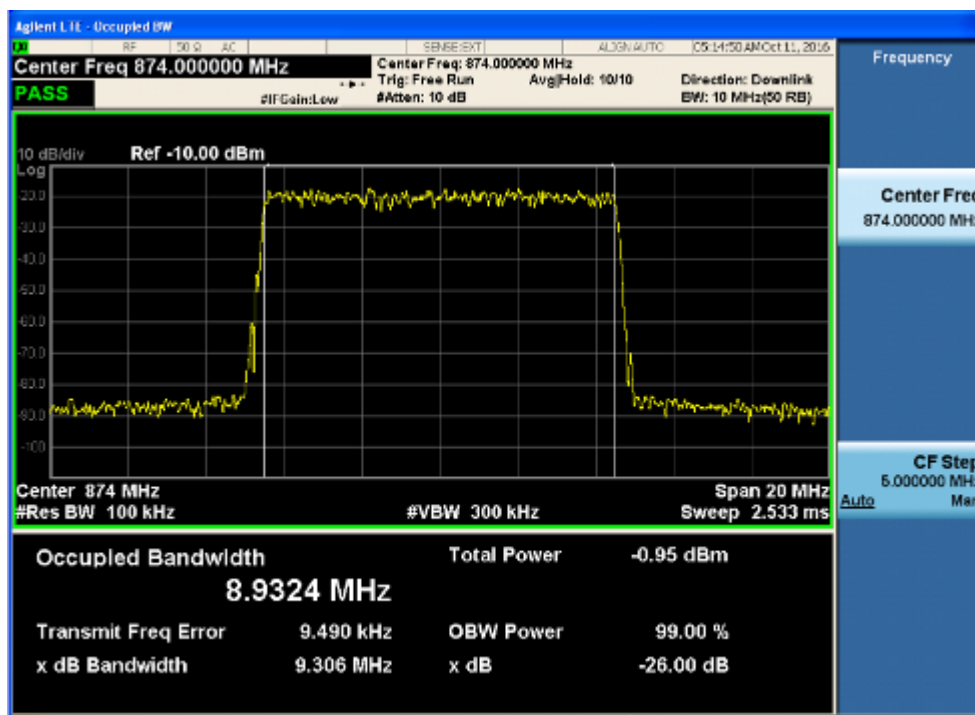
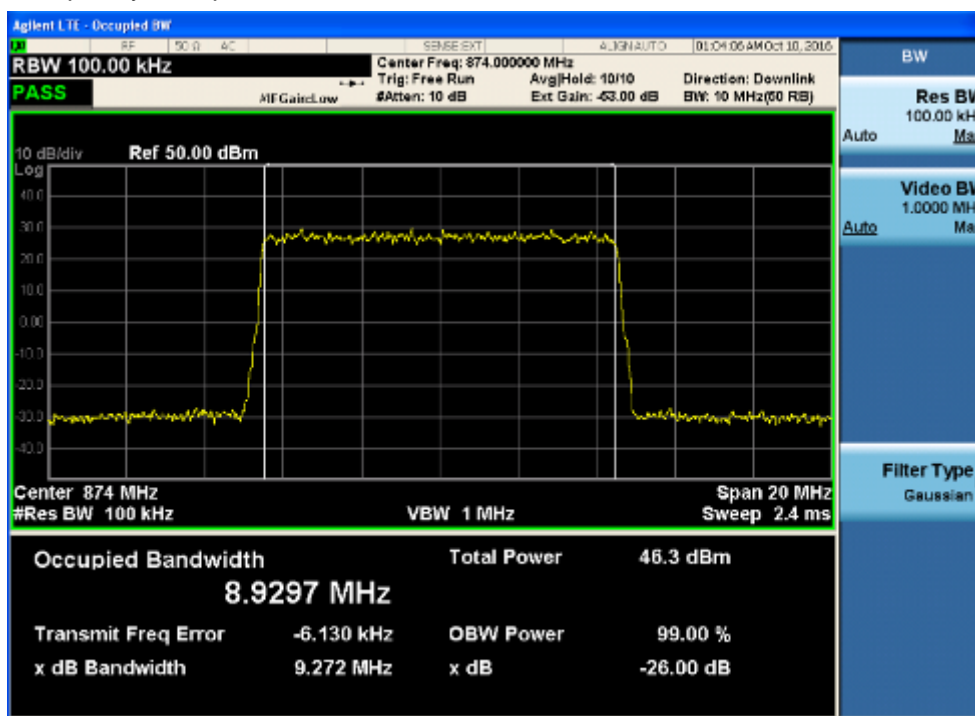


