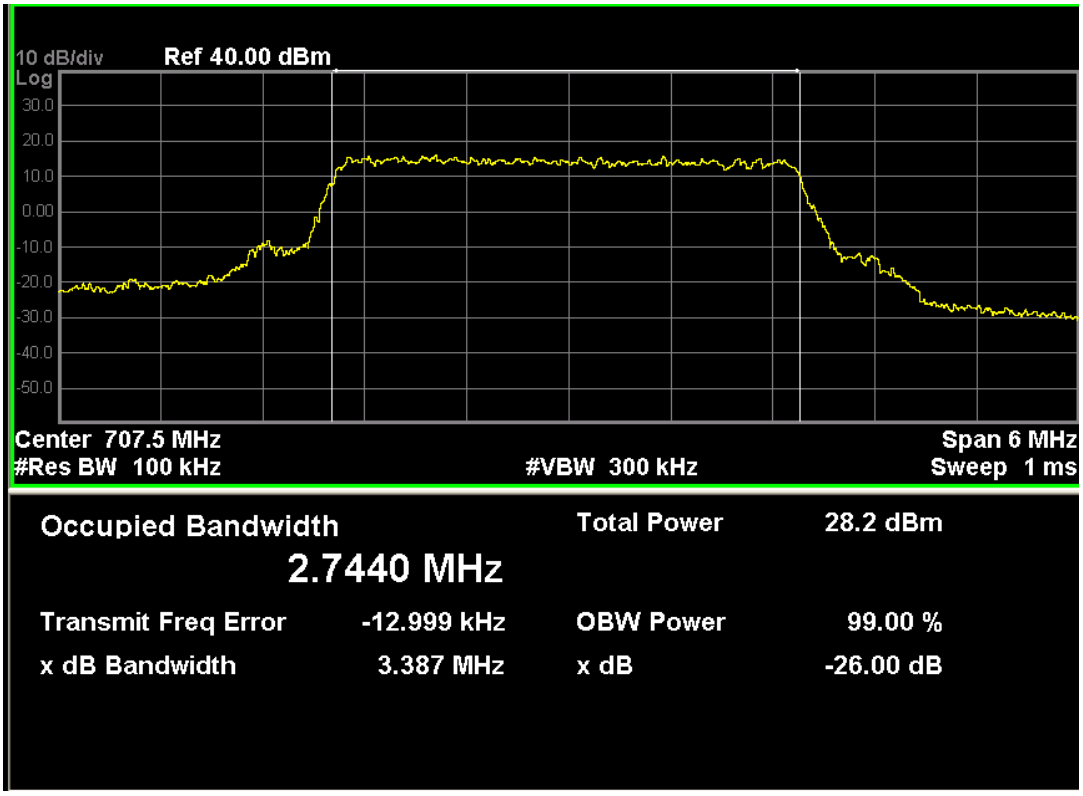
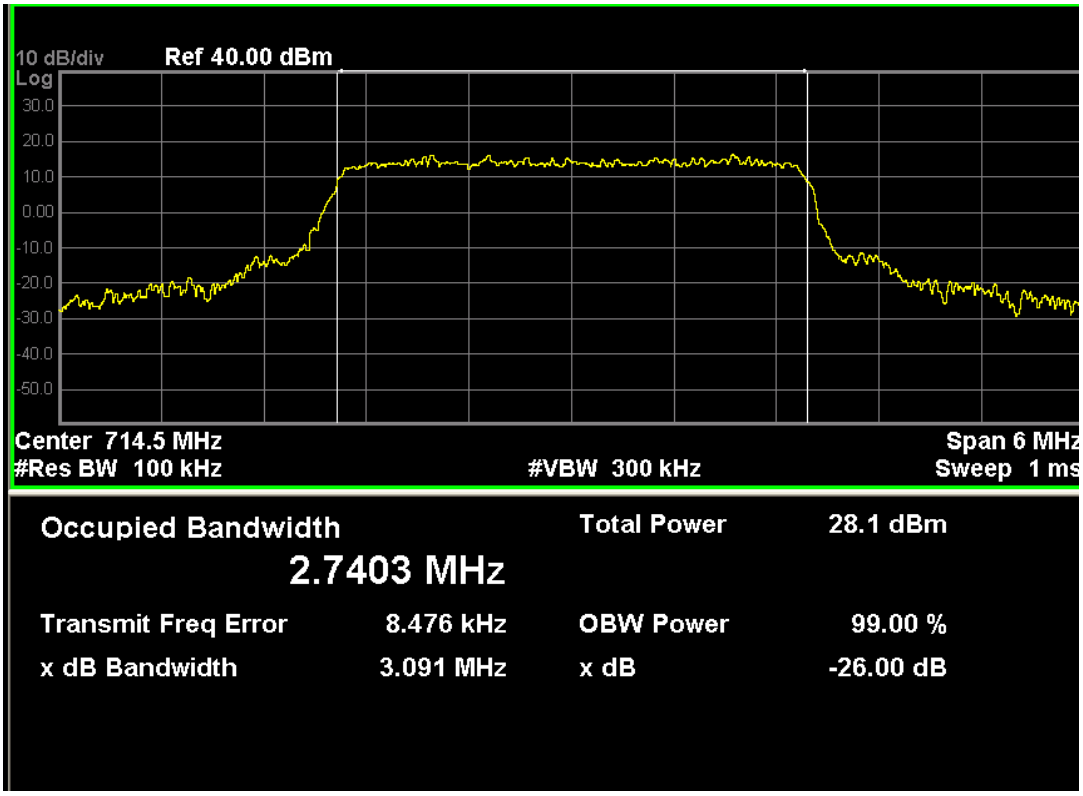
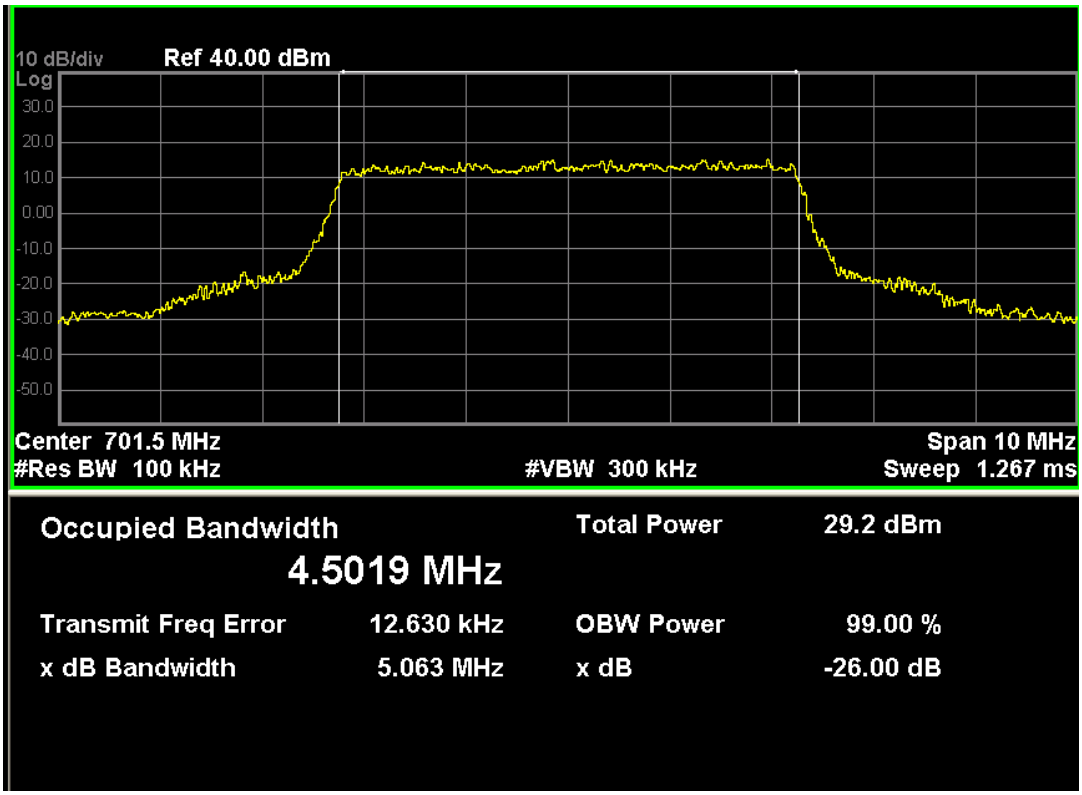
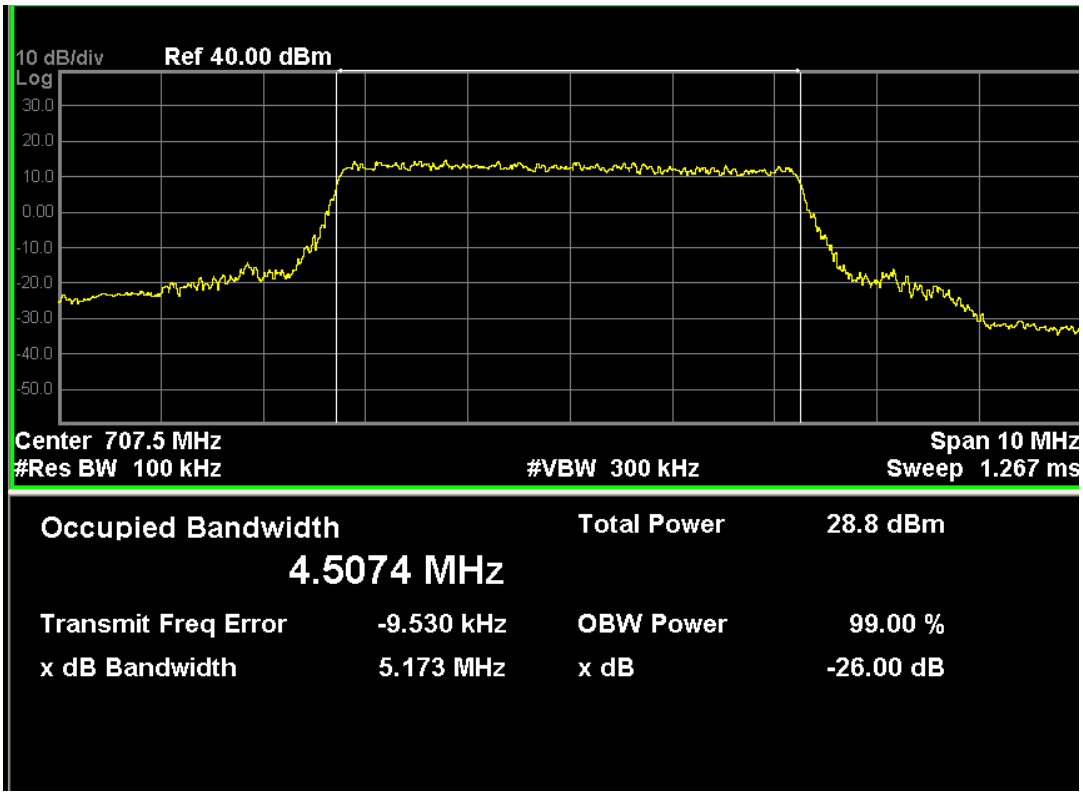

10 dB/div
Ref 40.00 dBm
Log
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
Center 707.5 MHz
#Res BW 100 kHz
#VBW 300 kHz
Span 6 MHz
Sweep 1 ms
Occupied Bandwidth
2.7440 MHz
Total Power 28.2 dBm
Transmit Freq Error -12.999 kHz
OBW Power 99.00 %
x dB Bandwidth 3.387 MHz
x dB -26.00 dB

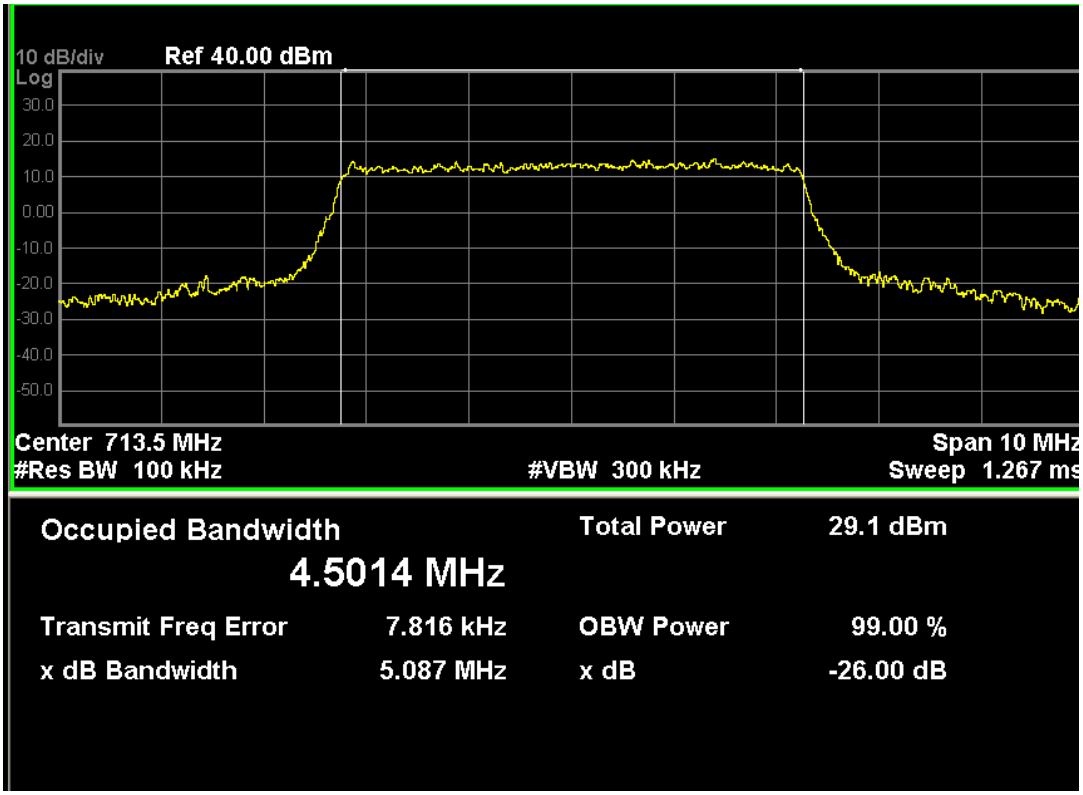

10 dB/div
Ref 40.00 dBm
Log
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
Center 714.5 MHz
#Res BW 100 kHz
#VBW 300 kHz
Span 6 MHz
Sweep 1 ms
Occupied Bandwidth
2.7403 MHz
Total Power 28.1 dBm
Transmit Freq Error 8.476 kHz
OBW Power 99.00 %
x dB Bandwidth 3.091 MHz
x dB -26.00 dB

LTE Band 12 (QPSK, Band Width 5MHz,RB Size 25,RB Offset 0)

Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
23035	701.5	5.063	4.5019
23095	707.5	5.173	4.5074
23155	713.5	5.087	4.5014

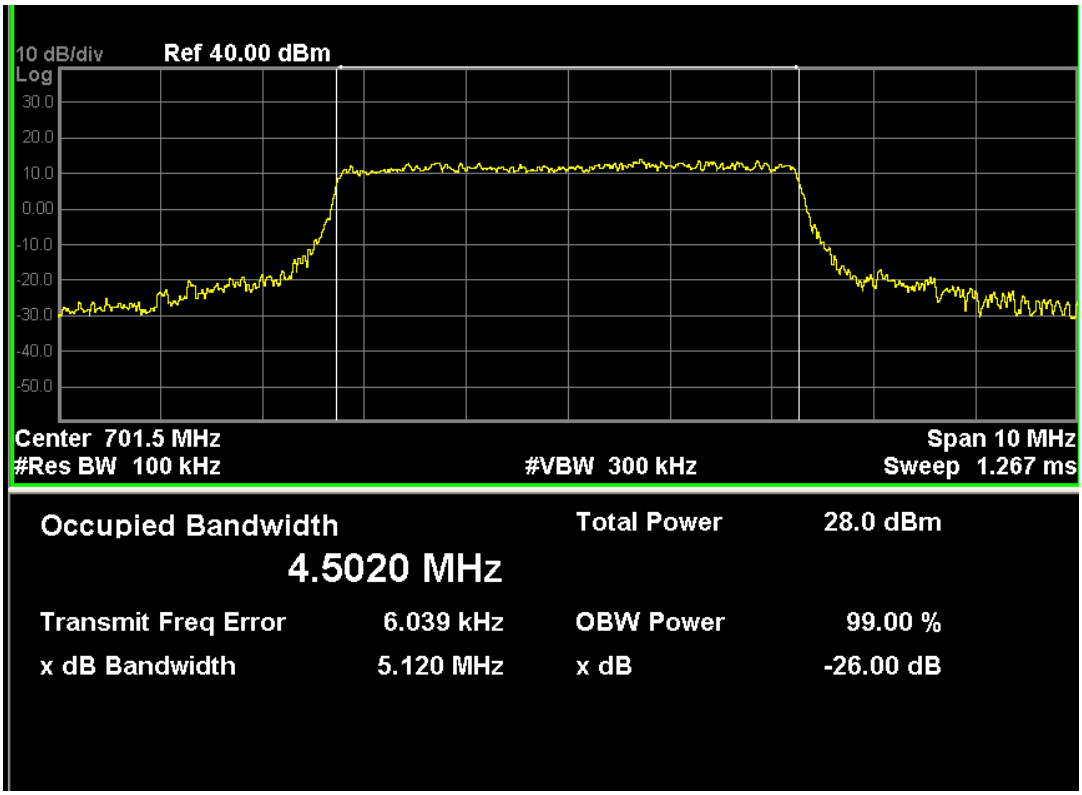


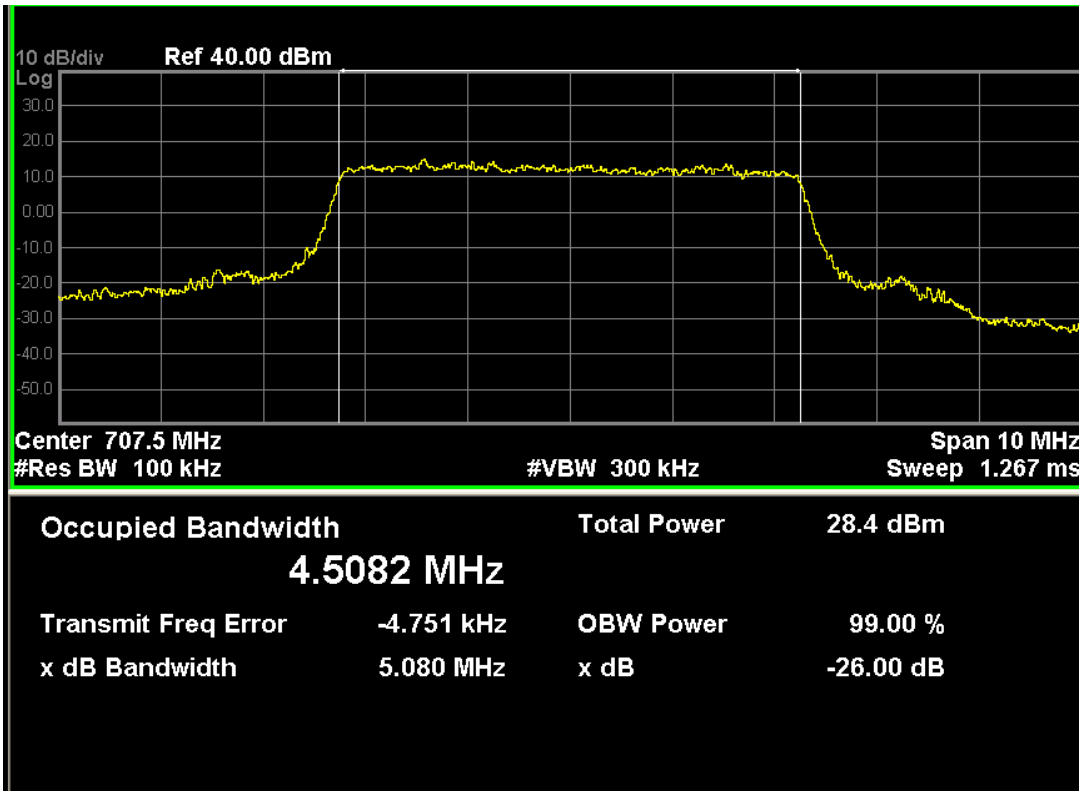

10 dB/div
Ref 40.00 dBm
Log
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
Center 707.5 MHz
#Res BW 100 kHz
#VBW 300 kHz
Span 10 MHz
Sweep 1.267 ms
Occupied Bandwidth
4.5074 MHz
Total Power 28.8 dBm
Transmit Freq Error -9.530 kHz
OBW Power 99.00 %
x dB Bandwidth 5.173 MHz
x dB -26.00 dB

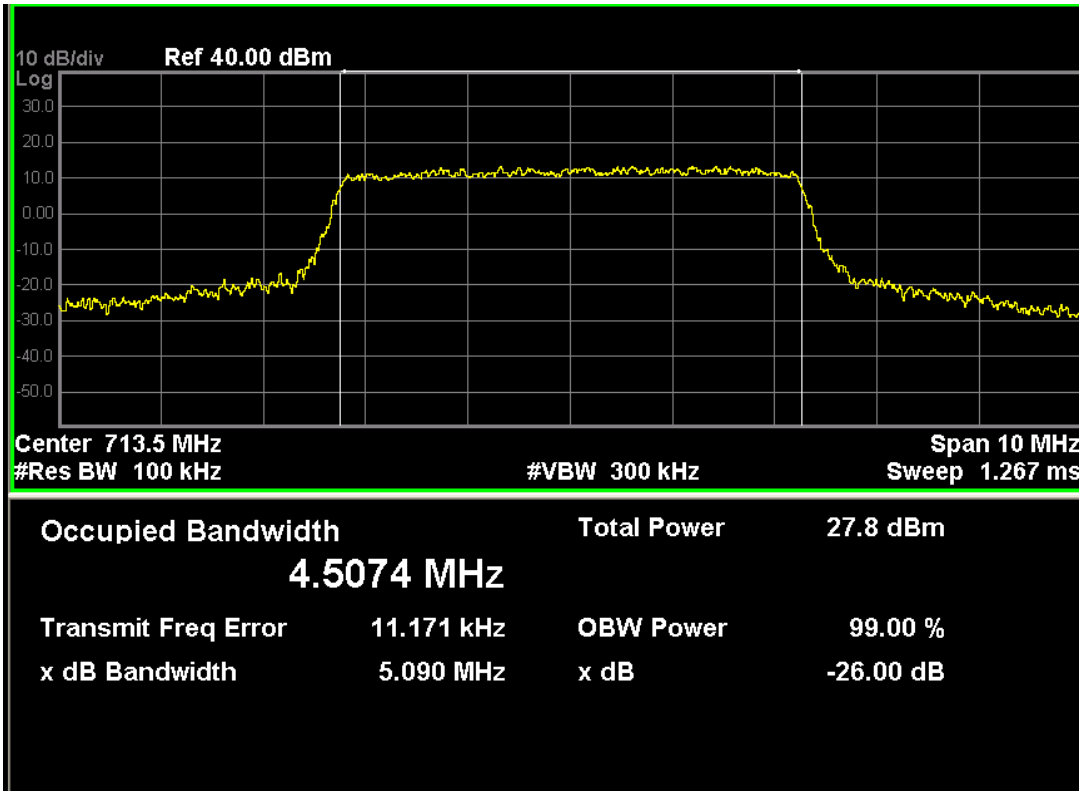

10 dB/div
Ref 40.00 dBm
Log
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
Center 713.5 MHz
#Res BW 100 kHz
#VBW 300 kHz
Span 10 MHz
Sweep 1.267 ms
Occupied Bandwidth
4.5014 MHz
Total Power 29.1 dBm
Transmit Freq Error 7.816 kHz
OBW Power 99.00 %
x dB Bandwidth 5.087 MHz
x dB -26.00 dB

LTE Band 12 (16-QAM, Band Width 5MHz,RB Size 25,RB Offset 0)

Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
23035	701.5	5.120	4.5020
23095	707.5	5.080	4.5082
23155	713.5	5.090	4.5074

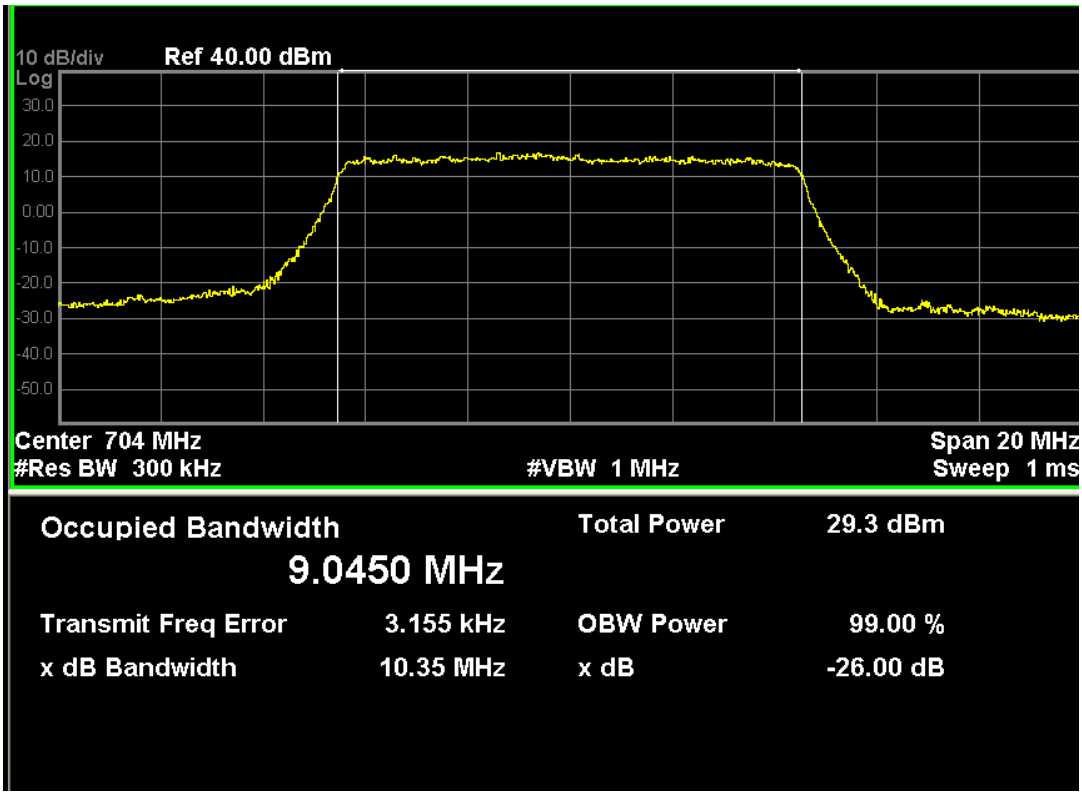


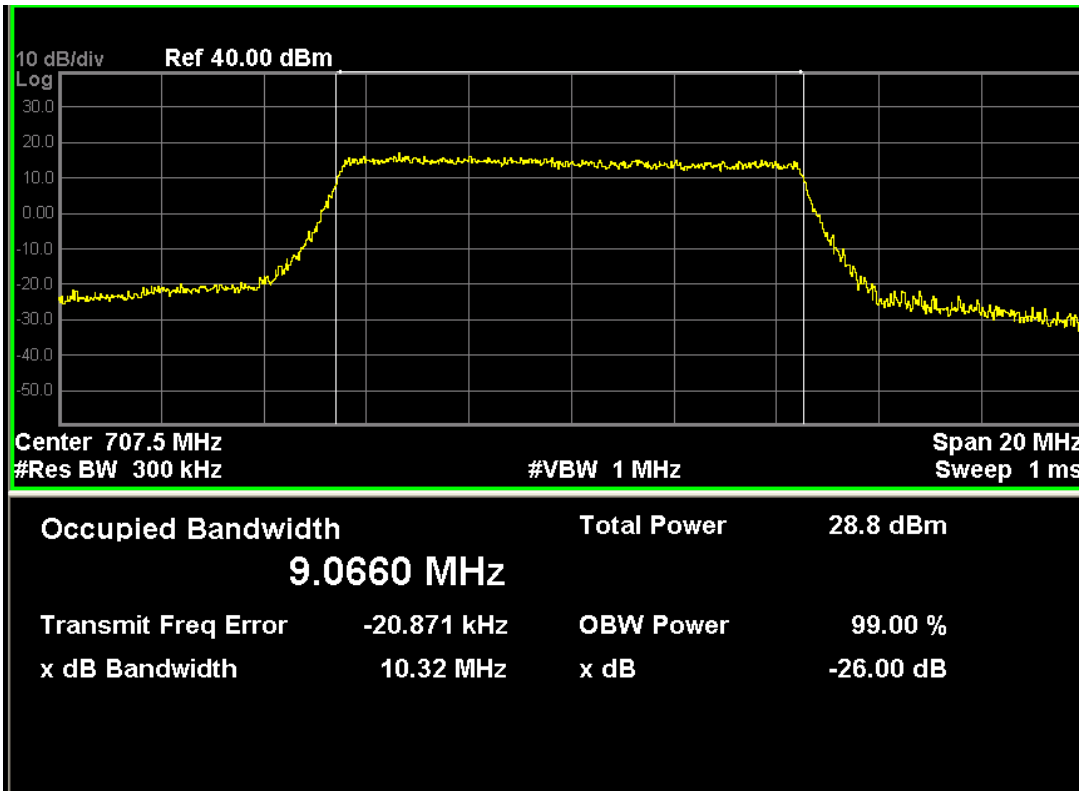

10 dB/div
Ref 40.00 dBm
Log
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
Center 707.5 MHz
#Res BW 100 kHz
#VBW 300 kHz
Span 10 MHz
Sweep 1.267 ms
Occupied Bandwidth
4.5082 MHz
Total Power 28.4 dBm
Transmit Freq Error -4.751 kHz
OBW Power 99.00 %
x dB Bandwidth 5.080 MHz
x dB -26.00 dB

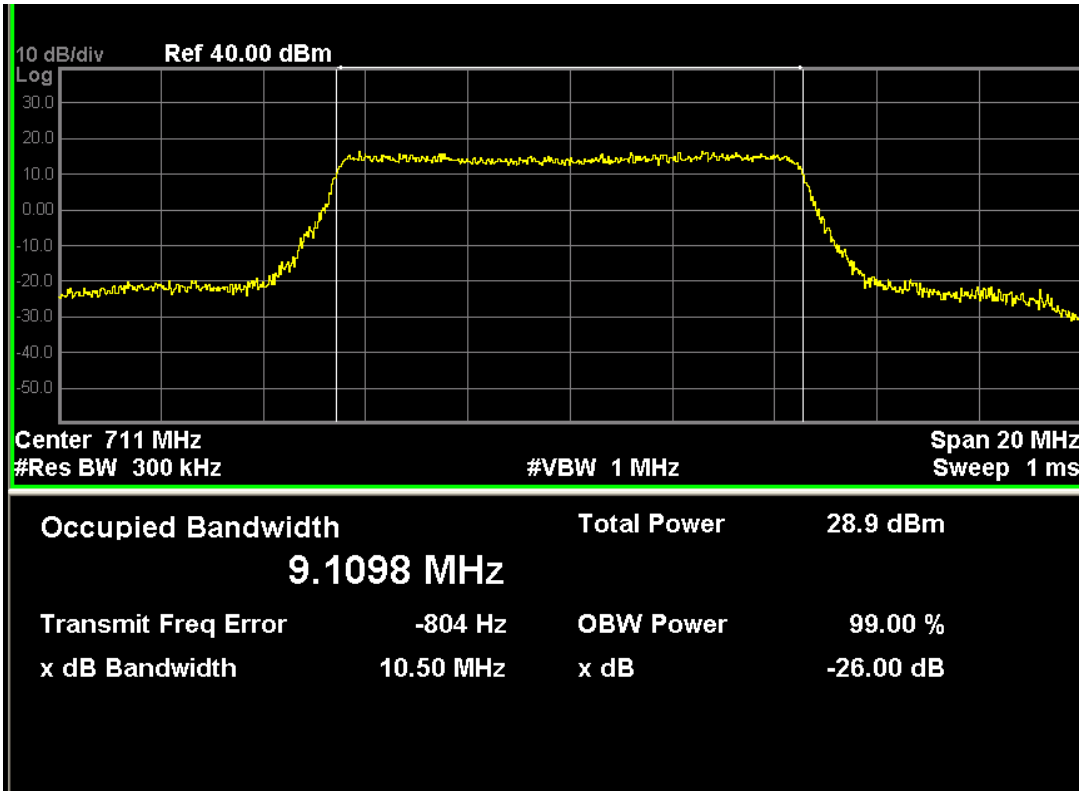

10 dB/div
Ref 40.00 dBm
Log
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
Center 713.5 MHz
#Res BW 100 kHz
#VBW 300 kHz
Span 10 MHz
Sweep 1.267 ms
Occupied Bandwidth
4.5074 MHz
Total Power 27.8 dBm
Transmit Freq Error 11.171 kHz
OBW Power 99.00 %
x dB Bandwidth 5.090 MHz
x dB -26.00 dB

LTE Band 12 (QPSK, Band Width 10MHz,RB Size 50,RB Offset 0)

Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
23060	704	10.35	9.0450
23095	707.5	10.32	9.0660
23130	711	10.50	9.1098

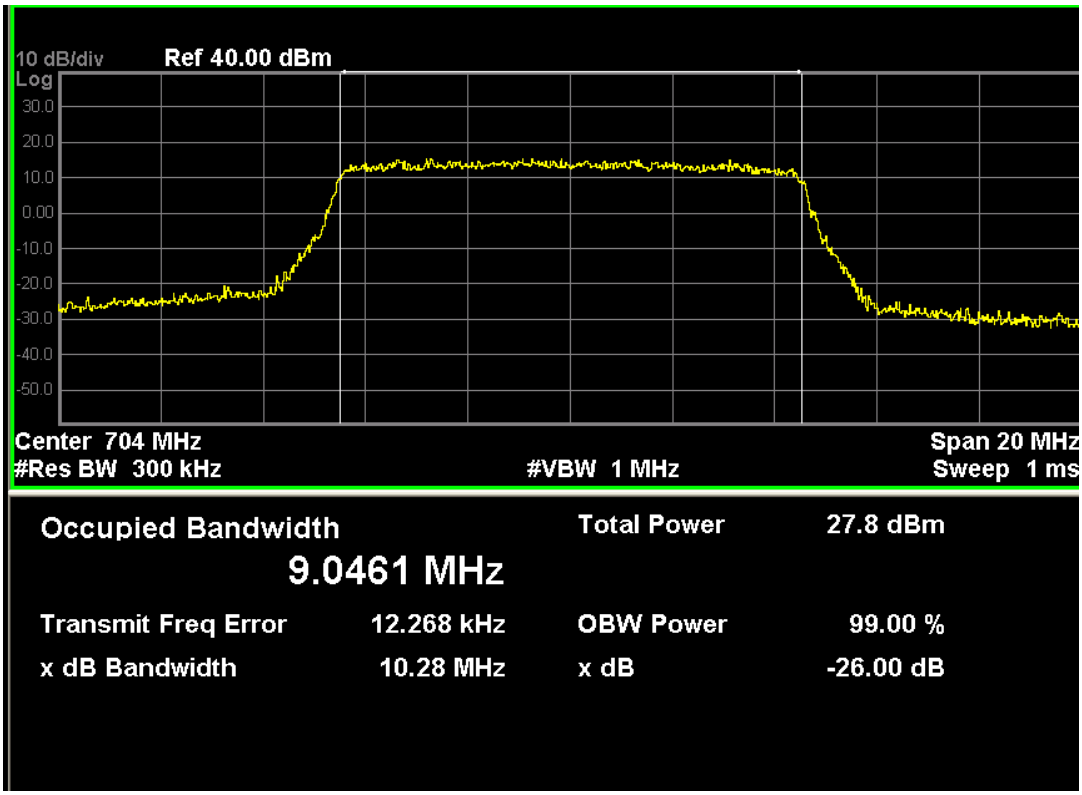


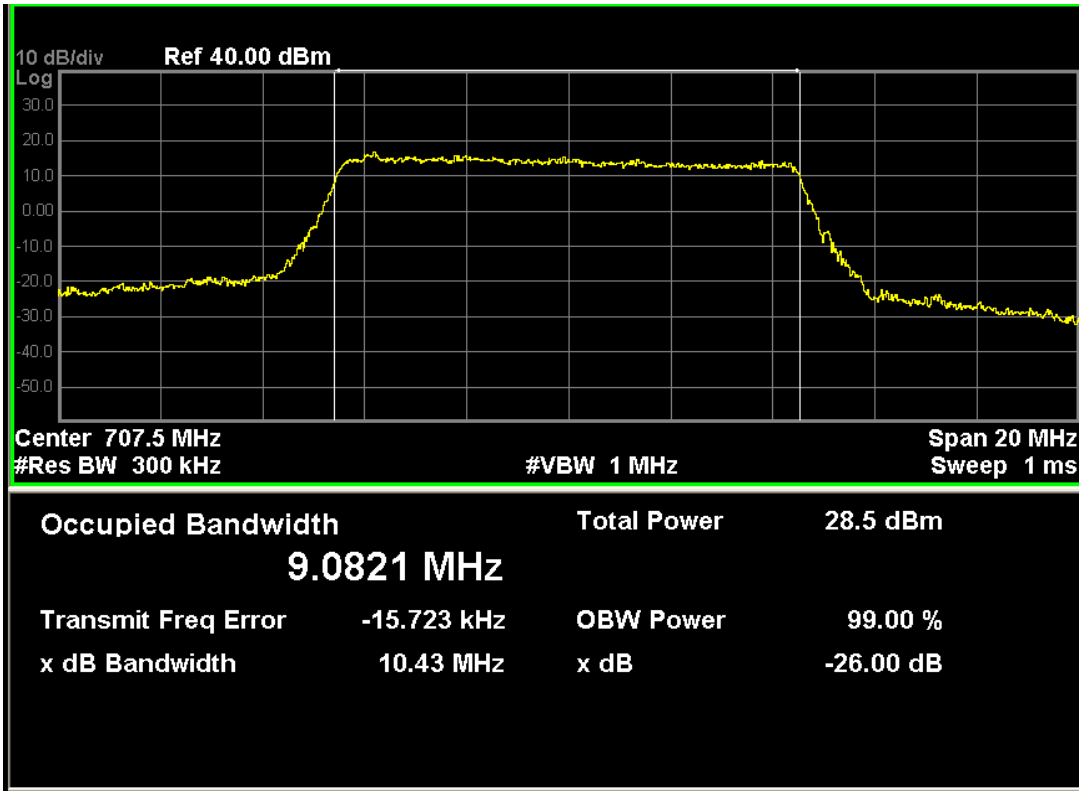

10 dB/div
Ref 40.00 dBm
Log
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
Center 707.5 MHz
#Res BW 300 kHz
#VBW 1 MHz
Span 20 MHz
Sweep 1 ms
Occupied Bandwidth
9.0660 MHz
Total Power 28.8 dBm
Transmit Freq Error -20.871 kHz
OBW Power 99.00 %
x dB Bandwidth 10.32 MHz
x dB -26.00 dB

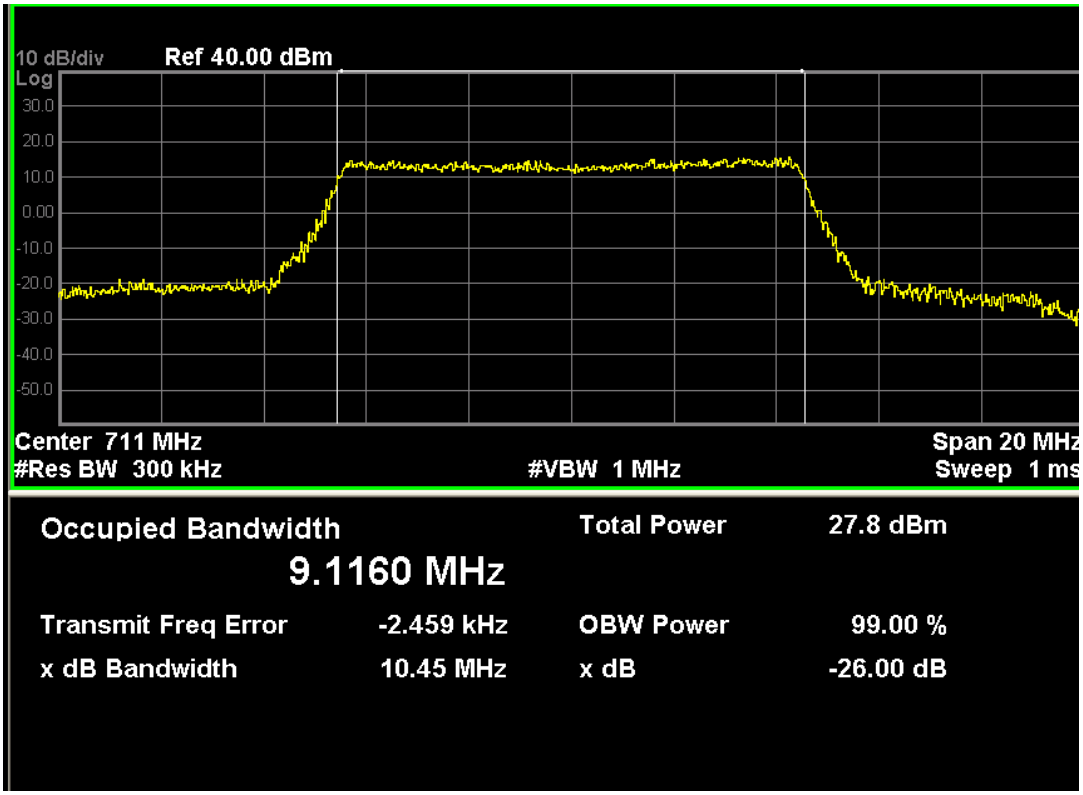

10 dB/div
Ref 40.00 dBm
Log
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
Center 711 MHz
#Res BW 300 kHz
#VBW 1 MHz
Span 20 MHz
Sweep 1 ms
Occupied Bandwidth
9.1098 MHz
Total Power 28.9 dBm
Transmit Freq Error -804 Hz
OBW Power 99.00 %
x dB Bandwidth 10.50 MHz
x dB -26.00 dB

LTE Band 12 (16-QAM, Band Width 10MHz,RB Size 50,RB Offset 0)

Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
23060	704	10.28	9.0461
23095	707.5	10.43	9.0821
23130	711	10.45	9.1160




10 dB/div
Ref 40.00 dBm
Log
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
Center 707.5 MHz
#Res BW 300 kHz
#VBW 1 MHz
Span 20 MHz
Sweep 1 ms
Occupied Bandwidth
9.0821 MHz
Total Power 28.5 dBm
Transmit Freq Error -15.723 kHz
OBW Power 99.00 %
x dB Bandwidth 10.43 MHz
x dB -26.00 dB


10 dB/div
Ref 40.00 dBm
Log
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
Center 711 MHz
#Res BW 300 kHz
#VBW 1 MHz
Span 20 MHz
Sweep 1 ms
Occupied Bandwidth
9.1160 MHz
Total Power 27.8 dBm
Transmit Freq Error -2.459 kHz
OBW Power 99.00 %
x dB Bandwidth 10.45 MHz
x dB -26.00 dB

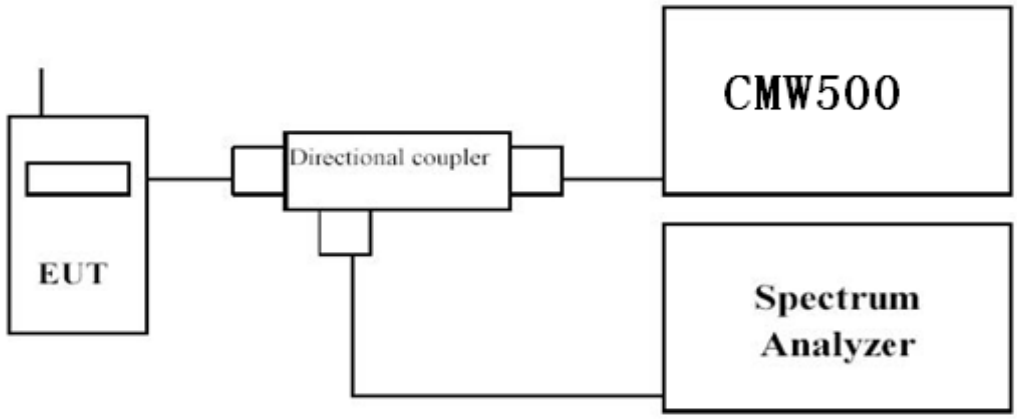
5.Spurious Emission At Antenna Terminals (+/- 1MHz)

5.1. Test Equipment

Instrument	Manufacturer	Model	Serial No	Cal. Date
Radio Communication Tester	R&S	CMW500	147483	11/08/2016
Spectrum Analyzer	Agilent	N9038A	MY51210142	11/05/2016
DC Power Supply	Agilent	6612C	MY43002989	03/02/2016

The measure equipment had been calibrated once a year.

5.2. Test Setup



5.3. Limit

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 + 10log(P) dB.

5.4. Test Procedure

In the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions.

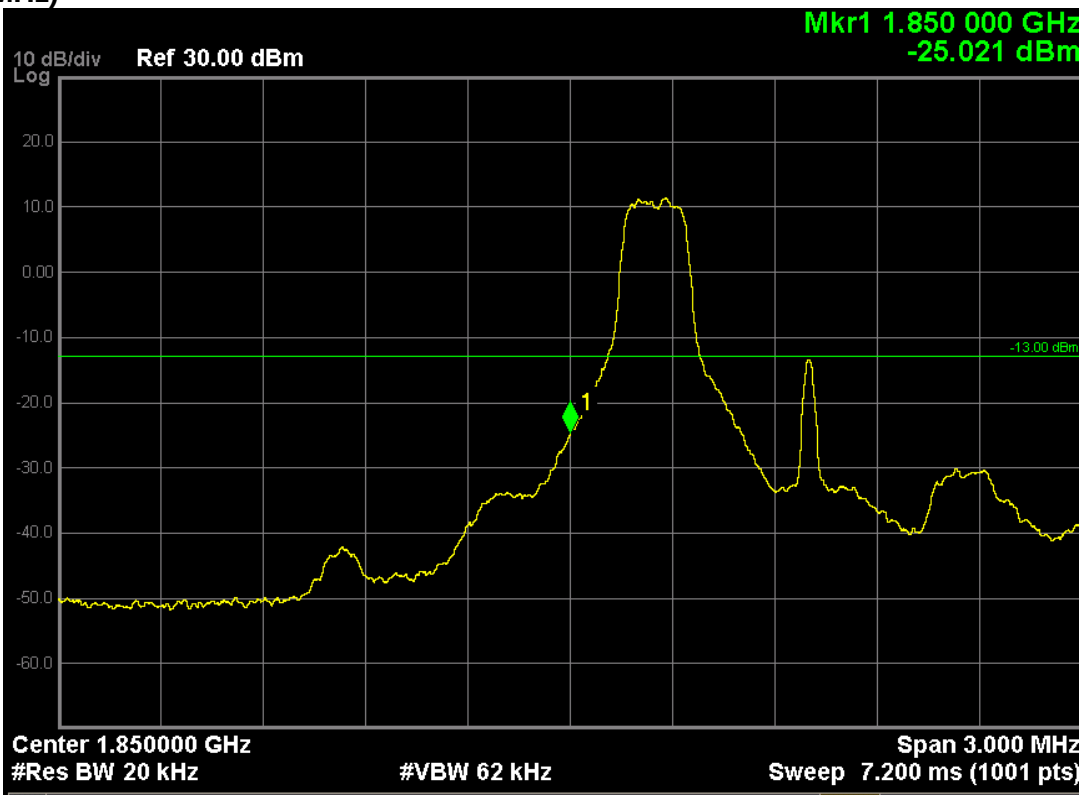
Procedure:
1. The testing follows FCC KDB 971168 v02v02 Section 6.0;
2. The EUT was connected to spectrum analyzer and the CMW500;
3. The band edges of low and high channels for the highest RF powers were measured.Set RBW≥ 1%OBW in the 1MHz band immediately outside and adjacent to the band edge.
4. Set spectrum analyzer with RMS detector.

5.5. Uncertainty

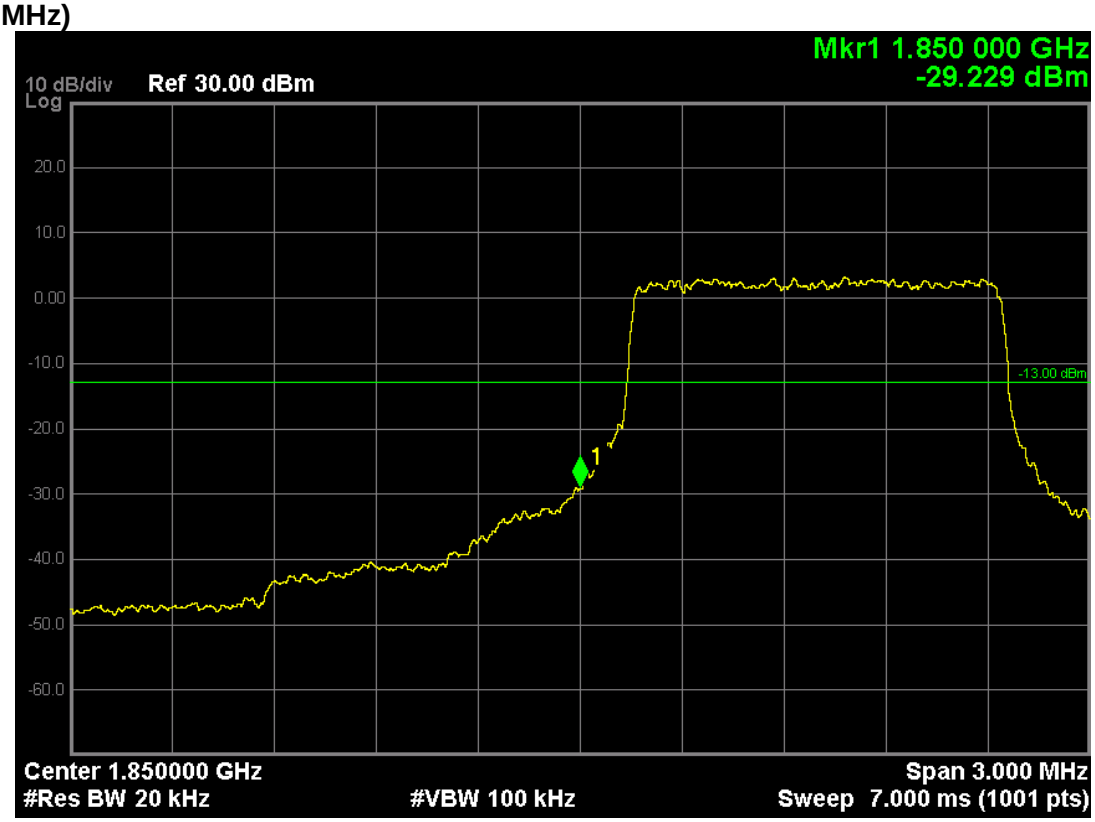
The measurement uncertainty is defined as ±1.2 dB.

5.6. Test Result

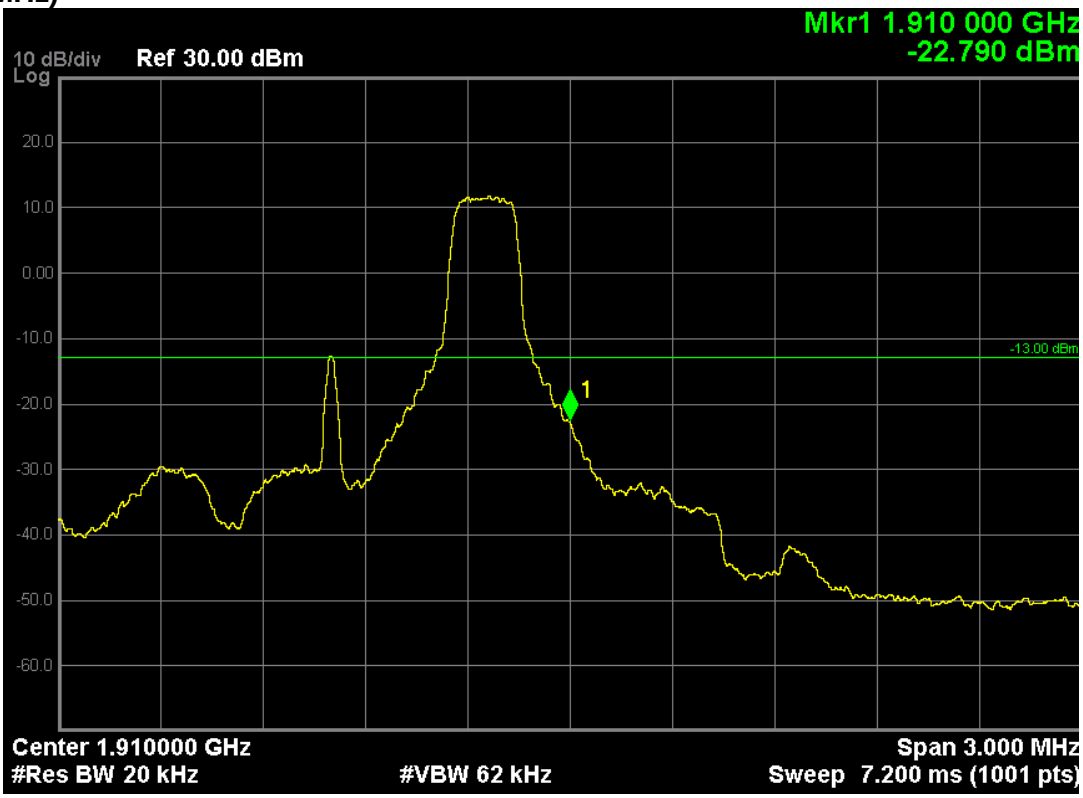
LTE Band 2 (QPSK, Band Width 1.4MHz,RB Size 1,RB Offset 0,Channel 18607,Frequeny 1850.7MHz)



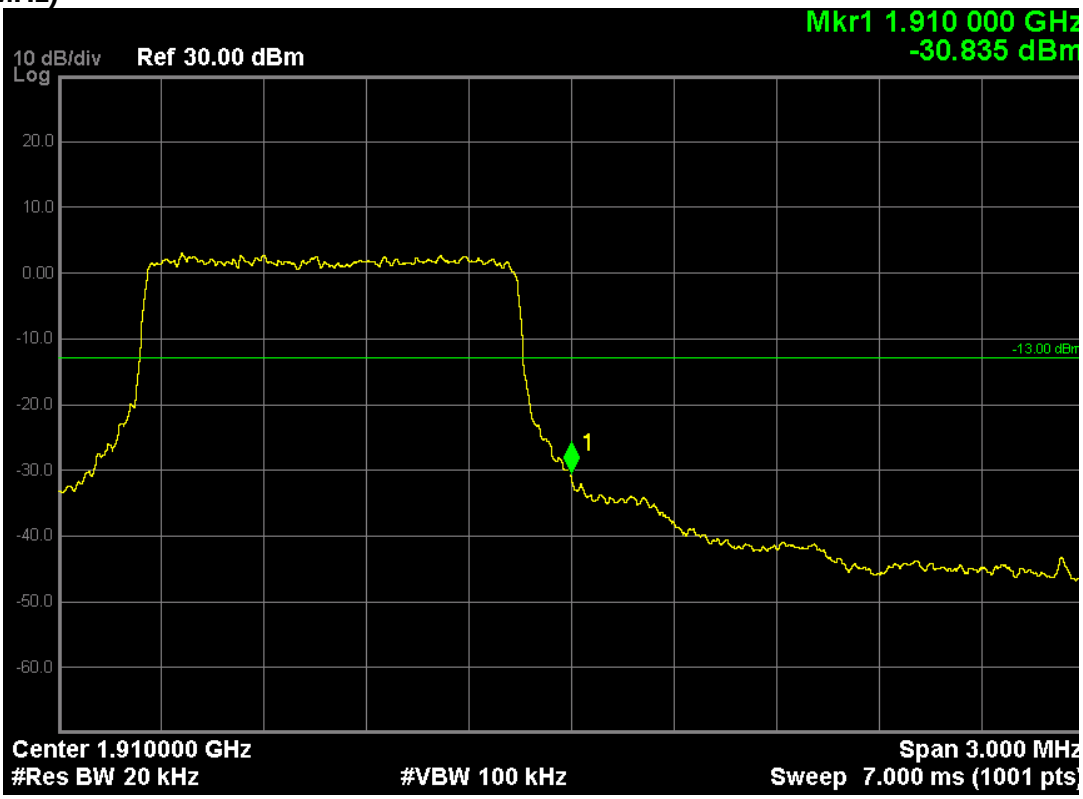
LTE Band 2 (QPSK, Band Width 1.4MHz,RB Size 6,RB Offset 0,Channel 18607,Frequeny 1850.7MHz)



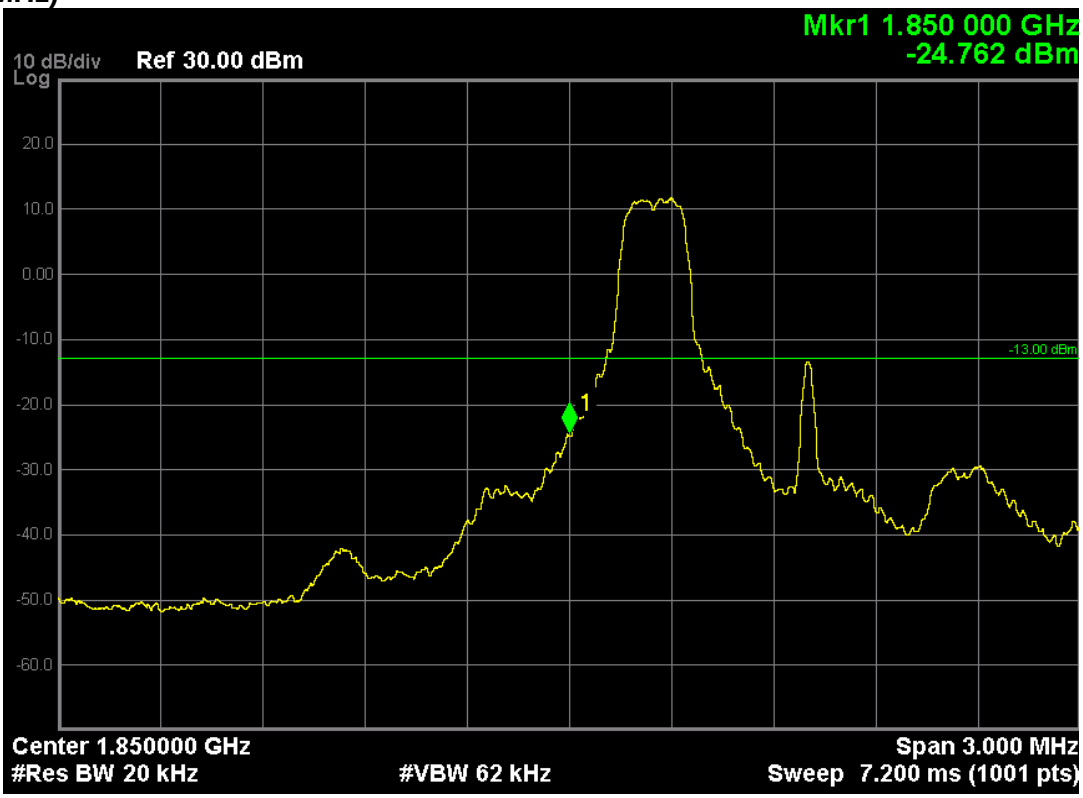
LTE Band 2 (QPSK, Band Width 1.4MHz,RB Size 1,RB Offset 5,Channel 19193,Frequeny 1909.3MHz)



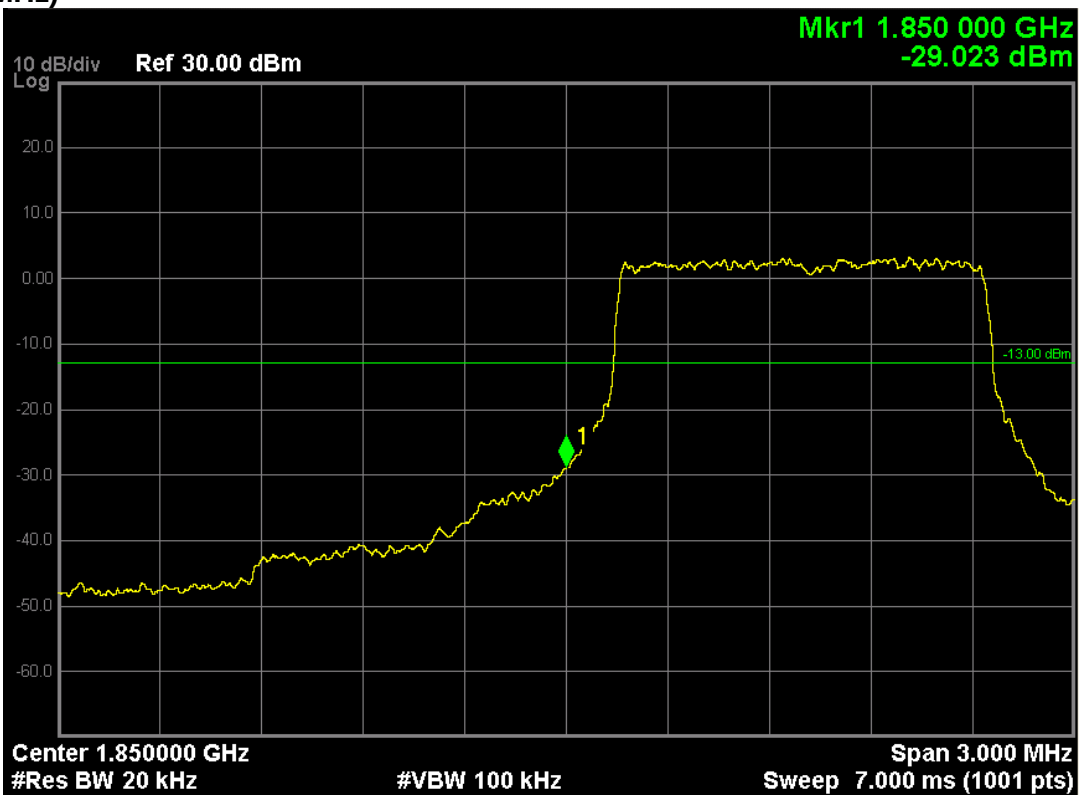
LTE Band 2 (QPSK, Band Width 1.4MHz,RB Size 6,RB Offset 0,Channel 19193,Frequeny 1909.3MHz)



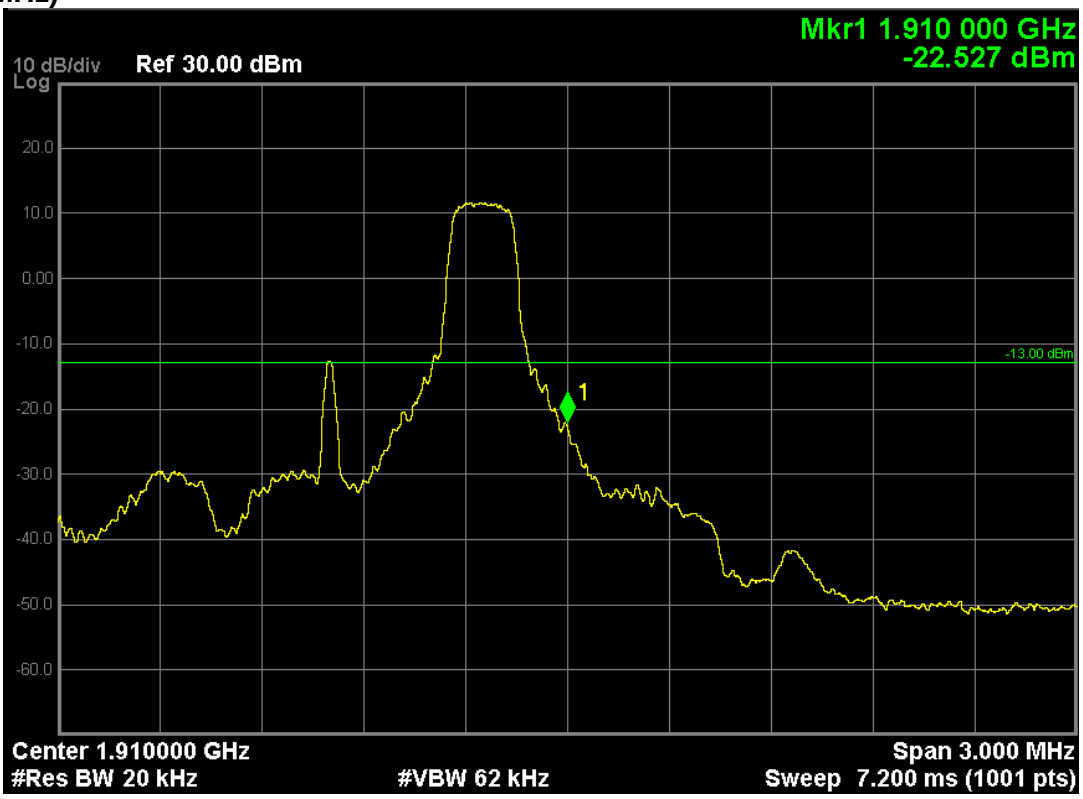
LTE Band 2 (16-QAM, Band Width 1.4MHz,RB Size 1,RB Offset 0,Channel 18607,Frequeny 1850.7MHz)



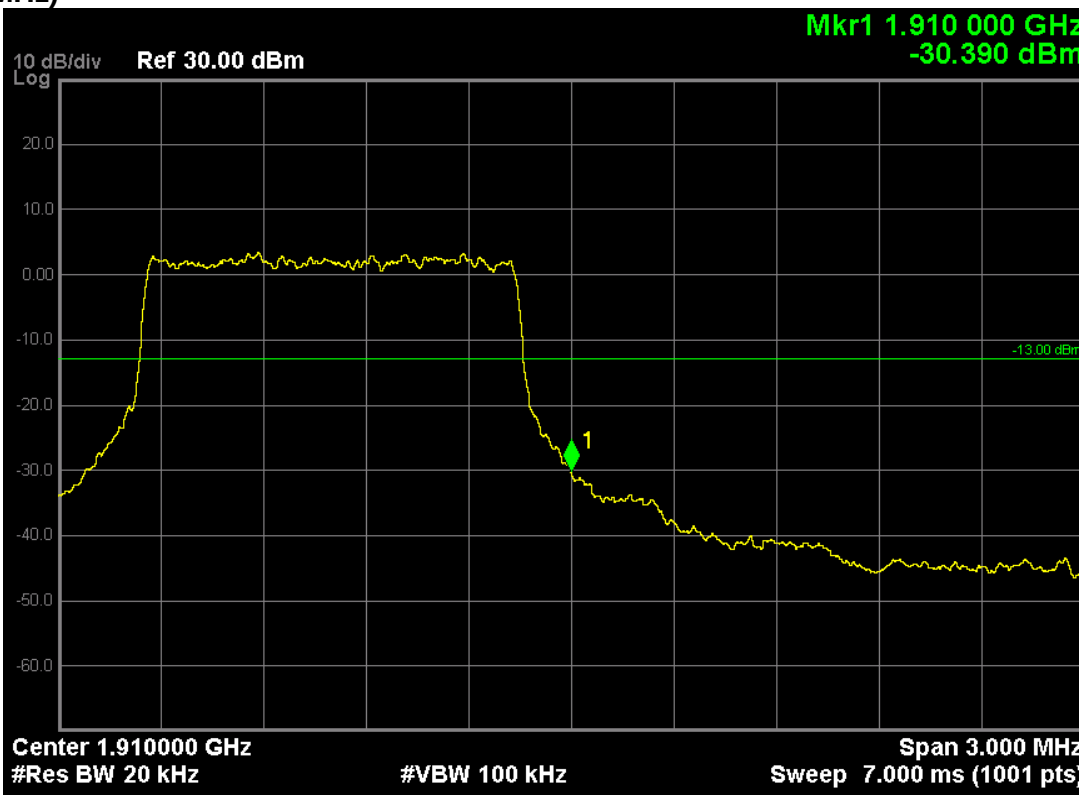
LTE Band 2 (16-QAM, Band Width 1.4MHz,RB Size 6,RB Offset 0,Channel 18607,Frequeny 1850.7MHz)



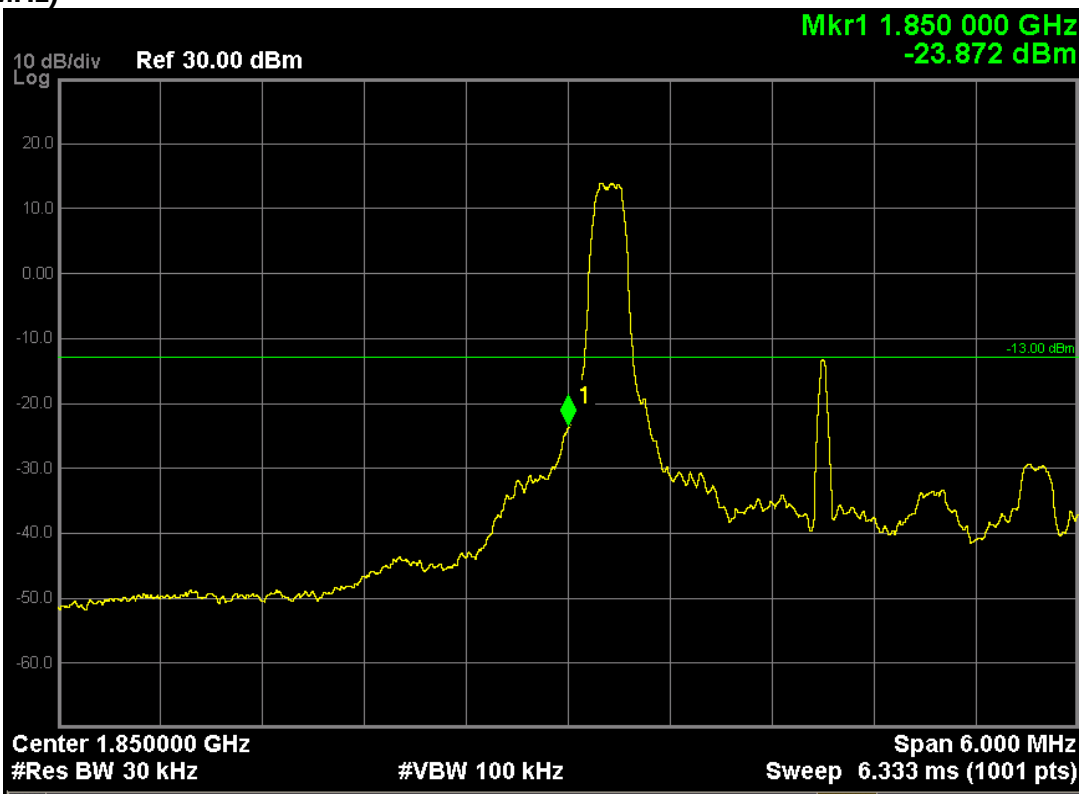
LTE Band 2 (16-QAM, Band Width 1.4MHz,RB Size 1,RB Offset 5,Channel 19193,Frequeny 1909.3MHz)



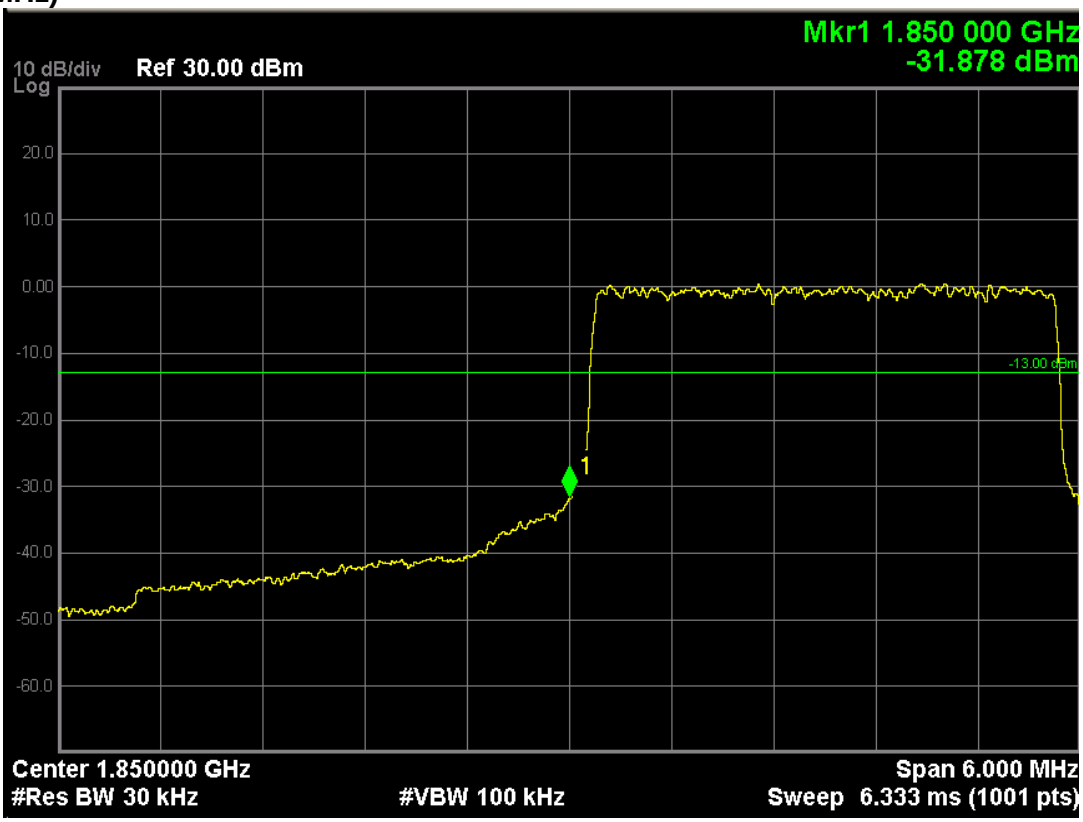
LTE Band 2 (16-QAM, Band Width 1.4MHz,RB Size 6,RB Offset 0,Channel 19193,Frequeny 1909.3MHz)



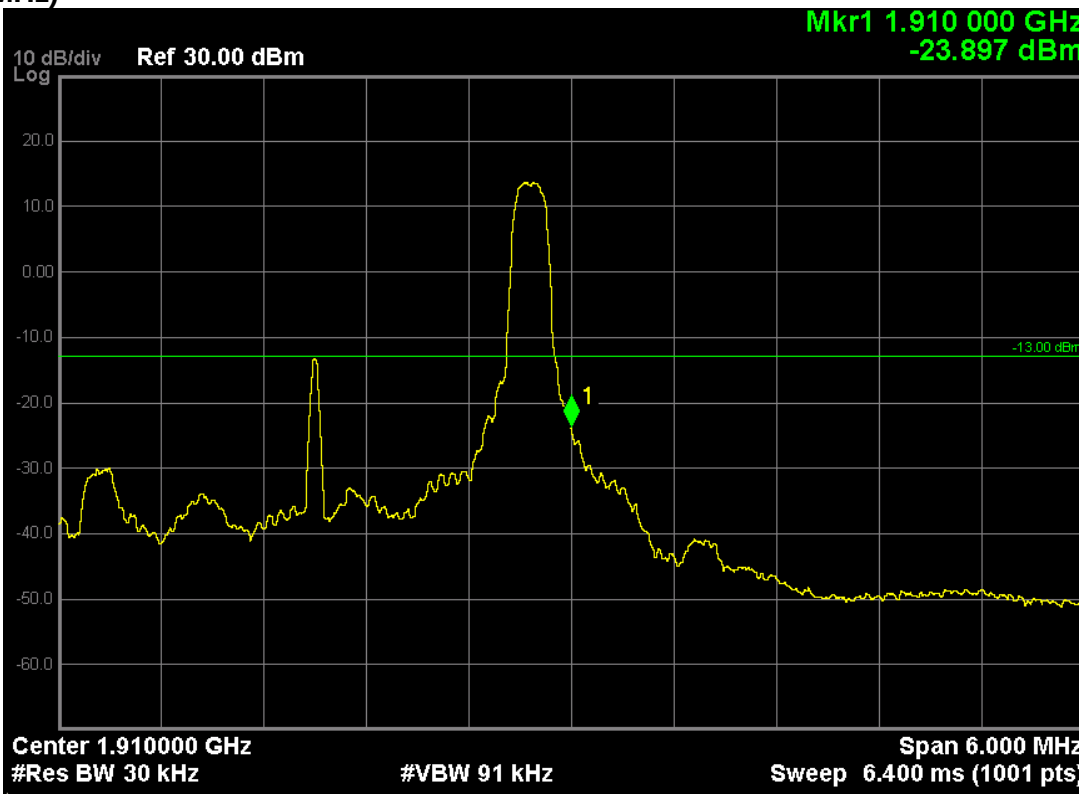
LTE Band 2 (QPSK, Band Width 3MHz,RB Size 1,RB Offset 0,Channel 18615,Frequeny 1851.5MHz)



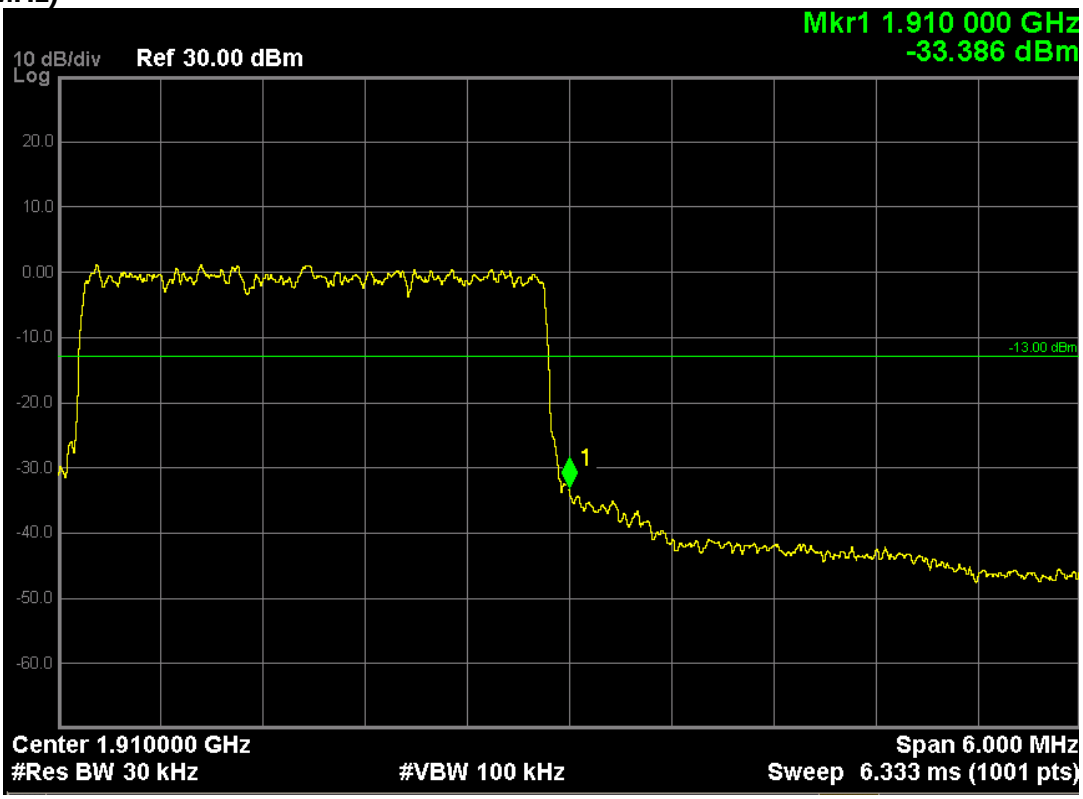
LTE Band 2 (QPSK, Band Width 3MHz,RB Size 15,RB Offset 0,Channel 18615,Frequeny 1851.5MHz)



