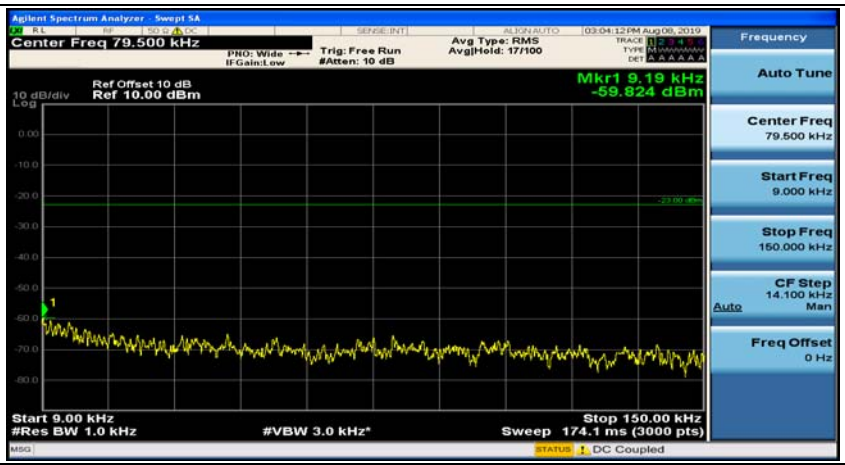
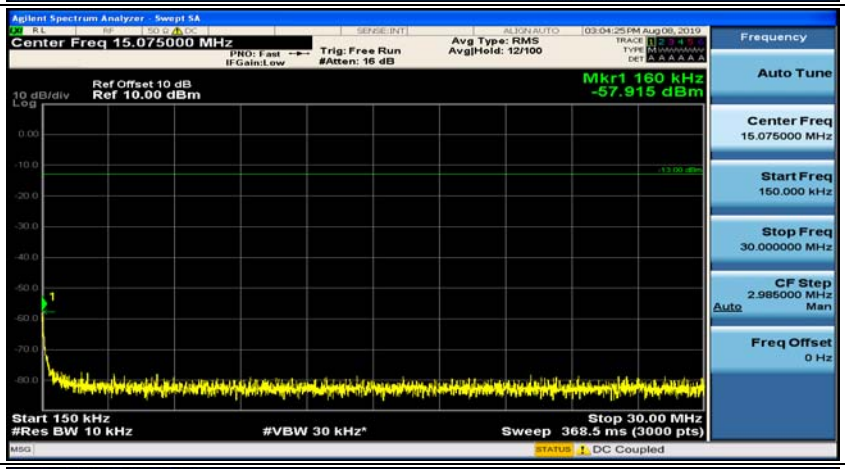
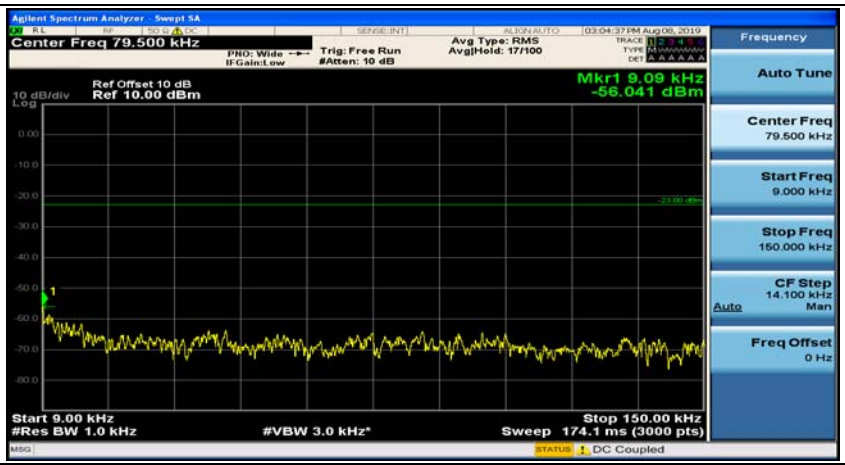
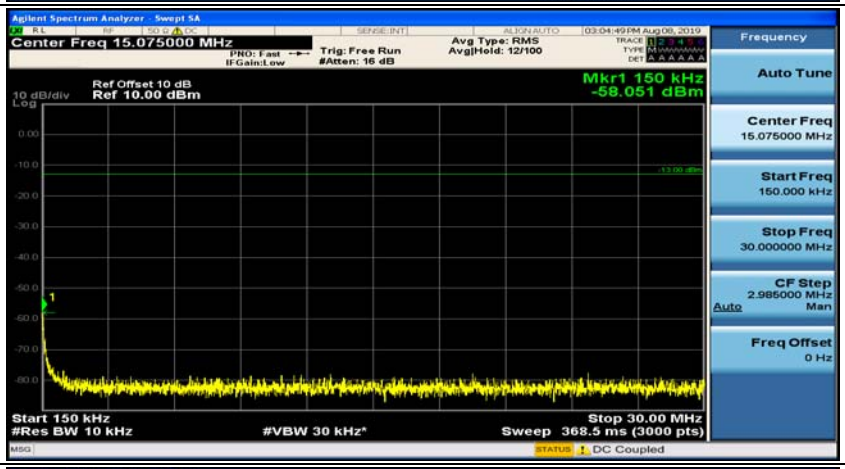
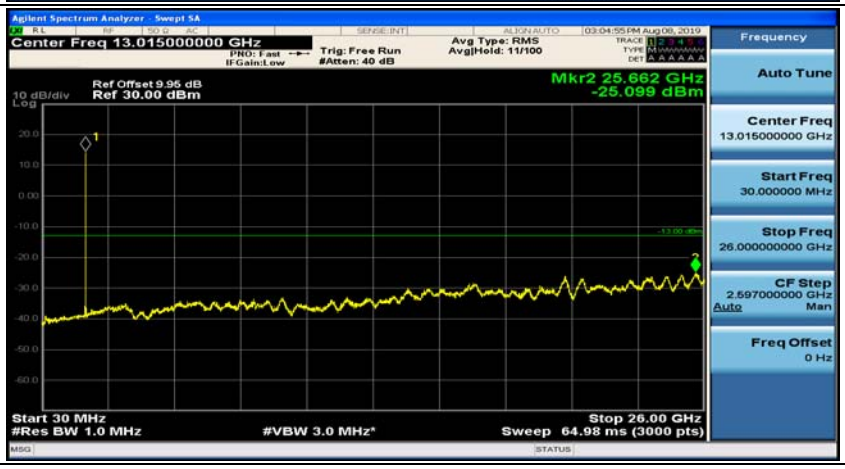


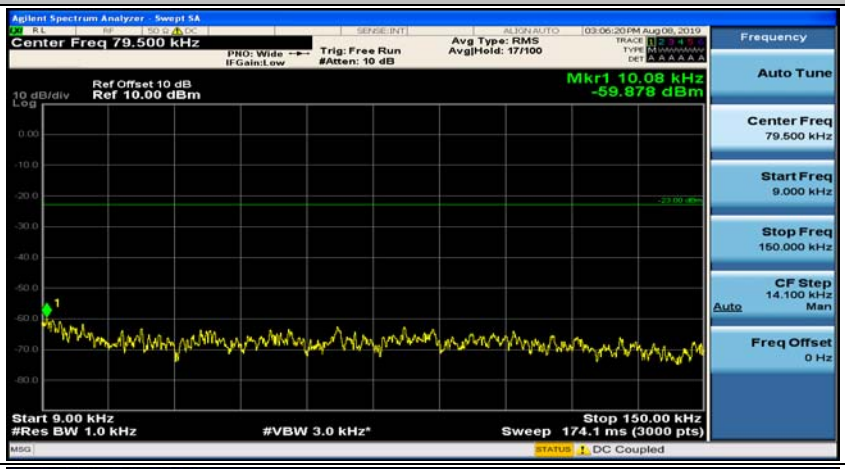
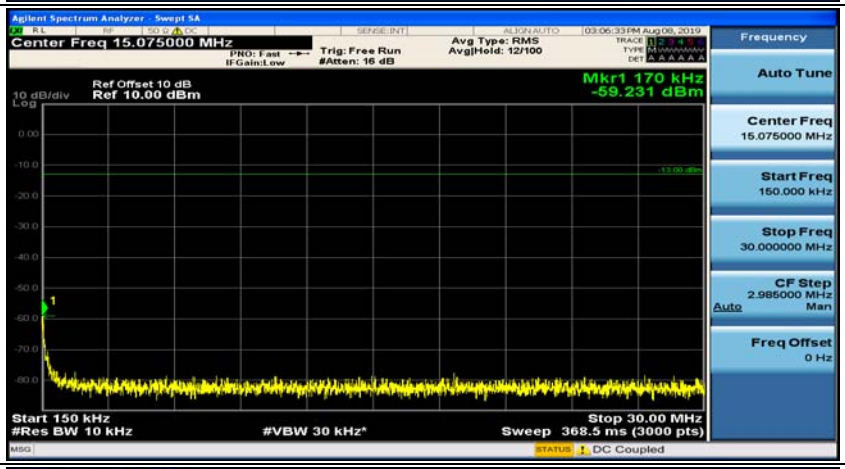
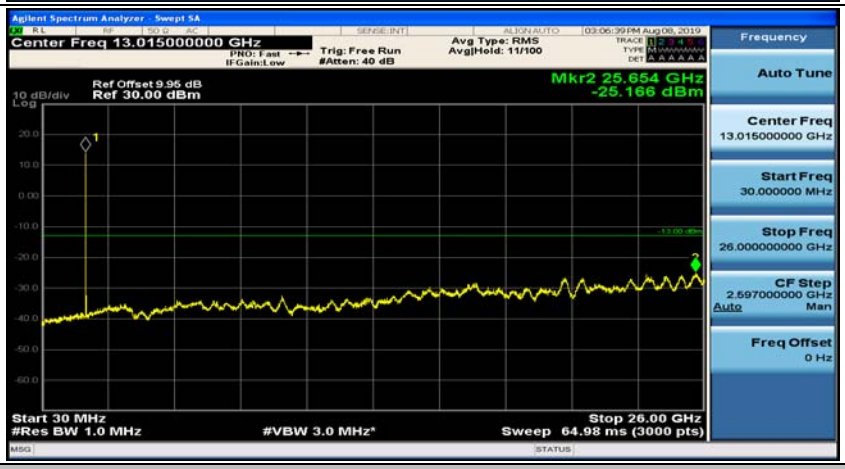


