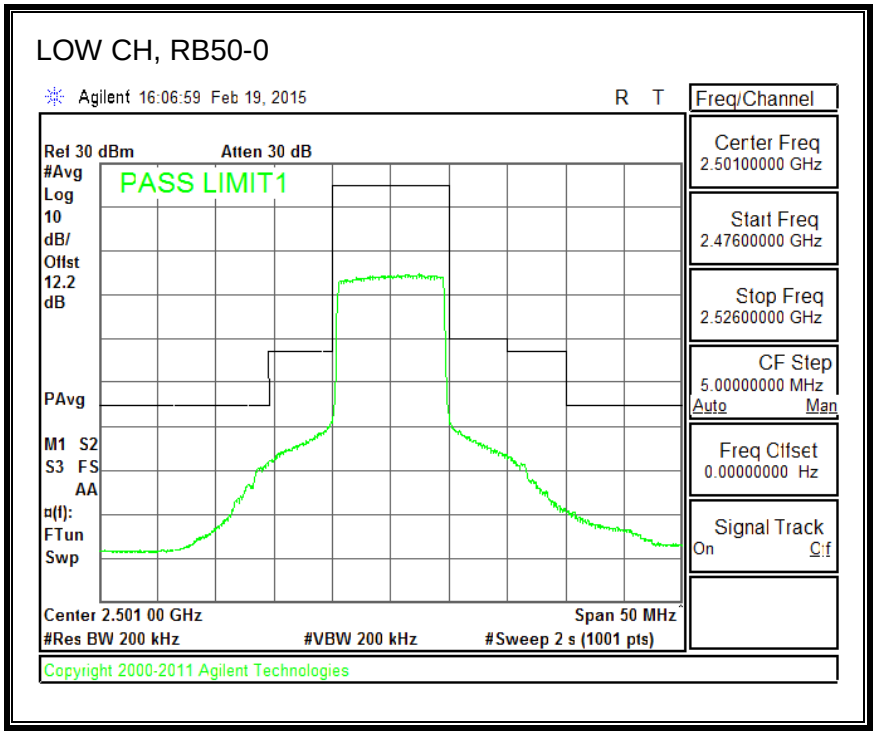
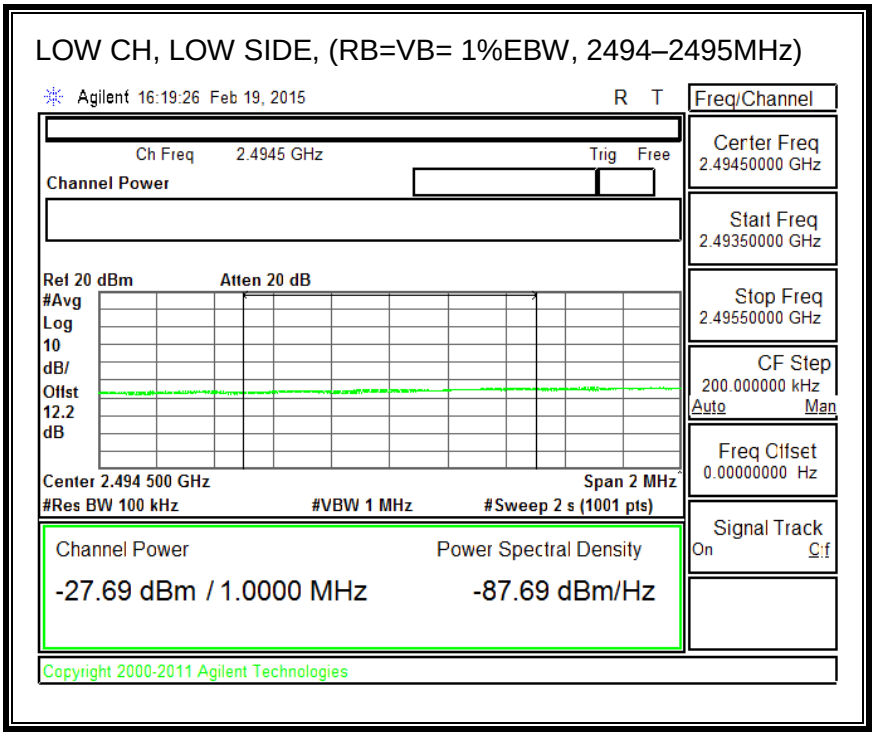
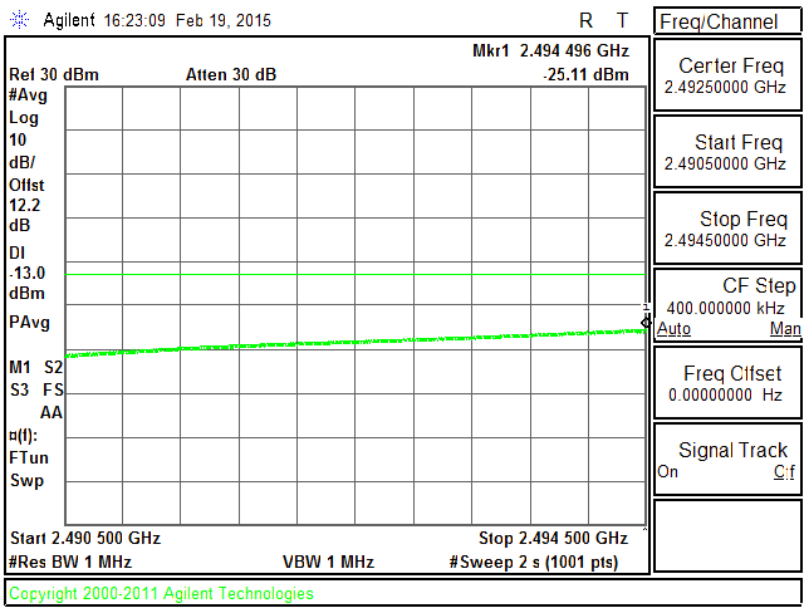
LOW CH, RB50-0



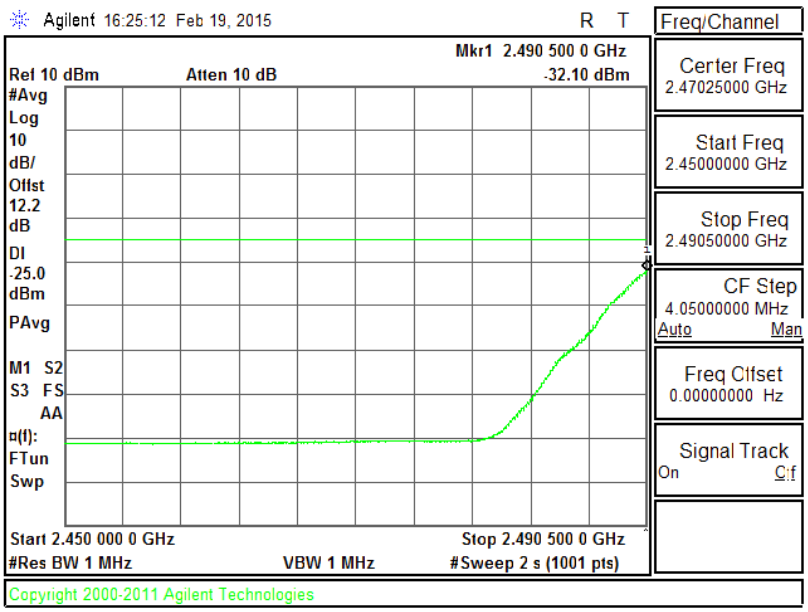
LOW CH, LOW SIDE, (RB=VB= 1%EBW, 2494–2495MHz)



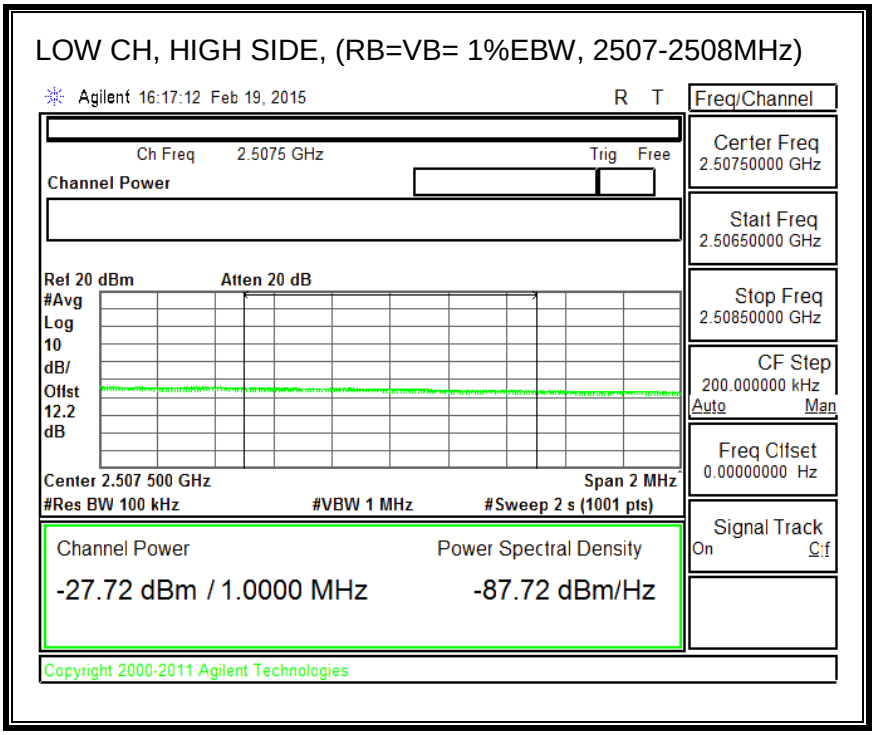
LOW CH, LOW SIDE, (RB=VB= 1MHz, 2490.5-2494.5MHz)



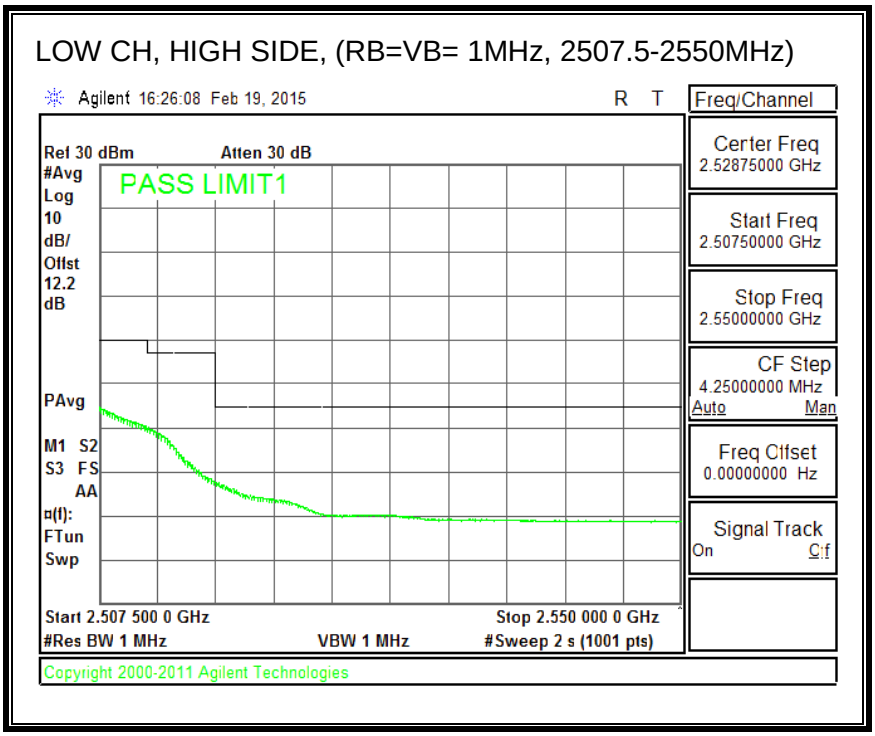
LOW CH, LOW SIDE, (RB=VB= 1MHz, -25dBm)



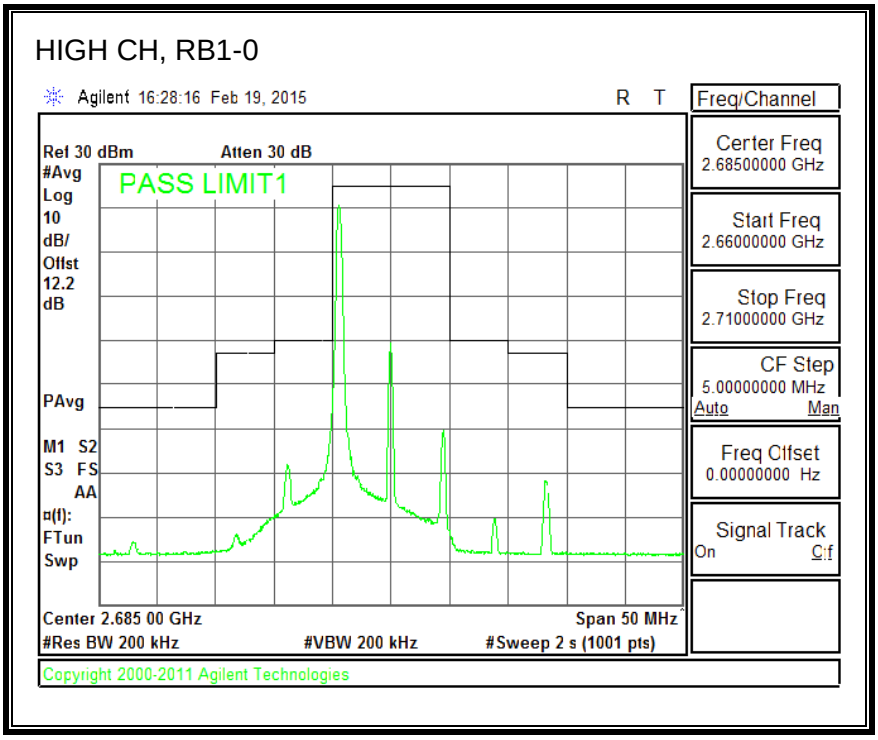
LOW CH, HIGH SIDE, (RB=VB= 1%EBW, 2507-2508MHz)



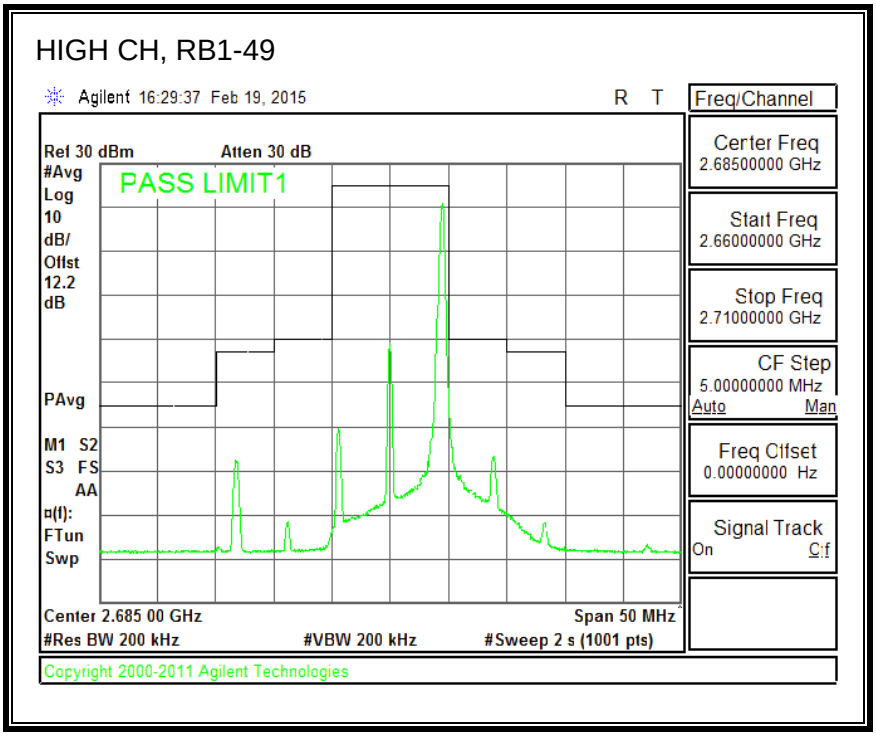
LOW CH, HIGH SIDE, (RB=VB= 1MHz, 2507.5-2550MHz)



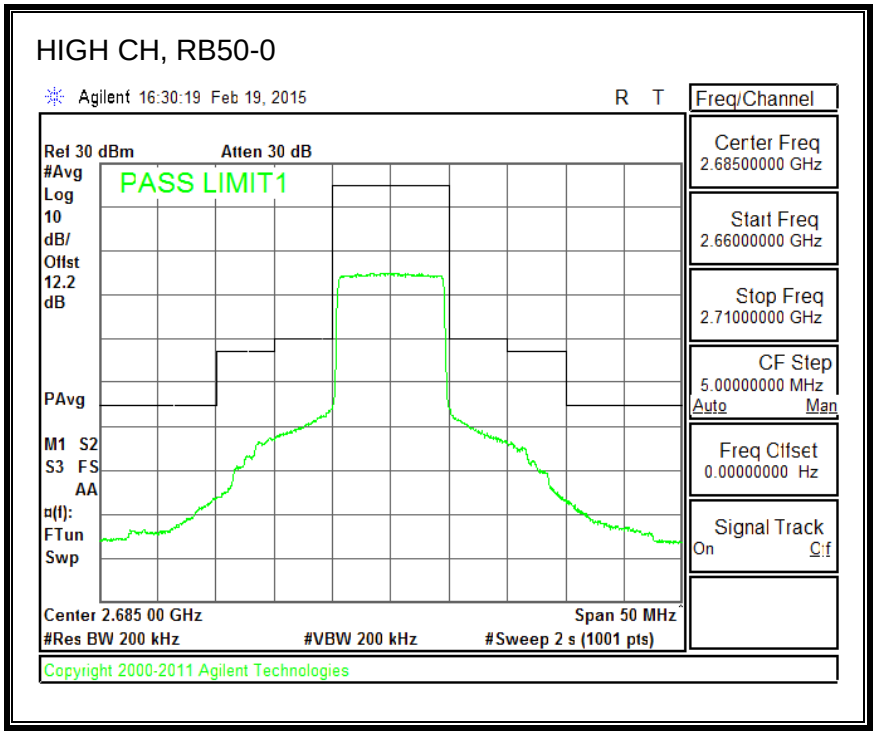
HIGH CH, RB1-0



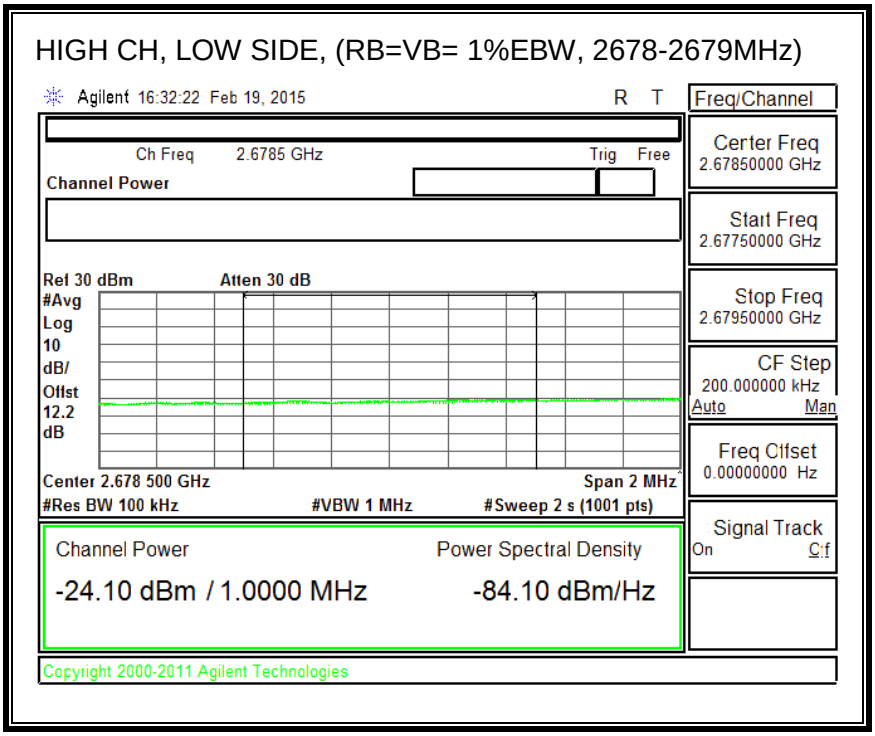
HIGH CH, RB1-49



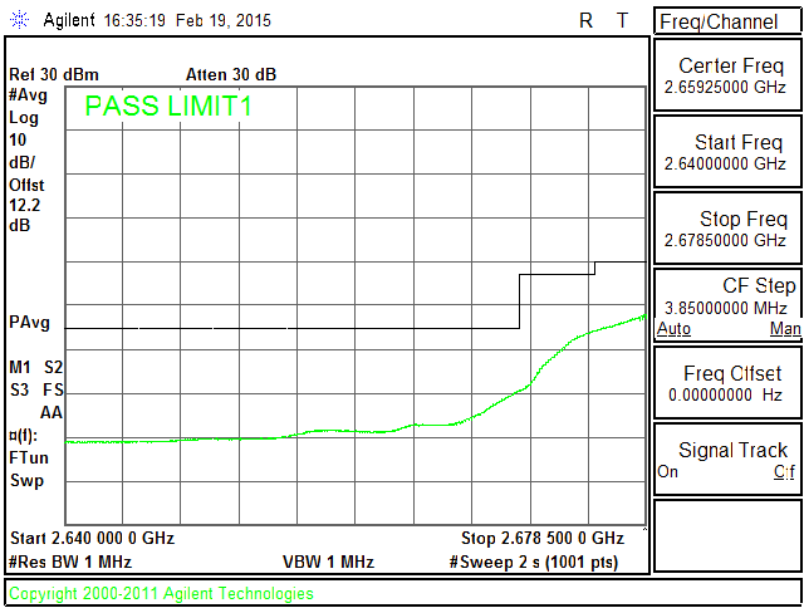
HIGH CH, RB50-0



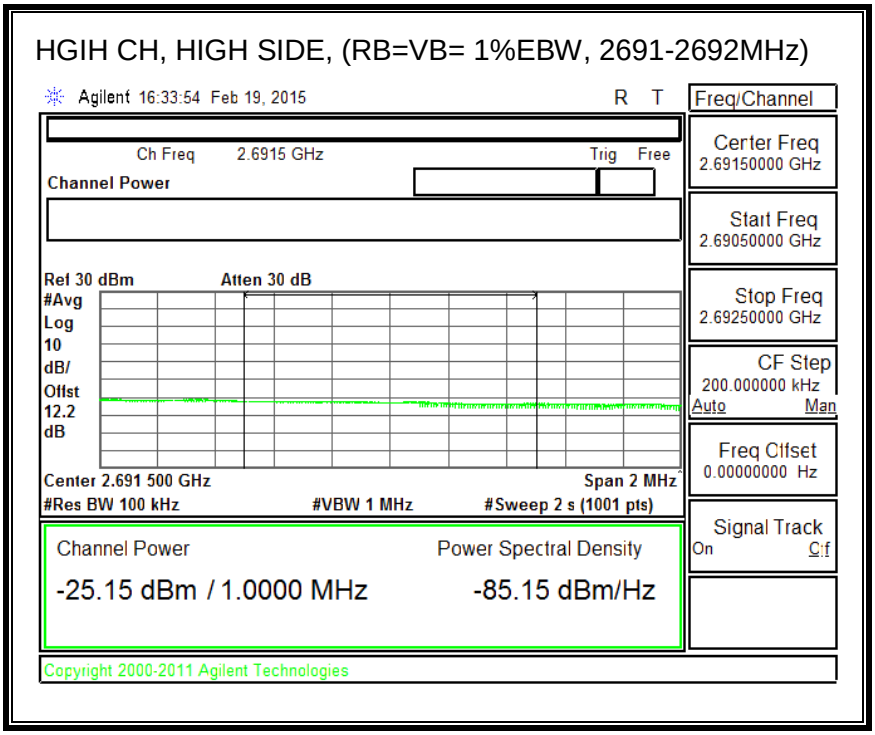
HIGH CH, LOW SIDE, (RB=VB= 1%EBW, 2678-2679MHz)



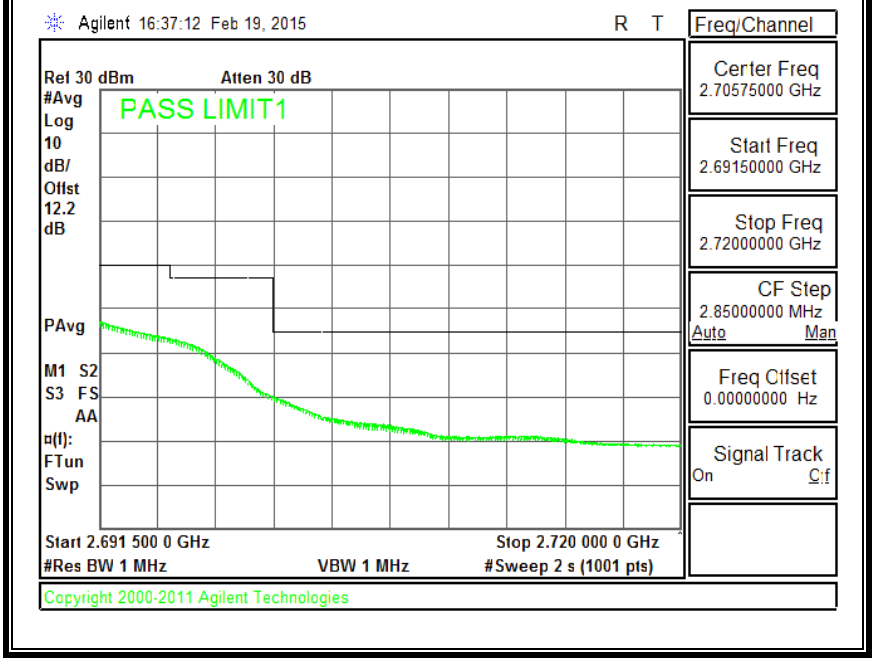
HIGH CH, LOW SIDE, (RB=VB= 1MHz, 2640-2678.5MHz)



HGIH CH, HIGH SIDE, (RB=VB= 1%EBW, 2691-2692MHz)

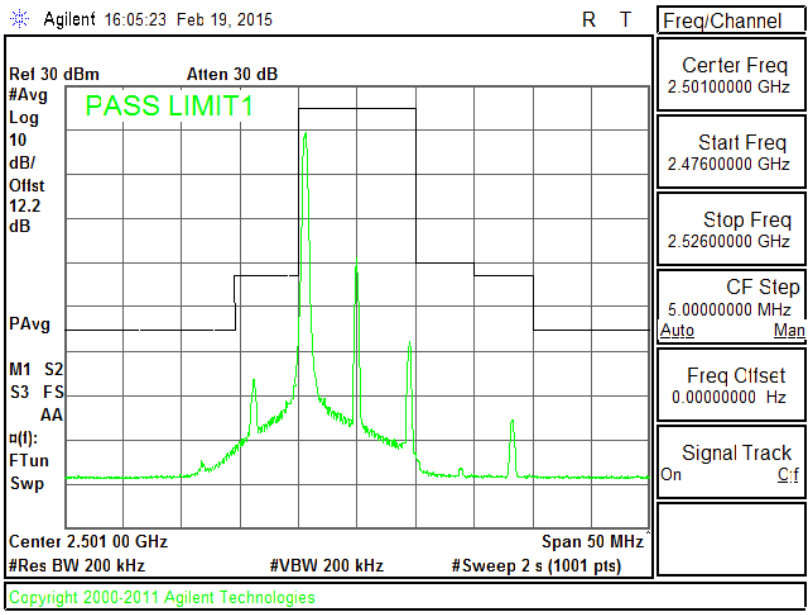


HIGH CH, HIGH SIDE, (RB=VB= 1MHz, 2691.5–2720MHz)

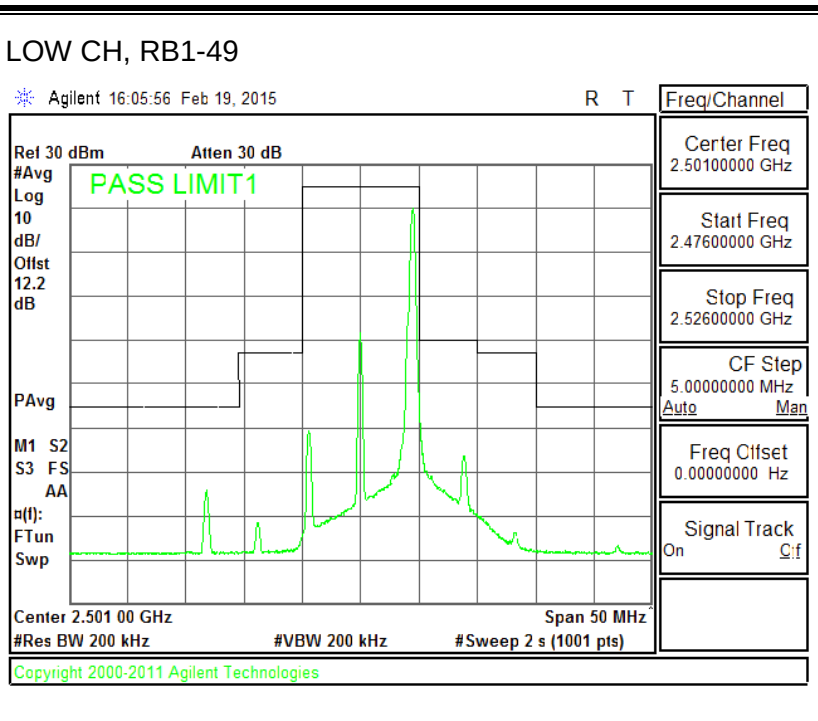


16QAM, (10.0 MHz BAND WIDTH)

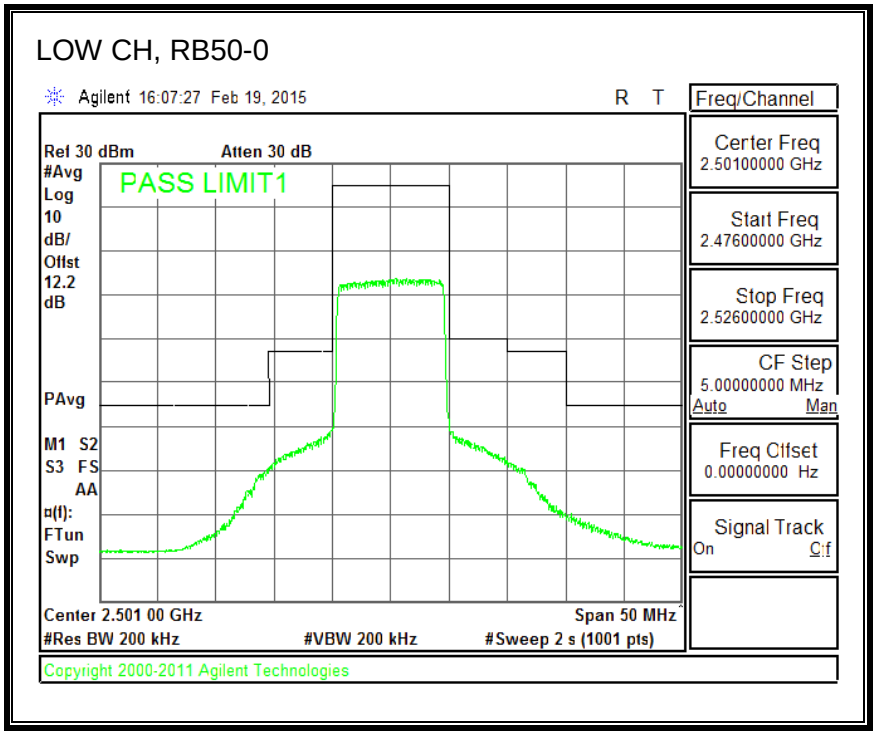
LOW CH, RB1-0



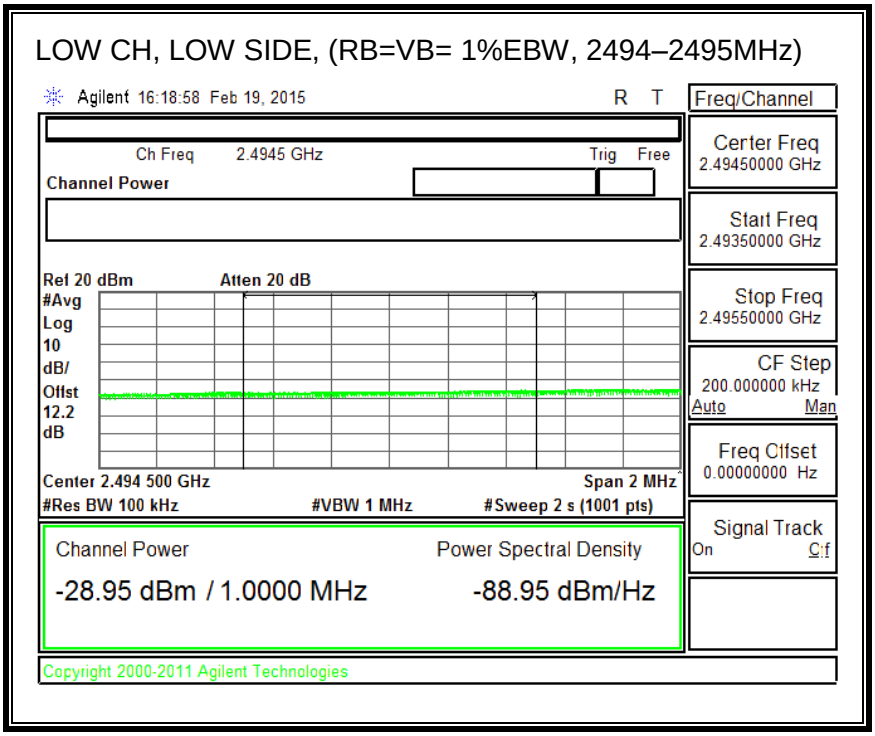
LOW CH, RB1-49



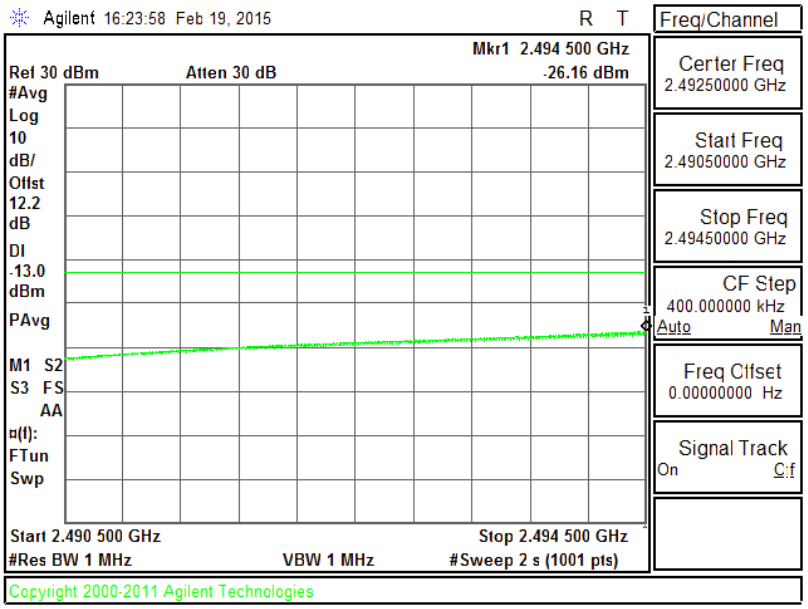
LOW CH, RB50-0



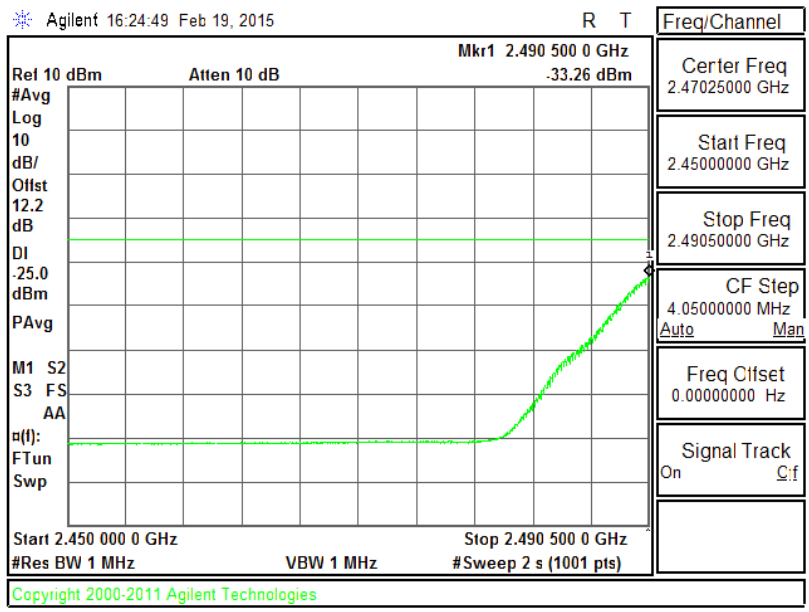
LOW CH, LOW SIDE, (RB=VB= 1%EBW, 2494–2495MHz)



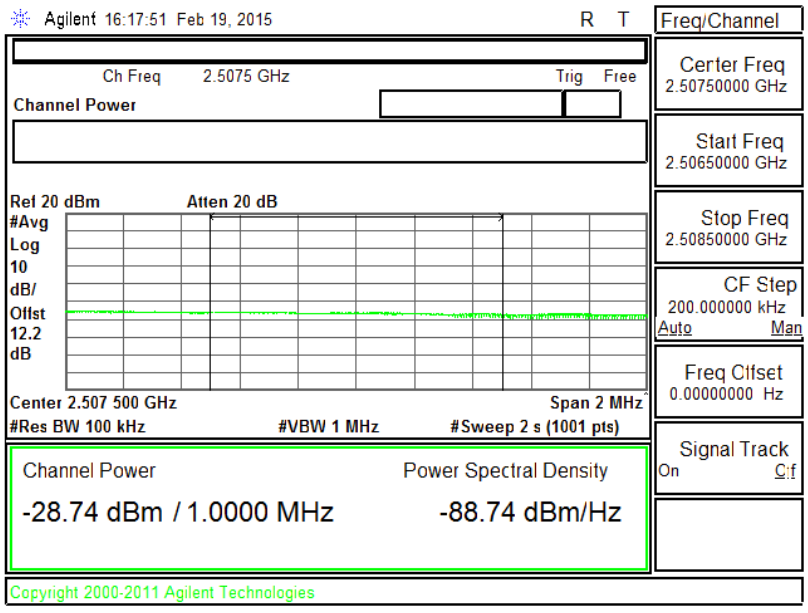
LOW CH, LOW SIDE, (RB=VB= 1MHz, 2490.5-2494.5MHz)



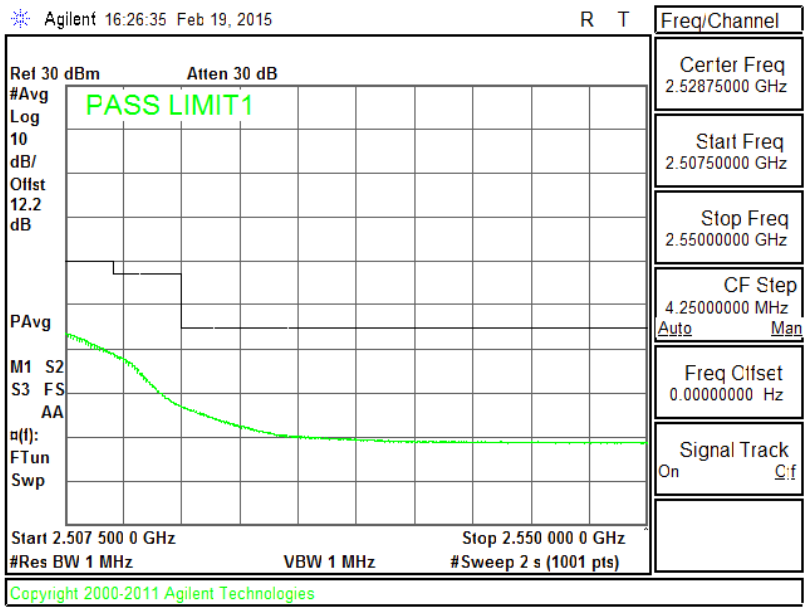
LOW CH, LOW SIDE, (RB=VB= 1MHz, -25dBm)



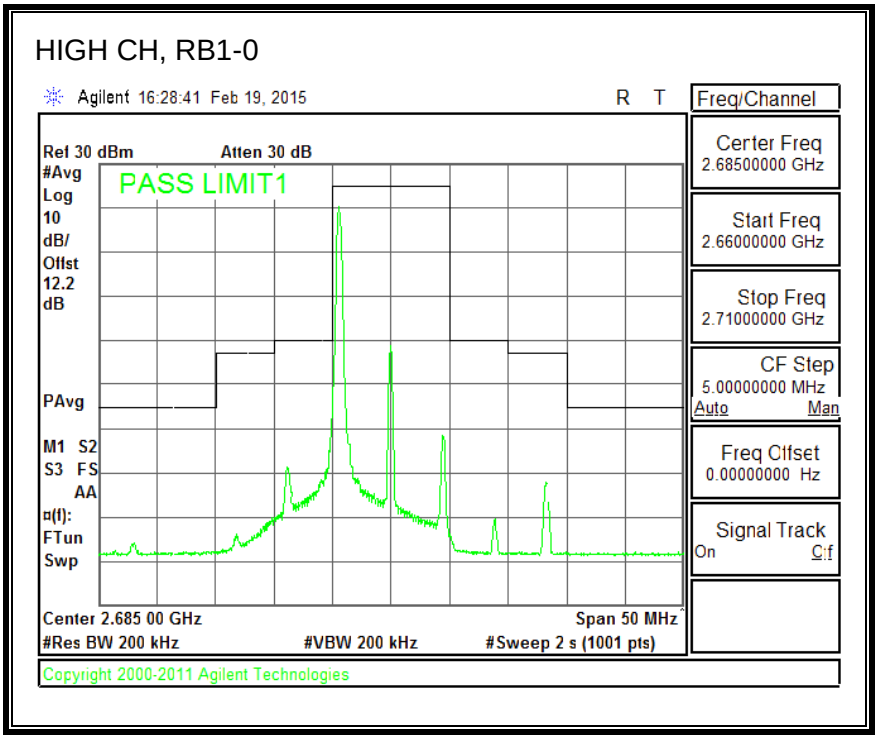
LOW CH, HIGH SIDE, (RB=VB= 1%EBW, 2507-2508MHz)



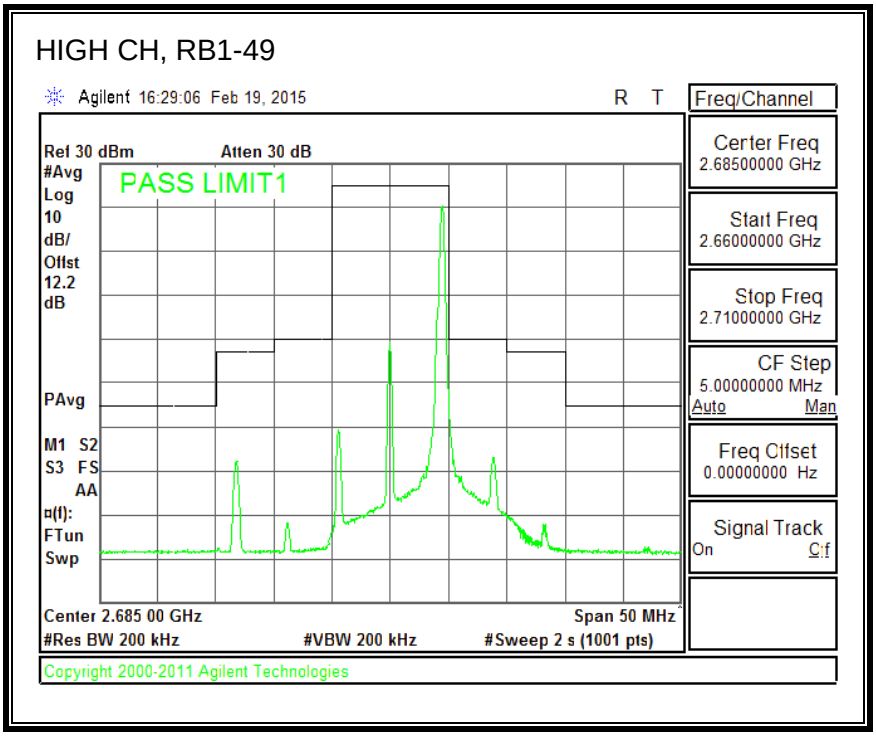
LOW CH, HIGH SIDE, (RB=VB= 1MHz, 2507.5-2550MHz)



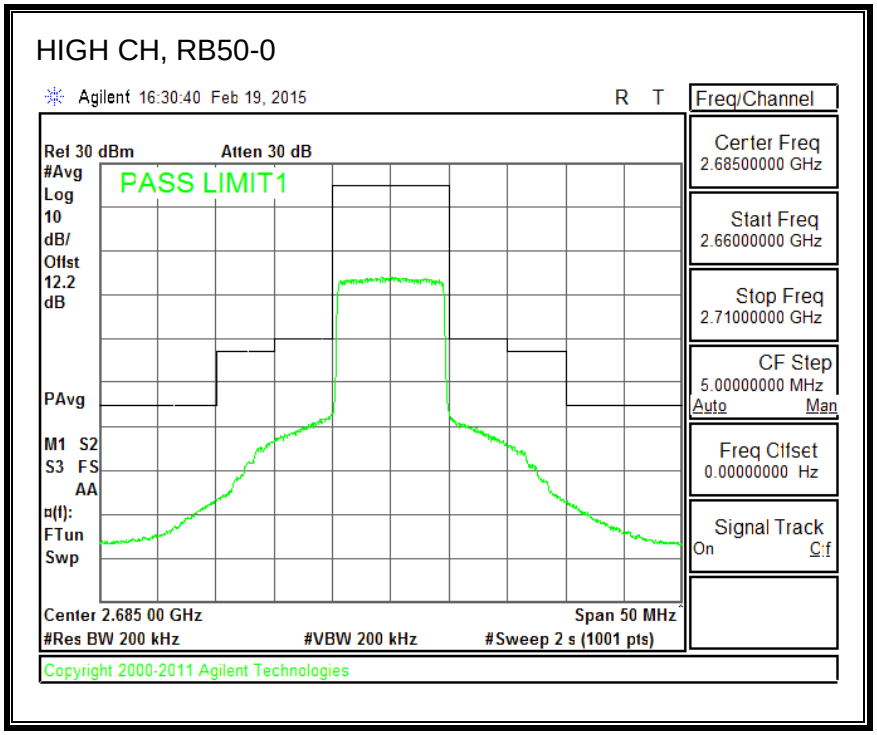
HIGH CH, RB1-0



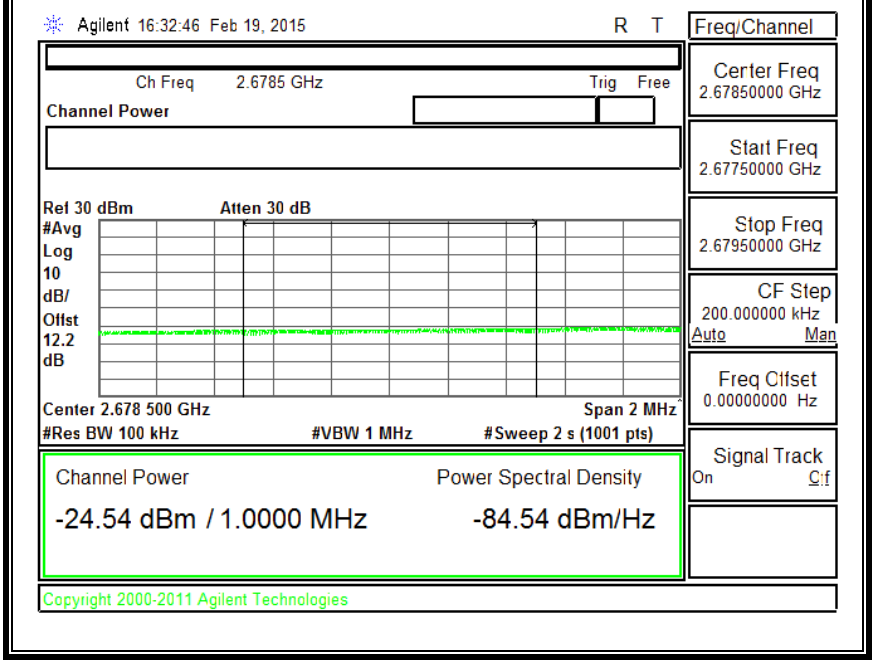
HIGH CH, RB1-49



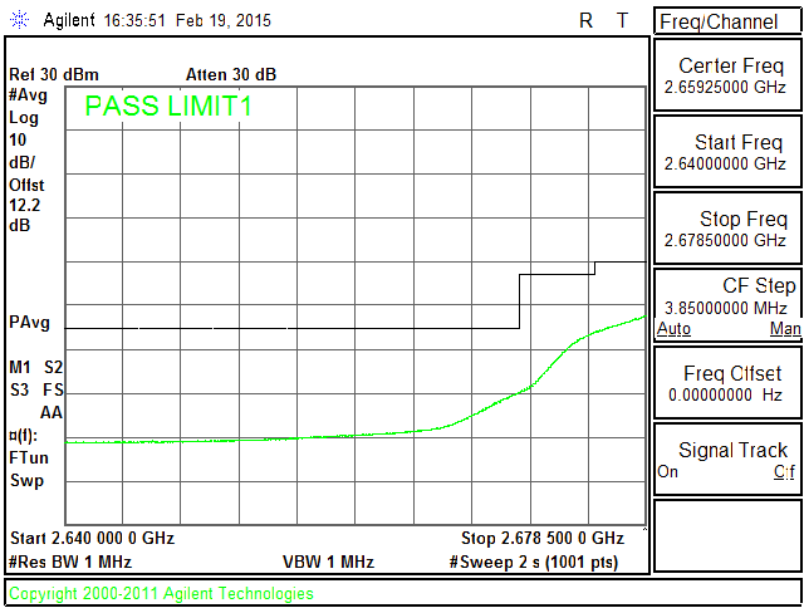
HIGH CH, RB50-0



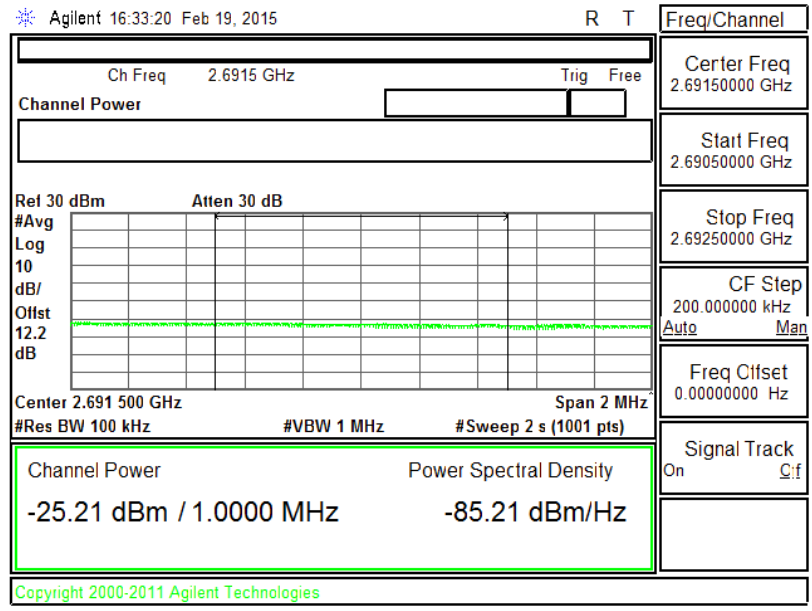
HIGH CH, LOW SIDE, (RB=VB= 1%EBW, 2678-2679MHz)



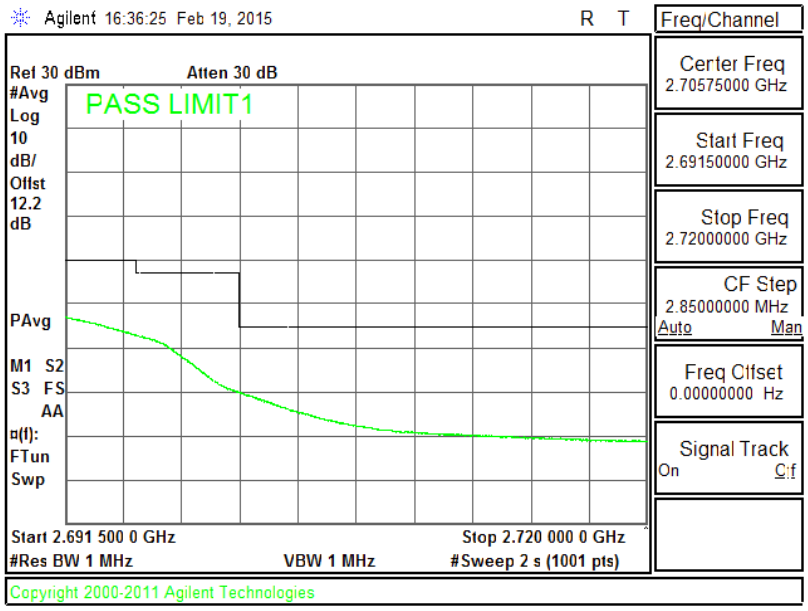
HIGH CH, LOW SIDE, (RB=VB= 1MHz, 2640-2678.5MHz)



HGIH CH, HIGH SIDE, (RB=VB= 1%EBW, 2691-2692MHz)

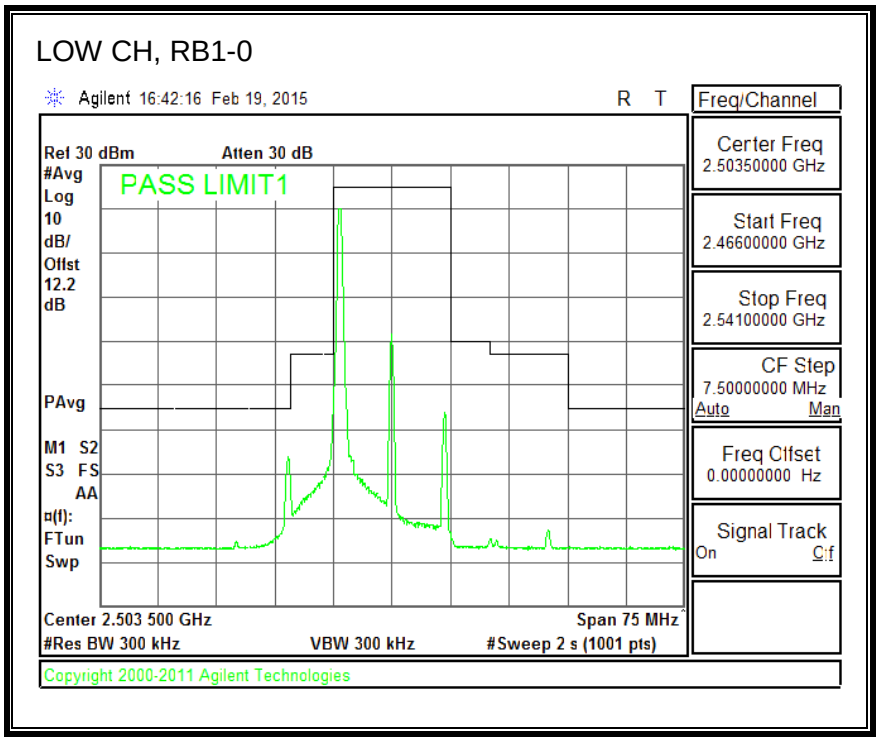


HIGH CH, HIGH SIDE, (RB=VB= 1MHz, 2691.5–2720MHz)

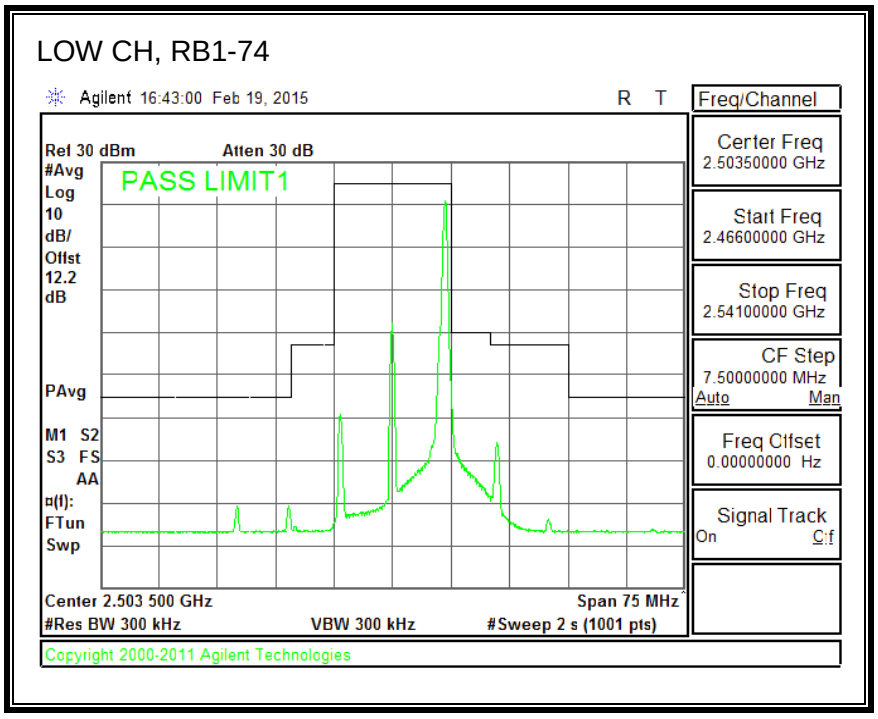


QPSK, (15.0 MHz BAND WIDTH)

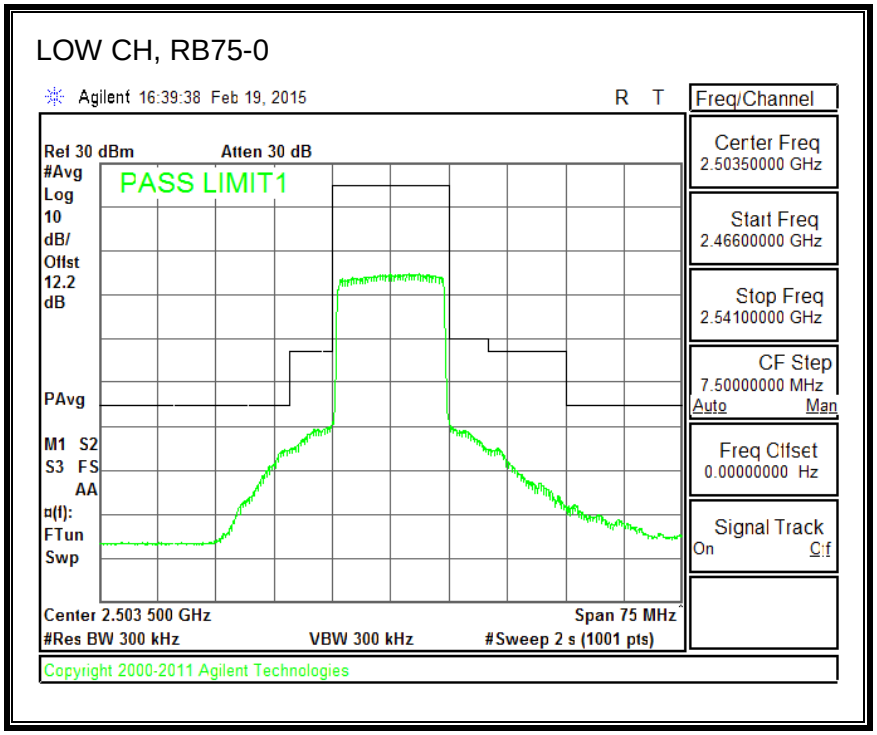
LOW CH, RB1-0



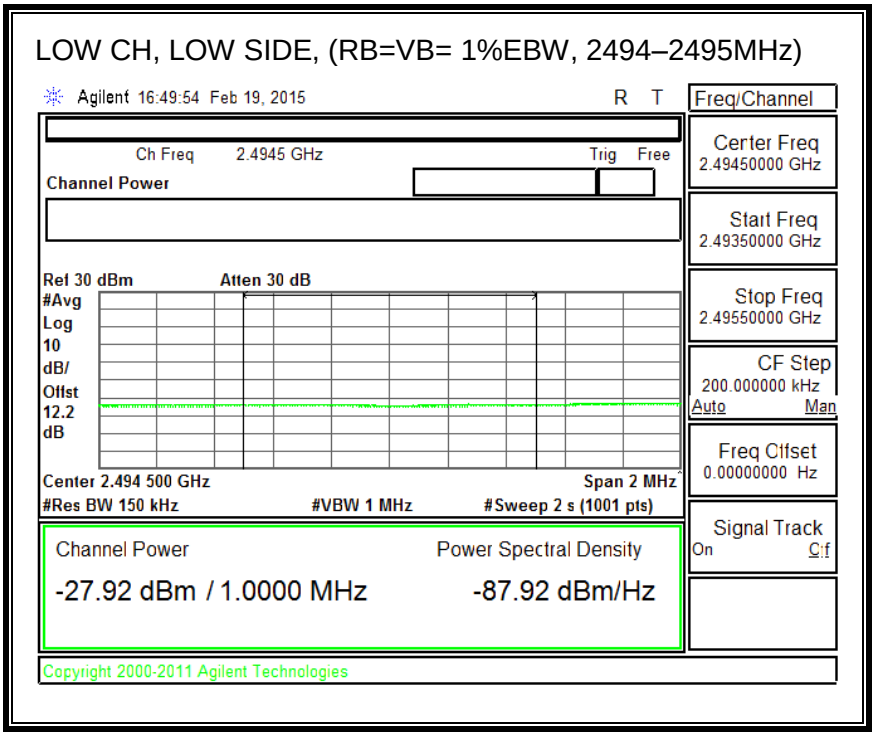
LOW CH, RB1-74



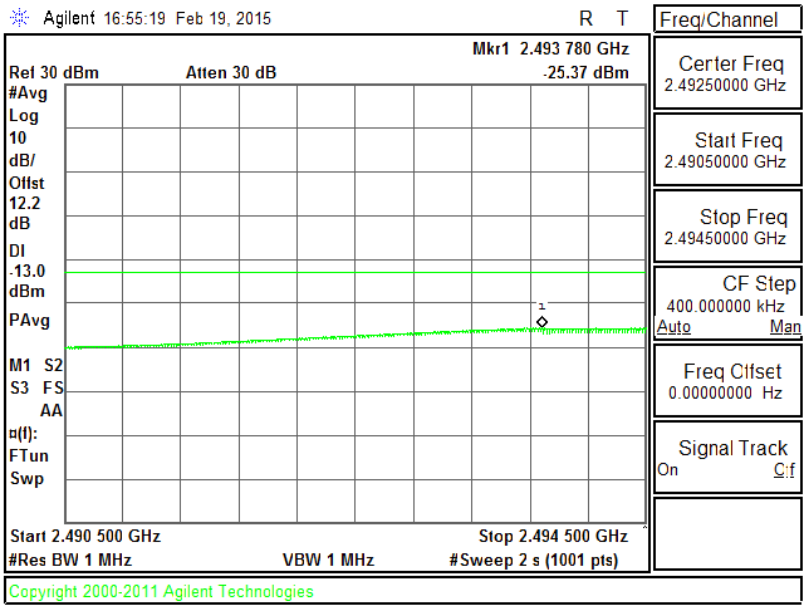
LOW CH, RB75-0



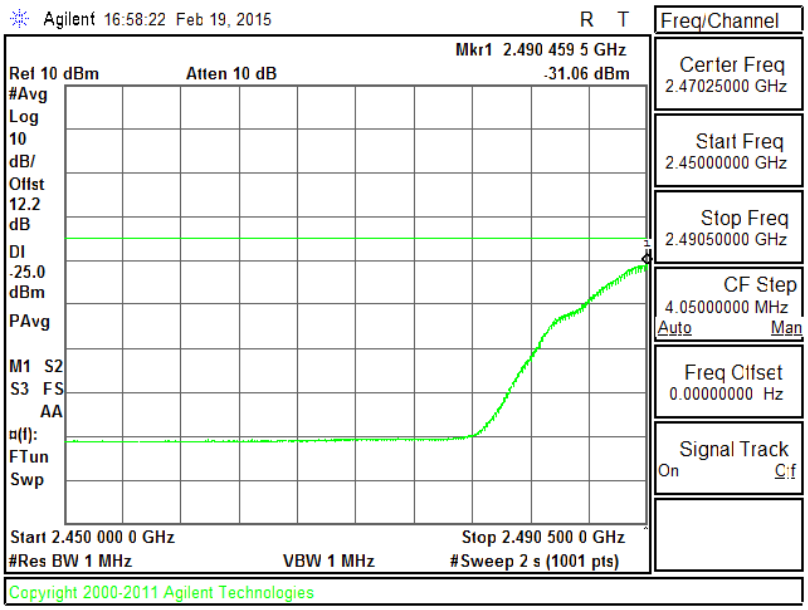
LOW CH, LOW SIDE, (RB=VB= 1%EBW, 2494–2495MHz)



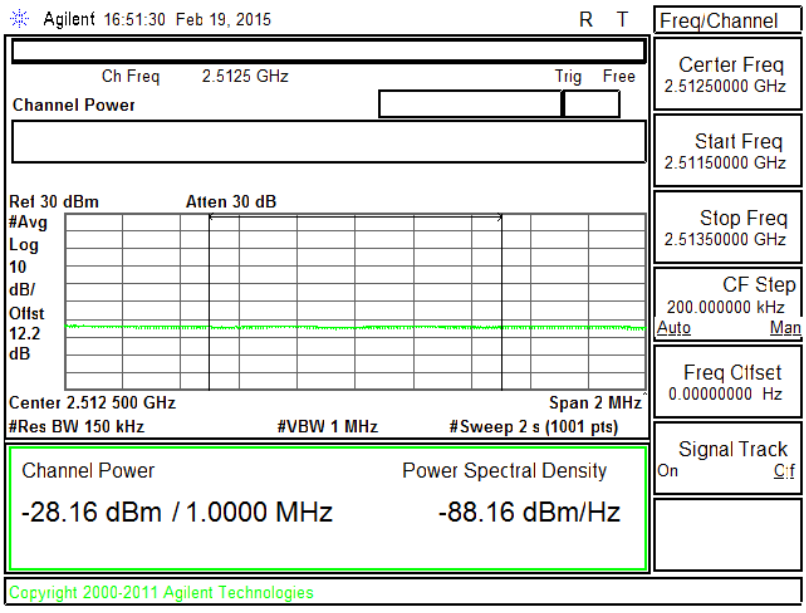
LOW CH, LOW SIDE, (RB=VB= 1MHz, 2490.5-2494.5MHz)



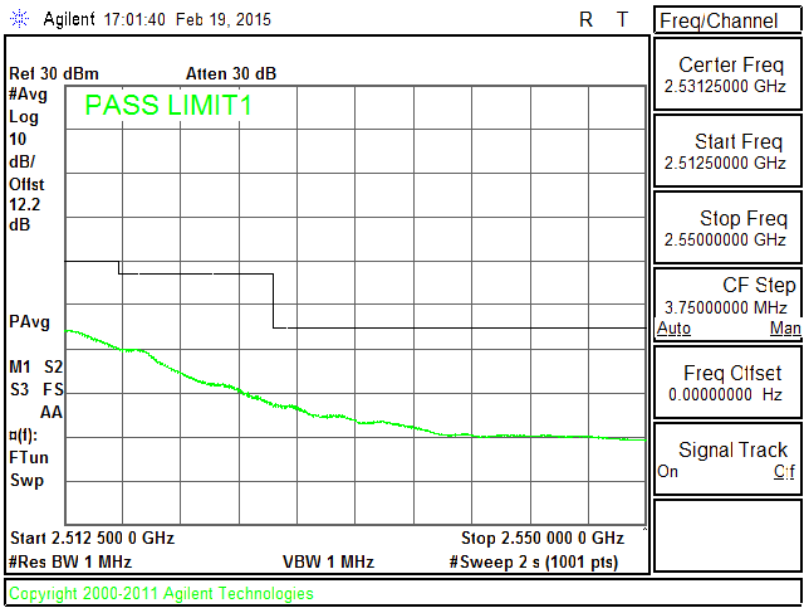
LOW CH, LOW SIDE, (RB=VB= 1MHz, -25dBm)



