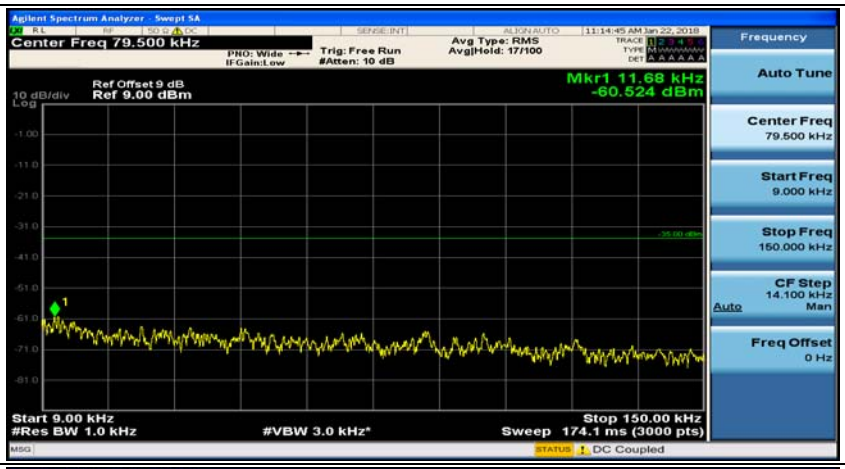
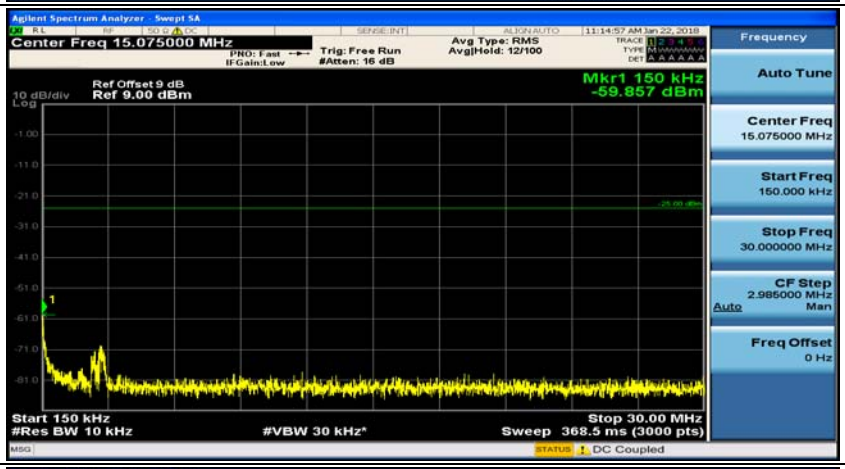
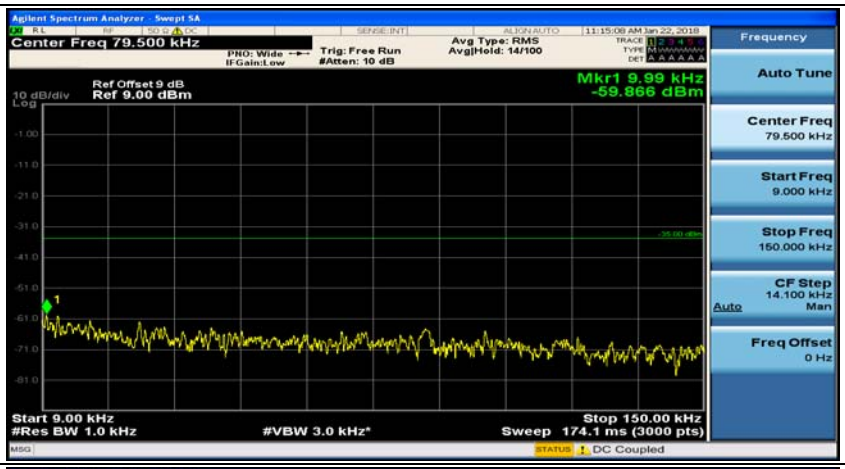
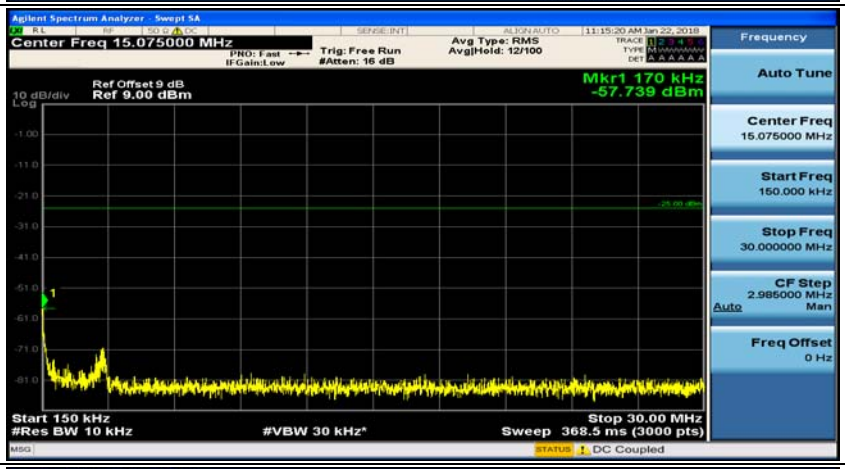
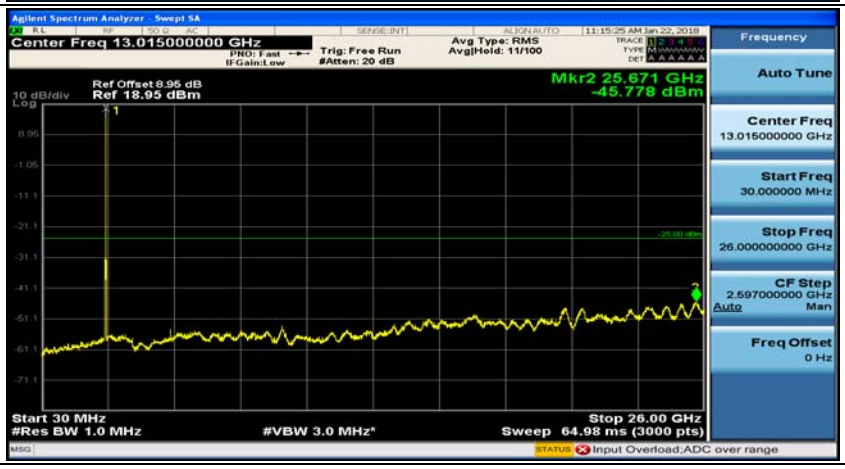


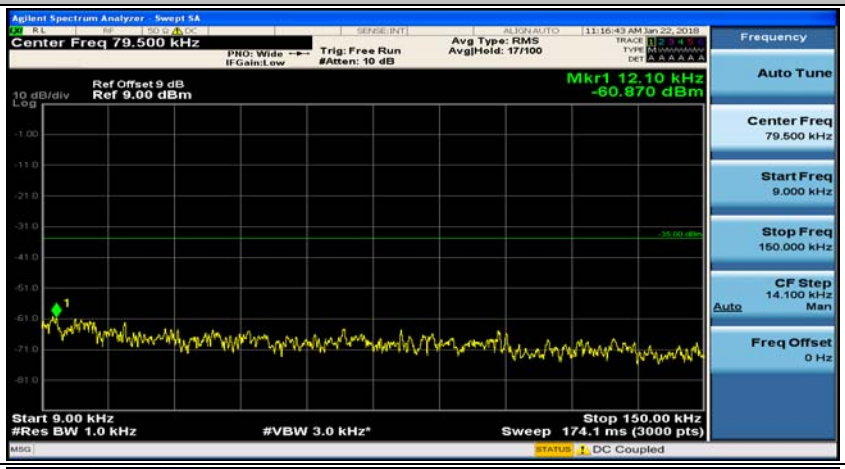
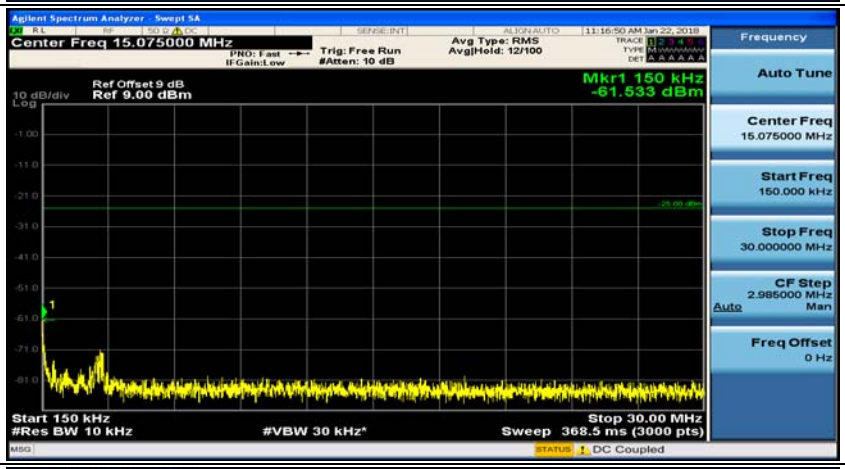
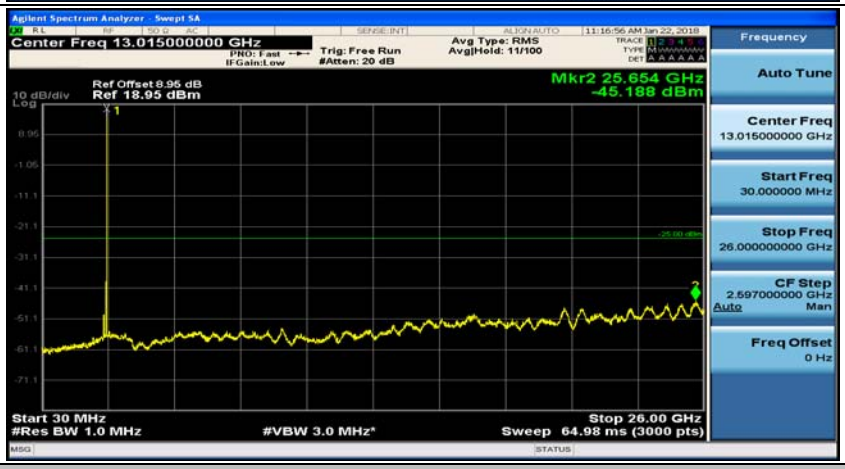



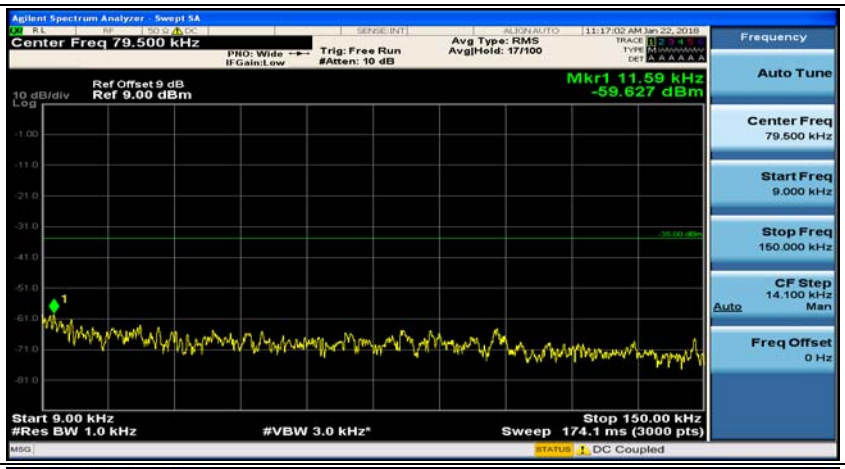
Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#49

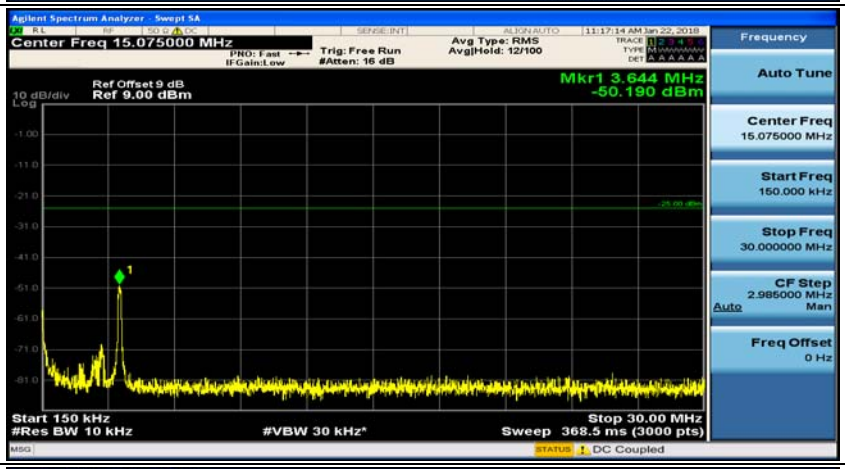

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 14/100
11:15:08 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 9.99 kHz
-59.866 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz

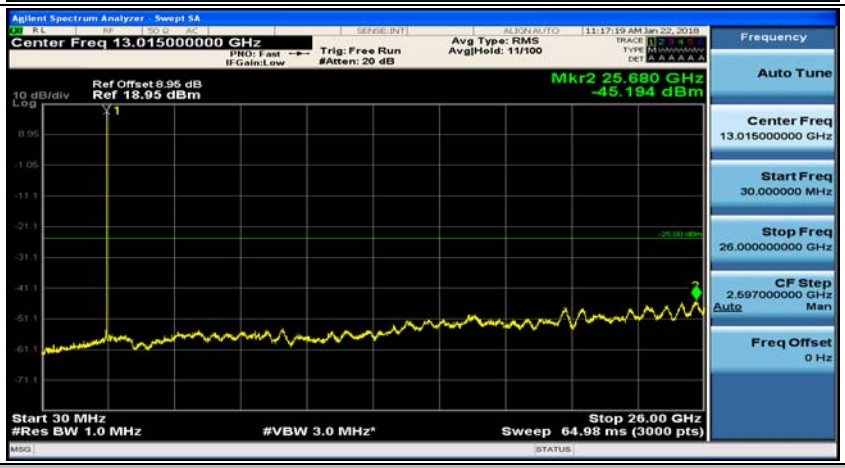

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 12/100
11:15:20 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 170 kHz
-57.739 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 11/100
11:15:25 AM Jan 22, 2018
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 25.671 GHz
-45.778 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Input Overload;ADC over range
Frequency
Auto Tune
Center Freq
13.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.597000000 GHz
Auto
Man
Freq Offset
0 Hz

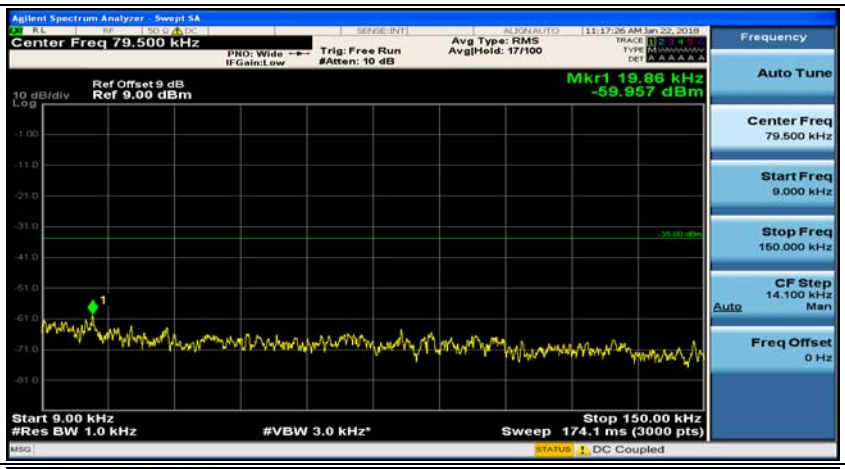
| Channel Bandwidth: 10 MHz_HCH_16QAM_1RB#0 |
|---|
|  |
|  |
|  |
| Channel Bandwidth: 10 MHz_HCH_16QAM_1RB#24 |

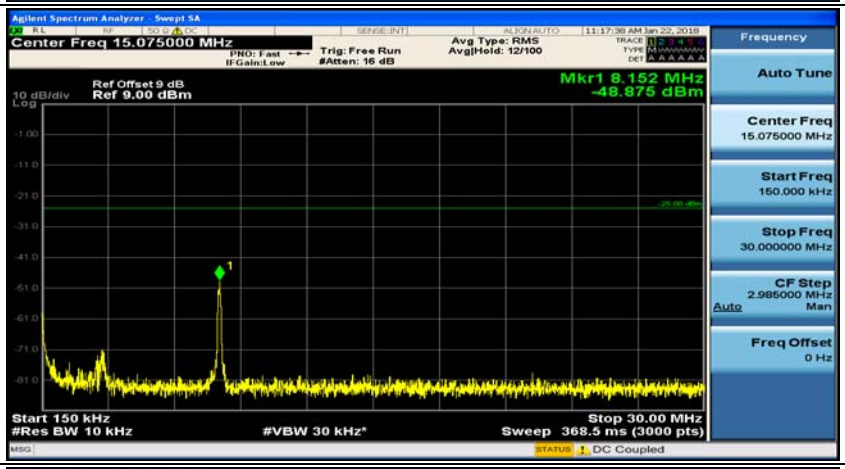


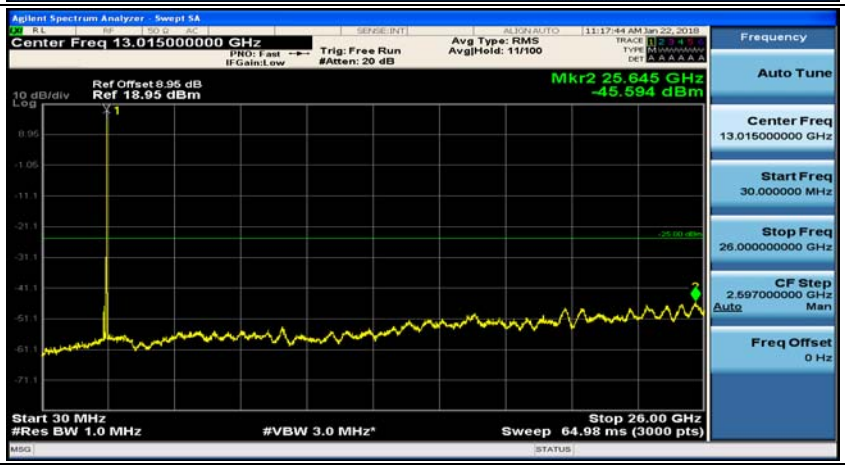




Channel Bandwidth: 10 MHz_HCH_16QAM_1RB#49

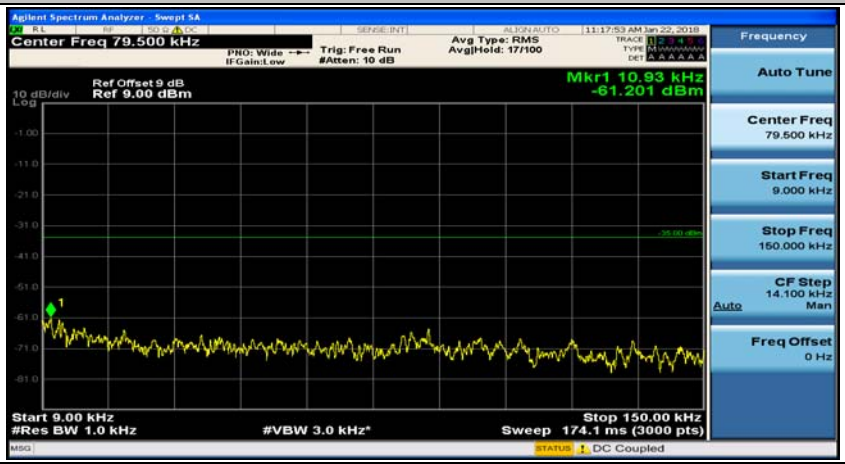

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
11:17:26 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 19.86 kHz
-59.957 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz

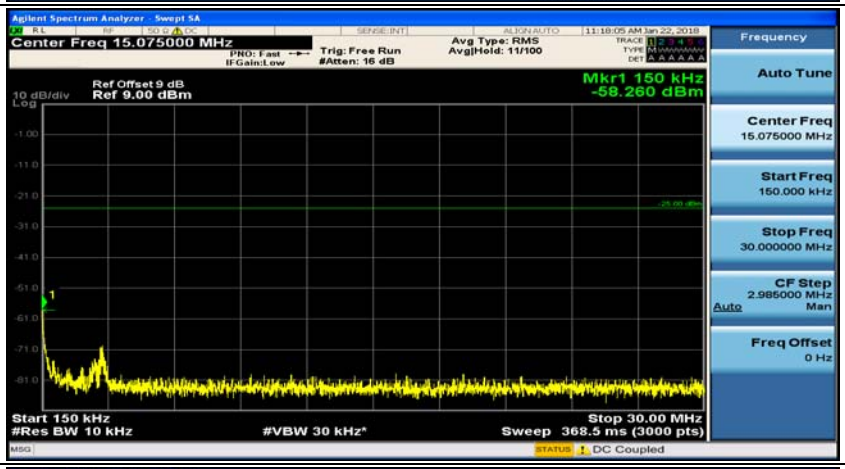

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 12/100
11:17:38 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 8.152 MHz
-48.875 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz

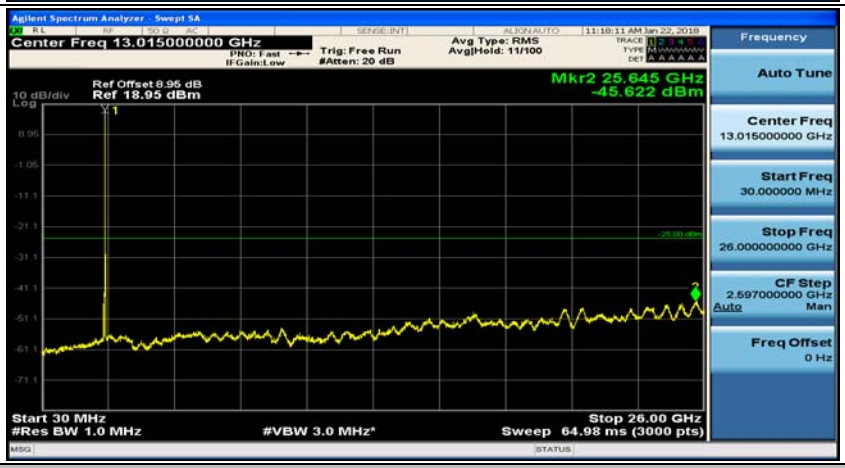

Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 11/100
11:17:44 AM Jan 22, 2018
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 25.645 GHz
-45.594 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Frequency
Auto Tune
Center Freq
13.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.597000000 GHz
Auto
Man
Freq Offset
0 Hz