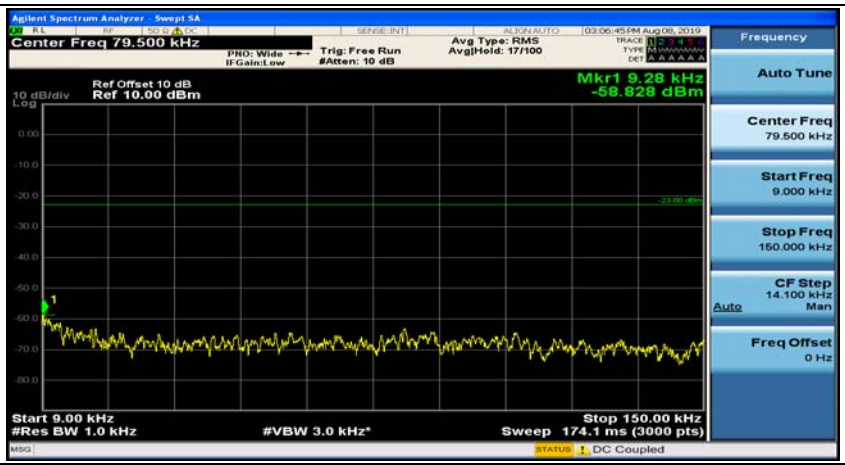
(Channel Bandwidth:15 MHz)_MCH_QPSK_1RB#74

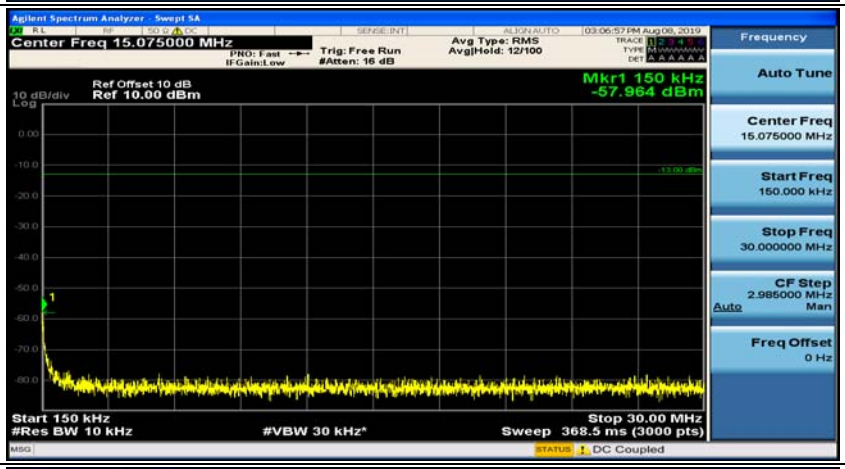

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
03:04:37 PM Aug 08, 2019
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 9.09 kHz
-56.041 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 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

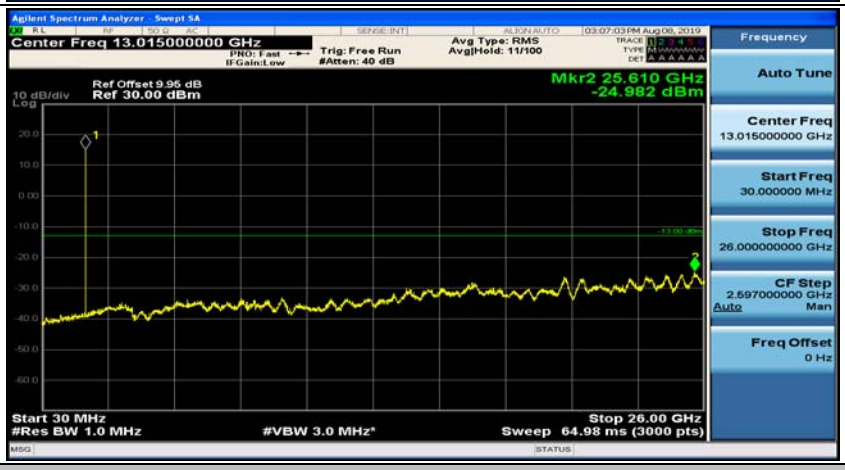

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 12/100
03:04:49 PM Aug 08, 2019
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 150 kHz
-58.051 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 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: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
03:04:55 PM Aug 08, 2019
Ref Offset 9.95 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr2 25.662 GHz
-25.099 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

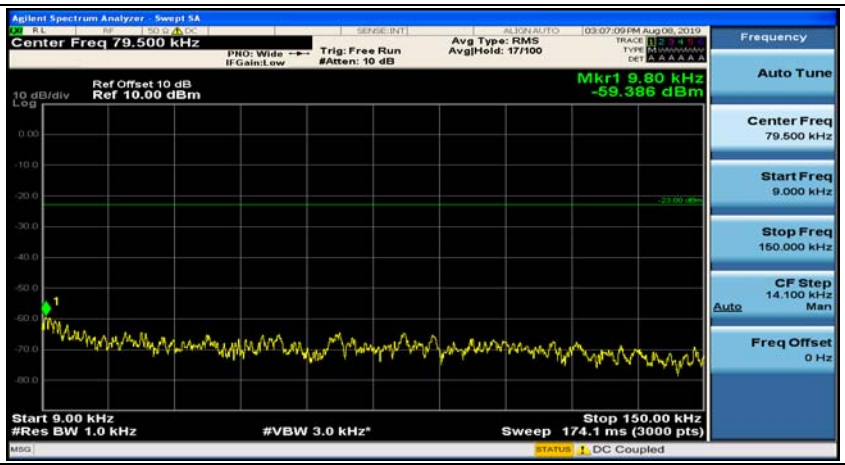
(Channel Bandwidth:15 MHz)_HCH_QPSK_1RB#0



