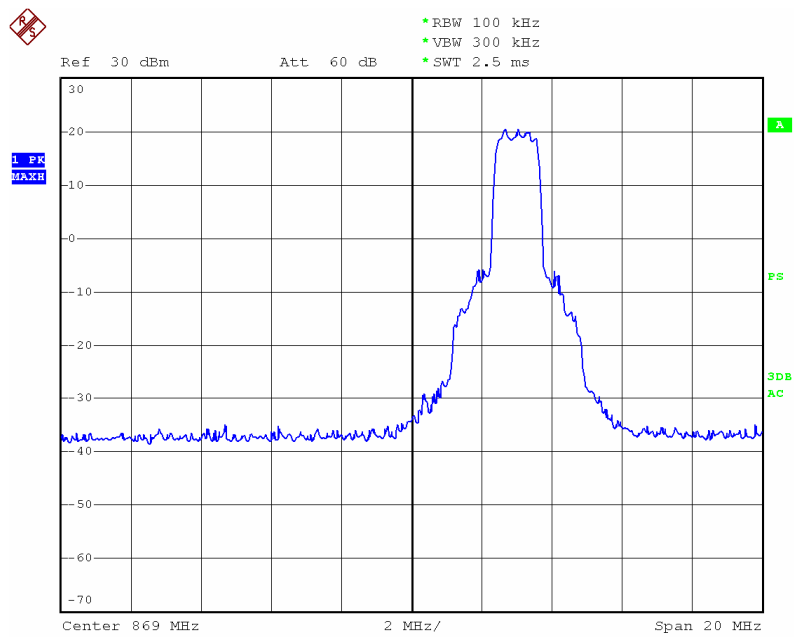
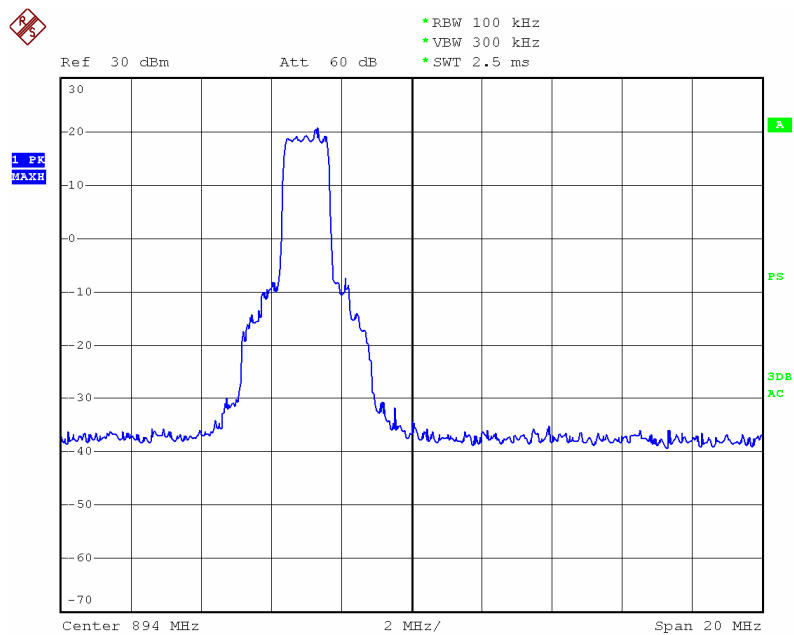


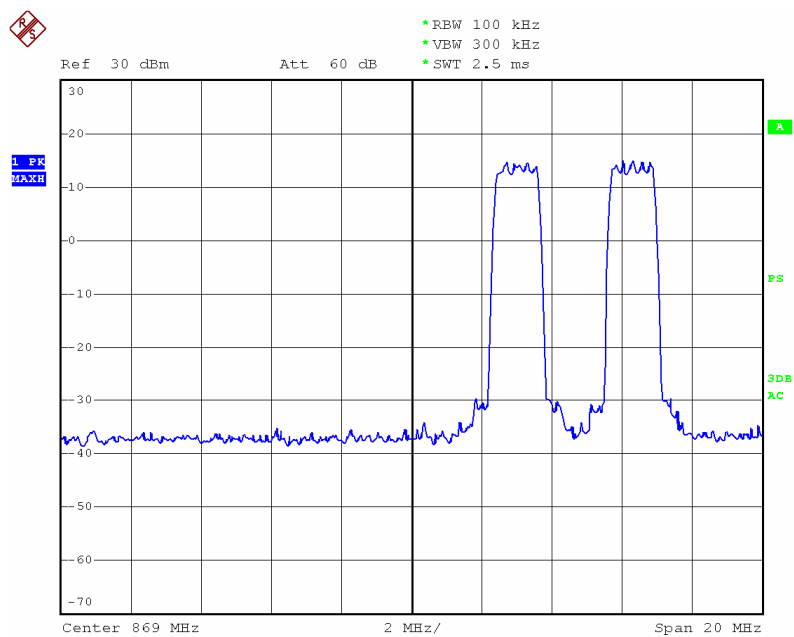
850MHz-CDMA2000 one signal input down link-Lower Edge



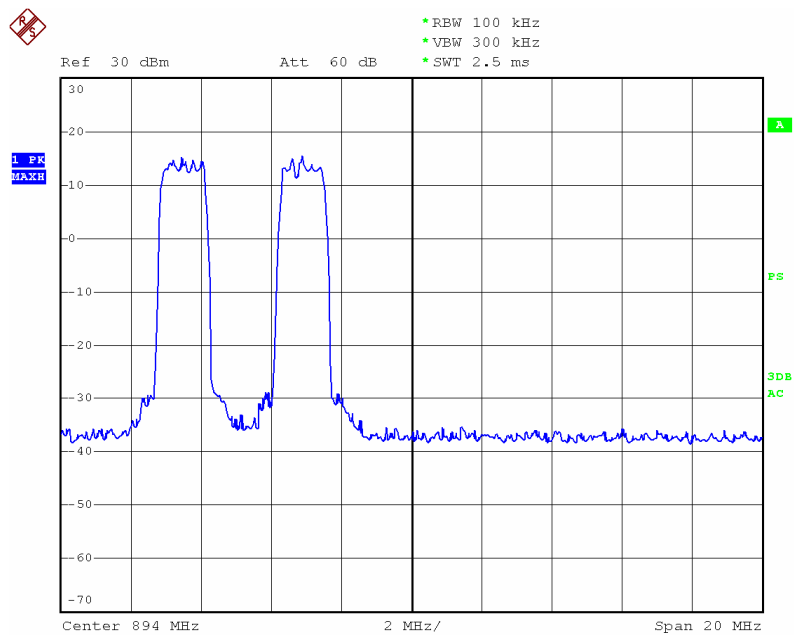
850MHz-CDMA2000 one signal input down link-Upper Edge



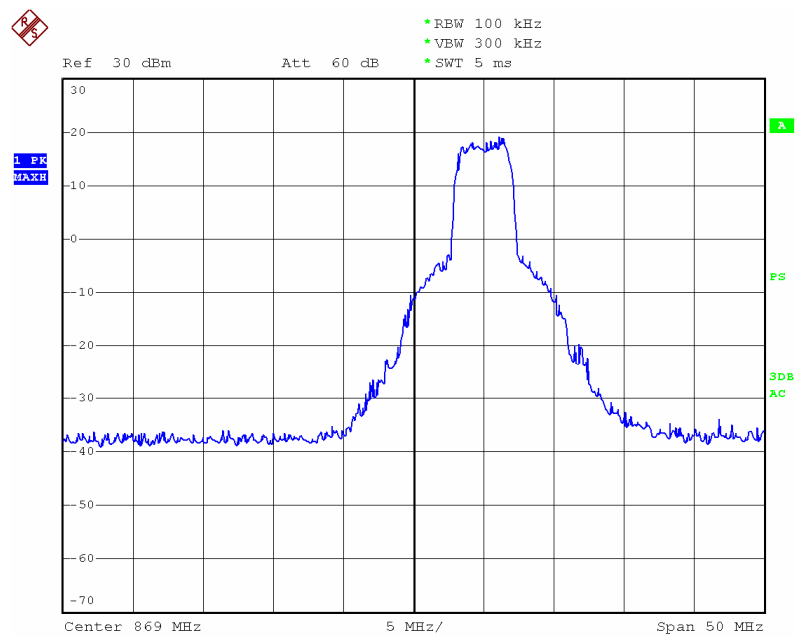
850MHz-CDMA2000 two signal input down link-Lower Edge



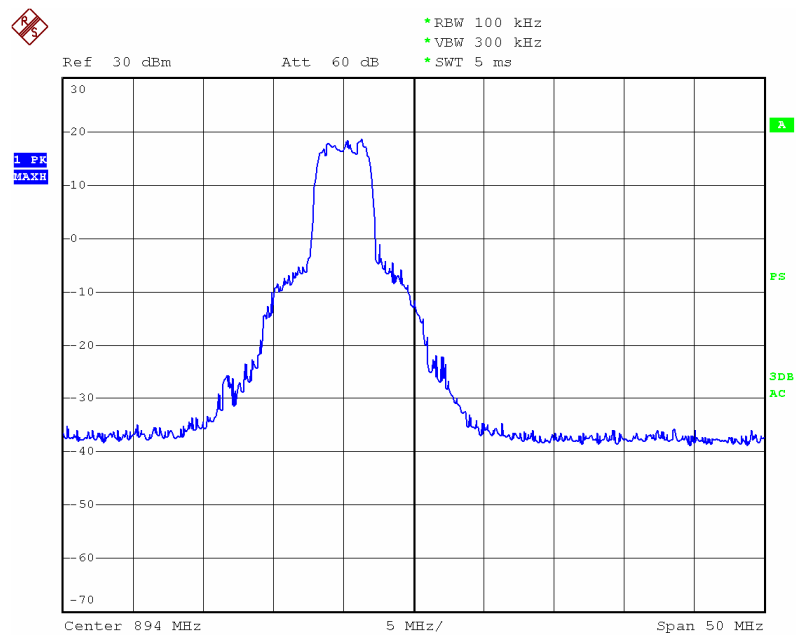
850MHz-CDMA2000 two signal input down link-Upper Edge

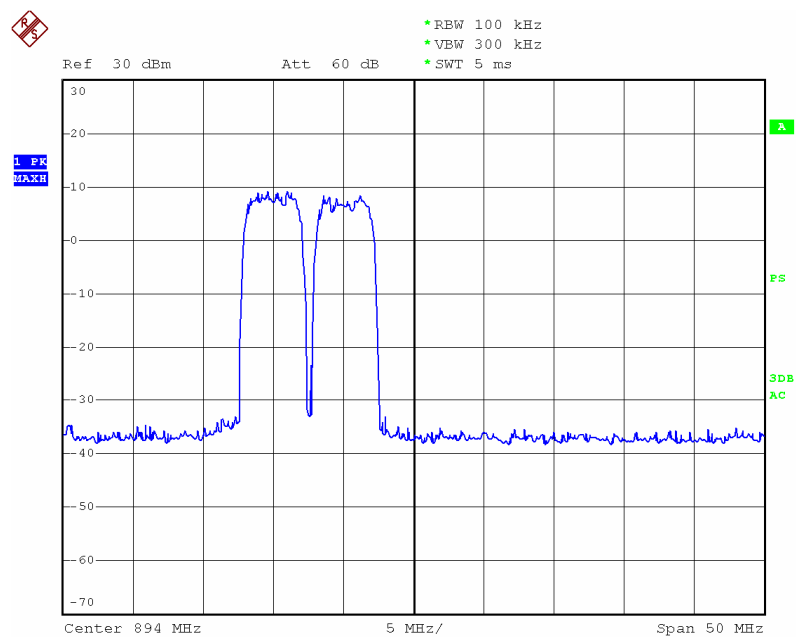


850MHz-WCDMA one signal input down link-Lower Edge



850MHz-WCDMA one signal input down link-Upper Edge





850MHz-LTE-QPSK one signal input down link-Lower Edge



850MHz-LTE-QPSK one signal input down link-Upper Edge



850MHz-LTE-16QAMone signal input down link-Lower Edge



850MHz-LTE-16QAM one signal input down link-Upper Edge



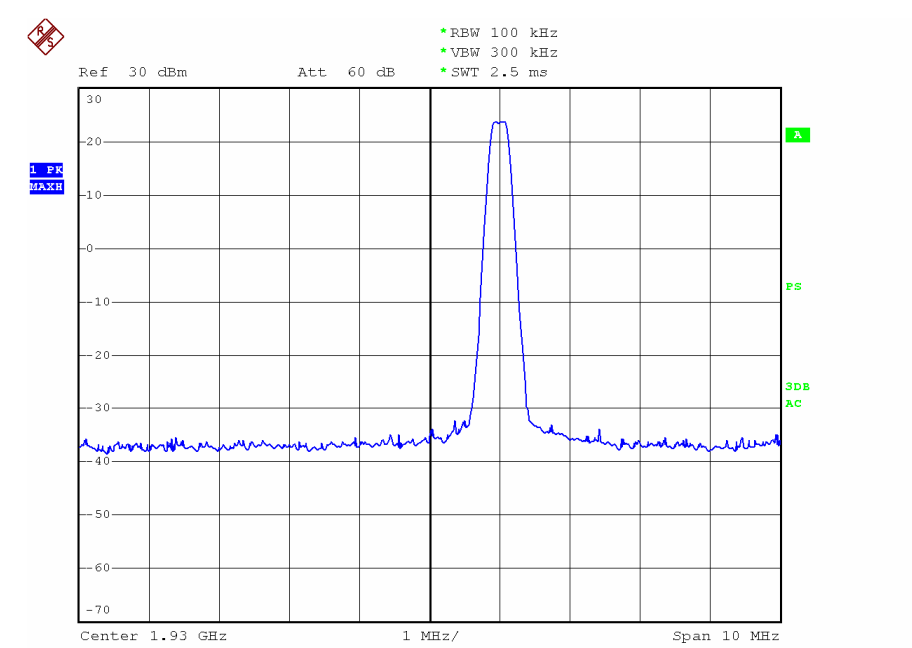
850MHz-LTE-64QAM one signal input down link-Lower Edge



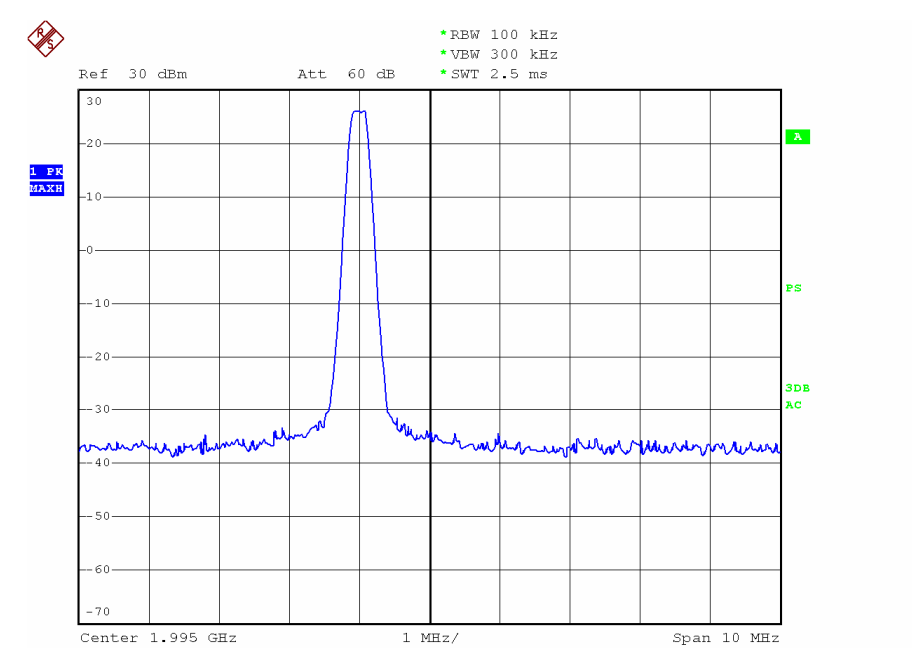
850MHz-LTE-64QAM one signal input down link-Upper Edge

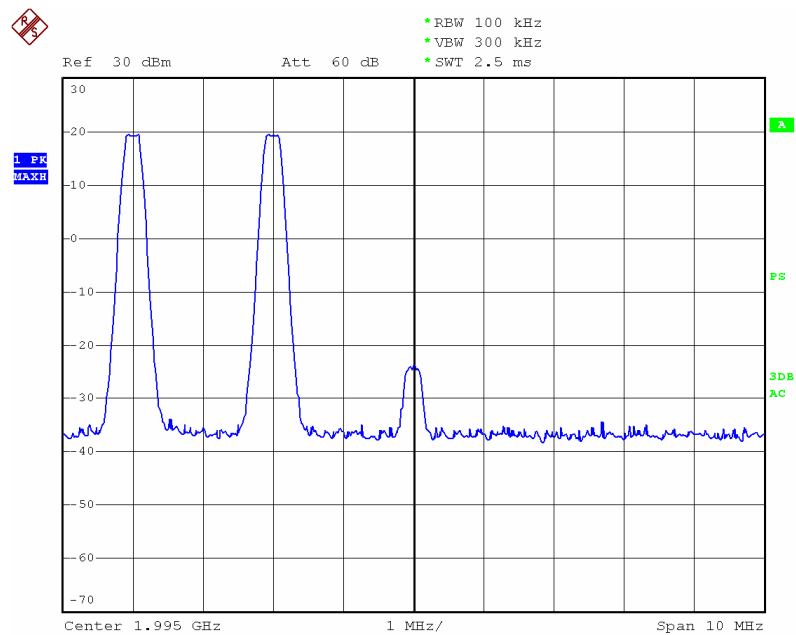


1900MHz-GSM one signal input down link-Lower Edge

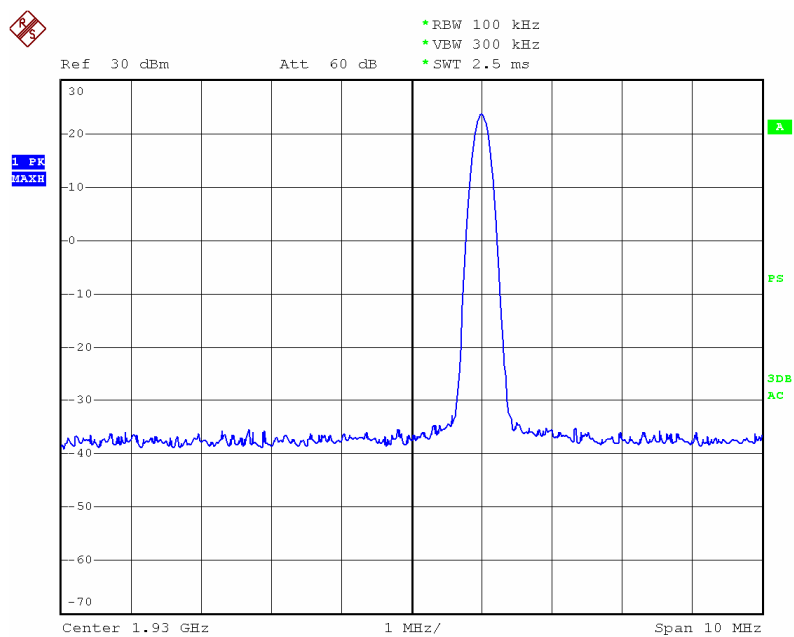


1900MHz-GSM one signal input down link-Upper Edge

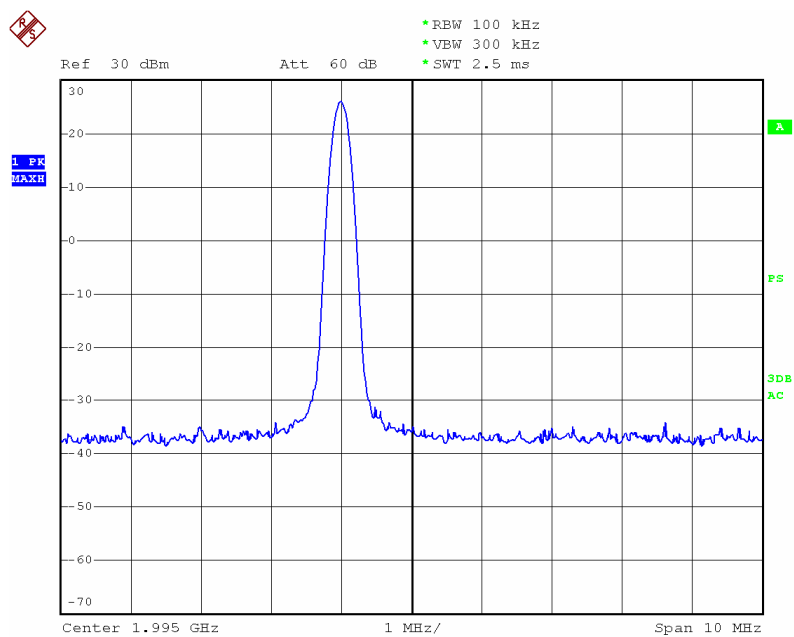




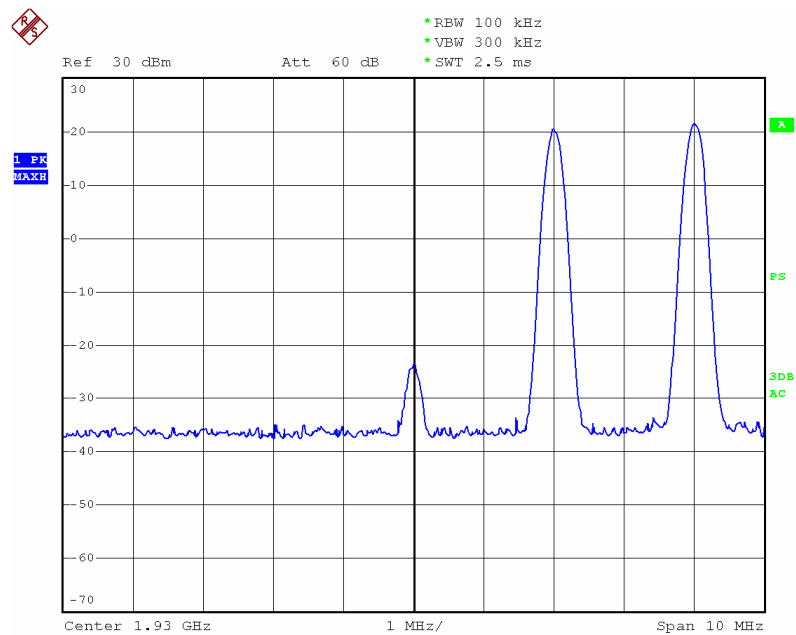
1900MHz-EDGE one signal input down link-Lower Edge



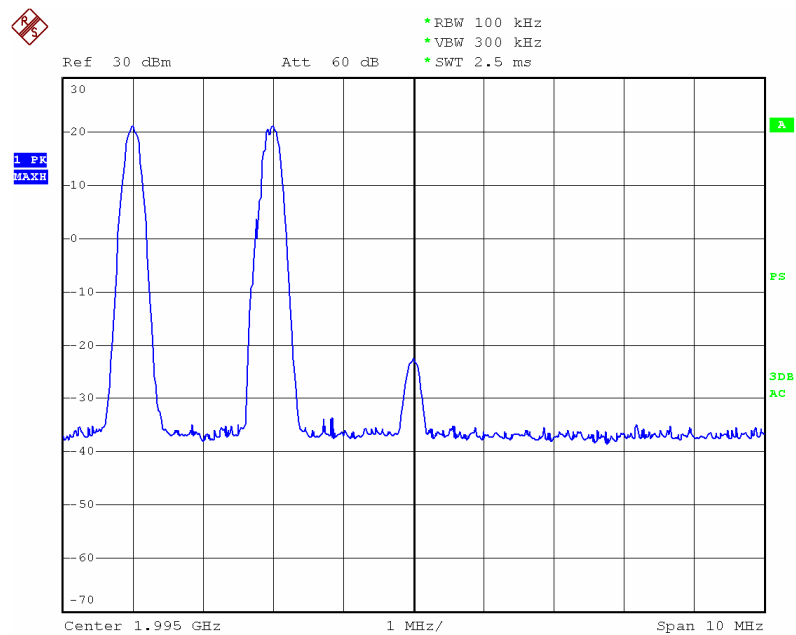
1900MHz-EDGE one signal input down link-Upper Edge



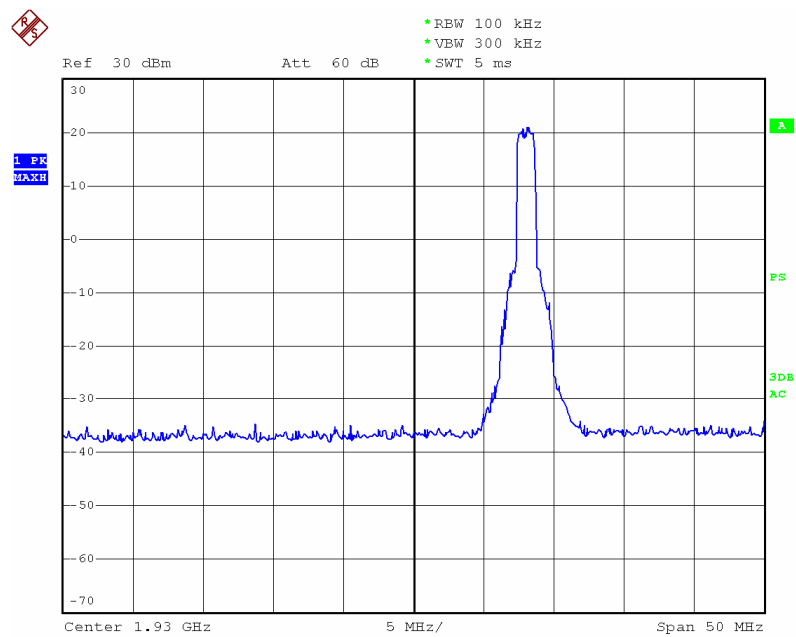
1900MHz-EDGE two signal input down link-Lower Edge



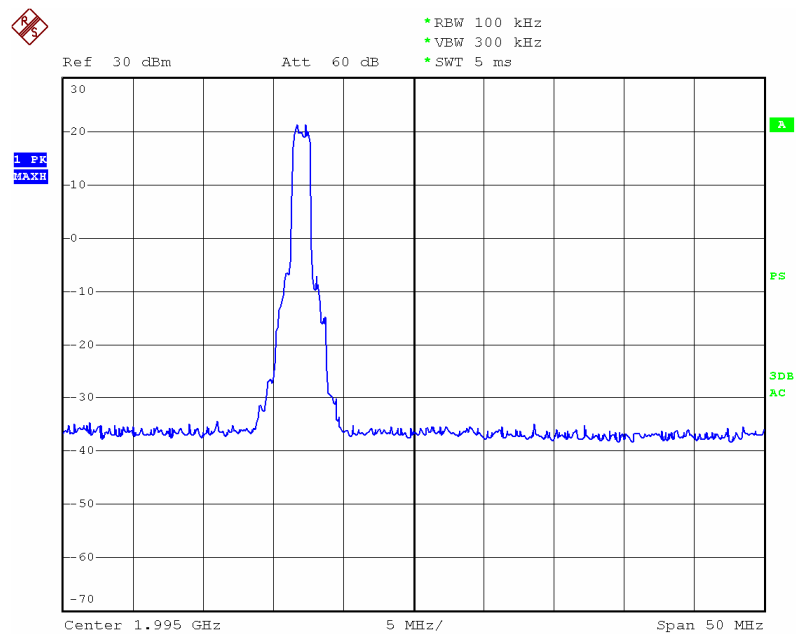
1900MHz-EDGE two signal input down link-Upper Edge