2.4 LTE Mode:

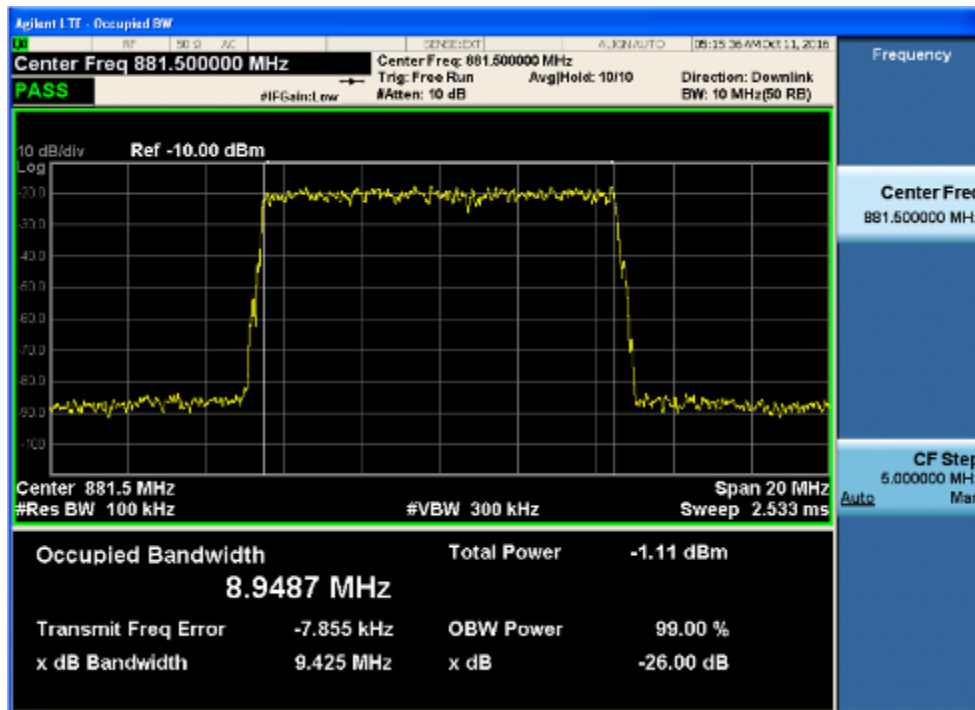
2.4.1 lowest frequency-- Input



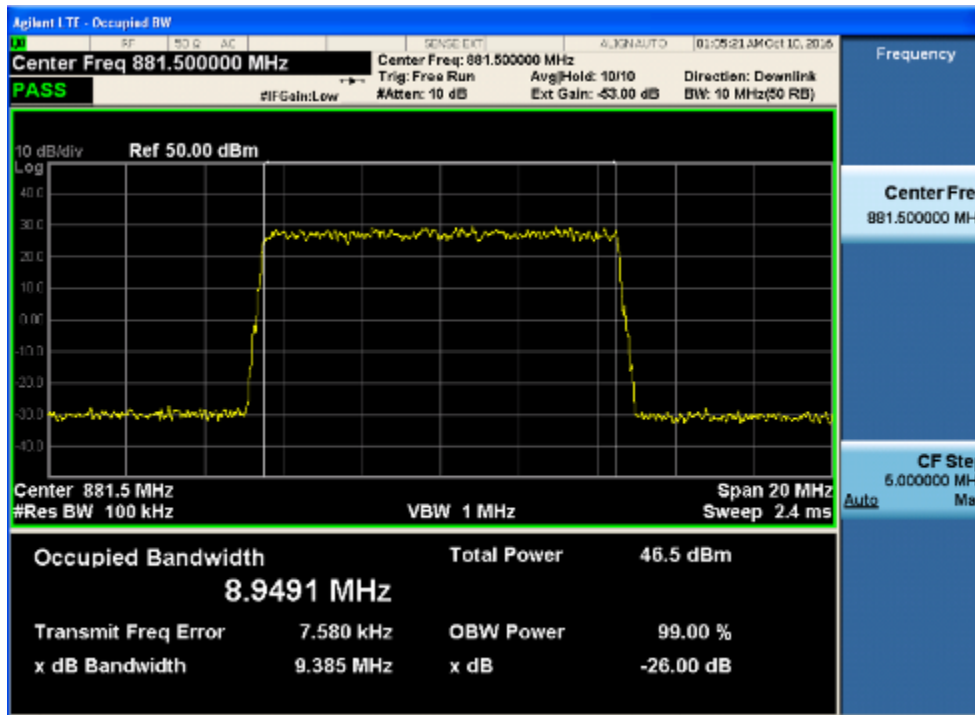
2.4.2 lowest frequency-- Output



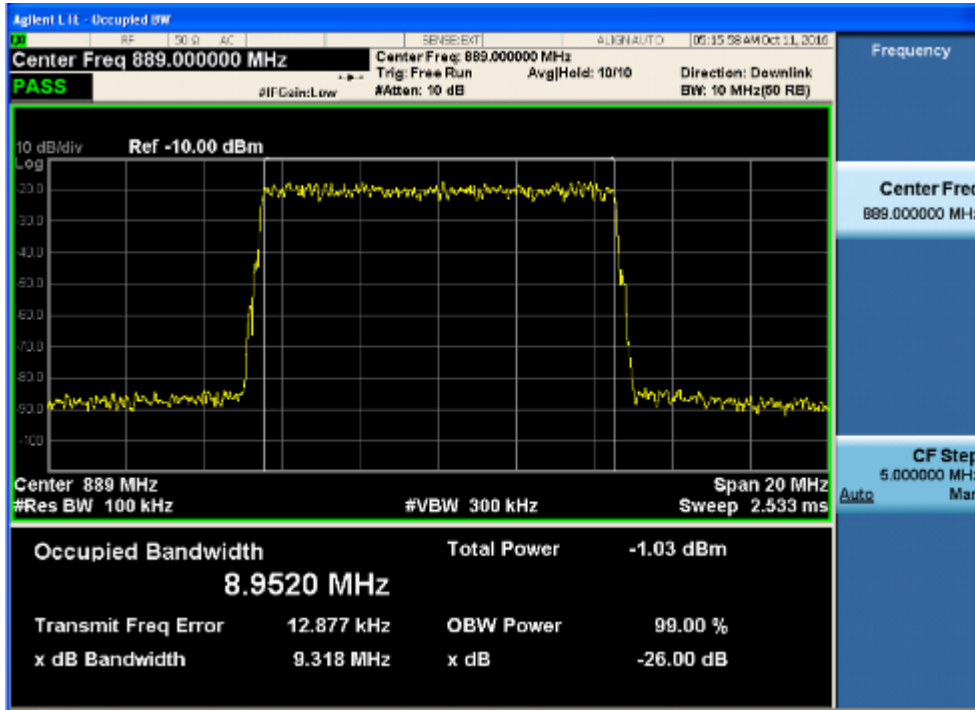
2.4.3 middle frequency-- Input



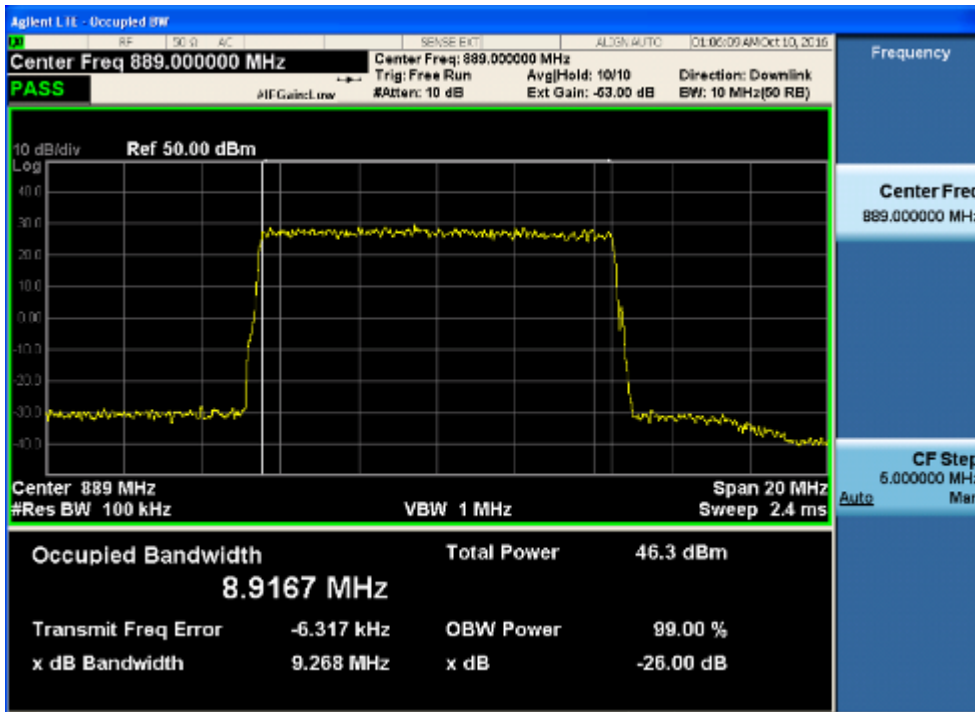
2.4.4 middle frequency-- Output



2.4.5 highest frequency—Input



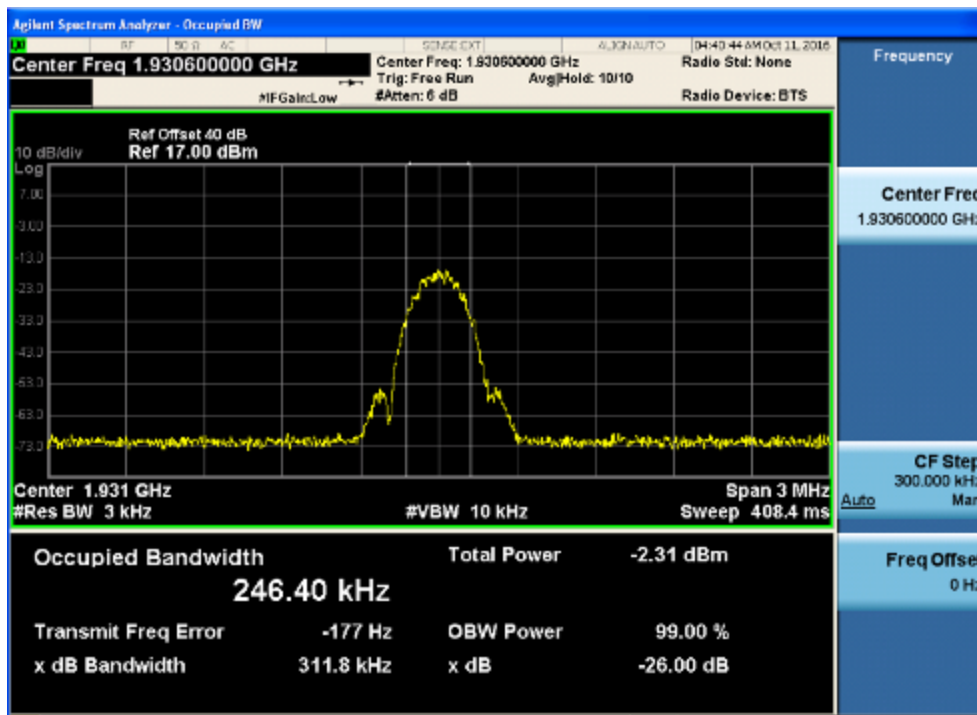
2.4.6 highest frequency--Output



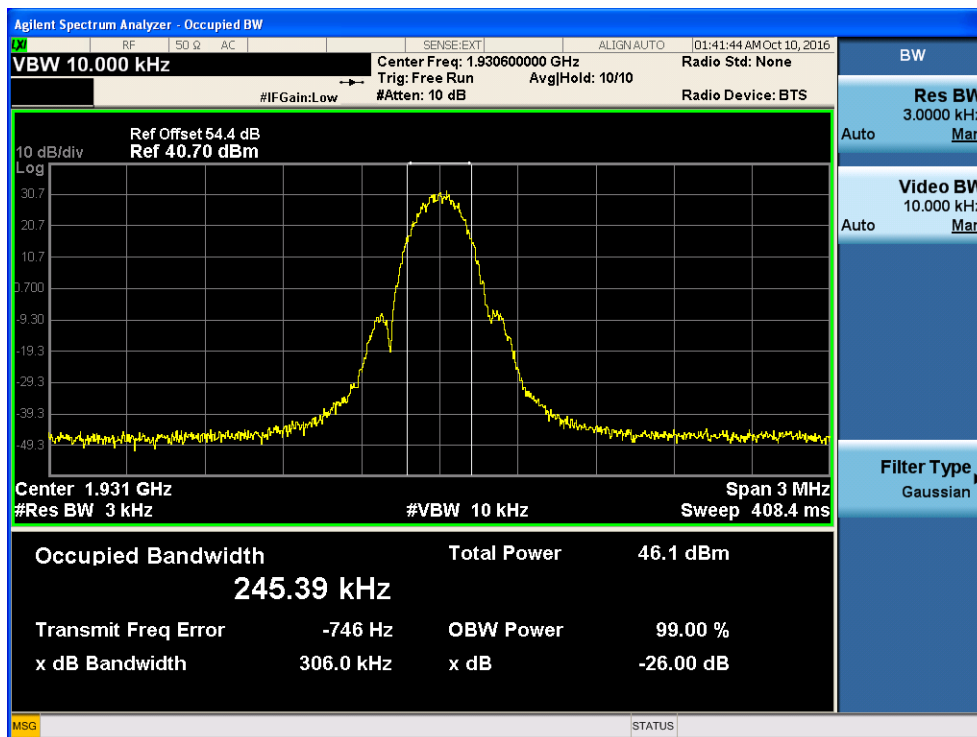
3. Downlink: 1930MHz to 1995MHz(GSM,CDMA,WCDMA,LTE)

