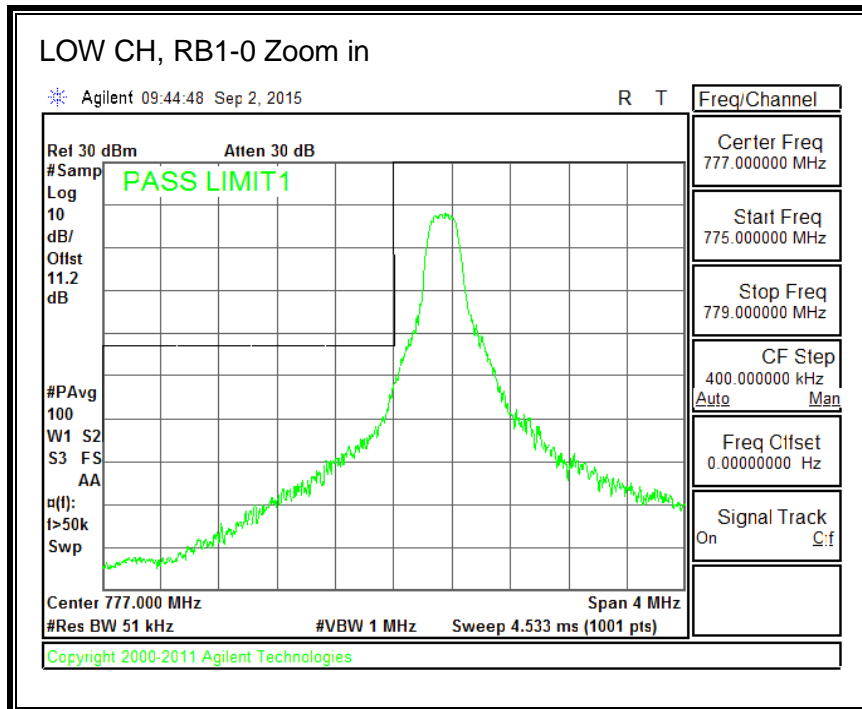
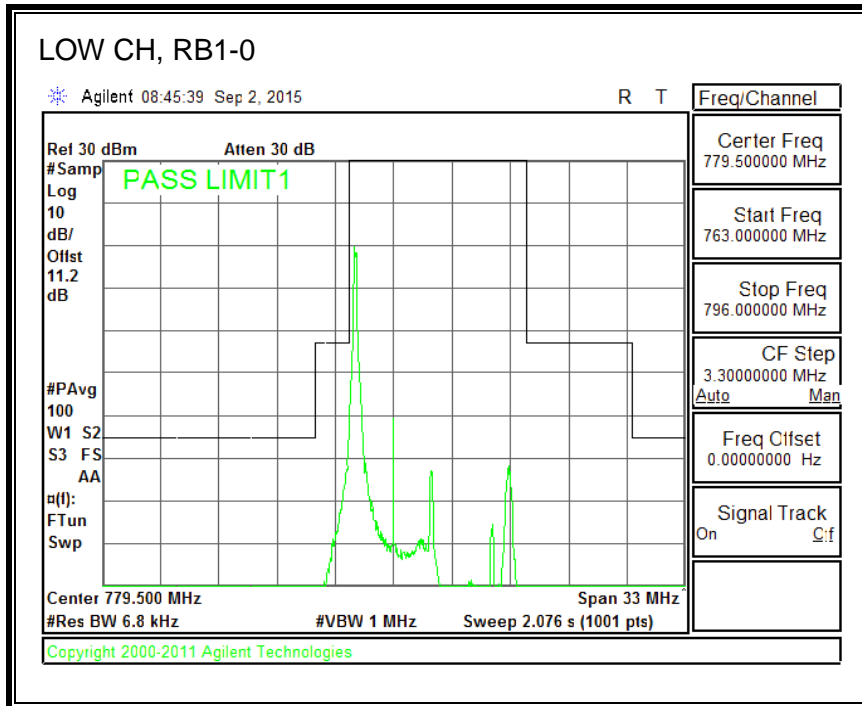
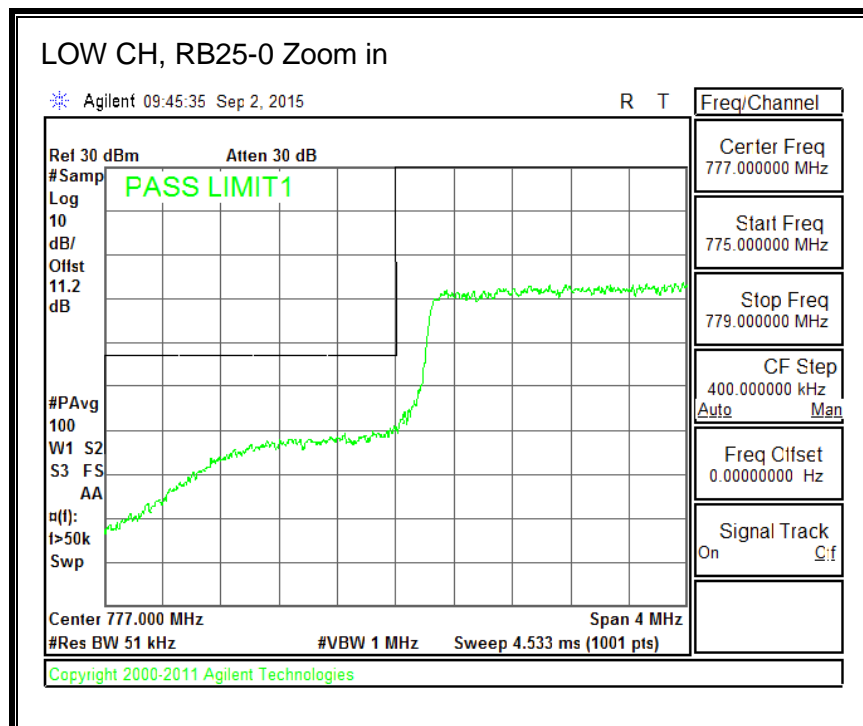
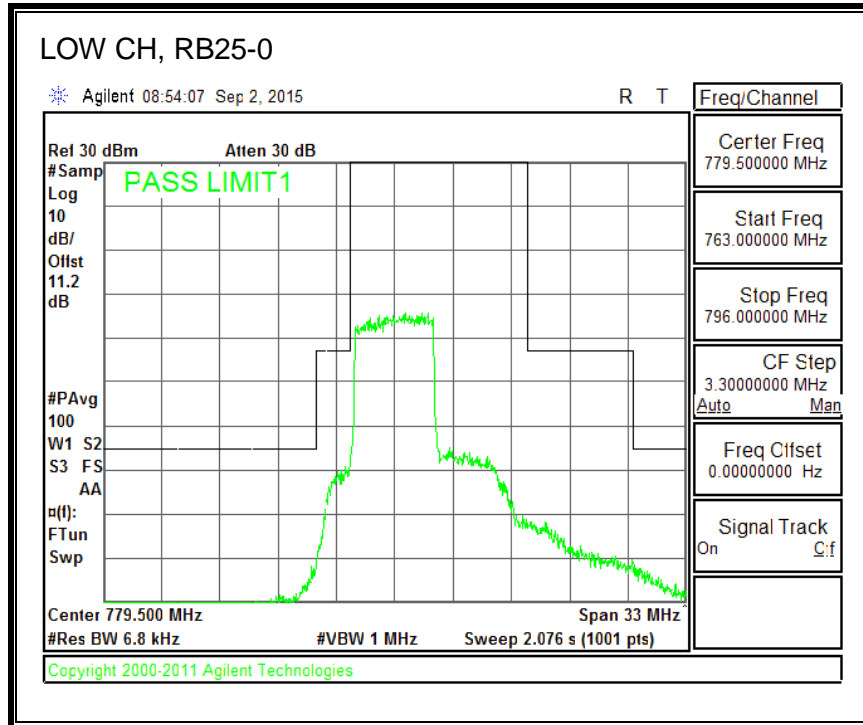
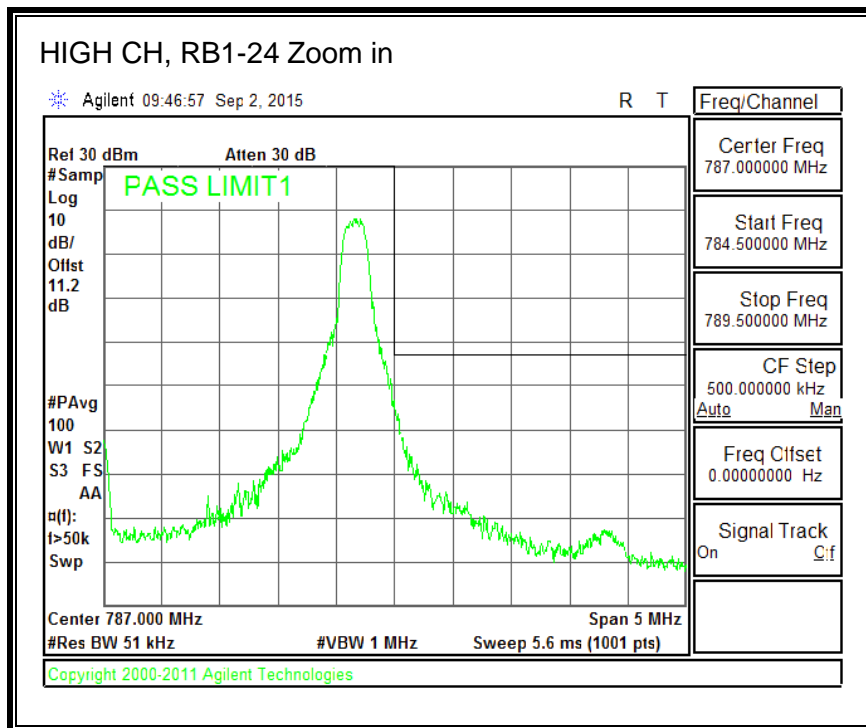
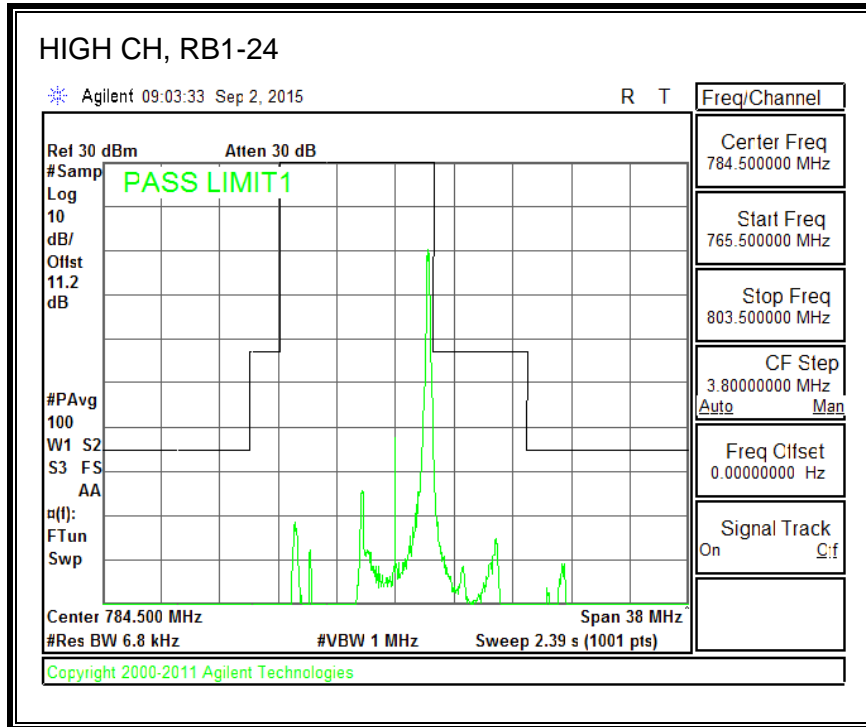
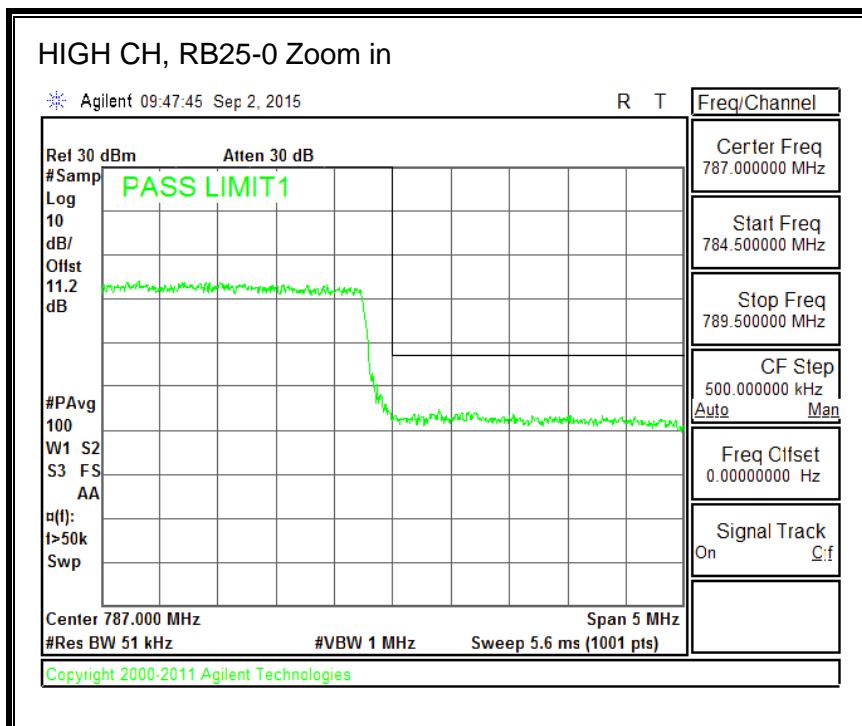
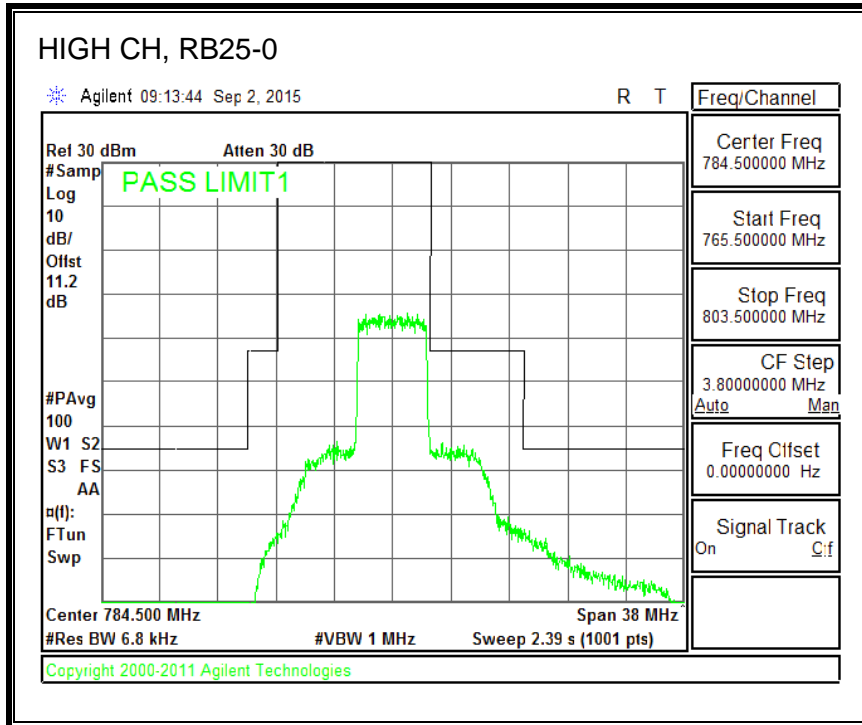


16QAM, (5.0 MHz BAND WIDTH)

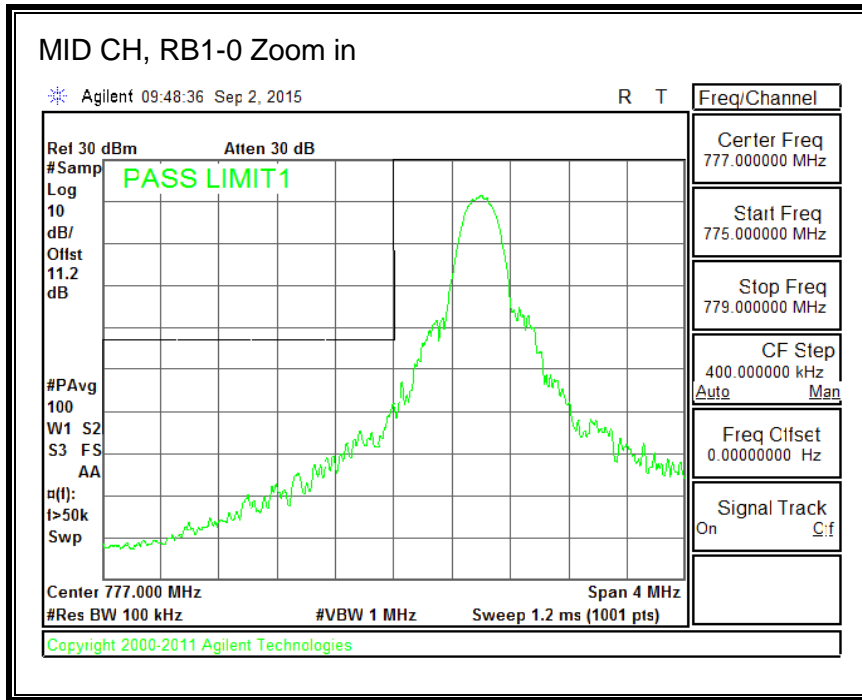
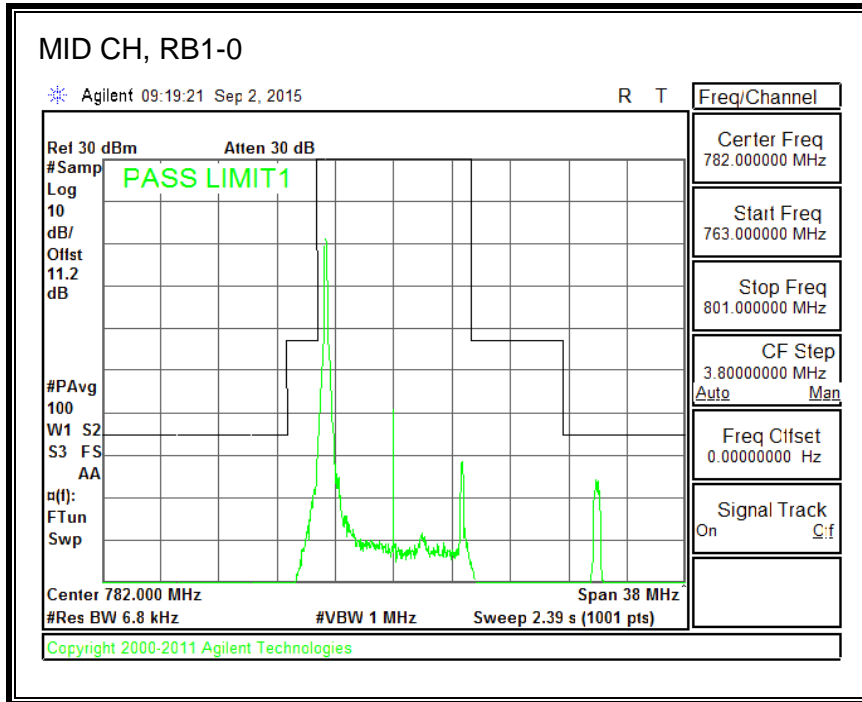


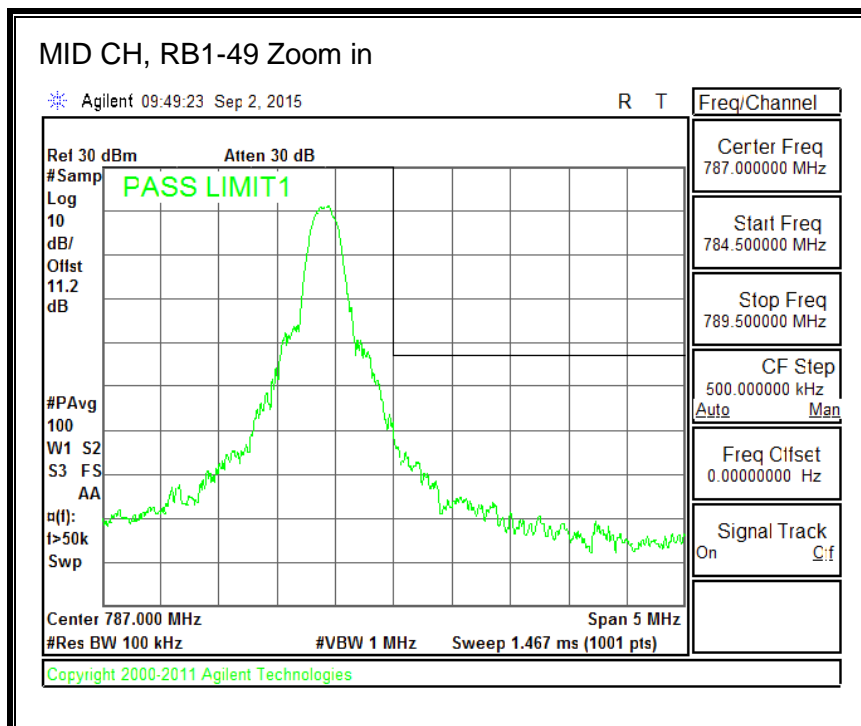
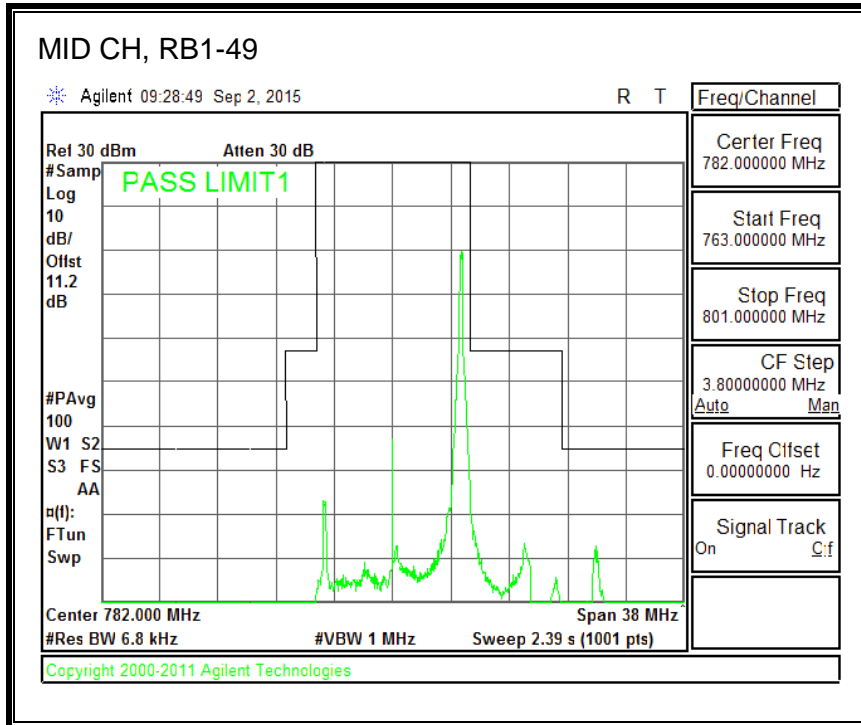


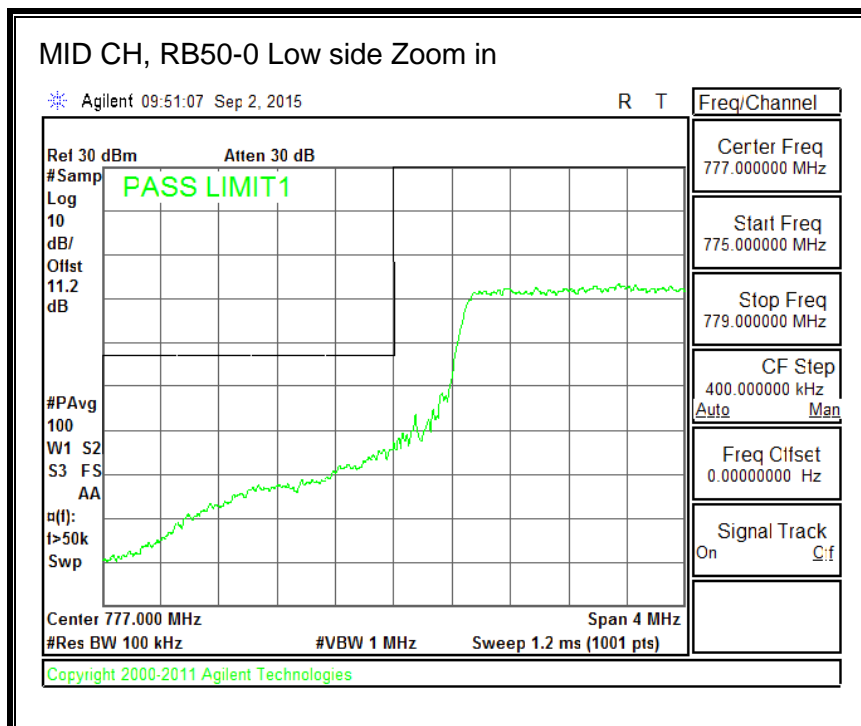
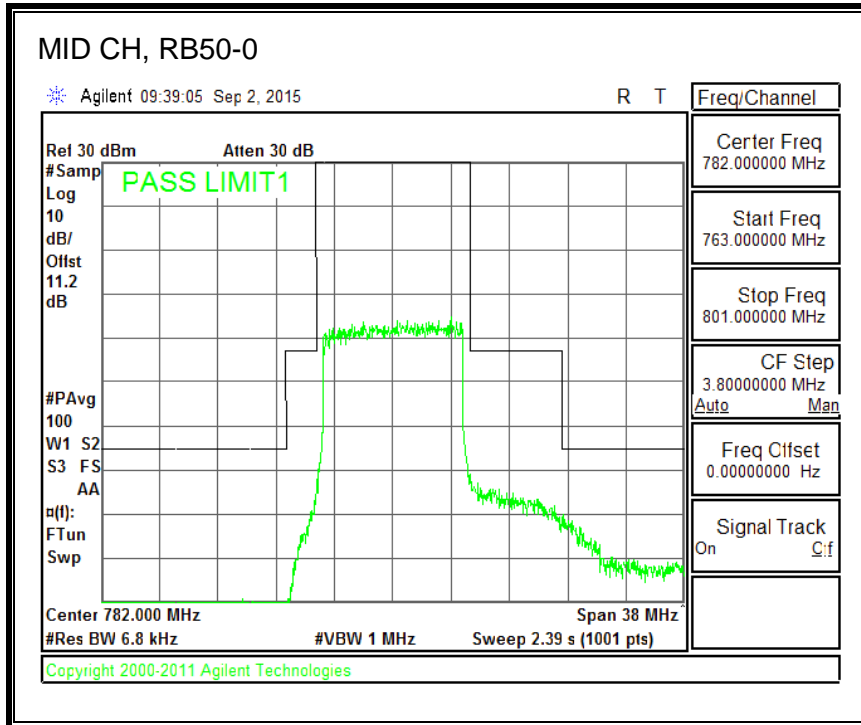


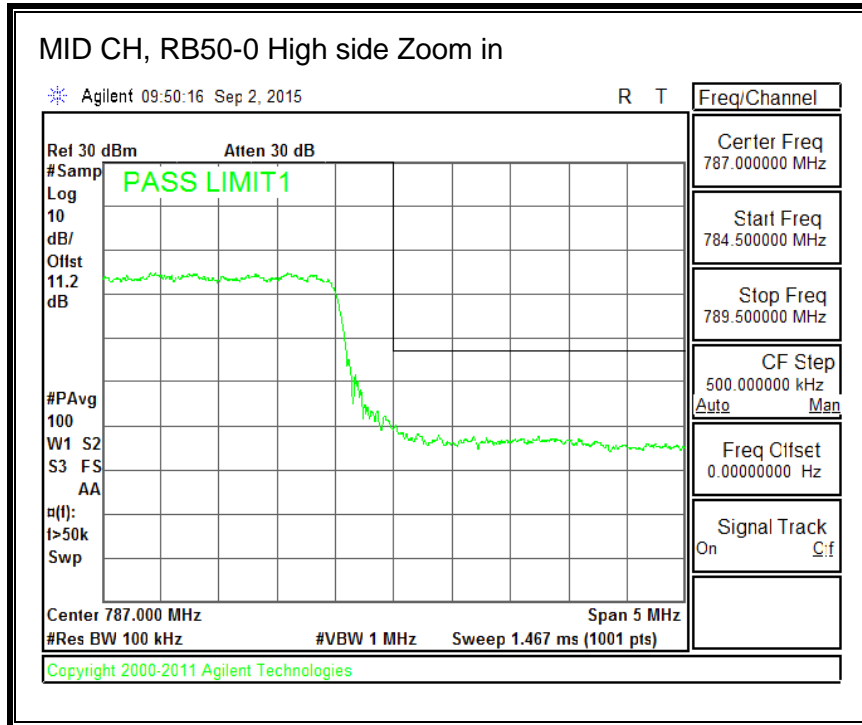


QPSK, (10.0 MHz BAND WIDTH)

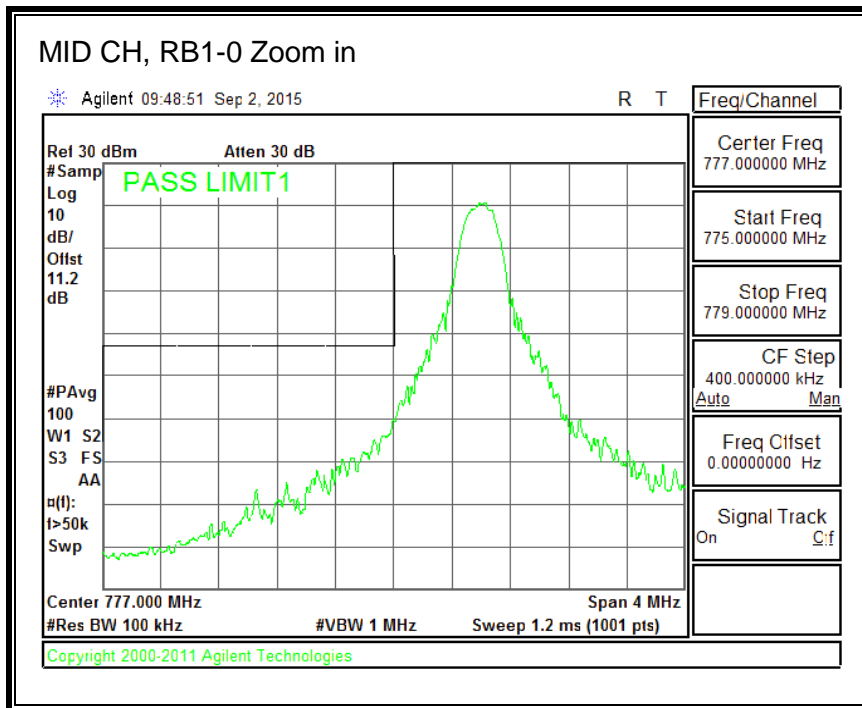
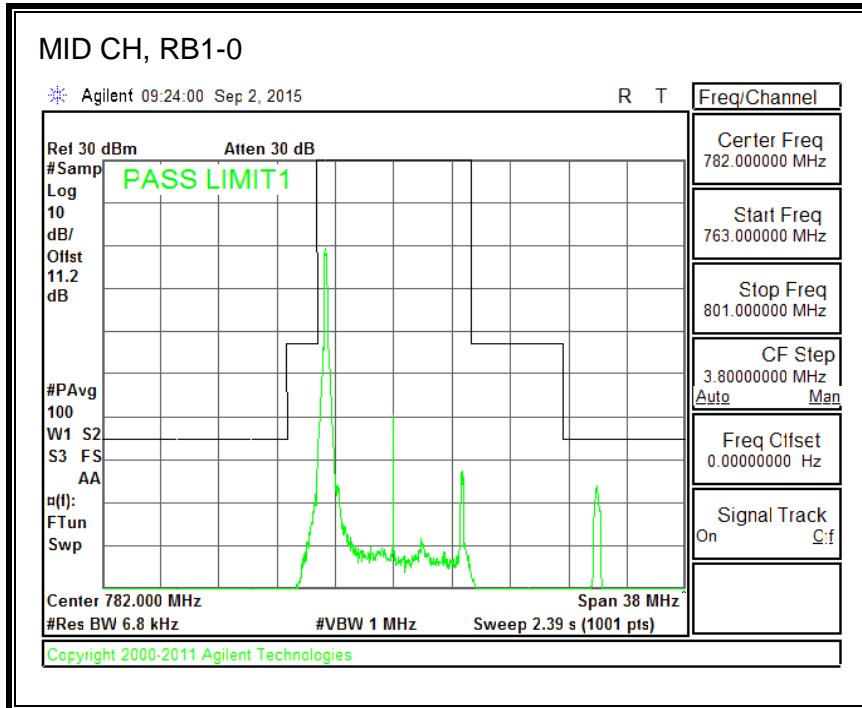


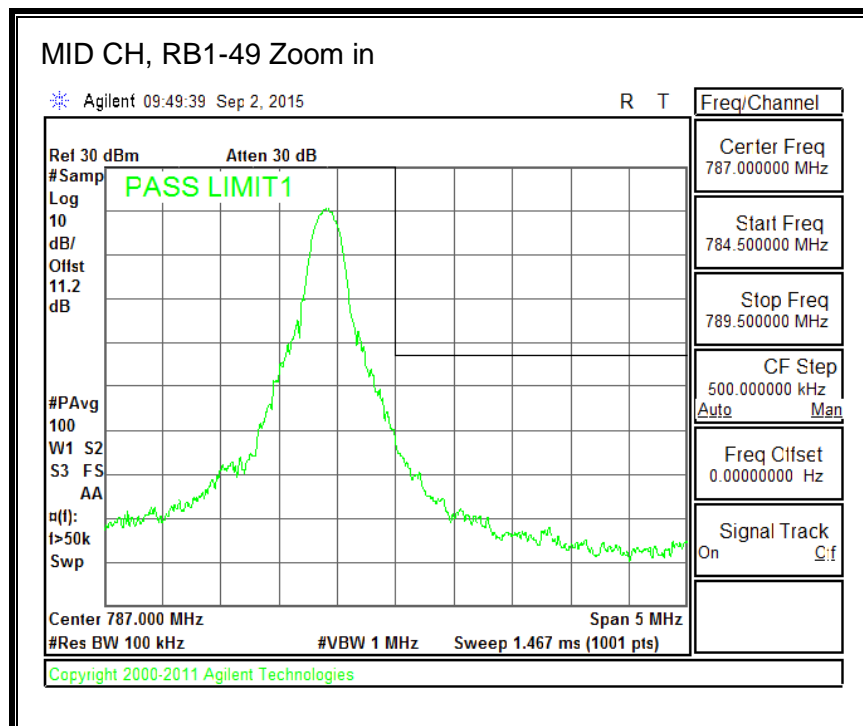
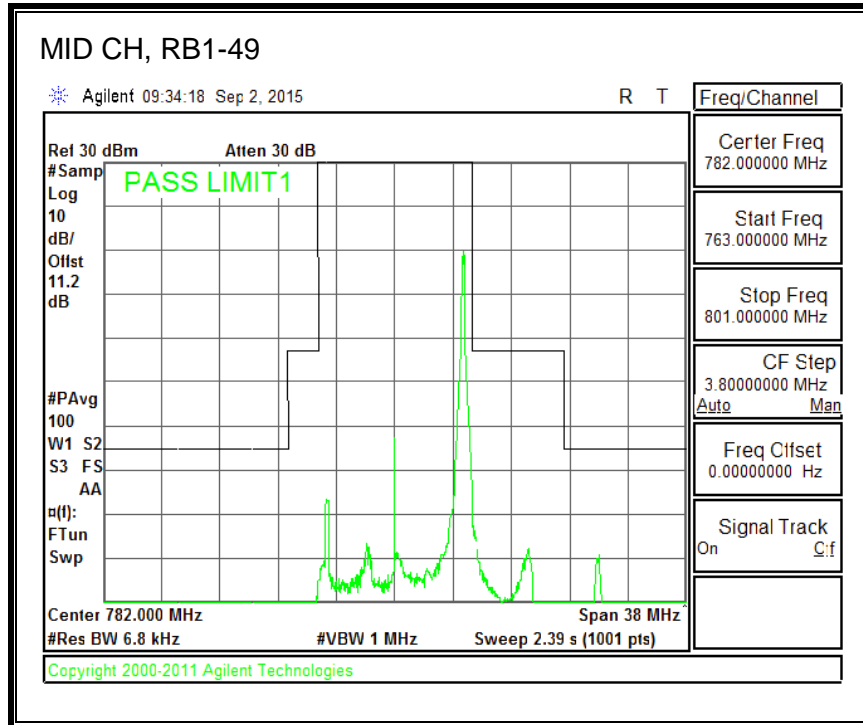


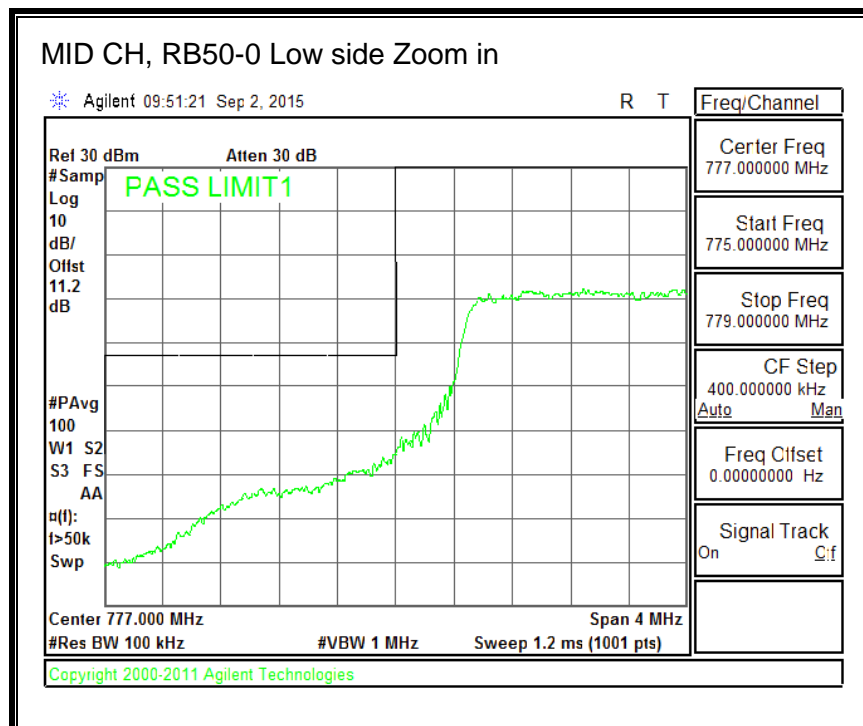
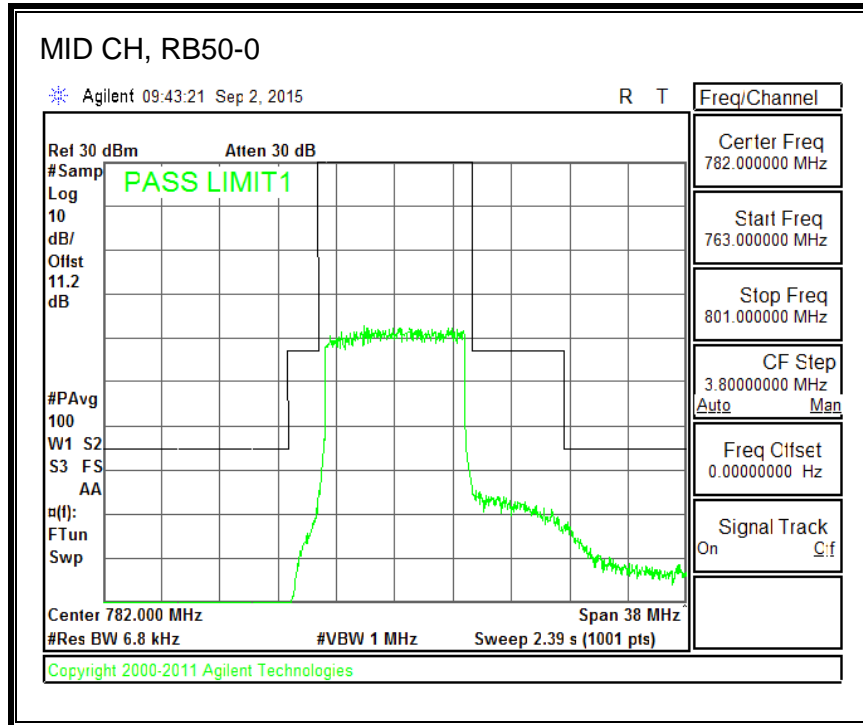


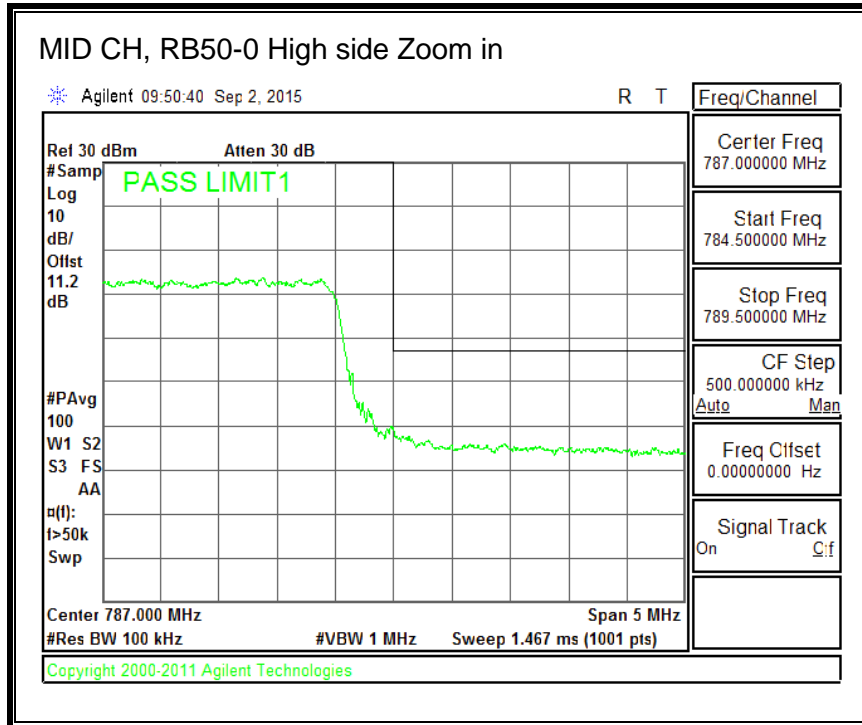


16QAM, (10.0 MHz BAND WIDTH)



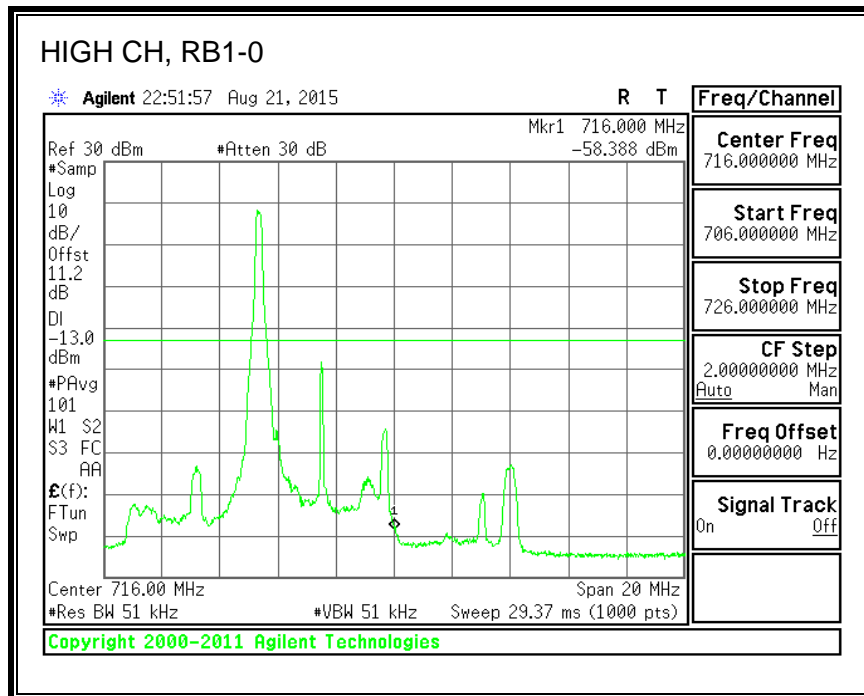
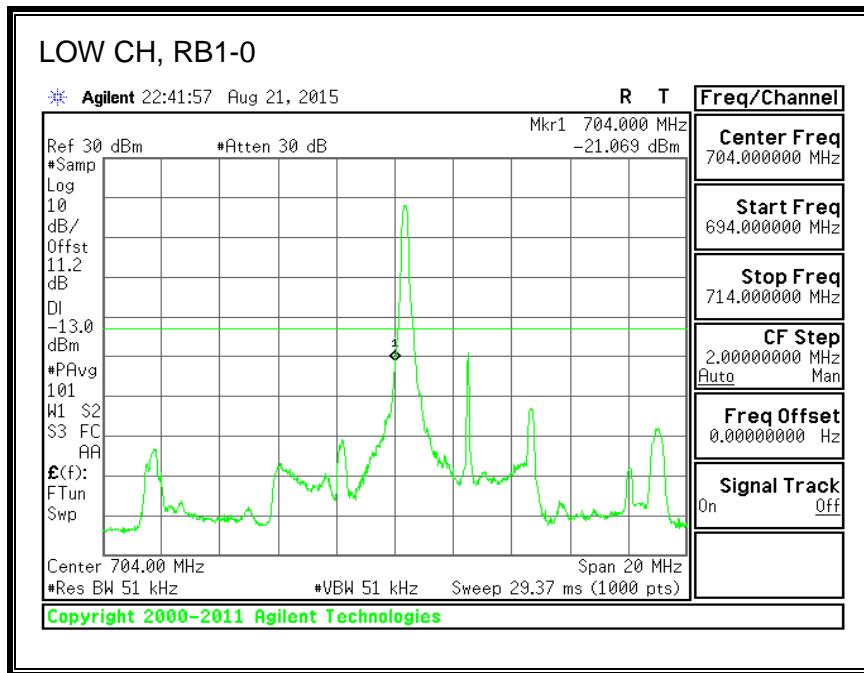


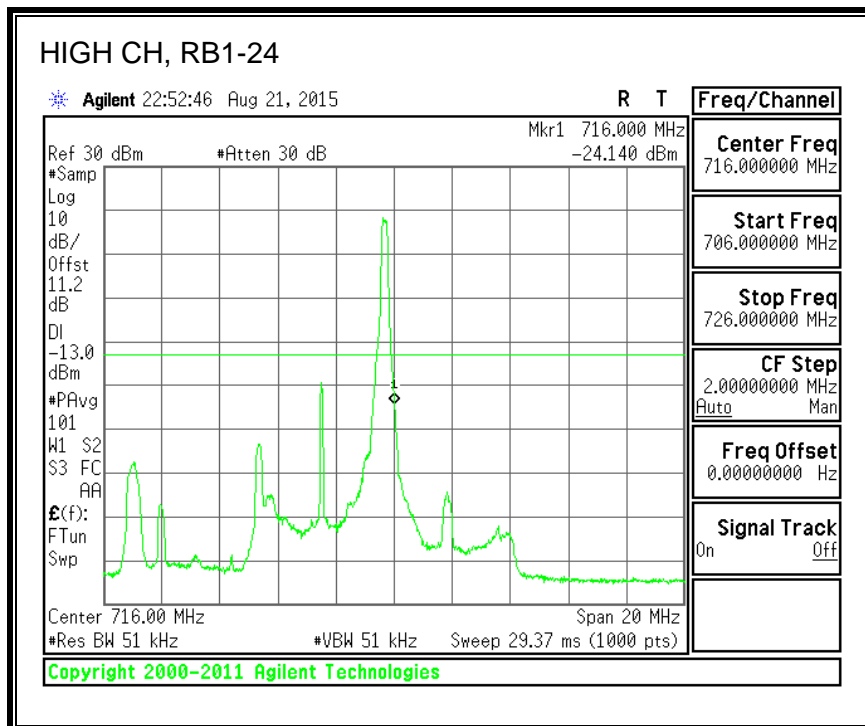
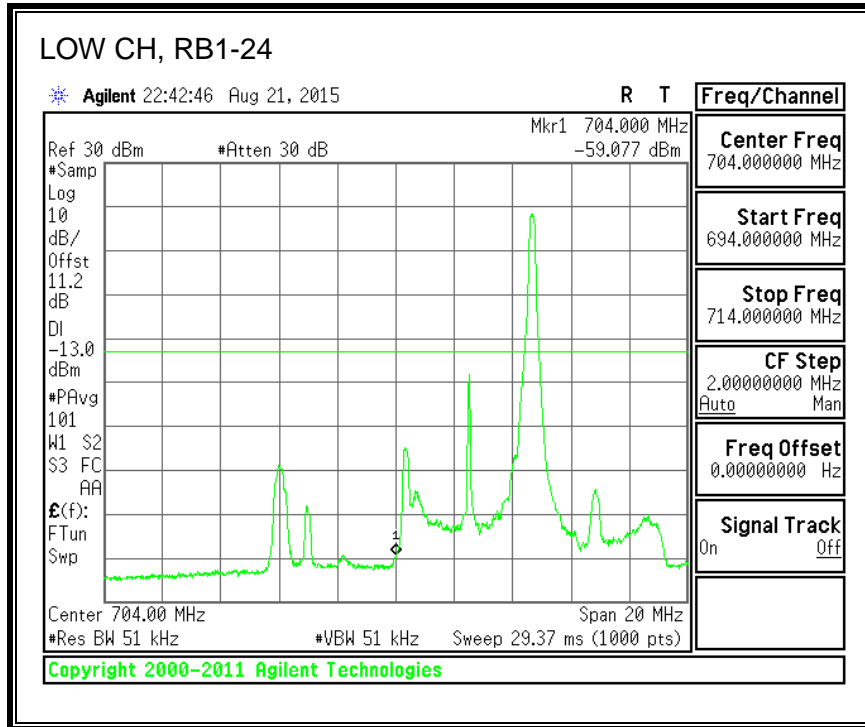


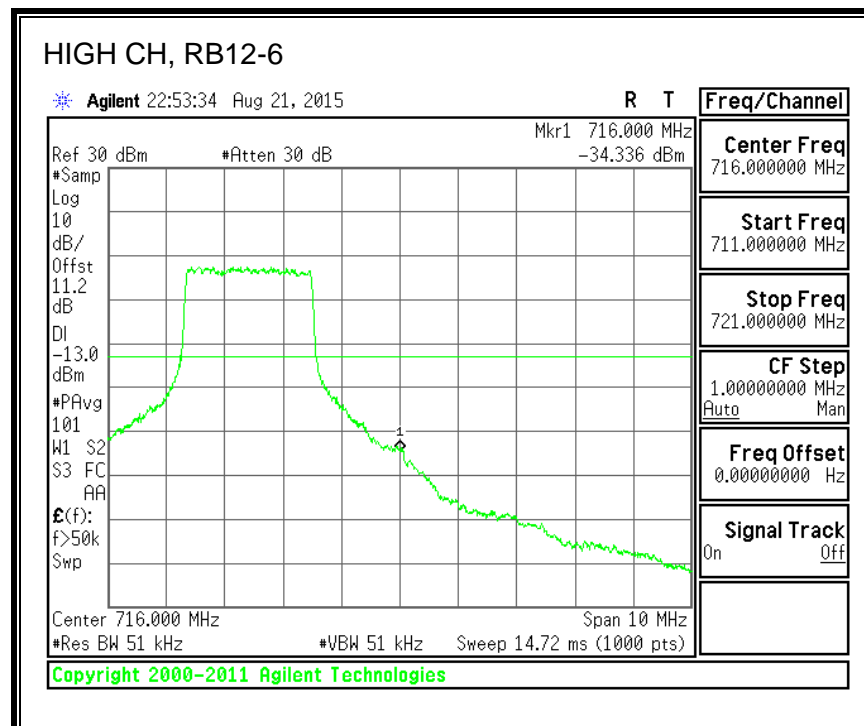
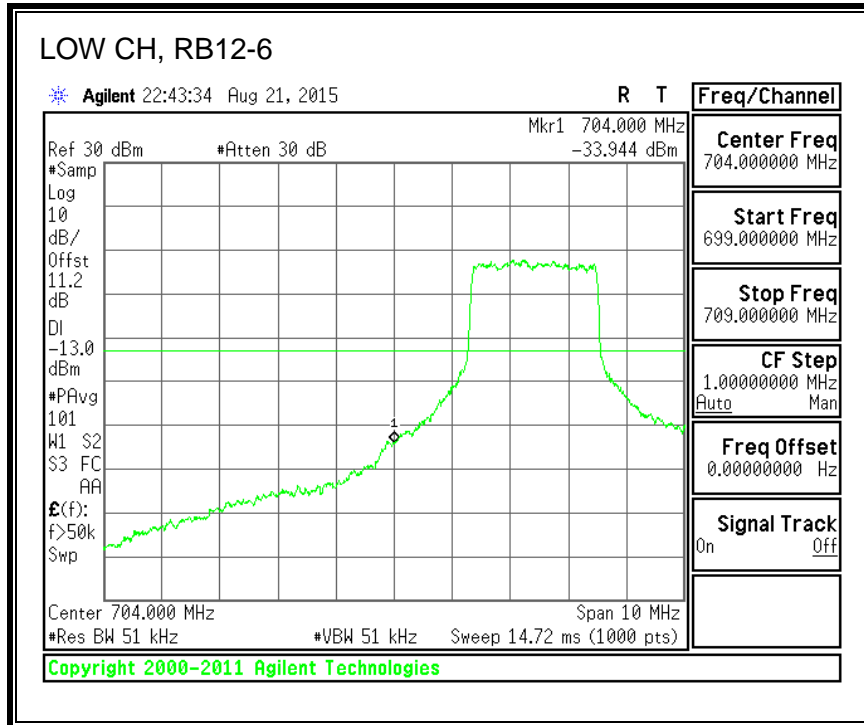


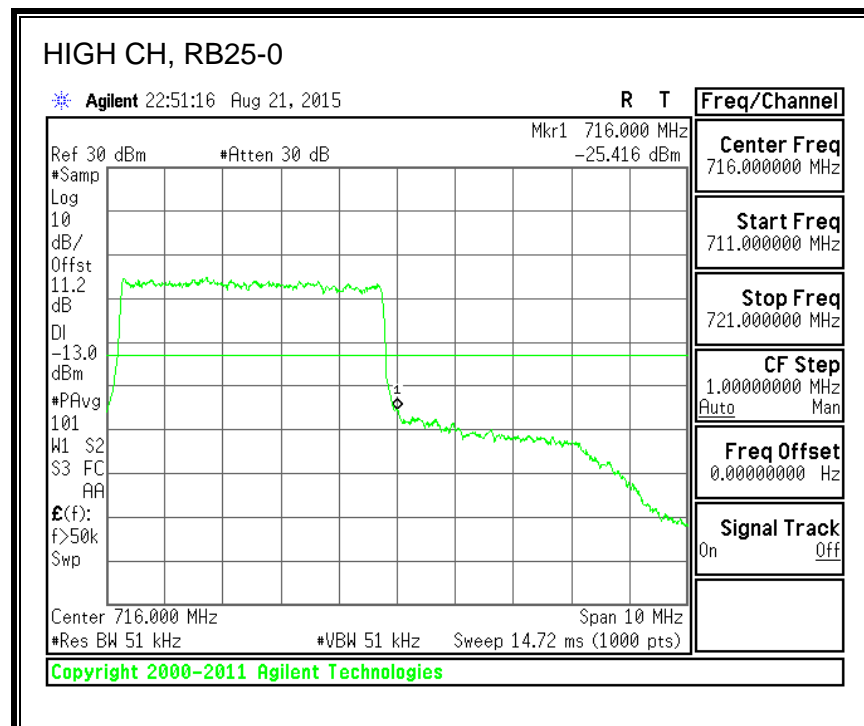
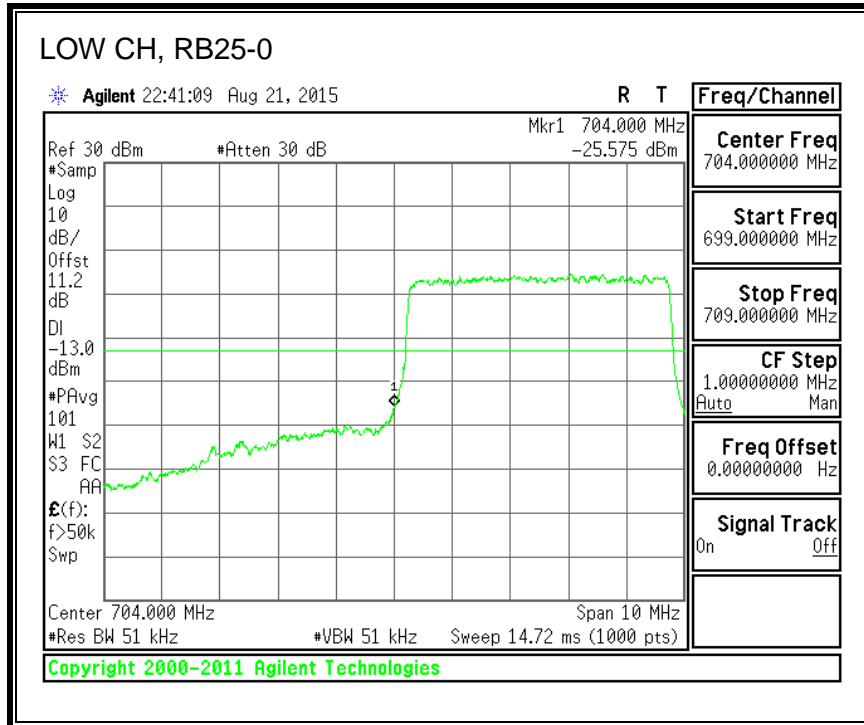
8.2.6. LTE BAND 17 BANDEDGE

QPSK, (5.0 MHz BAND WIDTH)

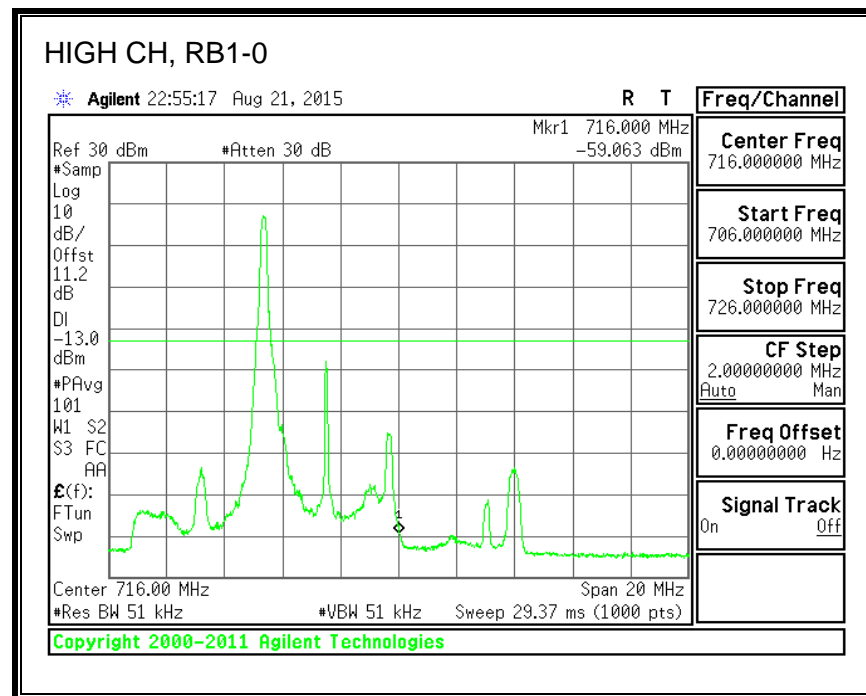
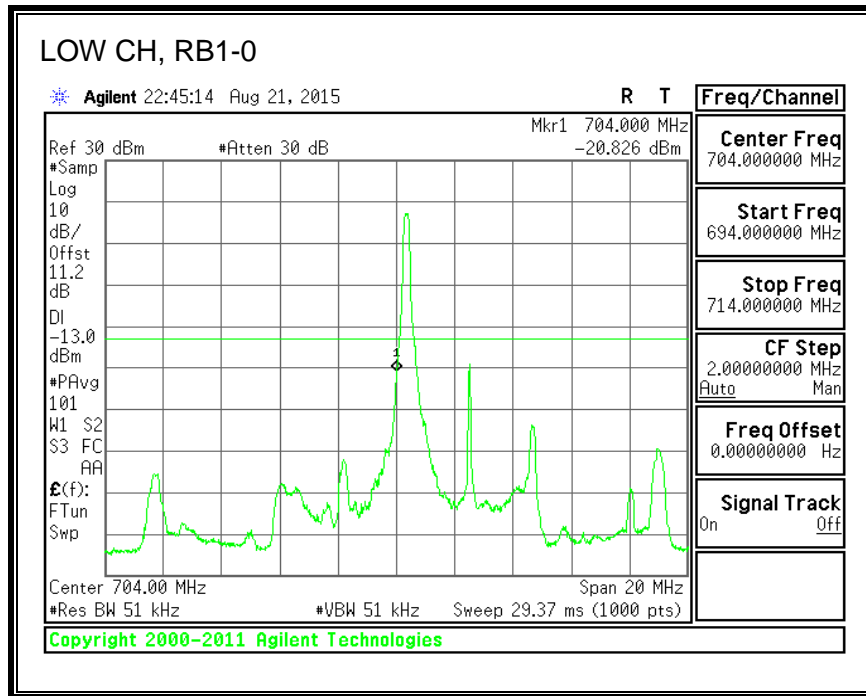


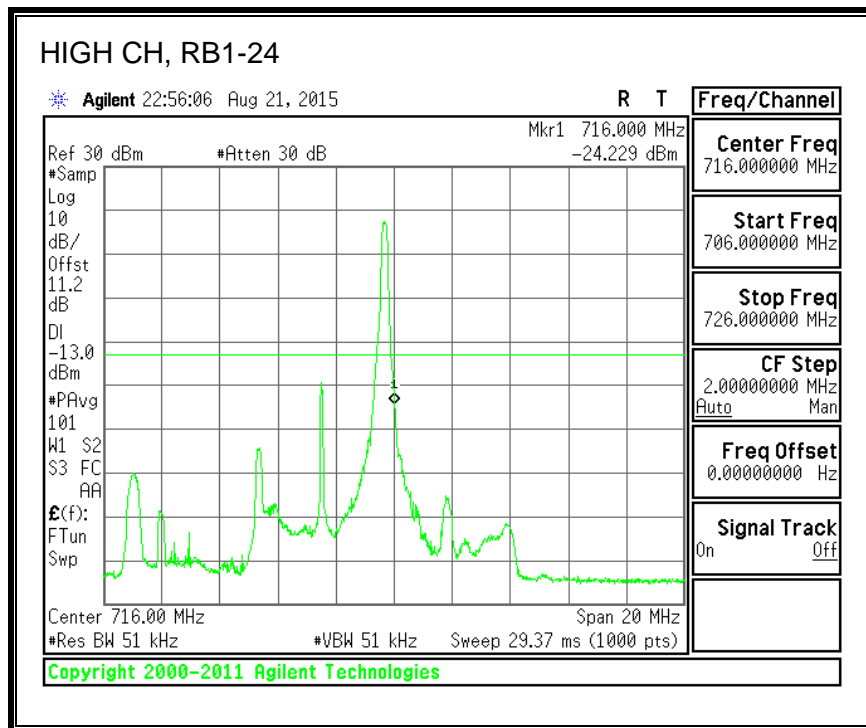
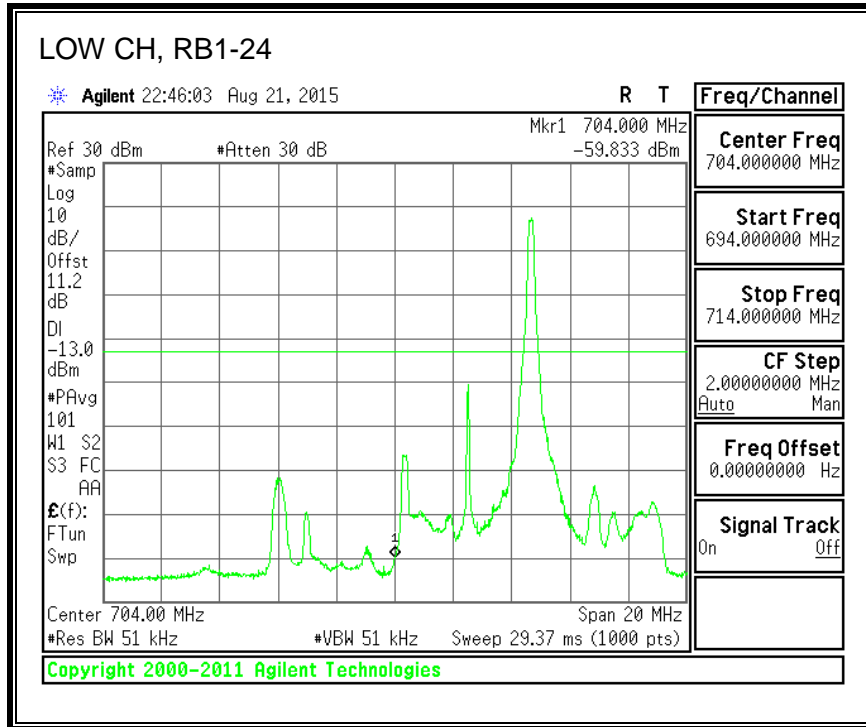


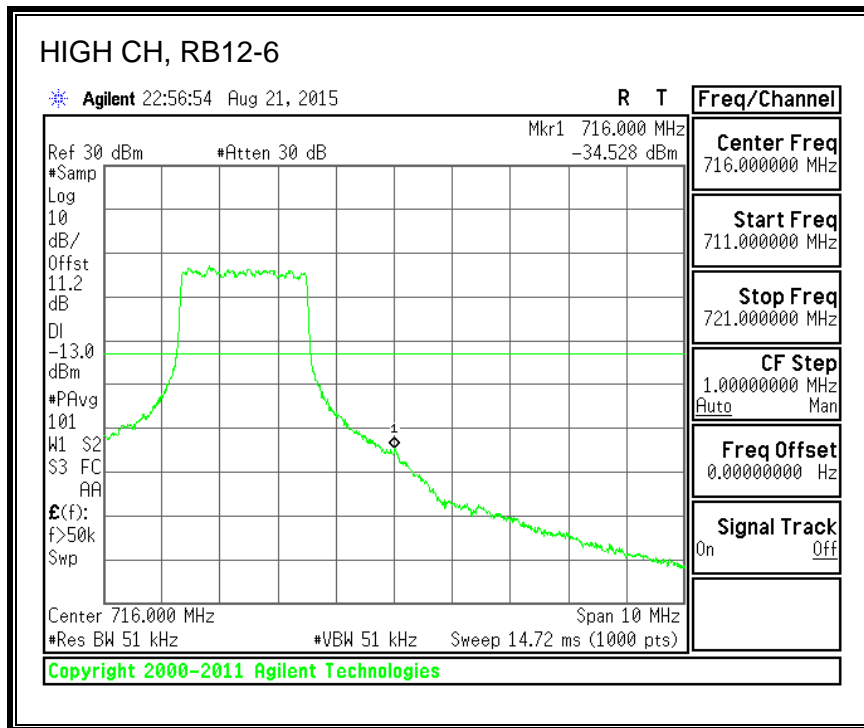
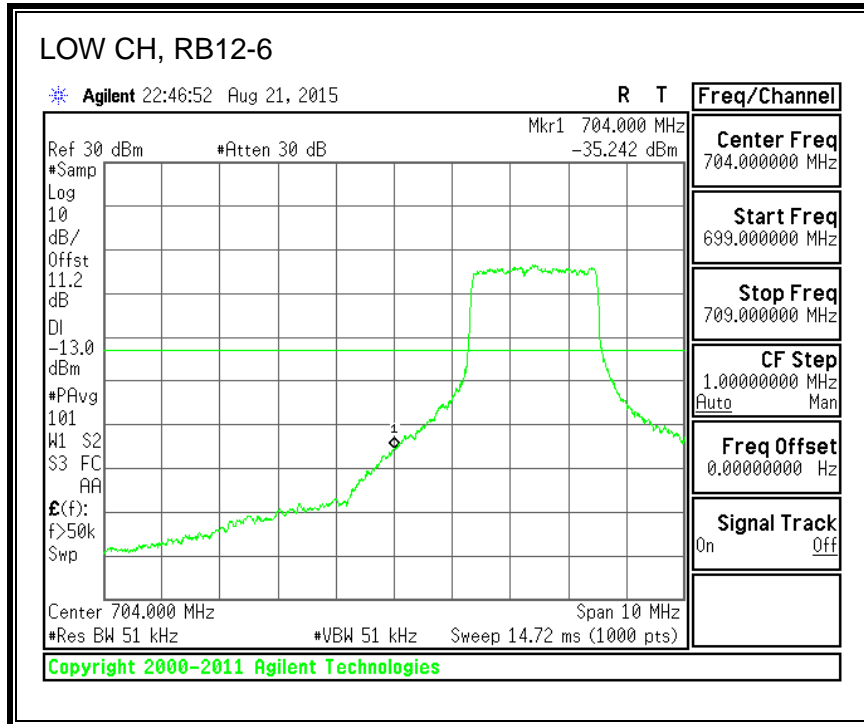


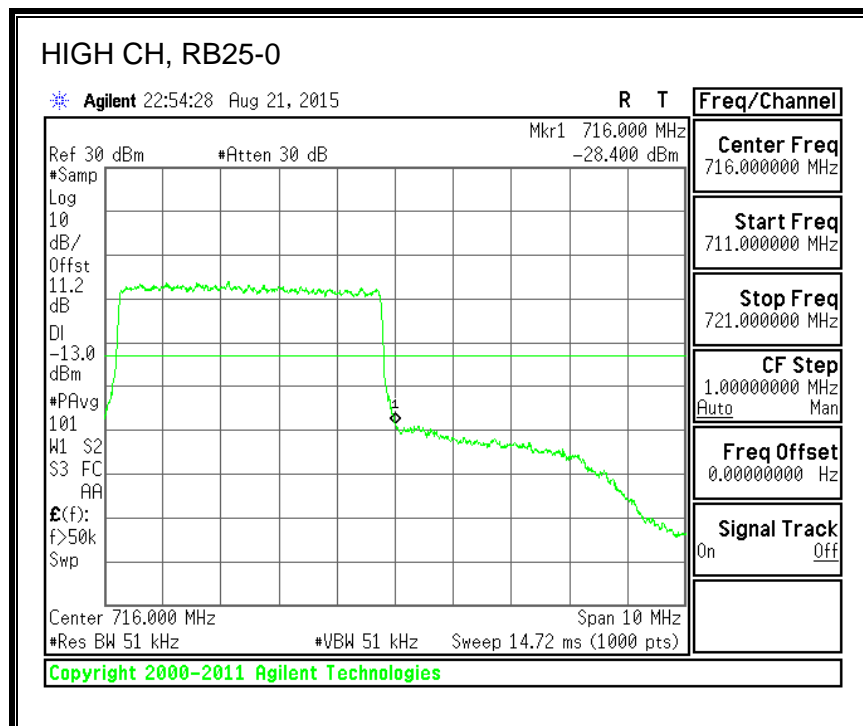
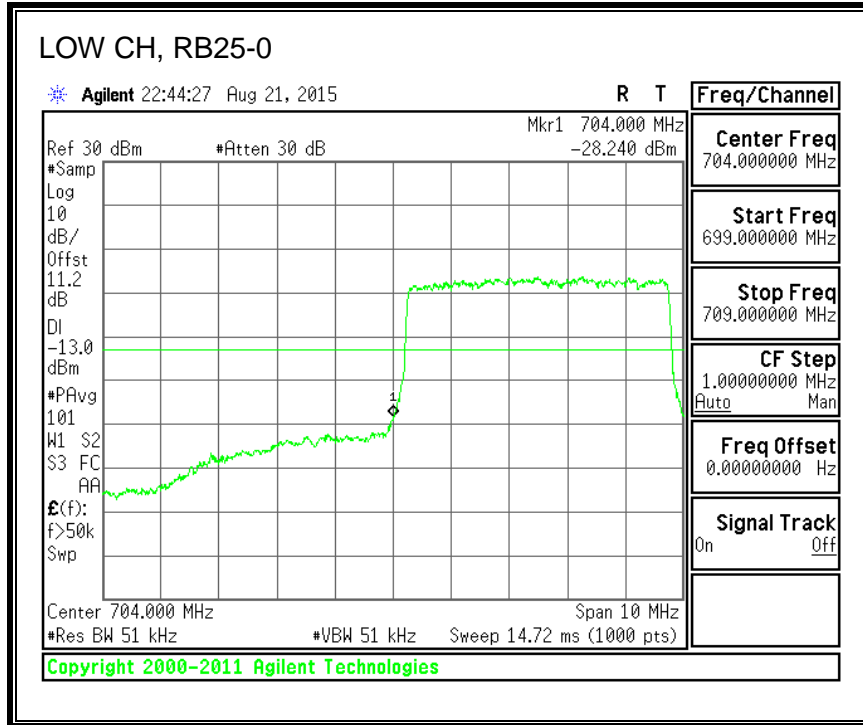


16QAM, (5.0 MHz BAND WIDTH)

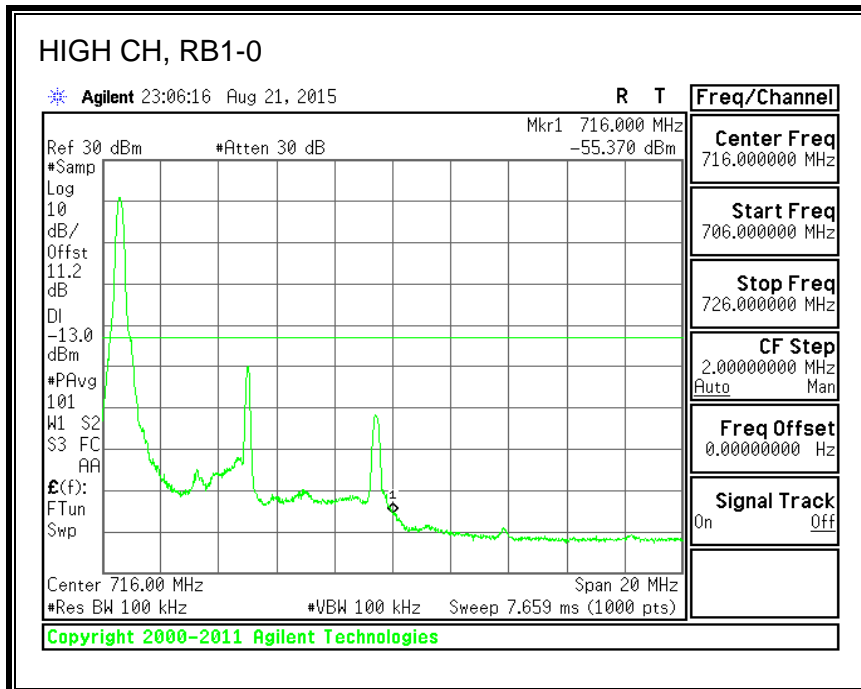
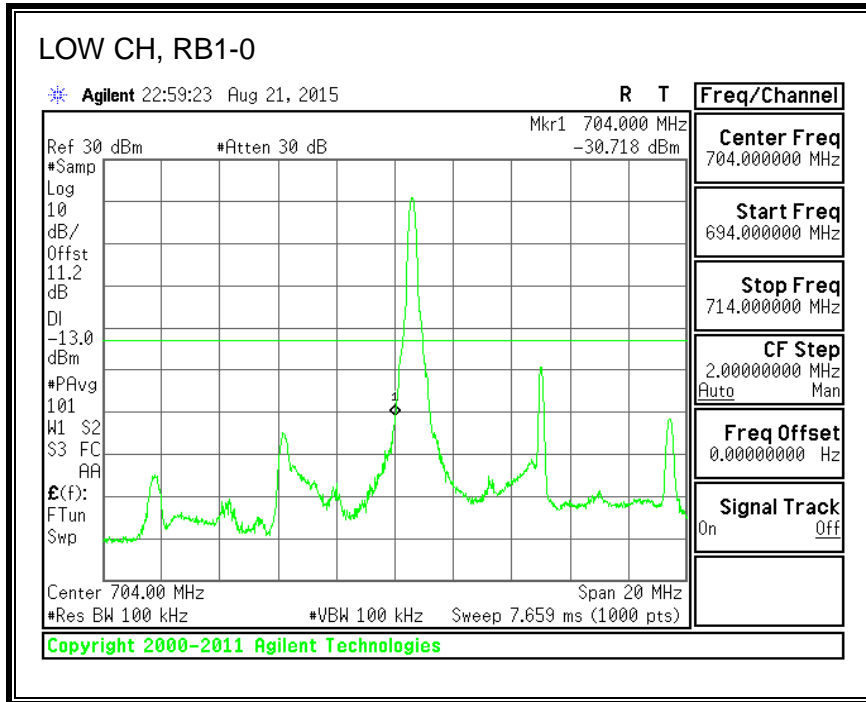


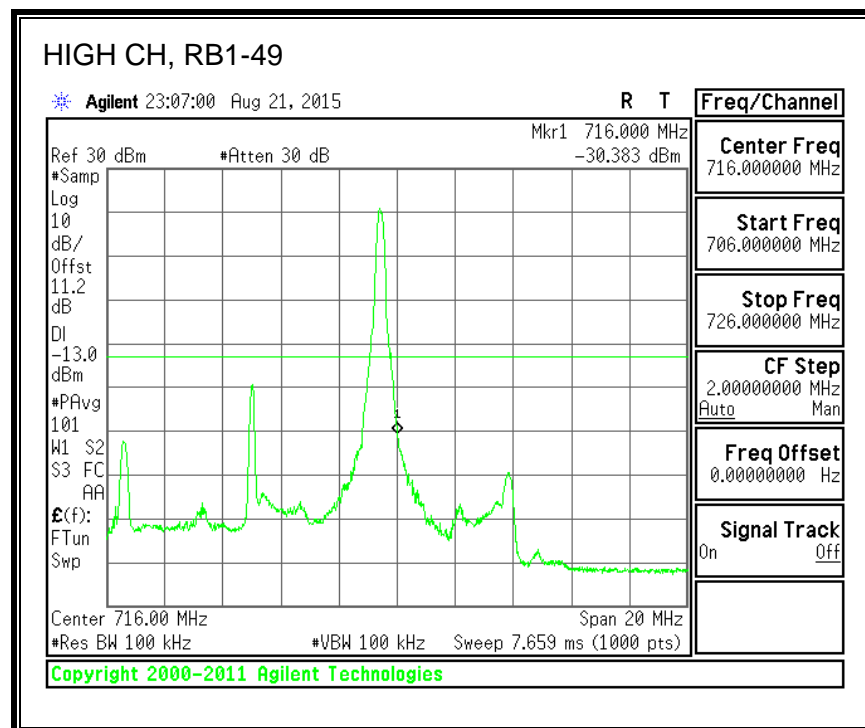
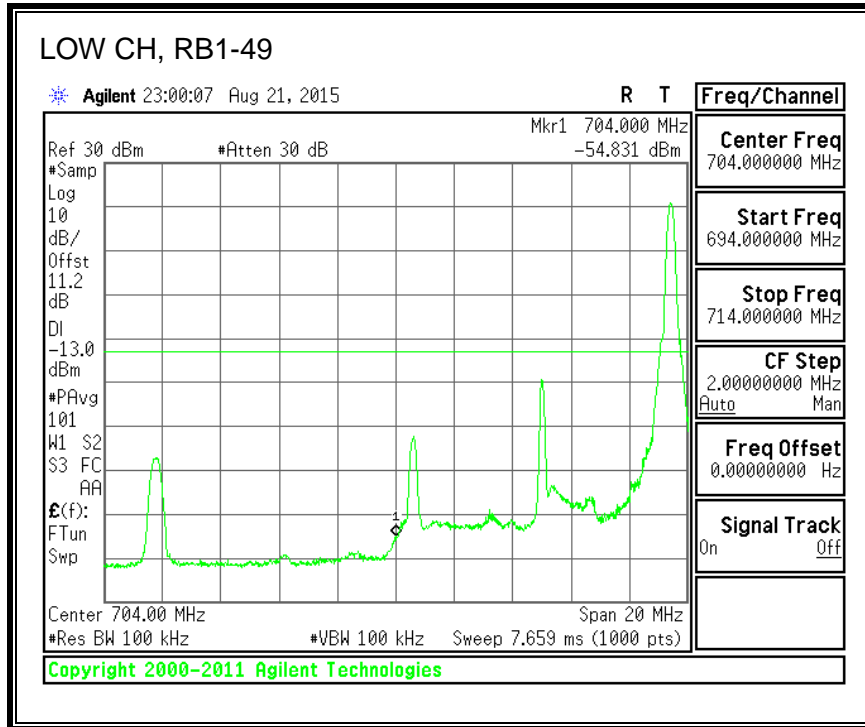


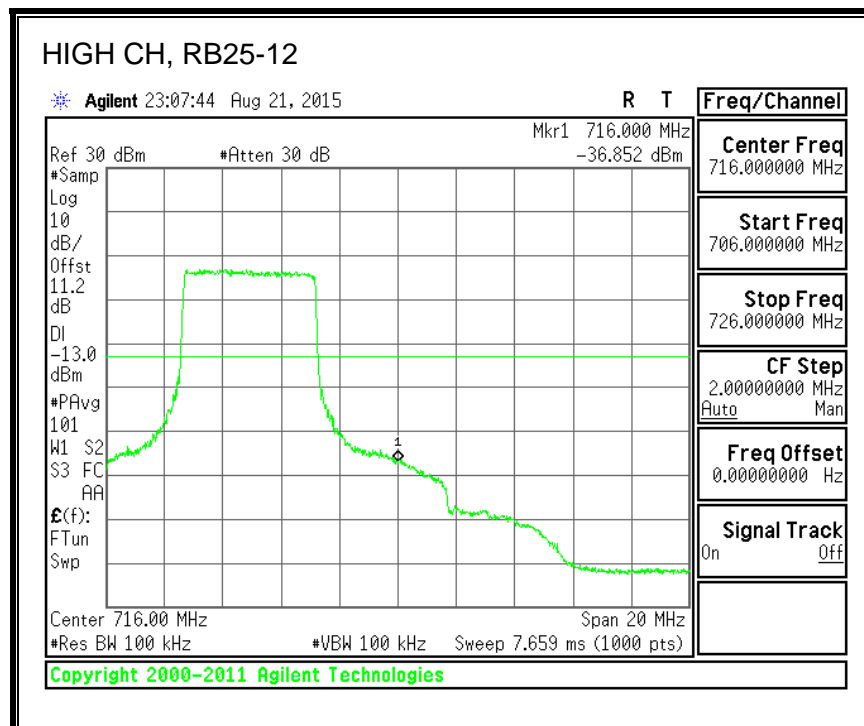
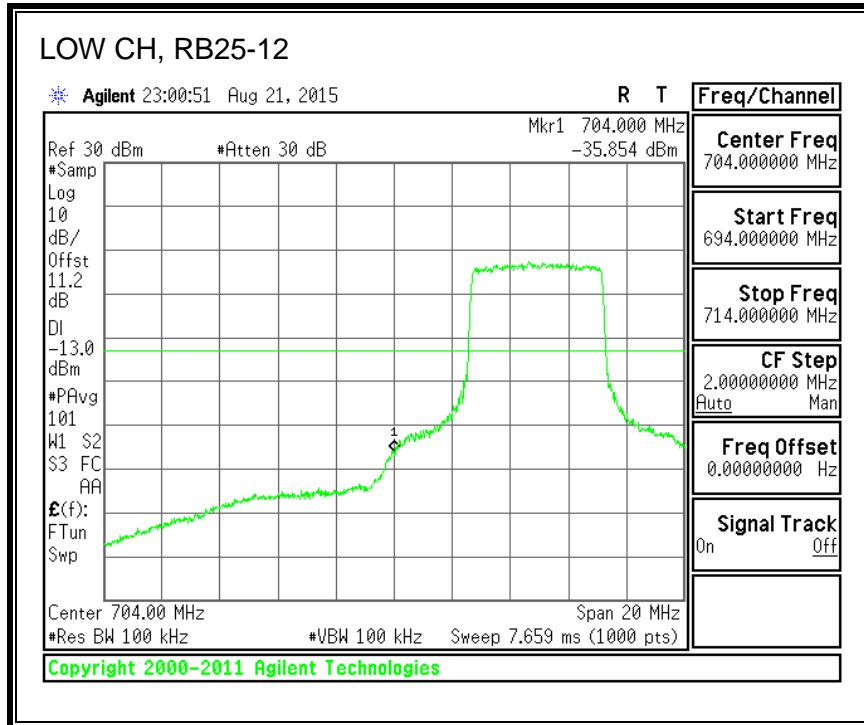


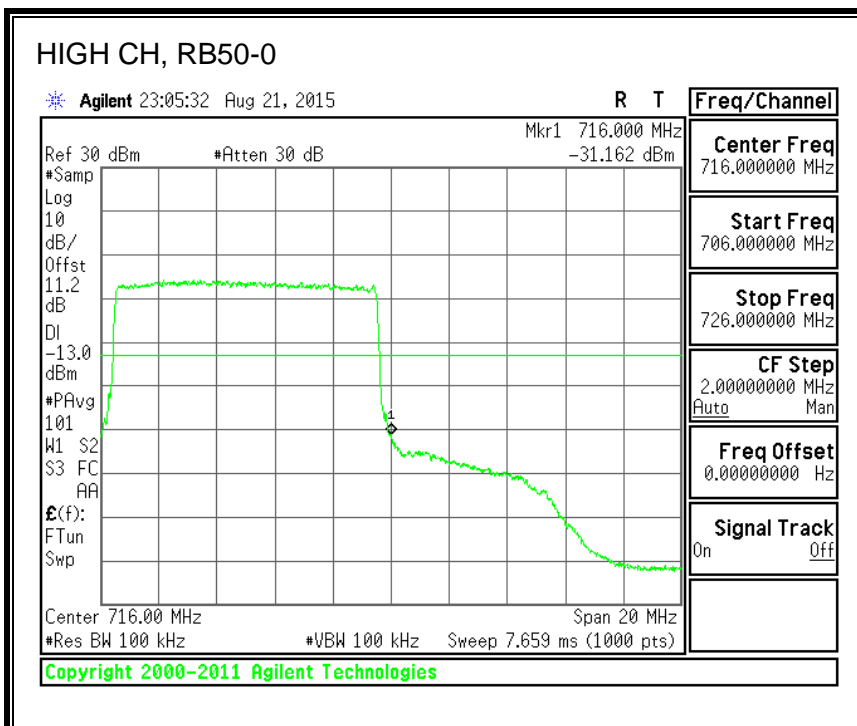
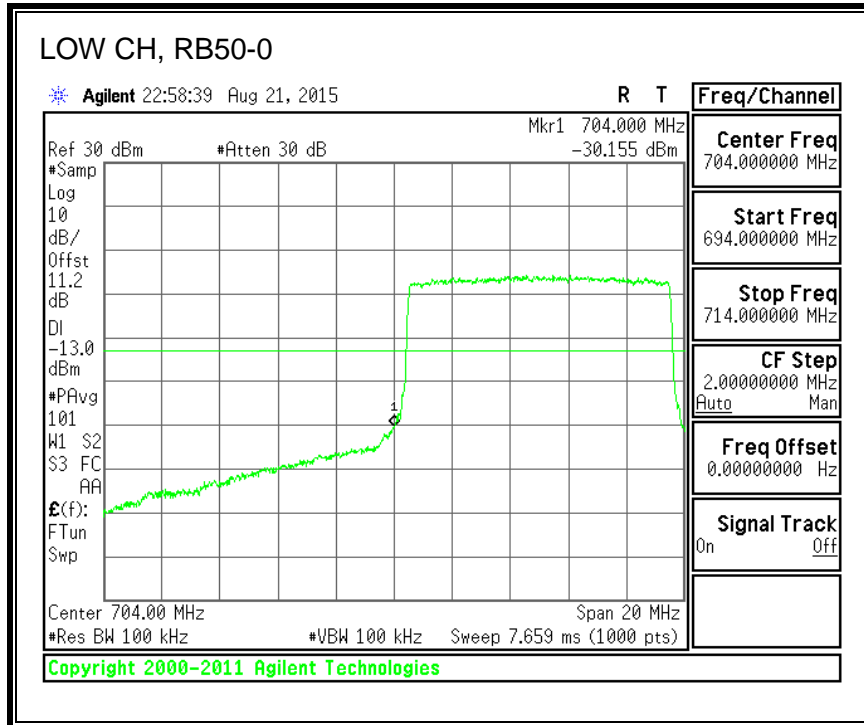


QPSK, (10.0 MHz BAND WIDTH)

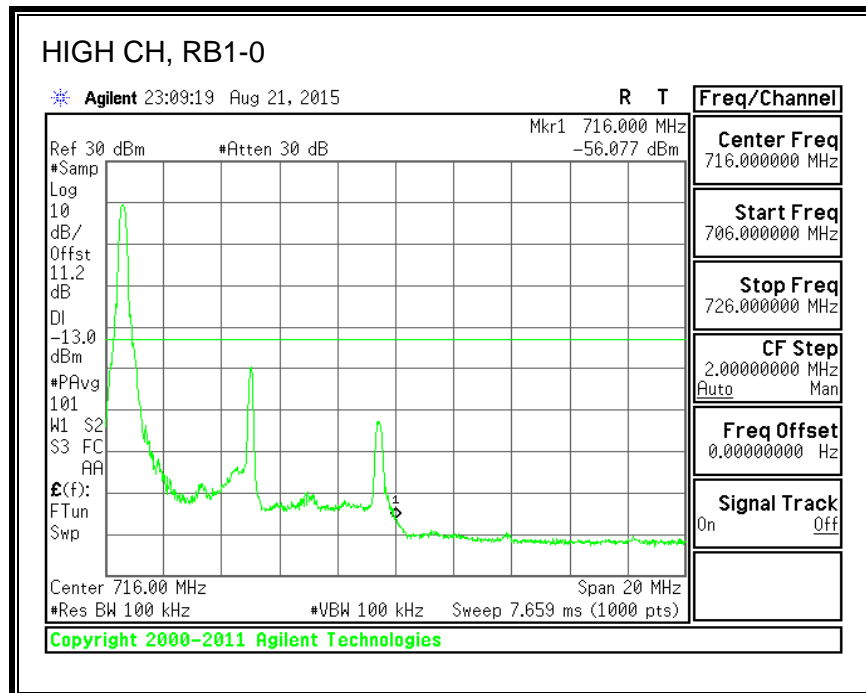
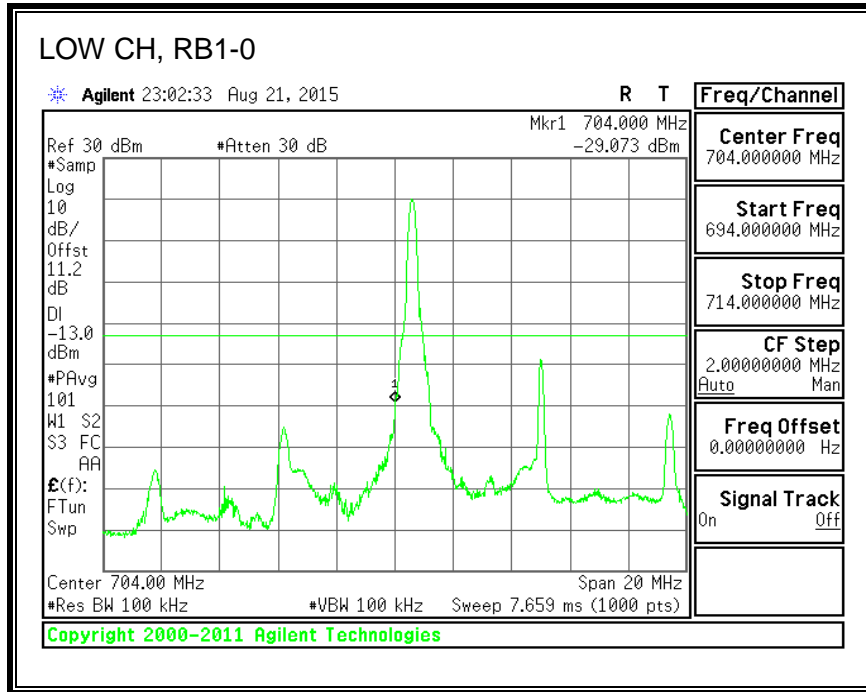


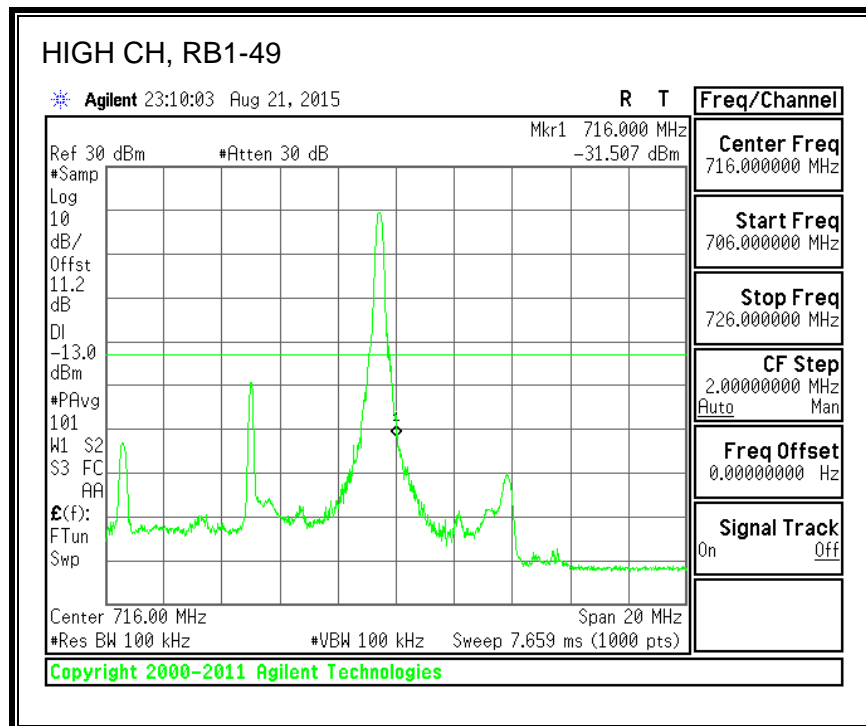
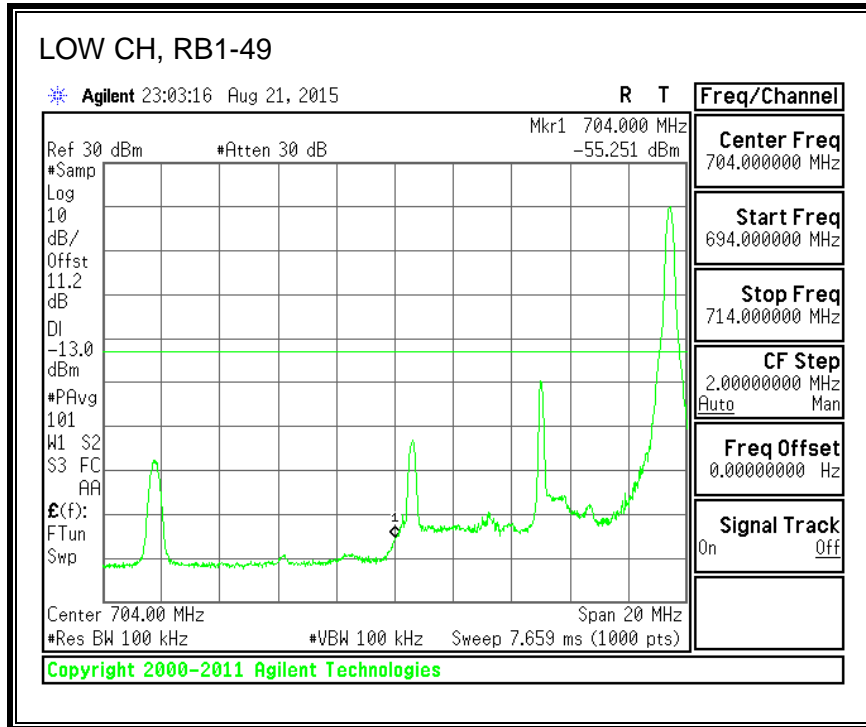


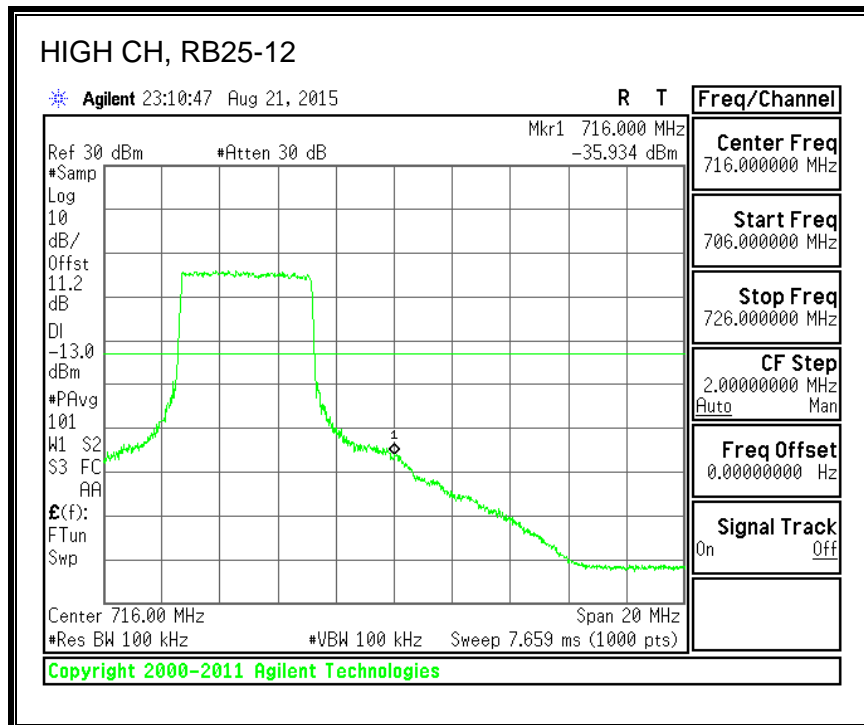
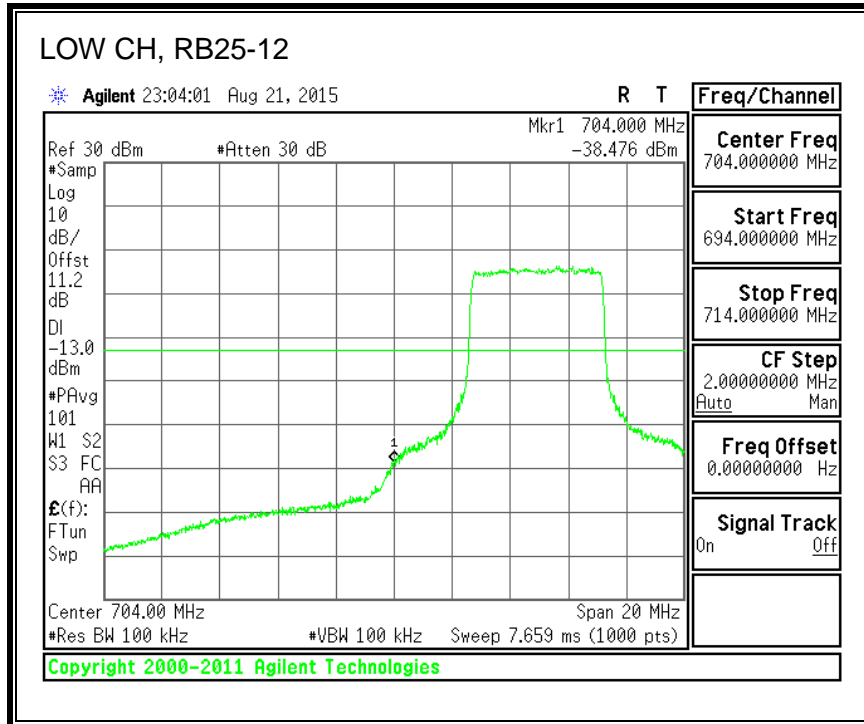