## Channel Bandwidth: 15 MHz

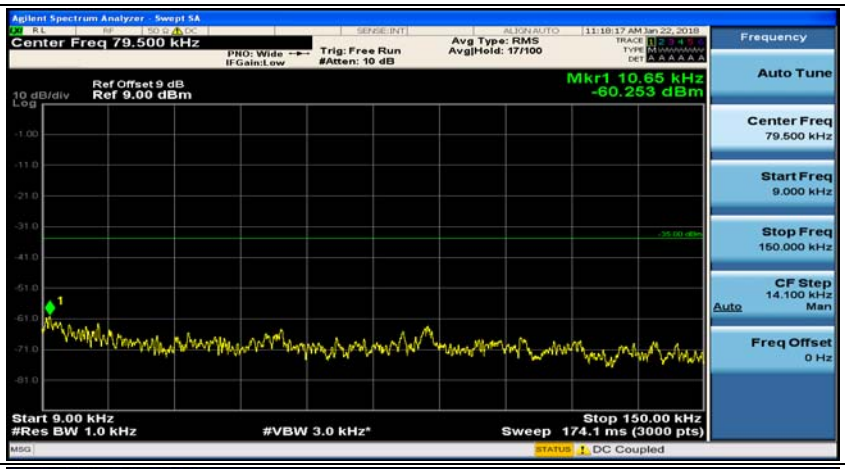
(Channel Bandwidth:15 MHz)_LCH_QPSK_1RB#0

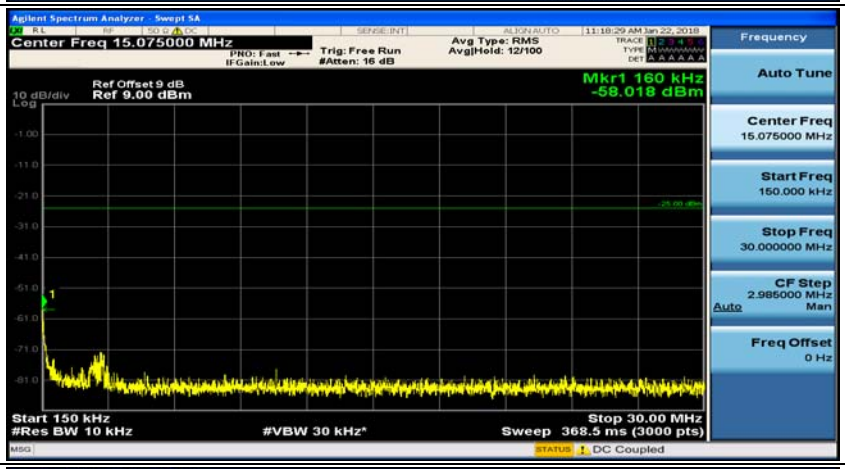


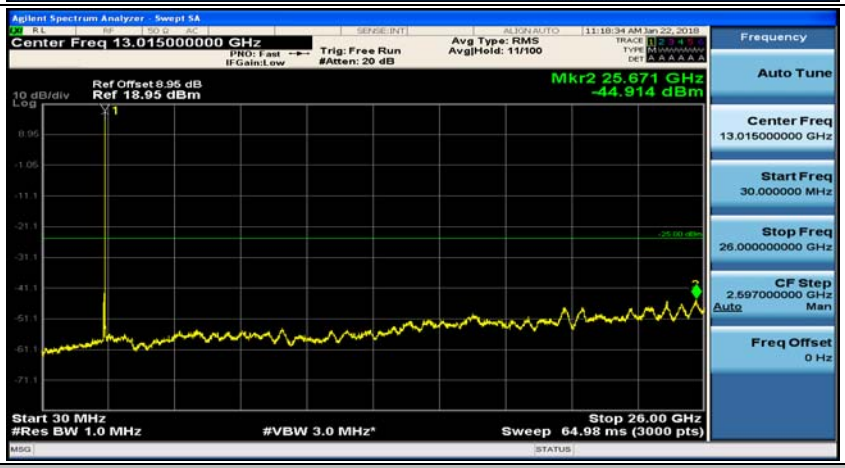



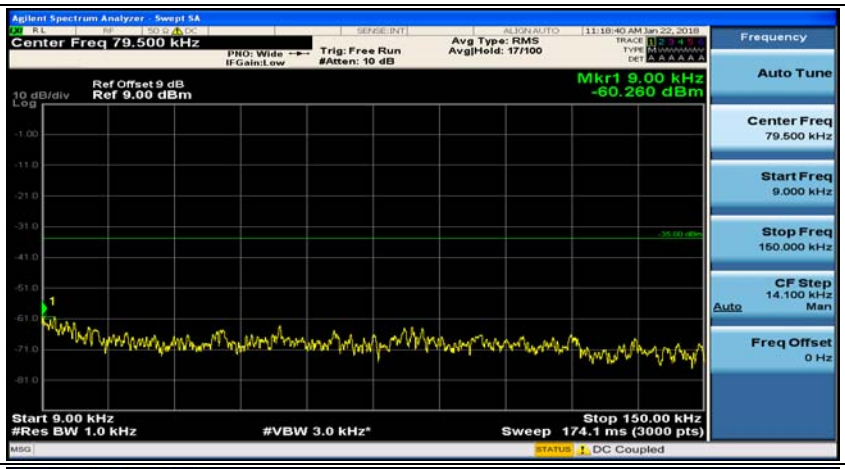

(Channel Bandwidth:15 MHz)_LCH_QPSK_1RB#37

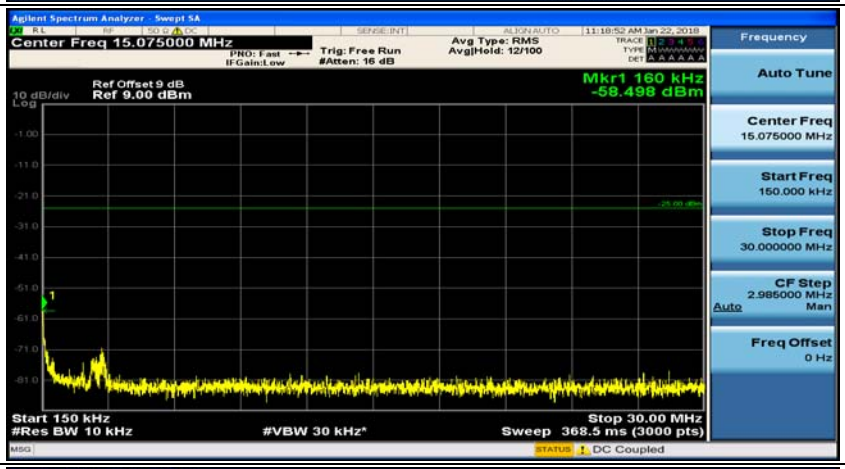


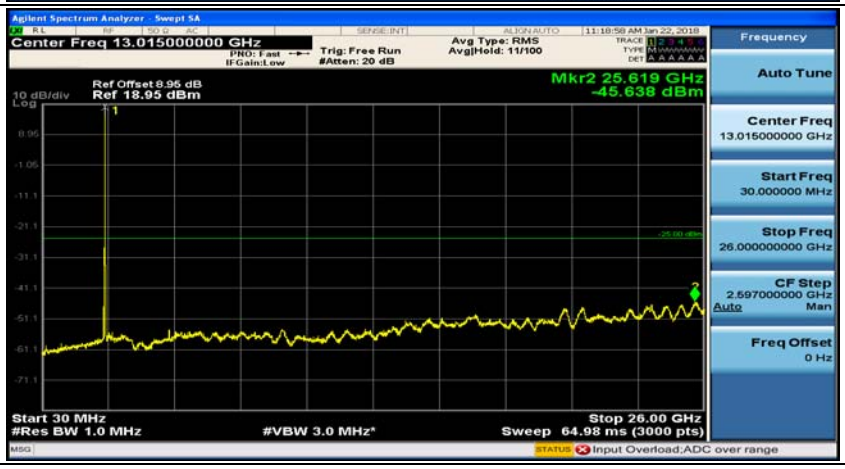



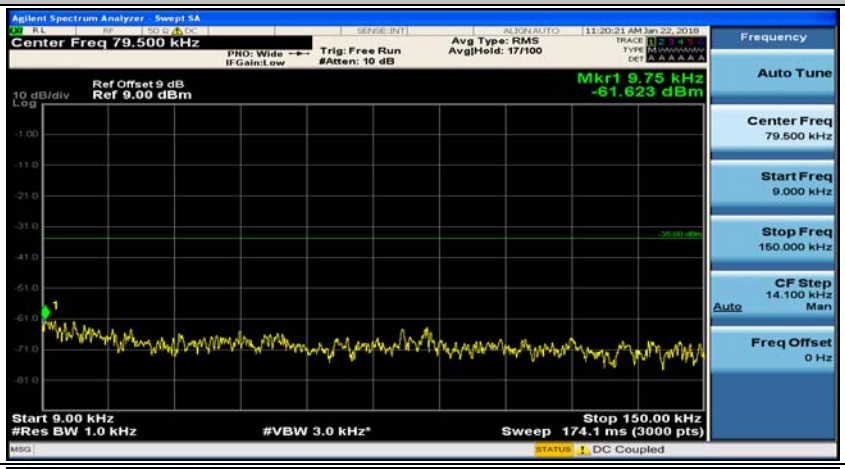

(Channel Bandwidth:15 MHz)_LCH_QPSK_1RB#74

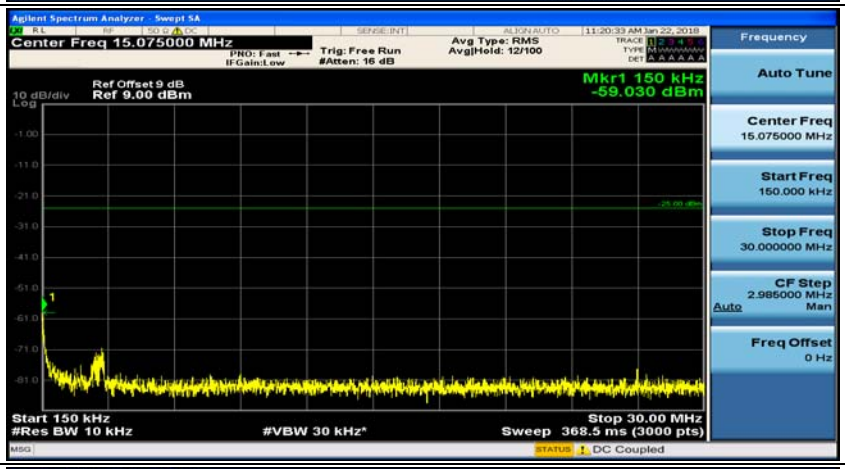

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
11:18:40 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 9.00 kHz
-60.260 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz

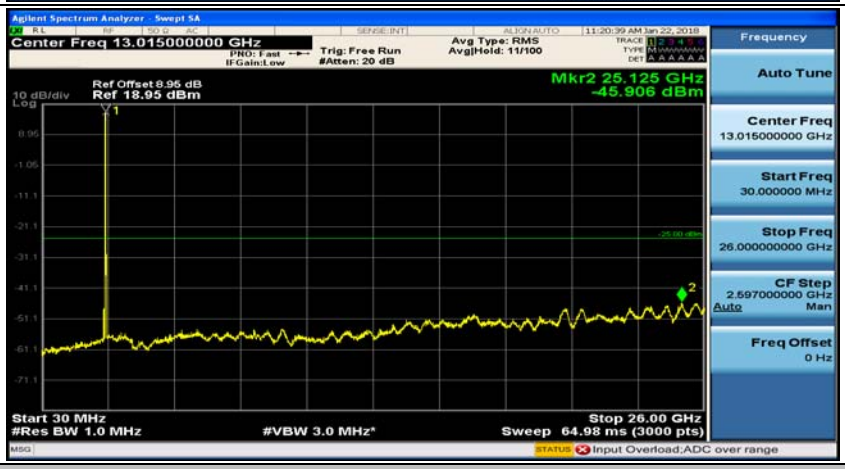

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 12/100
11:18:52 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 160 kHz
-58.498 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 11/100
11:18:58 AM Jan 22, 2018
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 25.619 GHz
-45.638 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Input Overload;ADC over range
Frequency
Auto Tune
Center Freq
13.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.597000000 GHz
Auto
Man
Freq Offset
0 Hz

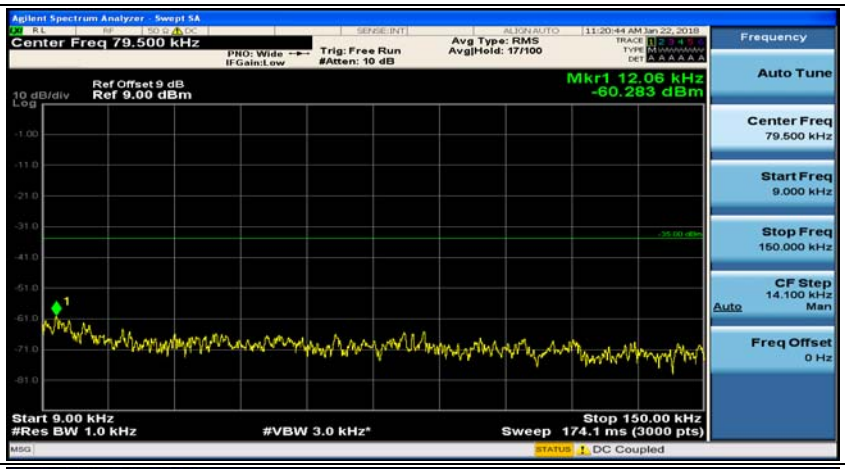
(Channel Bandwidth:15 MHz)_MCH_QPSK_1RB#0

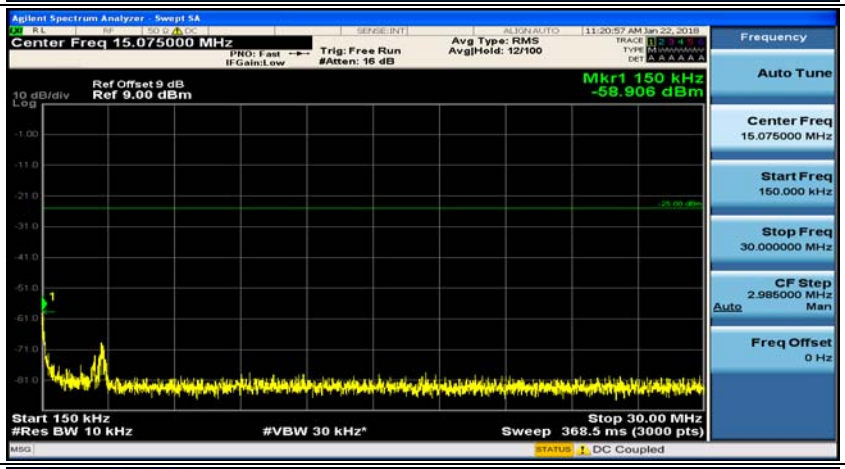


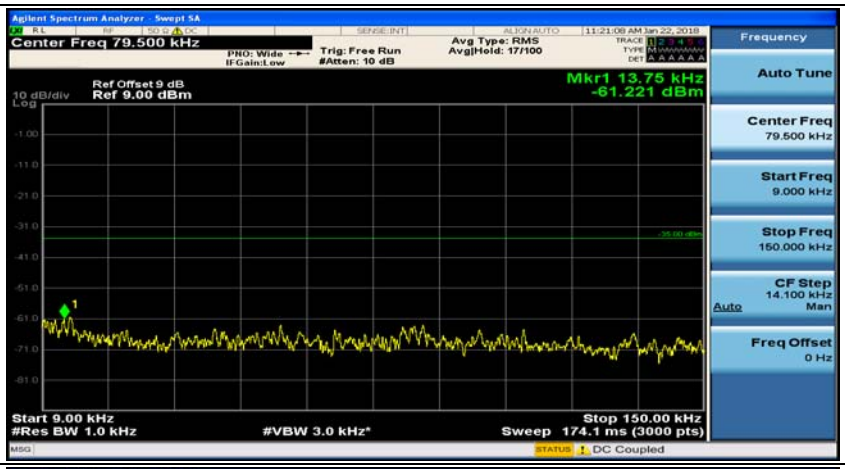



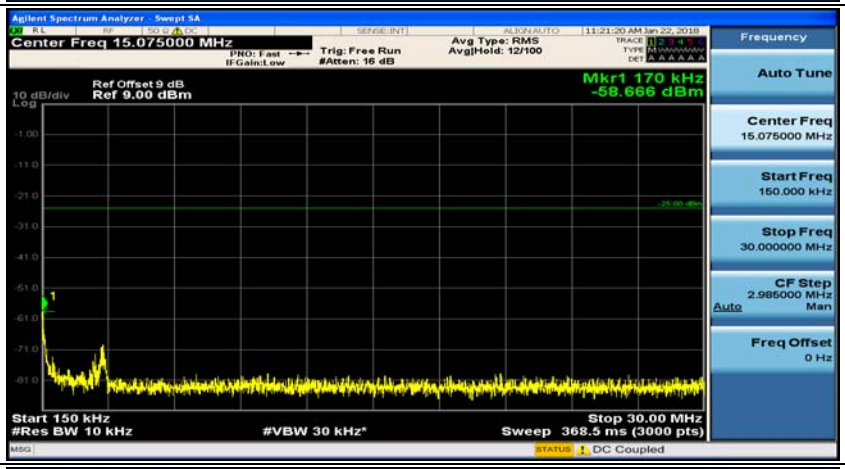

(Channel Bandwidth:15 MHz)_MCH_QPSK_1RB#37

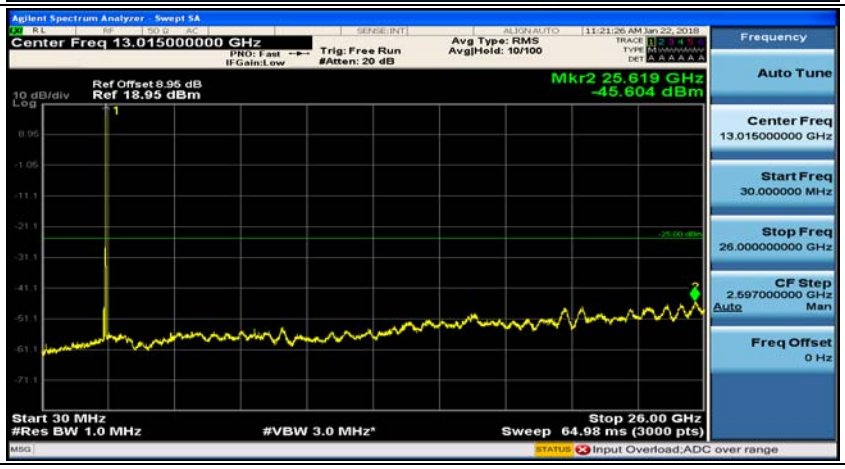


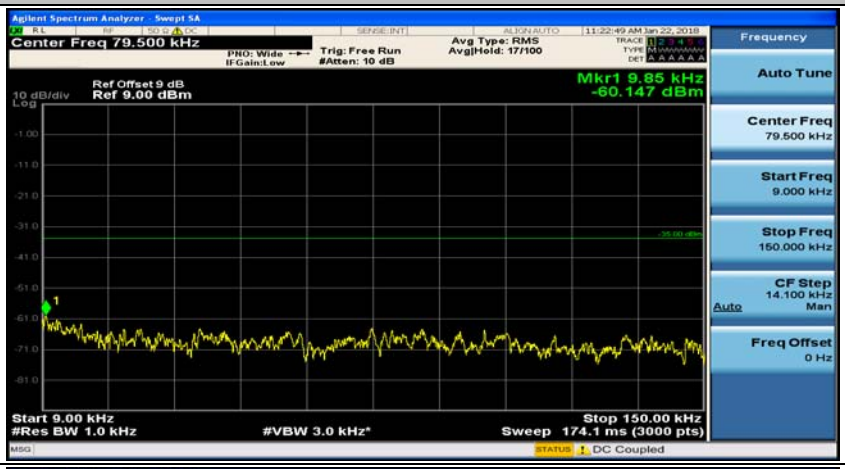
(Channel Bandwidth:15 MHz)_MCH_QPSK_1RB#74

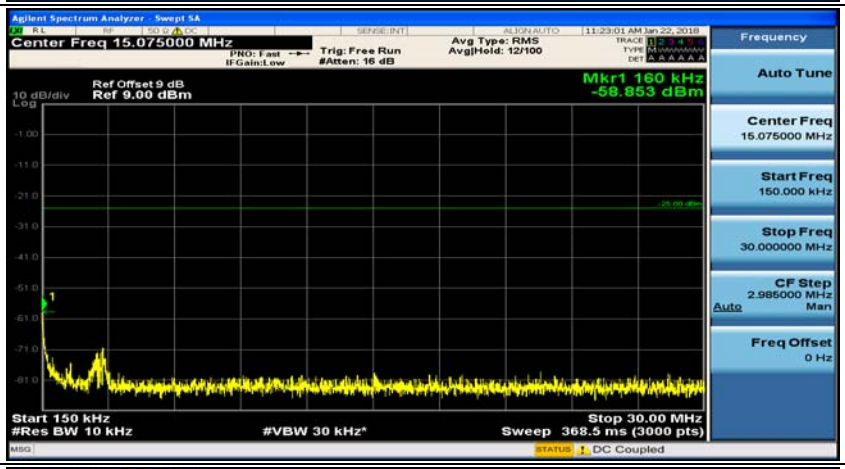

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
11:21:08 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 13.75 kHz
-61.221 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz

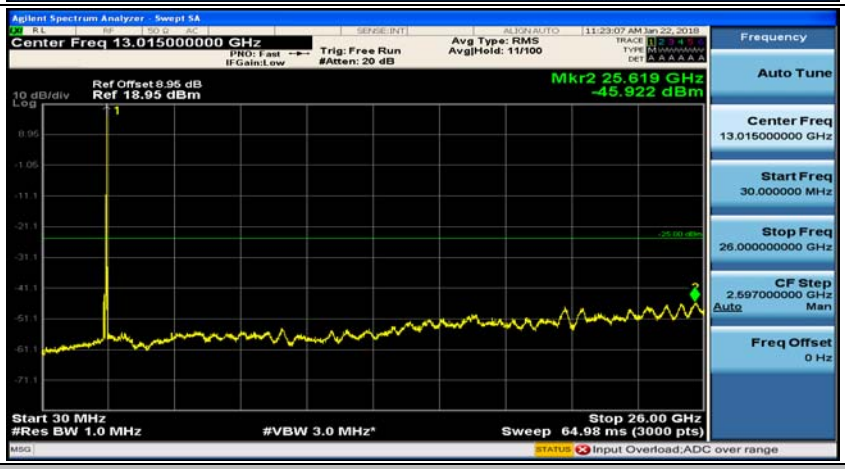

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 12/100
11:21:20 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 170 kHz
-58.666 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 10/100
11:21:26 AM Jan 22, 2018
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 25.619 GHz
-45.604 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Input Overload;ADC over range
Frequency
Auto Tune
Center Freq
13.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.597000000 GHz
Auto
Man
Freq Offset
0 Hz

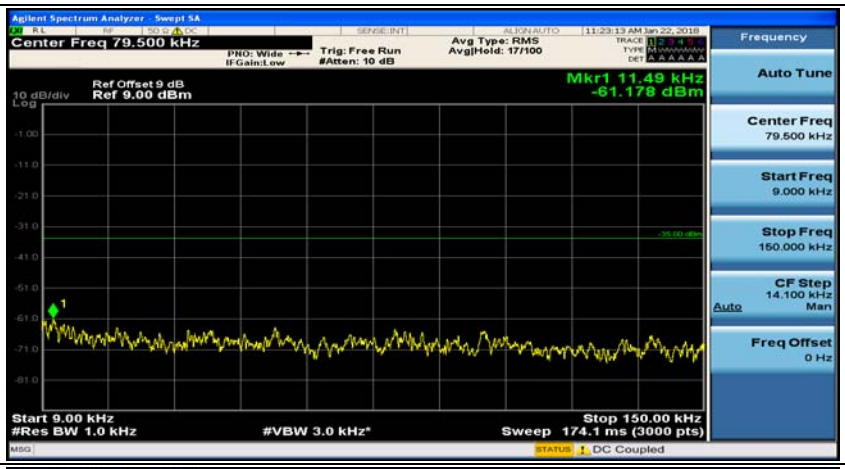
(Channel Bandwidth:15 MHz)_HCH_QPSK_1RB#0