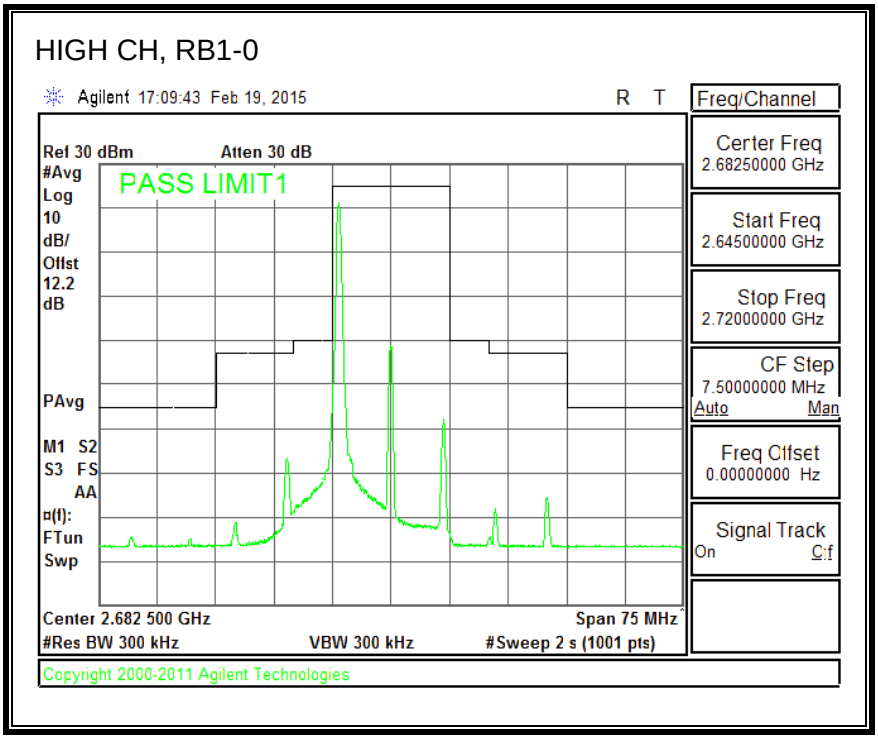
LOW CH, HIGH SIDE, (RB=VB= 1%EBW, 2512-2513MHz)



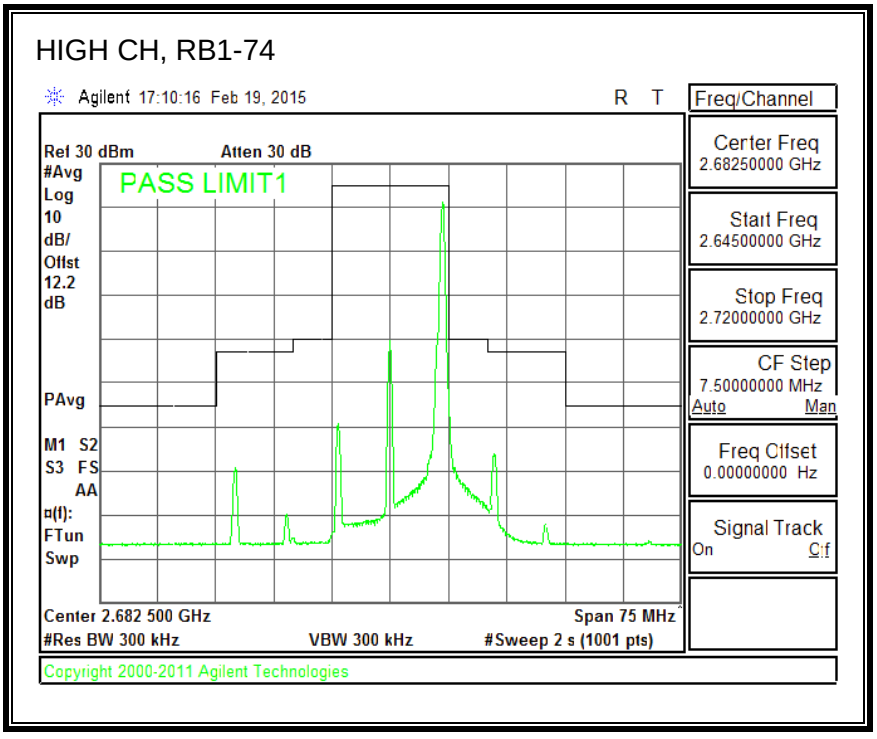
LOW CH, HIGH SIDE, (RB=VB= 1MHz, 2512.5-2550MHz)



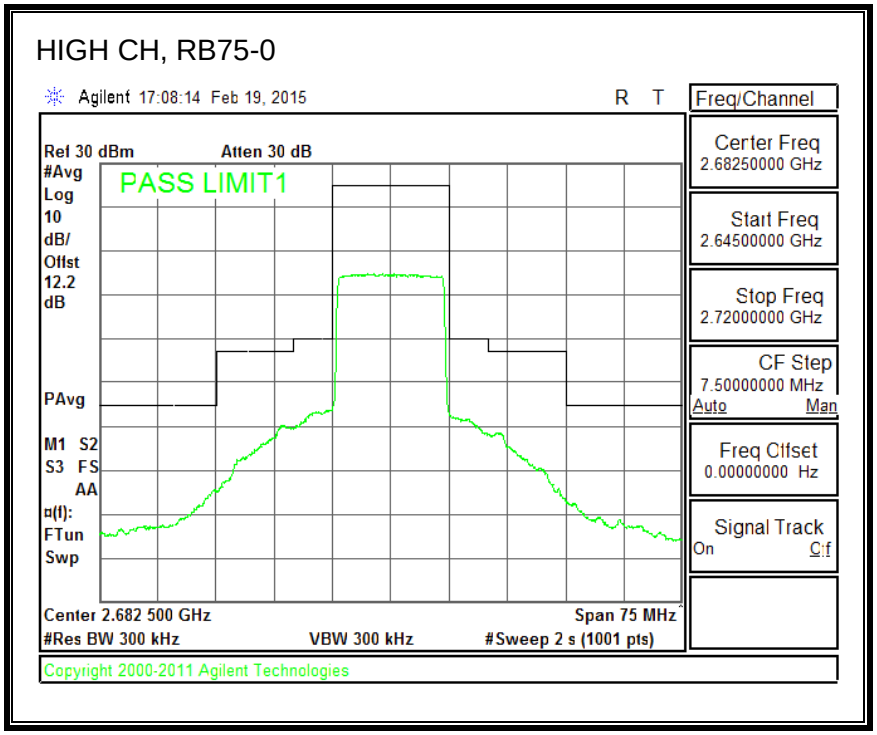
HIGH CH, RB1-0



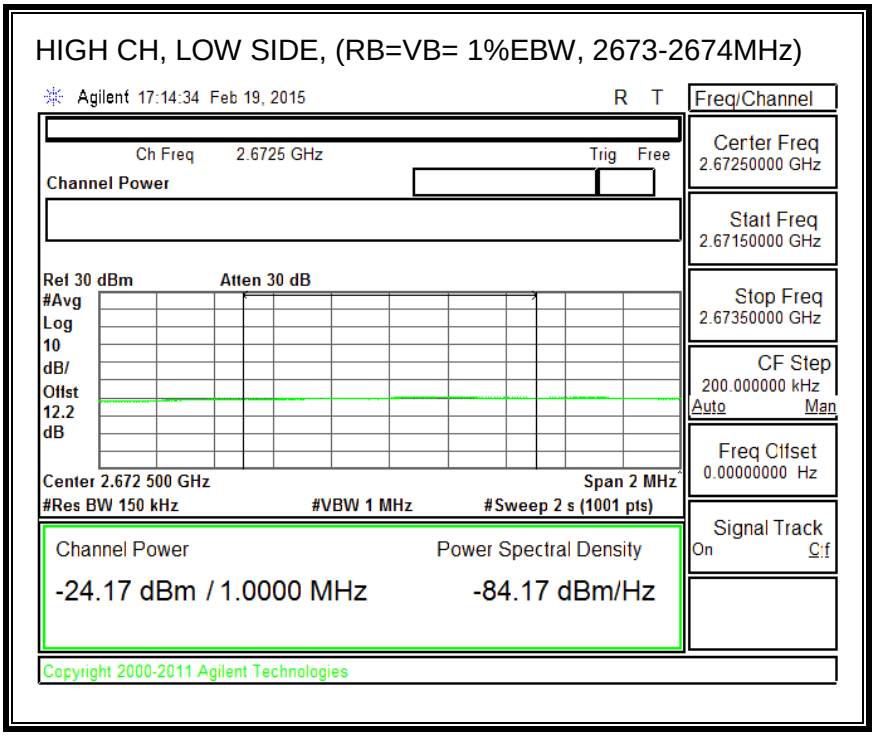
HIGH CH, RB1-74



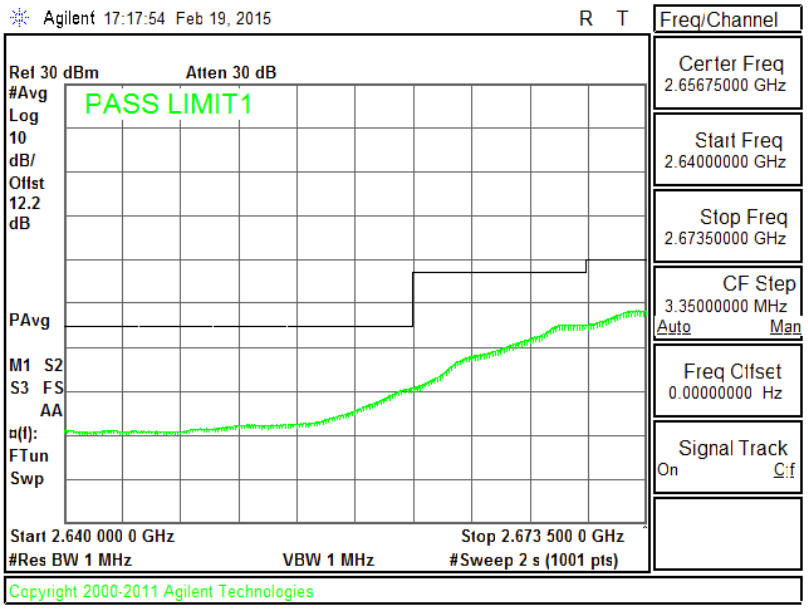
HIGH CH, RB75-0



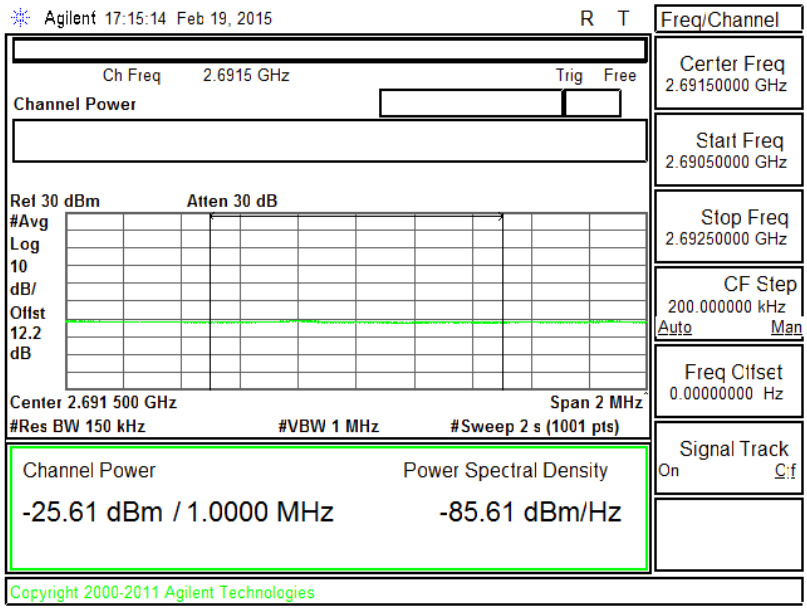
HIGH CH, LOW SIDE, (RB=VB= 1%EBW, 2673-2674MHz)



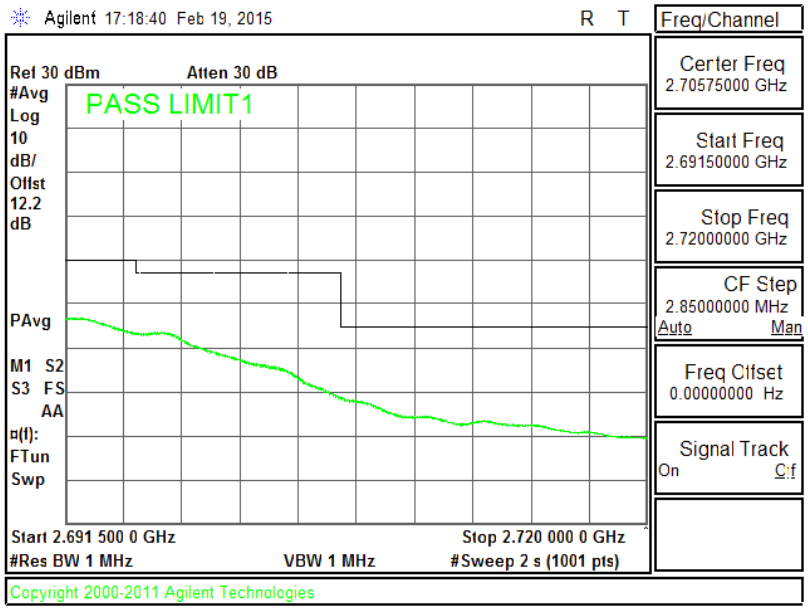
HIGH CH, LOW SIDE, (RB=VB= 1MHz, 2640-2673.5MHz)



HGIH CH, HIGH SIDE, (RB=VB= 1%EBW, 2691-2692MHz)

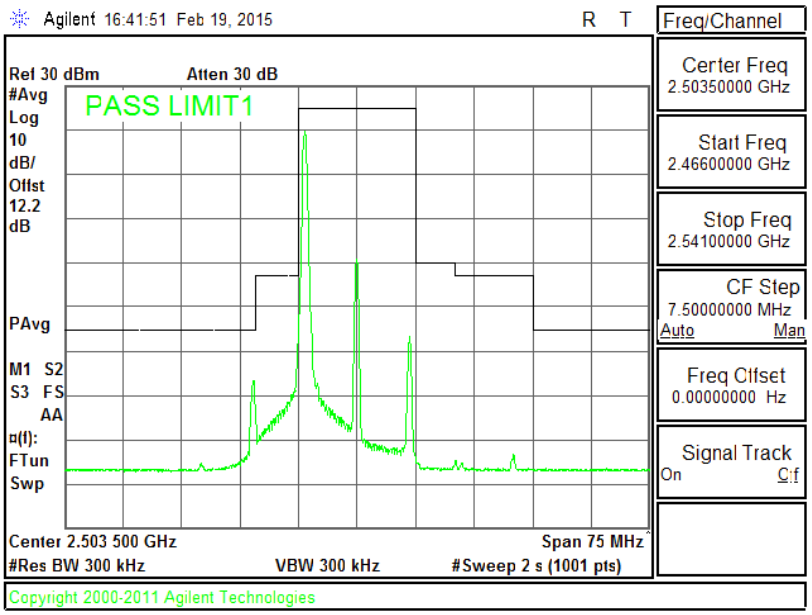


HIGH CH, HIGH SIDE, (RB=VB= 1MHz, 2691.5–2720MHz)

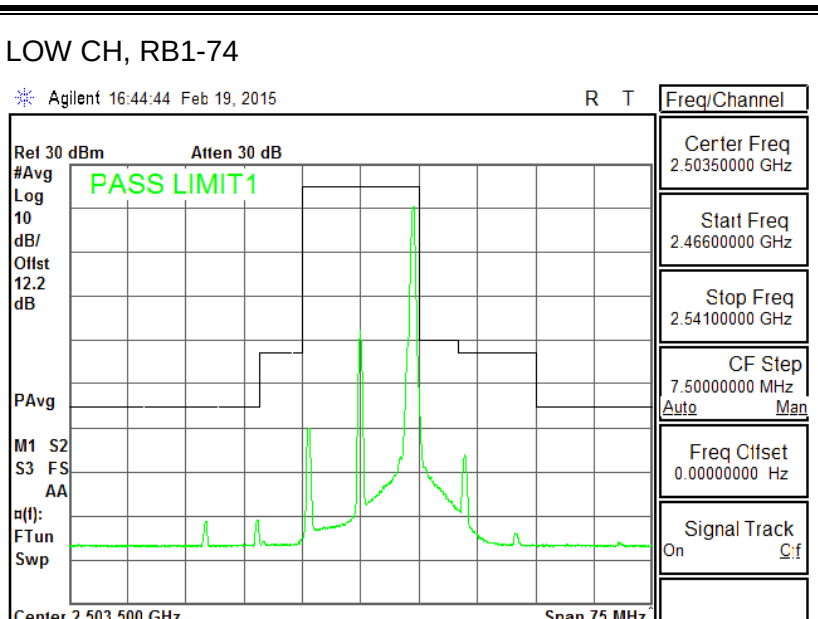


16QAM, (15.0 MHz BAND WIDTH)

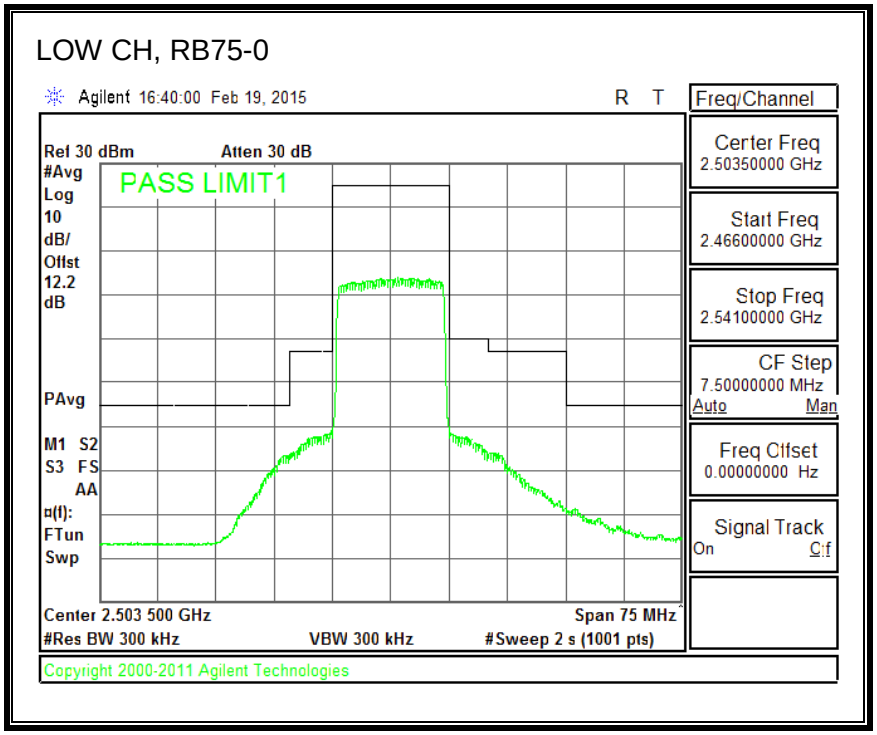
LOW CH, RB1-0



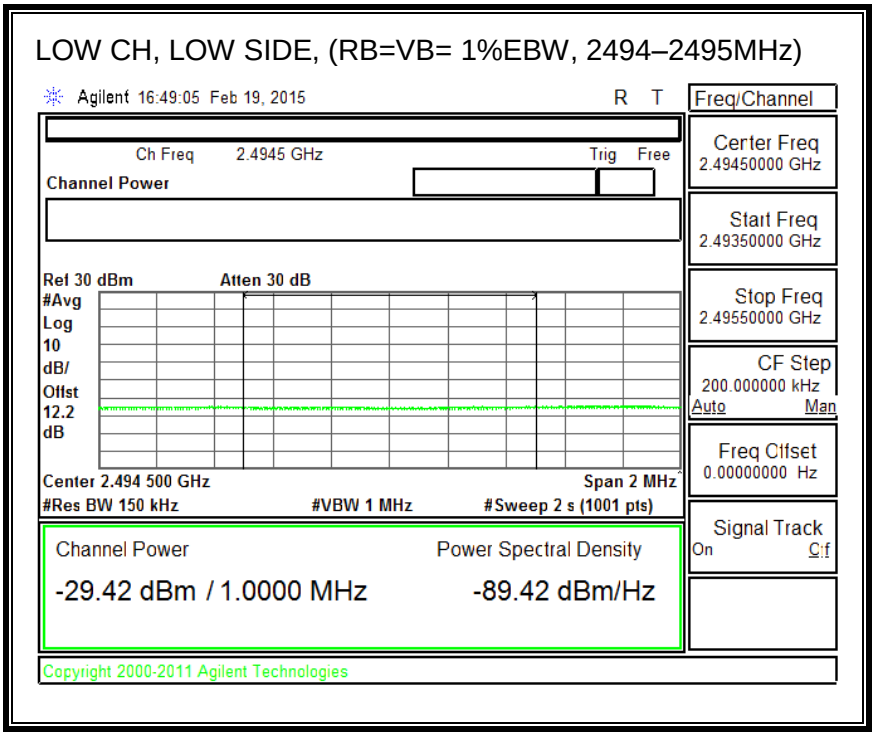
LOW CH, RB1-74



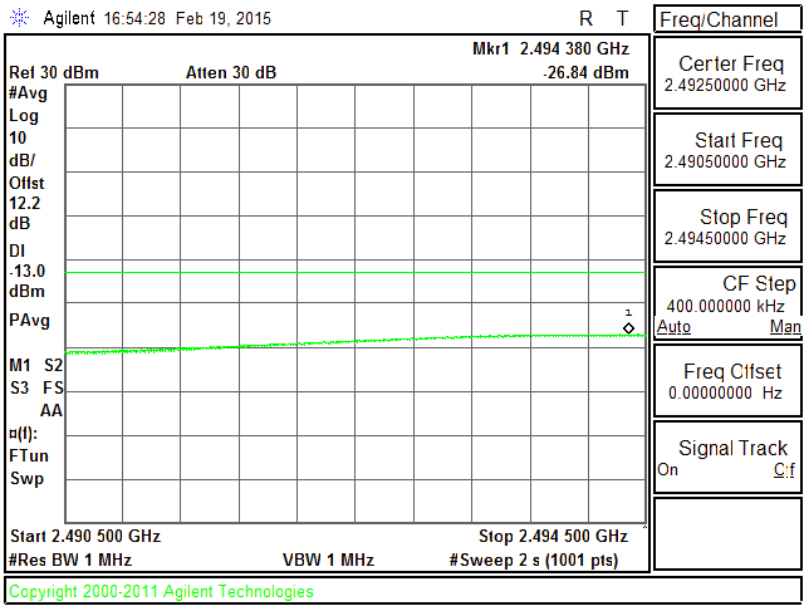
LOW CH, RB75-0



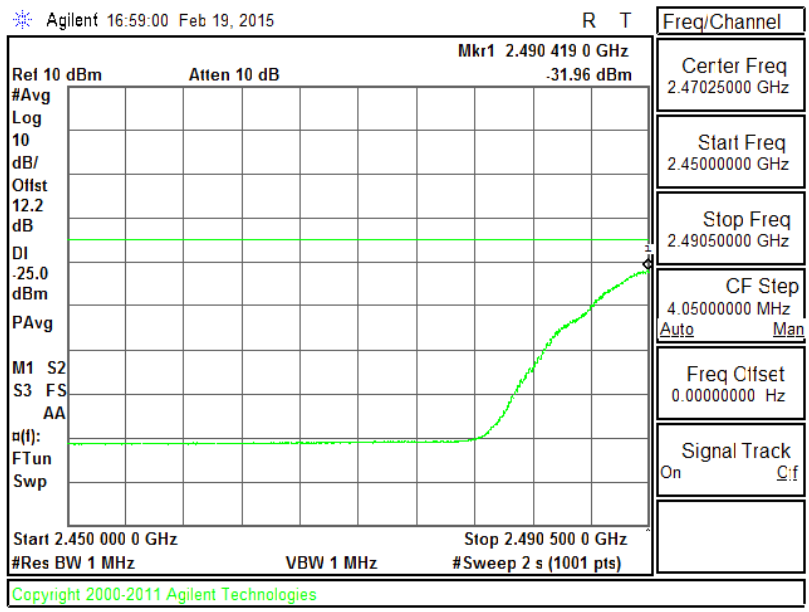
LOW CH, LOW SIDE, (RB=VB= 1%EBW, 2494–2495MHz)



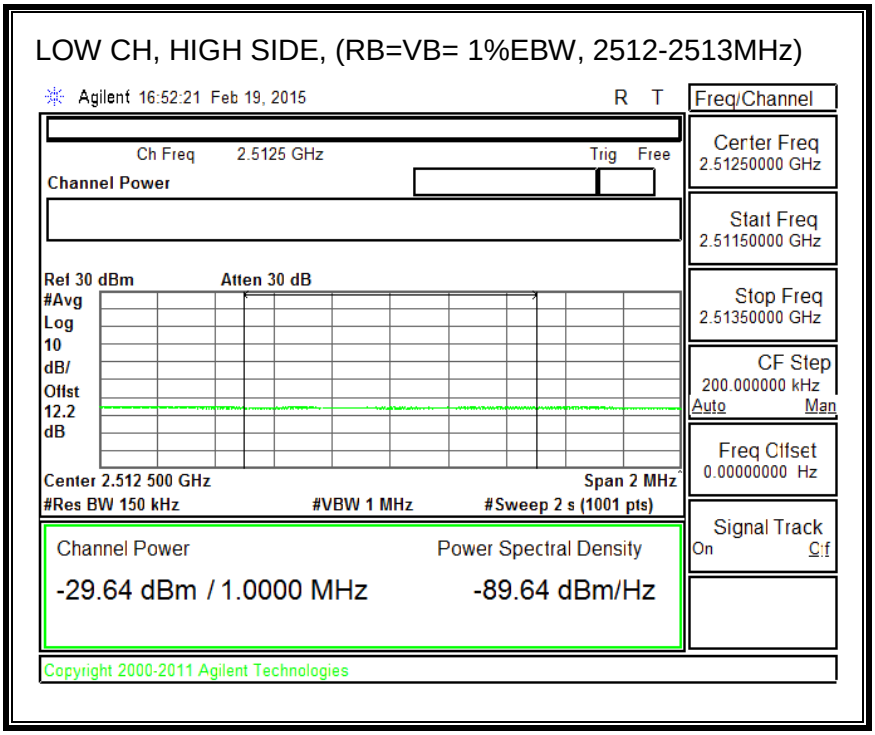
LOW CH, LOW SIDE, (RB=VB= 1MHz, 2490.5-2494.5MHz)



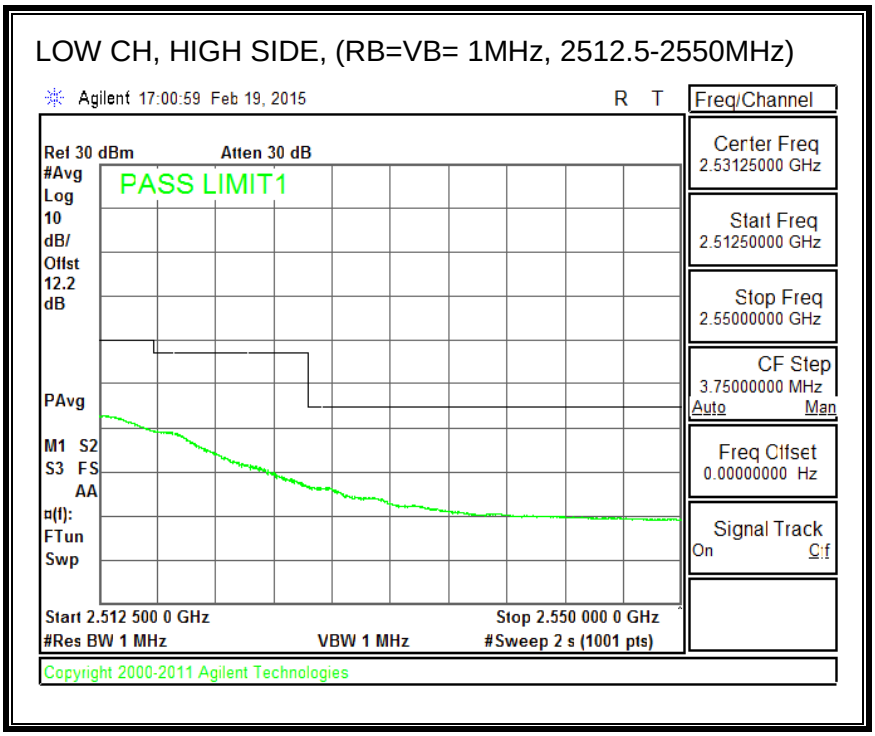
LOW CH, LOW SIDE, (RB=VB= 1MHz, -25dBm)



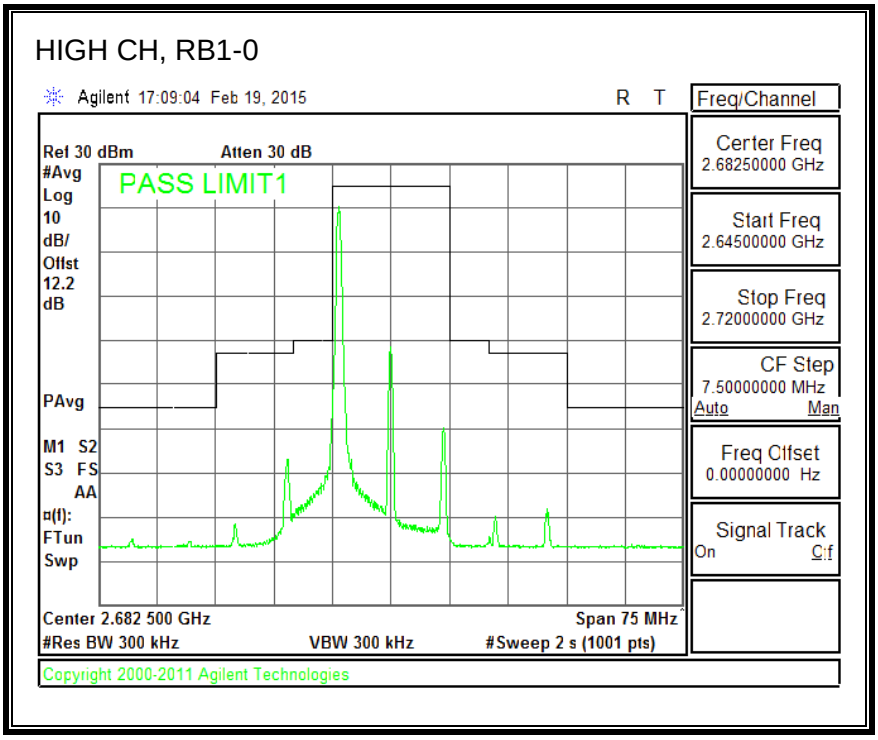
LOW CH, HIGH SIDE, (RB=VB= 1%EBW, 2512-2513MHz)



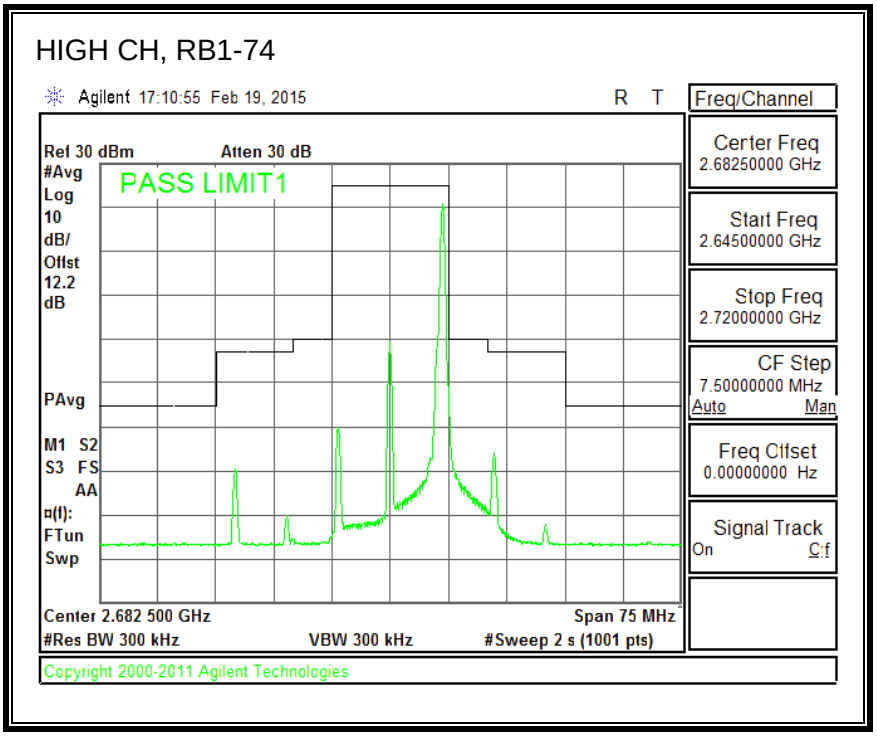
LOW CH, HIGH SIDE, (RB=VB= 1MHz, 2512.5-2550MHz)



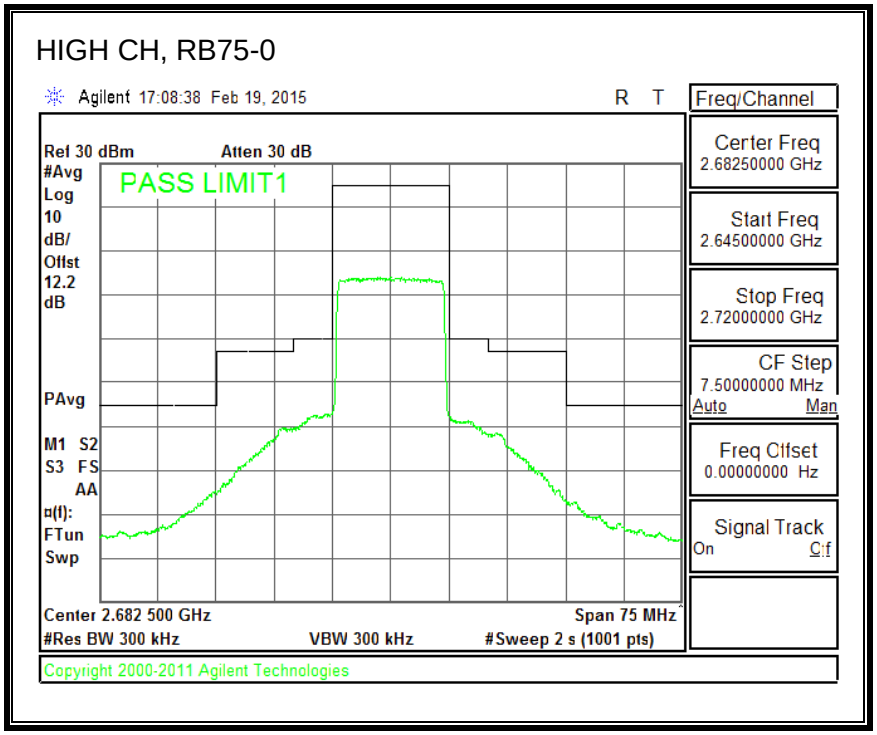
HIGH CH, RB1-0



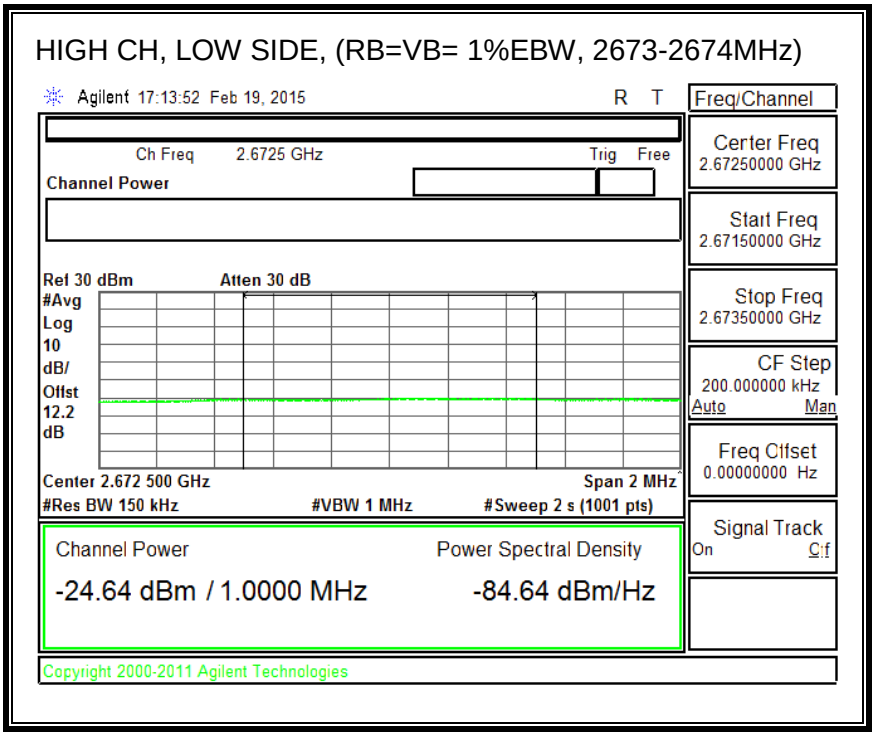
HIGH CH, RB1-74



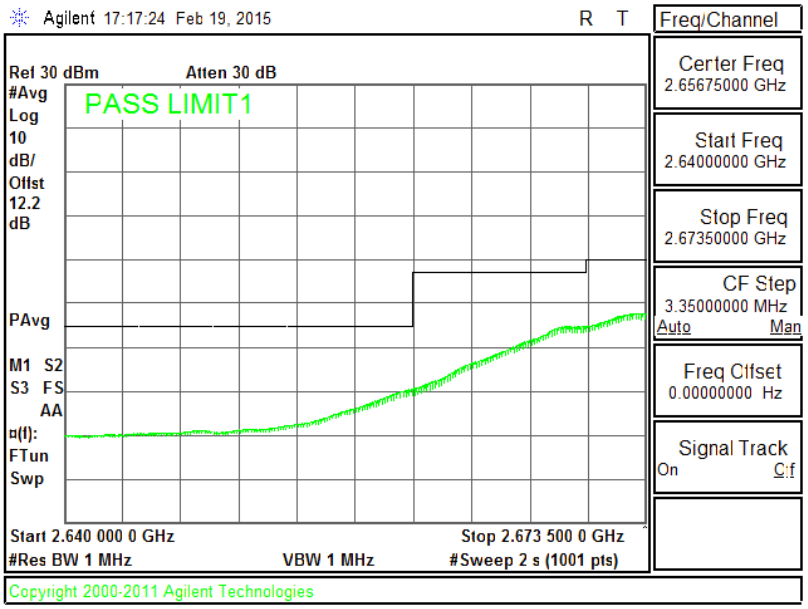
HIGH CH, RB75-0



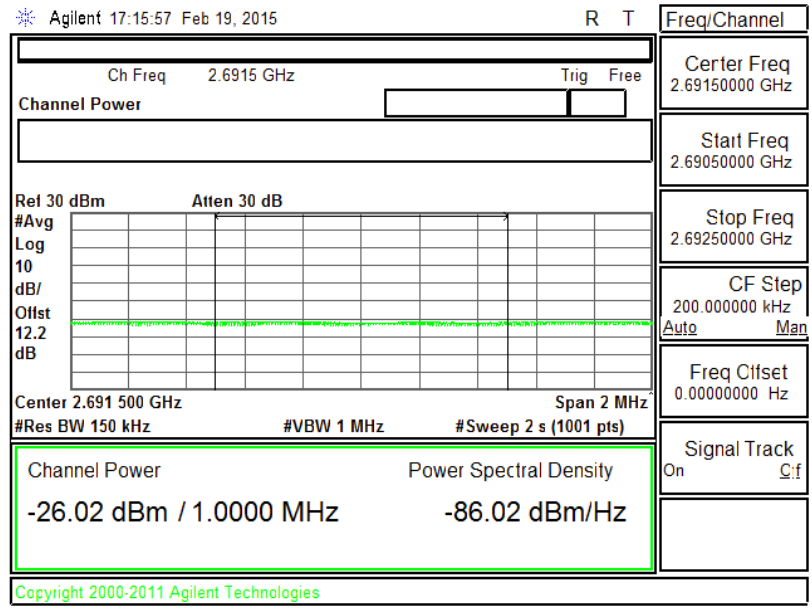
HIGH CH, LOW SIDE, (RB=VB= 1%EBW, 2673-2674MHz)



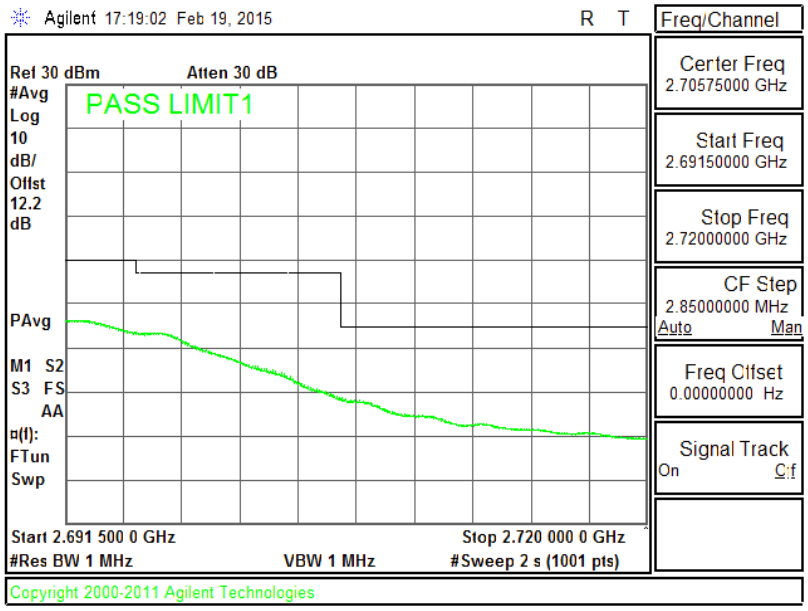
HIGH CH, LOW SIDE, (RB=VB= 1MHz, 2640-2673.5MHz)



HGIH CH, HIGH SIDE, (RB=VB= 1%EBW, 2691-2692MHz)

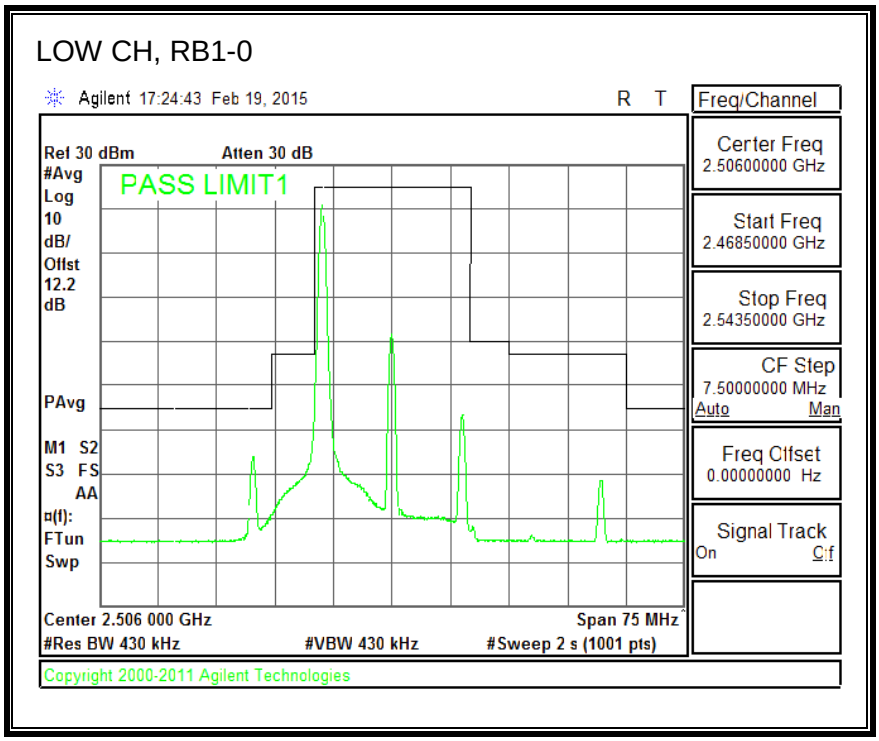


HIGH CH, HIGH SIDE, (RB=VB= 1MHz, 2691.5–2720MHz)

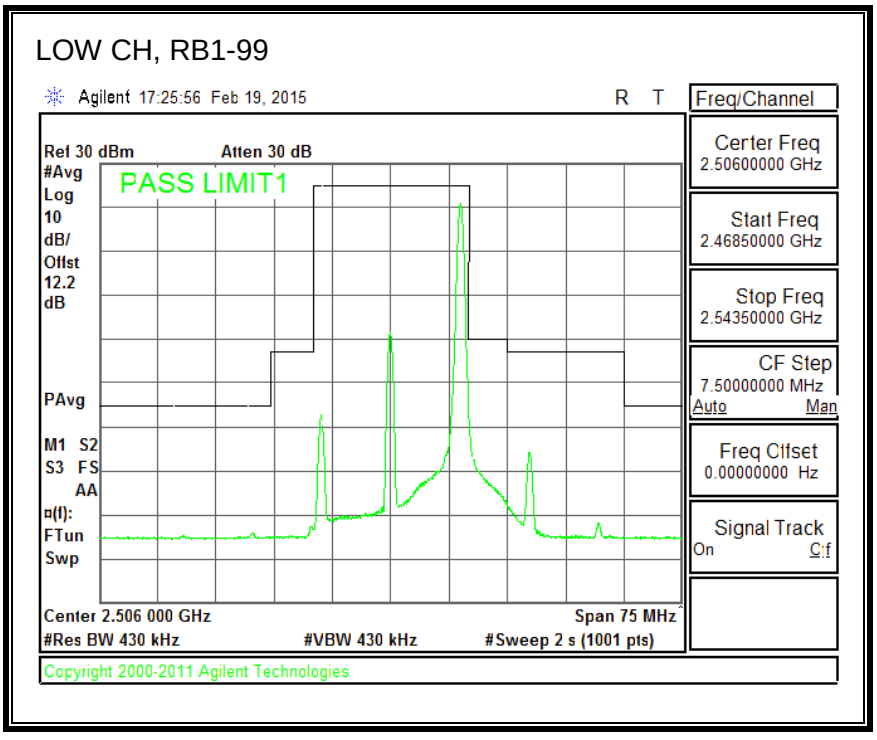


QPSK, (20.0 MHz BAND WIDTH)

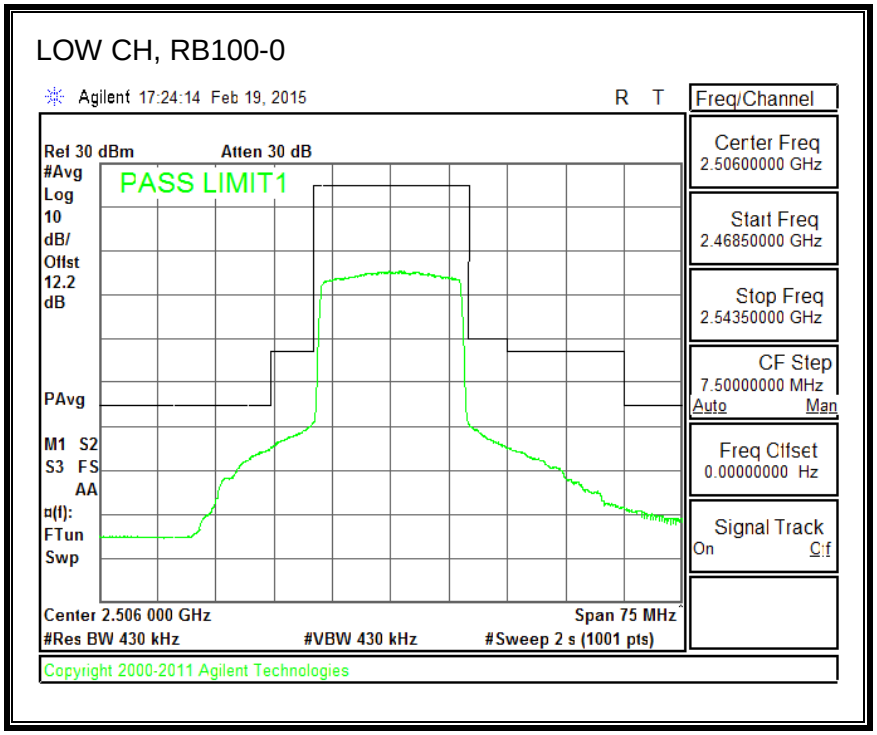
LOW CH, RB1-0



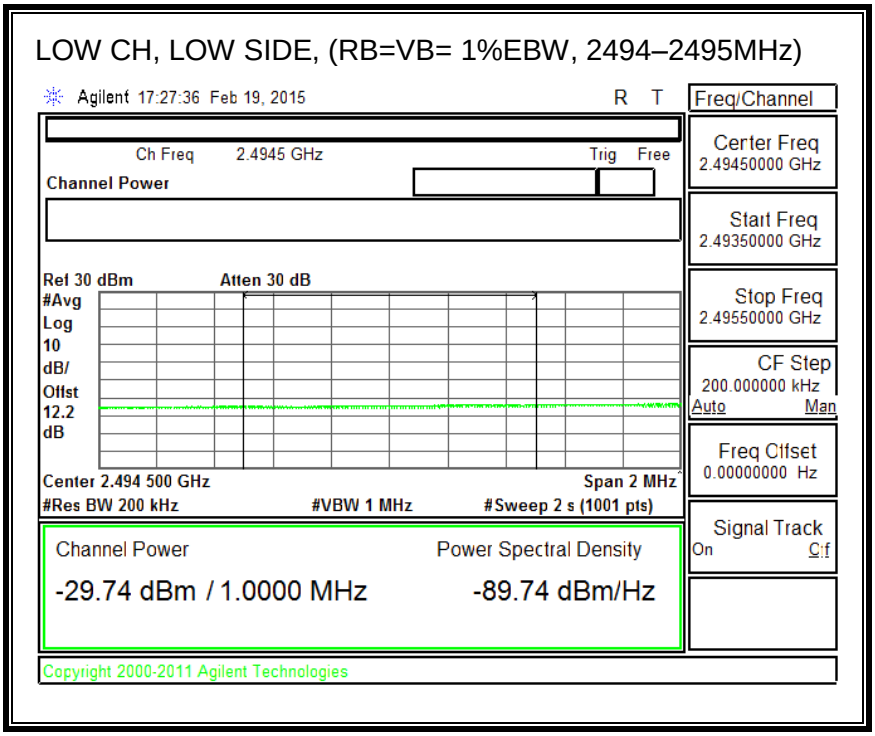
LOW CH, RB1-99



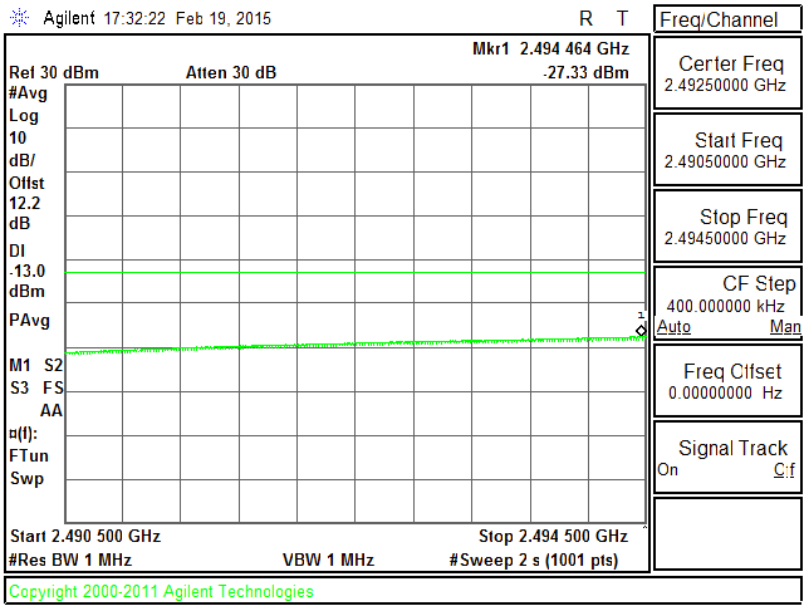
LOW CH, RB100-0



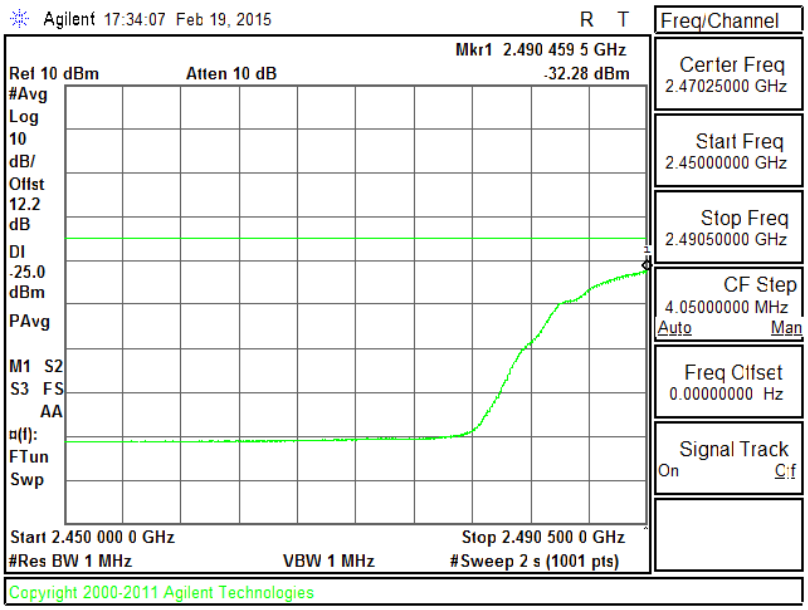
LOW CH, LOW SIDE, (RB=VB= 1%EBW, 2494–2495MHz)



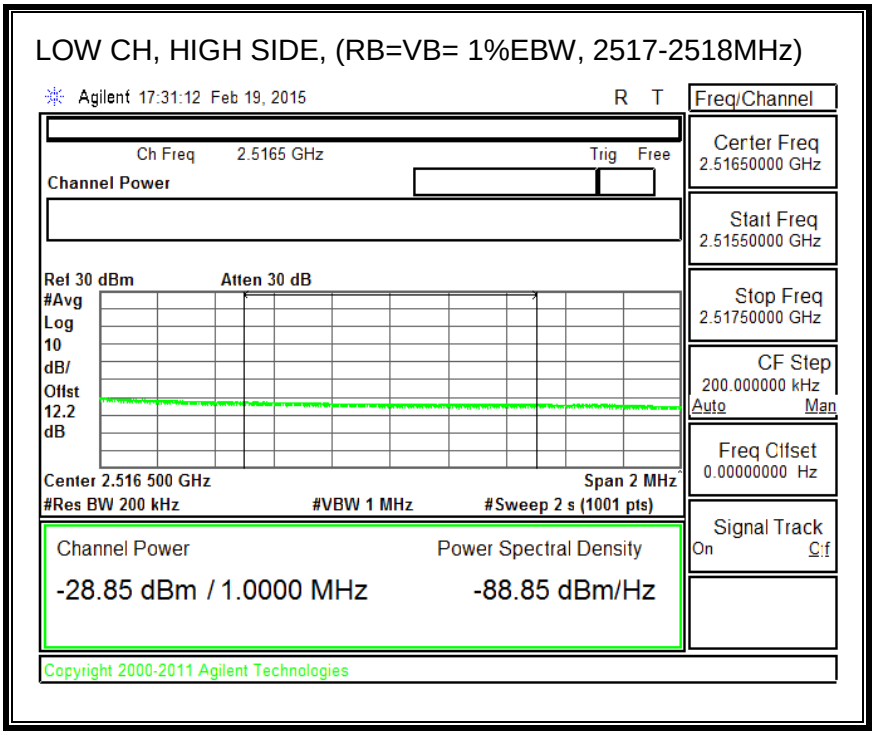
LOW CH, LOW SIDE, (RB=VB= 1MHz, 2490.5-2494.5MHz)



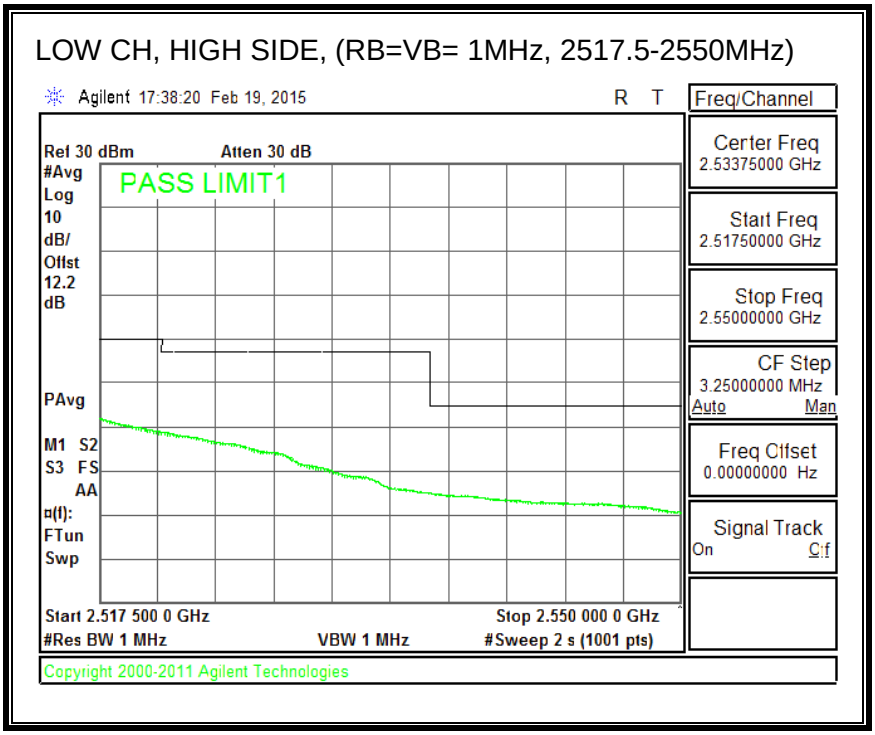
LOW CH, LOW SIDE, (RB=VB= 1MHz, -25dBm)



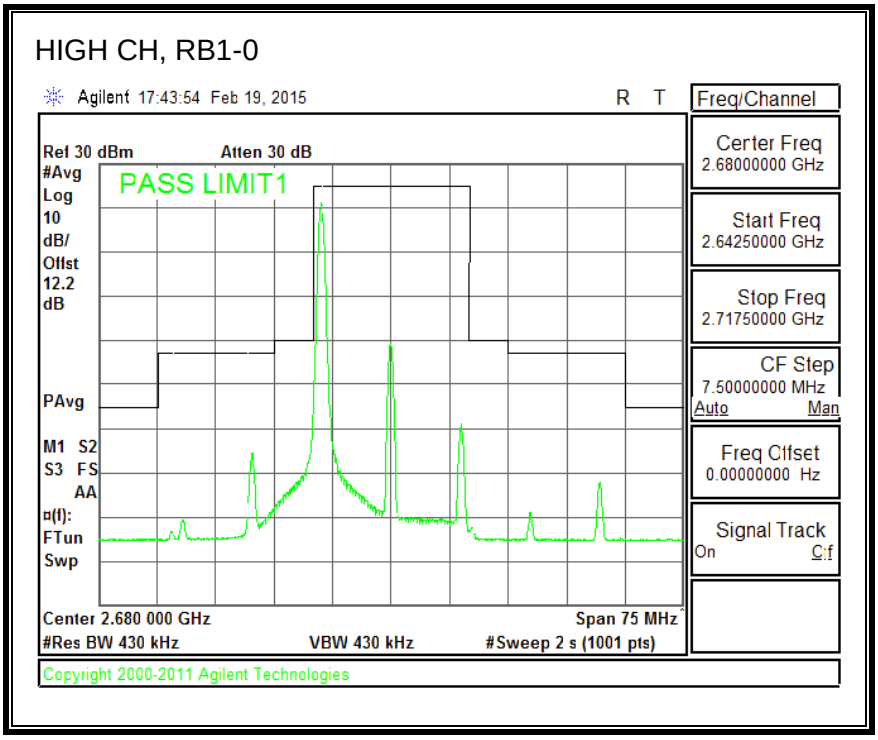
LOW CH, HIGH SIDE, (RB=VB= 1%EBW, 2517-2518MHz)



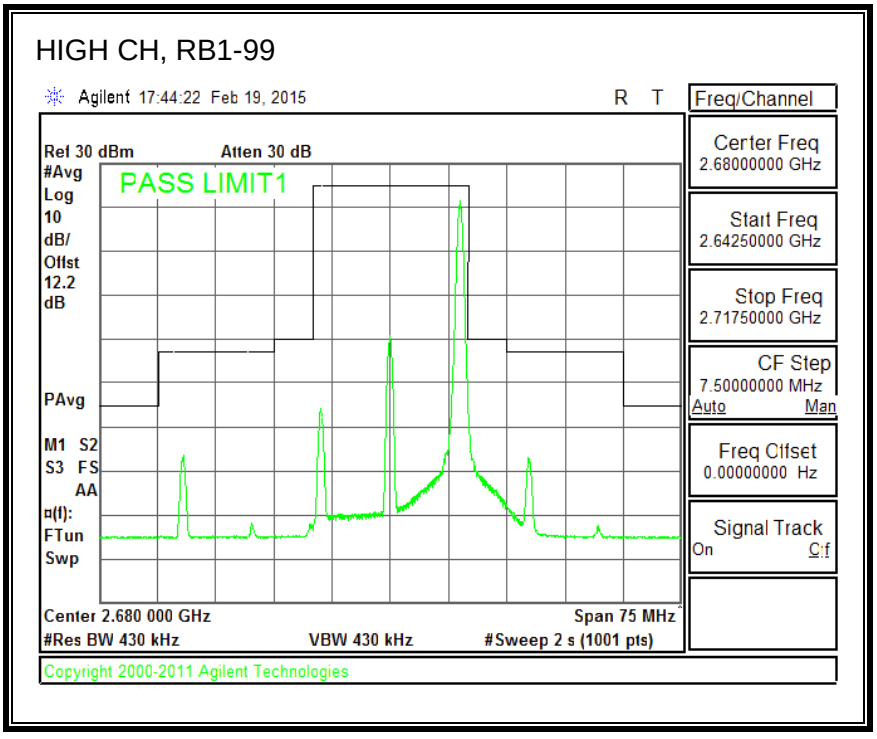
LOW CH, HIGH SIDE, (RB=VB= 1MHz, 2517.5-2550MHz)



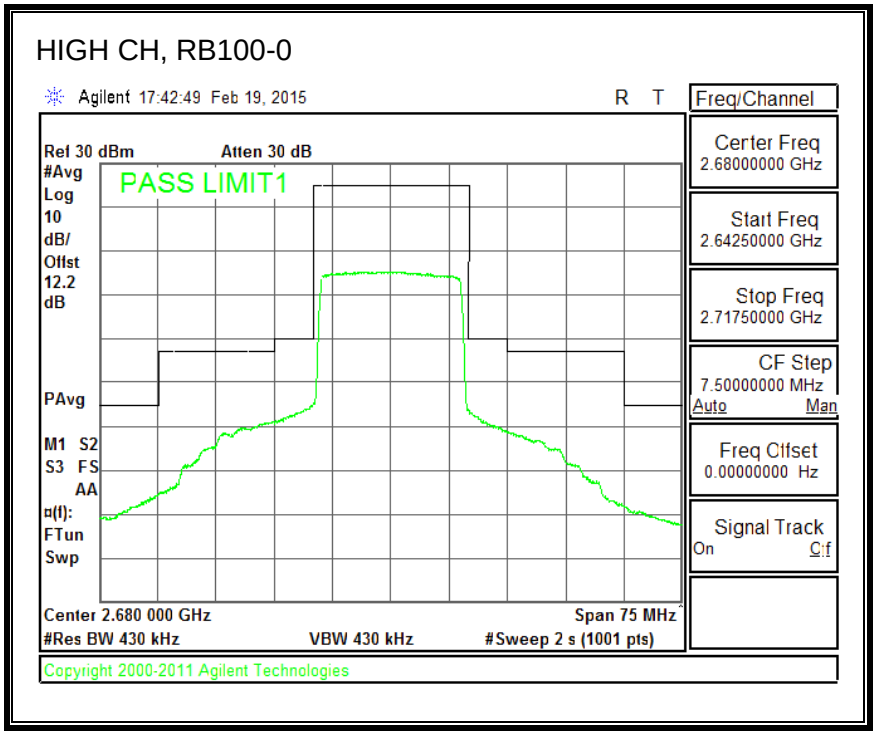
HIGH CH, RB1-0



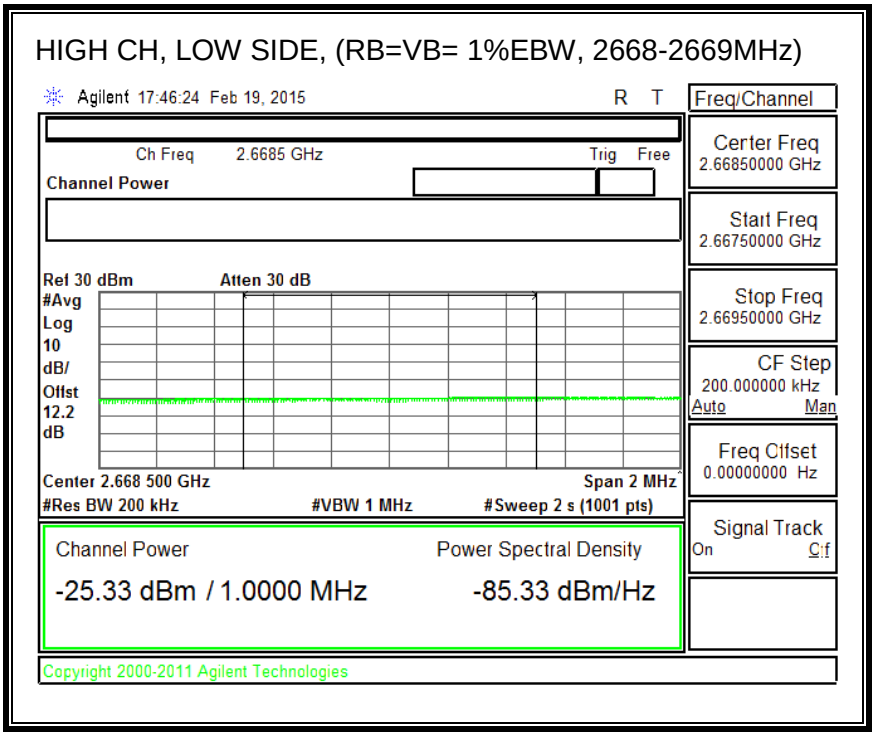
HIGH CH, RB1-99



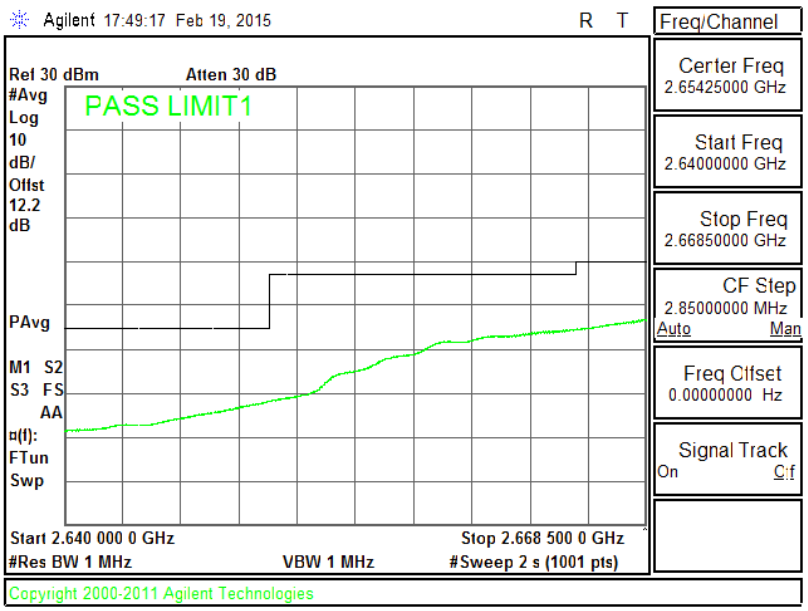
HIGH CH, RB100-0



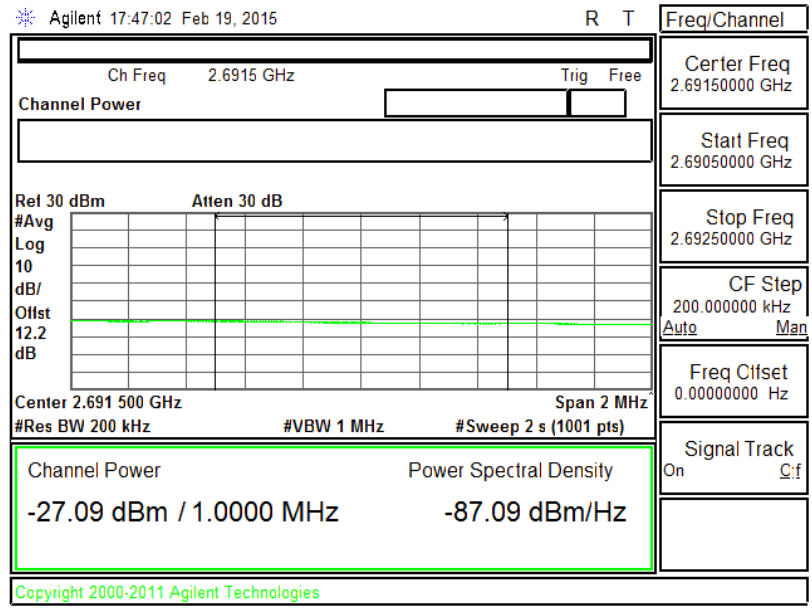
HIGH CH, LOW SIDE, (RB=VB= 1%EBW, 2668-2669MHz)



