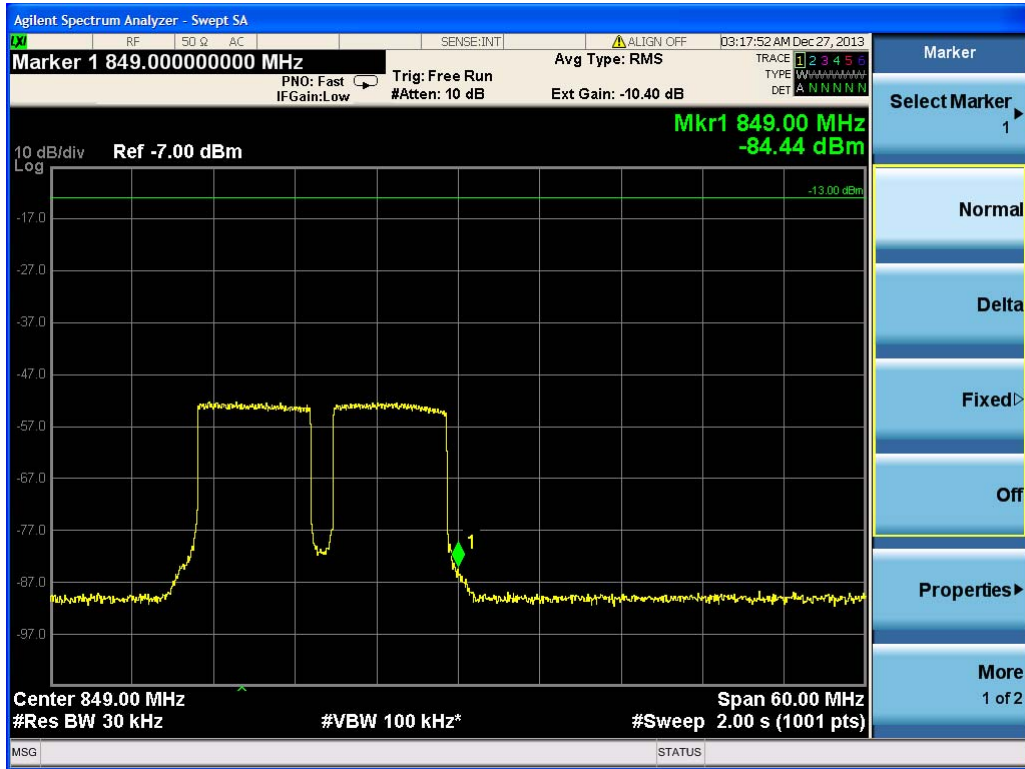
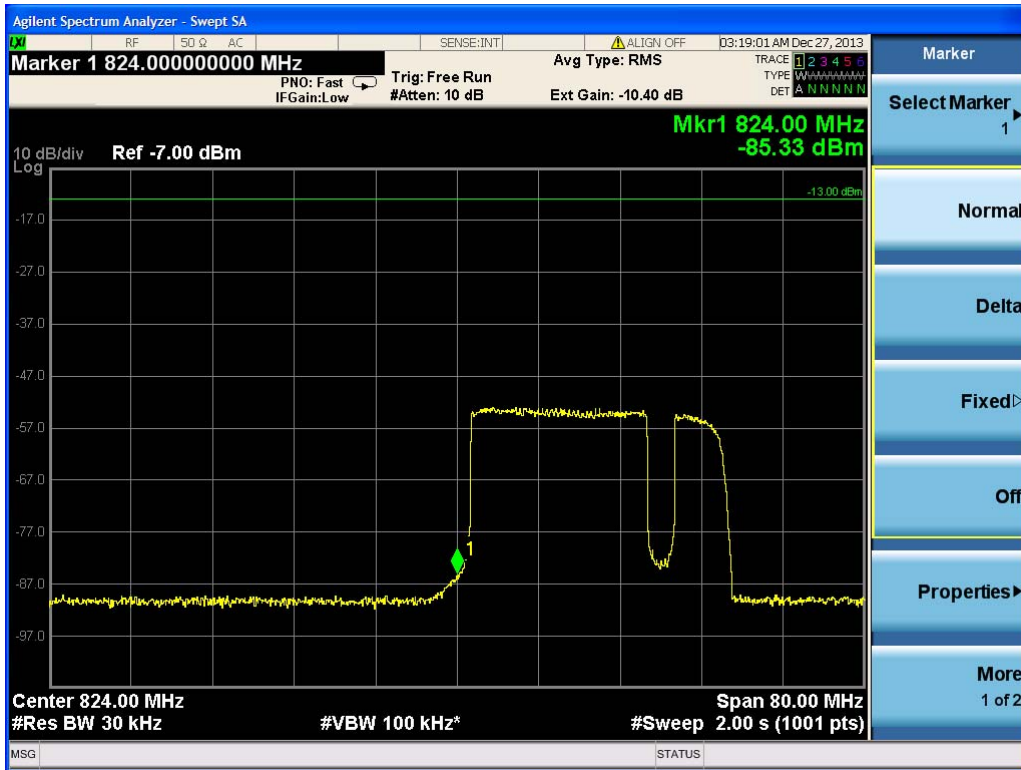


