8.3. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238, §27.53 and §90.691

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.

For mobile and portable stations operating in the 2305-2315 MHz: by a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz

For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

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, -25dBm and -40dBm according to the band Limit
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.

MODES TESTED

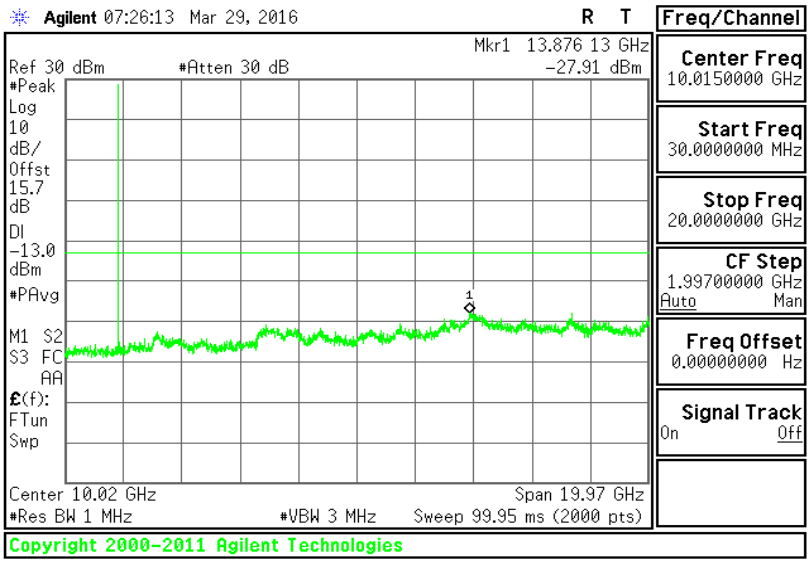
- LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 17
- LTE Band 25
- LTE Band 26
- LTE Band 27
- LTE Band 30
- LTE Band 41

8.3.1. LTE BAND 2

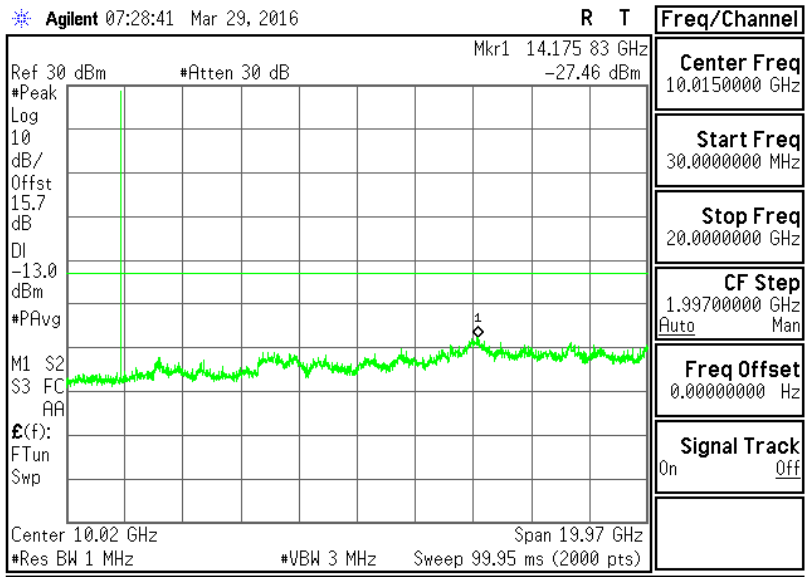
ID:	38806	Date:	3/29/16

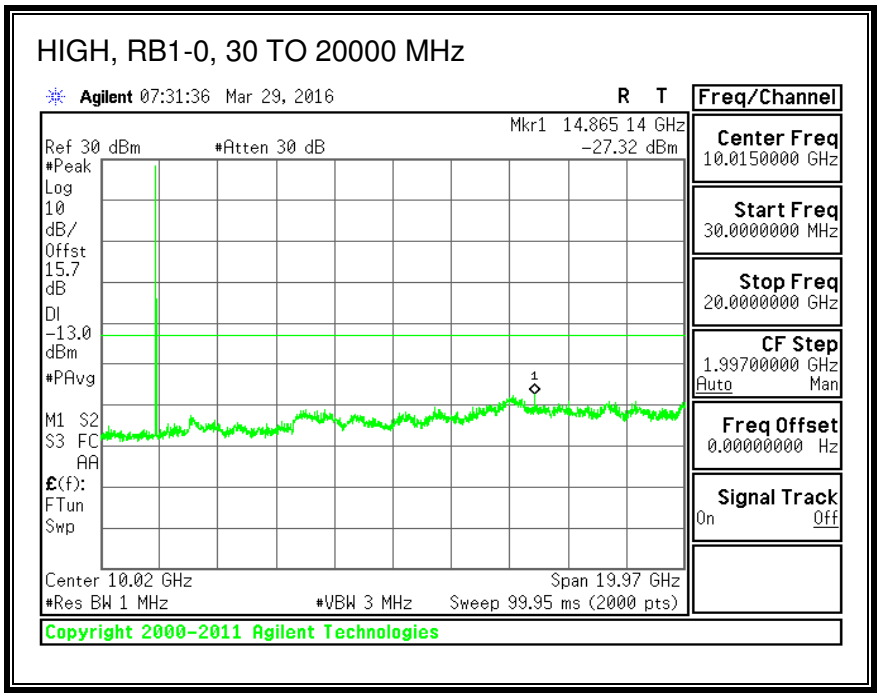
QPSK, (1.4 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 20000 MHz

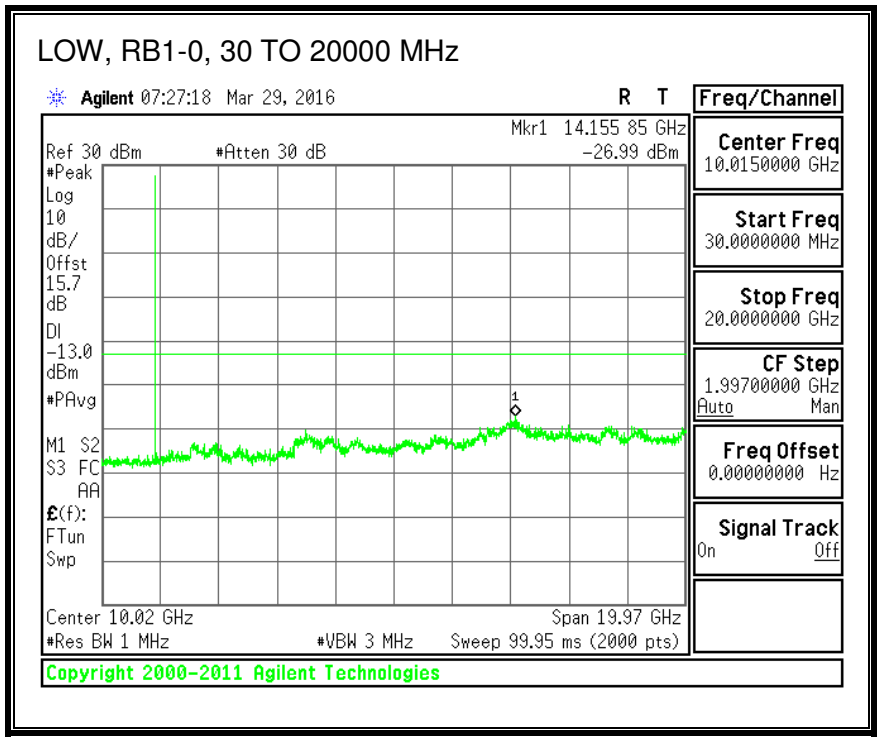


MID, RB1-0, 30 TO 20000 MHz

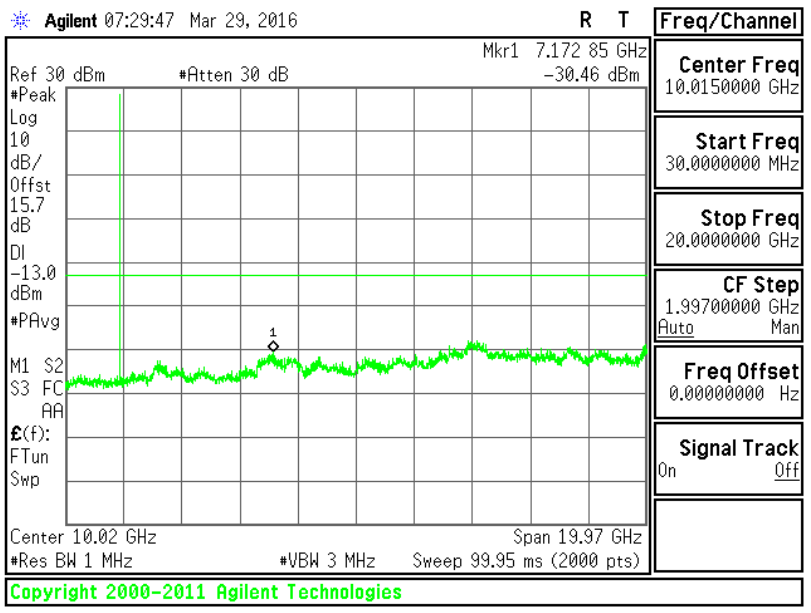




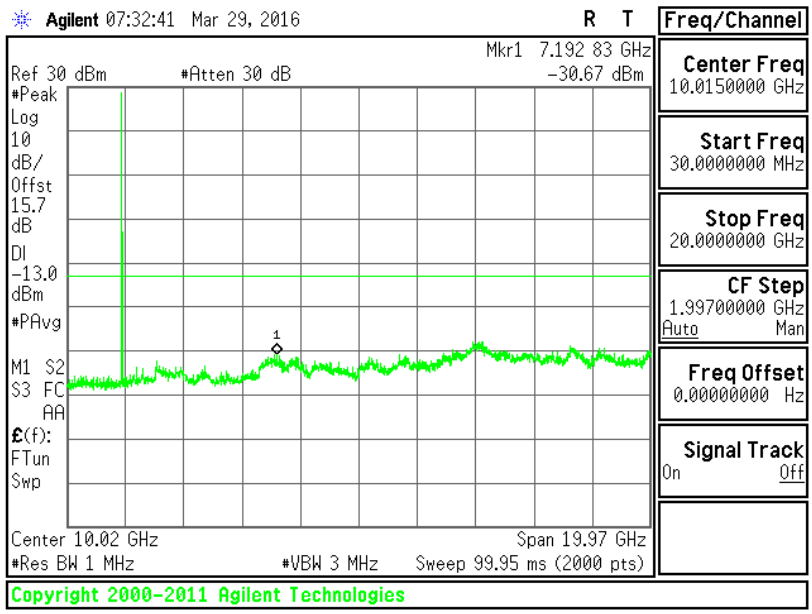
16QAM, (1.4 MHz BAND WIDTH)



MID, RB1-0, 30 TO 20000 MHz

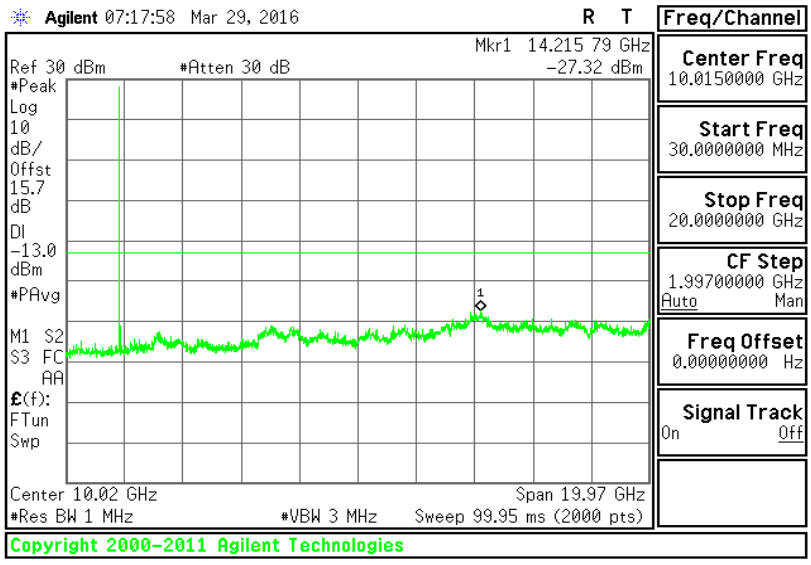


HIGH, RB1-0, 30 TO 20000 MHz

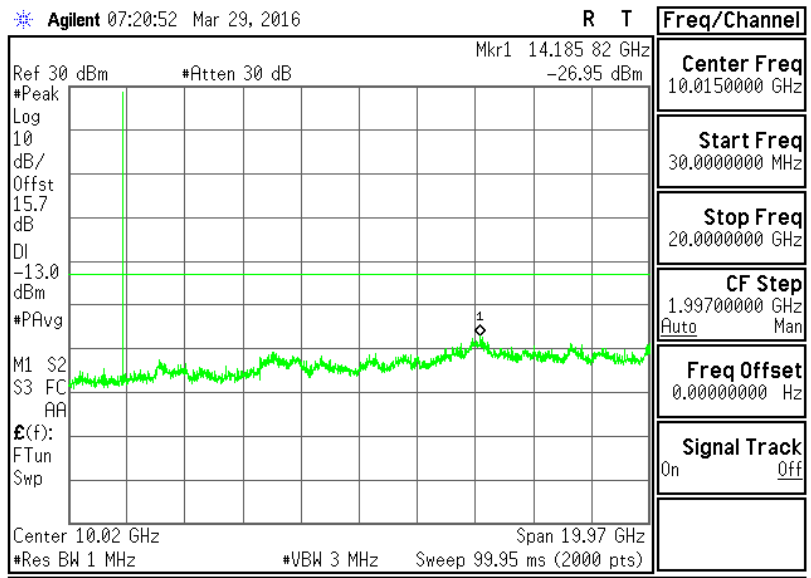


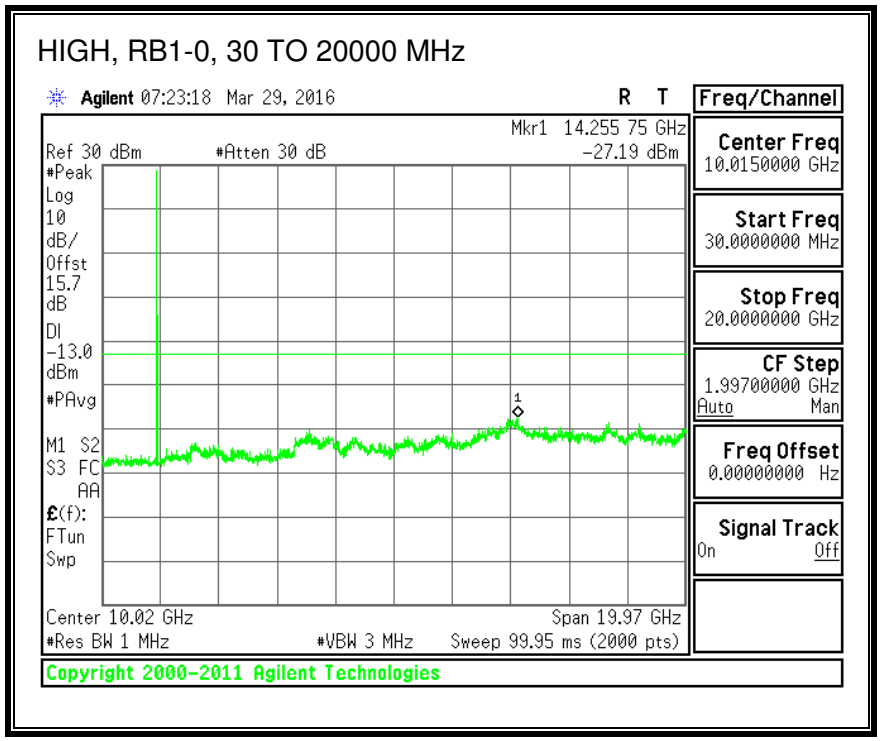
QPSK, (3.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 20000 MHz

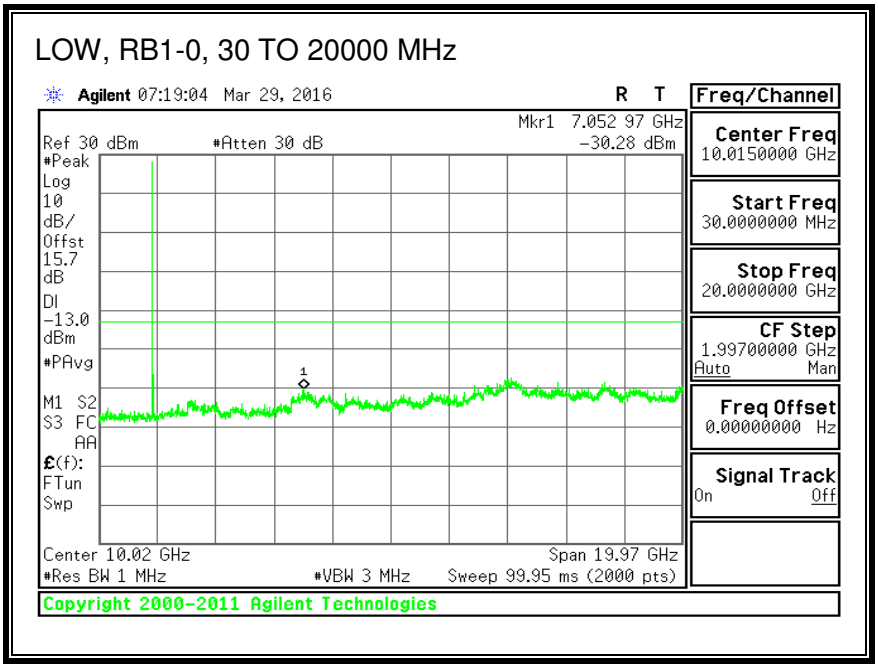


MID, RB1-0, 30 TO 20000 MHz

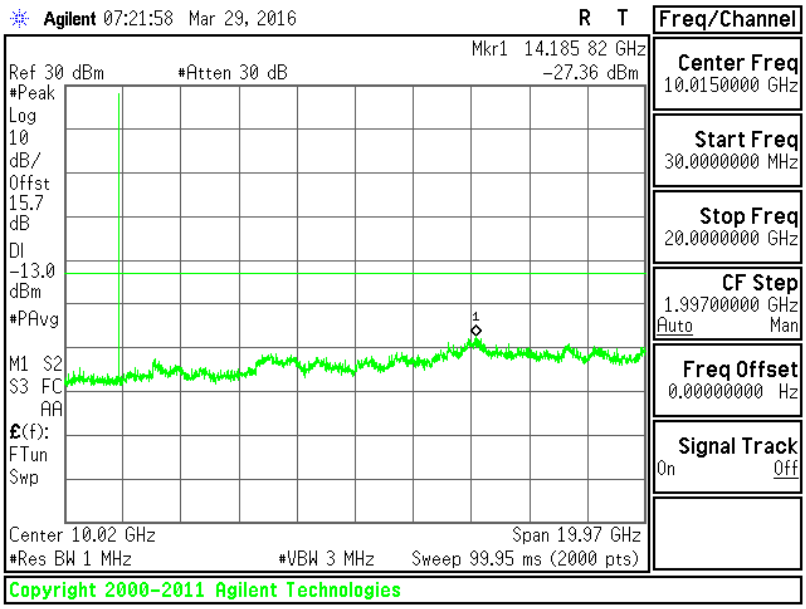




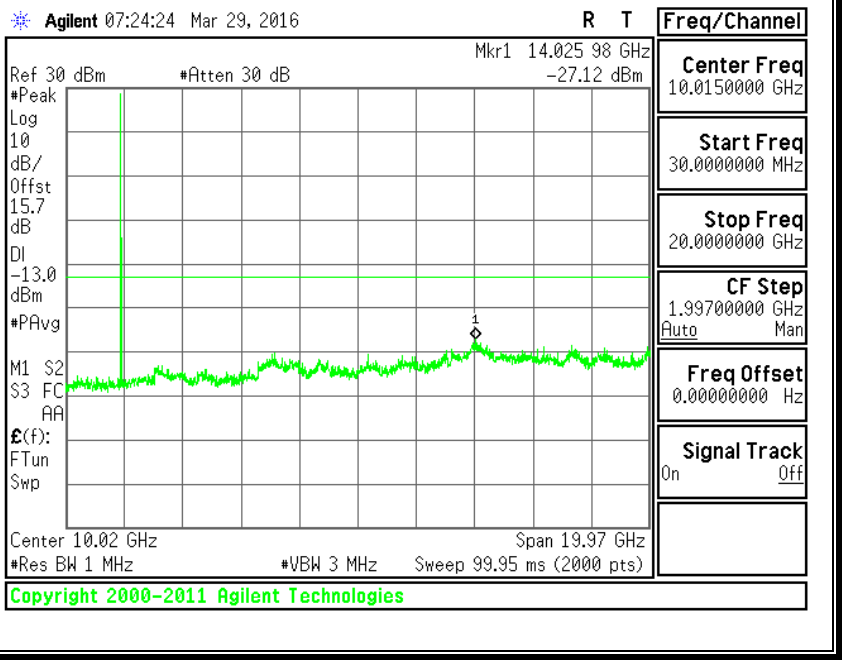
16QAM, (3.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 20000 MHz

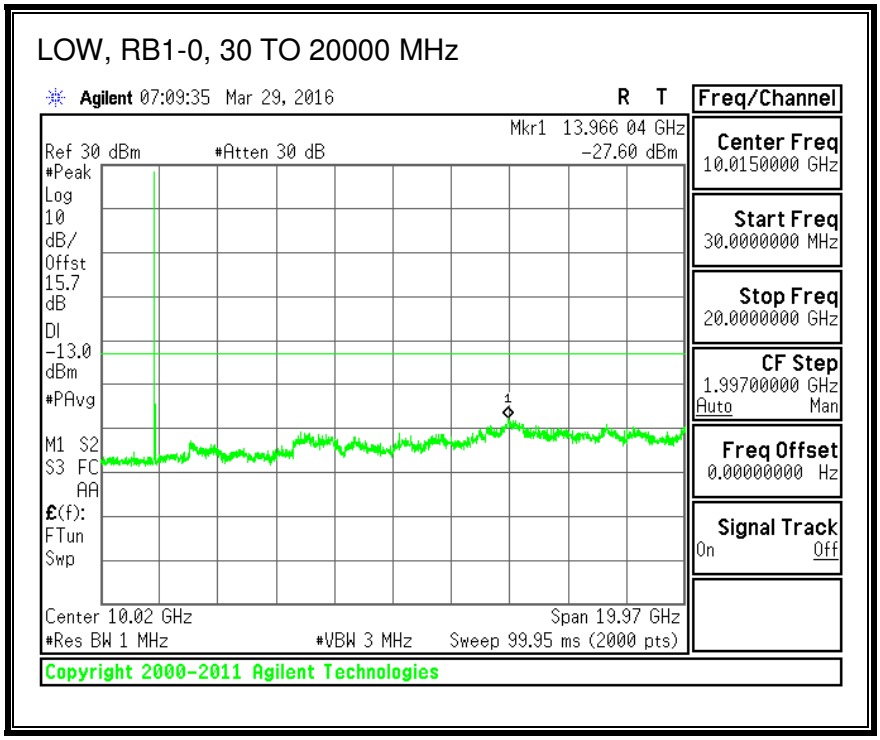


HIGH, RB1-0, 30 TO 20000 MHz

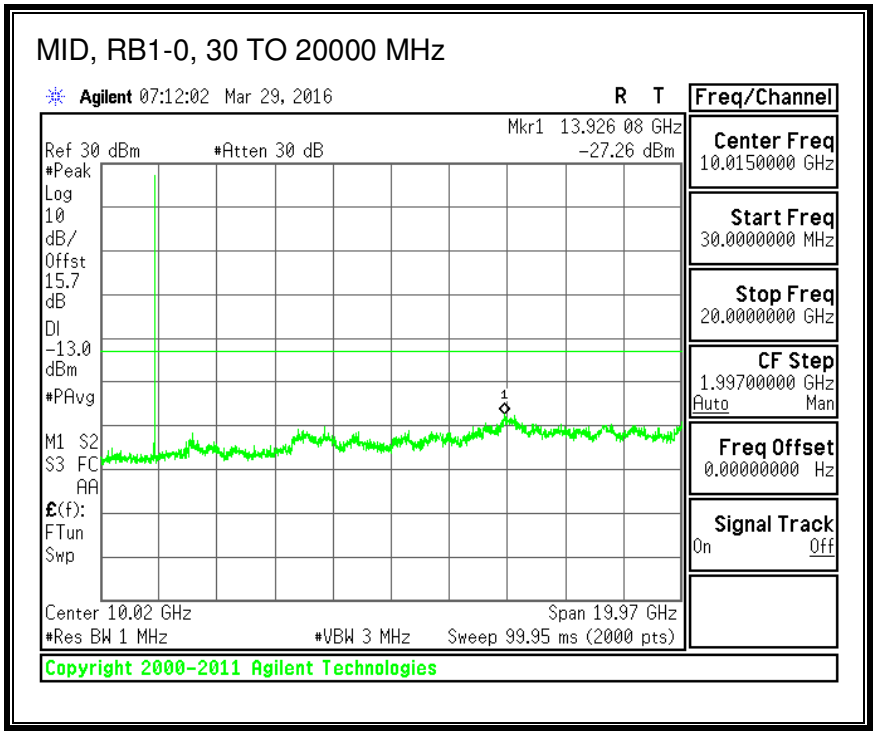


QPSK, (5.0 MHz BAND WIDTH)

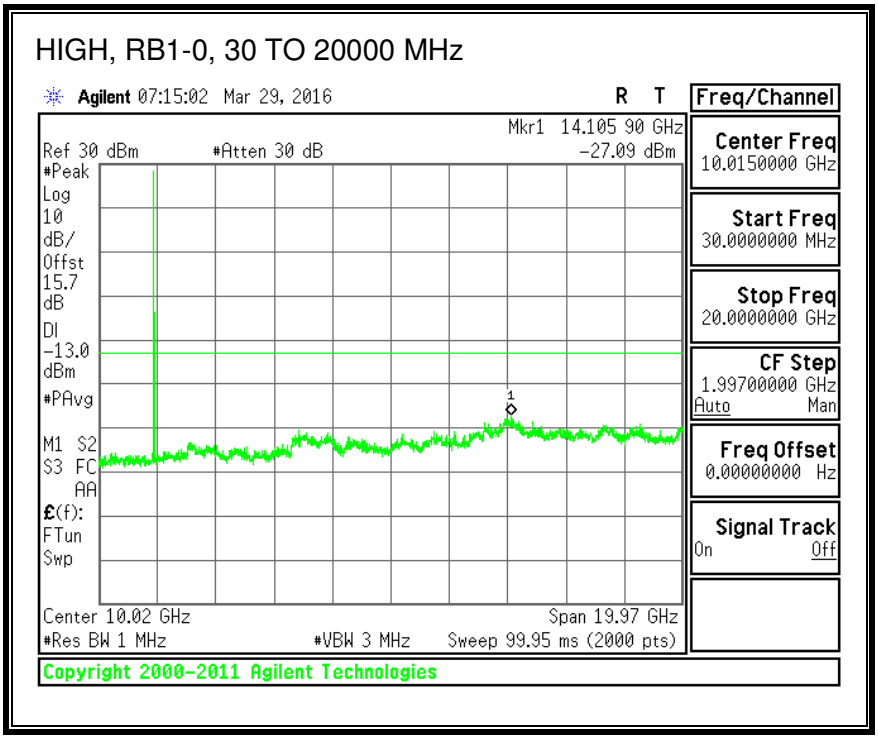
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

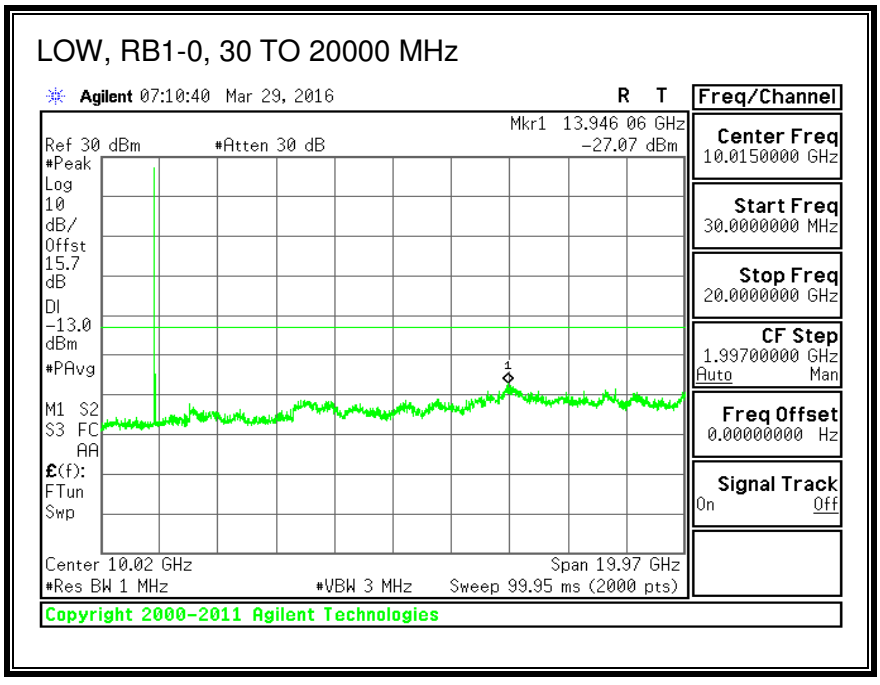


HIGH, RB1-0, 30 TO 20000 MHz

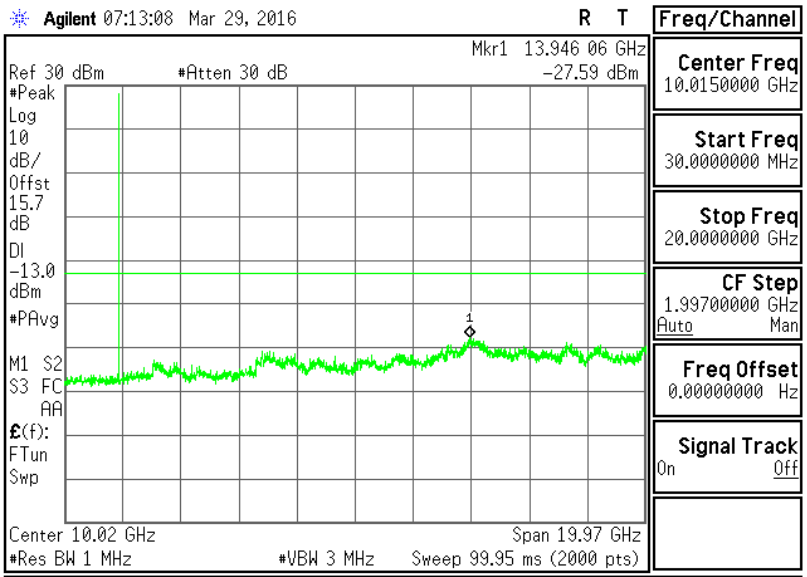


16QAM, (5.0 MHz BAND WIDTH)

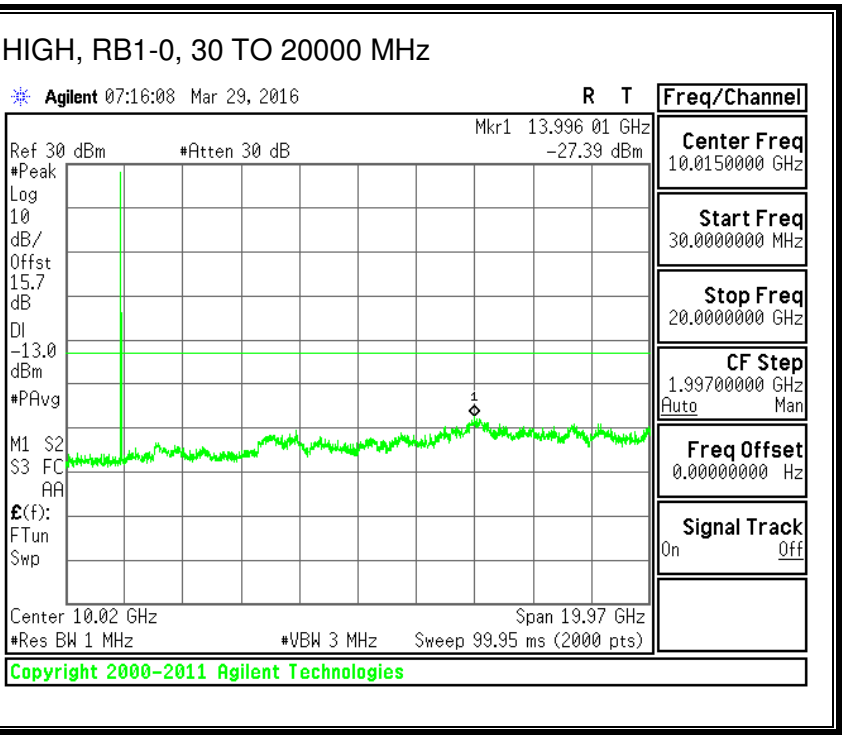
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

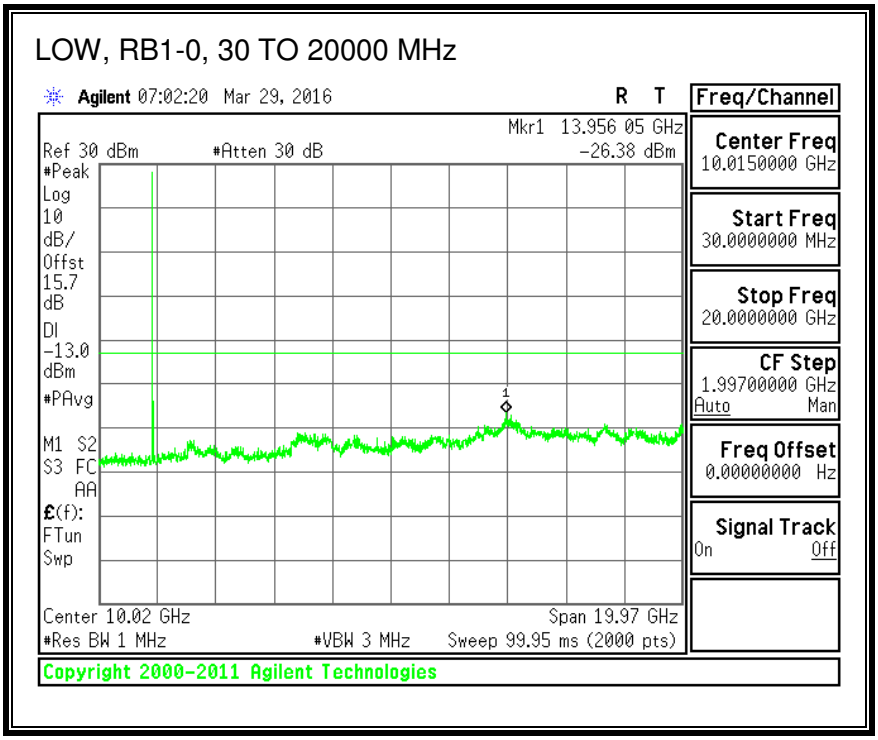


HIGH, RB1-0, 30 TO 20000 MHz

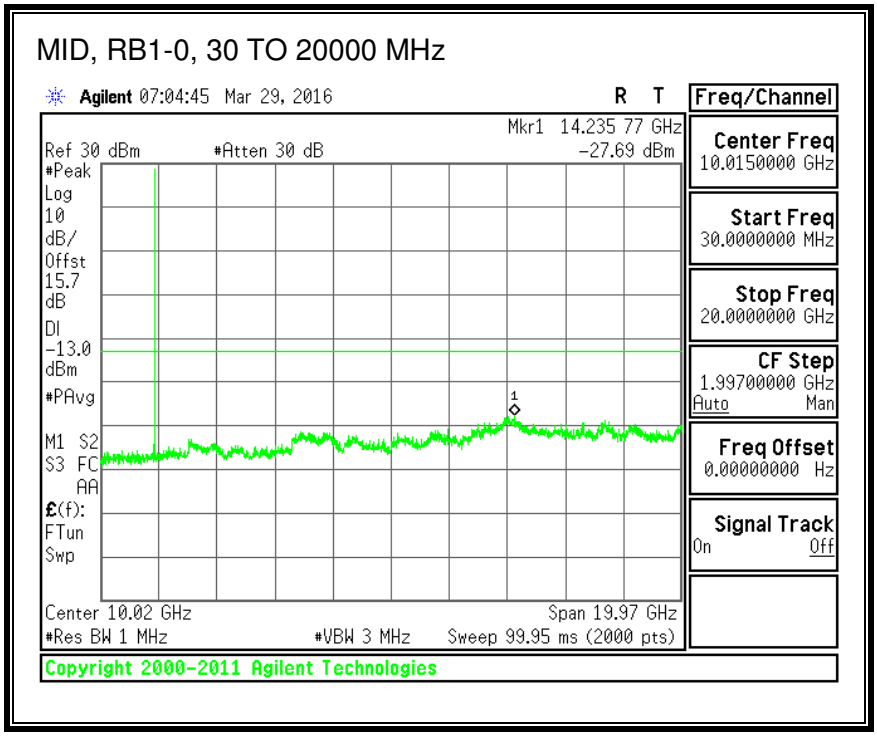


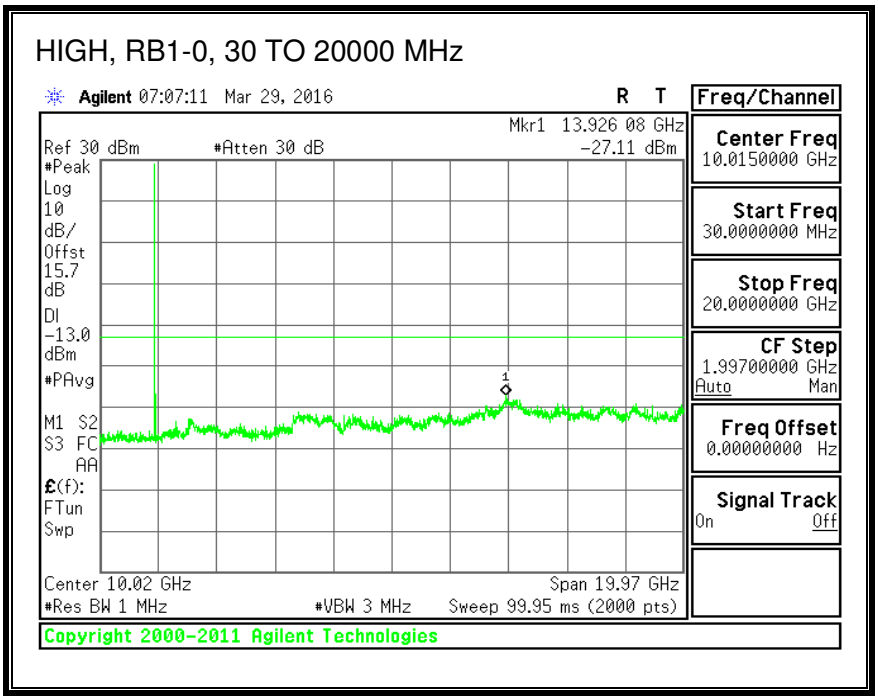
QPSK, (10.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 20000 MHz

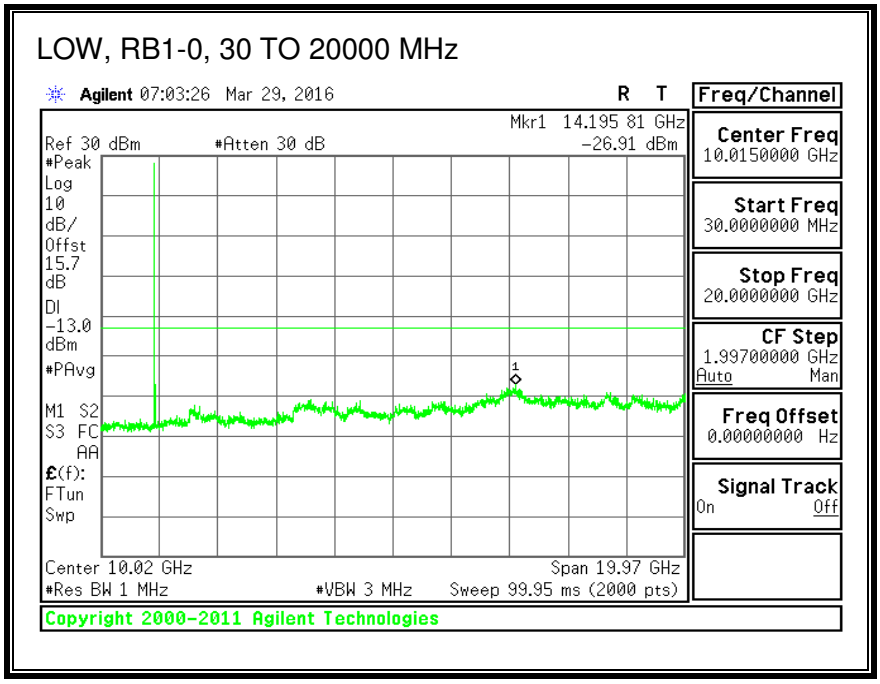


MID, RB1-0, 30 TO 20000 MHz

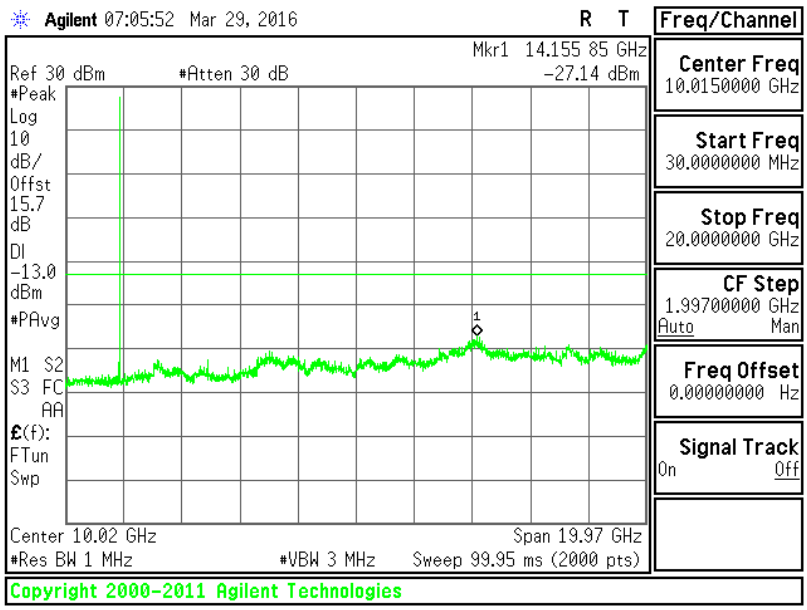




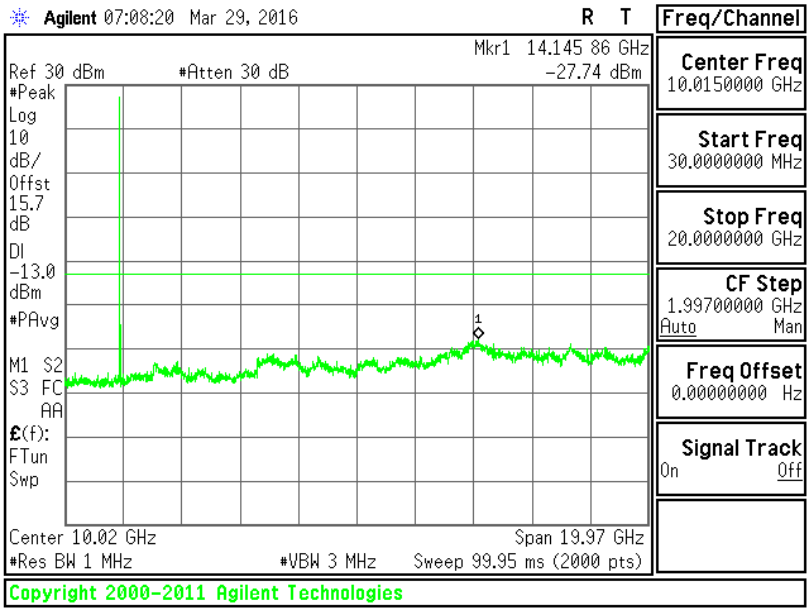
16QAM, (10.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 20000 MHz

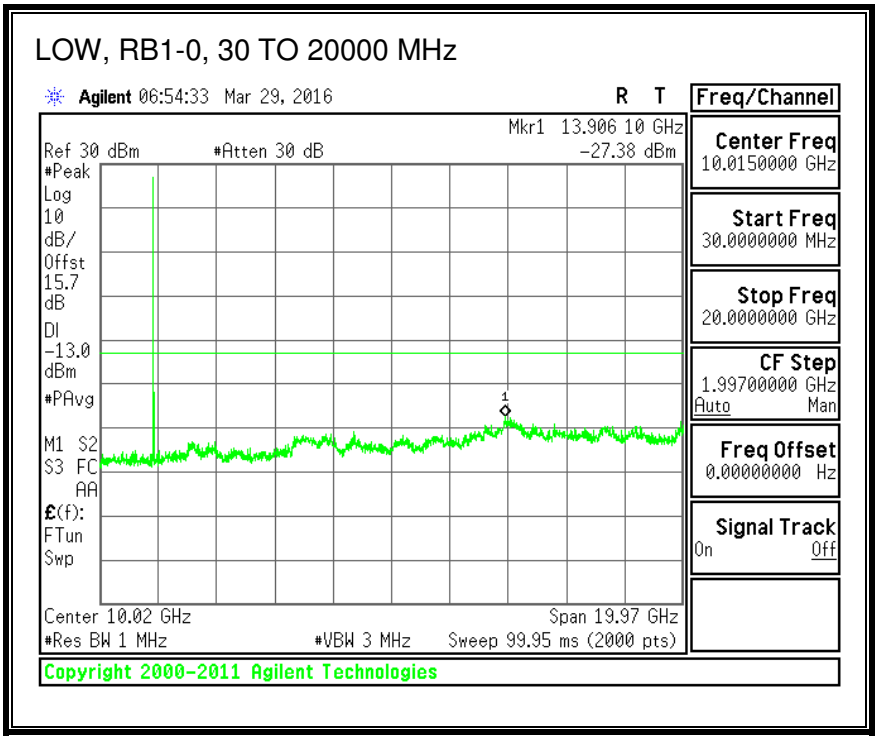


HIGH, RB1-0, 30 TO 20000 MHz

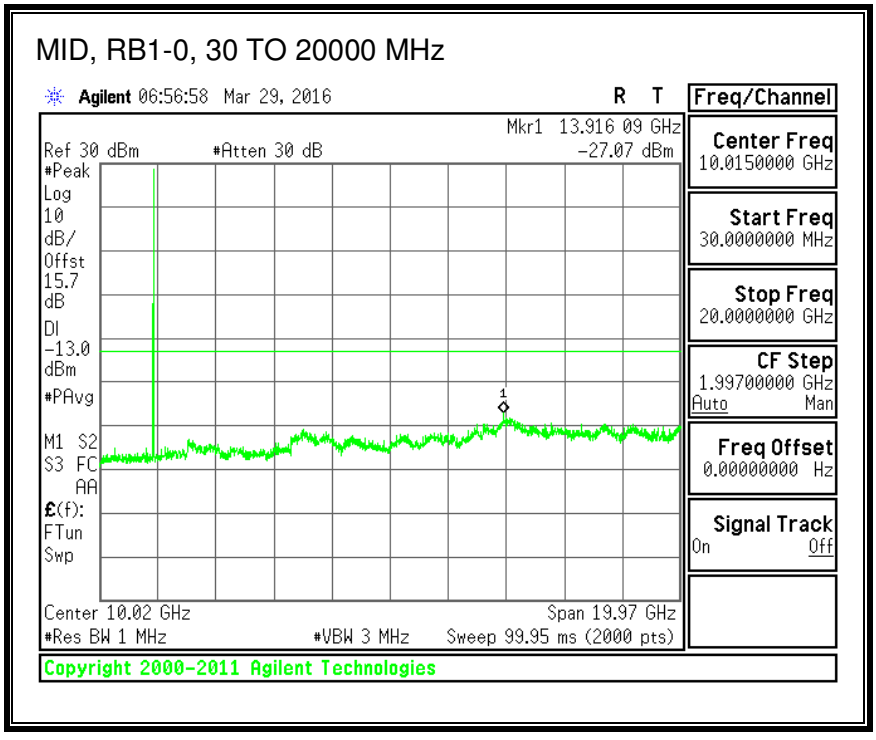


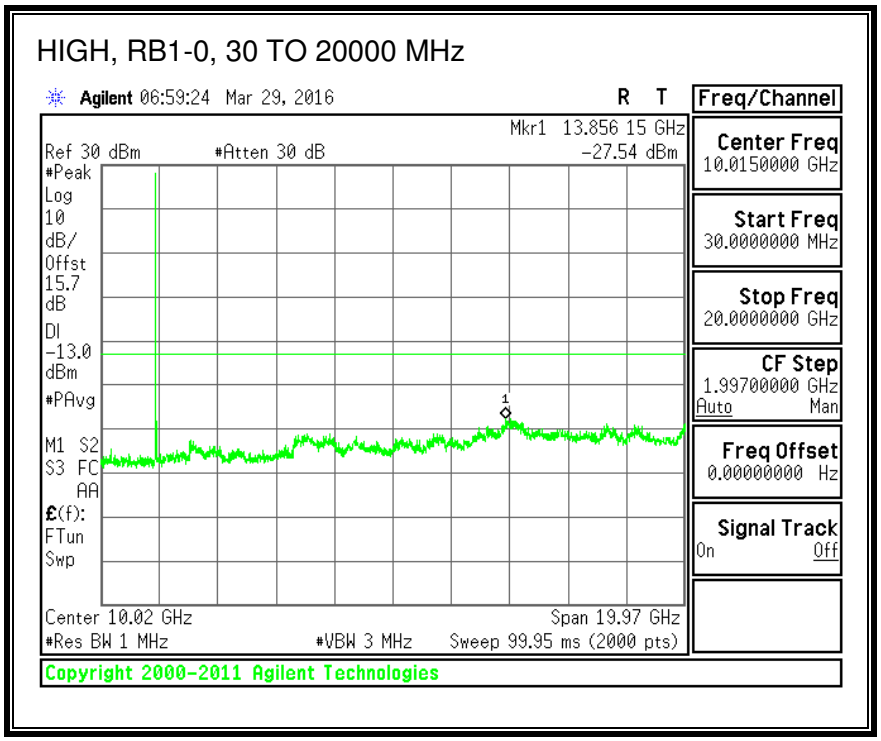
QPSK, (15.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 20000 MHz

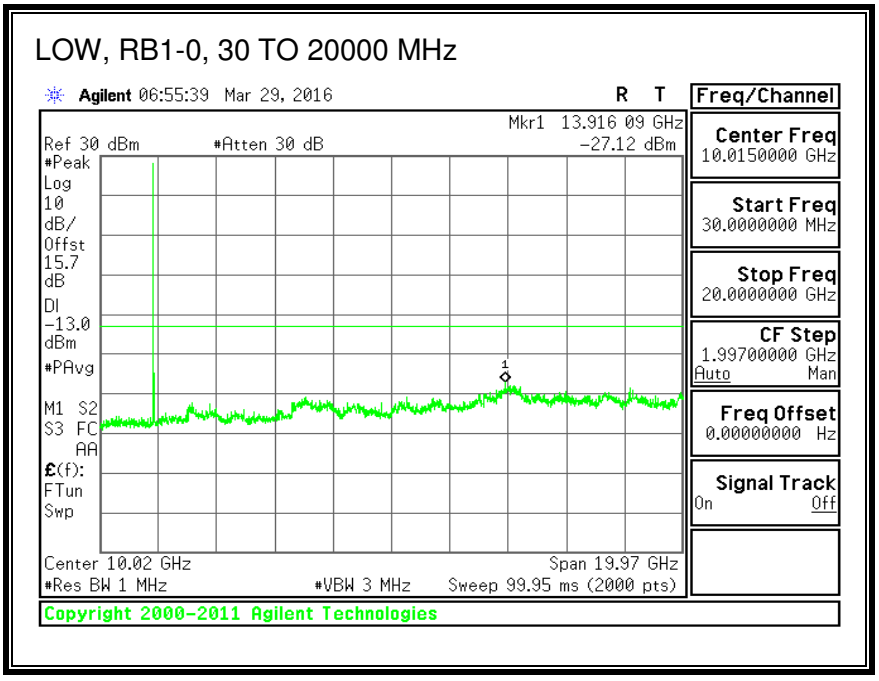


MID, RB1-0, 30 TO 20000 MHz

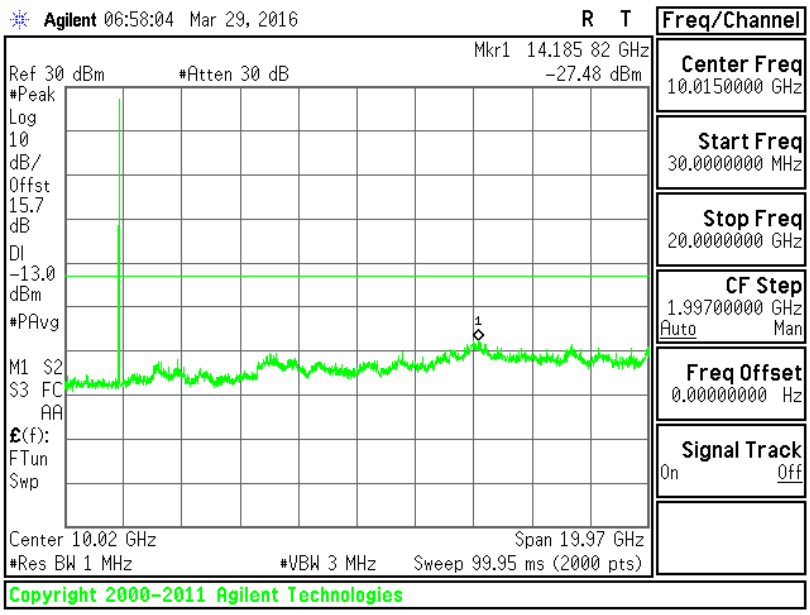




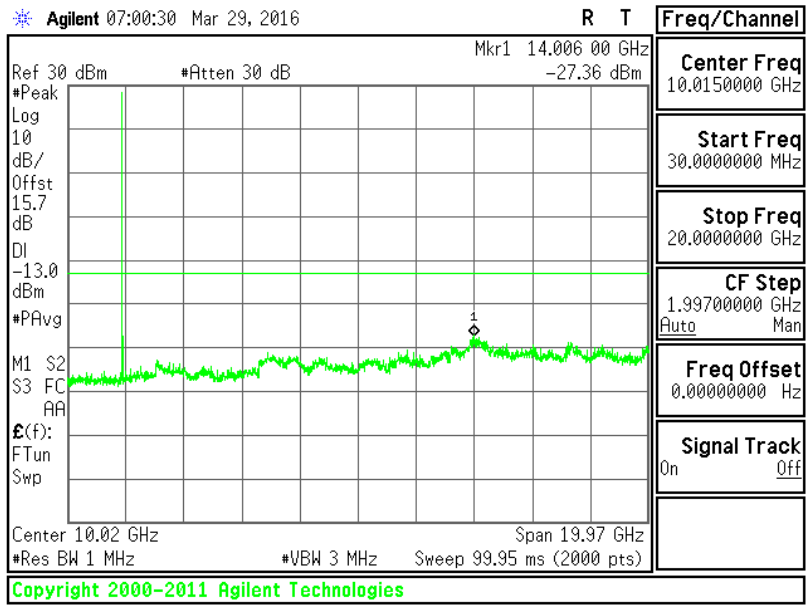
16QAM, (15.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 20000 MHz

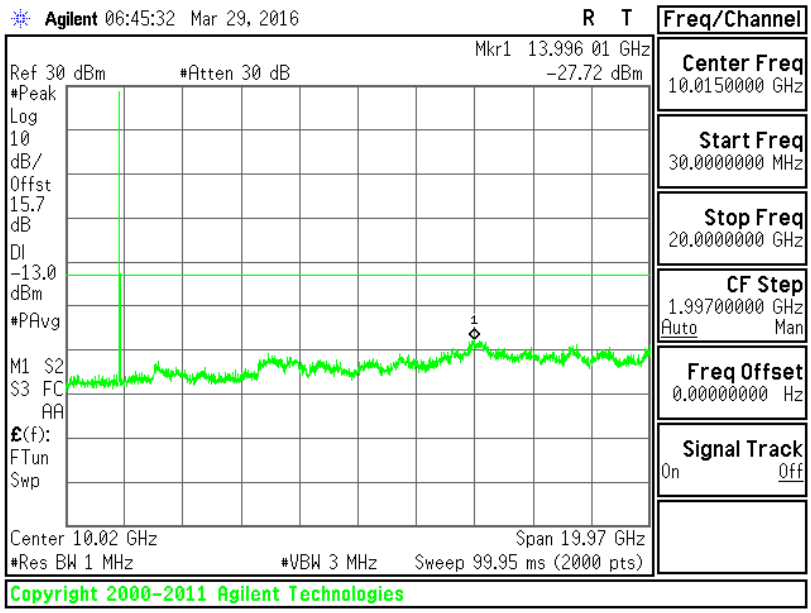


HIGH, RB1-0, 30 TO 20000 MHz

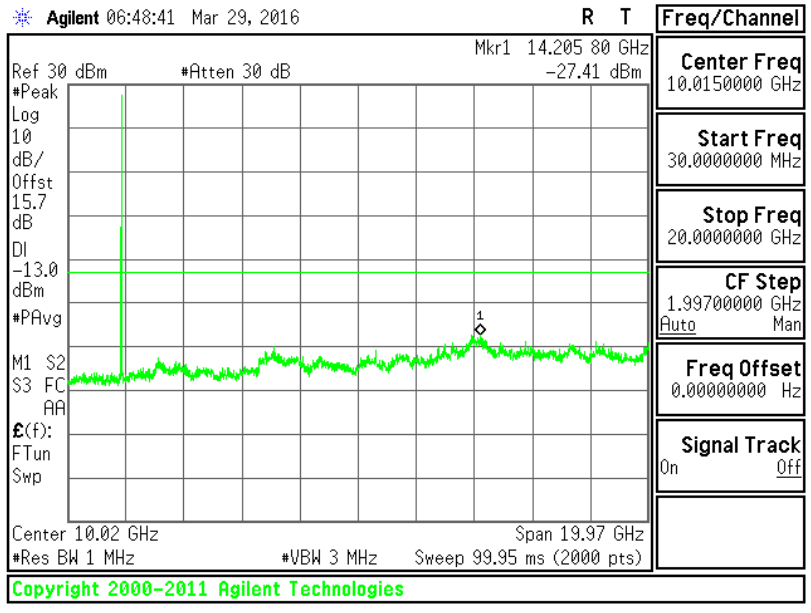


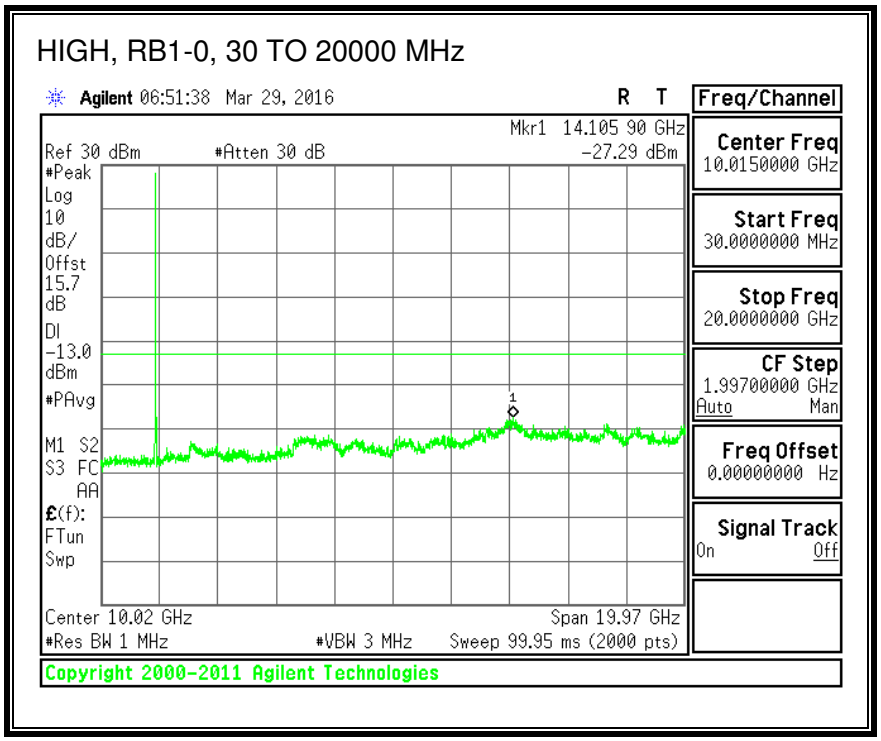
QPSK, (20.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 20000 MHz

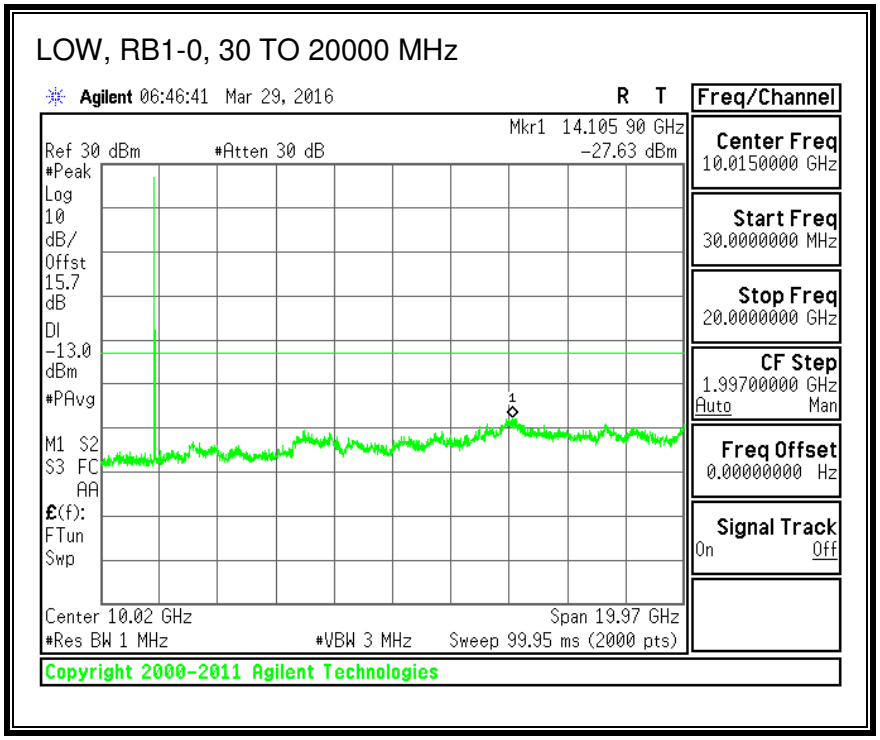


MID, RB1-0, 30 TO 20000 MHz

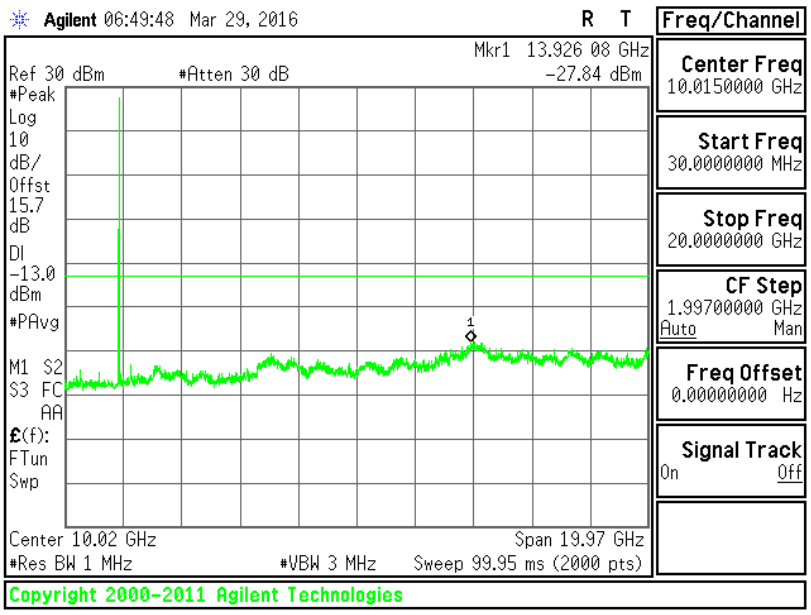




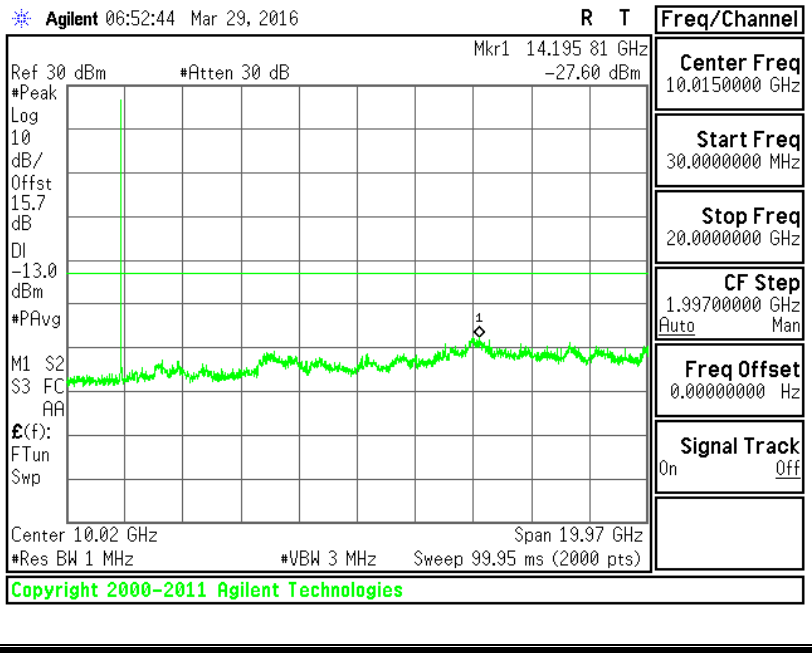
16QAM, (20.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 20000 MHz



HIGH, RB1-0, 30 TO 20000 MHz

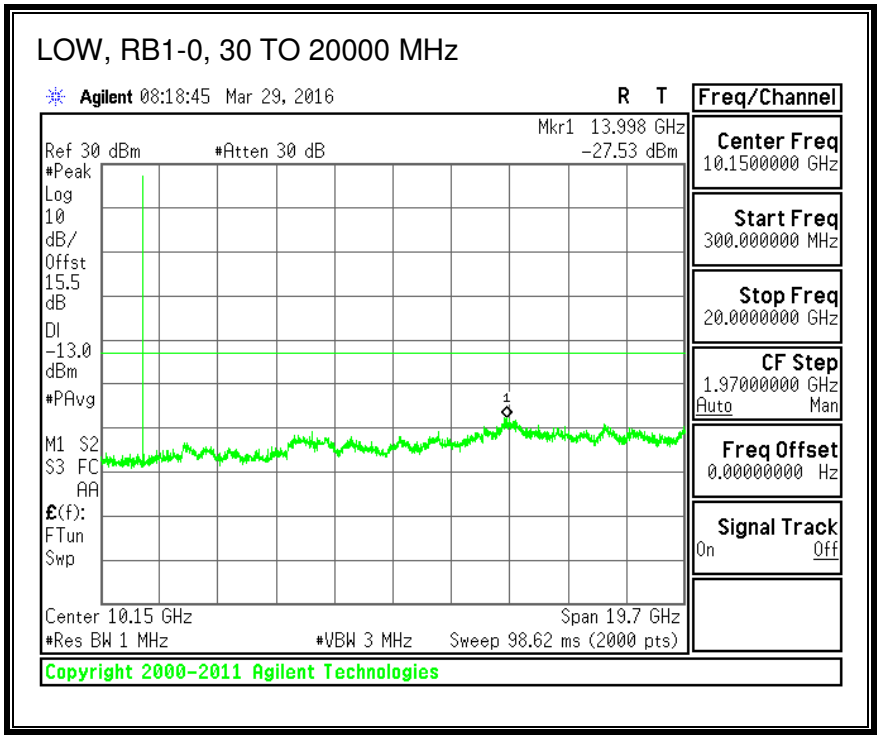


8.3.2. LTE BAND 4

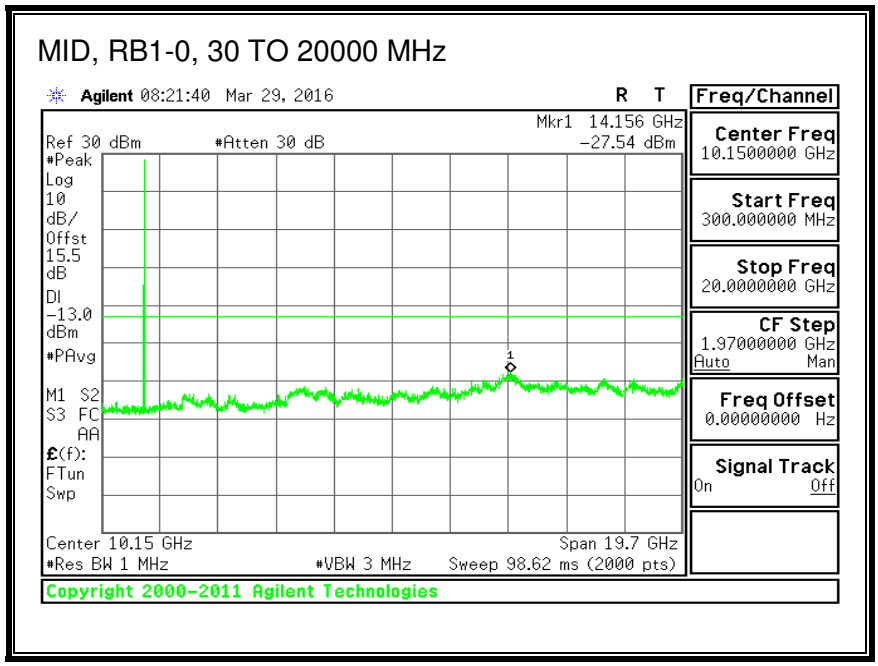
ID:	38806	Date:	3/29/16

QPSK, (1.4 MHz BAND WIDTH)

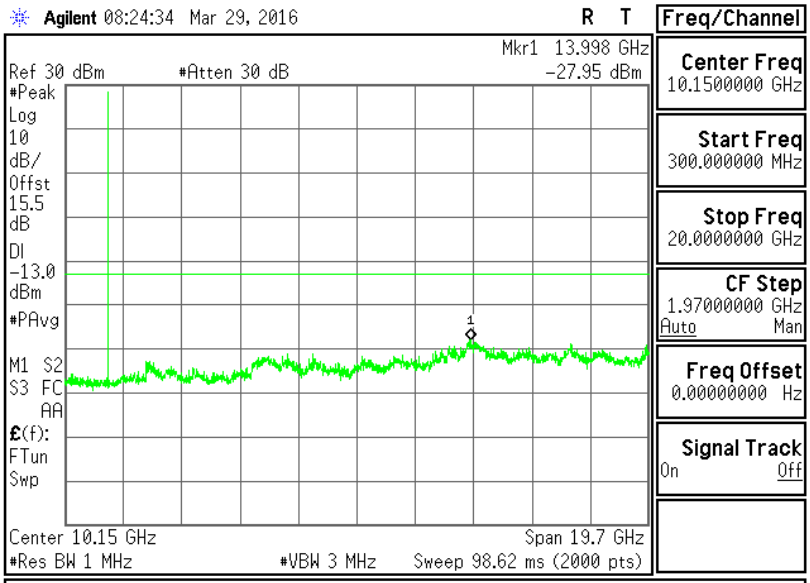
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

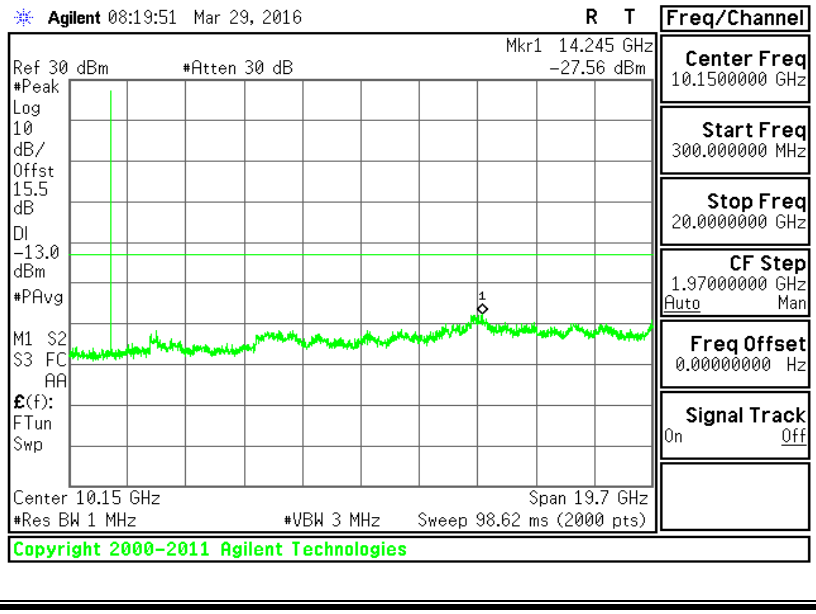


HIGH, RB1-0, 30 TO 20000 MHz

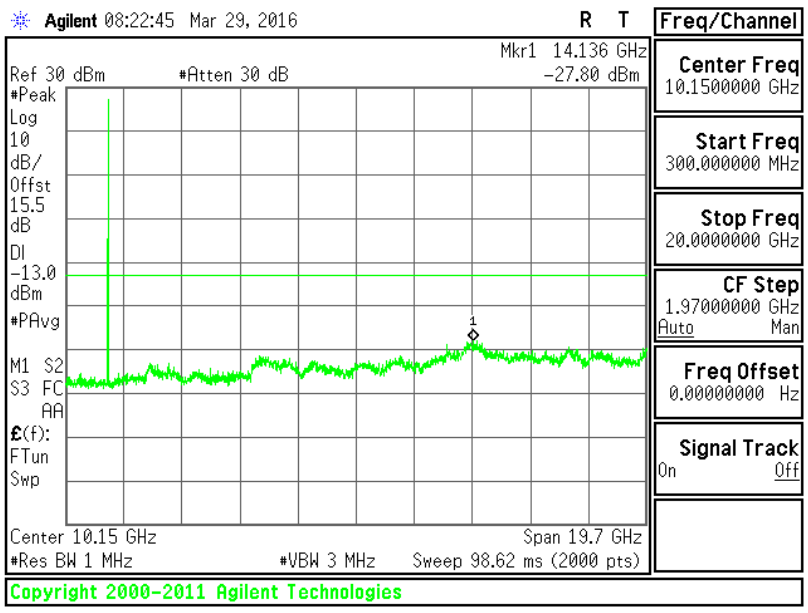


16QAM, (1.4 MHz BAND WIDTH)

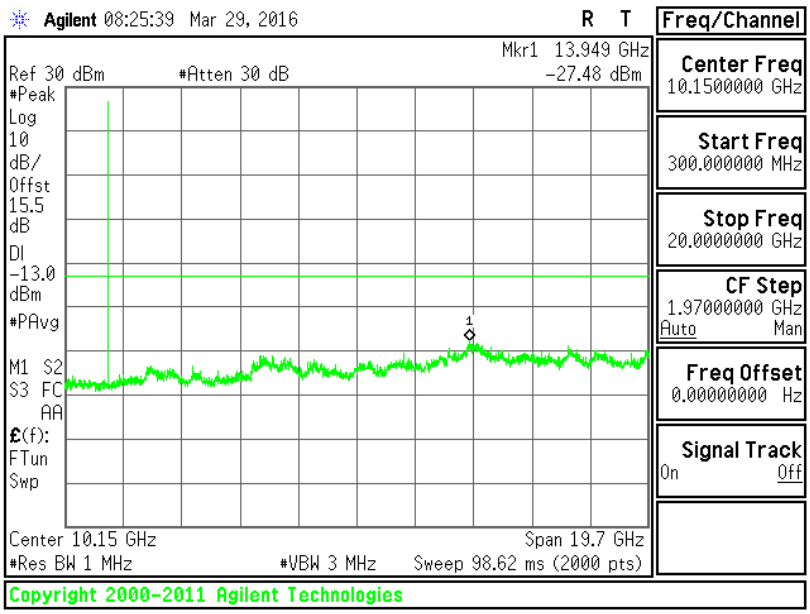
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