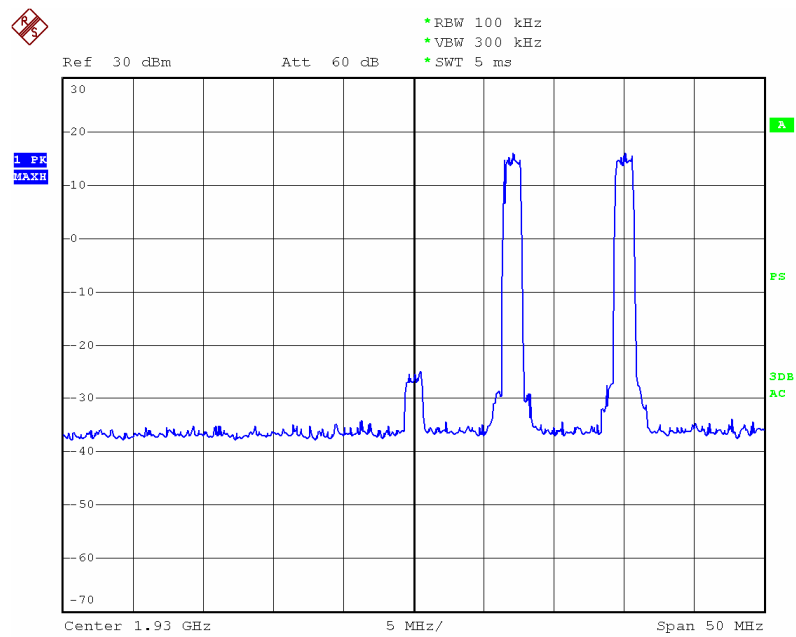
1900MHz-CDMA2000 one signal input down link-Lower Edge



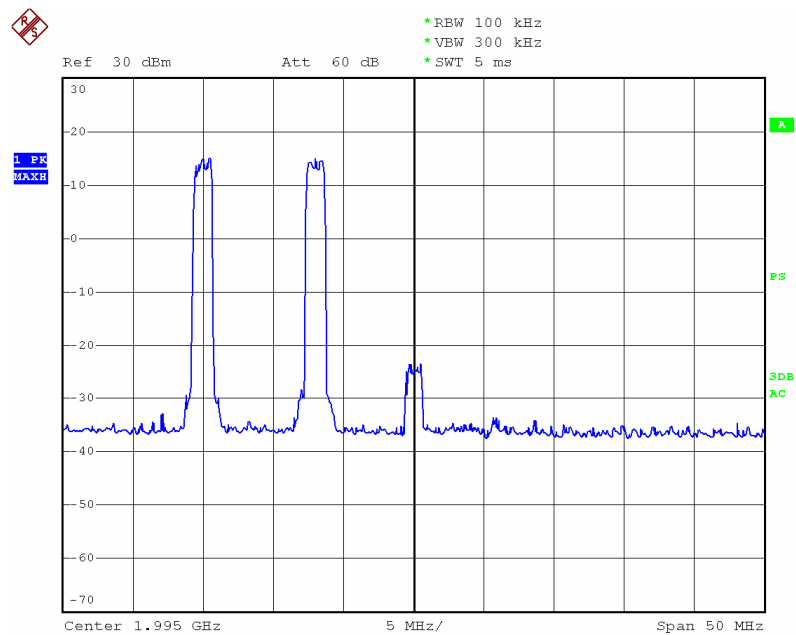
1900MHz-CDMA2000 one signal input down link-Upper Edge



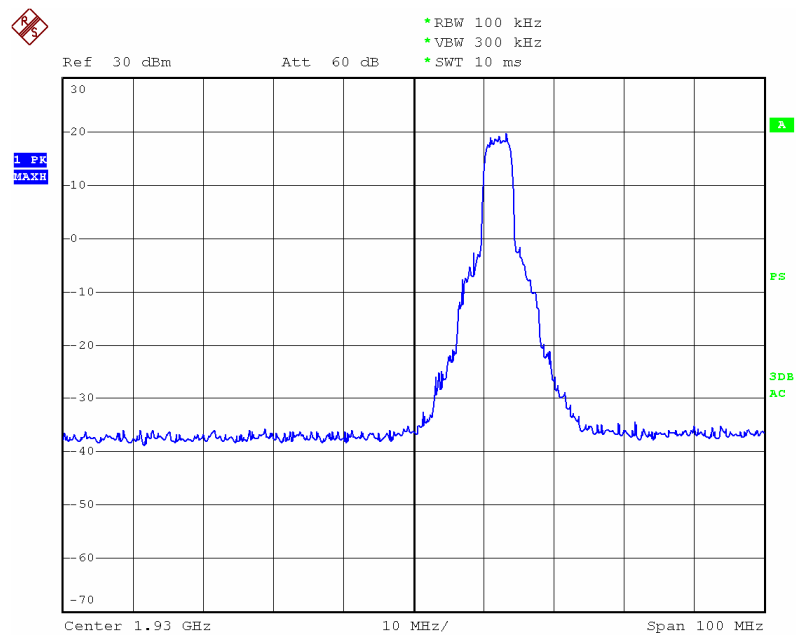
1900MHz-CDMA2000 two signal input down link-Lower Edge



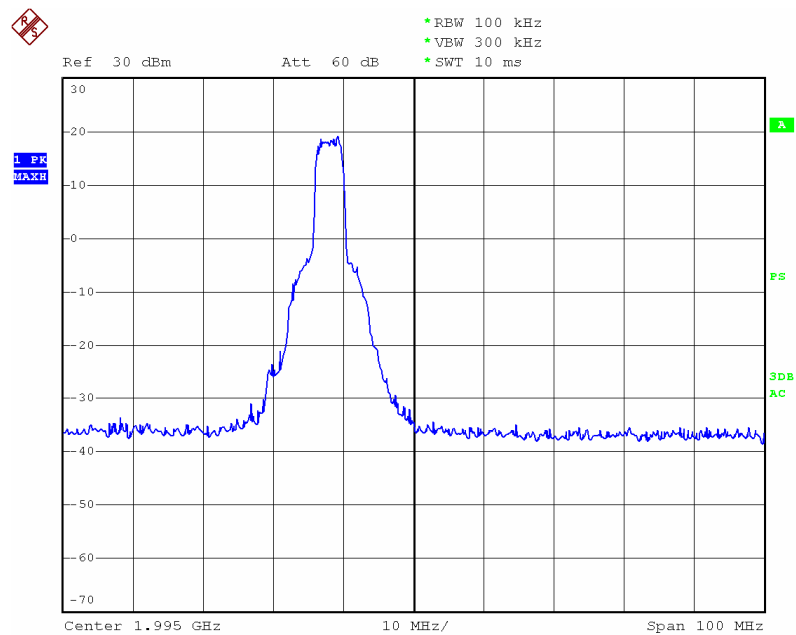
1900MHz-CDMA2000 two signal input down link-Upper Edge



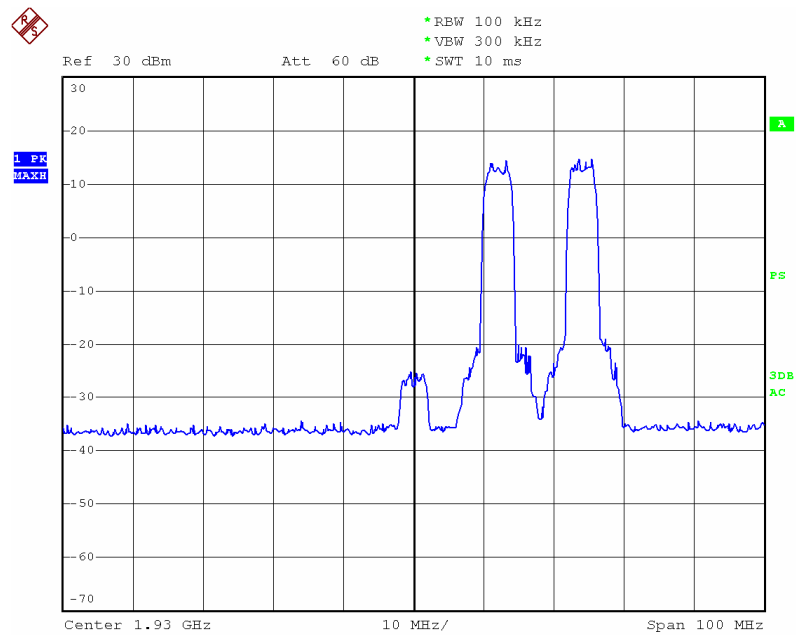
1900MHz-WCDMA one signal input down link-Lower Edge



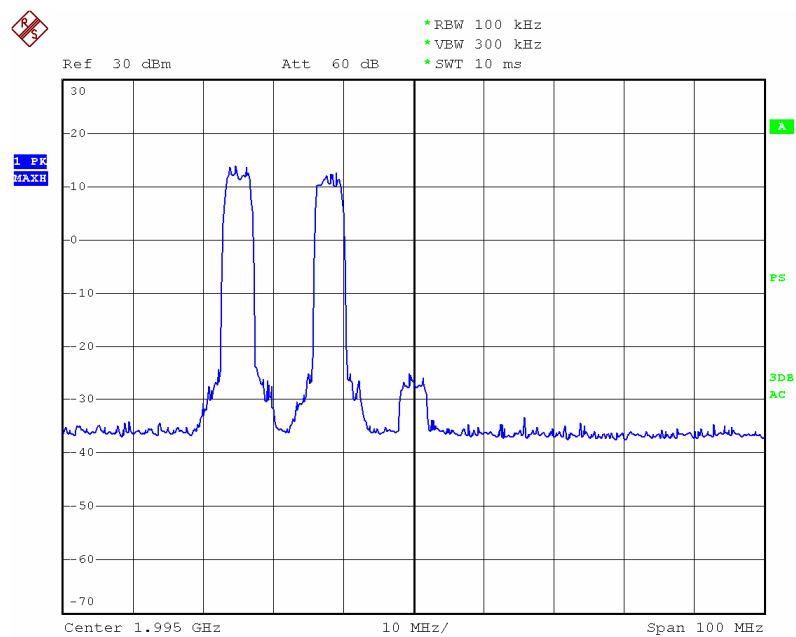
1900MHz-WCDMA one signal input down link-Upper Edge



1900MHz-WCDMA two signal input down link-Lower Edge



1900MHz-WCDMA two signal input down link-Upper Edge



1900MHz-LTE-QPSK one signal input down link-Lower Edge



1900MHz- LTE-QPSK one signal input down link-Upper Edge



1900MHz-LTE-16QAM one signal input down link-Lower Edge



1900MHz- LTE-16QAM one signal input down link-Upper Edge



1900MHz-LTE-64QAM one signal input down link-Lower Edge



1900MHz- LTE-64QAM one signal input down link-Upper Edge



4.2.4 RADIATED SPURIOUS EMISSIONS

Test Date: 16 April, 2012

Test Method: FCC part 2.1053

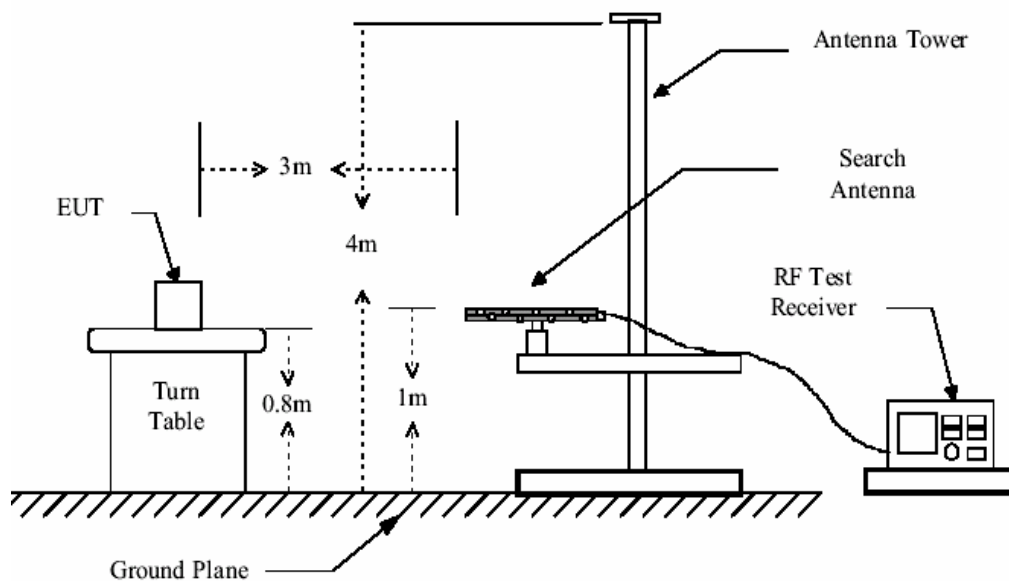
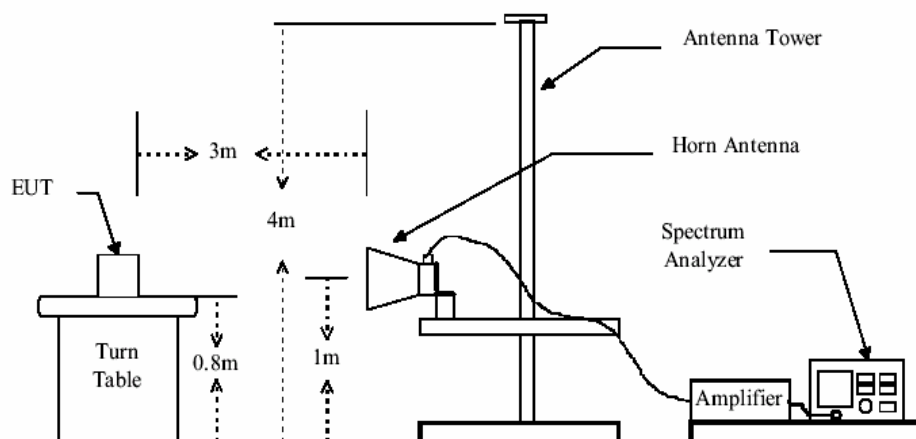
Test Requirement: FCC part 22.917(a)& FCC part 24.238(a)&FCC 27.53
22.917(a): The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10\log(P)$ dB.
24.238(a) The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10\log(P)$ dB.
27.53 The power of any emission outside of the authorized

operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10\log(P)$ dB.

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

Condition Normal conditions

Application Enclosure

Test Configuration:**Figure 1. 30 MHz to 1GHz radiated emissions test configuration****Figure 2. Above 1GHz radiated emissions test configuration**

Test Procedure: 1. Test the background noise level with all the facilities

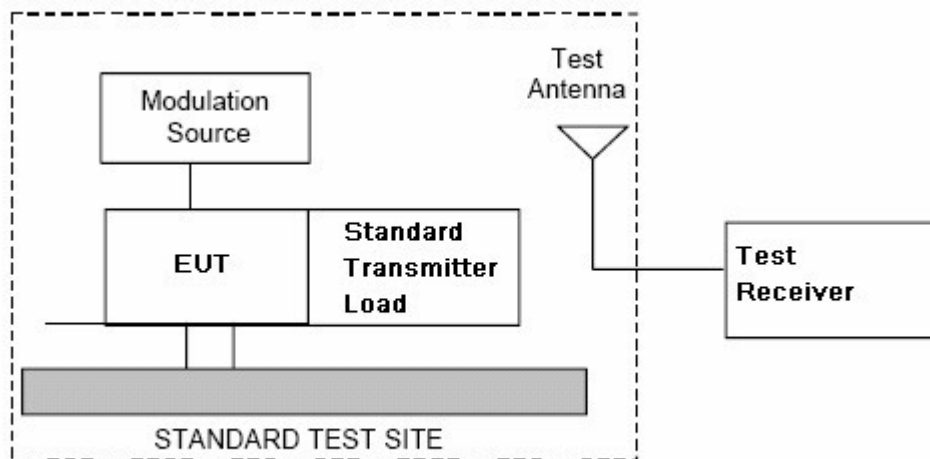
2. Keep one transmitting path, all other connectors shall be connected by normal power or RF leads,

3. Select the suitable RF notch filter to avoid the test receiver or spectrum analyzer produce unwanted spurious emissions,

4. Keep the EUT continuously transmitting in max power.

5. Read the radiated emissions of the EUT enclosure.

Radiated Emission Test Procedure:



a) Connect the equipment as illustrated

b) Adjust the spectrum analyzer for the following setting;

- 1) RBW=100KHZ for spurious emission below 1GHZ ,and 1MHz for spurious emission above 1GHZ
- 2) VBW=300KHZ for spurious emission below 1GHZ ,and 3MHz for spurious emission above 1GHZ
- 3) Sweep speed slow enough to maintain measurement calibration
- 4) Detector Mode=Positive Peak

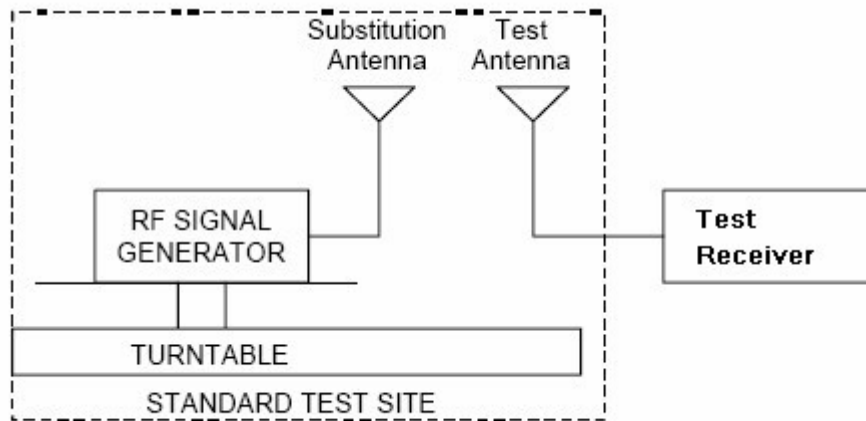
c) Place the transmitter to be tested on the turntable in the standard test site, The transmitter is transmitting into a nonradiating load that is placed on the turntable ,the RF cable to this load should be of minimum length.

d) Measurements shall be made from 30MHz to 10 times of fundamental carrier, except for the region close to the carrier equal to $\pm$ the carrier bandwidth.

e) Key the transmitter without modulation or normal modulation base the standard.

f) For each spurious frequency, raise and lower the test antenna from 1 m to 4 m to obtain a maximum reading on the spectrum analyzer with the test antenna at horizontal polarity. Then the turntable should be rotated 360° to determine the maximum reading. Repeat this procedure to obtain the highest possible reading. Record this maximum reading.

g) Repeat step f) for each spurious frequency with the test antenna polarized vertically.



- a) Reconnect the equipment as illustrated.
- b) Keep the spectrum analyzer adjusted as in step b)
- c) Remove the transmitter and replace it with a substitution antenna (the antenna should be half wavelength for each frequency involved). The center of the substitution antenna should be approximately at the same location as the center of the transmitter. At the lower frequencies, where the substitution antenna is very long, this will be impossible to achieve when the antenna is polarized vertically. In such case the lower end of the antenna should be 0.3m above the ground.
- d) Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a nonradiating cable. With the antennas at both ends horizontally polarized, and with the signal generator tuned to a particular spurious frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading or this set of conditions is obtained. This should be done carefully repeating the adjustment of the test antenna and generator output.
- e) Repeat step k) with both antennas vertically polarized for each spurious frequency.
- f) Calculate power in dBm into a reference ideal half-wave dipole antenna by reducing the readings obtained in step k) and i) by the power loss in the cable between the generator and the antenna, and further corrected for the gain of the substitution antenna used relative to an ideal half-wave dipole antenna by the following formula:

$$P_d(\text{dBm}) = P_g(\text{dBm}) - \text{cable loss (dB)} + \text{antenna gain (dB)}$$

where:

P_d is the dipole equivalent power and

P_g is the generator output power into the substitution antenna.

NOTE: It is permissible to use other antennas provided they can be referenced to a dipole.

NOTE: Effective radiated power (e.r.p) refers to the radiation of a half wave tuned dipole instead of an isotropic antenna. There is a constant difference of 2.15 dB between e.i.r.p. and e.r.p.e.r.p (dBm)-2.15

4.2.4.1 MEASUREMENT RECORD

Test Frequency (MHz)	Measuring level(dBm)		Limits (dBm)	Margin(dB)	
	Vertical	Horizontal		Vertical	Horizontal
30	N/A	N/A	-13	N/A	N/A
500	N/A	N/A	-13	N/A	N/A
1000	N/A	N/A	-13	N/A	N/A
2000	N/A	N/A	-13	N/A	N/A
5000	N/A	N/A	-13	N/A	N/A
10000	N/A	N/A	-13	N/A	N/A
15000	N/A	N/A	-13	N/A	N/A
20000	N/A	N/A	-13	N/A	N/A

Remark:

N/A,not applicable or the level i too weak to bo etected.

Sweap all the moulation tyoes emissions in Cellular band and PCS band,find the worse case to report it.

4.2.5 OCCUPIED BANDWIDTH

Test Date: 16 April, 2012

Test Method: FCC part 2.1049&2-11-04/EAB/RF

Test Requirement: 2-11-04/EAB/RF

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

Conditions Normal

Application 700MHz DL and UL ports, 850MHz DL and UL ports, 1900MHz DL and UL ports

Remark

Test configuration

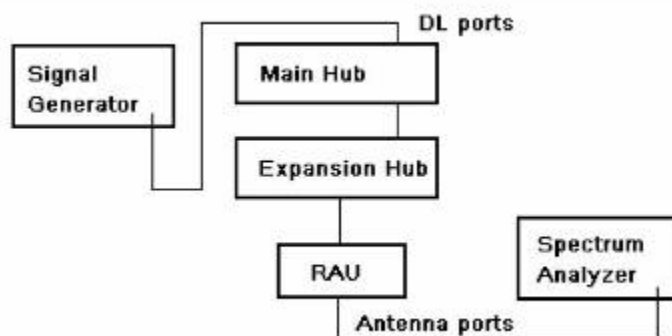


Fig.1 Down Link Configuration

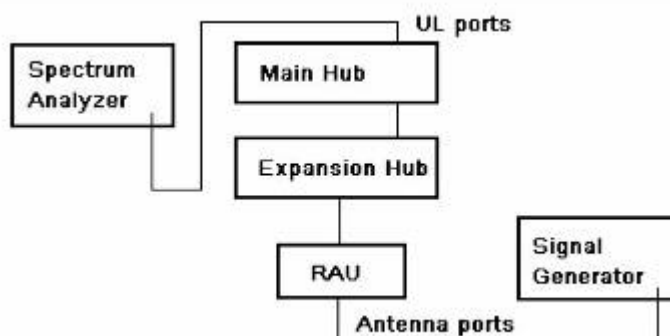


Fig.2 Up Link Configuration

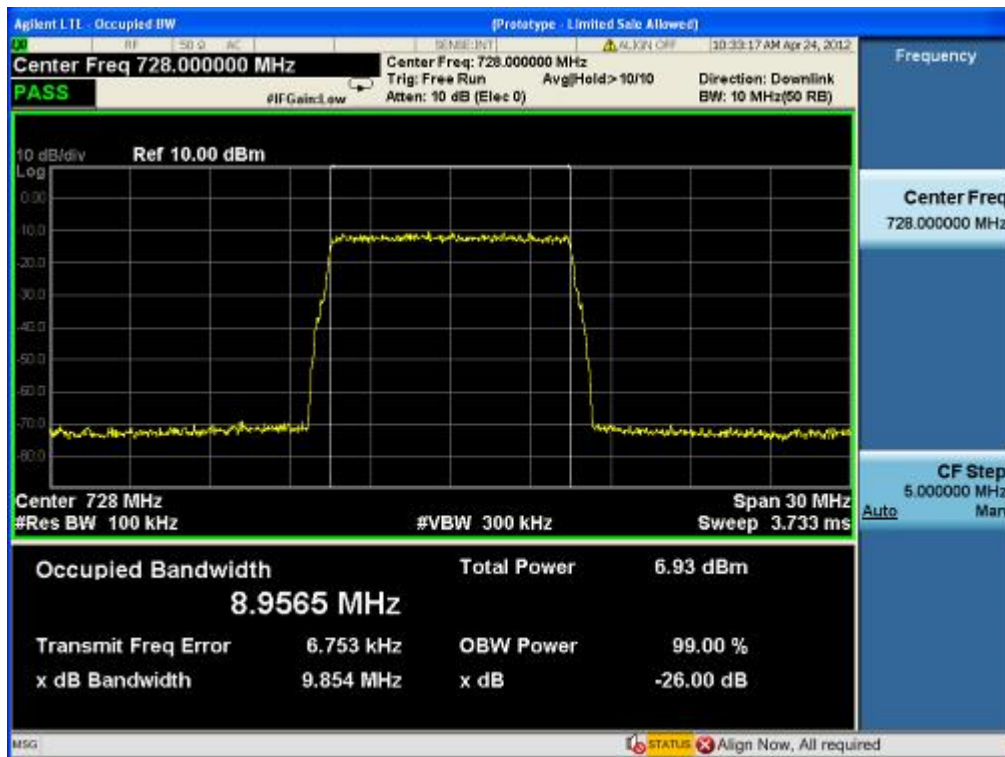
- Test Procedure:
- Set the spectrum analyzer RBW 300Hz >1%bandwidth of carrier.
 - Capture the trace of input signal
 - Connect the equipment as illustrated

d) Capture the trace of output signal

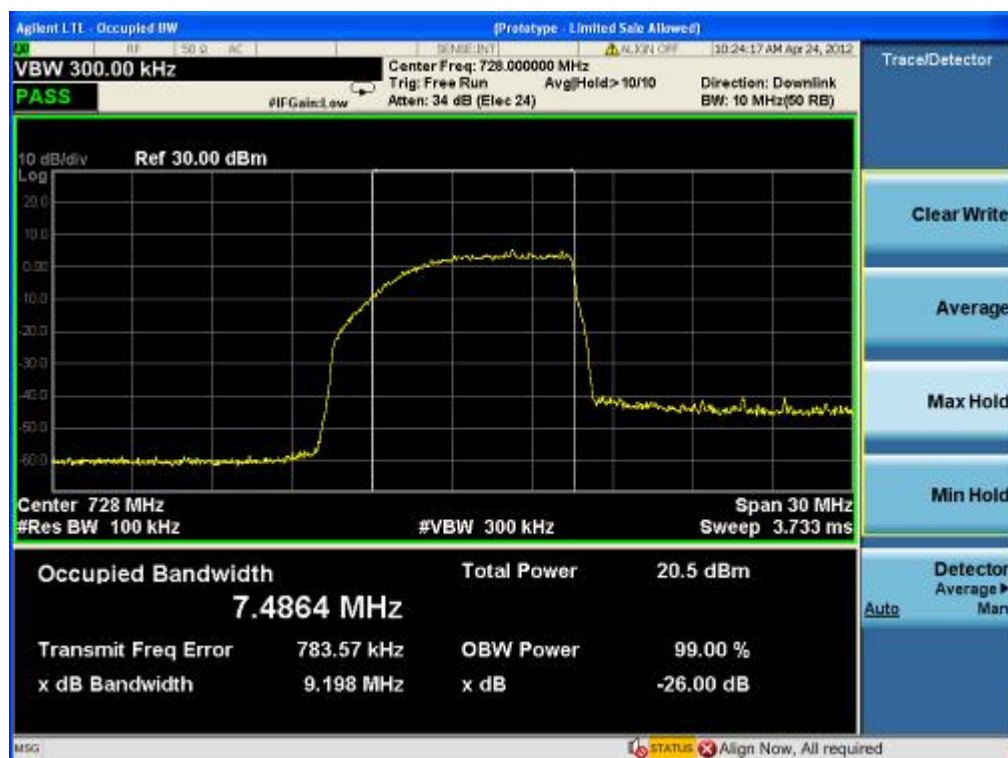
4.2.5.1 MEASUREMENT RECORD

700MHz

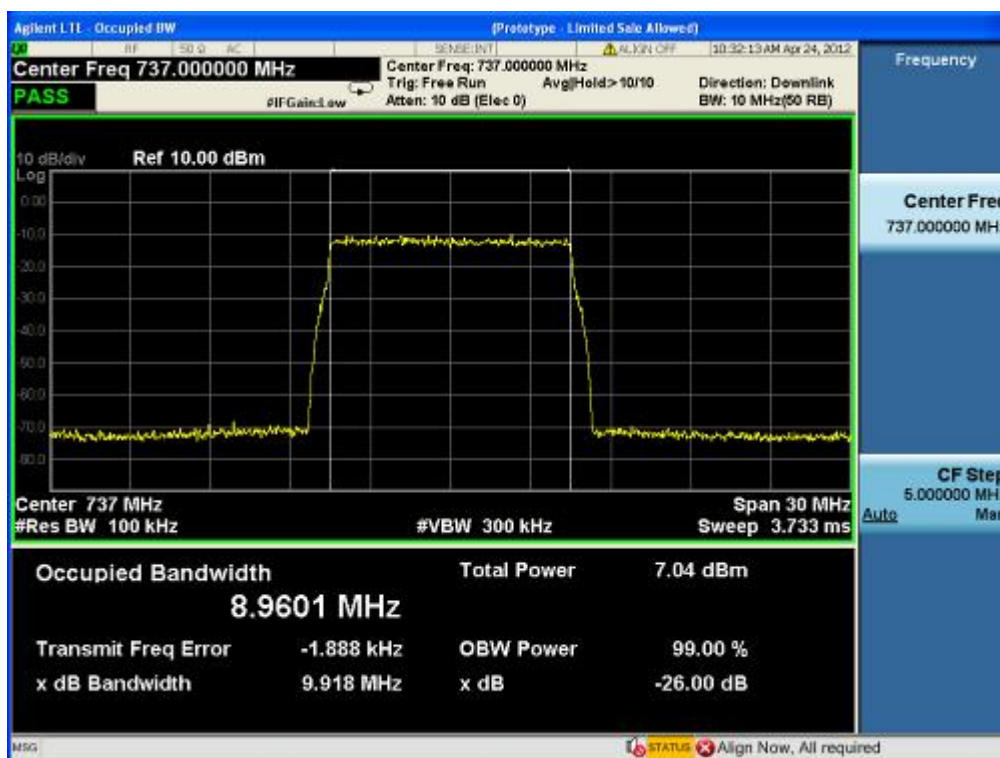
700MHz-LTE-QPSK downlink (lowest frequency)-Input