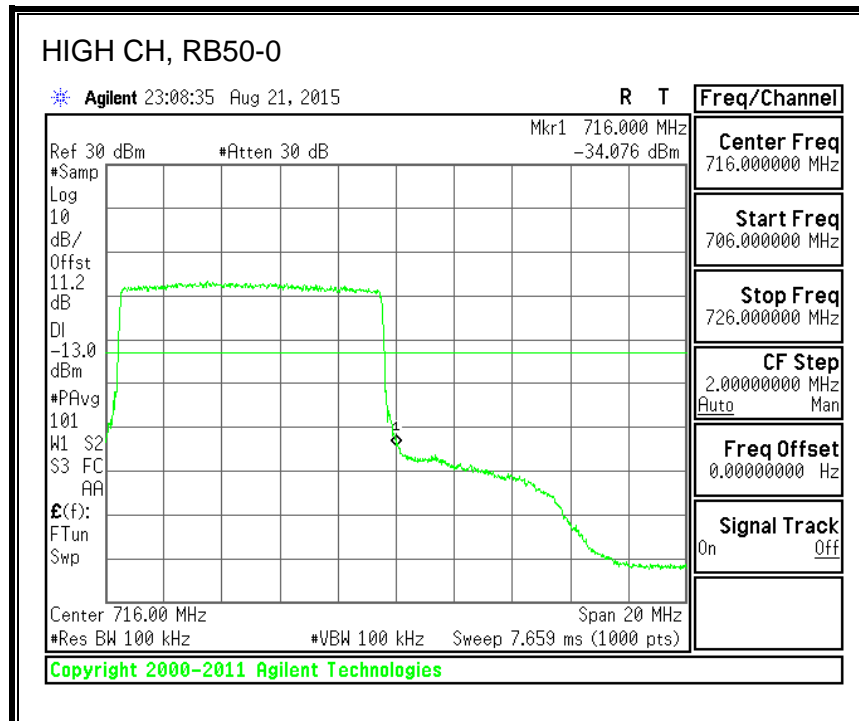
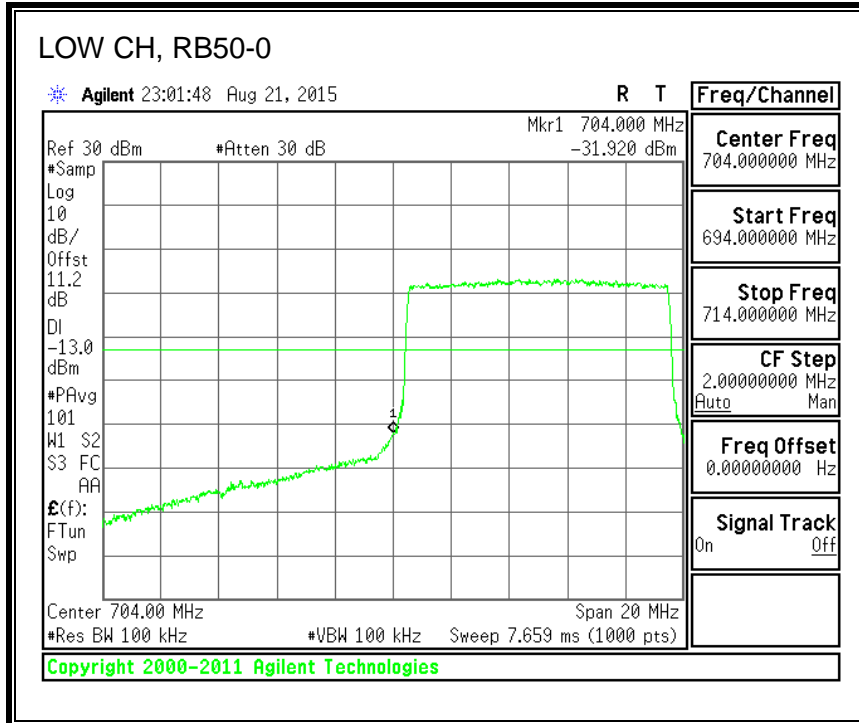


16QAM, (10.0 MHz BAND WIDTH)



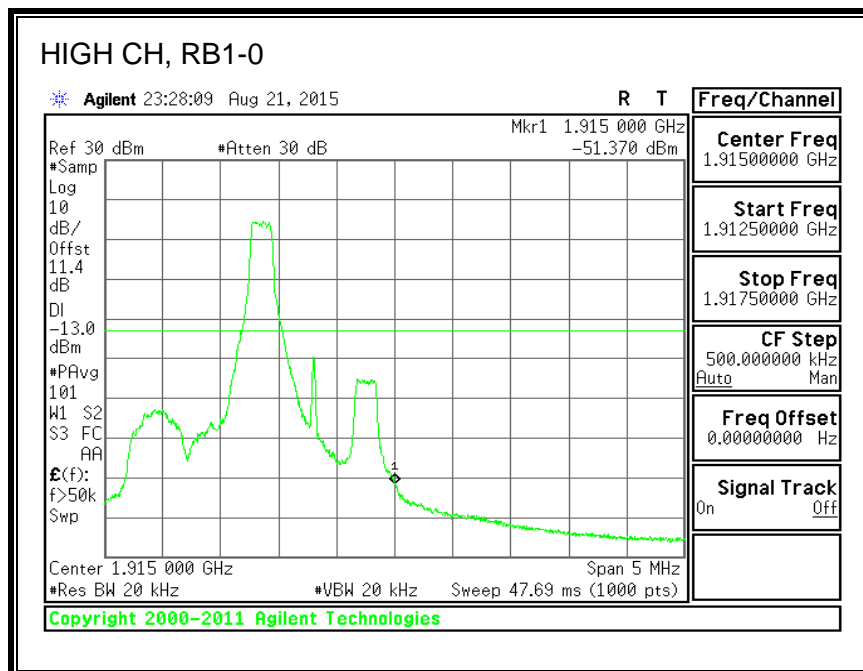
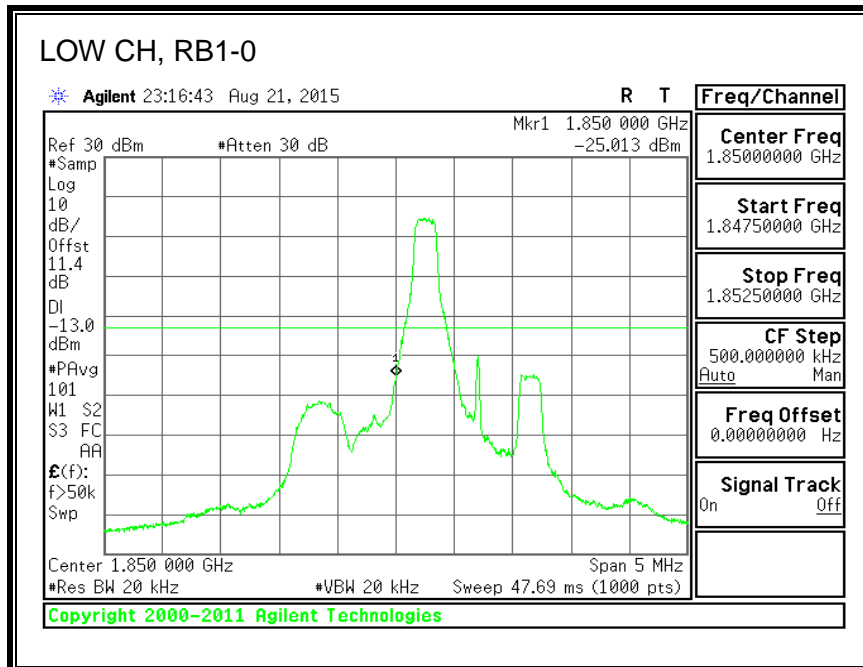


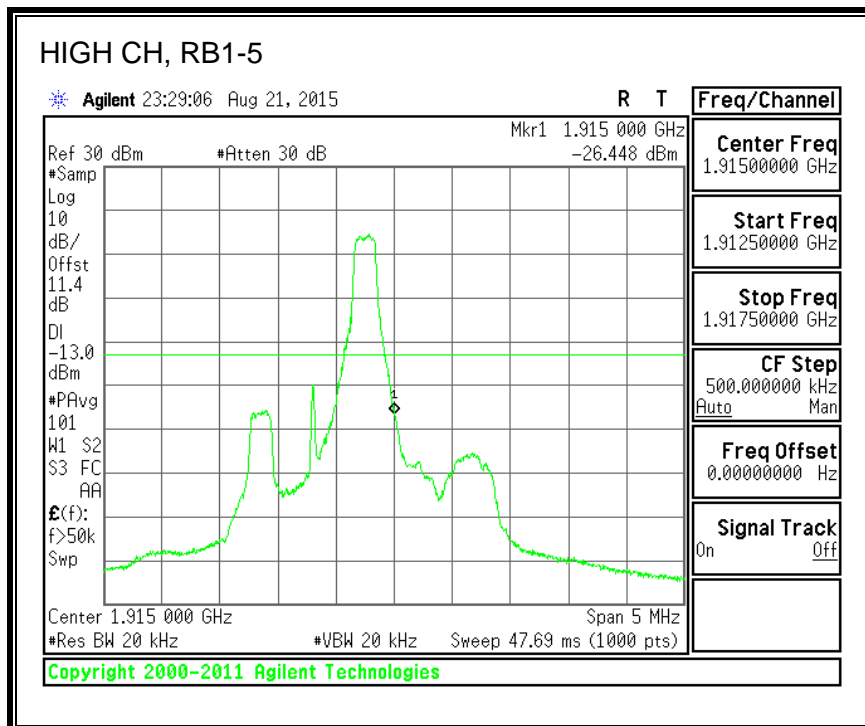
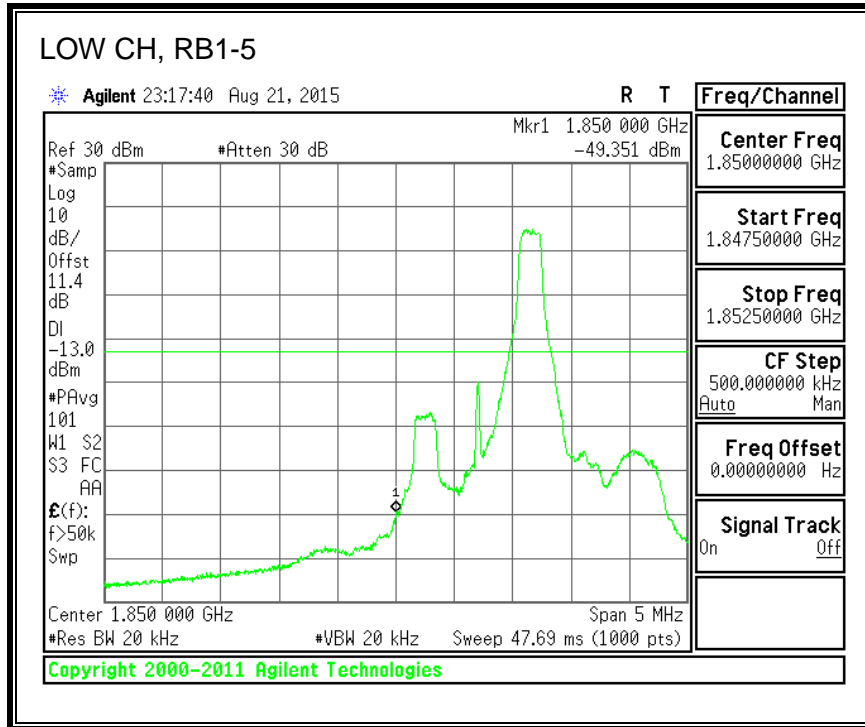


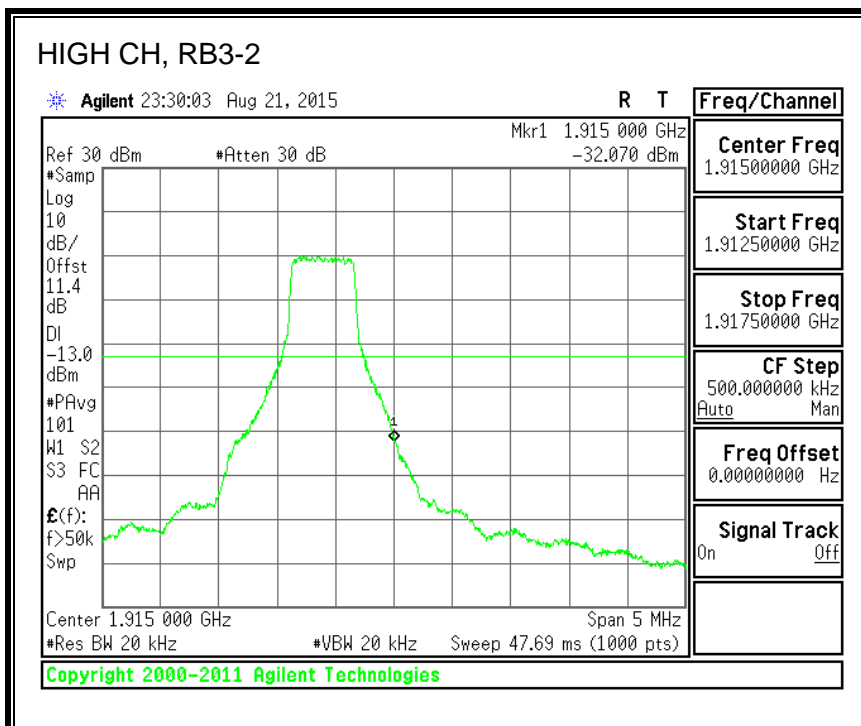
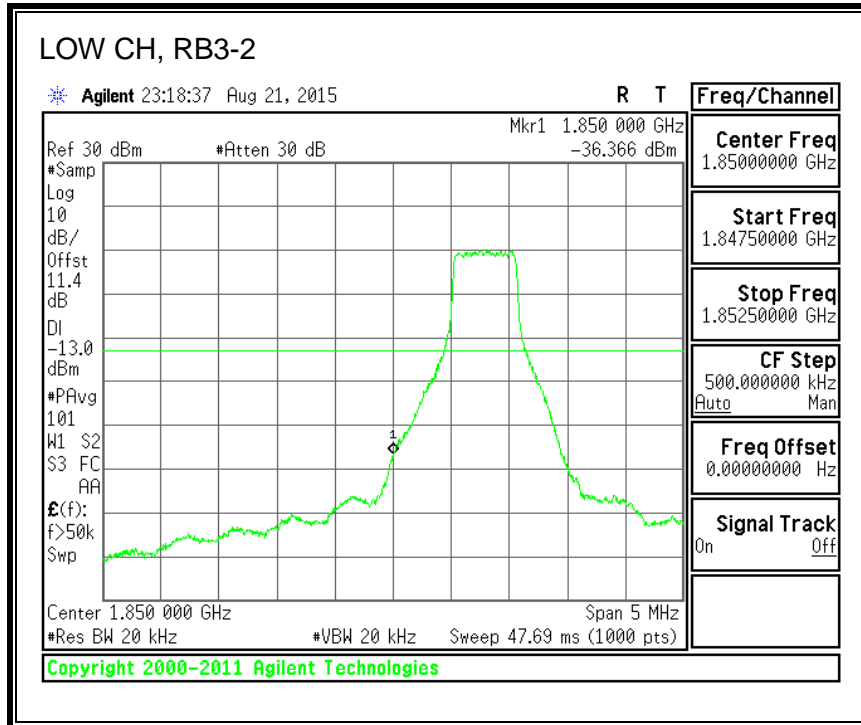


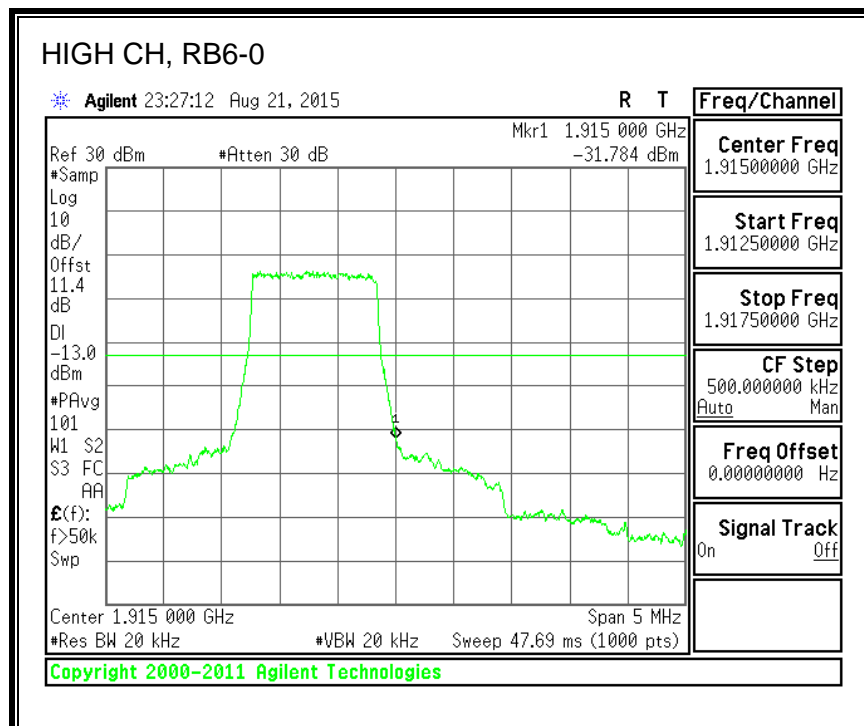
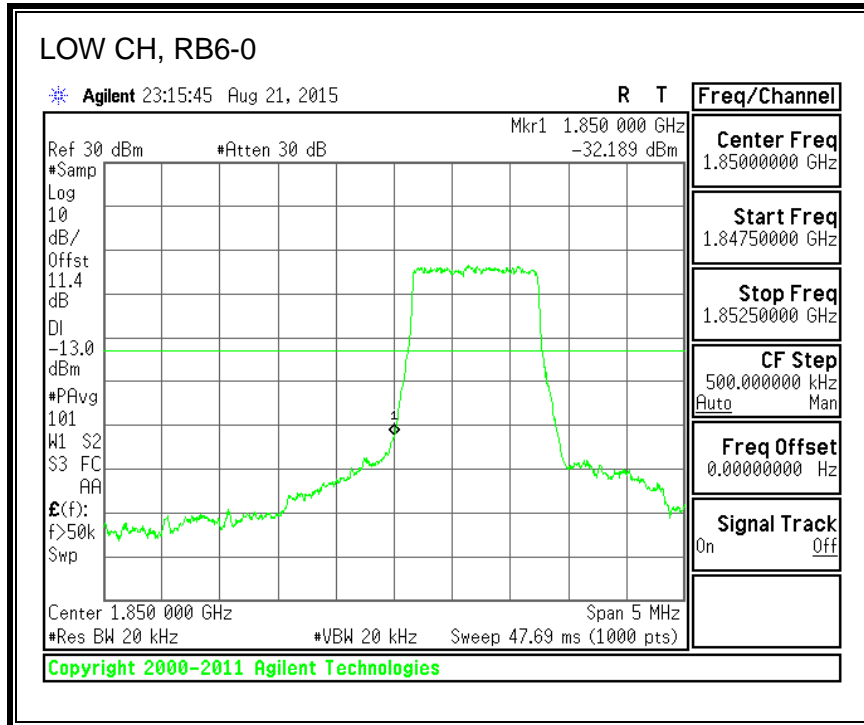
8.2.7. LTE BAND 25 BANDEDGE

QPSK, (1.4 MHz BAND WIDTH)

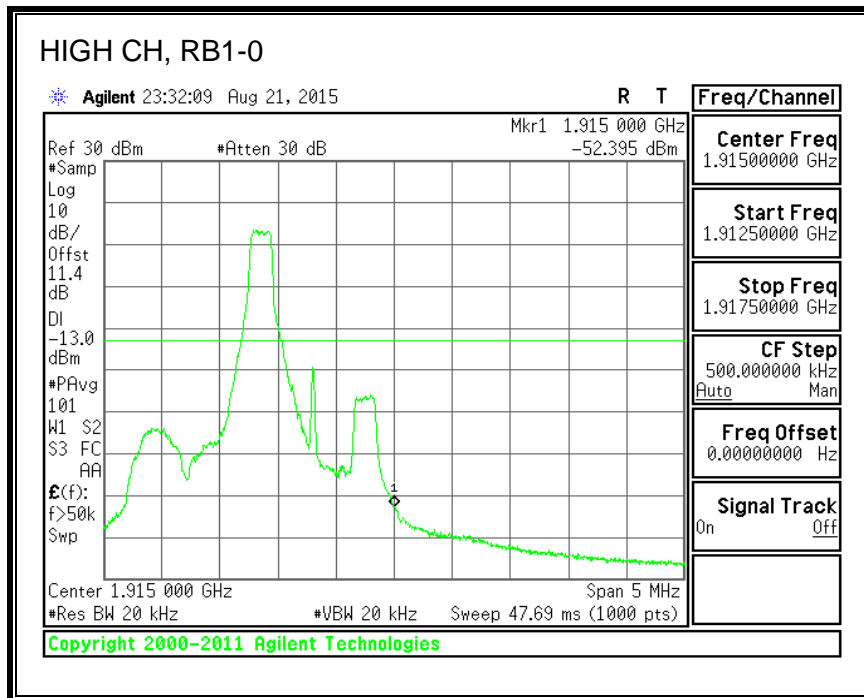
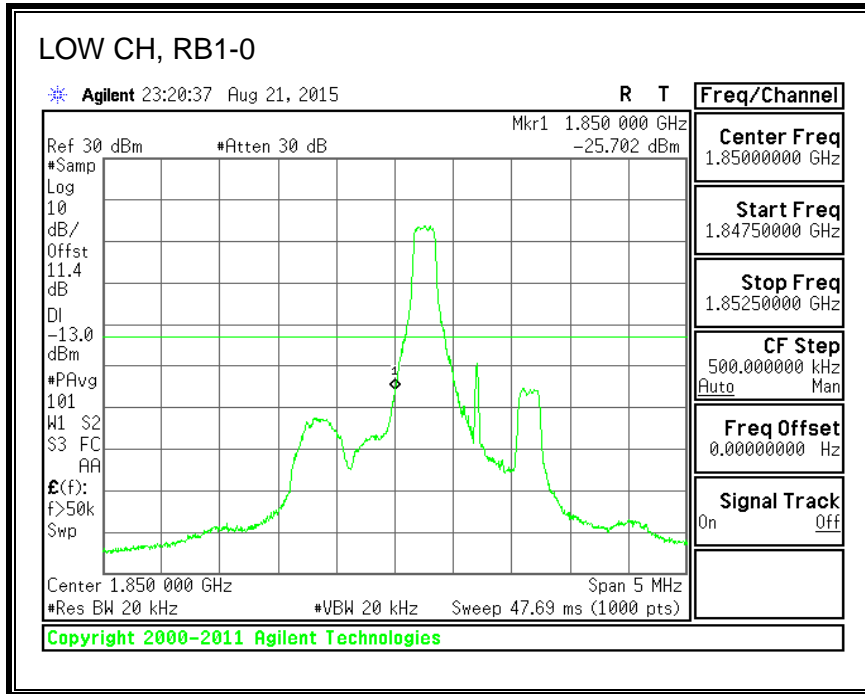


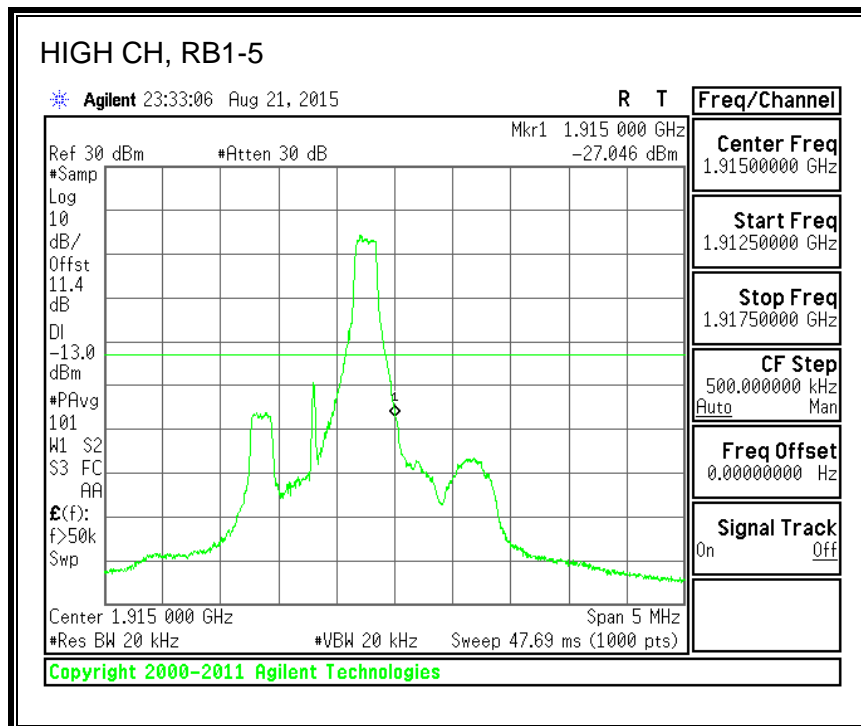
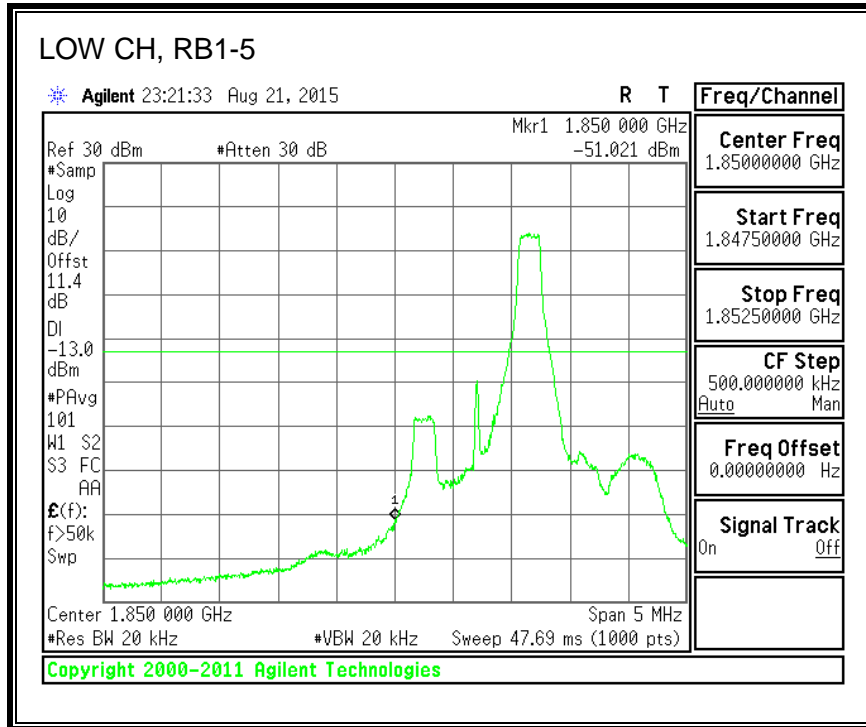


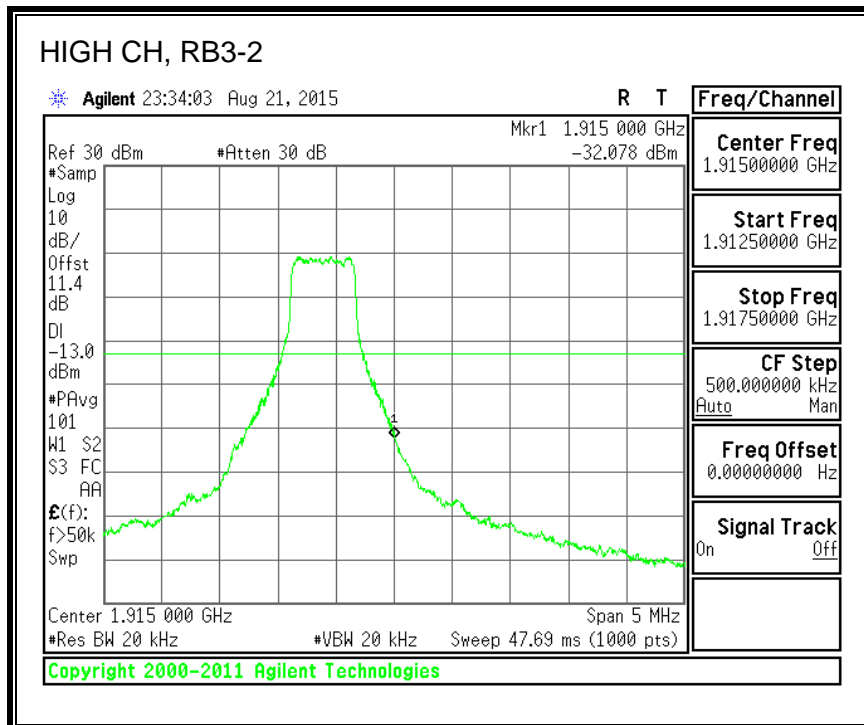
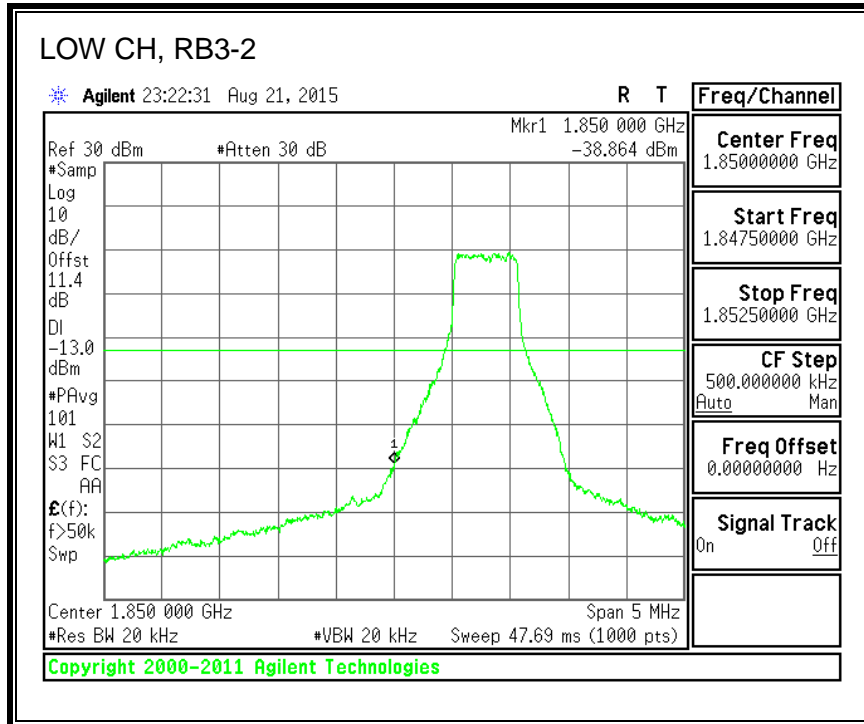


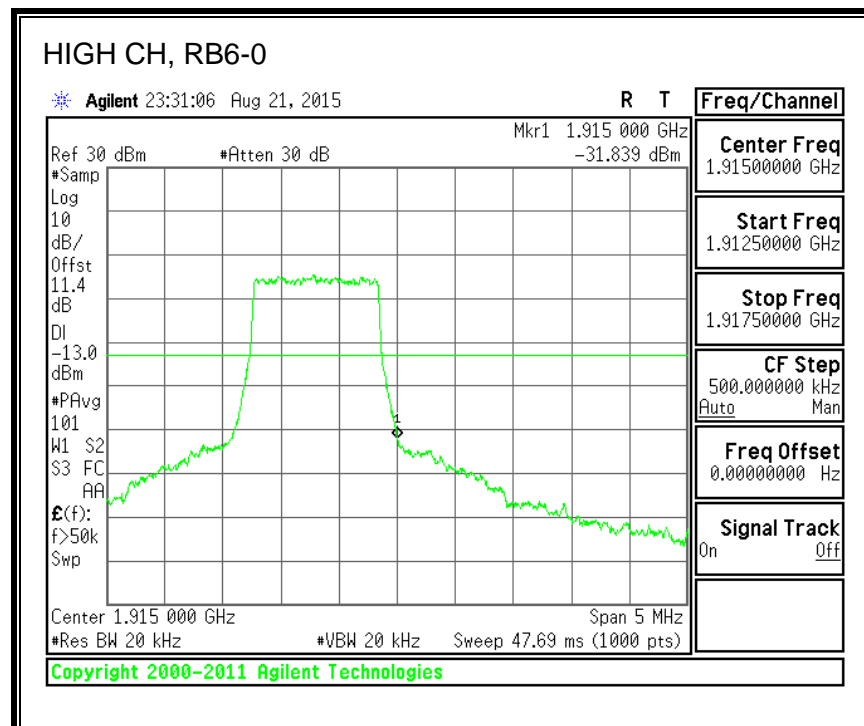
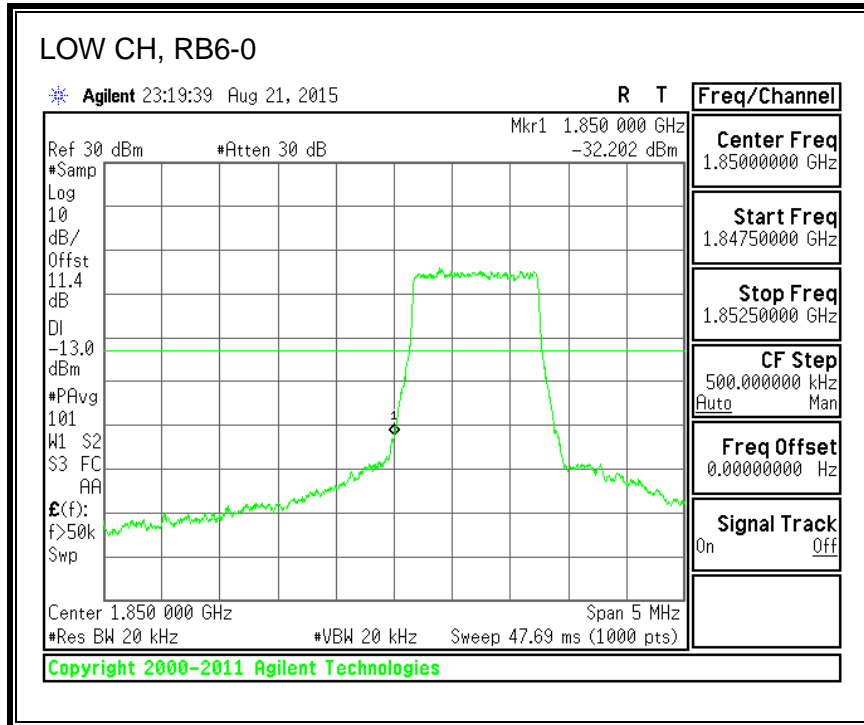


16QAM, (1.4 MHz BAND WIDTH)

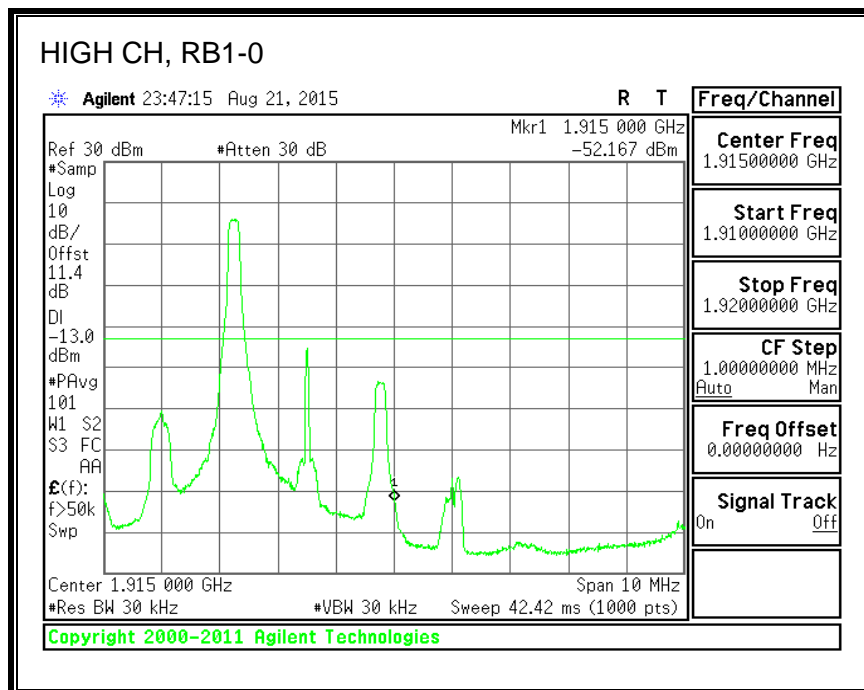
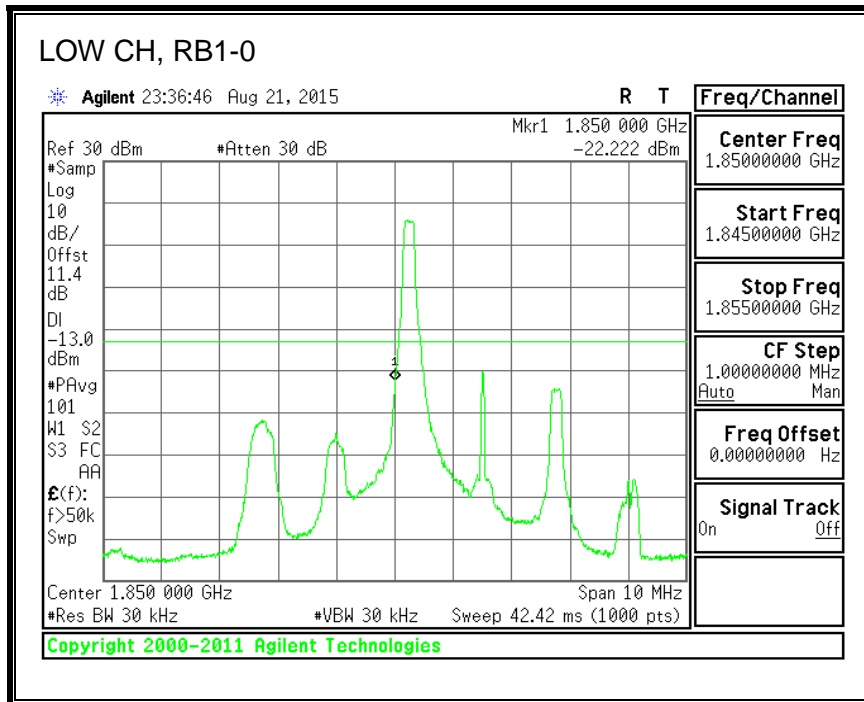


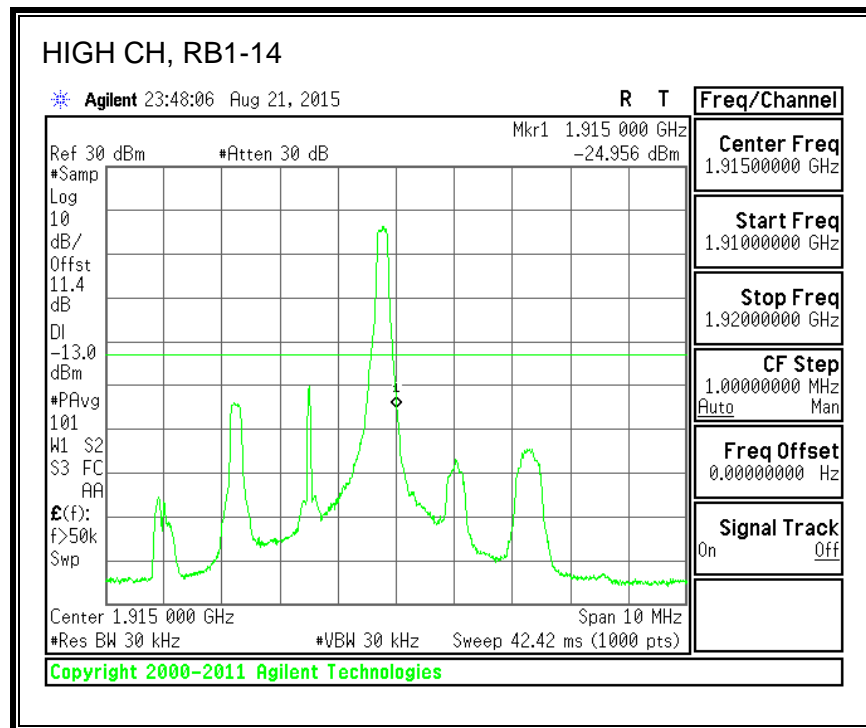
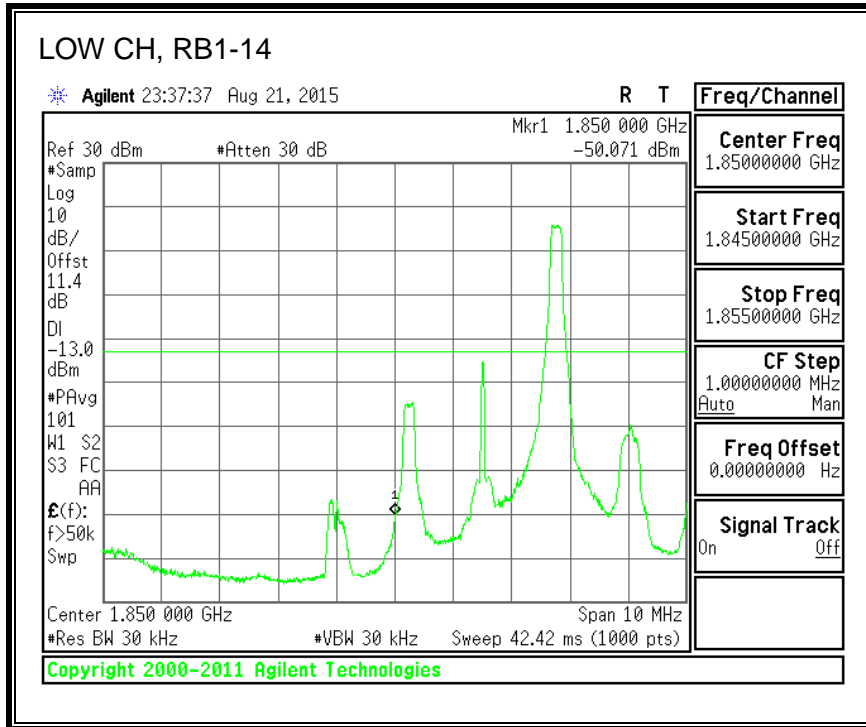


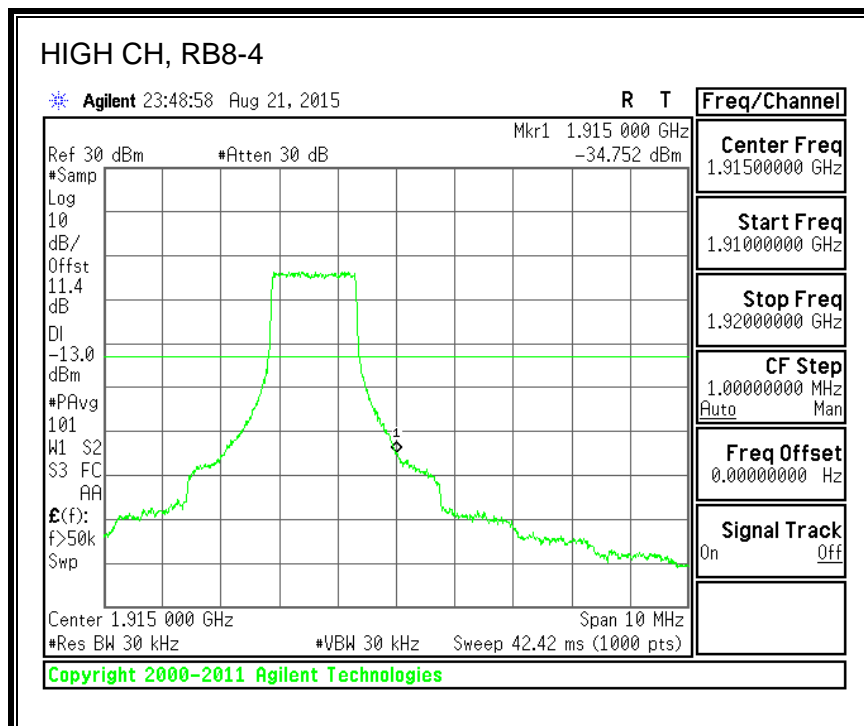
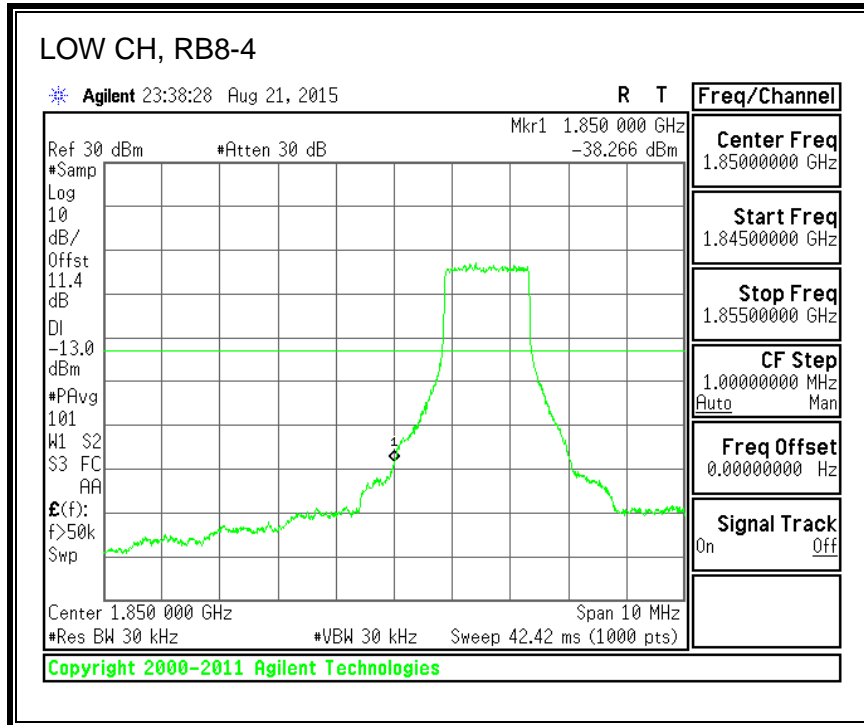


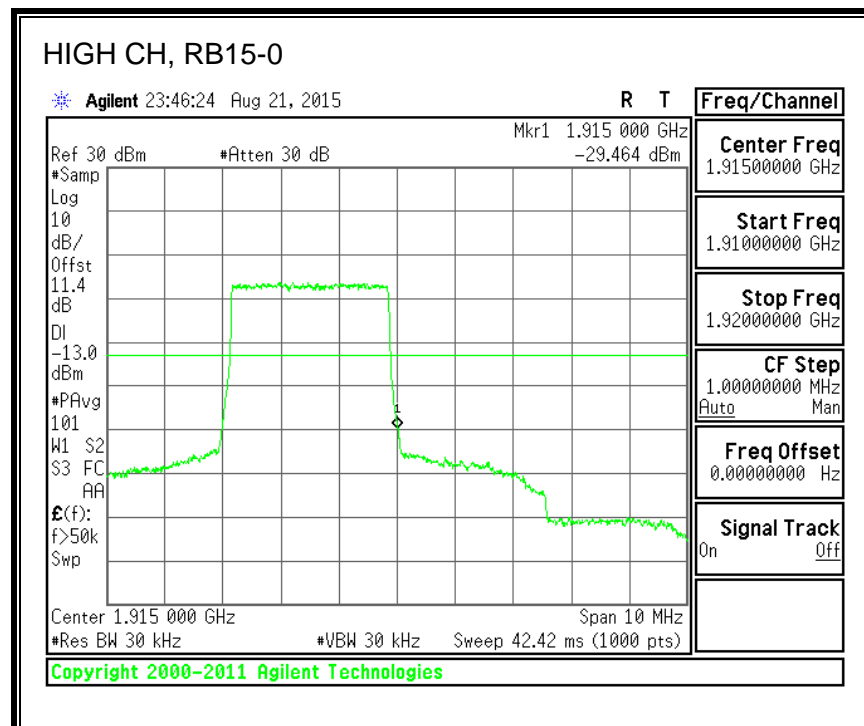
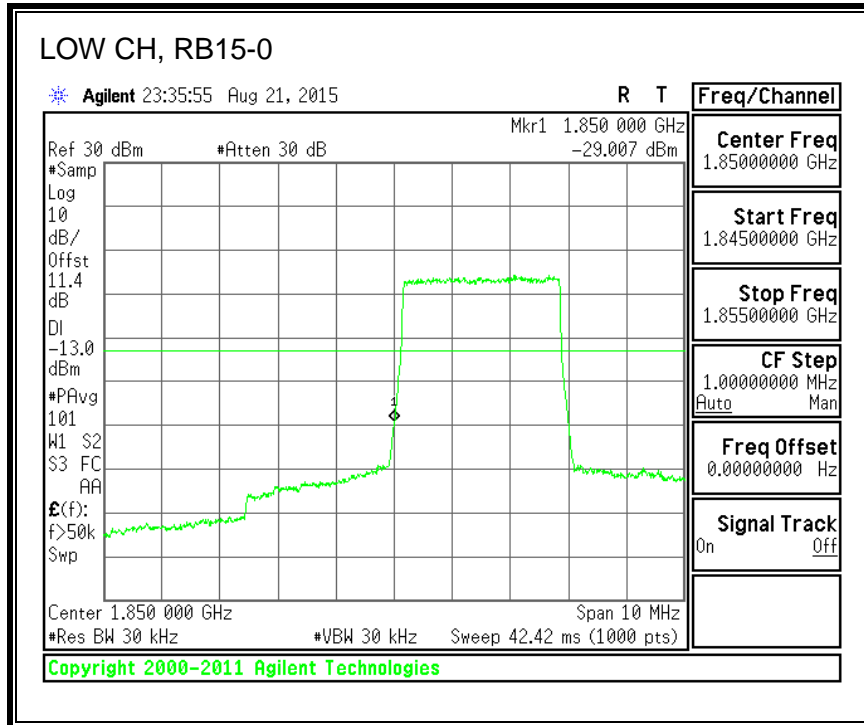


QPSK, (3.0 MHz BAND WIDTH)

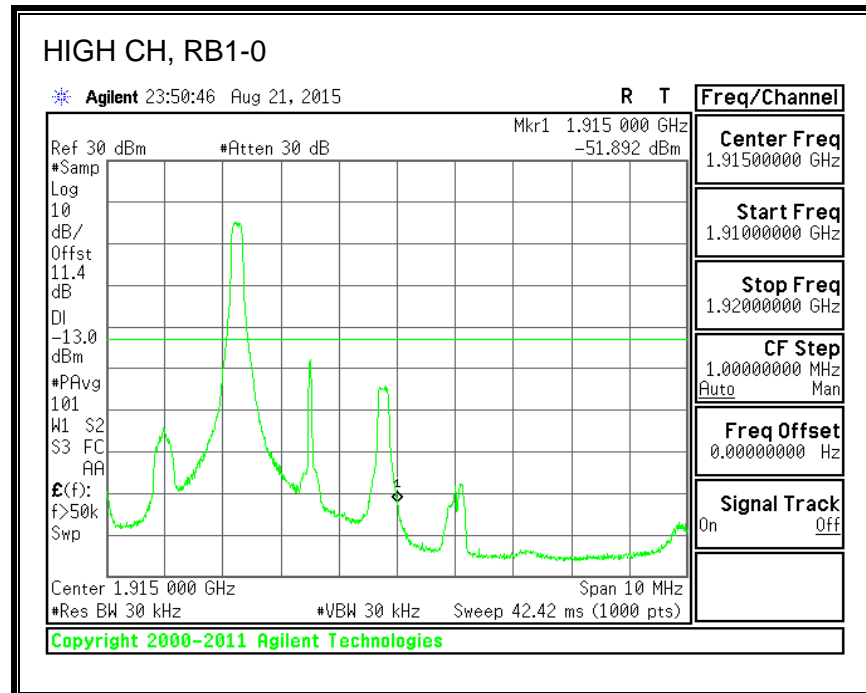
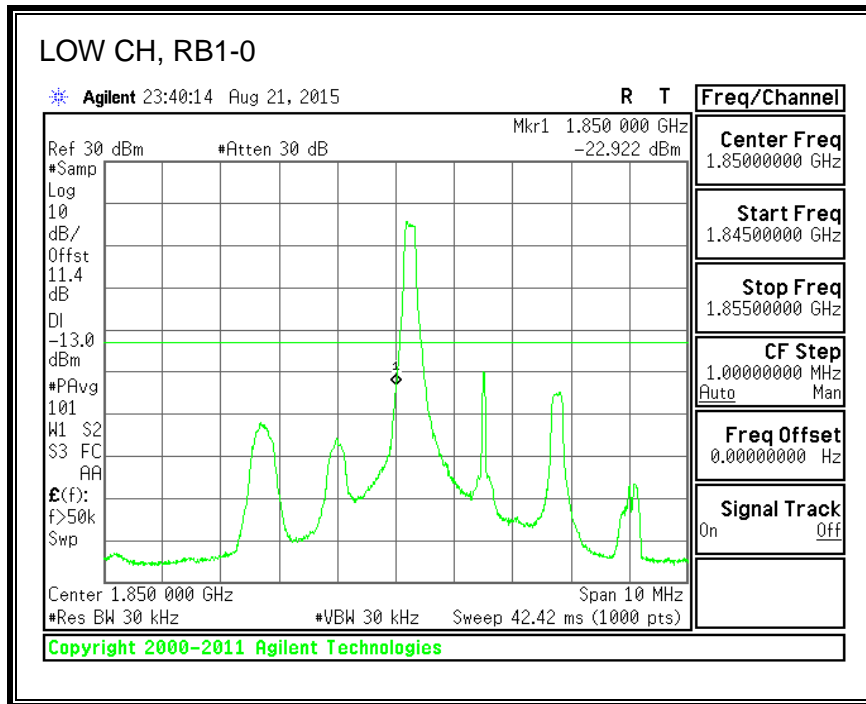


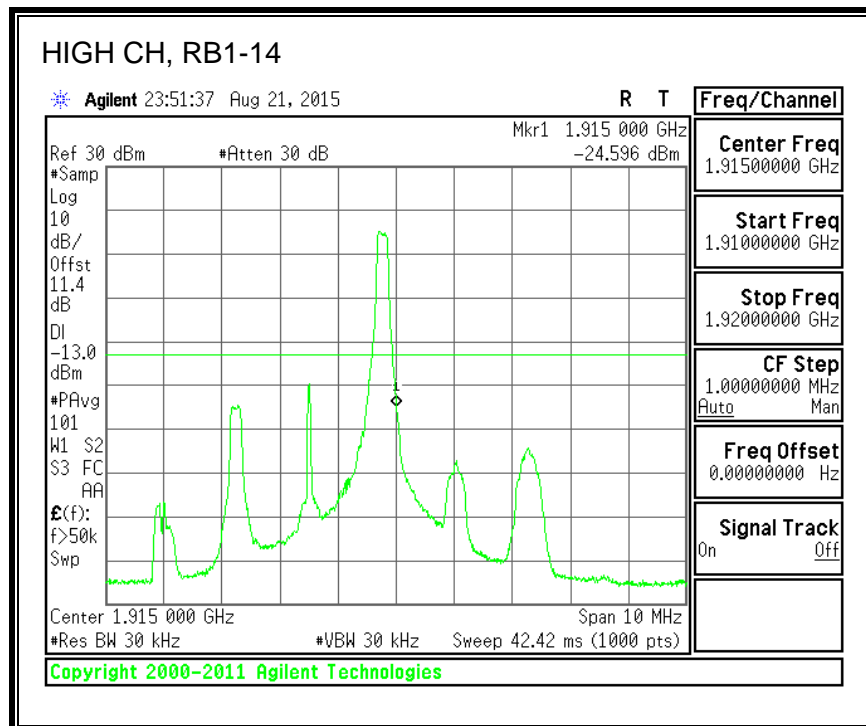
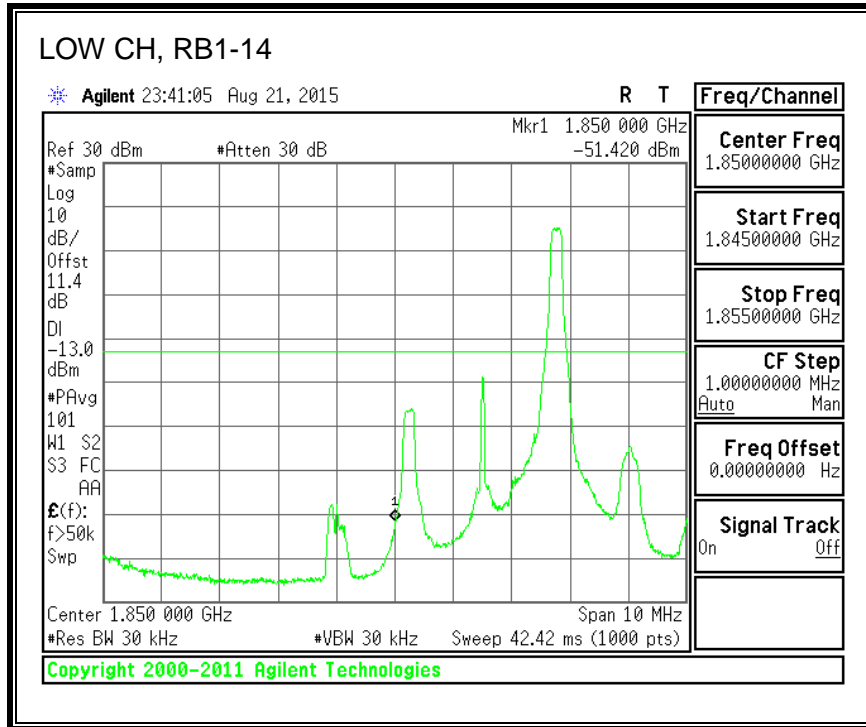


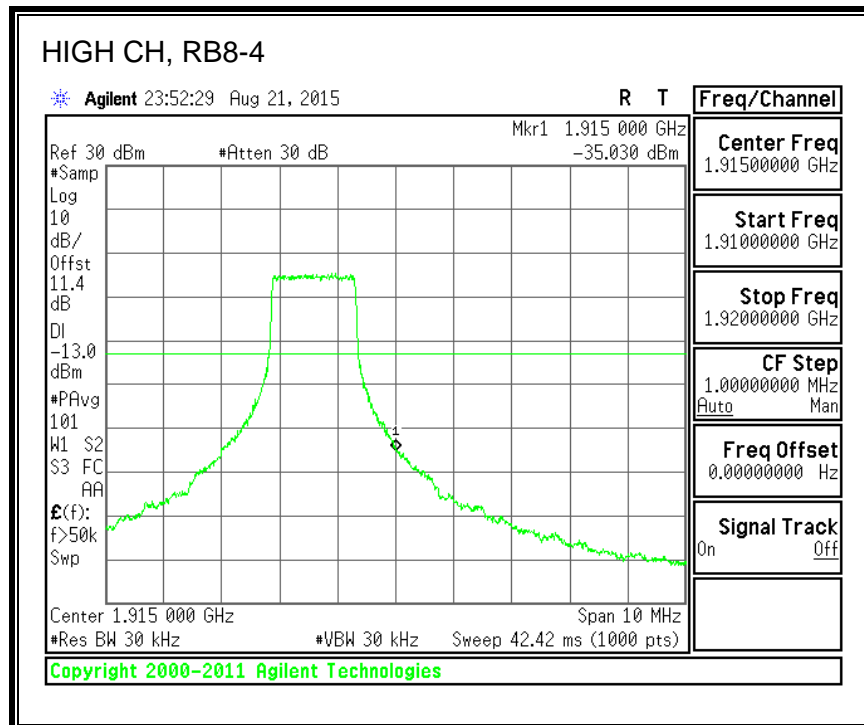
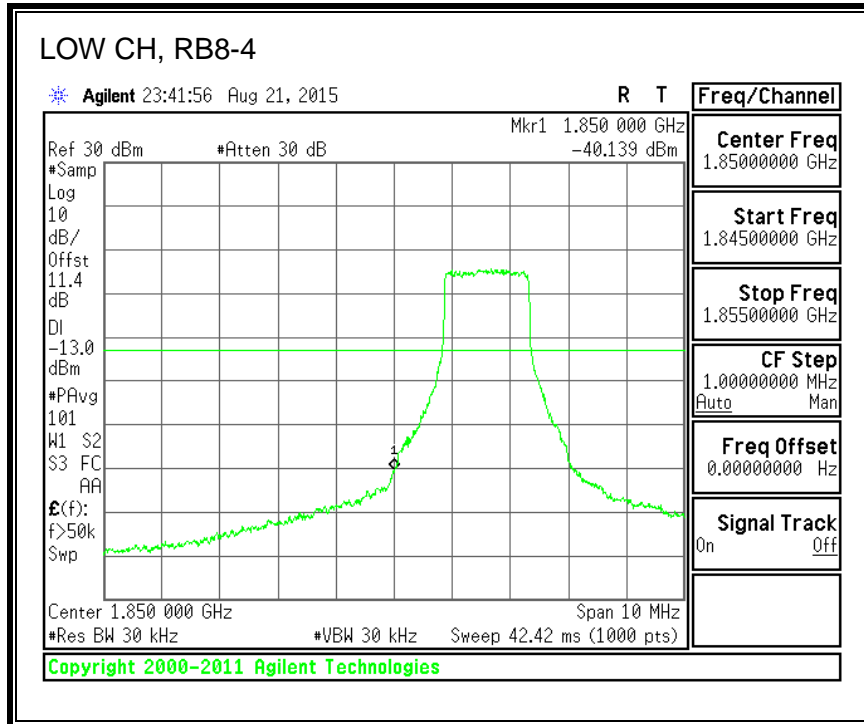


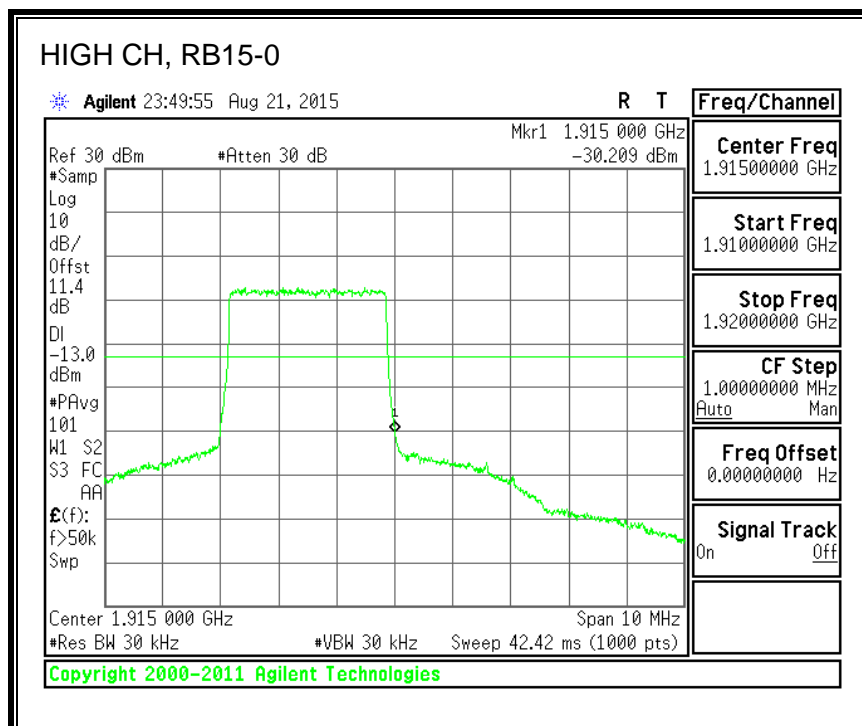
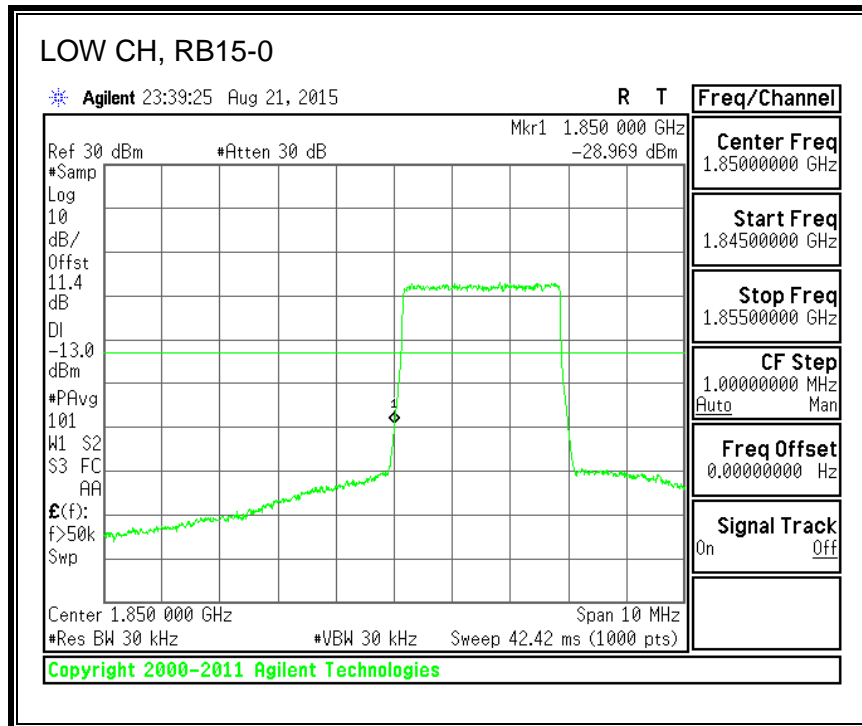


16QAM, (3.0 MHz BAND WIDTH)

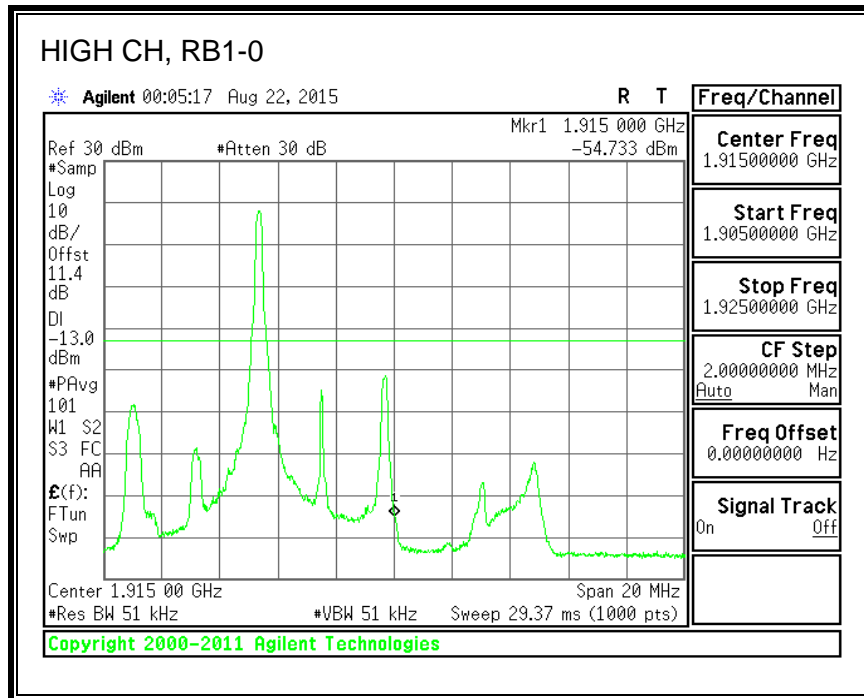
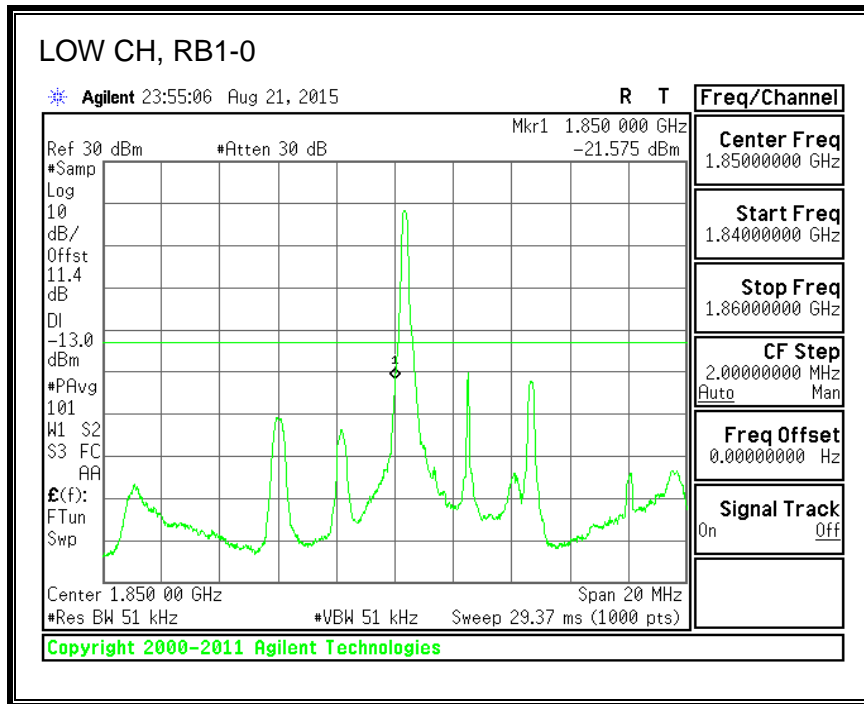


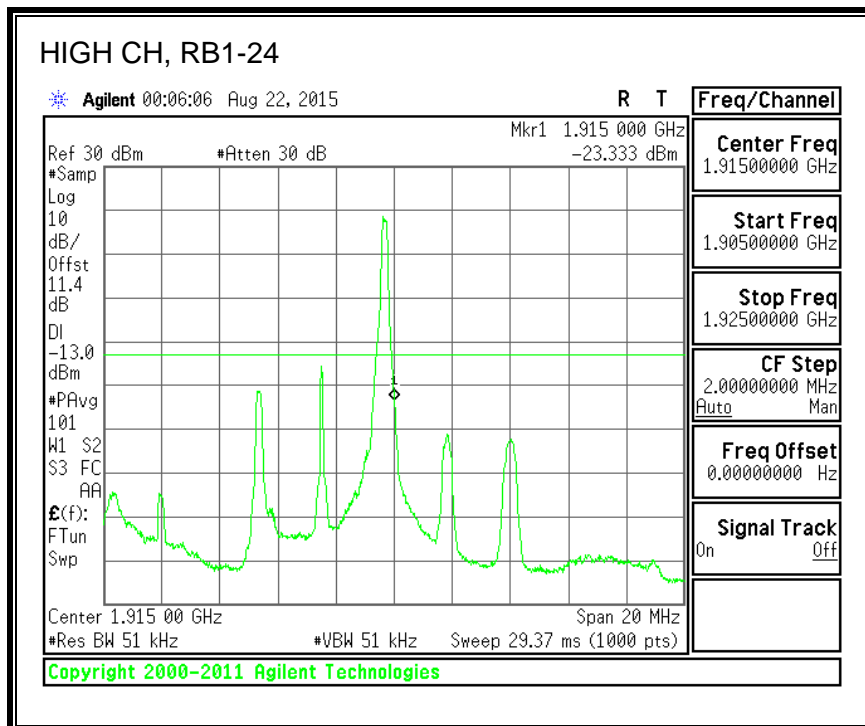
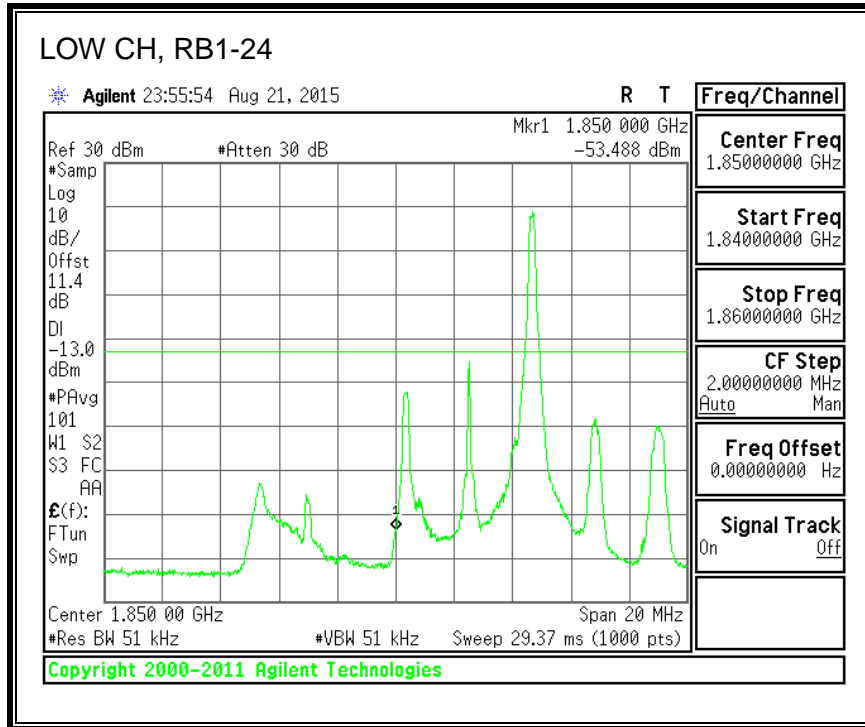


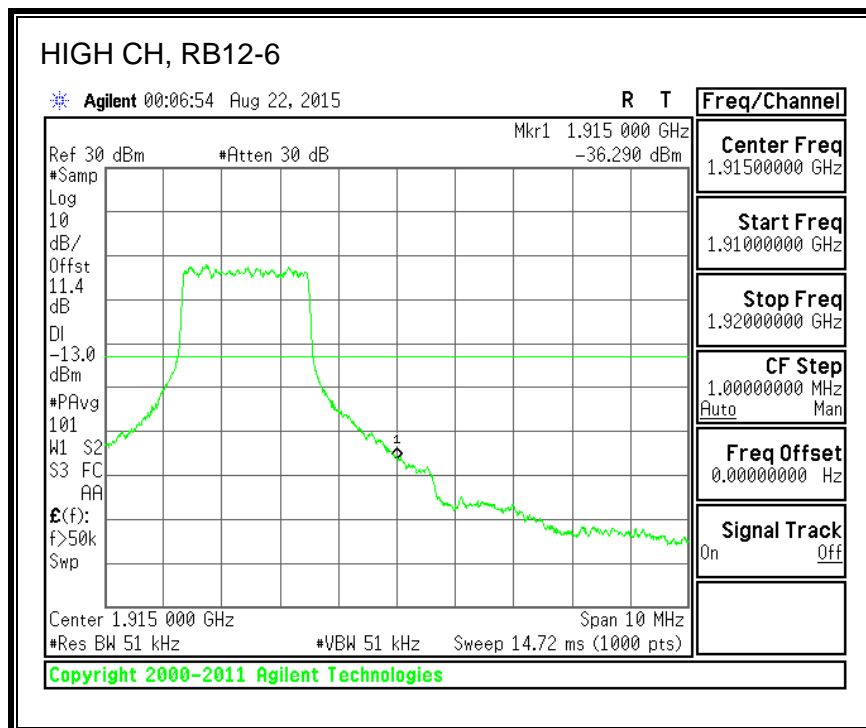
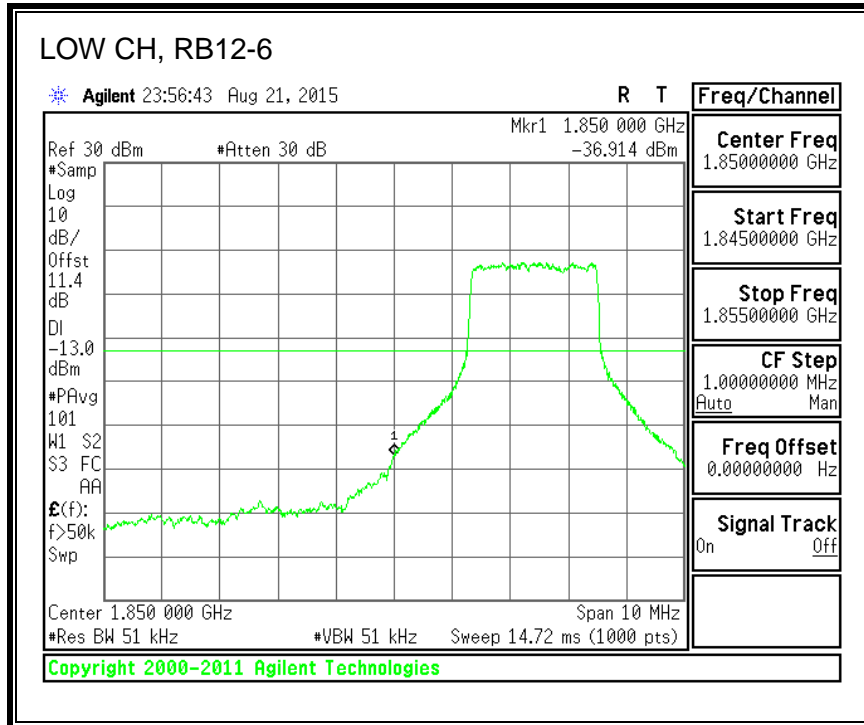


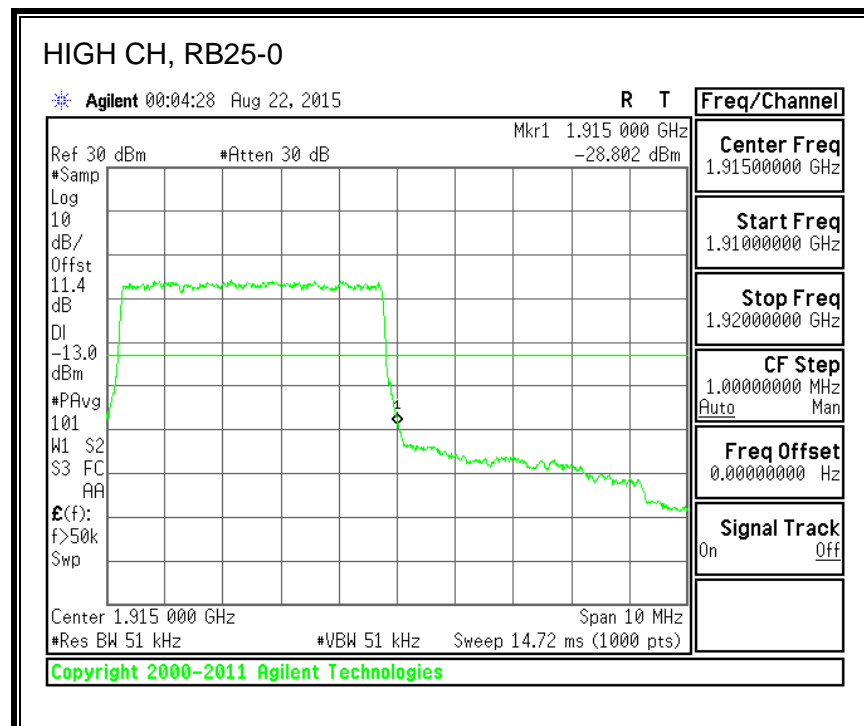
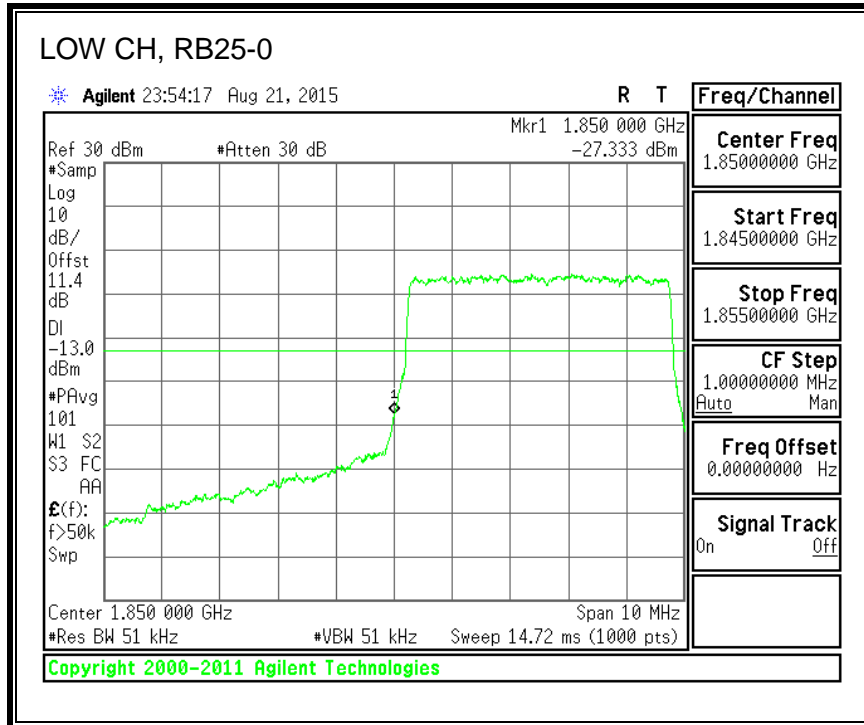


QPSK, (5.0 MHz BAND WIDTH)

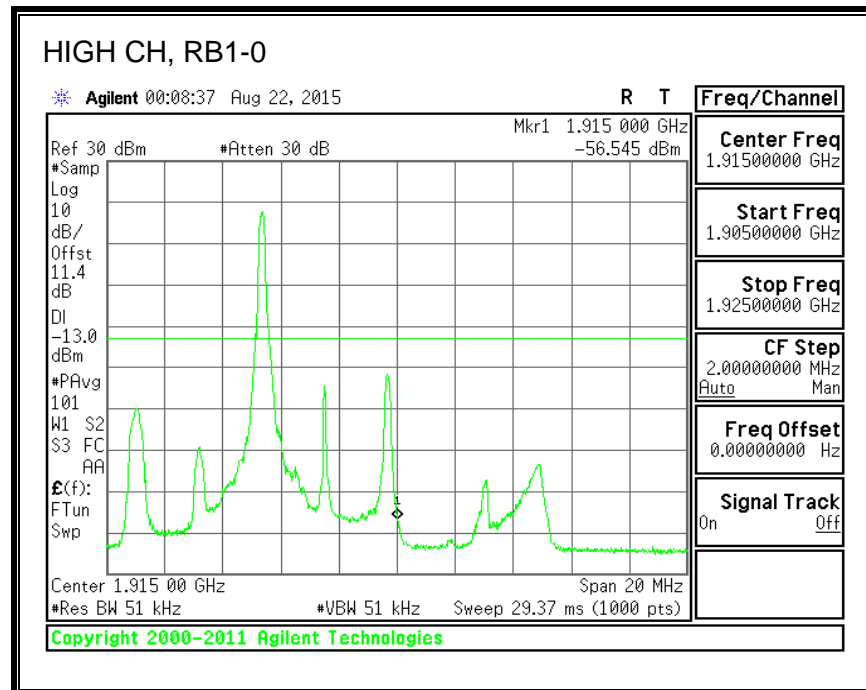
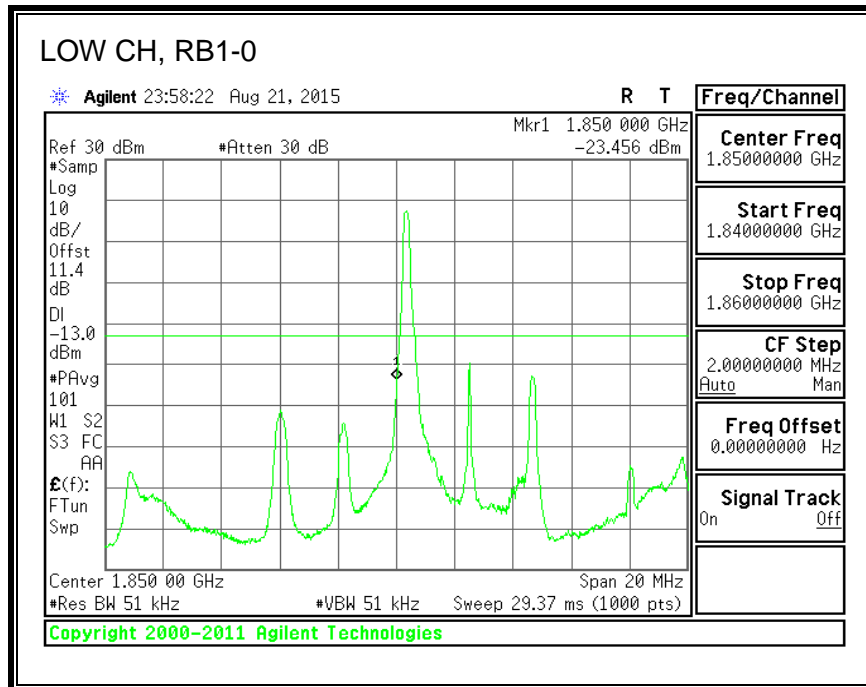


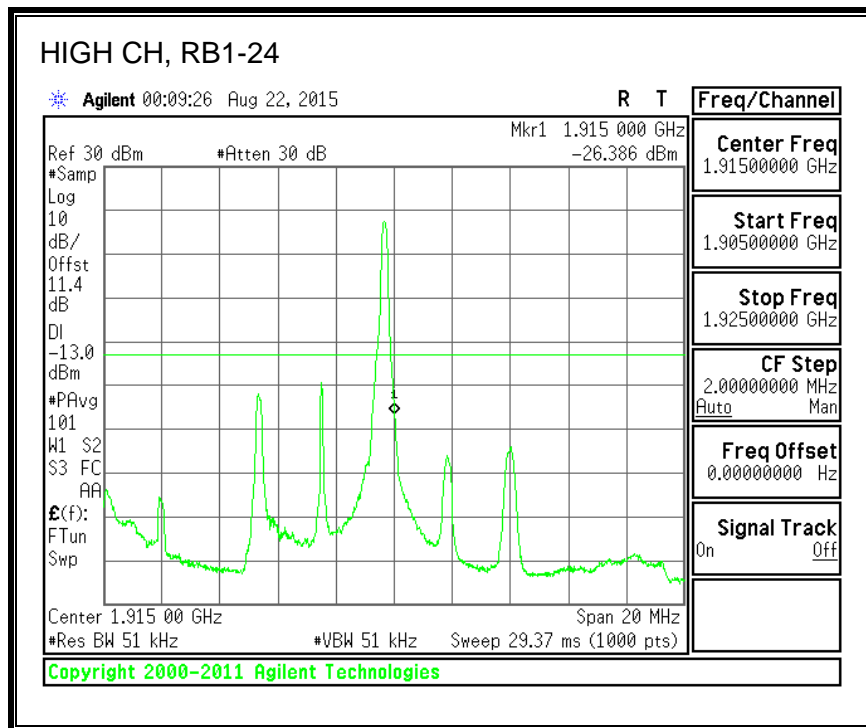
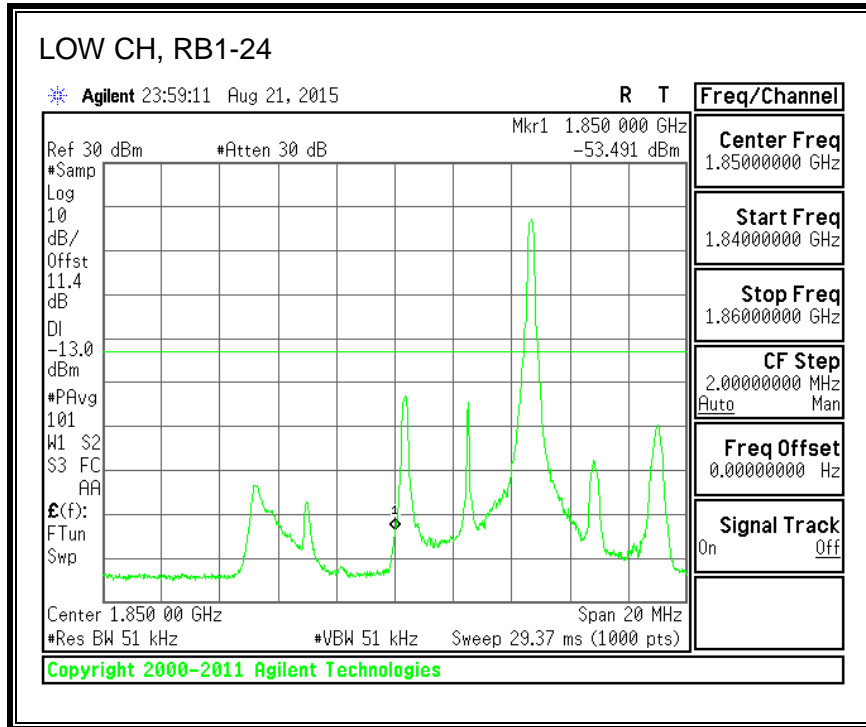


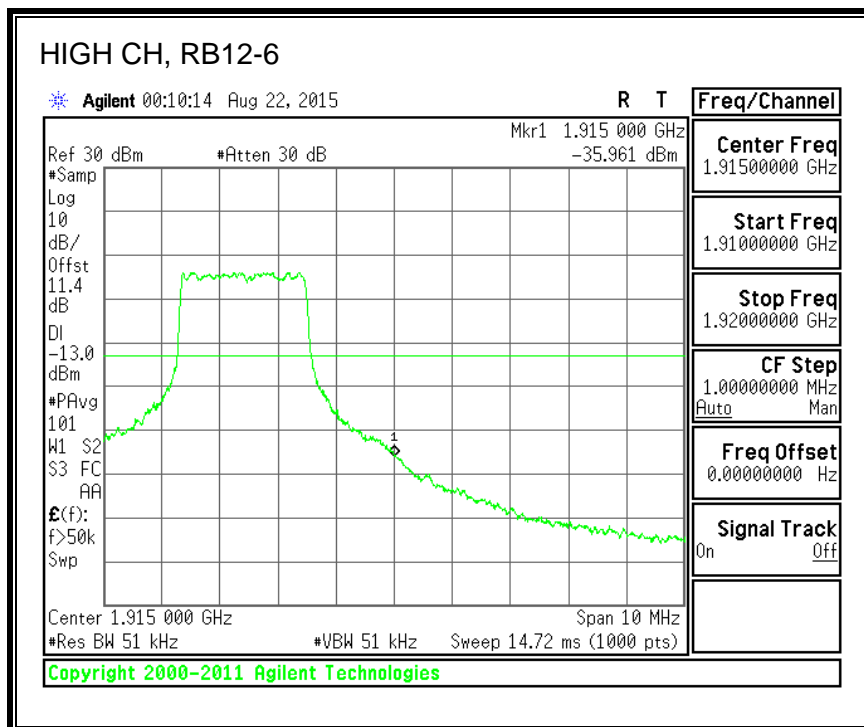
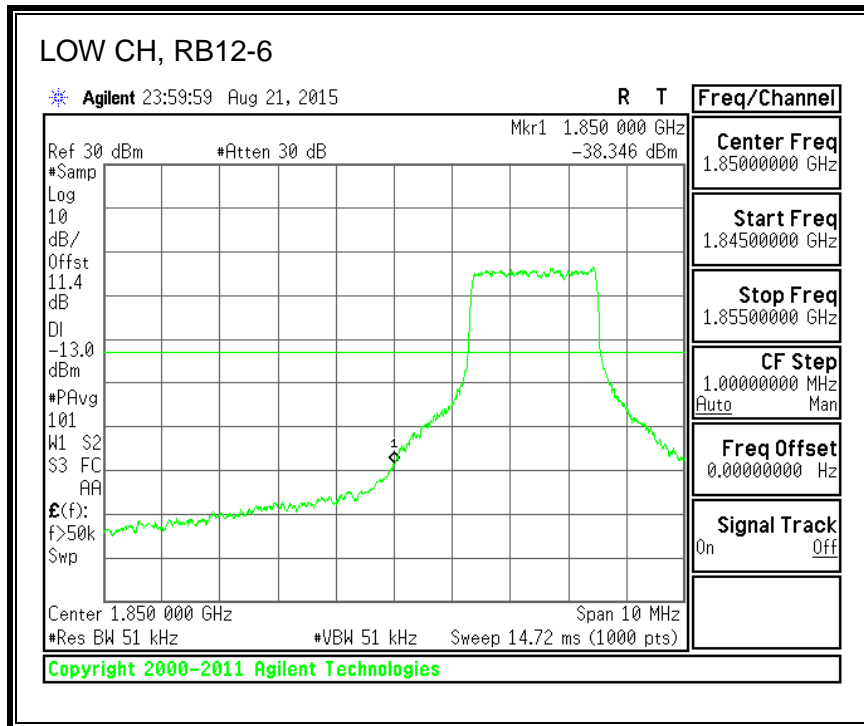


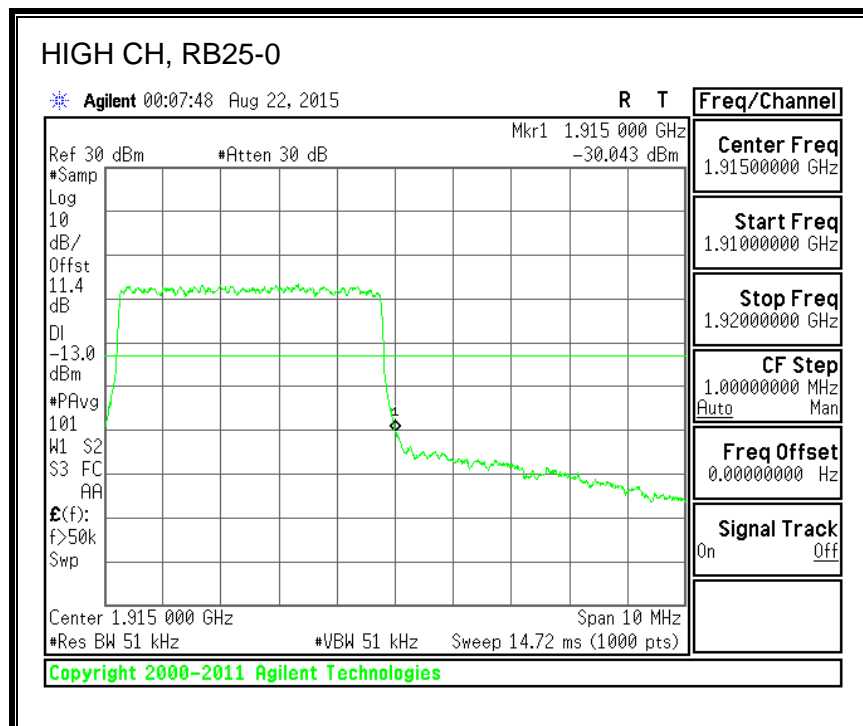
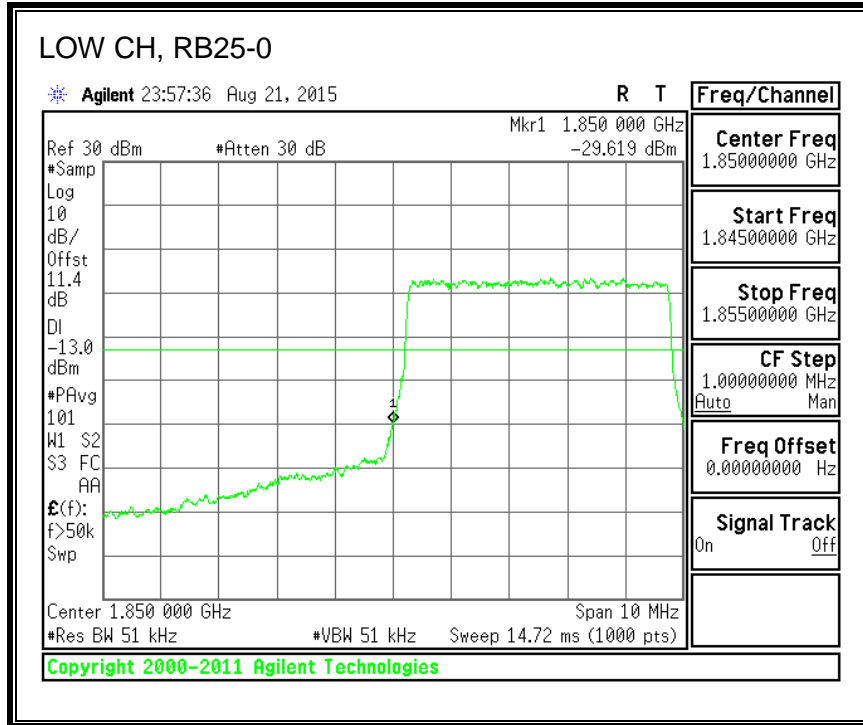


16QAM, (5.0 MHz BAND WIDTH)

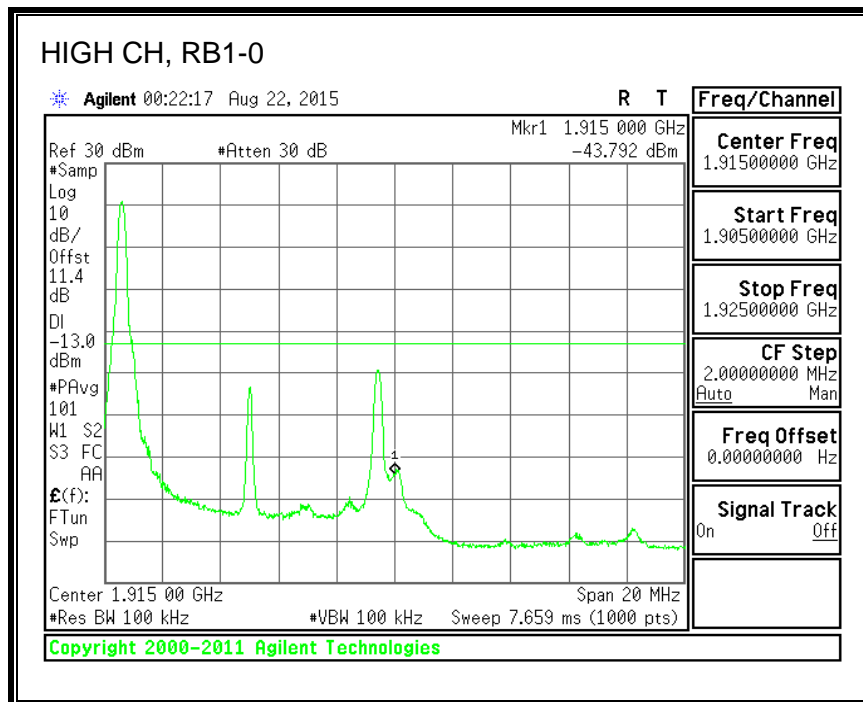
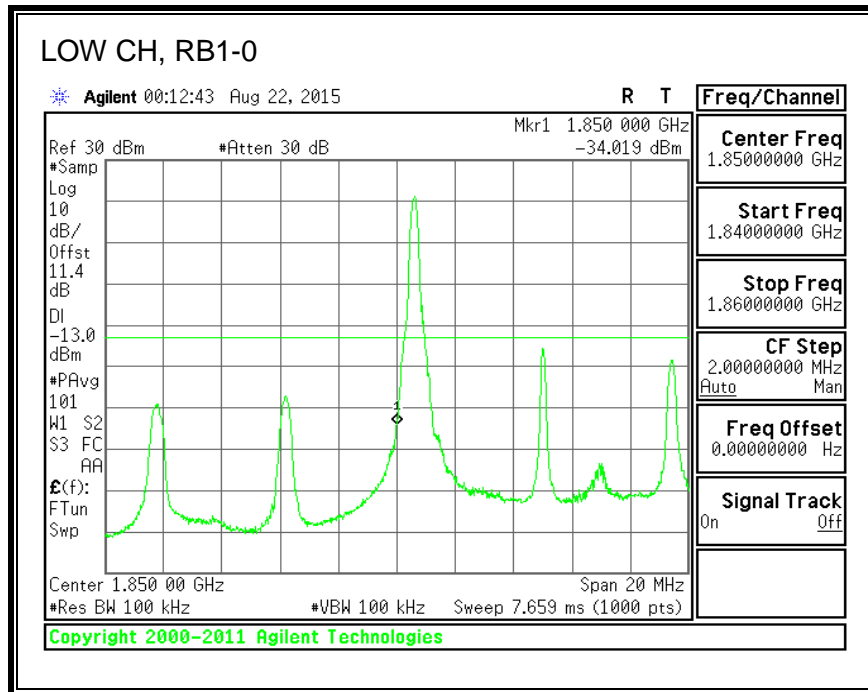


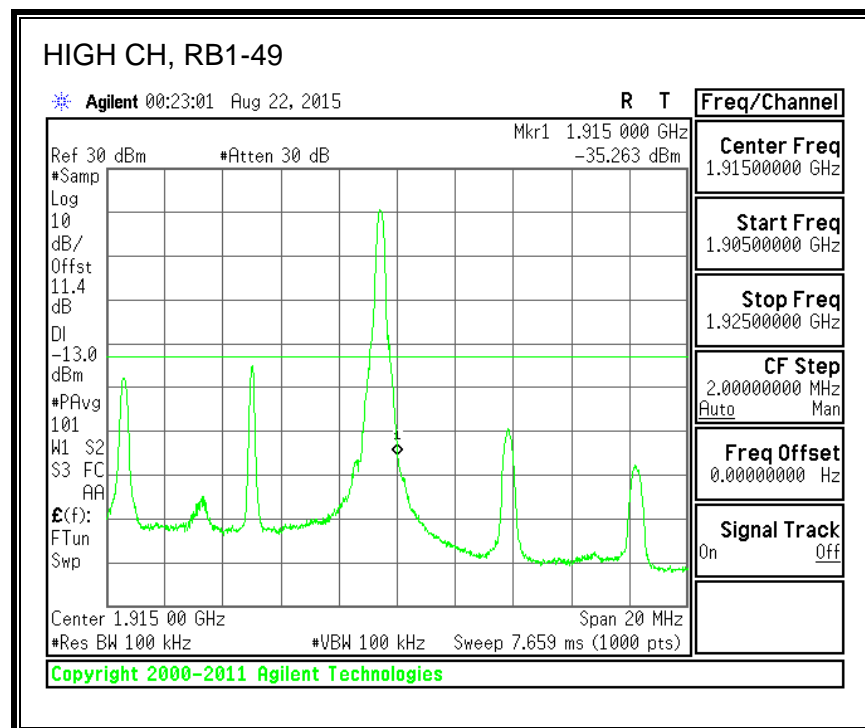
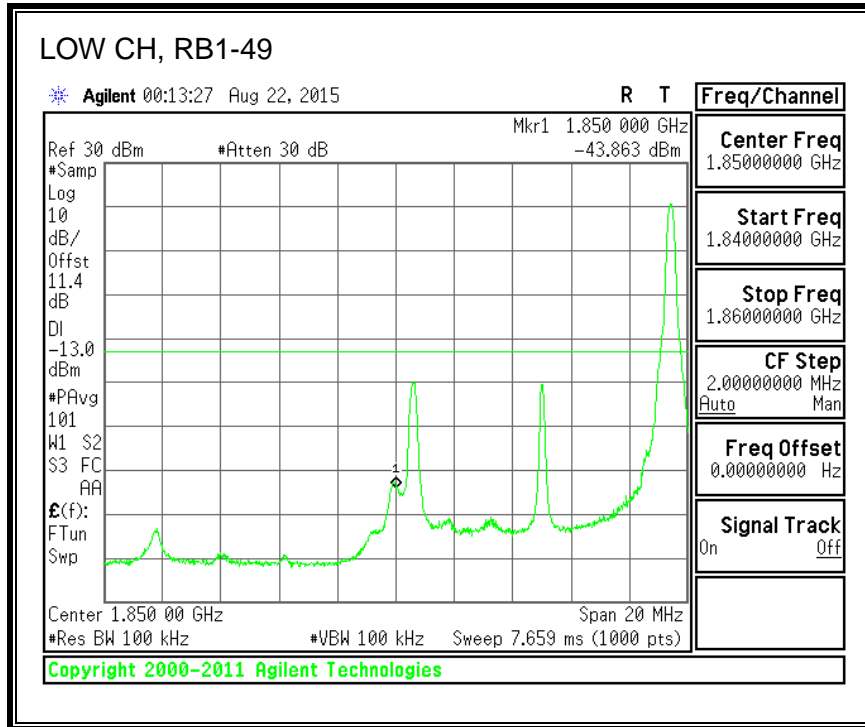


