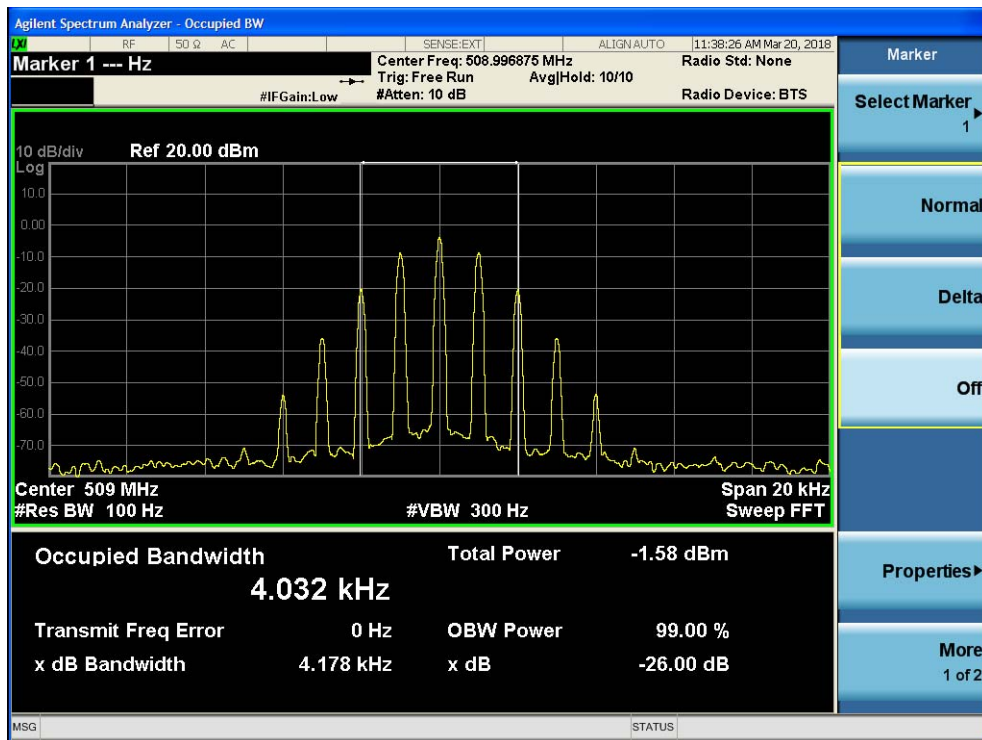
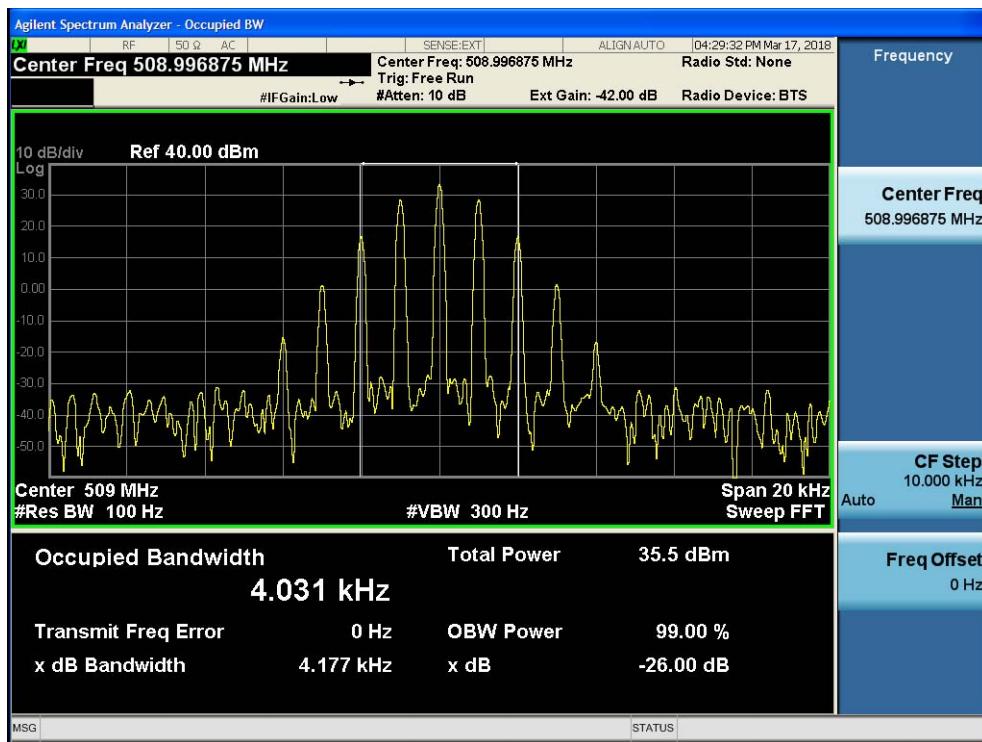