3.1 GSM Mode:

3.1.1 lowest frequency-- Input

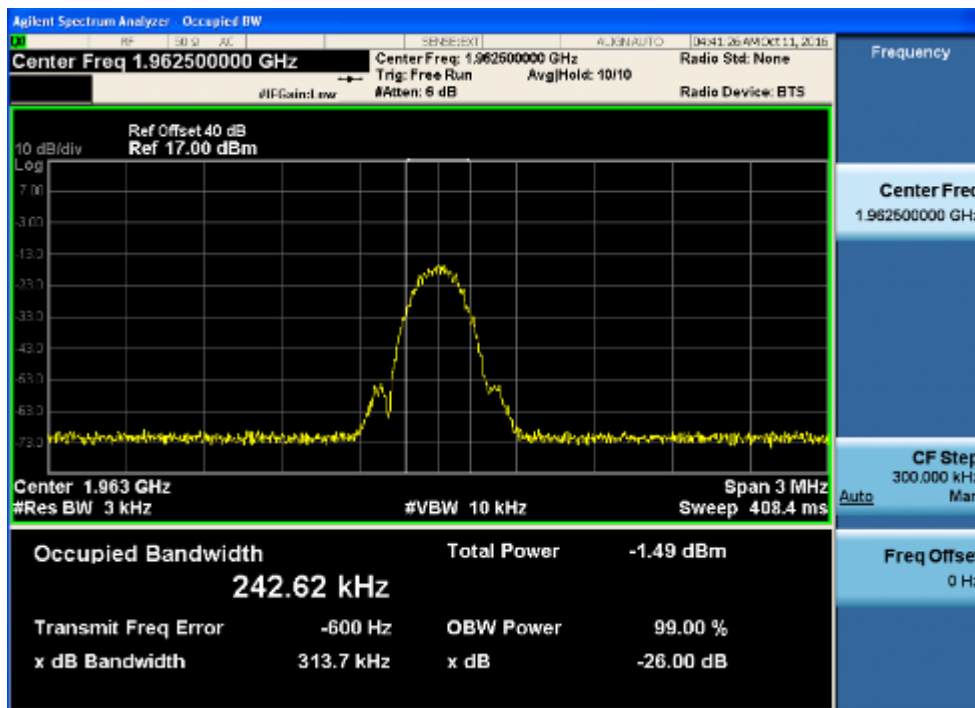


3.1.2 lowest frequency-- Output

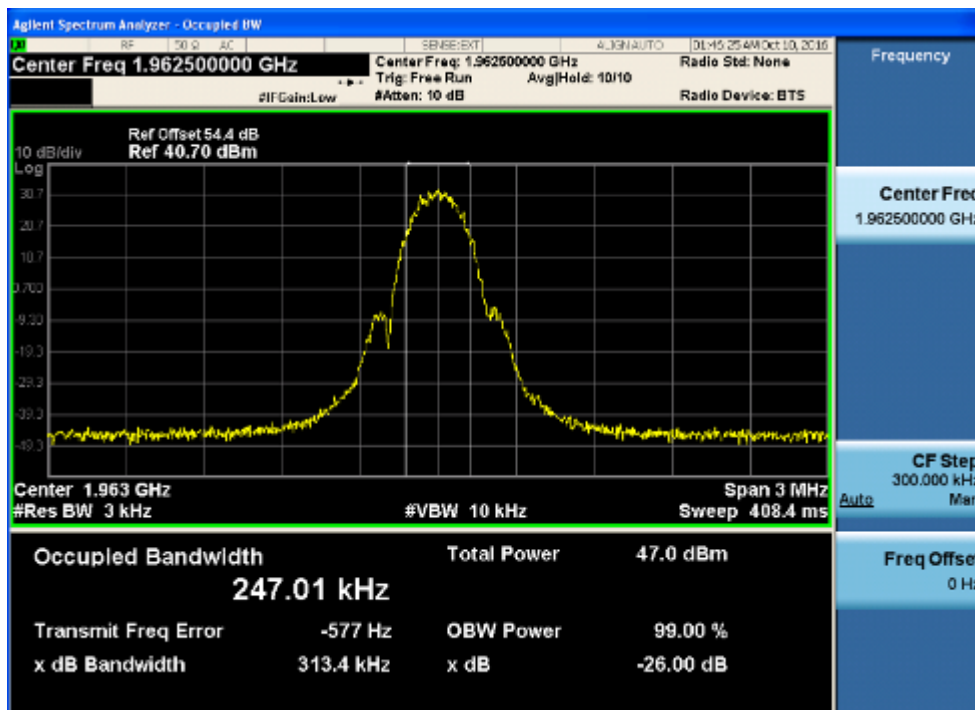




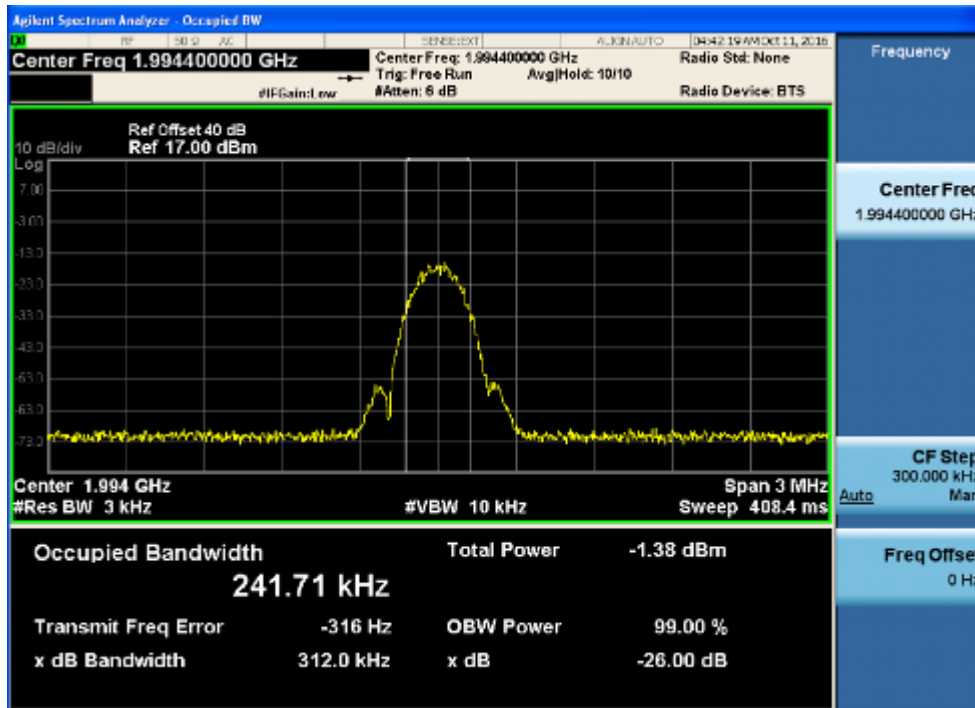
3.1.3 middle frequency-- Input



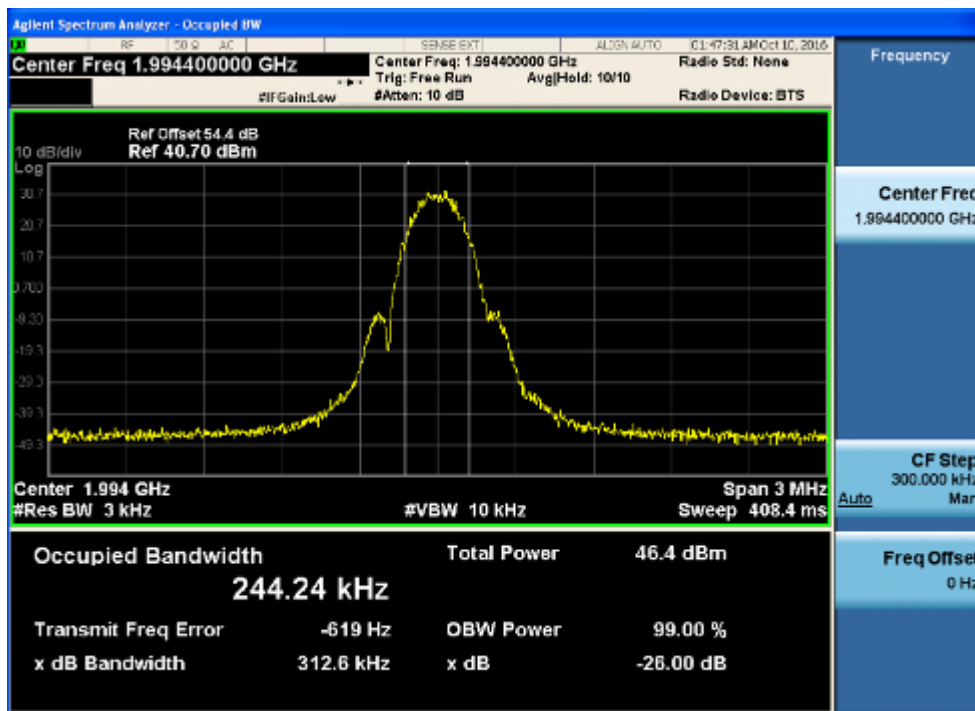
3.1.4 middle frequency-- Output



3.1.5 highest frequency—Input

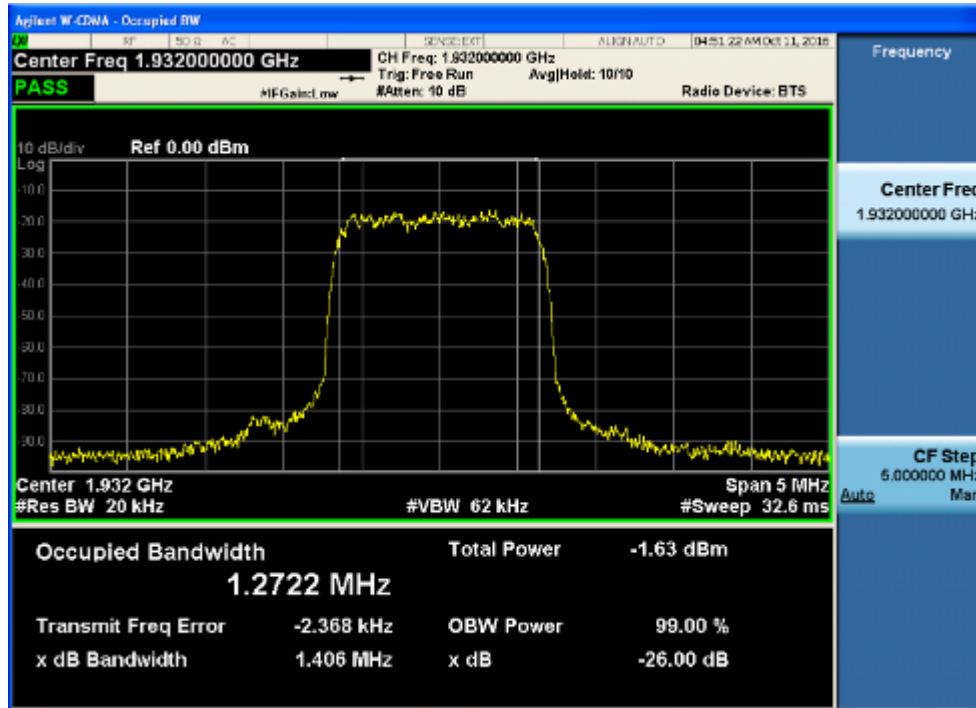


3.1.6 highest frequency--Output

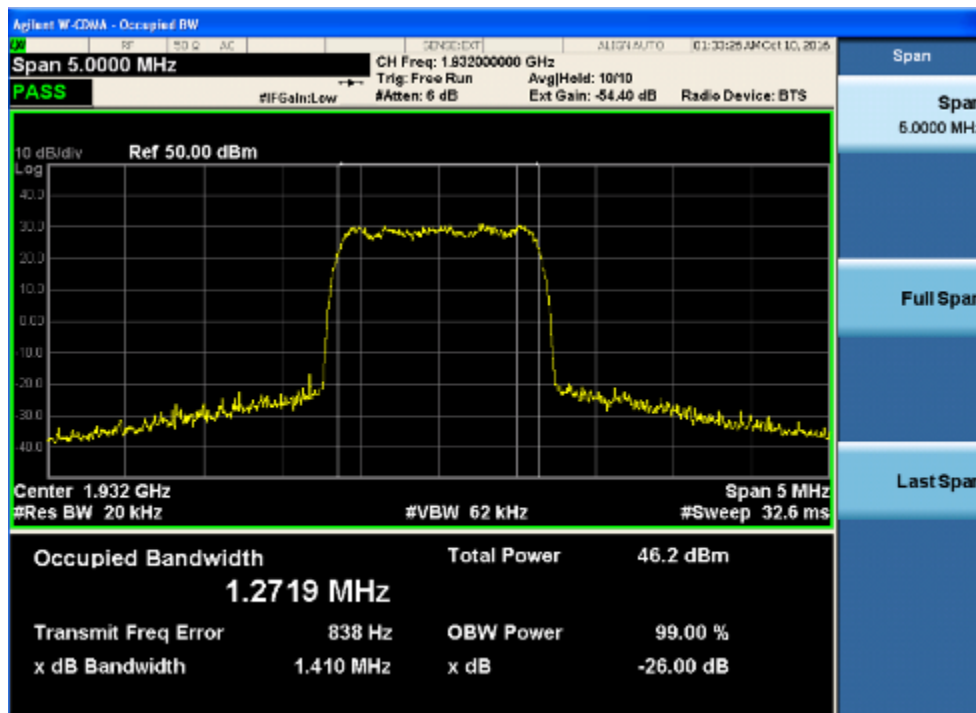


3.2 CDMA Mode:

3.2.1 lowest frequency-- Input

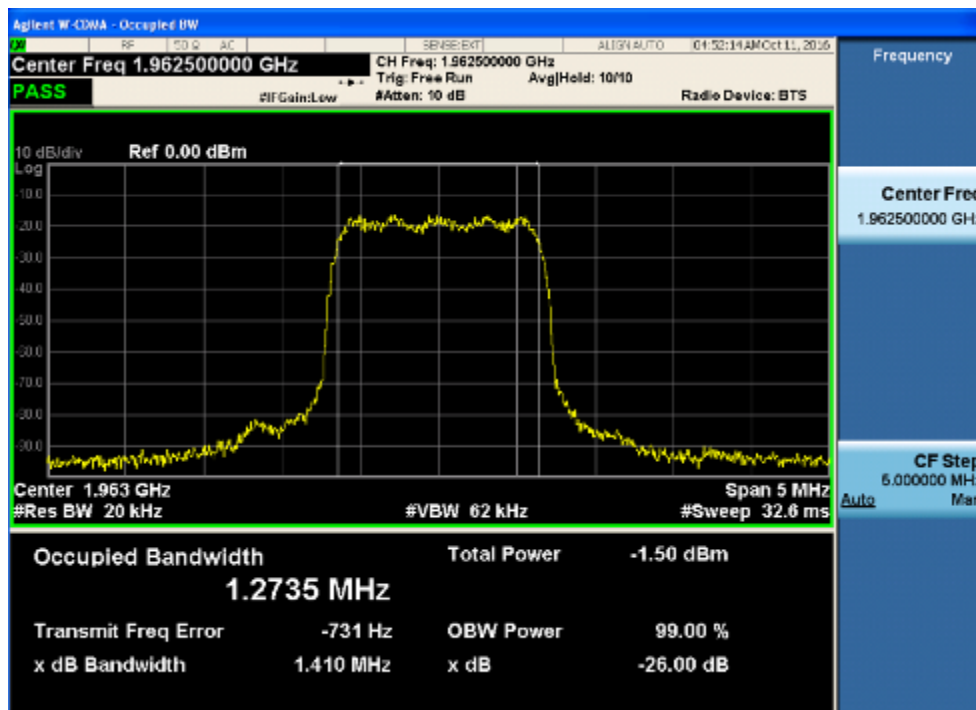


3.2.2 lowest frequency-- Output