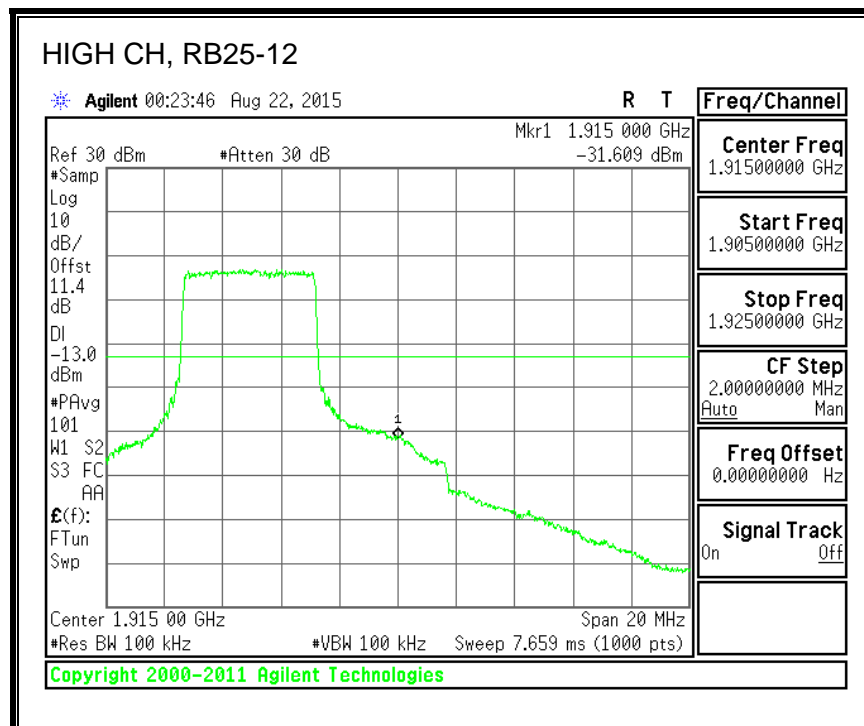
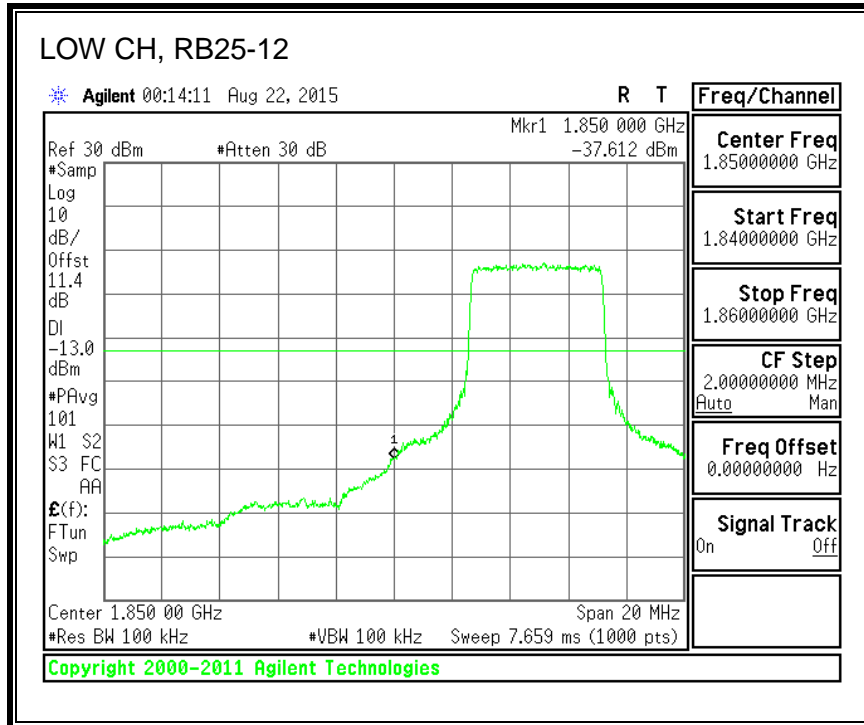


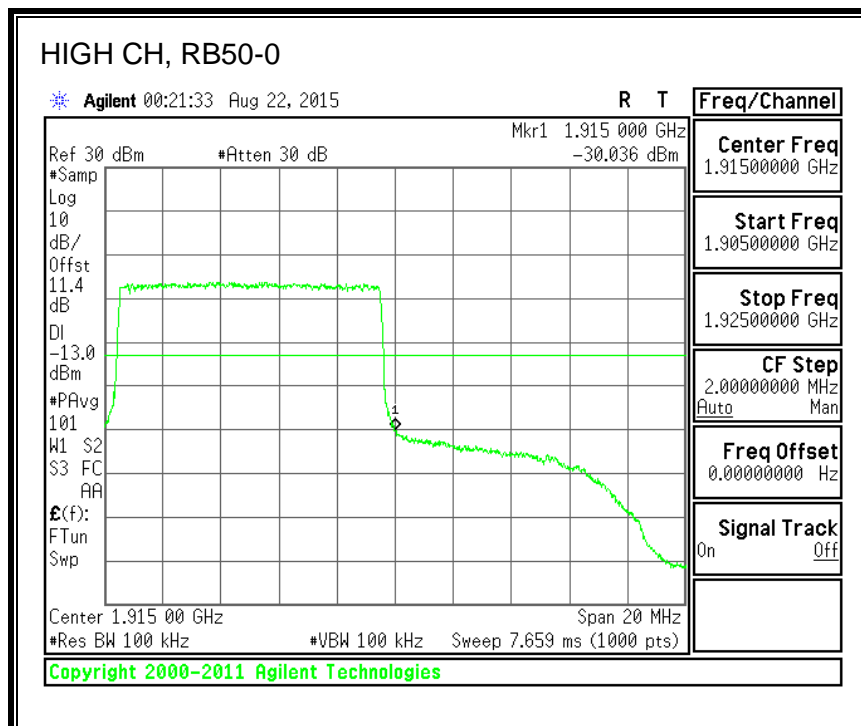
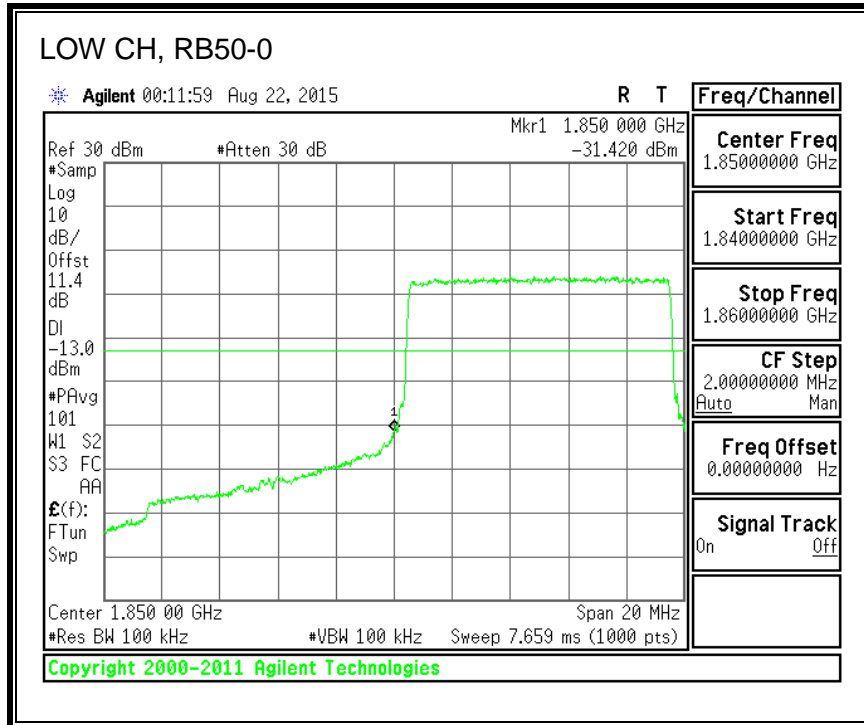


QPSK, (10.0 MHz BAND WIDTH)

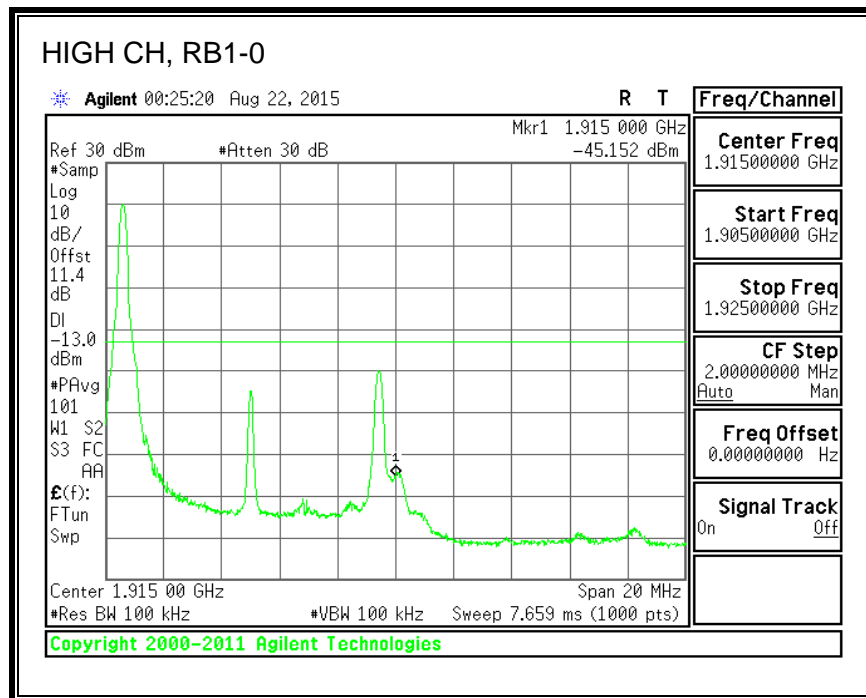
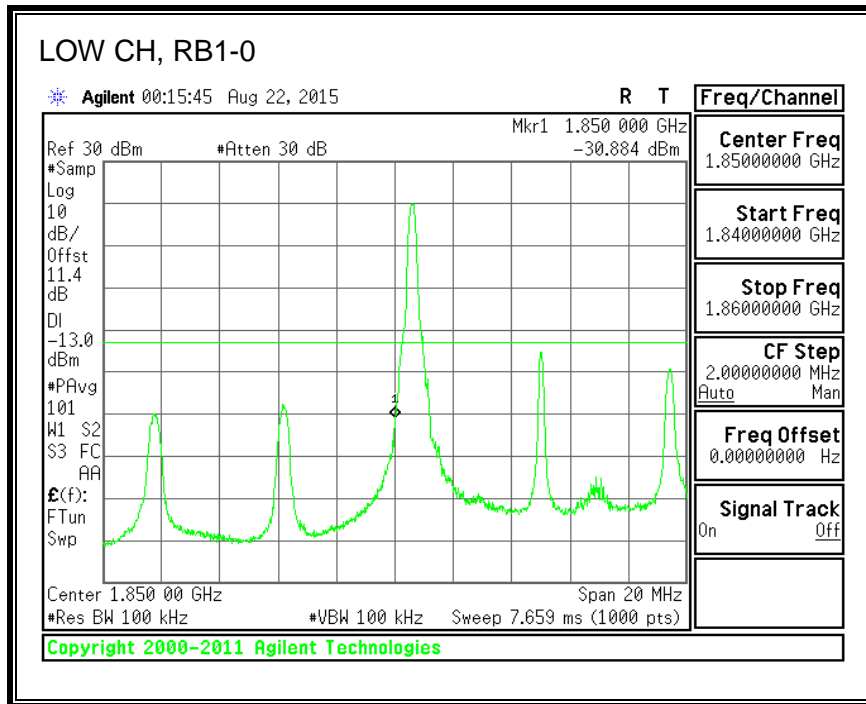


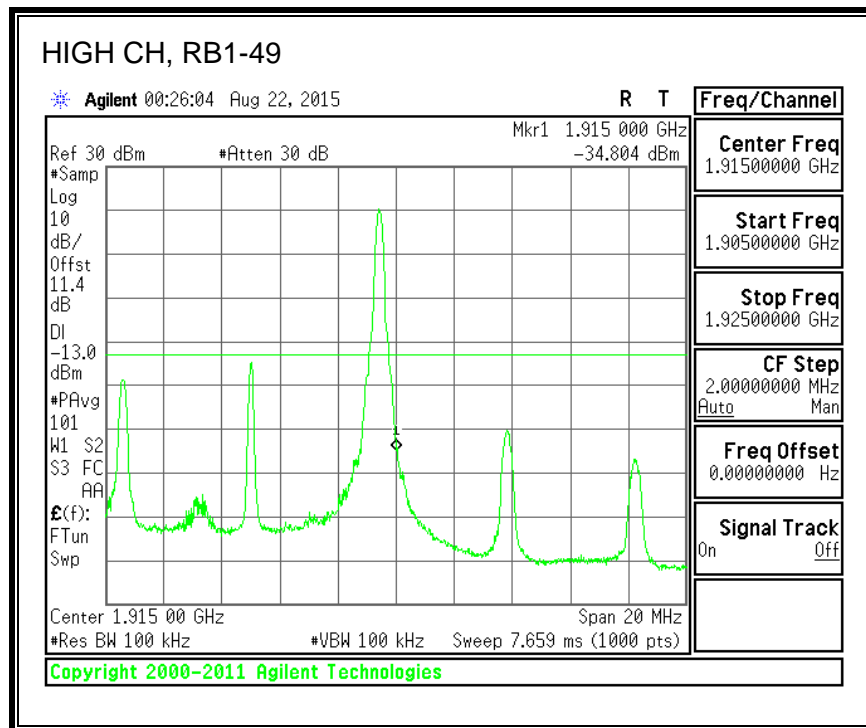
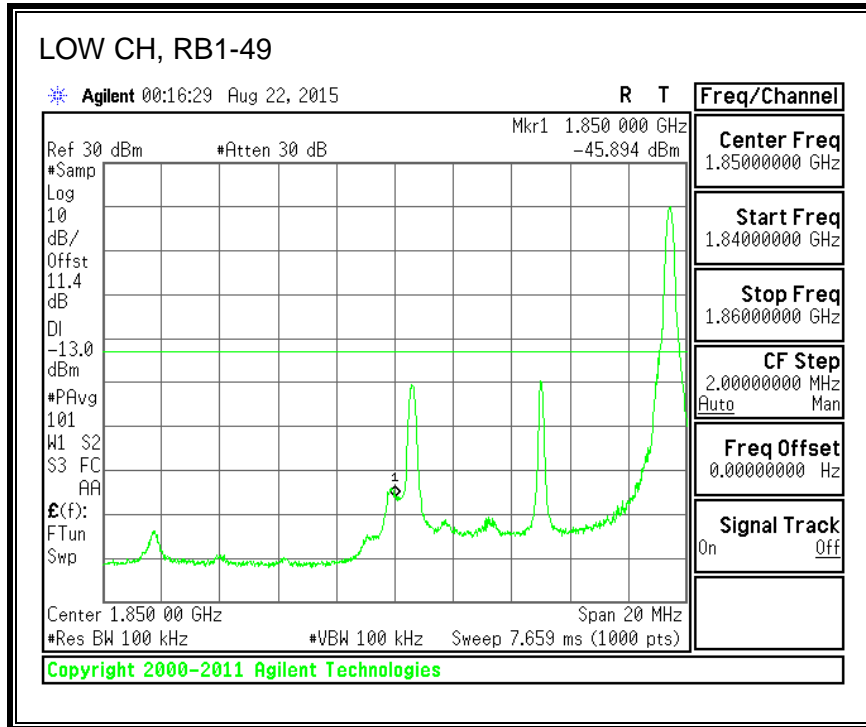


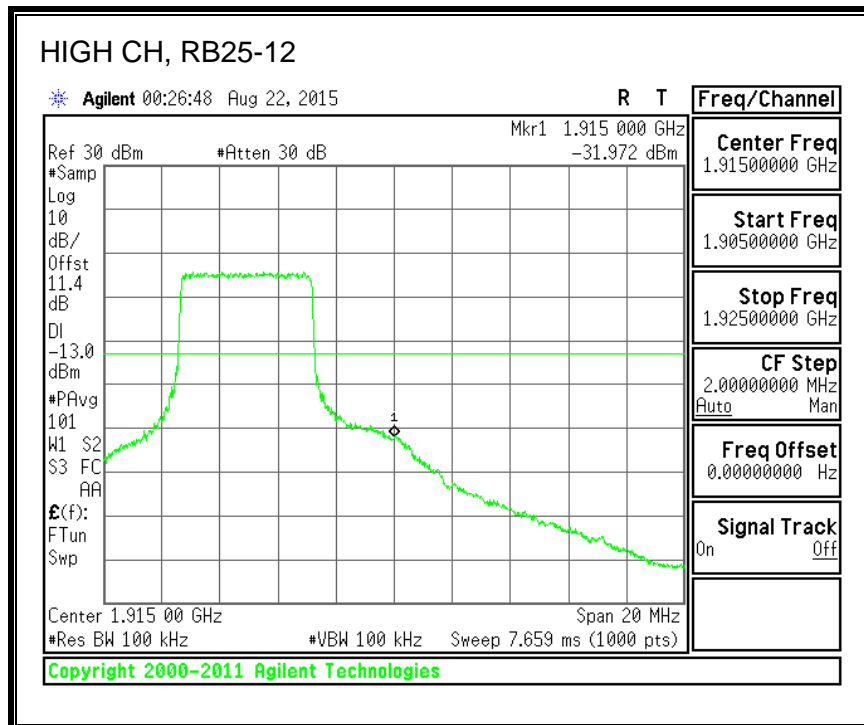
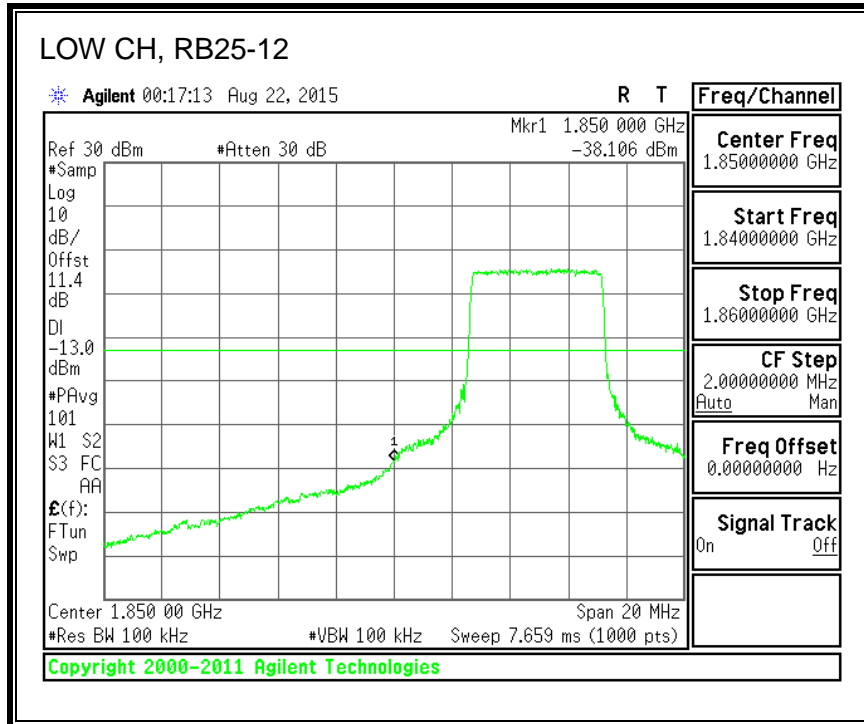


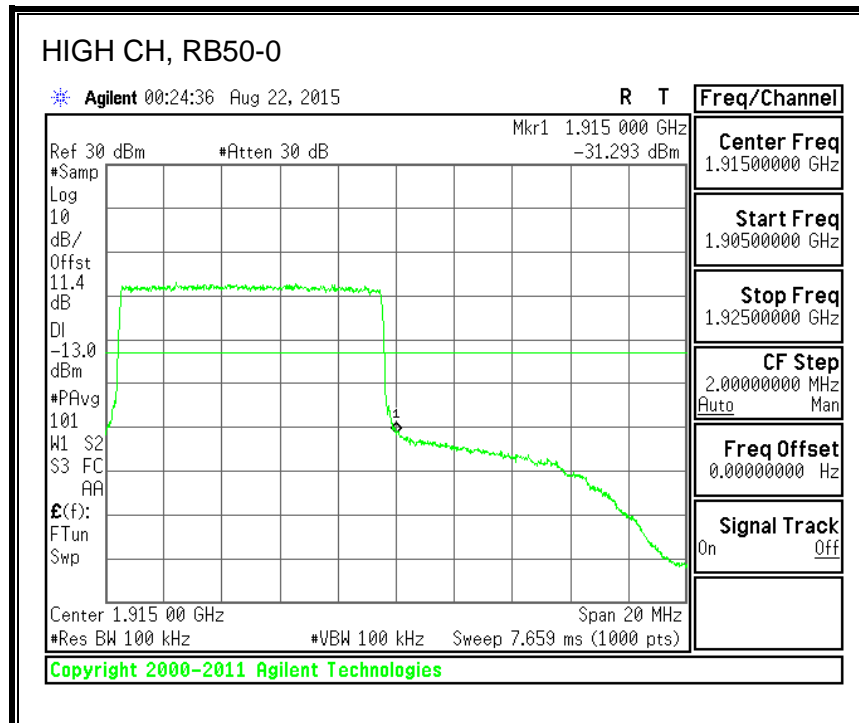
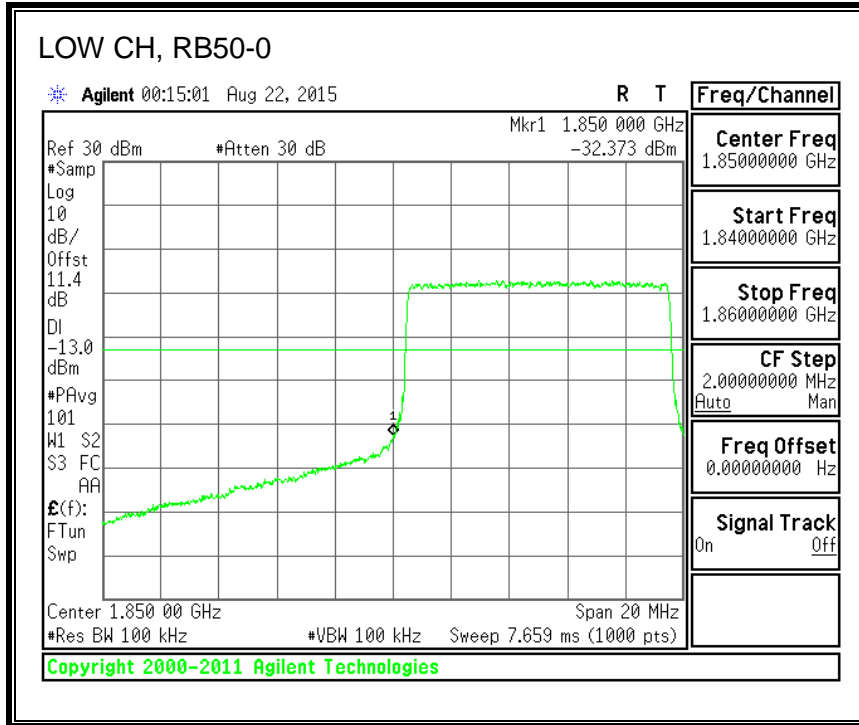


16QAM, (10.0 MHz BAND WIDTH)

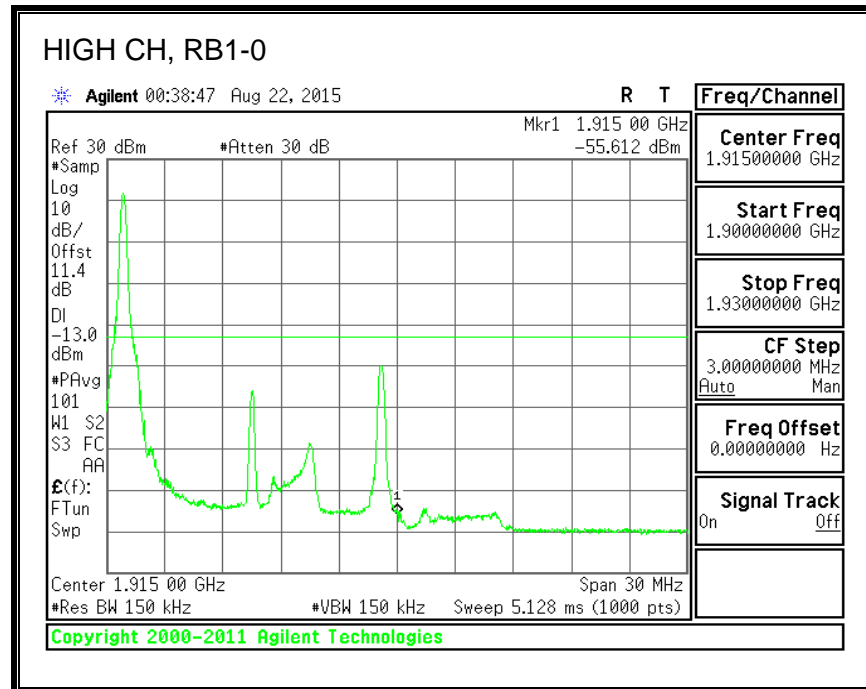
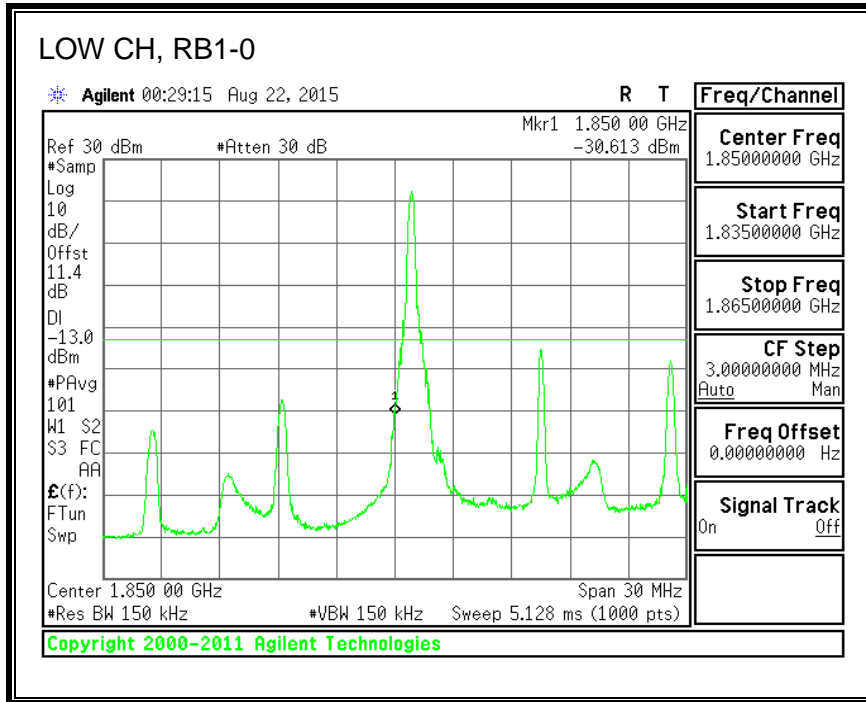


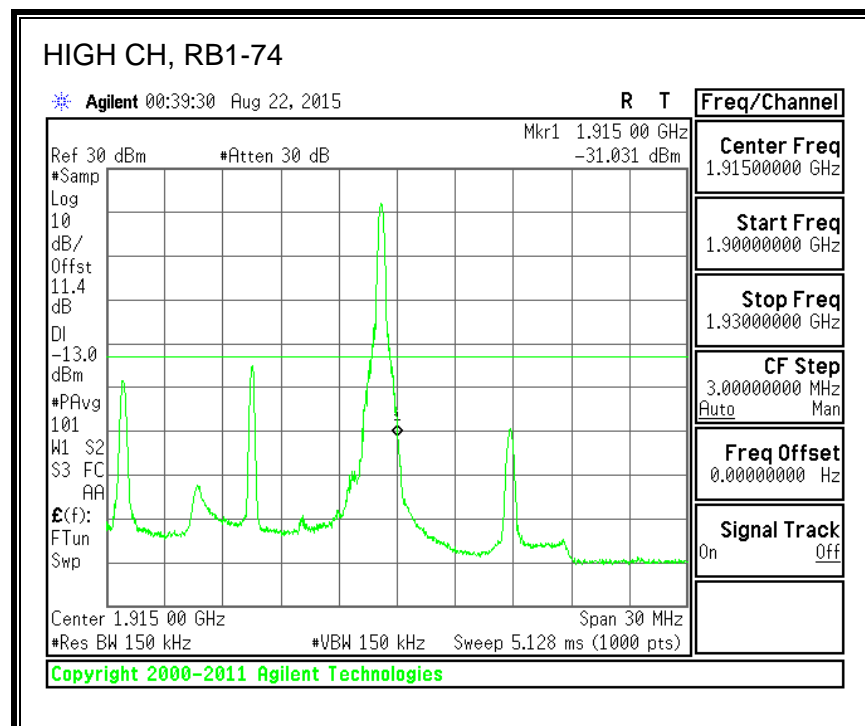
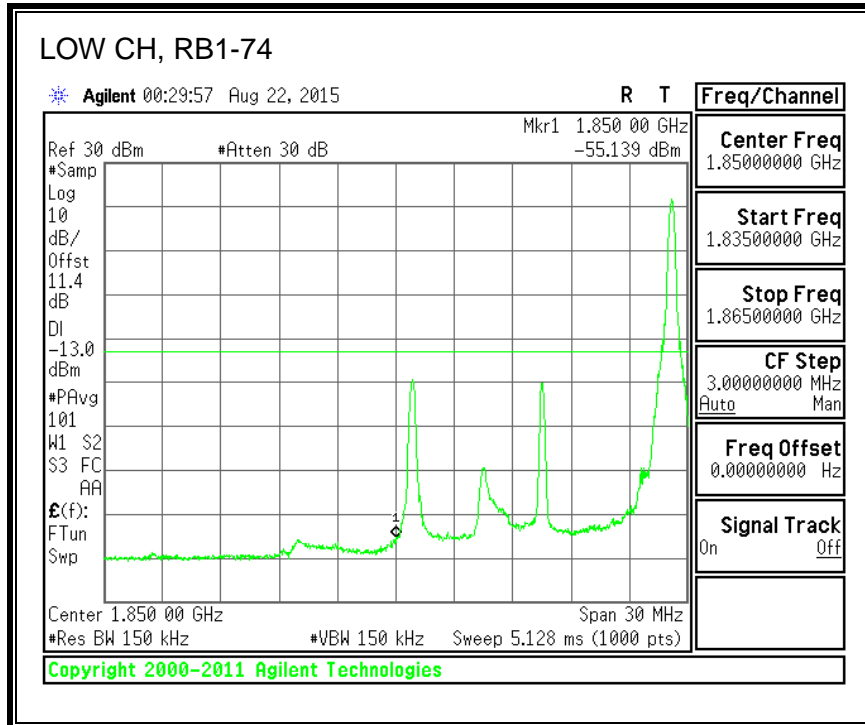


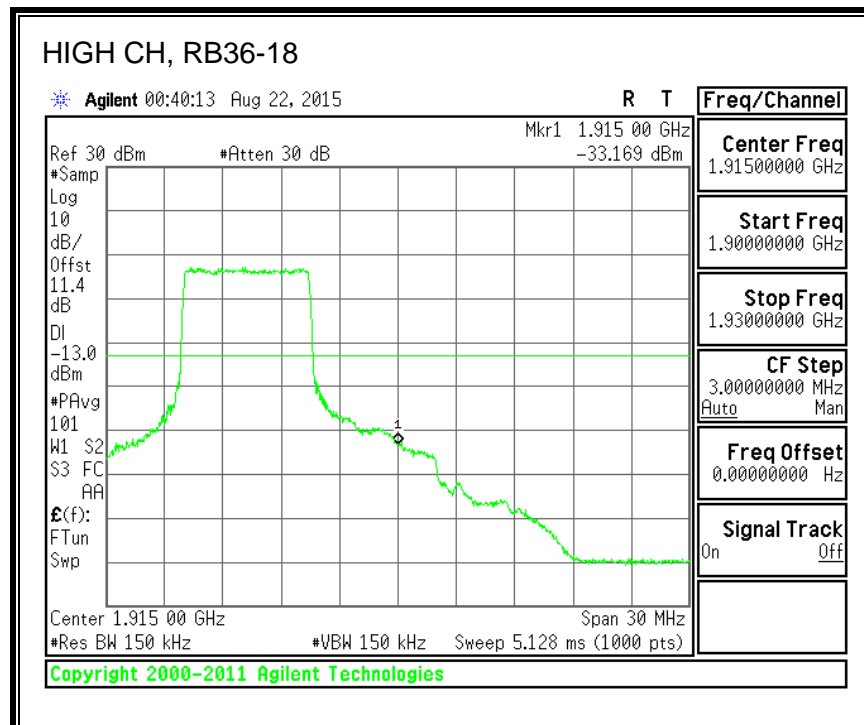
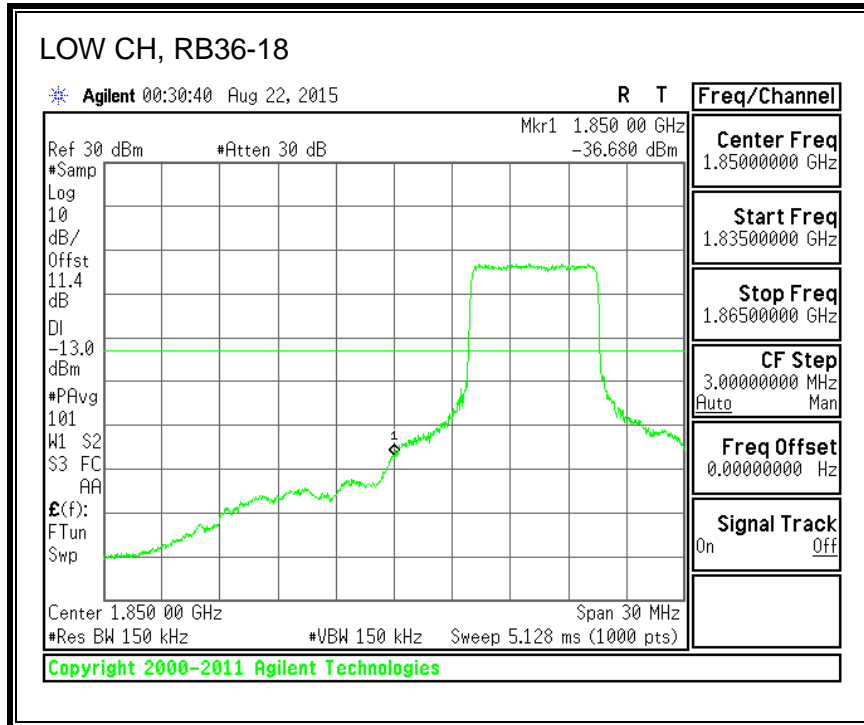


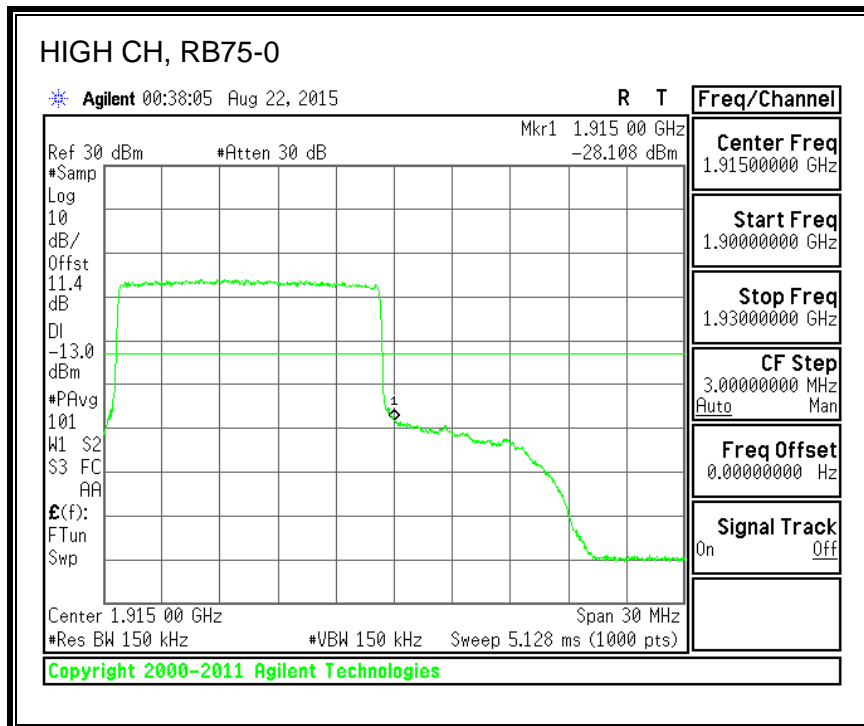
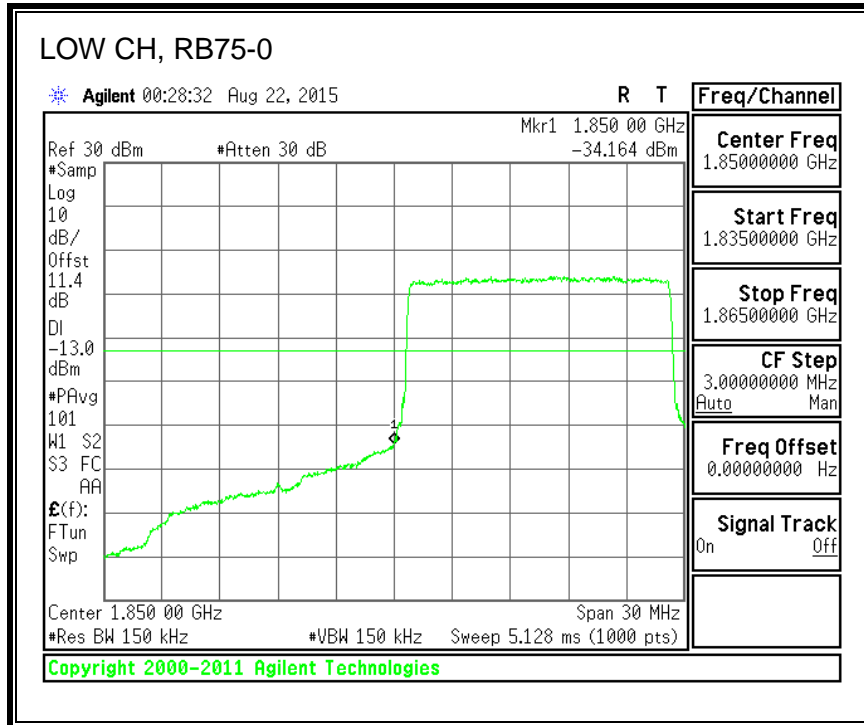


QPSK, (15.0 MHz BAND WIDTH)

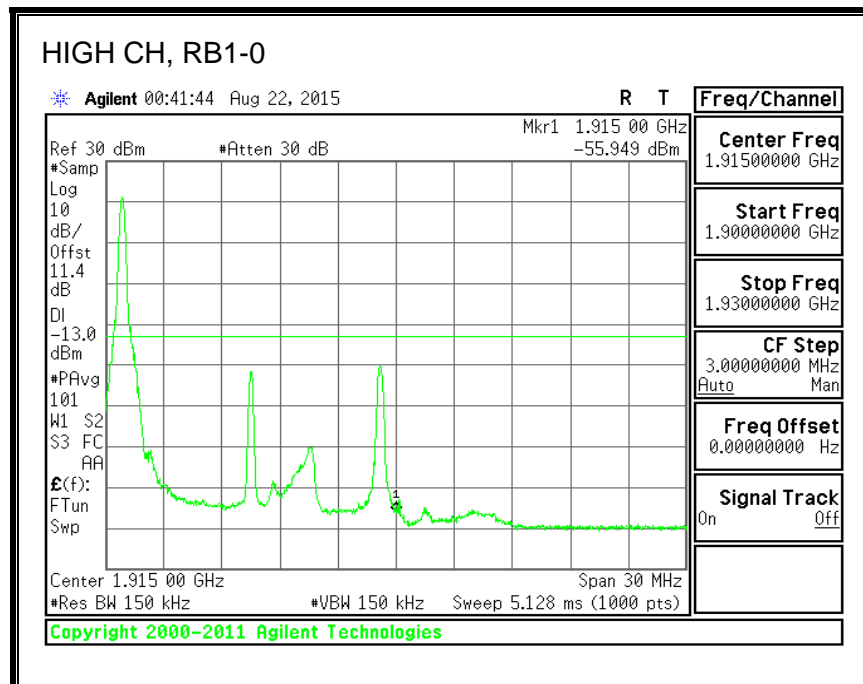
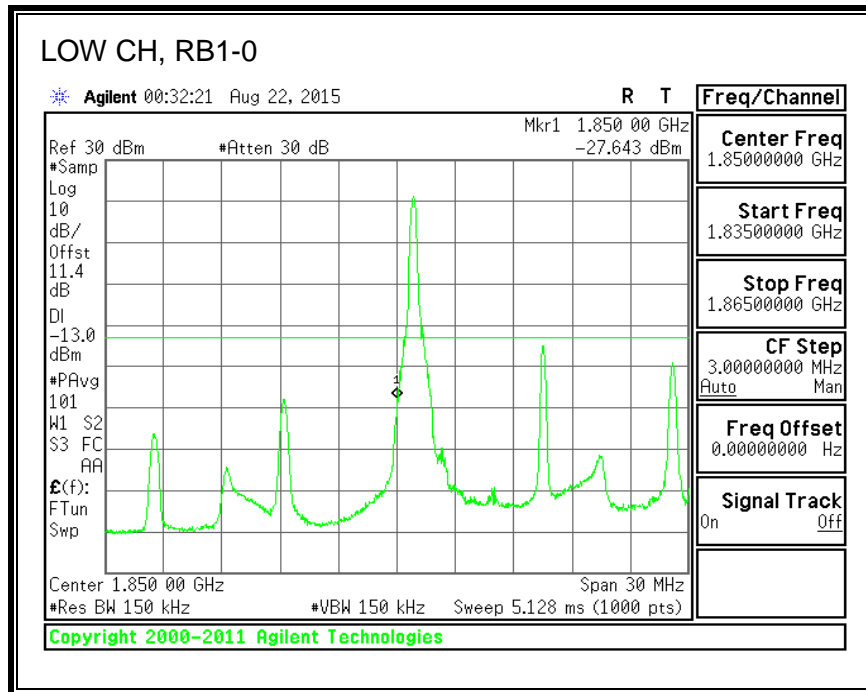


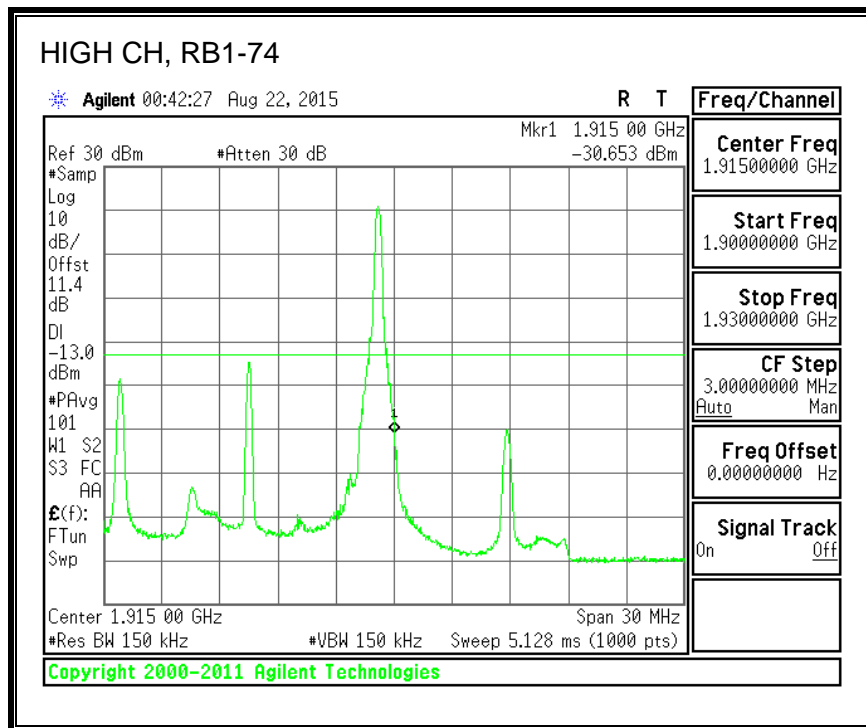
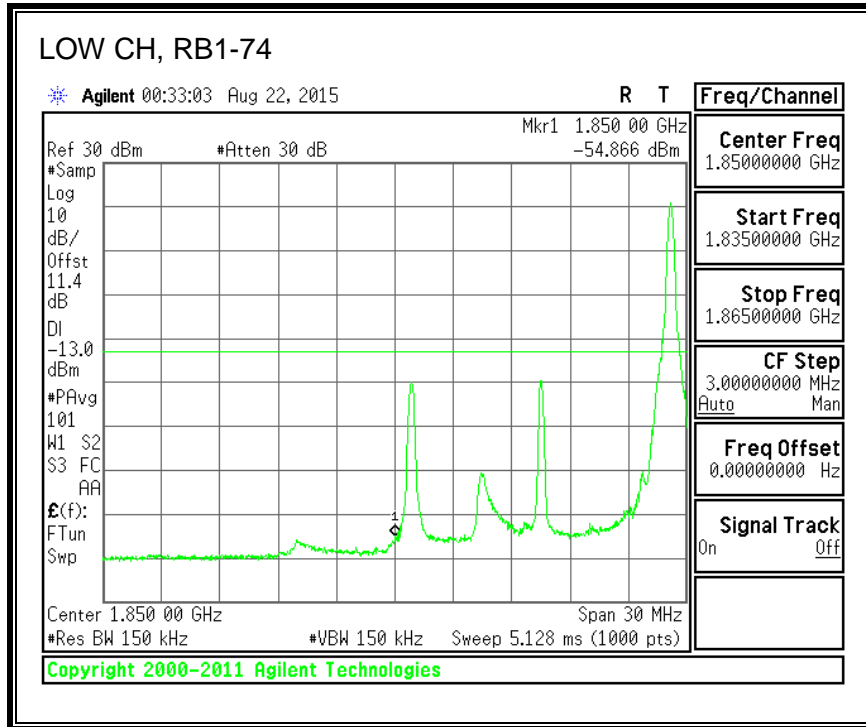


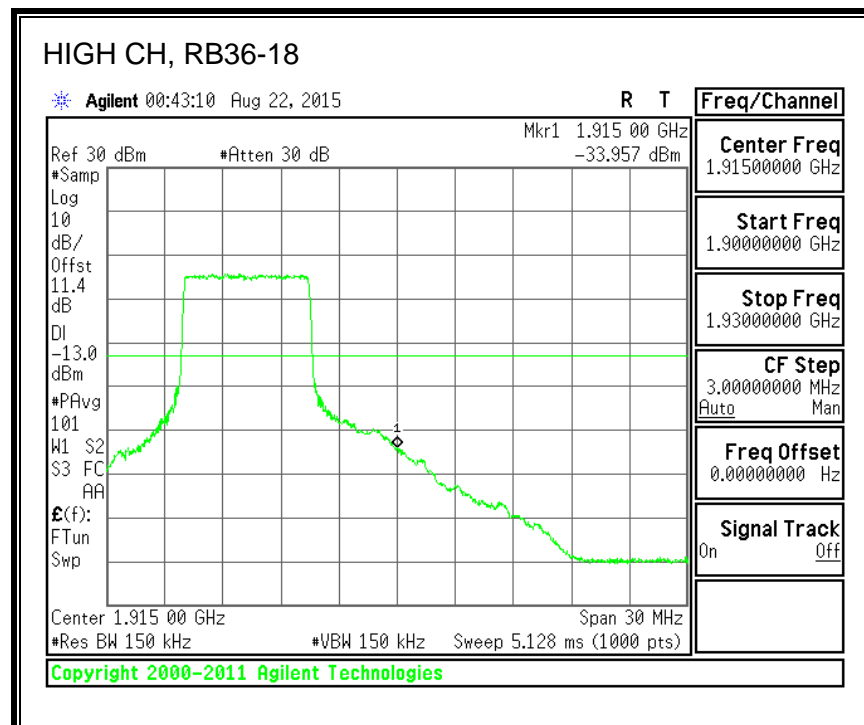
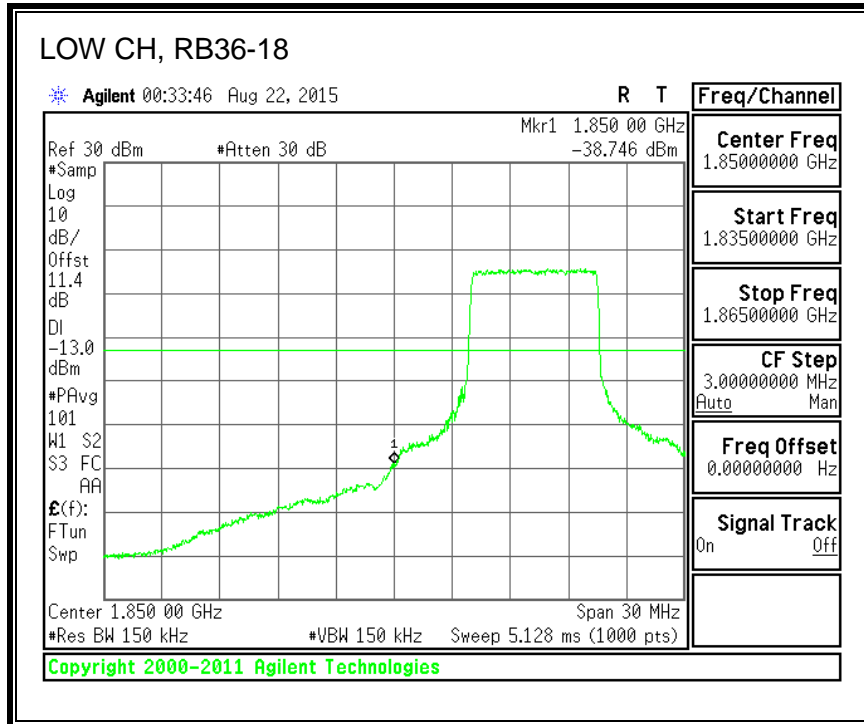


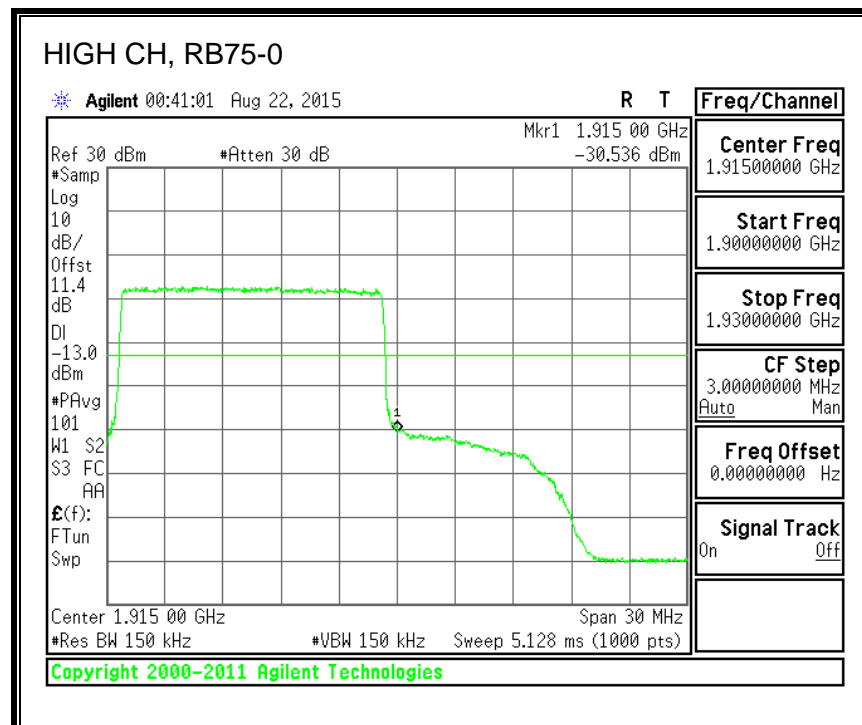
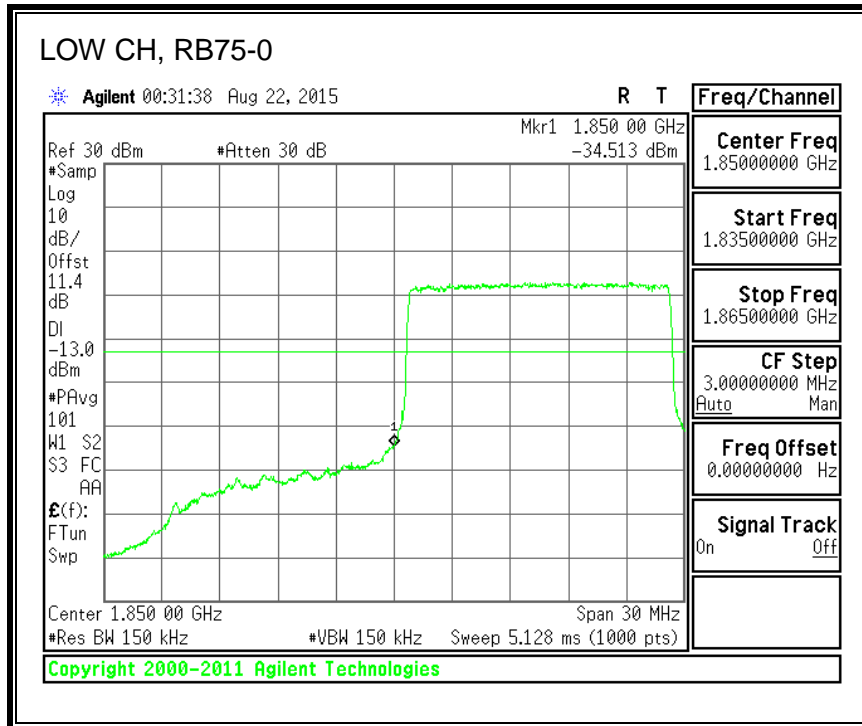


16QAM, (15.0 MHz BAND WIDTH)

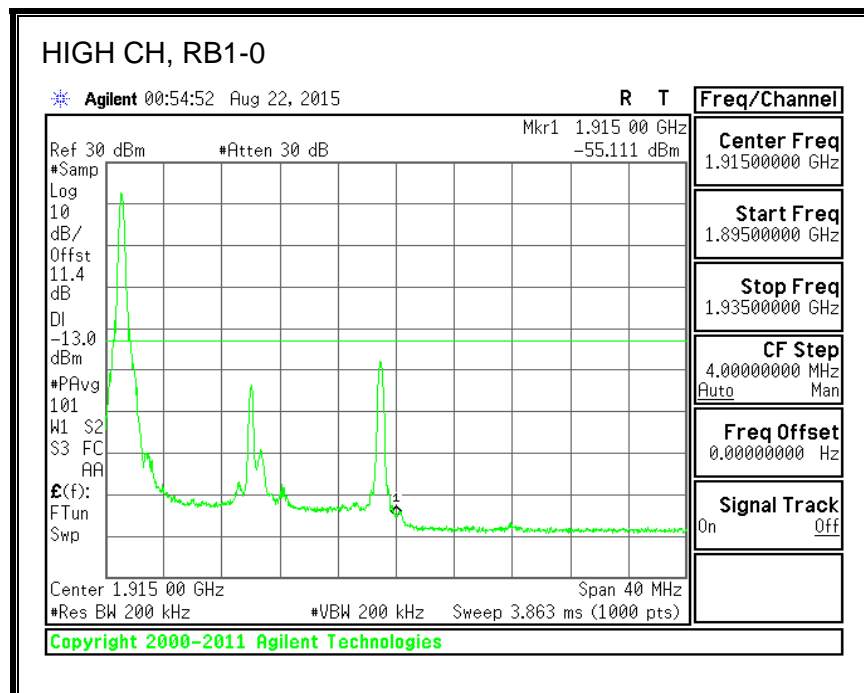
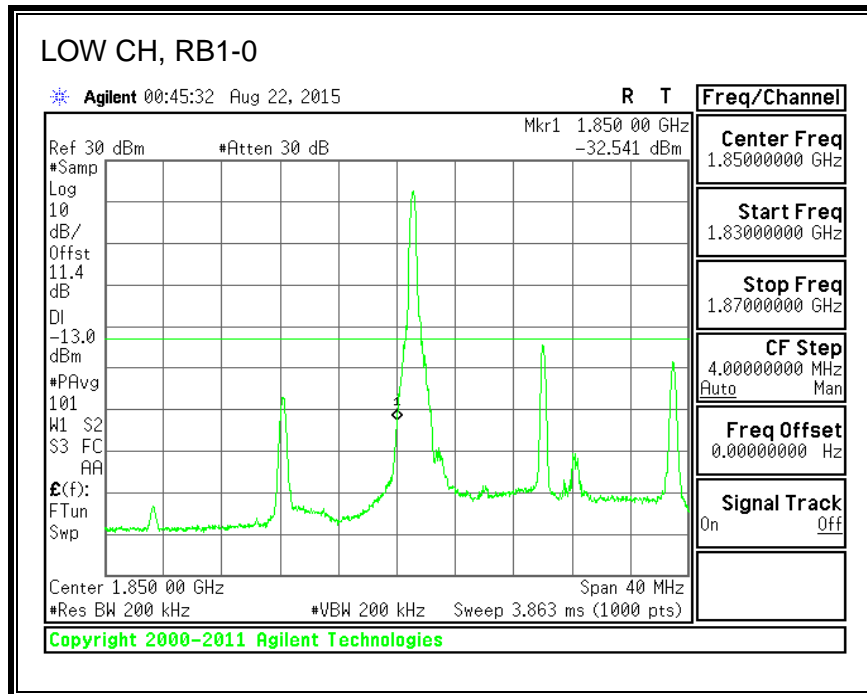


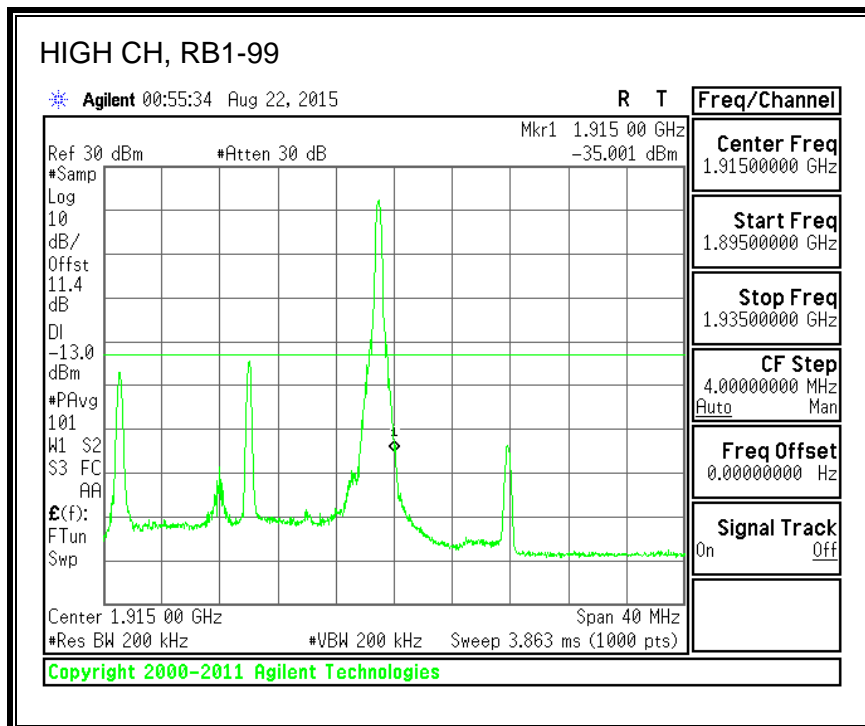
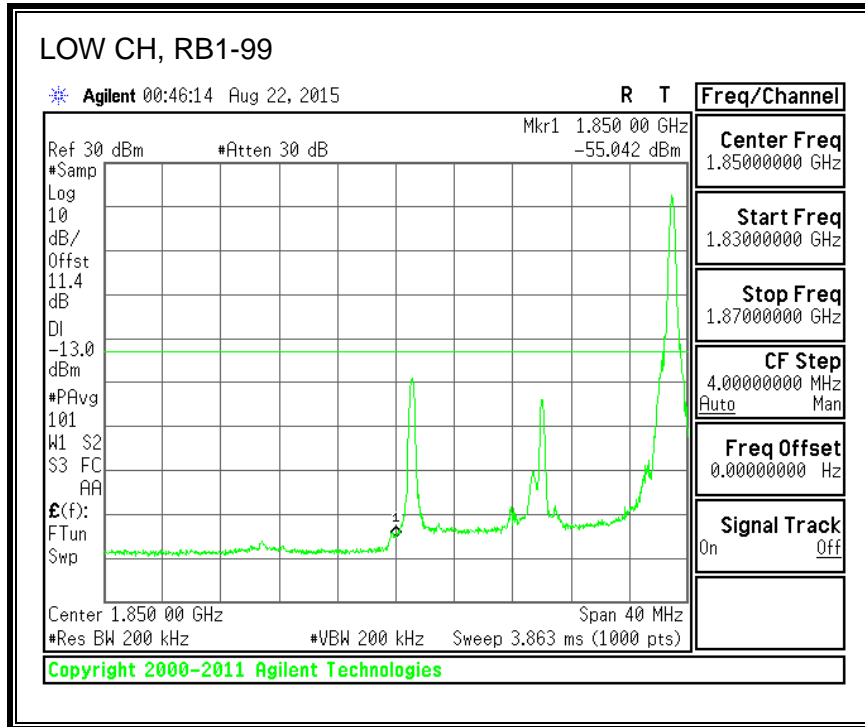


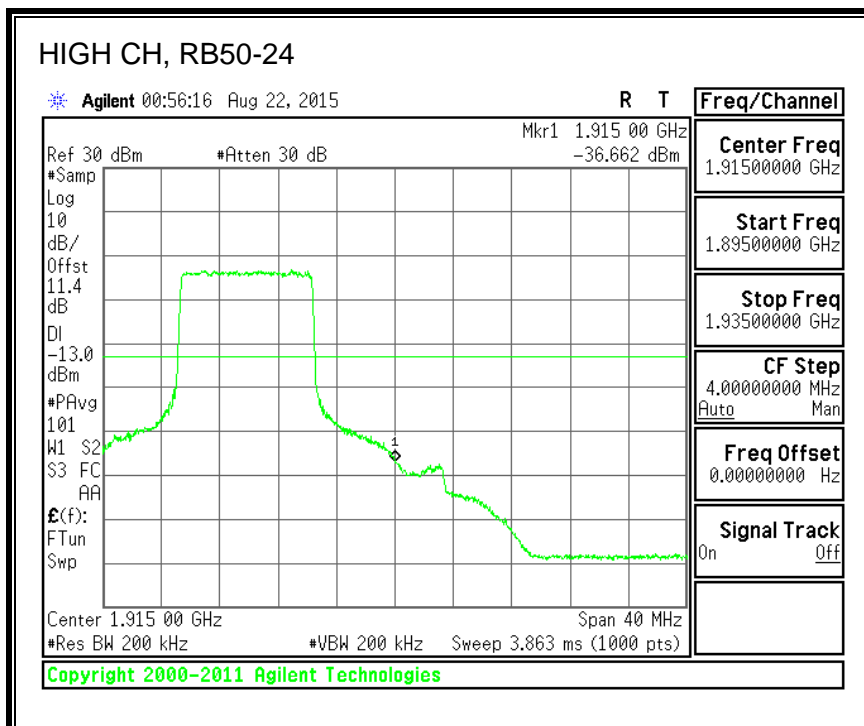
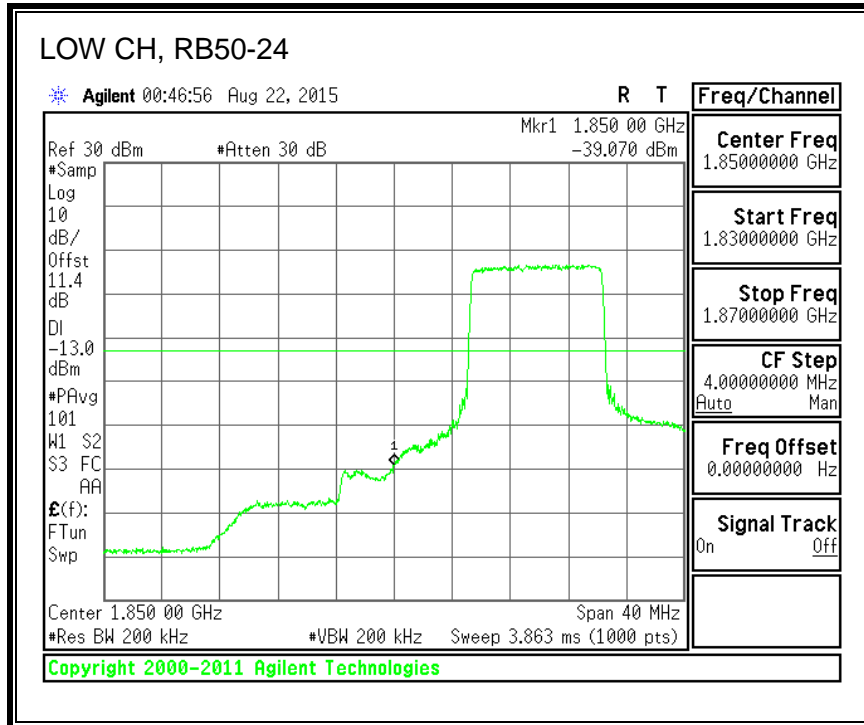


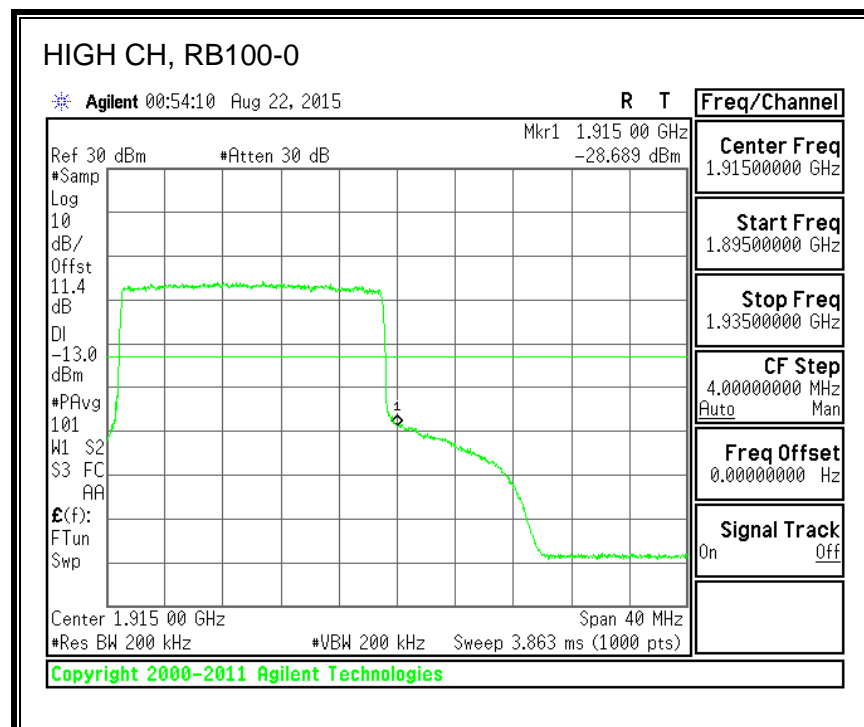
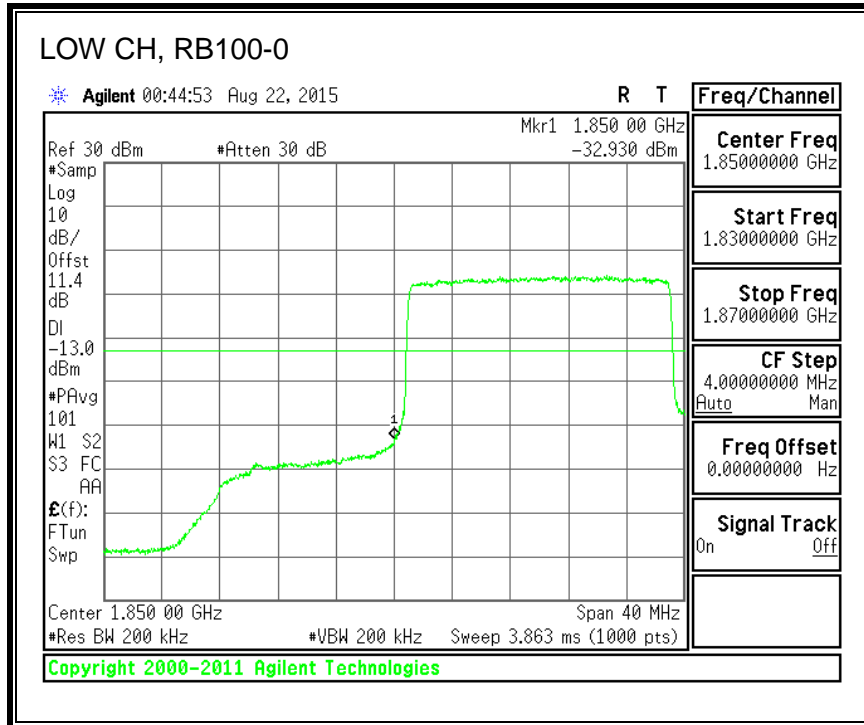


QPSK, (20.0 MHz BAND WIDTH)

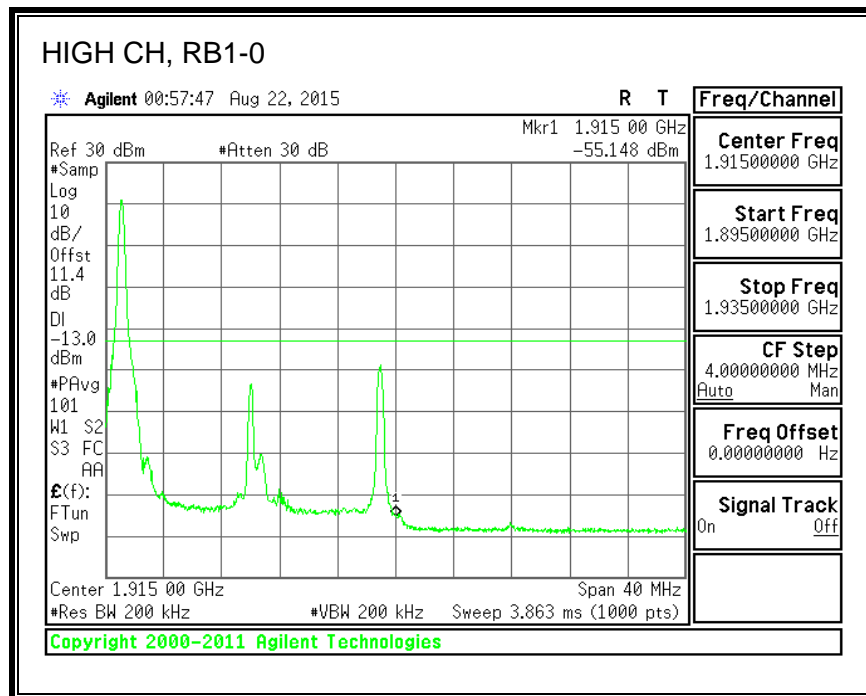
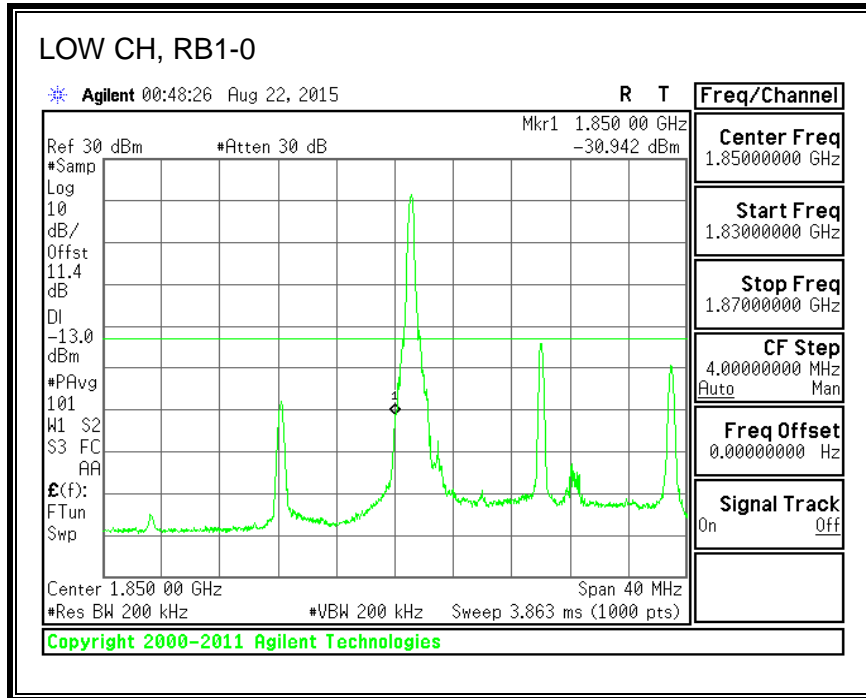


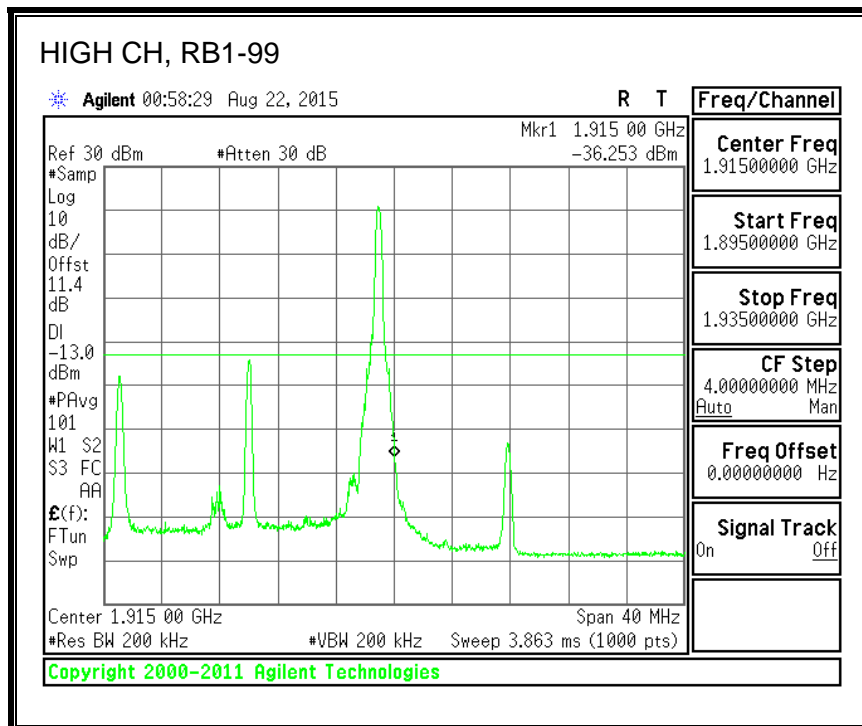
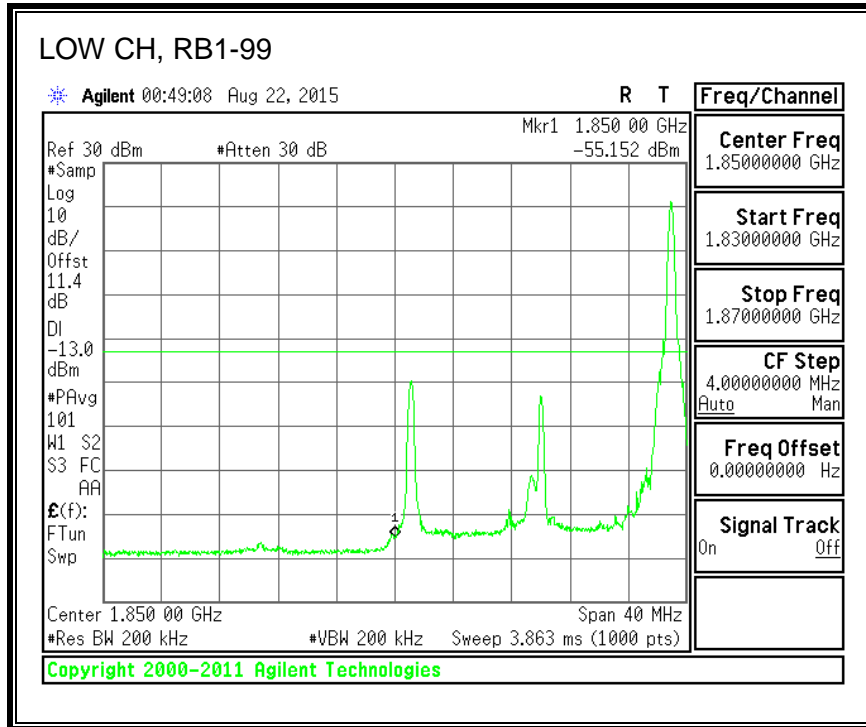


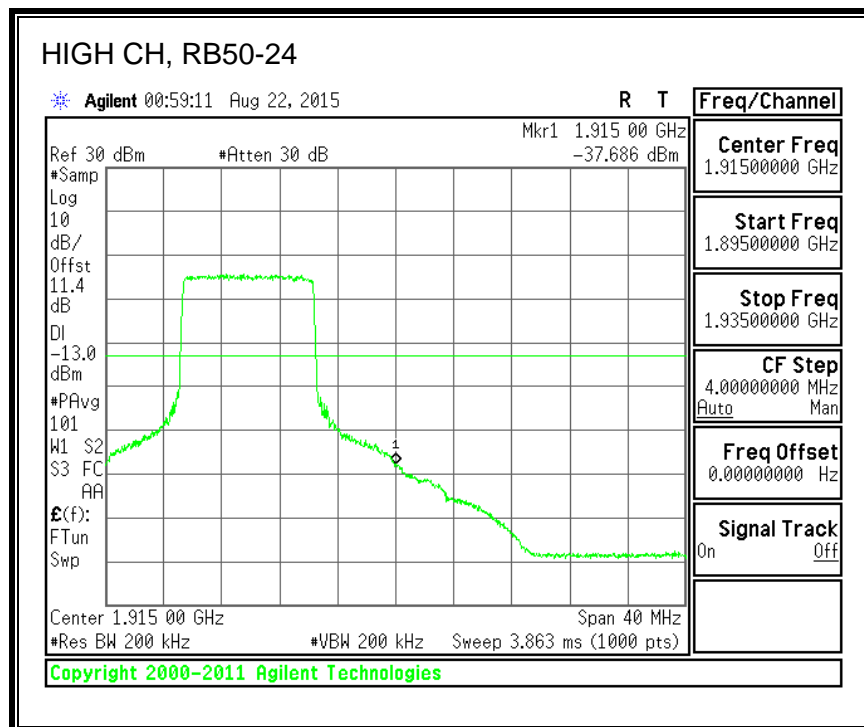
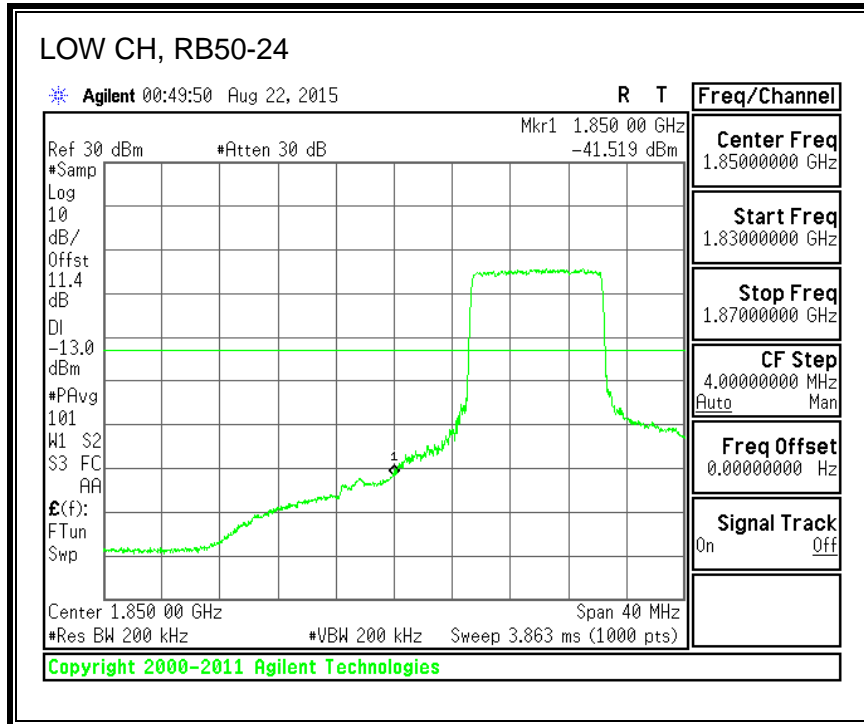


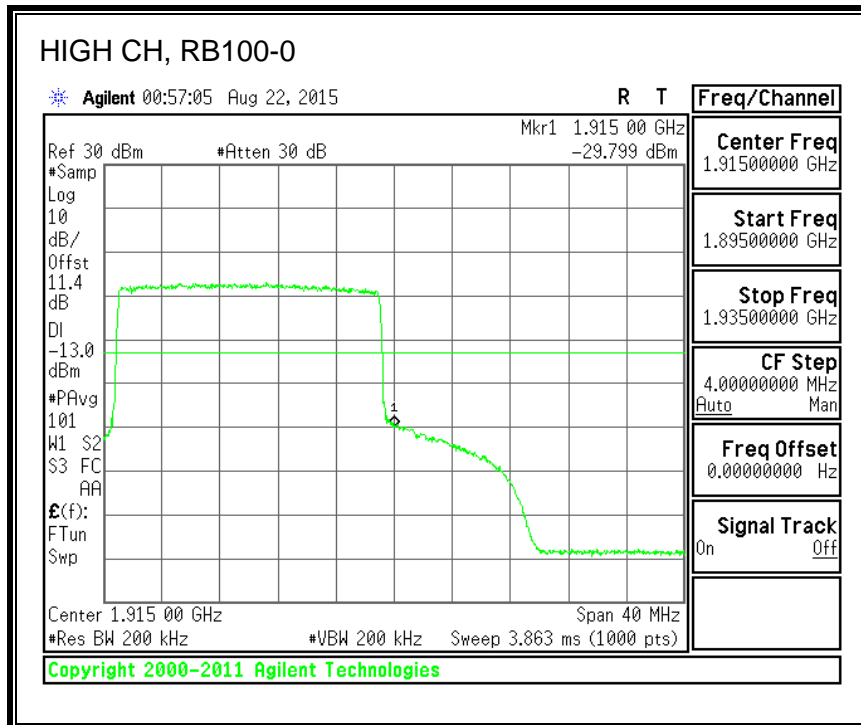
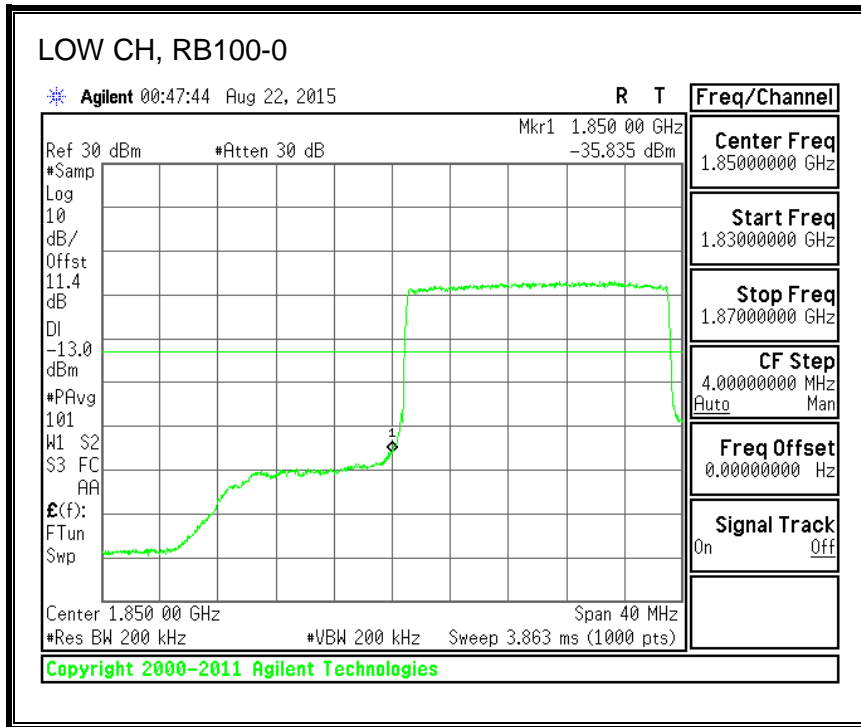


16QAM, (20.0 MHz BAND WIDTH)



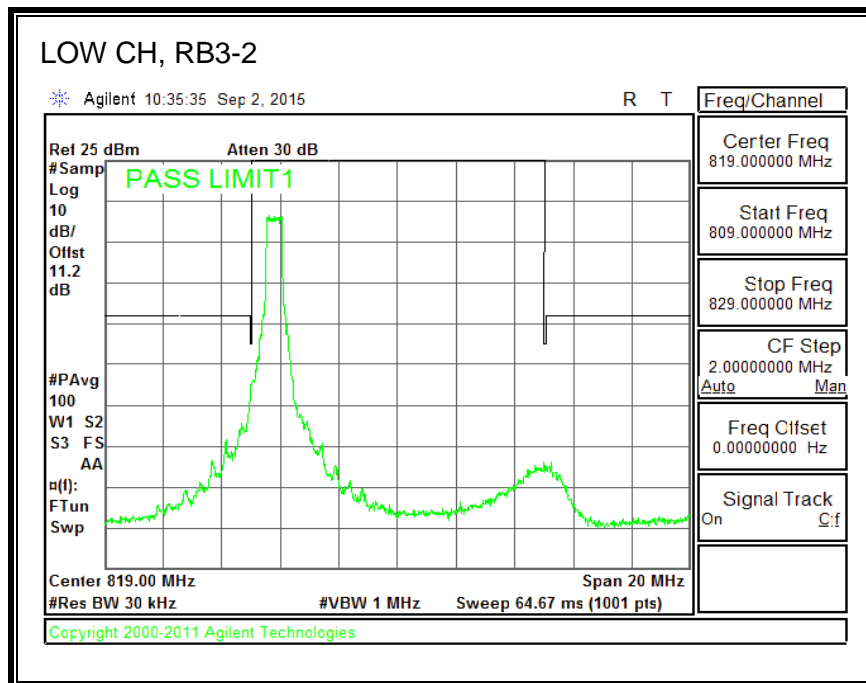
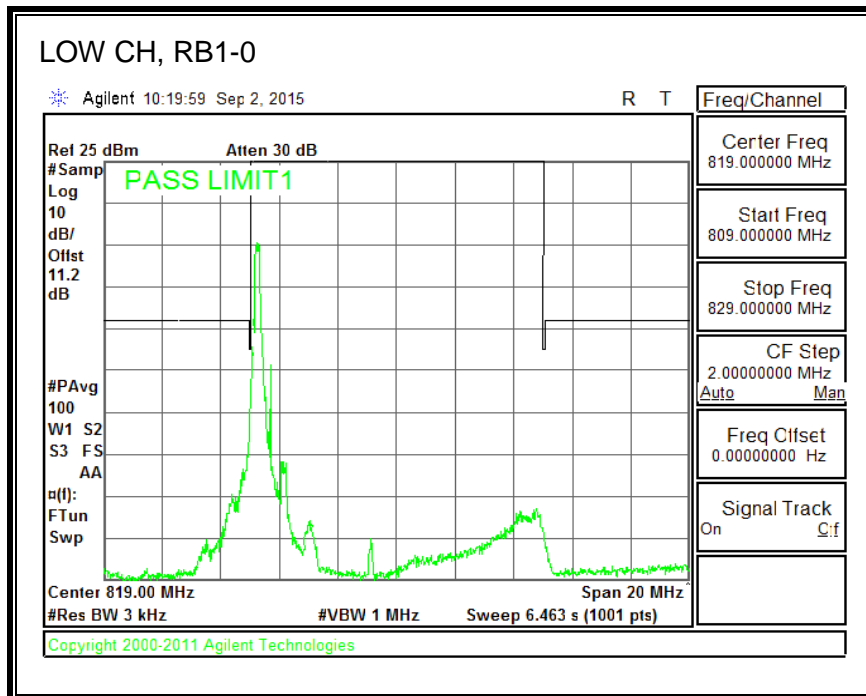


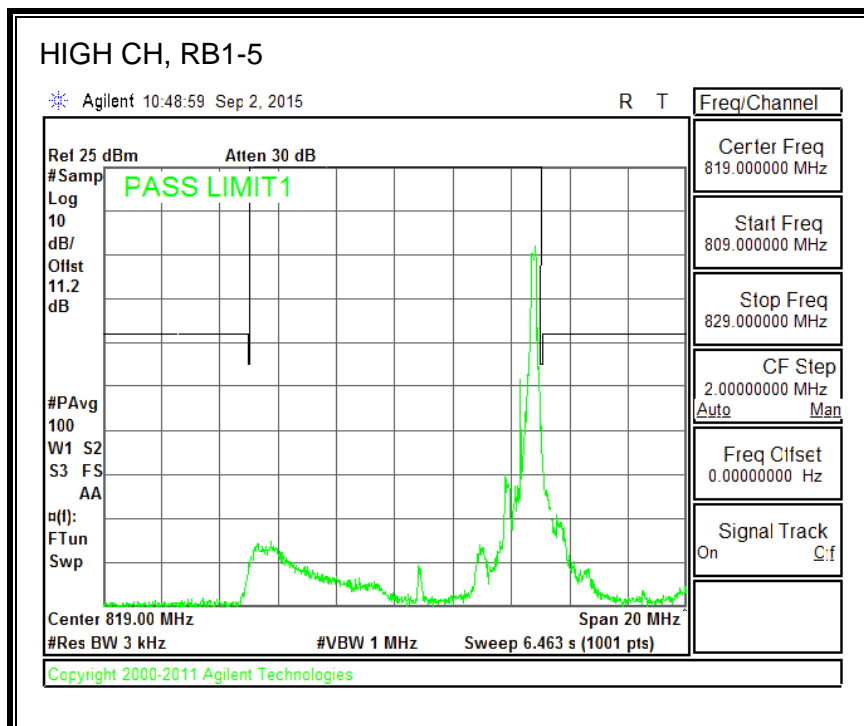
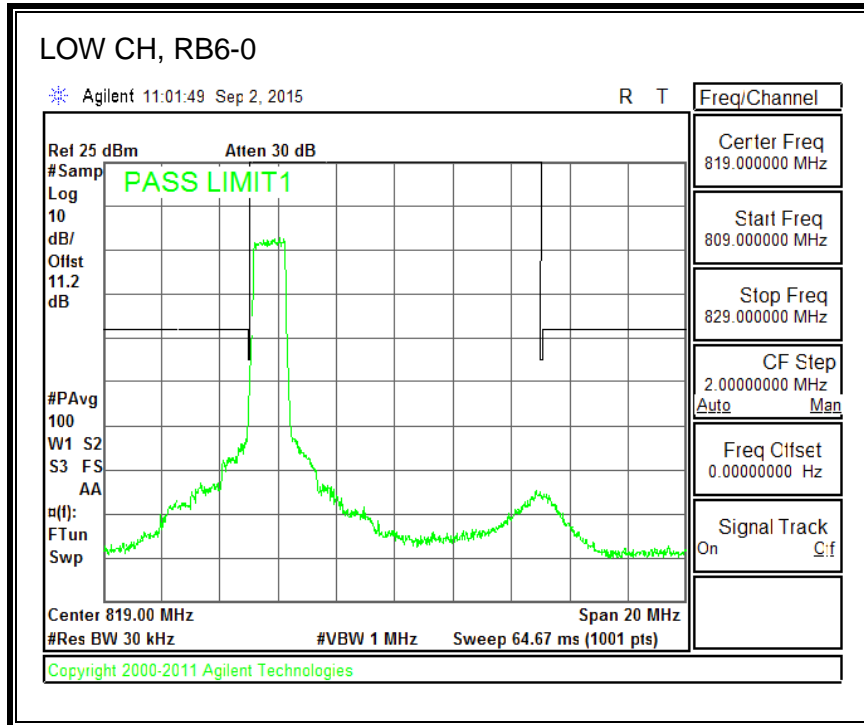


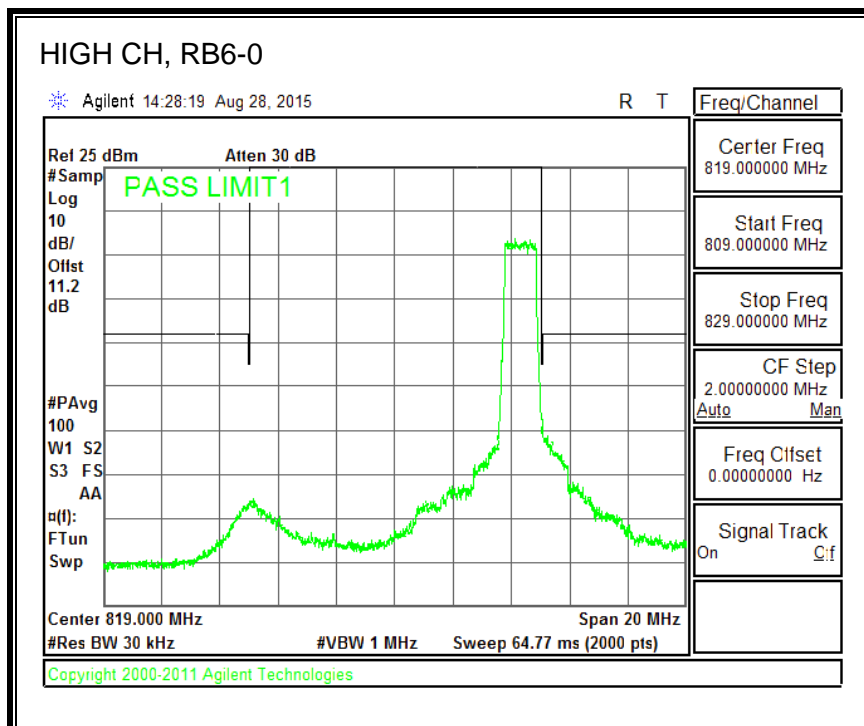
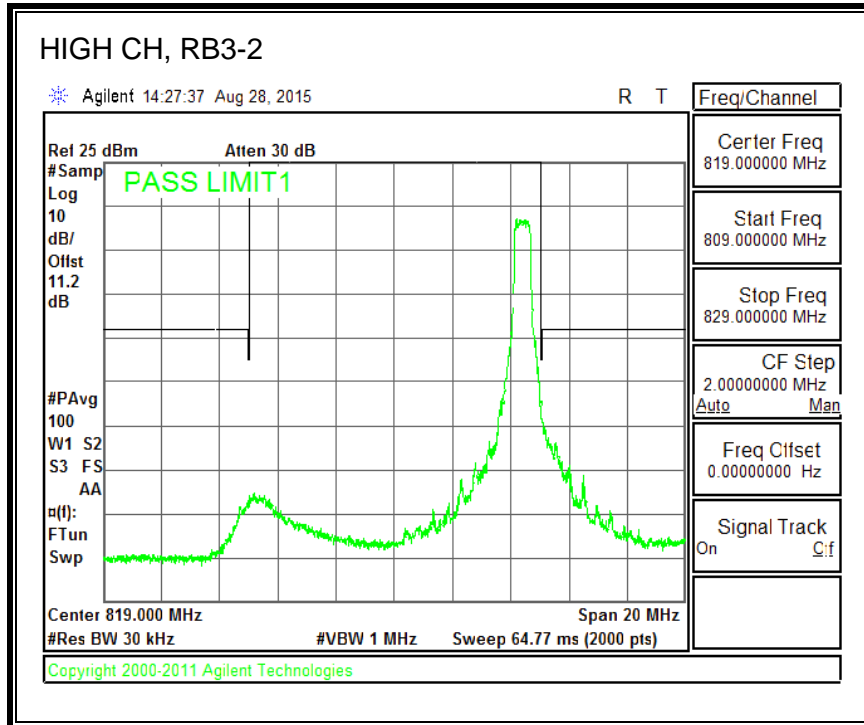


8.2.8. LTE BAND 26 EMISSION MASK

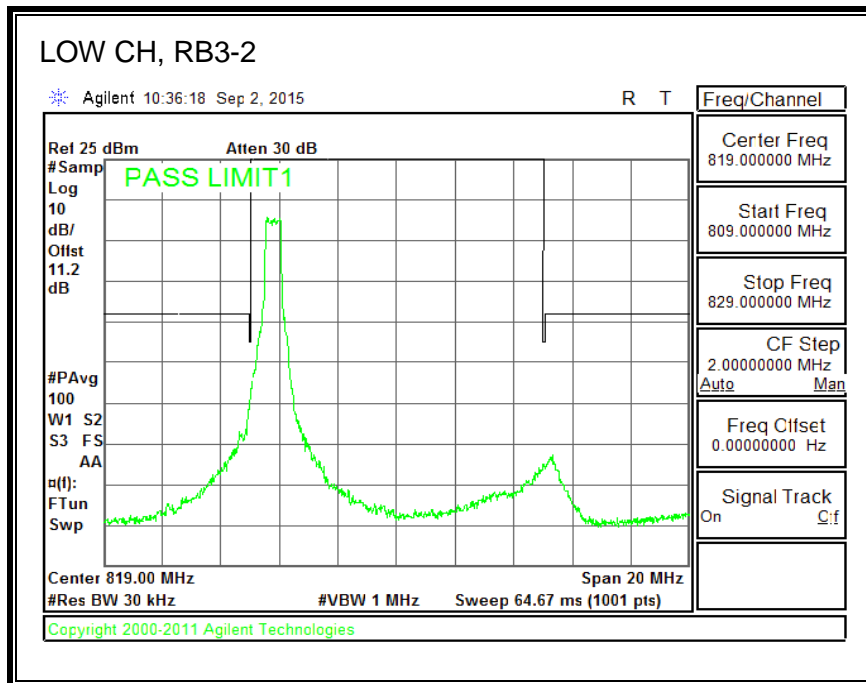
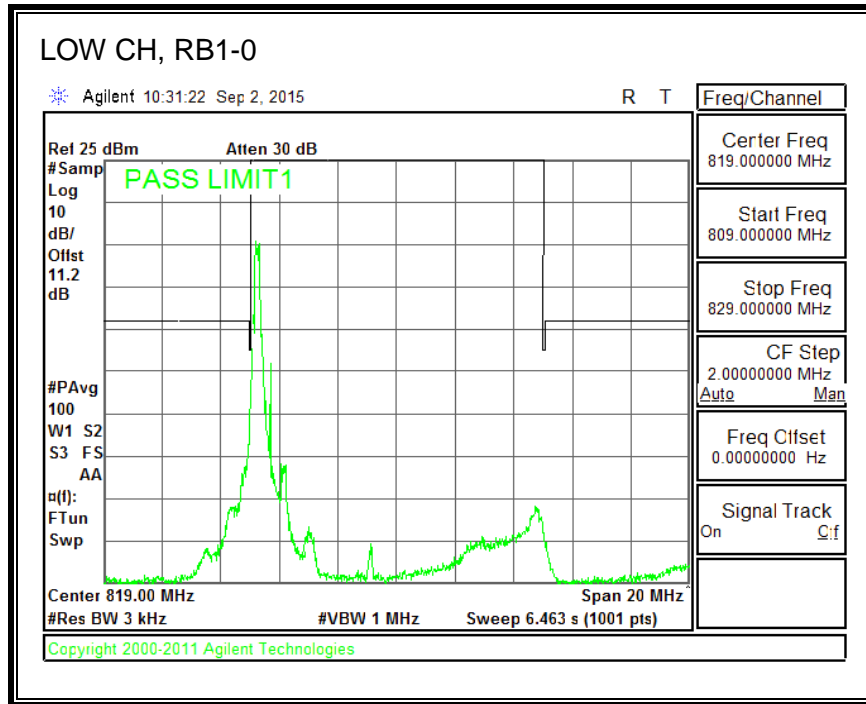
QPSK, (1.4 MHz BAND WIDTH)