b) Upper Edge

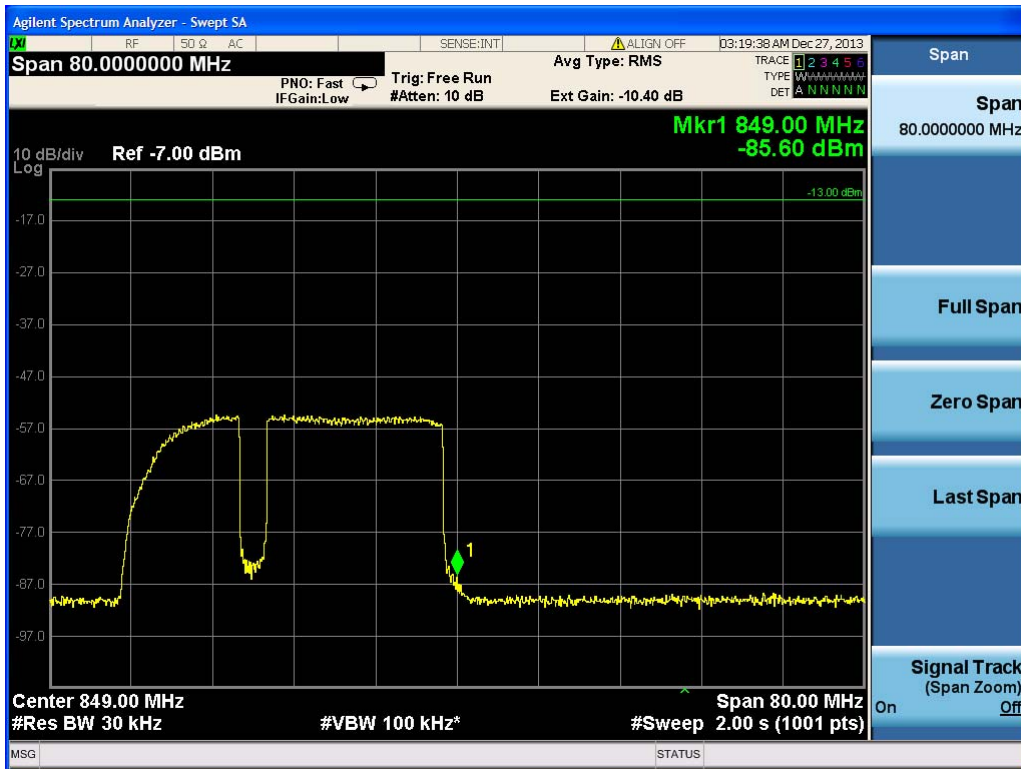


1.4) Test for LTE 20MHz

a) Lower Edge

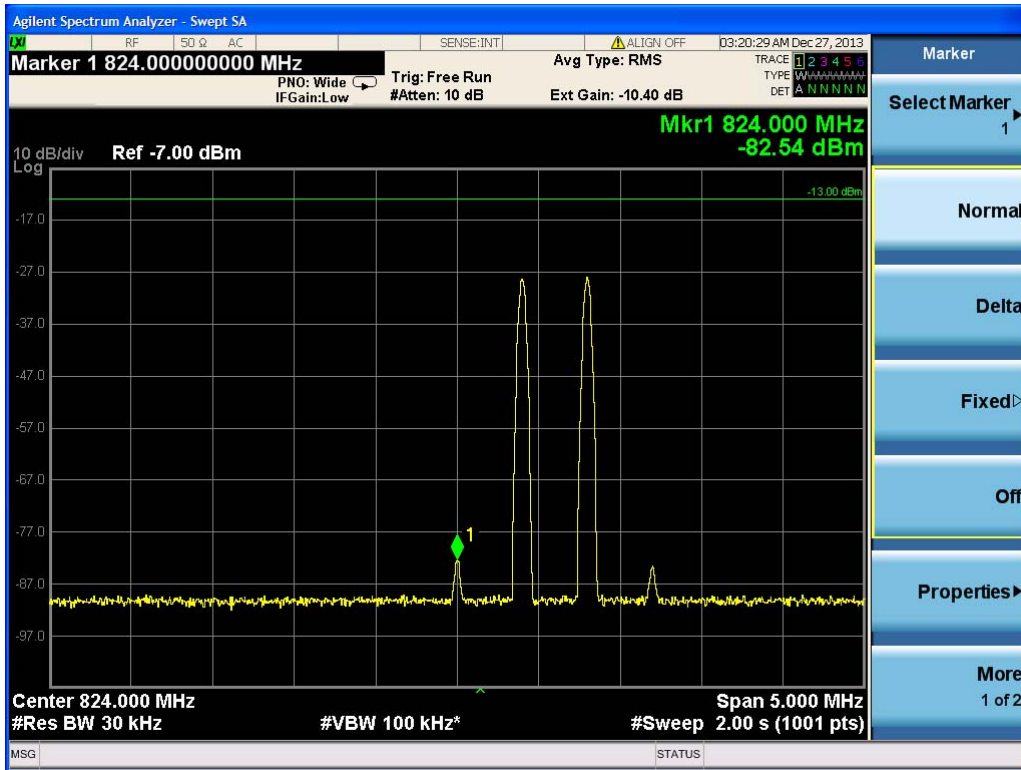


b) Upper Edge

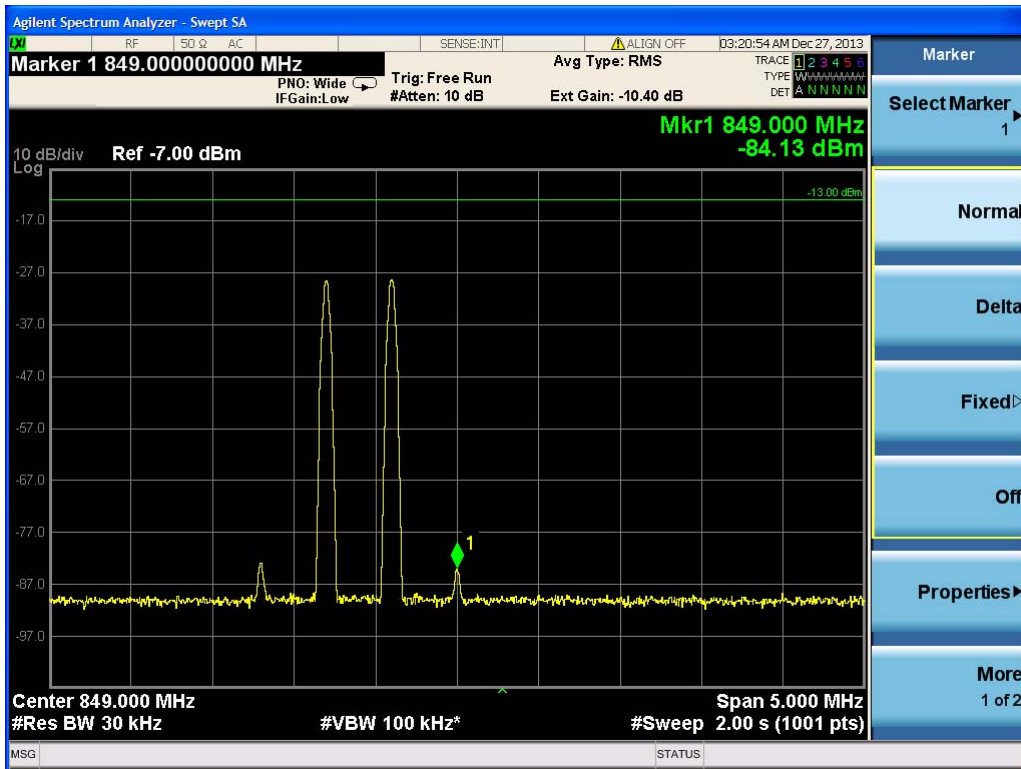


2) GSM modulation

a) Lower Edge

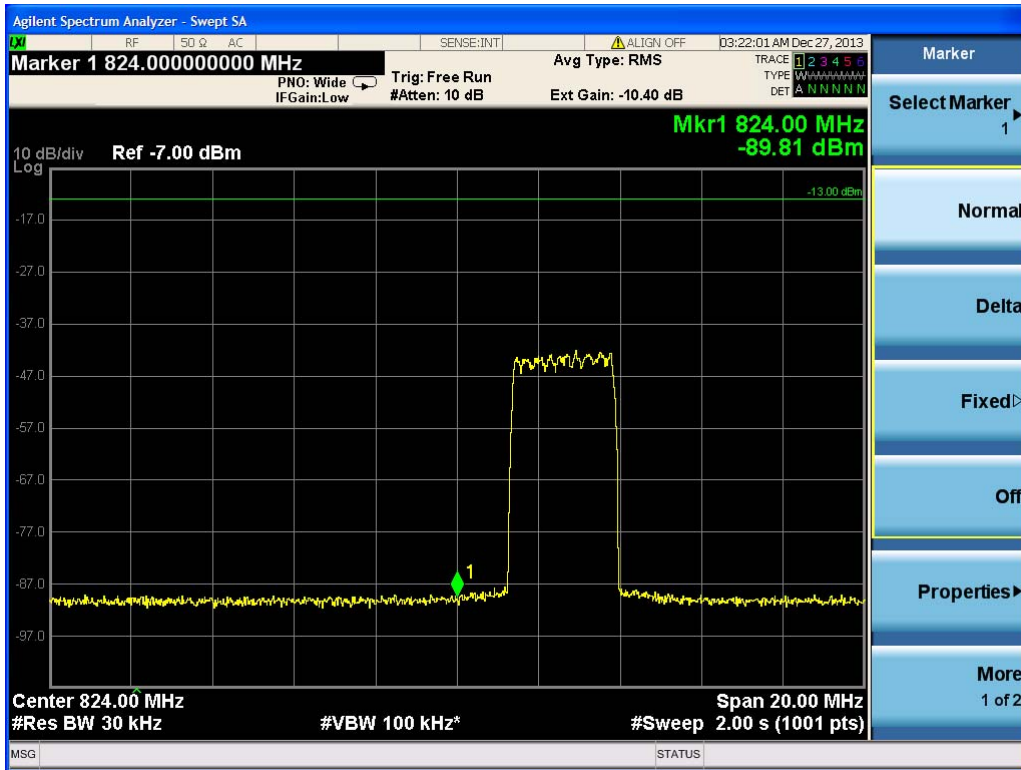


b) Upper Edge

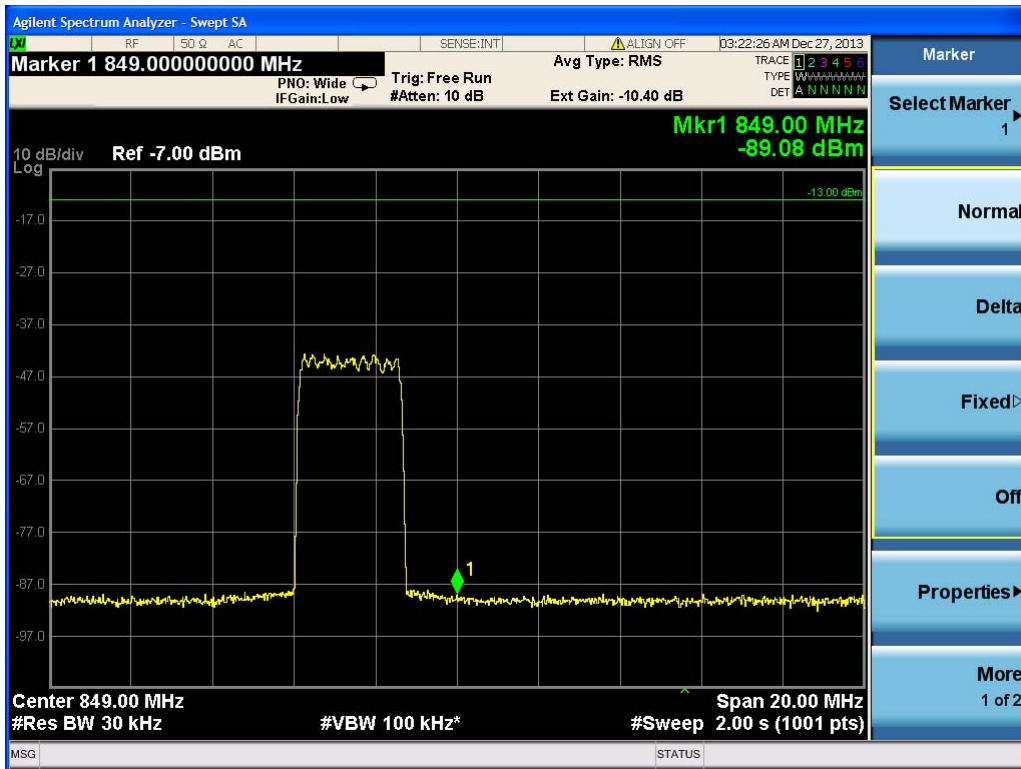


3) CDMA modulation

a) Lower Edge

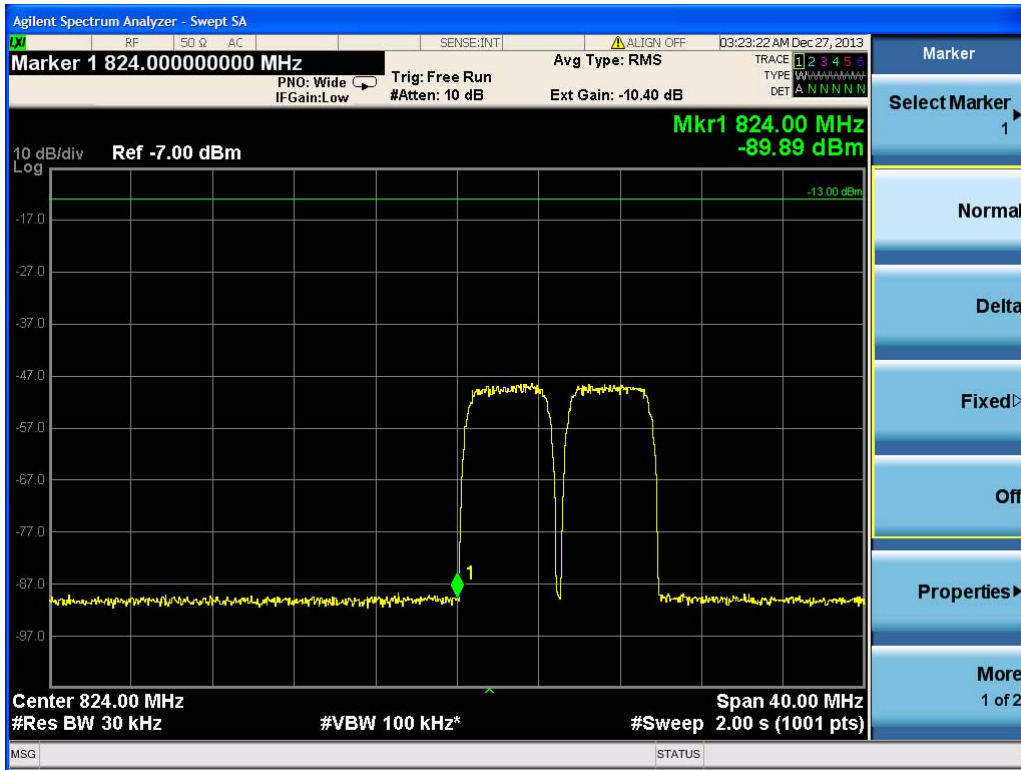


b) Upper Edge

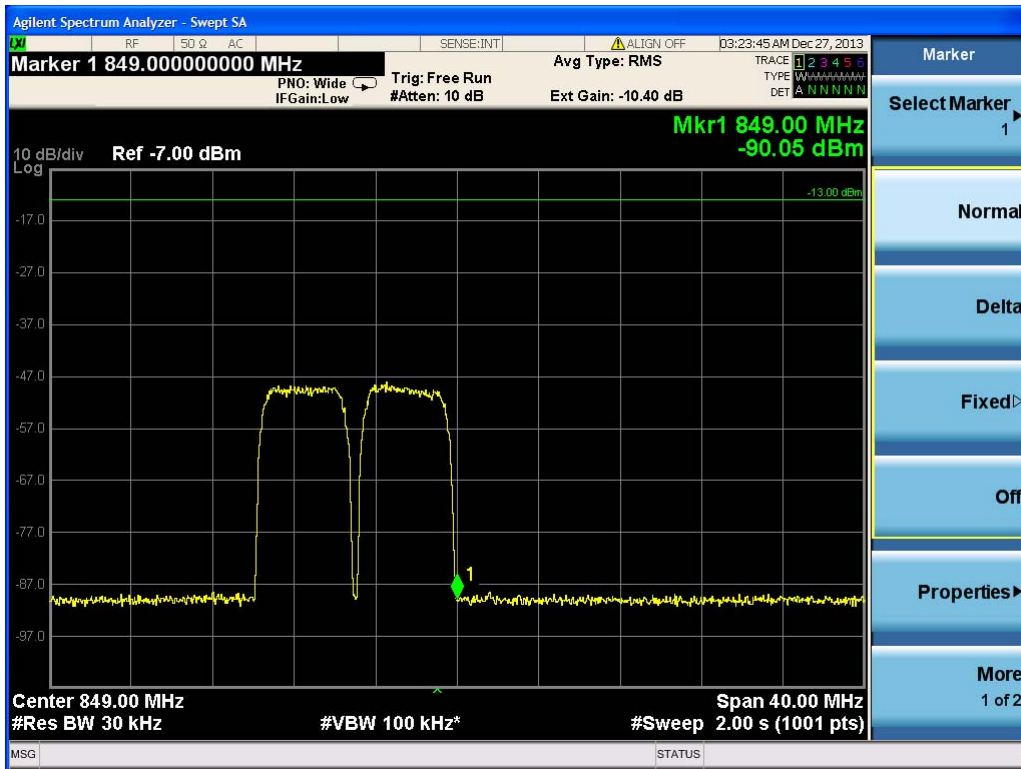


4) WCDMA modulation

a) Lower Edge

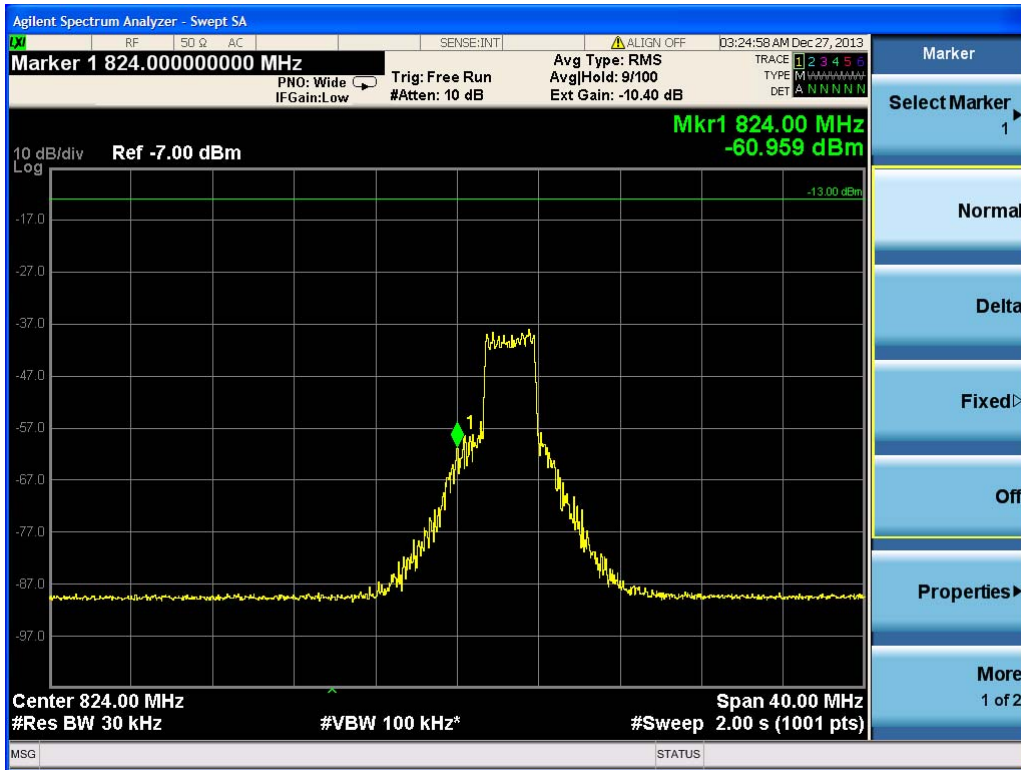


b) Upper Edge

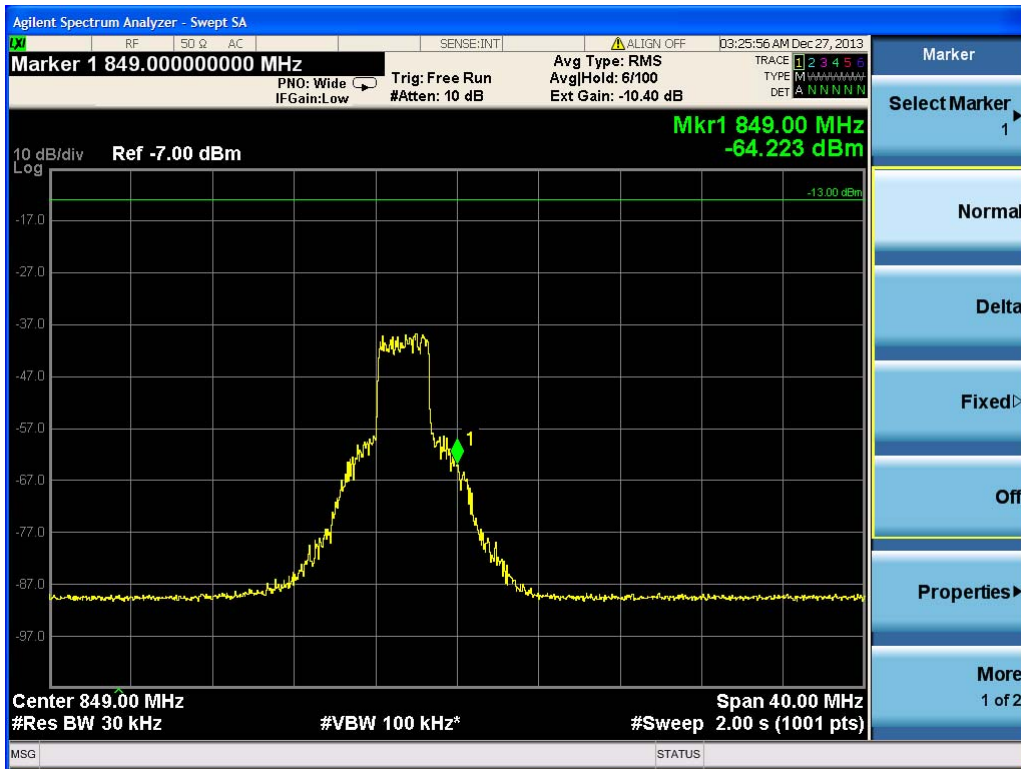


5) 1x EV-DO modulation

a) Lower Edge



b) Upper Edge

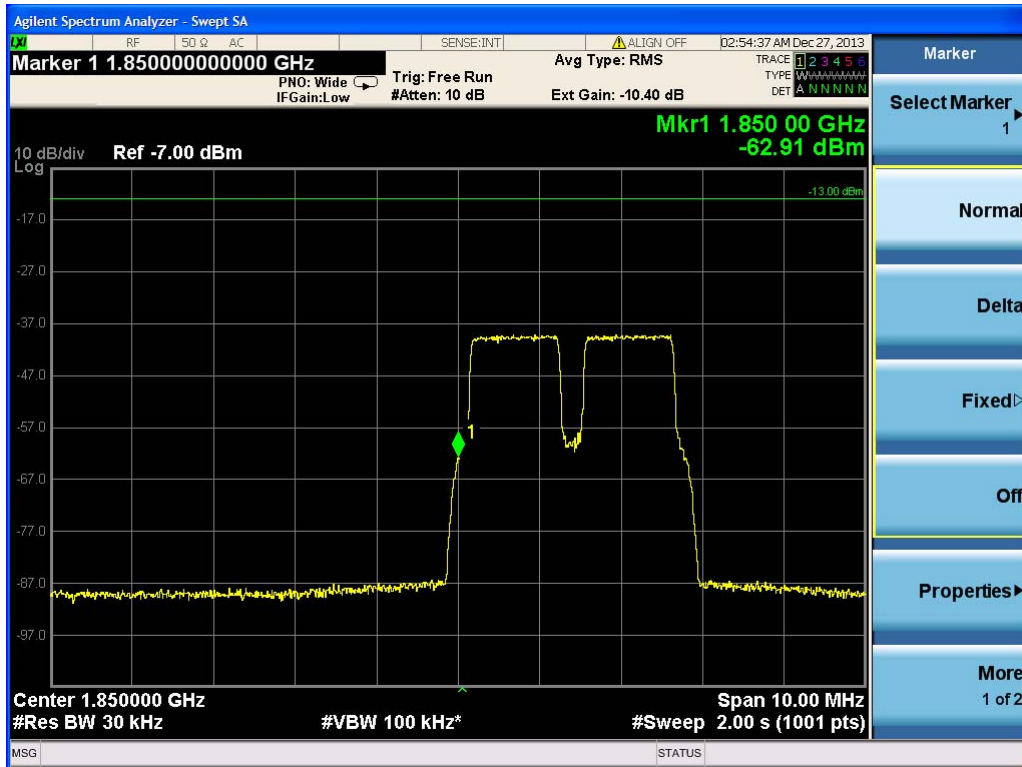


5.3.4.1.4 1900MHz Broadband PCS

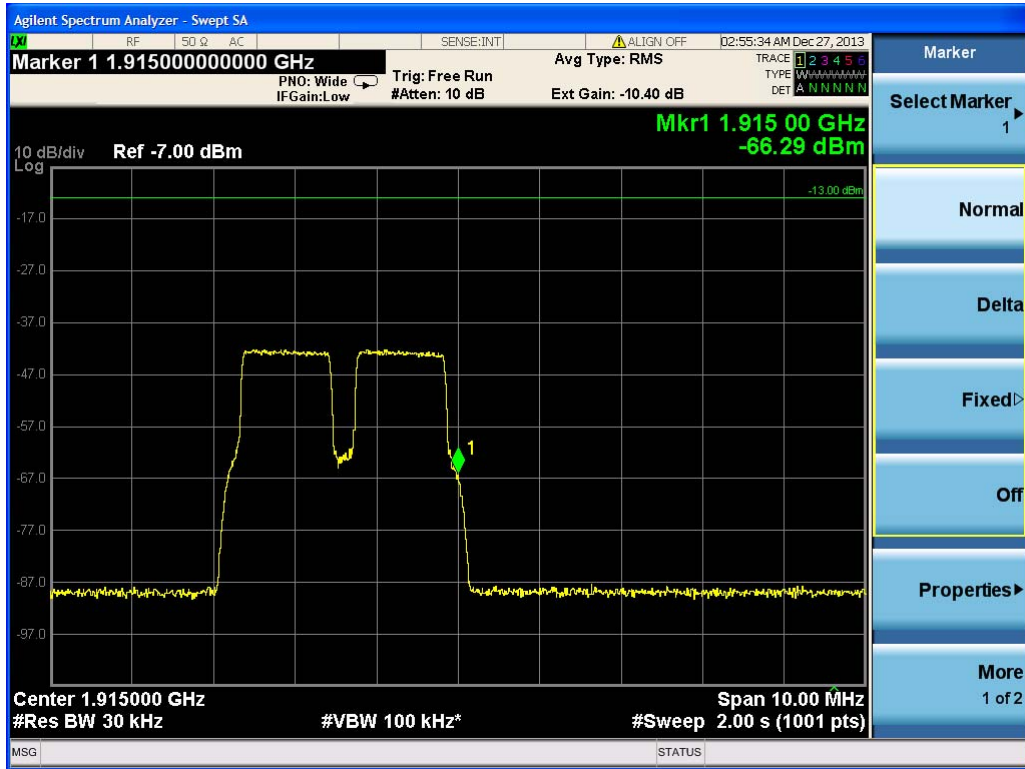
1) LTE modulation

1.1) Test for LTE 1.4MHz

a) Lower Edge

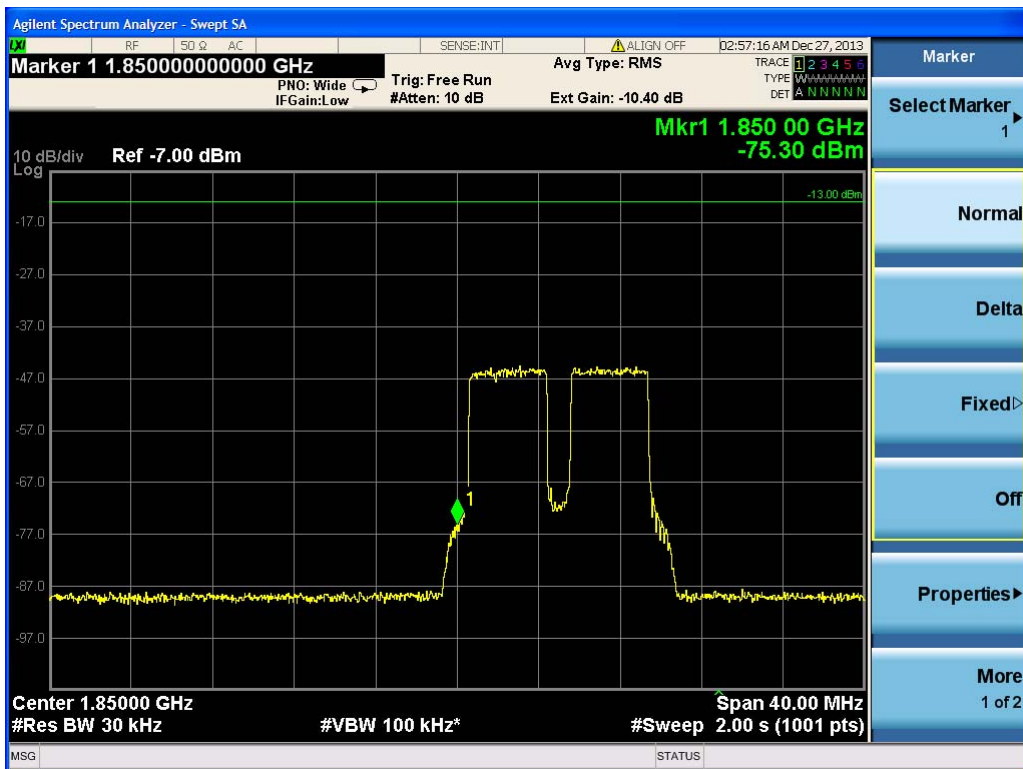


b) Upper Edge

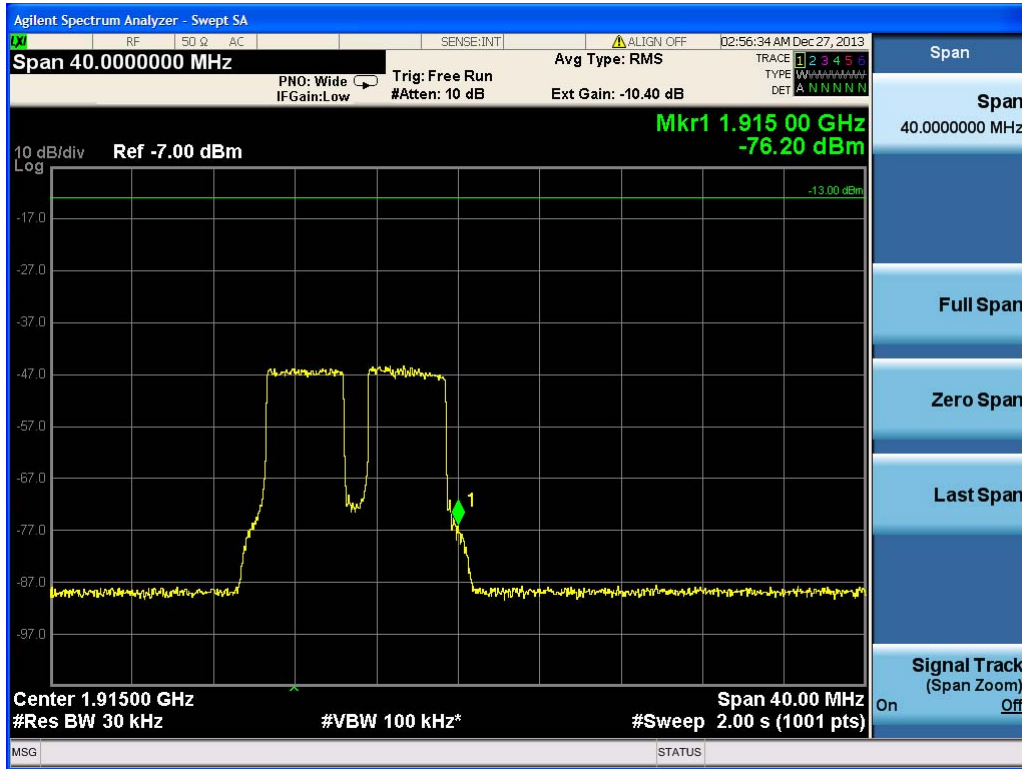


1.2) Test for LTE 5MHz

a) Lower Edge

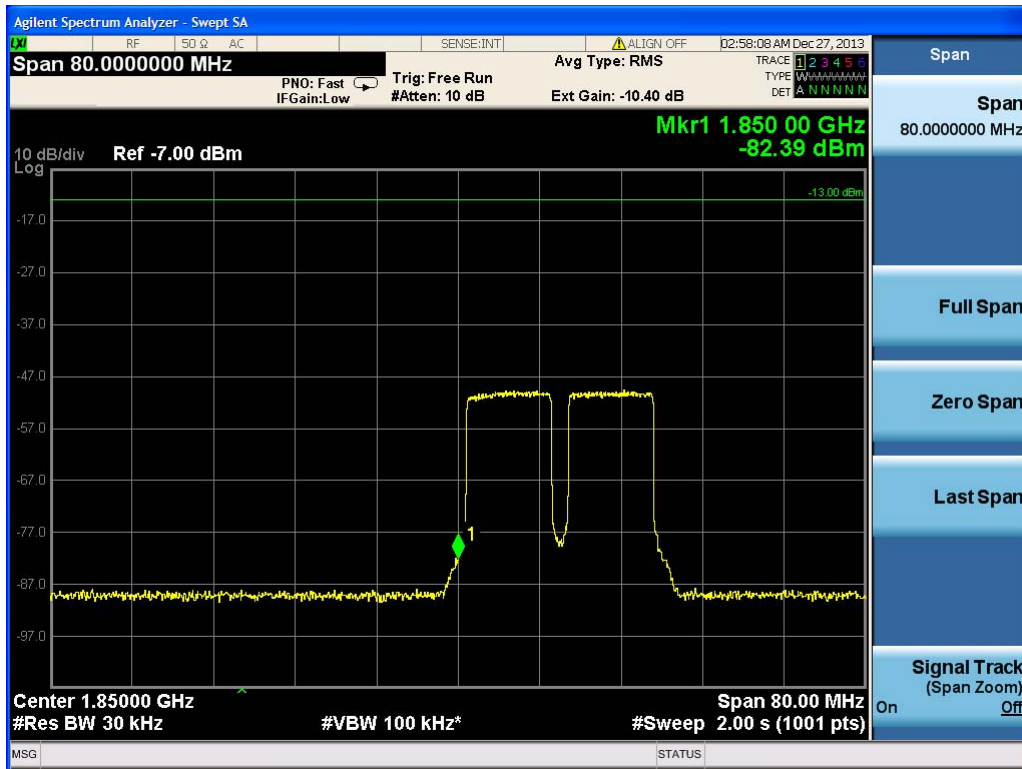


b) Upper Edge

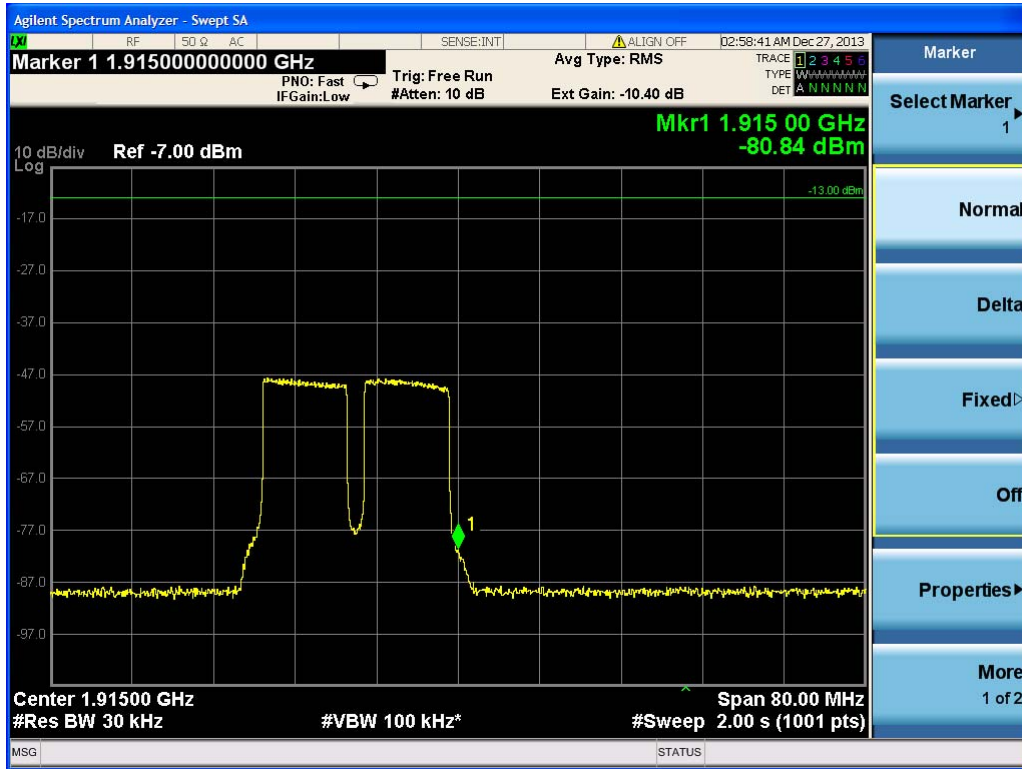


1.3) Test for LTE 10MHz

a) Lower Edge

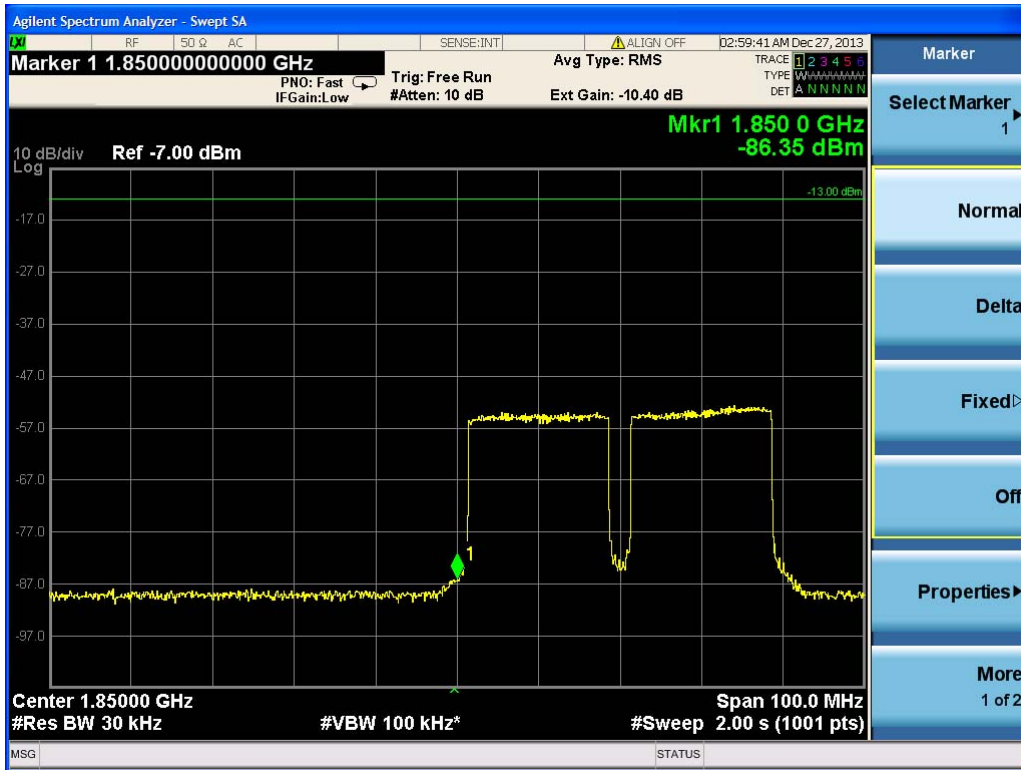


b) Upper Edge