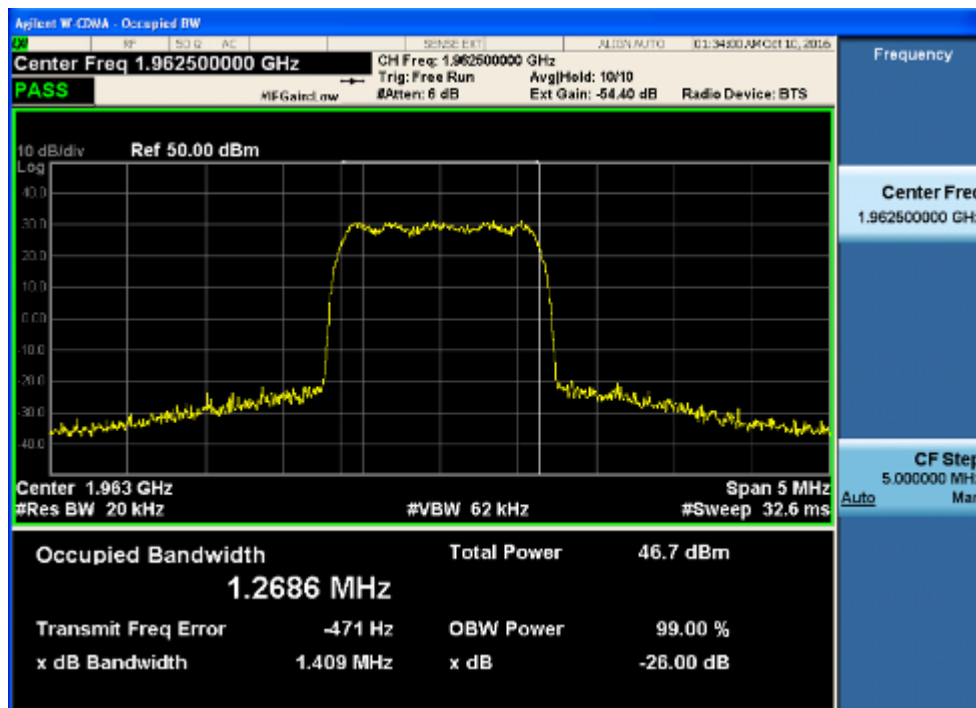




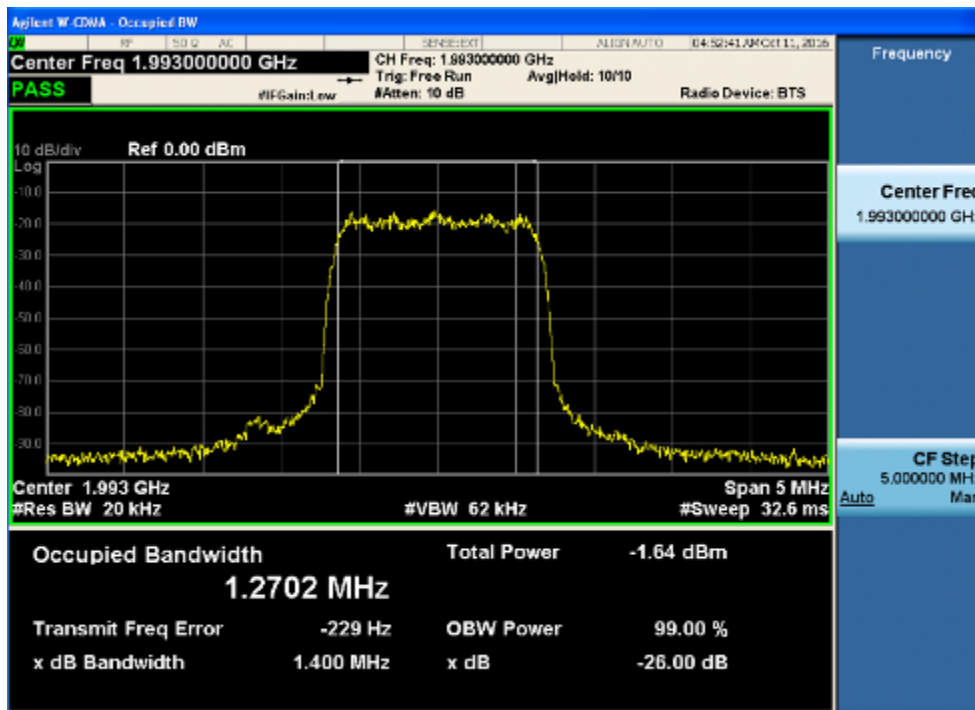
3.2.3 middle frequency-- Input



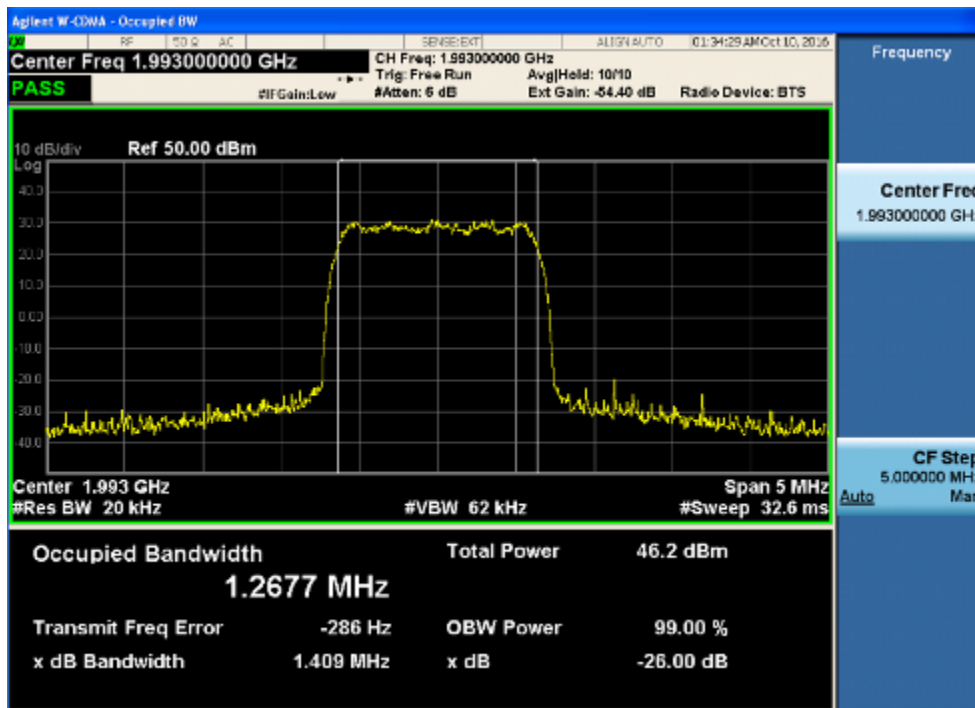
3.2.4 middle frequency-- Output



3.2.5 highest frequency—Input

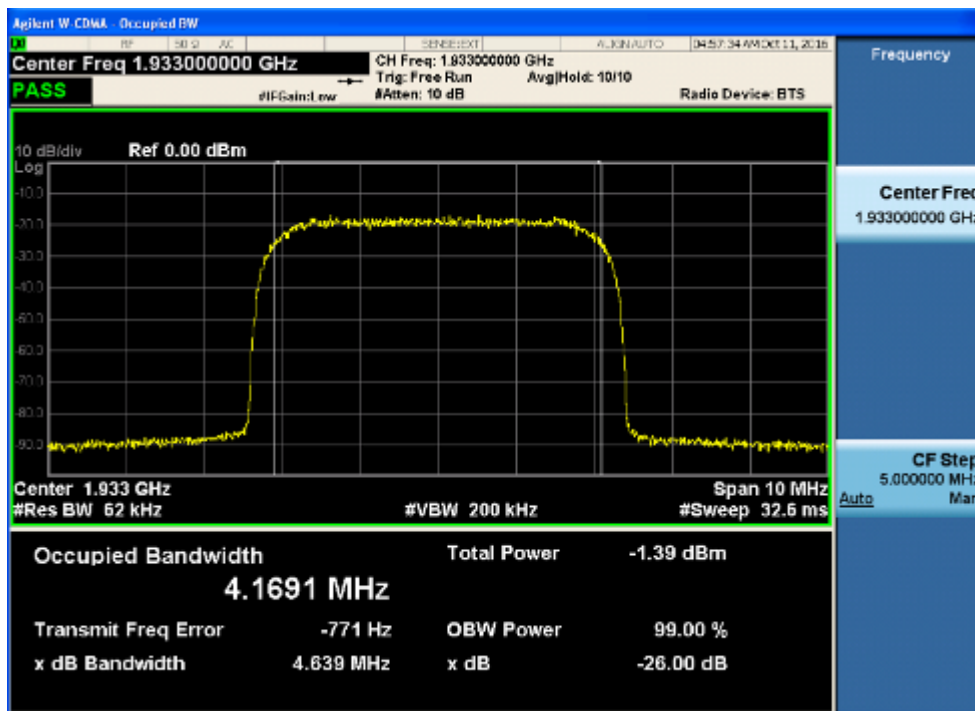


3.2.6 highest frequency--Output

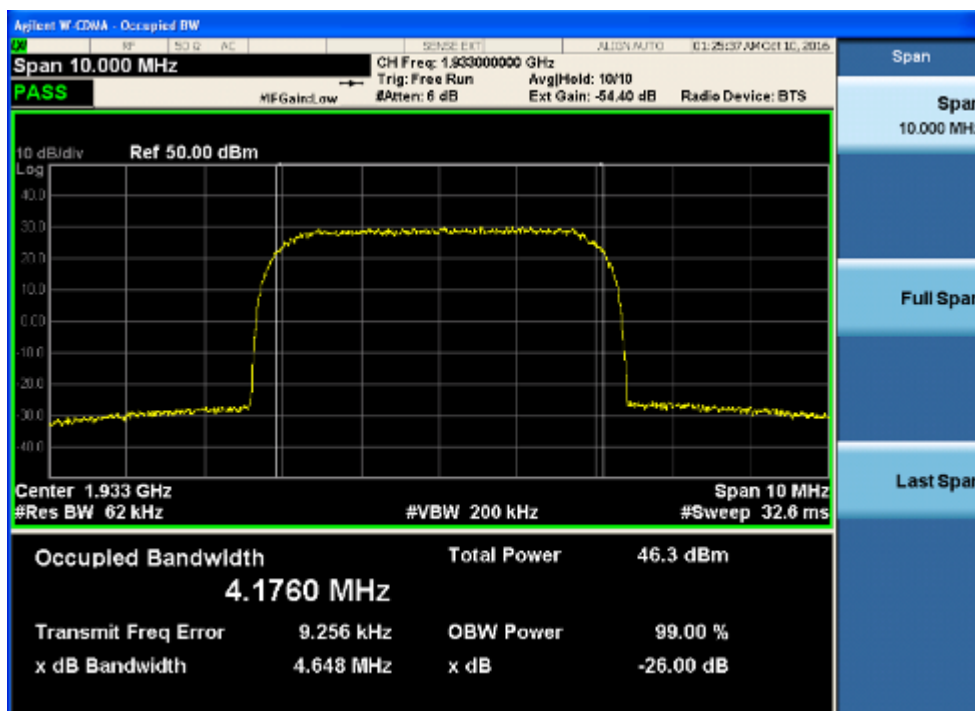


3.3 WCDMA Mode:

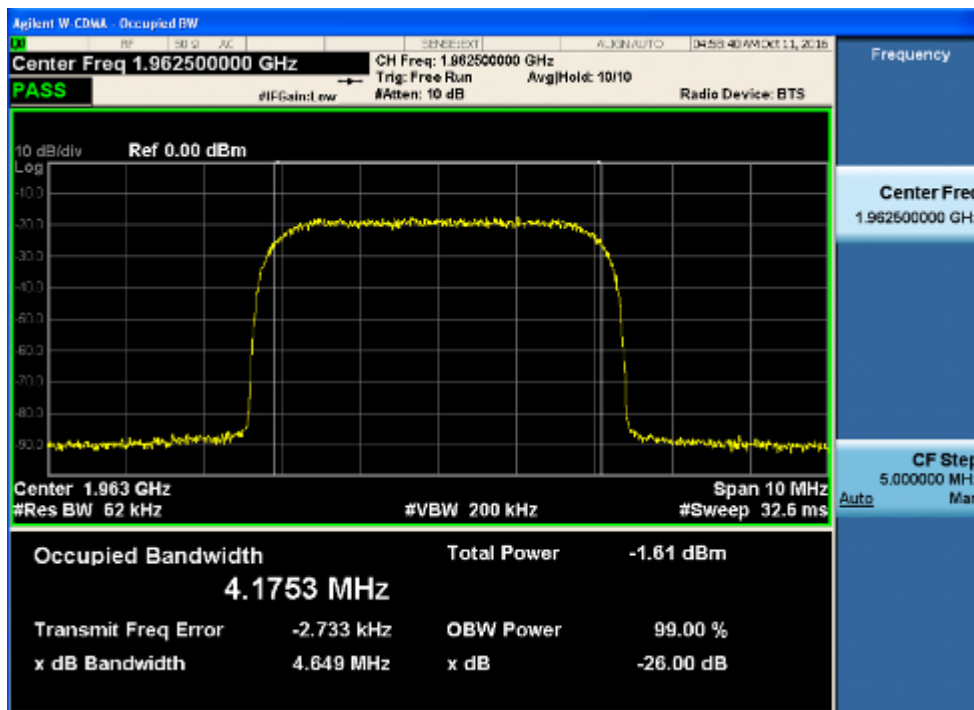
3.3.1 lowest frequency-- Input



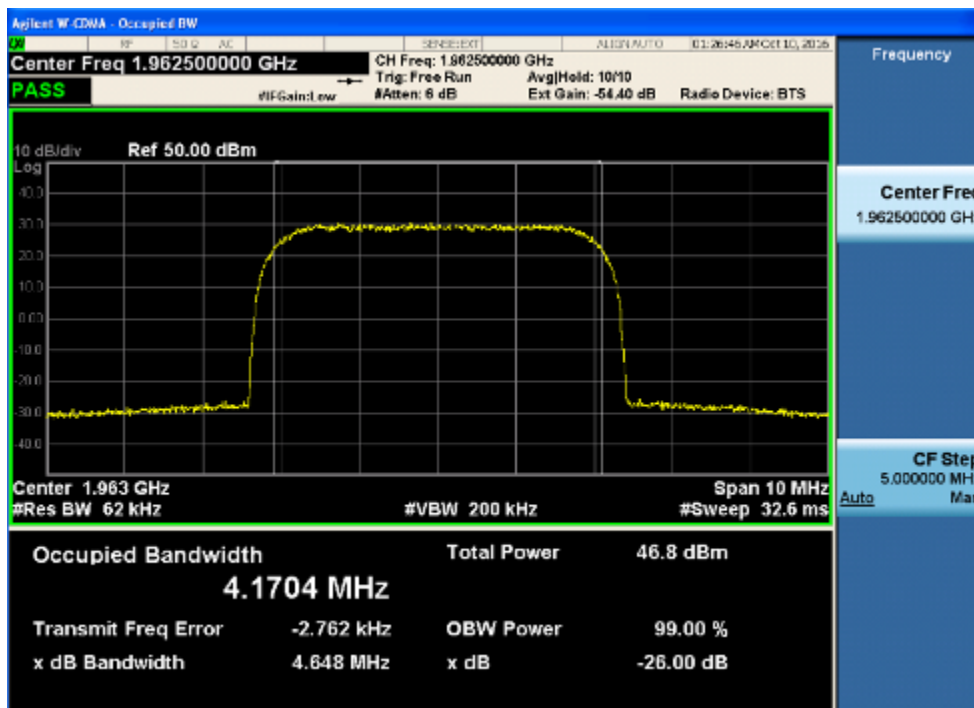
3.3.2 lowest frequency-- Output



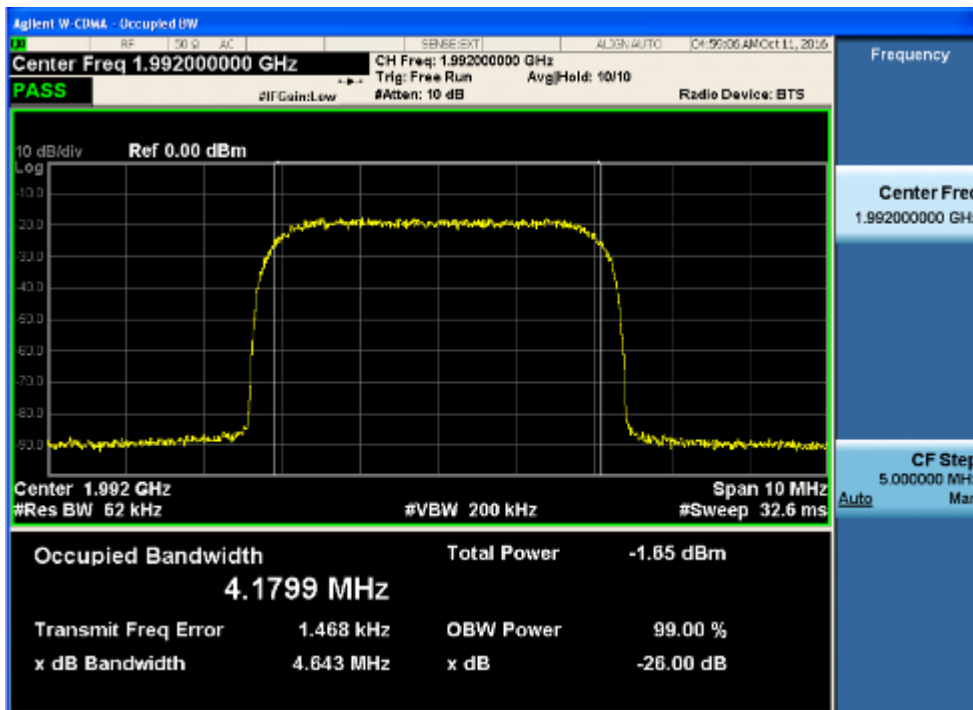
3.3.3 middle frequency-- Input