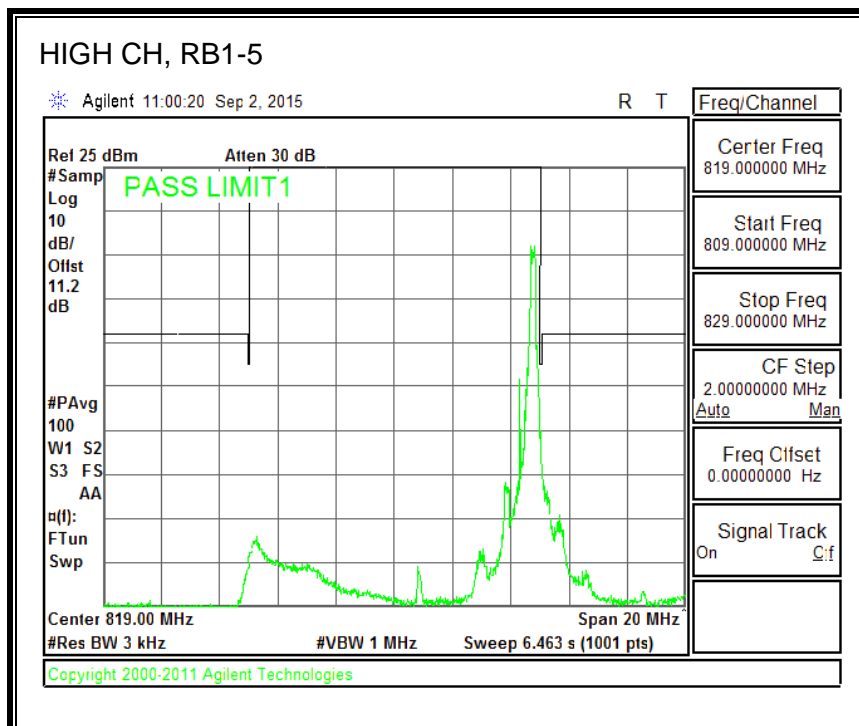
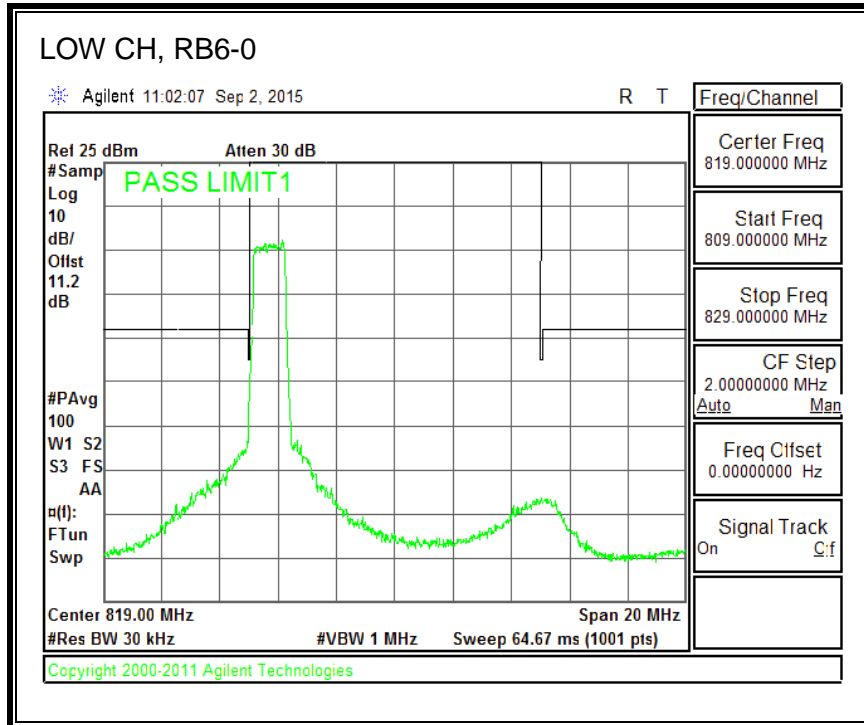


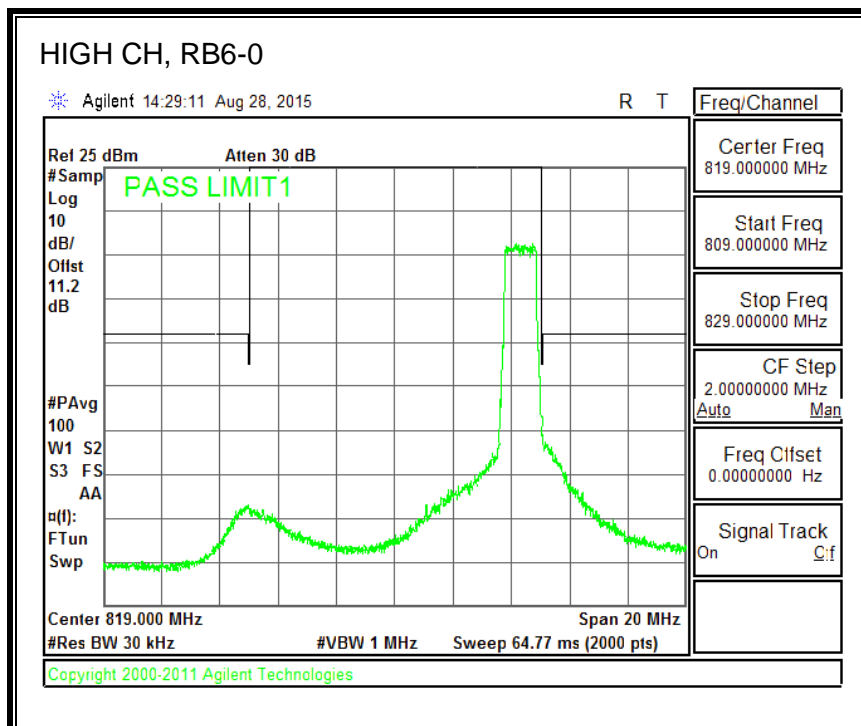
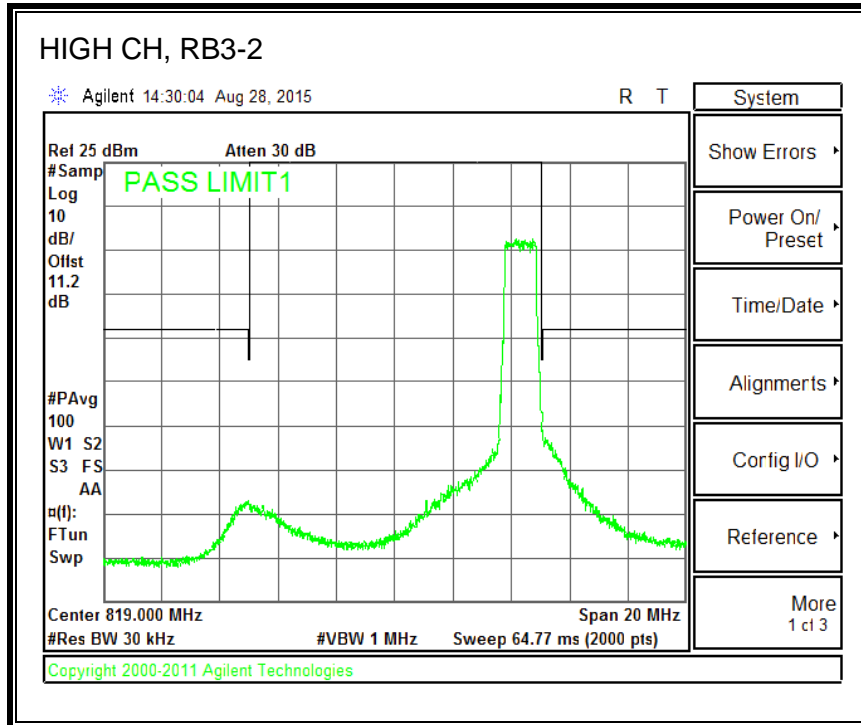




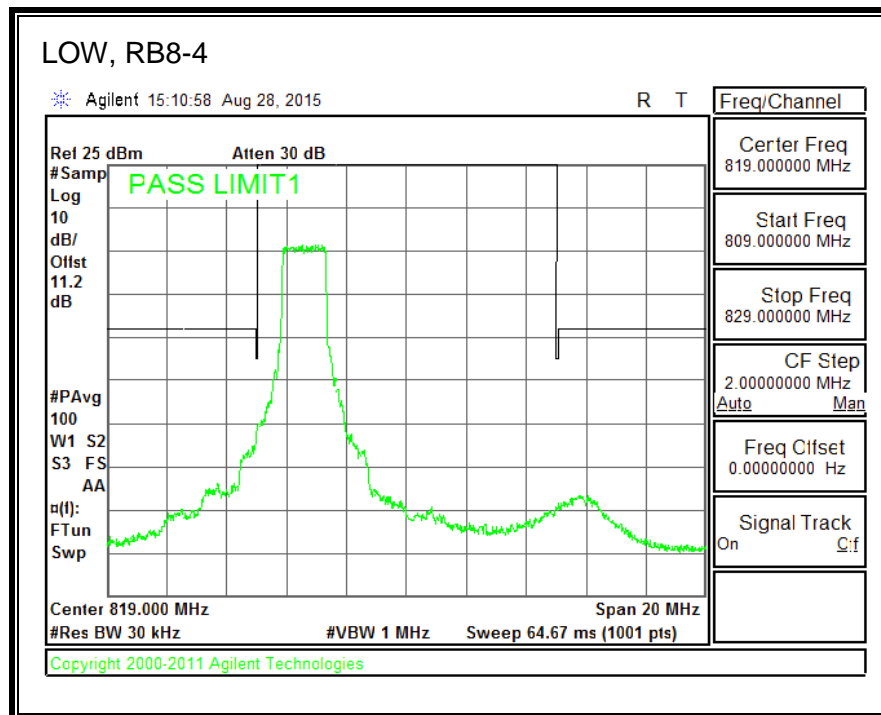
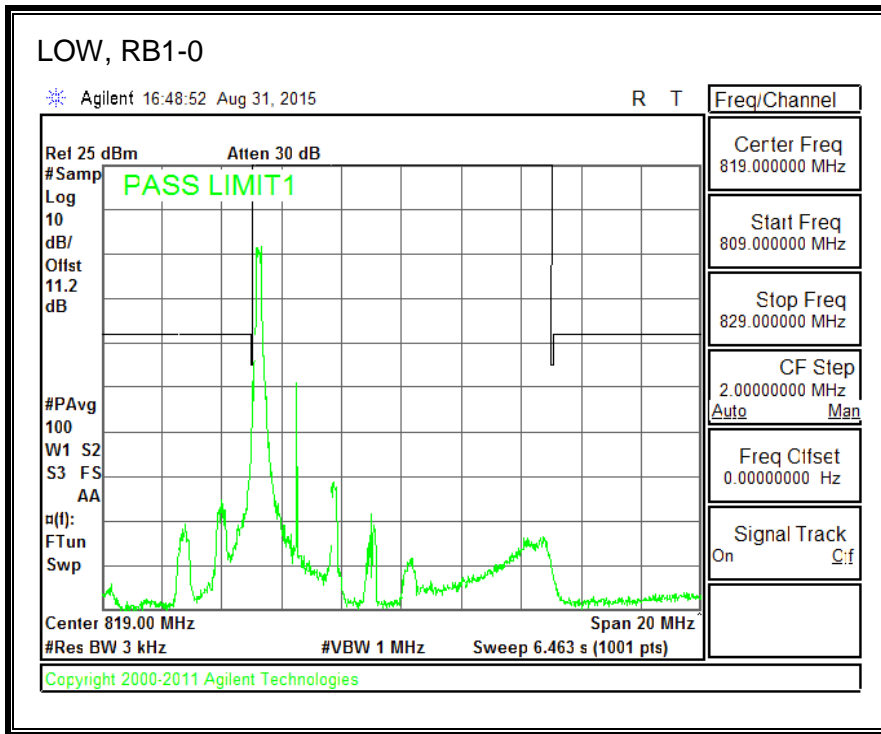
16QAM, (1.4 MHz BAND WIDTH)

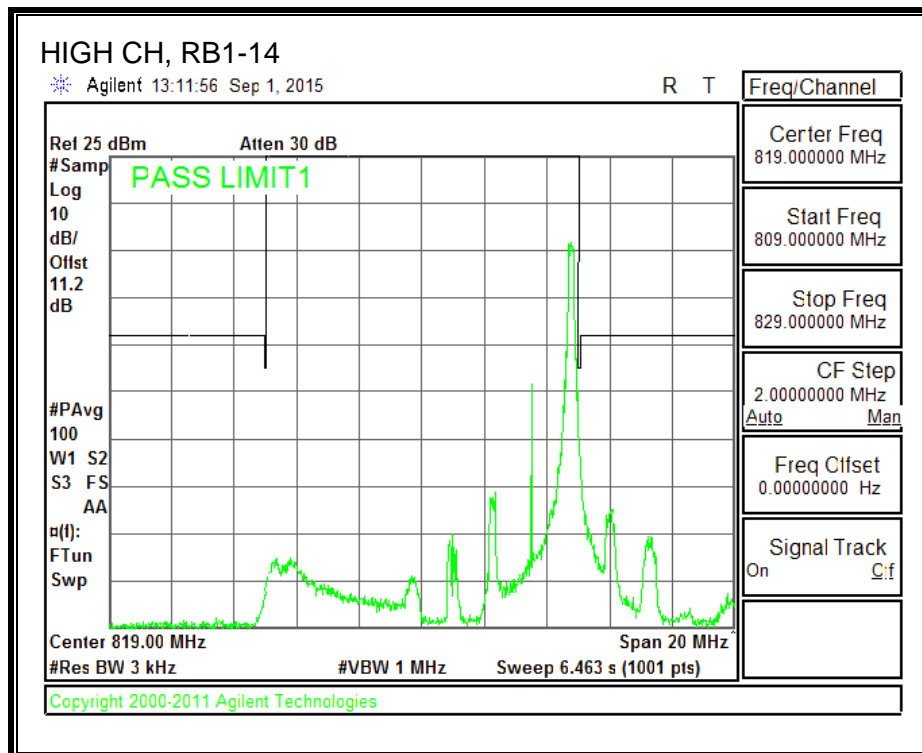
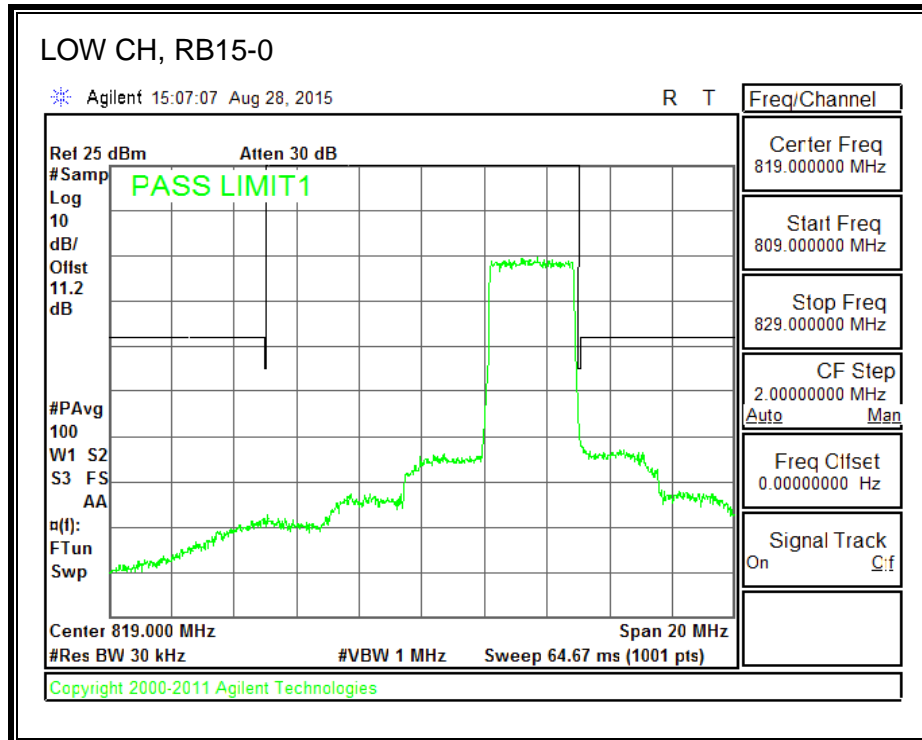


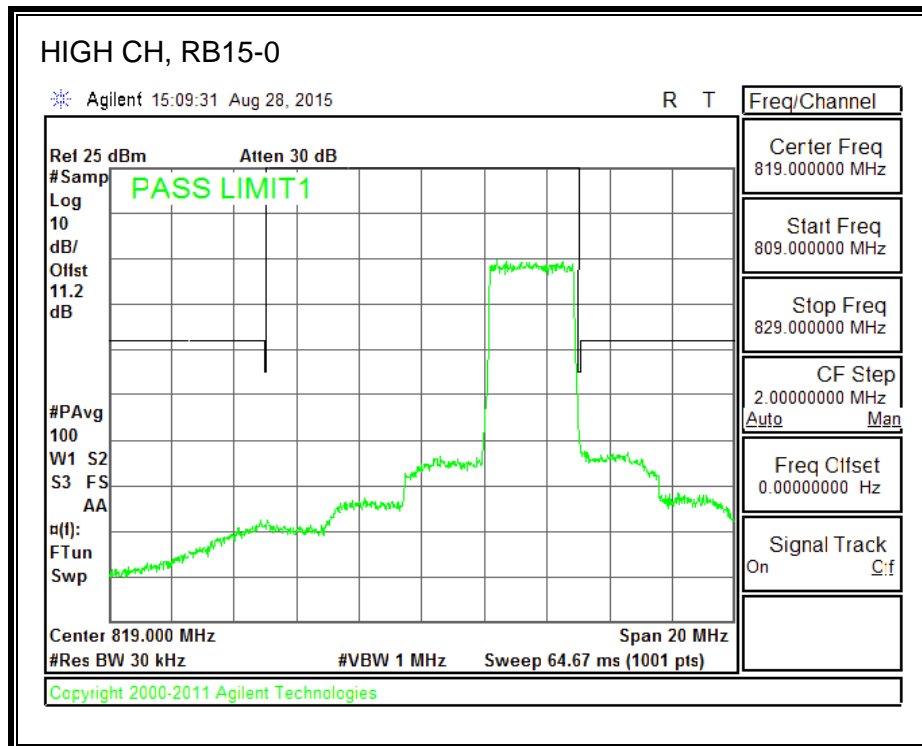
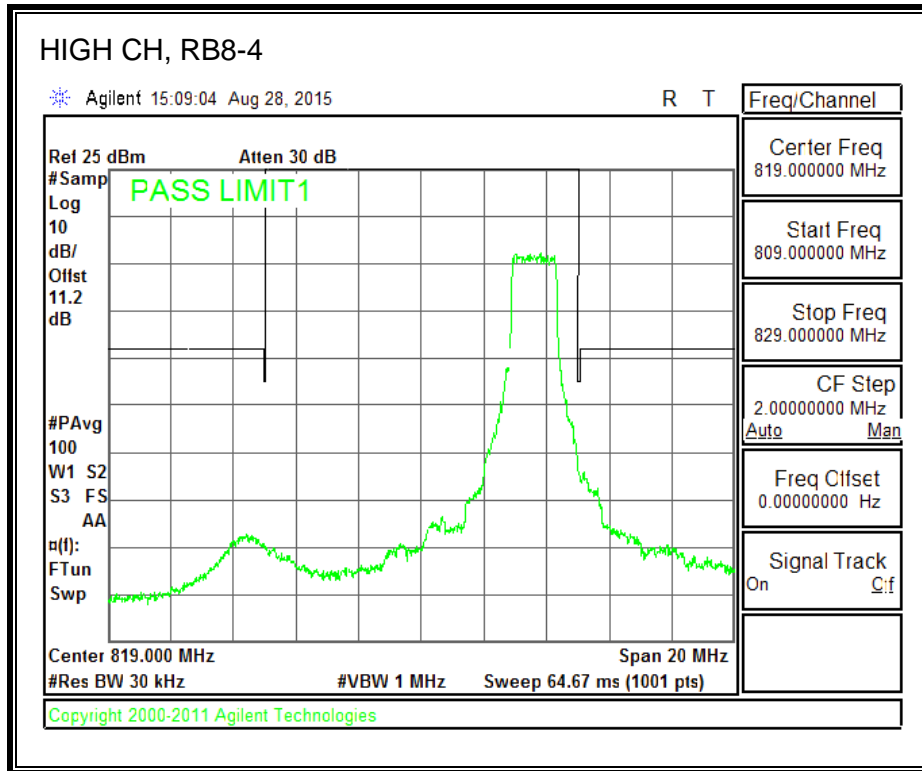




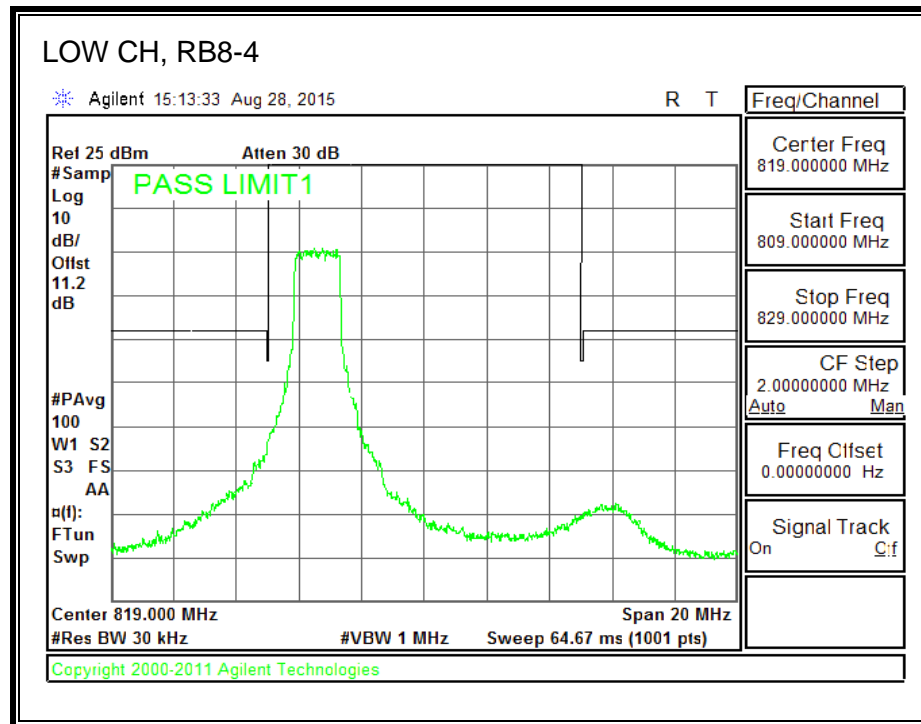
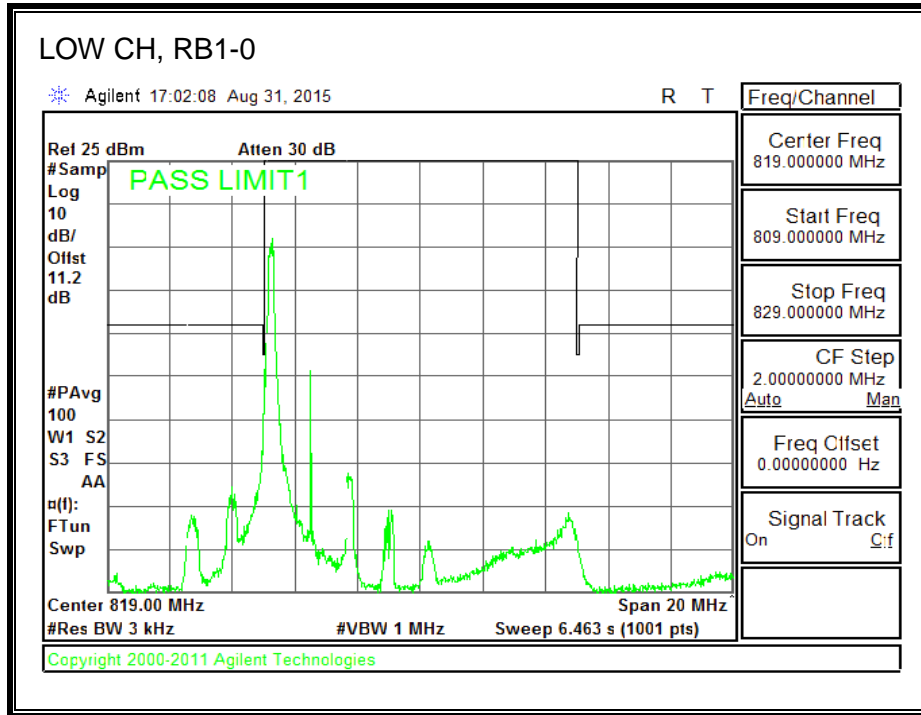
QPSK, (3.0 MHz BAND WIDTH)

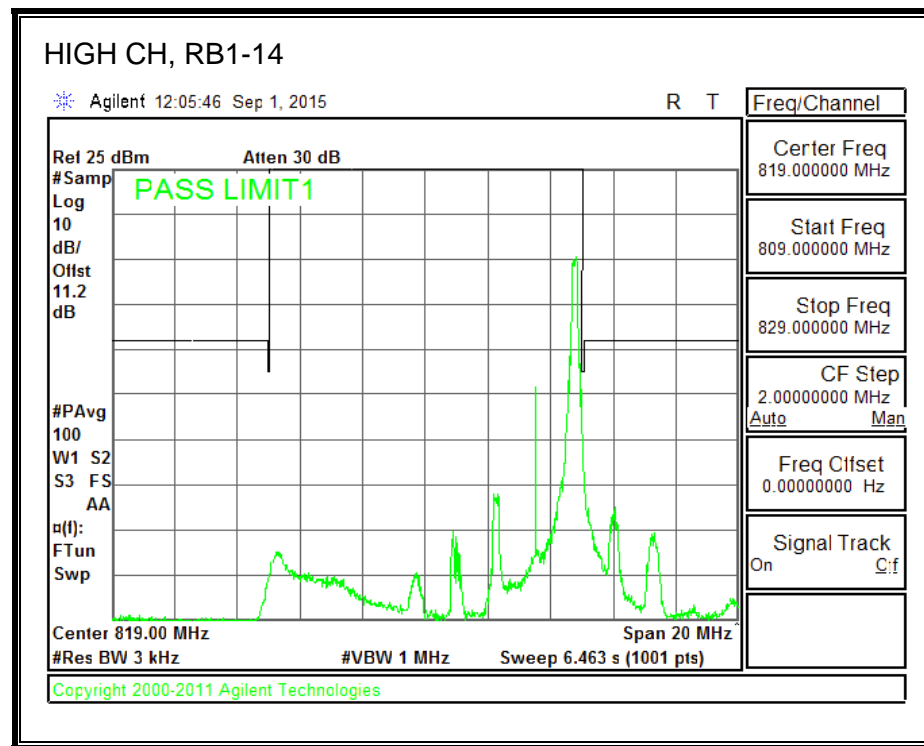
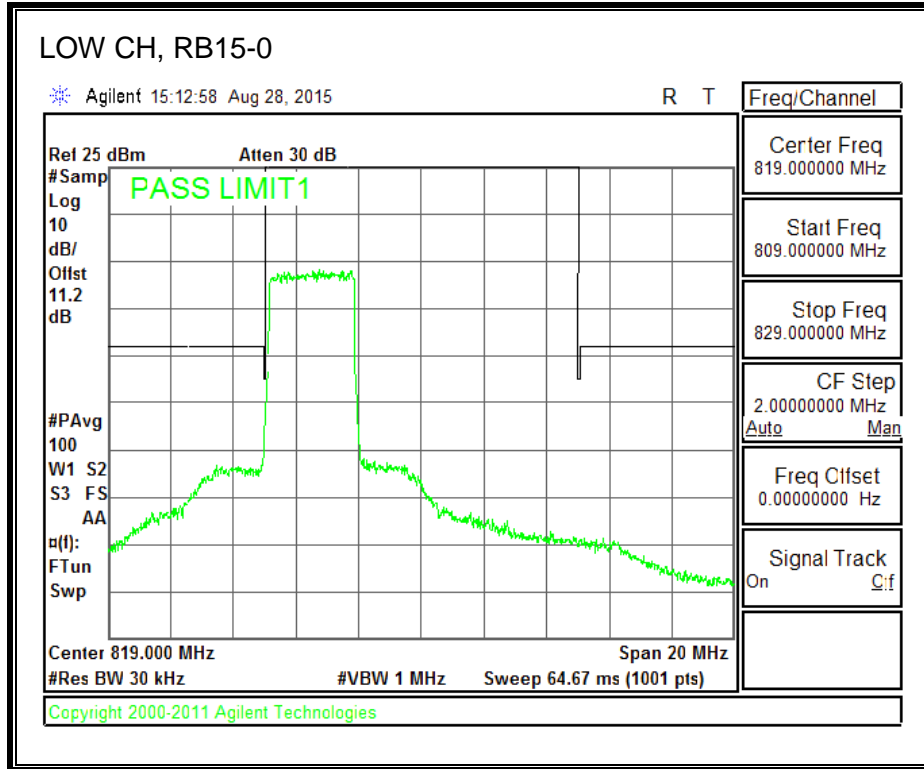


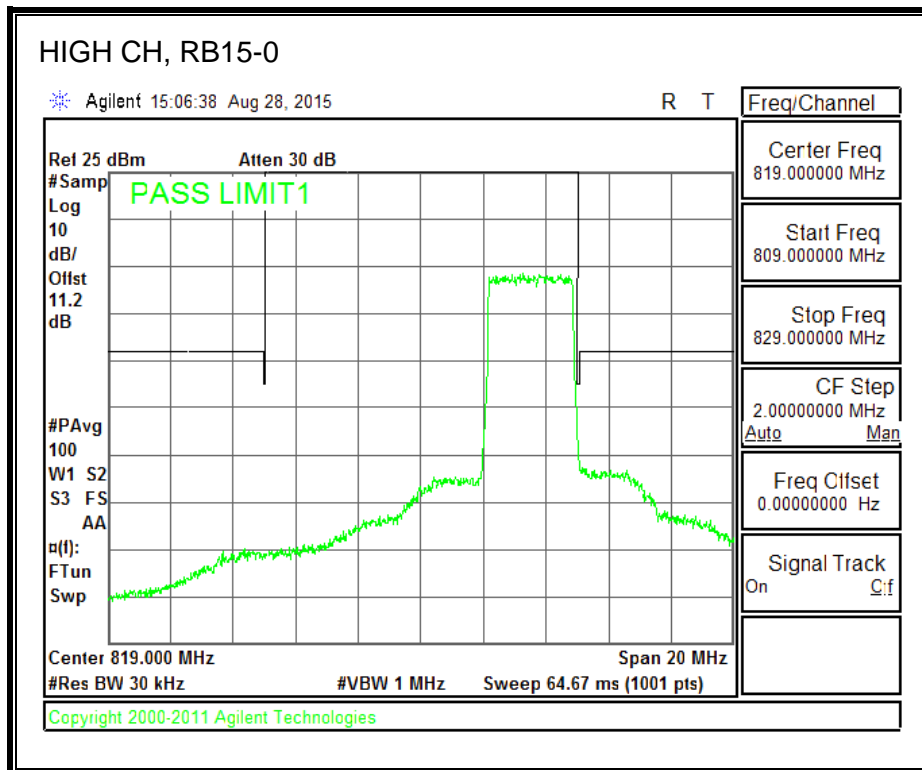
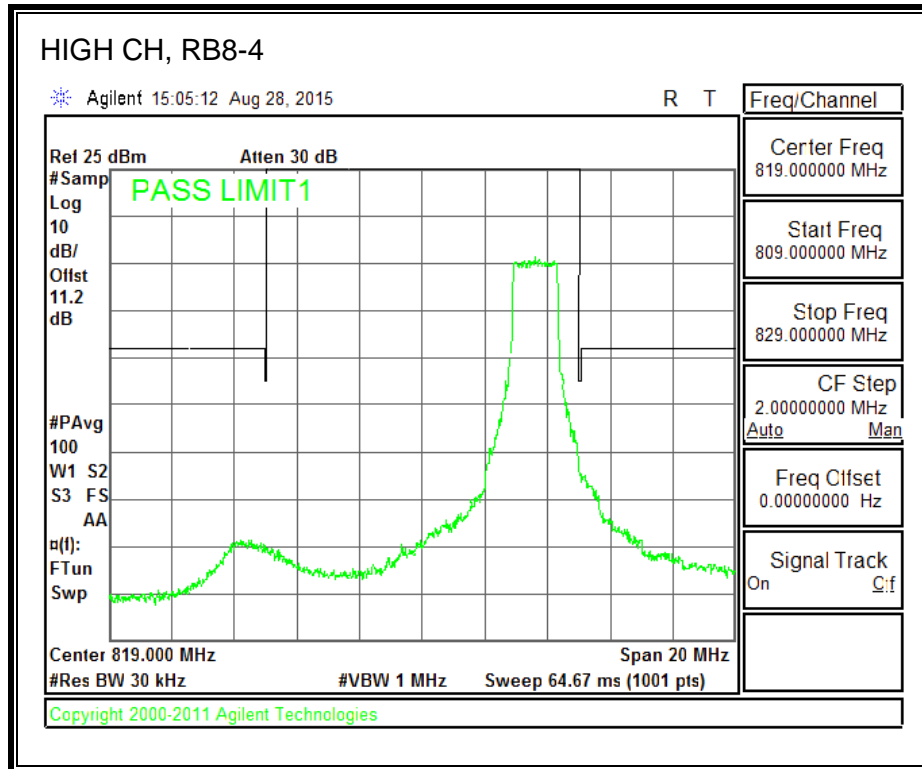




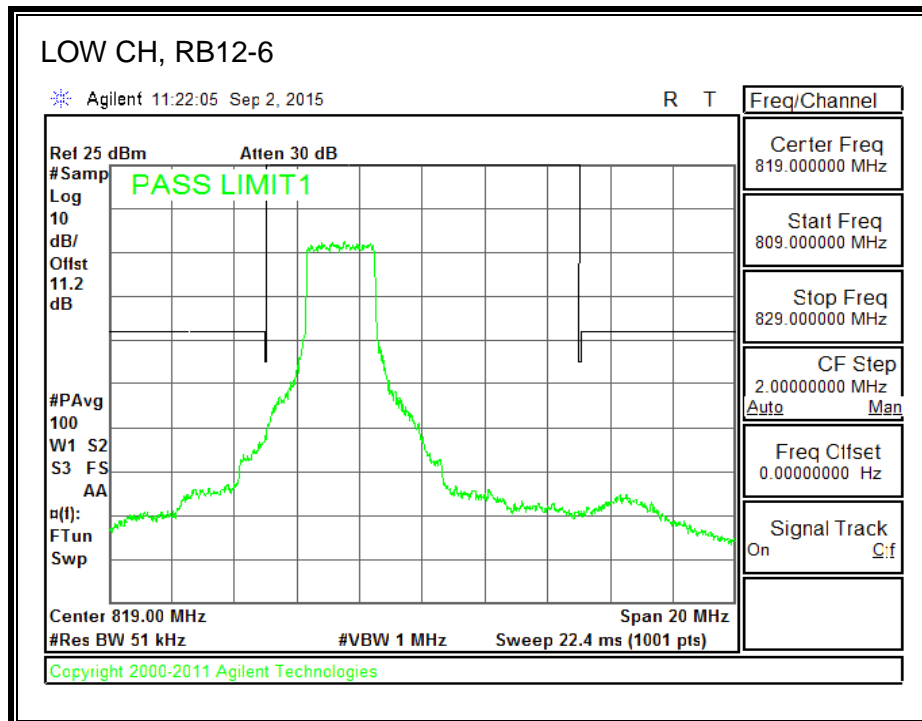
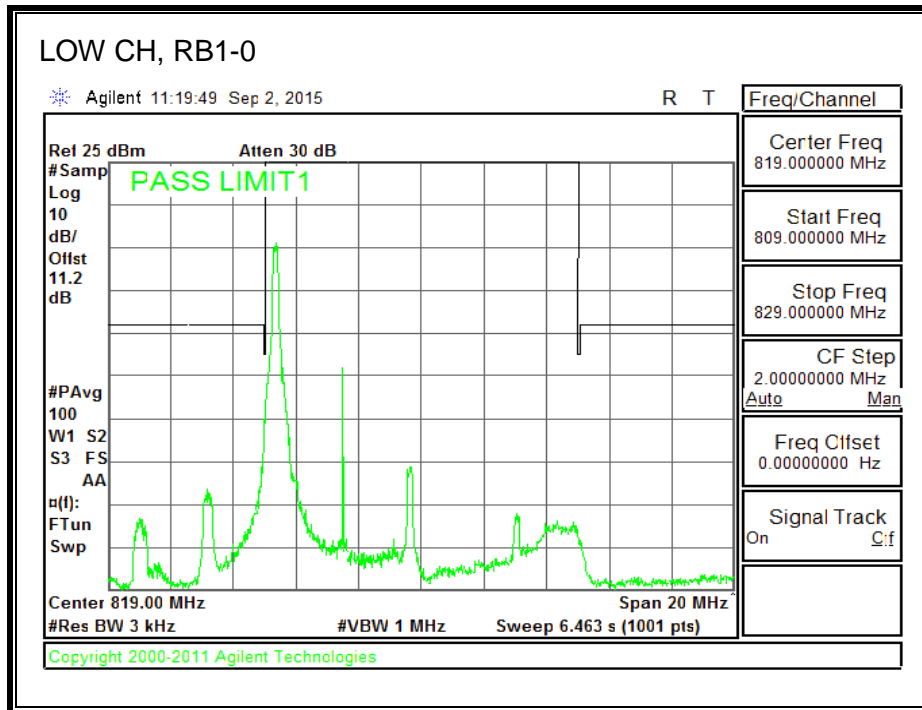
16QAM, (3.0 MHz BAND WIDTH)

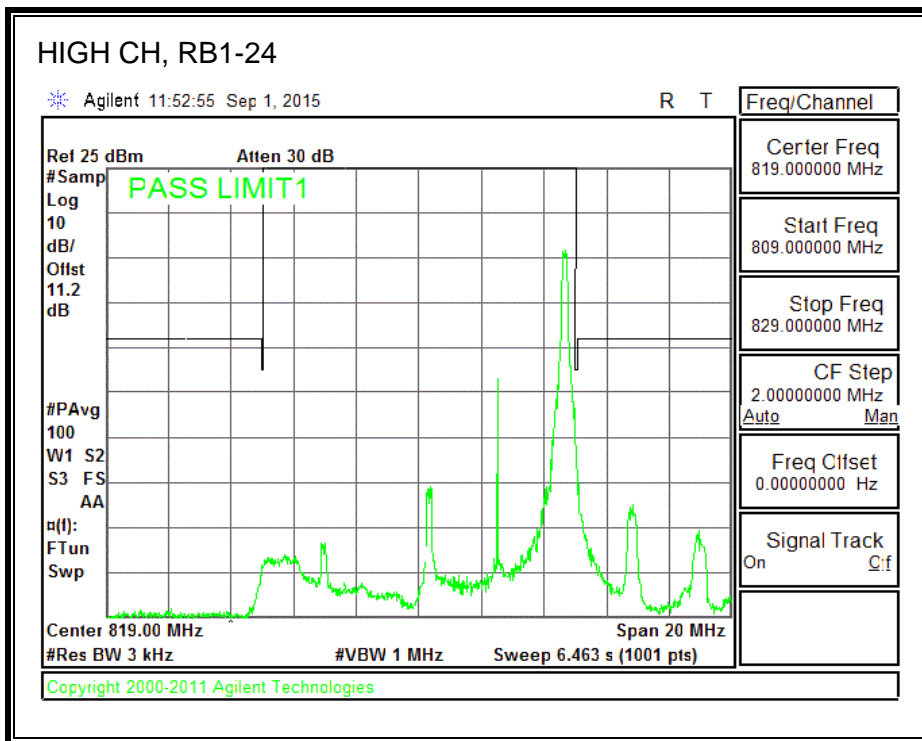
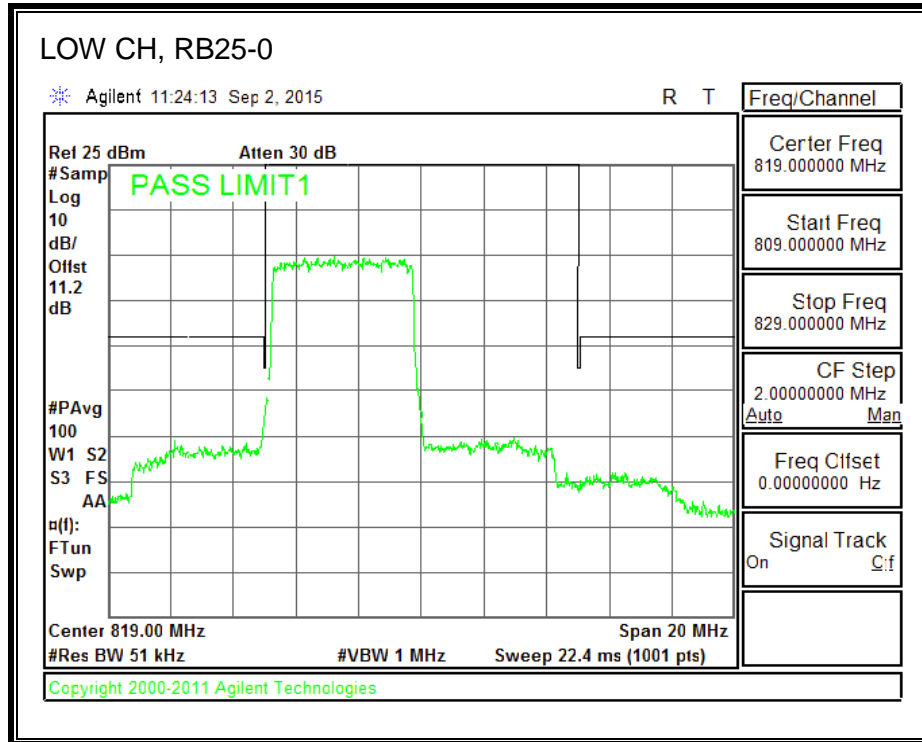


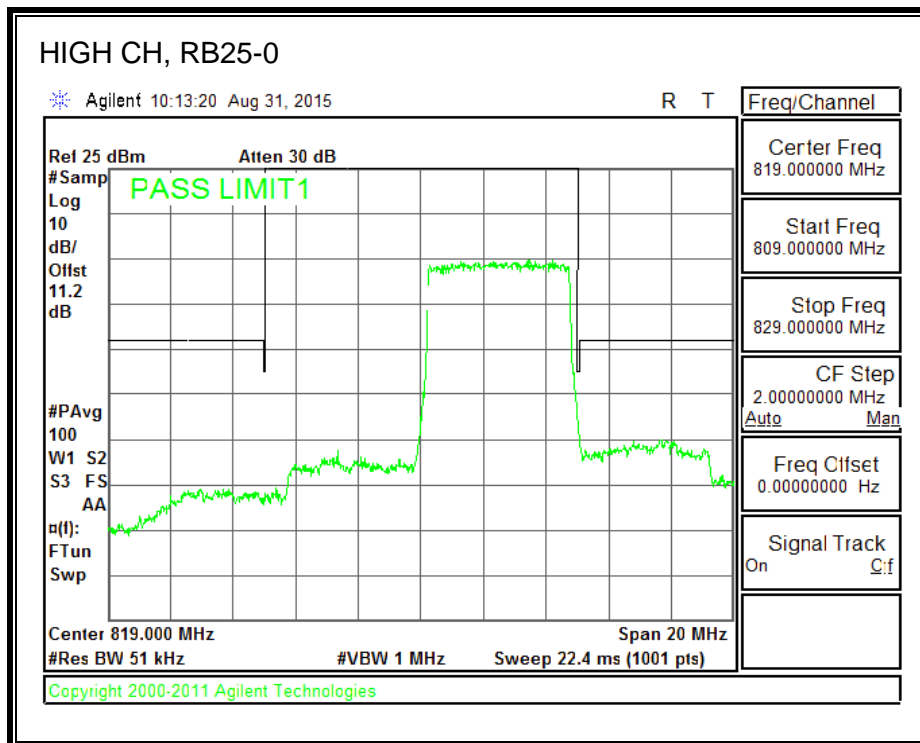
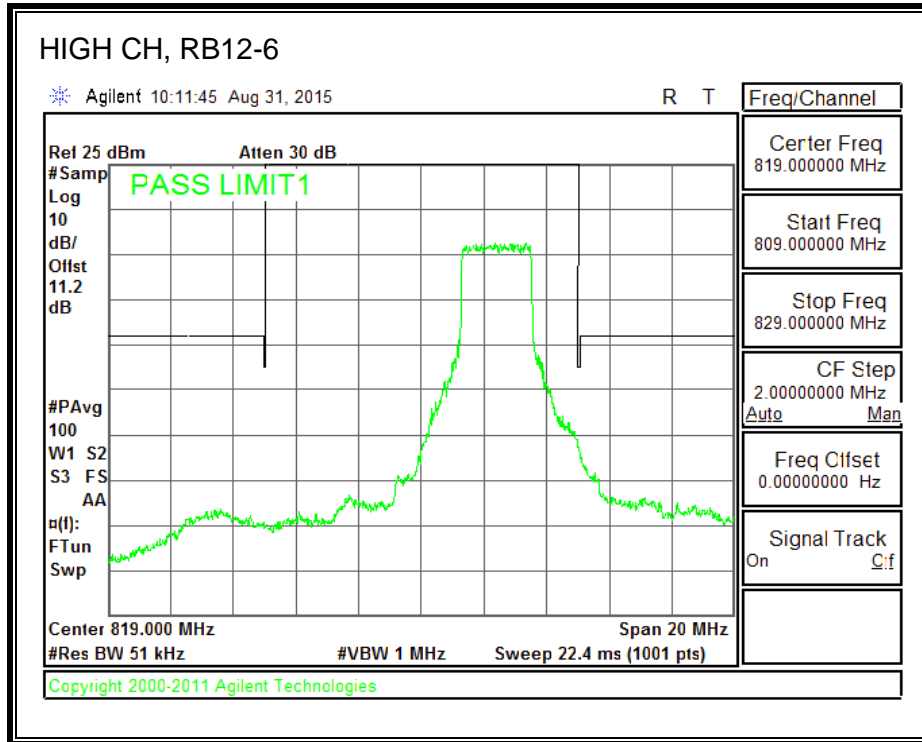




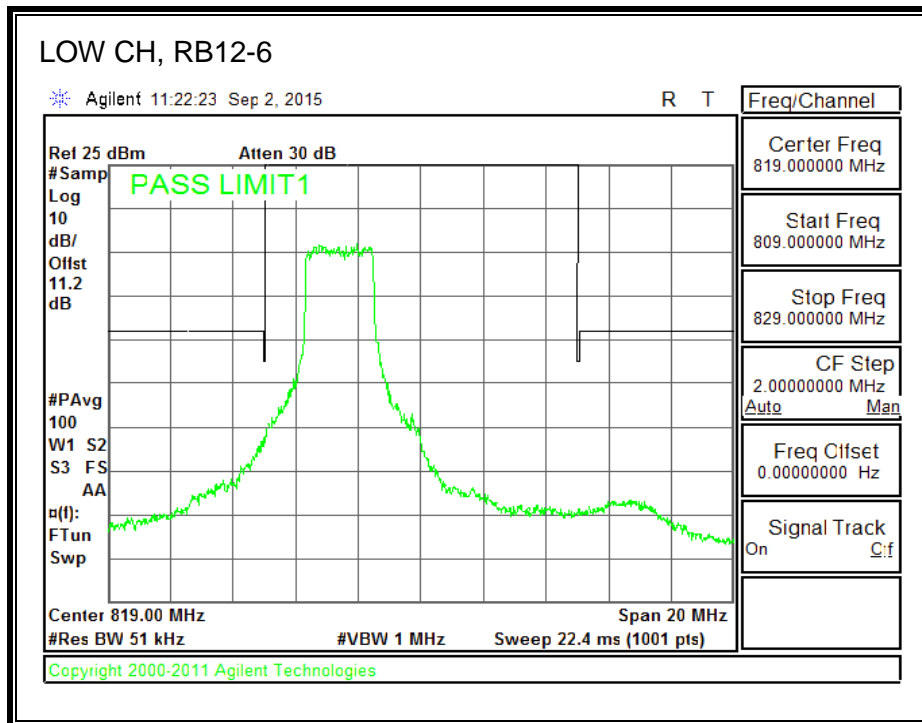
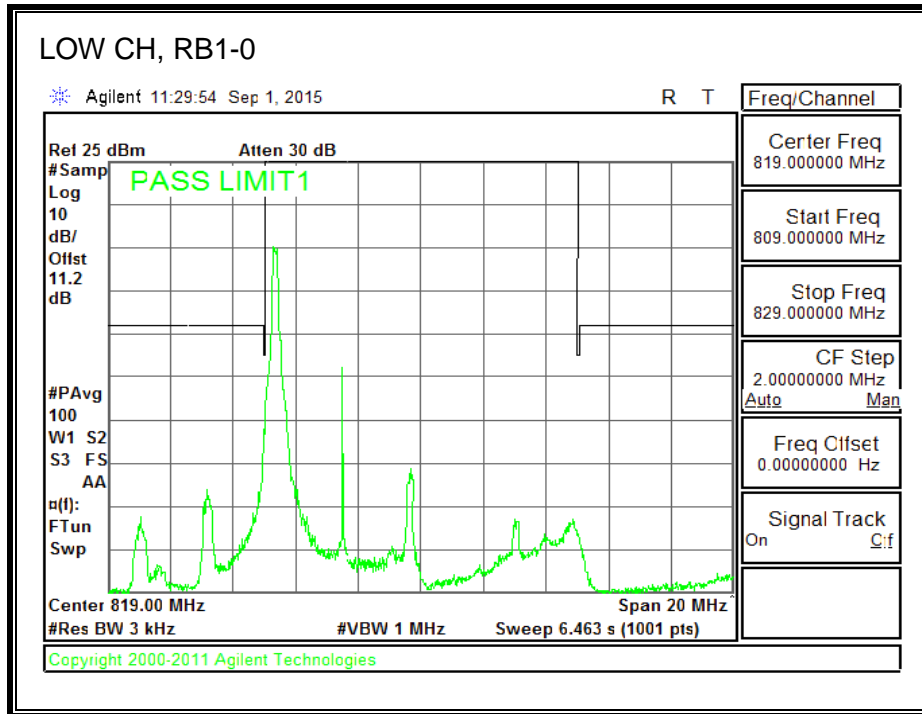
QPSK, (5.0 MHz BAND WIDTH)

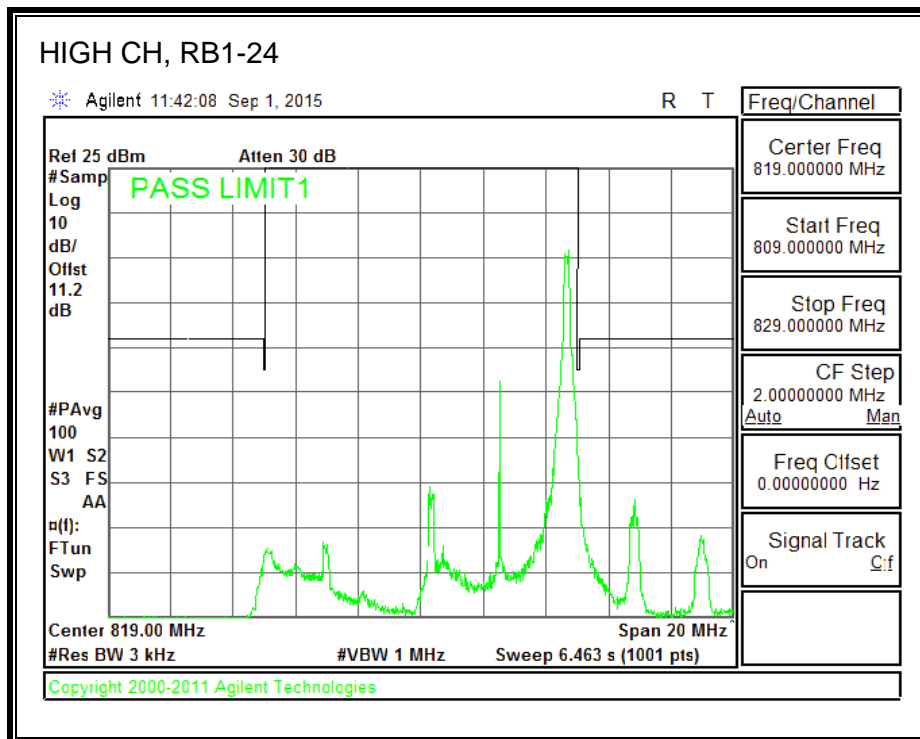
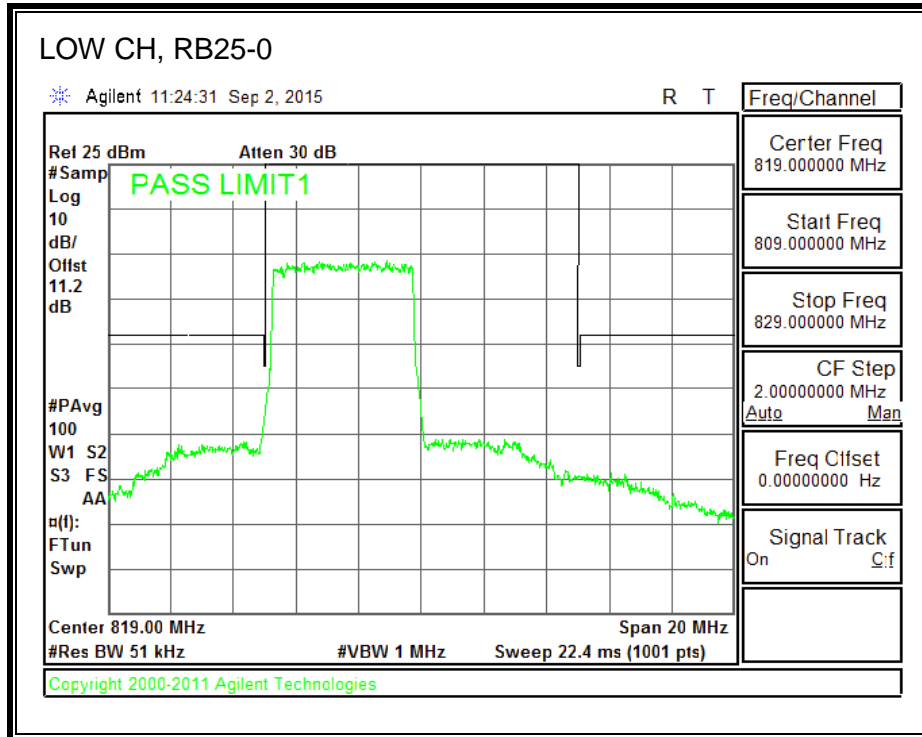


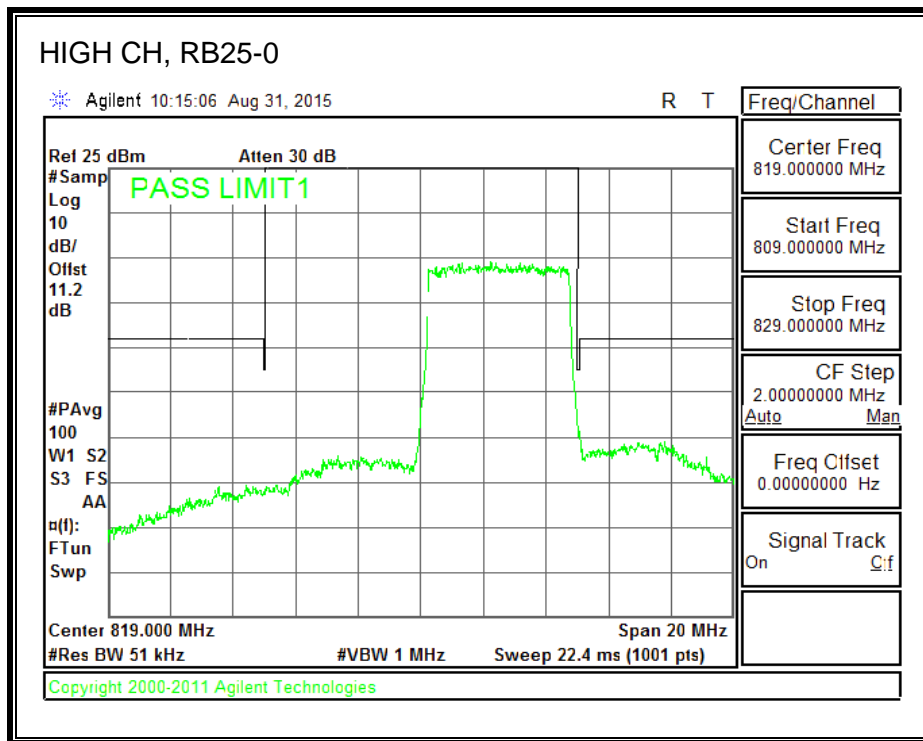
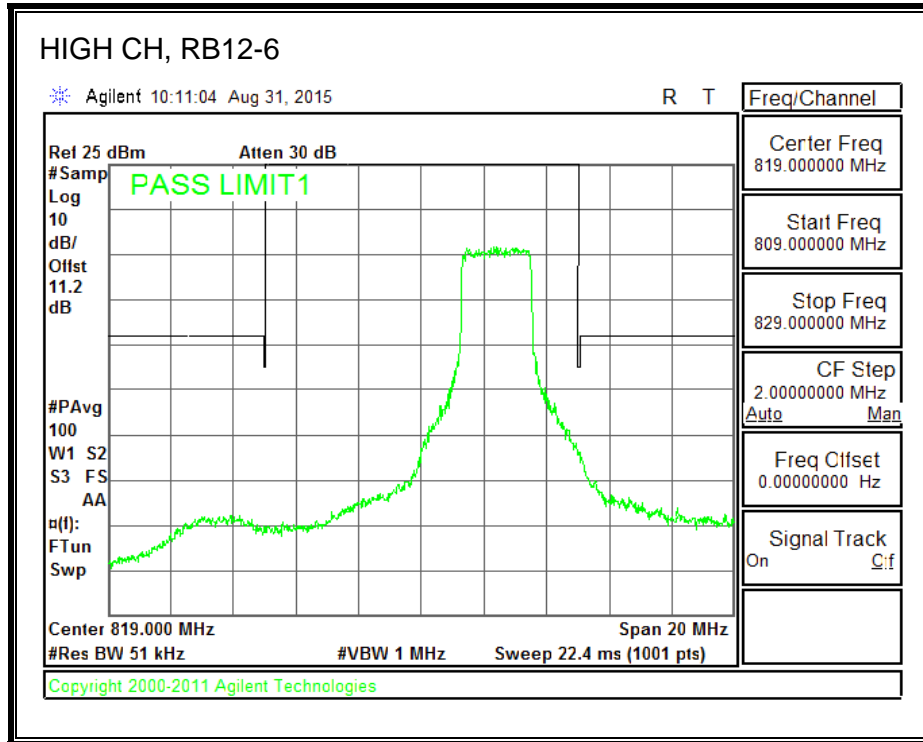




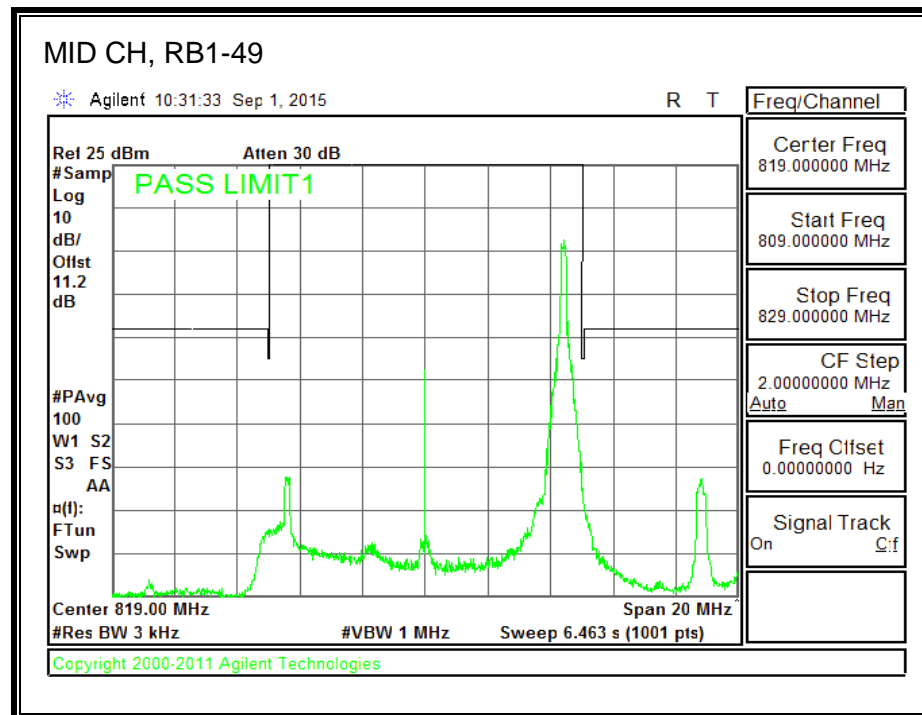
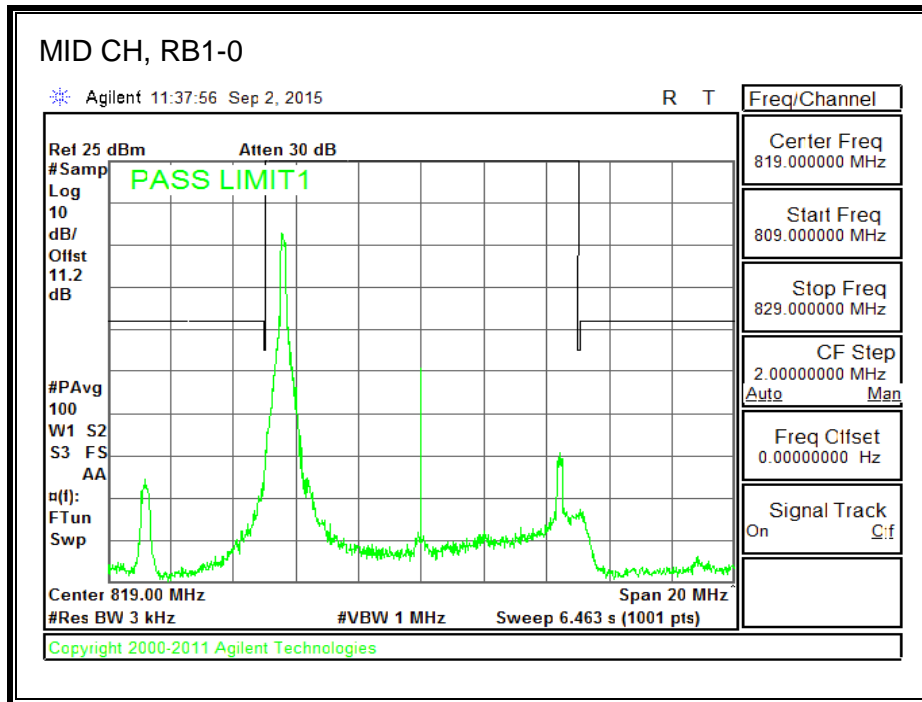
16QAM, (5.0 MHz BAND WIDTH)

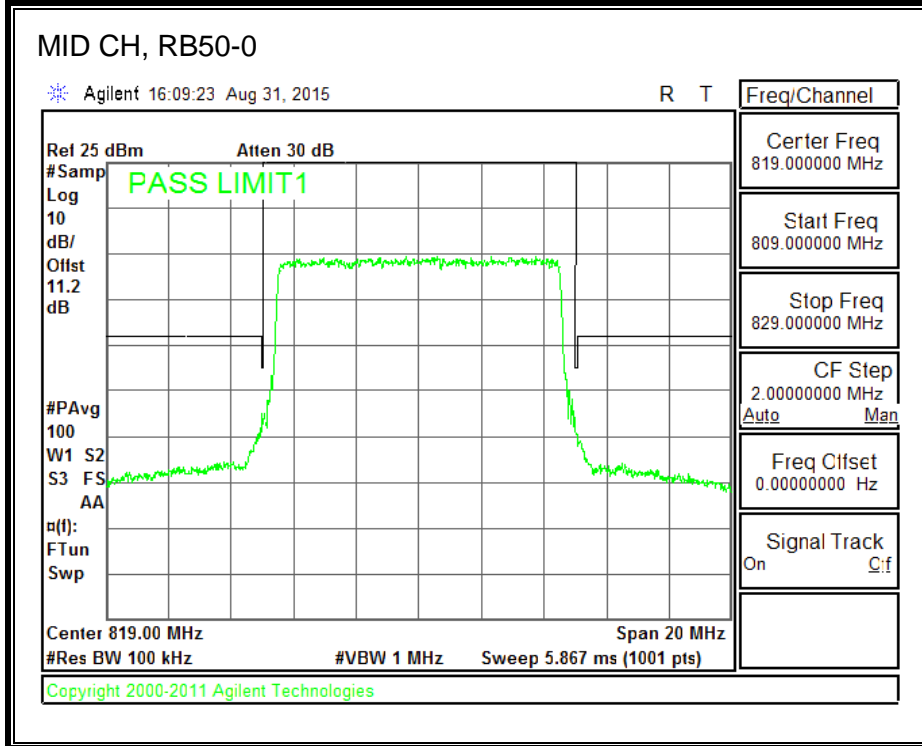
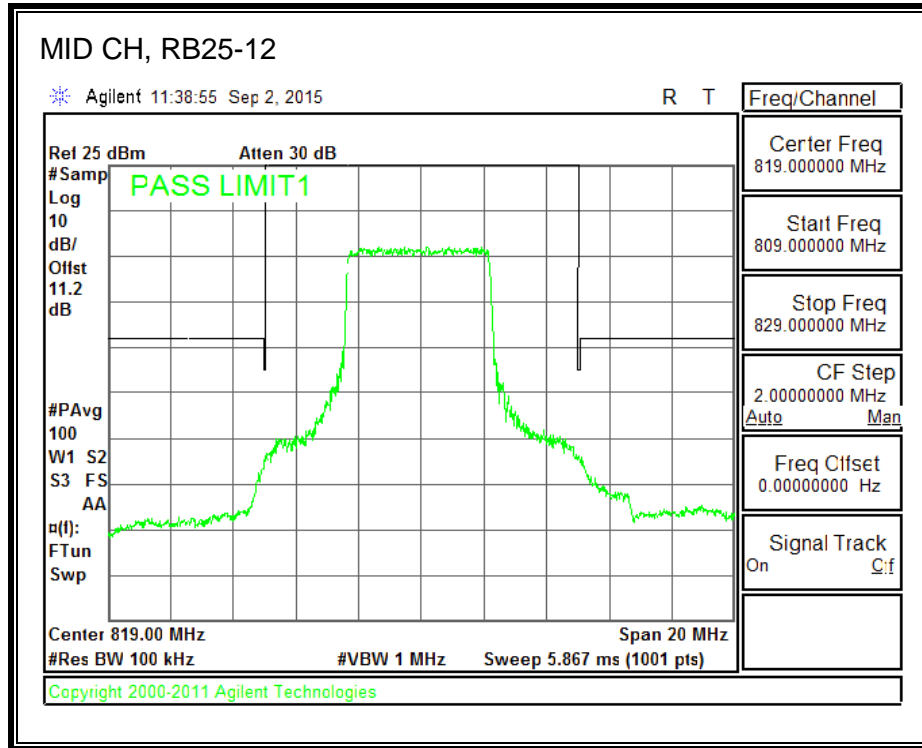




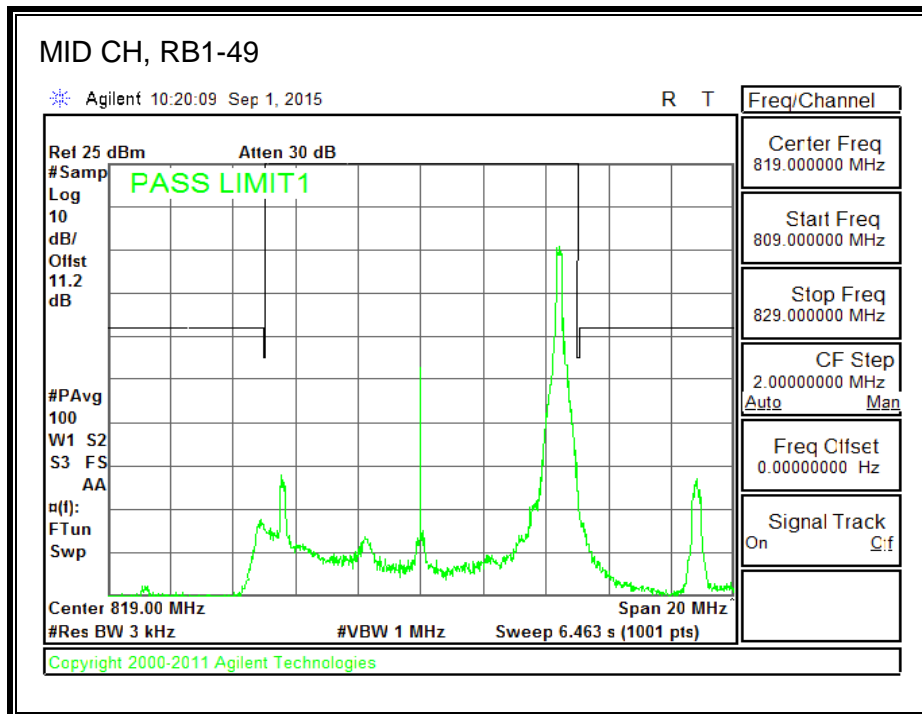
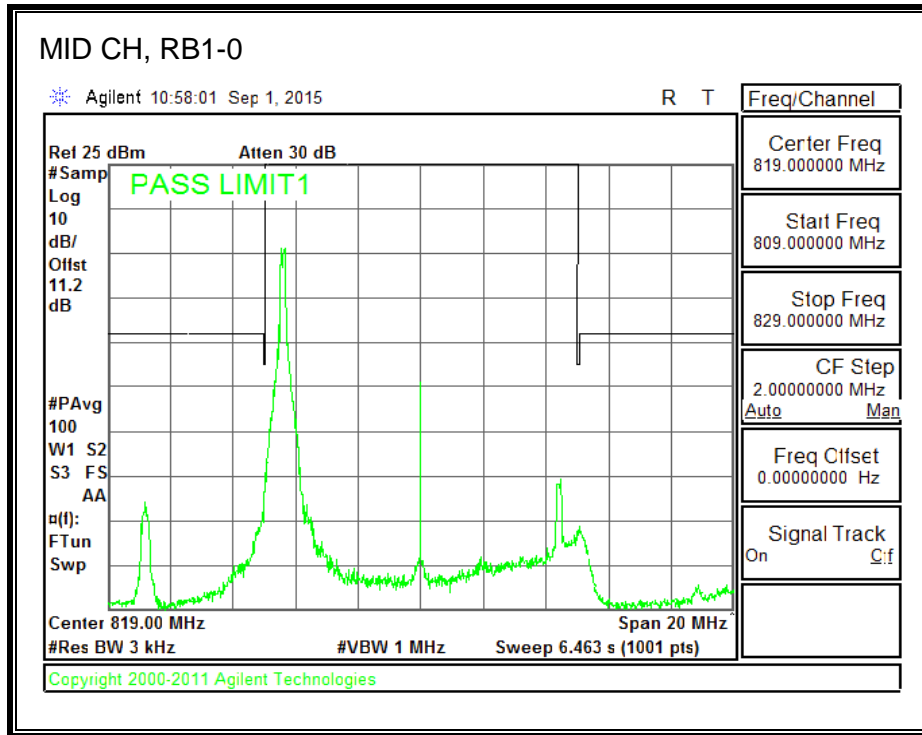


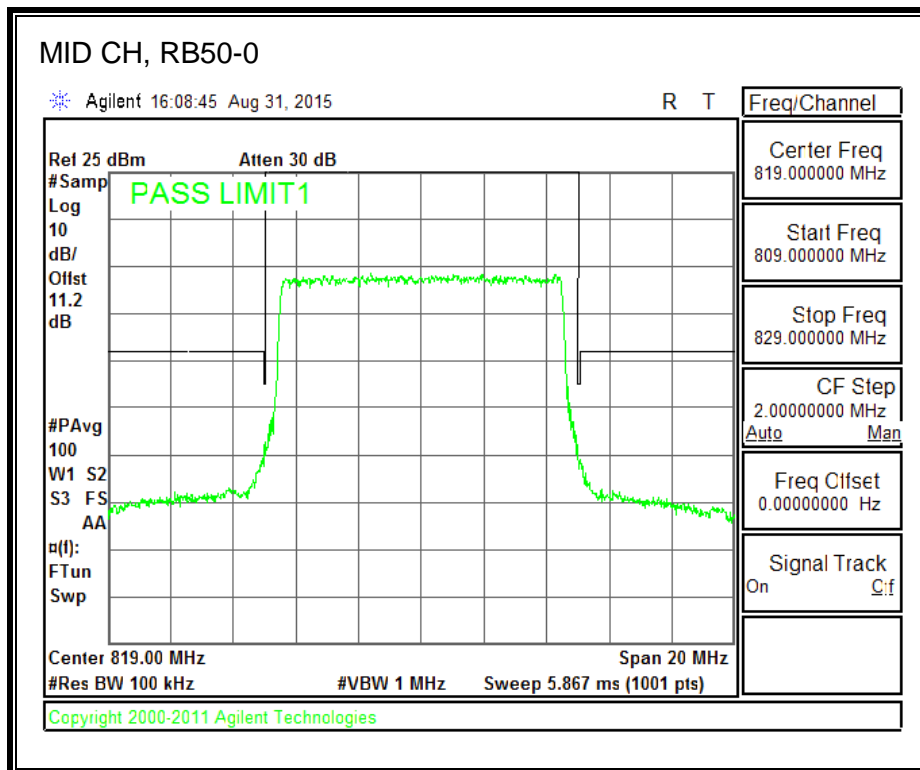
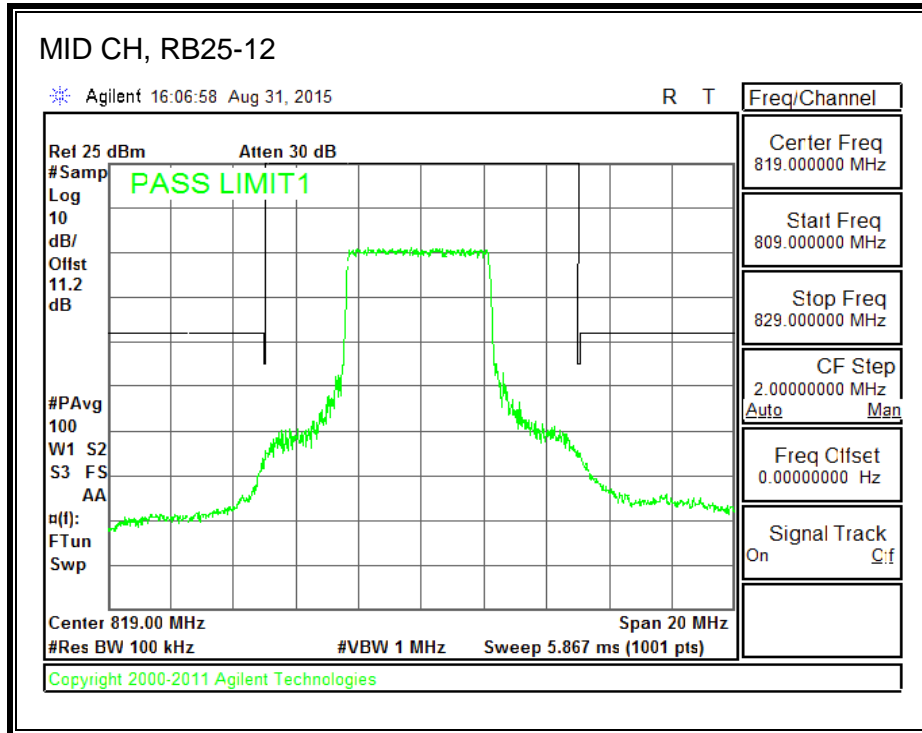
QPSK, (10.0 MHz BAND WIDTH)





16QAM, (10.0 MHz BAND WIDTH)





8.3. 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:

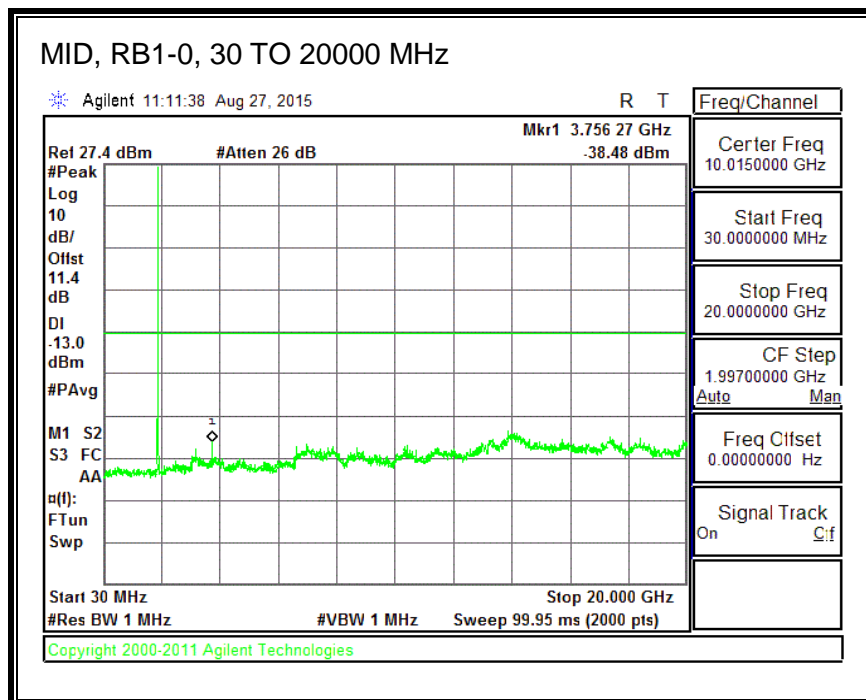
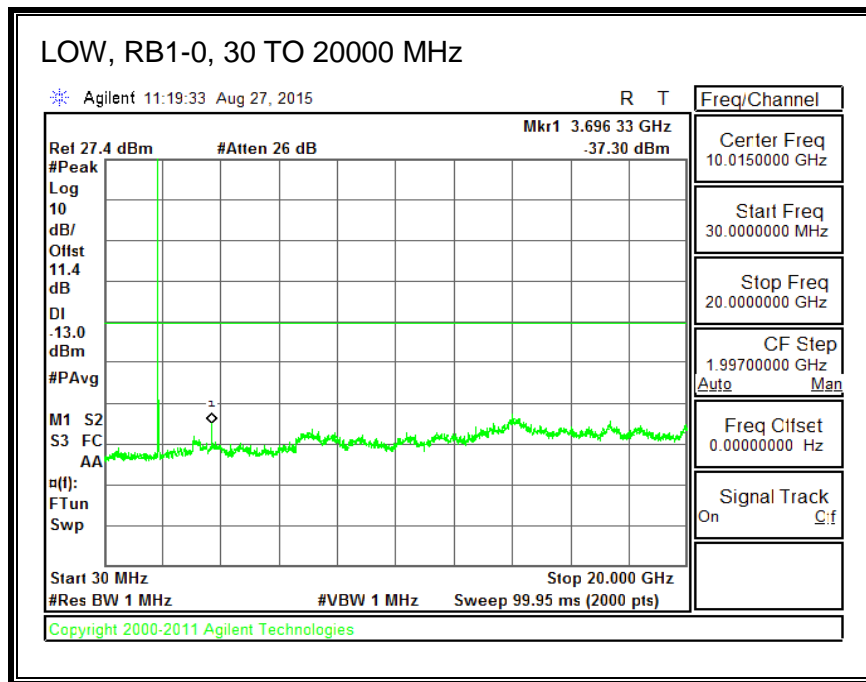
- Set display line at -13 dBm
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.

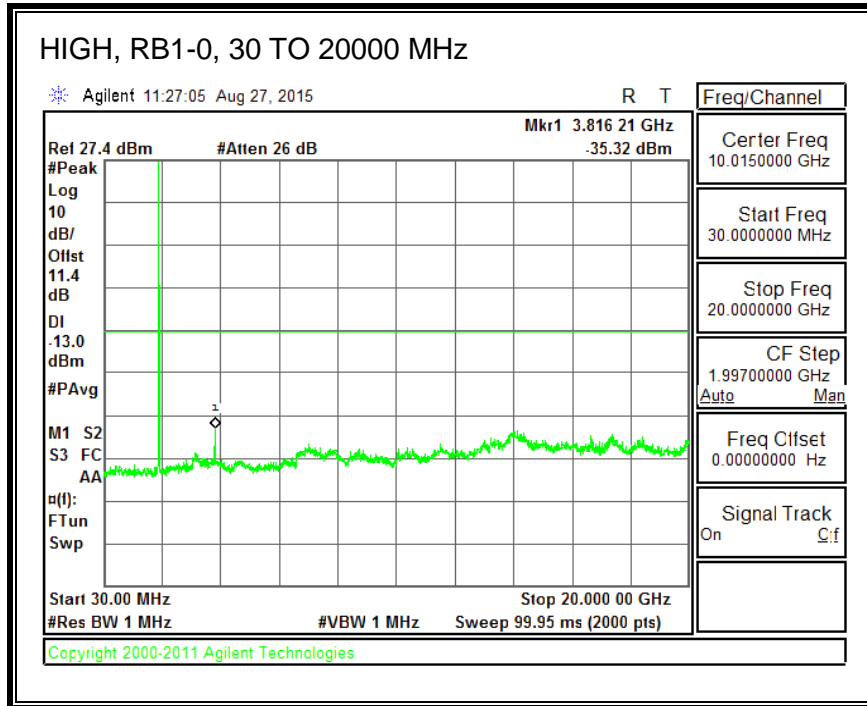
MODES TESTED

- LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 12
- LTE Band 13
- LTE Band 17
- LTE Band 25
- LTE Band 26

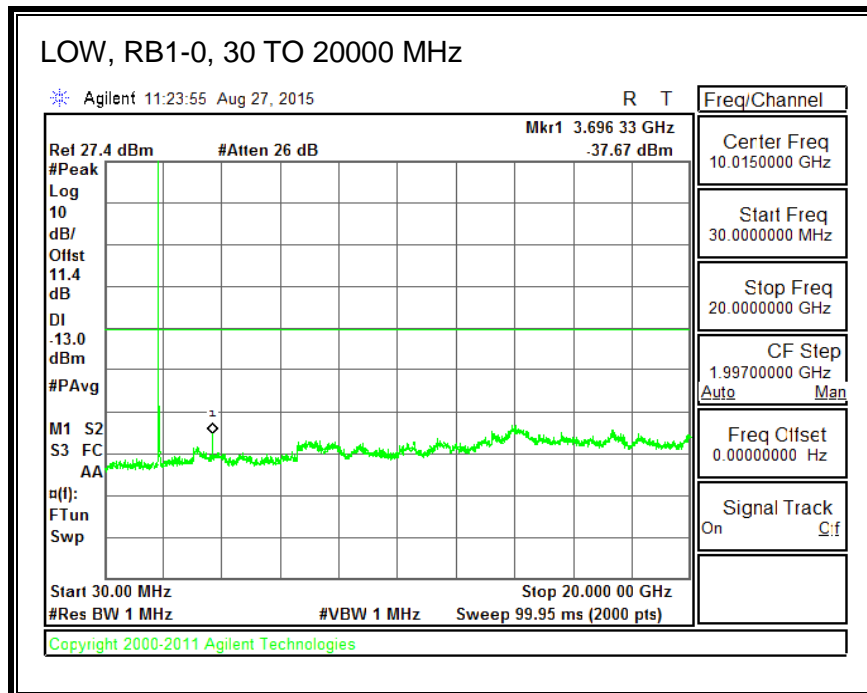
8.3.1. LTE BAND 2

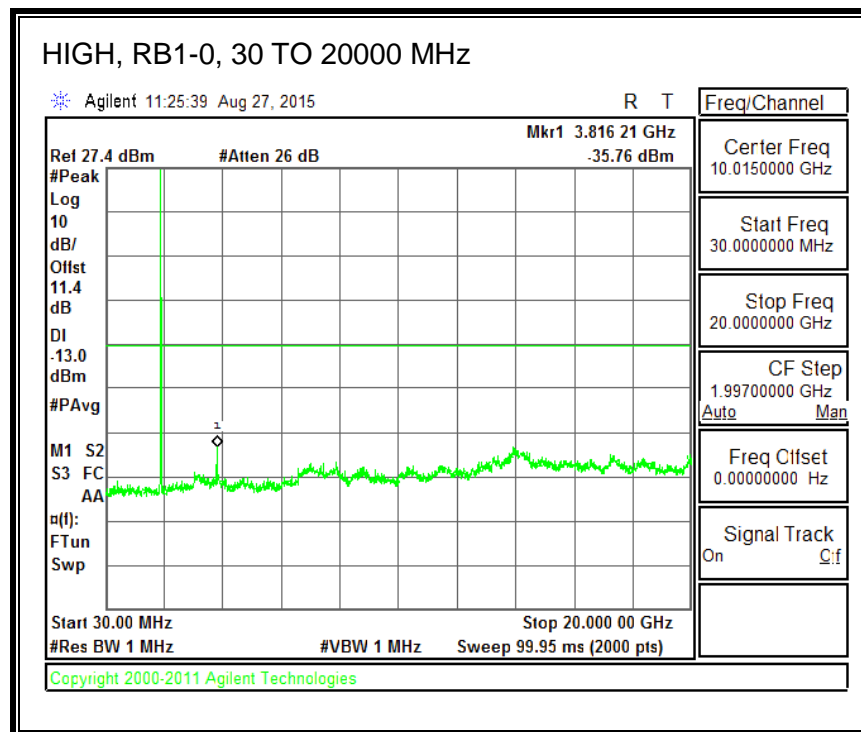
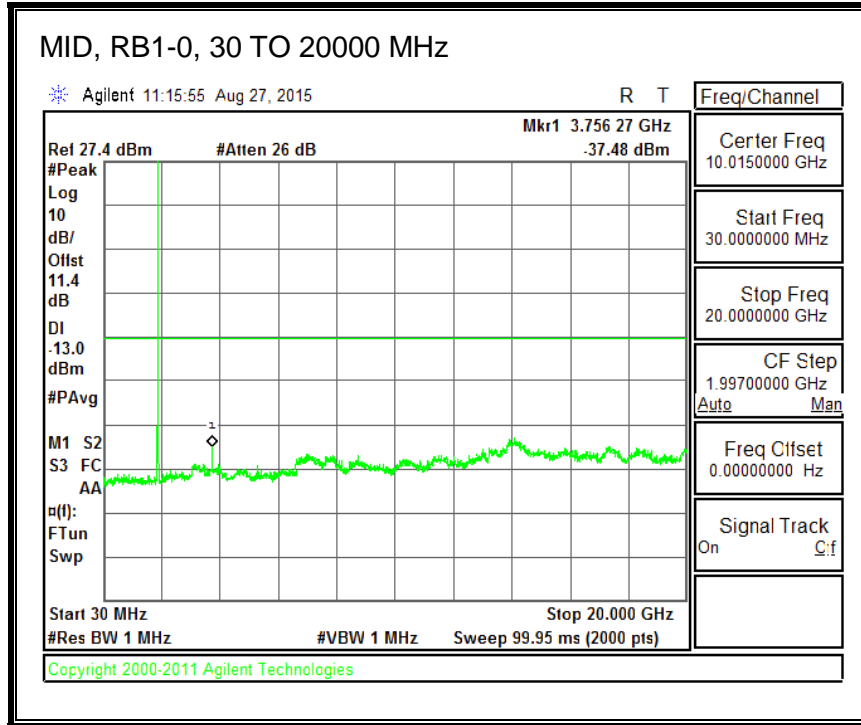
QPSK, (1.4 MHz BAND WIDTH)



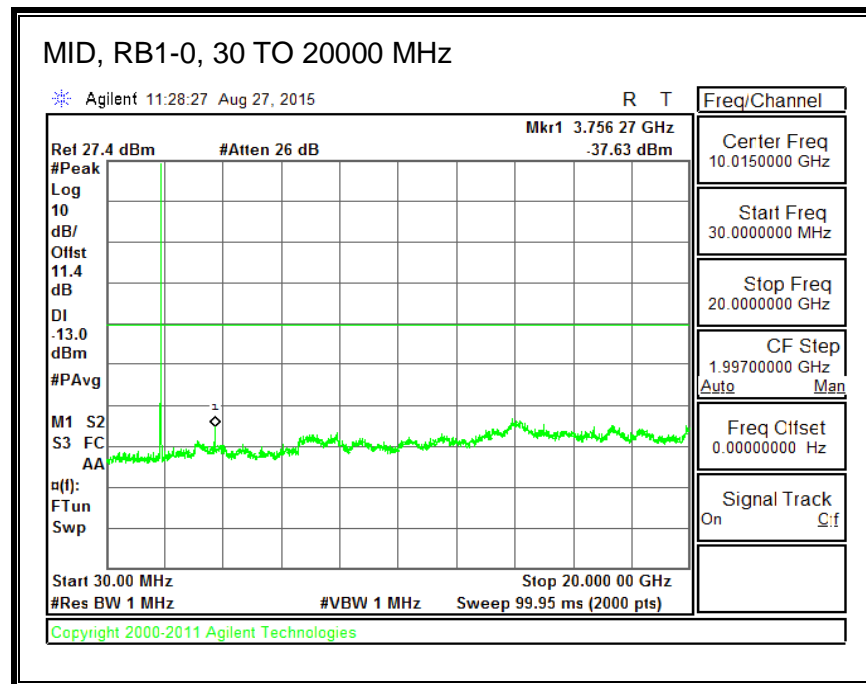
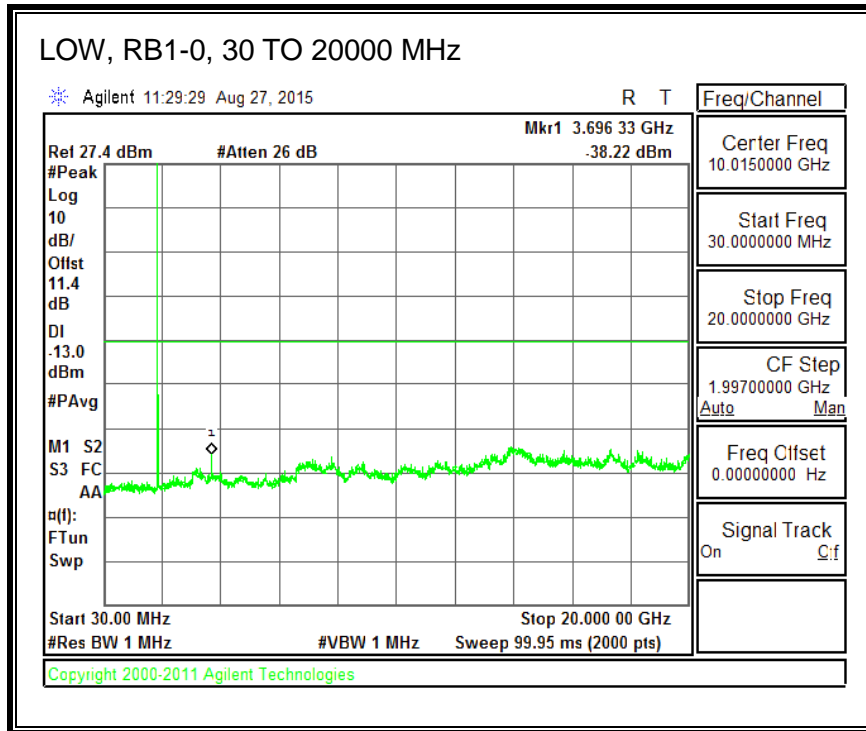


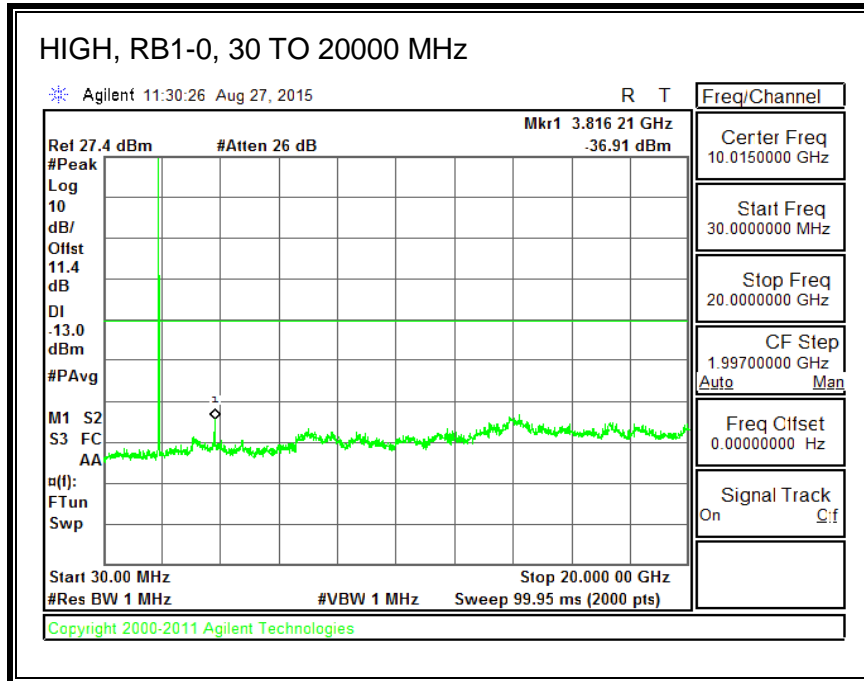
16QAM, (1.4 MHz BAND WIDTH)



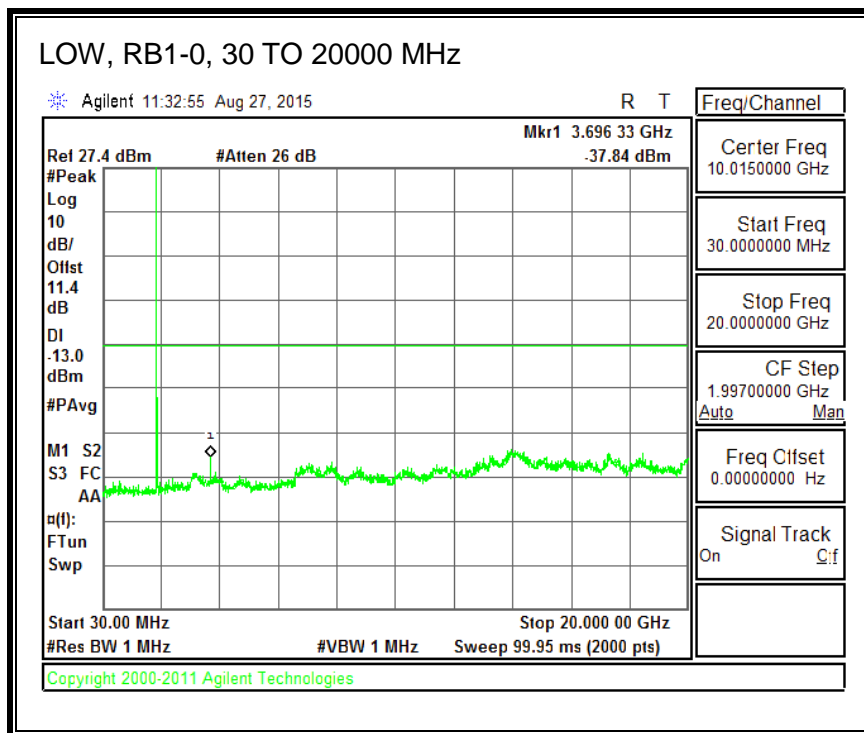


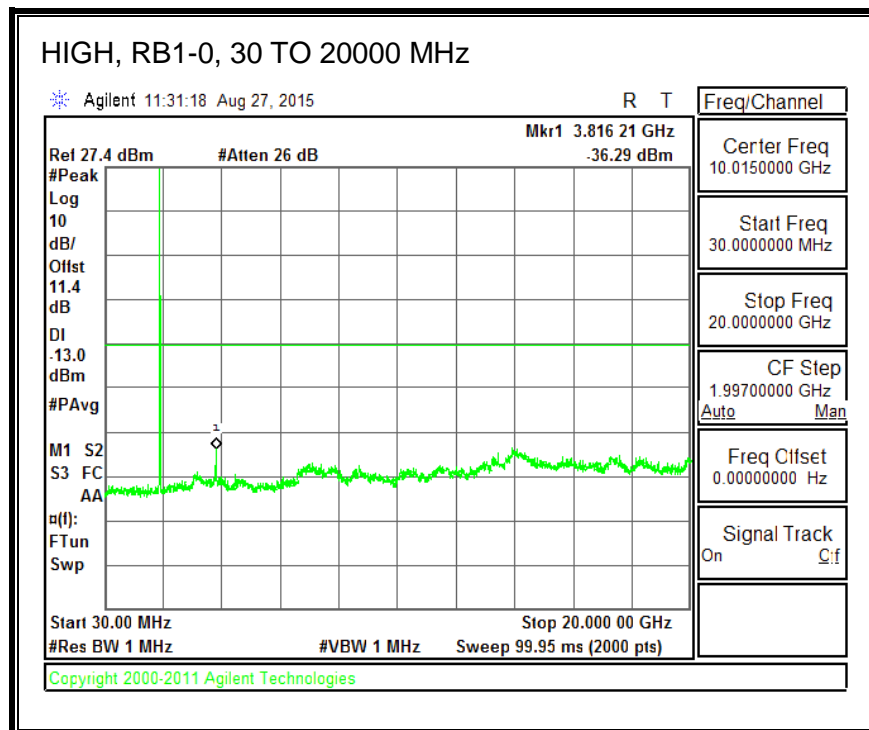
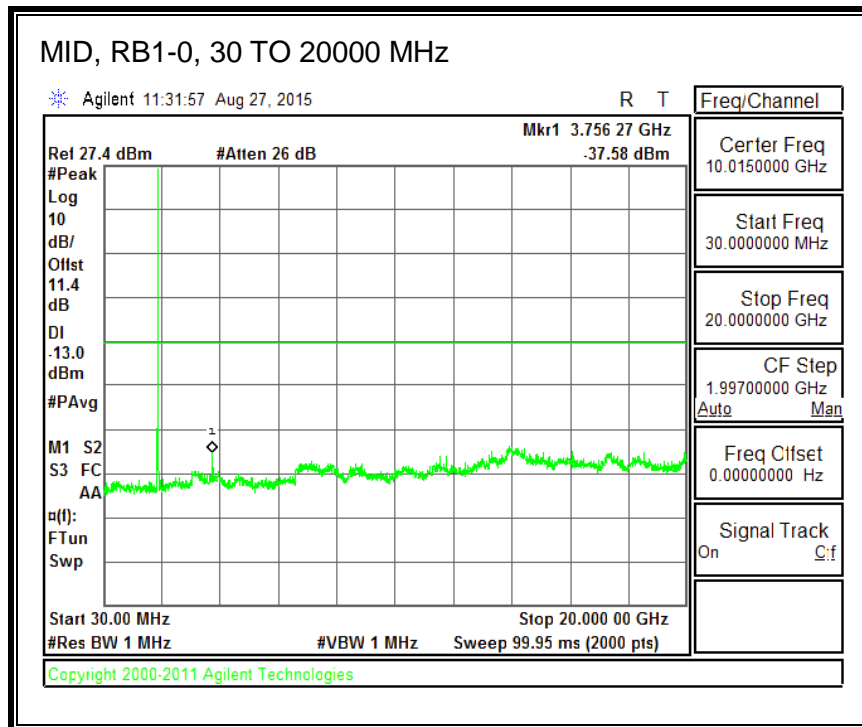
QPSK, (3.0 MHz BAND WIDTH)