(Channel Bandwidth:15 MHz)_HCH_QPSK_1RB#37

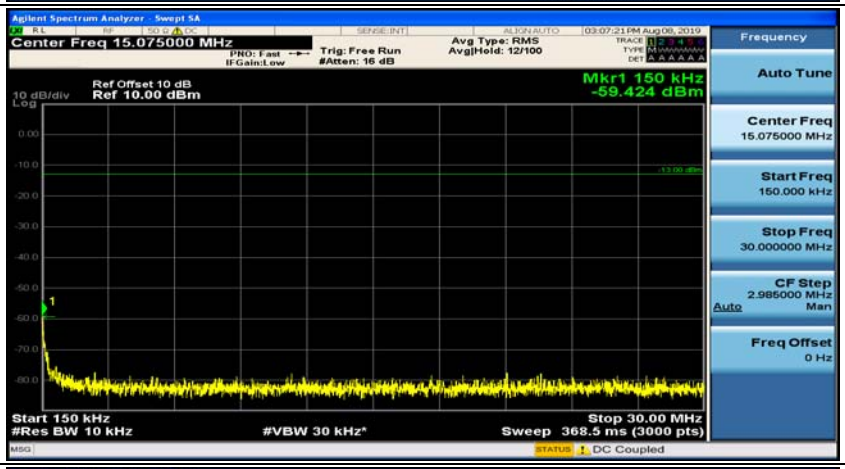


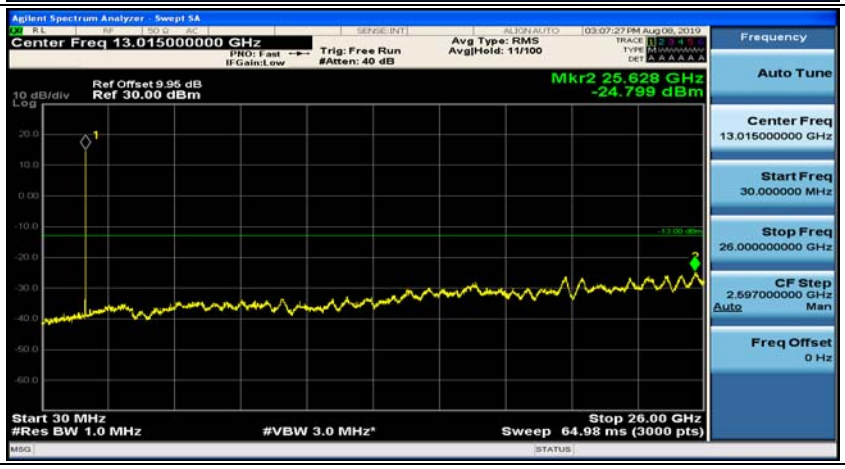


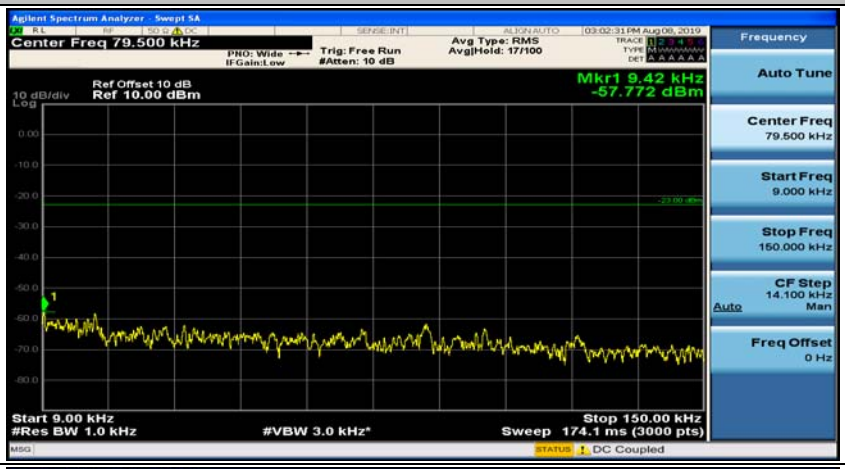
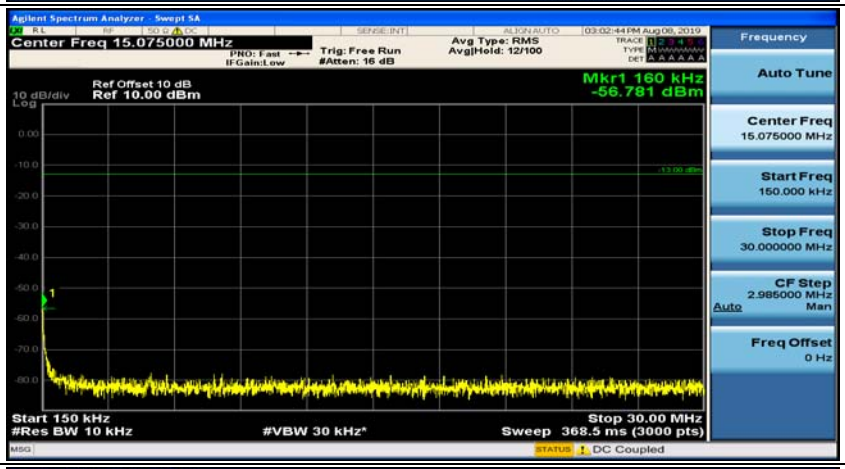
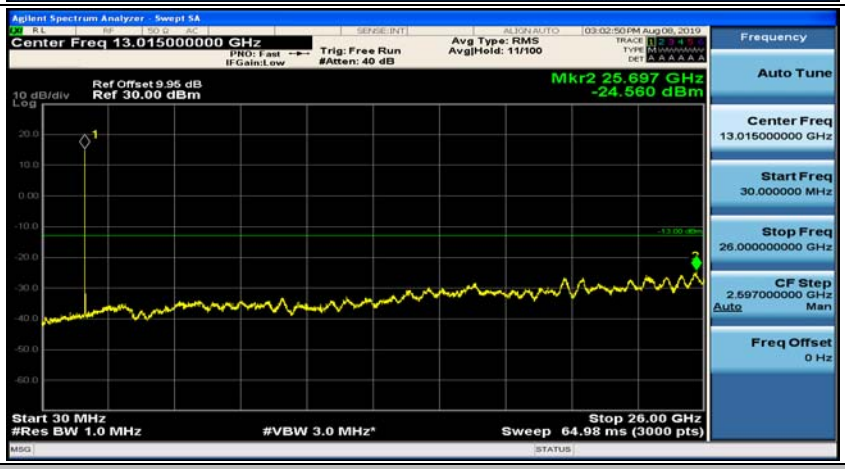


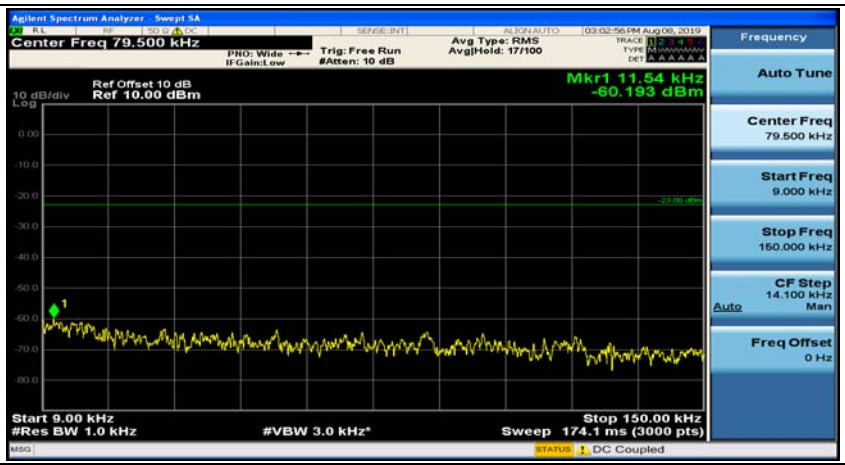
(Channel Bandwidth:15 MHz)_HCH_QPSK_1RB#74

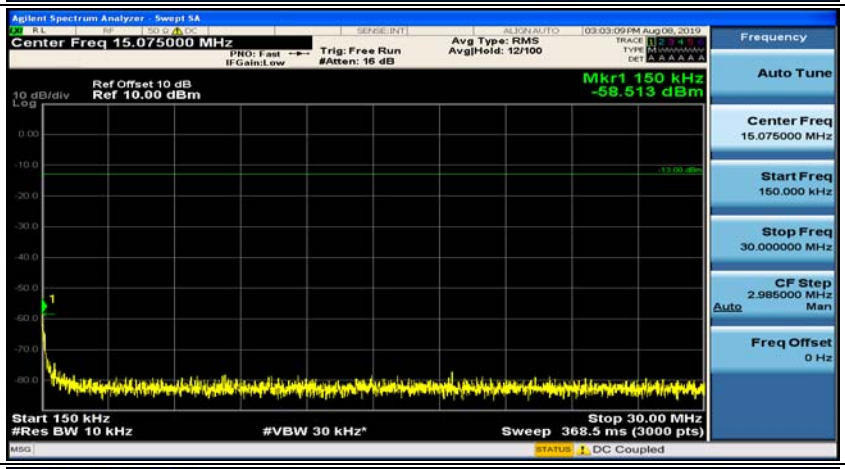

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
03:07:09 PM Aug 08, 2019
Frequency
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 9.80 kHz
-59.386 dBm
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz
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


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
03:07:21 PM Aug 08, 2019
Frequency
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 150 kHz
-59.424 dBm
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
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled

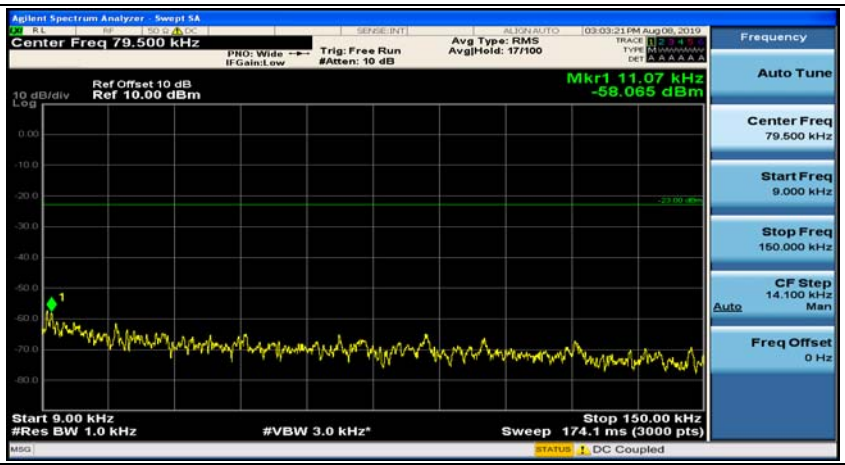

Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
03:07:27 PM Aug 08, 2019
Frequency
Ref Offset 9.95 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr2 25.628 GHz
-24.799 dBm
Auto Tune
Center Freq
13.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.597000000 GHz
Auto
Man
Freq Offset
0 Hz
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)