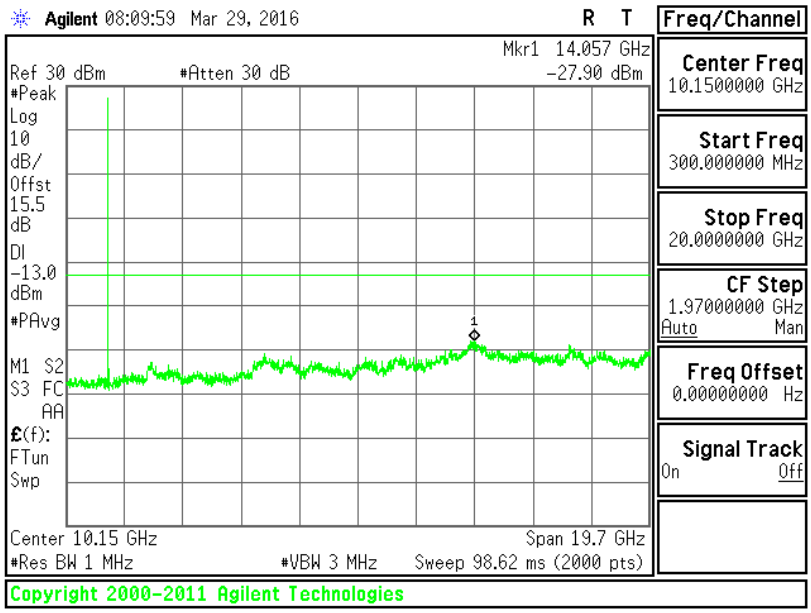


HIGH, RB1-0, 30 TO 20000 MHz

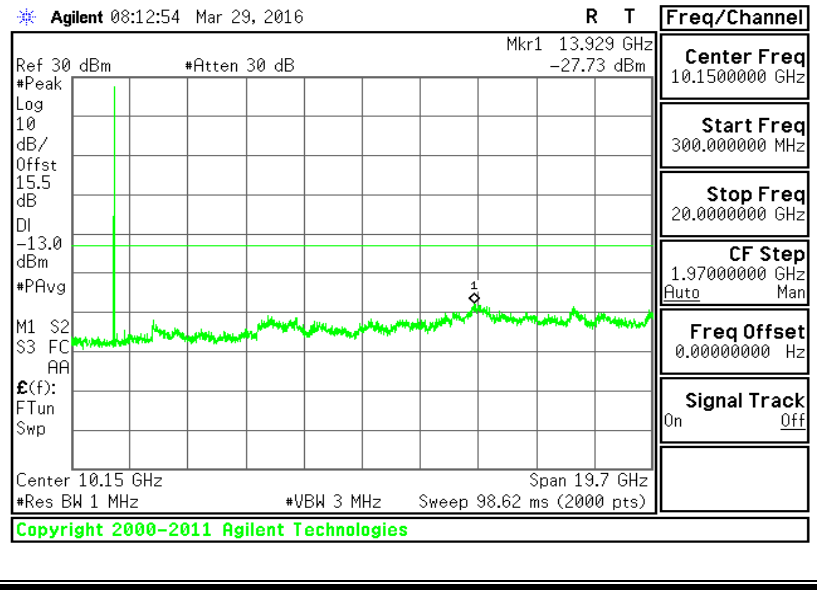


QPSK, (3.0 MHz BAND WIDTH)

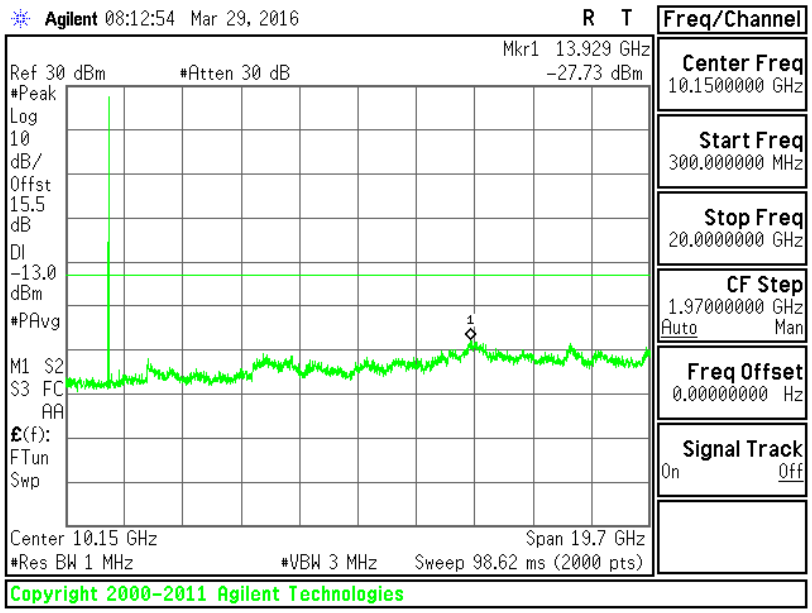
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

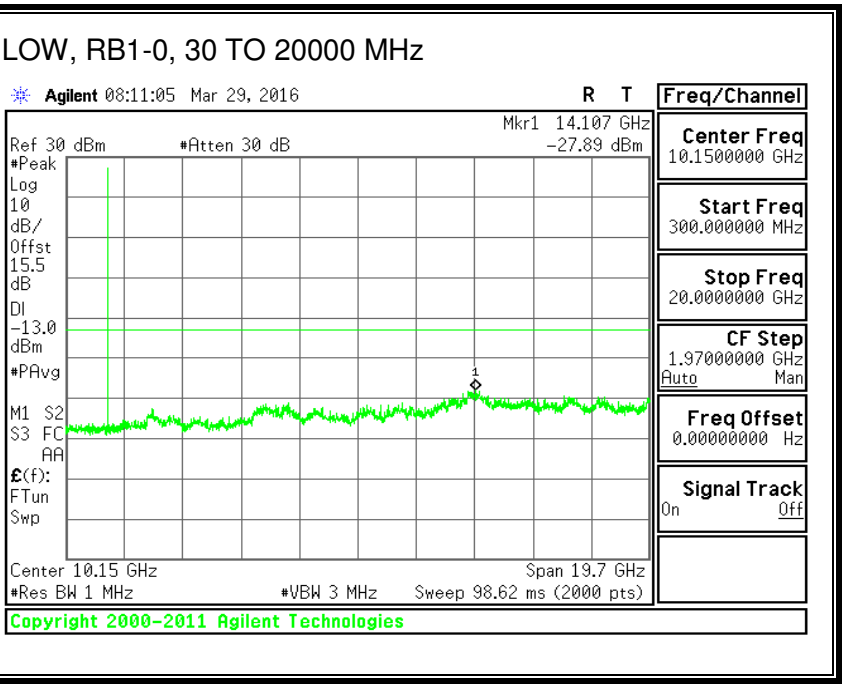


HIGH, RB1-0, 30 TO 20000 MHz

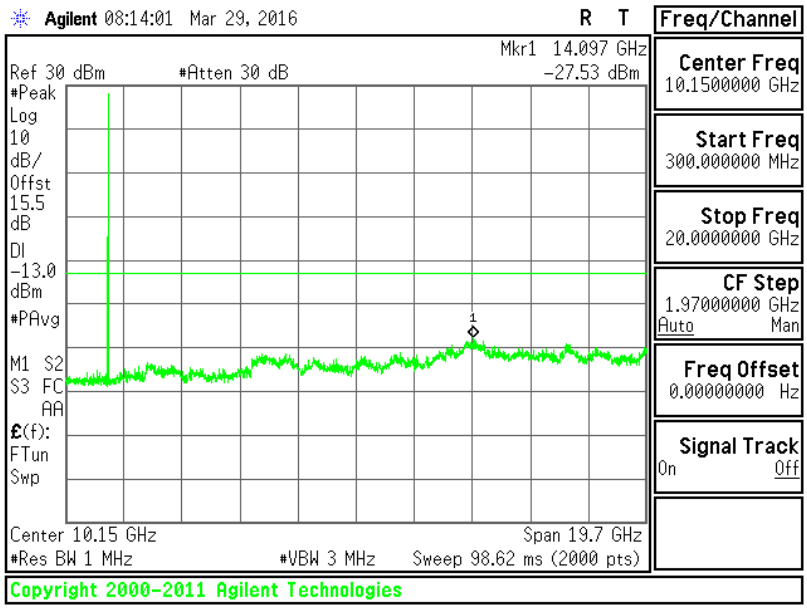


16QAM, (3.0 MHz BAND WIDTH)

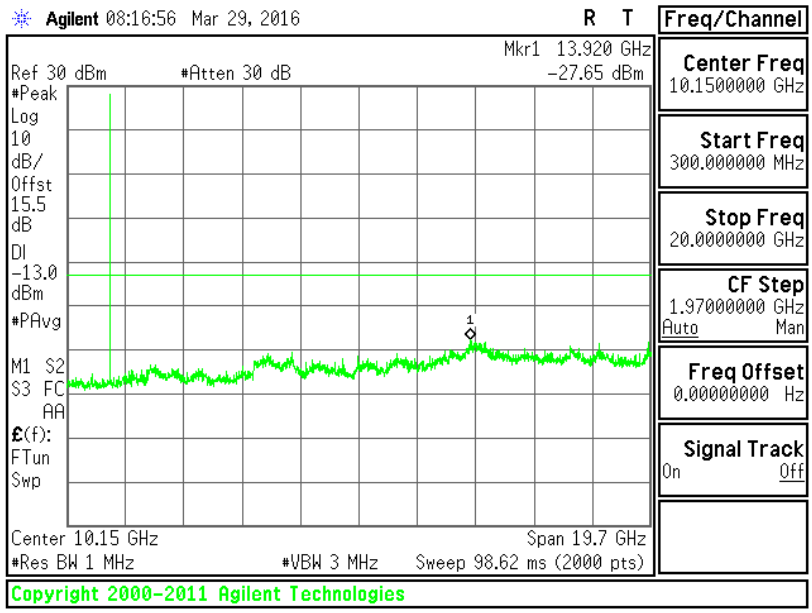
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

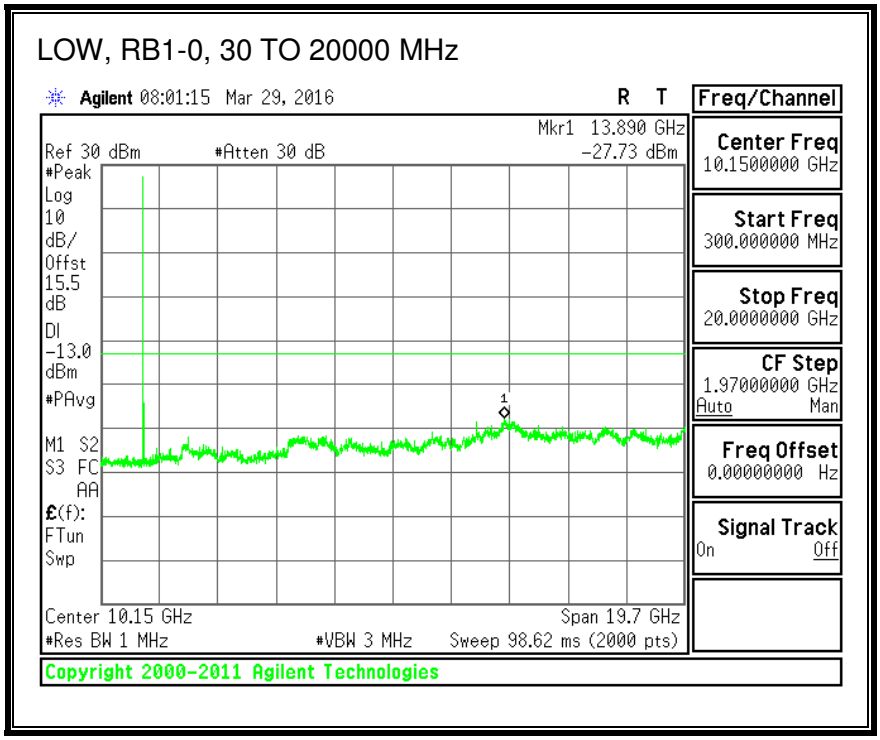


HIGH, RB1-0, 30 TO 20000 MHz

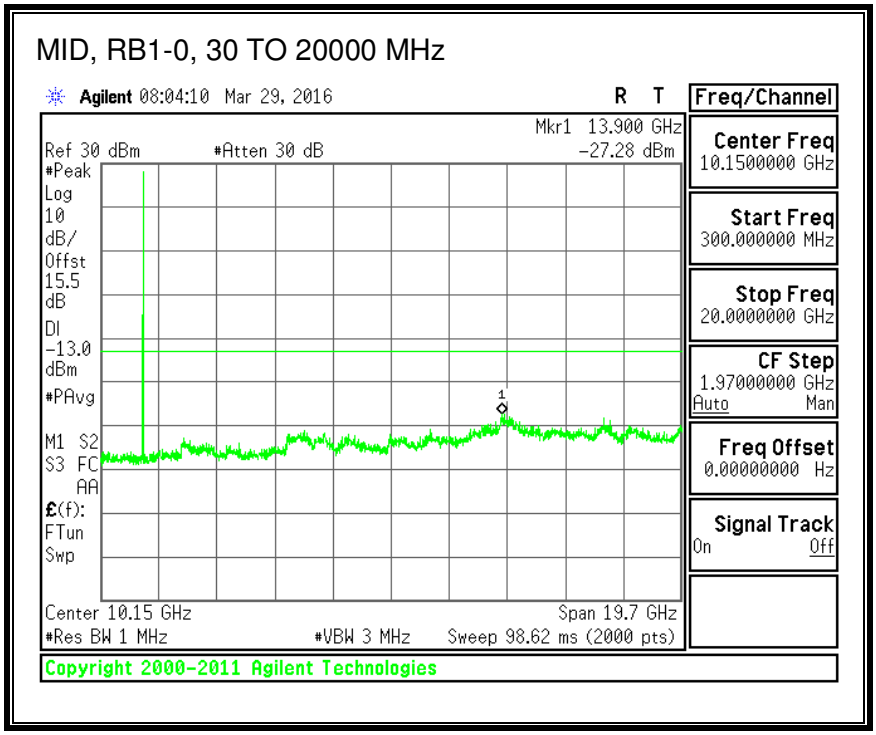


QPSK, (5.0 MHz BAND WIDTH)

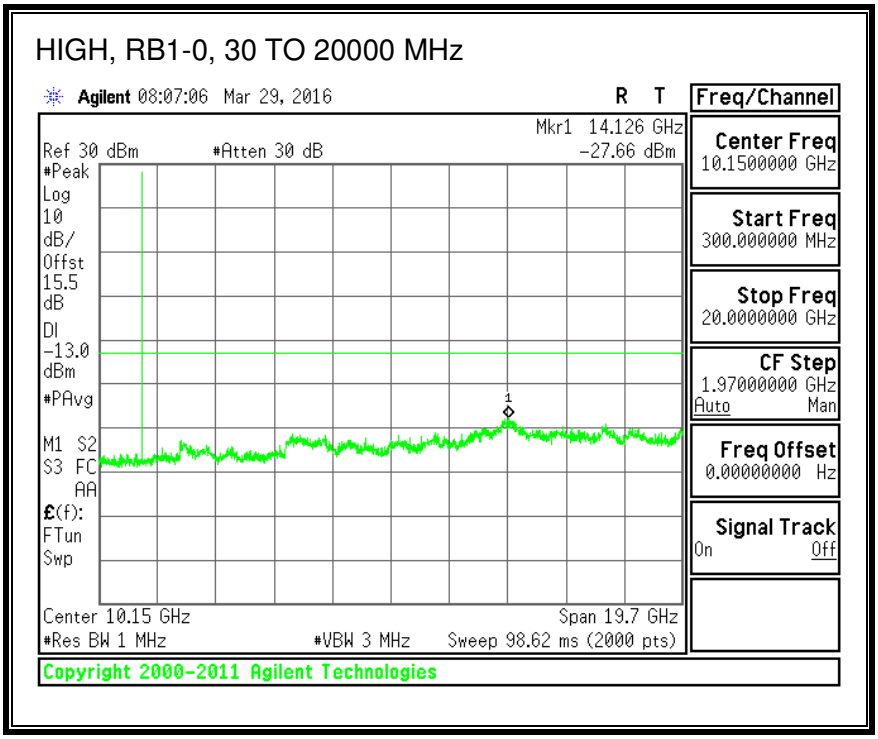
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

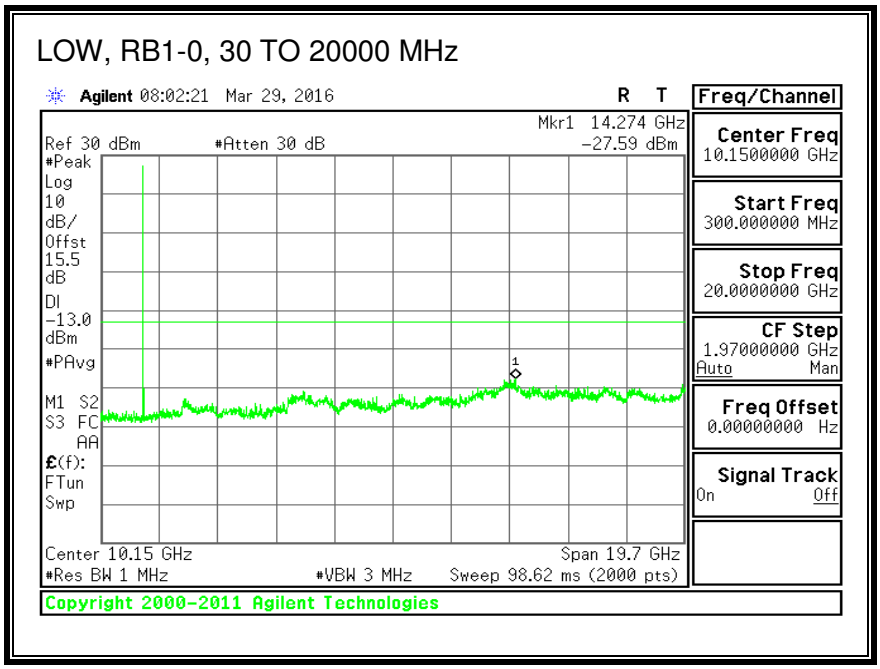


HIGH, RB1-0, 30 TO 20000 MHz

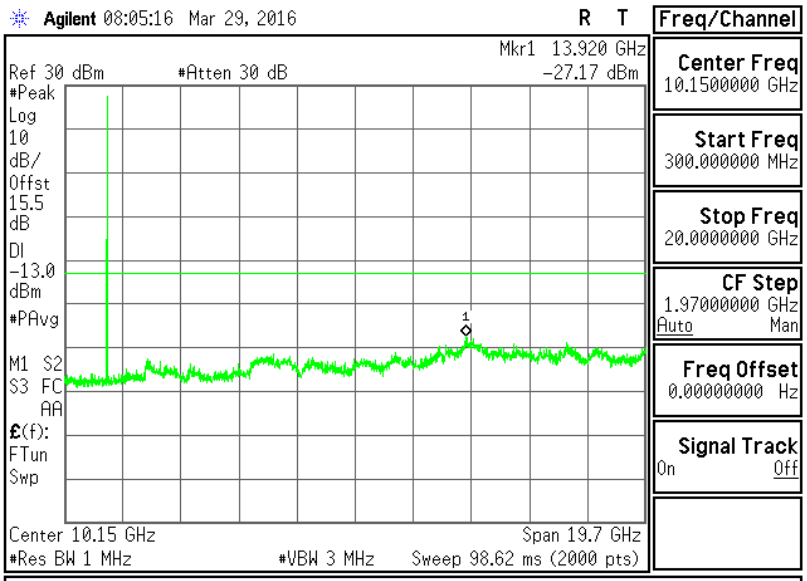


16QAM, (5.0 MHz BAND WIDTH)

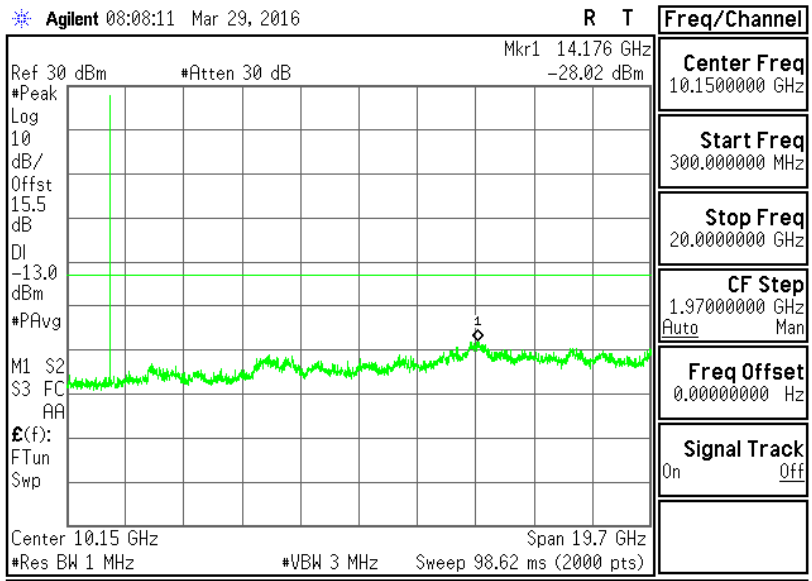
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

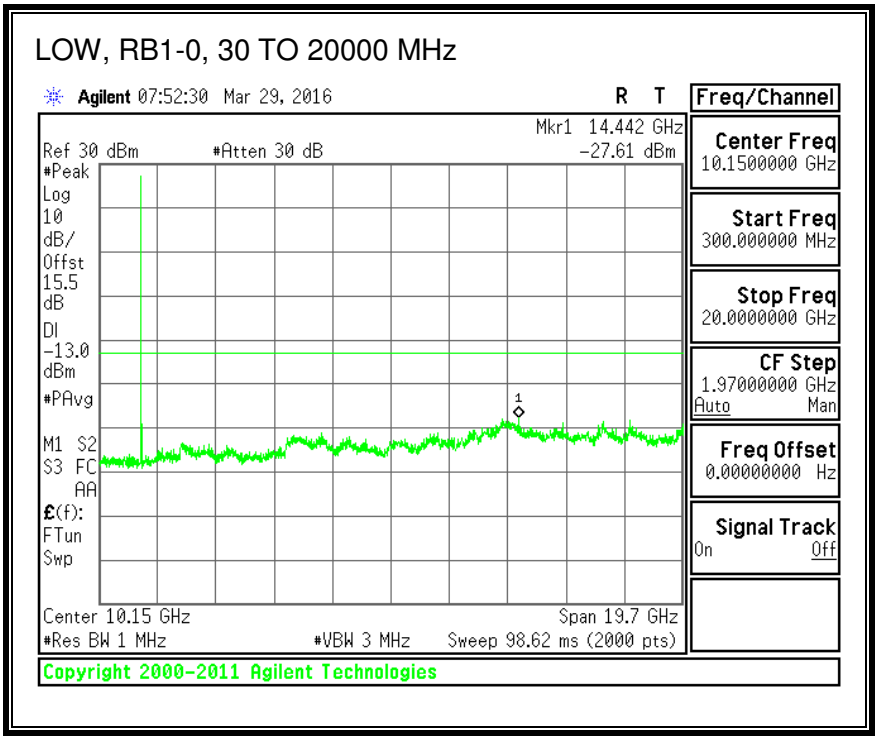


HIGH, RB1-0, 30 TO 20000 MHz

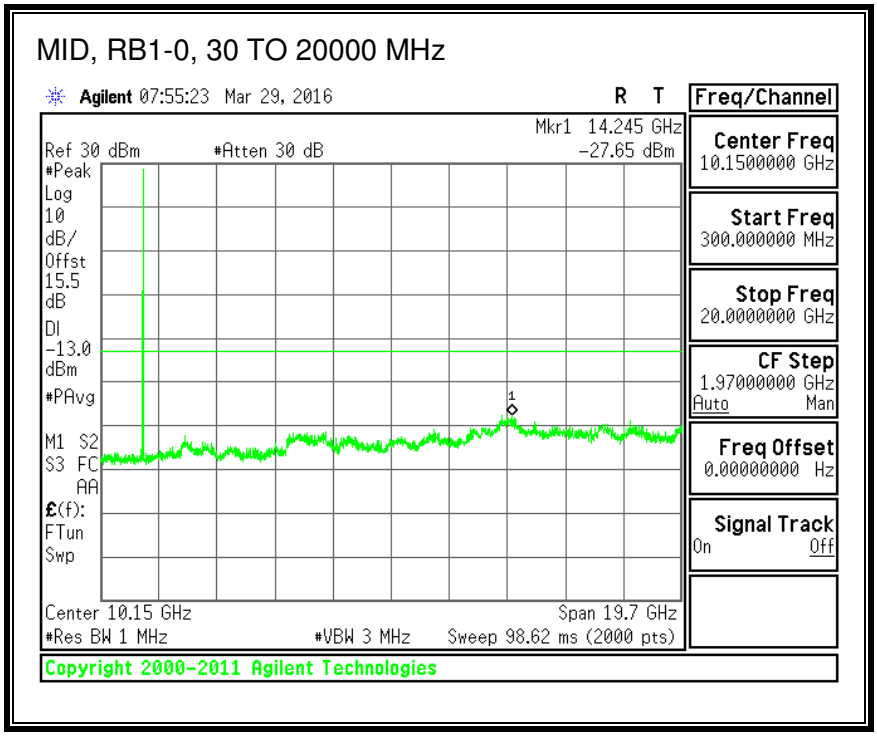


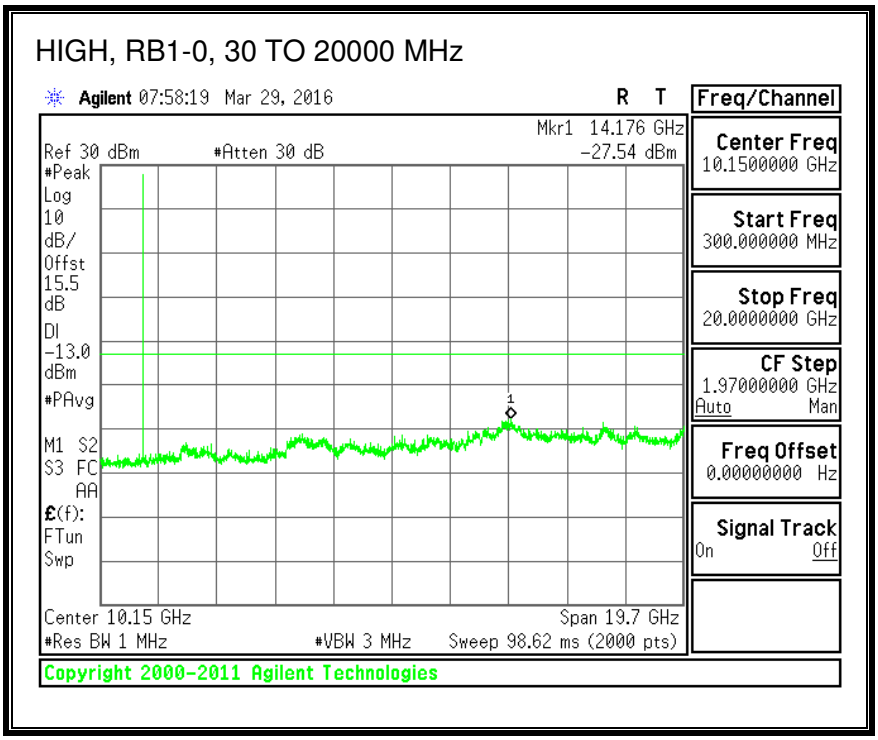
QPSK, (10.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 20000 MHz

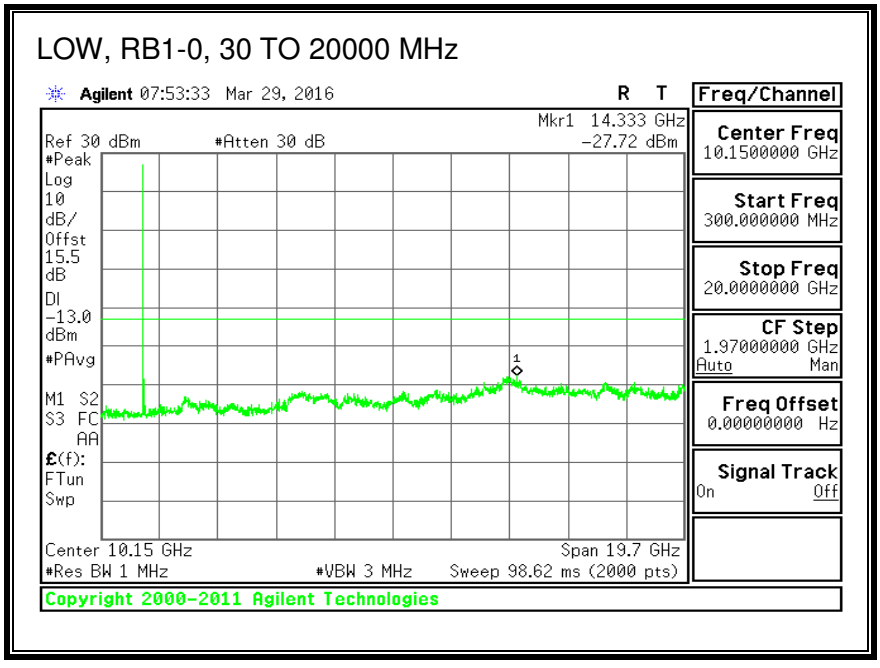


MID, RB1-0, 30 TO 20000 MHz

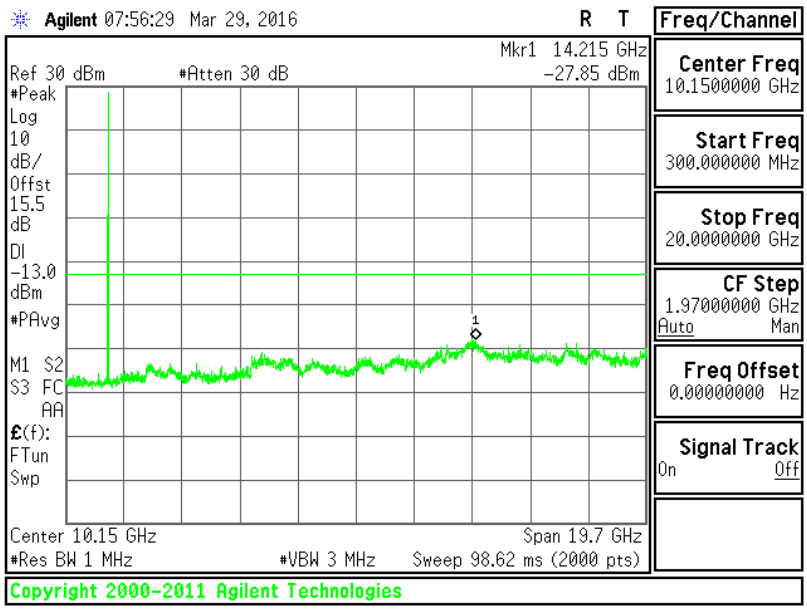




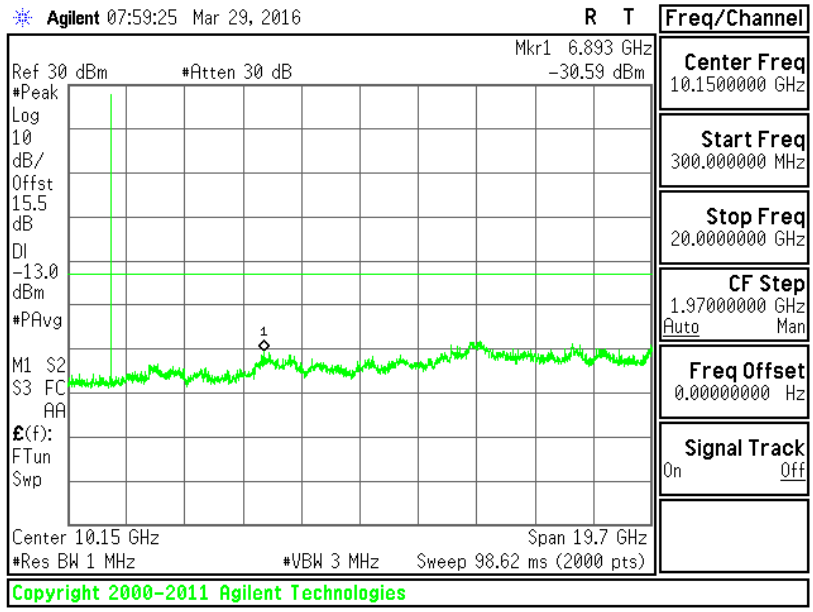
16QAM, (10.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 20000 MHz

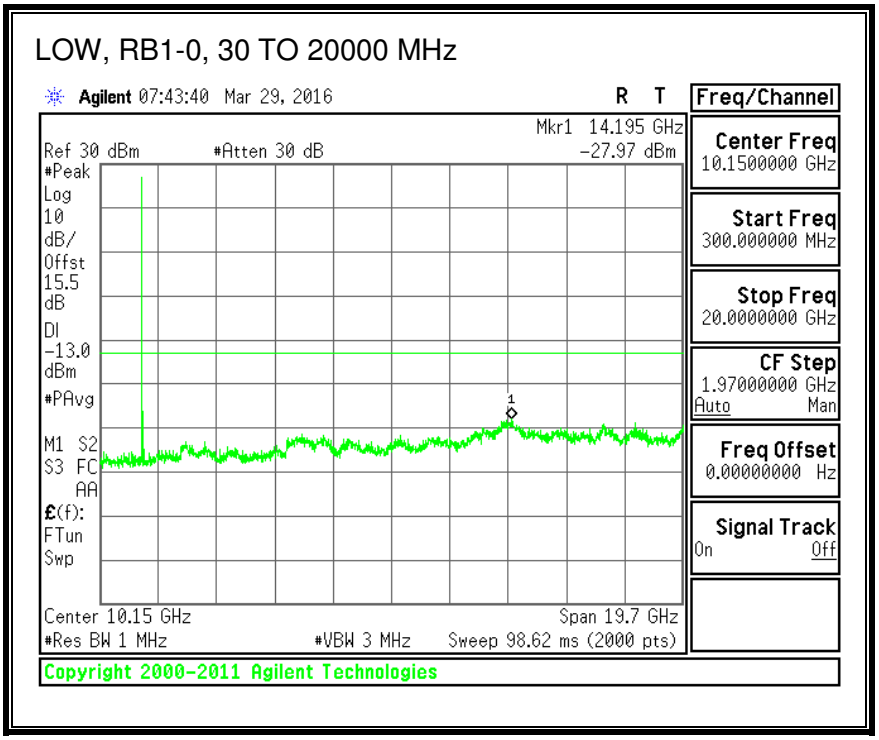


HIGH, RB1-0, 30 TO 20000 MHz

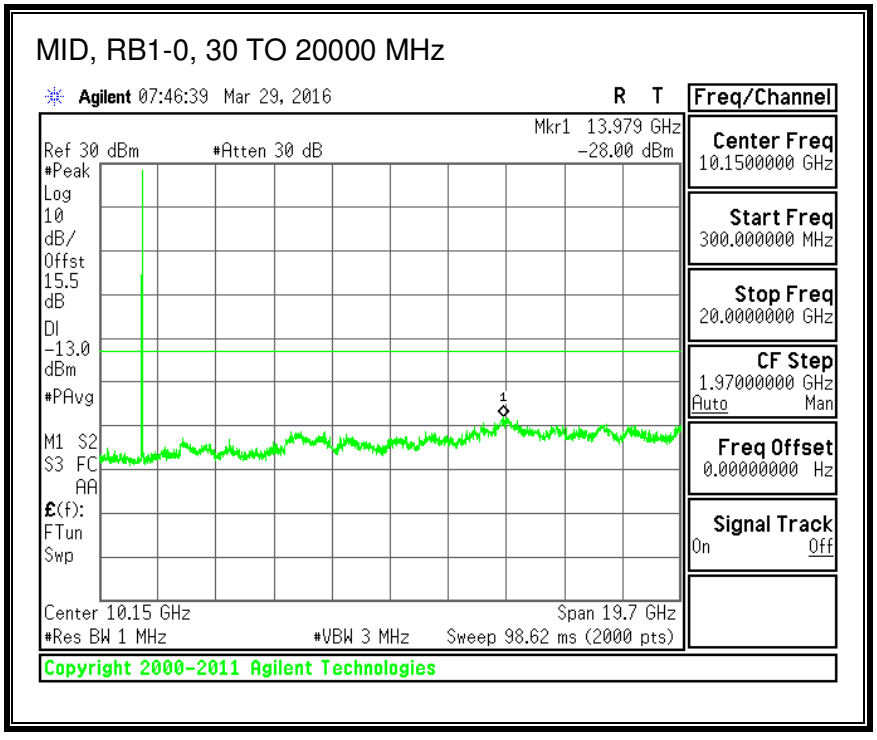


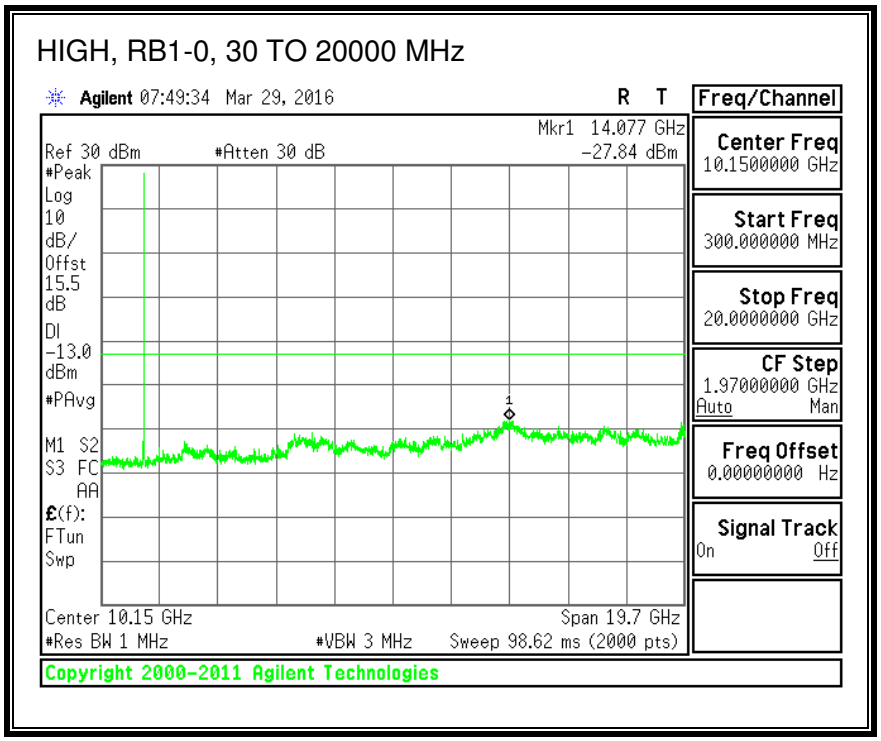
QPSK, (15.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 20000 MHz

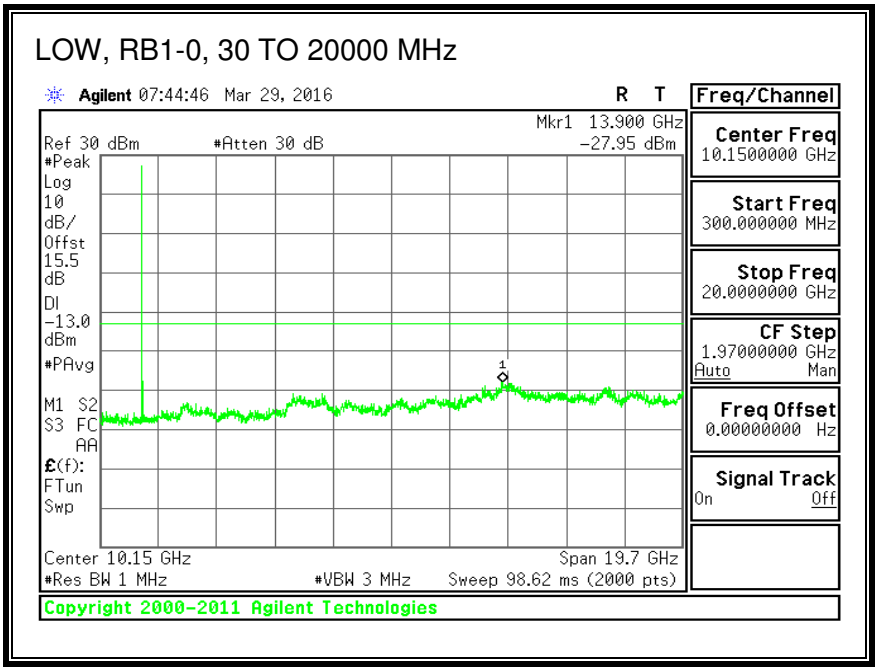


MID, RB1-0, 30 TO 20000 MHz

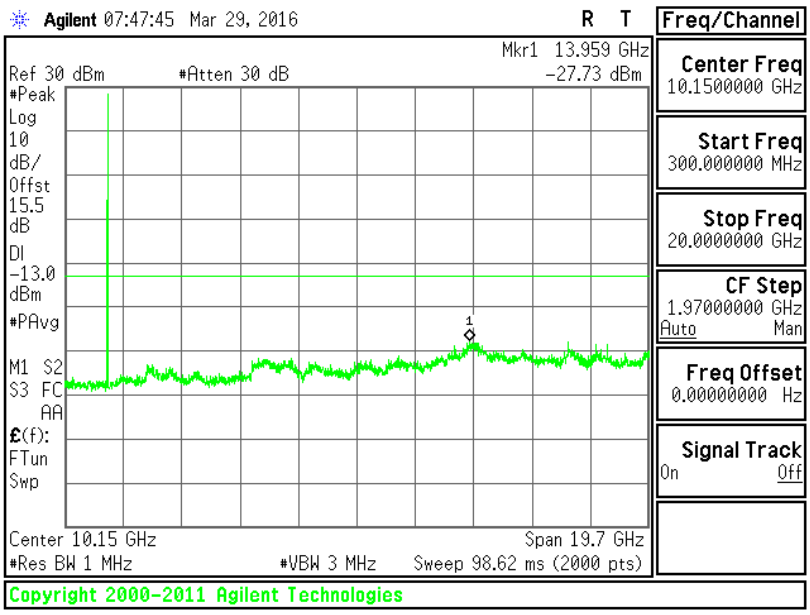




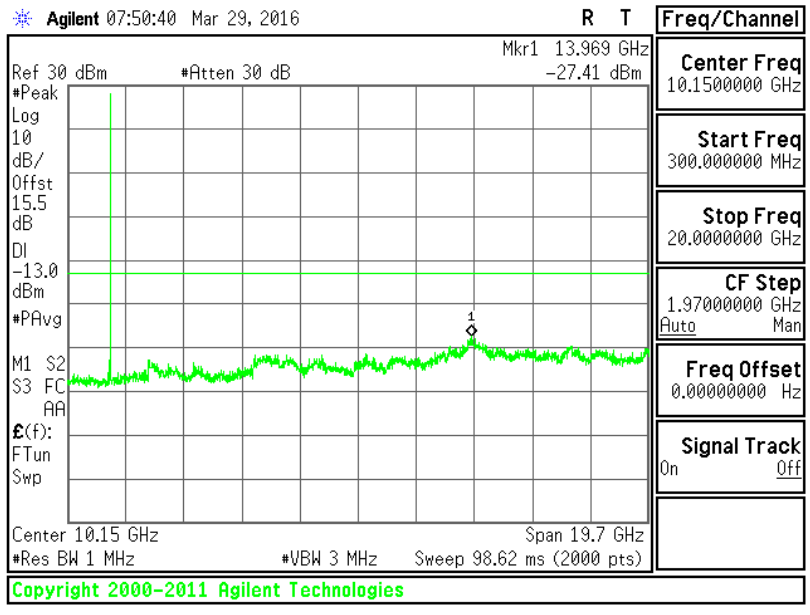
16QAM, (15.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 20000 MHz

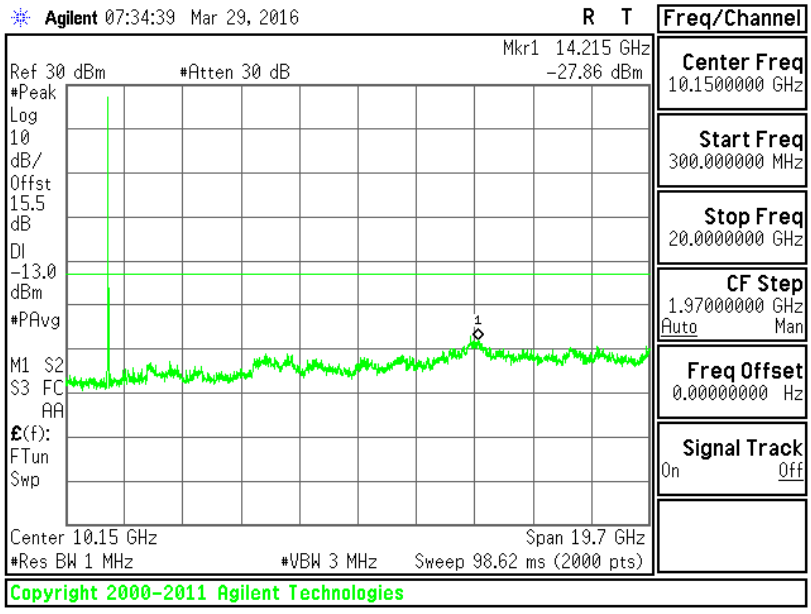


HIGH, RB1-0, 30 TO 20000 MHz

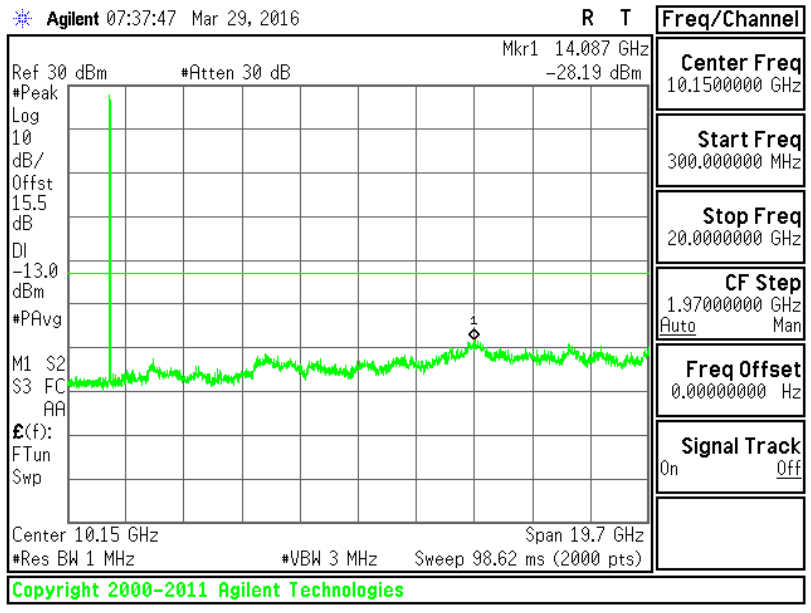


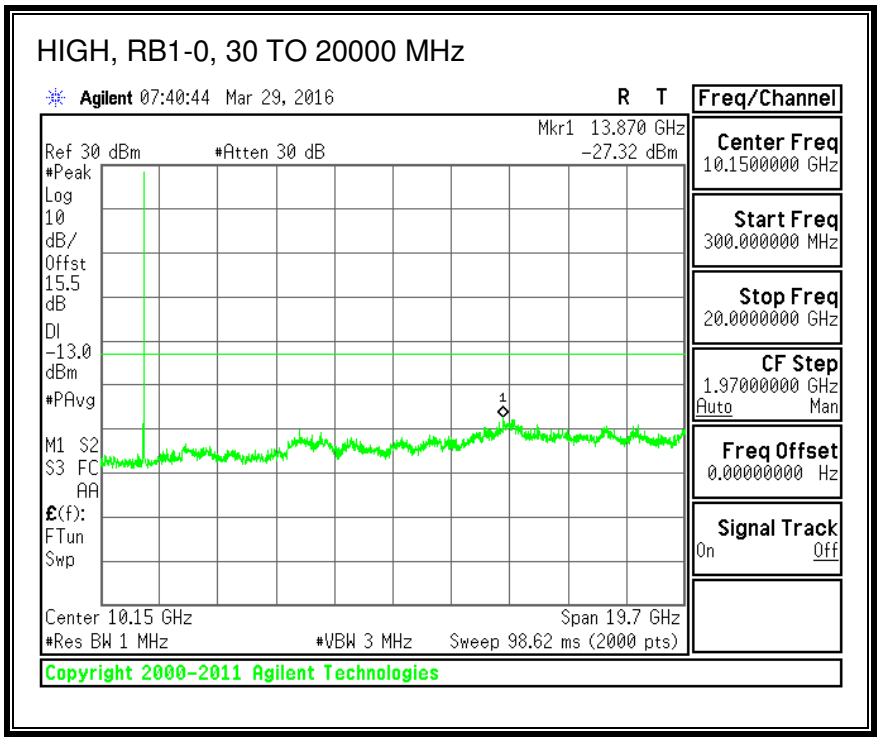
QPSK, (20.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 20000 MHz

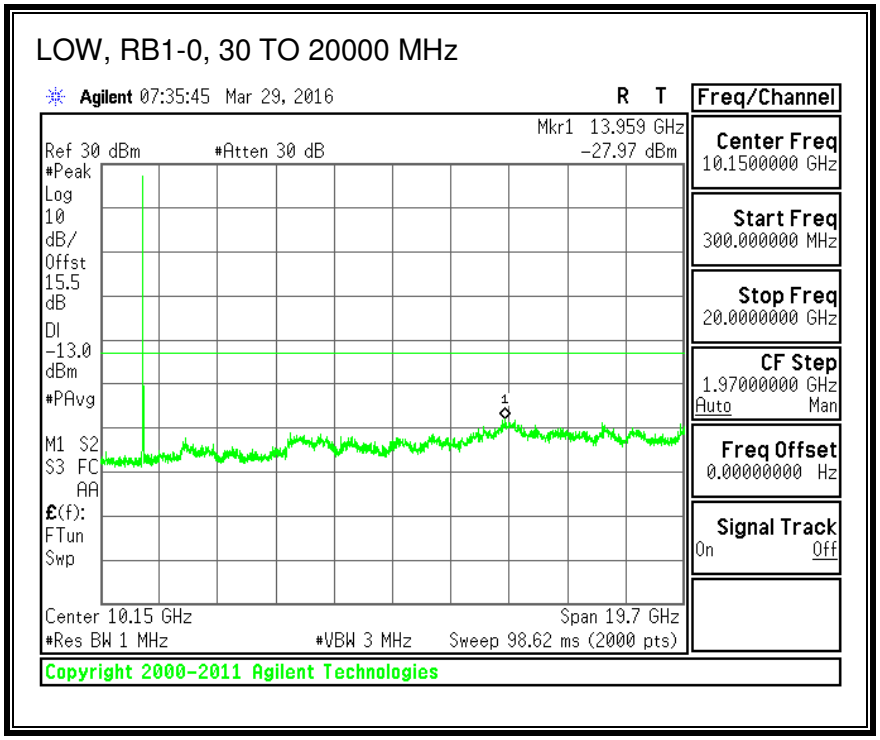


MID, RB1-0, 30 TO 20000 MHz

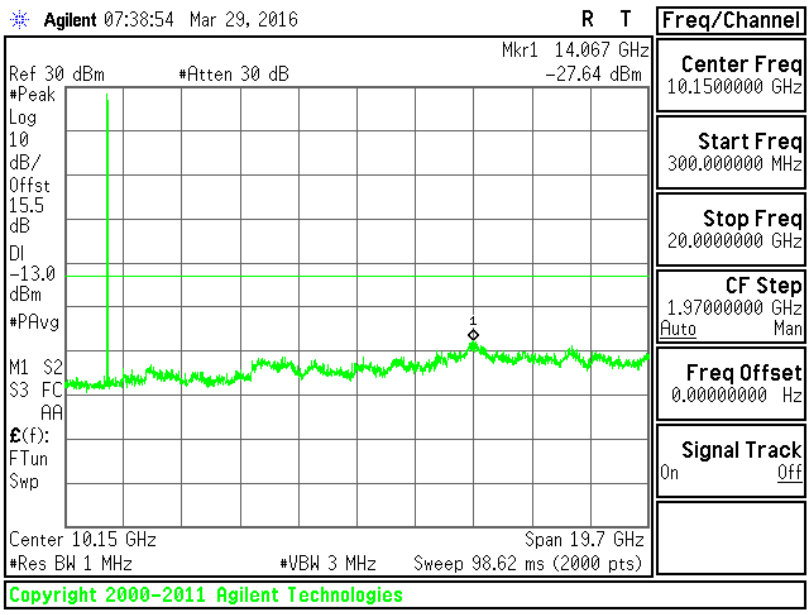




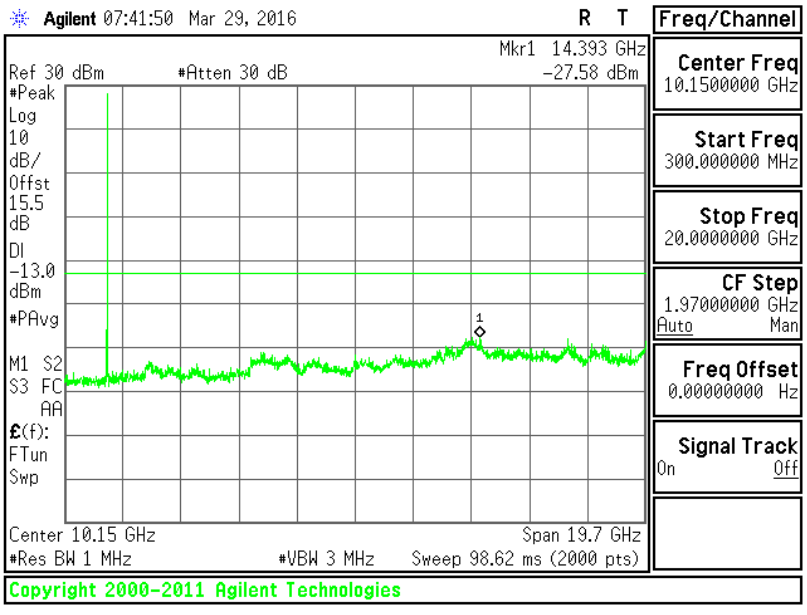
16QAM, (20.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 20000 MHz



HIGH, RB1-0, 30 TO 20000 MHz

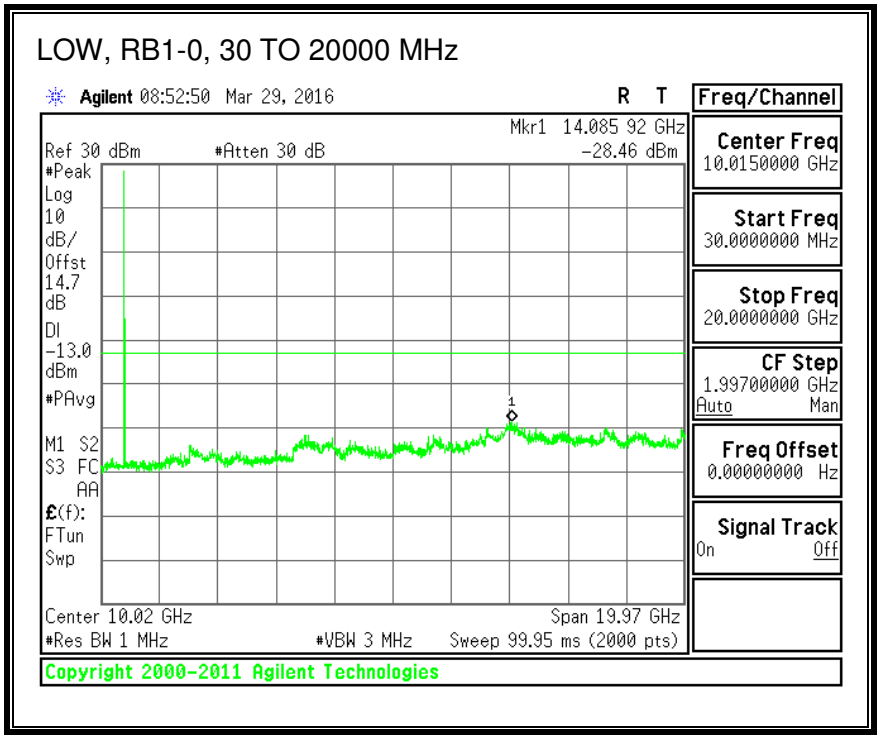


8.3.3. LTE BAND 5

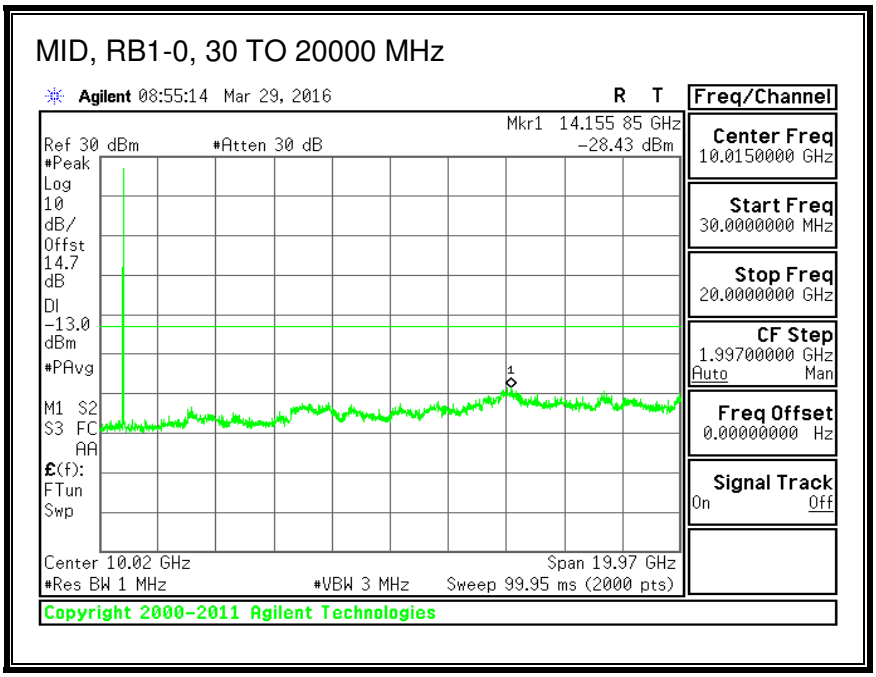
ID:	38806	Date:	3/29/16

QPSK, (1.4 MHz BAND WIDTH)

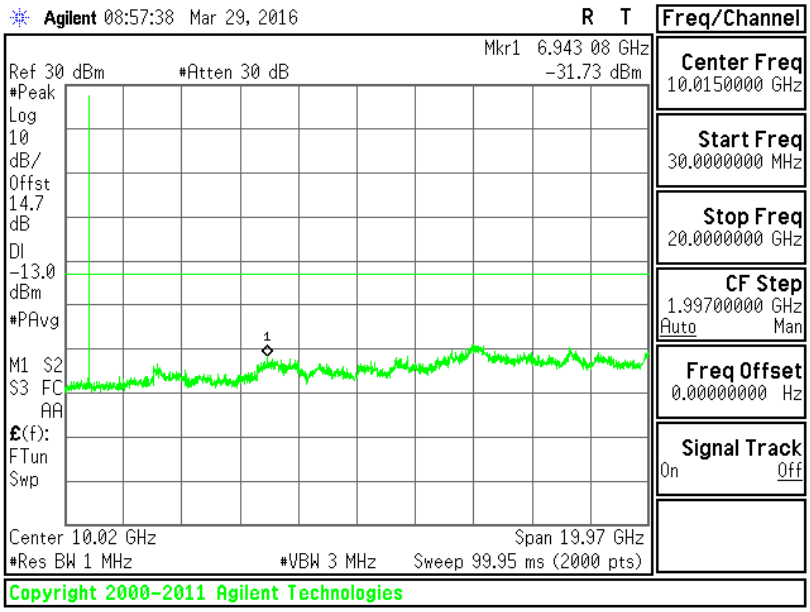
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

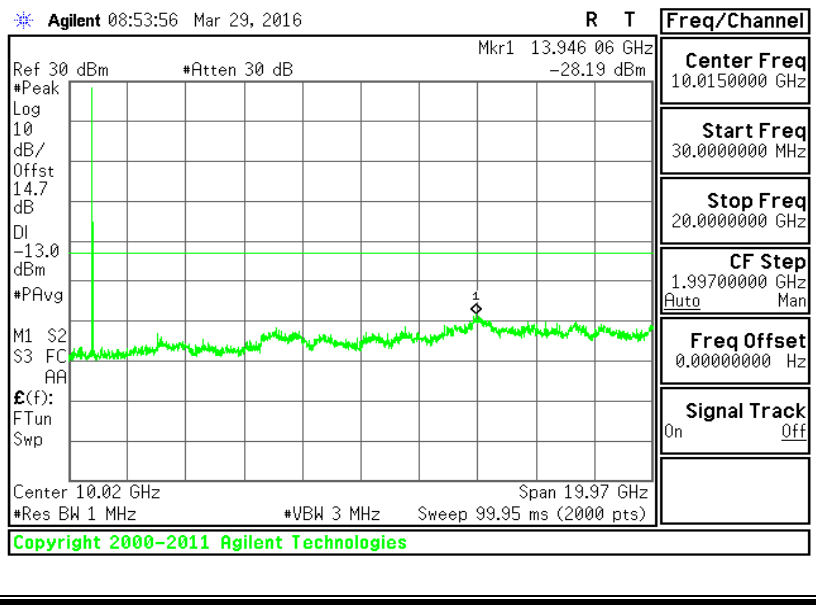


HIGH, RB1-0, 30 TO 20000 MHz

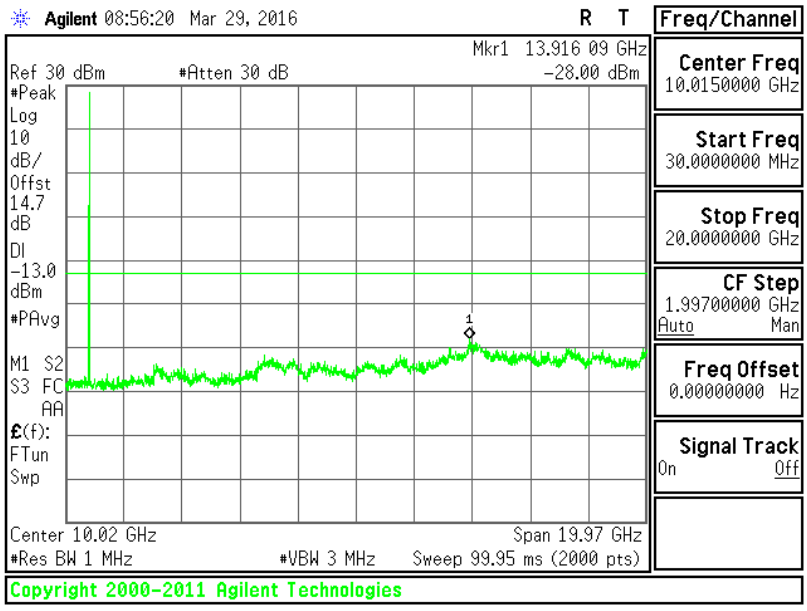


16QAM, (1.4 MHz BAND WIDTH)

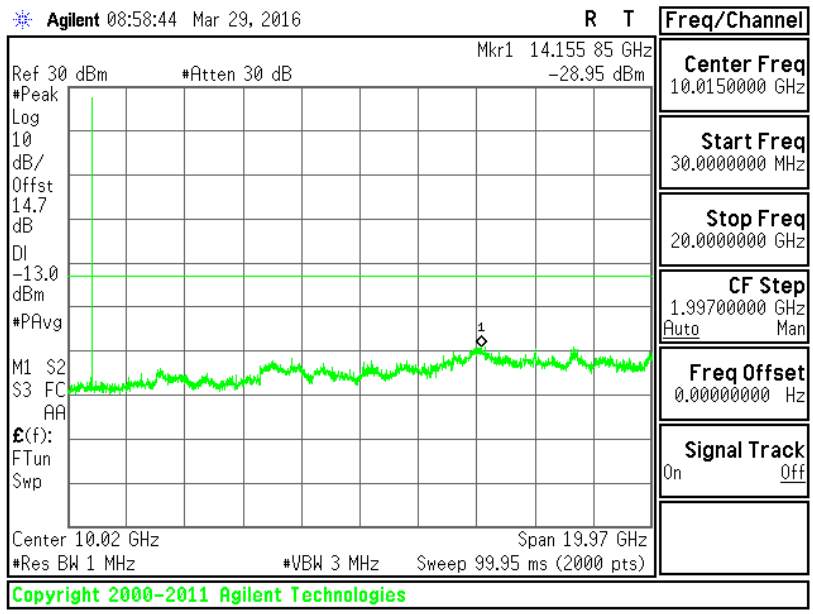
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

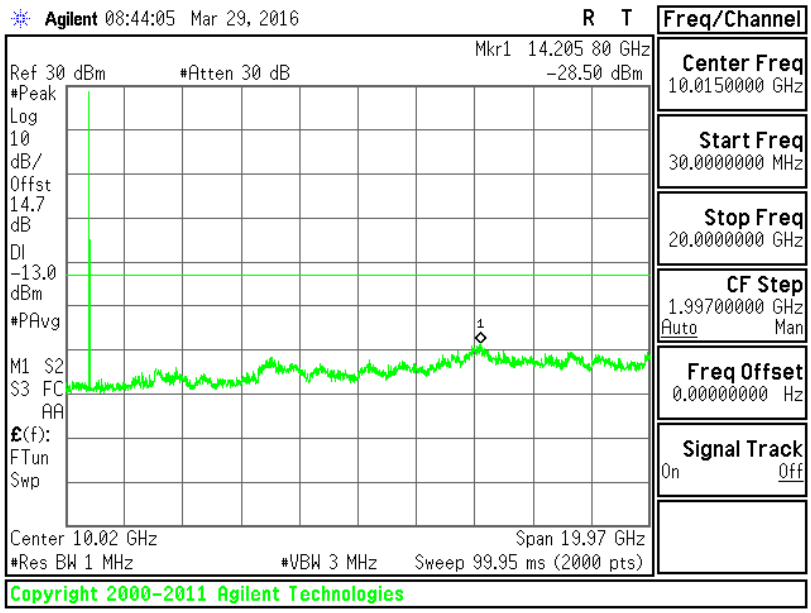


HIGH, RB1-0, 30 TO 20000 MHz

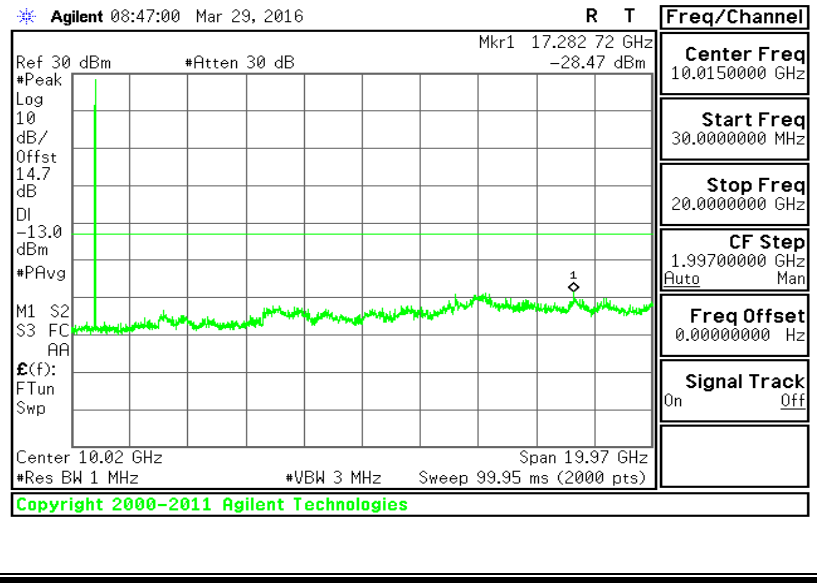


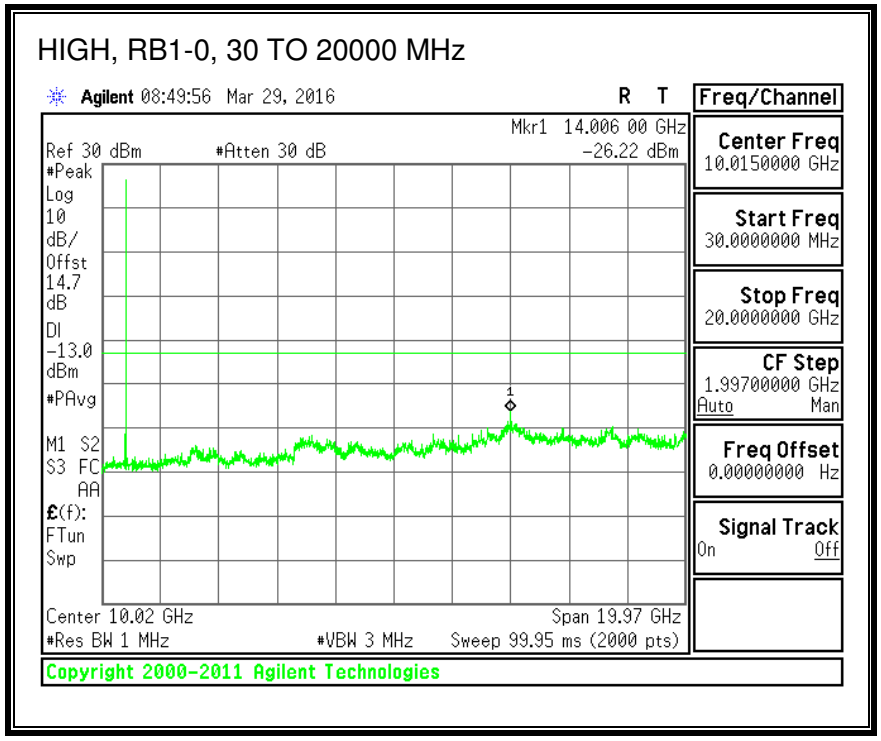
QPSK, (3.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 20000 MHz

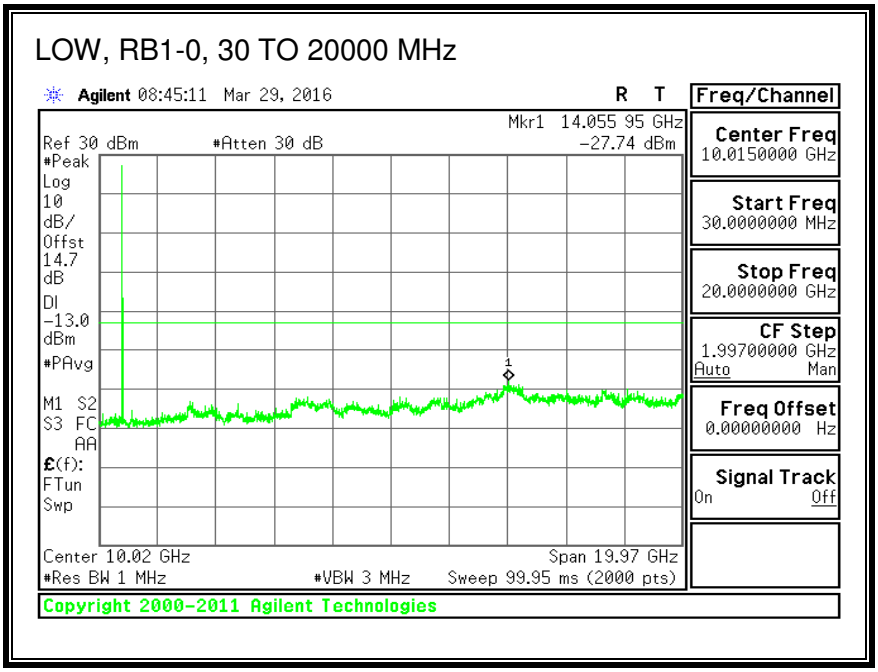


MID, RB1-0, 30 TO 20000 MHz

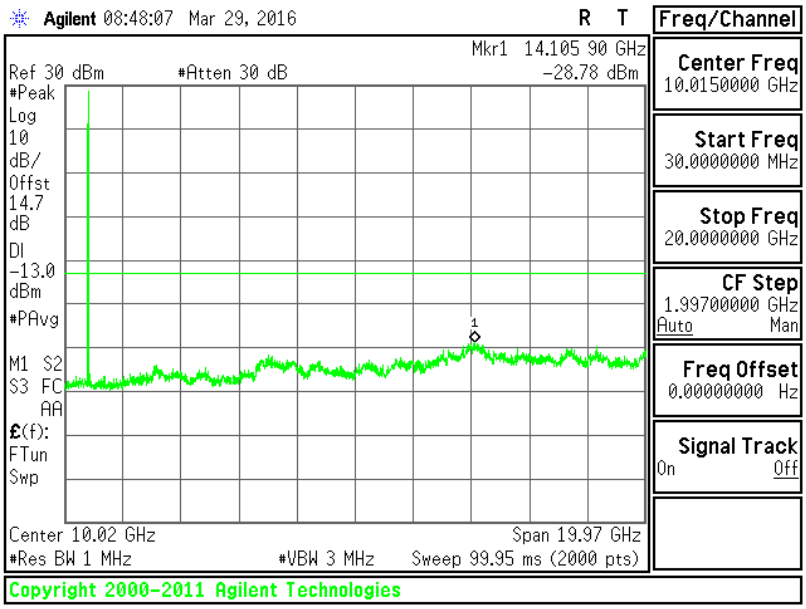




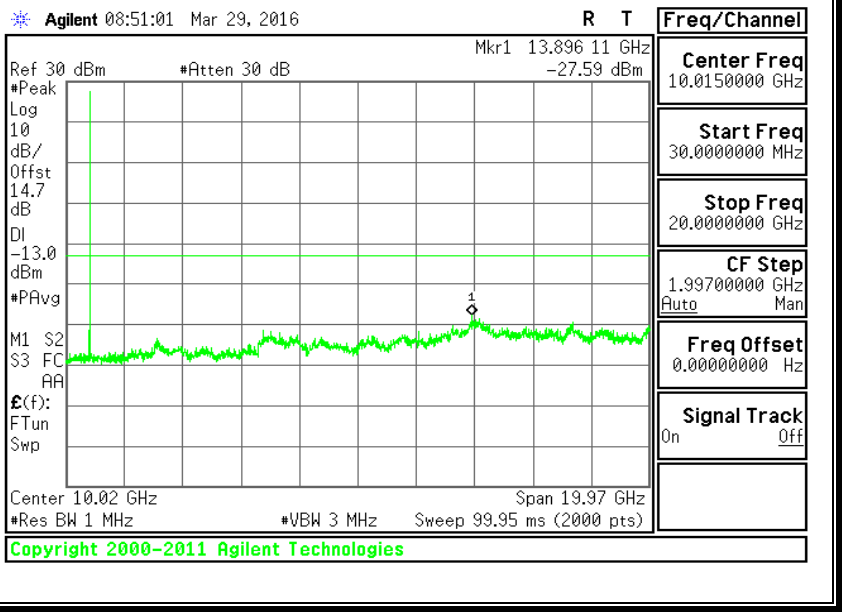
16QAM, (3.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 20000 MHz