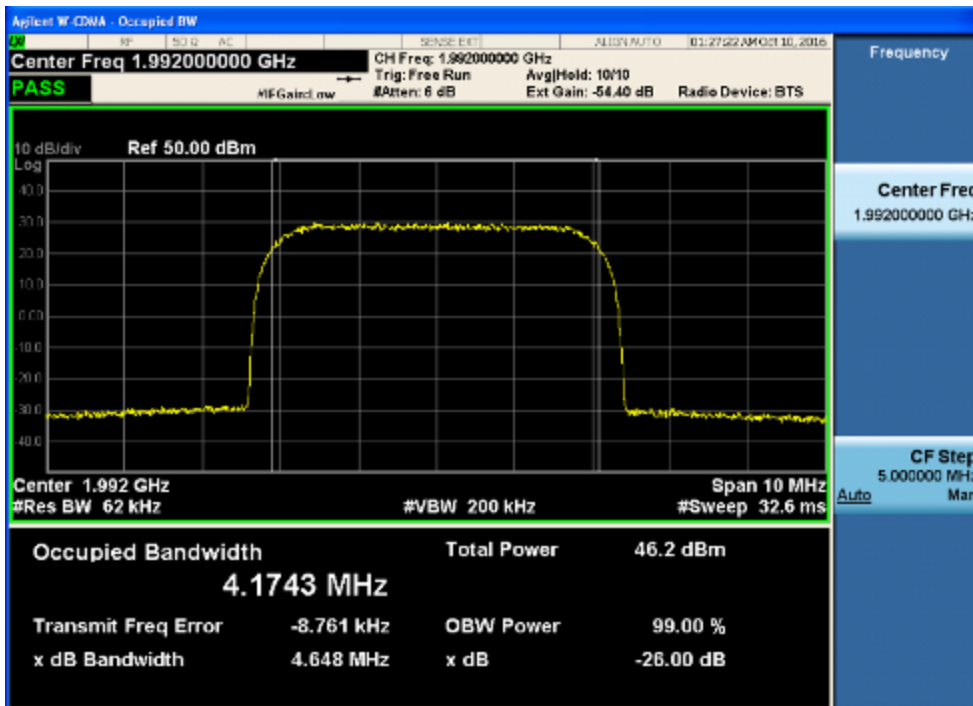
3.3.4 middle frequency-- Output



3.3.5 highest frequency—Input



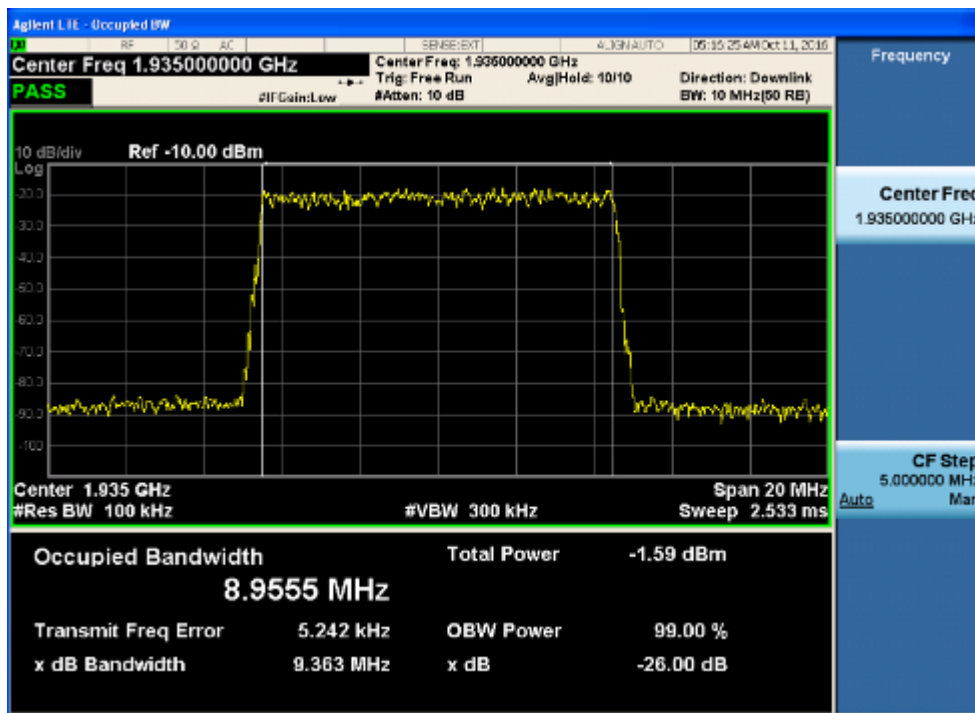
3.3.6 highest frequency--Output



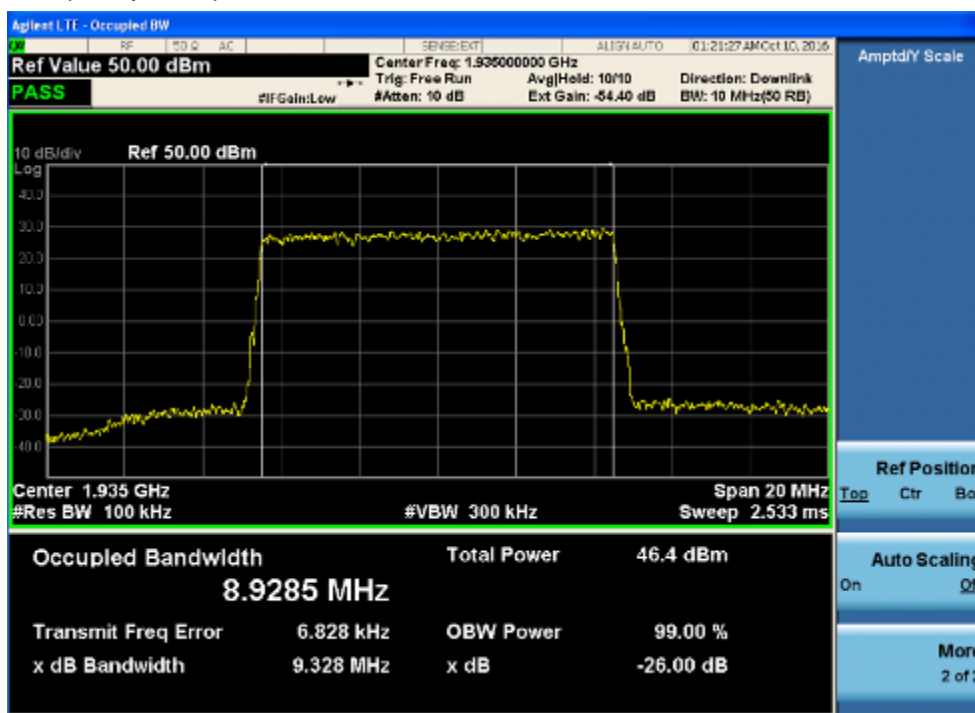


3.4 LTE Mode:

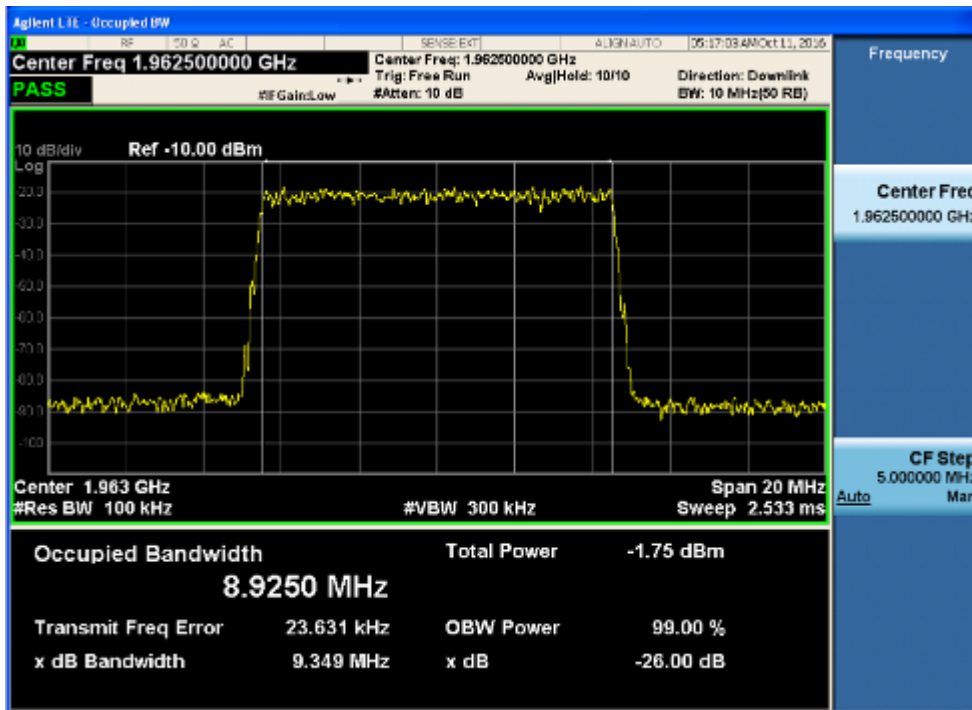
3.4.1 lowest frequency-- Input



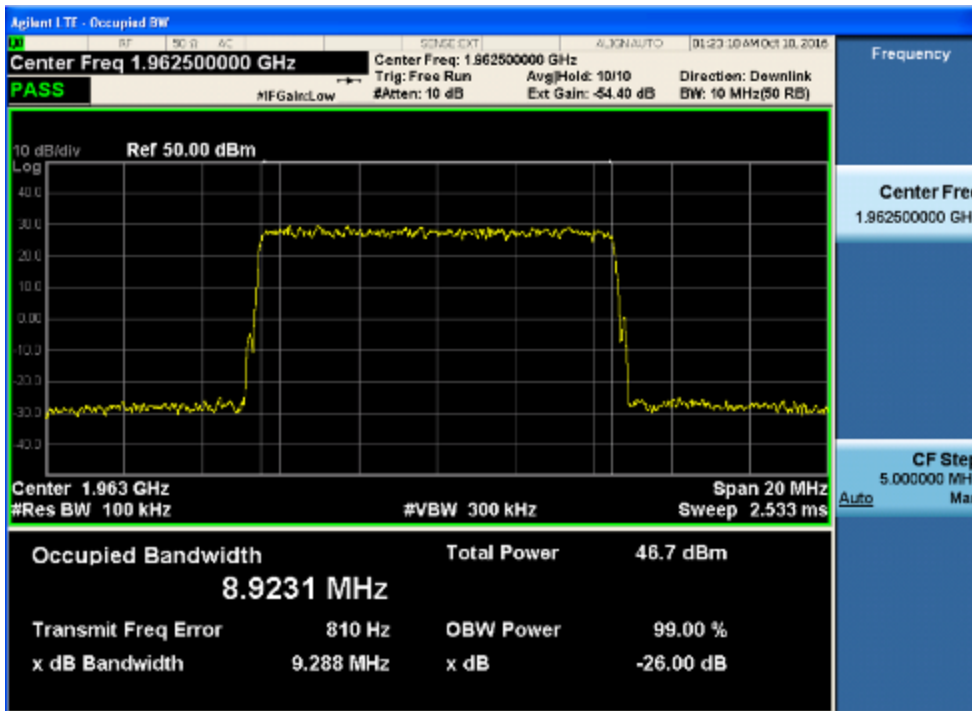
3.4.2 lowest frequency-- Output



3.4.3 middle frequency-- Input



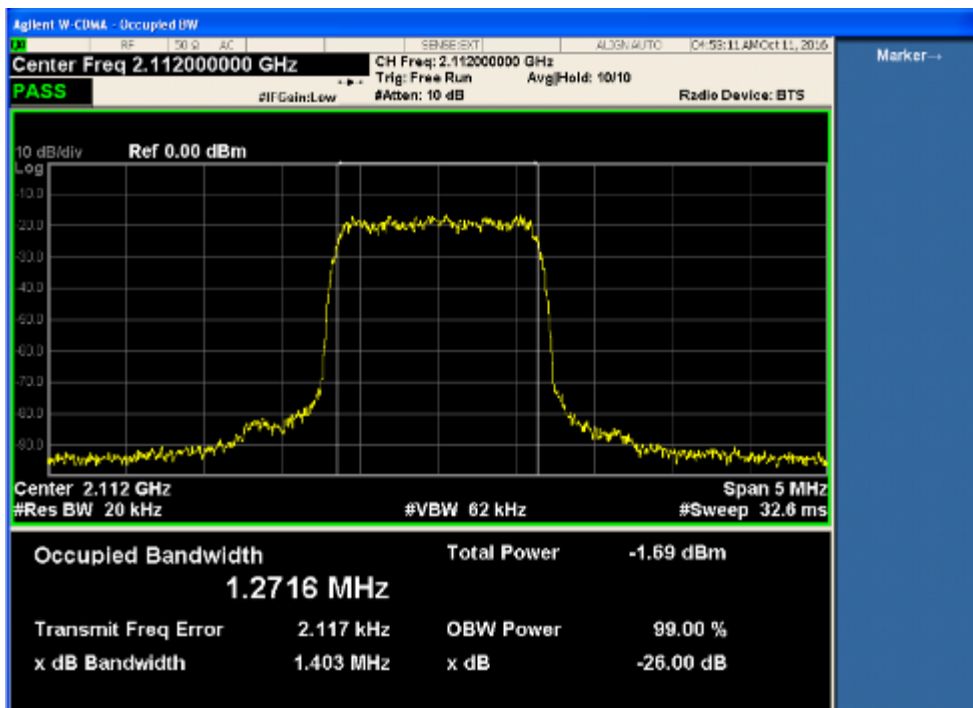
3.4.4 middle frequency-- Output



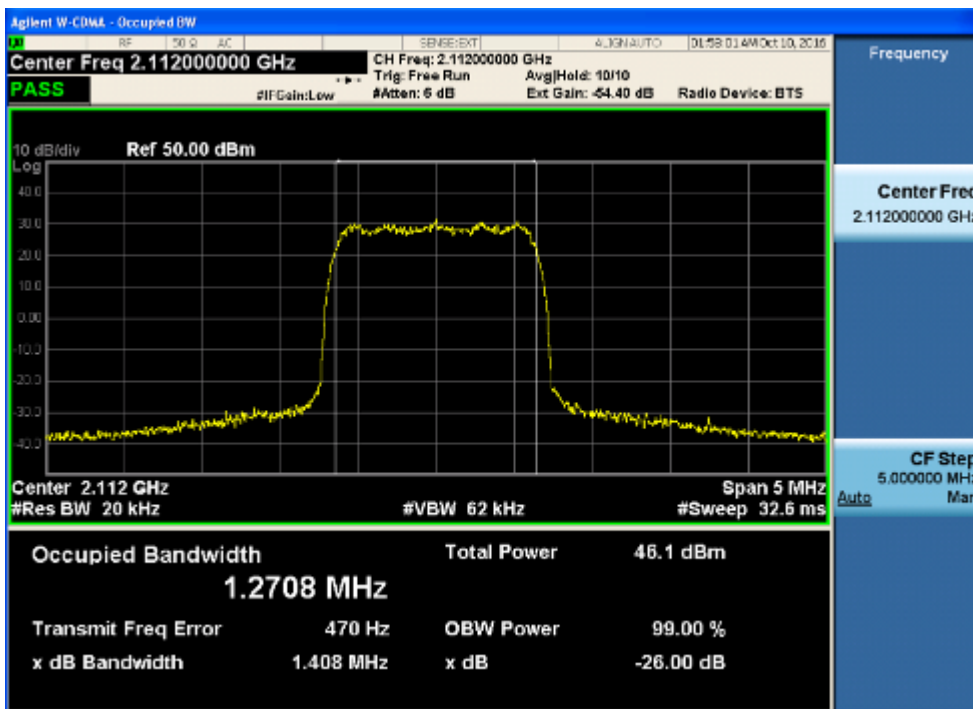
4. Downlink: 2110MHz to 2180MHz(CDMA,WCDMA,LTE)