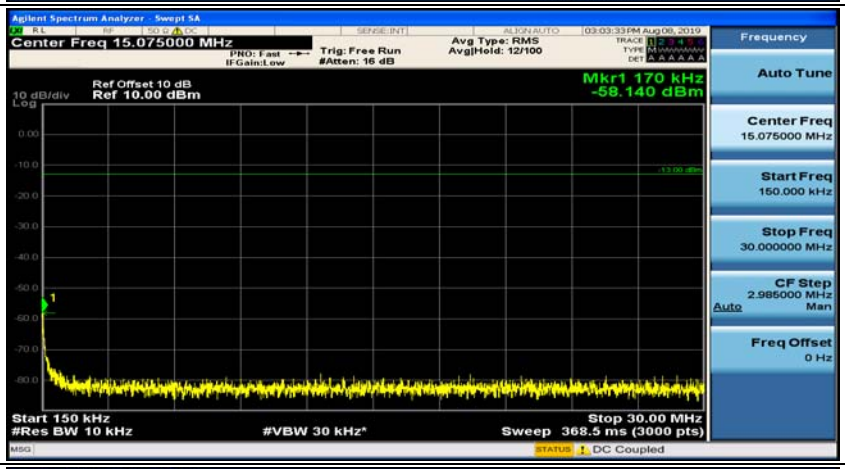
(Channel Bandwidth:15 MHz)_LCH_16QAM_1RB#0



(Channel Bandwidth:15 MHz)_LCH_16QAM_1RB#37

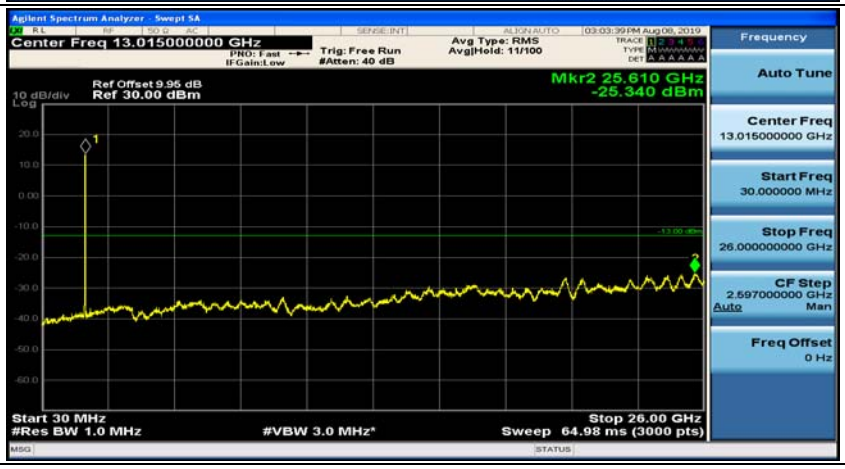


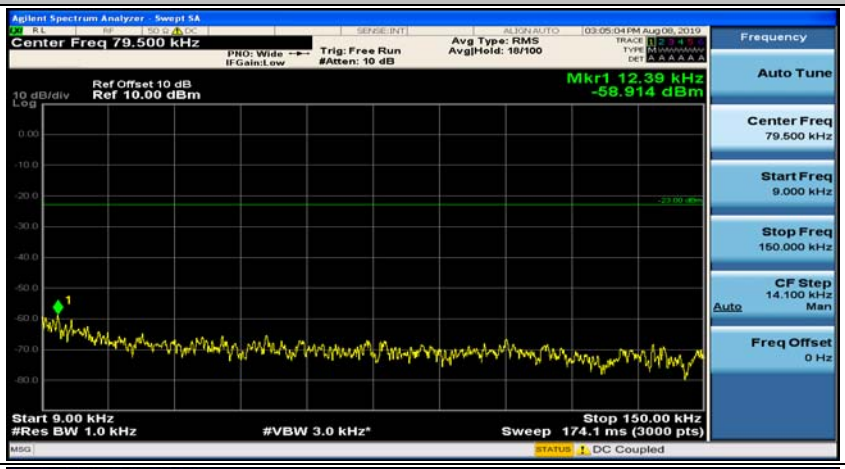
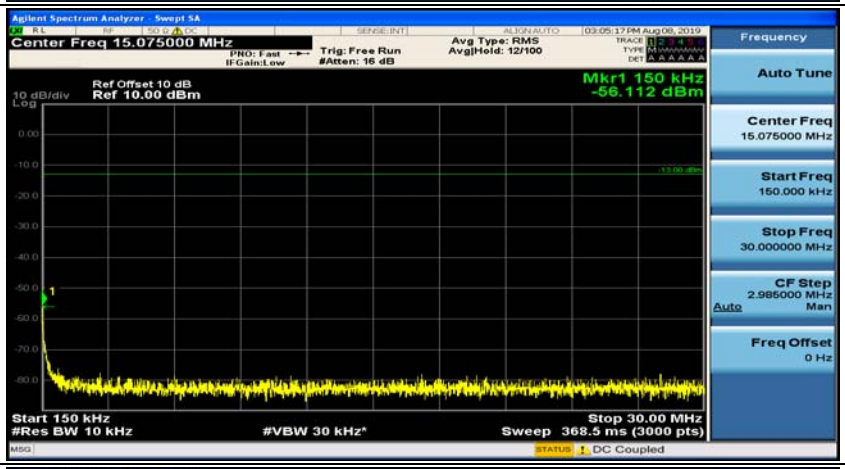
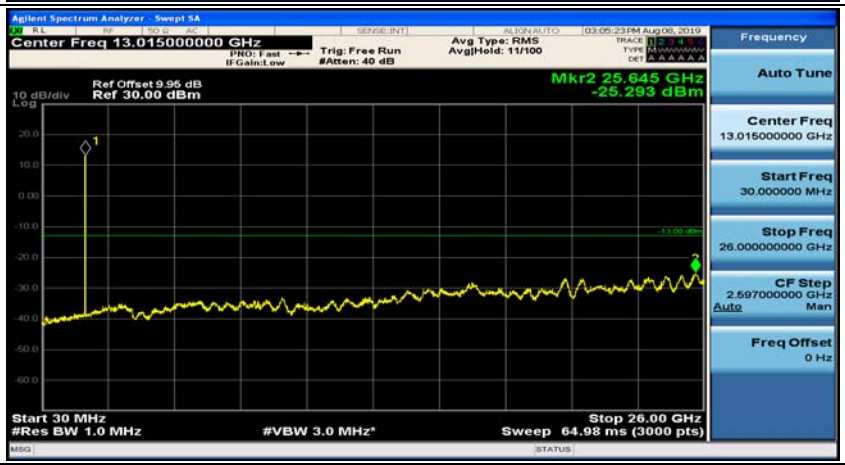


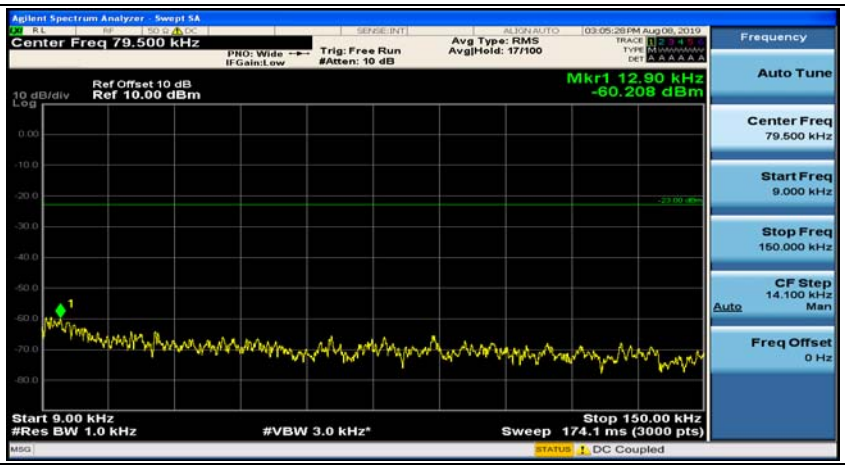
(Channel Bandwidth:15 MHz)_LCH_16QAM_1RB#74

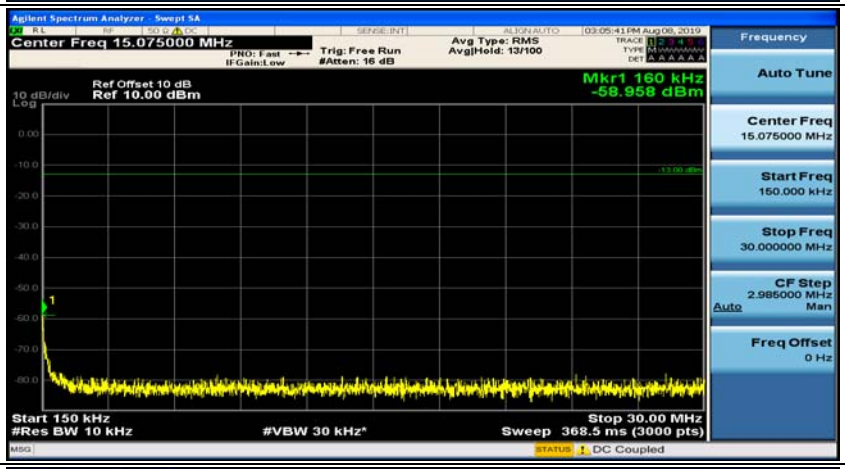

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
03:03:21 PM Aug 08, 2019
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 11.07 kHz
-58.065 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 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
03:03:33 PM Aug 08, 2019
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 170 kHz
-58.140 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