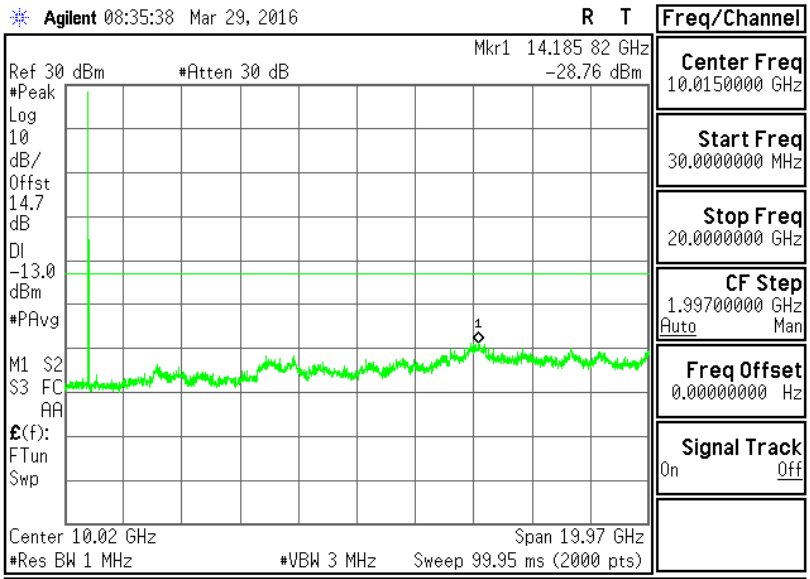


HIGH, RB1-0, 30 TO 20000 MHz

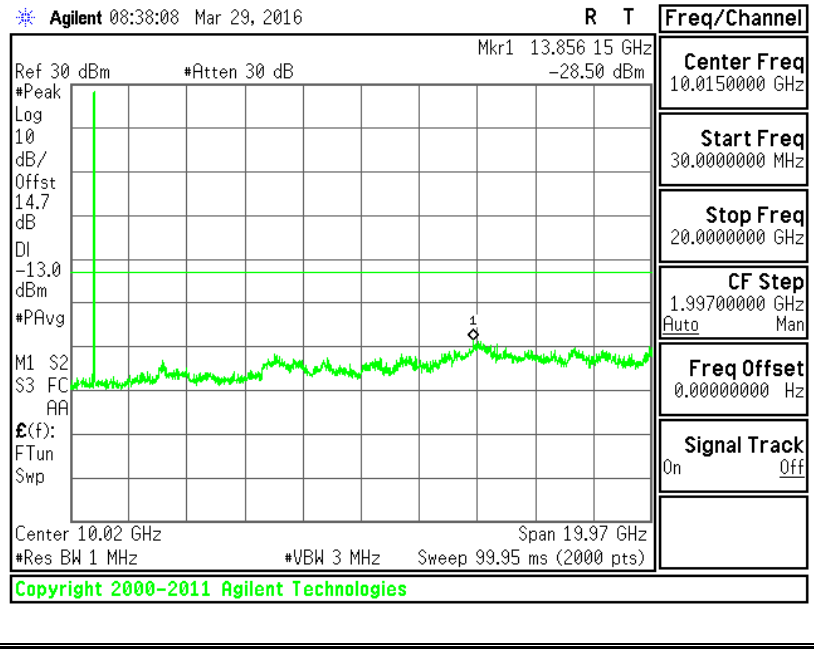


QPSK, (5.0 MHz BAND WIDTH)

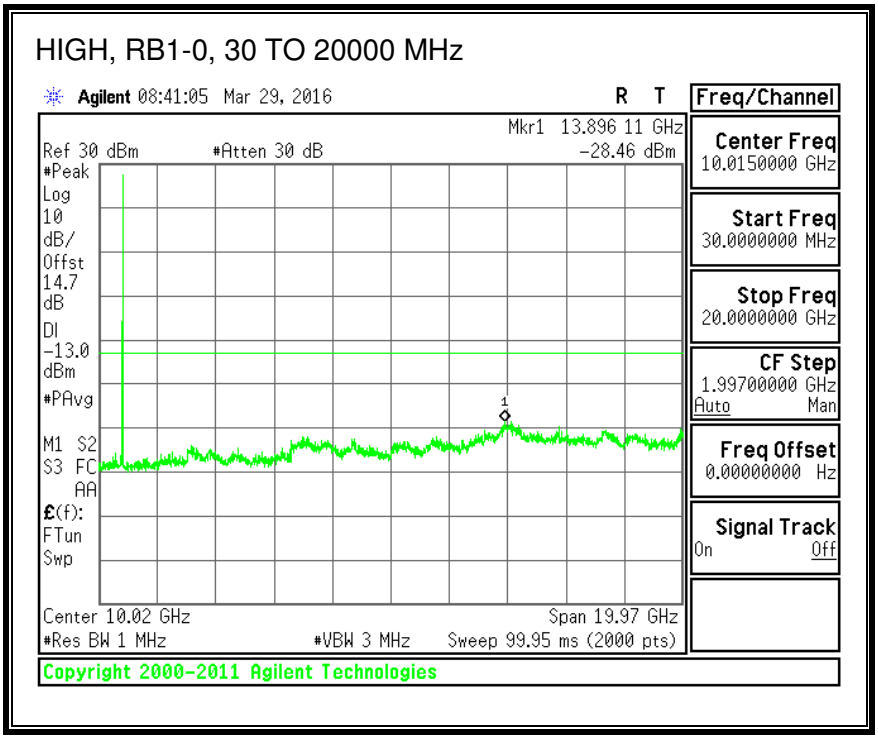
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

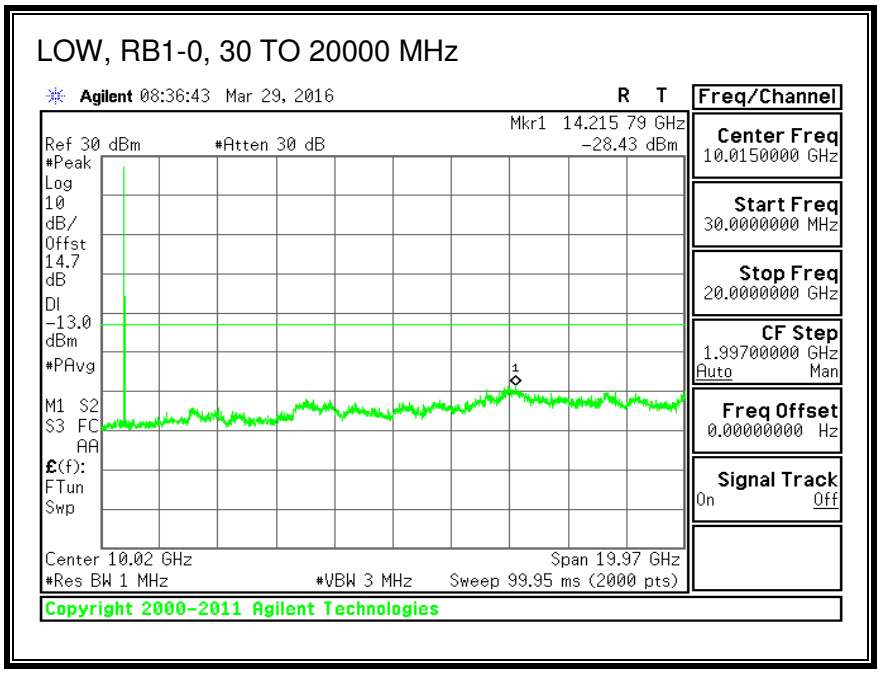


HIGH, RB1-0, 30 TO 20000 MHz

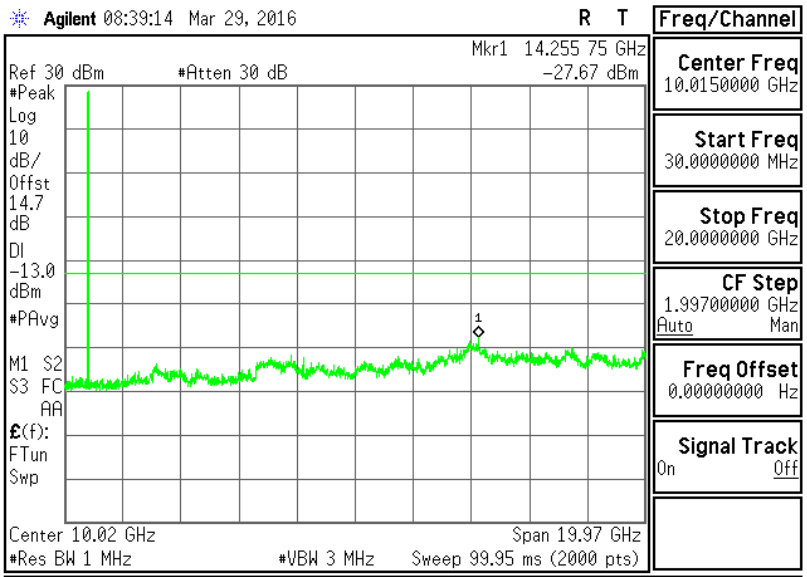


16QAM, (5.0 MHz BAND WIDTH)

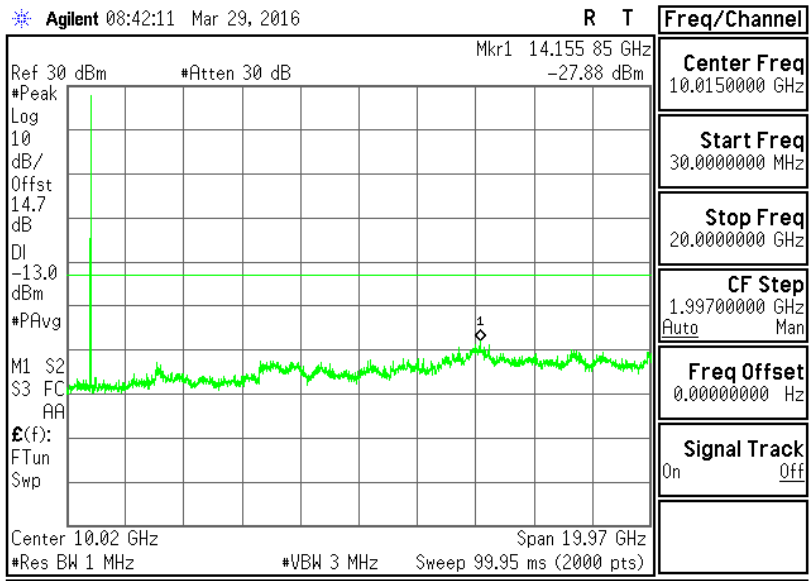
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

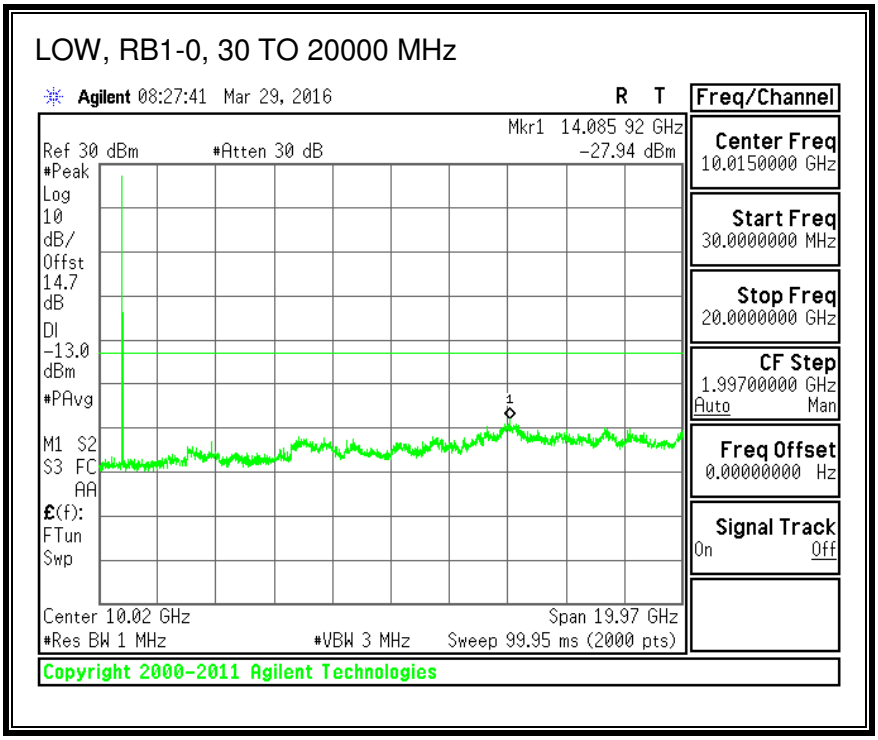


HIGH, RB1-0, 30 TO 20000 MHz

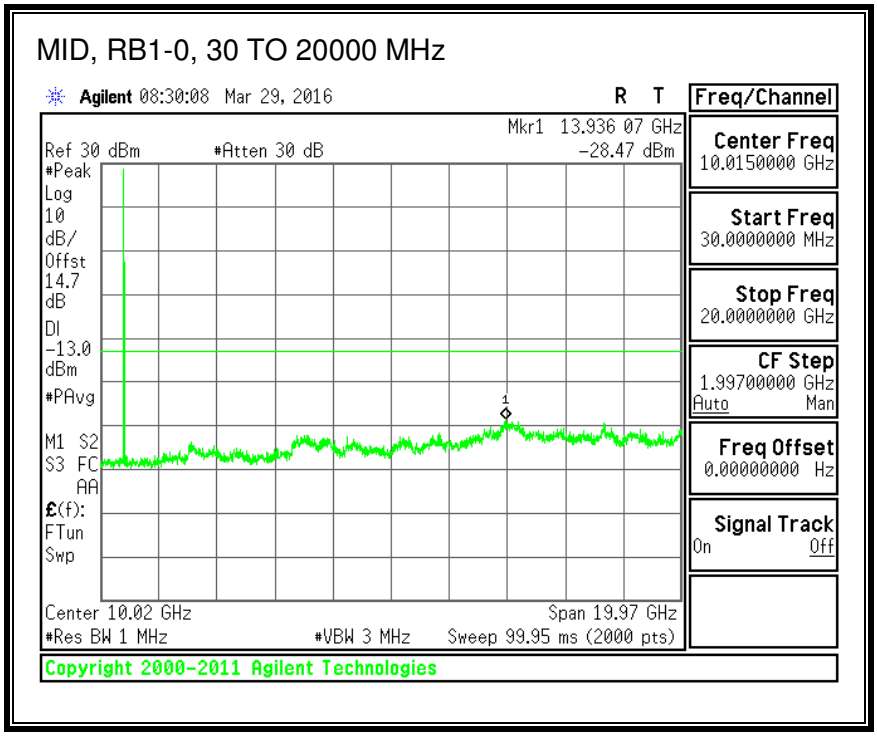


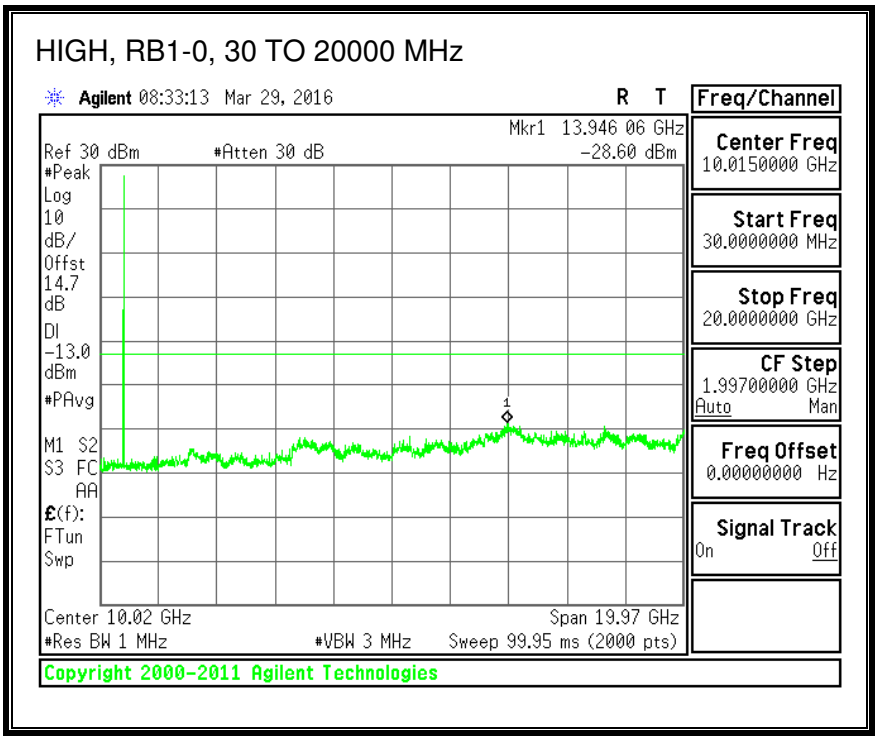
QPSK, (10.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 20000 MHz

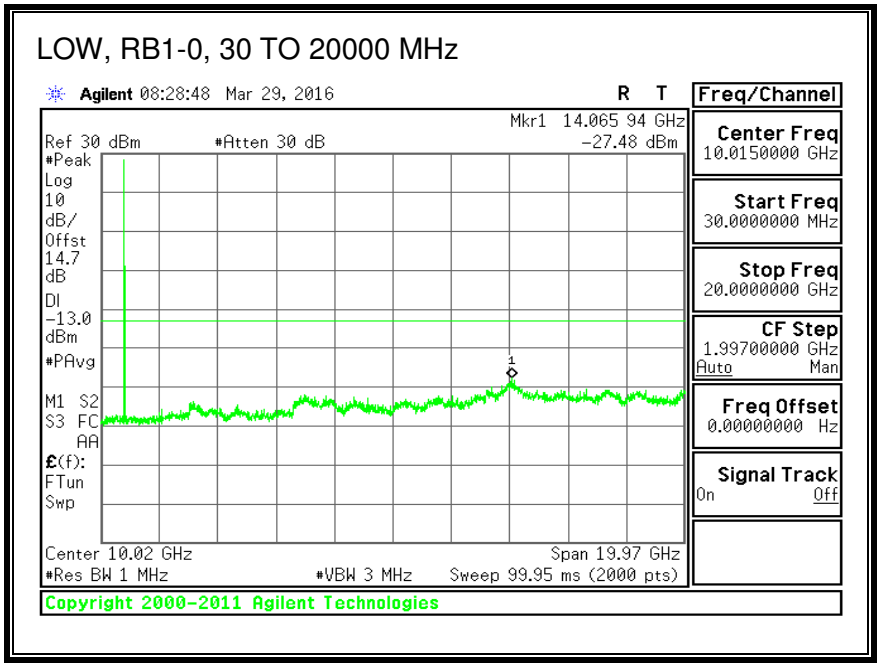


MID, RB1-0, 30 TO 20000 MHz

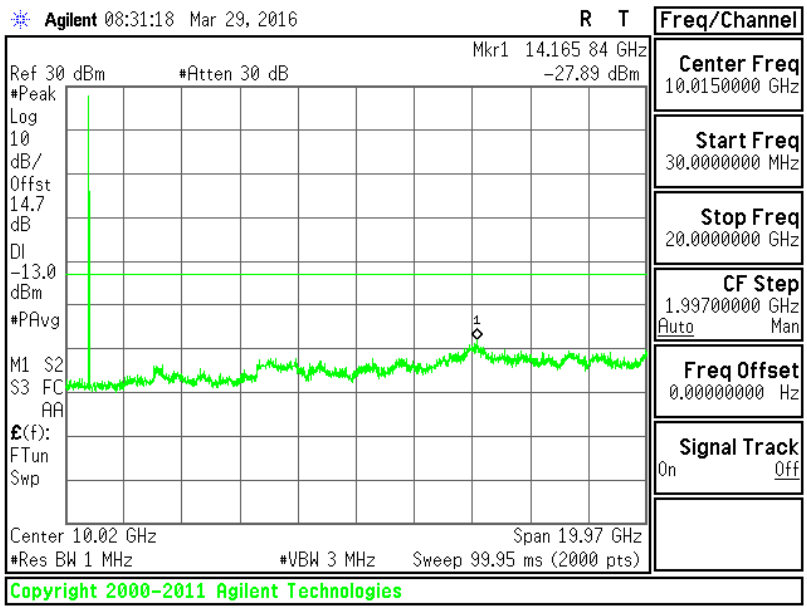




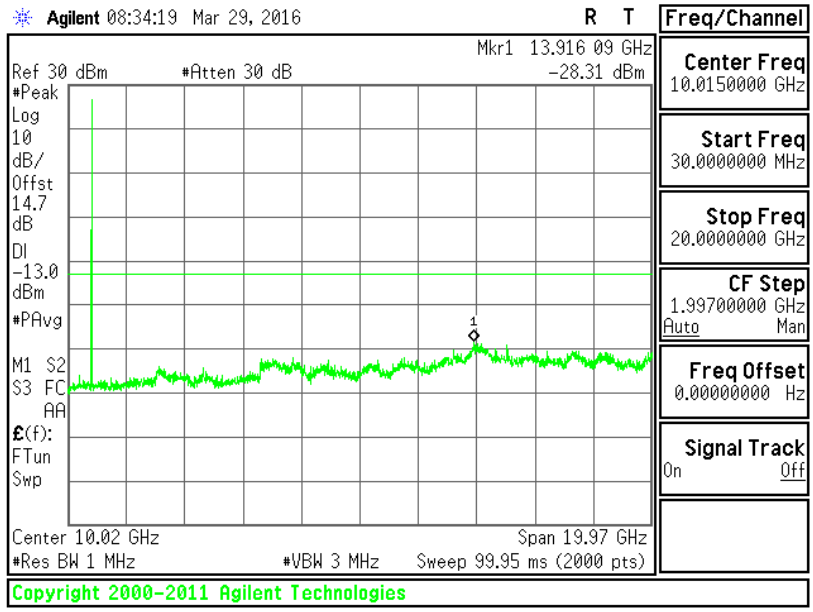
16QAM, (10.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 20000 MHz



HIGH, RB1-0, 30 TO 20000 MHz

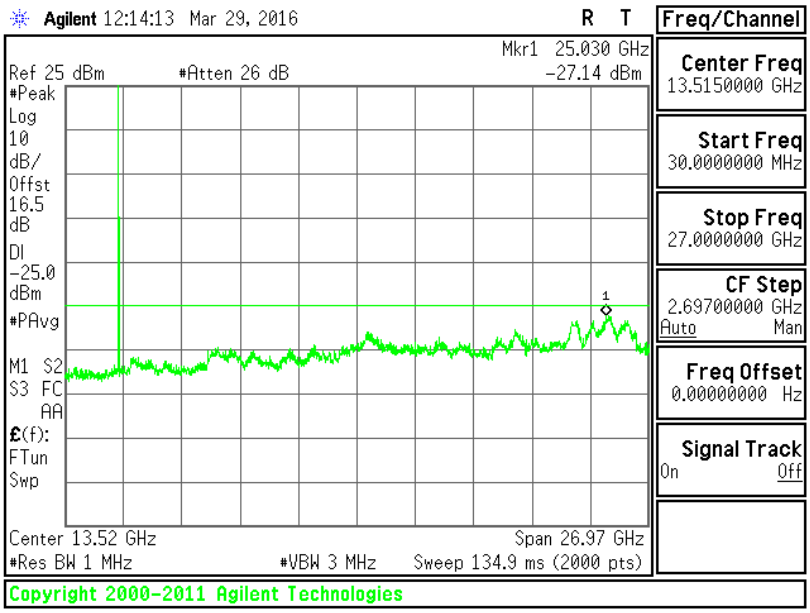


8.3.4. LTE BAND 7

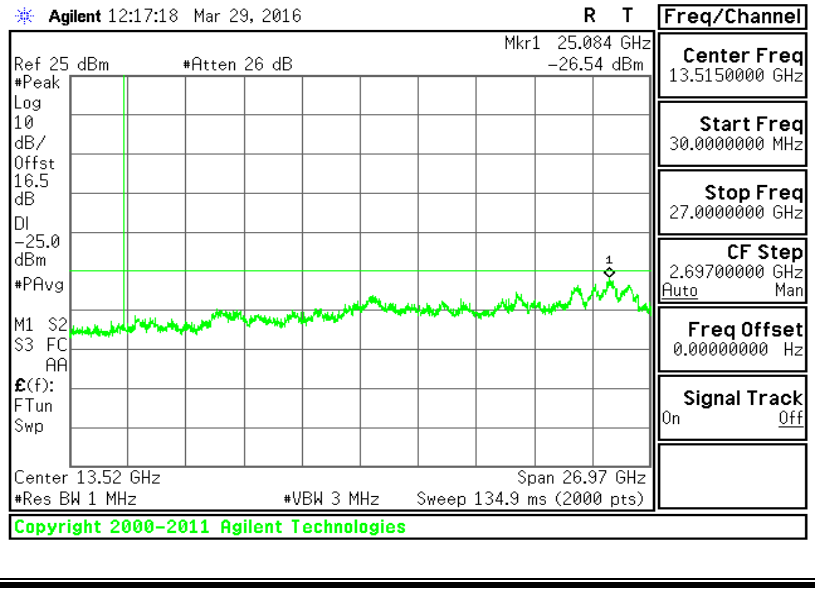
ID:	38806	Date:	3/29/16

QPSK, (5.0 MHz BAND WIDTH)

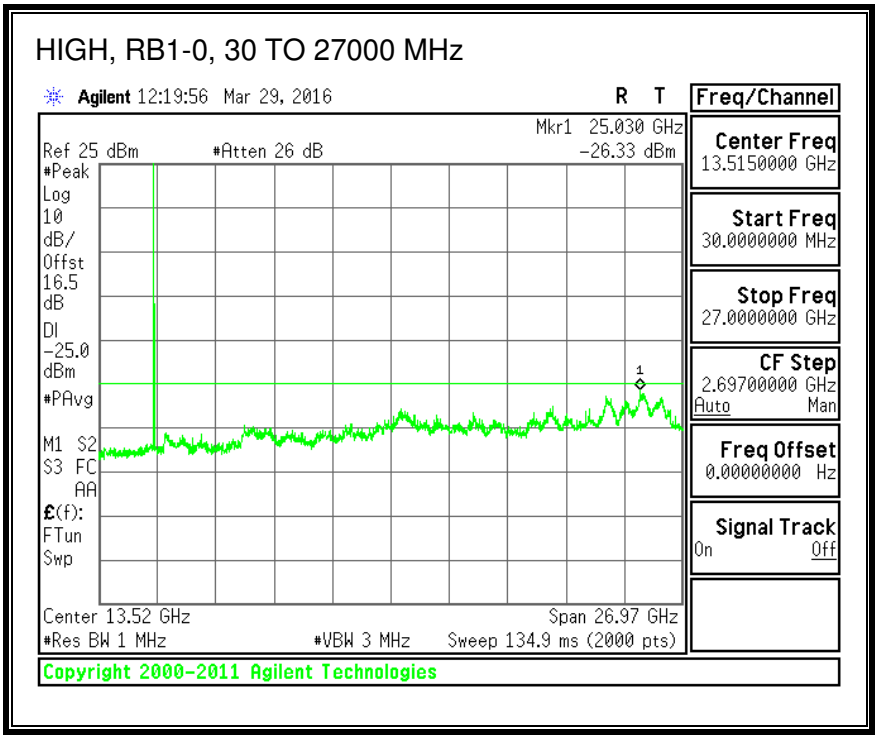
LOW, RB1-0, 30 TO 27000 MHz



MID, RB1-0, 30 TO 27000 MHz

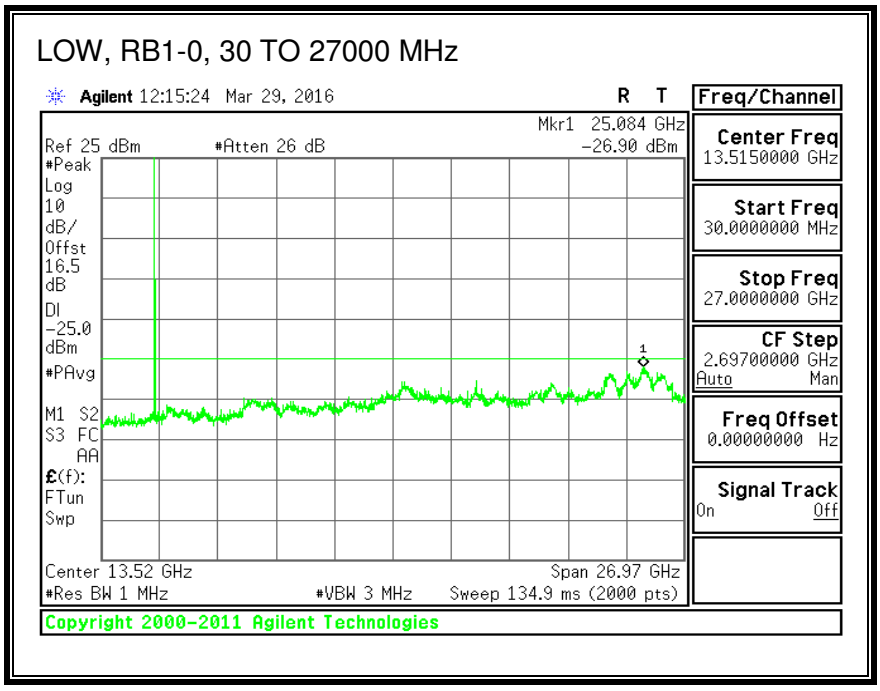


HIGH, RB1-0, 30 TO 27000 MHz

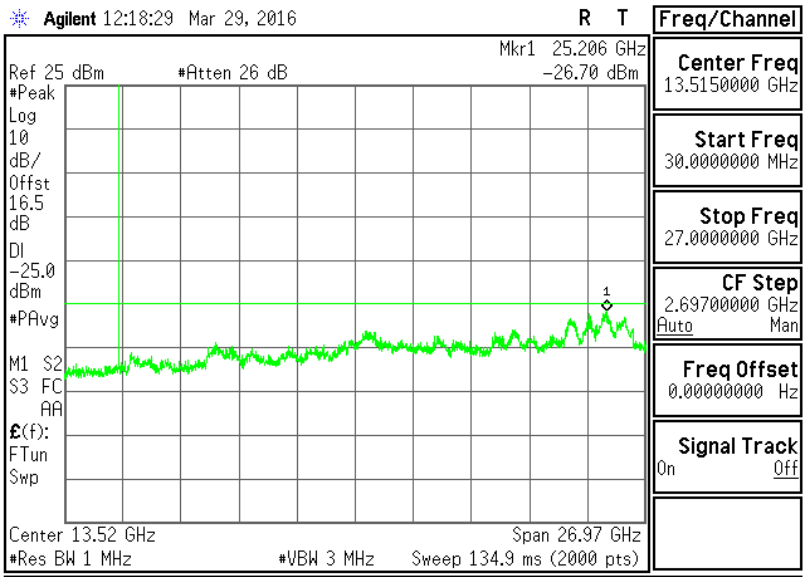


16QAM, (5.0 MHz BAND WIDTH)

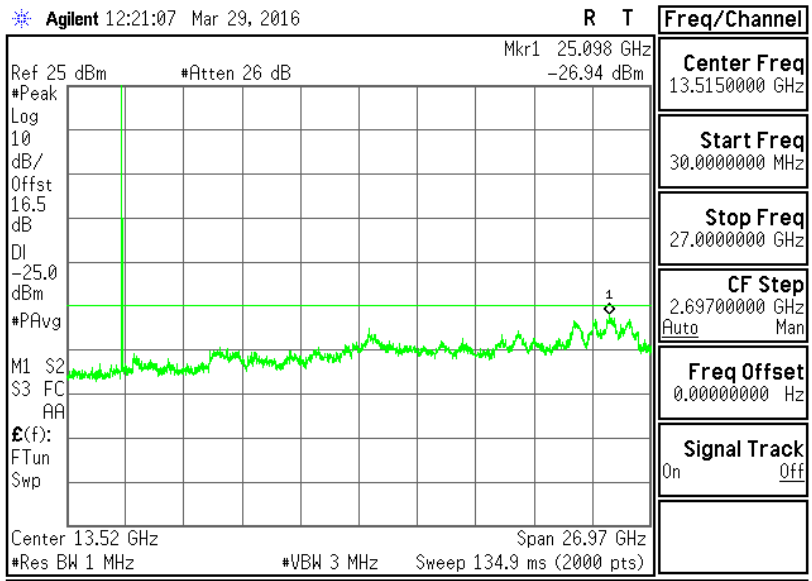
LOW, RB1-0, 30 TO 27000 MHz



MID, RB1-0, 30 TO 27000 MHz

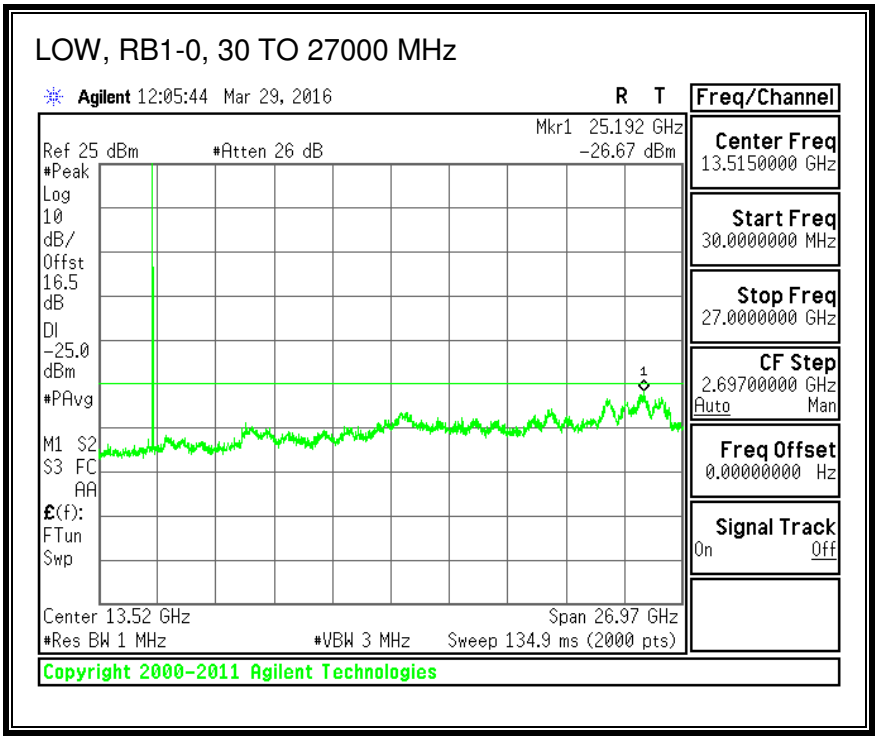


HIGH, RB1-0, 30 TO 27000 MHz

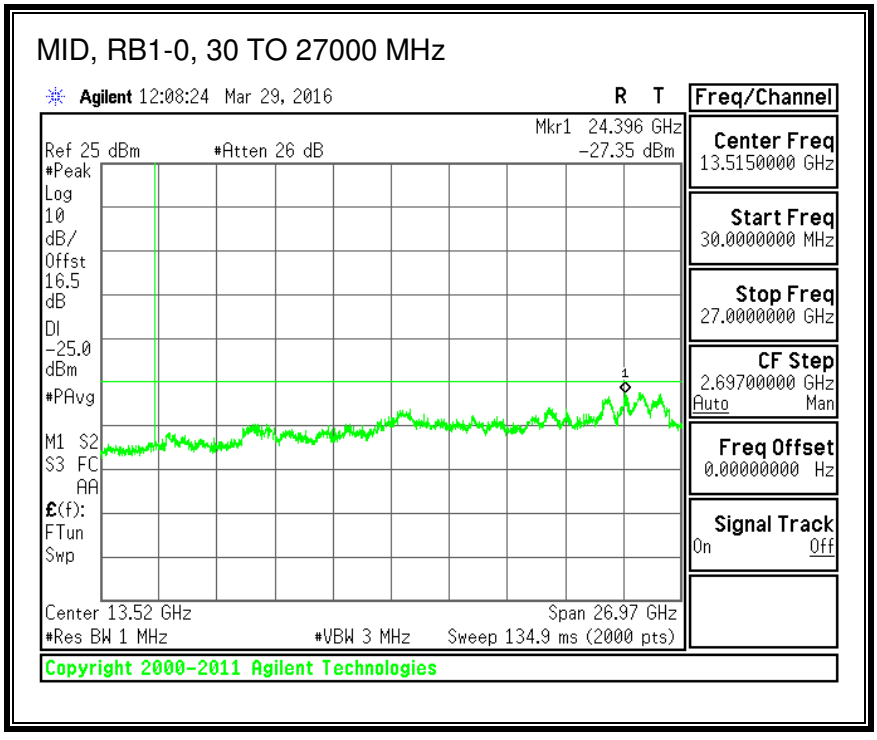


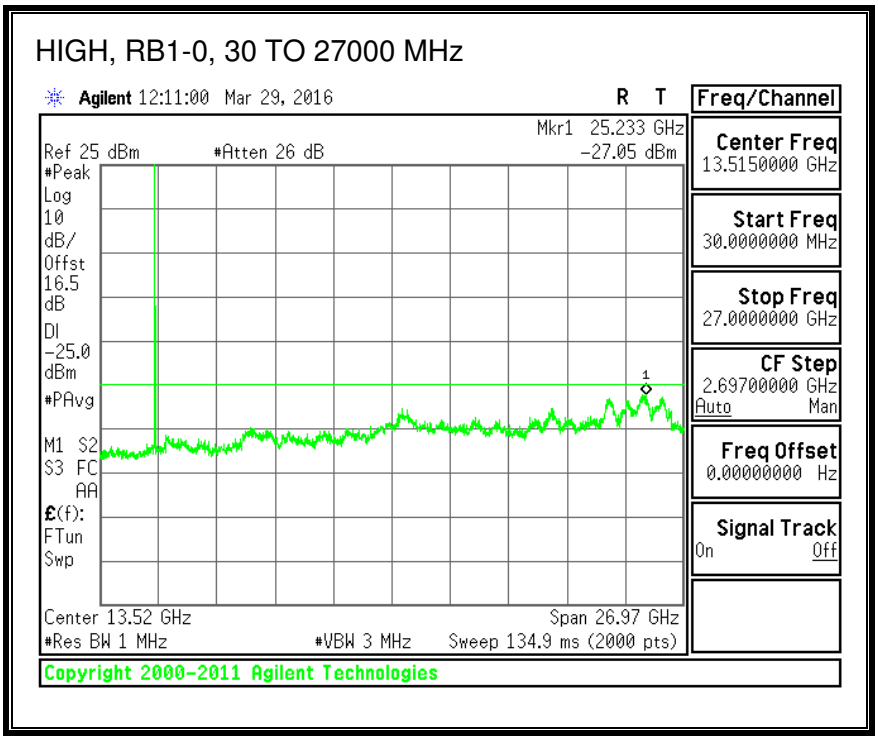
QPSK, (10.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 27000 MHz

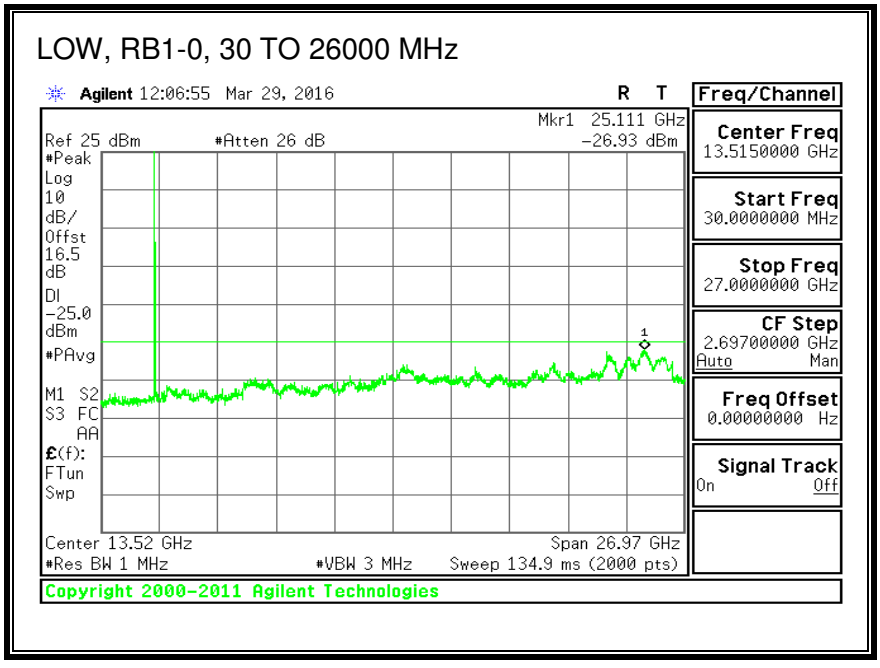


MID, RB1-0, 30 TO 27000 MHz

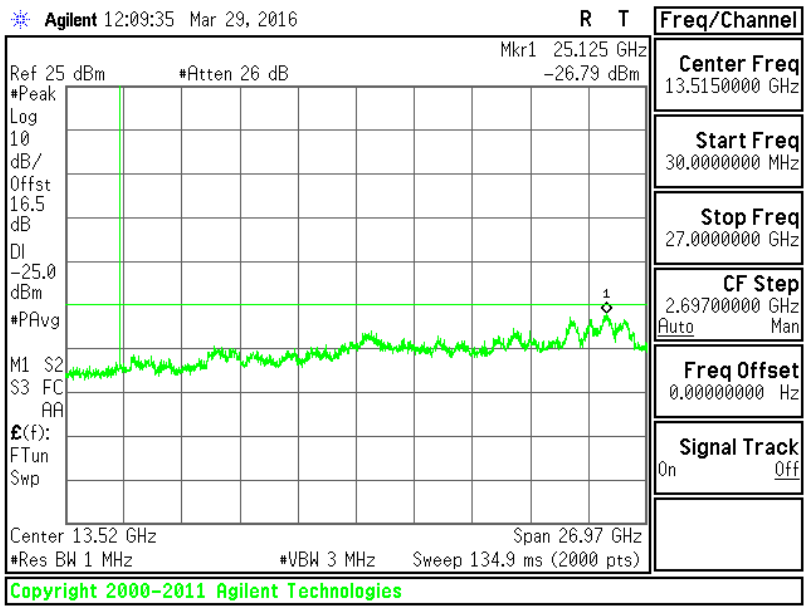




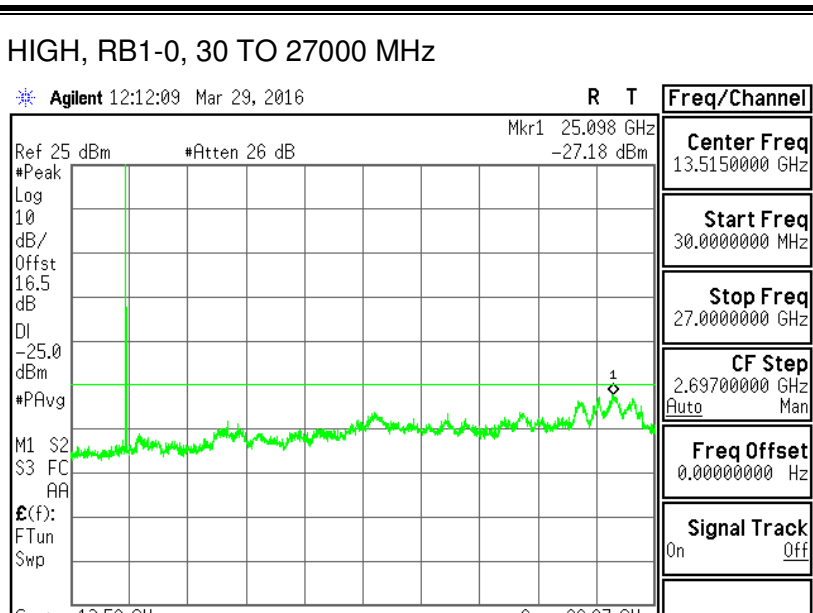
16QAM, (10.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 27000 MHz

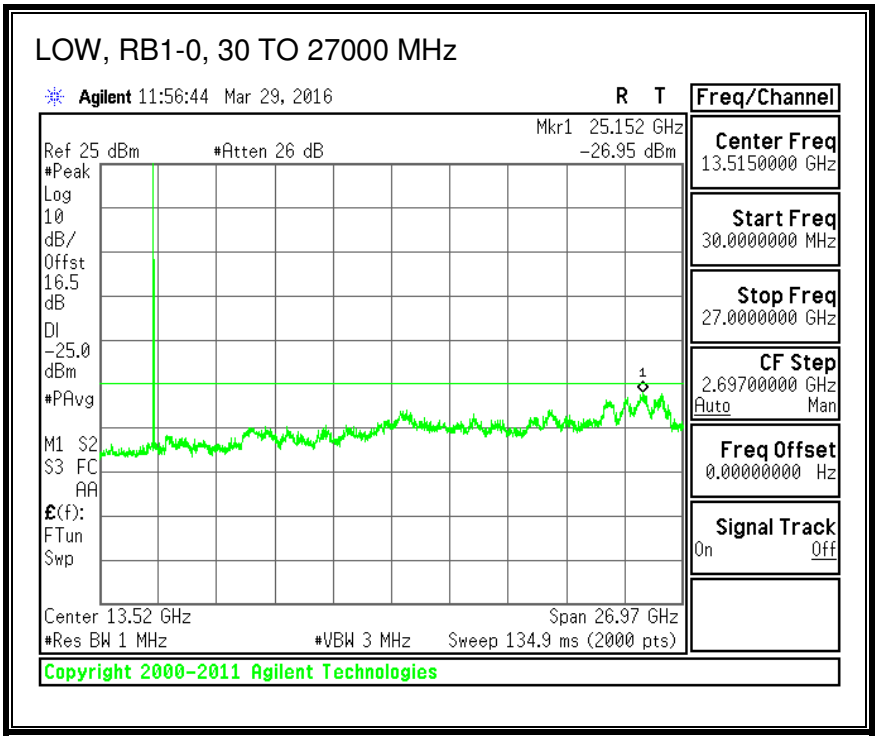


HIGH, RB1-0, 30 TO 27000 MHz

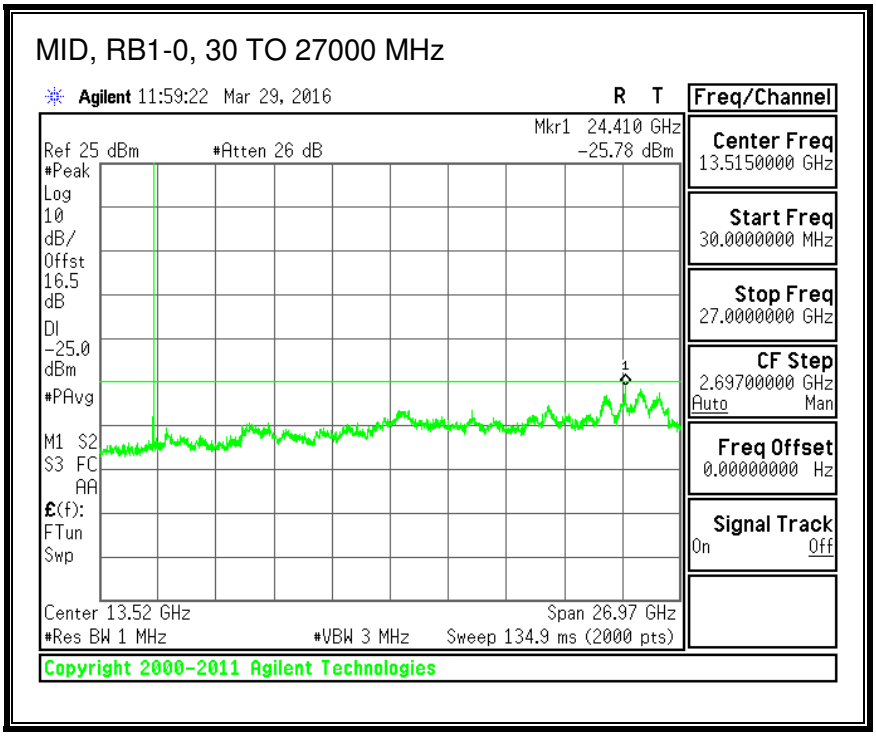


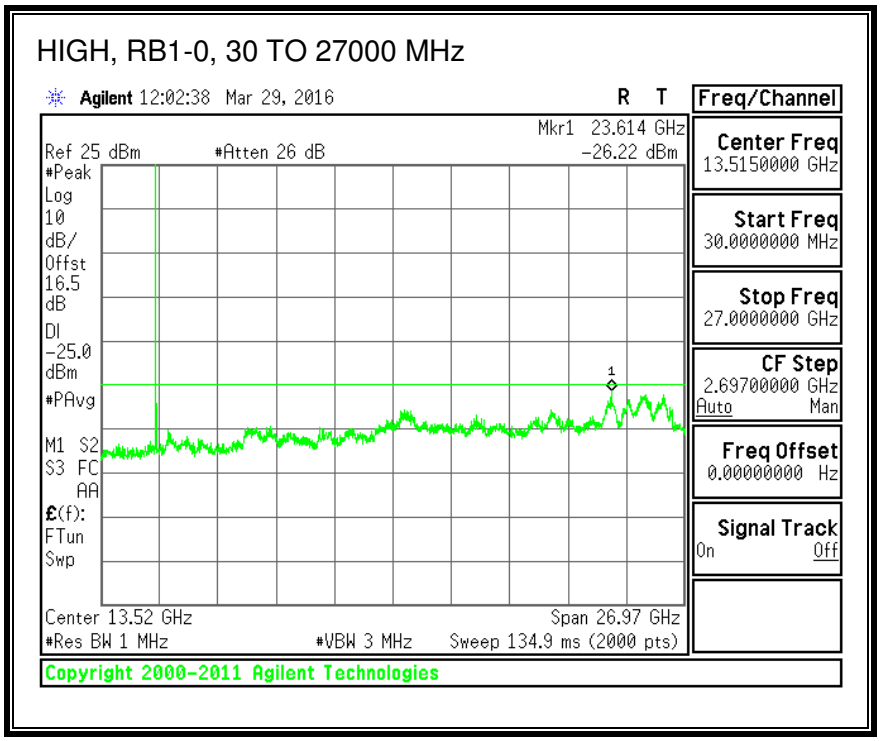
QPSK, (15.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 27000 MHz

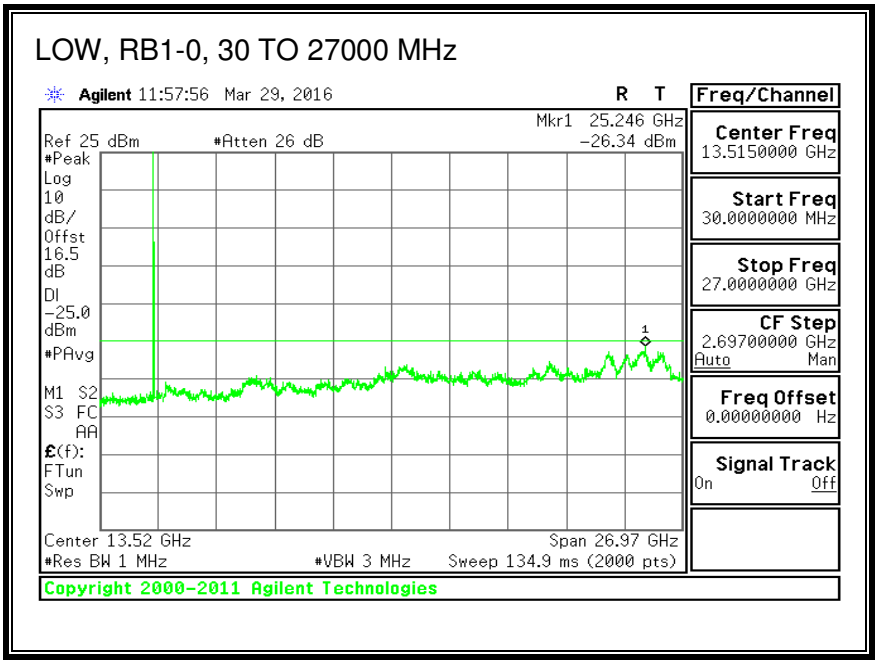


MID, RB1-0, 30 TO 27000 MHz

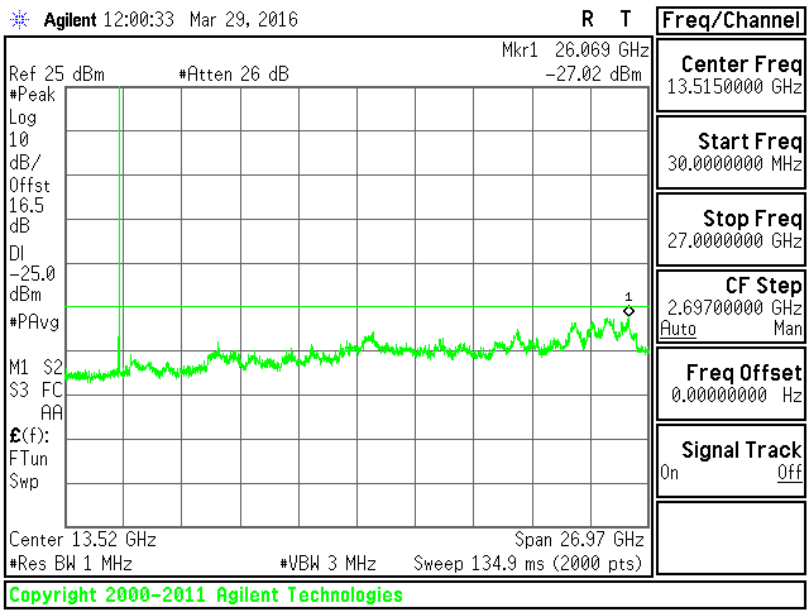




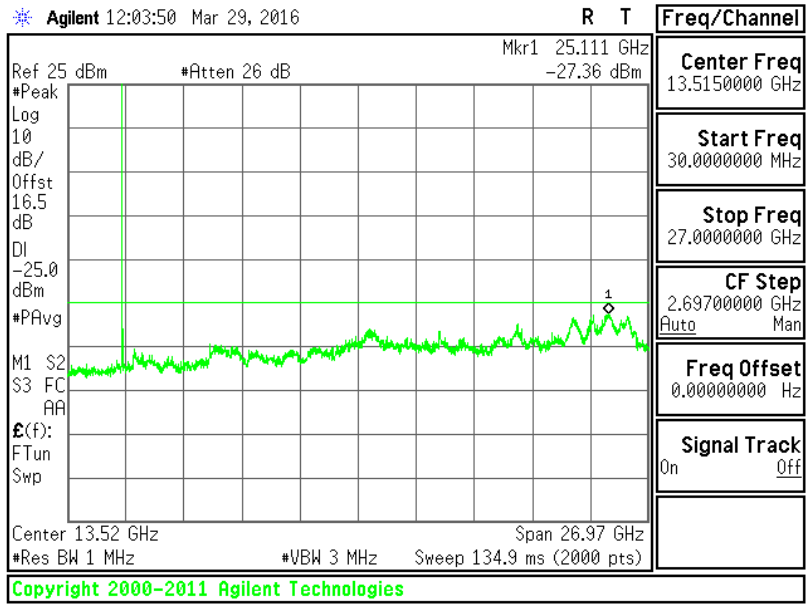
16QAM, (15.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 27000 MHz

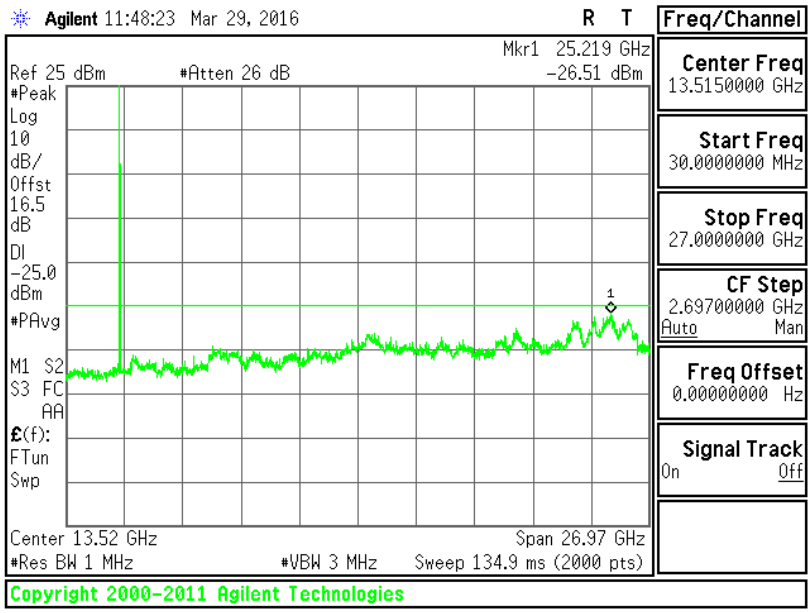


HIGH, RB1-0, 30 TO 27000 MHz

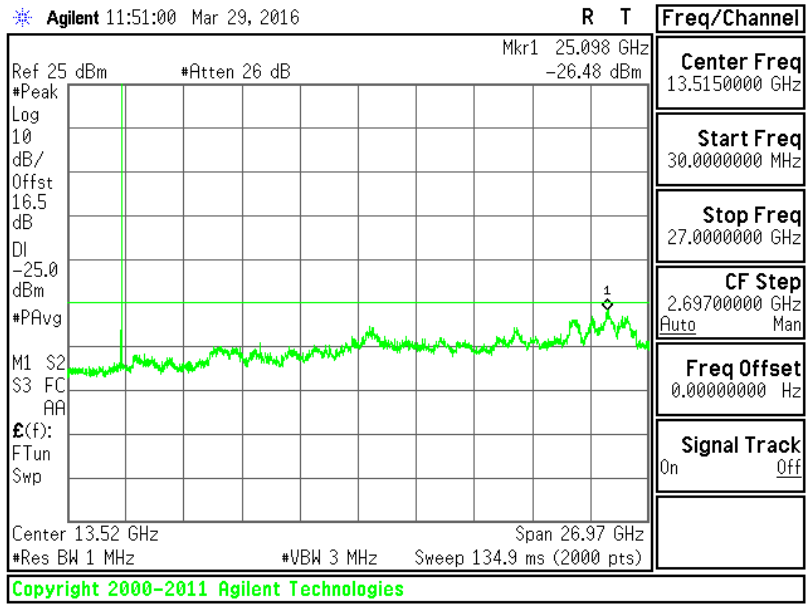


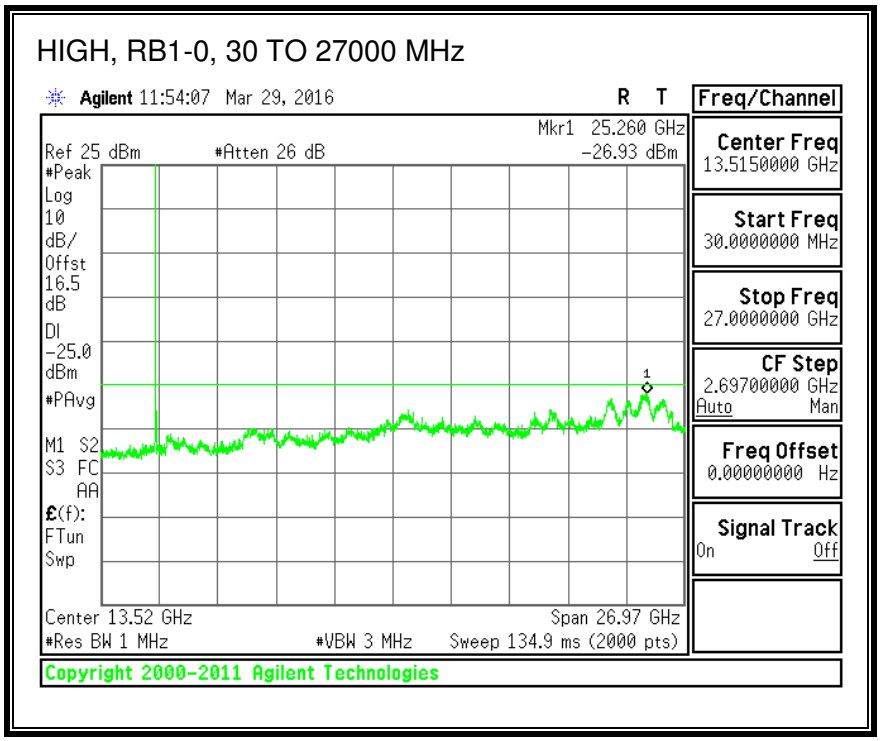
QPSK, (20.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 27000 MHz

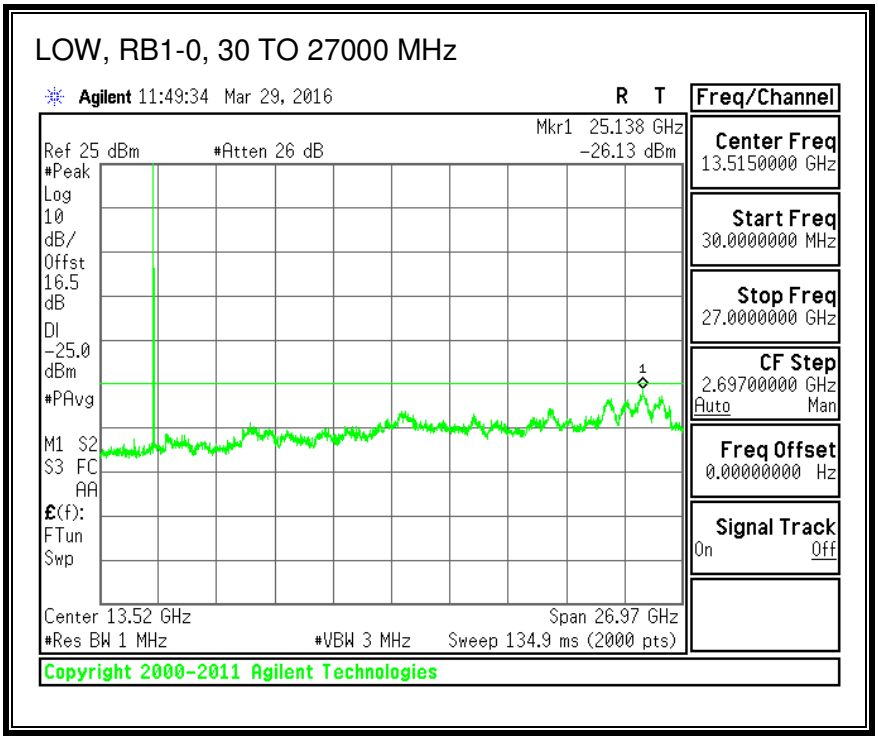


MID, RB1-0, 30 TO 27000 MHz

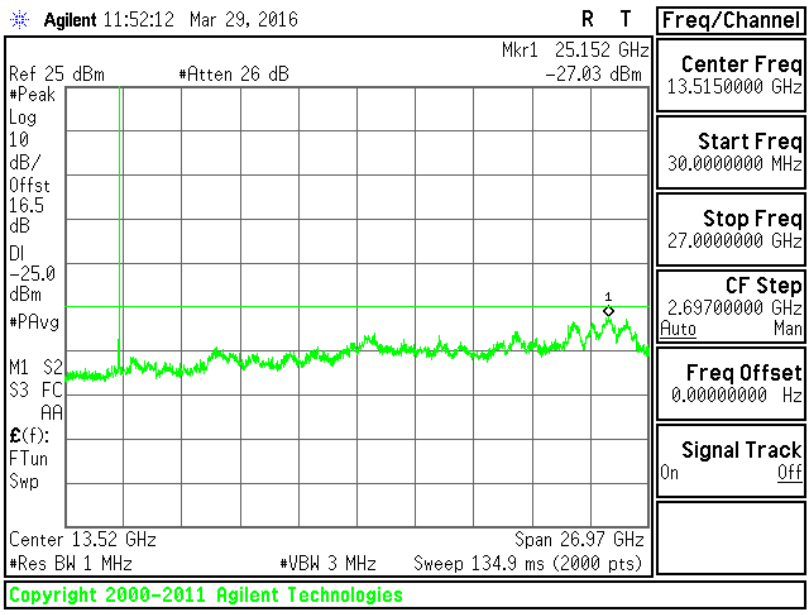




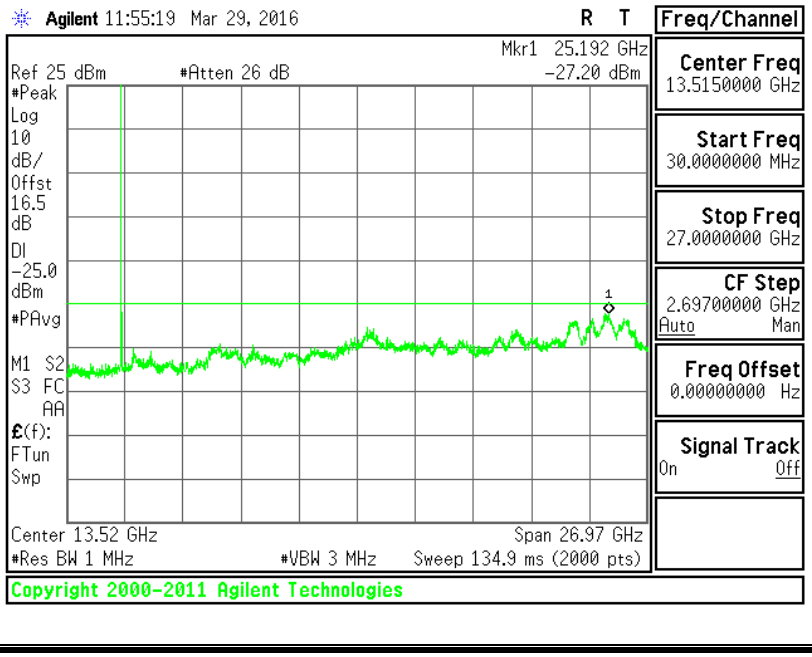
16QAM, (20.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 27000 MHz



HIGH, RB1-0, 30 TO 27000 MHz

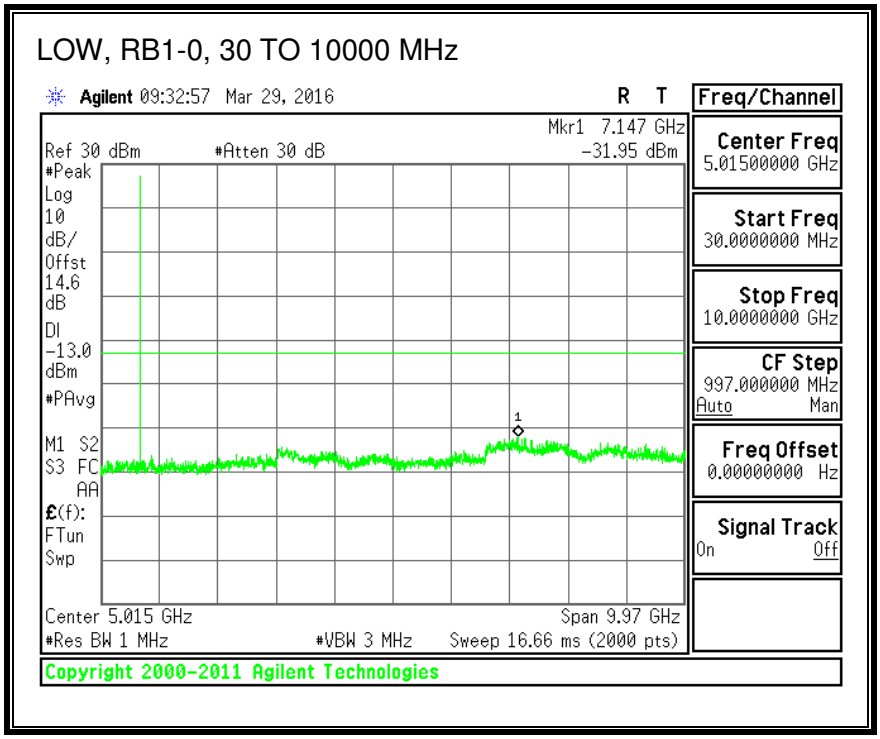


8.3.5. LTE BAND 12

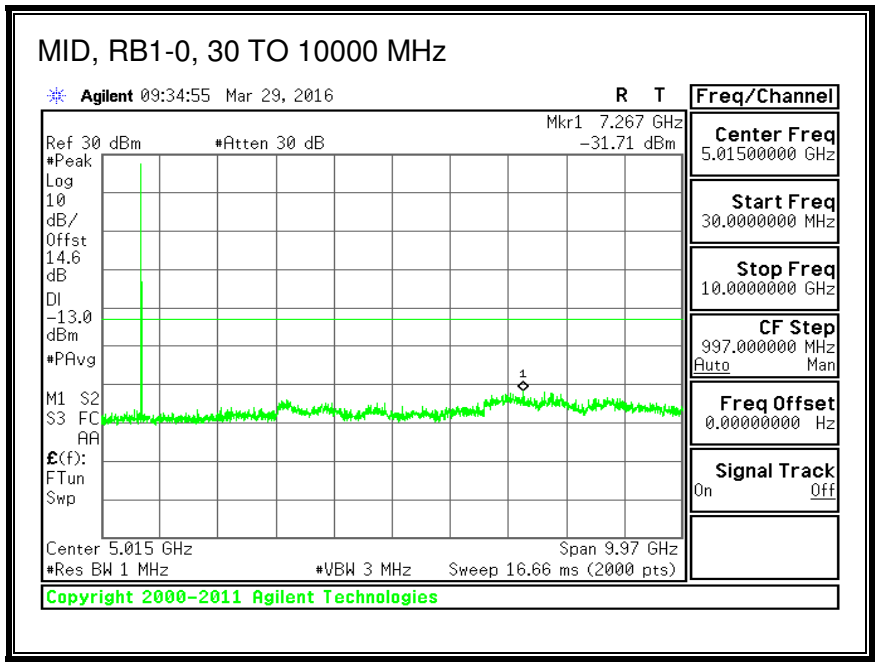
ID:	38806	Date:	3/29/16

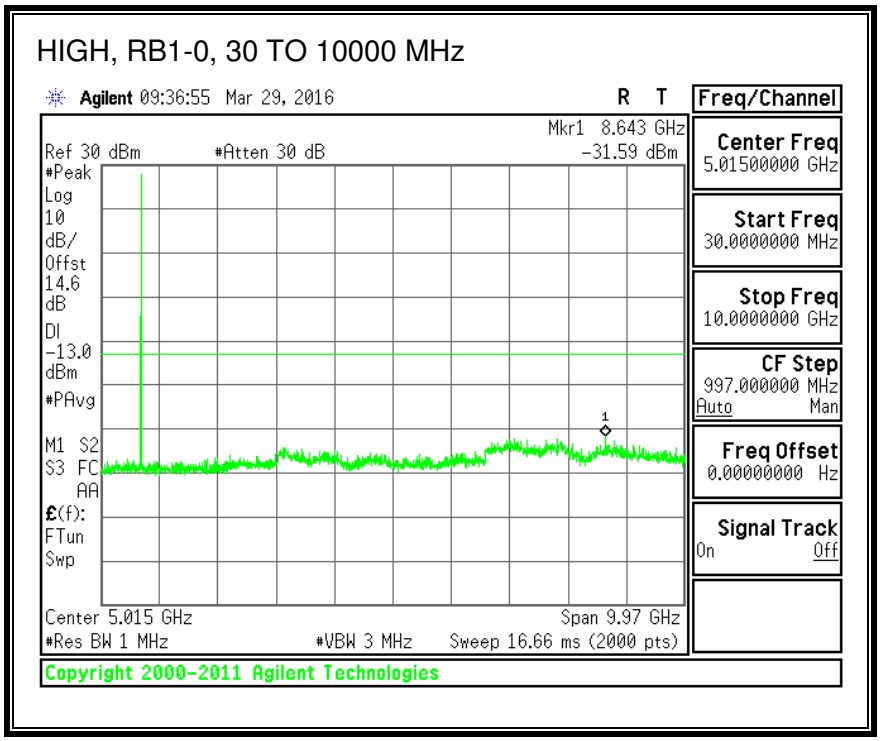
QPSK, (1.4 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 10000 MHz

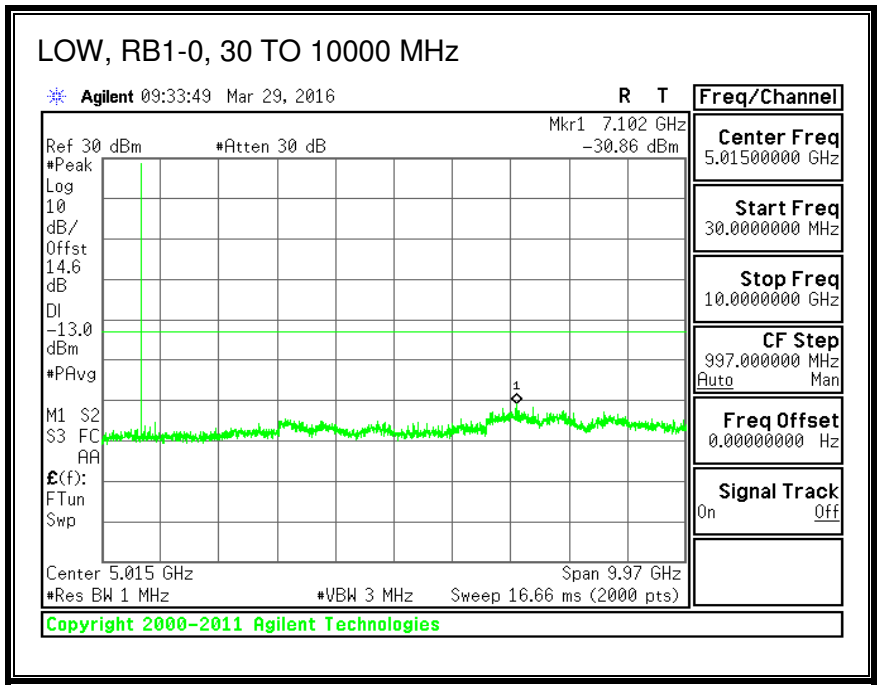


MID, RB1-0, 30 TO 10000 MHz

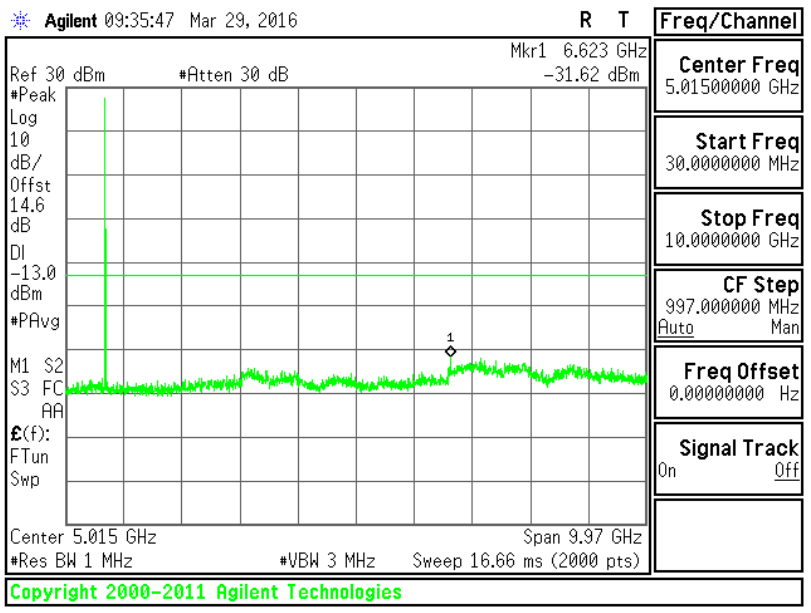




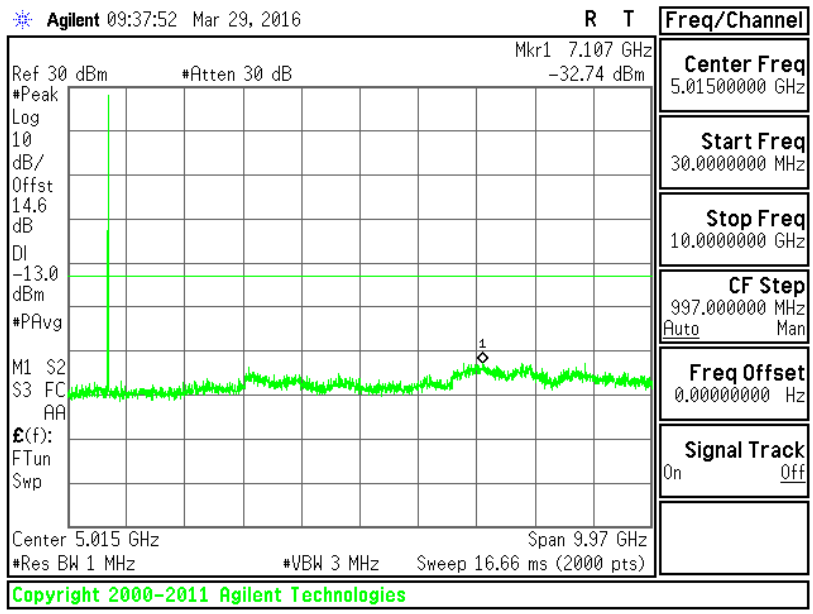
16QAM, (1.4 MHz BAND WIDTH)