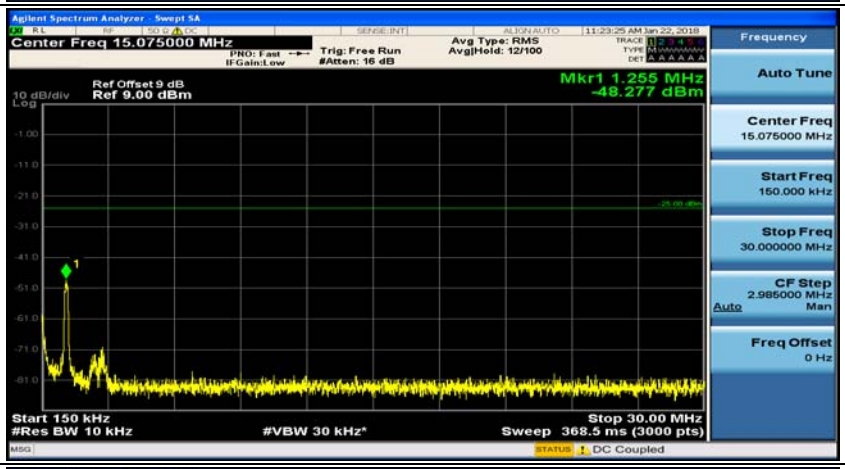


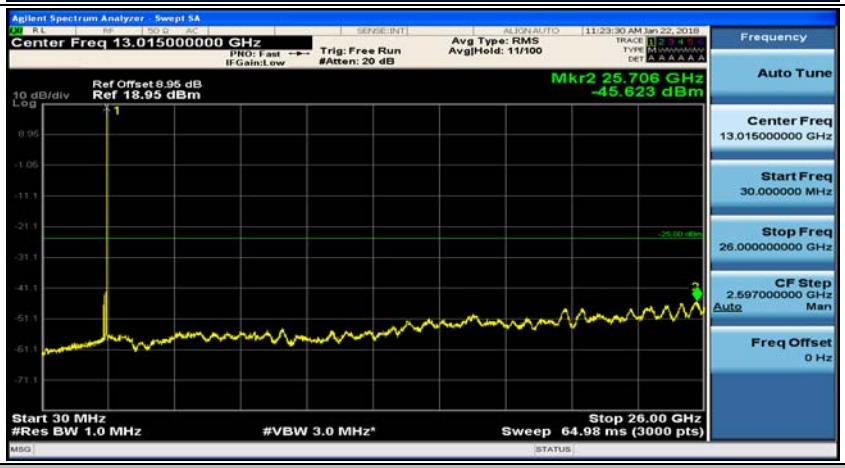



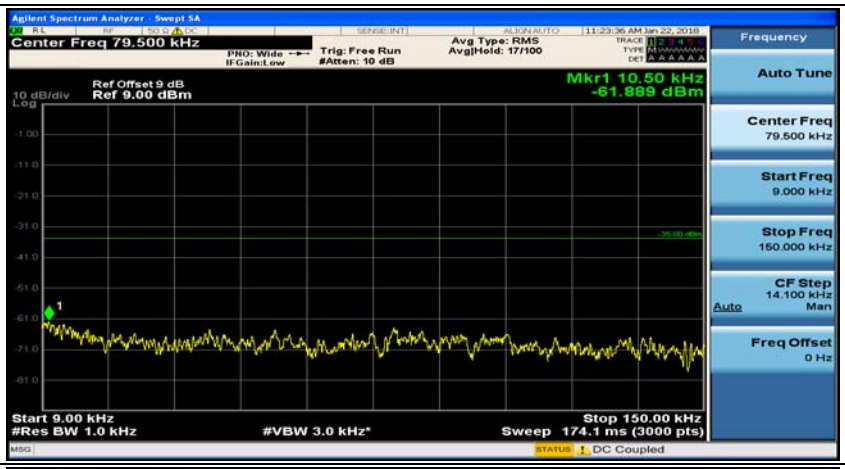

(Channel Bandwidth:15 MHz)_HCH_QPSK_1RB#37

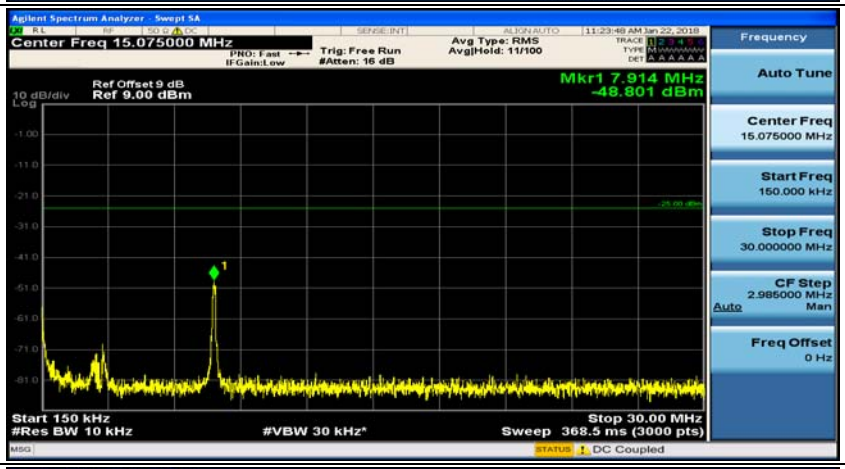


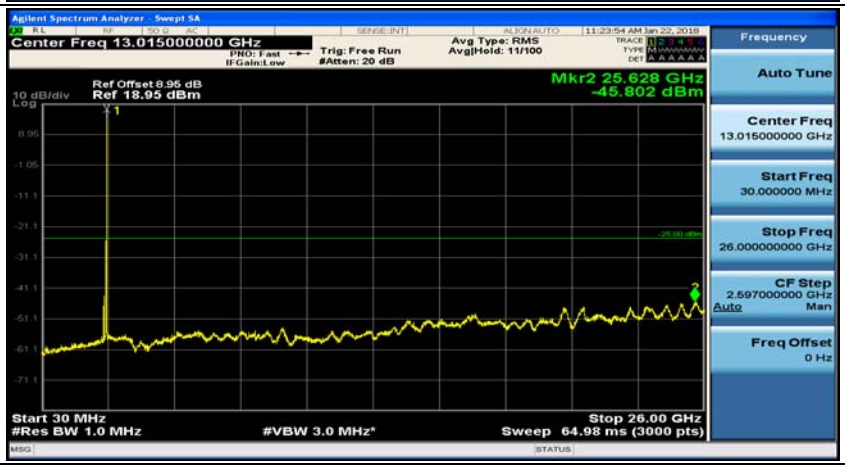



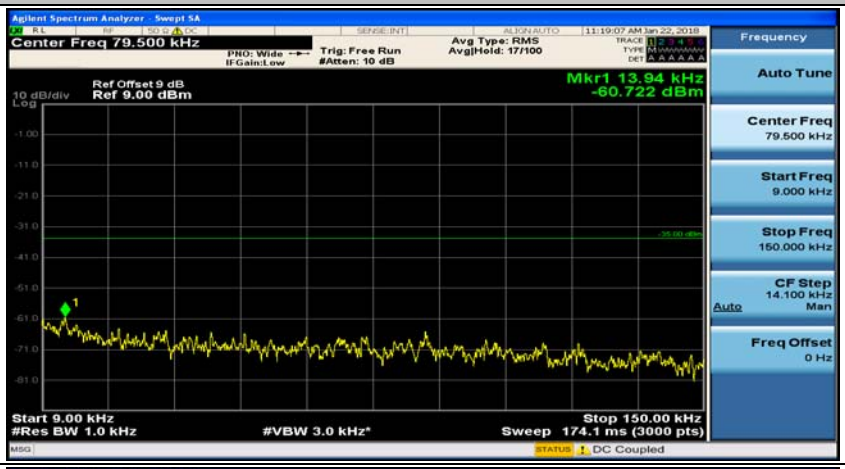

(Channel Bandwidth:15 MHz)_HCH_QPSK_1RB#74

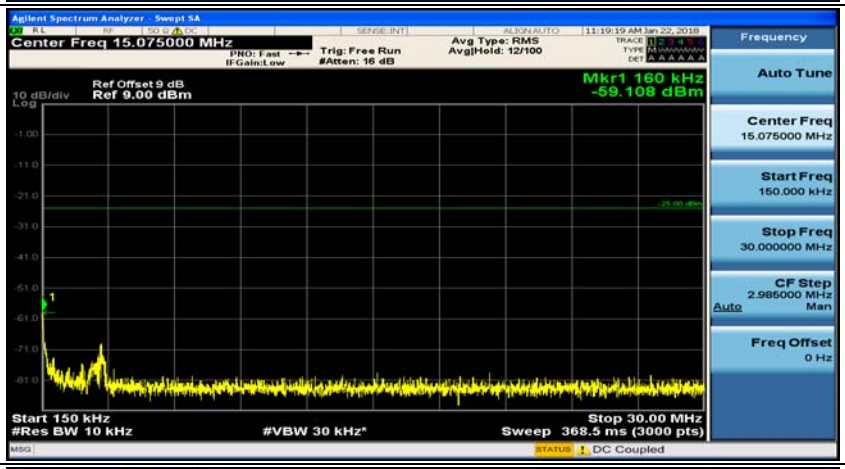

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
11:23:36 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Log
Mkr1 10.50 kHz
-61.889 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz

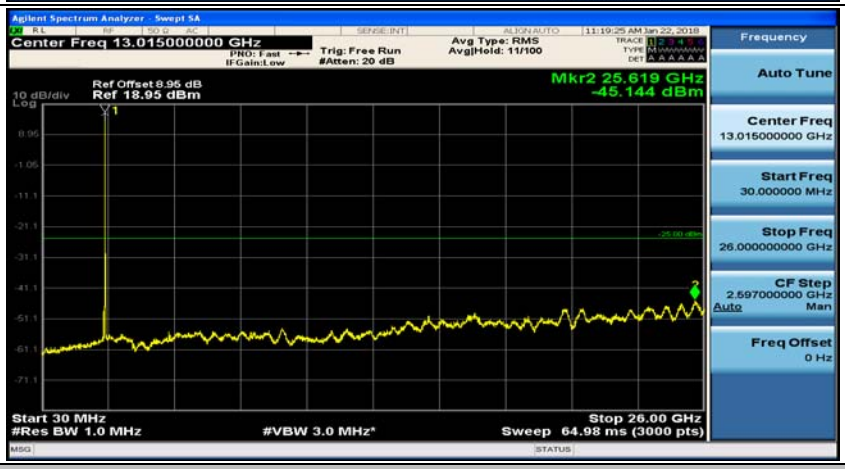

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 11/100
11:23:48 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Log
Mkr1 7.914 MHz
-48.801 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 11/100
11:23:54 AM Jan 22, 2018
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Log
Mkr2 25.628 GHz
-45.802 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Frequency
Auto Tune
Center Freq
13.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.597000000 GHz
Auto
Man
Freq Offset
0 Hz

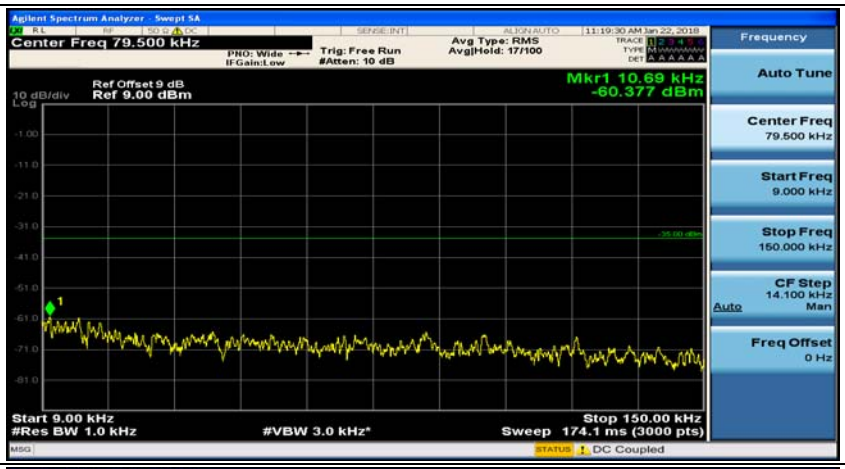
(Channel Bandwidth:15 MHz)_LCH_16QAM_1RB#0

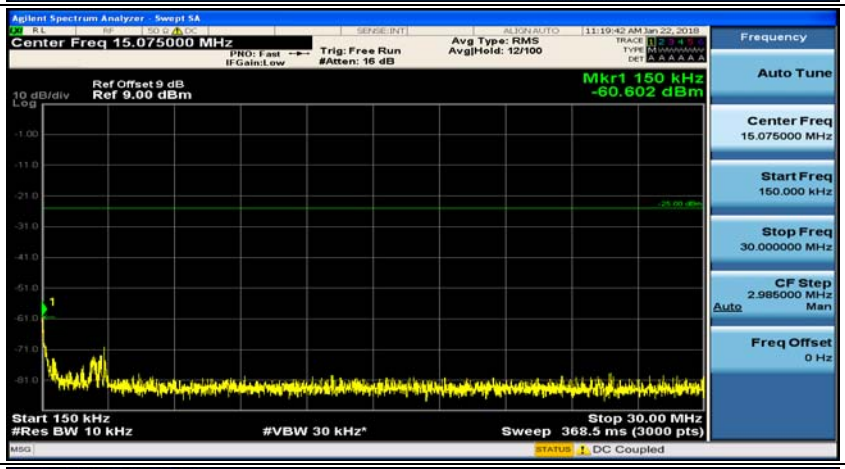


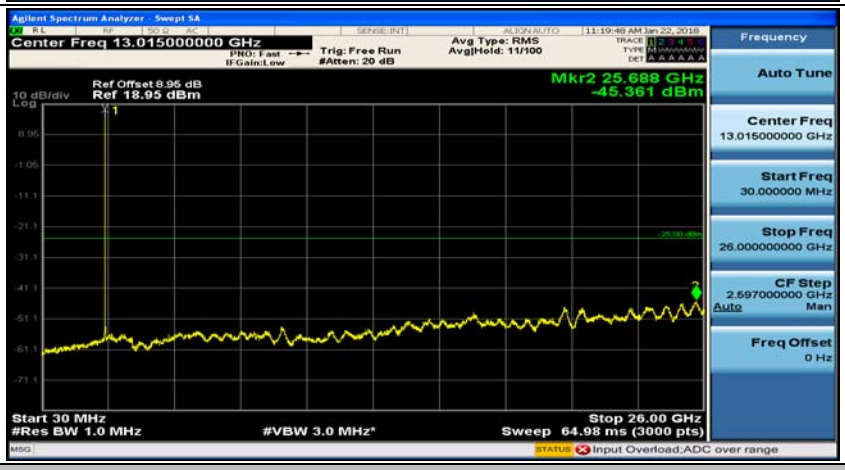



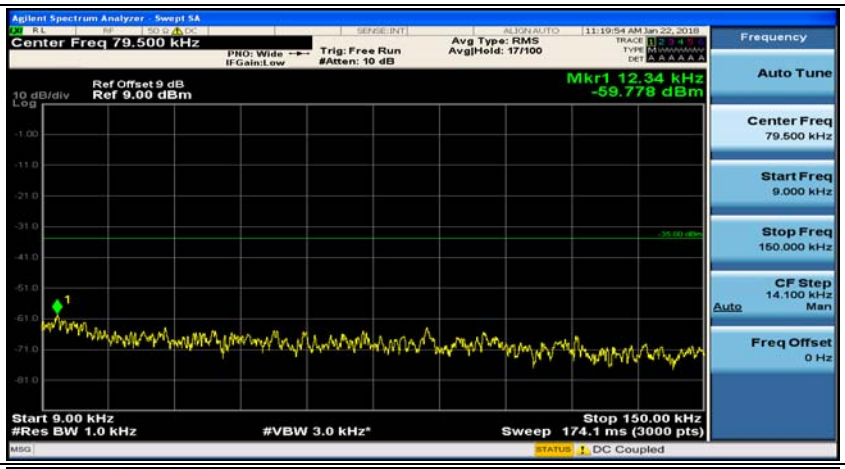

(Channel Bandwidth:15 MHz)_LCH_16QAM_1RB#37

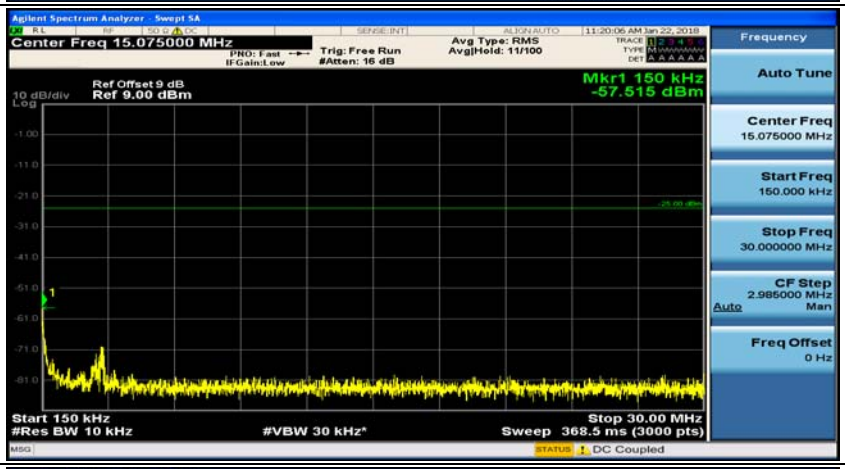


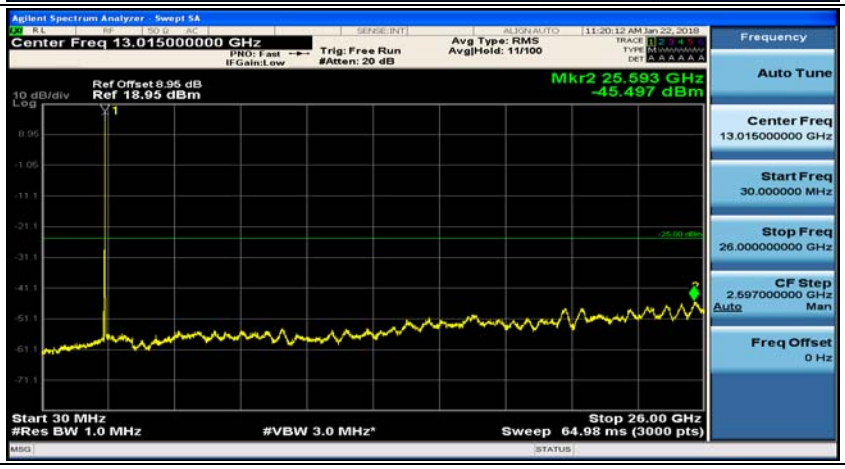



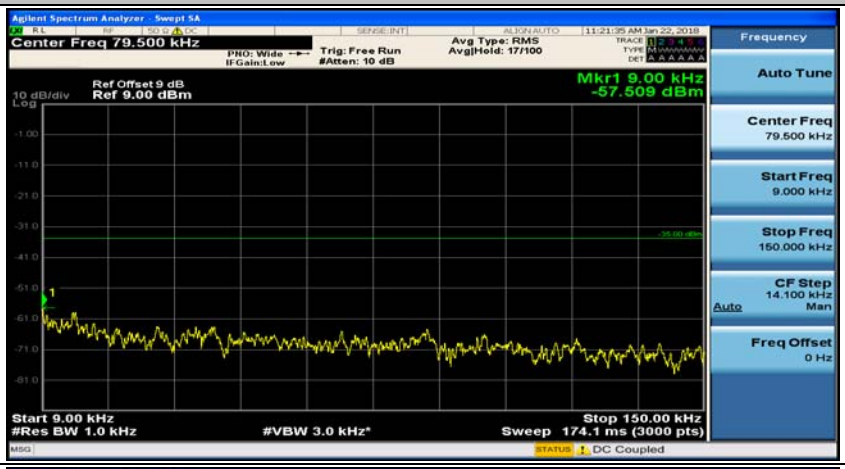

(Channel Bandwidth:15 MHz)_LCH_16QAM_1RB#74

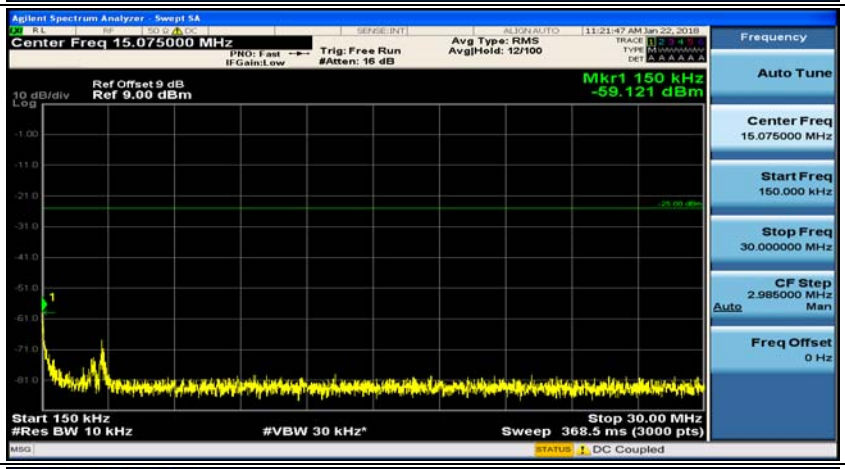

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
11:19:54 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 12.34 kHz
-59.778 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz

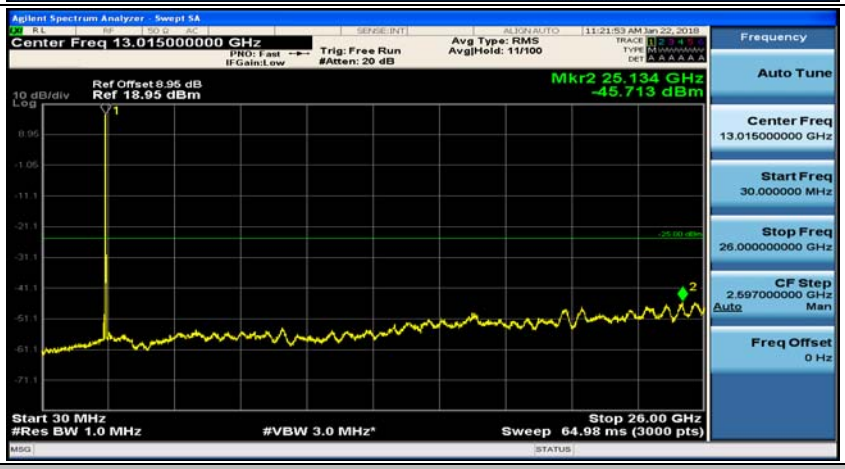

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 11/100
11:20:06 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 150 kHz
-57.515 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 11/100
11:20:12 AM Jan 22, 2018
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 25.593 GHz
-45.497 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Frequency
Auto Tune
Center Freq
13.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.597000000 GHz
Auto
Man
Freq Offset
0 Hz