700MHz-LTE-QPSK downlink (lowest frequency)-Output



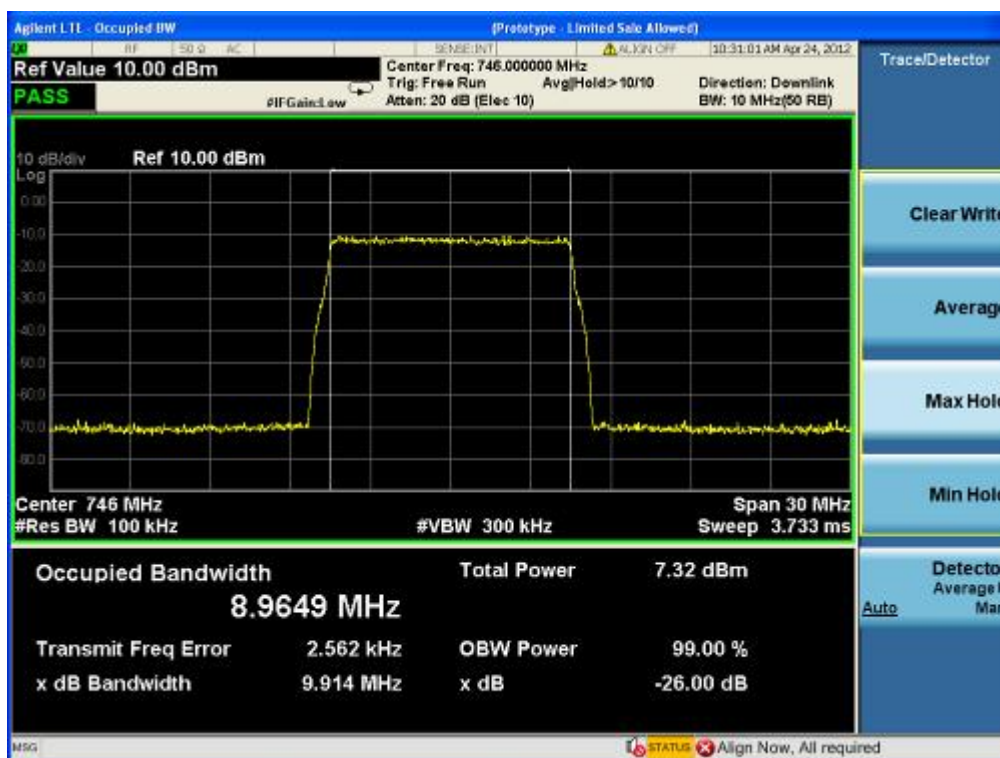
700MHz-LTE-QPSK downlink (middle frequency)-Input



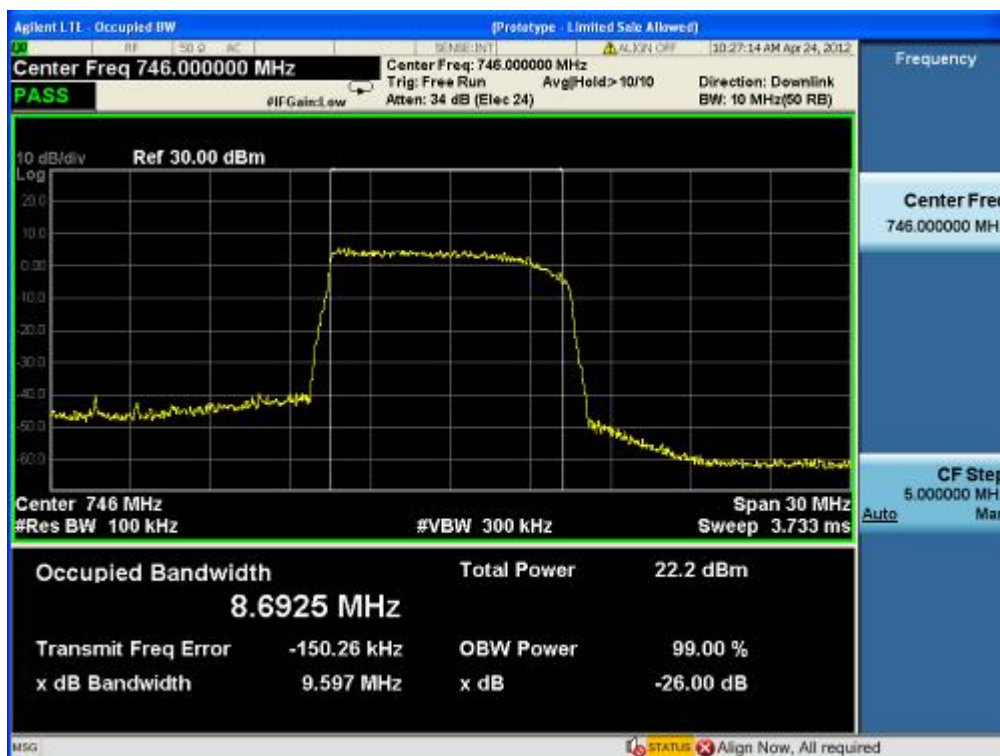
700MHz-LTE-QPSK downlink (middle frequency)- Output



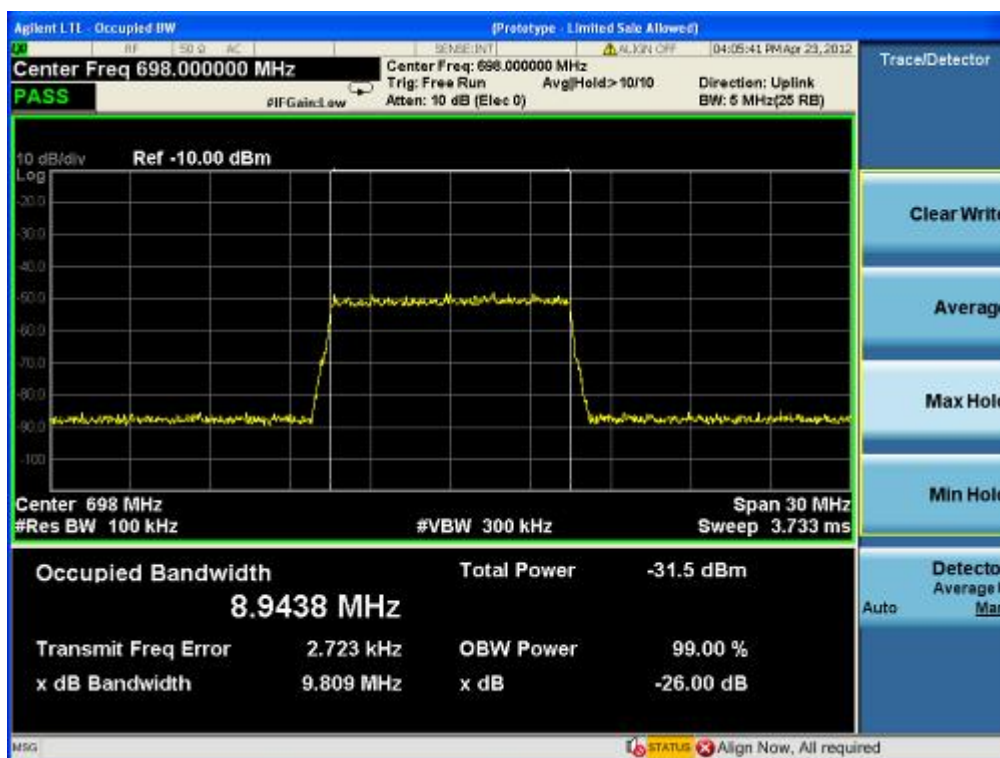
700MHz-LTE –QPSK downlink (highest frequency)-Input



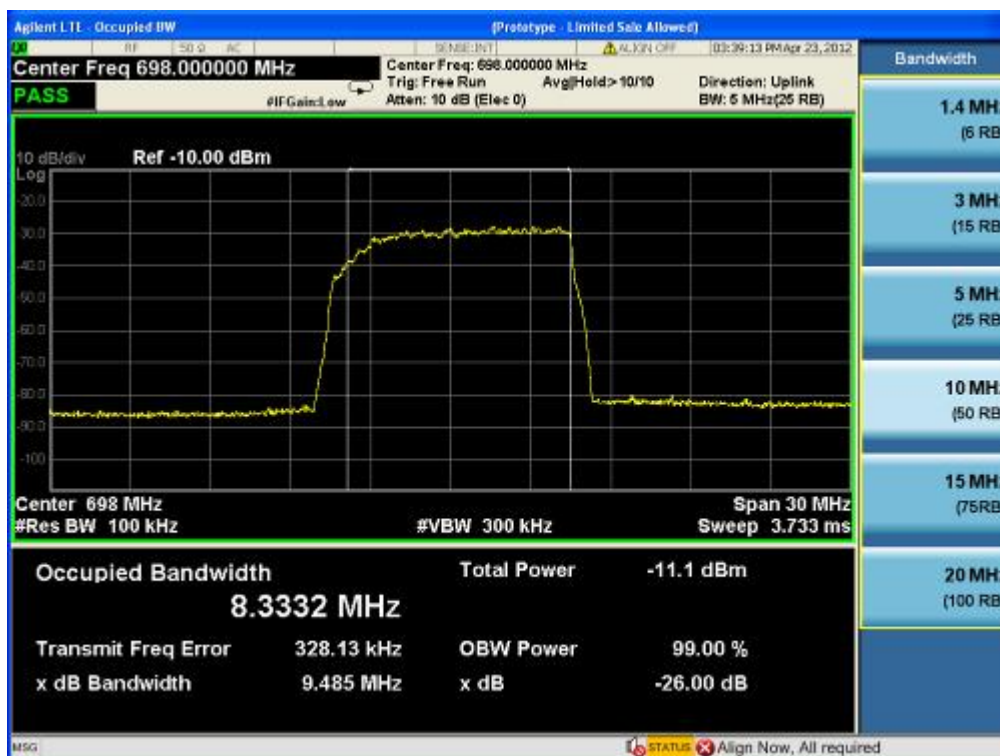
700MHz-LTE-QPSK downlink (highest frequency)- Output



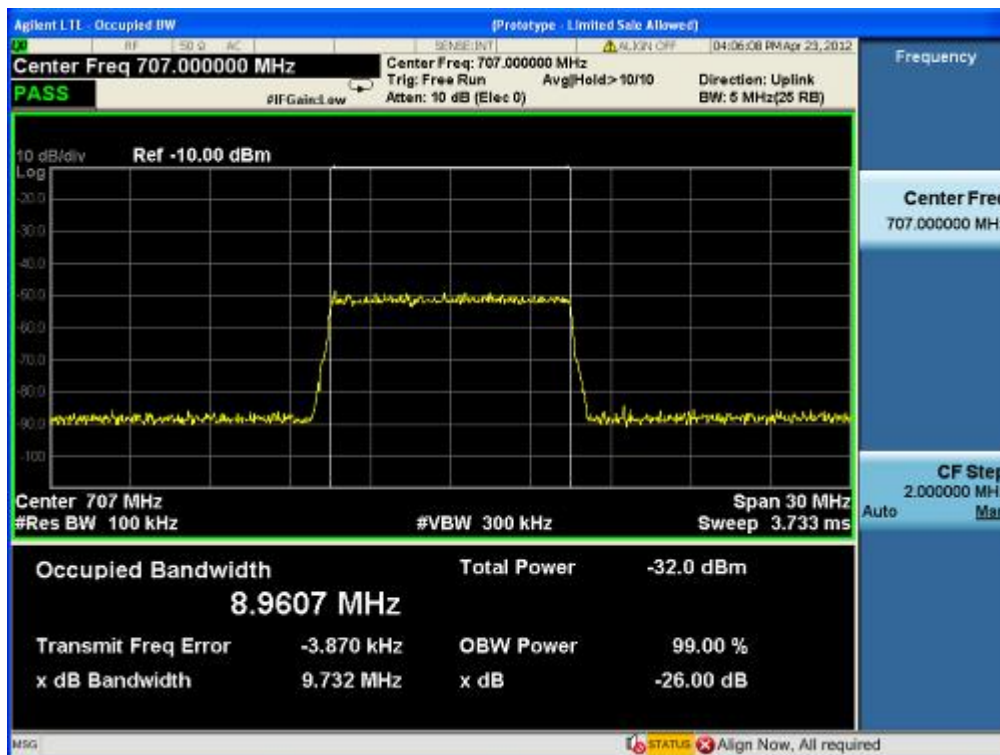
700MHz-LTE-QPSKuplink (lowest frequency)-Input



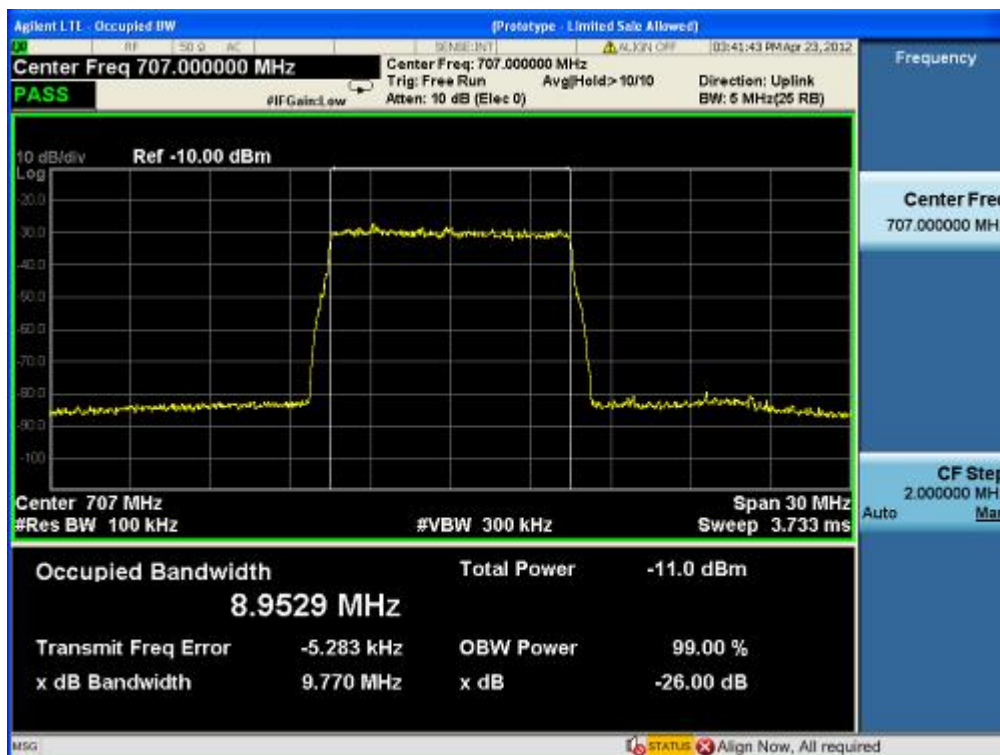
700MHz-LTE-QPSK uplink (lowest frequency)-Output



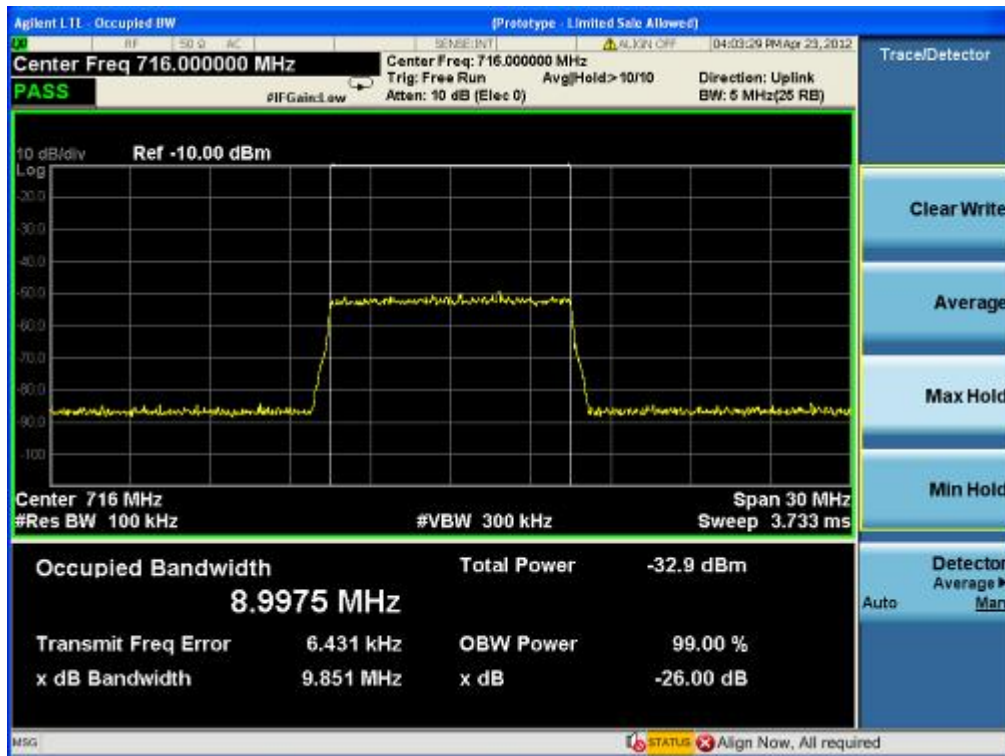
700MHz-LTE-QPSK uplink (middle frequency)- Input



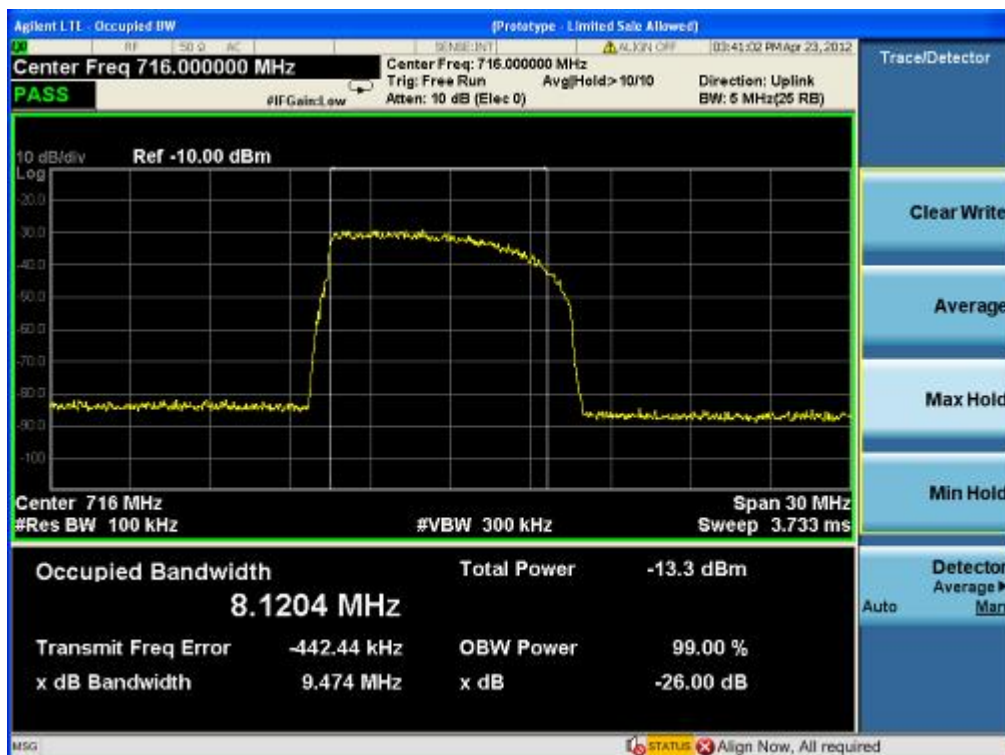
700MHz-LTE -QPSK uplink (middle frequency)-Output



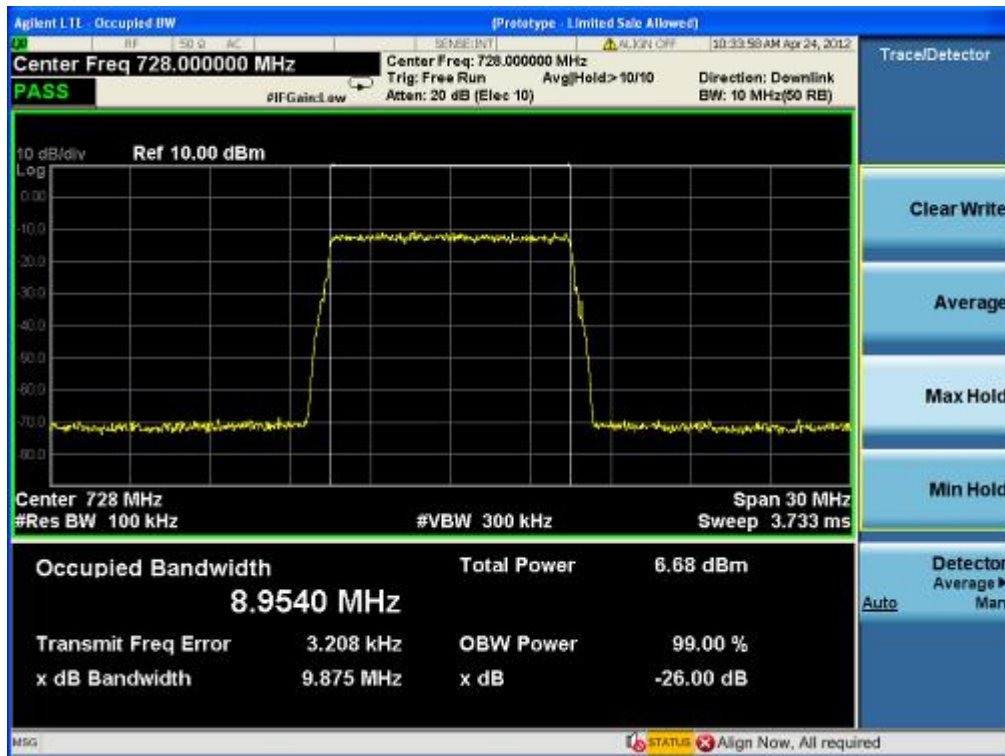
700MHz-LTE –QPSK uplink (highest frequency)-Input



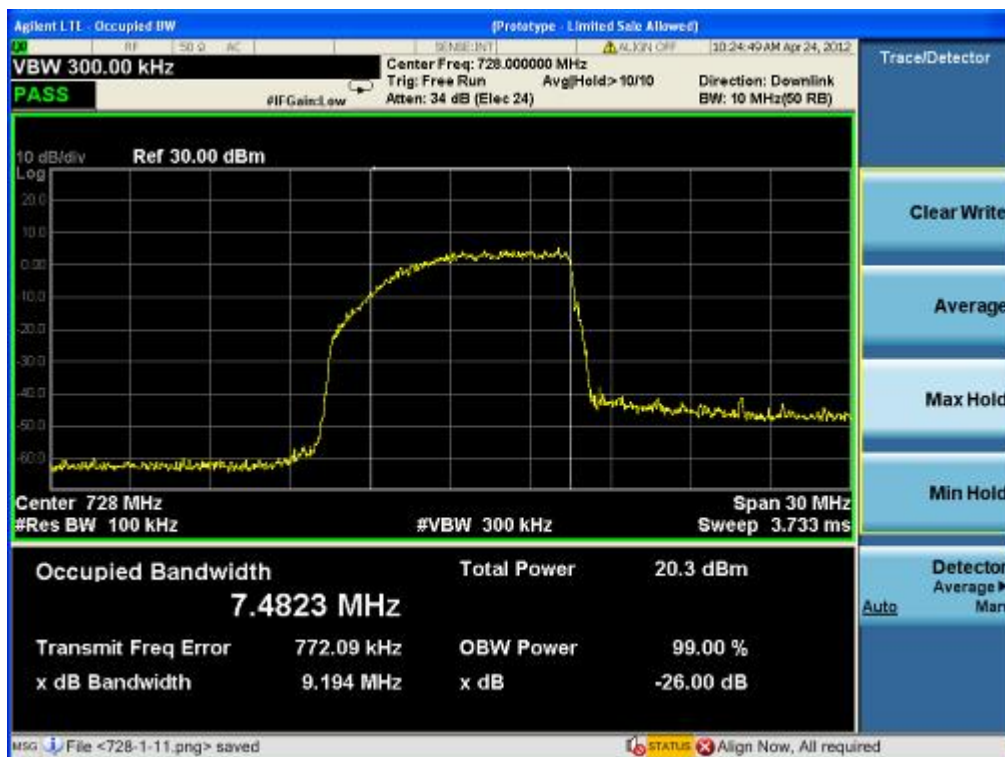
700MHz-LTE-QPSK uplink (highest frequency)- Output



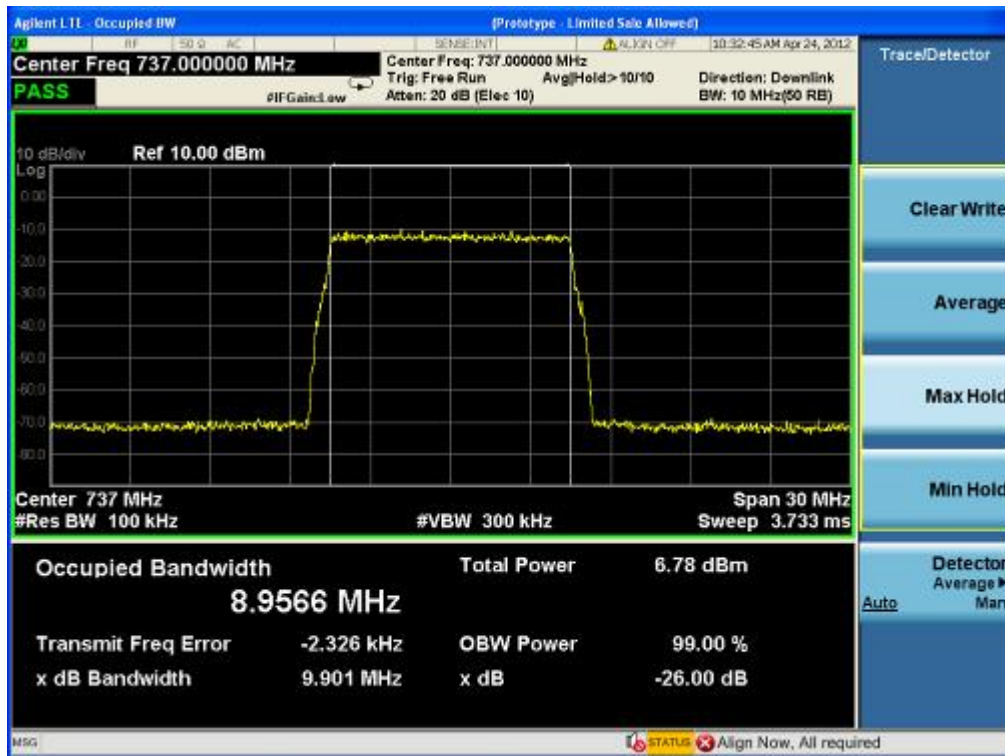
700MHz-LTE-16QAM downlink (lowest frequency)-Input