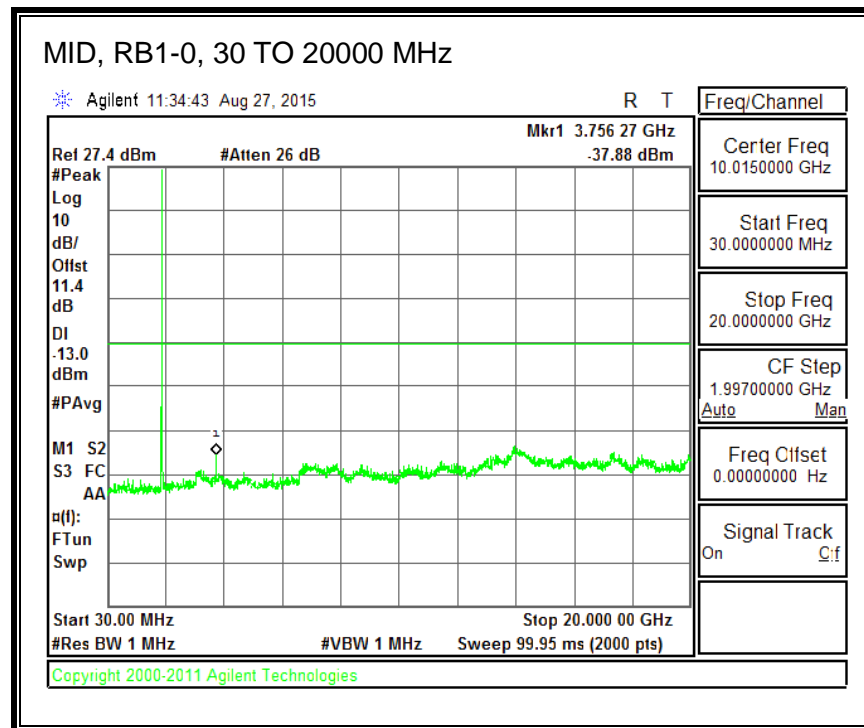
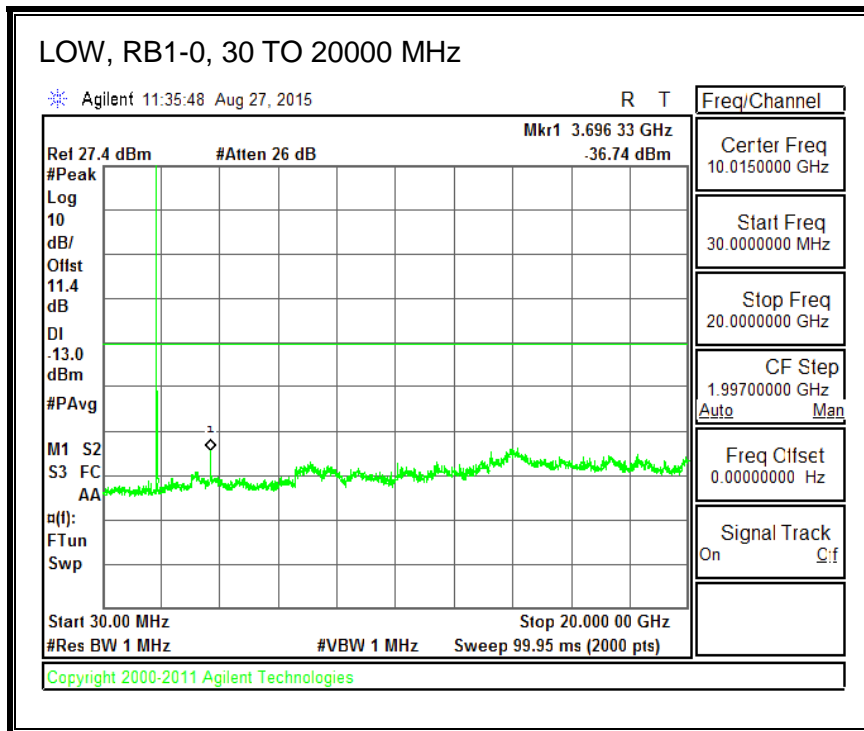


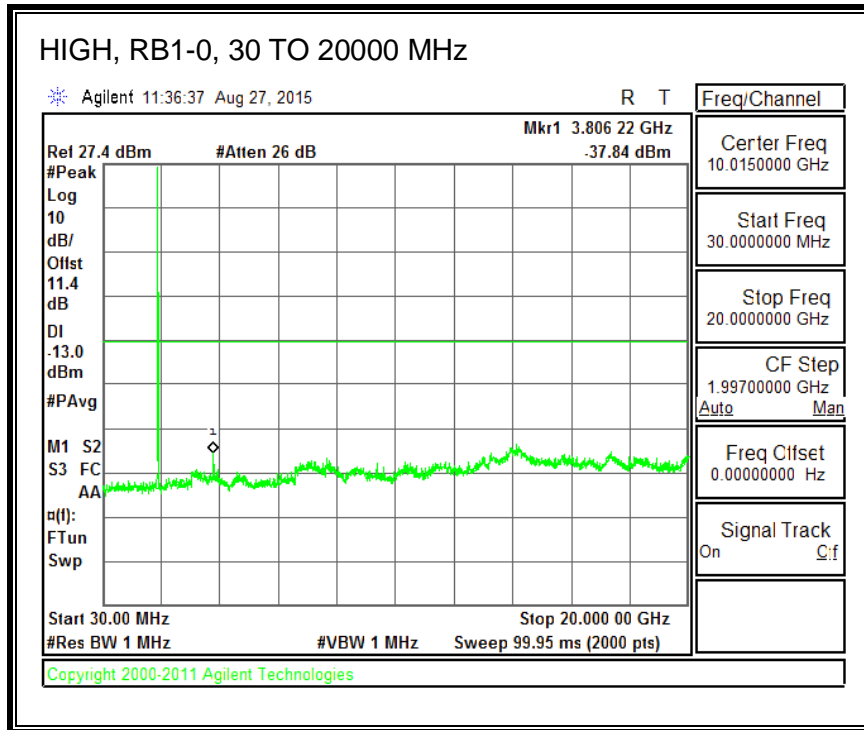
16QAM, (3.0 MHz BAND WIDTH)



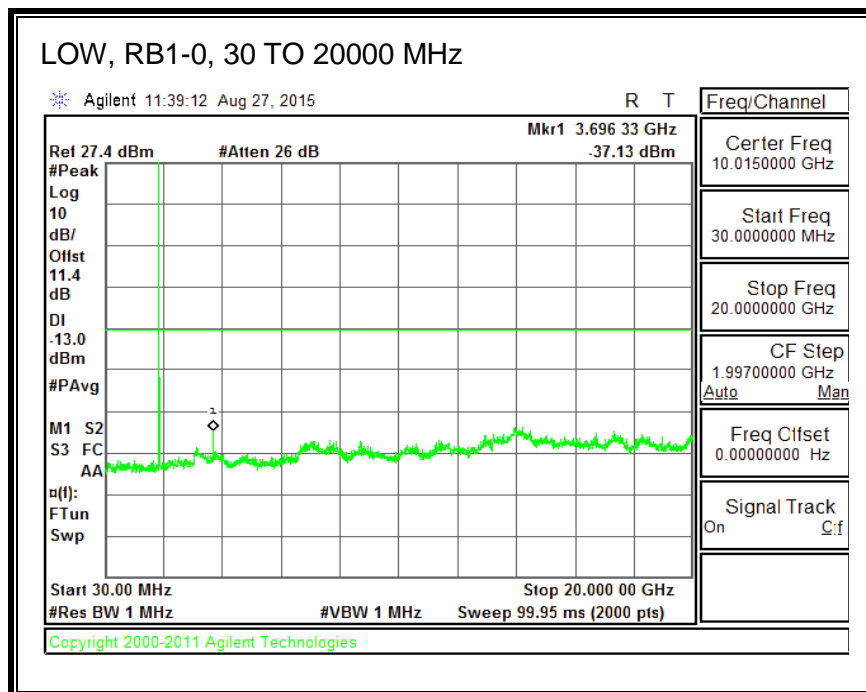


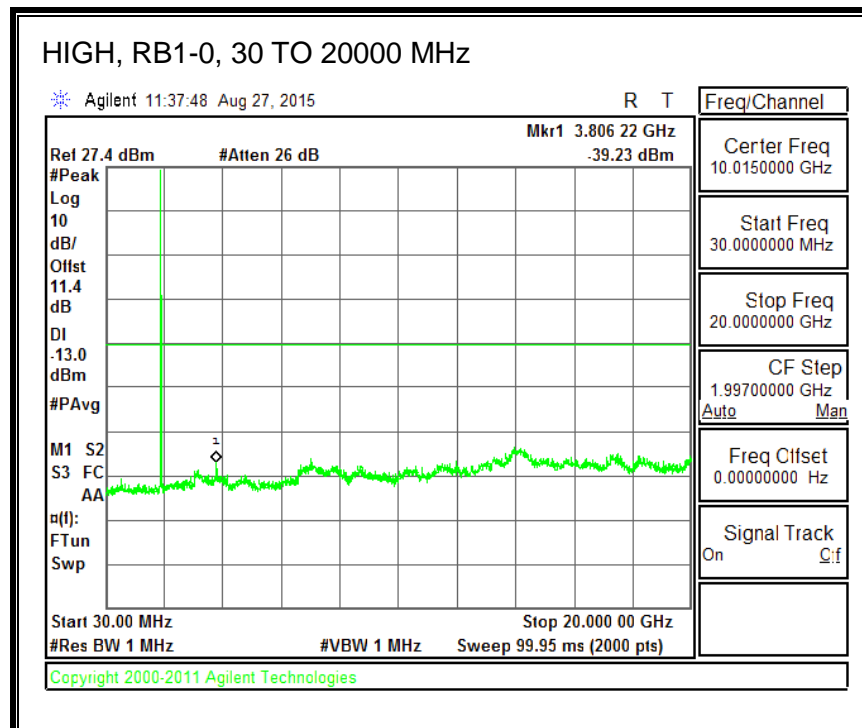
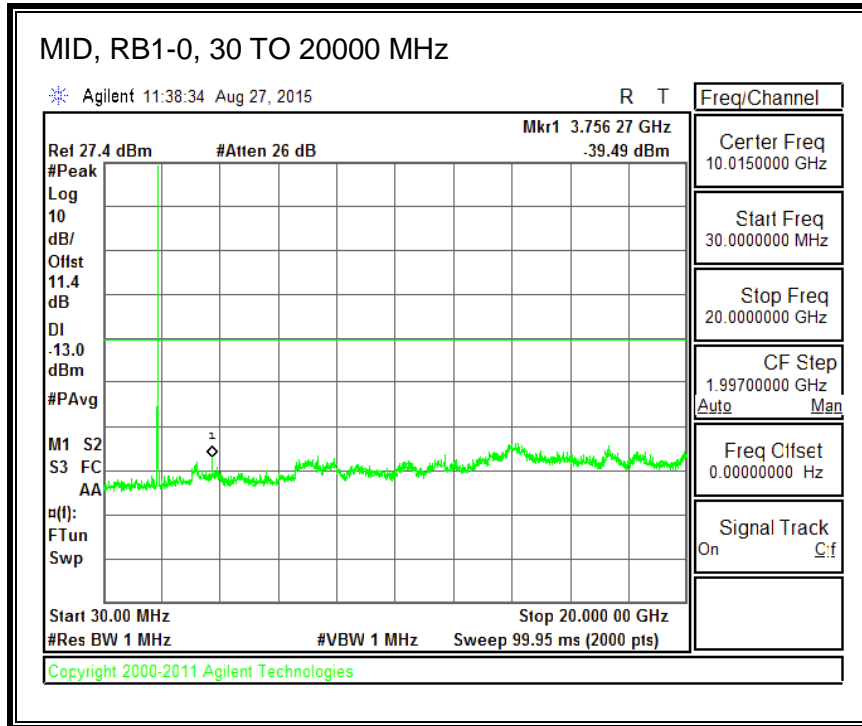
QPSK, (5.0 MHz BAND WIDTH)



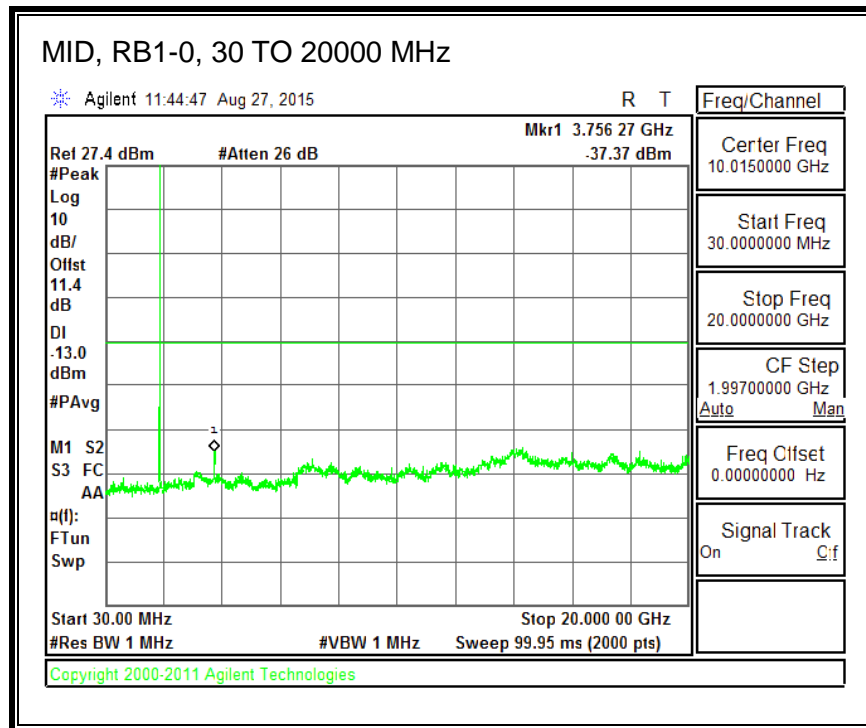
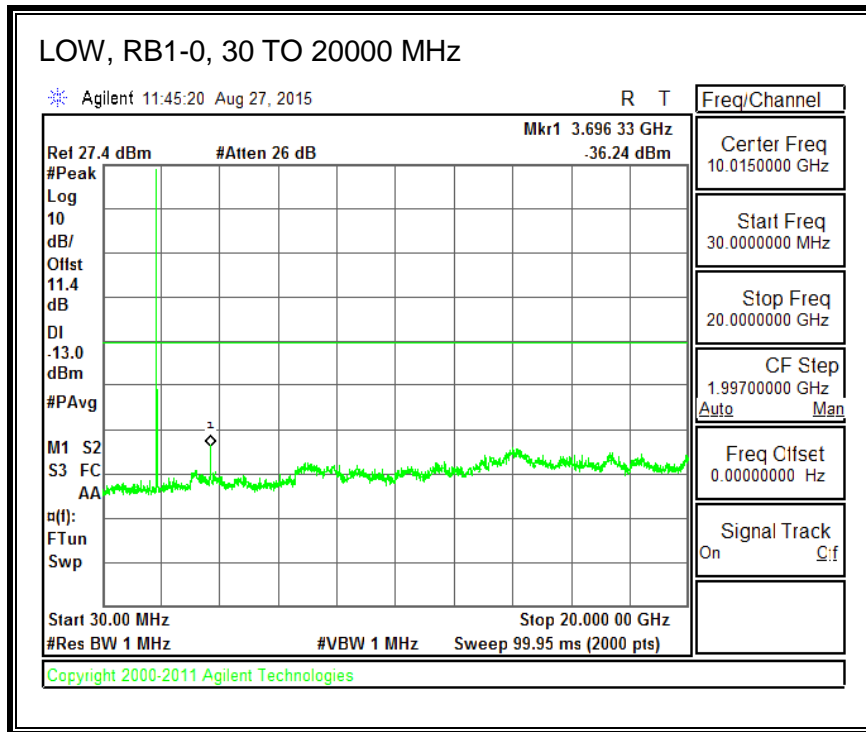


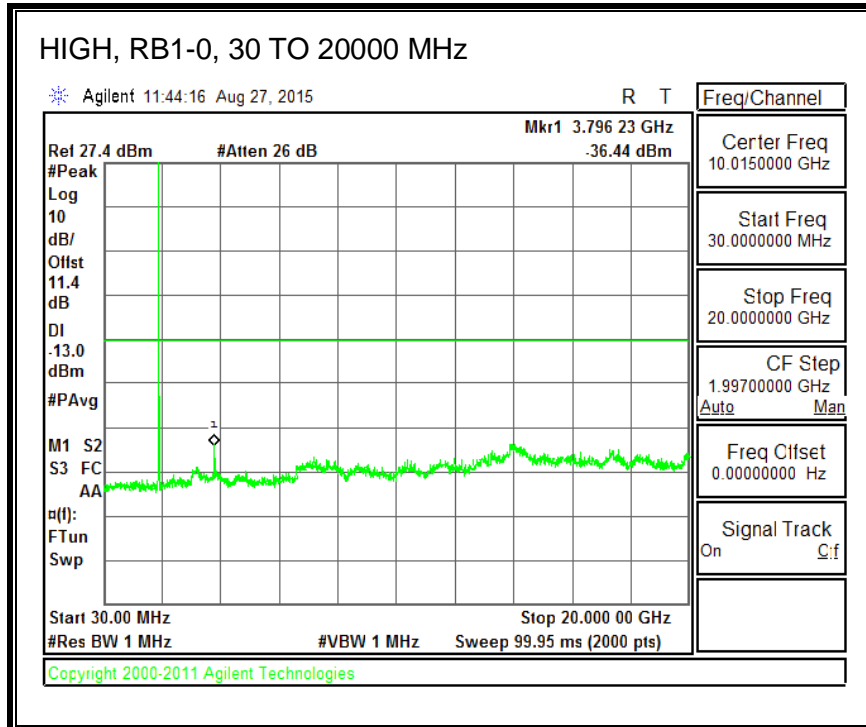
16QAM, (5.0 MHz BAND WIDTH)



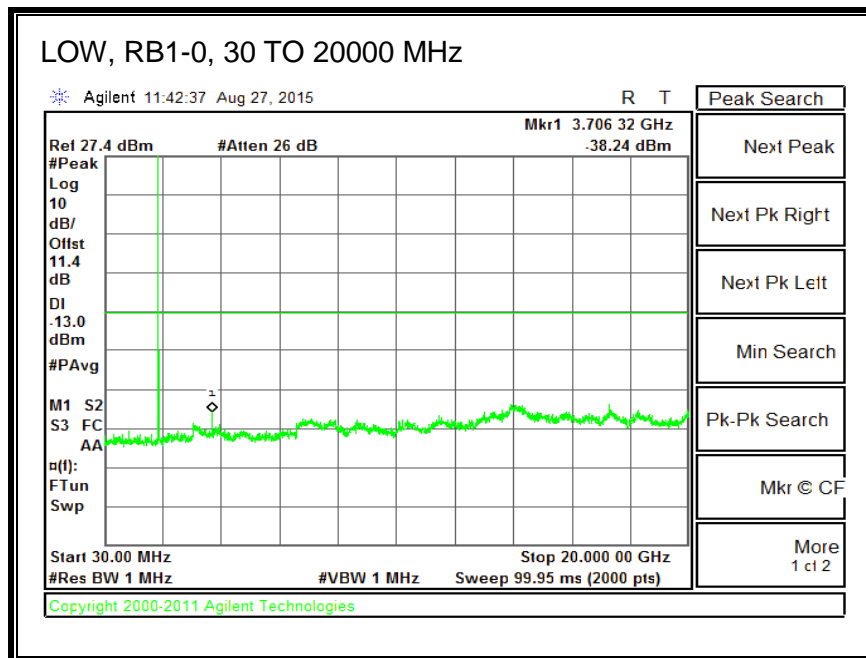


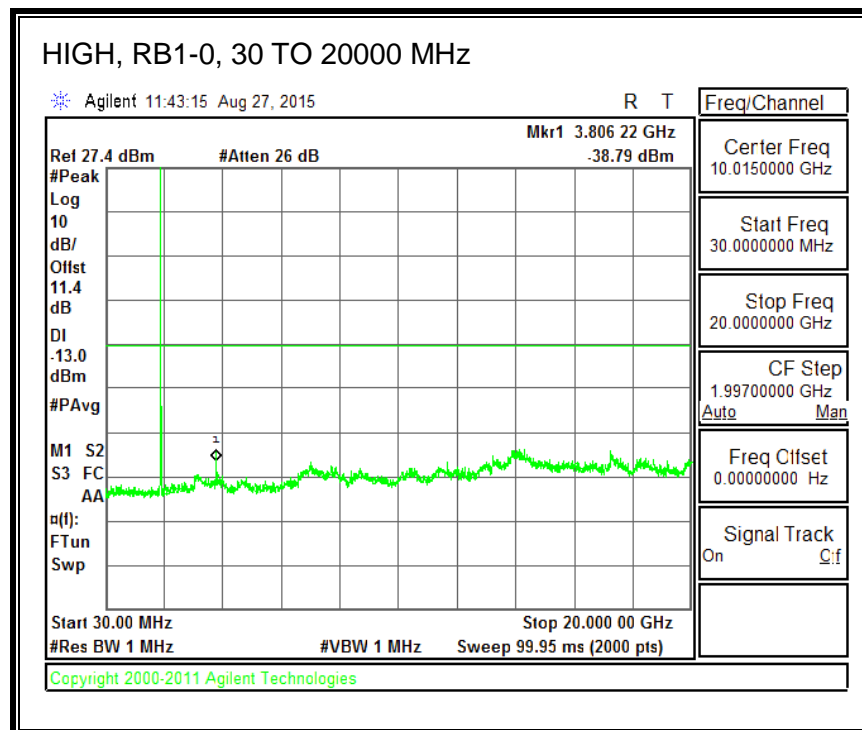
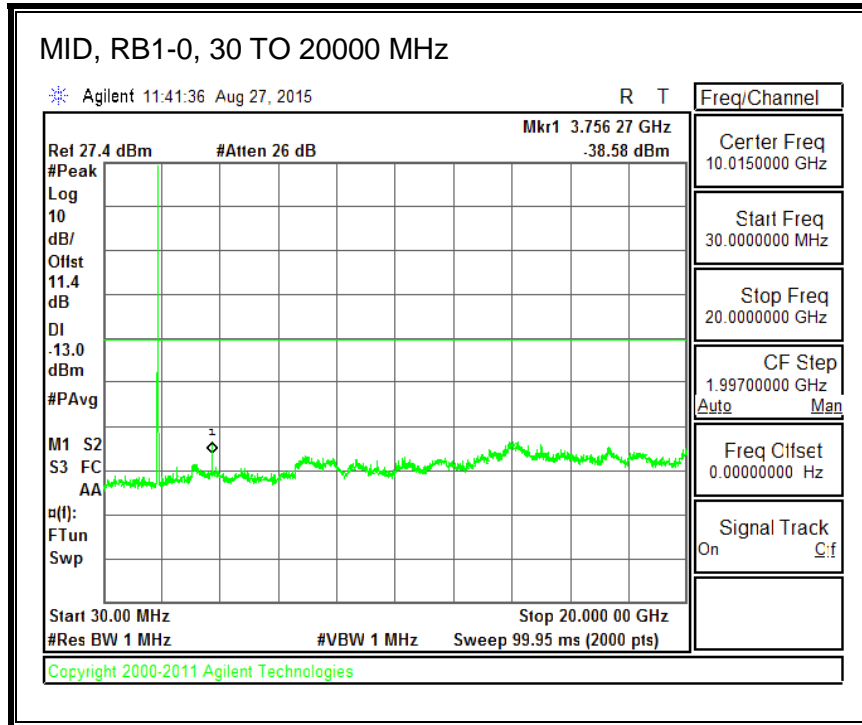
QPSK, (10.0 MHz BAND WIDTH)



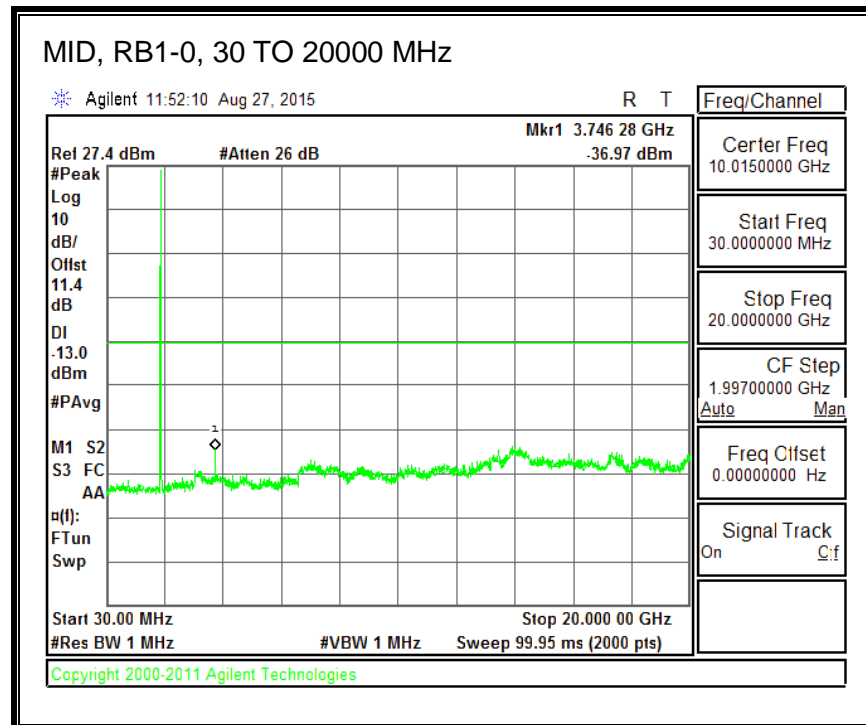
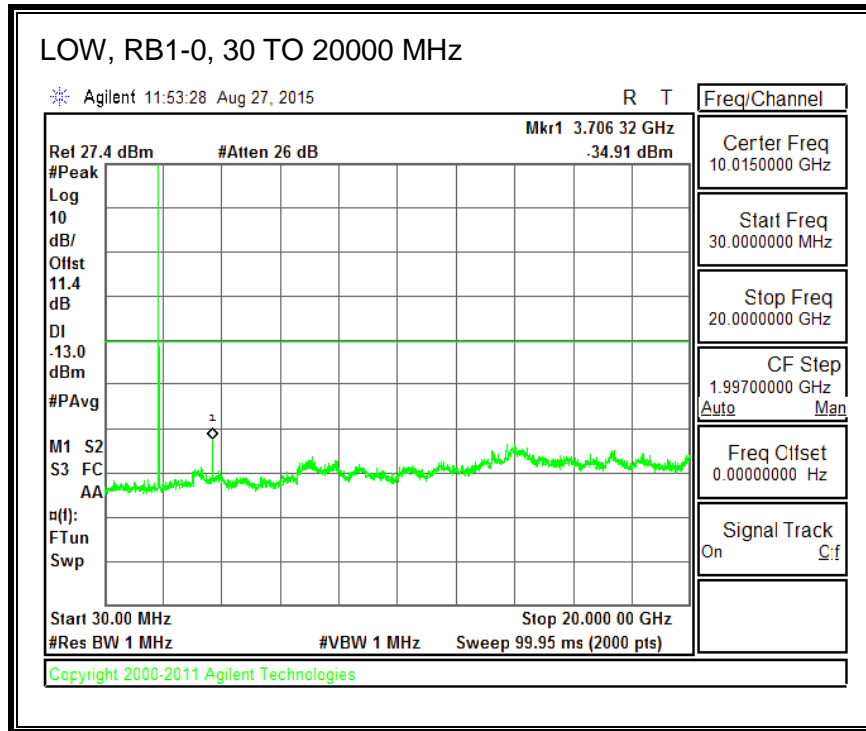


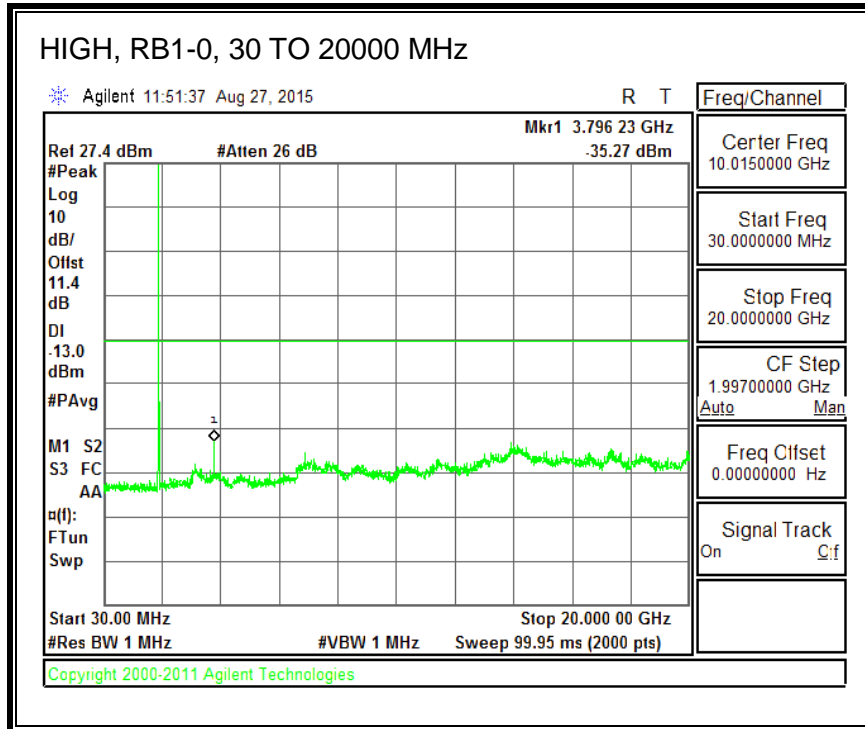
16QAM, (10.0 MHz BAND WIDTH)



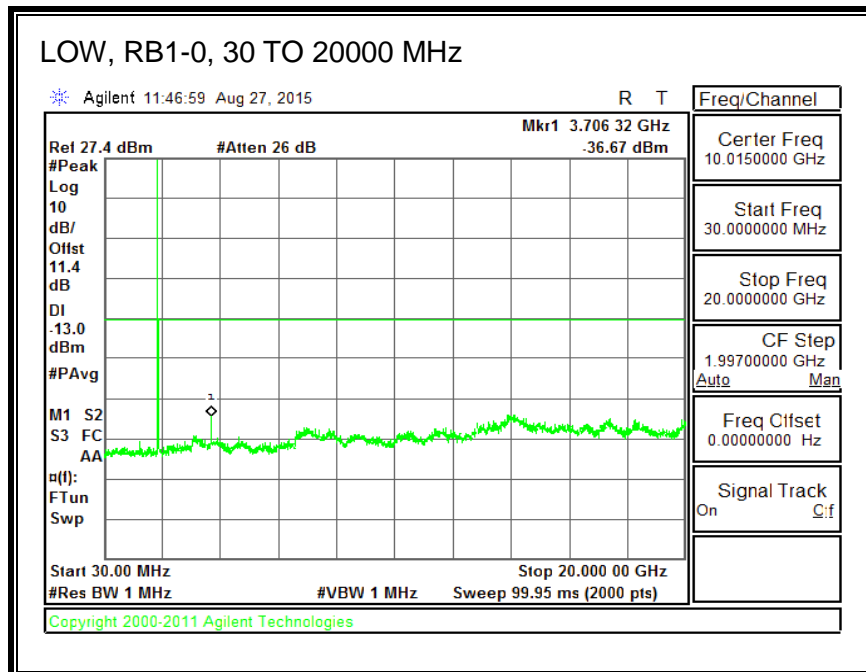


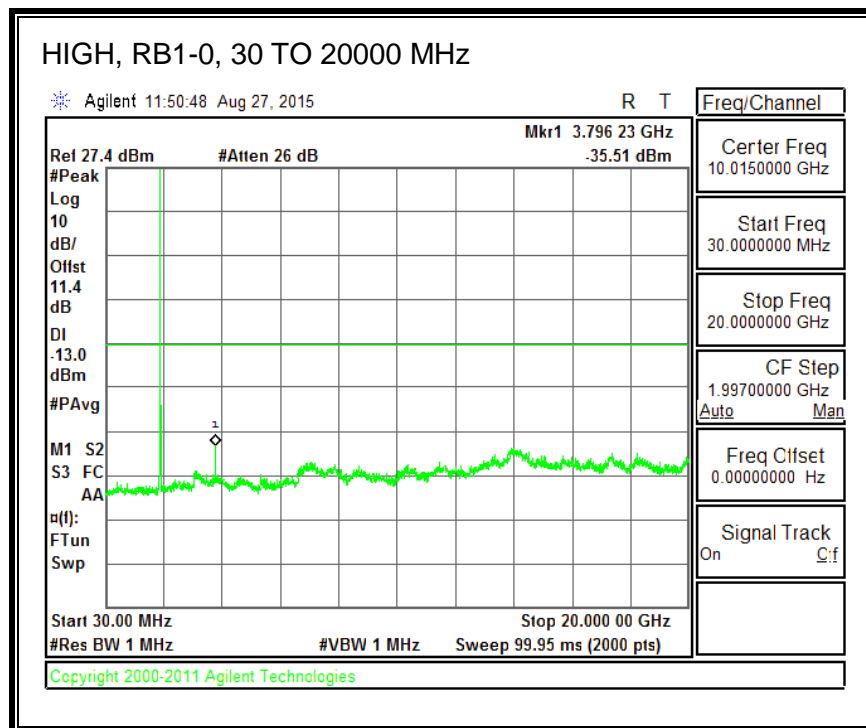
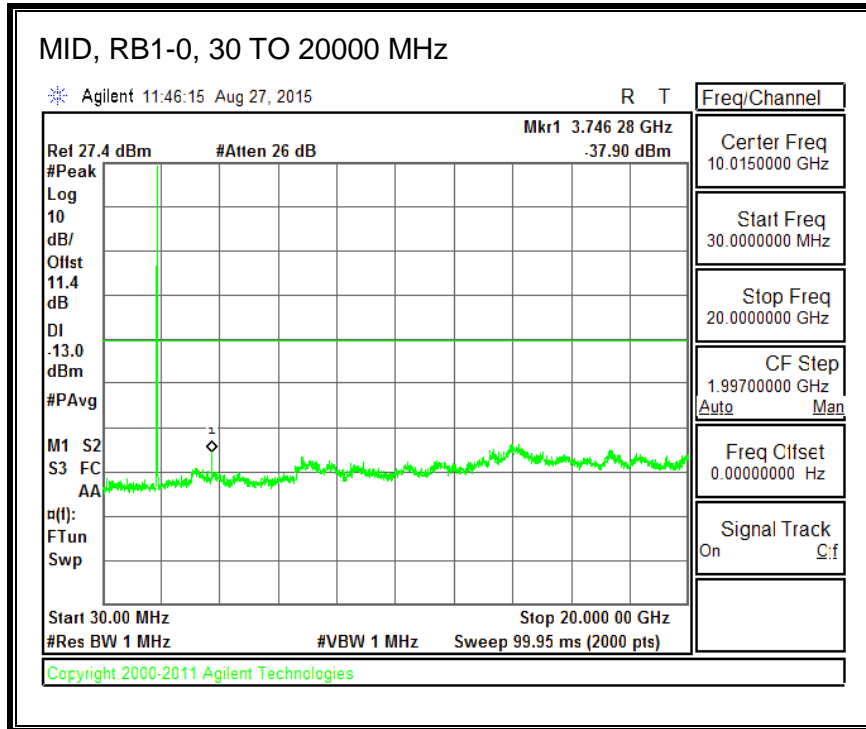
QPSK, (15.0 MHz BAND WIDTH)



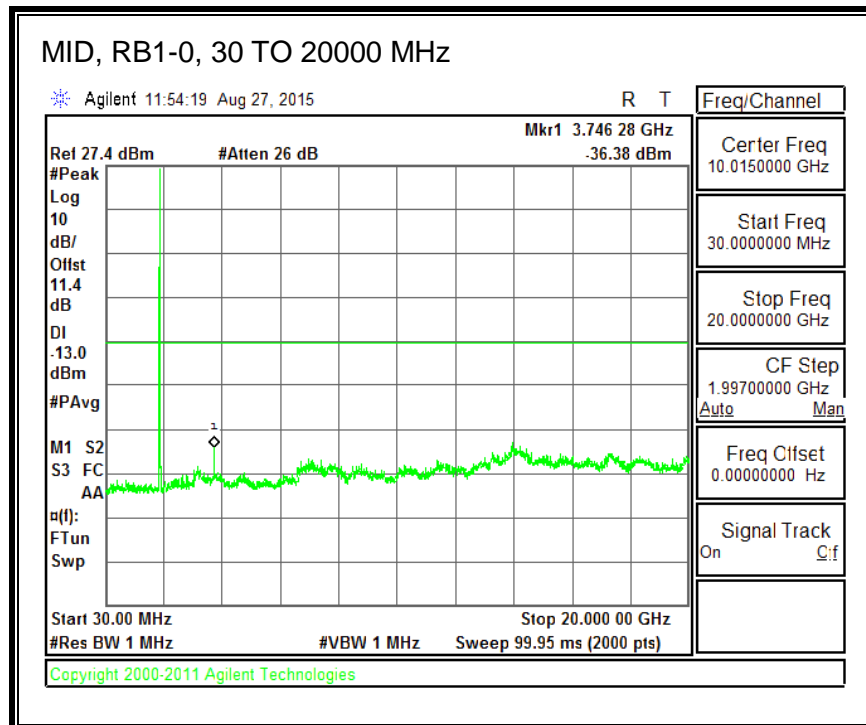
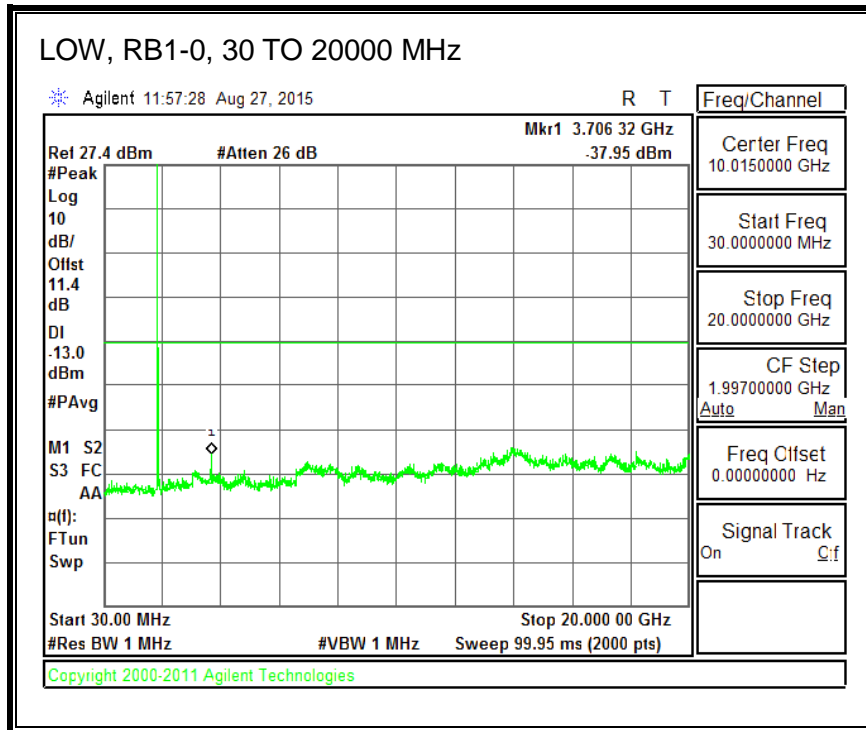


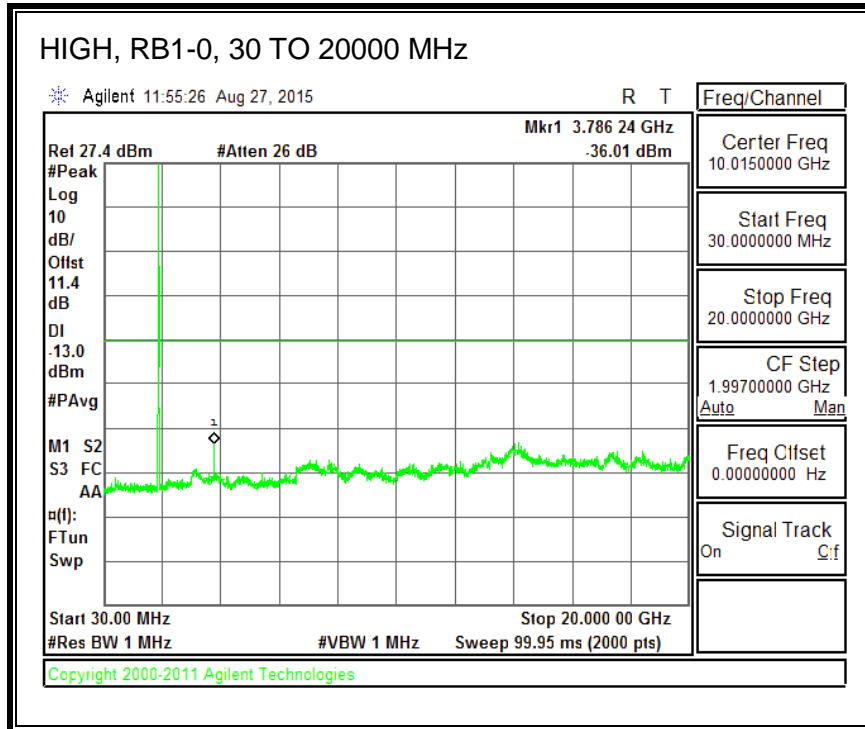
16QAM, (15.0 MHz BAND WIDTH)



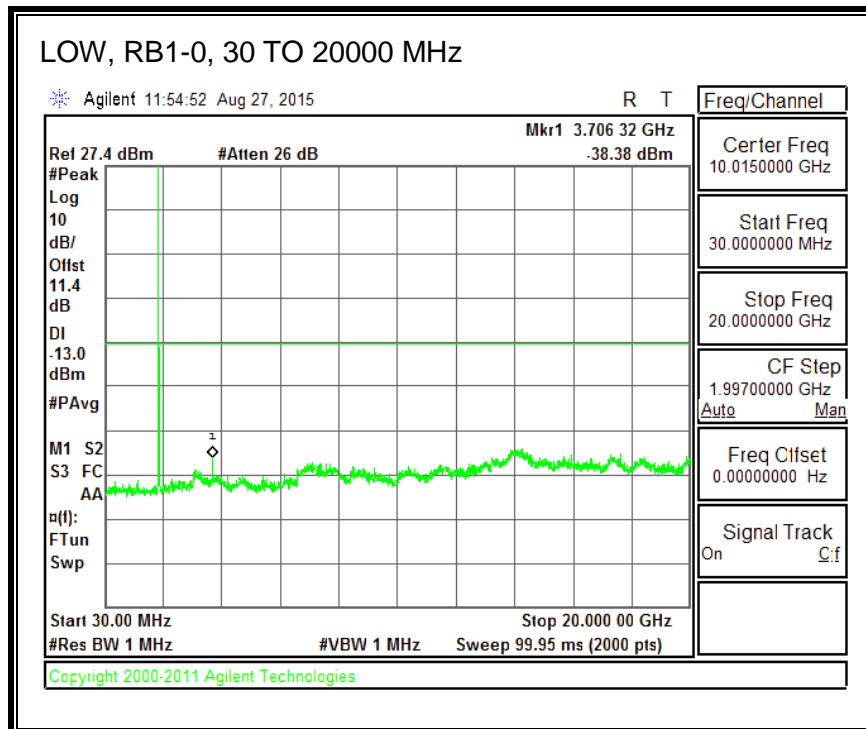


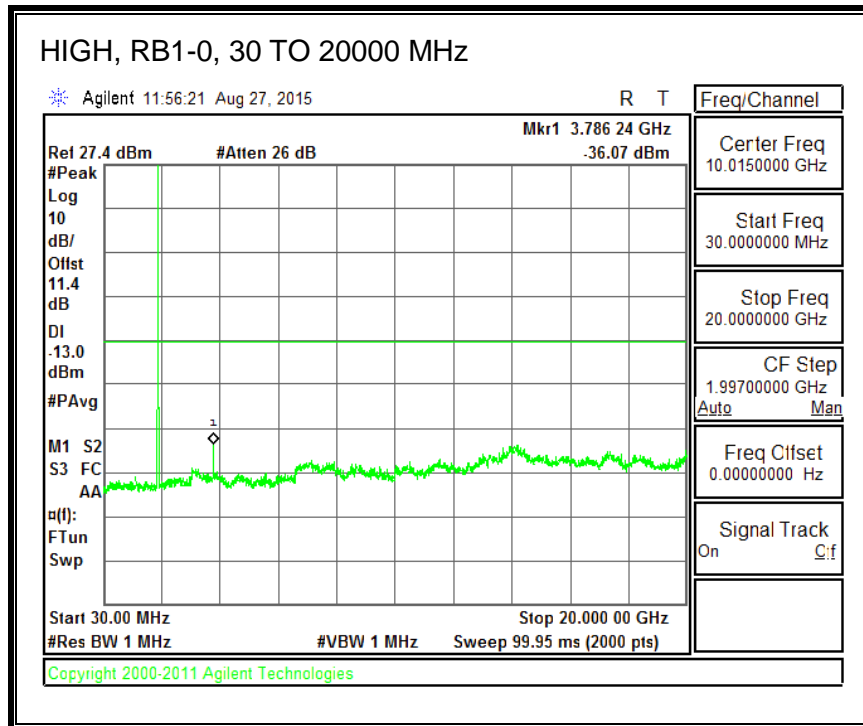
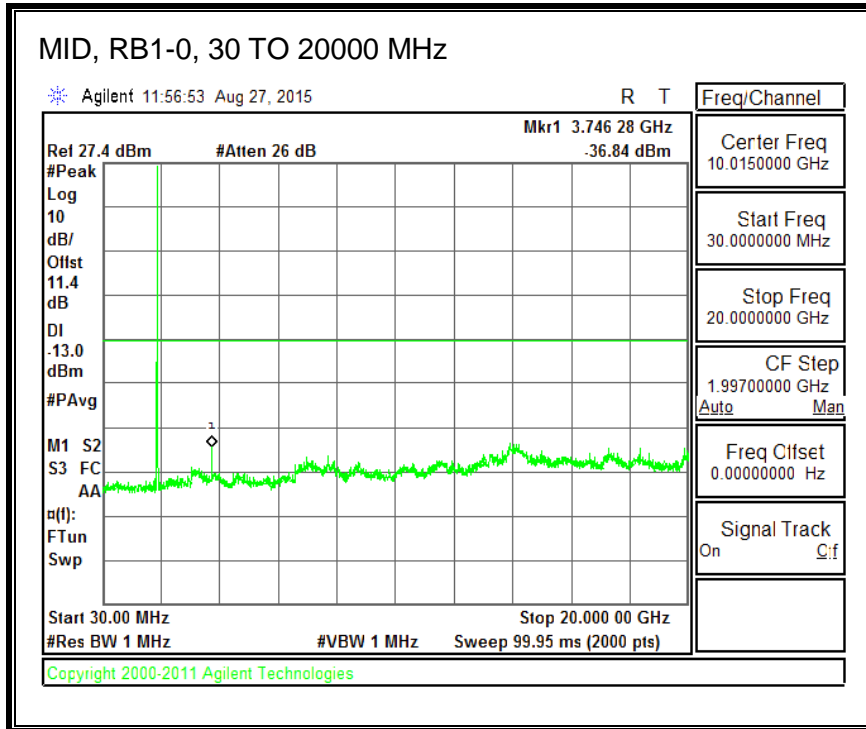
QPSK, (20.0 MHz BAND WIDTH)





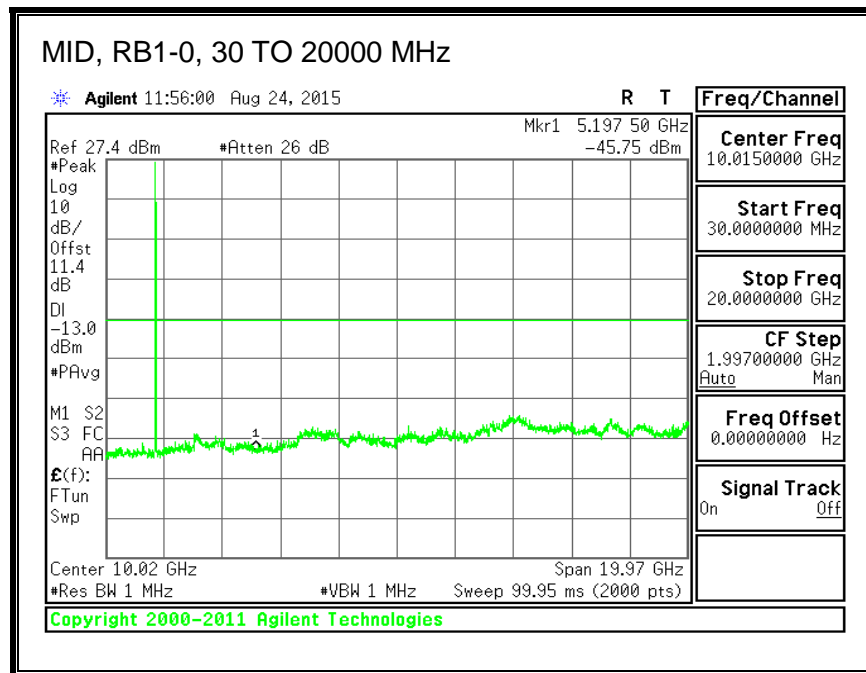
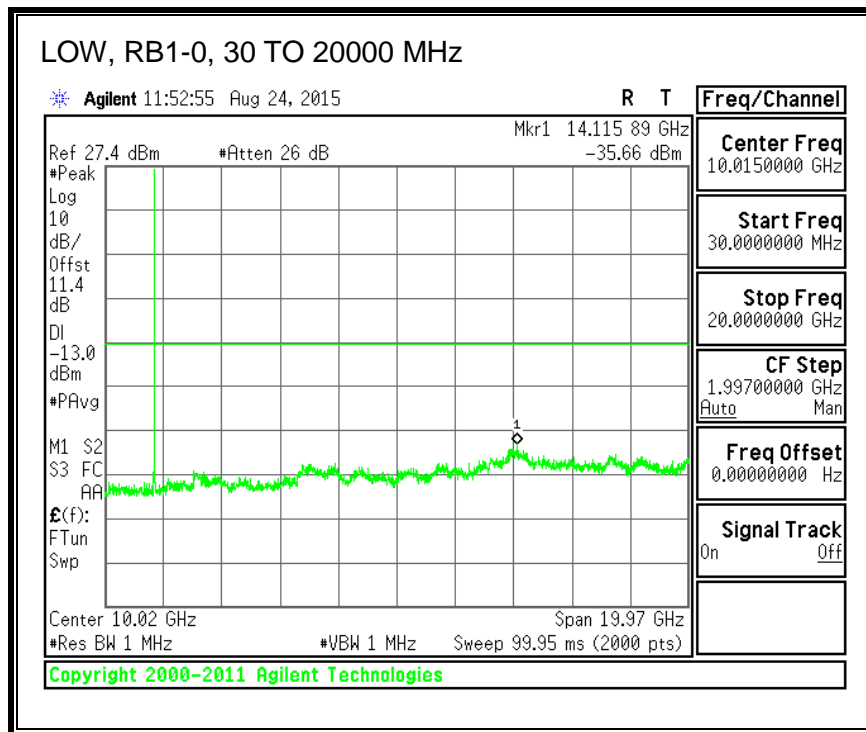
16QAM, (20.0 MHz BAND WIDTH)

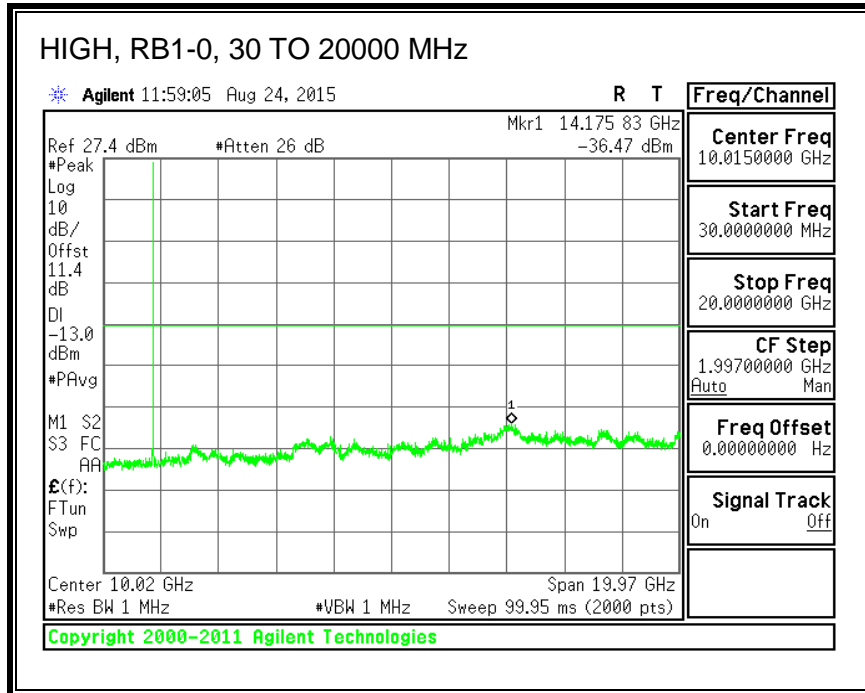




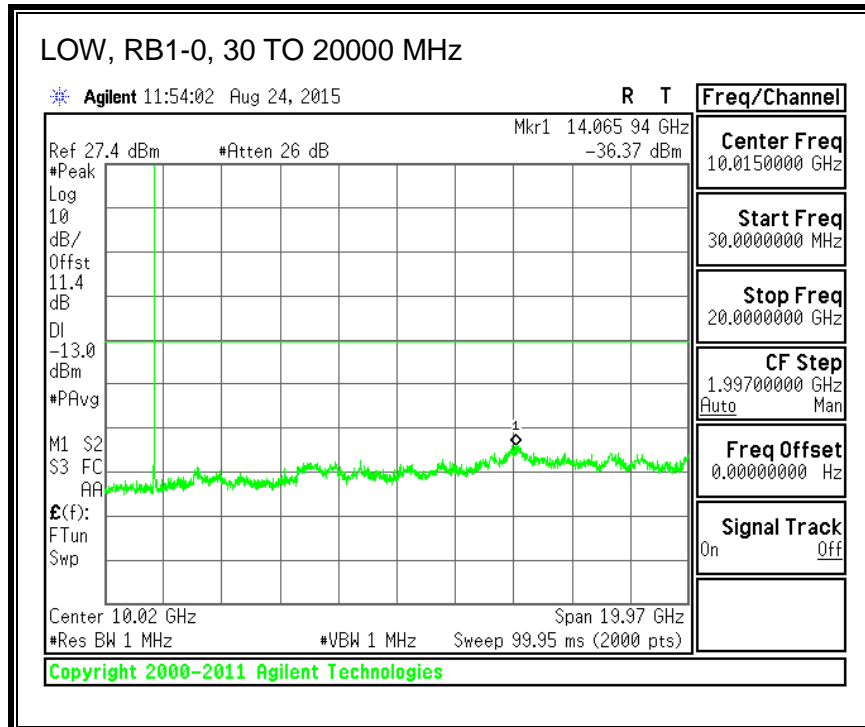
8.3.2. LTE BAND 4

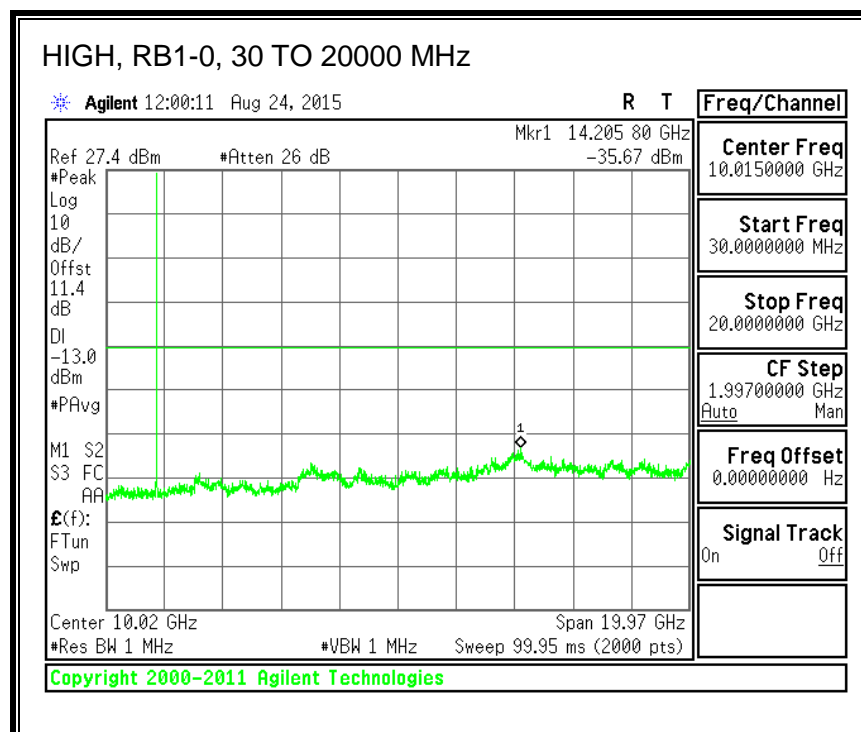
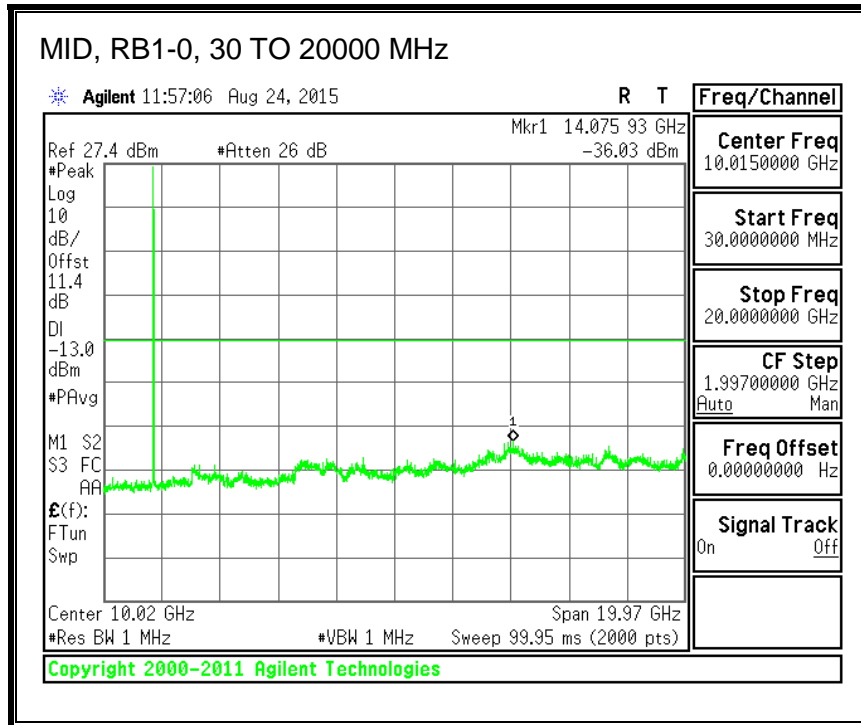
QPSK, (1.4 MHz BAND WIDTH)



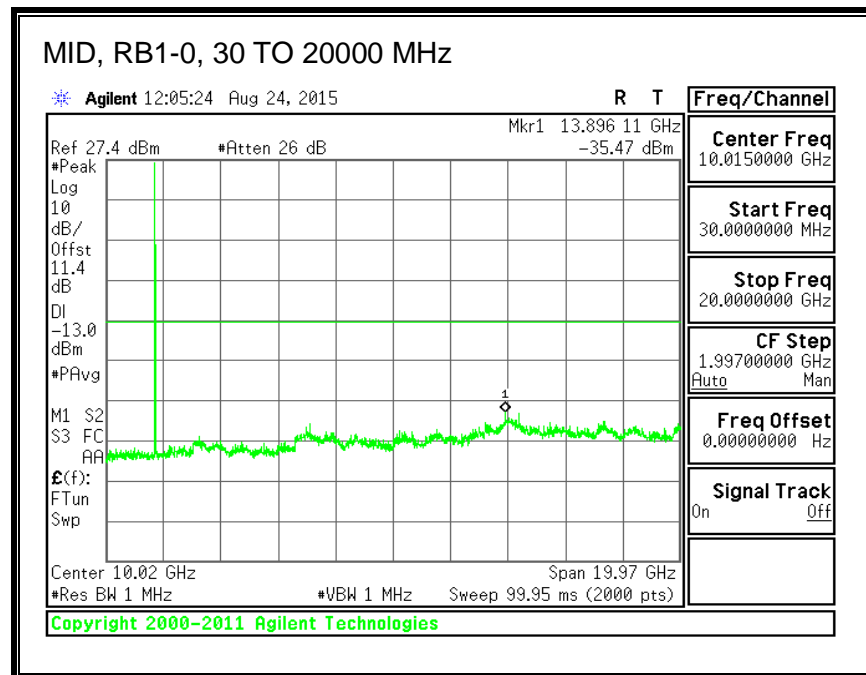
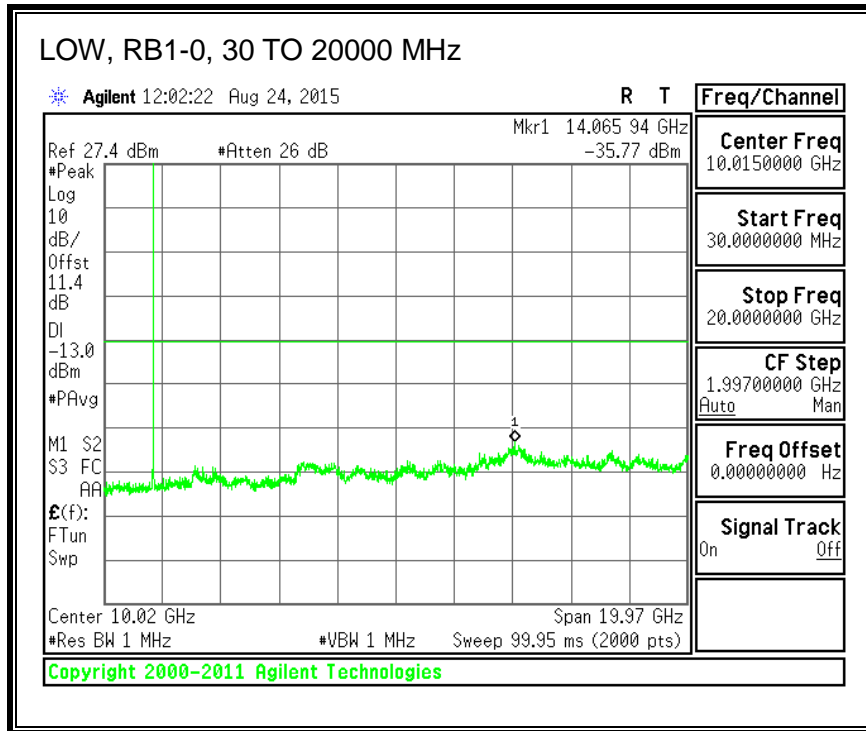


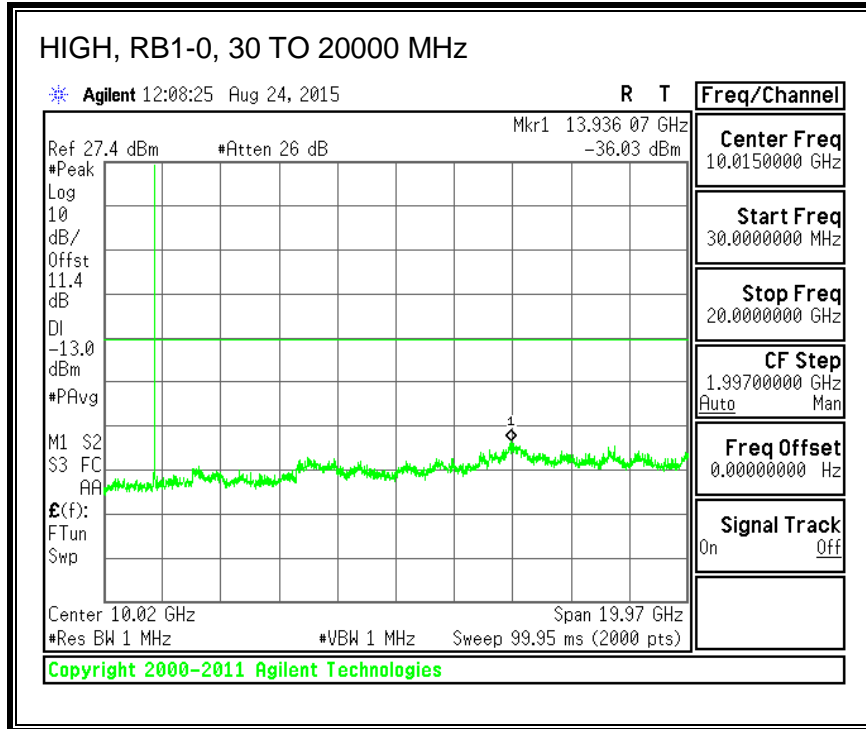
16QAM, (1.4 MHz BAND WIDTH)



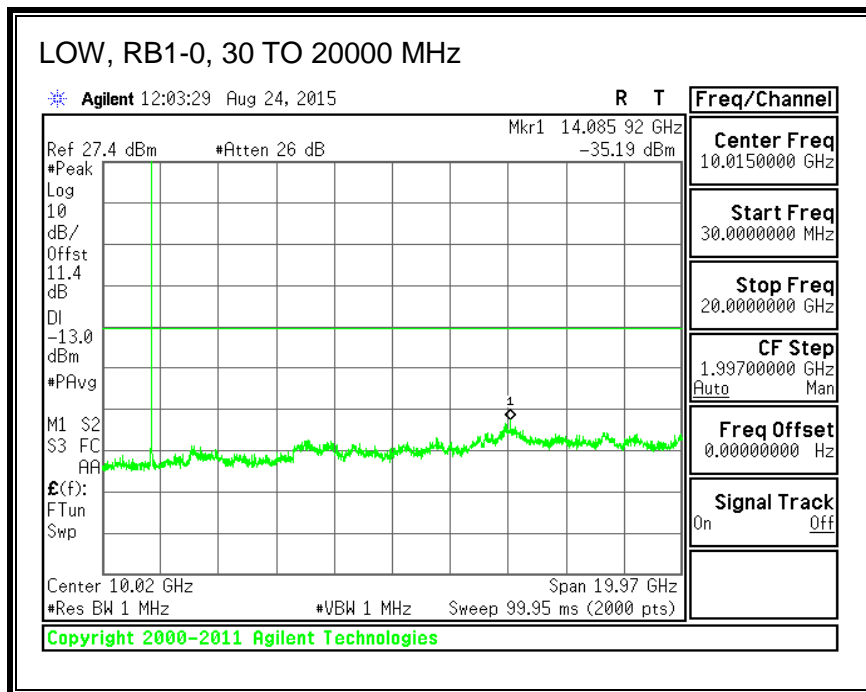


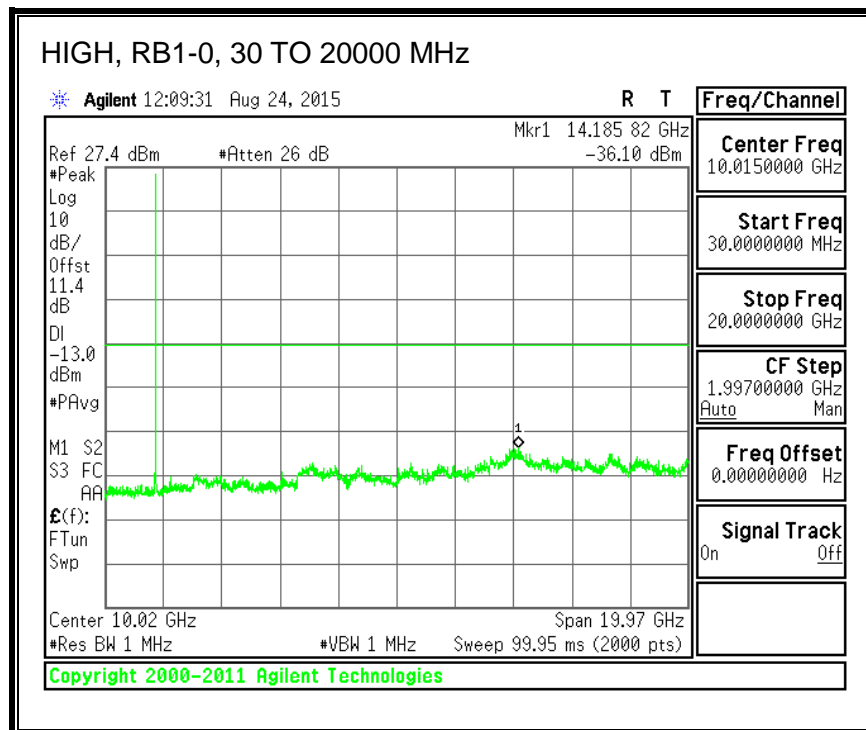
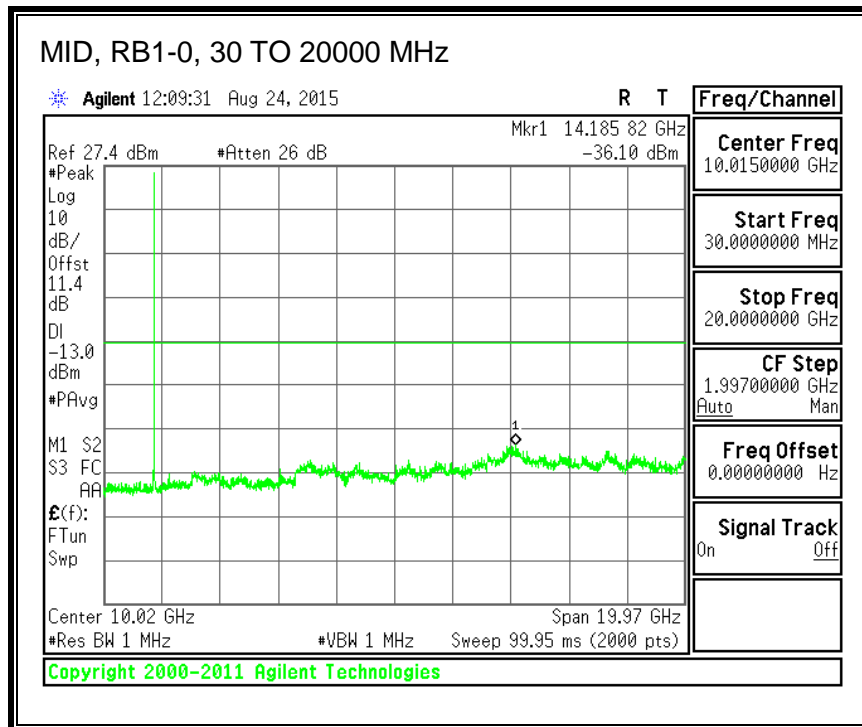
QPSK, (3.0 MHz BAND WIDTH)



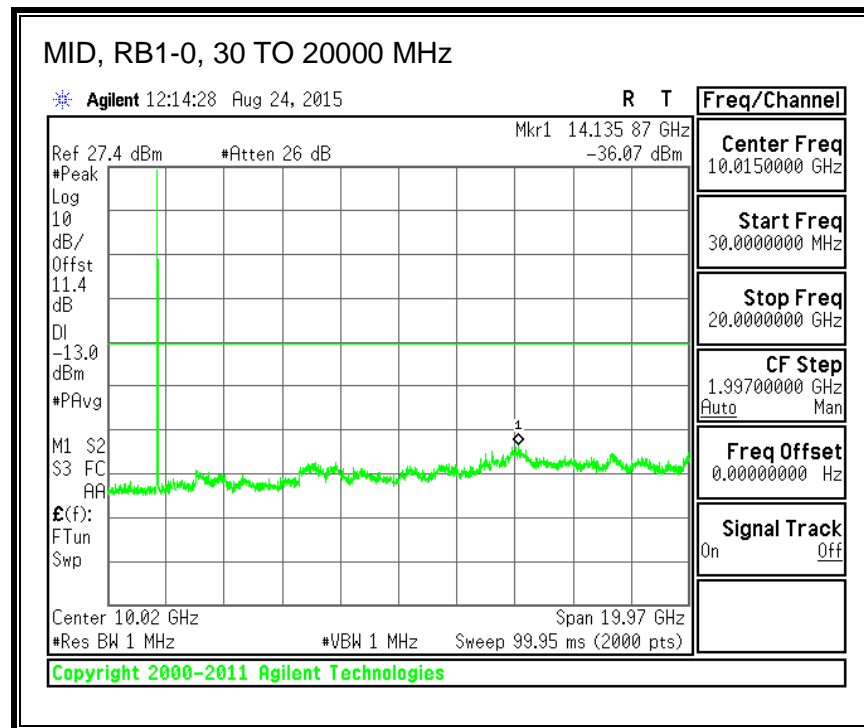
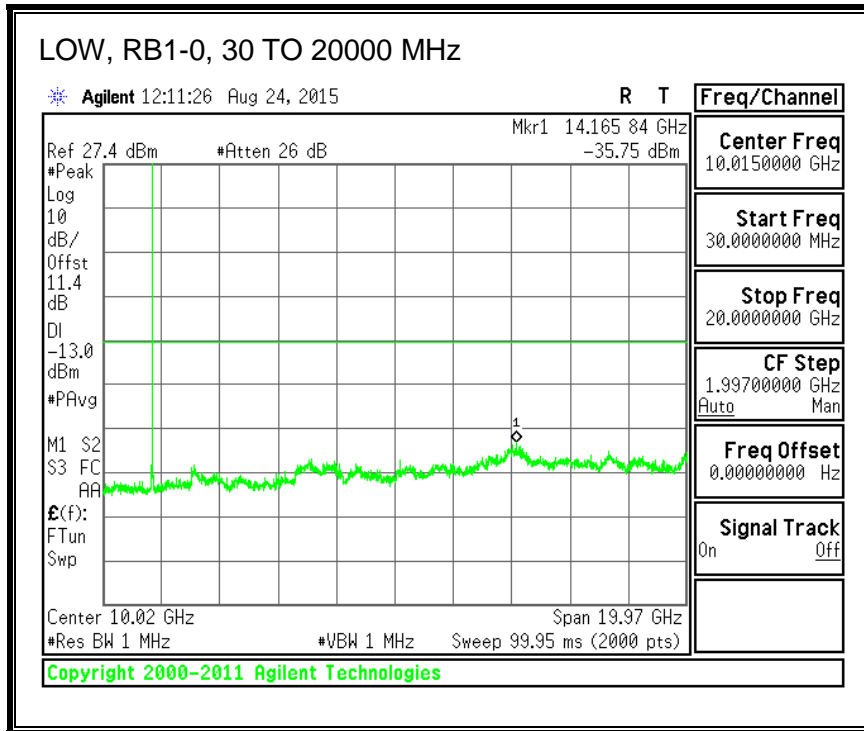


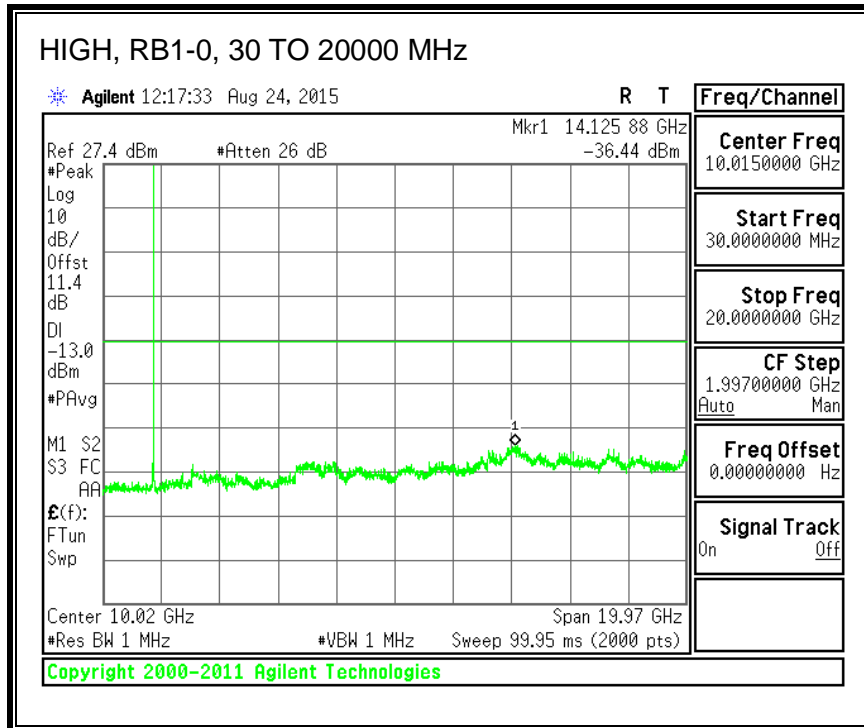
16QAM, (3.0 MHz BAND WIDTH)



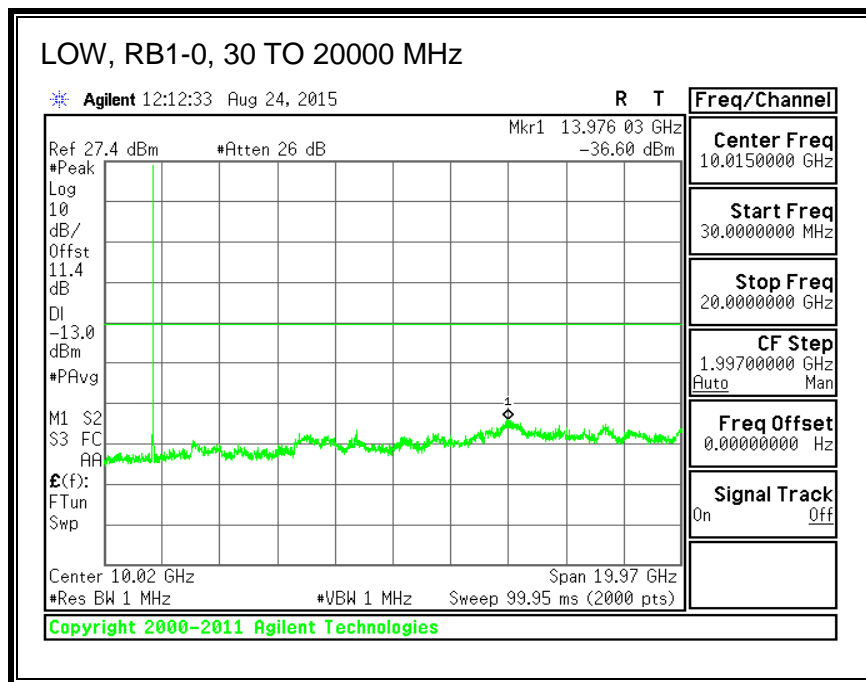


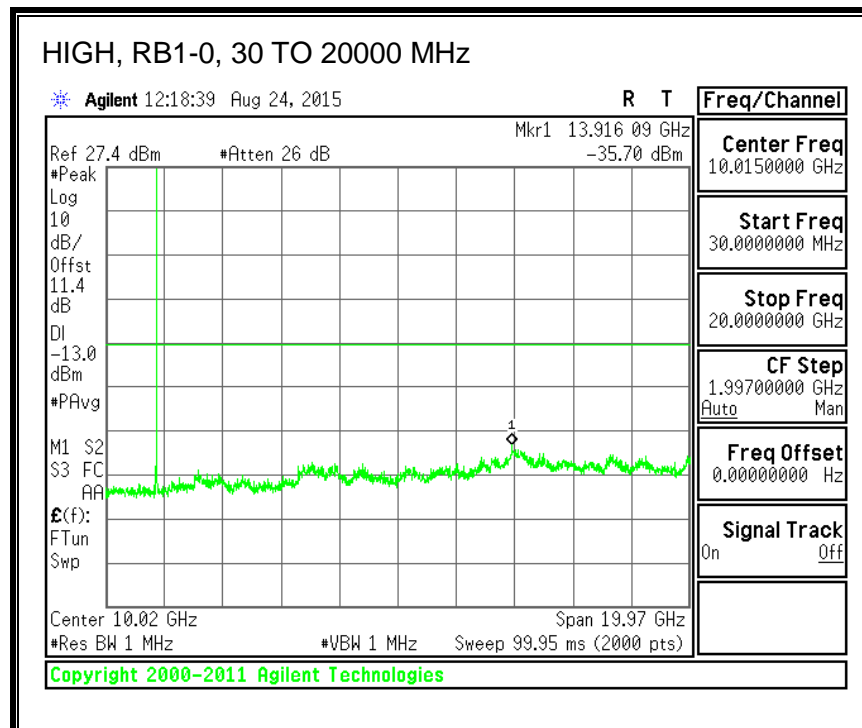
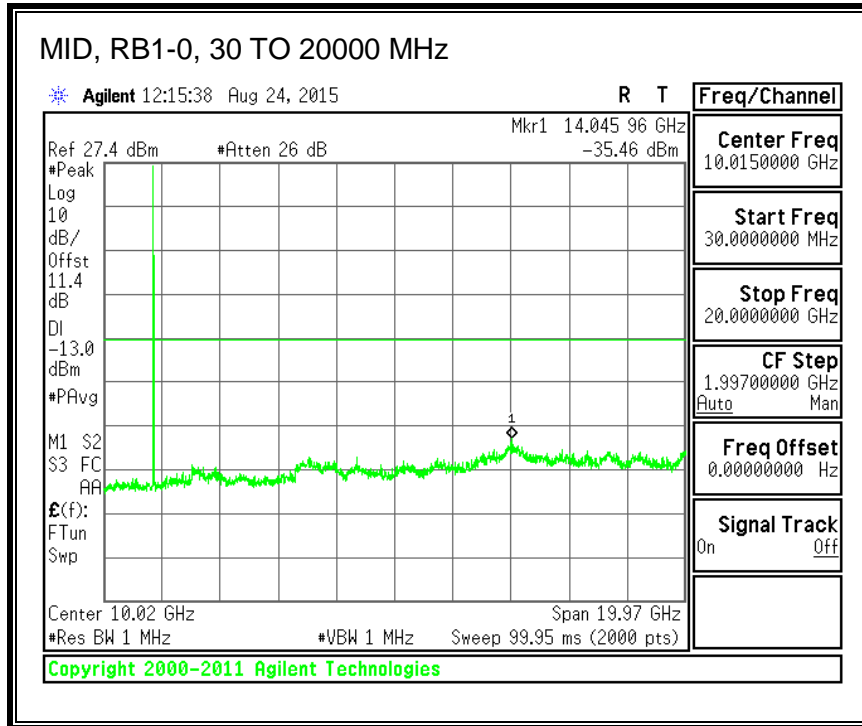
QPSK, (5.0 MHz BAND WIDTH)



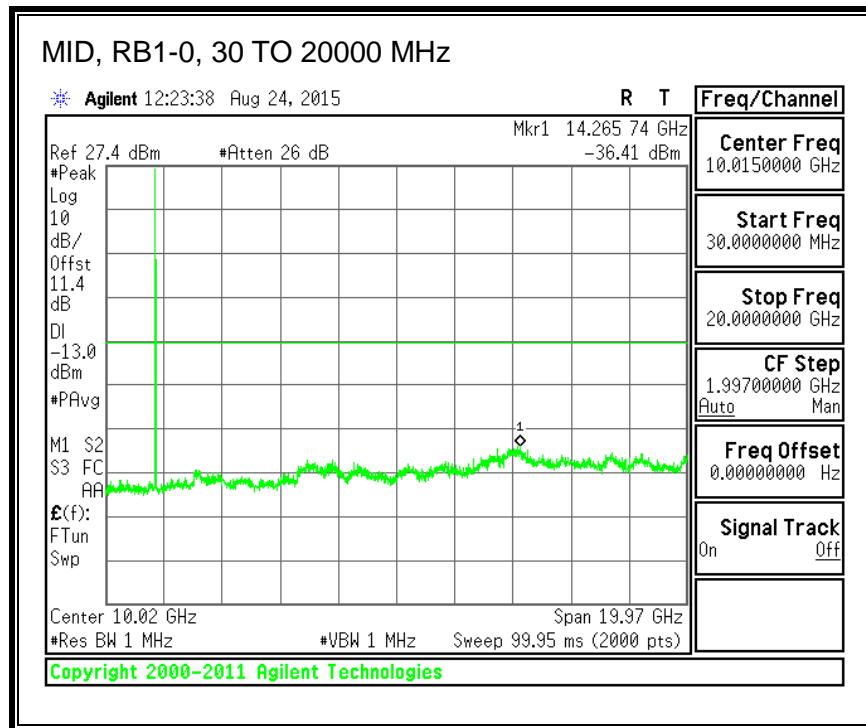
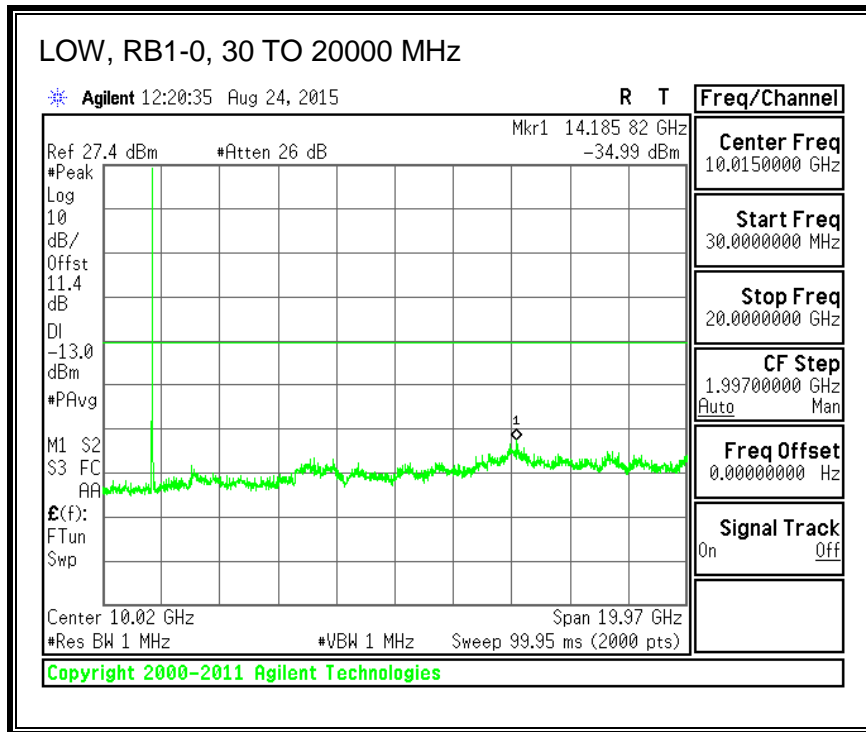


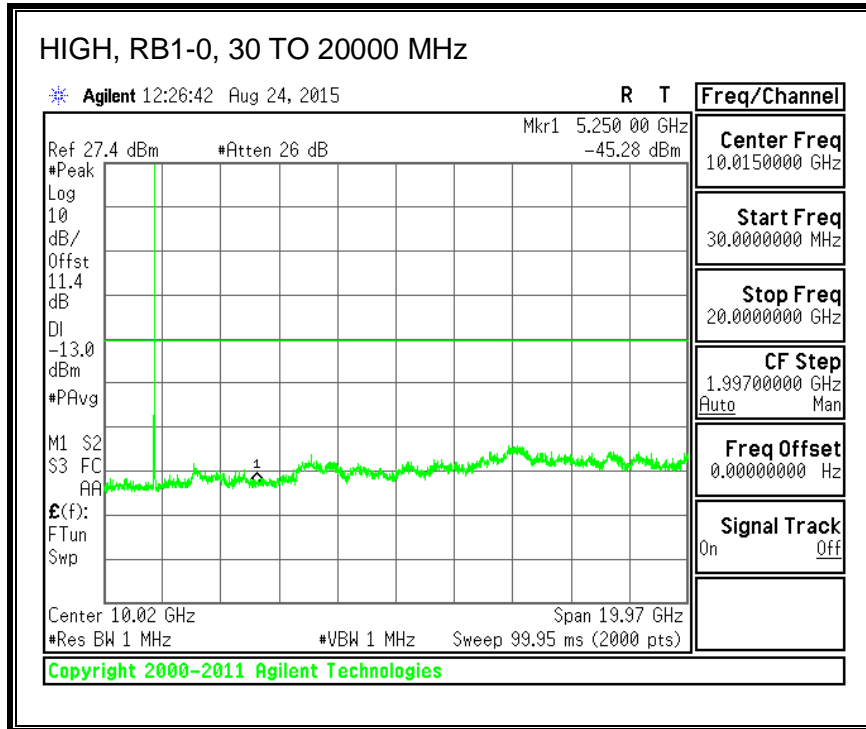
16QAM, (5.0 MHz BAND WIDTH)



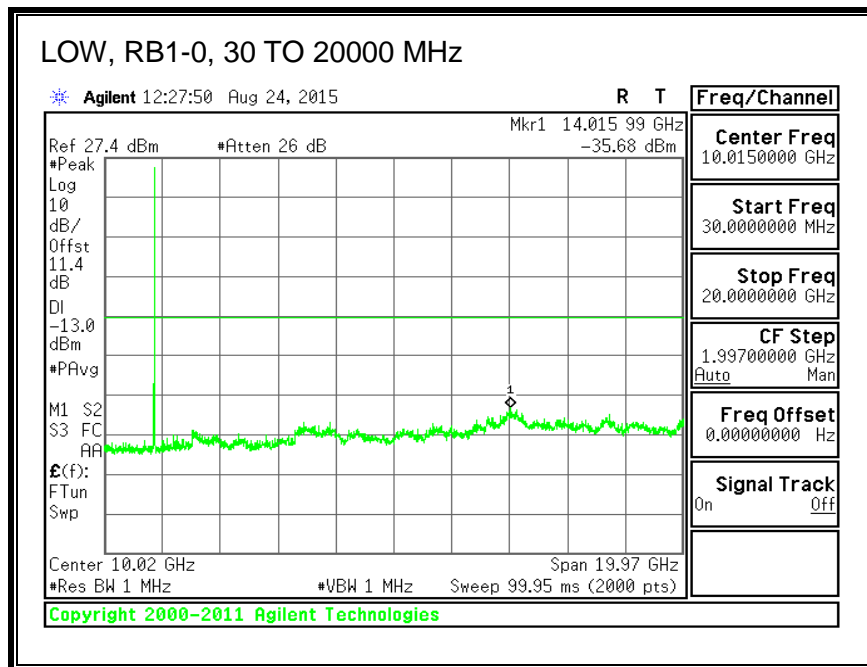


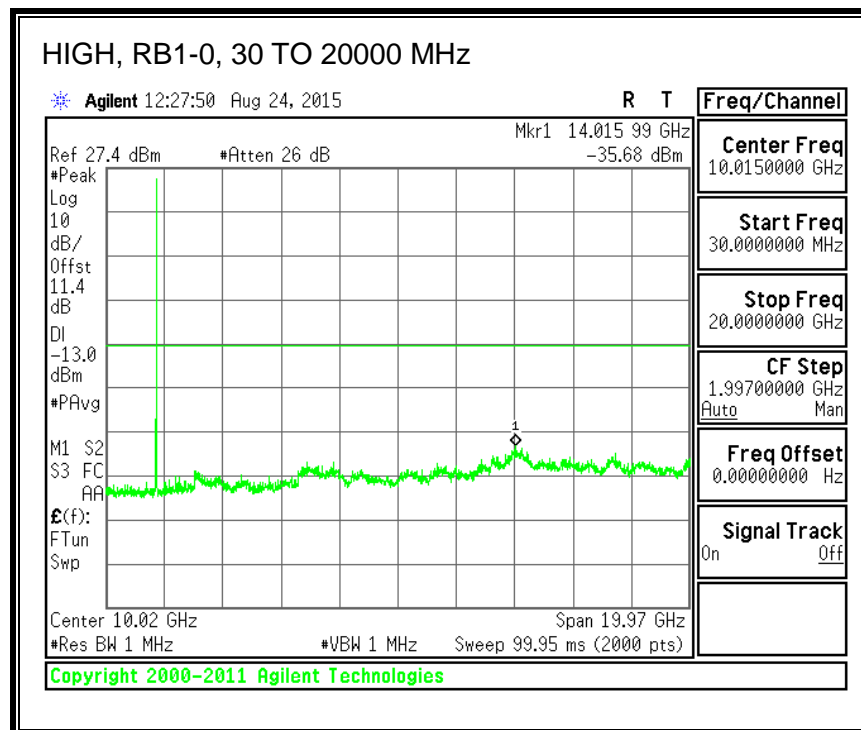
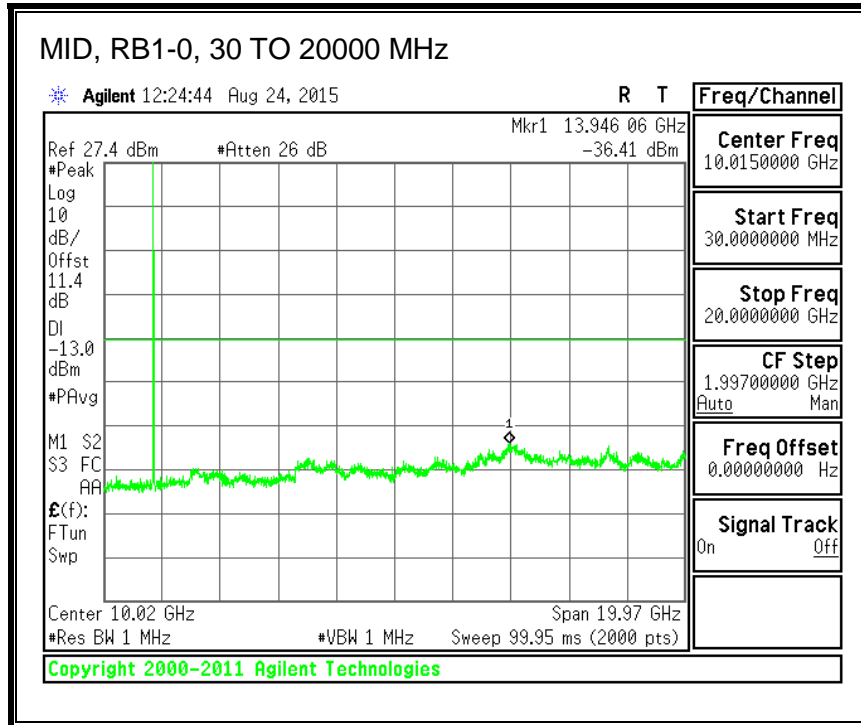
QPSK, (10.0 MHz BAND WIDTH)



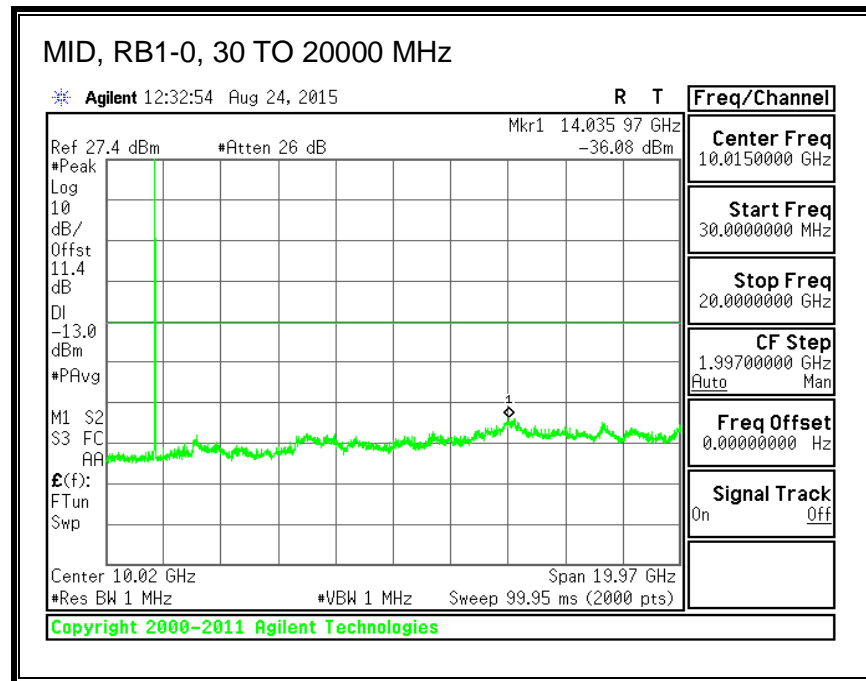
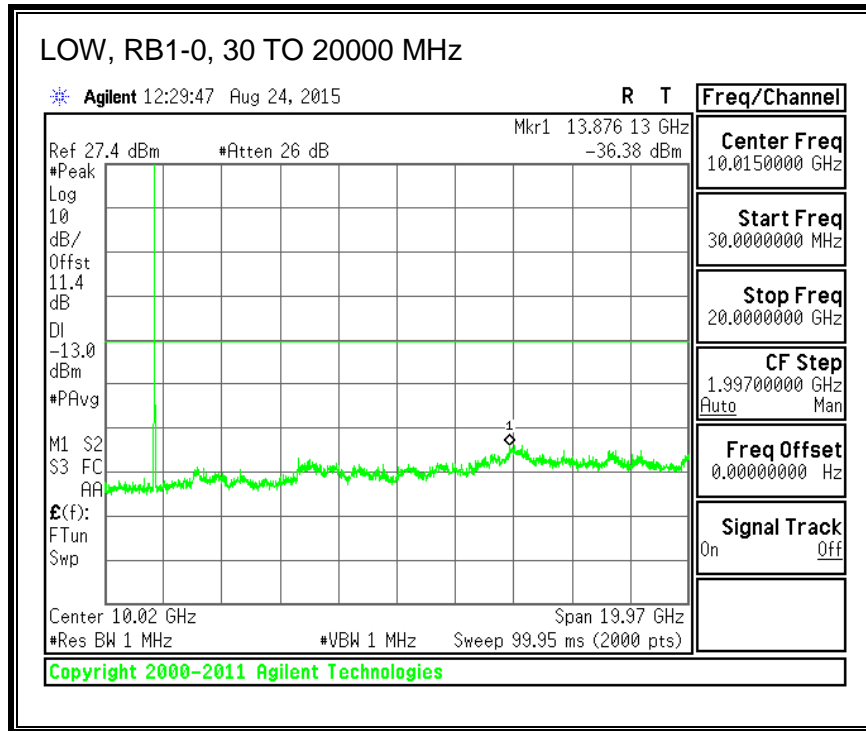


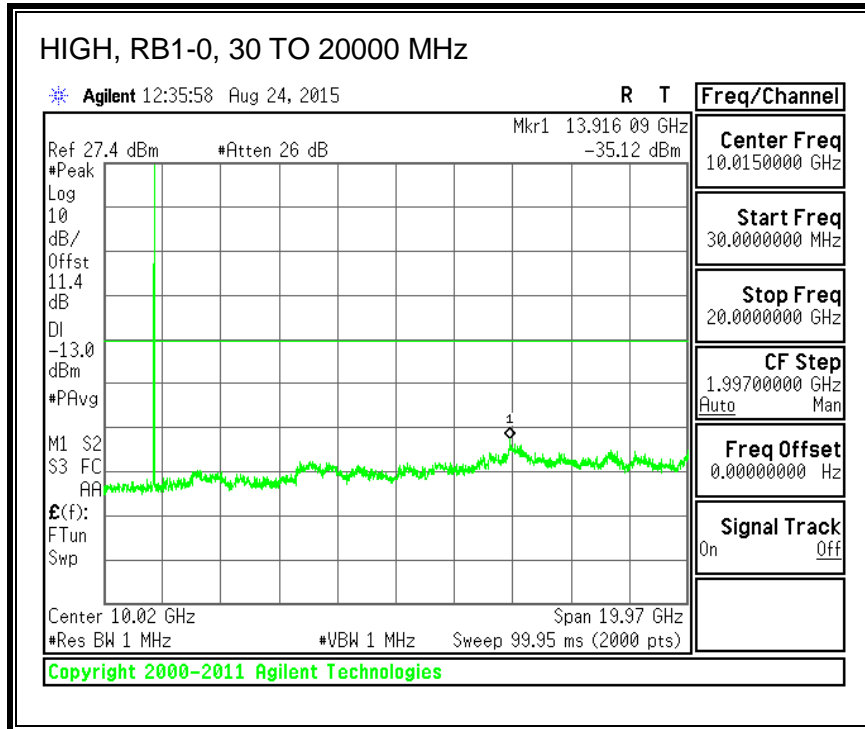
16QAM, (10.0 MHz BAND WIDTH)