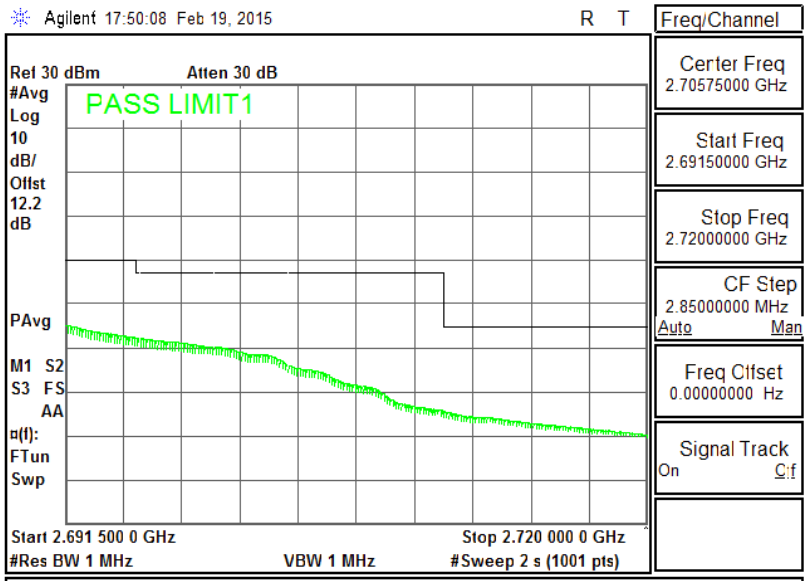
HIGH CH, LOW SIDE, (RB=VB= 1MHz, 2640-2668.5MHz)



HGIH CH, HIGH SIDE, (RB=VB= 1%EBW, 2691-2692MHz)

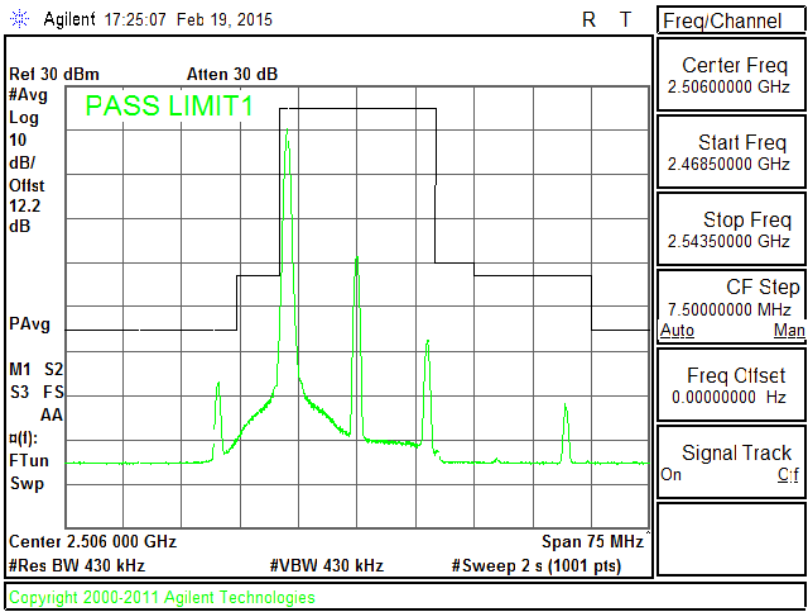


HIGH CH, HIGH SIDE, (RB=VB= 1MHz, 2691.5–2720MHz)

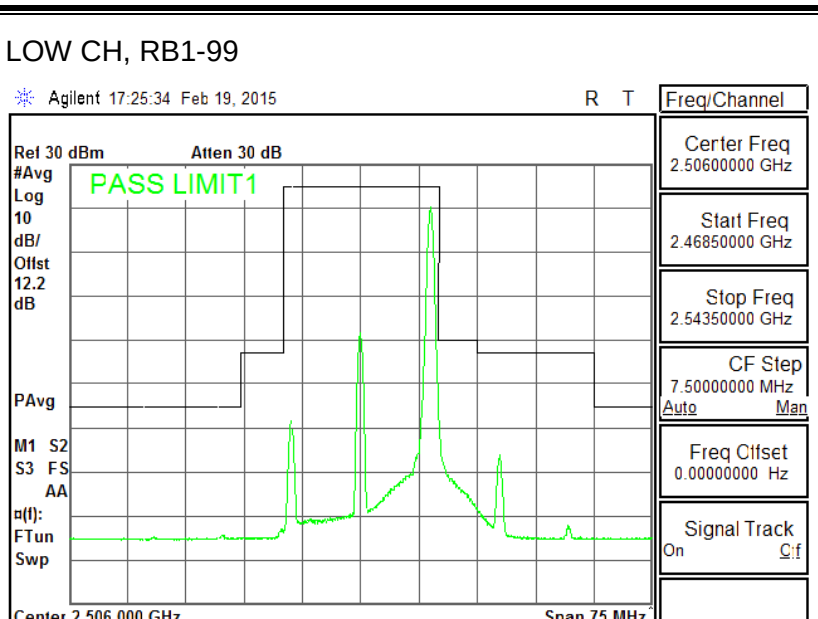


16QAM, (20.0 MHz BAND WIDTH)

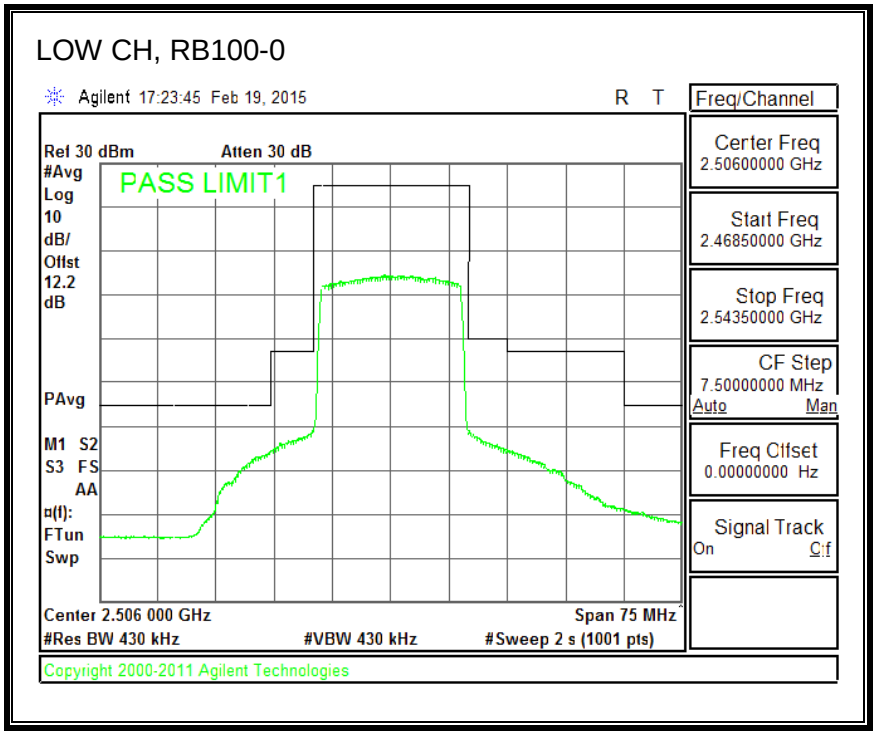
LOW CH, RB1-0



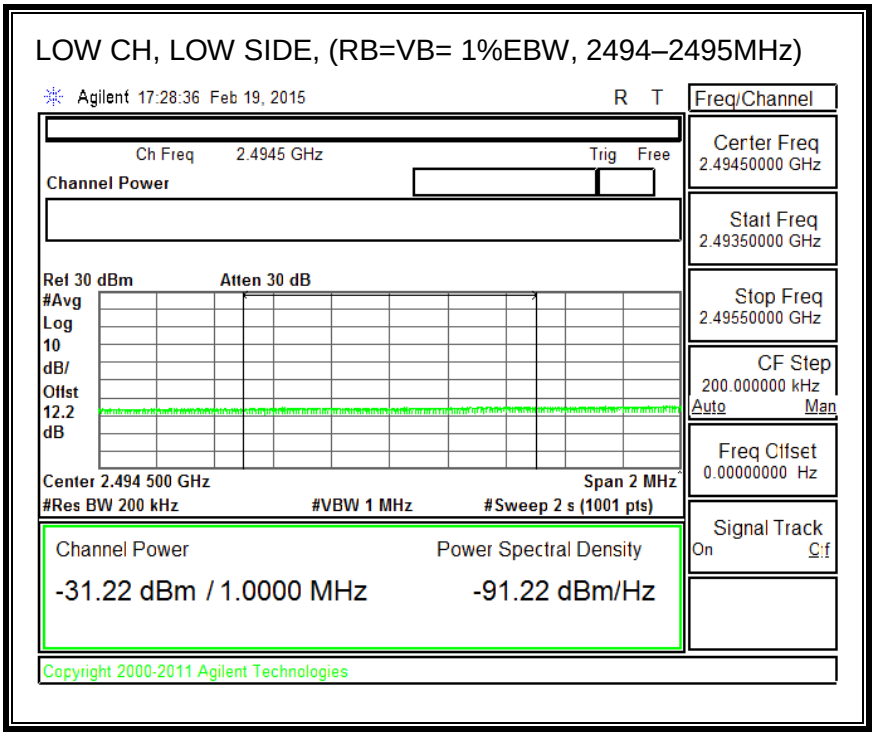
LOW CH, RB1-99



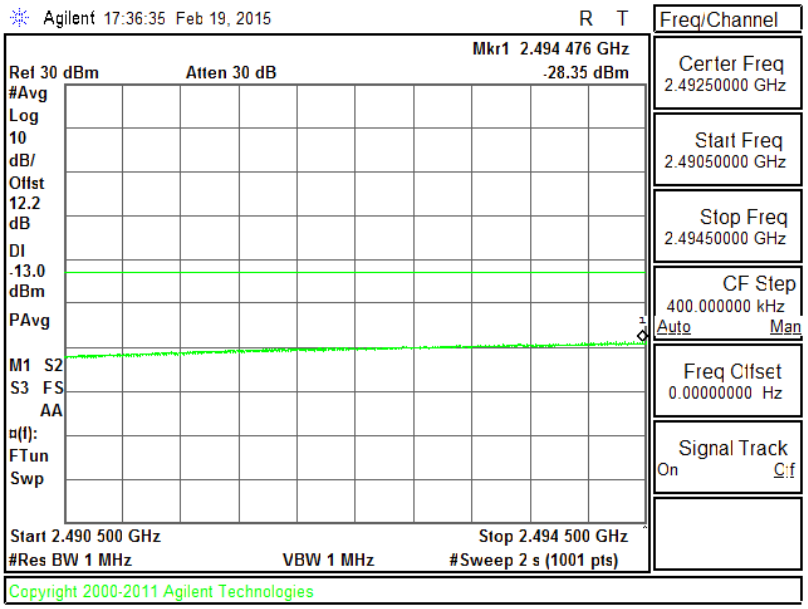
LOW CH, RB100-0



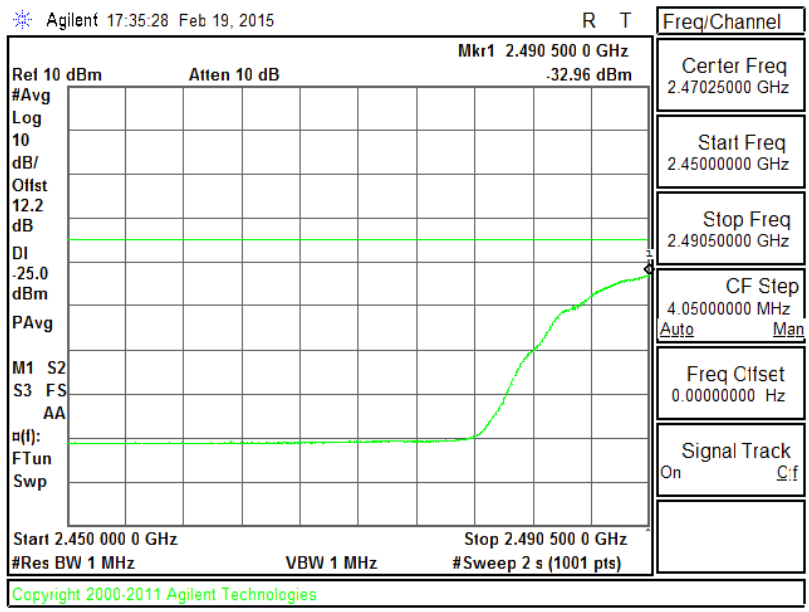
LOW CH, LOW SIDE, (RB=VB= 1%EBW, 2494–2495MHz)



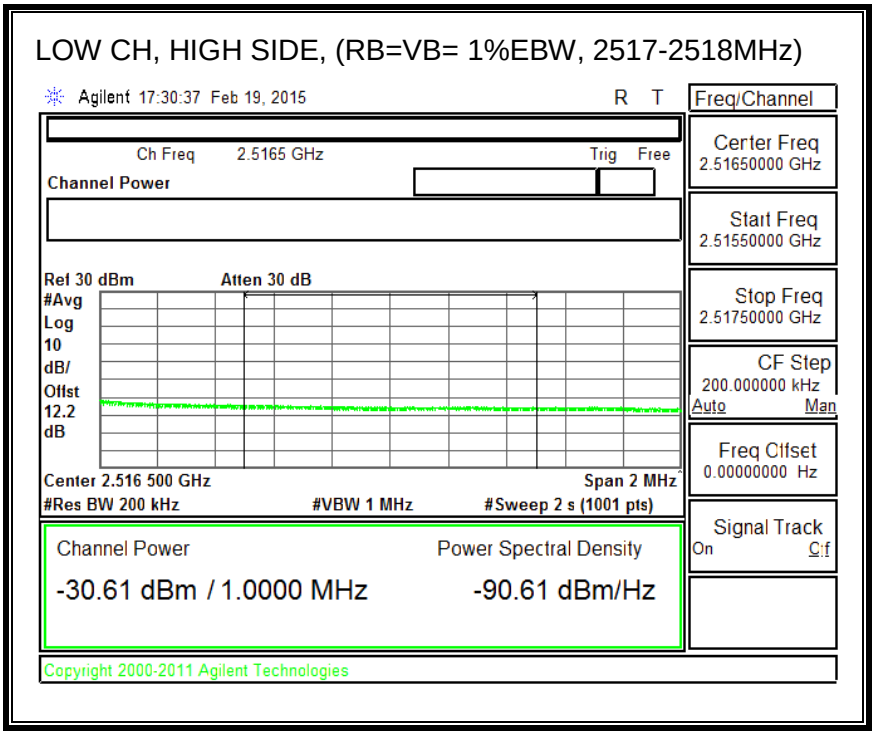
LOW CH, LOW SIDE, (RB=VB= 1MHz, 2490.5-2494.5MHz)



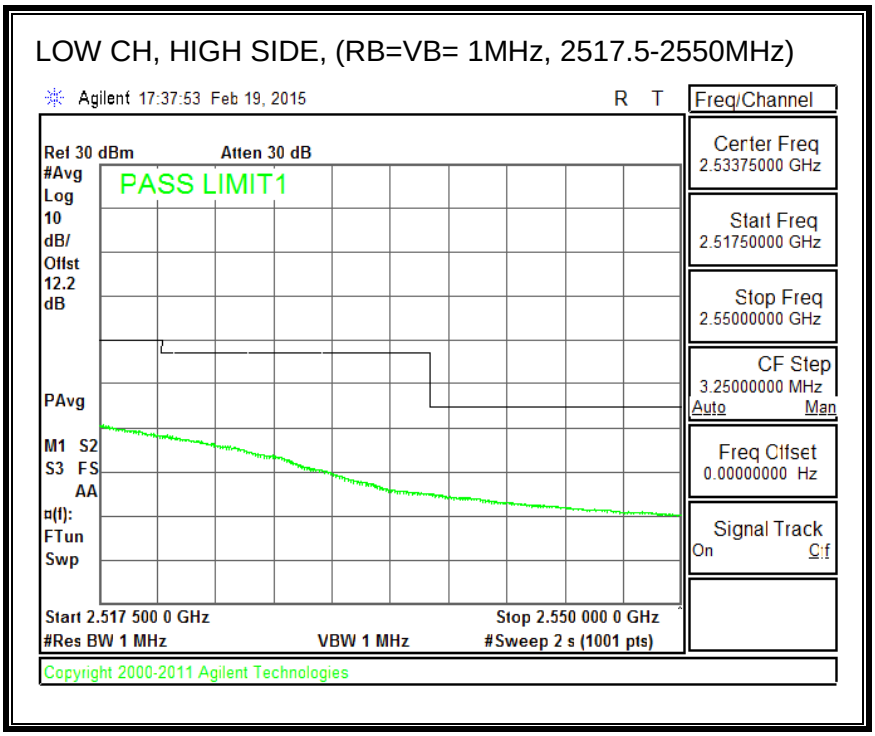
LOW CH, LOW SIDE, (RB=VB= 1MHz, -25dBm)



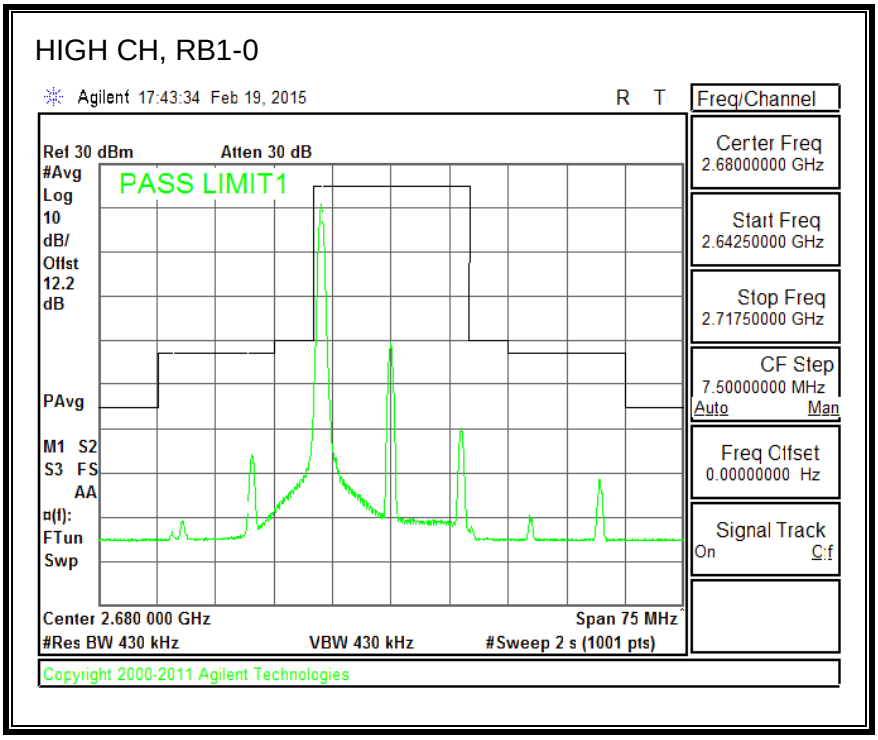
LOW CH, HIGH SIDE, (RB=VB= 1%EBW, 2517-2518MHz)



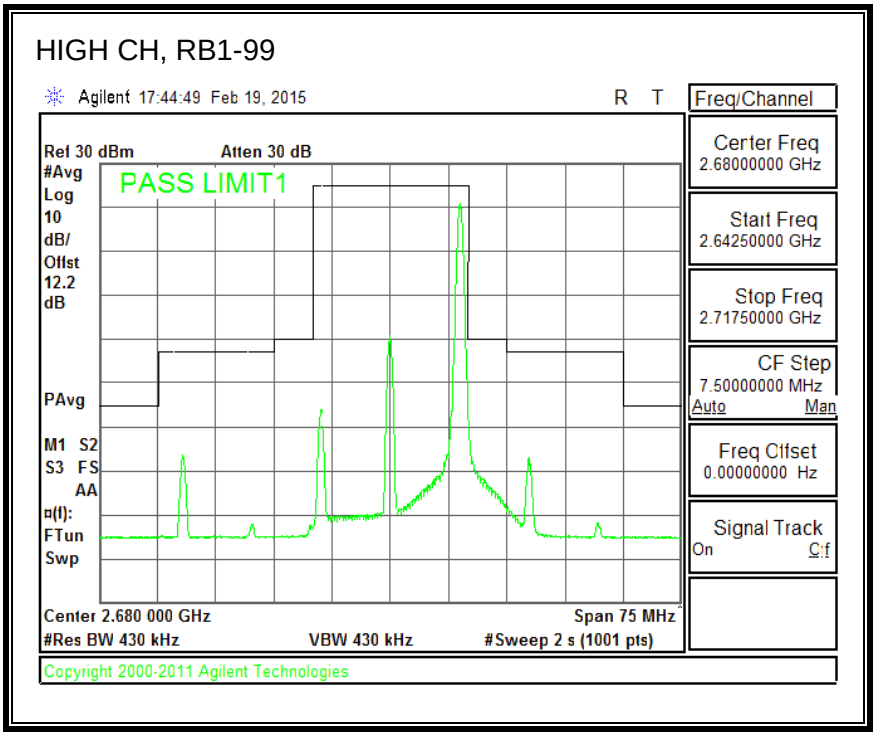
LOW CH, HIGH SIDE, (RB=VB= 1MHz, 2517.5-2550MHz)



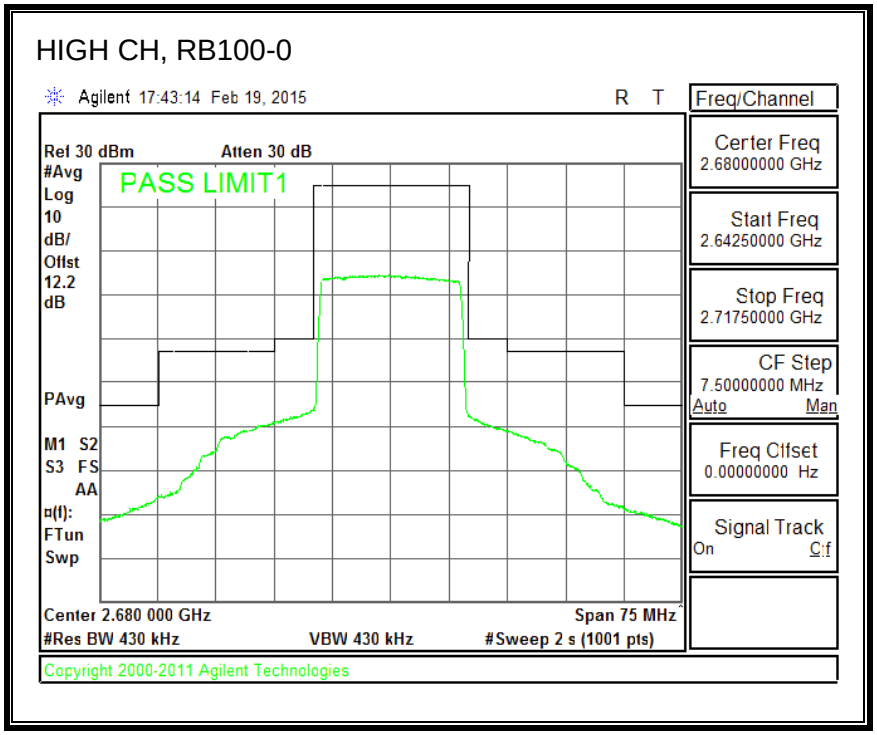
HIGH CH, RB1-0



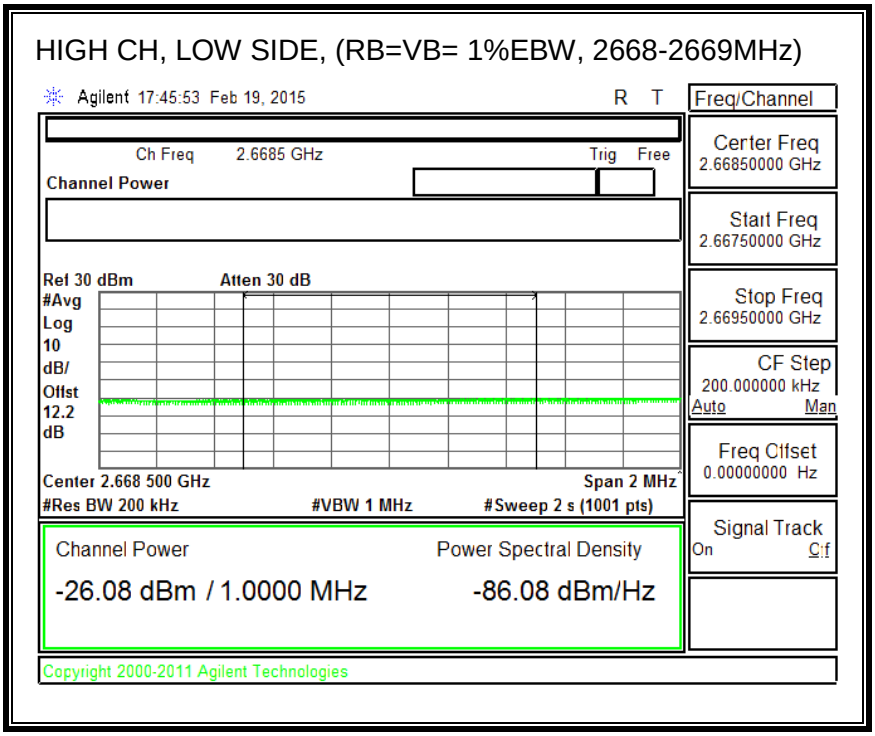
HIGH CH, RB1-99



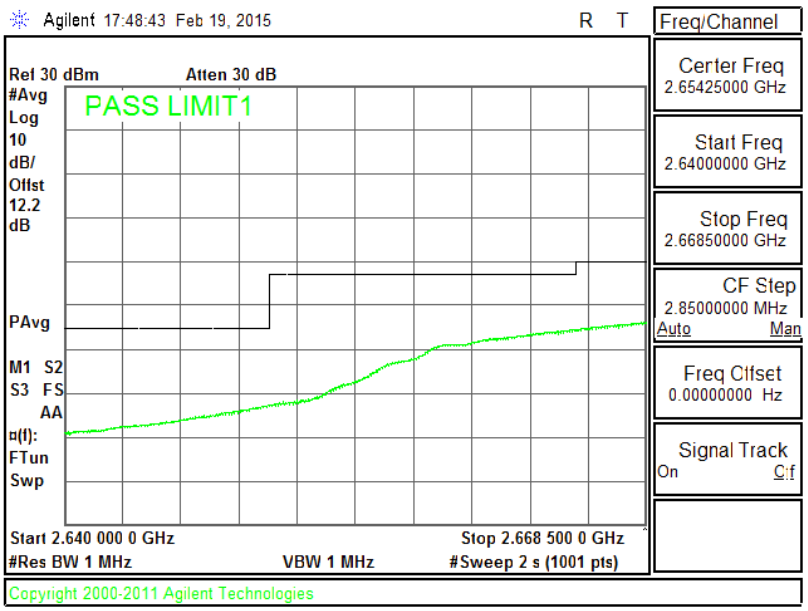
HIGH CH, RB100-0



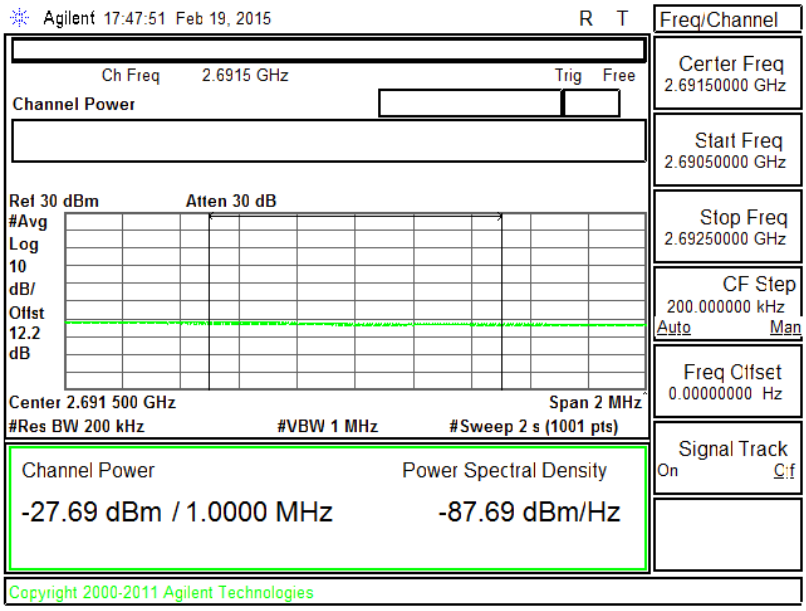
HIGH CH, LOW SIDE, (RB=VB= 1%EBW, 2668-2669MHz)



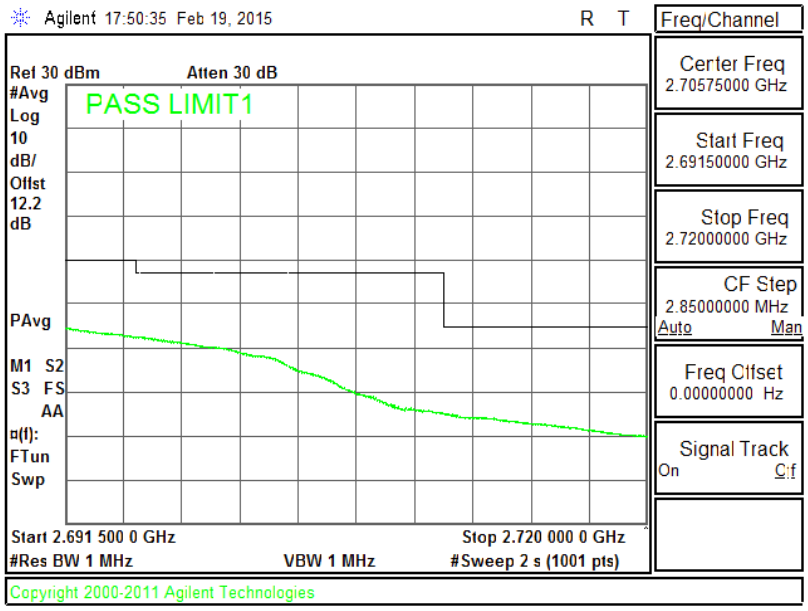
HIGH CH, LOW SIDE, (RB=VB= 1MHz, 2640-2668.5MHz)



HGIH CH, HIGH SIDE, (RB=VB= 1%EBW, 2691-2692MHz)



HIGH CH, HIGH SIDE, (RB=VB= 1MHz, 2691.5–2720MHz)



8.3. OUT OF BAND EMISSIONS

RULE PART(S)

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

LIMITS

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

TEST PROCEDURE

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

For each out of band emissions measurement:

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

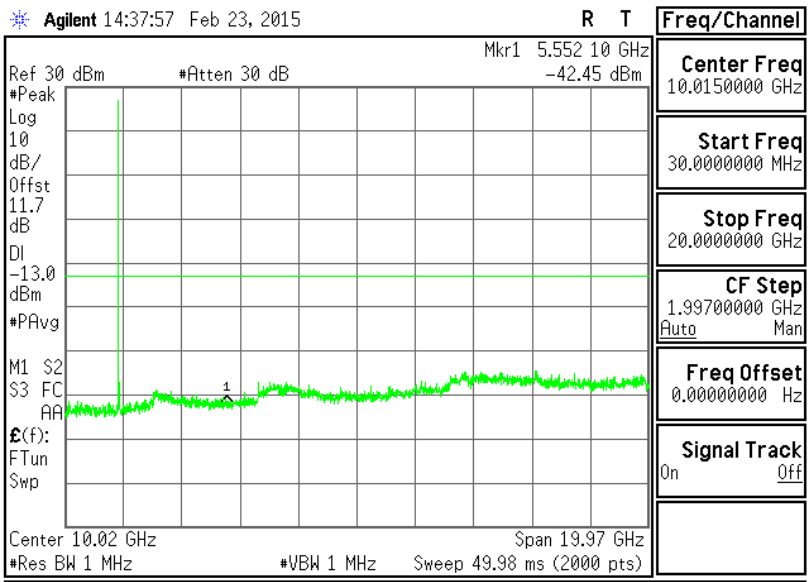
MODES TESTED

- LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 13
- LTE Band 17
- LTE Band 25
- LTE Band 26
- LTE Band 41

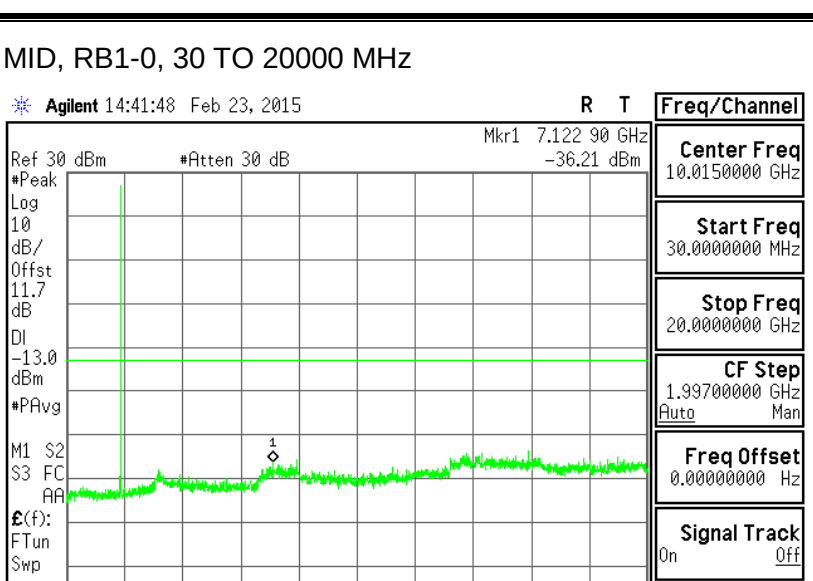
8.3.1. LTE BAND 2

QPSK, (1.4 MHz BAND WIDTH)

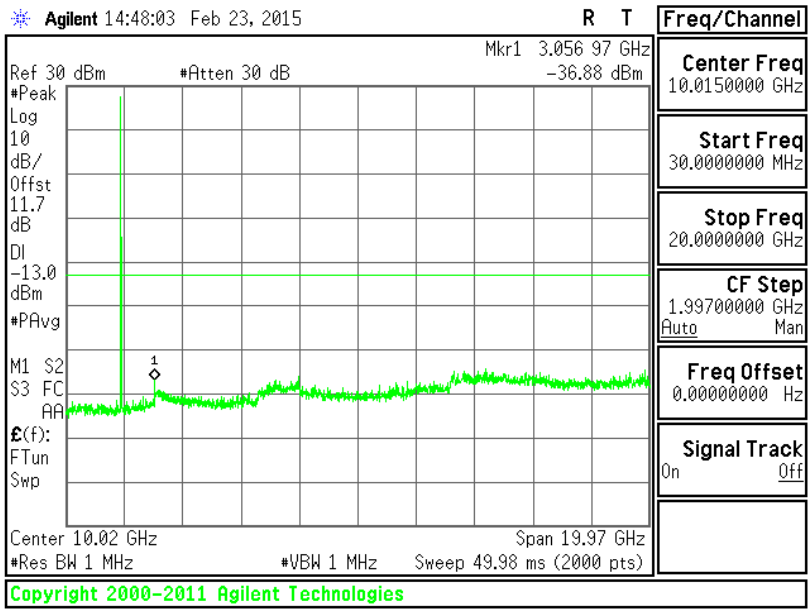
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

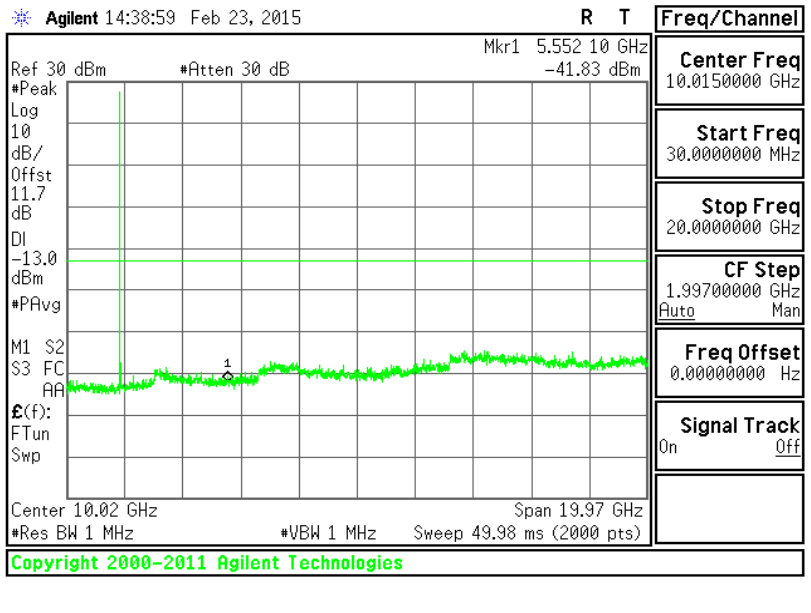


HIGH, RB1-0, 30 TO 20000 MHz

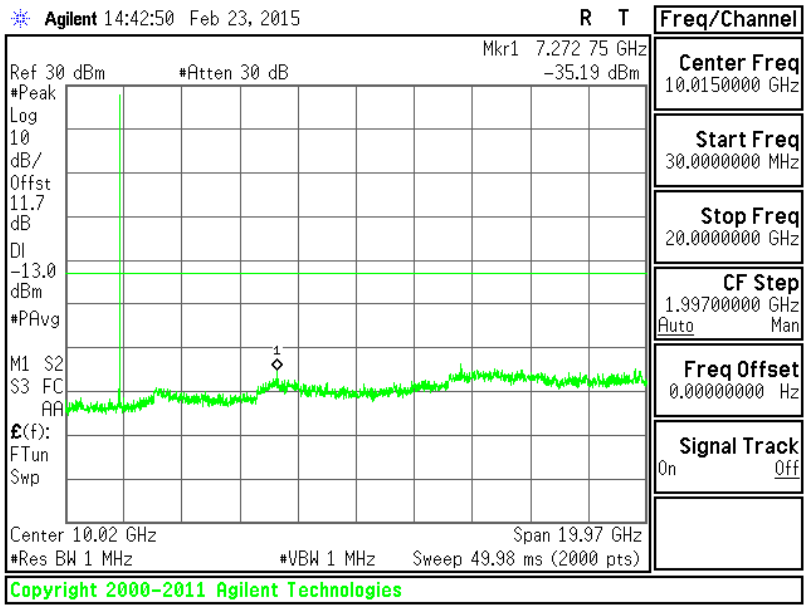


16QAM, (1.4 MHz BAND WIDTH)

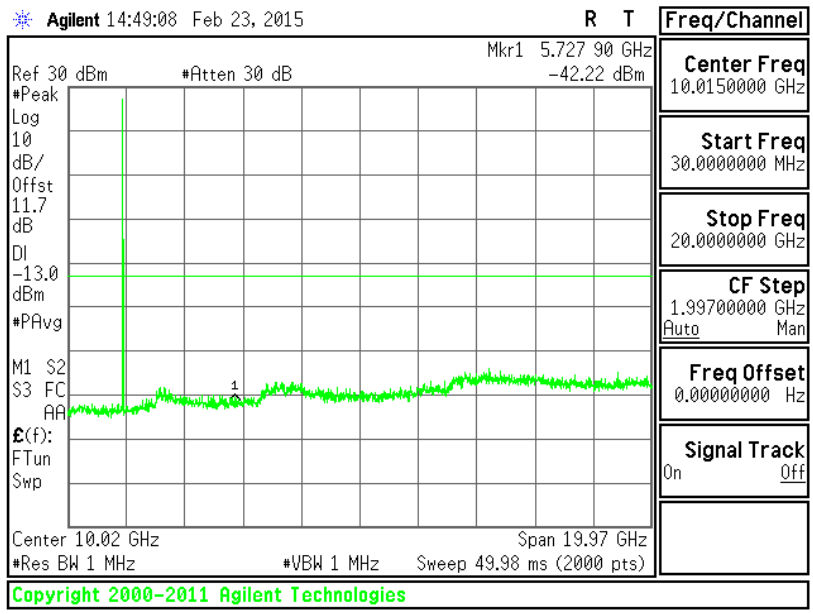
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

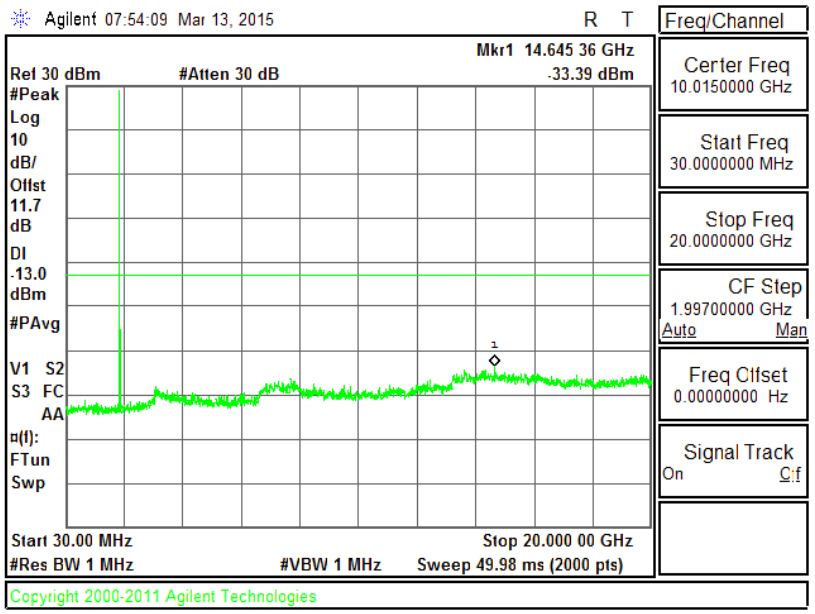


HIGH, RB1-0, 30 TO 20000 MHz

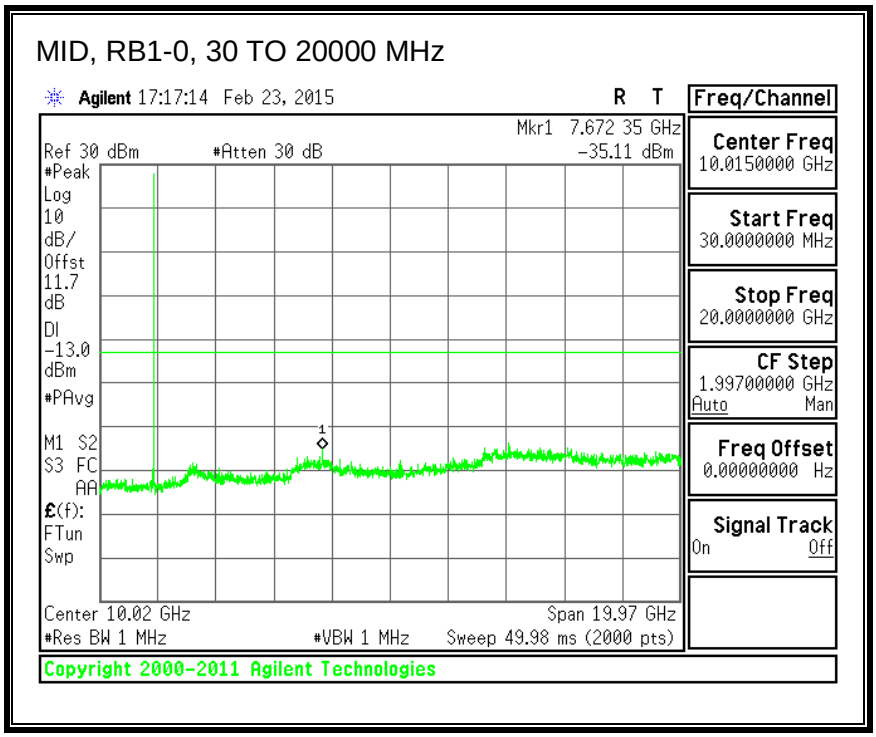


QPSK, (3.0 MHz BAND WIDTH)

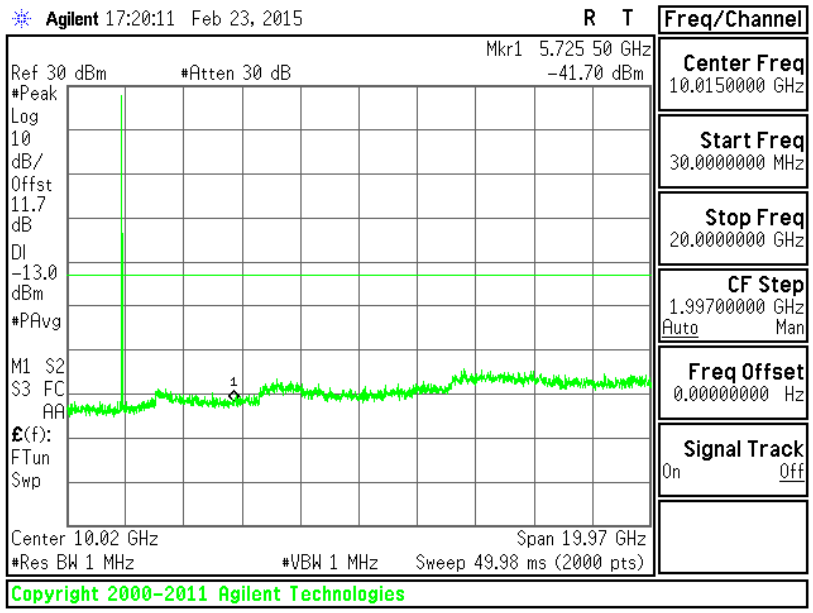
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

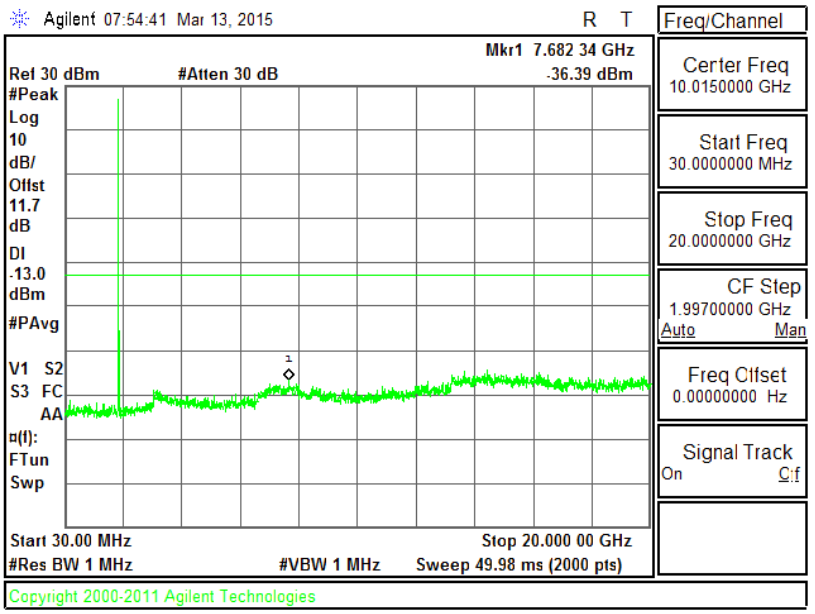


HIGH, RB1-0, 30 TO 20000 MHz

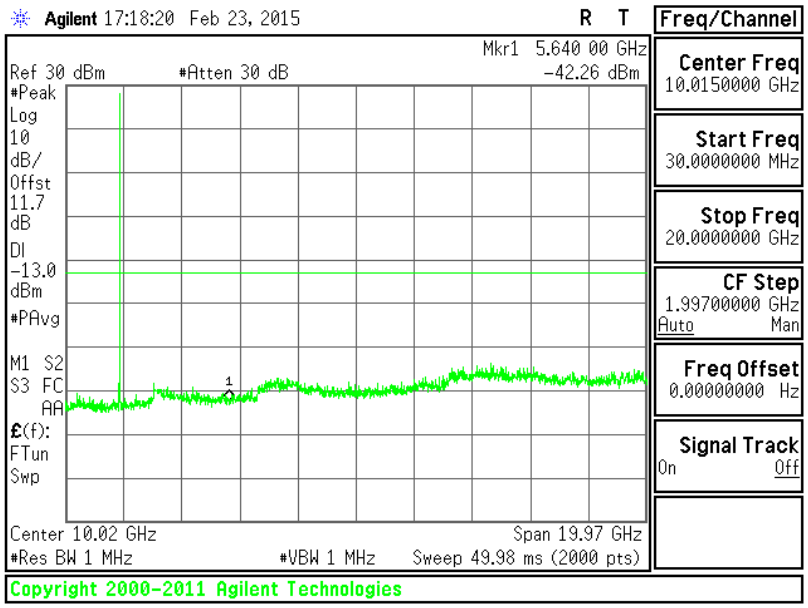


16QAM, (3.0 MHz BAND WIDTH)

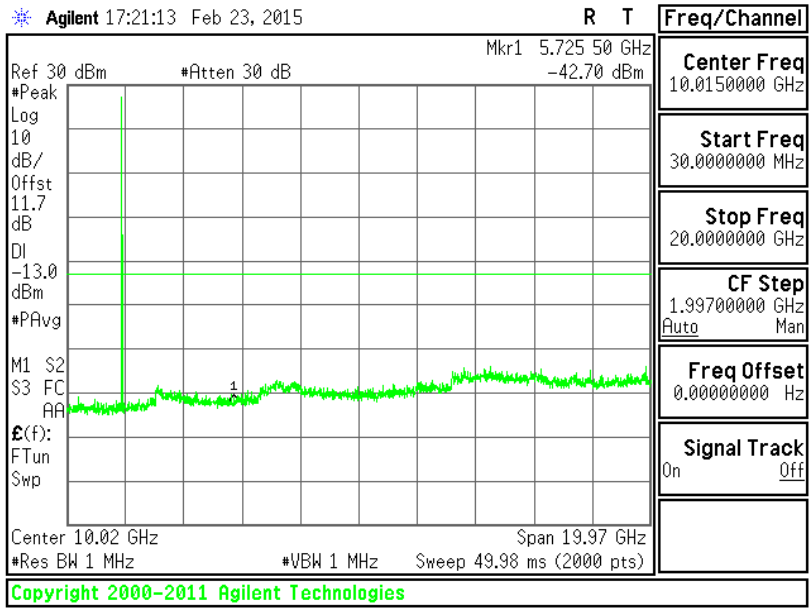
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

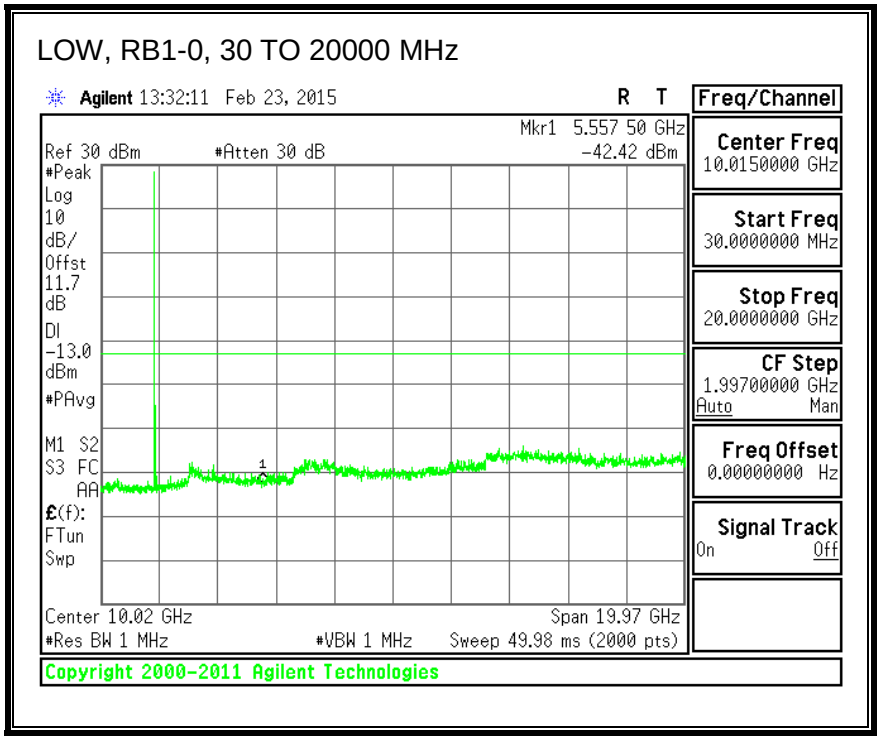


HIGH, RB1-0, 30 TO 20000 MHz

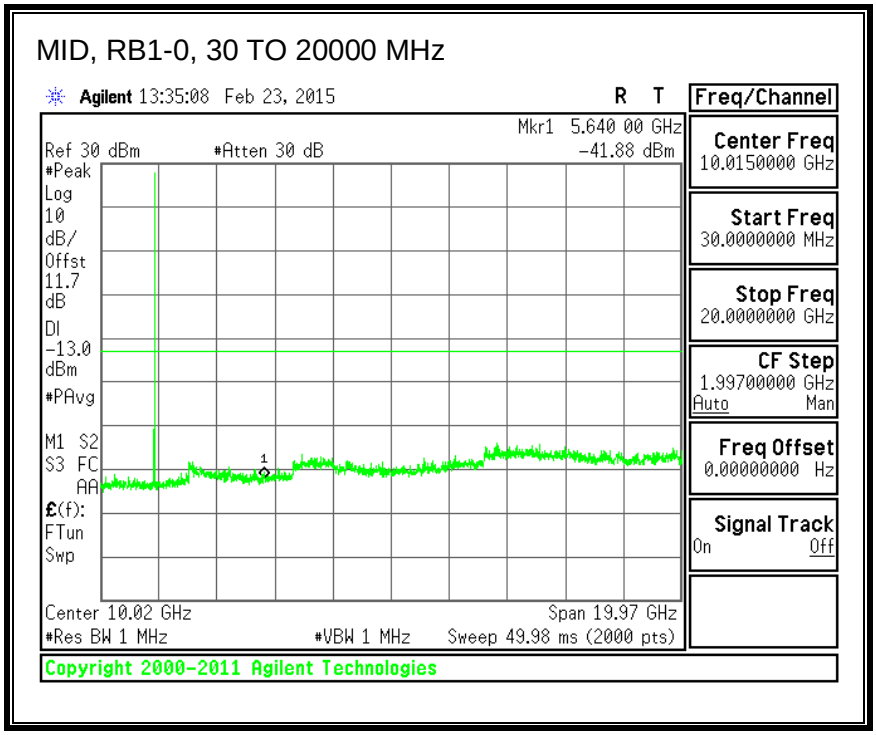


QPSK, (5.0 MHz BAND WIDTH)

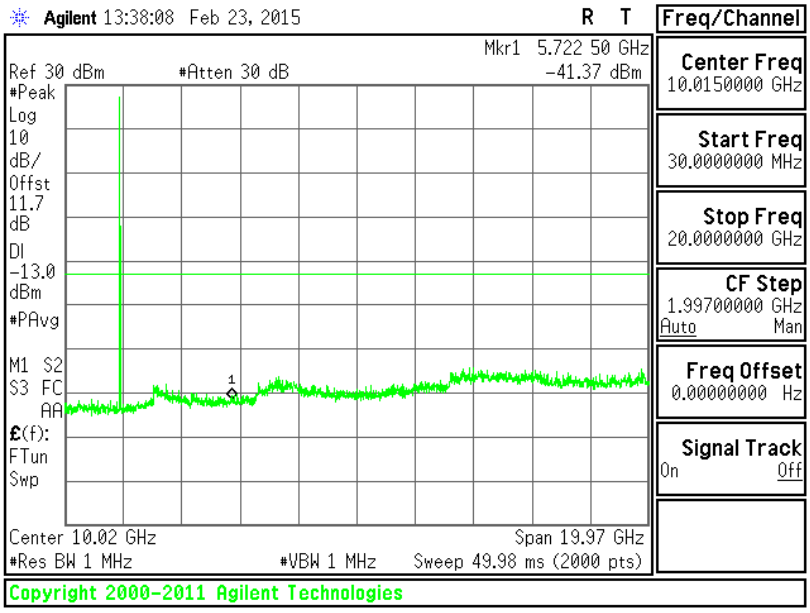
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

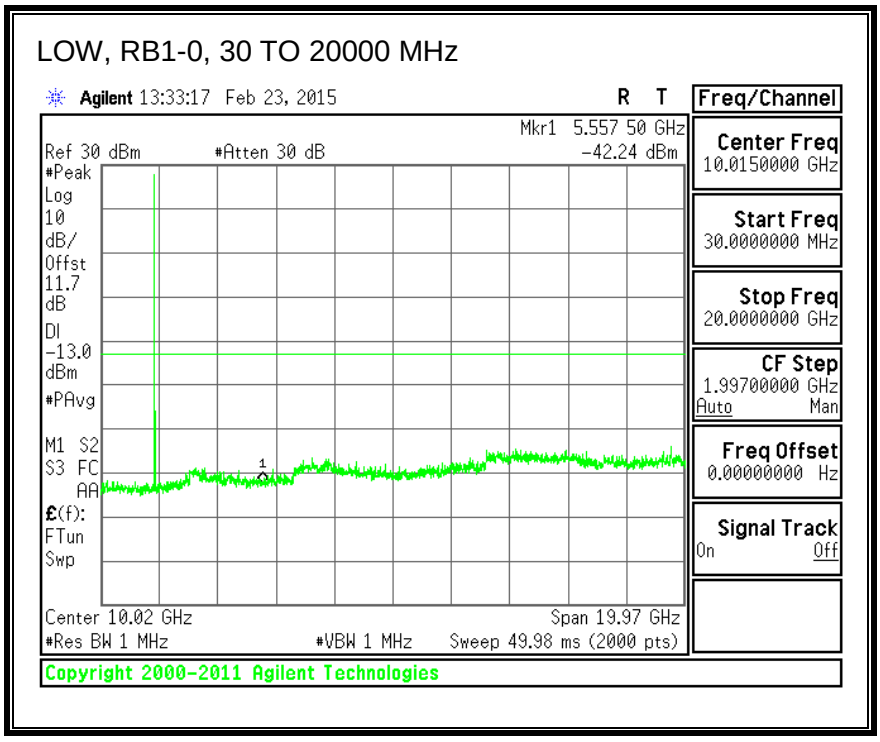


HIGH, RB1-0, 30 TO 20000 MHz

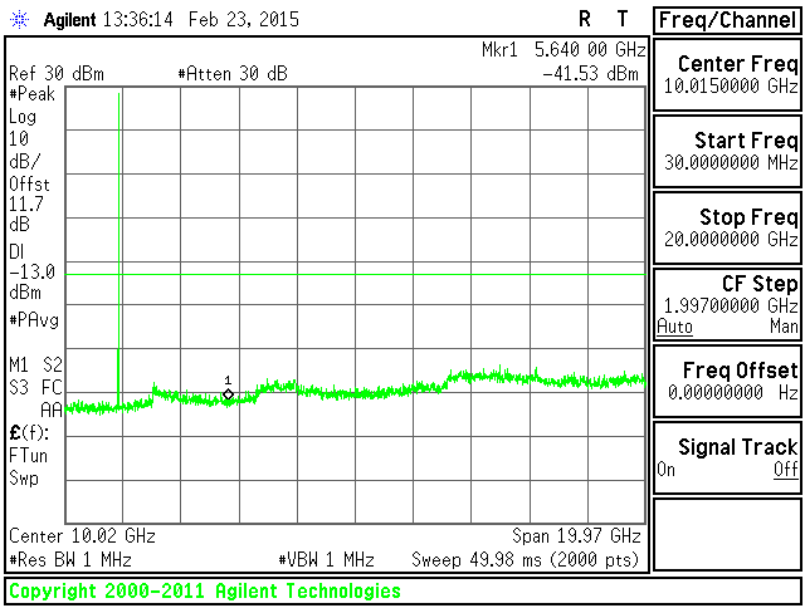


16QAM, (5.0 MHz BAND WIDTH)

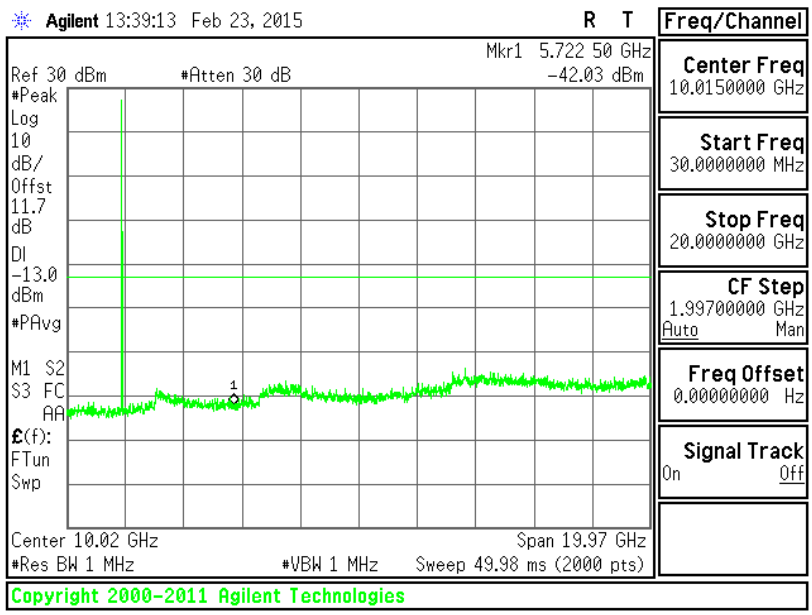
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

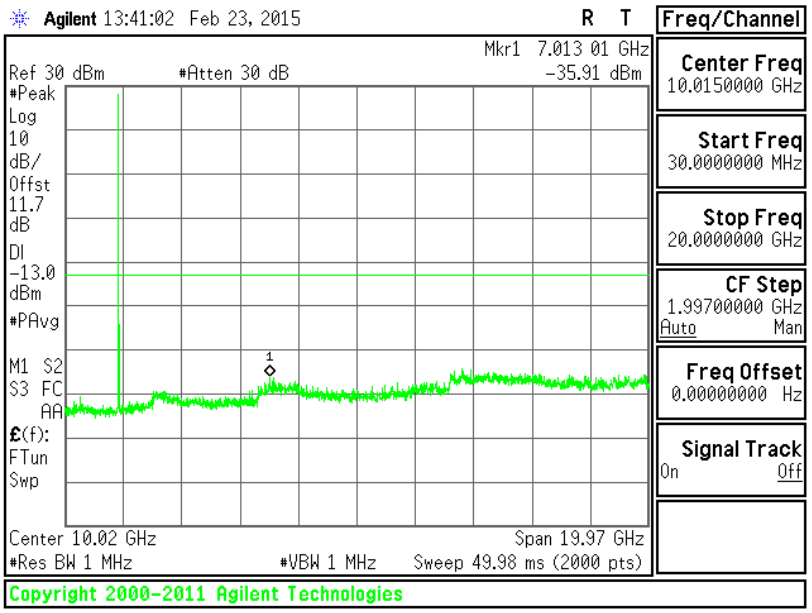


HIGH, RB1-0, 30 TO 20000 MHz

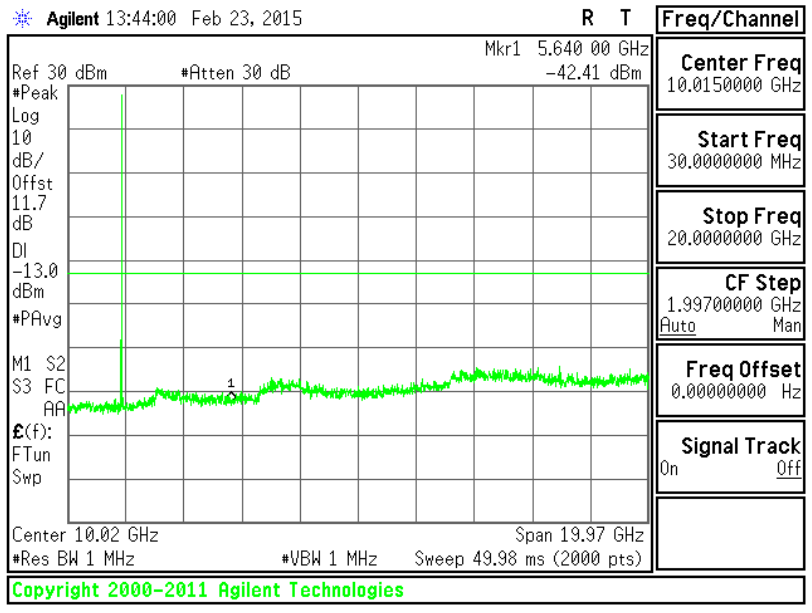


QPSK, (10.0 MHz BAND WIDTH)

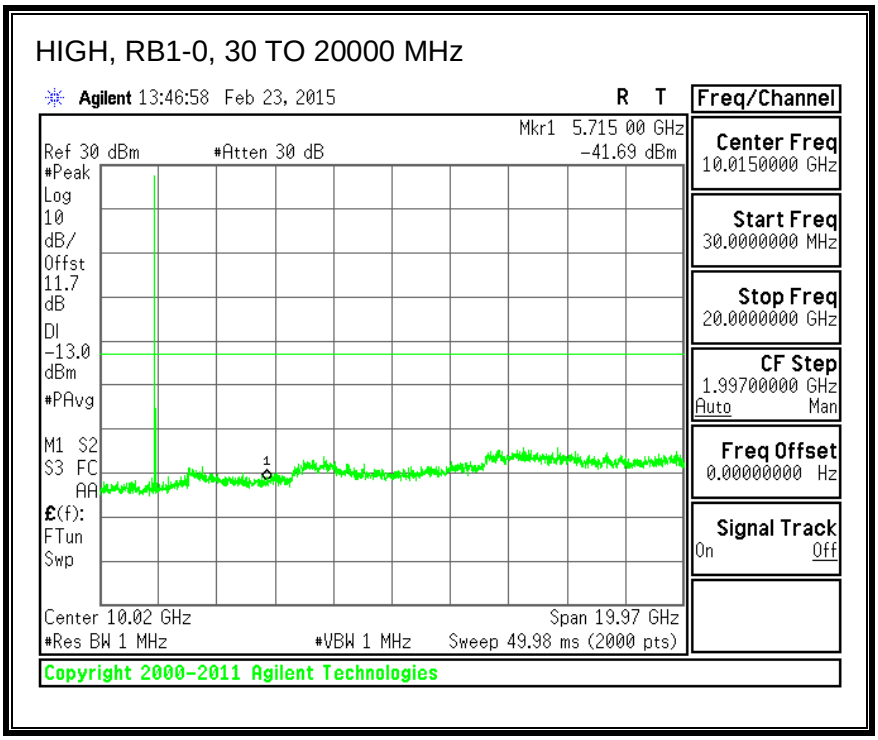
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

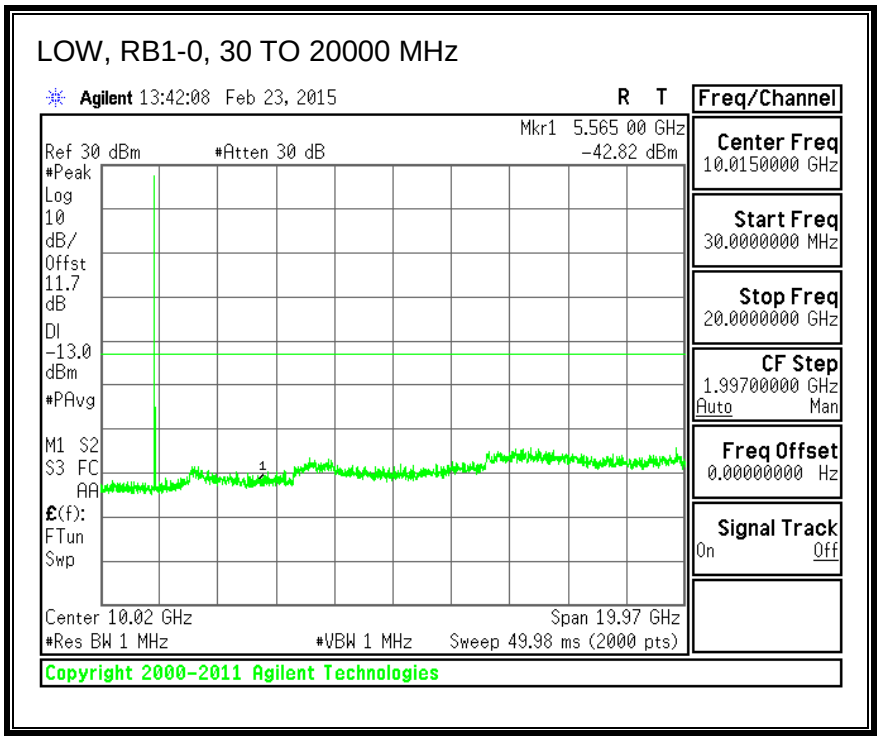


HIGH, RB1-0, 30 TO 20000 MHz

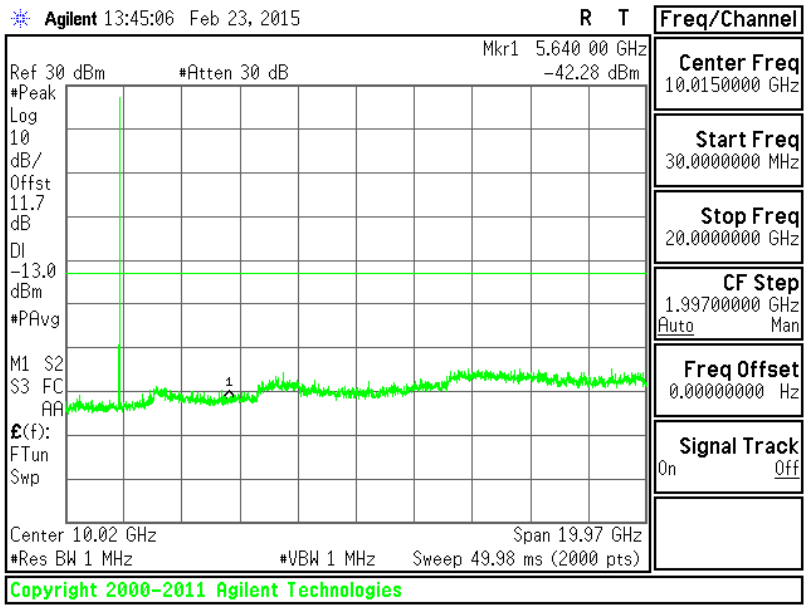


16QAM, (10.0 MHz BAND WIDTH)