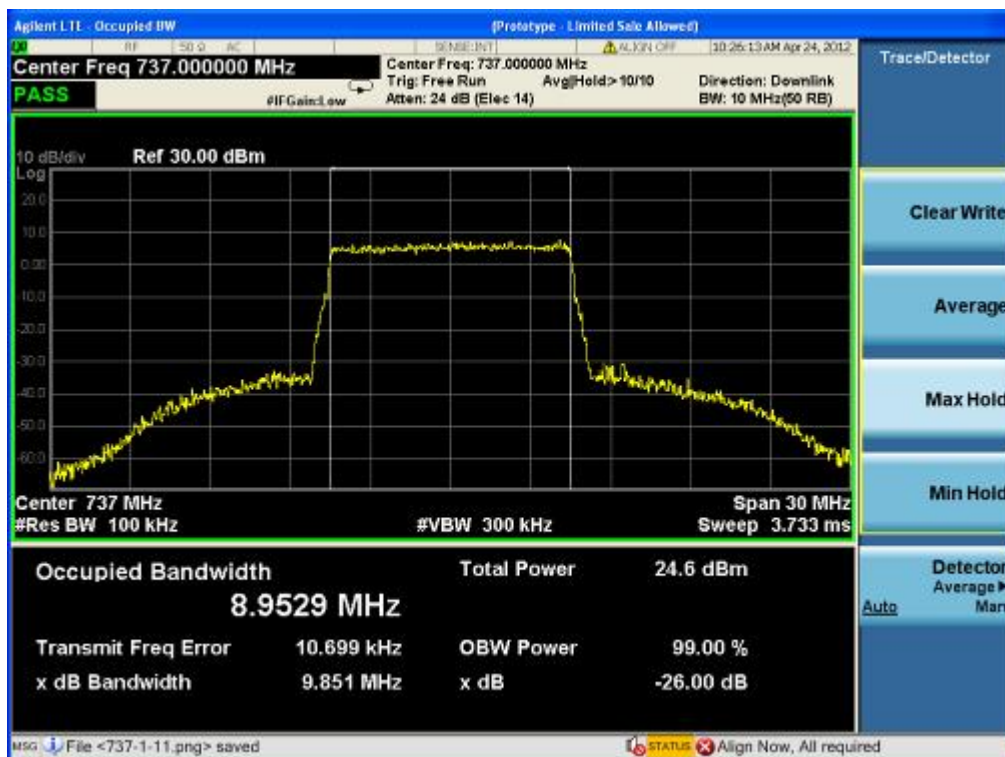
700MHz-LTE-16QAM downlink (lowest frequency)- Output



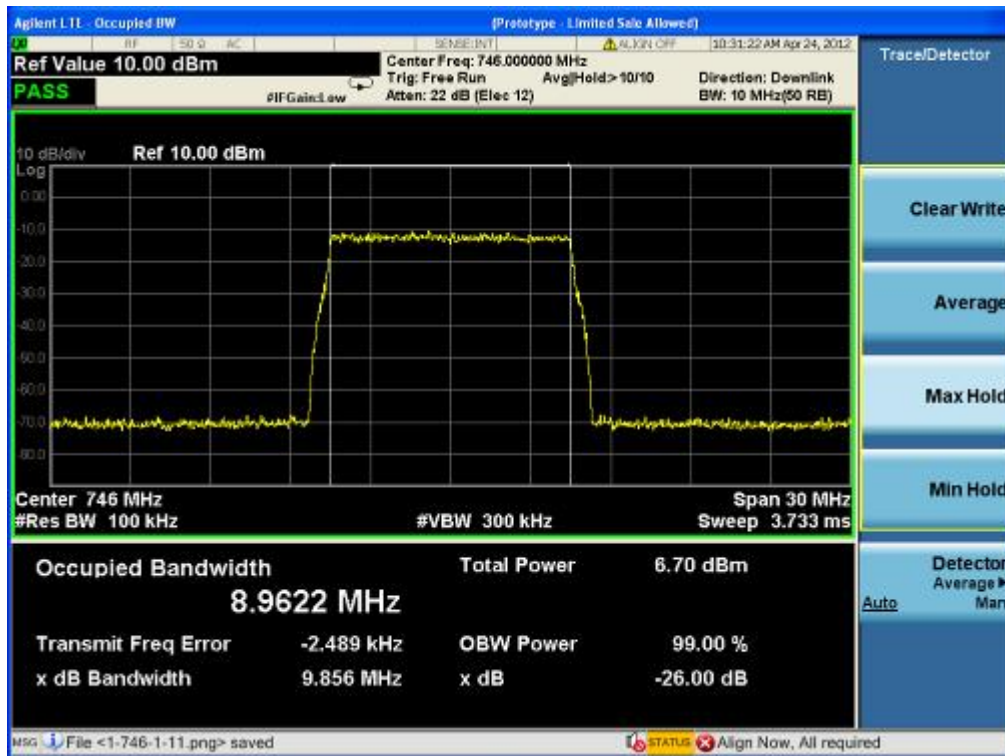
700MHz-LTE-16QAM downlink (middle frequency)-Input



700MHz-LTE-16QAM downlink (middle frequency)- Output



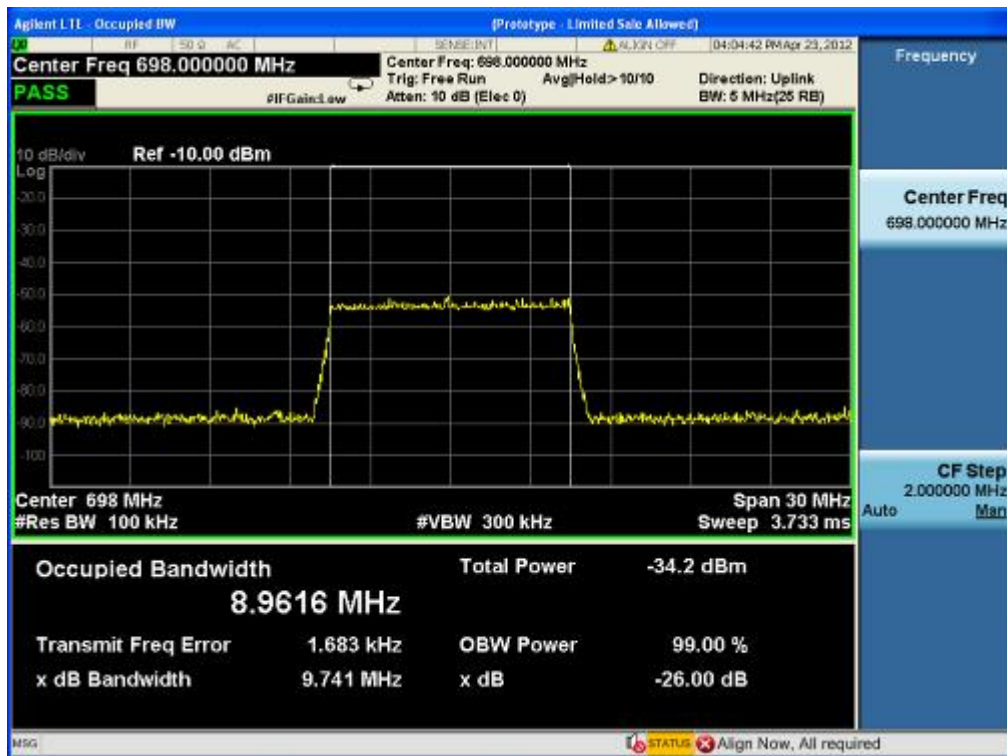
700MHz-LTE-16QAM downlink (highest frequency)-Input



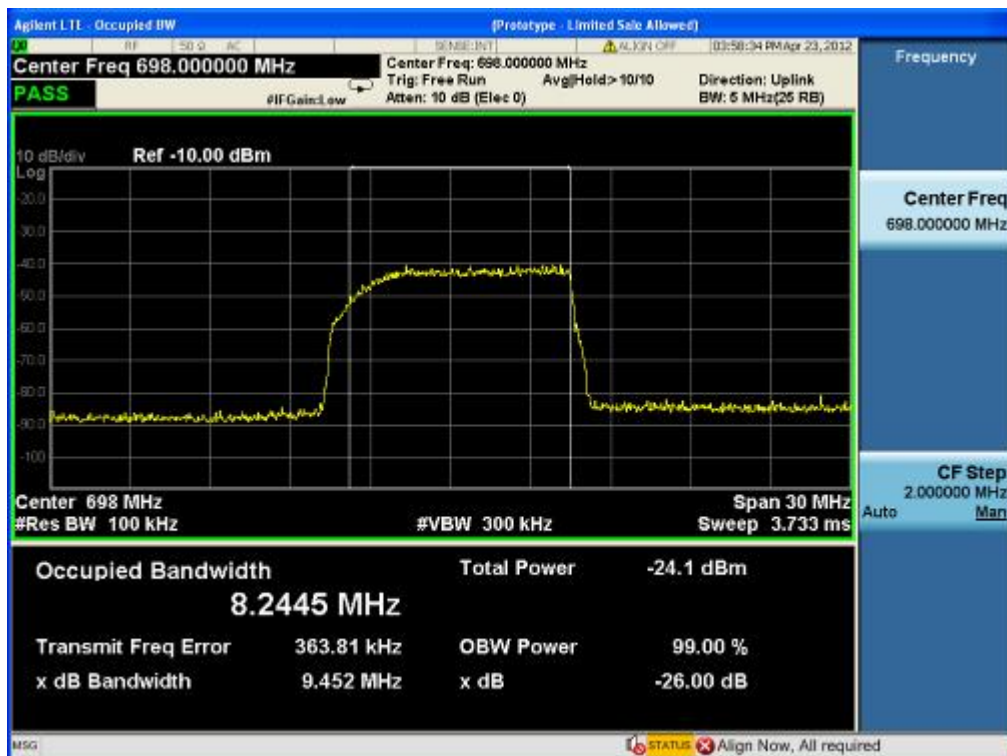
700MHz-LTE-16QAM downlink (highest frequency)- Output



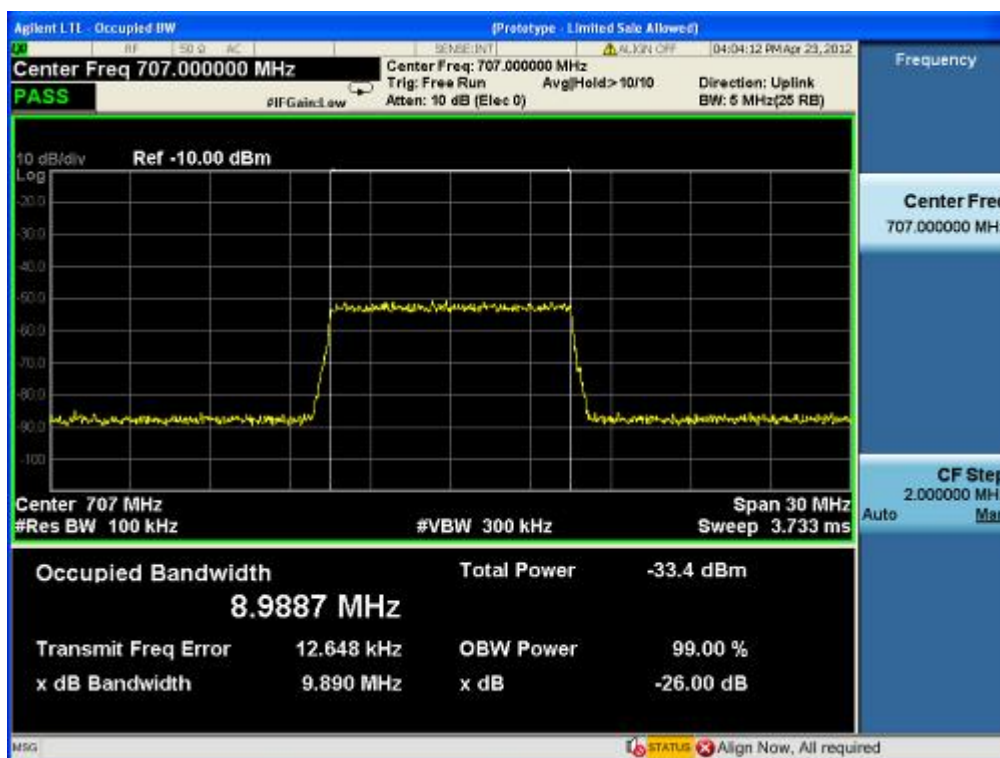
700MHz-LTE-16QAM uplink (lowest frequency)-Input



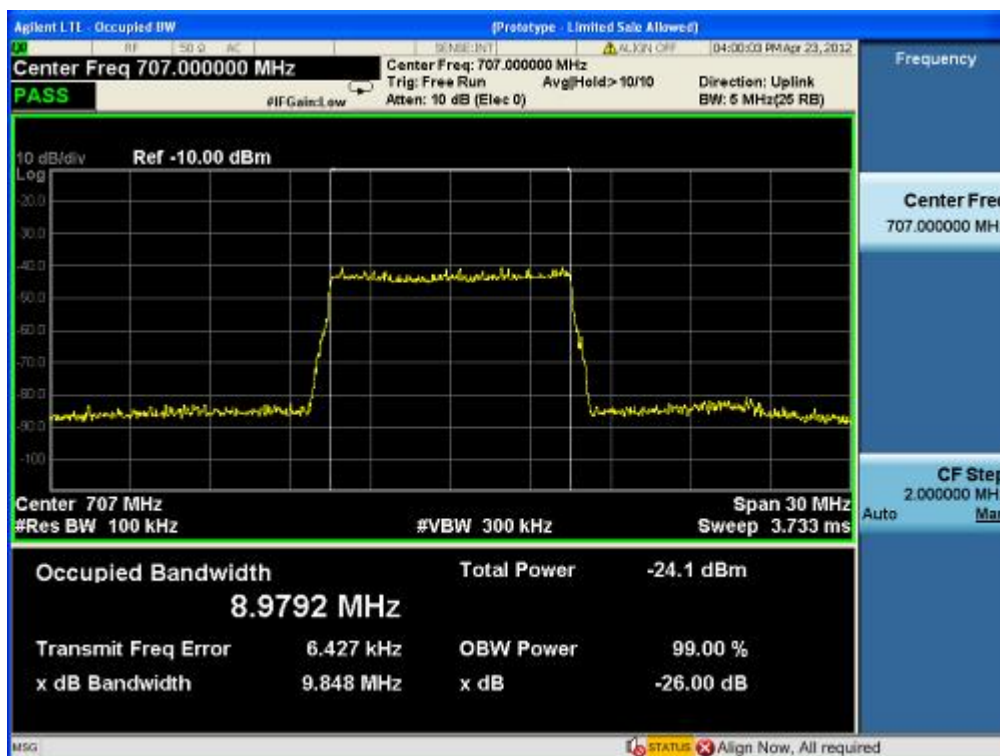
700MHz-LTE-16QAM uplink (lowest frequency)- Output



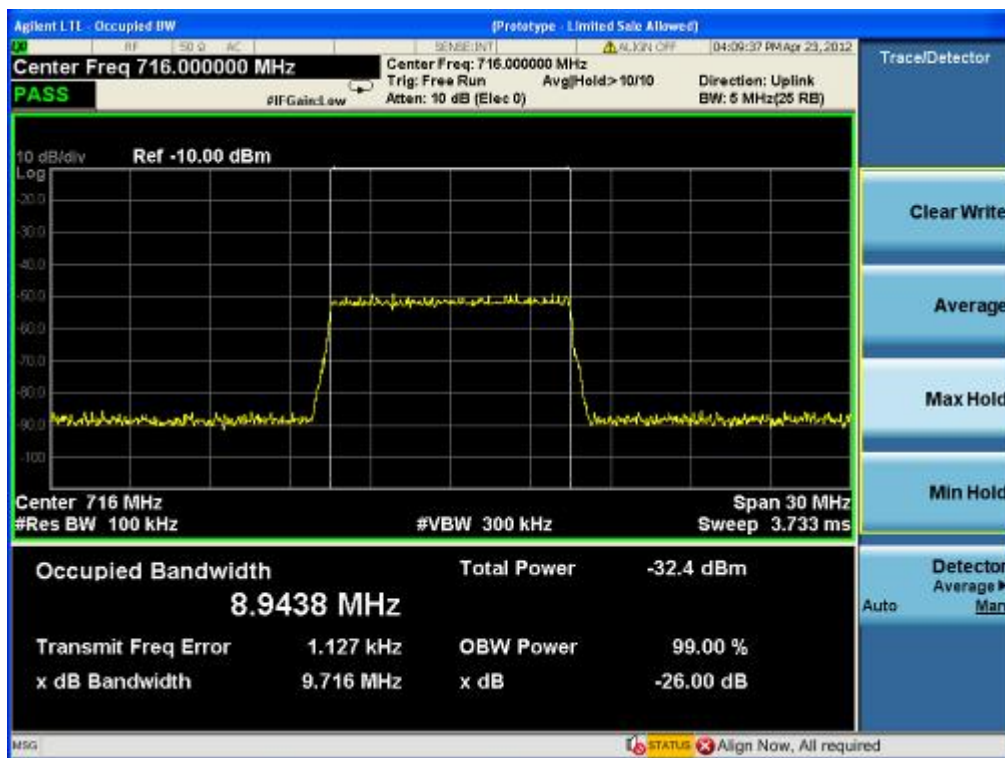
700MHz-LTE-16QAM uplink (middle frequency)-Input



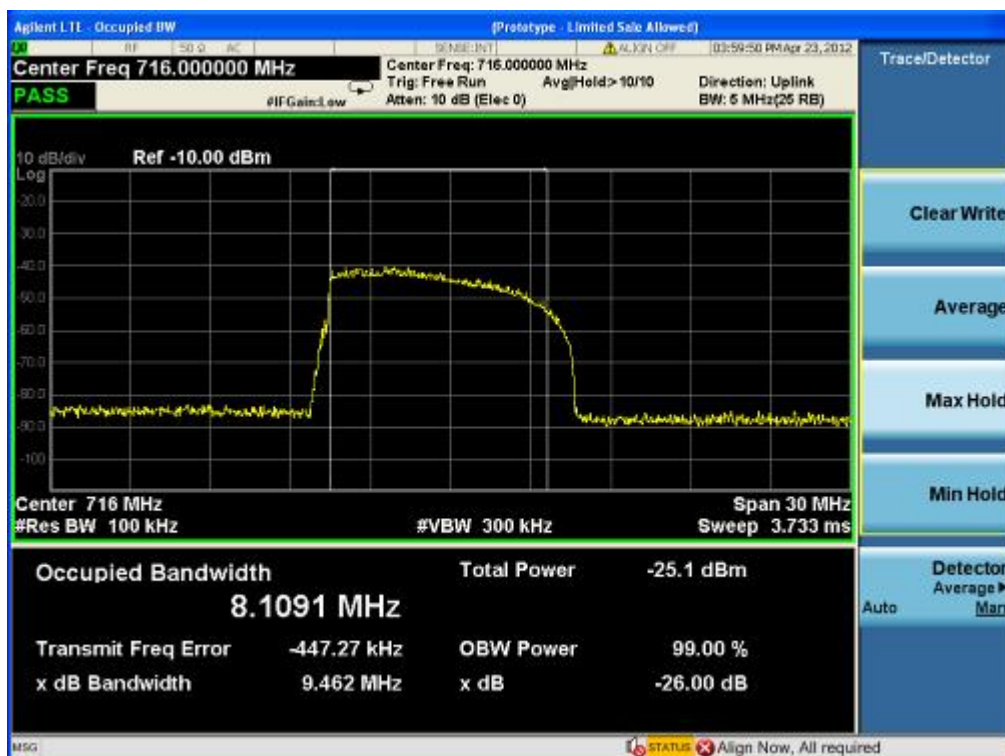
700MHz-LTE-16QAM uplink (middle frequency)- Output



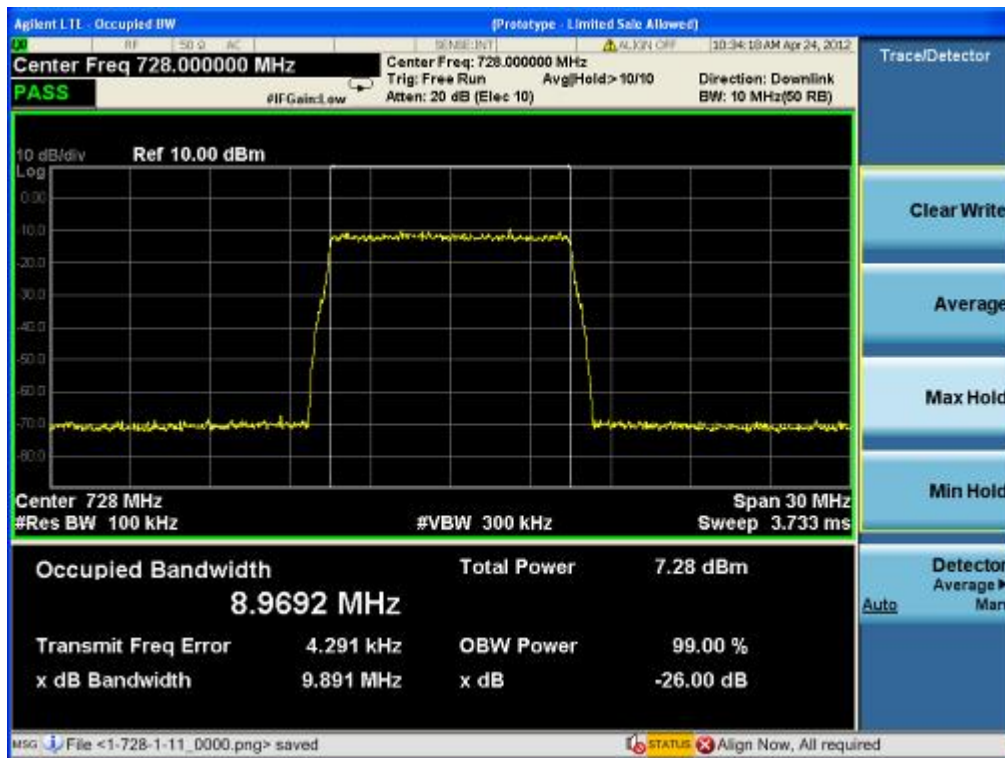
700MHz-LTE-16QAM uplink (highest frequency)-Input



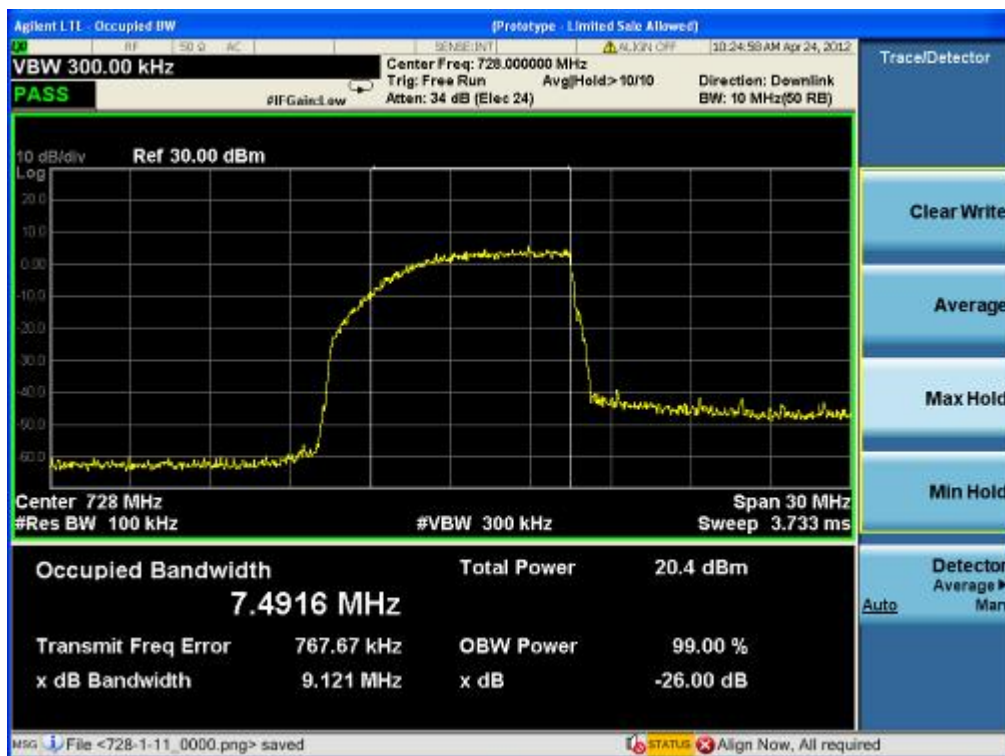
700MHz-LTE-16QAM uplink (highest frequency)- Output



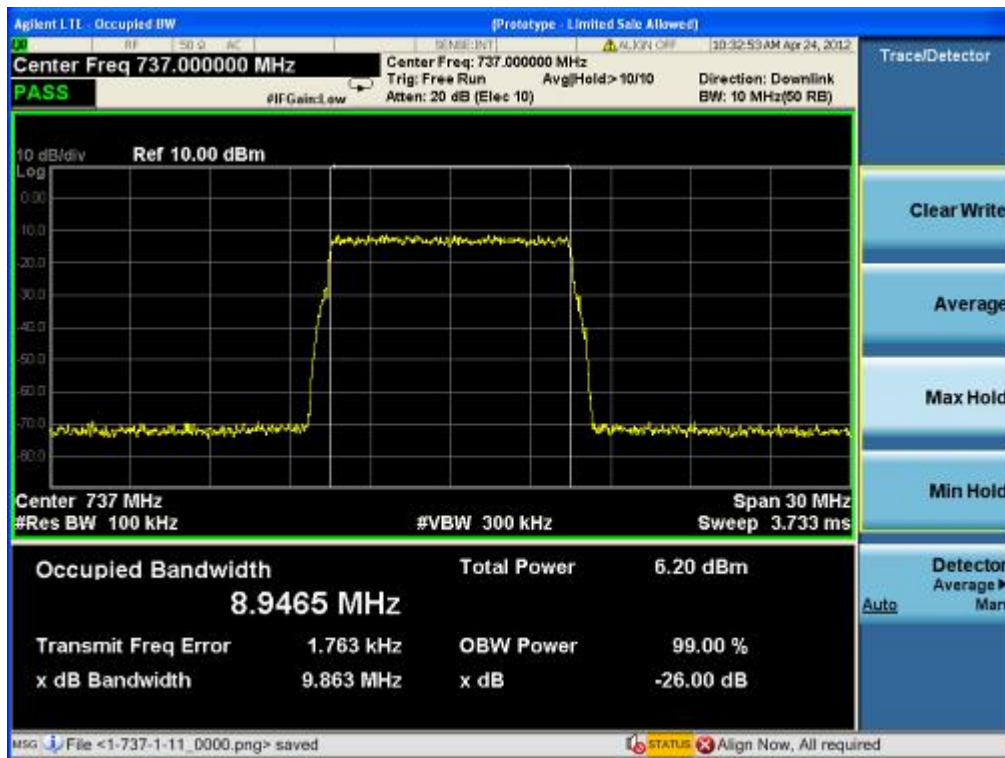
700MHz-LTE-64QAM downlink (lowest frequency)-Input