1.5 highest frequency—Input



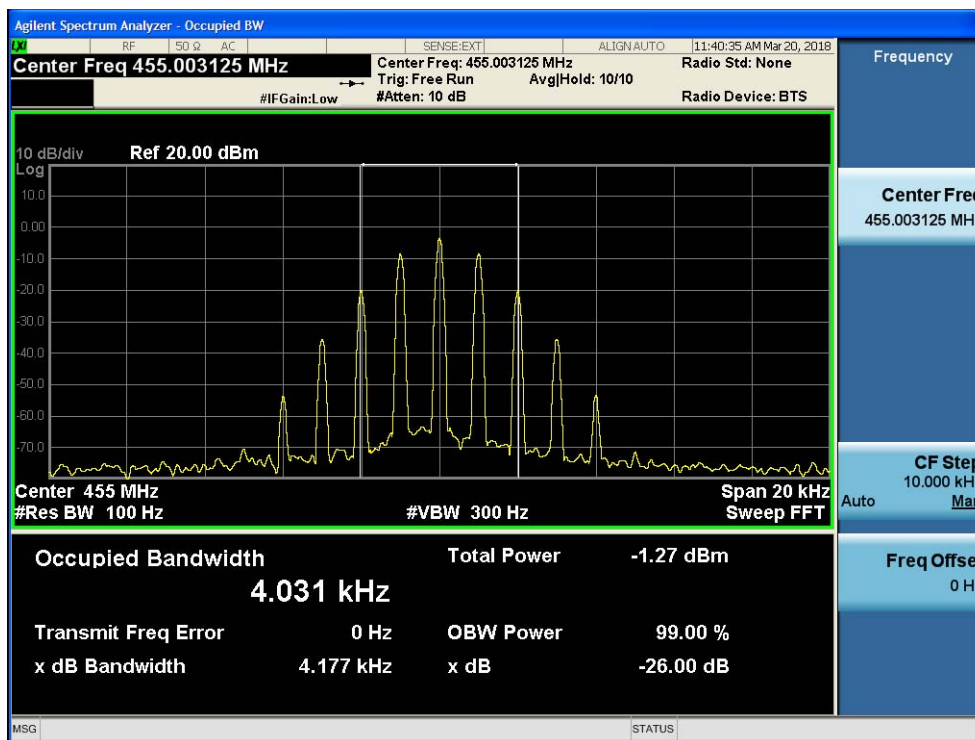
1.6 highest frequency—Output



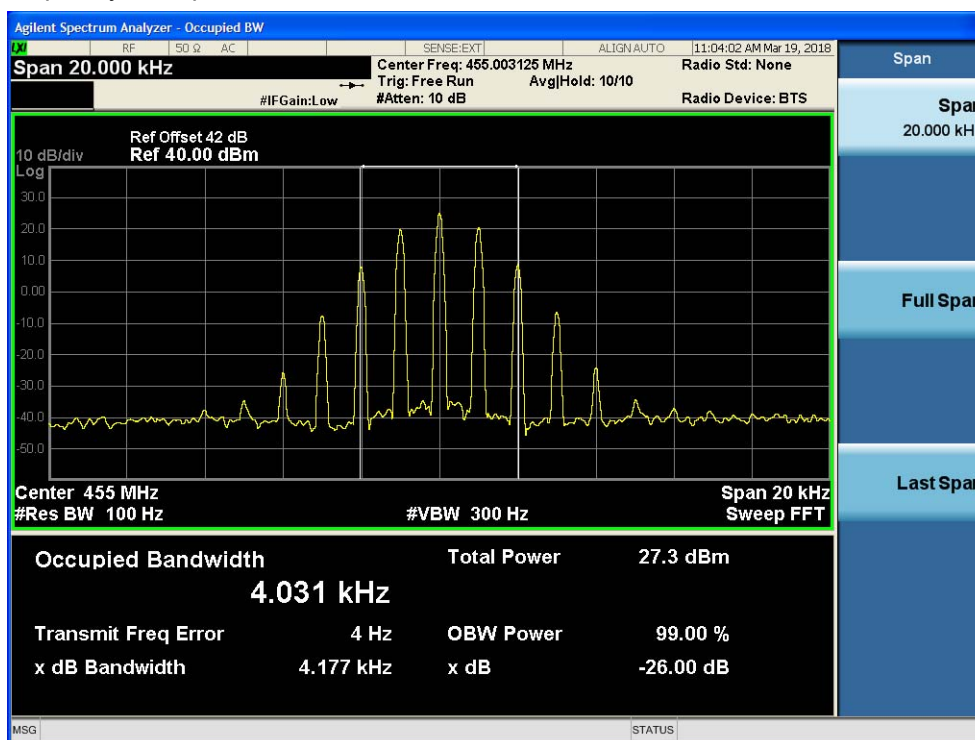


4. Uplink:455MHz to 512MHz (for FM 6.25K mode)

1.1 lowest frequency – Input

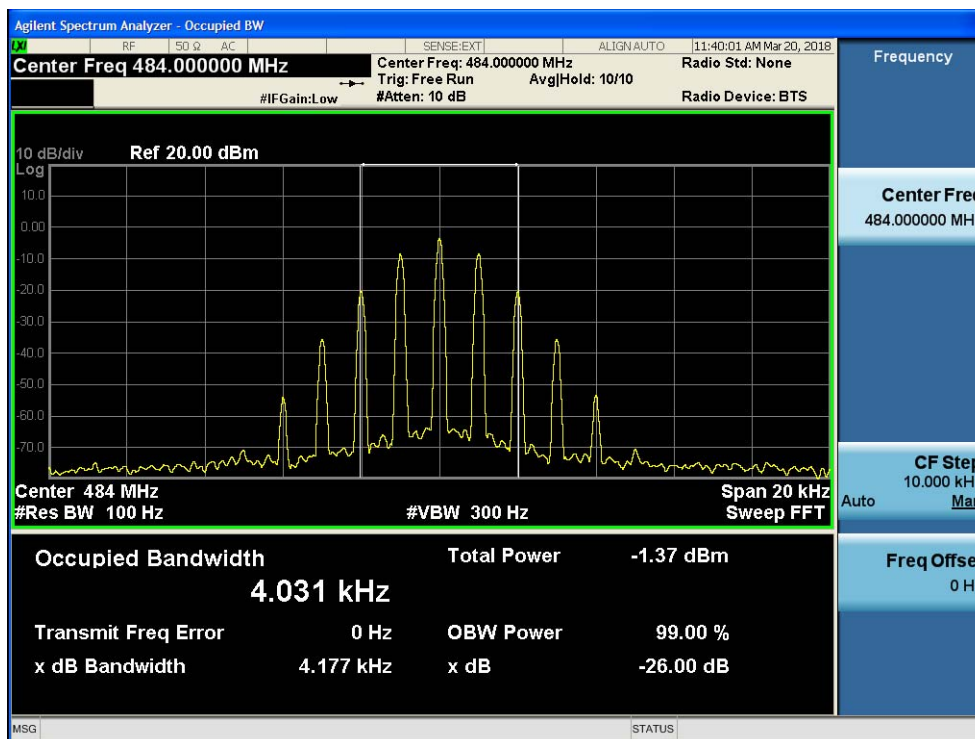


1.2 lowest frequency—Output

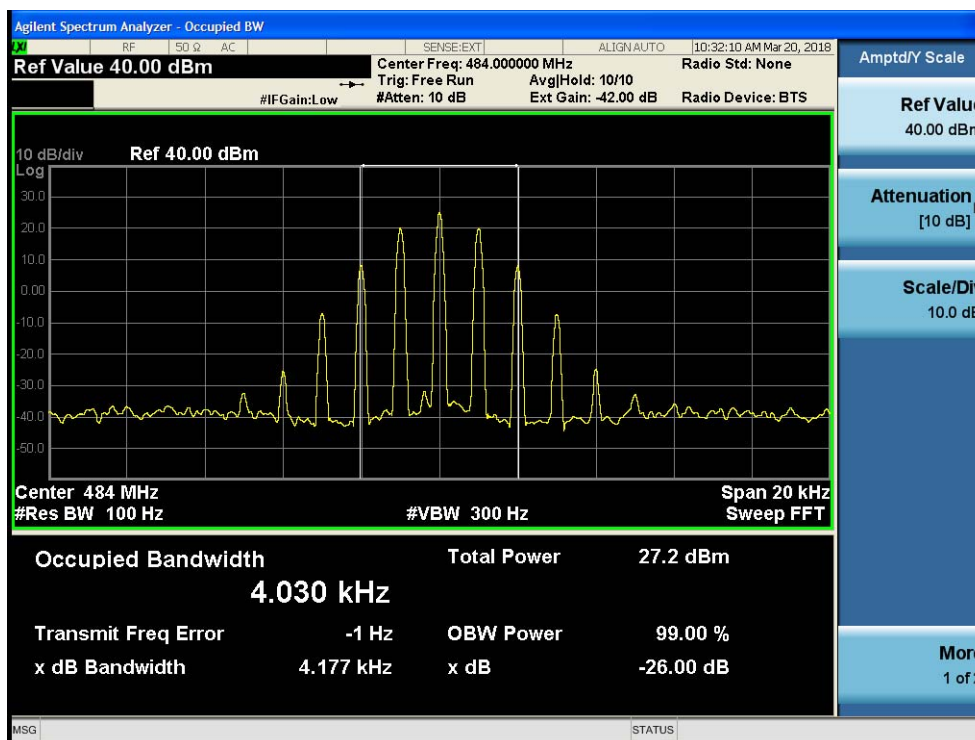




1.3 middle frequency—Input

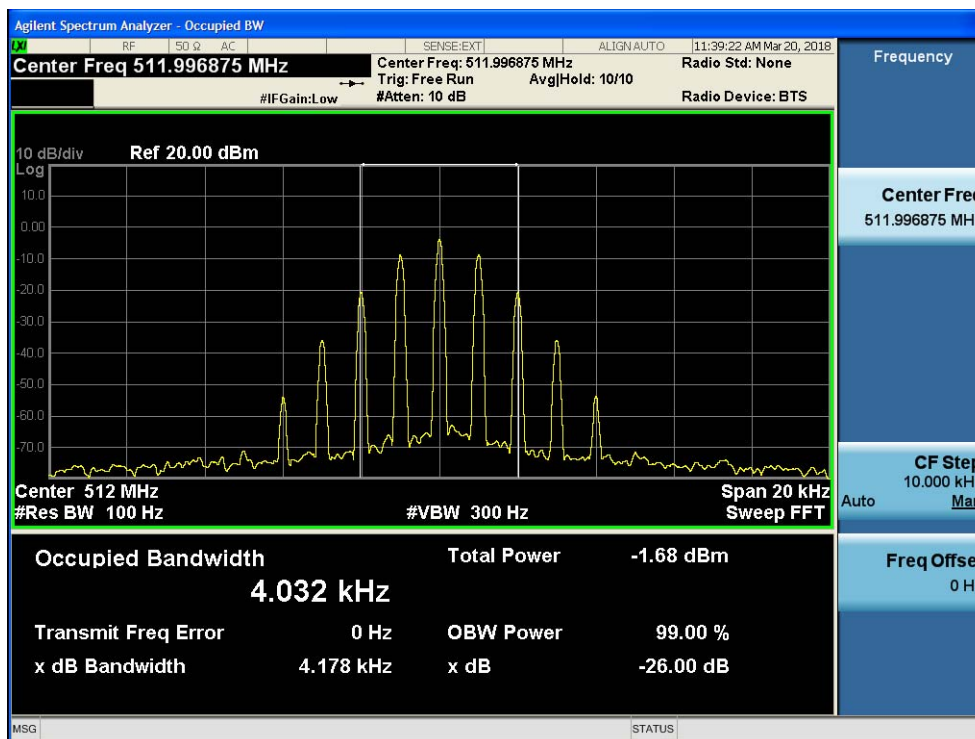


1.4 middle frequency—Output

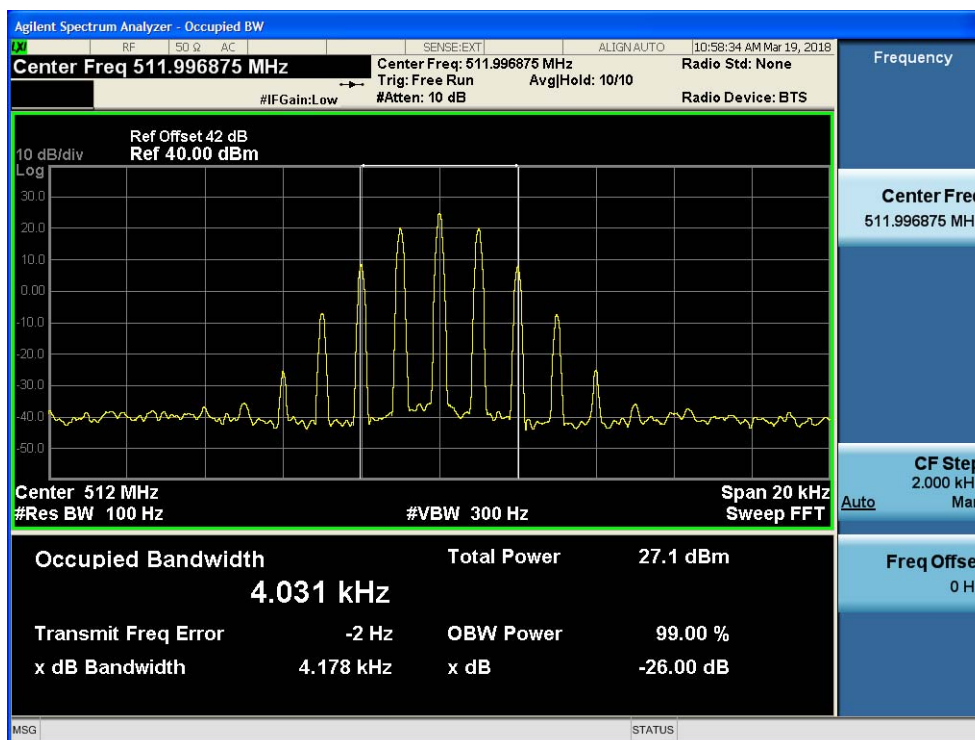




1.5 highest frequency—Input



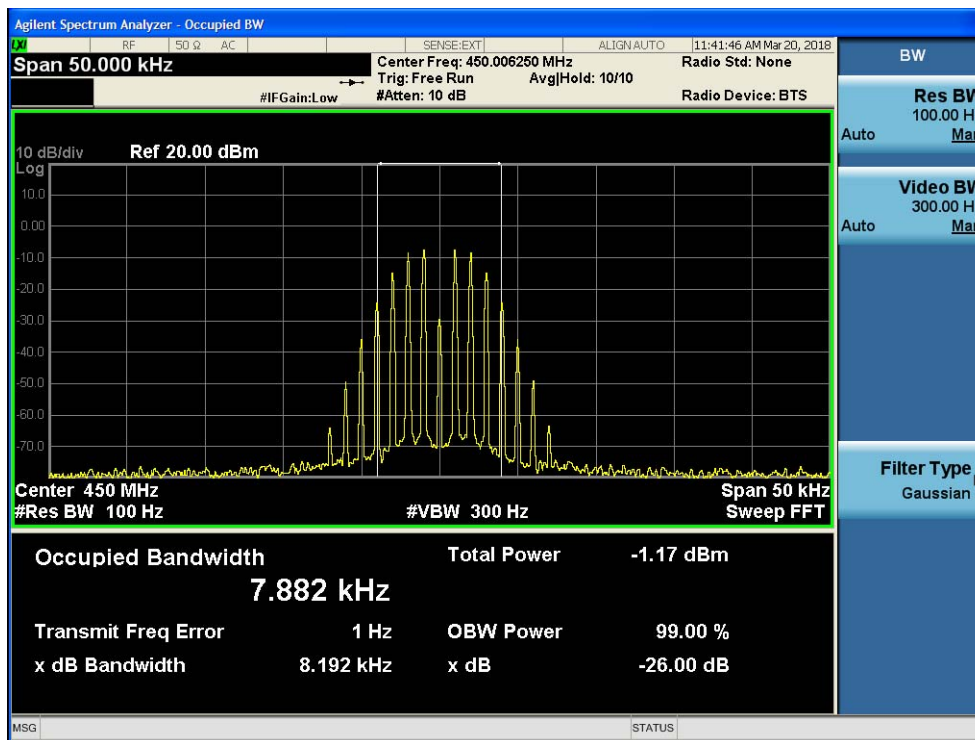
1.6 highest frequency—Output



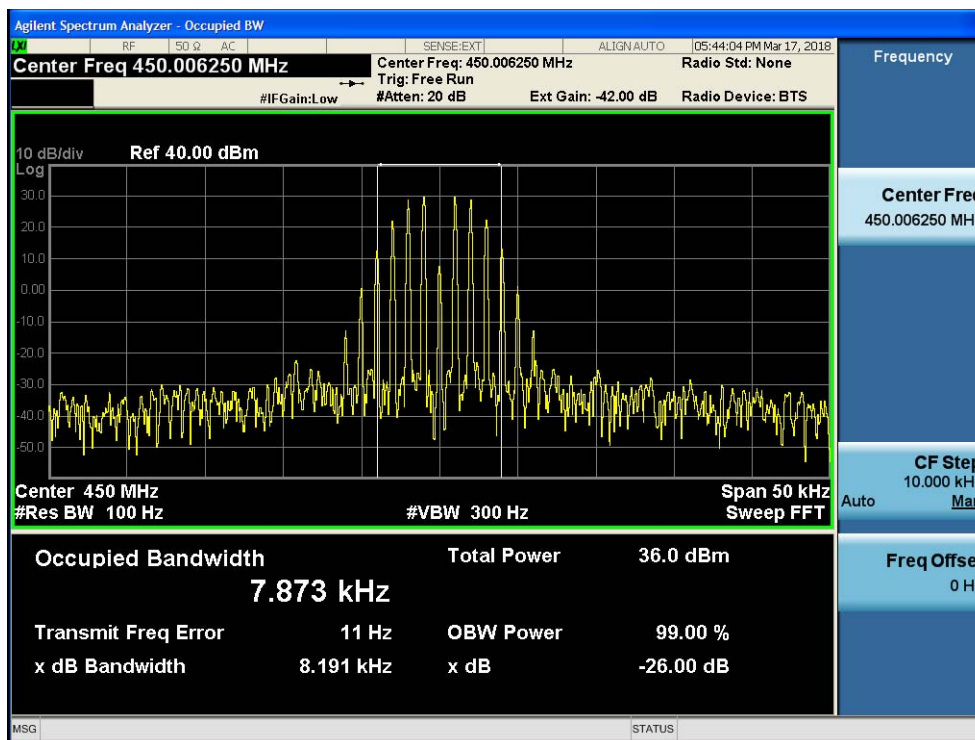


5. Downlink:450MHz to 509MHz
(for FM 12.5K mode)

1.1 lowest frequency – Input

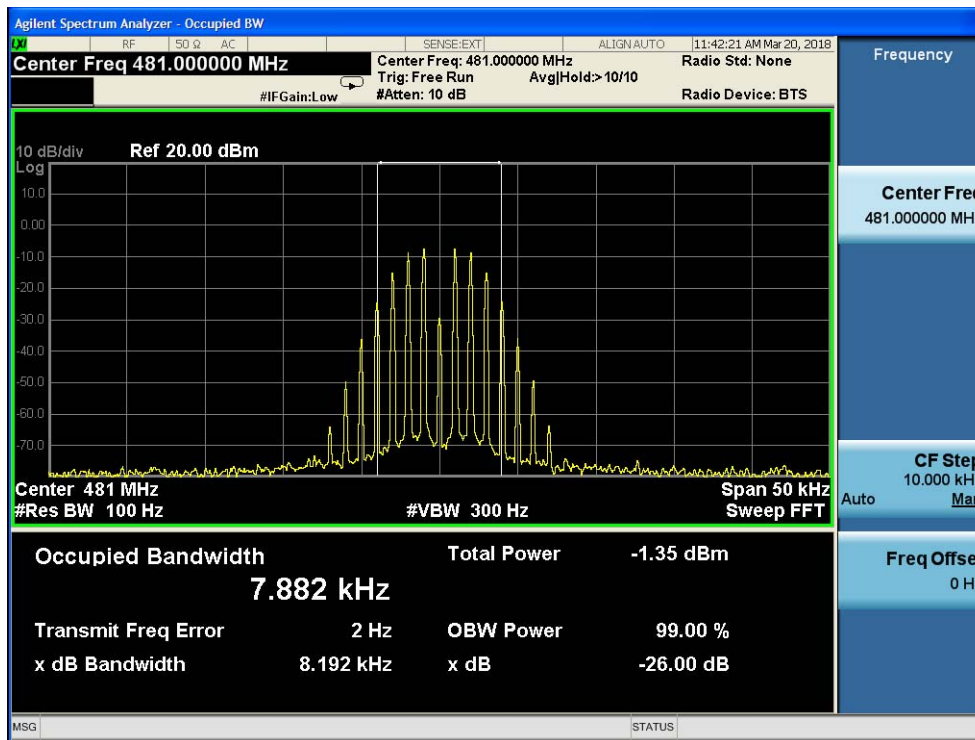


1.2 lowest frequency—Output

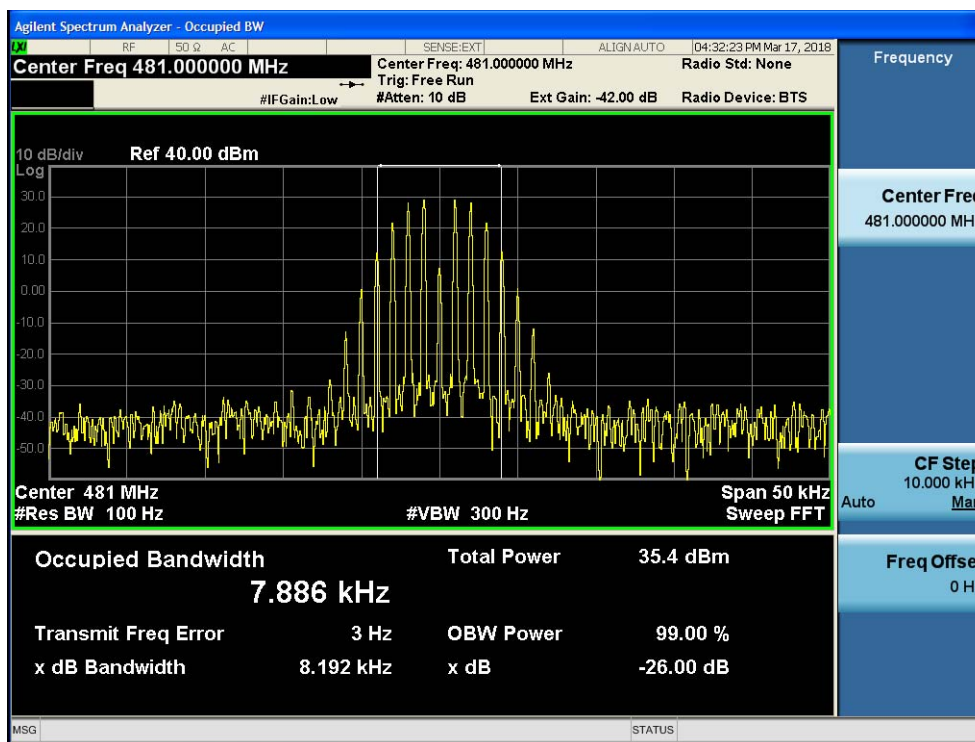