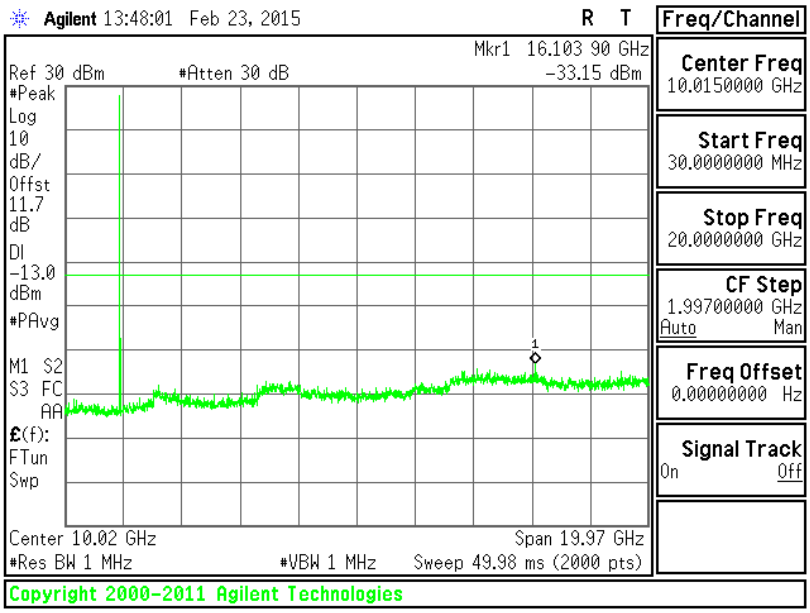
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

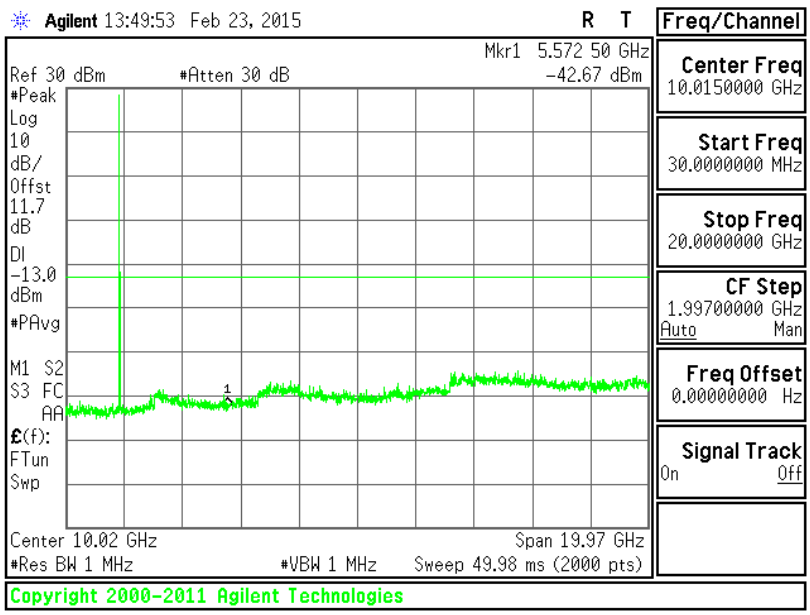


HIGH, RB1-0, 30 TO 20000 MHz

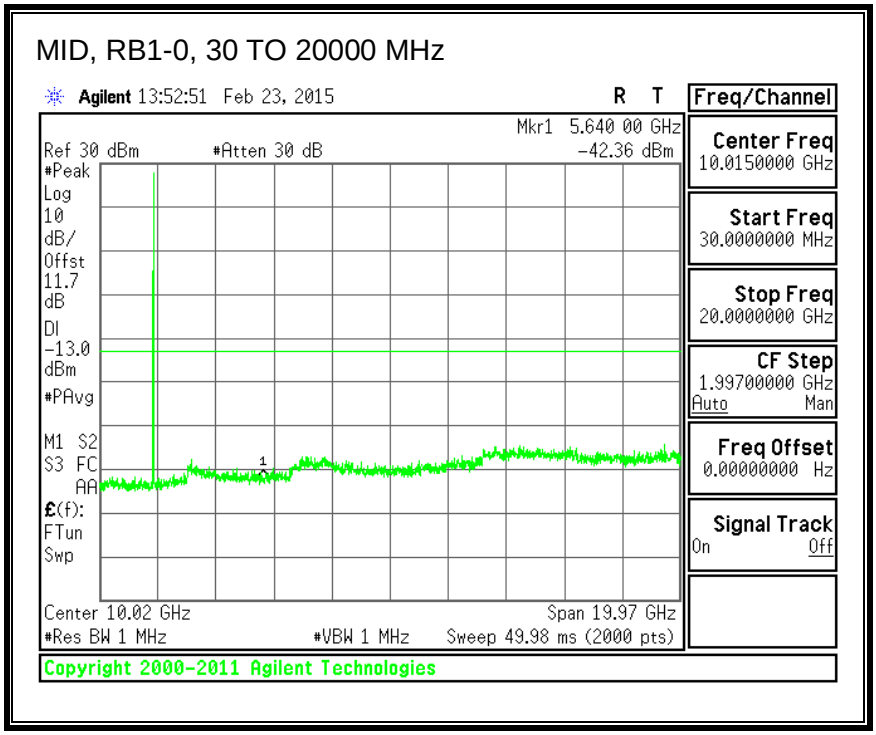


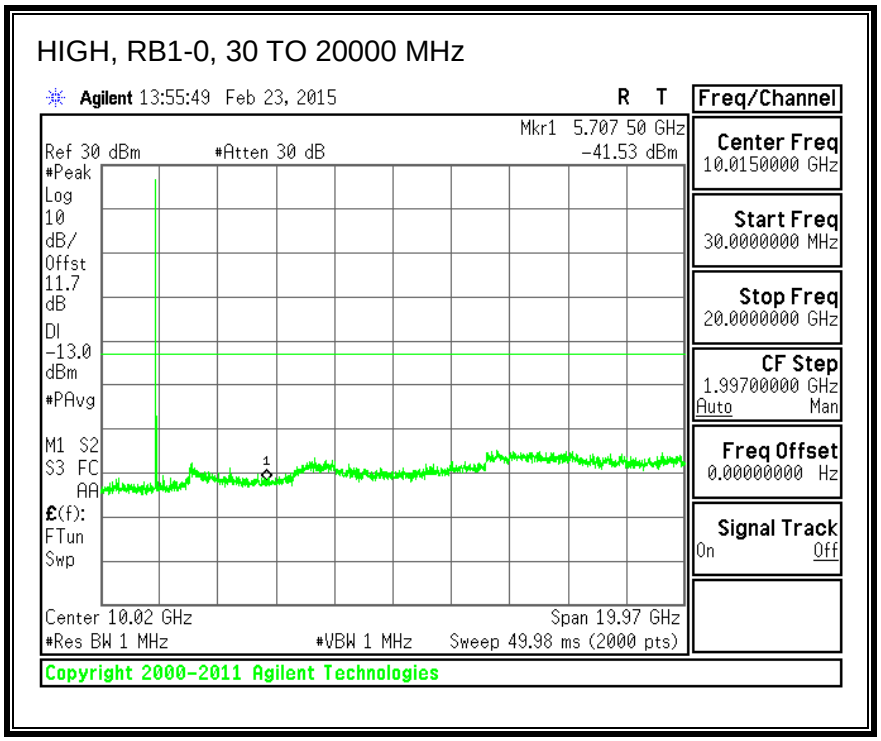
QPSK, (15.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 20000 MHz

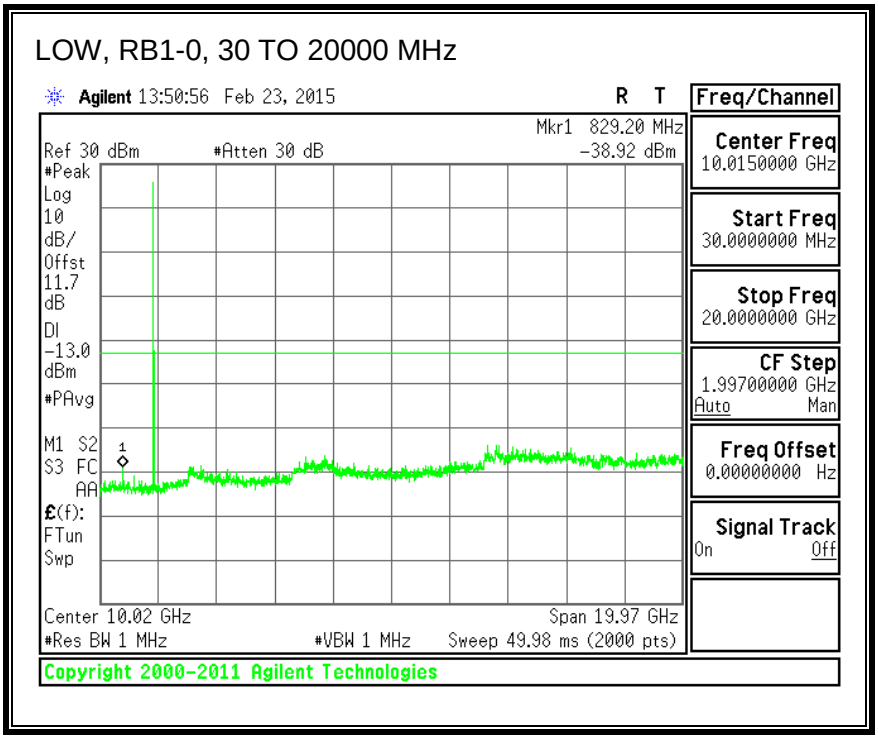


MID, RB1-0, 30 TO 20000 MHz

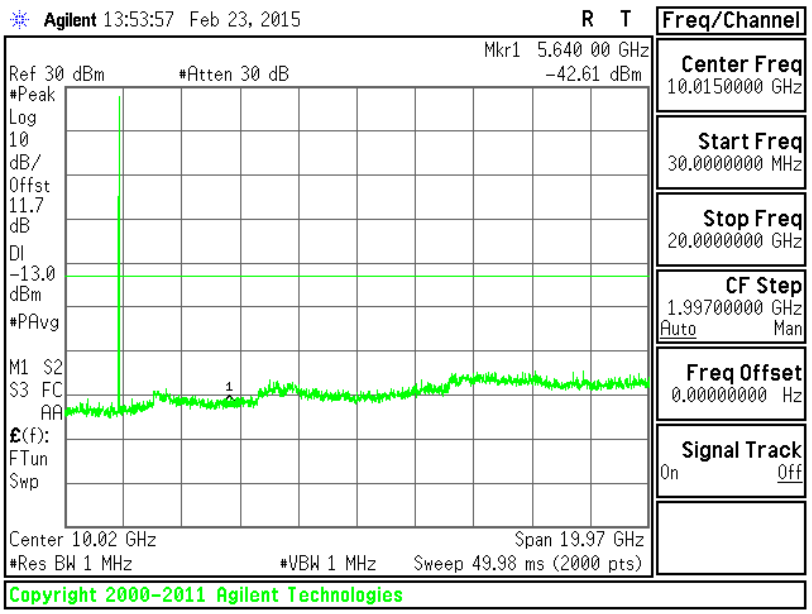




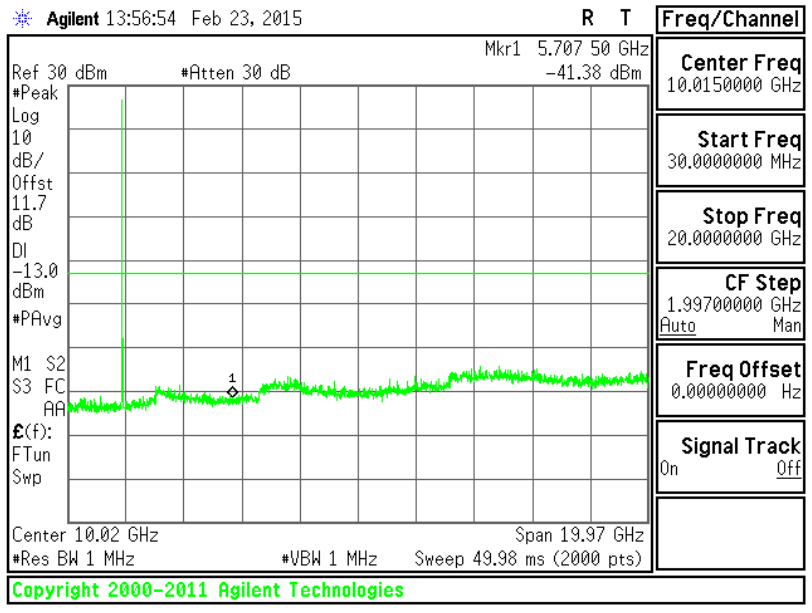
16QAM, (15.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 20000 MHz

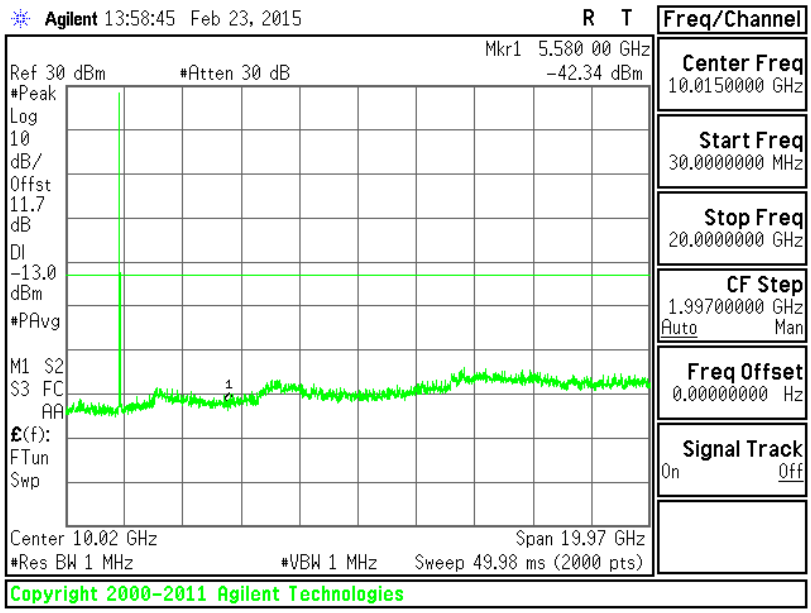


HIGH, RB1-0, 30 TO 20000 MHz

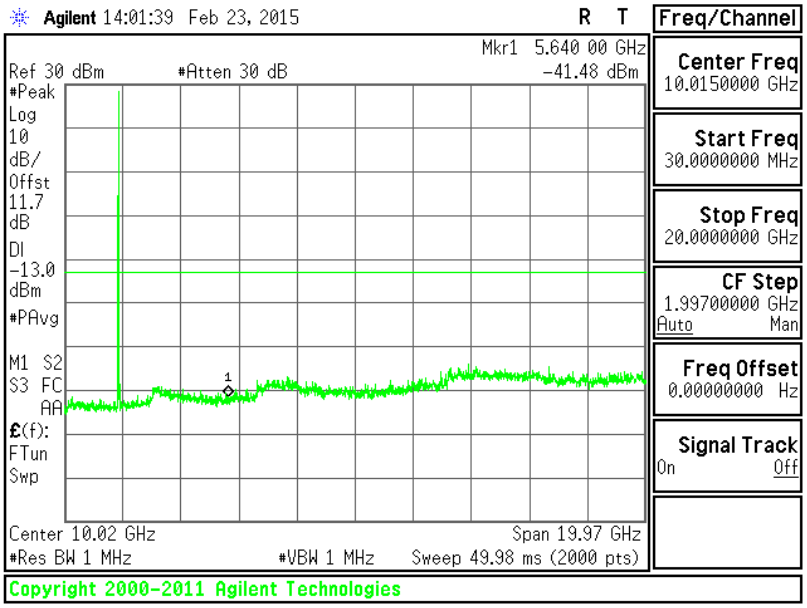


QPSK, (20.0 MHz BAND WIDTH)

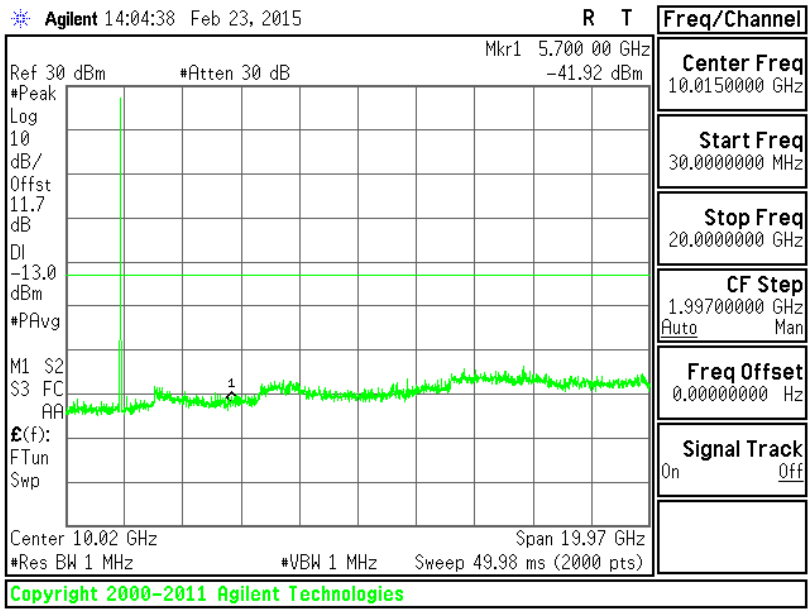
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

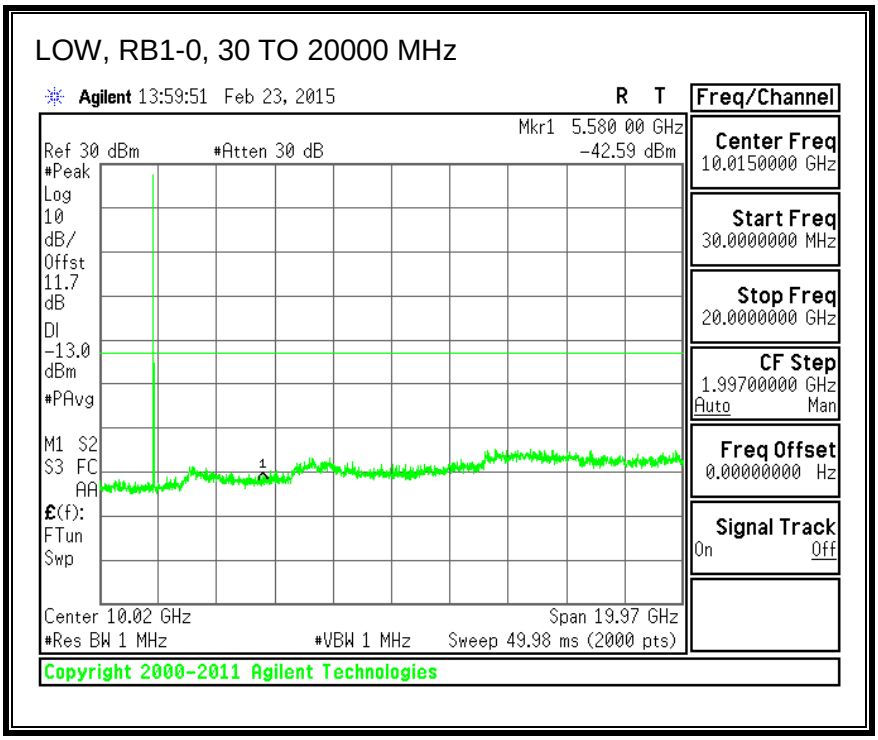


HIGH, RB1-0, 30 TO 20000 MHz

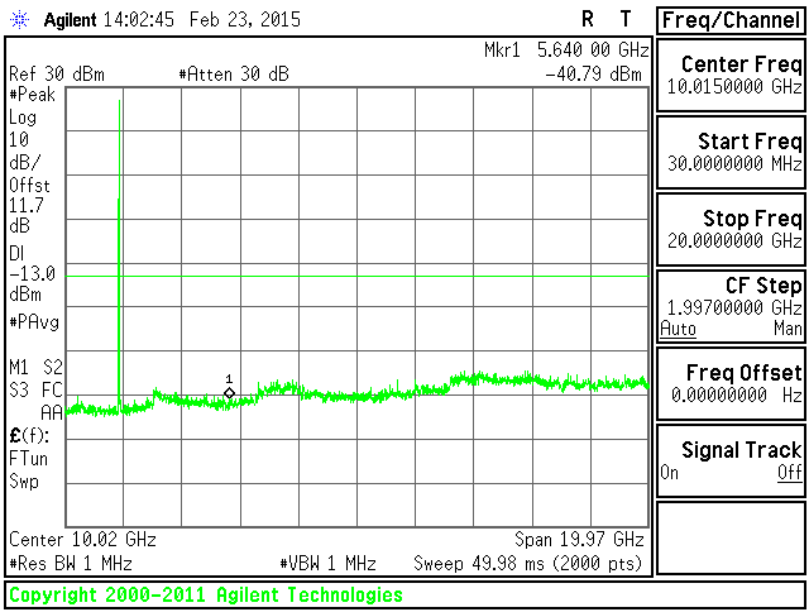


16QAM, (20.0 MHz BAND WIDTH)

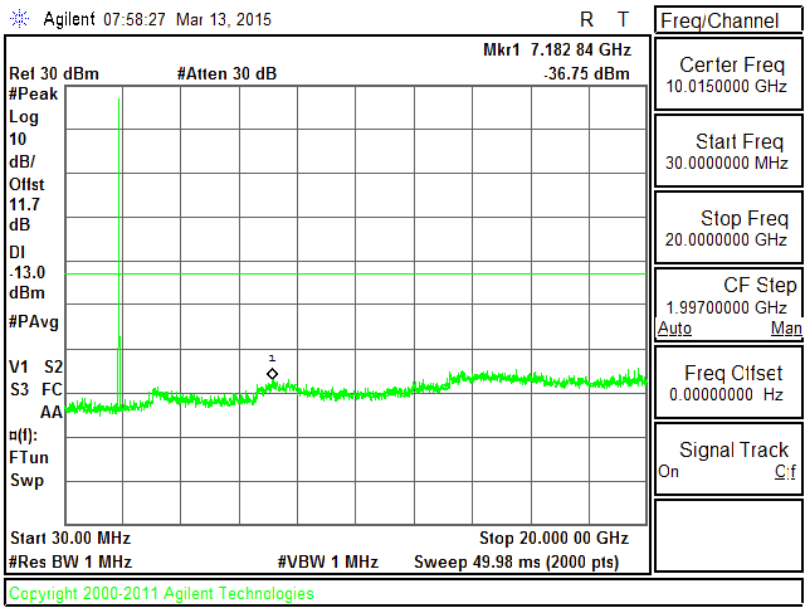
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz



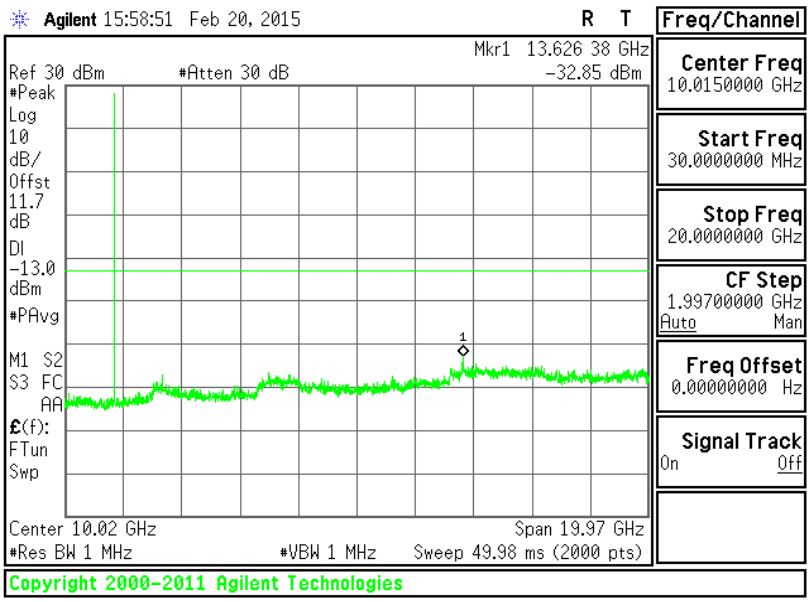
HIGH, RB1-0, 30 TO 20000 MHz



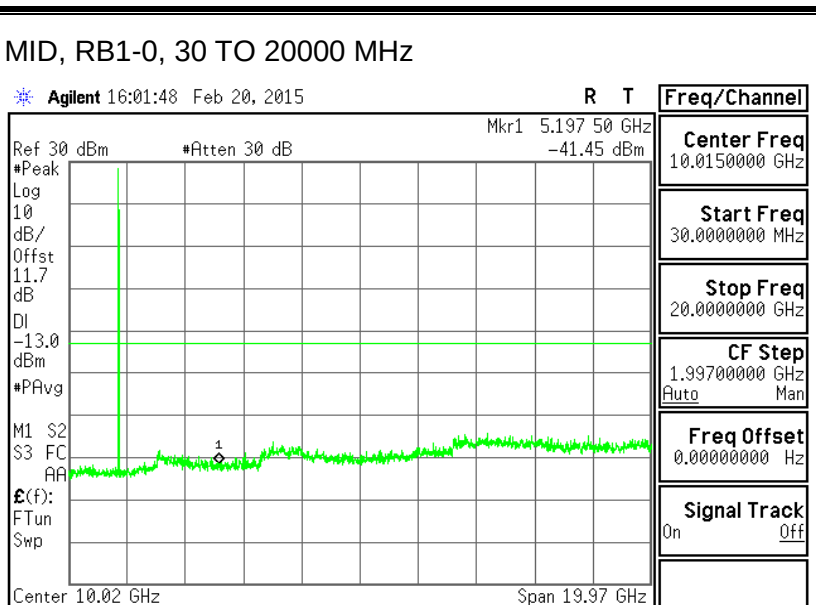
8.3.2. LTE BAND 4

QPSK, (1.4 MHz BAND WIDTH)

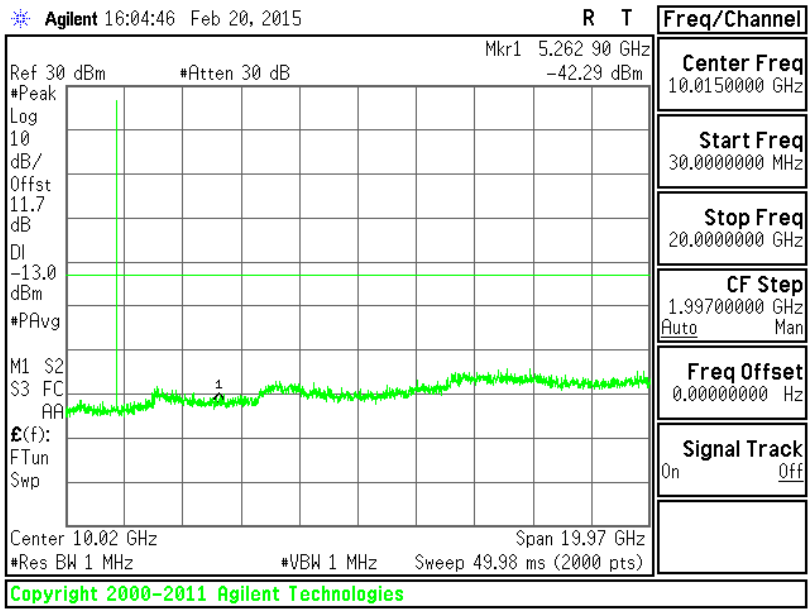
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

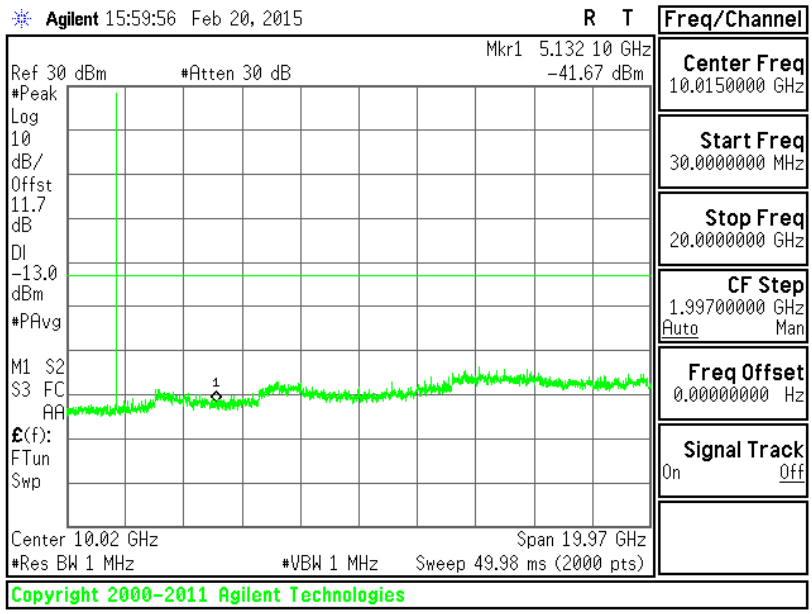


HIGH, RB1-0, 30 TO 20000 MHz

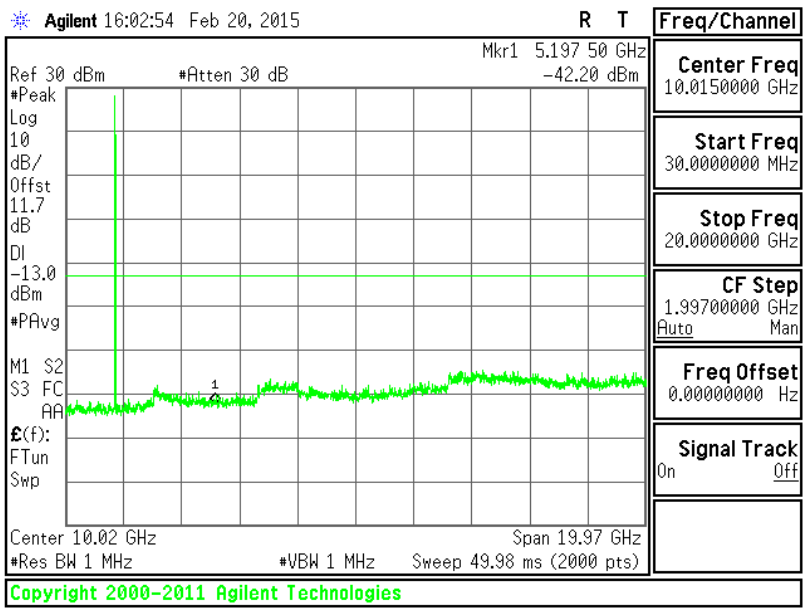


16QAM, (1.4 MHz BAND WIDTH)

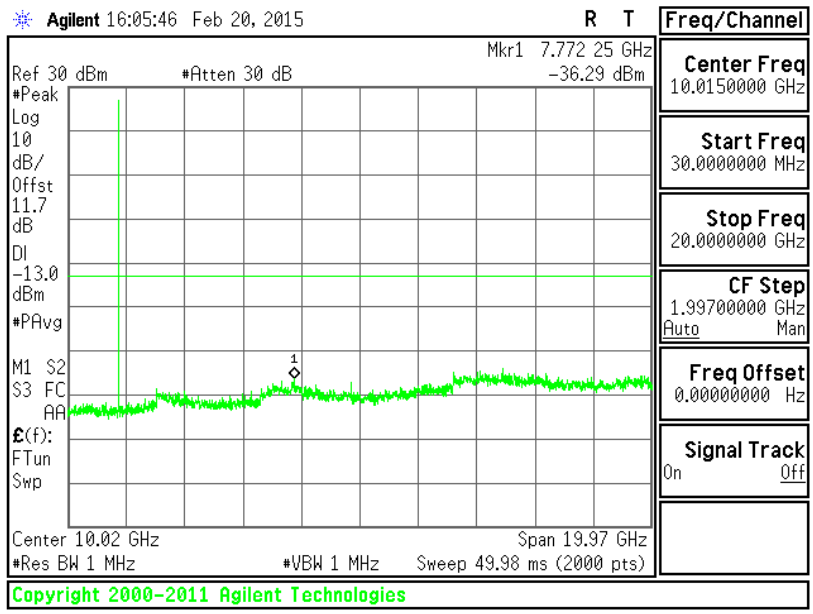
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

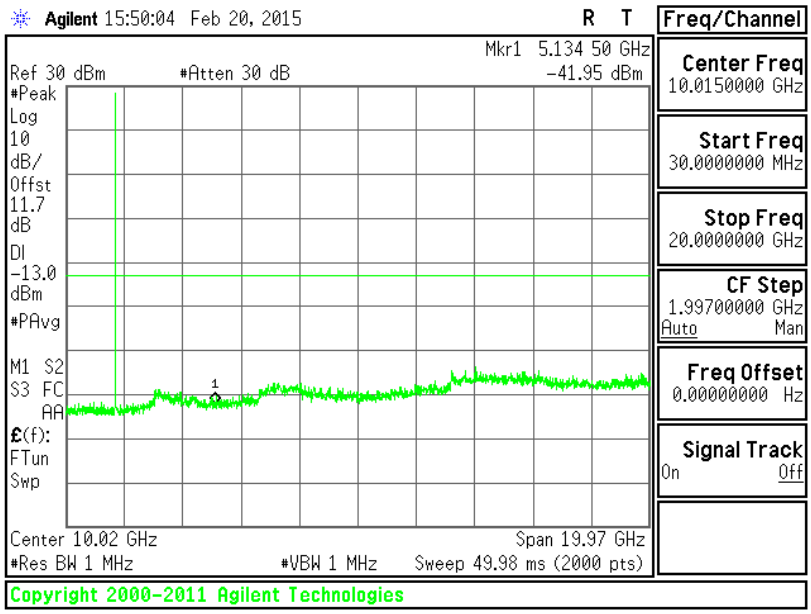


HIGH, RB1-0, 30 TO 20000 MHz

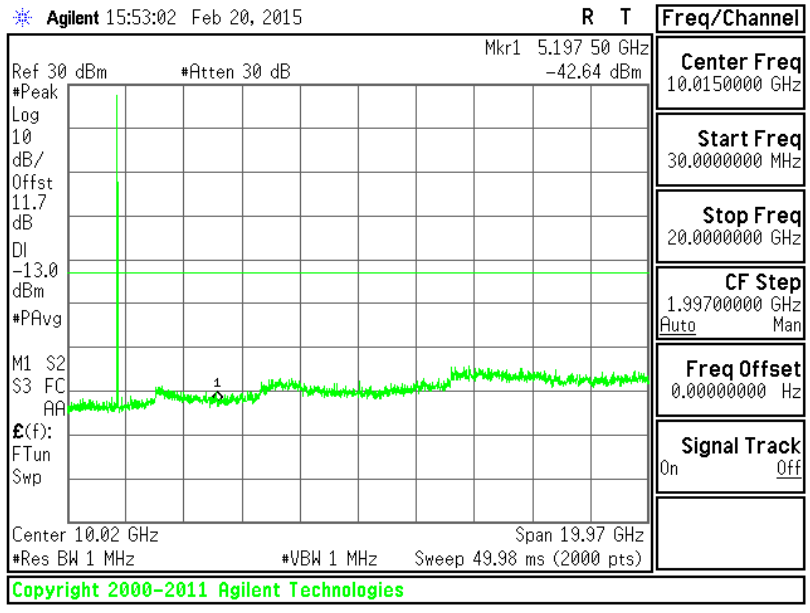


QPSK, (3.0 MHz BAND WIDTH)

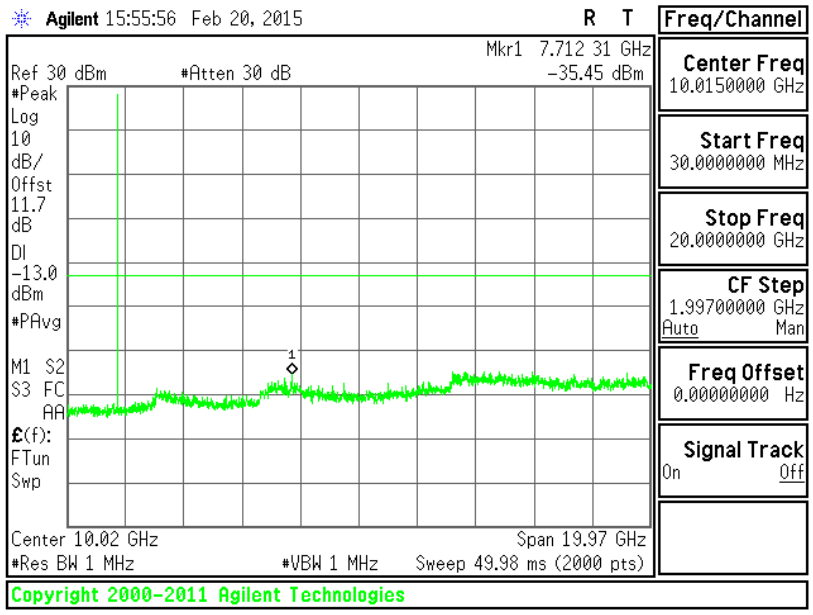
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

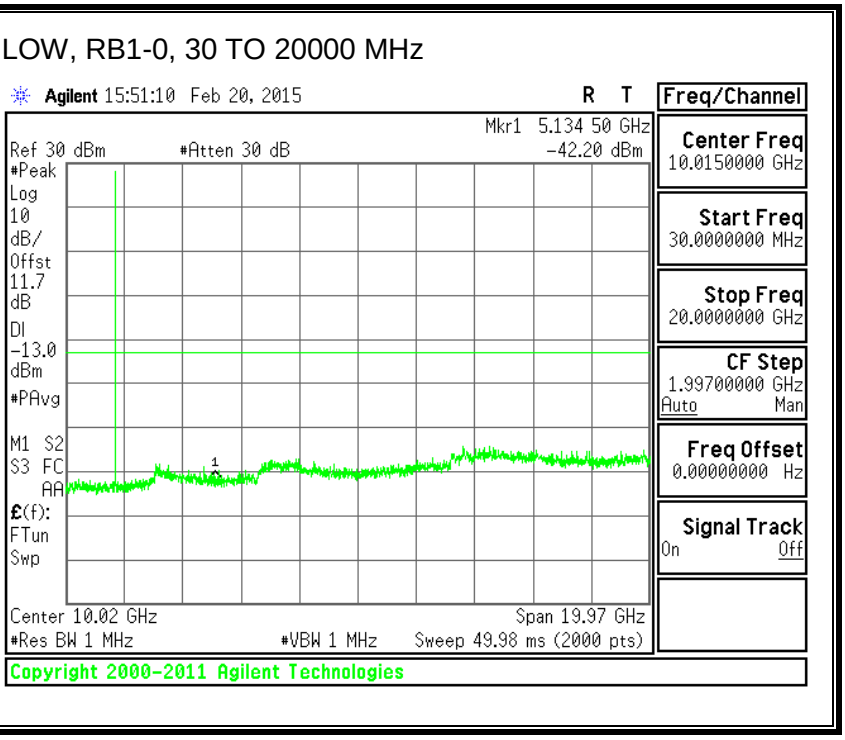


HIGH, RB1-0, 30 TO 20000 MHz

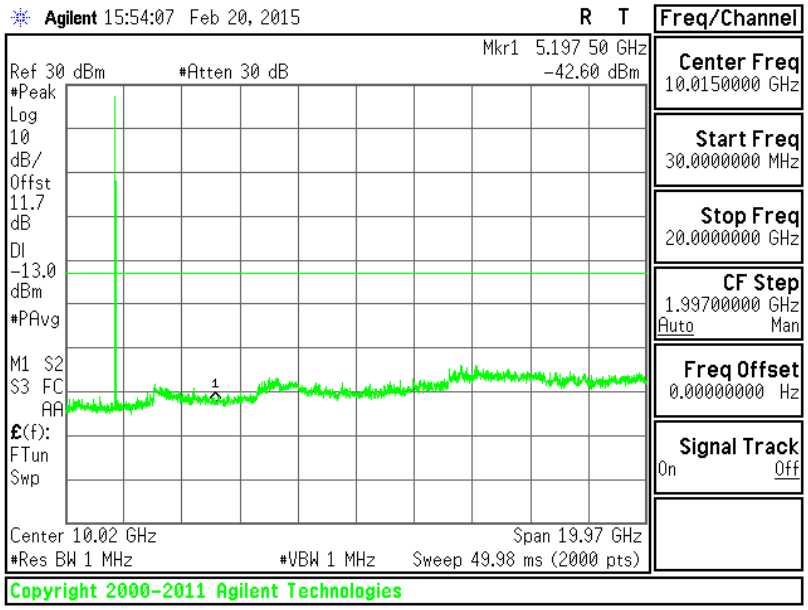


16QAM, (3.0 MHz BAND WIDTH)

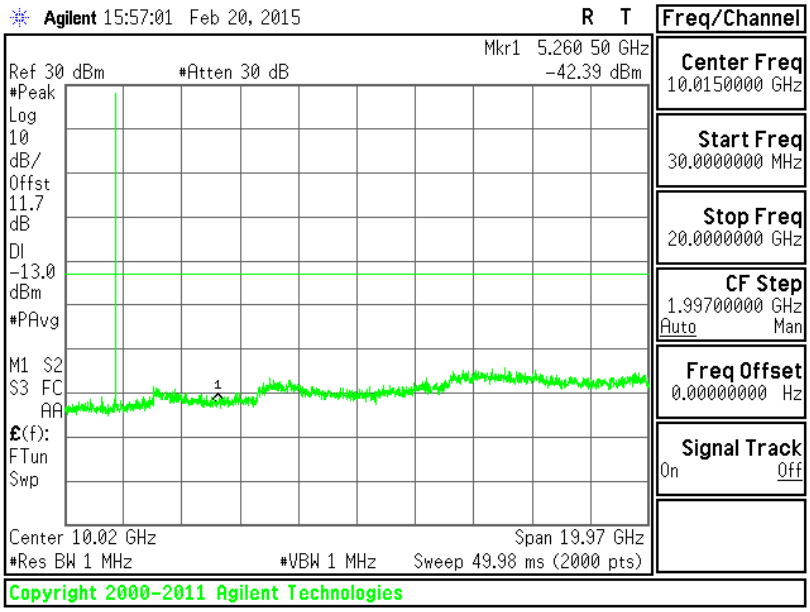
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

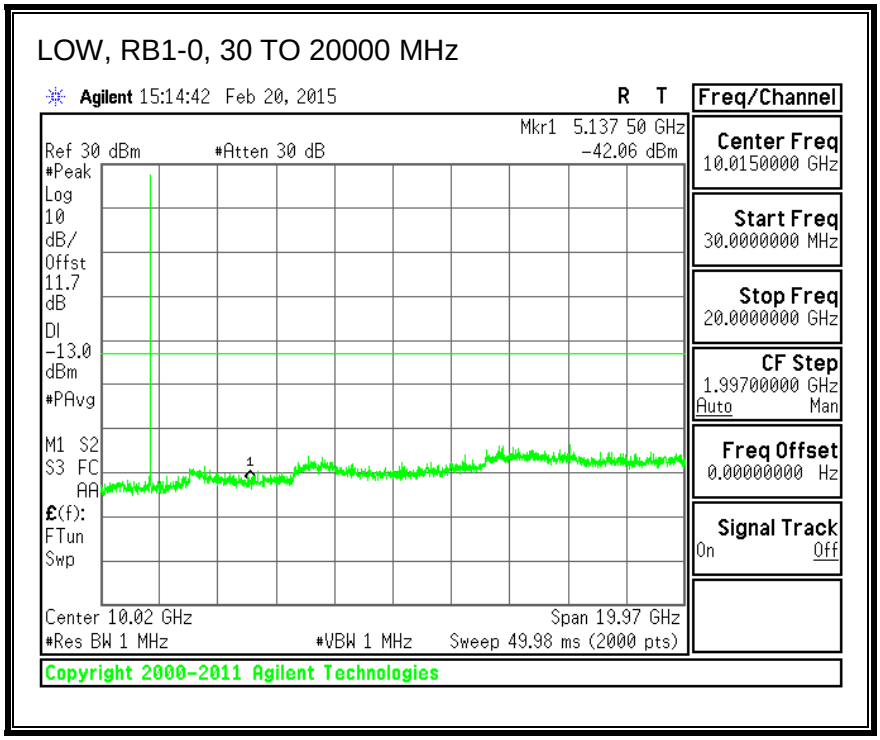


HIGH, RB1-0, 30 TO 20000 MHz

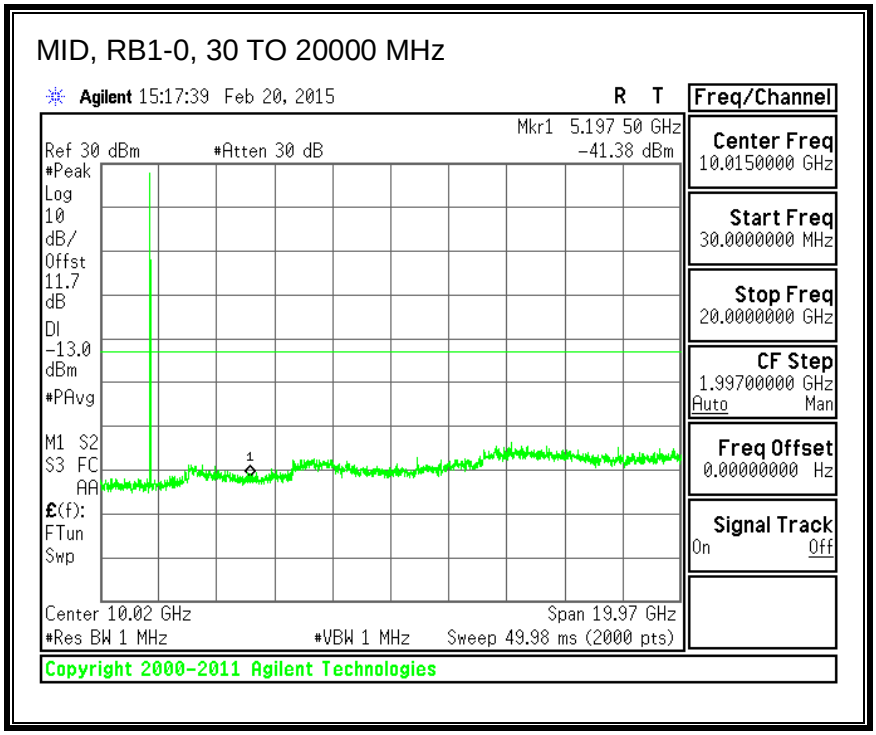


QPSK, (5.0 MHz BAND WIDTH)

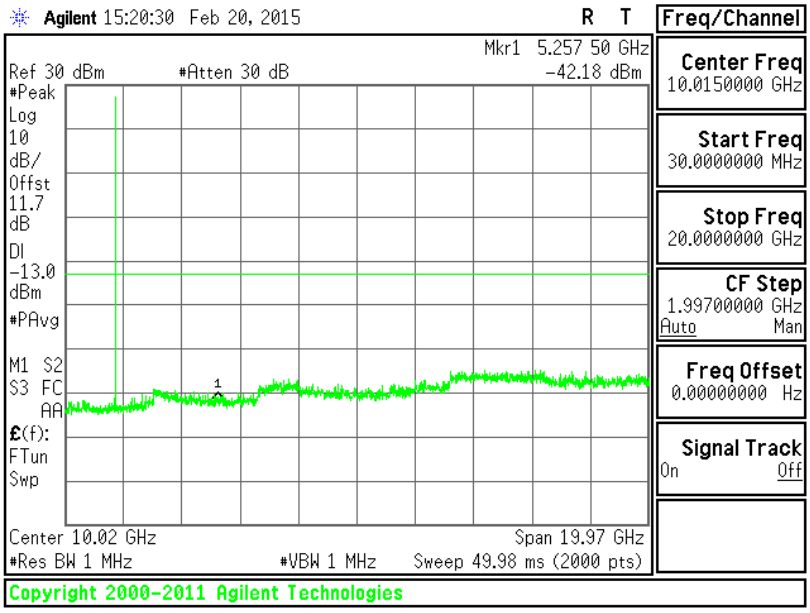
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

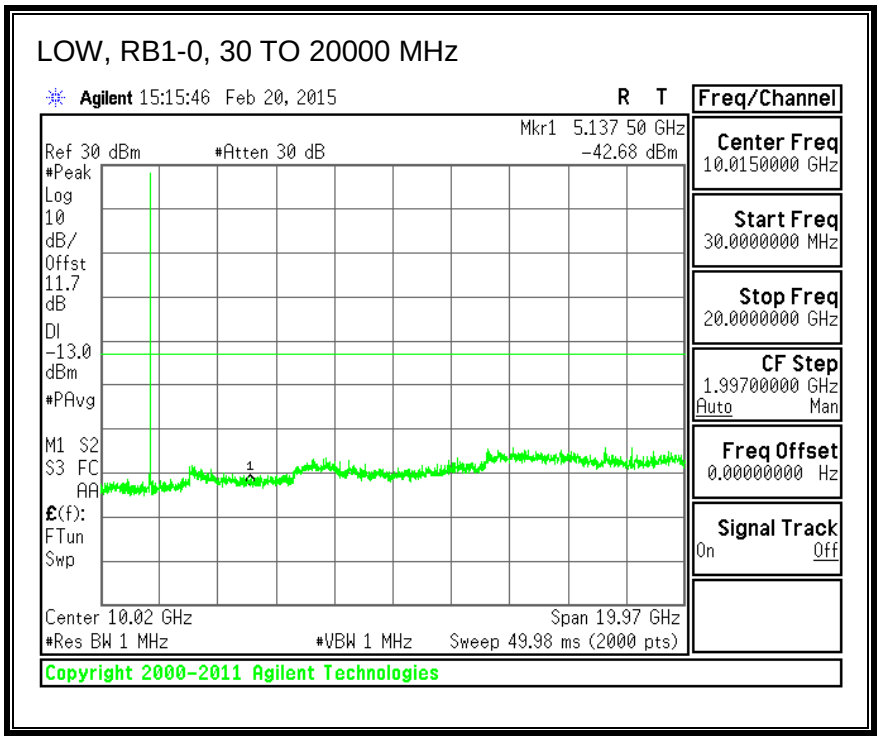


HIGH, RB1-0, 30 TO 20000 MHz

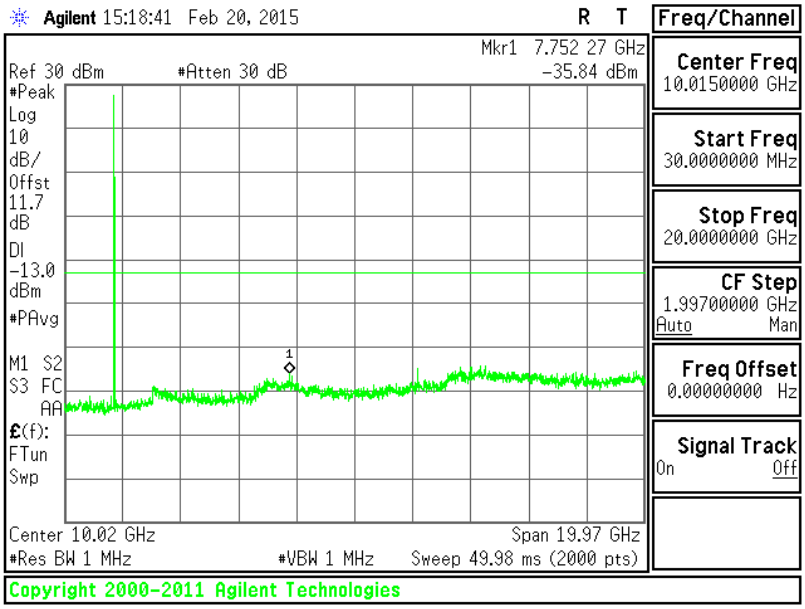


16QAM, (5.0 MHz BAND WIDTH)

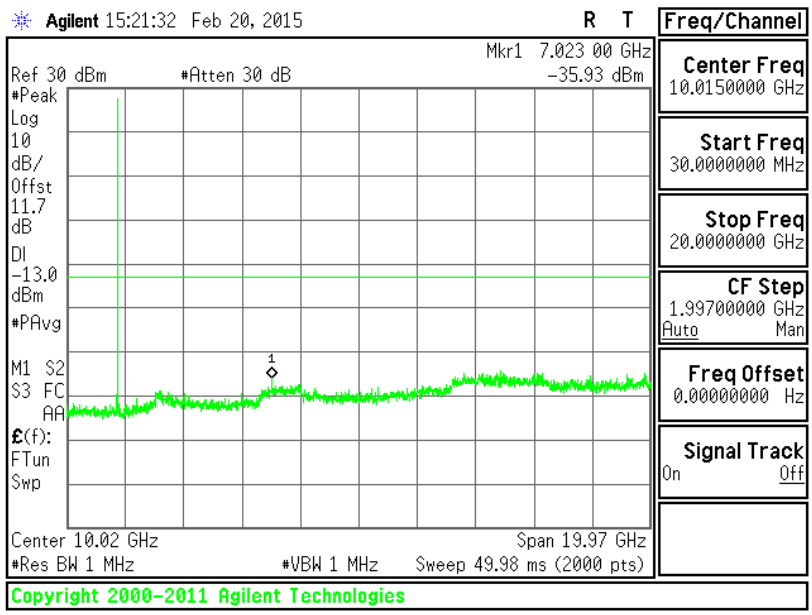
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

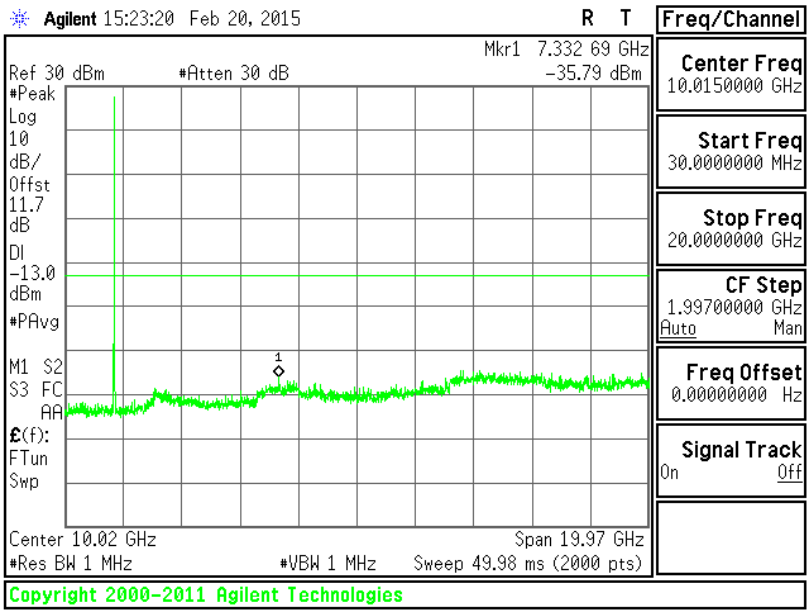


HIGH, RB1-0, 30 TO 20000 MHz

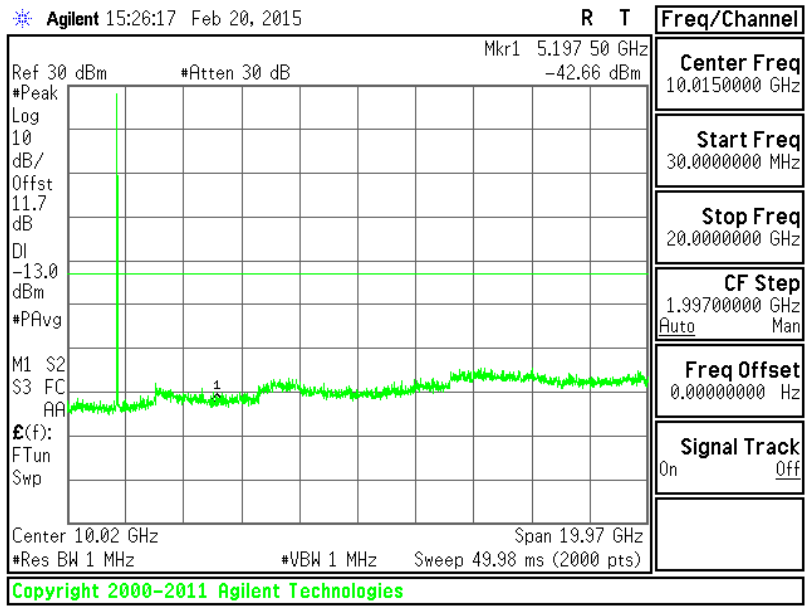


QPSK, (10.0 MHz BAND WIDTH)

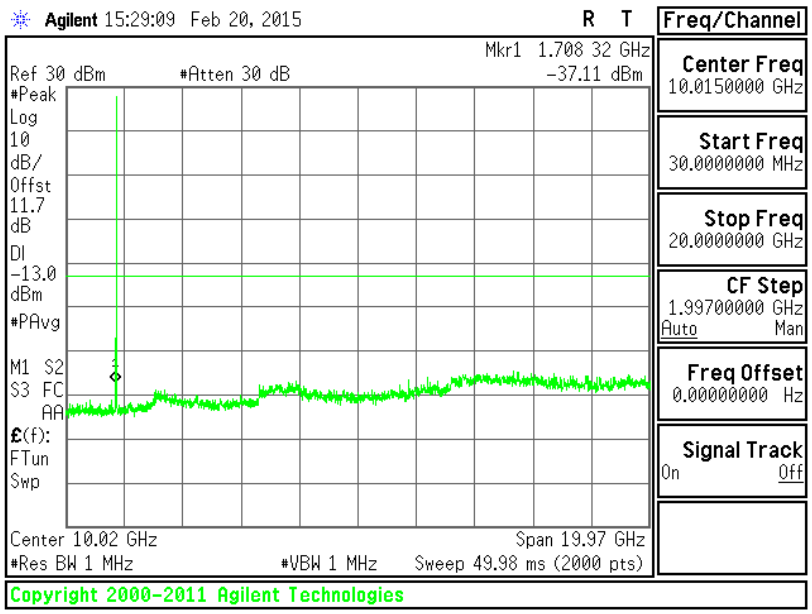
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

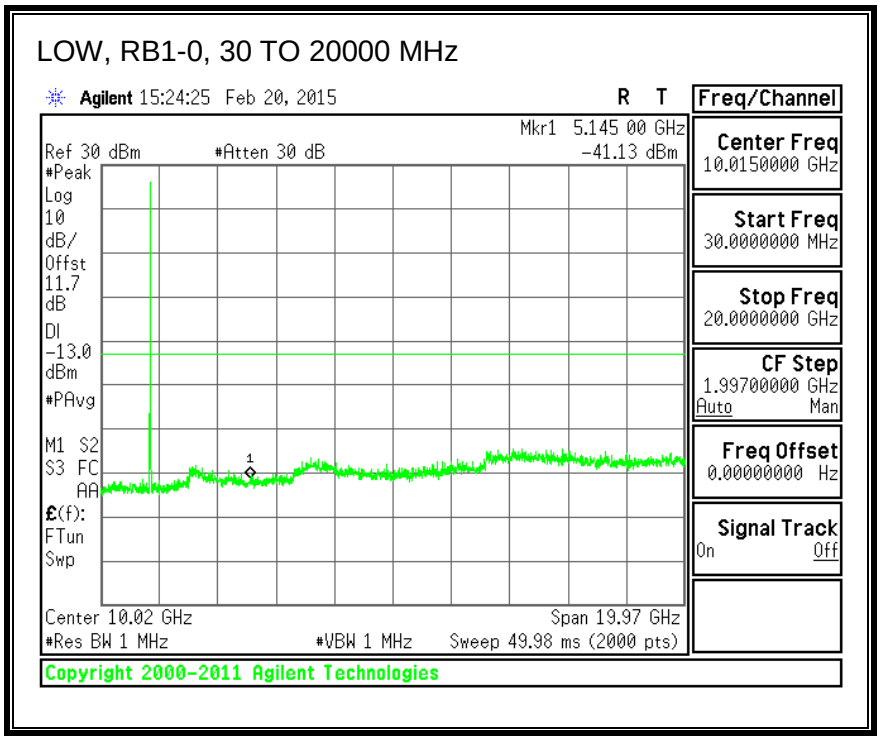


HIGH, RB1-0, 30 TO 20000 MHz

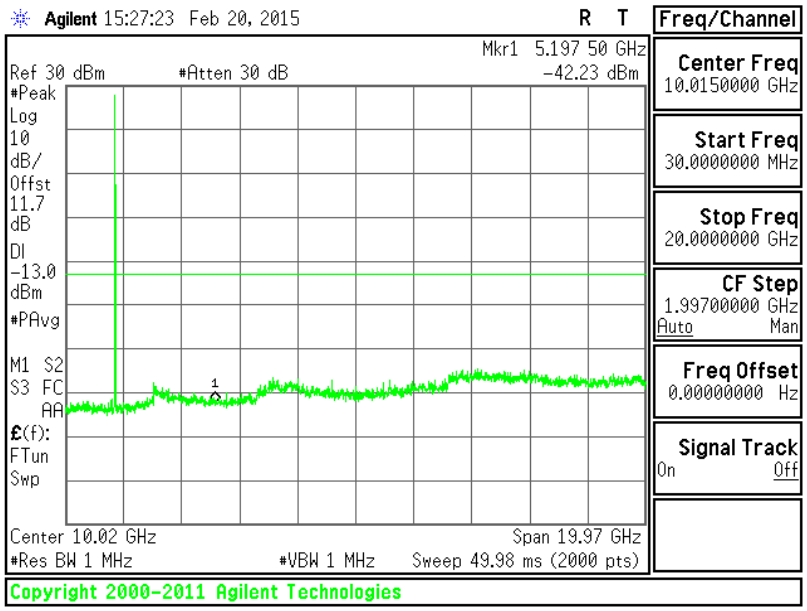


16QAM, (10.0 MHz BAND WIDTH)

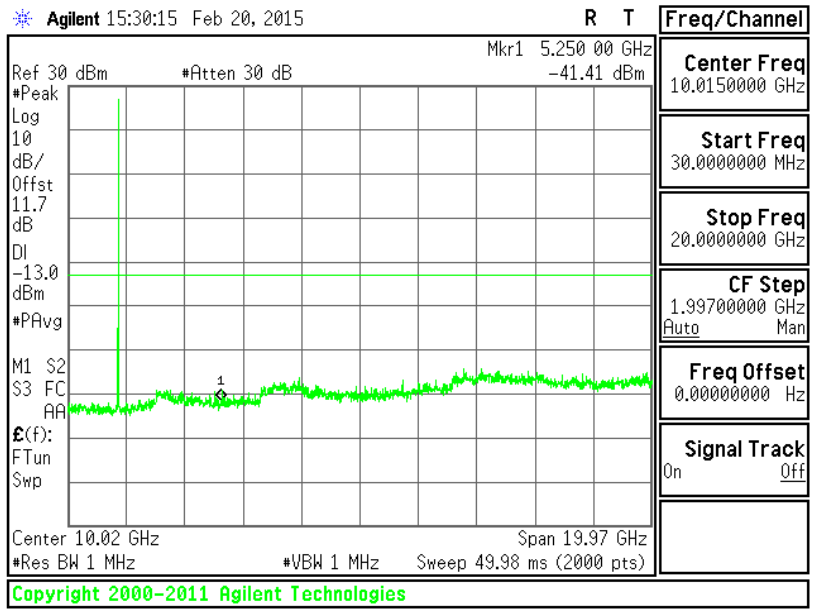
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

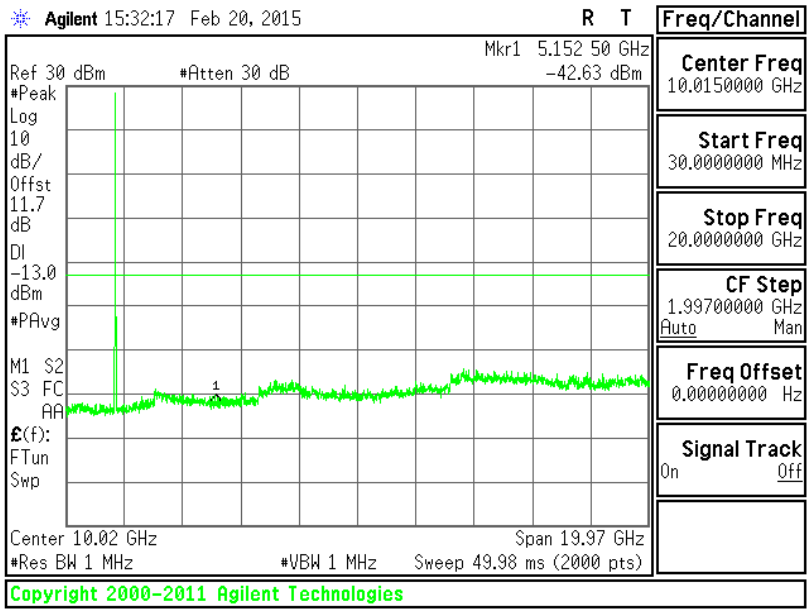


HIGH, RB1-0, 30 TO 20000 MHz

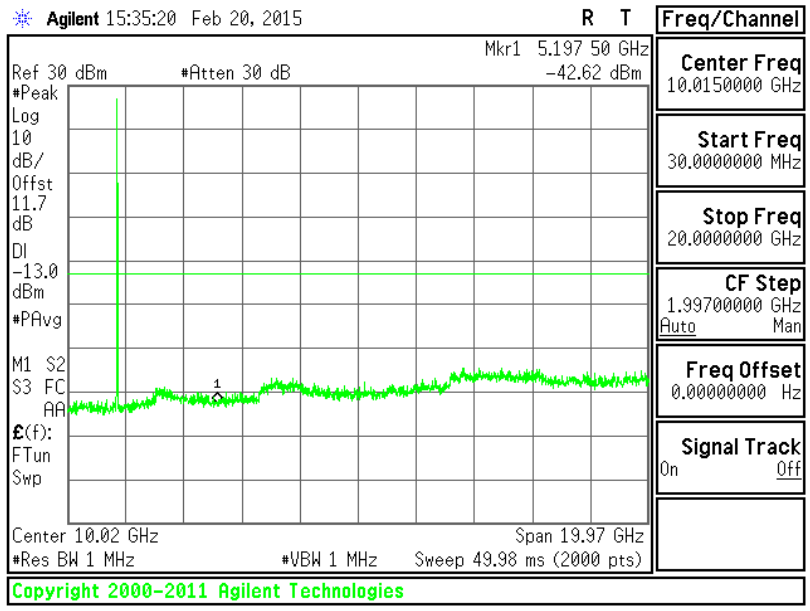


QPSK, (15.0 MHz BAND WIDTH)

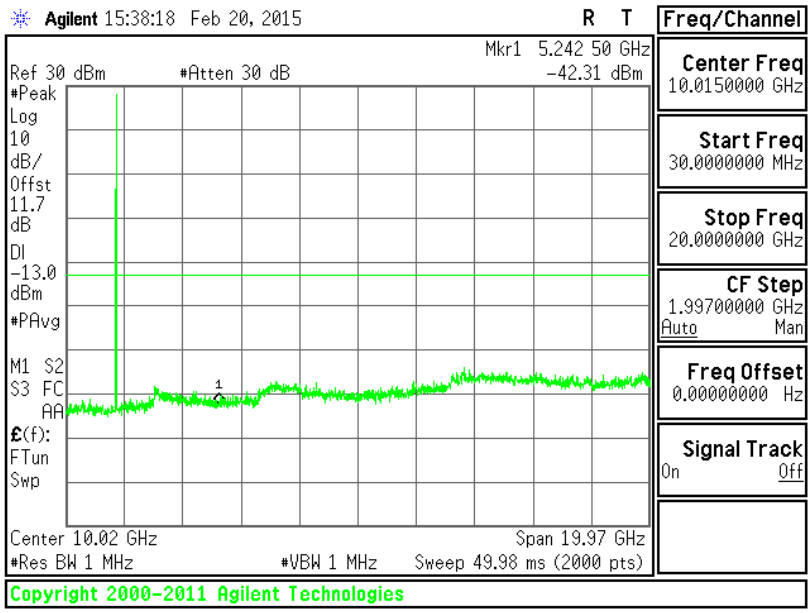
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