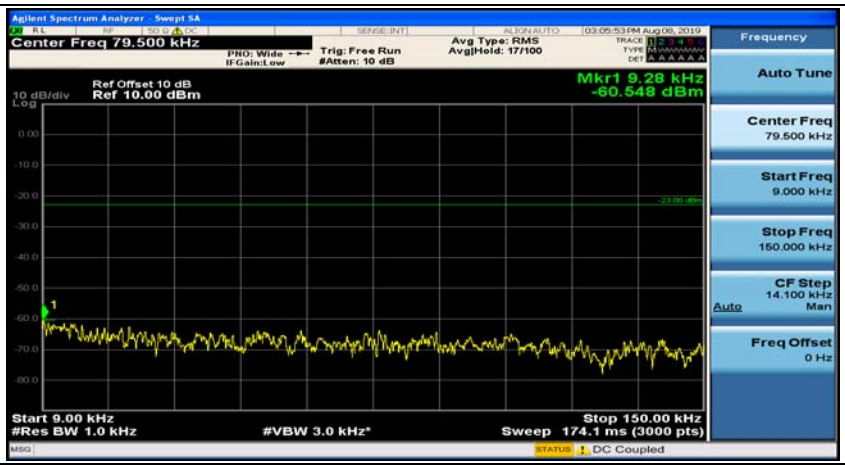

Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
03:03:39 PM Aug 08, 2019
Ref Offset 9.95 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr2 25.610 GHz
-25.340 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 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

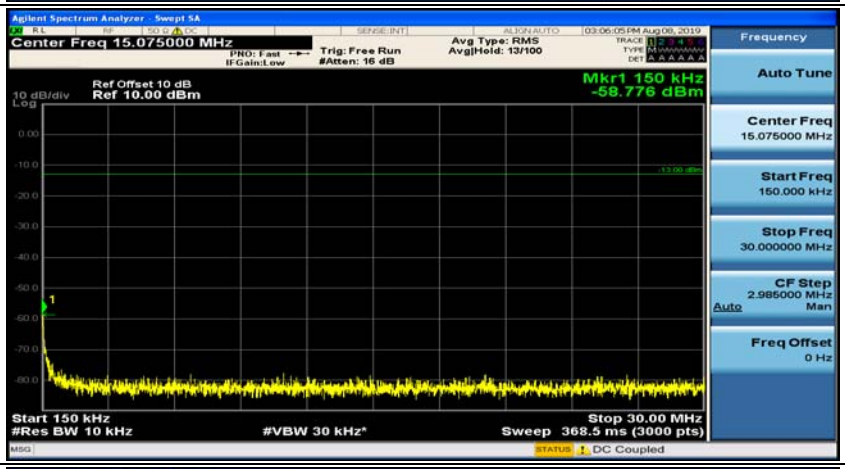
(Channel Bandwidth:15 MHz)_MCH_16QAM_1RB#0



(Channel Bandwidth:15 MHz)_MCH_16QAM_1RB#37

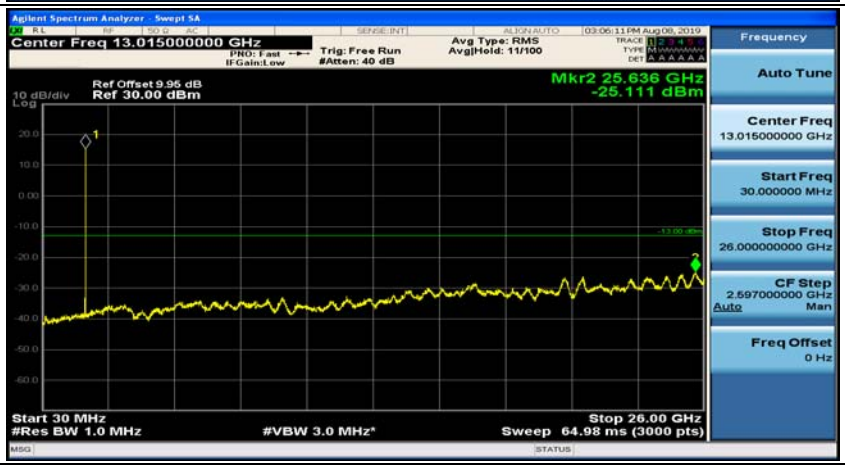


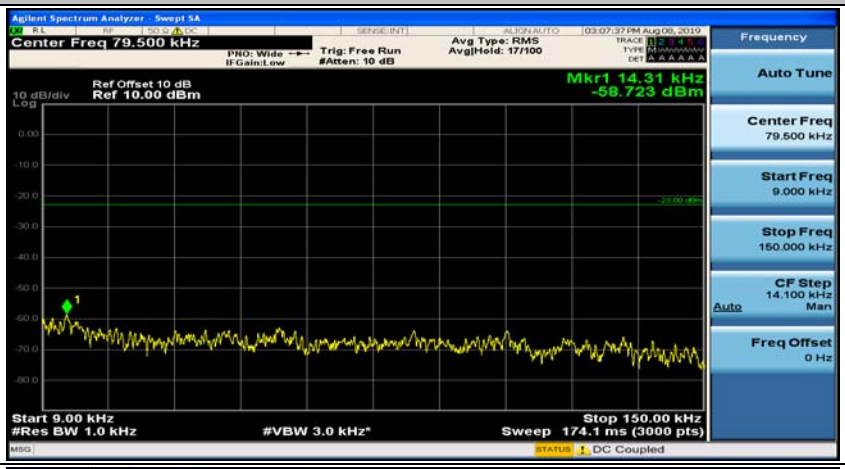
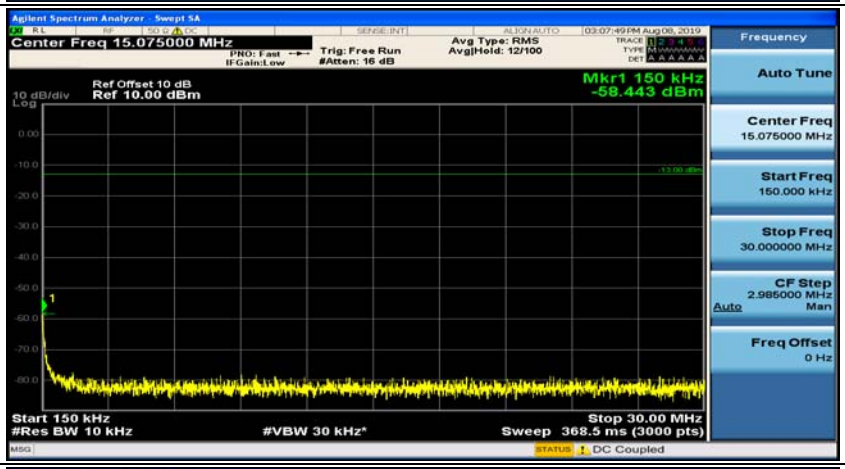
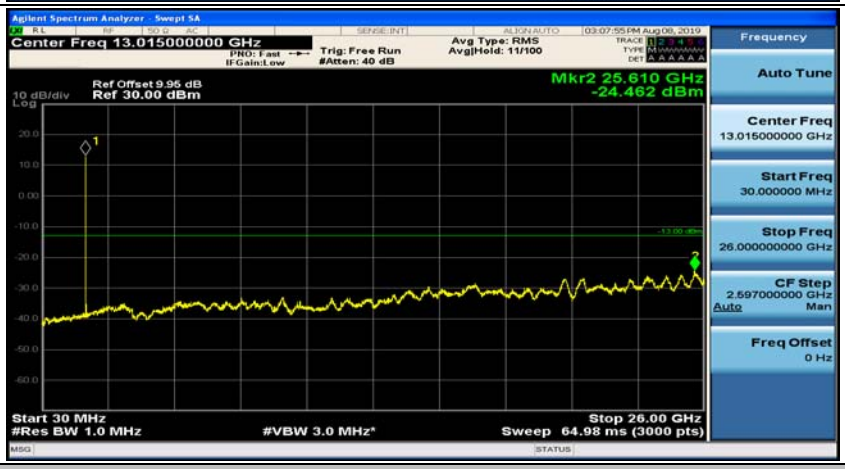


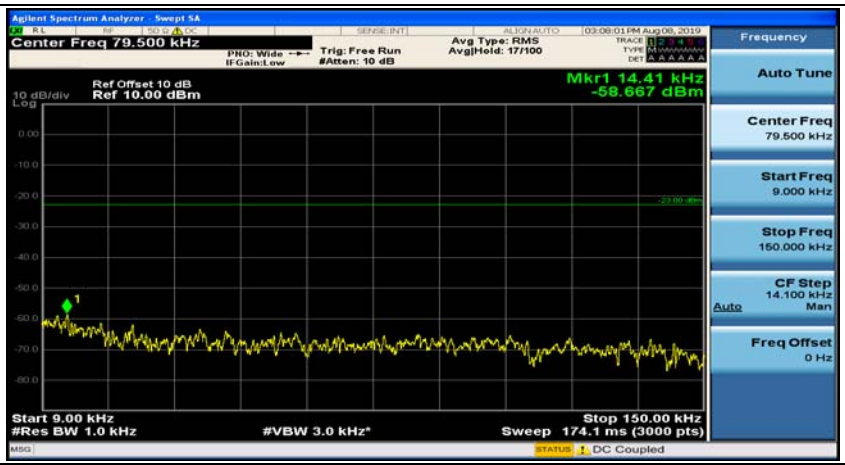
(Channel Bandwidth:15 MHz)_MCH_16QAM_1RB#74