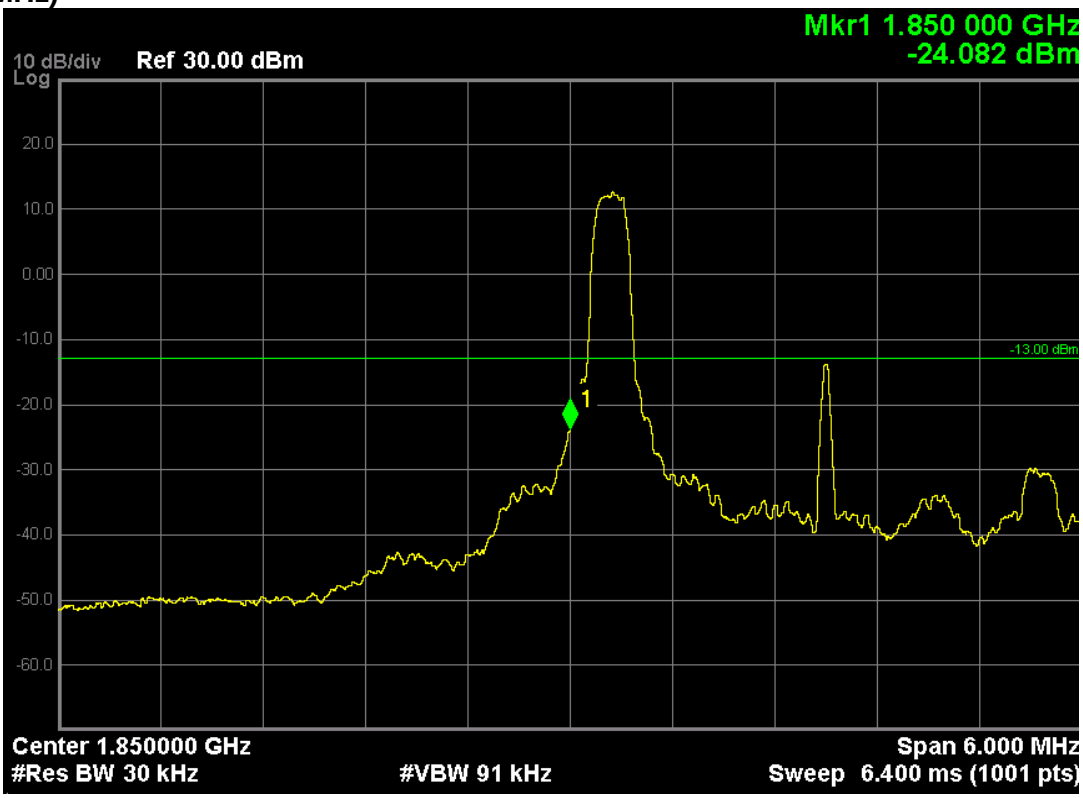
LTE Band 2 (QPSK, Band Width 3MHz,RB Size 1,RB Offset 14,Channel 19185,Frequeny 1908.5MHz)



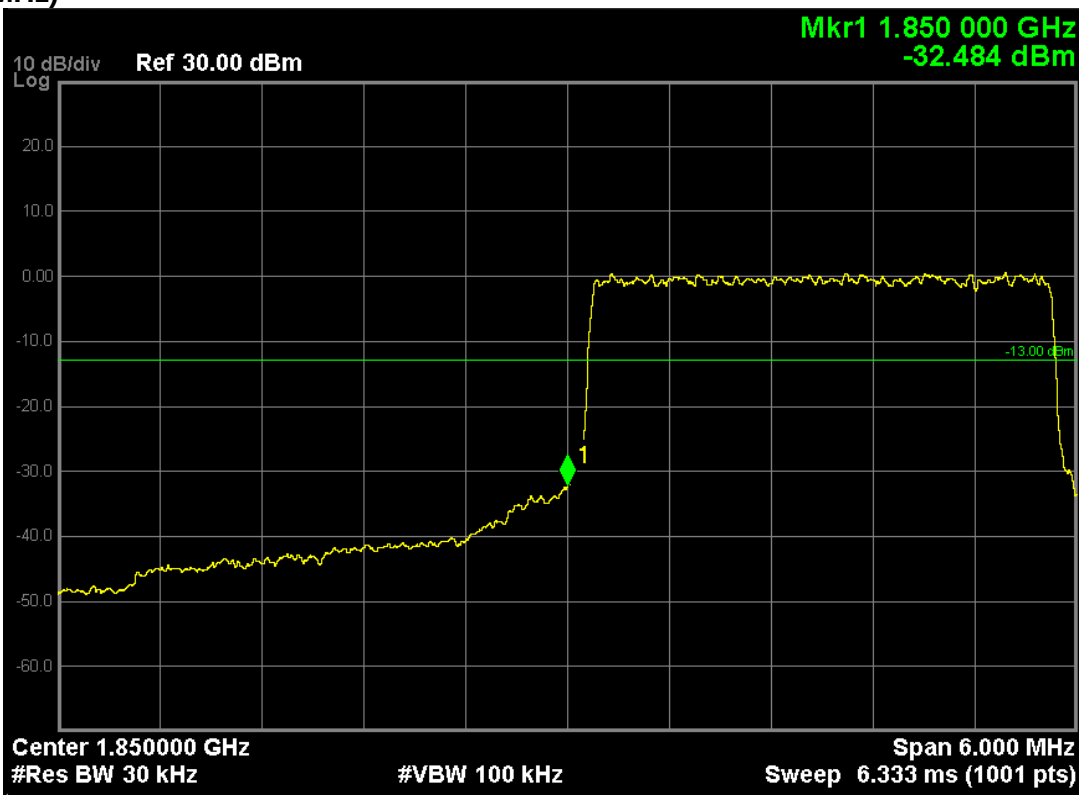
LTE Band 2 (QPSK, Band Width 3MHz,RB Size 15,RB Offset 0,Channel 19185,Frequeny 1908.5MHz)



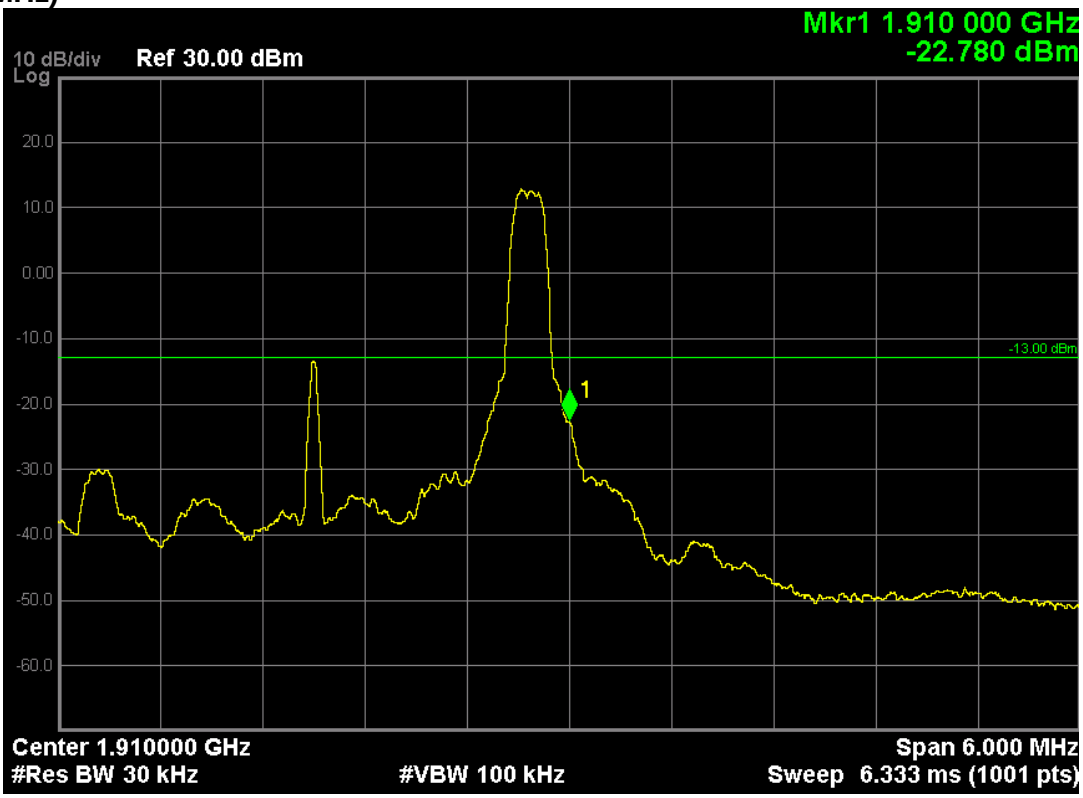
LTE Band 2 (16-QAM, Band Width 3MHz,RB Size 1,RB Offset 0,Channel 18615,Frequeny 1851.5MHz)



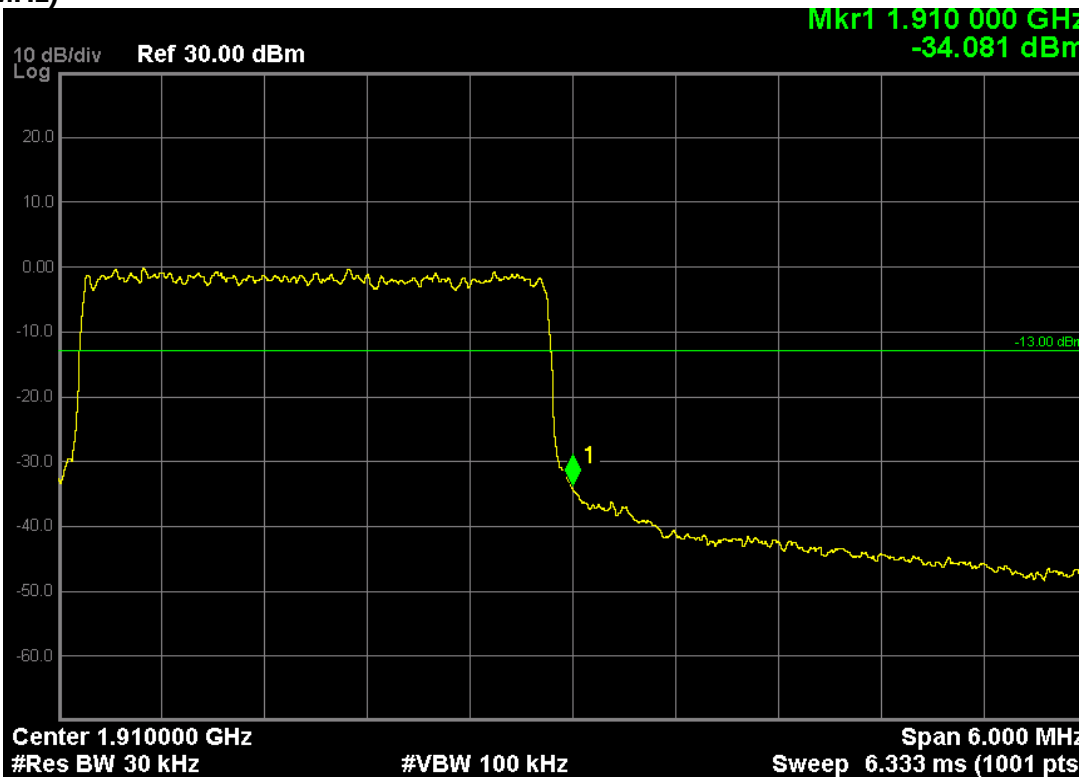
LTE Band 2 (16-QAM, Band Width 3MHz,RB Size 15,RB Offset 0,Channel 18615,Frequeny 1851.5MHz)



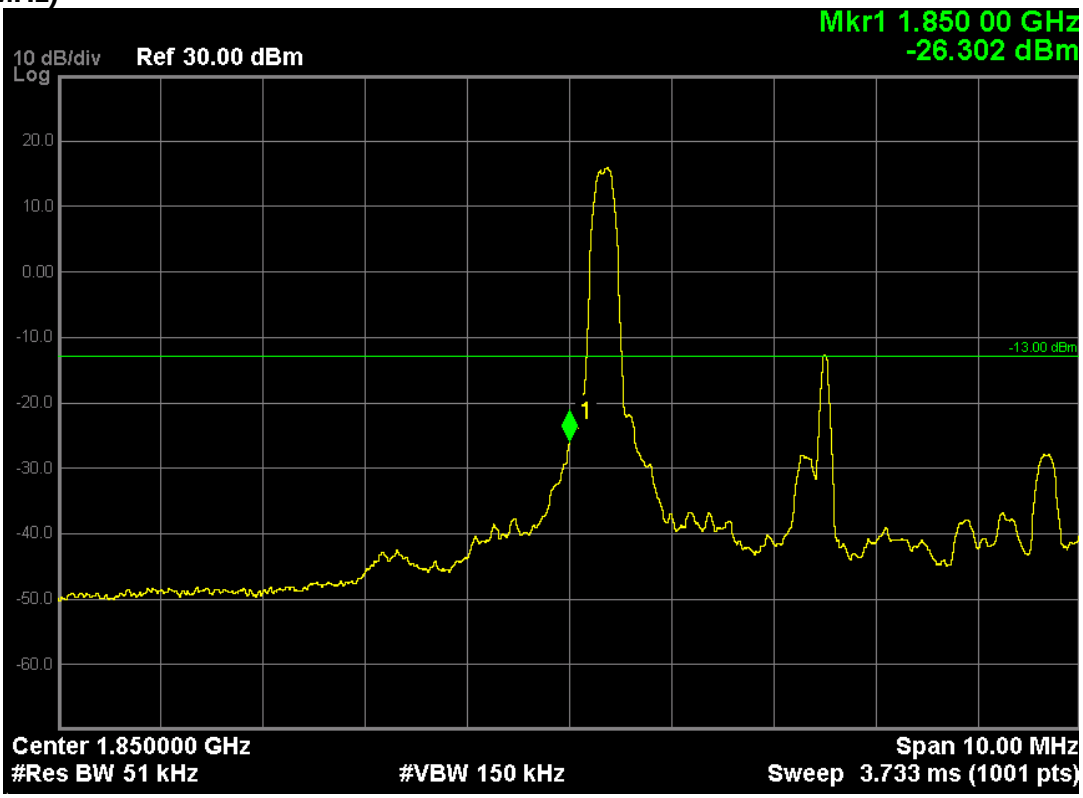
LTE Band 2 (16-QAM, Band Width 3MHz,RB Size 1,RB Offset 14,Channel 19185,Frequeny 1908.5MHz)



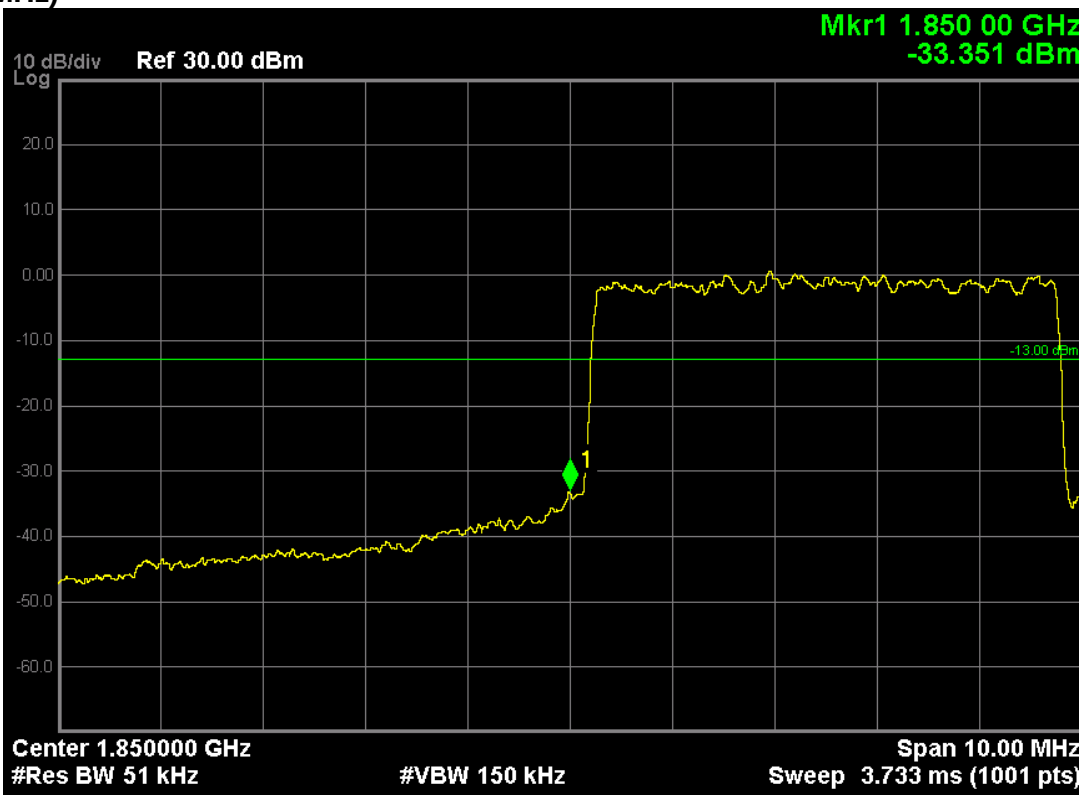
LTE Band 2 (16-QAM, Band Width 3MHz,RB Size 15,RB Offset 0,Channel 19185,Frequeny 1908.5MHz)



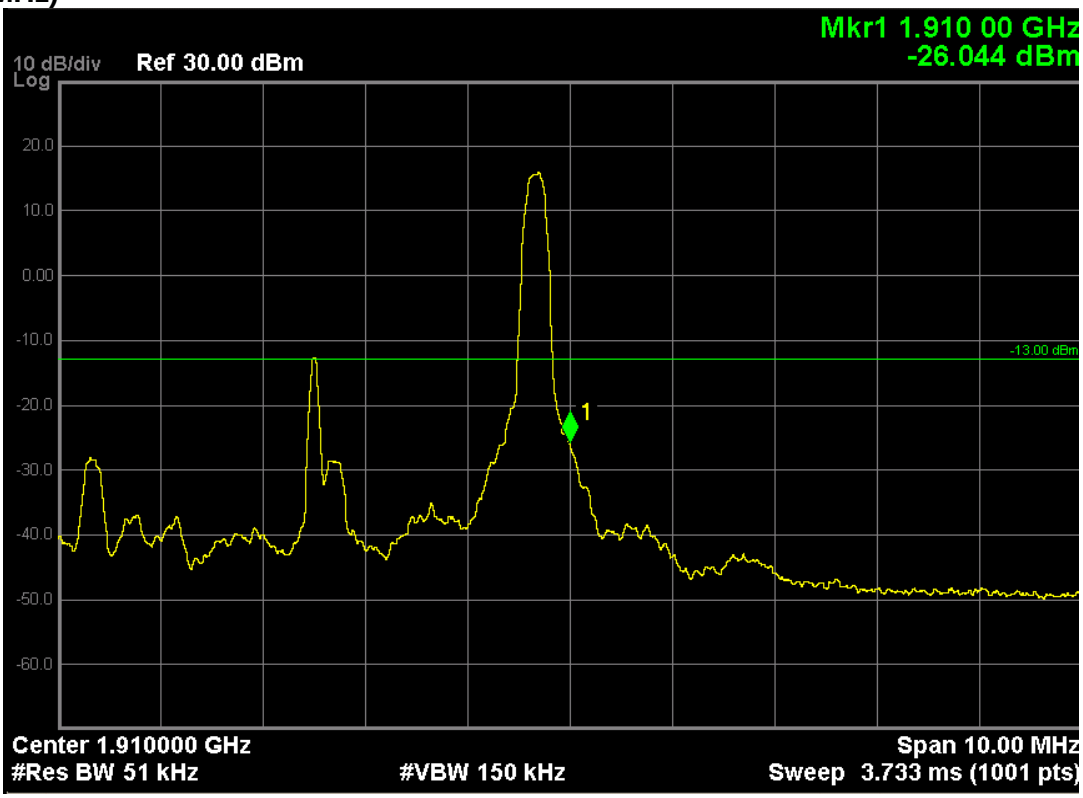
LTE Band 2 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 0,Channel 18625,Frequeny 1852.5MHz)



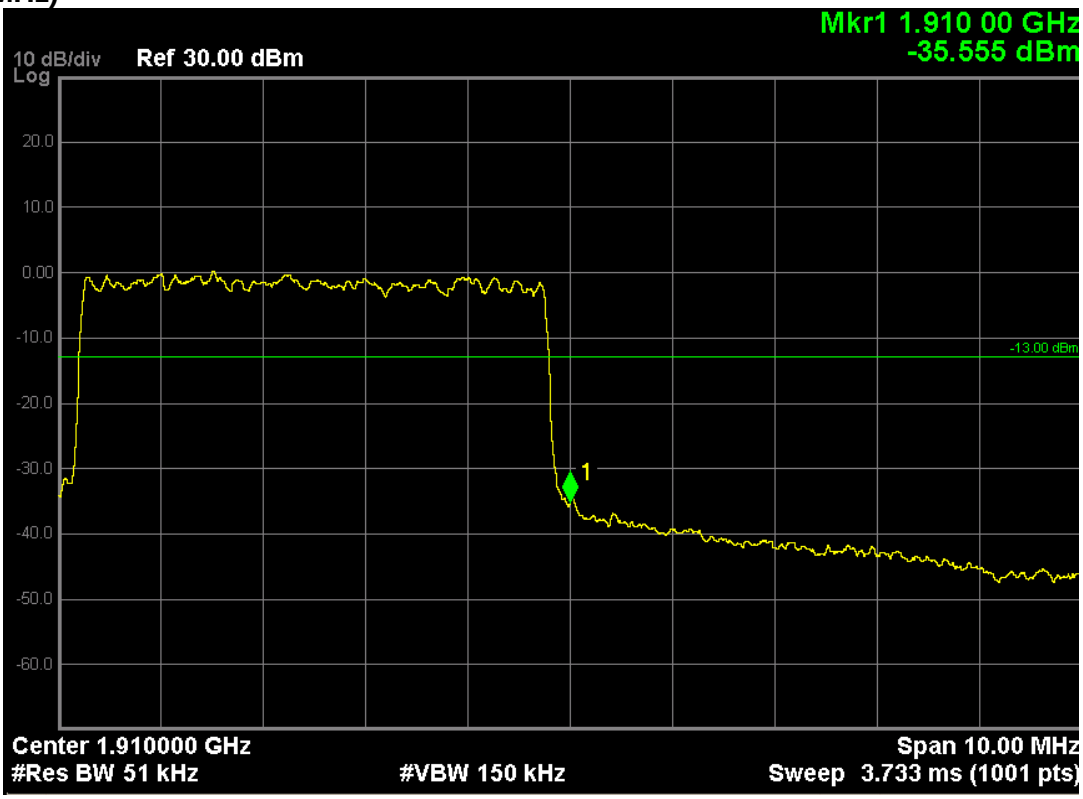
LTE Band 2 (QPSK, Band Width 5MHz,RB Size 25,RB Offset 0,Channel 18625,Frequeny 1852.5MHz)



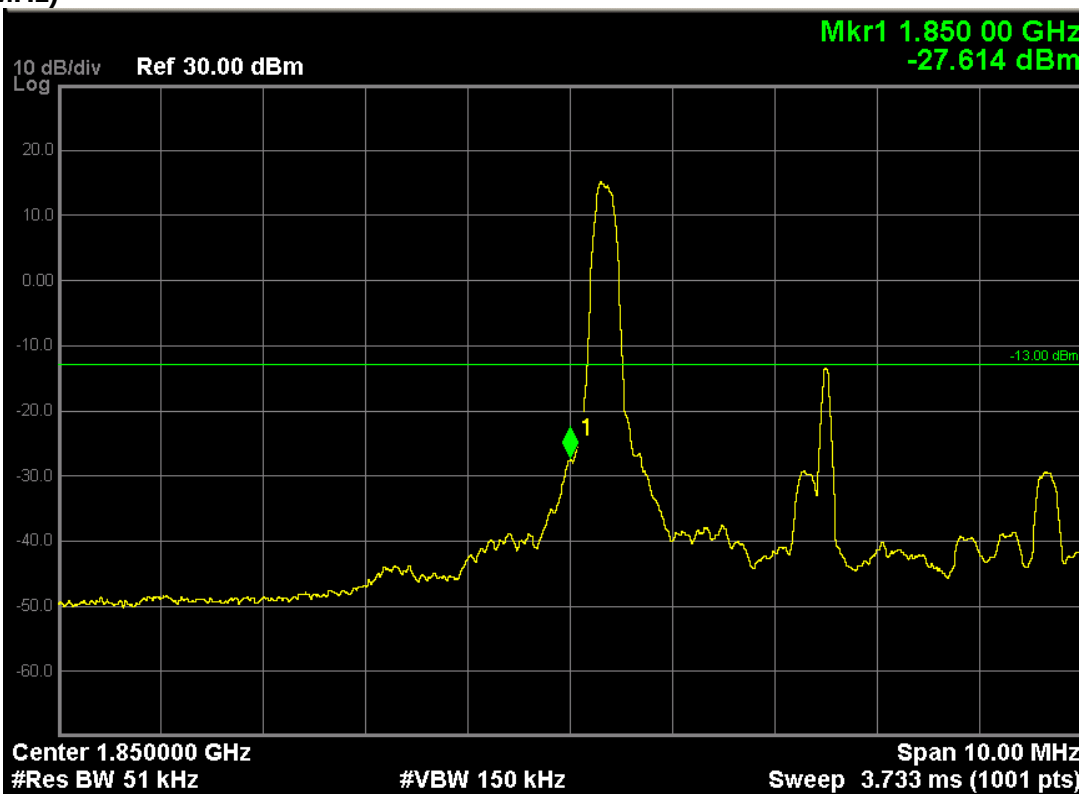
LTE Band 2 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 24,Channel 19175,Frequeny 1907.5MHz)



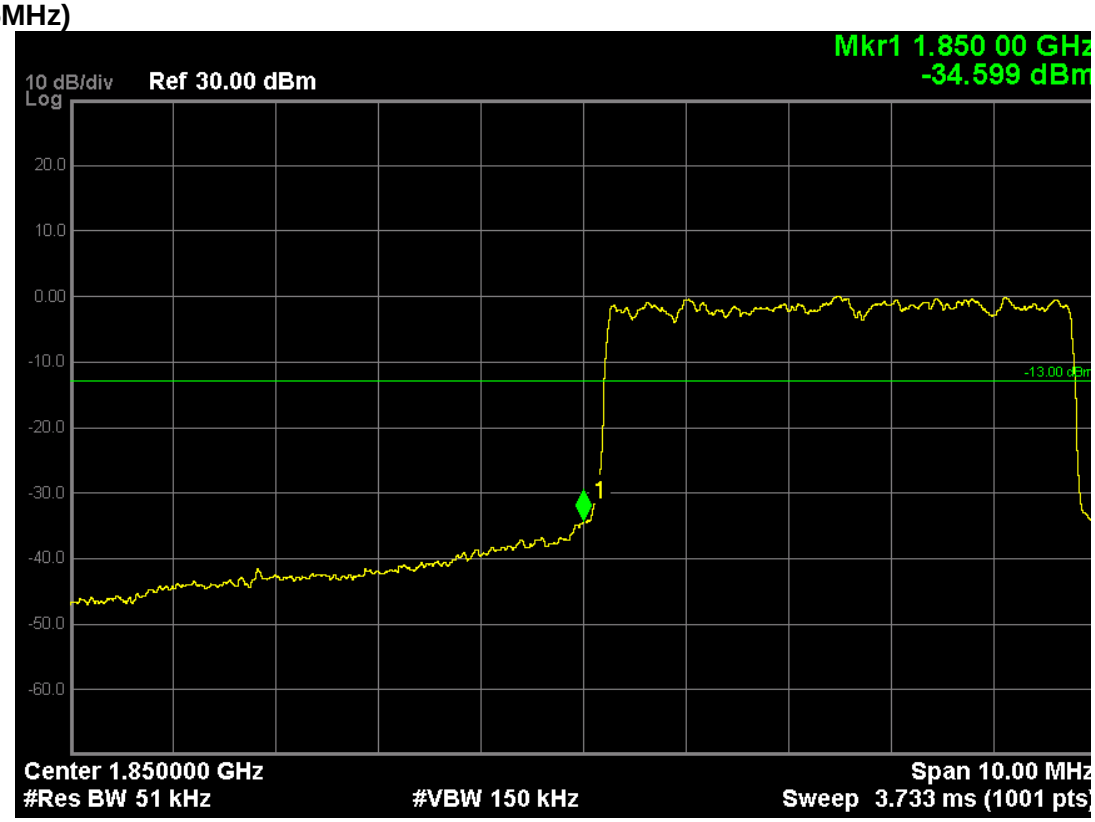
LTE Band 2 (QPSK, Band Width 5MHz,RB Size 25,RB Offset 0,Channel 19175,Frequeny 1907.5MHz)



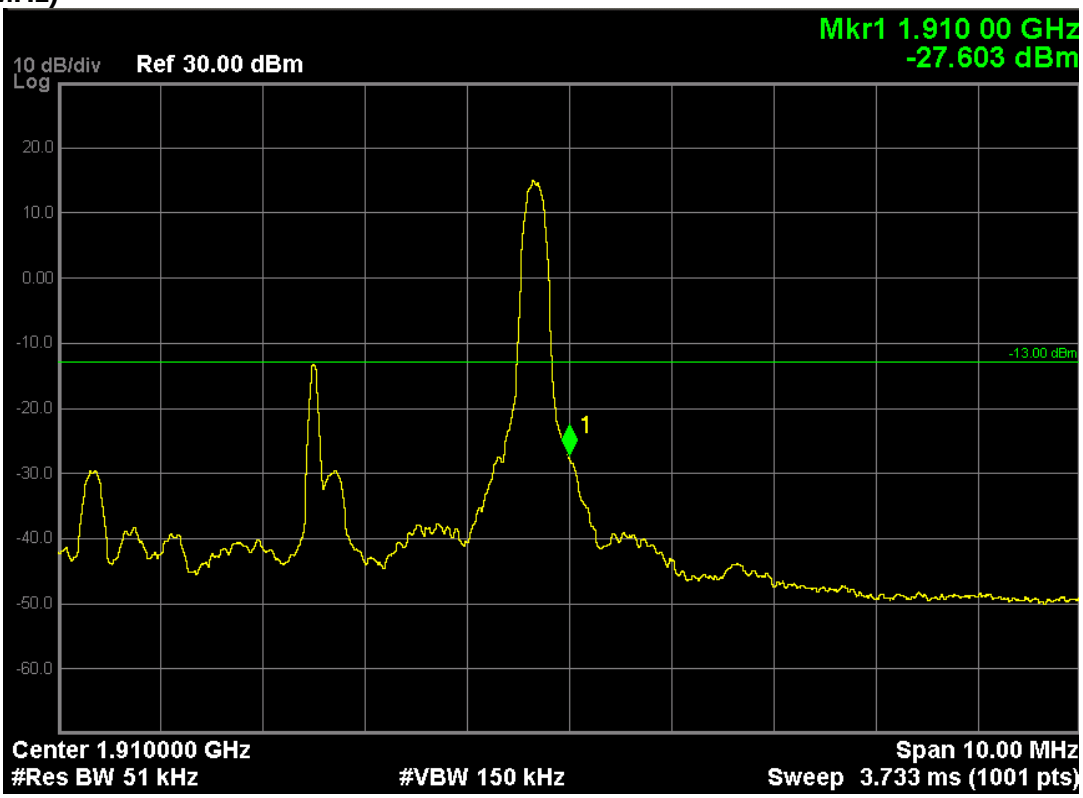
LTE Band 2 (16-QAM, Band Width 5MHz,RB Size 1,RB Offset 0,Channel 18625,Frequeny 1852.5MHz)



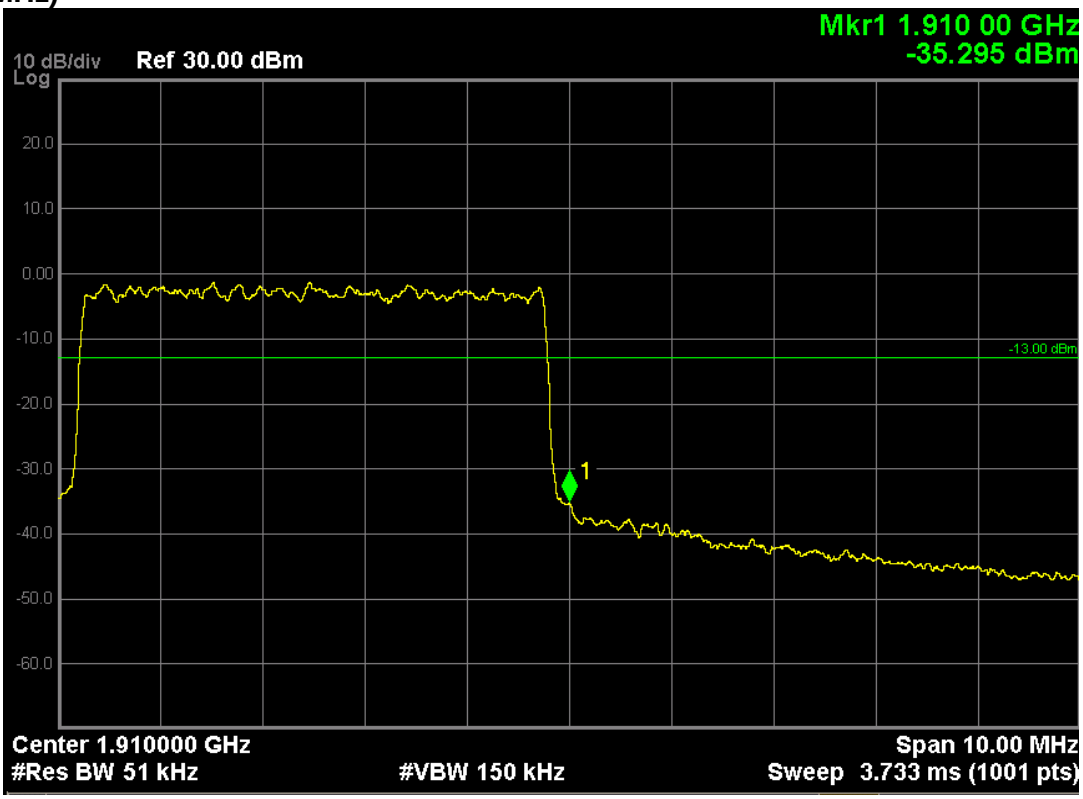
LTE Band 2 (16-QAM, Band Width 5MHz,RB Size 25,RB Offset 0,Channel 18625,Frequeny 1852.5MHz)



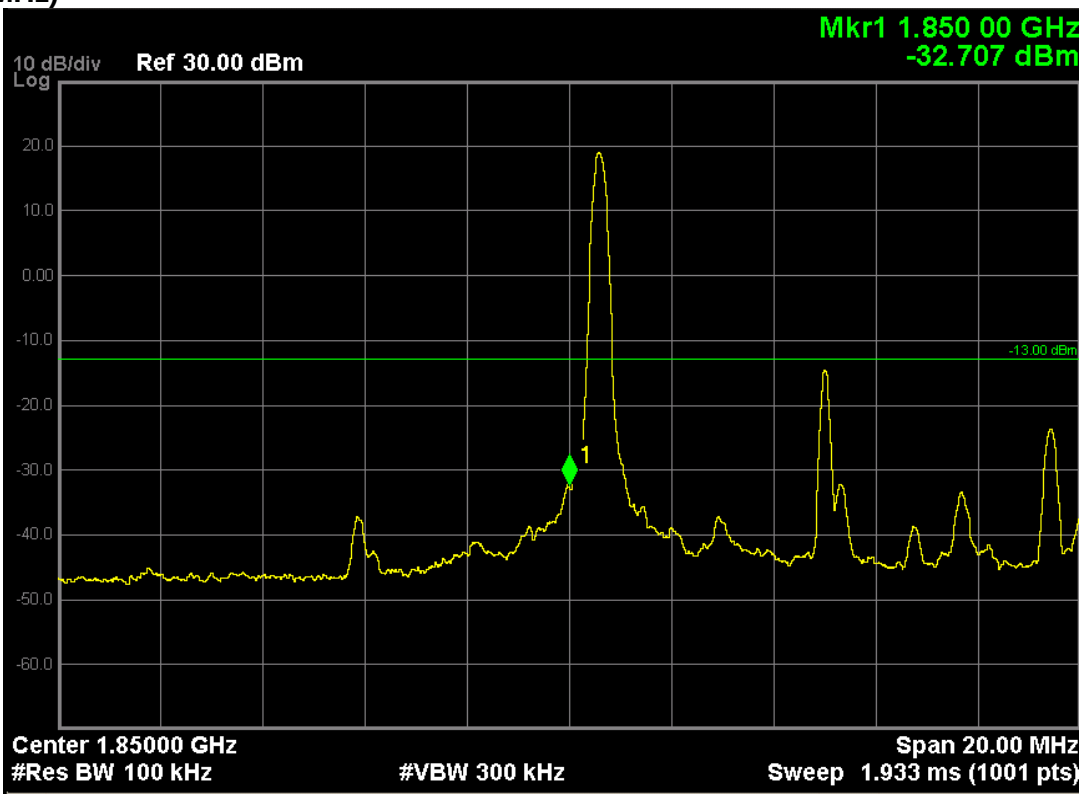
LTE Band 2 (16-QAM, Band Width 5MHz,RB Size 1,RB Offset 24,Channel 19175,Frequeny 1907.5MHz)



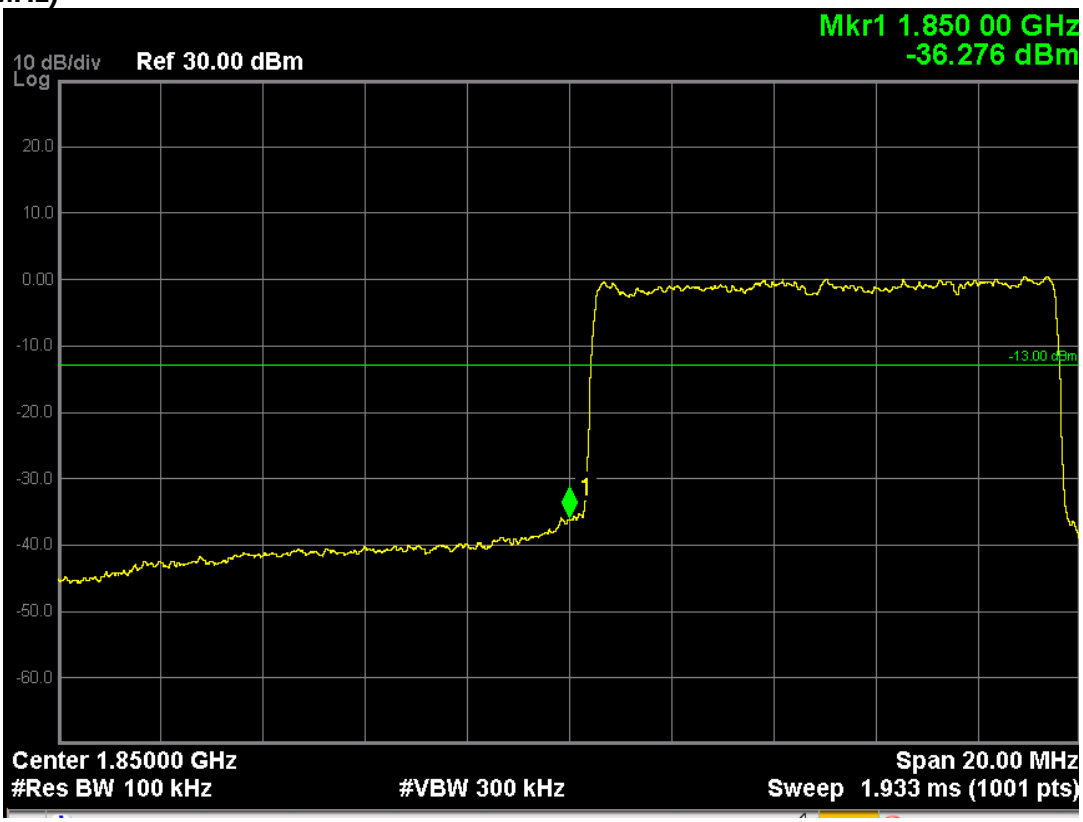
LTE Band 2 (16-QAM, Band Width 5MHz,RB Size 25,RB Offset 0,Channel 19175,Frequeny 1907.5MHz)



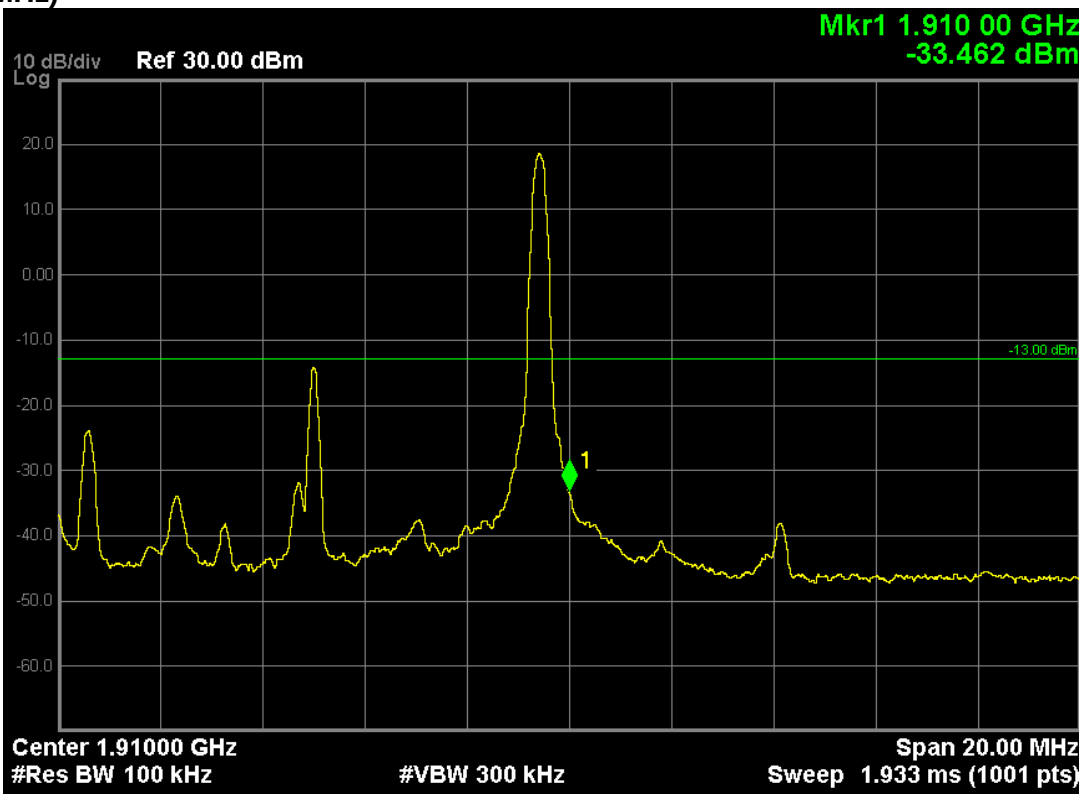
LTE Band 2 (QPSK, Band Width 10MHz,RB Size 1,RB Offset 0,Channel 18650,Frequeny 1855.0MHz)



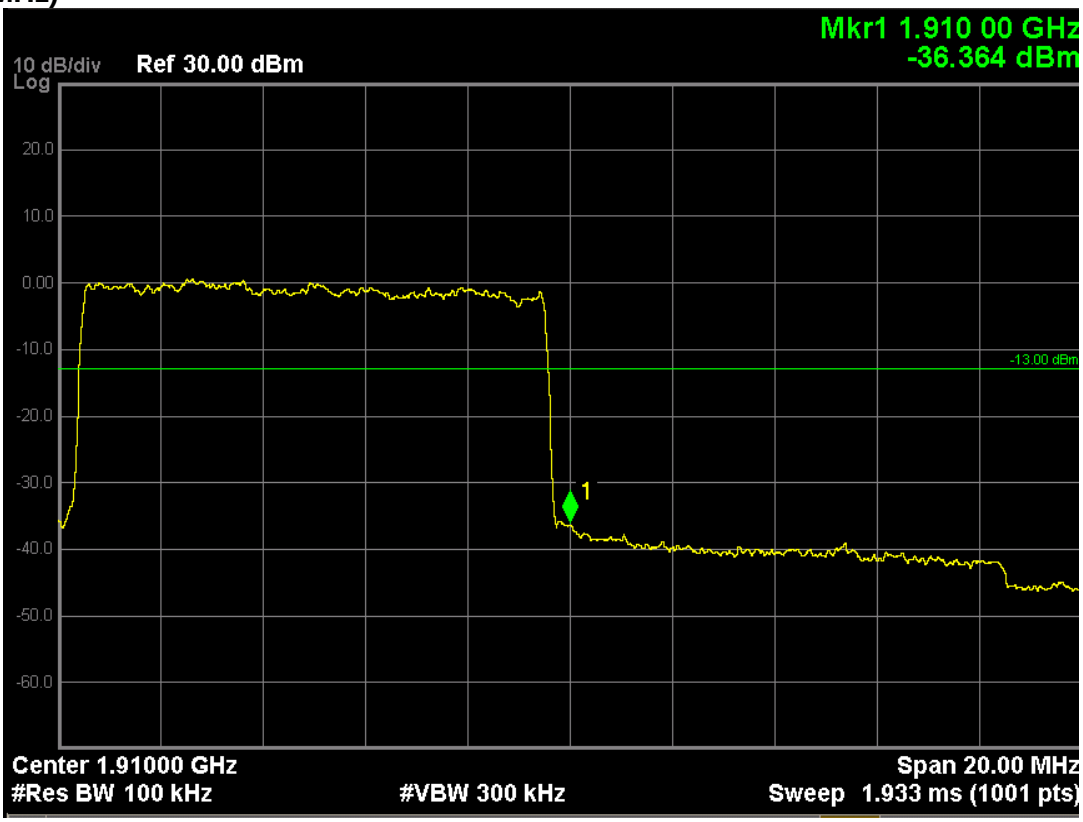
LTE Band 2 (QPSK, Band Width 10MHz,RB Size 50,RB Offset 0,Channel 18650,Frequeny 1855.0MHz)



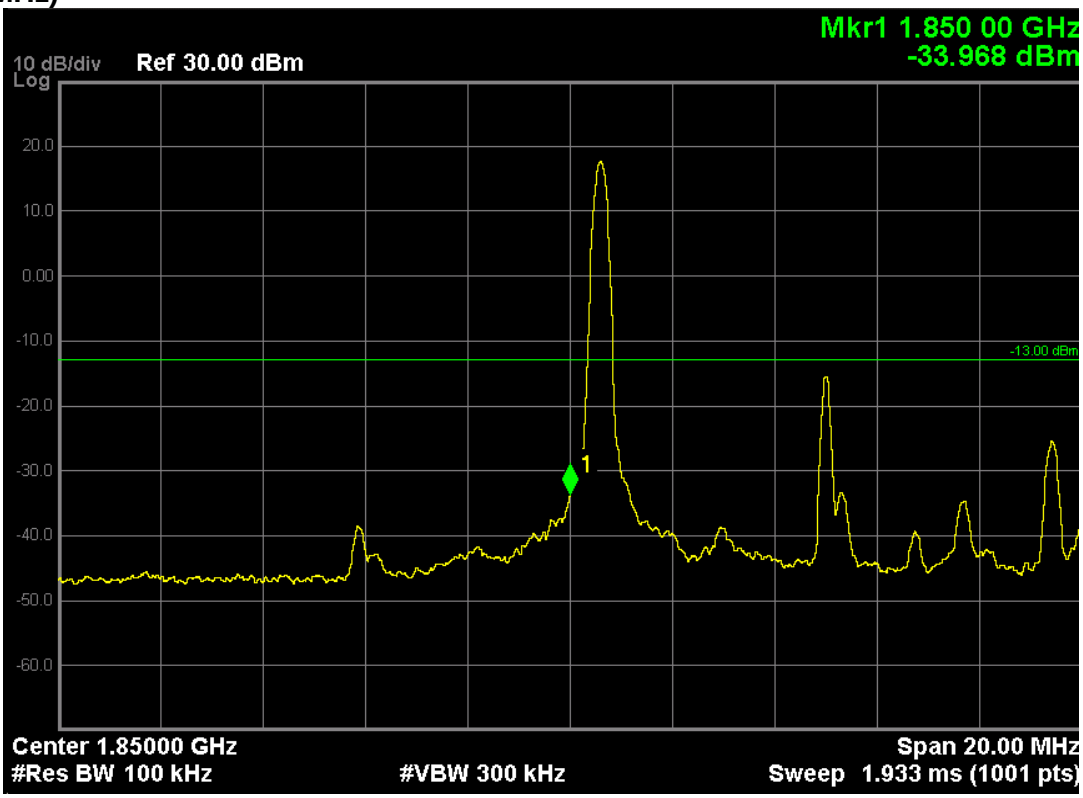
LTE Band 2 (QPSK, Band Width 10MHz,RB Size 1,RB Offset 49,Channel 19150,Frequeny 1905.0MHz)



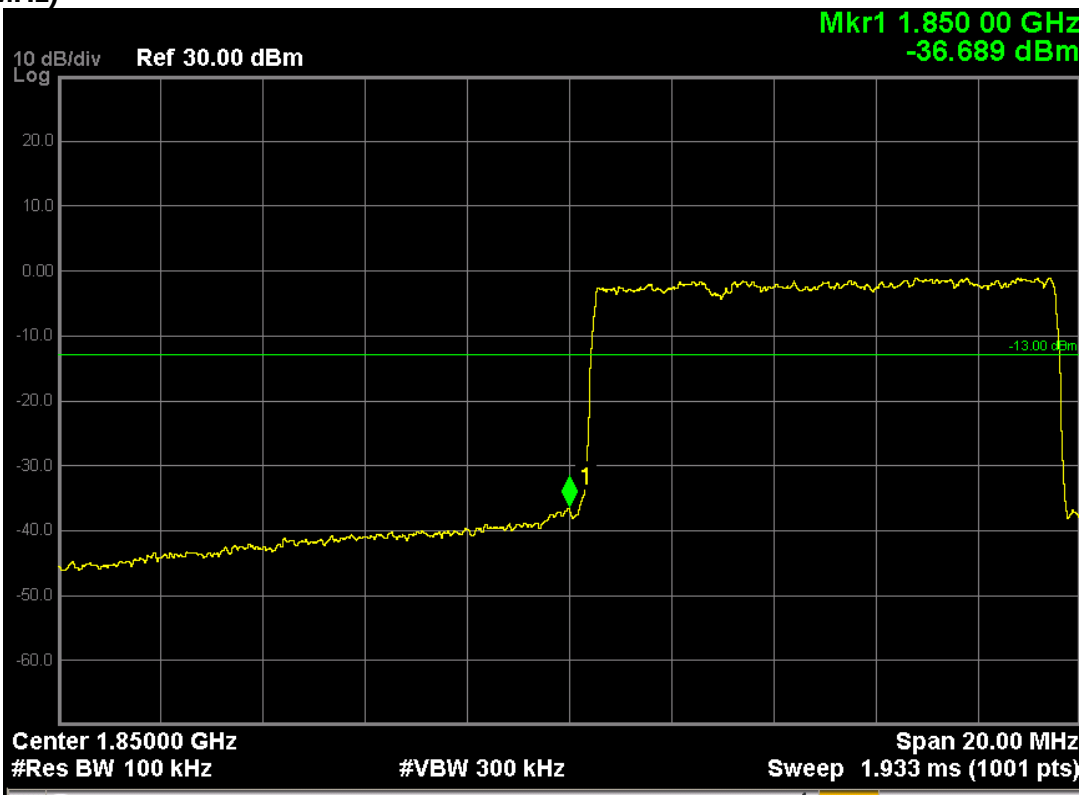
LTE Band 2 (QPSK, Band Width 10MHz,RB Size 50,RB Offset 0,Channel 19150,Frequeny 1905.0MHz)



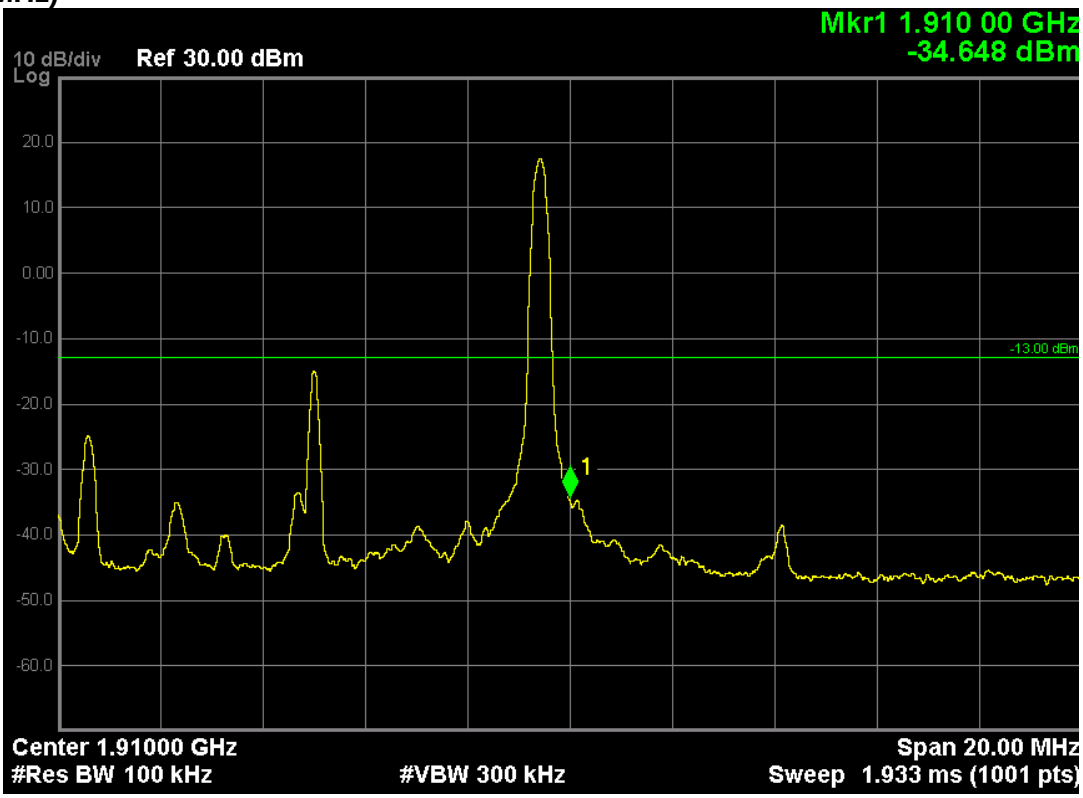
LTE Band 2 (16-QAM, Band Width 10MHz,RB Size 1,RB Offset 0,Channel 18650,Frequeny 1855.0MHz)



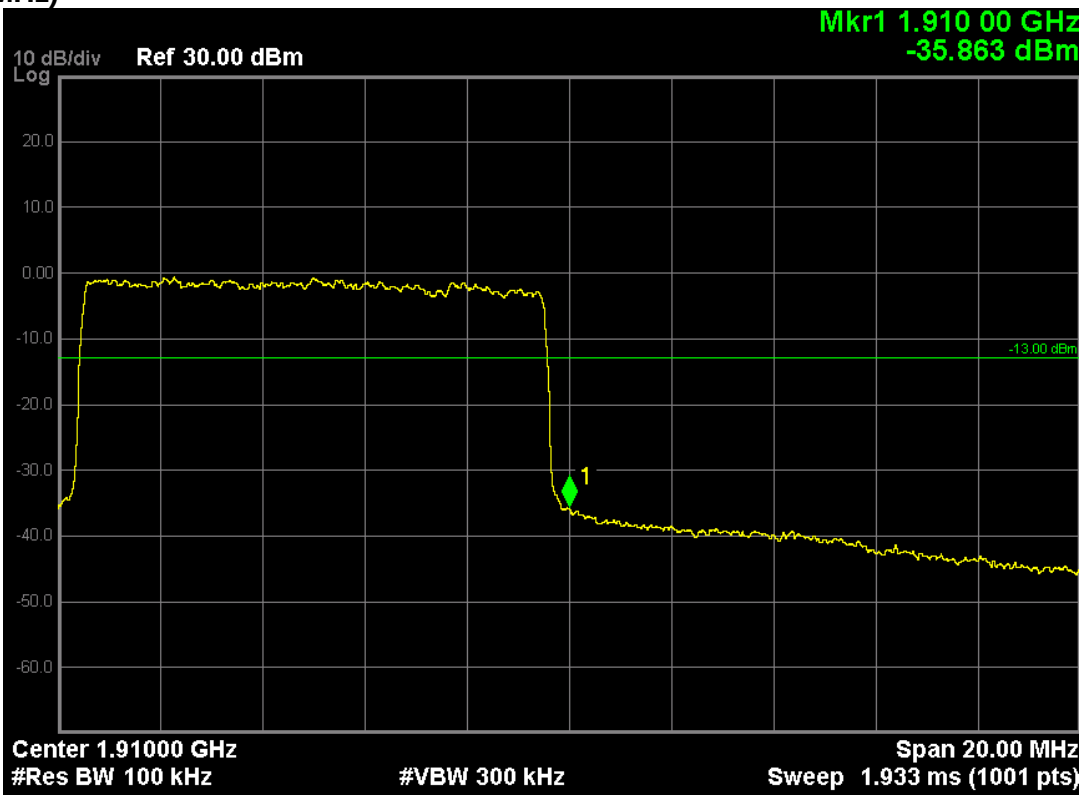
LTE Band 2 (16-QAM, Band Width 10MHz,RB Size 50,RB Offset 0,Channel 18650,Frequeny 1855.0MHz)



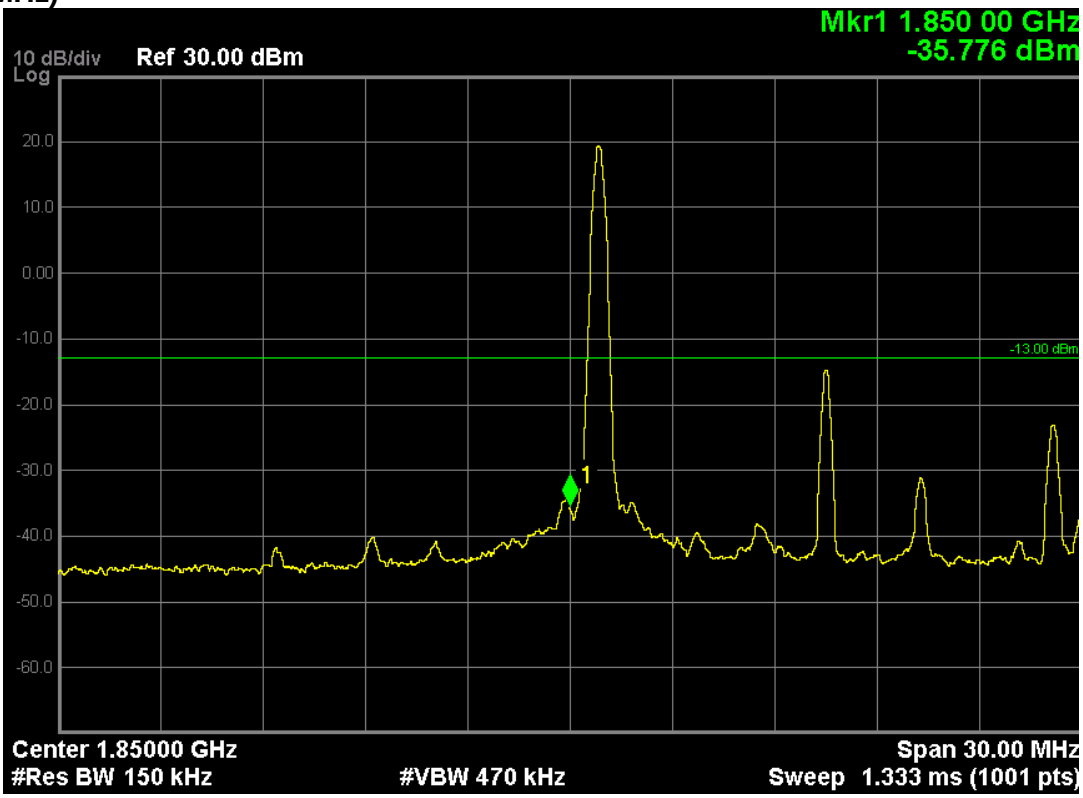
LTE Band 2 (16-QAM, Band Width 10MHz,RB Size 1,RB Offset 49,Channel 19150,Frequeny 1905.0MHz)



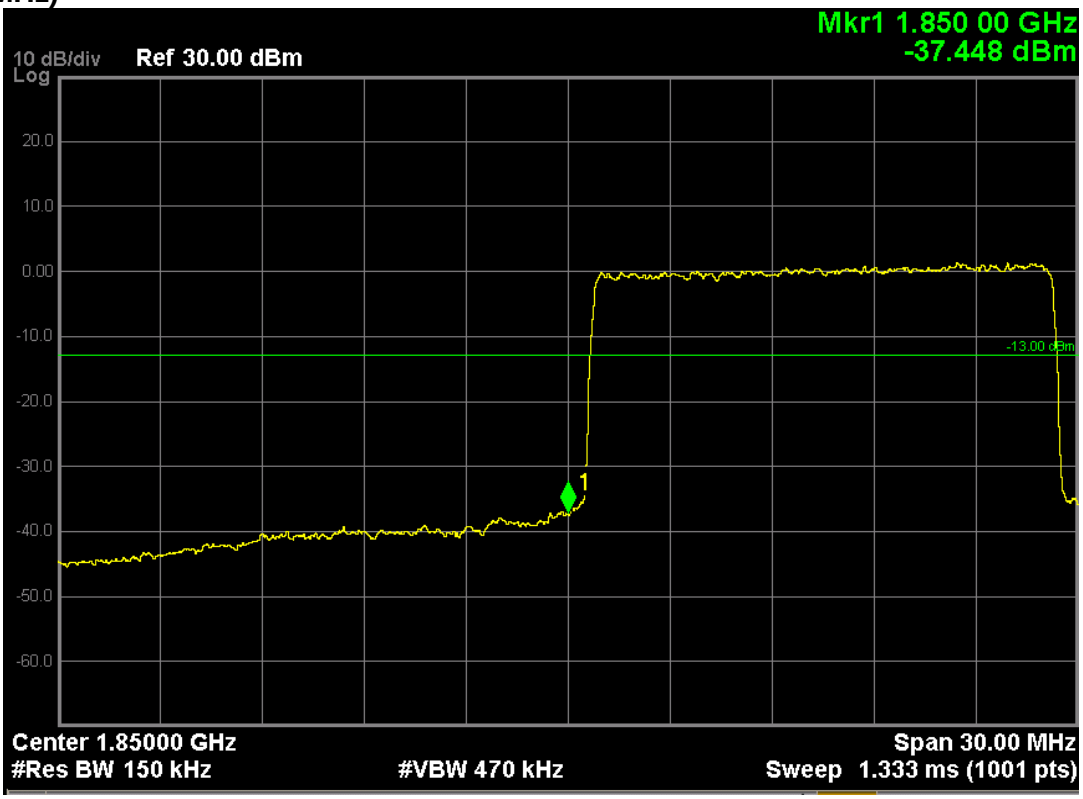
LTE Band 2 (16-QAM, Band Width 10MHz,RB Size 50,RB Offset 0,Channel 19150,Frequeny 1905.0MHz)



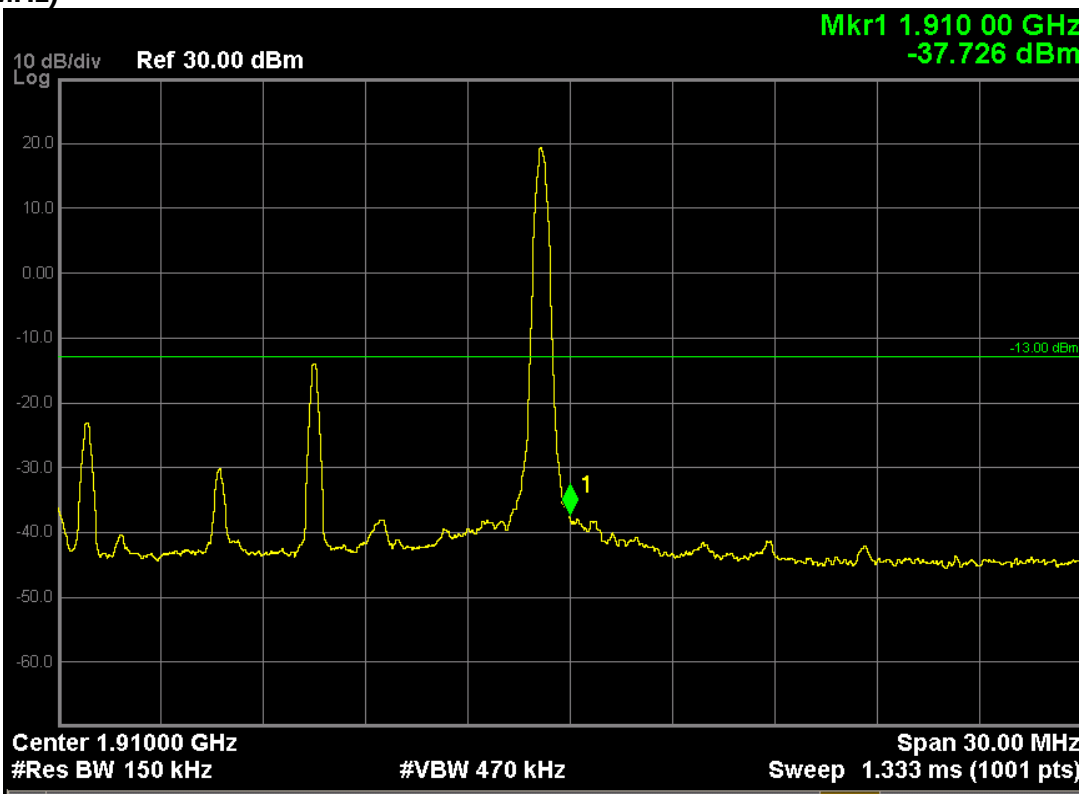
LTE Band 2 (QPSK, Band Width 15MHz,RB Size 1,RB Offset 0,Channel 18675,Frequeny 1857.5MHz)



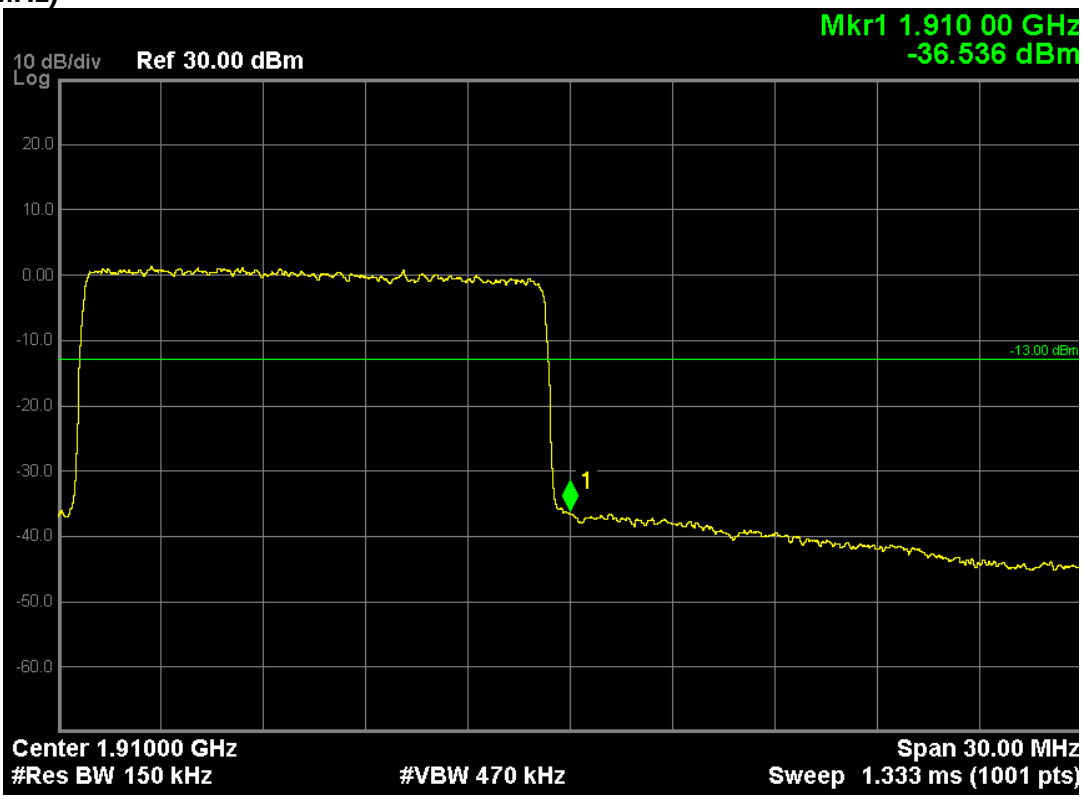
LTE Band 2 (QPSK, Band Width 15MHz,RB Size 75,RB Offset 0,Channel 18675,Frequeny 1857.5MHz)



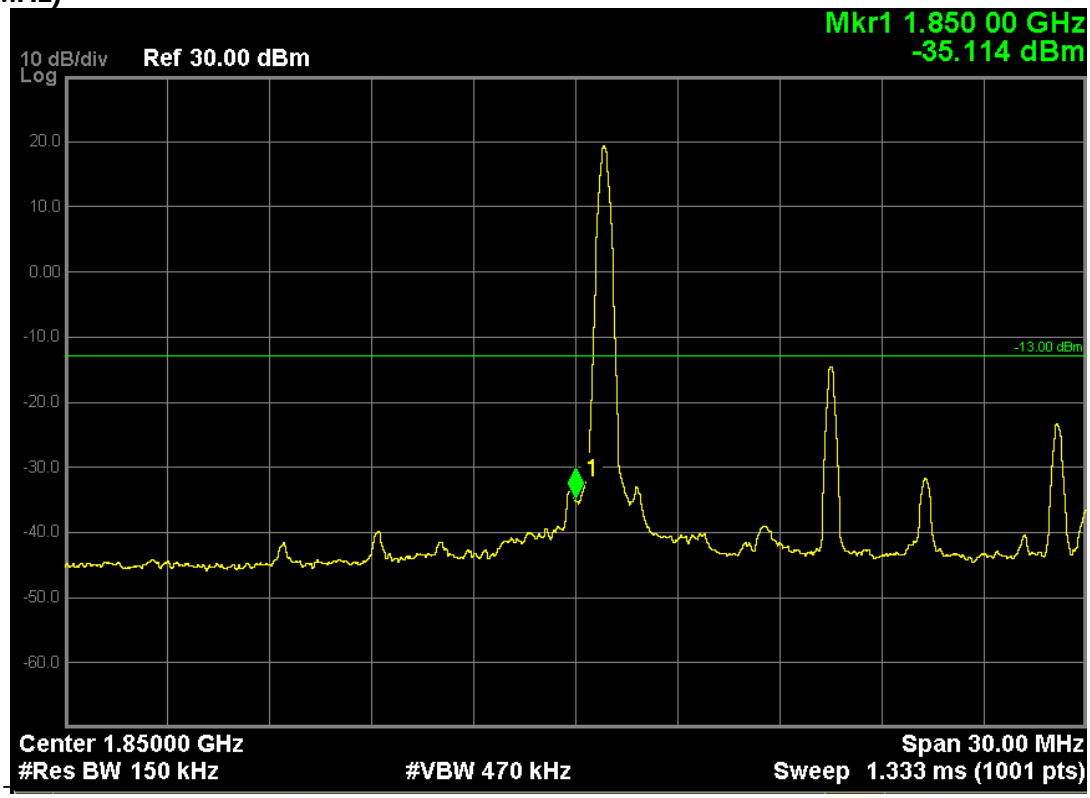
LTE Band 2 (QPSK, Band Width 15MHz,RB Size 1,RB Offset 74,Channel 19125,Frequeny 1902.5MHz)



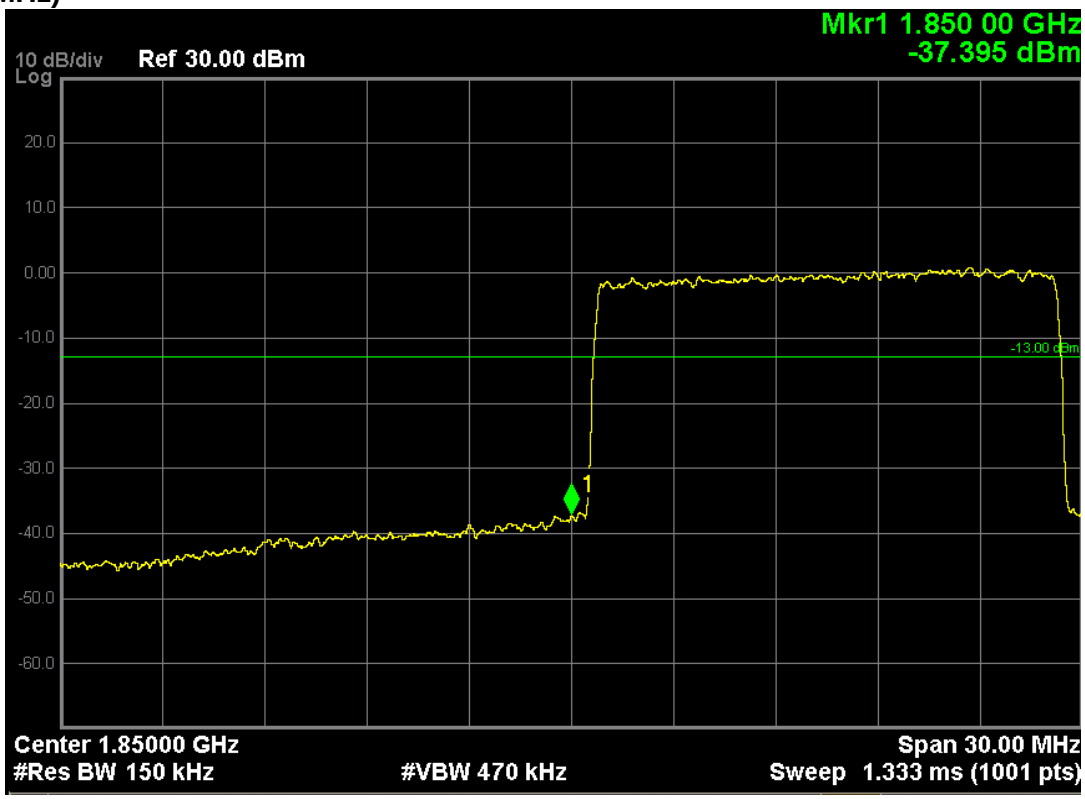
LTE Band 2 (QPSK, Band Width 15MHz,RB Size 75,RB Offset 0,Channel 19125,Frequeny 1902.5MHz)



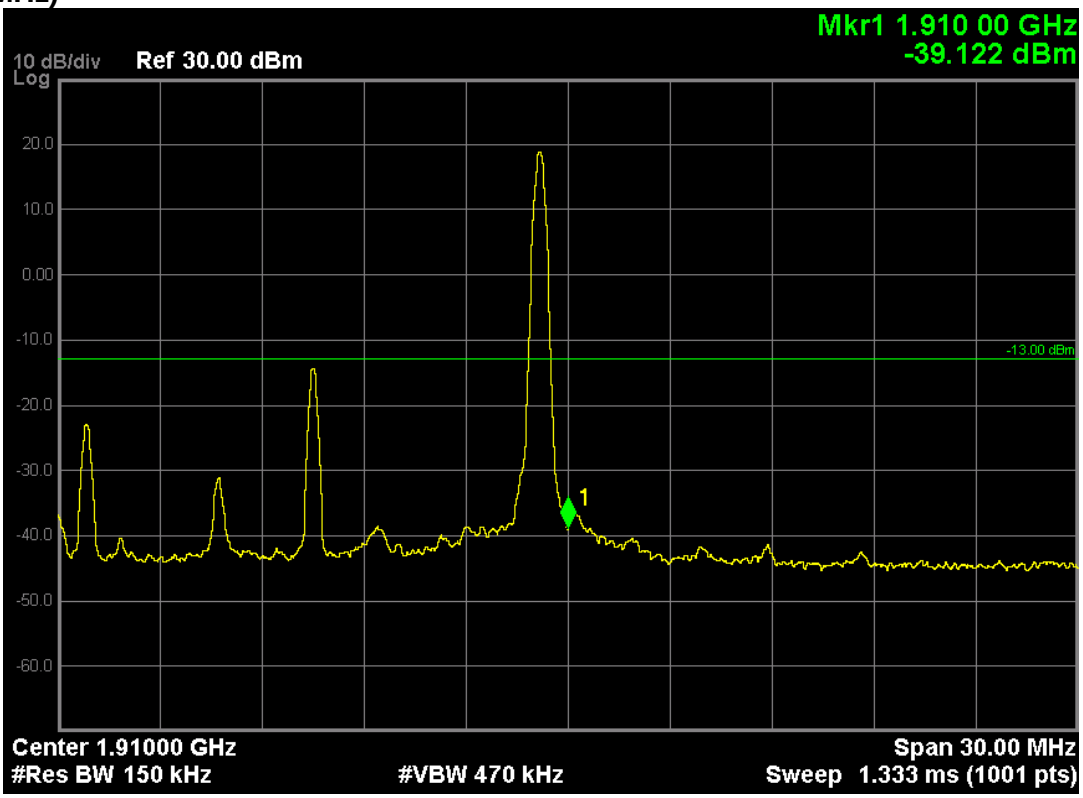
LTE Band 2 (16-QAM, Band Width 15MHz,RB Size 1,RB Offset 0,Channel 18675,Frequeny 1857.5MHz)



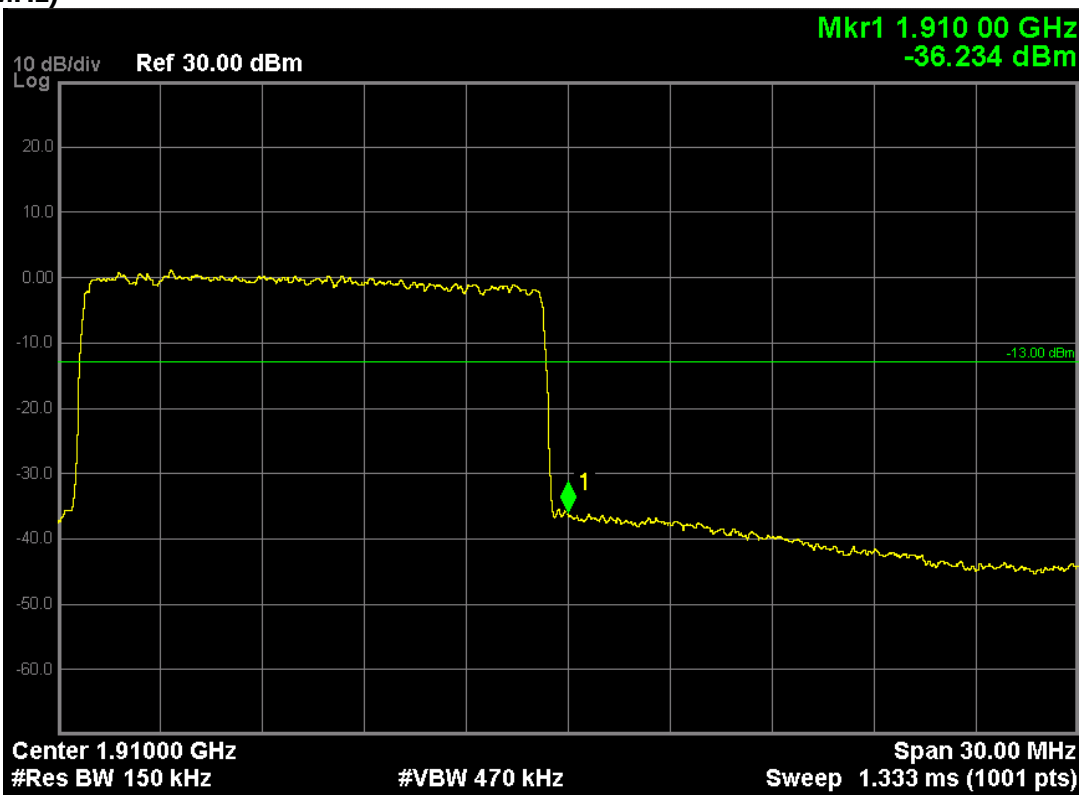
LTE Band 2 (16-QAM, Band Width 15MHz,RB Size 75,RB Offset 0,Channel 18675,Frequeny 1857.5MHz)



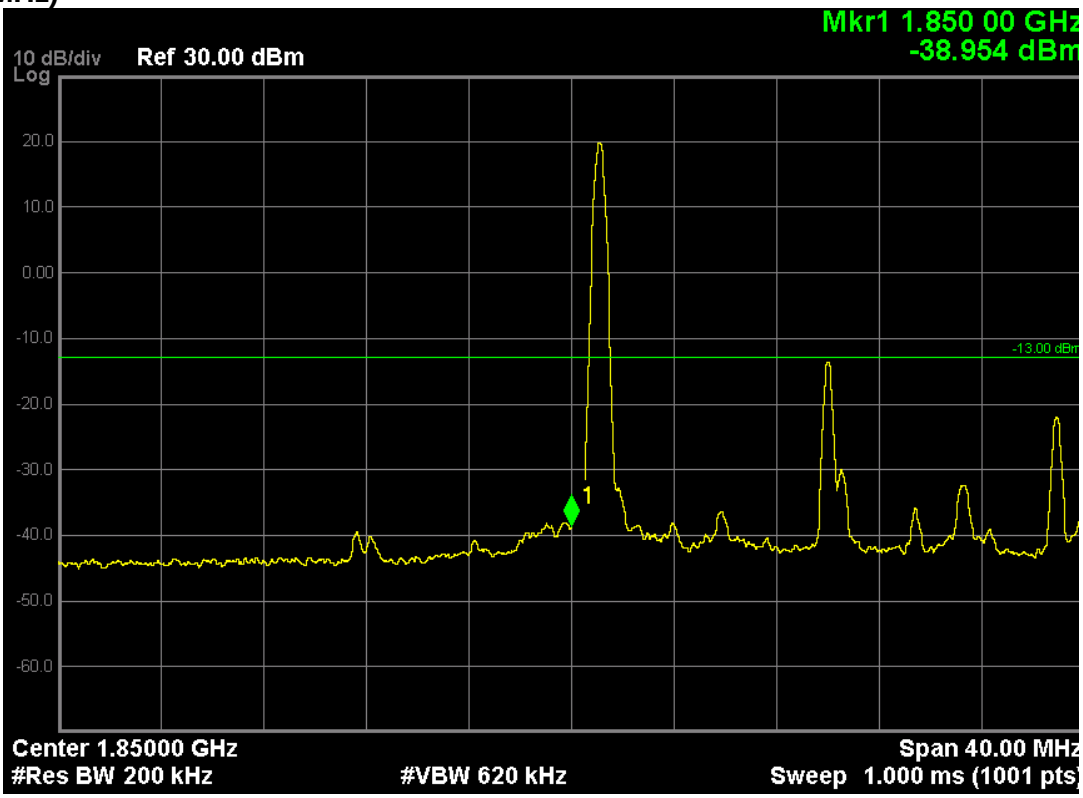
LTE Band 2 (16-QAM, Band Width 15MHz,RB Size 1,RB Offset 74,Channel 19125,Frequeny 1902.5MHz)