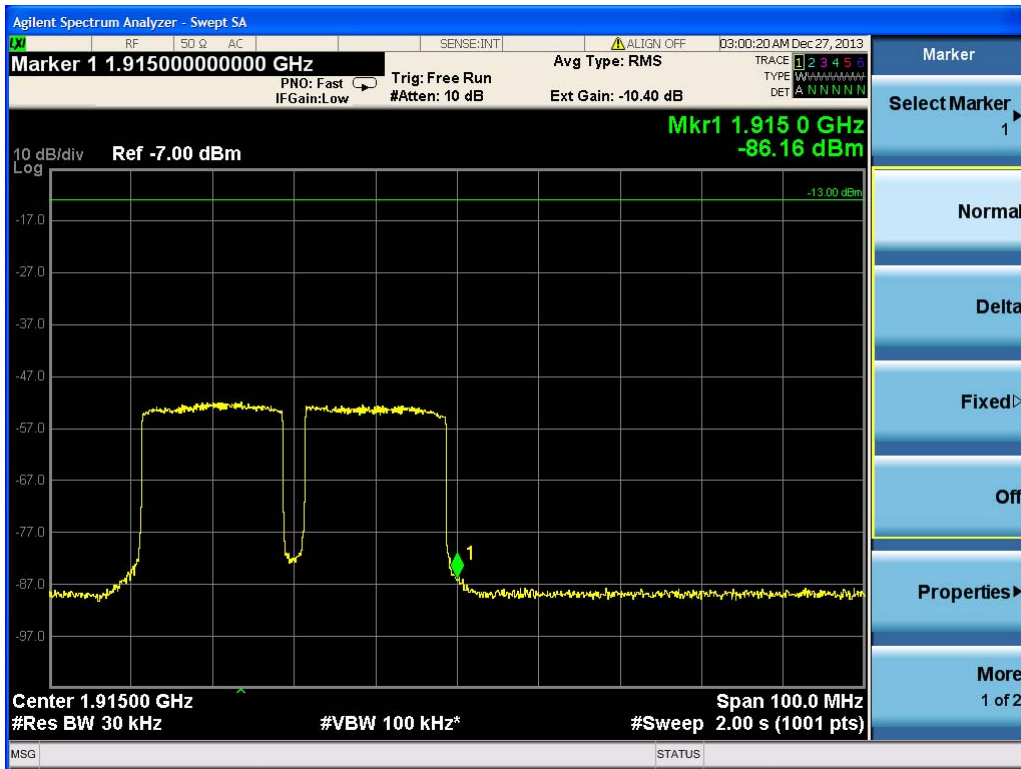


1.4) Test for LTE 20MHz

a) Lower Edge

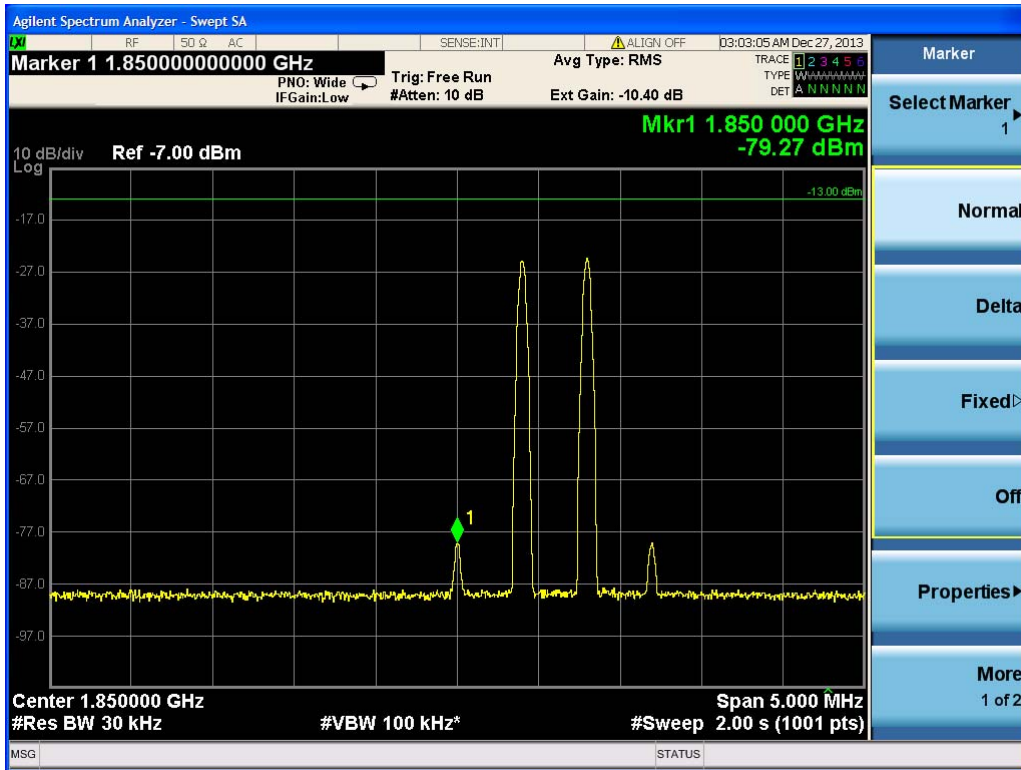


b) Upper Edge

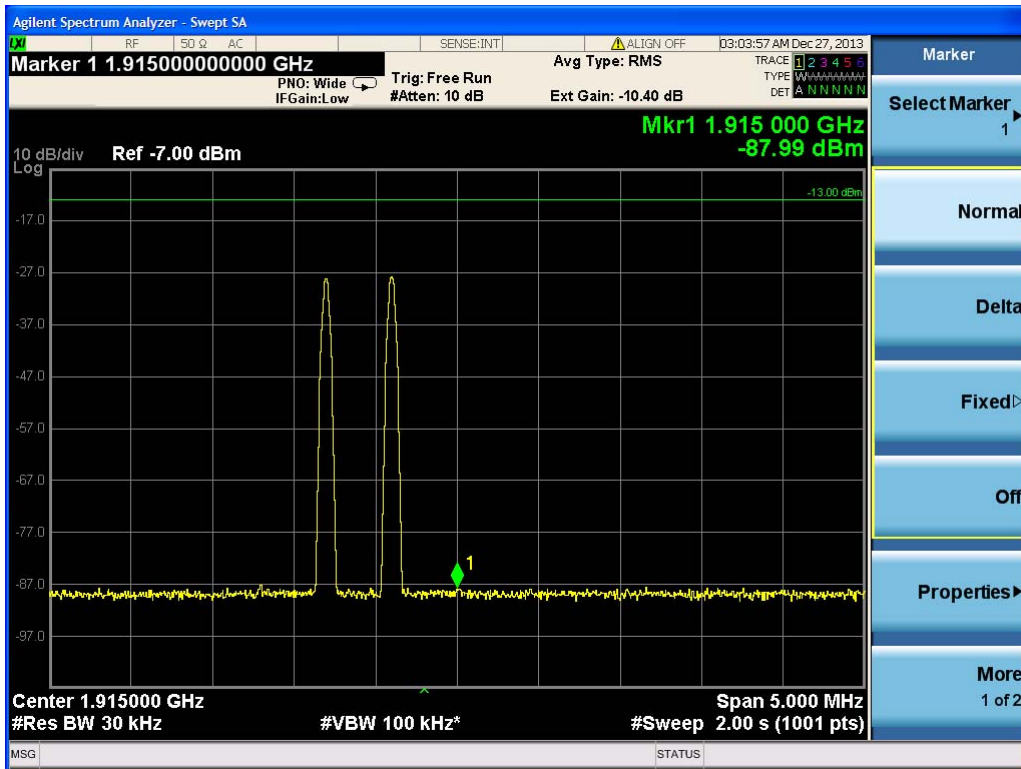


2) GSM modulation

a) Lower Edge

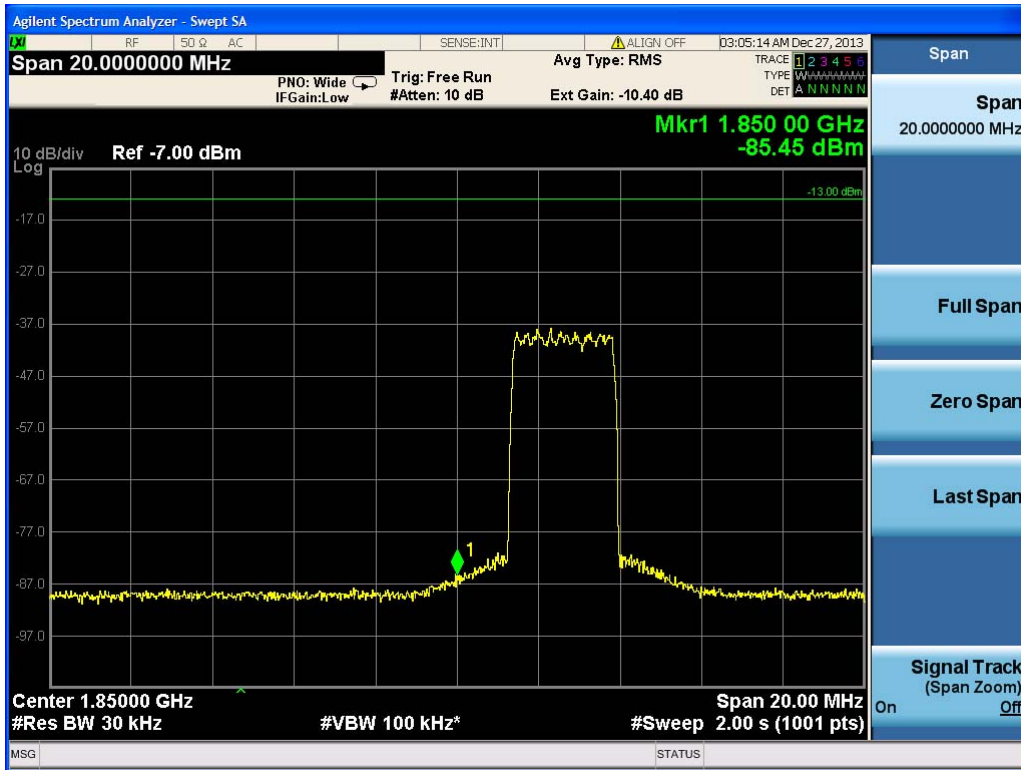


b) Upper Edge

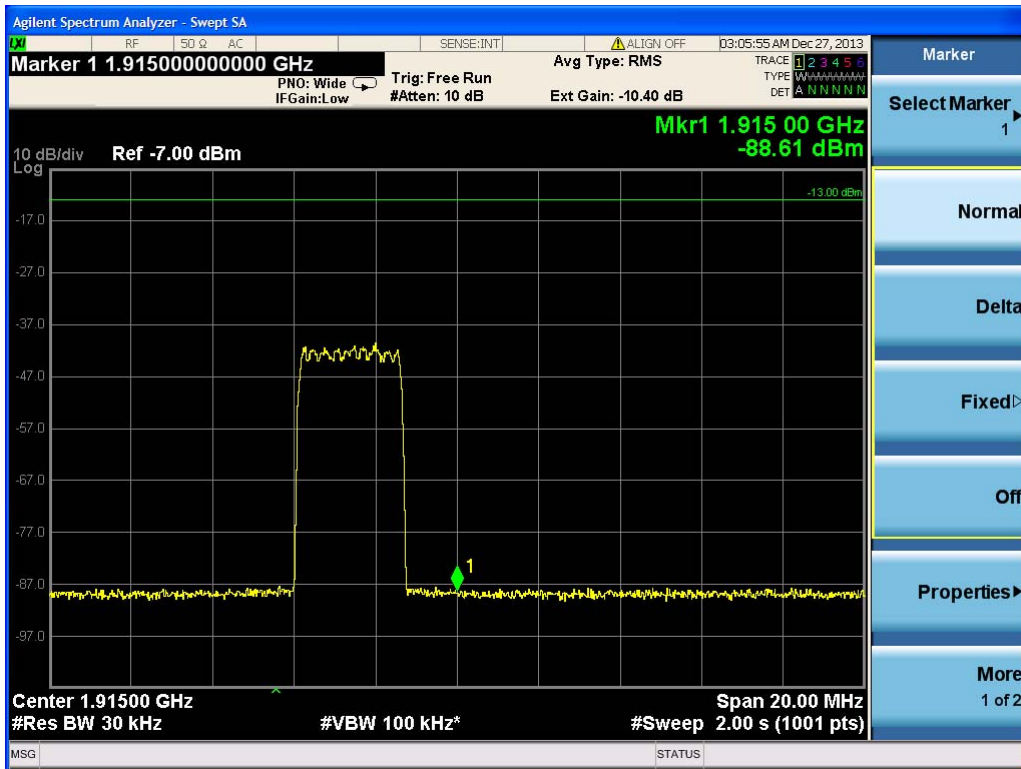


3) CDMA modulation

a) Lower Edge

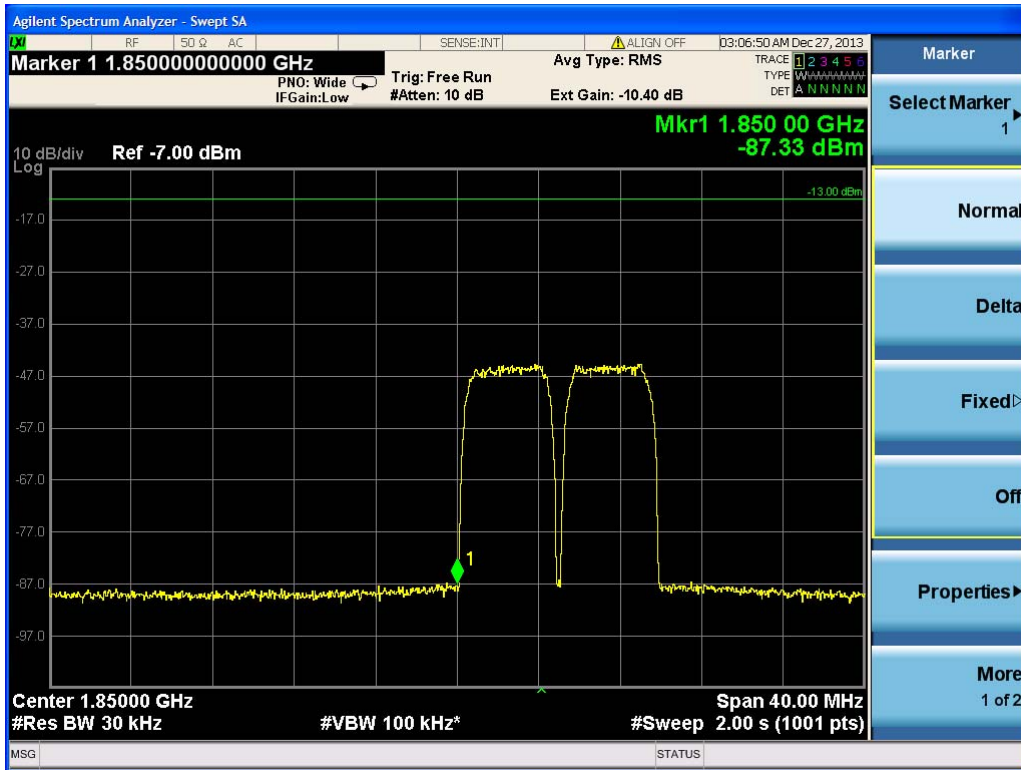


b) Upper Edge

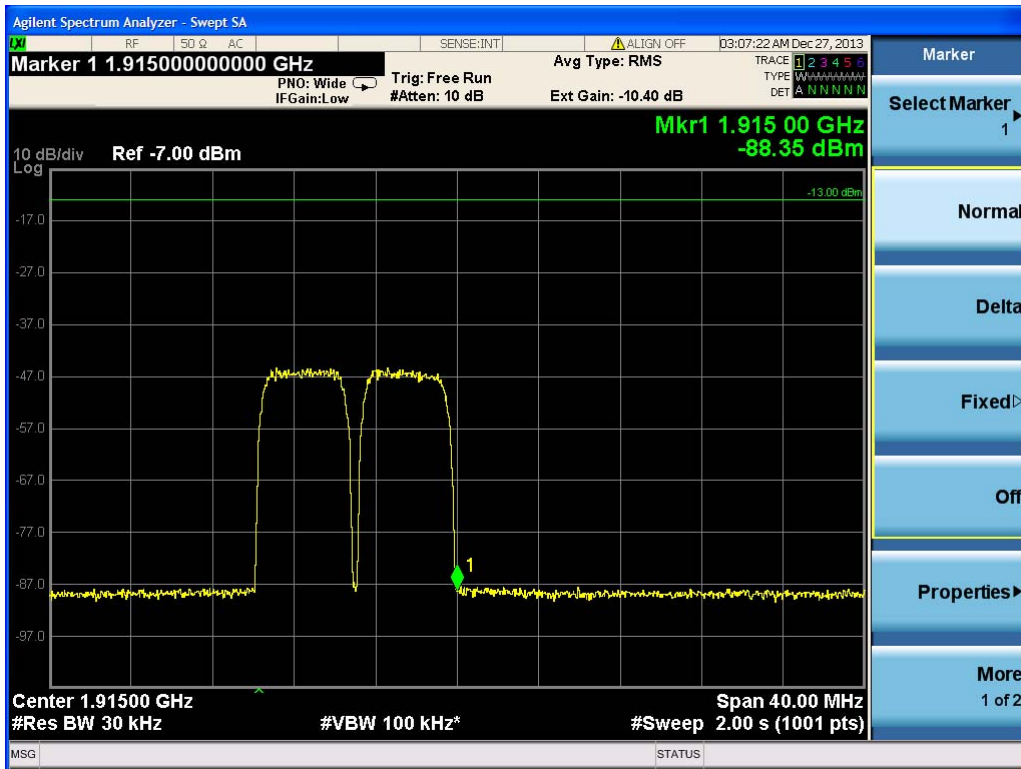


4) WCDMA modulation

a) Lower Edge

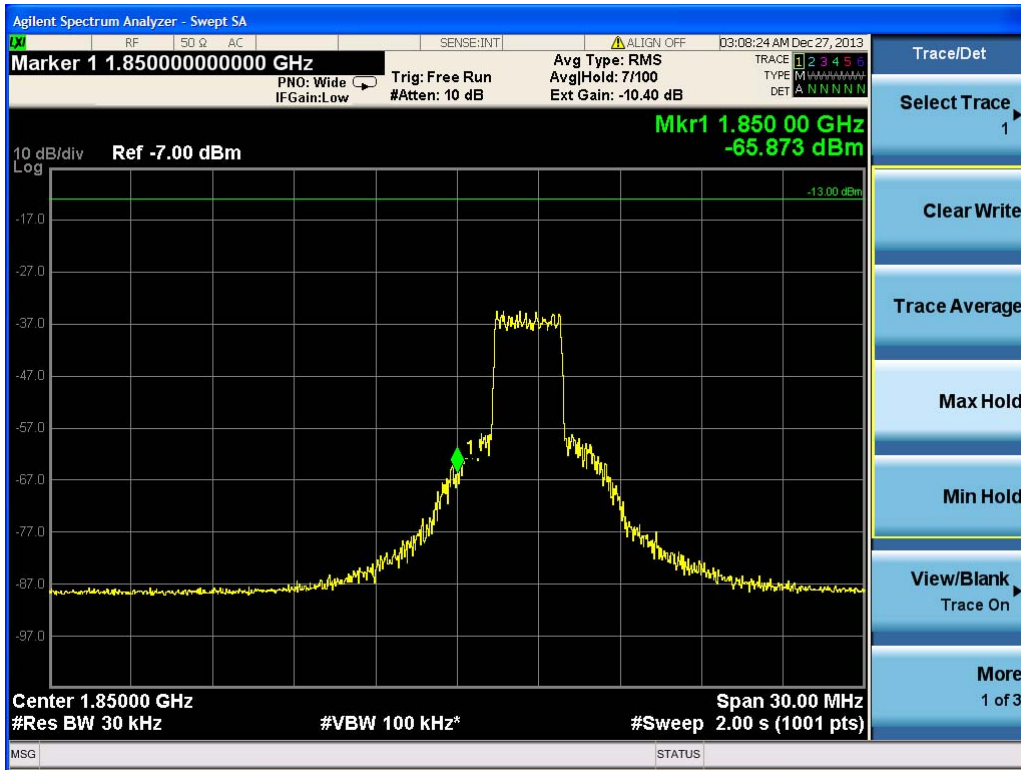


b) Upper Edge

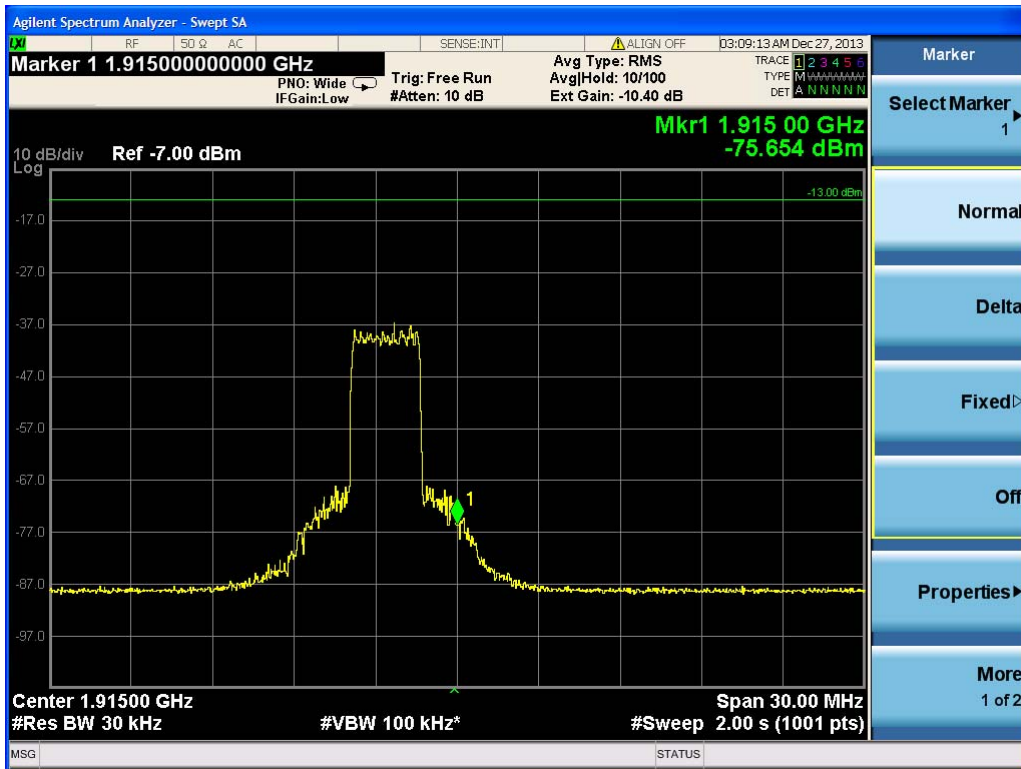


5) 1x EV-DO modulation

a) Lower Edge



b) Upper Edge

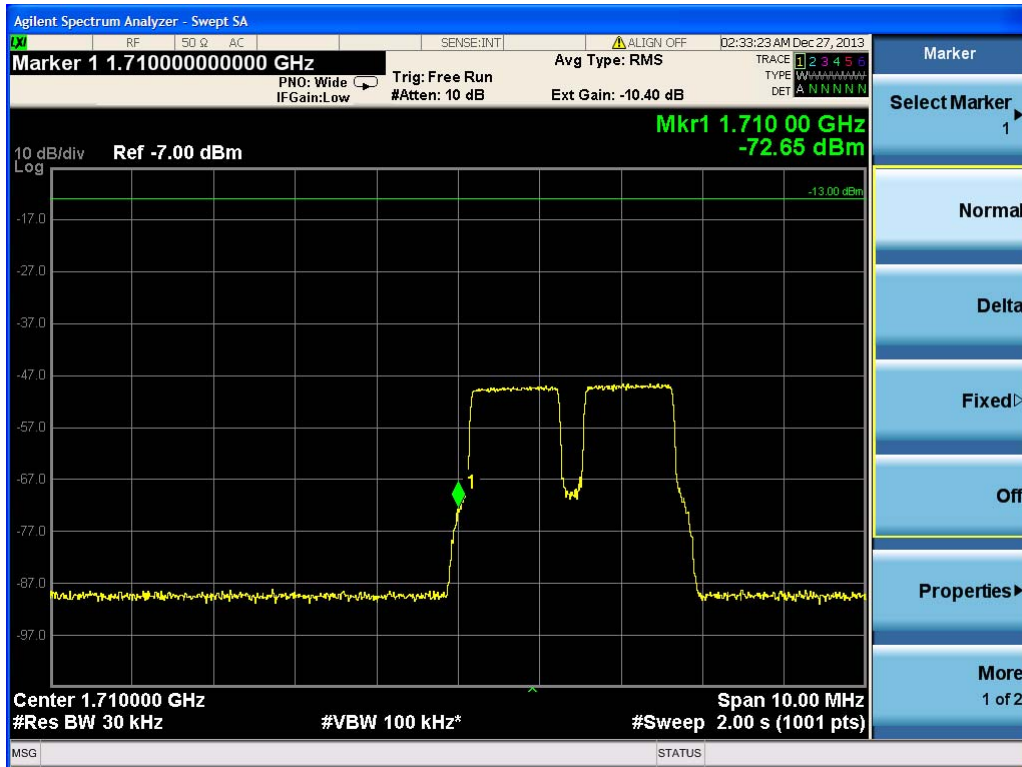


5.3.4.1.5 AWS-1 Band

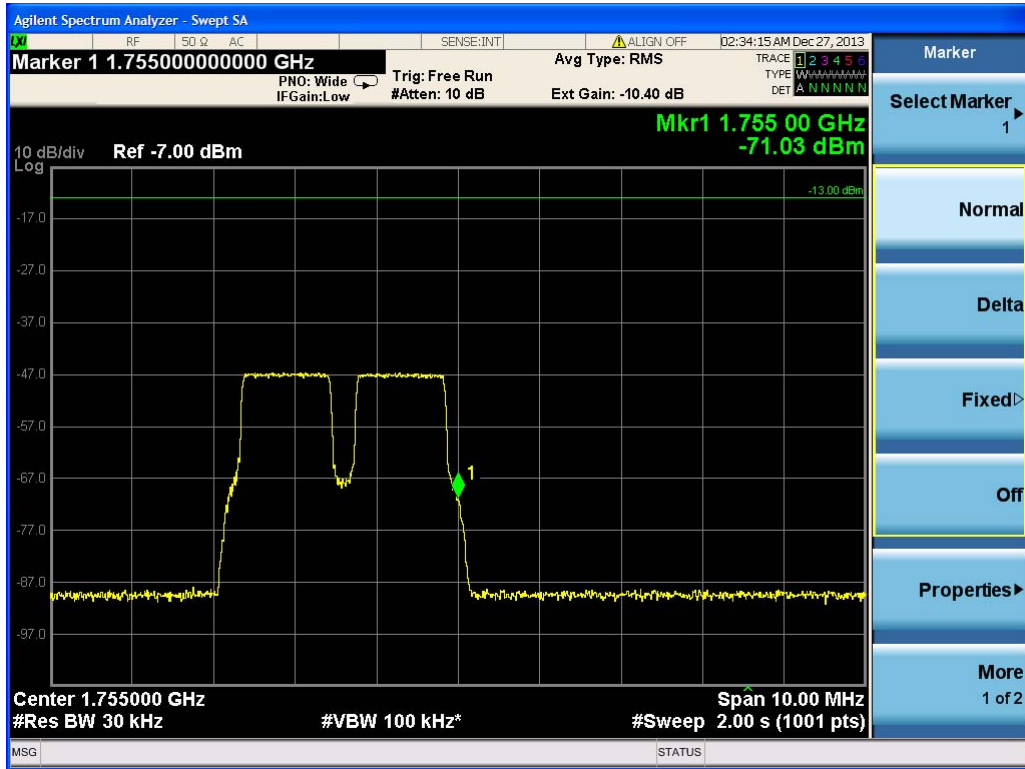
1) LTE modulation

1.1) Test for LTE 1.4MHz

a) Lower Edge

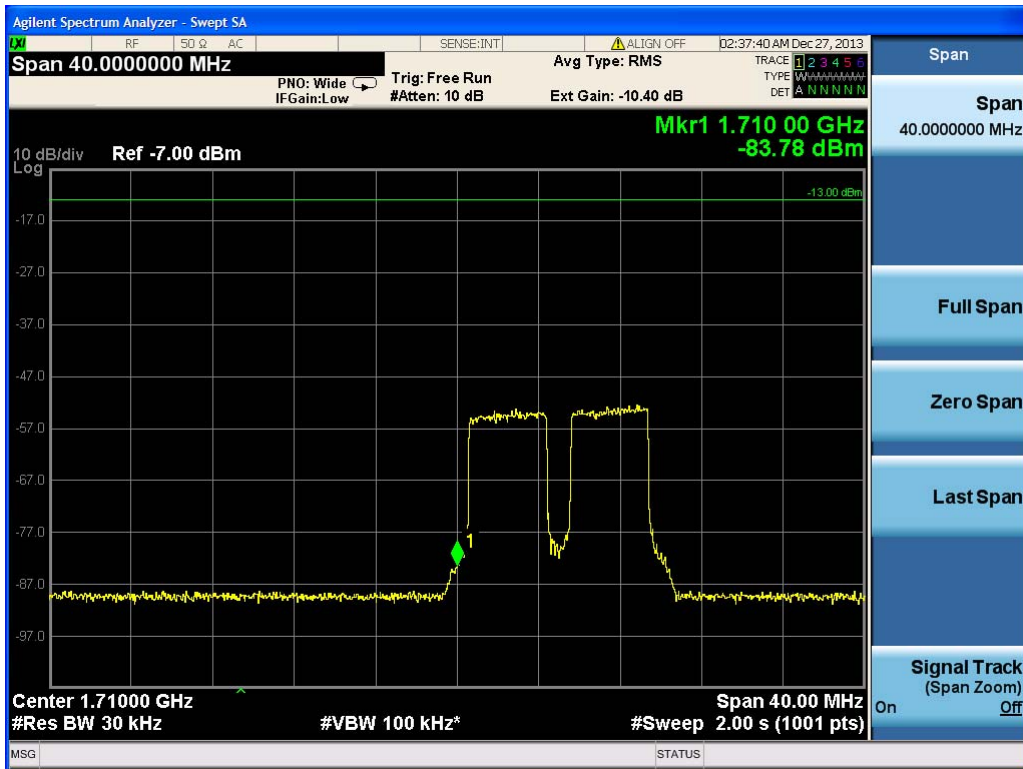


b) Upper Edge

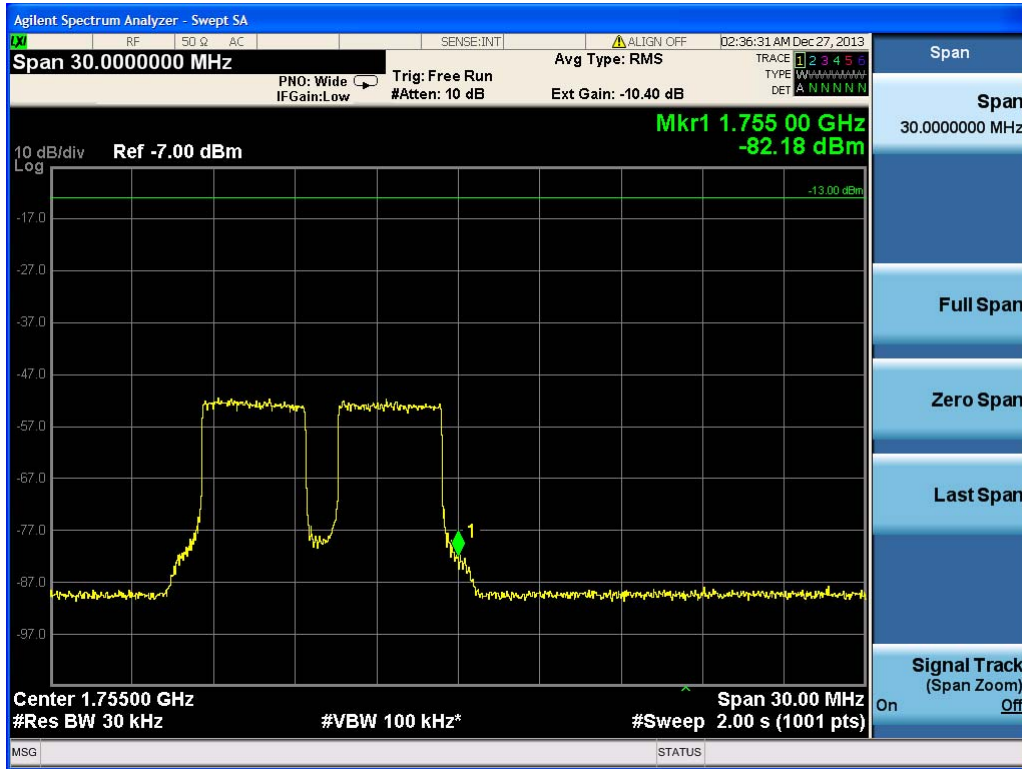


1.2) Test for LTE 5MHz

a) Lower Edge

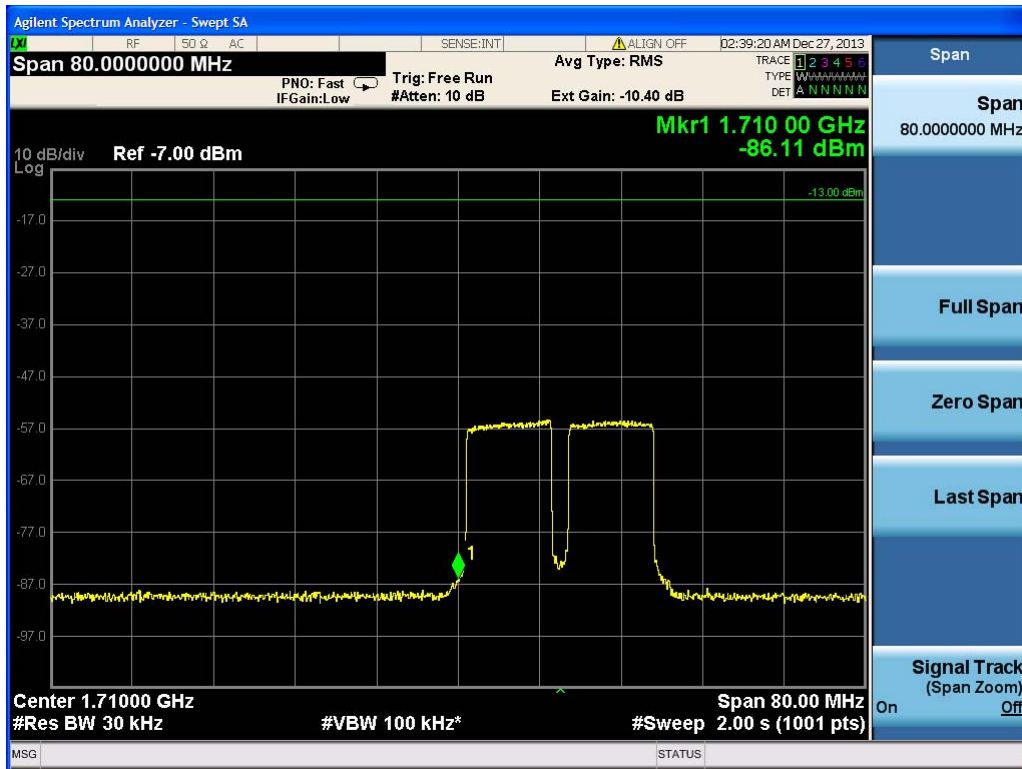


b) Upper Edge

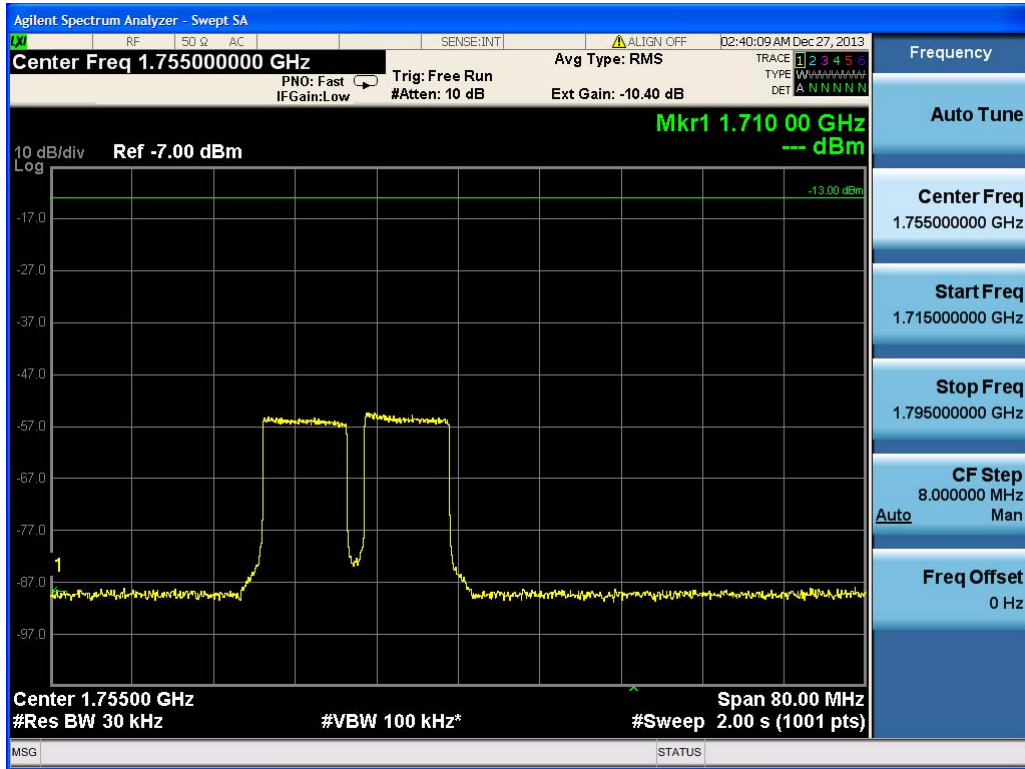


1.3) Test for LTE 10MHz

a) Lower Edge

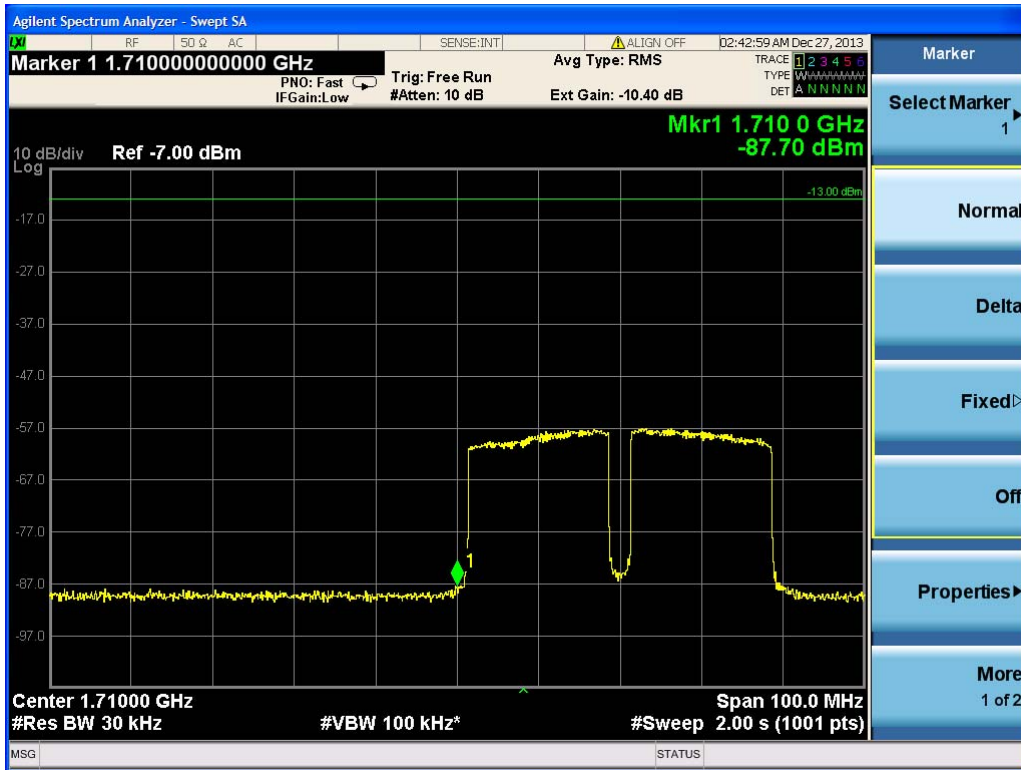


b) Upper Edge

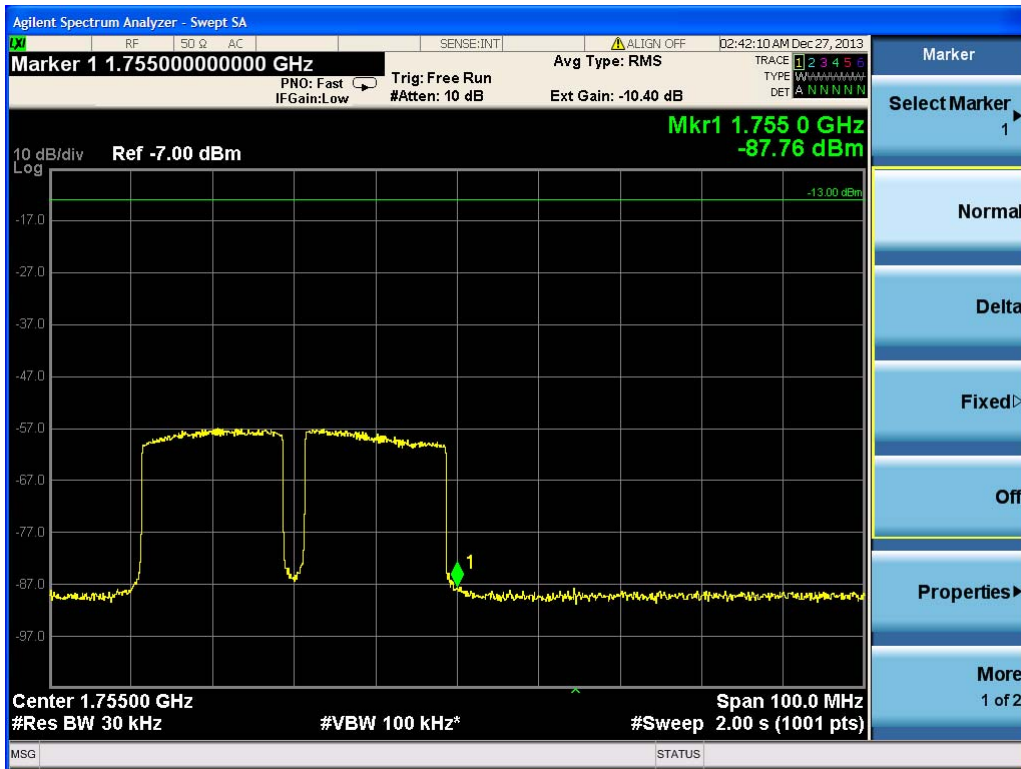