MID, RB1-0, 30 TO 10000 MHz

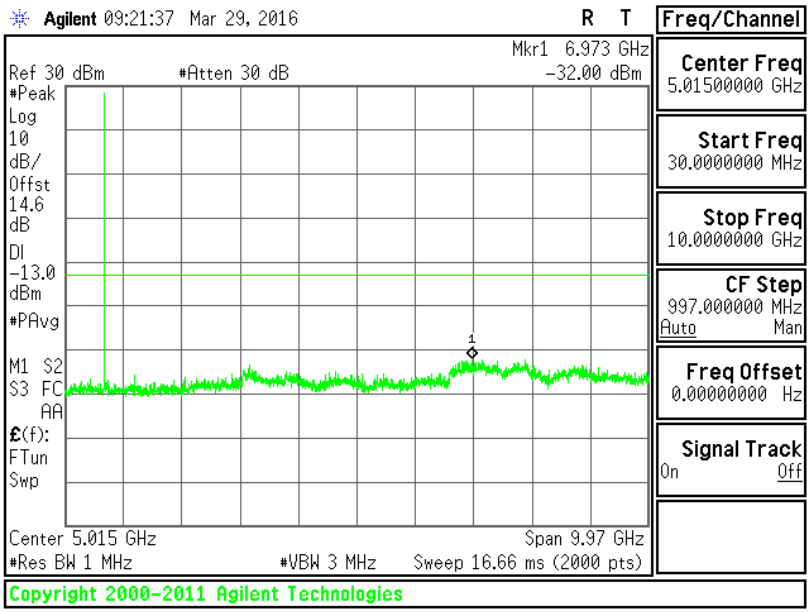


HIGH, RB1-0, 30 TO 10000 MHz

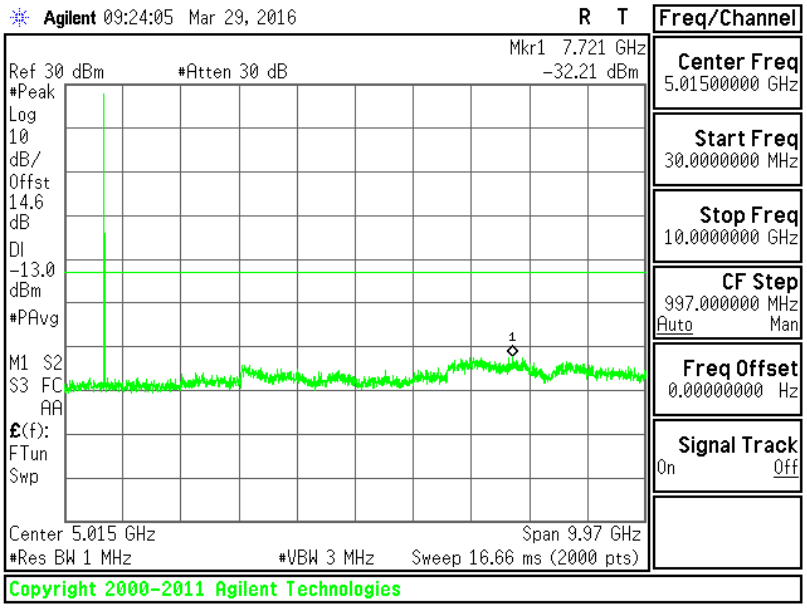


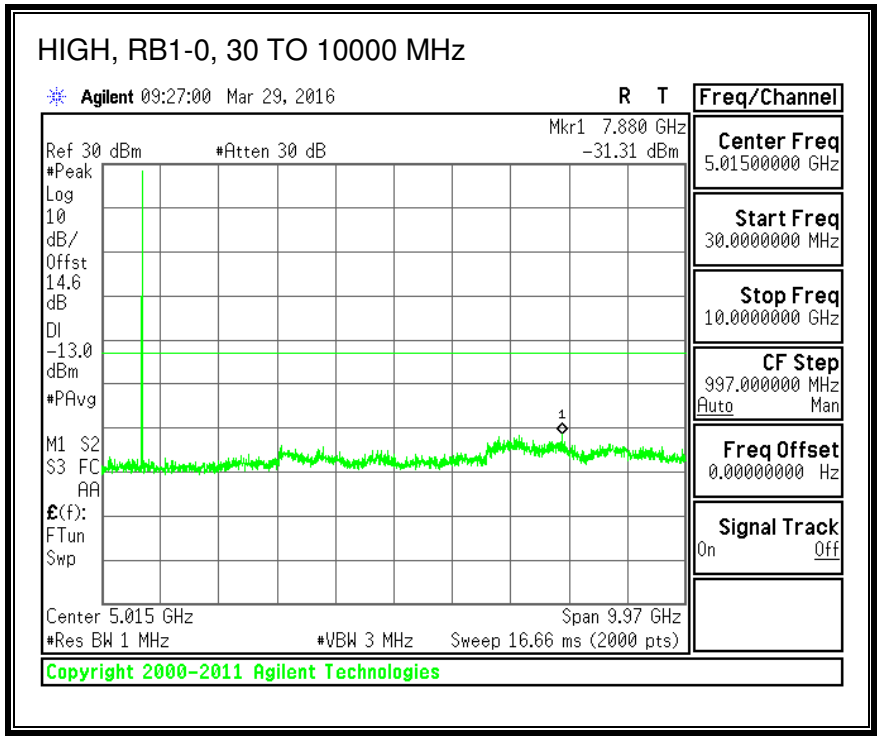
QPSK, (3.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 10000 MHz

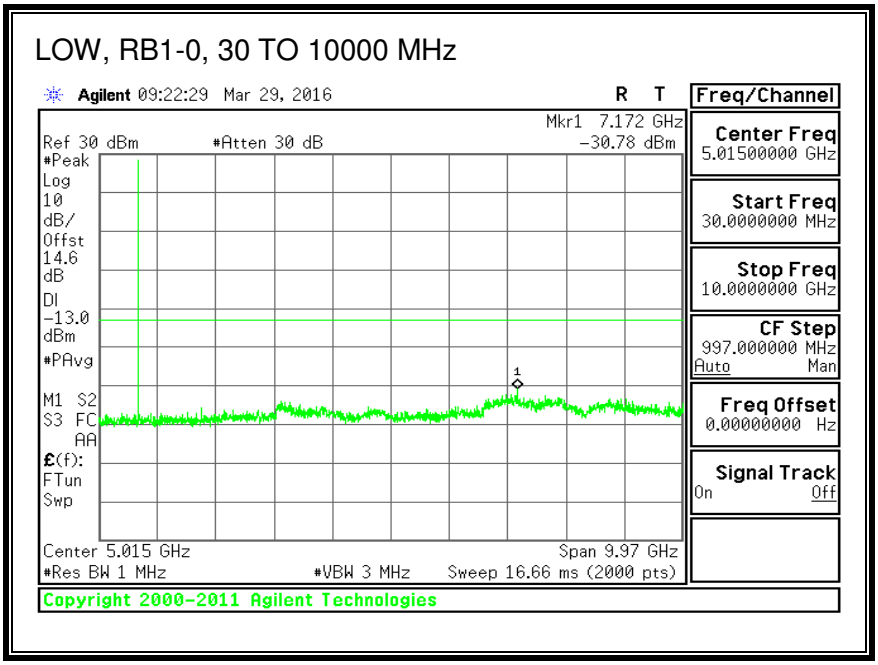


MID, RB1-0, 30 TO 10000 MHz

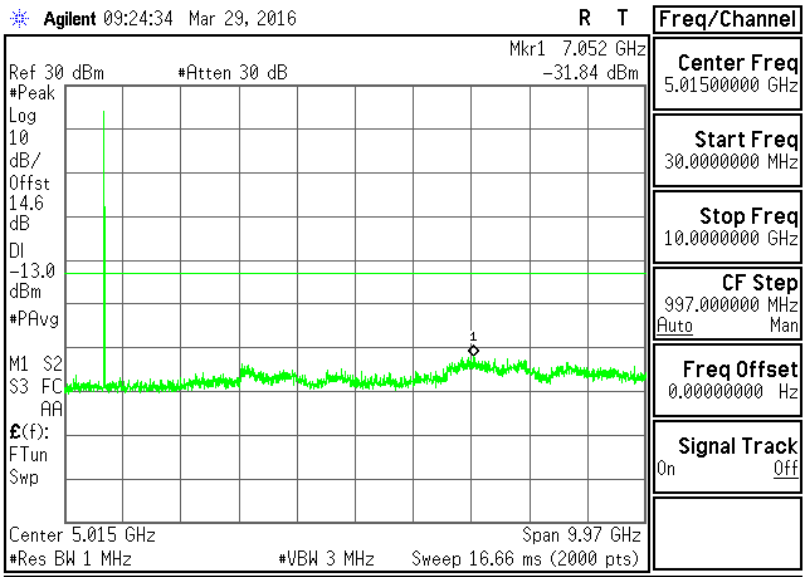




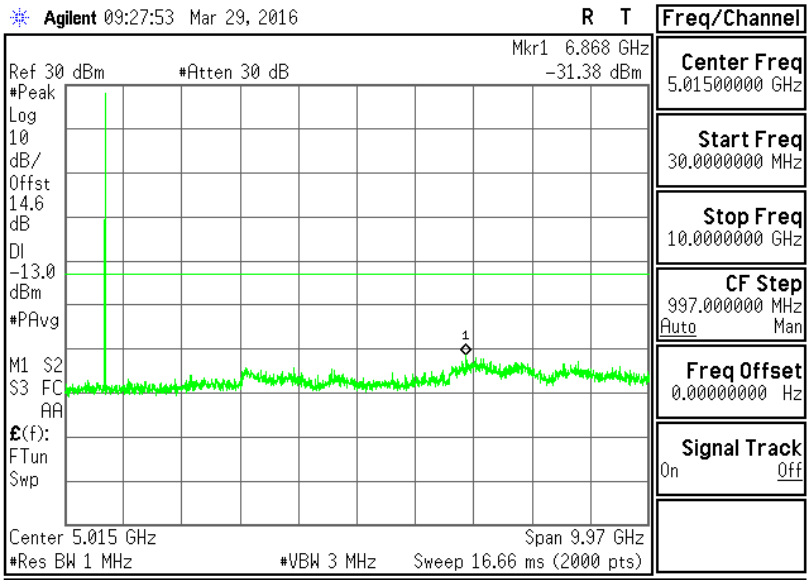
16QAM, (3.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 10000 MHz

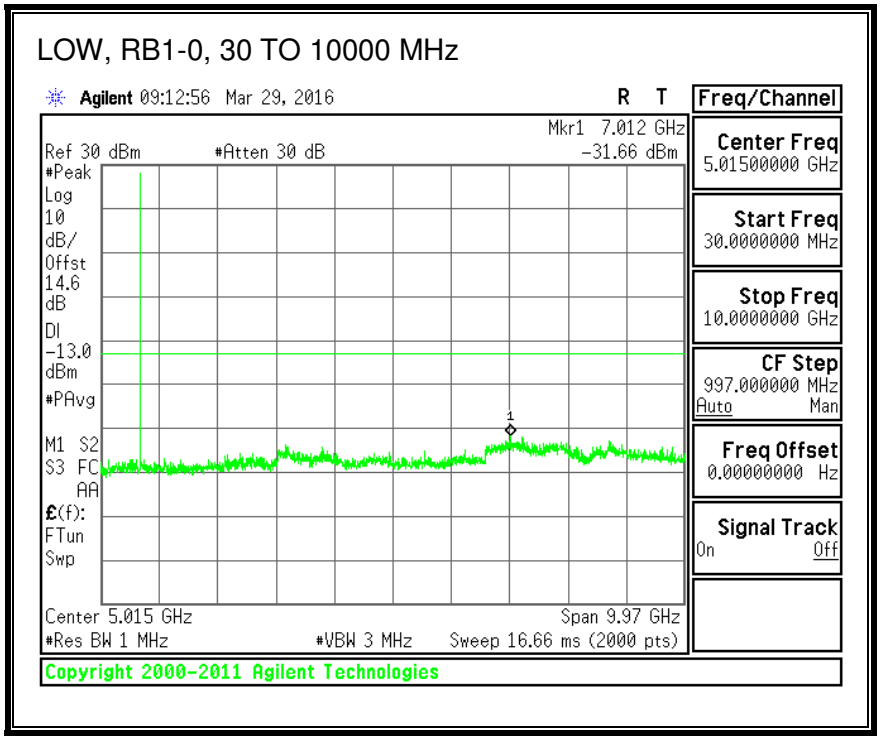


HIGH, RB1-0, 30 TO 10000 MHz

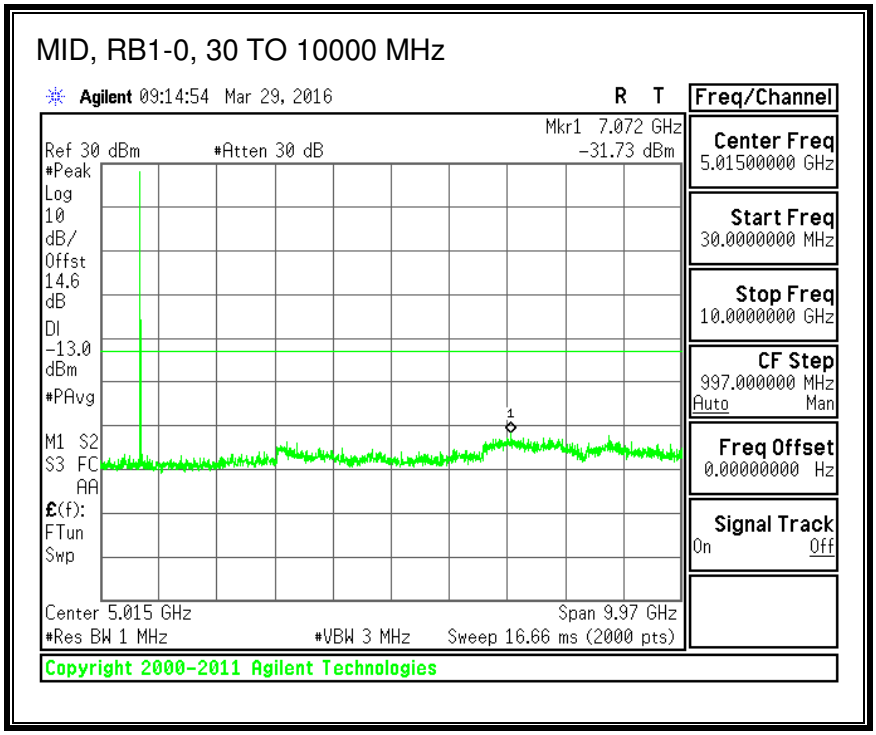


QPSK, (5.0 MHz BAND WIDTH)

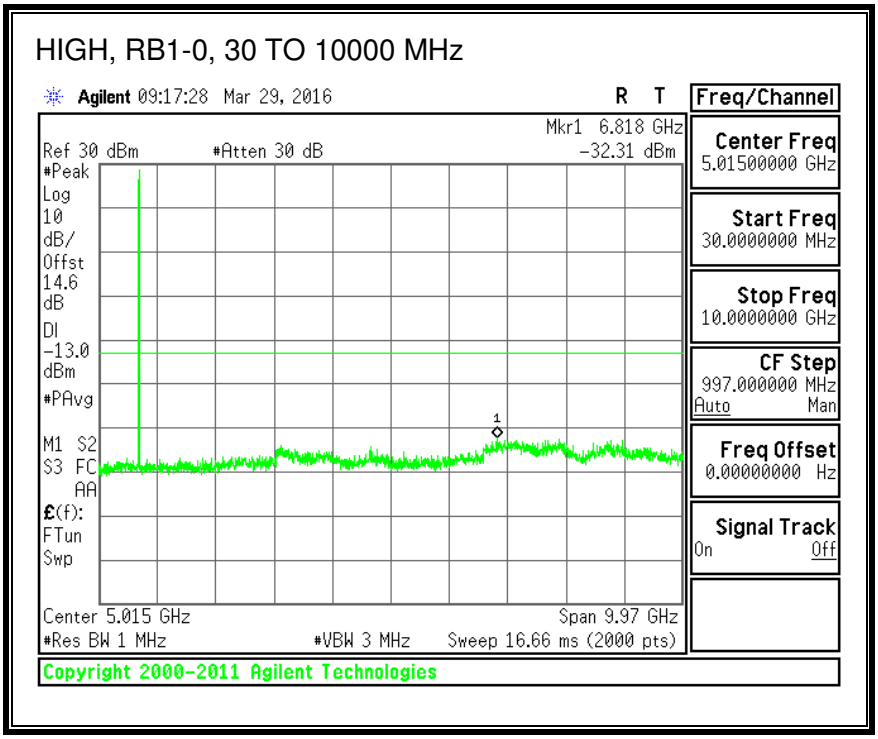
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

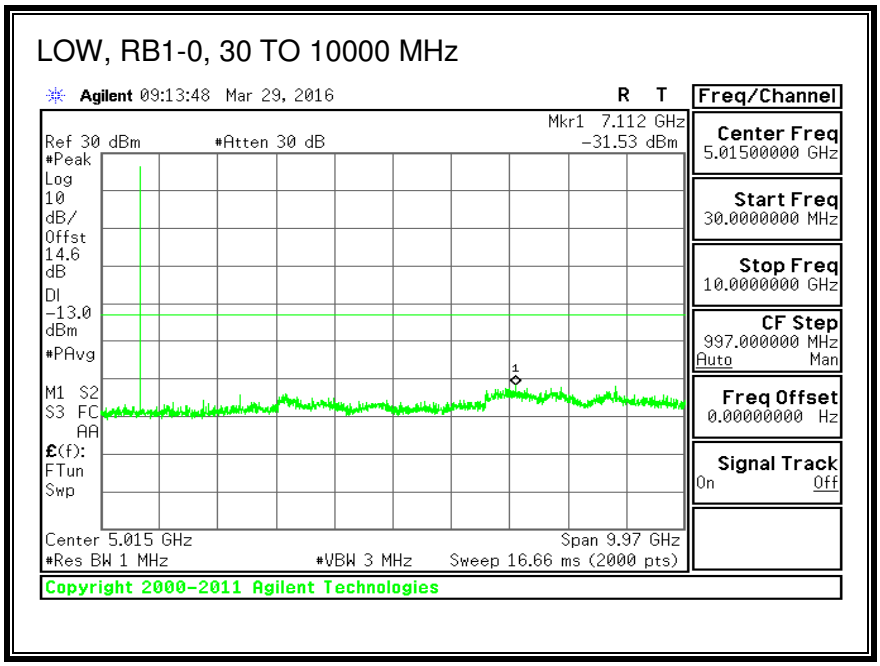


HIGH, RB1-0, 30 TO 10000 MHz

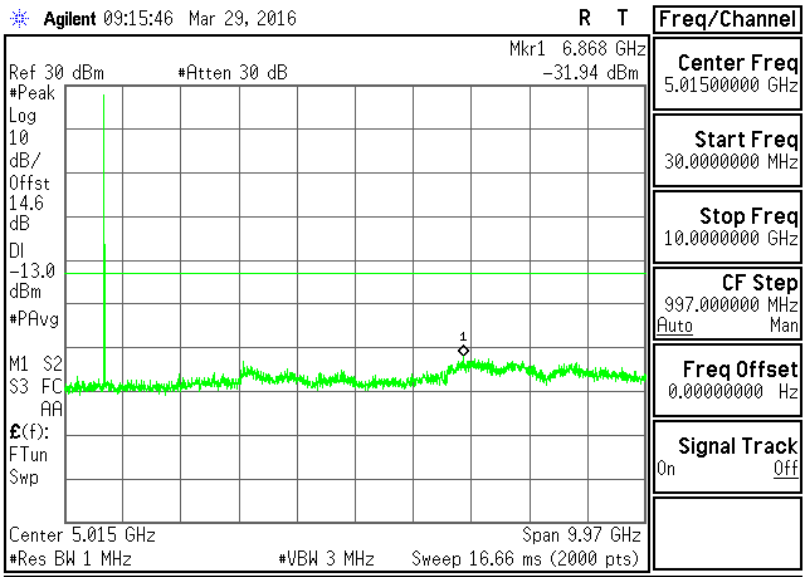


16QAM, (5.0 MHz BAND WIDTH)

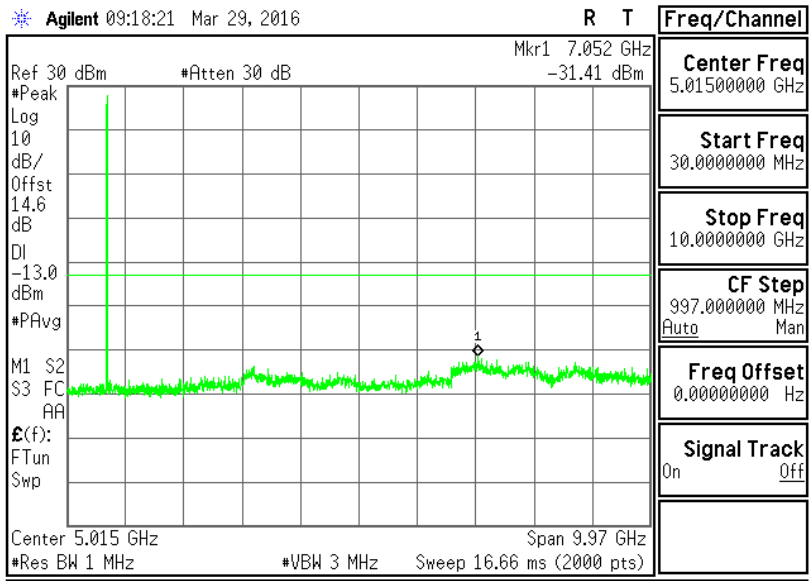
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

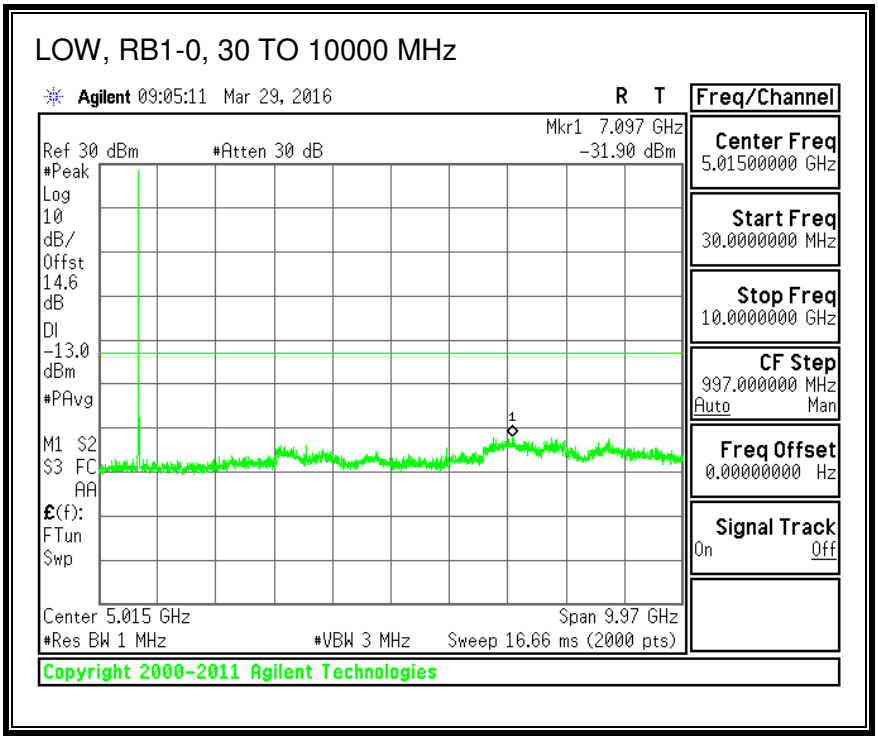


HIGH, RB1-0, 30 TO 10000 MHz

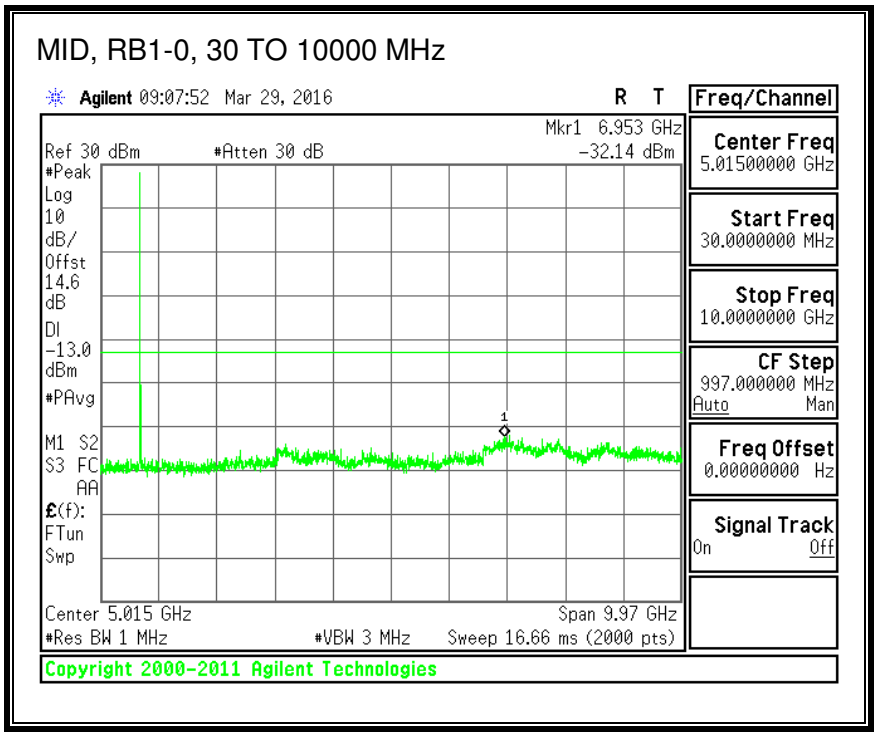


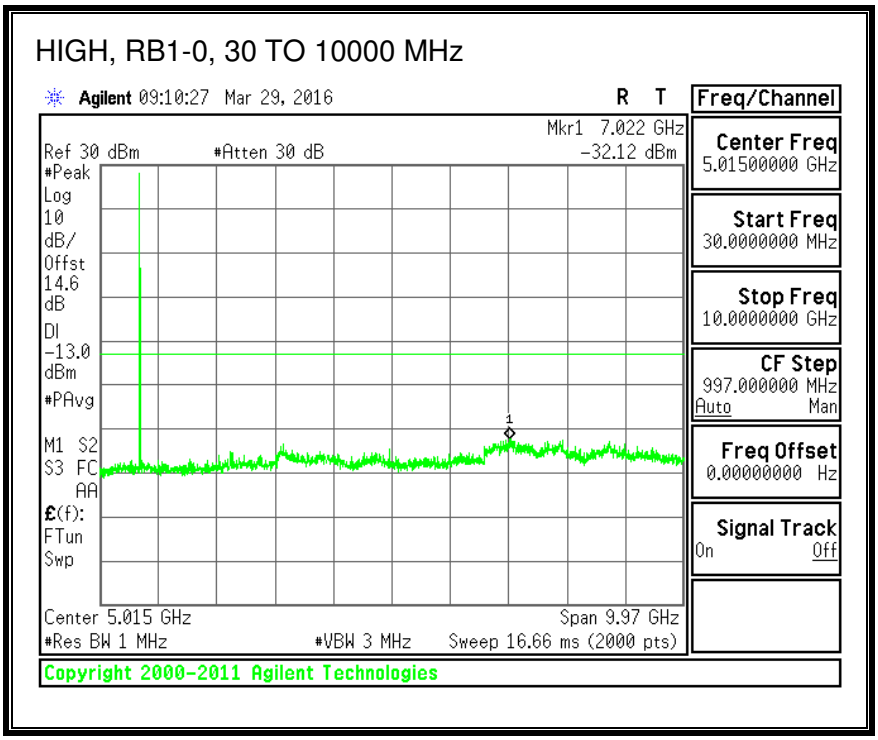
QPSK, (10.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 10000 MHz

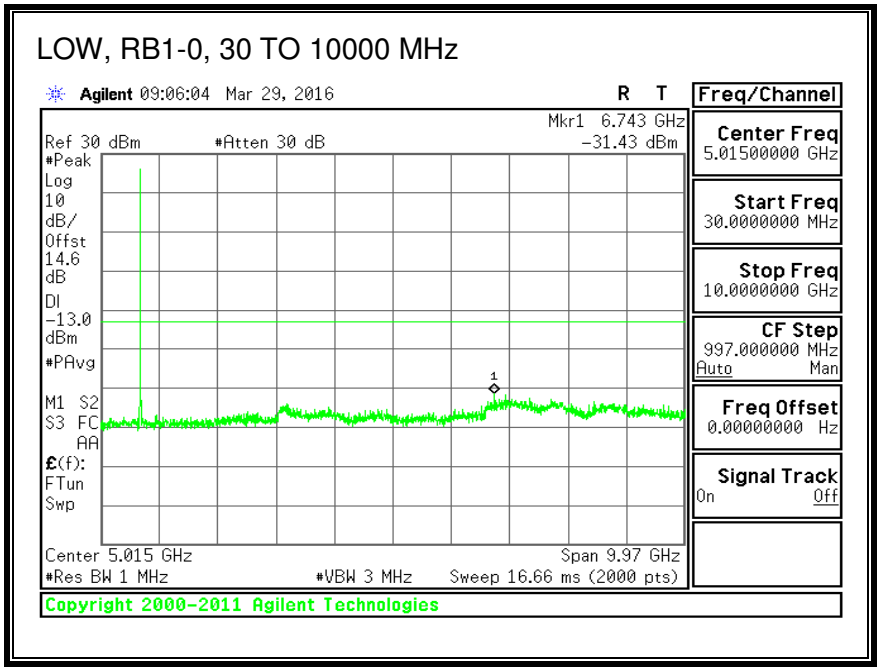


MID, RB1-0, 30 TO 10000 MHz

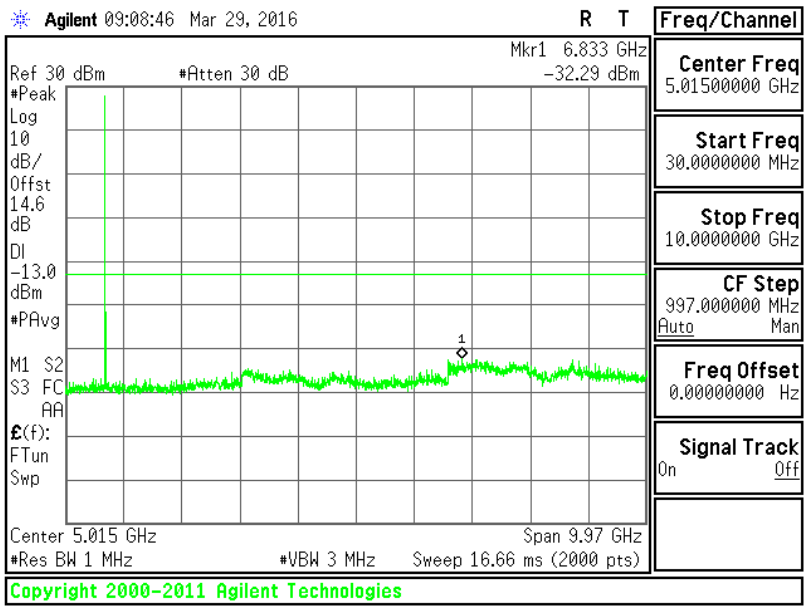




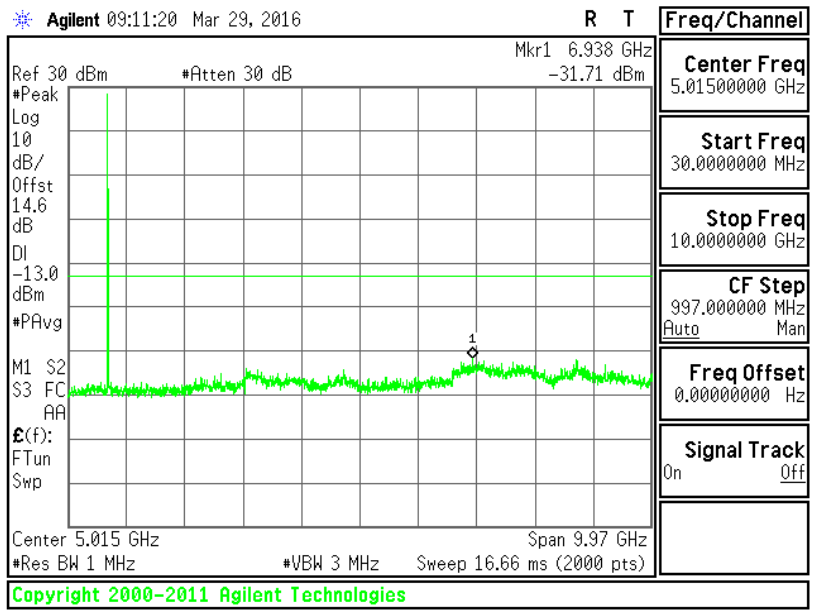
16QAM, (10.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 10000 MHz



HIGH, RB1-0, 30 TO 10000 MHz

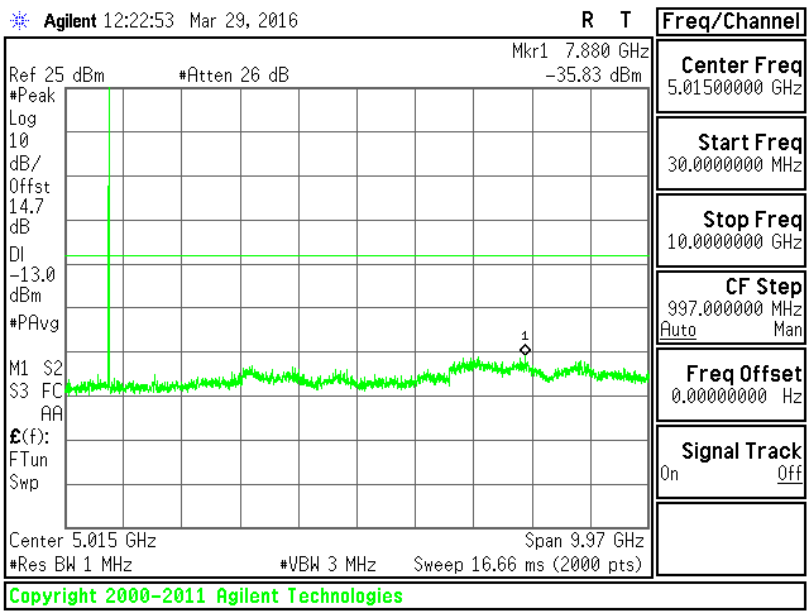


8.3.6. LTE BAND 13

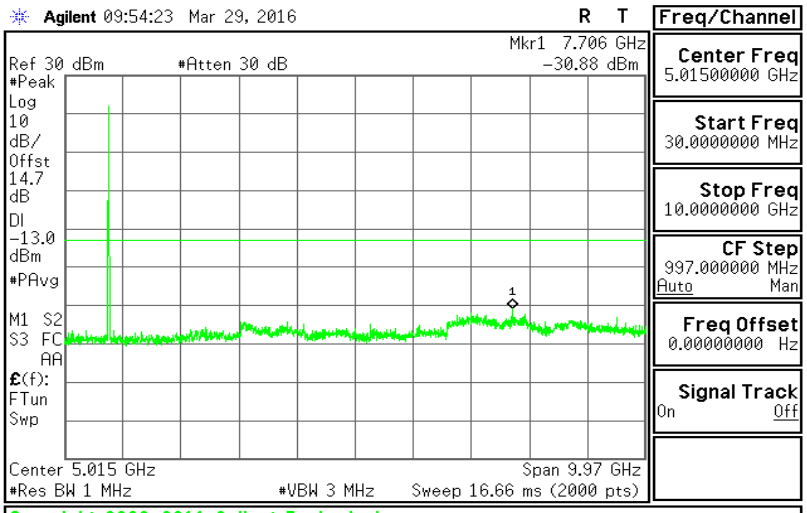
ID:	38806	Date:	3/29/16

QPSK, (5.0 MHz BAND WIDTH)

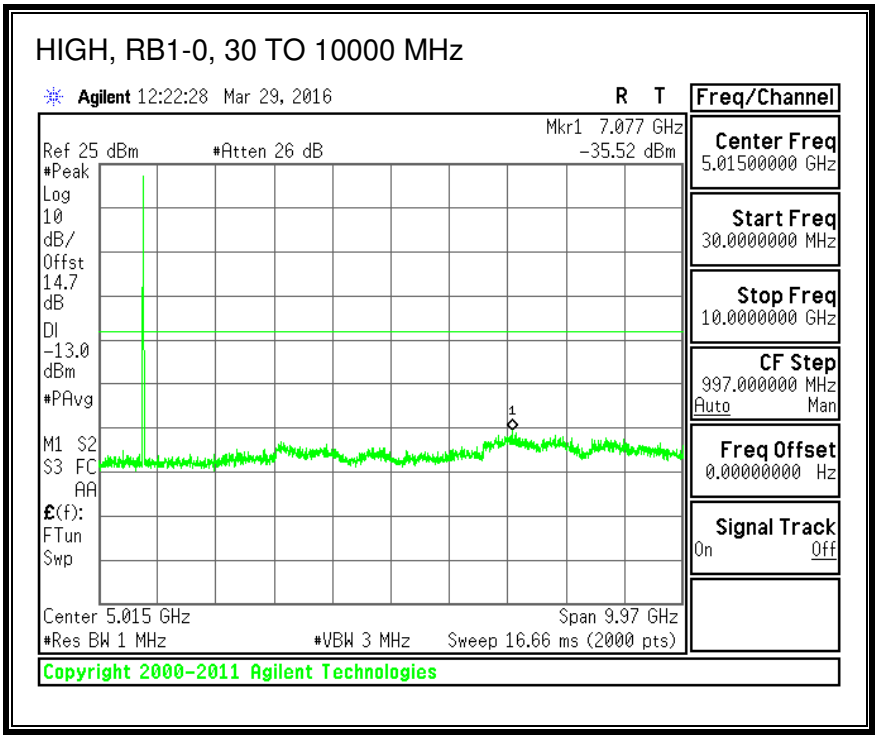
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

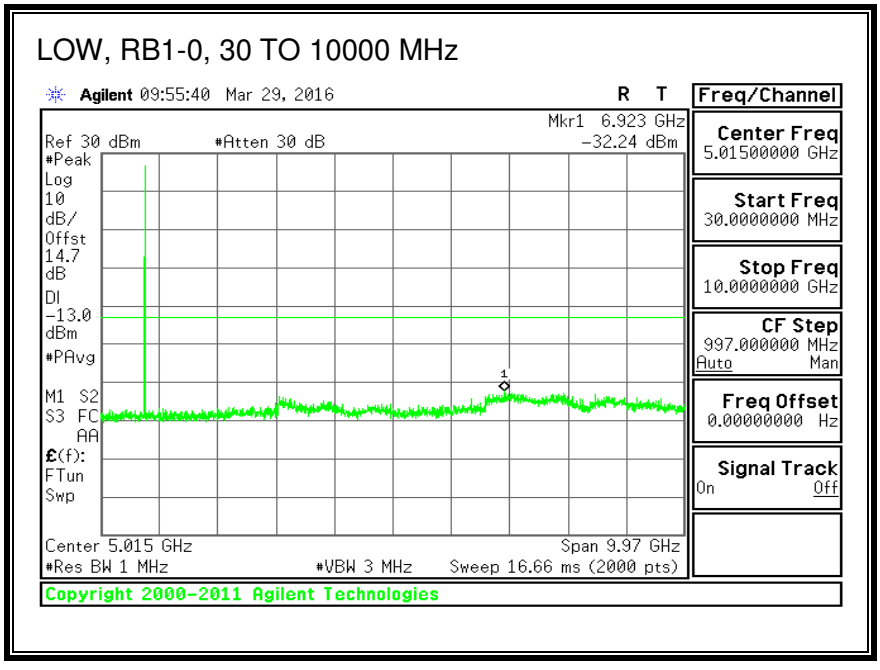


HIGH, RB1-0, 30 TO 10000 MHz

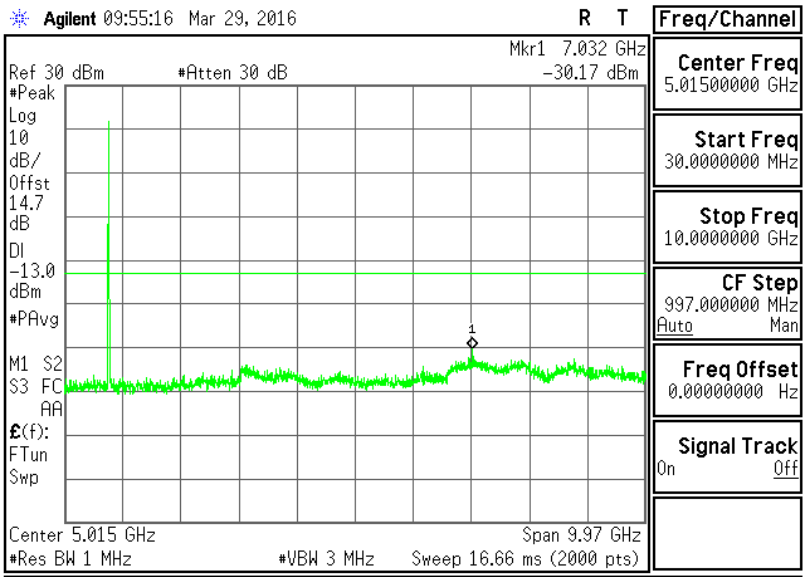


16QAM, (5.0 MHz BAND WIDTH)

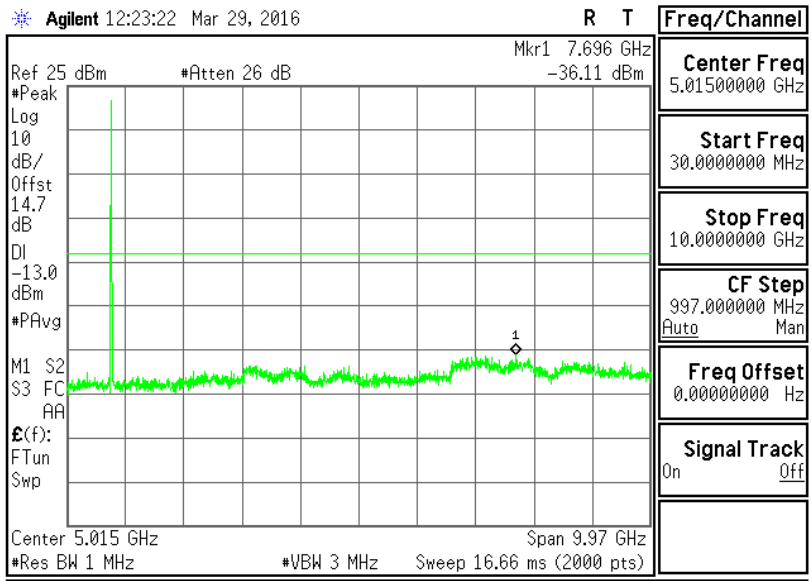
LOW, RB1-0, 30 TO 10000 MHz



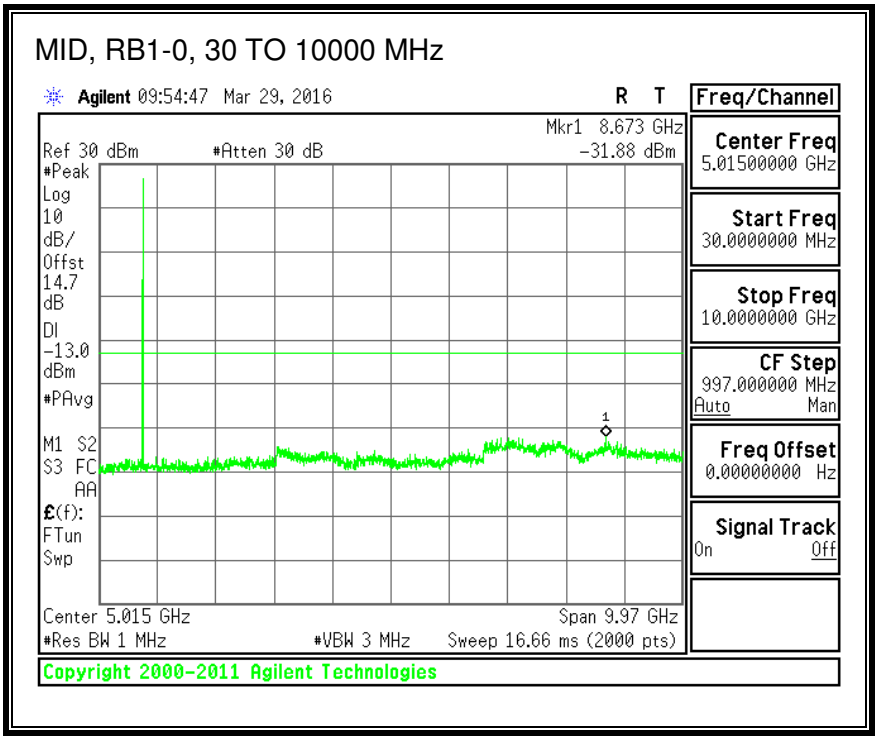
MID, RB1-0, 30 TO 10000 MHz



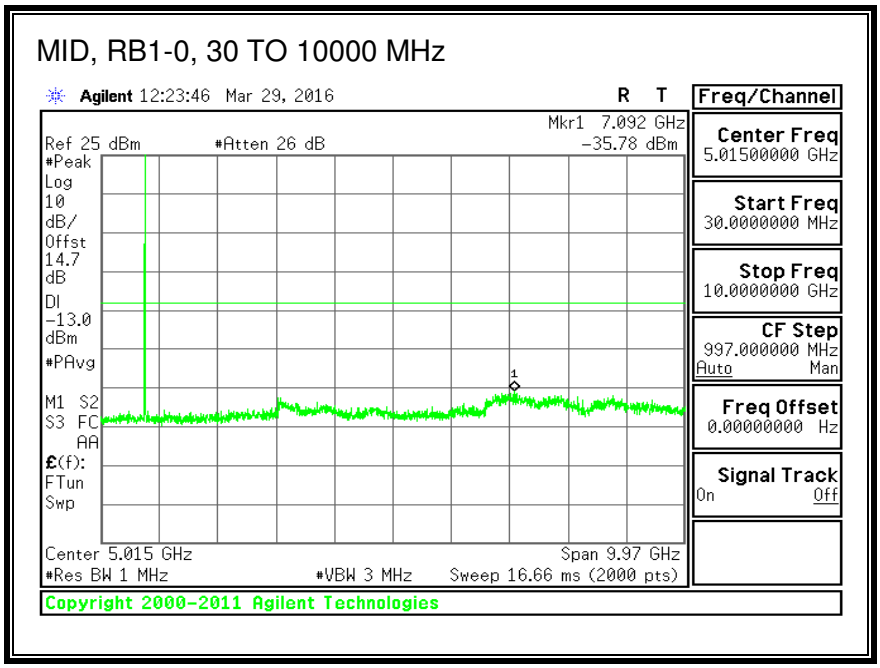
HIGH, RB1-0, 30 TO 10000 MHz



QPSK, (10.0 MHz BAND WIDTH)



16QAM, (10.0 MHz BAND WIDTH)

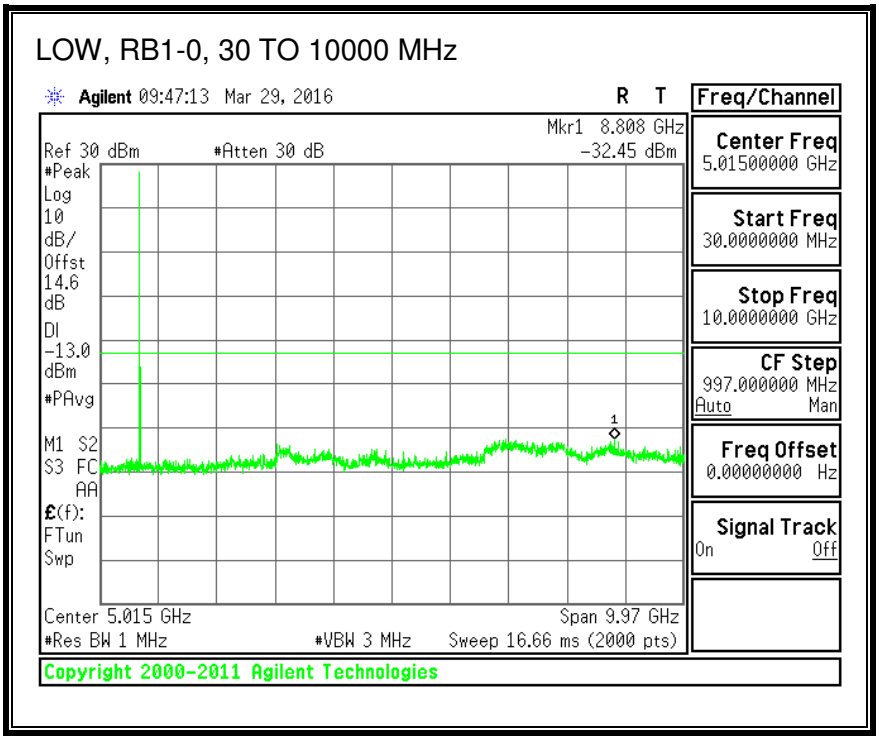


8.3.7. LTE BAND 17

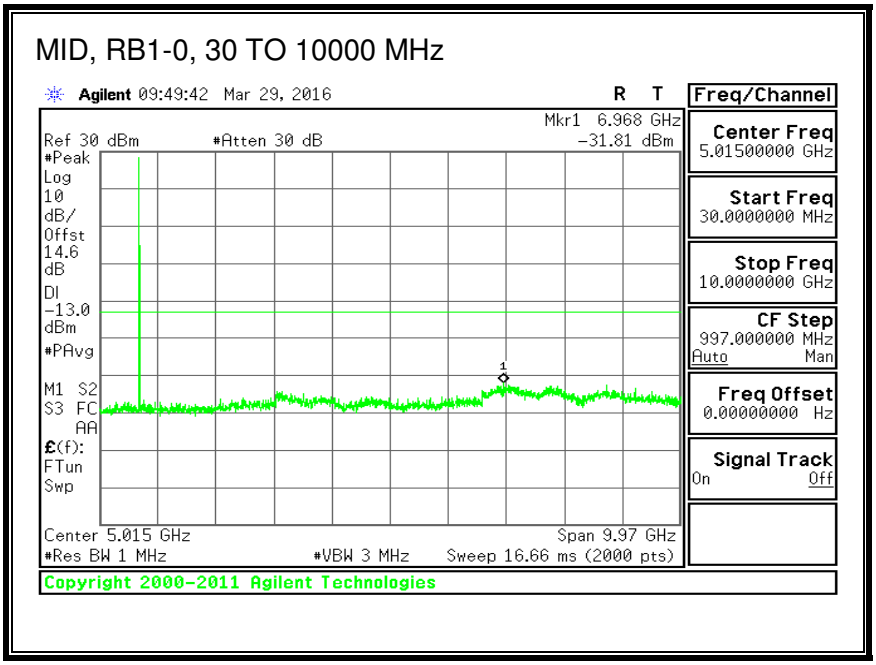
ID:	38806	Date:	3/29/16

QPSK, (5.0 MHz BAND WIDTH)

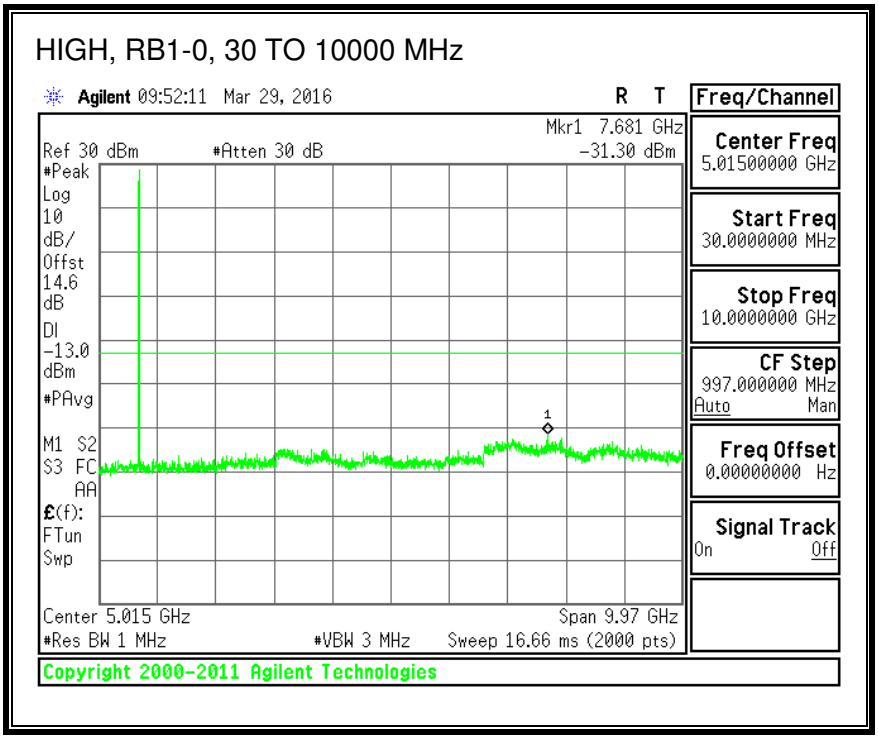
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

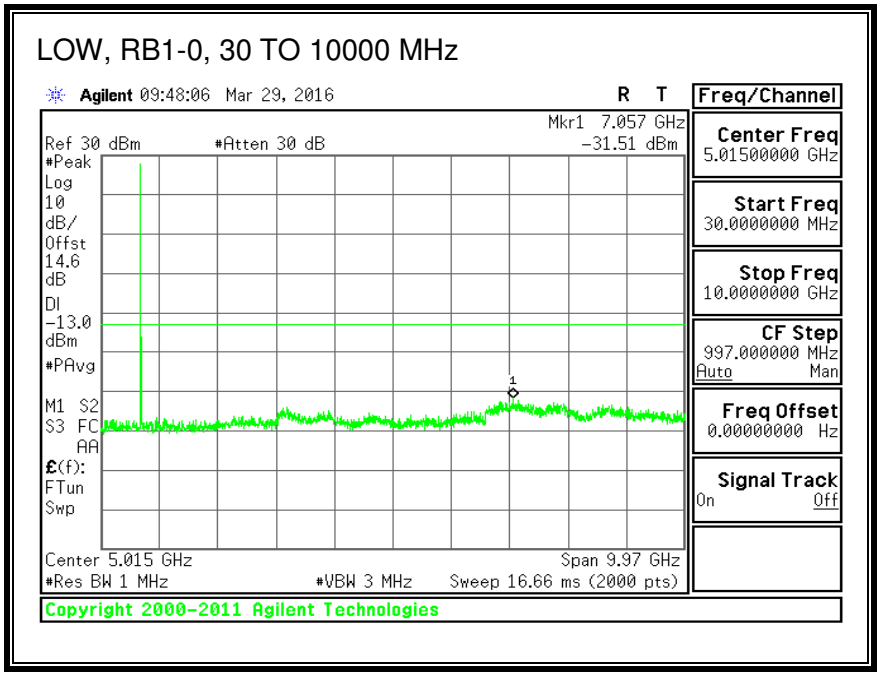


HIGH, RB1-0, 30 TO 10000 MHz

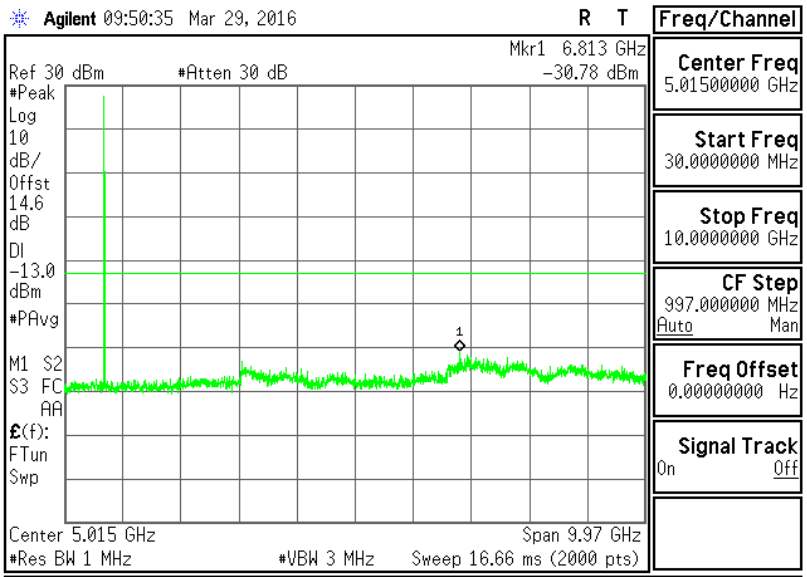


16QAM, (5.0 MHz BAND WIDTH)

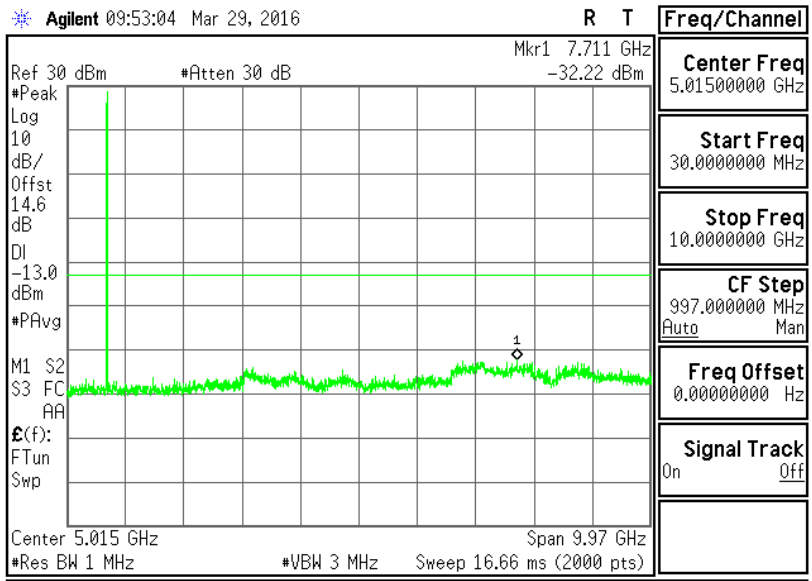
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

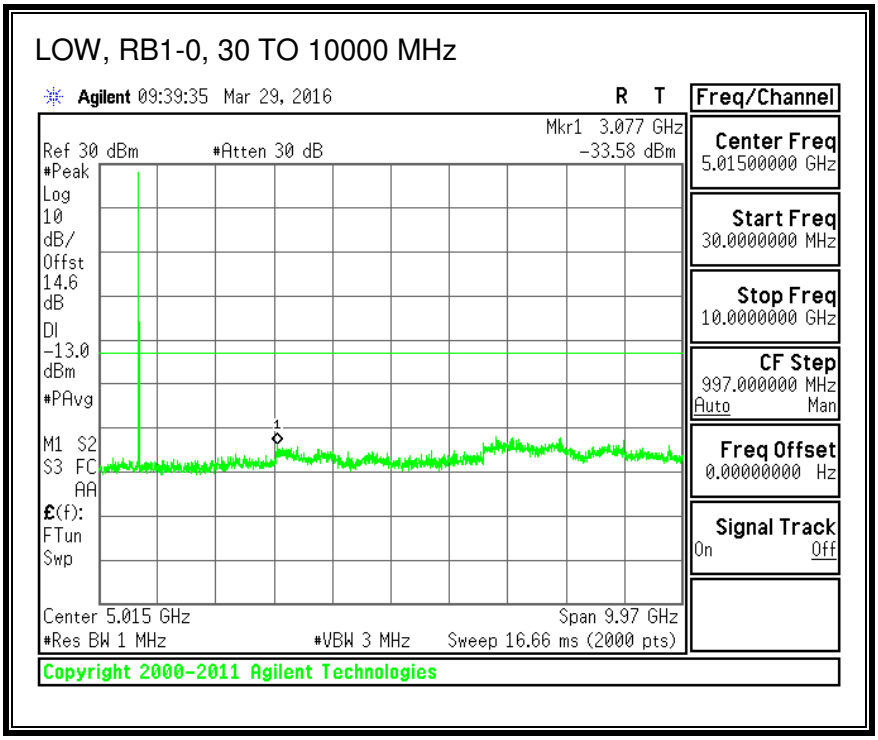


HIGH, RB1-0, 30 TO 10000 MHz

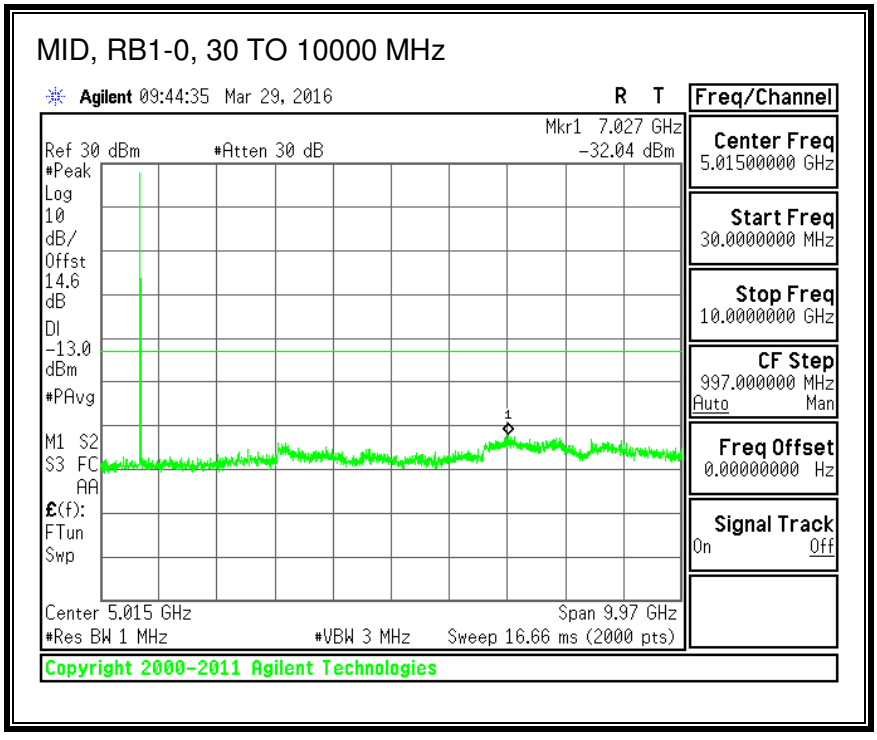


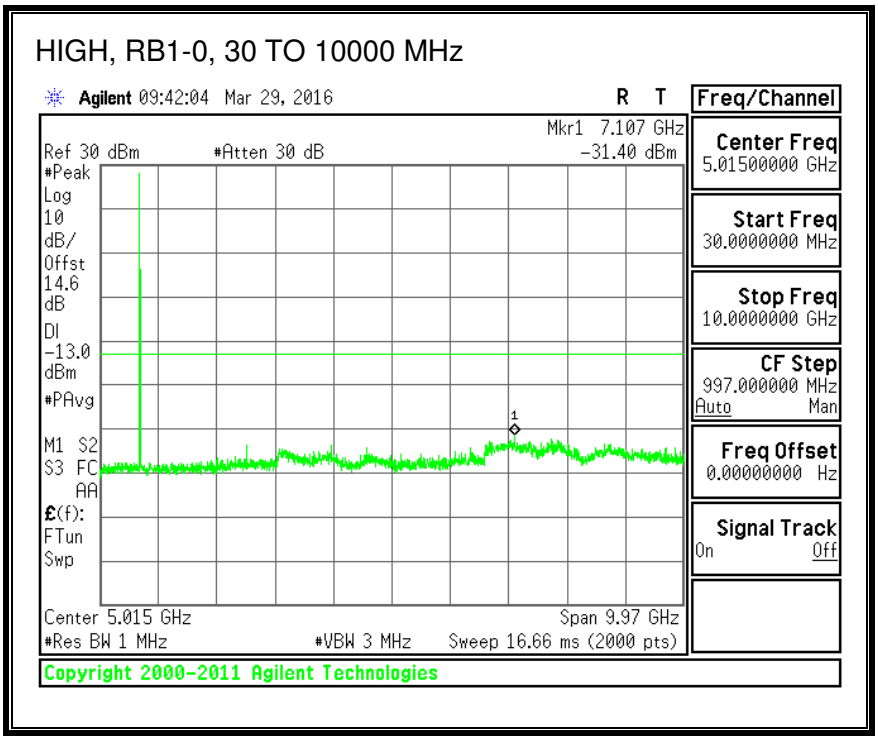
QPSK, (10.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 10000 MHz

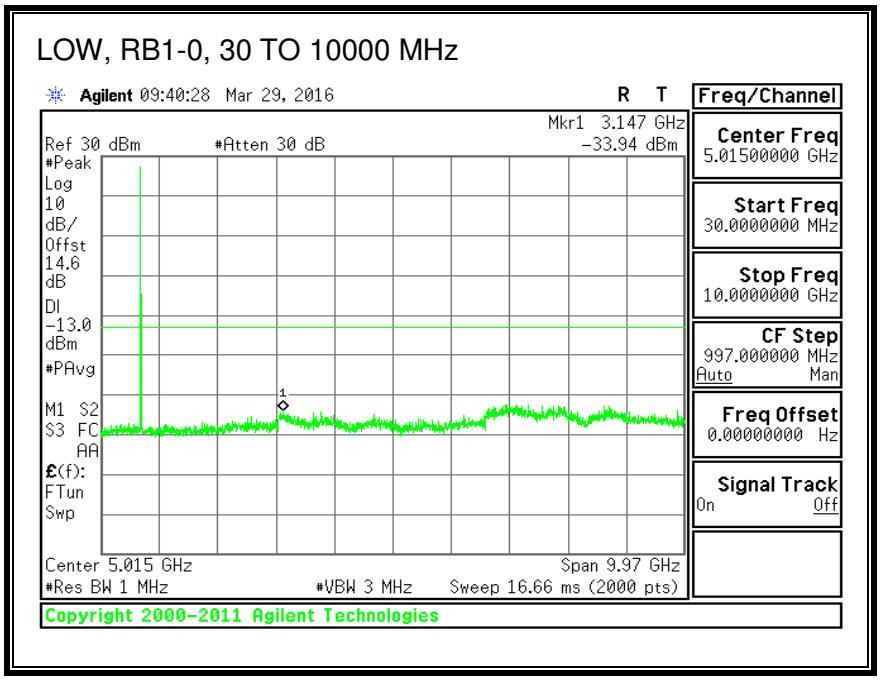


MID, RB1-0, 30 TO 10000 MHz

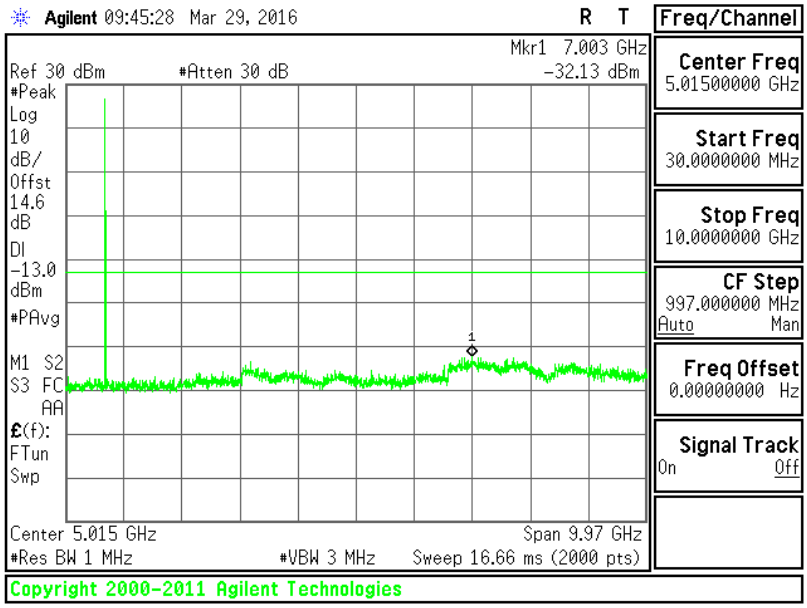




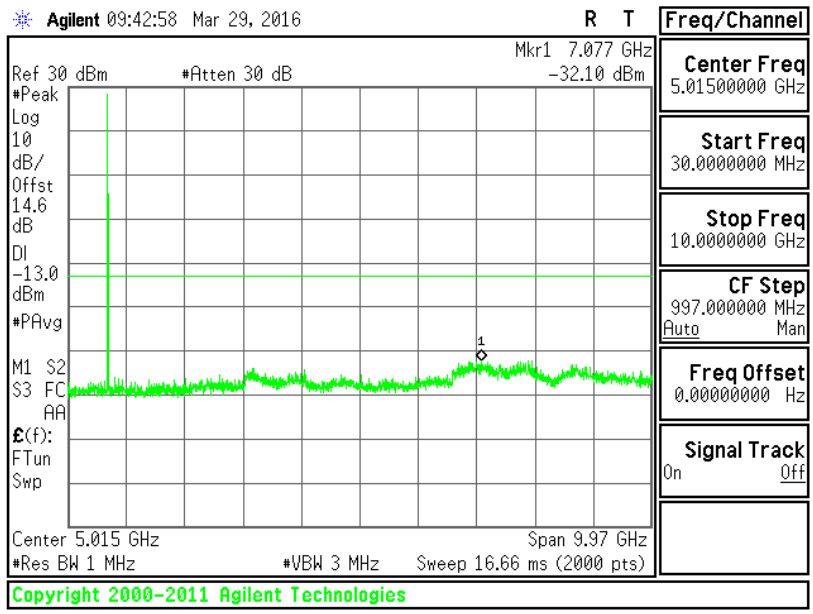
16QAM, (10.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 10000 MHz



HIGH, RB1-0, 30 TO 10000 MHz

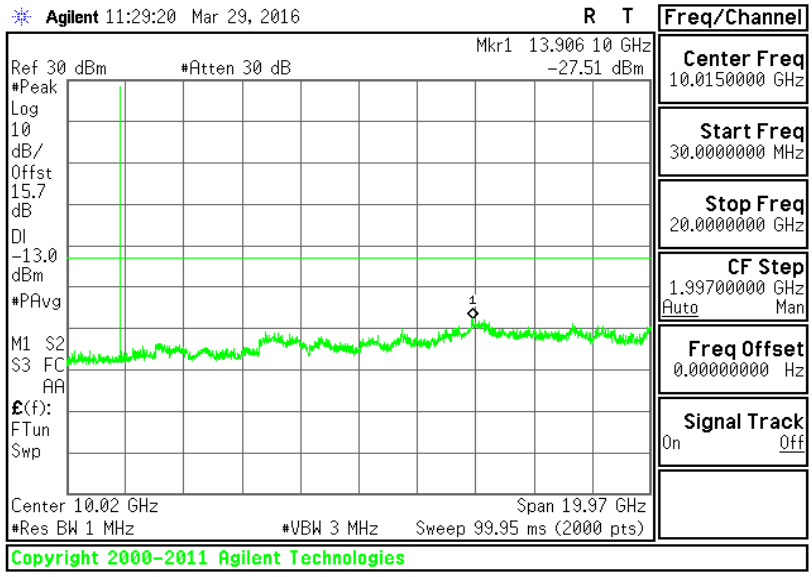


8.3.8. LTE BAND 25

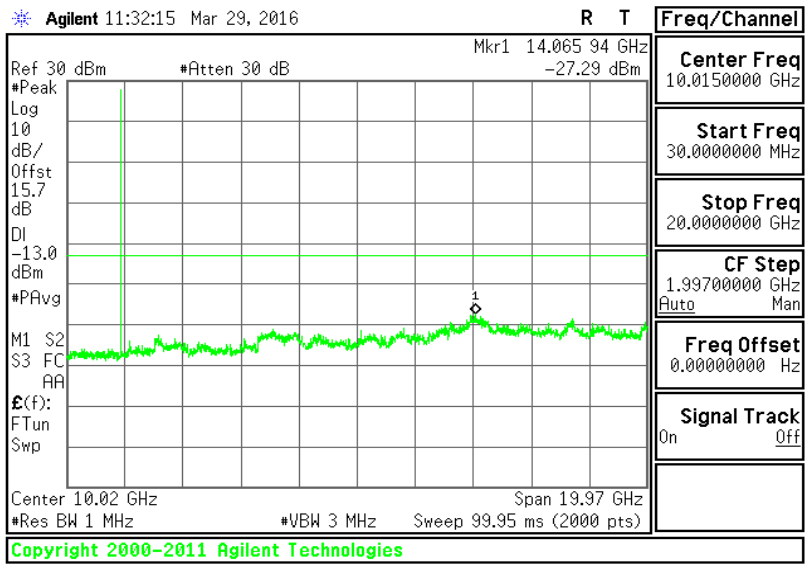
ID:	38806	Date:	3/29/16

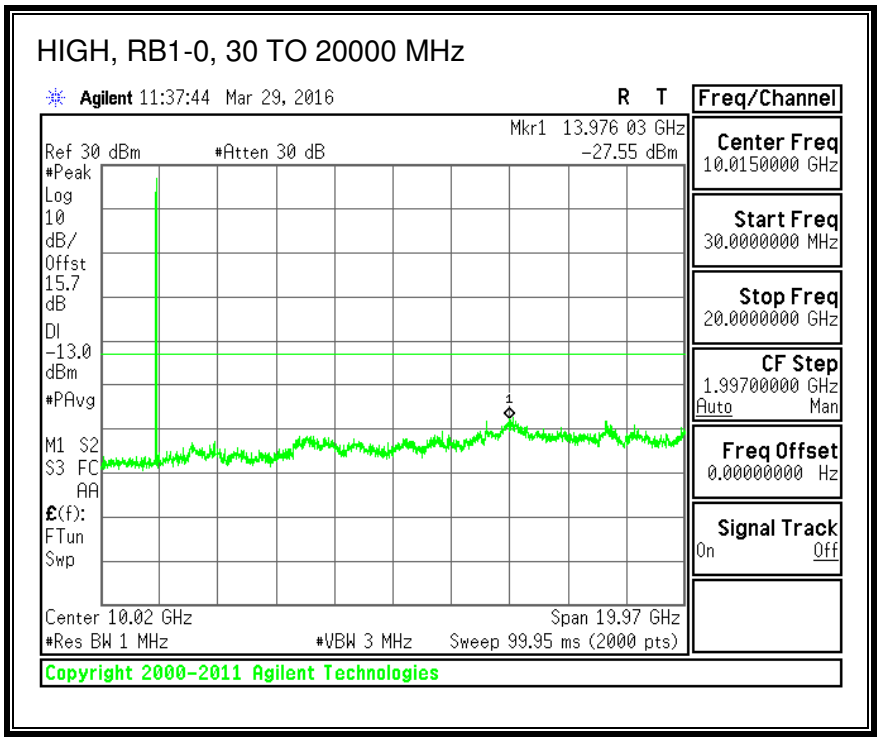
QPSK, (1.4 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 20000 MHz

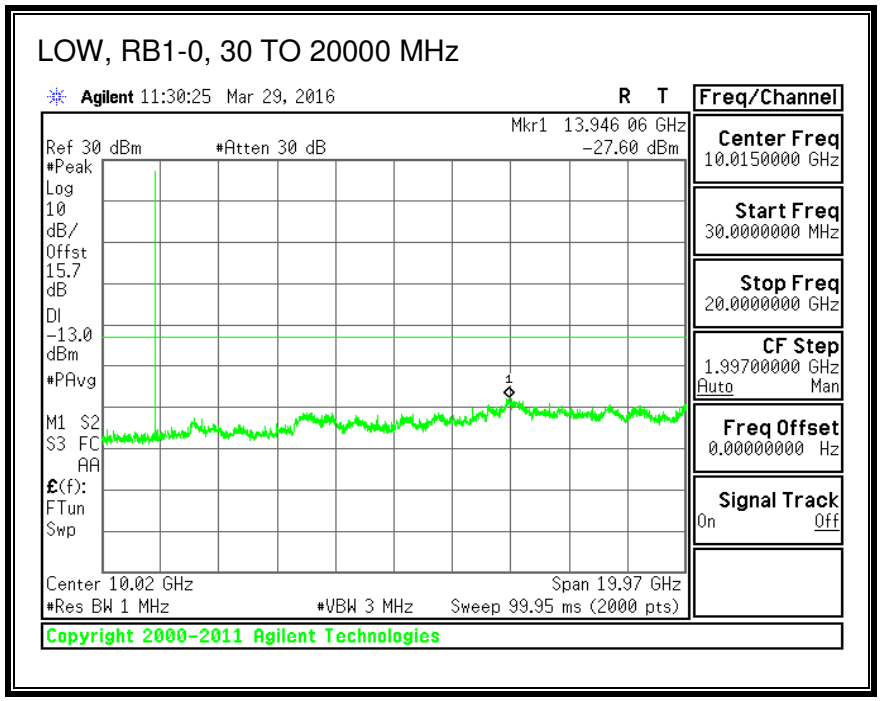


MID, RB1-0, 30 TO 20000 MHz

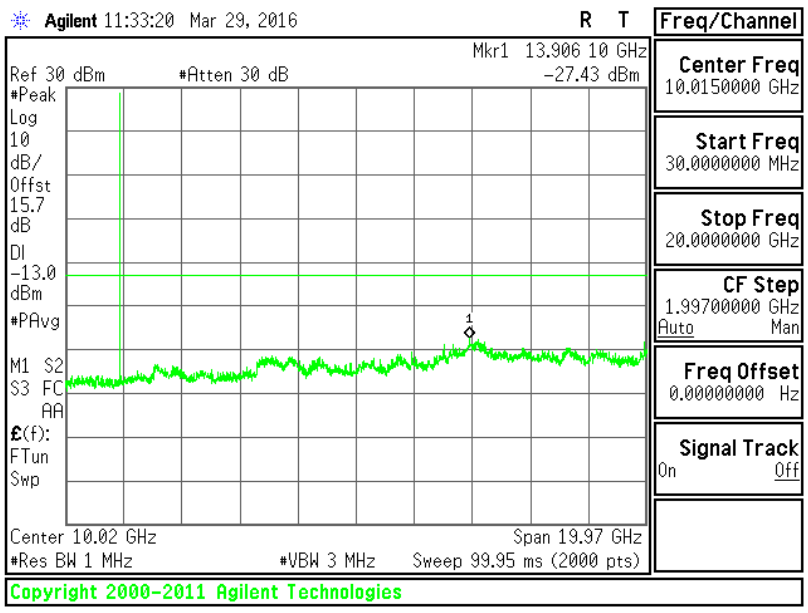




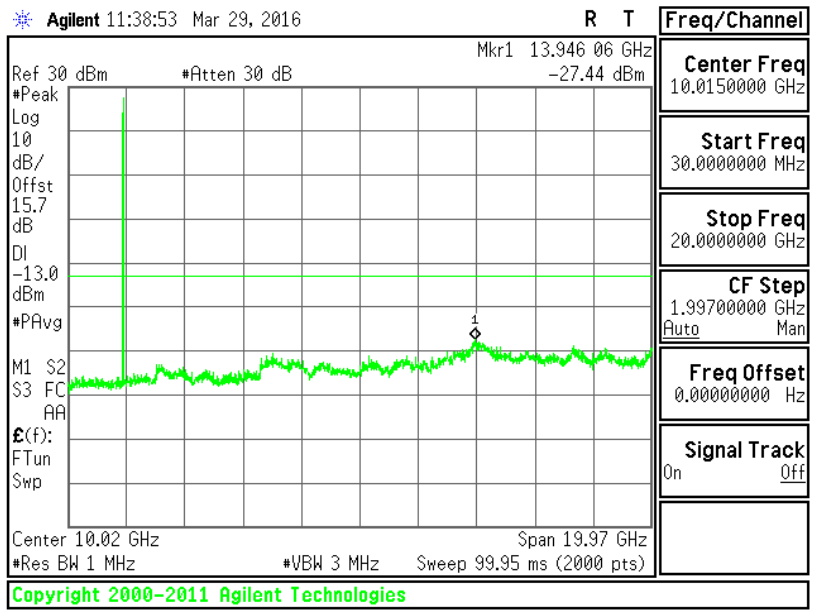
16QAM, (1.4 MHz BAND WIDTH)