1.3 middle frequency—Input

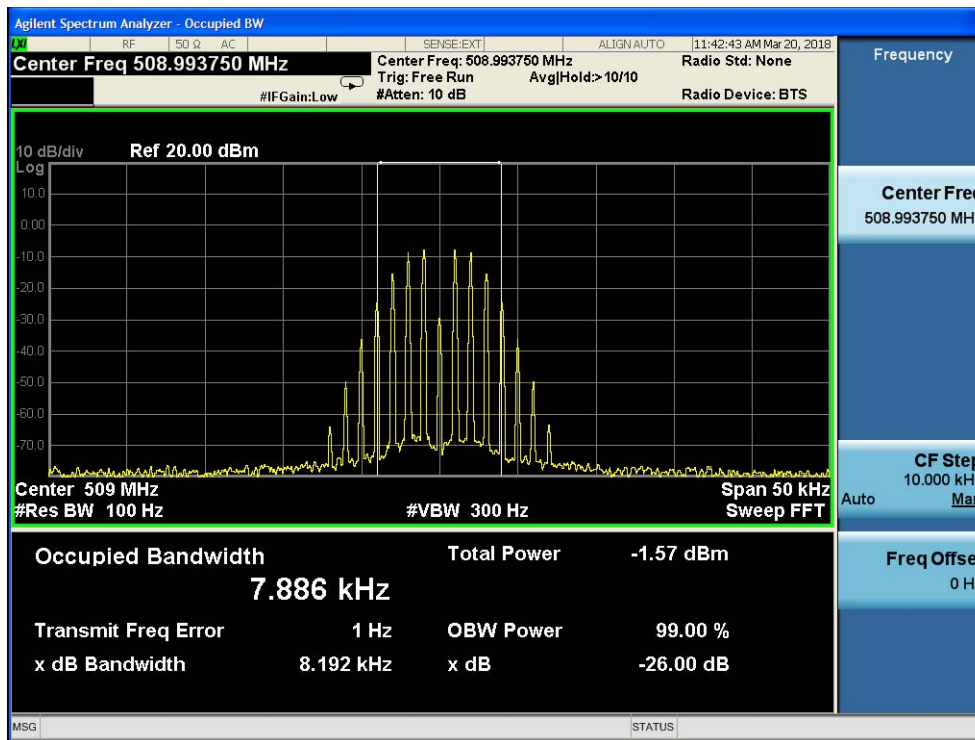


1.4 middle frequency—Output

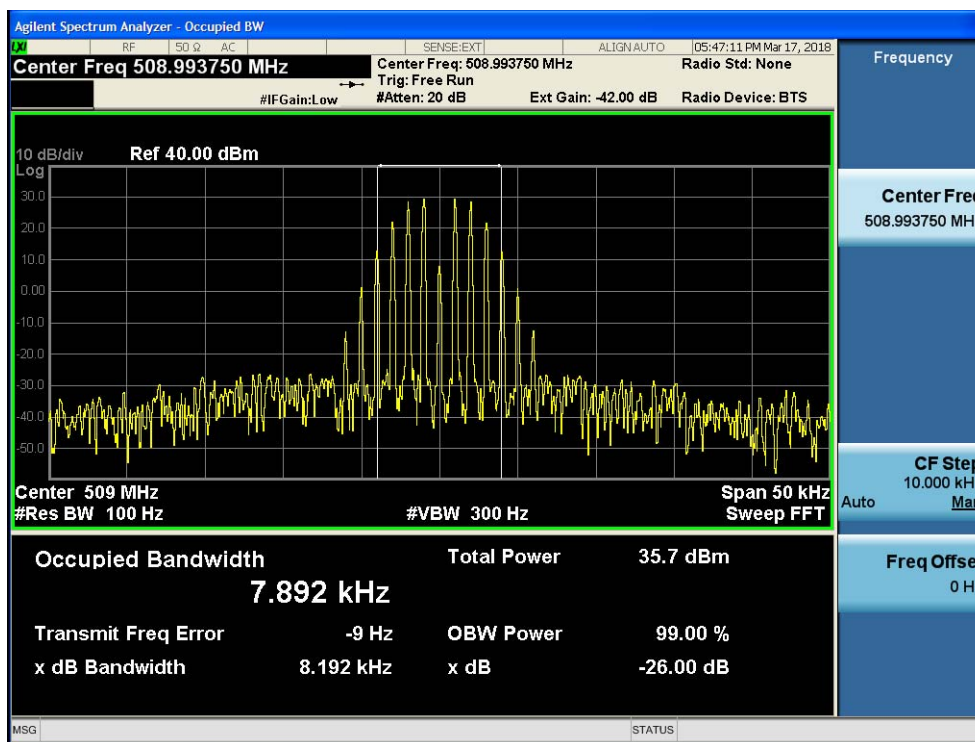




1.5 highest frequency—Input

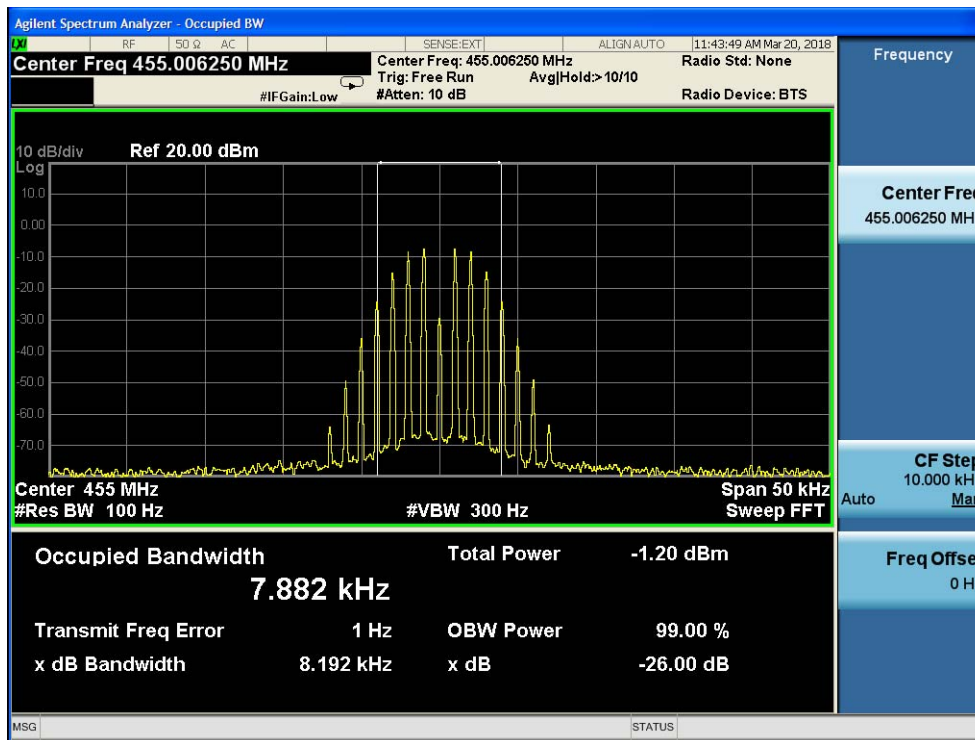


1.6 highest frequency—Output

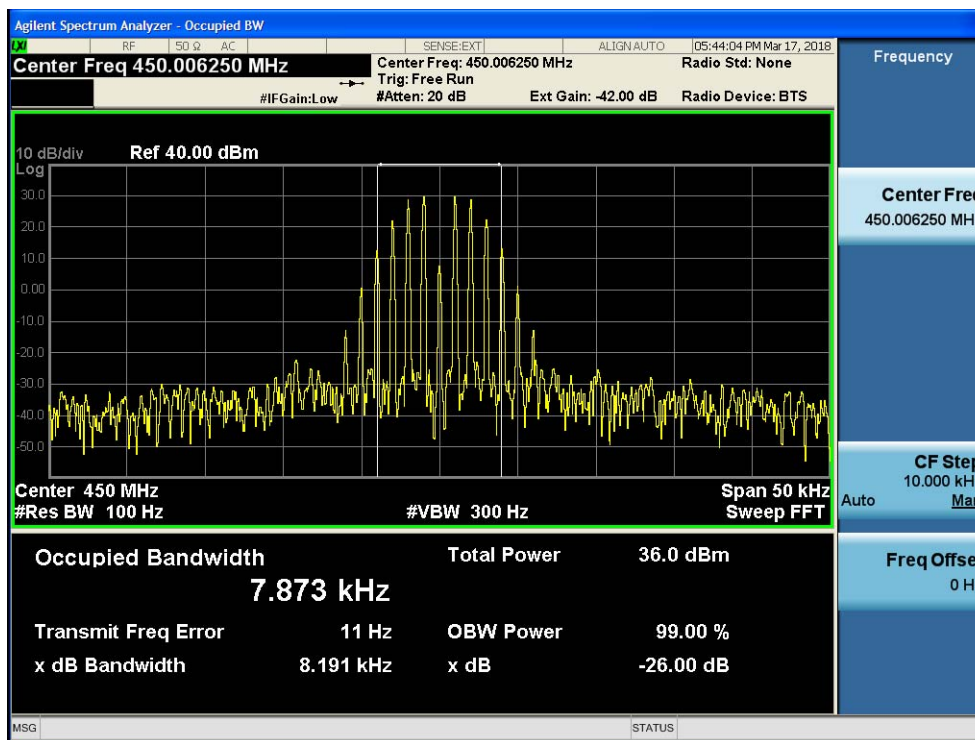


6. Uplink:455MHz to 512MHz (for FM 12.5K mode)

1.1 lowest frequency – Input

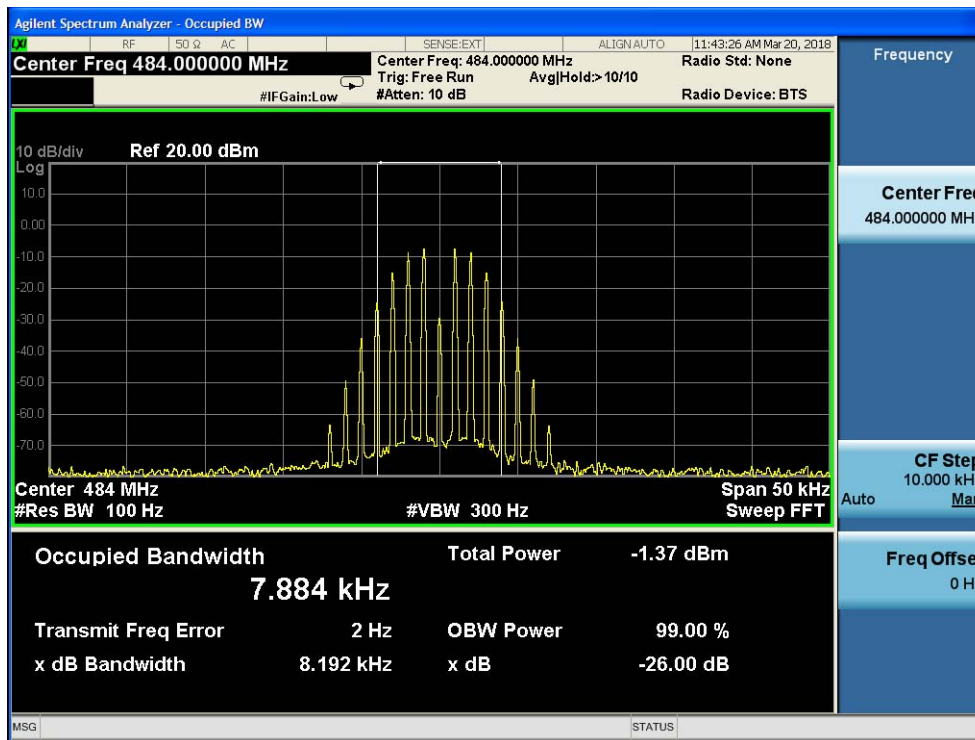


1.2 lowest frequency—Output

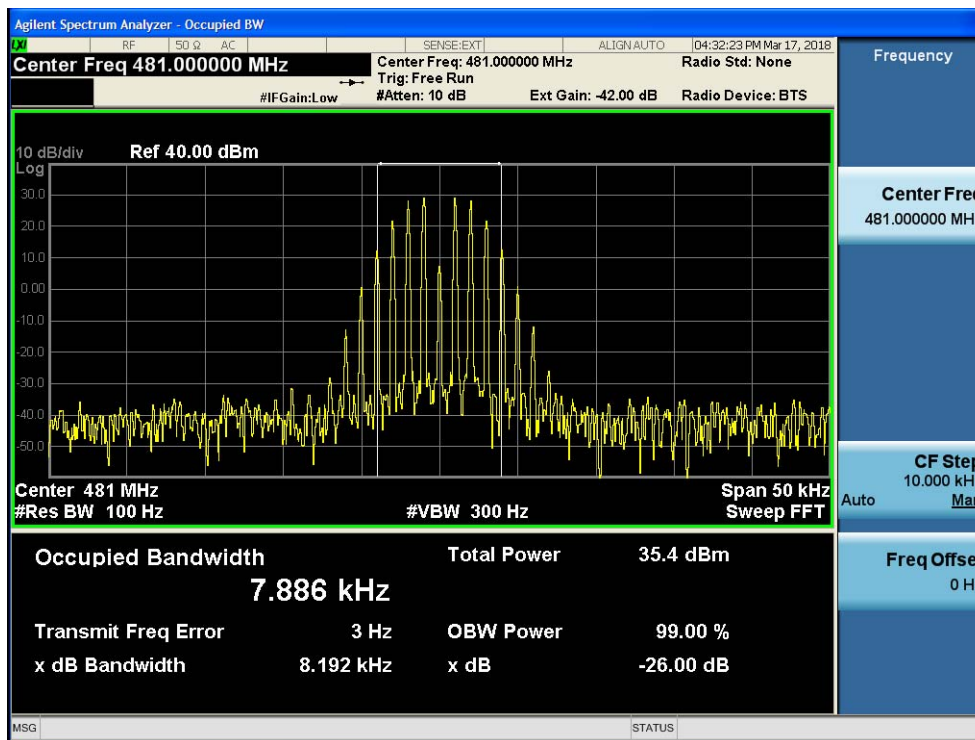




1.3 middle frequency—Input

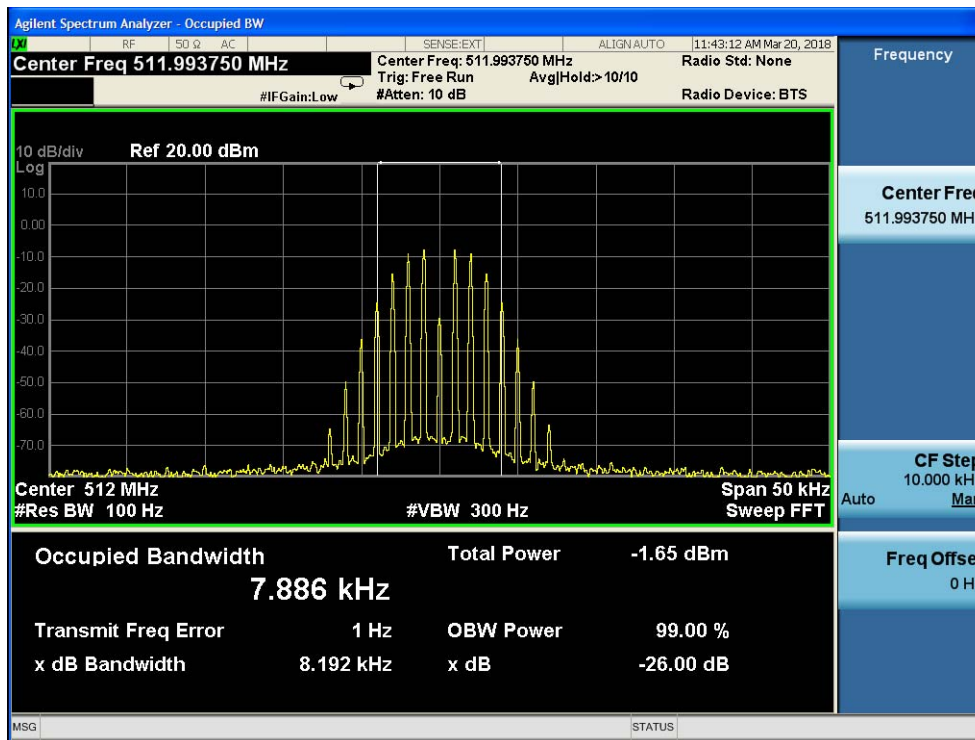


1.4 middle frequency—Output

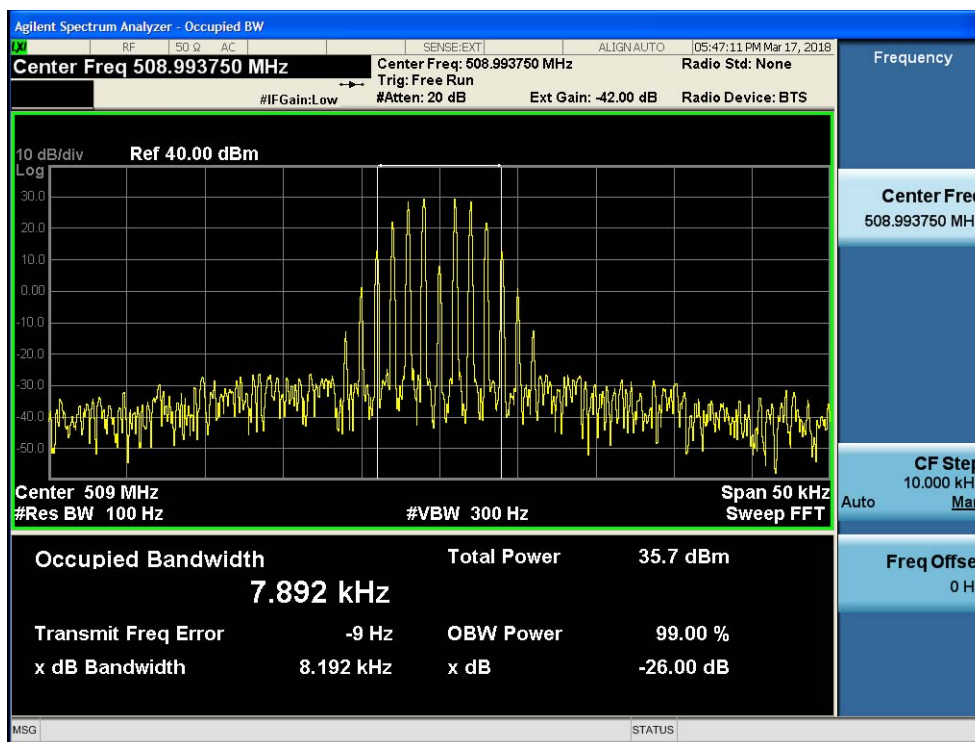




1.5 highest frequency—Input



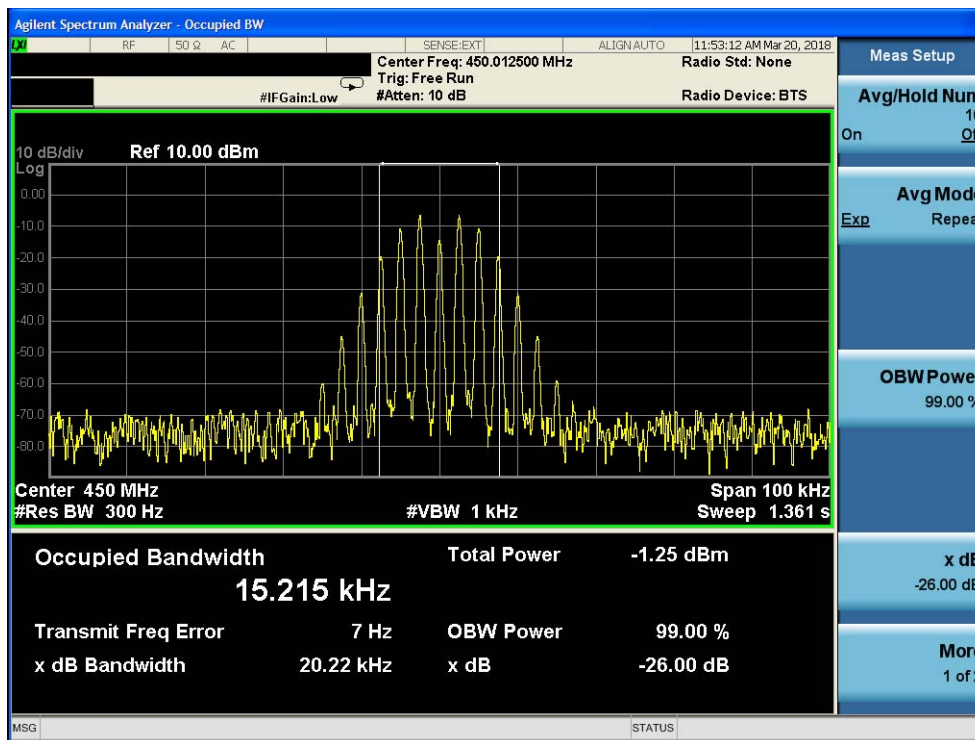
1.6 highest frequency—Output



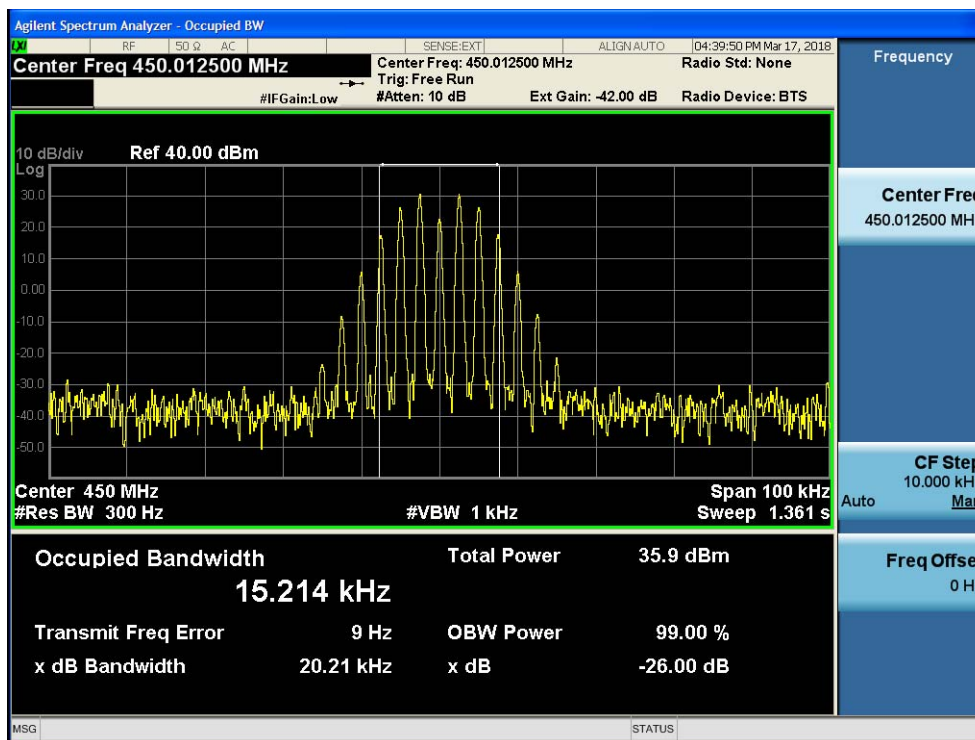


7. Downlink:450MHz to 509MHz (for FM 25K mode)