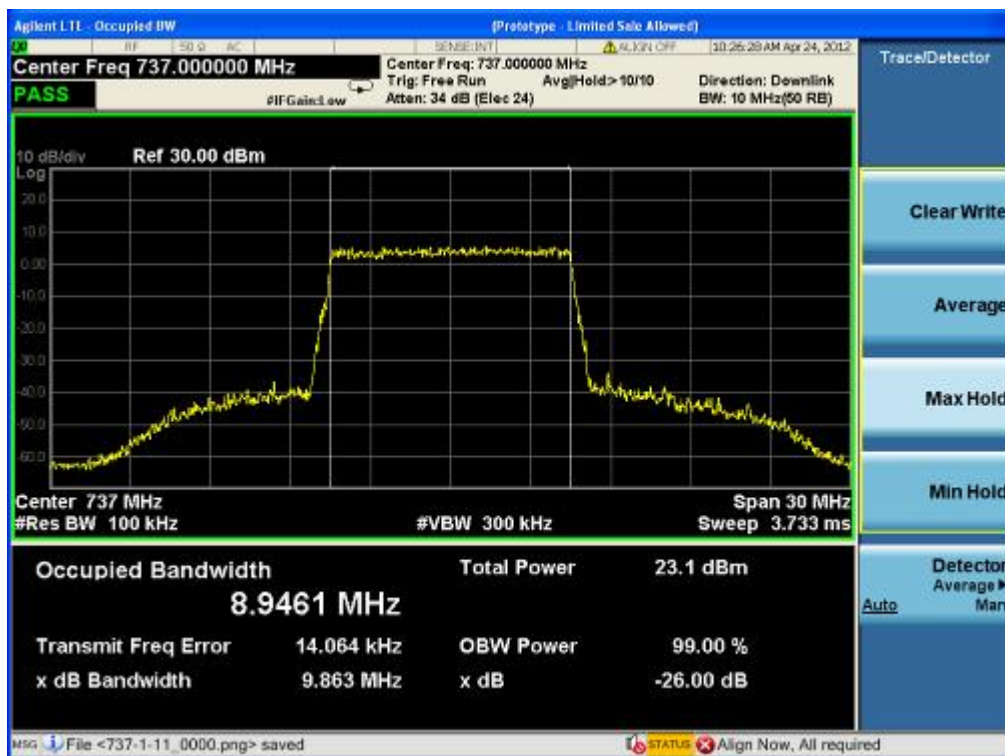
700MHz-LTE-64QAM downlink (lowest frequency)- Output



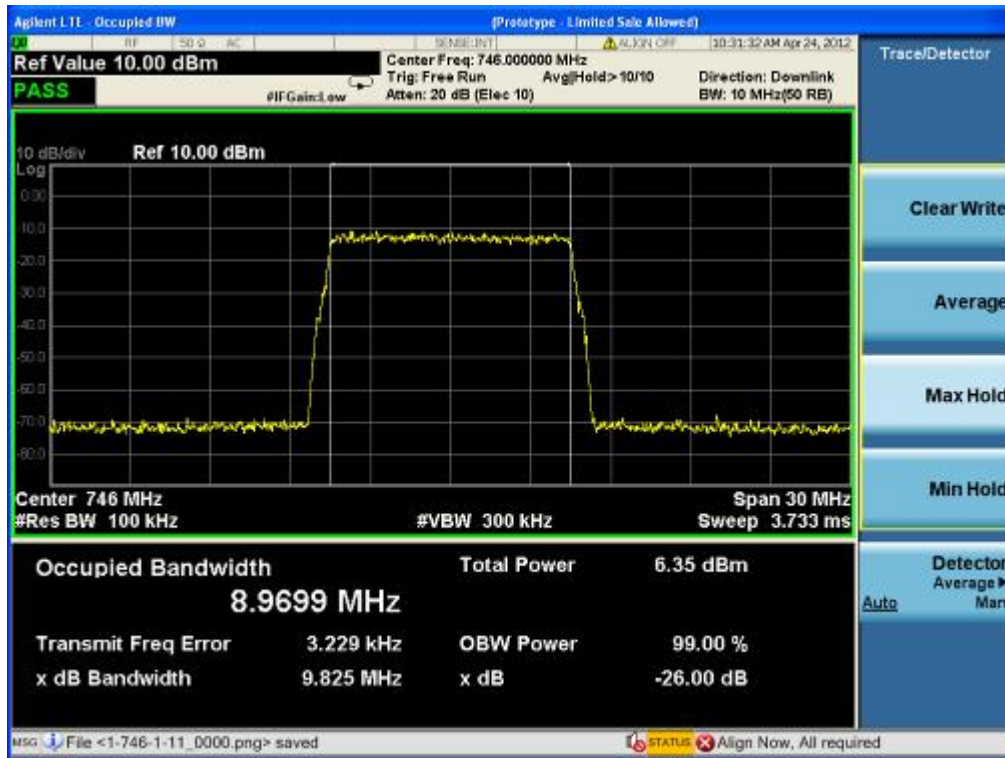
700MHz-LTE-64QAM downlink (middle frequency)-Input



700MHz-LTE-64QAM downlink (middle frequency)-Output



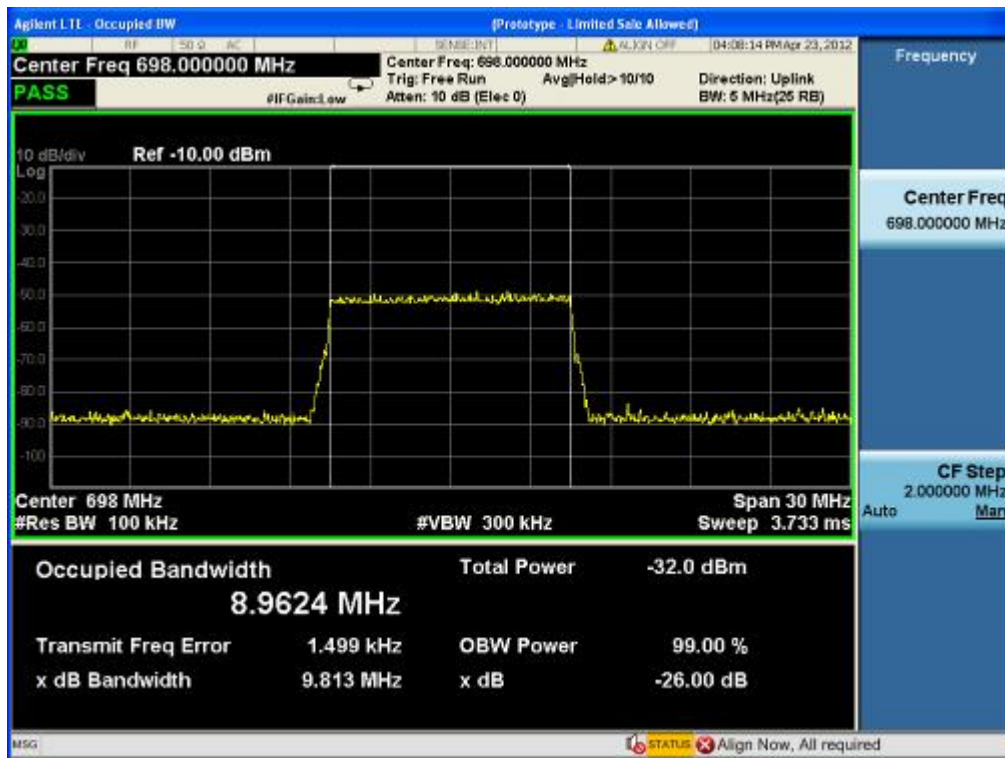
700MHz-LTE-64QAM downlink (highest frequency)-Input



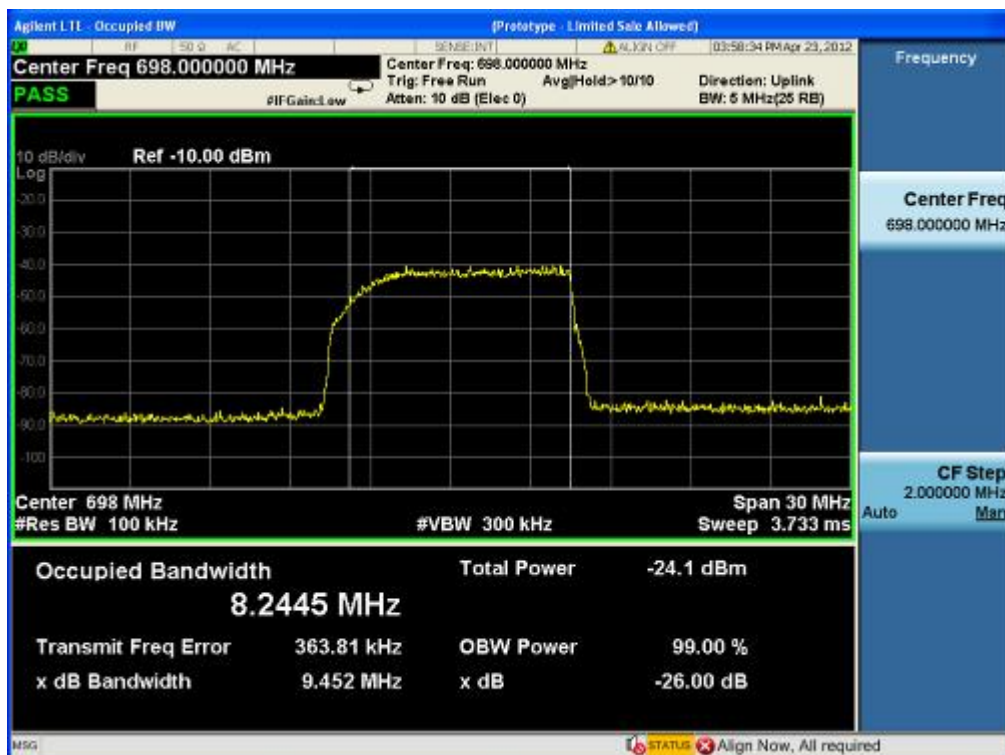
700MHz-LTE-64QAM downlink (highest frequency)- Output



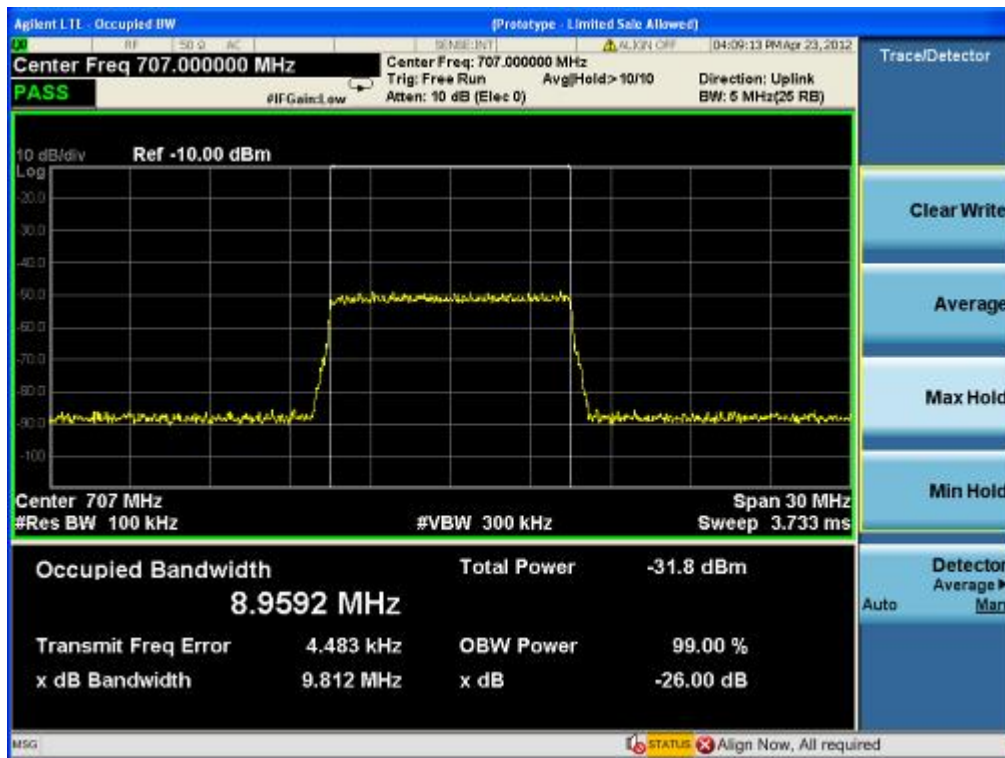
700MHz-LTE-64QAM uplink (lowest frequency)-Input



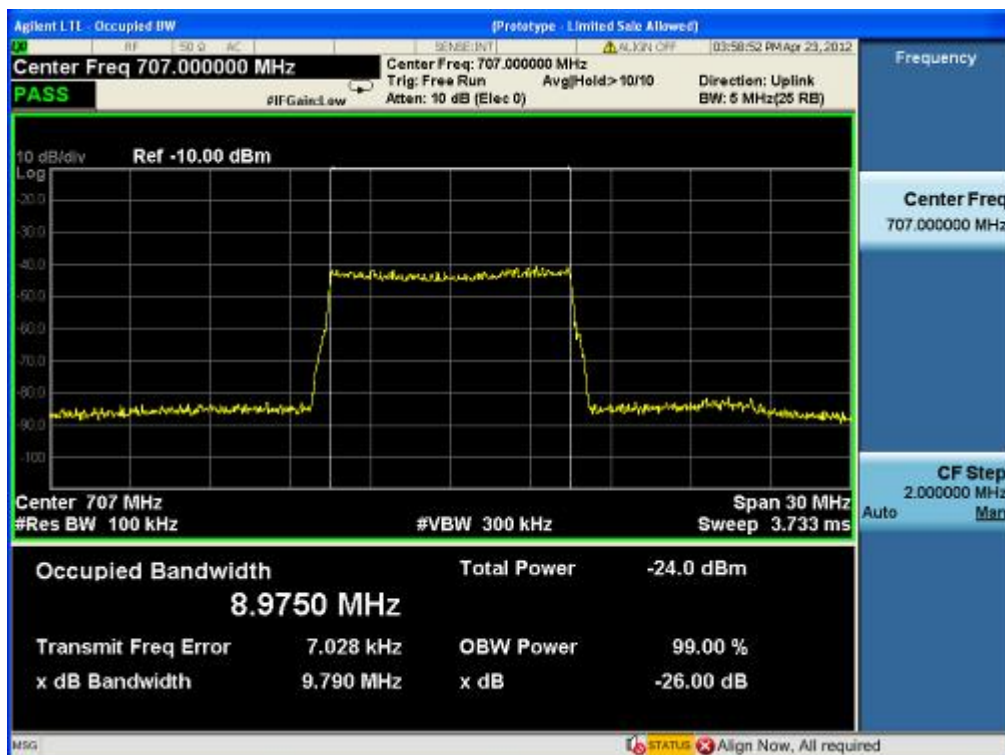
700MHz-LTE-64QAM uplink (lowest frequency)- Output



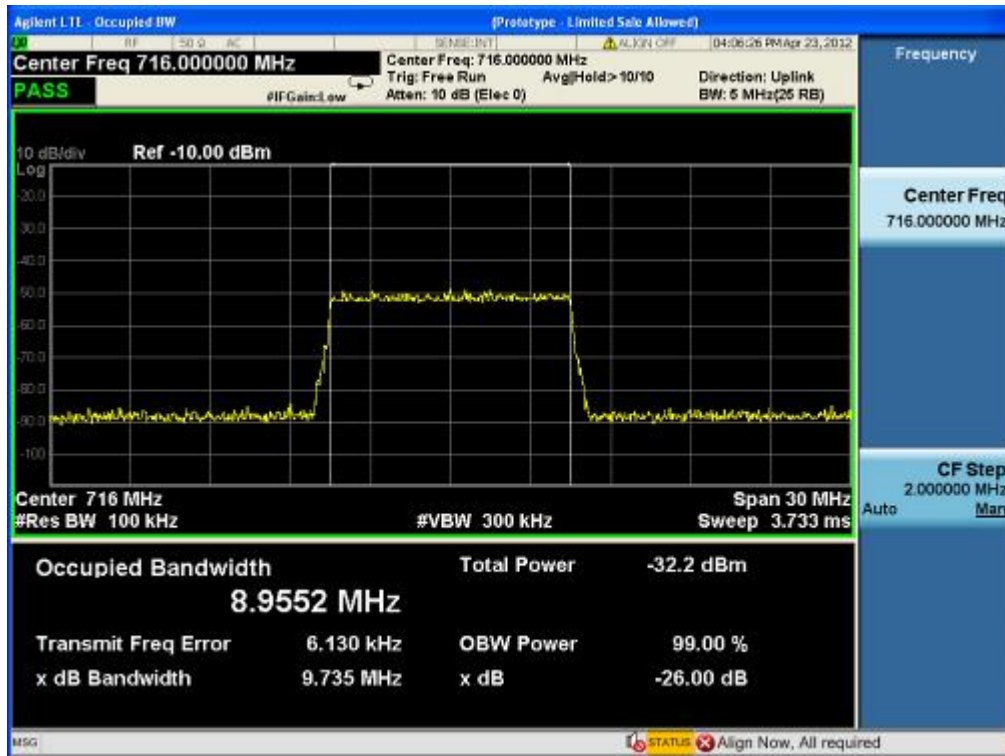
700MHz-LTE-64QAM uplink (middle frequency)-Input



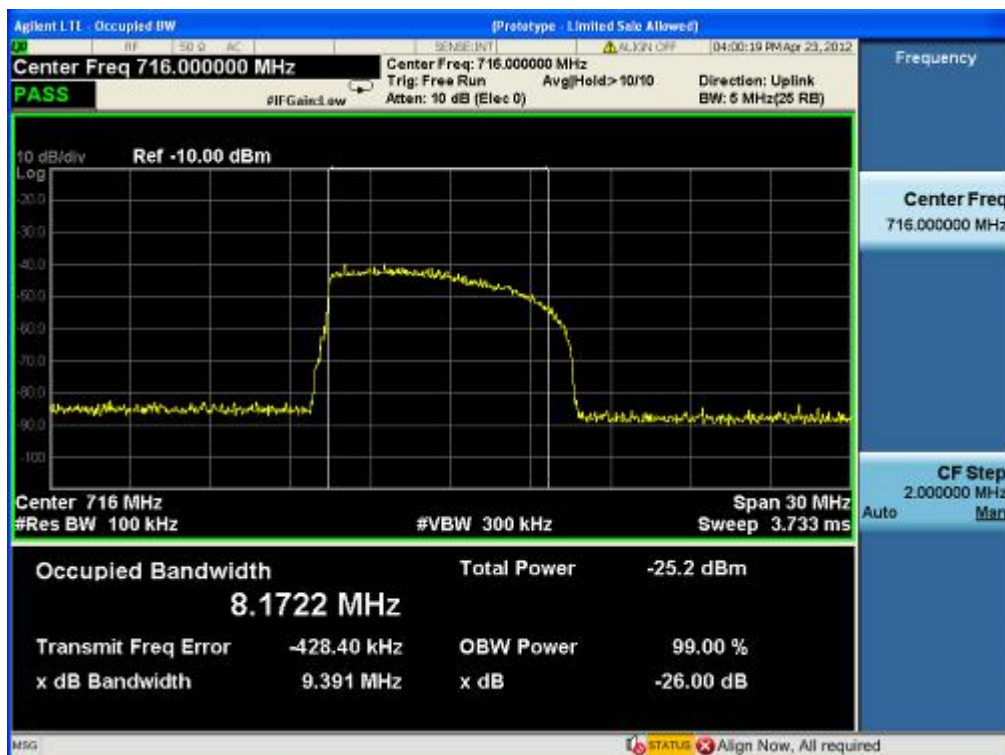
700MHz-LTE-64QAM uplink (middle frequency)-Output

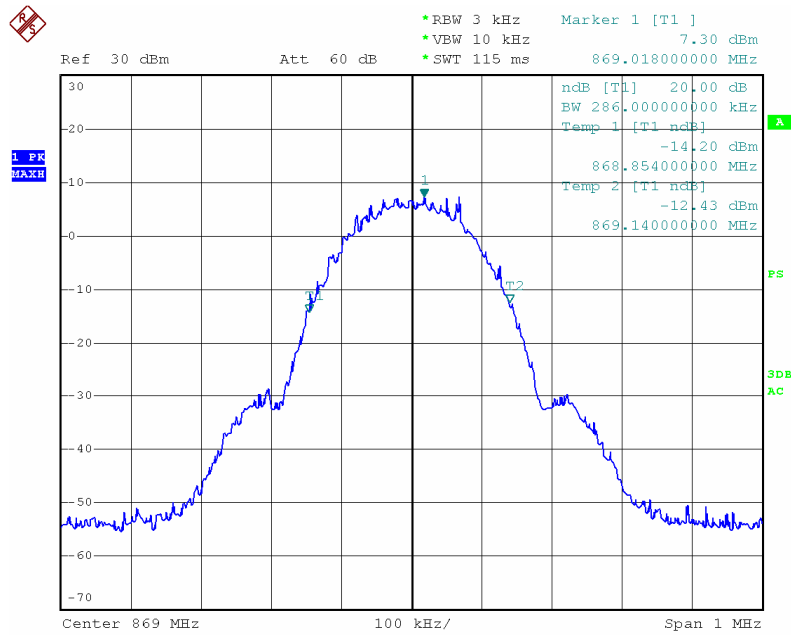
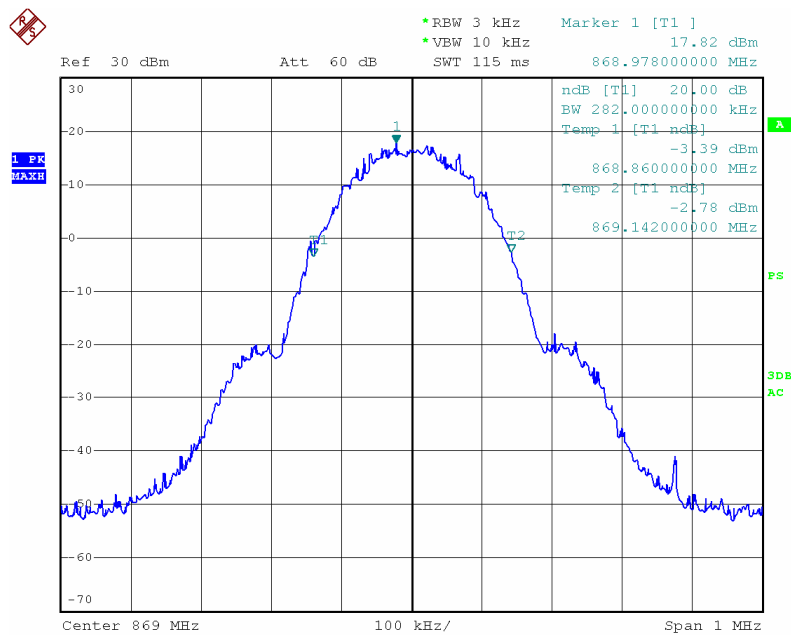


700MHz-LTE-64QAM uplink (highest frequency)-Input

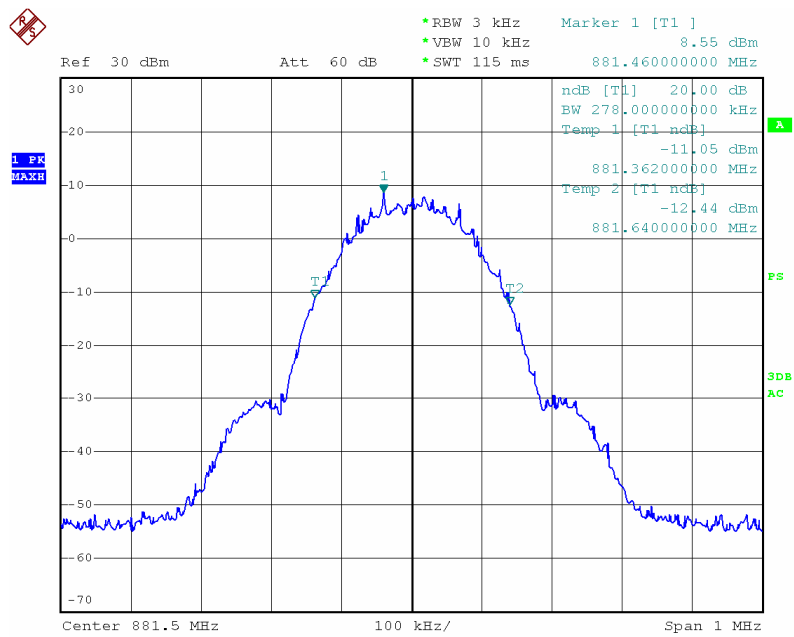


700MHz-LTE-64QAM uplink (highest frequency)- Output

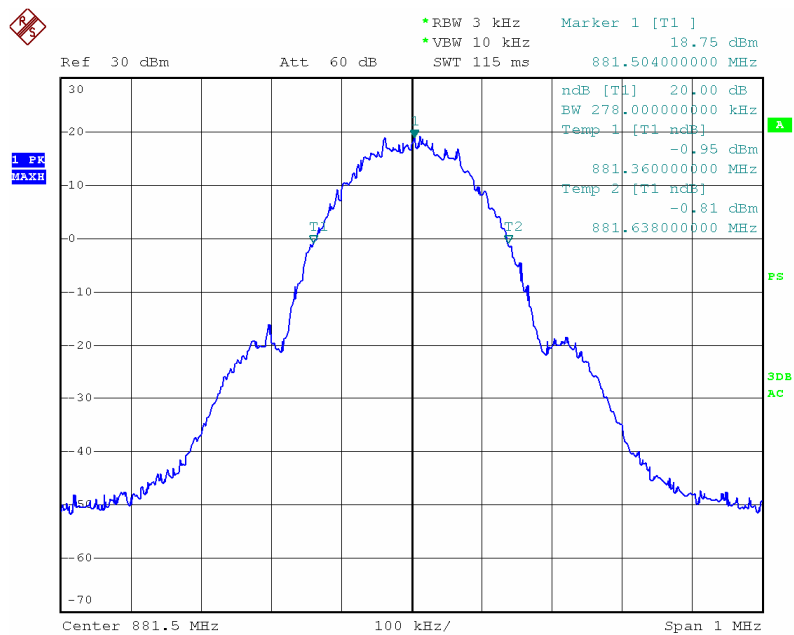


850MHz**850MHz-GSM downlink (lowest frequency)-Input****850MHz-GSM downlink (lowest frequency)-Output**

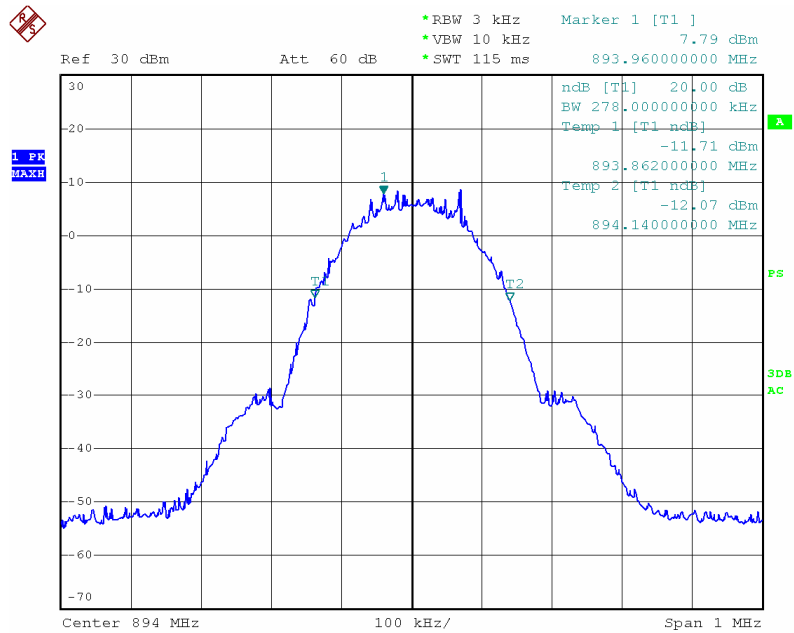
850MHz-GSM downlink (middle frequency)-Input