4.1 CDMA Mode:

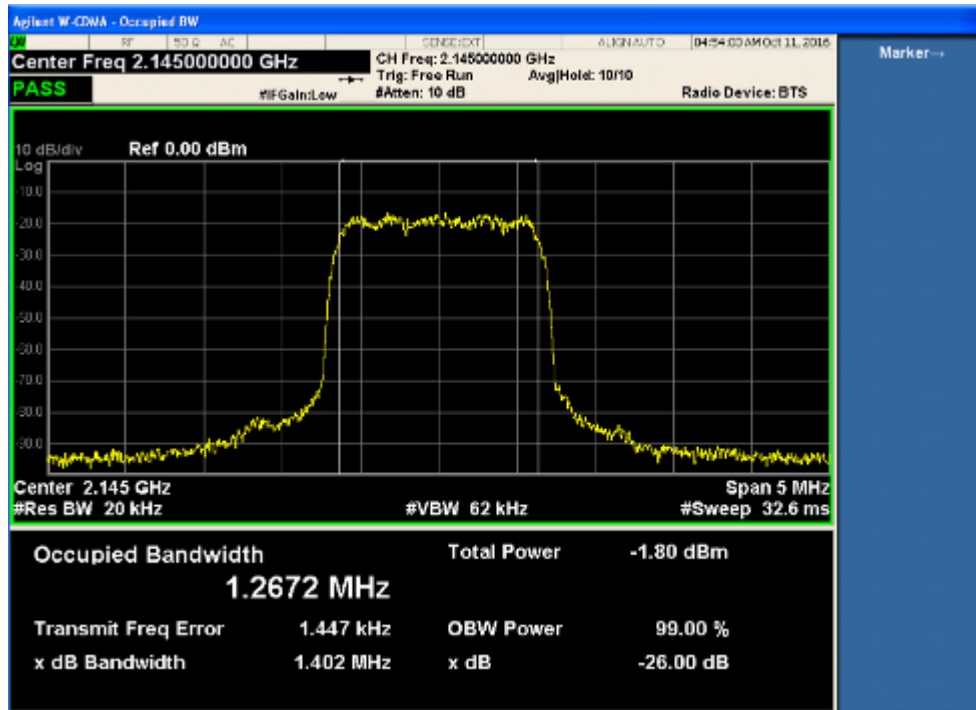
4.1.1 lowest frequency-- Input



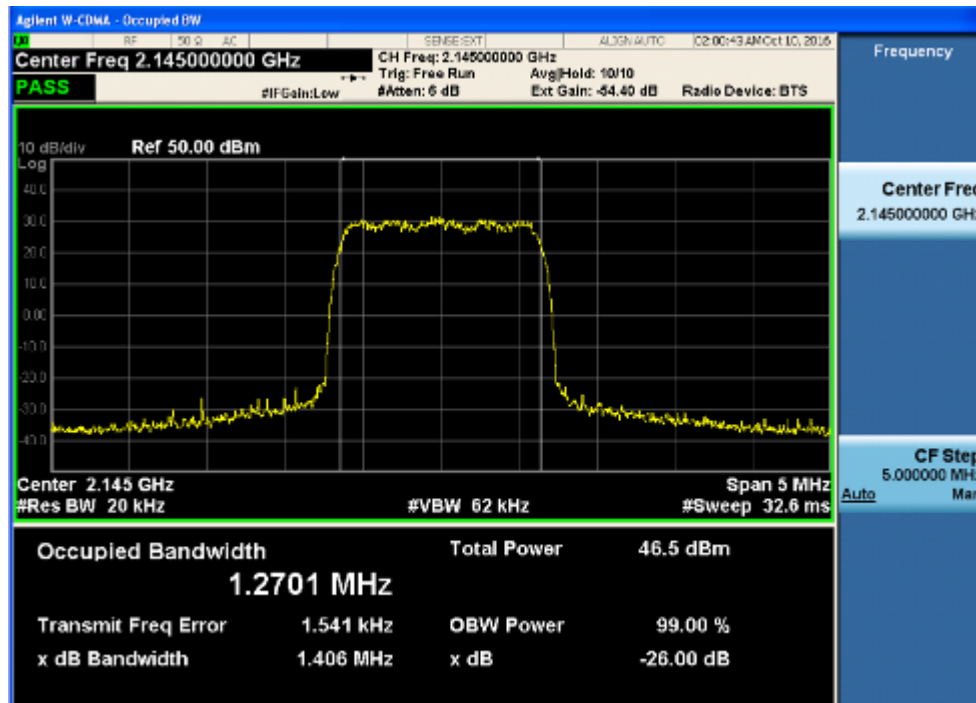
4.1.2 lowest frequency-- Output



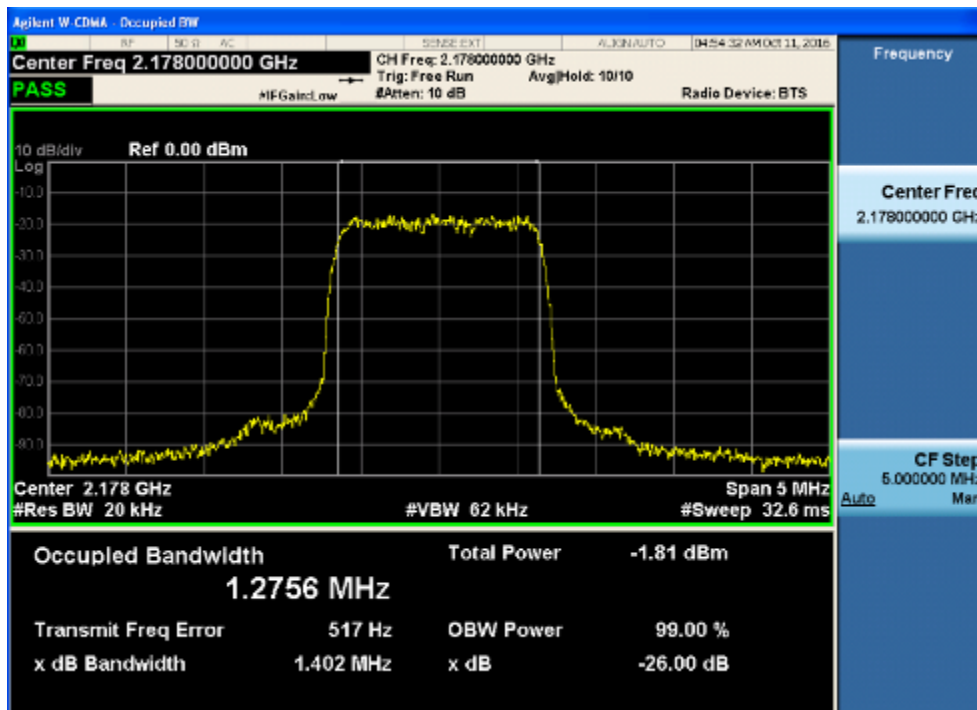
4.1.3 middle frequency-- Input



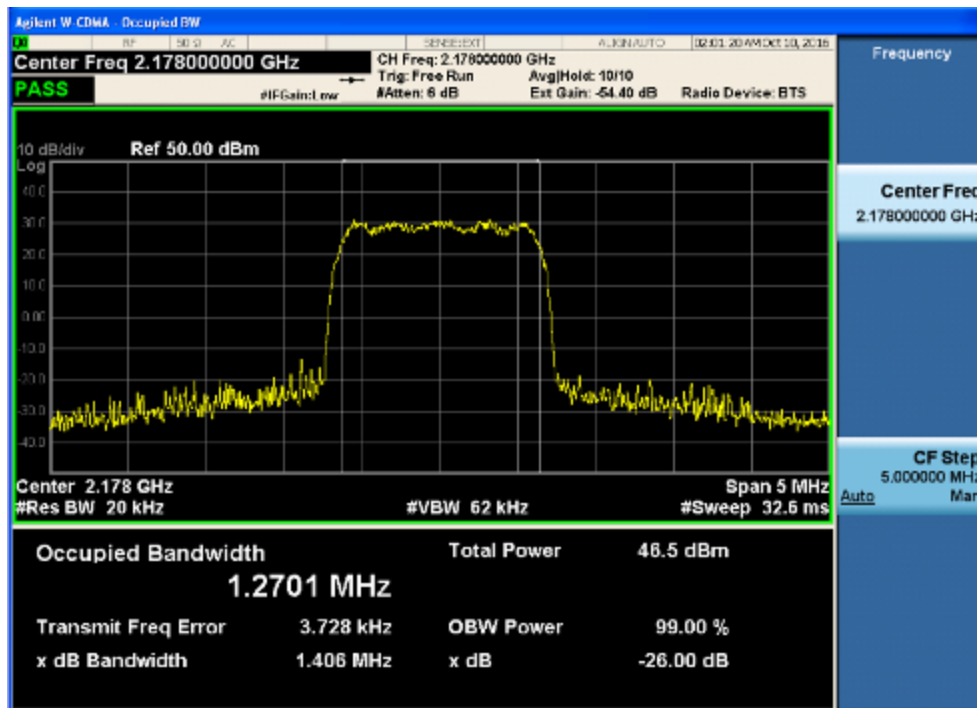
4.1.4 middle frequency-- Output



4.1.5 highest frequency—Input



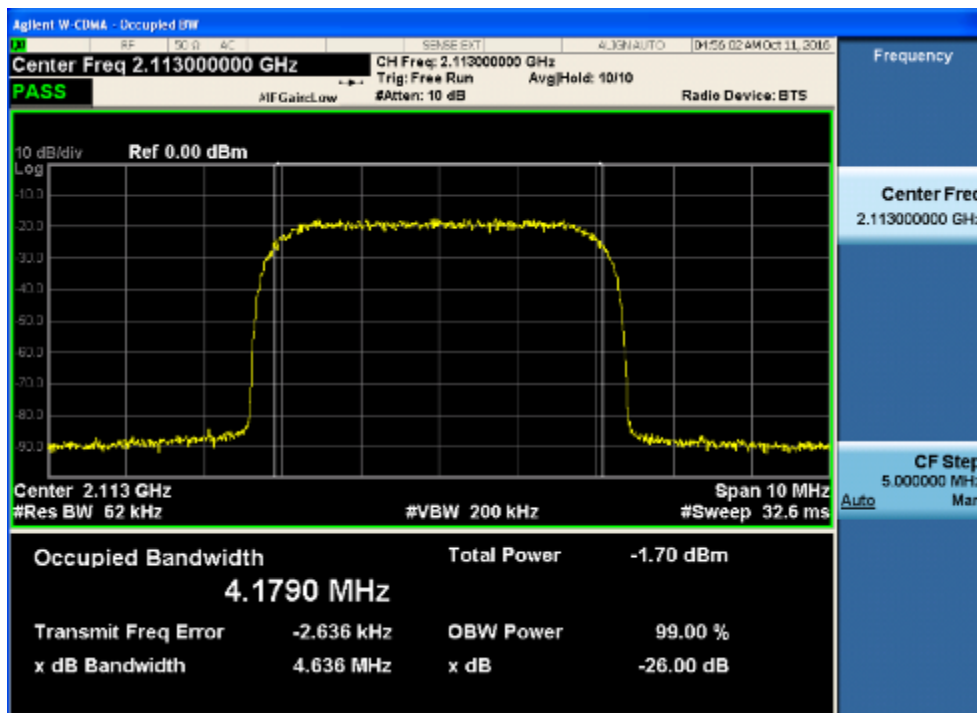
4.1.6 highest frequency--Output



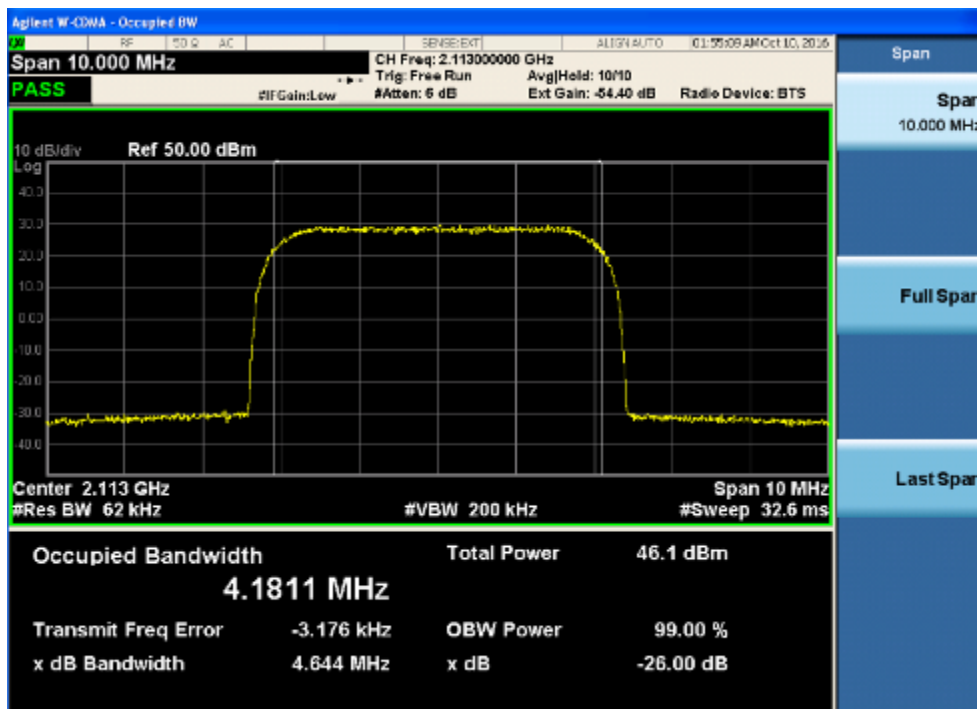


4.2 WCDMA Mode:

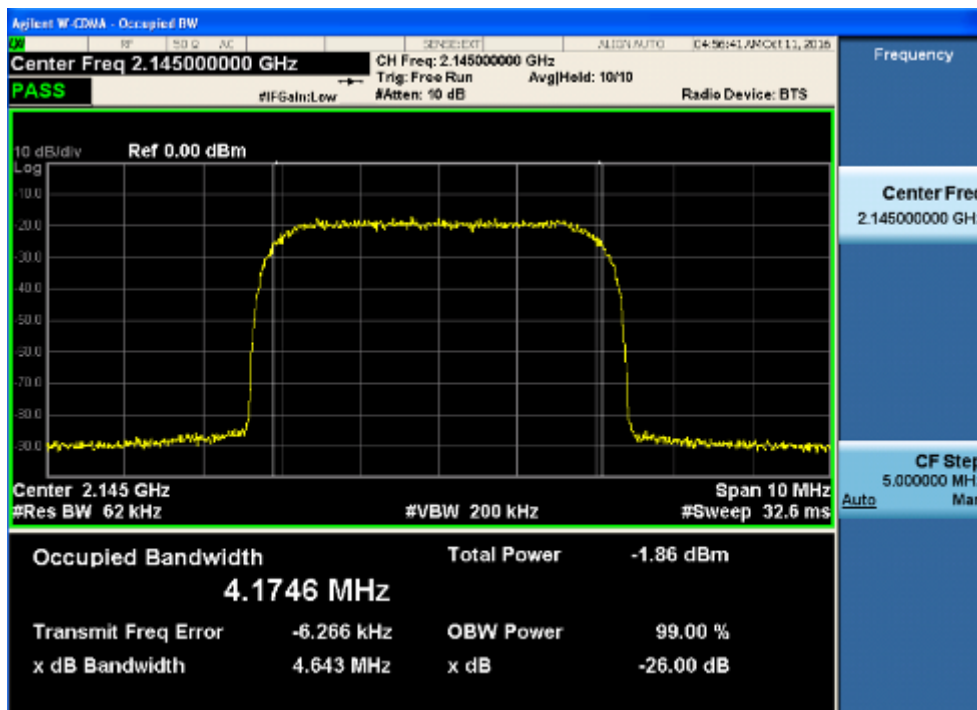
4.2.1 lowest frequency-- Input



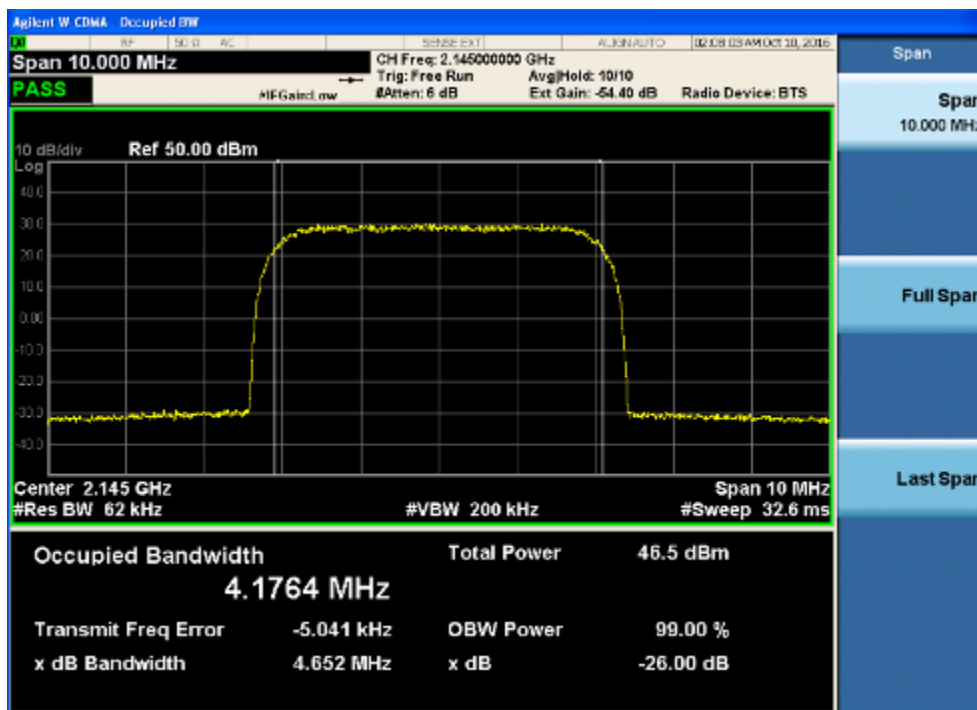
4.2.2 lowest frequency-- Output



4.2.3 middle frequency-- Input

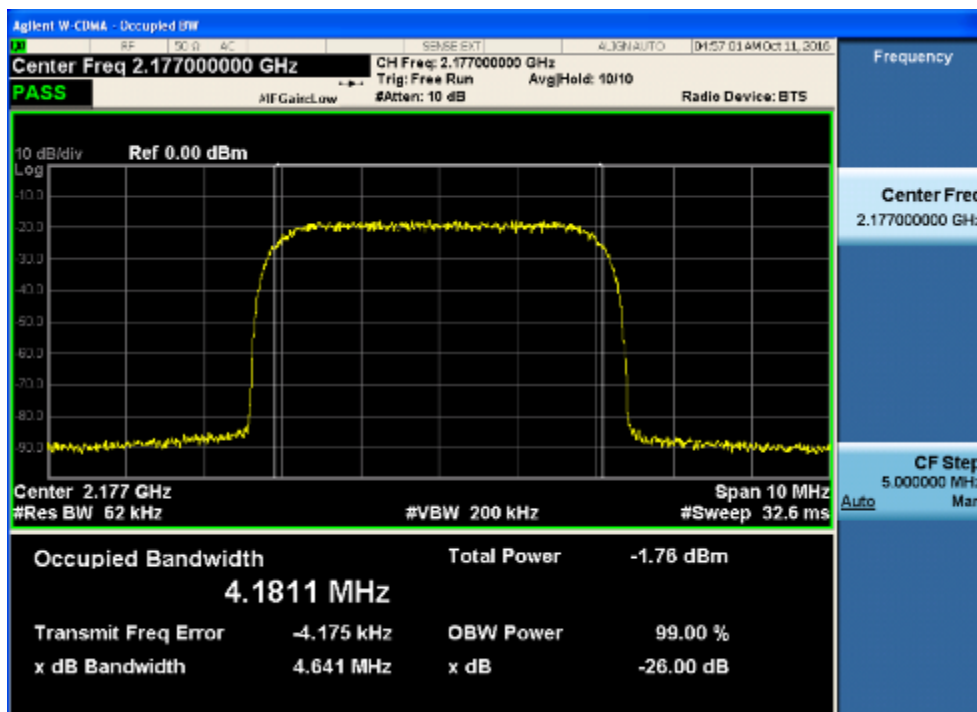


4.2.4 middle frequency-- Output

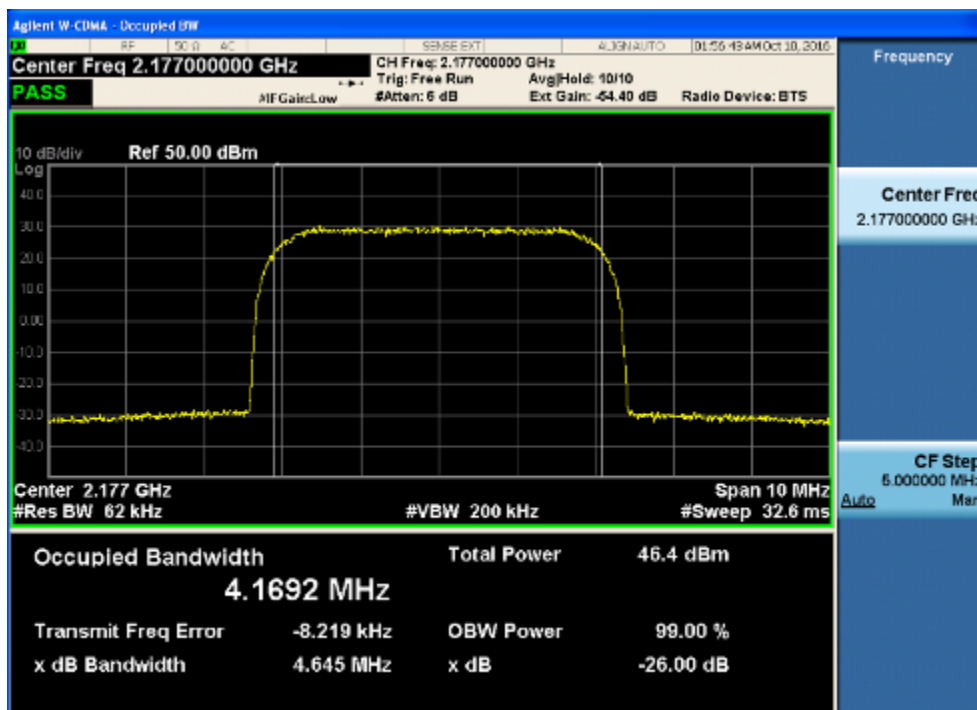




4.2.5 highest frequency—Input



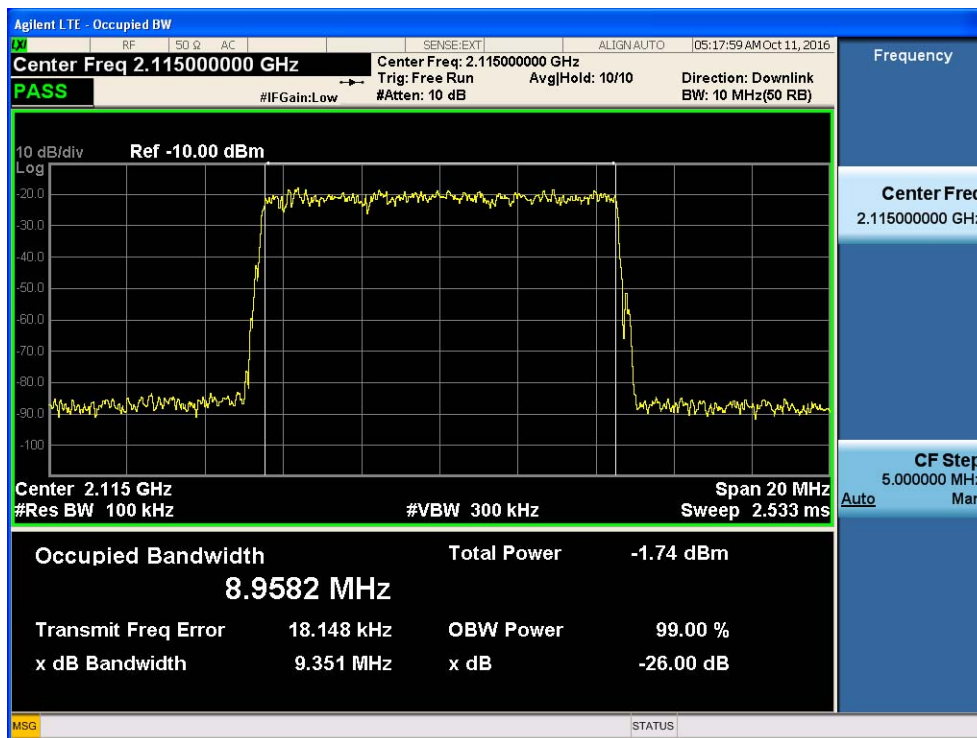
4.2.6 highest frequency--Output



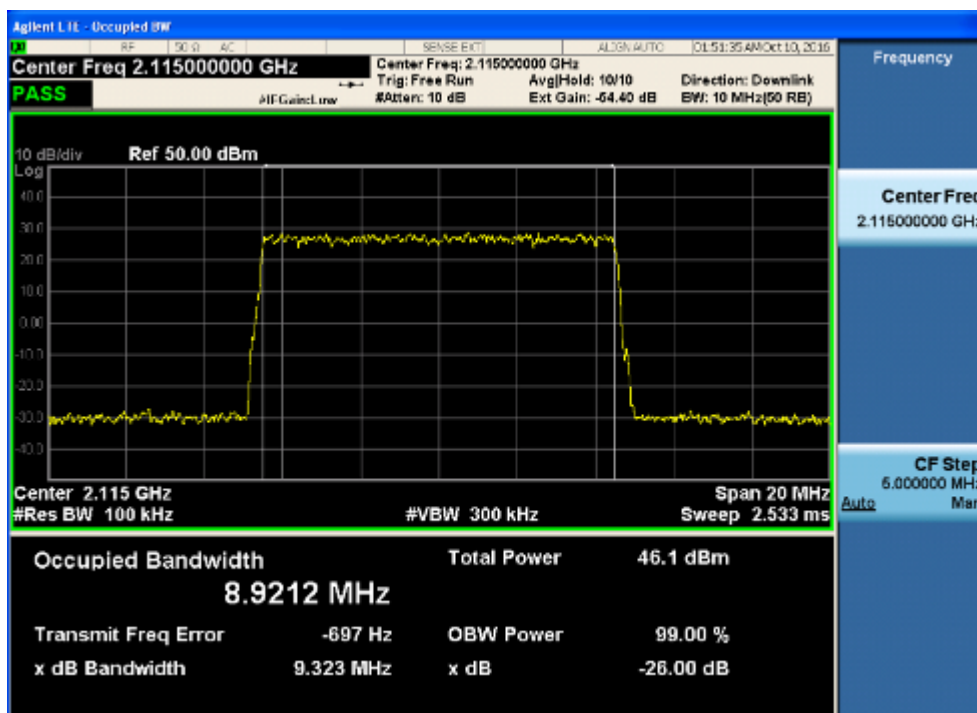


4.3 LTE Mode:

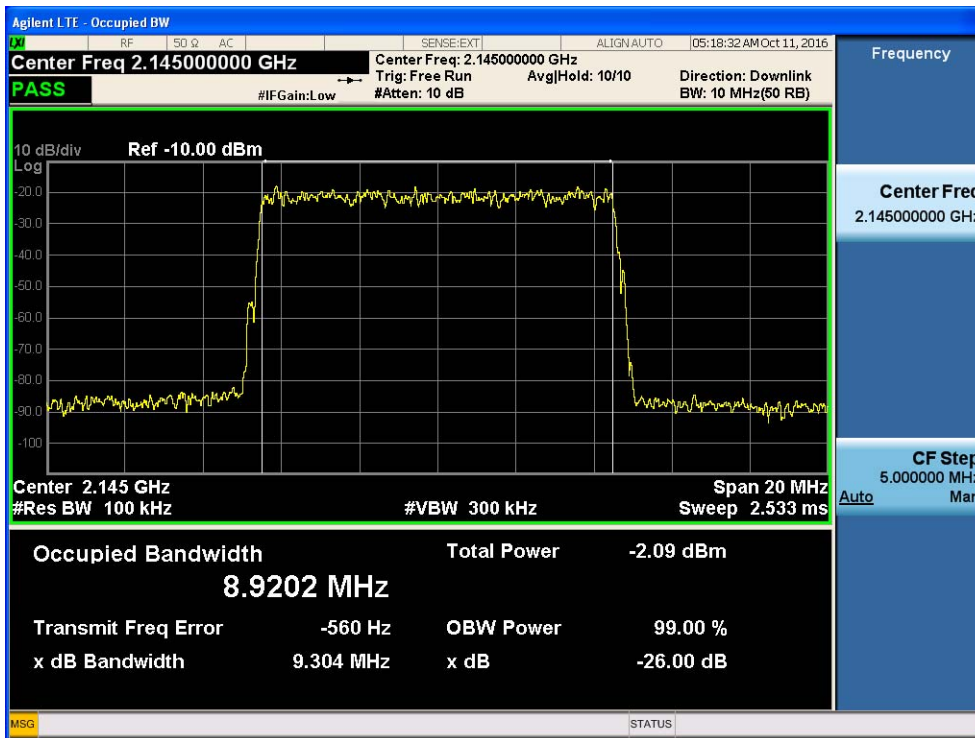
4.3.1 lowest frequency-- Input



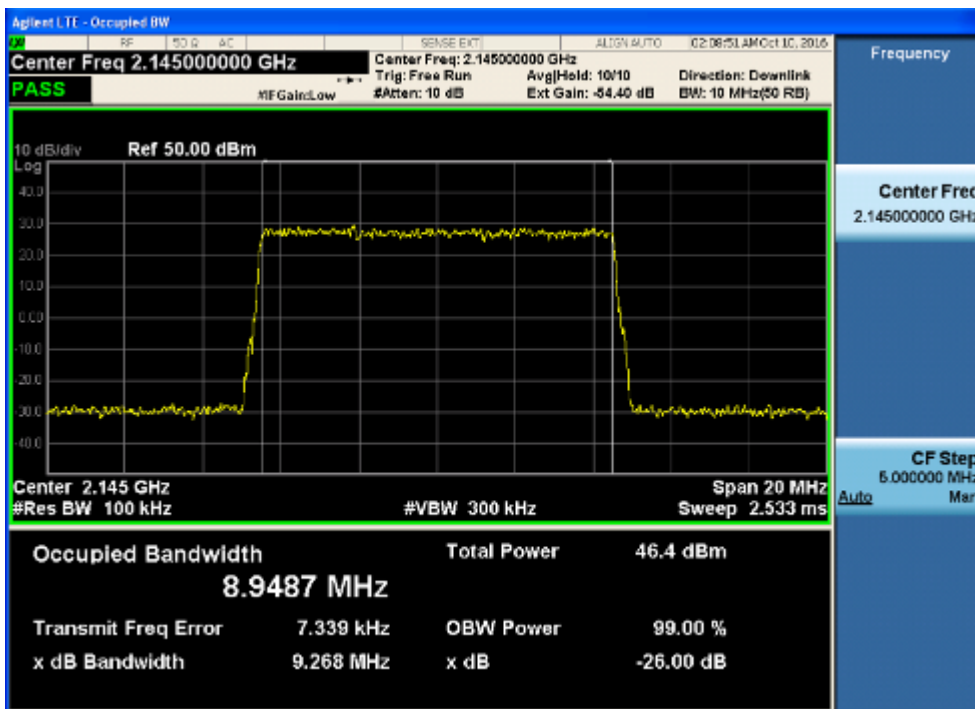
4.3.2 lowest frequency-- Output



4.3.3 middle frequency-- Input

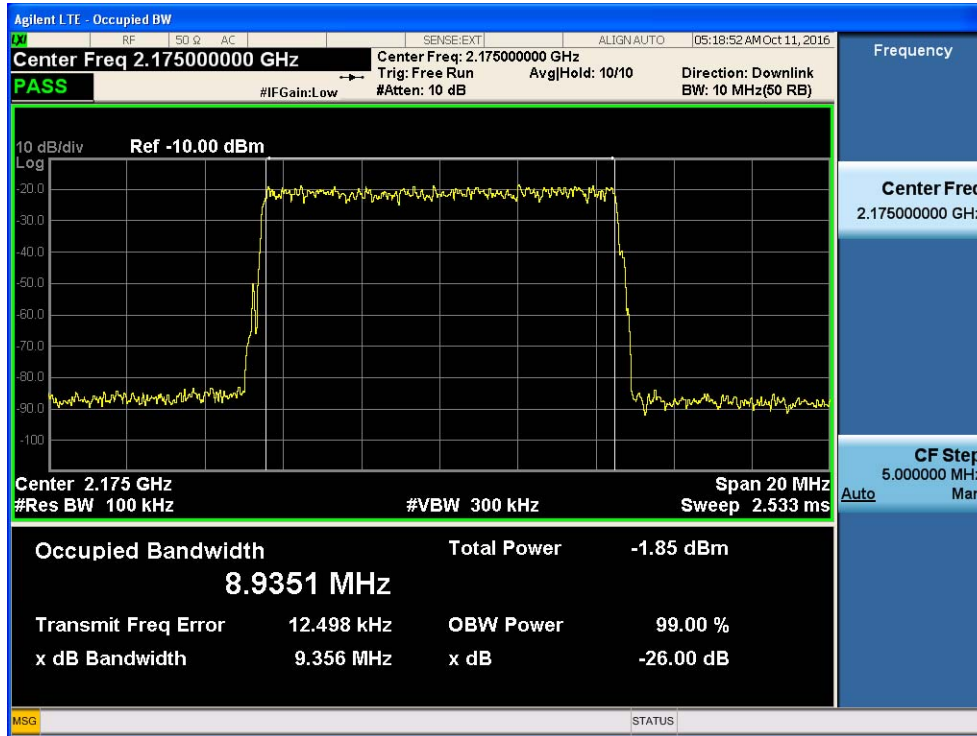


4.3.4 middle frequency-- Output

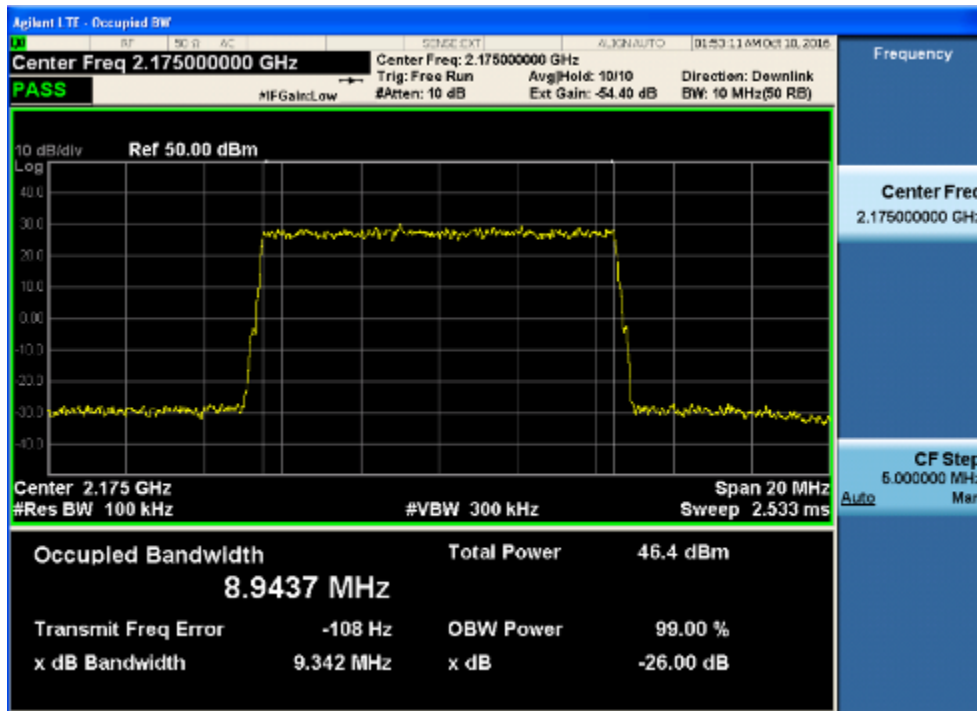