1.1 lowest frequency – Input

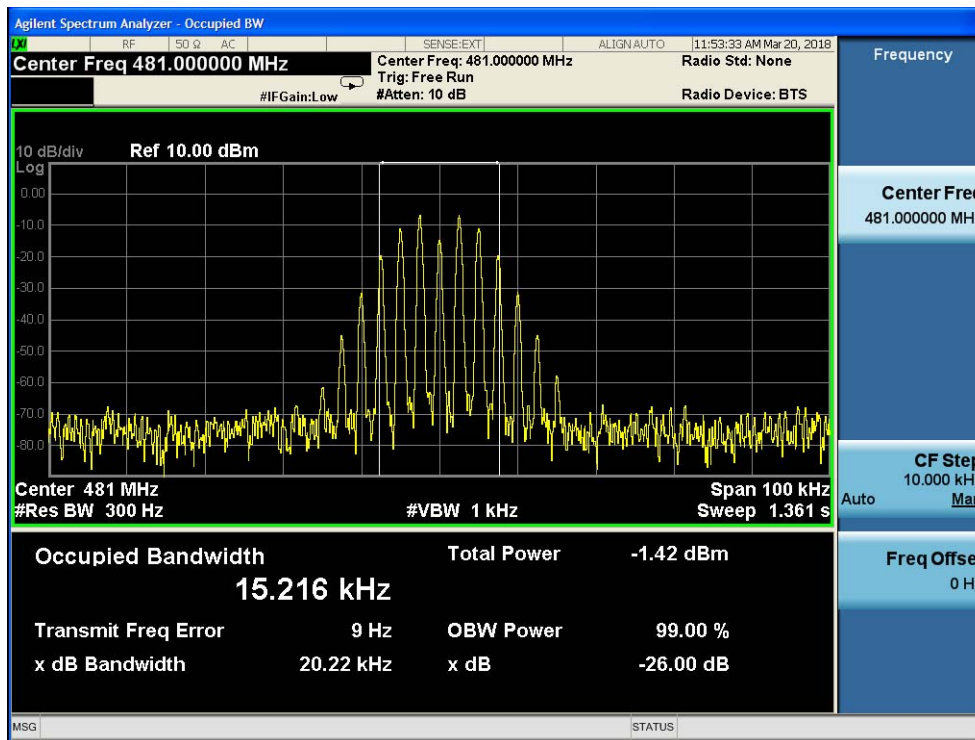


1.2 lowest frequency—Output

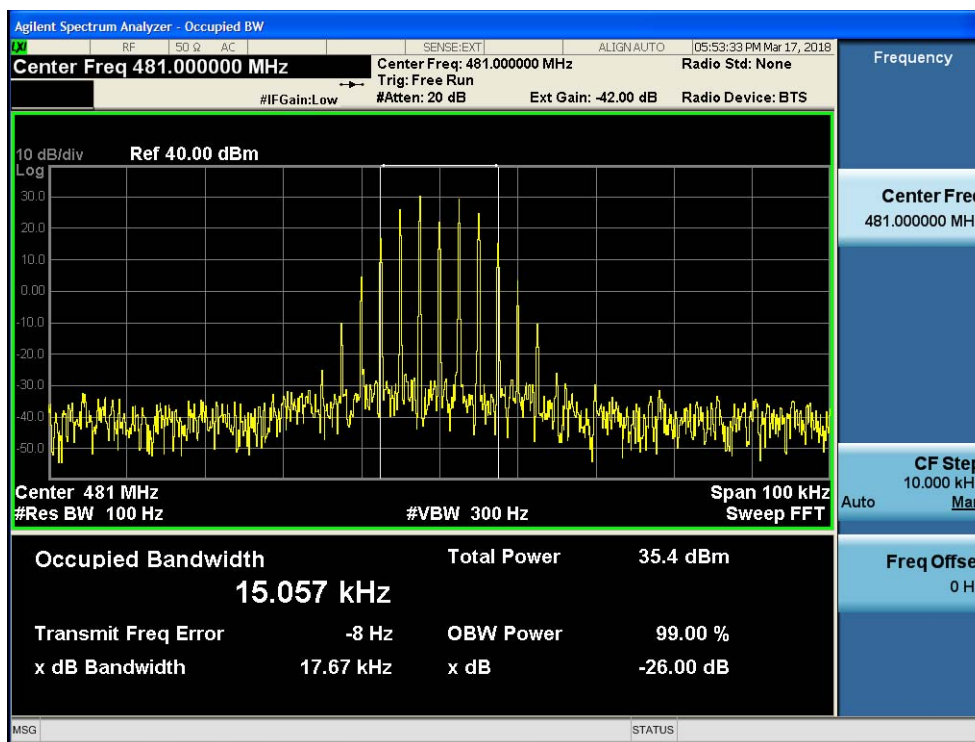




1.3 middle frequency—Input

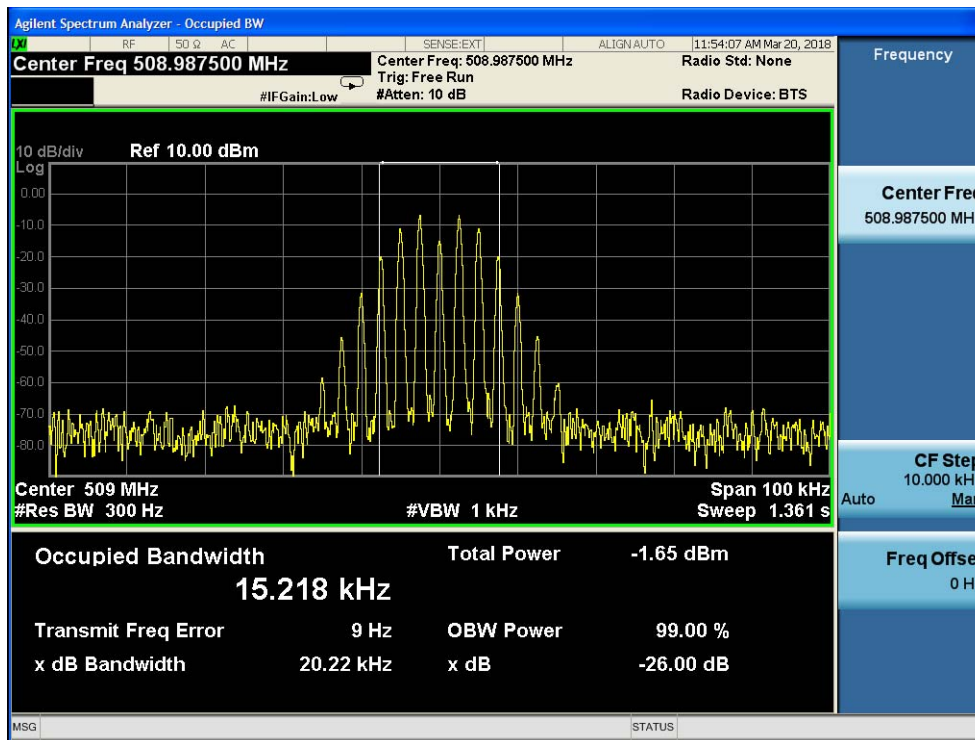


1.4 middle frequency—Output

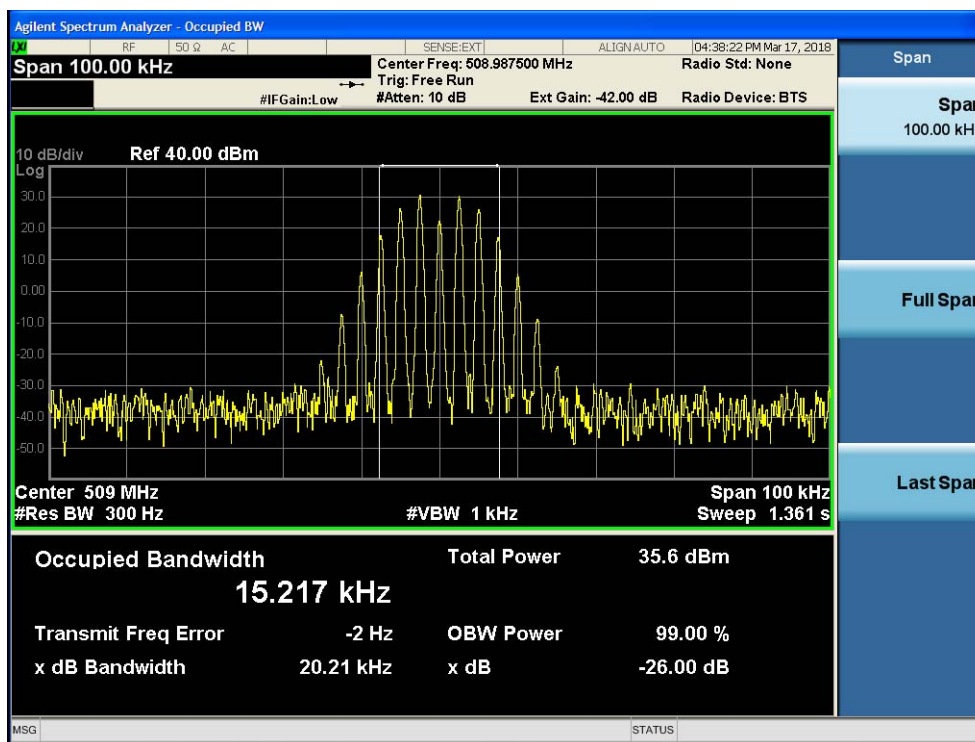




1.5 highest frequency—Input

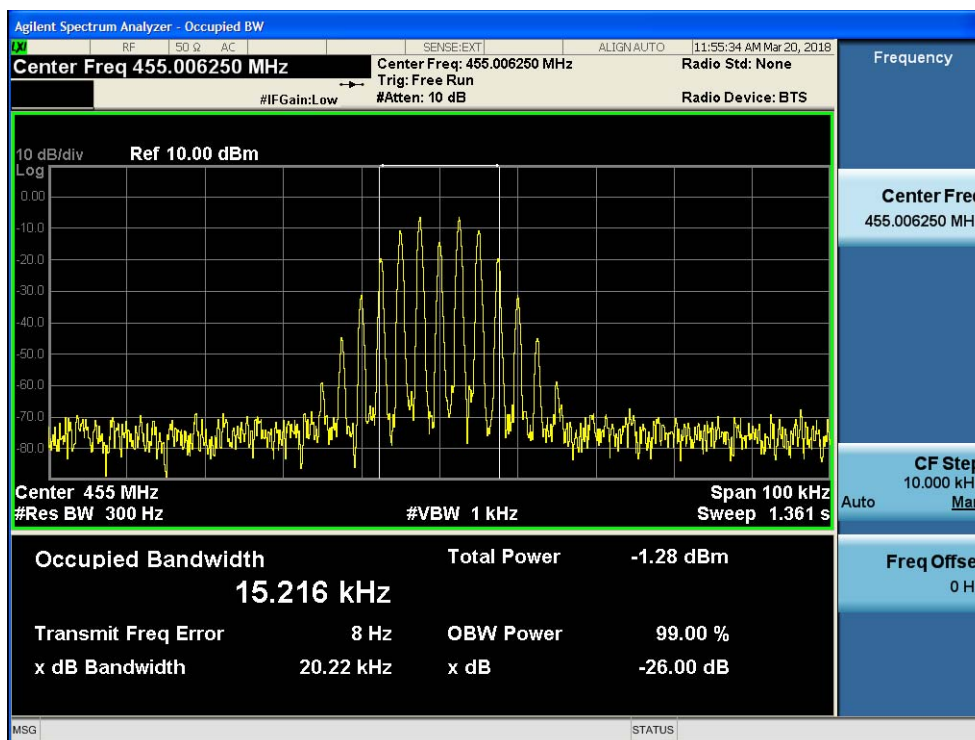


1.6 highest frequency—Output

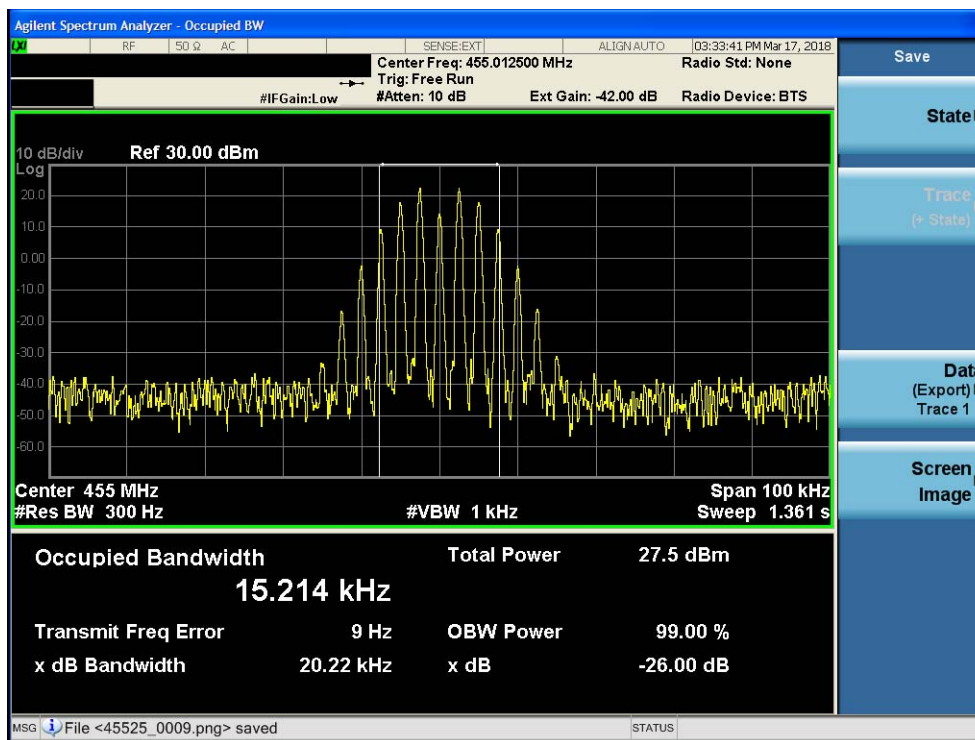


8. Uplink:455MHz to 512MHz (for FM 25K mode)

1.1 lowest frequency – Input

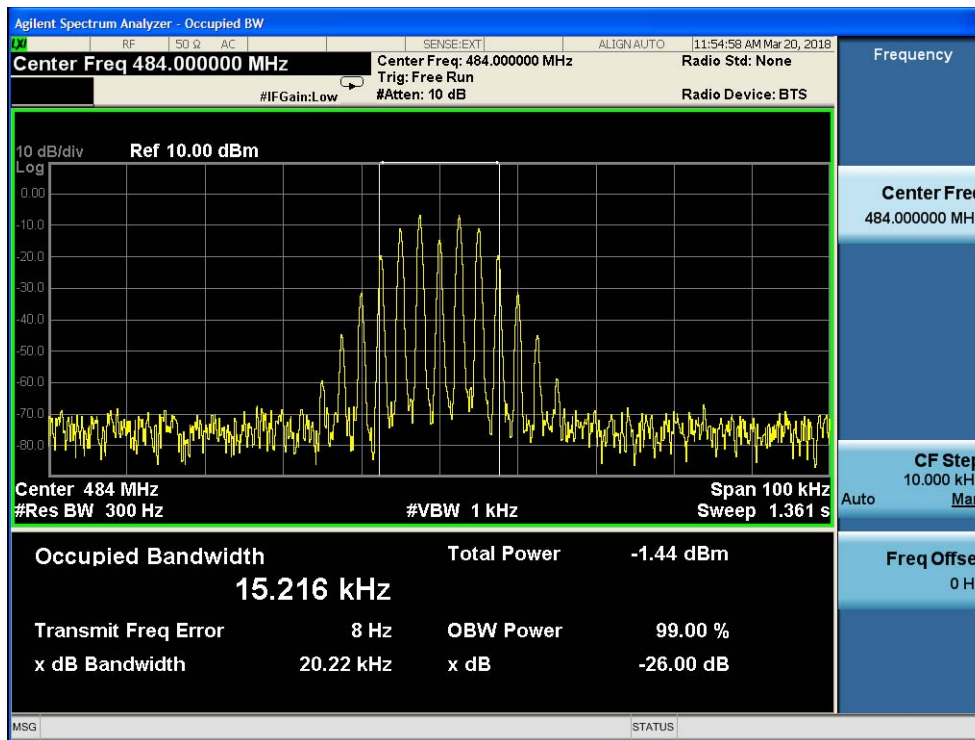


1.2 lowest frequency—Output

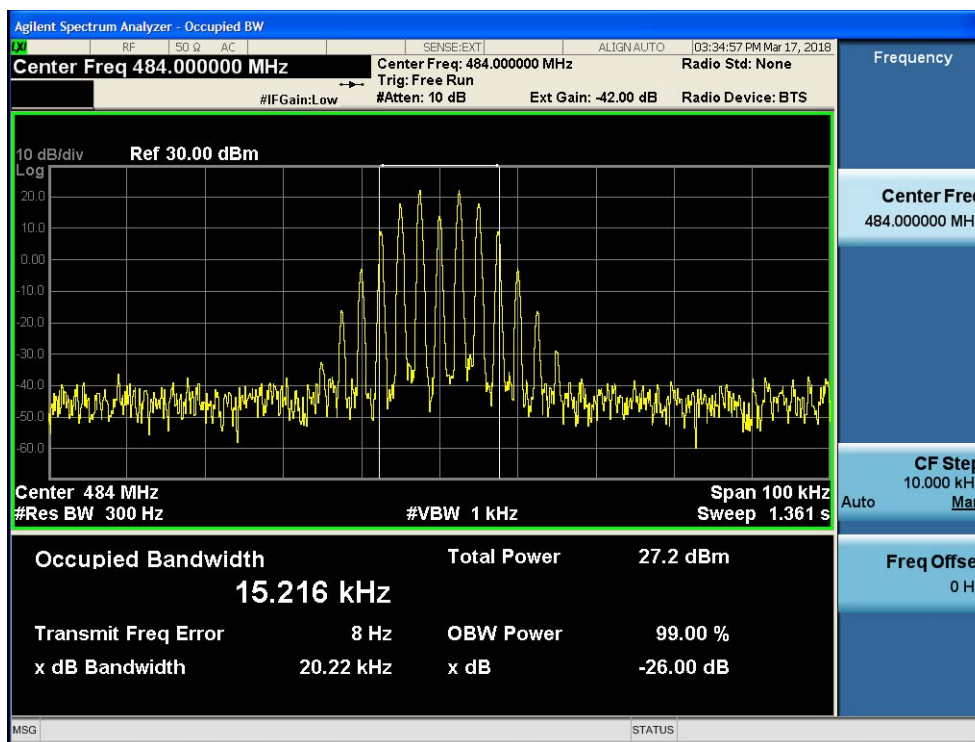




1.3 middle frequency—Input

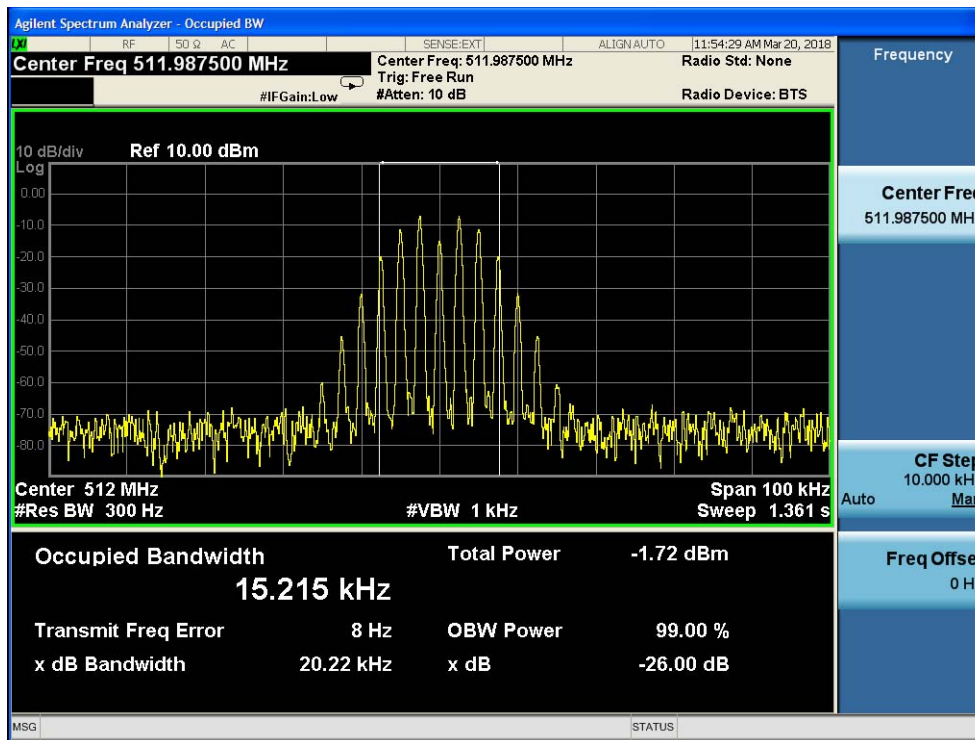


1.4 middle frequency—Output

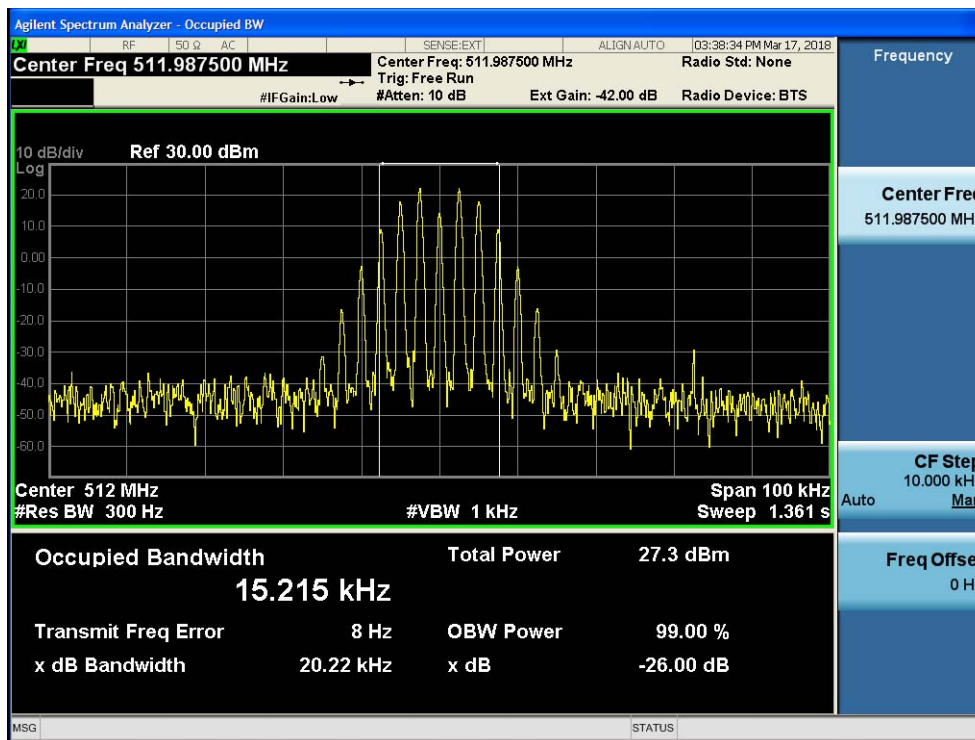




1.5 highest frequency—Input



1.6 highest frequency—Output