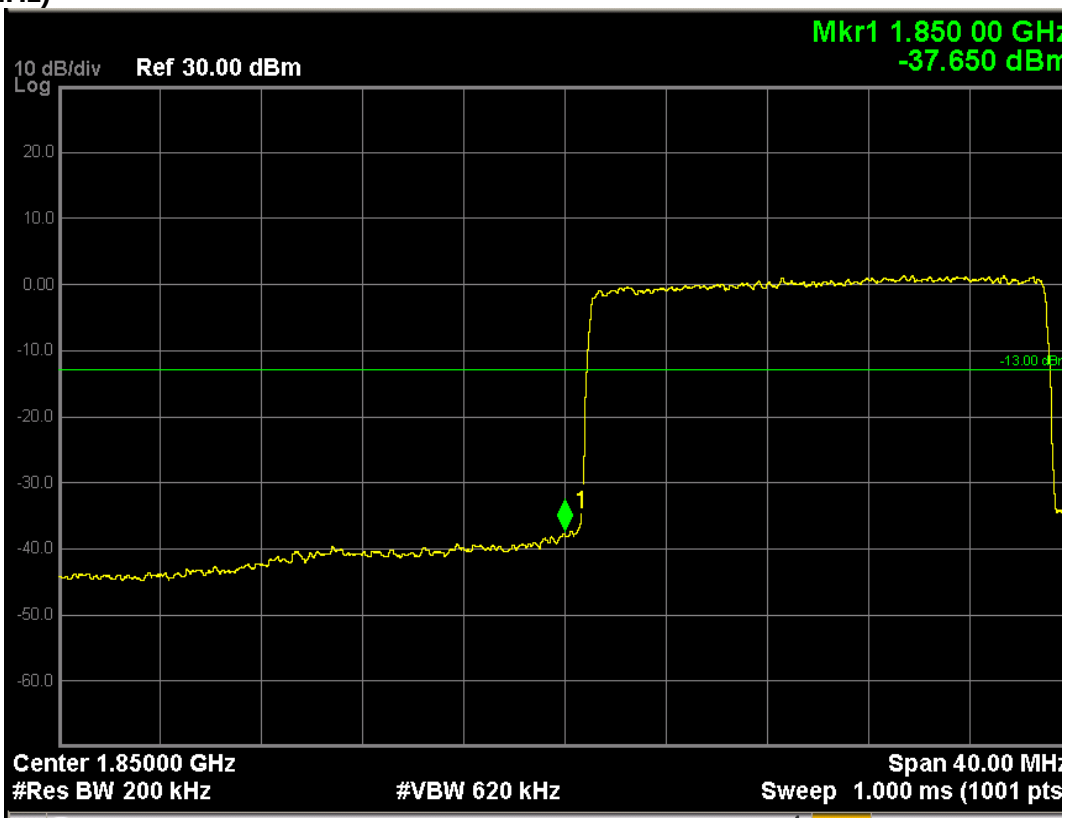
LTE Band 2 (16-QAM, Band Width 15MHz,RB Size 75,RB Offset 0,Channel 19125,Frequeny 1902.5MHz)



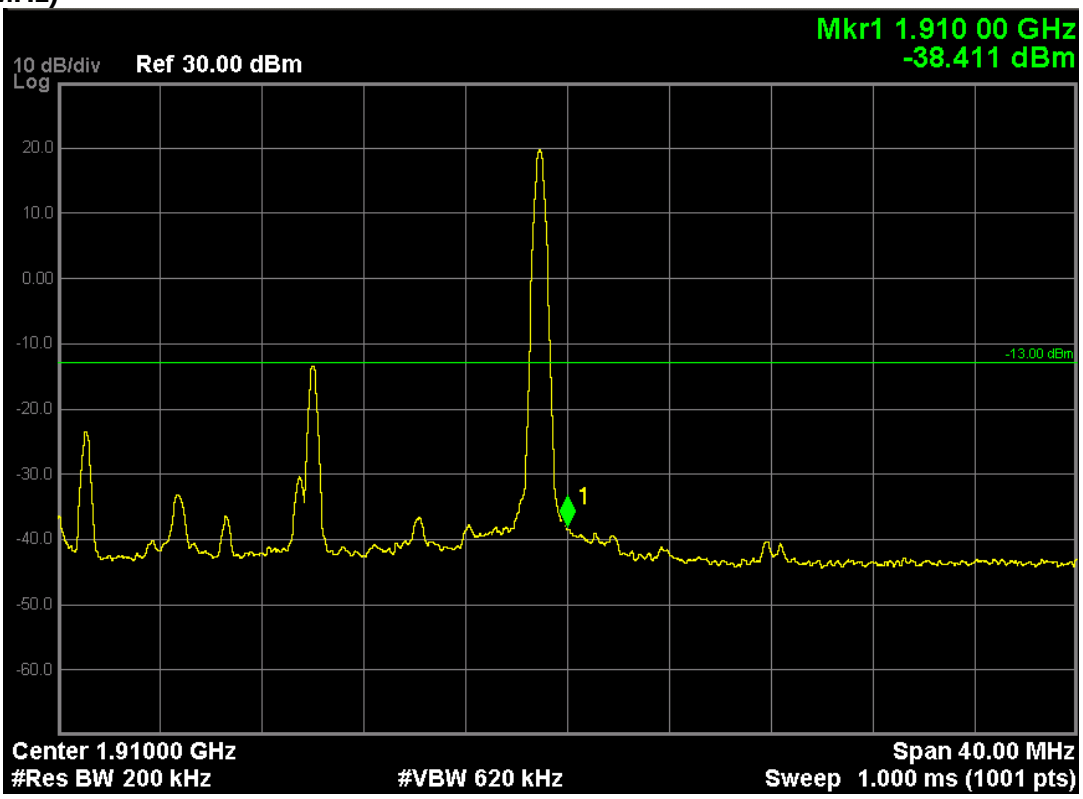
LTE Band 2 (QPSK, Band Width 20MHz,RB Size 1,RB Offset 0,Channel 18700,Frequeny 1860.0MHz)



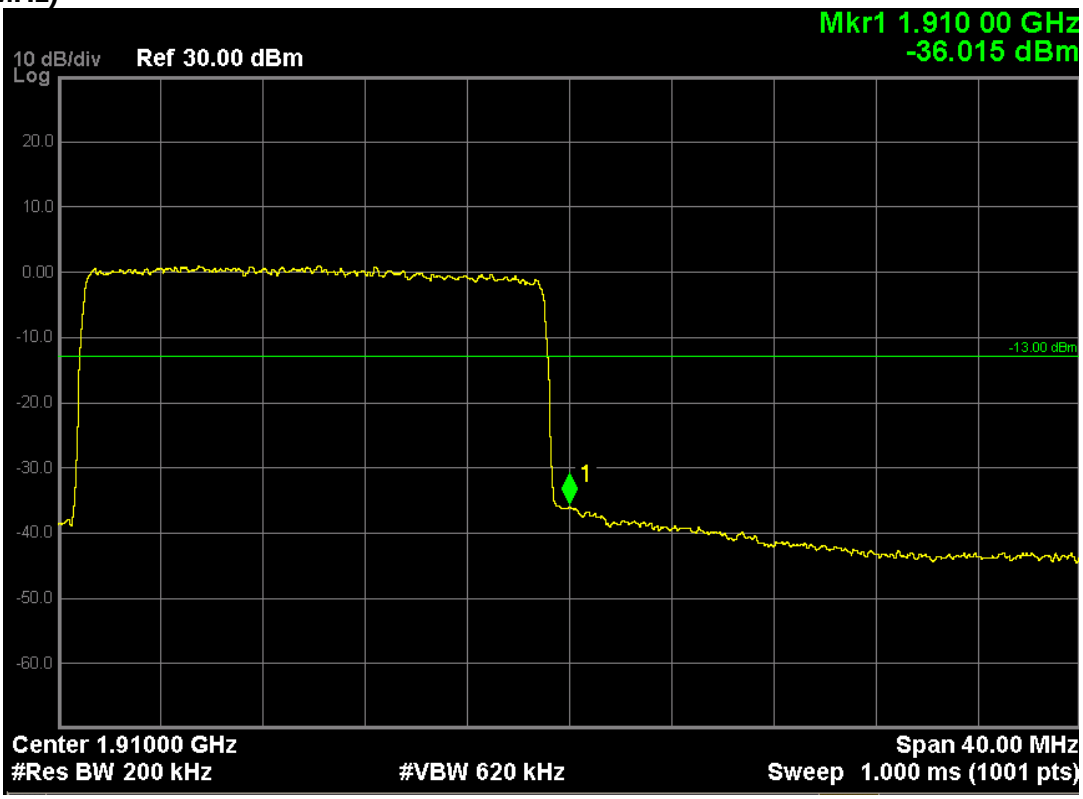
LTE Band 2 (QPSK, Band Width 20MHz,RB Size 100,RB Offset 0,Channel 18700,Frequeny 1860.0MHz)



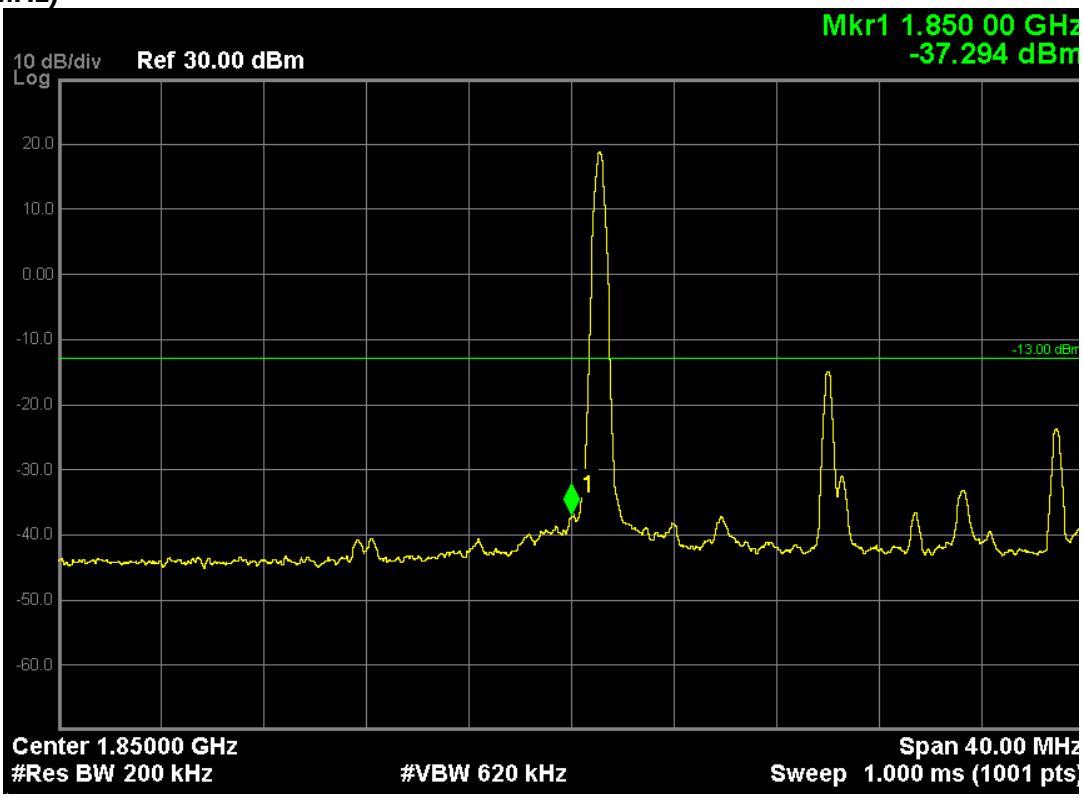
LTE Band 2 (QPSK, Band Width 20MHz,RB Size 1,RB Offset 99,Channel 19100,Frequeny 1900.0MHz)



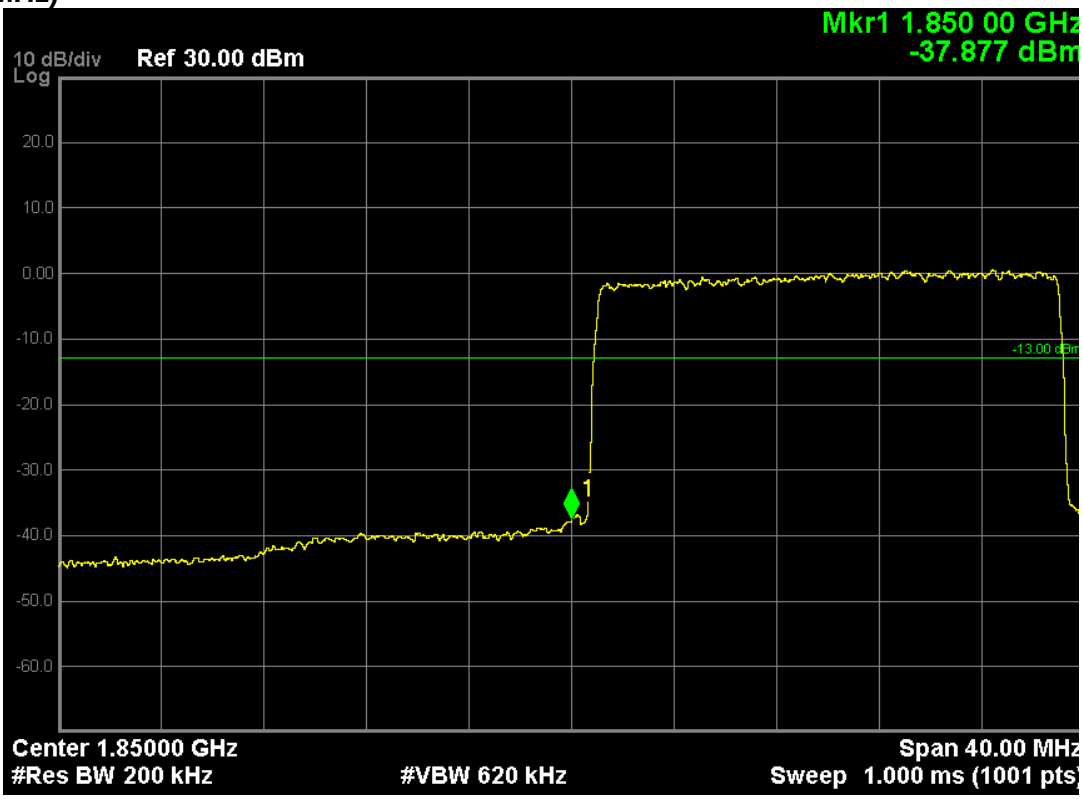
LTE Band 2 (QPSK, Band Width 20MHz,RB Size 100,RB Offset 0,Channel 19100,Frequeny 1900.0MHz)



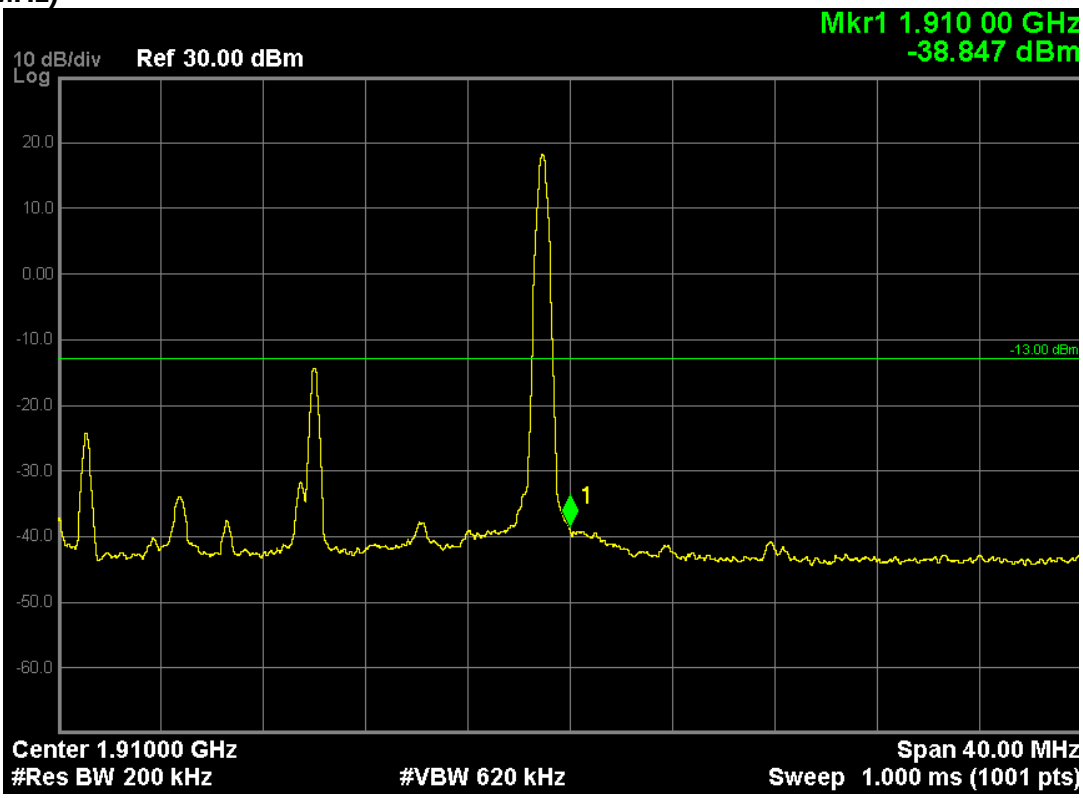
LTE Band 2 (16-QAM, Band Width 20MHz,RB Size 1,RB Offset 0,Channel 18700,Frequeny 1860.0MHz)



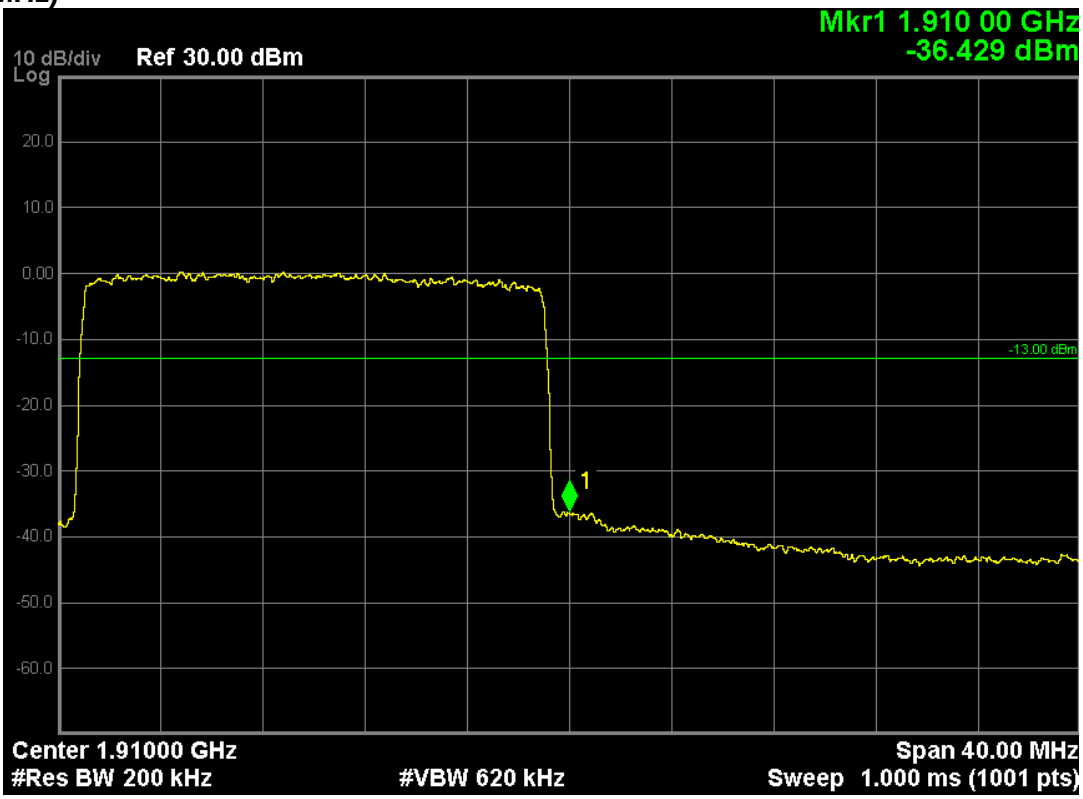
LTE Band 2 (16-QAM, Band Width 20MHz,RB Size 100,RB Offset 0,Channel 18700,Frequeny 1860.0MHz)



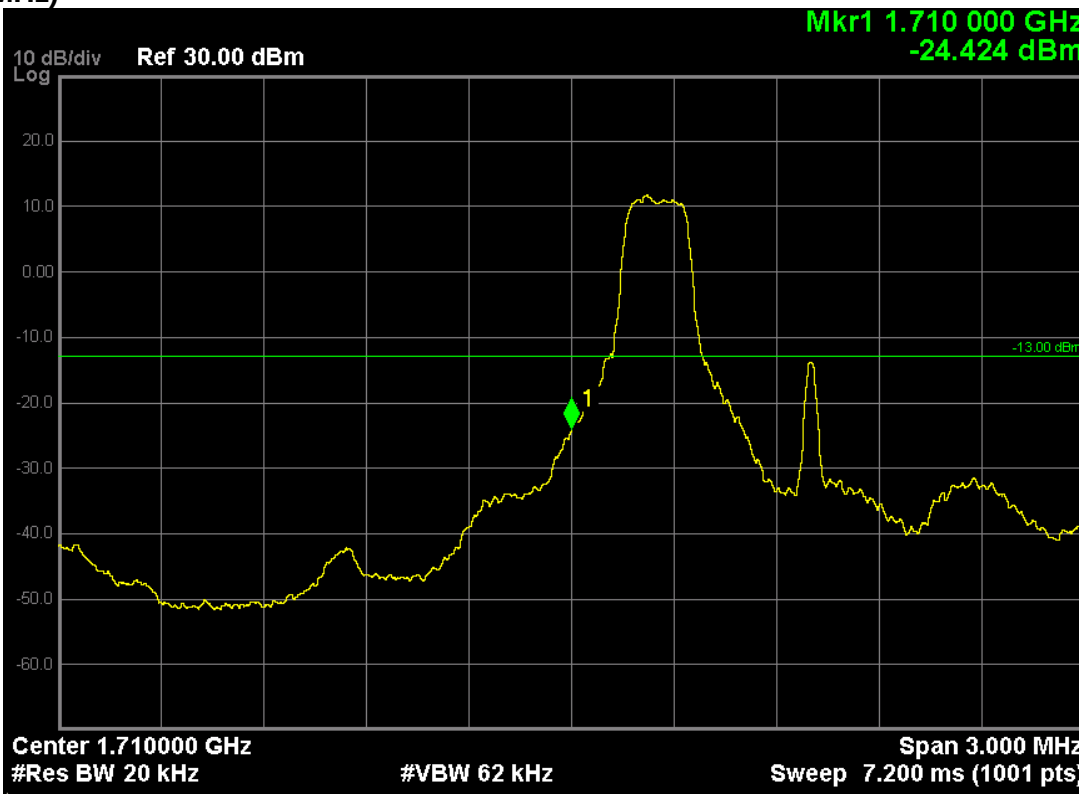
LTE Band 2 (16-QAM, Band Width 20MHz,RB Size 1,RB Offset 99,Channel 19100,Frequeny 1900.0MHz)



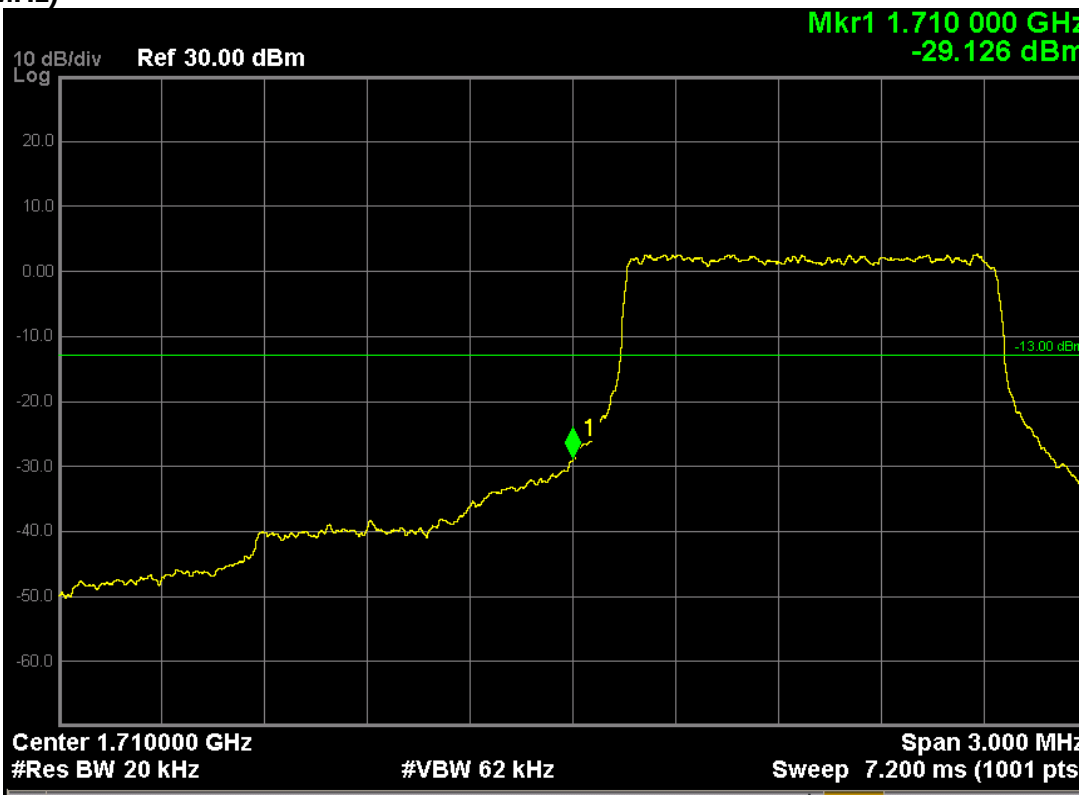
LTE Band 2 (16-QAM, Band Width 20MHz,RB Size 100,RB Offset 0,Channel 19100,Frequeny 1900.0MHz)



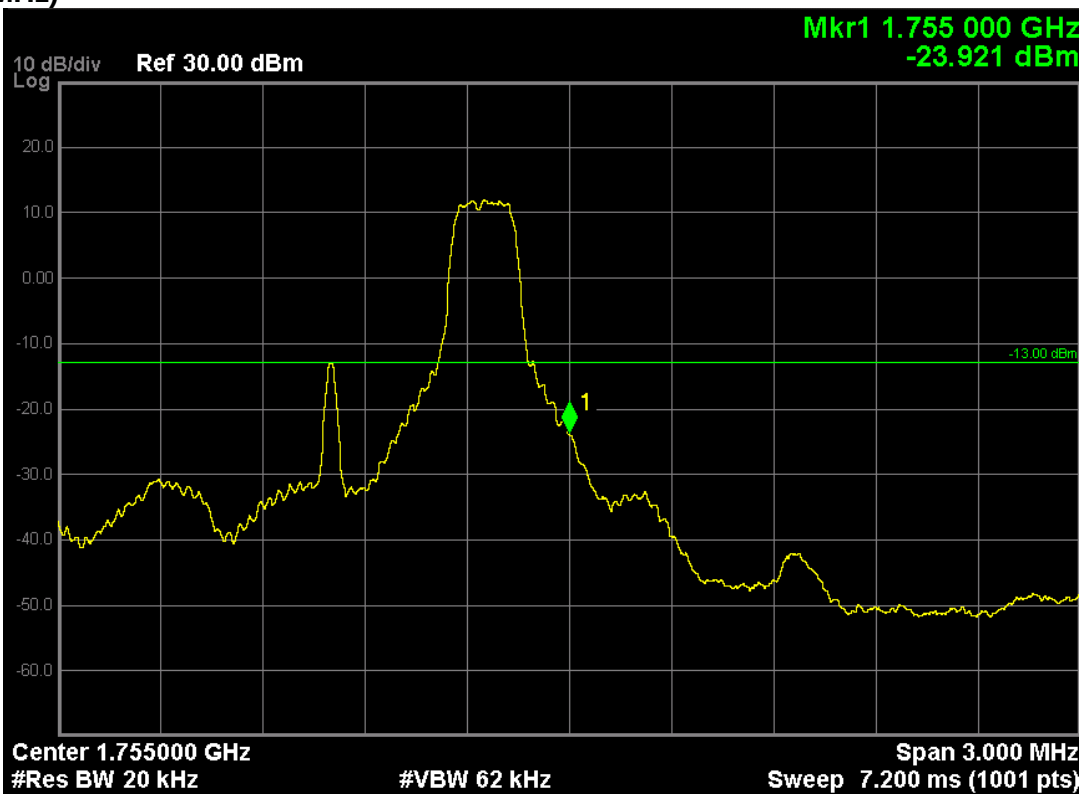
LTE Band 4 (QPSK, Band Width 1.4MHz,RB Size 1,RB Offset 0,Channel 19957,Frequeny 1710.7MHz)



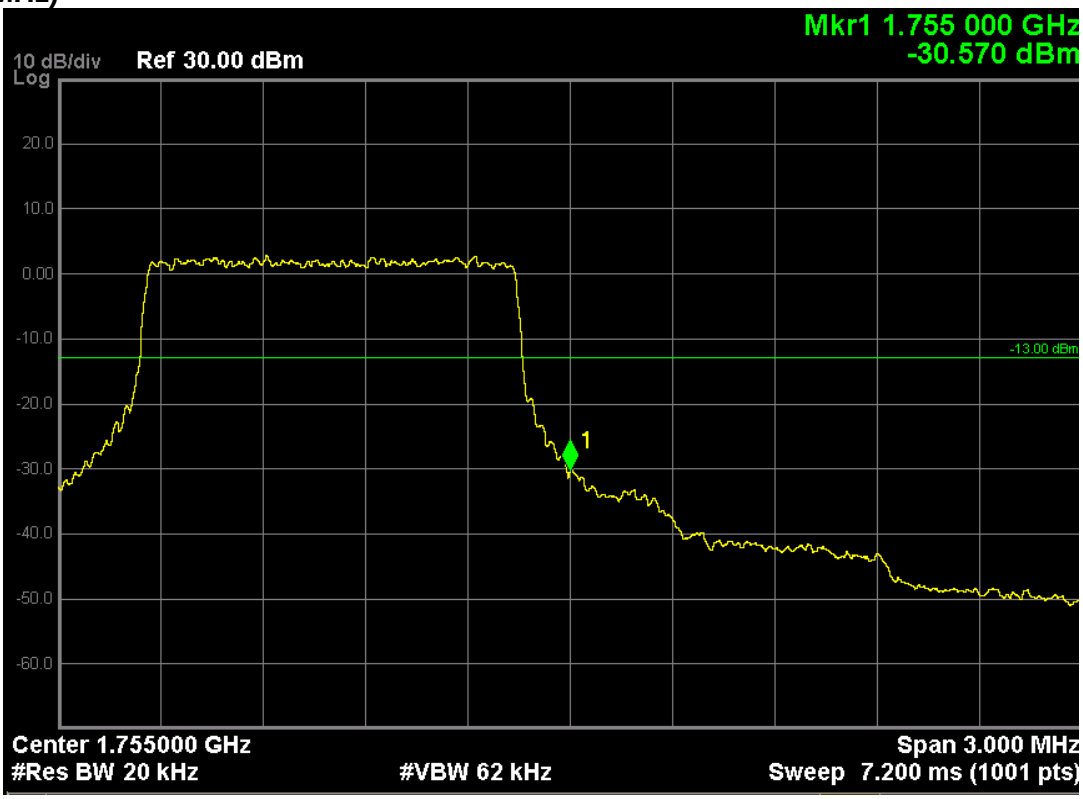
LTE Band 4 (QPSK, Band Width 1.4MHz,RB Size 6,RB Offset 0,Channel 19957,Frequeny 1710.7MHz)



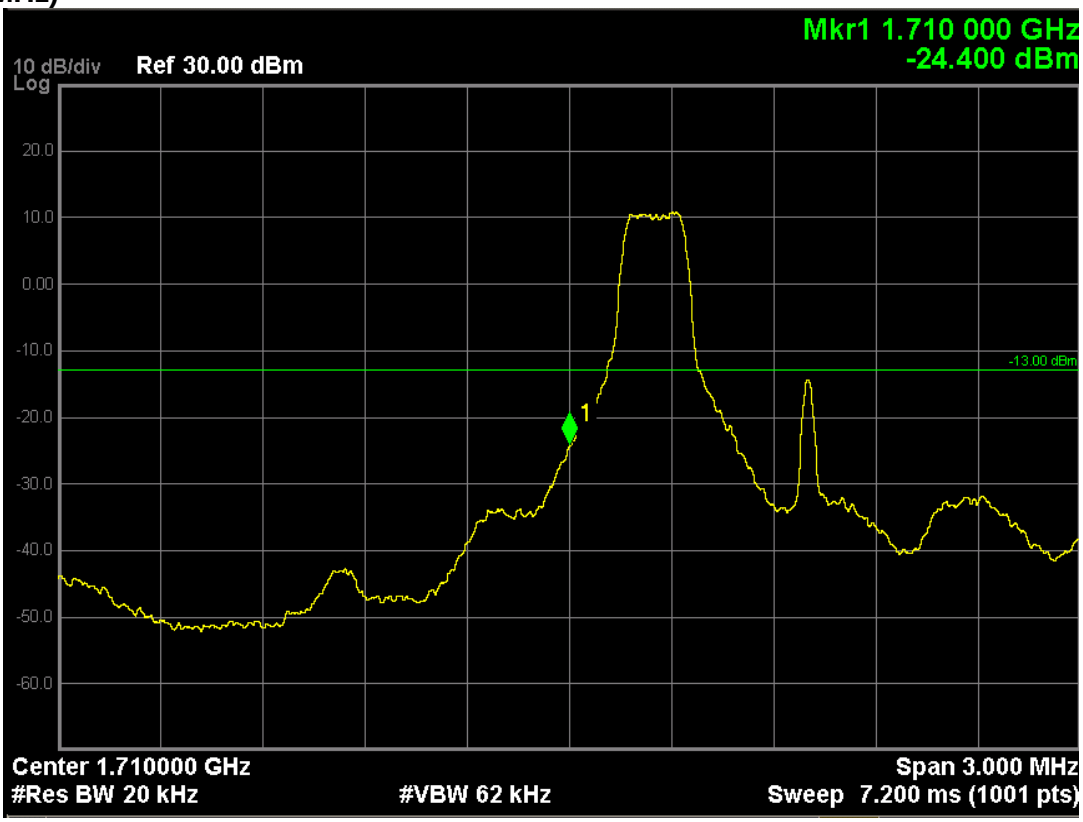
LTE Band 4 (QPSK, Band Width 1.4MHz,RB Size 1,RB Offset 5,Channel 20393,Frequeny 1754.3MHz)



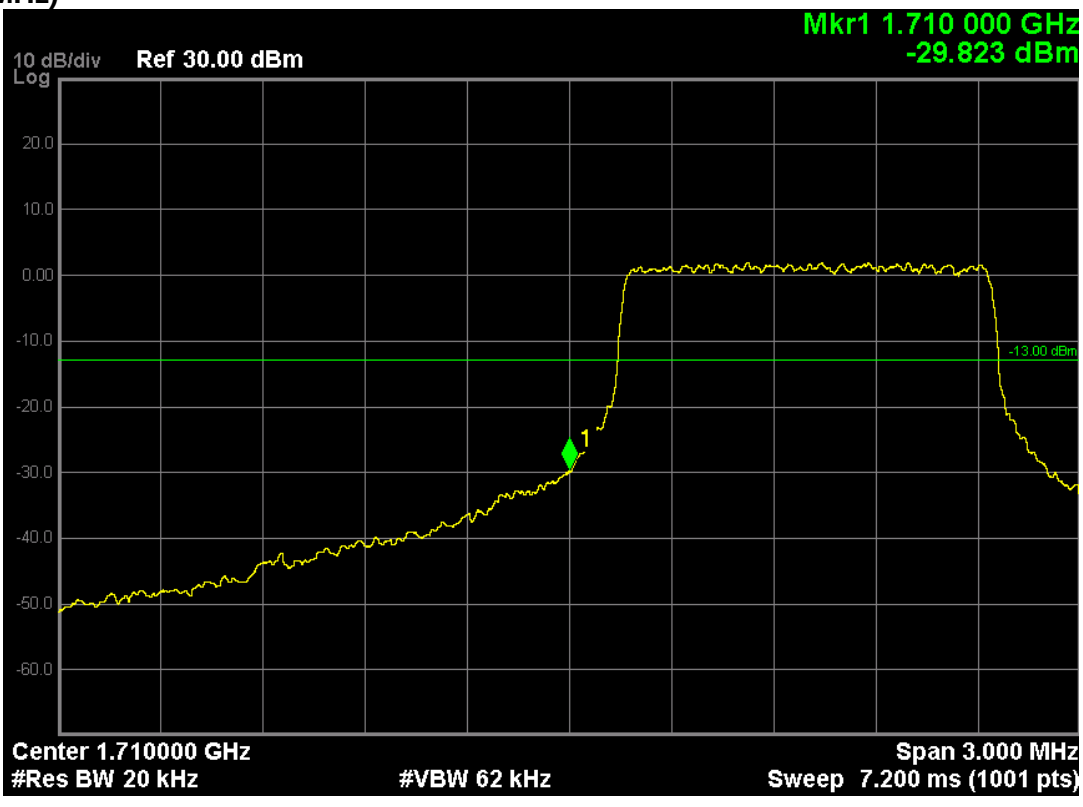
LTE Band 4 (QPSK, Band Width 1.4MHz,RB Size 6,RB Offset 0,Channel 20393,Frequeny 1754.3MHz)



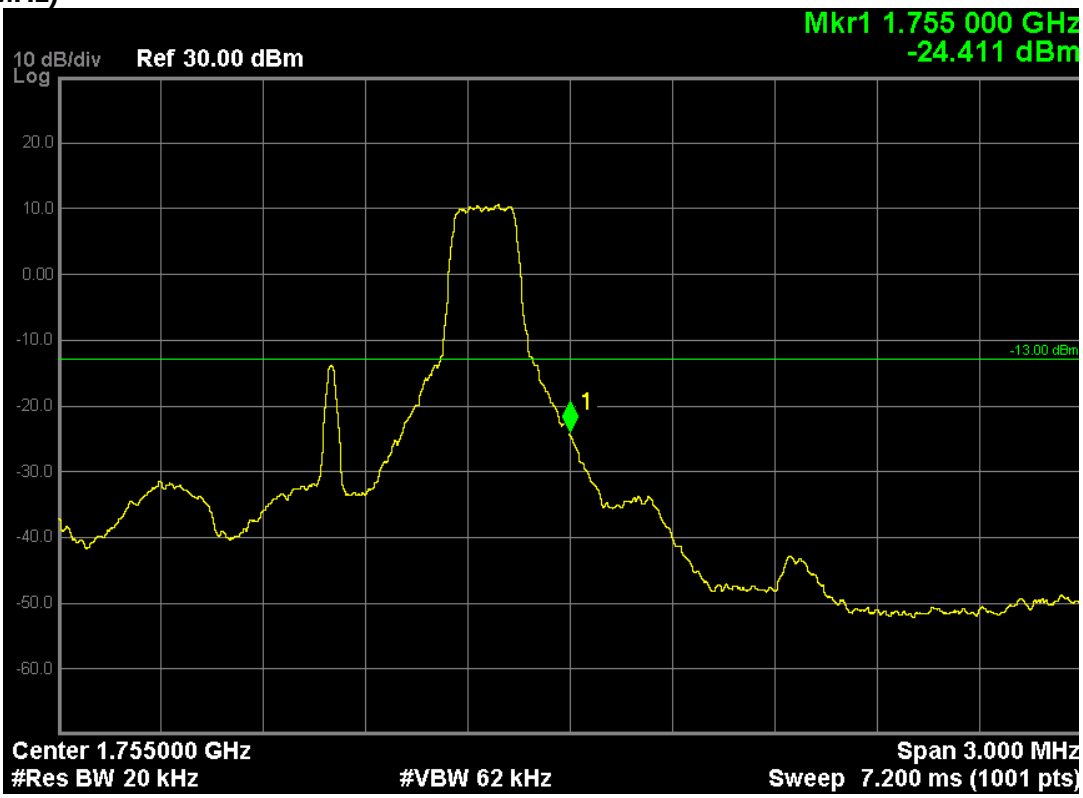
LTE Band 4 (16-QAM, Band Width 1.4MHz,RB Size 1,RB Offset 0,Channel 19957,Frequeny 1710.7MHz)



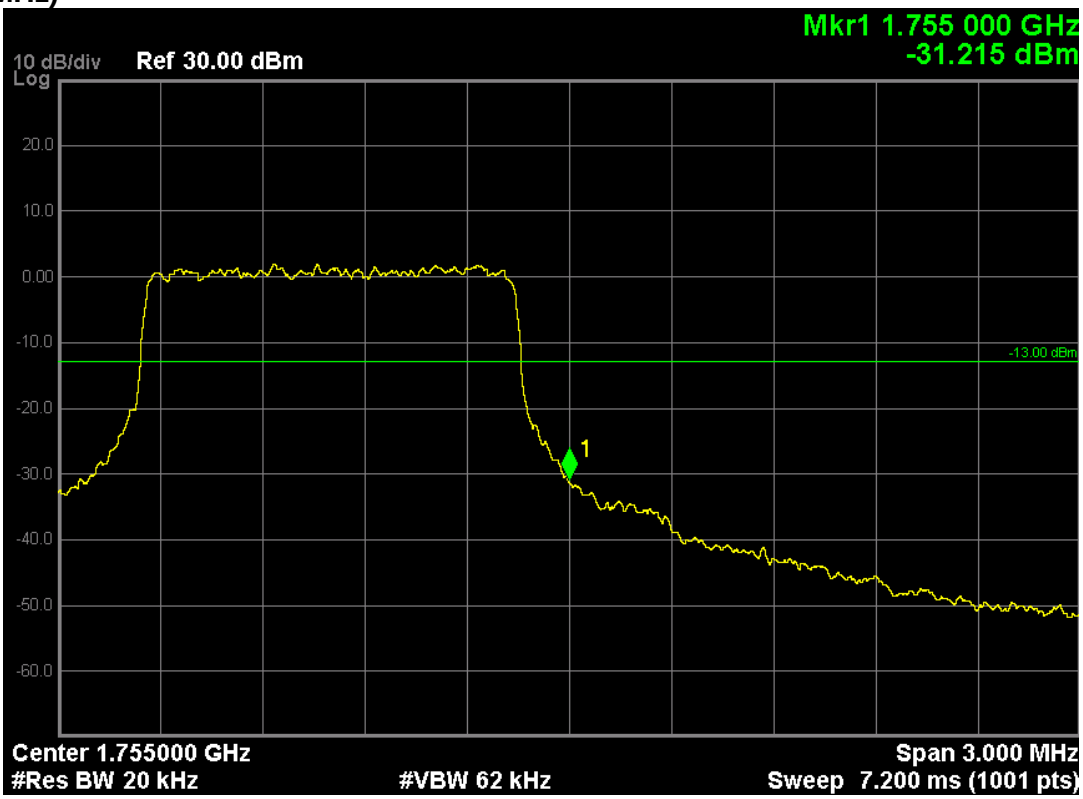
LTE Band 4 (16-QAM, Band Width 1.4MHz,RB Size 6,RB Offset 0,Channel 19957,Frequeny 1710.7MHz)



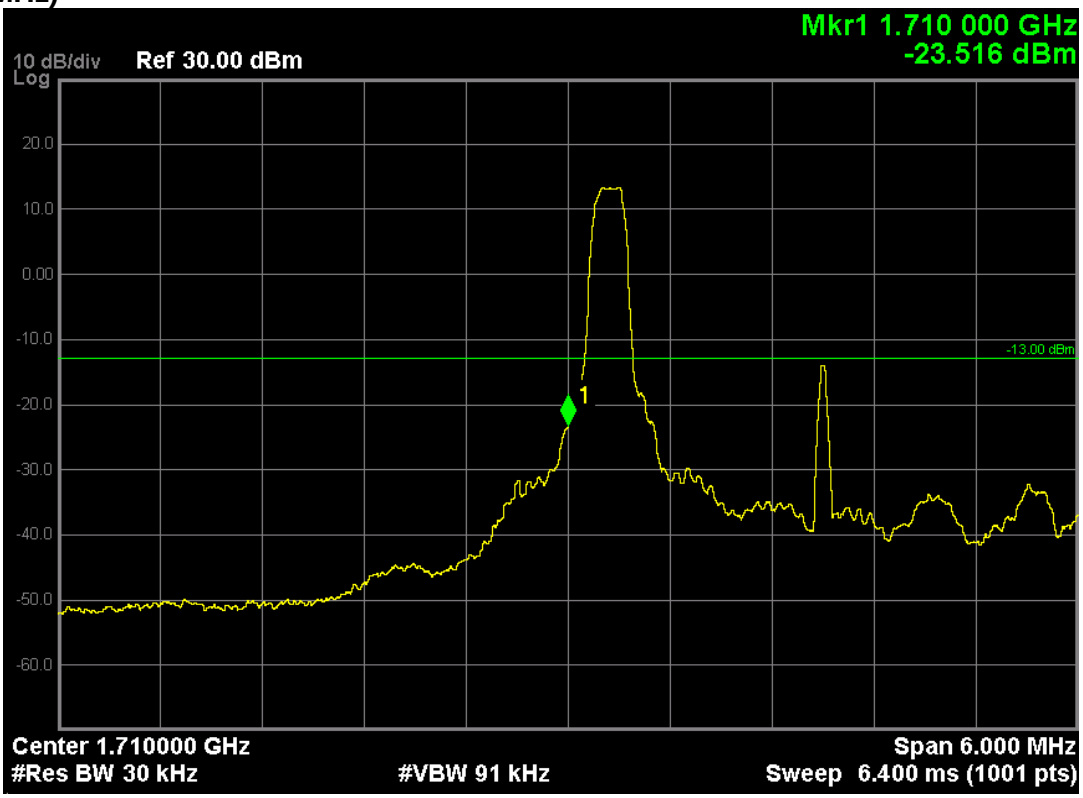
LTE Band 4 (16-QAM, Band Width 1.4MHz,RB Size 1,RB Offset 5,Channel 20393,Frequeny 1754.3MHz)



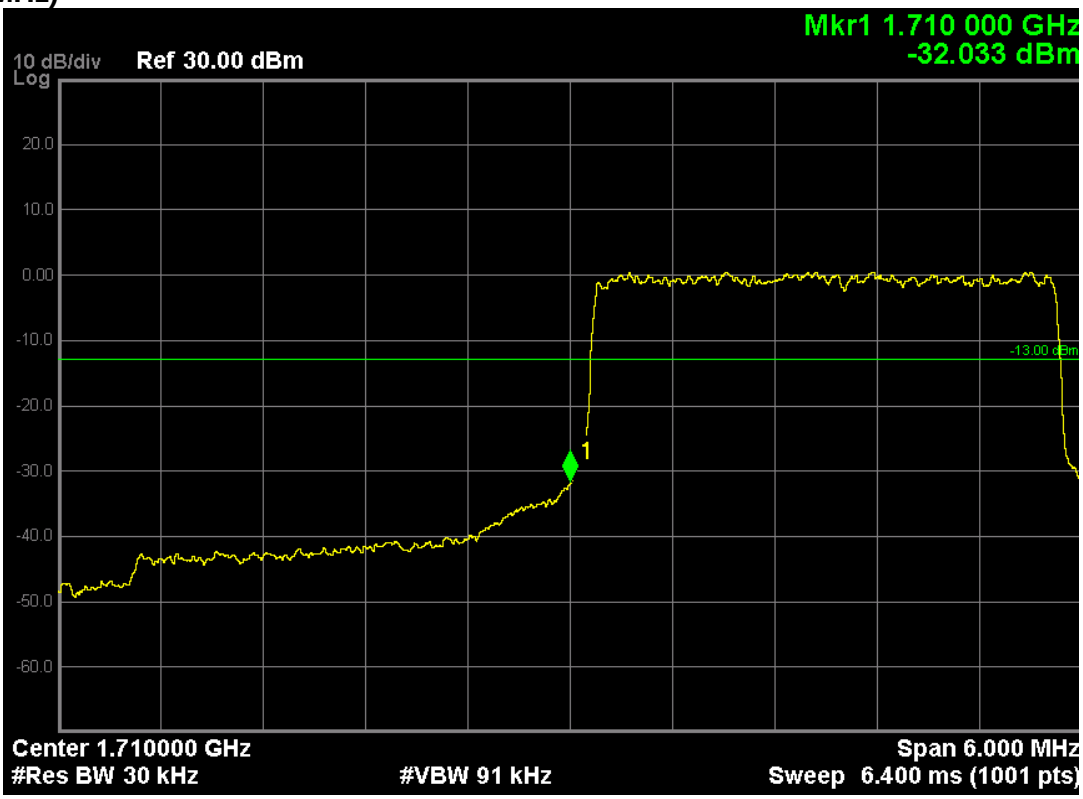
LTE Band 4 (16-QAM, Band Width 1.4MHz,RB Size 6,RB Offset 0,Channel 20393,Frequeny 1754.3MHz)



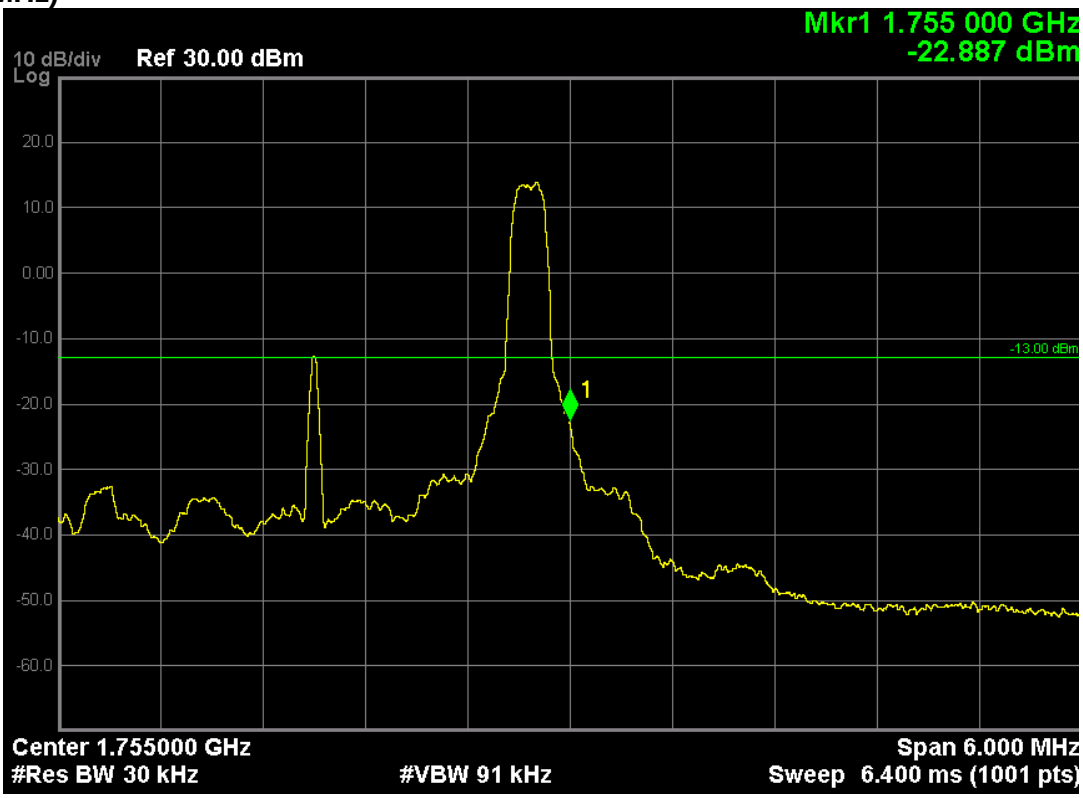
LTE Band 4 (QPSK, Band Width 3MHz,RB Size 1,RB Offset 0,Channel 19965,Frequeny 1711.5MHz)



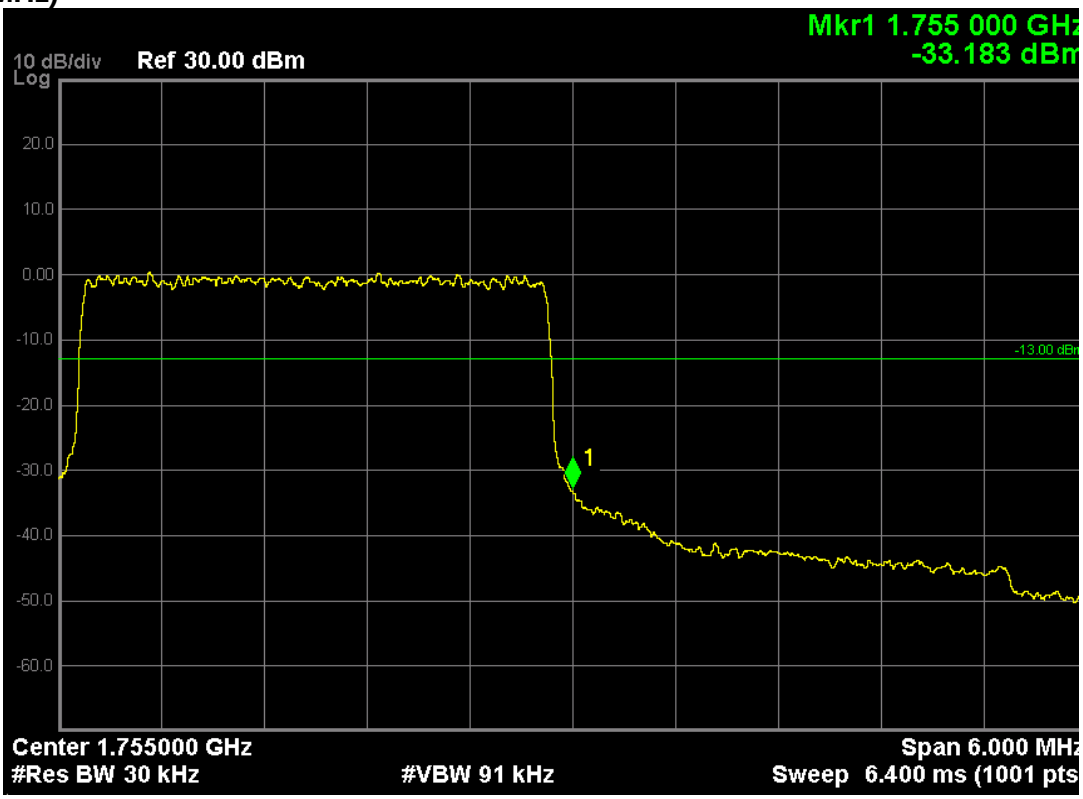
LTE Band 4 (QPSK, Band Width 3MHz,RB Size 15,RB Offset 0,Channel 19965,Frequeny 1711.5MHz)



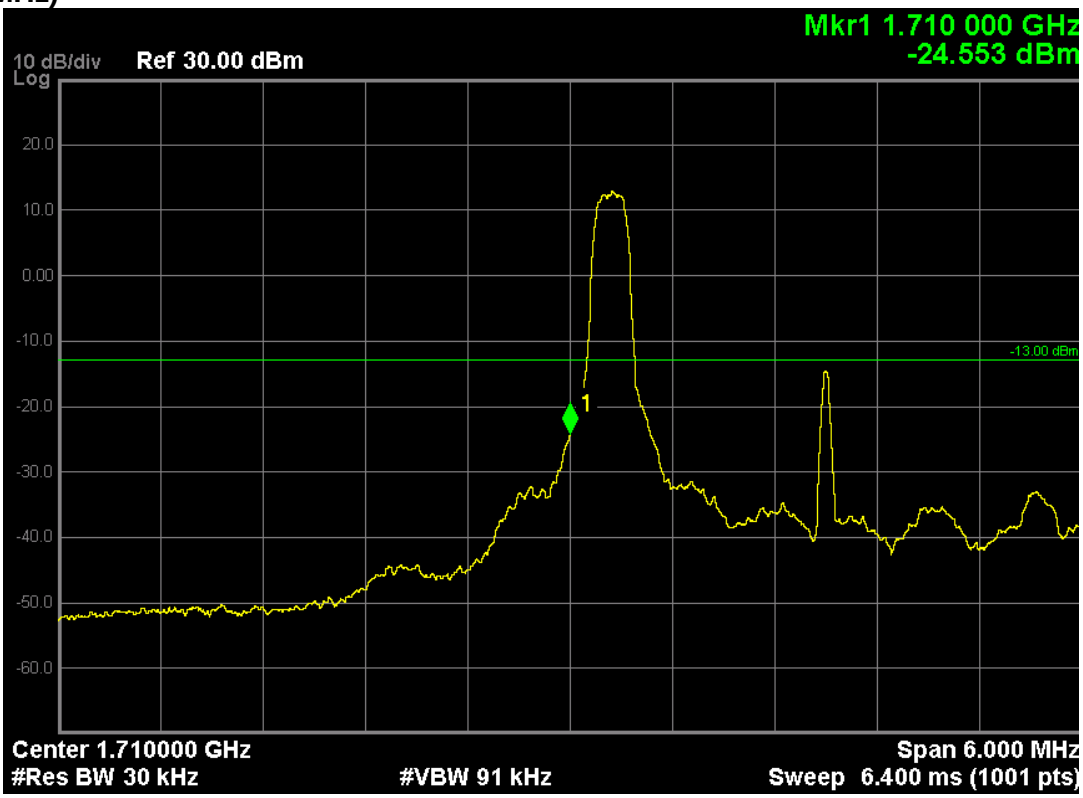
LTE Band 4 (QPSK, Band Width 3MHz,RB Size 1,RB Offset 14,Channel 20385,Frequeny 1753.5MHz)



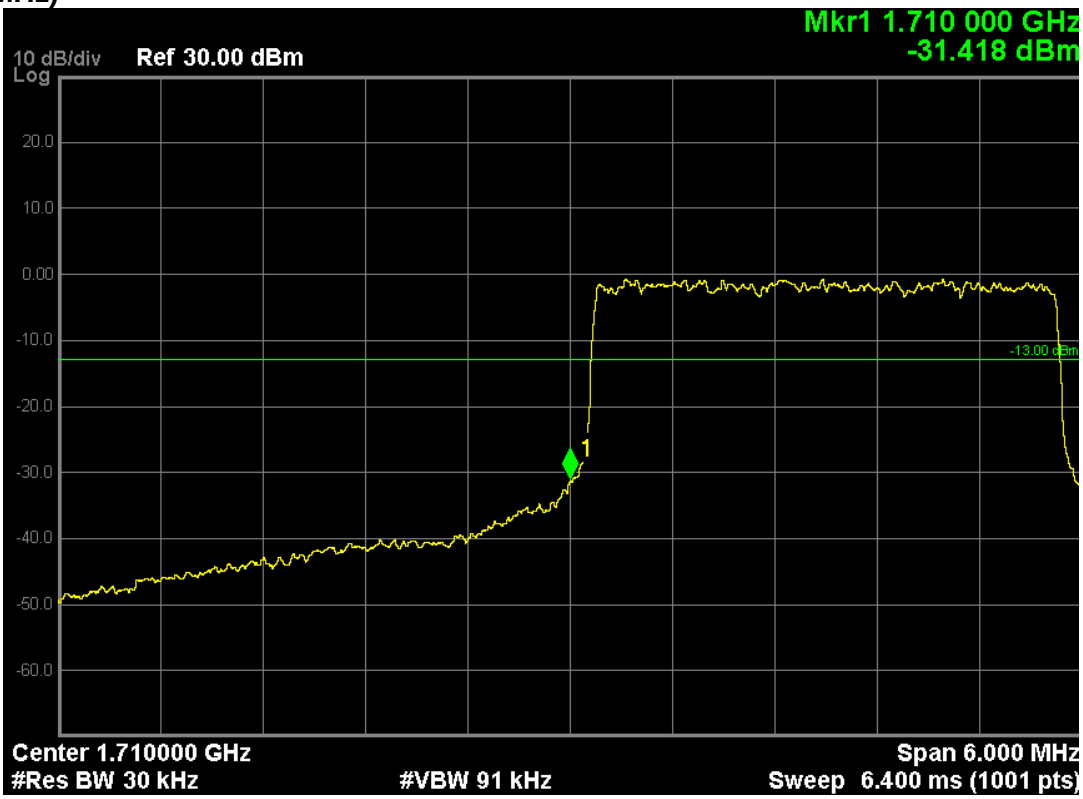
LTE Band 4 (QPSK, Band Width 3MHz,RB Size 15,RB Offset 0,Channel 20385,Frequeny 1753.5MHz)



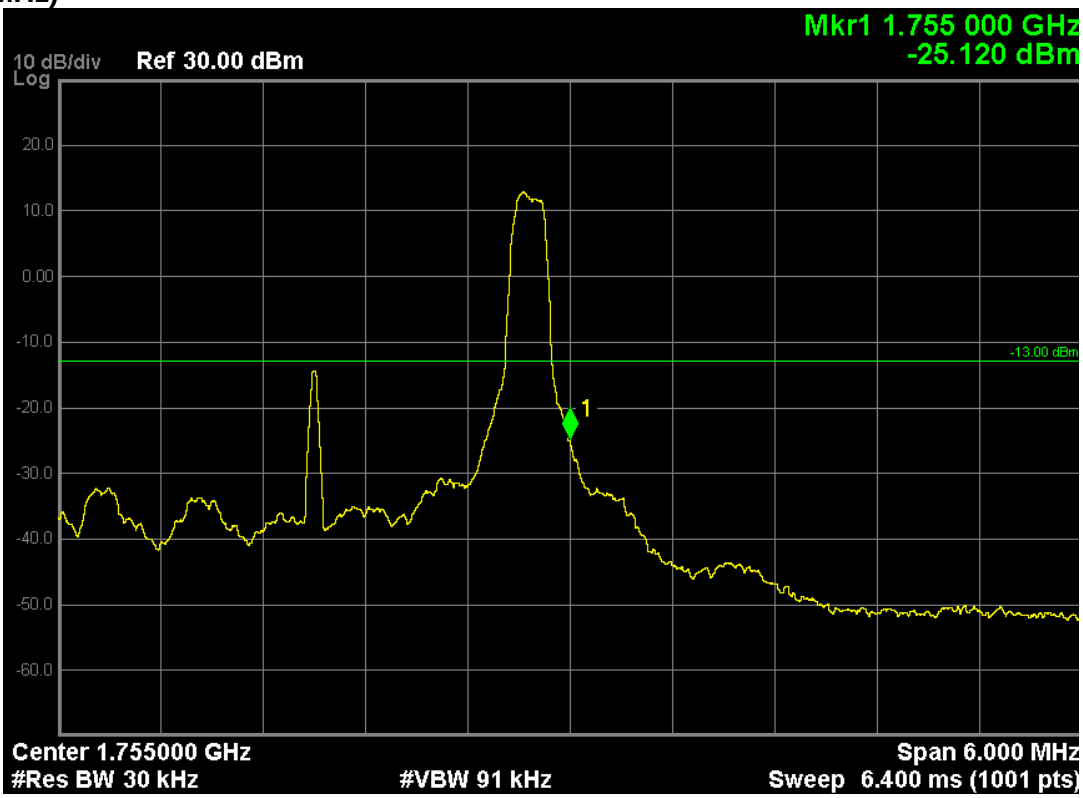
LTE Band 4 (16-QAM, Band Width 3MHz,RB Size 1,RB Offset 0,Channel 19965,Frequeny 1711.5MHz)



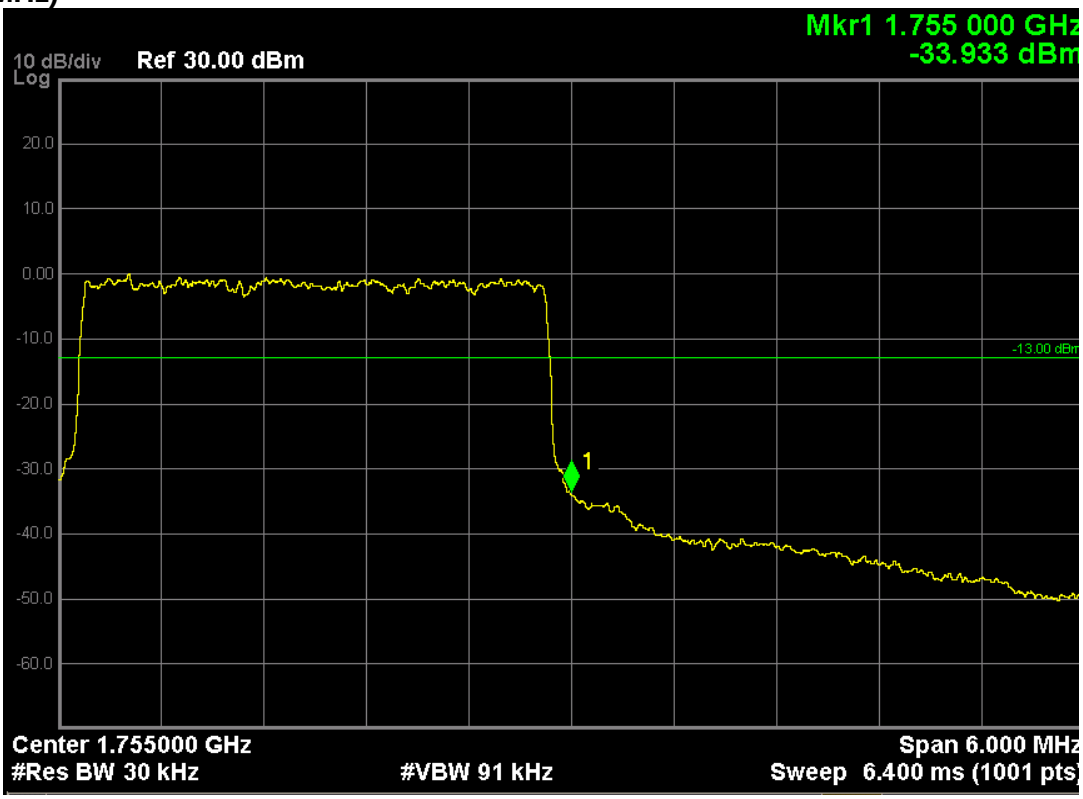
LTE Band 4 (16-QAM, Band Width 3MHz,RB Size 15,RB Offset 0,Channel 19965,Frequeny 1711.5MHz)



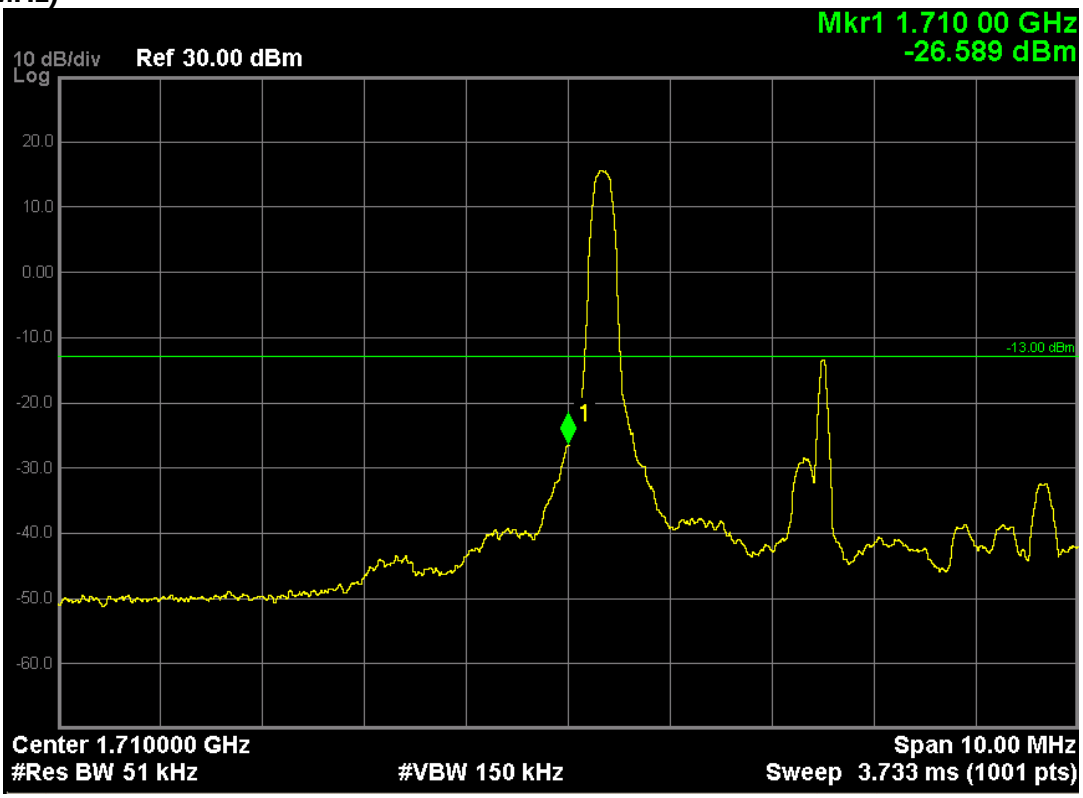
LTE Band 4 (16-QAM, Band Width 3MHz,RB Size 1,RB Offset 14,Channel 20385,Frequeny 1753.5MHz)



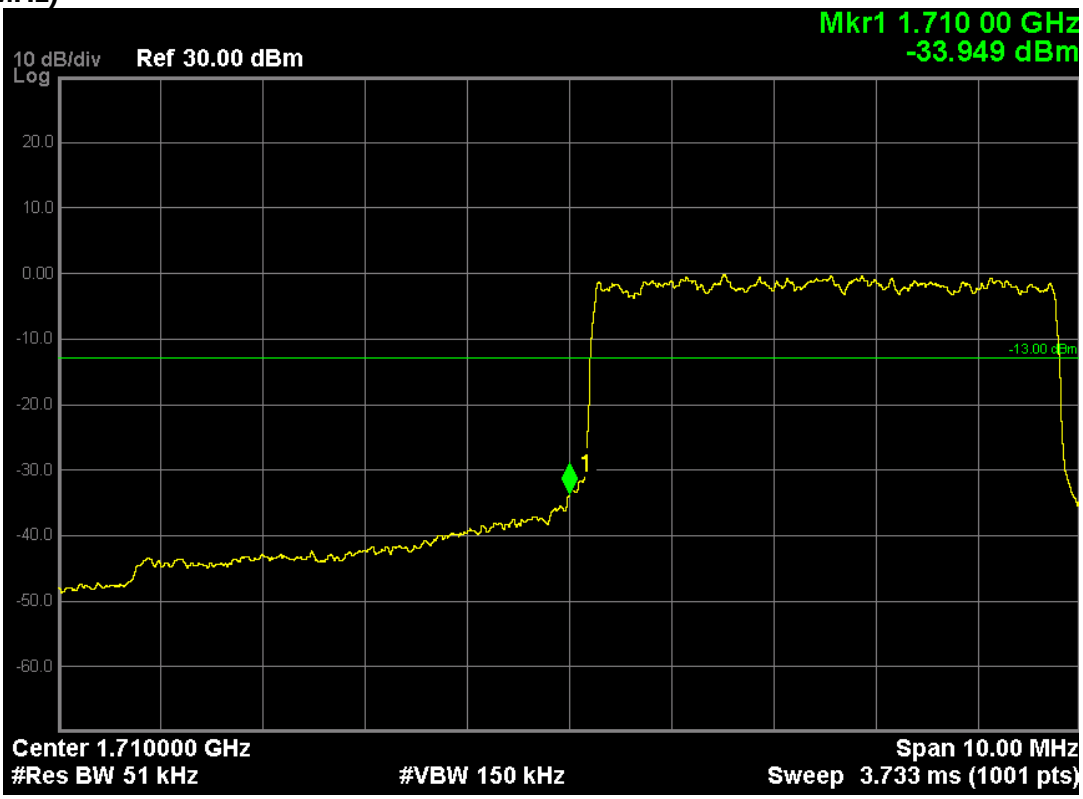
LTE Band 4 (16-QAM, Band Width 3MHz,RB Size 15,RB Offset 0,Channel 20385,Frequeny 1753.5MHz)



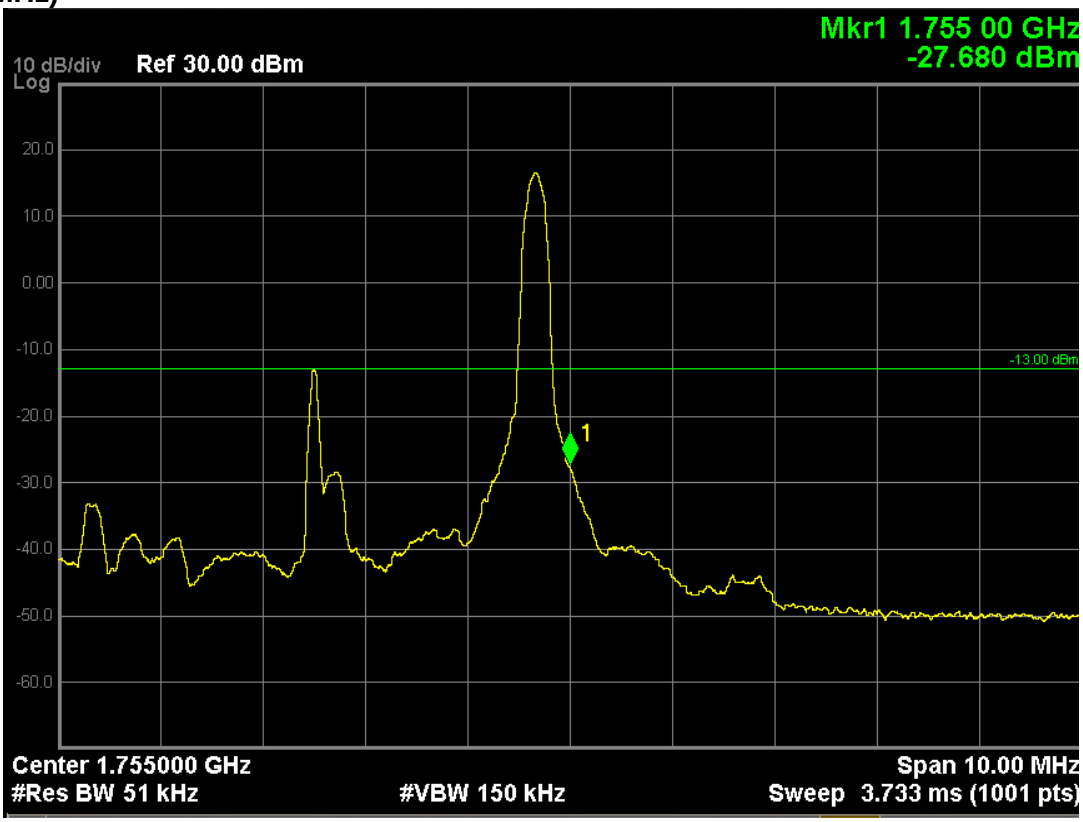
LTE Band 4 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 0,Channel 19975,Frequeny 1712.5MHz)



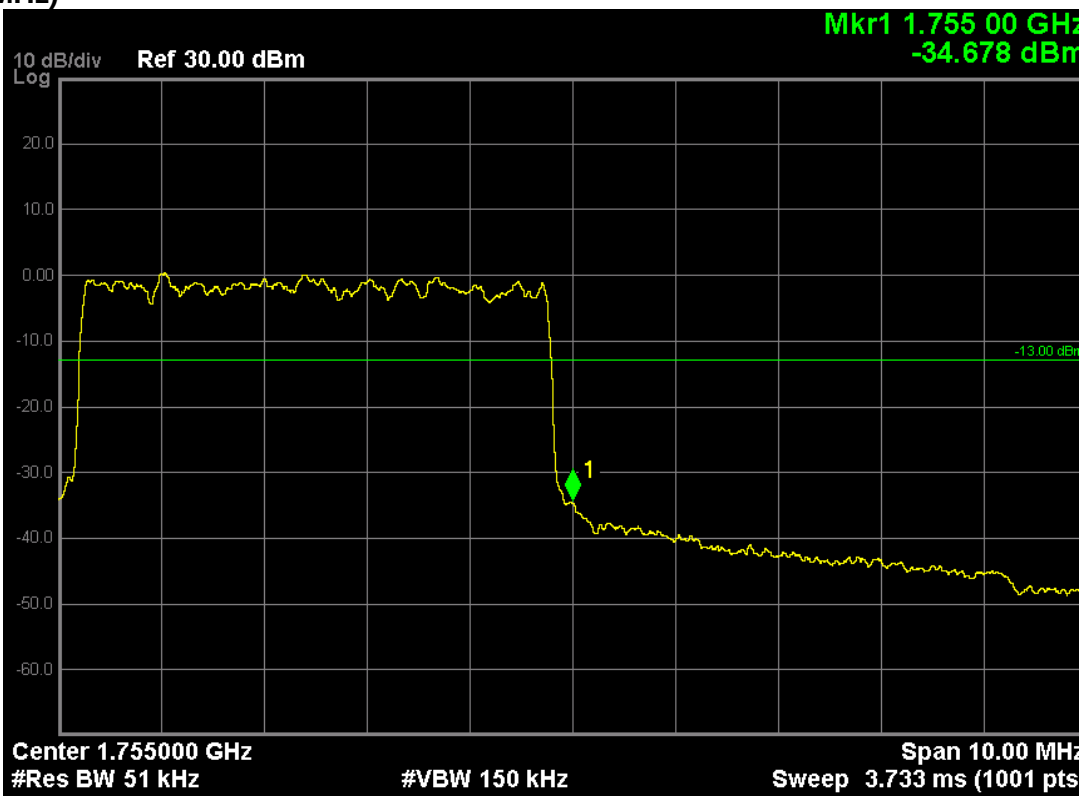
LTE Band 4 (QPSK, Band Width 5MHz,RB Size 25,RB Offset 0,Channel 19975,Frequeny 1712.5MHz)



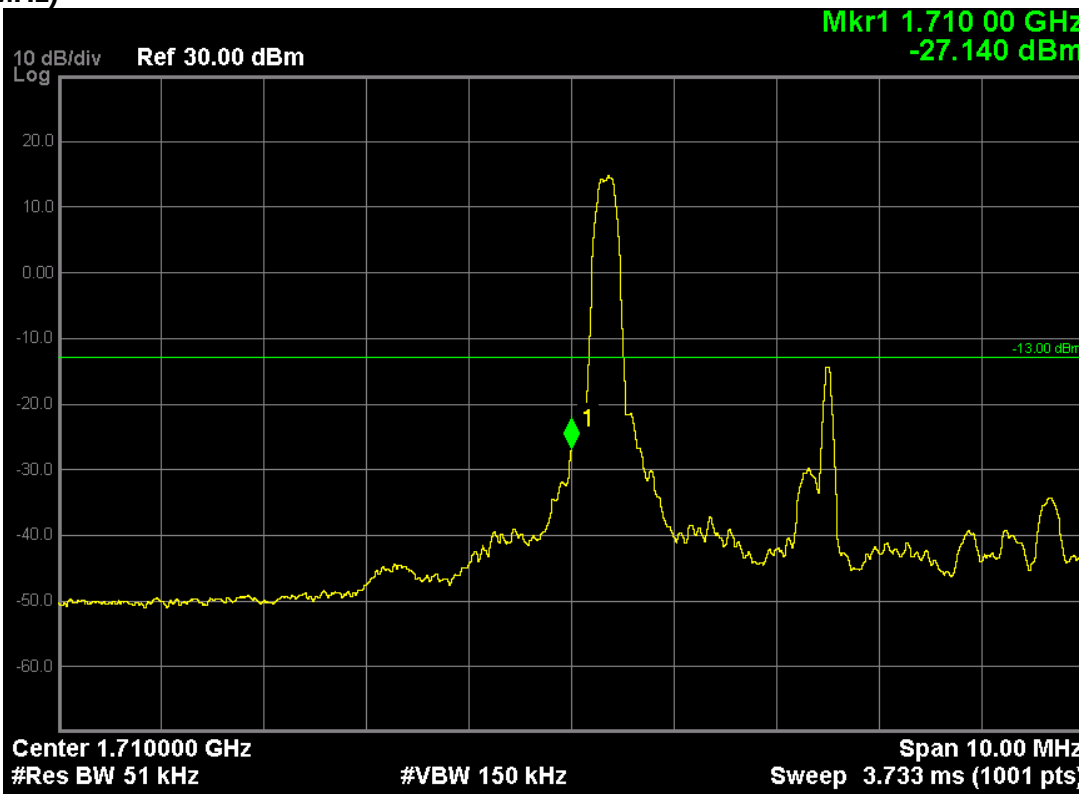
LTE Band 4 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 24,Channel 20375,Frequeny 1752.5MHz)