MID, RB1-0, 30 TO 20000 MHz

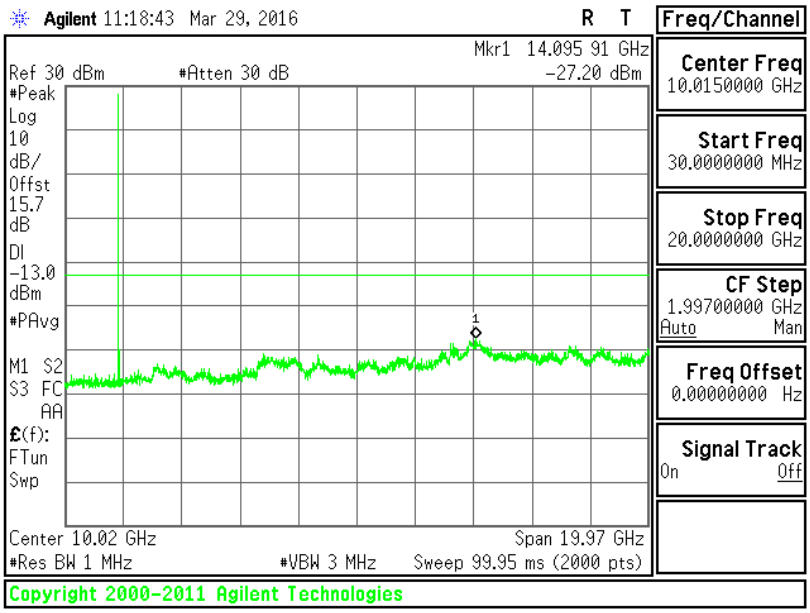


HIGH, RB1-0, 30 TO 20000 MHz

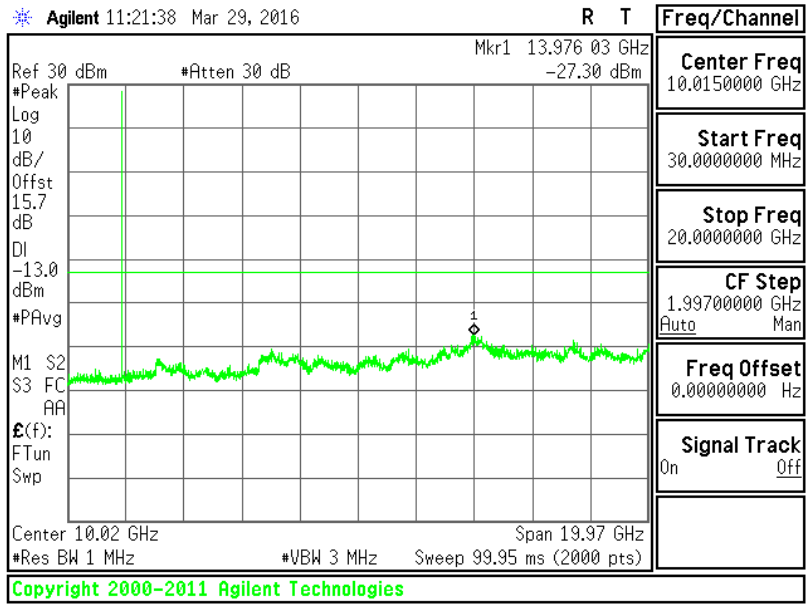


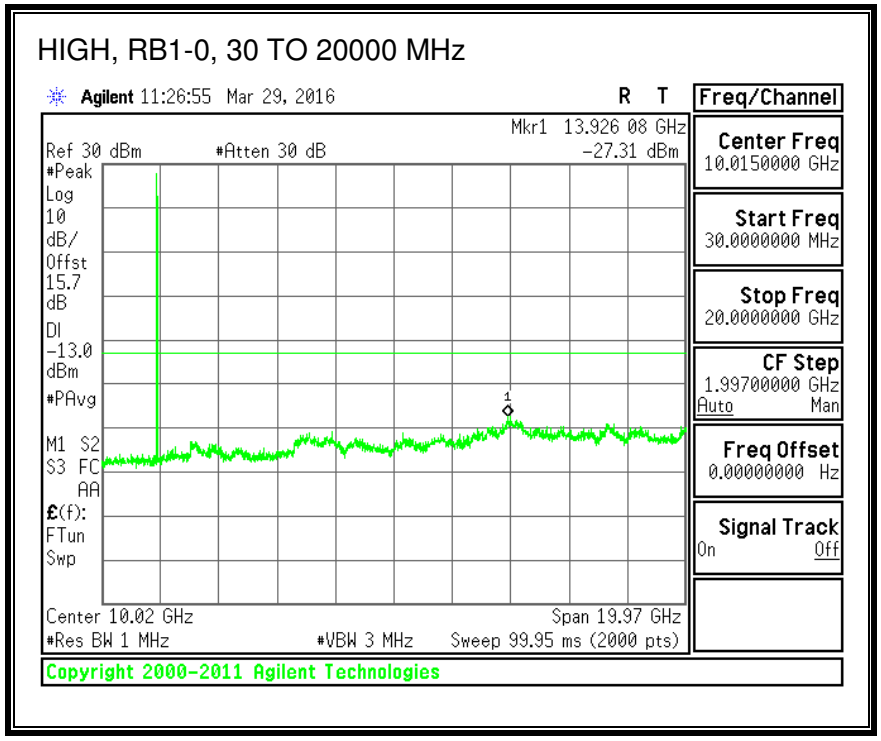
QPSK, (3.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 20000 MHz

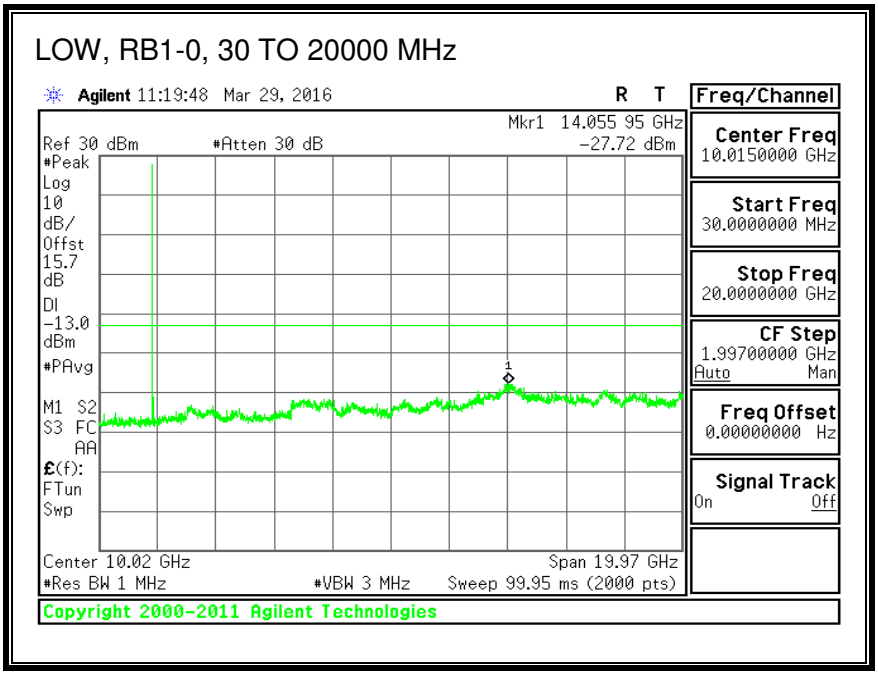


MID, RB1-0, 30 TO 20000 MHz

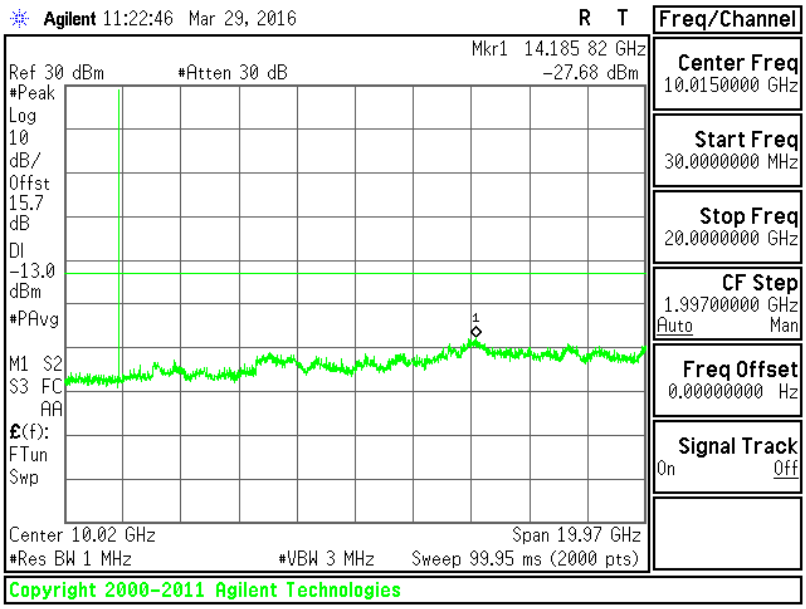




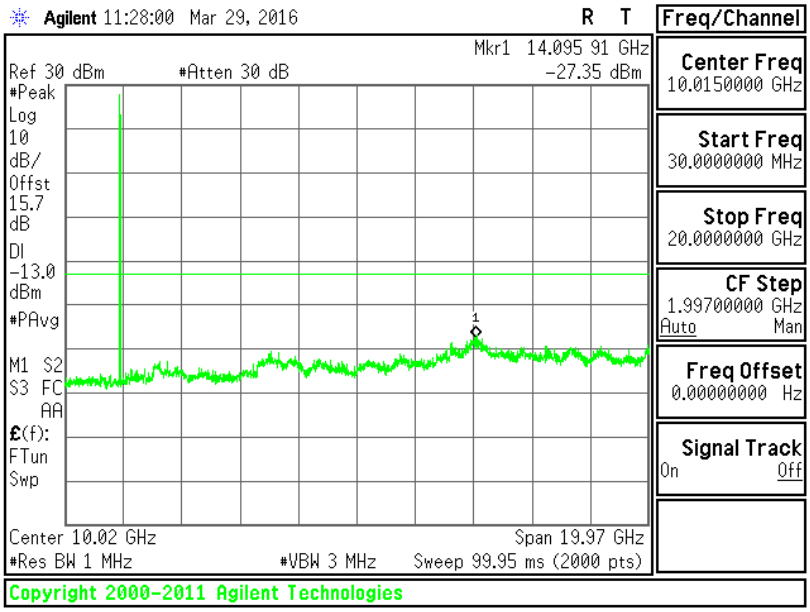
16QAM, (3.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 20000 MHz

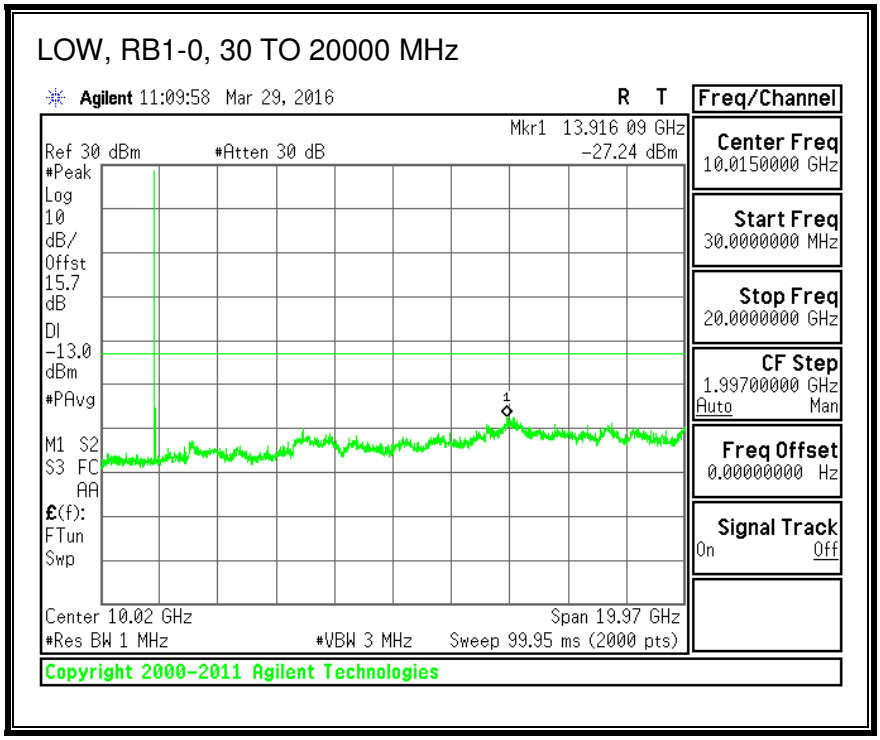


HIGH, RB1-0, 30 TO 20000 MHz

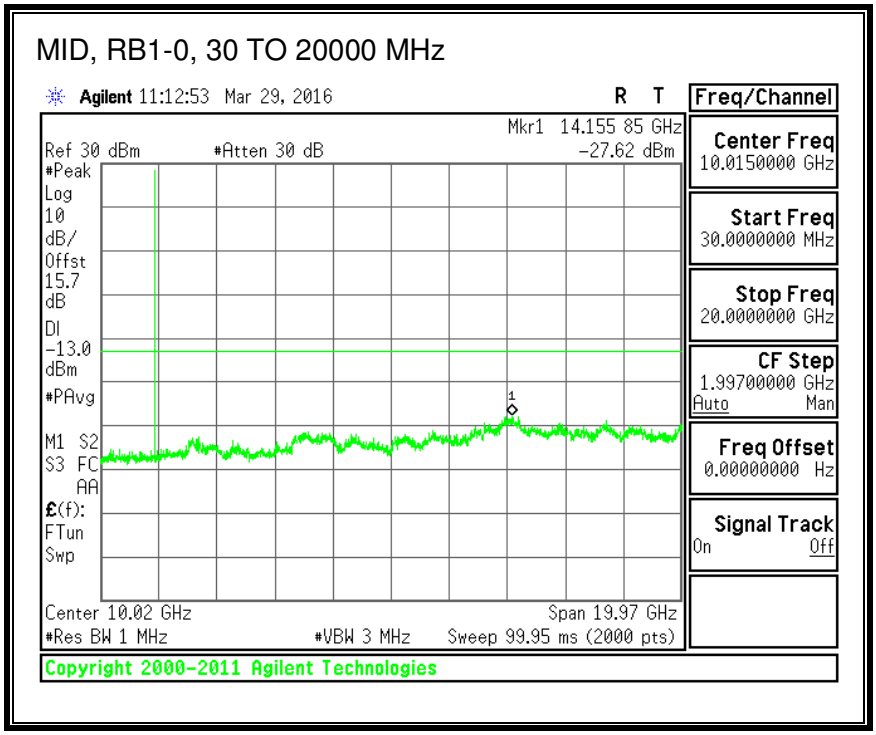


QPSK, (5.0 MHz BAND WIDTH)

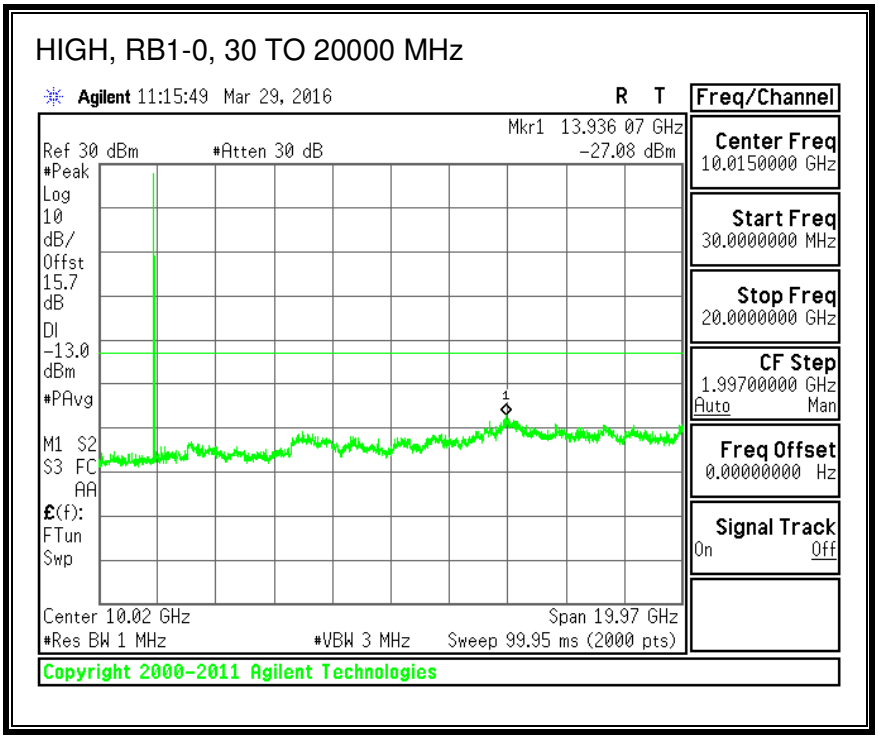
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

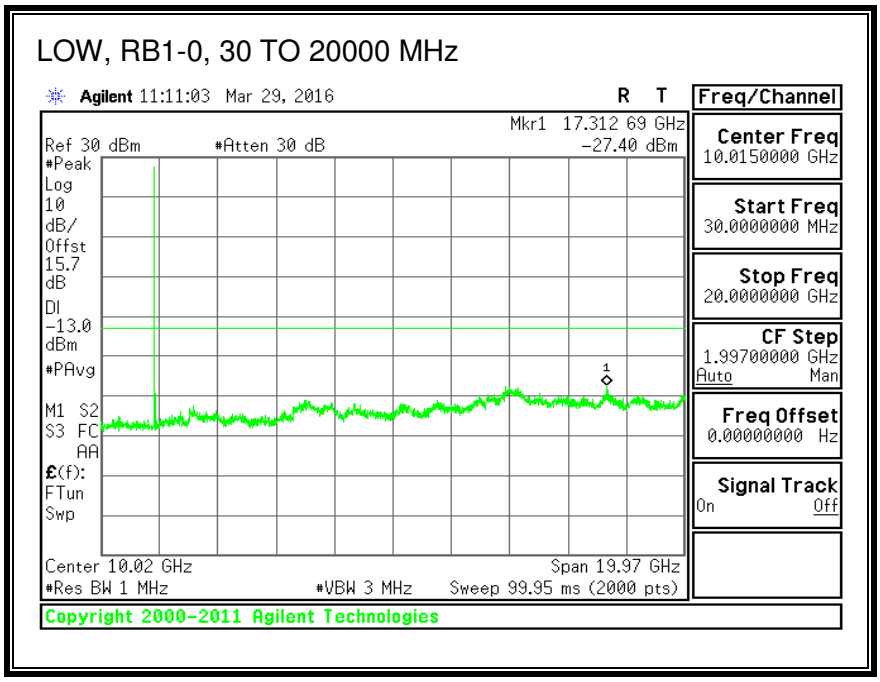


HIGH, RB1-0, 30 TO 20000 MHz

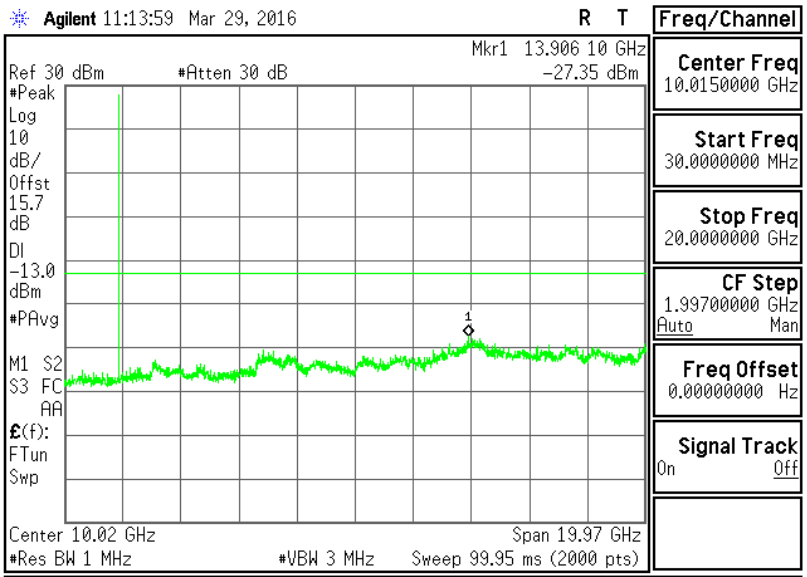


16QAM, (5.0 MHz BAND WIDTH)

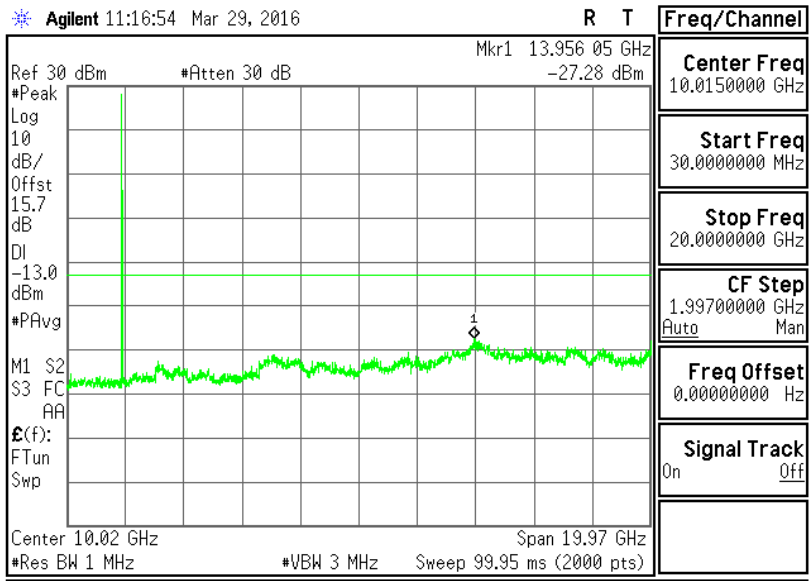
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

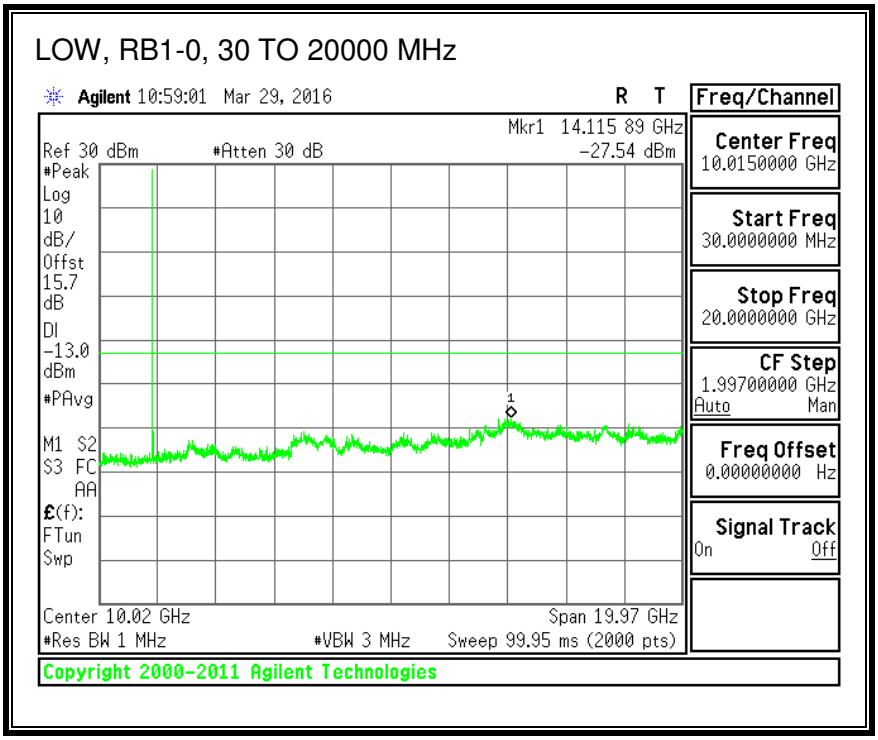


HIGH, RB1-0, 30 TO 20000 MHz

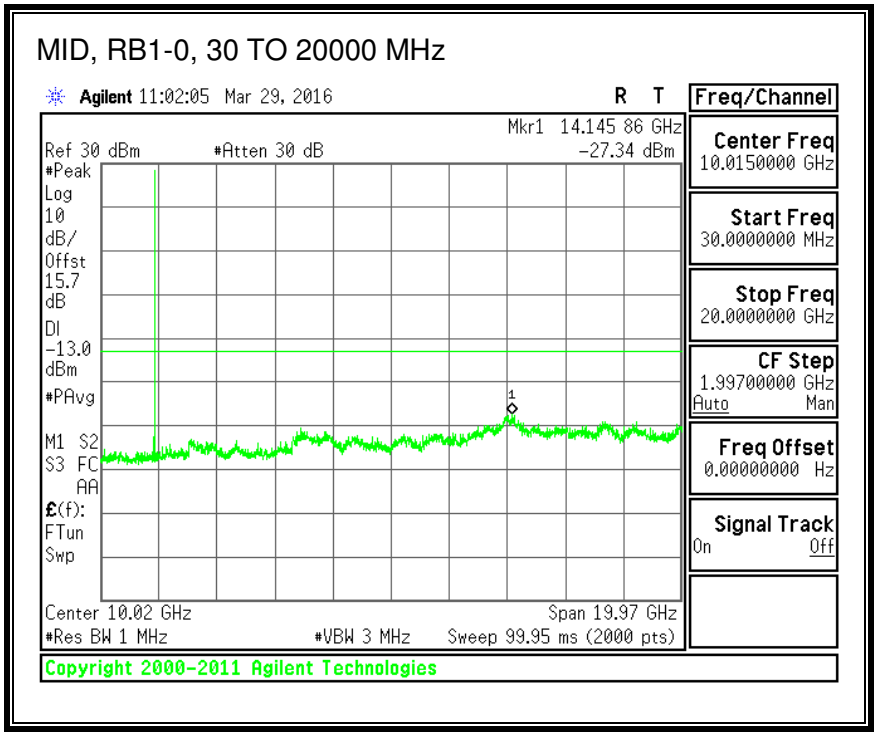


QPSK, (10.0 MHz BAND WIDTH)

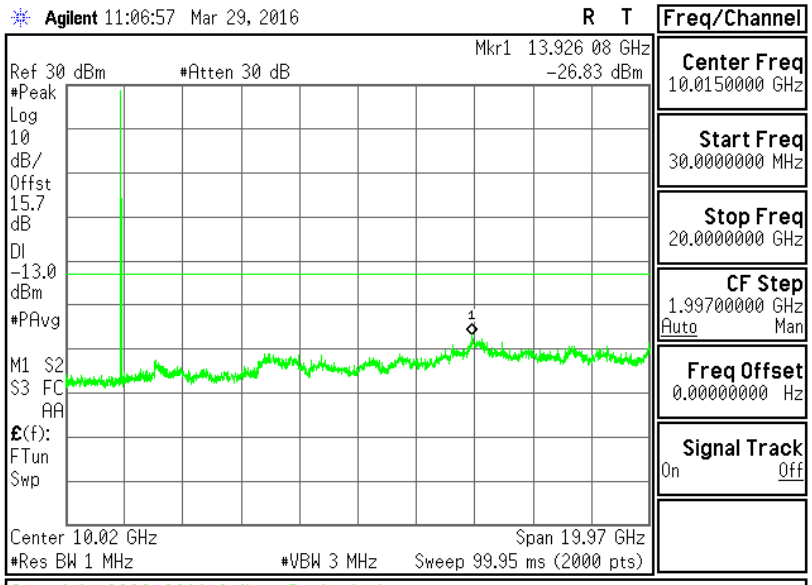
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

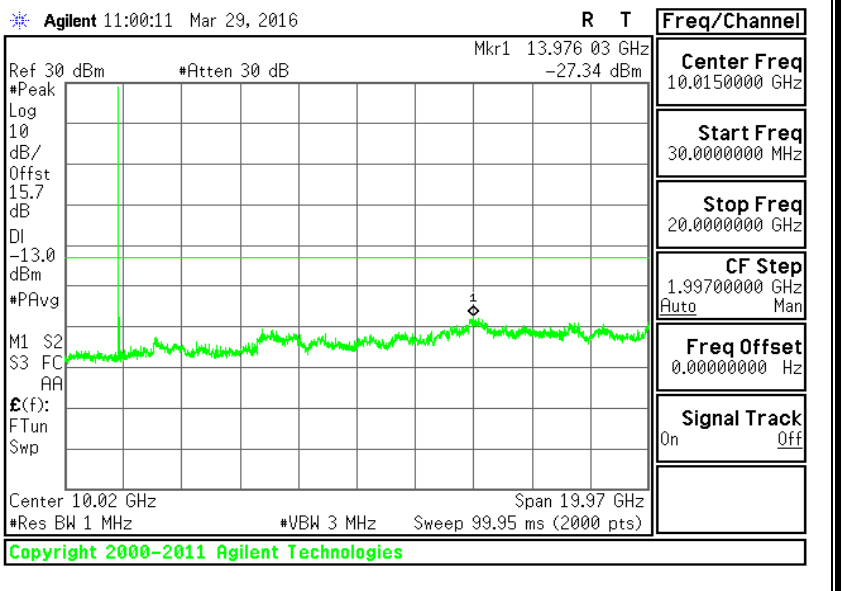


HIGH, RB1-0, 30 TO 20000 MHz

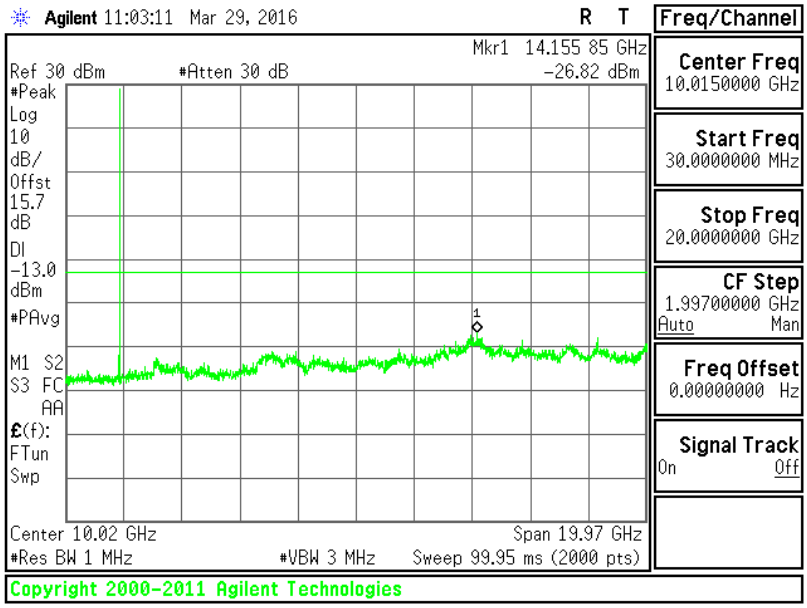


16QAM, (10.0 MHz BAND WIDTH)

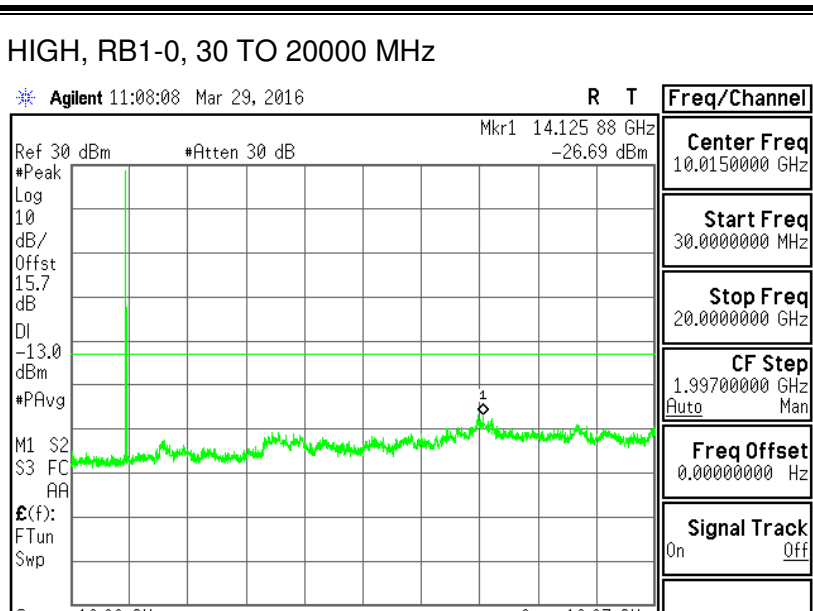
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

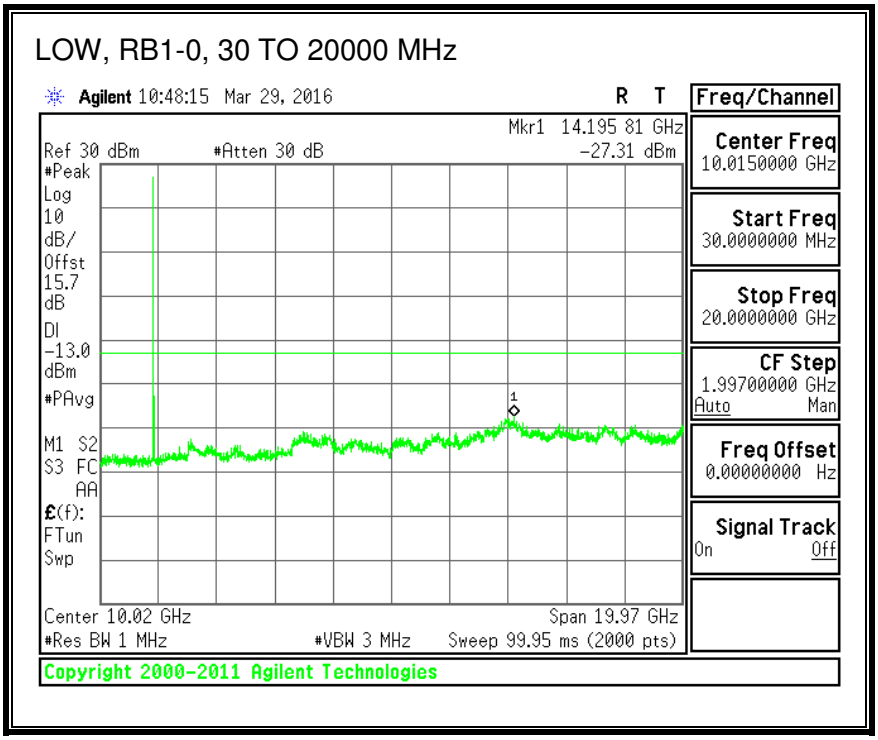


HIGH, RB1-0, 30 TO 20000 MHz

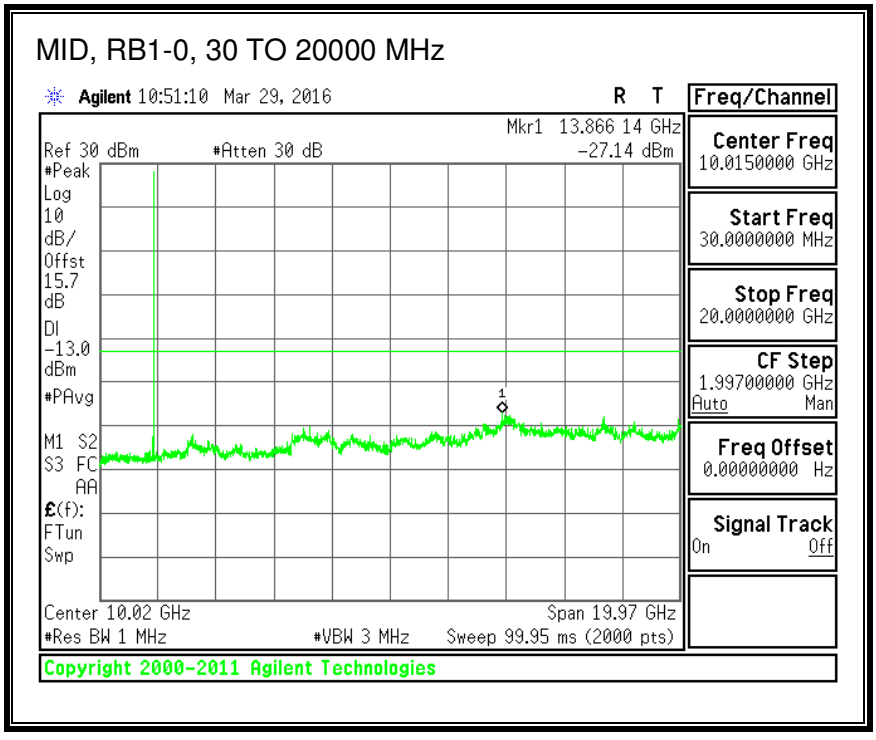


QPSK, (15.0 MHz BAND WIDTH)

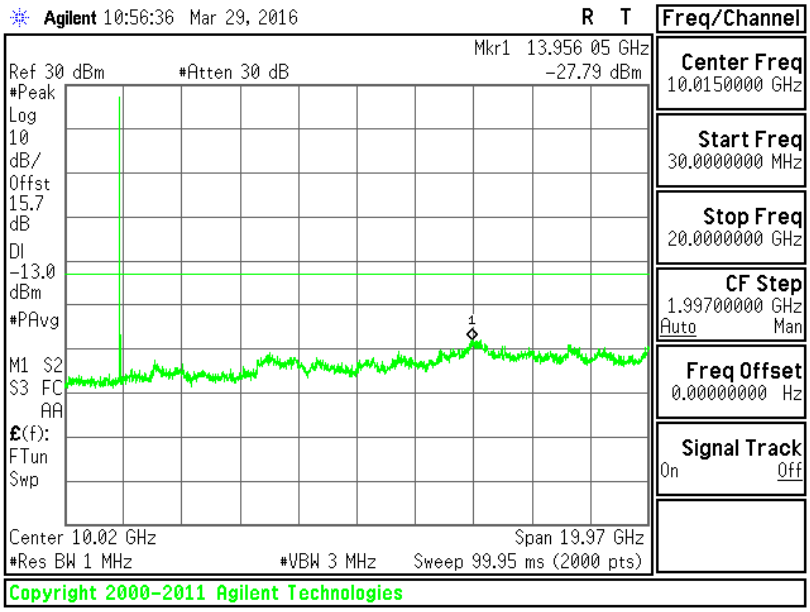
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

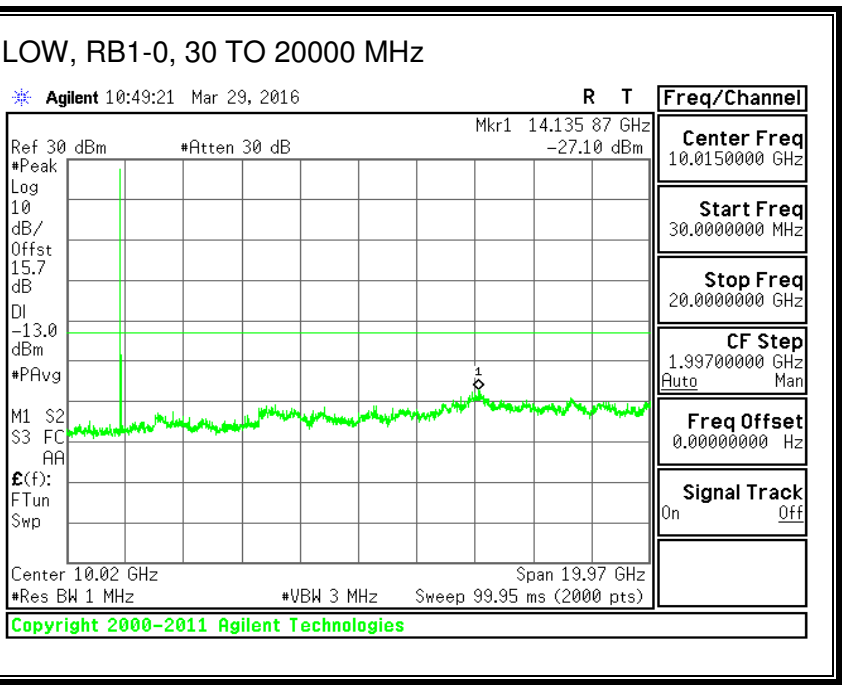


HIGH, RB1-0, 30 TO 20000 MHz

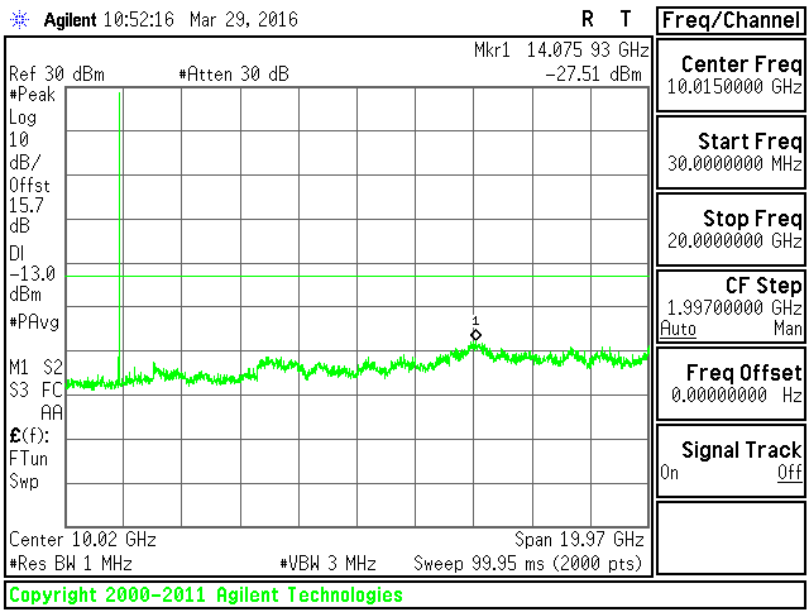


16QAM, (15.0 MHz BAND WIDTH)

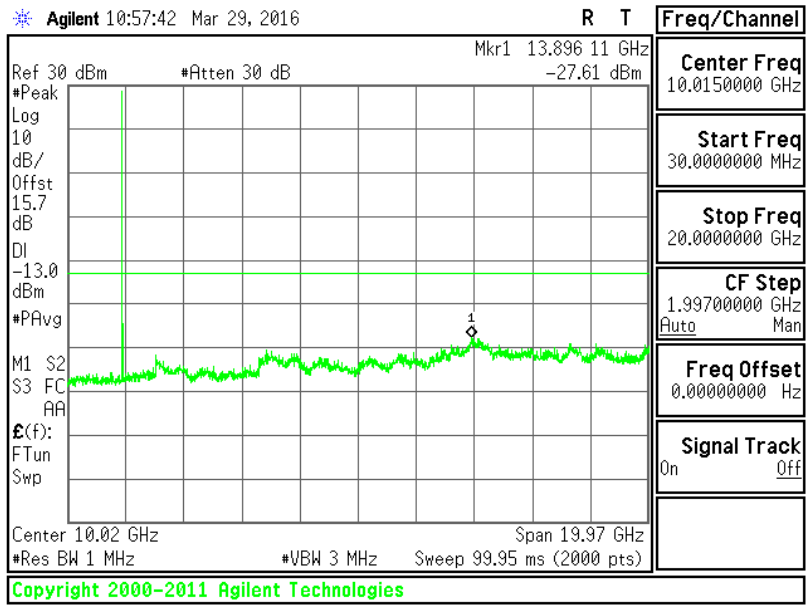
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

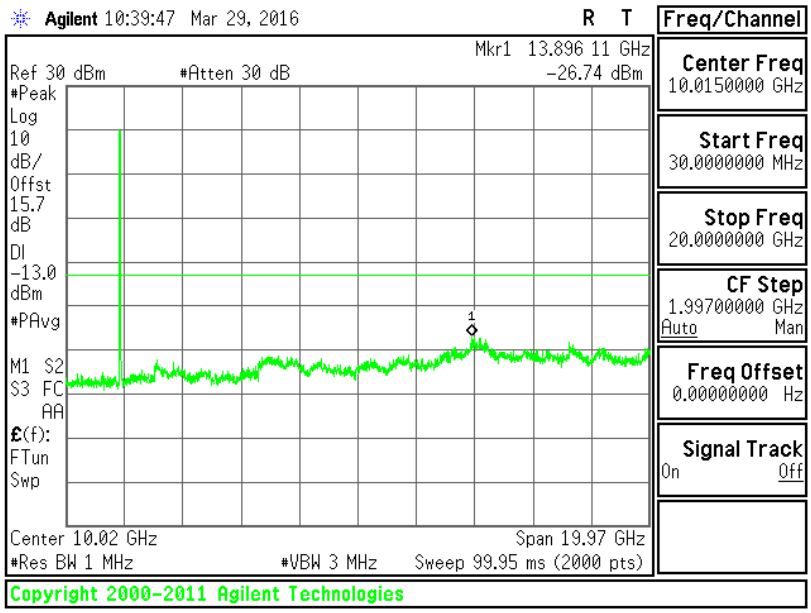


HIGH, RB1-0, 30 TO 20000 MHz

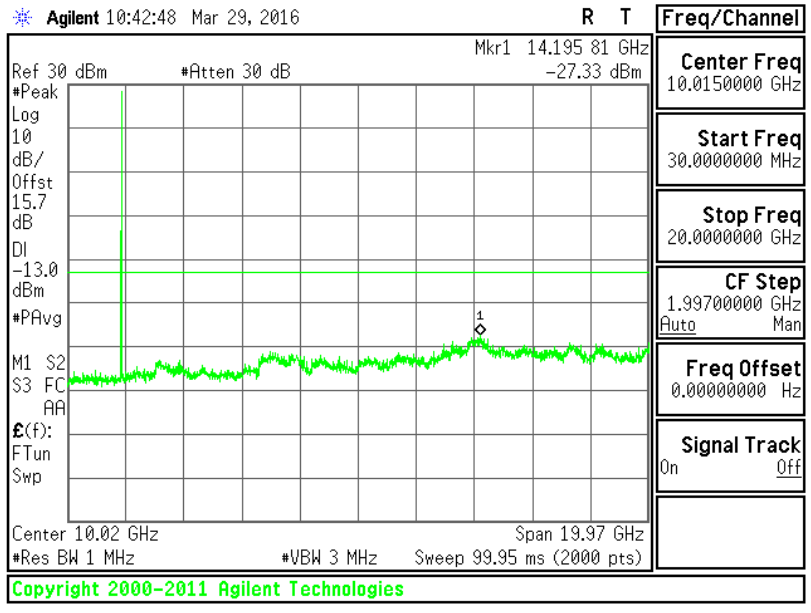


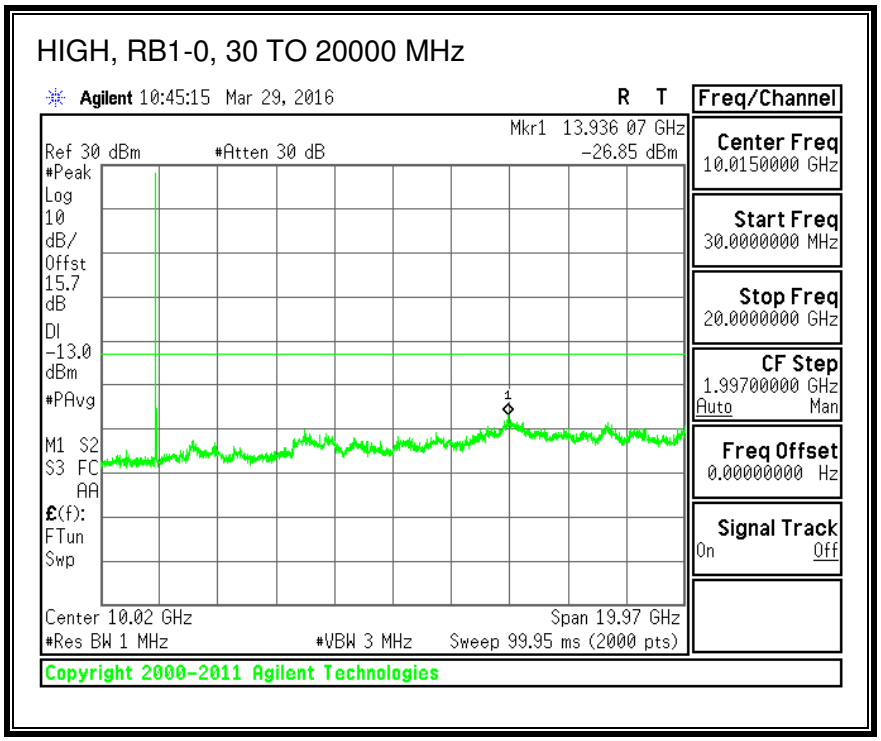
QPSK, (20.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 20000 MHz

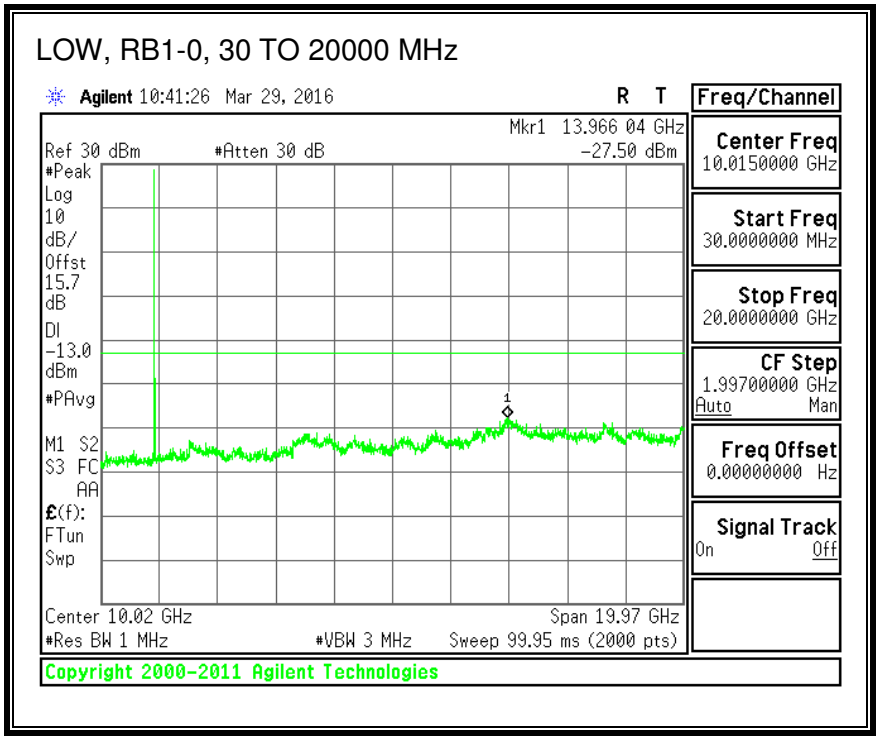


MID, RB1-0, 30 TO 20000 MHz

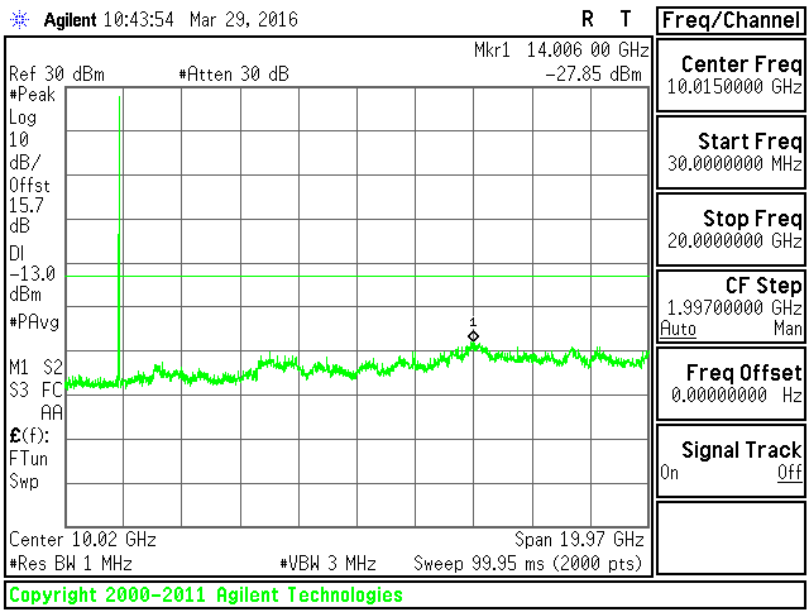




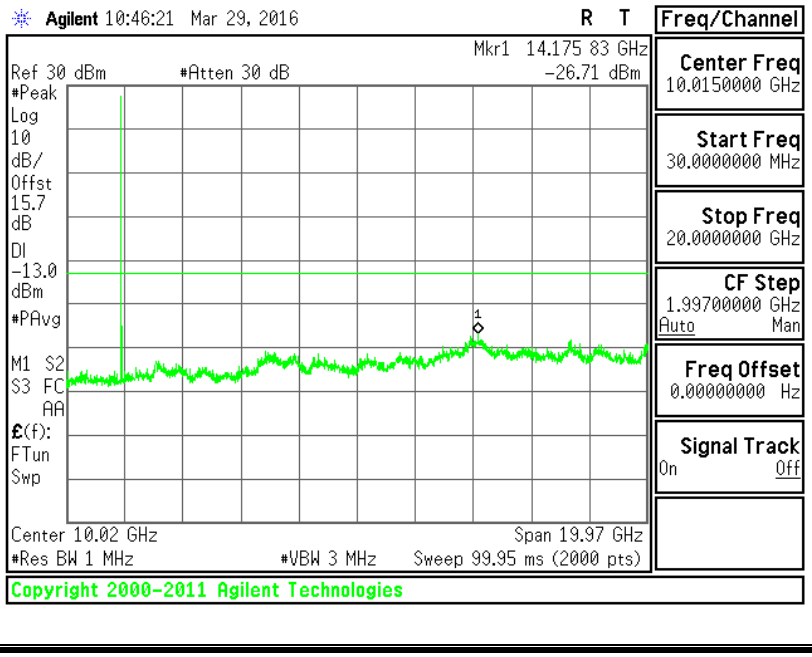
16QAM, (20.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 20000 MHz



HIGH, RB1-0, 30 TO 20000 MHz

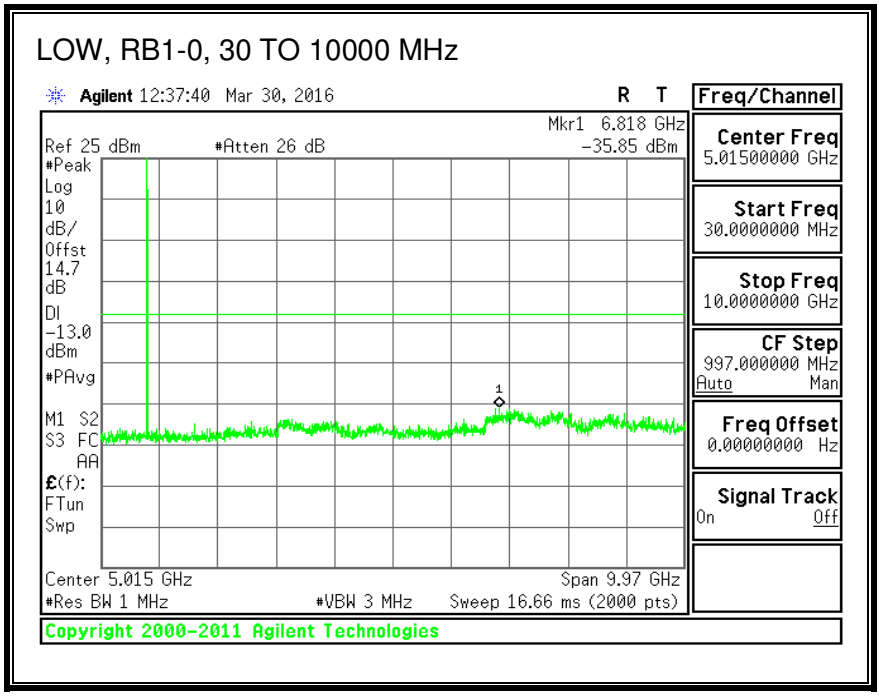


8.3.9. LTE BAND 26

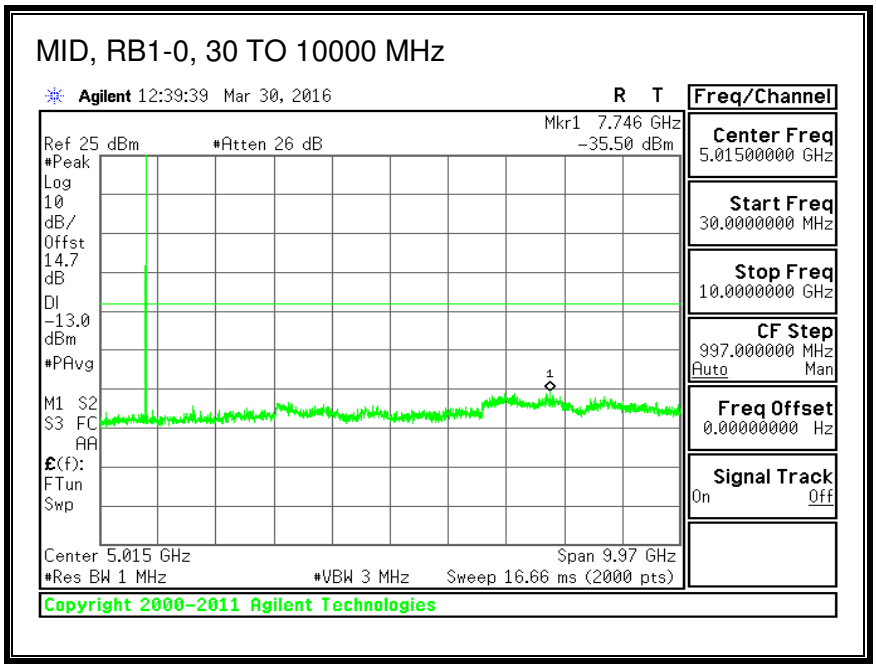
ID:	38806	Date:	3/30/16

QPSK, (1.4 MHz BAND WIDTH)

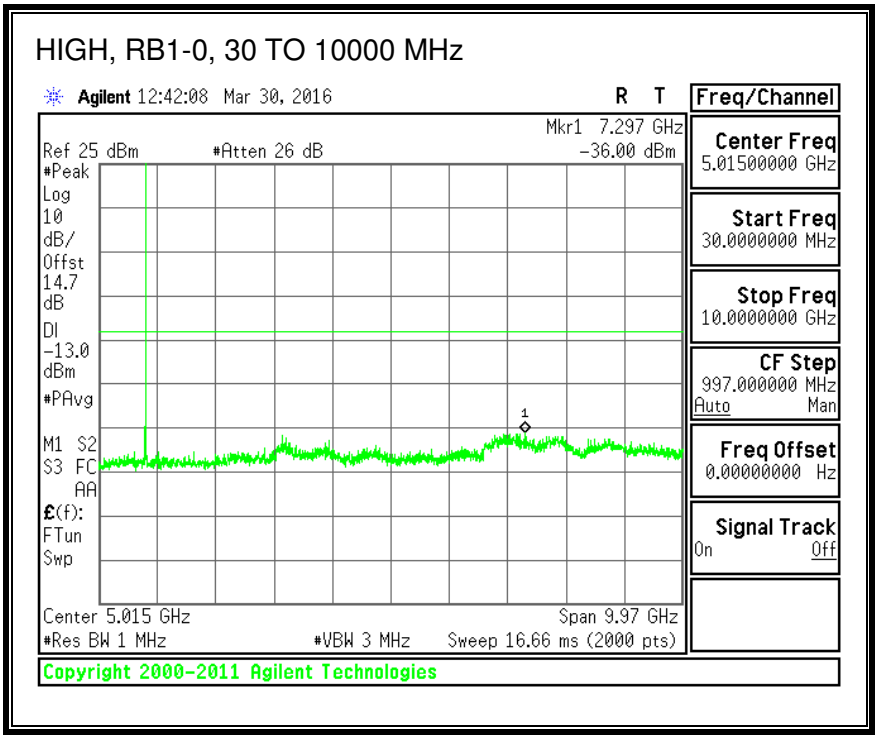
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

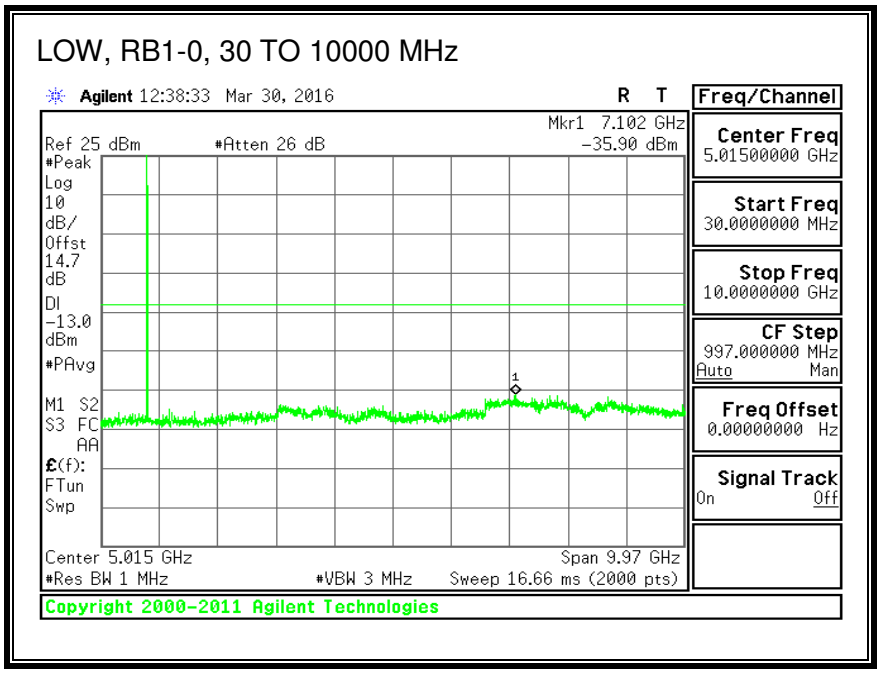


HIGH, RB1-0, 30 TO 10000 MHz

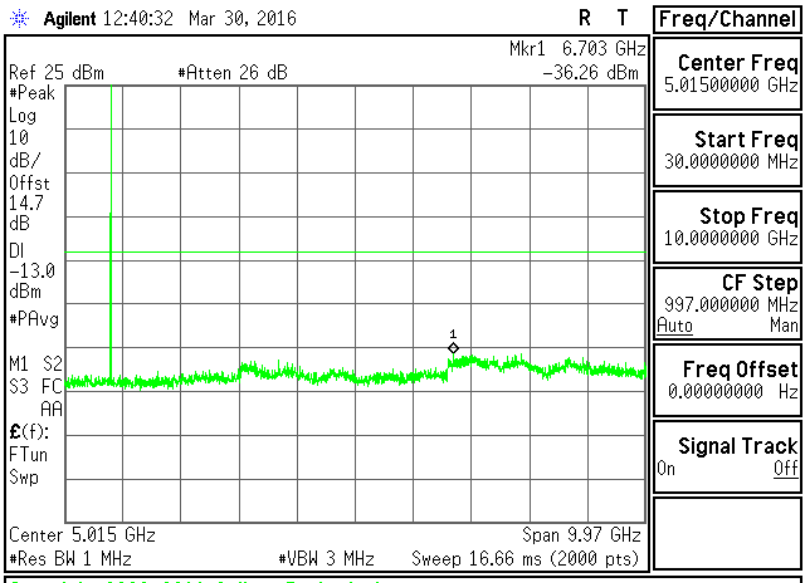


16QAM, (1.4 MHz BAND WIDTH)

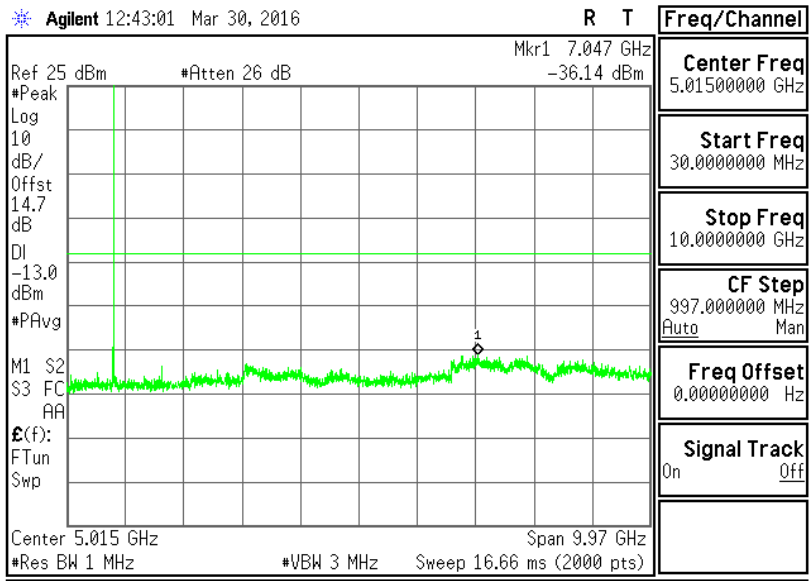
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

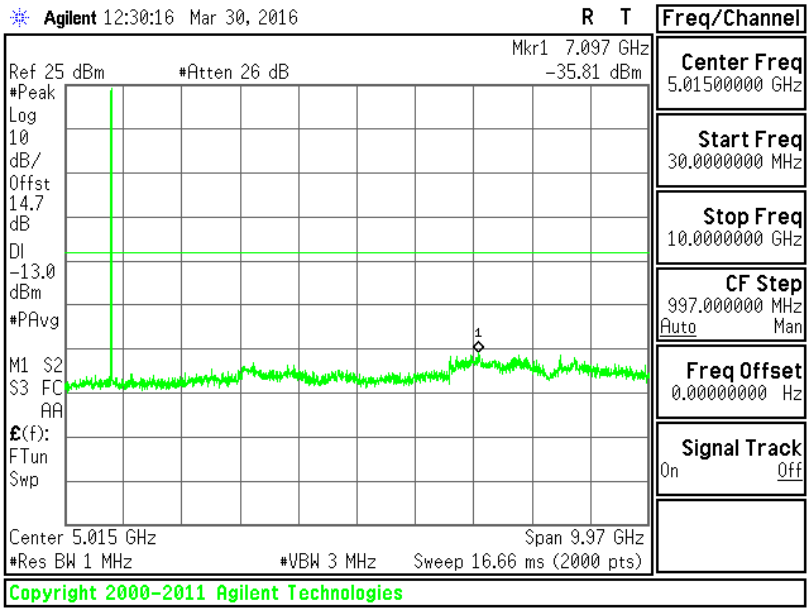


HIGH, RB1-0, 30 TO 10000 MHz

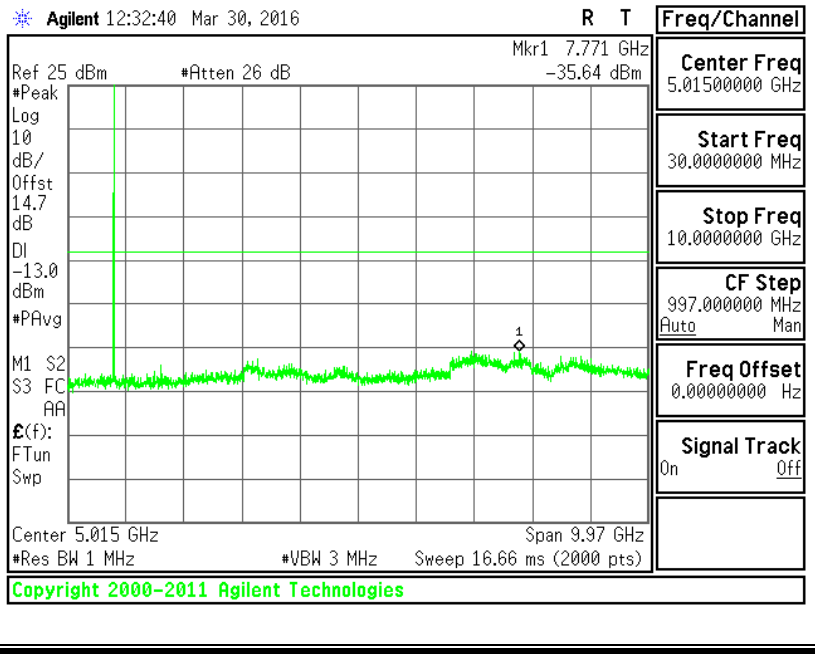


QPSK, (3.0 MHz BAND WIDTH)

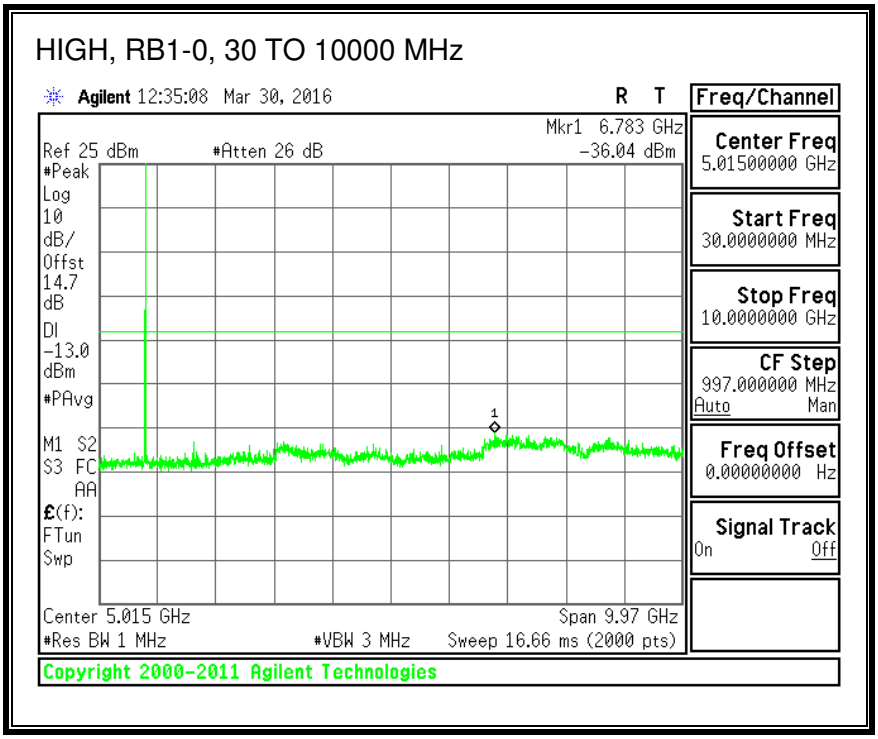
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

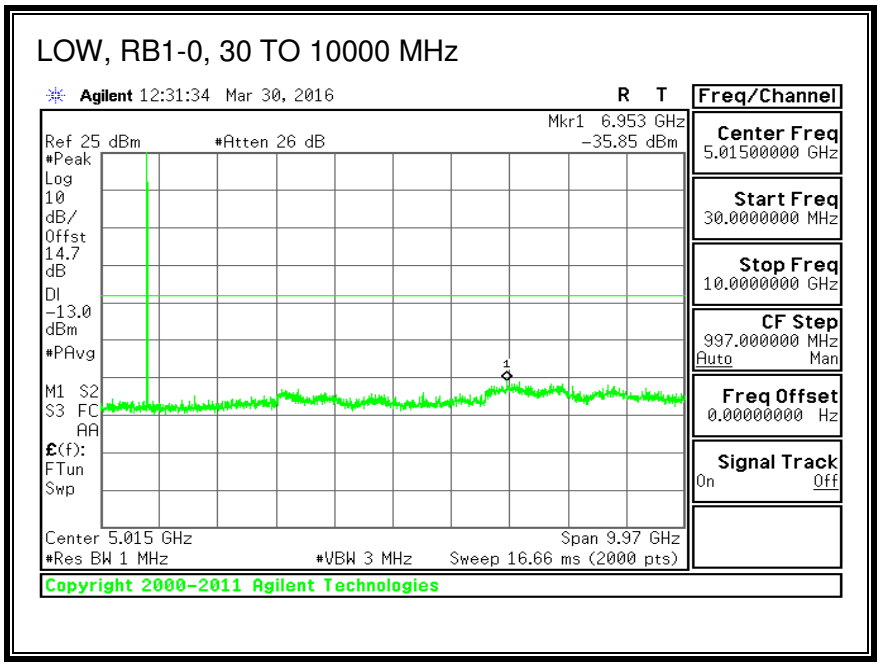


HIGH, RB1-0, 30 TO 10000 MHz

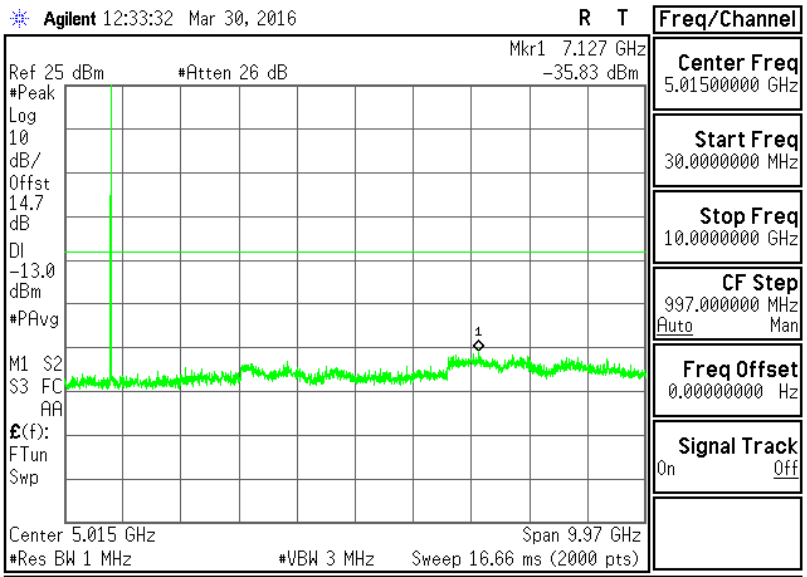


16QAM, (3.0 MHz BAND WIDTH)

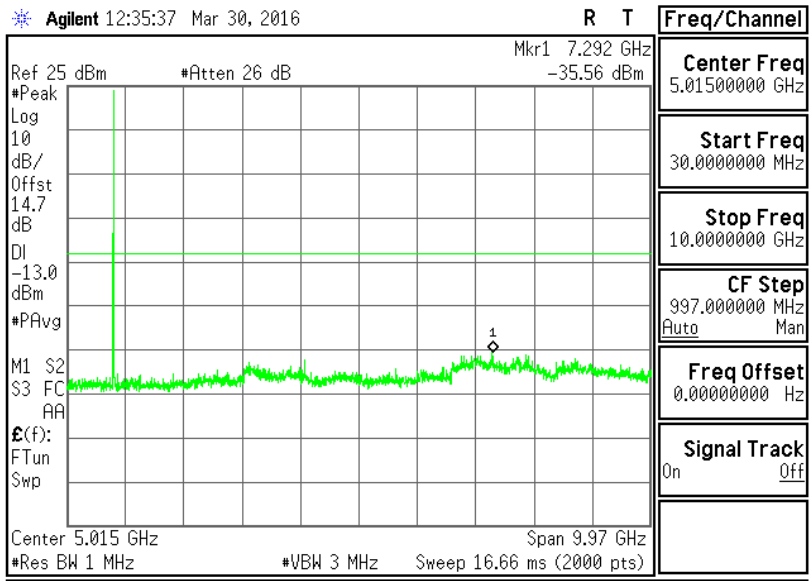
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