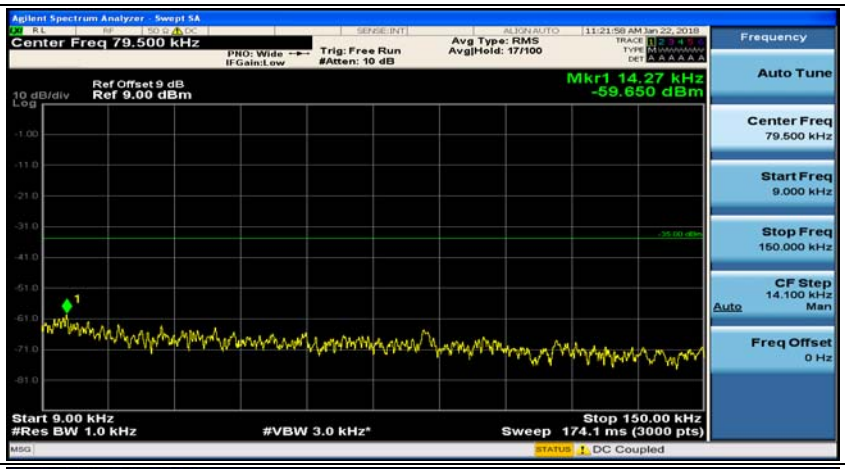
(Channel Bandwidth:15 MHz)_MCH_16QAM_1RB#0

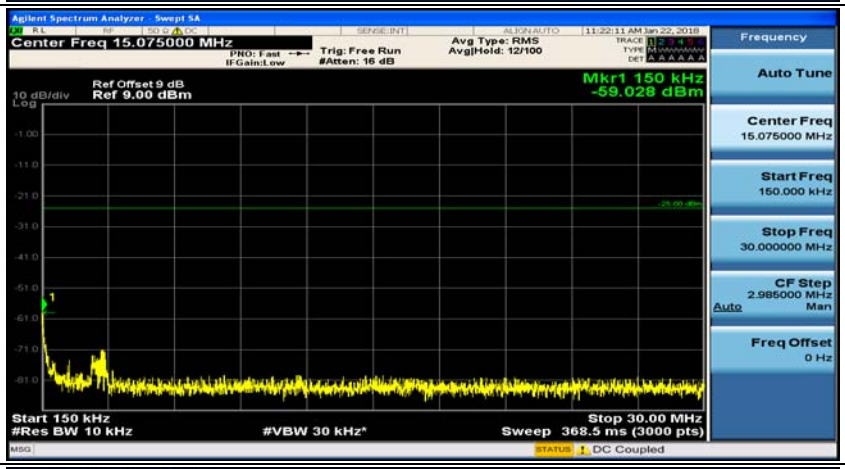


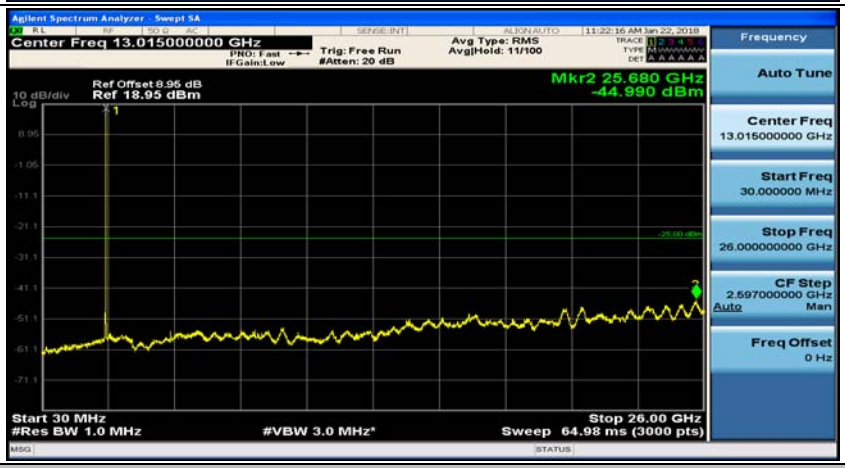



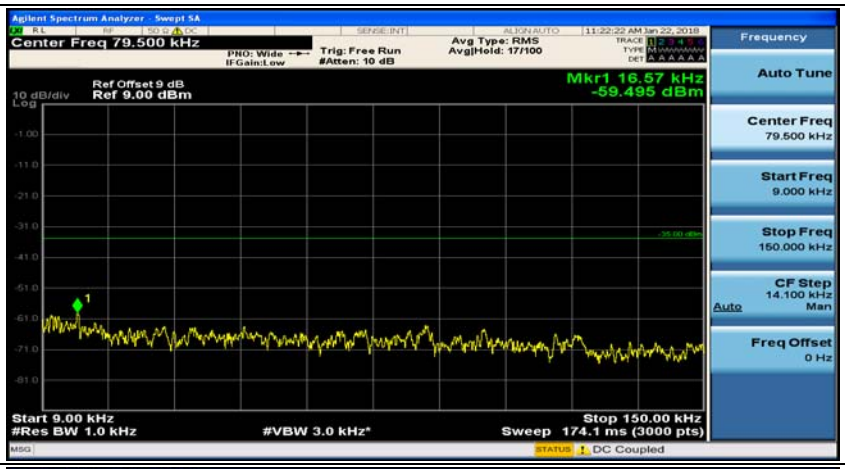

(Channel Bandwidth:15 MHz)_MCH_16QAM_1RB#37

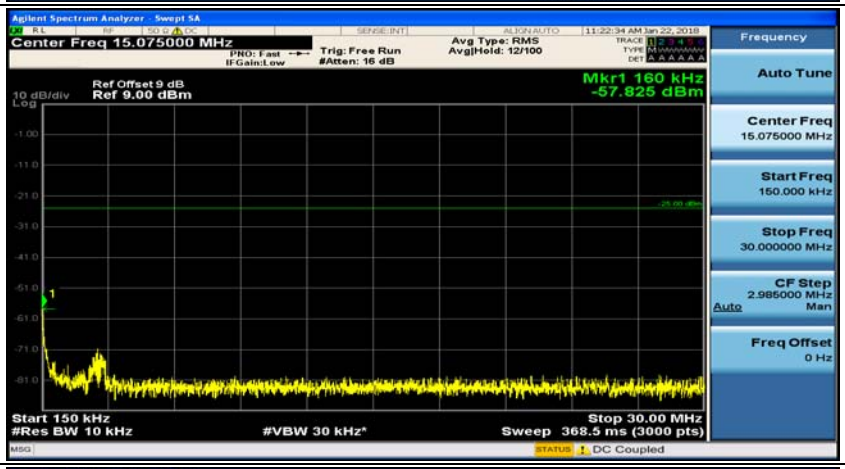


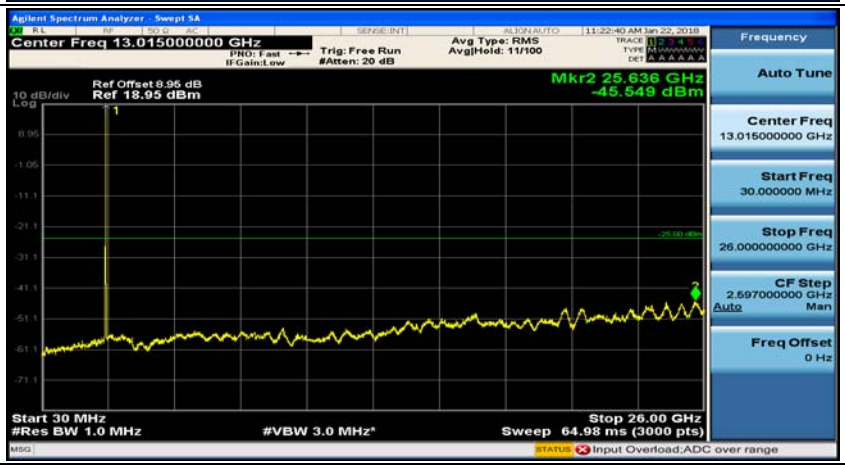



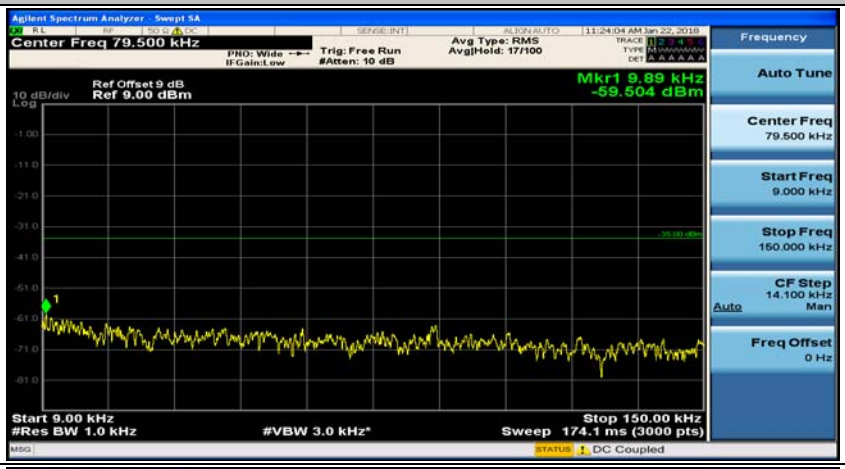

(Channel Bandwidth:15 MHz)_MCH_16QAM_1RB#74

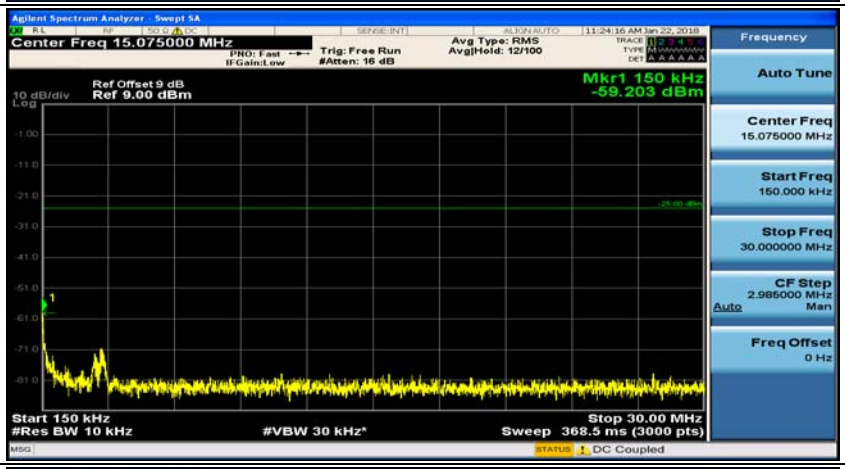

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
11:22:22 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 16.57 kHz
-59.495 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz

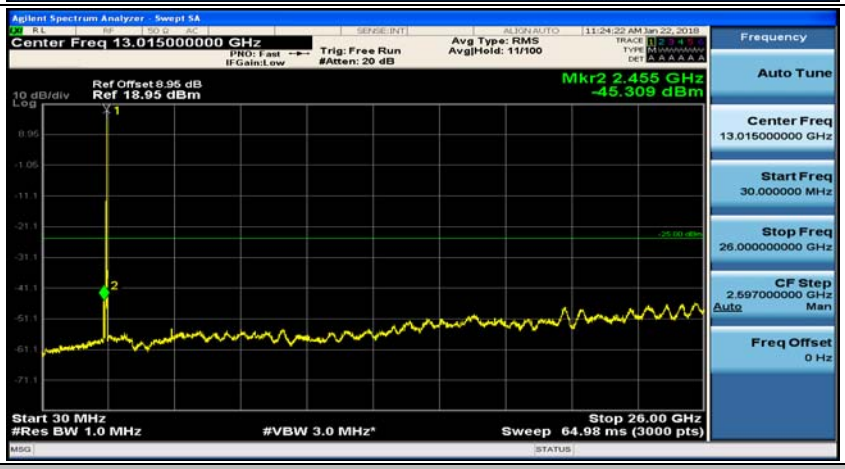

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 12/100
11:22:34 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 160 kHz
-57.825 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 11/100
11:22:40 AM Jan 22, 2018
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 25.636 GHz
-45.549 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Input Overload;ADC over range
Frequency
Auto Tune
Center Freq
13.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.597000000 GHz
Auto
Man
Freq Offset
0 Hz

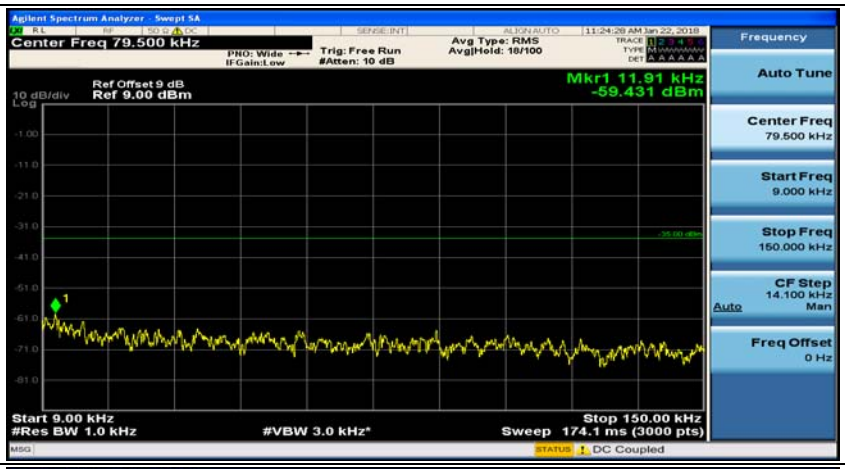
(Channel Bandwidth:15 MHz)_HCH_16QAM_1RB#0

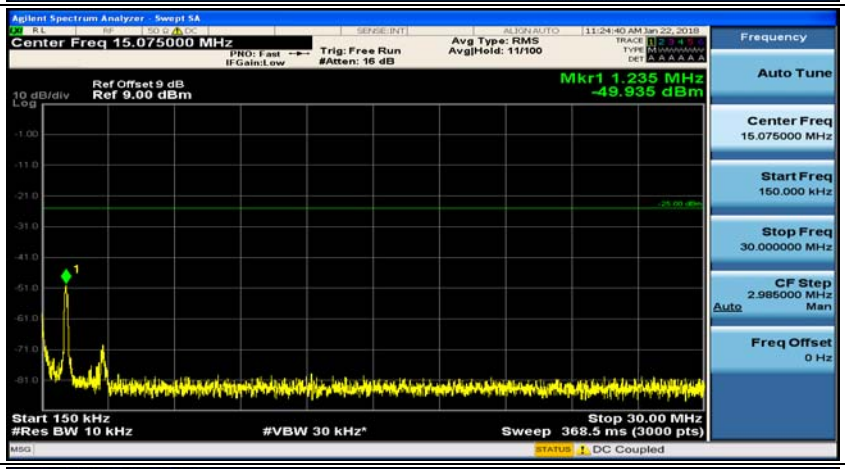


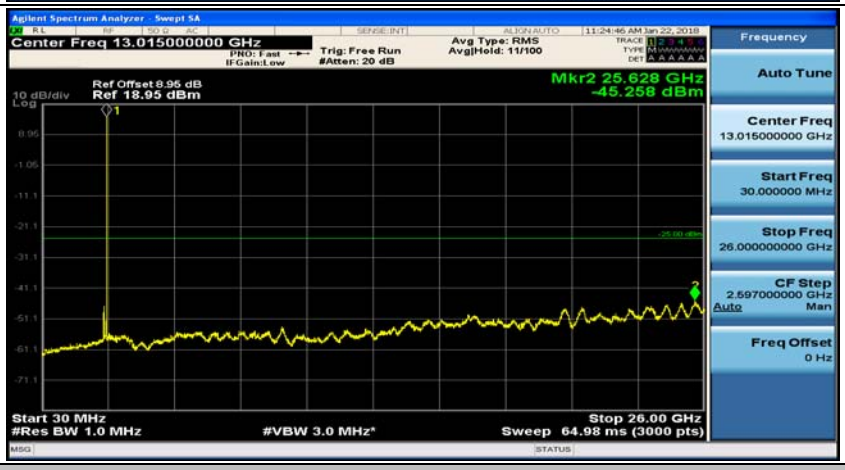



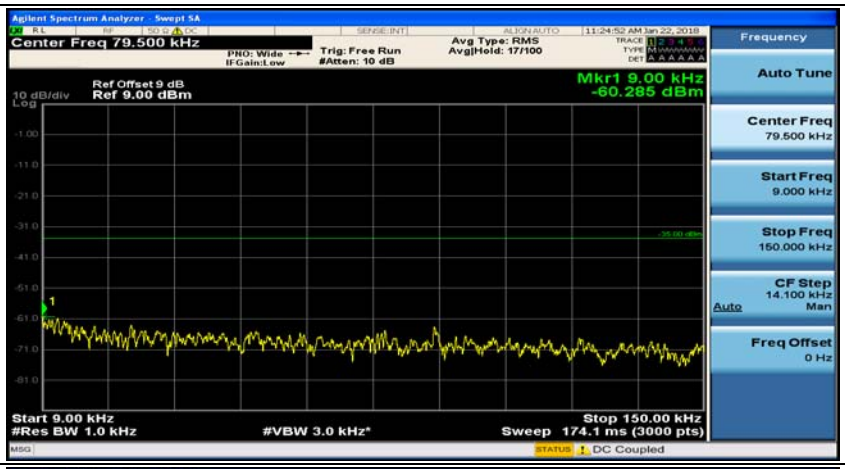

(Channel Bandwidth:15 MHz)_HCH_16QAM_1RB#37

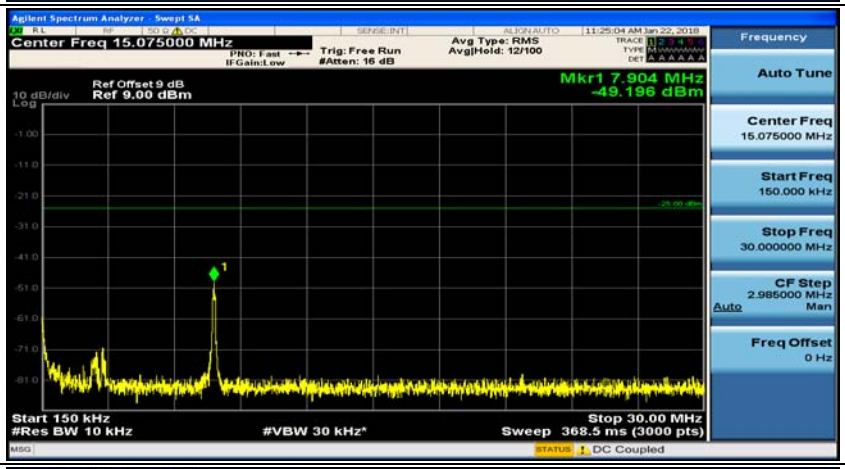


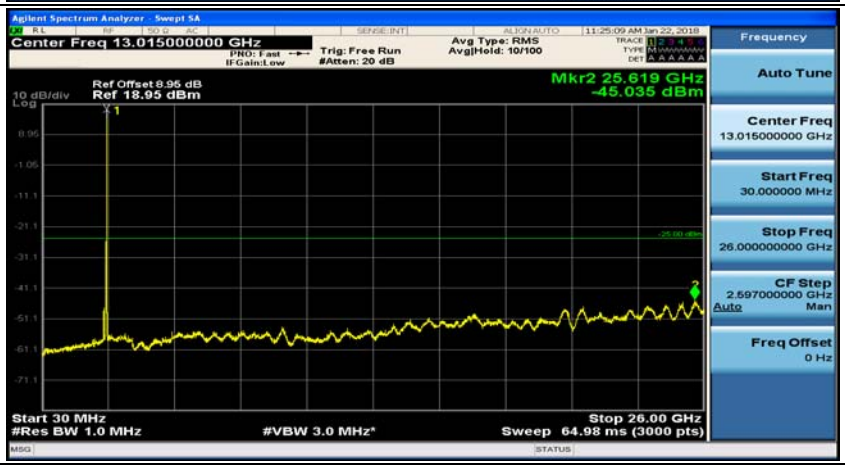




(Channel Bandwidth:15 MHz)_HCH_16QAM_1RB#74

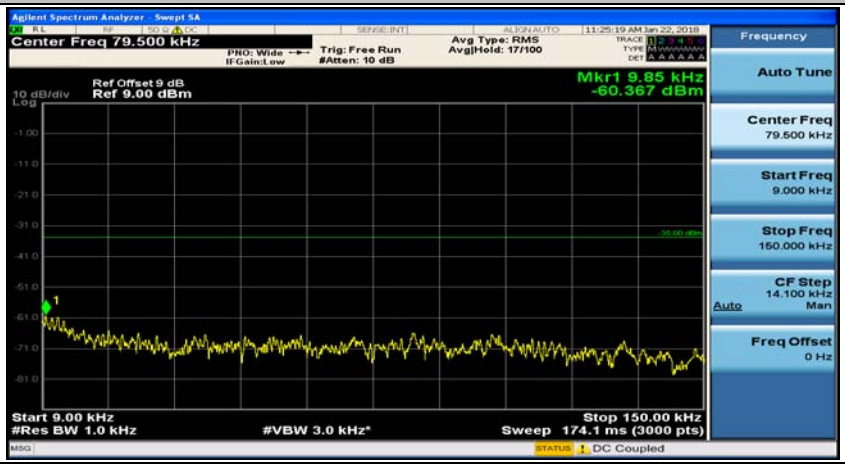

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
11:24:52 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Log
Mkr1 9.00 kHz
-60.285 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz

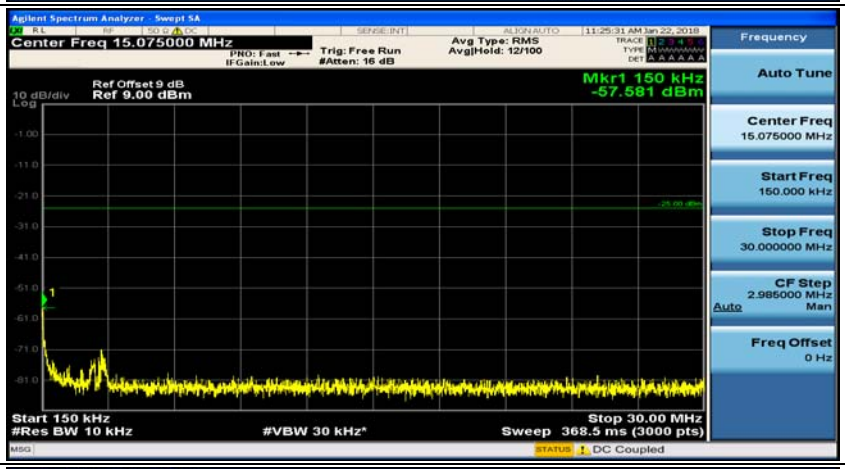

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 12/100
11:25:04 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Log
Mkr1 7.904 MHz
-49.196 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz

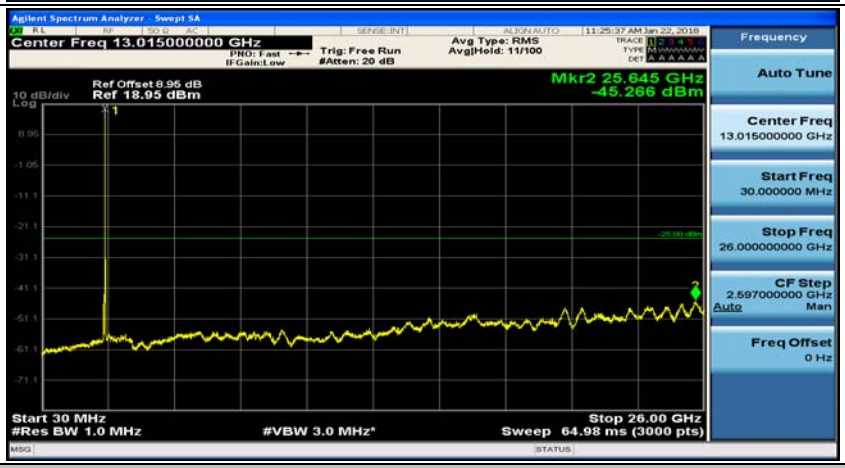

Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 10/100
11:25:09 AM Jan 22, 2018
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Log
Mkr2 25.619 GHz
-45.035 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Frequency
Auto Tune
Center Freq
13.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.597000000 GHz
Auto
Man
Freq Offset
0 Hz