1.4) Test for LTE 20MHz

a) Lower Edge

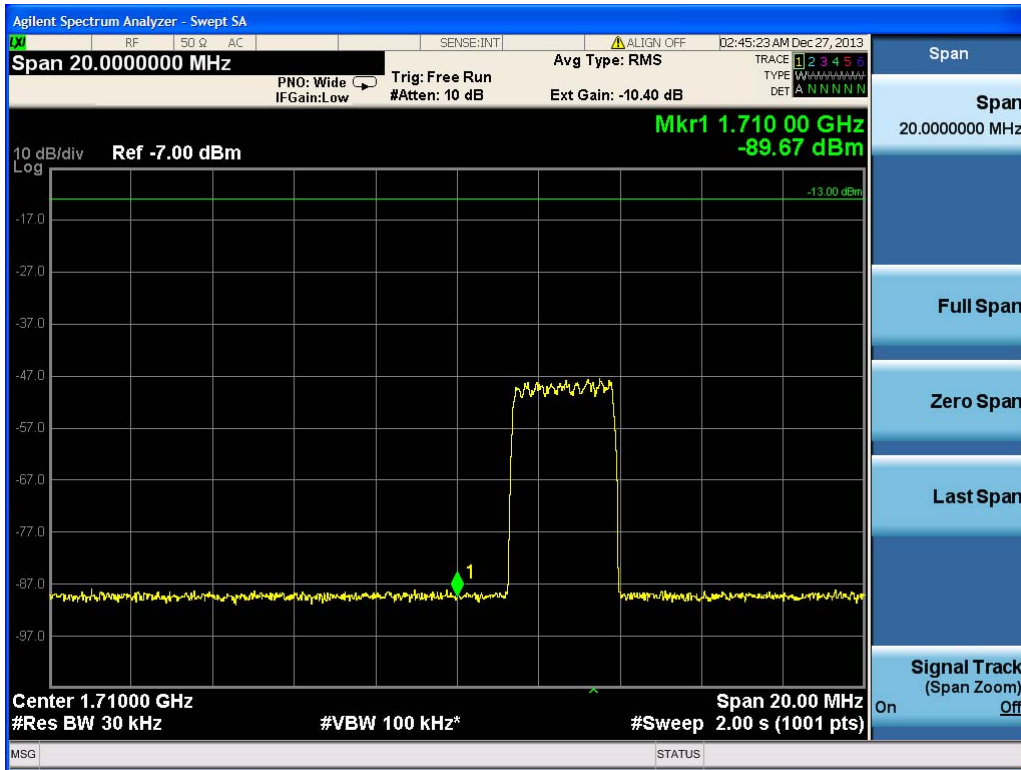


b) Upper Edge

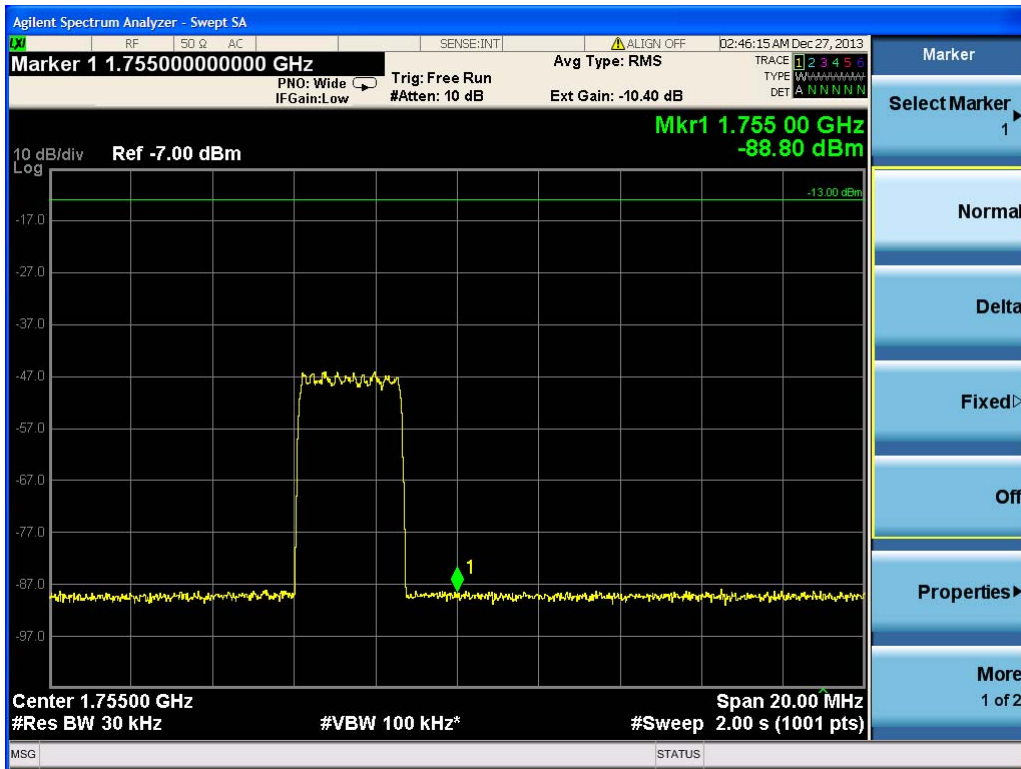


2) CDMA modulation

a) Lower Edge

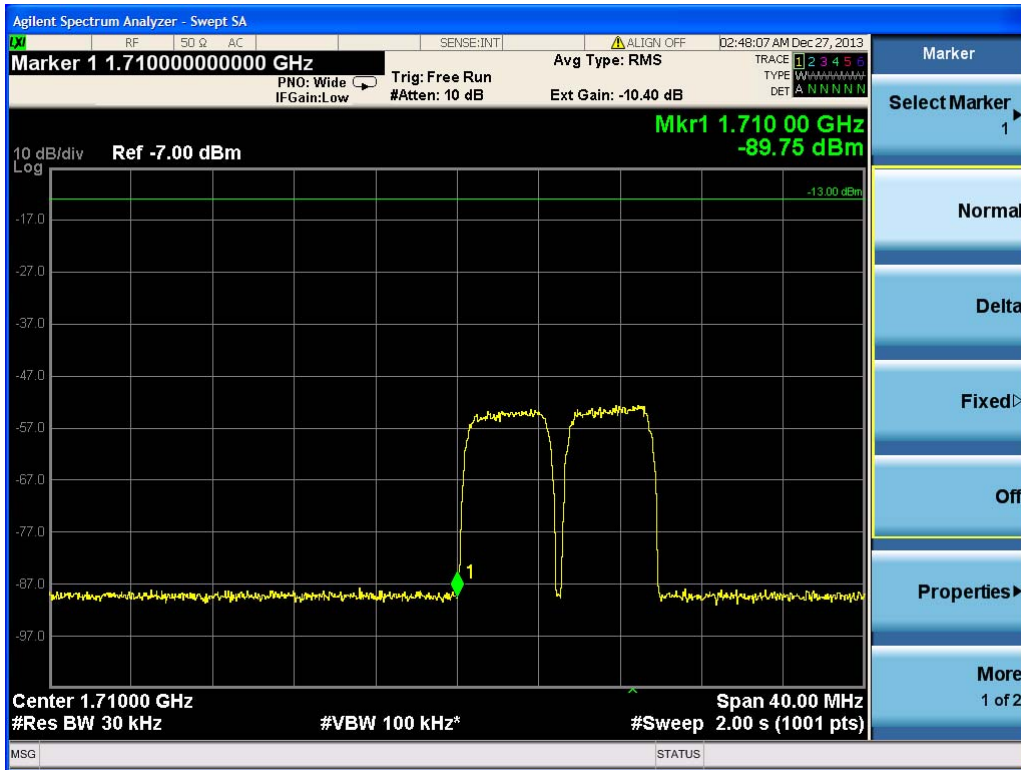


b) Upper Edge

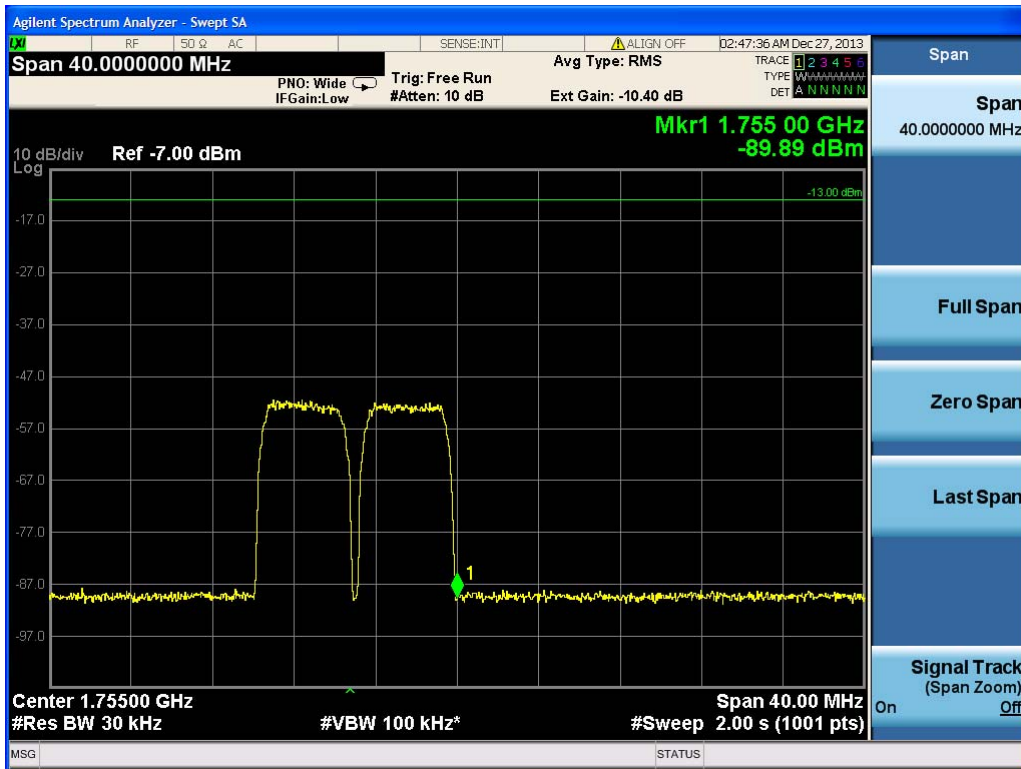


3) WCDMA modulation

a) Lower Edge

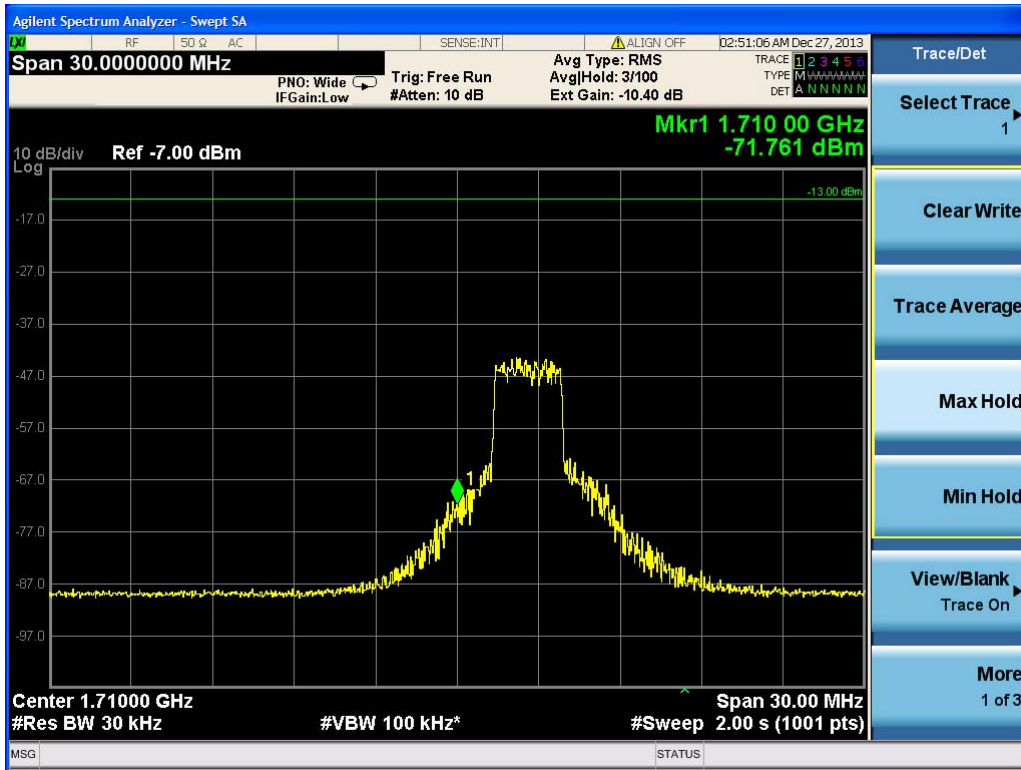


b) Upper Edge

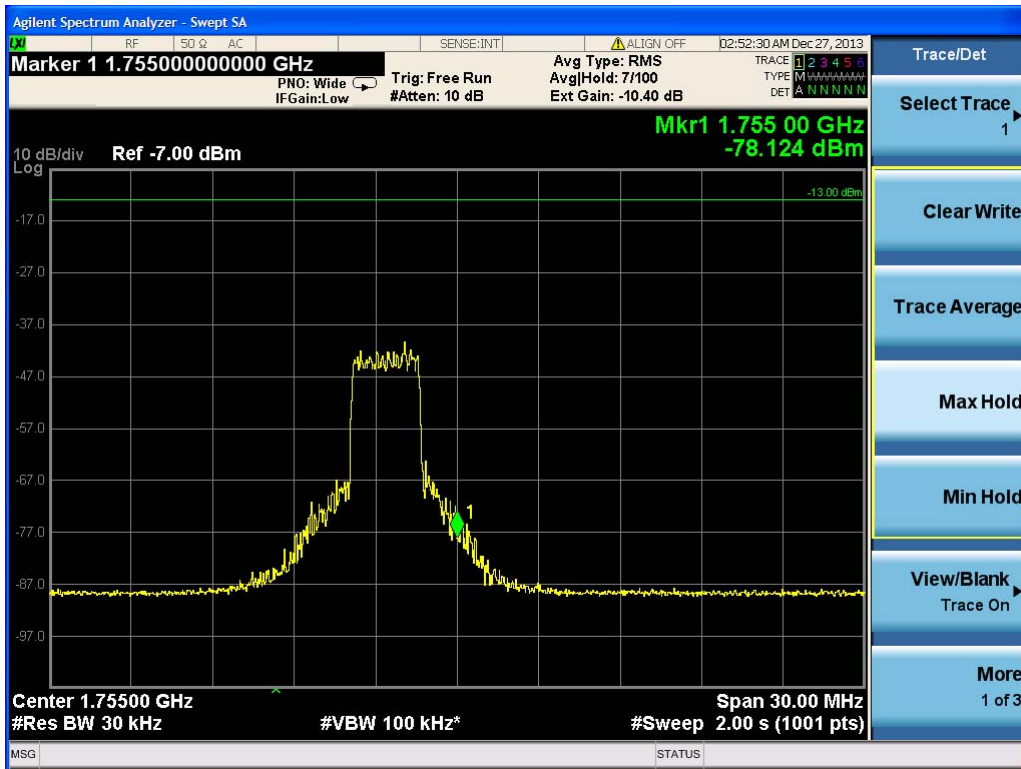


4) 1x EV-DO modulation

a) Lower Edge



b) Upper Edge



5.3.5 Frequency Stability

Test Date: 28 Dec, 2013 to 29 Dec, 2013

Ambient Temp: 20.0°C

Humid : 67%

Atmospheric Pressure: 1005mbar

Test Method: FCC part 2.1055

Test Requirement:

700MHz Lower ABC Band FCC part 27. 54

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation, The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ (± 2.5 ppm) of the center frequency.

700MHz Upper C Band FCC part 27. 54

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation, The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ (± 2.5 ppm) of the center frequency

850MHz Band FCC part 22. 355