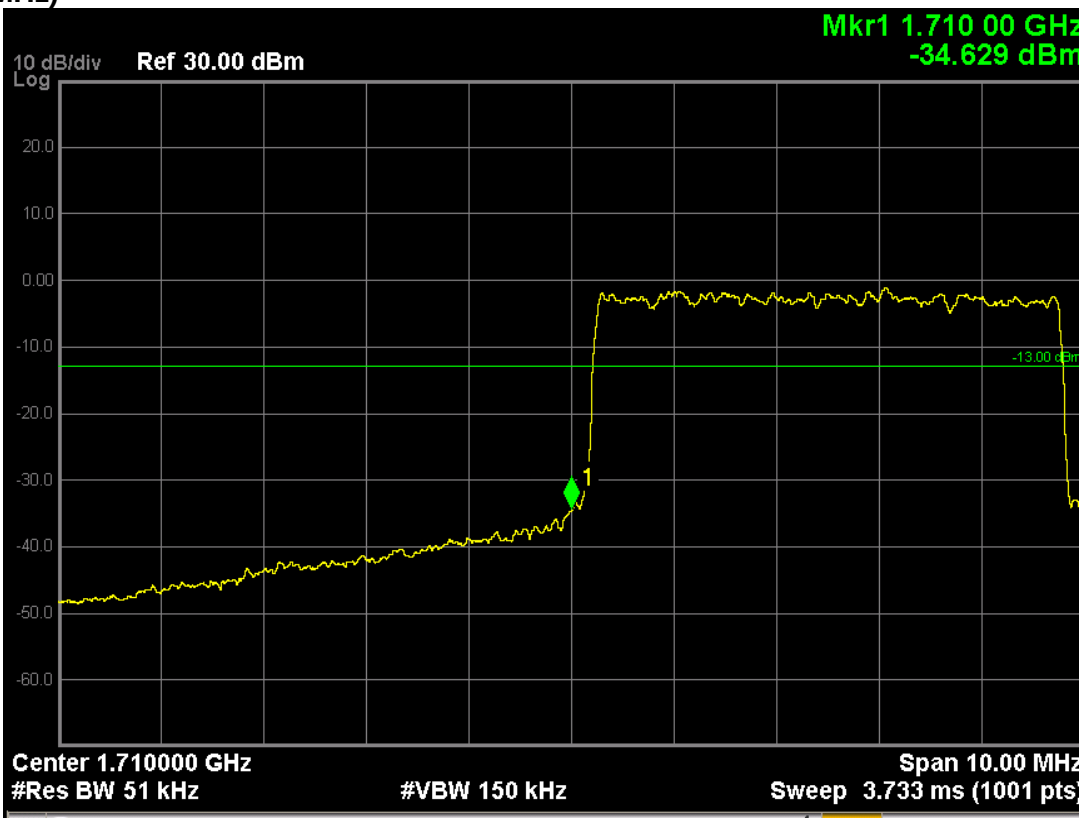
LTE Band 4 (QPSK, Band Width 5MHz,RB Size 25,RB Offset 0,Channel 20375,Frequeny 1752.5MHz)



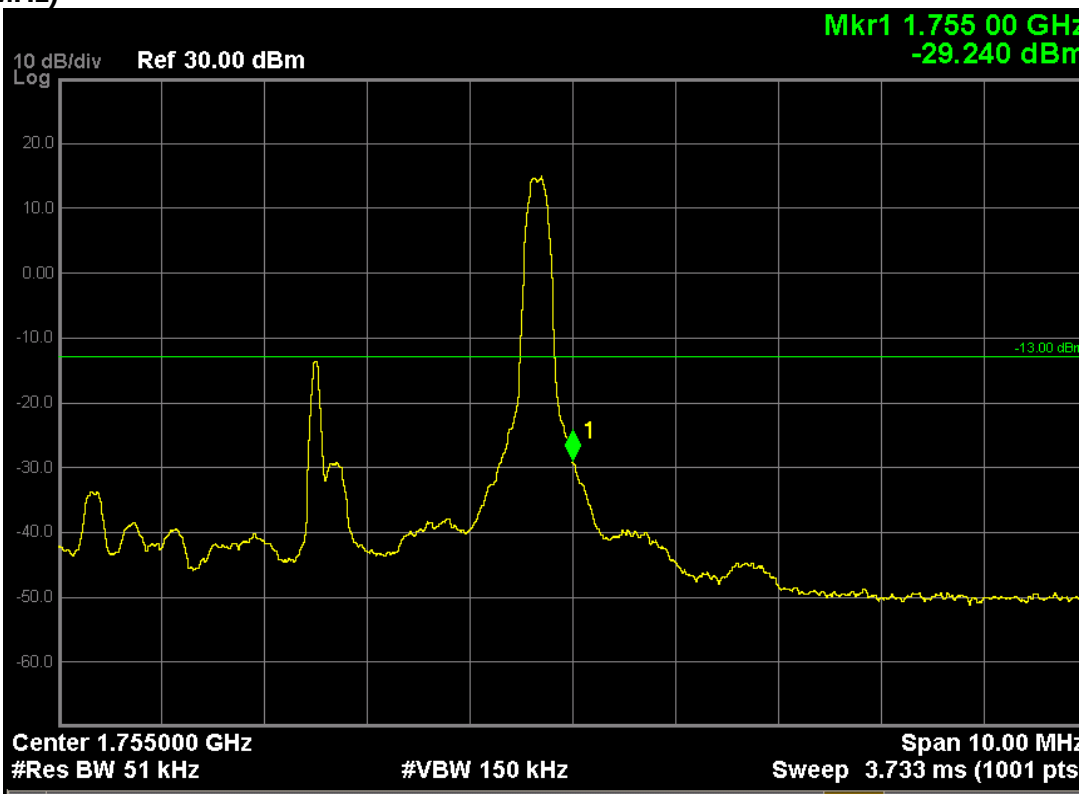
LTE Band 4 (16-QAM, Band Width 5MHz,RB Size 1,RB Offset 0,Channel 19975,Frequeny 1712.5MHz)



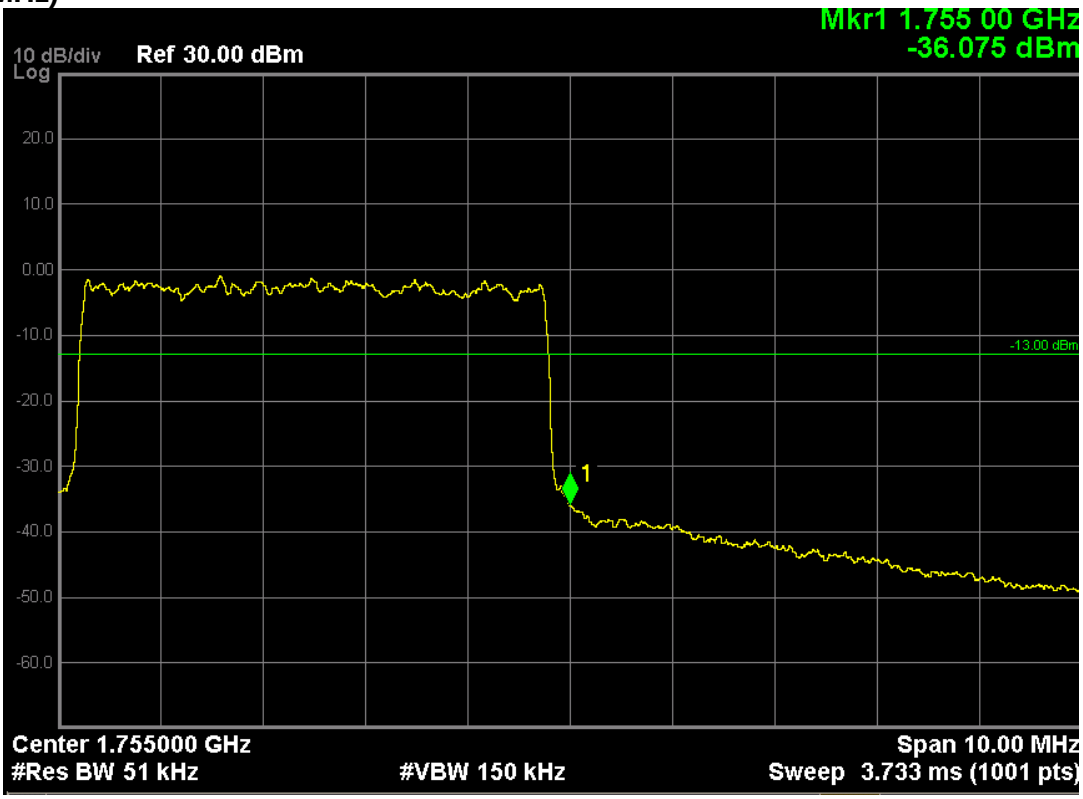
LTE Band 4 (16-QAM, Band Width 5MHz,RB Size 25,RB Offset 0,Channel 19975,Frequeny 1712.5MHz)



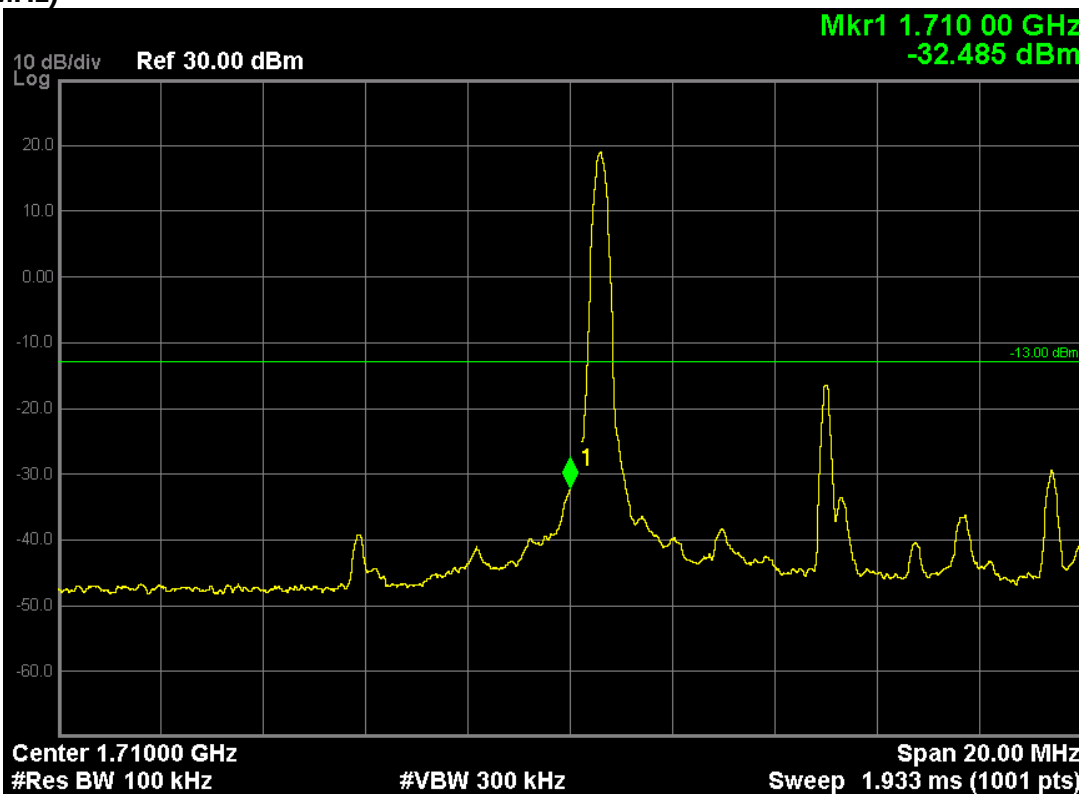
LTE Band 4 (16-QAM, Band Width 5MHz,RB Size 1,RB Offset 24,Channel 20375,Frequeny 1752.5MHz)



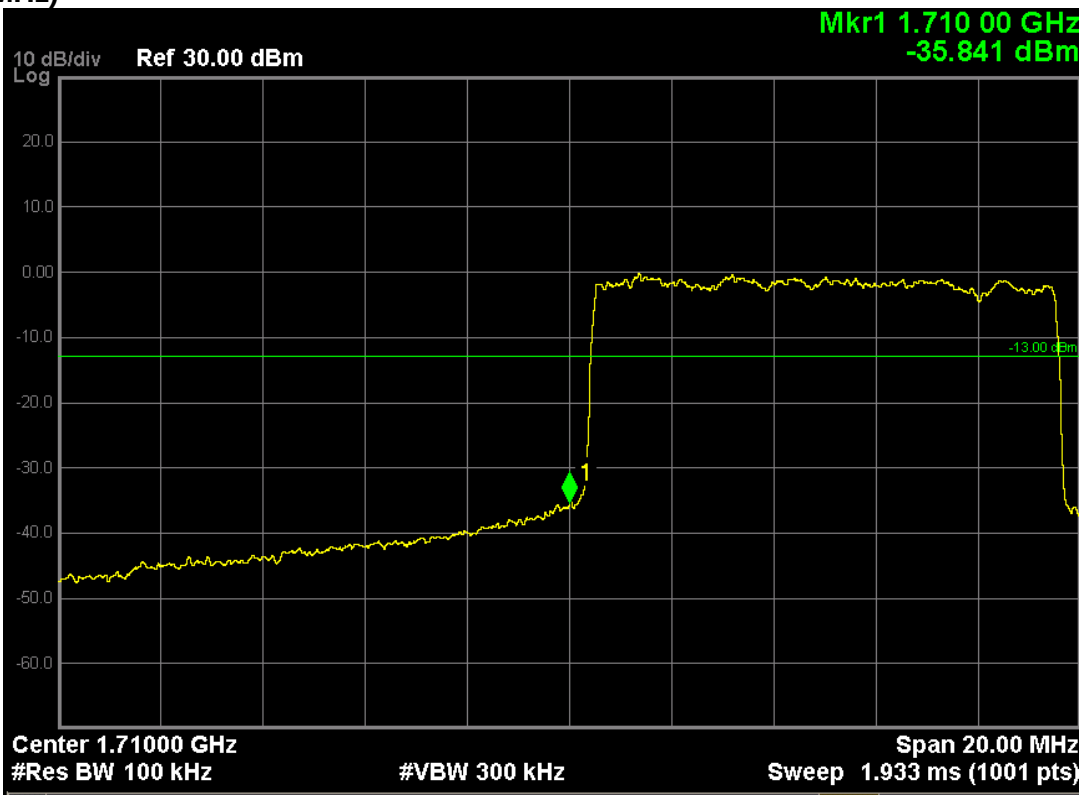
LTE Band 4 (16-QAM, Band Width 5MHz,RB Size 25,RB Offset 0,Channel 20375,Frequeny 1752.5MHz)



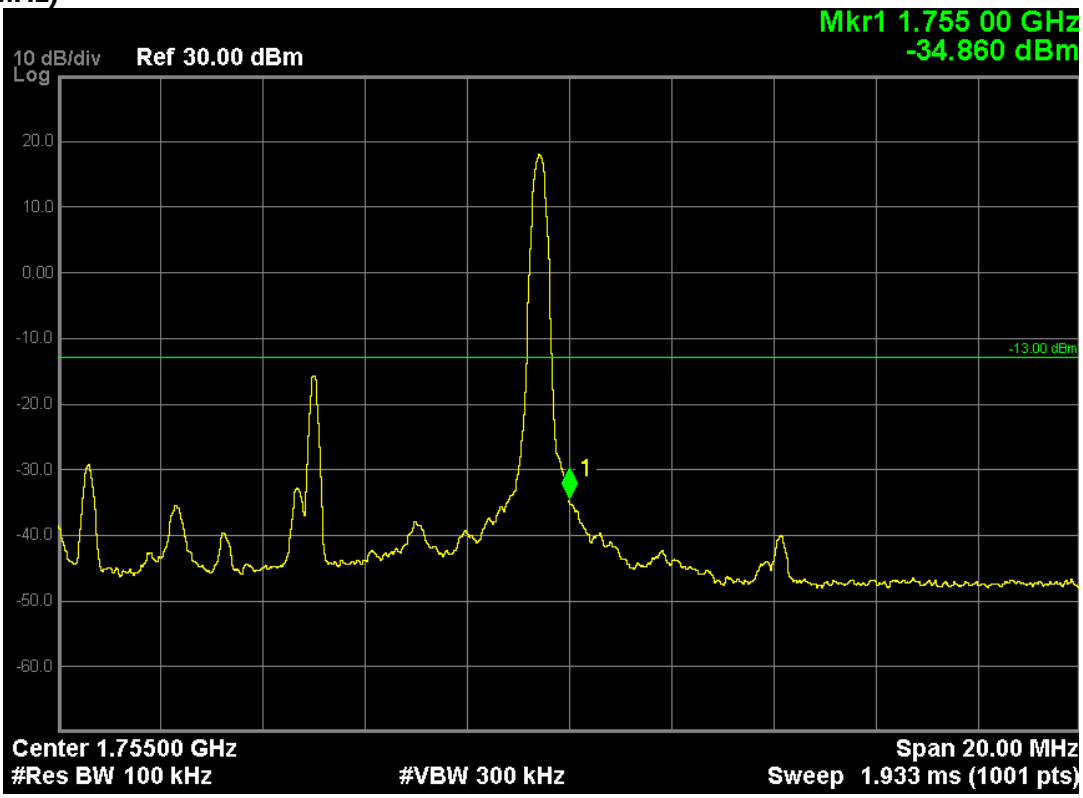
LTE Band 4 (QPSK, Band Width 10MHz,RB Size 1,RB Offset 0,Channel 20000,Frequeny 1715.0MHz)



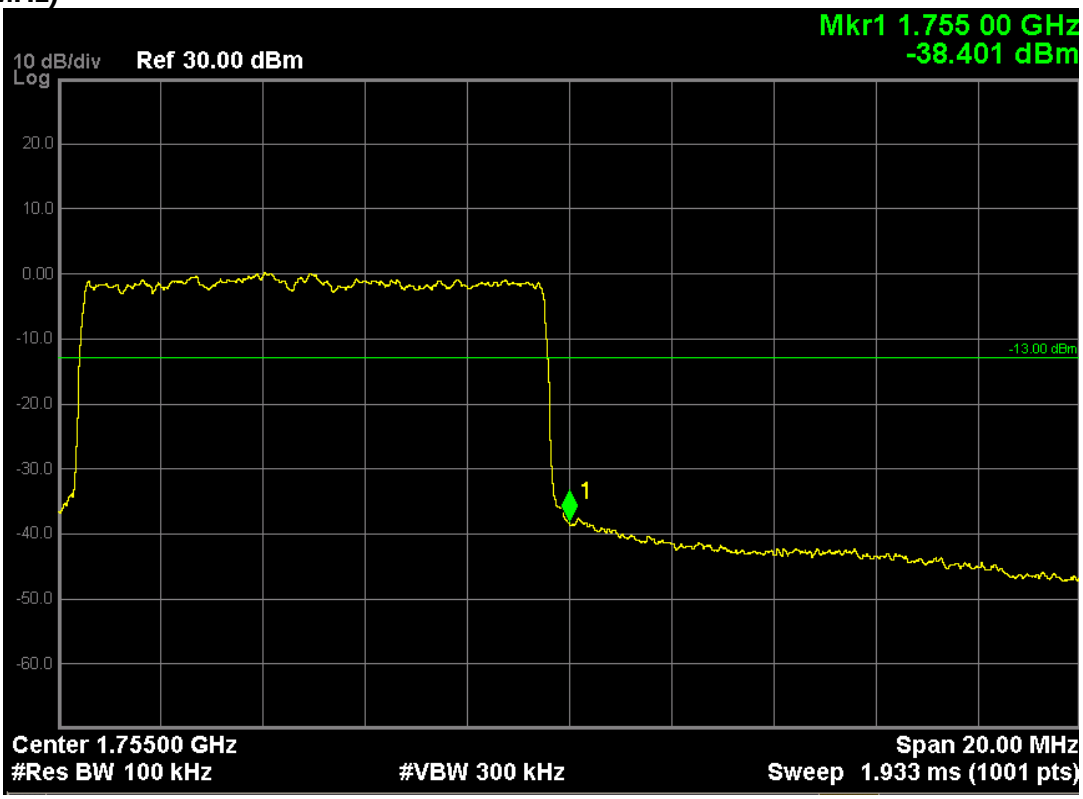
LTE Band 4 (QPSK, Band Width 10MHz,RB Size 50,RB Offset 0,Channel 20000,Frequeny 1715.0MHz)



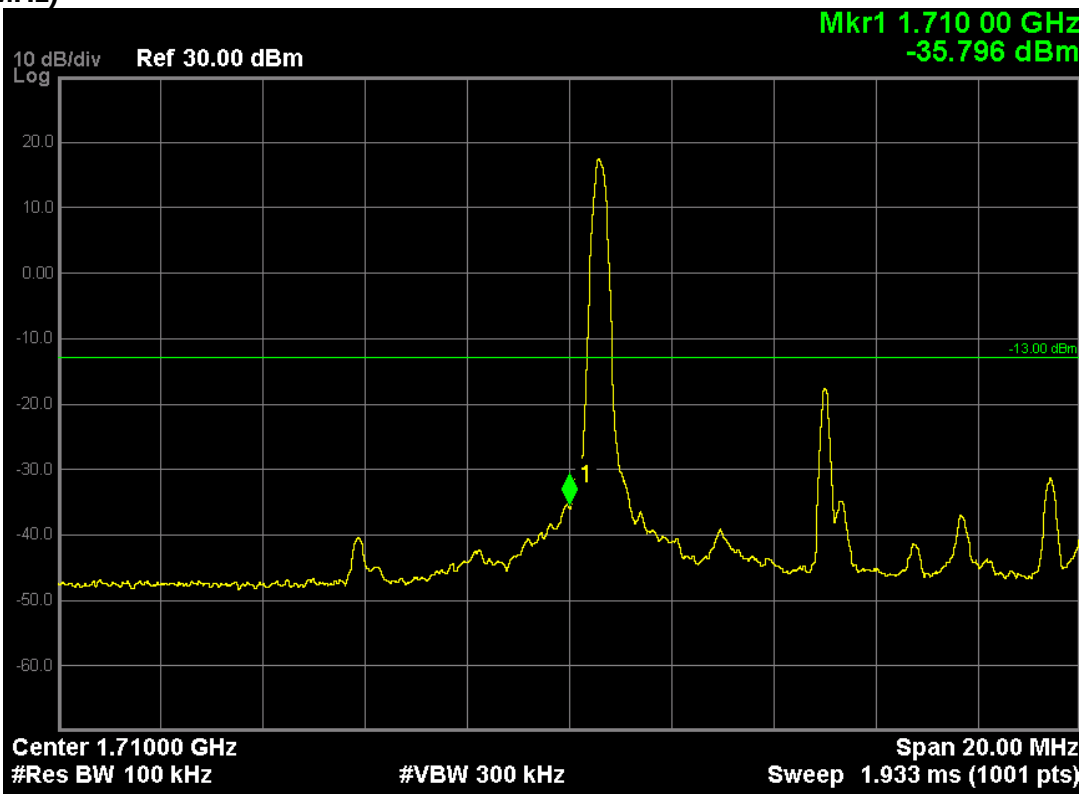
LTE Band 4 (QPSK, Band Width 10MHz,RB Size 1,RB Offset 49,Channel 20350,Frequeny 1750.0MHz)



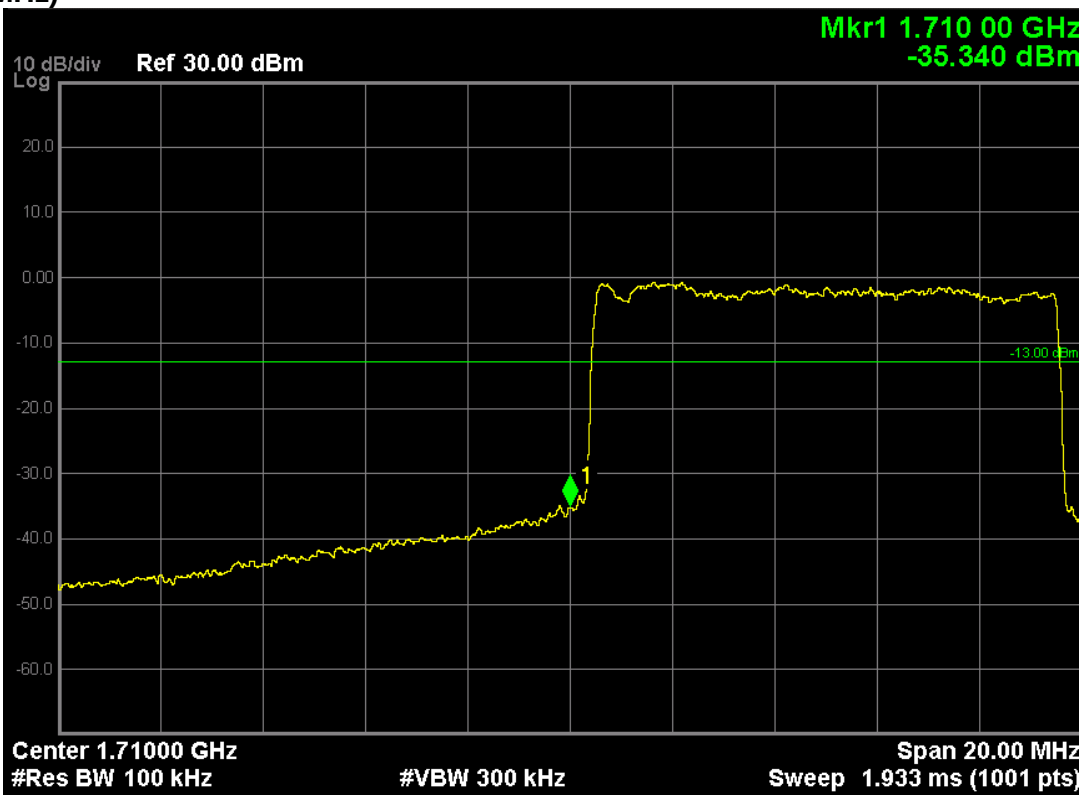
LTE Band 4 (QPSK, Band Width 10MHz,RB Size 50,RB Offset 0,Channel 20350,Frequeny 1750.0MHz)



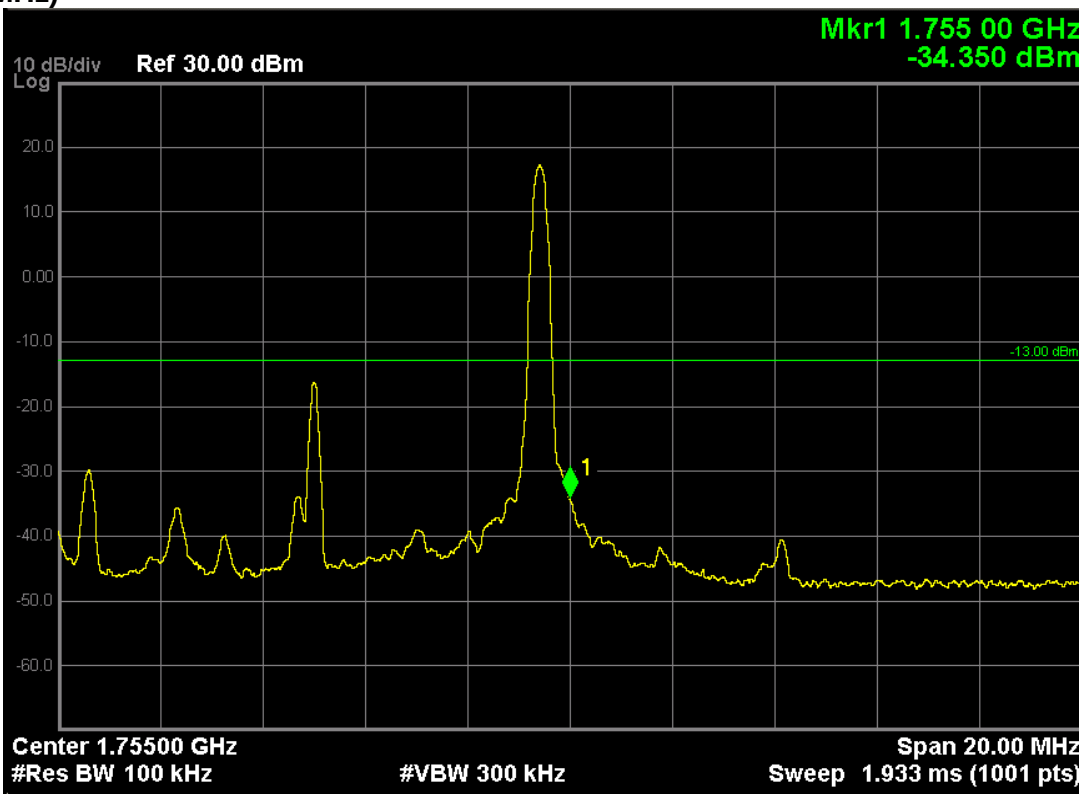
LTE Band 4 (16-QAM, Band Width 10MHz,RB Size 1,RB Offset 0,Channel 20000,Frequeny 1715.0MHz)



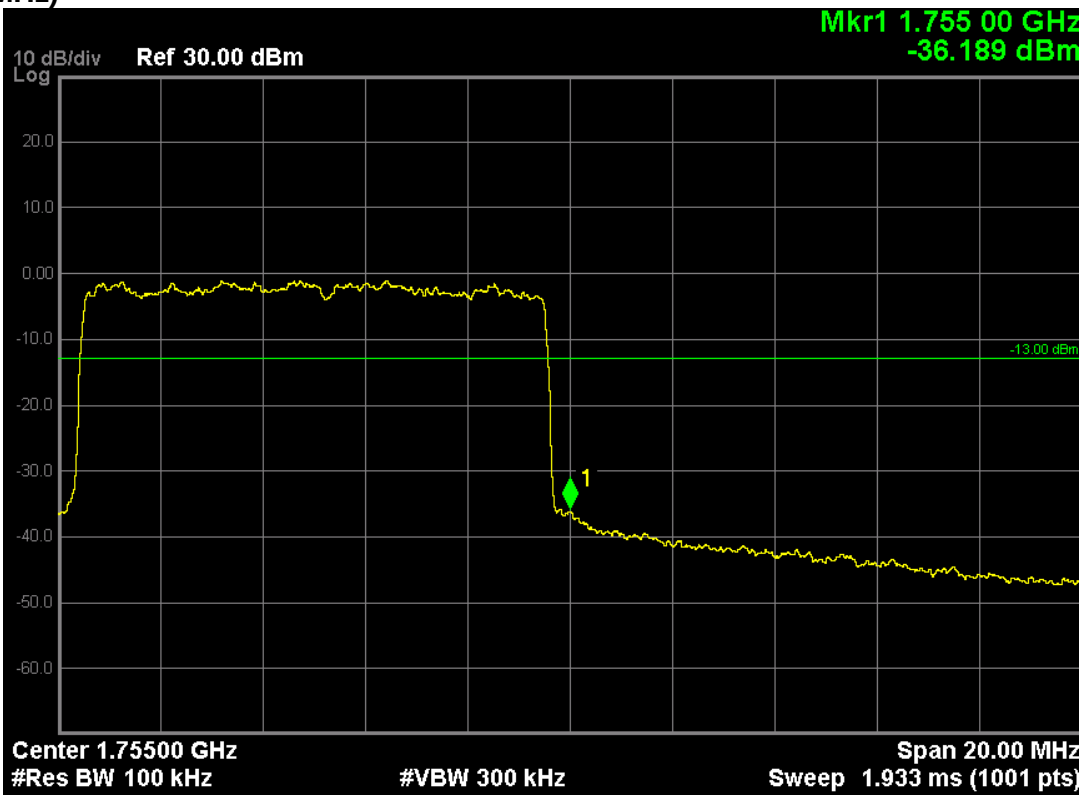
LTE Band 4 (16-QAM, Band Width 10MHz,RB Size 50,RB Offset 0,Channel 20000,Frequeny 1715.0MHz)



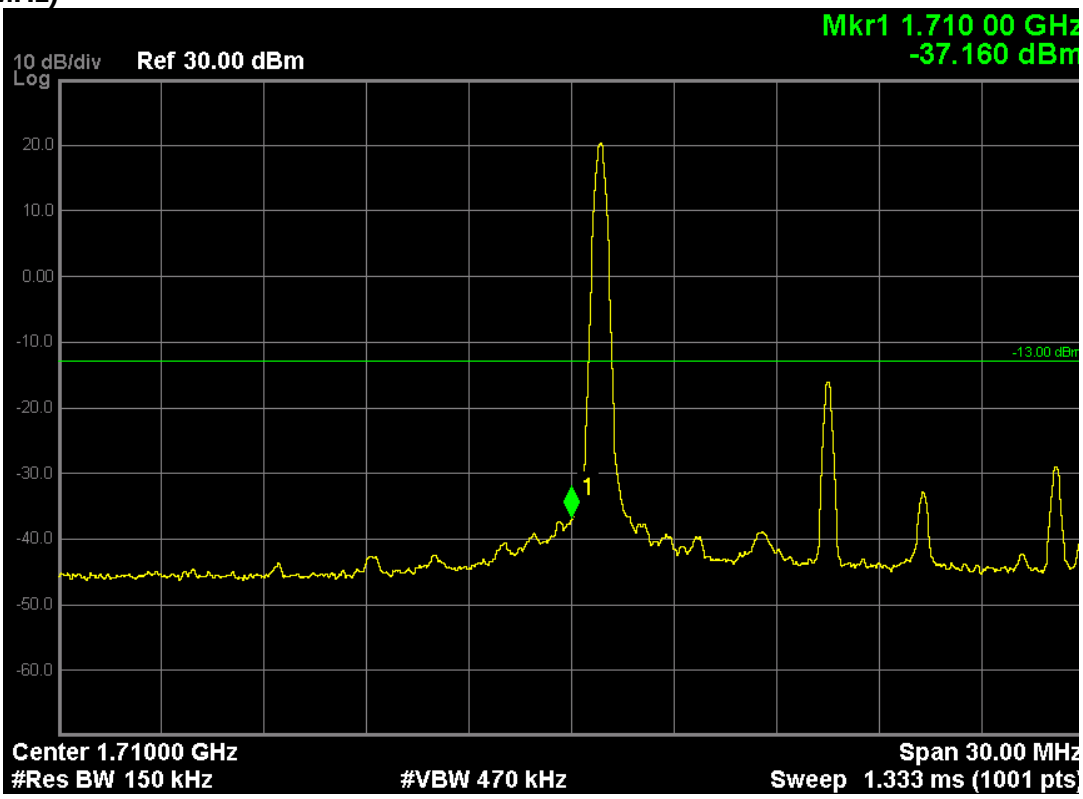
LTE Band 4 (16-QAM, Band Width 10MHz,RB Size 1,RB Offset 49,Channel 20350,Frequeny 1750.0MHz)



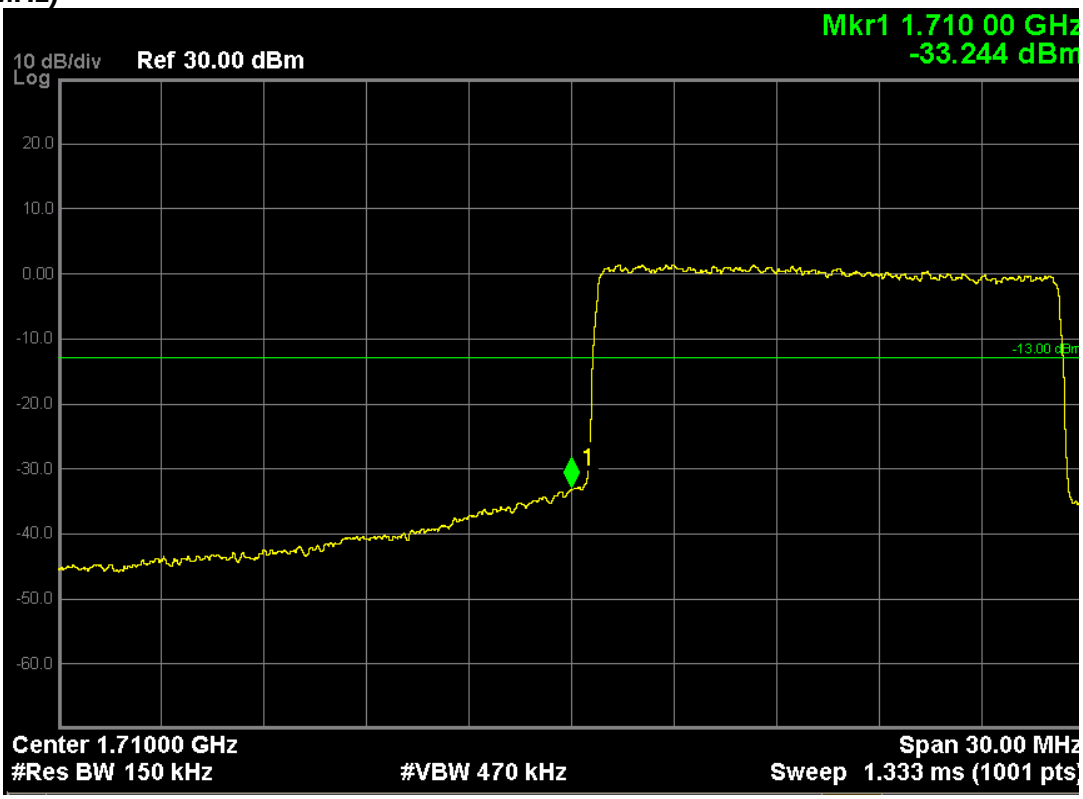
LTE Band 4 (16-QAM, Band Width 10MHz,RB Size 50,RB Offset 0,Channel 20350,Frequeny 1750.0MHz)



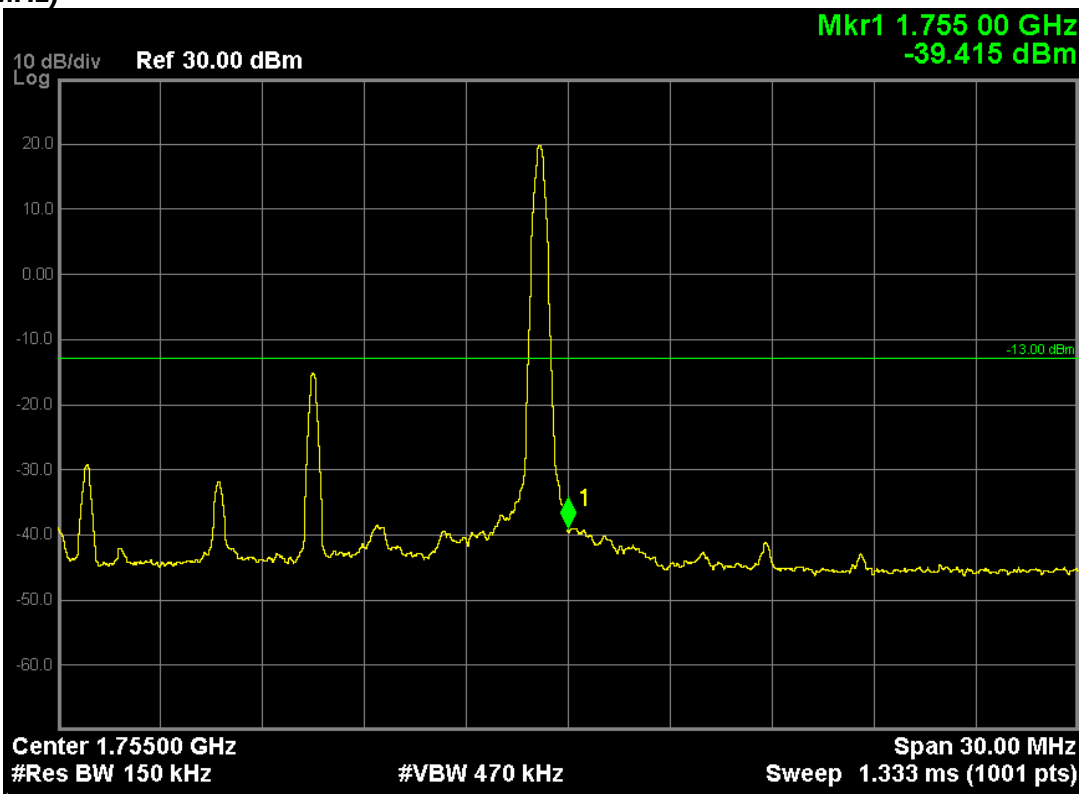
LTE Band 4 (QPSK, Band Width 15MHz,RB Size 1,RB Offset 0,Channel 20025,Frequeny 1717.5MHz)



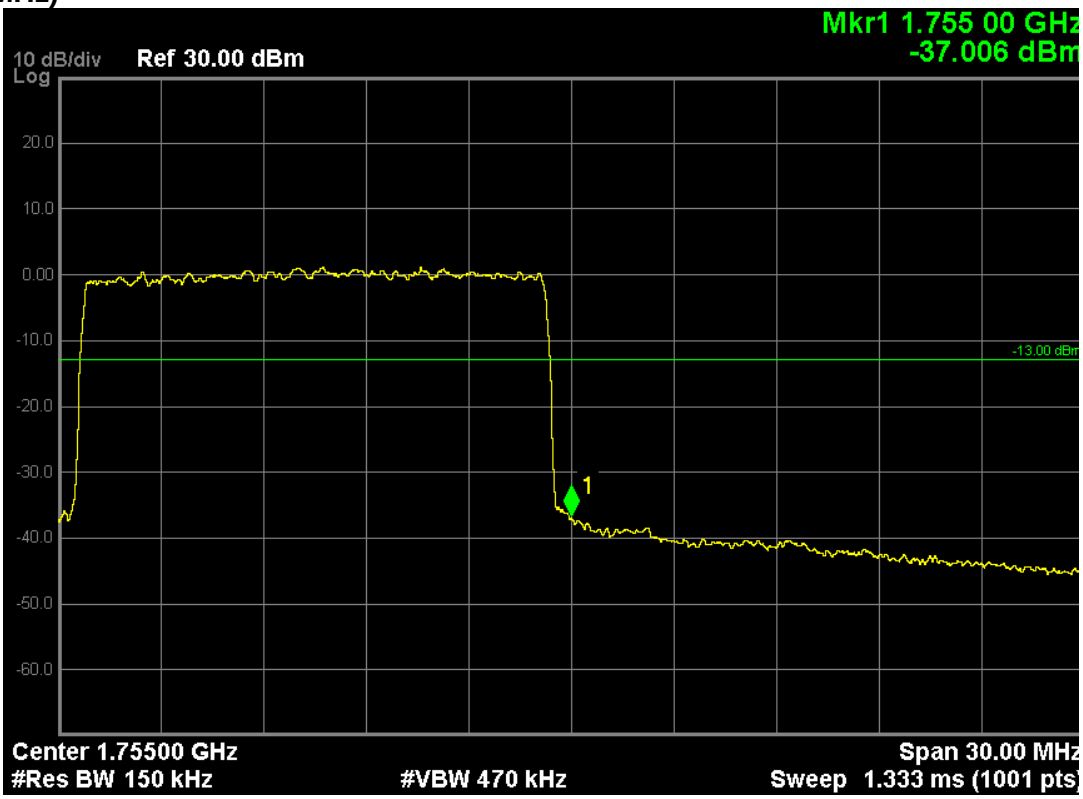
LTE Band 4 (QPSK, Band Width 15MHz,RB Size 75,RB Offset 0,Channel 20025,Frequeny 1717.5MHz)



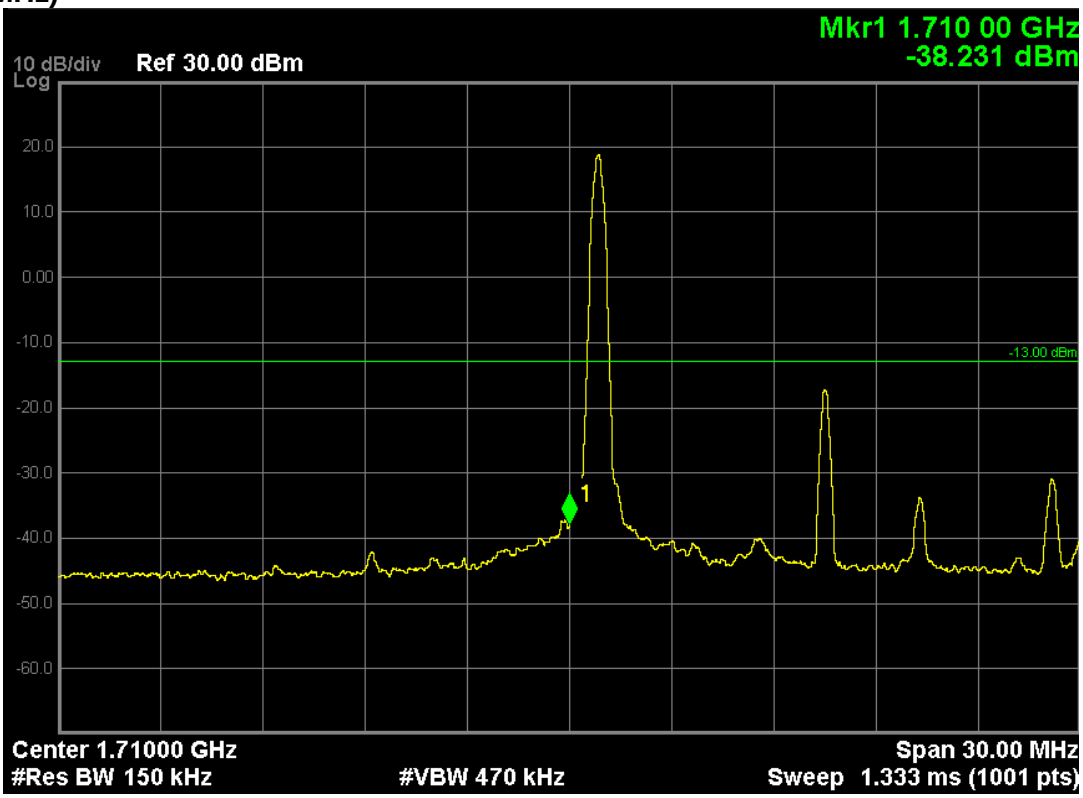
LTE Band 4 (QPSK, Band Width 15MHz,RB Size 1,RB Offset 74,Channel 20325,Frequeny 1747.5MHz)



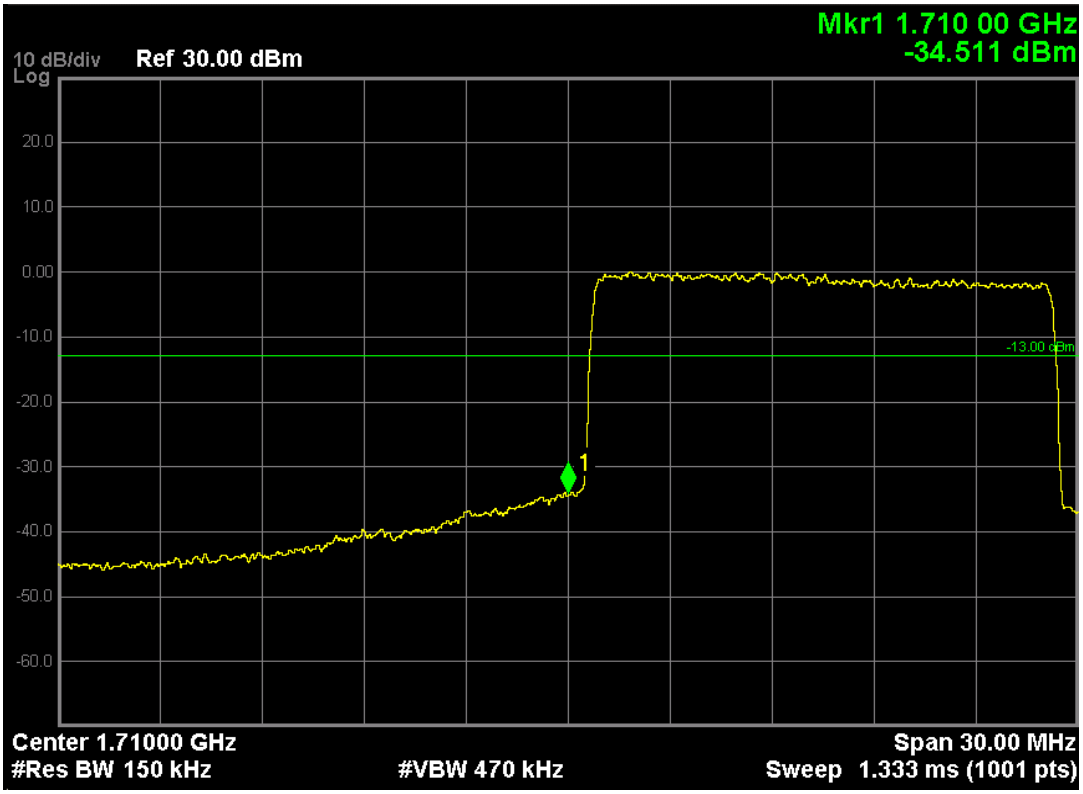
LTE Band 4 (QPSK, Band Width 15MHz,RB Size 75,RB Offset 0,Channel 20325,Frequeny 1747.5MHz)



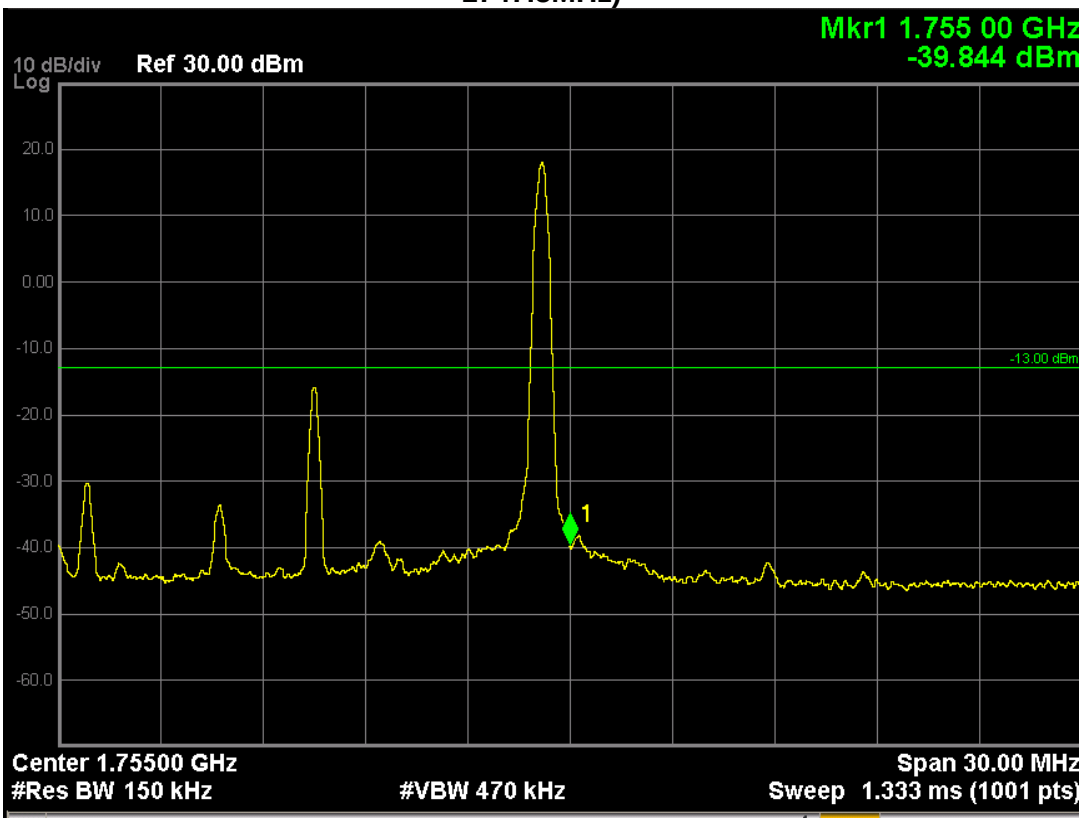
LTE Band 4 (16-QAM, Band Width 15MHz,RB Size 1,RB Offset 0,Channel 20025,Frequeny 1717.5MHz)



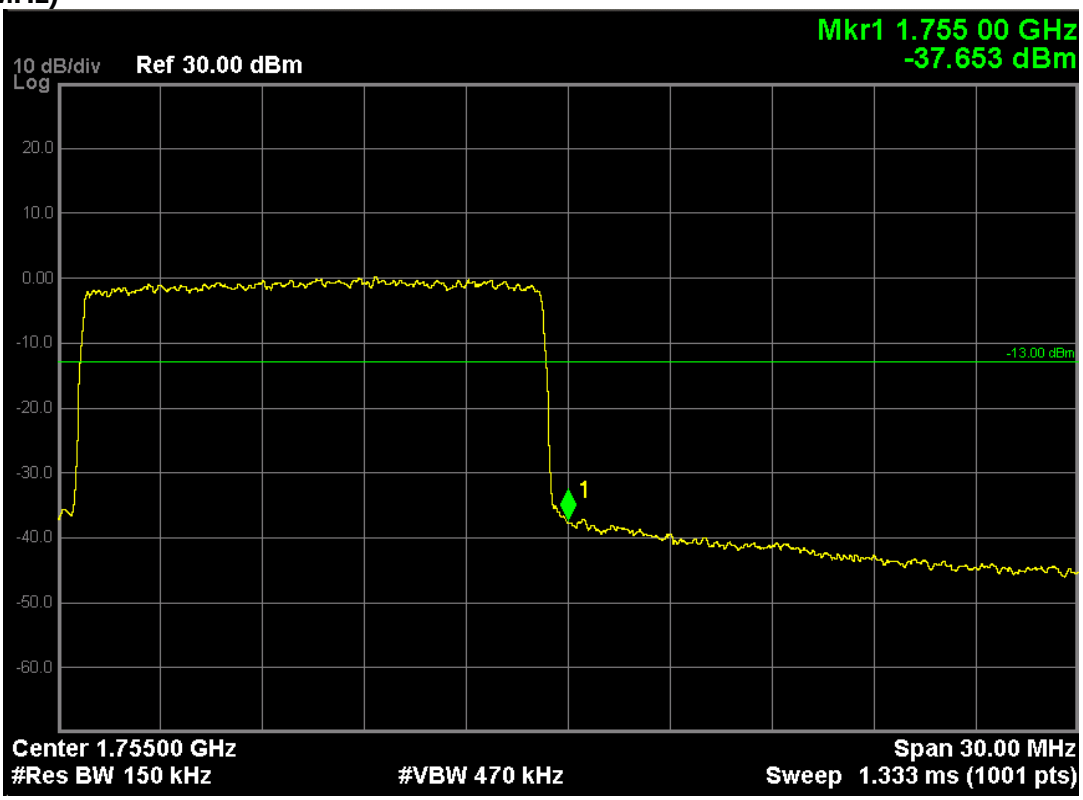
LTE Band 4 (16-QAM, Band Width 15MHz,RB Size 75,RB Offset 0,Channel 20025,Frequeny 1717.5MHz)



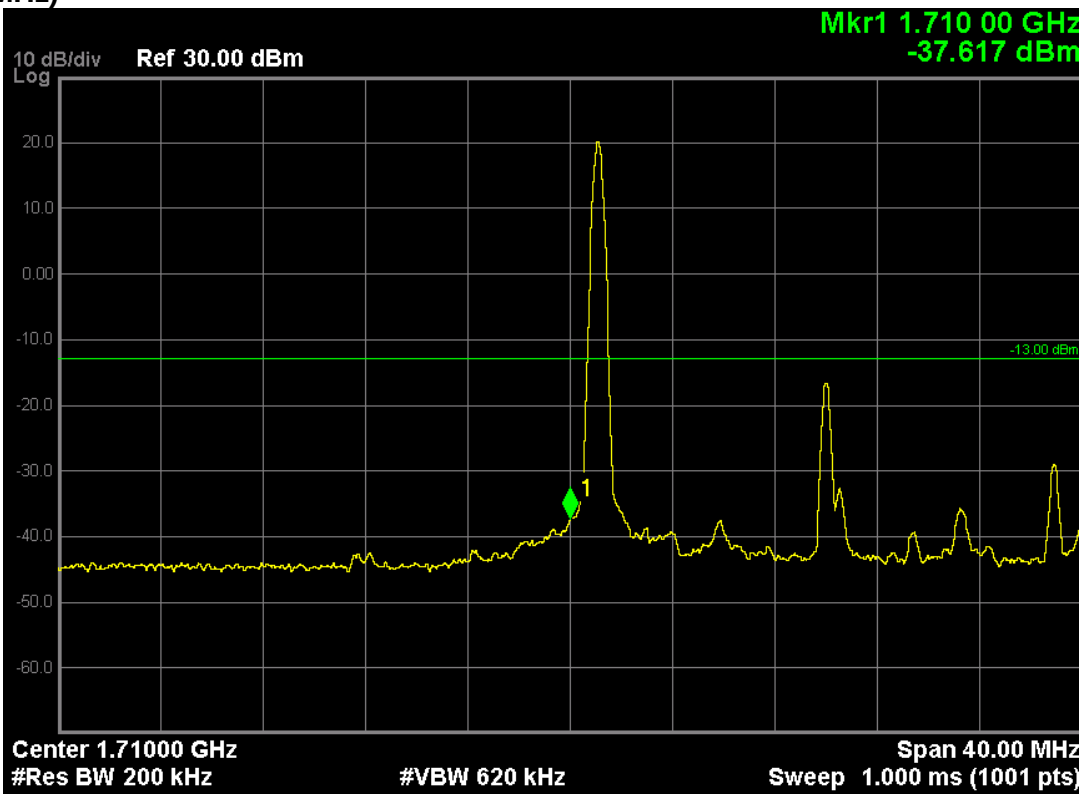
LTE Band 4 (16-QAM, Band Width 15MHz,RB Size 1,RB Offset 74,Channel 20325,Frequeny 1747.5MHz)



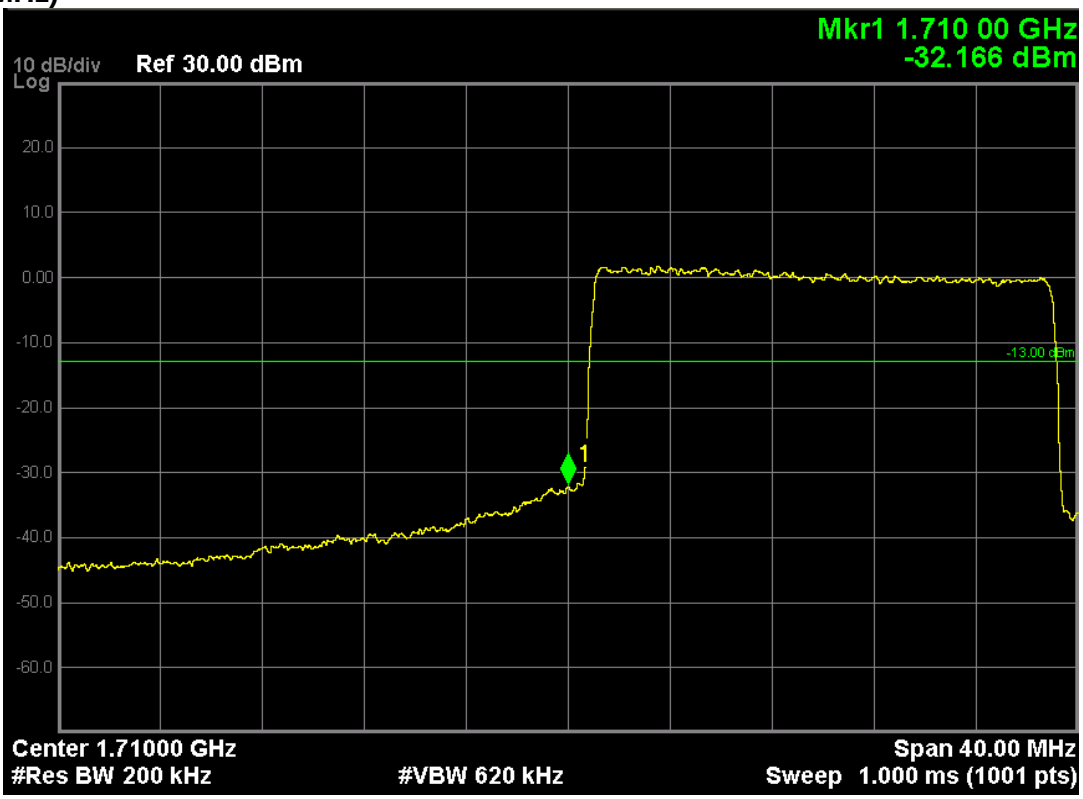
LTE Band 4 (16-QAM, Band Width 15MHz,RB Size 75,RB Offset 0,Channel 20325,Frequeny 1747.5MHz)



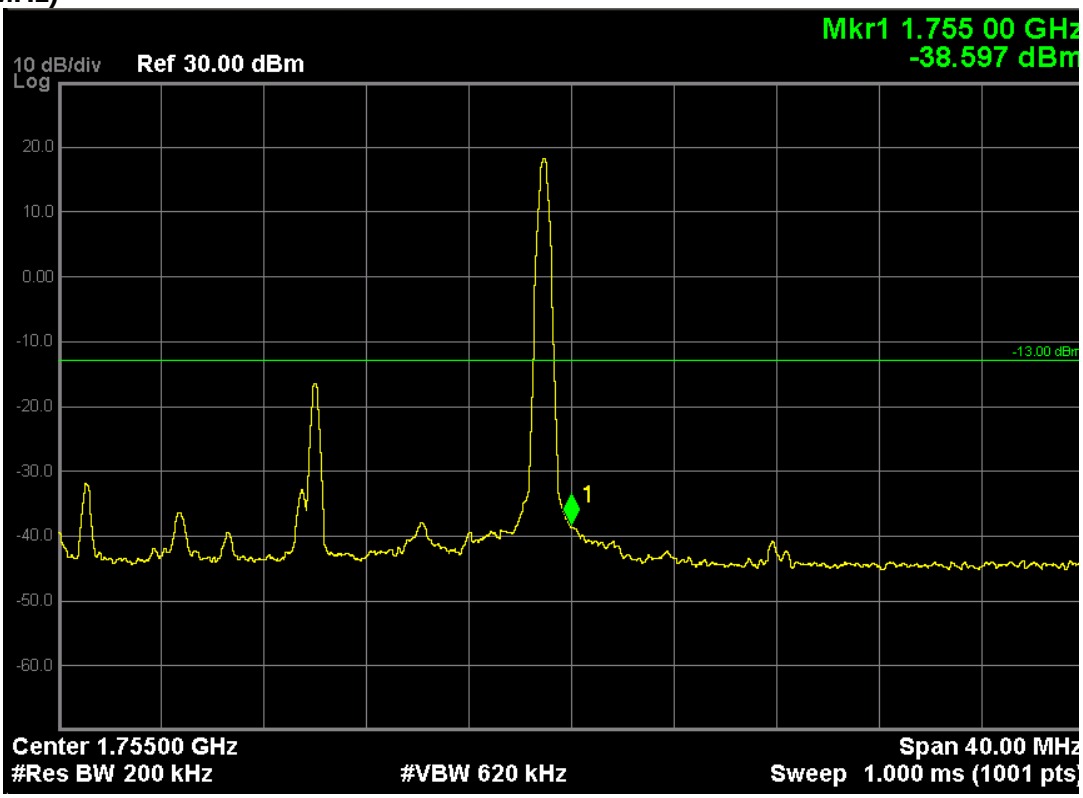
LTE Band 4 (QPSK, Band Width 20MHz,RB Size 1,RB Offset 0,Channel 20050,Frequeny 1720.0MHz)



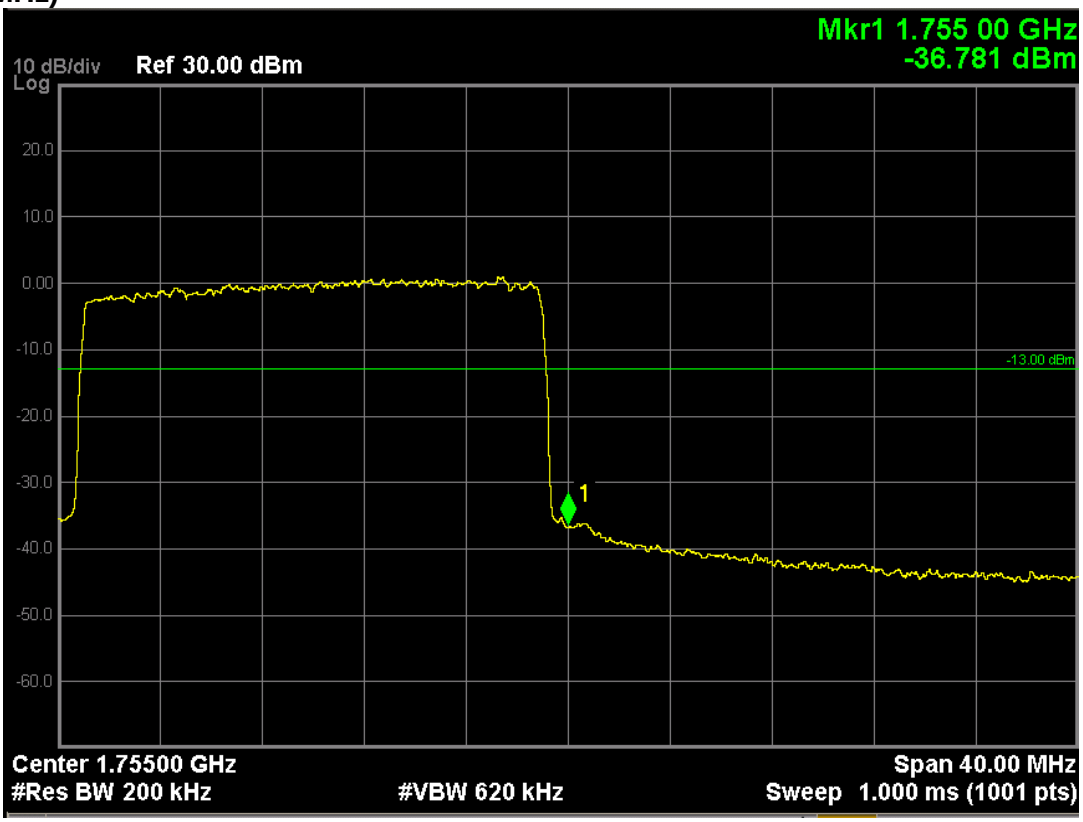
LTE Band 4 (QPSK, Band Width 20MHz,RB Size 100,RB Offset 0,Channel 20050,Frequeny 1720.0MHz)



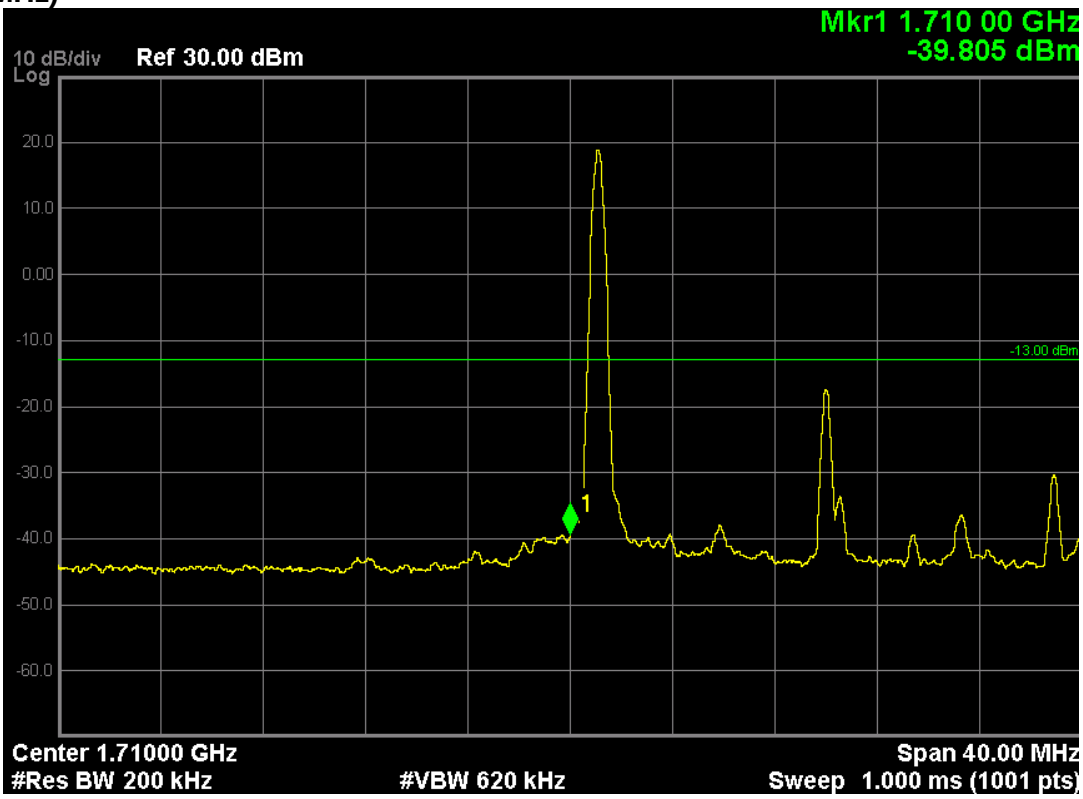
LTE Band 4 (QPSK, Band Width 20MHz,RB Size 1,RB Offset 99,Channel 20300,Frequeny 1745.0MHz)



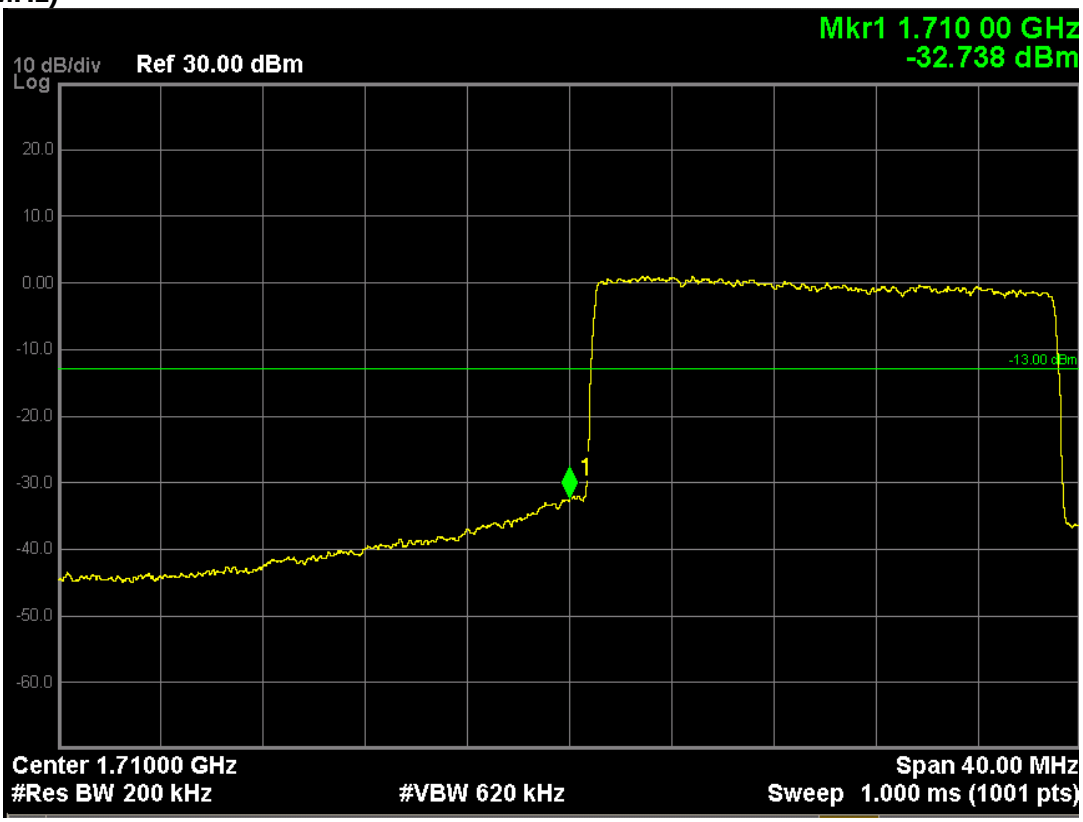
LTE Band 4 (QPSK, Band Width 20MHz,RB Size 100,RB Offset 0,Channel 20300,Frequeny 1745.0MHz)



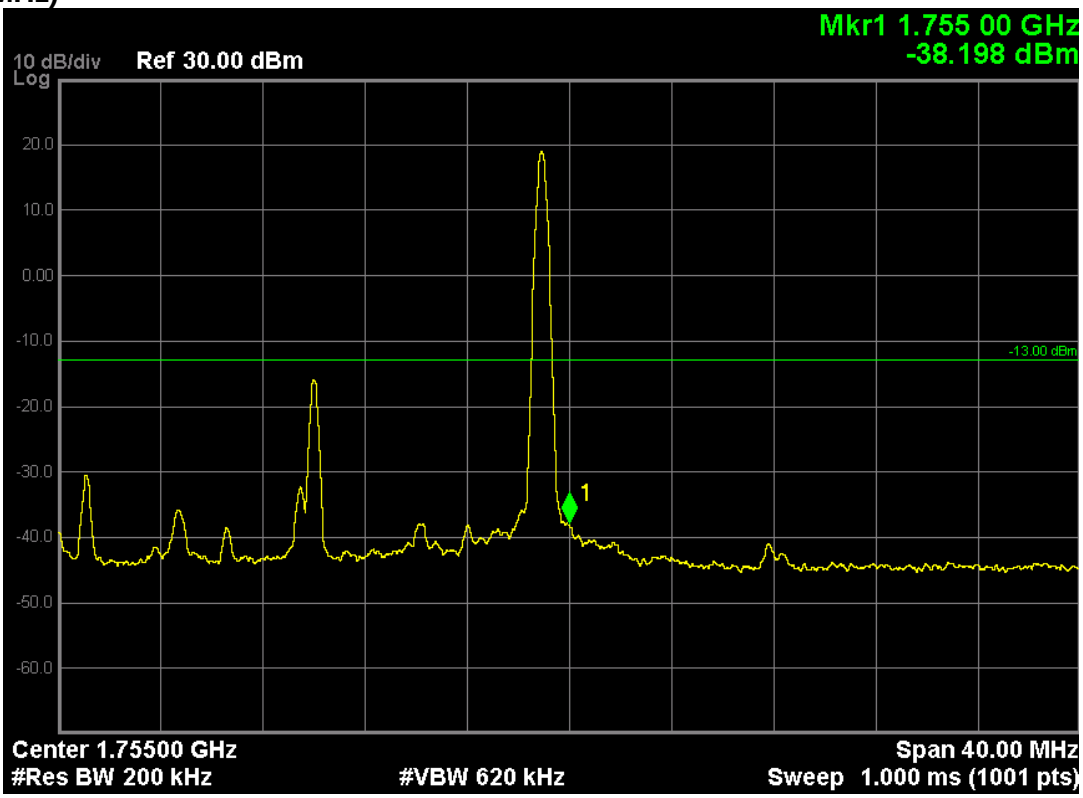
LTE Band 4 (16-QAM, Band Width 20MHz,RB Size 1,RB Offset 0,Channel 20050,Frequeny 1720.0MHz)



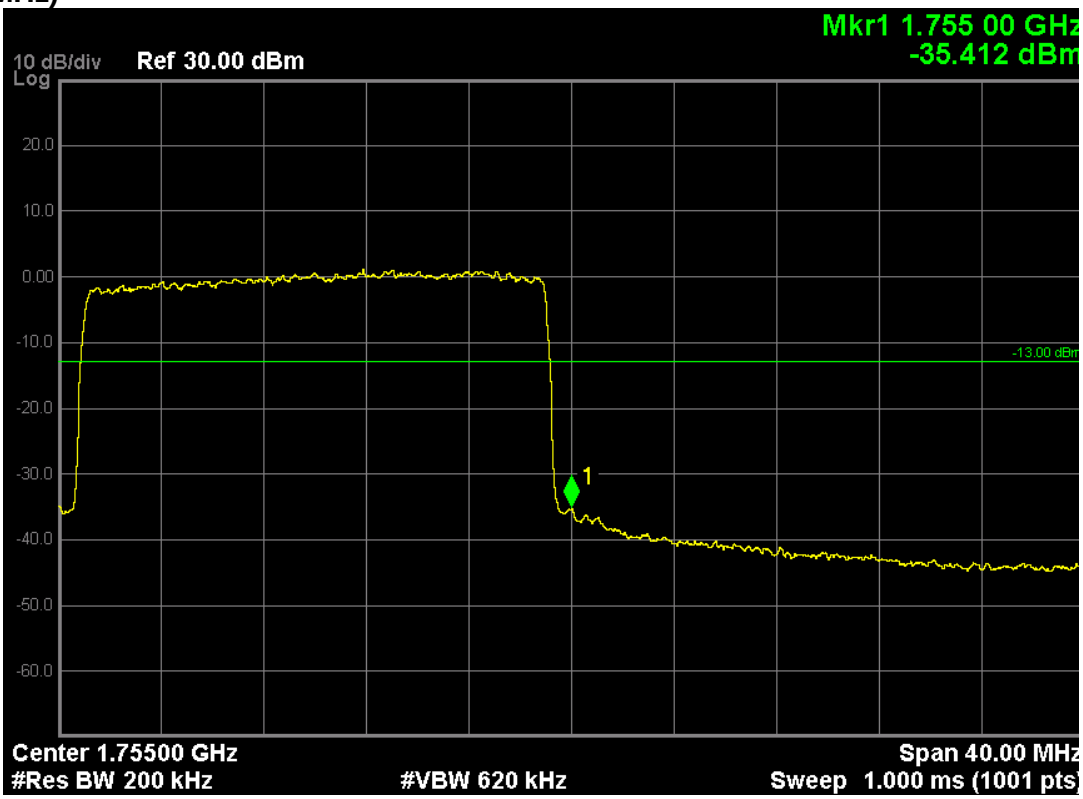
LTE Band 4 (16-QAM, Band Width 20MHz,RB Size 100,RB Offset 0,Channel 20050,Frequeny 1720.0MHz)



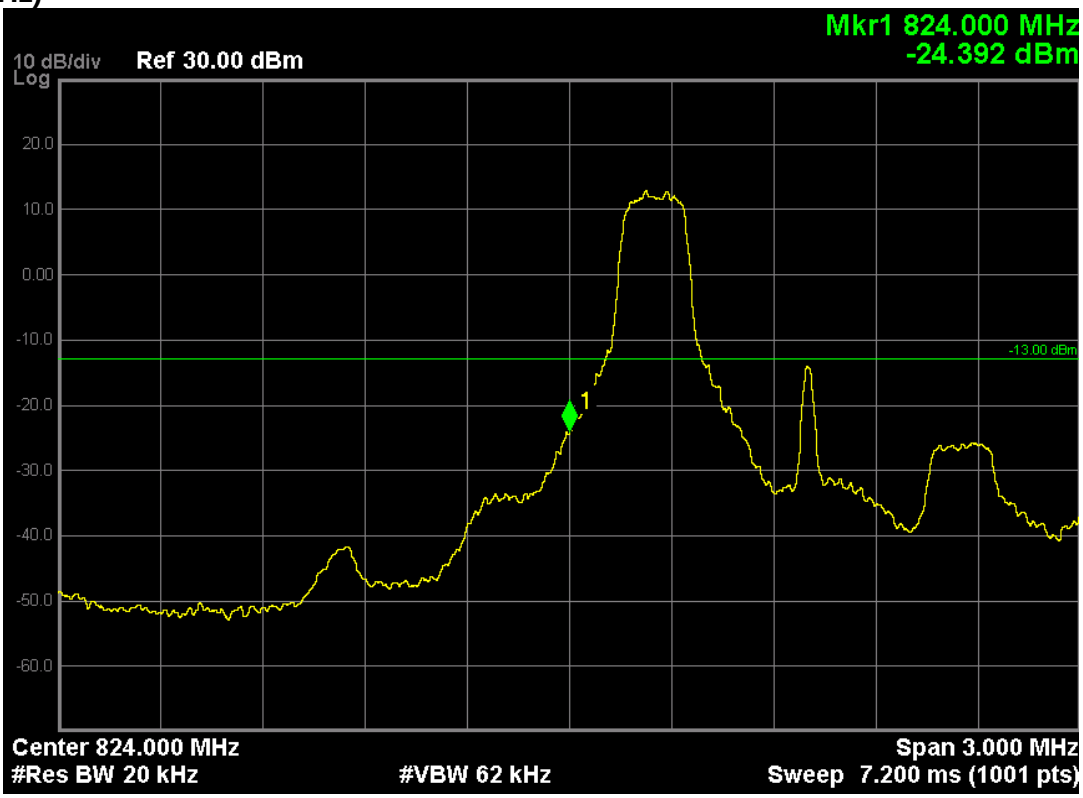
LTE Band 4 (16-QAM, Band Width 20MHz,RB Size 1,RB Offset 99,Channel 20300,Frequeny 1745.0MHz)