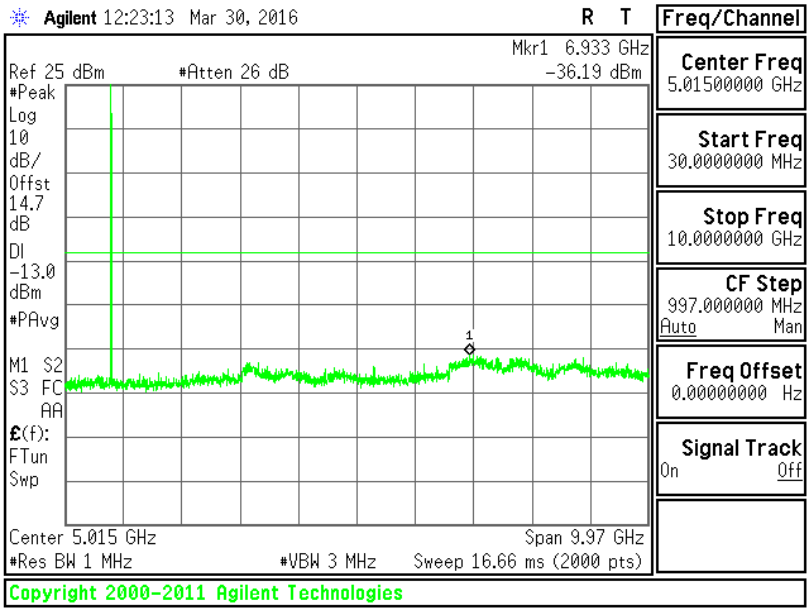


HIGH, RB1-0, 30 TO 10000 MHz

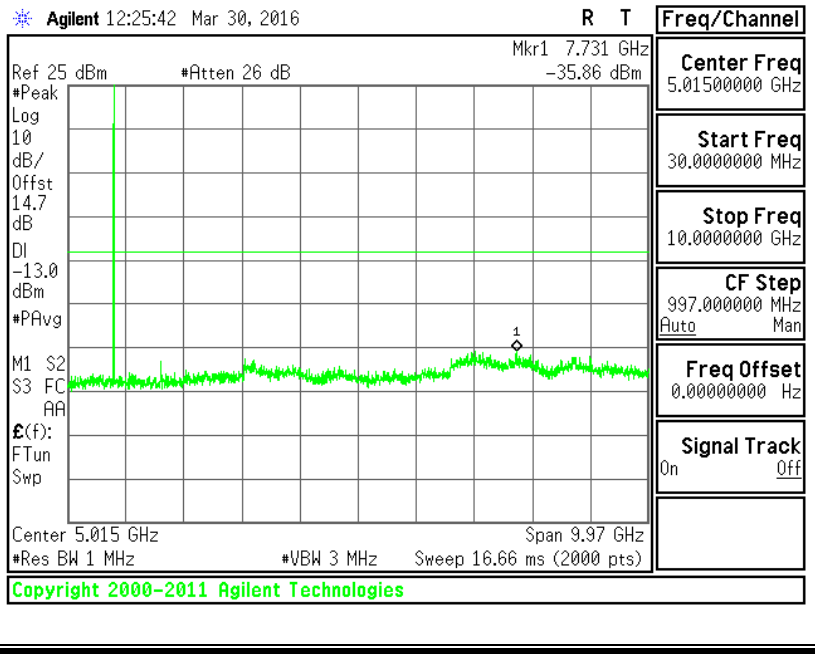


QPSK, (5.0 MHz BAND WIDTH)

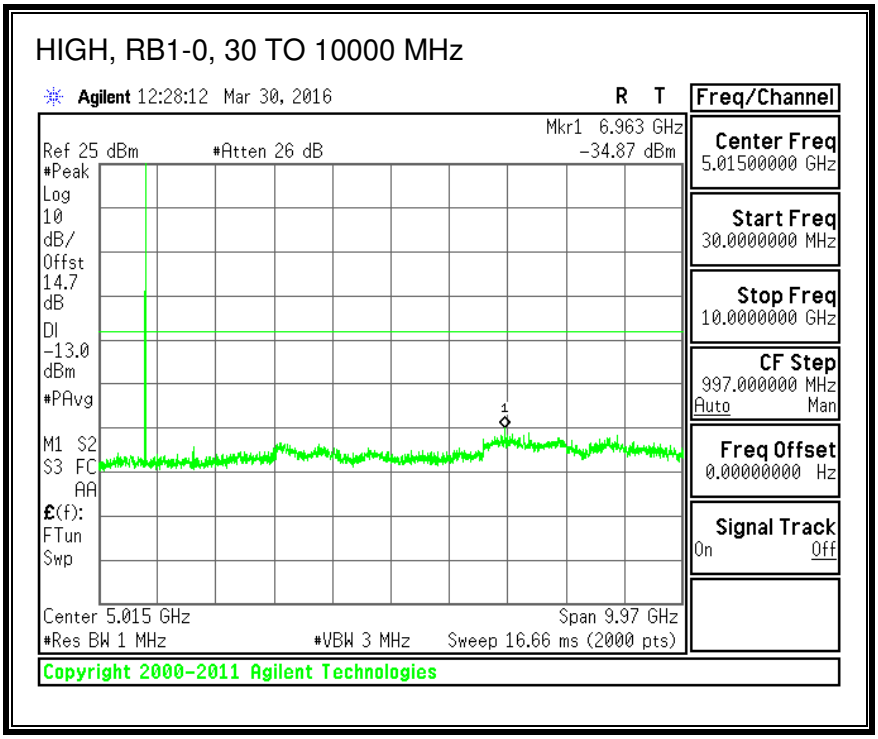
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

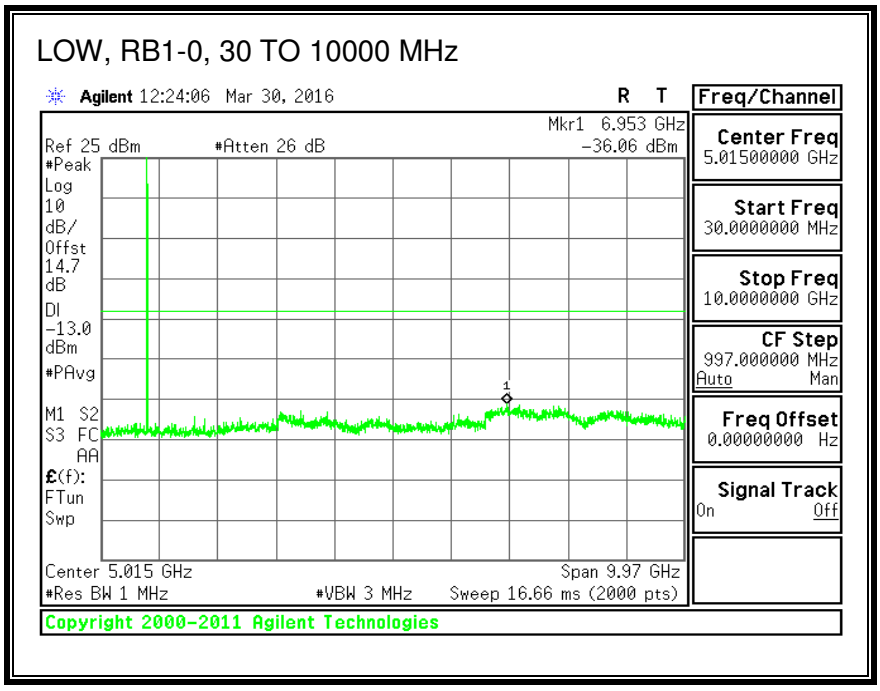


HIGH, RB1-0, 30 TO 10000 MHz

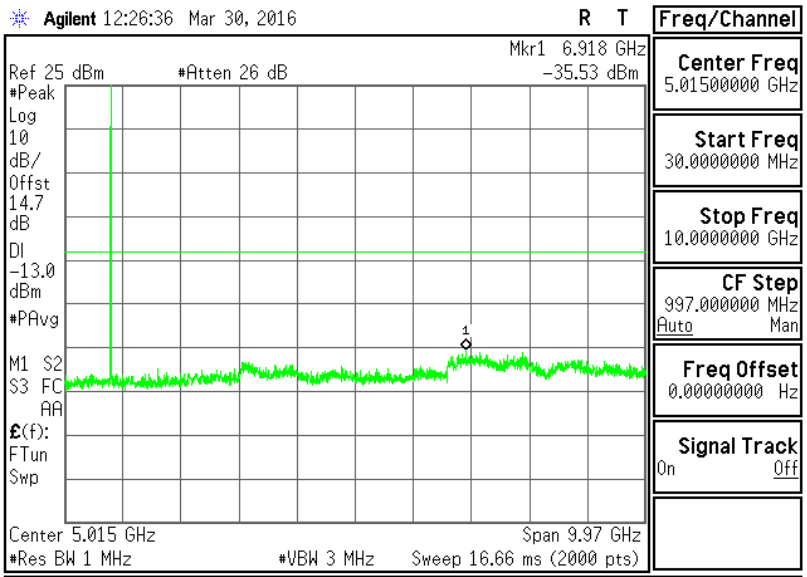


16QAM, (5.0 MHz BAND WIDTH)

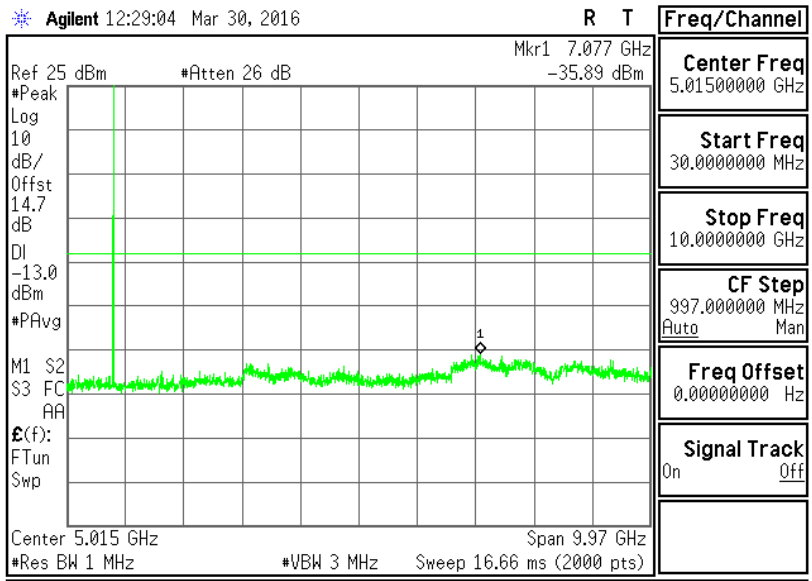
LOW, RB1-0, 30 TO 10000 MHz



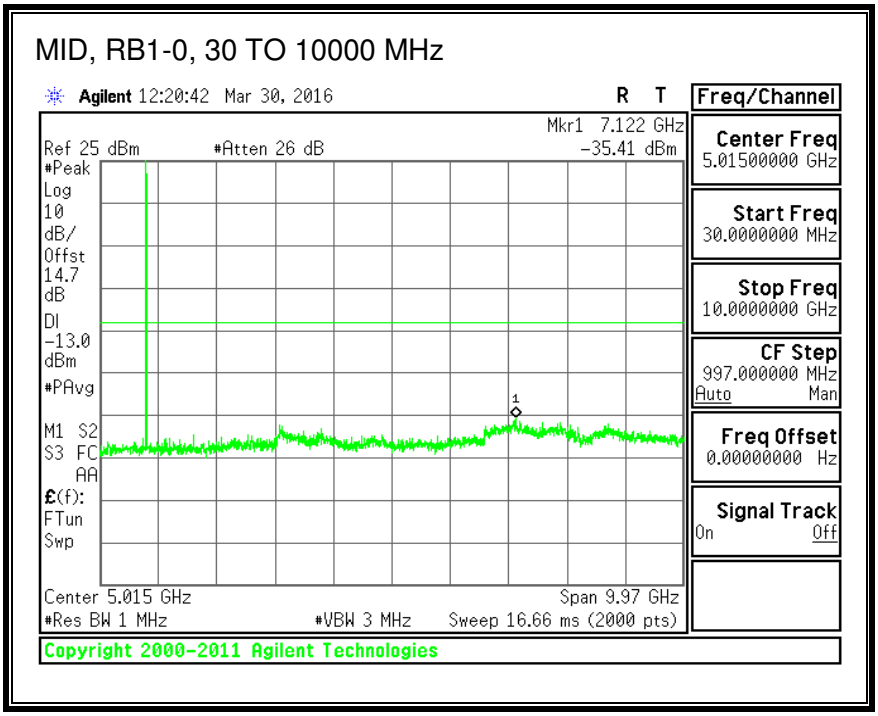
MID, RB1-0, 30 TO 10000 MHz



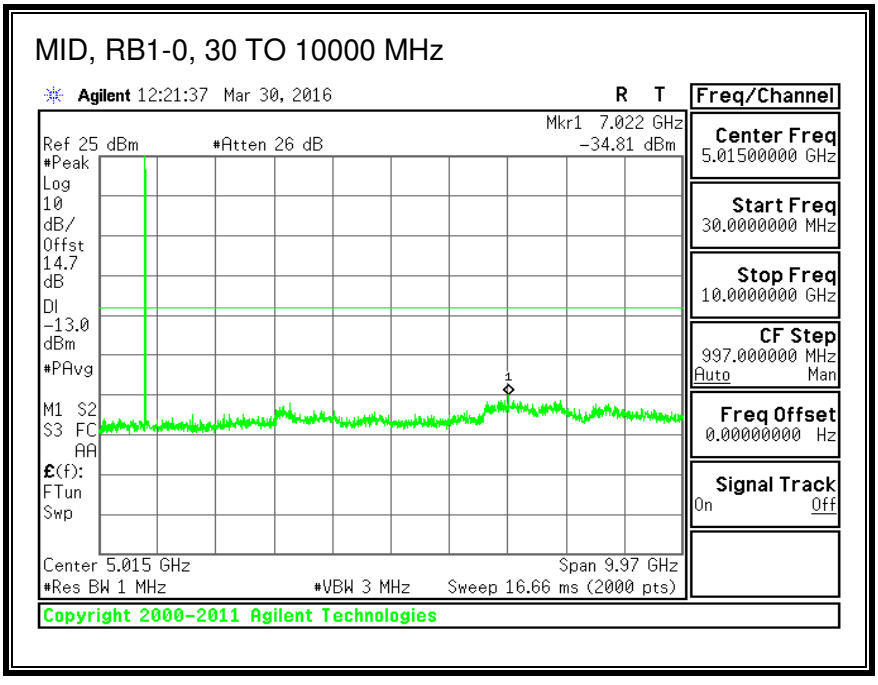
HIGH, RB1-0, 30 TO 10000 MHz



QPSK, (10.0 MHz BAND WIDTH)



16QAM, (10.0 MHz BAND WIDTH)

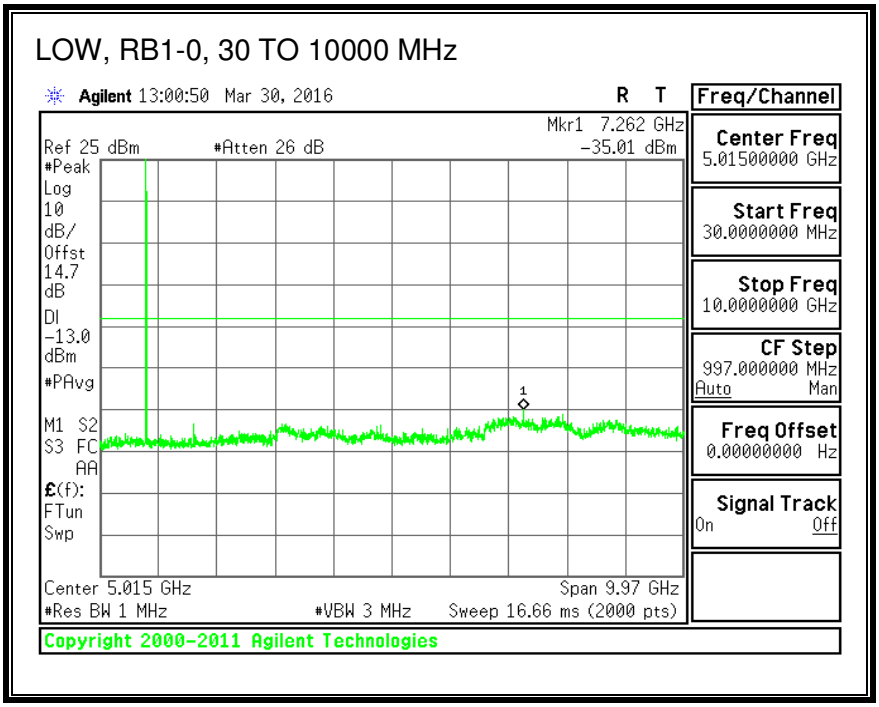


8.3.10. LTE BAND 27

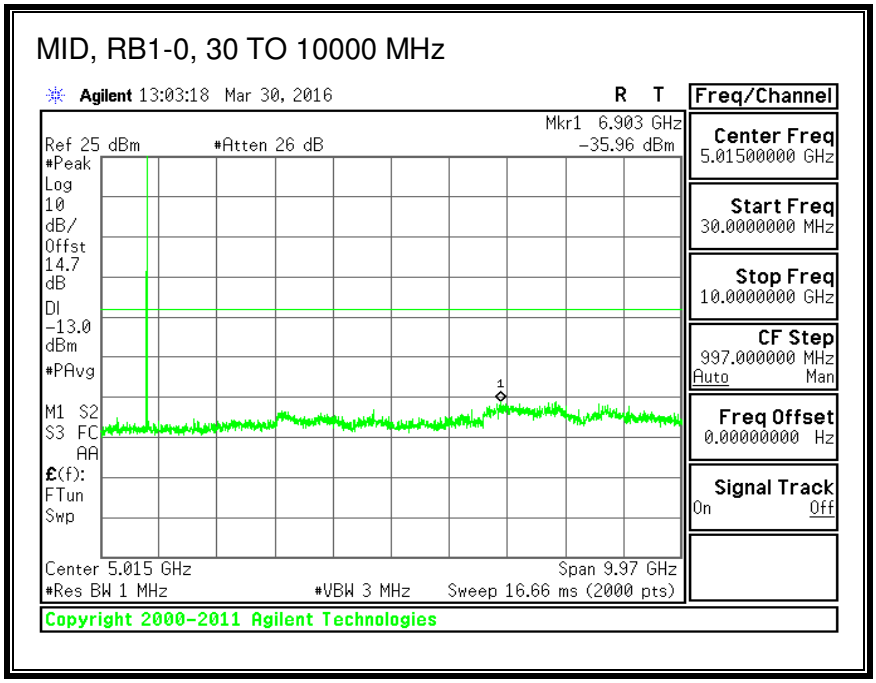
ID:	38806	Date:	3/29/16

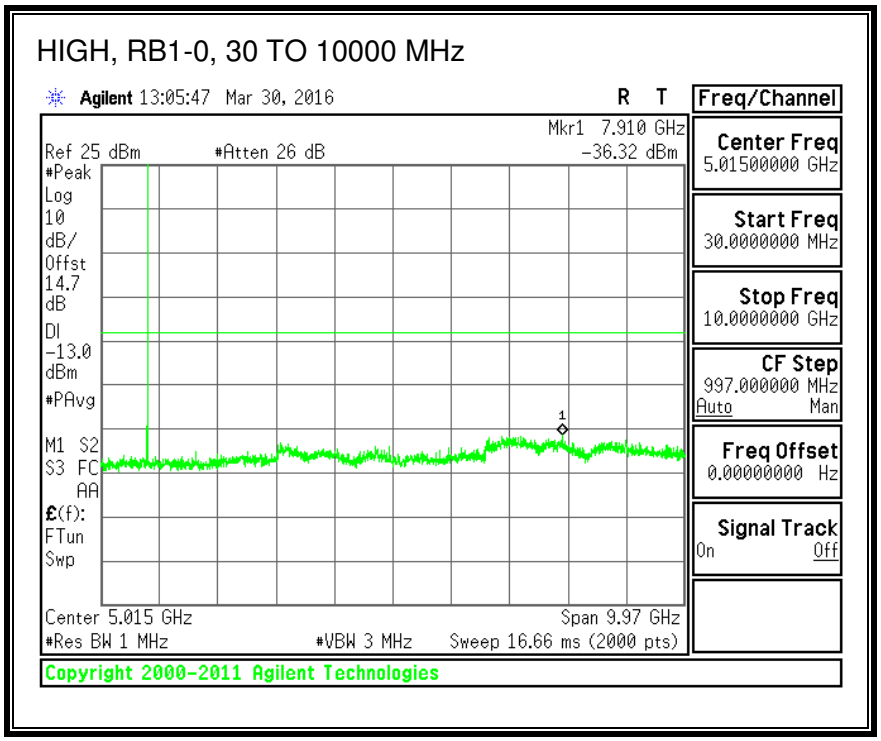
QPSK, (1.4 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 10000 MHz

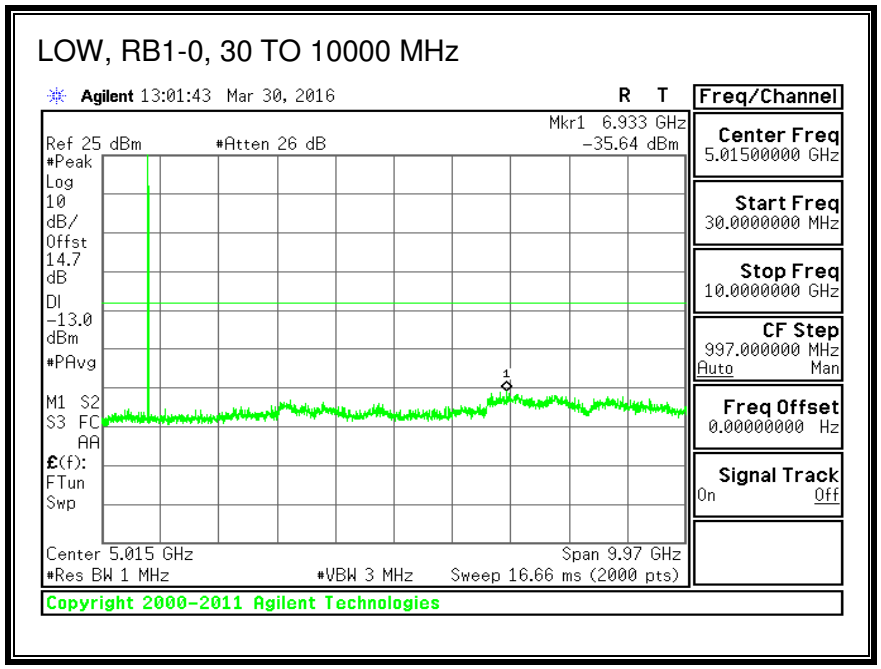


MID, RB1-0, 30 TO 10000 MHz

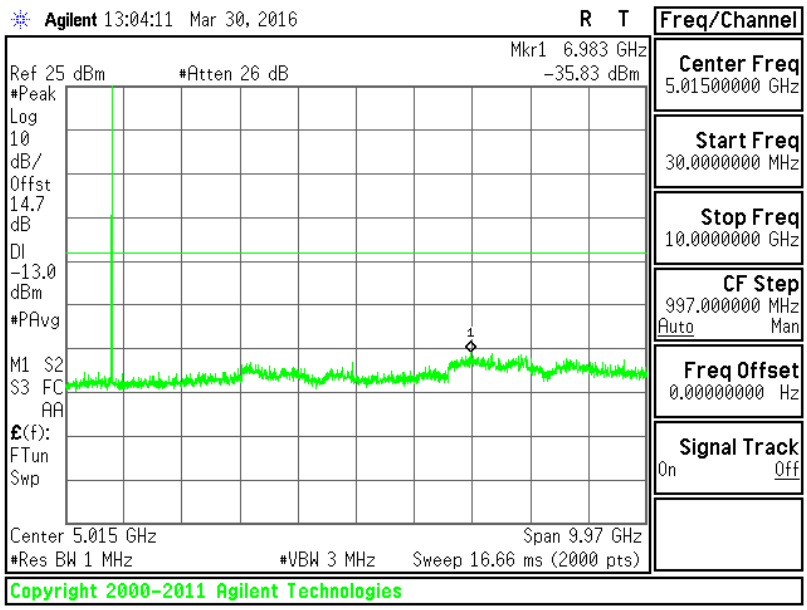




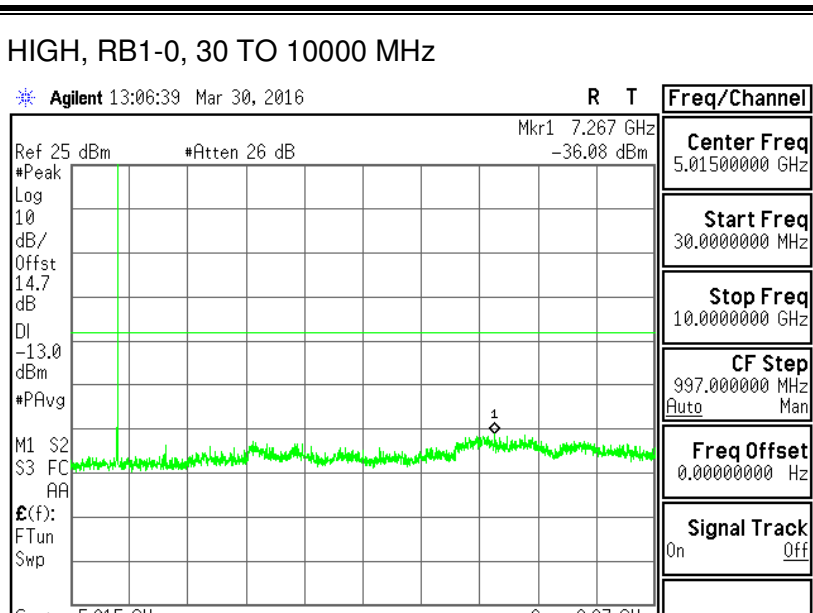
16QAM, (1.4 MHz BAND WIDTH)



MID, RB1-0, 30 TO 10000 MHz

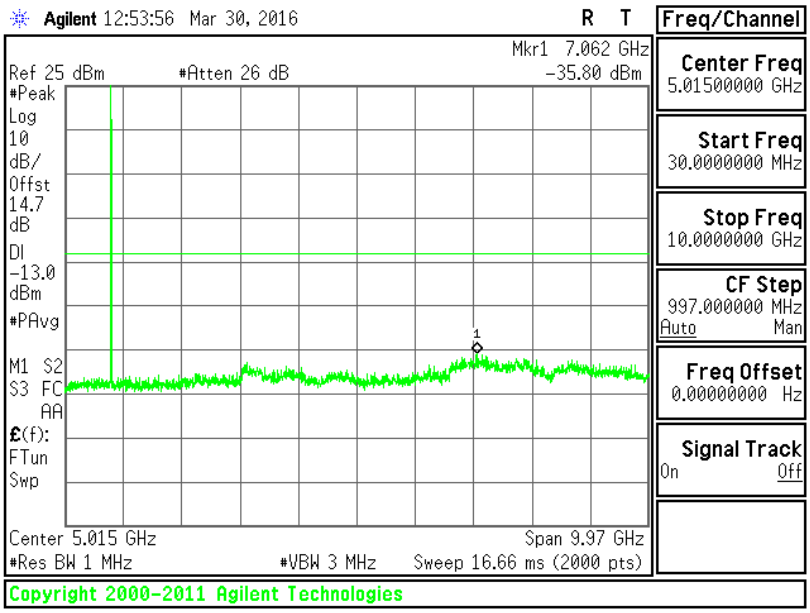


HIGH, RB1-0, 30 TO 10000 MHz

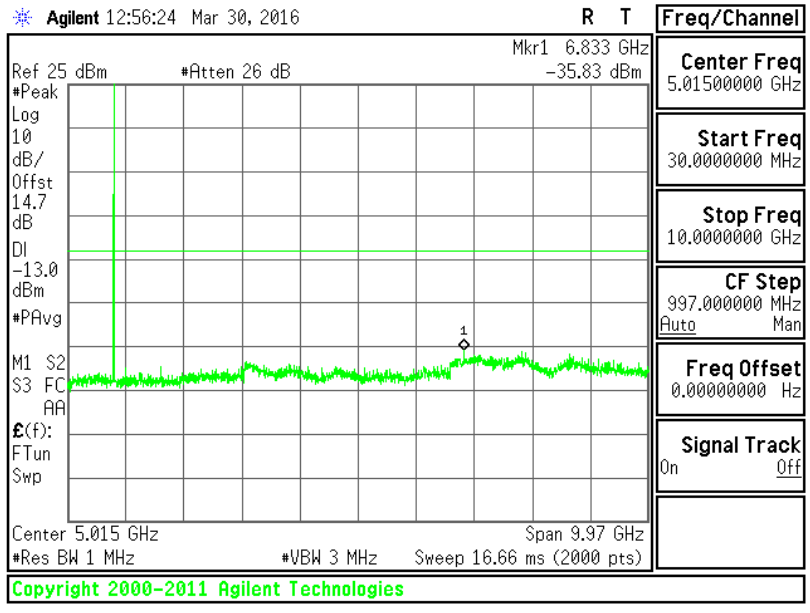


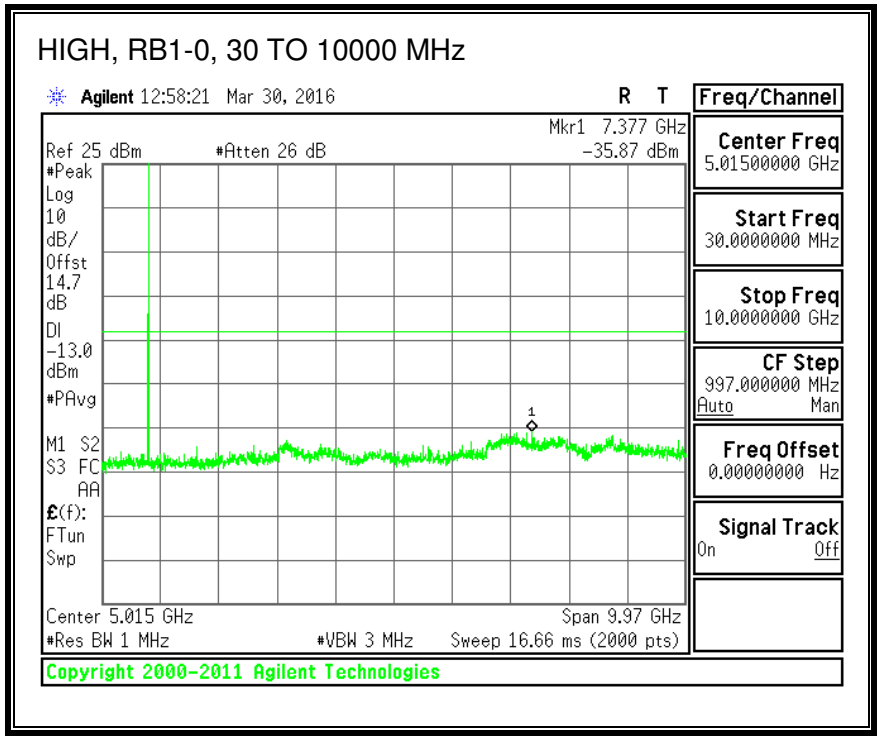
QPSK, (3.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 10000 MHz

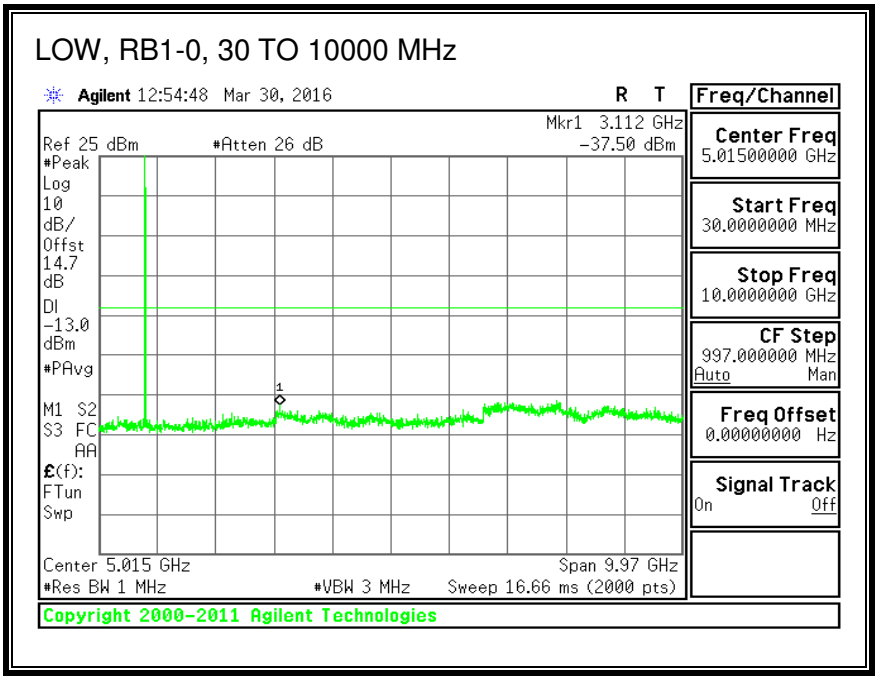


MID, RB1-0, 30 TO 10000 MHz

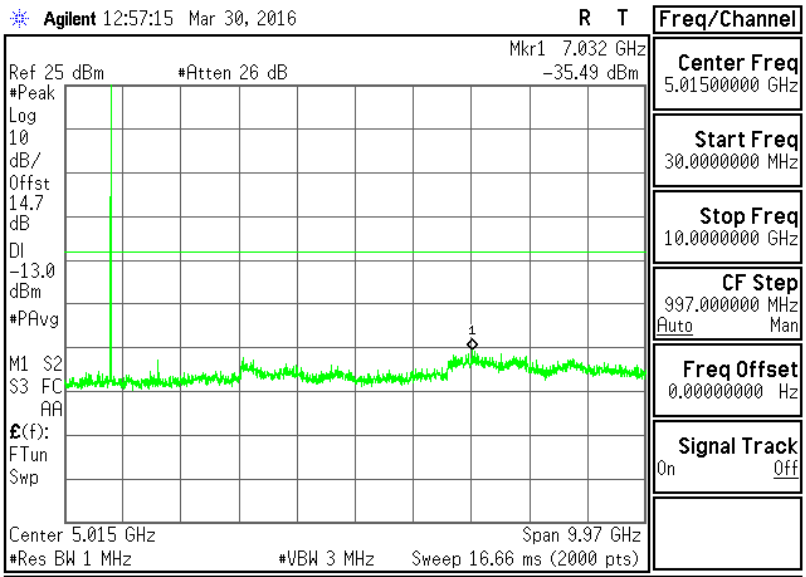




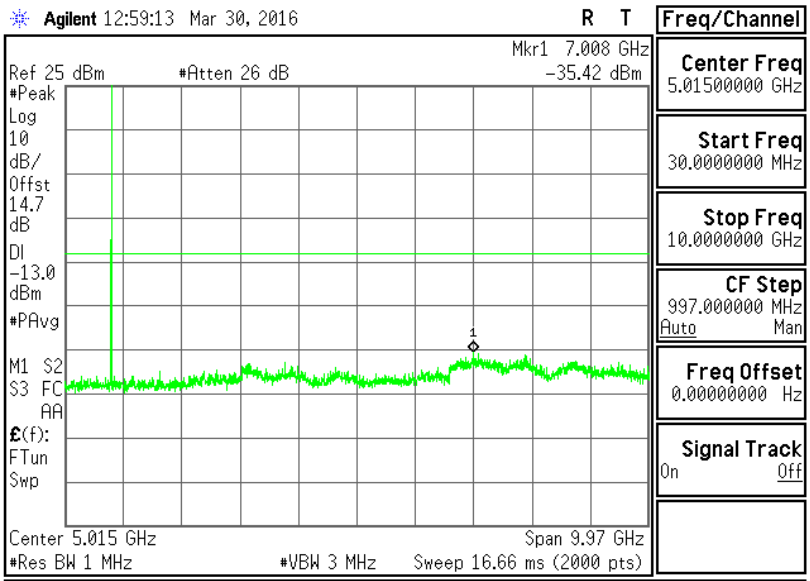
16QAM, (3.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 10000 MHz

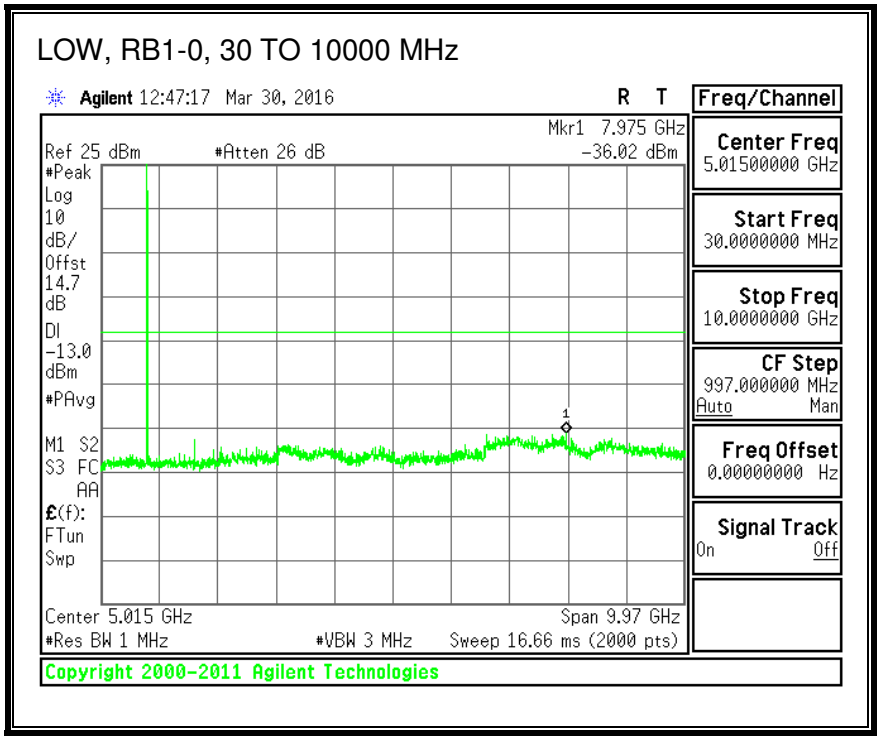


HIGH, RB1-0, 30 TO 10000 MHz

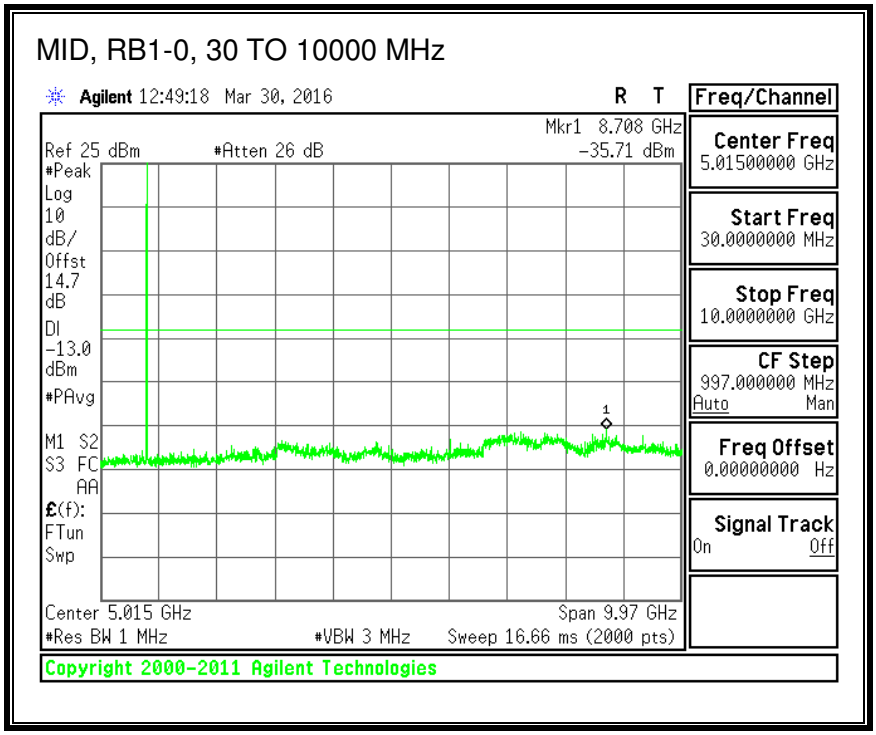


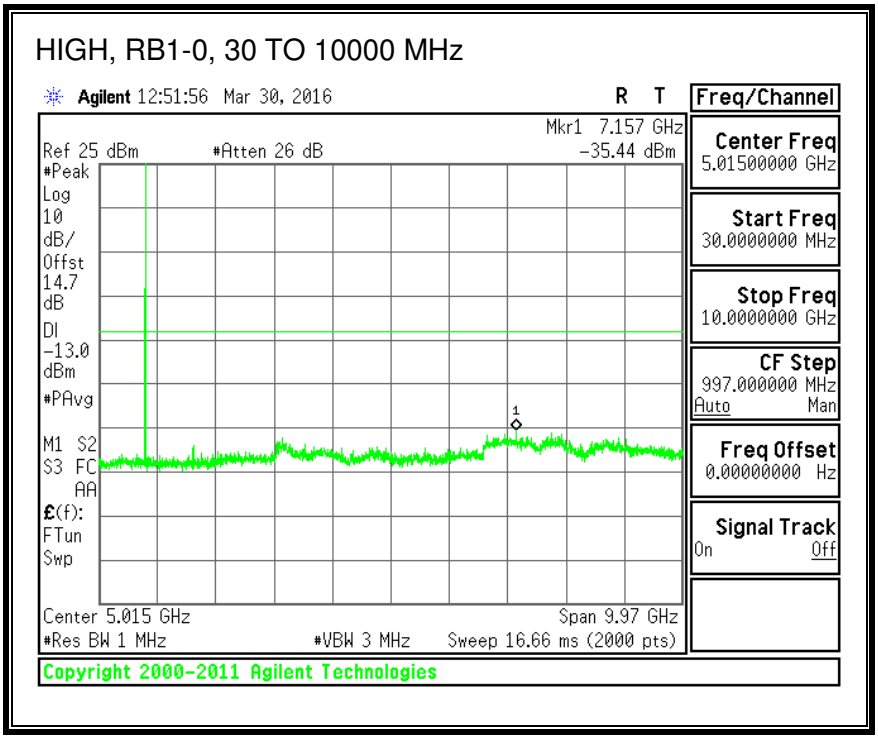
QPSK, (5.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 10000 MHz

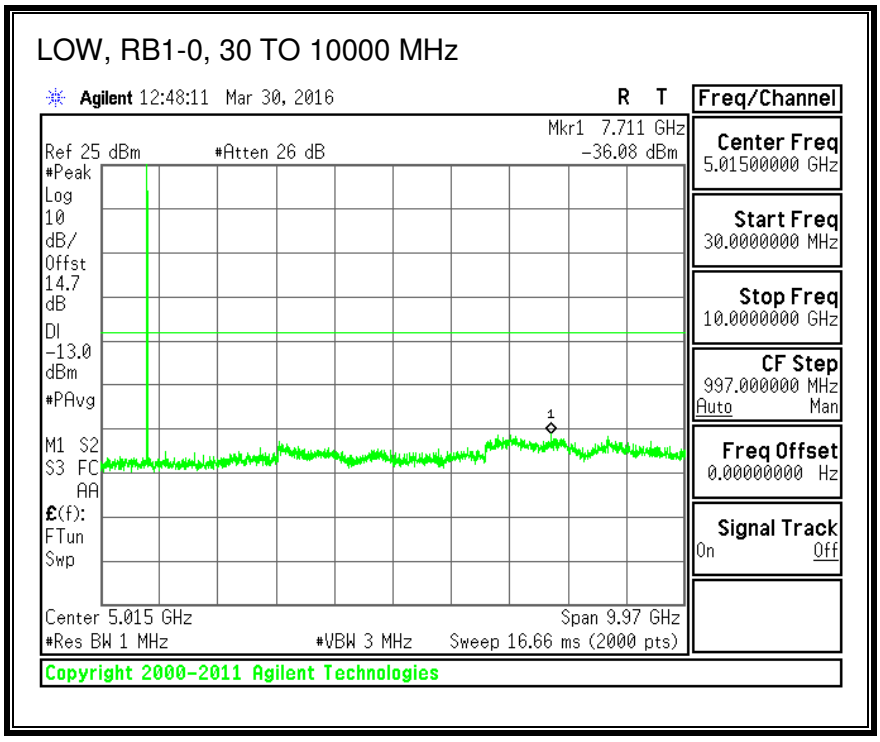


MID, RB1-0, 30 TO 10000 MHz

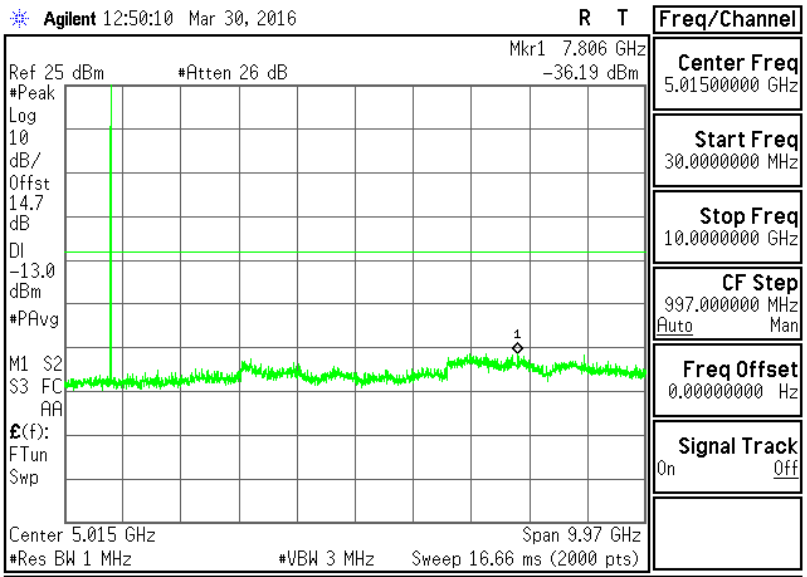




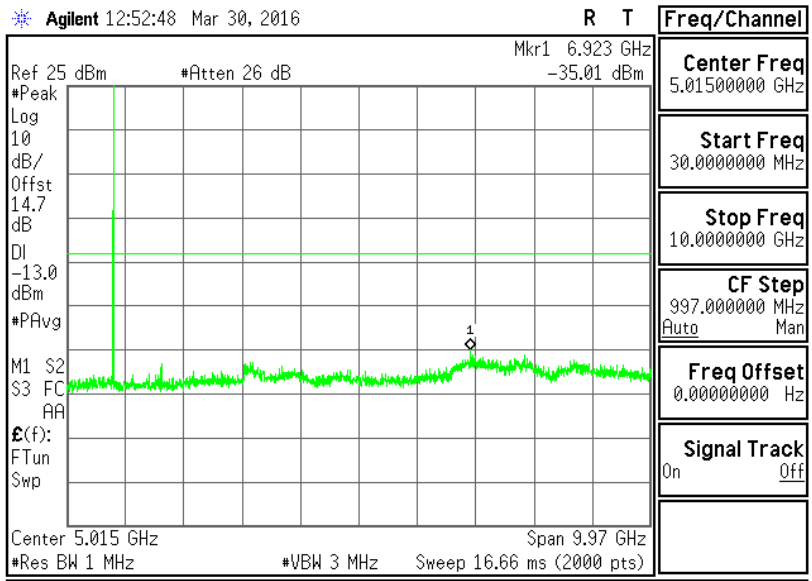
16QAM, (5.0 MHz BAND WIDTH)



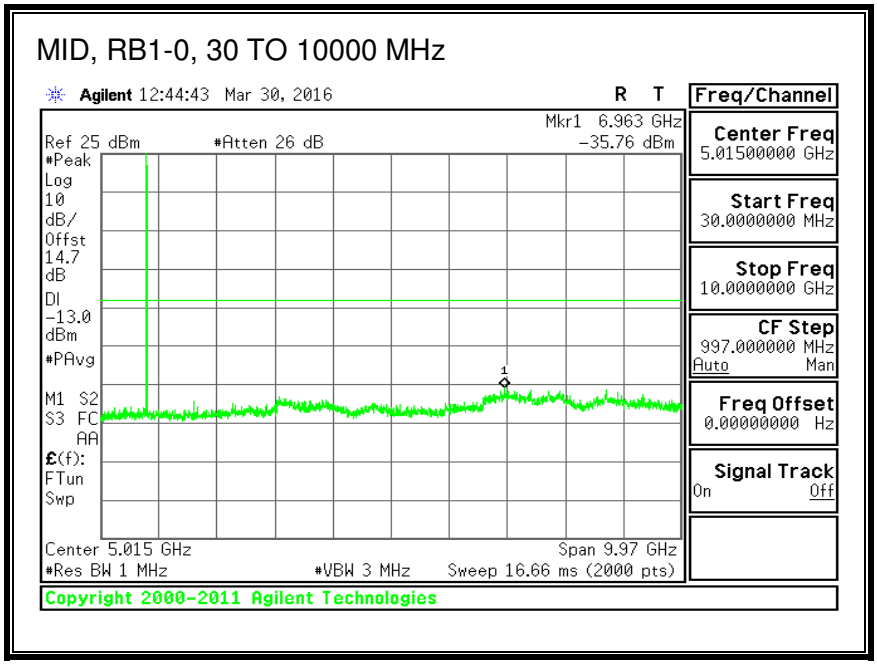
MID, RB1-0, 30 TO 10000 MHz



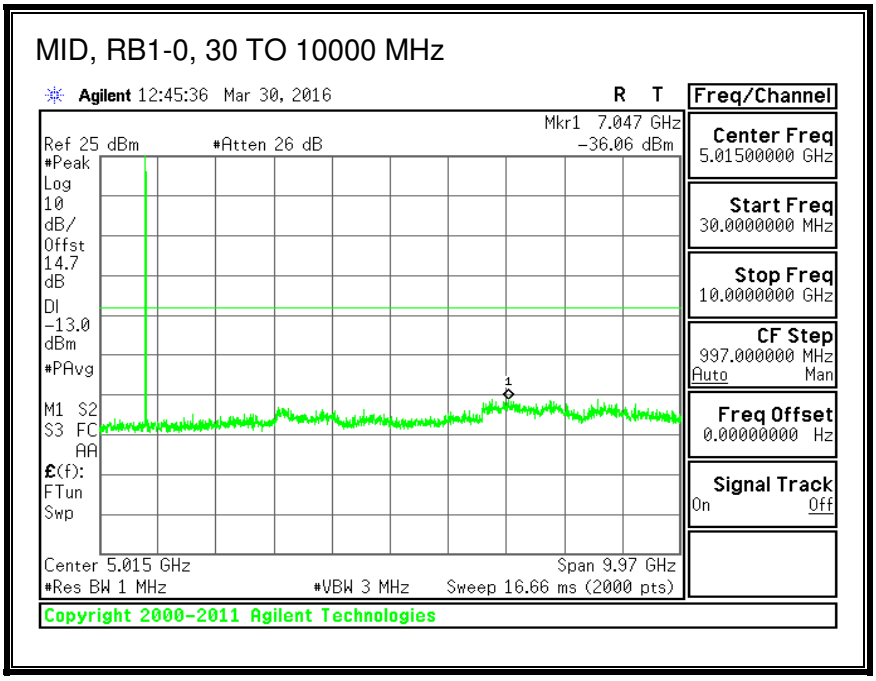
HIGH, RB1-0, 30 TO 10000 MHz



QPSK, (10.0 MHz BAND WIDTH)



16QAM, (10.0 MHz BAND WIDTH)

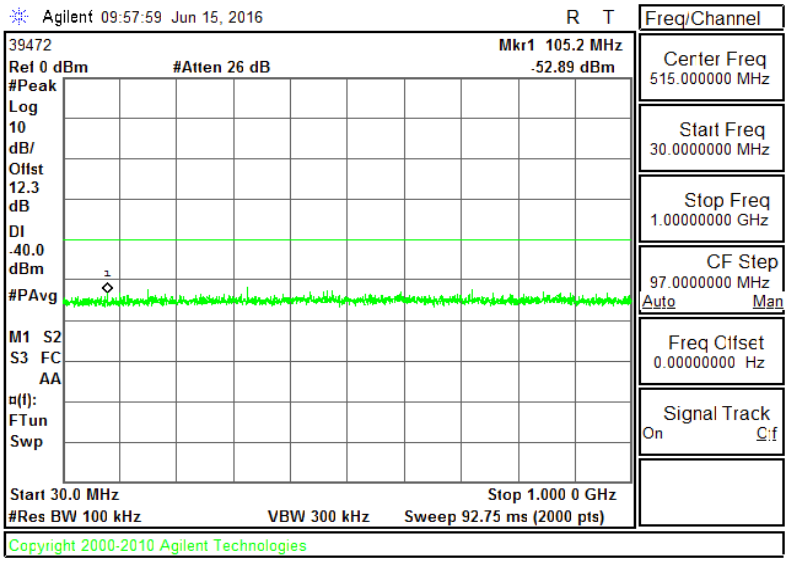


8.3.11. LTE BAND 30

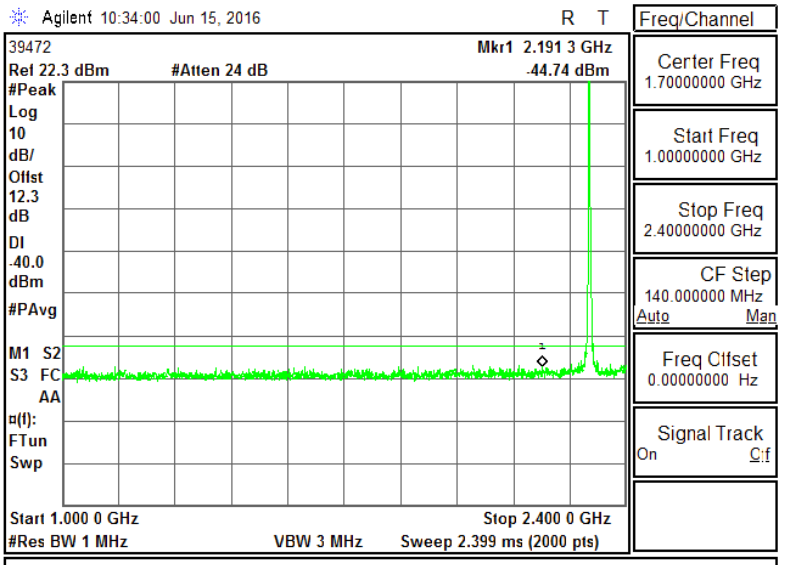
ID:	39472	Date:	6/15/16

QPSK, (5.0 MHz BAND WIDTH)

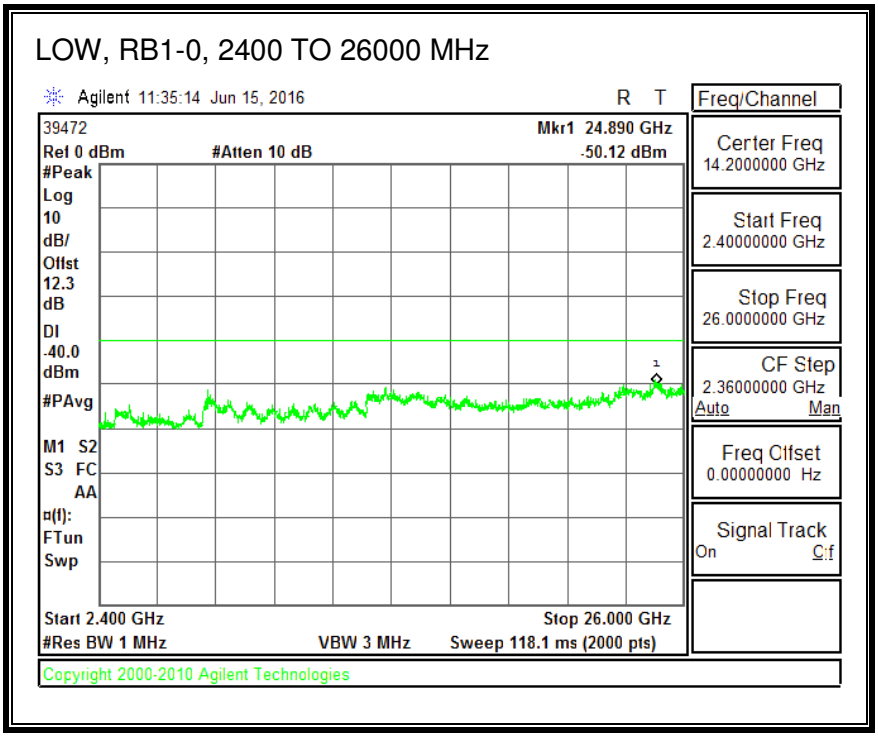
LOW, RB1-0, 30 TO 1000 MHz



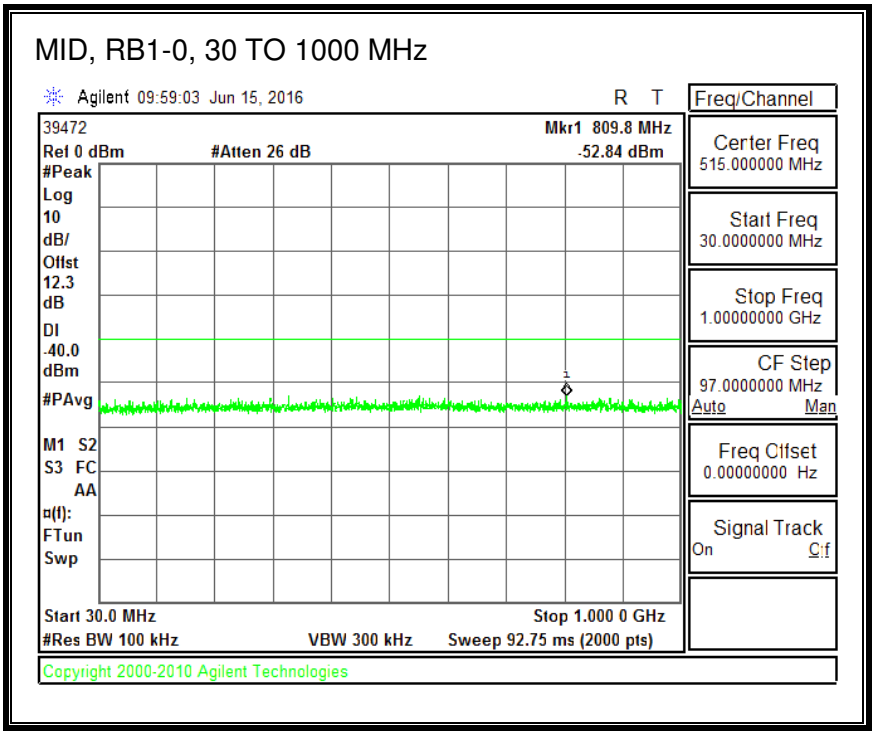
LOW, RB1-0, 1000 TO 2400 MHz



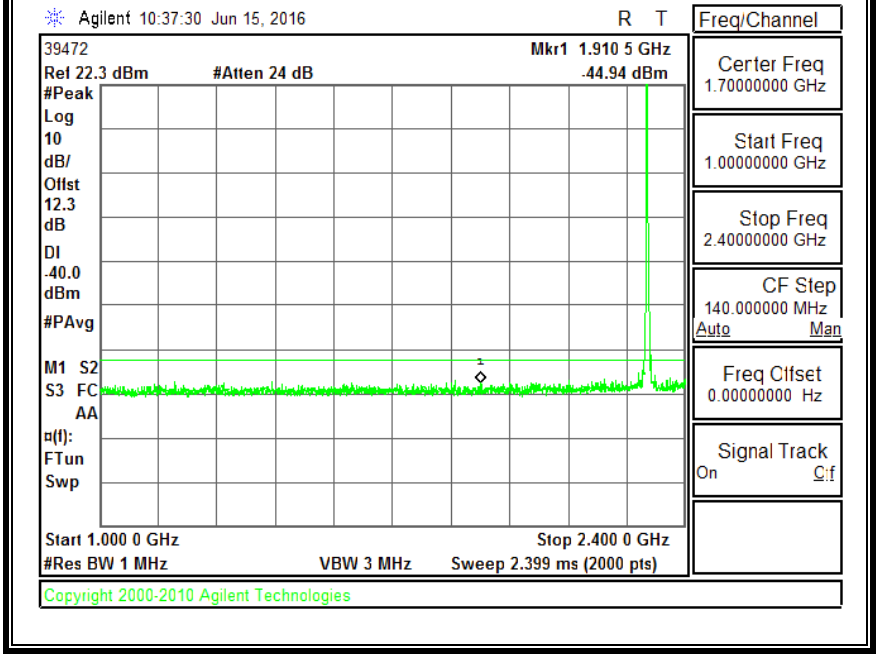
LOW, RB1-0, 2400 TO 26000 MHz



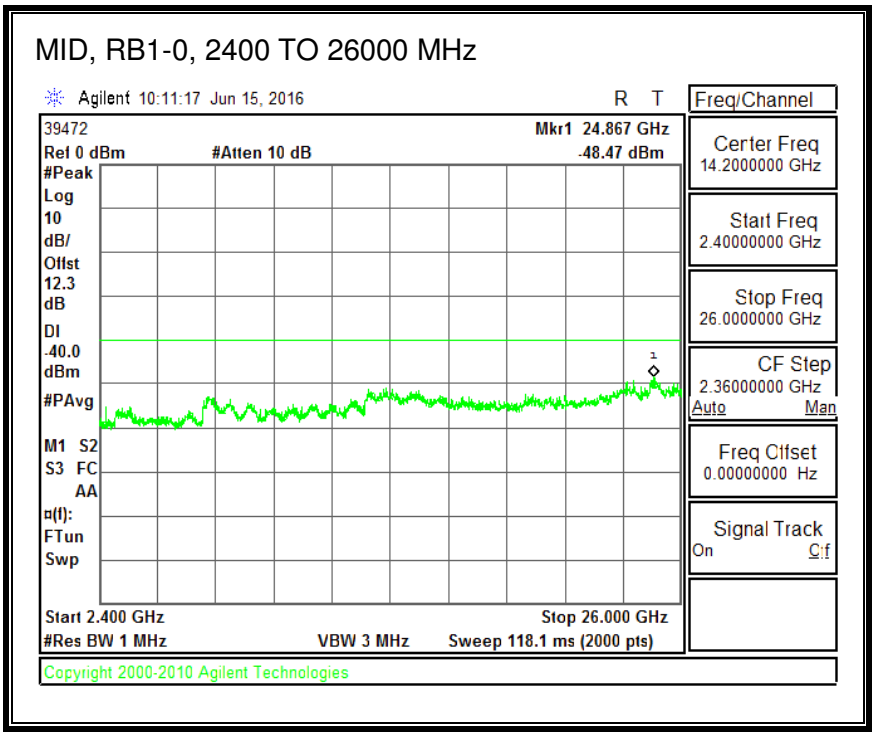
MID, RB1-0, 30 TO 1000 MHz



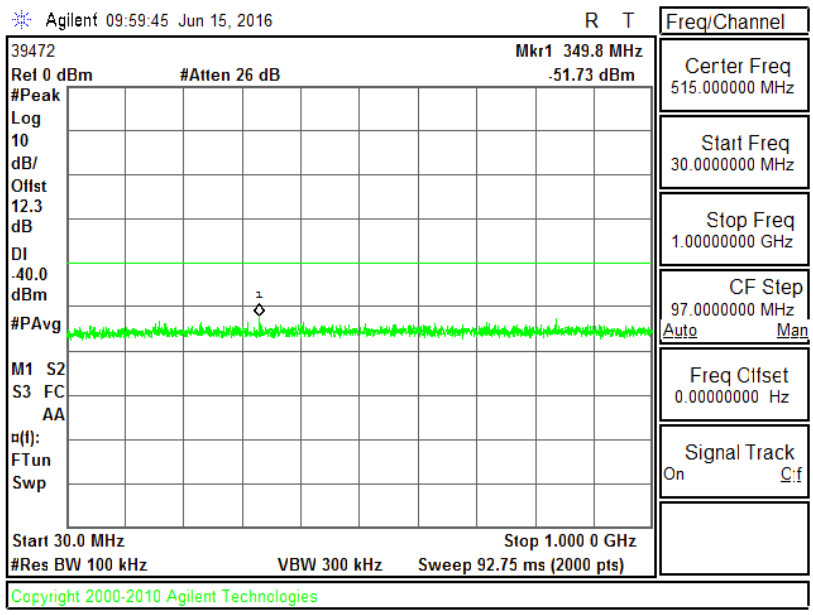
MID, RB1-0, 1000 TO 2400 MHz



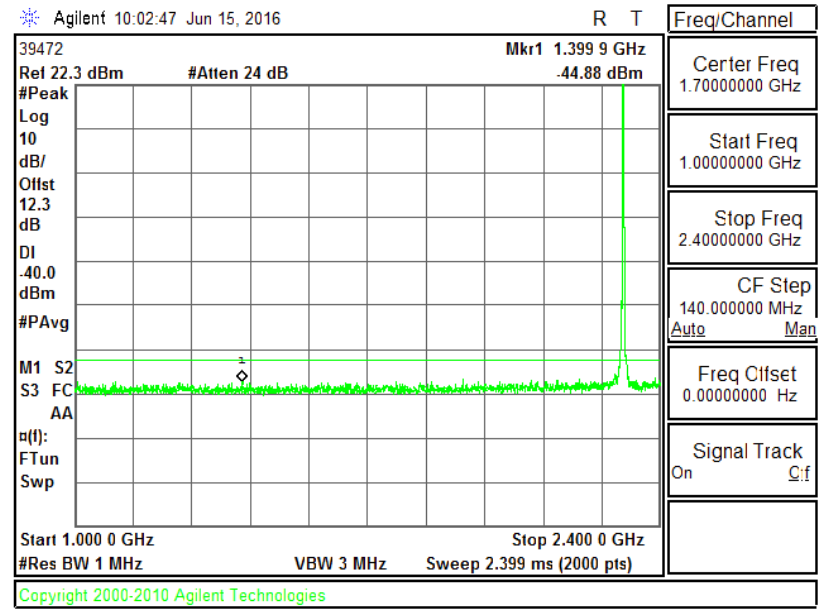
MID, RB1-0, 2400 TO 26000 MHz



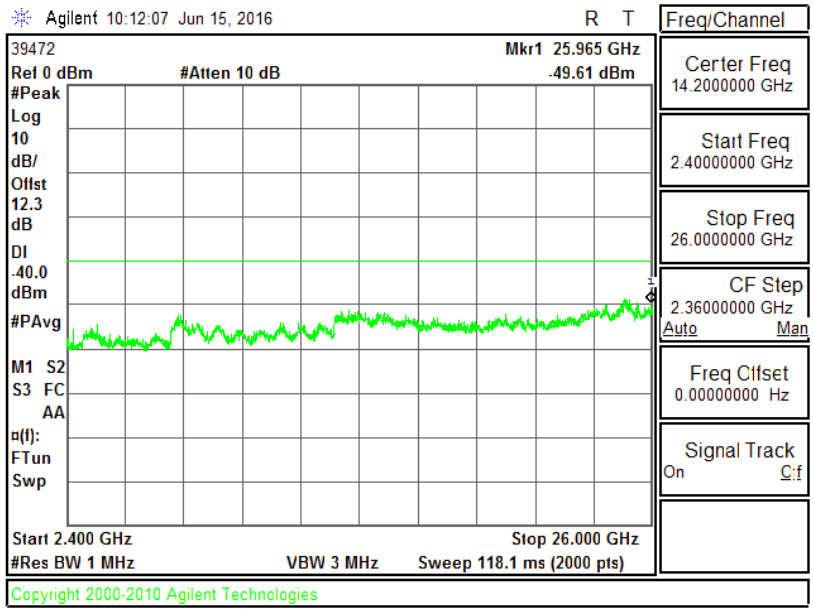
HIGH, RB1-0, 30 TO 1000 MHz



HIGH, RB1-0, 1000 TO 2400 MHz

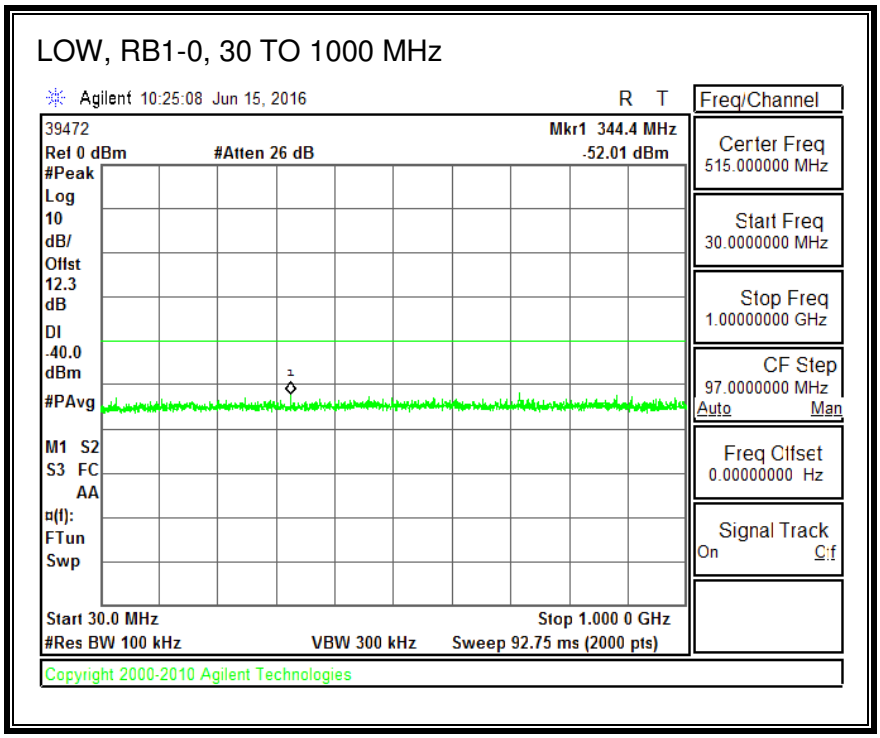


HIGH, RB1-0, 2400 TO 26000 MHz

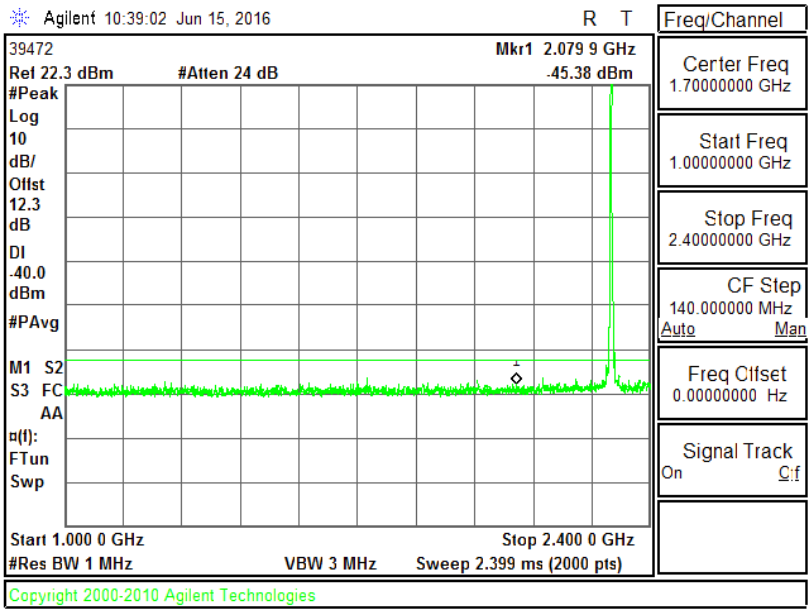


16QAM, (5.0 MHz BAND WIDTH)