## Channel Bandwidth: 20 MHz

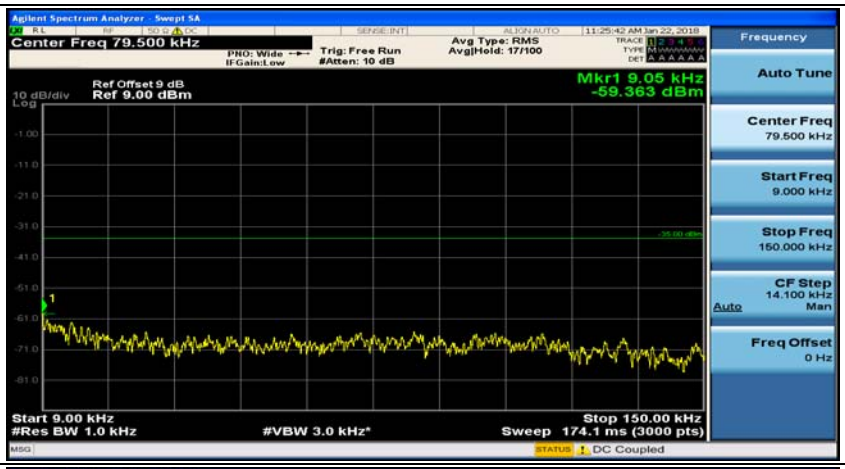
(Channel Bandwidth:20 MHz)_LCH_QPSK_1RB#0

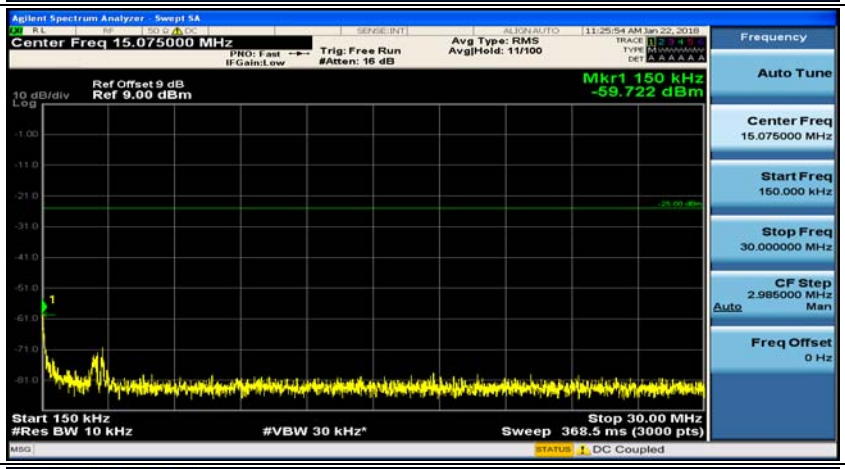


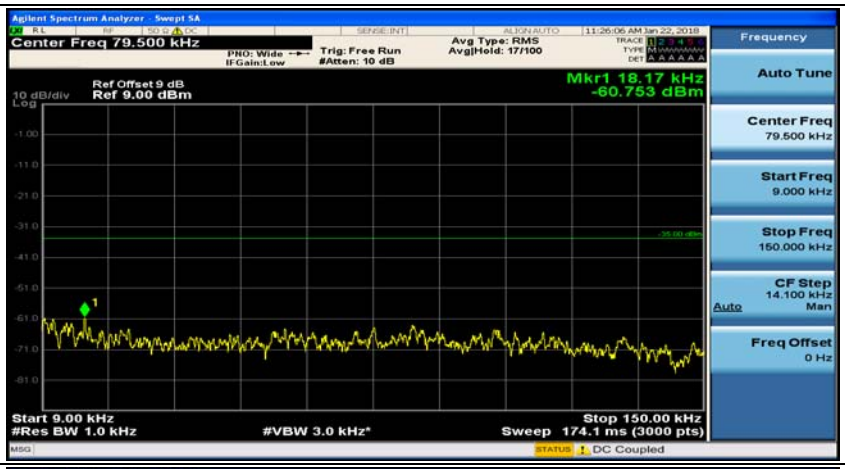



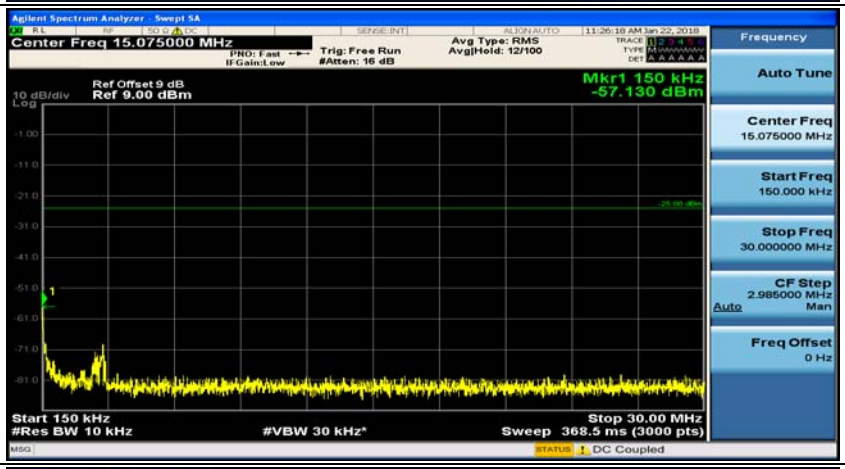

(Channel Bandwidth:20 MHz)_LCH_QPSK_1RB#49

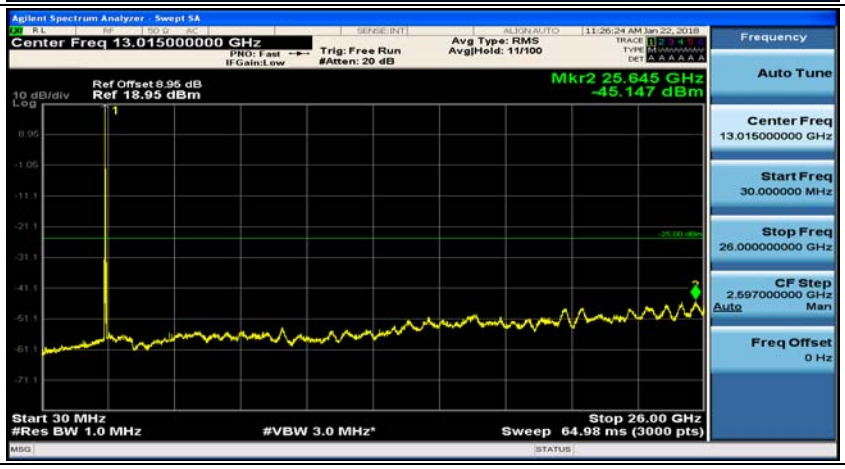


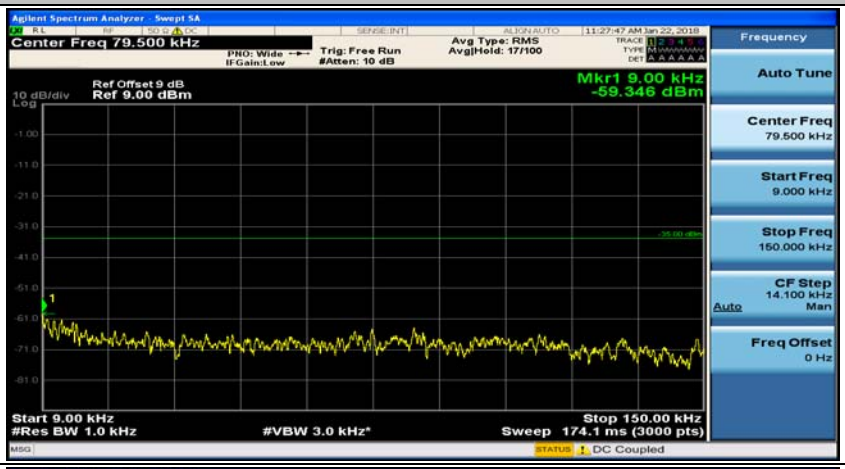
(Channel Bandwidth:20 MHz)_LCH_QPSK_1RB#99

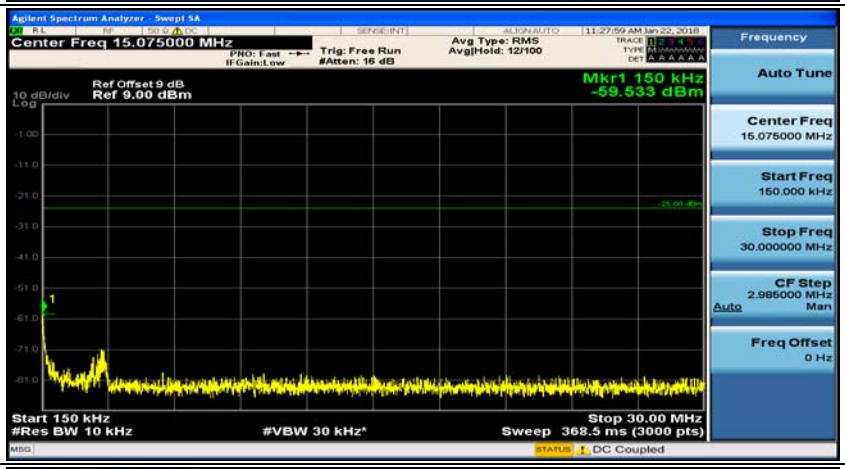

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
11:26:06 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 18.17 kHz
-60.753 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz

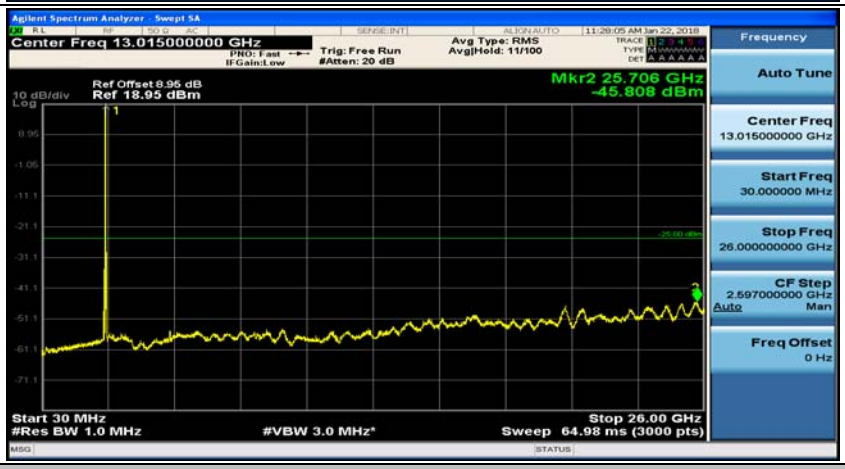

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 12/100
11:26:18 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 150 kHz
-57.130 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 11/100
11:26:24 AM Jan 22, 2018
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 25.645 GHz
-45.147 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Frequency
Auto Tune
Center Freq
13.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.597000000 GHz
Auto
Man
Freq Offset
0 Hz

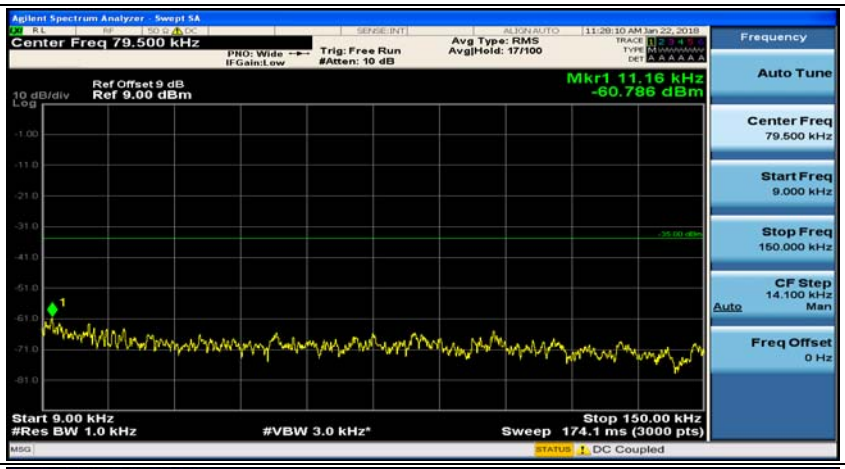
(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#0

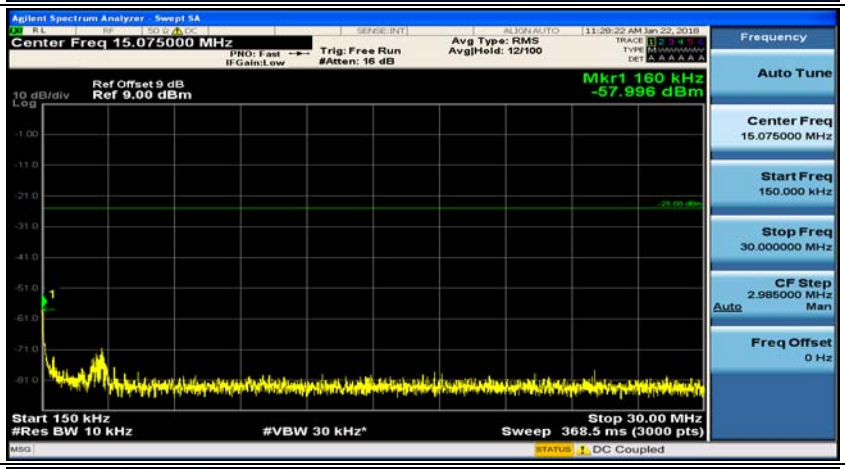


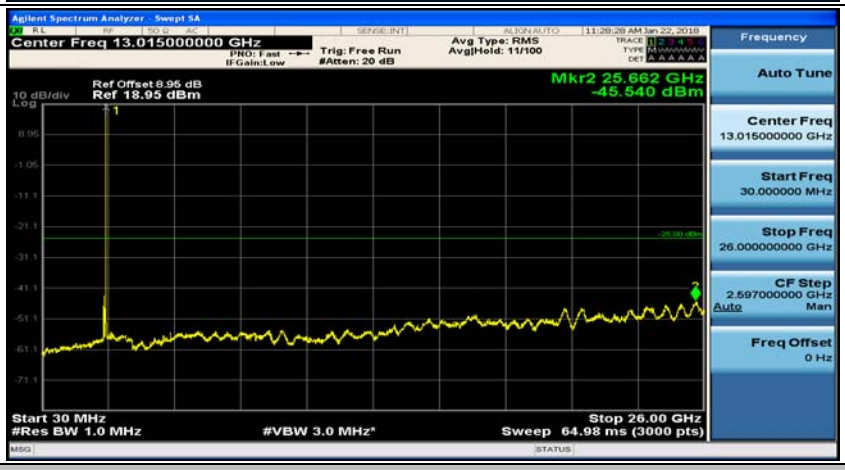



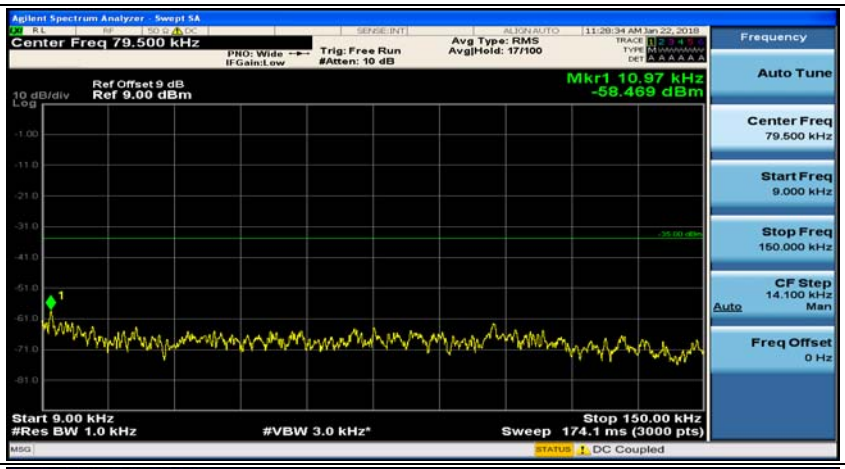

(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#49

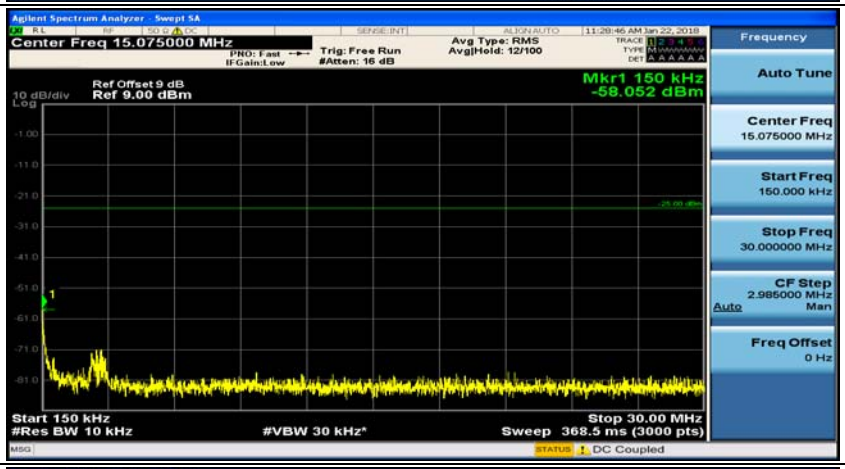


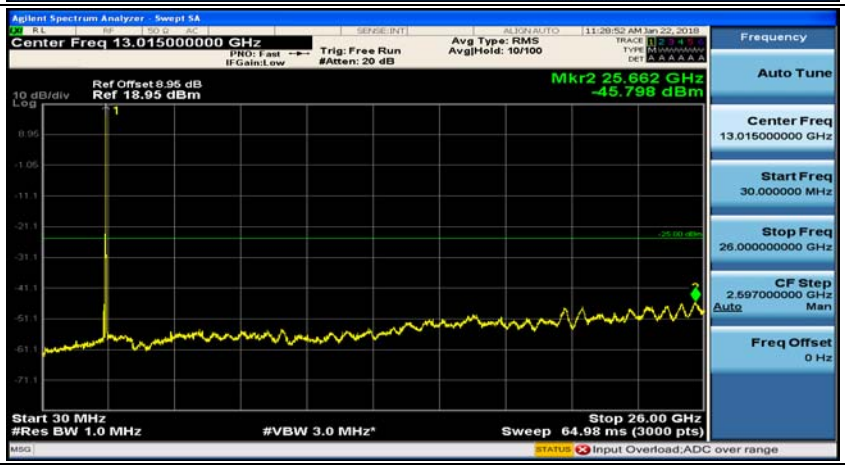



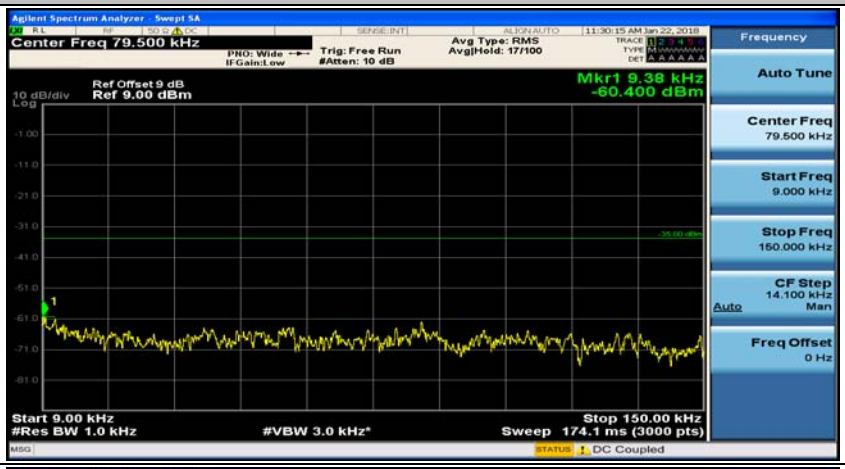

(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#99

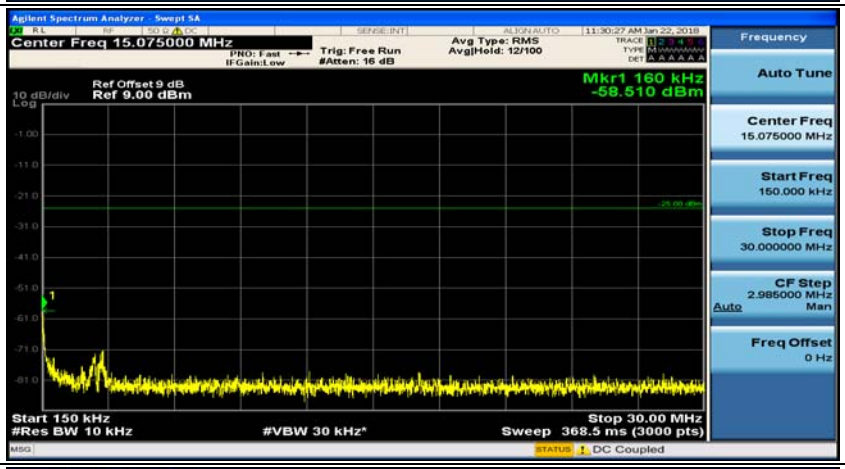

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
11:28:34 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 10.97 kHz
-58.469 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz

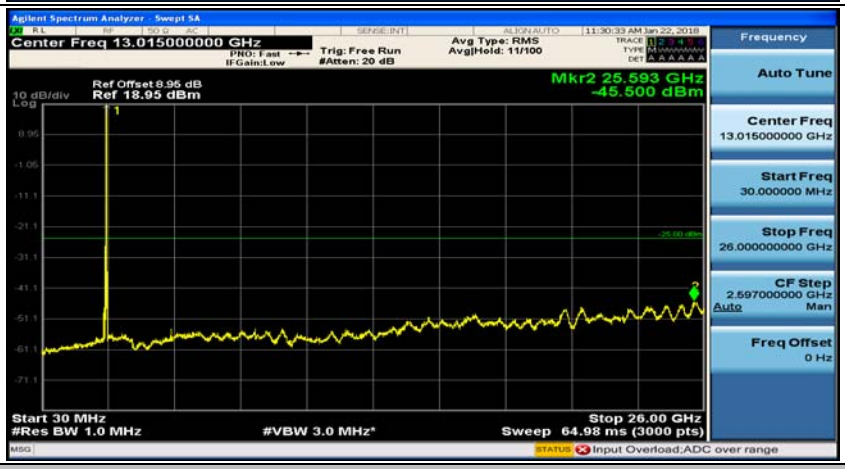

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 12/100
11:28:46 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 150 kHz
-58.052 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 10/100
11:28:52 AM Jan 22, 2018
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 25.662 GHz
-45.798 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Input Overload;ADC over range
Frequency
Auto Tune
Center Freq
13.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.597000000 GHz
Auto
Man
Freq Offset
0 Hz