7.2.10 Out of Band Rejection

Test Requirement: KDB935210 D02

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

Test Method: KDB935210 D02

EUT Operation:

Status: Drive the EUT to maximum output power. .

Conditions: Normal conditions

Application: Cellular Band RF output ports

Test Configuration:

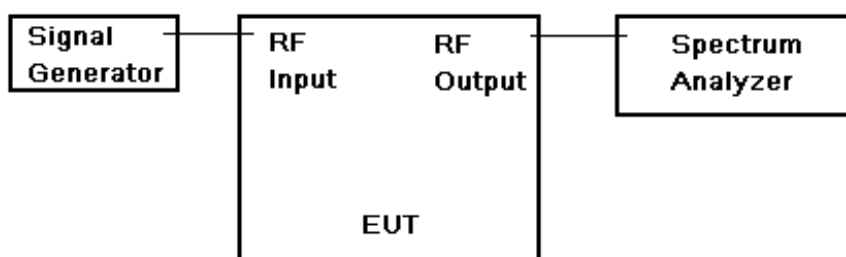


Fig.4. Out of Band rejection test configuration

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;
- With the aid of a CW Swept signal generator and spectrum analyser, the bandwidth and frequency response of the open channel (i.e. at the point where the gain has fallen by 20dB) is measured.
- This measurement shows the gain-versus-frequency response of the open channel from the midband frequency f_0 of the channel up to at least $f_0 + 250\%$ of the 20dB bandwidth.