The frequency stability of the transmitter shall be maintained within ± 0.00025 percent (± 2.5 ppm) of the center frequency over a temperature variation of -30° Celsius to $+50^{\circ}$ Celsius at normal supply voltage, and over a variation in the primary supply voltage of 85 percent to 115 percent of the rated supply voltage at a temperature of 20° Celsius.

1900MHz Broadband PCS FCC part 24. 135

The frequency stability of the transmitter shall be maintained within ± 0.0001 percent (± 1 ppm) of the center frequency over a temperature variation of -30° Celsius to $+50^{\circ}$ Celsius at normal supply voltage, and over a variation in the primary supply voltage of 85 percent to 115 percent of the rated supply voltage at a temperature of 20° Celsius.

AWS-1 Band FCC part 27. 54

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation, The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ (± 2.5 ppm) of the center frequency

EUT Operation: The output power of EUT be set to maximum value, the gain of EUT be set to maximum value by software through the manufacture

Test conditions: Temperature conditions, Voltage condition

Test configuration:

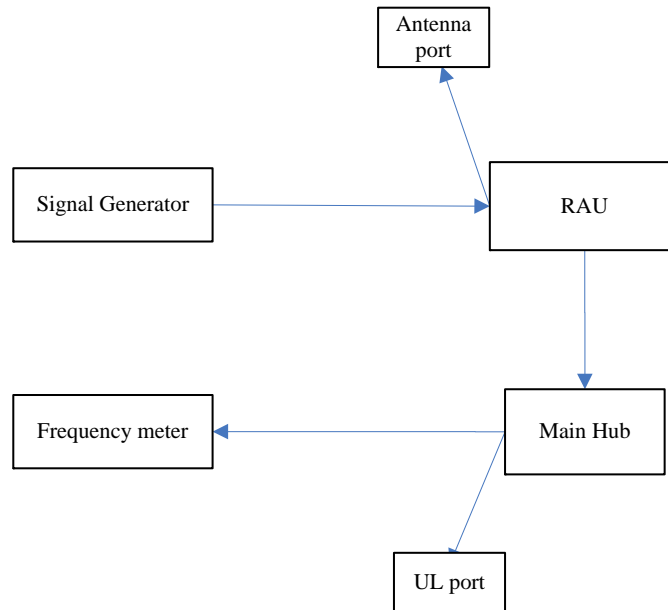


Figure 5: Uplink Frequency Stability Configuration

Test Procedure:

Frequency Stability test procedure:

- 1) Temperature condition:
 - a) Connect the equipment as illustrated
 - b) The RF output port of the EUT was connected to frequency meter;
 - c) Set the working frequency in the middle channel;
 - d) Record the 20°C and nominal voltage frequency value as reference point;
 - e) Vary the temperature from -30°C to 50°C with step 10°C;
 - f) When reach a temperature point, keep the temperature banlance at least 1 hour to make the product working in this status;
 - g) Read the frequency at the relative temperature;
- 2) Correct for all losses in the RF path
 - a) Record the 20°C and nominal voltage frequency value as reference point;
 - b) Vary the voltage from -15% nominal voltage to +15% voltage;

Read the frequency at the relative voltage;

5.3.5.1 Measurement Record

5.3.5.1.1 Frequency Stability vs temperature

1) 700MHz Lower ABC Band

a) Test Lower ABC, The center frequency is 701MHz

Temperature(°C)	Frequency(MHz)	Tolerance(ppm)
50	700.9999971	0.004
40	700.9999973	0.004
30	700.9999972	0.004
20	700.9999972	0.004
10	700.9999974	0.004
0	700.9999975	0.004
-10	700.9999979	0.003
-20	700.9999983	0.002
-30	700.9999989	0.001

b) Test Lower B, The center frequency is 707MHz

Temperature(°C)	Frequency(MHz)	Tolerance(ppm)
50	706.9999969	0.004
40	706.9999970	0.004
30	706.9999970	0.004
20	706.9999971	0.004
10	706.9999970	0.004
0	706.9999974	0.004
-10	706.9999978	0.003
-20	706.9999982	0.002
-30	706.9999988	0.001

c) Test Lower C, The center frequency is 713MHz

Temperature(°C)	Frequency(MHz)	Tolerance(ppm)
50	712.9999970	0.004
40	712.9999969	0.004
30	712.9999969	0.004
20	712.9999971	0.004
10	712.9999970	0.004
0	712.9999974	0.004
-10	712.9999977	0.003
-20	712.9999979	0.003
-30	712.9999994	0.001

2) 700MHz Upper C Band, The center frequency is 781.5MHz

Temperature(°C)	Frequency(MHz)	Tolerance(ppm)
50	781.4999965	-0.004
40	781.4999968	-0.004
30	781.4999968	-0.004
20	781.4999969	-0.004
10	781.4999973	-0.003
0	781.4999975	-0.003
-10	781.4999986	-0.002
-20	781.4999999	0
-30	781.5000034	0.004

3) 850MHz Band, The center frequency is 836.5MHz

Temperature(°C)	Frequency(MHz)	Tolerance(ppm)
50	836.4999952	-0.006
40	836.4999965	-0.004
30	836.4999963	-0.004
20	836.4999966	-0.004
10	836.4999969	-0.004
0	836.5000007	0.001
-10	836.5000037	0.004
-20	836.5000087	0.010
-30	836.5000112	0.013