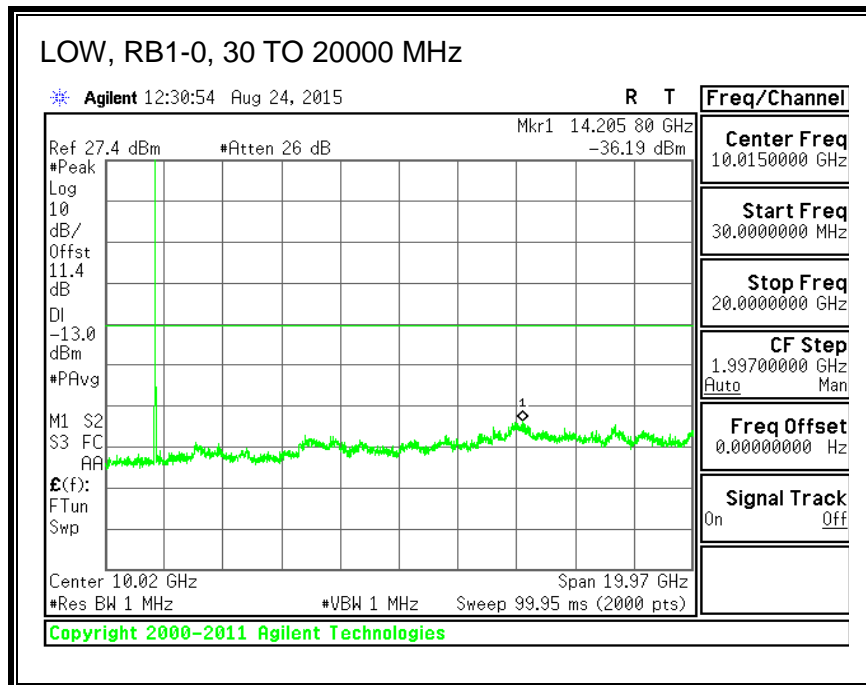


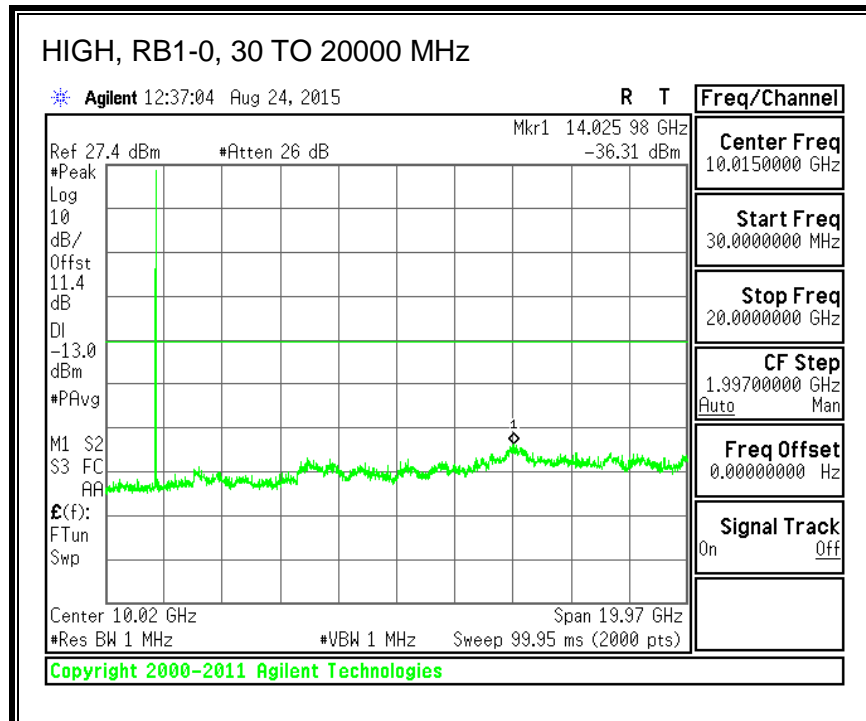
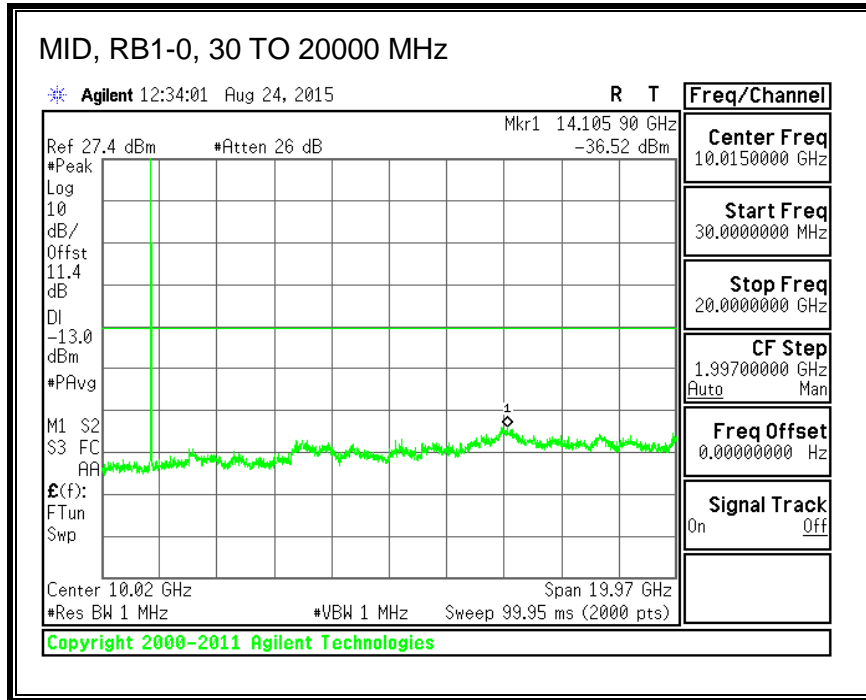
QPSK, (15.0 MHz BAND WIDTH)



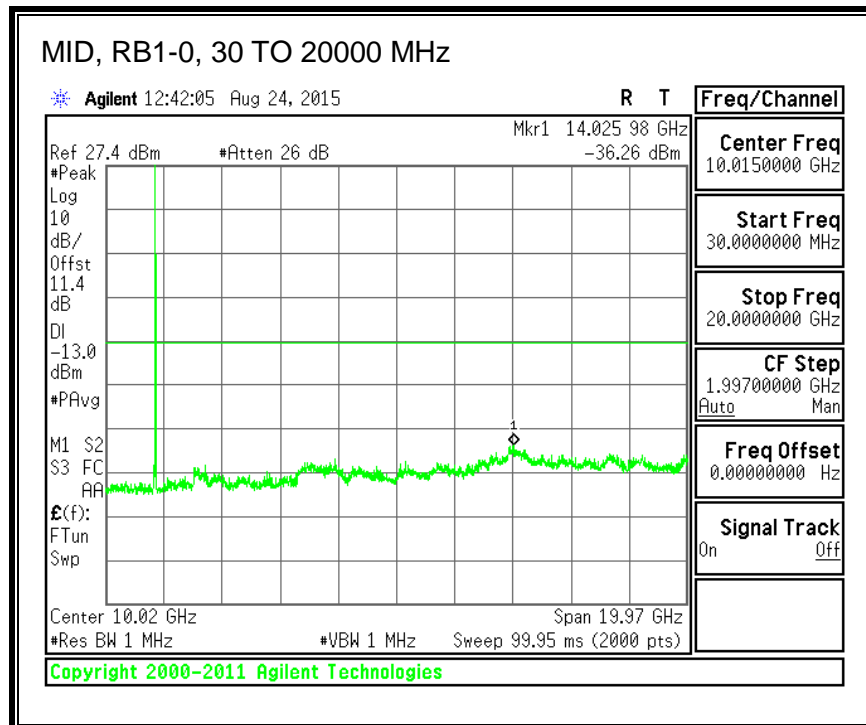
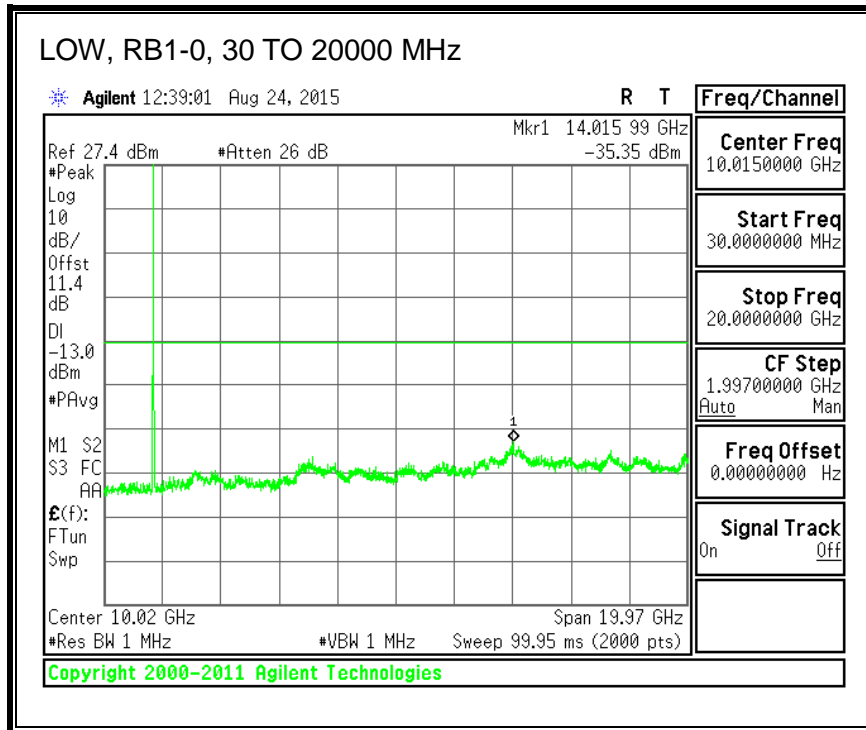


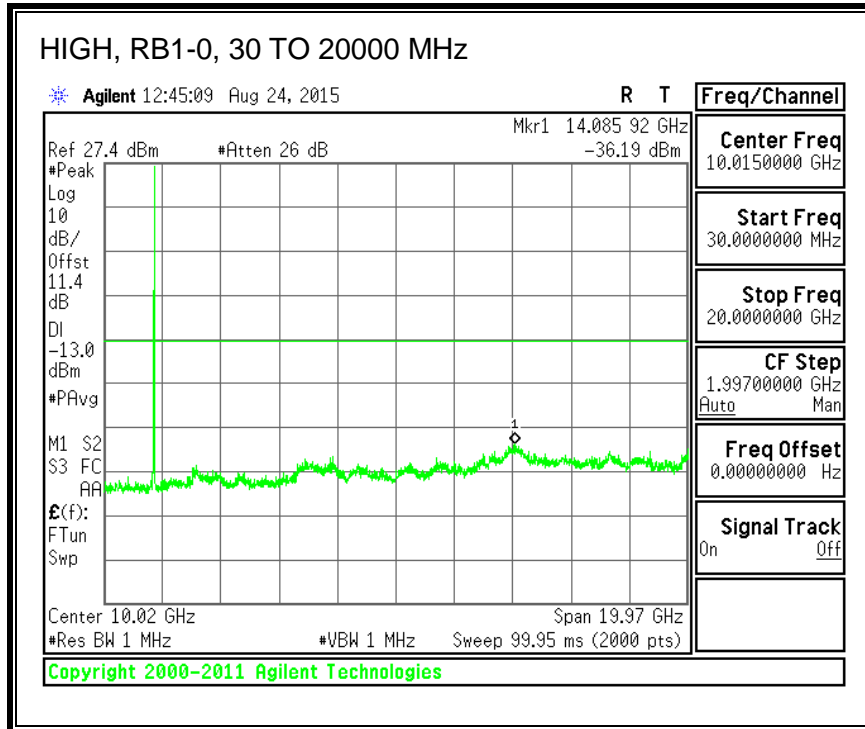
16QAM, (15.0 MHz BAND WIDTH)



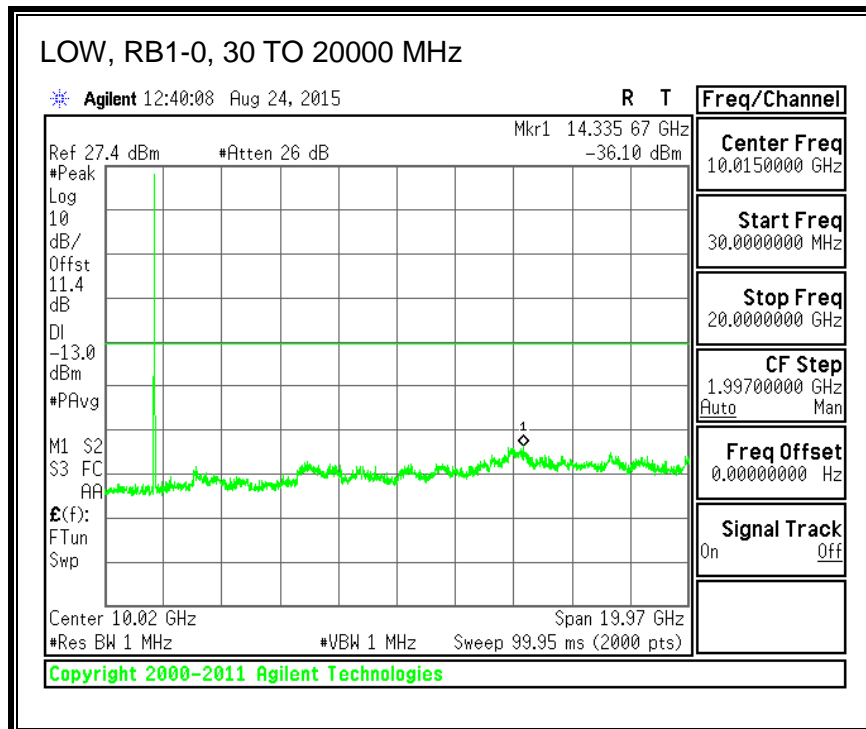


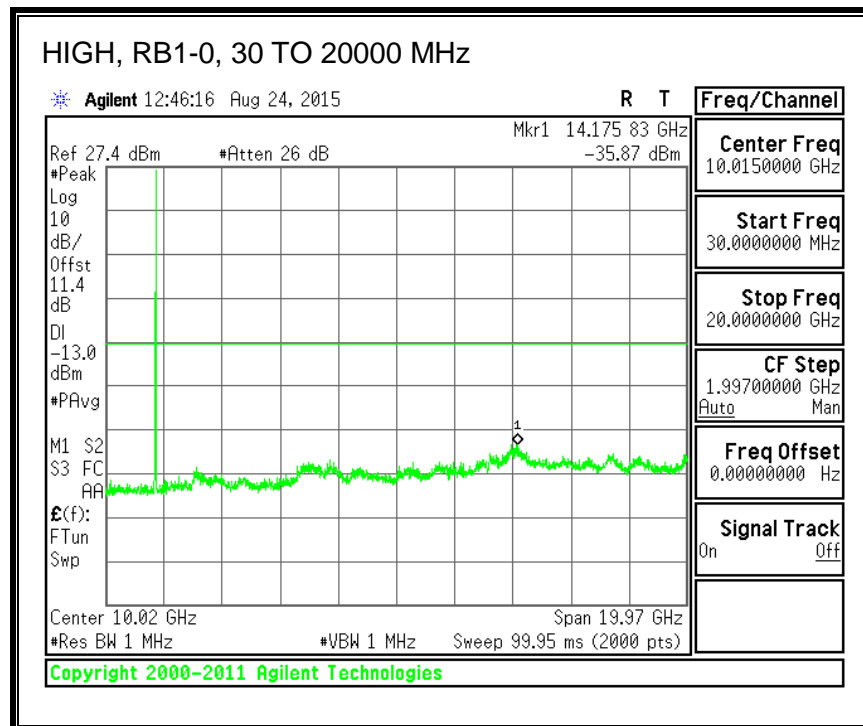
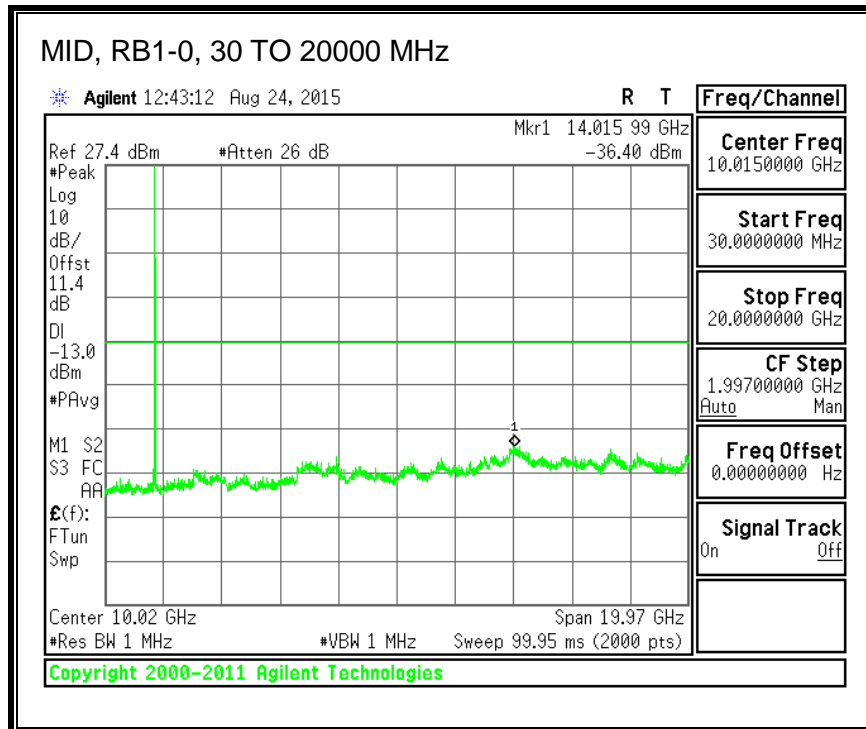
QPSK, (20.0 MHz BAND WIDTH)





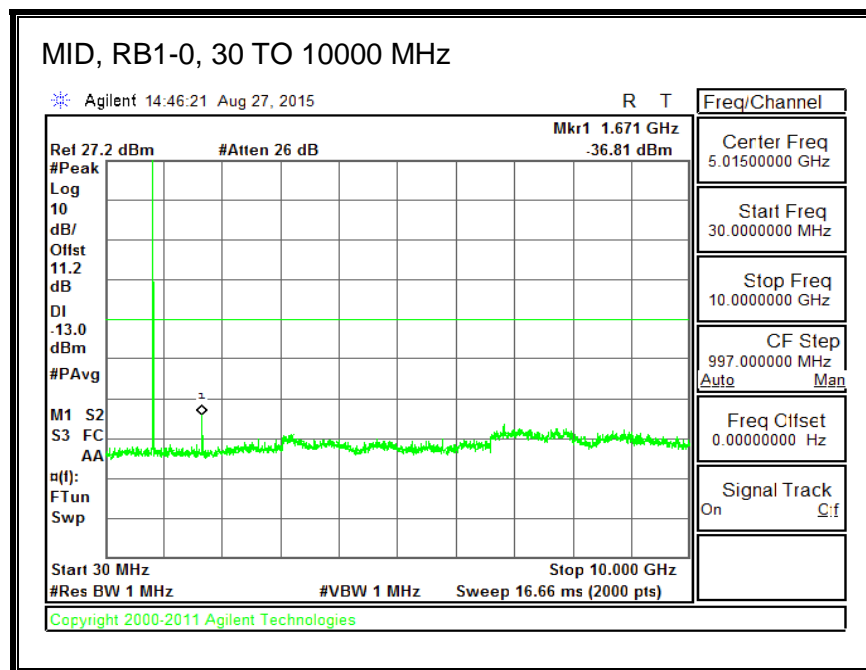
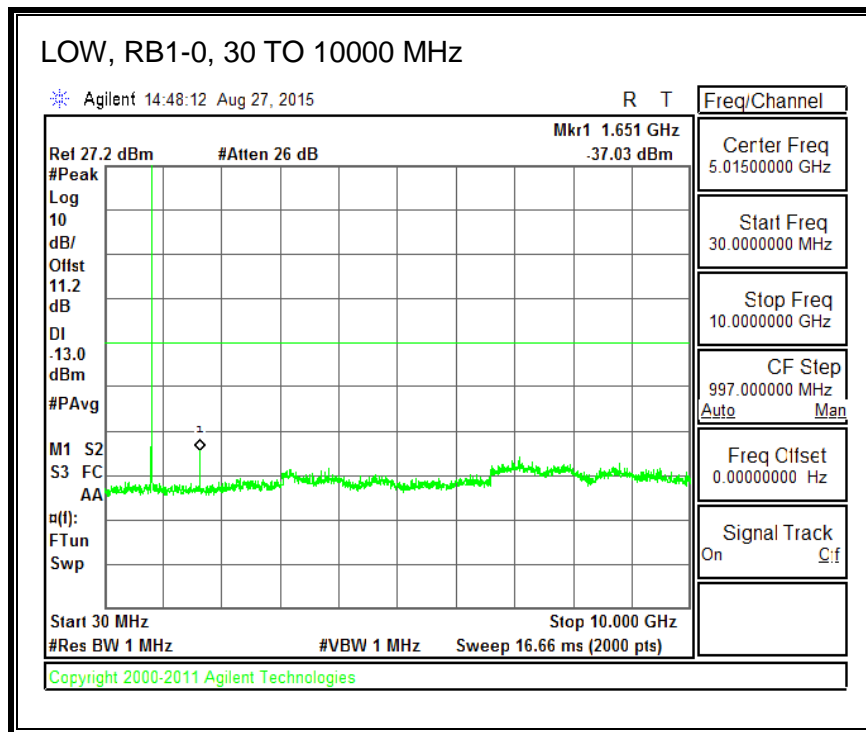
16QAM, (20.0 MHz BAND WIDTH)

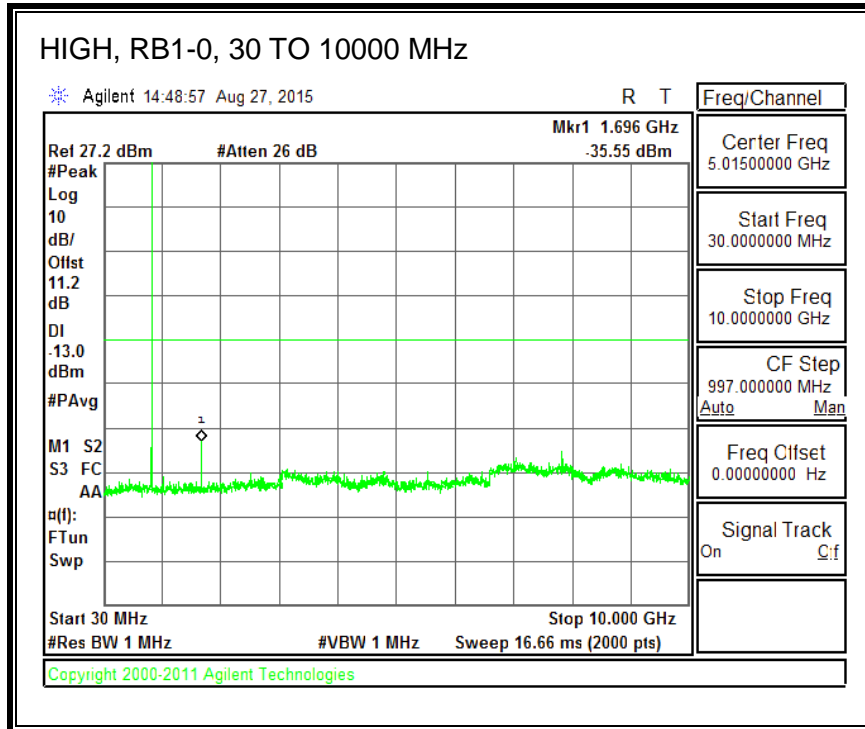




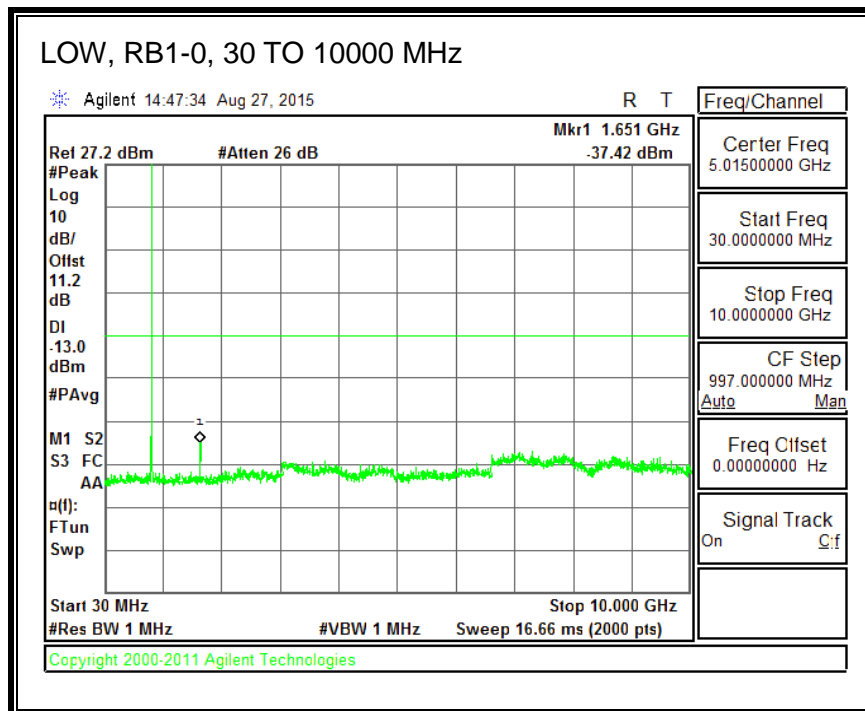
8.3.3. LTE BAND 5

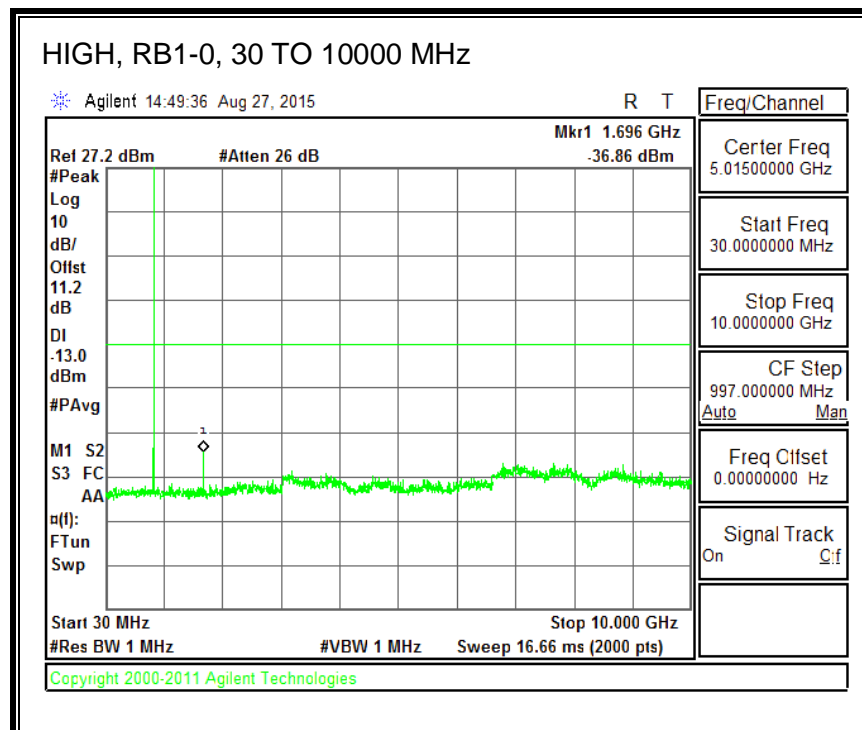
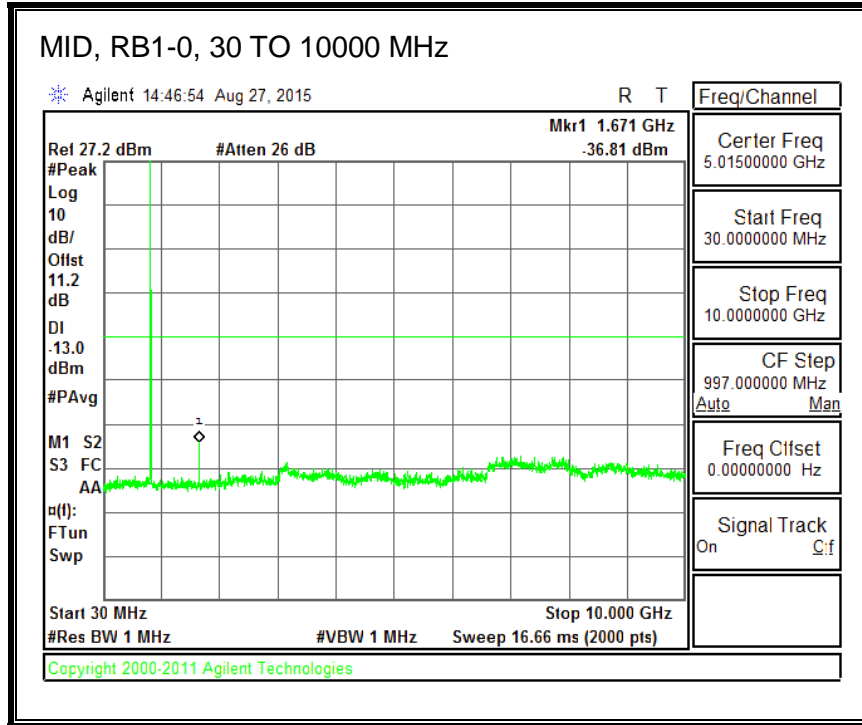
QPSK, (1.4 MHz BAND WIDTH)



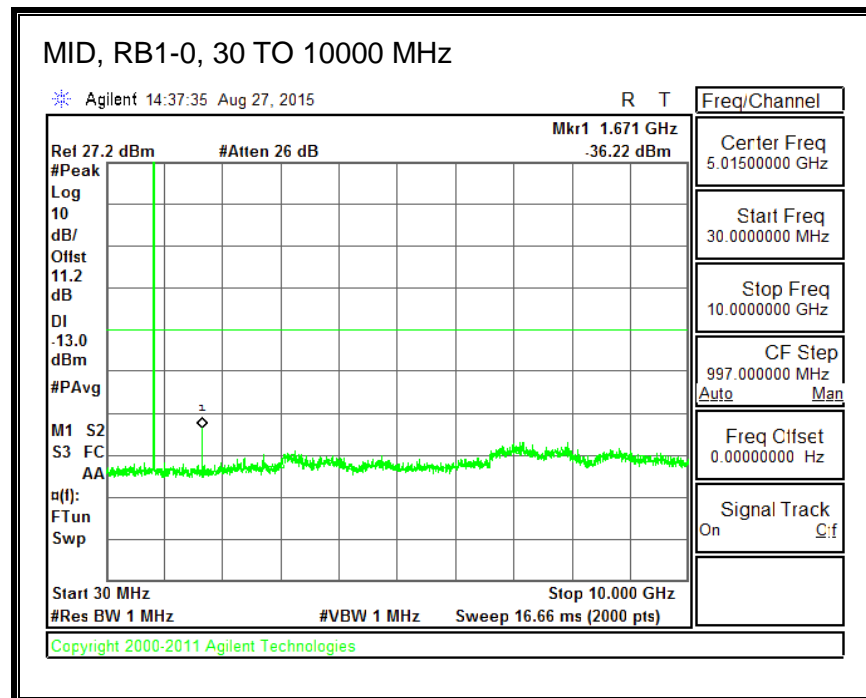
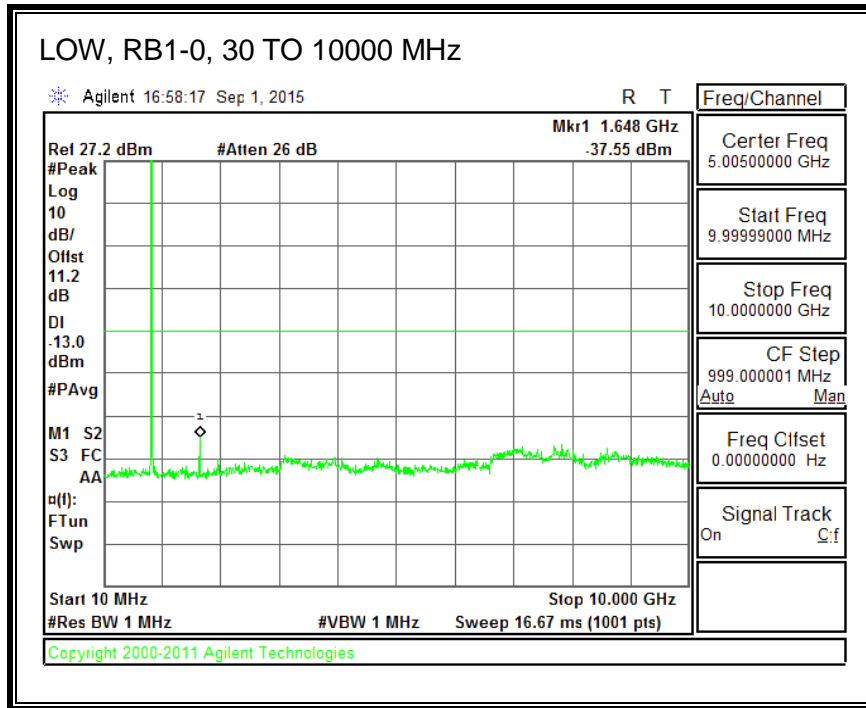


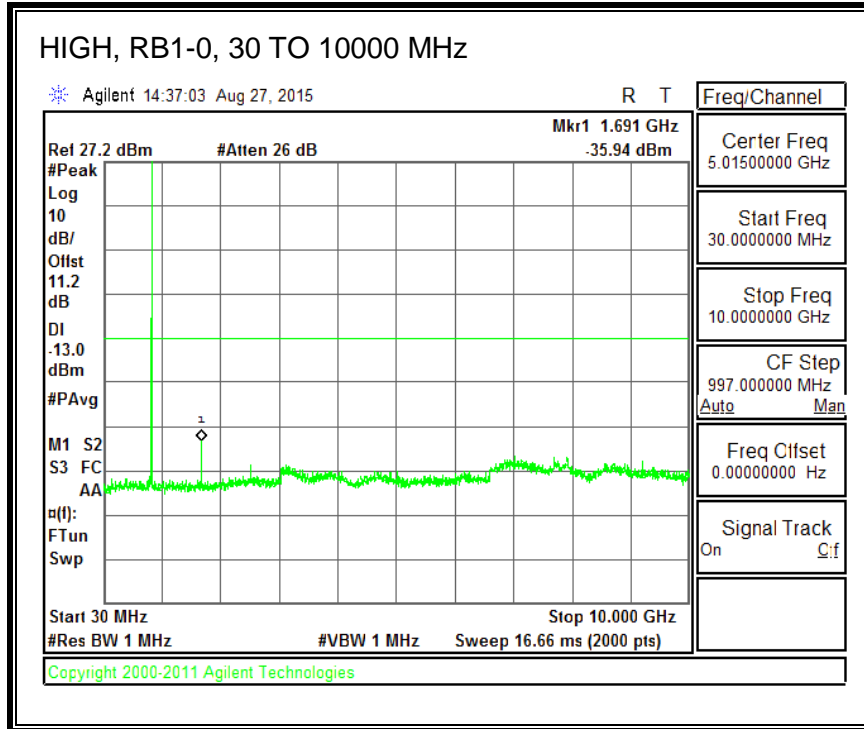
16QAM, (1.4 MHz BAND WIDTH)



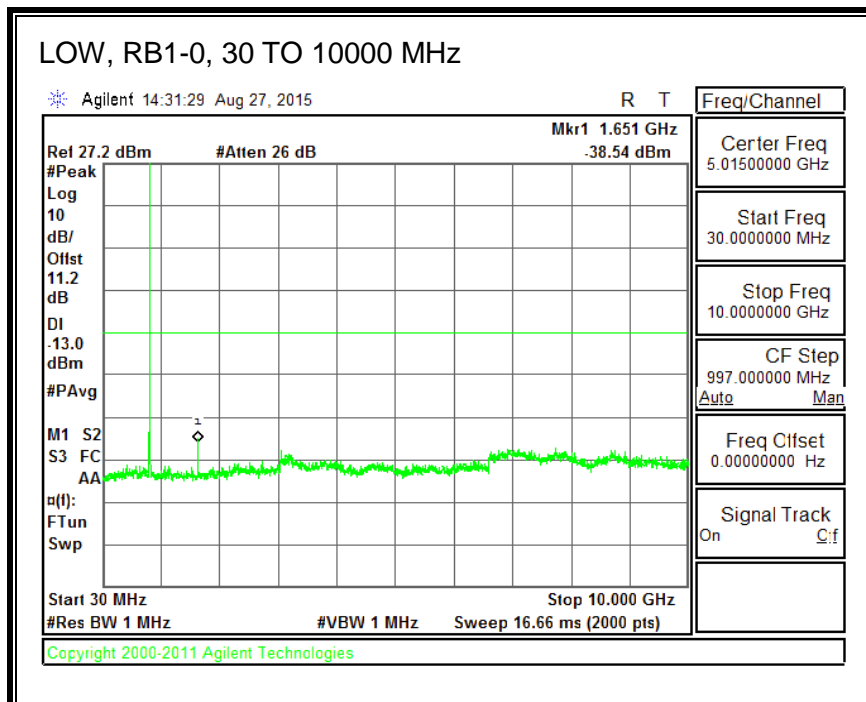


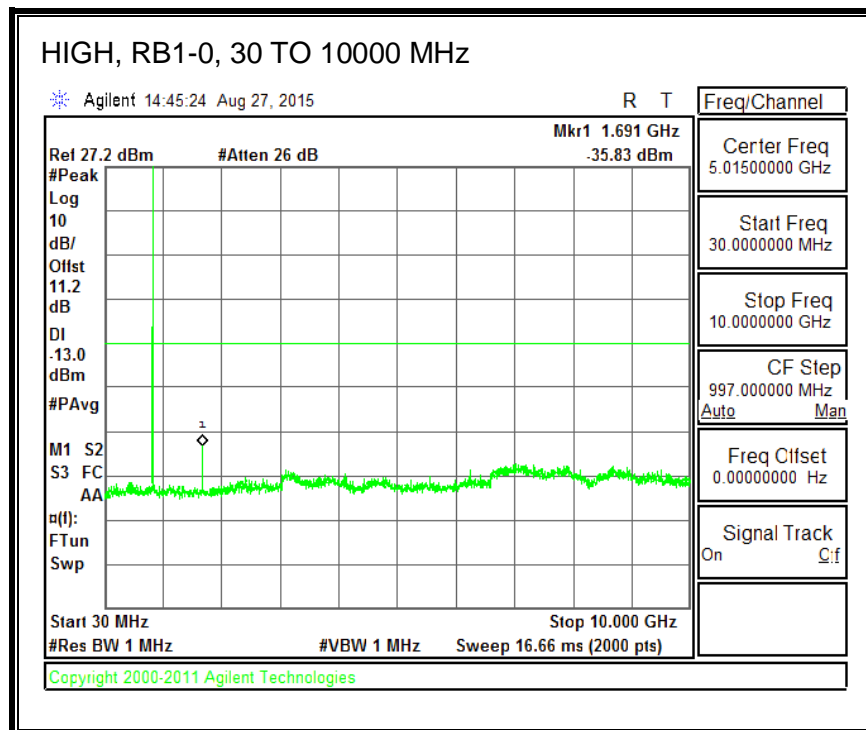
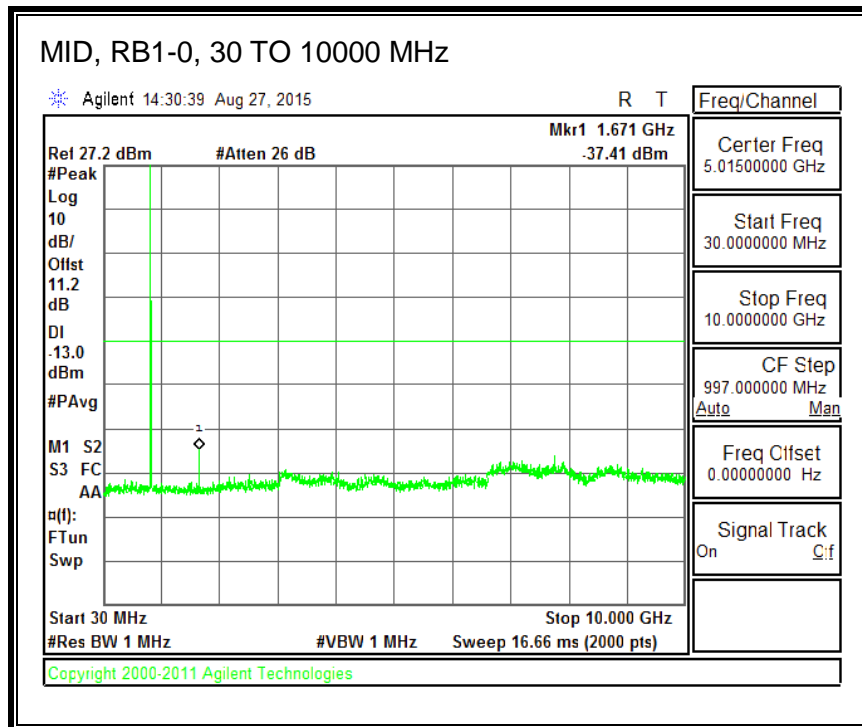
QPSK, (3.0 MHz BAND WIDTH)



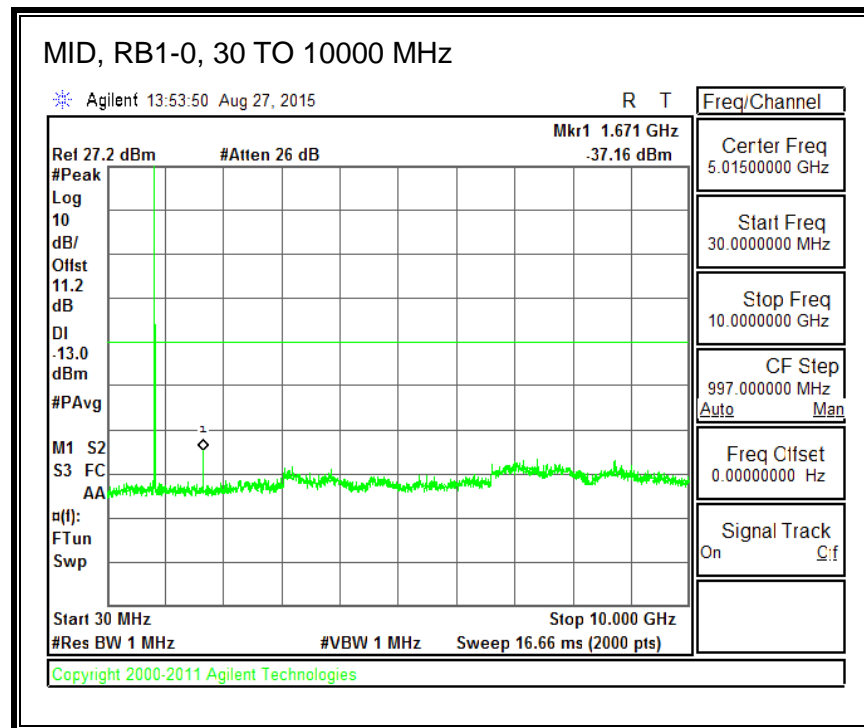
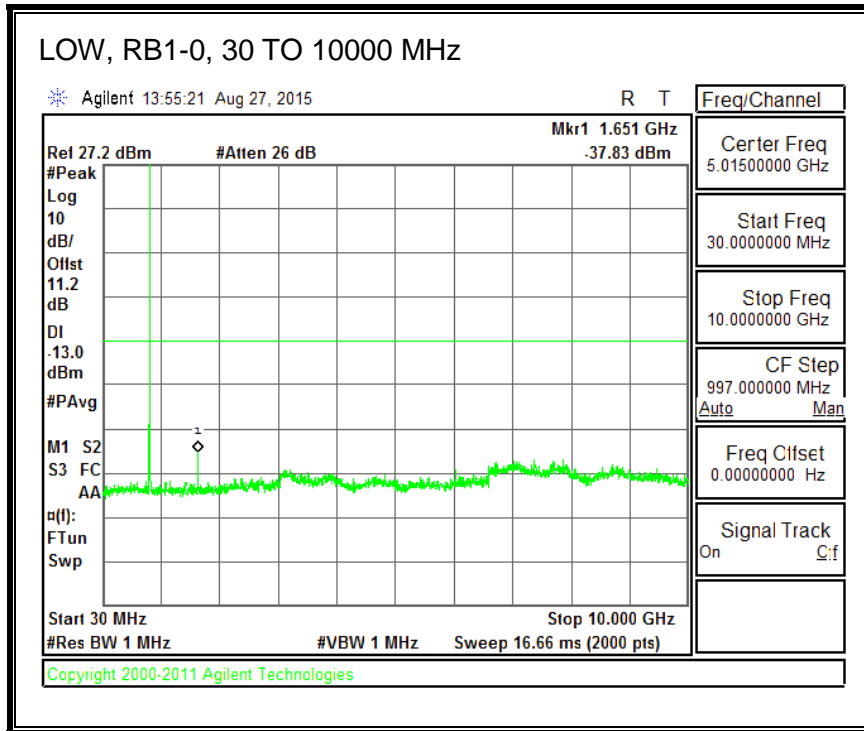


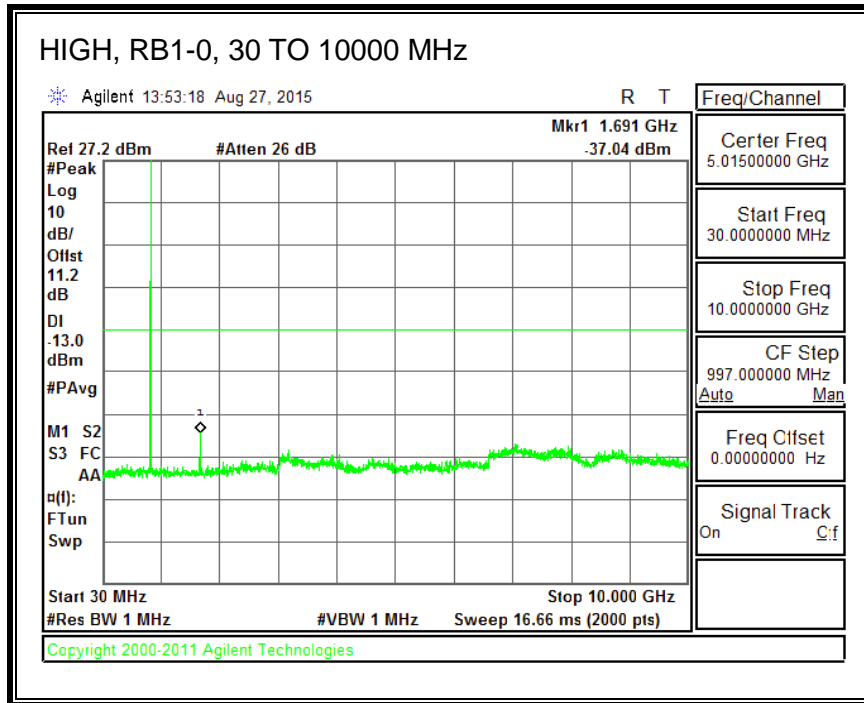
16QAM, (3.0 MHz BAND WIDTH)



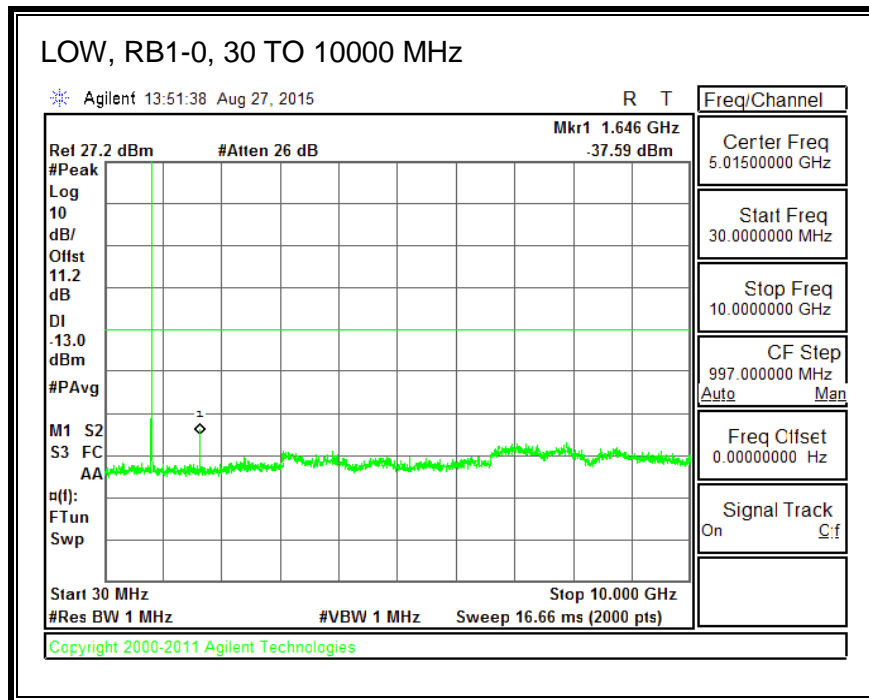


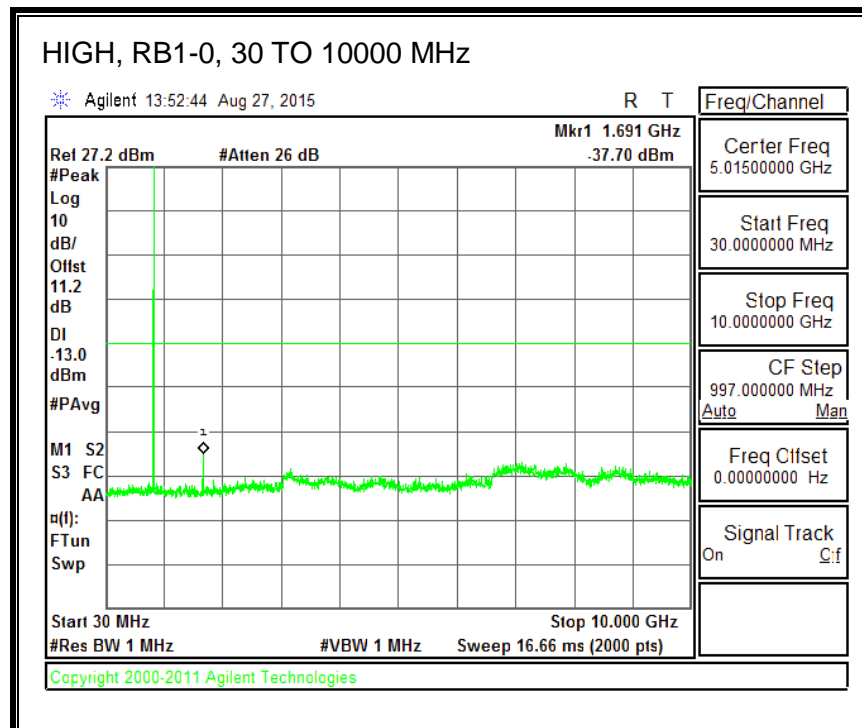
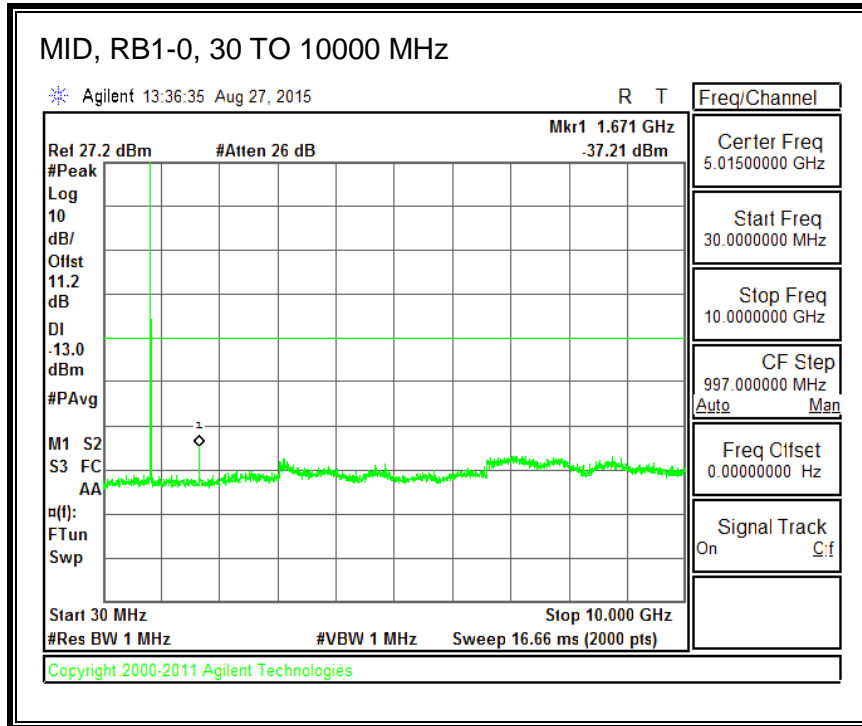
QPSK, (5.0 MHz BAND WIDTH)



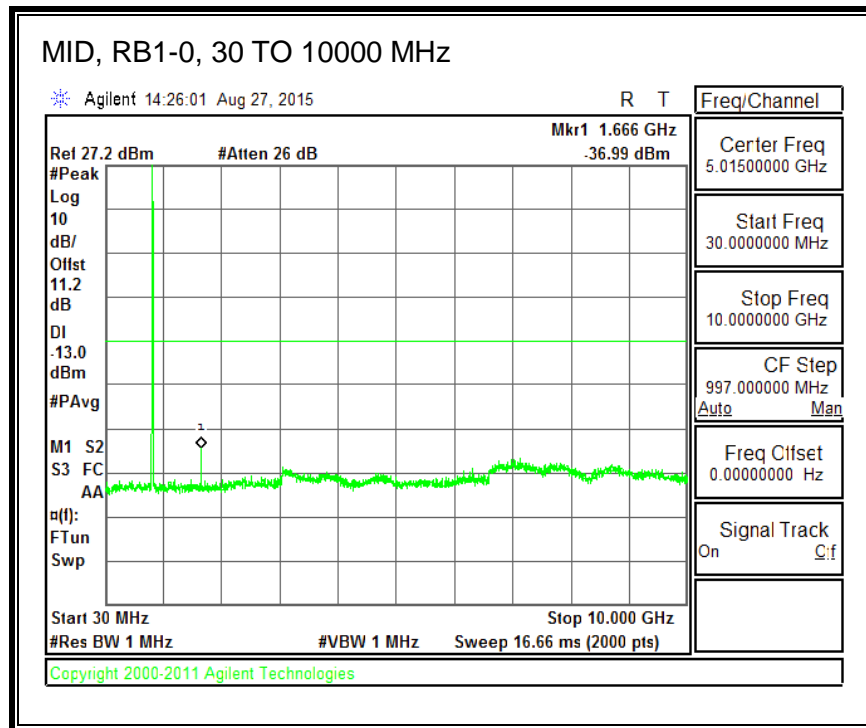
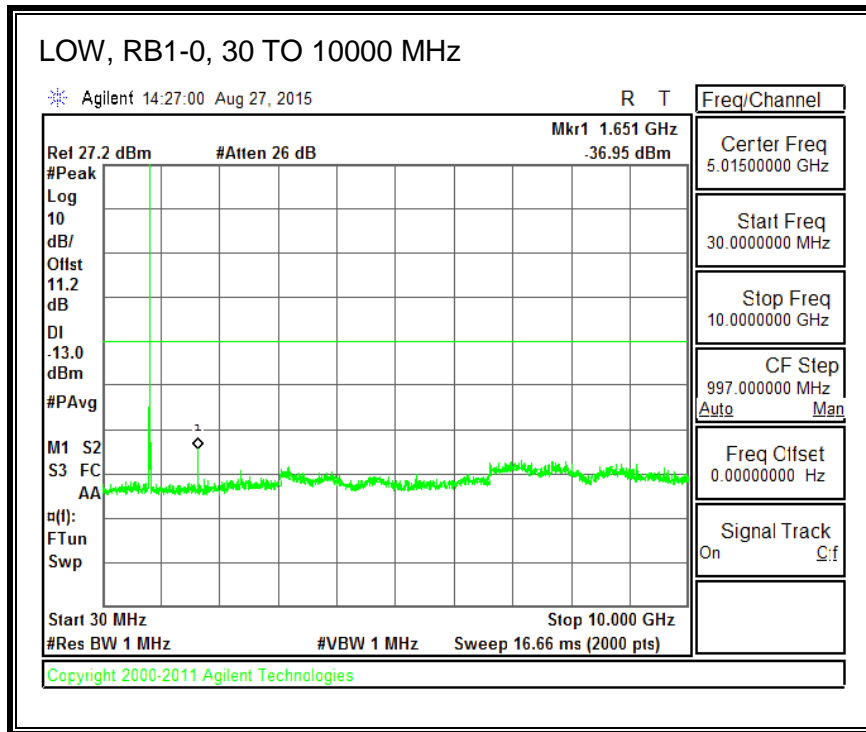


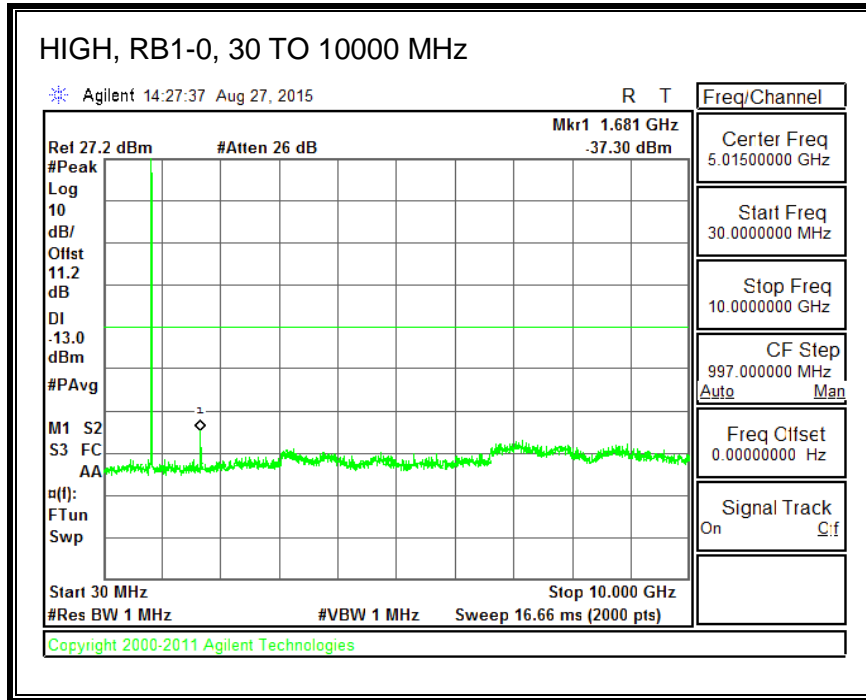
16QAM, (5.0 MHz BAND WIDTH)



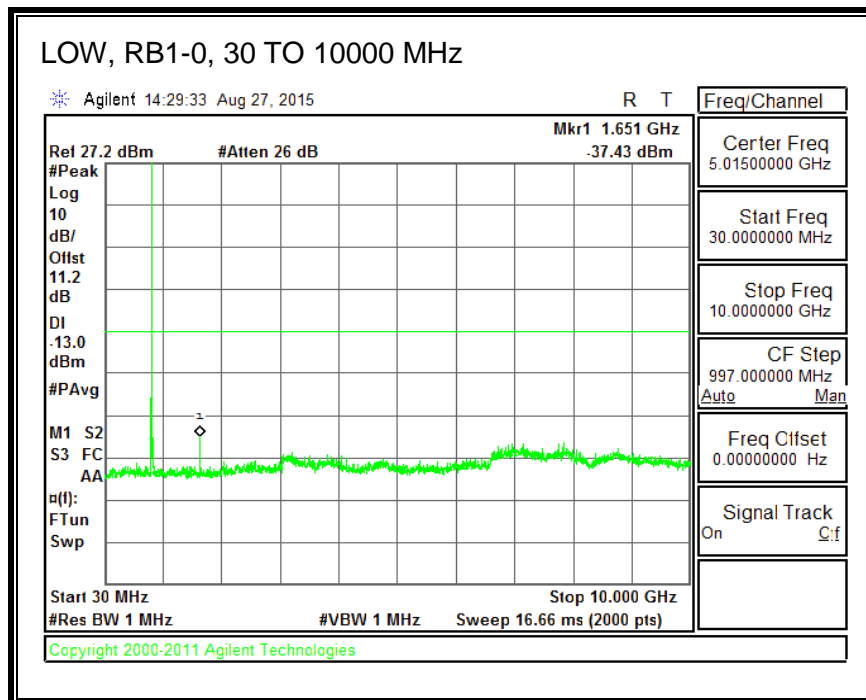


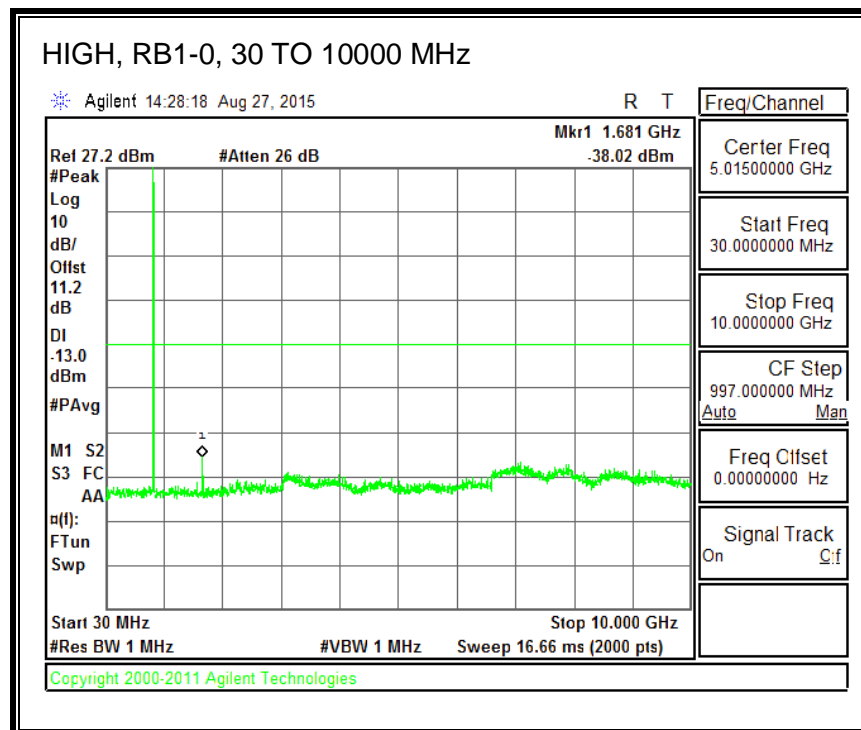
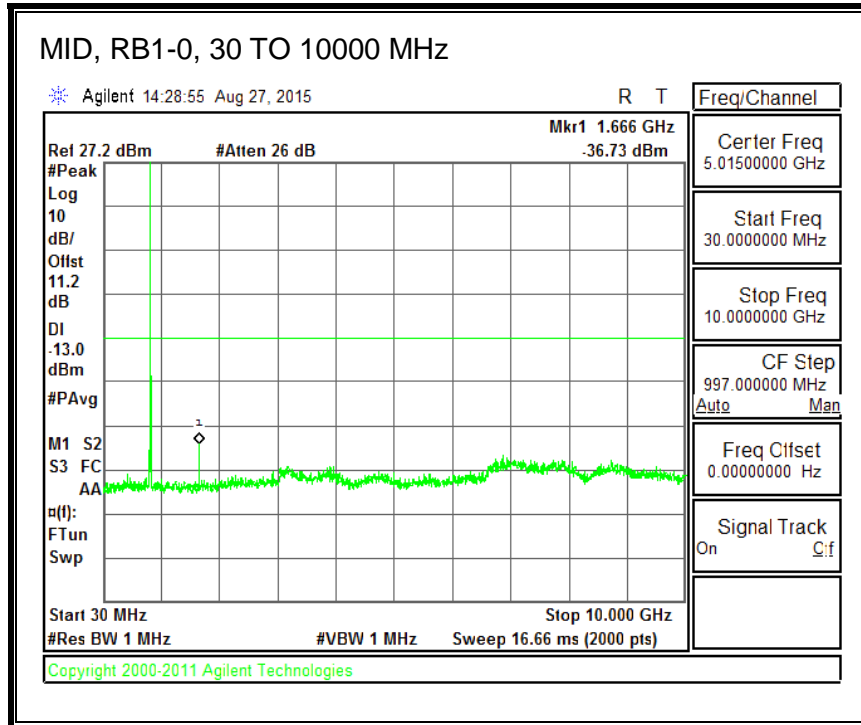
QPSK, (10.0 MHz BAND WIDTH)





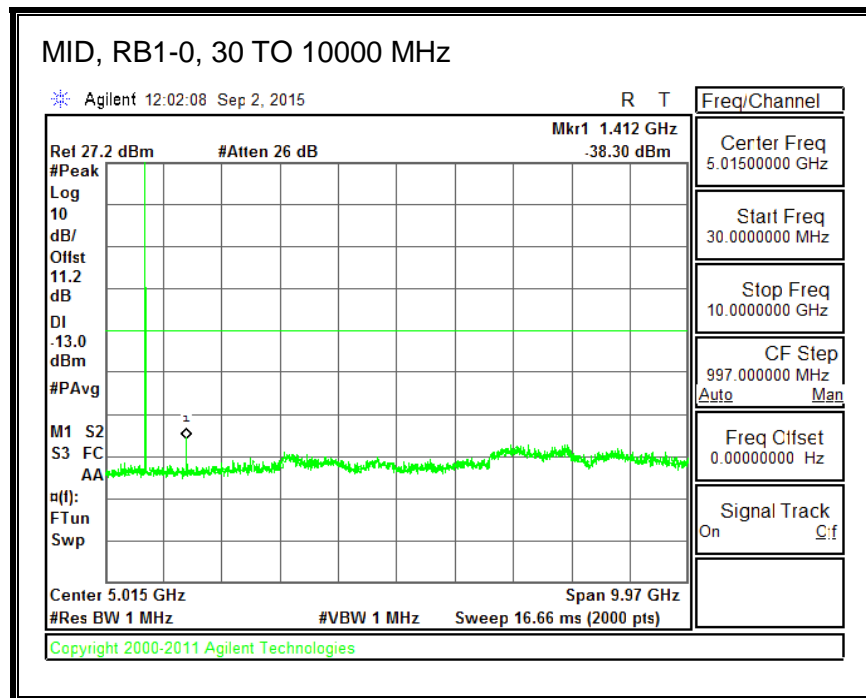
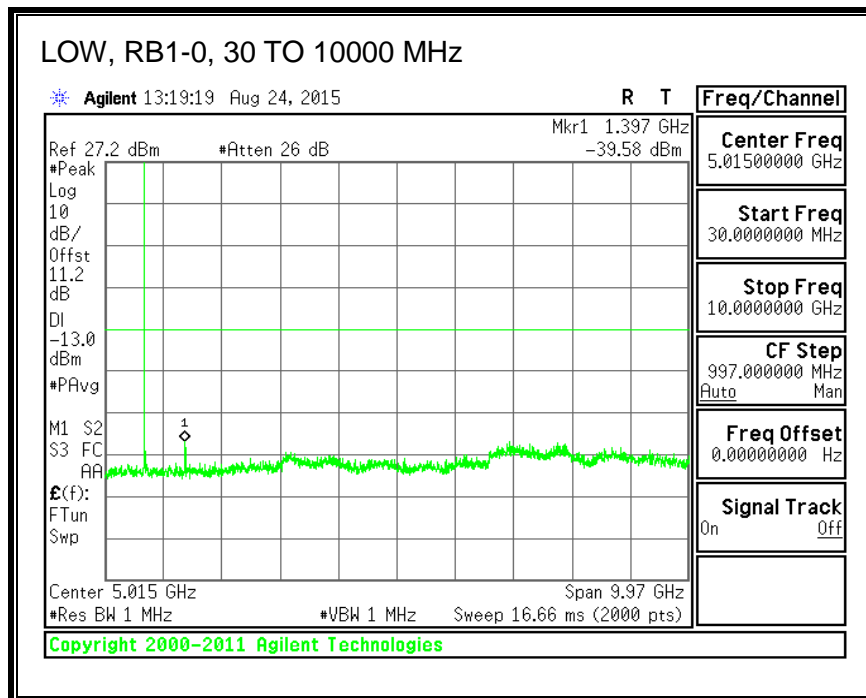
16QAM, (10.0 MHz BAND WIDTH)

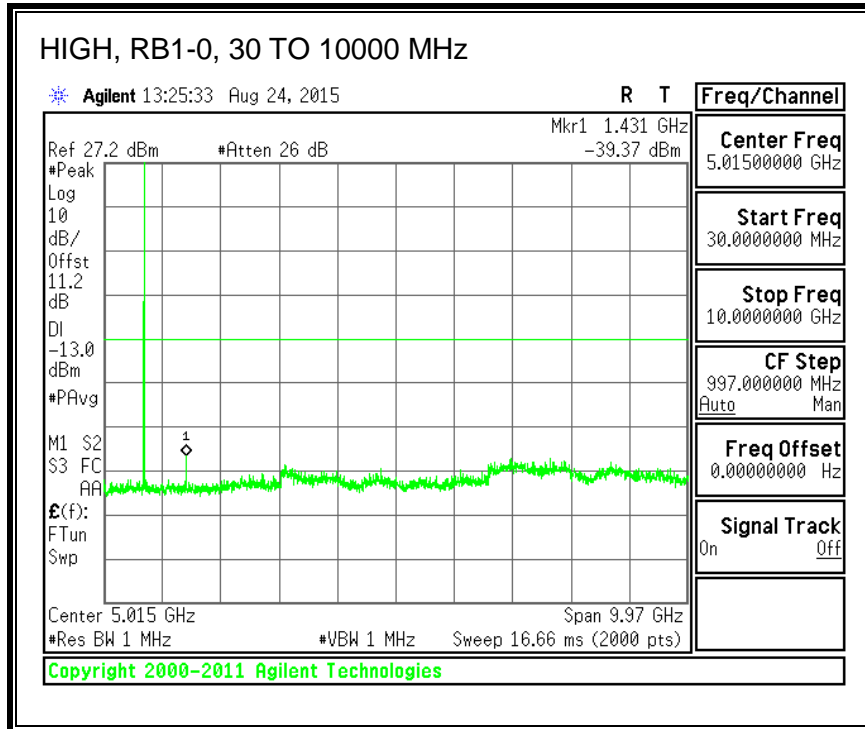




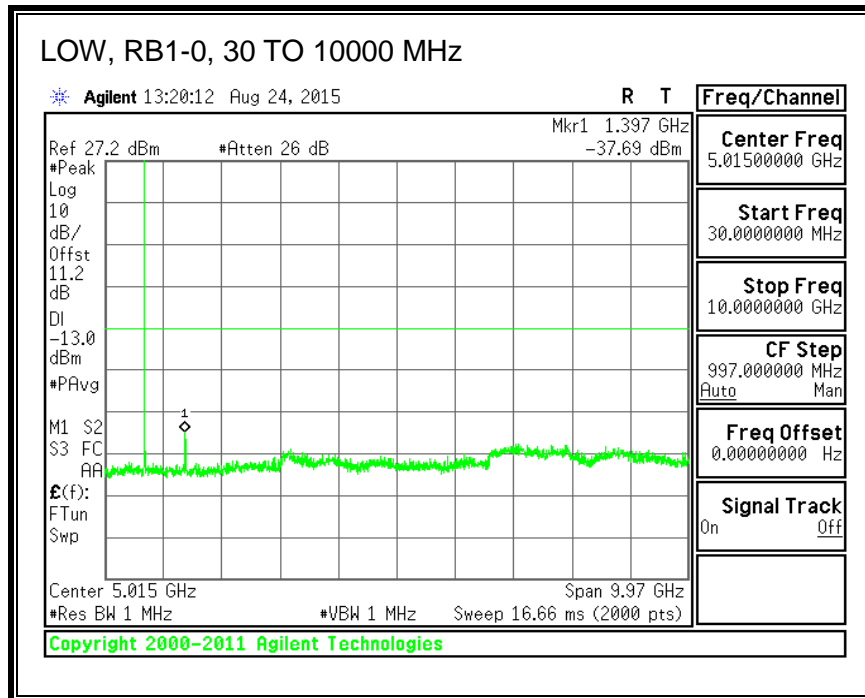
8.3.4. LTE BAND 12

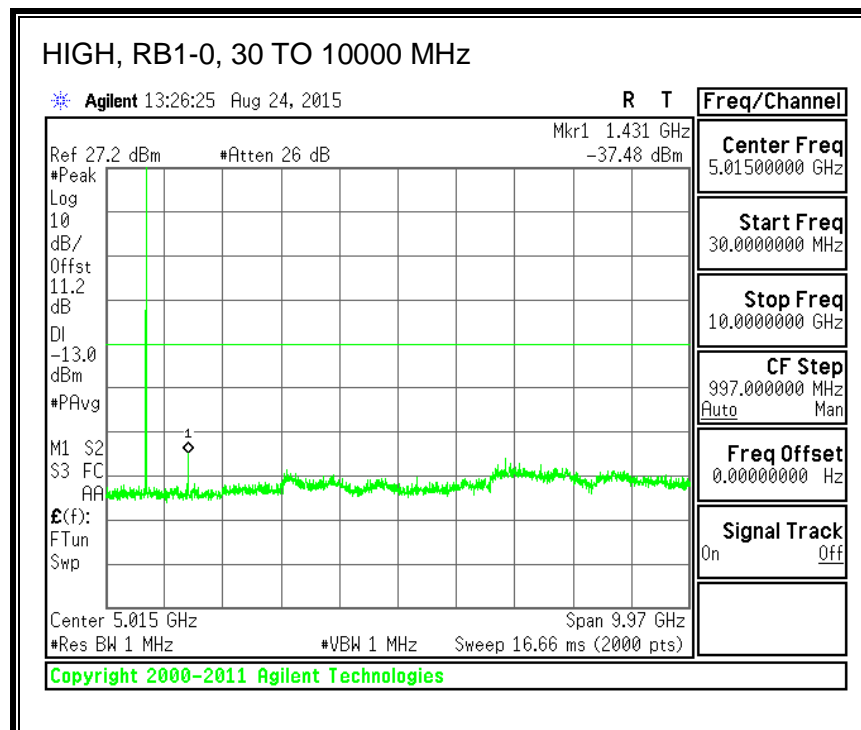
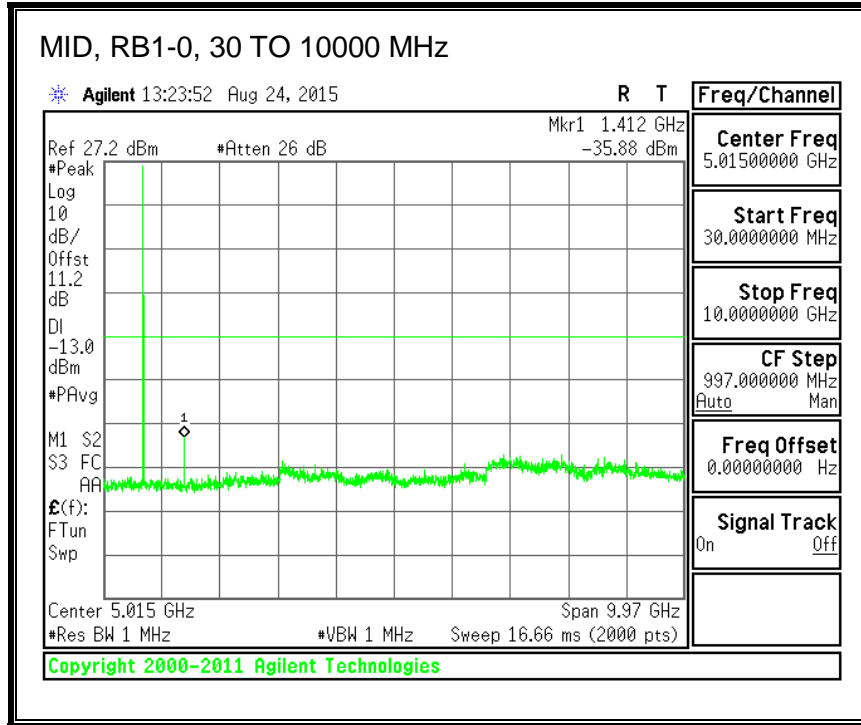
QPSK, (1.4 MHz BAND WIDTH)



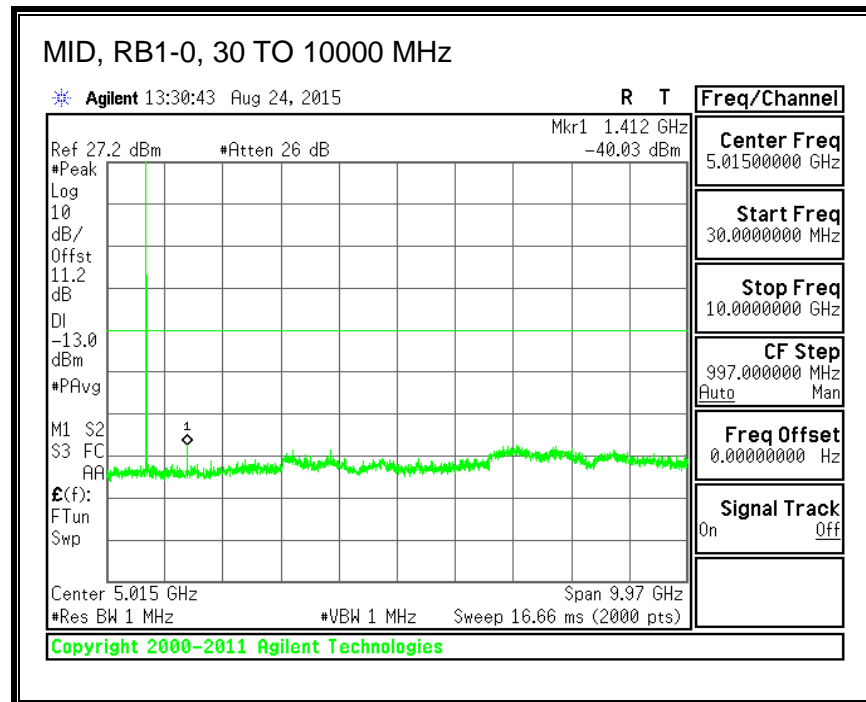
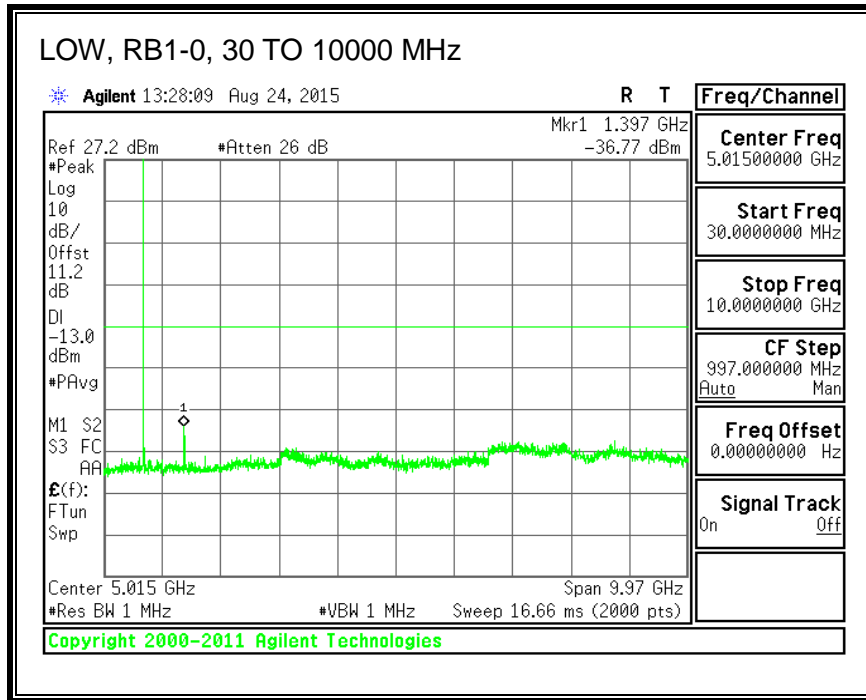


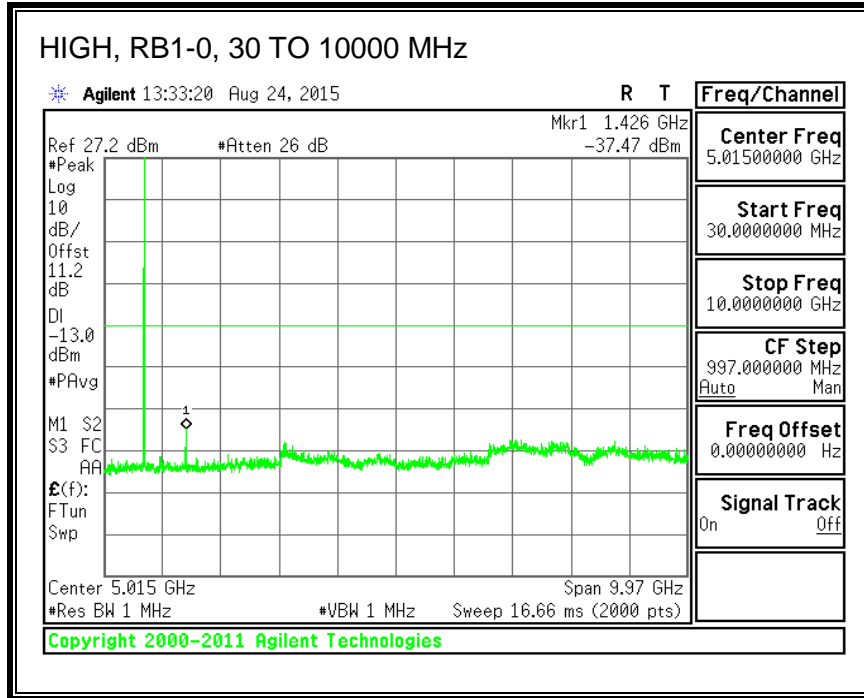
16QAM, (1.4 MHz BAND WIDTH)



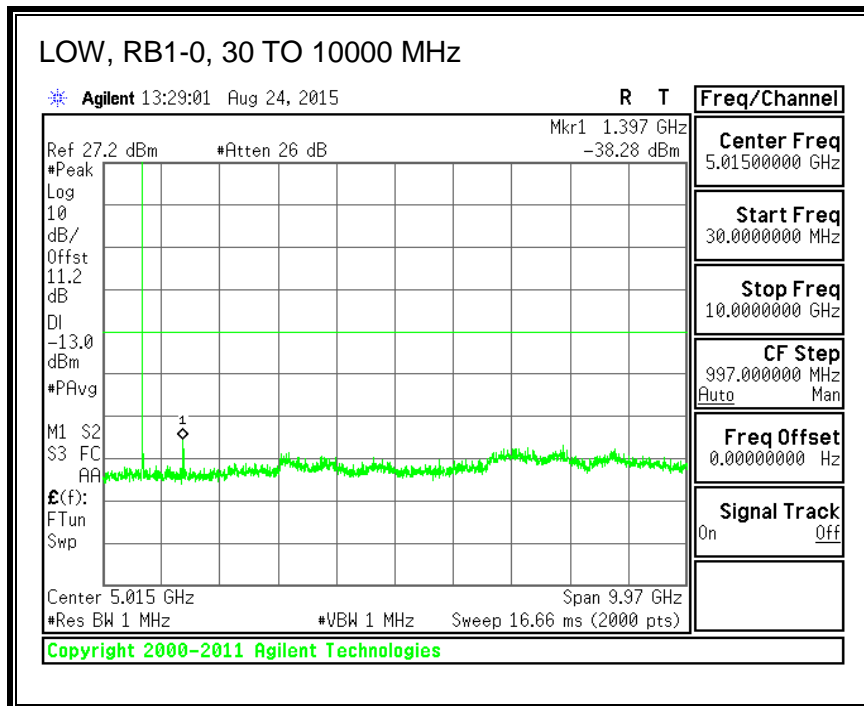


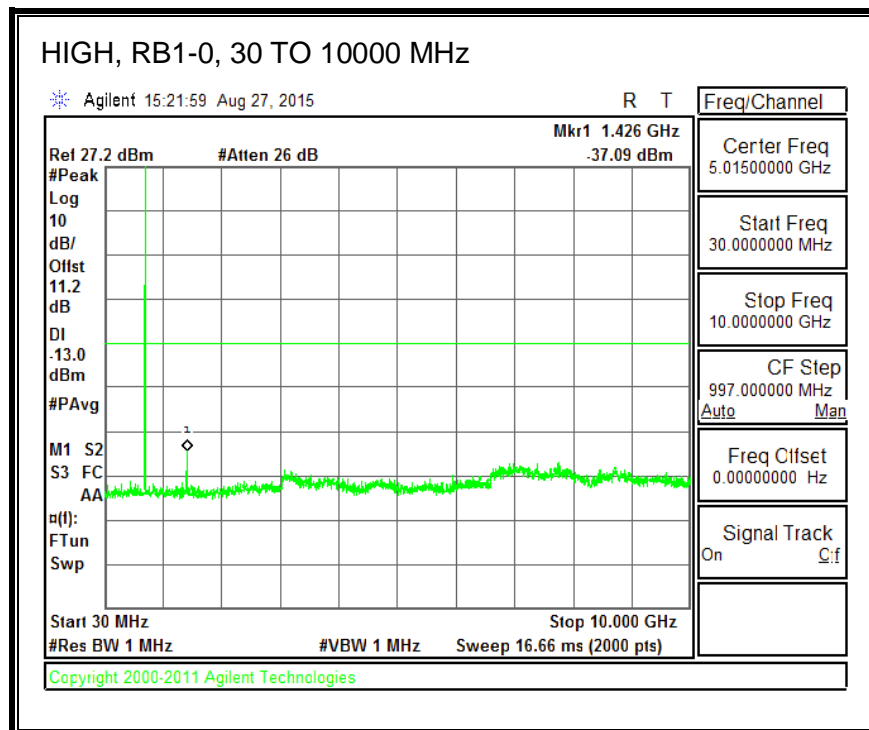
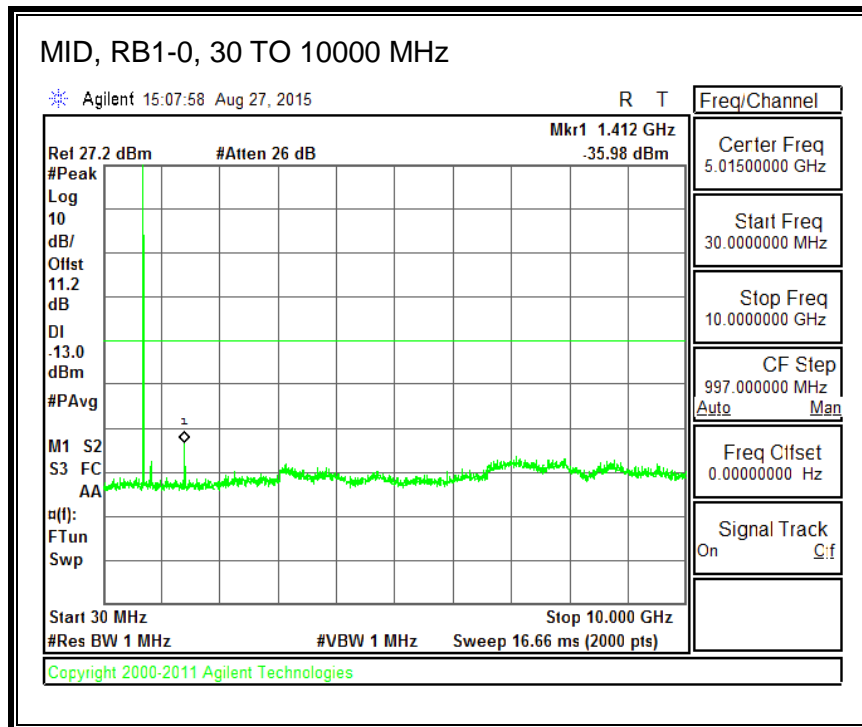
QPSK, (3.0 MHz BAND WIDTH)



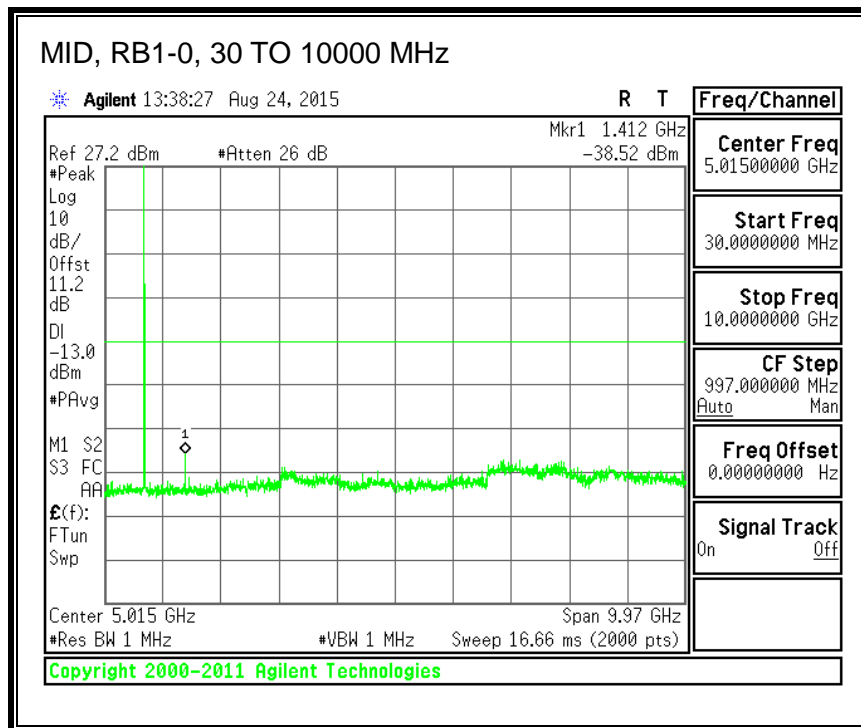
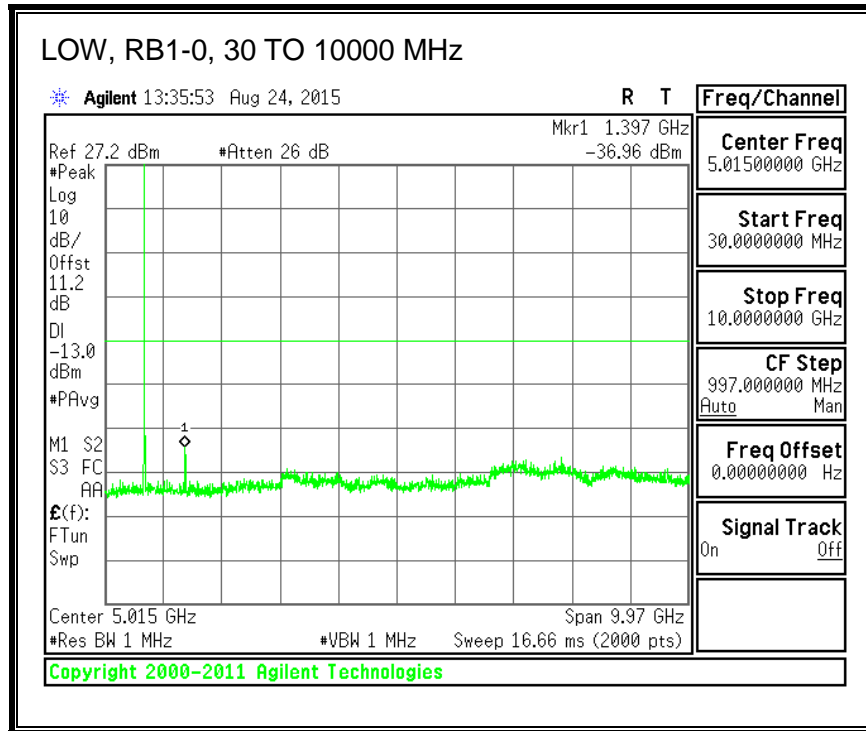


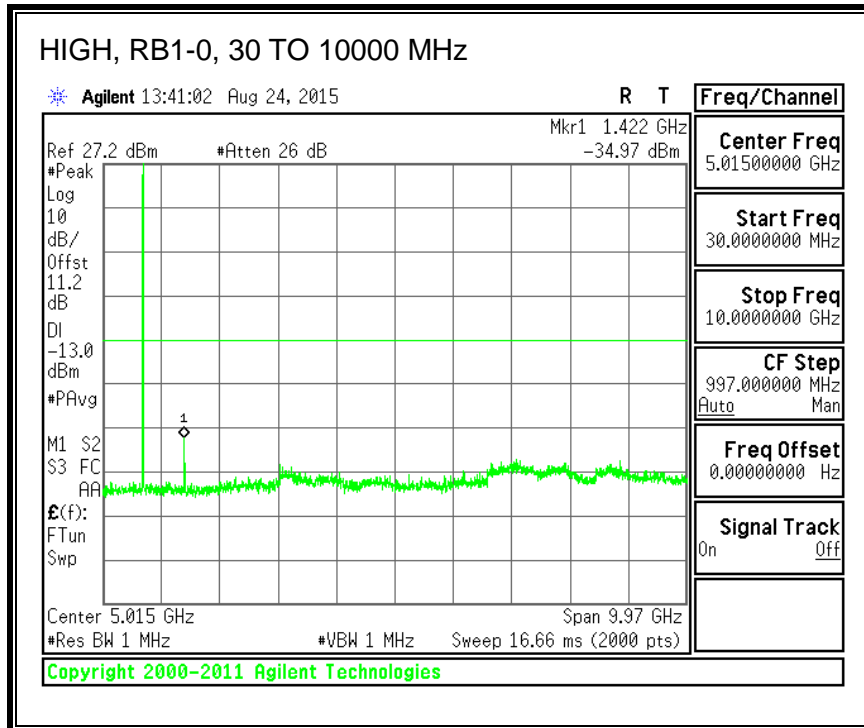
16QAM, (3.0 MHz BAND WIDTH)



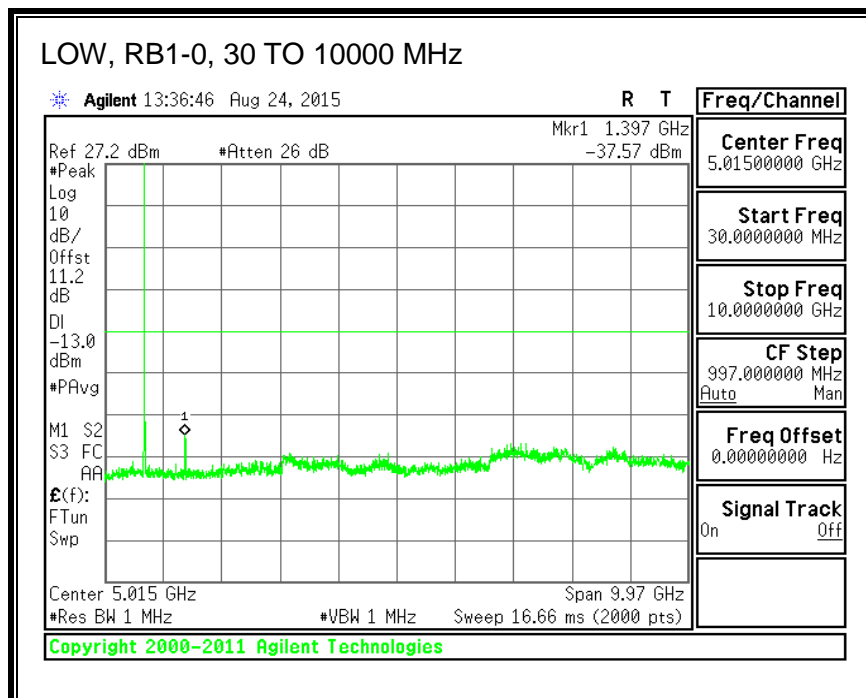


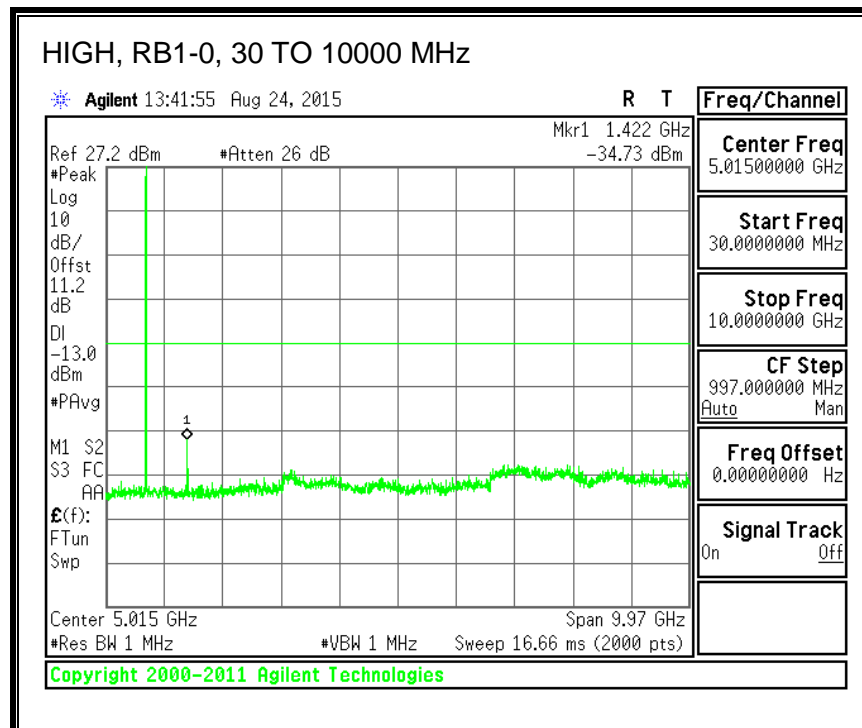
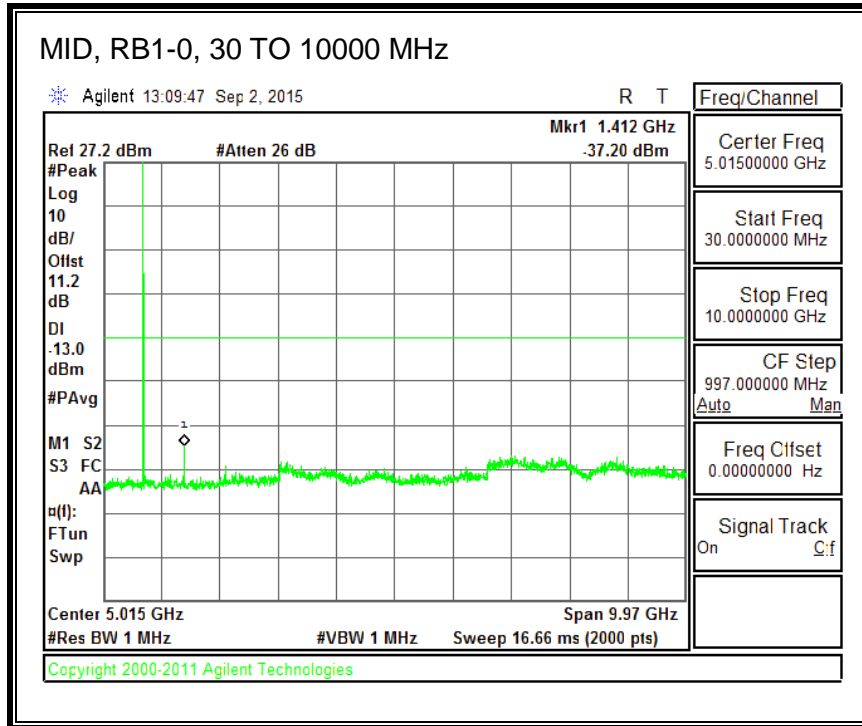
QPSK, (5.0 MHz BAND WIDTH)



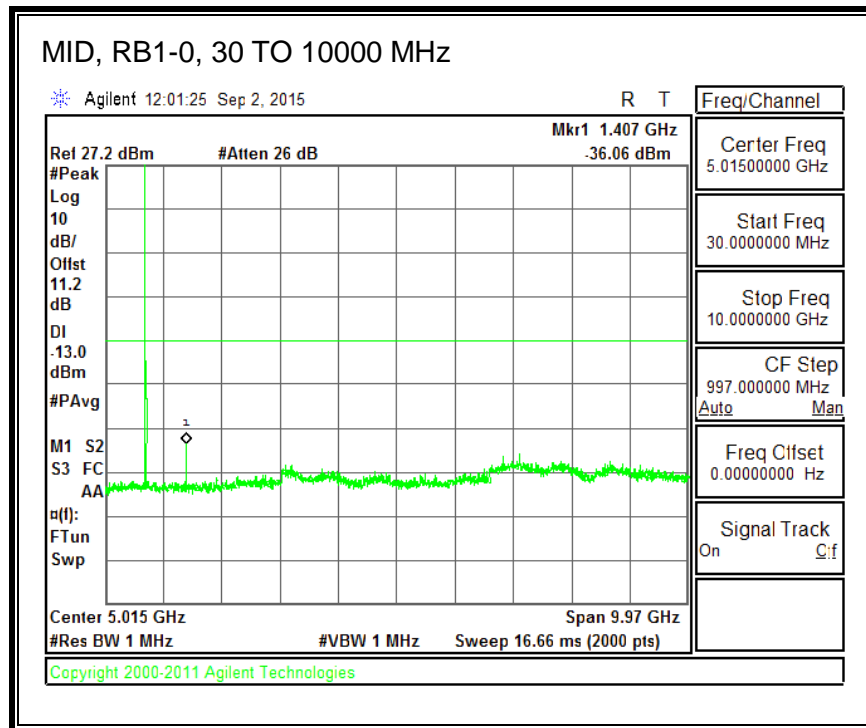
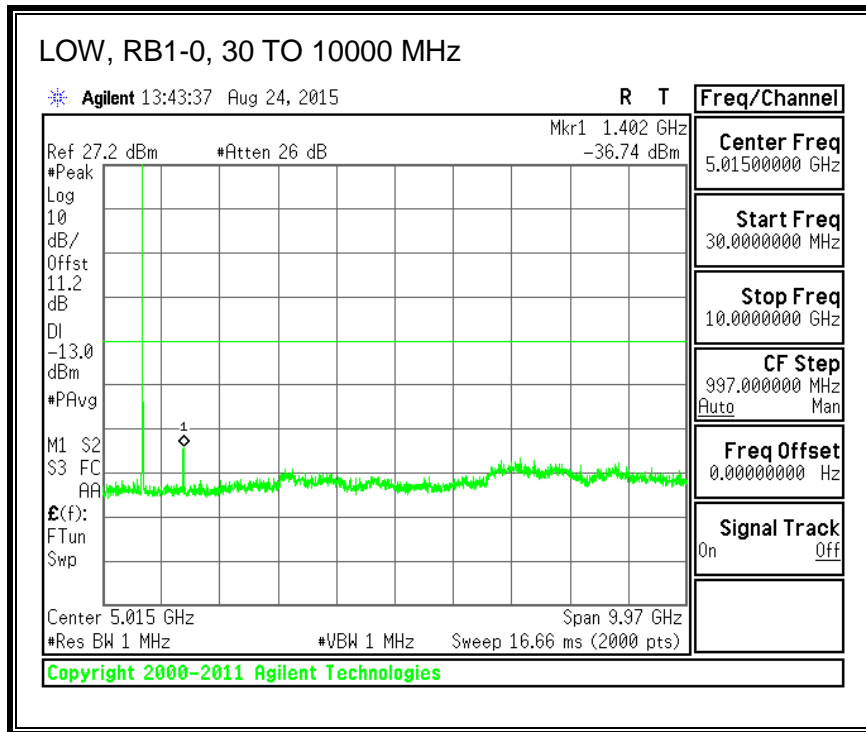