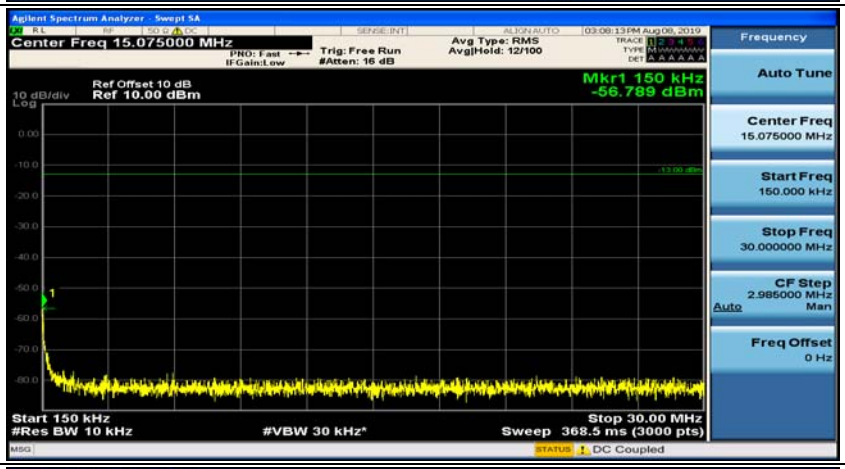

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
03:05:53 PM Aug 08, 2019
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 9.28 kHz
-60.548 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 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: 13/100
03:06:05 PM Aug 08, 2019
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 150 kHz
-58.776 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

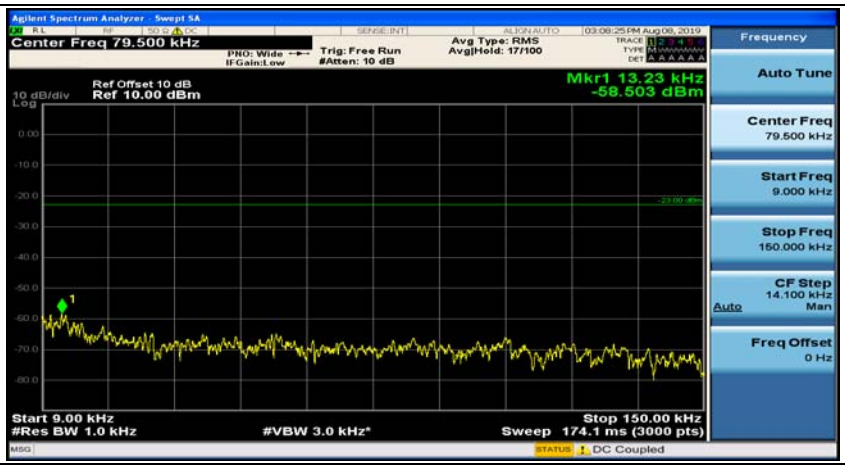

Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
03:06:11 PM Aug 08, 2019
Ref Offset 9.95 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr2 25.636 GHz
-25.111 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 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

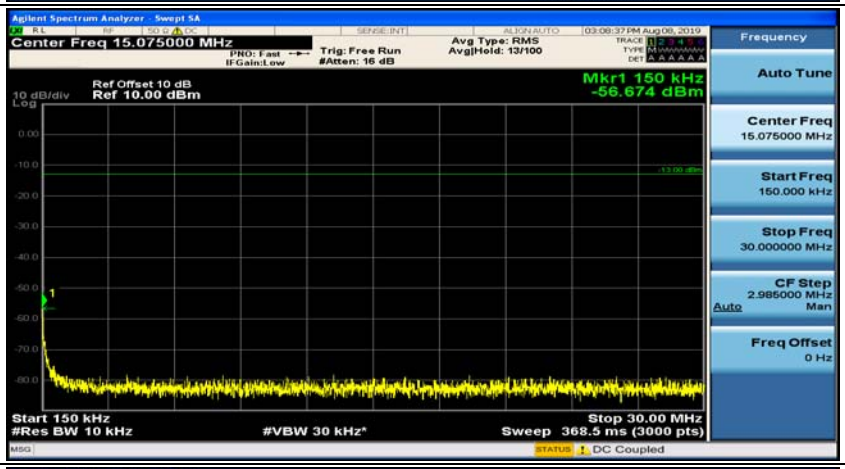
(Channel Bandwidth:15 MHz)_HCH_16QAM_1RB#0



(Channel Bandwidth:15 MHz)_HCH_16QAM_1RB#37

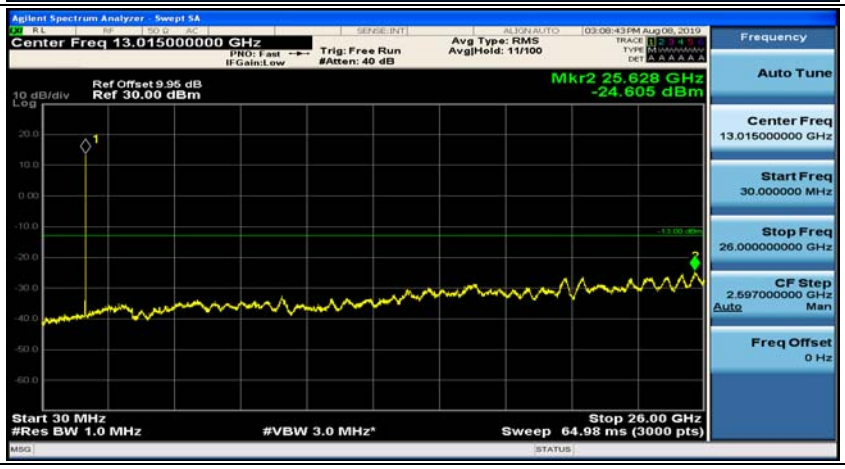




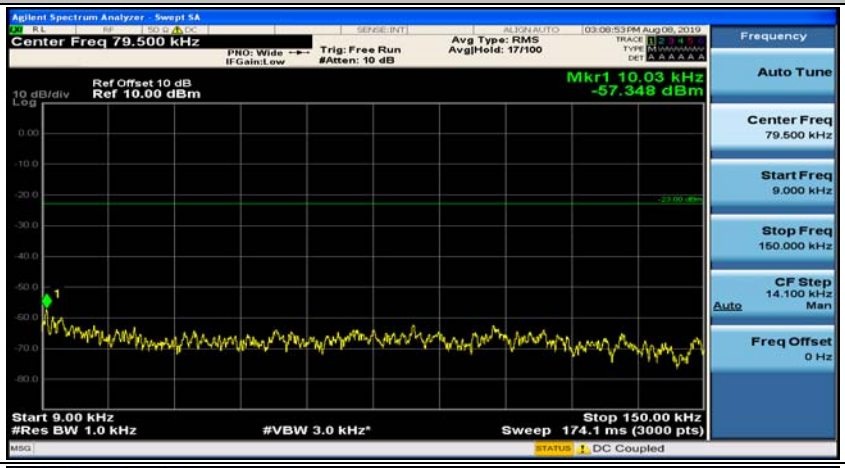
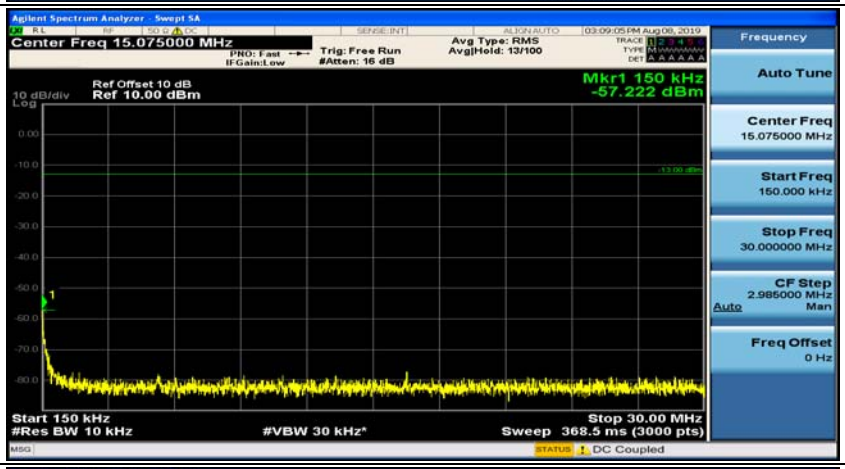
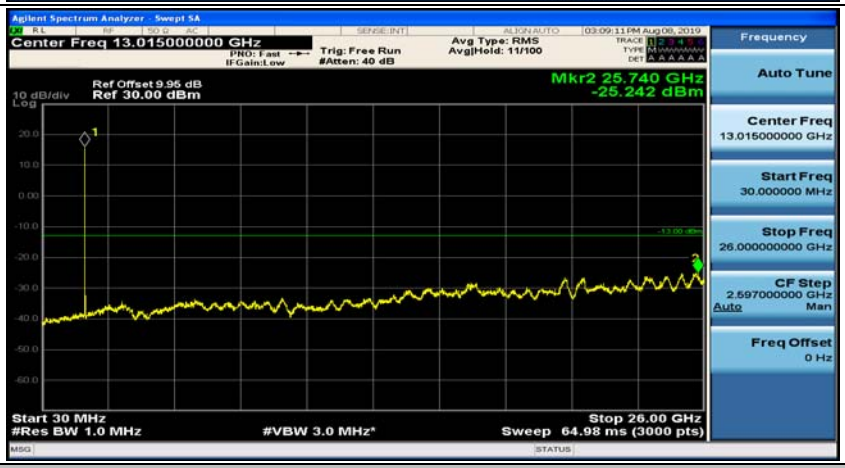
(Channel Bandwidth:15 MHz)_HCH_16QAM_1RB#74