7.2.10.1 Measurement Record:

Downlink:

Lower 25kHz Channel 449.9985625MHz-450.0264375MHz

Middle 25kHz Channel 480.9860625MHz-481.0139375MHz

Upper 25kHz Channel 508.9735125MHz-509.0014375MHz

Frequency (MHz)	FL(MHz)	FH (MHz)	20dB Bandwidth (kHz)
450.0125	449.9985625	450.0264375	27.875
481	480.9860625	481.0139375	27.875
508.9875	508.9735125	509.0014375	27.875

Uplink:

Lower 25kHz Channel 454.998625MHz-455.0264375MHz

Middle 25kHz Channel 483.98600625MHz-484.0139375MHz

Upper: 25kHz Channel 511.9735625MHz-512.001375MHz

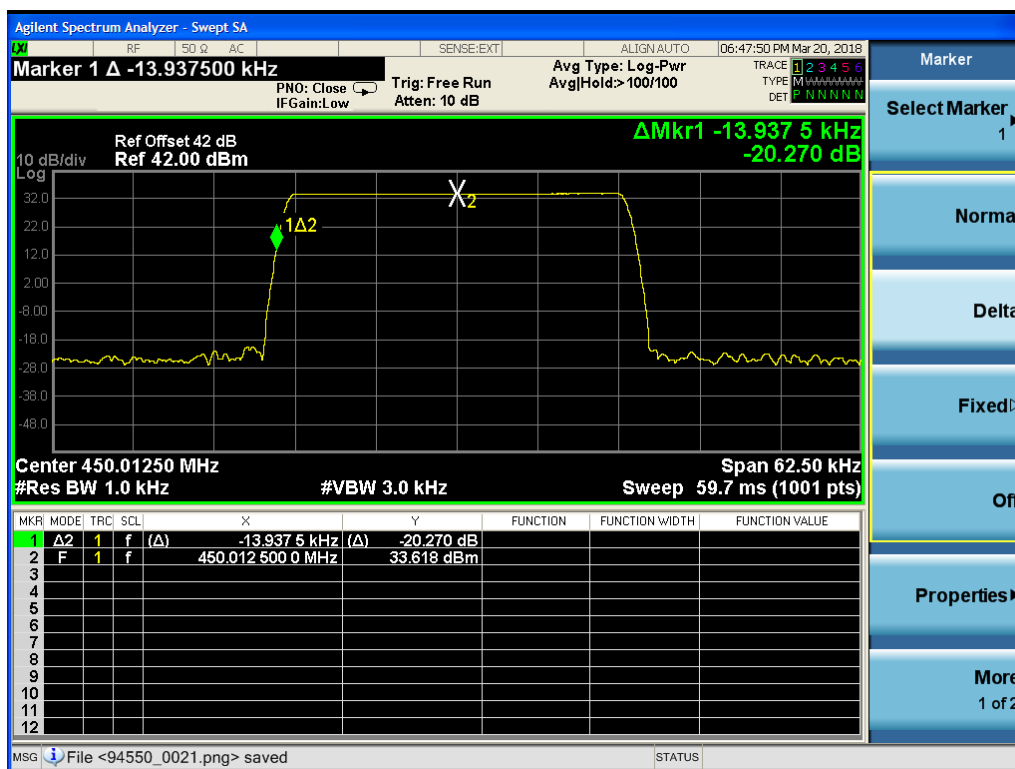
Frequency (MHz)	FL(MHz)	FH (MHz)	20dB Bandwidth (kHz)
455.0125	454.998625	455.0264375	27.8125
484	483.98600625	484.0139375	27.875
511.9875	511.9735625	512.001375	27.8125



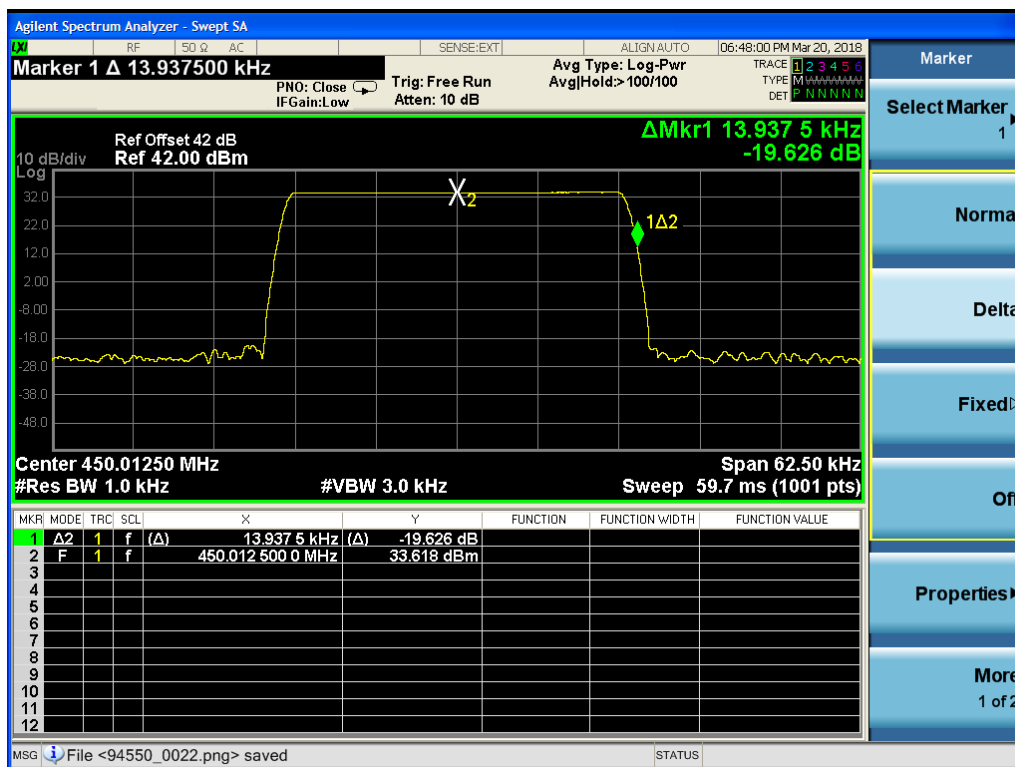
1. Test for Downlink: 449.9985625MHz to 450.0264375MHz 25k