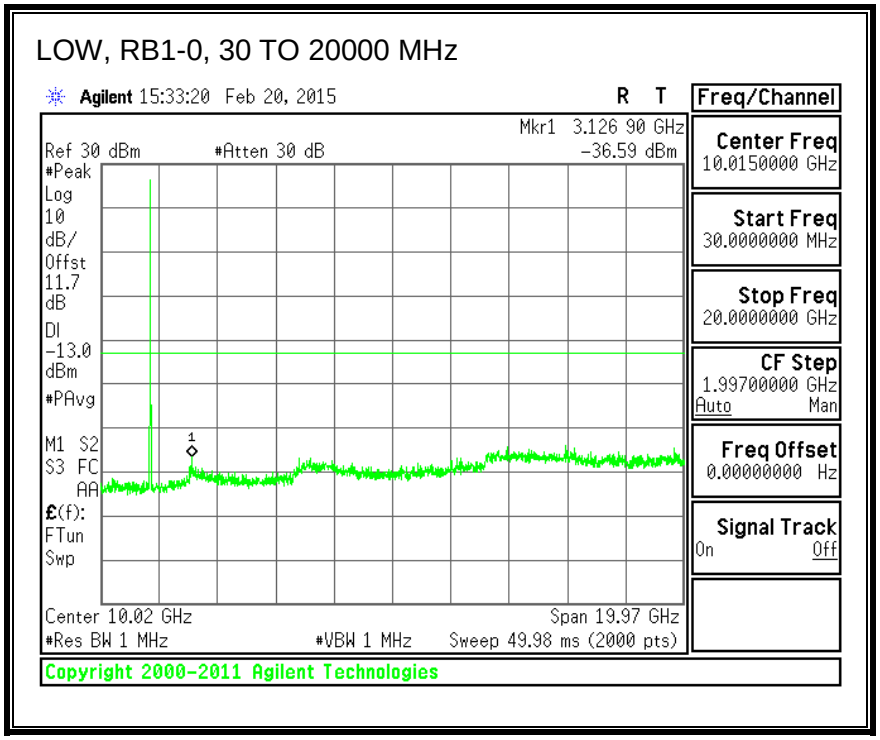


HIGH, RB1-0, 30 TO 20000 MHz

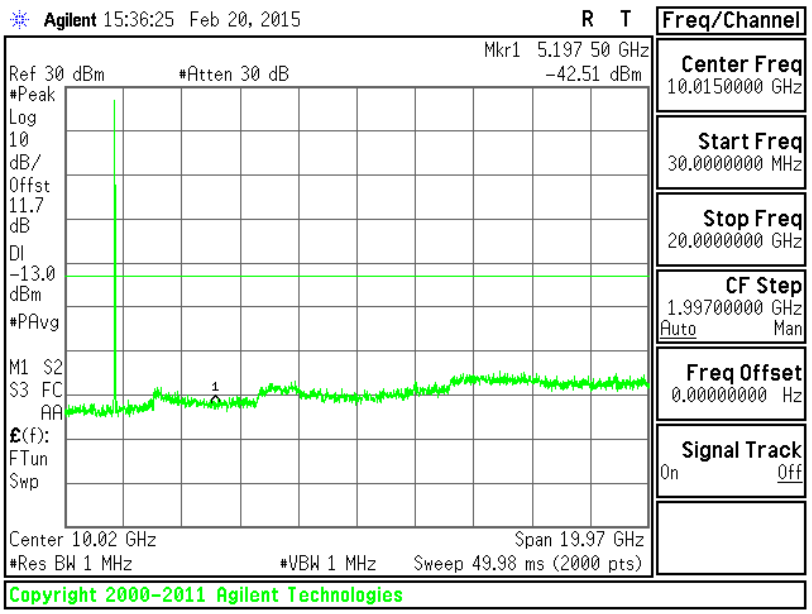


16QAM, (15.0 MHz BAND WIDTH)

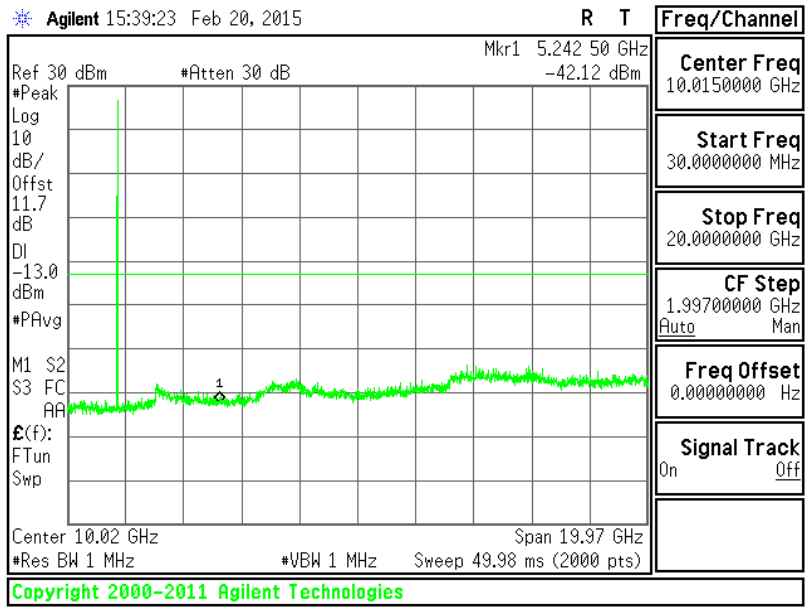
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

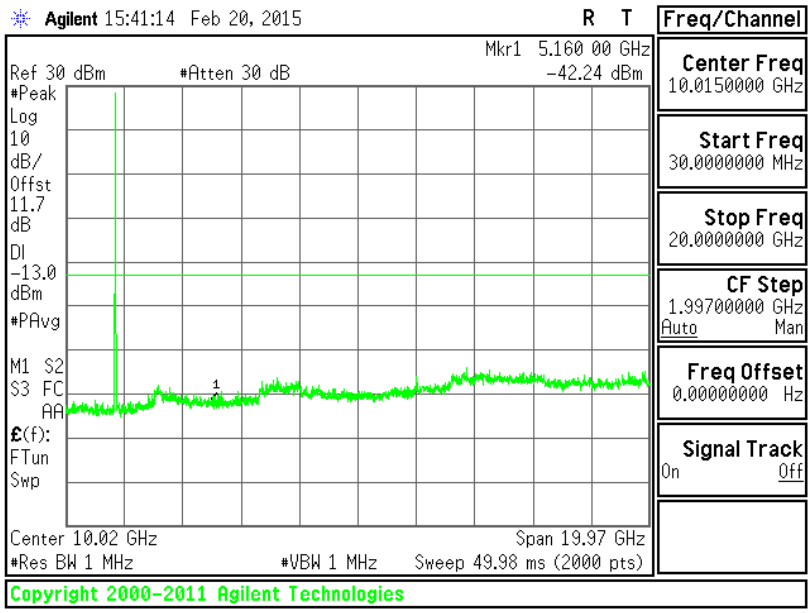


HIGH, RB1-0, 30 TO 20000 MHz

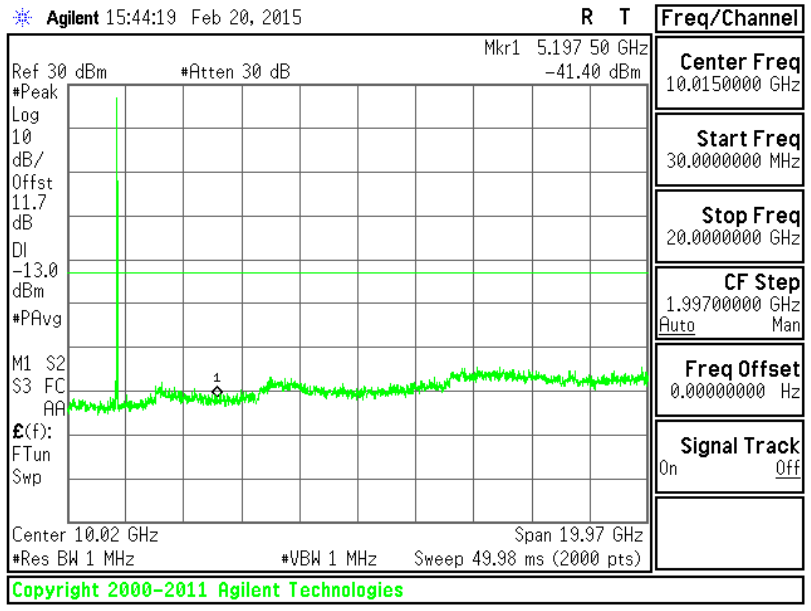


QPSK, (20.0 MHz BAND WIDTH)

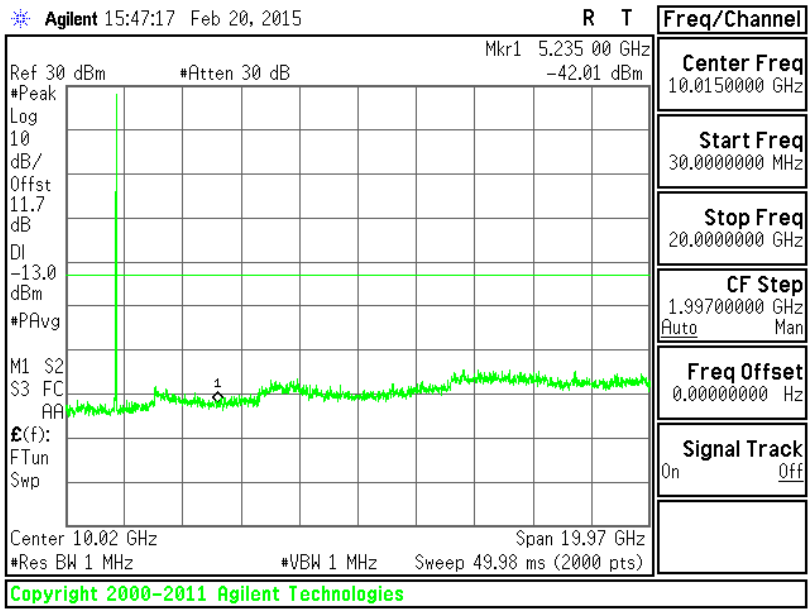
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

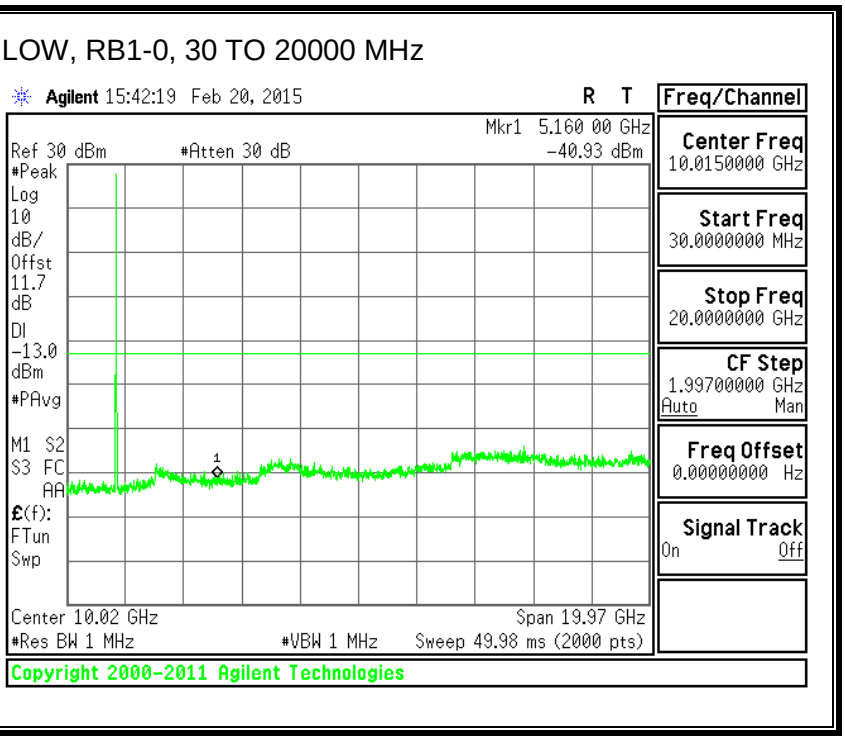


HIGH, RB1-0, 30 TO 20000 MHz

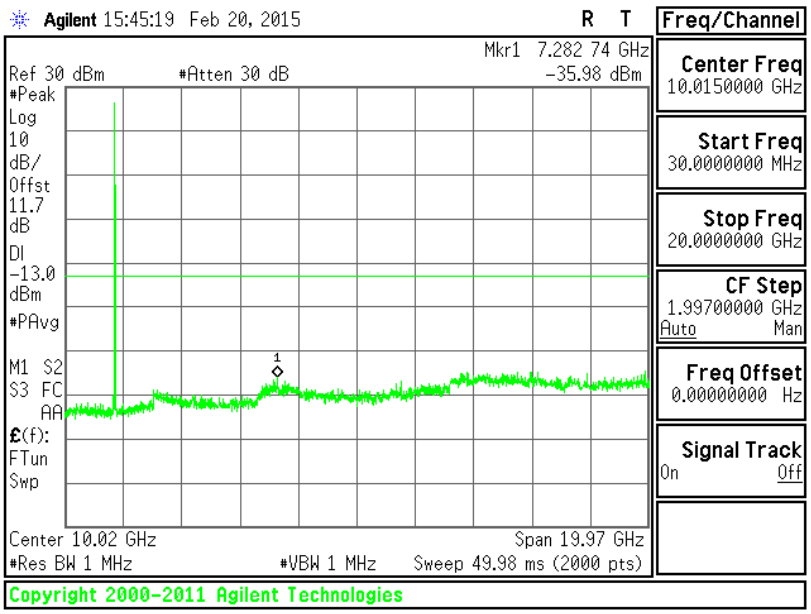


16QAM, (20.0 MHz BAND WIDTH)

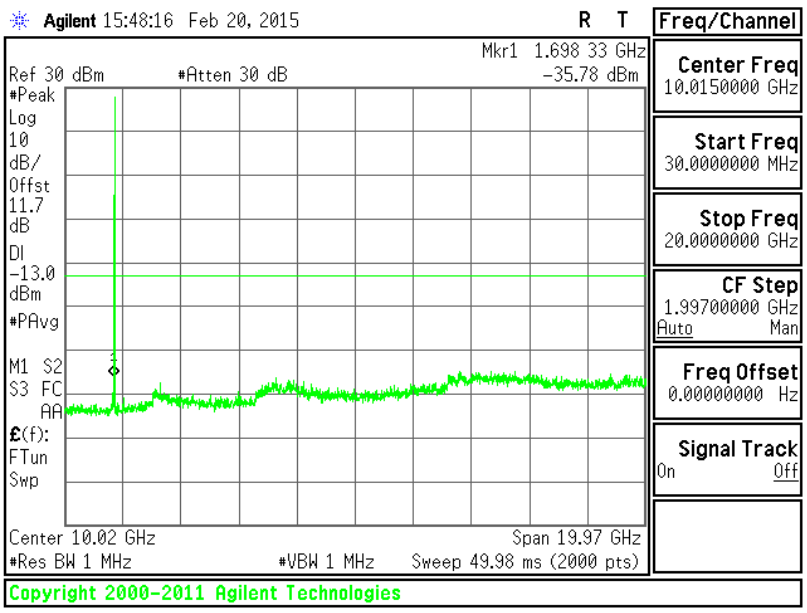
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz



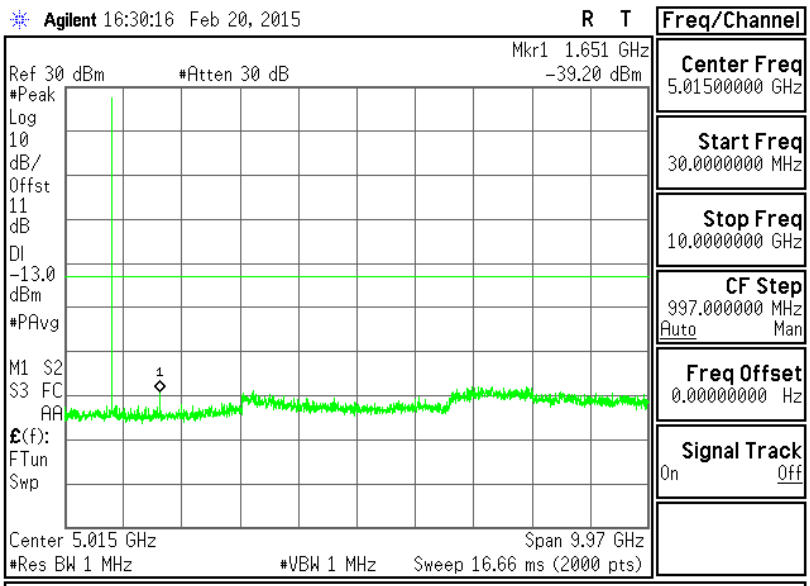
HIGH, RB1-0, 30 TO 20000 MHz



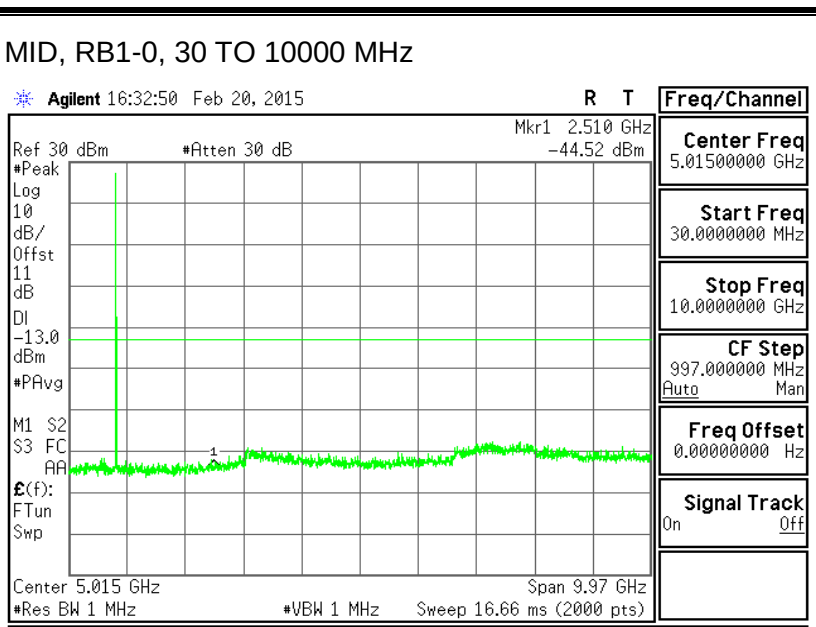
8.3.3. LTE BAND 5

QPSK, (1.4 MHz BAND WIDTH)

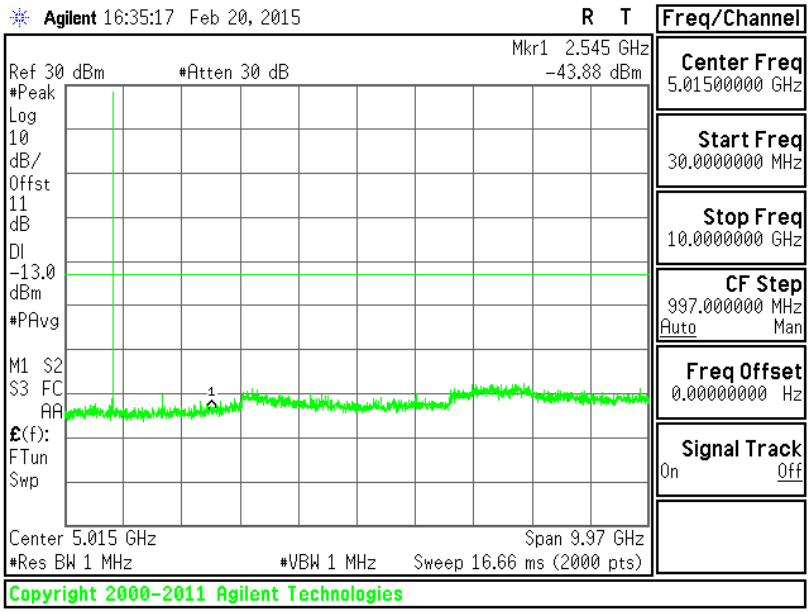
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

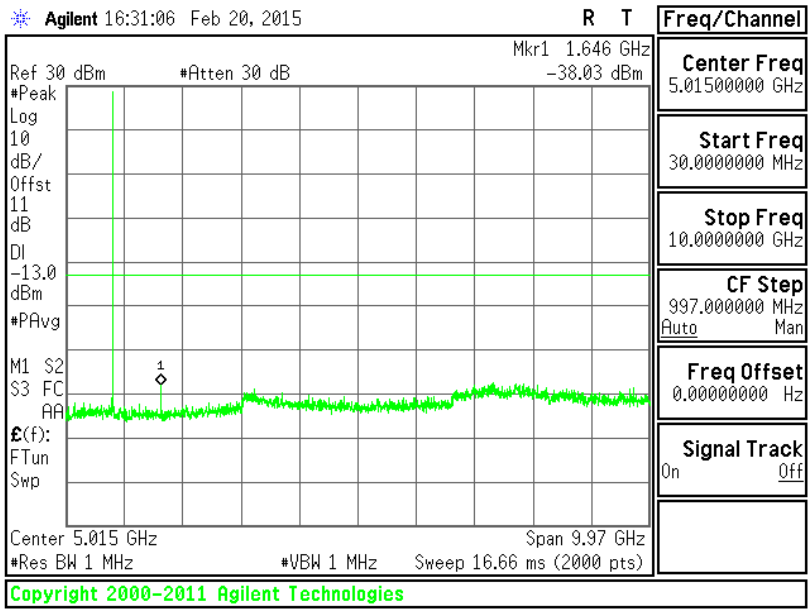


HIGH, RB1-0, 30 TO 10000 MHz

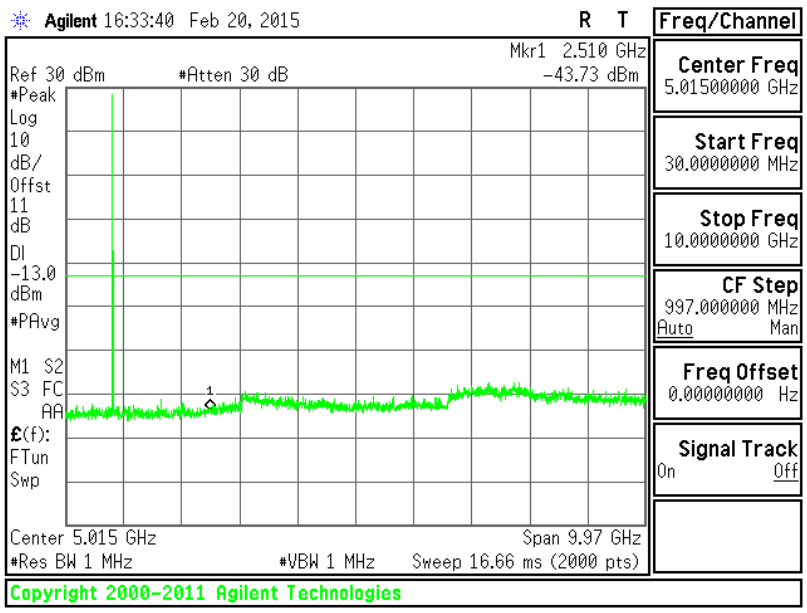


16QAM, (1.4 MHz BAND WIDTH)

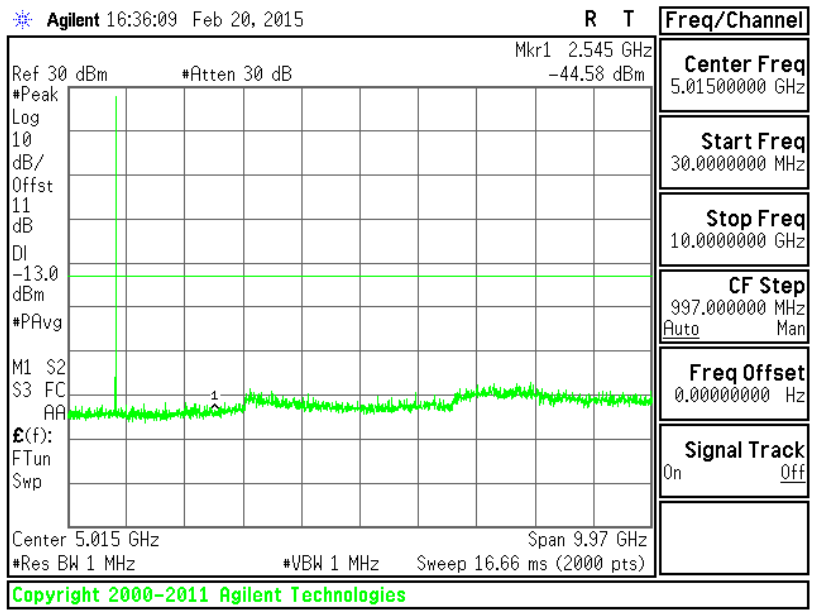
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

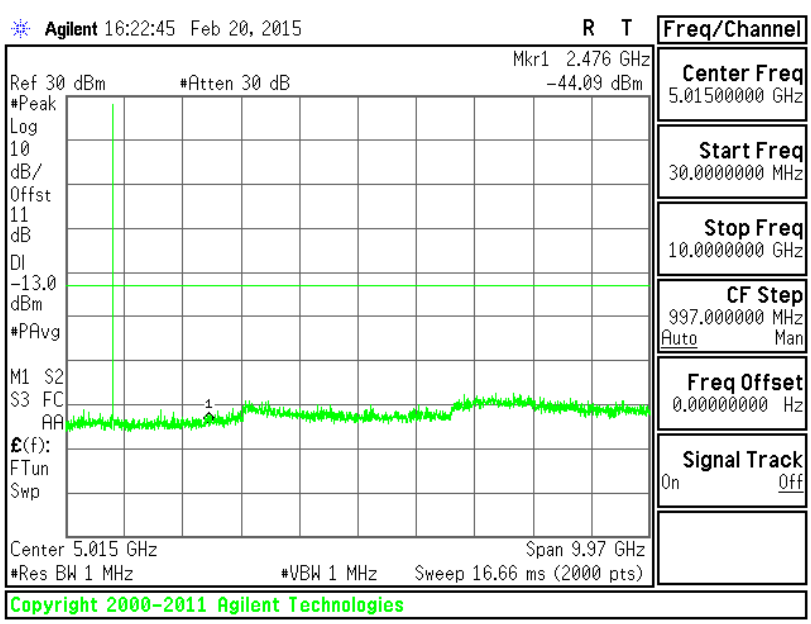


HIGH, RB1-0, 30 TO 10000 MHz

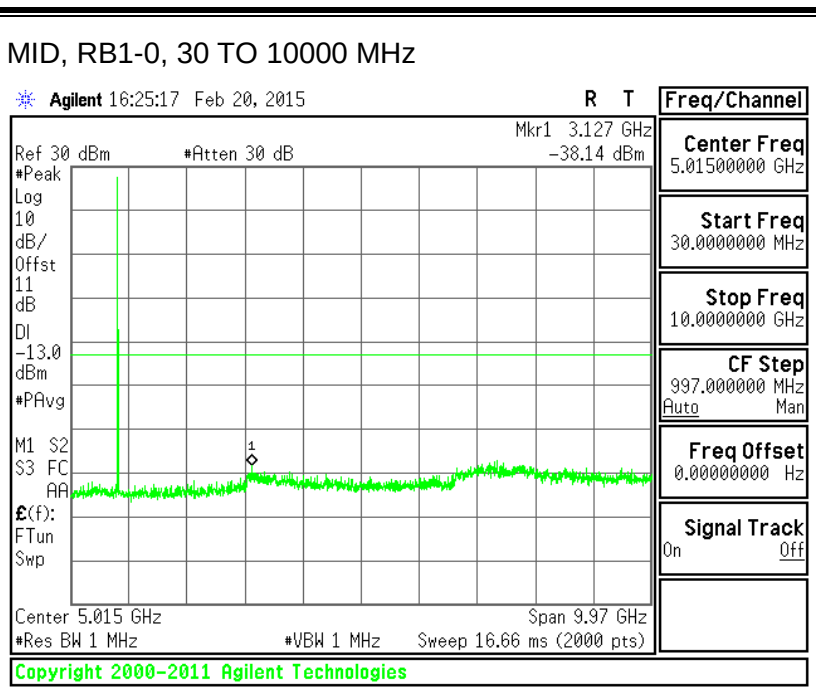


QPSK, (3.0 MHz BAND WIDTH)

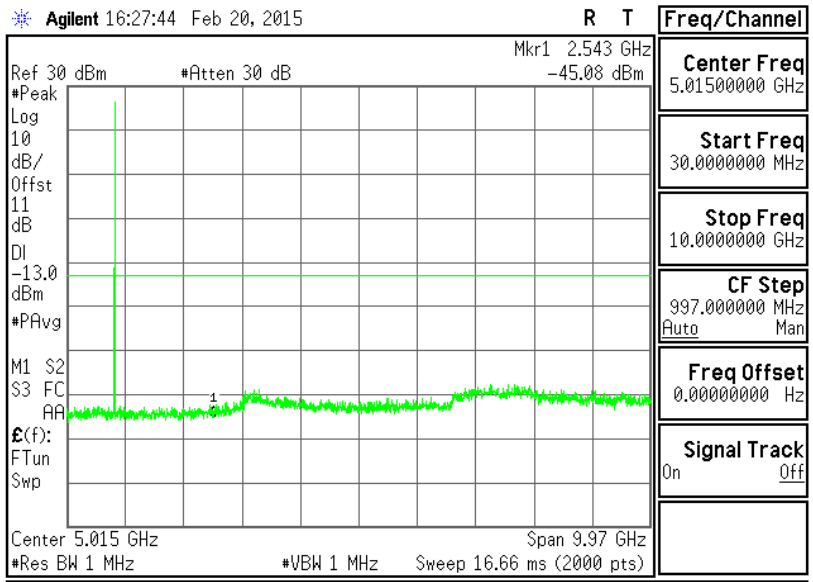
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

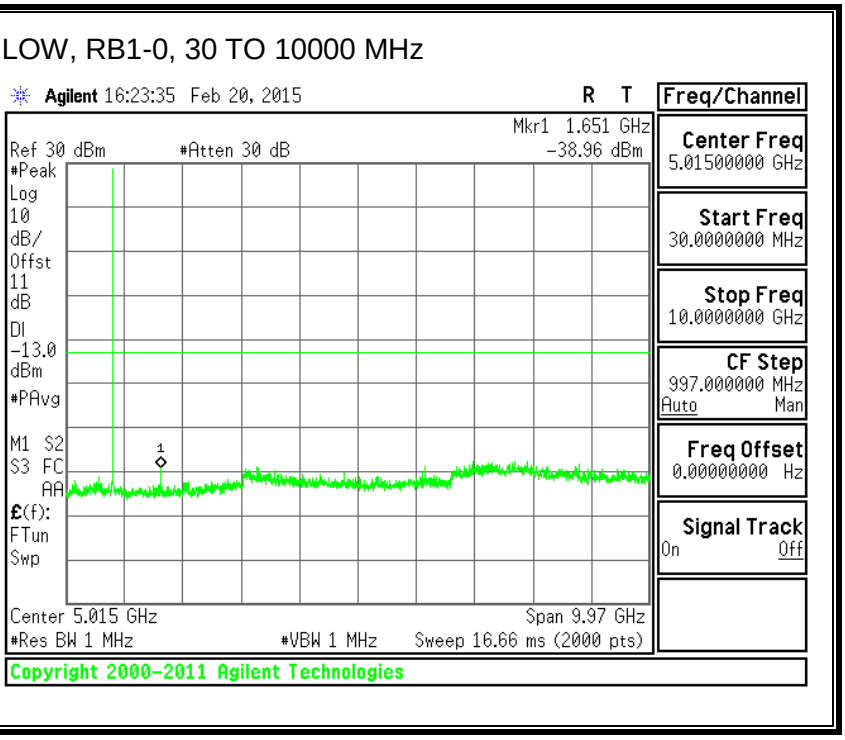


HIGH, RB1-0, 30 TO 10000 MHz

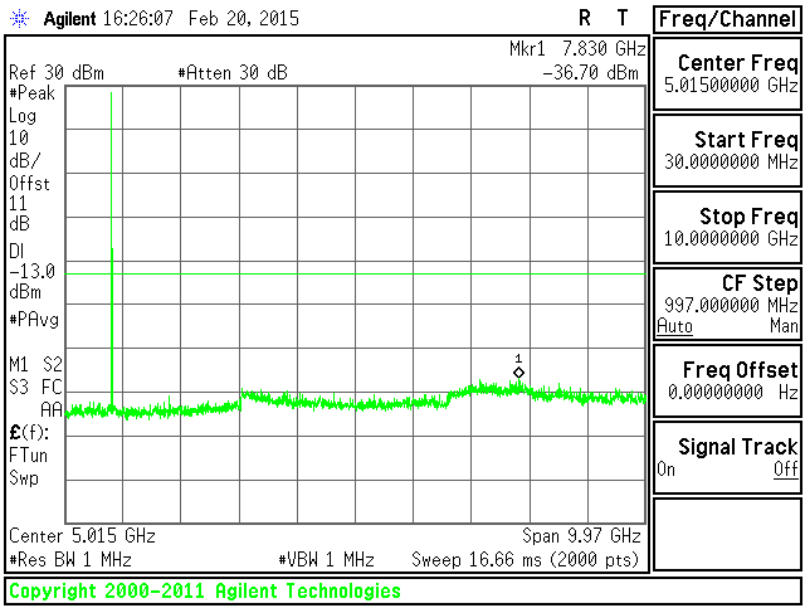


16QAM, (3.0 MHz BAND WIDTH)

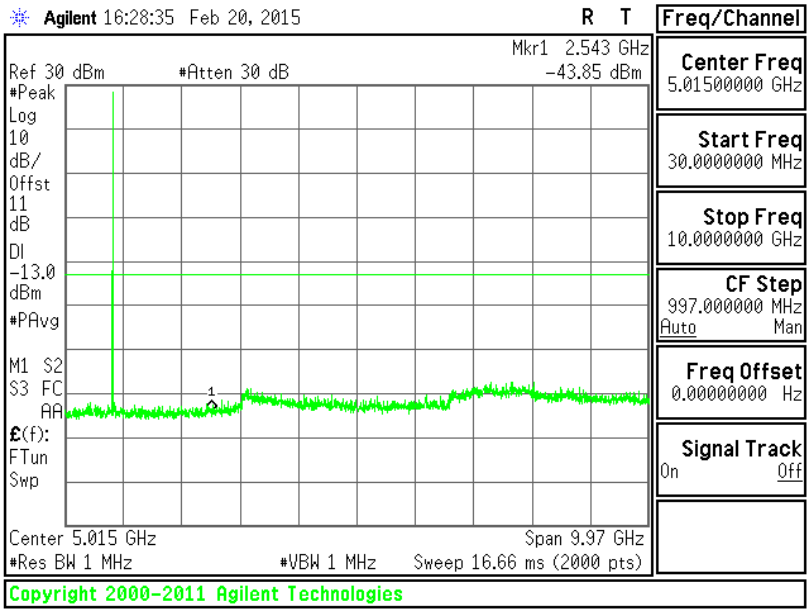
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

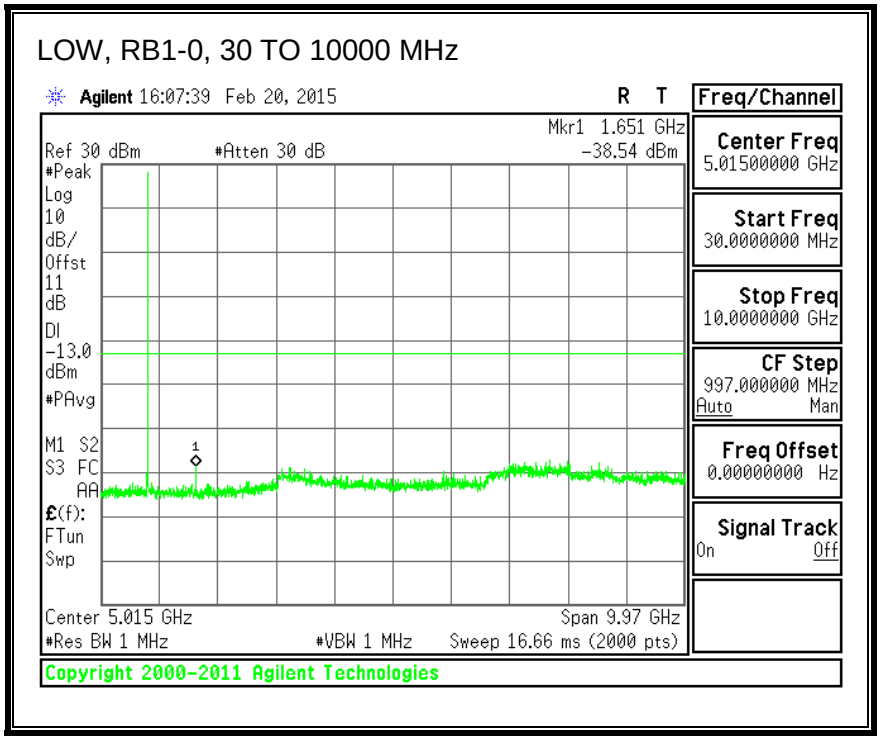


HIGH, RB1-0, 30 TO 10000 MHz

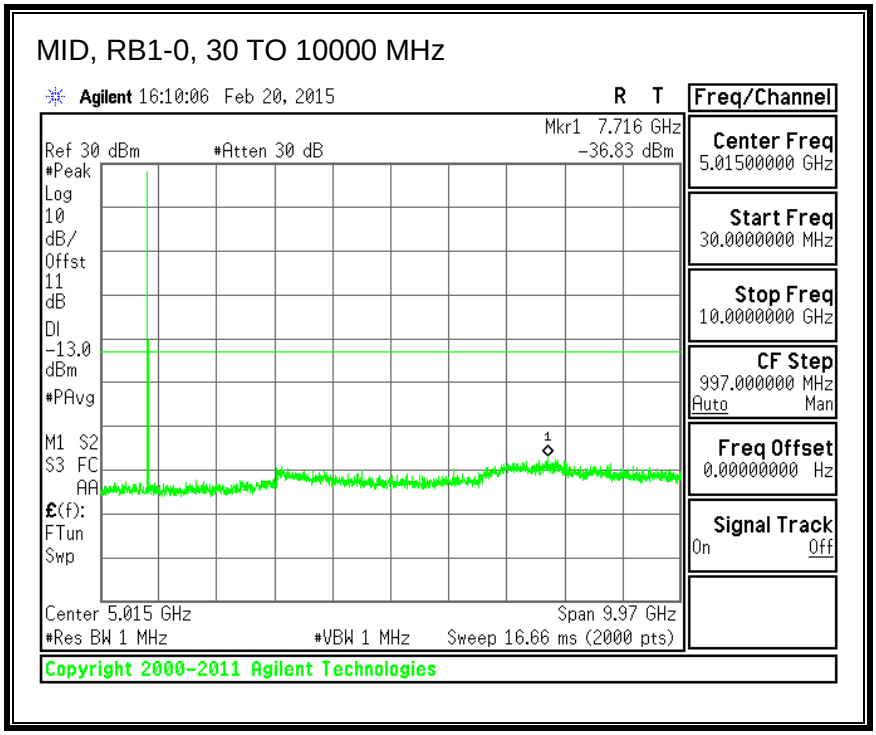


QPSK, (5.0 MHz BAND WIDTH)

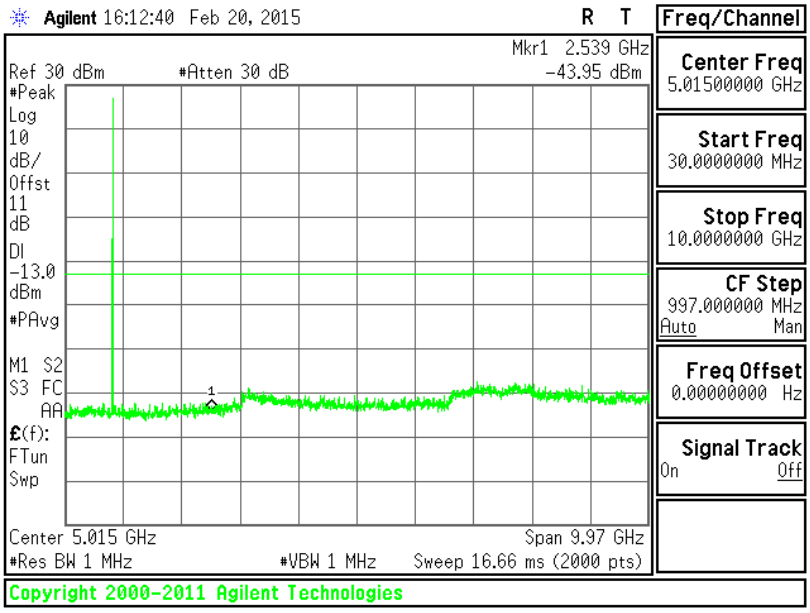
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

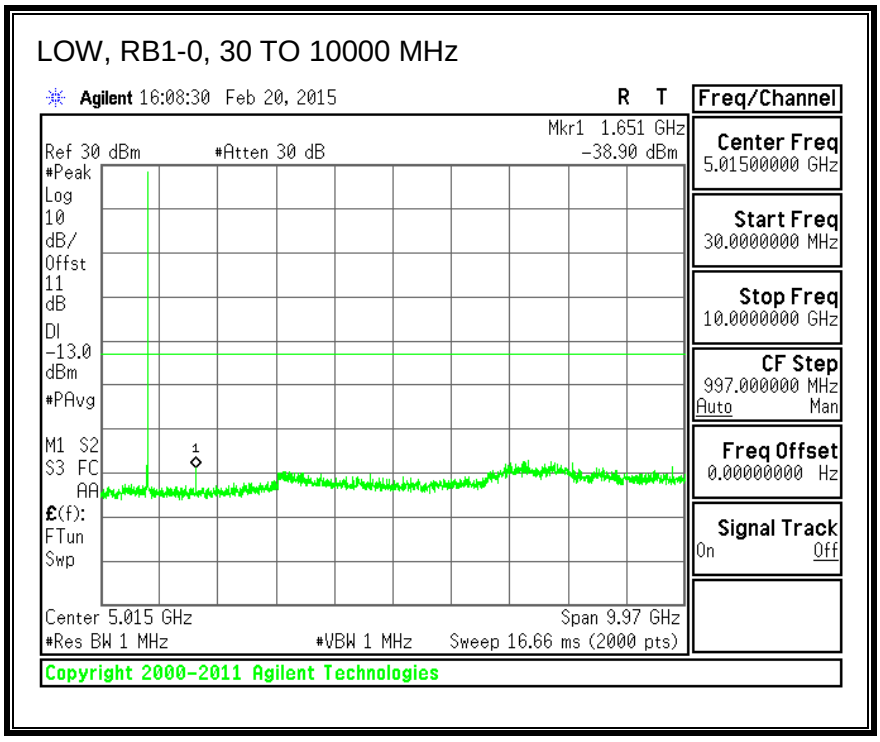


HIGH, RB1-0, 30 TO 10000 MHz

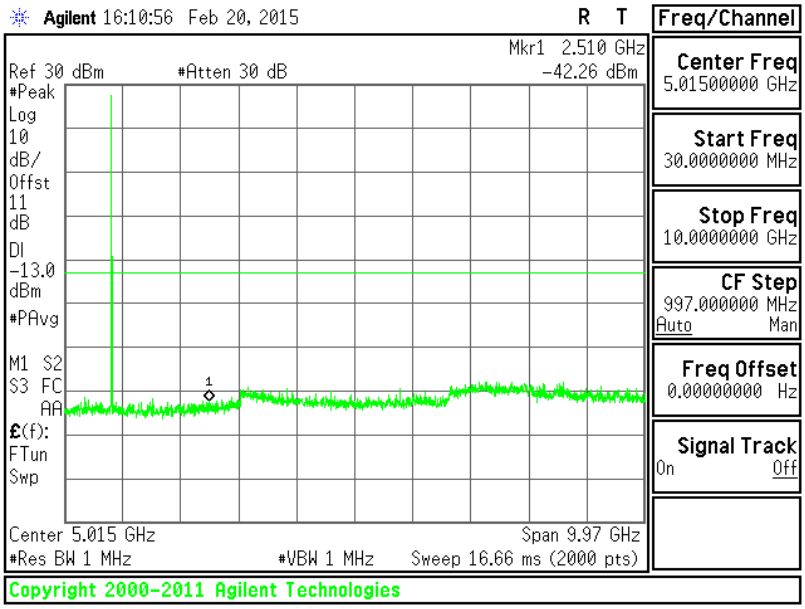


16QAM, (5.0 MHz BAND WIDTH)

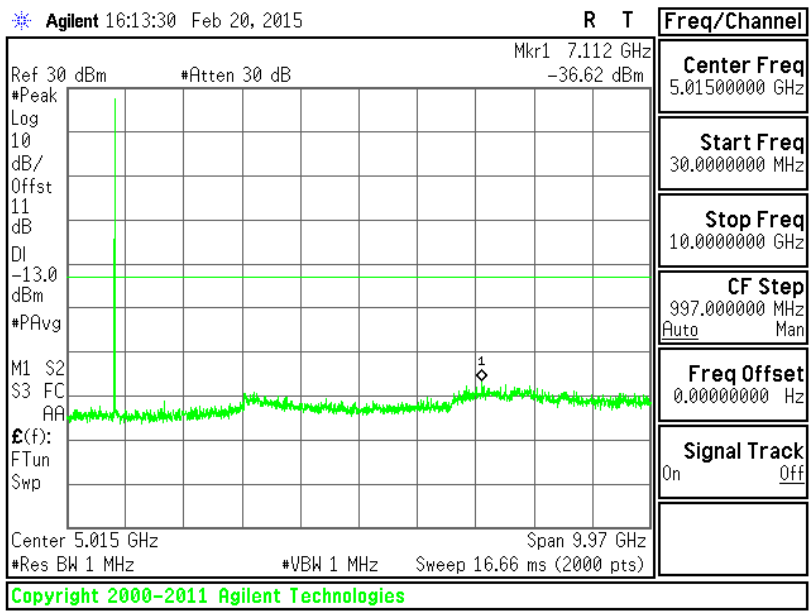
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

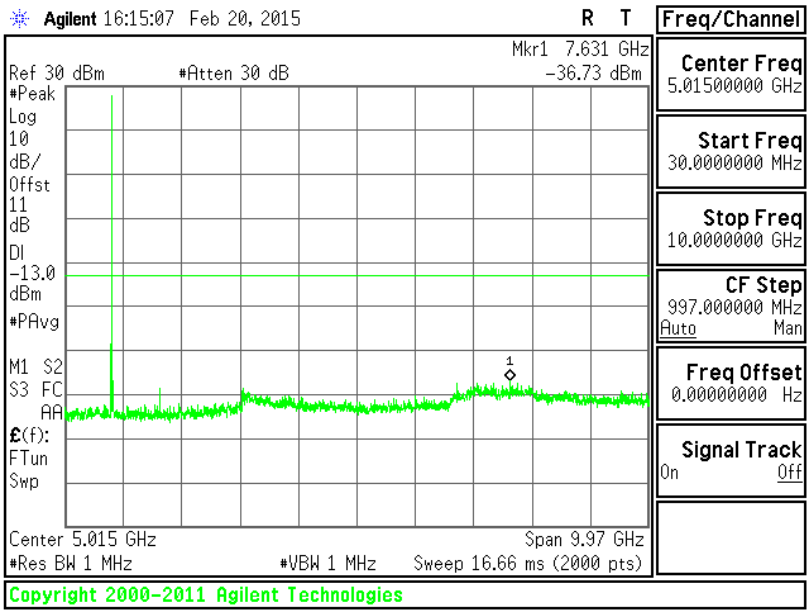


HIGH, RB1-0, 30 TO 10000 MHz

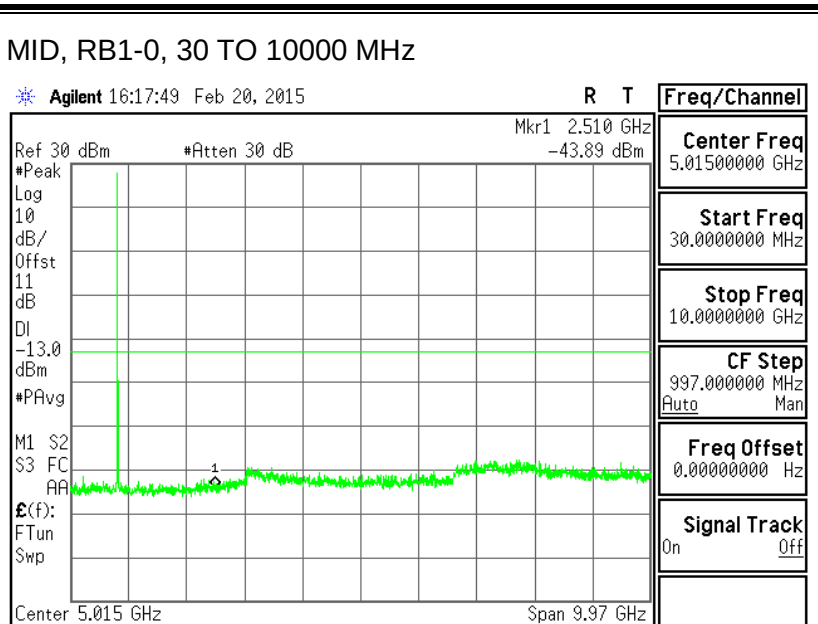


QPSK, (10.0 MHz BAND WIDTH)

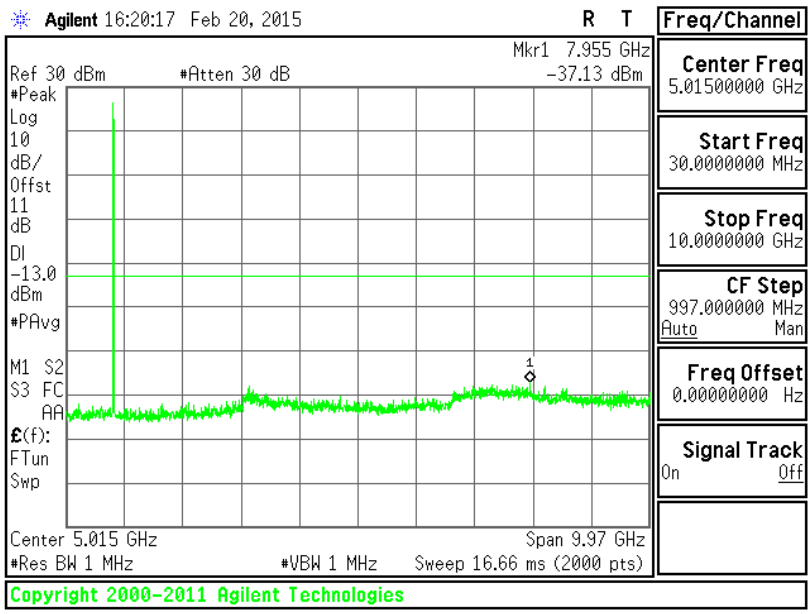
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

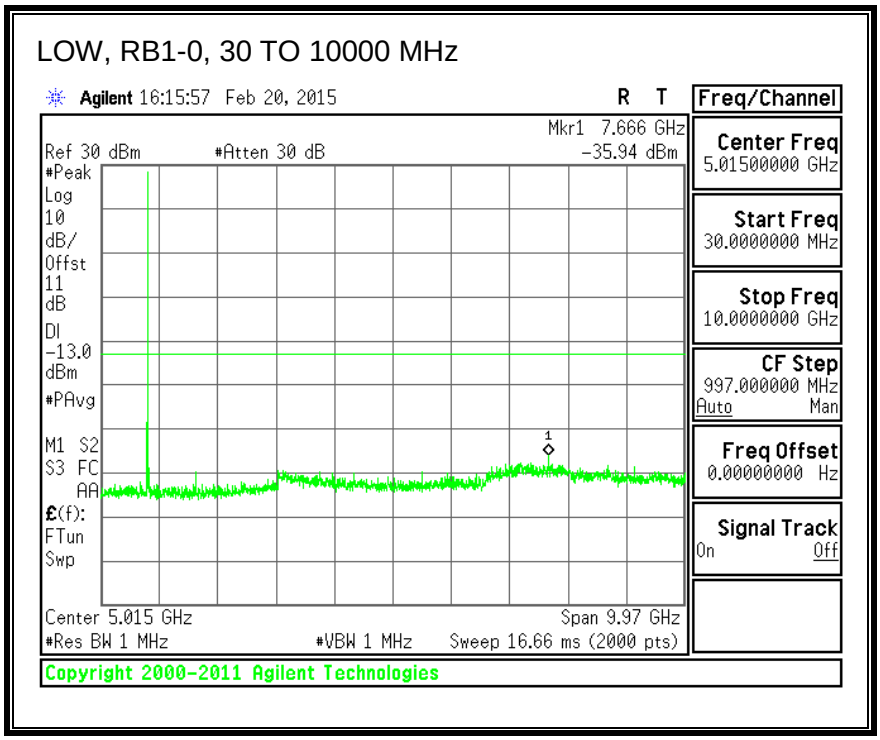


HIGH, RB1-0, 30 TO 10000 MHz

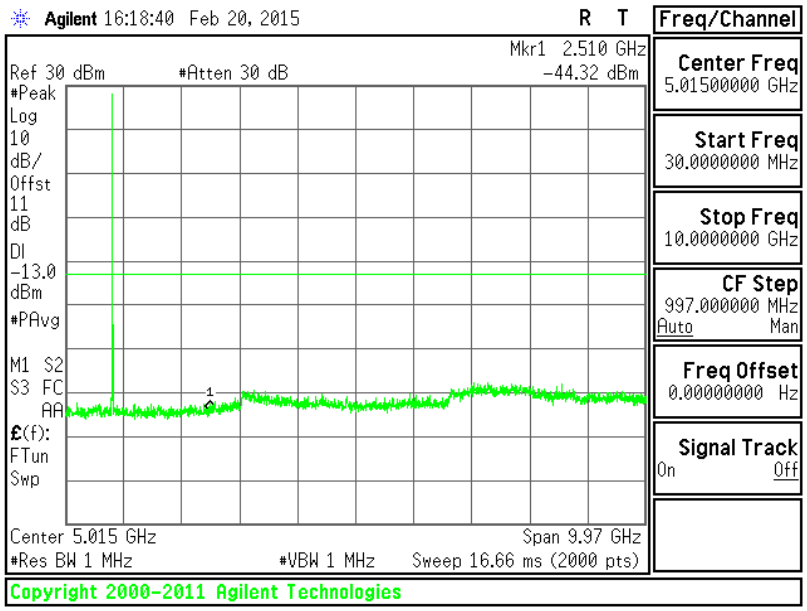


16QAM, (10.0 MHz BAND WIDTH)

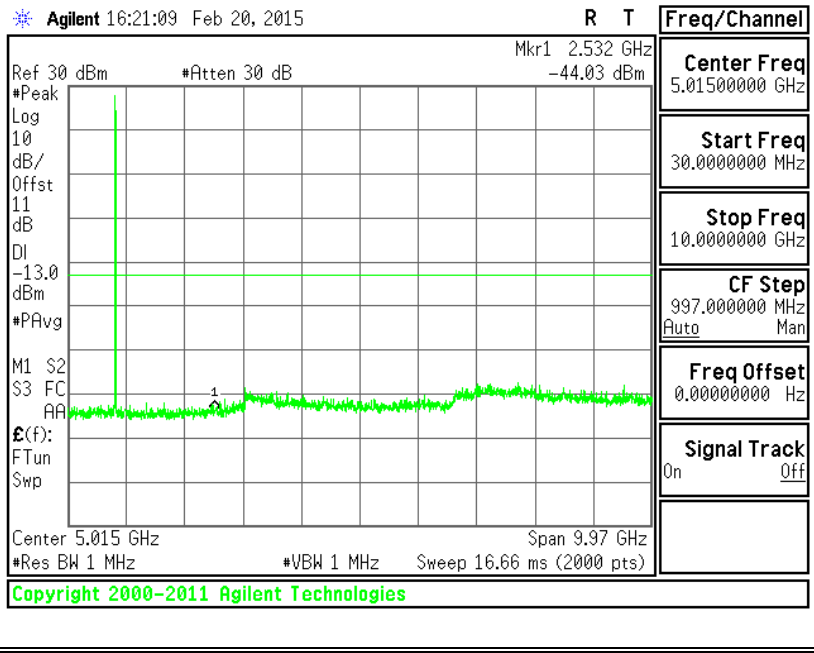
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz



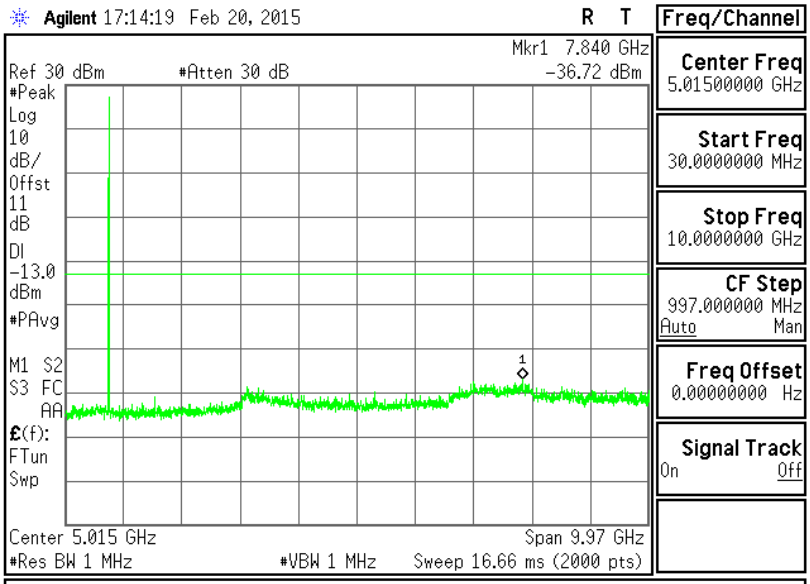
HIGH, RB1-0, 30 TO 10000 MHz



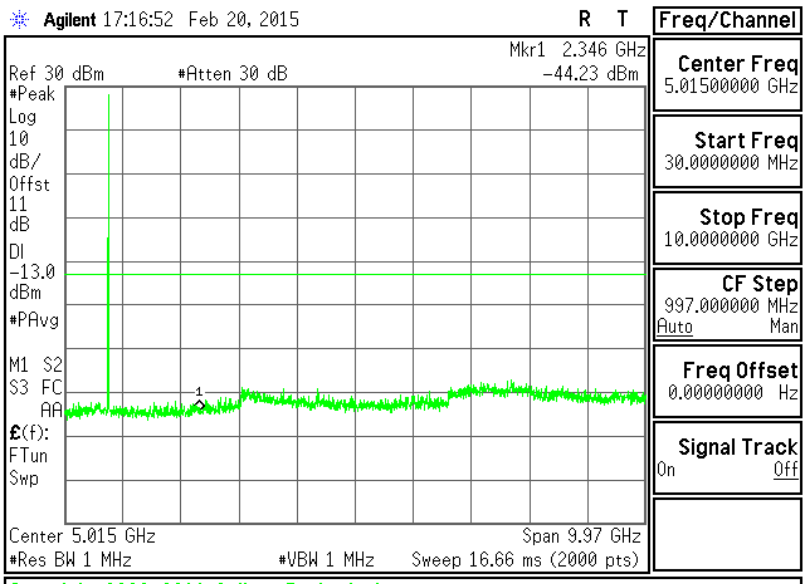
8.3.4. LTE BAND 13

QPSK, (5.0 MHz BAND WIDTH)

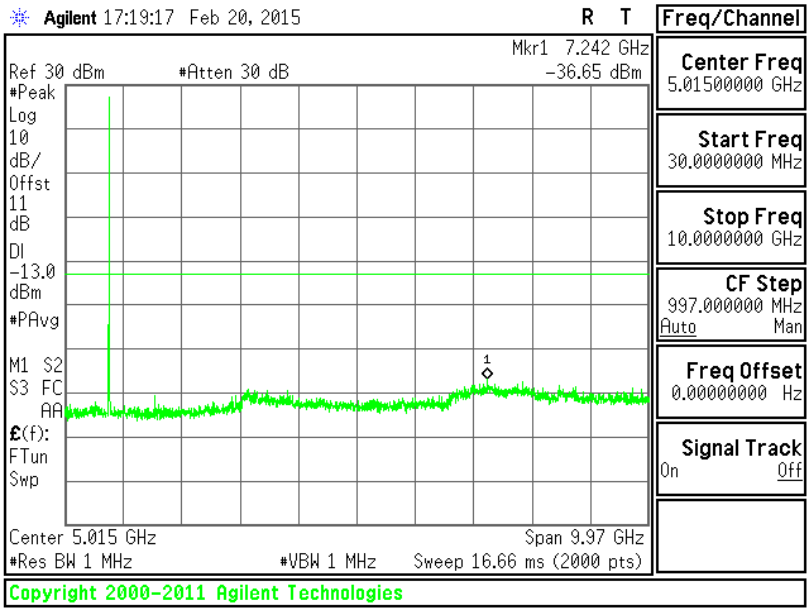
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

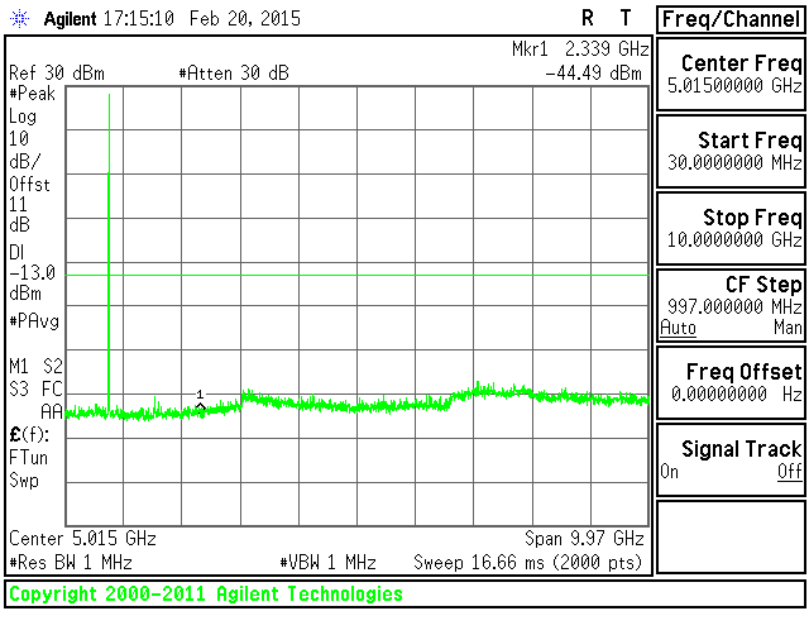


HIGH, RB1-0, 30 TO 10000 MHz

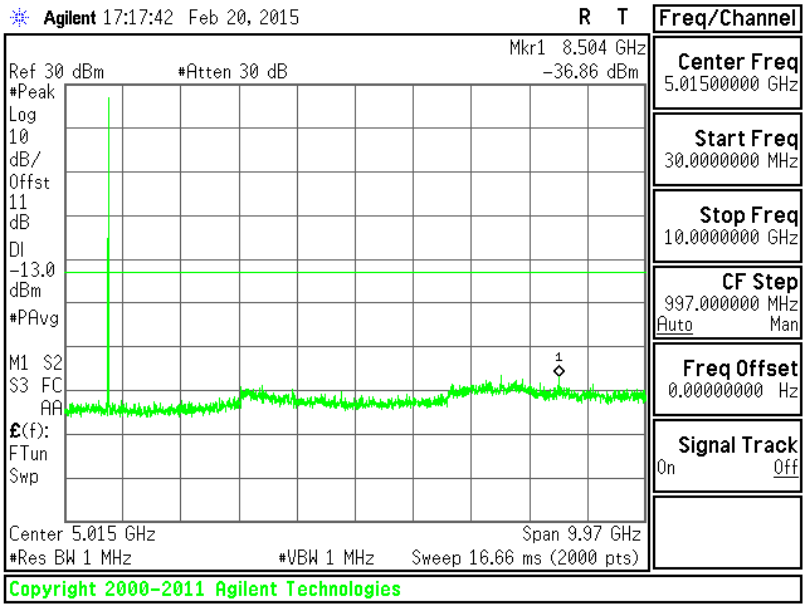


16QAM, (5.0 MHz BAND WIDTH)

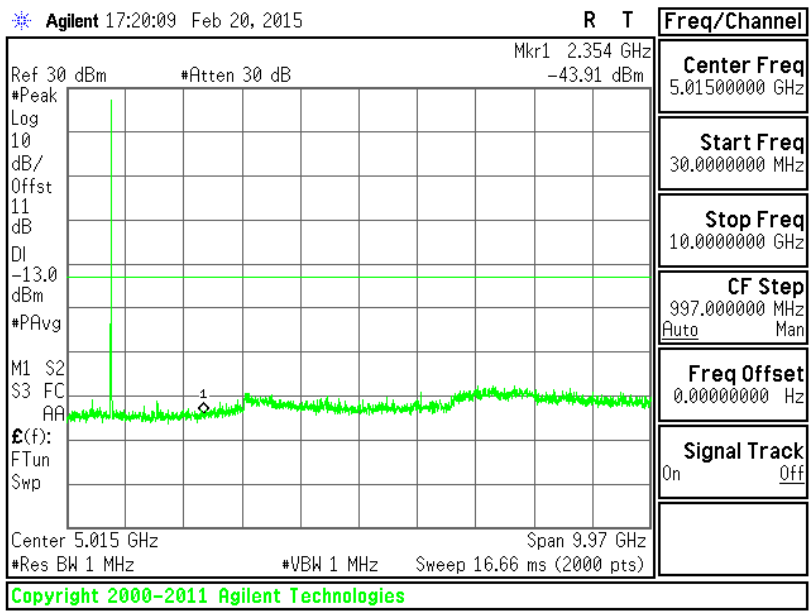
LOW, RB1-0, 30 TO 10000 MHz



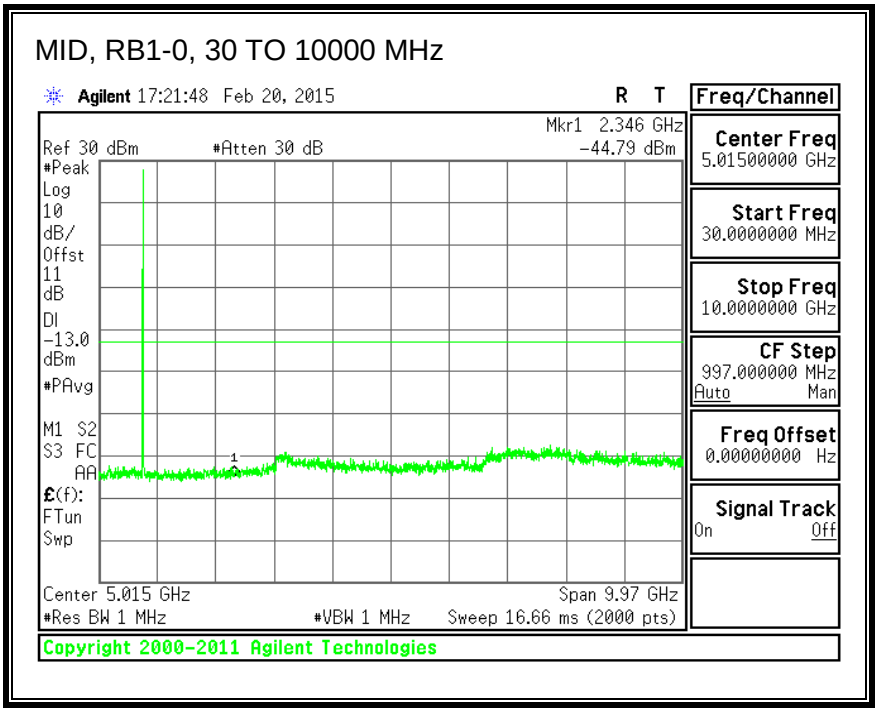
MID, RB1-0, 30 TO 10000 MHz



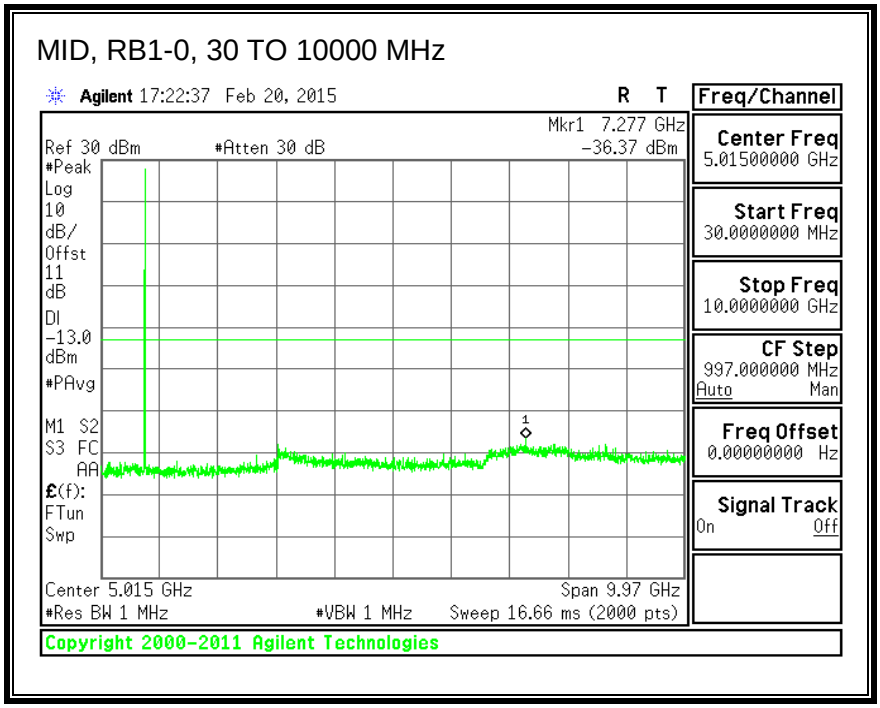
HIGH, RB1-0, 30 TO 10000 MHz



QPSK, (10.0 MHz BAND WIDTH)