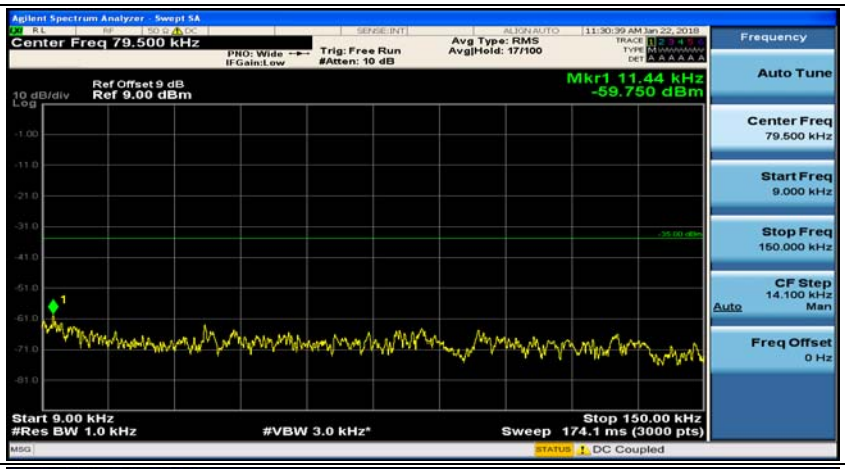
(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#0

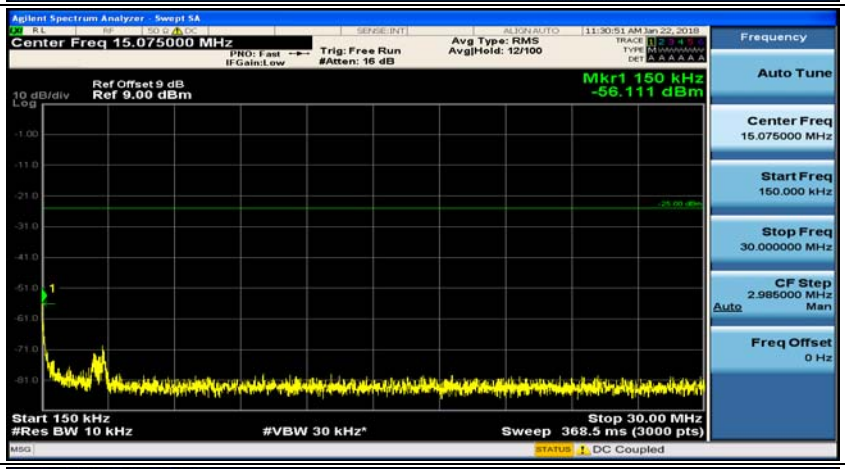


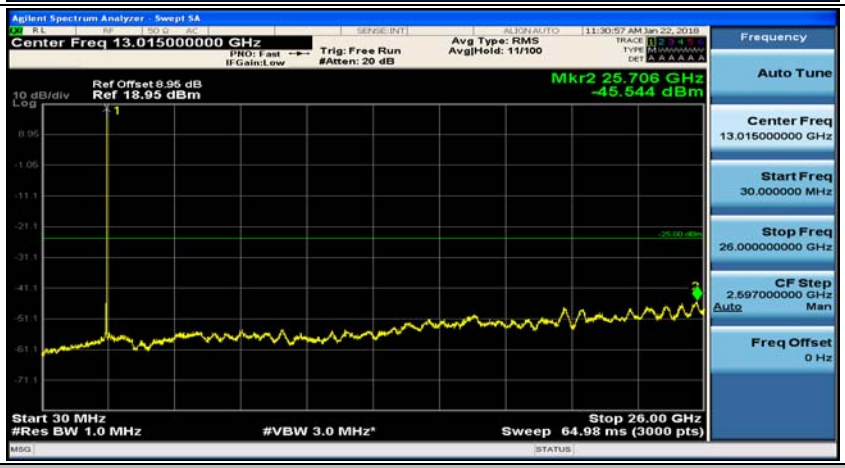



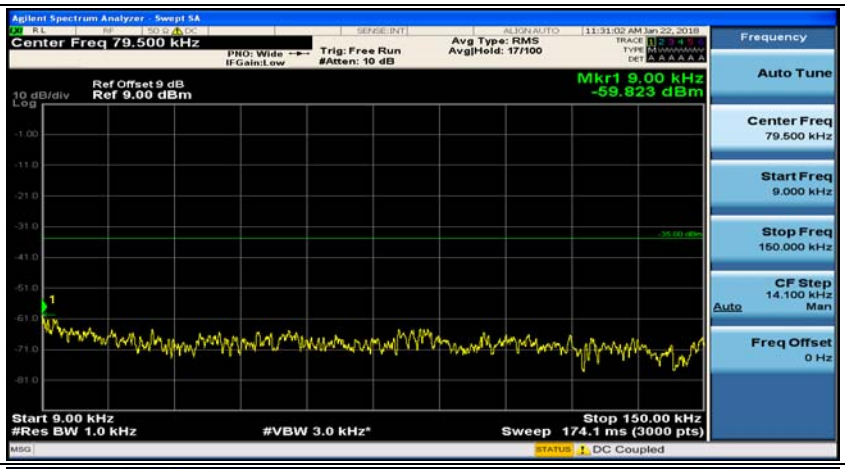

(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#49

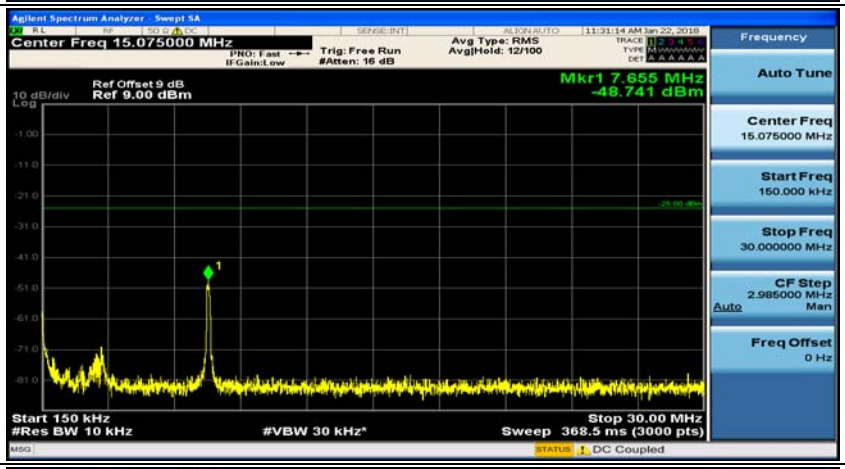


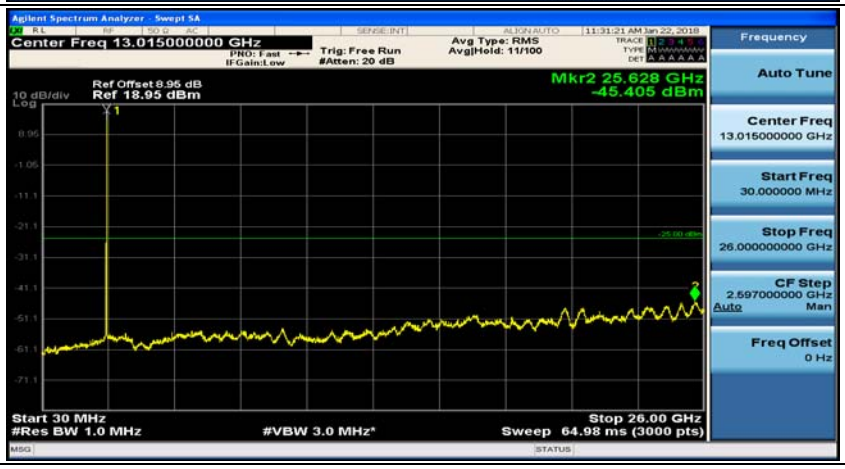



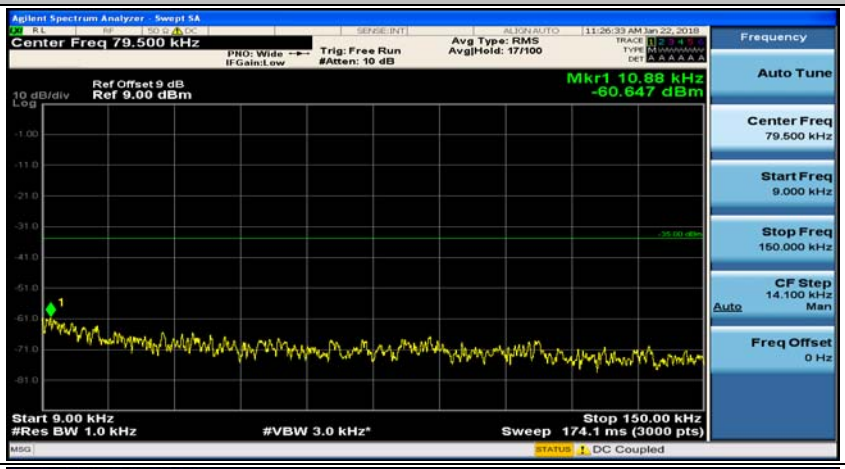

(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#99

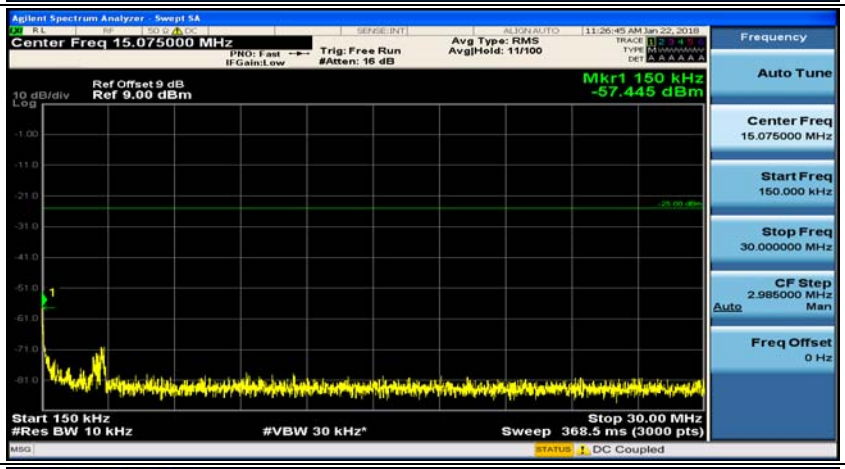

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
11:31:02 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Log
Mkr1 9.00 kHz
-59.823 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz

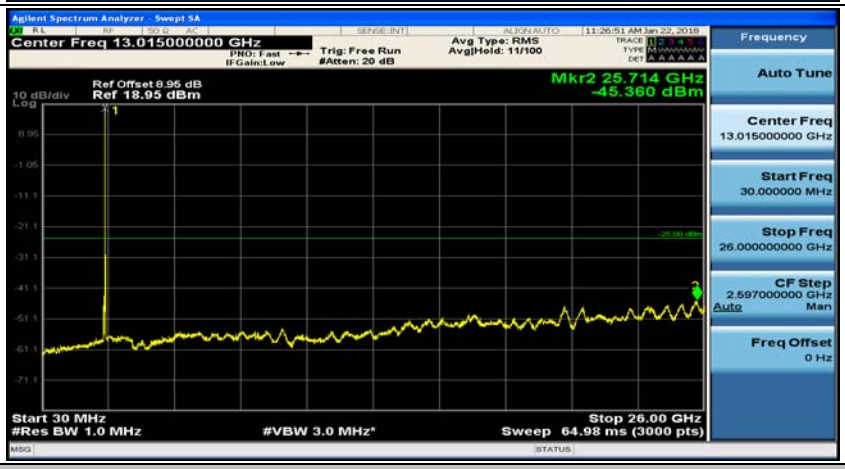

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 12/100
11:31:14 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Log
Mkr1 7.655 MHz
-48.741 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 11/100
11:31:21 AM Jan 22, 2018
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Log
Mkr2 25.628 GHz
-45.405 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Frequency
Auto Tune
Center Freq
13.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.597000000 GHz
Auto
Man
Freq Offset
0 Hz

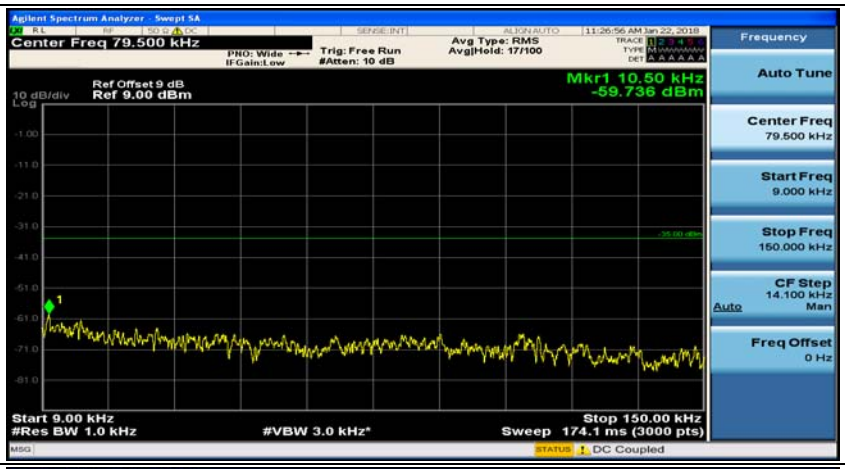
(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#0

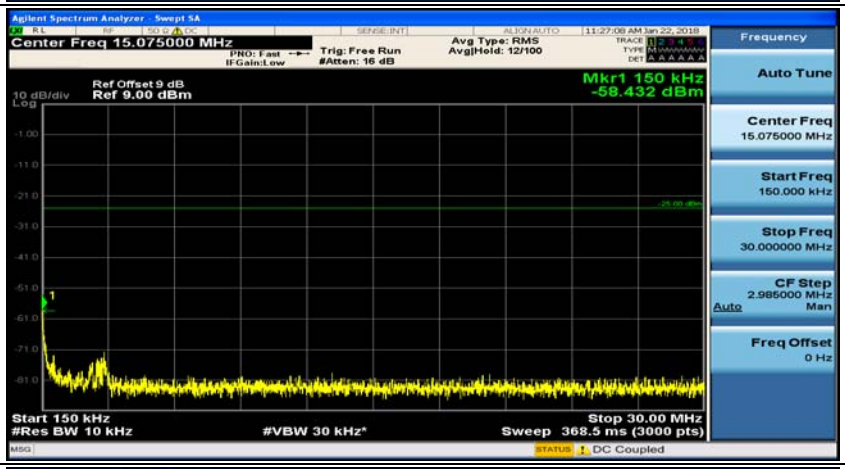


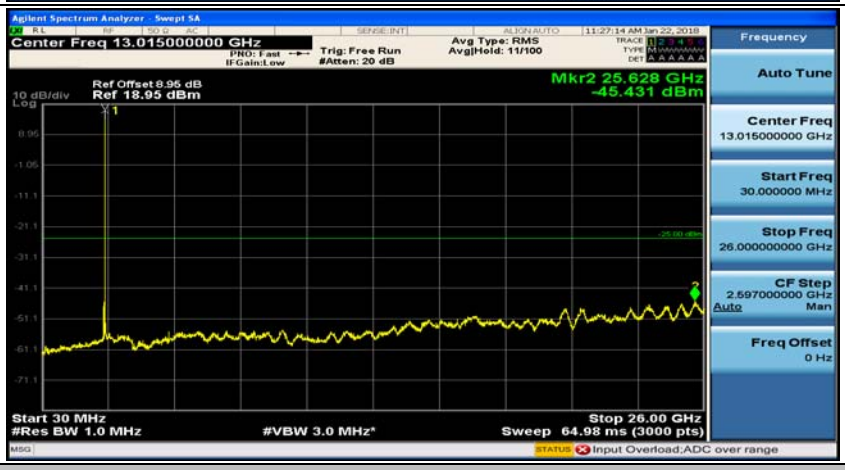



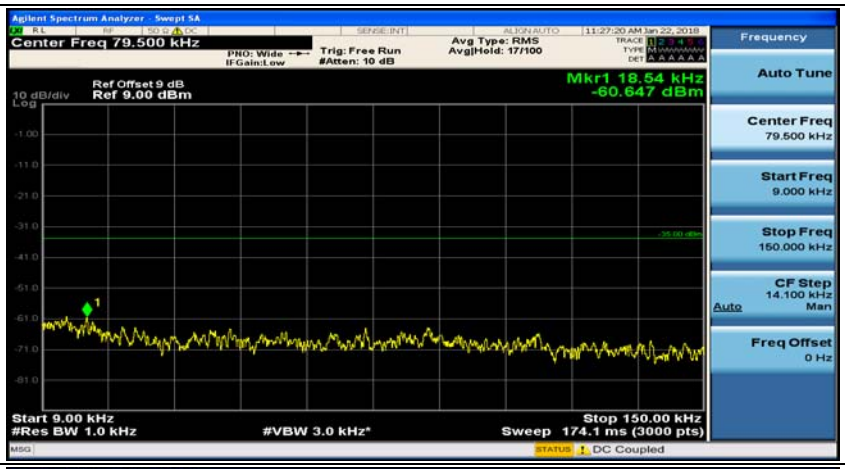

(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#49

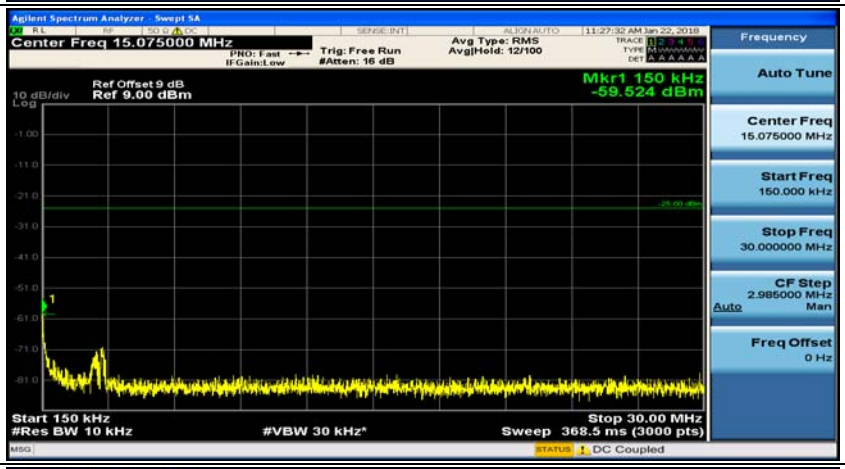


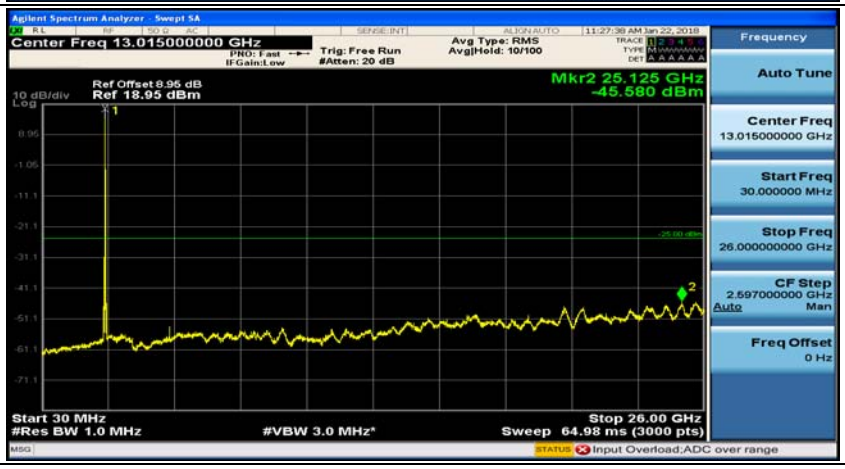



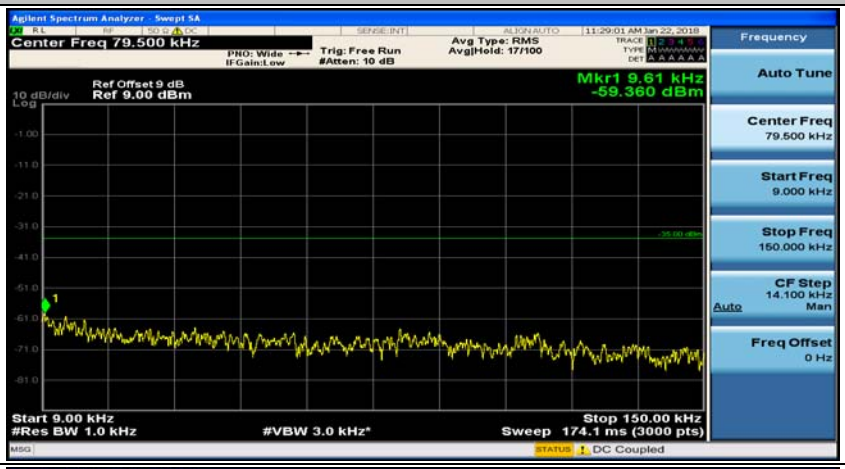

(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#99

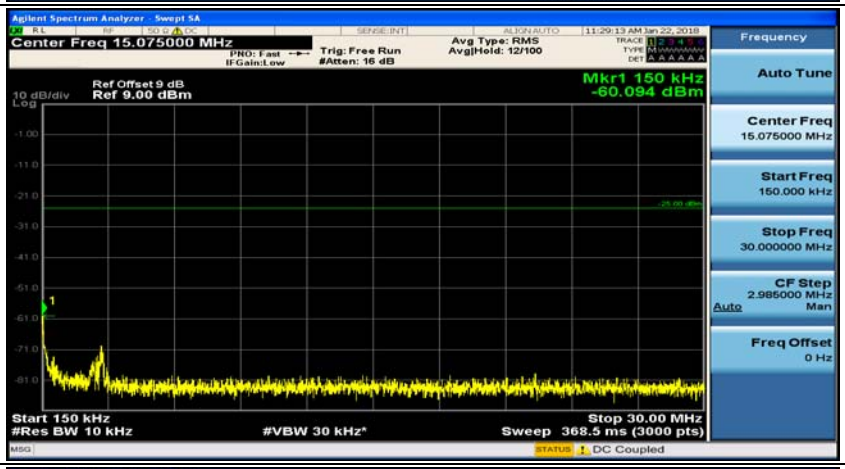

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
11:27:20 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 18.54 kHz
-60.647 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz

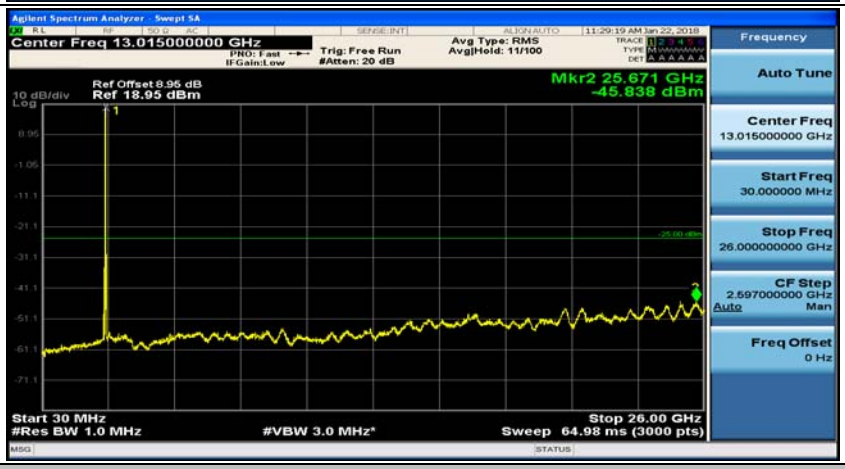

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 12/100
11:27:32 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 150 kHz
-59.524 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 10/100
11:27:38 AM Jan 22, 2018
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 25.125 GHz
-45.580 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Input Overload;ADC over range
Frequency
Auto Tune
Center Freq
13.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.597000000 GHz
Auto
Man
Freq Offset
0 Hz