1)Lowest frequency

left

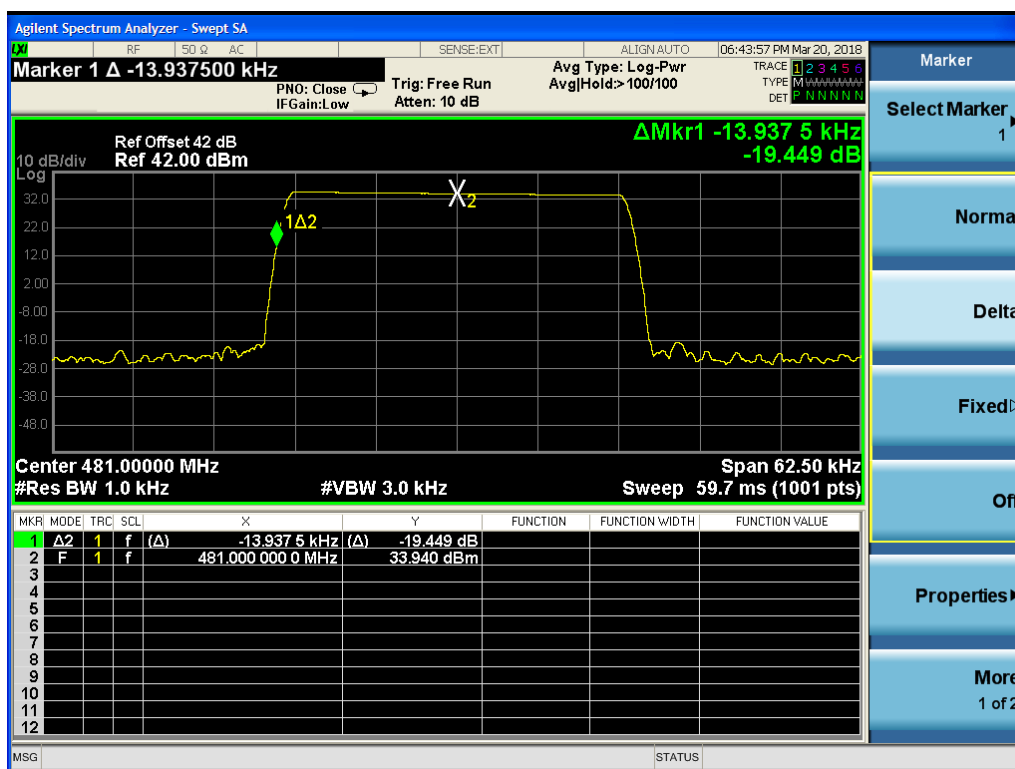


right

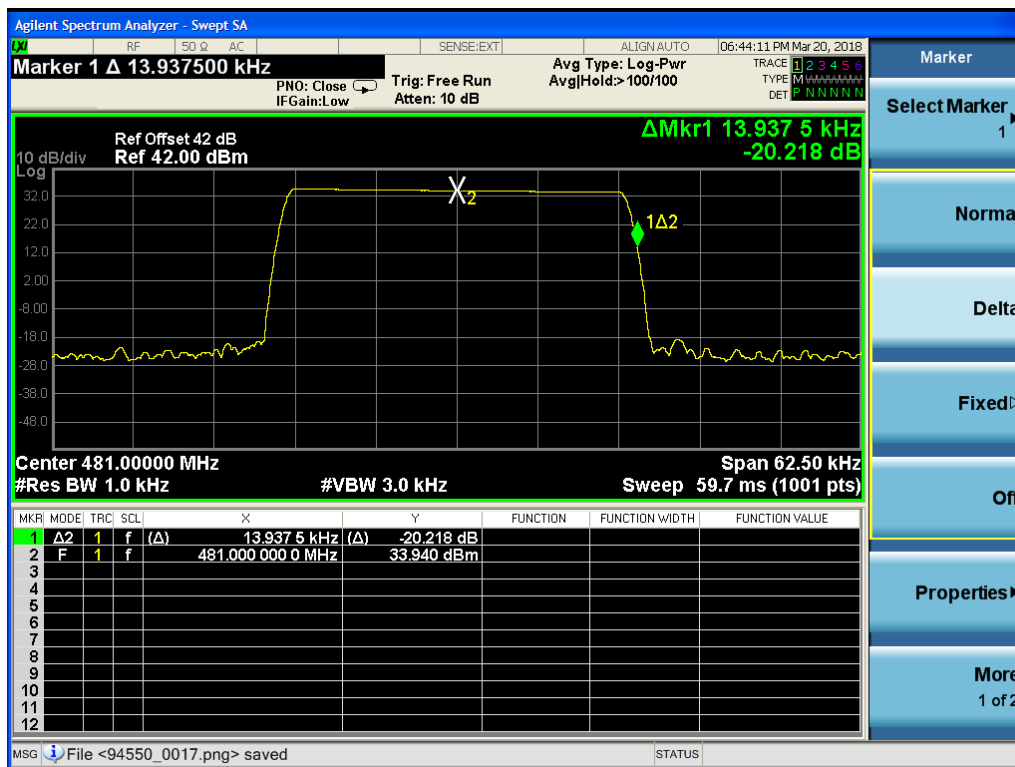


4) Middle frequency

Left



right



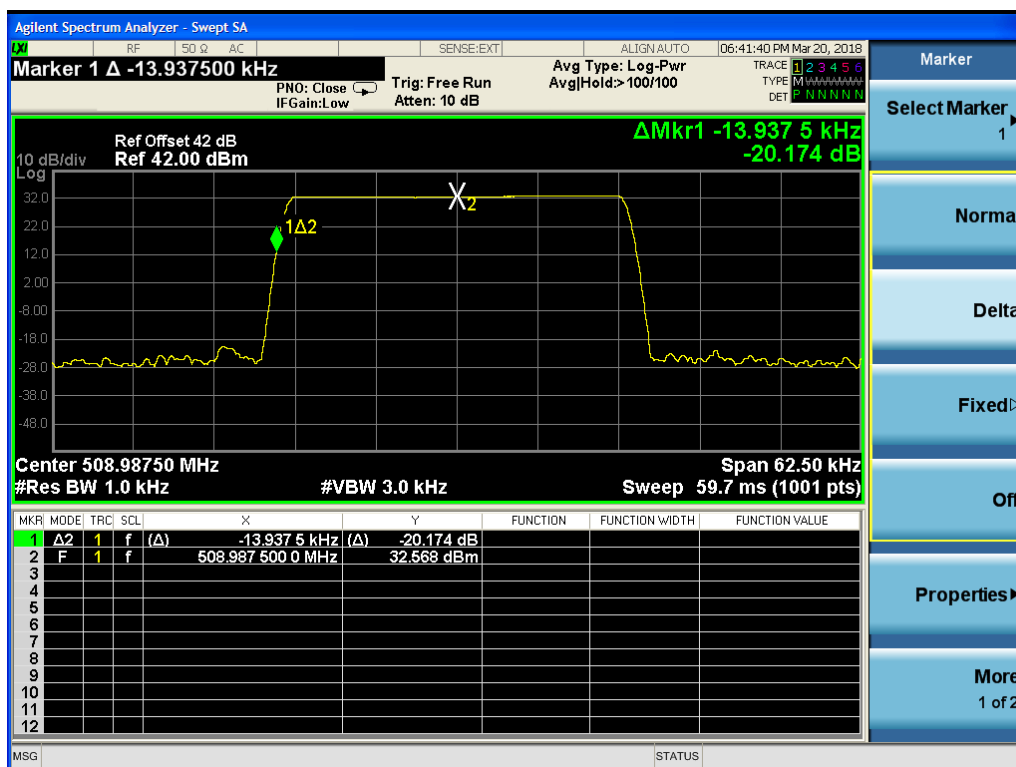
3) Highest frequency

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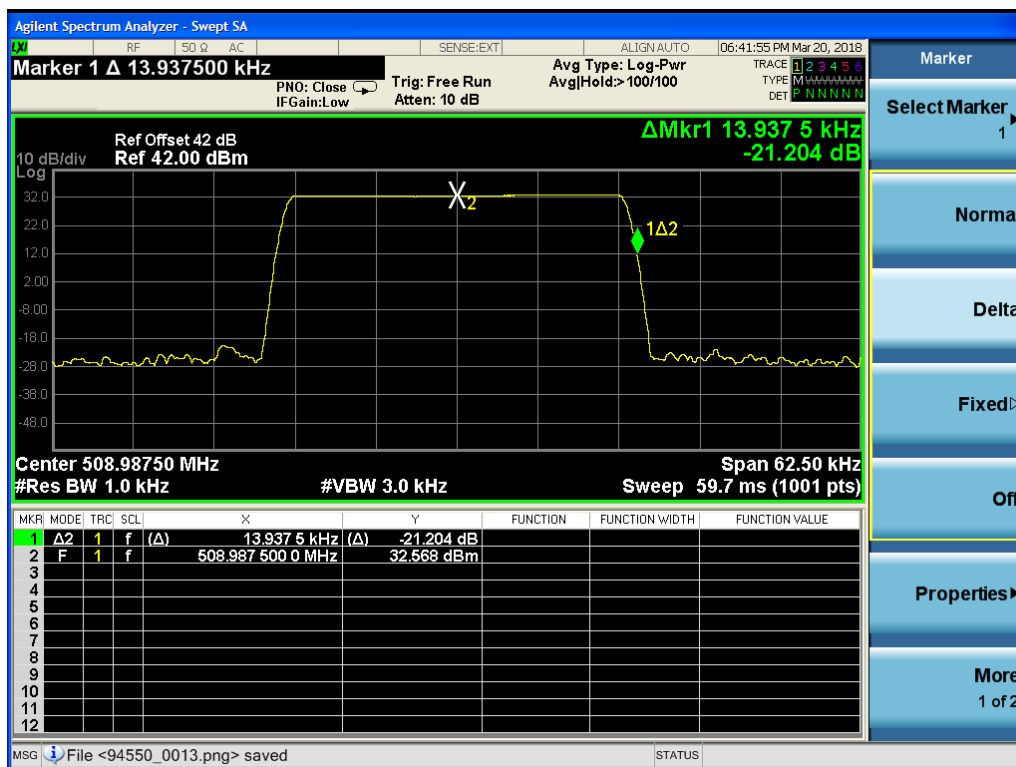
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



Left



right

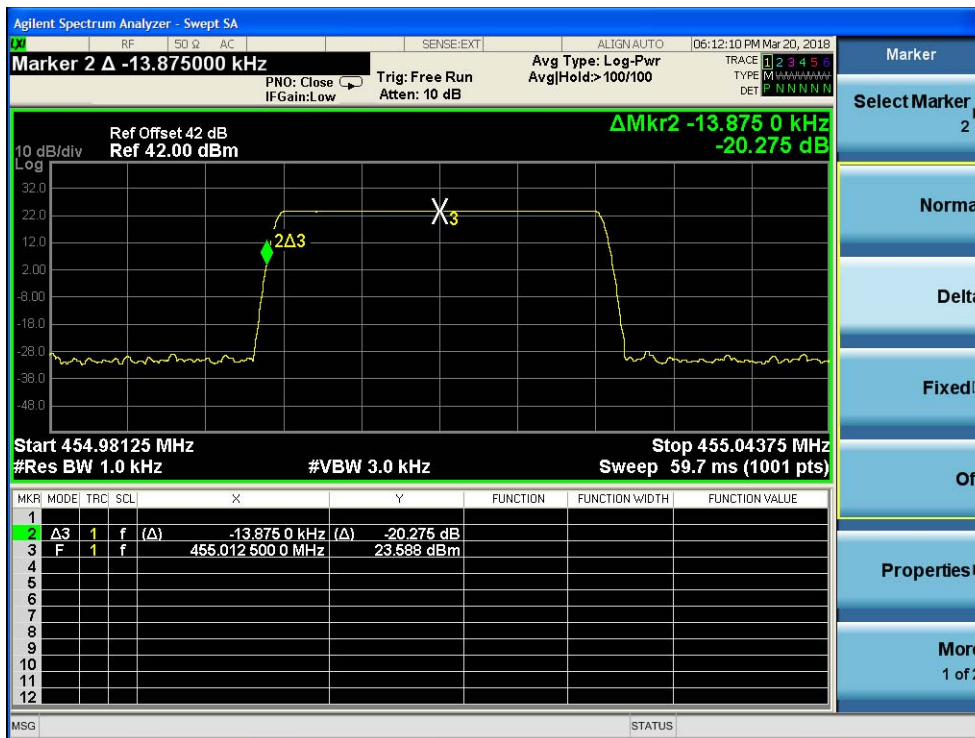




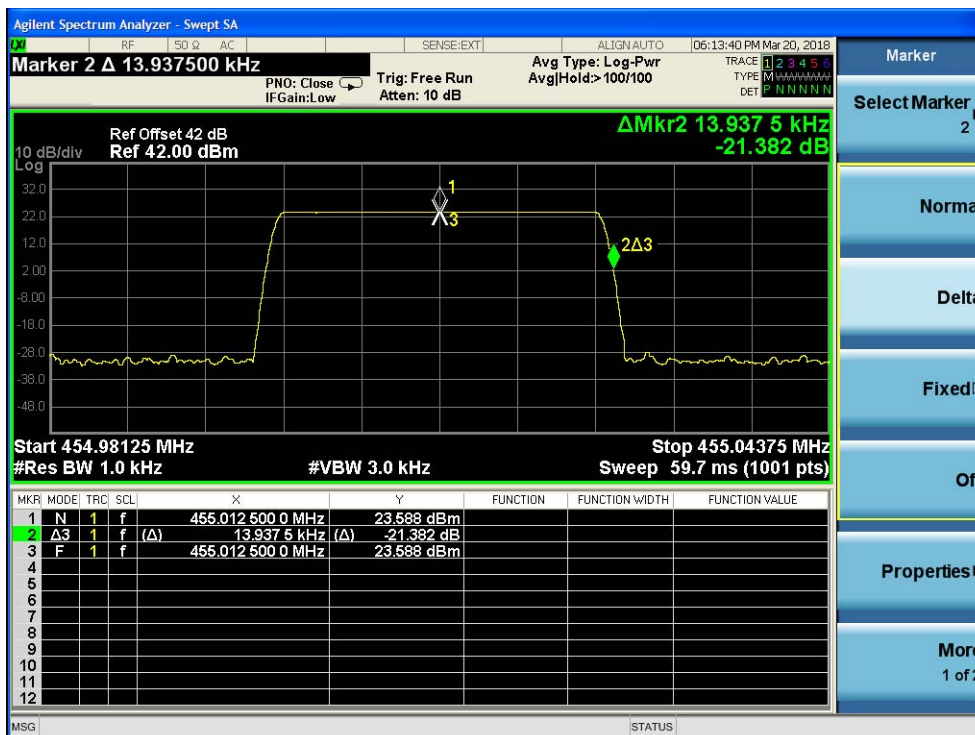
2. Test for Uplink: 454.998625MHz to 455.0264375MHz 25k