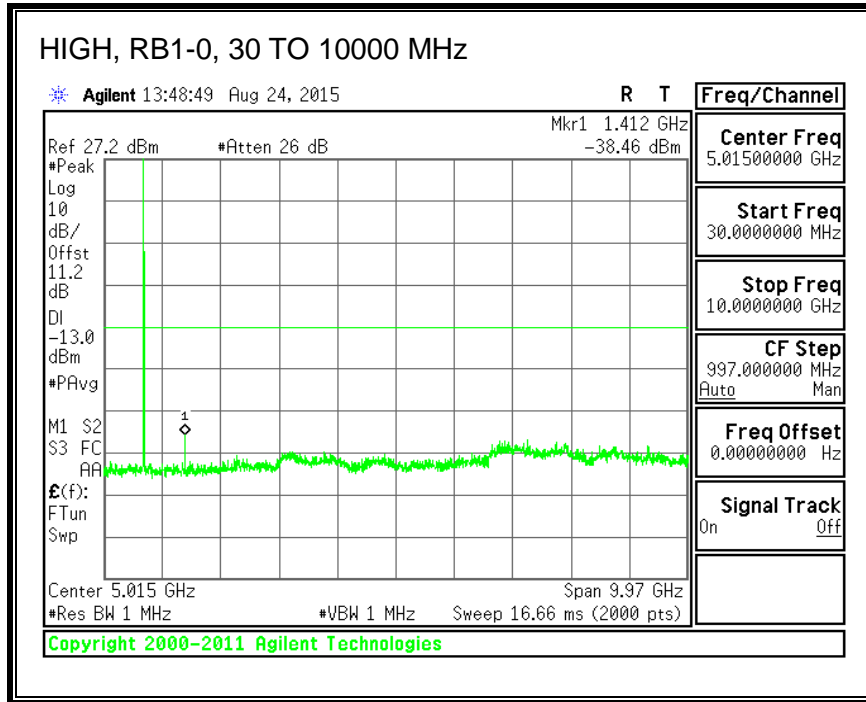
16QAM, (5.0 MHz BAND WIDTH)



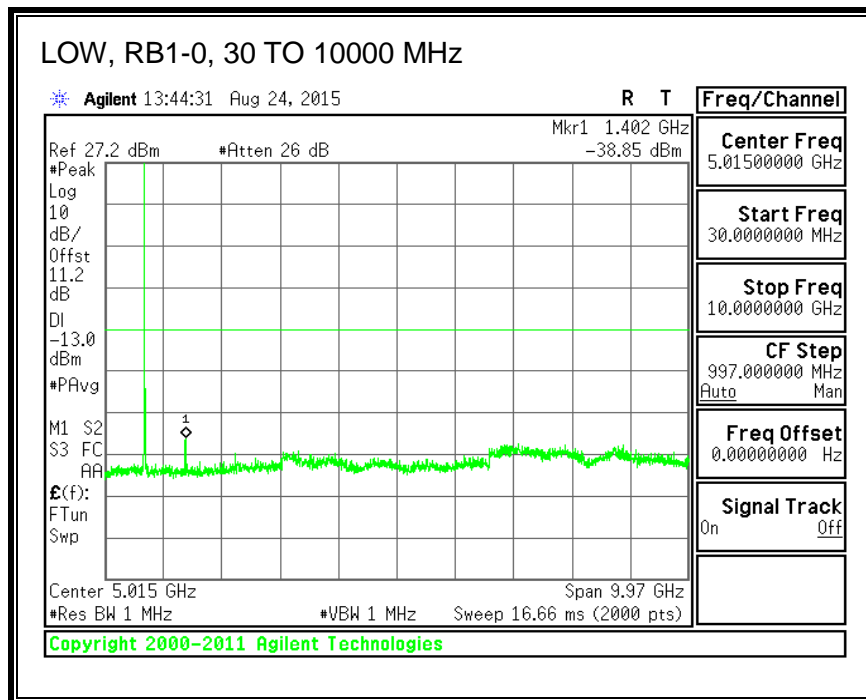


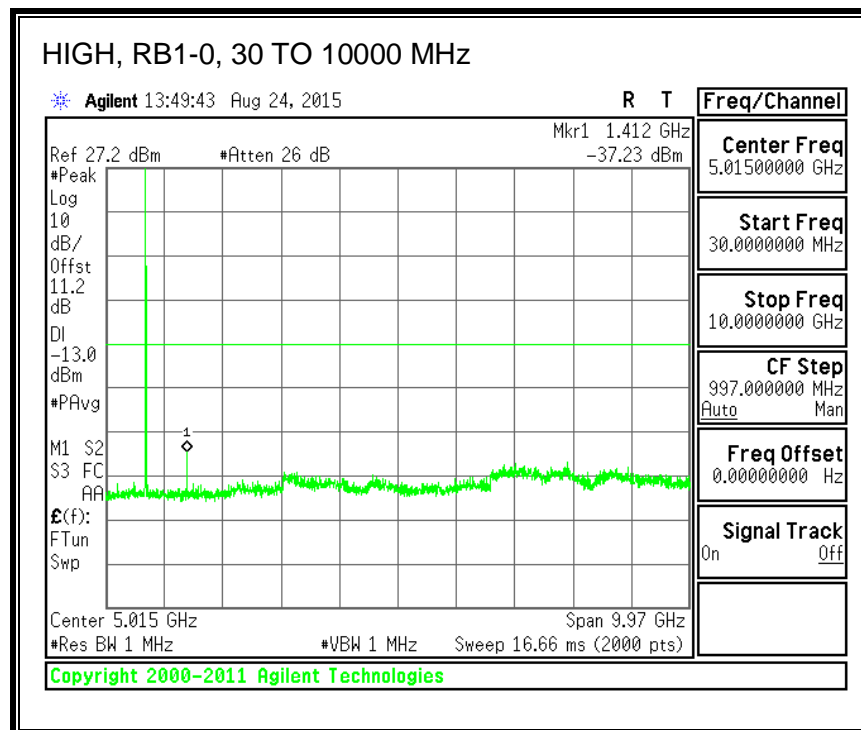
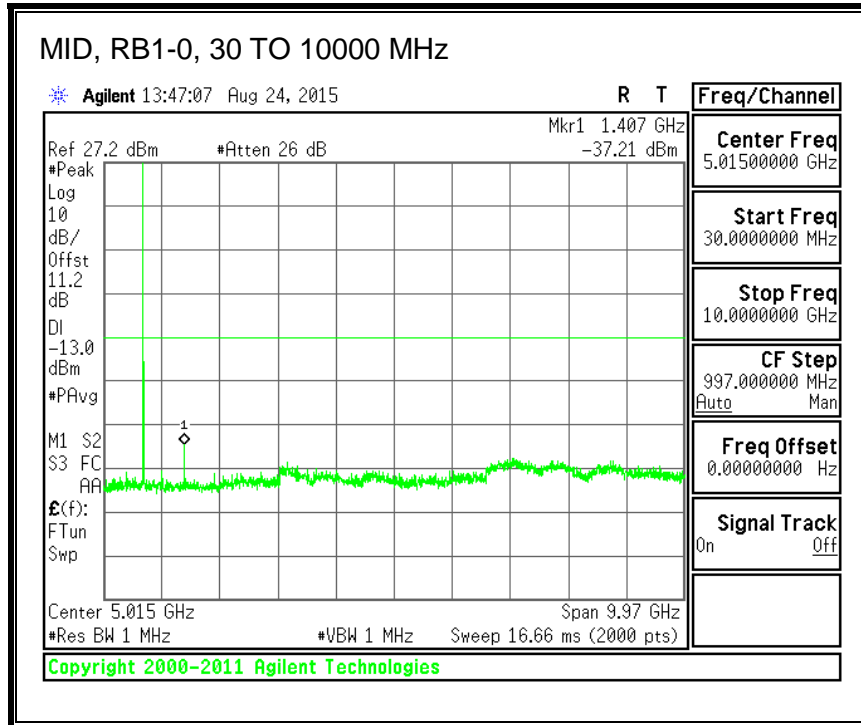
QPSK, (10.0 MHz BAND WIDTH)





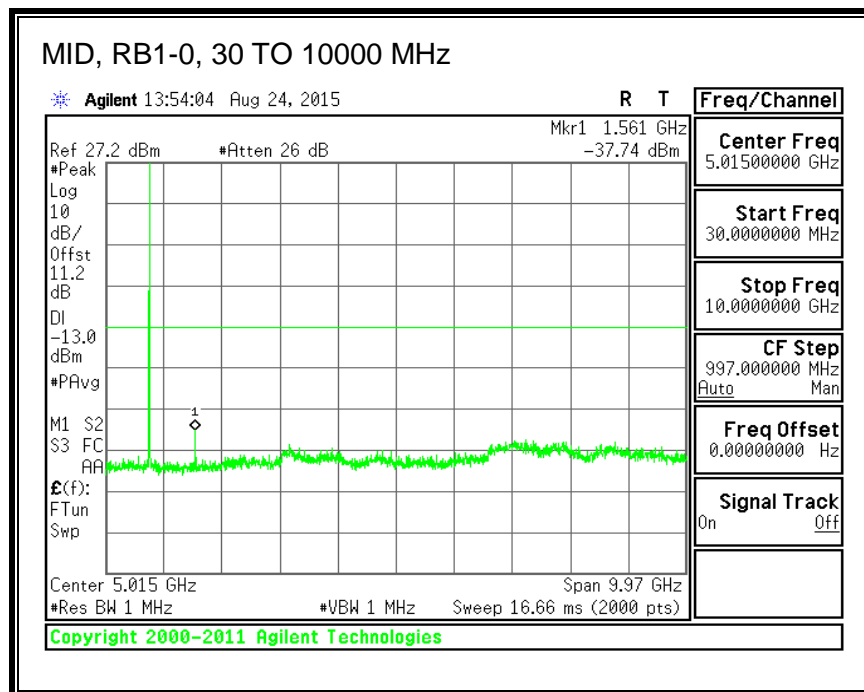
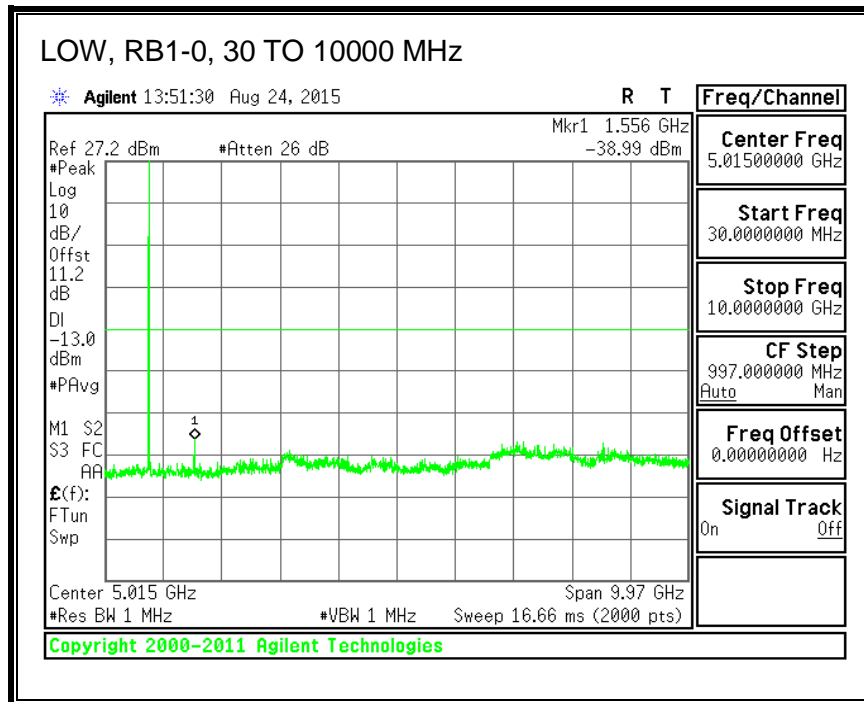
16QAM, (10.0 MHz BAND WIDTH)

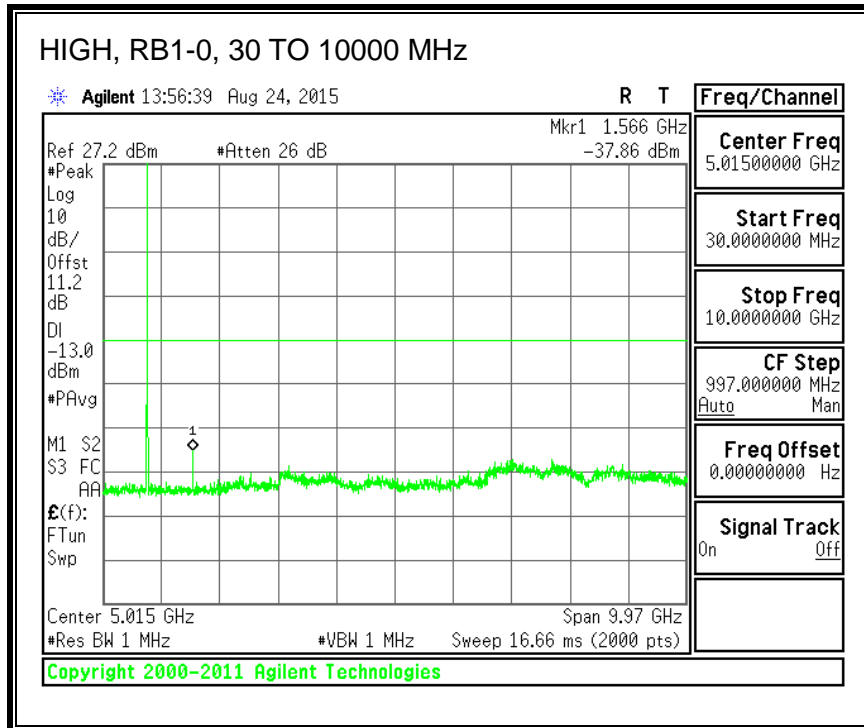




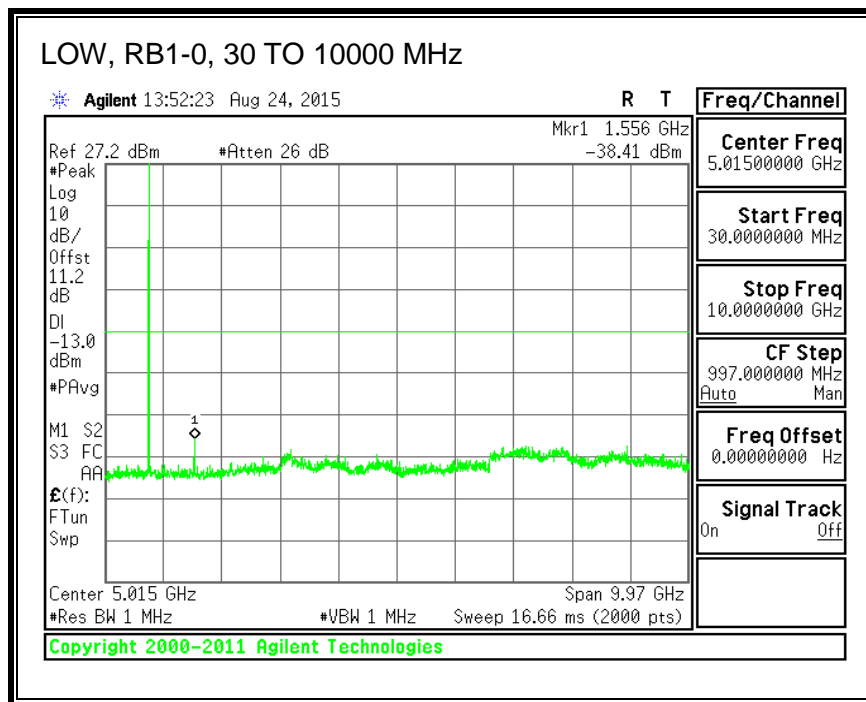
8.3.5. LTE BAND 13

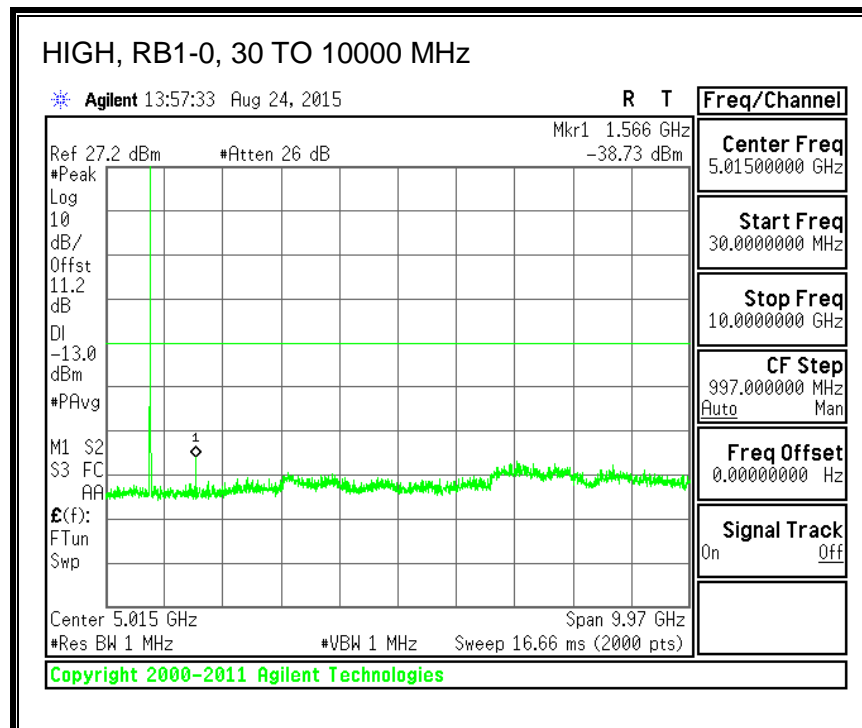
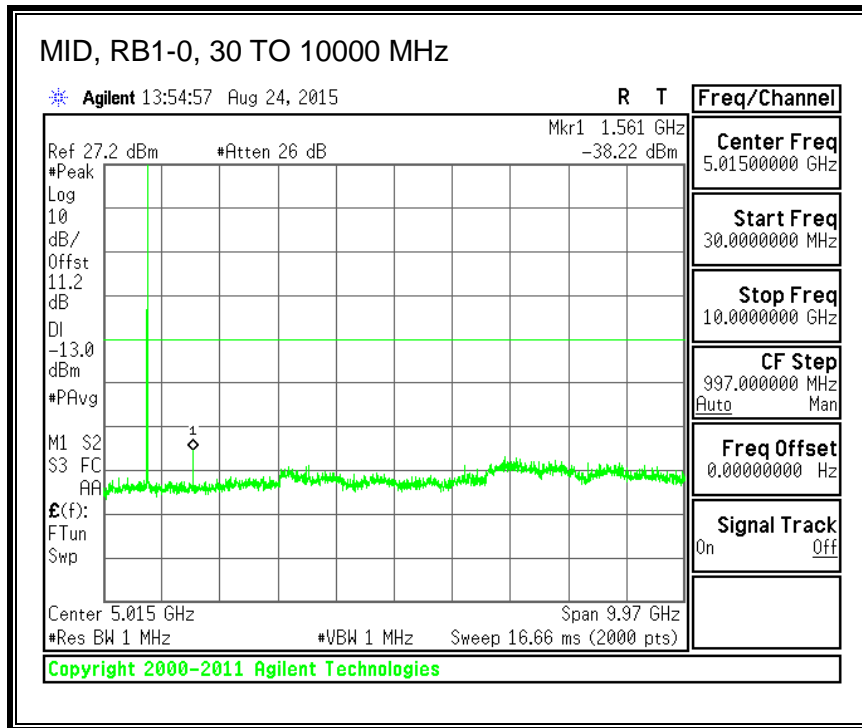
QPSK, (5.0 MHz BAND WIDTH)



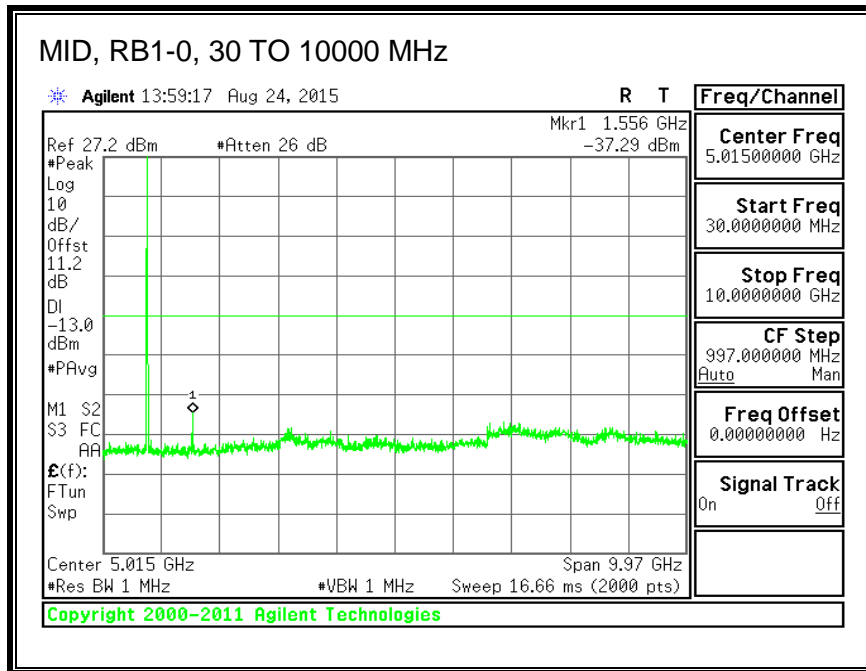


16QAM, (5.0 MHz BAND WIDTH)

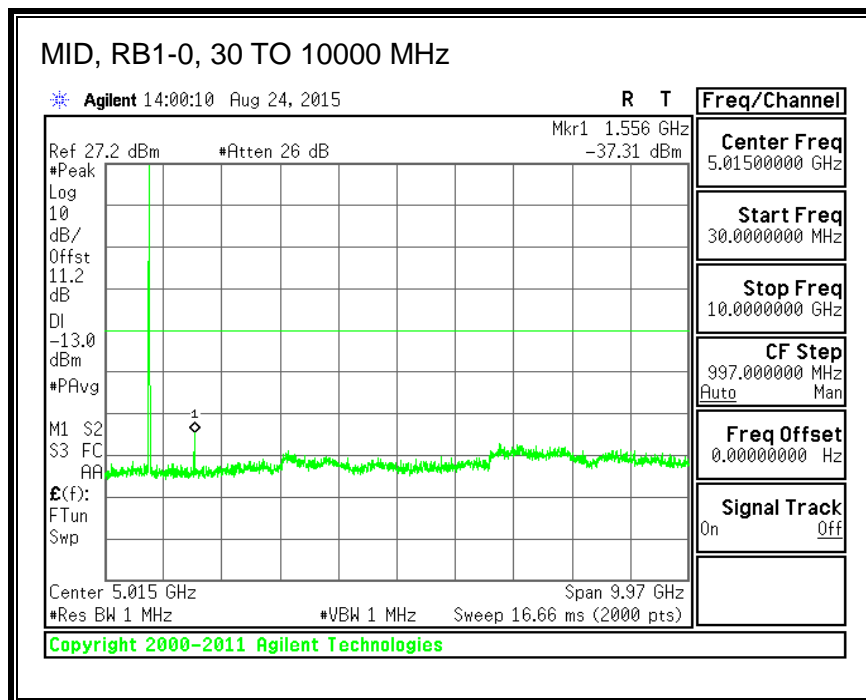




QPSK, (10.0 MHz BAND WIDTH)

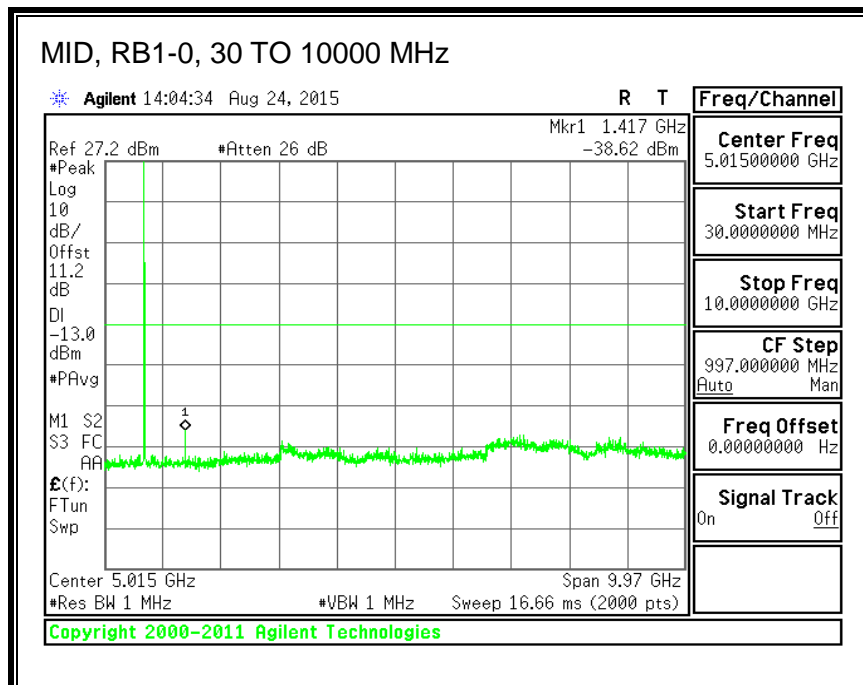
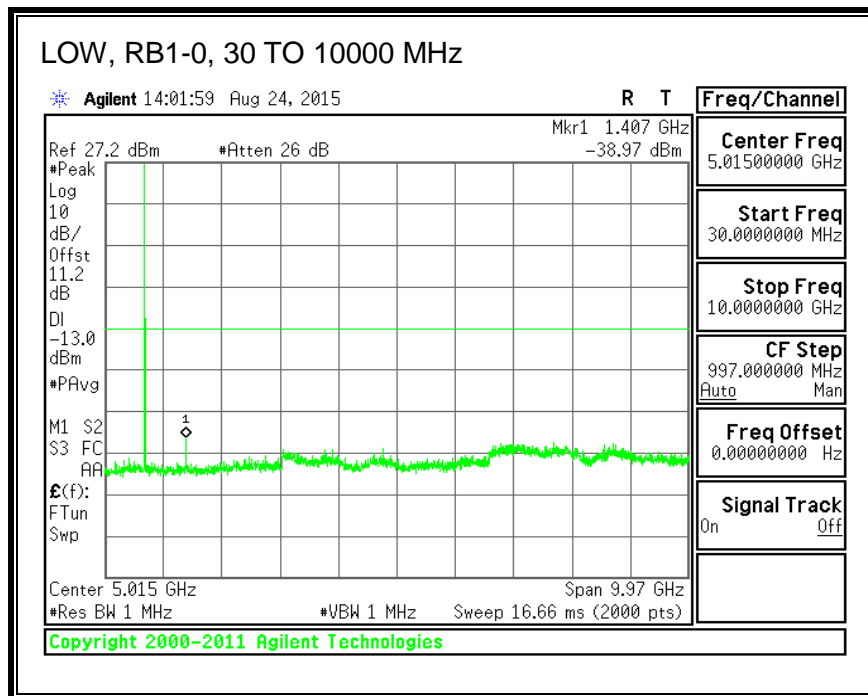


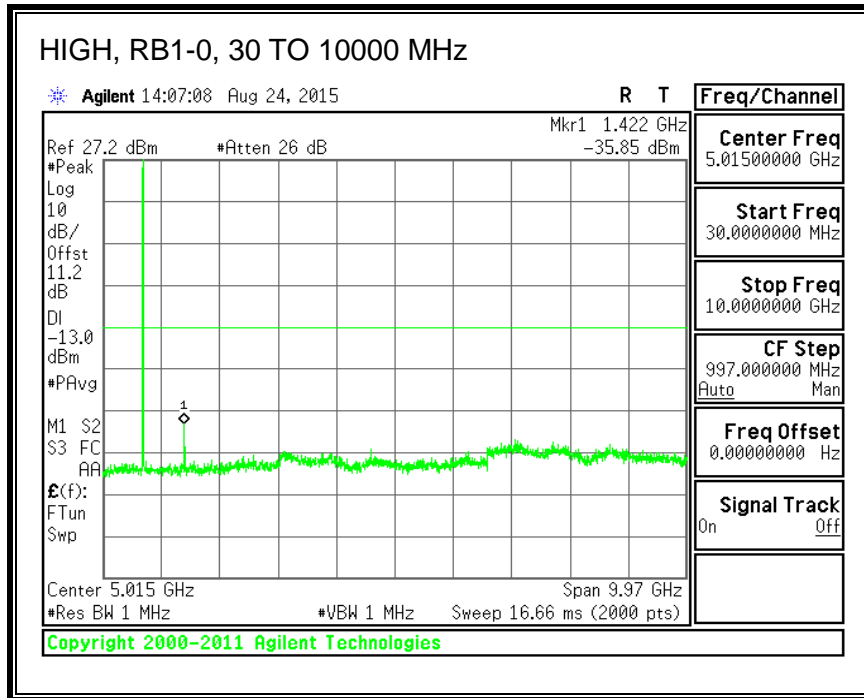
16QAM, (10.0 MHz BAND WIDTH)



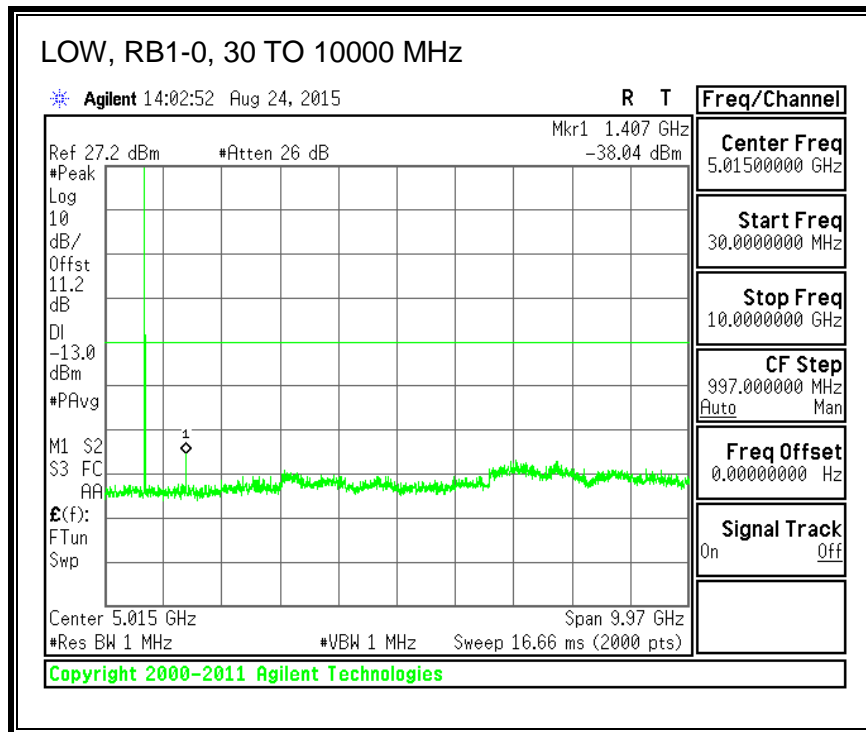
8.3.6. LTE BAND 17

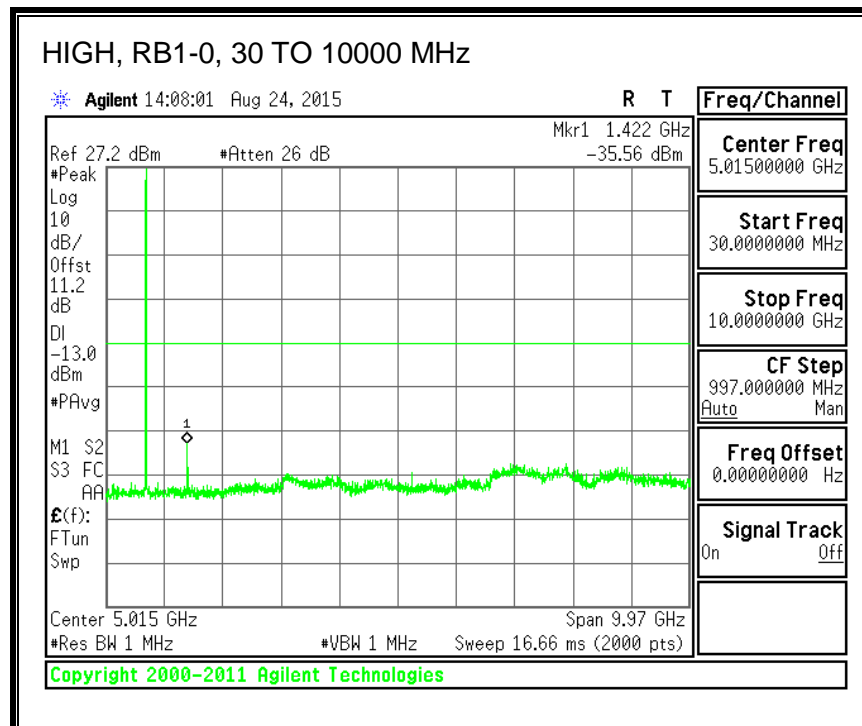
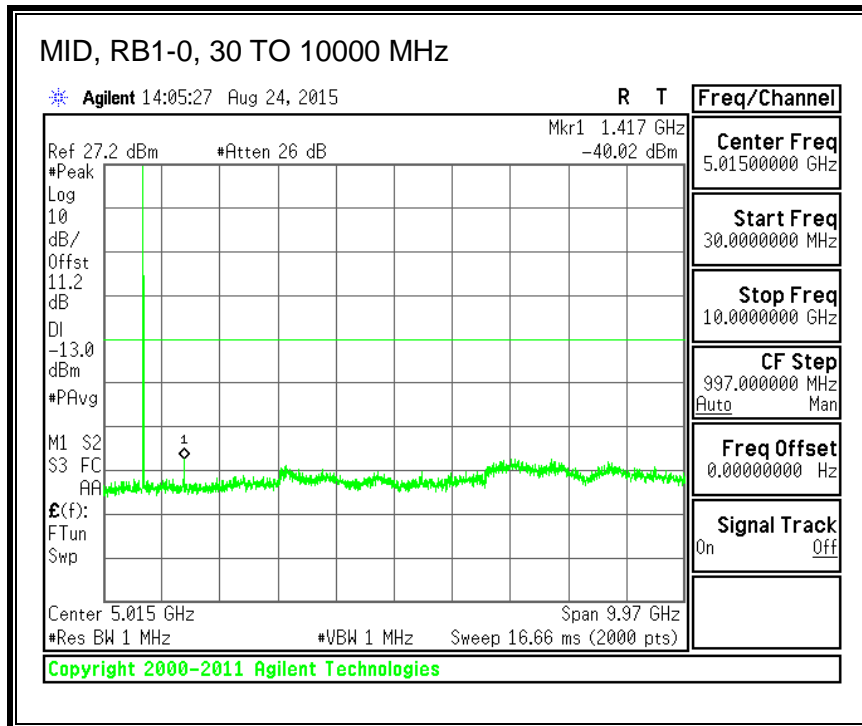
QPSK, (5.0 MHz BAND WIDTH)



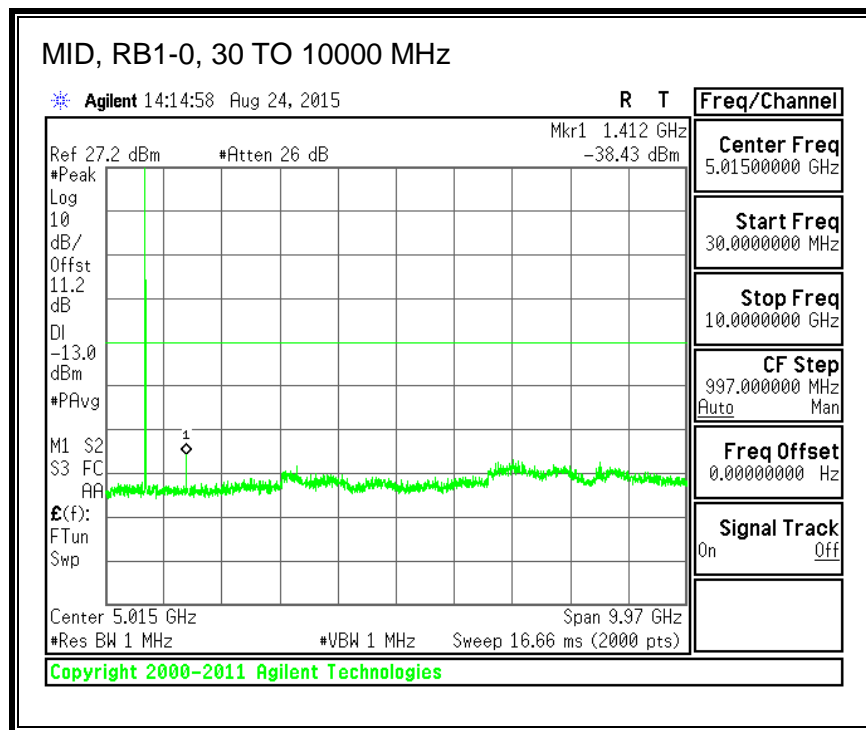
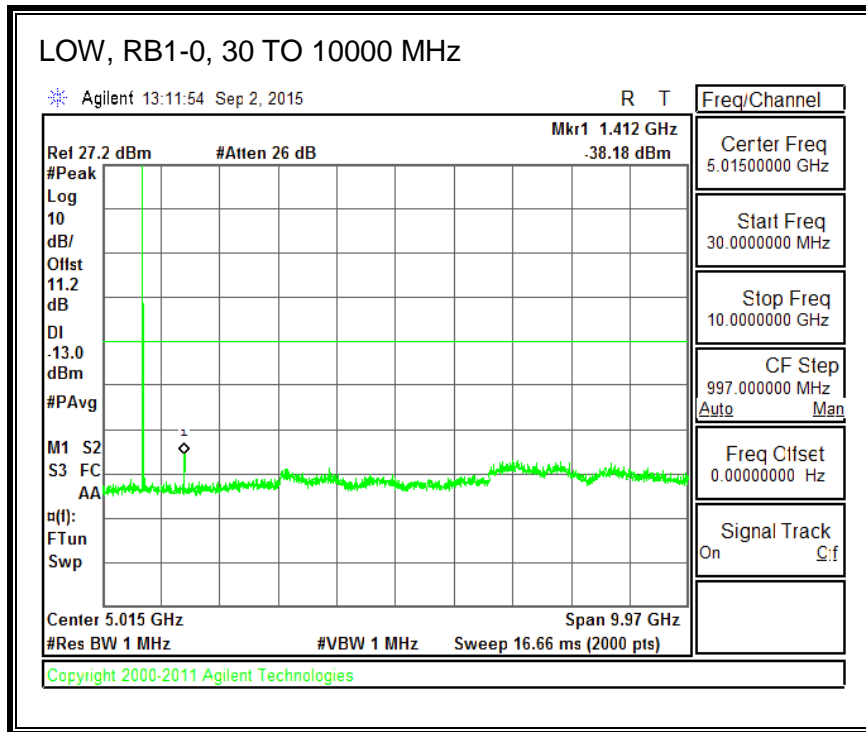


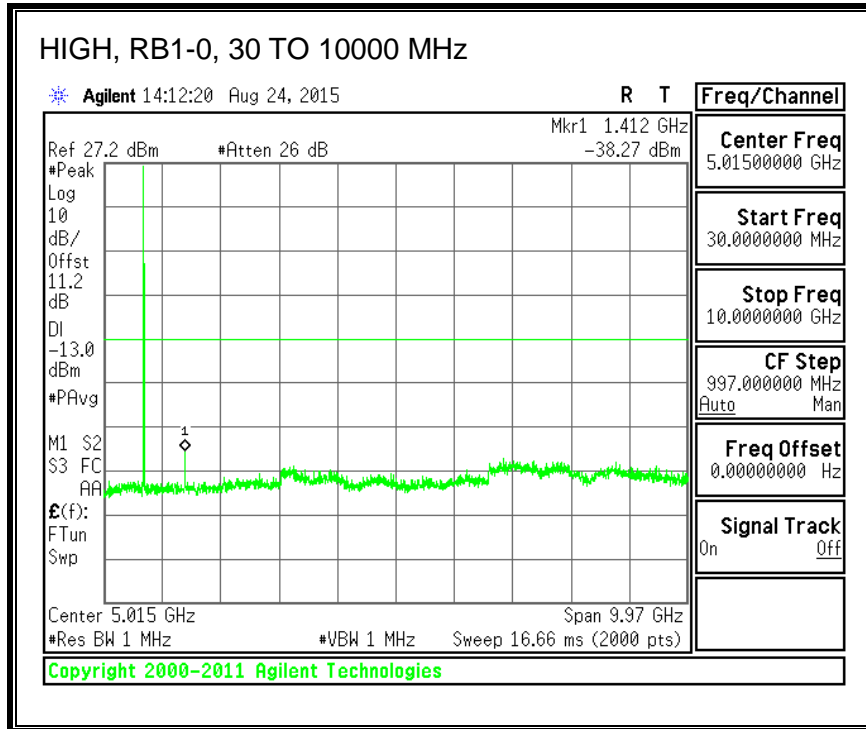
16QAM, (5.0 MHz BAND WIDTH)



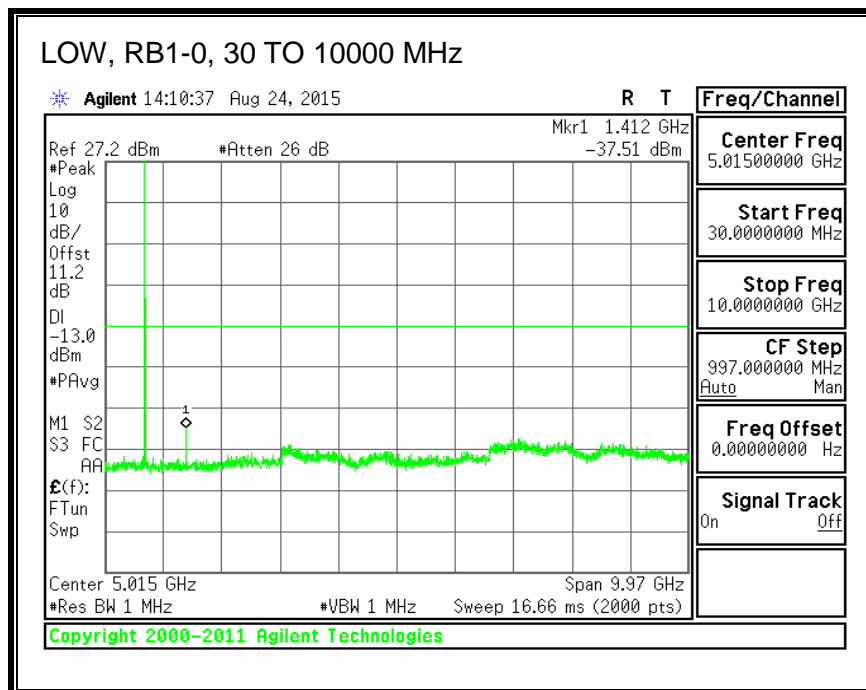


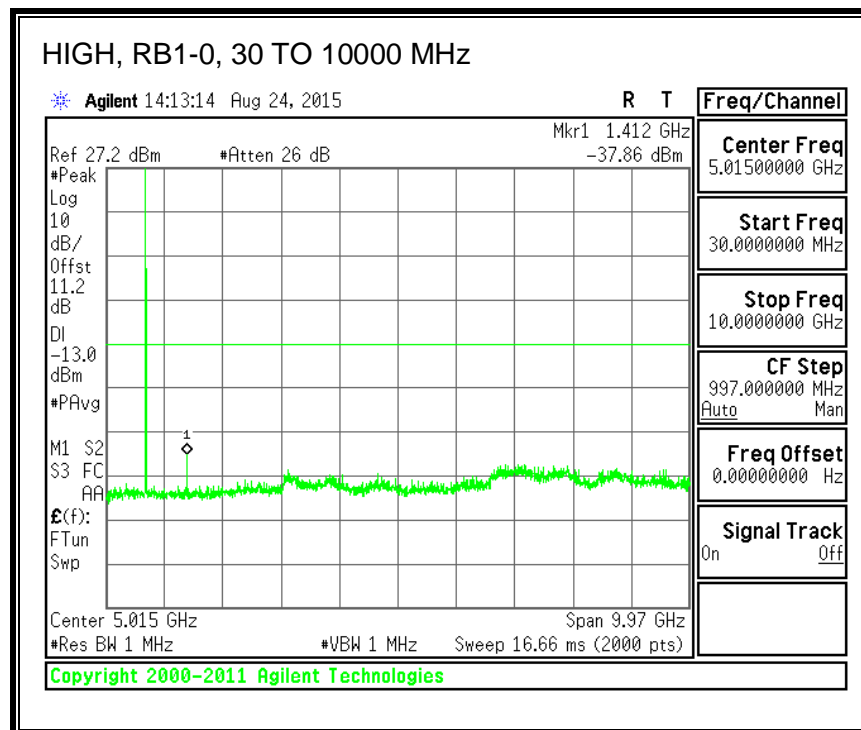
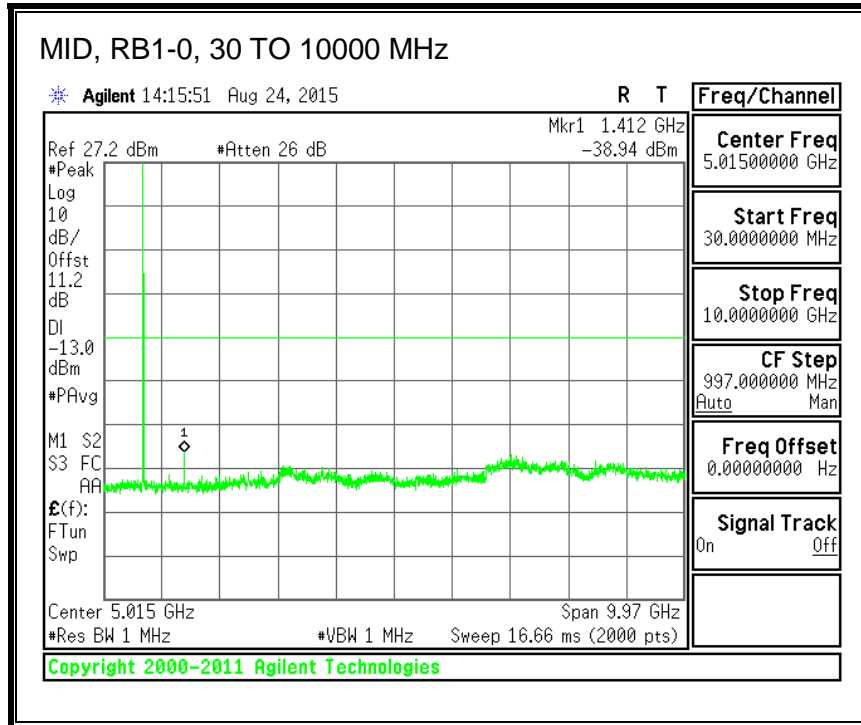
QPSK, (10.0 MHz BAND WIDTH)





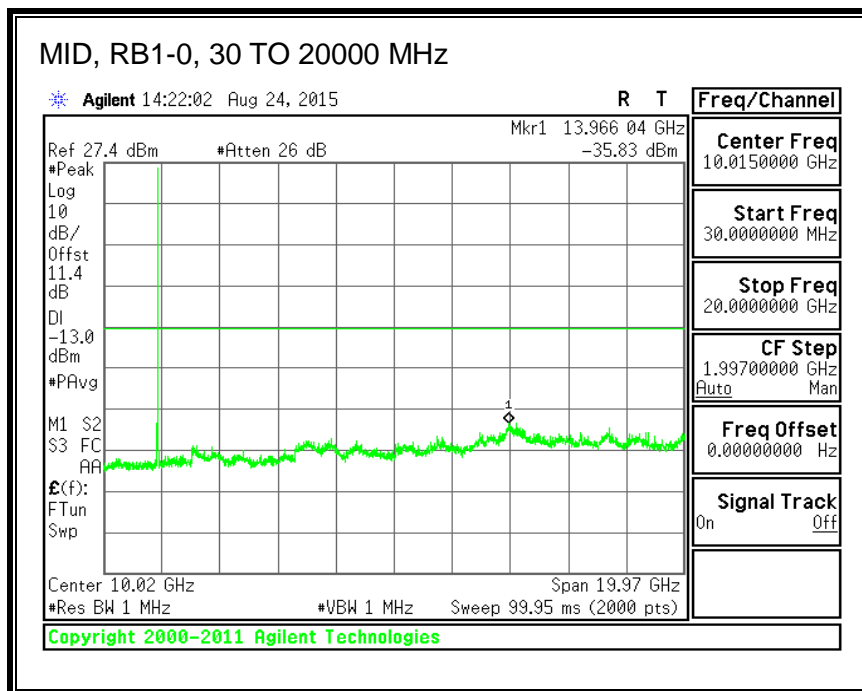
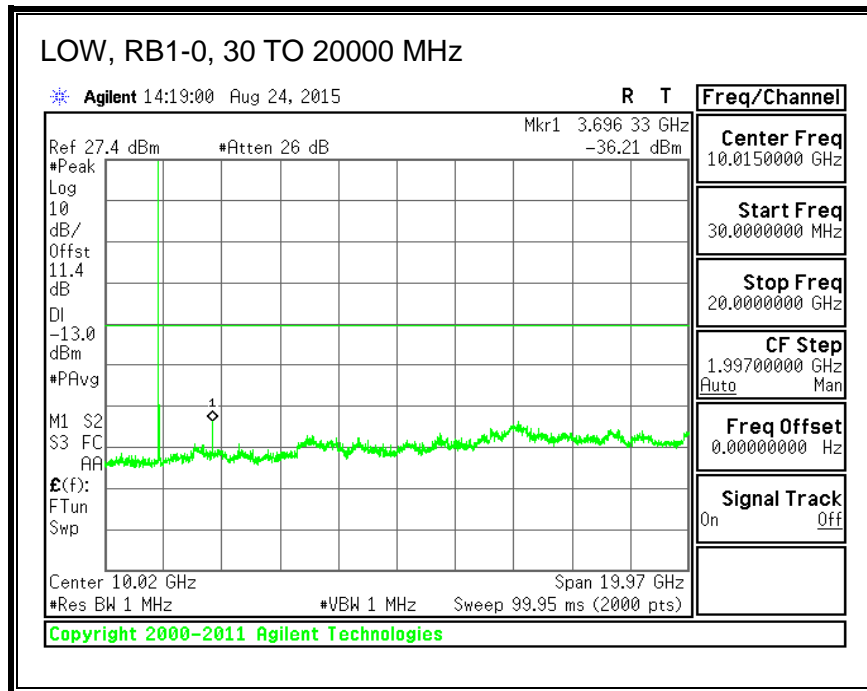
16QAM, (10.0 MHz BAND WIDTH)

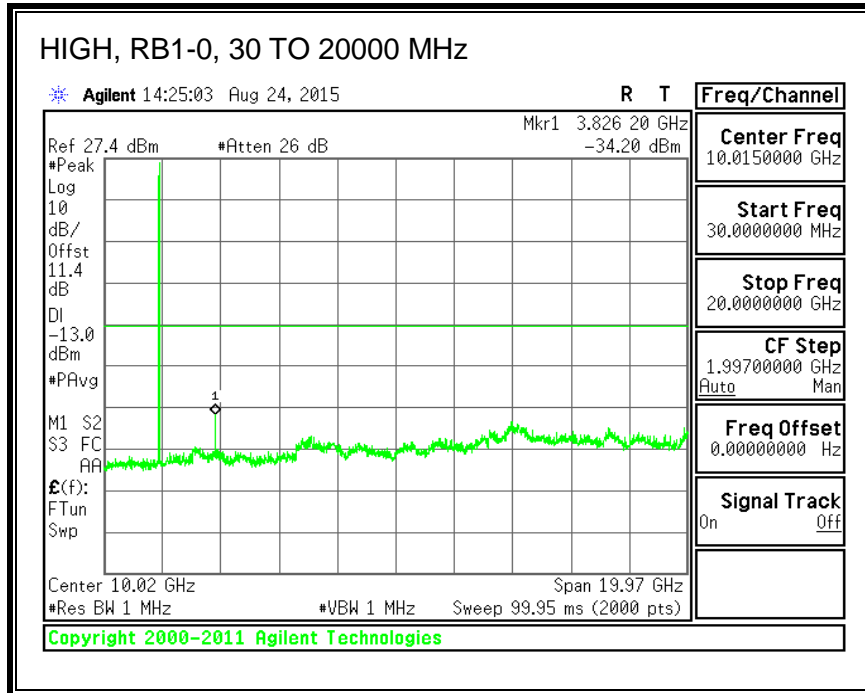




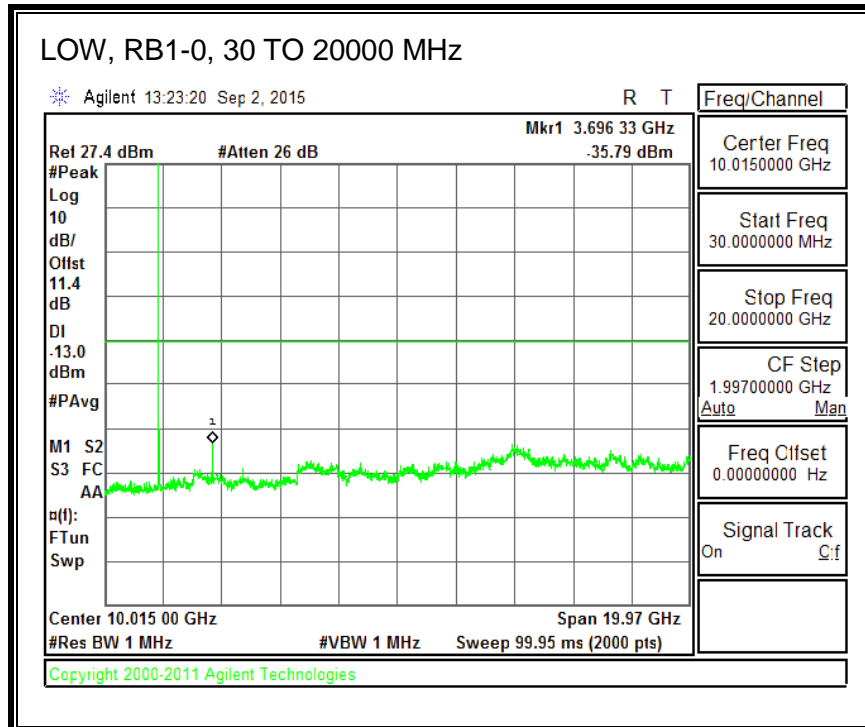
8.3.7. LTE BAND 25

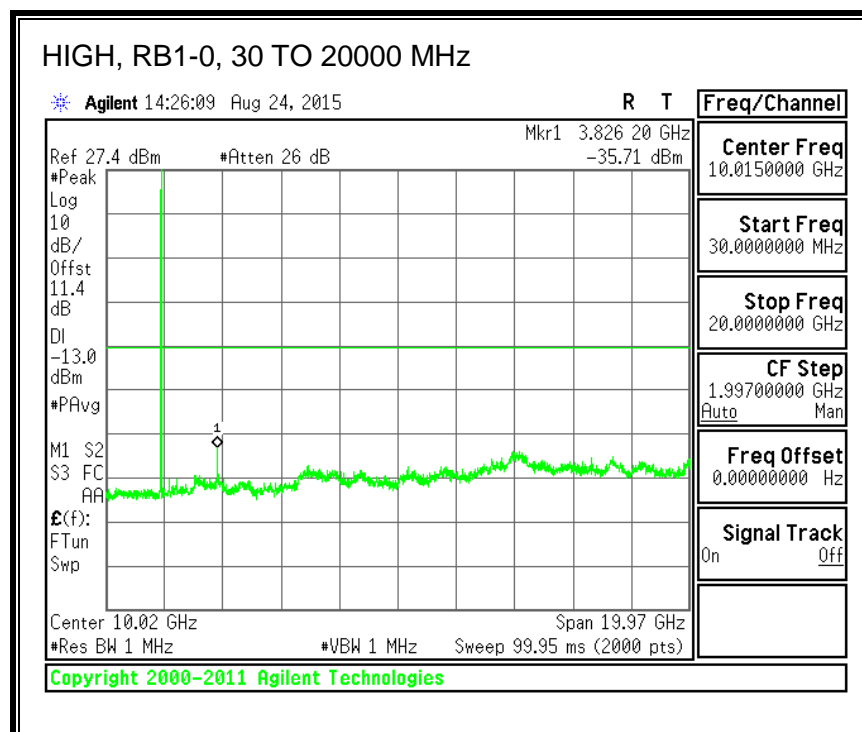
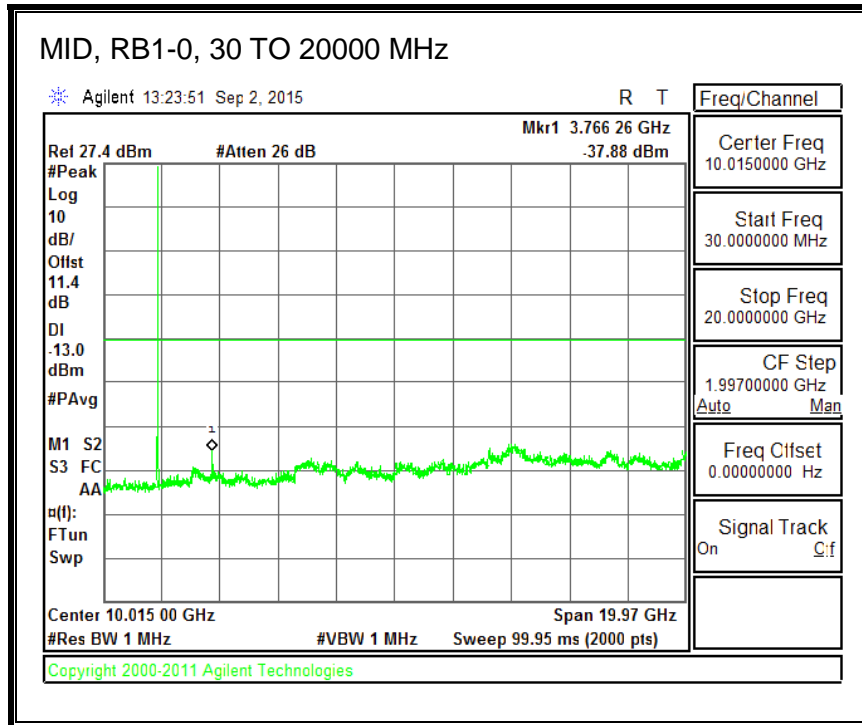
QPSK, (1.4 MHz BAND WIDTH)



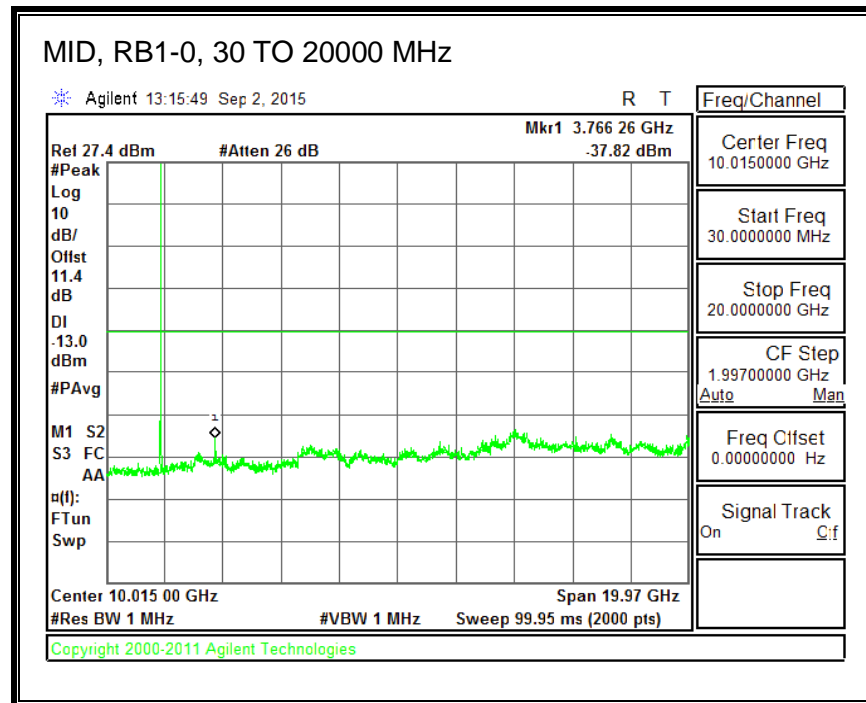
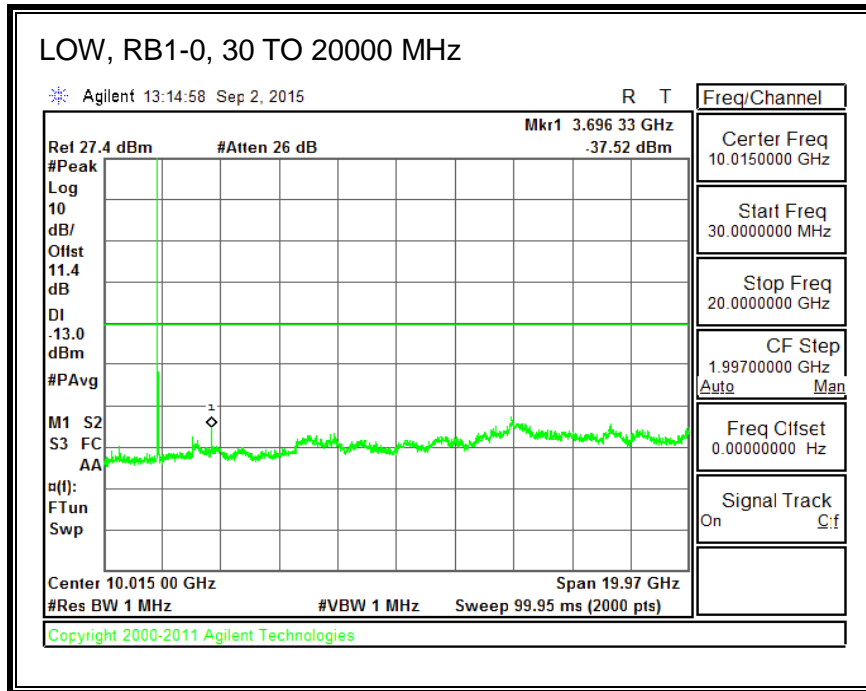


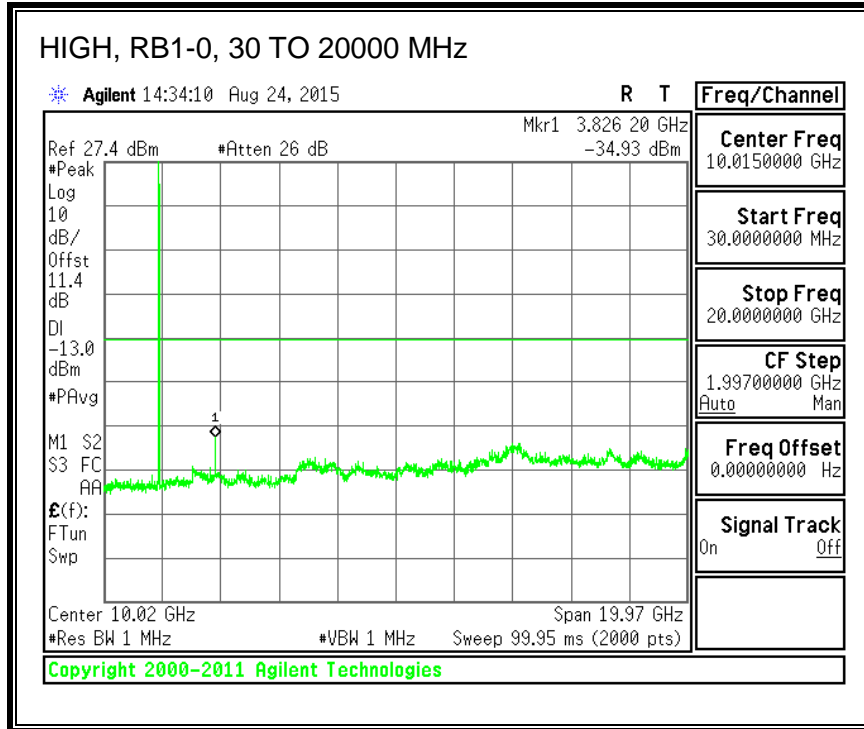
16QAM, (1.4 MHz BAND WIDTH)



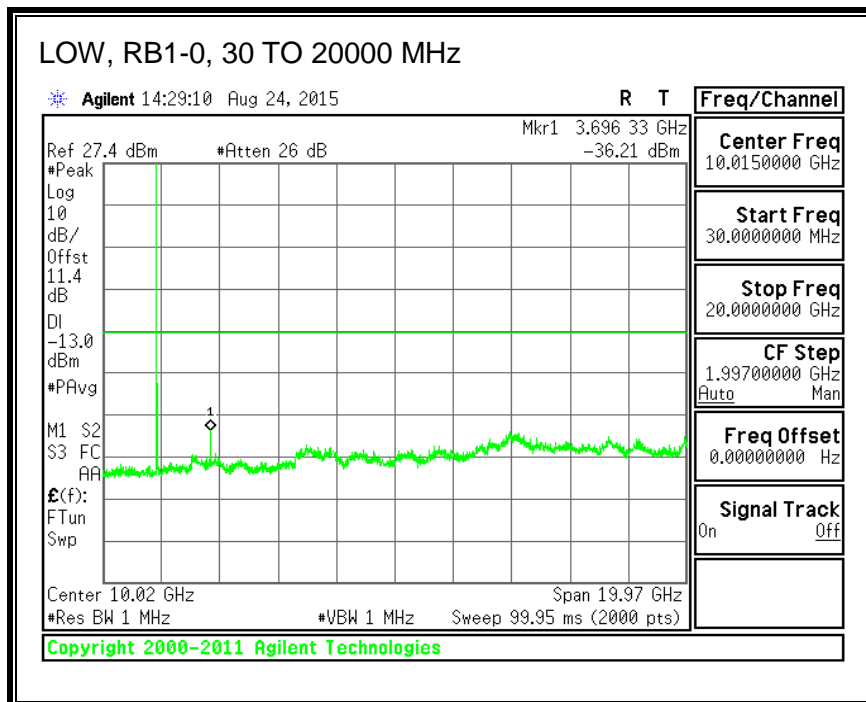


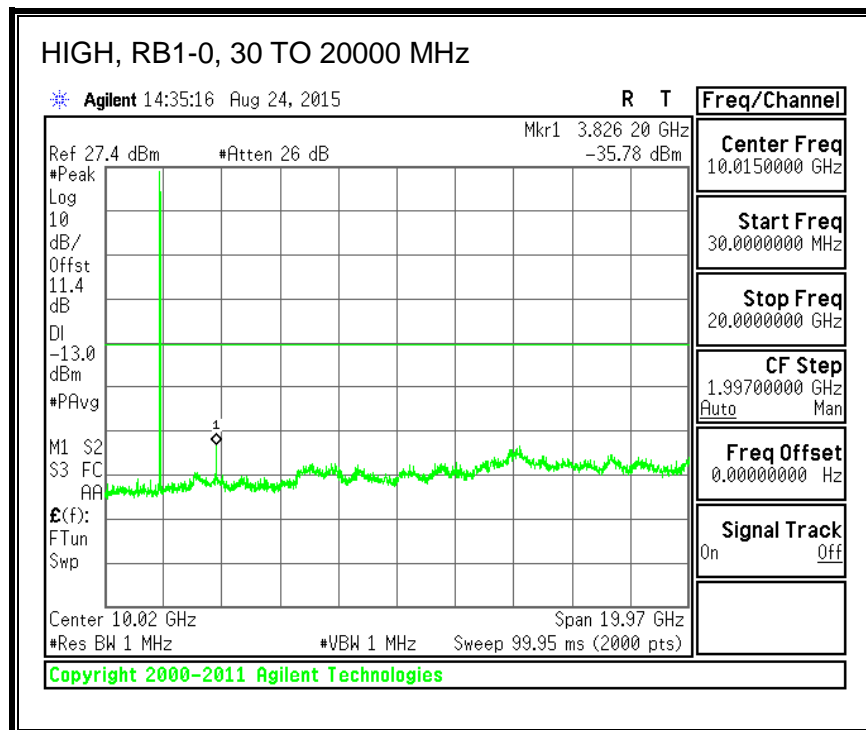
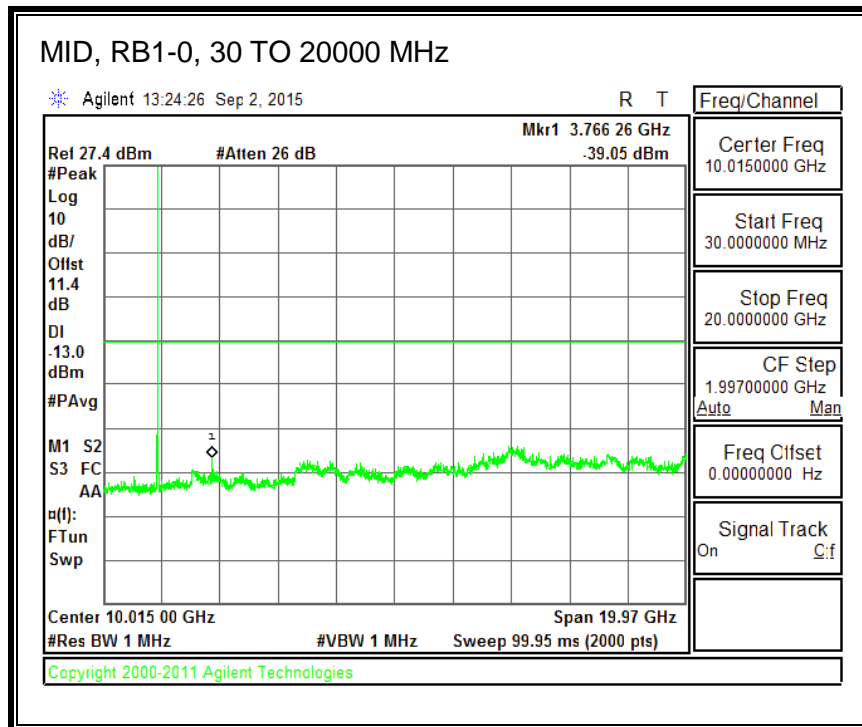
QPSK, (3.0 MHz BAND WIDTH)



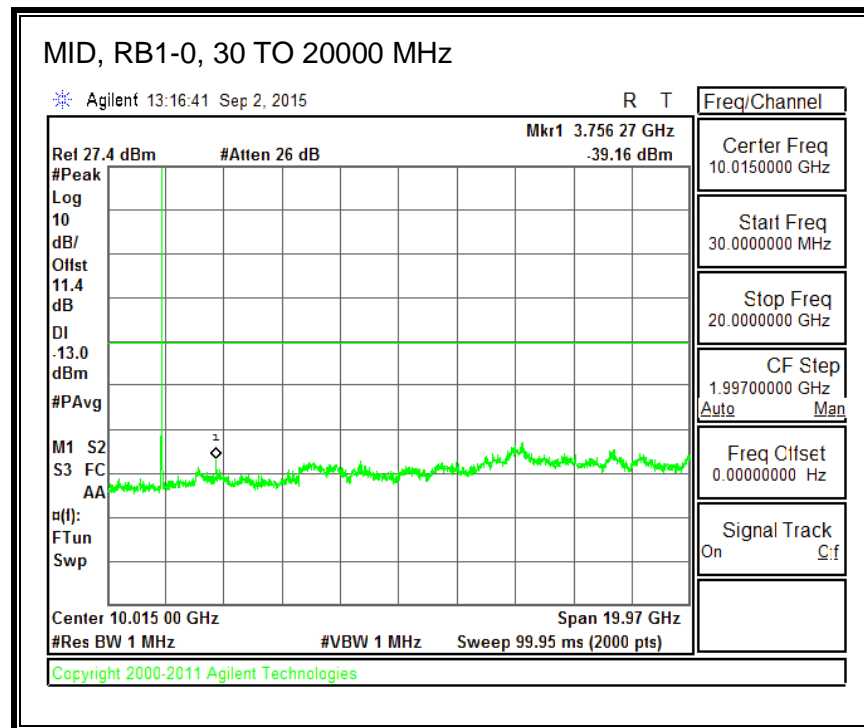
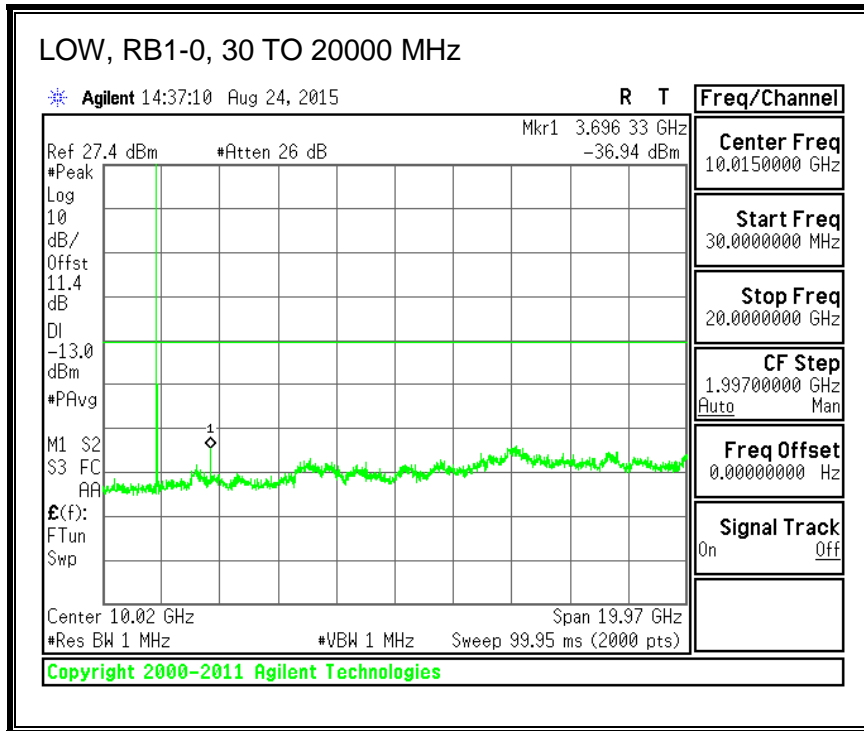


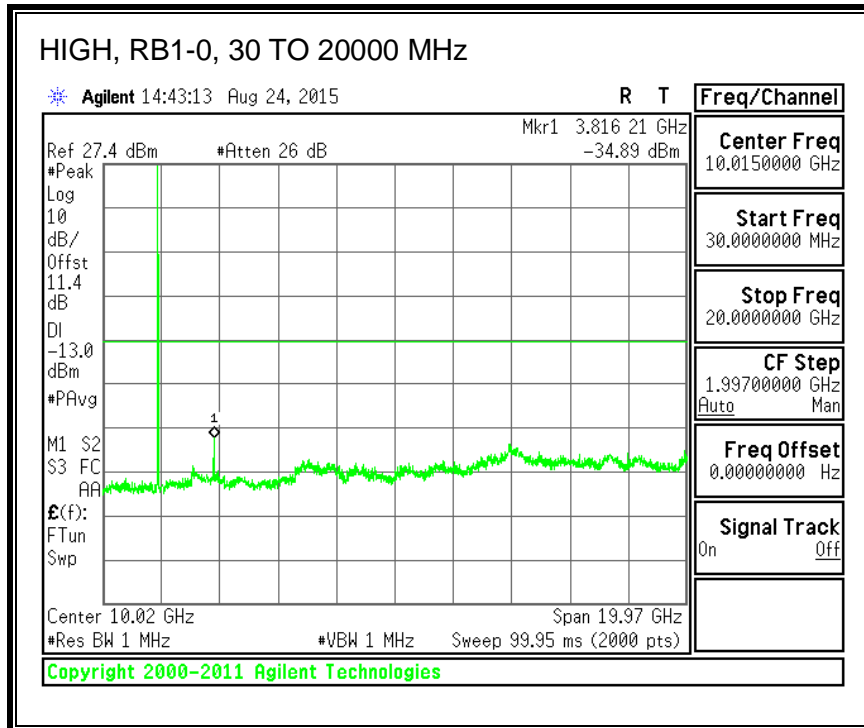
16QAM, (3.0 MHz BAND WIDTH)



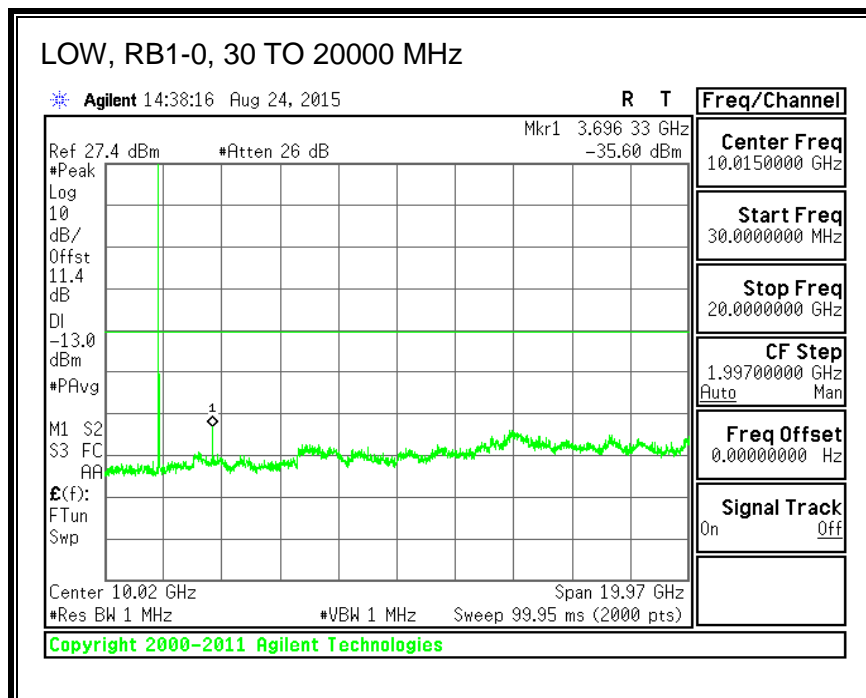


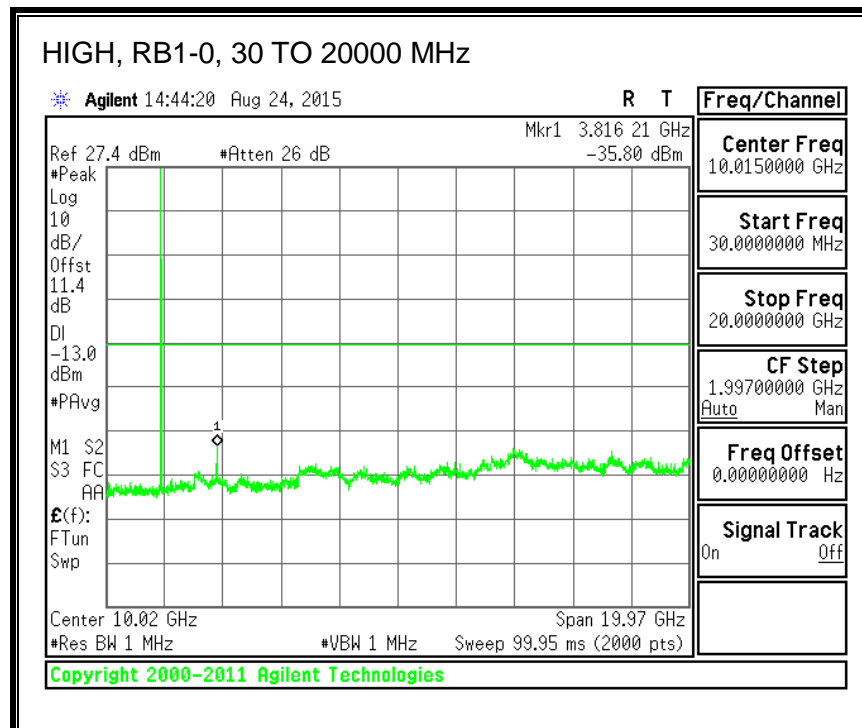
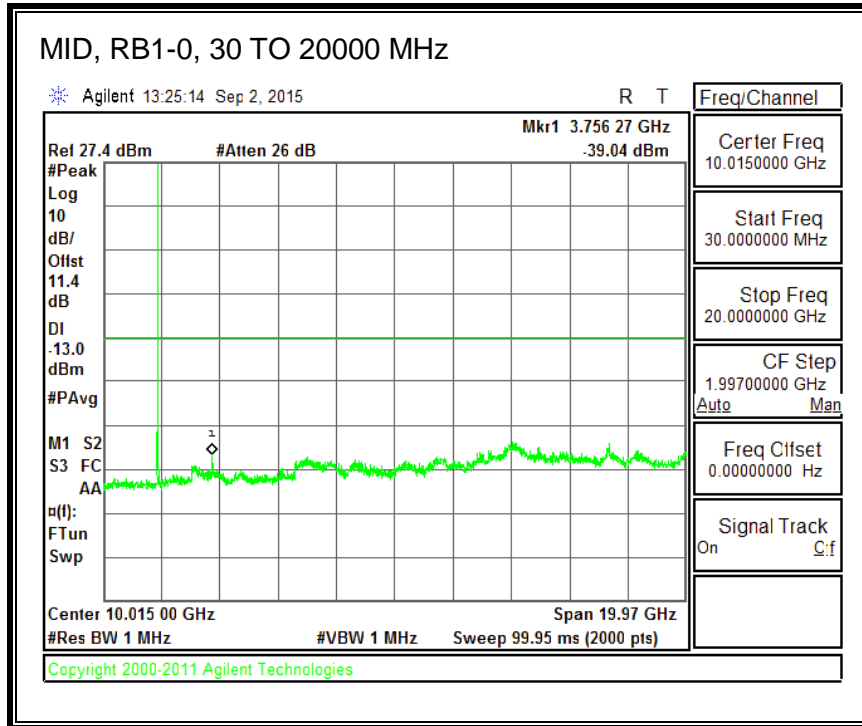
QPSK, (5.0 MHz BAND WIDTH)



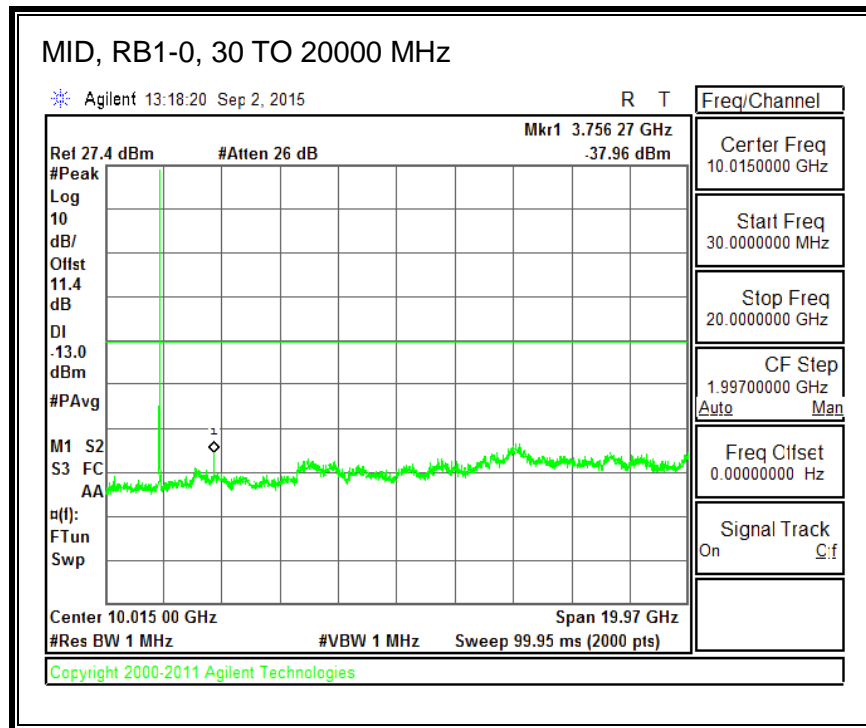
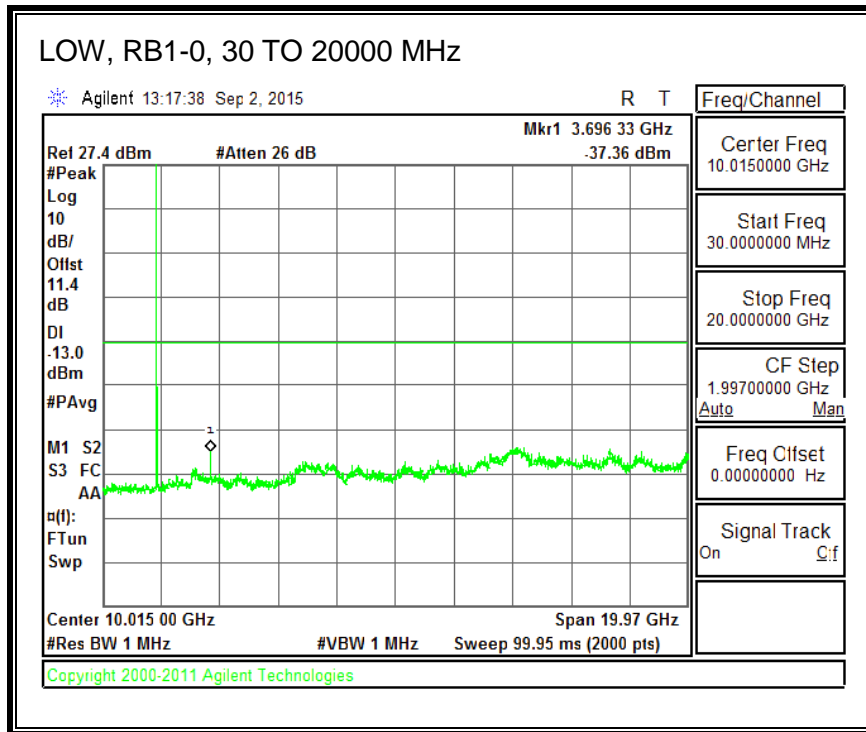


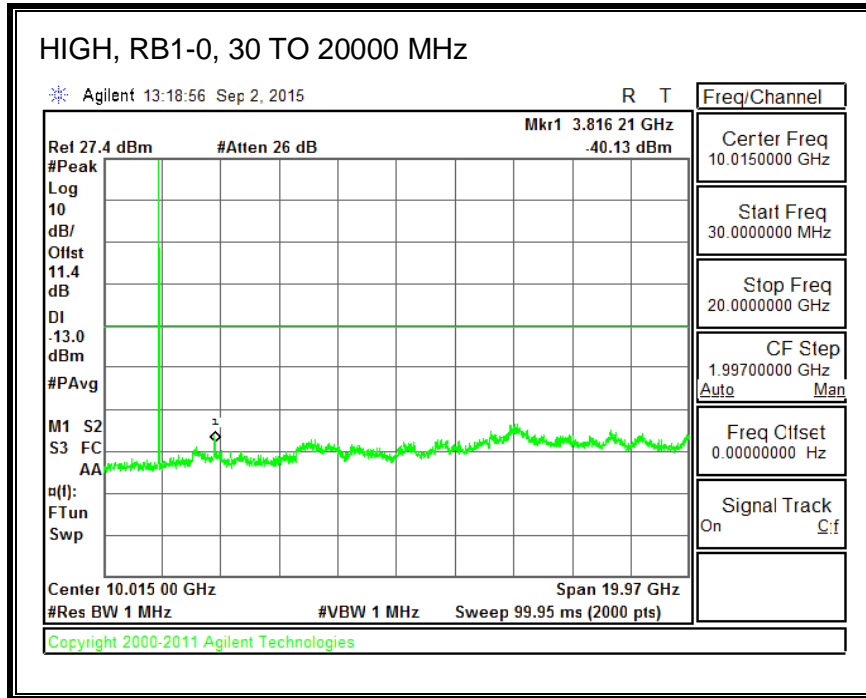
16QAM, (5.0 MHz BAND WIDTH)



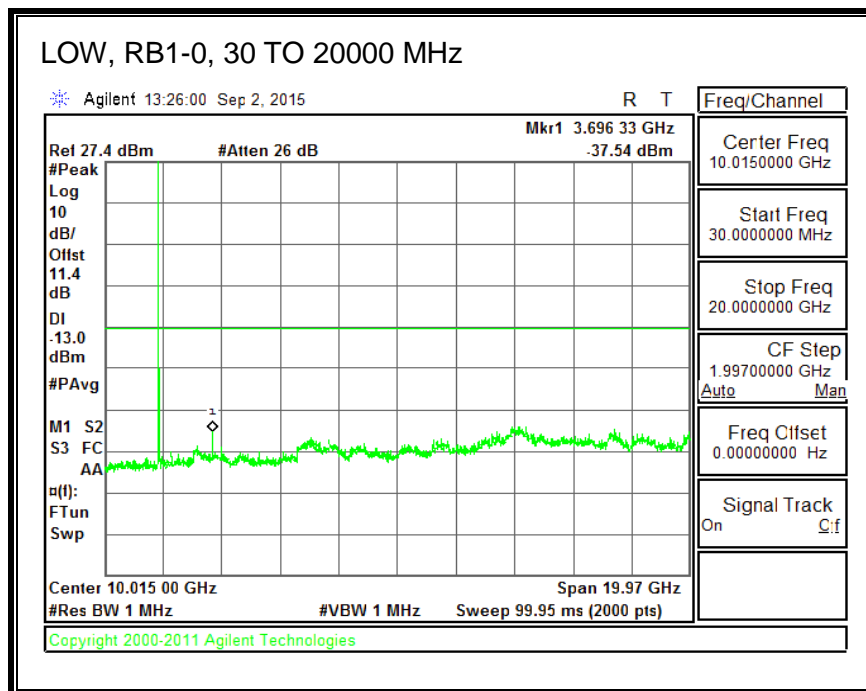


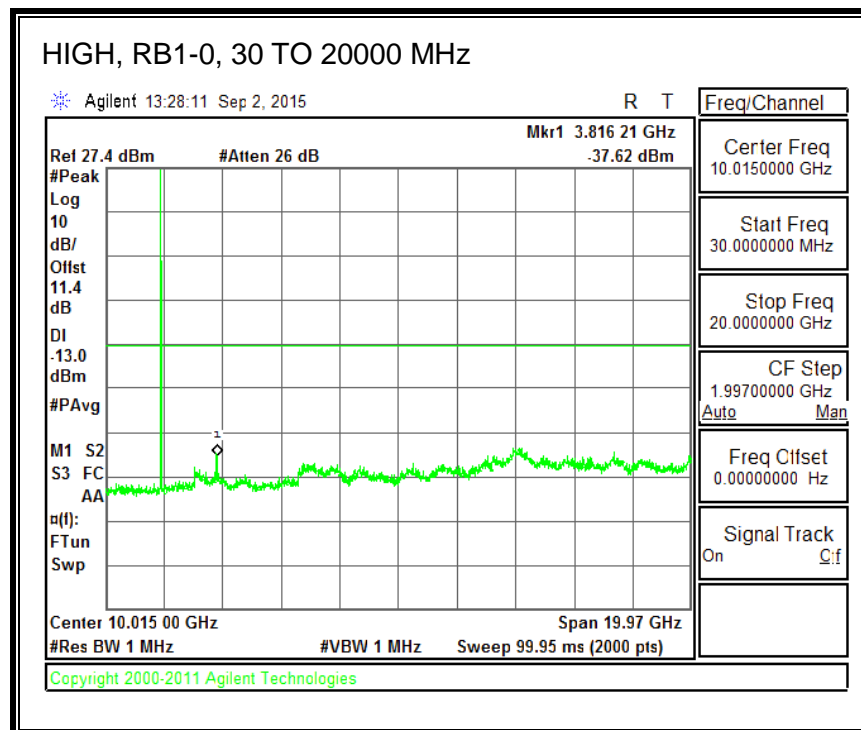
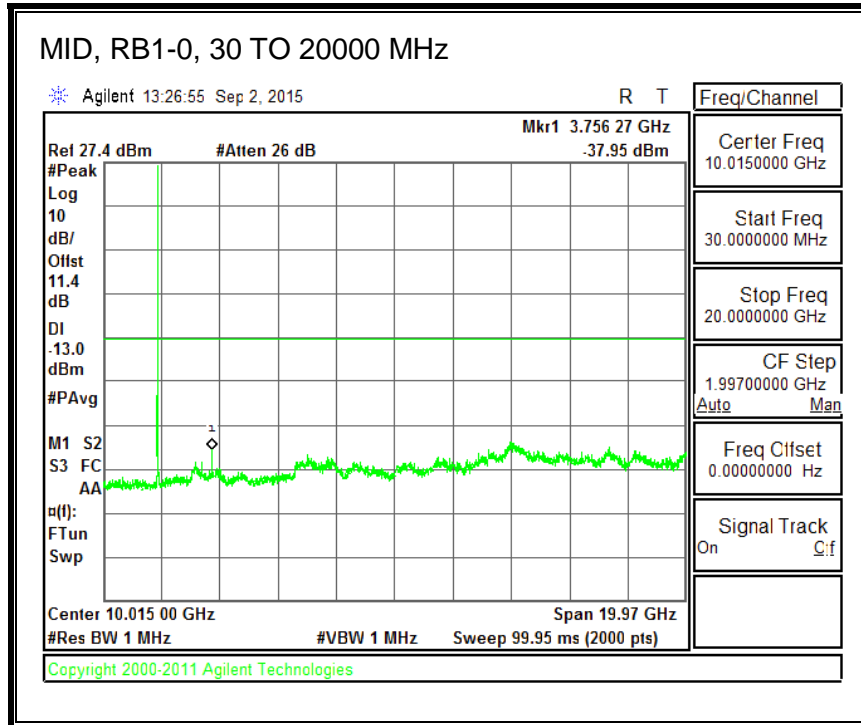
QPSK, (10.0 MHz BAND WIDTH)



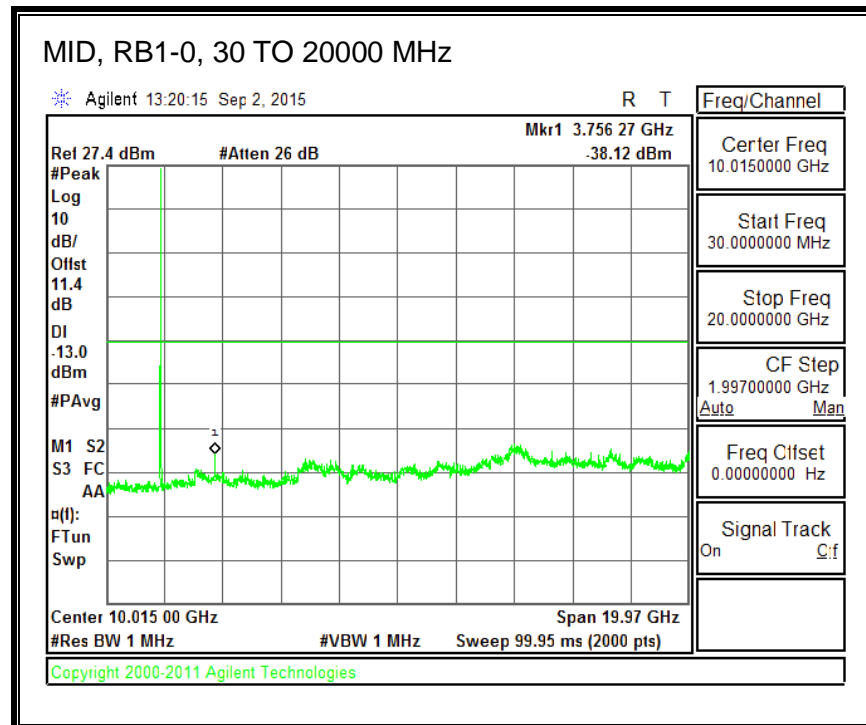
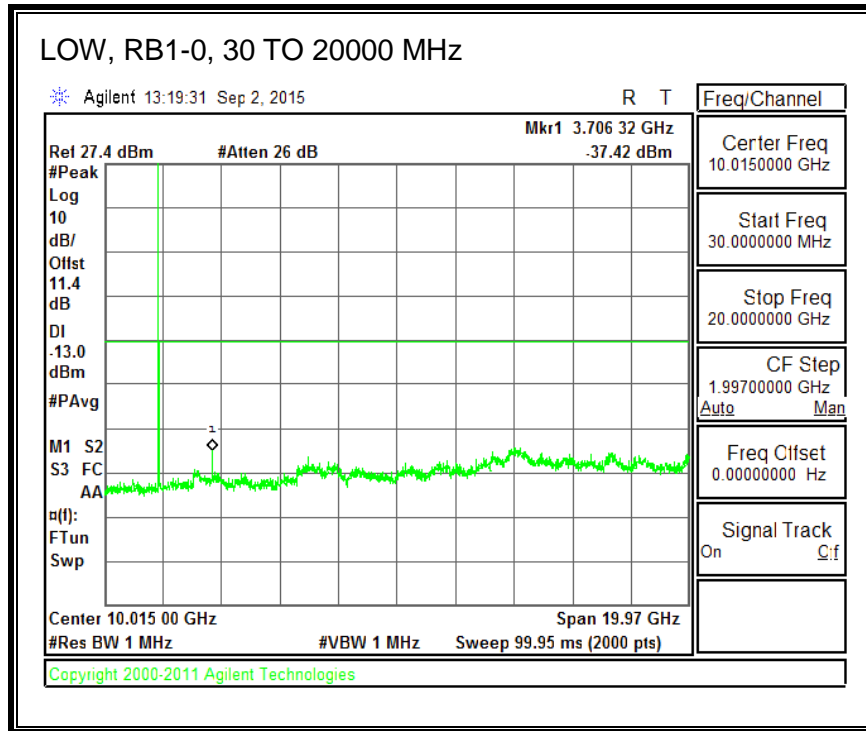


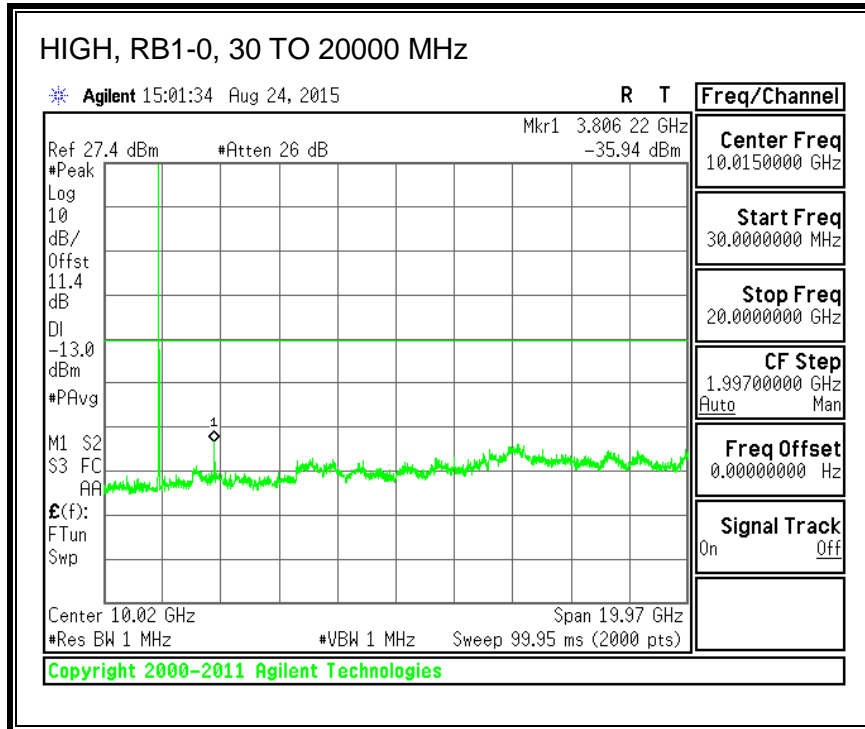
16QAM, (10.0 MHz BAND WIDTH)