4) 1900MHz Broadband PCS, The center frequency is 1882.5MHz

Temperature(°C)	Frequency(MHz)	Tolerance(ppm)
50	1882.499990	-0.005
40	1882.499992	-0.004

30	1882.499993	-0.004
20	1882.499992	-0.004
10	1882.499994	-0.003
0	1882.499999	0
-10	1882.500002	0.001
-20	1882.500001	0.001
-30	1882.500005	0.003

5) AWS-1 Band, The center frequency is 1732.5MHz

Temperature(°C)	Frequency(MHz)	Tolerance(ppm)
50	1732.499991	-0.005
40	1732.499993	-0.004
30	1732.499994	-0.004
20	1732.499993	-0.004
10	1732.499992	-0.005
0	1732.499995	-0.003
-10	1732.500002	0.001
-20	1732.500006	0.003
-30	1732.500009	0.005

5.3.5.1.2 Frequency Stability vs voltage**1) 700MHz Lower ABC Band**

a) Test Lower A, The center frequency is 701MHz

Voltage(V)	Frequency(MHz)	Tolerance(ppm)
102 (120*0.85)	700.9999972	-0.004
120	700.9999972	-0.004
138 (120*1.15)	700.9999972	-0.004

b) Test Lower B, The center frequency is 707MHz

Voltage(V)	Frequency(MHz)	Tolerance(ppm)
102 (120*0.85)	706.9999971	-0.004
120	706.9999971	-0.004
138 (120*1.15)	706.9999971	-0.004

c) Test Lower C, The center frequency is 713MHz

Voltage(V)	Frequency(MHz)	Tolerance(ppm)
102 (120*0.85)	712.9999971	-0.004
120	712.9999971	-0.004
138 (120*1.15)	712.9999971	-0.004