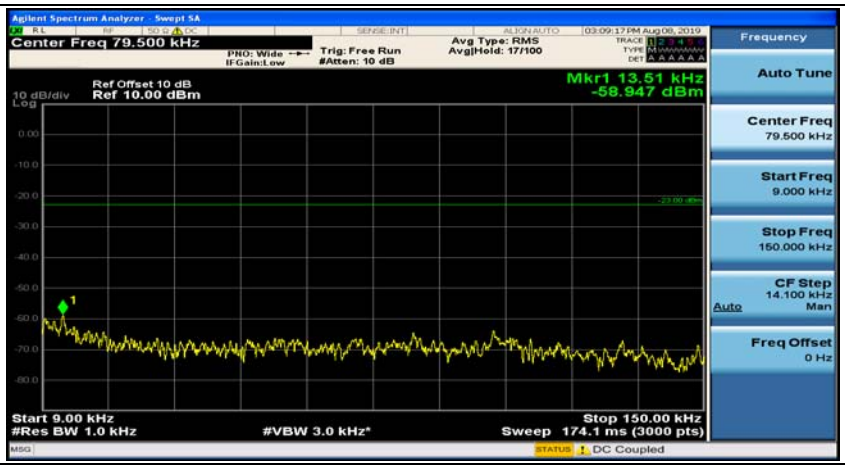

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
03:08:25 PM Aug 08, 2019
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 13.23 kHz
-58.503 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 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

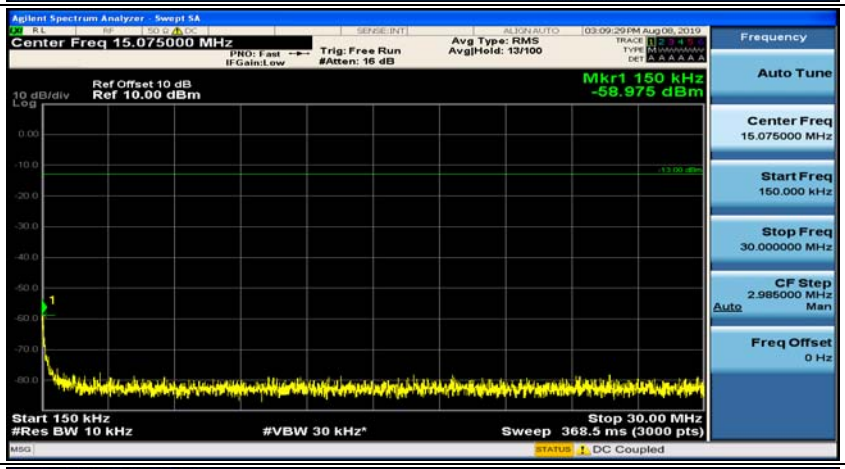

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 13/100
03:08:37 PM Aug 08, 2019
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 150 kHz
-56.674 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 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: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
03:08:43 PM Aug 08, 2019
Ref Offset 9.95 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr2 25.628 GHz
-24.605 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

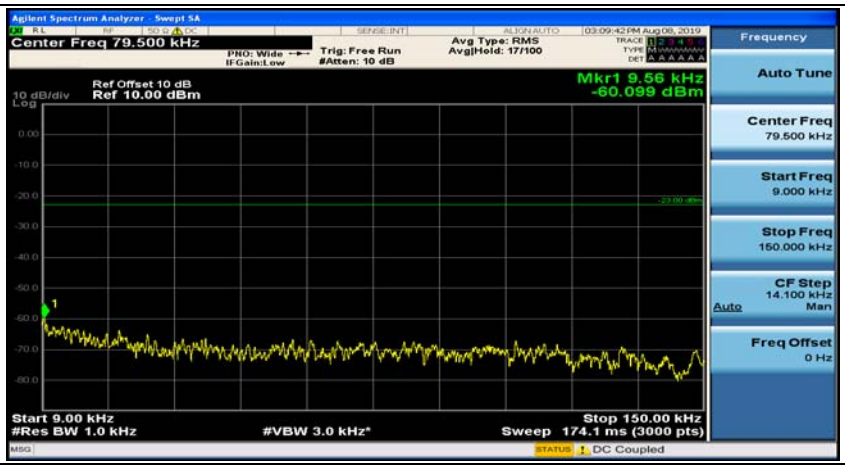
Channel Bandwidth: 20 MHz

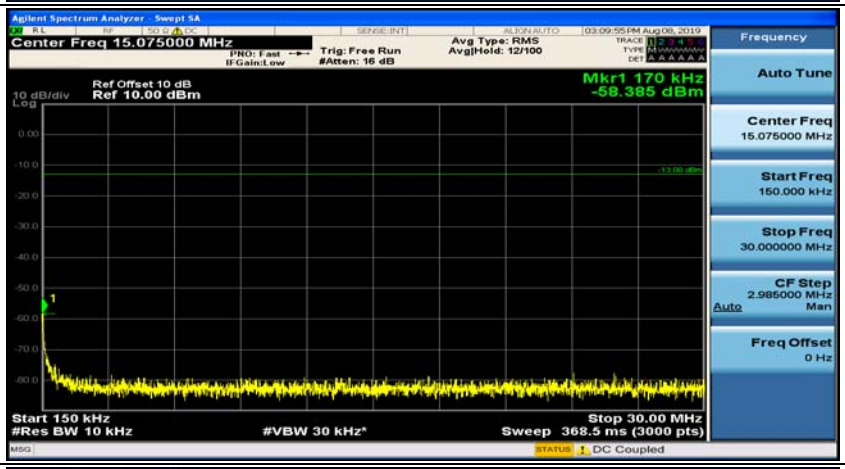
(Channel Bandwidth:20 MHz)_LCH_QPSK_1RB#0