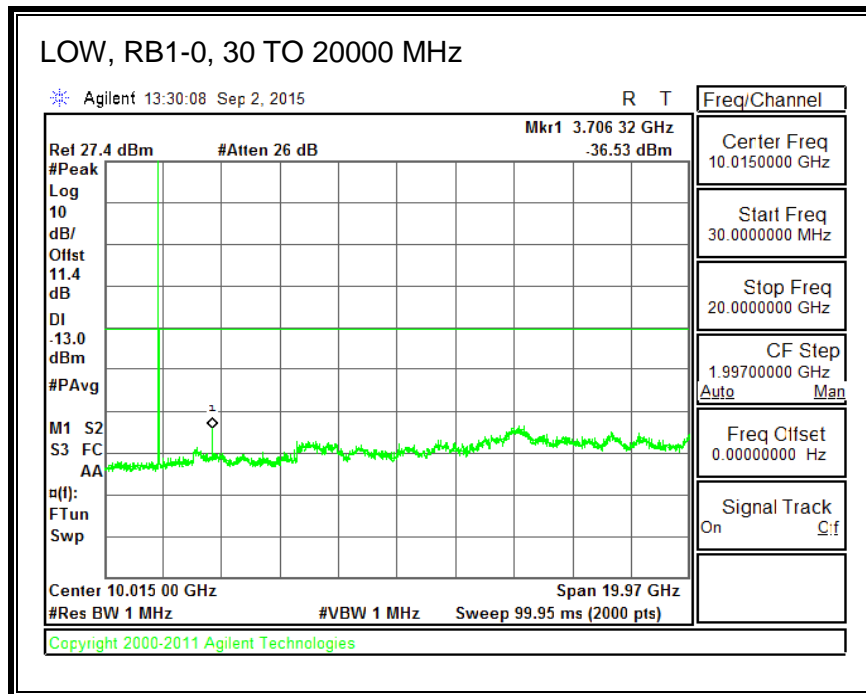


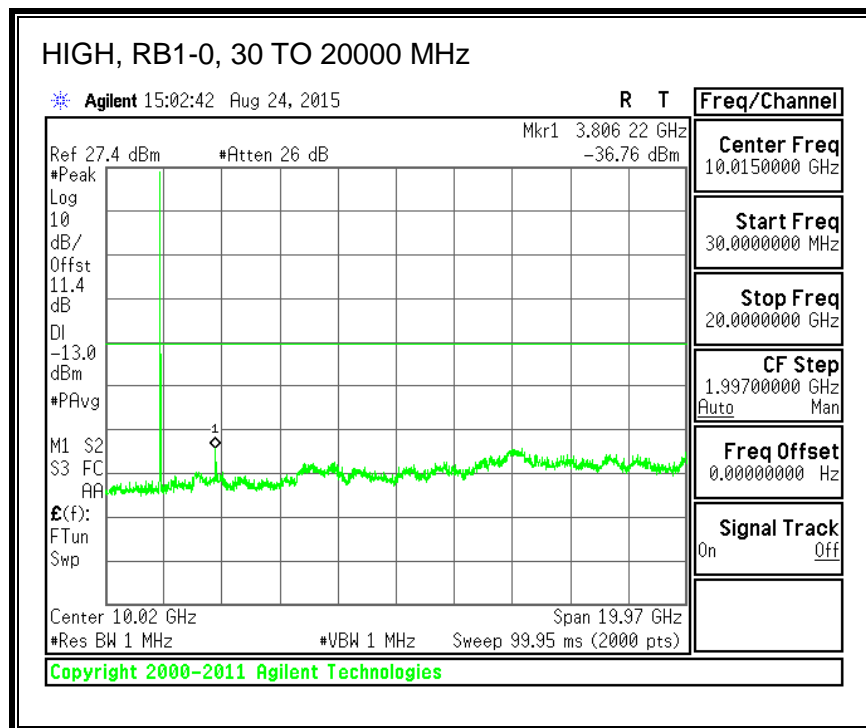
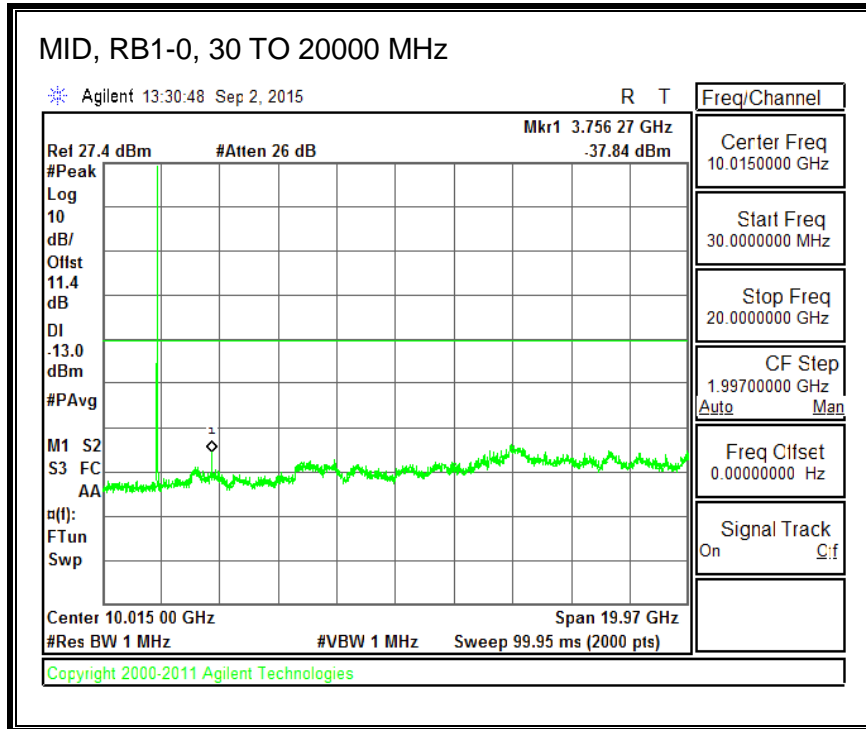
QPSK, (15.0 MHz BAND WIDTH)



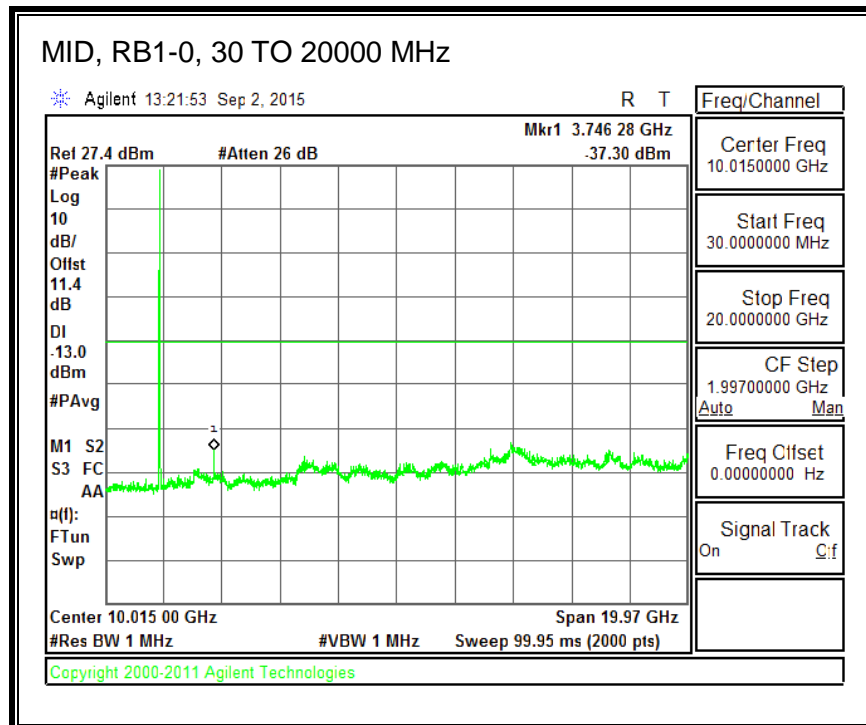
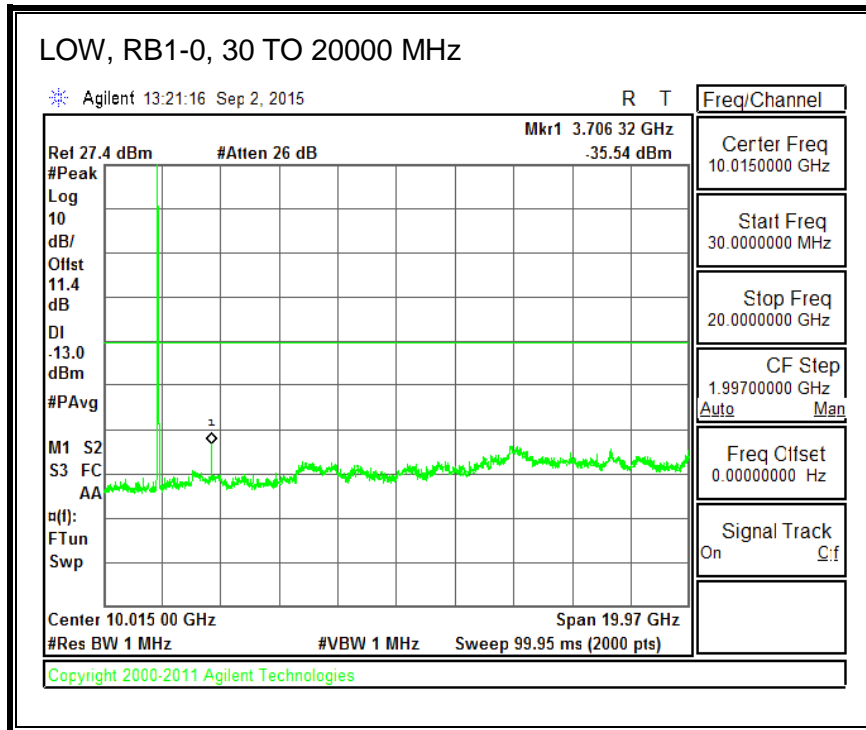


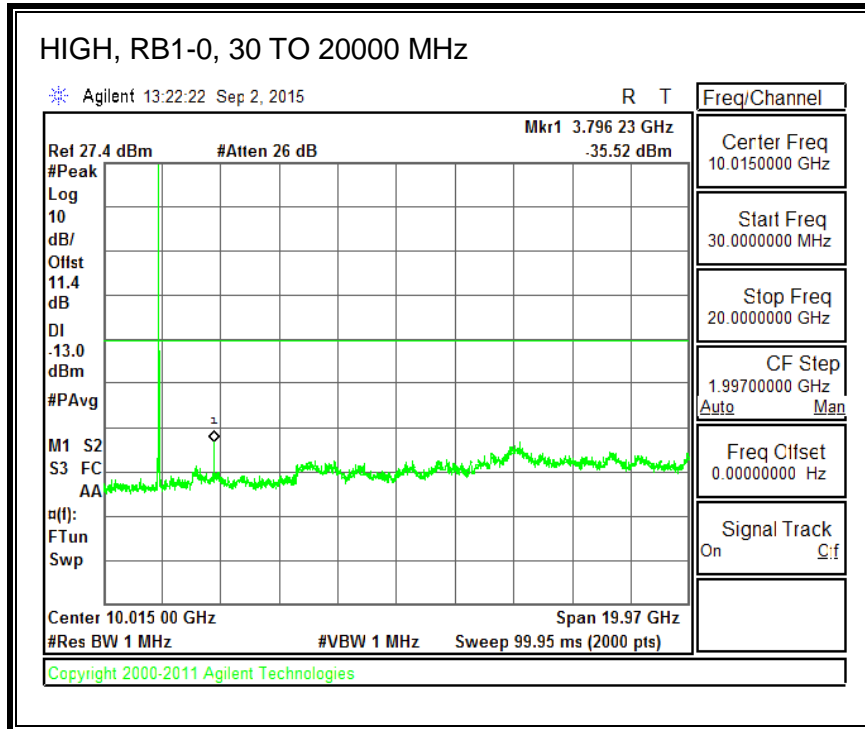
16QAM, (15.0 MHz BAND WIDTH)



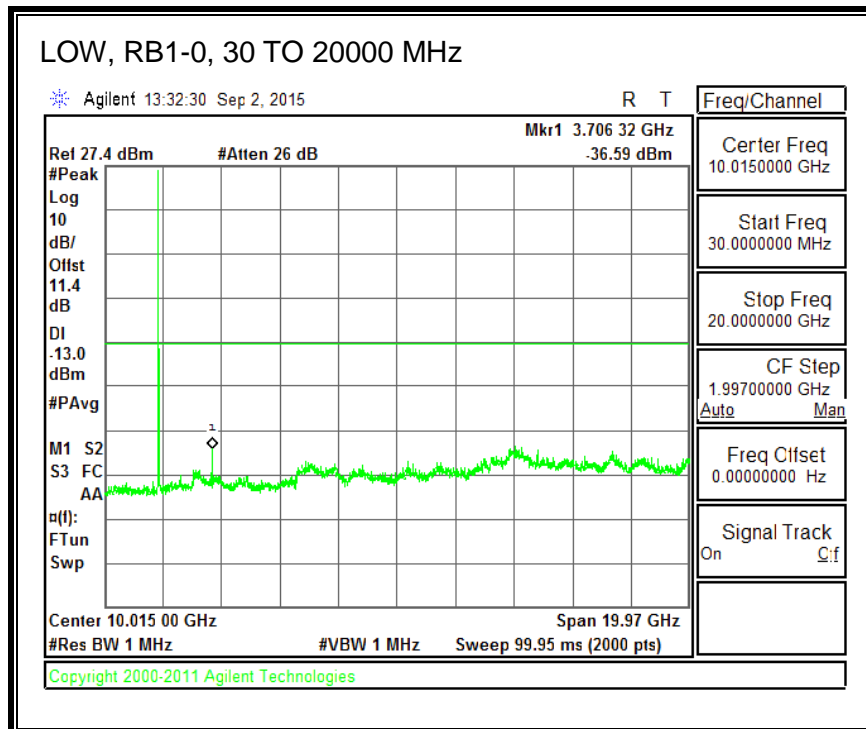


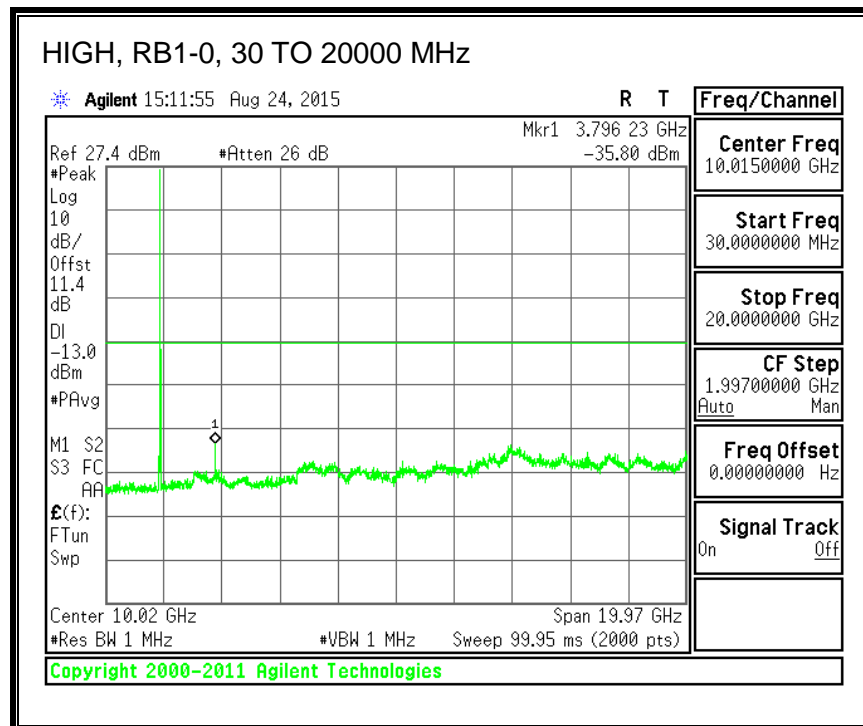
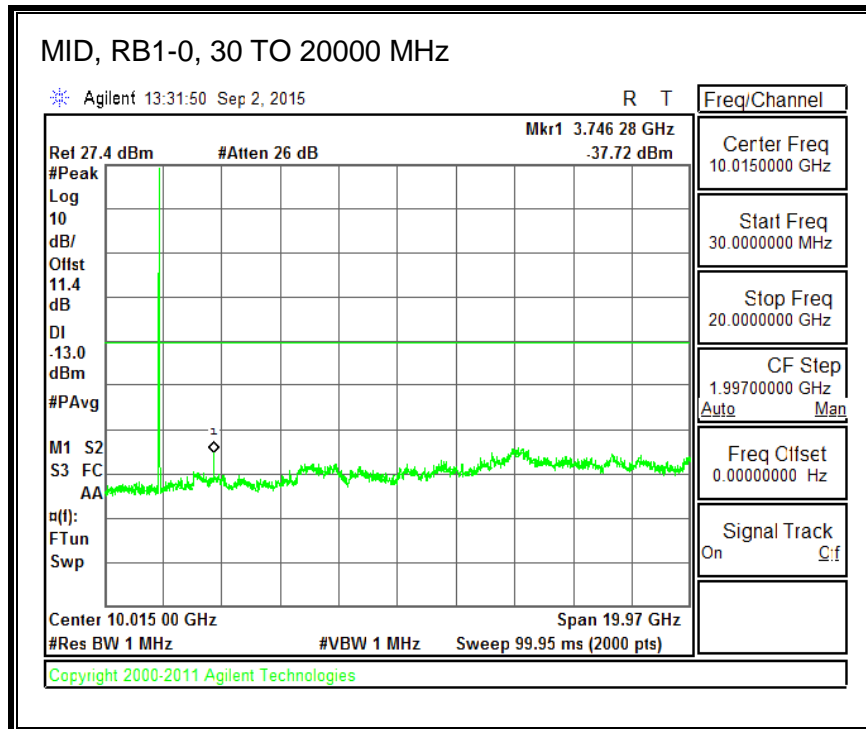
QPSK, (20.0 MHz BAND WIDTH)





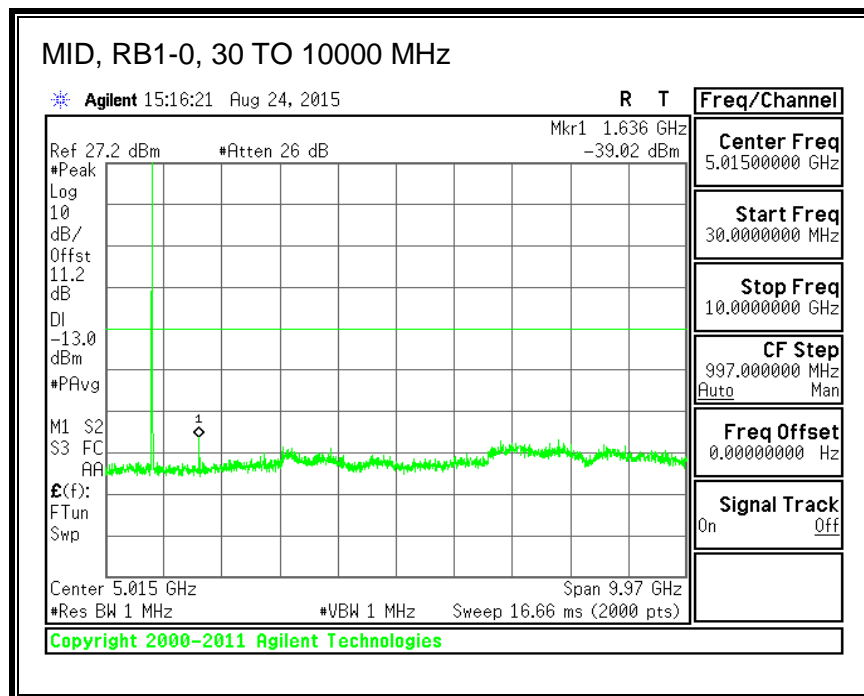
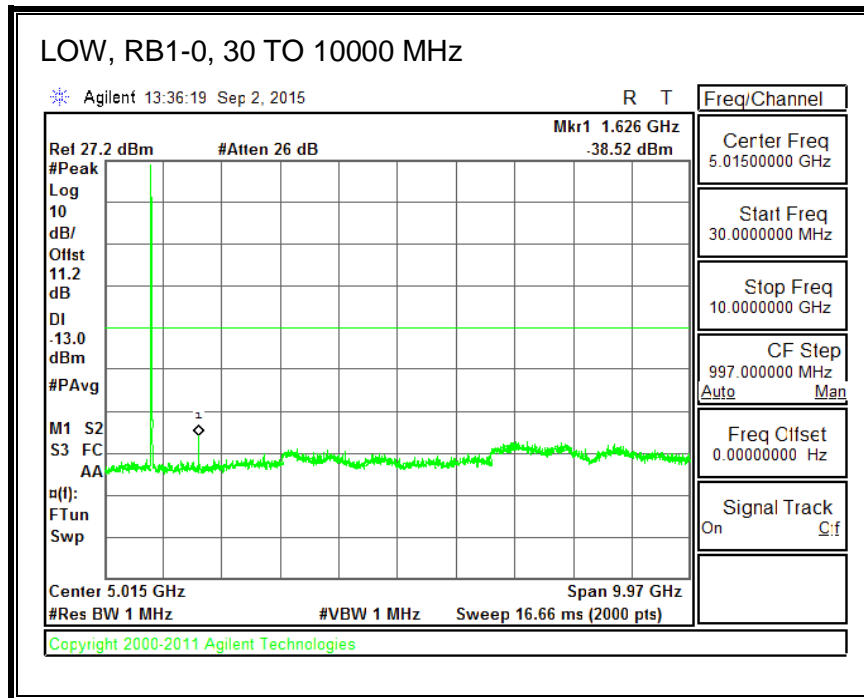
16QAM, (20.0 MHz BAND WIDTH)

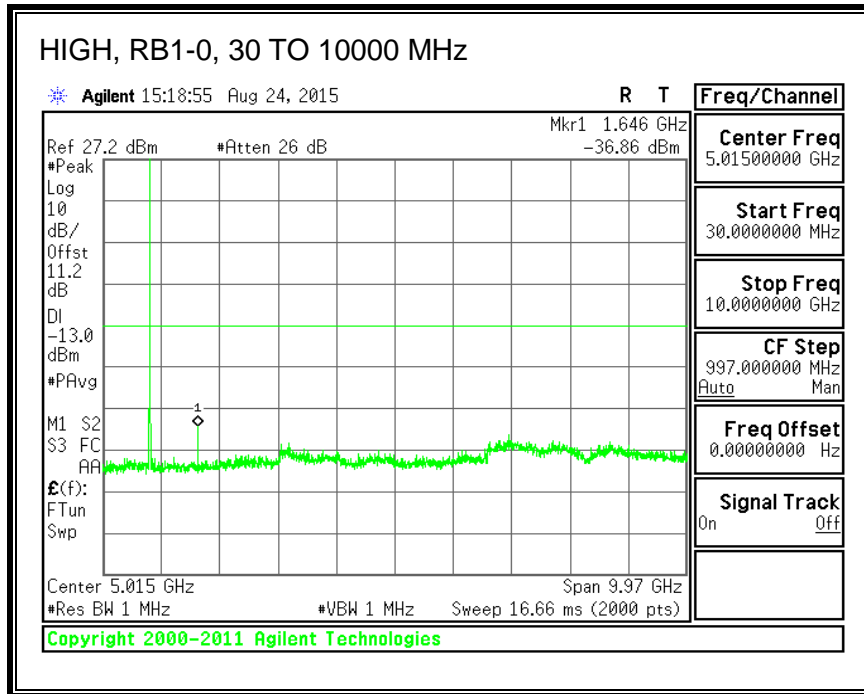




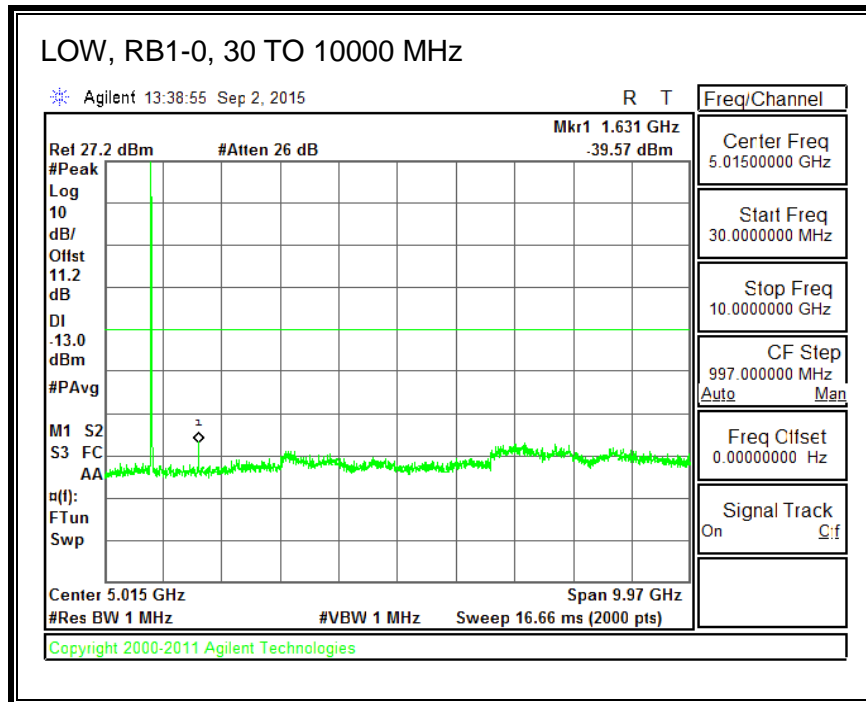
8.3.8. LTE BAND 26

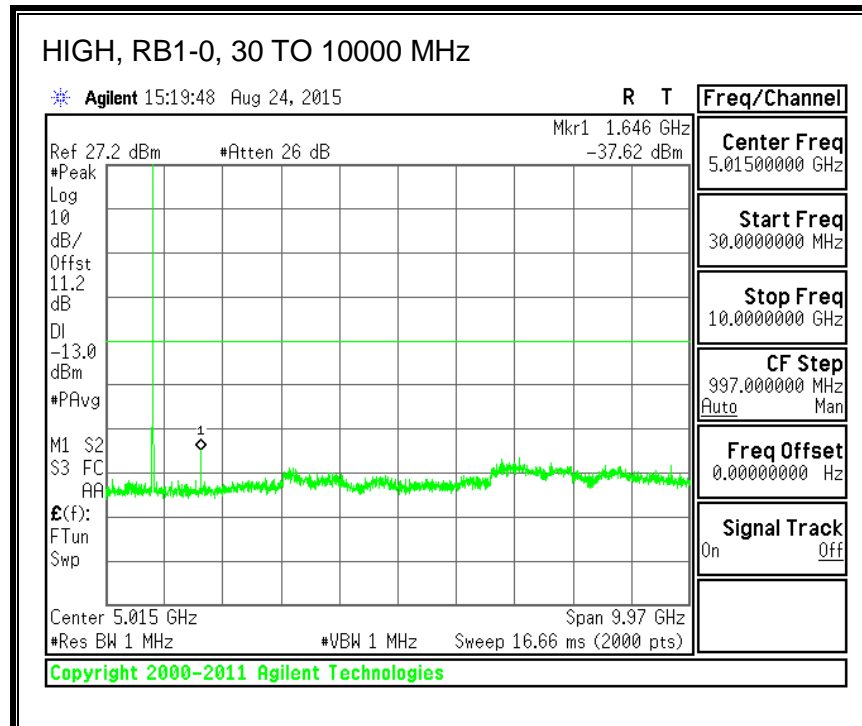
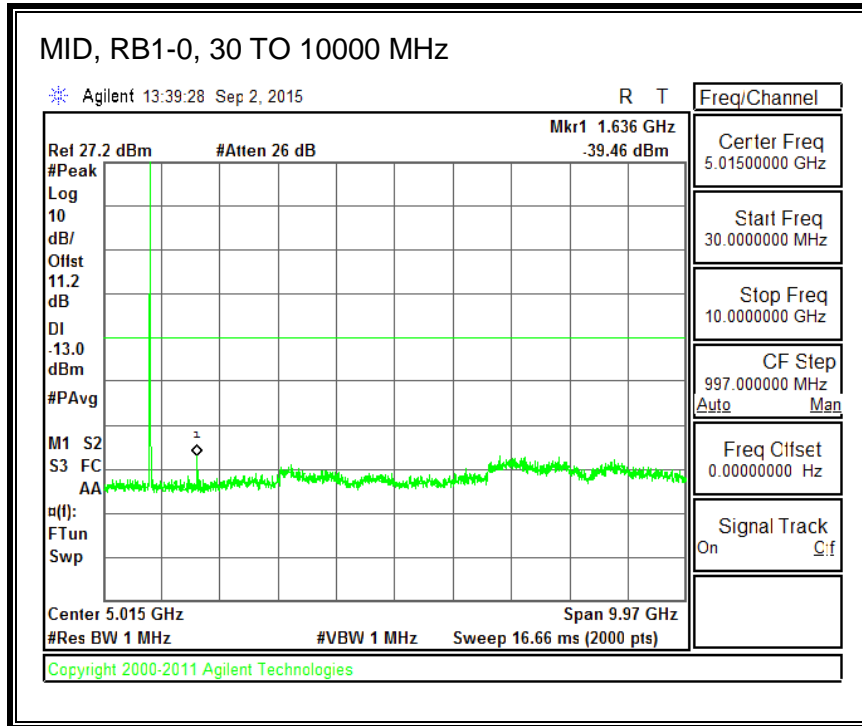
QPSK, (1.4 MHz BAND WIDTH)



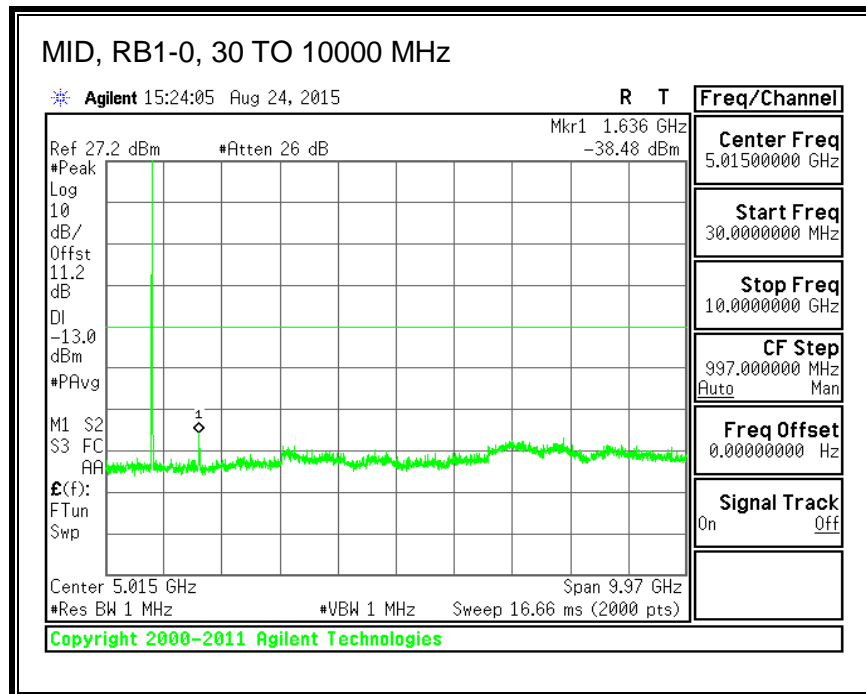
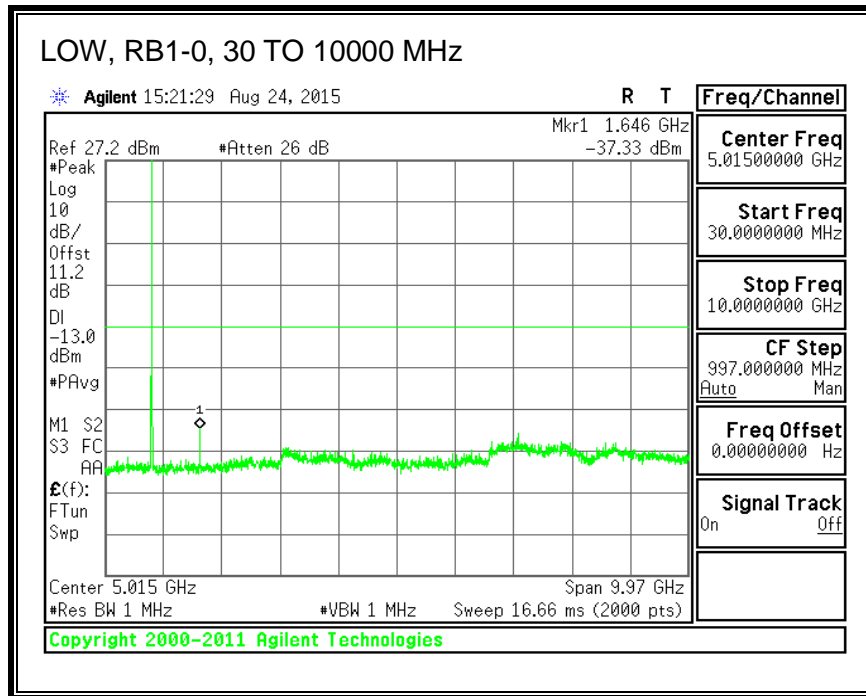


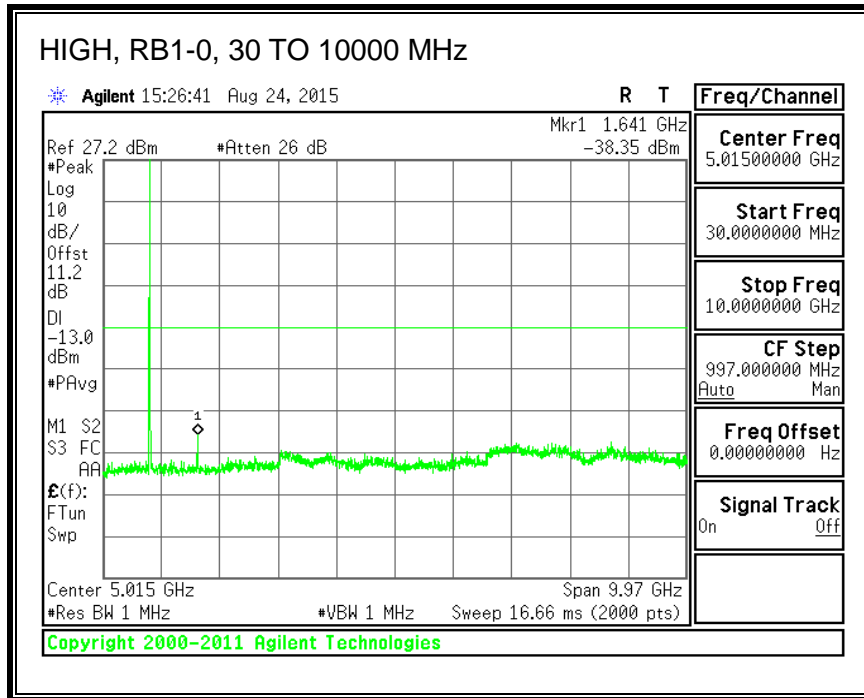
16QAM, (1.4 MHz BAND WIDTH)



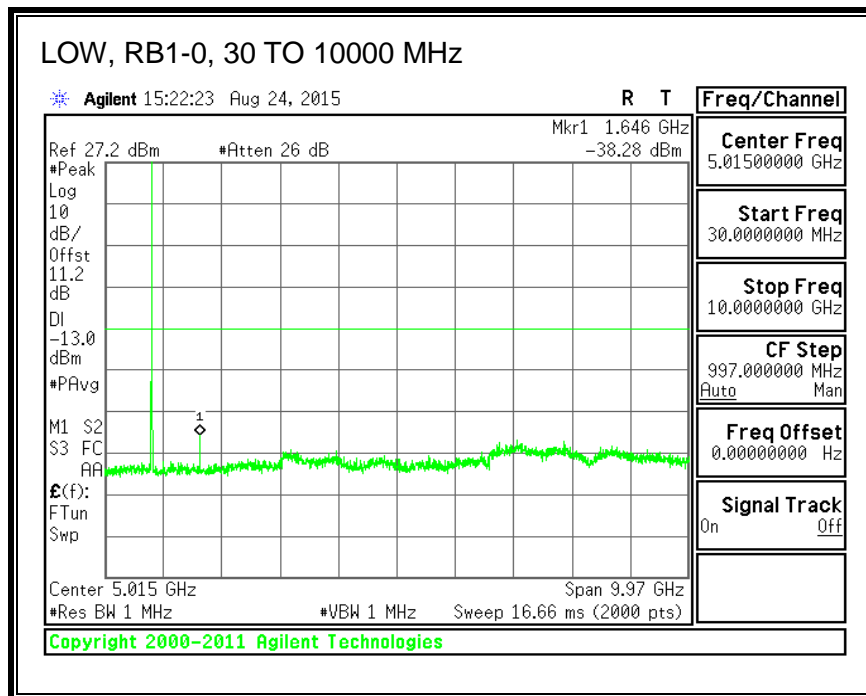


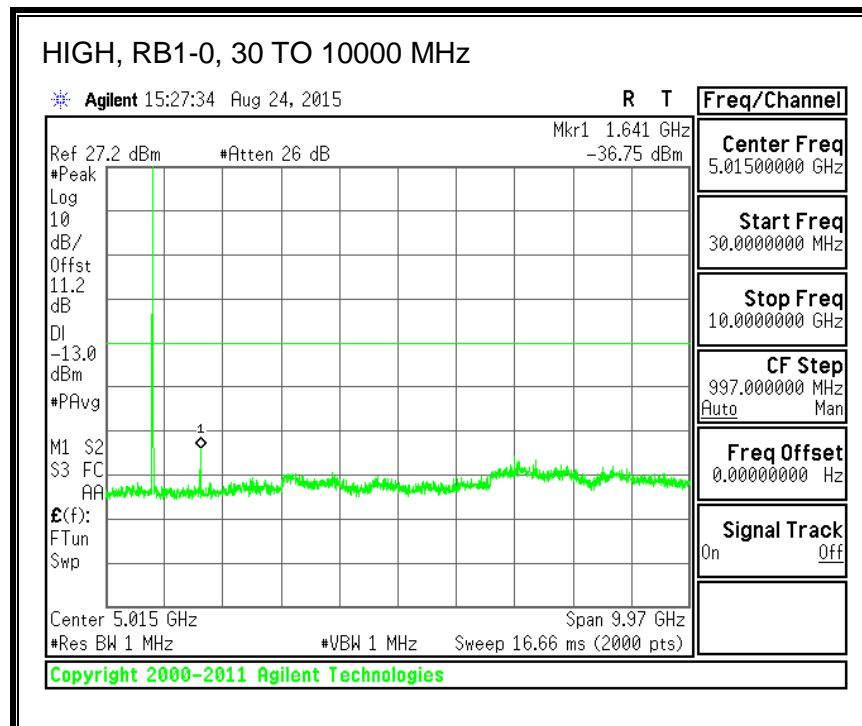
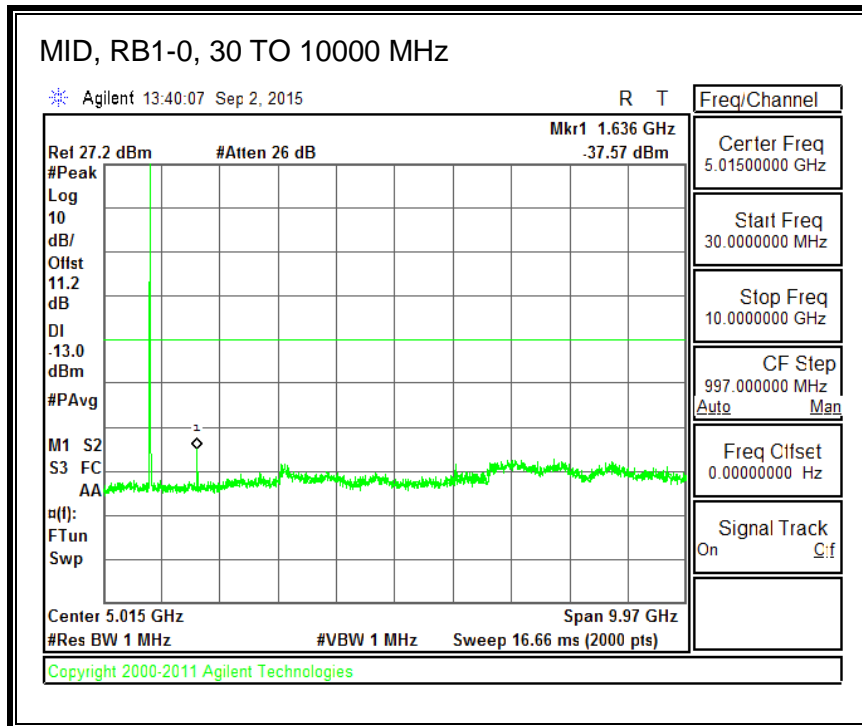
QPSK, (3.0 MHz BAND WIDTH)



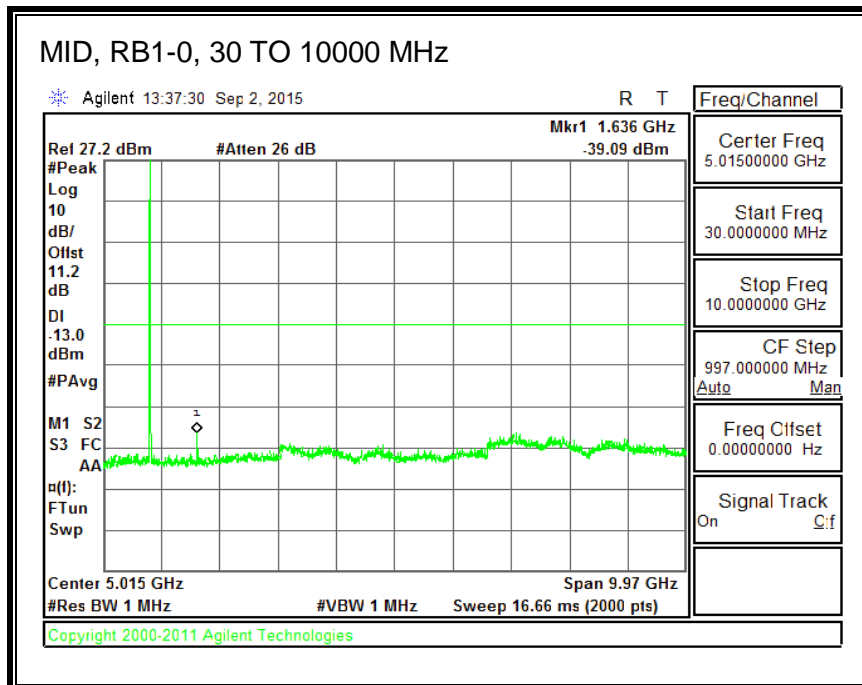
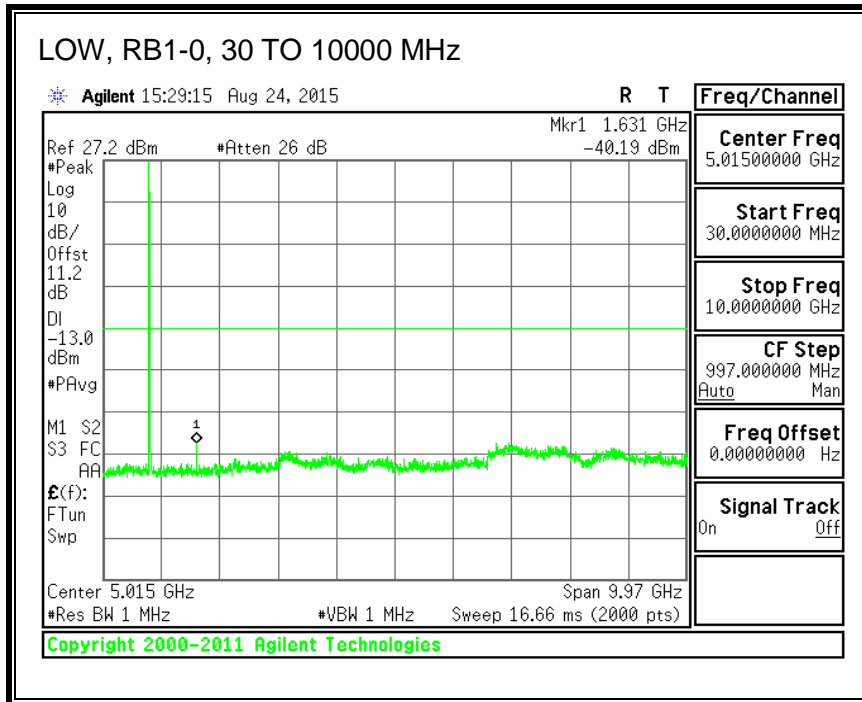


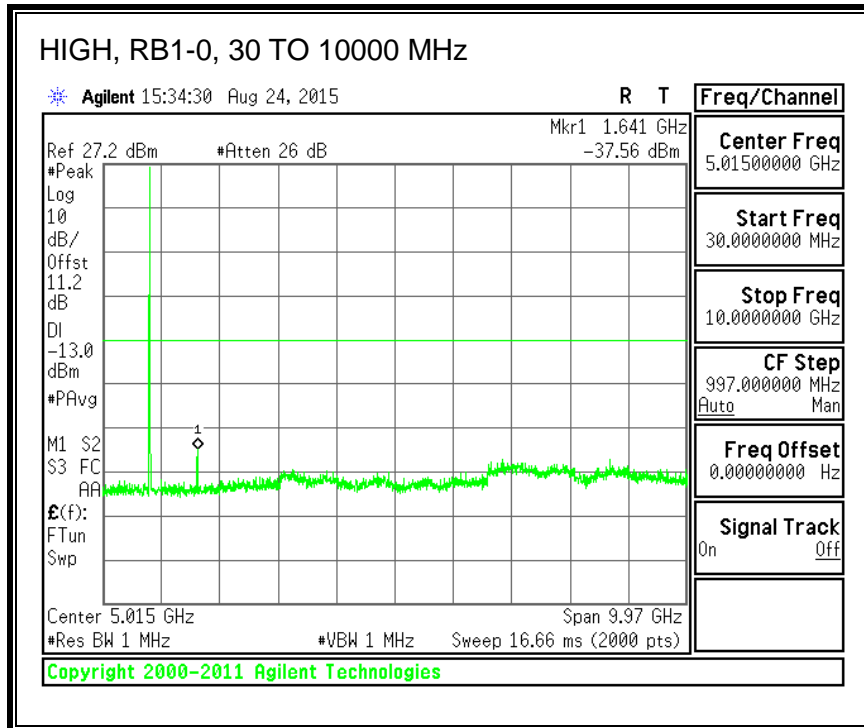
16QAM, (3.0 MHz BAND WIDTH)



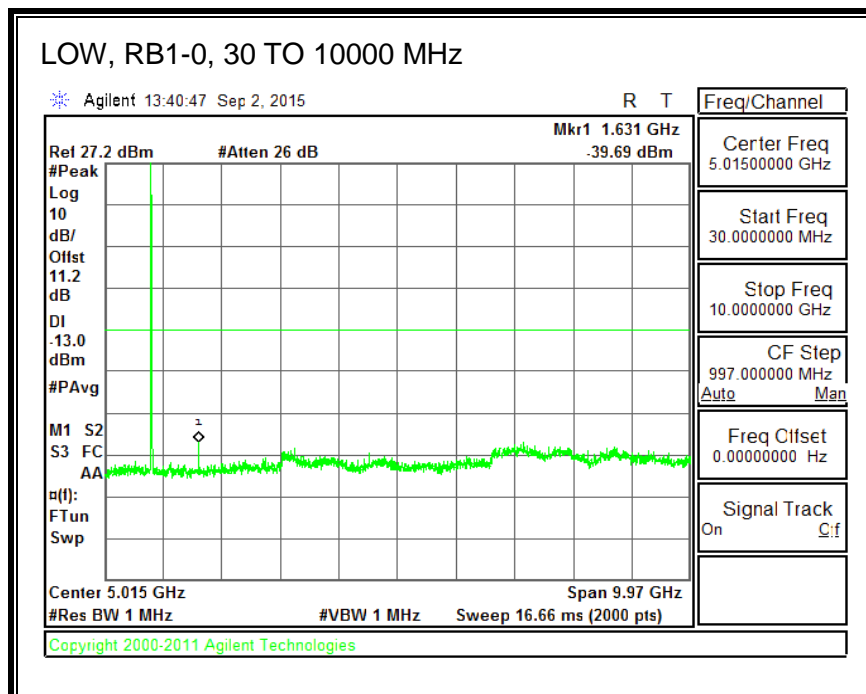


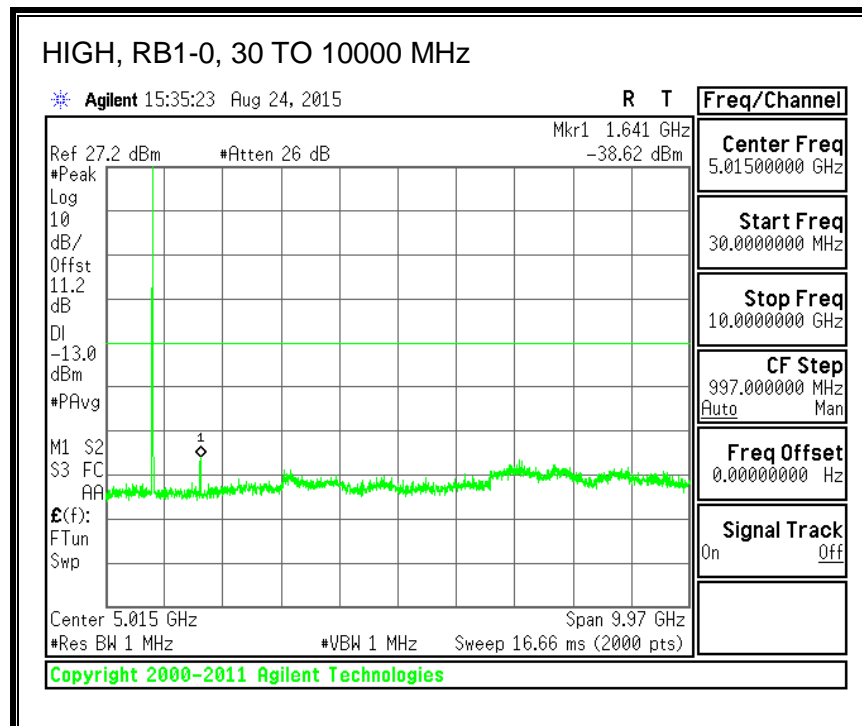
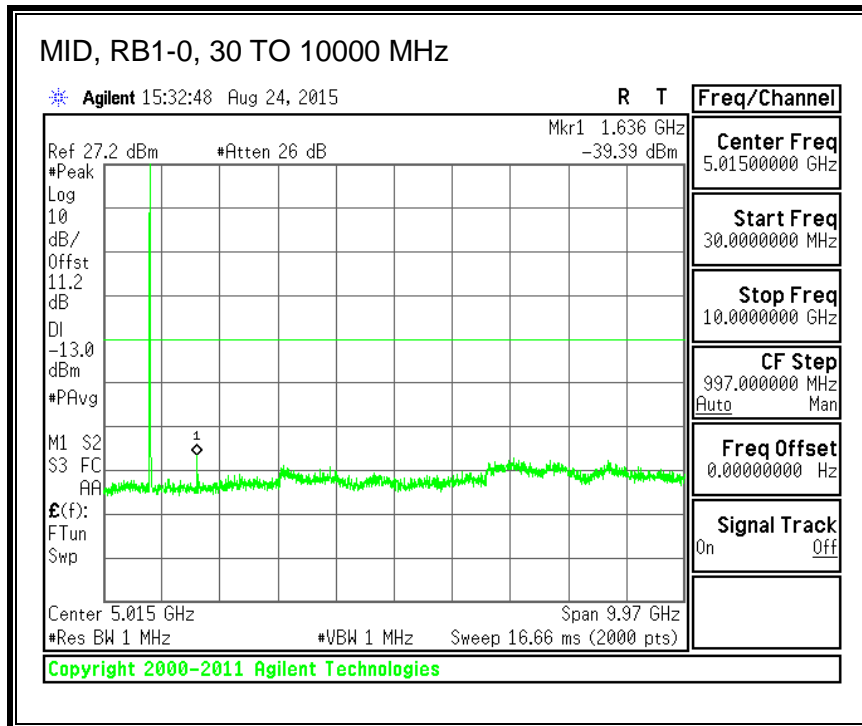
QPSK, (5.0 MHz BAND WIDTH)



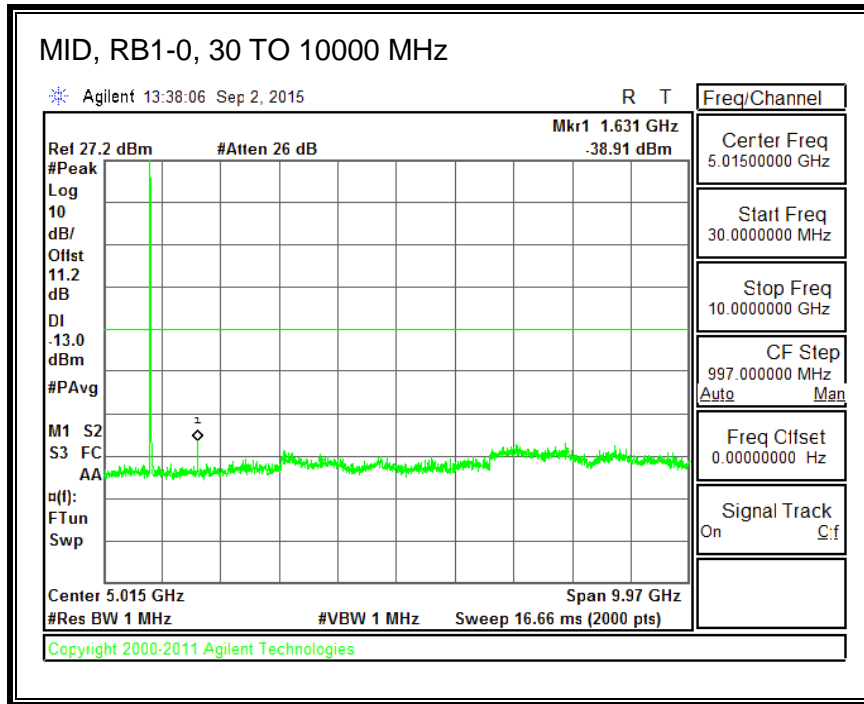


16QAM, (5.0 MHz BAND WIDTH)

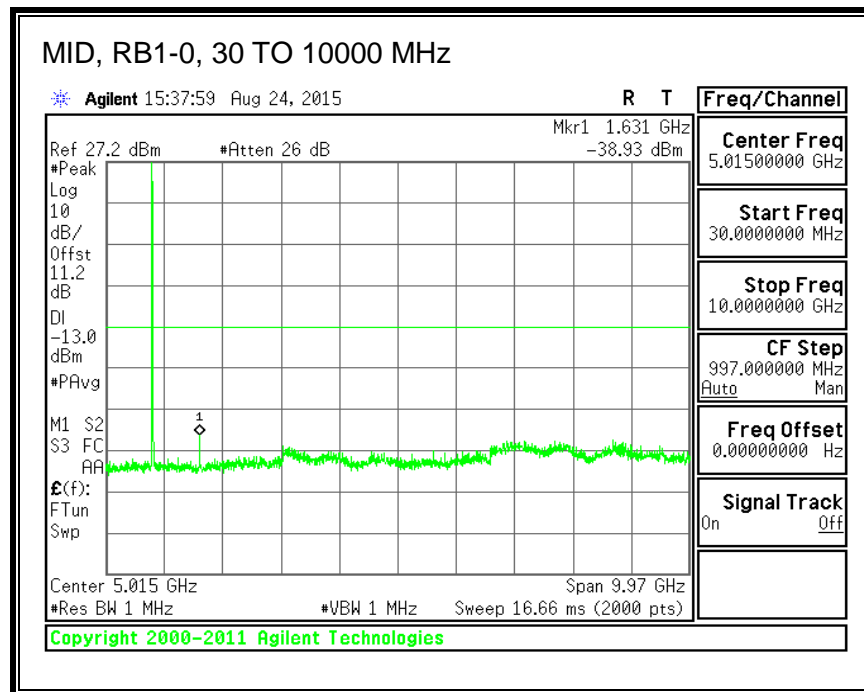




QPSK, (10.0 MHz BAND WIDTH)



16QAM, (10.0 MHz BAND WIDTH)



8.4. FREQUENCY STABILITY

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

LIMITS

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

§24.235 & §27.54

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

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 12
- LTE Band 13
- LTE Band 17
- LTE Band 25
- LTE Band 26

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	1851.0218	1908.9894		
Extreme (50C)		1851.0218	1908.9894	-3.3	-0.002
Extreme (40C)		1851.0218	1908.9894	-2.9	-0.002
Extreme (30C)		1851.0218	1908.9894	-3.2	-0.002
Extreme (10C)		1851.0218	1908.9894	-1.3	-0.001
Extreme (0C)		1851.0218	1908.9894	-2.7	-0.001
Extreme (-10C)		1851.0218	1908.9894	-2.3	-0.001
Extreme (-20C)		1851.0218	1908.9894	-2.5	-0.001
Extreme (-30C)		1851.0218	1908.9894	-2.4	-0.001
25C	10%	1851.0218	1908.9894	-3.2	-0.002
	-10%	1851.0218	1908.9894	-3.3	-0.002
	End Point	1851.0218	1908.9894	-3.0	-0.002

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	1851.0231	1908.9757		
Extreme (50C)		1851.0231	1908.9757	-3.5	-0.002
Extreme (40C)		1851.0231	1908.9757	-3.7	-0.002
Extreme (30C)		1851.0231	1908.9757	1.8	0.001
Extreme (10C)		1851.0231	1908.9757	-1.6	-0.001
Extreme (0C)		1851.0231	1908.9757	-2.5	-0.001
Extreme (-10C)		1851.0231	1908.9757	-2.1	-0.001
Extreme (-20C)		1851.0231	1908.9757	-2.3	-0.001
Extreme (-30C)		1851.0231	1908.9757	-2.1	-0.001
25C	10%	1851.0231	1908.9757	-2.9	-0.002
	-10%	1851.0231	1908.9757	-2.6	-0.001
	End Point	1851.0231	1908.9757	-2.3	-0.001

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	1711.0212	1753.9804		
Extreme (50C)		1711.0212	1753.9804	-1.3	-0.001
Extreme (40C)		1711.0212	1753.9804	-2.5	-0.001
Extreme (30C)		1711.0212	1753.9804	-3.8	-0.002
Extreme (10C)		1711.0212	1753.9804	-3.5	-0.002
Extreme (0C)		1711.0212	1753.9804	-2.7	-0.002
Extreme (-10C)		1711.0212	1753.9804	-1.9	-0.001
Extreme (-20C)		1711.0212	1753.9804	-3.3	-0.002
Extreme (-30C)		1711.0212	1753.9804	-1.5	-0.001
25C	10%	1711.0212	1753.9804	-3.0	-0.002
	-10%	1711.0212	1753.9804	-2.7	-0.002
	End Point	1711.0212	1753.9804	-2.5	-0.001

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	1711.0191	1753.9784		
Extreme (50C)		1711.0191	1753.9784	-1.5	-0.001
Extreme (40C)		1711.0191	1753.9784	-1.9	-0.001
Extreme (30C)		1711.0191	1753.9784	-3.1	-0.002
Extreme (10C)		1711.0191	1753.9784	-3.3	-0.002
Extreme (0C)		1711.0191	1753.9784	-2.2	-0.001
Extreme (-10C)		1711.0191	1753.9784	-2.6	-0.001
Extreme (-20C)		1711.0191	1753.9784	-4.0	-0.002
Extreme (-30C)		1711.0191	1753.9784	-1.6	-0.001
25C	10%	1711.0191	1753.9784	-3.9	-0.002
	-10%	1711.0191	1753.9784	-3.5	-0.002
	End Point	1711.0191	1753.9784	-3.0	-0.002

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	824.5012	848.4957		
Extreme (50C)		824.5012	848.4957	0.3	0.000
Extreme (40C)		824.5011	848.4957	-1.7	-0.002
Extreme (30C)		824.5011	848.4957	-1.8	-0.002
Extreme (10C)		824.5012	848.4957	0.2	0.000
Extreme (0C)		824.5012	848.4957	-0.7	-0.001
Extreme (-10C)		824.5011	848.4957	-2.2	-0.003
Extreme (-20C)		824.5012	848.4957	0.8	0.001
Extreme (-30C)		824.5011	848.4957	-1.9	-0.002
25C	10%	824.5011	848.4957	-2.0	-0.002
	-10%	824.5011	848.4957	-2.2	-0.003
	End Point	824.5011	848.4957	-2.3	-0.003

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	824.5081	848.4928		
Extreme (50C)		824.5081	848.4928	0.7	0.001
Extreme (40C)		824.5081	848.4928	-3.2	-0.004
Extreme (30C)		824.5081	848.4928	-2.1	-0.003
Extreme (10C)		824.5081	848.4928	0.2	0.000
Extreme (0C)		824.5081	848.4928	-0.6	-0.001
Extreme (-10C)		824.5081	848.4928	-3.5	-0.004
Extreme (-20C)		824.5081	848.4928	-1.6	-0.002
Extreme (-30C)		824.5081	848.4928	-0.7	-0.001
25C	10%	824.5081	848.4928	-2.0	-0.002
	-10%	824.5081	848.4928	-1.7	-0.002
	End Point	824.5081	848.4928	-1.9	-0.002

8.4.4. LTE BAND 12

QPSK, (10MHz BANDWIDTH)

Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)	Delta (Hz)	Frequency Stability (ppm)
Temperature	Voltage				
Normal (25C)	Normal	699.5020	715.4920		
Extreme (50C)		699.5020	715.4920	-1.7	-0.002
Extreme (40C)		699.5020	715.4920	-2.7	-0.004
Extreme (30C)		699.5020	715.4920	-1.7	-0.002
Extreme (10C)		699.5020	715.4920	-0.1	0.000
Extreme (0C)		699.5020	715.4920	-1.2	-0.002
Extreme (-10C)		699.5020	715.4920	-1.0	-0.001
Extreme (-20C)		699.5020	715.4920	0.7	0.001
Extreme (-30C)		699.5020	715.4920	-1.1	-0.002
25C	10%	699.5020	715.4920	-2.2	-0.003
	-10%	699.5020	715.4920	-2.2	-0.003
	End Point	699.5020	715.4920	-2.0	-0.003

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	699.5068	715.4916		
Extreme (50C)		699.5068	715.4916	-0.7	-0.001
Extreme (40C)		699.5068	715.4916	-1.3	-0.002
Extreme (30C)		699.5068	715.4916	-1.0	-0.001
Extreme (10C)		699.5068	715.4916	-1.1	-0.002
Extreme (0C)		699.5068	715.4916	-1.2	-0.002
Extreme (-10C)		699.5068	715.4916	-0.6	-0.001
Extreme (-20C)		699.5068	715.4916	0.3	0.000
Extreme (-30C)		699.5068	715.4916	-0.2	0.000
25C	10%	699.5068	715.4916	-3.5	-0.005
	-10%	699.5068	715.4916	-3.2	-0.005
	End Point	699.5068	715.4916	-4.0	-0.006

8.4.5. LTE BAND 13

QPSK, (10MHz BANDWIDTH)

Limit		777	787	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	777.5059	786.4928		
Extreme (50C)		777.5059	786.4928	-0.3	0.000
Extreme (40C)		777.5059	786.4928	0.5	0.001
Extreme (30C)		777.5059	786.4928	0.2	0.000
Extreme (10C)		777.5059	786.4928	0.2	0.000
Extreme (0C)		777.5059	786.4928	-0.4	-0.001
Extreme (-10C)		777.5059	786.4928	-0.3	0.000
Extreme (-20C)		777.5059	786.4928	-0.3	0.000
Extreme (-30C)		777.5059	786.4928	-0.6	-0.001
25C	10%	777.5059	786.4928	-1.1	-0.001
	-10%	777.5059	786.4928	-1.8	-0.002
	End Point	777.5059	786.4928	-2.0	-0.003

16QAM, (10MHz BANDWIDTH)

Limit		777	787	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	777.5059	786.4928		
Extreme (50C)		777.5059	786.4928	0.4	0.001
Extreme (40C)		777.5059	786.4928	0.1	0.000
Extreme (30C)		777.5059	786.4928	-0.4	0.000
Extreme (10C)		777.5059	786.4928	1.2	0.002
Extreme (0C)		777.5059	786.4928	-0.6	-0.001
Extreme (-10C)		777.5059	786.4928	-0.5	-0.001
Extreme (-20C)		777.5059	786.4928	0.6	0.001
Extreme (-30C)		777.5059	786.4928	-0.8	-0.001
25C	10%	777.5059	786.4928	-1.0	-0.001
	-10%	777.5059	786.4928	-2.1	-0.003
	End Point	777.5059	786.4928	-1.9	-0.002

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	704.5064	715.4957		
Extreme (50C)		704.5064	715.4957	0.6	0.001
Extreme (40C)		704.5064	715.4957	0.9	0.001
Extreme (30C)		704.5064	715.4957	0.4	0.001
Extreme (10C)		704.5064	715.4957	0.9	0.001
Extreme (0C)		704.5064	715.4957	2.4	0.003
Extreme (-10C)		704.5064	715.4957	-0.6	-0.001
Extreme (-20C)		704.5064	715.4957	1.8	0.002
Extreme (-30C)		704.5064	715.4957	0.7	0.001
25C	10%	704.5064	715.4957	2.0	0.003
	-10%	704.5064	715.4957	2.1	0.003
	End Point	704.5064	715.4957	2.1	0.003

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	704.5065	715.4924		
Extreme (50C)		704.5065	715.4924	-1.0	-0.001
Extreme (40C)		704.5065	715.4924	-1.1	-0.002
Extreme (30C)		704.5065	715.4924	-1.0	-0.001
Extreme (10C)		704.5065	715.4924	1.5	0.002
Extreme (0C)		704.5065	715.4924	-1.5	-0.002
Extreme (-10C)		704.5065	715.4924	1.2	0.002
Extreme (-20C)		704.5065	715.4924	1.0	0.001
Extreme (-30C)		704.5065	715.4924	-1.8	-0.003
25C	10%	704.5065	715.4924	-1.8	-0.003
	-10%	704.5065	715.4924	-1.5	-0.002
	End Point	704.5065	715.4924	-2.0	-0.003

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	1851.0204	1913.9951		
Extreme (50C)		1851.0204	1913.9951	6.9	0.004
Extreme (40C)		1851.0204	1913.9951	6.0	0.003
Extreme (30C)		1851.0204	1913.9951	6.4	0.003
Extreme (10C)		1851.0204	1913.9951	6.5	0.003
Extreme (0C)		1851.0204	1913.9951	6.8	0.004
Extreme (-10C)		1851.0204	1913.9951	5.1	0.003
Extreme (-20C)		1851.0204	1913.9951	6.9	0.004
Extreme (-30C)		1851.0204	1913.9951	4.8	0.003
25C	10%	1851.0204	1913.9951	7.9	0.004
	-10%	1851.0204	1913.9951	7.5	0.004
	End Point	1851.0204	1913.9951	7.7	0.004

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	1851.0203	1913.9949		
Extreme (50C)		1851.0203	1913.9949	7.2	0.004
Extreme (40C)		1851.0203	1913.9949	6.2	0.003
Extreme (30C)		1851.0203	1913.9949	6.5	0.003
Extreme (10C)		1851.0203	1913.9949	5.9	0.003
Extreme (0C)		1851.0203	1913.9949	5.7	0.003
Extreme (-10C)		1851.0203	1913.9949	5.8	0.003
Extreme (-20C)		1851.0203	1913.9949	5.0	0.003
Extreme (-30C)		1851.0203	1913.9949	6.2	0.003
25C	10%	1851.0203	1913.9949	7.0	0.004
	-10%	1851.0203	1913.9949	6.5	0.003
	End Point	1851.0203	1913.9949	7.0	0.004

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	814.5047	823.4955		
Extreme (50C)		814.5047	823.4955	1.8	0.002
Extreme (40C)		814.5047	823.4955	1.5	0.002
Extreme (30C)		814.5047	823.4955	-1.5	-0.002
Extreme (10C)		814.5047	823.4955	1.7	0.002
Extreme (0C)		814.5047	823.4955	1.5	0.002
Extreme (-10C)		814.5047	823.4955	2.3	0.003
Extreme (-20C)		814.5047	823.4955	2.1	0.003
Extreme (-30C)		814.5047	823.4955	3.0	0.004
25C	10%	814.5047	823.4955	2.9	0.004
	-10%	814.5047	823.4955	2.5	0.003
	End Point	814.5047	823.4955	2.4	0.003

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	814.5037	823.4957		
Extreme (50C)		814.5037	823.4957	1.7	0.002
Extreme (40C)		814.5037	823.4957	1.4	0.002
Extreme (30C)		814.5037	823.4957	1.6	0.002
Extreme (10C)		814.5037	823.4957	2.4	0.003
Extreme (0C)		814.5037	823.4957	1.4	0.002
Extreme (-10C)		814.5037	823.4957	2.5	0.003
Extreme (-20C)		814.5037	823.4957	1.7	0.002
Extreme (-30C)		814.5037	823.4957	2.2	0.003
25C	10%	814.5037	823.4957	2.1	0.003
	-10%	814.5037	823.4957	2.2	0.003
	End Point	814.5037	823.4957	2.5	0.003

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 12
- LTE Band 13
- LTE Band 17
- LTE Band 25
- LTE Band 26

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	24.06	254.68
		1880.0	24.03	252.93
		1909.3	23.84	242.10
1.4MHz Band 16QAM	1/0	1850.7	23.12	205.12
		1880.0	23.18	207.97
		1909.3	23.05	201.84

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	23.95	248.31
		1908.5	23.75	237.14
3.0MHz Band 16QAM	1/0	1851.5	23.05	201.84
		1880.0	22.94	196.79
		1908.5	22.74	187.93

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	23.94	247.74
		1880.0	23.85	242.66
		1907.5	23.88	244.34
5.0MHz Band 16QAM	1/0	1852.5	23.04	201.37
		1880.0	22.99	199.07
		1907.5	22.74	187.93

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	24.04	253.51
		1880.0	23.91	246.04
		1905.0	23.94	247.74
10.0MHz Band 16QAM	1/0	1855.0	22.91	195.43
		1880.0	22.70	186.21
		1905.0	22.83	191.87

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	24.06	254.68
		1880.0	23.75	237.14
		1902.5	23.89	244.91
15MHz Band 16QAM	1/0	1857.5	23.04	201.37
		1880.0	22.84	192.31
		1902.5	22.86	193.20

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	23.94	247.74
		1880.0	23.61	229.61
		1900.0	23.69	233.88
20MHz Band 16QAM	1/0	1860.0	22.81	190.99
		1880.0	23.18	207.97
		1900.0	22.87	193.64

EIRP POWER FOR LTE BAND 4 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
1.4 MHZ BAND QPSK	1/0	1710.7	24.19	262.42
		1732.5	24.03	252.93
		1754.3	24.11	257.63
1.4 MHZ BAND 16QAM	1/0	1710.7	23.14	206.06
		1732.5	23.13	205.59
		1754.3	23.11	204.64

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	24.09	256.45
		1732.5	24.13	258.82
		1753.5	23.96	248.89
3.0 MHZ BAND 16QAM	1/0	1711.5	23.02	200.45
		1732.5	23.10	204.17
		1753.5	22.96	197.70

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	24.03	252.93
		1732.5	24.18	261.82
		1752.5	23.90	245.47
5.0 MHZ BAND 16QAM	1/0	1712.5	23.06	202.30
		1732.5	23.13	205.59
		1752.5	22.91	195.43

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	23.96	248.89
		1732.5	24.11	257.63
		1750.0	24.02	252.35
10.0 MHZ BAND 16QAM	1/0	1715.0	23.01	199.99
		1732.5	23.13	205.59
		1750.0	23.00	199.53

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	24.07	255.27
		1732.5	23.93	247.17
		1747.5	23.82	240.99
15.0 MHZ BAND 16QAM	1/0	1717.5	23.12	205.12
		1732.5	23.03	200.91
		1747.5	22.90	194.98

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	24.17	261.22
		1732.5	24.03	252.93
		1745.0	23.83	241.55
20.0 MHZ BAND 16QAM	1/0	1720.0	23.07	202.77
		1732.5	23.03	200.91
		1745.0	22.91	195.43

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	20.14	103.28
		836.5	20.27	106.41
		848.3	20.26	106.17
1.4MHz Band 16QAM	1/0	824.7	19.13	81.85
		836.5	19.50	89.13
		848.3	19.32	85.51

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	20.70	117.49
		836.5	20.50	112.20
		847.5	20.36	108.64
3.0 MHZ BAND 16QAM	1/0	825.5	19.60	91.20
		836.5	19.86	96.83
		847.5	19.74	94.19

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	20.50	112.20
		836.5	20.23	105.44
		846.5	20.71	117.76
5MHz Band 16QAM	1/0	826.5	19.50	89.13
		836.5	19.67	92.68
		846.5	19.78	95.06

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	20.21	104.95
		836.5	20.09	102.09
		844.0	20.37	108.89
10.0 MHZ BAND 16QAM	1/0	829.0	19.25	84.14
		836.5	19.40	87.10
		844.0	19.32	85.51

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	18.00	63.10
		707.5	18.16	65.46
		715.3	18.19	65.92
1.4MHz Band 16QAM	1/0	699.7	17.40	54.95
		707.5	17.33	54.08
		715.3	17.45	55.59

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	17.57	57.15
		707.5	17.65	58.21
		714.5	17.69	58.75
3.0 MHZ BAND 16QAM	1/0	700.5	16.80	47.86
		707.5	16.95	49.55
		714.5	16.89	48.87

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	17.70	58.88
		707.5	17.55	56.89
		713.5	17.74	59.43
5MHz Band 16QAM	1/0	701.5	16.76	47.42
		707.5	16.85	48.42
		713.5	16.89	48.87

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	17.50	56.23
		707.5	17.40	54.95
		711.0	17.37	54.58
10.0 MHZ BAND 16QAM	1/0	704.0	16.70	46.77
		707.5	16.65	46.24
		711.0	16.49	44.57

ERP POWER FOR LTE BAND 13 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
5.0 MHZ BAND QPSK	1/0	779.5	18.22	66.37
		782.0	18.40	69.18
		784.5	18.10	64.57
5.0 MHZ BAND 16QAM	1/0	779.5	17.57	57.15
		782.0	17.55	56.89
		784.5	17.50	56.23

ERP POWER FOR LTE BAND 13 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
10 MHZ BAND QPSK	1/0	782.0	18.26	66.99
10 MHZ BAND 16QAM	1/0		17.45	55.59

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	17.90	61.66
		710.0	18.09	64.42
		713.5	18.10	64.57
5MHz Band 16QAM	1/0	706.5	17.06	50.82
		710.0	17.05	50.70
		713.5	17.13	51.64

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	18.15	65.31
10.0 MHZ BAND 16QAM		710.0	17.25	53.09

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	25.02	317.69
		1882.5	24.85	305.49
		1914.3	24.74	297.85
1.4 MHZ BAND 16QAM	1/0	1850.7	24.12	258.23
		1882.5	23.80	239.88
		1914.3	23.67	232.81

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	25.17	328.85
		1882.5	24.75	298.54
		1913.5	24.64	291.07
3.0 MHZ BAND 16QAM	1/0	1851.5	24.36	272.90
		1882.5	23.48	222.84
		1913.5	23.52	224.91

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	25.01	316.96
		1882.5	24.82	303.39
		1912.5	24.69	294.44
5.0 MHZ BAND 16QAM	1/0	1852.5	24.11	257.63
		1882.5	23.36	216.77
		1912.5	23.48	222.84

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	25.26	335.74
		1882.5	24.66	292.42
		1910.0	25.03	318.42
10.0 MHZ BAND 16QAM	1/0	1855.0	24.27	267.30
		1882.5	23.78	238.78
		1910.0	24.00	251.19

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	25.31	339.63
		1882.5	24.56	285.76
		1907.5	25.28	337.29
15.0 MHZ BAND 16QAM	1/0	1857.5	24.41	276.06
		1882.5	23.54	225.94
		1907.5	24.37	273.53

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	25.61	363.92
		1882.5	24.30	269.15
		1905.0	25.60	363.08
20.0 MHZ BAND 16QAM	1/0	1860.0	24.31	269.77
		1882.5	23.37	217.27
		1905.0	24.14	259.42

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	21.88	154.17
		819.0	21.76	149.97
		823.3	21.96	157.04
1.4 MHZ BAND 16QAM	1/0	814.7	20.88	122.46
		819.0	20.76	119.12
		823.3	20.82	120.78

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	21.91	155.24
		819.0	22.13	163.31
		822.5	21.90	154.88
3.0 MHZ BAND 16QAM	1/0	815.5	21.21	132.13
		819.0	21.32	135.52
		822.5	20.94	124.17

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	21.70	147.91
		819.0	21.66	146.55
		821.5	21.45	139.64
5.0 MHZ BAND 16QAM	1/0	816.5	20.50	112.20
		819.0	20.46	111.17
		821.5	20.55	113.50

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	21.36	136.77
10.0 MHZ BAND 16QAM	1/0	819.0	20.56	113.76

9.1.1. LTE BAND 2

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

High Frequency Fundamental Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 15U21634								
Date: 12/28/2015								
Test Engineer: F. Guamero								
Configuration: EUT Only								
Mode: LTE Band 2 QPSK 1.4MHz BW								
Test Equipment:								
Receiving: Horn T344 and Chamber D 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	22.59	33.0	-10.4	
1.851	17.0	H	0.98	8.05	24.06	33.0	-8.9	
Mid Ch								
1.880	15.9	V	0.98	8.03	22.98	33.0	-10.0	
1.880	17.0	H	0.98	8.03	24.03	33.0	-9.0	
High Ch								
1.909	15.5	V	0.98	8.05	22.57	33.0	-10.4	
1.909	16.8	H	0.98	8.05	23.84	33.0	-9.2	
Rev. 11.20.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 15U21634								
Date: 12/28/2015								
Test Engineer: F. Guamero								
Configuration: EUT Only								
Mode: LTE Band 2 16QAM 1.4MHz BW								
Test Equipment:								
Receiving: Horn T344 and Chamber D 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	14.6	V	0.98	8.05	21.65	33.0	-11.4	
1.851	16.0	H	0.98	8.05	23.12	33.0	-9.9	
Mid Ch								
1.880	14.8	V	0.98	8.03	21.86	33.0	-11.1	
1.880	16.1	H	0.98	8.03	23.18	33.0	-9.8	
High Ch								
1.909	14.6	V	0.98	8.05	21.63	33.0	-11.4	
1.909	16.0	H	0.98	8.05	23.05	33.0	-9.9	
Rev. 11.20.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 15U21634								
Date: 12/28/2015								
Test Engineer: F. Guamero								
Configuration: EUT Only								
Mode: LTE Band 2 QPSK 3MHz BW								
Test Equipment:								
Receiving: Horn T344 and Chamber D 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	15.5	V	0.98	8.05	22.58	33.0	-10.4	
1.852	17.0	H	0.98	8.05	24.07	33.0	-8.9	
Mid Ch								
1.880	16.1	V	0.98	8.03	23.14	33.0	-9.9	
1.880	16.9	H	0.98	8.03	23.95	33.0	-9.0	
High Ch								
1.909	15.3	V	0.98	8.05	22.36	33.0	-10.6	
1.909	16.7	H	0.98	8.05	23.75	33.0	-9.3	
Rev. 11.20.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 15U21634								
Date: 12/28/2015								
Test Engineer: F. Guamero								
Configuration: EUT Only								
Mode: LTE Band 2 16QAM 3MHz BW								
Test Equipment:								
Receiving: Horn T344 and Chamber D 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	14.6	V	0.98	8.05	21.71	33.0	-11.3	
1.852	16.0	H	0.98	8.05	23.05	33.0	-10.0	
Mid Ch								
1.880	15.0	V	0.98	8.03	22.08	33.0	-10.9	
1.880	15.9	H	0.98	8.03	22.94	33.0	-10.1	
High Ch								
1.909	14.7	V	0.98	8.05	21.78	33.0	-11.2	
1.909	15.7	H	0.98	8.05	22.74	33.0	-10.3	
Rev. 11.20.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 15U21634								
Date: 12/28/2015								
Test Engineer: F. Guamero								
Configuration: EUT Only								
Mode: LTE Band 2 QPSK 5MHz BW								
Test Equipment:								
Receiving: Horn T344 and Chamber D 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	15.7	V	0.98	8.05	22.72	33.0	-10.3	
1.853	16.9	H	0.98	8.05	23.94	33.0	-9.1	
Mid Ch								
1.880	16.0	V	0.98	8.03	23.00	33.0	-10.0	
1.880	16.8	H	0.98	8.03	23.85	33.0	-9.1	
High Ch								
1.908	15.3	V	0.98	8.04	22.32	33.0	-10.7	
1.908	16.8	H	0.98	8.04	23.88	33.0	-9.1	
Rev. 11.20.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D									
Company:									
Project #: 15U21634									
Date: 12/28/2015									
Test Engineer: F. Guamero									
Configuration: EUT Only									
Mode: LTE Band 2 16QAM 5MHz BW									
Test Equipment:									
Receiving: Horn T344 and Chamber D 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	14.7	V	0.98	8.05	21.75	33.0	-11.3		
1.853	16.0	H	0.98	8.05	23.04	33.0	-10.0		
Mid Ch									
1.880	14.8	V	0.98	8.03	21.81	33.0	-11.2		
1.880	15.9	H	0.98	8.03	22.99	33.0	-10.0		
High Ch									
1.908	14.7	V	0.98	8.04	21.72	33.0	-11.3		
1.908	15.7	H	0.98	8.04	22.74	33.0	-10.3		
Rev. 11.20.15									

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 15U21634								
Date: 12/28/2015								
Test Engineer: F. Guarnero								
Configuration: EUT Only								
Mode: LTE Band 2 QPSK 10MHz BW								
Test Equipment:								
Receiving: Horn T344 and Chamber D 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	15.6	V	0.98	8.05	22.62	33.0	-10.4	
1.855	17.0	H	0.98	8.05	24.04	33.0	-9.0	
Mid Ch								
1.880	16.0	V	0.98	8.03	23.00	33.0	-10.0	
1.880	16.9	H	0.98	8.03	23.91	33.0	-9.1	
High Ch								
1.905	15.4	V	0.98	8.04	22.41	33.0	-10.6	
1.905	16.9	H	0.98	8.04	23.94	33.0	-9.1	
Rev. 11.20.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 15U21634								
Date: 12/28/2015								
Test Engineer: F. Guamero								
Configuration: EUT Only								
Mode: LTE Band 2 16QAM 10MHz BW								
Test Equipment:								
Receiving: Horn T344 and Chamber D 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	14.6	V	0.98	8.05	21.65	33.0	-11.4	
1.855	15.8	H	0.98	8.05	22.91	33.0	-10.1	
Mid Ch								
1.880	15.2	V	0.98	8.03	22.25	33.0	-10.7	
1.880	15.7	H	0.98	8.03	22.70	33.0	-10.3	
High Ch								
1.905	14.6	V	0.98	8.04	21.69	33.0	-11.3	
1.905	15.8	H	0.98	8.04	22.83	33.0	-10.2	
Rev. 11.20.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 15U21634								
Date: 12/28/2015								
Test Engineer: F. Guamero								
Configuration: EUT Only								
Mode: LTE Band 2 QPSK 15MHz BW								
Test Equipment:								
Receiving: Horn T344 and Chamber D 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	15.5	V	0.98	8.04	22.55	33.0	-10.5	
1.858	17.0	H	0.98	8.04	24.06	33.0	-8.9	
Mid Ch								
1.880	16.2	V	0.98	8.03	23.20	33.0	-9.8	
1.880	16.7	H	0.98	8.03	23.75	33.0	-9.2	
High Ch								
1.903	15.5	V	0.98	8.03	22.54	33.0	-10.5	
1.903	16.8	H	0.98	8.03	23.89	33.0	-9.1	
Rev. 11.20.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 15U21634								
Date: 12/28/2015								
Test Engineer: F. Guamero								
Configuration: EUT Only								
Mode: LTE Band 2 16QAM 15MHz BW								
Test Equipment:								
Receiving: Horn T344 and Chamber D 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	14.4	V	0.98	8.04	21.49	33.0	-11.5	
1.858	16.0	H	0.98	8.04	23.04	33.0	-10.0	
Mid Ch								
1.880	15.3	V	0.98	8.03	22.33	33.0	-10.7	
1.880	15.8	H	0.98	8.03	22.84	33.0	-10.2	
High Ch								
1.903	14.6	V	0.98	8.03	21.68	33.0	-11.3	
1.903	15.8	H	0.98	8.03	22.86	33.0	-10.1	
Rev. 11.20.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D									
Company:									
Project #: 15U21634									
Date: 12/28/2015									
Test Engineer: F. Guamero									
Configuration: EUT Only									
Mode: LTE Band 2 QPSK 20MHz BW									
Test Equipment:									
Receiving: Horn T344 and Chamber D 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	15.6	V	0.98	8.04	22.68	33.0	-10.3		
1.860	16.9	H	0.98	8.04	23.94	33.0	-9.1		
Mid Ch									
1.880	16.1	V	0.98	8.03	23.11	33.0	-9.9		
1.880	16.6	H	0.98	8.03	23.61	33.0	-9.4		
High Ch									
1.900	15.4	V	0.98	8.02	22.43	33.0	-10.6		
1.900	16.7	H	0.98	8.02	23.69	33.0	-9.3		
Rev. 11.20.15									

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 15U21634								
Date: 12/28/2015								
Test Engineer: F. Guamero								
Configuration: EUT Only								
Mode: LTE Band 2 16QAM 20MHz BW								
Test Equipment:								
Receiving: Horn T344 and Chamber D 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	14.7	V	0.98	8.04	21.77	33.0	-11.2	
1.860	15.7	H	0.98	8.04	22.81	33.0	-10.2	
Mid Ch								
1.880	15.1	V	0.98	8.03	22.10	33.0	-10.9	
1.880	16.1	H	0.98	8.03	23.18	33.0	-9.8	
High Ch								
1.900	14.6	V	0.98	8.02	21.67	33.0	-11.3	
1.900	15.8	H	0.98	8.02	22.87	33.0	-10.1	
Rev. 11.20.15								

9.1.2. LTE BAND 4

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D									
Company:									
Project #: 15U21634									
Date: 12/28/2015									
Test Engineer: F. Guamero									
Configuration: EUT Only									
Mode: LTE Band 4 QPSK 1.4MHz BW									
Test Equipment:									
Receiving: Horn T344 and Chamber D 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	14.6	V	0.95	8.27	21.95	30.0	-8.0		
1.711	16.9	H	0.95	8.27	24.19	30.0	-5.8		
Mid Ch									
1.733	14.7	V	0.95	8.23	21.94	30.0	-8.1		
1.733	16.8	H	0.95	8.23	24.03	30.0	-6.0		
High Ch									
1.754	14.7	V	0.95	8.18	21.89	30.0	-8.1		
1.754	16.9	H	0.95	8.18	24.11	30.0	-5.9		
Rev. 11.20.15									

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 15U21634								
Date: 12/28/2015								
Test Engineer: F. Guamero								
Configuration: EUT Only								
Mode: LTE Band 4 16QAM 1.4MHz BW								
Test Equipment:								
Receiving: Horn T344 and Chamber D 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	13.4	V	0.95	8.27	20.75	30.0	-9.2	
1.711	15.8	H	0.95	8.27	23.14	30.0	-6.9	
Mid Ch								
1.733	13.6	V	0.95	8.23	20.88	30.0	-9.1	
1.733	15.9	H	0.95	8.23	23.13	30.0	-6.9	
High Ch								
1.754	13.5	V	0.95	8.18	20.75	30.0	-9.2	
1.754	15.9	H	0.95	8.18	23.11	30.0	-6.9	
Rev. 11.20.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 15U21634								
Date: 12/28/2015								
Test Engineer: F. Guamero								
Configuration: EUT Only								
Mode: LTE Band 4 QPSK 3MHz BW								
Test Equipment:								
Receiving: Horn T344 and Chamber D 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	14.7	V	0.95	8.27	21.98	30.0	-8.0	
1.712	16.8	H	0.95	8.27	24.09	30.0	-5.9	
Mid Ch								
1.733	14.7	V	0.95	8.23	21.97	30.0	-8.0	
1.733	16.9	H	0.95	8.23	24.13	30.0	-5.9	
High Ch								
1.754	14.6	V	0.95	8.18	21.82	30.0	-8.2	
1.754	16.7	H	0.95	8.18	23.96	30.0	-6.0	
Rev. 11.20.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 15U21634								
Date: 12/28/2015								
Test Engineer: F. Guamero								
Configuration: EUT Only								
Mode: LTE Band 4 16QAM 3MHz BW								
Test Equipment:								
Receiving: Horn T344 and Chamber D 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	13.3	V	0.95	8.27	20.66	30.0	-9.3	
1.712	15.7	H	0.95	8.27	23.02	30.0	-7.0	
Mid Ch								
1.733	13.7	V	0.95	8.23	20.94	30.0	-9.1	
1.733	15.8	H	0.95	8.23	23.10	30.0	-6.9	
High Ch								
1.754	13.4	V	0.95	8.18	20.64	30.0	-9.4	
1.754	15.7	H	0.95	8.18	22.96	30.0	-7.0	
Rev. 11.20.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 15U21634								
Date: 12/28/2015								
Test Engineer: F. Guamero								
Configuration: EUT Only								
Mode: LTE Band 4 QPSK 5MHz BW								
Test Equipment:								
Receiving: Horn T344 and Chamber D 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	14.5	V	0.95	8.27	21.87	30.0	-8.1	
1.713	16.7	H	0.95	8.27	24.03	30.0	-6.0	
Mid Ch								
1.733	14.5	V	0.95	8.23	21.79	30.0	-8.2	
1.733	16.9	H	0.95	8.23	24.18	30.0	-5.8	
High Ch								
1.753	14.4	V	0.95	8.18	21.67	30.0	-8.3	
1.753	16.7	H	0.95	8.18	23.90	30.0	-6.1	
Rev. 11.20.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 15U21634								
Date: 12/28/2015								
Test Engineer: F. Guamero								
Configuration: EUT Only								
Mode: LTE Band 4 16QAM 5MHz BW								
Test Equipment:								
Receiving: Horn T344 and Chamber D 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	13.0	V	0.95	8.27	20.35	30.0	-9.7	
1.713	15.7	H	0.95	8.27	23.06	30.0	-6.9	
Mid Ch								
1.733	13.2	V	0.95	8.23	20.50	30.0	-9.5	
1.733	15.9	H	0.95	8.23	23.13	30.0	-6.9	
High Ch								
1.753	13.2	V	0.95	8.18	20.43	30.0	-9.6	
1.753	15.7	H	0.95	8.18	22.91	30.0	-7.1	
Rev. 11.20.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 15U21634								
Date: 12/28/2015								
Test Engineer: F. Guarnero								
Configuration: EUT Only								
Mode: LTE Band 4 QPSK 10MHz BW								
Test Equipment:								
Receiving: Horn T344 and Chamber D 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	14.3	V	0.95	8.26	21.66	30.0	-8.3	
1.715	16.6	H	0.95	8.26	23.96	30.0	-6.0	
Mid Ch								
1.733	14.3	V	0.95	8.23	21.60	30.0	-8.4	
1.733	16.8	H	0.95	8.23	24.11	30.0	-5.9	
High Ch								
1.750	14.4	V	0.95	8.19	21.60	30.0	-8.4	
1.750	16.8	H	0.95	8.19	24.02	30.0	-6.0	
Rev. 11.20.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 15U21634								
Date: 12/28/2015								
Test Engineer: F. Guamero								
Configuration: EUT Only								
Mode: LTE Band 4 16QAM 10MHz BW								
Test Equipment:								
Receiving: Horn T344 and Chamber D 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	13.0	V	0.95	8.26	20.31	30.0	-9.7	
1.715	15.7	H	0.95	8.26	23.01	30.0	-7.0	
Mid Ch								
1.733	13.4	V	0.95	8.23	20.68	30.0	-9.3	
1.733	15.9	H	0.95	8.23	23.13	30.0	-6.9	
High Ch								
1.750	13.2	V	0.95	8.19	20.44	30.0	-9.6	
1.750	15.8	H	0.95	8.19	23.00	30.0	-7.0	
Rev. 11.20.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 15U21634								
Date: 12/28/2015								
Test Engineer: F. Guamero								
Configuration: EUT Only								
Mode: LTE Band 4 QPSK 15MHz BW								
Test Equipment:								
Receiving: Horn T344 and Chamber D 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	14.2	V	0.95	8.26	21.52	30.0	-8.5	
1.718	16.8	H	0.95	8.26	24.07	30.0	-5.9	
Mid Ch								
1.733	14.2	V	0.95	8.23	21.47	30.0	-8.5	
1.733	16.7	H	0.95	8.23	23.93	30.0	-6.1	
High Ch								
1.748	14.2	V	0.95	8.19	21.45	30.0	-8.6	
1.748	16.6	H	0.95	8.19	23.82	30.0	-6.2	
Rev. 11.20.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 15U21634								
Date: 12/28/2015								
Test Engineer: F. Guamero								
Configuration: EUT Only								
Mode: LTE Band 4 16QAM 15MHz BW								
Test Equipment:								
Receiving: Horn T344 and Chamber D 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	13.0	V	0.95	8.26	20.28	30.0	-9.7	
1.718	15.8	H	0.95	8.26	23.12	30.0	-6.9	
Mid Ch								
1.733	13.2	V	0.95	8.23	20.50	30.0	-9.5	
1.733	15.8	H	0.95	8.23	23.03	30.0	-7.0	
High Ch								
1.748	13.1	V	0.95	8.19	20.37	30.0	-9.6	
1.748	15.7	H	0.95	8.19	22.90	30.0	-7.1	
Rev. 11.20.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 15U21634								
Date: 12/28/2015								
Test Engineer: F. Guamero								
Configuration: EUT Only								
Mode: LTE Band 4 QPSK 20MHz BW								
Test Equipment:								
Receiving: Horn T344 and Chamber D 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	14.0	V	0.95	8.25	21.33	30.0	-8.7	
1.720	16.9	H	0.95	8.25	24.17	30.0	-5.8	
Mid Ch								
1.733	14.1	V	0.95	8.23	21.34	30.0	-8.7	
1.733	16.8	H	0.95	8.23	24.03	30.0	-6.0	
High Ch								
1.745	14.1	V	0.95	8.20	21.30	30.0	-8.7	
1.745	16.6	H	0.95	8.20	23.83	30.0	-6.2	
Rev. 11.20.15								

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber D								
Company:								
Project #: 15U21634								
Date: 12/28/2015								
Test Engineer: F. Guamero								
Configuration: EUT Only								
Mode: LTE Band 4 16QAM 20MHz BW								
Test Equipment:								
Receiving: Horn T344 and Chamber D 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	13.0	V	0.95	8.25	20.27	30.0	-9.7	
1.720	15.8	H	0.95	8.25	23.07	30.0	-6.9	
Mid Ch								
1.733	12.9	V	0.95	8.23	20.20	30.0	-9.8	
1.733	15.8	H	0.95	8.23	23.03	30.0	-7.0	
High Ch								
1.745	13.1	V	0.95	8.20	20.32	30.0	-9.7	
1.745	15.7	H	0.95	8.20	22.91	30.0	-7.1	
Rev. 11.20.15								

9.1.3. LTE BAND 5

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber F											
Company:											
Project #: 15U21634											
Date: 12/23/2015											
Test Engineer: M. Hua											
Configuration: EUT Only											
Mode: LTE Band 5 QPSK 1.4MHz BW											
Test Equipment:											
Receiving: Sunol T122, and Chamber F 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	15.81	V	0.6	0.0	15.19	17.34	38.45	40.60	-23.3		
824.70	20.76	H	0.6	0.0	20.14	22.29	38.45	40.60	-18.3		
Mid Ch											
836.50	15.43	V	0.6	0.0	14.81	16.96	38.45	40.60	-23.6		
836.50	20.89	H	0.6	0.0	20.27	22.42	38.45	40.60	-18.2		
High Ch											
848.30	14.94	V	0.6	0.0	14.32	16.47	38.45	40.60	-24.1		
848.30	20.88	H	0.6	0.0	20.26	22.41	38.45	40.60	-18.2		
Rev. 12.14.15											

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber F										
Company:										
Project #:	15U21634									
Date:	12/23/2015									
Test Engineer:	M. Hua									
Configuration:	EUT Only									
Mode:	LTE Band 5 16QAM 1.4MHz BW									
Test Equipment:										
Receiving: Sunol T122, and Chamber F 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	14.99	V	0.6	0.0	14.37	16.52	38.45	40.60	-24.1	
824.70	19.75	H	0.6	0.0	19.13	21.28	38.45	40.60	-19.3	
Mid Ch										
836.50	14.39	V	0.6	0.0	13.77	15.92	38.45	40.60	-24.7	
836.50	20.12	H	0.6	0.0	19.50	21.65	38.45	40.60	-18.9	
High Ch										
848.30	14.10	V	0.6	0.0	13.48	15.63	38.45	40.60	-25.0	
848.30	19.94	H	0.6	0.0	19.32	21.47	38.45	40.60	-19.1	
Rev. 12.14.15										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber F										
Company:										
Project #: 15U21634										
Date: 12/23/2015										
Test Engineer: M. Hua										
Configuration: EUT Only										
Mode: LTE Band 5 QPSK 3MHz BW										
Test Equipment:										
Receiving: Sunol T122, and Chamber F 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	15.80	V	0.6	0.0	15.18	17.33	38.45	40.60	-23.3	
825.50	21.32	H	0.6	0.0	20.70	22.85	38.45	40.60	-17.8	
Mid Ch										
836.50	15.47	V	0.6	0.0	14.85	17.00	38.45	40.60	-23.6	
836.50	21.12	H	0.6	0.0	20.50	22.65	38.45	40.60	-17.9	
High Ch										
847.50	15.00	V	0.6	0.0	14.38	16.53	38.45	40.60	-24.1	
847.50	20.98	H	0.6	0.0	20.36	22.51	38.45	40.60	-18.1	
Rev. 12.14.15										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber F										
Company:										
Project #:	15U21634									
Date:	12/23/2015									
Test Engineer:	M. Hua									
Configuration:	EUT Only									
Mode:	LTE Band 5 16QAM 3MHz BW									
Test Equipment:										
Receiving: Sunol T122, and Chamber F 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	14.86	V	0.6	0.0	14.24	16.39	38.45	40.60	-24.2	
825.50	20.22	H	0.6	0.0	19.60	21.75	38.45	40.60	-18.9	
Mid Ch										
836.50	14.52	V	0.6	0.0	13.90	16.05	38.45	40.60	-24.6	
836.50	20.48	H	0.6	0.0	19.86	22.01	38.45	40.60	-18.6	
High Ch										
847.50	14.03	V	0.6	0.0	13.41	15.56	38.45	40.60	-25.0	
847.50	20.36	H	0.6	0.0	19.74	21.89	38.45	40.60	-18.7	
Rev. 12.14.15										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber F										
Company:										
Project #: 15U21634										
Date: 12/23/2015										
Test Engineer: M. Hua										
Configuration: EUT Only										
Mode: LTE Band 5 QPSK 5MHz BW										
Test Equipment:										
Receiving: Sunol T122, and Chamber F 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	15.90	V	0.6	0.0	15.28	17.43	38.45	40.60	-23.2	
826.50	21.12	H	0.6	0.0	20.50	22.65	38.45	40.60	-18.0	
Mid Ch										
836.50	15.53	V	0.6	0.0	14.91	17.06	38.45	40.60	-23.5	
836.50	20.85	H	0.6	0.0	20.23	22.38	38.45	40.60	-18.2	
High Ch										
846.50	14.82	V	0.6	0.0	14.20	16.35	38.45	40.60	-24.3	
846.50	21.33	H	0.6	0.0	20.71	22.86	38.45	40.60	-17.7	
Rev. 12.14.15										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber F										
Company:										
Project #:	15U21634									
Date:	12/23/2015									
Test Engineer:	M. Hua									
Configuration:	EUT Only									
Mode:	LTE Band 5 16QAM 5MHz BW									
Test Equipment:										
Receiving: Sunol T122, and Chamber F 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	15.03	V	0.6	0.0	14.41	16.56	38.45	40.60	-24.0	
826.50	20.12	H	0.6	0.0	19.50	21.65	38.45	40.60	-19.0	
Mid Ch										
836.50	14.38	V	0.6	0.0	13.76	15.91	38.45	40.60	-24.7	
836.50	20.29	H	0.6	0.0	19.67	21.82	38.45	40.60	-18.8	
High Ch										
846.50	13.91	V	0.6	0.0	13.29	15.44	38.45	40.60	-25.2	
846.50	20.40	H	0.6	0.0	19.78	21.93	38.45	40.60	-18.7	
Rev. 12.14.15										

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

High Frequency Substitution Measurement UL Fremont Radiated Chamber F										
Company:										
Project #: 15U21634										
Date: 12/23/2015										
Test Engineer: M. Hua										
Configuration: EUT Only										
Mode: LTE Band 5 QPSK 10MHz BW										
Test Equipment:										
Receiving: Sunoi T122, and Chamber F 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	15.93	V	0.6	0.0	15.31	17.46	38.45	40.60	-23.1	
829.00	20.83	H	0.6	0.0	20.21	22.36	38.45	40.60	-18.2	
Mid Ch										
836.50	15.72	V	0.6	0.0	15.10	17.25	38.45	40.60	-23.4	
836.50	20.71	H	0.6	0.0	20.09	22.24	38.45	40.60	-18.4	
High Ch										
844.00	15.08	V	0.6	0.0	14.46	16.61	38.45	40.60	-24.0	
844.00	20.99	H	0.6	0.0	20.37	22.52	38.45	40.60	-18.1	
Rev. 12.14.15										