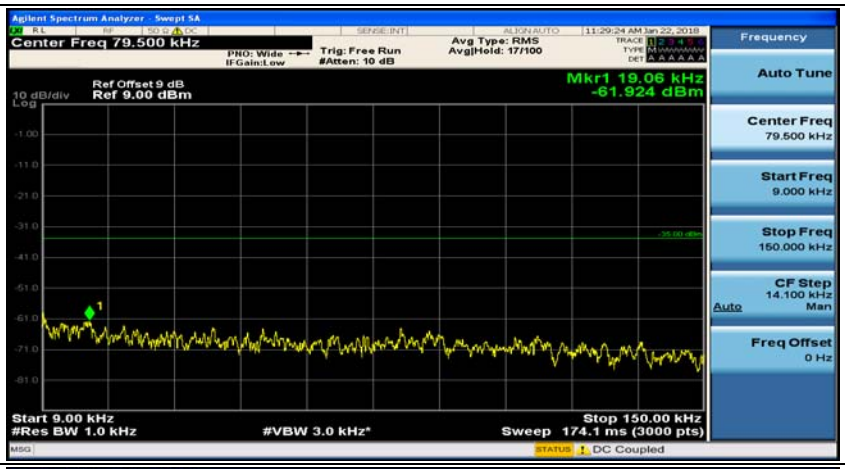
(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#0

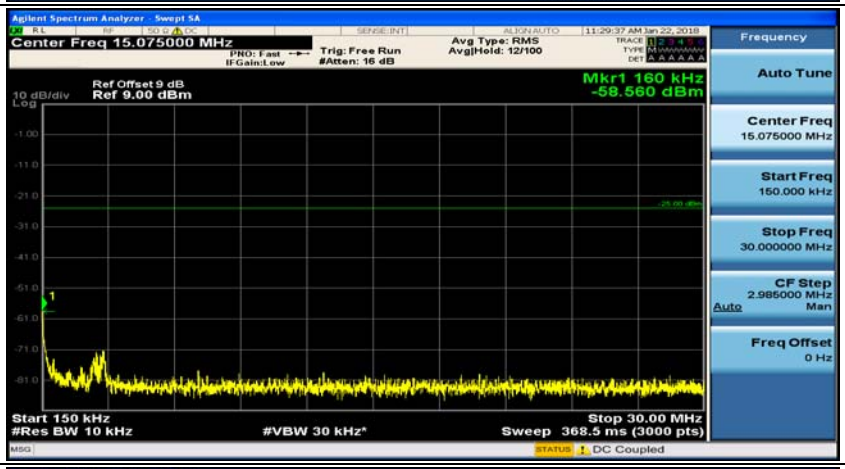


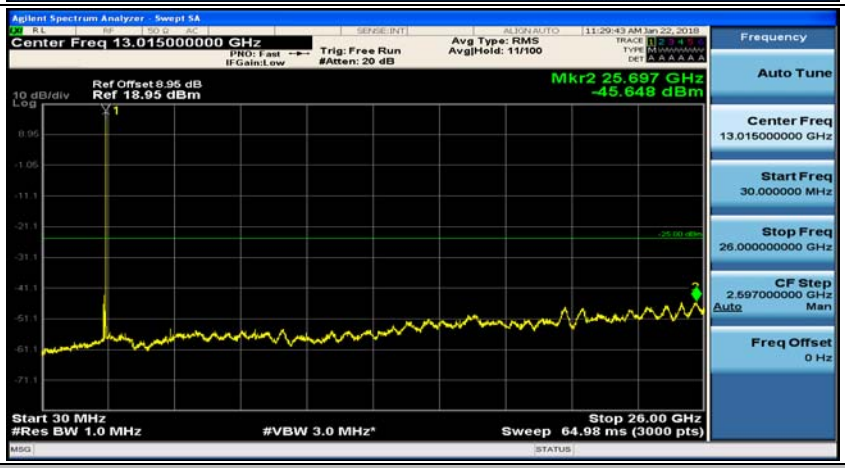



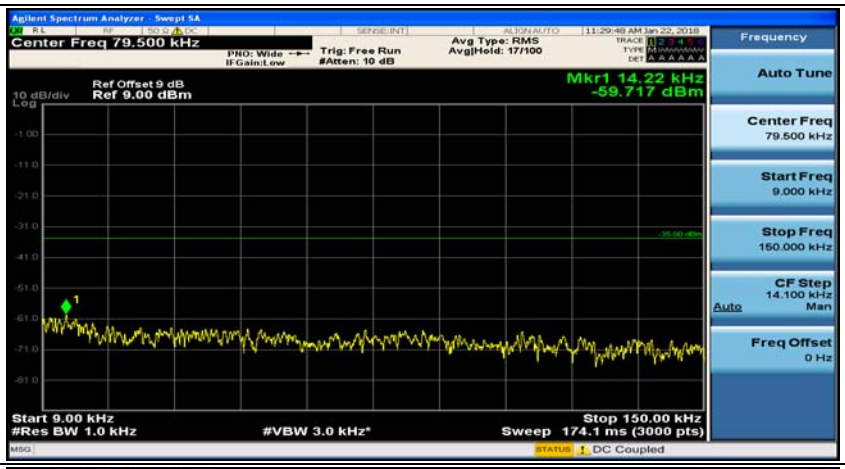

(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#49

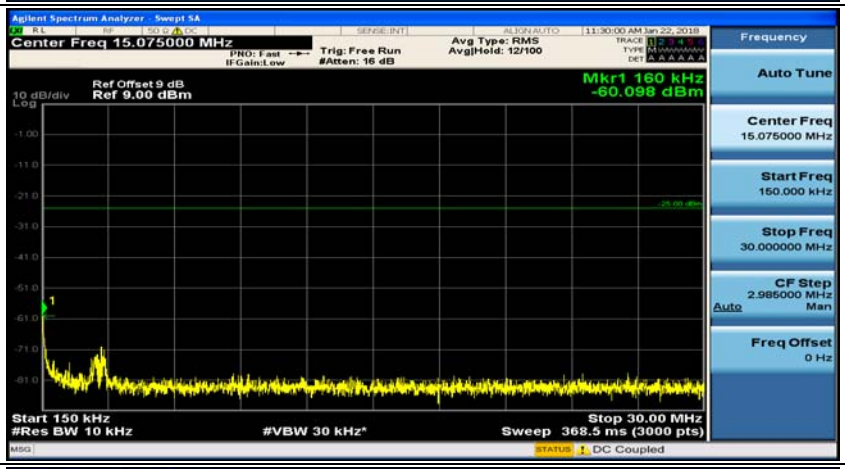


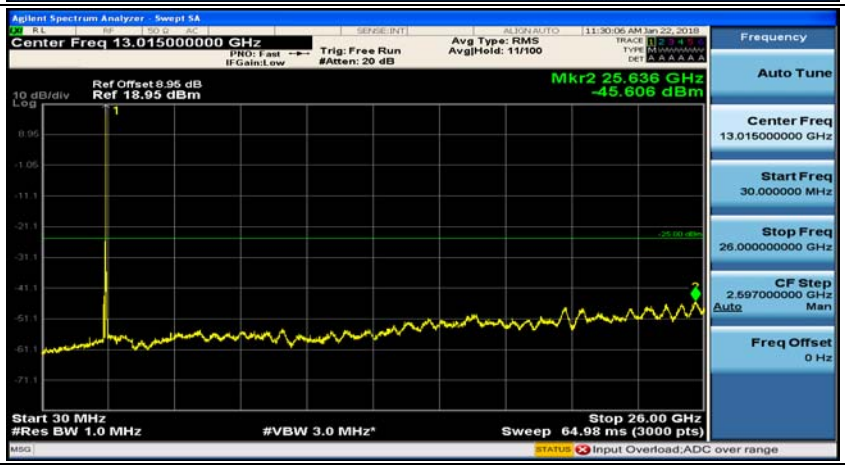



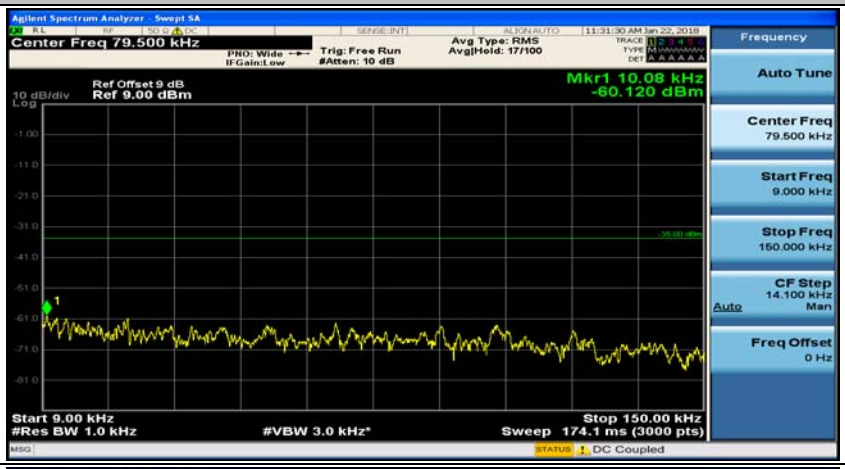

(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#99

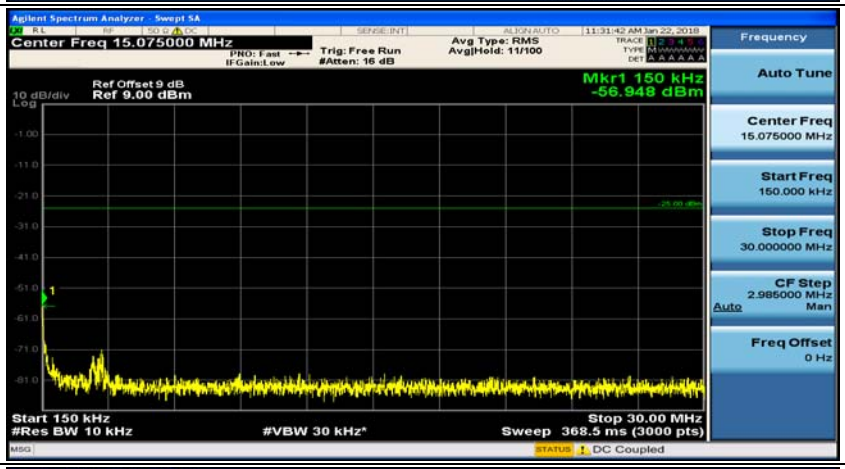

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
11:29:48 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 14.22 kHz
-59.717 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz

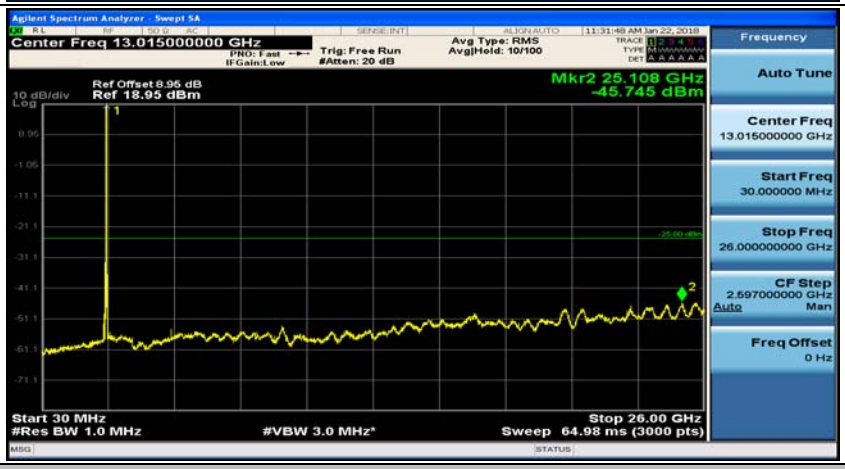

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 12/100
11:30:00 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 160 kHz
-60.098 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 11/100
11:30:06 AM Jan 22, 2018
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 25.636 GHz
-45.606 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Input Overload;ADC over range
Frequency
Auto Tune
Center Freq
13.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.597000000 GHz
Auto
Man
Freq Offset
0 Hz

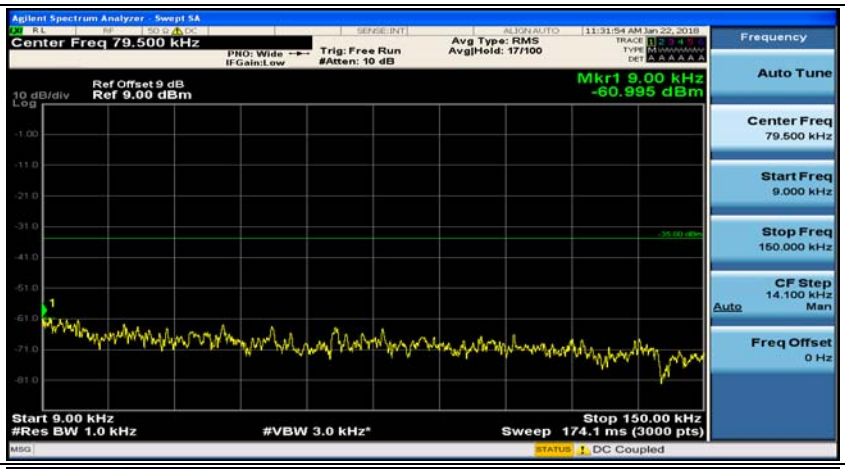
(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#0

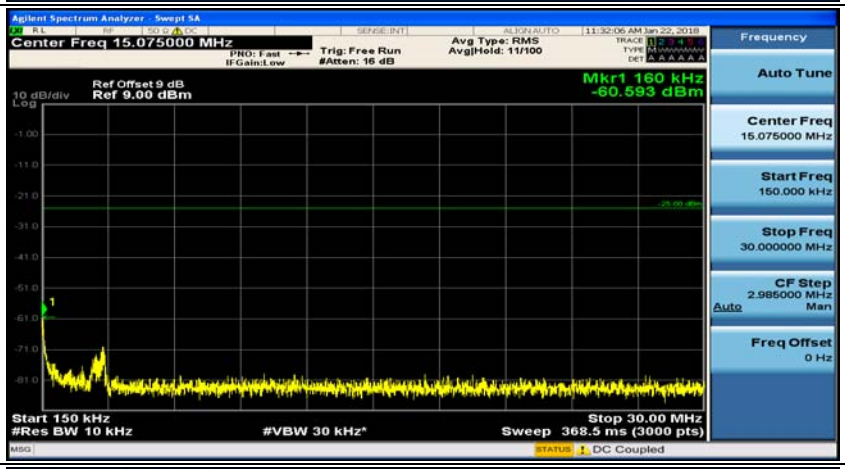


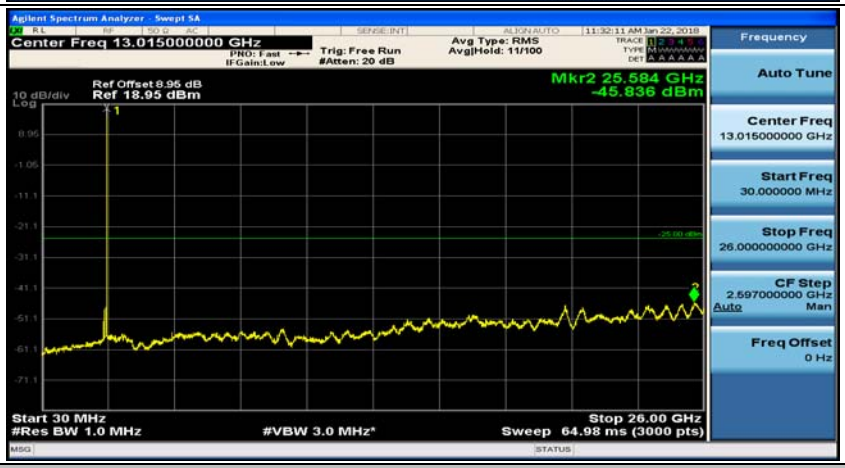



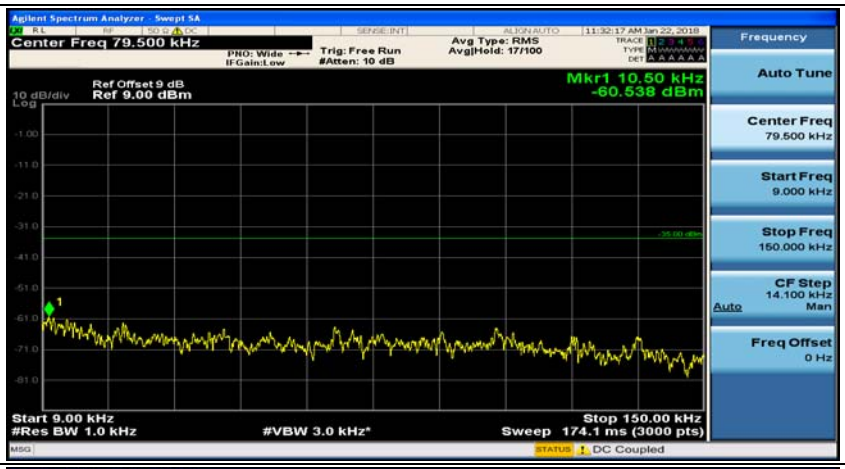

(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#49

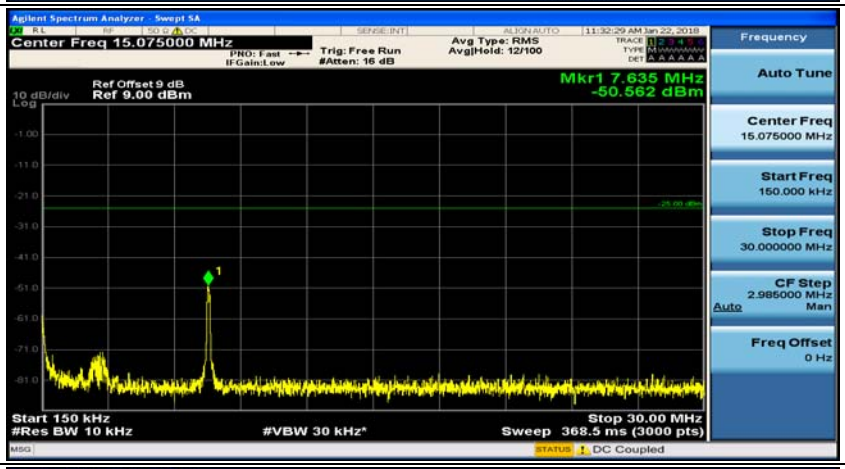


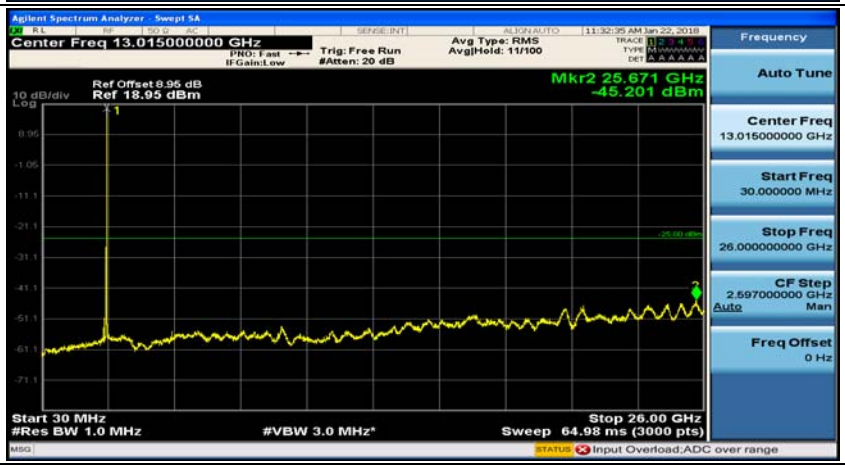




(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#99


Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
11:32:17 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 10.50 kHz
-60.538 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 12/100
11:32:29 AM Jan 22, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 7.635 MHz
-50.562 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 11/100
11:32:35 AM Jan 22, 2018
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 25.671 GHz
-45.201 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Input Overload;ADC over range
Frequency
Auto Tune
Center Freq
13.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.597000000 GHz
Auto
Man
Freq Offset
0 Hz