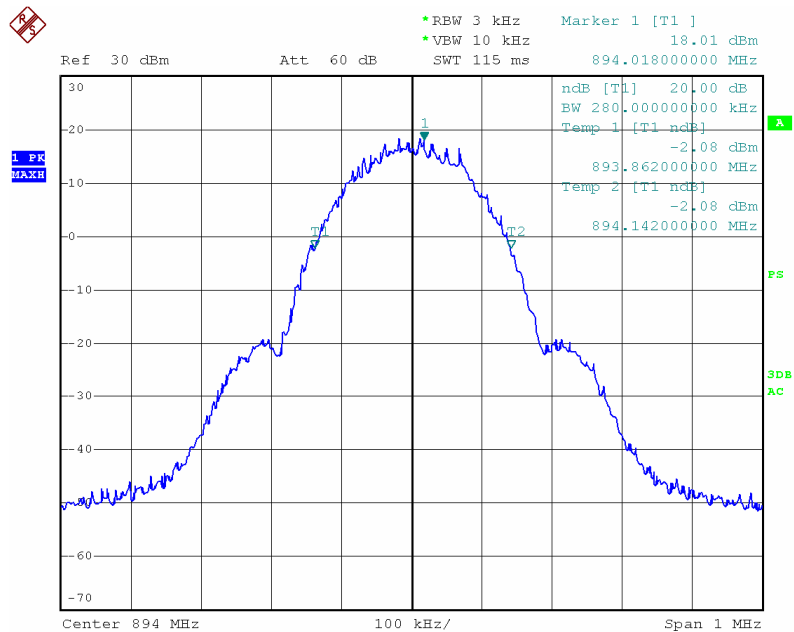
850MHz-GSM downlink (middle frequency)- Output



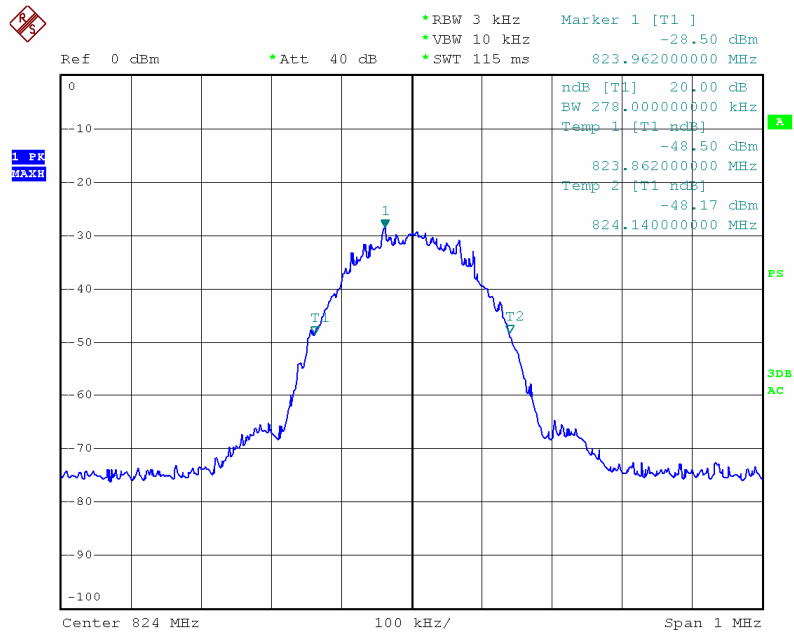
850MHz-GSM downlink (highest frequency)-Input



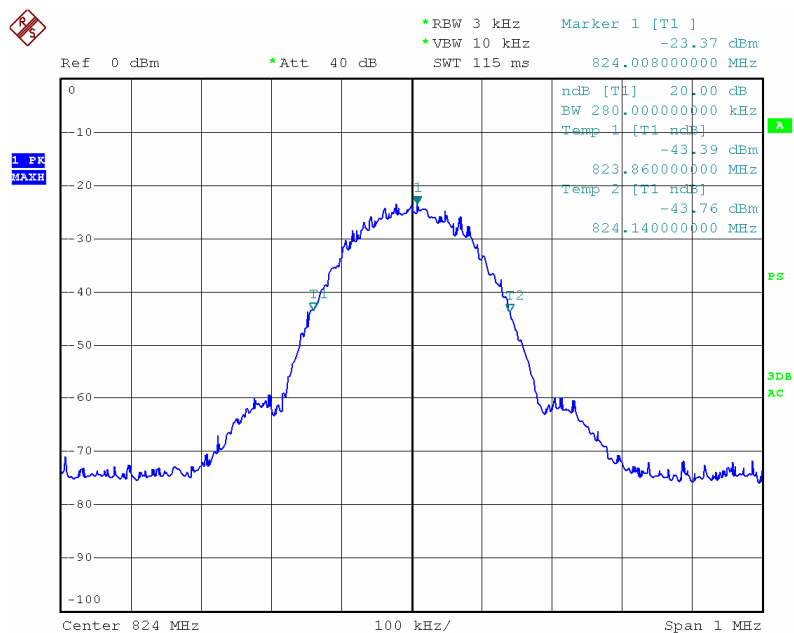
850MHz-GSM downlink (highest frequency)- Output



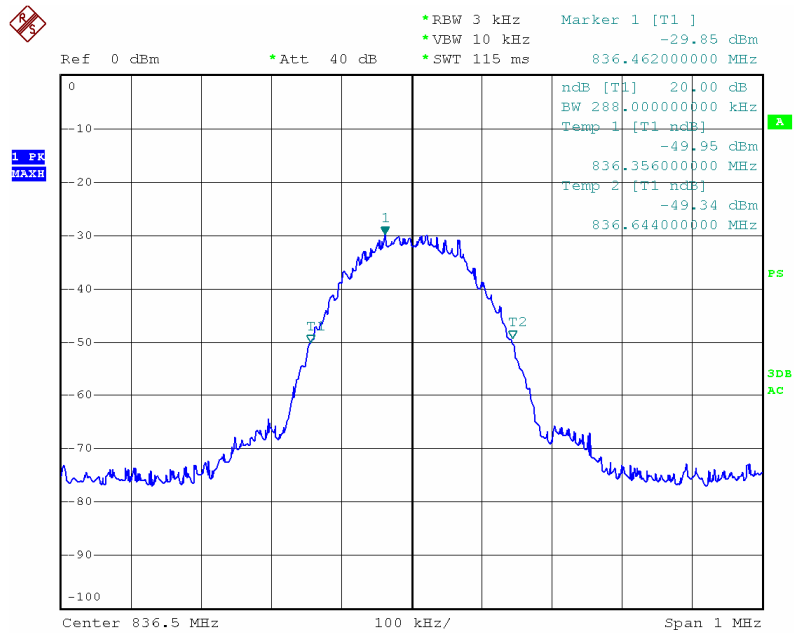
850MHz-GSM uplink (lowest frequency)-Input



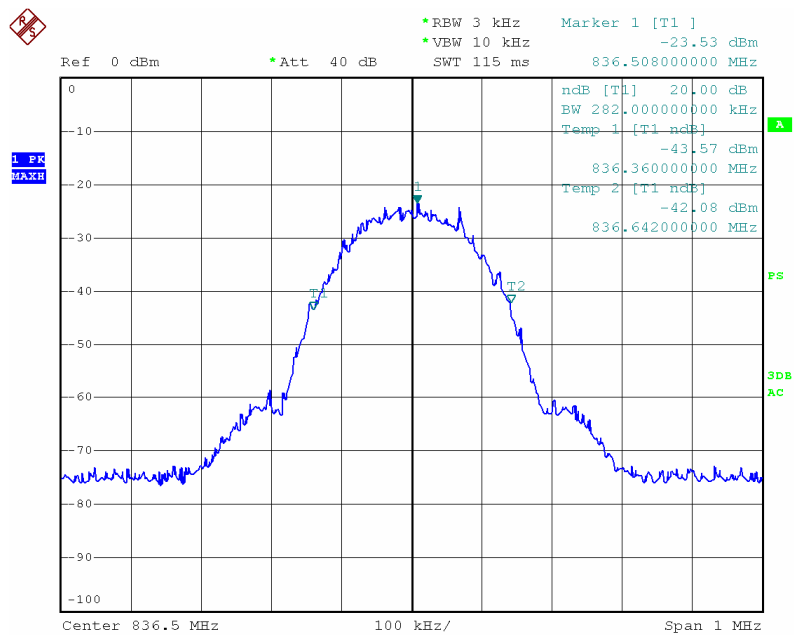
850MHz-GSM uplink (lowest frequency)- Output



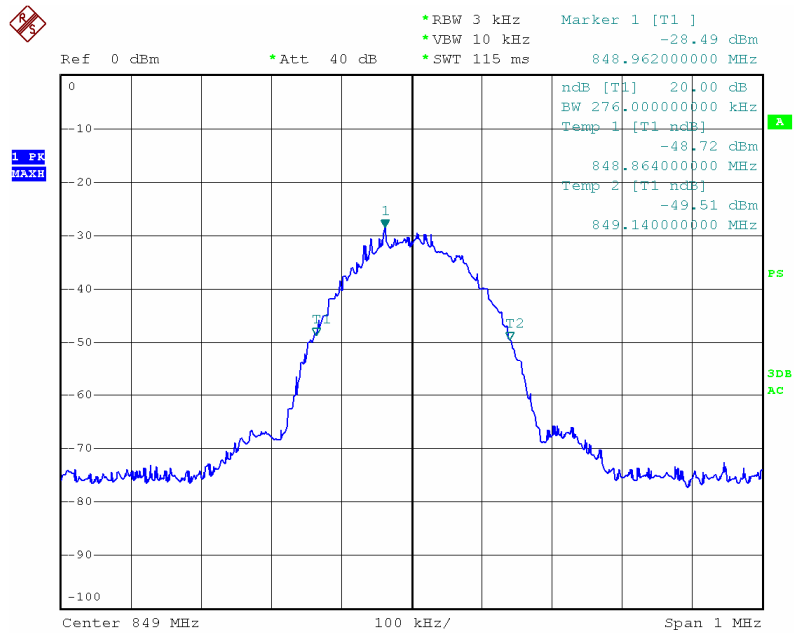
850MHz-GSM uplink (middle frequency)-Input



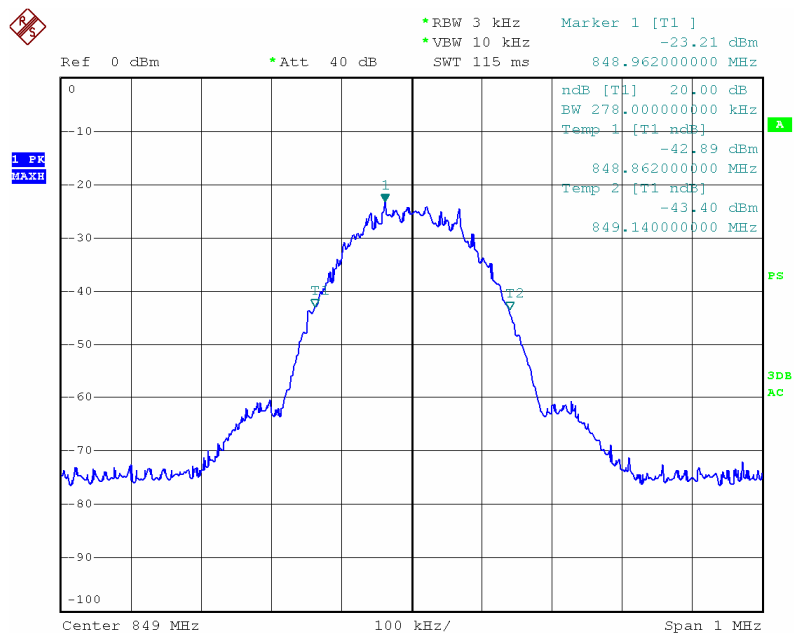
850MHz-GSM uplink (middle frequency)-Output



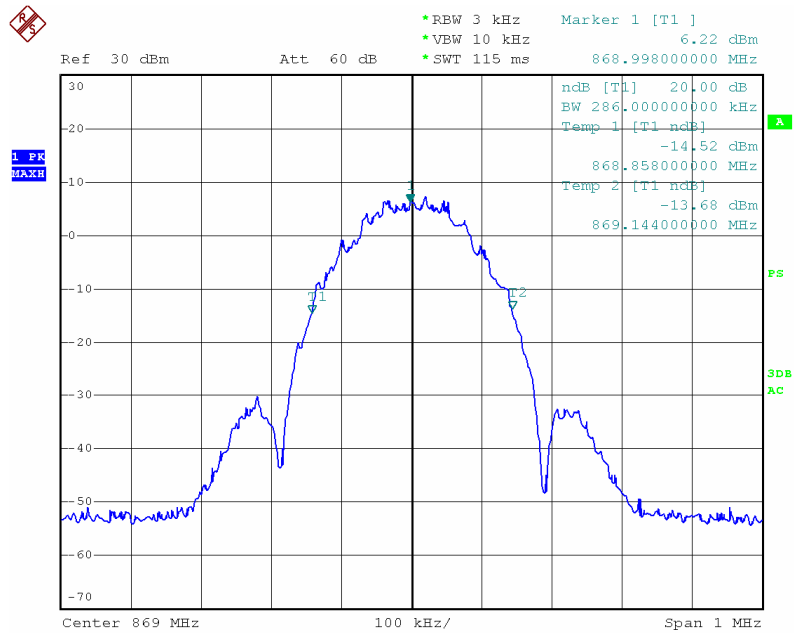
850MHz-GSM uplink (highest frequency)-Input



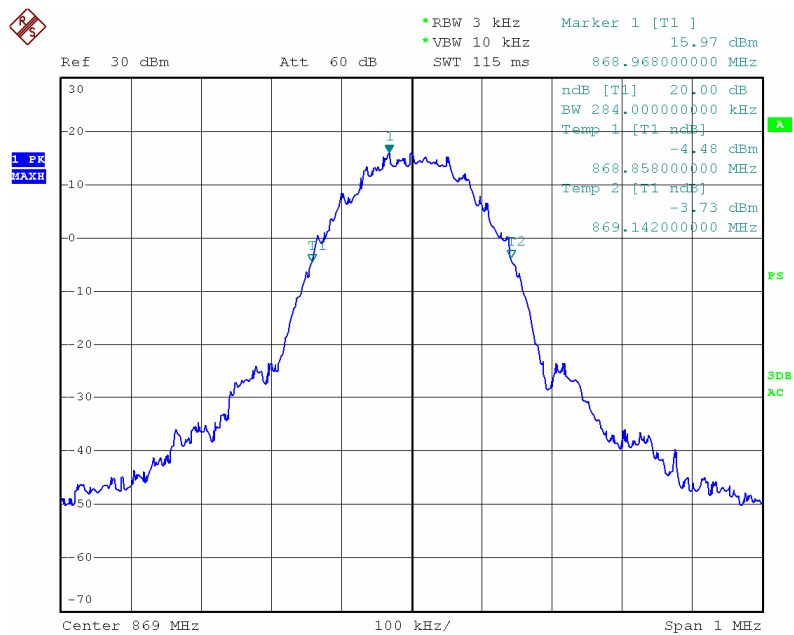
850MHz-GSM uplink (highest frequency)- Output



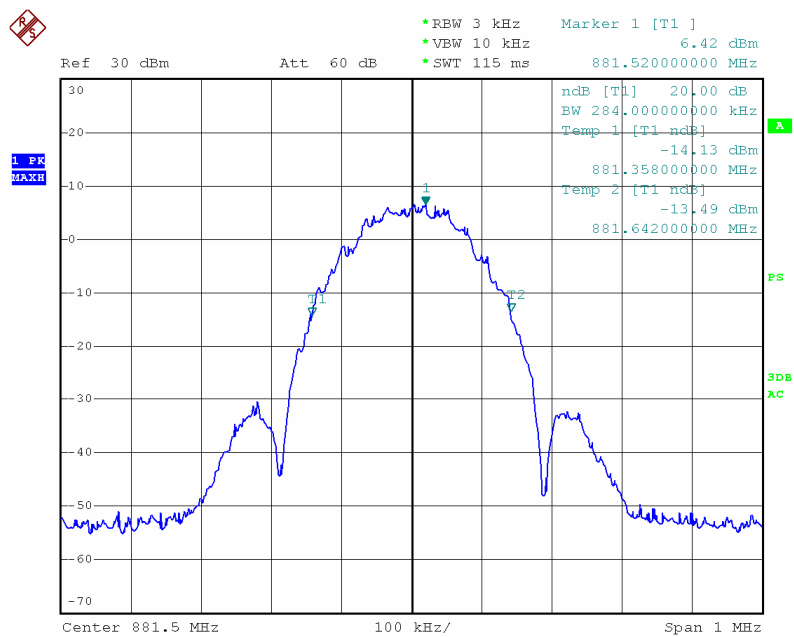
850MHz-EDGE downlink (lowest frequency)-Input



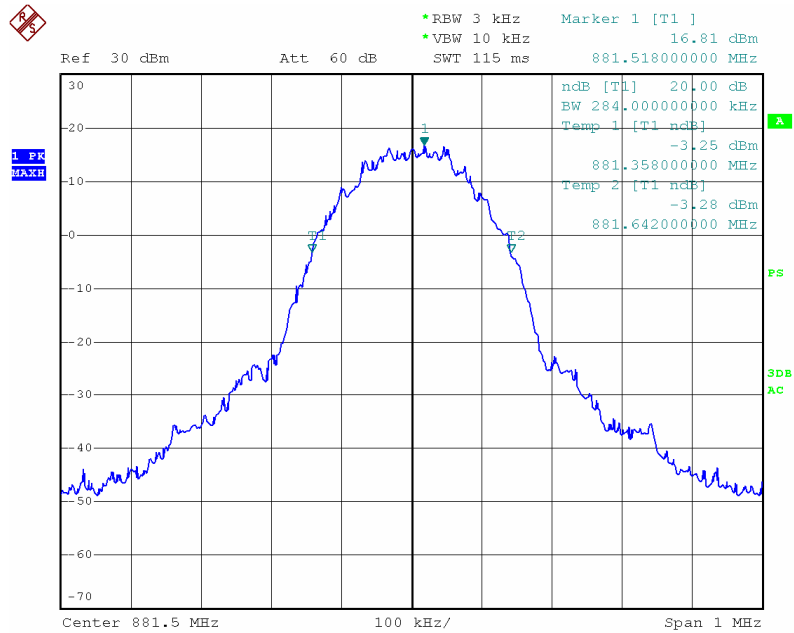
850MHz-EDGE downlink (lowest frequency)-Output



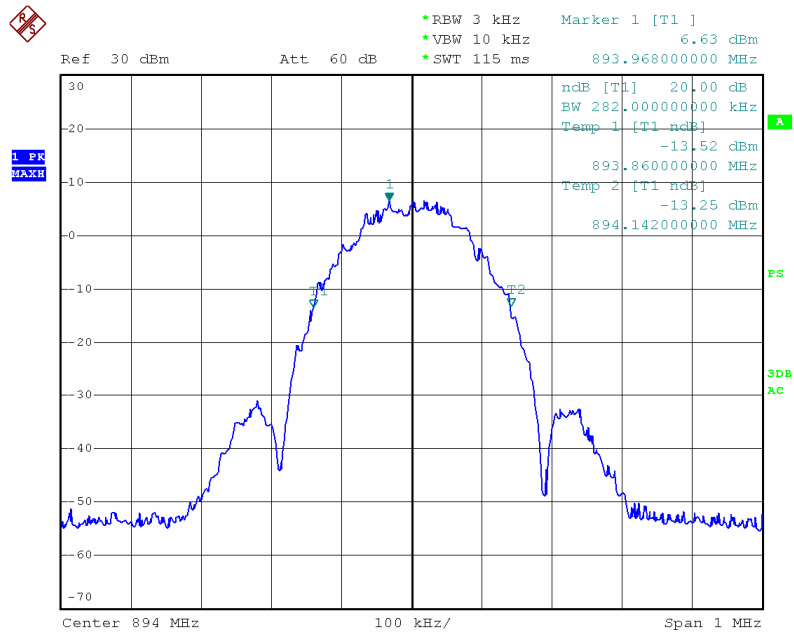
850MHz-EDGE downlink (middle frequency)-Input



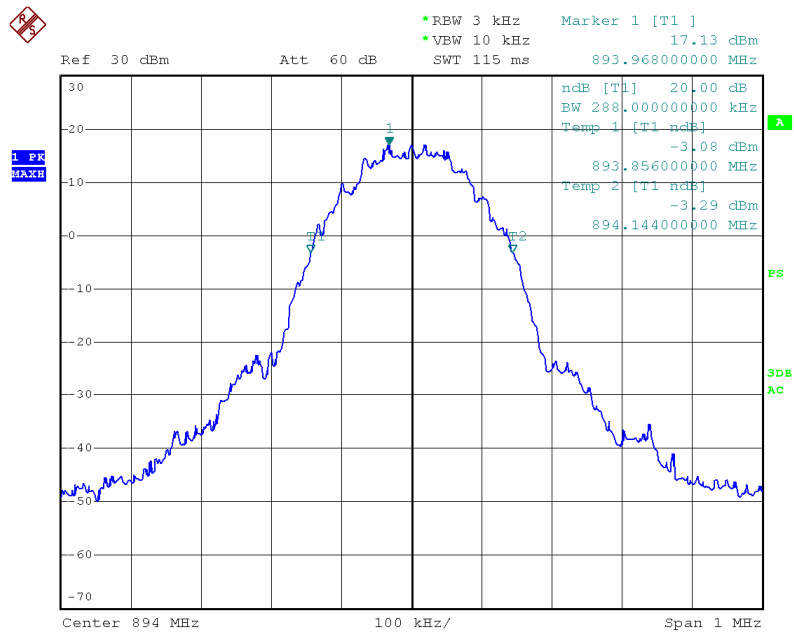
850MHz-EDGE downlink (middle frequency)- Output



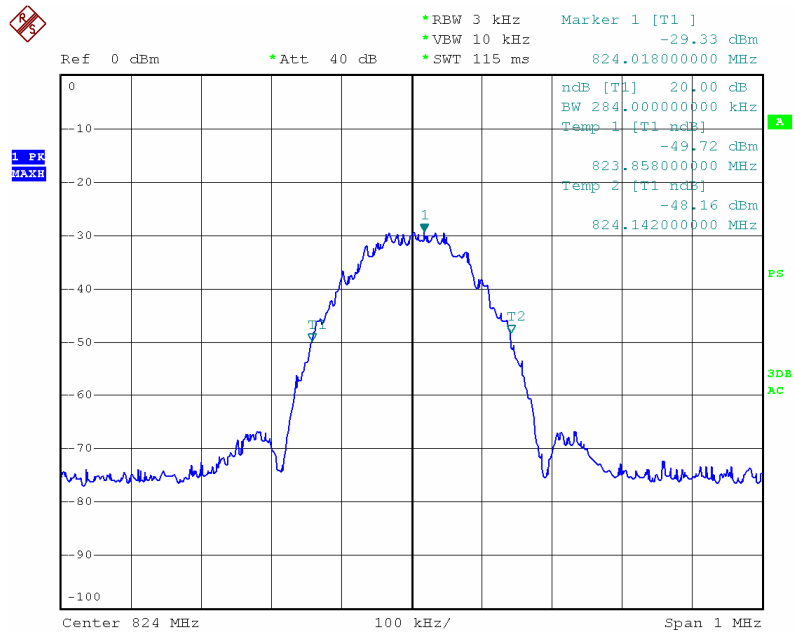
850MHz-EDGE downlink (highest frequency)-Input



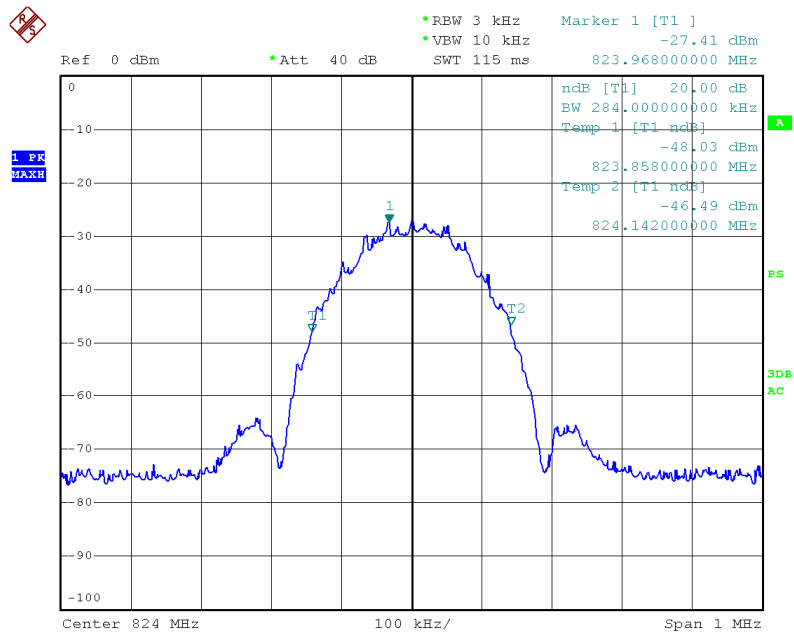
850MHz-EDGE downlink (highest frequency)- Output



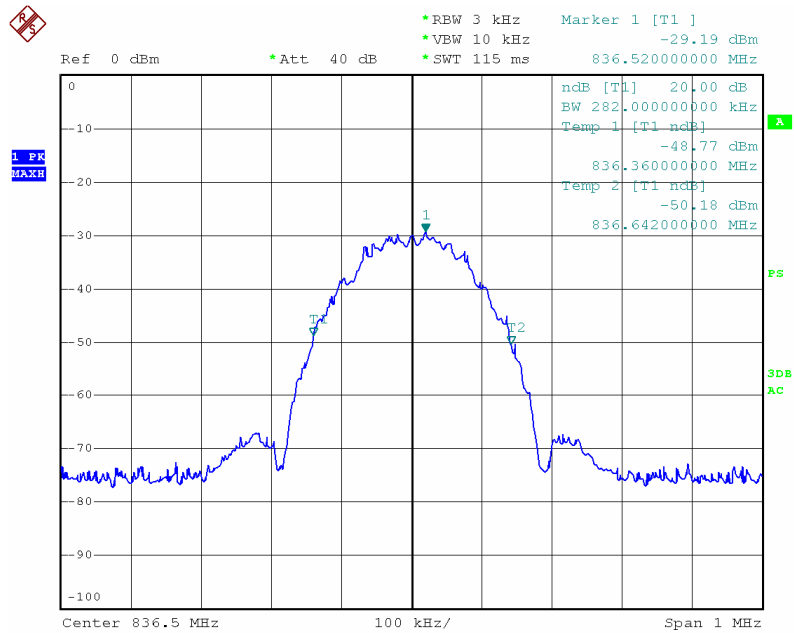
850MHz-EDGE uplink (lowest frequency)-Input



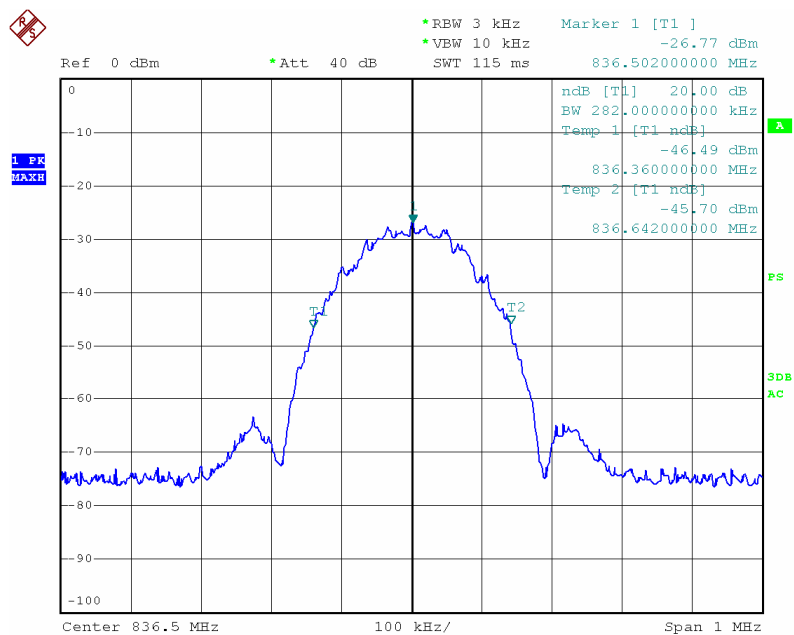
850MHz-EDGE uplink (lowest frequency)- Output