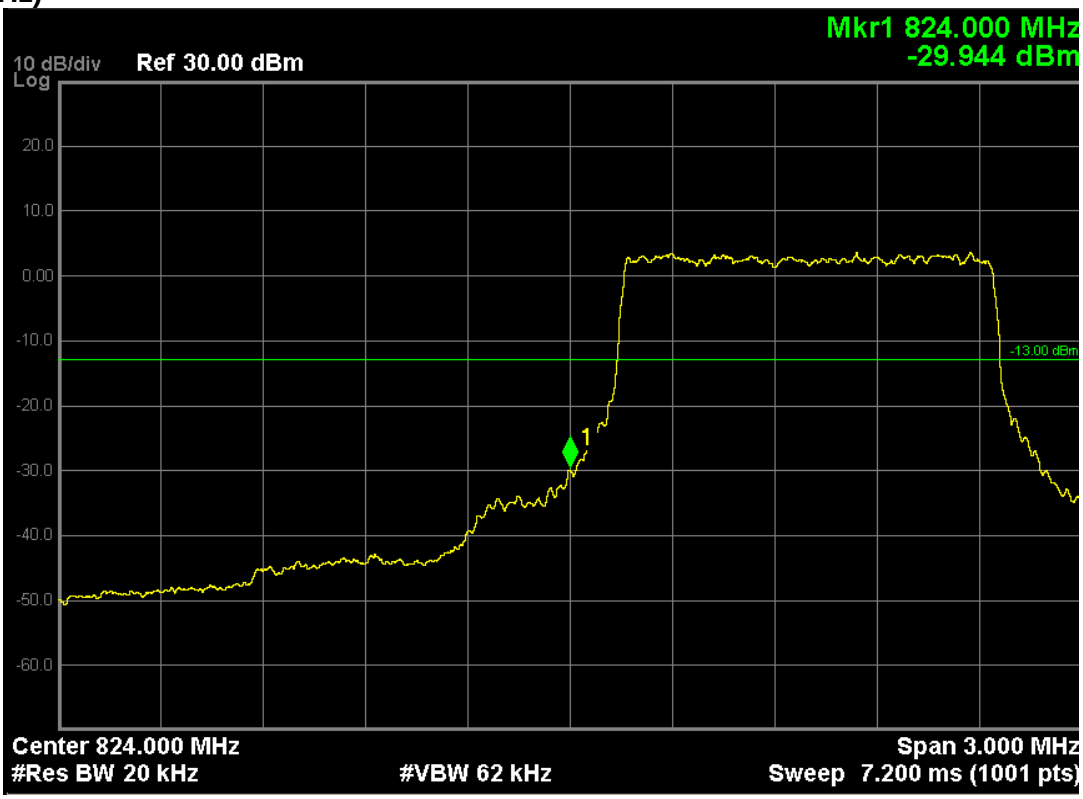
LTE Band 4 (16-QAM, Band Width 20MHz,RB Size 100,RB Offset 0,Channel 20300,Frequeny 1745.0MHz)



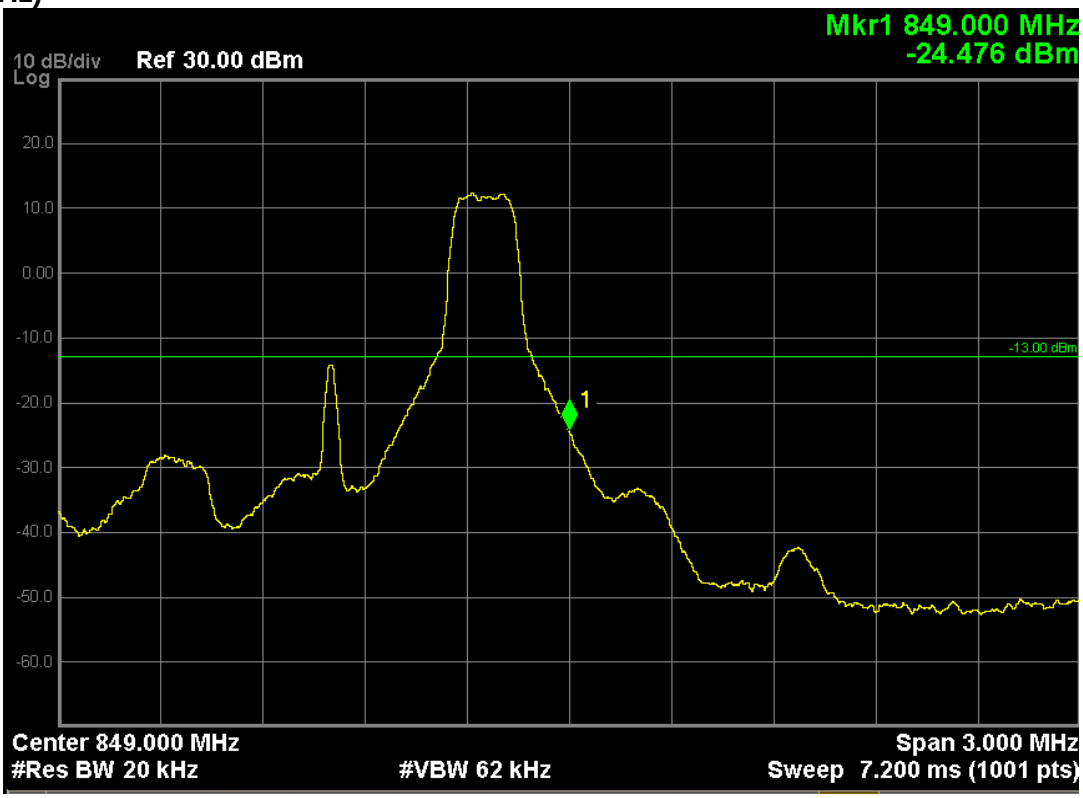
LTE Band 5 (QPSK, Band Width 1.4MHz,RB Size 1,RB Offset 0,Channel 20407,Frequeny 824.7MHz)



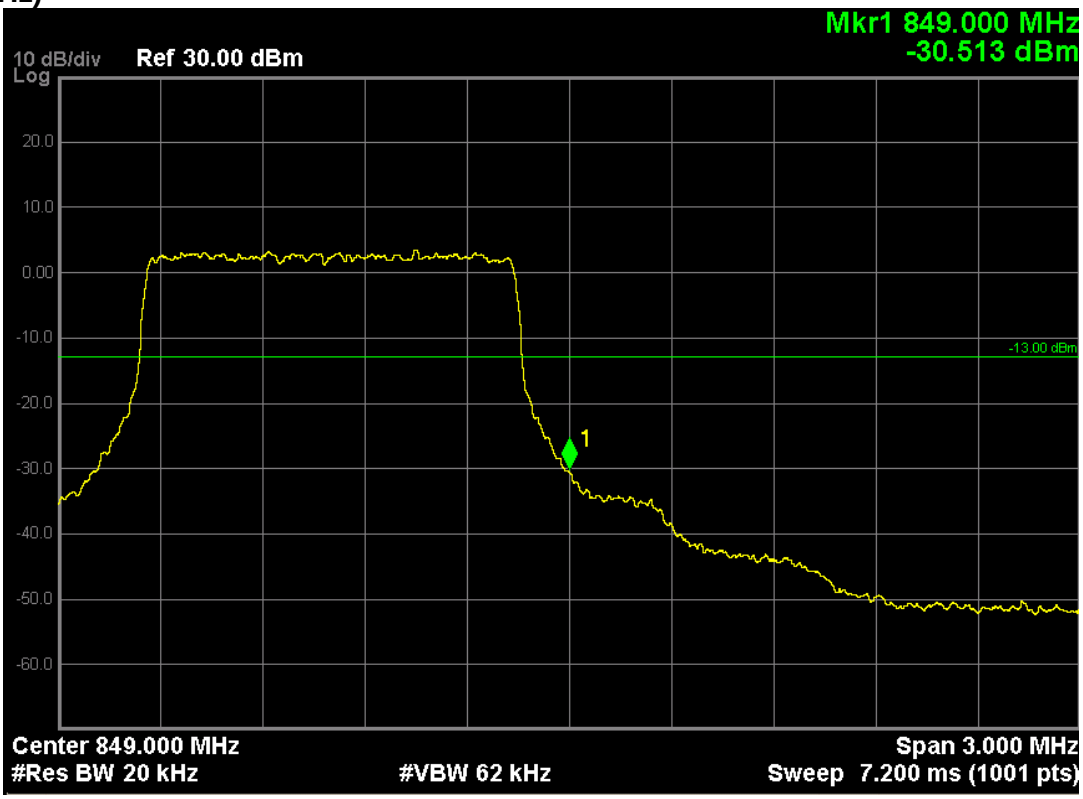
LTE Band 5 (QPSK, Band Width 1.4MHz,RB Size 6,RB Offset 0,Channel 20407,Frequeny 824.7MHz)



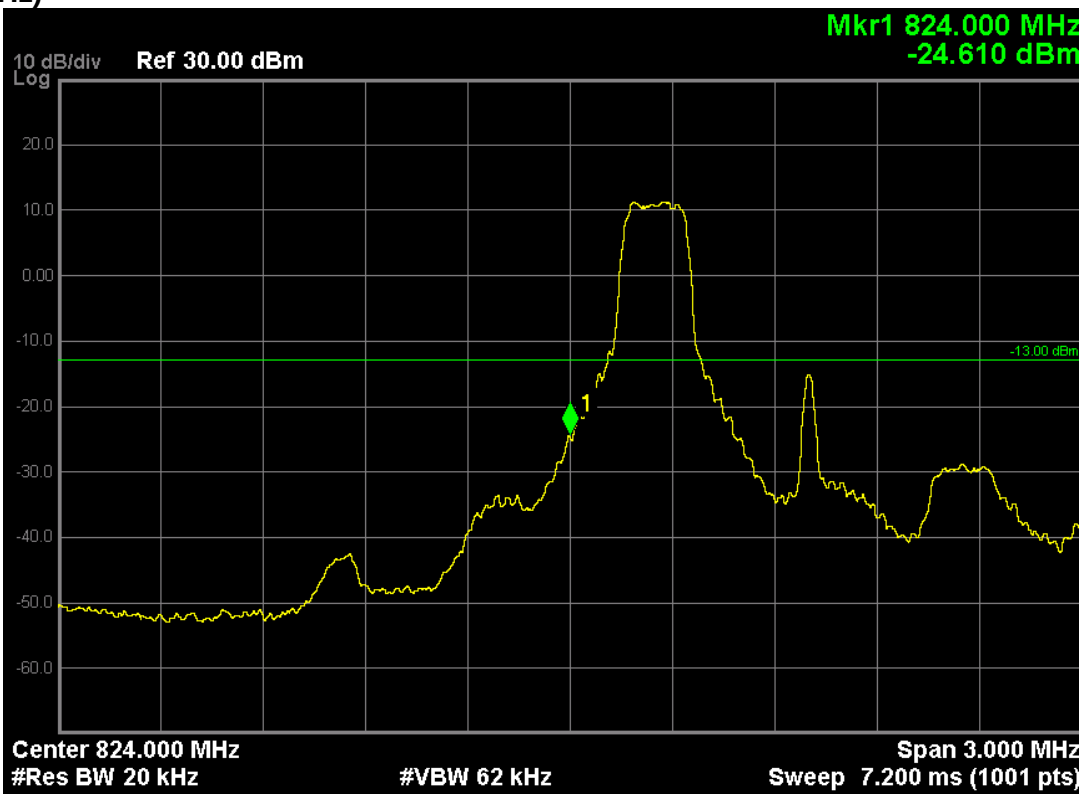
LTE Band 5 (QPSK, Band Width 1.4MHz,RB Size 1,RB Offset 5,Channel 20643,Frequeny 848.3MHz)



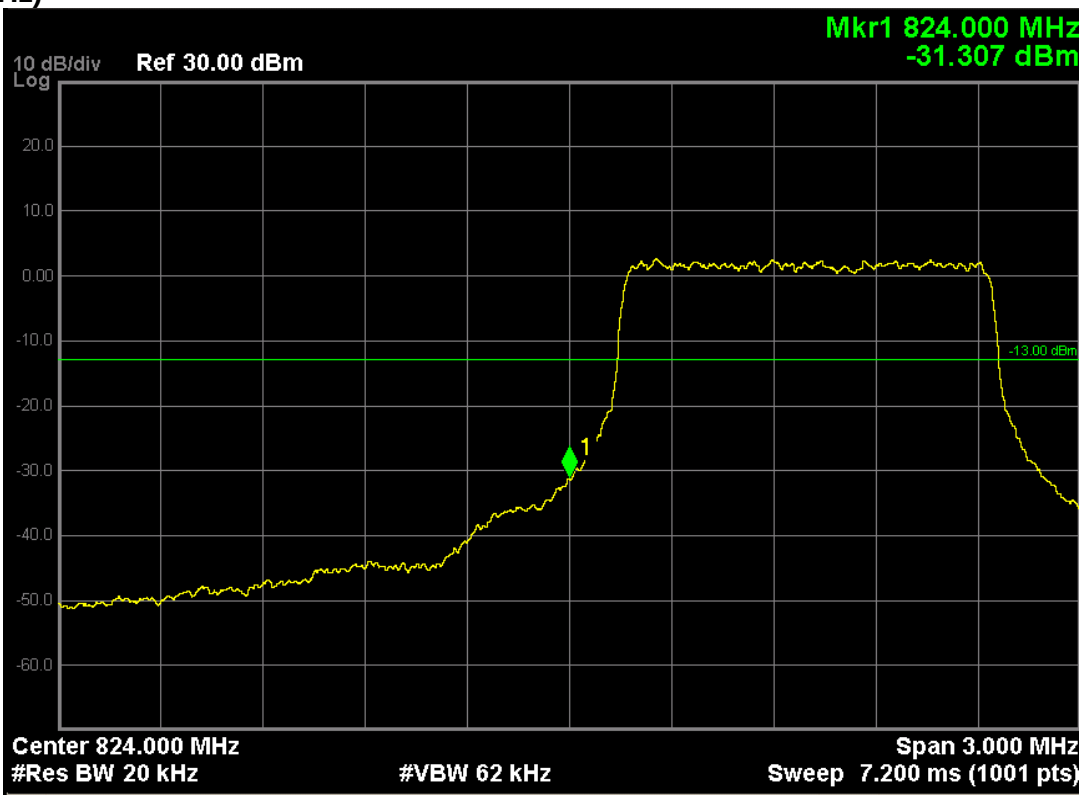
LTE Band 5 (QPSK, Band Width 1.4MHz,RB Size 6,RB Offset 0,Channel 20643,Frequeny 848.3MHz)



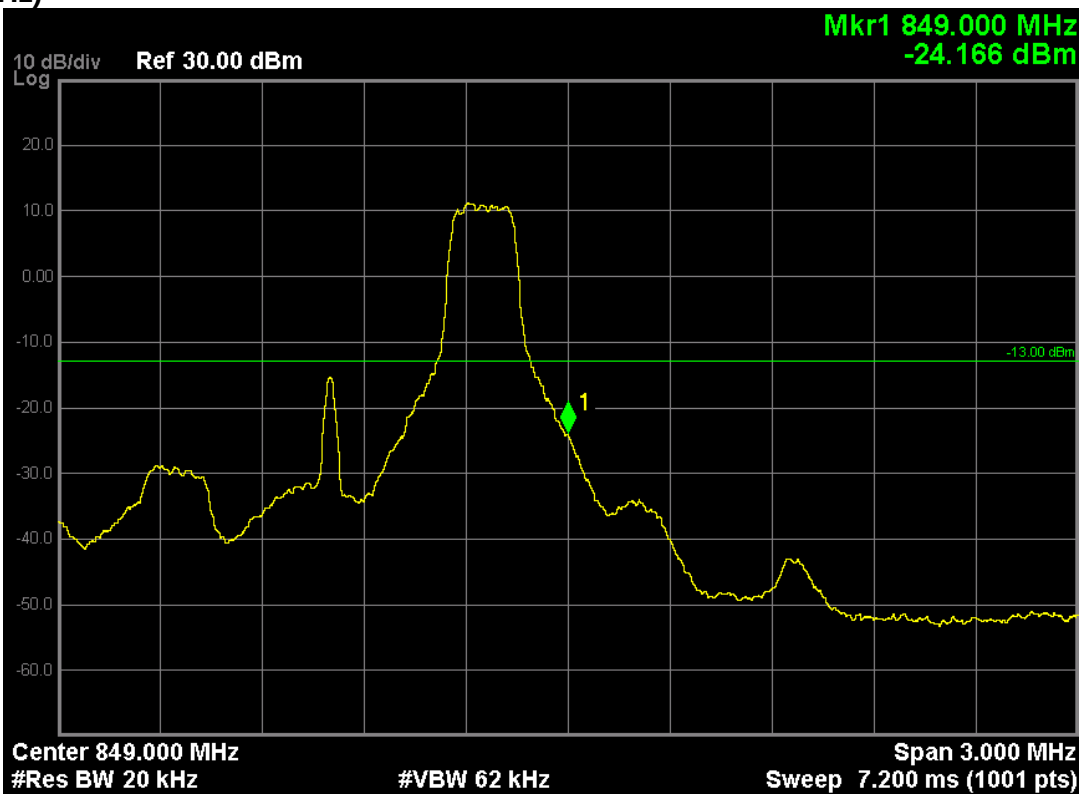
LTE Band 5 (16-QAM, Band Width 1.4MHz,RB Size 1,RB Offset 0,Channel 20407,Frequeny 824.7MHz)



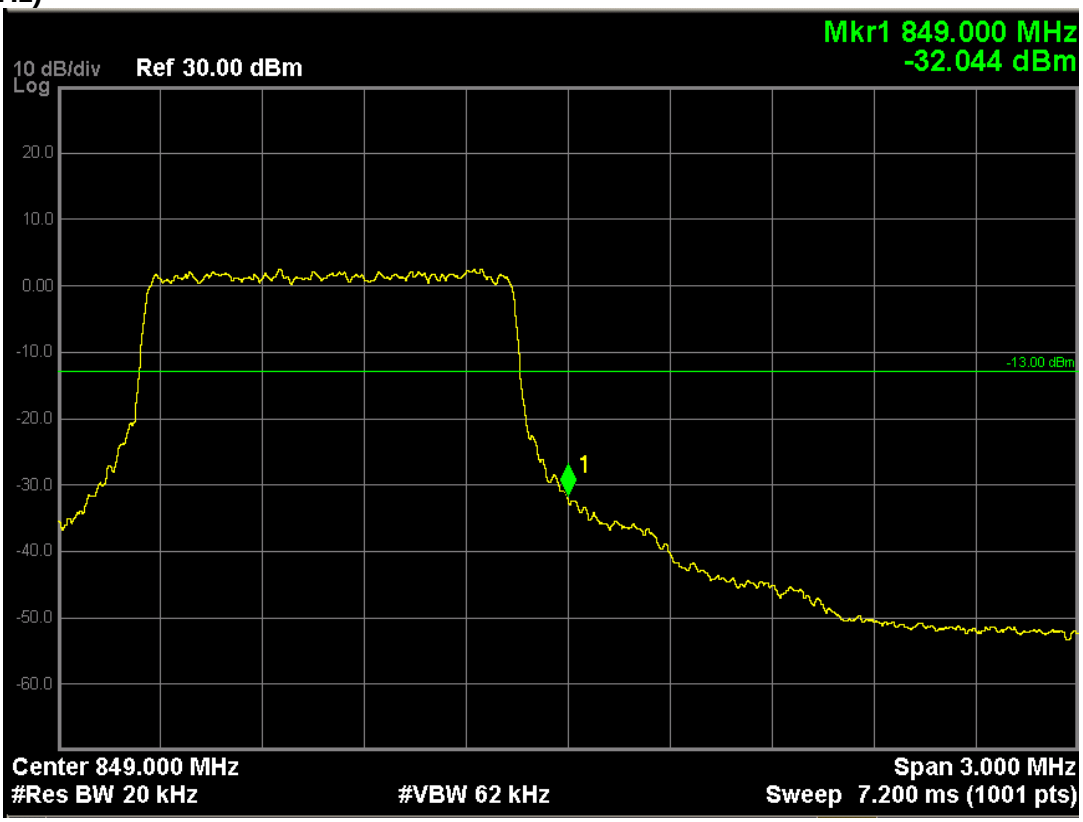
LTE Band 5 (16-QAM, Band Width 1.4MHz,RB Size 6,RB Offset 0,Channel 20407,Frequeny 824.7MHz)



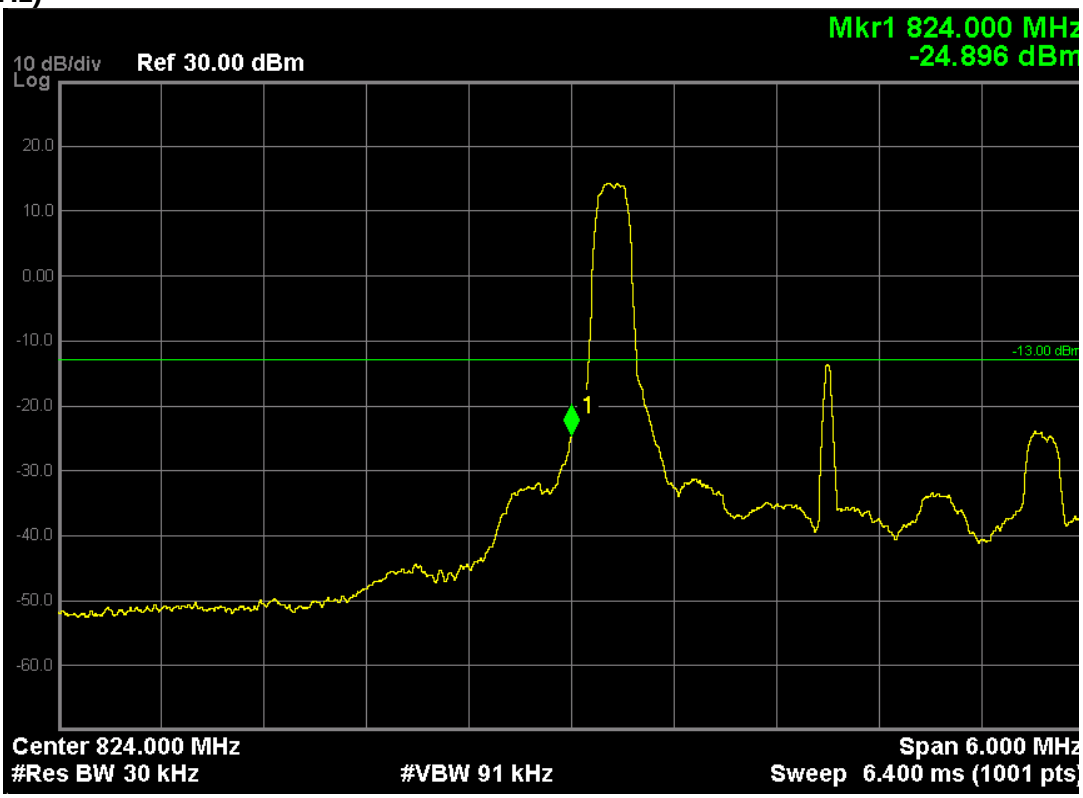
LTE Band 5 (16-QAM, Band Width 1.4MHz,RB Size 1,RB Offset 5,Channel 20643,Frequeny 848.3MHz)



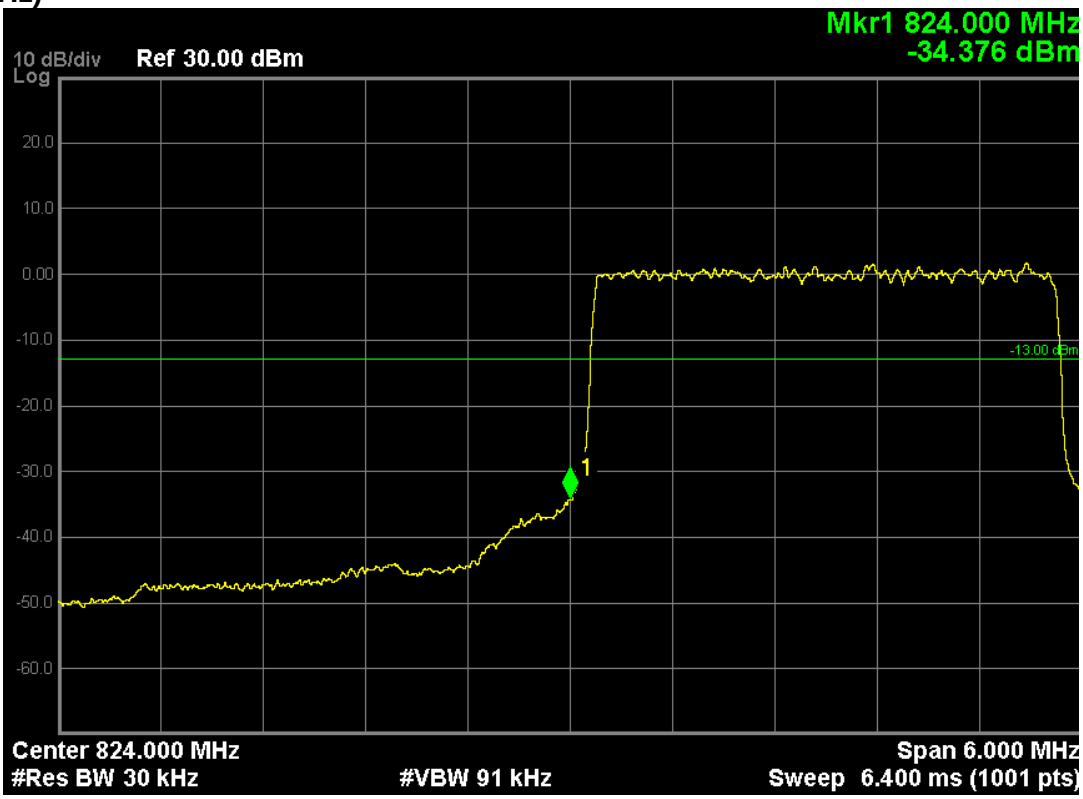
LTE Band 5 (16-QAM, Band Width 1.4MHz,RB Size 6,RB Offset 0,Channel 20643,Frequeny 848.3MHz)



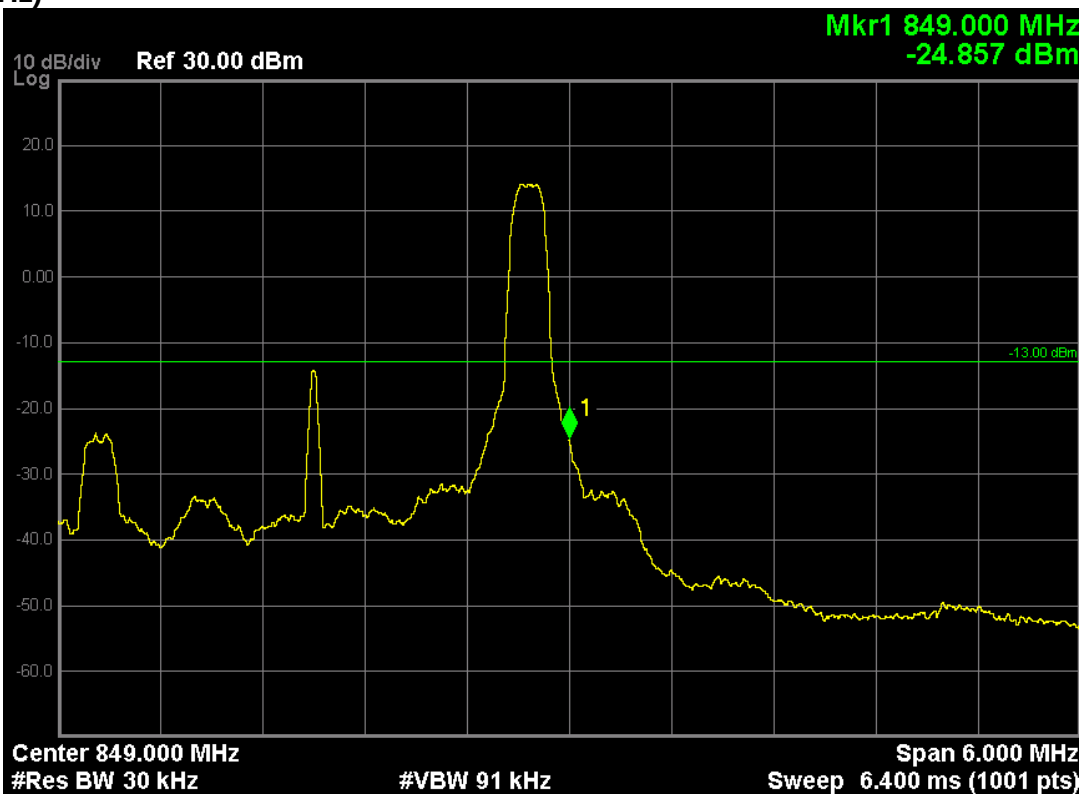
LTE Band 5 (QPSK, Band Width 3MHz,RB Size 1,RB Offset 0,Channel 20415,Frequeny 825.5MHz)



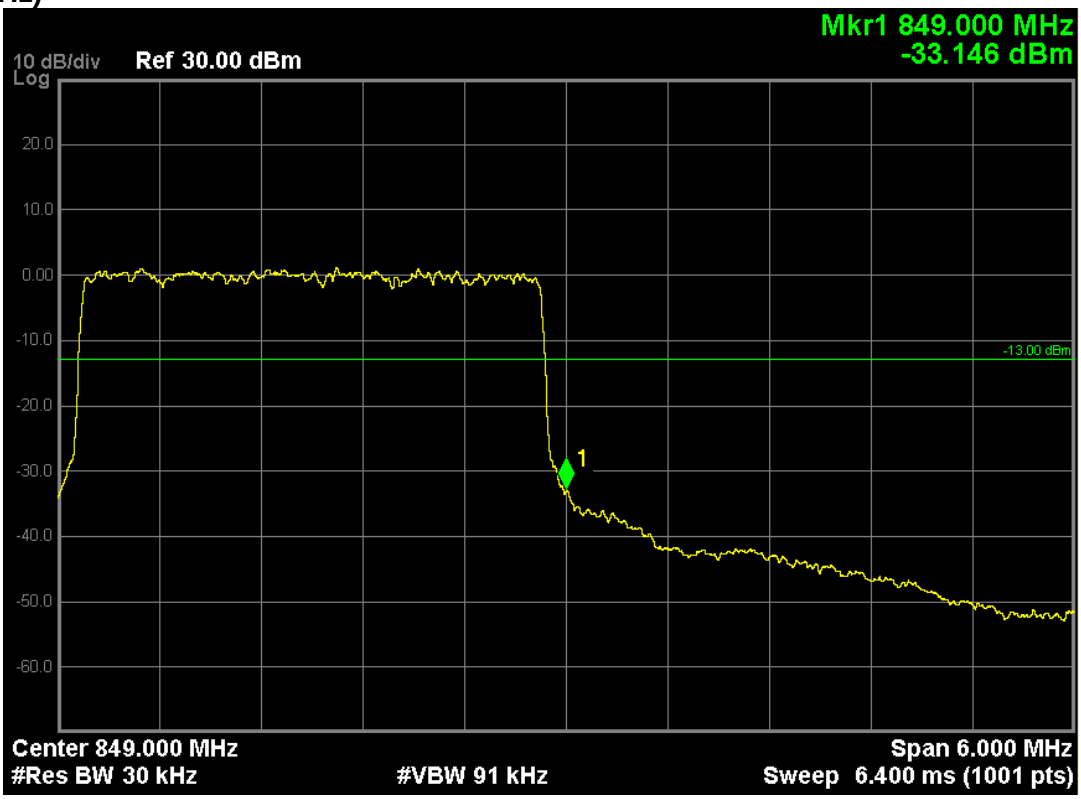
LTE Band 5 (QPSK, Band Width 3MHz,RB Size 15,RB Offset 0,Channel 20415,Frequeny 825.5MHz)



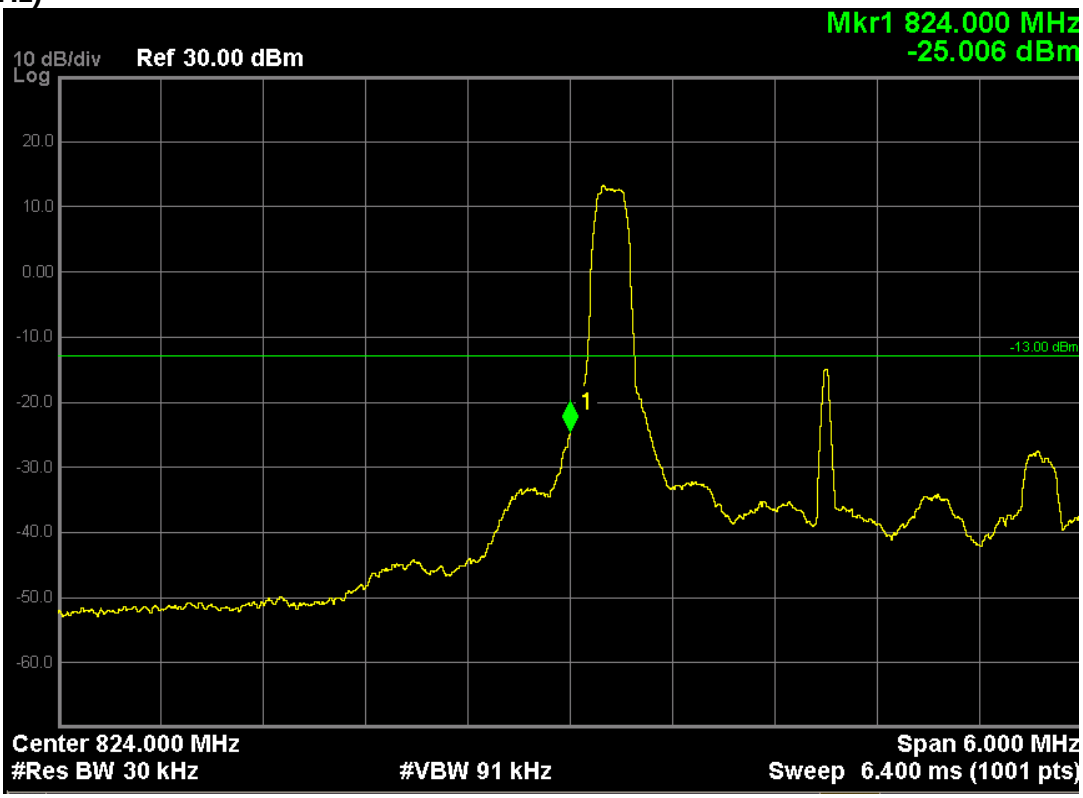
LTE Band 5 (QPSK, Band Width 3MHz,RB Size 1,RB Offset 14,Channel 20635,Frequeny 847.5MHz)



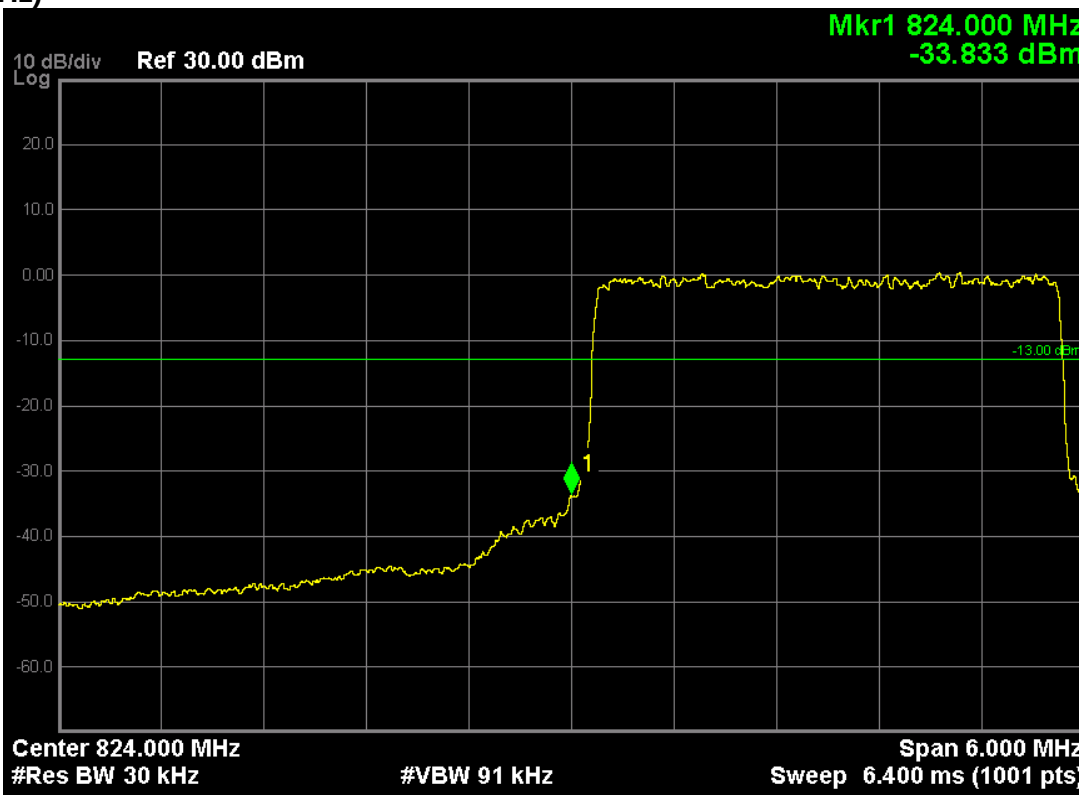
LTE Band 5 (QPSK, Band Width 3MHz,RB Size 15,RB Offset 0,Channel 20635,Frequeny 847.5MHz)



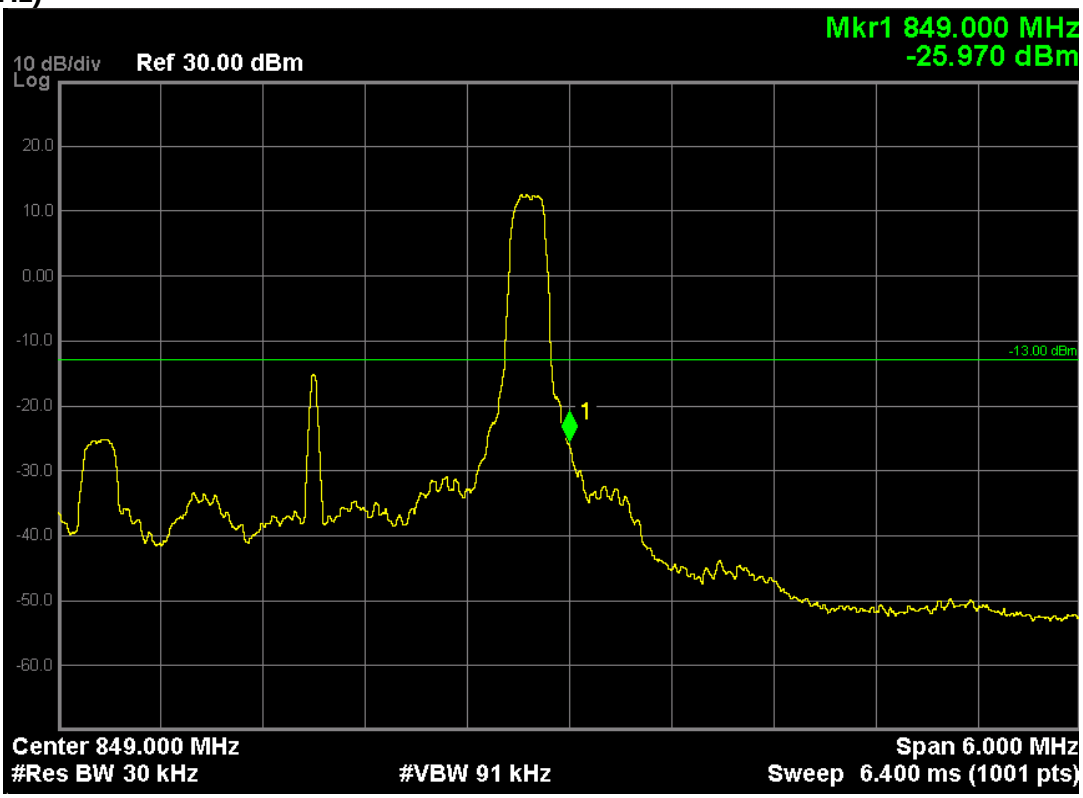
LTE Band 5 (16-QAM, Band Width 3MHz,RB Size 1,RB Offset 0,Channel 20415,Frequeny 825.5MHz)



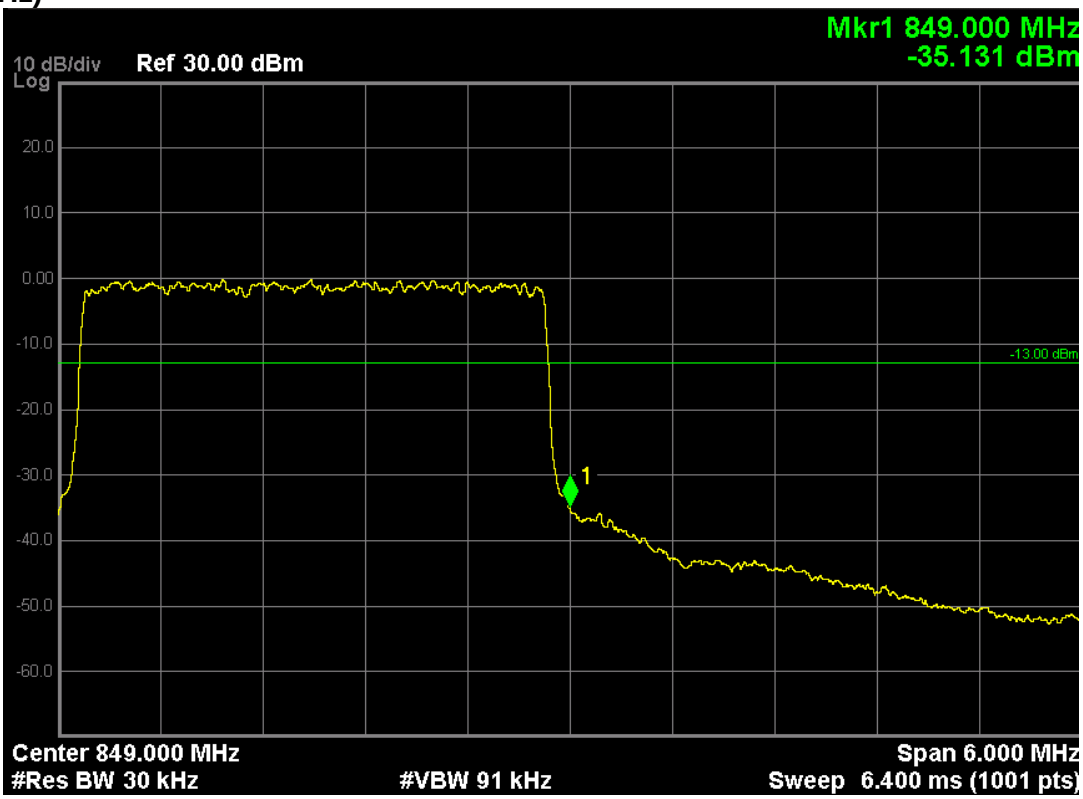
LTE Band 5 (16-QAM, Band Width 3MHz,RB Size 15,RB Offset 0,Channel 20415,Frequeny 825.5MHz)



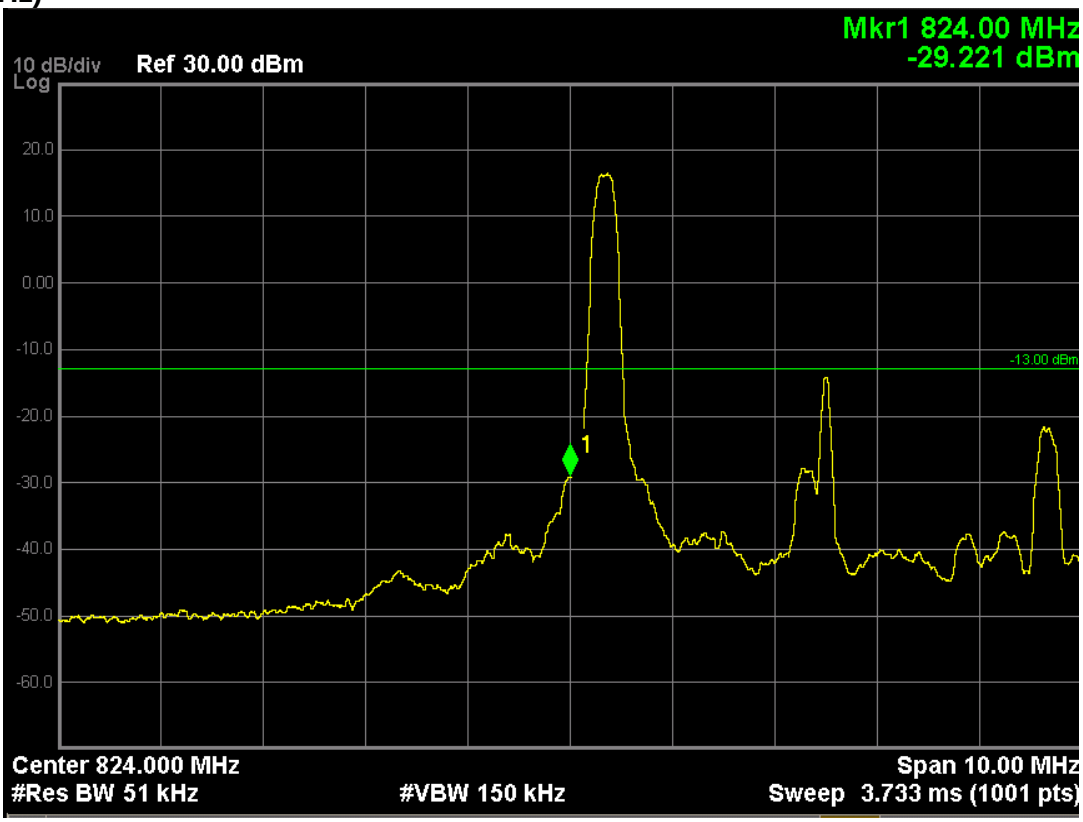
LTE Band 5 (16-QAM, Band Width 3MHz,RB Size 1,RB Offset 14,Channel 20635,Frequeny 847.5MHz)



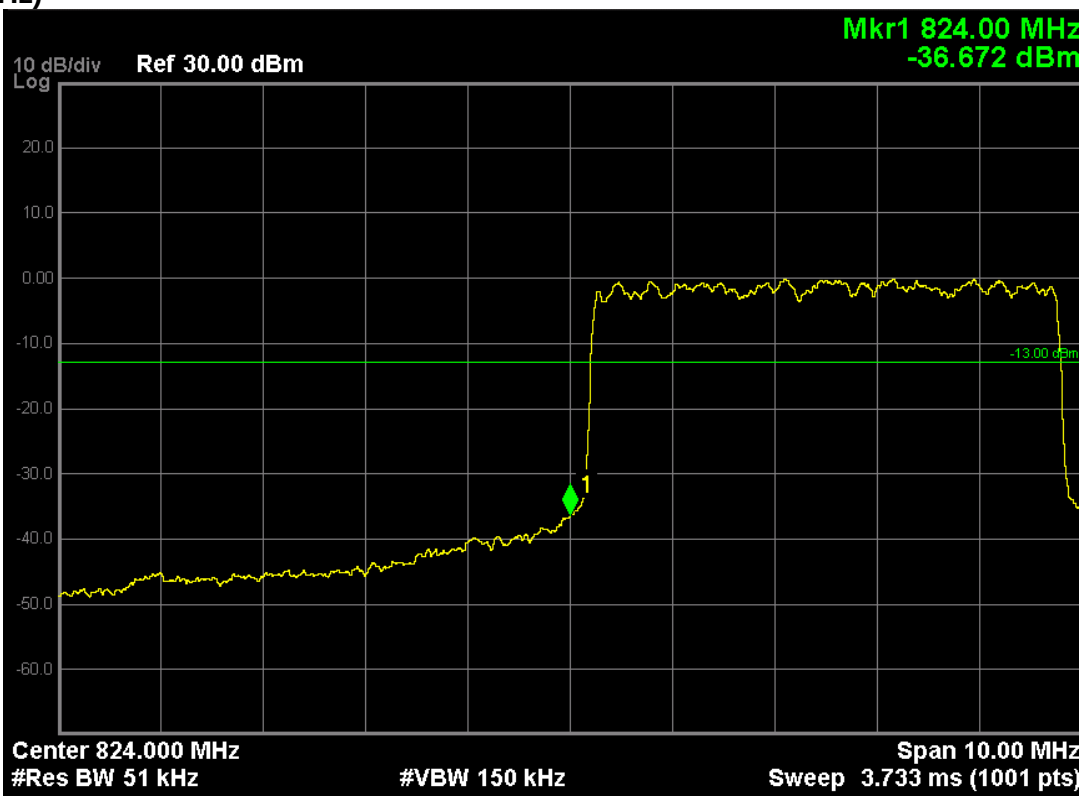
LTE Band 5 (16-QAM, Band Width 3MHz,RB Size 15,RB Offset 0,Channel 20635,Frequeny 847.5MHz)



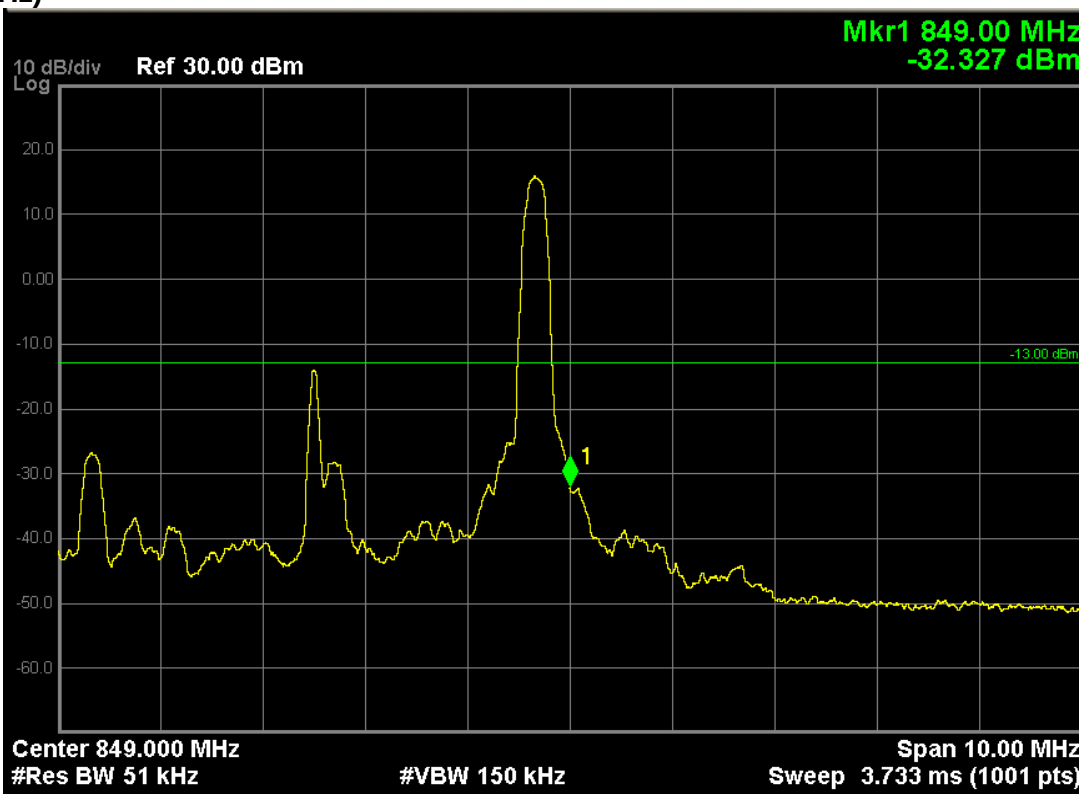
LTE Band 5 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 0,Channel 20425,Frequeny 826.5MHz)



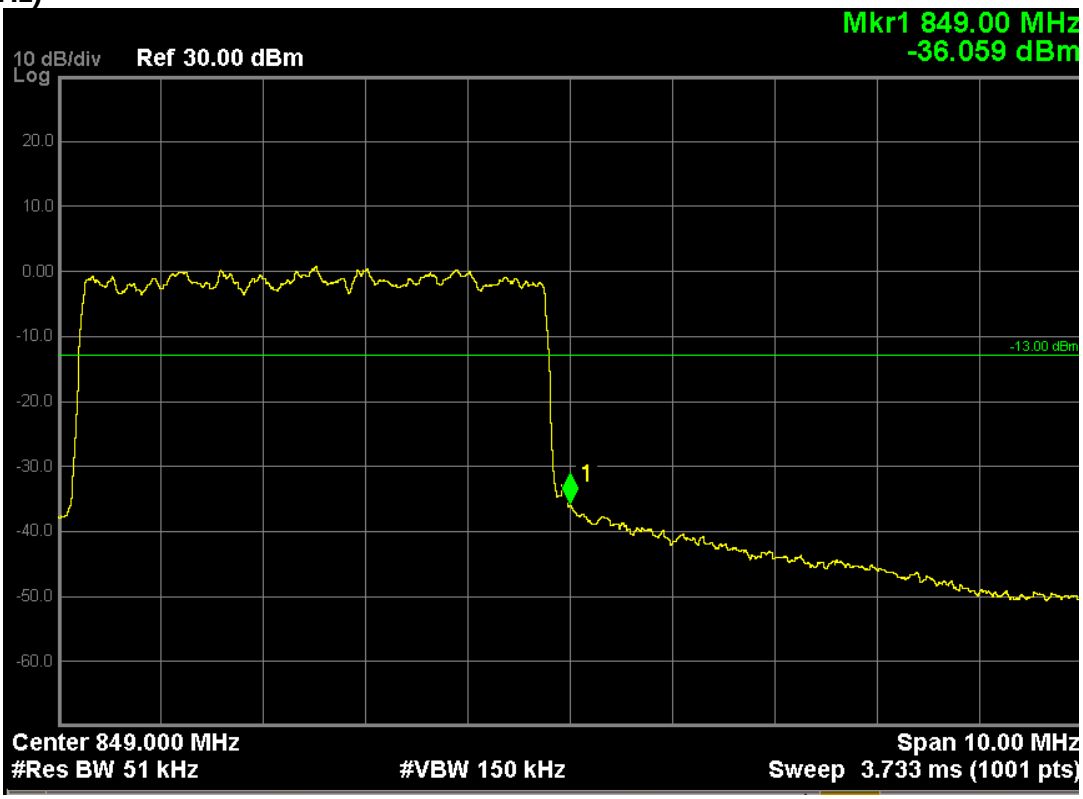
LTE Band 5 (QPSK, Band Width 5MHz,RB Size 25,RB Offset 0,Channel 20425,Frequeny 826.5MHz)



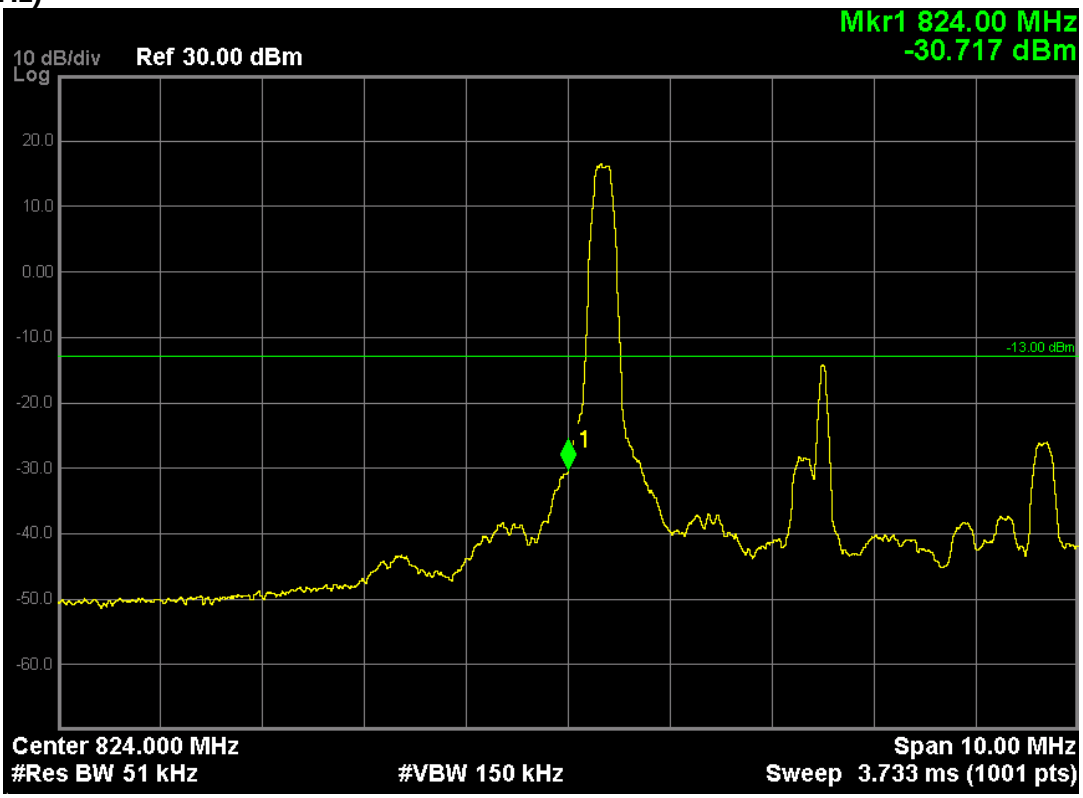
LTE Band 5 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 24,Channel 20625,Frequeny 846.5MHz)



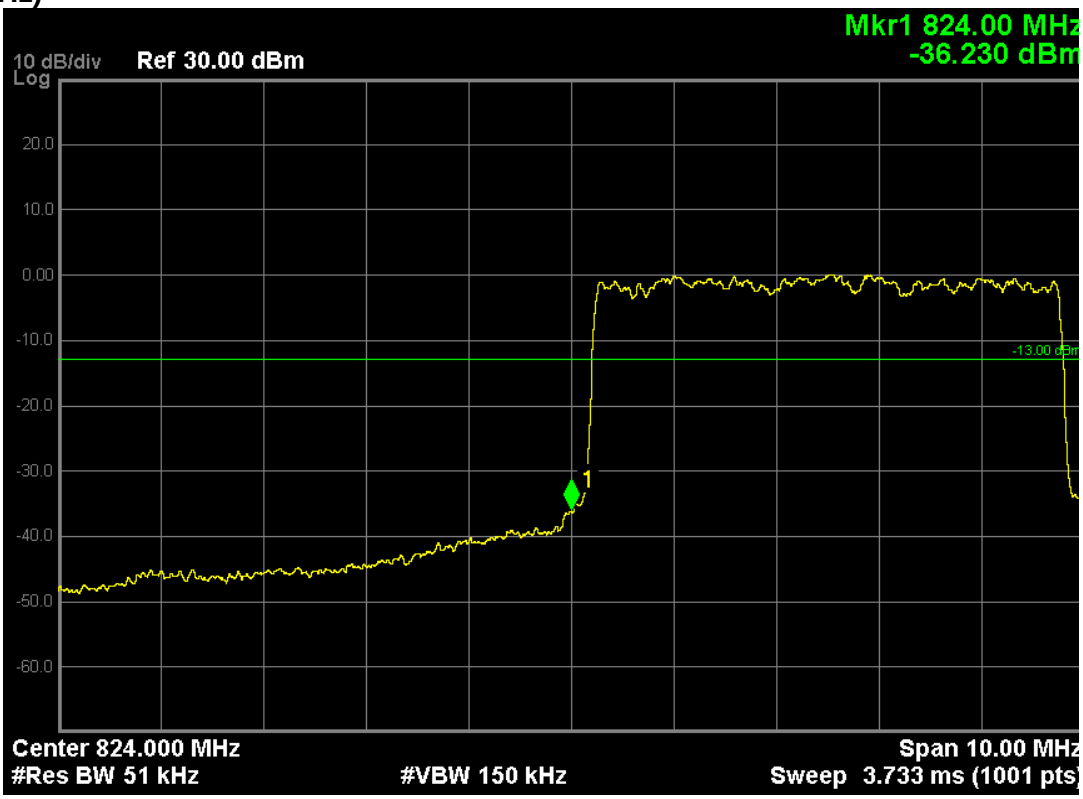
LTE Band 5 (QPSK, Band Width 5MHz,RB Size 25,RB Offset 0,Channel 20625,Frequeny 846.5MHz)



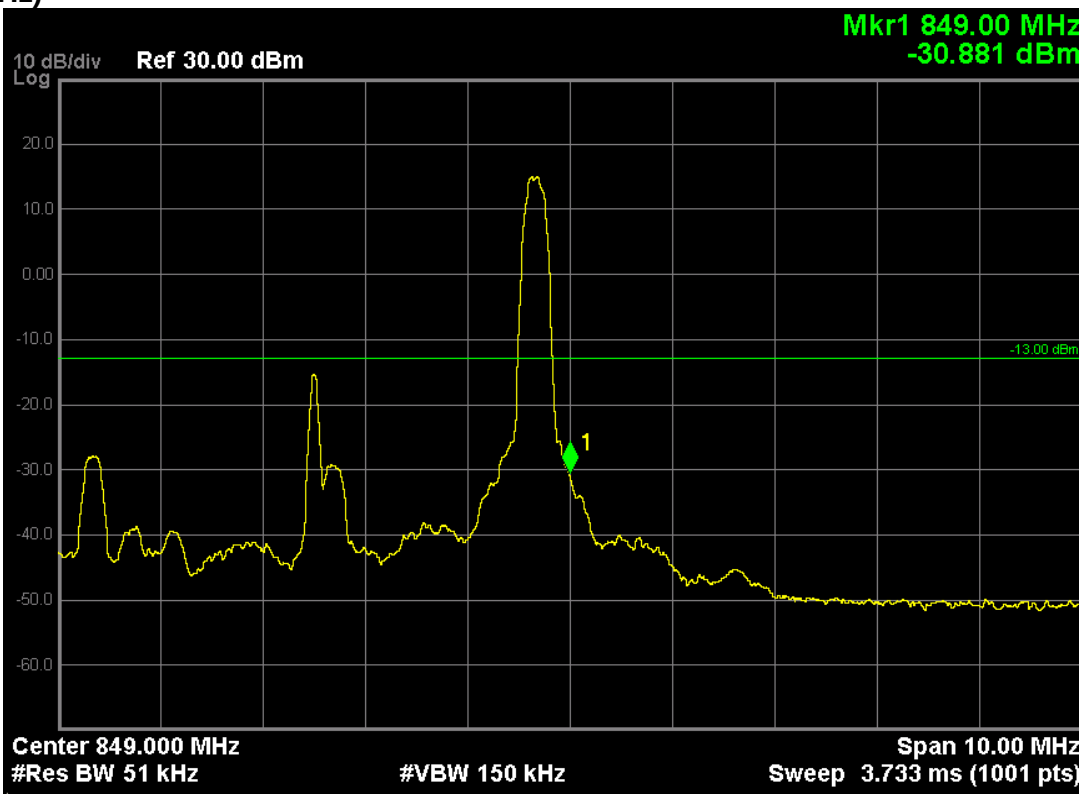
LTE Band 5 (16-QAM, Band Width 5MHz,RB Size 1,RB Offset 0,Channel 20425,Frequeny 826.5MHz)



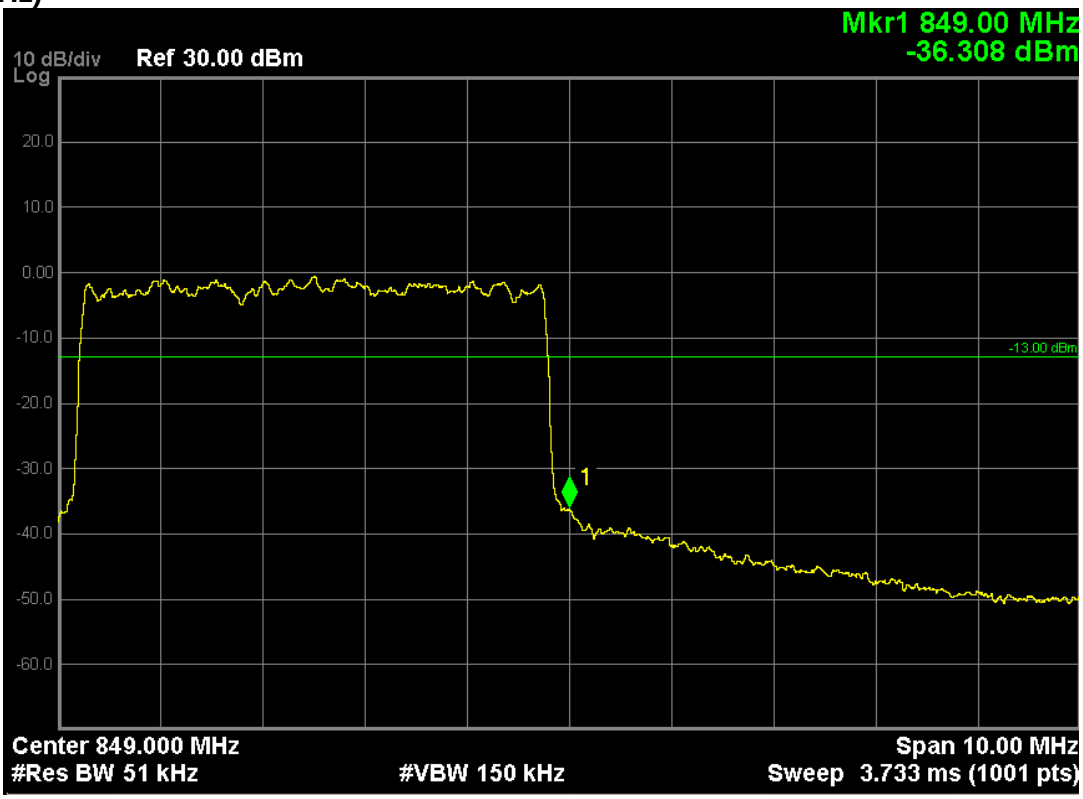
LTE Band 5 (16-QAM, Band Width 5MHz,RB Size 25,RB Offset 0,Channel 20425,Frequeny 826.5MHz)



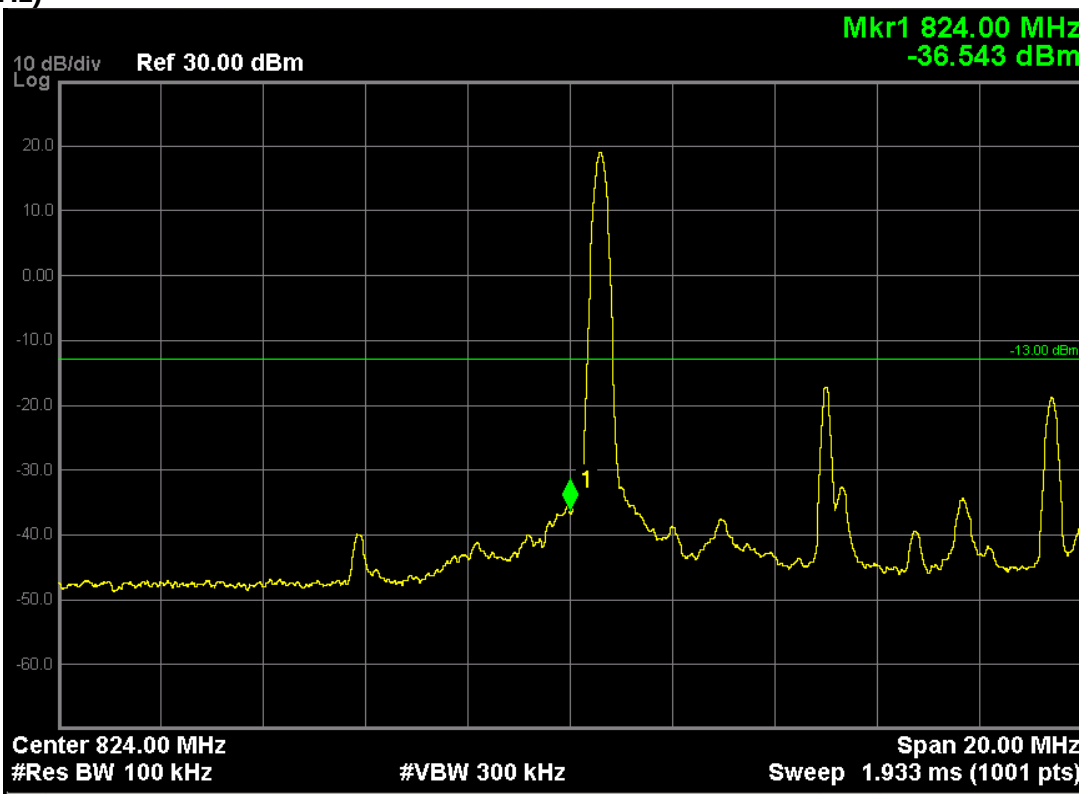
LTE Band 5 (16-QAM, Band Width 5MHz,RB Size 1,RB Offset 24,Channel 20625,Frequeny 846.5MHz)



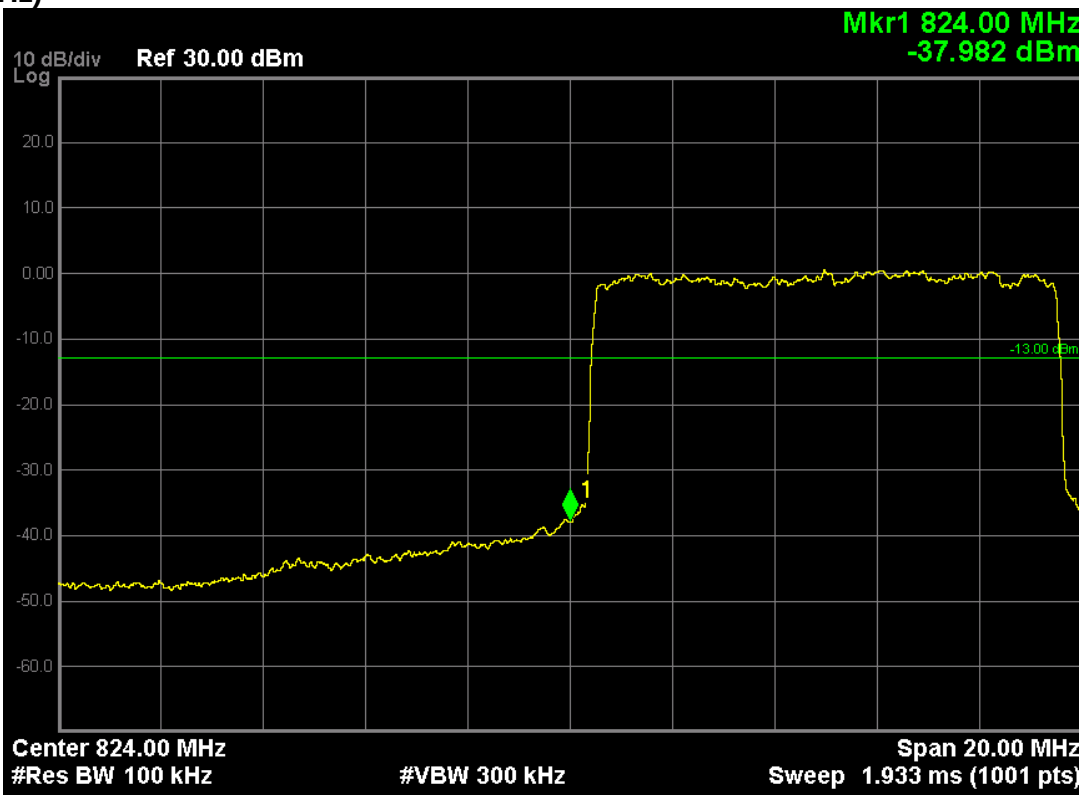
LTE Band 5 (16-QAM, Band Width 5MHz,RB Size 25,RB Offset 0,Channel 20625,Frequeny 846.5MHz)



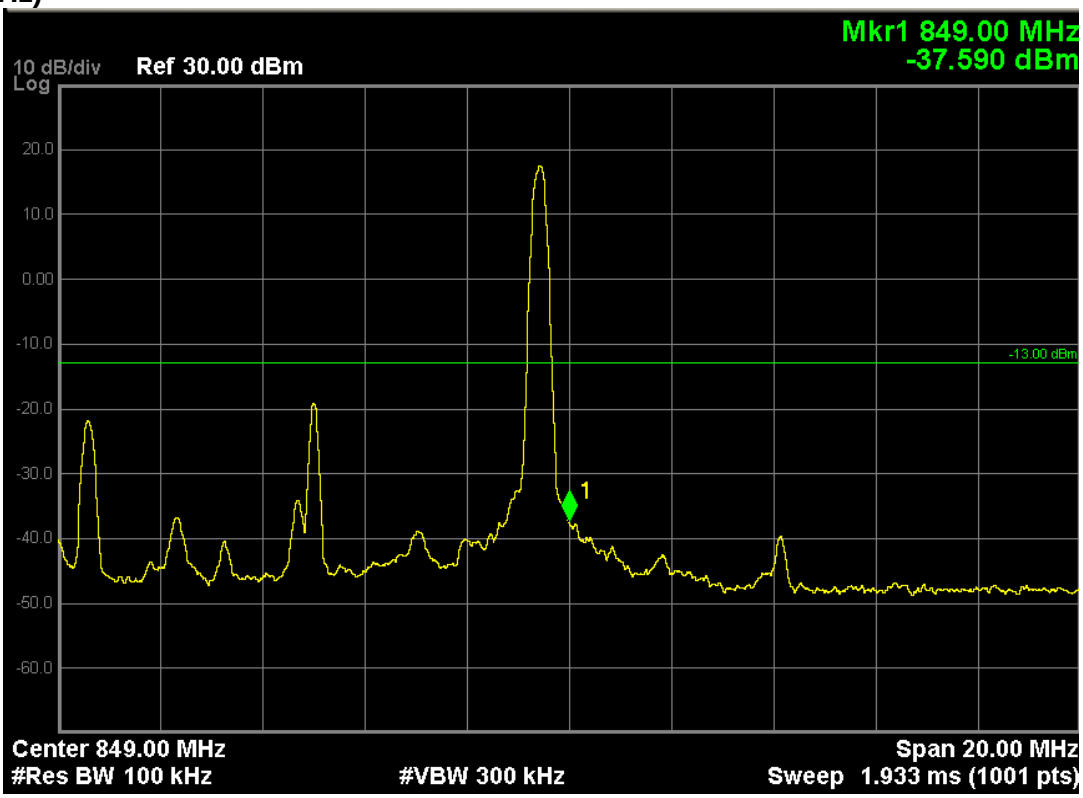
LTE Band 5 (QPSK, Band Width 10MHz,RB Size 1,RB Offset 0,Channel 20450,Frequeny 829.0MHz)



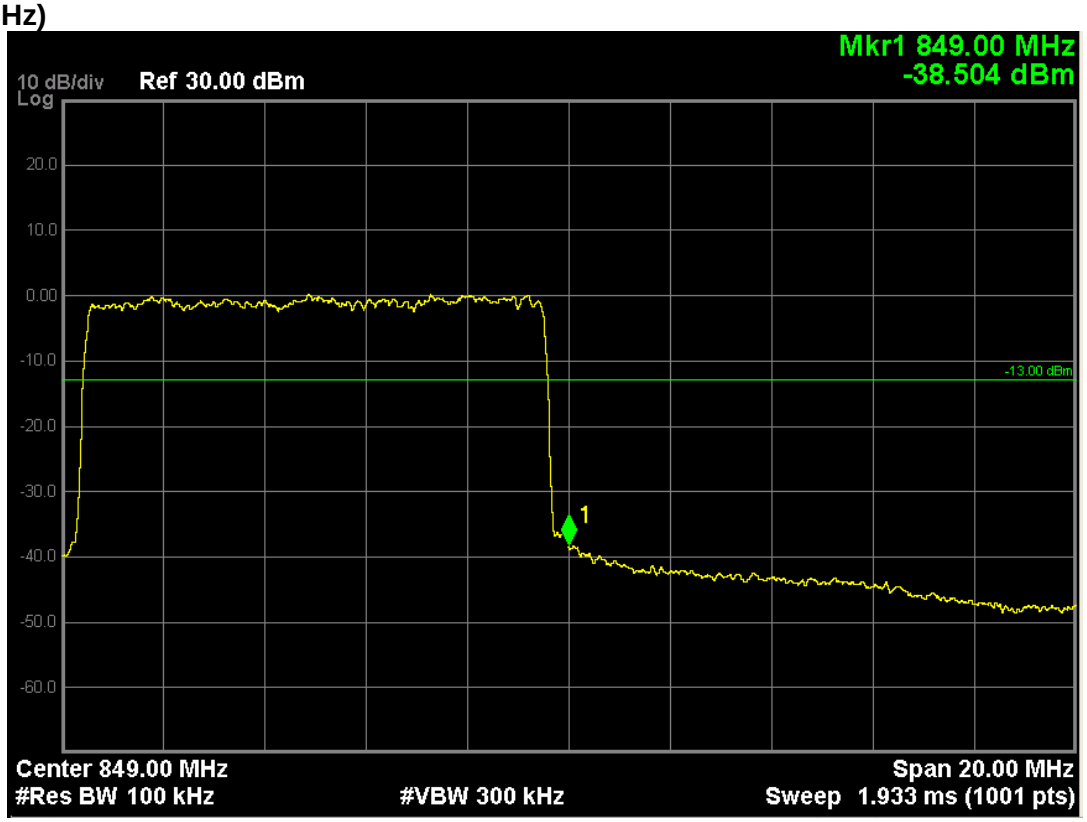
LTE Band 5 (QPSK, Band Width 10MHz,RB Size 50,RB Offset 0,Channel 20450,Frequeny 829.0MHz)



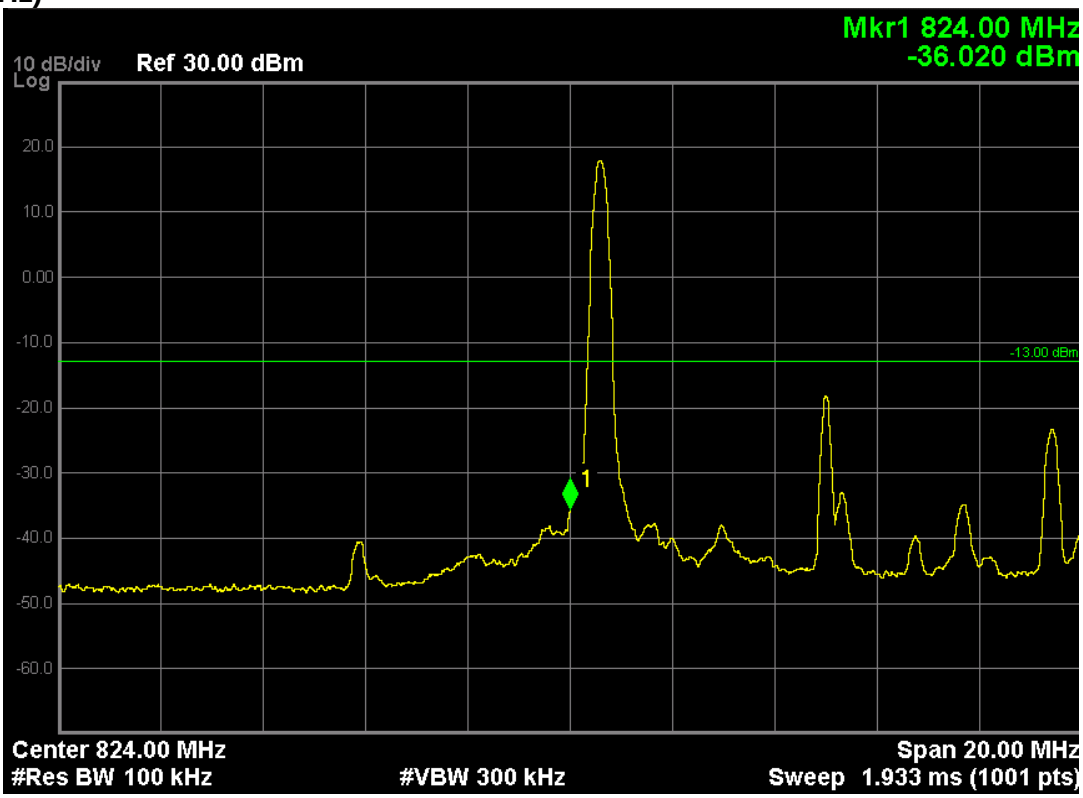
LTE Band 5 (QPSK, Band Width 10MHz,RB Size 1,RB Offset 49,Channel 20600,Frequeny 844.0MHz)