# Appendix F: Frequency Stability

## Test Result

## Channel Bandwidth: 5 MHz

| Channel Bandwidth: 5 MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Voltage | | | | | | | |
| Modulation | Channel | Voltage [Vdc] | Temperature (℃) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| QPSK | LCH | VL | TN | 1.76 | 0.000703 | ± 2.5 | PASS |
| | | VN | TN | -1.83 | -0.000731 | ± 2.5 | PASS |
| | | VH | TN | 0.5 | 0.000200 | ± 2.5 | PASS |
| | MCH | VL | TN | 2.72 | 0.001073 | ± 2.5 | PASS |
| | | VN | TN | 2.18 | 0.000860 | ± 2.5 | PASS |
| | | VH | TN | 1.64 | 0.000647 | ± 2.5 | PASS |
| | HCH | VL | TN | 4.14 | 0.001612 | ± 2.5 | PASS |
| | | VN | TN | 1.71 | 0.000666 | ± 2.5 | PASS |
| | | VH | TN | -0.77 | -0.000300 | ± 2.5 | PASS |
| 16QAM | LCH | VL | TN | 3.96 | 0.001582 | ± 2.5 | PASS |
| | | VN | TN | 1.11 | 0.000444 | ± 2.5 | PASS |
| | | VH | TN | 1.63 | 0.000651 | ± 2.5 | PASS |
| | MCH | VL | TN | 3.65 | 0.001440 | ± 2.5 | PASS |
| | | VN | TN | 1.54 | 0.000607 | ± 2.5 | PASS |
| | | VH | TN | 2.73 | 0.001077 | ± 2.5 | PASS |
| | HCH | VL | TN | -0.81 | -0.000315 | ± 2.5 | PASS |
| | | VN | TN | 0.75 | 0.000292 | ± 2.5 | PASS |
| | | VH | TN | -0.32 | -0.000125 | ± 2.5 | PASS |
| Temperature | | | | | | | |
| Modulation | Channel | Voltage [Vdc] | Temperature (℃) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| QPSK | LCH | VN | -30 | 0.79 | 0.000316 | ± 2.5 | PASS |
| | | VN | -20 | 1.63 | 0.000651 | ± 2.5 | PASS |
| | | VN | -10 | 2.99 | 0.001195 | ± 2.5 | PASS |
| | | VN | 0 | 2.49 | 0.000995 | ± 2.5 | PASS |
| | | VN | 10 | 1.35 | 0.000539 | ± 2.5 | PASS |
| | | VN | 20 | -0.64 | -0.000256 | ± 2.5 | PASS |
| | | VN | 30 | 1.07 | 0.000428 | ± 2.5 | PASS |
| | | VN | 40 | -1.9 | -0.000759 | ± 2.5 | PASS |
| | | VN | 50 | -1.99 | -0.000795 | ± 2.5 | PASS |
| | MCH | VN | -30 | 2.54 | 0.001002 | ± 2.5 | PASS |
| | | VN | -20 | -1.64 | -0.000647 | ± 2.5 | PASS |
| | | VN | -10 | 3.9 | 0.001538 | ± 2.5 | PASS |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | VN | 0 | 2.9 | 0.001144 | ± 2.5 | PASS |
| | | VN | 10 | -0.54 | -0.000213 | ± 2.5 | PASS |
| | | VN | 20 | 3.22 | 0.001270 | ± 2.5 | PASS |
| | | VN | 30 | -1.78 | -0.000702 | ± 2.5 | PASS |
| | | VN | 40 | 4.34 | 0.001712 | ± 2.5 | PASS |
| | | VN | 50 | 4.24 | 0.001673 | ± 2.5 | PASS |
| | HCH | VN | -30 | 4.21 | 0.001640 | ± 2.5 | PASS |
| | | VN | -20 | 0.61 | 0.000238 | ± 2.5 | PASS |
| | | VN | -10 | 2.26 | 0.000880 | ± 2.5 | PASS |
| | | VN | 0 | 3.99 | 0.001554 | ± 2.5 | PASS |
| | | VN | 10 | 2.44 | 0.000950 | ± 2.5 | PASS |
| | | VN | 20 | 4.64 | 0.001807 | ± 2.5 | PASS |
| | | VN | 30 | 3.55 | 0.001383 | ± 2.5 | PASS |
| | | VN | 40 | 3.46 | 0.001348 | ± 2.5 | PASS |
| | | VN | 50 | 0.1 | 0.000039 | ± 2.5 | PASS |
| 16QAM | LCH | VN | -30 | 4.03 | 0.001610 | ± 2.5 | PASS |
| | | VN | -20 | 1.68 | 0.000671 | ± 2.5 | PASS |
| | | VN | -10 | 4.56 | 0.001822 | ± 2.5 | PASS |
| | | VN | 0 | -0.35 | -0.000140 | ± 2.5 | PASS |
| | | VN | 10 | 3.51 | 0.001403 | ± 2.5 | PASS |
| | | VN | 20 | -0.75 | -0.000300 | ± 2.5 | PASS |
| | | VN | 30 | 3.29 | 0.001315 | ± 2.5 | PASS |
| | | VN | 40 | -1.32 | -0.000527 | ± 2.5 | PASS |
| | | VN | 50 | -0.39 | -0.000156 | ± 2.5 | PASS |
| | MCH | VN | -30 | 1.05 | 0.000414 | ± 2.5 | PASS |
| | | VN | -20 | -0.09 | -0.000036 | ± 2.5 | PASS |
| | | VN | -10 | 2.66 | 0.001049 | ± 2.5 | PASS |
| | | VN | 0 | 2.96 | 0.001168 | ± 2.5 | PASS |
| | | VN | 10 | 4.07 | 0.001606 | ± 2.5 | PASS |
| | | VN | 20 | 0.29 | 0.000114 | ± 2.5 | PASS |
| | | VN | 30 | 1.67 | 0.000659 | ± 2.5 | PASS |
| | | VN | 40 | 2.78 | 0.001097 | ± 2.5 | PASS |
| | | VN | 50 | 4.07 | 0.001606 | ± 2.5 | PASS |
| | HCH | VN | -30 | -0.79 | -0.000308 | ± 2.5 | PASS |
| | | VN | -20 | 0.82 | 0.000319 | ± 2.5 | PASS |
| | | VN | -10 | -0.55 | -0.000214 | ± 2.5 | PASS |
| | | VN | 0 | -1.35 | -0.000526 | ± 2.5 | PASS |
| | | VN | 10 | 2.16 | 0.000841 | ± 2.5 | PASS |
| | | VN | 20 | 0.36 | 0.000140 | ± 2.5 | PASS |
| | | VN | 30 | -1.76 | -0.000685 | ± 2.5 | PASS |
| | | VN | 40 | -0.59 | -0.000230 | ± 2.5 | PASS |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | VN | 50 | 4.25 | 0.001655 | ± 2.5 | PASS |

## Channel Bandwidth: 10 MHz

| Channel Bandwidth: 10 MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Voltage | | | | | | | |
| Modulation | Channel | Voltage [Vdc] | Temperature (℃) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| QPSK | LCH | VL | TN | 2.11 | 0.000842 | ± 2.5 | PASS |
| | | VN | TN | 2.41 | 0.000962 | ± 2.5 | PASS |
| | | VH | TN | 3.19 | 0.001273 | ± 2.5 | PASS |
| | MCH | VL | TN | 4.7 | 0.001854 | ± 2.5 | PASS |
| | | VN | TN | 3.8 | 0.001499 | ± 2.5 | PASS |
| | | VH | TN | 4.91 | 0.001937 | ± 2.5 | PASS |
| | HCH | VL | TN | 4.07 | 0.001587 | ± 2.5 | PASS |
| | | VN | TN | 2.75 | 0.001072 | ± 2.5 | PASS |
| | | VH | TN | -0.41 | -0.000160 | ± 2.5 | PASS |
| 16QAM | LCH | VL | TN | -0.32 | -0.000128 | ± 2.5 | PASS |
| | | VN | TN | 1.34 | 0.000535 | ± 2.5 | PASS |
| | | VH | TN | -1.09 | -0.000435 | ± 2.5 | PASS |
| | MCH | VL | TN | 0.19 | 0.000075 | ± 2.5 | PASS |
| | | VN | TN | -0.92 | -0.000363 | ± 2.5 | PASS |
| | | VH | TN | 2.3 | 0.000907 | ± 2.5 | PASS |
| | HCH | VL | TN | 2.01 | 0.000784 | ± 2.5 | PASS |
| | | VN | TN | 2.71 | 0.001057 | ± 2.5 | PASS |
| | | VH | TN | 1.75 | 0.000682 | ± 2.5 | PASS |
| Temperature | | | | | | | |
| Modulation | Channel | Voltage [Vdc] | Temperature (℃) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| 16QAM | LCH | VN | -30 | -0.66 | -0.000263 | ± 2.5 | PASS |
| | | VN | -20 | 2.1 | 0.000838 | ± 2.5 | PASS |
| | | VN | -10 | -1.83 | -0.000731 | ± 2.5 | PASS |
| | | VN | 0 | 0.85 | 0.000339 | ± 2.5 | PASS |
| | | VN | 10 | -0.55 | -0.000220 | ± 2.5 | PASS |
| | | VN | 20 | 2.41 | 0.000962 | ± 2.5 | PASS |
| | | VN | 30 | 0.2 | 0.000080 | ± 2.5 | PASS |
| | | VN | 40 | 2.78 | 0.001110 | ± 2.5 | PASS |
| | | VN | 50 | 4.86 | 0.001940 | ± 2.5 | PASS |
| | MCH | VN | -30 | 3.33 | 0.001314 | ± 2.5 | PASS |
| | | VN | -20 | -1.01 | -0.000398 | ± 2.5 | PASS |
| | | VN | -10 | 3.79 | 0.001495 | ± 2.5 | PASS |
| | | VN | 0 | -1.89 | -0.000746 | ± 2.5 | PASS |
| | | VN | 10 | 0.66 | 0.000260 | ± 2.5 | PASS |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | VN | 20 | 0.08 | 0.000032 | ± 2.5 | PASS |
| | | VN | 30 | -1.84 | -0.000726 | ± 2.5 | PASS |
| | | VN | 40 | 0.8 | 0.000316 | ± 2.5 | PASS |
| | | VN | 50 | 0.68 | 0.000268 | ± 2.5 | PASS |
| | HCH | VN | -30 | 2.6 | 0.001014 | ± 2.5 | PASS |
| | | VN | -20 | 4.29 | 0.001673 | ± 2.5 | PASS |
| | | VN | -10 | 4.63 | 0.001805 | ± 2.5 | PASS |
| | | VN | 0 | -1.28 | -0.000499 | ± 2.5 | PASS |
| | | VN | 10 | -0.72 | -0.000281 | ± 2.5 | PASS |
| | | VN | 20 | 3.23 | 0.001259 | ± 2.5 | PASS |
| | | VN | 30 | 2.53 | 0.000986 | ± 2.5 | PASS |
| | | VN | 40 | 1.38 | 0.000538 | ± 2.5 | PASS |
| | | VN | 50 | -0.33 | -0.000129 | ± 2.5 | PASS |
| QPSK | LCH | VN | -30 | 2.83 | 0.001130 | ± 2.5 | PASS |
| | | VN | -20 | 4.12 | 0.001645 | ± 2.5 | PASS |
| | | VN | -10 | -1.92 | -0.000766 | ± 2.5 | PASS |
| | | VN | 0 | -0.42 | -0.000168 | ± 2.5 | PASS |
| | | VN | 10 | 3.08 | 0.001230 | ± 2.5 | PASS |
| | | VN | 20 | 2.75 | 0.001098 | ± 2.5 | PASS |
| | | VN | 30 | -0.23 | -0.000092 | ± 2.5 | PASS |
| | | VN | 40 | 1.5 | 0.000599 | ± 2.5 | PASS |
| | | VN | 50 | 2.56 | 0.001022 | ± 2.5 | PASS |
| | MCH | VN | -30 | -1.33 | -0.000525 | ± 2.5 | PASS |
| | | VN | -20 | 3.16 | 0.001247 | ± 2.5 | PASS |
| | | VN | -10 | 1.45 | 0.000572 | ± 2.5 | PASS |
| | | VN | 0 | 1.7 | 0.000671 | ± 2.5 | PASS |
| | | VN | 10 | 3.21 | 0.001266 | ± 2.5 | PASS |
| | | VN | 20 | 1.47 | 0.000580 | ± 2.5 | PASS |
| | | VN | 30 | 3.48 | 0.001373 | ± 2.5 | PASS |
| | | VN | 40 | -0.95 | -0.000375 | ± 2.5 | PASS |
| | | VN | 50 | 3.42 | 0.001349 | ± 2.5 | PASS |
| | HCH | VN | -30 | -0.67 | -0.000261 | ± 2.5 | PASS |
| | | VN | -20 | -1.46 | -0.000569 | ± 2.5 | PASS |
| | | VN | -10 | 0.89 | 0.000347 | ± 2.5 | PASS |
| | | VN | 0 | -0.22 | -0.000086 | ± 2.5 | PASS |
| | | VN | 10 | 2.47 | 0.000963 | ± 2.5 | PASS |
| | | VN | 20 | 1.78 | 0.000694 | ± 2.5 | PASS |
| | | VN | 30 | 3.14 | 0.001224 | ± 2.5 | PASS |
| | | VN | 40 | 2.99 | 0.001166 | ± 2.5 | PASS |
| | | VN | 50 | 2.49 | 0.000971 | ± 2.5 | PASS |

## Channel Bandwidth: 15 MHz

| Channel Bandwidth: 15 MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| Voltage | | | | | | | |
| Modulation | Channel | Voltage [Vdc] | Temperature (℃) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| QPSK | LCH | VL | TN | -0.74 | -0.000295 | ± 2.5 | PASS |
| | | VN | TN | 0.6 | 0.000239 | ± 2.5 | PASS |
| | | VH | TN | 2.35 | 0.000937 | ± 2.5 | PASS |
| | MCH | VL | TN | 0.63 | 0.000249 | ± 2.5 | PASS |
| | | VN | TN | 2.68 | 0.001057 | ± 2.5 | PASS |
| | | VH | TN | 1.21 | 0.000477 | ± 2.5 | PASS |
| | HCH | VL | TN | 4.3 | 0.001678 | ± 2.5 | PASS |
| | | VN | TN | 1.52 | 0.000593 | ± 2.5 | PASS |
| | | VH | TN | -1.63 | -0.000636 | ± 2.5 | PASS |
| 16QAM | LCH | VL | TN | -0.76 | -0.000303 | ± 2.5 | PASS |
| | | VN | TN | -0.87 | -0.000347 | ± 2.5 | PASS |
| | | VH | TN | 2.82 | 0.001125 | ± 2.5 | PASS |
| | MCH | VL | TN | 4.84 | 0.001909 | ± 2.5 | PASS |
| | | VN | TN | -0.5 | -0.000197 | ± 2.5 | PASS |
| | | VH | TN | -0.18 | -0.000071 | ± 2.5 | PASS |
| | HCH | VL | TN | 0.15 | 0.000059 | ± 2.5 | PASS |
| | | VN | TN | 4.67 | 0.001822 | ± 2.5 | PASS |
| | | VH | TN | 2.54 | 0.000991 | ± 2.5 | PASS |
| Temperature | | | | | | | |
| Modulation | Channel | Voltage [Vdc] | Temperature (℃) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| QPSK | LCH | VN | -30 | 1.96 | 0.000782 | ± 2.5 | PASS |
| | | VN | -20 | 3.1 | 0.001236 | ± 2.5 | PASS |
| | | VN | -10 | 0.48 | 0.000191 | ± 2.5 | PASS |
| | | VN | 0 | 2.73 | 0.001089 | ± 2.5 | PASS |
| | | VN | 10 | 4.81 | 0.001918 | ± 2.5 | PASS |
| | | VN | 20 | 4.4 | 0.001755 | ± 2.5 | PASS |
| | | VN | 30 | 3.81 | 0.001519 | ± 2.5 | PASS |
| | | VN | 40 | 0.73 | 0.000291 | ± 2.5 | PASS |
| | | VN | 50 | 0.8 | 0.000319 | ± 2.5 | PASS |
| | MCH | VN | -30 | 1.22 | 0.000481 | ± 2.5 | PASS |
| | | VN | -20 | 0.32 | 0.000126 | ± 2.5 | PASS |
| | | VN | -10 | -0.95 | -0.000375 | ± 2.5 | PASS |
| | | VN | 0 | 2.72 | 0.001073 | ± 2.5 | PASS |
| | | VN | 10 | 4.27 | 0.001684 | ± 2.5 | PASS |
| | | VN | 20 | 2.99 | 0.001179 | ± 2.5 | PASS |
| | | VN | 30 | 3.22 | 0.001270 | ± 2.5 | PASS |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | VN | 40 | -0.15 | -0.000059 | ± 2.5 | PASS |
| | | VN | 50 | -1.4 | -0.000552 | ± 2.5 | PASS |
| | HCH | VN | -30 | -1.06 | -0.000414 | ± 2.5 | PASS |
| | | VN | -20 | 1.77 | 0.000691 | ± 2.5 | PASS |
| | | VN | -10 | 2.8 | 0.001093 | ± 2.5 | PASS |
| | | VN | 0 | 0.99 | 0.000386 | ± 2.5 | PASS |
| | | VN | 10 | 1.28 | 0.000500 | ± 2.5 | PASS |
| | | VN | 20 | 3.74 | 0.001460 | ± 2.5 | PASS |
| | | VN | 30 | -1.75 | -0.000683 | ± 2.5 | PASS |
| | | VN | 40 | 1.02 | 0.000398 | ± 2.5 | PASS |
| | | VN | 50 | 1.49 | 0.000581 | ± 2.5 | PASS |
| 16QAM | LCH | VN | -30 | 2.51 | 0.001001 | ± 2.5 | PASS |
| | | VN | -20 | 0.13 | 0.000052 | ± 2.5 | PASS |
| | | VN | -10 | 1.04 | 0.000415 | ± 2.5 | PASS |
| | | VN | 0 | 0.21 | 0.000084 | ± 2.5 | PASS |
| | | VN | 10 | 2.82 | 0.001125 | ± 2.5 | PASS |
| | | VN | 20 | 1.97 | 0.000786 | ± 2.5 | PASS |
| | | VN | 30 | -1.88 | -0.000750 | ± 2.5 | PASS |
| | | VN | 40 | 4.32 | 0.001723 | ± 2.5 | PASS |
| | | VN | 50 | -0.62 | -0.000247 | ± 2.5 | PASS |
| | MCH | VN | -30 | 1.23 | 0.000485 | ± 2.5 | PASS |
| | | VN | -20 | -0.26 | -0.000103 | ± 2.5 | PASS |
| | | VN | -10 | 4.3 | 0.001696 | ± 2.5 | PASS |
| | | VN | 0 | 0.26 | 0.000103 | ± 2.5 | PASS |
| | | VN | 10 | 4.88 | 0.001925 | ± 2.5 | PASS |
| | | VN | 20 | 2.99 | 0.001179 | ± 2.5 | PASS |
| | | VN | 30 | 2.64 | 0.001041 | ± 2.5 | PASS |
| | | VN | 40 | 4.91 | 0.001937 | ± 2.5 | PASS |
| | | VN | 50 | -1.6 | -0.000631 | ± 2.5 | PASS |
| | HCH | VN | -30 | -1.68 | -0.000656 | ± 2.5 | PASS |
| | | VN | -20 | -0.08 | -0.000031 | ± 2.5 | PASS |
| | | VN | -10 | 2.68 | 0.001046 | ± 2.5 | PASS |
| | | VN | 0 | -0.69 | -0.000269 | ± 2.5 | PASS |
| | | VN | 10 | -1.53 | -0.000597 | ± 2.5 | PASS |
| | | VN | 20 | 3.07 | 0.001198 | ± 2.5 | PASS |
| | | VN | 30 | -0.47 | -0.000183 | ± 2.5 | PASS |
| | | VN | 40 | -1.51 | -0.000589 | ± 2.5 | PASS |
| | | VN | 50 | -0.94 | -0.000367 | ± 2.5 | PASS |

## Channel Bandwidth: 20 MHz

| Channel Bandwidth: 20 MHz |
|---|

| Voltage | | | | | | | |
|---|---|---|---|---|---|---|---|
| Modulation | Channel | Voltage [Vdc] | Temperature (℃) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| QPSK | LCH | VL | TN | -0.9 | -0.000359 | ± 2.5 | PASS |
| | | VN | TN | 2.65 | 0.001056 | ± 2.5 | PASS |
| | | VH | TN | 4.33 | 0.001725 | ± 2.5 | PASS |
| | MCH | VL | TN | -0.09 | -0.000036 | ± 2.5 | PASS |
| | | VN | TN | 3.27 | 0.001290 | ± 2.5 | PASS |
| | | VH | TN | 1.9 | 0.000750 | ± 2.5 | PASS |
| | HCH | VL | TN | 2.75 | 0.001074 | ± 2.5 | PASS |
| | | VN | TN | 4.1 | 0.001602 | ± 2.5 | PASS |
| | | VH | TN | 3.16 | 0.001234 | ± 2.5 | PASS |
| 16QAM | LCH | VL | TN | -0.1 | -0.000040 | ± 2.5 | PASS |
| | | VN | TN | 0.89 | 0.000355 | ± 2.5 | PASS |
| | | VH | TN | 2.87 | 0.001143 | ± 2.5 | PASS |
| | MCH | VL | TN | 4.28 | 0.001688 | ± 2.5 | PASS |
| | | VN | TN | 4.98 | 0.001964 | ± 2.5 | PASS |
| | | VH | TN | 2.87 | 0.001132 | ± 2.5 | PASS |
| | HCH | VL | TN | 0.77 | 0.000301 | ± 2.5 | PASS |
| | | VN | TN | 0.17 | 0.000066 | ± 2.5 | PASS |
| | | VH | TN | 1.61 | 0.000629 | ± 2.5 | PASS |

| Temperature | | | | | | | |
|---|---|---|---|---|---|---|---|
| Modulation | Channel | Voltage [Vdc] | Temperature (℃) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| QPSK | LCH | VN | -30 | 1.39 | 0.000554 | ± 2.5 | PASS |
| | | VN | -20 | 2.56 | 0.001020 | ± 2.5 | PASS |
| | | VN | -10 | 0.81 | 0.000323 | ± 2.5 | PASS |
| | | VN | 0 | 3.74 | 0.001490 | ± 2.5 | PASS |
| | | VN | 10 | -1 | -0.000398 | ± 2.5 | PASS |
| | | VN | 20 | -0.83 | -0.000331 | ± 2.5 | PASS |
| | | VN | 30 | 3.27 | 0.001303 | ± 2.5 | PASS |
| | | VN | 40 | 4.49 | 0.001789 | ± 2.5 | PASS |
| | | VN | 50 | -1.48 | -0.000590 | ± 2.5 | PASS |
| | MCH | VN | -30 | -1.64 | -0.000647 | ± 2.5 | PASS |
| | | VN | -20 | 4.95 | 0.001953 | ± 2.5 | PASS |
| | | VN | -10 | 1.55 | 0.000611 | ± 2.5 | PASS |
| | | VN | 0 | 1.05 | 0.000414 | ± 2.5 | PASS |
| | | VN | 10 | 4.46 | 0.001759 | ± 2.5 | PASS |
| | | VN | 20 | 3.06 | 0.001207 | ± 2.5 | PASS |
| | | VN | 30 | 2.75 | 0.001085 | ± 2.5 | PASS |
| | | VN | 40 | 4.18 | 0.001649 | ± 2.5 | PASS |
| | | VN | 50 | -0.97 | -0.000383 | ± 2.5 | PASS |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | HCH | VN | -30 | 0.44 | 0.000172 | ± 2.5 | PASS |
| | | VN | -20 | 3.01 | 0.001176 | ± 2.5 | PASS |
| | | VN | -10 | -0.73 | -0.000285 | ± 2.5 | PASS |
| | | VN | 0 | 3.04 | 0.001188 | ± 2.5 | PASS |
| | | VN | 10 | 2.12 | 0.000828 | ± 2.5 | PASS |
| | | VN | 20 | -0.13 | -0.000051 | ± 2.5 | PASS |
| | | VN | 30 | -0.32 | -0.000125 | ± 2.5 | PASS |
| | | VN | 40 | -0.9 | -0.000352 | ± 2.5 | PASS |
| | | VN | 50 | 0.44 | 0.000172 | ± 2.5 | PASS |
| 16QAM | LCH | VN | -30 | 3.55 | 0.001414 | ± 2.5 | PASS |
| | | VN | -20 | 0.57 | 0.000227 | ± 2.5 | PASS |
| | | VN | -10 | 1.43 | 0.000570 | ± 2.5 | PASS |
| | | VN | 0 | 0.78 | 0.000311 | ± 2.5 | PASS |
| | | VN | 10 | -1.06 | -0.000422 | ± 2.5 | PASS |
| | | VN | 20 | -0.49 | -0.000195 | ± 2.5 | PASS |
| | | VN | 30 | -1.68 | -0.000669 | ± 2.5 | PASS |
| | | VN | 40 | 4.71 | 0.001876 | ± 2.5 | PASS |
| | | VN | 50 | 1.6 | 0.000637 | ± 2.5 | PASS |
| | MCH | VN | -30 | 2.46 | 0.000970 | ± 2.5 | PASS |
| | | VN | -20 | 2.38 | 0.000939 | ± 2.5 | PASS |
| | | VN | -10 | 3.75 | 0.001479 | ± 2.5 | PASS |
| | | VN | 0 | 3.65 | 0.001440 | ± 2.5 | PASS |
| | | VN | 10 | 1.22 | 0.000481 | ± 2.5 | PASS |
| | | VN | 20 | 4.36 | 0.001720 | ± 2.5 | PASS |
| | | VN | 30 | 4.61 | 0.001819 | ± 2.5 | PASS |
| | | VN | 40 | 3.01 | 0.001187 | ± 2.5 | PASS |
| | | VN | 50 | 2.87 | 0.001132 | ± 2.5 | PASS |
| | HCH | VN | -30 | 1.01 | 0.000395 | ± 2.5 | PASS |
| | | VN | -20 | 0.6 | 0.000234 | ± 2.5 | PASS |
| | | VN | -10 | 2.81 | 0.001098 | ± 2.5 | PASS |
| | | VN | 0 | 1.88 | 0.000734 | ± 2.5 | PASS |
| | | VN | 10 | 1.55 | 0.000605 | ± 2.5 | PASS |
| | | VN | 20 | -1.87 | -0.000730 | ± 2.5 | PASS |
| | | VN | 30 | 0.24 | 0.000094 | ± 2.5 | PASS |
| | | VN | 40 | -1.7 | -0.000664 | ± 2.5 | PASS |
| | | VN | 50 | 1.74 | 0.000680 | ± 2.5 | PASS |