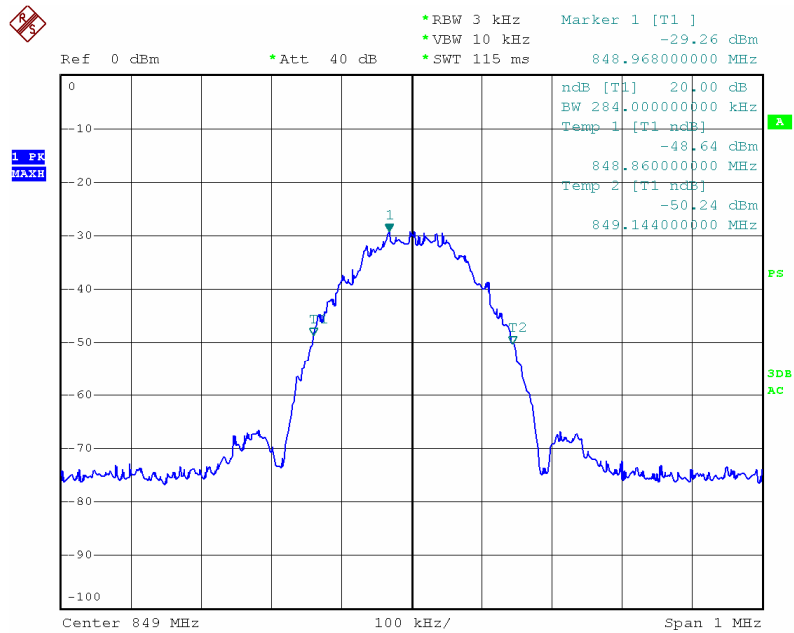
850MHz-EDGE uplink (middle frequency)-Input



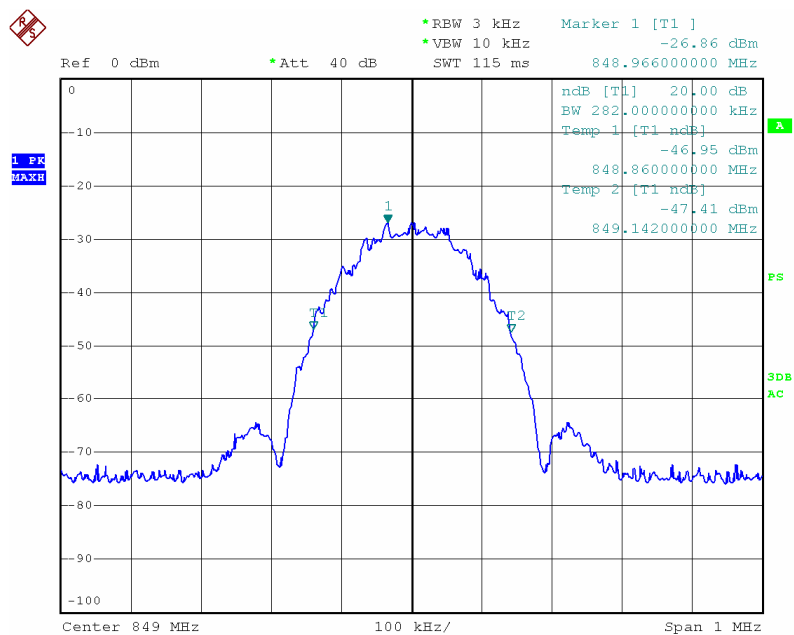
850MHz-EDGE uplink (middle frequency)-Output



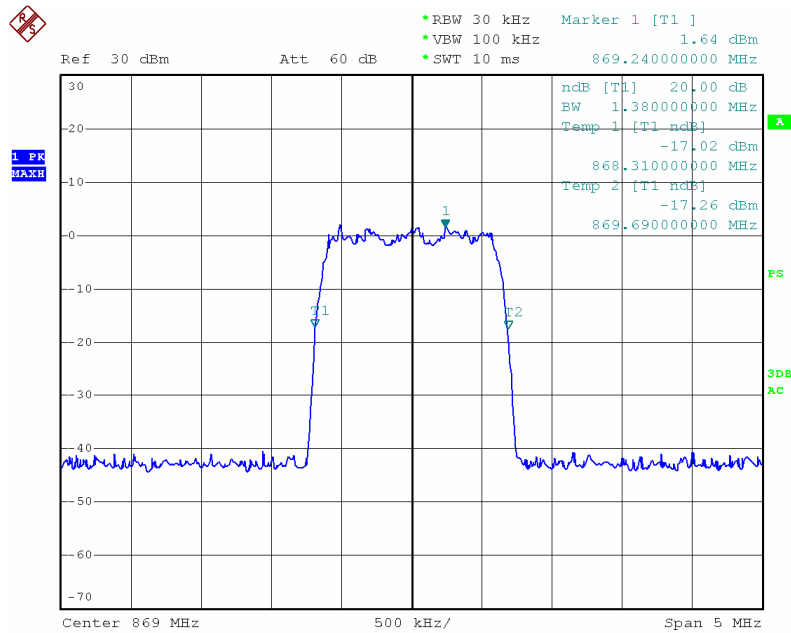
850MHz-EDGE uplink (highest frequency)-Input



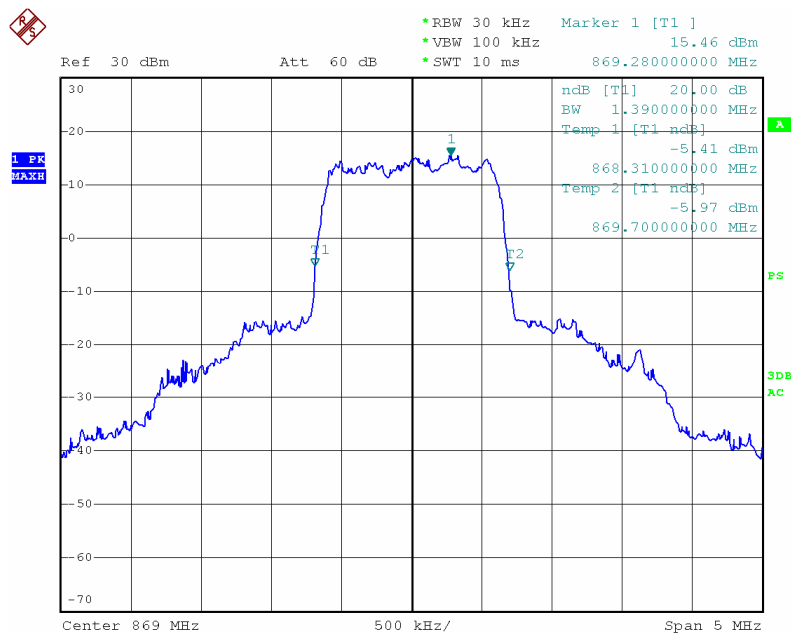
850MHz-EDGE uplink (highest frequency)- Output



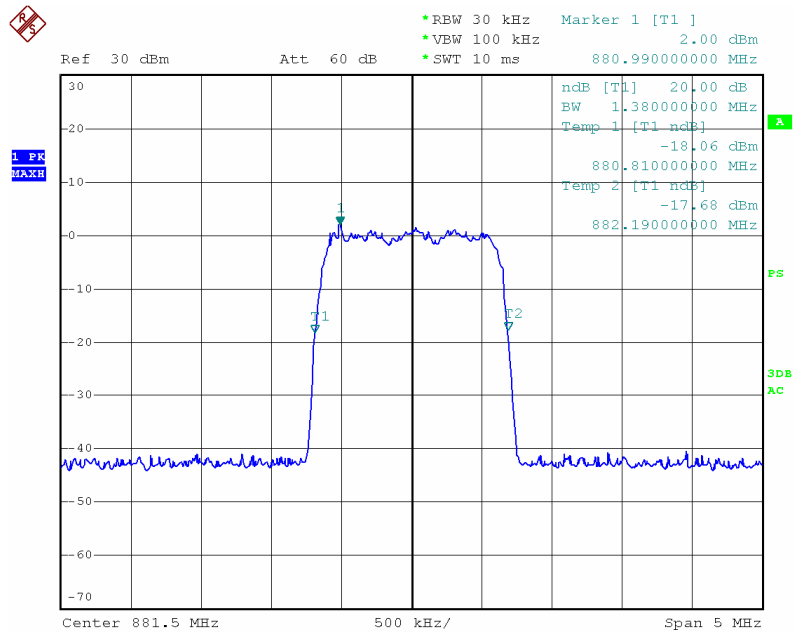
850MHz-CDMA2000 downlink (lowest frequency)-Input



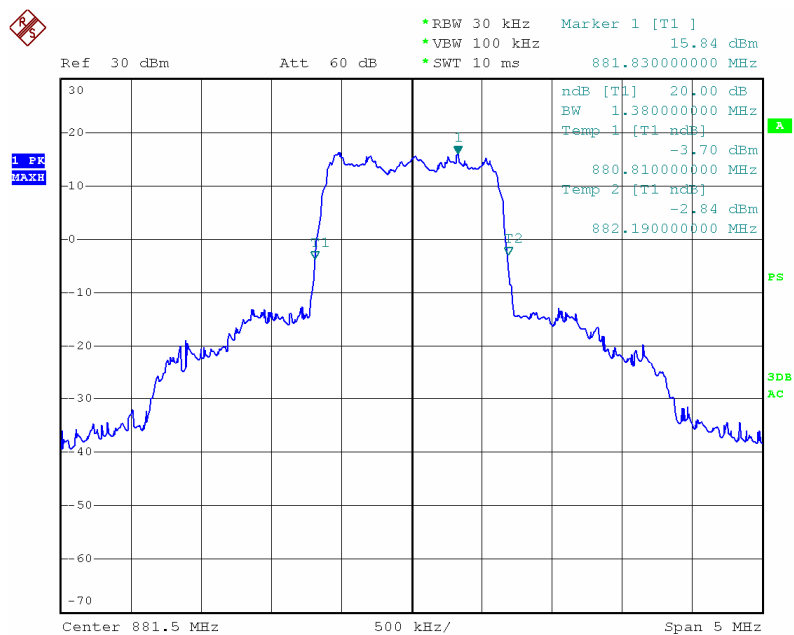
850MHz-CDMA2000 downlink (lowest frequency)-Output



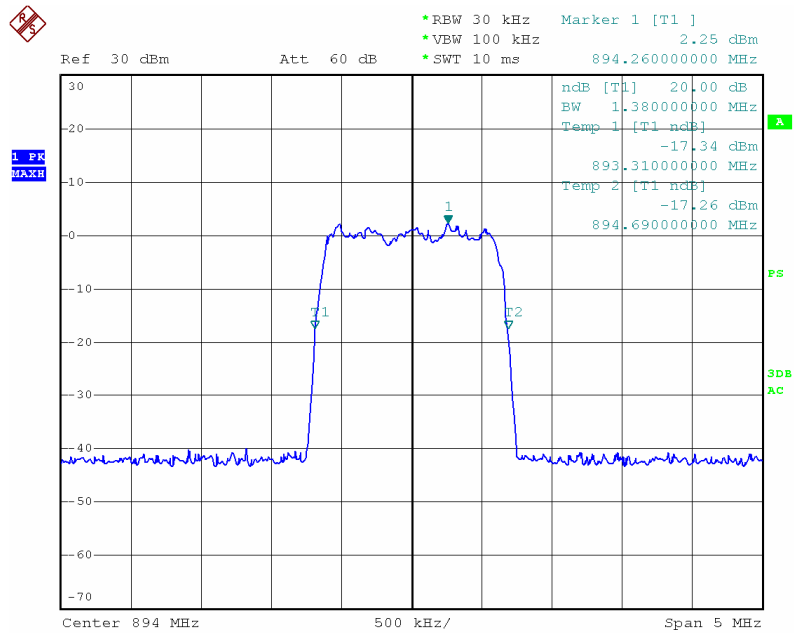
850MHz-CDMA2000 downlink (middle frequency)-Input



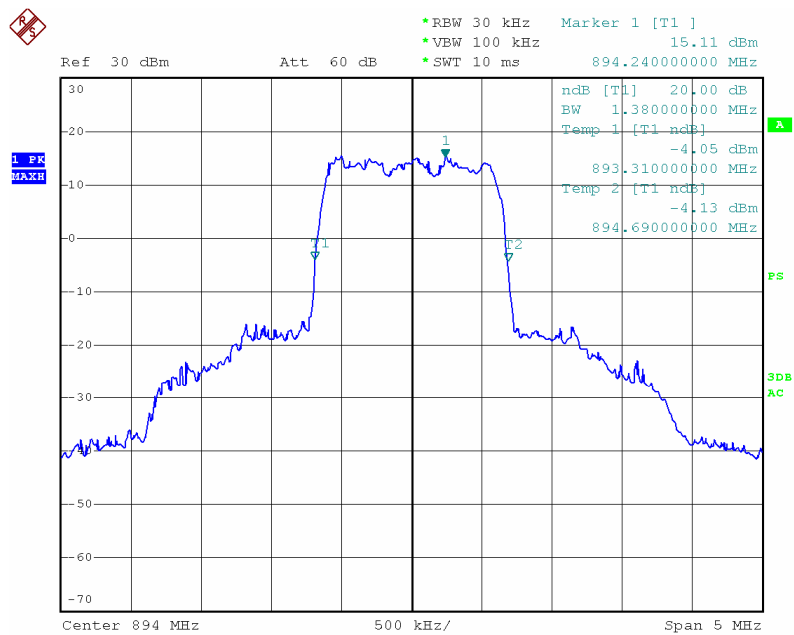
850MHz-CDMA2000 downlink (middle frequency)- Output



850MHz-CDMA2000 downlink (highest frequency)-Input

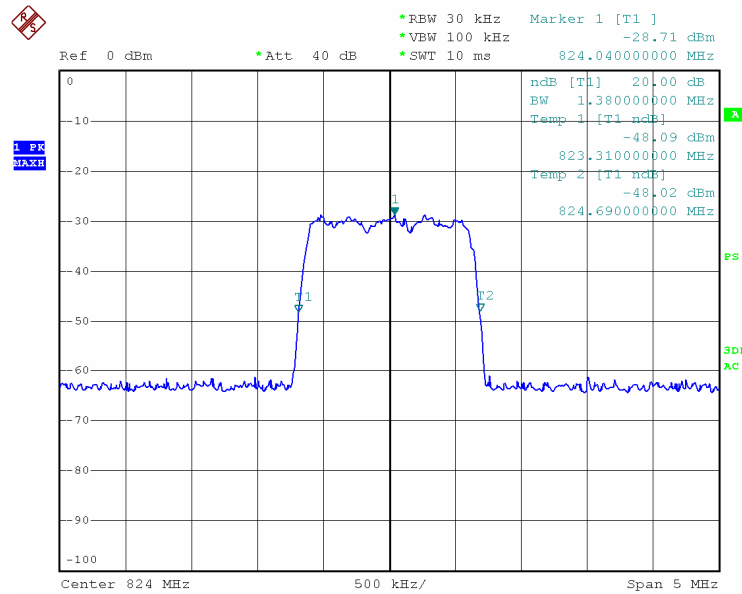


850MHz-CDMA2000 downlink (highest frequency)- Output

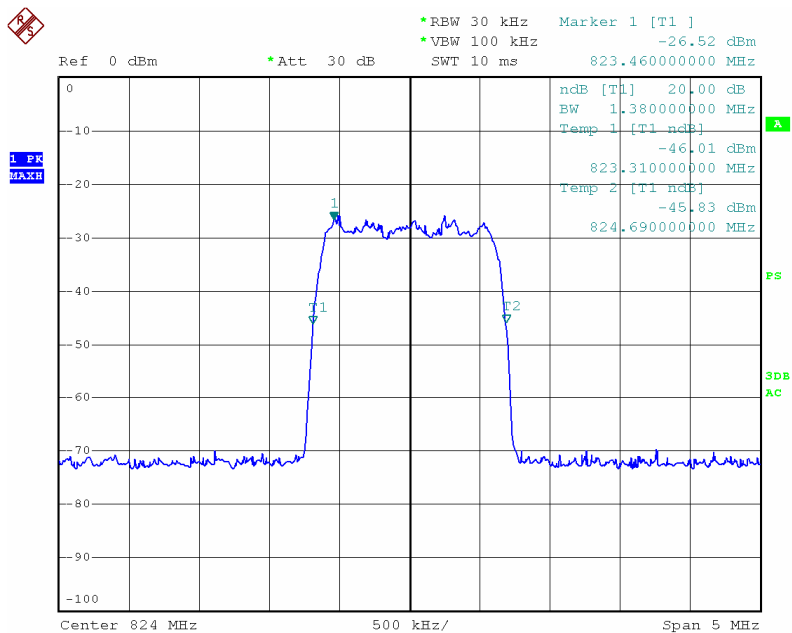


Date: 19.APR.2012 19:25:11

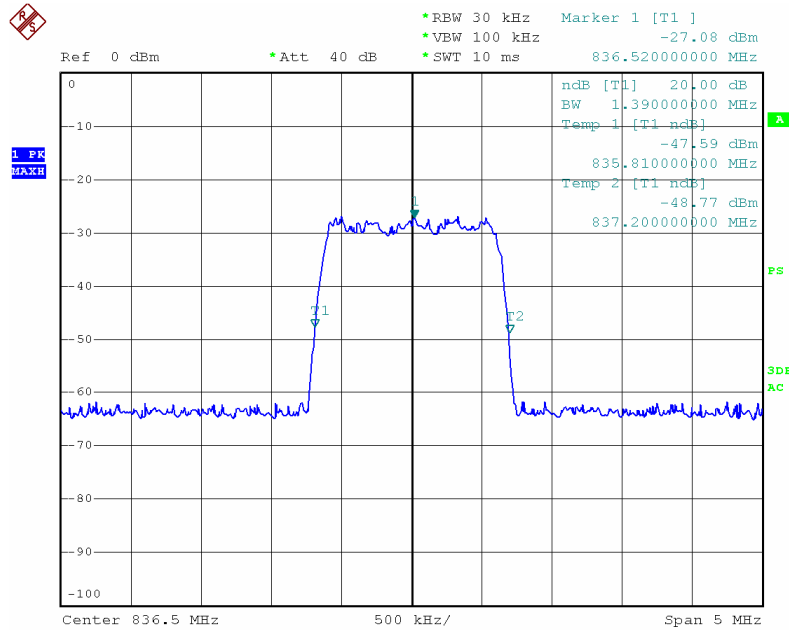
850MHz-CDMA2000 uplink (lowest frequency)-Input



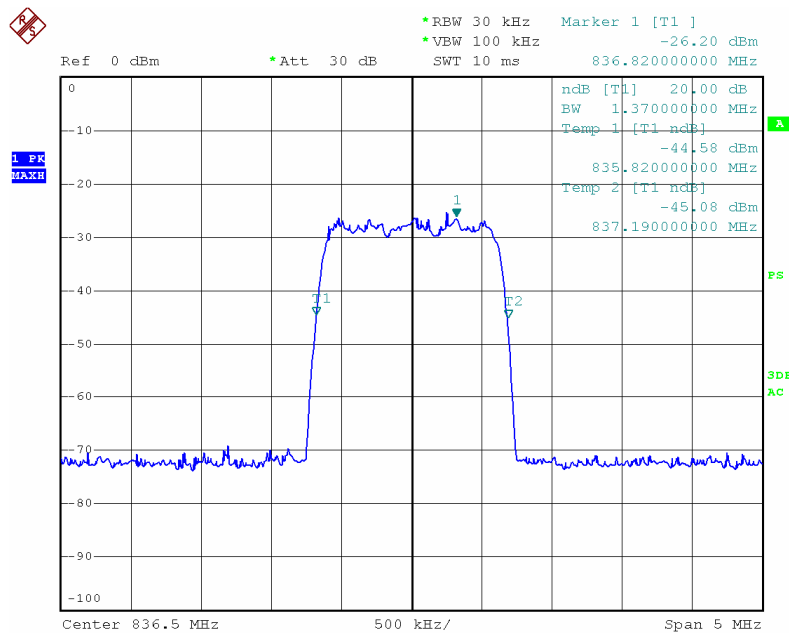
850MHz-CDMA2000 uplink (lowest frequency)- Output



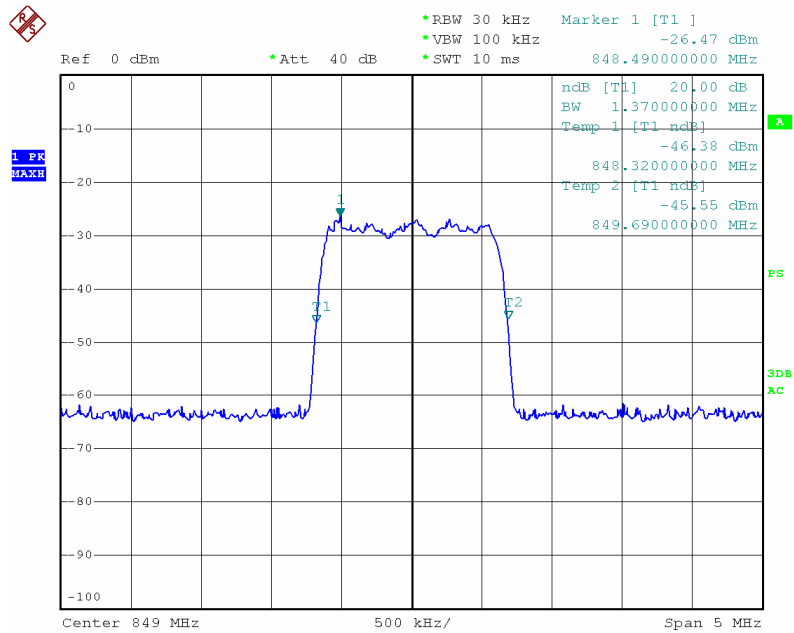
850MHz-CDMA2000 uplink (middle frequency)-Input



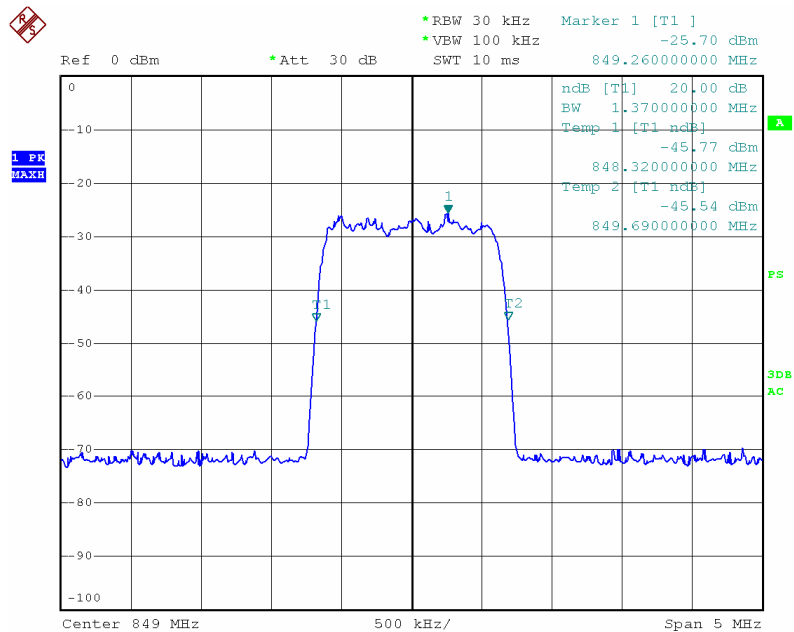
850MHz-CDMA2000 uplink (middle frequency)-Output



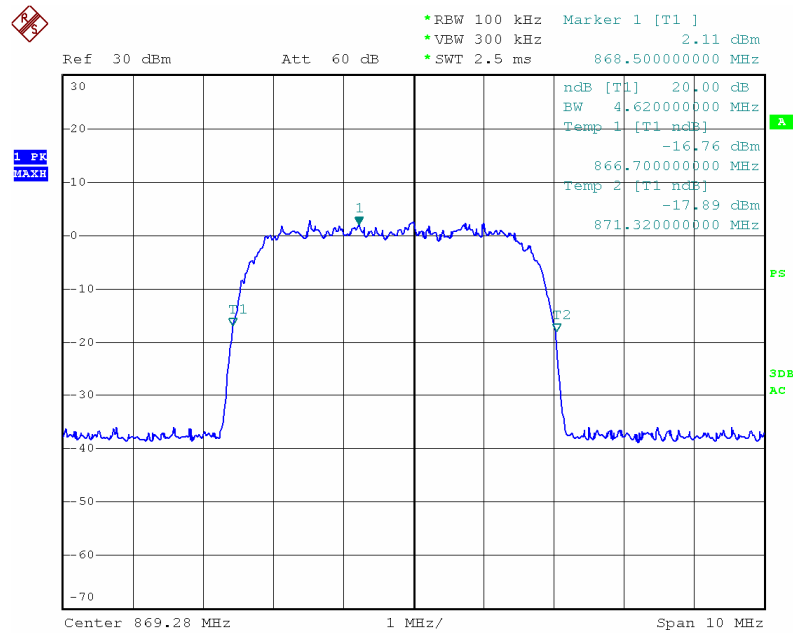
850MHz-CDMA2000 uplink (highest frequency)-Input



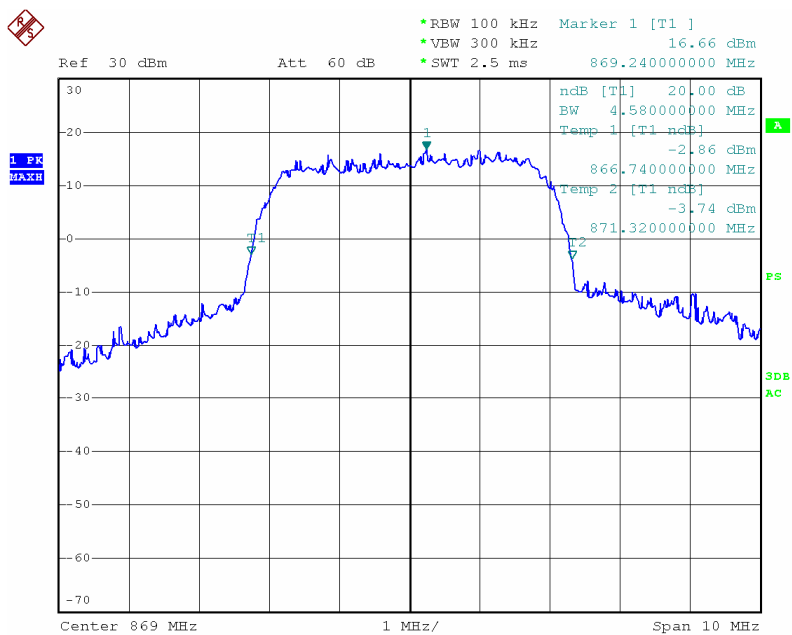
850MHz-CDMA2000 uplink (highest frequency)- Output



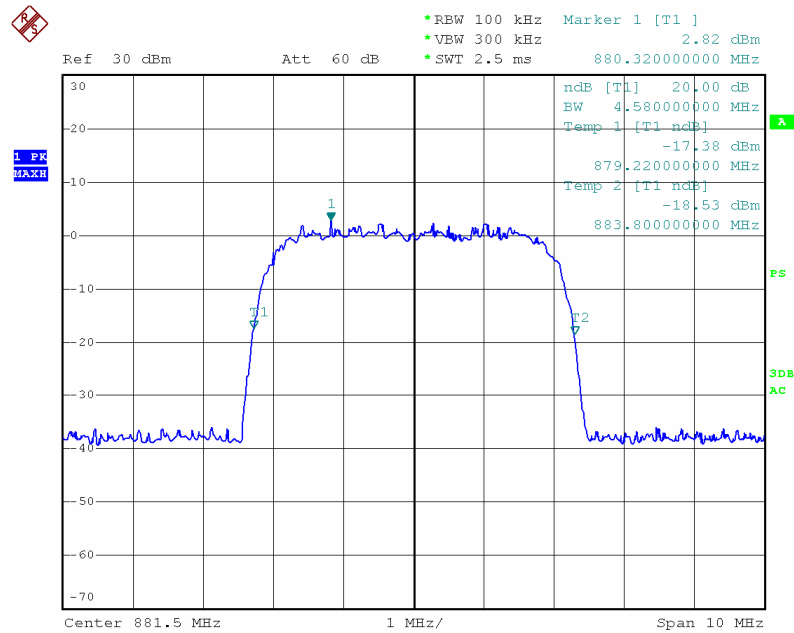
850MHz-WCDMA downlink (lowest frequency)-Input