4.3.5 highest frequency—Input



4.3.6 highest frequency--Output



7.2.6 Out of Band Rejection

Test Date: 2013-03-17

Test Requirement: KDB935210 D02;2-11-04/EAB/RF

Test for rejection of out of band signals. Filter freq. response plots are acceptable.

Test Method: KDB935210 D02;2-11-04/EAB/RF

EUT Operation:

Status: Drive the EUT to maximum output power. .

Conditions: Normal conditions

Application: Cellular Band RF output ports

Test Configuration:

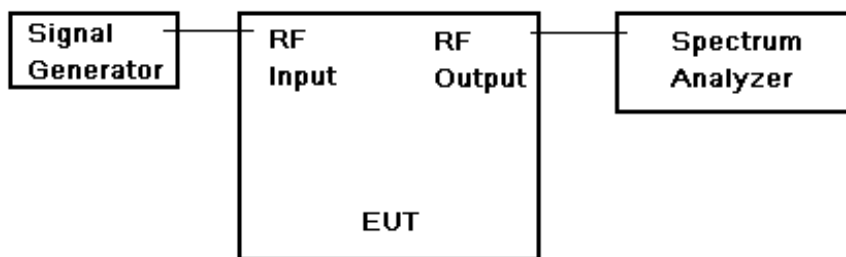


Fig.4. Out of Band rejection test configuration

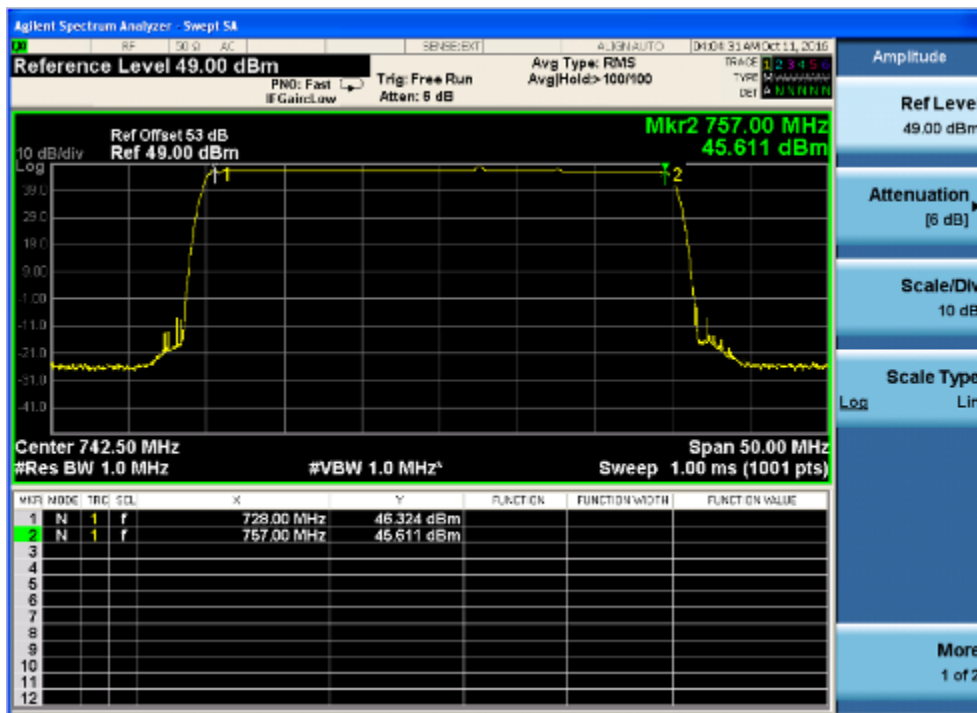
Test Procedure:

1. Connect the equipment as illustrated;
2. Test the background noise level with all the test facilities;
3. Keep one transmitting path, all other connectors shall be connected by normal power or RF leads;
4. Select the attenuator to avoid the test receiver or spectrum analyzer being destroyed;
5. Keep the EUT continuously transmitting in max power;
6. Signal generator sweep from the frequency more lower than the product frequency to the frequency more higher than it, find the product band filter characteristic;
 - CW signal rather than typical signal is acceptable (for FM).
 - Multiple band filter will need test each other.