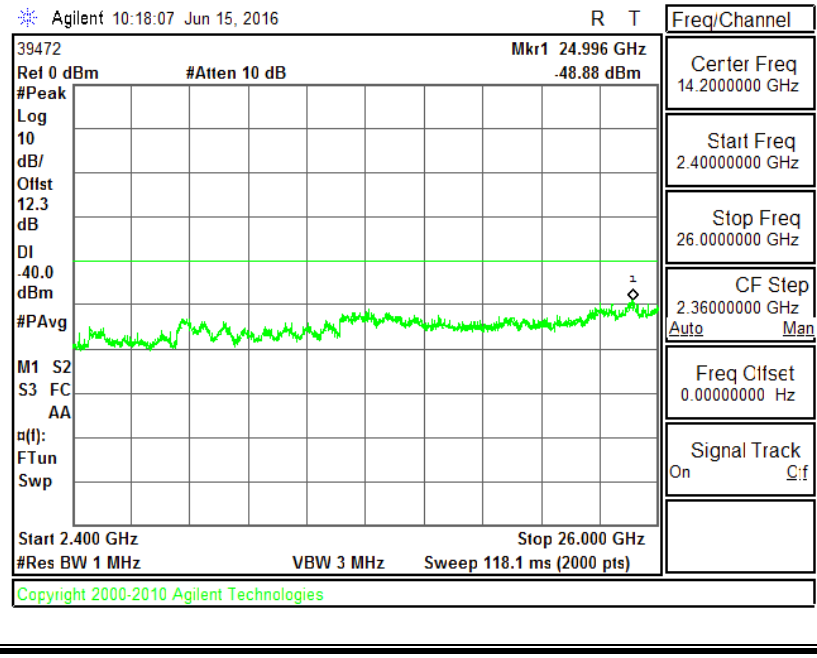
LOW, RB1-0, 30 TO 1000 MHz



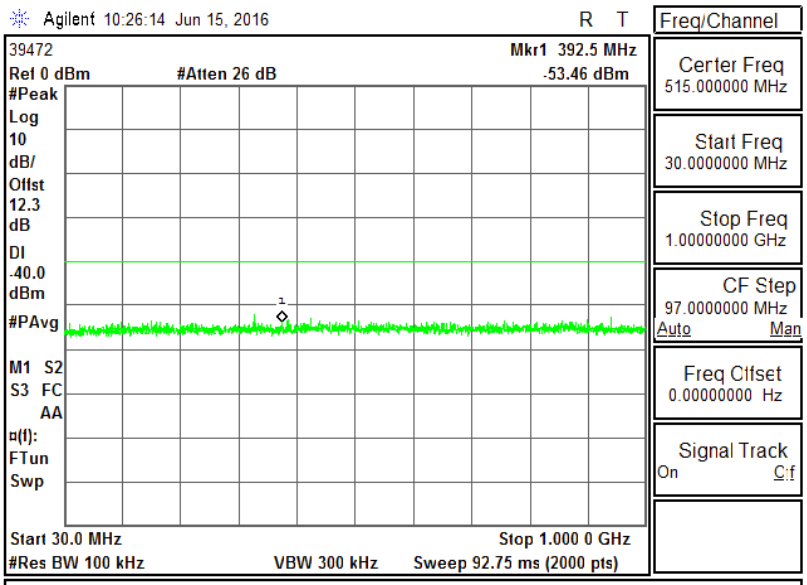
LOW, RB1-0, 1000 TO 2400 MHz



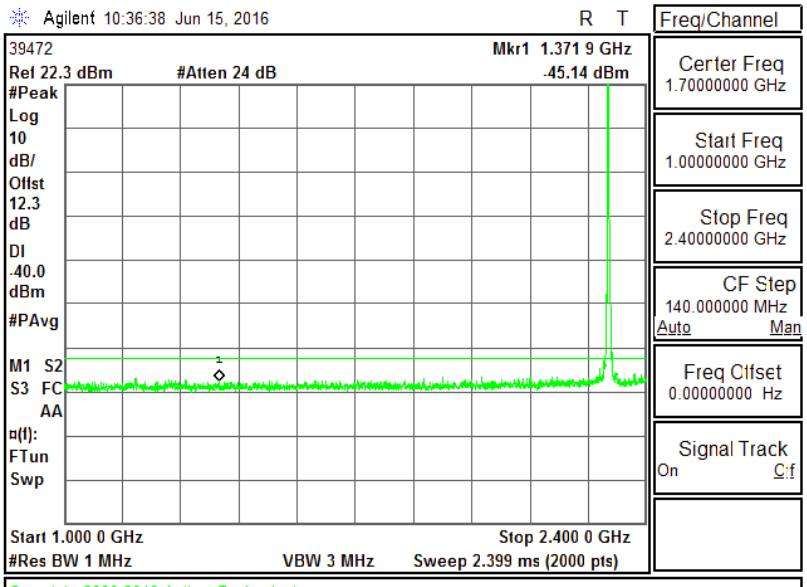
LOW, RB1-0, 2400 TO 26000 MHz



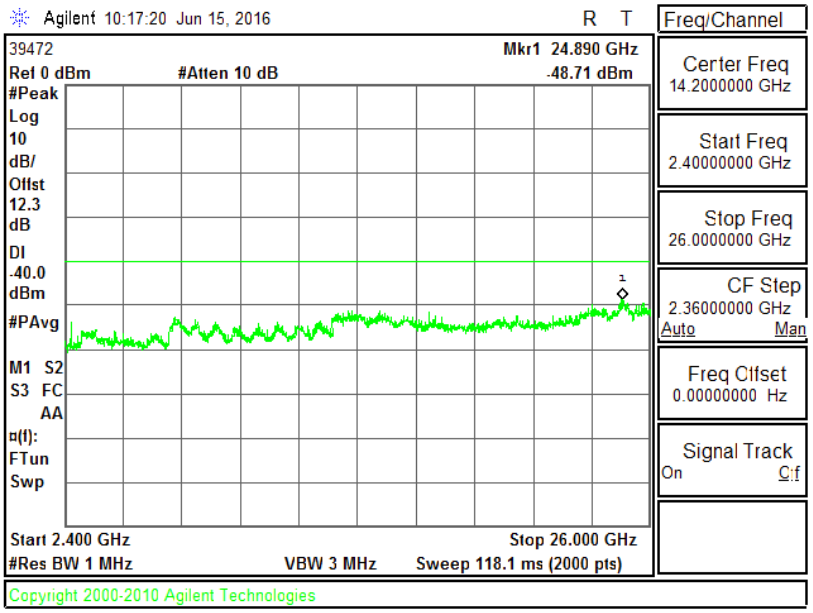
MID, RB1-0, 30 TO 1000 MHz



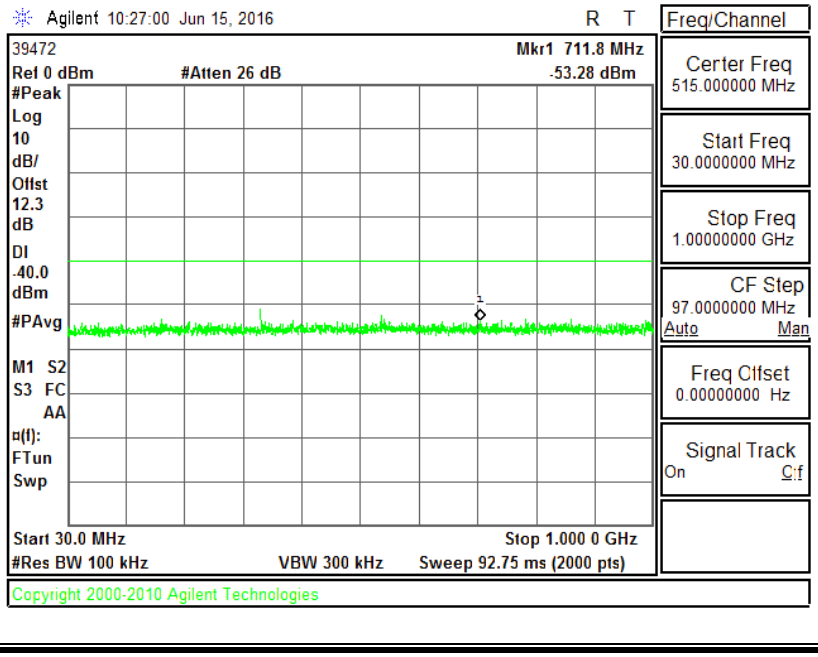
MID, RB1-0, 1000 TO 2400 MHz



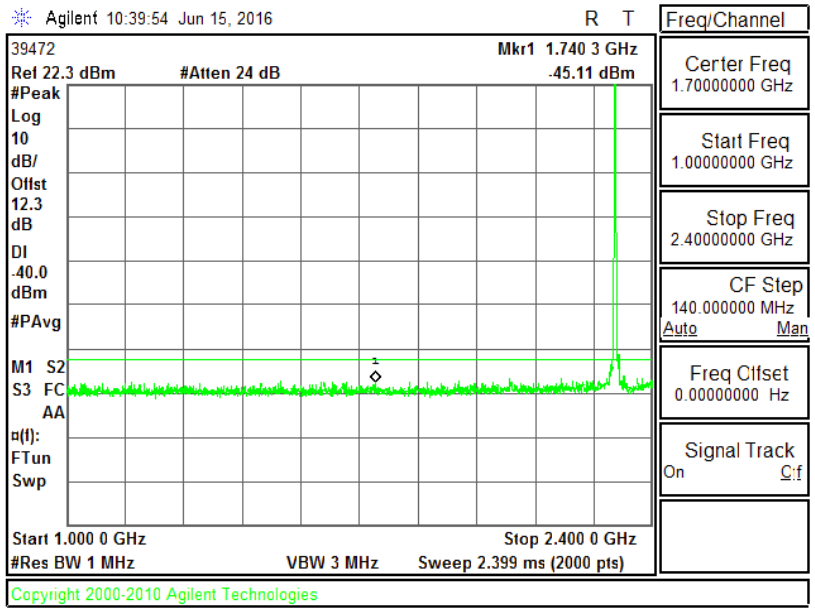
MID, RB1-0, 2400 TO 26000 MHz



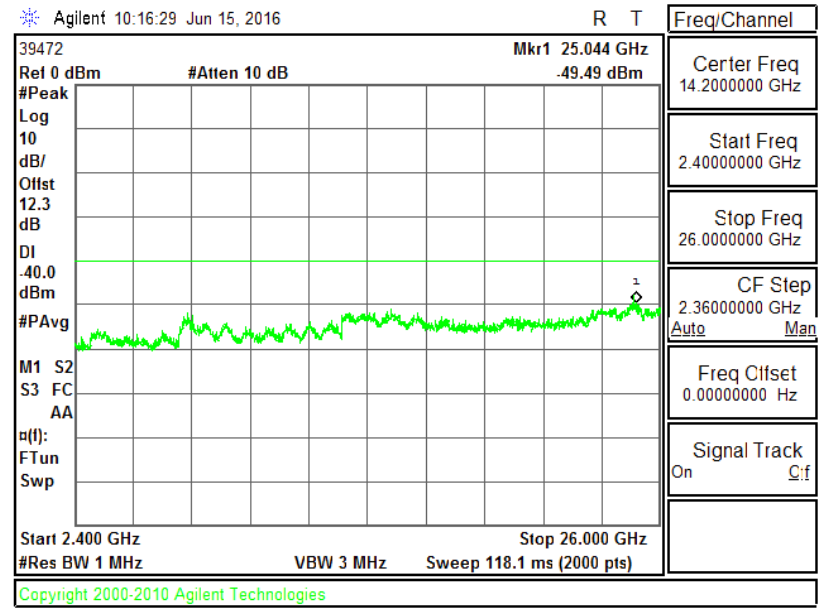
HIGH, RB1-0, 30 TO 1000 MHz



HIGH, RB1-0, 1000 TO 2400 MHz

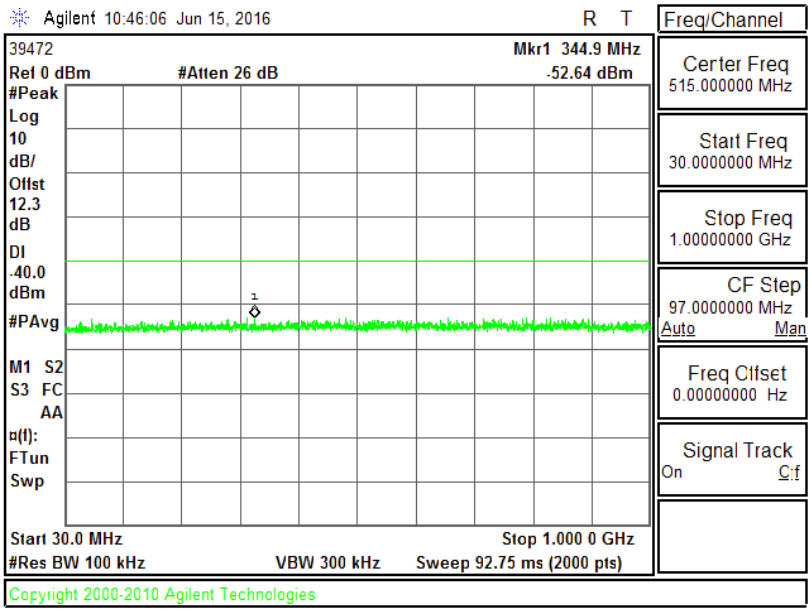


HIGH, RB1-0, 1000 TO 2400 MHz

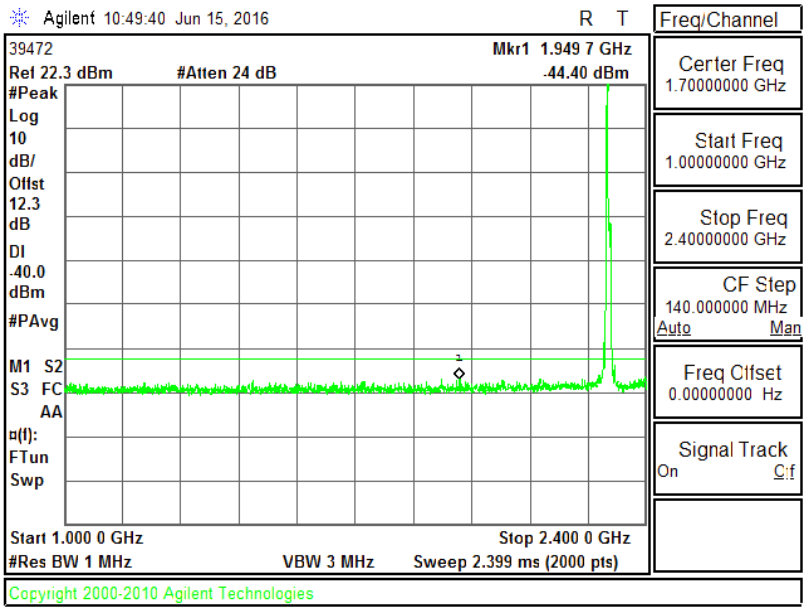


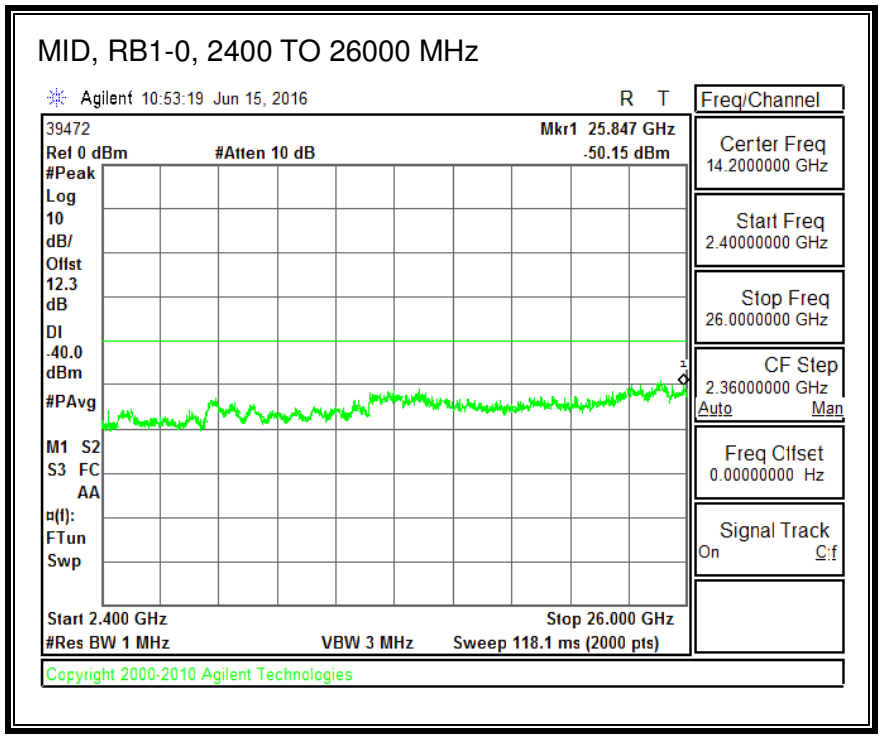
QPSK, (10.0 MHz BAND WIDTH)

MID, RB1-0, 30 TO 1000 MHz

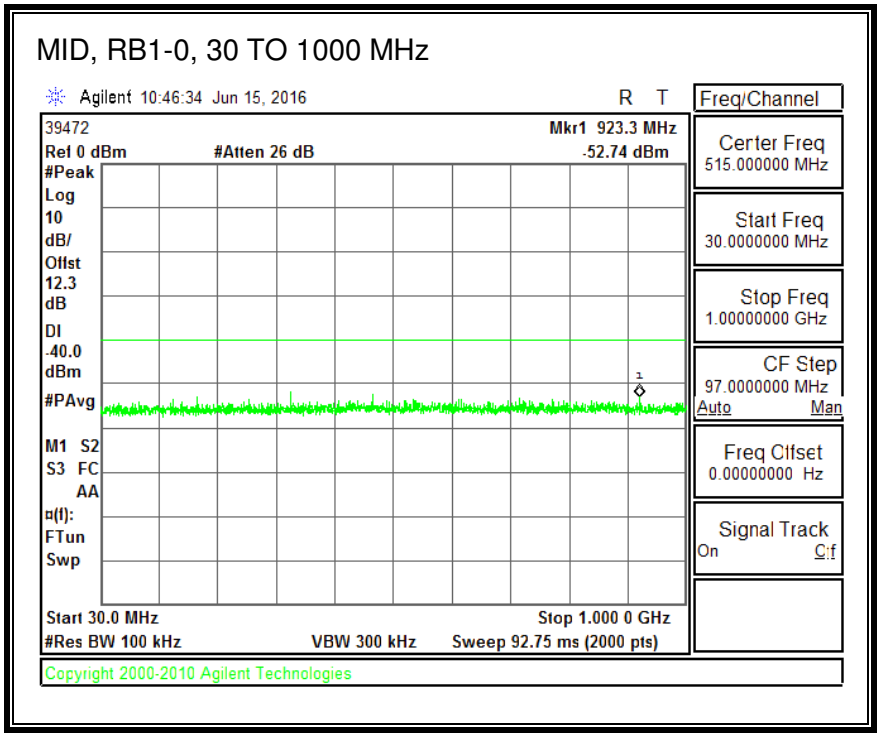


MID, RB1-0, 1000 TO 2400 MHz

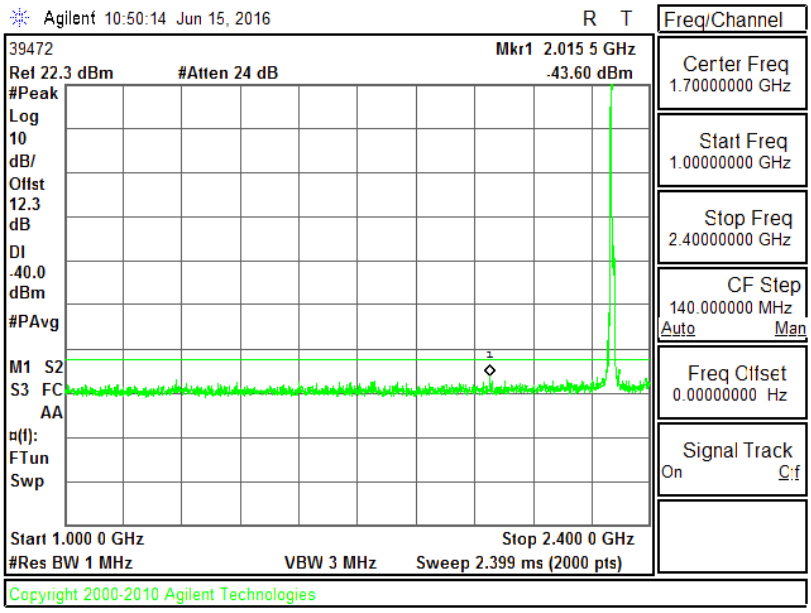




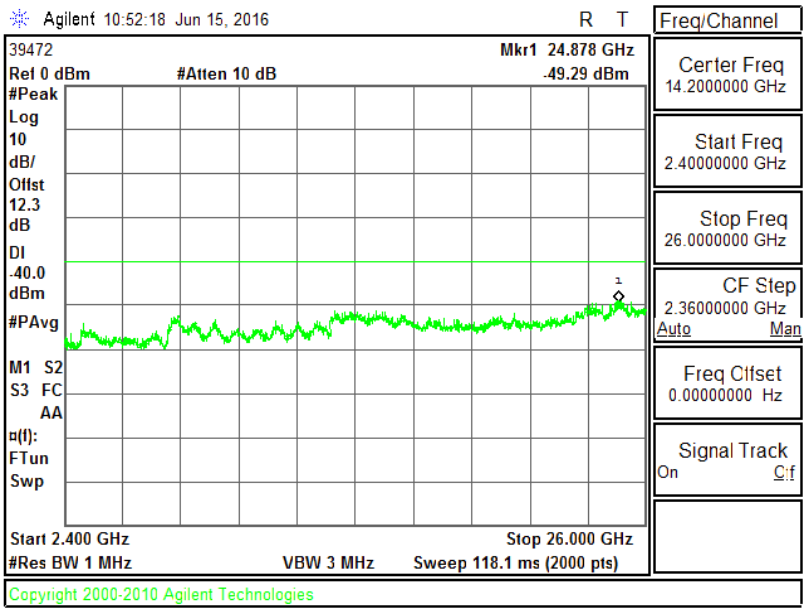
16QAM, (10.0 MHz BAND WIDTH)



MID, RB1-0, 1000 TO 2400 MHz



MID, RB1-0, 2400 TO 26000 MHz

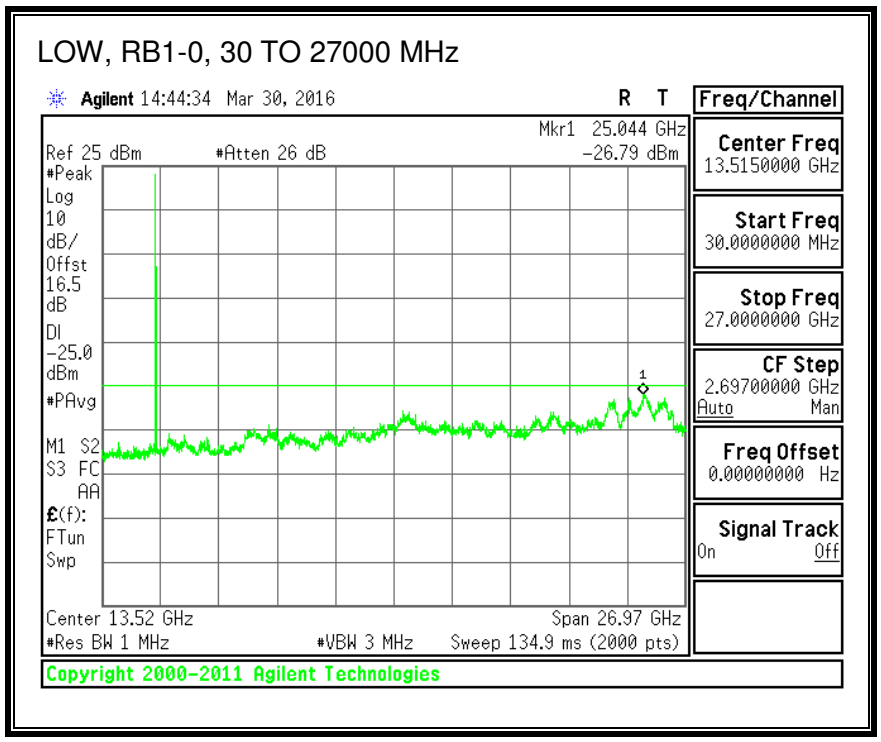


8.3.12 LTE BAND 41

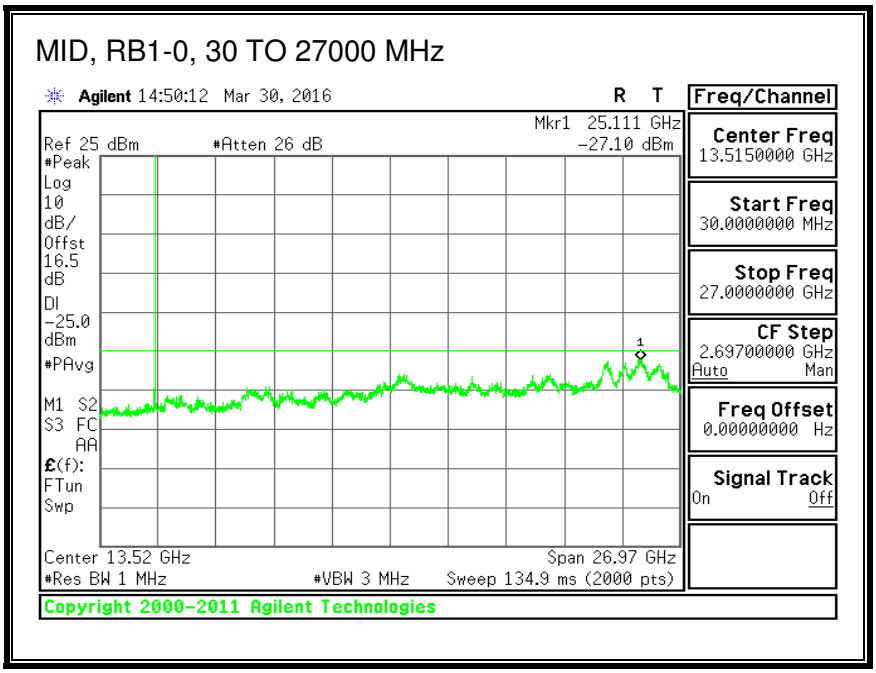
ID:	38806	Date:	3/29/16

QPSK, (5.0 MHz BAND WIDTH)

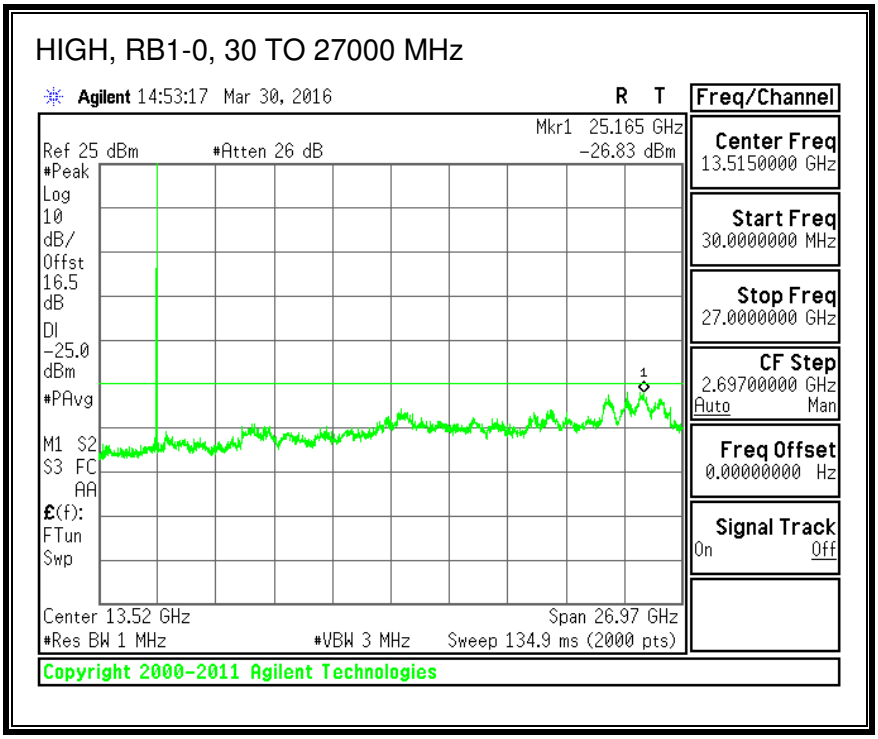
LOW, RB1-0, 30 TO 27000 MHz



MID, RB1-0, 30 TO 27000 MHz

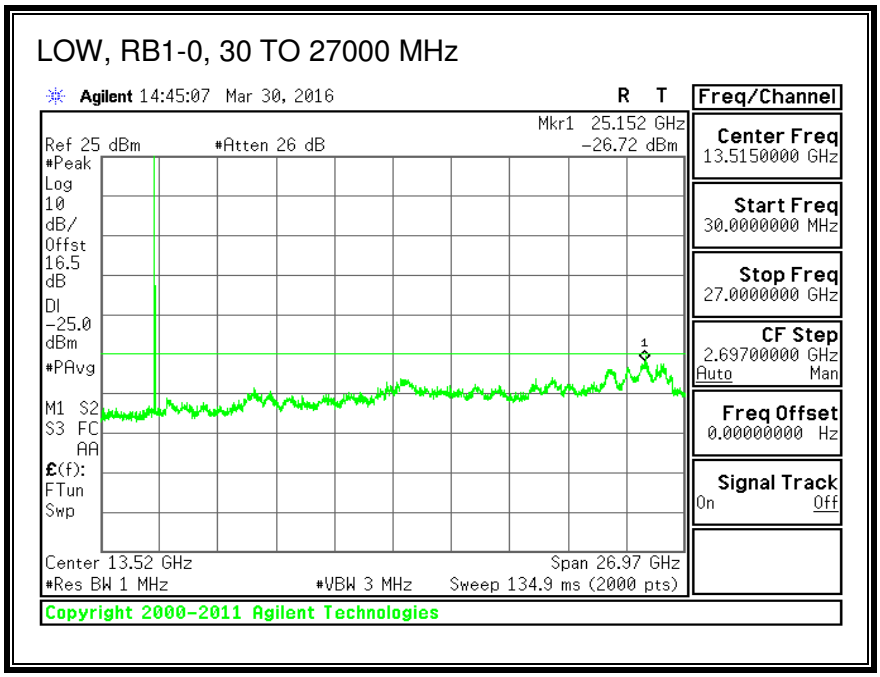


HIGH, RB1-0, 30 TO 27000 MHz

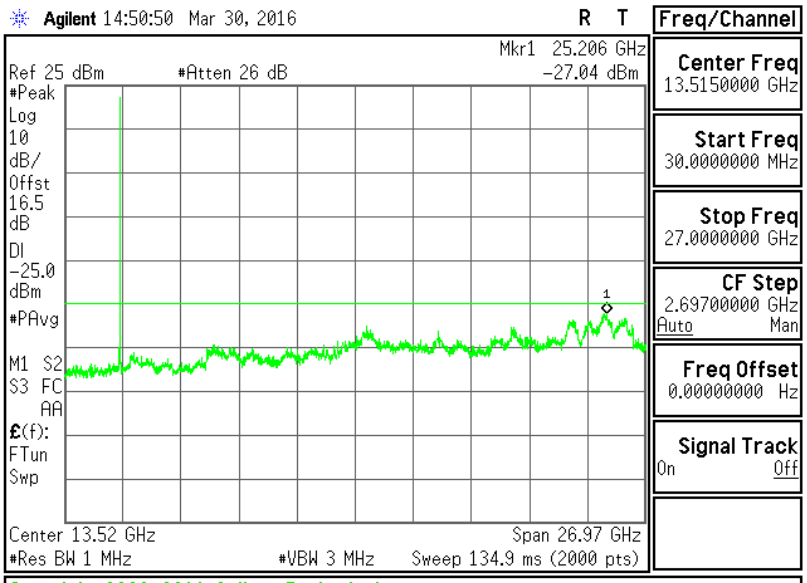


16QAM, (5.0 MHz BAND WIDTH)

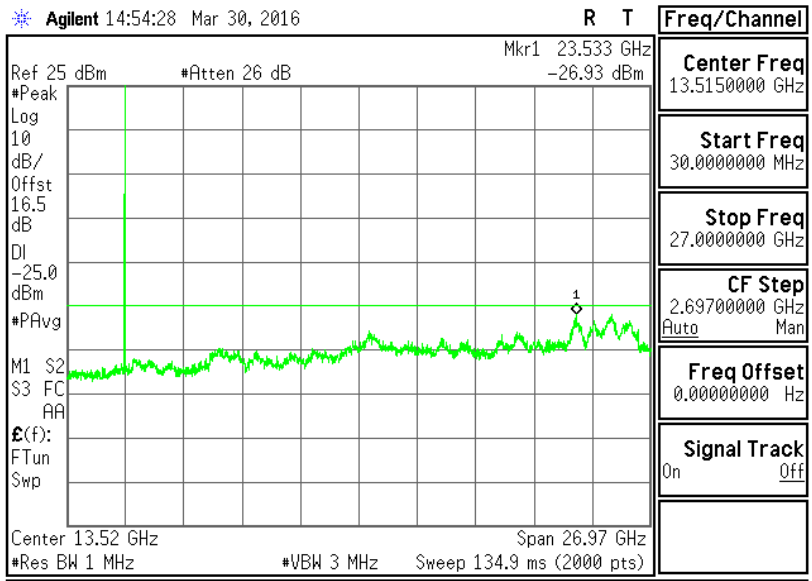
LOW, RB1-0, 30 TO 27000 MHz



MID, RB1-0, 30 TO 27000 MHz

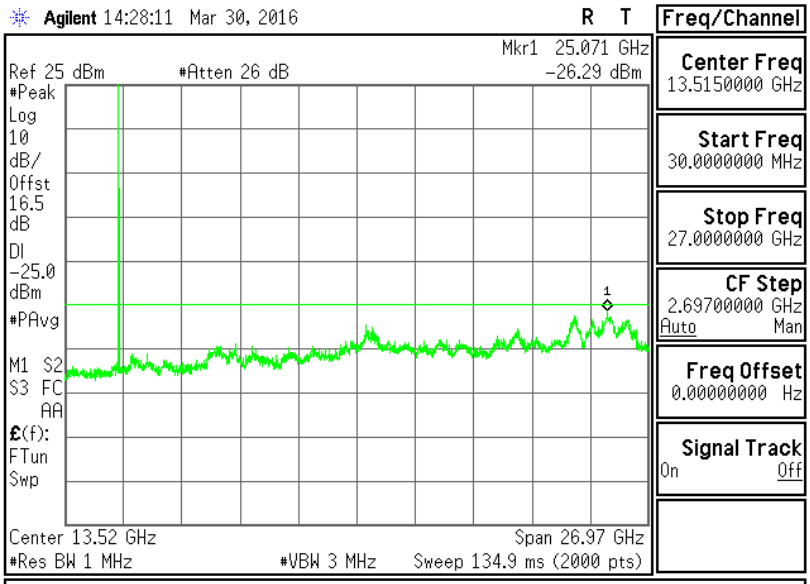


HIGH, RB1-0, 30 TO 27000 MHz

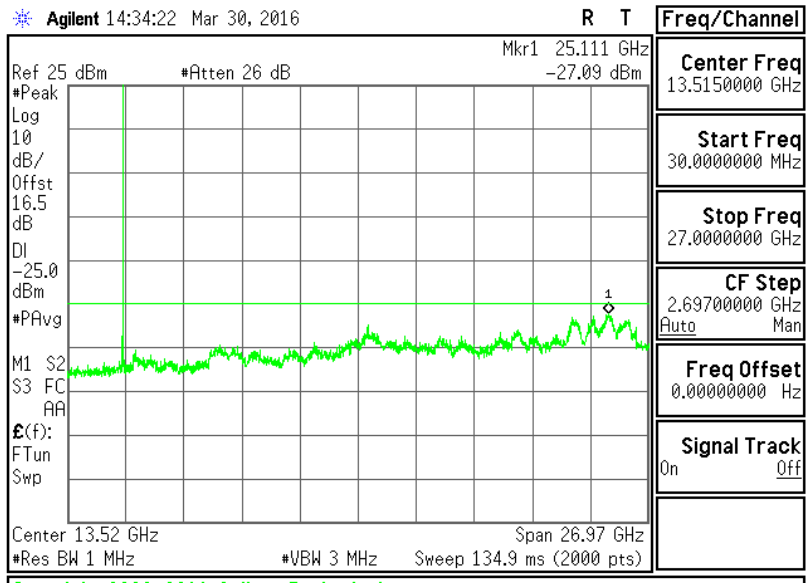


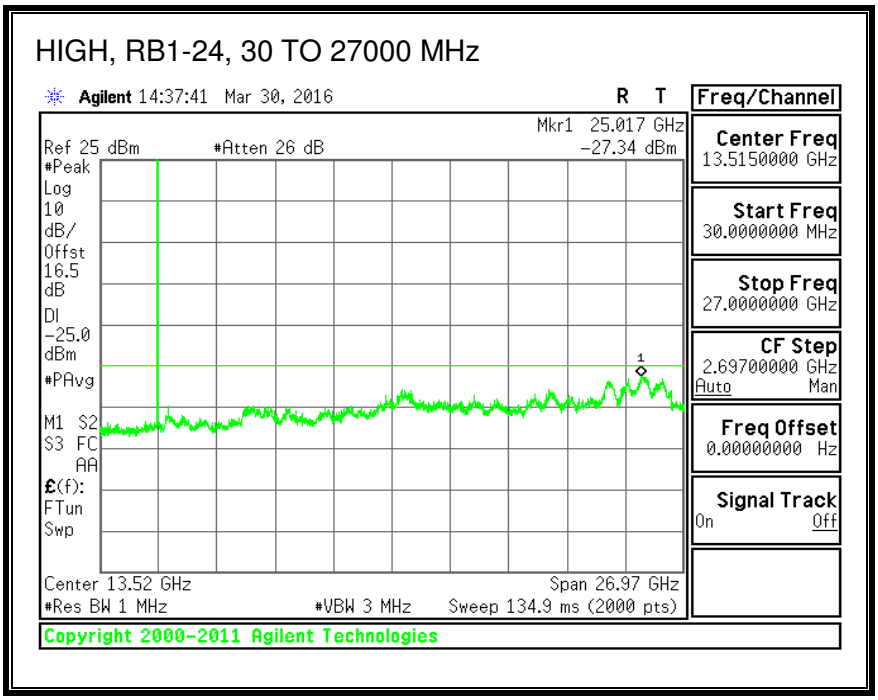
QPSK, (10.0 MHz BAND WIDTH)

LOW, RB1-24, 30 TO 27000 MHz

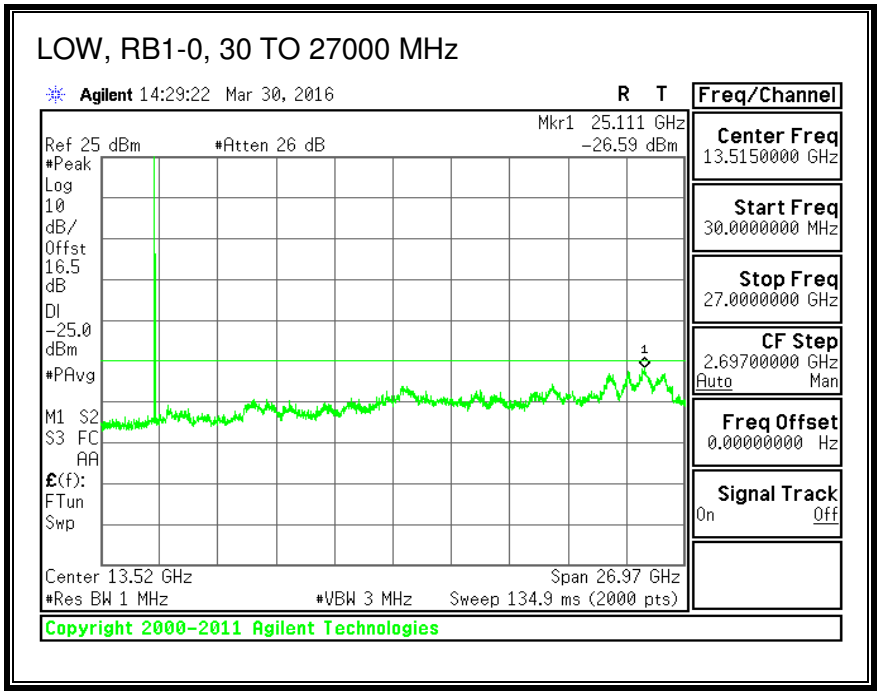


MID, RB1-24, 30 TO 27000 MHz

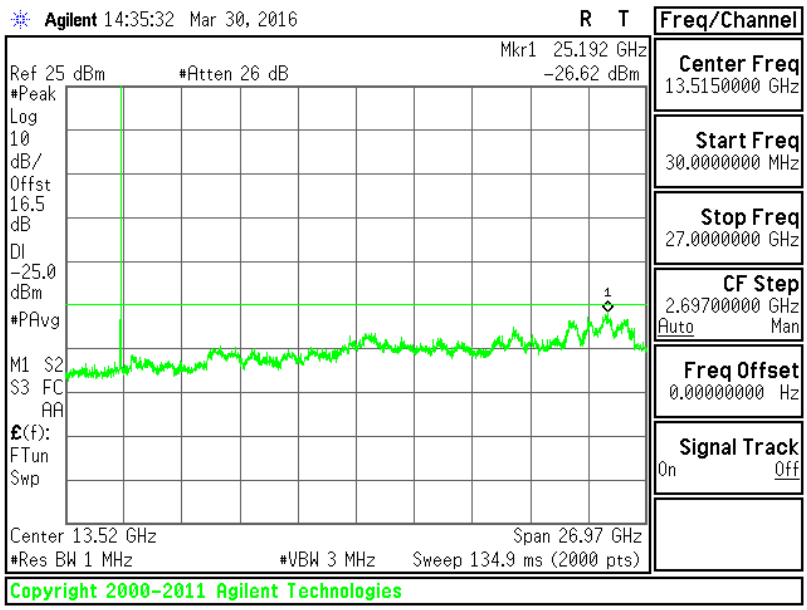




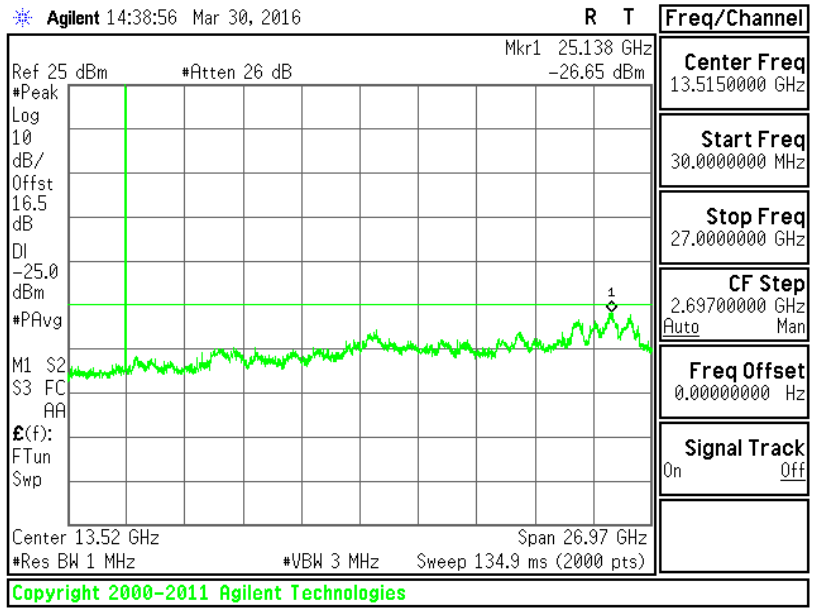
16QAM, (10.0 MHz BAND WIDTH)



MID, RB1-24, 30 TO 27000 MHz

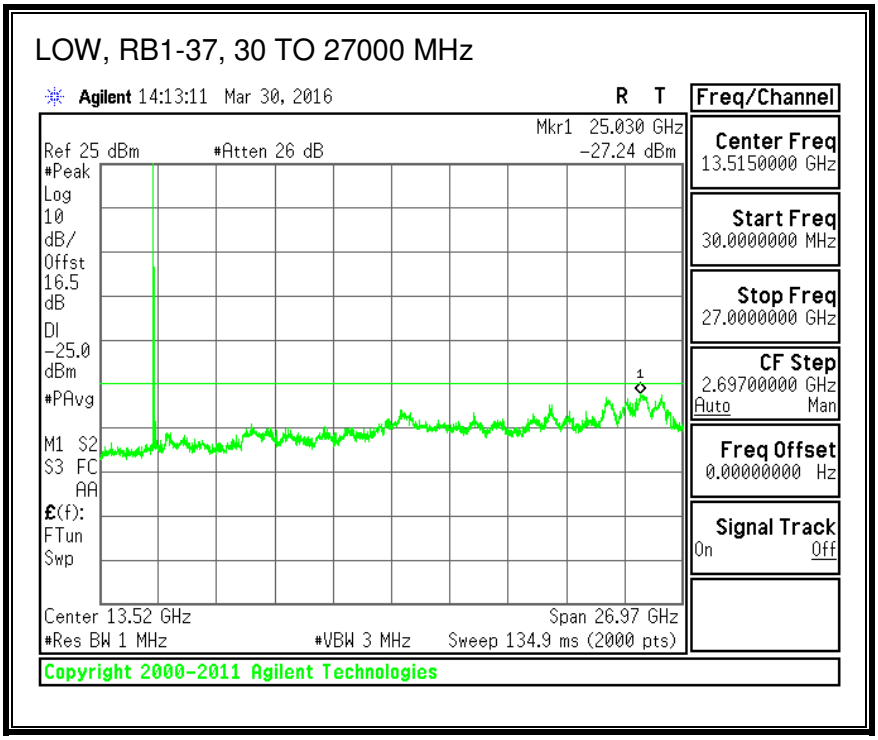


HIGH, RB1-24, 30 TO 27000 MHz

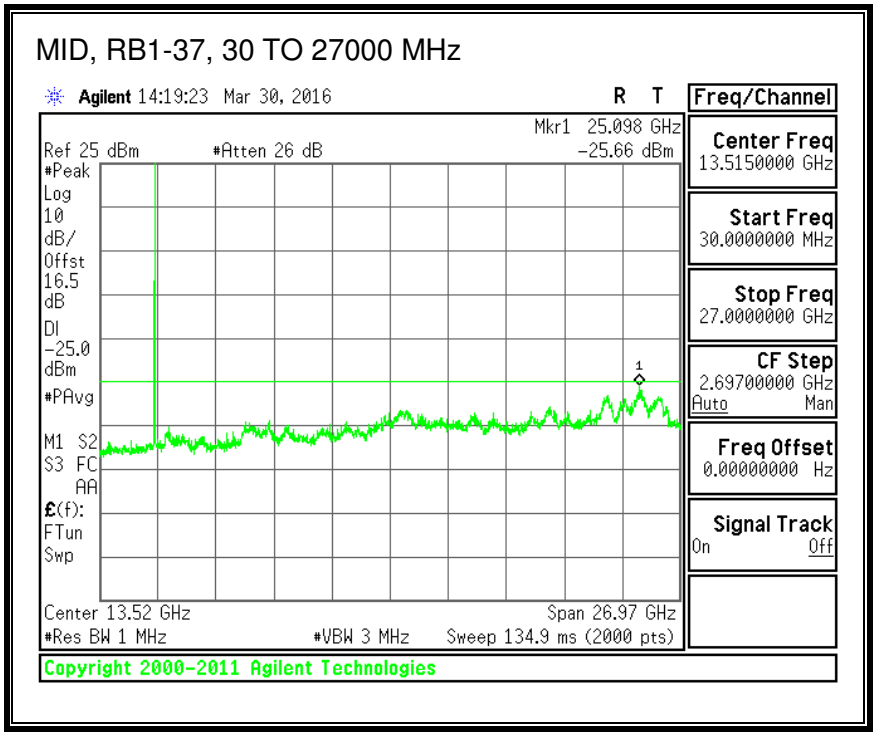


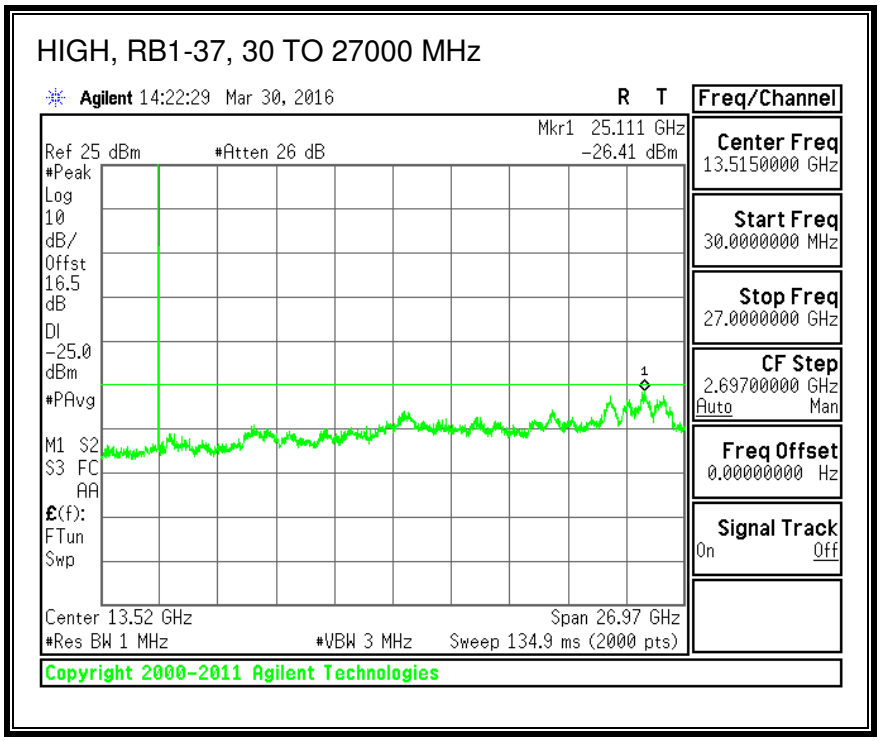
QPSK, (15.0 MHz BAND WIDTH)

LOW, RB1-37, 30 TO 27000 MHz

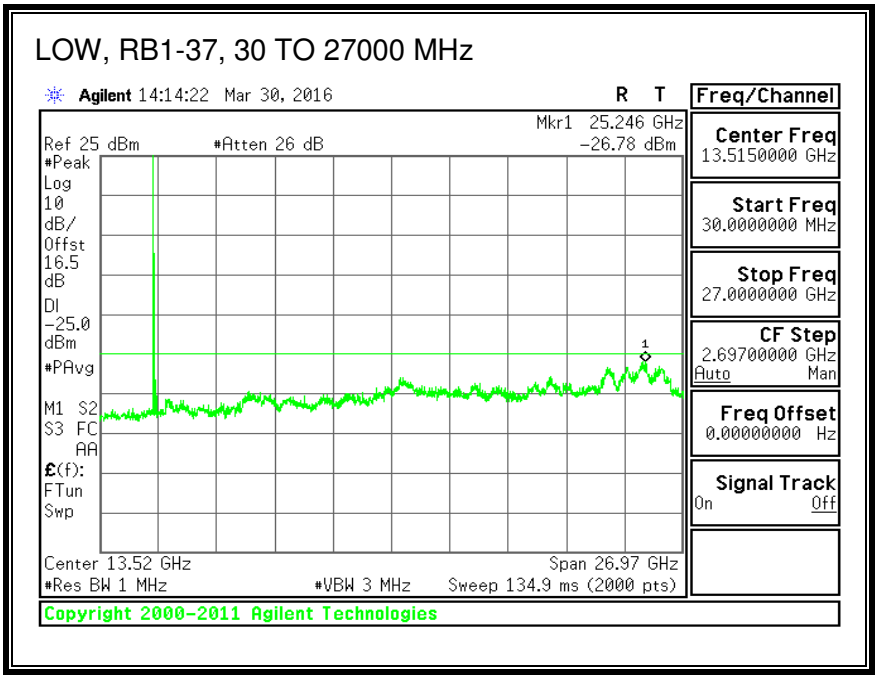


MID, RB1-37, 30 TO 27000 MHz

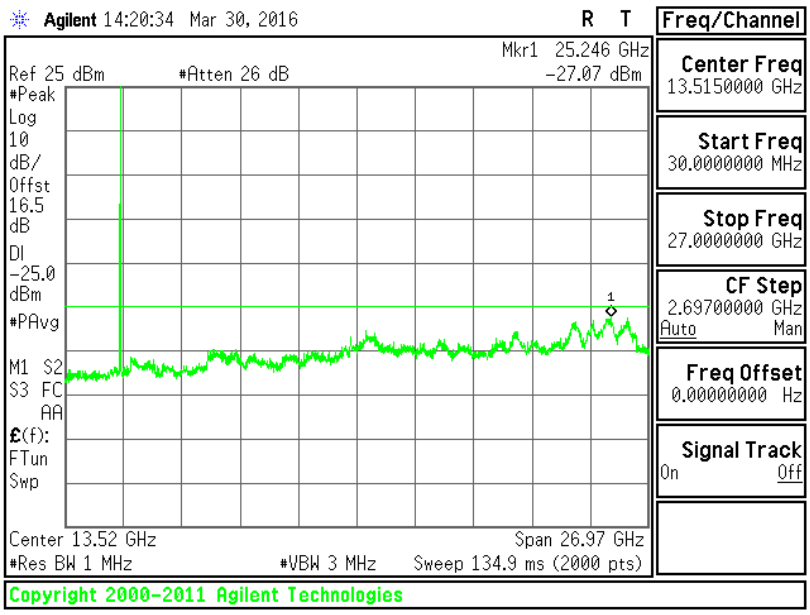




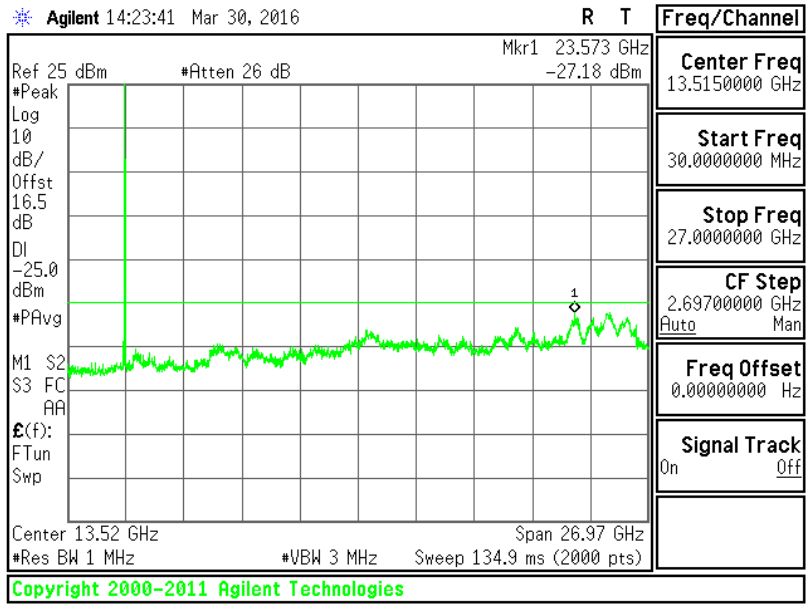
16QAM, (15.0 MHz BAND WIDTH)



MID, RB1-37, 30 TO 27000 MHz

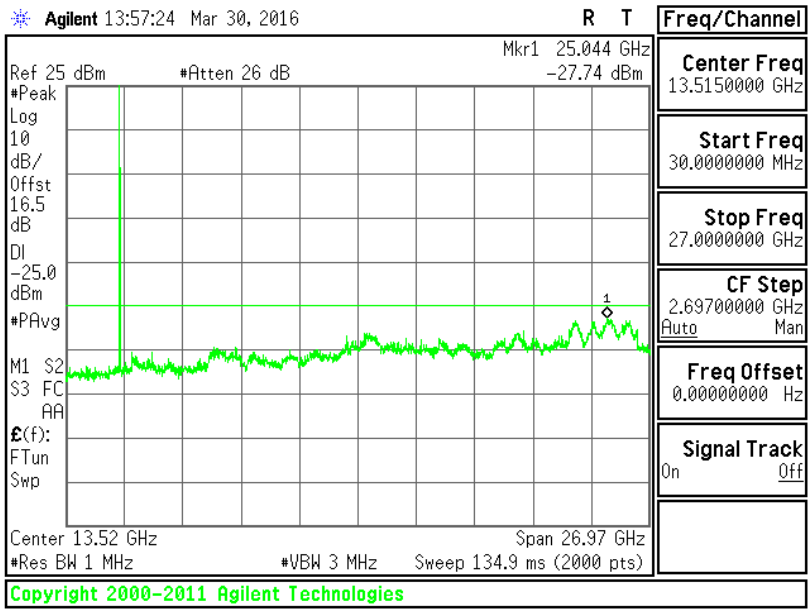


HIGH, RB1-37, 30 TO 27000 MHz

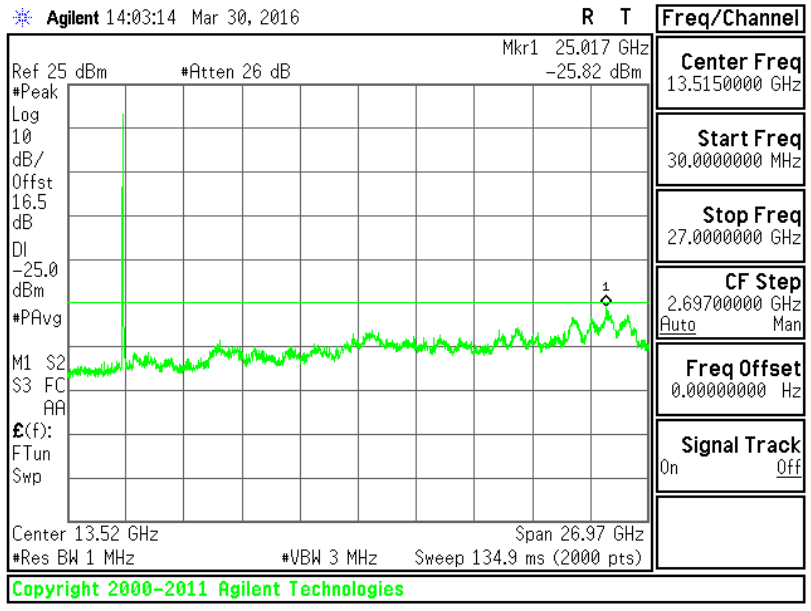


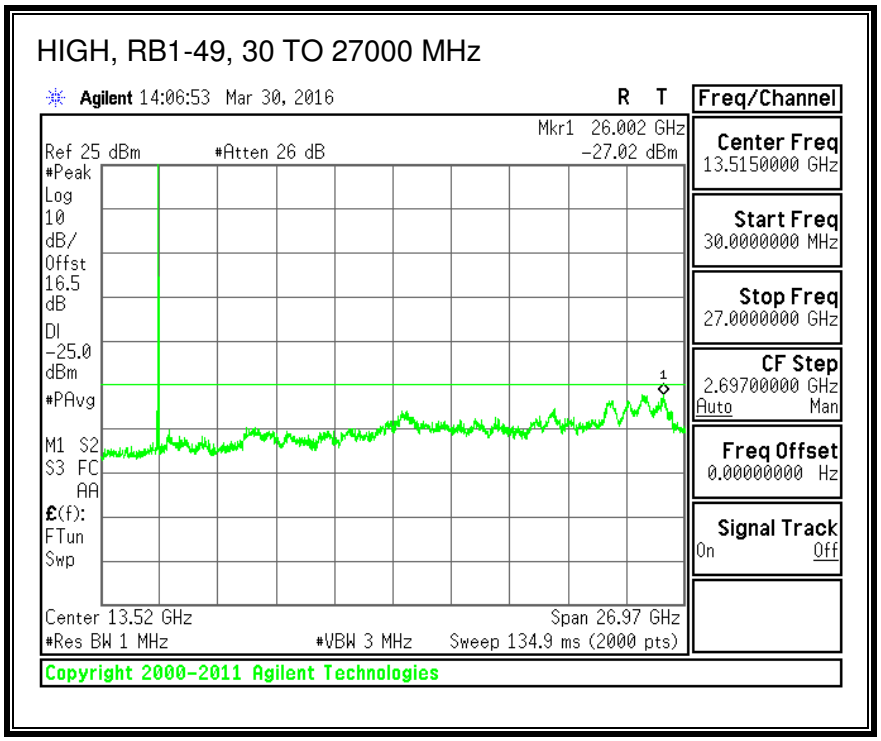
QPSK, (20.0 MHz BAND WIDTH)

LOW, RB1-49, 30 TO 27000 MHz

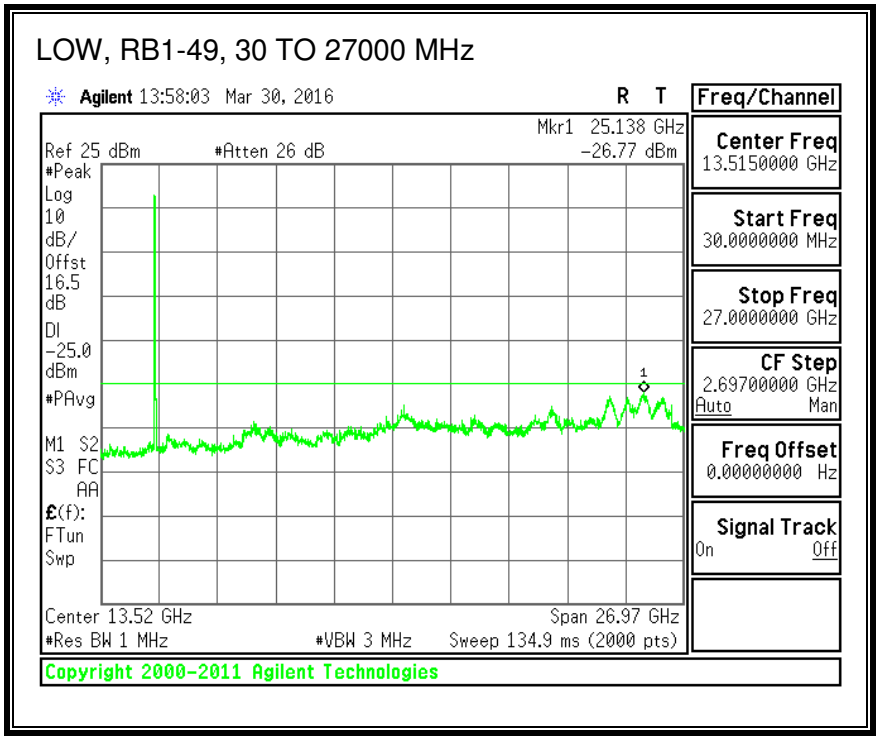


MID, RB1-49, 30 TO 27000 MHz

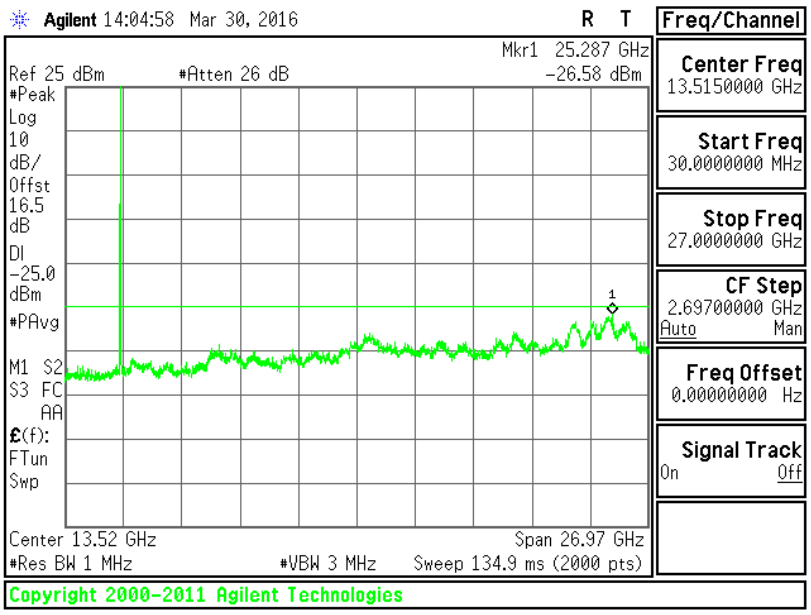




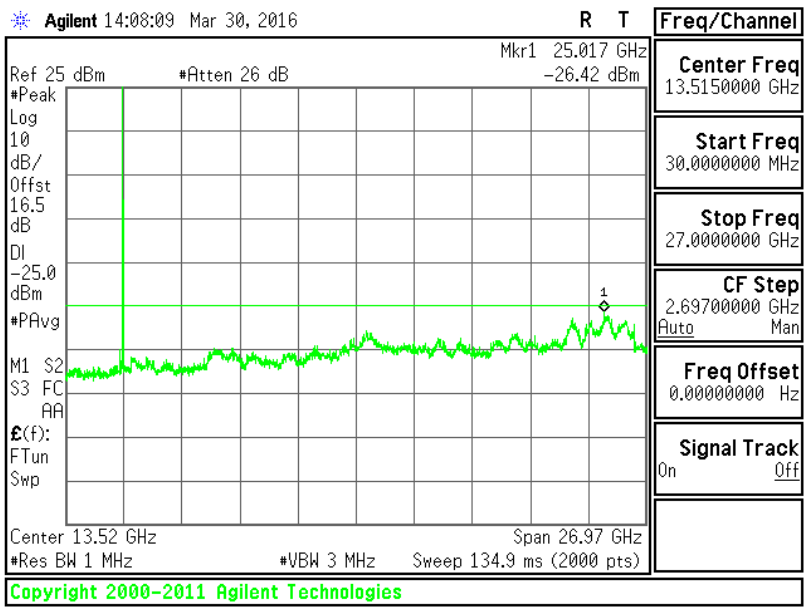
16QAM, (20.0 MHz BAND WIDTH)



MID, RB1-49, 30 TO 27000 MHz



HIGH, RB1-49, 30 TO 27000 MHz



9. FREQUENCY STABILITY

FCC: §2.1055, §22.355, §24.235, §27.54 and §90.691

LIMITS

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

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

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

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

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

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

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

MODES TESTED

- LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 17
- LTE Band 25
- LTE Band 26
- LTE Band 27
- LTE Band 30
- LTE Band 41

RESULTS

See the following pages.

9.1. LTE BAND 2

ID:	37290	Date:	4/15/16

QPSK, (20MHz BANDWIDTH)

Limit		1850	1915	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	1851.0221	1908.9827		
Extreme (50C)		1851.0221	1908.9827	8.1	0.004
Extreme (40C)		1851.0221	1908.9827	9.2	0.005
Extreme (30C)		1851.0221	1908.9827	9.2	0.005
Extreme (10C)		1851.0221	1908.9827	7.6	0.004
Extreme (0C)		1851.0221	1908.9827	8.4	0.004
Extreme (-10C)		1851.0221	1908.9827	7.8	0.004
Extreme (-20C)		1851.0221	1908.9827	9.2	0.005
Extreme (-30C)		1851.0221	1908.9827	8.6	0.005
25C	10%	1851.0221	1908.9827	8.1	0.004
	-10%	1851.0221	1908.9827	7.4	0.004
	End Point	1851.0221	1908.9827	6.8	0.004

16QAM, (20MHz BANDWIDTH)

Limit		1850	1915	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	1851.0177	1908.9739		
Extreme (50C)		1851.0177	1908.9739	9.6	0.005
Extreme (40C)		1851.0177	1908.9739	10.6	0.006
Extreme (30C)		1851.0177	1908.9739	7.8	0.004
Extreme (10C)		1851.0177	1908.9739	8.1	0.004
Extreme (0C)		1851.0177	1908.9739	7.4	0.004
Extreme (-10C)		1851.0177	1908.9739	8.7	0.005
Extreme (-20C)		1851.0177	1908.9739	7.0	0.004
Extreme (-30C)		1851.0177	1908.9739	6.9	0.004
25C	10%	1851.0177	1908.9739	7.0	0.004
	-10%	1851.0177	1908.9739	7.2	0.004
	End Point	1851.0177	1908.9739	8.0	0.004

9.2. LTE BAND 4

ID:	37290	Date:	2/23/16

QPSK, (20MHz BANDWIDTH)

Limit		1710	1755	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	1711.0170	1753.9854		
Extreme (50C)		1711.0170	1753.9854	4.2	0.002
Extreme (40C)		1711.0170	1753.9854	-5.1	-0.003
Extreme (30C)		1711.0170	1753.9854	2.0	0.001
Extreme (10C)		1711.0170	1753.9854	1.2	0.001
Extreme (0C)		1711.0170	1753.9854	2.0	0.001
Extreme (-10C)		1711.0170	1753.9854	1.5	0.001
Extreme (-20C)		1711.0170	1753.9854	1.2	0.001
Extreme (-30C)		1711.0170	1753.9854	2.0	0.001
25C	10%	1711.0170	1753.9854	-0.8	0.000
	-10%	1711.0170	1753.9854	-0.7	0.000
	End Point	1711.0170	1753.9854	-0.6	0.000

16QAM, (20MHz BANDWIDTH)

Limit		1710	1755	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	1711.0220	1753.9808		
Extreme (50C)		1711.0220	1753.9808	4.1	0.002
Extreme (40C)		1711.0220	1753.9808	-5.4	-0.003
Extreme (30C)		1711.0220	1753.9808	2.9	0.002
Extreme (10C)		1711.0220	1753.9808	1.5	0.001
Extreme (0C)		1711.0220	1753.9808	1.1	0.001
Extreme (-10C)		1711.0220	1753.9808	0.9	0.001
Extreme (-20C)		1711.0220	1753.9808	0.6	0.000
Extreme (-30C)		1711.0220	1753.9808	1.9	0.001
25C	10%	1711.0220	1753.9808	-1.1	-0.001
	-10%	1711.0220	1753.9808	-1.6	-0.001
	End Point	1711.0220	1753.9808	-1.5	-0.001

9.3. LTE BAND 5

ID:	37290	Date:	2/23/16

QPSK, (10MHz BANDWIDTH)

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	824.5050	848.4933		
Extreme (50C)		824.5050	848.4933	2.3	0.003
Extreme (40C)		824.5050	848.4933	-3.0	-0.004
Extreme (30C)		824.5050	848.4933	-0.7	-0.001
Extreme (10C)		824.5050	848.4933	0.4	0.000
Extreme (0C)		824.5050	848.4933	0.9	0.001
Extreme (-10C)		824.5050	848.4933	1.4	0.002
Extreme (-20C)		824.5050	848.4933	1.3	0.002
Extreme (-30C)		824.5050	848.4933	-2.2	-0.003
25C	10%	824.5050	848.4933	-1.1	-0.001
	-10%	824.5050	848.4933	-0.5	-0.001
	End Point	824.5050	848.4933	-0.7	-0.001

16QAM, (10MHz BANDWIDTH)

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	824.5068	848.4923		
Extreme (50C)		824.5068	848.4923	-3.3	-0.004
Extreme (40C)		824.5068	848.4923	-3.2	-0.004
Extreme (30C)		824.5068	848.4923	-0.4	0.000
Extreme (10C)		824.5068	848.4923	0.9	0.001
Extreme (0C)		824.5068	848.4923	0.2	0.000
Extreme (-10C)		824.5068	848.4923	0.2	0.000
Extreme (-20C)		824.5068	848.4923	1.0	0.001
Extreme (-30C)		824.5068	848.4923	-1.7	-0.002
25C	10%	824.5068	848.4923	-1.3	-0.002
	-10%	824.5068	848.4923	-1.0	-0.001
	End Point	824.5068	848.4923	-1.6	-0.002

9.4. LTE BAND 7

ID:	37290	Date:	2/23/16

QPSK, (20MHz BANDWIDTH)

Limit		2500	2570	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	2501.0147	2568.9826		
Extreme (50C)		2501.0147	2568.9826	-8.2	-0.003
Extreme (40C)		2501.0146	2568.9826	-11.2	-0.004
Extreme (30C)		2501.0147	2568.9826	-4.6	-0.002
Extreme (10C)		2501.0147	2568.9826	-2.9	-0.001
Extreme (0C)		2501.0147	2568.9826	-2.7	-0.001
Extreme (-10C)		2501.0147	2568.9826	-4.0	-0.002
Extreme (-20C)		2501.0147	2568.9826	-4.0	-0.002
Extreme (-30C)		2501.0147	2568.9826	-5.7	-0.002
25C	10%	2501.0147	2568.9826	-3.3	-0.001
	-10%	2501.0147	2568.9826	-3.9	-0.002
	End Point	2501.0147	2568.9826	-4.9	-0.002

16QAM, (20MHz BANDWIDTH)

Limit		2500	2570	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	2501.0121	2568.9906		
Extreme (50C)		2501.0121	2568.9906	-7.7	-0.003
Extreme (40C)		2501.0121	2568.9906	-10.2	-0.004
Extreme (30C)		2501.0121	2568.9906	-4.3	-0.002
Extreme (10C)		2501.0121	2568.9906	-2.6	-0.001
Extreme (0C)		2501.0121	2568.9906	-2.4	-0.001
Extreme (-10C)		2501.0121	2568.9906	-4.0	-0.002
Extreme (-20C)		2501.0121	2568.9906	-1.6	-0.001
Extreme (-30C)		2501.0121	2568.9906	-4.7	-0.002
25C	10%	2501.0121	2568.9906	-3.7	-0.001
	-10%	2501.0121	2568.9906	-2.9	-0.001
	End Point	2501.0121	2568.9906	-3.2	-0.001

9.5. LTE BAND 12

ID:	37290	Date:	2/23/16

QPSK, (10MHz BANDWIDTH)

Limit		699	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	699.5060	715.4958		
Extreme (50C)		699.5060	715.4958	0.8	0.001
Extreme (40C)		699.5060	715.4958	0.2	0.000
Extreme (30C)		699.5060	715.4958	0.6	0.001
Extreme (10C)		699.5060	715.4958	1.8	0.003
Extreme (0C)		699.5060	715.4958	2.3	0.003
Extreme (-10C)		699.5060	715.4958	2.3	0.003
Extreme (-20C)		699.5060	715.4958	1.4	0.002
Extreme (-30C)		699.5060	715.4958	-0.4	-0.001
25C	10%	699.5060	715.4958	0.7	0.001
	-10%	699.5060	715.4958	0.3	0.000
	End Point	699.5060	715.4958	0.4	0.001

16QAM, (10MHz BANDWIDTH)

Limit		699	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	699.5064	715.4940		
Extreme (50C)		699.5064	715.4940	0.3	0.000
Extreme (40C)		699.5064	715.4940	0.5	0.001
Extreme (30C)		699.5064	715.4940	0.3	0.000
Extreme (10C)		699.5064	715.4940	1.9	0.003
Extreme (0C)		699.5064	715.4940	1.4	0.002
Extreme (-10C)		699.5064	715.4940	1.7	0.002
Extreme (-20C)		699.5064	715.4940	0.5	0.001
Extreme (-30C)		699.5064	715.4940	0.2	0.000
25C	10%	699.5064	715.4940	0.5	0.001
	-10%	699.5064	715.4940	1.3	0.002
	End Point	699.5064	715.4940	1.3	0.002

9.6. LTE BAND 13

ID:	37290	Date:	2/23/16

QPSK, (10MHz BANDWIDTH)

Limit		777	787	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	777.5058	786.4954		
Extreme (50C)		777.5058	786.4954	0.3	0.000
Extreme (40C)		777.5058	786.4954	0.5	0.001
Extreme (30C)		777.5058	786.4954	0.3	0.000
Extreme (10C)		777.5058	786.4954	1.9	0.002
Extreme (0C)		777.5058	786.4954	1.4	0.002
Extreme (-10C)		777.5058	786.4954	1.7	0.002
Extreme (-20C)		777.5058	786.4954	0.5	0.001
Extreme (-30C)		777.5058	786.4954	0.2	0.000
25C	10%	777.5058	786.4954	0.5	0.001
	-10%	777.5058	786.4954	1.3	0.002
	End Point	777.5058	786.4954	1.3	0.002

16QAM, (10MHz BANDWIDTH)

Limit		777	787	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	777.5083	786.4937		
Extreme (50C)		777.5083	786.4937	-4.0	-0.005
Extreme (40C)		777.5083	786.4937	-2.1	-0.003
Extreme (30C)		777.5083	786.4937	-0.6	-0.001
Extreme (10C)		777.5083	786.4937	1.5	0.002
Extreme (0C)		777.5083	786.4937	0.4	0.000
Extreme (-10C)		777.5083	786.4937	0.4	0.000
Extreme (-20C)		777.5083	786.4937	-1.0	-0.001
Extreme (-30C)		777.5083	786.4937	2.2	0.003
25C	10%	777.5083	786.4937	-0.9	-0.001
	-10%	777.5083	786.4937	-0.9	-0.001
	End Point	777.5083	786.4937	1.6	0.002

9.7. LTE BAND 17

ID:	37290	Date:	2/23/16

QPSK, (10MHz BANDWIDTH)

Limit		704	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	704.5032	715.4945		
Extreme (50C)		704.5031	715.4945	-2.4	-0.003
Extreme (40C)		704.5032	715.4945	-0.7	-0.001
Extreme (30C)		704.5032	715.4945	0.5	0.001
Extreme (10C)		704.5032	715.4945	1.0	0.001
Extreme (0C)		704.5032	715.4945	1.7	0.002
Extreme (-10C)		704.5032	715.4945	1.8	0.002
Extreme (-20C)		704.5032	715.4945	0.9	0.001
Extreme (-30C)		704.5032	715.4945	2.9	0.004
25C	10%	704.5032	715.4945	0.9	0.001
	-10%	704.5032	715.4945	1.1	0.002
	End Point	704.5032	715.4945	1.0	0.001

16QAM, (10MHz BANDWIDTH)

Limit		704	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	704.5056	715.4928		
Extreme (50C)		704.5055	715.4928	-3.3	-0.005
Extreme (40C)		704.5056	715.4928	-0.4	-0.001
Extreme (30C)		704.5056	715.4928	0.9	0.001
Extreme (10C)		704.5056	715.4928	0.8	0.001
Extreme (0C)		704.5056	715.4928	0.6	0.001
Extreme (-10C)		704.5056	715.4928	0.7	0.001
Extreme (-20C)		704.5056	715.4928	0.3	0.000
Extreme (-30C)		704.5056	715.4928	1.8	0.003
25C	10%	704.5056	715.4928	-0.3	0.000
	-10%	704.5056	715.4928	0.4	0.001
	End Point	704.5056	715.4928	-0.4	-0.001

9.8. LTE BAND 25

ID:	37290	Date:	2/23/16

QPSK, (20MHz BANDWIDTH)

Limit		1850	1915	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	1851.0128	1914.5404		
Extreme (50C)		1851.0128	1914.5404	-5.1	-0.003
Extreme (40C)		1851.0128	1914.5404	1.4	0.001
Extreme (30C)		1851.0128	1914.5404	1.0	0.001
Extreme (10C)		1851.0128	1914.5404	2.3	0.001
Extreme (0C)		1851.0128	1914.5404	1.8	0.001
Extreme (-10C)		1851.0128	1914.5404	3.3	0.002
Extreme (-20C)		1851.0128	1914.5404	3.8	0.002
Extreme (-30C)		1851.0128	1914.5404	5.0	0.003
25C	10%	1851.0128	1914.5404	1.1	0.001
	-10%	1851.0128	1914.5404	1.3	0.001
	End Point	1851.0128	1914.5404	1.1	0.001

16QAM, (20MHz BANDWIDTH)

Limit		1850	1915	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	1851.0097	1913.9808		
Extreme (50C)		1851.0097	1913.9808	5.7	0.003
Extreme (40C)		1851.0097	1913.9808	1.7	0.001
Extreme (30C)		1851.0097	1913.9808	1.1	0.001
Extreme (10C)		1851.0097	1913.9808	2.0	0.001
Extreme (0C)		1851.0097	1913.9808	0.8	0.000
Extreme (-10C)		1851.0097	1913.9808	2.4	0.001
Extreme (-20C)		1851.0097	1913.9808	2.3	0.001
Extreme (-30C)		1851.0097	1913.9808	5.8	0.003
25C	10%	1851.0097	1913.9808	-2.2	-0.001
	-10%	1851.0097	1913.9808	-0.8	0.000
	End Point	1851.0097	1913.9808	-2.3	-0.001

9.9. LTE BAND 26

ID:	37290	Date:	2/25/16

QPSK, (10MHz BANDWIDTH)

Limit		814	824	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	814.5025	823.4964		
Extreme (50C)		814.5025	823.4964	2.5	0.003
Extreme (40C)		814.5025	823.4964	1.1	0.001
Extreme (30C)		814.5025	823.4964	-0.4	-0.001
Extreme (10C)		814.5025	823.4964	1.6	0.002
Extreme (0C)		814.5025	823.4964	0.6	0.001
Extreme (-10C)		814.5025	823.4964	-0.7	-0.001
Extreme (-20C)		814.5025	823.4964	2.0	0.002
Extreme (-30C)		814.5025	823.4964	3.4	0.004
25C	10%	814.5025	823.4964	0.7	0.001
	-10%	814.5025	823.4964	-1.7	-0.002
	End Point	814.5025	823.4964	1.4	0.002

16QAM, (10MHz BANDWIDTH)

Limit		814	824	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	814.5047	823.4923		
Extreme (50C)		814.5047	823.4923	-3.7	-0.005
Extreme (40C)		814.5047	823.4923	1.3	0.002
Extreme (30C)		814.5047	823.4923	-1.3	-0.002
Extreme (10C)		814.5047	823.4923	2.3	0.003
Extreme (0C)		814.5047	823.4923	2.1	0.003
Extreme (-10C)		814.5047	823.4923	-0.1	0.000
Extreme (-20C)		814.5047	823.4923	0.7	0.001
Extreme (-30C)		814.5047	823.4923	2.2	0.003
25C	10%	814.5047	823.4923	0.8	0.001
	-10%	814.5047	823.4923	1.4	0.002
	End Point	814.5047	823.4923	1.7	0.002

9.10. LTE BAND 27

ID:	37290	Date:	2/25/16

QPSK, (10MHz BANDWIDTH)

Limit		814	824	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	814.4980	823.4951		
Extreme (50C)		814.4980	823.4951	1.2	0.002
Extreme (40C)		814.4980	823.4951	1.0	0.001
Extreme (30C)		814.4980	823.4951	0.9	0.001
Extreme (10C)		814.4980	823.4951	2.6	0.003
Extreme (0C)		814.4980	823.4951	2.2	0.003
Extreme (-10C)		814.4980	823.4951	1.3	0.002
Extreme (-20C)		814.4980	823.4951	2.0	0.002
Extreme (-30C)		814.4980	823.4951	4.9	0.006
25C	10%	814.4980	823.4951	0.7	0.001
	-10%	814.4980	823.4951	1.4	0.002
	End Point	814.4980	823.4951	1.0	0.001

16QAM, (10MHz BANDWIDTH)

Limit		814	824	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	814.5068	823.4926		
Extreme (50C)		814.5068	823.4926	0.8	0.001
Extreme (40C)		814.5068	823.4926	1.4	0.002
Extreme (30C)		814.5068	823.4926	1.1	0.001
Extreme (10C)		814.5068	823.4926	1.8	0.002
Extreme (0C)		814.5068	823.4926	2.4	0.003
Extreme (-10C)		814.5068	823.4926	1.9	0.002
Extreme (-20C)		814.5068	823.4926	1.7	0.002
Extreme (-30C)		814.5068	823.4926	5.8	0.007
25C	10%	814.5068	823.4926	2.0	0.002
	-10%	814.5068	823.4926	1.1	0.001
	End Point	814.5068	823.4926	0.6	0.001

9.11. LTE BAND 30

ID:	37290	Date:	2/25/16

QPSK, (20MHz BANDWIDTH)

Limit		2305	2315	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	2305.5055	2314.4952		
Extreme (50C)		2305.5055	2314.4952	-4.1	-0.002
Extreme (40C)		2305.5055	2314.4952	-3.5	-0.002
Extreme (30C)		2305.5055	2314.4952	-3.7	-0.002
Extreme (10C)		2305.5055	2314.4952	-1.8	-0.001
Extreme (0C)		2305.5055	2314.4952	-2.6	-0.001
Extreme (-10C)		2305.5055	2314.4952	-3.1	-0.001
Extreme (-20C)		2305.5055	2314.4952	6.2	0.003
Extreme (-30C)		2305.5055	2314.4952	5.9	0.003
25C	10%	2305.5055	2314.4952	-2.9	-0.001
	-10%	2305.5055	2314.4952	-5.8	-0.002
	End Point	2305.5055	2314.4952	-2.9	-0.001

16QAM, (20MHz BANDWIDTH)

Limit		2305	2315	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	2305.5068	2314.4949		
Extreme (50C)		2305.5068	2314.4949	-2.7	-0.001
Extreme (40C)		2305.5068	2314.4948	-3.0	-0.001
Extreme (30C)		2305.5068	2314.4948	-4.2	-0.002
Extreme (10C)		2305.5068	2314.4949	-2.0	-0.001
Extreme (0C)		2305.5068	2314.4949	-2.0	-0.001
Extreme (-10C)		2305.5068	2314.4949	6.4	0.003
Extreme (-20C)		2305.5068	2314.4949	5.3	0.002
Extreme (-30C)		2305.5068	2314.4949	6.2	0.003
25C	10%	2305.5068	2314.4948	-3.3	-0.001
	-10%	2305.5068	2314.4948	-4.0	-0.002
	End Point	2305.5068	2314.4949	3.3	0.001

9.12. LTE BAND 41

ID:	37290	Date:	2/25/16

QPSK, (20MHz BANDWIDTH)

Limit		2496	2690	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	2496.1900	2689.1144		
Extreme (50C)		2496.1900	2689.1144	37.8	0.015
Extreme (40C)		2496.1900	2689.1144	10.6	0.004
Extreme (30C)		2496.1900	2689.1144	9.4	0.004
Extreme (10C)		2496.1900	2689.1144	14.4	0.006
Extreme (0C)		2496.1900	2689.1144	10.0	0.004
Extreme (-10C)		2496.1900	2689.1144	9.6	0.004
Extreme (-20C)		2496.1900	2689.1144	14.7	0.006
Extreme (-30C)		2496.1900	2689.1144	11.9	0.005
25C	10%	2496.1900	2689.1144	8.7	0.003
	-10%	2496.1900	2689.1144	16.1	0.006
	End Point	2496.1900	2689.1144	11.9	0.005

16QAM, (20MHz BANDWIDTH)

Limit		2496	2690	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	2496.9064	2689.1072		
Extreme (50C)		2496.9064	2689.1073	35.5	0.014
Extreme (40C)		2496.9064	2689.1072	13.9	0.005
Extreme (30C)		2496.9064	2689.1072	9.9	0.004
Extreme (10C)		2496.9064	2689.1072	14.9	0.006
Extreme (0C)		2496.9064	2689.1072	8.3	0.003
Extreme (-10C)		2496.9064	2689.1072	11.9	0.005
Extreme (-20C)		2496.9064	2689.1072	15.1	0.006
Extreme (-30C)		2496.9064	2689.1072	13.9	0.005
25C	10%	2496.9064	2689.1072	9.5	0.004
	-10%	2496.9064	2689.1072	15.9	0.006
	End Point	2496.9064	2689.1072	10.6	0.004

10. RADIATED TEST RESULTS

10.1. RADIATED POWER (ERP & EIRP), LAT

FCC: §2.1046, §22.913, §24.232, §27.50 and §90.635

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

§90.635 Limitations on power and antenna height.