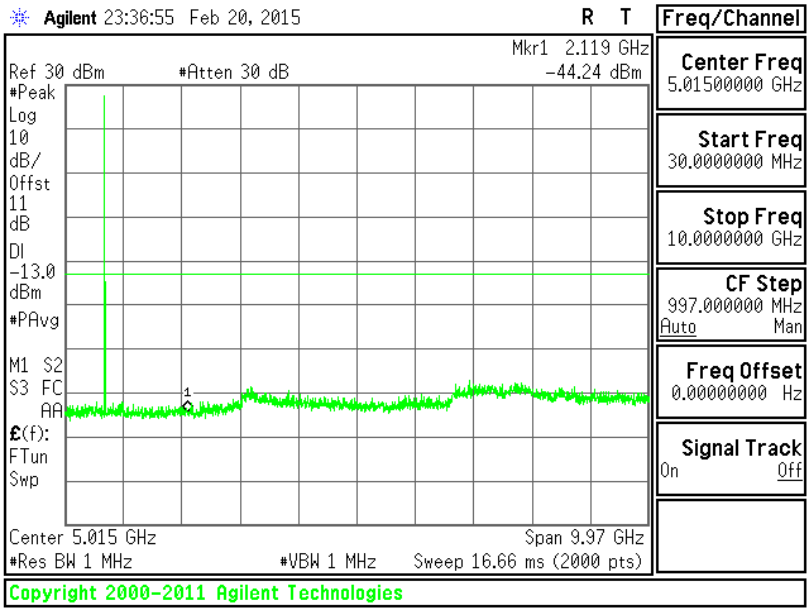
16QAM, (10.0 MHz BAND WIDTH)



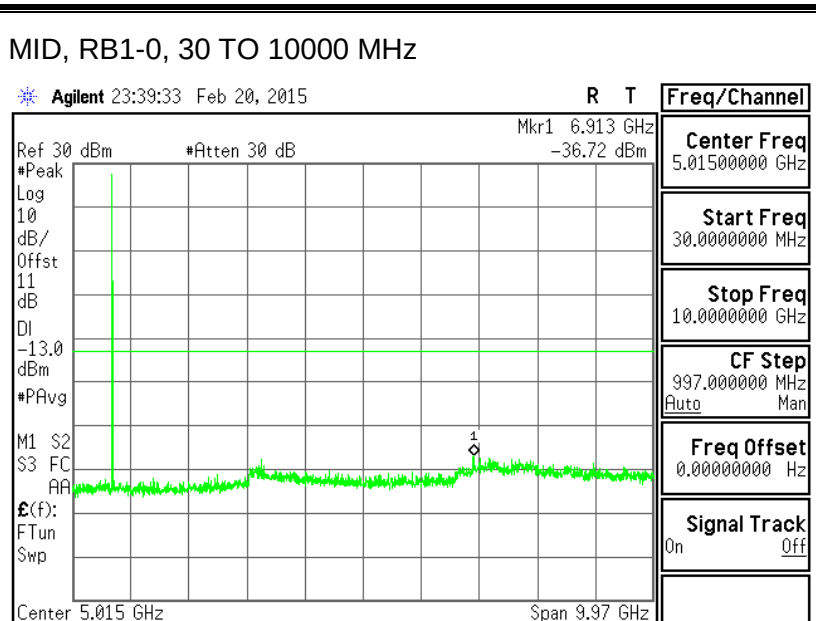
8.3.5. LTE BAND 17

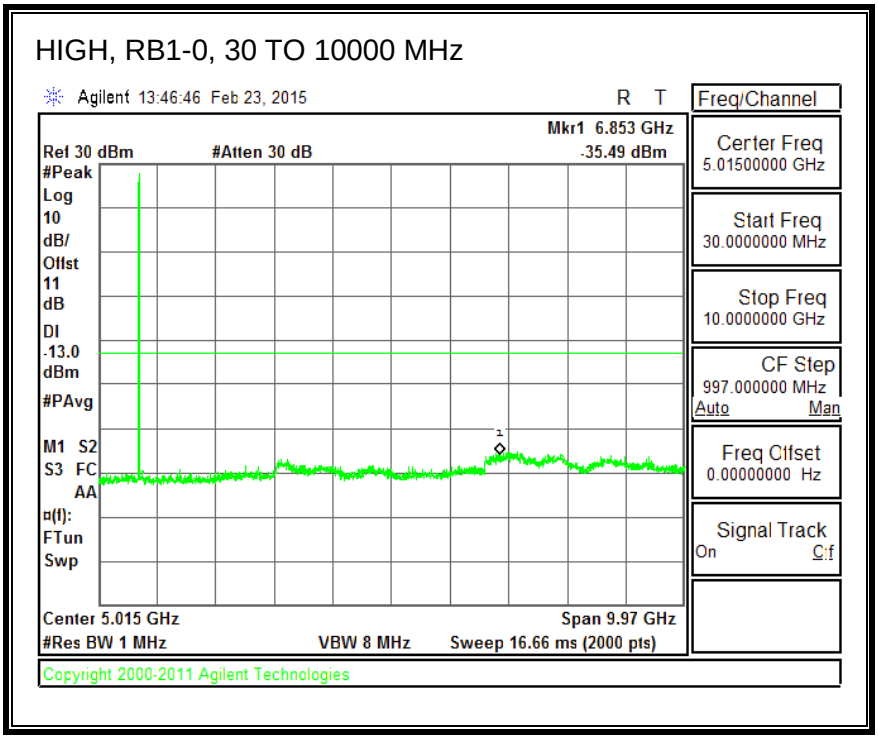
QPSK, (5.0 MHz BAND WIDTH)

LOW, RB1-0, 30 TO 10000 MHz

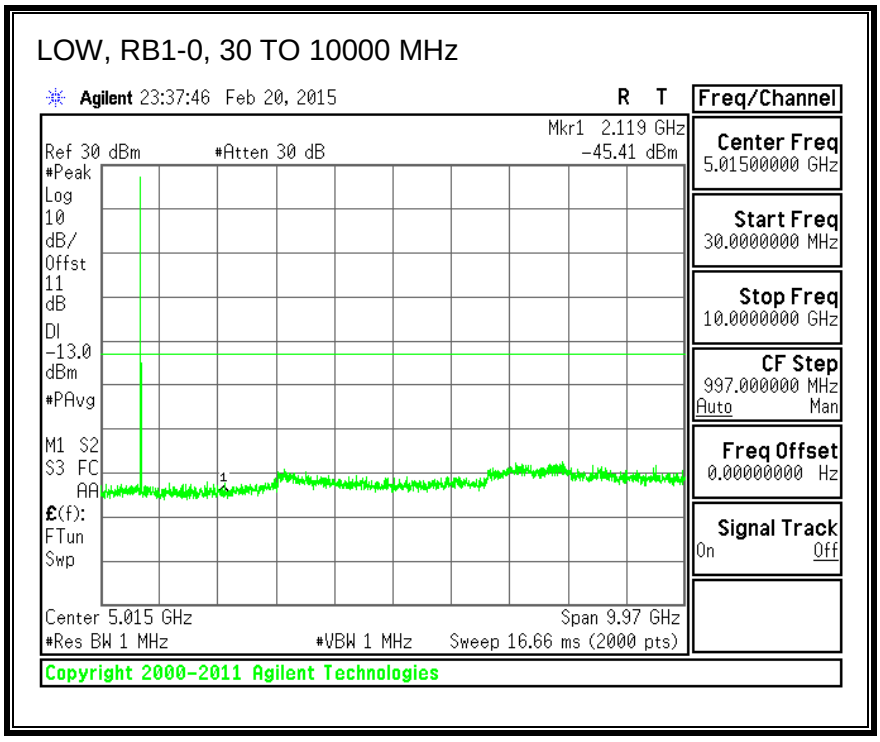


MID, RB1-0, 30 TO 10000 MHz

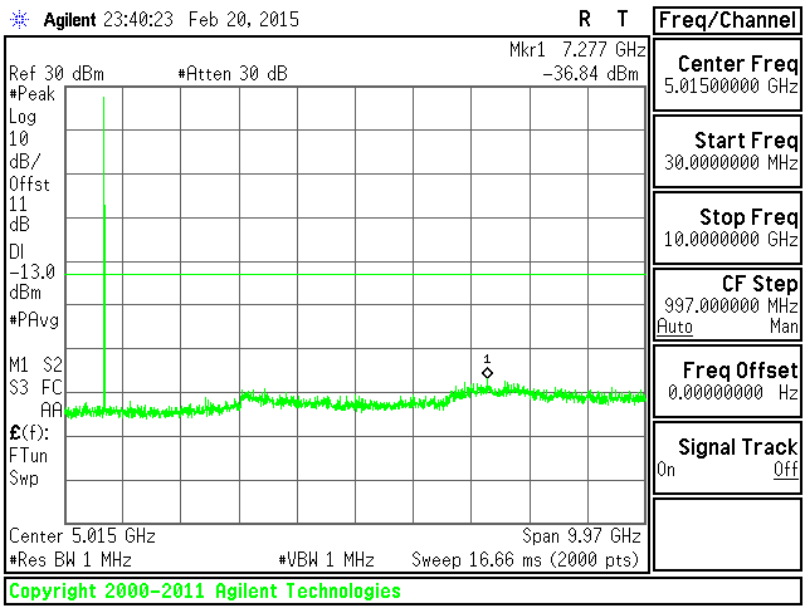




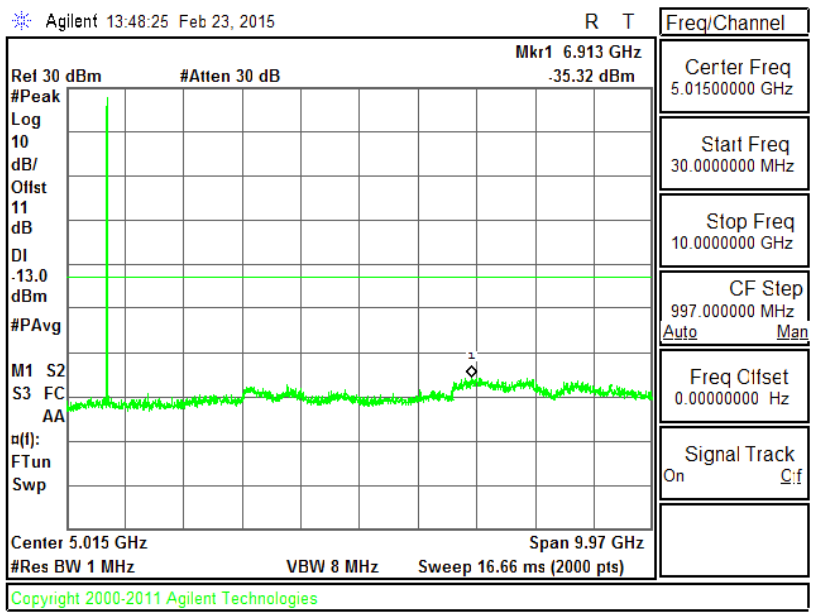
16QAM, (5.0 MHz BAND WIDTH)



MID, RB1-0, 30 TO 10000 MHz

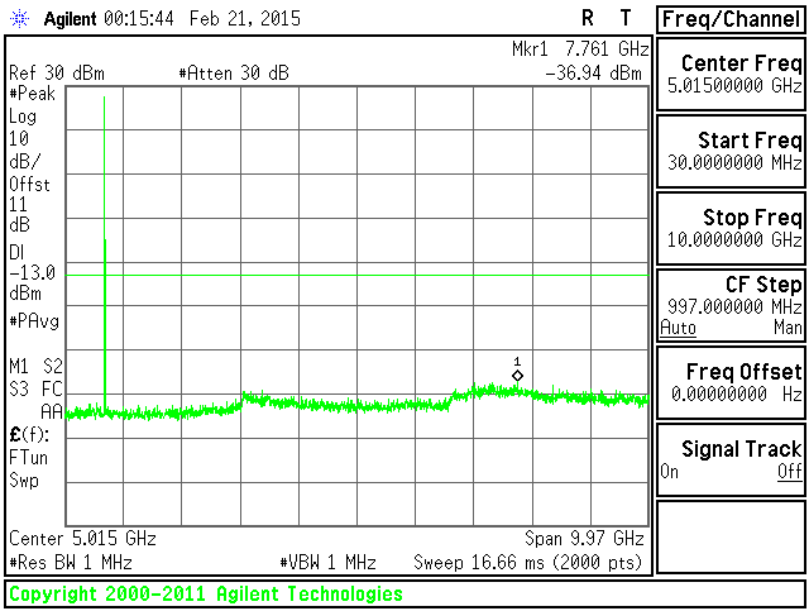


HIGH, RB1-0, 30 TO 10000 MHz

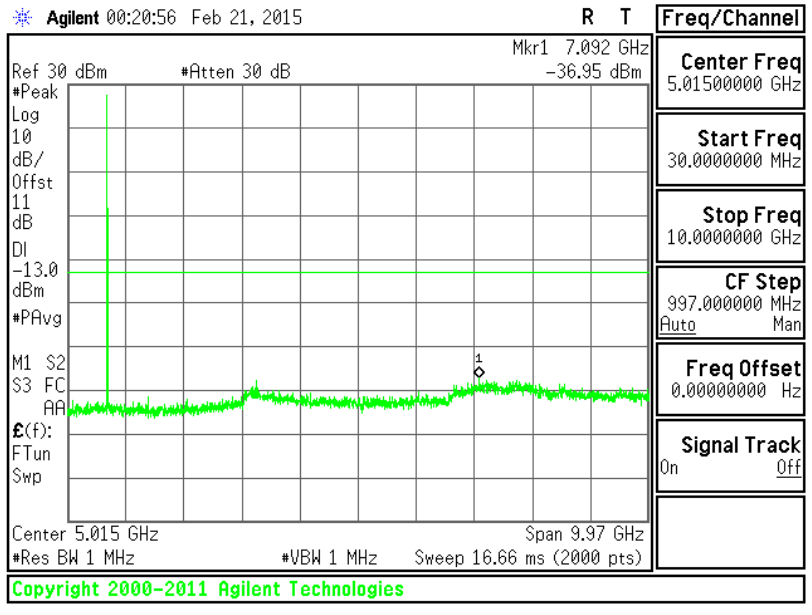


QPSK, (10.0 MHz BAND WIDTH)

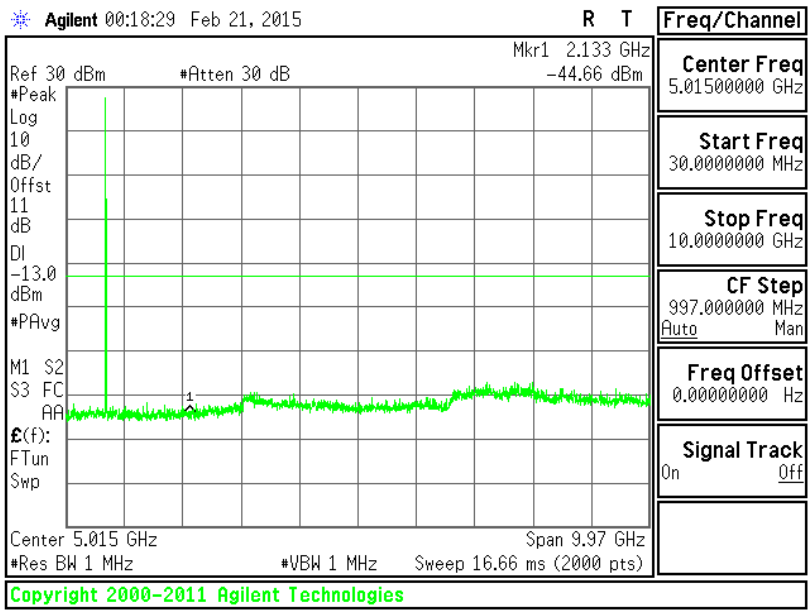
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

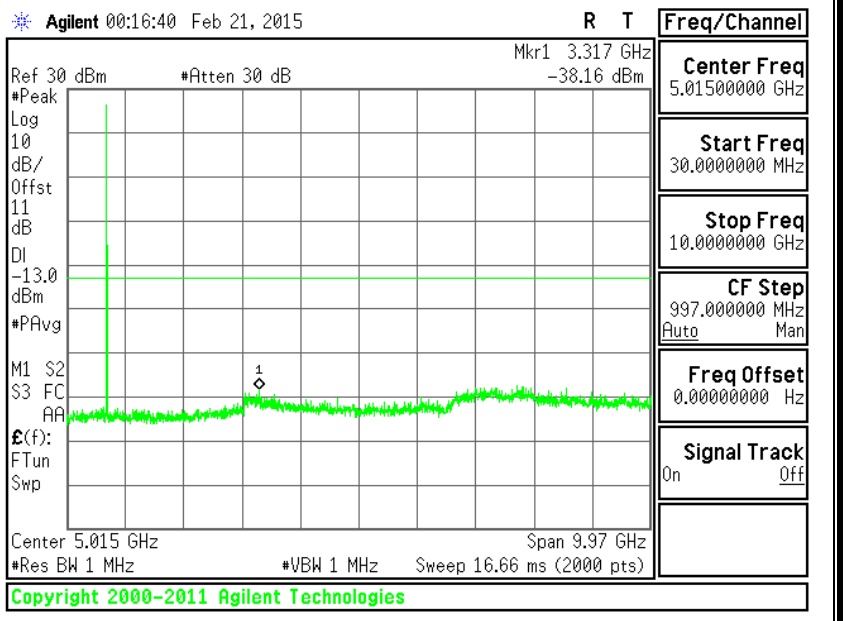


HIGH, RB1-0, 30 TO 10000 MHz

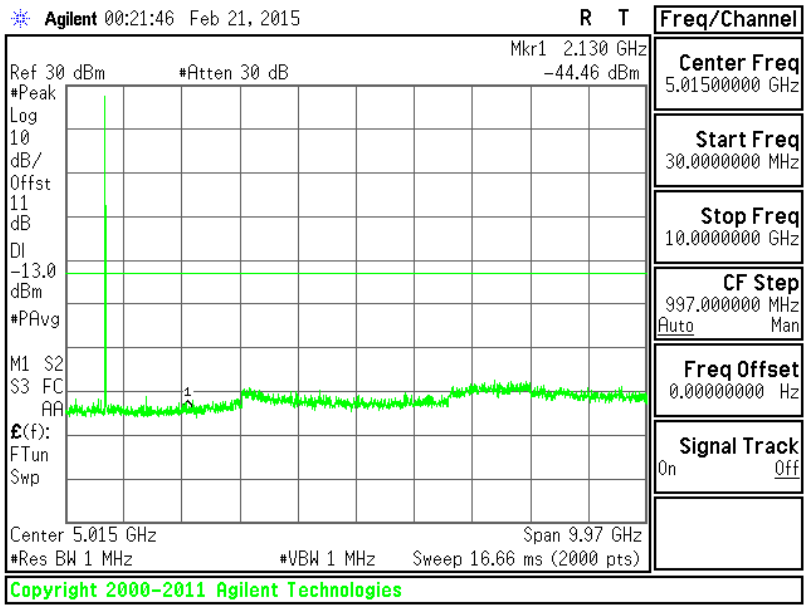


16QAM, (10.0 MHz BAND WIDTH)

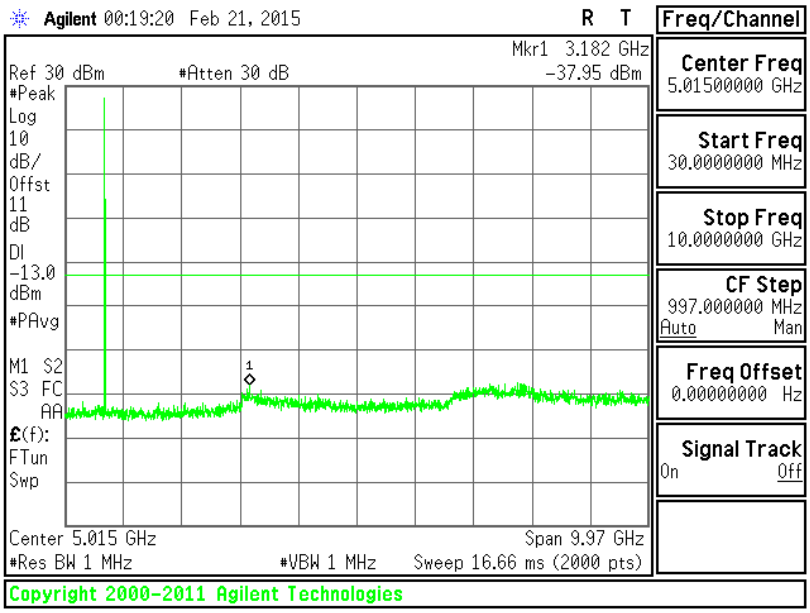
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz



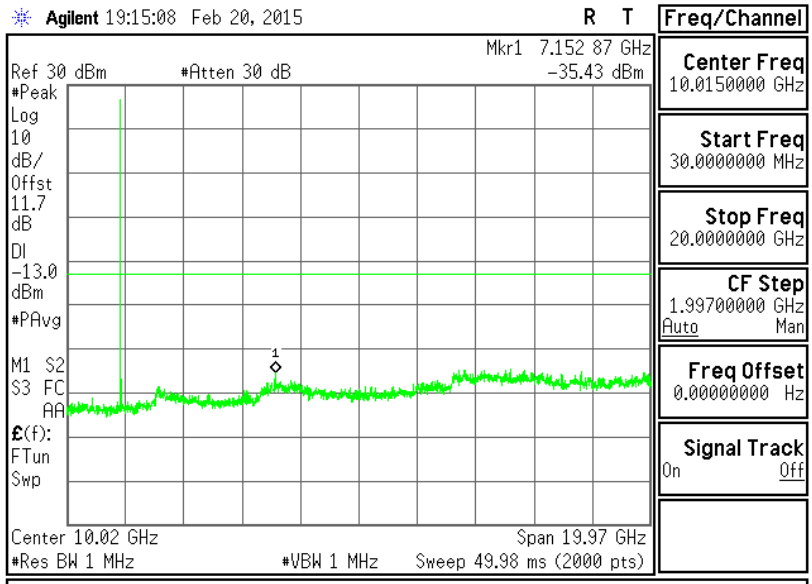
HIGH, RB1-0, 30 TO 10000 MHz



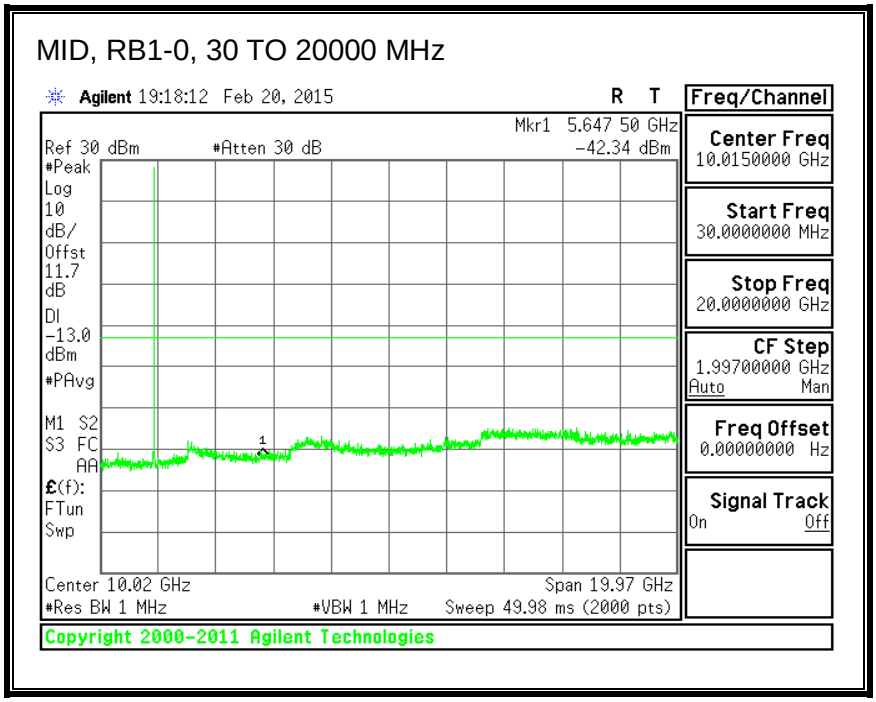
8.3.6. LTE BAND 25

QPSK, (1.4 MHz BAND WIDTH)

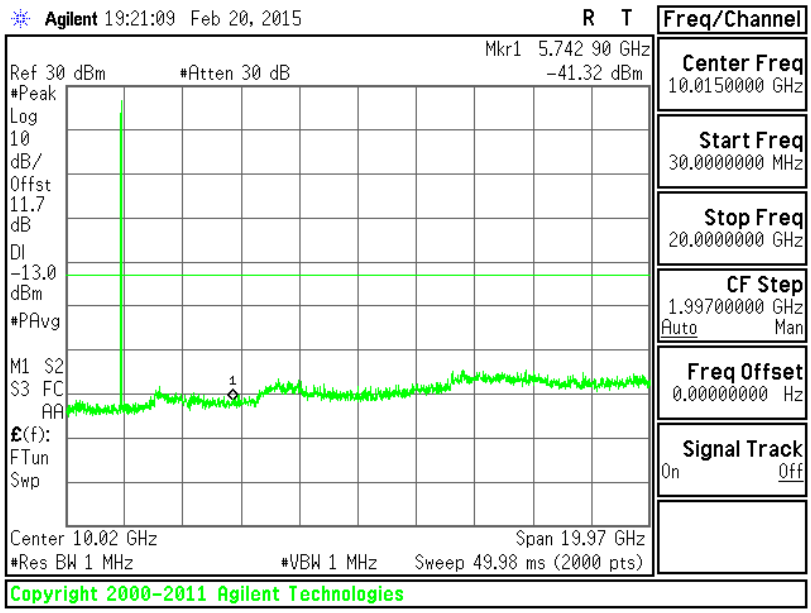
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

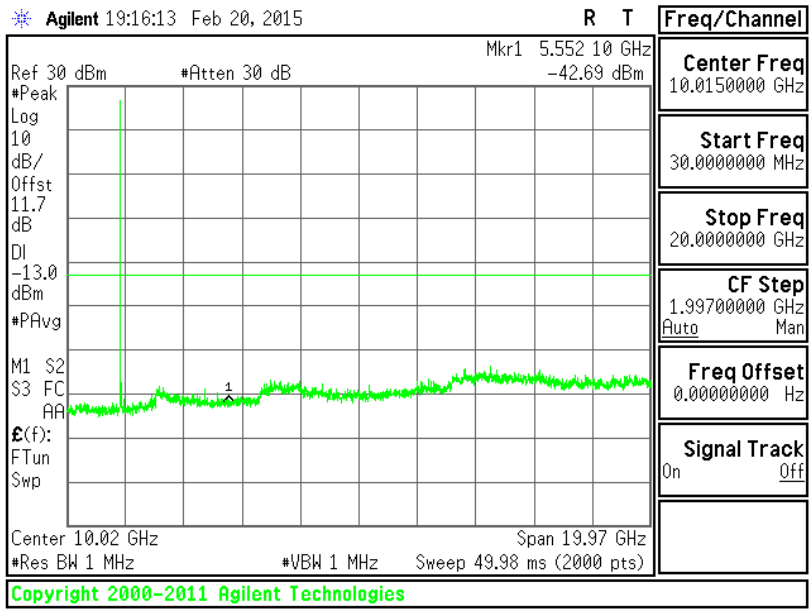


HIGH, RB1-0, 30 TO 20000 MHz

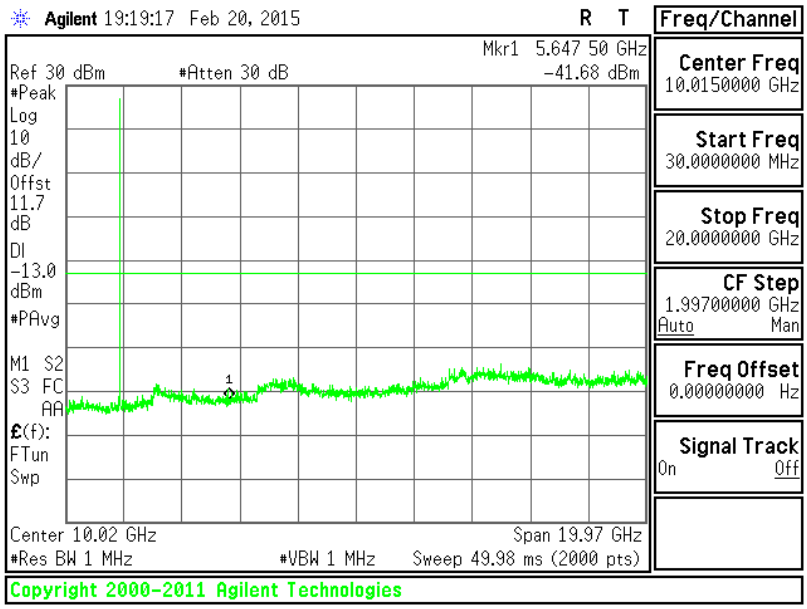


16QAM, (1.4 MHz BAND WIDTH)

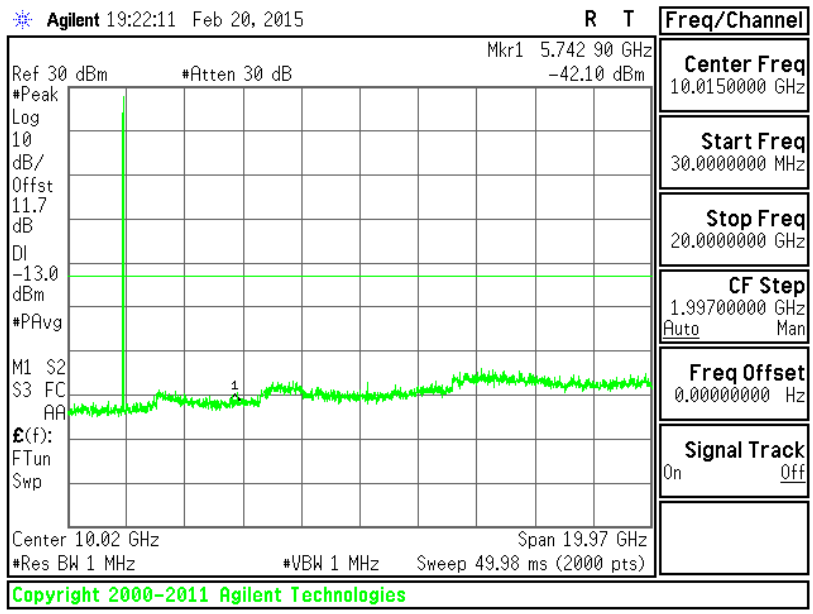
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

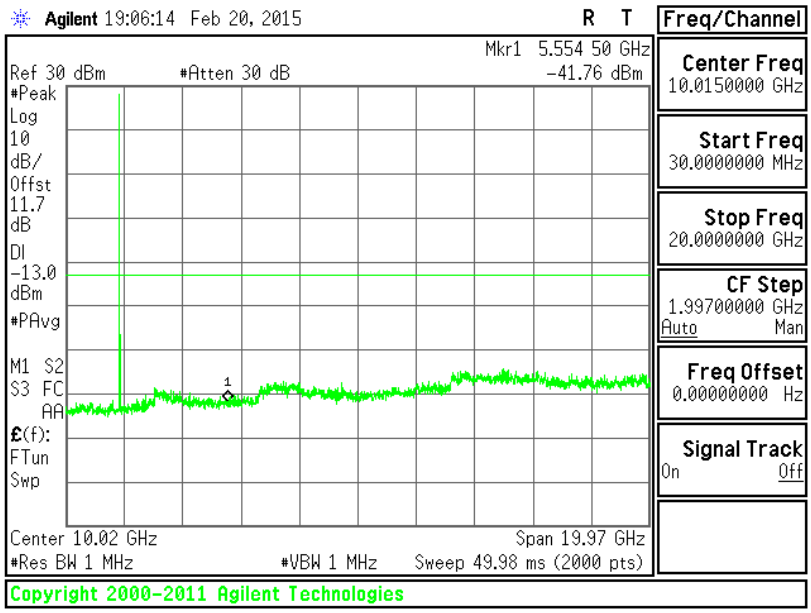


HIGH, RB1-0, 30 TO 20000 MHz

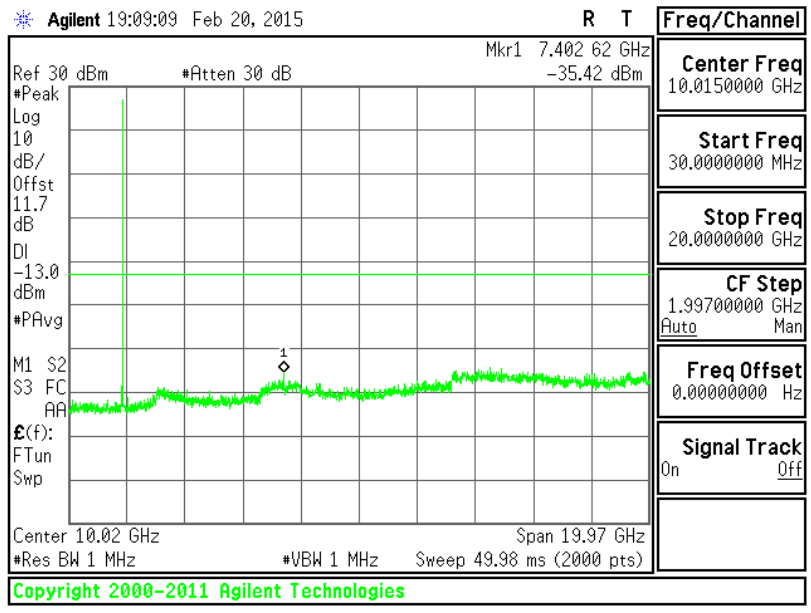


QPSK, (3.0 MHz BAND WIDTH)

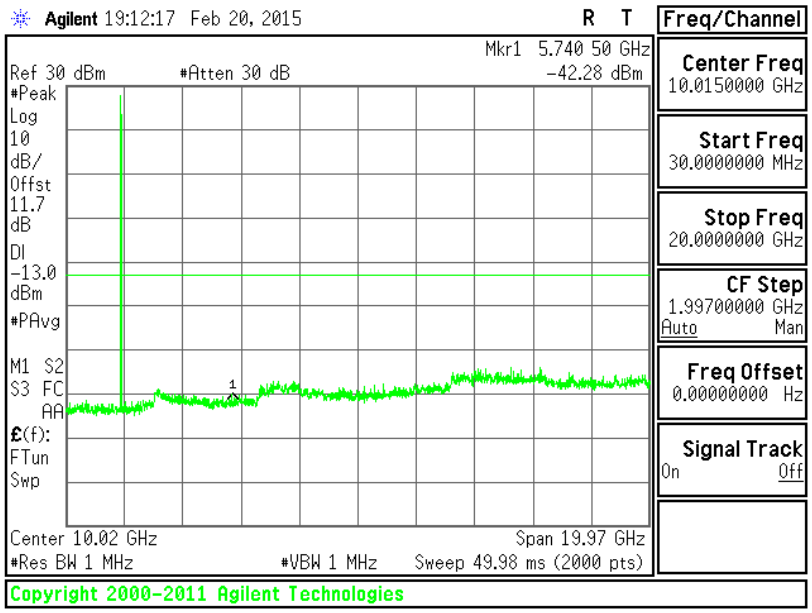
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

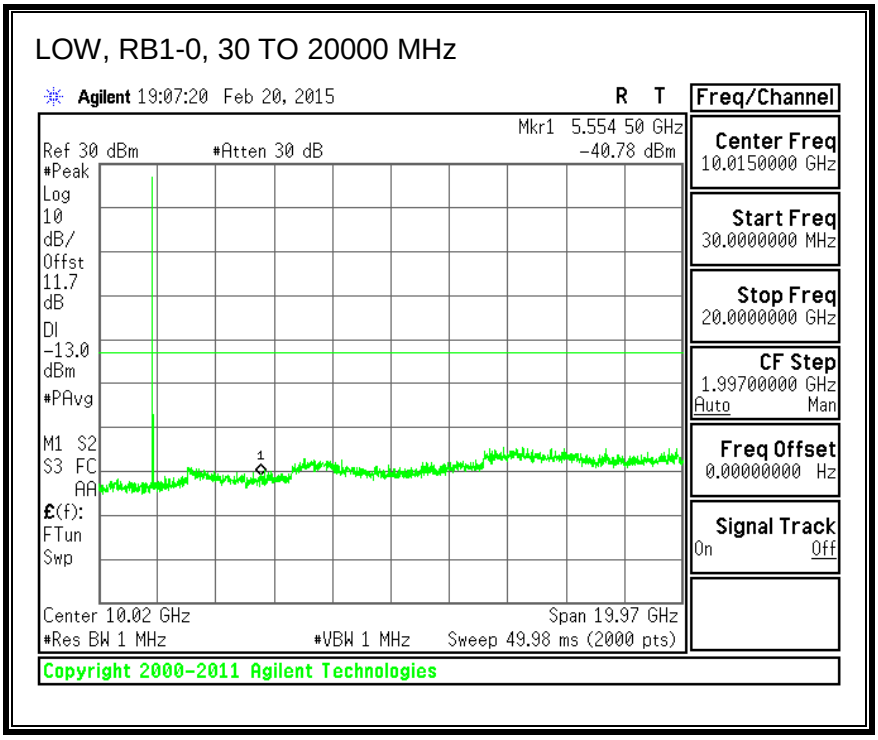


HIGH, RB1-0, 30 TO 20000 MHz

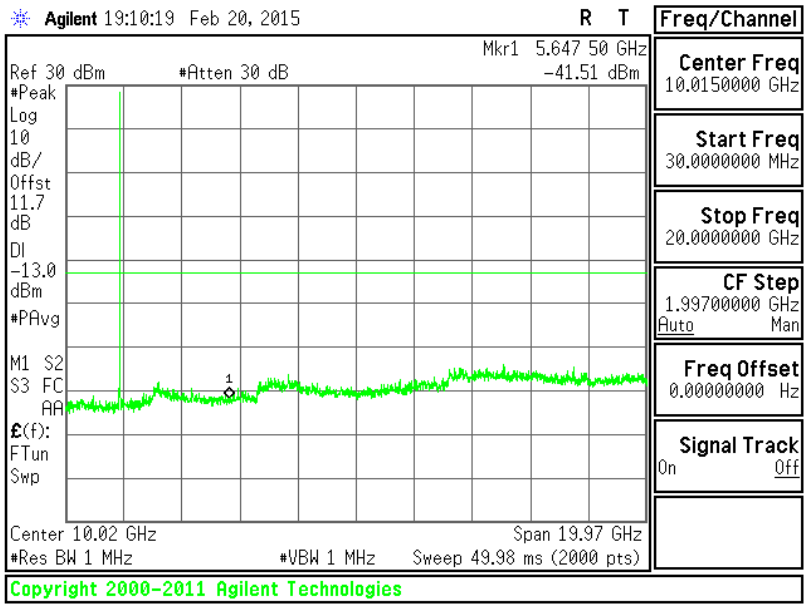


16QAM, (3.0 MHz BAND WIDTH)

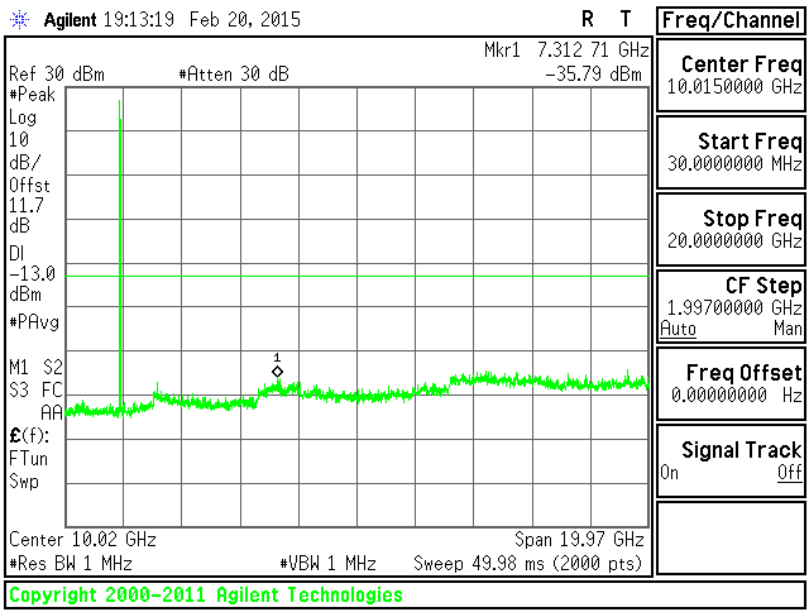
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

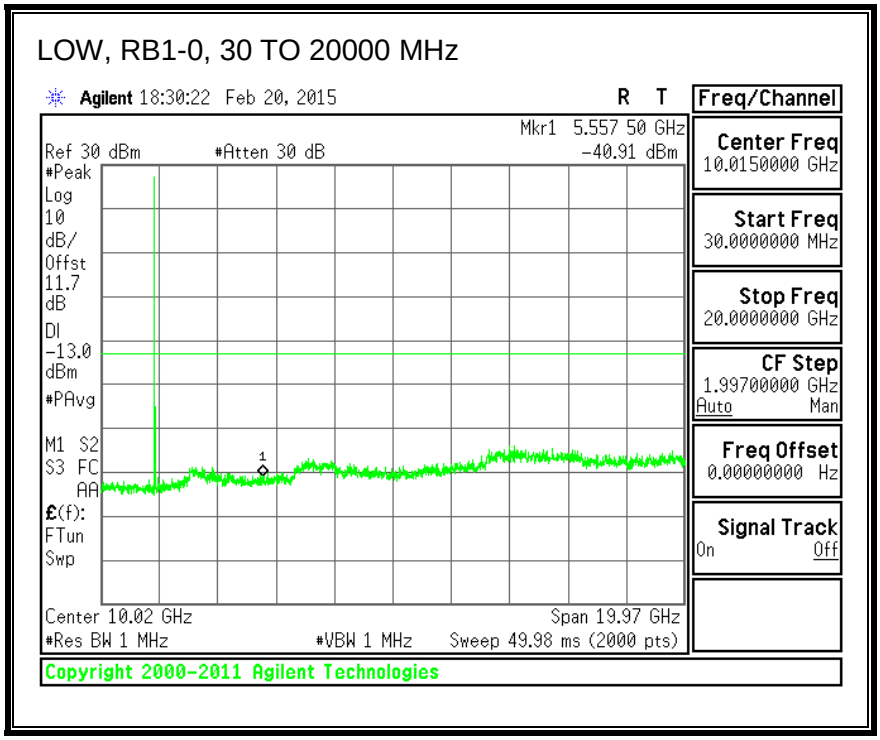


HIGH, RB1-0, 30 TO 20000 MHz

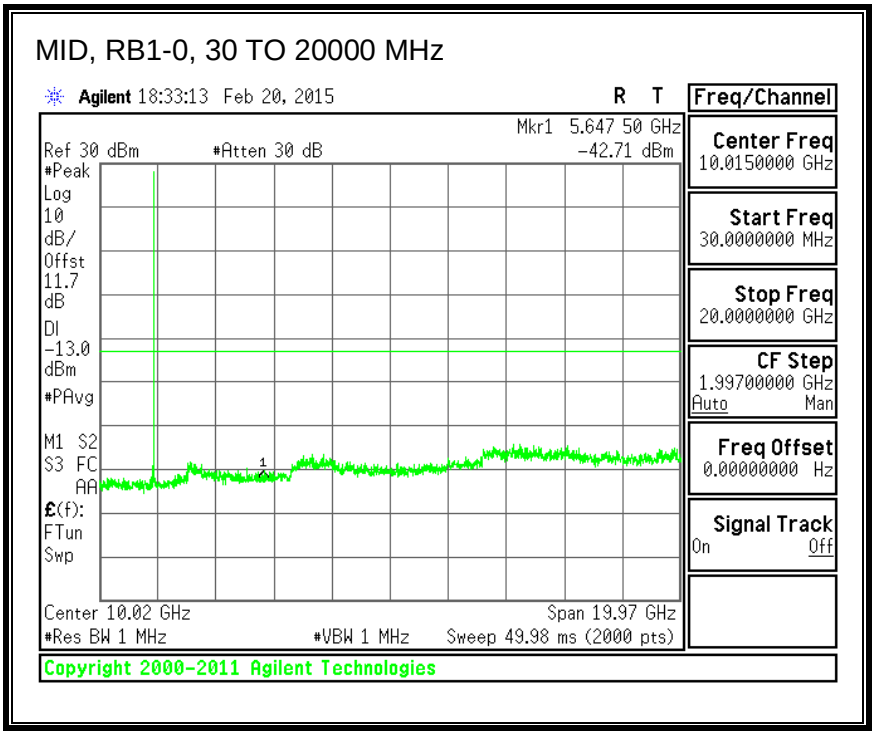


QPSK, (5.0 MHz BAND WIDTH)

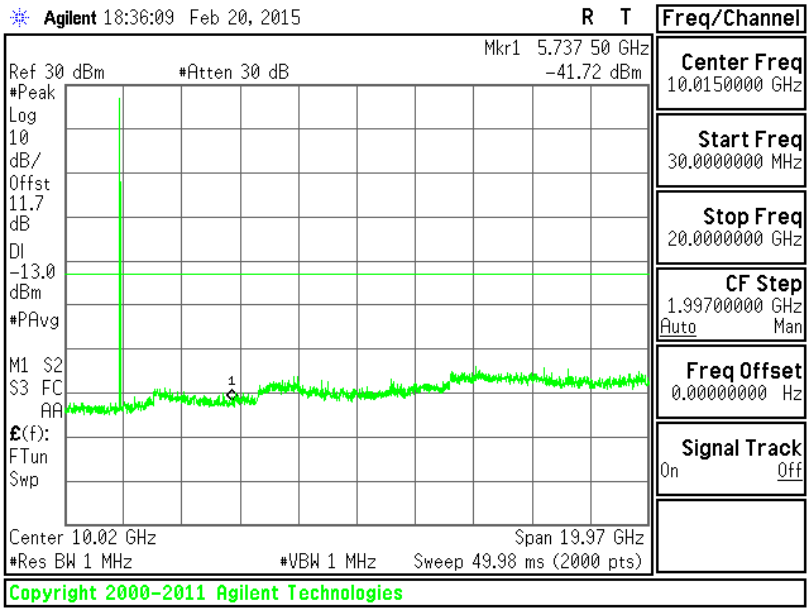
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

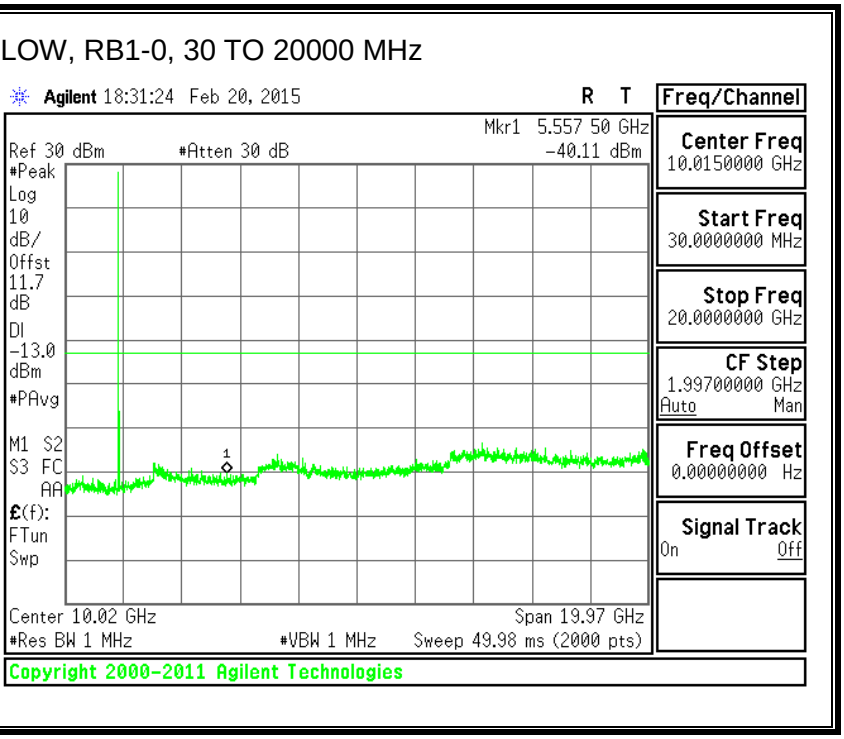


HIGH, RB1-0, 30 TO 20000 MHz

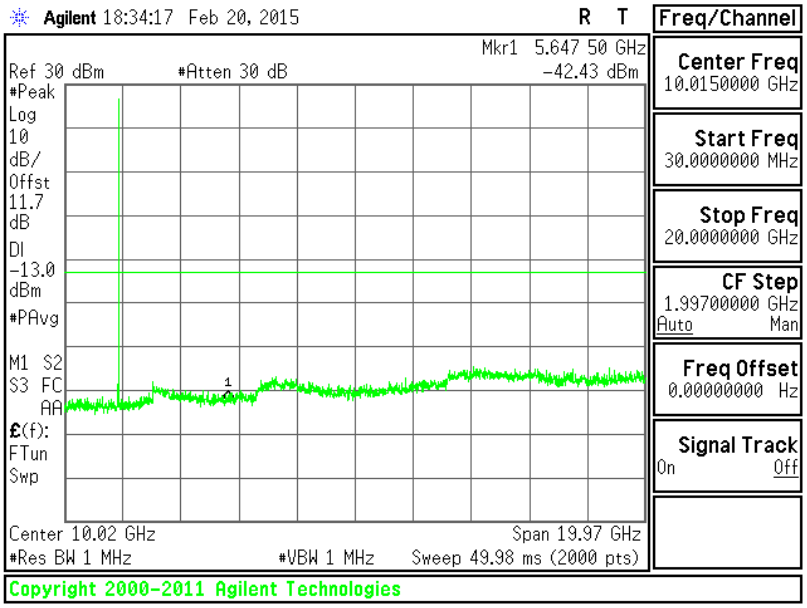


16QAM, (5.0 MHz BAND WIDTH)

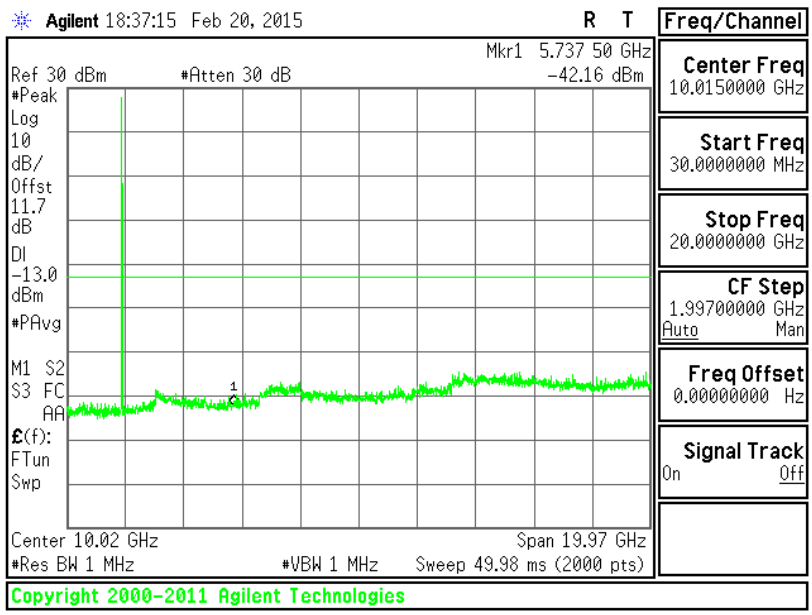
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

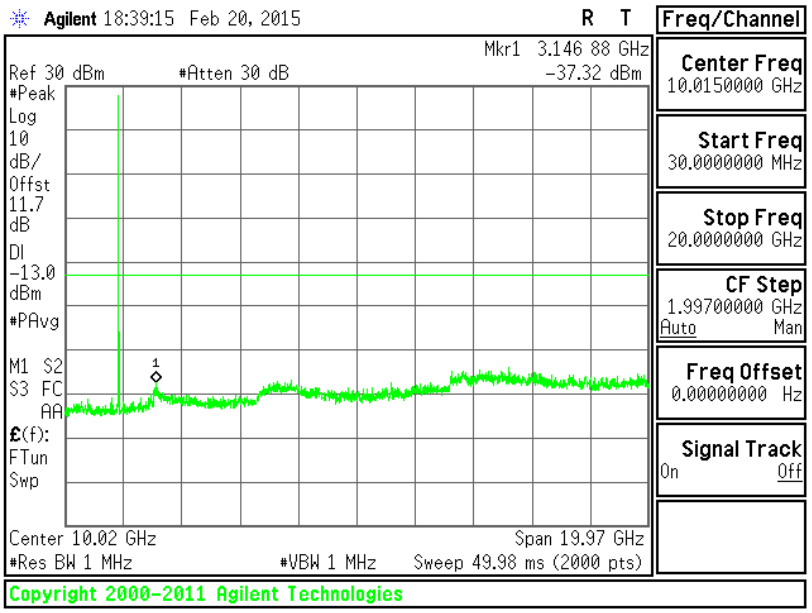


HIGH, RB1-0, 30 TO 20000 MHz

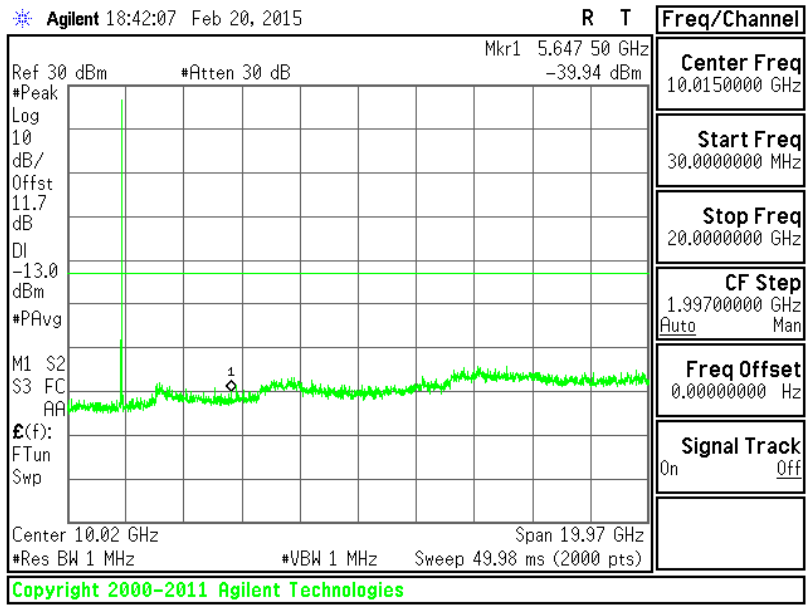


QPSK, (10.0 MHz BAND WIDTH)

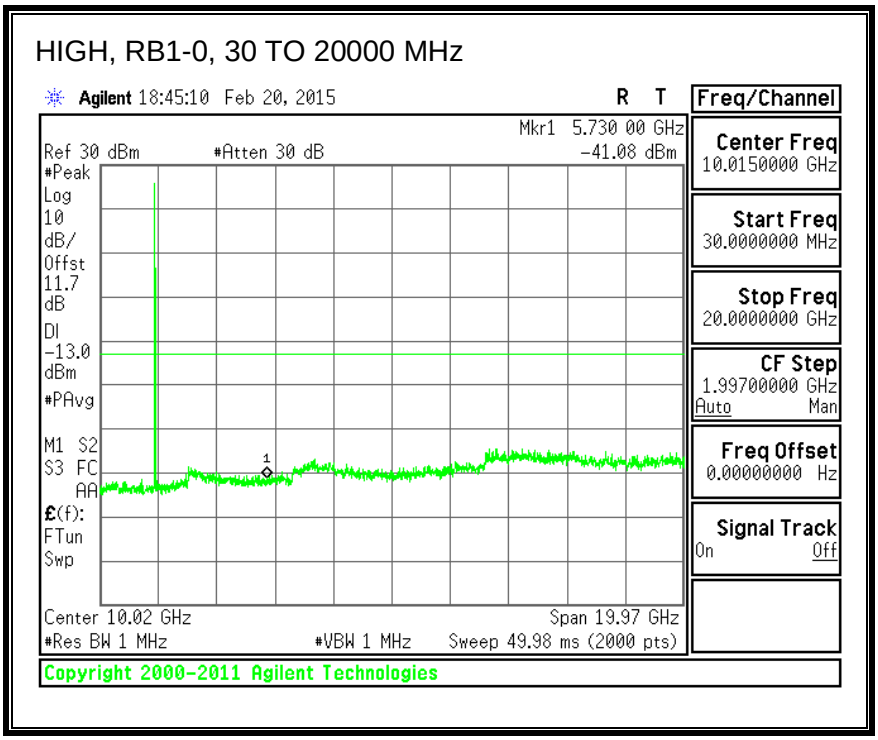
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

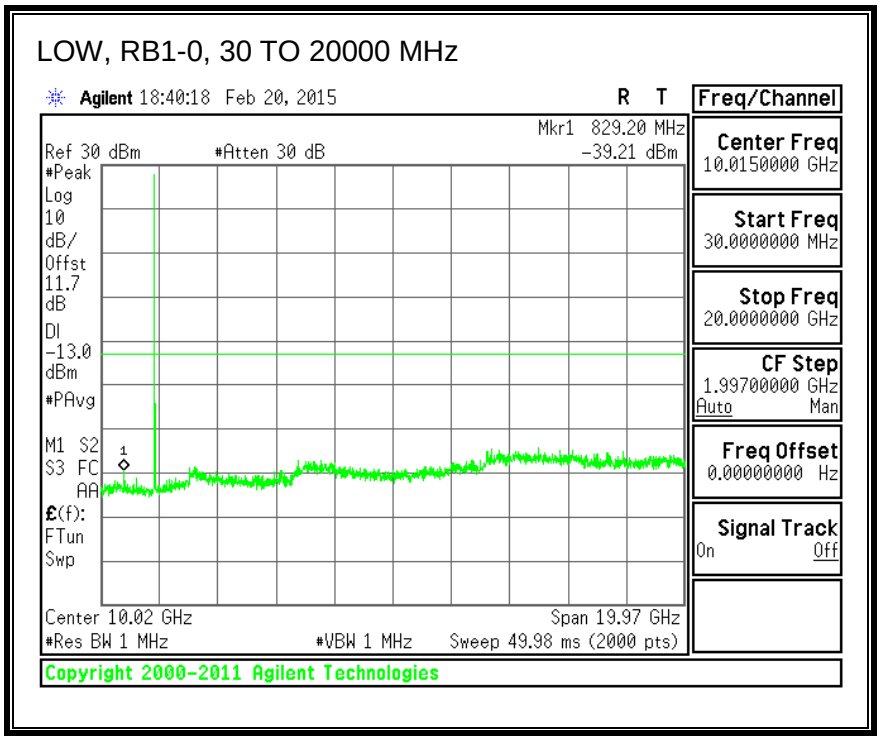


HIGH, RB1-0, 30 TO 20000 MHz

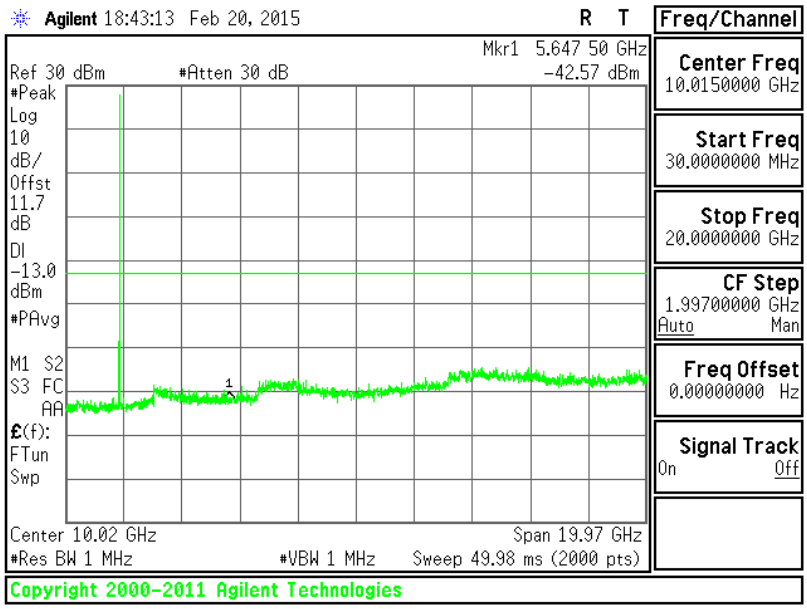


16QAM, (10.0 MHz BAND WIDTH)

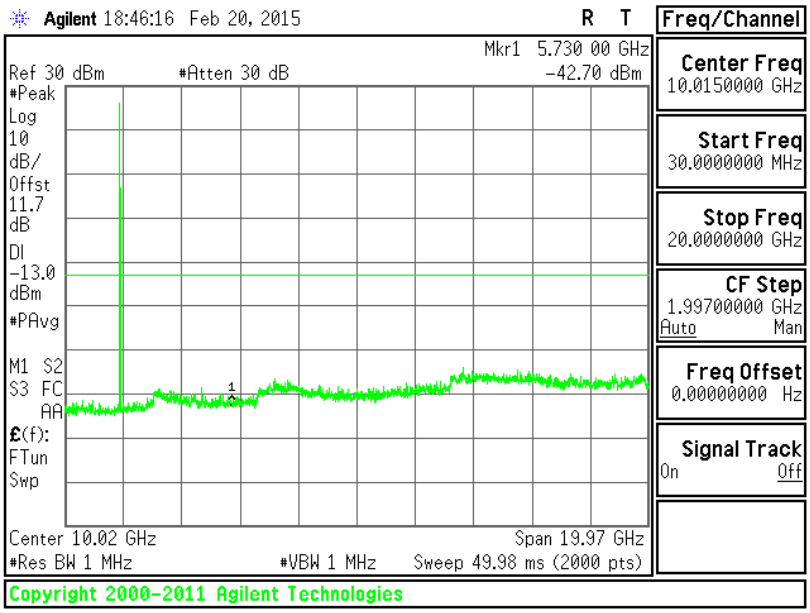
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

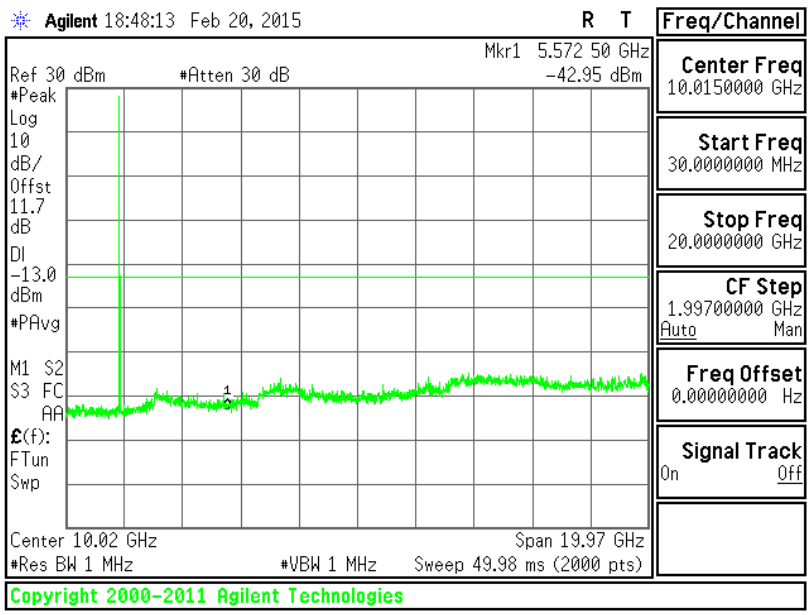


HIGH, RB1-0, 30 TO 20000 MHz

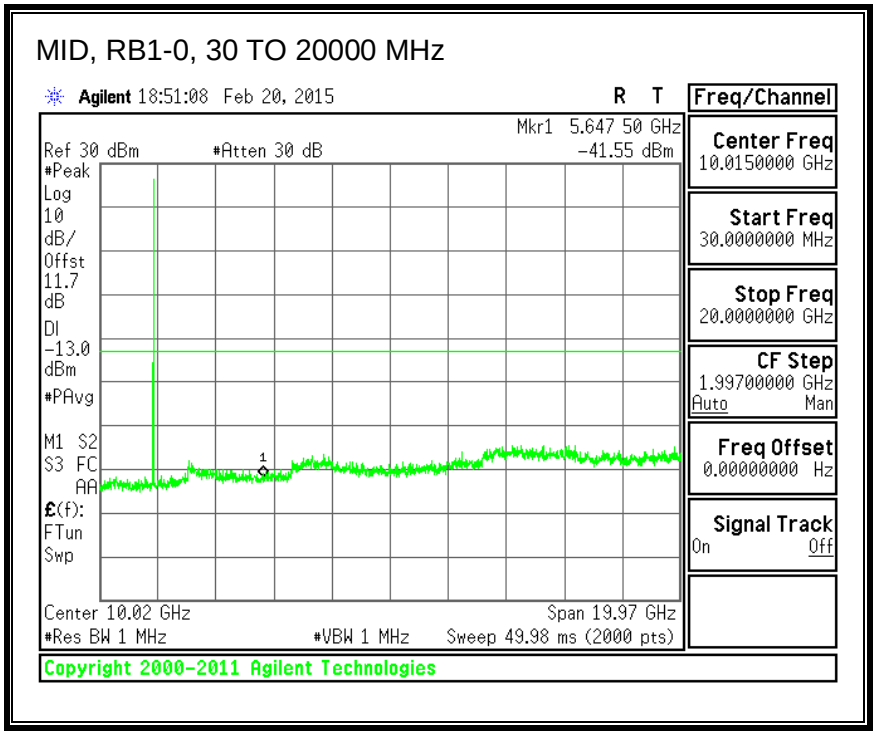


QPSK, (15.0 MHz BAND WIDTH)

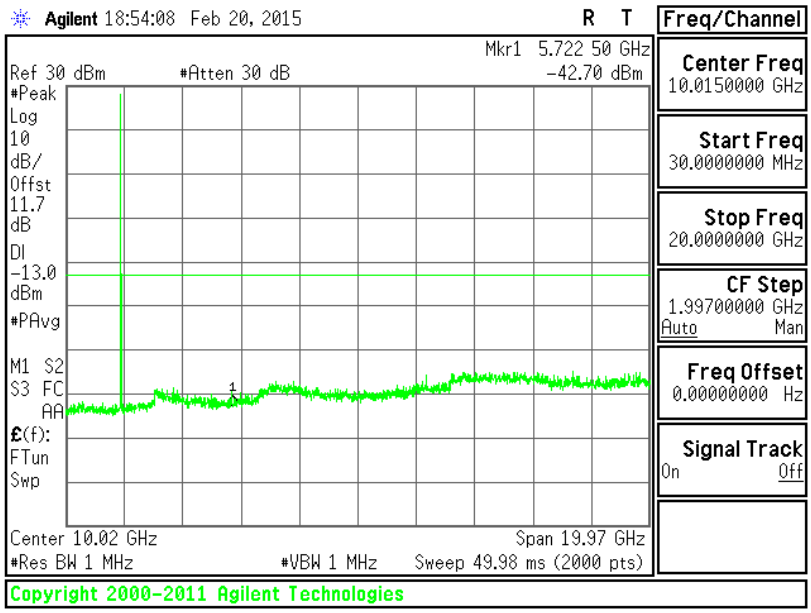
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