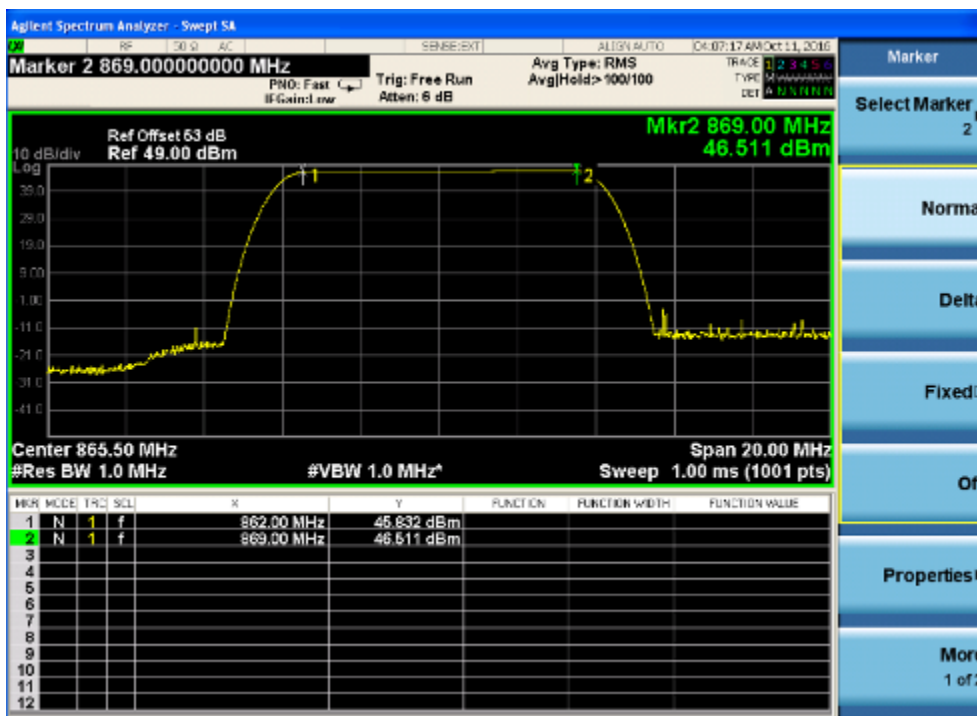


7.2.6.1 Measurement Record:

1. Test for Downlink: 728MHz to 757MHz

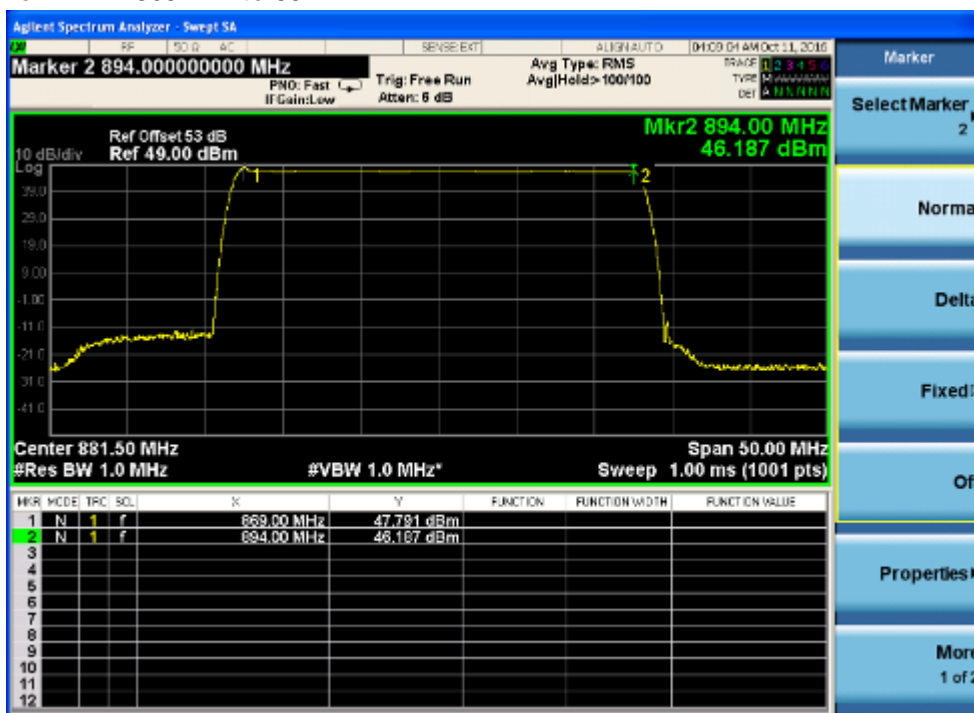


2. Test for Downlink: 862MHz to 869MHz

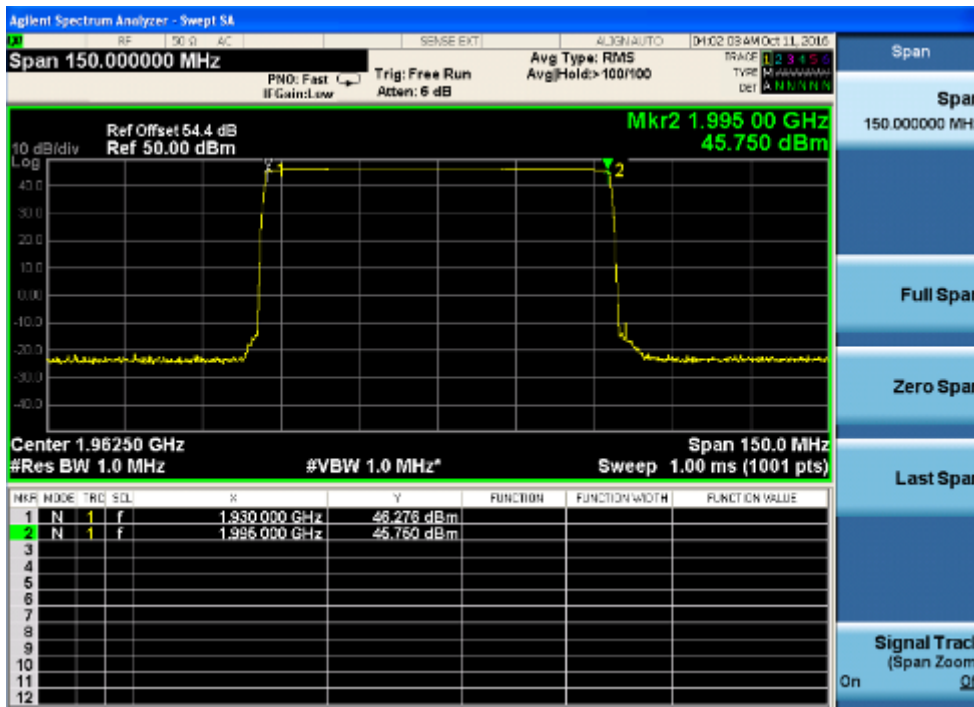




3. Test for Downlink: 869MHz to 894MHz

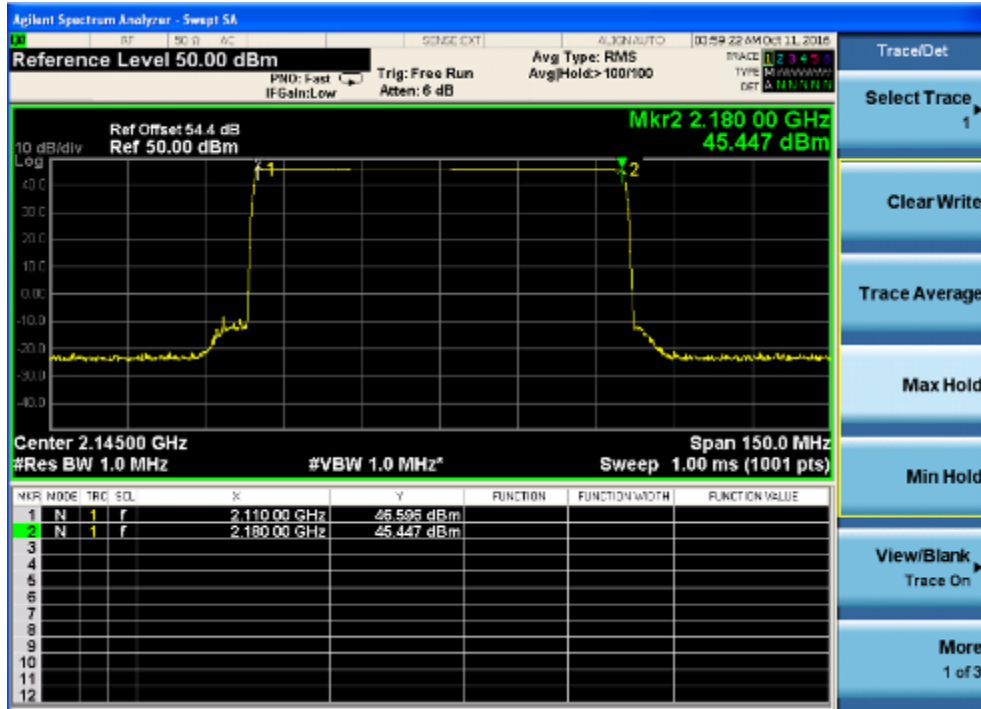


4. Test for Downlink: 1930MHz to 1995MHz





5. Test for Downlink:2110MHz to 2180MHz





7.2.7 Frequency Stability

- Test Date: 2016-10-08 to 2016-10-09
- Test Requirement: FCC part 90.213 & FCC part 22.355 & FCC part 24.235 & FCC part 27.54
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.
- Test Method: FCC part 2.1055
- EUT Operation:
- Status: Drive the EUT to maximum output power.
 - Conditions: Temperature conditions, voltage conditions
 - Application: Cellular Band RF output ports
- Test Procedure:
1. Temperature conditions:
 - a) The RF output port of the EUT was connected to Frequency Meter;
 - b) Set the working Frequency in the middle channel;
 - c) record the 20°C and nominal voltage frequency value as reference point;
 - d) vary the temperature from -40°C to 50°C with step 10°C
 - e) when reach a temperature point, keep the temperature balance at least 1 hour to make the product working in this status;
 - f) read the frequency at the relative temperature.
 2. Voltage conditions:
 - a) record the 20°C and nominal voltage frequency value as reference point;
 - b) vary the voltage from -15% nominal voltage to +15% voltage;
 - c) read the frequency at the relative voltage.



7.2.7.1 Measurement Record:

1) Frequency Stability vs temperature:

1.1) Test for Downlink: 728~757MHz (middle channel 742.5MHz)

Temperature(°C)	Frequency(MHz)	Tolerance(ppm)
50	742.5000027	0.000808080
40	742.5000023	0.000269360
30	742.5000025	0.000538721
20	742.5000021	Reference
10	742.5000024	0.000404040
0	742.5000029	0.00107744
-10	742.5000021	0
-20	742.5000030	0.001212121
-30	742.5000028	0.000942761
-40	742.5000026	0.000673401

1.2) Test for Downlink: 862~869MHz (middle channel 865.5MHz)

Temperature(°C)	Frequency(MHz)	Tolerance(ppm)
50	865.5000029	0.00462160
40	865.5000027	0.00023108
30	865.5000031	0.00069324
20	865.5000025	Reference
10	865.5000023	-0.00023108
0	865.5000028	-0.00034462
-10	865.5000026	0.00011540
-20	865.5000020	0.00057770
-30	865.5000021	0.00046216
-40	865.5000019	0.00069324

1.3) Test for Downlink: 869~894MHz (middle channel 881.5MHz)

Temperature(°C)	Frequency(MHz)	Tolerance(ppm)
50	881.5000028	0.000567214
40	881.5000029	0.000680657
30	881.5000031	0.000907543
20	881.5000023	Reference
10	881.5000026	0.000340329
0	881.5000032	0.001020987
-10	881.5000022	-0.000113443
-20	881.5000019	-0.000453772
-30	881.5000024	0.000113443
-40	881.5000033	0.000113442



1.3) Test for Downlink: 1930~1995MHz (middle channel 1962.5MHz)

Temperature(°C)	Frequency(MHz)	Tolerance(ppm)
50	1962.500023	-0.000254777
40	1962.500024	-0.000203821
30	1962.500027	0.000050955
20	1962.500028	Reference
10	1962.500032	0.000203821
0	1962.500030	0.000101911
-10	1962.500025	-0.000152866
-20	1962.500031	0.000152866
-30	1962.500033	0.000254777
-40	1962.500029	0.000509554

1.4) Test for Downlink: 2110~2155MHz (middle channel 2132.5MHz)

Temperature(°C)	Frequency(MHz)	Tolerance(ppm)
50	2132.500024	0.000375147
40	2132.500029	0.000140679
30	2132.500031	0.000046893
20	2132.500032	Reference
10	2132.500025	-0.000328253
0	2132.500027	-0.000234467
-10	2132.500026	0.000281359
-20	2132.500032	0
-30	2132.500030	-0.000093787
-40	2132.500028	0.000187573

2) Frequency Stability vs voltage:

2.1) For AC supplied:

2.1.1) Test for Downlink:728~757MHz (middle channel 742.5MHz)

Voltage(V AC)	Frequency(MHz)	Tolerance(ppm)
102 (120*0.85)	742.500026	0.00067340
120	742.500021	Reference
138 (120*1.15)	742.500023	0.00026936

2.1.2) Test for Downlink: 862~869MHz (middle channel 865.5MHz)

Voltage(V AC)	Frequency(MHz)	Tolerance(ppm)
102 (120*0.85)	865.500027	-0.00034662
120	865.500024	Reference
138 (120*1.15)	865.500029	0.00057770



2.1.3) Test for Downlink: 869~894MHz (middle channel 881.5MHz)

Voltage(V AC)	Frequency(MHz)	Tolerance(ppm)
102 (120*0.85)	881.5000028	0.00056721
120	881.5000023	Reference
138 (120*1.15)	881.5000025	0.00022688

2.1.4) Test for Downlink: 1930~1995MHz (middle channel 1962.5MHz)

Voltage(V AC)	Frequency(MHz)	Tolerance(ppm)
102 (120*0.85)	1962.5000026	0.000254777
120	1962.5000021	Reference
138 (120*1.15)	1962.5000027	0.000305732

2.1.5) Test for Downlink: 2110~2155MHz (middle channel 2132.5MHz)

Voltage(V AC)	Frequency(MHz)	Tolerance(ppm)
102 (120*0.85)	2132.5000027	0.0000140679
120	2132.5000024	Reference
138 (120*1.15)	2132.5000029	0.000234466



2.2) For DC supplied:

2.2.1) Test for Downlink:728~757MHz (middle channel 742.5MHz)

Voltage(V DC)	Frequency(MHz)	Tolerance(ppm)
-40.8 (-48.0*0.85)	742.5000026	0.00067340
-48.0	742.5000021	Reference
-55.2 (-48.0*1.15)	742.5000018	-0.00040404

2.2.2) Test for Downlink: 862~869MHz (middle channel 865.5MHz)

Voltage(V DC)	Frequency(MHz)	Tolerance(ppm)
-40.8 (-48.0*0.85)	865.5000025	0.00023108
-48.0	865.5000023	Reference
-55.2 (-48.0*1.15)	865.5000026	-0.00034662

2.2.3) Test for Downlink: 869~894MHz (middle channel 881.5MHz)

Voltage(V DC)	Frequency(MHz)	Tolerance(ppm)
-40.8 (-48.0*0.85)	881.5000027	0.00023108
-48.0	881.5000025	Reference
-55.2 (-48.0*1.15)	881.5000029	-0.000453772

2.2.4) Test for Downlink: 1930~1995MHz (middle channel 1962.5MHz)

Voltage(V DC)	Frequency(MHz)	Tolerance(ppm)
-40.8 (-48.0*0.85)	1962.5000024	-0.000152866
-48.0	1962.5000021	Reference
-55.2 (-48.0*1.15)	1962.5000028	0.000203821

2.2.5) Test for Downlink: 2110~2155MHz (middle channel 2132.5MHz)

Voltage(V DC)	Frequency(MHz)	Tolerance(ppm)
-40.8 (-48.0*0.85)	2132.5000027	0.000234466
-48.0	2132.5000022	Reference
-55.2 (-48.0*1.15)	2132.5000026	0.000187573

--The End of Report--