1)Lowest frequency

left



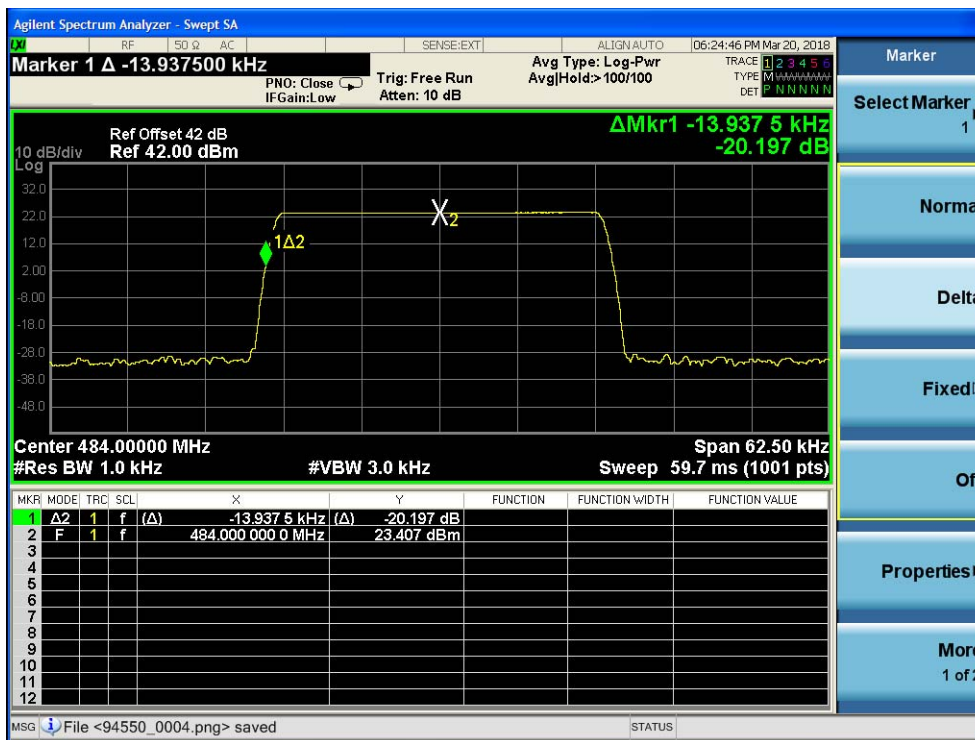
right



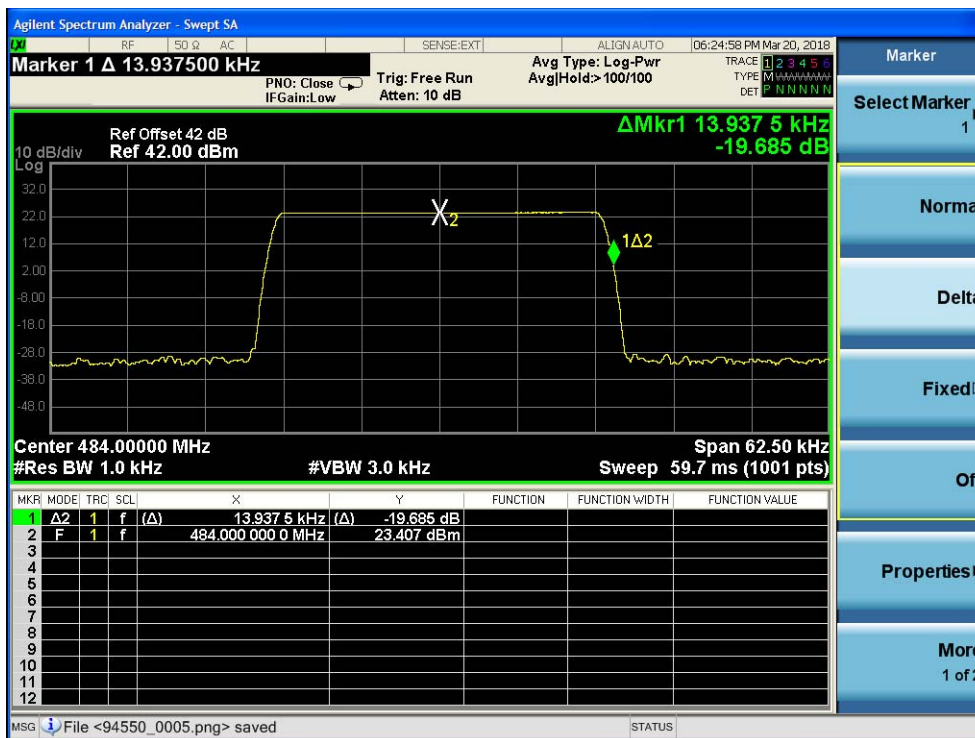


5) Middle frequency

Left



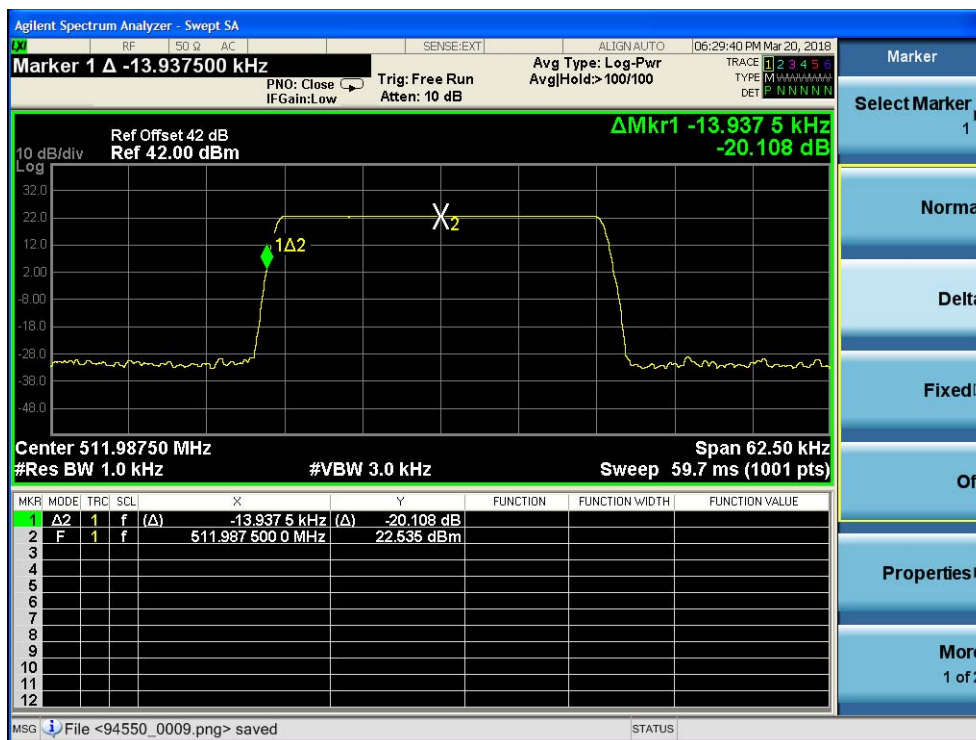
right



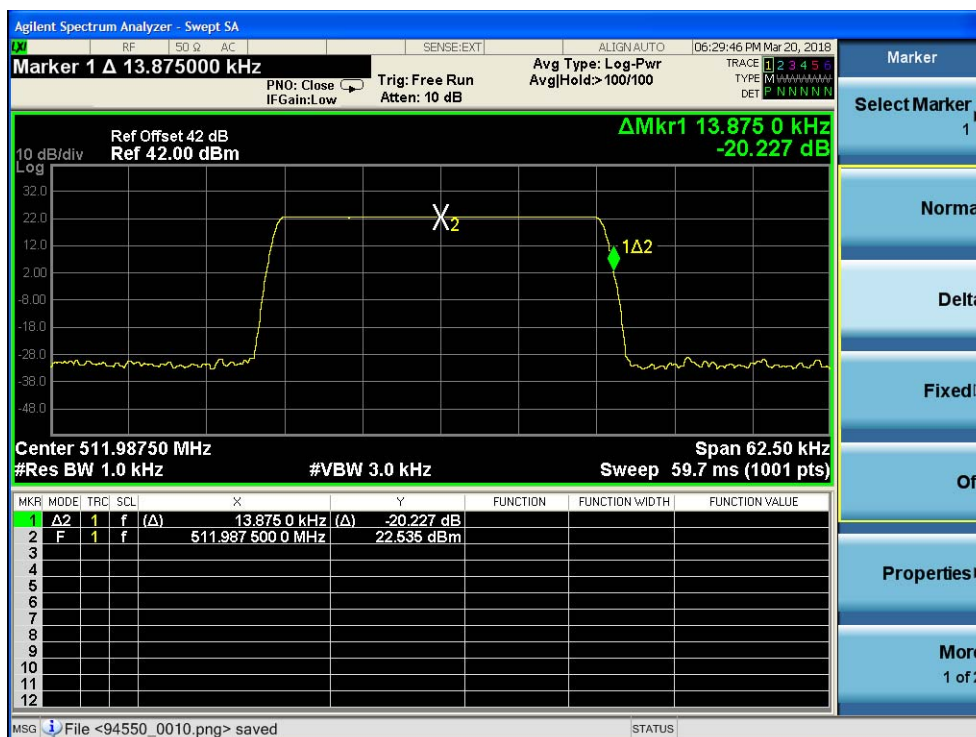


3) Highest frequency

Left



right





7.2.11 Frequency Stability

Test Requirement: FCC part 90.213

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 -30°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.



7.2.11.1 Measurement Record:

1) Frequency Stability vs temperature:

1.1) Test for Downlink: 450~509MHz (middle channel 481MHz)

Temperature(°C)	Frequency(MHz)	Tolerance(ppm)
50	481.0000021	0.000623700
40	481.0000017	0.000207900
30	481.0000023	0.001039500
20	481.0000018	Reference
10	481.0000025	0.001455300
0	481.0000019	-0.000207900
-10	481.0000022	0.000831600
-20	481.0000015	-0.000623700
-30	481.0000022	0.000831600

1.2) Test for Uplink: 455~512MHz (middle channel 484MHz)

Temperature(°C)	Frequency(MHz)	Tolerance(ppm)
50	484.0000021	0.000826446
40	484.0000023	0.001239669
30	484.0000019	0.000413223
20	484.0000017	Reference
10	484.0000014	-0.000619835
0	484.0000023	0.001239669
-10	484.0000022	0.000133067
-20	484.0000017	0
-30	484.0000015	-0.000413223



2) Frequency Stability vs voltage:

2.1) For AC supplied:

2.1.1) Test for Downlink:450~509MHz (middle channel 481.0MHz)

Voltage(V AC)	Frequency(MHz)	Tolerance(ppm)
102 (120*0.85)	481.0000017	0.000062370
120	481.0000020	Reference
138 (120*1.15)	481.0000022	0.000041580

2.1.2) Test for Uplink:455~512MHz (middle channel 484.0MHz)

Voltage(V AC)	Frequency(MHz)	Tolerance(ppm)
102 (120*0.85)	484.0000021	0.000041322
120	484.0000019	Reference
138 (120*1.15)	484.0000024	0.001033058

3) Frequency Stability vs voltage:

2.1) For DC supplied:

2.1.1) Test for Downlink:450~509MHz (middle channel 481.0MHz)

Voltage(V DC)	Frequency(MHz)	Tolerance(ppm)
-40.8 (-48.0*0.85)	481.0000019	0.000062370
-48.0	481.0000021	Reference
-55.2 (-48.0*1.15)	481.0000016	0.000103950

2.1.2) Test for Uplink:455~512MHz (middle channel 484.0MHz)

Voltage(V DC)	Frequency(MHz)	Tolerance(ppm)
-40.8 (-48.0*0.85)	484.0000022	0.000082644
-48.0	484.0000018	Reference
-55.2 (-48.0*1.15)	484.0000026	0.000165289

--The End of Report--