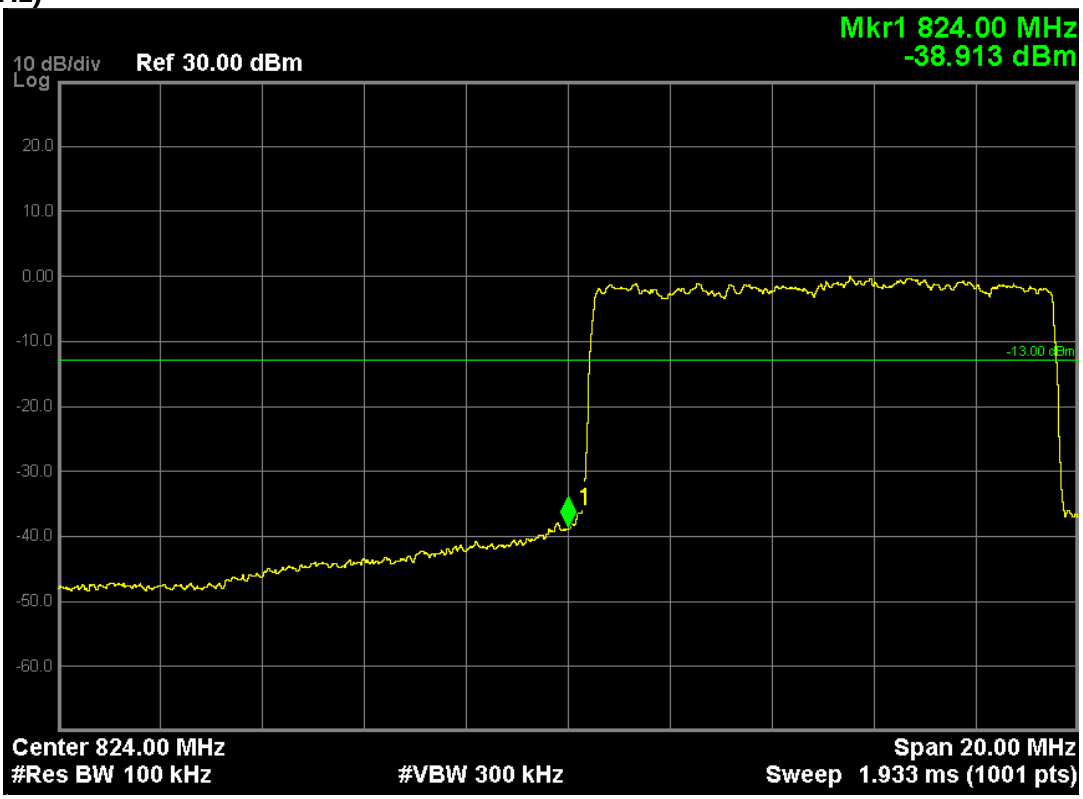
LTE Band 5 (QPSK, Band Width 10MHz,RB Size 50,RB Offset 0,Channel 20600,Frequeny 844.0MHz)



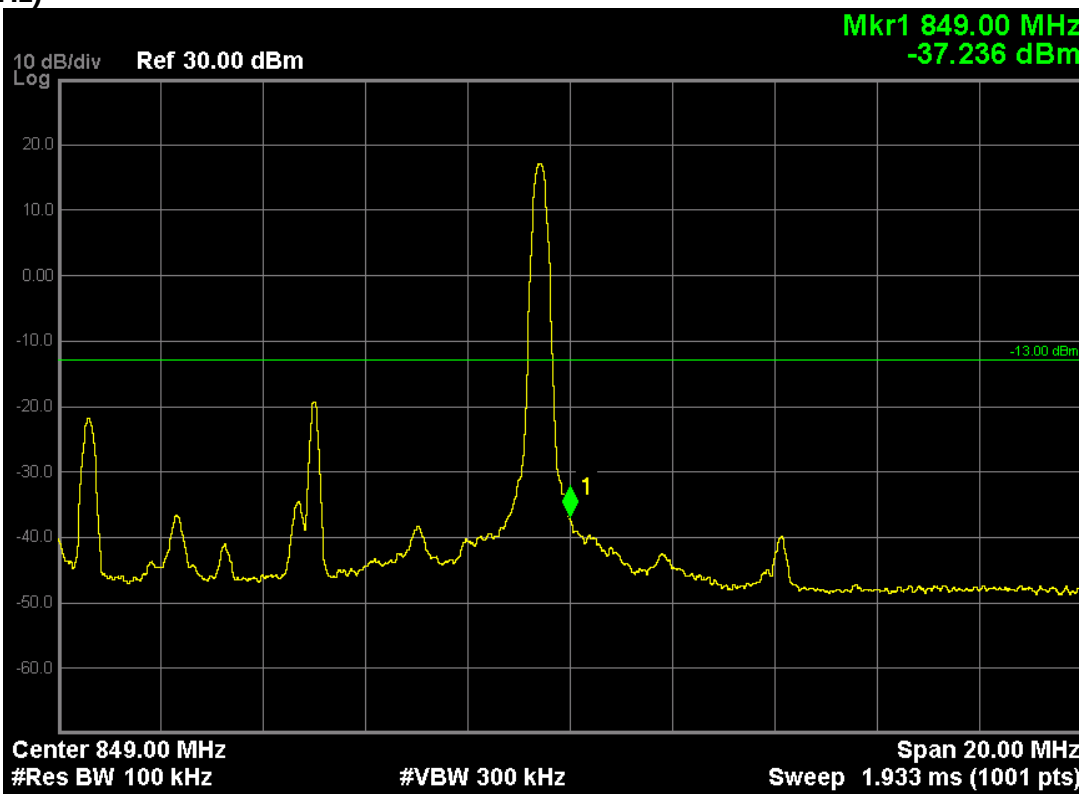
LTE Band 5 (16-QAM, Band Width 10MHz,RB Size 1,RB Offset 0,Channel 20450,Frequeny 829.0MHz)



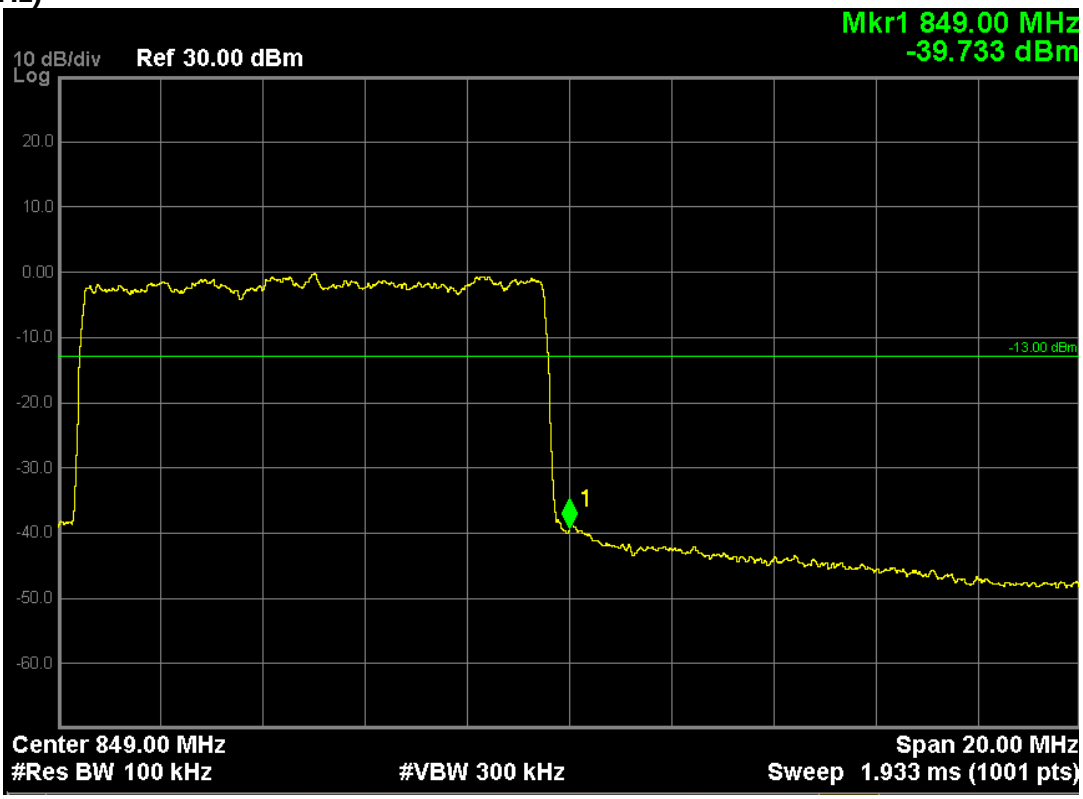
LTE Band 5 (16-QAM, Band Width 10MHz,RB Size 50,RB Offset 0,Channel 20450,Frequeny 829.0MHz)



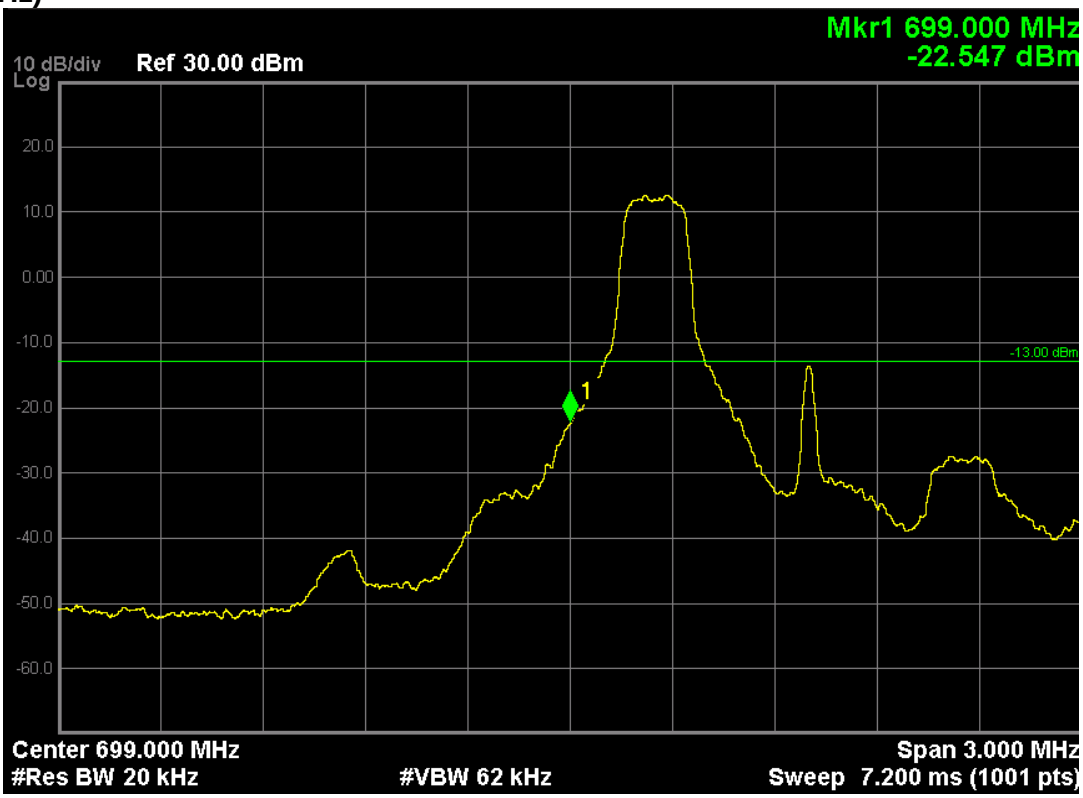
LTE Band 5 (16-QAM, Band Width 10MHz,RB Size 1,RB Offset 49,Channel 20600,Frequeny 844.0MHz)



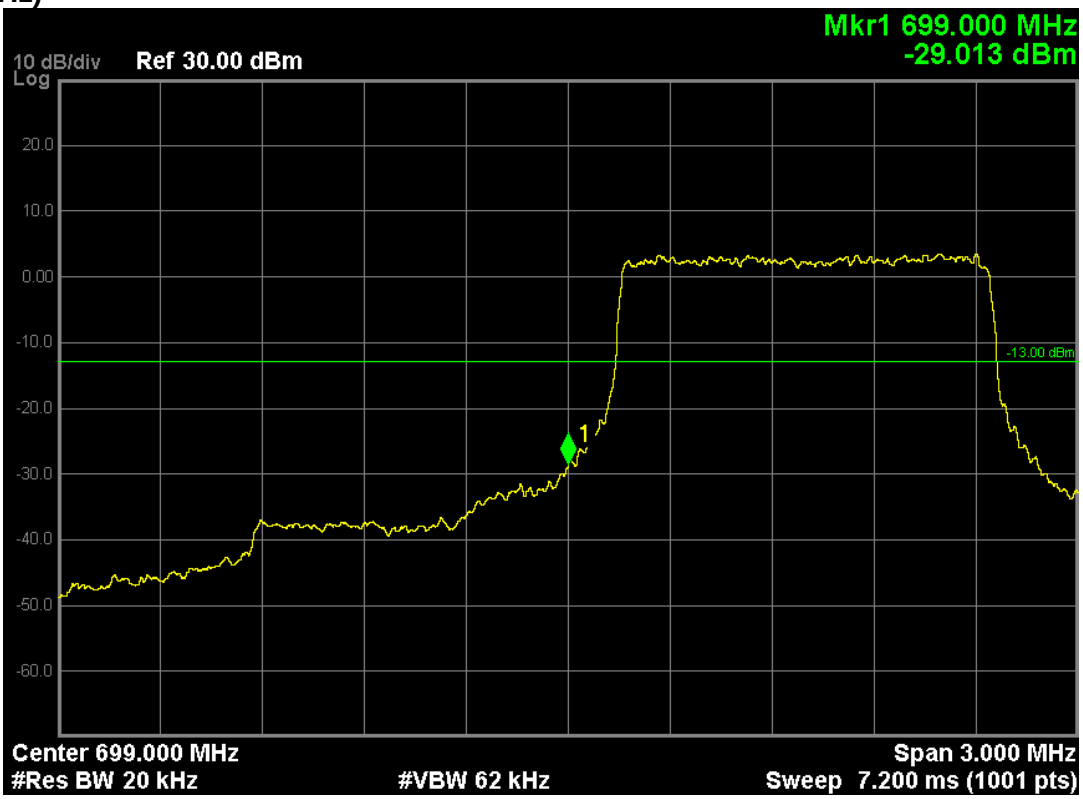
LTE Band 5 (16-QAM, Band Width 10MHz,RB Size 50,RB Offset 0,Channel 20600,Frequeny 844.0MHz)



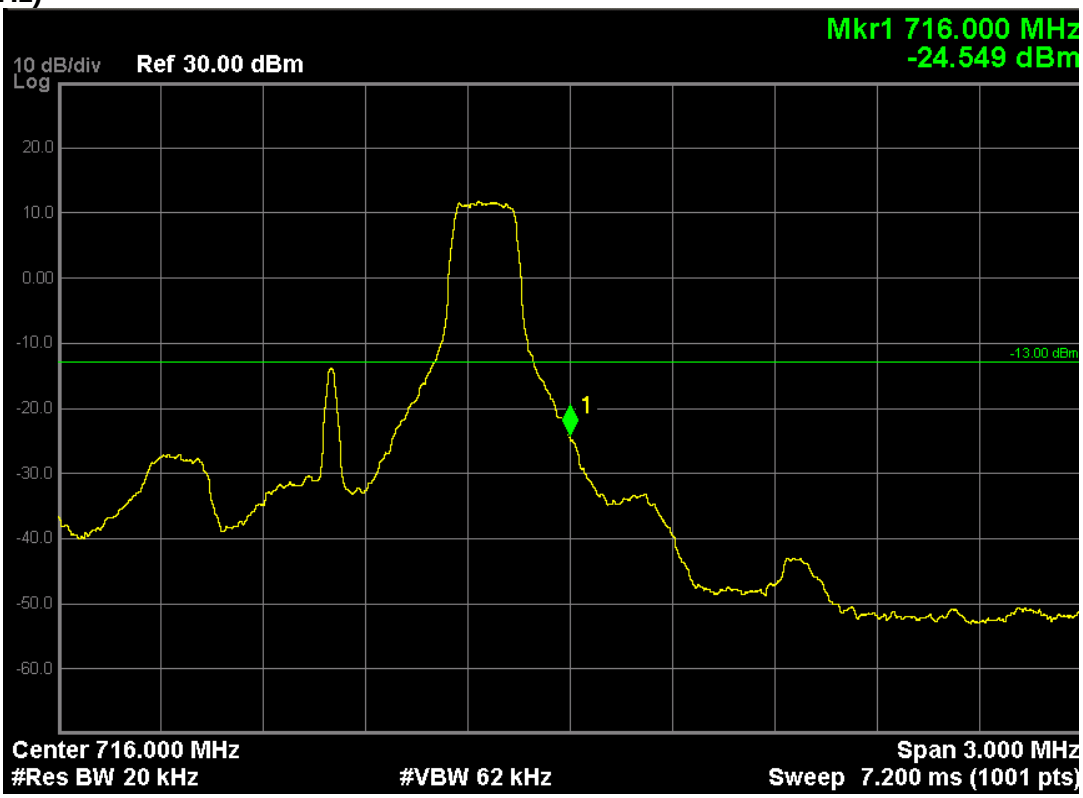
LTE Band 12 (QPSK, Band Width 1.4MHz,RB Size 1,RB Offset 0,Channel 23017,Frequeny 699.7MHz)



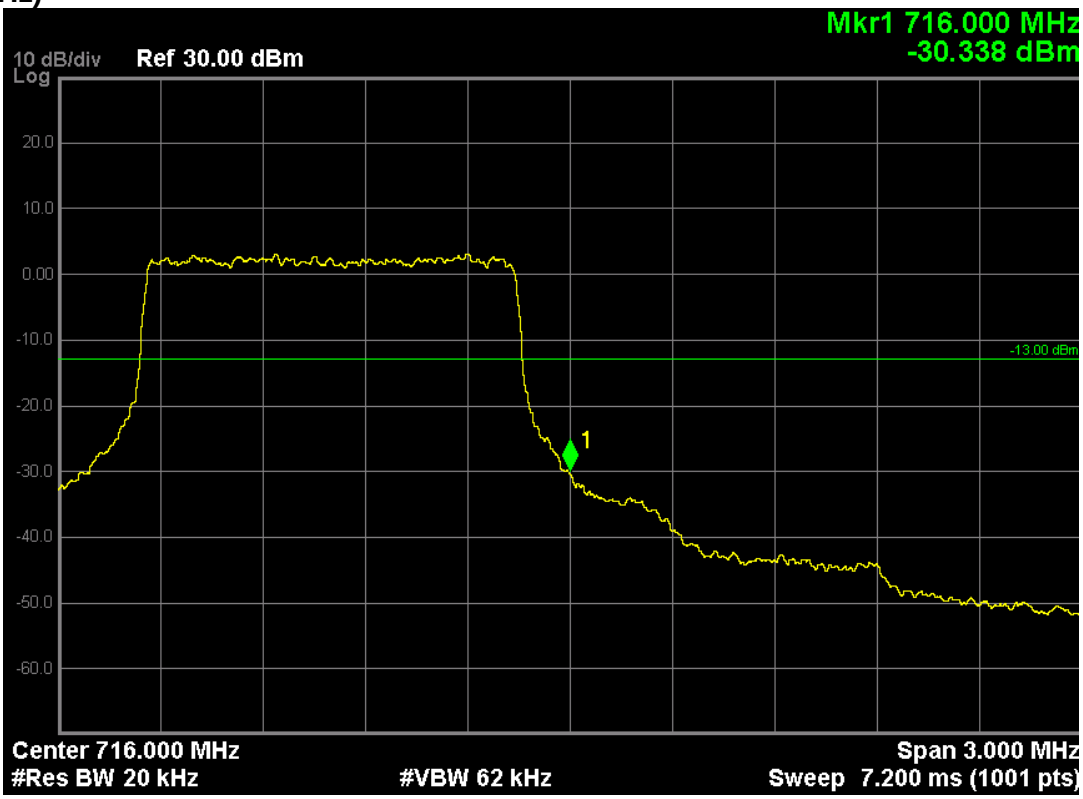
LTE Band 12 (QPSK, Band Width 1.4MHz,RB Size 6,RB Offset 0,Channel 23017,Frequeny 699.7MHz)



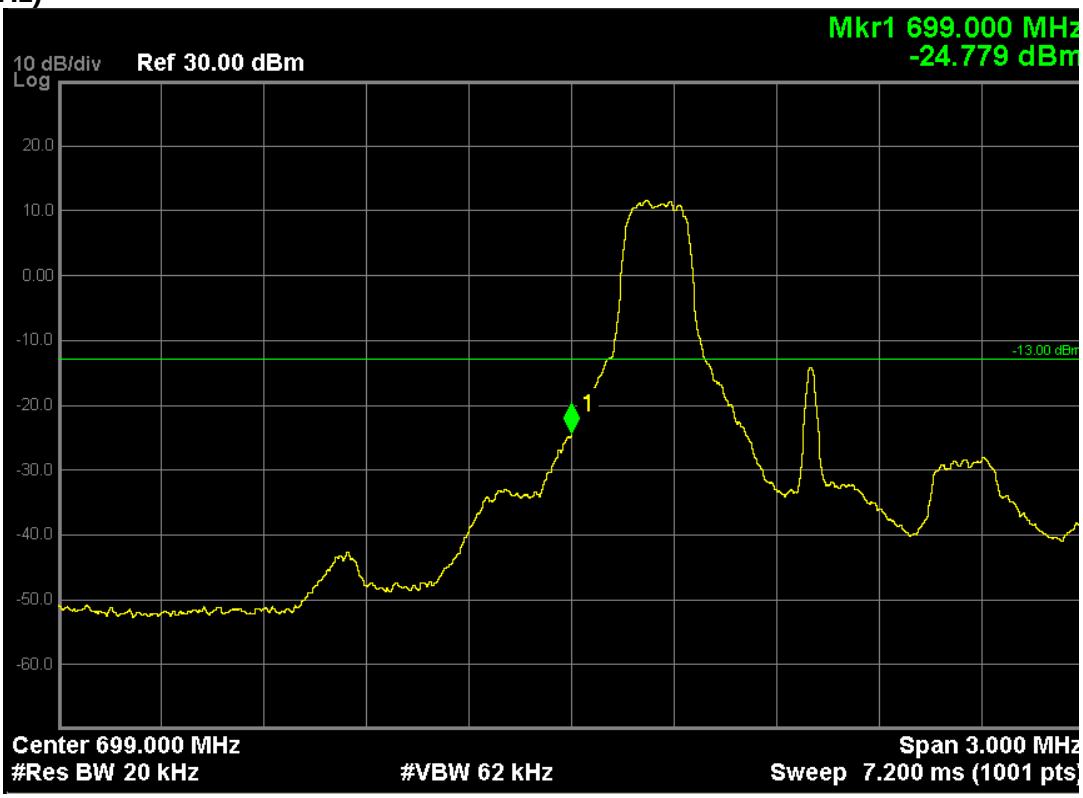
LTE Band 12 (QPSK, Band Width 1.4MHz,RB Size 1,RB Offset 5,Channel 23173,Frequeny 715.3MHz)



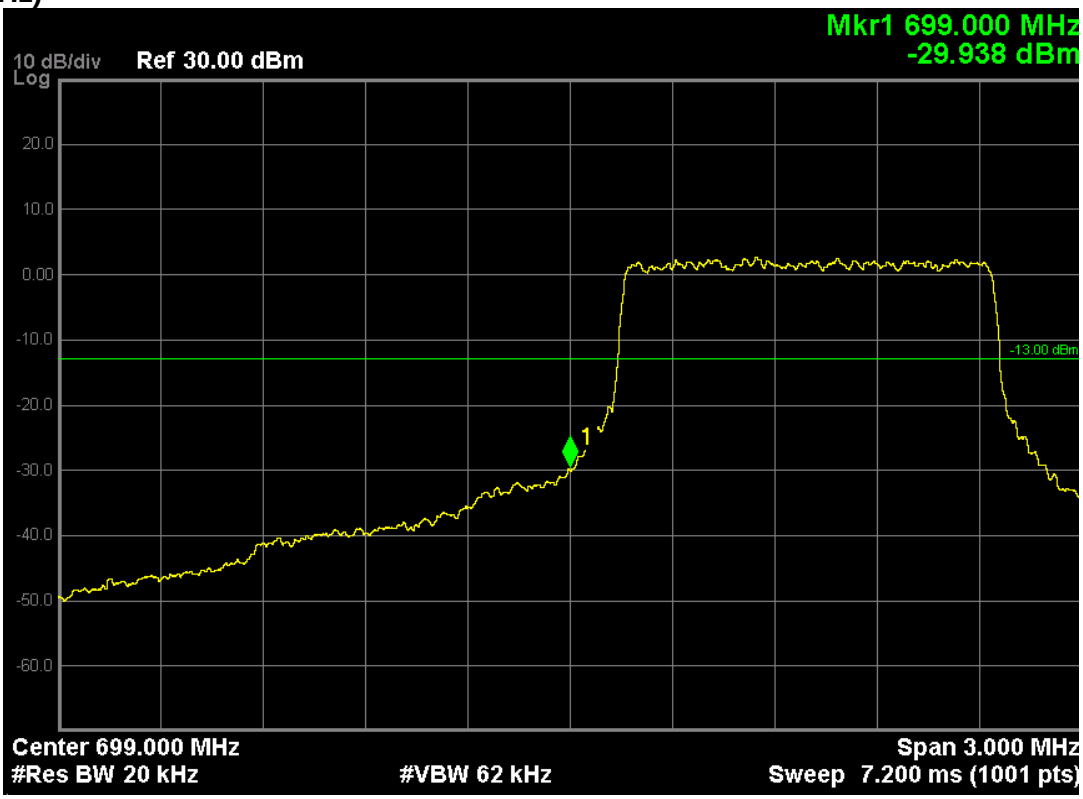
LTE Band 12 (QPSK, Band Width 1.4MHz,RB Size 6,RB Offset 0,Channel 23173,Frequeny 715.3MHz)



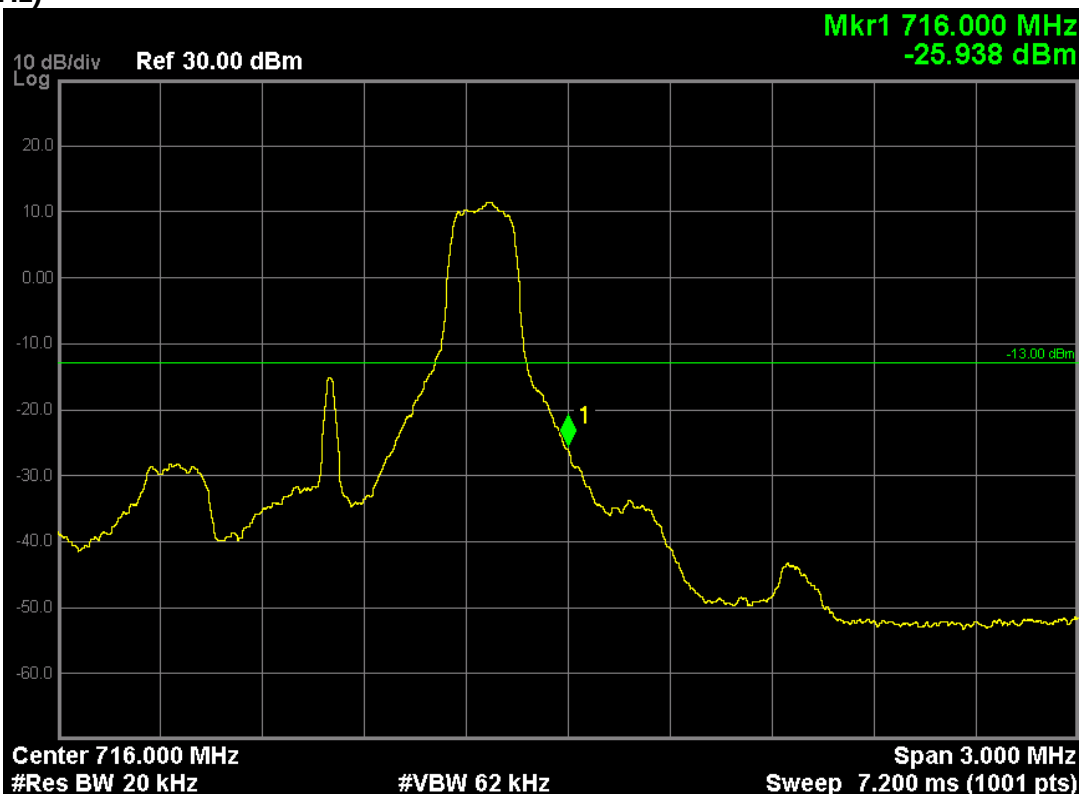
LTE Band 12 (16-QAM, Band Width 1.4MHz,RB Size 1,RB Offset 0,Channel 23017,Frequeny 699.7MHz)



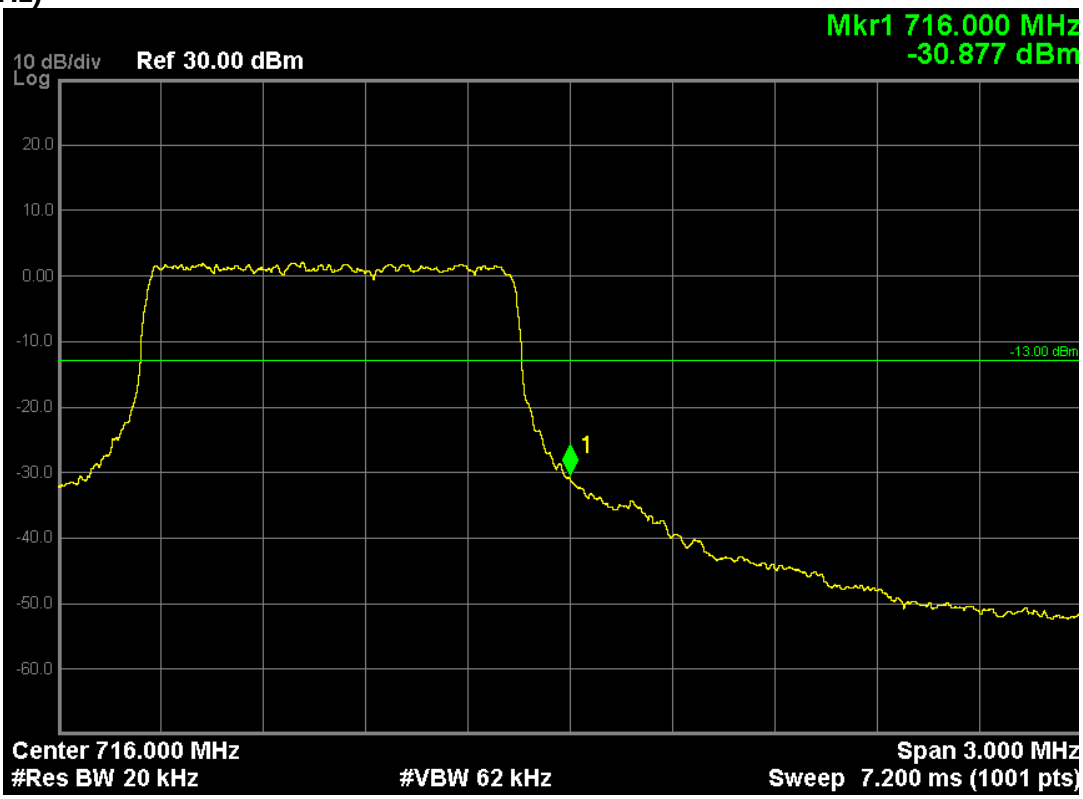
LTE Band 12 (16-QAM, Band Width 1.4MHz,RB Size 6,RB Offset 0,Channel 23017,Frequeny 699.7MHz)



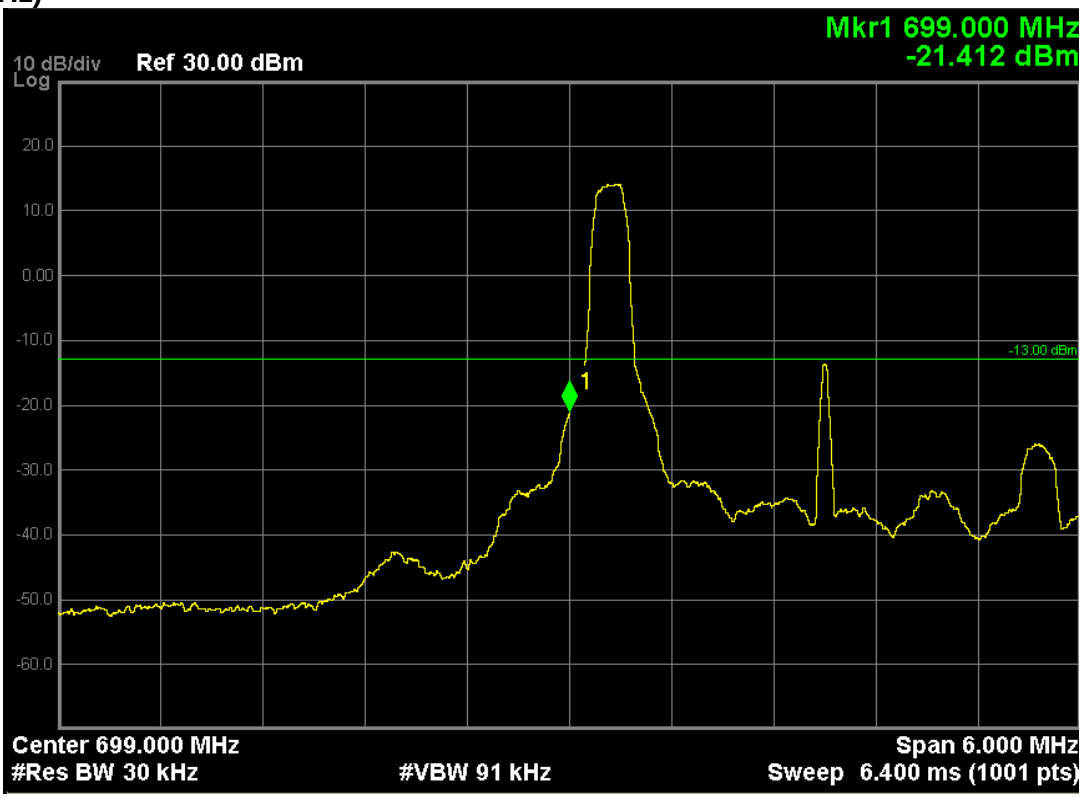
LTE Band 12 (16-QAM, Band Width 1.4MHz,RB Size 1,RB Offset 5,Channel 23173,Frequeny 715.3MHz)



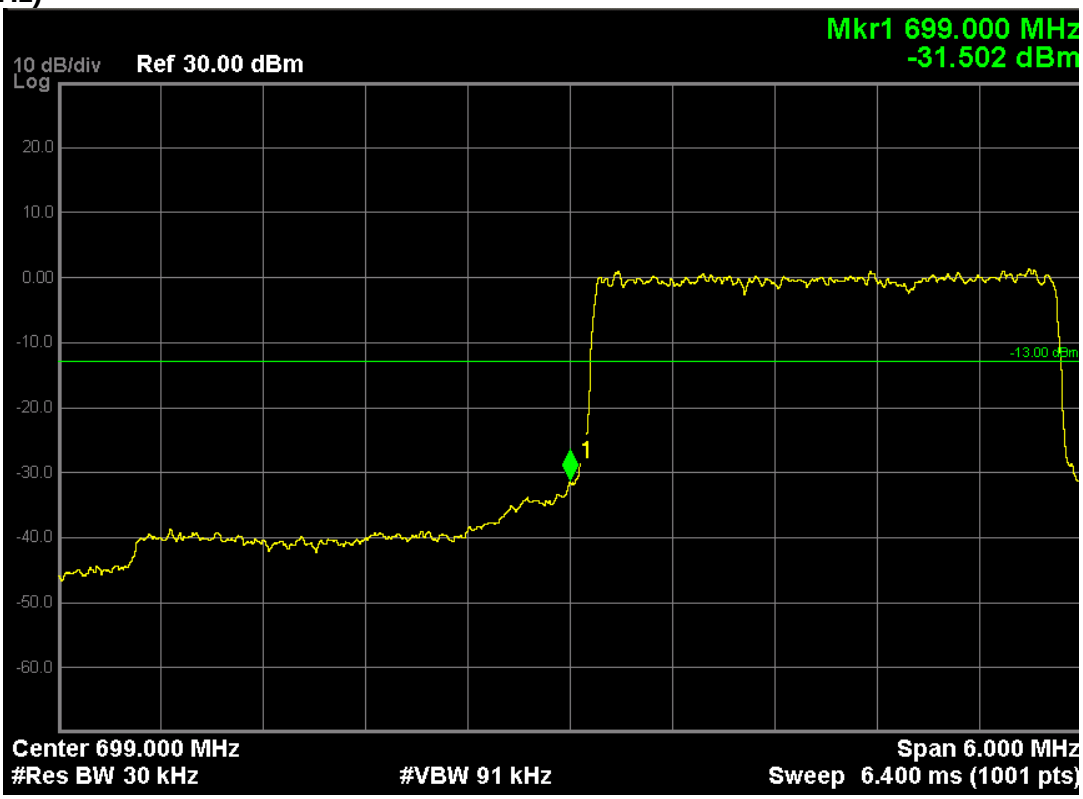
LTE Band 12 (16-QAM, Band Width 1.4MHz,RB Size 6,RB Offset 0,Channel 23173,Frequeny 715.3MHz)



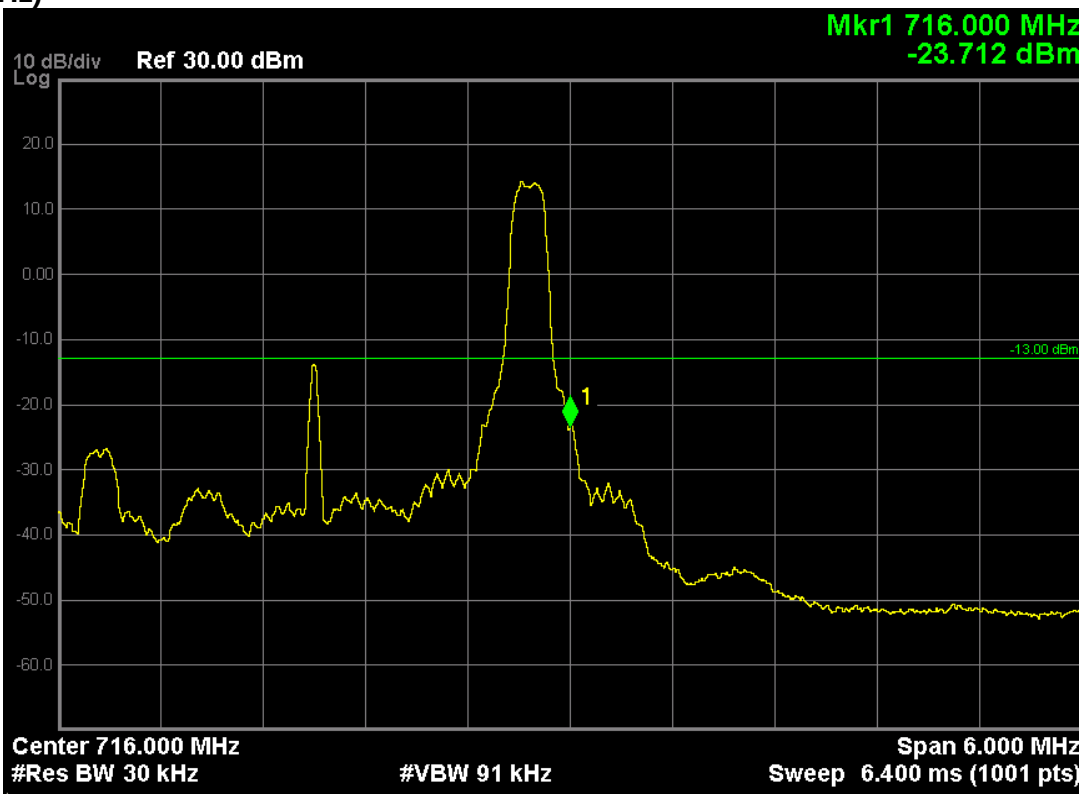
LTE Band 12 (QPSK, Band Width 3MHz,RB Size 1,RB Offset 0,Channel 23025,Frequeny 700.5MHz)



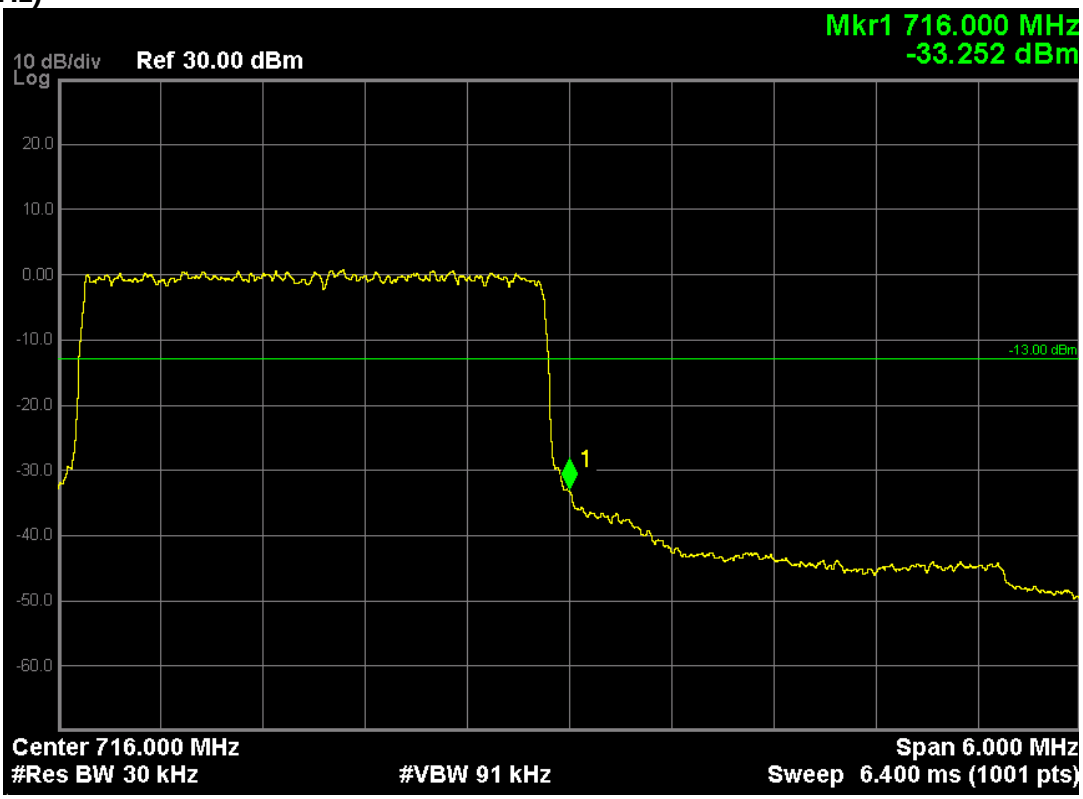
LTE Band 12 (QPSK, Band Width 3MHz,RB Size 15,RB Offset 0,Channel 23025,Frequeny 700.5MHz)



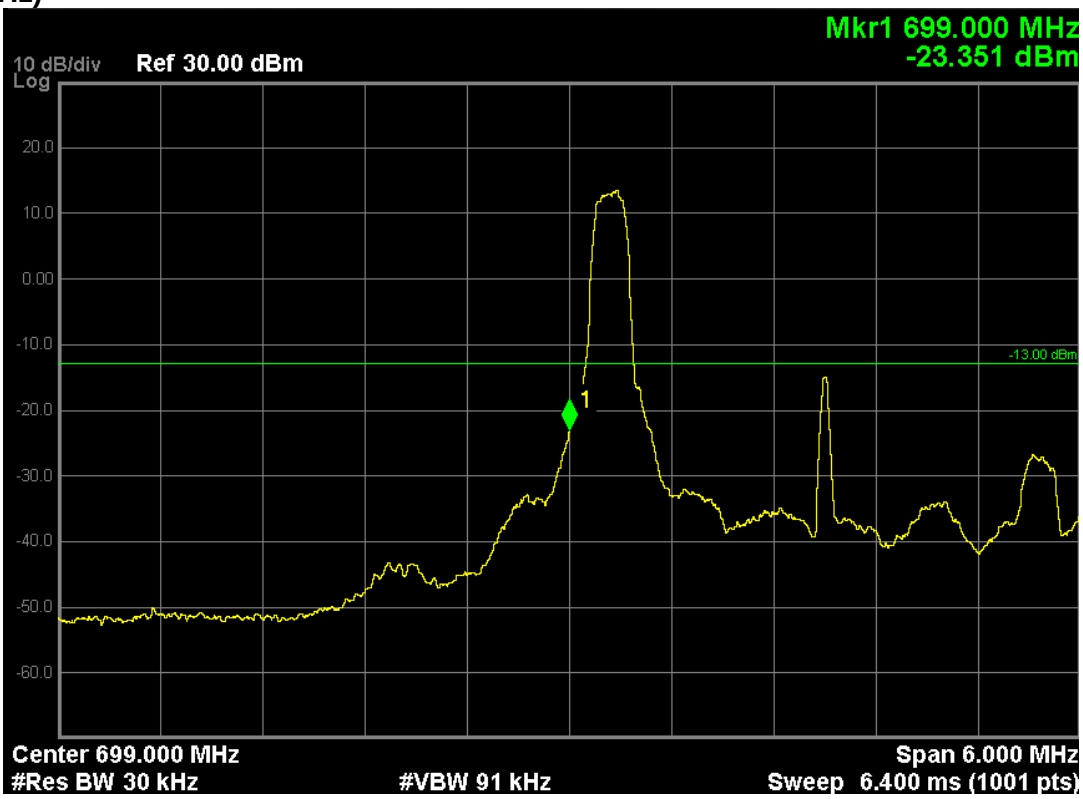
LTE Band 12 (QPSK, Band Width 3MHz,RB Size 1,RB Offset 14,Channel 23165,Frequeny 714.5MHz)



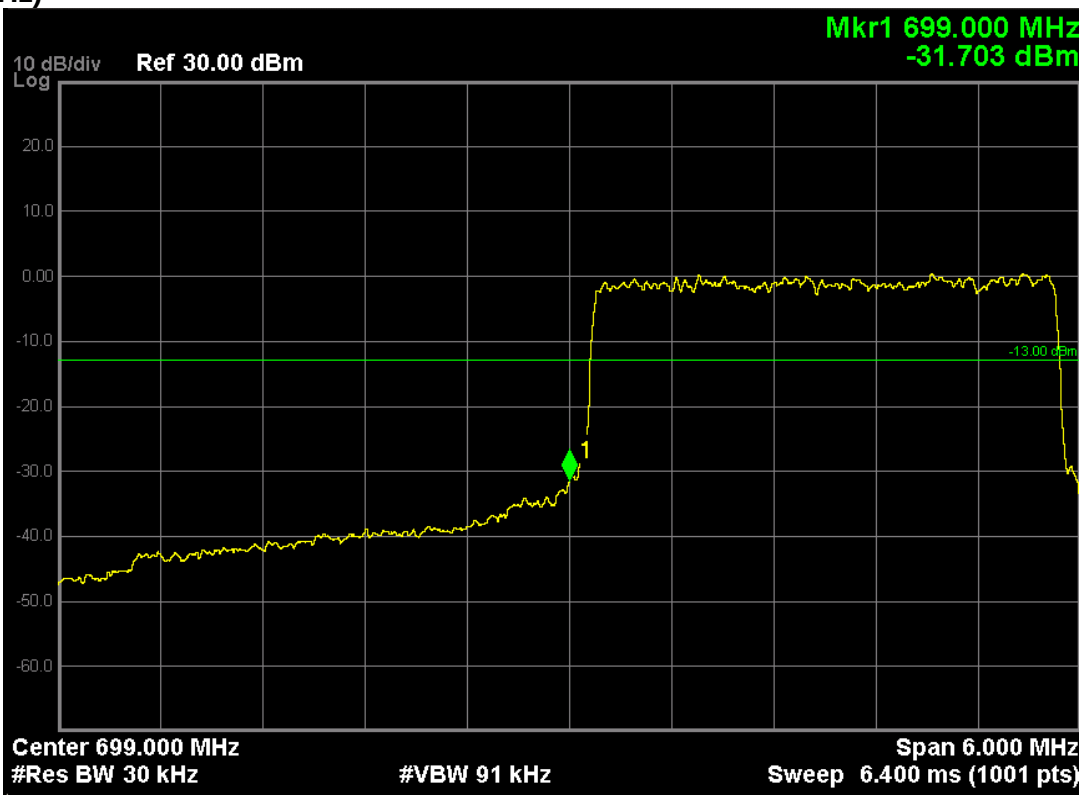
LTE Band 12 (QPSK, Band Width 3MHz,RB Size 15,RB Offset 0,Channel 23165,Frequeny 714.5MHz)



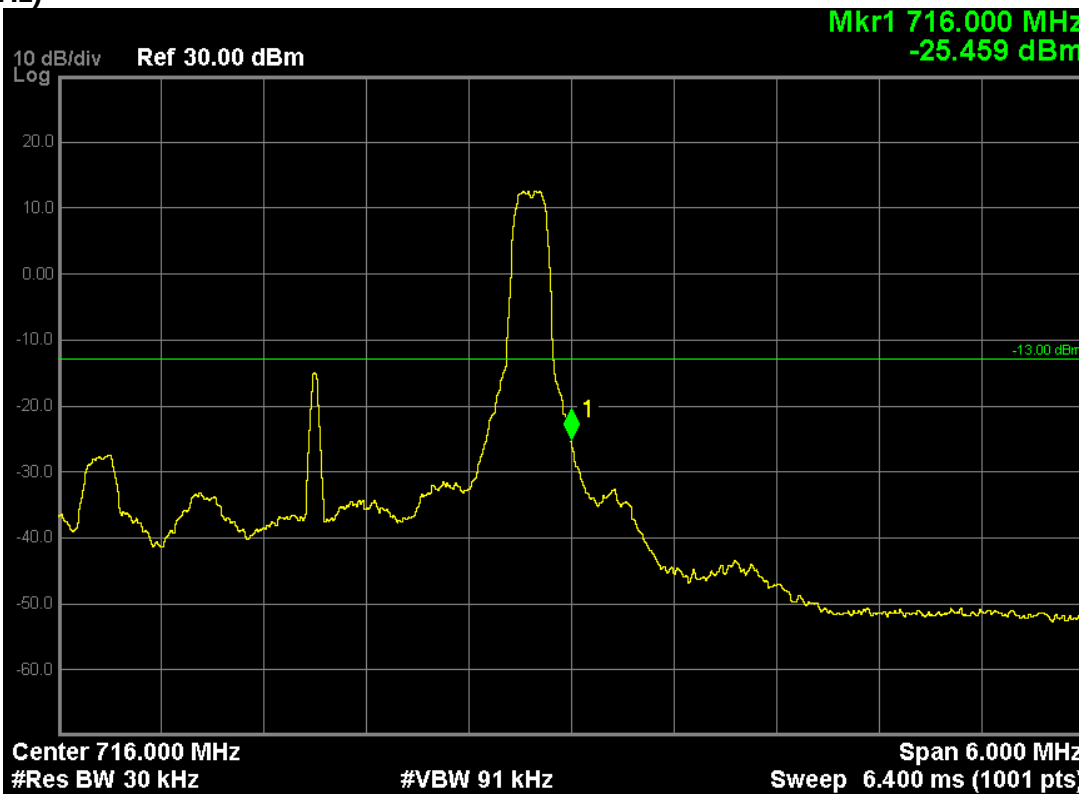
LTE Band 12 (16-QAM, Band Width 3MHz,RB Size 1,RB Offset 0,Channel 23025,Frequeny 700.5MHz)



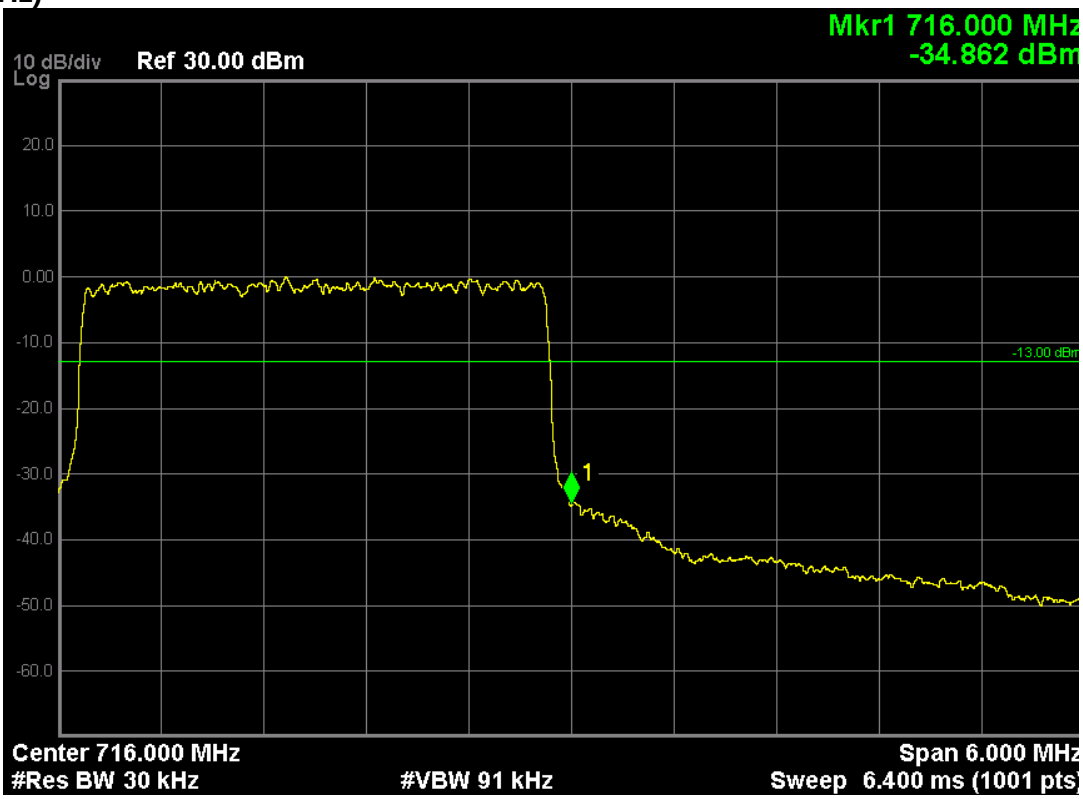
LTE Band 12 (16-QAM, Band Width 3MHz,RB Size 15,RB Offset 0,Channel 23025,Frequeny 700.5MHz)



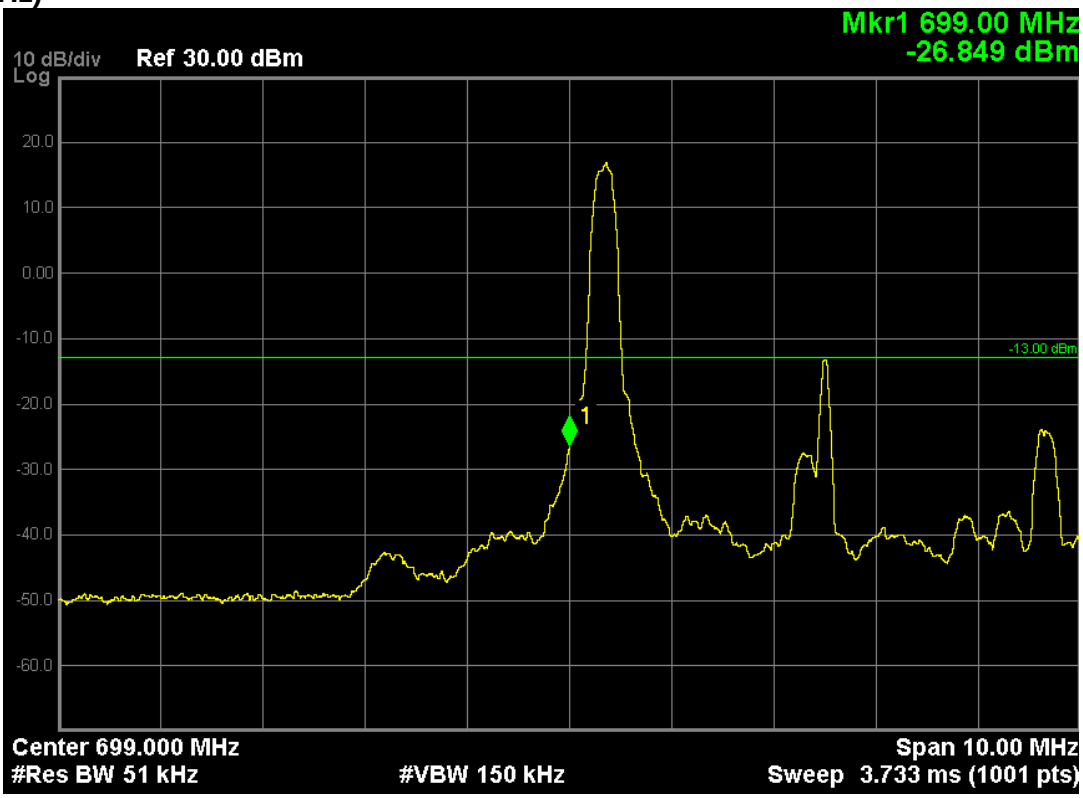
LTE Band 12 (16-QAM, Band Width 3MHz,RB Size 1,RB Offset 14,Channel 23165,Frequeny 714.5MHz)



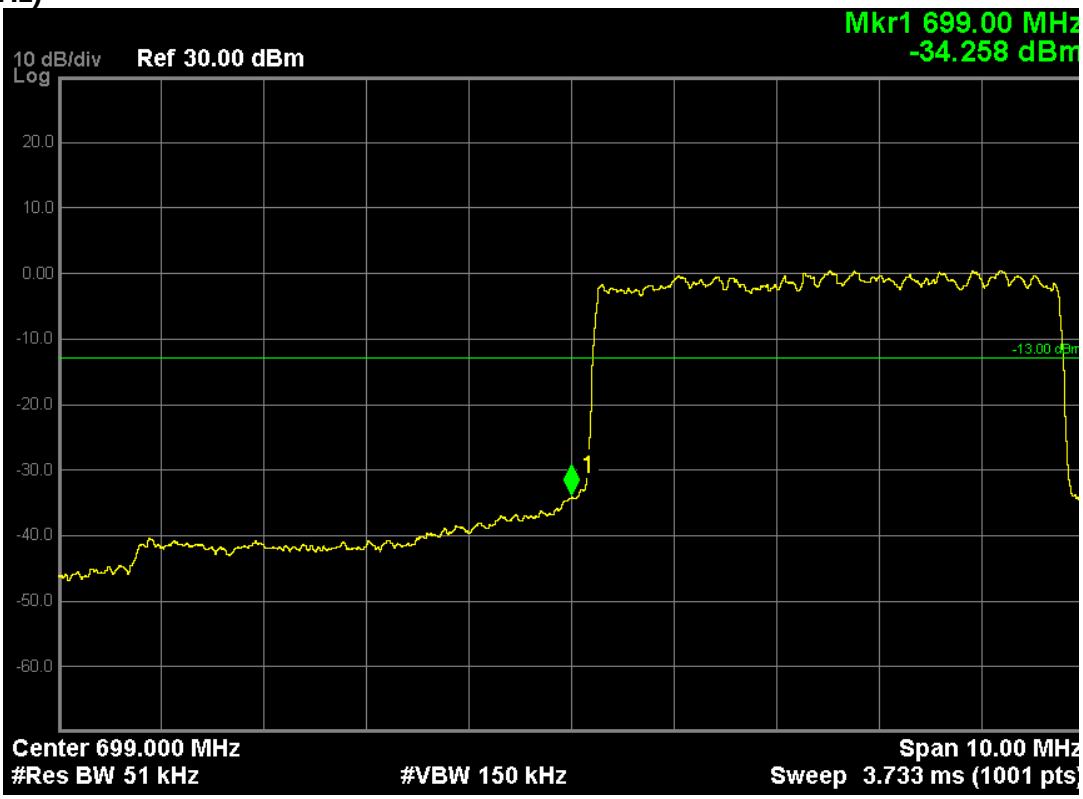
LTE Band 12 (16-QAM, Band Width 3MHz,RB Size 15,RB Offset 0,Channel 23165,Frequeny 714.5MHz)



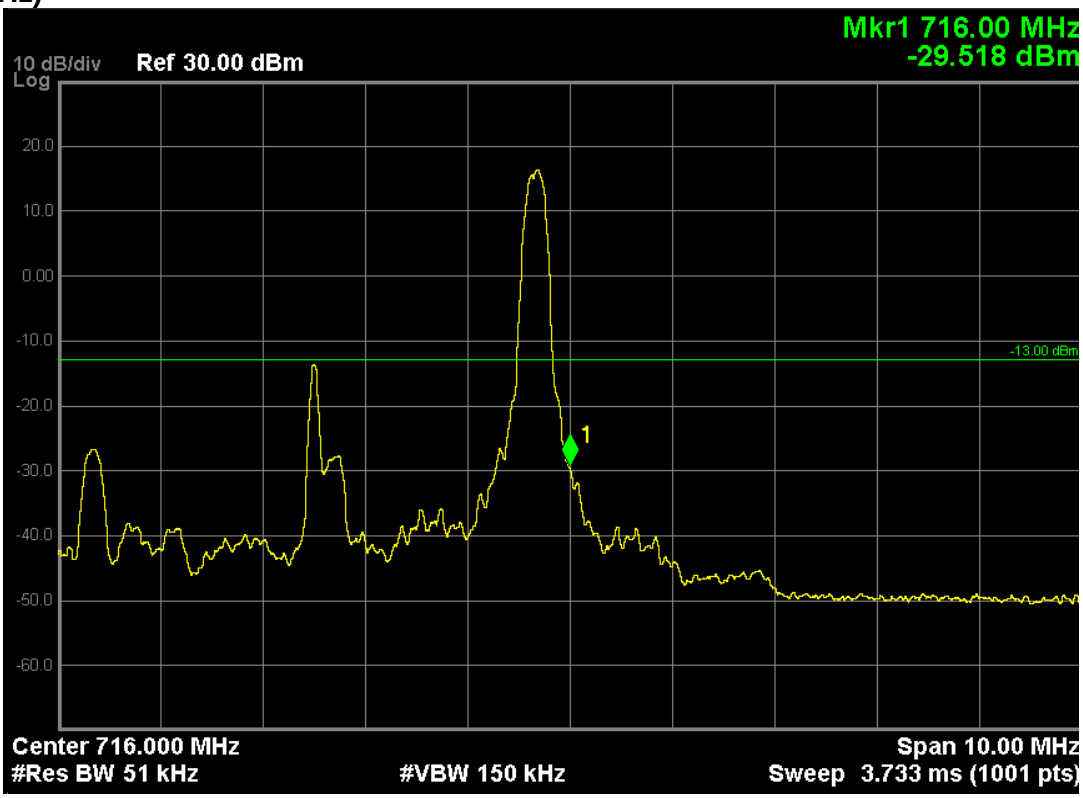
LTE Band 12 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 0,Channel 23035,Frequeny 701.5MHz)



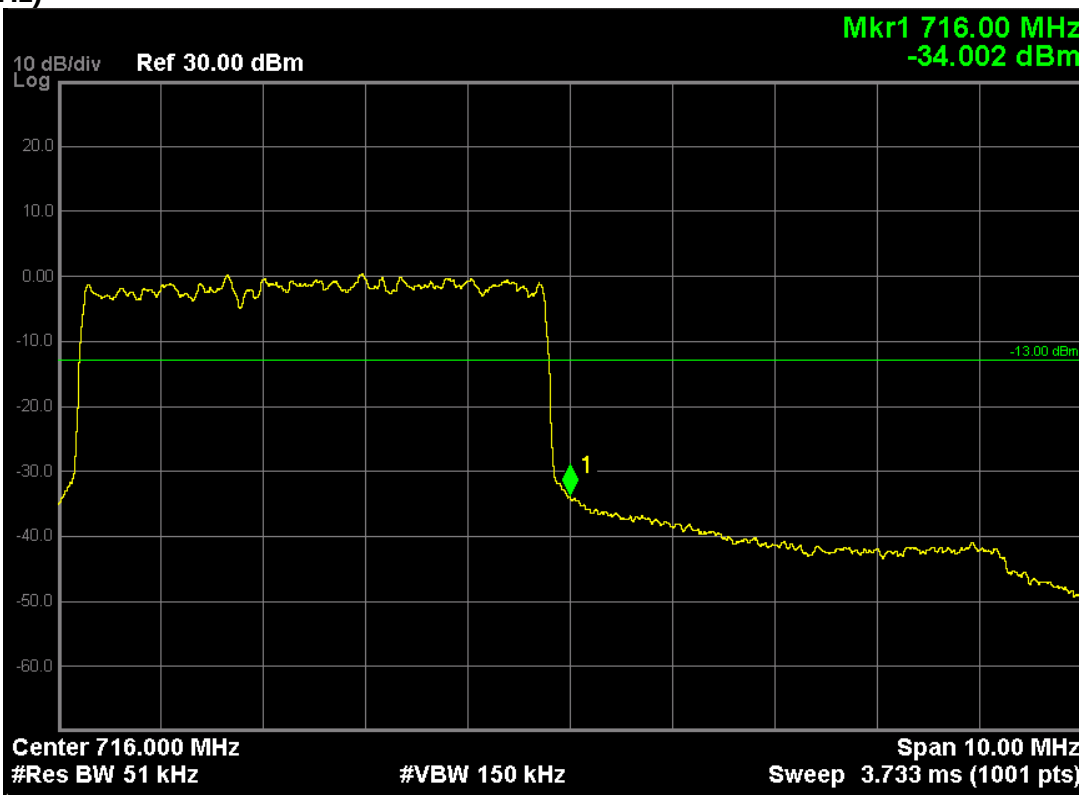
LTE Band 12 (QPSK, Band Width 5MHz,RB Size 25,RB Offset 0,Channel 23035,Frequeny 701.5MHz)



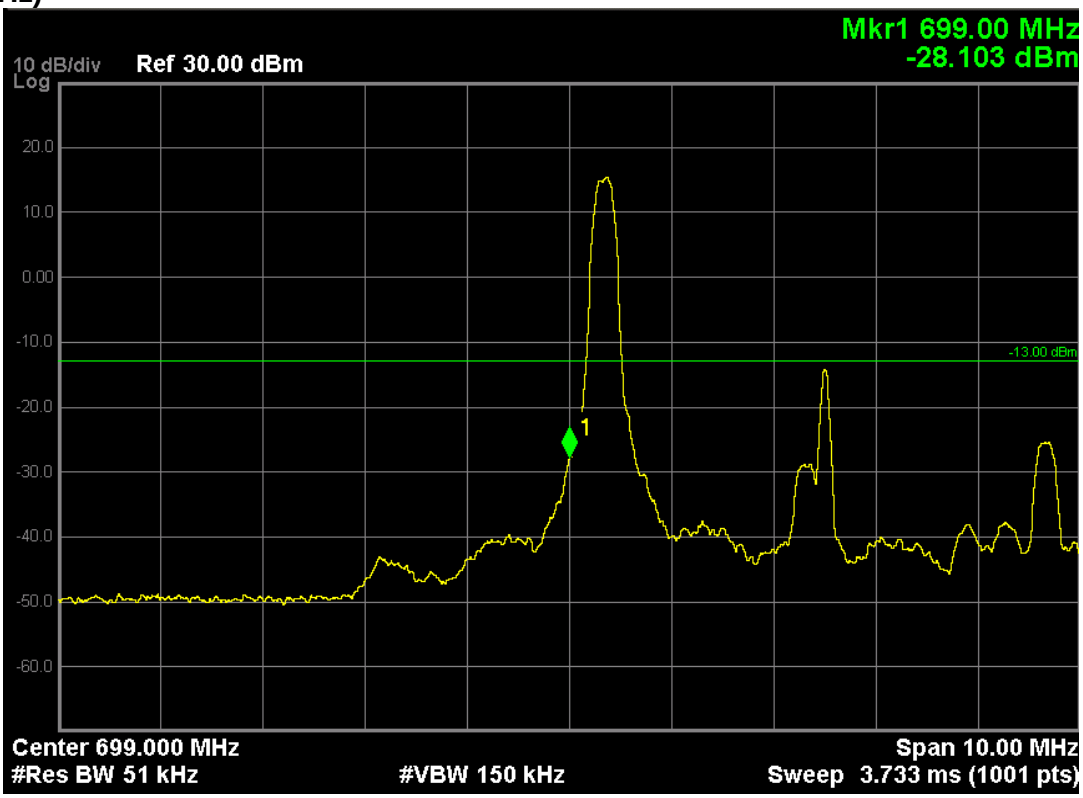
LTE Band 12 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 24,Channel 23155,Frequeny 713.5MHz)



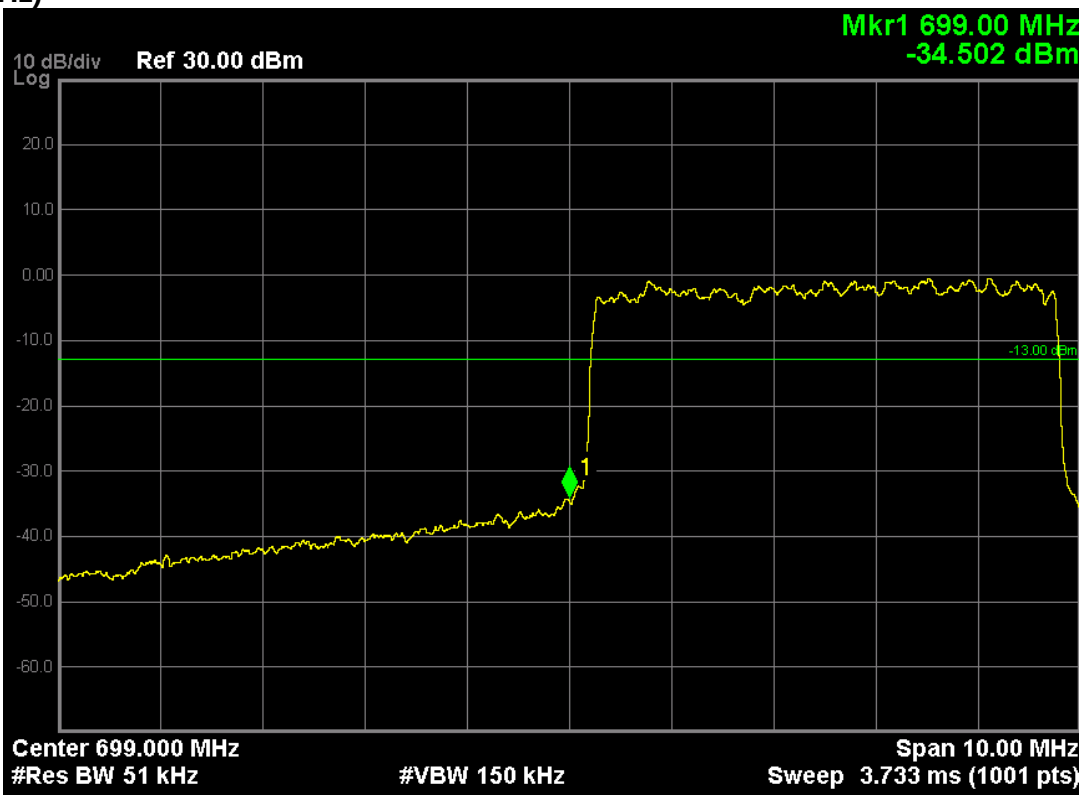
LTE Band 12 (QPSK, Band Width 5MHz,RB Size 25,RB Offset 0,Channel 23155,Frequeny 713.5MHz)



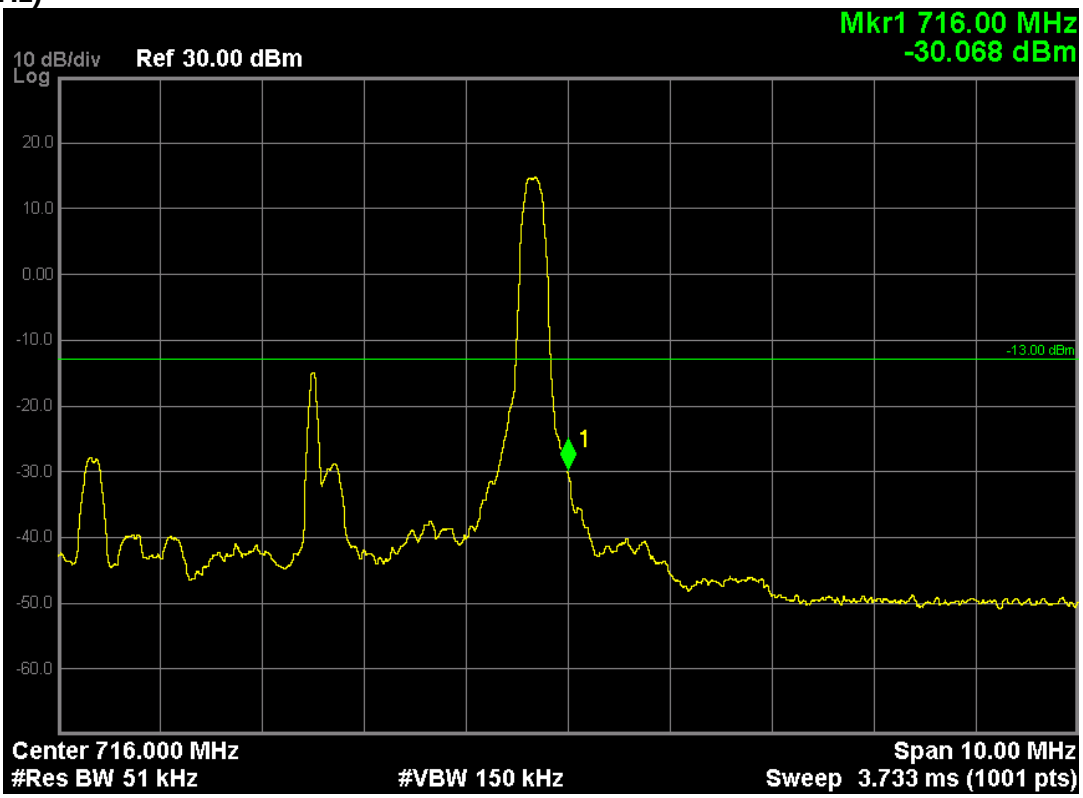
LTE Band 12 (16-QAM, Band Width 5MHz,RB Size 1,RB Offset 0,Channel 23035,Frequeny 701.5MHz)



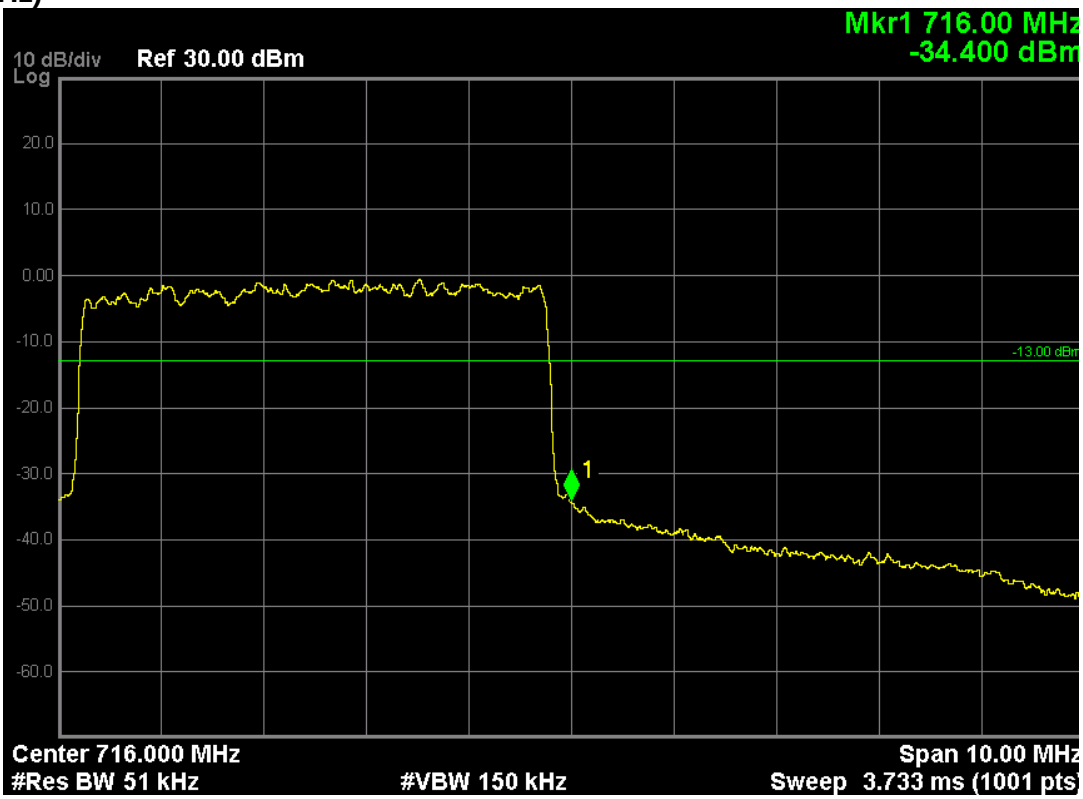
LTE Band 12 (16-QAM, Band Width 5MHz,RB Size 25,RB Offset 0,Channel 23035,Frequeny 701.5MHz)



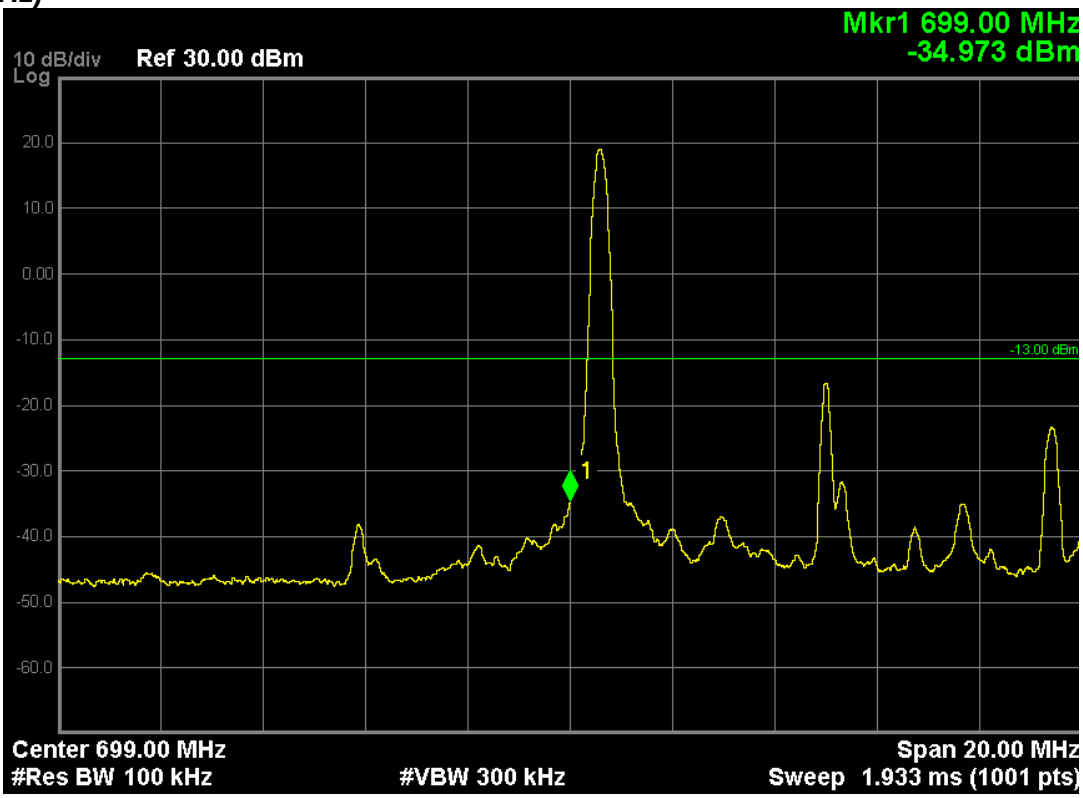
LTE Band 12 (16-QAM, Band Width 5MHz,RB Size 1,RB Offset 24,Channel 23155,Frequeny 713.5MHz)