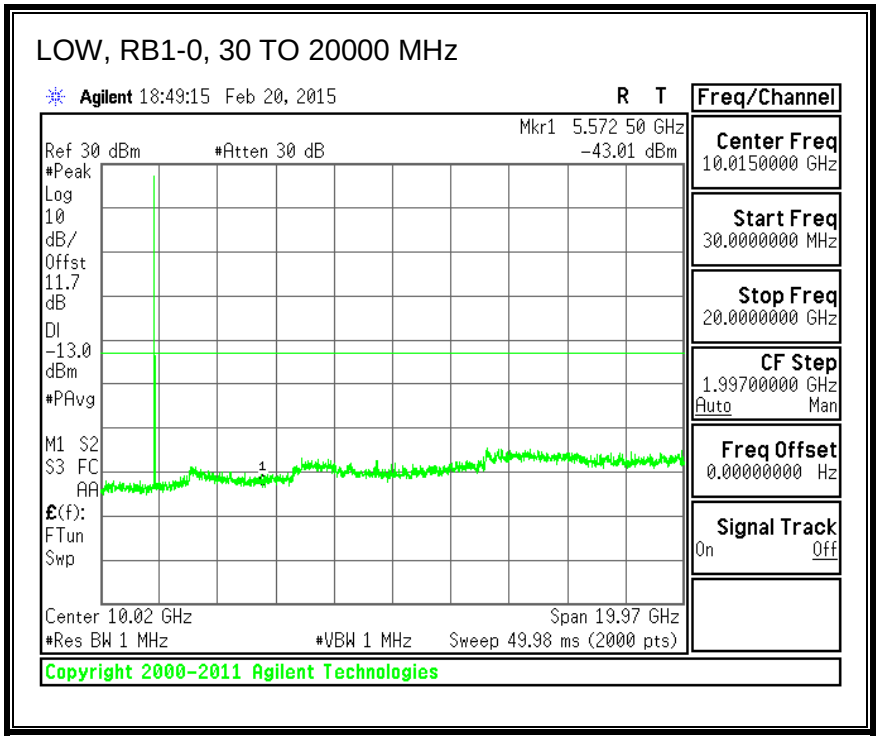


HIGH, RB1-0, 30 TO 20000 MHz

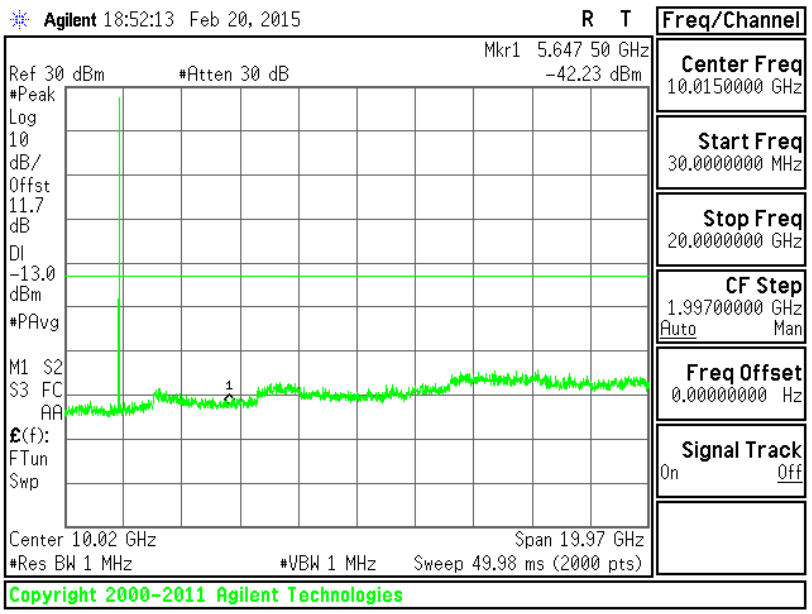


16QAM, (15.0 MHz BAND WIDTH)

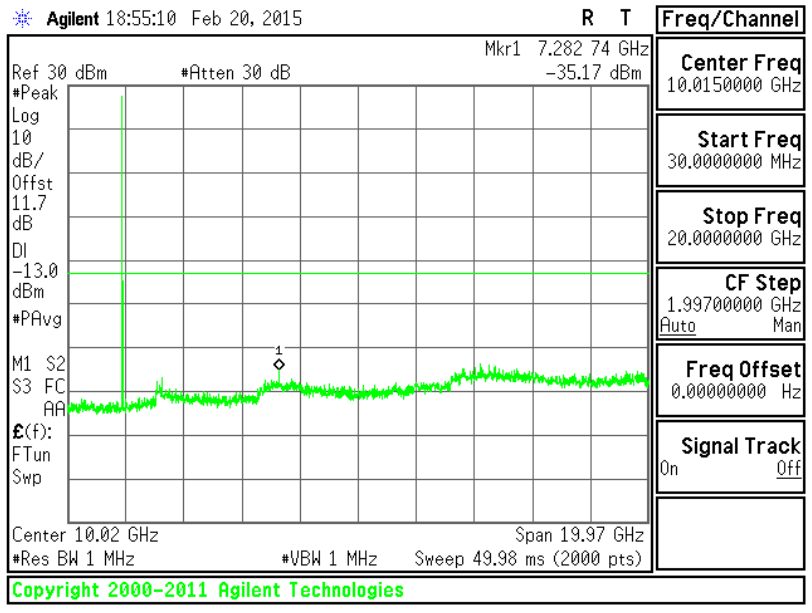
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

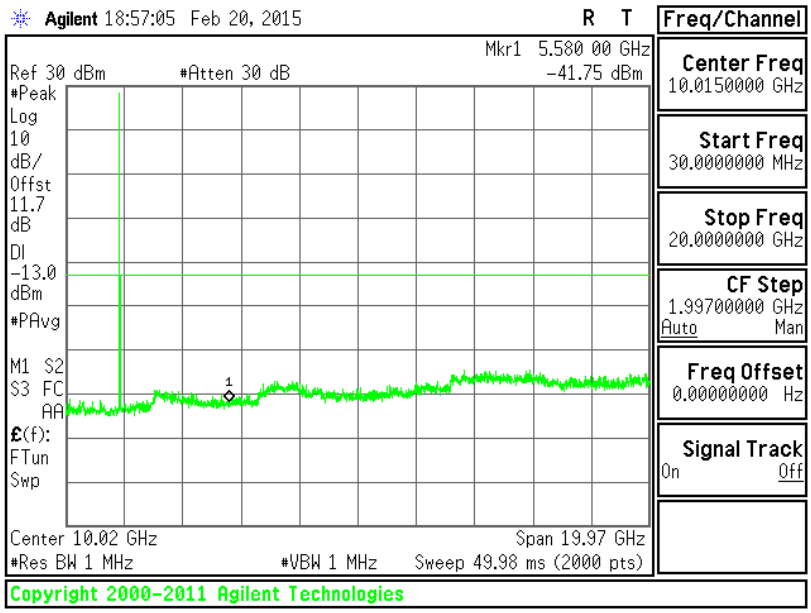


HGIH, RB1-0, 30 TO 20000 MHz

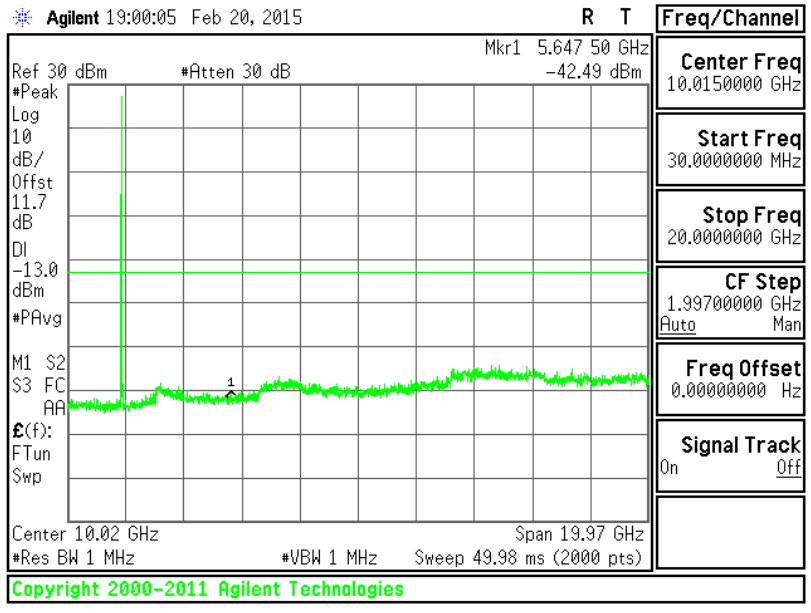


QPSK, (20.0 MHz BAND WIDTH)

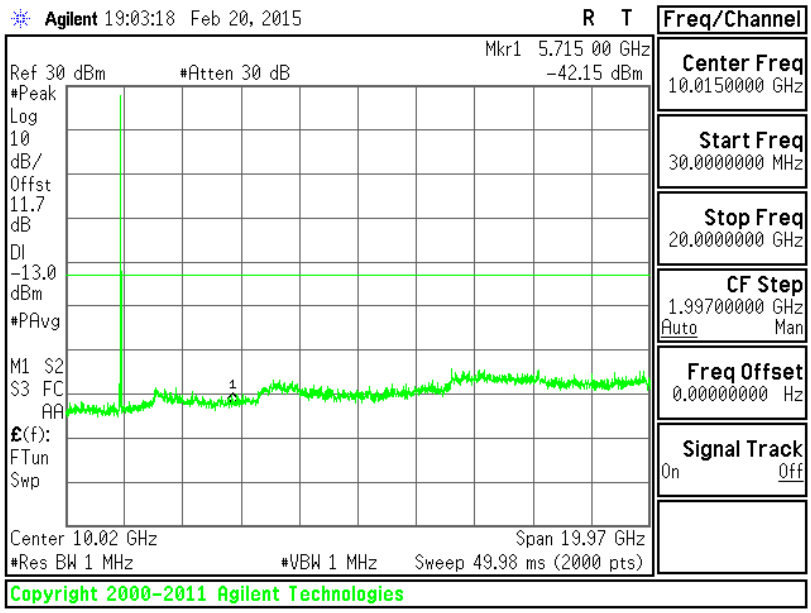
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz

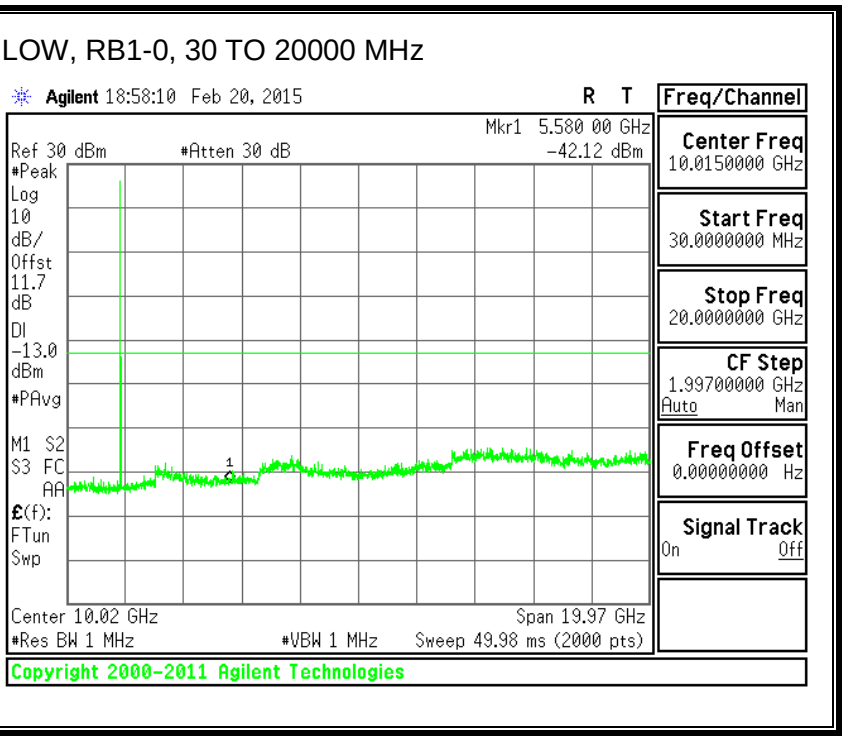


HIGH, RB1-0, 30 TO 20000 MHz

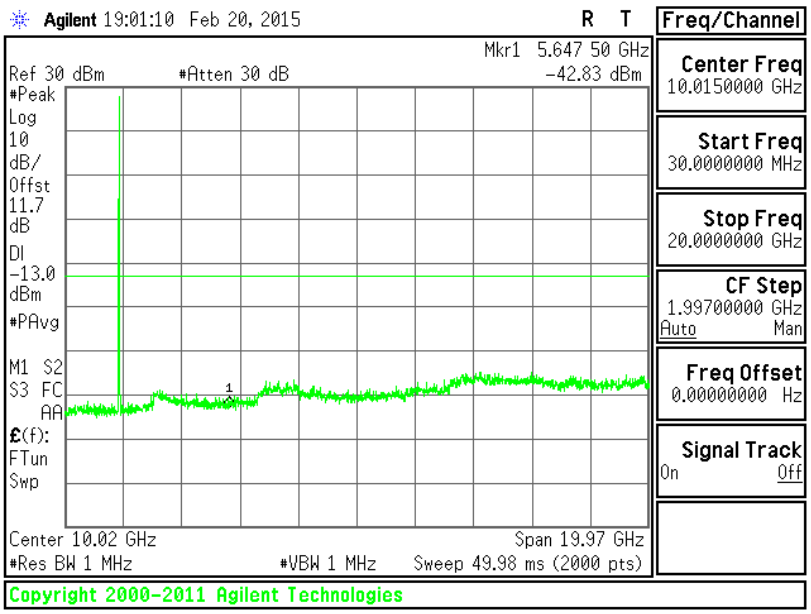


16QAM, (20.0 MHz BAND WIDTH)

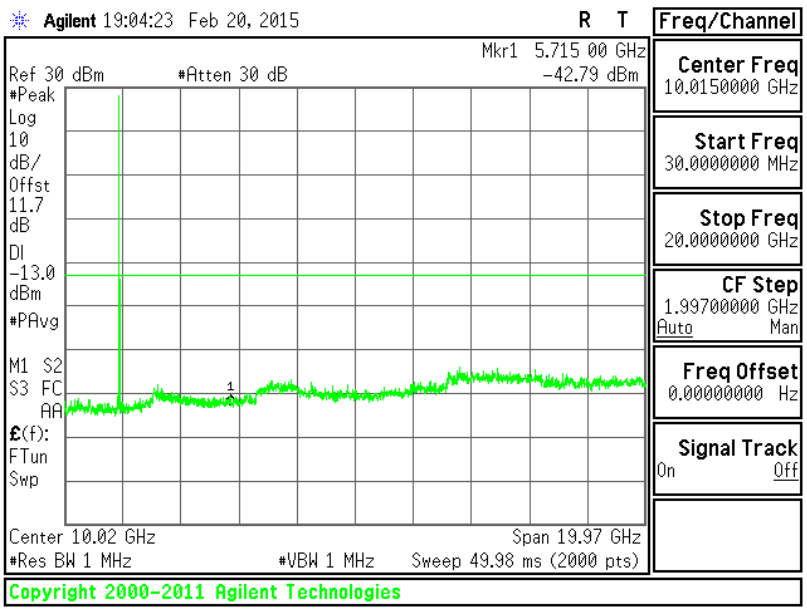
LOW, RB1-0, 30 TO 20000 MHz



MID, RB1-0, 30 TO 20000 MHz



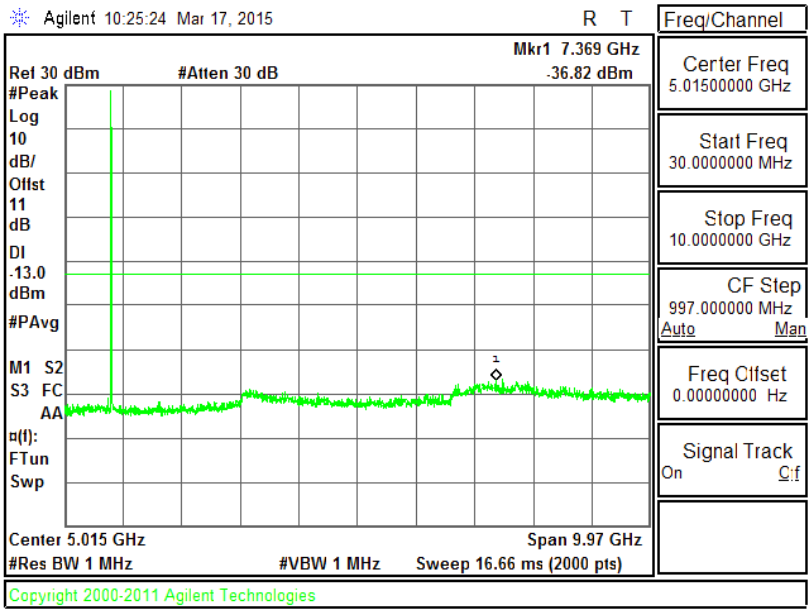
HIGH, RB1-0, 30 TO 20000 MHz



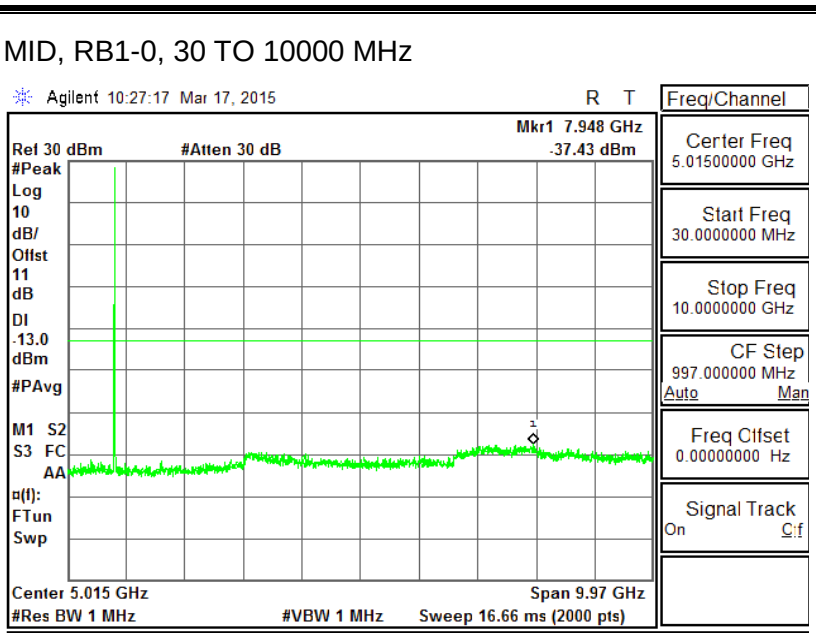
8.3.7. LTE BAND 26

QPSK, (1.4 MHz BAND WIDTH)

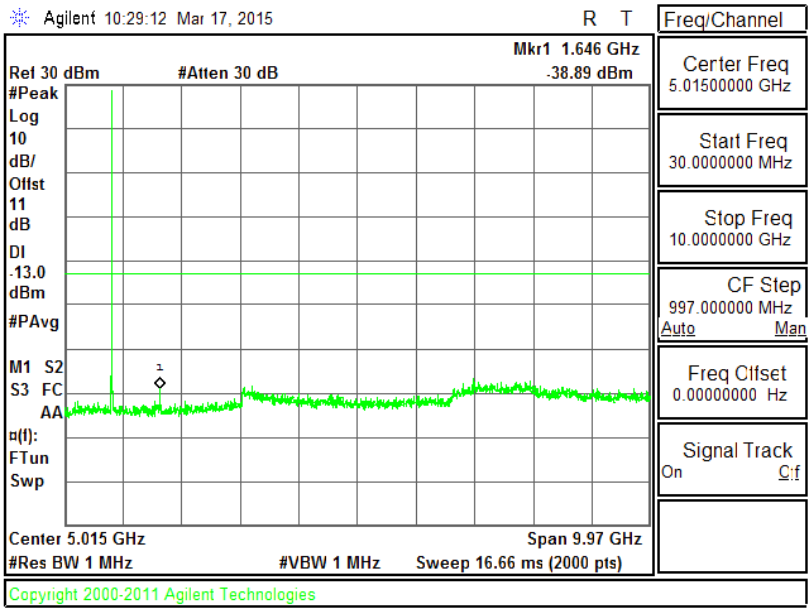
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

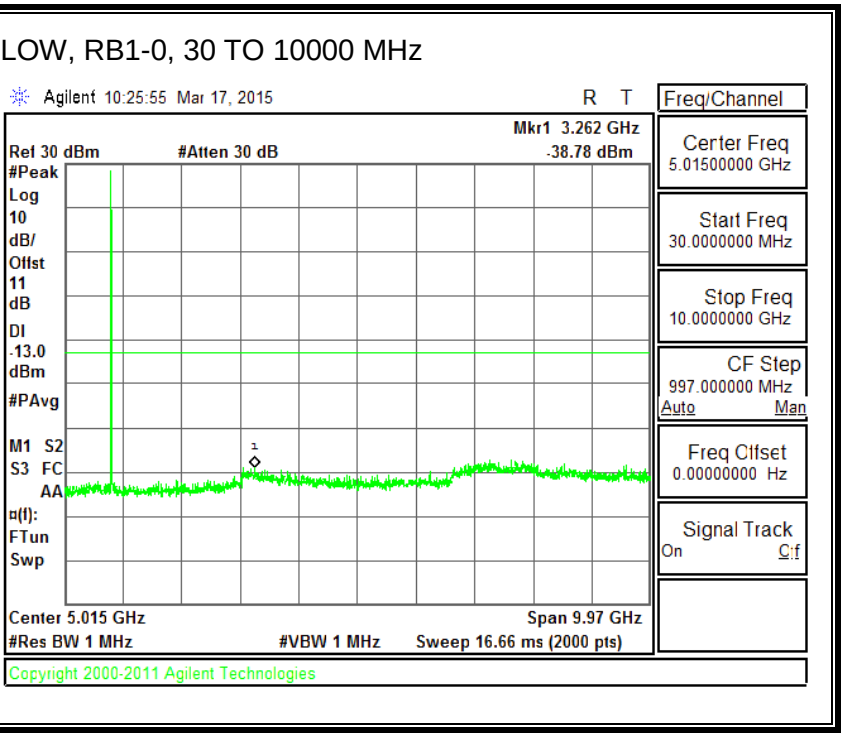


HIGH, RB1-0, 30 TO 10000 MHz

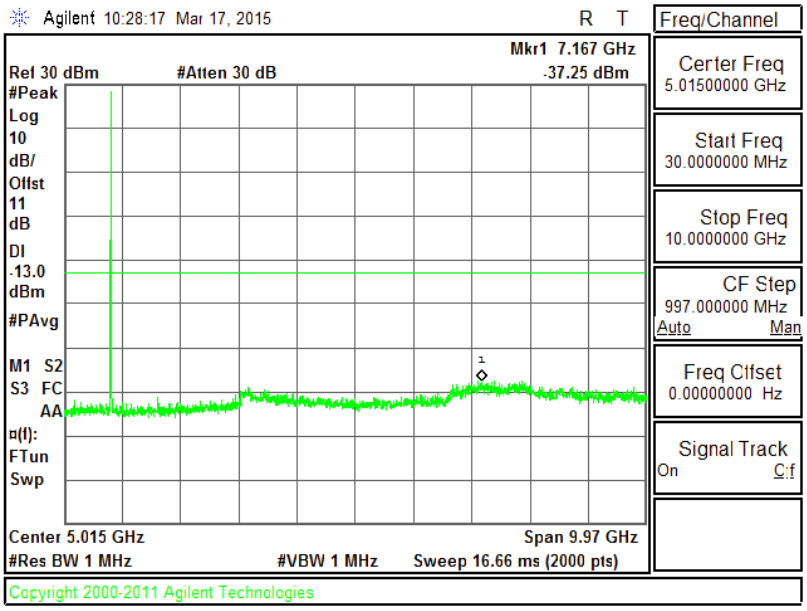


16QAM, (1.4 MHz BAND WIDTH)

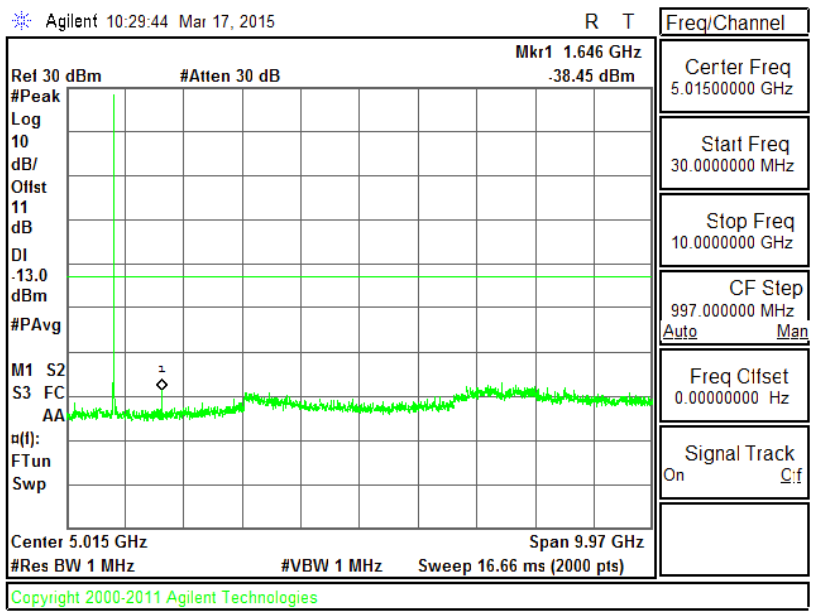
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

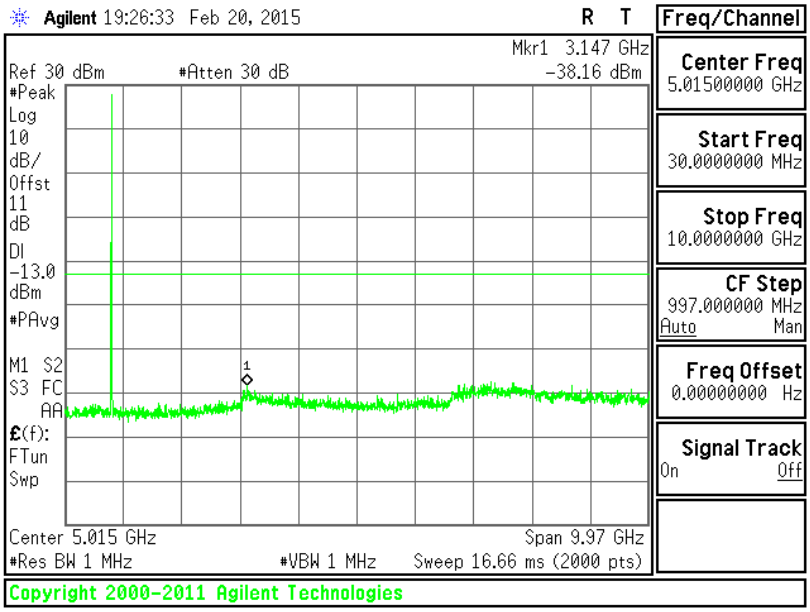


HIGH, RB1-0, 30 TO 10000 MHz

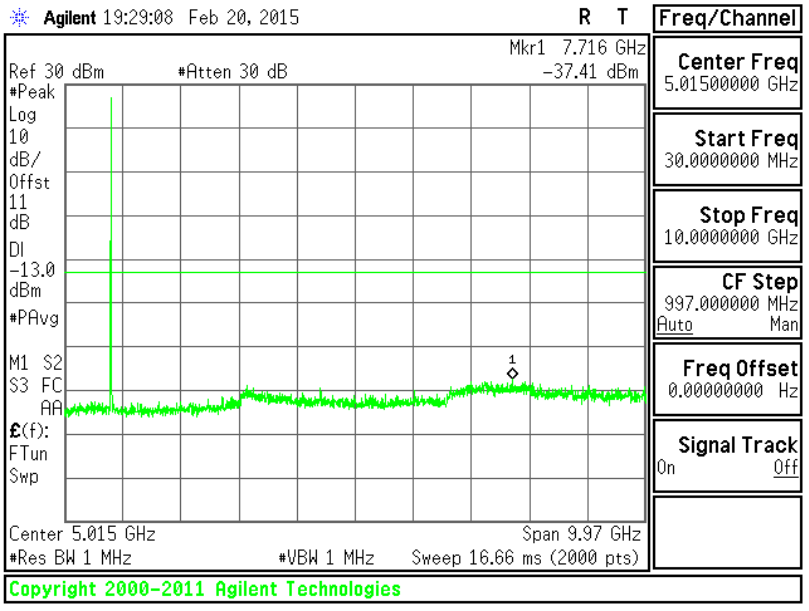


QPSK, (3.0 MHz BAND WIDTH)

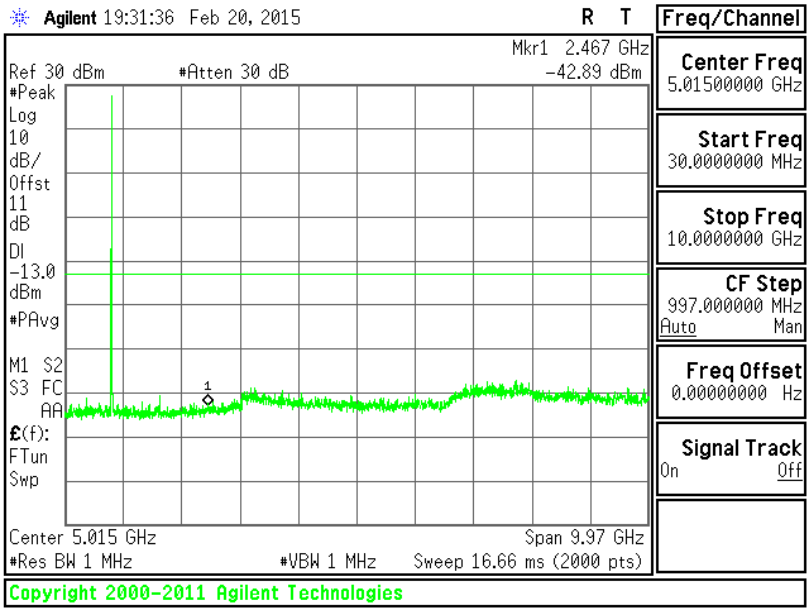
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

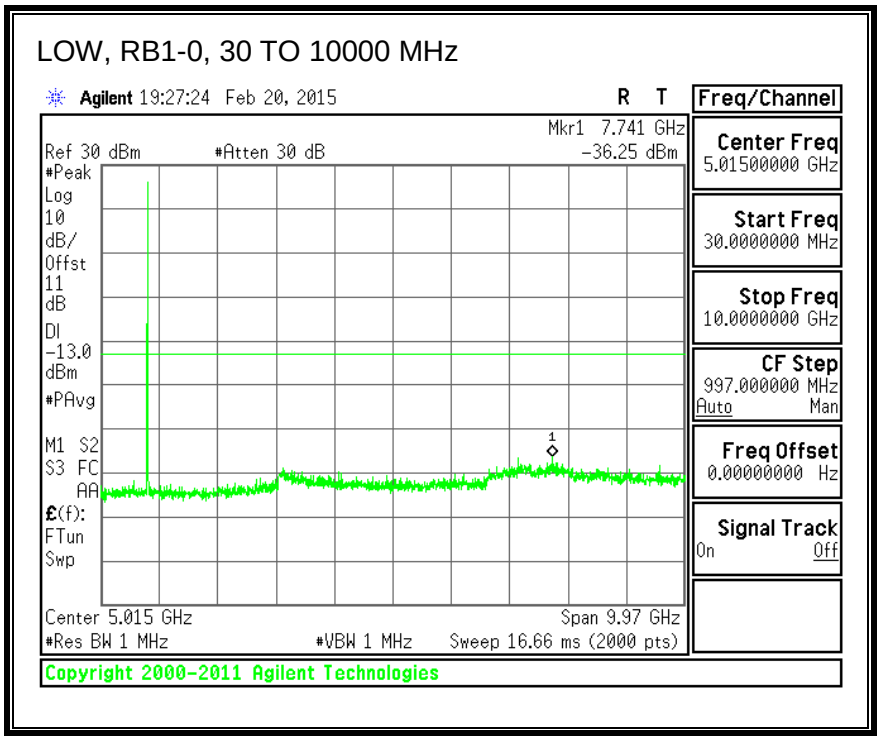


HIGH, RB1-0, 30 TO 10000 MHz

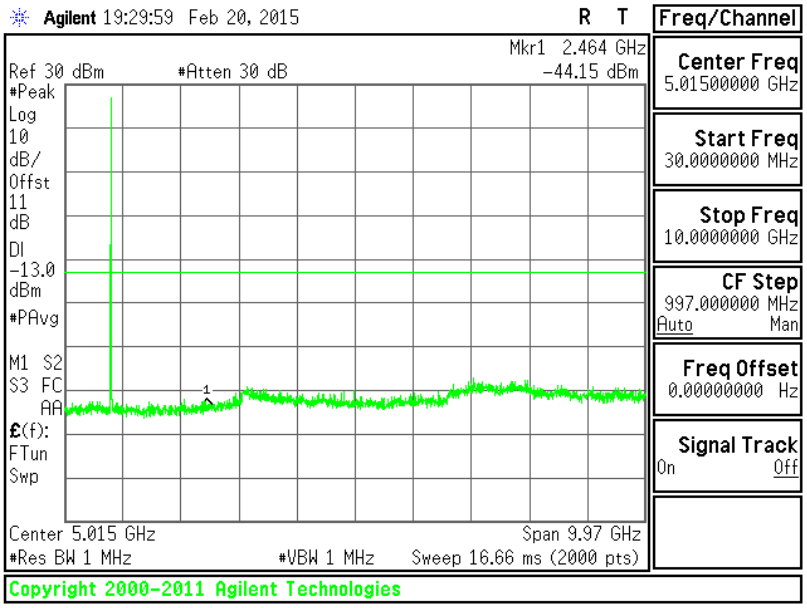


16QAM, (3.0 MHz BAND WIDTH)

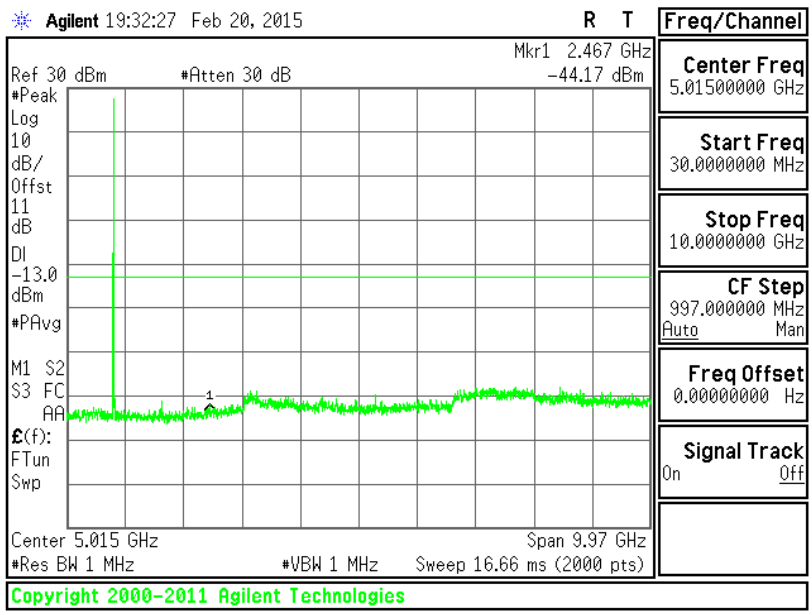
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

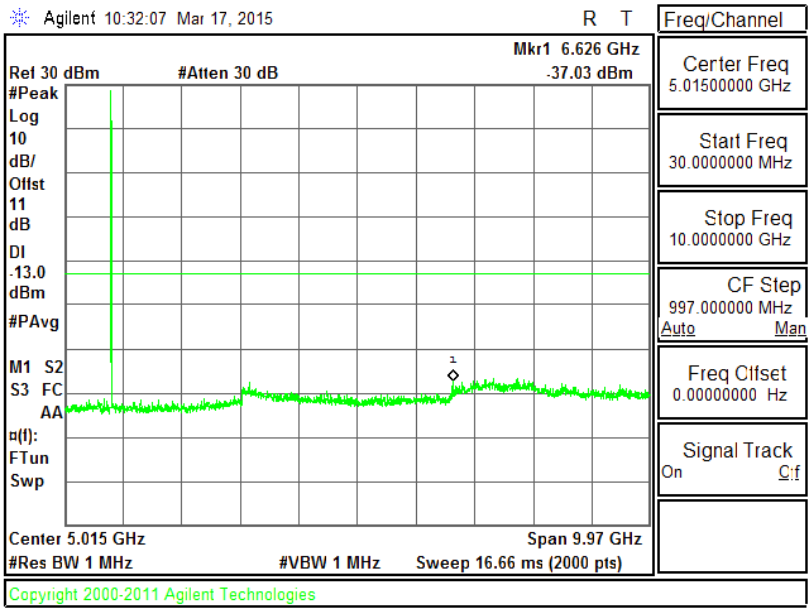


HIGH, RB1-0, 30 TO 10000 MHz

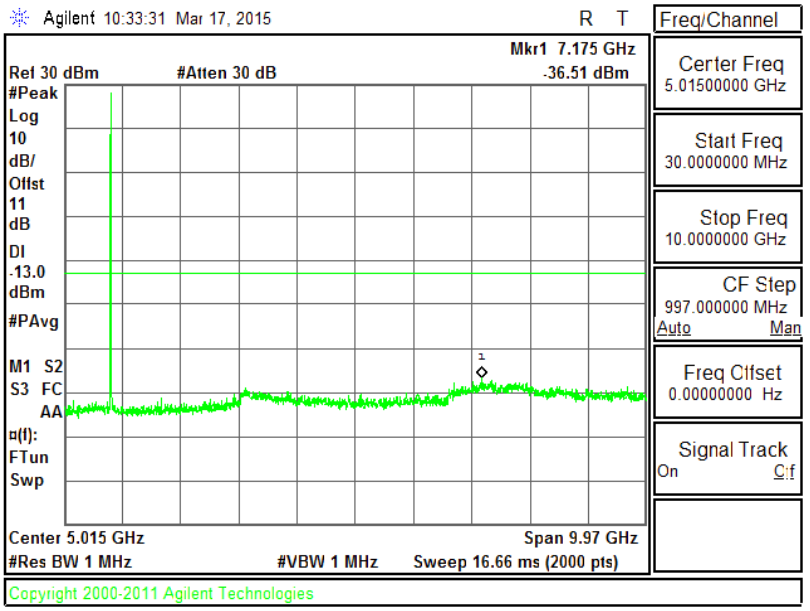


QPSK, (5.0 MHz BAND WIDTH)

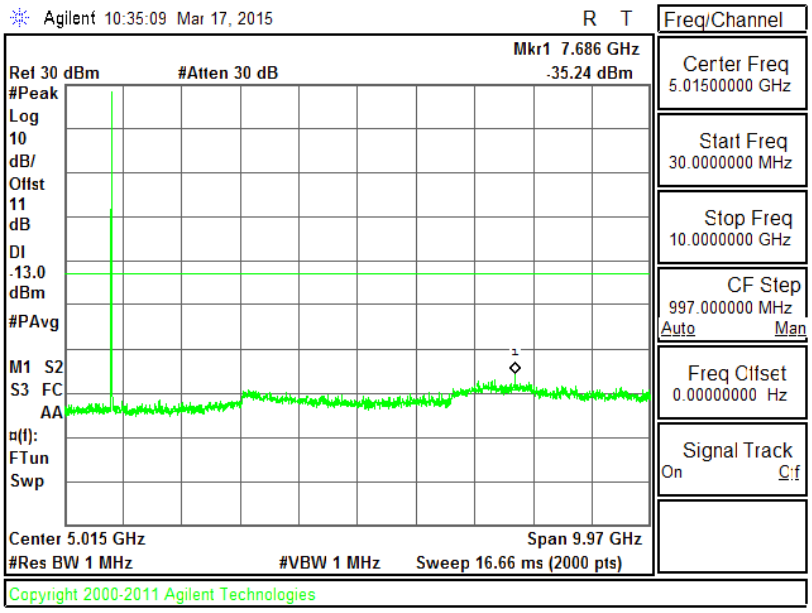
LOW, RB1-0, 30 TO 10000 MHz



MID, RB1-0, 30 TO 10000 MHz

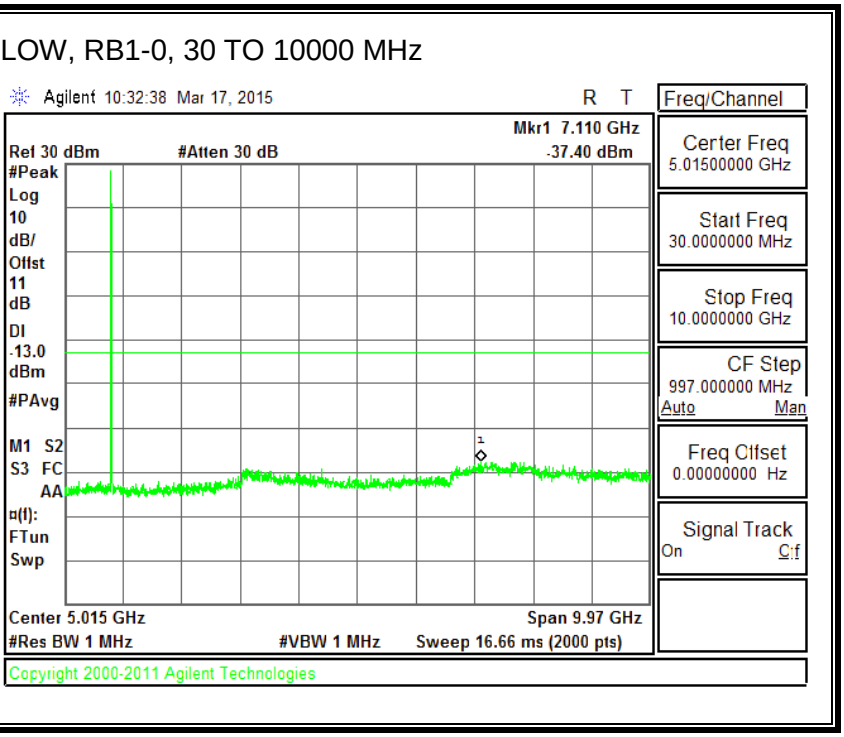


HIGH, RB1-0, 30 TO 10000 MHz

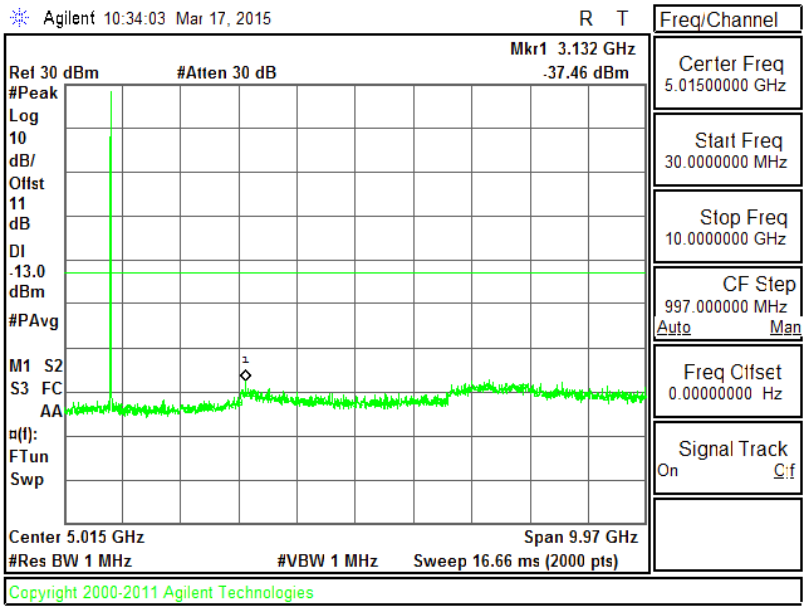


16QAM, (5.0 MHz BAND WIDTH)

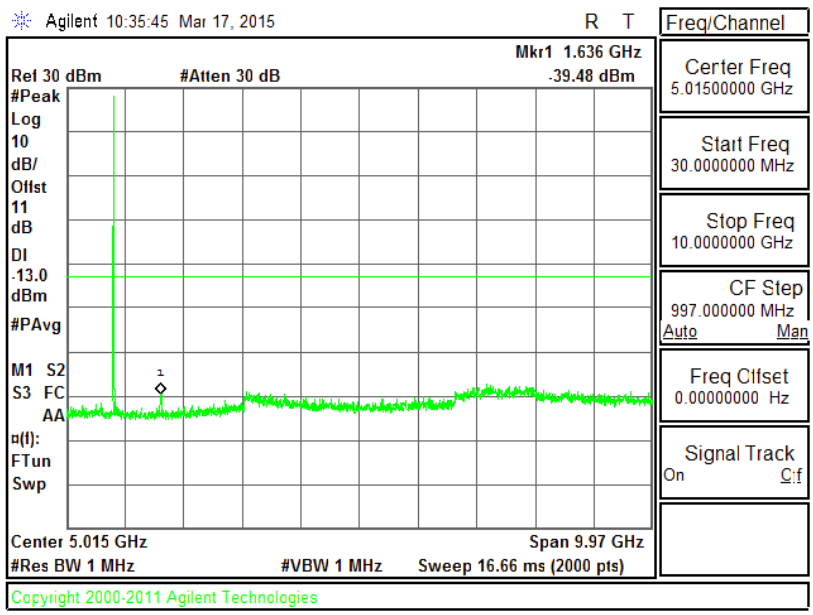
LOW, RB1-0, 30 TO 10000 MHz



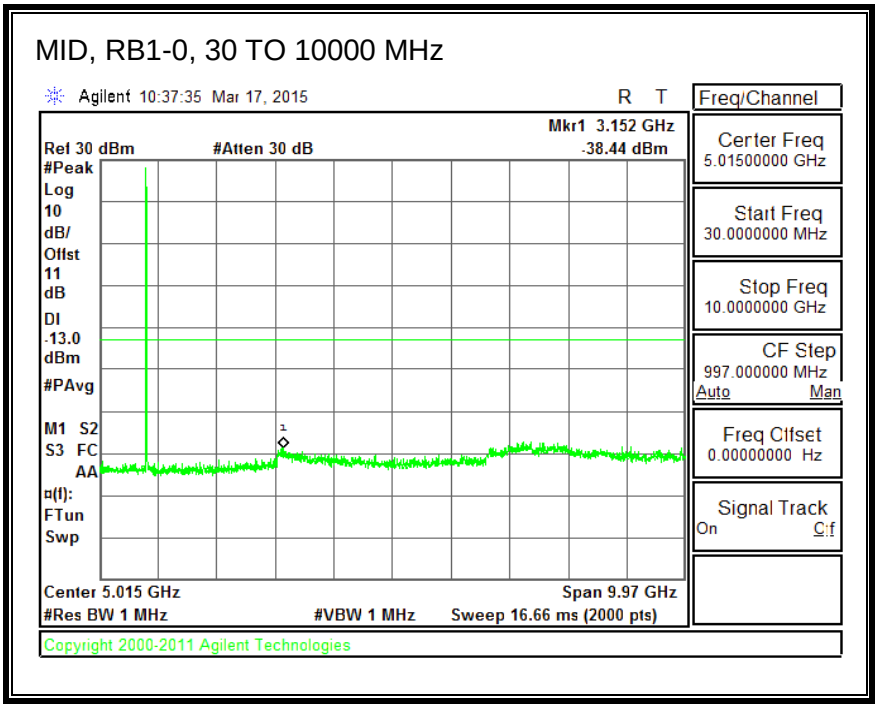
MID, RB1-0, 30 TO 10000 MHz



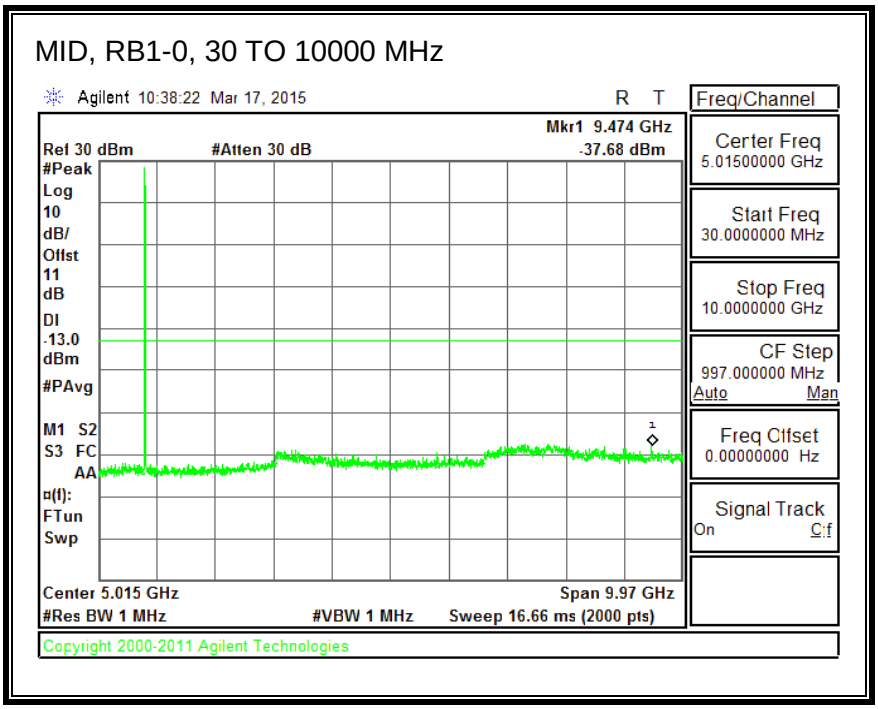
HIGH, RB1-0, 30 TO 10000 MHz



QPSK, (10.0 MHz BAND WIDTH)



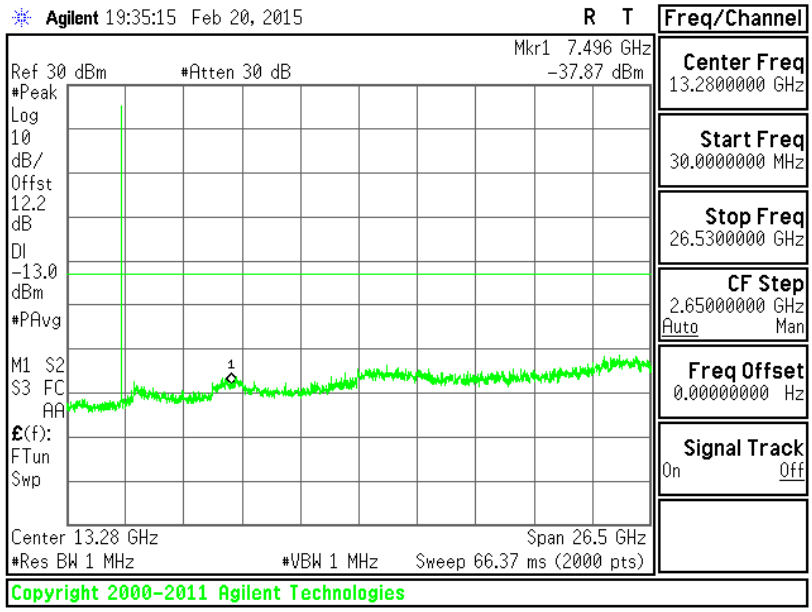
16QAM, (10.0 MHz BAND WIDTH)



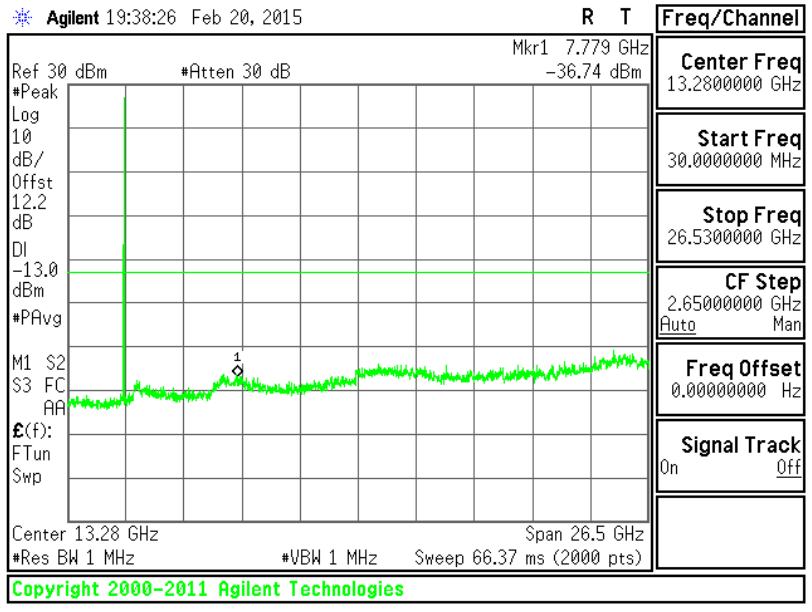
8.3.8. LTE BAND 41

QPSK, (5.0 MHz BAND WIDTH)

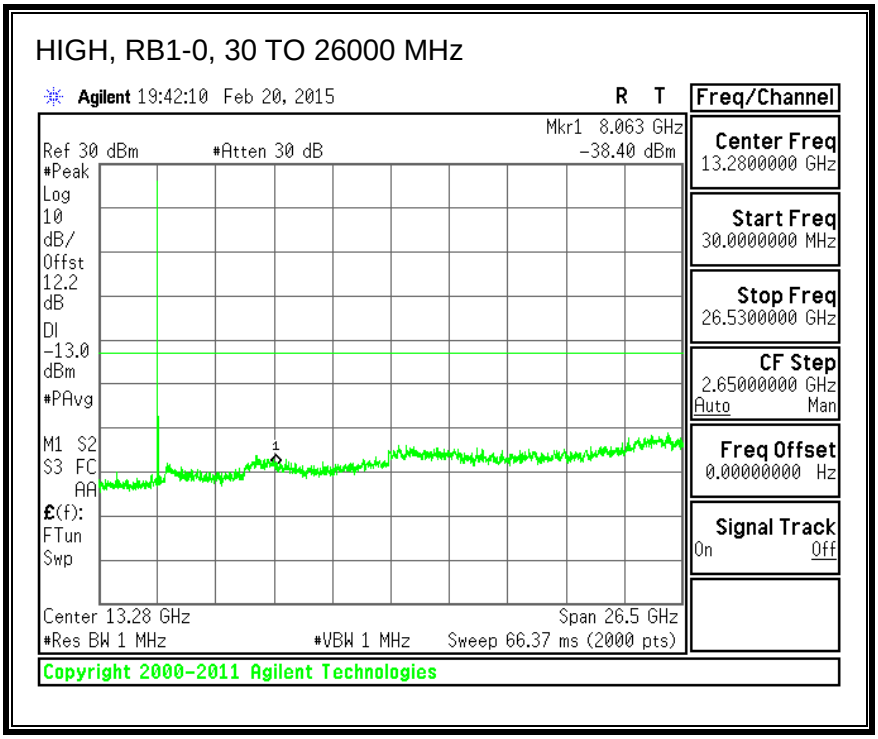
LOW, RB1-0, 30 TO 26000 MHz



MID, RB1-0, 30 TO 26000 MHz

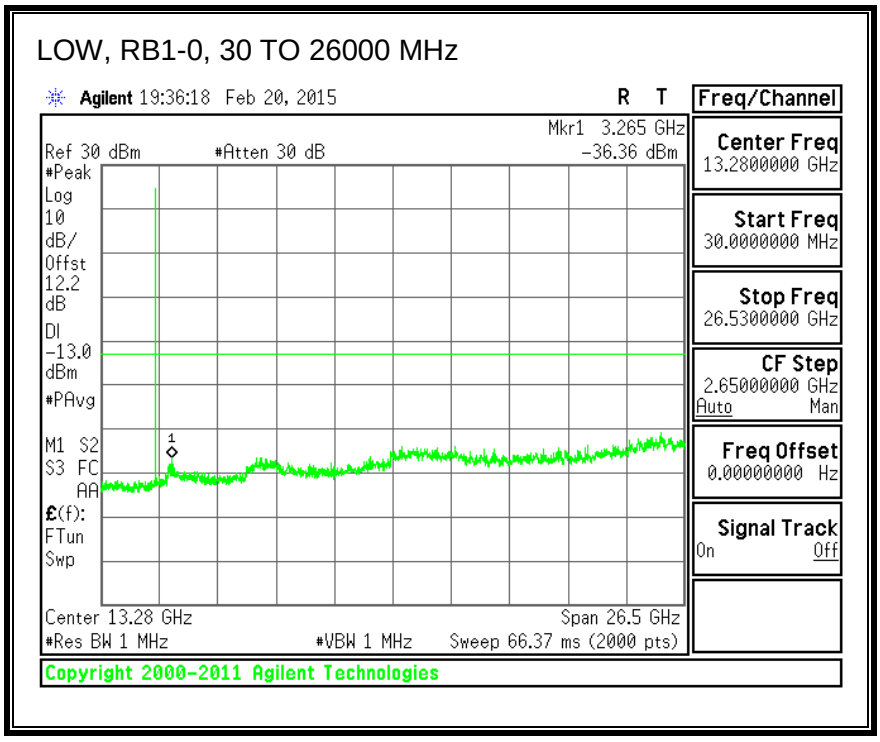


HIGH, RB1-0, 30 TO 26000 MHz

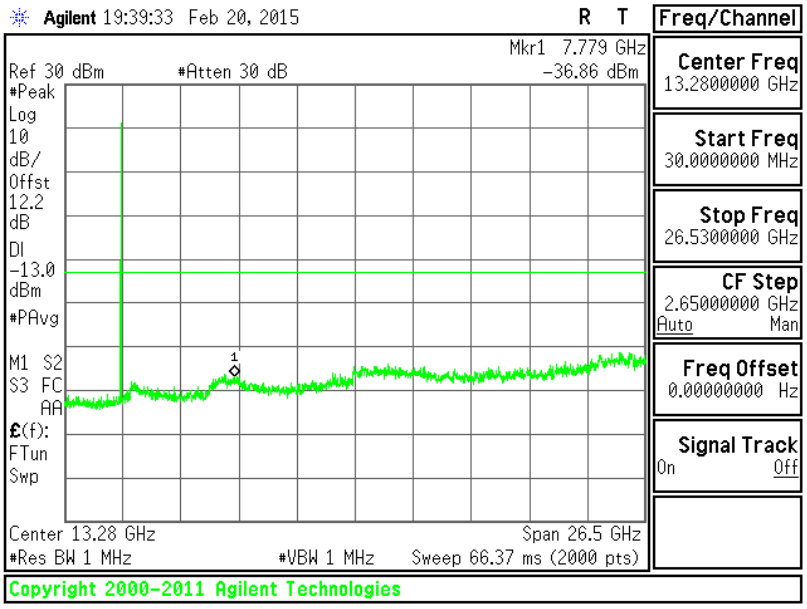


16QAM, (5.0 MHz BAND WIDTH)

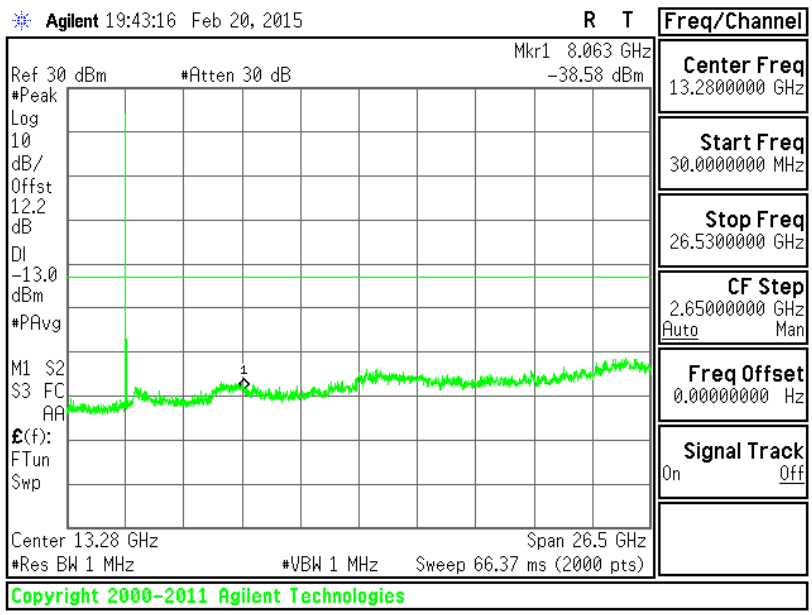
LOW, RB1-0, 30 TO 26000 MHz



MID, RB1-0, 30 TO 26000 MHz

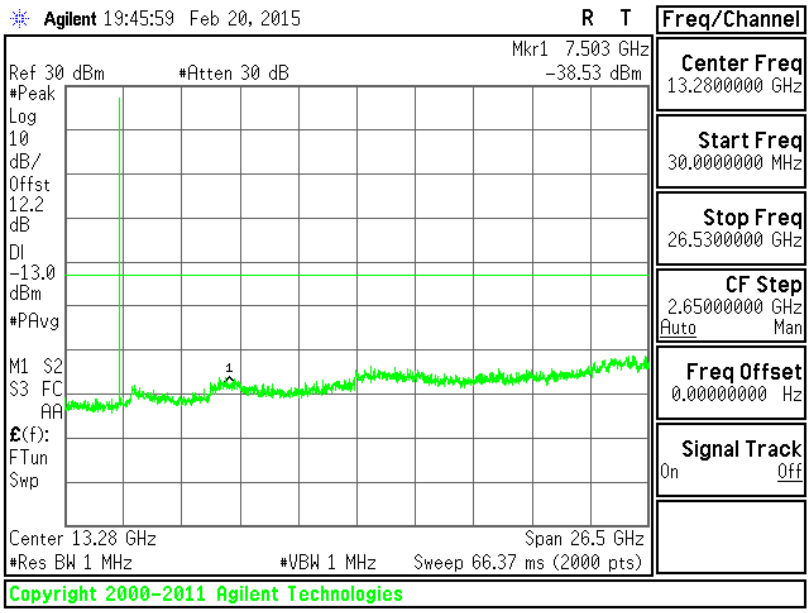


HIGH, RB1-0, 30 TO 26000 MHz

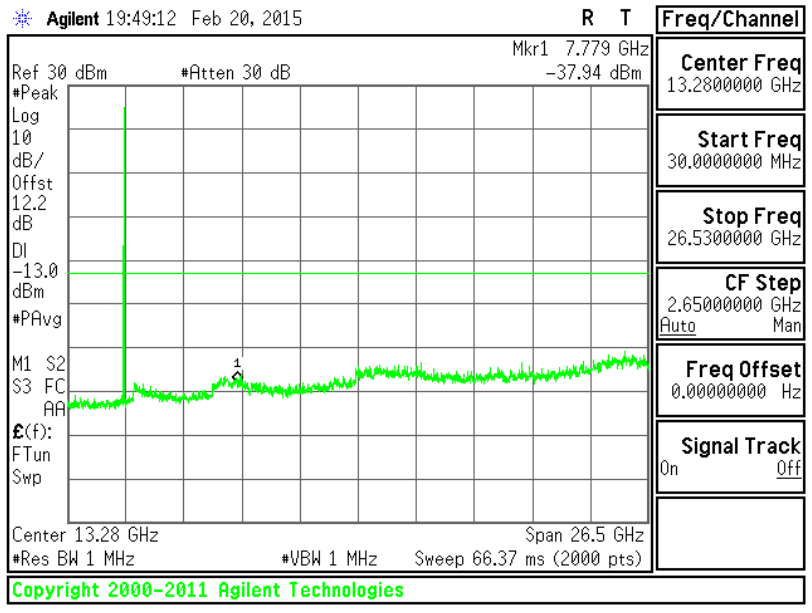


QPSK, (10.0 MHz BAND WIDTH)

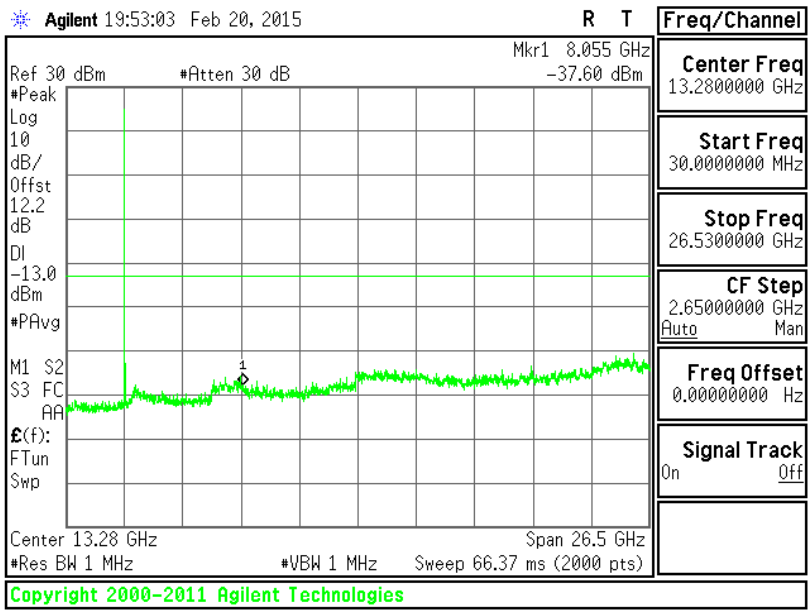
LOW, RB1-0, 30 TO 26000 MHz



MID, RB1-0, 30 TO 26000 MHz

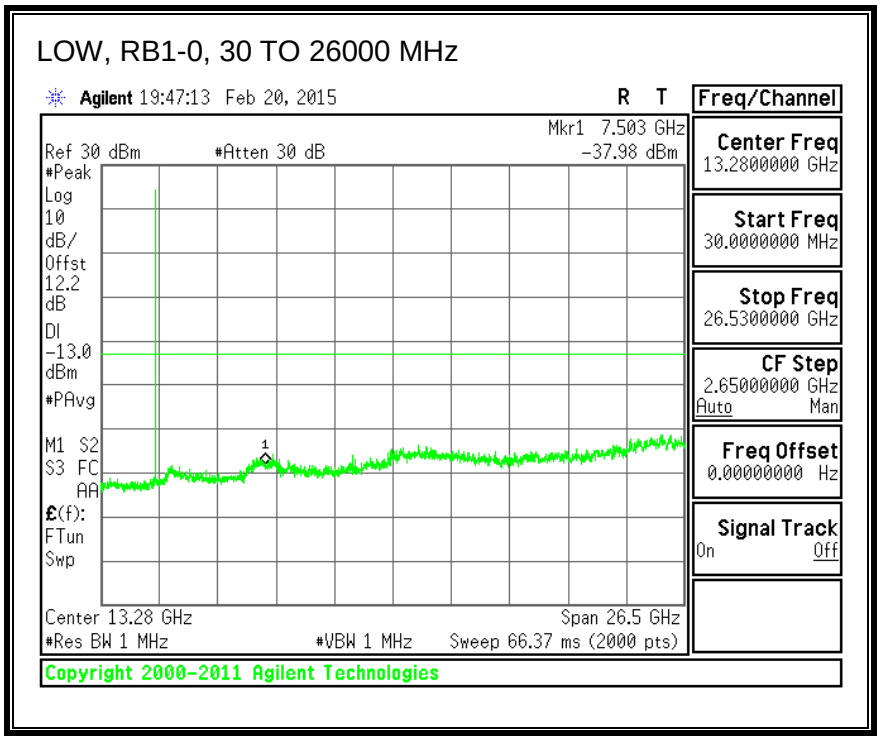


HIGH, RB1-0, 30 TO 26000 MHz

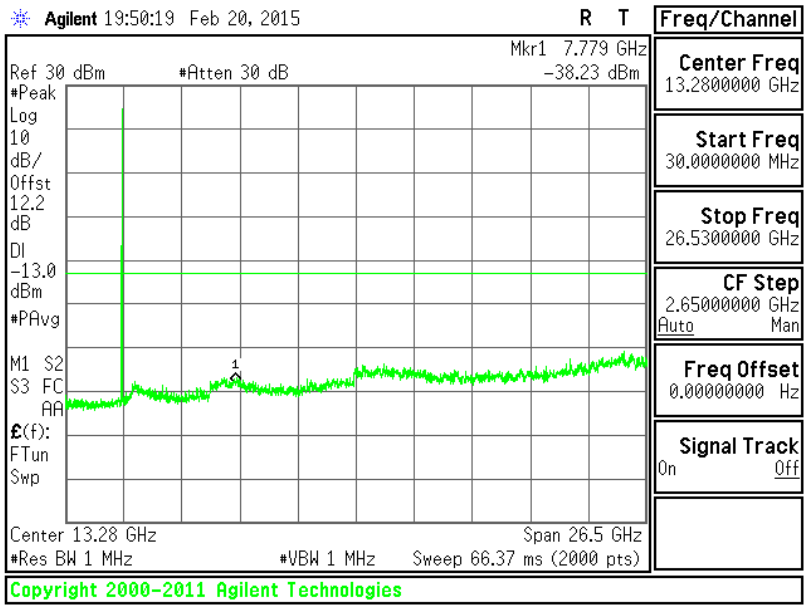


16QAM, (10.0 MHz BAND WIDTH)