(a) The effective radiated power and antenna height for base stations may not exceed 1 kilowatt (30 dBw) and 304 m. (1,000 ft.) above average terrain (AAT), respectively, or the equivalent thereof as determined from the Table. These are maximum values, and applicants will be required to justify power levels and antenna heights requested.

(b) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

Table—Equivalent Power and Antenna Heights for Base Stations in the 851–869 MHz and 935–940 MHz Bands Which Have a Requirement for a 32 km (20 mi) Service Area Radius

Antenna height (ATT) meters (feet)	Effective radiated power (watts)[1,2,4]
Above 1,372 (4,500)	65
Above 1,220 (4,000) to 1,372 (4,500)	70
Above 1,067 (3,500) to 1,220 (4,000)	75
Above 915 (3,000) to 1,067 (3,500)	100
Above 763 (2,500) to 915 (3,000)	140
Above 610 (2,000) to 763 (2,500)	200
Above 458 (1,500) to 610 (2,000)	350
Above 305 (1,000) to 458 (1,500)	600
Up to 305 (1,000)	31,000

1 Power is given in terms of effective radiated power (ERP).

2 Applicants in the Los Angeles, CA, area who demonstrate a need to serve both the downtown and fringe areas will be permitted to utilize an ERP of 1 kw at the following mountaintop sites: Santiago Park, Sierra Peak, Mount Lukens, and Mount Wilson.

3 Stations with antennas below 305 m (1,000 ft) (AAT) will be restricted to a maximum power of 1 kw (ERP).In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

TEST PROCEDURE

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

MODES TESTED

- LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 17
- LTE Band 25
- LTE Band 26
- LTE Band 27
- LTE Band 30
- LTE Band 41

RESULTS

EIRP POWER FOR LTE BAND 2 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
1.4MHz Band QPSK	1/0	1850.7	24.43	277.33
		1880.0	**25.17**	328.85
		1909.3	24.90	309.03
1.4MHz Band 16QAM	1/0	1850.7	23.95	248.31
		1880.0	**24.95**	312.61
		1909.3	24.38	274.16

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	23.55	226.46
		1880.0	**24.39**	274.79
		1908.5	23.86	243.22
3.0MHz Band 16QAM	1/0	1851.5	22.55	179.89
		1880.0	**23.43**	220.29
		1908.5	22.96	197.70

EIRP POWER FOR LTE BAND 2 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5.0MHz Band QPSK	1/0	1852.5	24.01	251.77
		1880.0	**24.40**	275.42
		1907.5	23.95	248.31
5.0MHz Band 16QAM	1/0	1852.5	23.43	220.29
		1880.0	**23.83**	241.55
		1907.5	23.39	218.27

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	24.05	254.10
		1880.0	**24.42**	276.69
		1905.0	23.93	247.17
10.0MHz Band 16QAM	1/0	1855.0	23.46	221.82
		1880.0	**23.90**	245.47
		1905.0	23.41	219.28

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	24.01	251.77
		1880.0	**24.38**	274.16
		1902.5	23.90	245.47
15MHz Band 16QAM	1/0	1857.5	23.47	222.33
		1880.0	**23.86**	243.22
		1902.5	23.45	221.31

EIRP POWER FOR LTE BAND 2 (20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0MHz Band QPSK	1/0	1860.0	24.04	253.51
		1880.0	**24.38**	274.16
		1900.0	23.91	246.04
20MHz Band 16QAM	1/0	1860.0	23.50	223.87
		1880.0	**23.91**	246.04
		1900.0	23.43	220.29

EIRP POWER FOR LTE BAND 4 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
1.4 MHZ BAND QPSK	1/0	1710.7	23.82	240.99
		1732.5	**24.22**	264.24
		1754.3	23.97	249.46
1.4 MHZ BAND 16QAM	1/0	1710.7	23.78	238.78
		1732.5	**24.19**	262.42
		1754.3	23.50	223.87

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	22.65	184.08
		1732.5	22.50	177.83
		1753.5	**23.35**	216.27
3.0 MHZ BAND 16QAM	1/0	1711.5	21.71	148.25
		1732.5	21.56	143.22
		1753.5	**22.40**	173.78

EIRP POWER FOR LTE BAND 4 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5.0 MHZ BAND QPSK	1/0	1712.5	23.05	201.84
		1732.5	22.90	194.98
		1752.5	**23.35**	216.27
5.0 MHZ BAND 16QAM	1/0	1712.5	22.11	162.55
		1732.5	21.92	155.60
		1752.5	**22.41**	174.18

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	23.12	205.12
		1732.5	23.00	199.53
		1750.0	**23.46**	221.82
10.0 MHZ BAND 16QAM	1/0	1715.0	22.20	165.96
		1732.5	22.13	163.31
		1750.0	**22.52**	178.65

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	22.24	167.49
		1732.5	23.00	199.53
		1747.5	**23.56**	226.99
15.0 MHZ BAND 16QAM	1/0	1717.5	21.34	136.14
		1732.5	22.12	162.93
		1747.5	**22.57**	180.72

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	23.13	205.59
		1732.5	22.90	194.98
		1745.0	**23.77**	238.23
20.0 MHZ BAND 16QAM	1/0	1720.0	22.23	167.11
		1732.5	22.00	158.49
		1745.0	**22.75**	188.36

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	19.87	97.05
		836.5	**20.19**	104.47
		848.3	18.95	78.52
1.4MHz Band 16QAM	1/0	824.7	19.19	82.99
		836.5	**19.49**	88.92
		848.3	18.44	69.82

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	19.52	89.54
		836.5	**19.78**	95.06
		847.5	19.20	83.18
3.0 MHZ BAND 16QAM	1/0	825.5	18.42	69.50
		836.5	**18.77**	75.34
		847.5	18.19	65.92

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	19.53	89.74
		836.5	**19.77**	94.84
		846.5	19.25	84.14
5MHz Band 16QAM	1/0	826.5	18.43	69.66
		836.5	**18.79**	75.68
		846.5	18.25	66.83

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	22.03	159.59
		836.5	**22.35**	171.79
		844.0	21.74	149.28
10.0 MHZ BAND 16QAM	1/0	829.0	20.92	123.59
		836.5	**21.30**	134.90
		844.0	20.73	118.30

EIRP POWER FOR LTE BAND 7 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5.0 MHZ BAND QPSK	25/0	2502.5	21.16	130.62
		2535.0	**22.29**	169.43
		2567.5	21.36	136.77
5.0 MHZ BAND 16QAM	25/0	2502.5	20.52	112.72
		2535.0	**20.97**	125.03
		2567.5	20.66	116.41

EIRP POWER FOR LTE BAND 7 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
10.0 MHZ BAND QPSK	50/0	2505.0	19.73	93.97
		2535.0	**20.05**	101.16
		2565.0	19.44	87.90
10.0 MHZ BAND 16QAM	50/0	2505.0	18.42	69.50
		2535.0	**18.80**	75.86
		2565.0	18.23	66.53

EIRP POWER FOR LTE BAND 7 (15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
15.0 MHZ BAND QPSK	75/0	2507.5	21.30	134.90
		2535.0	**22.29**	169.43
		2562.5	21.05	127.35
15.0 MHZ BAND 16QAM	75/0	2507.5	20.53	112.98
		2535.0	**20.94**	124.17
		2562.5	20.64	115.88

EIRP POWER FOR LTE BAND 7 (20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0 MHZ BAND QPSK	100/0	2510.0	21.76	149.97
		2535.0	**22.21**	166.34
		2560.0	21.31	135.21
20.0 MHZ BAND 16QAM	100/0	2510.0	20.64	115.88
		2535.0	**20.79**	119.95
		2560.0	20.33	107.89

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	18.54	71.45
		707.5	18.43	69.66
		715.3	**18.56**	71.78
1.4MHz Band 16QAM	1/0	699.7	17.30	53.70
		707.5	**17.51**	56.36
		715.3	17.49	56.10

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	16.95	49.55
		707.5	16.65	46.24
		714.5	**17.39**	54.83
3.0 MHZ BAND 16QAM	1/0	700.5	16.12	40.93
		707.5	15.81	38.11
		714.5	**16.47**	44.36

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	16.75	47.32
		707.5	16.65	46.24
		713.5	**17.09**	51.17
5MHz Band 16QAM	1/0	701.5	15.88	38.73
		707.5	15.73	37.41
		713.5	**16.20**	41.69

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	**17.01**	50.23
		707.5	16.85	48.42
		711.0	16.89	48.87
10.0 MHZ BAND 16QAM	1/0	704.0	**16.15**	41.21
		707.5	15.94	39.26
		711.0	16.01	39.90

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	17.79	60.12
		782.0	**18.86**	76.91
		784.5	18.76	75.16
5.0 MHZ BAND 16QAM	1/0	779.5	16.86	48.53
		782.0	**17.95**	62.37
		784.5	17.82	60.53

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	**17.65**	58.21
10 MHz BAND 16QAM	1/0		**16.75**	47.32

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	16.63	46.03
		710.0	16.90	48.98
		713.5	**17.32**	53.95
5MHz Band 16QAM	1/0	706.5	15.79	37.93
		710.0	16.00	39.81
		713.5	**16.39**	43.55

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	**16.94**	49.43
10.0 MHZ BAND 16QAM		710.0	**16.03**	40.09

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	23.82	240.99
		1882.5	**24.97**	314.05
		1914.3	24.50	281.84
1.4 MHZ BAND 16QAM	1/0	1850.7	22.87	193.64
		1882.5	**23.85**	242.66
		1914.3	23.71	234.96

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	23.72	235.50
		1882.5	**24.66**	292.42
		1913.5	24.25	266.07
3.0 MHZ BAND 16QAM	1/0	1851.5	22.81	190.99
		1882.5	**23.74**	236.59
		1913.5	23.31	214.29

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	23.72	235.50
		1882.5	**24.66**	292.42
		1912.5	24.57	286.42
5.0 MHZ BAND 16QAM	1/0	1852.5	22.77	189.23
		1882.5	**23.77**	238.23
		1912.5	23.71	234.96

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	23.72	235.50
		1882.5	**24.82**	303.39
		1910.0	24.13	258.82
10.0 MHZ BAND 16QAM	1/0	1855.0	23.17	207.49
		1882.5	**24.04**	253.51
		1910.0	23.29	213.30

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	23.84	242.10
		1882.5	**24.71**	295.80
		1907.5	24.28	267.92
15.0 MHZ BAND 16QAM	1/0	1857.5	22.87	193.64
		1882.5	**23.67**	232.81
		1907.5	23.40	218.78

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	23.51	224.39
		1882.5	**24.96**	313.33
		1905.0	24.32	270.40
20.0 MHZ BAND 16QAM	1/0	1860.0	21.67	146.89
		1882.5	**23.14**	206.06
		1905.0	22.48	177.01

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	21.16	130.62
		819.0	21.40	138.04
		823.3	**21.42**	138.68
1.4 MHZ BAND 16QAM	1/0	814.7	**20.38**	109.14
		819.0	20.08	101.86
		823.3	20.06	101.39

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	21.19	131.52
		819.0	21.43	139.00
		822.5	**21.53**	142.23
3.0 MHZ BAND 16QAM	1/0	815.5	20.11	102.57
		819.0	**20.40**	109.65
		822.5	20.37	108.89

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	21.18	131.22
		819.0	21.40	138.04
		821.5	**21.52**	141.91
5.0 MHZ BAND 16QAM	1/0	816.5	20.13	103.04
		819.0	20.40	109.65
		821.5	**20.46**	111.17

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	**21.20**	131.83
10.0 MHZ BAND 16QAM	1/0	819.0	**20.19**	104.47

ERP POWER FOR LTE BAND 27 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
1.4 MHZ BAND QPSK	1/0	814.7	**22.08**	161.44
		819.0	21.82	152.05
		823.3	21.88	154.17
1.4 MHZ BAND 16QAM	1/0	814.7	**21.41**	138.36
		819.0	21.04	127.06
		823.3	21.02	126.47

ERP POWER FOR LTE BAND 27 (3.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
3.0 MHZ BAND QPSK	1/0	815.5	**22.51**	178.24
		819.0	22.15	164.06
		822.5	22.20	165.96
3.0 MHZ BAND 16QAM	1/0	815.5	**21.51**	141.58
		819.0	21.11	129.12
		822.5	21.07	127.94

ERP POWER FOR LTE BAND 27 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
5.0 MHZ BAND QPSK	1/0	816.5	**22.50**	177.83
		819.0	22.22	166.72
		821.5	22.19	165.58
5.0 MHZ BAND 16QAM	1/0	816.5	**21.48**	140.60
		819.0	21.22	132.43
		821.5	21.05	127.35

ERP POWER FOR LTE BAND 27 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP(Average)	
			dBm	mW
10.0 MHZ BAND QPSK	1/0	819.0	**22.23**	167.11
10.0 MHZ BAND 16QAM	1/0	819.0	**21.22**	132.43

EIRP POWER FOR LTE BAND 30 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5MHz Band QPSK	1/0	2307.5	23.64	231.21
		2310.0	23.45	221.31
		2312.5	**23.80**	239.88
5MHz Band 16QAM	1/0	2307.5	22.64	183.65
		2310.0	22.54	179.47
		2312.5	**22.78**	189.67

EIRP POWER FOR LTE BAND 30 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
10.0 MHZ BAND QPSK	1/0	2310.0	**23.62**	230.14
10.0 MHZ BAND 16QAM		2310.0	**22.72**	187.07

EIRP POWER FOR LTE BAND 41 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5.0 MHZ BAND QPSK	25/0	2498.5	19.92	98.17
		2593.0	20.29	106.91
		2687.5	**21.02**	126.47
5.0 MHZ BAND 16QAM	25/0	2498.5	18.91	77.80
		2593.0	19.34	85.90
		2687.5	**20.11**	102.57

EIRP POWER FOR LTE BAND 41 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
10.0 MHZ BAND QPSK	50/0	2501.0	19.48	88.72
		2593.0	20.09	102.09
		2685.0	**21.01**	126.18
10.0 MHZ BAND 16QAM	50/0	2501.0	18.50	70.79
		2593.0	19.15	82.22
		2685.0	**20.08**	101.86

EIRP POWER FOR LTE BAND 41 (15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
15.0 MHZ BAND QPSK	75/0	2503.5	19.66	92.47
		2593.0	20.30	107.15
		2682.5	**21.00**	125.89
15.0 MHZ BAND 16QAM	75/0	2503.5	18.71	74.30
		2593.0	19.36	86.30
		2682.5	**20.09**	102.09

EIRP POWER FOR LTE BAND 41 (20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0 MHZ BAND QPSK	100/0	2506.0	19.97	99.31
		2593.0	20.75	118.85
		2680.0	**21.30**	134.90
20.0 MHZ BAND 16QAM	100/0	2506.0	18.93	78.16
		2593.0	19.78	95.06
		2680.0	**20.36**	108.64

10.1.1. LTE BAND 2

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

High Frequency Fundamental Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 16U23309
Date: 6/9/2016
Test Engineer: 45200
Configuration: EUT Only
Mode: LTE Band 2 QPSK 1.4MHz BW

Test Equipment:
Receiving: Horn T712, 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	16.5	V	0.98	8.05	23.58	33.0	-9.4	
1.851	17.4	H	0.98	8.05	24.43	33.0	-8.6	
Mid Ch								
1.880	18.1	V	0.98	8.03	25.14	33.0	-7.9	
1.880	18.1	H	0.98	8.03	25.17	33.0	-7.8	
High Ch								
1.909	17.6	V	0.98	8.05	24.65	33.0	-8.3	
1.909	17.8	H	0.98	8.05	24.90	33.0	-8.1	

Rev. 10.24.13

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/9/2016
Test Engineer: 45200
Configuration: EUT Only
Mode: LTE Band 2 16QAM 1.4MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.851	16.3	V	0.98	8.05	23.34	33.0	-9.7	
1.851	16.9	H	0.98	8.05	23.95	33.0	-9.1	
Mid Ch								
1.880	17.9	V	0.98	8.03	24.95	33.0	-8.1	
1.880	16.8	H	0.98	8.03	23.88	33.0	-9.1	
High Ch								
1.909	17.3	V	0.98	8.05	24.38	33.0	-8.6	
1.909	16.9	H	0.98	8.05	23.93	33.0	-9.1	

Rev. 10.24.13

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 2 QPSK 3MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.852	14.3	V	0.98	8.05	21.35	33.0	-11.7	
1.852	16.5	H	0.98	8.05	23.55	33.0	-9.5	
Mid Ch								
1.880	15.8	V	0.98	8.03	22.80	33.0	-10.2	
1.880	17.3	H	0.98	8.03	24.39	33.0	-8.6	
High Ch								
1.909	14.7	V	0.98	8.05	21.72	33.0	-11.3	
1.909	16.8	H	0.98	8.05	23.86	33.0	-9.1	

Rev. 10.24.13

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 2 16QAM 3MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.852	13.5	V	0.98	8.05	20.55	33.0	-12.5	
1.852	15.5	H	0.98	8.05	22.55	33.0	-10.5	
Mid Ch								
1.880	14.9	V	0.98	8.03	21.90	33.0	-11.1	
1.880	16.4	H	0.98	8.03	23.43	33.0	-9.6	
High Ch								
1.909	13.7	V	0.98	8.05	20.72	33.0	-12.3	
1.909	15.9	H	0.98	8.05	22.96	33.0	-10.0	

Rev. 10.24.13

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/26/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 2 QPSK 5MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.853	13.9	V	0.98	8.05	21.00	33.0	-12.0	
1.853	16.9	H	0.98	8.05	24.01	33.0	-9.0	
Mid Ch								
1.880	15.0	V	0.98	8.03	22.06	33.0	-10.9	
1.880	17.4	H	0.98	8.03	24.40	33.0	-8.6	
High Ch								
1.908	14.8	V	0.98	8.04	21.88	33.0	-11.1	
1.908	16.9	H	0.98	8.04	23.95	33.0	-9.0	

Rev. 10.24.13

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/26/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 2 16QAM 5MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.853	13.4	V	0.98	8.05	20.50	33.0	-12.5	
1.853	16.4	H	0.98	8.05	23.43	33.0	-9.6	
Mid Ch								
1.880	14.5	V	0.98	8.03	21.55	33.0	-11.5	
1.880	16.8	H	0.98	8.03	23.83	33.0	-9.2	
High Ch								
1.908	14.2	V	0.98	8.04	21.29	33.0	-11.7	
1.908	16.3	H	0.98	8.04	23.39	33.0	-9.6	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/26/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 2 QPSK 10MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.855	14.0	V	0.98	8.05	21.03	33.0	-12.0	
1.855	17.0	H	0.98	8.05	24.05	33.0	-9.0	
Mid Ch								
1.880	15.0	V	0.98	8.03	22.08	33.0	-10.9	
1.880	17.4	H	0.98	8.03	24.42	33.0	-8.6	
High Ch								
1.905	14.8	V	0.98	8.04	21.87	33.0	-11.1	
1.905	16.9	H	0.98	8.04	23.93	33.0	-9.1	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/26/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 2 16QAM 10MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.855	13.5	V	0.98	8.05	20.53	33.0	-12.5	
1.855	16.4	H	0.98	8.05	23.46	33.0	-9.5	
Mid Ch								
1.880	14.5	V	0.98	8.03	21.57	33.0	-11.4	
1.880	16.9	H	0.98	8.03	23.90	33.0	-9.1	
High Ch								
1.905	14.2	V	0.98	8.04	21.29	33.0	-11.7	
1.905	16.4	H	0.98	8.04	23.41	33.0	-9.6	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/26/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 2 QPSK 15MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.858	14.0	V	0.98	8.04	21.04	33.0	-12.0	
1.858	17.0	H	0.98	8.04	24.01	33.0	-9.0	
Mid Ch								
1.880	15.0	V	0.98	8.03	22.09	33.0	-10.9	
1.880	17.3	H	0.98	8.03	24.38	33.0	-8.6	
High Ch								
1.903	14.8	V	0.98	8.03	21.85	33.0	-11.2	
1.903	16.9	H	0.98	8.03	23.90	33.0	-9.1	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/26/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 2 16QAM 15MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.858	13.5	V	0.98	8.04	20.54	33.0	-12.5	
1.858	16.4	H	0.98	8.04	23.47	33.0	-9.5	
Mid Ch								
1.880	14.5	V	0.98	8.03	21.55	33.0	-11.5	
1.880	16.8	H	0.98	8.03	23.86	33.0	-9.1	
High Ch								
1.903	14.3	V	0.98	8.03	21.35	33.0	-11.7	
1.903	16.4	H	0.98	8.03	23.45	33.0	-9.6	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/26/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 2 QPSK 20MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.860	14.0	V	0.98	8.04	21.02	33.0	-12.0	
1.860	17.0	H	0.98	8.04	24.04	33.0	-9.0	
Mid Ch								
1.880	15.0	V	0.98	8.03	22.05	33.0	-11.0	
1.880	17.3	H	0.98	8.03	24.38	33.0	-8.6	
High Ch								
1.900	14.8	V	0.98	8.02	21.82	33.0	-11.2	
1.900	16.9	H	0.98	8.02	23.91	33.0	-9.1	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/26/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 2 16QAM 20MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.860	13.5	V	0.98	8.04	20.54	33.0	-12.5	
1.860	16.4	H	0.98	8.04	23.50	33.0	-9.5	
Mid Ch								
1.880	14.5	V	0.98	8.03	21.57	33.0	-11.4	
1.880	16.9	H	0.98	8.03	23.91	33.0	-9.1	
High Ch								
1.900	14.3	V	0.98	8.02	21.38	33.0	-11.6	
1.900	16.4	H	0.98	8.02	23.43	33.0	-9.6	

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10.1.2. LTE BAND 4

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/9/2016
Test Engineer: 45200
Configuration: EUT Only
Mode: LTE Band 4 QPSK 1.4MHz BW

Test Equipment:
Receiving: Horn T712, 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	14.1	V	0.95	8.27	21.46	30.0	-8.5	
1.711	16.5	H	0.95	8.27	23.82	30.0	-6.2	
Mid Ch								
1.733	15.0	V	0.95	8.23	22.26	30.0	-7.7	
1.733	16.9	H	0.95	8.23	24.22	30.0	-5.8	
High Ch								
1.754	14.4	V	0.95	8.18	21.65	30.0	-8.4	
1.754	16.7	H	0.95	8.18	23.97	30.0	-6.0	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 16U23309
Date: 6/9/2016
Test Engineer: 45200
Configuration: EUT Only
Mode: LTE Band 4 16QAM 1.4MHz BW

Test Equipment:
Receiving: Horn T712, 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	13.9	V	0.95	8.27	21.25	30.0	-8.7	
1.711	16.5	H	0.95	8.27	23.78	30.0	-6.2	
Mid Ch								
1.733	15.0	V	0.95	8.23	22.31	30.0	-7.7	
1.733	16.9	H	0.95	8.23	24.19	30.0	-5.8	
High Ch								
1.754	14.4	V	0.95	8.18	21.59	30.0	-8.4	
1.754	16.3	H	0.95	8.18	23.50	30.0	-6.5	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 4 QPSK 3MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.712	13.7	V	0.95	8.27	21.06	30.0	-8.9	
1.712	15.3	H	0.95	8.27	22.65	30.0	-7.3	
Mid Ch								
1.733	14.6	V	0.95	8.23	21.90	30.0	-8.1	
1.733	15.2	H	0.95	8.23	22.50	30.0	-7.5	
High Ch								
1.754	15.5	V	0.95	8.18	22.75	30.0	-7.2	
1.754	16.1	H	0.95	8.18	23.35	30.0	-6.6	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 4 16QAM 3MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.712	12.8	V	0.95	8.27	20.15	30.0	-9.8	
1.712	14.4	H	0.95	8.27	21.71	30.0	-8.3	
Mid Ch								
1.733	13.7	V	0.95	8.23	20.99	30.0	-9.0	
1.733	14.3	H	0.95	8.23	21.56	30.0	-8.4	
High Ch								
1.754	14.6	V	0.95	8.18	21.83	30.0	-8.2	
1.754	15.2	H	0.95	8.18	22.40	30.0	-7.6	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 4 QPSK 5MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.713	13.7	V	0.95	8.27	21.06	30.0	-8.9	
1.713	15.7	H	0.95	8.27	23.05	30.0	-7.0	
Mid Ch								
1.733	14.7	V	0.95	8.23	22.00	30.0	-8.0	
1.733	15.6	H	0.95	8.23	22.90	30.0	-7.1	
High Ch								
1.753	15.5	V	0.95	8.18	22.75	30.0	-7.2	
1.753	16.1	H	0.95	8.18	23.35	30.0	-6.6	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 4 16QAM 5MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.713	12.8	V	0.95	8.27	20.13	30.0	-9.9	
1.713	14.8	H	0.95	8.27	22.11	30.0	-7.9	
Mid Ch								
1.733	13.8	V	0.95	8.23	21.08	30.0	-8.9	
1.733	14.6	H	0.95	8.23	21.92	30.0	-8.1	
High Ch								
1.753	14.6	V	0.95	8.18	21.83	30.0	-8.2	
1.753	15.2	H	0.95	8.18	22.41	30.0	-7.6	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 4 QPSK 10MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.715	13.7	V	0.95	8.26	21.05	30.0	-8.9	
1.715	15.8	H	0.95	8.26	23.12	30.0	-6.9	
Mid Ch								
1.733	14.7	V	0.95	8.23	22.02	30.0	-8.0	
1.733	15.7	H	0.95	8.23	23.00	30.0	-7.0	
High Ch								
1.750	15.0	V	0.95	8.19	22.21	30.0	-7.8	
1.750	16.2	H	0.95	8.19	23.46	30.0	-6.5	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 4 16QAM 10MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.715	12.8	V	0.95	8.26	20.12	30.0	-9.9	
1.715	14.9	H	0.95	8.26	22.20	30.0	-7.8	
Mid Ch								
1.733	13.8	V	0.95	8.23	21.06	30.0	-8.9	
1.733	14.9	H	0.95	8.23	22.13	30.0	-7.9	
High Ch								
1.750	14.0	V	0.95	8.19	21.25	30.0	-8.8	
1.750	15.3	H	0.95	8.19	22.52	30.0	-7.5	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 4 QPSK 15MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.718	13.8	V	0.95	8.26	21.15	30.0	-8.9	
1.718	14.9	H	0.95	8.26	22.24	30.0	-7.8	
Mid Ch								
1.733	14.7	V	0.95	8.23	22.00	30.0	-8.0	
1.733	15.7	H	0.95	8.23	23.00	30.0	-7.0	
High Ch								
1.748	15.7	V	0.95	8.19	22.96	30.0	-7.0	
1.748	16.3	H	0.95	8.19	23.56	30.0	-6.4	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 4 16QAM 15MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.718	13.0	V	0.95	8.26	20.35	30.0	-9.7	
1.718	14.0	H	0.95	8.26	21.34	30.0	-8.7	
Mid Ch								
1.733	13.8	V	0.95	8.23	21.10	30.0	-8.9	
1.733	14.8	H	0.95	8.23	22.12	30.0	-7.9	
High Ch								
1.748	14.8	V	0.95	8.19	22.02	30.0	-8.0	
1.748	15.3	H	0.95	8.19	22.57	30.0	-7.4	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 4 QPSK 20MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.720	14.1	V	0.95	8.25	21.44	30.0	-8.6	
1.720	15.8	H	0.95	8.25	23.13	30.0	-6.9	
Mid Ch								
1.733	15.1	V	0.95	8.23	22.40	30.0	-7.6	
1.733	15.6	H	0.95	8.23	22.90	30.0	-7.1	
High Ch								
1.745	15.6	V	0.95	8.20	22.87	30.0	-7.1	
1.745	16.5	H	0.95	8.20	23.77	30.0	-6.2	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 4 16QAM 20MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.720	13.3	V	0.95	8.25	20.64	30.0	-9.4	
1.720	14.9	H	0.95	8.25	22.23	30.0	-7.8	
Mid Ch								
1.733	14.1	V	0.95	8.23	21.40	30.0	-8.6	
1.733	14.7	H	0.95	8.23	22.00	30.0	-8.0	
High Ch								
1.745	14.7	V	0.95	8.20	21.97	30.0	-8.0	
1.745	15.5	H	0.95	8.20	22.75	30.0	-7.3	

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10.1.3. LTE BAND 5

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 16U23309
Date: 6/9/2016
Test Engineer: 45200
Configuration: EUT Only
Mode: LTE Band 5 QPSK 1.4MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
824.70	20.49	V	0.6	0.0	19.87	22.02	38.45	40.60	-18.6	
824.70	3.60	H	0.6	0.0	2.98	5.13	38.45	40.60	-35.5	
Mid Ch										
836.50	20.81	V	0.6	0.0	20.19	22.34	38.45	40.60	-18.3	
836.50	3.19	H	0.6	0.0	2.57	4.72	38.45	40.60	-35.9	
High Ch										
848.30	19.57	V	0.6	0.0	18.95	21.10	38.45	40.60	-19.5	
848.30	2.06	H	0.6	0.0	1.44	3.59	38.45	40.60	-37.0	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 16U23309
Date: 6/9/2016
Test Engineer: 45200
Configuration: EUT Only
Mode: LTE Band 5 16QAM 1.4MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
824.70	19.81	V	0.6	0.0	19.19	21.34	38.45	40.60	-19.3	
824.70	2.86	H	0.6	0.0	2.24	4.39	38.45	40.60	-36.2	
Mid Ch										
836.50	20.11	V	0.6	0.0	19.49	21.64	38.45	40.60	-19.0	
836.50	2.41	H	0.6	0.0	1.79	3.94	38.45	40.60	-36.7	
High Ch										
848.30	19.06	V	0.6	0.0	18.44	20.59	38.45	40.60	-20.0	
848.30	2.09	H	0.6	0.0	1.47	3.62	38.45	40.60	-37.0	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 5 QPSK 3MHz BW

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
825.50	20.14	V	0.6	0.0	19.52	21.67	38.45	40.60	-18.9	
825.50	0.46	H	0.6	0.0	-0.16	1.99	38.45	40.60	-38.6	
Mid Ch										
836.50	20.40	V	0.6	0.0	19.78	21.93	38.45	40.60	-18.7	
836.50	0.98	H	0.6	0.0	0.36	2.51	38.45	40.60	-38.1	
High Ch										
847.50	19.82	V	0.6	0.0	19.20	21.35	38.45	40.60	-19.2	
847.50	2.10	H	0.6	0.0	1.48	3.63	38.45	40.60	-37.0	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 5 16QAM 3MHz BW

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
825.50	19.04	V	0.6	0.0	18.42	20.57	38.45	40.60	-20.0	
825.50	-0.56	H	0.6	0.0	-1.18	0.97	38.45	40.60	-39.6	
Mid Ch										
836.50	19.39	V	0.6	0.0	18.77	20.92	38.45	40.60	-19.7	
836.50	-0.03	H	0.6	0.0	-0.65	1.50	38.45	40.60	-39.1	
High Ch										
847.50	18.81	V	0.6	0.0	18.19	20.34	38.45	40.60	-20.3	
847.50	1.08	H	0.6	0.0	0.46	2.61	38.45	40.60	-38.0	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 5 QPSK 5MHz BW

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
826.50	20.15	V	0.6	0.0	19.53	21.68	38.45	40.60	-18.9	
826.50	0.47	H	0.6	0.0	-0.15	2.00	38.45	40.60	-38.6	
Mid Ch										
836.50	20.39	V	0.6	0.0	19.77	21.92	38.45	40.60	-18.7	
836.50	0.97	H	0.6	0.0	0.35	2.50	38.45	40.60	-38.1	
High Ch										
846.50	19.87	V	0.6	0.0	19.25	21.40	38.45	40.60	-19.2	
846.50	2.09	H	0.6	0.0	1.47	3.62	38.45	40.60	-37.0	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 5 16QAM 5MHz BW

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
826.50	19.05	V	0.6	0.0	18.43	20.58	38.45	40.60	-20.0	
826.50	-0.57	H	0.6	0.0	-1.19	0.96	38.45	40.60	-39.6	
Mid Ch										
836.50	19.41	V	0.6	0.0	18.79	20.94	38.45	40.60	-19.7	
836.50	-0.02	H	0.6	0.0	-0.64	1.51	38.45	40.60	-39.1	
High Ch										
846.50	18.87	V	0.6	0.0	18.25	20.40	38.45	40.60	-20.2	
846.50	1.09	H	0.6	0.0	0.47	2.62	38.45	40.60	-38.0	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 5 QPSK 10MHz BW

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
829.00	20.35	V	0.6	0.0	19.73	21.88	38.45	40.60	-18.7	
829.00	0.57	H	0.6	0.0	-0.05	2.10	38.45	40.60	-38.5	
Mid Ch										
836.50	20.67	V	0.6	0.0	20.05	22.20	38.45	40.60	-18.4	
836.50	1.16	H	0.6	0.0	0.54	2.69	38.45	40.60	-37.9	
High Ch										
844.00	20.06	V	0.6	0.0	19.44	21.59	38.45	40.60	-19.0	
844.00	2.27	H	0.6	0.0	1.65	3.80	38.45	40.60	-36.8	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 5 16QAM 10MHz BW

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
829.00	19.04	V	0.6	0.0	18.42	20.57	38.45	40.60	-20.0	
829.00	-0.68	H	0.6	0.0	-1.30	0.85	38.45	40.60	-39.8	
Mid Ch										
836.50	19.42	V	0.6	0.0	18.80	20.95	38.45	40.60	-19.6	
836.50	-0.06	H	0.6	0.0	-0.68	1.47	38.45	40.60	-39.1	
High Ch										
844.00	18.85	V	0.6	0.0	18.23	20.38	38.45	40.60	-20.2	
844.00	1.07	H	0.6	0.0	0.45	2.60	38.45	40.60	-38.0	

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10.1.4. LTE BAND 7

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 7 QPSK 5MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.503	12.1	V	1.15	9.34	20.24	33.0	-12.8	
2.503	13.0	H	1.15	9.34	21.16	33.0	-11.8	
Mid Ch								
2.535	11.6	V	1.16	9.38	19.82	33.0	-13.2	
2.535	14.1	H	1.16	9.38	22.29	33.0	-10.7	
High Ch								
2.568	12.2	V	1.17	9.43	20.46	33.0	-12.5	
2.568	13.1	H	1.17	9.43	21.36	33.0	-11.6	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 7 16QAM 5MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.503	11.5	V	1.15	9.34	19.70	33.0	-13.3	
2.503	12.3	H	1.15	9.34	20.52	33.0	-12.5	
Mid Ch								
2.535	10.9	V	1.16	9.38	19.12	33.0	-13.9	
2.535	12.8	H	1.16	9.38	20.97	33.0	-12.0	
High Ch								
2.568	11.4	V	1.17	9.43	19.68	33.0	-13.3	
2.568	12.4	H	1.17	9.43	20.66	33.0	-12.3	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 7 QPSK 10MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.505	12.7	V	1.15	9.34	20.89	33.0	-12.1	
2.505	13.2	H	1.15	9.34	21.34	33.0	-11.7	
Mid Ch								
2.535	11.3	V	1.16	9.38	19.49	33.0	-13.5	
2.535	14.1	H	1.16	9.38	22.29	33.0	-10.7	
High Ch								
2.565	12.2	V	1.17	9.43	20.44	33.0	-12.6	
2.565	13.1	H	1.17	9.43	21.35	33.0	-11.7	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 7 16QAM 10MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.505	11.7	V	1.15	9.34	19.89	33.0	-13.1	
2.505	12.4	H	1.15	9.34	20.55	33.0	-12.4	
Mid Ch								
2.535	10.4	V	1.16	9.38	18.57	33.0	-14.4	
2.535	12.7	H	1.16	9.38	20.90	33.0	-12.1	
High Ch								
2.565	11.0	V	1.17	9.43	19.23	33.0	-13.8	
2.565	12.2	H	1.17	9.43	20.50	33.0	-12.5	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 7 QPSK 15MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.508	12.1	V	1.15	9.34	20.28	33.0	-12.7	
2.508	13.1	H	1.15	9.34	21.30	33.0	-11.7	
Mid Ch								
2.535	11.5	V	1.16	9.38	19.73	33.0	-13.3	
2.535	14.1	H	1.16	9.38	22.29	33.0	-10.7	
High Ch								
2.563	12.2	V	1.17	9.42	20.44	33.0	-12.6	
2.563	12.8	H	1.17	9.42	21.05	33.0	-11.9	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 7 16QAM 15MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.508	12.0	V	1.15	9.34	20.19	33.0	-12.8	
2.508	12.3	H	1.15	9.34	20.53	33.0	-12.5	
Mid Ch								
2.535	10.6	V	1.16	9.38	18.81	33.0	-14.2	
2.535	12.7	H	1.16	9.38	20.94	33.0	-12.1	
High Ch								
2.563	11.4	V	1.17	9.42	19.66	33.0	-13.3	
2.563	12.4	H	1.17	9.42	20.64	33.0	-12.4	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 7 QPSK 20MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.510	12.5	V	1.15	9.35	20.68	33.0	-12.3	
2.510	13.6	H	1.15	9.35	21.76	33.0	-11.2	
Mid Ch								
2.535	11.8	V	1.16	9.38	20.00	33.0	-13.0	
2.535	14.0	H	1.16	9.38	22.21	33.0	-10.8	
High Ch								
2.560	12.0	V	1.17	9.42	20.24	33.0	-12.8	
2.560	13.1	H	1.17	9.42	21.31	33.0	-11.7	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 7 16QAM 20MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.510	12.0	V	1.15	9.35	20.22	33.0	-12.8	
2.510	12.4	H	1.15	9.35	20.64	33.0	-12.4	
Mid Ch								
2.535	10.9	V	1.16	9.38	19.07	33.0	-13.9	
2.535	12.6	H	1.16	9.38	20.79	33.0	-12.2	
High Ch								
2.560	10.9	V	1.17	9.42	19.15	33.0	-13.8	
2.560	12.1	H	1.17	9.42	20.33	33.0	-12.7	

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10.1.5 LTE BAND 12

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 16U23309
Date: 6/2/2016
Test Engineer: 45200
Configuration: EUT only
Mode: LTE Band 12 QPSK 1.4MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
699.70	14.87	V	0.55	0.0	14.32	16.47	34.77	36.99	-20.5	
699.70	19.09	H	0.55	0.0	18.54	20.69	34.77	36.99	-16.3	
Mid Ch										
707.50	14.56	V	0.55	0.0	14.01	16.16	34.77	36.99	-20.8	
707.50	18.98	H	0.55	0.0	18.43	20.58	34.77	36.99	-16.4	
High Ch										
715.30	14.50	V	0.55	0.0	13.95	16.10	34.77	36.99	-20.9	
715.30	19.11	H	0.55	0.0	18.56	20.71	34.77	36.99	-16.3	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 16U23309
Date: 6/2/2016
Test Engineer: 45200
Configuration: EUT only
Mode: LTE Band 12 16QAM 1.4MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
699.70	13.97	V	0.55	0.0	13.42	15.57	34.77	36.99	-21.4	
699.70	17.85	H	0.55	0.0	17.30	19.45	34.77	36.99	-17.5	
Mid Ch										
707.50	13.70	V	0.55	0.0	13.15	15.30	34.77	36.99	-21.7	
707.50	18.06	H	0.55	0.0	17.51	19.66	34.77	36.99	-17.3	
High Ch										
715.30	13.50	V	0.55	0.0	12.95	15.10	34.77	36.99	-21.9	
715.30	18.04	H	0.55	0.0	17.49	19.64	34.77	36.99	-17.3	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/2/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 12 QPSK 3MHz BW

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
700.50	7.17	V	0.55	0.0	6.62	8.77	34.77	36.99	-28.2	
700.50	17.50	H	0.55	0.0	16.95	19.10	34.77	36.99	-17.9	
Mid Ch										
707.50	7.26	V	0.55	0.0	6.71	8.86	34.77	36.99	-28.1	
707.50	17.20	H	0.55	0.0	16.65	18.80	34.77	36.99	-18.2	
High Ch										
714.50	8.10	V	0.55	0.0	7.55	9.70	34.77	36.99	-27.3	
714.50	17.94	H	0.55	0.0	17.39	19.54	34.77	36.99	-17.4	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/2/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 12 16QAM 3MHz BW

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
700.50	6.34	V	0.55	0.0	5.79	7.94	34.77	36.99	-29.0	
700.50	16.67	H	0.55	0.0	16.12	18.27	34.77	36.99	-18.7	
Mid Ch										
707.50	6.42	V	0.55	0.0	5.87	8.02	34.77	36.99	-29.0	
707.50	16.36	H	0.55	0.0	15.81	17.96	34.77	36.99	-19.0	
High Ch										
714.50	7.16	V	0.55	0.0	6.61	8.76	34.77	36.99	-28.2	
714.50	17.02	H	0.55	0.0	16.47	18.62	34.77	36.99	-18.4	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/2/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 12 QPSK 5MHz BW

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
701.50	7.37	V	0.55	0.0	6.82	8.97	34.77	36.99	-28.0	
701.50	17.30	H	0.55	0.0	16.75	18.90	34.77	36.99	-18.1	
Mid Ch										
707.50	7.56	V	0.55	0.0	7.01	9.16	34.77	36.99	-27.8	
707.50	17.20	H	0.55	0.0	16.65	18.80	34.77	36.99	-18.2	
High Ch										
713.50	7.80	V	0.55	0.0	7.25	9.40	34.77	36.99	-27.6	
713.50	17.64	H	0.55	0.0	17.09	19.24	34.77	36.99	-17.7	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/2/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 12 16QAM 5MHz BW

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
701.50	6.55	V	0.55	0.0	6.00	8.15	34.77	36.99	-28.8	
701.50	16.43	H	0.55	0.0	15.88	18.03	34.77	36.99	-19.0	
Mid Ch										
707.50	6.71	V	0.55	0.0	6.16	8.31	34.77	36.99	-28.7	
707.50	16.28	H	0.55	0.0	15.73	17.88	34.77	36.99	-19.1	
High Ch										
713.50	6.87	V	0.55	0.0	6.32	8.47	34.77	36.99	-28.5	
713.50	16.75	H	0.55	0.0	16.20	18.35	34.77	36.99	-18.6	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/2/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 12 QPSK 10MHz BW

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
704.00	7.37	V	0.55	0.0	6.82	8.97	34.77	36.99	-28.0	
704.00	17.56	H	0.55	0.0	17.01	19.16	34.77	36.99	-17.8	
Mid Ch										
707.50	7.16	V	0.55	0.0	6.61	8.76	34.77	36.99	-28.2	
707.50	17.40	H	0.55	0.0	16.85	19.00	34.77	36.99	-18.0	
High Ch										
711.00	7.70	V	0.55	0.0	7.15	9.30	34.77	36.99	-27.7	
711.00	17.44	H	0.55	0.0	16.89	19.04	34.77	36.99	-17.9	

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16QAM EIRP POWER FOR LTE BAND 12 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/2/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 12 16QAM 10MHz BW

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
704.00	6.51	V	0.55	0.0	5.96	8.11	34.77	36.99	-28.9	
704.00	16.70	H	0.55	0.0	16.15	18.30	34.77	36.99	-18.7	
Mid Ch										
707.50	6.22	V	0.55	0.0	5.67	7.82	34.77	36.99	-29.2	
707.50	16.49	H	0.55	0.0	15.94	18.09	34.77	36.99	-18.9	
High Ch										
711.00	6.78	V	0.55	0.0	6.23	8.38	34.77	36.99	-28.6	
711.00	16.56	H	0.55	0.0	16.01	18.16	34.77	36.99	-18.8	

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10.1.6. LTE BAND 13

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/2/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 13 QPSK 5MHz BW

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
779.50	10.41	V	0.55	0.0	9.86	12.01	34.77	36.99	-25.0	
779.50	18.34	H	0.55	0.0	17.79	19.94	34.77	36.99	-17.0	
Mid Ch										
782.00	11.63	V	0.55	0.0	11.08	13.23	34.77	36.99	-23.8	
782.00	19.41	H	0.55	0.0	18.86	21.01	34.77	36.99	-16.0	
High Ch										
784.50	11.62	V	0.55	0.0	11.07	13.22	34.77	36.99	-23.8	
784.50	19.31	H	0.55	0.0	18.76	20.91	34.77	36.99	-16.1	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/2/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 13 16QAM5MHz BW

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
779.50	9.56	V	0.55	0.0	9.01	11.16	34.77	36.99	-25.8	
779.50	17.41	H	0.55	0.0	16.86	19.01	34.77	36.99	-18.0	
Mid Ch										
782.00	10.72	V	0.55	0.0	10.17	12.32	34.77	36.99	-24.7	
782.00	18.50	H	0.55	0.0	17.95	20.10	34.77	36.99	-16.9	
High Ch										
784.50	10.75	V	0.55	0.0	10.20	12.35	34.77	36.99	-24.6	
784.50	18.37	H	0.55	0.0	17.82	19.97	34.77	36.99	-17.0	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/2/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 13 QPSK 10MHz BW

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
782.00	10.74	V	0.55		10.19	12.34	34.77	36.99	-24.7	
782.00	18.20	H	0.55		17.65	19.80	34.77	36.99	-17.2	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/2/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 13 16QAM 10MHz BW

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
782.00	9.89	V	0.55		9.34	11.49	34.77	36.99	-25.5	
782.00	17.30	H	0.55		16.75	18.90	34.77	36.99	-18.1	

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10.1.7. LTE BAND 17

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/2/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 17 QPSK 5MHz BW

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
706.50	7.65	V	0.55	0.0	7.10	9.25	34.77	36.99	-27.7	
706.50	17.18	H	0.55	0.0	16.63	18.78	34.77	36.99	-18.2	
Mid Ch										
710.00	7.53	V	0.55	0.0	6.98	9.13	34.77	36.99	-27.9	
710.00	17.45	H	0.55	0.0	16.90	19.05	34.77	36.99	-17.9	
High Ch										
713.50	8.49	V	0.55	0.0	7.94	10.09	34.77	36.99	-26.9	
713.50	17.87	H	0.55	0.0	17.32	19.47	34.77	36.99	-17.5	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/2/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 17 16QAM 5MHz BW

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
706.50	6.83	V	0.55	0.0	6.28	8.43	34.77	36.99	-28.6	
706.50	16.34	H	0.55	0.0	15.79	17.94	34.77	36.99	-19.0	
Mid Ch										
710.00	6.65	V	0.55	0.0	6.10	8.25	34.77	36.99	-28.7	
710.00	16.55	H	0.55	0.0	16.00	18.15	34.77	36.99	-18.8	
High Ch										
713.50	7.67	V	0.55	0.0	7.12	9.27	34.77	36.99	-27.7	
713.50	16.94	H	0.55	0.0	16.39	18.54	34.77	36.99	-18.4	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/2/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 17 QPSK 10MHz BW

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
710.00	7.68	V	0.55	0.0	7.13	9.28	34.77	36.99	-27.7	
710.00	17.49	H	0.55	0.0	16.94	19.09	34.77	36.99	-17.9	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/2/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 17 16QAM 10MHz BW

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

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
710.00	6.95	V	0.55	0.0	6.40	8.55	34.77	36.99	-28.4	
710.00	16.58	H	0.55	0.0	16.03	18.18	34.77	36.99	-18.8	

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10.1.8. LTE BAND 25

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 16U23309
Date: 6/9/2016
Test Engineer: 45200
Configuration: EUT Only
Mode: LTE Band 25 QPSK 1.4MHz BW

Test Equipment:
Receiving: Horn T712, 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	15.0	V	0.98	8.05	22.06	33.0	-10.9	
1.851	16.8	H	0.98	8.05	23.82	33.0	-9.2	
Mid Ch								
1.883	16.3	V	0.98	8.03	23.35	33.0	-9.7	
1.883	17.9	H	0.98	8.03	24.97	33.0	-8.0	
High Ch								
1.914	15.9	V	0.98	8.07	22.94	33.0	-10.1	
1.914	17.4	H	0.98	8.07	24.50	33.0	-8.5	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 16U23309
Date: 6/9/2016
Test Engineer: 45200
Configuration: EUT Only
Mode: LTE Band 25 16QAM 1.4MHz BW

Test Equipment:
Receiving: Horn T712, 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	14.4	V	0.98	8.05	21.43	33.0	-11.6	
1.851	15.8	H	0.98	8.05	22.87	33.0	-10.1	
Mid Ch								
1.883	16.3	V	0.98	8.03	23.31	33.0	-9.7	
1.883	16.8	H	0.98	8.03	23.85	33.0	-9.2	
High Ch								
1.914	16.0	V	0.98	8.07	23.04	33.0	-10.0	
1.914	16.6	H	0.98	8.07	23.71	33.0	-9.3	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 25 QPSK 3MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.852	14.4	V	0.98	8.05	21.48	33.0	-11.5	
1.852	16.7	H	0.98	8.05	23.72	33.0	-9.3	
Mid Ch								
1.883	15.5	V	0.98	8.03	22.55	33.0	-10.5	
1.883	17.6	H	0.98	8.03	24.66	33.0	-8.3	
High Ch								
1.914	14.8	V	0.98	8.07	21.85	33.0	-11.2	
1.914	17.2	H	0.98	8.07	24.25	33.0	-8.8	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 25 16QAM 3MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.852	13.5	V	0.98	8.05	20.54	33.0	-12.5	
1.852	15.7	H	0.98	8.05	22.81	33.0	-10.2	
Mid Ch								
1.883	14.5	V	0.98	8.03	21.58	33.0	-11.4	
1.883	16.7	H	0.98	8.03	23.74	33.0	-9.3	
High Ch								
1.914	13.8	V	0.98	8.07	20.86	33.0	-12.1	
1.914	16.2	H	0.98	8.07	23.31	33.0	-9.7	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 25 QPSK 5MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.853	14.5	V	0.98	8.05	21.58	33.0	-11.4	
1.853	16.7	H	0.98	8.05	23.72	33.0	-9.3	
Mid Ch								
1.883	15.2	V	0.98	8.03	22.21	33.0	-10.8	
1.883	17.6	H	0.98	8.03	24.66	33.0	-8.3	
High Ch								
1.913	15.1	V	0.98	8.06	22.14	33.0	-10.9	
1.913	17.5	H	0.98	8.06	24.57	33.0	-8.4	

Rev. 10.24.13

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 25 16QAM 5MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.853	13.8	V	0.98	8.05	20.88	33.0	-12.1	
1.853	15.7	H	0.98	8.05	22.77	33.0	-10.2	
Mid Ch								
1.883	14.6	V	0.98	8.03	21.61	33.0	-11.4	
1.883	16.7	H	0.98	8.03	23.77	33.0	-9.2	
High Ch								
1.913	14.4	V	0.98	8.06	21.49	33.0	-11.5	
1.913	16.6	H	0.98	8.06	23.71	33.0	-9.3	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 25 QPSK 10MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.855	14.7	V	0.98	8.05	21.78	33.0	-11.2	
1.855	16.7	H	0.98	8.05	23.72	33.0	-9.3	
Mid Ch								
1.883	15.4	V	0.98	8.03	22.47	33.0	-10.5	
1.883	17.8	H	0.98	8.03	24.82	33.0	-8.2	
High Ch								
1.910	15.4	V	0.98	8.05	22.43	33.0	-10.6	
1.910	17.1	H	0.98	8.05	24.13	33.0	-8.9	

Rev. 10.24.13

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 25 16QAM 10MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.855	13.8	V	0.98	8.05	20.82	33.0	-12.2	
1.855	16.1	H	0.98	8.05	23.17	33.0	-9.8	
Mid Ch								
1.883	14.7	V	0.98	8.03	21.78	33.0	-11.2	
1.883	17.0	H	0.98	8.03	24.04	33.0	-9.0	
High Ch								
1.910	14.4	V	0.98	8.05	21.46	33.0	-11.5	
1.910	16.2	H	0.98	8.05	23.29	33.0	-9.7	

Rev. 10.24.13

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 25 QPSK 15MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.858	14.1	V	0.98	8.04	21.17	33.0	-11.8	
1.858	16.8	H	0.98	8.04	23.84	33.0	-9.2	
Mid Ch								
1.883	15.2	V	0.98	8.03	22.21	33.0	-10.8	
1.883	17.7	H	0.98	8.03	24.71	33.0	-8.3	
High Ch								
1.908	15.4	V	0.98	8.04	22.42	33.0	-10.6	
1.908	17.2	H	0.98	8.04	24.28	33.0	-8.7	

Rev. 10.24.13

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 25 16QAM 15MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.858	13.2	V	0.98	8.04	20.27	33.0	-12.7	
1.858	15.8	H	0.98	8.04	22.87	33.0	-10.1	
Mid Ch								
1.883	14.2	V	0.98	8.03	21.28	33.0	-11.7	
1.883	16.6	H	0.98	8.03	23.67	33.0	-9.3	
High Ch								
1.908	14.4	V	0.98	8.04	21.49	33.0	-11.5	
1.908	16.3	H	0.98	8.04	23.40	33.0	-9.6	

Rev. 10.24.13

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 25 QPSK 20MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.860	14.7	V	0.98	8.04	21.73	33.0	-11.3	
1.860	16.5	H	0.98	8.04	23.51	33.0	-9.5	
Mid Ch								
1.883	15.4	V	0.98	8.03	22.49	33.0	-10.5	
1.883	17.9	H	0.98	8.03	24.96	33.0	-8.0	
High Ch								
1.905	15.7	V	0.98	8.04	22.79	33.0	-10.2	
1.905	17.3	H	0.98	8.04	24.32	33.0	-8.7	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/27/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 25 16QAM 20MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.860	12.9	V	0.98	8.04	19.95	33.0	-13.0	
1.860	14.6	H	0.98	8.04	21.67	33.0	-11.3	
Mid Ch								
1.883	13.5	V	0.98	8.03	20.50	33.0	-12.5	
1.883	16.1	H	0.98	8.03	23.14	33.0	-9.9	
High Ch								
1.905	13.9	V	0.98	8.04	20.91	33.0	-12.1	
1.905	15.4	H	0.98	8.04	22.48	33.0	-10.5	

Rev. 10.24.13

10.1.9. LTE BAND 26

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 16U23309
Date: 6/10/2016
Test Engineer: 45200
Configuration: EUT Only
Mode: LTE Band 26 QPSK 1.4MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
814.70	21.78	V	0.62	0.0	21.16	23.31	38.45	40.60	-17.3	
814.70	3.58	H	0.62	0.0	2.96	5.11	38.45	40.60	-35.5	
Mid Ch										
819.00	22.02	V	0.62	0.0	21.40	23.55	38.45	40.60	-17.0	
819.00	3.95	H	0.62	0.0	3.33	5.48	38.45	40.60	-35.1	
High Ch										
823.30	22.04	V	0.62	0.0	21.42	23.57	38.45	40.60	-17.0	
823.30	3.89	H	0.62	0.0	3.27	5.42	38.45	40.60	-35.2	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 16U23309
Date: 6/10/2016
Test Engineer: 45200
Configuration: EUT Only
Mode: LTE Band 26 16QAM 1.4MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
814.70	21.00	V	0.62	0.0	20.38	22.53	38.45	40.60	-18.1	
814.70	2.98	H	0.62	0.0	2.36	4.51	38.45	40.60	-36.1	
Mid Ch										
819.00	20.70	V	0.62	0.0	20.08	22.23	38.45	40.60	-18.4	
819.00	3.20	H	0.62	0.0	2.58	4.73	38.45	40.60	-35.9	
High Ch										
823.30	20.68	V	0.62	0.0	20.06	22.21	38.45	40.60	-18.4	
823.30	3.29	H	0.62	0.0	2.67	4.82	38.45	40.60	-35.8	

Rev. 10.24.13

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 26 QPSK 3MHz BW

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

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
815.50	21.81	V	0.62	0.0	21.19	23.34	38.45	40.60	-17.3	
815.50	2.06	H	0.62	0.0	1.44	3.59	38.45	40.60	-37.0	
Mid Ch										
819.00	22.05	V	0.62	0.0	21.43	23.58	38.45	40.60	-17.0	
819.00	2.31	H	0.62	0.0	1.69	3.84	38.45	40.60	-36.8	
High Ch										
822.50	22.15	V	0.62	0.0	21.53	23.68	38.45	40.60	-16.9	
822.50	2.28	H	0.62	0.0	1.66	3.81	38.45	40.60	-36.8	

Rev. 10.24.13

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 26 16QAM 3MHz BW

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

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
815.50	20.73	V	0.62	0.0	20.11	22.26	38.45	40.60	-18.3	
815.50	1.05	H	0.62	0.0	0.43	2.58	38.45	40.60	-38.0	
Mid Ch										
819.00	21.02	V	0.62	0.0	20.40	22.55	38.45	40.60	-18.0	
819.00	1.29	H	0.62	0.0	0.67	2.82	38.45	40.60	-37.8	
High Ch										
822.50	20.99	V	0.62	0.0	20.37	22.52	38.45	40.60	-18.1	
822.50	1.27	H	0.62	0.0	0.65	2.80	38.45	40.60	-37.8	

Rev. 10.24.13

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 26 QPSK 5MHz BW

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

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
816.50	21.80	V	0.62	0.0	21.18	23.33	38.45	40.60	-17.3	
816.50	2.05	H	0.62	0.0	1.43	3.58	38.45	40.60	-37.0	
Mid Ch										
819.00	22.02	V	0.62	0.0	21.40	23.55	38.45	40.60	-17.0	
819.00	2.29	H	0.62	0.0	1.67	3.82	38.45	40.60	-36.8	
High Ch										
821.50	22.14	V	0.62	0.0	21.52	23.67	38.45	40.60	-16.9	
821.50	2.26	H	0.62	0.0	1.64	3.79	38.45	40.60	-36.8	

Rev. 10.24.13

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 26 16QAM 5MHz BW

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

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
816.50	20.75	V	0.62	0.0	20.13	22.28	38.45	40.60	-18.3	
816.50	1.06	H	0.62	0.0	0.44	2.59	38.45	40.60	-38.0	
Mid Ch										
819.00	21.02	V	0.62	0.0	20.40	22.55	38.45	40.60	-18.0	
819.00	1.27	H	0.62	0.0	0.65	2.80	38.45	40.60	-37.8	
High Ch										
821.50	21.08	V	0.62	0.0	20.46	22.61	38.45	40.60	-18.0	
821.50	1.24	H	0.62	0.0	0.62	2.77	38.45	40.60	-37.8	

Rev. 10.24.13

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 26 QPSK 10MHz BW

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

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin EIRP (dB)	Notes
Mid Ch										
819.00	21.82	V	0.62	0.0	21.20	23.35	38.45	40.60	-17.2	
819.00	2.23	H	0.62	0.0	1.61	3.76	38.45	40.60	-36.8	

Rev. 10.24.13

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 26 16QAM 10MHz BW

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

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Mid Ch										
819.00	20.81	V	0.62	0.0	20.19	22.34	38.45	40.60	-18.3	
819.00	1.21	H	0.62	0.0	0.59	2.74	38.45	40.60	-37.9	

Rev. 10.24.13

10.1.10. LTE BAND 27

QPSK EIRP POWER FOR LTE BAND 27 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 16U23309
Date: 6/10/2016
Test Engineer: 45200
Configuration: EUT Only
Mode: LTE Band 27 QPSK 1.4MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	ERP Limit (dBm)	Margin (dB)	Notes
Low Ch								
814.70	22.70	V	0.62	0.0	22.08	50.00	-27.9	
814.70	1.14	H	0.62	0.0	0.52	50.00	-49.5	
Mid Ch								
819.00	22.44	V	0.62	0.0	21.82	50.00	-28.2	
819.00	2.13	H	0.62	0.0	1.51	50.00	-48.5	
High Ch								
823.30	22.50	V	0.62	0.0	21.88	50.00	-28.1	
823.30	1.93	H	0.62	0.0	1.31	50.00	-48.7	

Rev. 04.28.15

16QAM EIRP POWER FOR LTE BAND 27 (1.4MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber D

Company:
Project #: 16U23309
Date: 6/10/2016
Test Engineer: 45200
Configuration: EUT Only
Mode: LTE Band 27 16QAM 1.4MHz BW

Test Equipment:
Receiving: Sunol T408, and Chamber D Cable
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	ERP Limit (dBm)	Margin (dB)	Notes
Low Ch								
814.70	22.03	V	0.62	0.0	21.41	50.00	-28.6	
814.70	0.84	H	0.62	0.0	0.22	50.00	-49.8	
Mid Ch								
819.00	21.66	V	0.62	0.0	21.04	50.00	-29.0	
819.00	1.66	H	0.62	0.0	1.04	50.00	-49.0	
High Ch								
823.30	21.64	V	0.62	0.0	21.02	50.00	-29.0	
823.30	1.93	H	0.62	0.0	1.31	50.00	-48.7	

Rev. 04.28.15

QPSK EIRP POWER FOR LTE BAND 27 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 27 QPSK 3MHz BW

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

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	ERP Limit (dBm)	Margin (dB)	Notes
Low Ch								
815.50	23.13	V	0.62	0.0	22.51	50.00	-27.5	
815.50	2.51	H	0.62	0.0	1.89	50.00	-48.1	
Mid Ch								
819.00	22.77	V	0.62	0.0	22.15	50.00	-27.8	
819.00	2.84	H	0.62	0.0	2.22	50.00	-47.8	
High Ch								
822.50	22.82	V	0.62	0.0	22.20	50.00	-27.8	
822.50	3.37	H	0.62	0.0	2.75	50.00	-47.2	

Rev. 04.28.15

16QAM EIRP POWER FOR LTE BAND 27 (3.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 27 16QAM 3MHz BW

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

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	ERP Limit (dBm)	Margin (dB)	Notes
Low Ch								
815.50	22.13	V	0.62	0.0	21.51	50.00	-28.5	
815.50	1.52	H	0.62	0.0	0.90	50.00	-49.1	
Mid Ch								
819.00	21.73	V	0.62	0.0	21.11	50.00	-28.9	
819.00	1.84	H	0.62	0.0	1.22	50.00	-48.8	
High Ch								
822.50	21.69	V	0.62	0.0	21.07	50.00	-28.9	
822.50	2.35	H	0.62	0.0	1.73	50.00	-48.3	

Rev. 04.28.15

QPSK EIRP POWER FOR LTE BAND 27 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 27 QPSK 5MHz BW

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

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	ERP Limit (dBm)	Margin (dB)	Notes
Low Ch								
816.50	23.12	V	0.62	0.0	22.50	50.00	-27.5	
816.50	2.49	H	0.62	0.0	1.87	50.00	-48.1	
Mid Ch								
819.00	22.84	V	0.62	0.0	22.22	50.00	-27.8	
819.00	2.85	H	0.62	0.0	2.23	50.00	-47.8	
High Ch								
821.50	22.81	V	0.62	0.0	22.19	50.00	-27.8	
821.50	3.34	H	0.62	0.0	2.72	50.00	-47.3	

Rev. 04.28.15

16QAM EIRP POWER FOR LTE BAND 27 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 27 16QAM 5MHz BW

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

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	ERP Limit (dBm)	Margin (dB)	Notes
Low Ch								
816.50	22.10	V	0.62	0.0	21.48	50.00	-28.5	
816.50	1.50	H	0.62	0.0	0.88	50.00	-49.1	
Mid Ch								
819.00	21.84	V	0.62	0.0	21.22	50.00	-28.8	
819.00	1.79	H	0.62	0.0	1.17	50.00	-48.8	
High Ch								
821.50	21.67	V	0.62	0.0	21.05	50.00	-28.9	
821.50	2.34	H	0.62	0.0	1.72	50.00	-48.3	

Rev. 04.28.15

QPSK EIRP POWER FOR LTE BAND 27 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 27 QPSK 10MHz BW

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

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	ERP Limit (dBm)	Margin (dB)	Notes
Mid Ch								
819.00	22.85	V	0.62	0.0	22.23	50.00	-27.8	
819.00	2.79	H	0.62	0.0	2.17	50.00	-47.8	

Rev. 04.28.15

16QAM EIRP POWER FOR LTE BAND 27 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 39005
Configuration: EUT only
Mode: LTE Band 27 16QAM 10MHz BW

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

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	ERP (dBm)	ERP Limit (dBm)	Margin (dB)	Notes
Mid Ch								
819.00	21.84	V	0.62	0.0	21.22	50.00	-28.8	
819.00	1.80	H	0.62	0.0	1.18	50.00	-48.8	

Rev. 04.28.15

10.1.11. LTE BAND 30

QPSK EIRP POWER FOR LTE BAND 30 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/31/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 30 QPSK 5MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.308	15.4	V	1.15	9.37	23.64	24.0	-0.4	
2.308	14.7	H	1.15	9.37	22.89	24.0	-1.1	
Mid Ch								
2.310	15.2	V	1.16	9.37	23.45	24.0	-0.6	
2.310	14.9	H	1.16	9.37	23.07	24.0	-0.9	
High Ch								
2.313	15.6	V	1.17	9.37	23.80	24.0	-0.2	
2.313	15.0	H	1.17	9.37	23.24	24.0	-0.8	

Rev. 04.24.15

16QAM EIRP POWER FOR LTE BAND 30 (5.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/31/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 30 16QAM 5MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.308	14.4	V	1.15	9.37	22.64	24.0	-1.4	
2.308	13.7	H	1.15	9.37	21.91	24.0	-2.1	
Mid Ch								
2.310	14.3	V	1.16	9.37	22.54	24.0	-1.5	
2.310	14.0	H	1.16	9.37	22.17	24.0	-1.8	
High Ch								
2.313	14.6	V	1.17	9.37	22.78	24.0	-1.2	
2.313	14.0	H	1.17	9.37	22.20	24.0	-1.8	

Rev. 04.24.15

QPSK EIRP POWER FOR LTE BAND 30 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/31/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 30 QPSK 10MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
2.310	15.4	V	1.15	9.37	23.62	24.0	-0.4	
2.310	14.7	H	1.15	9.37	22.92	24.0	-1.1	

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16QAM EIRP POWER FOR LTE BAND 30 (10.0MHZ BANDWIDTH)

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 5/31/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 30 16QAM 10MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
2.310	14.5	V	1.15	9.37	22.72	24.0	-1.3	
2.310	13.7	H	1.15	9.37	21.88	24.0	-2.1	

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10.1.12 LTE BAND 41

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 41 QPSK 5MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.499	11.2	V	1.15	9.33	19.38	33.0	-13.6	
2.499	11.7	H	1.15	9.33	19.92	33.0	-13.1	
Mid Ch								
2.593	11.0	V	1.16	9.47	19.31	33.0	-13.7	
2.593	12.0	H	1.16	9.47	20.29	33.0	-12.7	
High Ch								
2.688	11.8	V	1.17	9.78	20.44	33.0	-12.6	
2.688	12.4	H	1.17	9.78	21.02	33.0	-12.0	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 41 16QAM 5MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.499	10.2	V	1.15	9.33	18.41	33.0	-14.6	
2.499	10.7	H	1.15	9.33	18.91	33.0	-14.1	
Mid Ch								
2.593	10.1	V	1.16	9.47	18.37	33.0	-14.6	
2.593	11.0	H	1.16	9.47	19.34	33.0	-13.7	
High Ch								
2.688	10.7	V	1.17	9.78	19.32	33.0	-13.7	
2.688	11.5	H	1.17	9.78	20.11	33.0	-12.9	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 41 QPSK 10MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.501	11.3	V	1.15	9.33	19.48	33.0	-13.5	
2.501	11.3	H	1.15	9.33	19.46	33.0	-13.5	
Mid Ch								
2.593	11.1	V	1.16	9.47	19.41	33.0	-13.6	
2.593	11.8	H	1.16	9.47	20.09	33.0	-12.9	
High Ch								
2.685	11.4	V	1.17	9.77	20.03	33.0	-13.0	
2.685	12.4	H	1.17	9.77	21.01	33.0	-12.0	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 41 16QAM 10MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.501	10.3	V	1.15	9.33	18.44	33.0	-14.6	
2.501	10.3	H	1.15	9.33	18.50	33.0	-14.5	
Mid Ch								
2.593	10.2	V	1.16	9.47	18.48	33.0	-14.5	
2.593	10.8	H	1.16	9.47	19.15	33.0	-13.9	
High Ch								
2.685	10.4	V	1.17	9.77	18.99	33.0	-14.0	
2.685	11.5	H	1.17	9.77	20.08	33.0	-12.9	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 41 QPSK 15MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.504	11.3	V	1.15	9.34	19.44	33.0	-13.6	
2.504	11.5	H	1.15	9.34	19.66	33.0	-13.3	
Mid Ch								
2.593	11.3	V	1.16	9.47	19.61	33.0	-13.4	
2.593	12.0	H	1.16	9.47	20.30	33.0	-12.7	
High Ch								
2.683	12.1	V	1.17	9.76	20.68	33.0	-12.3	
2.683	12.4	H	1.17	9.76	21.00	33.0	-12.0	

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 41 16QAM 15MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.504	10.3	V	1.15	9.34	18.50	33.0	-14.5	
2.504	10.5	H	1.15	9.34	18.71	33.0	-14.3	
Mid Ch								
2.593	10.3	V	1.16	9.47	18.65	33.0	-14.4	
2.593	11.1	H	1.16	9.47	19.36	33.0	-13.6	
High Ch								
2.683	11.0	V	1.17	9.76	19.58	33.0	-13.4	
2.683	11.5	H	1.17	9.76	20.09	33.0	-12.9	

Rev. 10.24.13

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 41 QPSK 20MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.506	11.4	V	1.15	9.34	19.59	33.0	-13.4	
2.506	11.8	H	1.15	9.34	19.97	33.0	-13.0	
Mid Ch								
2.593	12.1	V	1.16	9.47	20.41	33.0	-12.6	
2.593	12.4	H	1.16	9.47	20.75	33.0	-12.3	
High Ch								
2.680	12.0	V	1.17	9.76	20.62	33.0	-12.4	
2.680	12.7	H	1.17	9.76	21.30	33.0	-11.7	

Rev. 10.24.13

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber G

Company:
Project #: 16U23309
Date: 6/1/2016
Test Engineer: 38602
Configuration: EUT only
Mode: LTE Band 41 16QAM 20MHz BW

Test Equipment:
Receiving: Horn T136, and Chamber G SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable (s/n 245182-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
2.506	10.6	V	1.15	9.34	18.75	33.0	-14.2	
2.506	10.7	H	1.15	9.34	18.93	33.0	-14.1	
Mid Ch								
2.593	11.1	V	1.16	9.47	19.38	33.0	-13.6	
2.593	11.5	H	1.16	9.47	19.78	33.0	-13.2	
High Ch								
2.680	11.1	V	1.17	9.76	19.68	33.0	-13.3	
2.680	11.8	H	1.17	9.76	20.36	33.0	-12.6	

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