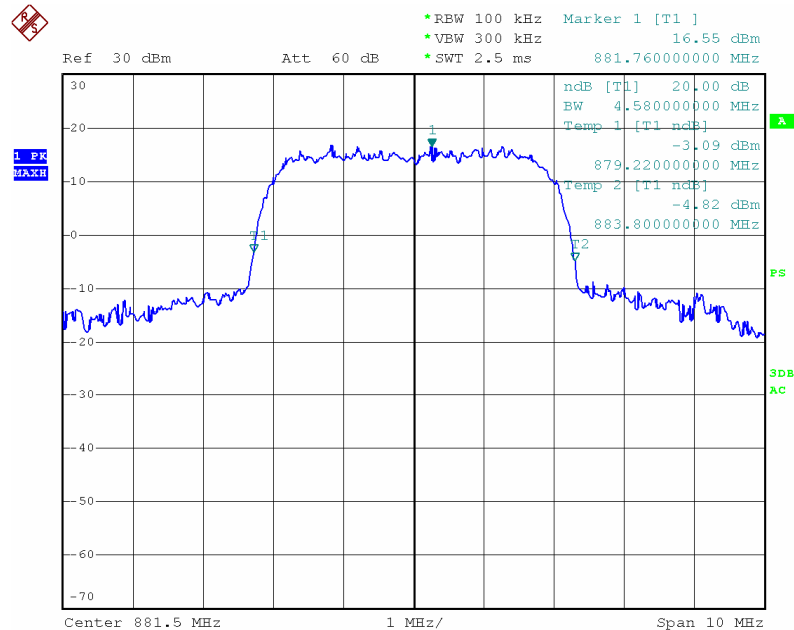
850MHz-WCDMA downlink (lowest frequency)-Output



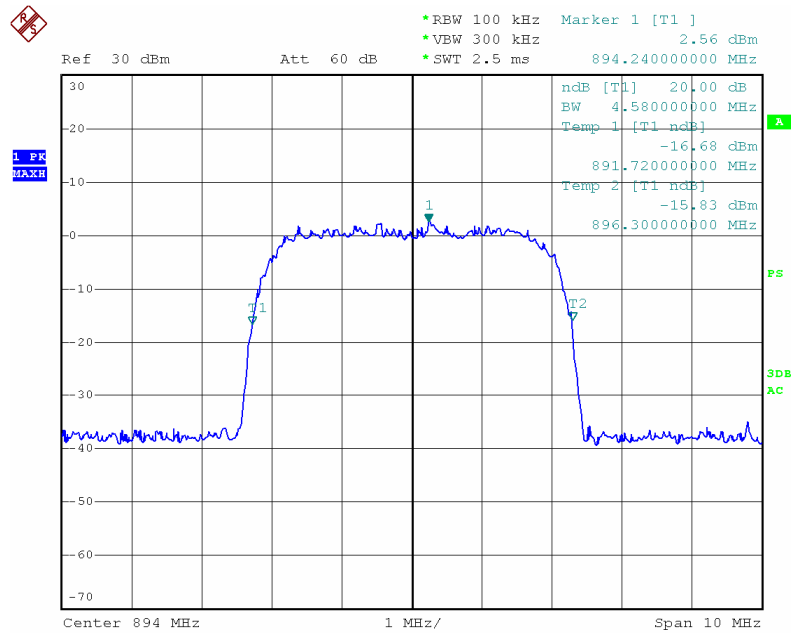
850MHz-WCDMA downlink (middle frequency)-Input



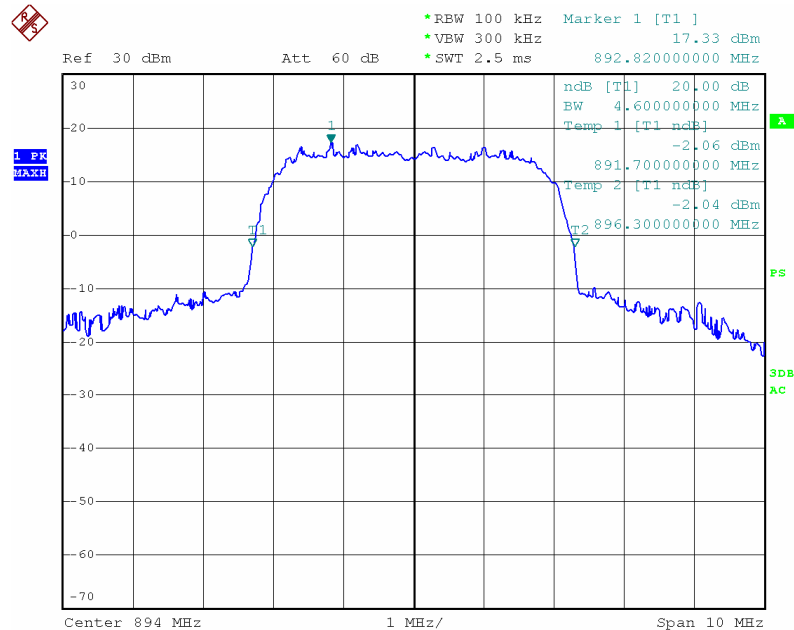
850MHz-WCDMA downlink (middle frequency)- Output



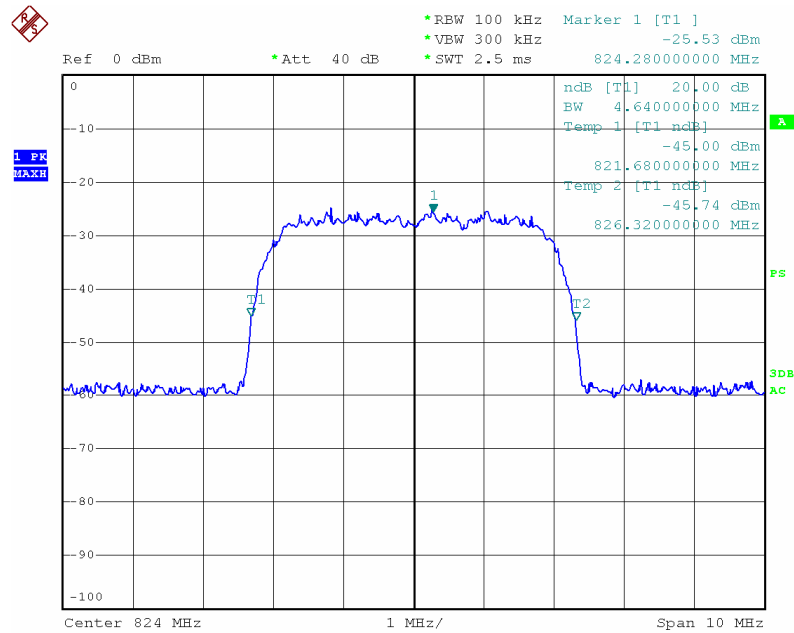
850MHz-WCDMA downlink (highest frequency)-Input



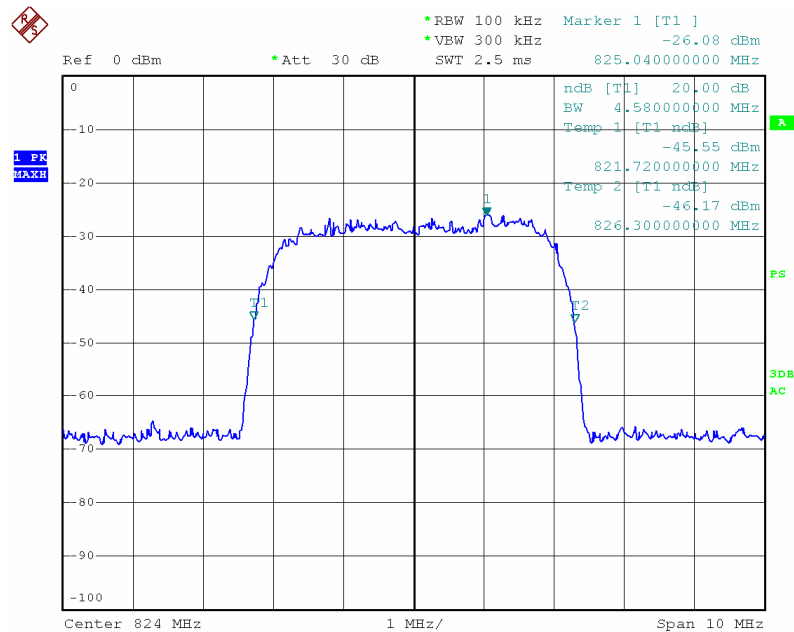
850MHz-WCDMA downlink (highest frequency)- Output



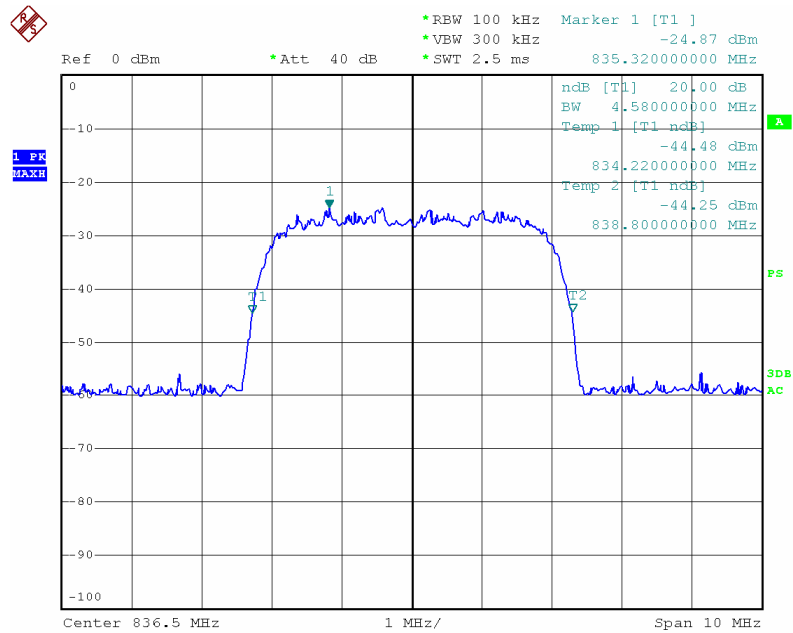
850MHz-WCDMA uplink (lowest frequency)-Input



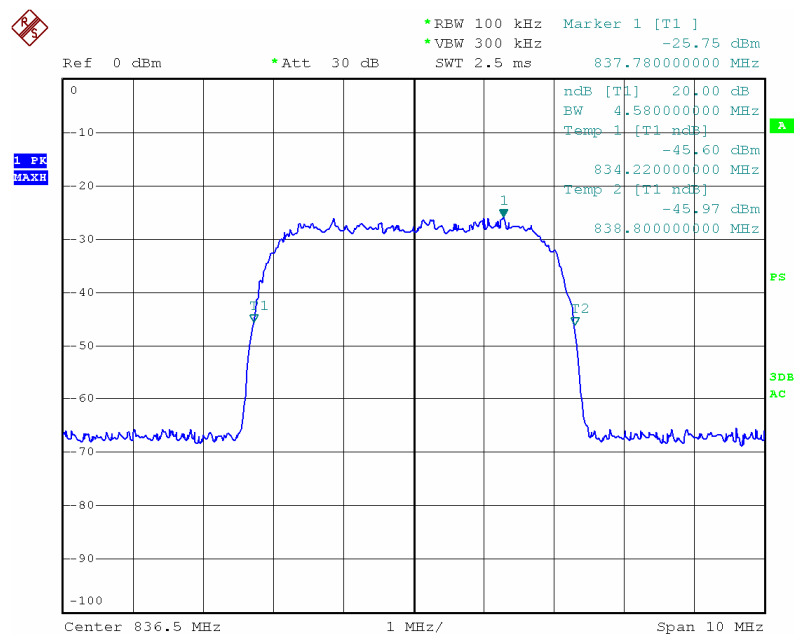
850MHz-WCDMA uplink (lowest frequency)- Output



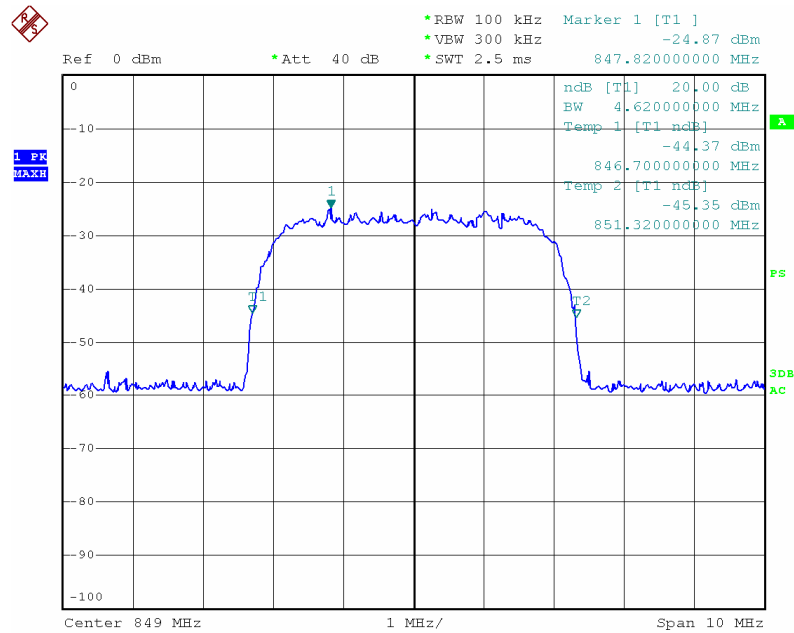
850MHz-WCDMA uplink (middle frequency)-Input



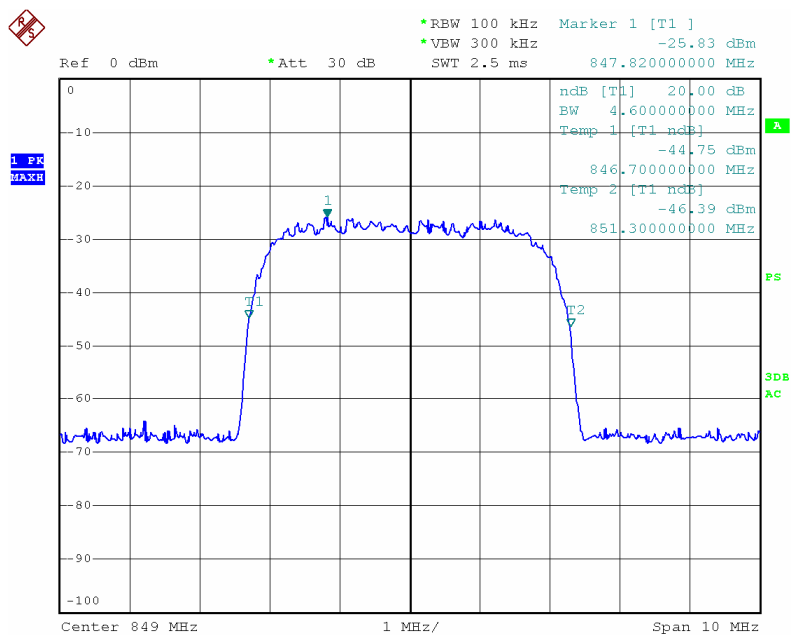
850MHz-WCDMA uplink (middle frequency)-Output



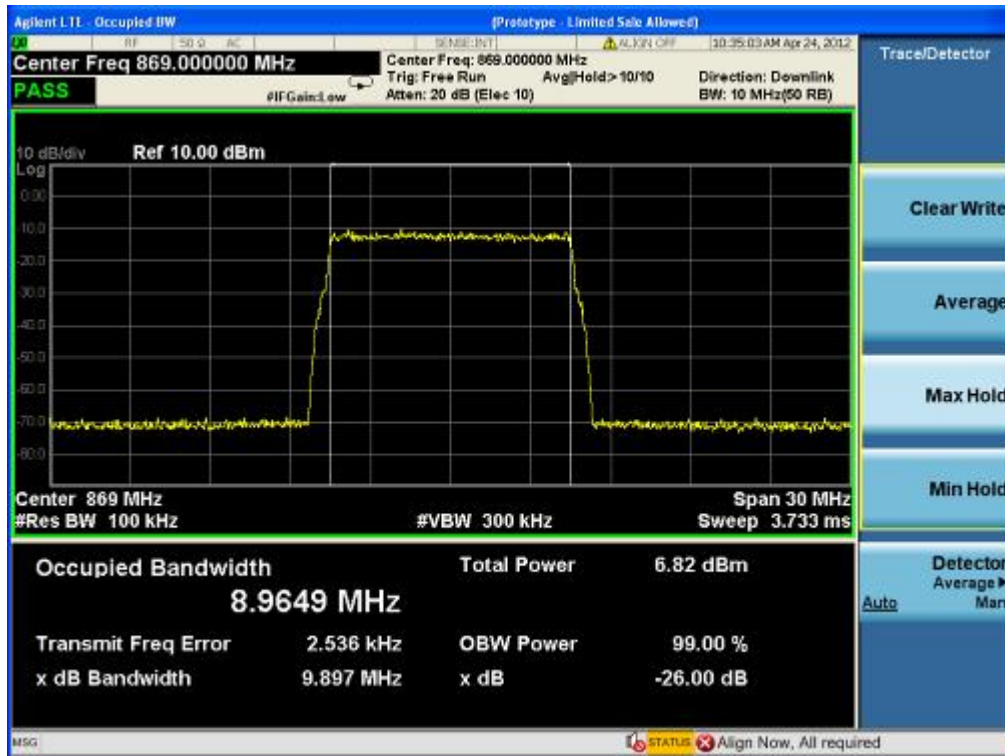
850MHz-WCDMA uplink (highest frequency)-Input



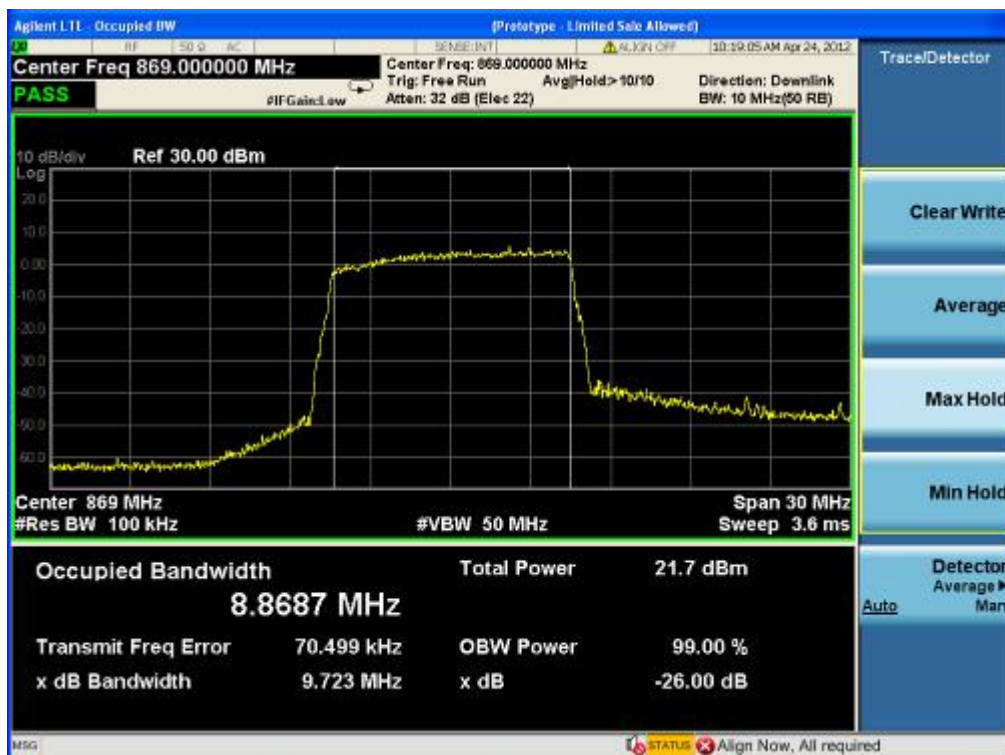
850MHz-WCDMA uplink (highest frequency)- Output



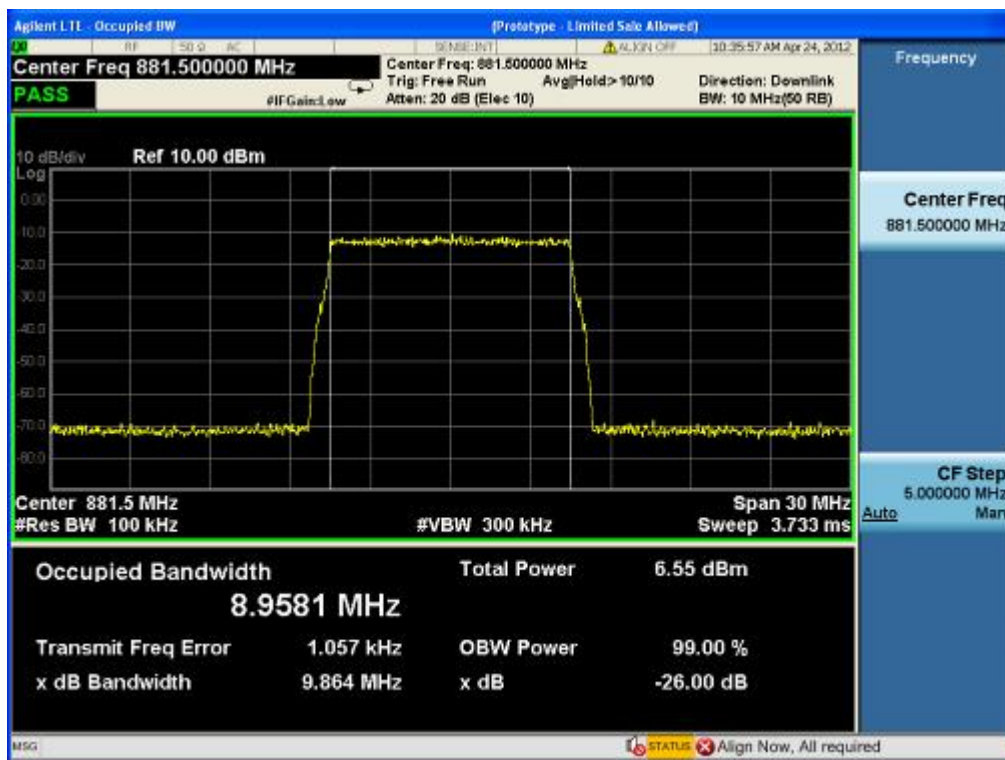
850MHz-LTE –QPSK downlink (lowest frequency)-Input



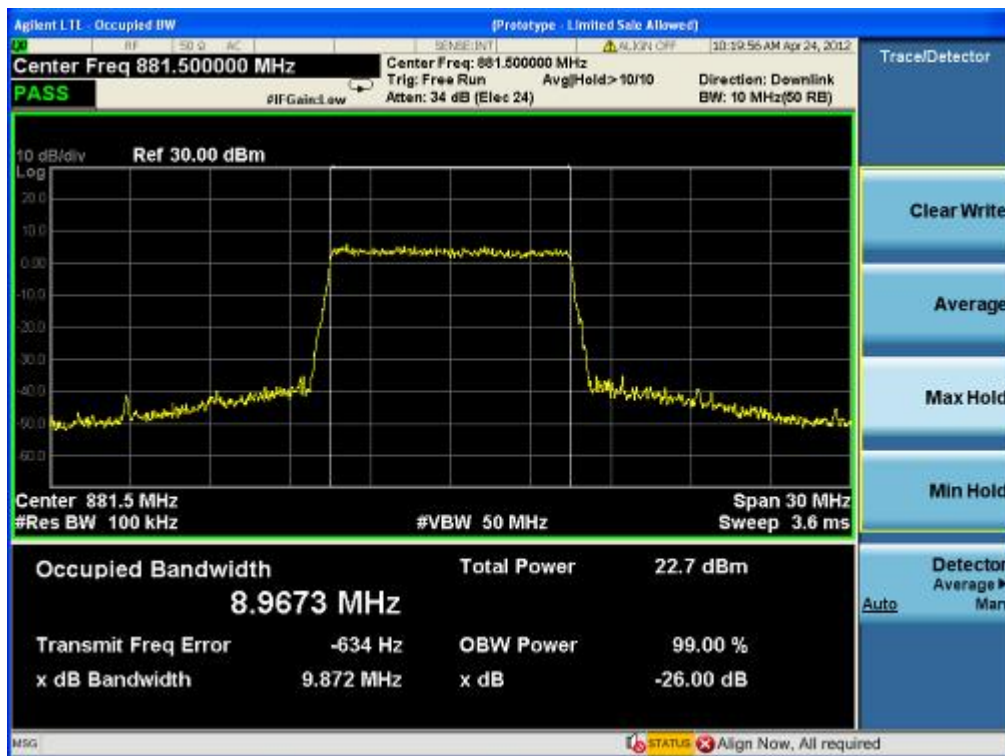
850MHz-LTE –QPSK downlink (lowest frequency)-Output



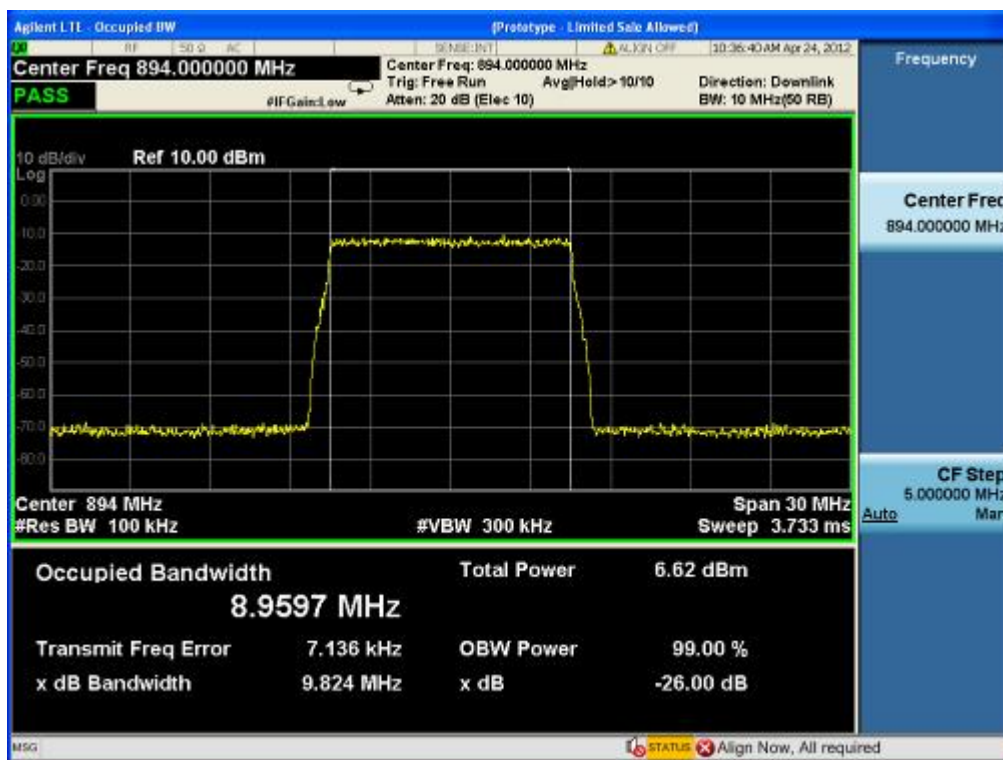
850MHz-LTE –QPSK downlink (middle frequency)-Input



850MHz-LTE –QPSK downlink (middle frequency)- Output



850MHz-LTE –QPSK downlink (highest frequency)-Input



850MHz-LTE –QPSK downlink (highest frequency)- Output