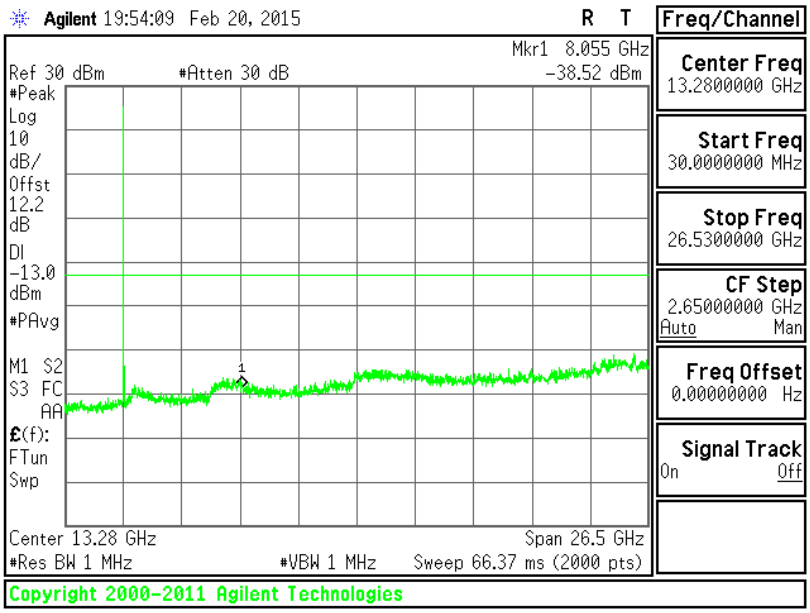
LOW, RB1-0, 30 TO 26000 MHz



MID, RB1-0, 30 TO 26000 MHz

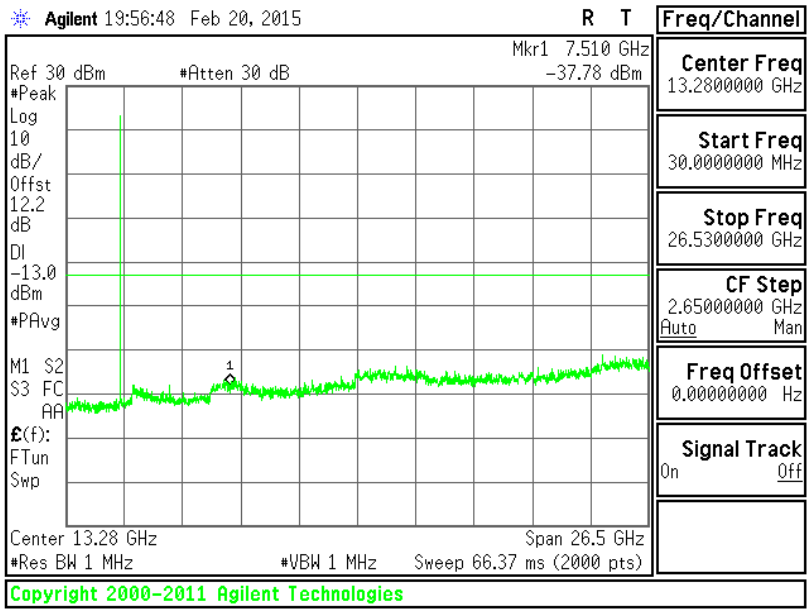


HIGH, RB1-0, 30 TO 26000 MHz

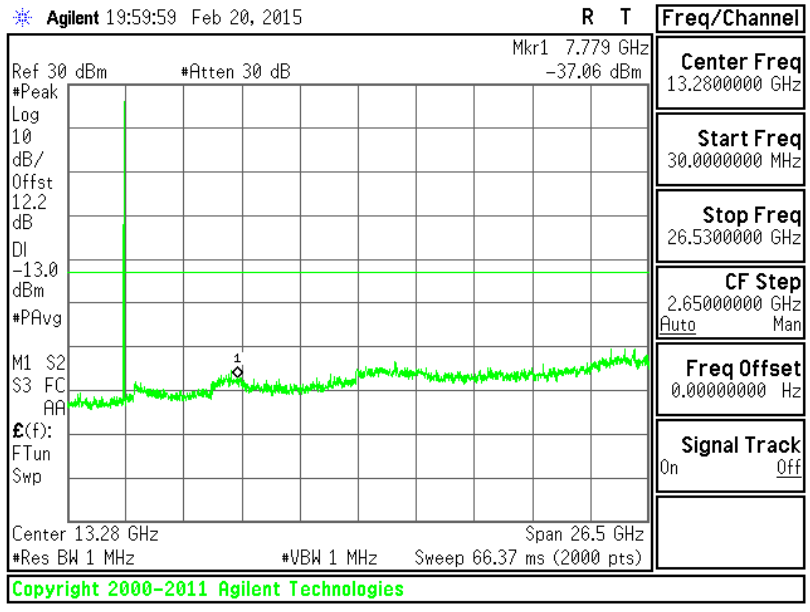


QPSK, (15.0 MHz BAND WIDTH)

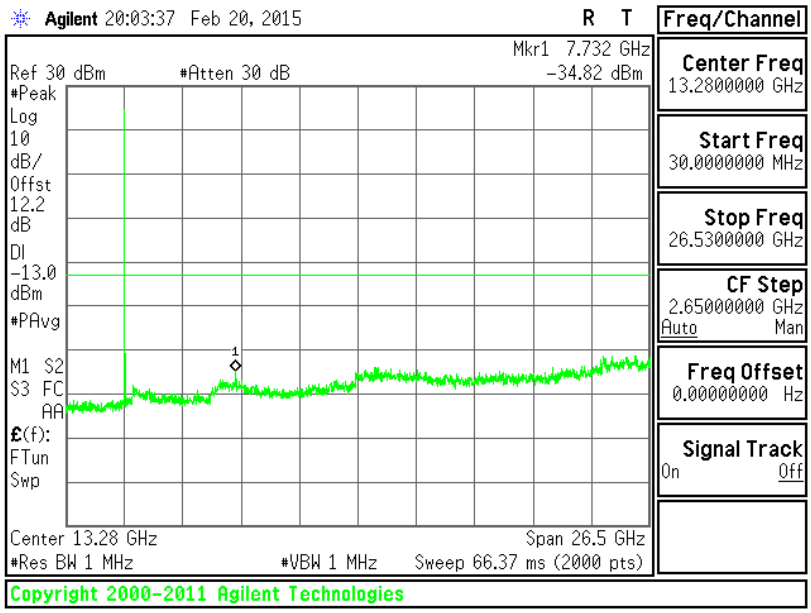
LOW, RB1-0, 30 TO 26000 MHz



MID, RB1-0, 30 TO 26000 MHz

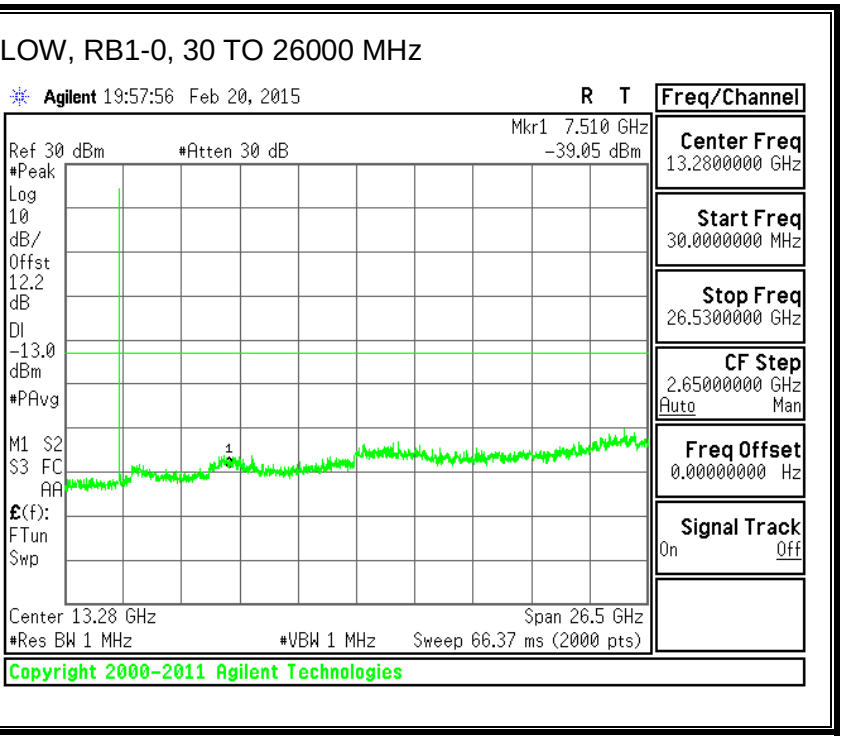


HIGH, RB1-0, 30 TO 26000 MHz

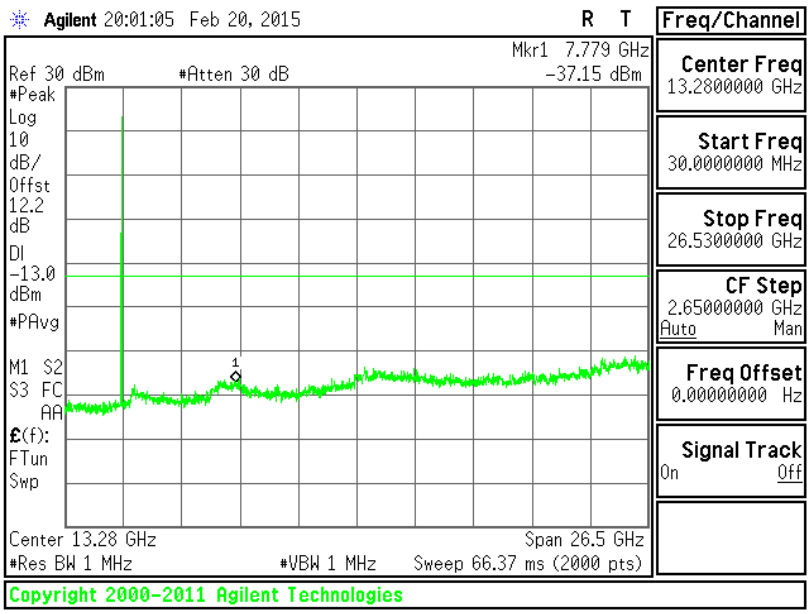


16QAM, (15.0 MHz BAND WIDTH)

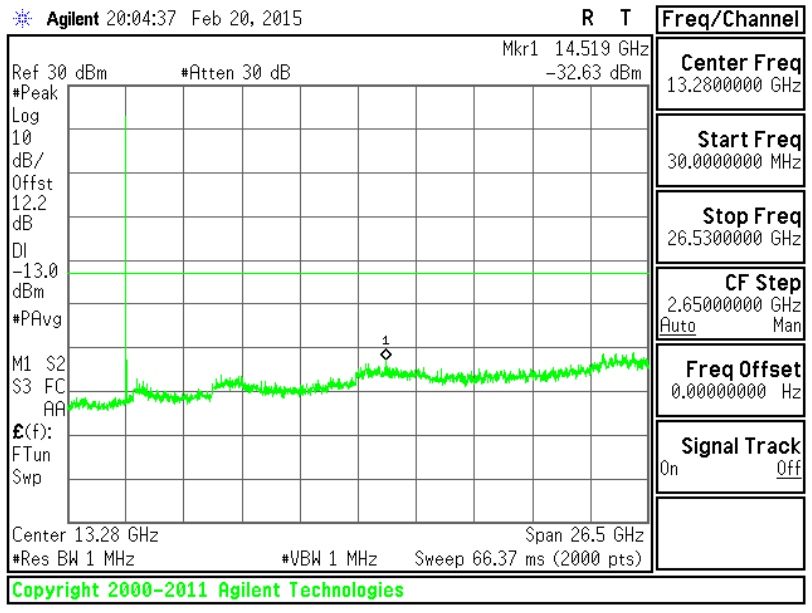
LOW, RB1-0, 30 TO 26000 MHz



MID, RB1-0, 30 TO 26000 MHz

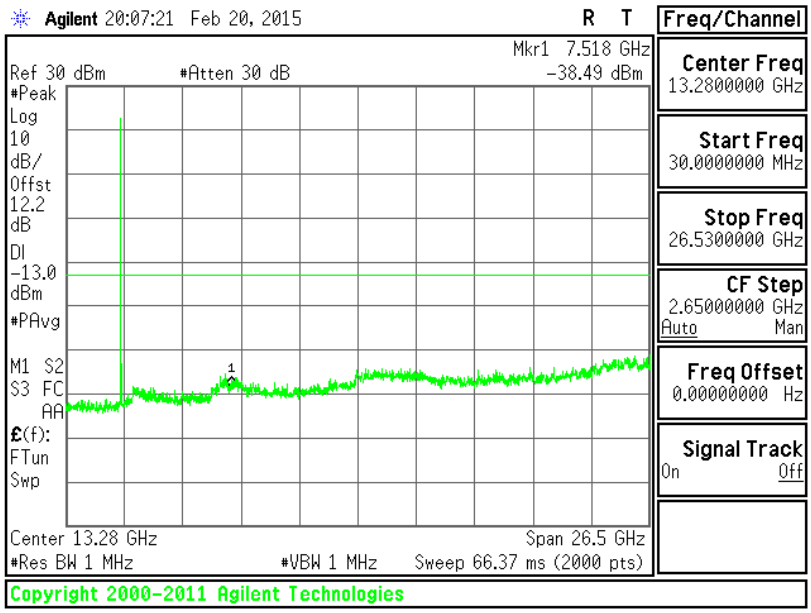


HIGH, RB1-0, 30 TO 26000 MHz

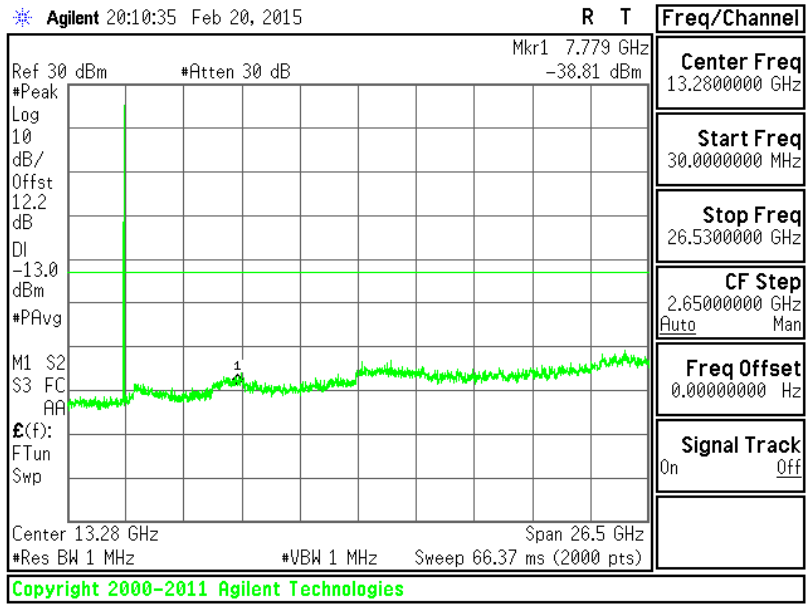


QPSK, (20.0 MHz BAND WIDTH)

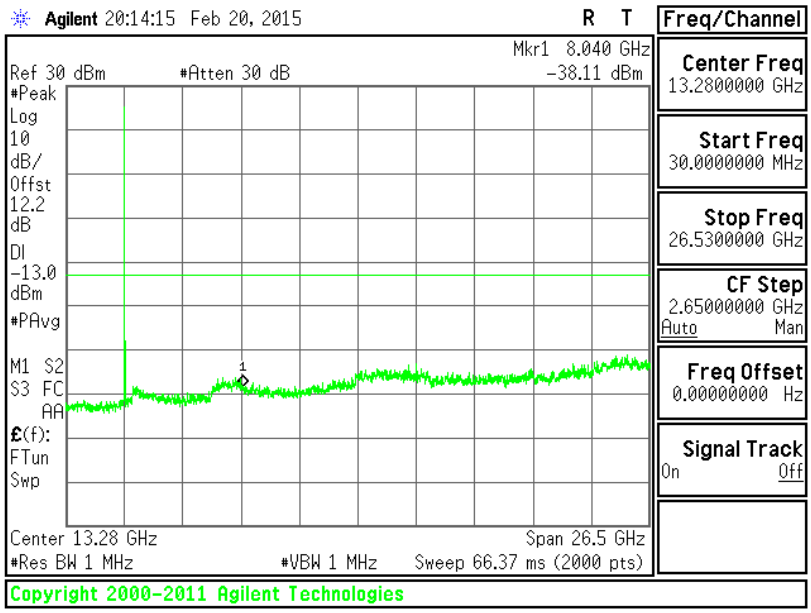
LOW, RB1-0, 30 TO 26000 MHz



MID, RB1-0, 30 TO 26000 MHz

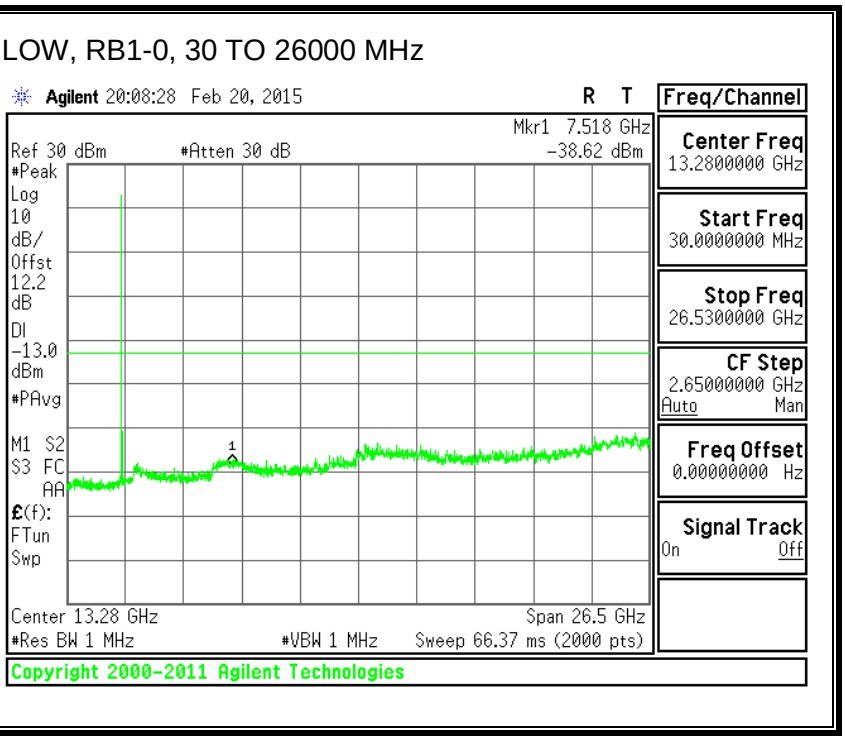


HIGH, RB1-0, 30 TO 26000 MHz

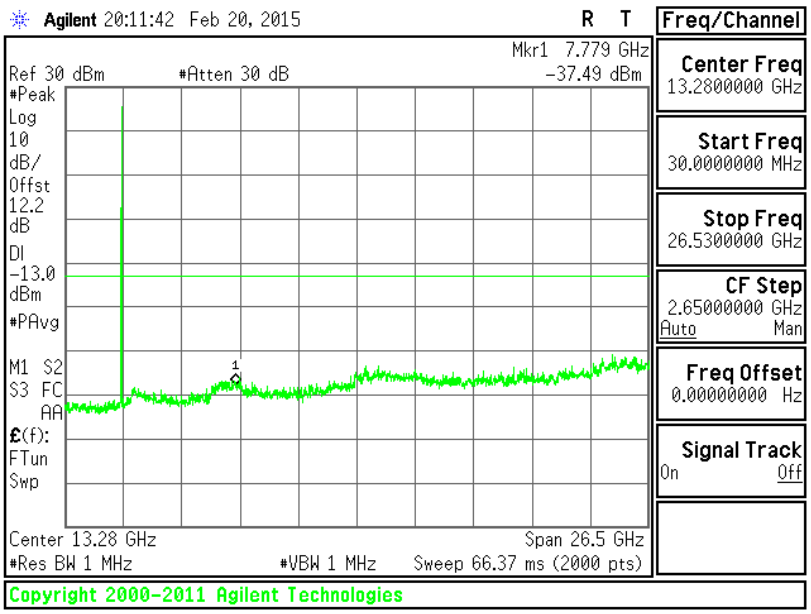


16QAM, (20.0 MHz BAND WIDTH)

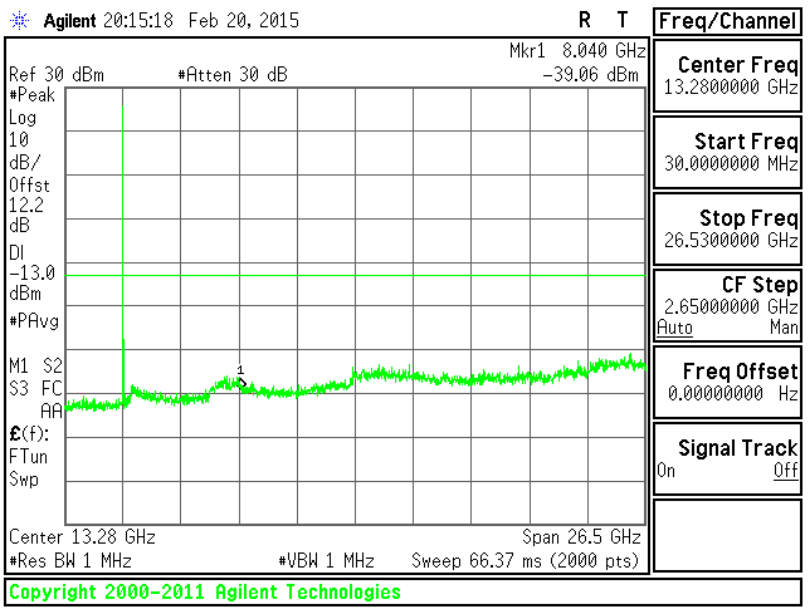
LOW, RB1-0, 30 TO 26000 MHz



MID, RB1-0, 30 TO 26000 MHz



HIGH, RB1-0, 30 TO 26000 MHz



8.4. FREQUENCY STABILITY

RULE PART(S)

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

LIMITS

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

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

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

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

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

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

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

MODES TESTED

- LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 13
- LTE Band 17
- LTE Band 25
- LTE Band 26
- LTE Band 41

RESULTS

See the following pages.

8.4.1. LTE BAND 2

QPSK, (20MHz BANDWIDTH)

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	1851.0121	1908.9983		
Extreme (50C)		1851.0120	1908.9982	-5.4	-0.003
Extreme (40C)		1851.0121	1908.9983	-2.6	-0.001
Extreme (30C)		1851.0121	1908.9983	3.2	0.002
Extreme (10C)		1851.0121	1908.9983	-2.8	-0.001
Extreme (0C)		1851.0120	1908.9982	-3.5	-0.002
Extreme (-10C)		1851.0121	1908.9983	4.8	0.003
Extreme (-20C)		1851.0121	1908.9983	3.0	0.002
Extreme (-30C)		1851.0120	1908.9982	-5.6	-0.003
25C	10%	1851.0121	1908.9983	-2.9	-0.002
	-10%	1851.0121	1908.9983	-2.3	-0.001
	End Point	1851.0120	1908.9982	-3.2	-0.002

16QAM, (20MHz BANDWIDTH)

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	1851.0128	1909.0004		
Extreme (50C)		1851.0127	1909.0003	-91.8	-0.049
Extreme (40C)		1851.0127	1909.0004	-86.9	-0.046
Extreme (30C)		1851.0127	1909.0003	-92.5	-0.049
Extreme (10C)		1851.0127	1909.0004	-85.5	-0.045
Extreme (0C)		1851.0127	1909.0004	-84.2	-0.045
Extreme (-10C)		1851.0127	1909.0004	-84.6	-0.045
Extreme (-20C)		1851.0127	1909.0004	-85.0	-0.045
Extreme (-30C)		1851.0127	1909.0004	-84.5	-0.045
25C	10%	1851.0128	1909.0004	-4.1	-0.002
	-10%	1851.0128	1909.0004	-4.0	-0.002
	End Point	1851.0128	1909.0004	-4.0	-0.002

8.4.2. LTE BAND 4

QPSK, (20MHz BANDWIDTH)

Limit		1710	1755	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	1710.5804	1753.9829		
Extreme (50C)		1710.5804	1753.9829	-5.1	-0.003
Extreme (40C)		1710.5804	1753.9829	-7.3	-0.004
Extreme (30C)		1710.5804	1753.9829	-5.0	-0.003
Extreme (10C)		1710.5804	1753.9829	-3.2	-0.002
Extreme (0C)		1710.5804	1753.9829	-4.9	-0.003
Extreme (-10C)		1710.5804	1753.9829	-4.0	-0.002
Extreme (-20C)		1710.5804	1753.9829	-2.9	-0.002
Extreme (-30C)		1710.5804	1753.9829	-4.1	-0.002
25C	10%	1710.5804	1753.9829	-4.2	-0.002
	-10%	1710.5804	1753.9829	-3.3	-0.002
	End Point	1710.5804	1753.9829	-4.8	-0.003

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	1711.0062	1753.9843		
Extreme (50C)		1711.0061	1753.9843	-93.8	-0.054
Extreme (40C)		1711.0061	1753.9843	-92.6	-0.053
Extreme (30C)		1711.0061	1753.9843	-86.5	-0.050
Extreme (10C)		1711.0061	1753.9843	-91.0	-0.052
Extreme (0C)		1711.0061	1753.9843	-90.8	-0.052
Extreme (-10C)		1711.0061	1753.9843	-90.5	-0.052
Extreme (-20C)		1711.0061	1753.9843	-88.3	-0.051
Extreme (-30C)		1711.0061	1753.9843	-90.7	-0.052
25C	10%	1711.0061	1753.9843	-87.7	-0.051
	-10%	1711.0061	1753.9843	-88.3	-0.051
	End Point	1711.0061	1753.9843	-90.4	-0.052

8.4.3. LTE BAND 5

QPSK, (10MHz BANDWIDTH)

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	824.4915	848.5027		
Extreme (50C)		824.4915	848.5027	-1.8	-0.002
Extreme (40C)		824.4915	848.5027	-1.2	-0.001
Extreme (30C)		824.4915	848.5027	-0.4	-0.001
Extreme (10C)		824.4915	848.5027	-0.7	-0.001
Extreme (0C)		824.4915	848.5027	-1.3	-0.002
Extreme (-10C)		824.4915	848.5027	-1.9	-0.002
Extreme (-20C)		824.4915	848.5027	-0.6	-0.001
Extreme (-30C)		824.4915	848.5027	0.8	0.001
25C	10%	824.4915	848.5027	-1.1	-0.001
	-10%	824.4915	848.5027	-0.9	-0.001
	End Point	824.4915	848.5027	-1.5	-0.002

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	824.5010	848.4949		
Extreme (50C)		824.5010	848.4949	-19.8	-0.024
Extreme (40C)		824.5010	848.4949	-19.3	-0.023
Extreme (30C)		824.5010	848.4949	-18.5	-0.022
Extreme (10C)		824.5010	848.4949	-18.5	-0.022
Extreme (0C)		824.5010	848.4949	-17.9	-0.021
Extreme (-10C)		824.5010	848.4949	-18.2	-0.022
Extreme (-20C)		824.5010	848.4949	-18.1	-0.022
Extreme (-30C)		824.5010	848.4949	-18.0	-0.021
25C	10%	824.5010	848.4949	-18.6	-0.022
	-10%	824.5010	848.4949	-18.7	-0.022
	End Point	824.5010	848.4949	-19.0	-0.023

8.4.4. LTE BAND 13

QPSK, (10MHz BANDWIDTH)

Limit		777	787	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	777.5032	786.5002		
Extreme (50C)		777.5032	786.5002	-1.2	-0.001
Extreme (40C)		777.5032	786.5002	-1.7	-0.002
Extreme (30C)		777.5032	786.5002	-0.7	-0.001
Extreme (10C)		777.5032	786.5002	-1.1	-0.001
Extreme (0C)		777.5032	786.5002	-2.0	-0.003
Extreme (-10C)		777.5032	786.5002	-1.0	-0.001
Extreme (-20C)		777.5032	786.5002	-1.1	-0.001
Extreme (-30C)		777.5032	786.5002	-1.2	-0.002
25C	10%	777.5032	786.5002	-1.0	-0.001
	-10%	777.5032	786.5002	-1.0	-0.001
	End Point	777.5032	786.5002	-1.4	-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	777.5025	786.5004		
Extreme (50C)		777.5024	786.5003	-21.8	-0.028
Extreme (40C)		777.5024	786.5003	-19.7	-0.025
Extreme (30C)		777.5024	786.5003	-18.3	-0.023
Extreme (10C)		777.5024	786.5003	-18.2	-0.023
Extreme (0C)		777.5024	786.5003	-17.7	-0.023
Extreme (-10C)		777.5024	786.5003	-18.3	-0.023
Extreme (-20C)		777.5024	786.5003	-16.9	-0.022
Extreme (-30C)		777.5024	786.5003	-16.2	-0.021
25C	10%	777.5024	786.5003	-18.7	-0.024
	-10%	777.5024	786.5003	-17.6	-0.022
	End Point	777.5024	786.5003	-18.8	-0.024

8.4.5. LTE BAND 17

QPSK, (10MHz BANDWIDTH)

Limit		704	716	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	704.5053	715.4929		
Extreme (50C)		704.5053	715.4929	-1.2	-0.002
Extreme (40C)		704.5053	715.4929	-0.8	-0.001
Extreme (30C)		704.5053	715.4929	0.5	0.001
Extreme (10C)		704.5053	715.4929	1.7	0.002
Extreme (0C)		704.5053	715.4929	1.2	0.002
Extreme (-10C)		704.5053	715.4929	2.0	0.003
Extreme (-20C)		704.5053	715.4929	1.7	0.002
Extreme (-30C)		704.5053	715.4929	2.0	0.003
25C	10%	704.5053	715.4929	1.2	0.002
	-10%	704.5053	715.4929	1.3	0.002
	End Point	704.5053	715.4929	1.9	0.003

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	704.5057	715.4944		
Extreme (50C)		704.5057	715.4944	-19.1	-0.027
Extreme (40C)		704.5057	715.4944	-19.5	-0.028
Extreme (30C)		704.5057	715.4944	-18.6	-0.026
Extreme (10C)		704.5057	715.4944	-16.9	-0.024
Extreme (0C)		704.5057	715.4944	-16.5	-0.023
Extreme (-10C)		704.5057	715.4944	-16.9	-0.024
Extreme (-20C)		704.5057	715.4944	-16.8	-0.024
Extreme (-30C)		704.5057	715.4944	-15.3	-0.022
25C	10%	704.5057	715.4944	-13.7	-0.019
	-10%	704.5057	715.4944	-14.6	-0.020
	End Point	704.5057	715.4944	-13.2	-0.019

8.4.6. LTE BAND 25

QPSK, (20MHz BANDWIDTH)

Limit		1850	1915	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	1851.0128	1914.5404		
Extreme (50C)		1851.0128	1914.5404	6.3	0.003
Extreme (40C)		1851.0128	1914.5404	4.1	0.002
Extreme (30C)		1851.0128	1914.5404	4.8	0.003
Extreme (10C)		1851.0128	1914.5404	4.4	0.002
Extreme (0C)		1851.0128	1914.5404	6.9	0.004
Extreme (-10C)		1851.0128	1914.5404	6.2	0.003
Extreme (-20C)		1851.0128	1914.5404	4.9	0.003
Extreme (-30C)		1851.0128	1914.5404	6.2	0.003
25C	10%	1851.0128	1914.5404	5.2	0.003
	-10%	1851.0128	1914.5404	4.7	0.002
	End Point	1851.0128	1914.5404	5.8	0.003

16QAM, (20MHz BANDWIDTH)

Limit		1850	1915	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	1851.0156	1913.9803		
Extreme (50C)		1851.0155	1913.9802	-90.4	-0.048
Extreme (40C)		1851.0155	1913.9802	-84.1	-0.045
Extreme (30C)		1851.0155	1913.9802	-81.9	-0.043
Extreme (10C)		1851.0155	1913.9802	-82.8	-0.044
Extreme (0C)		1851.0155	1913.9802	-83.7	-0.044
Extreme (-10C)		1851.0155	1913.9802	-84.9	-0.045
Extreme (-20C)		1851.0155	1913.9802	-83.1	-0.044
Extreme (-30C)		1851.0155	1913.9802	-81.8	-0.043
25C	10%	1851.0155	1913.9802	-83.7	-0.044
	-10%	1851.0155	1913.9802	-84.5	-0.045
	End Point	1851.0155	1913.9802	-82.4	-0.044

8.4.7. LTE BAND 26

QPSK, (10MHz BANDWIDTH)

Limit		814	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	814.4983	823.5119		
Extreme (50C)		814.4983	823.5119	-0.7	-0.001
Extreme (40C)		814.4983	823.5119	1.1	0.001
Extreme (30C)		814.4983	823.5119	-0.6	-0.001
Extreme (10C)		814.4983	823.5119	1.5	0.002
Extreme (0C)		814.4983	823.5119	1.4	0.002
Extreme (-10C)		814.4983	823.5119	1.5	0.002
Extreme (-20C)		814.4983	823.5119	1.5	0.002
Extreme (-30C)		814.4983	823.5119	0.7	0.001
25C	10%	814.4983	823.5119	1.2	0.001
	-10%	814.4983	823.5119	1.0	0.001
	End Point	814.4983	823.5119	1.0	0.001

16QAM, (10MHz BANDWIDTH)

Limit		814	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	814.5043	823.6399		
Extreme (50C)		814.5043	823.6398	-18.2	-0.022
Extreme (40C)		814.5043	823.6398	-18.1	-0.022
Extreme (30C)		814.5043	823.6398	-18.8	-0.023
Extreme (10C)		814.5043	823.6398	-18.2	-0.022
Extreme (0C)		814.5043	823.6398	-18.1	-0.022
Extreme (-10C)		814.5043	823.6398	-17.8	-0.021
Extreme (-20C)		814.5043	823.6398	-18.6	-0.022
Extreme (-30C)		814.5043	823.6398	-19.1	-0.023
25C	10%	814.5043	823.6398	-17.5	-0.021
	-10%	814.5043	823.6398	-17.7	-0.021
	End Point	814.5043	823.6398	-18.0	-0.022

8.4.8. LTE BAND 41

QPSK, (20MHz BANDWIDTH)

Limit		2496	2690	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (25C)	Normal	2496.9945	2.6890		
Extreme (50C)		2496.9945	2.6890	0.9	0.000
Extreme (40C)		2496.9945	2.6890	-0.1	0.000
Extreme (30C)		2496.9945	2.6890	1.7	0.001
Extreme (10C)		2496.9945	2.6890	-4.2	-0.002
Extreme (0C)		2496.9945	2.6890	-3.5	-0.001
Extreme (-10C)		2496.9945	2.6890	-2.7	-0.001
Extreme (-20C)		2496.9945	2.6890	-4.1	-0.002
Extreme (-30C)		2496.9945	2.6890	-1.8	-0.001
25C	10%	2496.9945	2.6890	-3.5	-0.001
	-10%	2496.9945	2.6890	-0.5	0.000
	End Point	2496.9945	2.6890	-2.1	-0.001

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	2496.9884	2689.0490		
Extreme (50C)		2496.9884	2689.0490	5.2	0.002
Extreme (40C)		2496.9884	2689.0490	4.3	0.002
Extreme (30C)		2496.9884	2689.0490	6.0	0.002
Extreme (10C)		2496.9884	2689.0490	3.7	0.001
Extreme (0C)		2496.9884	2689.0490	2.0	0.001
Extreme (-10C)		2496.9884	2689.0490	2.7	0.001
Extreme (-20C)		2496.9884	2689.0490	2.4	0.001
Extreme (-30C)		2496.9884	2689.0490	6.4	0.002
25C	10%	2496.9884	2689.0490	3.7	0.001
	-10%	2496.9884	2689.0490	7.4	0.003
	End Point	2496.9884	2689.0490	2.3	0.001

9. RADIATED TEST RESULTS

9.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

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

LIMITS:

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

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

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

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

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

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

TEST PROCEDURE

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

MODES TESTED

- LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 13
- LTE Band 17
- LTE Band 25
- LTE Band 26
- LTE Band 41

RESULTS

EIRP POWER FOR LTE BAND 2 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
1.4MHz Band QPSK	1/0	1850.7	23.91	246.04
		1880.0	24.01	251.77
		1909.3	**24.34**	271.64
1.4MHz Band 16QAM	1/0	1850.7	22.81	190.99
		1880.0	**23.11**	204.64
		1909.3	**23.34**	215.77

EIRP POWER FOR LTE BAND 2 (3.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
3.0MHz Band QPSK	1/0	1851.5	24.81	302.69
		1880.0	**25.21**	331.89
		1908.5	24.34	271.64
3.0MHz Band 16QAM	1/0	1851.5	23.91	246.04
		1880.0	**24.11**	257.63
		1908.5	23.34	215.77

EIRP POWER FOR LTE BAND 2 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5.0MHz Band QPSK	1/0	1852.5	**23.61**	229.61
		1880.0	23.51	224.39
		1907.5	22.34	171.40
5.0MHz Band 16QAM	1/0	1852.5	**22.61**	182.39
		1880.0	22.51	178.24
		1907.5	21.34	136.14

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	**24.81**	302.69
		1880.0	24.61	289.07
		1905.0	23.44	220.80
10.0MHz Band 16QAM	1/0	1855.0	**23.81**	240.44
		1880.0	23.61	229.61
		1905.0	22.44	175.39

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	**25.11**	324.34
		1880.0	24.31	269.77
		1902.5	23.64	231.21
15MHz Band 16QAM	1/0	1857.5	**24.21**	263.63
		1880.0	23.31	214.29
		1902.5	22.54	179.47

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	**24.41**	276.06
		1880.0	24.31	269.77
		1900.0	23.94	247.74
20MHz Band 16QAM	1/0	1860.0	**23.31**	214.29
		1880.0	**23.31**	214.29
		1900.0	23.04	201.37

EIRP POWER FOR LTE BAND 4 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
1.4 MHZ BAND QPSK	1/0	1710.7	24.07	255.27
		1732.5	24.67	293.09
		1754.3	**24.71**	295.80
1.4 MHZ BAND 16QAM	1/0	1710.7	23.29	213.30
		1732.5	23.66	232.27
		1754.3	**23.86**	243.22

EIRP POWER FOR LTE BAND 4 (3.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
3.0 MHZ BAND QPSK	1/0	1711.5	24.19	262.42
		1732.5	**24.65**	291.74
		1753.5	24.62	289.73
3.0 MHZ BAND 16QAM	1/0	1711.5	23.17	207.49
		1732.5	**23.79**	239.33
		1753.5	23.62	230.14

EIRP POWER FOR LTE BAND 4 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5.0 MHZ BAND QPSK	1/0	1712.5	24.13	258.82
		1732.5	**24.89**	308.32
		1752.5	24.59	287.74
5.0 MHZ BAND 16QAM	1/0	1712.5	23.24	210.86
		1732.5	**23.73**	236.05
		1752.5	23.61	229.61

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	24.38	274.16
		1732.5	**24.77**	299.92
		1750.0	24.55	285.10
10.0 MHZ BAND 16QAM	1/0	1715.0	23.46	221.82
		1732.5	**24.00**	251.19
		1750.0	23.59	228.56

EIRP POWER FOR LTE BAND 4 (15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
15.0 MHZ BAND QPSK	1/0	1717.5	24.44	277.97
		1732.5	**24.99**	315.50
		1747.5	24.45	278.61
15.0 MHZ BAND 16QAM	1/0	1717.5	23.54	225.94
		1732.5	23.52	224.91
		1747.5	**23.64**	231.21

EIRP POWER FOR LTE BAND 4 (20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0 MHZ BAND QPSK	1/0	1720.0	24.42	276.69
		1732.5	**24.55**	285.10
		1745.0	24.45	278.61
20.0 MHZ BAND 16QAM	1/0	1720.0	**23.41**	219.28
		1732.5	23.35	216.27
		1745.0	23.19	208.45

EIRP POWER FOR LTE BAND 5 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP (Average)	
			dBm	mW
1.4MHz Band QPSK	1/0	824.7	24.27	267.30
		836.5	**24.33**	271.02
		848.3	23.15	206.54
1.4MHz Band 16QAM	1/0	824.7	23.77	238.23
		836.5	**23.83**	241.55
		848.3	22.65	184.08

EIRP POWER FOR LTE BAND 5 (3.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP (Average)	
			dBm	mW
3.0 MHZ BAND QPSK	1/0	825.5	24.17	261.22
		836.5	**24.53**	283.79
		847.5	23.55	226.46
3.0 MHZ BAND 16QAM	1/0	825.5	23.67	232.81
		836.5	**24.13**	258.82
		847.5	23.15	206.54

EIRP POWER FOR LTE BAND 5 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP (Average)	
			dBm	mW
5MHz Band QPSK	1/0	826.5	24.17	261.22
		836.5	**24.23**	264.85
		846.5	23.85	242.66
5MHz Band 16QAM	1/0	826.5	23.67	232.81
		836.5	**23.73**	236.05
		846.5	23.35	216.27

EIRP POWER FOR LTE BAND 5 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP (Average)	
			dBm	mW
10.0 MHZ BAND QPSK	1/0	829.0	**24.47**	279.90
		836.5	24.23	264.85
		844.0	24.35	272.27
10.0 MHZ BAND 16QAM	1/0	829.0	**23.97**	249.46
		836.5	23.73	236.05
		844.0	23.95	248.31

EIRP POWER FOR LTE BAND 13 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5.0 MHZ BAND QPSK	1/0	779.5	**22.61**	182.39
		782.0	22.35	171.79
		784.5	21.32	135.52
5.0 MHZ BAND 16QAM	1/0	779.5	**21.76**	149.97
		782.0	21.36	136.77
		784.5	20.25	105.93

EIRP POWER FOR LTE BAND 13 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
10 MHZ BAND QPSK	1/0	782.0	**22.65**	184.08
10 MHz BAND 16QAM	1/0		**21.88**	154.17

EIRP POWER FOR LTE BAND 17 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5MHz Band QPSK	1/0	706.5	21.23	132.74
		710.0	21.18	131.22
		713.5	**21.40**	138.04
5MHz Band 16QAM	1/0	706.5	20.35	108.39
		710.0	**20.74**	118.58
		713.5	20.40	109.65

EIRP POWER FOR LTE BAND 17 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
10.0 MHZ BAND QPSK	1/0	710.0	**21.07**	127.94
10.0 MHZ BAND 16QAM		710.0	**20.40**	109.65

EIRP POWER FOR LTE BAND 25 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
1.4 MHZ BAND QPSK	1/0	1850.7	**25.31**	339.63
		1880.0	24.51	282.49
		1914.3	23.94	247.74
1.4 MHZ BAND 16QAM	1/0	1850.7	**24.31**	269.77
		1880.0	23.51	224.39
		1914.3	23.04	201.37

EIRP POWER FOR LTE BAND 25 (3.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
3.0 MHZ BAND QPSK	1/0	1851.5	**25.01**	316.96
		1880.0	24.51	282.49
		1913.5	23.64	231.21
3.0 MHZ BAND 16QAM	1/0	1851.5	**23.91**	246.04
		1880.0	23.51	224.39
		1913.5	22.84	192.31

EIRP POWER FOR LTE BAND 25 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5.0 MHZ BAND QPSK	1/0	1852.5	24.01	251.77
		1880.0	**24.61**	289.07
		1912.5	23.84	242.10
5.0 MHZ BAND 16QAM	1/0	1852.5	23.11	204.64
		1880.0	**23.71**	234.96
		1912.5	22.94	196.79

EIRP POWER FOR LTE BAND 25 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
10.0 MHZ BAND QPSK	1/0	1855.0	**25.31**	339.63
		1880.0	25.01	316.96
		1910.0	23.34	215.77
10.0 MHZ BAND 16QAM	1/0	1855.0	**24.21**	263.63
		1880.0	24.01	251.77
		1910.0	22.44	175.39

EIRP POWER FOR LTE BAND 25 (15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
15.0 MHZ BAND QPSK	1/0	1857.5	24.91	309.74
		1880.0	**25.51**	355.63
		1907.5	23.74	236.59
15.0 MHZ BAND 16QAM	1/0	1857.5	23.91	246.04
		1880.0	**24.41**	276.06
		1907.5	22.84	192.31

EIRP POWER FOR LTE BAND 25 (20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
20.0 MHZ BAND QPSK	1/0	1860.0	25.31	339.63
		1880.0	**25.41**	347.54
		1905.0	23.94	247.74
20.0 MHZ BAND 16QAM	1/0	1860.0	24.31	269.77
		1880.0	**24.41**	276.06
		1905.0	23.04	201.37

EIRP POWER FOR LTE BAND 26 (1.4MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
1.4 MHZ BAND QPSK	1/0	814.7	22.42	174.58
		819.0	22.13	163.31
		823.3	**22.75**	188.36
1.4 MHZ BAND 16QAM	1/0	814.7	21.52	141.91
		819.0	21.13	129.72
		823.3	**21.85**	153.11

EIRP POWER FOR LTE BAND 26 (3.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
3.0 MHZ BAND QPSK	1/0	815.5	22.84	192.31
		819.0	22.69	185.78
		822.5	**23.51**	224.39
3.0 MHZ BAND 16QAM	1/0	815.5	21.97	157.40
		819.0	21.83	152.41
		822.5	**22.48**	177.01

EIRP POWER FOR LTE BAND 26 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
5.0 MHZ BAND QPSK	1/0	816.5	22.73	187.50
		819.0	**23.35**	216.27
		821.5	22.43	174.98
5.0 MHZ BAND 16QAM	1/0	816.5	21.33	135.83
		819.0	**22.15**	164.06
		821.5	21.33	135.83

EIRP POWER FOR LTE BAND 26 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Average)	
			dBm	mW
10.0 MHZ BAND QPSK	1/0	819.0	**22.61**	182.39
10.0 MHZ BAND 16QAM	1/0	819.0	**21.73**	148.94

EIRP POWER FOR LTE BAND 41 (5.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Peak)	
			dBm	mW
5.0 MHZ BAND QPSK	25/0	2498.5	**31.46**	1399.59
		2593.0	31.08	1282.33
		2687.5	**31.46**	877.00
5.0 MHZ BAND 16QAM	25/0	2498.5	29.43	1073.99
		2593.0	**30.31**	1002.31
		2687.5	30.01	979.49

EIRP POWER FOR LTE BAND 41 (10.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Peak)	
			dBm	mW
10.0 MHZ BAND QPSK	50/0	2501.0	**31.99**	1581.25
		2593.0	31.25	1333.52
		2685.0	31.78	1506.61
10.0 MHZ BAND 16QAM	50/0	2501.0	**30.50**	1122.02
		2593.0	29.81	957.19
		2685.0	30.24	1056.82

EIRP POWER FOR LTE BAND 41(15.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Peak)	
			dBm	mW
15.0 MHZ BAND QPSK	75/0	2503.5	**31.96**	1570.36
		2593.0	31.42	1386.76
		2682.5	31.87	1538.15
15.0 MHZ BAND 16QAM	75/0	2503.5	**30.64**	1158.78
		2593.0	30.10	1023.29
		2682.5	30.42	1101.54

EIRP POWER FOR LTE BAND 41 (20.0MHZ BANDWIDTH)

Mode	RB/RB SIZE	f (MHz)	EIRP(Peak)	
			dBm	mW
20.0 MHZ BAND QPSK	100/0	2506.0	**32.20**	1659.59
		2593.0	31.62	1452.11
		2680.0	31.87	1538.15
20.0 MHZ BAND 16QAM	100/0	2506.0	**31.10**	1289.14
		2593.0	30.22	1051.96
		2680.0	30.37	1088.93

9.1.1. LTE BAND 2

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

High Frequency Fundamental Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: T Wang
Configuration: EUT only
Mode: LTE Band 2 QPSK 1.4MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; 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	8.61	23.91	33.0	-9.1	
1.851	12.2	H	0.98	8.81	20.04	33.0	-13.0	
Mid Ch								
1.880	16.5	V	0.98	8.53	24.01	33.0	-9.0	
1.880	11.7	H	0.98	8.68	19.38	33.0	-13.6	
High Ch								
1.909	16.9	V	0.98	8.45	24.34	33.0	-8.7	
1.909	11.4	H	0.98	8.55	18.97	33.0	-14.0	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: T Wang
Configuration: EUT only
Mode: LTE Band 2 16QAM 1.4MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; 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	15.2	V	0.98	8.61	22.81	33.0	-10.2	
1.851	11.3	H	0.98	8.81	19.14	33.0	-13.9	
Mid Ch								
1.880	15.6	V	0.98	8.53	23.11	33.0	-9.9	
1.880	10.7	H	0.98	8.68	18.38	33.0	-14.6	
High Ch								
1.909	15.9	V	0.98	8.45	23.34	33.0	-9.7	
1.909	10.5	H	0.98	8.55	18.07	33.0	-14.9	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: T Wang
Configuration: EUT only
Mode: LTE Band 2 QPSK 3MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.852	17.2	V	0.98	8.61	24.81	33.0	-8.2	
1.852	11.7	H	0.98	8.81	19.54	33.0	-13.5	
Mid Ch								
1.880	17.7	V	0.98	8.53	25.21	33.0	-7.8	
1.880	11.8	H	0.98	8.68	19.48	33.0	-13.5	
High Ch								
1.909	16.9	V	0.98	8.45	24.34	33.0	-8.7	
1.909	12.1	H	0.98	8.55	19.67	33.0	-13.3	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: T Wang
Configuration: EUT only
Mode: LTE Band 2 16QAM 3MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.852	16.3	V	0.98	8.61	23.91	33.0	-9.1	
1.852	10.8	H	0.98	8.81	18.64	33.0	-14.4	
Mid Ch								
1.880	16.6	V	0.98	8.53	24.11	33.0	-8.9	
1.880	10.7	H	0.98	8.68	18.38	33.0	-14.6	
High Ch								
1.909	15.9	V	0.98	8.45	23.34	33.0	-9.7	
1.909	11.1	H	0.98	8.55	18.67	33.0	-14.3	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: T Wang
Configuration: EUT only
Mode: LTE Band 2 QPSK 5MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.853	16.0	V	0.98	8.61	23.61	33.0	-9.4	
1.853	10.9	H	0.98	8.81	18.74	33.0	-14.3	
Mid Ch								
1.880	16.0	V	0.98	8.53	23.51	33.0	-9.5	
1.880	12.4	H	0.98	8.68	20.08	33.0	-12.9	
High Ch								
1.908	14.9	V	0.98	8.45	22.34	33.0	-10.7	
1.908	11.3	H	0.98	8.55	18.87	33.0	-14.1	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: T Wang
Configuration: EUT only
Mode: LTE Band 2 16QAM 5MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.853	15.0	V	0.98	8.61	22.61	33.0	-10.4	
1.853	10.0	H	0.98	8.81	17.84	33.0	-15.2	
Mid Ch								
1.880	15.0	V	0.98	8.53	22.51	33.0	-10.5	
1.880	11.4	H	0.98	8.68	19.08	33.0	-13.9	
High Ch								
1.908	13.9	V	0.98	8.45	21.34	33.0	-11.7	
1.908	10.3	H	0.98	8.55	17.87	33.0	-15.1	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: T Wang
Configuration: EUT only
Mode: LTE Band 2 QPSK 10MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.855	17.2	V	0.98	8.61	24.81	33.0	-8.2	
1.855	11.9	H	0.98	8.81	19.74	33.0	-13.3	
Mid Ch								
1.880	17.1	V	0.98	8.53	24.61	33.0	-8.4	
1.880	11.1	H	0.98	8.68	18.78	33.0	-14.2	
High Ch								
1.905	16.0	V	0.98	8.45	23.44	33.0	-9.6	
1.905	4.9	H	0.98	8.55	12.47	33.0	-20.5	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber E

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: T Wang
Configuration: EUT only
Mode: LTE Band 2 16QAM 10MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.855	16.2	V	0.98	8.61	23.81	33.0	-9.2	
1.855	11.0	H	0.98	8.81	18.84	33.0	-14.2	
Mid Ch								
1.880	16.1	V	0.98	8.53	23.61	33.0	-9.4	
1.880	10.0	H	0.98	8.68	17.68	33.0	-15.3	
High Ch								
1.905	15.0	V	0.98	8.45	22.44	33.0	-10.6	
1.905	4.1	H	0.98	8.55	11.67	33.0	-21.3	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: T Wang
Configuration: EUT only
Mode: LTE Band 2 QPSK 15MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.858	17.5	V	0.98	8.61	25.11	33.0	-7.9	
1.858	12.0	H	0.98	8.81	19.84	33.0	-13.2	
Mid Ch								
1.880	16.8	V	0.98	8.53	24.31	33.0	-8.7	
1.880	11.7	H	0.98	8.68	19.38	33.0	-13.6	
High Ch								
1.903	16.2	V	0.98	8.45	23.64	33.0	-9.4	
1.903	12.4	H	0.98	8.55	19.97	33.0	-13.0	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: T Wang
Configuration: EUT only
Mode: LTE Band 2 16QAM 15MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.858	16.6	V	0.98	8.61	24.21	33.0	-8.8	
1.858	11.0	H	0.98	8.81	18.84	33.0	-14.2	
Mid Ch								
1.880	15.8	V	0.98	8.53	23.31	33.0	-9.7	
1.880	10.6	H	0.98	8.68	18.28	33.0	-14.7	
High Ch								
1.903	15.1	V	0.98	8.45	22.54	33.0	-10.5	
1.903	11.4	H	0.98	8.55	18.97	33.0	-14.0	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: T Wang
Configuration: EUT only
Mode: LTE Band 2 QPSK 20MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.860	16.8	V	0.98	8.61	24.41	33.0	-8.6	
1.860	12.2	H	0.98	8.81	20.04	33.0	-13.0	
Mid Ch								
1.880	16.8	V	0.98	8.53	24.31	33.0	-8.7	
1.880	11.9	H	0.98	8.68	19.58	33.0	-13.4	
High Ch								
1.900	16.5	V	0.98	8.45	23.94	33.0	-9.1	
1.900	11.6	H	0.98	8.55	19.17	33.0	-13.8	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: T Wang
Configuration: EUT only
Mode: LTE Band 2 16QAM 20MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.860	15.7	V	0.98	8.61	23.31	33.0	-9.7	
1.860	11.2	H	0.98	8.81	19.04	33.0	-14.0	
Mid Ch								
1.880	15.8	V	0.98	8.53	23.31	33.0	-9.7	
1.880	11.0	H	0.98	8.68	18.68	33.0	-14.3	
High Ch								
1.900	15.6	V	0.98	8.45	23.04	33.0	-10.0	
1.900	10.5	H	0.98	8.55	18.07	33.0	-14.9	

Rev. 02.24.15

9.1.2. LTE BAND 4

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: F. Guarnero
Configuration: EUT only
Mode: LTE Band 4 QPSK 1.4MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.711	16.6	V	0.95	8.42	24.07	30.0	-5.9	
1.711	10.1	H	0.95	8.60	17.74	30.0	-12.3	
Mid Ch								
1.733	17.1	V	0.95	8.50	24.67	30.0	-5.3	
1.733	11.0	H	0.95	8.70	18.71	30.0	-11.3	
High Ch								
1.754	17.1	V	0.95	8.57	24.71	30.0	-5.3	
1.754	11.0	H	0.95	8.80	18.81	30.0	-11.2	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: F. Guarnero
Configuration: EUT only
Mode: LTE Band 4 16QAM 1.4MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.711	15.8	V	0.95	8.42	23.29	30.0	-6.7	
1.711	9.1	H	0.95	8.60	16.74	30.0	-13.3	
Mid Ch								
1.733	16.1	V	0.95	8.50	23.66	30.0	-6.3	
1.733	9.8	H	0.95	8.70	17.52	30.0	-12.5	
High Ch								
1.754	16.2	V	0.95	8.57	23.86	30.0	-6.1	
1.754	10.2	H	0.95	8.80	18.08	30.0	-11.9	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: F. Guarnero
Configuration: EUT only
Mode: LTE Band 4 QPSK 3MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; 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	16.7	V	0.95	8.42	24.19	30.0	-5.8	
1.712	10.1	H	0.95	8.60	17.77	30.0	-12.2	
Mid Ch								
1.733	17.1	V	0.95	8.50	24.65	30.0	-5.4	
1.733	10.3	H	0.95	8.70	18.05	30.0	-12.0	
High Ch								
1.754	17.0	V	0.95	8.57	24.62	30.0	-5.4	
1.754	11.6	H	0.95	8.80	19.46	30.0	-10.5	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: F. Guarnero
Configuration: EUT only
Mode: LTE Band 4 16QAM 3MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.712	15.7	V	0.95	8.42	23.17	30.0	-6.8	
1.712	9.0	H	0.95	8.60	16.68	30.0	-13.3	
Mid Ch								
1.733	16.2	V	0.95	8.50	23.79	30.0	-6.2	
1.733	9.6	H	0.95	8.70	17.37	30.0	-12.6	
High Ch								
1.754	16.0	V	0.95	8.57	23.62	30.0	-6.4	
1.754	10.3	H	0.95	8.80	18.13	30.0	-11.9	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: F. Guarnero
Configuration: EUT only
Mode: LTE Band 4 QPSK 5MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; 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	16.7	V	0.95	8.42	24.13	30.0	-5.9	
1.713	9.8	H	0.95	8.60	17.44	30.0	-12.6	
Mid Ch								
1.733	17.3	V	0.95	8.50	24.89	30.0	-5.1	
1.733	10.1	H	0.95	8.70	17.89	30.0	-12.1	
High Ch								
1.753	17.0	V	0.95	8.57	24.59	30.0	-5.4	
1.753	10.9	H	0.95	8.80	18.70	30.0	-11.3	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: F. Guarnero
Configuration: EUT only
Mode: LTE Band 4 16QAM 5MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.713	15.8	V	0.95	8.42	23.24	30.0	-6.8	
1.713	9.1	H	0.95	8.60	16.75	30.0	-13.3	
Mid Ch								
1.733	16.2	V	0.95	8.50	23.73	30.0	-6.3	
1.733	9.4	H	0.95	8.70	17.12	30.0	-12.9	
High Ch								
1.753	16.0	V	0.95	8.57	23.61	30.0	-6.4	
1.753	9.7	H	0.95	8.80	17.58	30.0	-12.4	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: F. Guarnero
Configuration: EUT only
Mode: LTE Band 4 QPSK 10MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; 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	16.9	V	0.95	8.42	24.38	30.0	-5.6	
1.715	10.1	H	0.95	8.60	17.78	30.0	-12.2	
Mid Ch								
1.733	17.2	V	0.95	8.50	24.77	30.0	-5.2	
1.733	10.2	H	0.95	8.70	17.96	30.0	-12.0	
High Ch								
1.750	16.9	V	0.95	8.57	24.55	30.0	-5.5	
1.750	10.8	H	0.95	8.80	18.63	30.0	-11.4	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: F. Guarnero
Configuration: EUT only
Mode: LTE Band 4 16QAM 10MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; 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	16.0	V	0.95	8.42	23.46	30.0	-6.5	
1.715	9.4	H	0.95	8.60	17.01	30.0	-13.0	
Mid Ch								
1.733	16.5	V	0.95	8.50	24.00	30.0	-6.0	
1.733	9.1	H	0.95	8.70	16.89	30.0	-13.1	
High Ch								
1.750	16.0	V	0.95	8.57	23.59	30.0	-6.4	
1.750	9.6	H	0.95	8.80	17.46	30.0	-12.5	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: F. Guarnero
Configuration: EUT only
Mode: LTE Band 4 QPSK 15MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.718	17.0	V	0.95	8.42	24.44	30.0	-5.6	
1.718	10.1	H	0.95	8.60	17.76	30.0	-12.2	
Mid Ch								
1.733	17.4	V	0.95	8.50	24.99	30.0	-5.0	
1.733	10.3	H	0.95	8.70	18.00	30.0	-12.0	
High Ch								
1.748	16.8	V	0.95	8.57	24.45	30.0	-5.6	
1.748	11.4	H	0.95	8.80	19.23	30.0	-10.8	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: F. Guarnero
Configuration: EUT only
Mode: LTE Band 4 QPSK 15MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; 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	16.1	V	0.95	8.42	23.54	30.0	-6.5	
1.718	9.3	H	0.95	8.60	16.91	30.0	-13.1	
Mid Ch								
1.733	16.0	V	0.95	8.50	23.52	30.0	-6.5	
1.733	9.4	H	0.95	8.70	17.18	30.0	-12.8	
High Ch								
1.748	16.0	V	0.95	8.57	23.64	30.0	-6.4	
1.748	10.2	H	0.95	8.80	18.02	30.0	-12.0	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: F. Guarnero
Configuration: EUT only
Mode: LTE Band 4 QPSK 20MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.720	17.0	V	0.95	8.42	24.42	30.0	-5.6	
1.720	10.0	H	0.95	8.60	17.69	30.0	-12.3	
Mid Ch								
1.733	17.0	V	0.95	8.50	24.55	30.0	-5.5	
1.733	10.1	H	0.95	8.70	17.87	30.0	-12.1	
High Ch								
1.745	16.8	V	0.95	8.57	24.45	30.0	-5.6	
1.745	10.9	H	0.95	8.80	18.79	30.0	-11.2	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/24/2015
Test Engineer: F. Guarnero
Configuration: EUT only
Mode: LTE Band 4 16QAM 20MHz BW

Test Equipment:
Receiving: Horn T120, and Chamber F SMA Cables
Substitution: Horn T59 Substitution, 8ft SMA Cable (s/n 228076-003; SUCOFLEX 104PEA)

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin EIRP (dB)	Notes
Low Ch								
1.720	15.9	V	0.95	8.42	23.41	30.0	-6.6	
1.720	9.3	H	0.95	8.60	16.99	30.0	-13.0	
Mid Ch								
1.733	15.8	V	0.95	8.50	23.35	30.0	-6.7	
1.733	9.7	H	0.95	8.70	17.41	30.0	-12.6	
High Ch								
1.745	15.6	V	0.95	8.57	23.19	30.0	-6.8	
1.745	9.7	H	0.95	8.80	17.59	30.0	-12.4	

Rev. 02.24.15

9.1.3. LTE BAND 5

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/26/2015
Test Engineer: T Wang
Configuration: EUT only
Mode: LTE Band 5 QPSK 1.4MHz BW

Test Equipment:
Receiving: Sunol T122, and Chamber F Cable
Substitution: Dipole S/N: 00022117, 8ft SMA Cable (s/n 228076-003; 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	21.39	V	0.6	0.0	20.77	22.92	38.45	40.60	-17.7	
824.70	22.74	H	0.6	0.0	22.12	24.27	38.45	40.60	-16.3	
Mid Ch										
836.50	20.28	V	0.6	0.0	19.66	21.81	38.45	40.60	-18.8	
836.50	22.80	H	0.6	0.0	22.18	24.33	38.45	40.60	-16.3	
High Ch										
848.30	19.09	V	0.6	0.0	18.47	20.62	38.45	40.60	-20.0	
848.30	21.62	H	0.6	0.0	21.00	23.15	38.45	40.60	-17.4	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/26/2015
Test Engineer: T Wang
Configuration: EUT only
Mode: LTE Band 5 16QAM 1.4MHz BW

Test Equipment:
Receiving: Sunol T122, and Chamber F Cable
Substitution: Dipole S/N: 00022117, 8ft SMA Cable (s/n 228076-003; 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	20.89	V	0.6	0.0	20.27	22.42	38.45	40.60	-18.2	
824.70	22.24	H	0.6	0.0	21.62	23.77	38.45	40.60	-16.8	
Mid Ch										
836.50	19.88	V	0.6	0.0	19.26	21.41	38.45	40.60	-19.2	
836.50	22.30	H	0.6	0.0	21.68	23.83	38.45	40.60	-16.8	
High Ch										
848.30	18.59	V	0.6	0.0	17.97	20.12	38.45	40.60	-20.5	
848.30	21.12	H	0.6	0.0	20.50	22.65	38.45	40.60	-17.9	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/26/2015
Test Engineer: T Wang
Configuration: EUT only
Mode: LTE Band 5 QPSK 3MHz BW

Test Equipment:
Receiving: Sunol T122, and Chamber F Cable
Substitution: Dipole S/N: 00022117, 8ft SMA Cable (s/n 228076-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
825.50	21.29	V	0.6	0.0	20.67	22.82	38.45	40.60	-17.8	
825.50	22.64	H	0.6	0.0	22.02	24.17	38.45	40.60	-16.4	
Mid Ch										
836.50	20.98	V	0.6	0.0	20.36	22.51	38.45	40.60	-18.1	
836.50	23.00	H	0.6	0.0	22.38	24.53	38.45	40.60	-16.1	
High Ch										
847.50	20.99	V	0.6	0.0	20.37	22.52	38.45	40.60	-18.1	
847.50	22.02	H	0.6	0.0	21.40	23.55	38.45	40.60	-17.0	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber E

Company:
Project #: 14U19187
Date: 2/26/2015
Test Engineer: T Wang
Configuration: EUT only
Mode: LTE Band 5 16QAM 3MHz BW

Test Equipment:
Receiving: Sunol T122, and Chamber F Cable
Substitution: Dipole S/N: 00022117, 8ft SMA Cable (s/n 228076-003; 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	20.79	V	0.6	0.0	20.17	22.32	38.45	40.60	-18.3	
825.50	22.14	H	0.6	0.0	21.52	23.67	38.45	40.60	-16.9	
Mid Ch										
836.50	20.58	V	0.6	0.0	19.96	22.11	38.45	40.60	-18.5	
836.50	22.60	H	0.6	0.0	21.98	24.13	38.45	40.60	-16.5	
High Ch										
847.50	20.59	V	0.6	0.0	19.97	22.12	38.45	40.60	-18.5	
847.50	21.62	H	0.6	0.0	21.00	23.15	38.45	40.60	-17.4	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/26/2015
Test Engineer: T Wang
Configuration: EUT only
Mode: LTE Band 5 QPSK 5MHz BW

Test Equipment:
Receiving: Sunol T122, and Chamber F Cable
Substitution: Dipole S/N: 00022117, 8ft SMA Cable (s/n 228076-003; 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	20.99	V	0.6	0.0	20.37	22.52	38.45	40.60	-18.1	
826.50	22.64	H	0.6	0.0	22.02	24.17	38.45	40.60	-16.4	
Mid Ch										
836.50	20.58	V	0.6	0.0	19.96	22.11	38.45	40.60	-18.5	
836.50	22.70	H	0.6	0.0	22.08	24.23	38.45	40.60	-16.4	
High Ch										
846.50	20.69	V	0.6	0.0	20.07	22.22	38.45	40.60	-18.4	
846.50	22.32	H	0.6	0.0	21.70	23.85	38.45	40.60	-16.7	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/26/2015
Test Engineer: T Wang
Configuration: EUT only
Mode: LTE Band 5 16QAM 5MHz BW

Test Equipment:
Receiving: Sunol T122, and Chamber F Cable
Substitution: Dipole S/N: 00022117, 8ft SMA Cable (s/n 228076-003; 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	20.59	V	0.6	0.0	19.97	22.12	38.45	40.60	-18.5	
826.50	22.14	H	0.6	0.0	21.52	23.67	38.45	40.60	-16.9	
Mid Ch										
836.50	20.18	V	0.6	0.0	19.56	21.71	38.45	40.60	-18.9	
836.50	22.20	H	0.6	0.0	21.58	23.73	38.45	40.60	-16.9	
High Ch										
846.50	20.19	V	0.6	0.0	19.57	21.72	38.45	40.60	-18.9	
846.50	21.82	H	0.6	0.0	21.20	23.35	38.45	40.60	-17.2	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/26/2015
Test Engineer: T Wang
Configuration: EUT only
Mode: LTE Band 5 QPSK 10MHz BW

Test Equipment:
Receiving: Sunol T122, and Chamber F Cable
Substitution: Dipole S/N: 00022117, 8ft SMA Cable (s/n 228076-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
829.00	21.99	V	0.6	0.0	21.37	23.52	38.45	40.60	-17.1	
829.00	22.94	H	0.6	0.0	22.32	24.47	38.45	40.60	-16.1	
Mid Ch										
836.50	20.98	V	0.6	0.0	20.36	22.51	38.45	40.60	-18.1	
836.50	22.70	H	0.6	0.0	22.08	24.23	38.45	40.60	-16.4	
High Ch										
844.00	20.89	V	0.6	0.0	20.27	22.42	38.45	40.60	-18.2	
844.00	22.82	H	0.6	0.0	22.20	24.35	38.45	40.60	-16.2	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/26/2015
Test Engineer: T Wang
Configuration: EUT only
Mode: LTE Band 5 16QAM 10MHz BW

Test Equipment:
Receiving: Sunol T122, and Chamber F Cable
Substitution: Dipole S/N: 00022117, 8ft SMA Cable (s/n 228076-003; SUCOFLEX 104PEA)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	EIRP (dBm)	ERP Limit (dBm)	EIRP Limit (dBm)	Margin (dB)	Notes
Low Ch										
829.00	21.49	V	0.6	0.0	20.87	23.02	38.45	40.60	-17.6	
829.00	22.44	H	0.6	0.0	21.82	23.97	38.45	40.60	-16.6	
Mid Ch										
836.50	20.58	V	0.6	0.0	19.96	22.11	38.45	40.60	-18.5	
836.50	22.20	H	0.6	0.0	21.58	23.73	38.45	40.60	-16.9	
High Ch										
844.00	20.49	V	0.6	0.0	19.87	22.02	38.45	40.60	-18.6	
844.00	22.42	H	0.6	0.0	21.80	23.95	38.45	40.60	-16.6	

Rev. 02.24.15

9.1.4. LTE BAND 13

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/26/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 13 QPSK 5MHz BW

Test Equipment:
Receiving: Sunol T122, and Chamber F Cable
Substitution: Dipole S/N: 00022117, 8ft SMA Cable (s/n 228076-003; 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	20.45	V	0.55	0.0	19.90	22.05	34.77	36.99	-14.9	
779.50	21.01	H	0.55	0.0	20.46	22.61	34.77	36.99	-14.4	
Mid Ch										
782.00	20.47	V	0.55	0.0	19.92	22.07	34.77	36.99	-14.9	
782.00	20.75	H	0.55	0.0	20.20	22.35	34.77	36.99	-14.6	
High Ch										
784.50	18.62	V	0.55	0.0	18.07	20.22	34.77	36.99	-16.8	
784.50	19.72	H	0.55	0.0	19.17	21.32	34.77	36.99	-15.7	

Rev. 02.24.15

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

High Frequency Substitution Measurement
UL Fremont Radiated Chamber F

Company:
Project #: 14U19187
Date: 2/26/2015
Test Engineer: F. Guarnero
Configuration: EUT Only
Mode: LTE Band 13 16QAM 5MHz BW

Test Equipment:
Receiving: Sunol T122, and Chamber F Cable
Substitution: Dipole S/N: 00022117, 8ft SMA Cable (s/n 228076-003; 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	19.55	V	0.55	0.0	19.00	21.15	34.77	36.99	-15.8	
779.50	20.16	H	0.55	0.0	19.61	21.76	34.77	36.99	-15.2	
Mid Ch										
782.00	19.57	V	0.55	0.0	19.02	21.17	34.77	36.99	-15.8	
782.00	19.76	H	0.55	0.0	19.21	21.36	34.77	36.99	-15.6	
High Ch										
784.50	18.54	V	0.55	0.0	17.99	20.14	34.77	36.99	-16.9	
784.50	18.65	H	0.55	0.0	18.10	20.25	34.77	36.99	-16.7	

Rev. 02.24.15