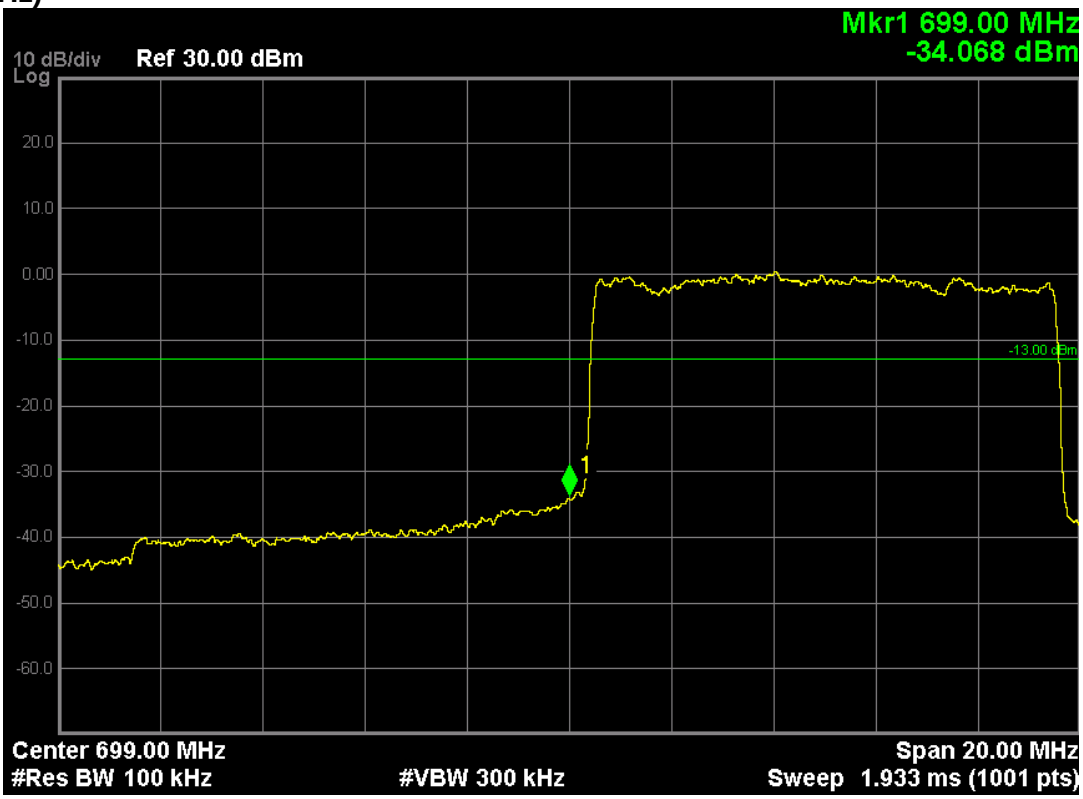
LTE Band 12 (16-QAM, Band Width 5MHz,RB Size 25,RB Offset 0,Channel 23155,Frequeny 713.5MHz)



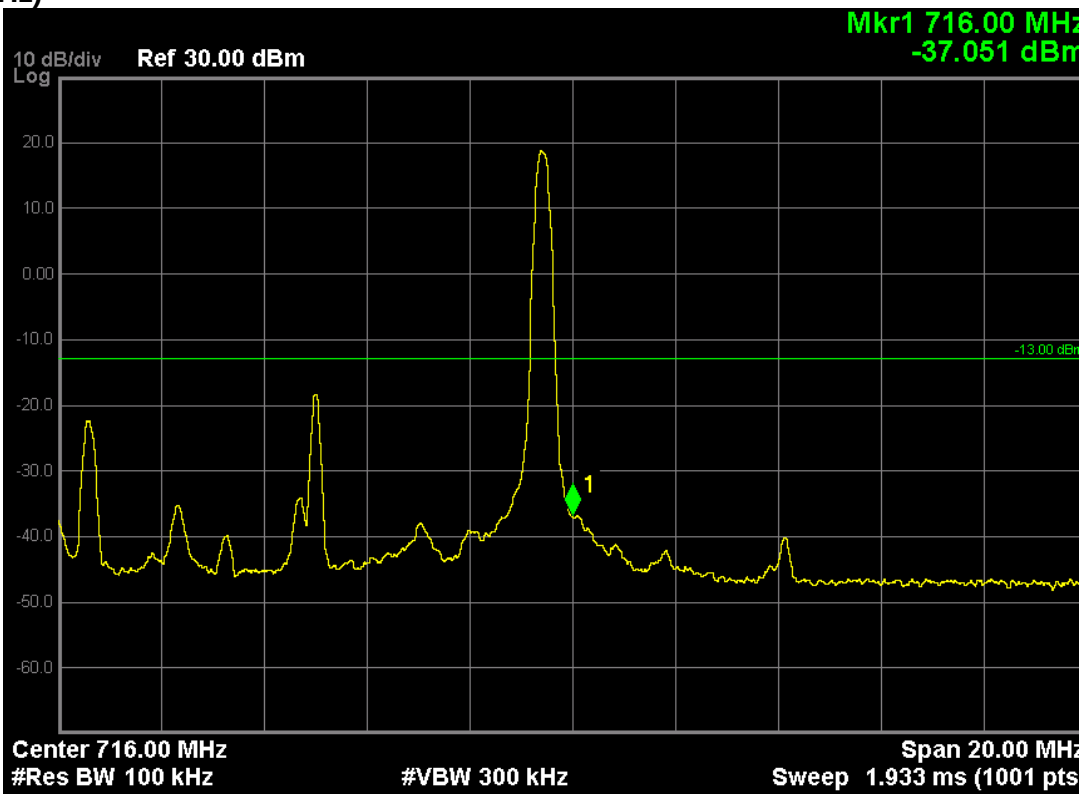
LTE Band 12 (QPSK, Band Width 10MHz,RB Size 1,RB Offset 0,Channel 23060,Frequeny 704.0MHz)



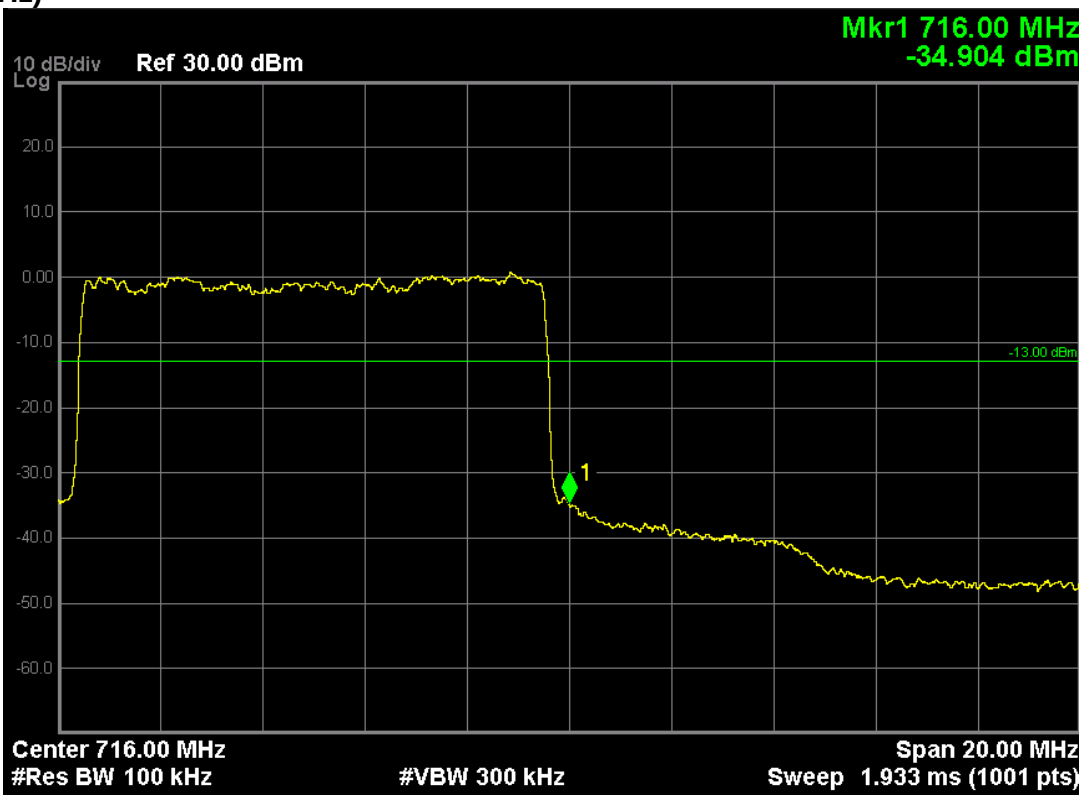
LTE Band 12 (QPSK, Band Width 10MHz,RB Size 50,RB Offset 0,Channel 23060,Frequeny 704.0MHz)



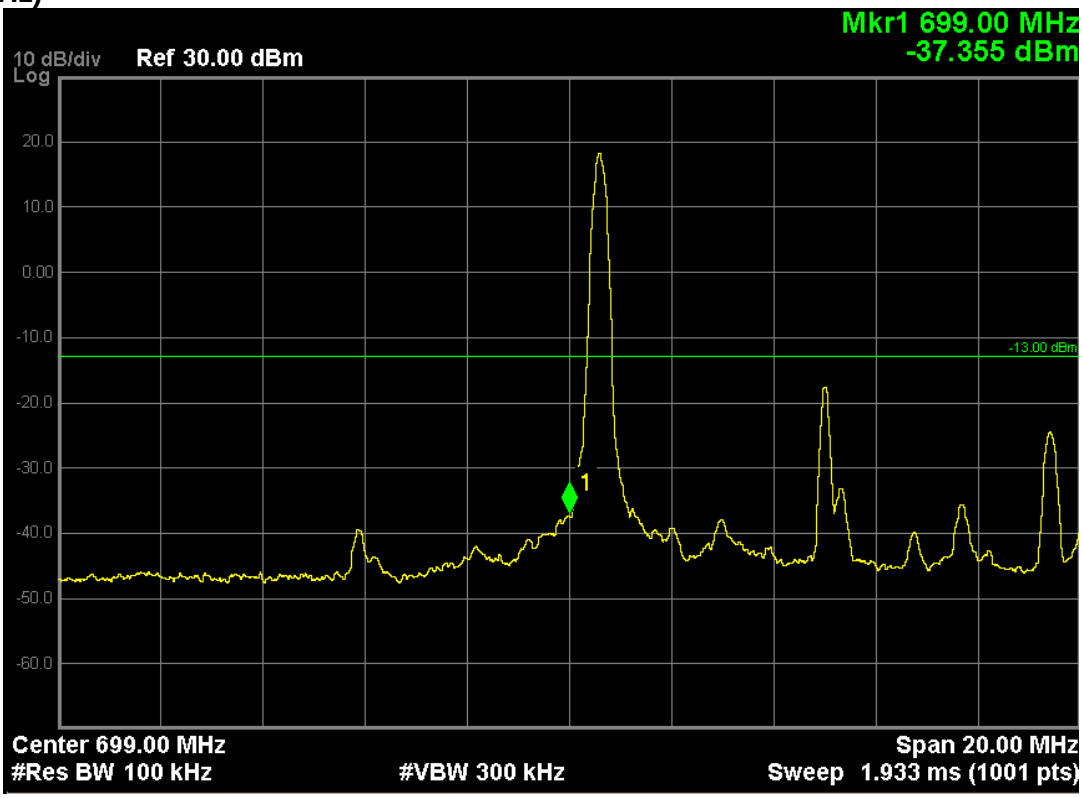
LTE Band 12 (QPSK, Band Width 10MHz,RB Size 1,RB Offset 49,Channel 23130,Frequeny 711.0MHz)



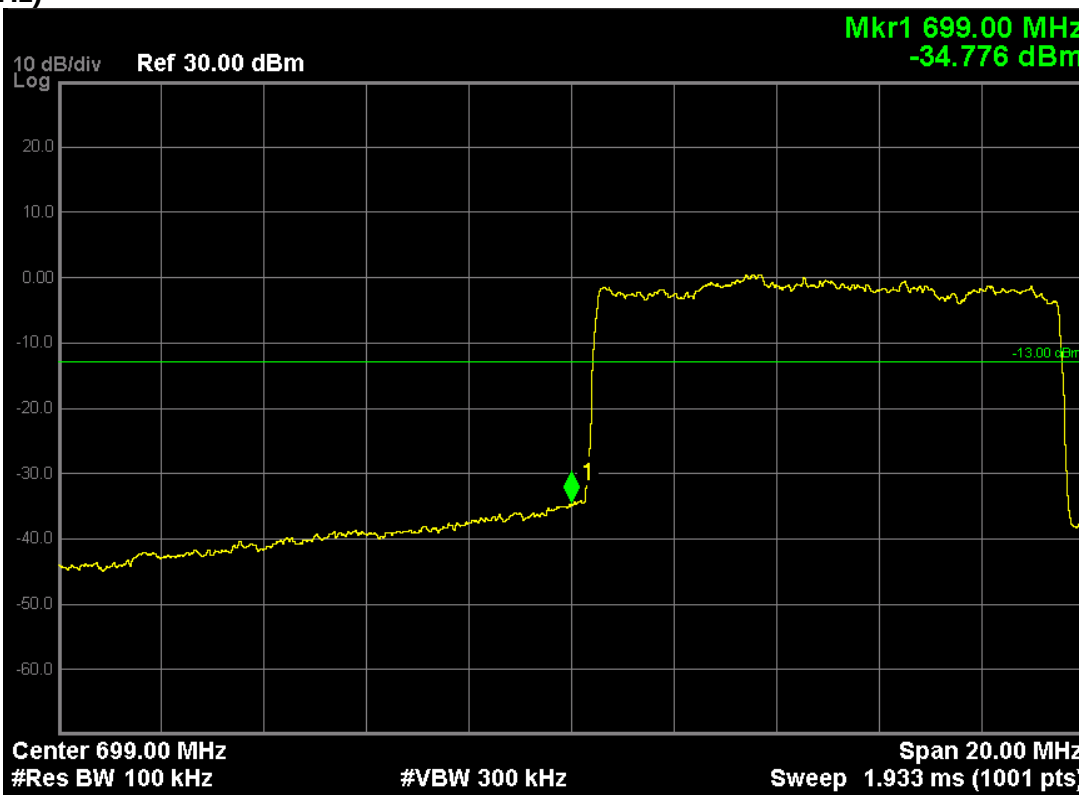
LTE Band 12 (QPSK, Band Width 10MHz,RB Size 50,RB Offset 0,Channel 23130,Frequeny 711.0MHz)



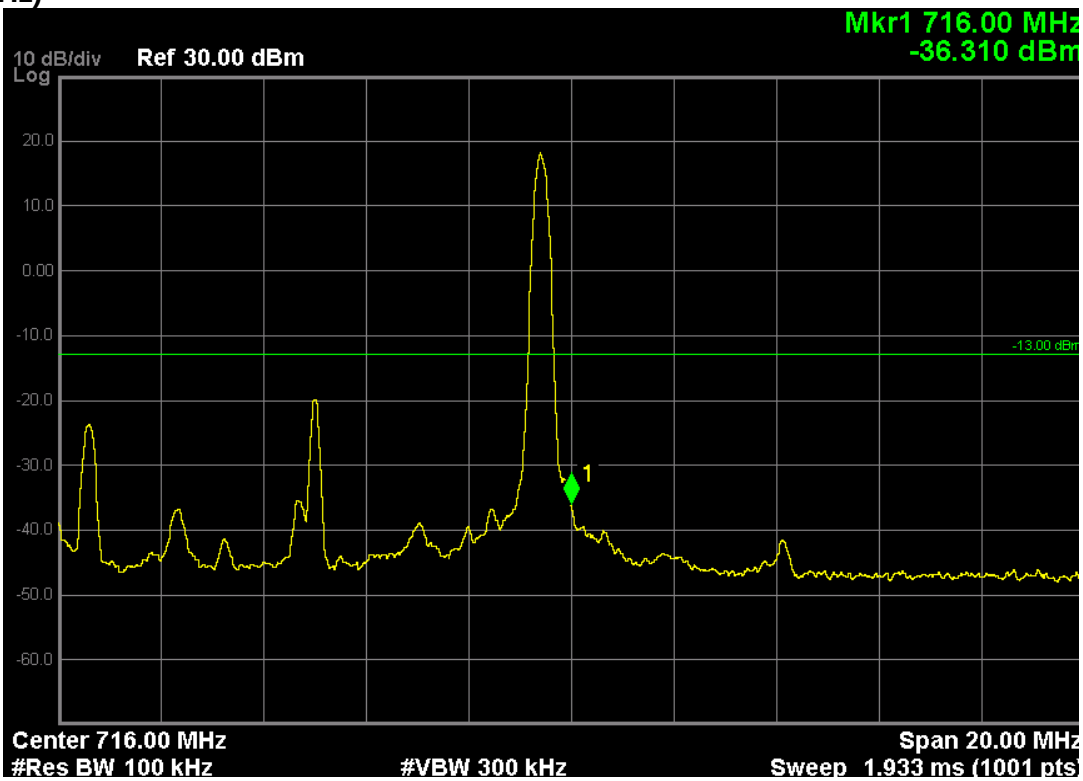
LTE Band 12 (16-QAM, Band Width 10MHz,RB Size 1,RB Offset 0,Channel 23060,Frequeny 704.0MHz)



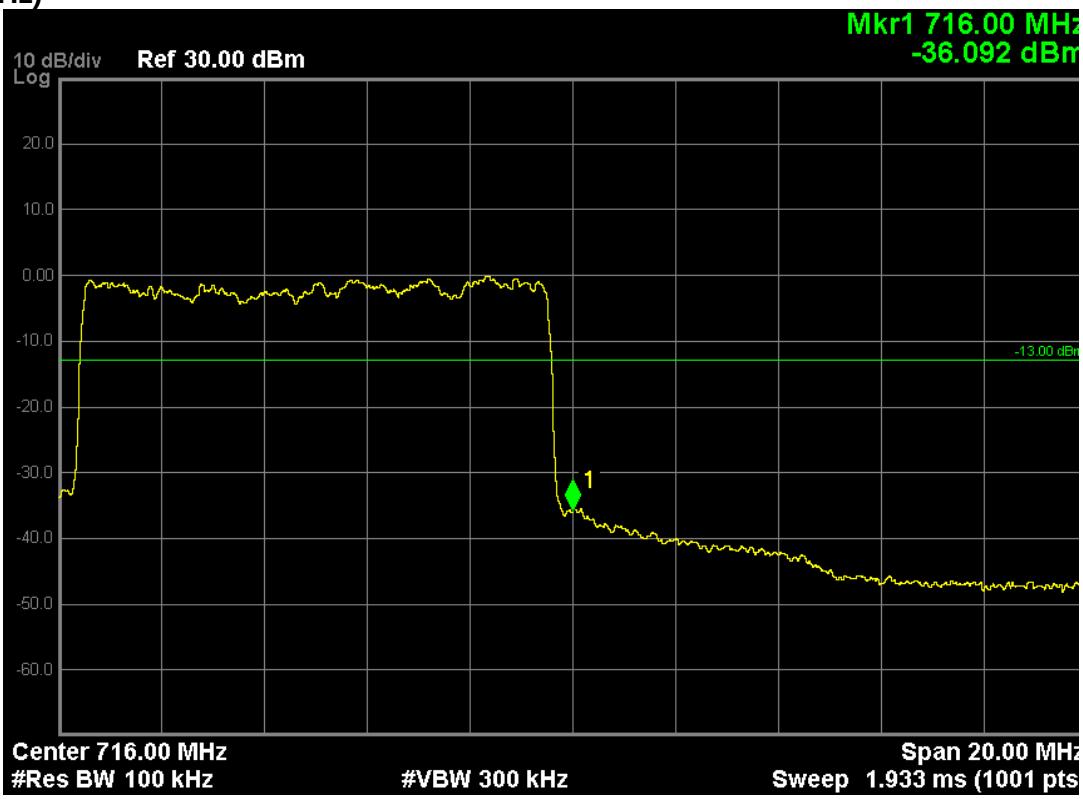
LTE Band 12 (16-QAM, Band Width 10MHz,RB Size 50,RB Offset 0,Channel 23060,Frequeny 704.0MHz)



LTE Band 12 (16-QAM, Band Width 10MHz,RB Size 1,RB Offset 49,Channel 23130,Frequeny 711.0MHz)



LTE Band 12 (16-QAM, Band Width 10MHz,RB Size 50,RB Offset 0,Channel 23130,Frequeny 711.0MHz)



6.Spurious Emission

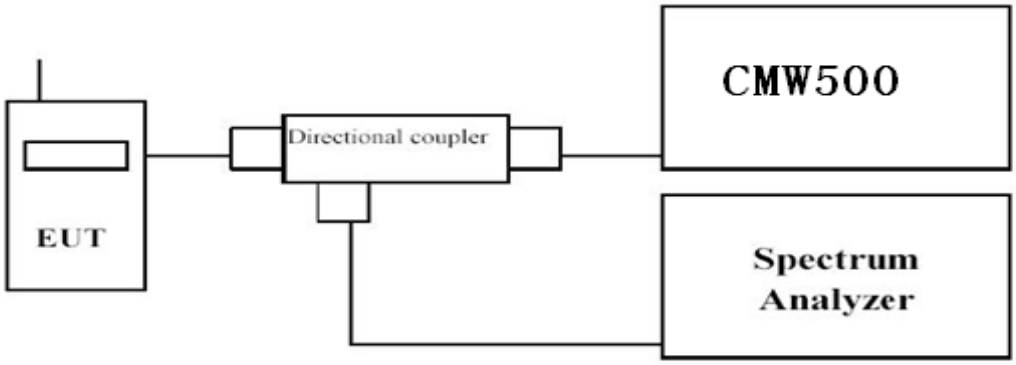
6.1. Test Equipment

Instrument	Manufacturer	Model	Serial No.	Cali. Due Date
Spectrum Analyzer	Agilent	N9038A	MY51210142	11/05/2016
Radio Communication Tester	R&S	CMW500	147483	11/08/2016
Signal Generator	Agilent	N5183A	MY50140938	01/04/2016
Preamplifier	CEM	EM30180	3008A0245	02/27/2016
Loop Antenna	Schwarzbeck	FMZB1519	1519-020	03/25/2016
Bilog Antenna	Schwarzbeck	VULB9160	9160-3316	09/19/2016
VHF-UHF-Biconical Antenna	Schwarzbeck	VUBA9117	9117-263	09/19/2016
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	9120D-942	09/19/2016
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	9120D-943	09/19/2016

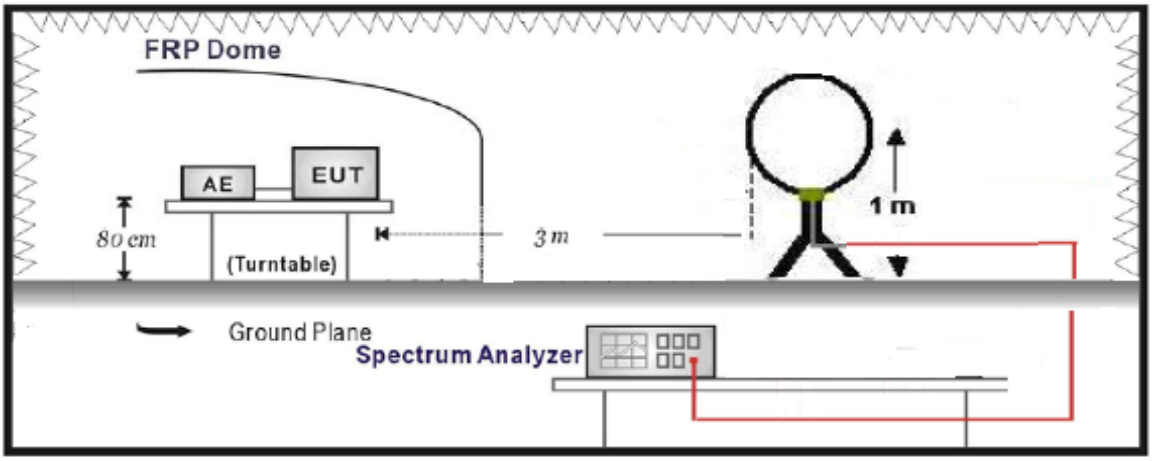
The measure equipment had been calibrated once a year.

6.2. Test Setup

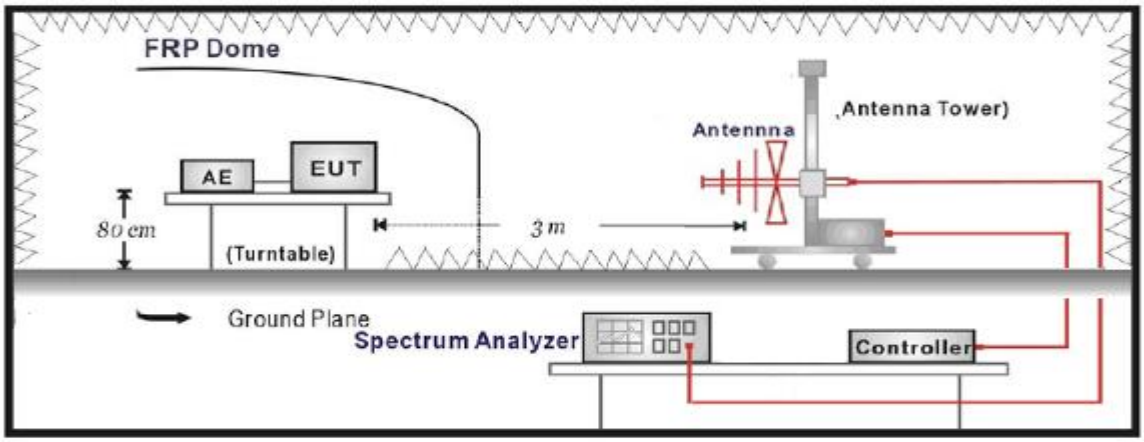
Conducted Spurious Emission Measurement:



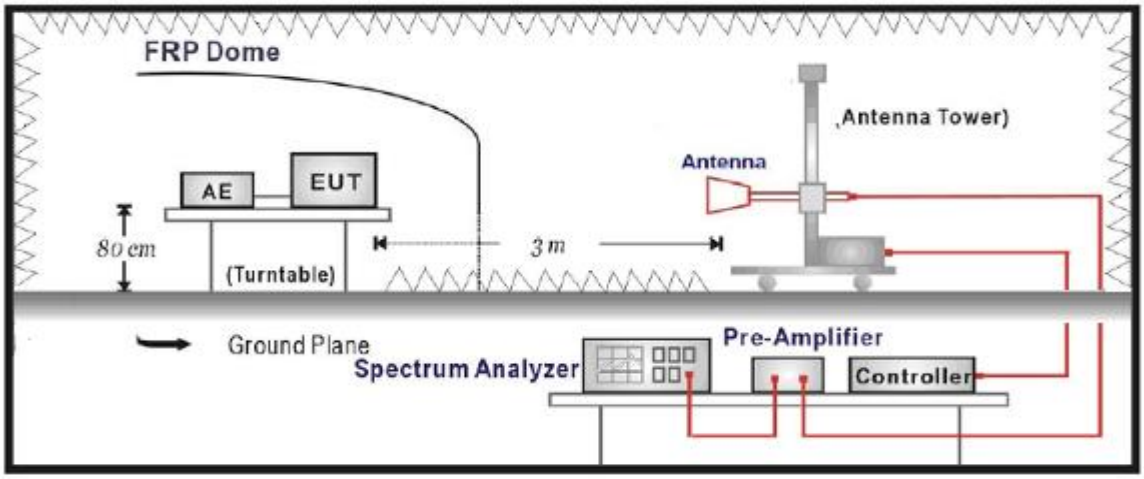
Radiated Spurious Measurement: below 30MHz



Radiated Spurious Measurement: 30MHz to 1GHz



Radiated Spurious Measurement: above 1GHz



6.3. Limit

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 + 10log(P) dB.

6.4. Test Procedure

Conducted Spurious Measurement:

a. The testing follows FCC KDB 971168 v02v02 Section 6.0;
b. Place the EUT on a bench and set it in transmitting mode.
c. Connect a low loss RF cable from the antenna port to a spectrum analyzer and CMW500 by a Directional Couple.
d. EUT Communicate with CMW500, then select a channel for testing.
e. Add a correction factor to the display of spectrum, and then test.
f. The resolution bandwidth of the spectrum analyzer was set at 1 MHz, sufficient scans were taken to show the out of band Emission if any up to 10th harmonic.

Radiated Spurious Measurement:

a. The testing follows FCC KDB 971168 v02v02 Section 5.8 and ANSI/TIA-603-D-2010 Section 2.2.12;
b. The EUT shall be placed at the specified height on a support, and in the position closest to normal use as declared by provider.
c. The test antenna shall be oriented initially for vertical polarization and shall be chosen to correspond to the frequency of the transmitter
d. The output of the test antenna shall be connected to the measuring receiver. The transmitter shall be switched on and the measuring receiver shall be tuned to the frequency of the transmitter under test.
e. The test antenna shall be raised and lowered through the specified range of height until a

maximum signal level is detected by the measuring receiver.

f. The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.

g. The test antenna shall be raised and lowered again through the specified range of height until a maximum signal level is detected by the measuring receiver.
h. The maximum signal level detected by the measuring receiver shall be noted.
i. The transmitter shall be replaced by a substitution antenna.
j. The substitution antenna shall be orientated for vertical polarization and the length of the substitution antenna shall be adjusted to correspond to the frequency of the transmitter.
k. The substitution antenna shall be connected to a calibrated signal generator.
l. If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
m. The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.
n. The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator setting of the measuring receiver.
o. The measurement shall be repeated with the test antenna and the substitution antenna orientated for horizontal polarization.
p. The measure of the effective radiated power is the larger of the two levels recorded at the input to the substitution antenna, corrected for gain of the substitution antenna if necessary.
q. The frequency range was checked up to 10^{th} harmonic.

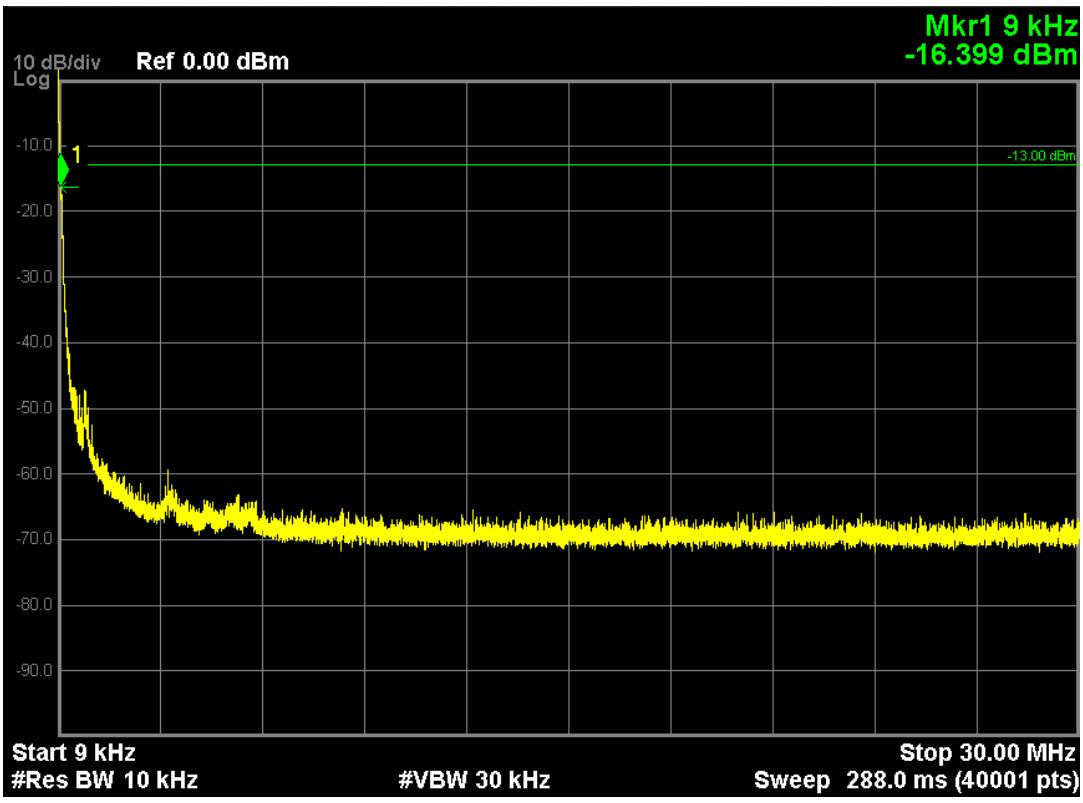
6.5. Uncertainty

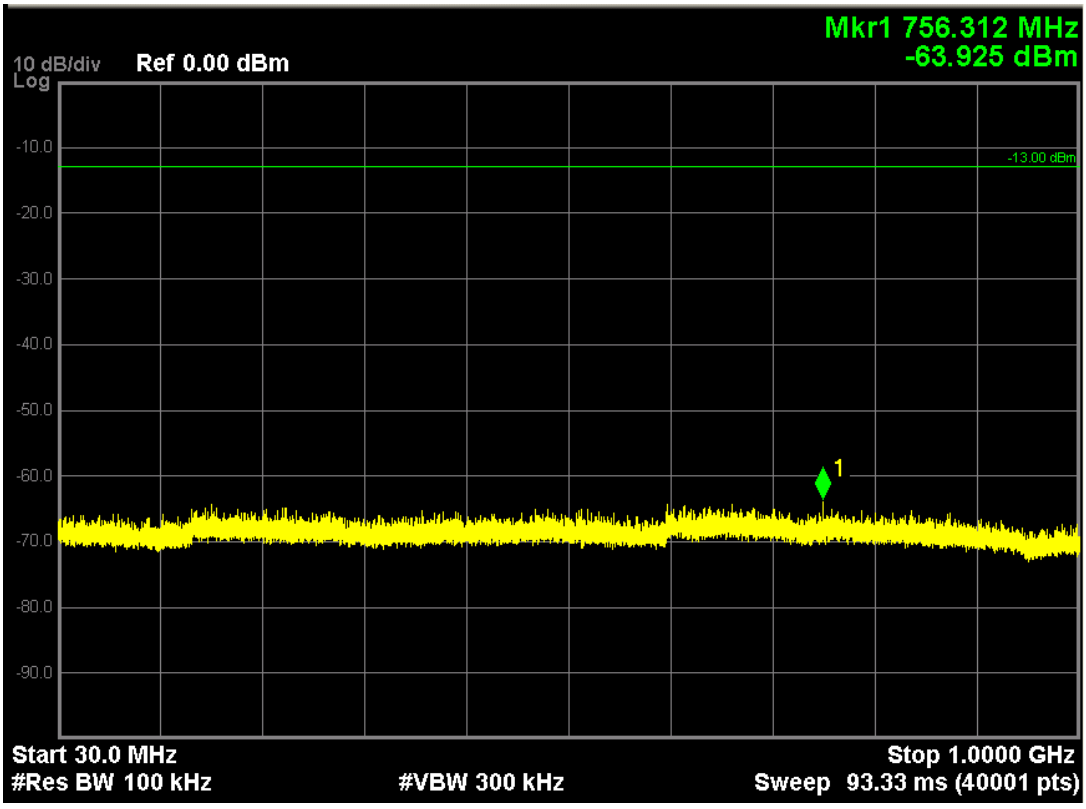
The measurement uncertainty is defined as 3.2 dB for Radiated Power Measurement.

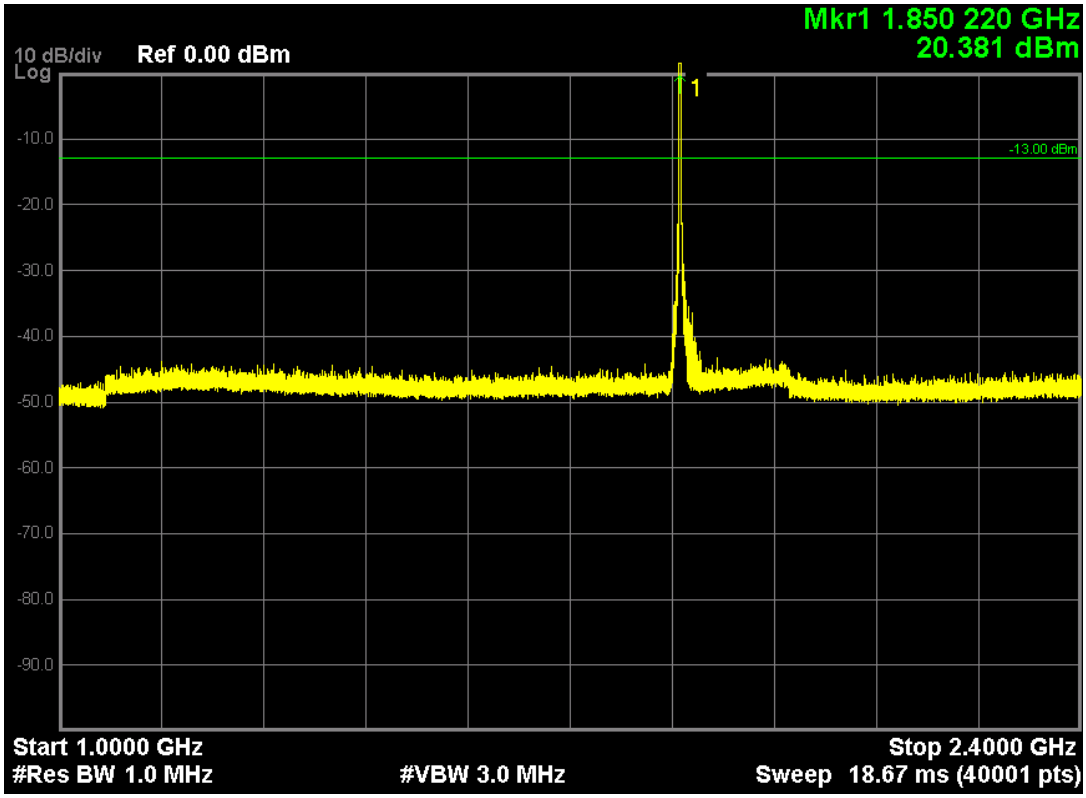
6.6. Test Result

Conducted Spurious Measurement:

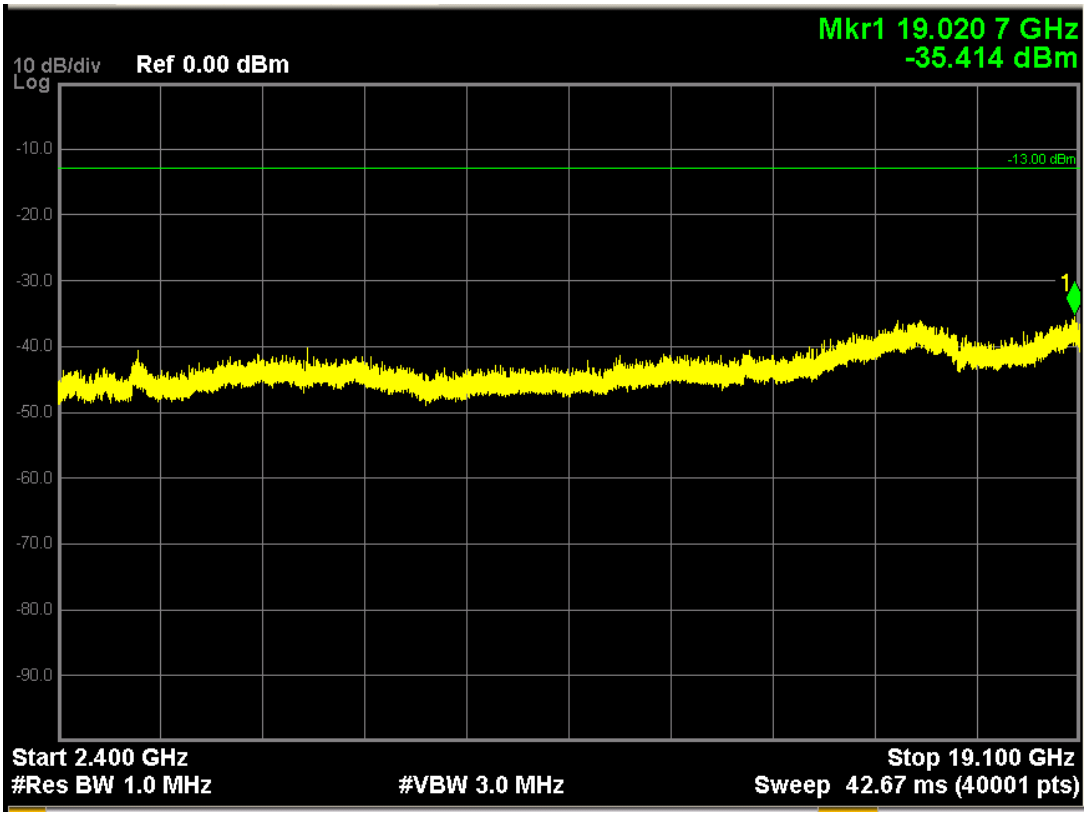
LTE Band 2 (QPSK, Band Width 1.4MHz,RB Size 1,RB Offset 0,Channel 18607,Frequeny 1850.7MHz)



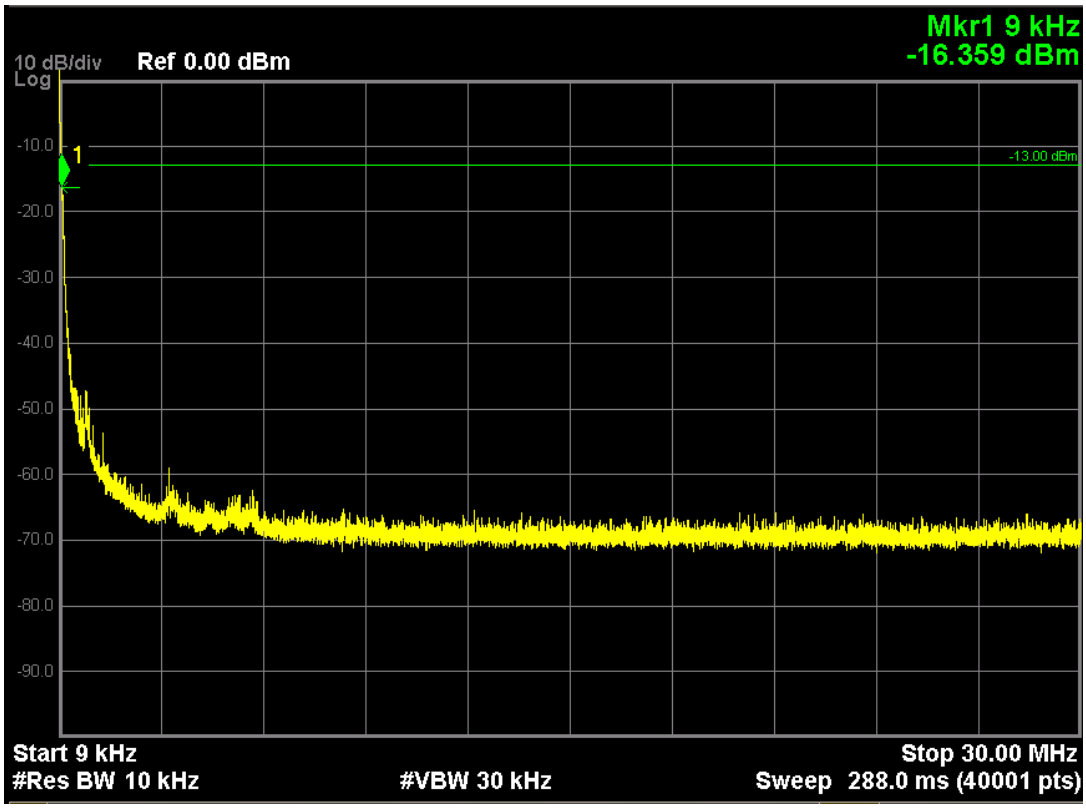


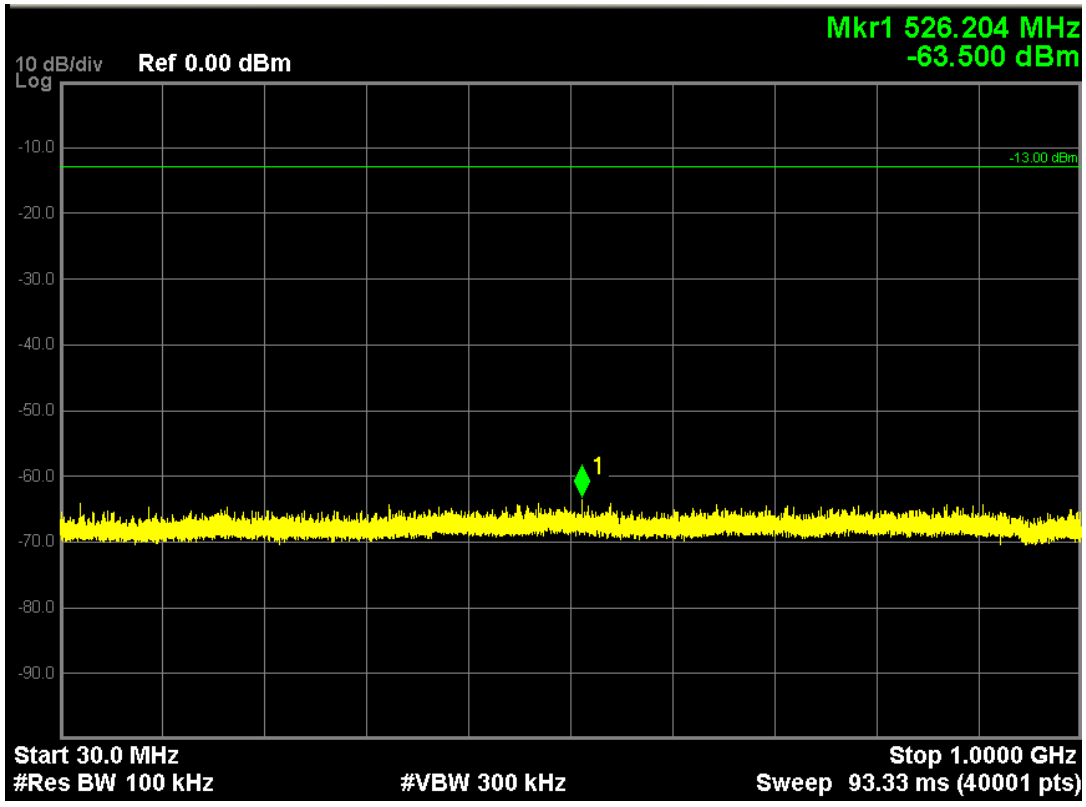


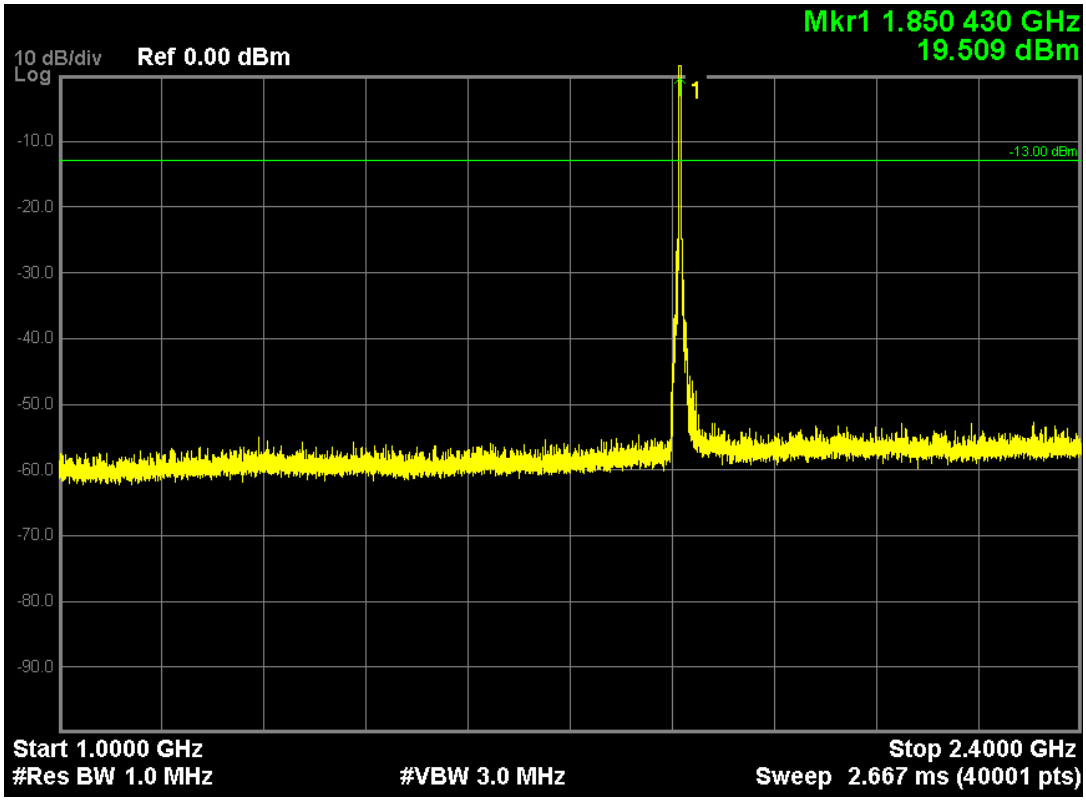
Note: The signal at point 1 is carrier



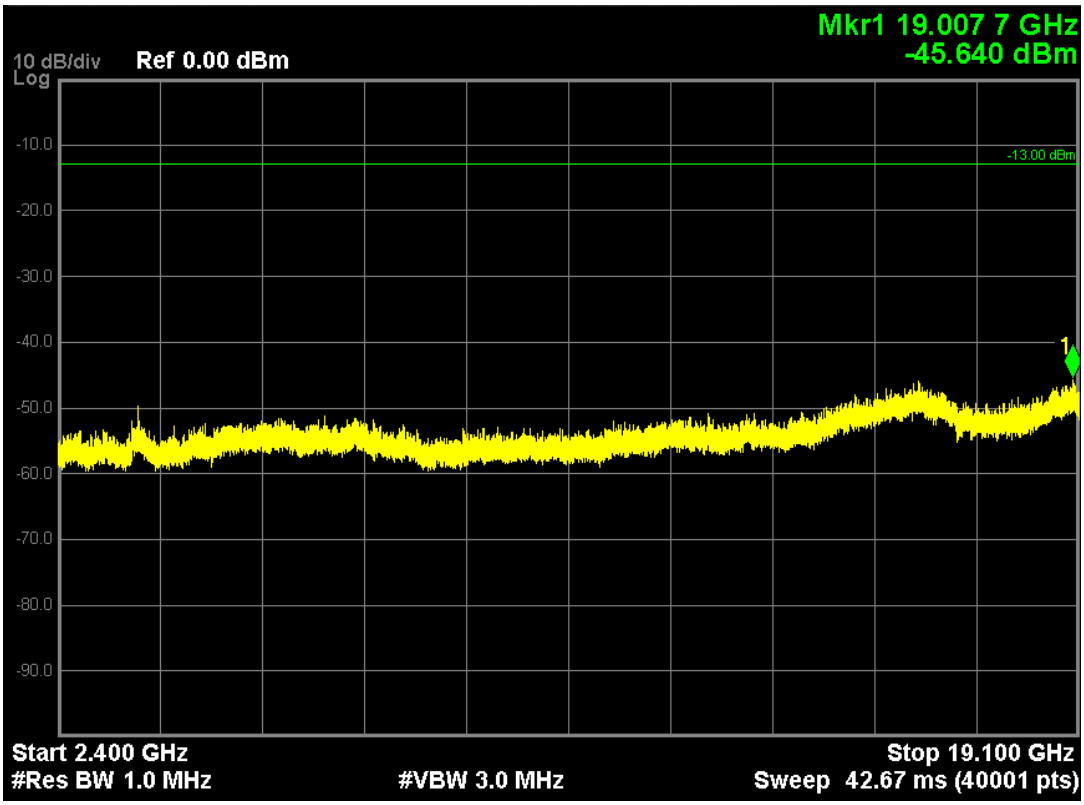
LTE Band 2 (16-QAM, Band Width 1.4MHz,RB Size 1,RB Offset 0,Channel 18607,Frequeny 1850.7MHz)



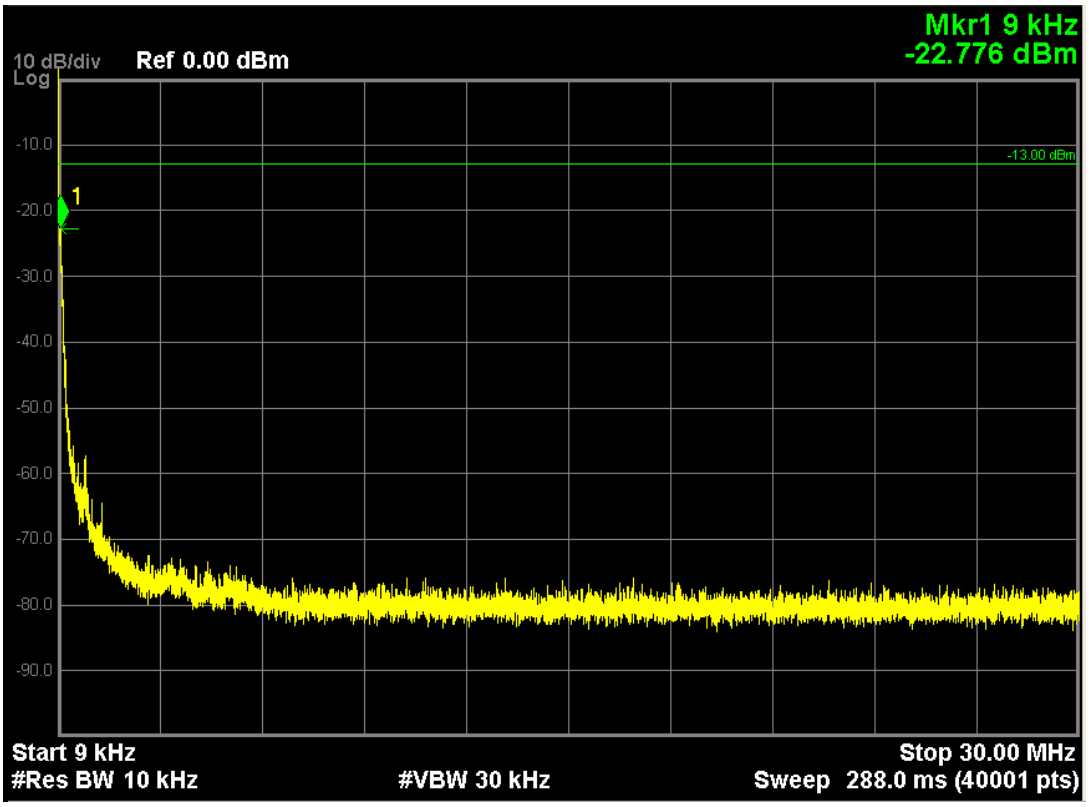


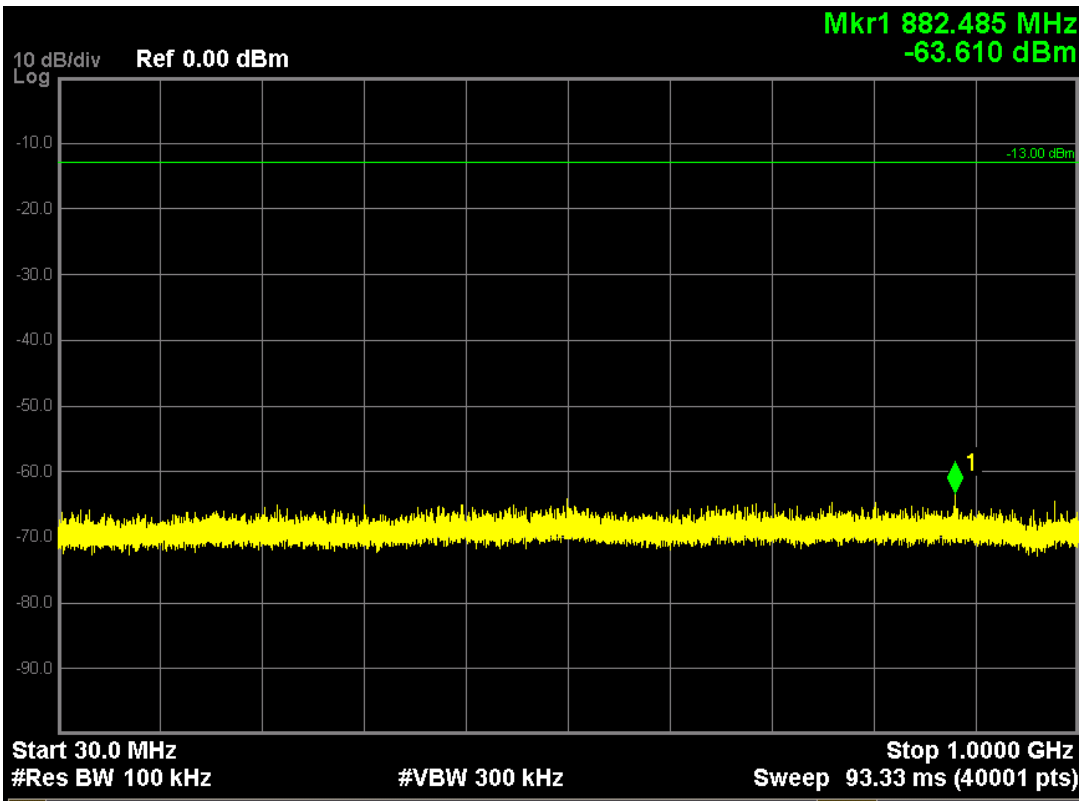


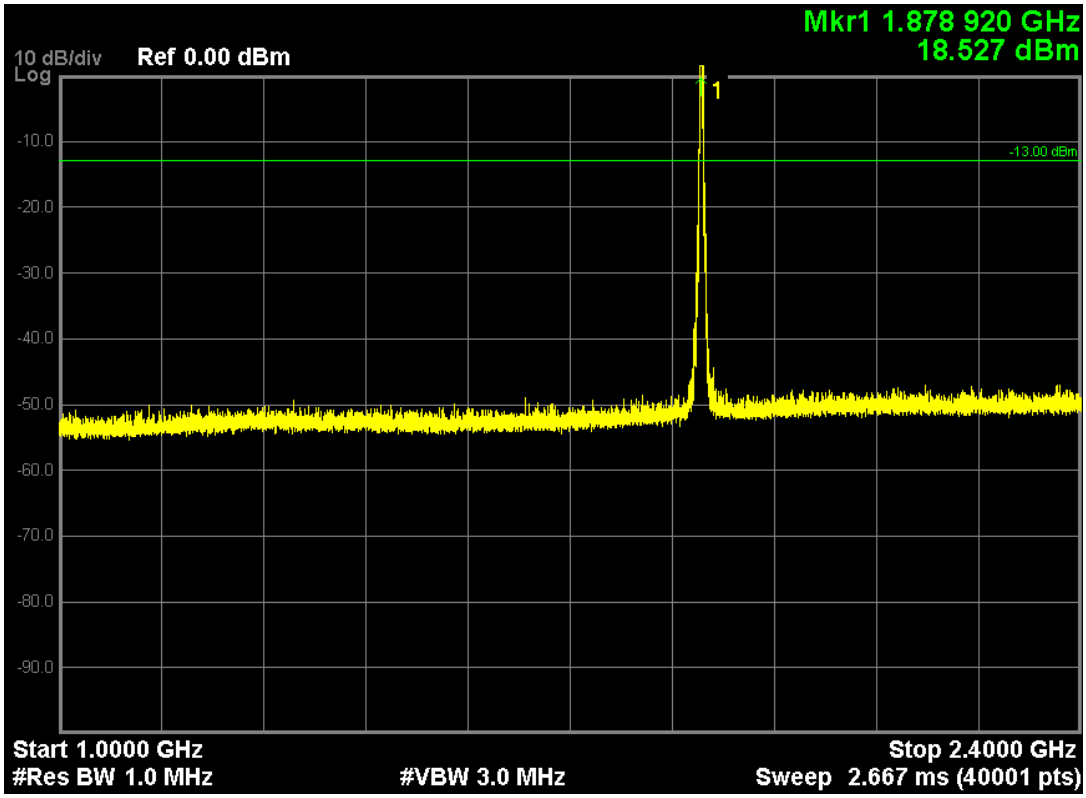
Note: The signal at point 1 is carrier



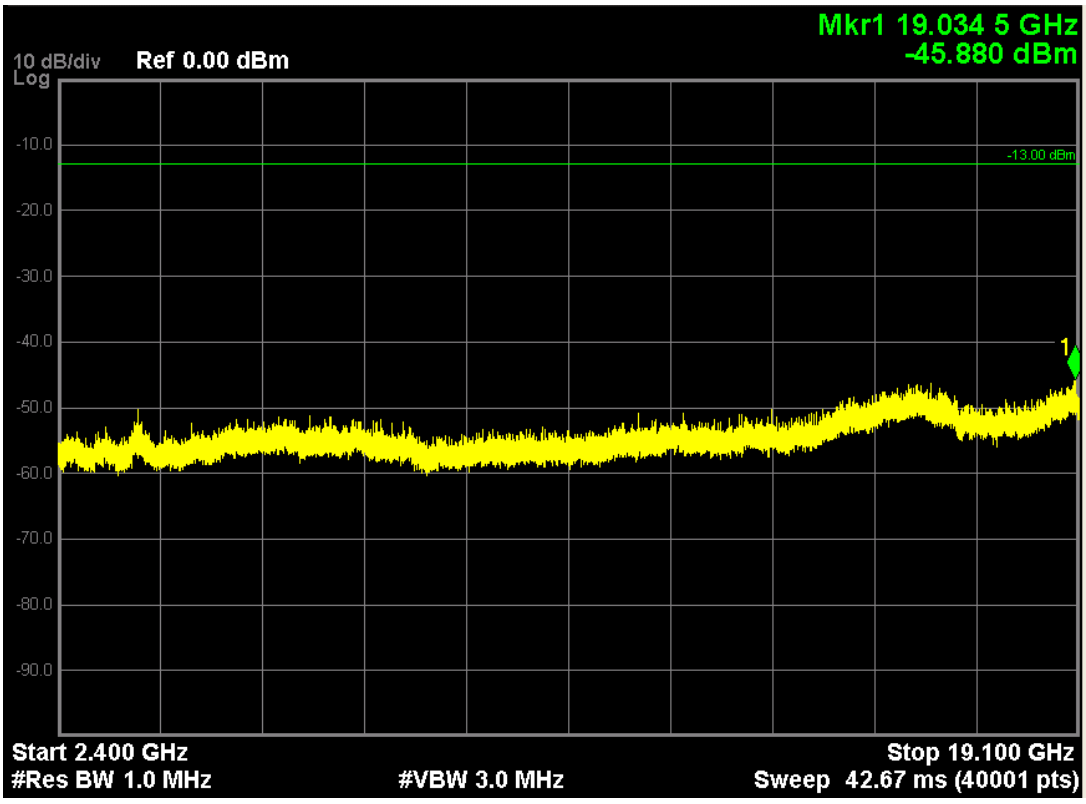
LTE Band 2 (QPSK, Band Width 3MHz,RB Size 1,RB Offset 0,Channel 18900,Frequeny 1880.0MHz)



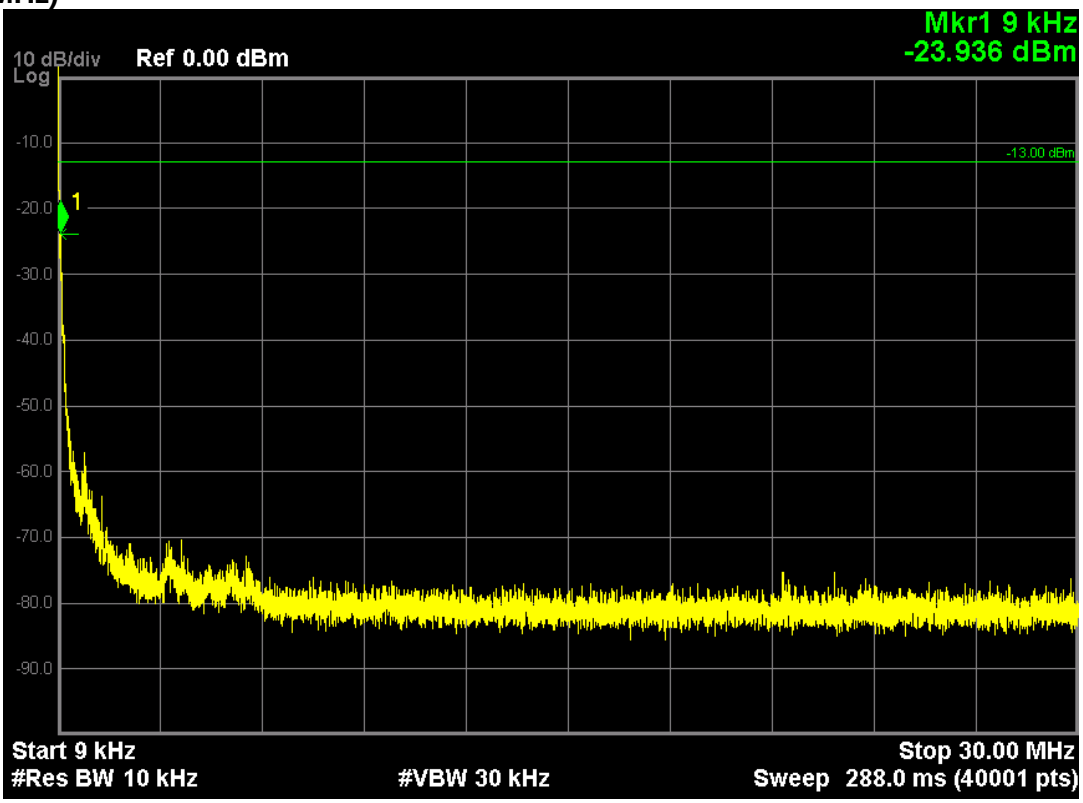


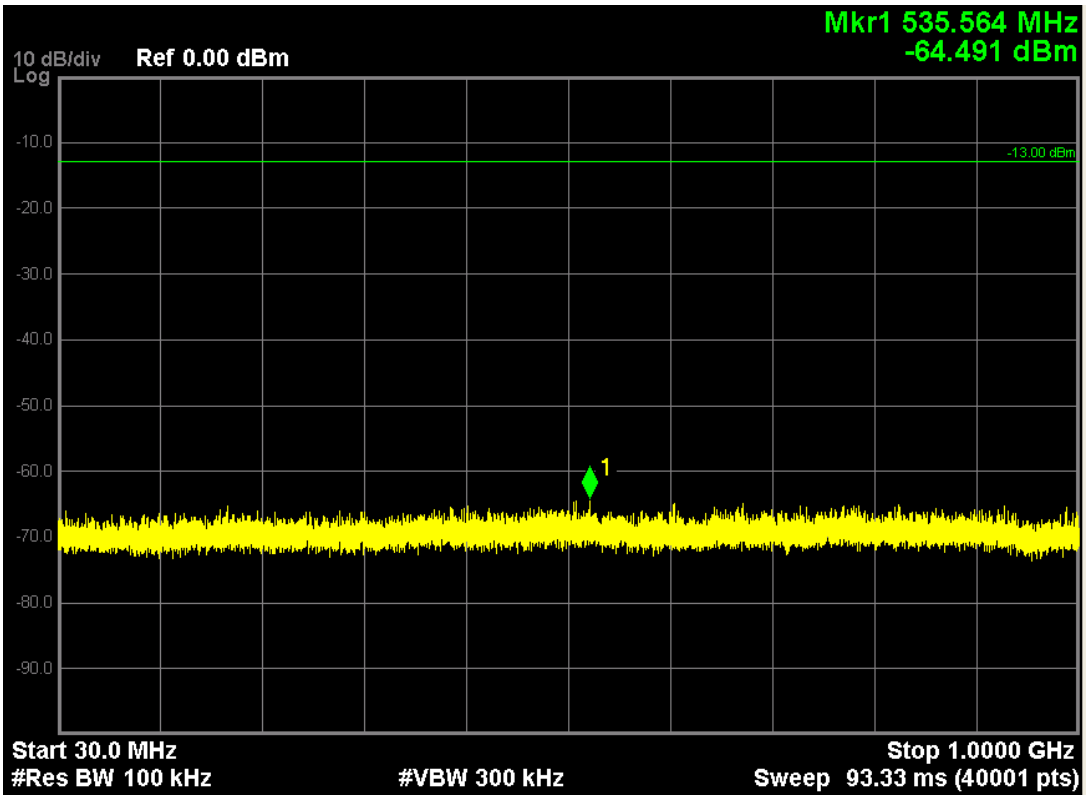


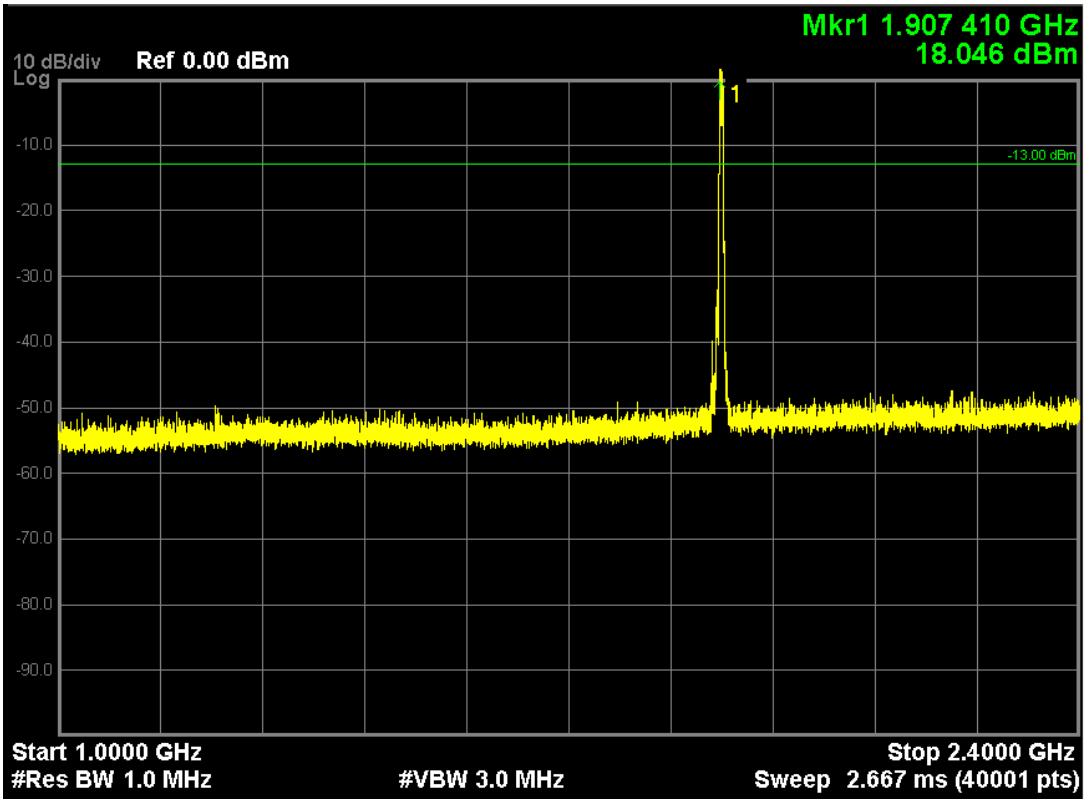
Note: The signal at point 1 is carrier



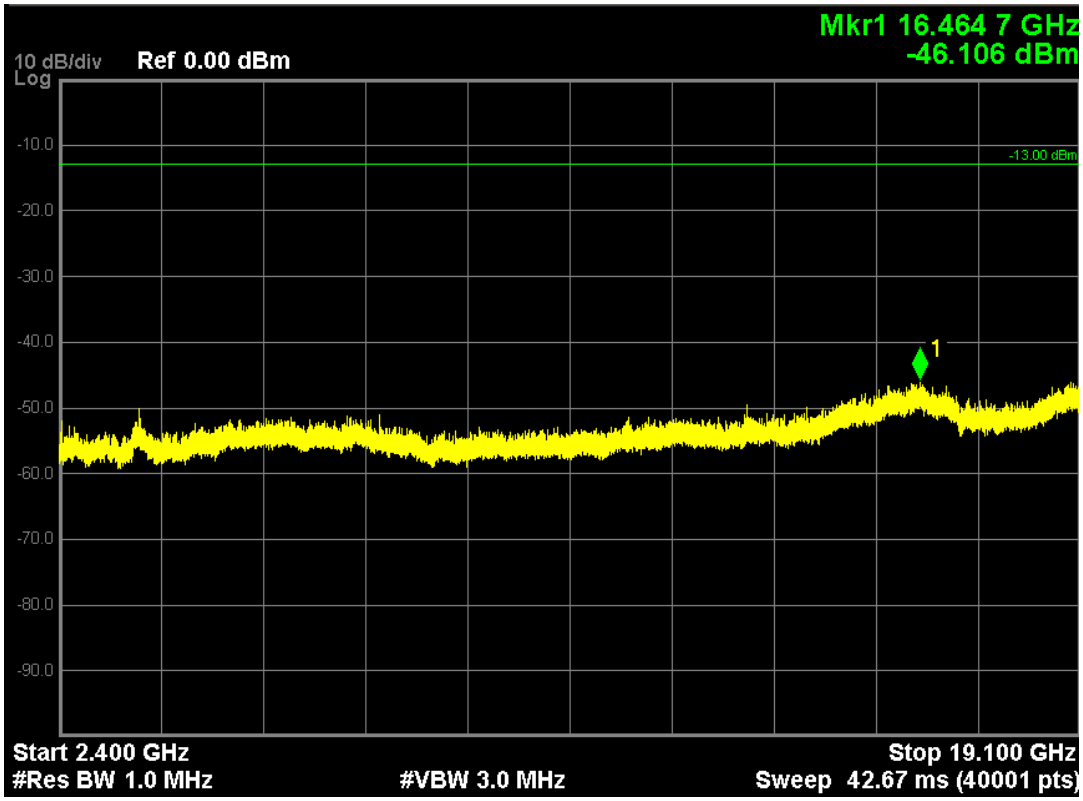
LTE Band 2 (16-QAM, Band Width 3MHz,RB Size 1,RB Offset 0,Channel 19185,Frequeny 1908.5MHz)



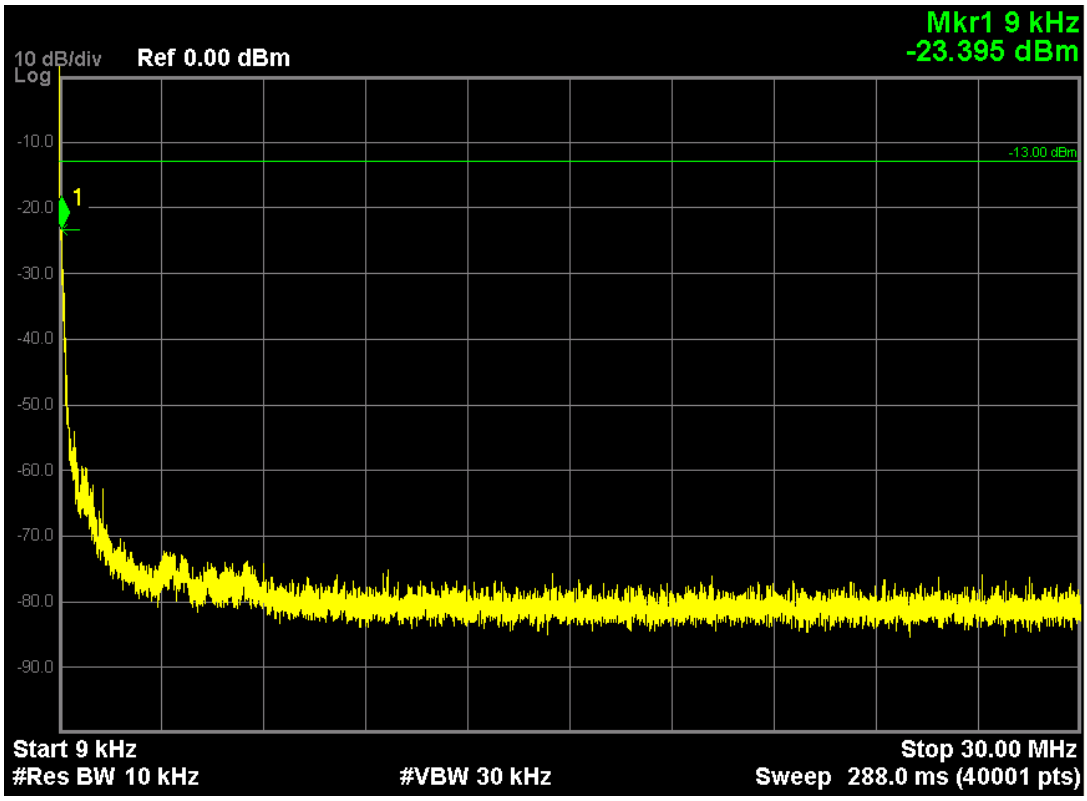


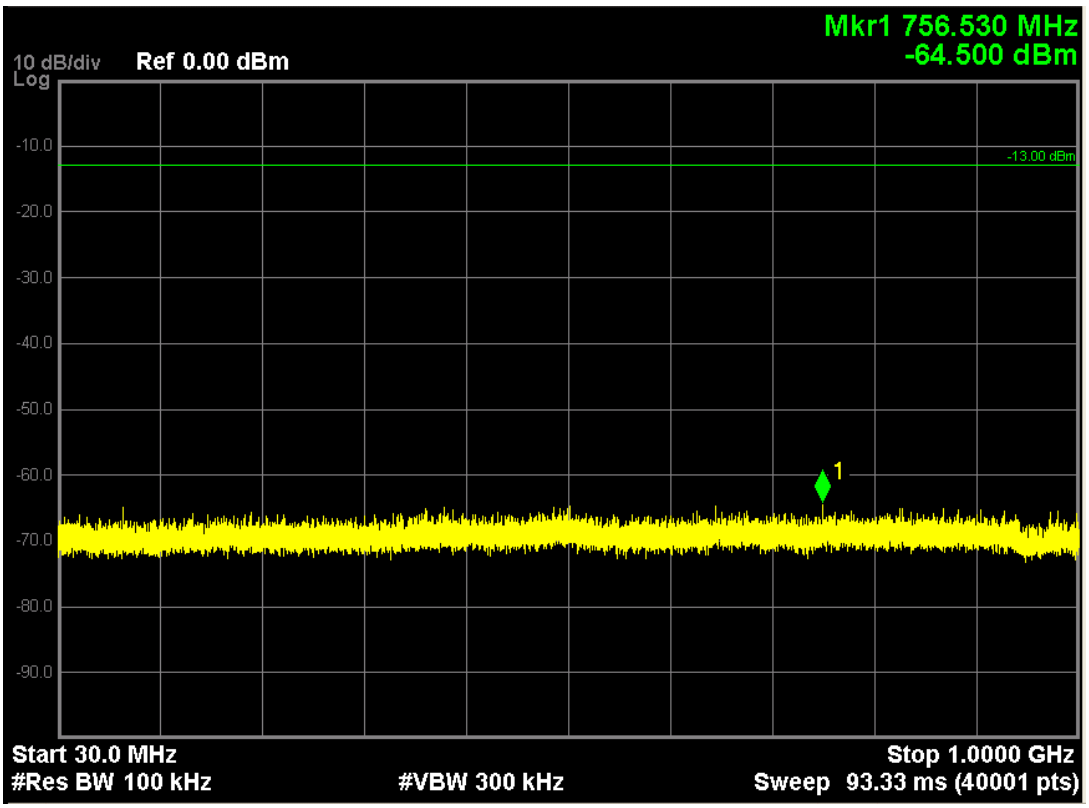


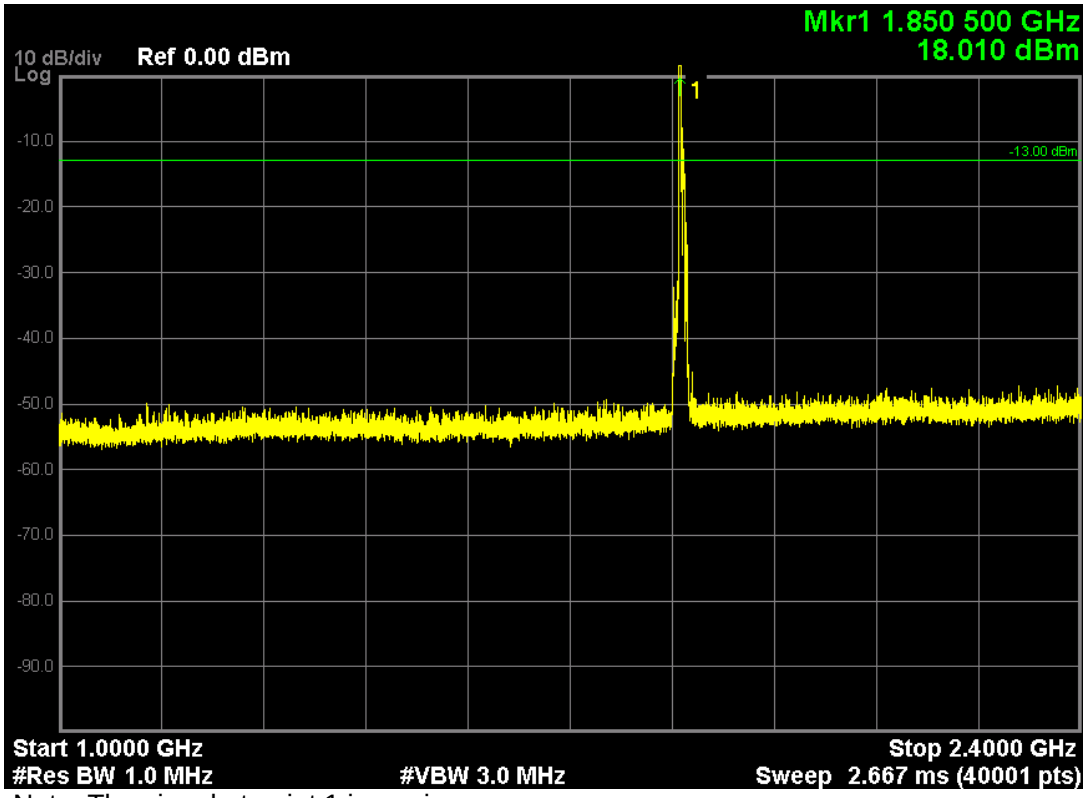
Note: The signal at point 1 is carrier



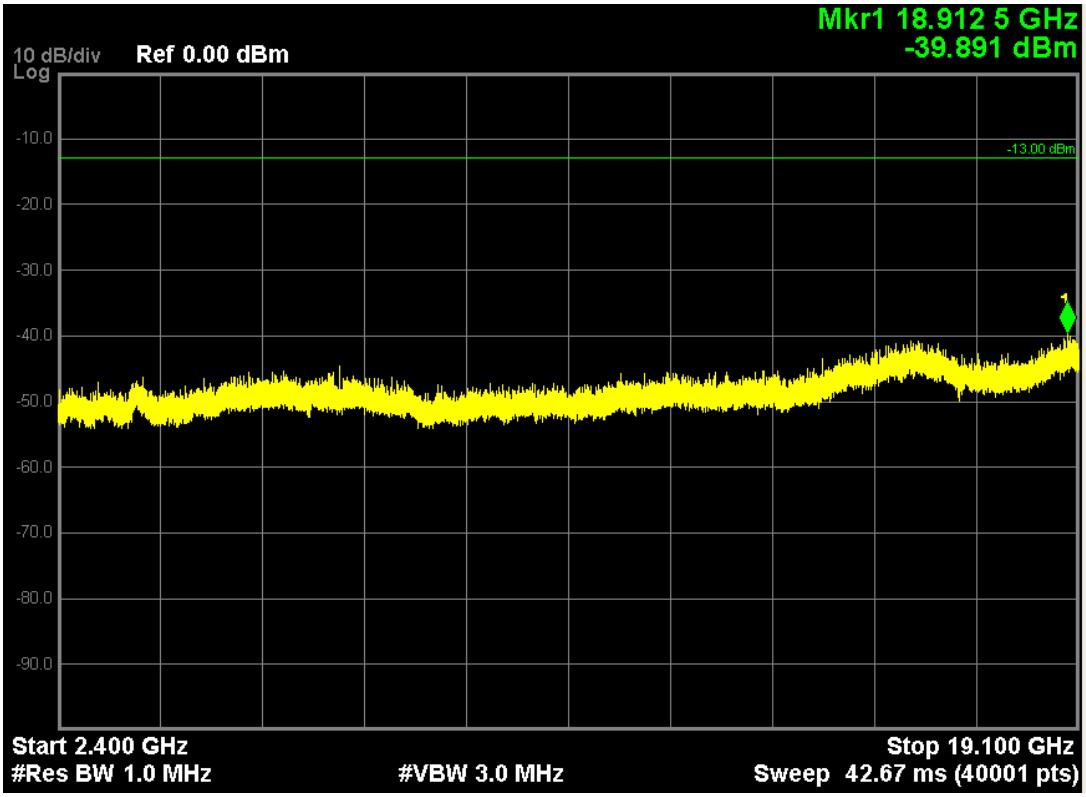
LTE Band 2 (QPSK, Band Width 5MHz,RB Size 1,RB Offset 0,Channel 18625,Frequeny 1852.5MHz)



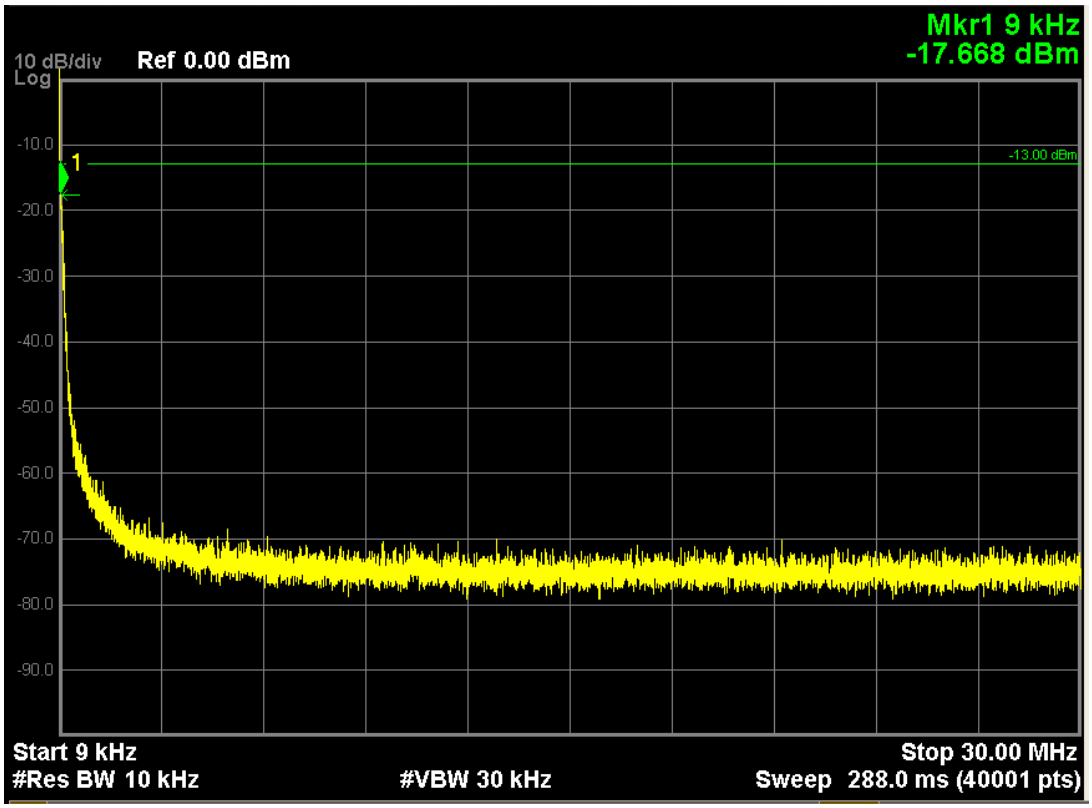


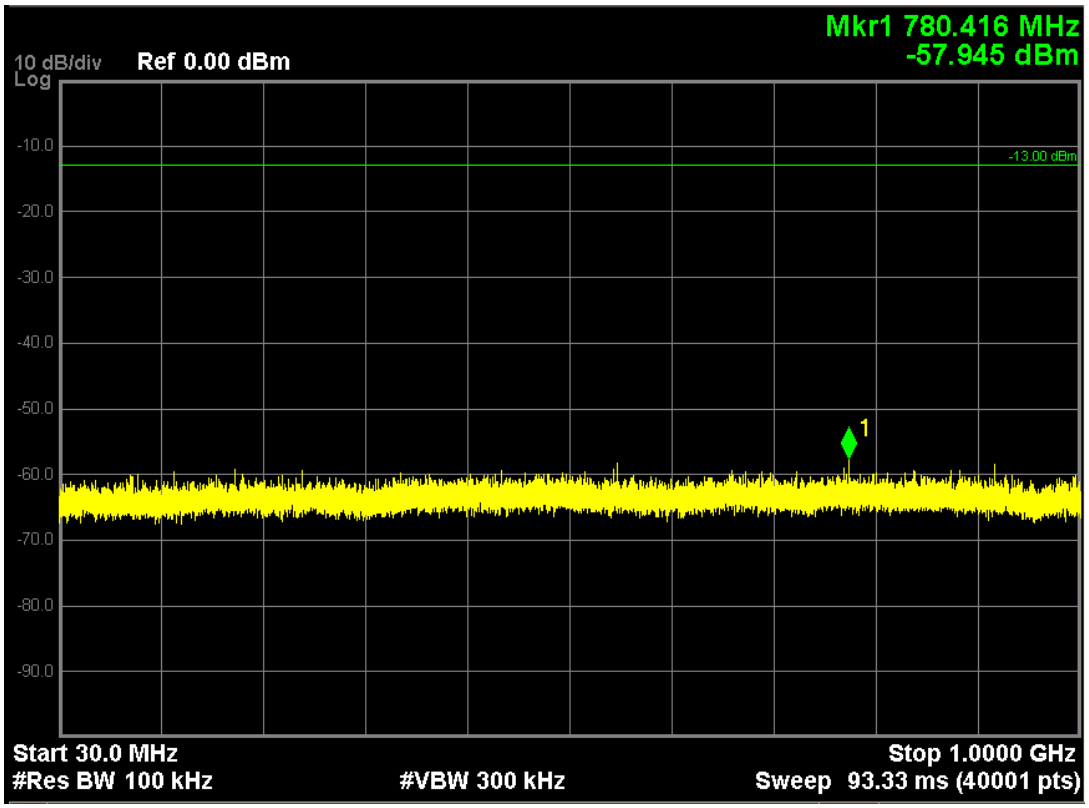


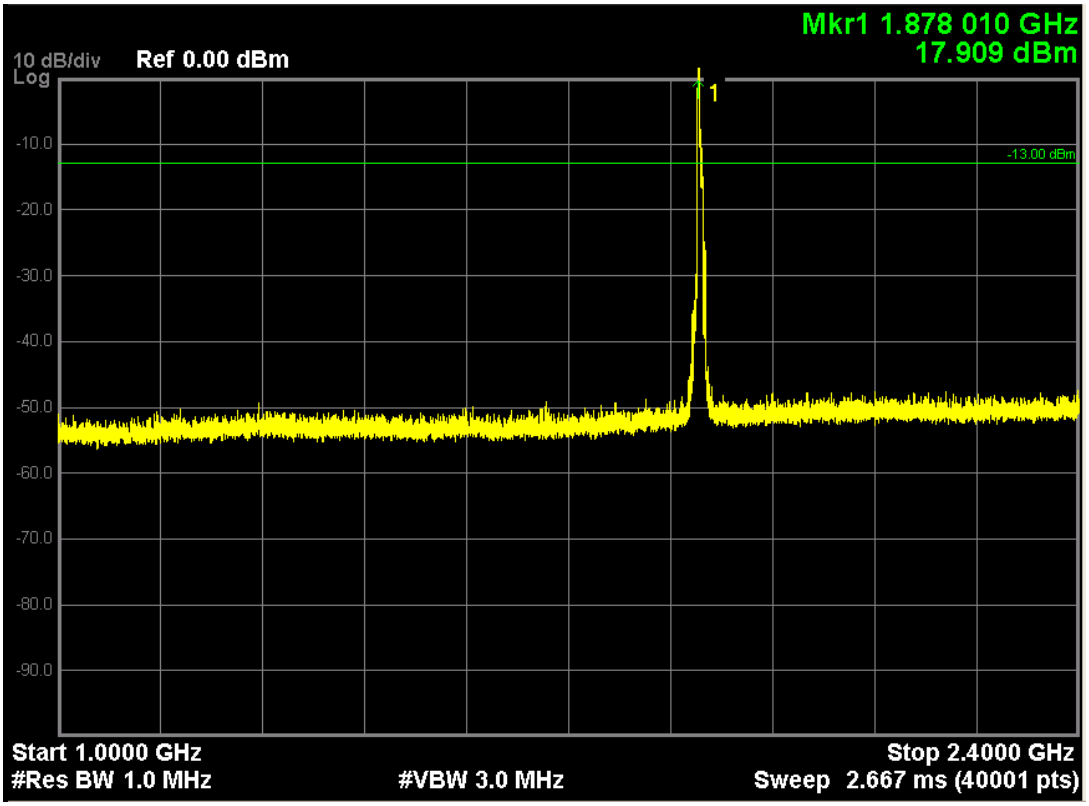
Note: The signal at point 1 is carrier



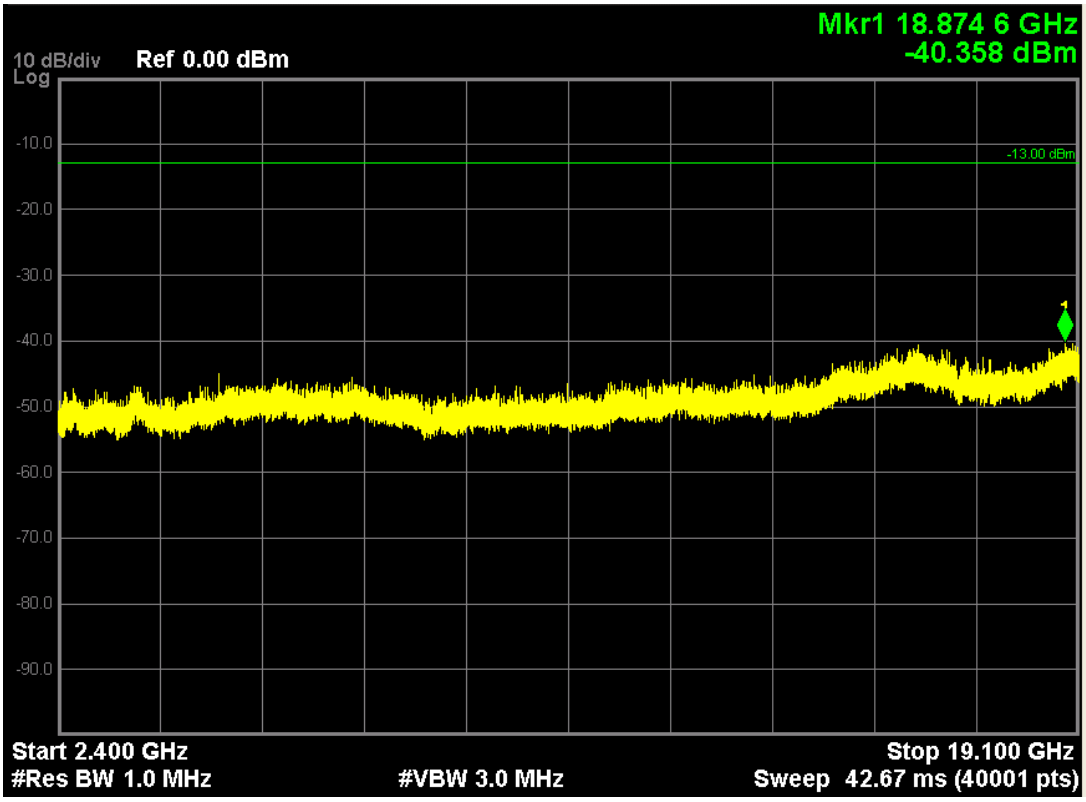
LTE Band 2 (16-QAM, Band Width 5MHz,RB Size 1,RB Offset 0,Channel 18900,Frequeny 1880MHz)



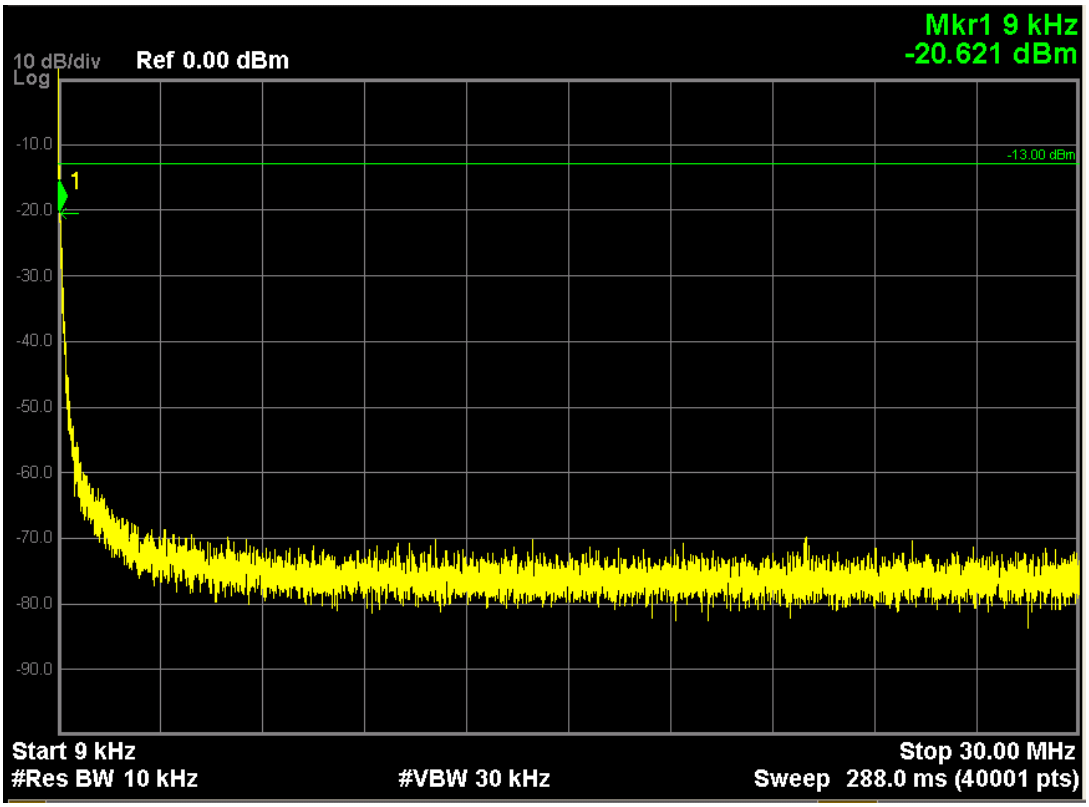


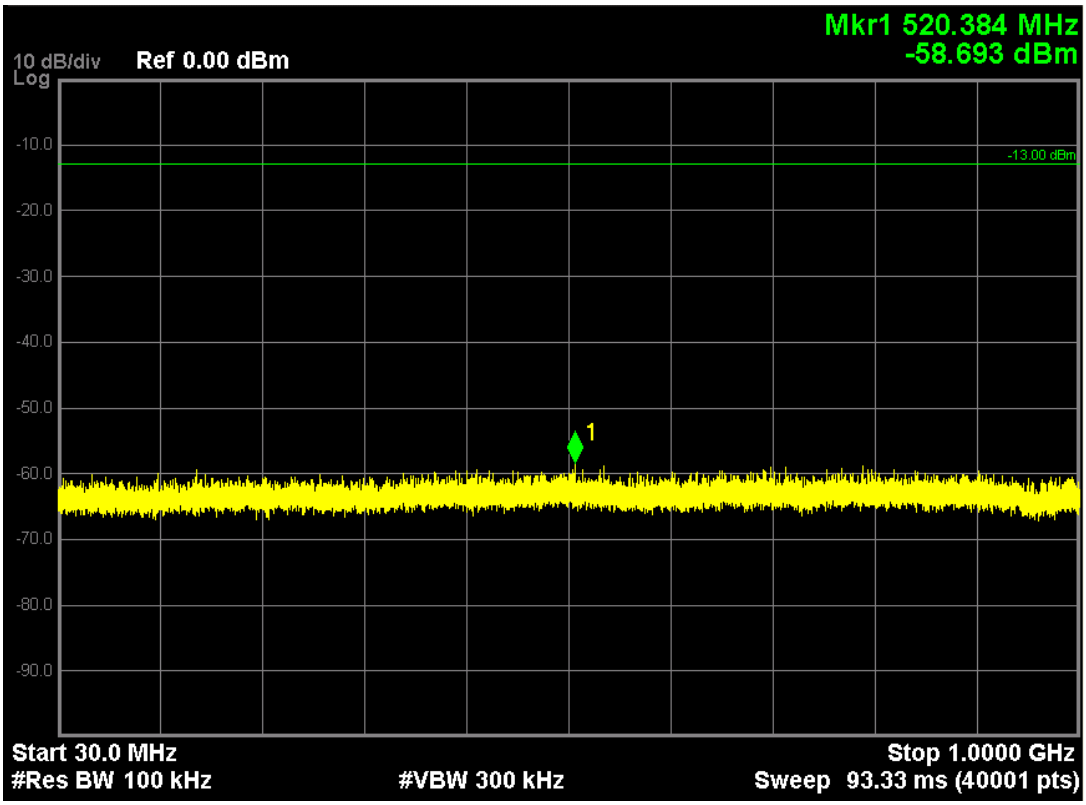


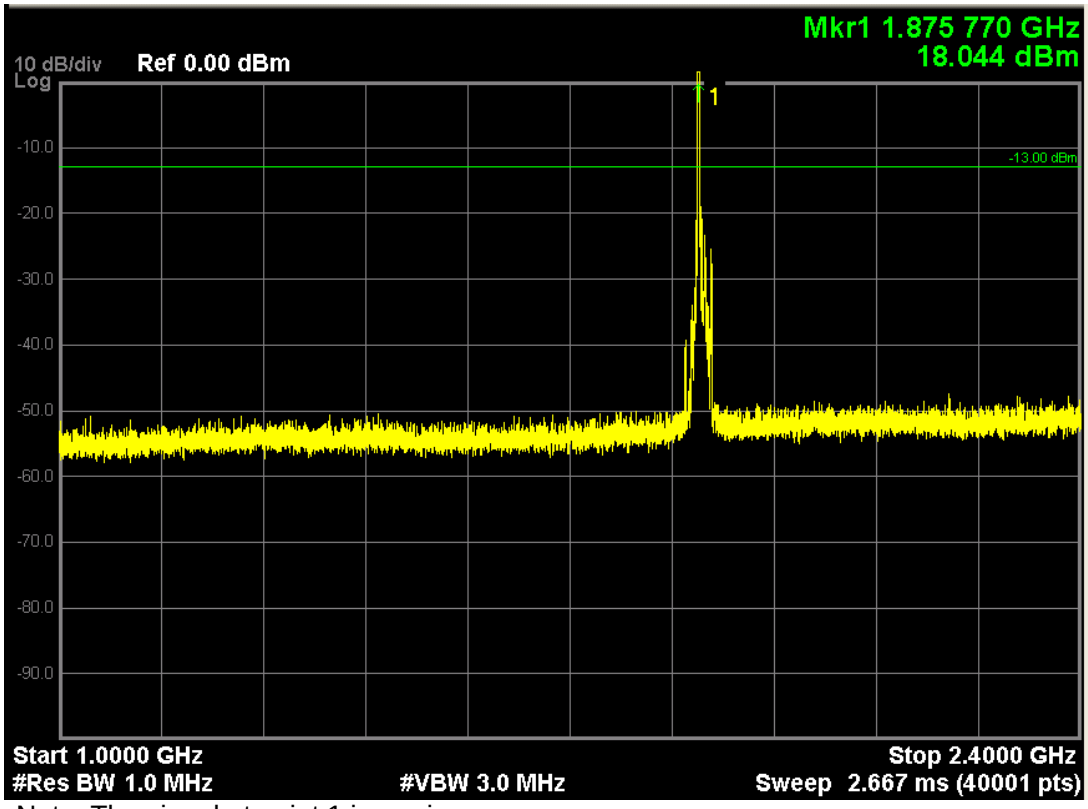
Note: The signal at point 1 is carrier



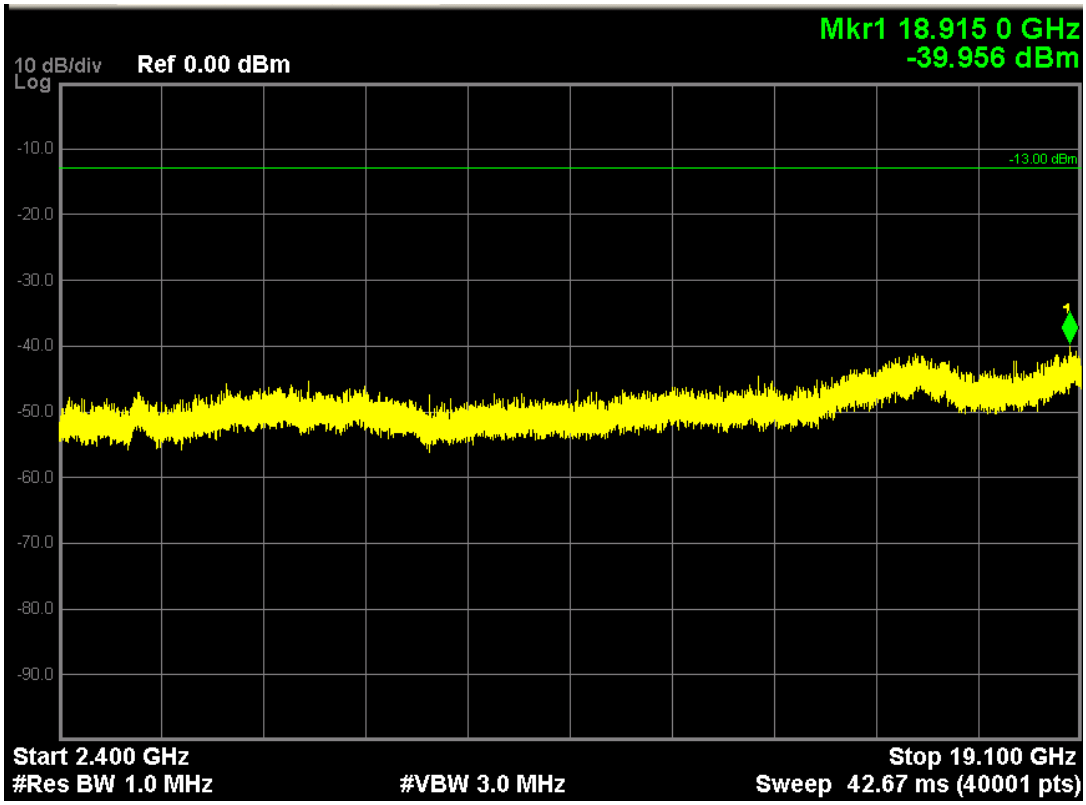
LTE Band 2 (QPSK, Band Width 10MHz,RB Size 1,RB Offset,Channel 18900,Frequeny 1880MHz)



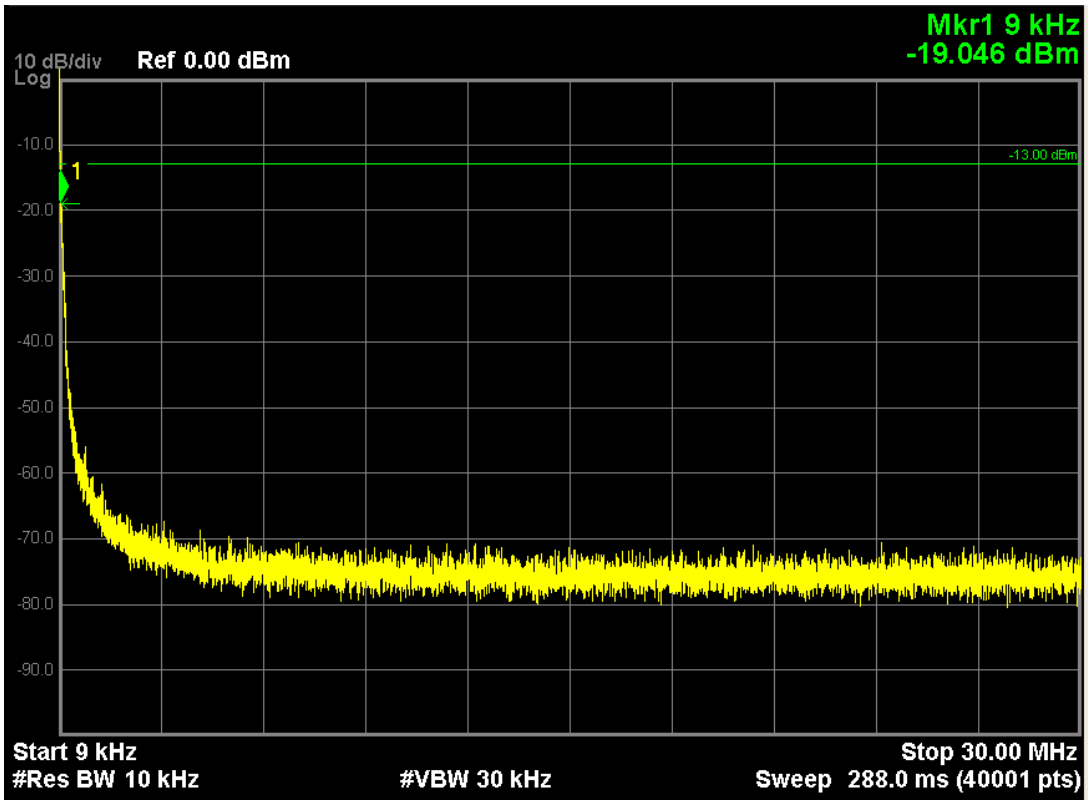


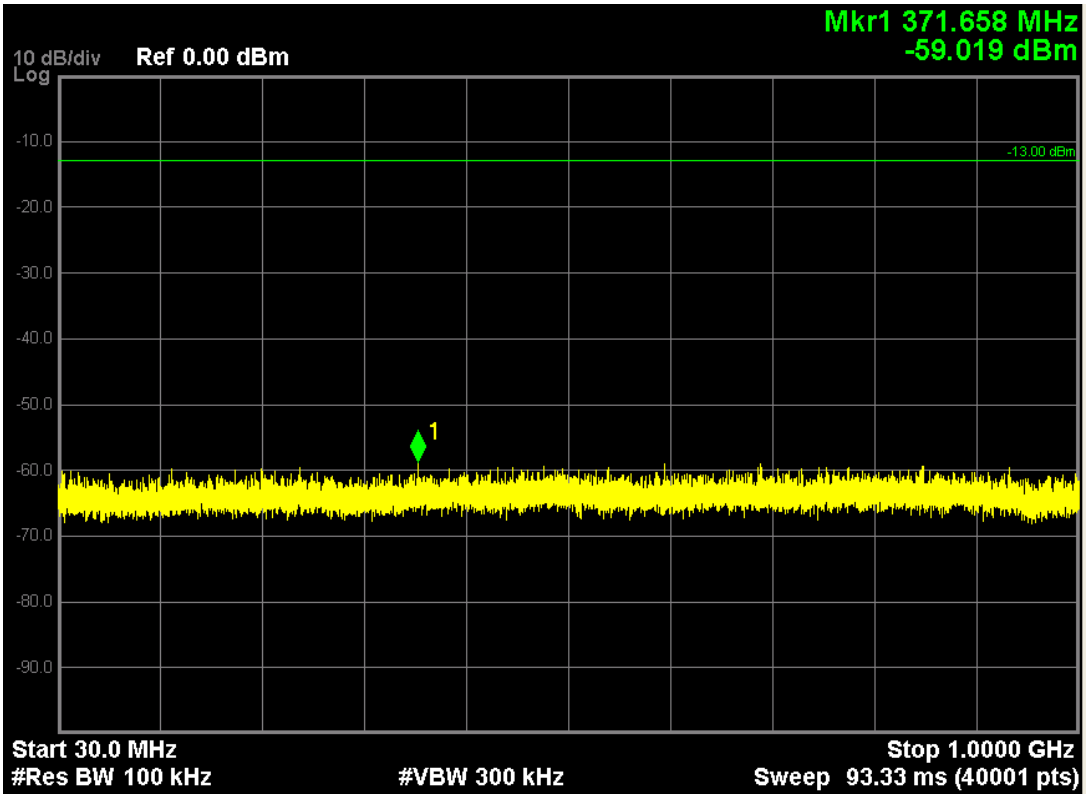


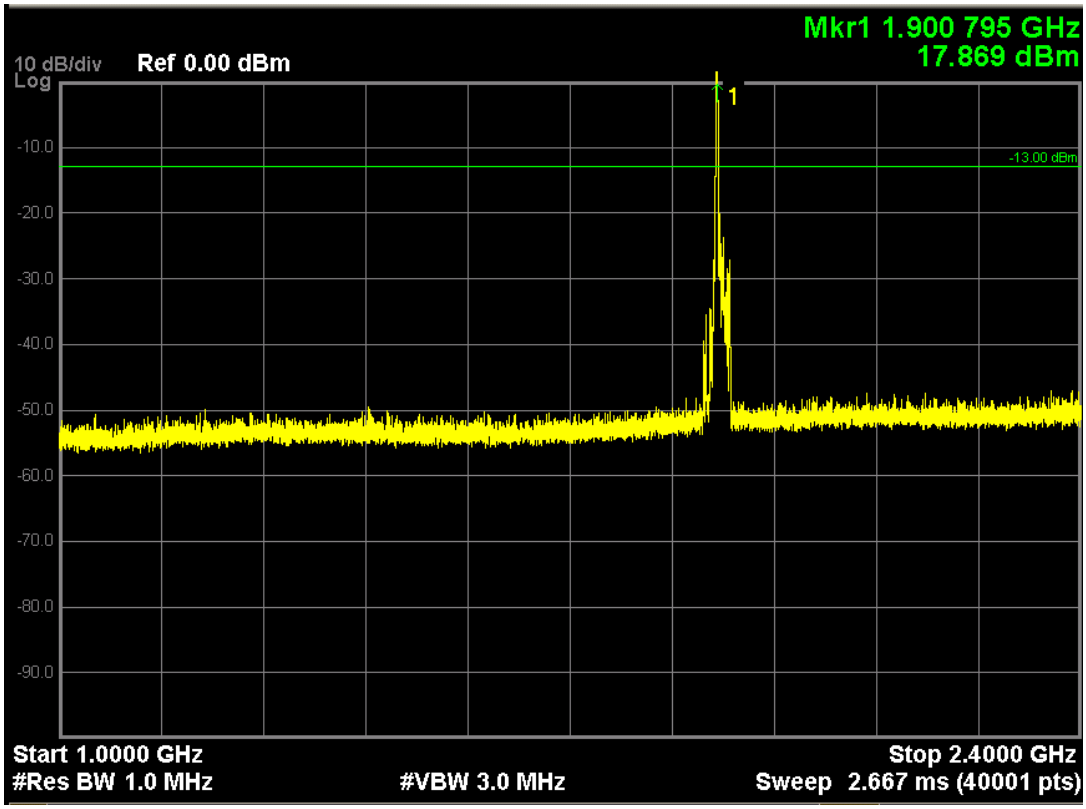
Note: The signal at point 1 is carrier



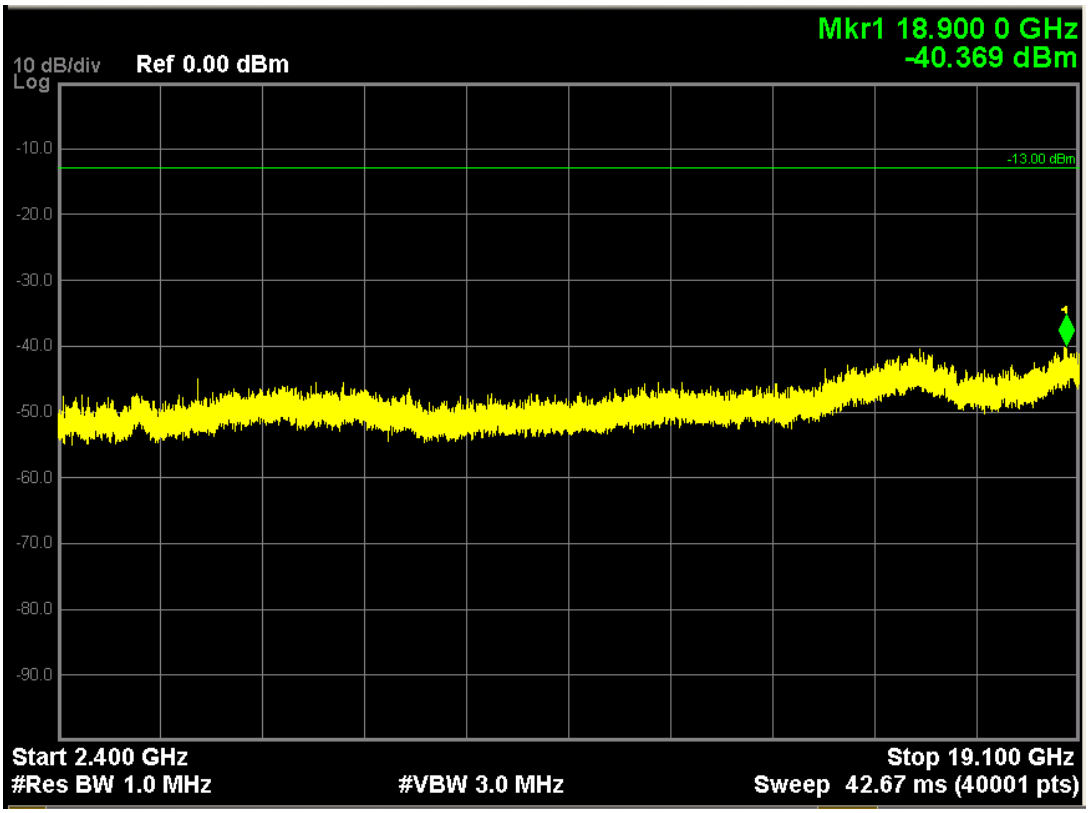
LTE Band 2 (16-QAM, Band Width 10MHz,RB Size 1,RB Offset 0,Channel 19150,Frequeny 1905.0MHz)



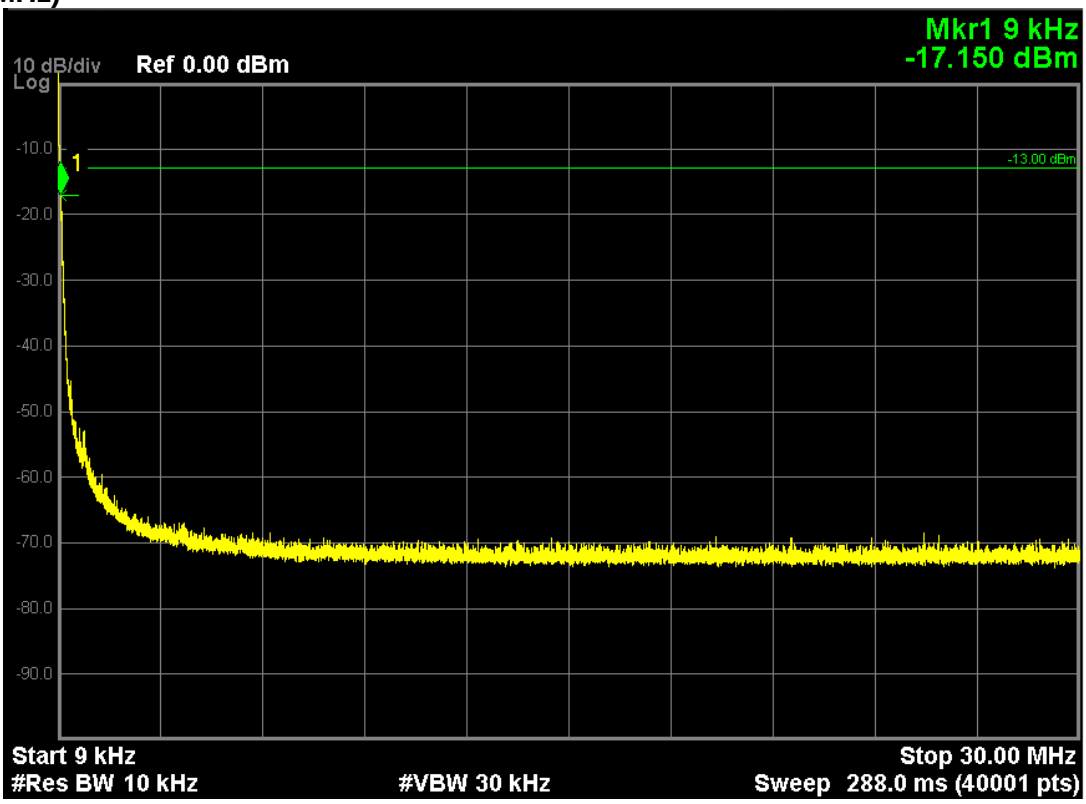


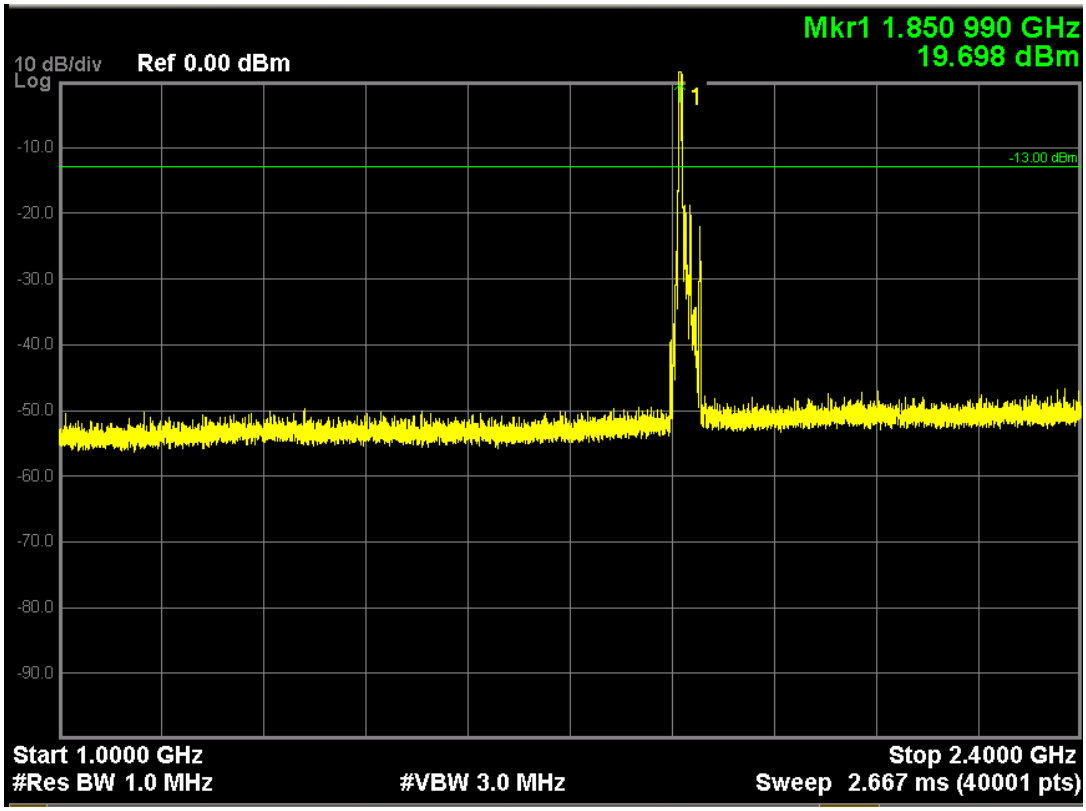


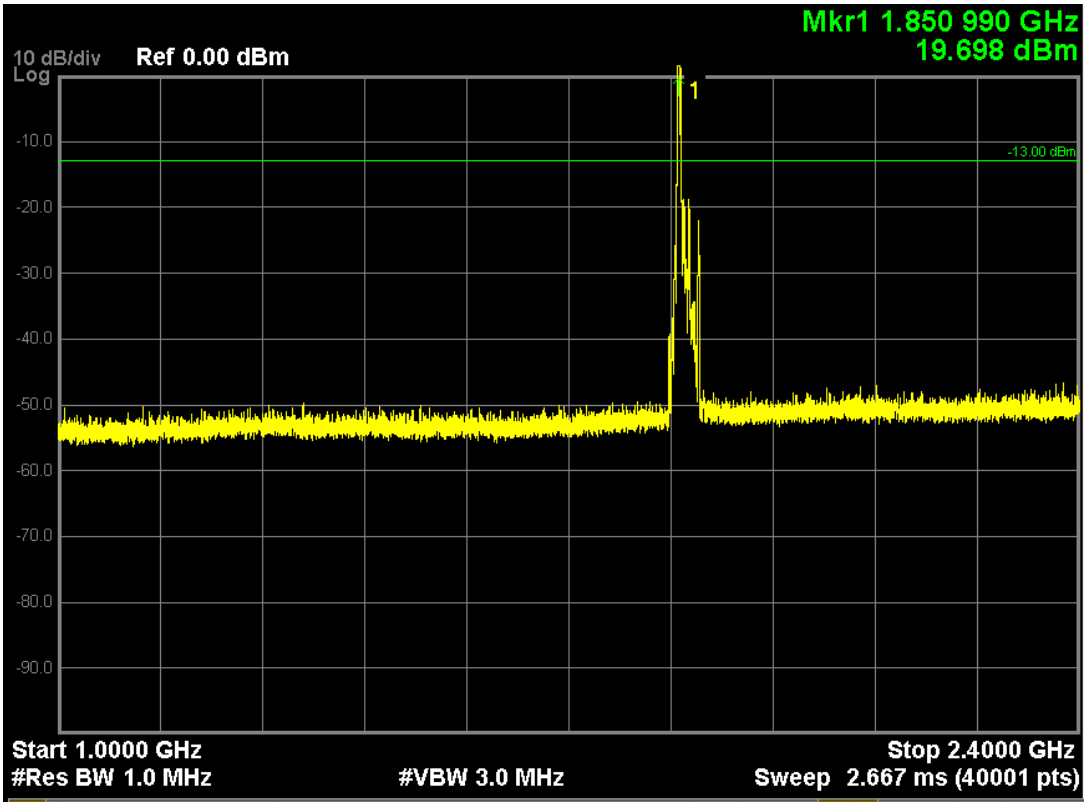
Note: The signal at point 1 is carrier



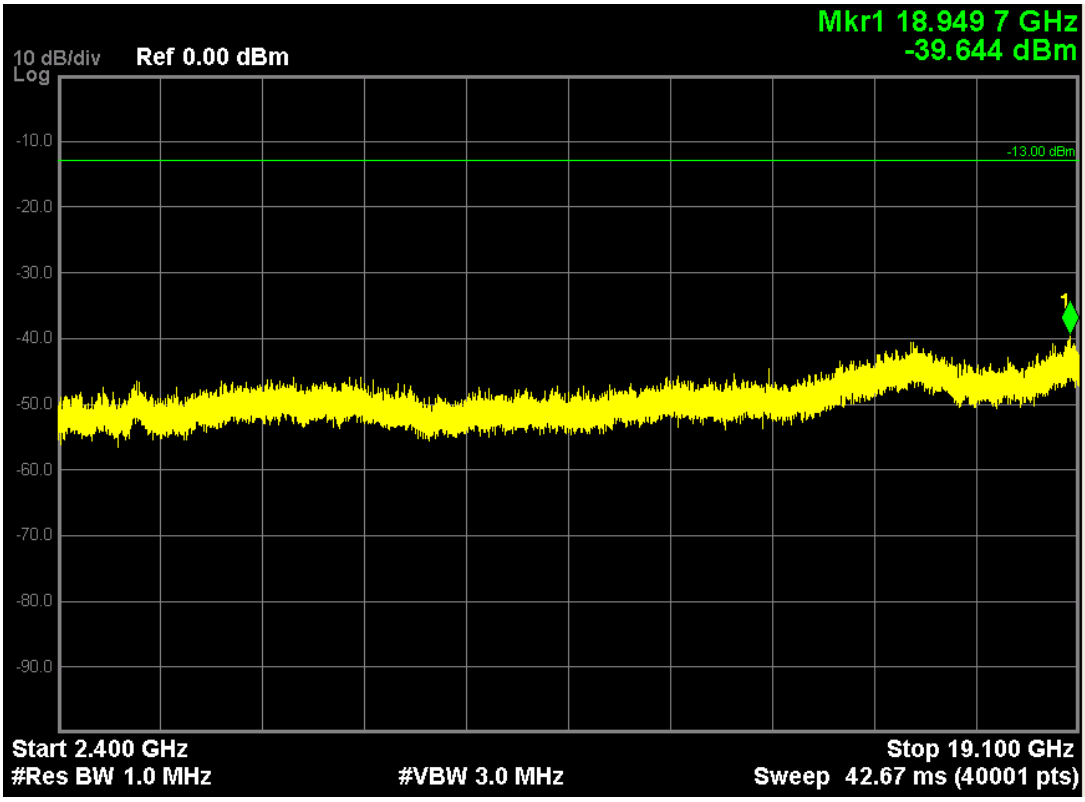
LTE Band 2 (QPSK, Band Width 15MHz,RB Size 1,RB Offset 0,Channel 18675,Frequeny 1857.5MHz)



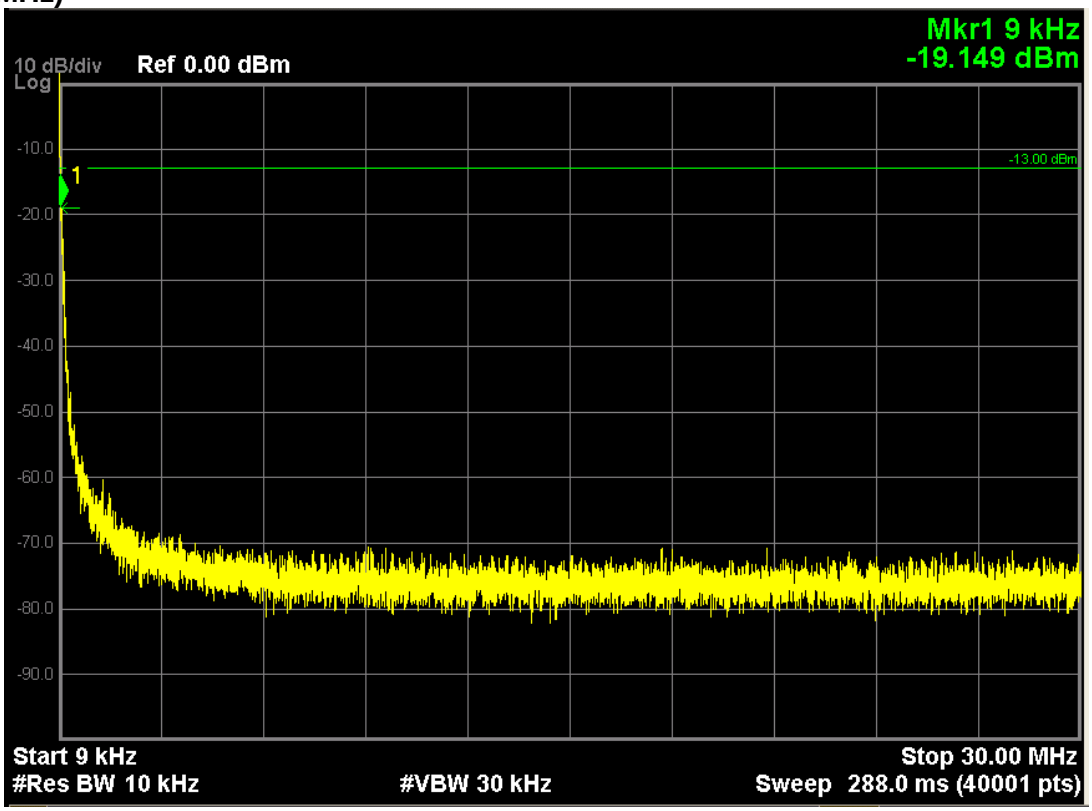


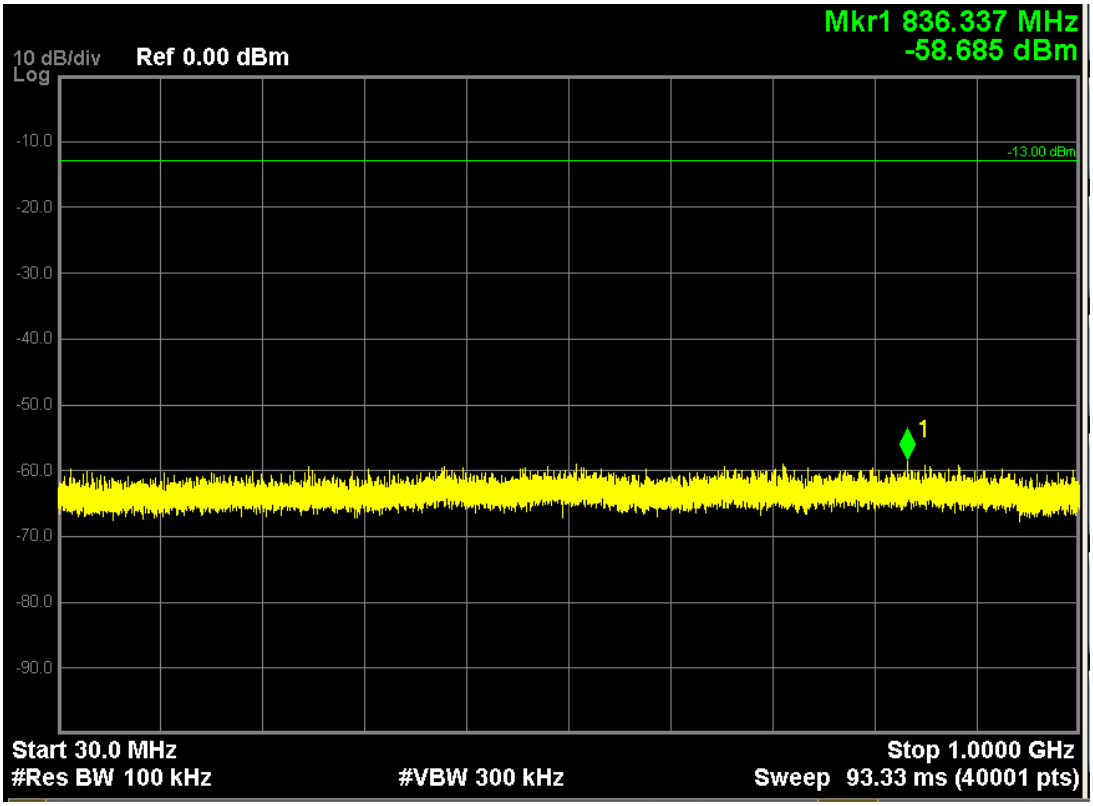


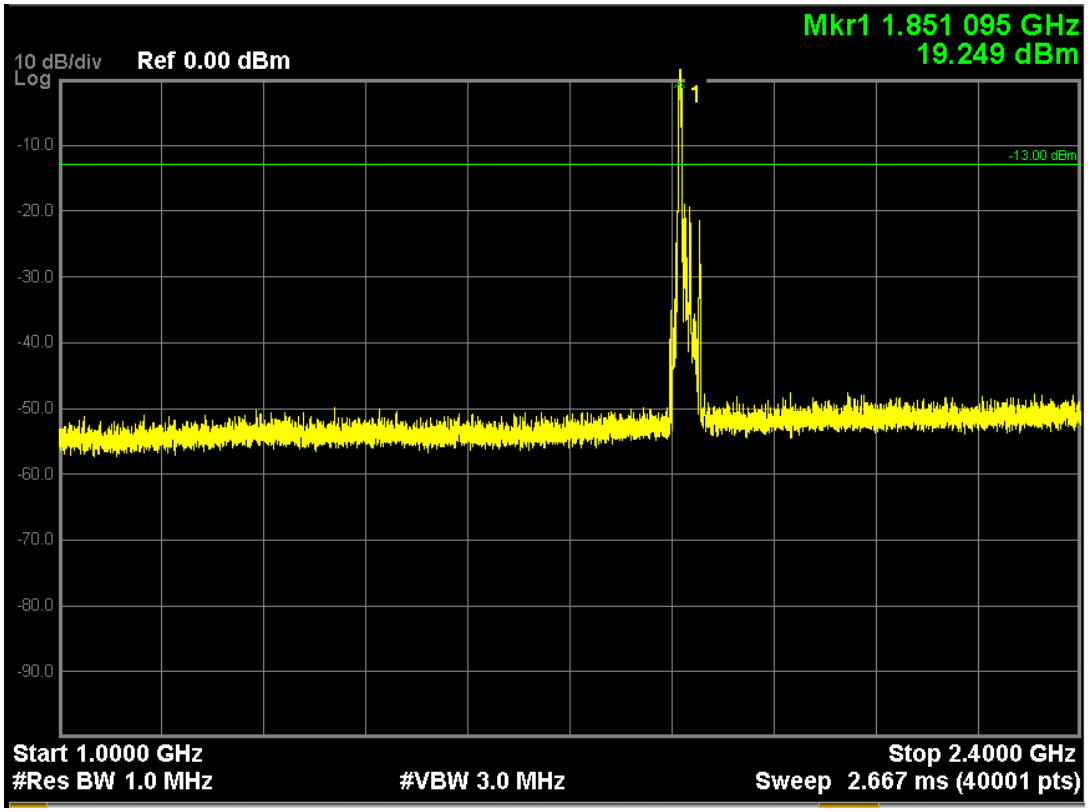
Note: The signal at point 1 is carrier



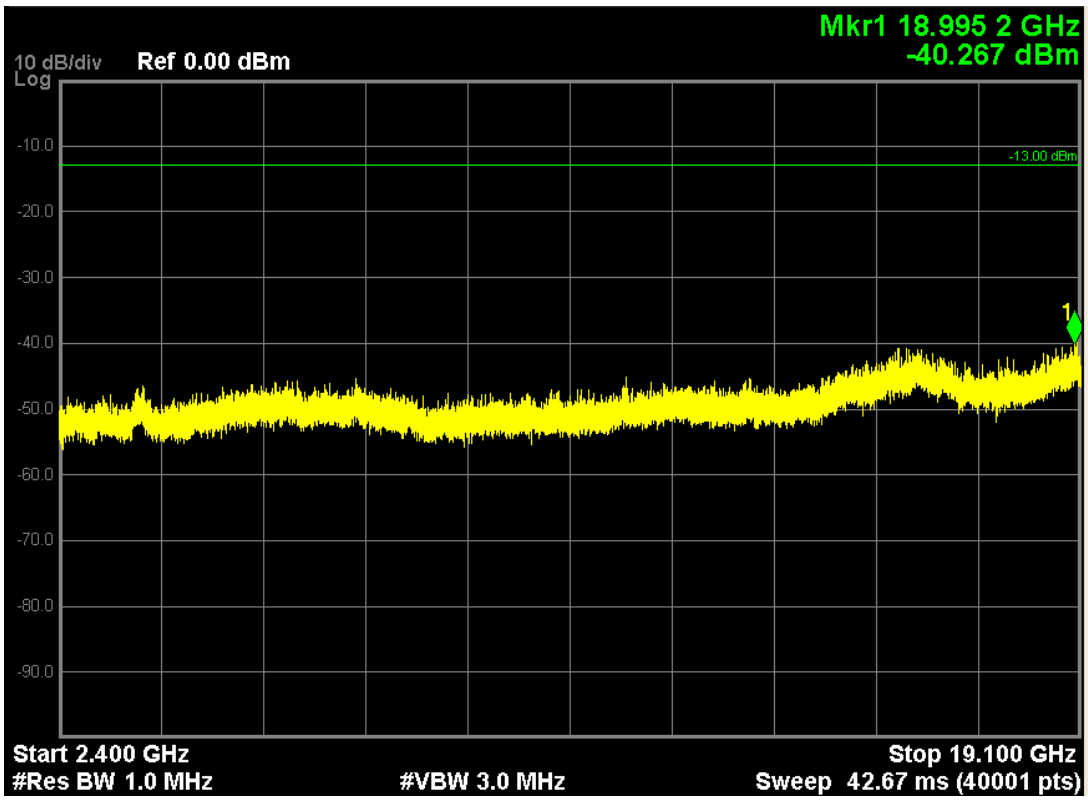
LTE Band 2 (16-QAM, Band Width 15MHz,RB Size 1,RB Offset 0,Channel 19675,Frequeny 1857.5MHz)



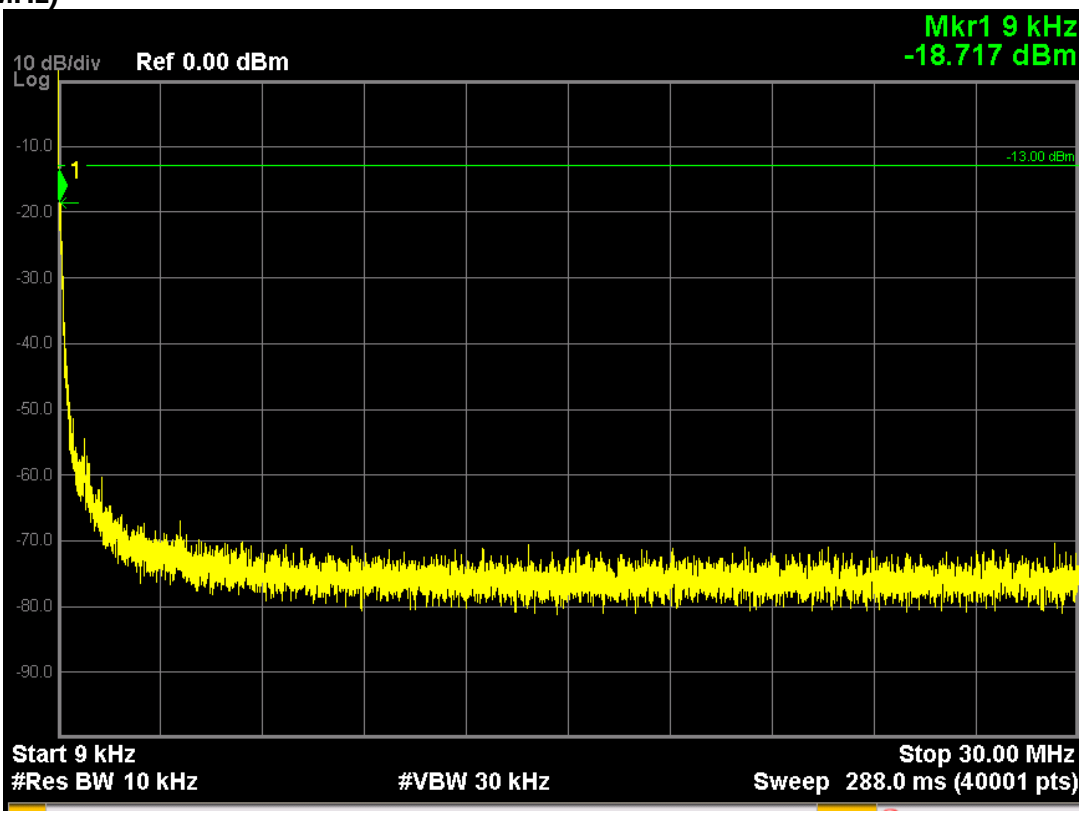


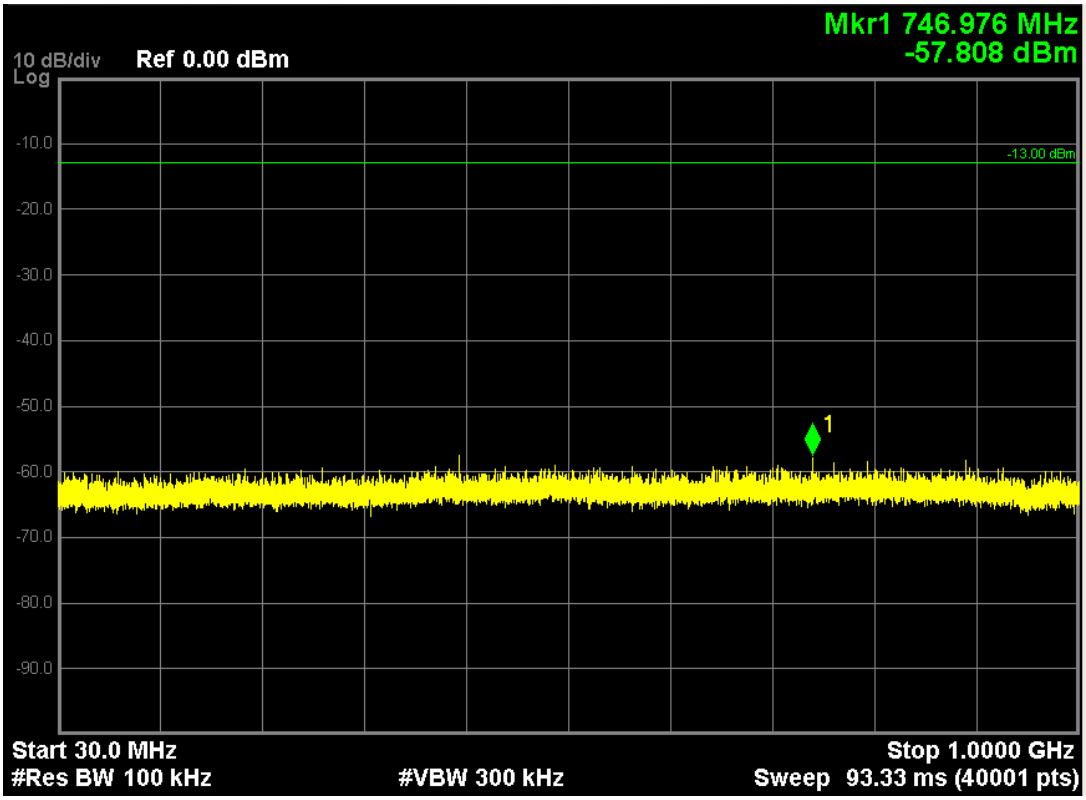


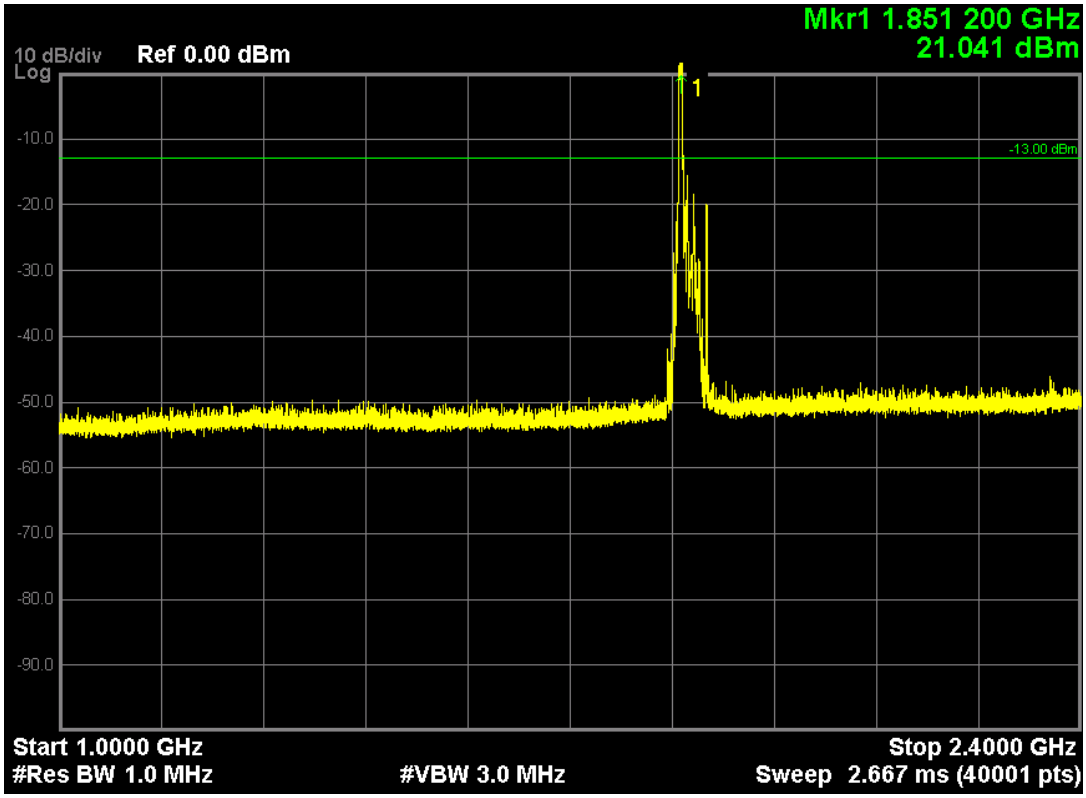
Note: The signal at point 1 is carrier



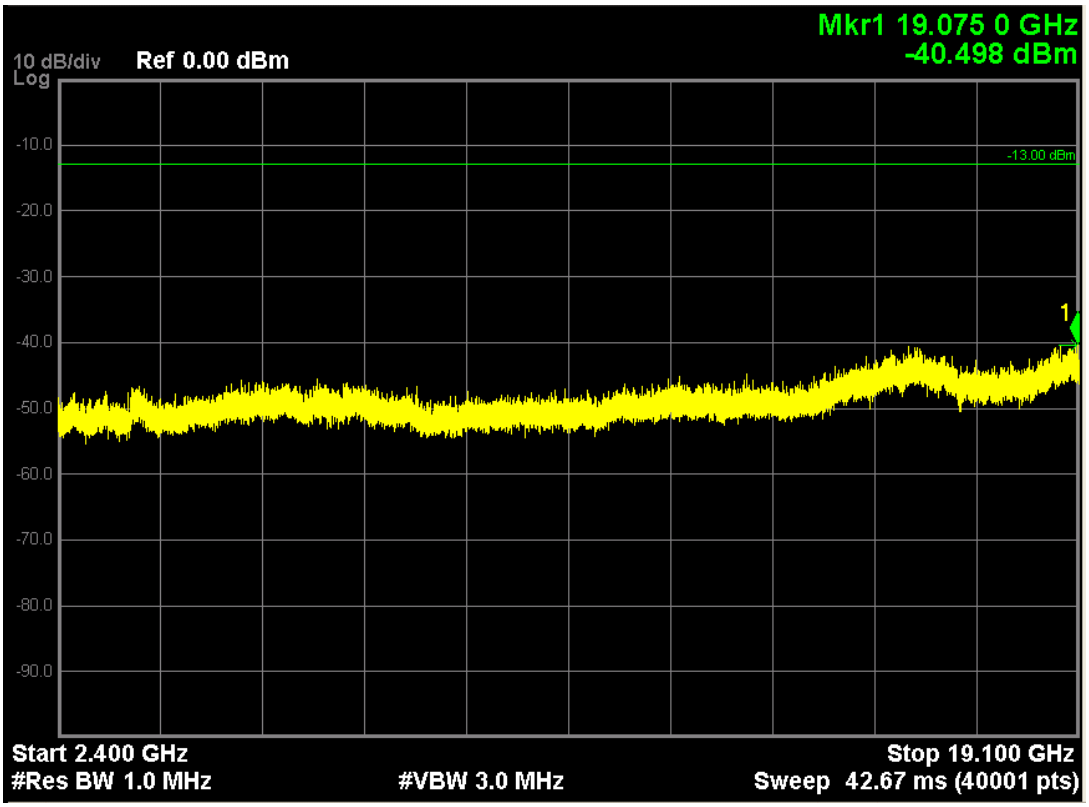
LTE Band 2 (QPSK, Band Width 20MHz,RB Size 1,RB Offset 0,Channel 18700,Frequeny 1860.0MHz)



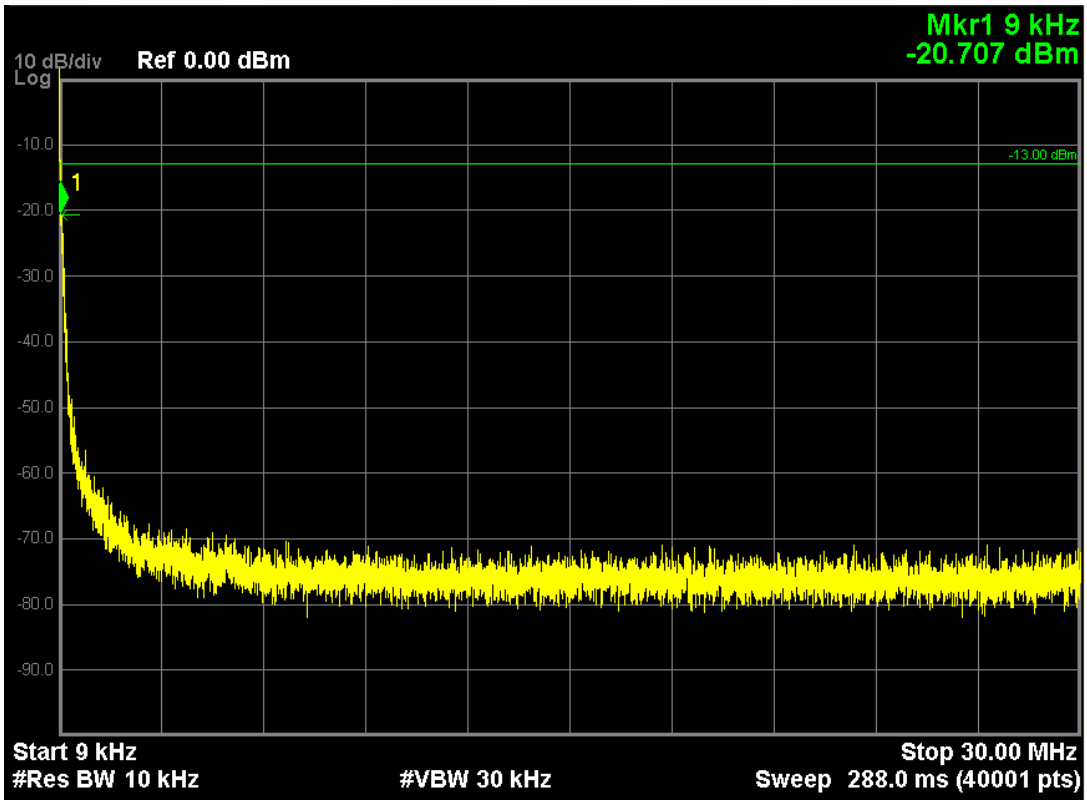


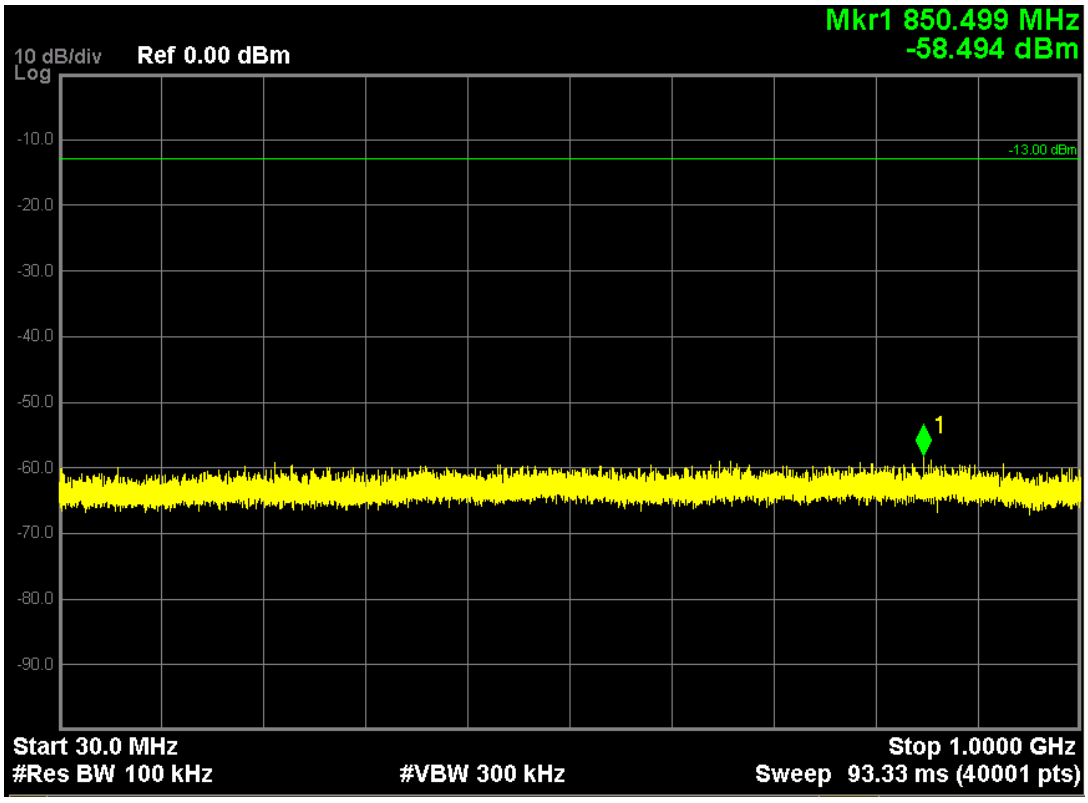


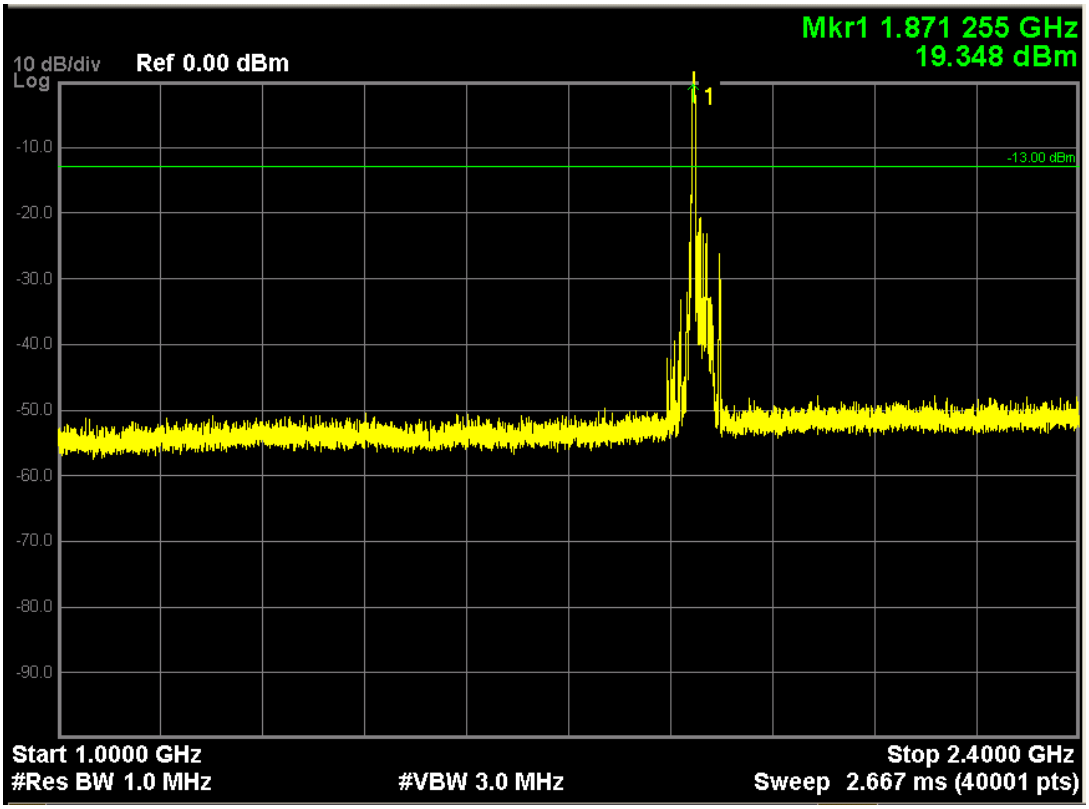
Note: The signal at point 1 is carrier



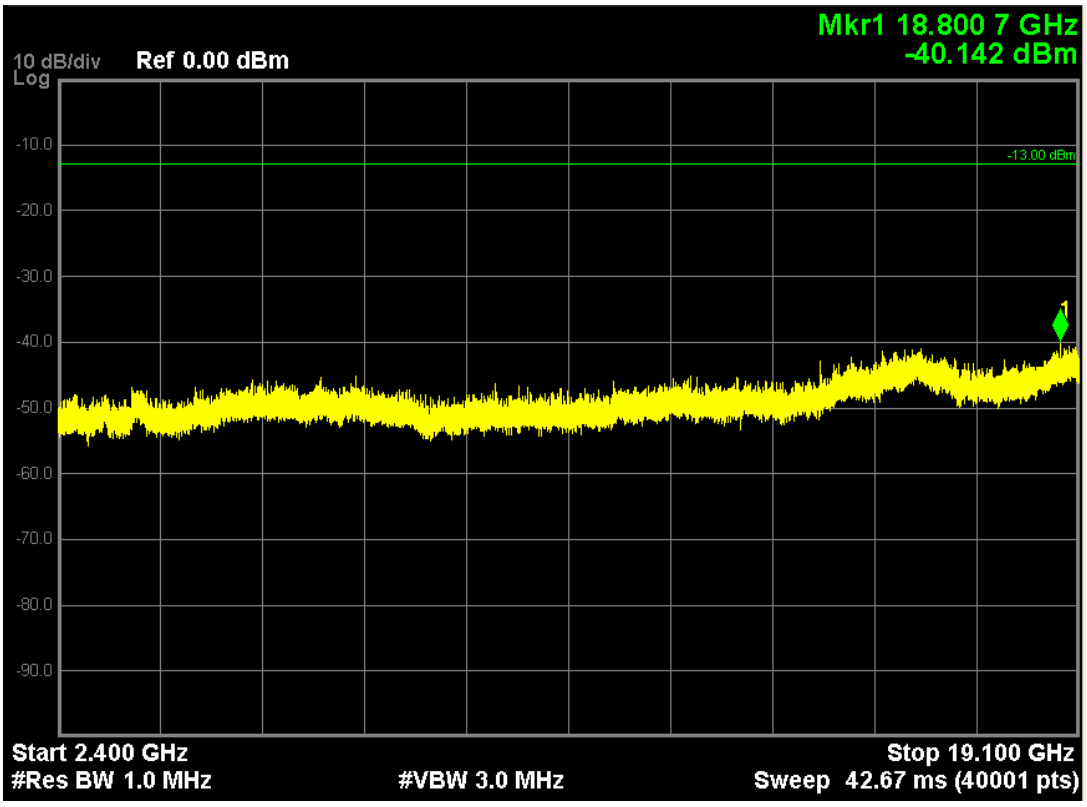
LTE Band 2 (16-QAM, Band Width 20MHz, RB Size 1,RB Offset 0,Channel 18900,Frequeny 1880.0MHz)







Note: The signal at point 1 is carrier



LTE Band 4 (QPSK, Band Width 1.4MHz,RB Size 1,RB Offset 0,Channel 19957,Frequeny 1710.7MHz)