(Channel Bandwidth:20 MHz)_LCH_QPSK_1RB#49

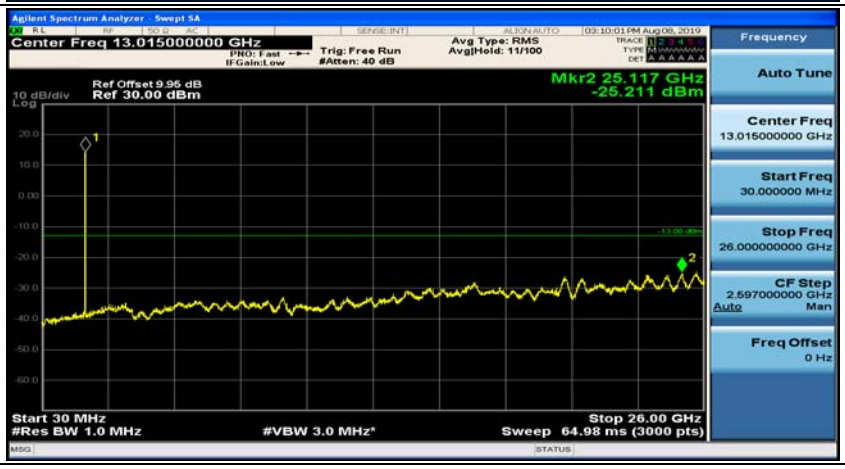


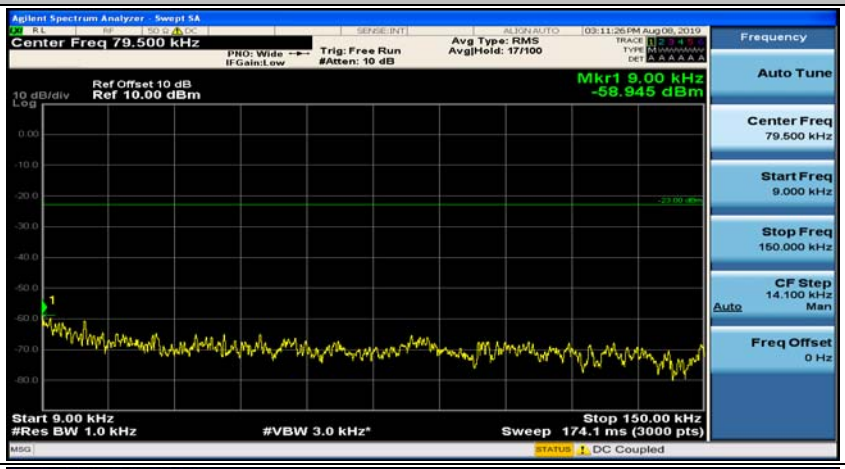
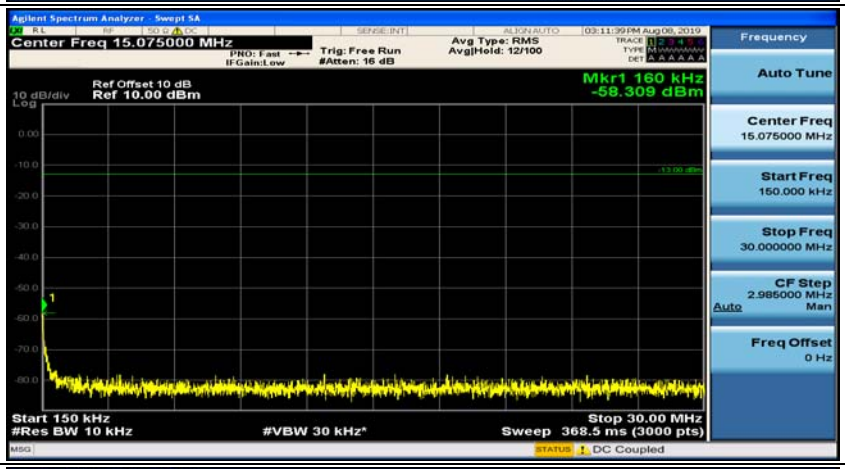
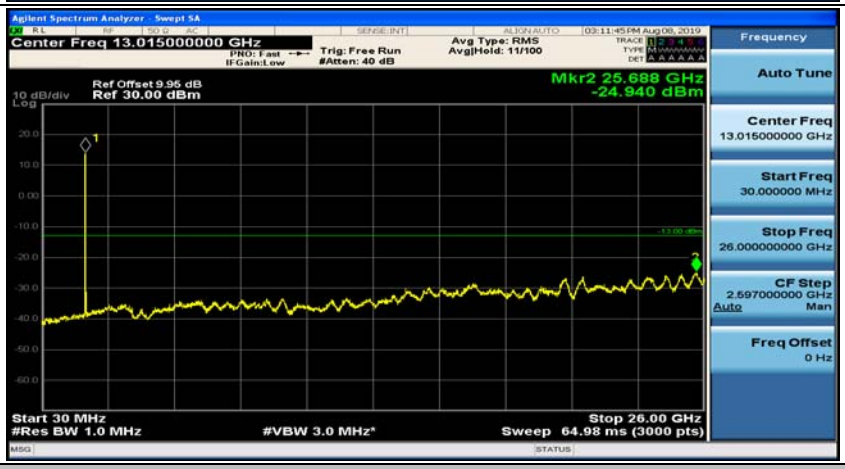


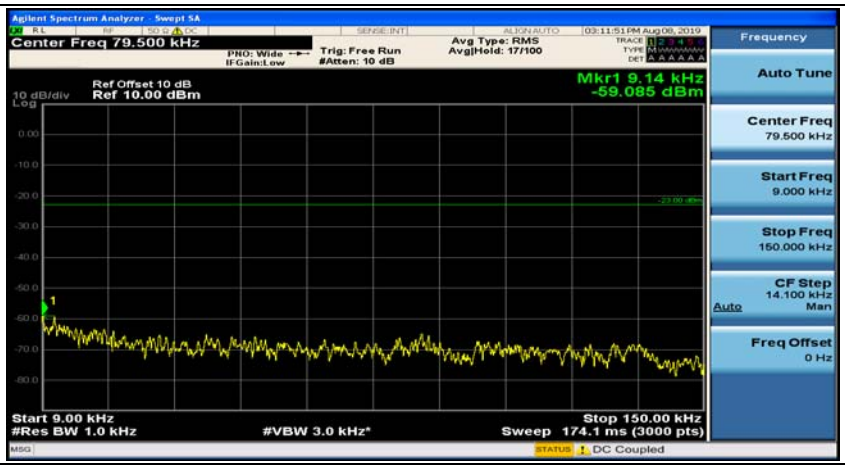
(Channel Bandwidth:20 MHz)_LCH_QPSK_1RB#99

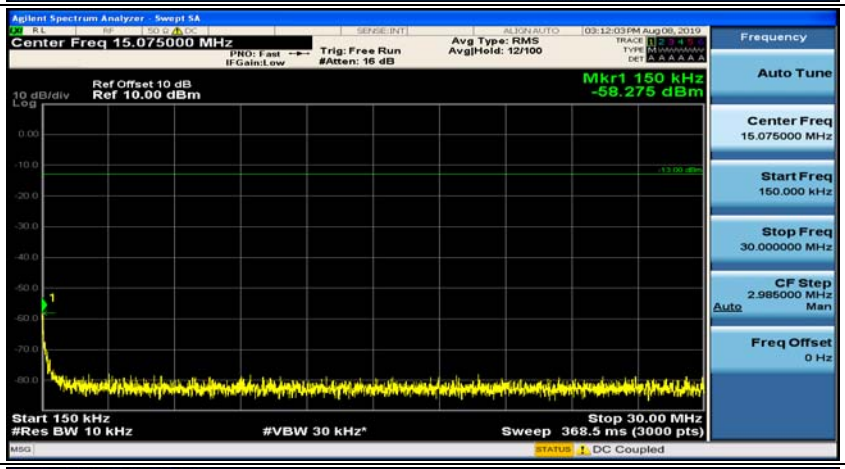

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
03:09:42 PM Aug 08, 2019
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 9.56 kHz
-60.099 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 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
03:09:55 PM Aug 08, 2019
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 170 kHz
-58.385 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

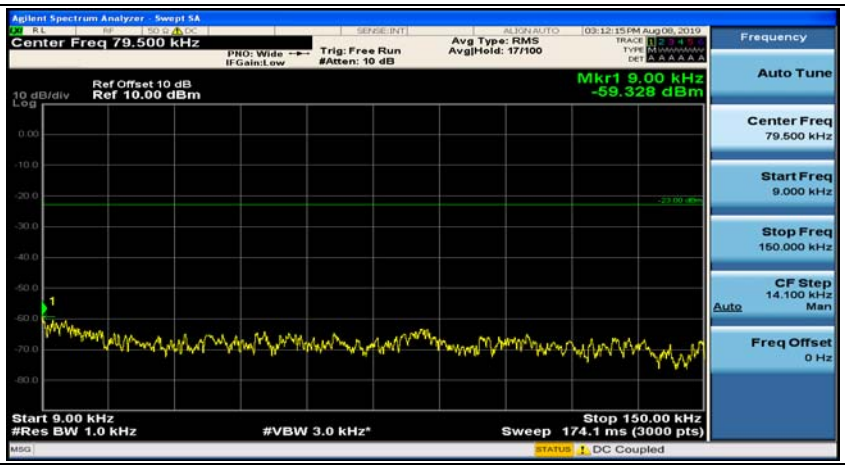

Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
03:10:01 PM Aug 08, 2019
Ref Offset 9.95 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr2 25.117 GHz
-25.211 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 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

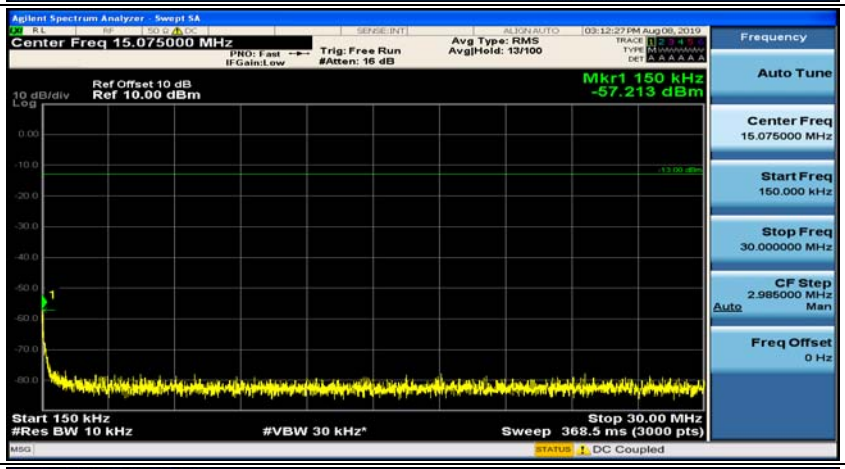
(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#0



(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#49

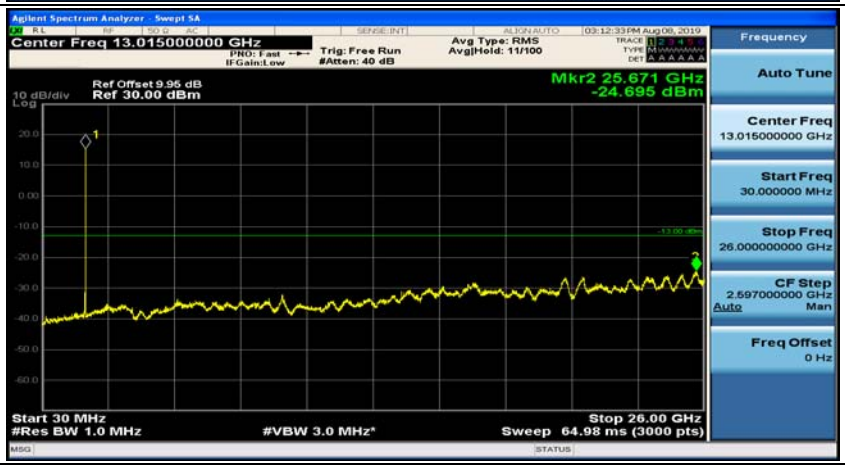




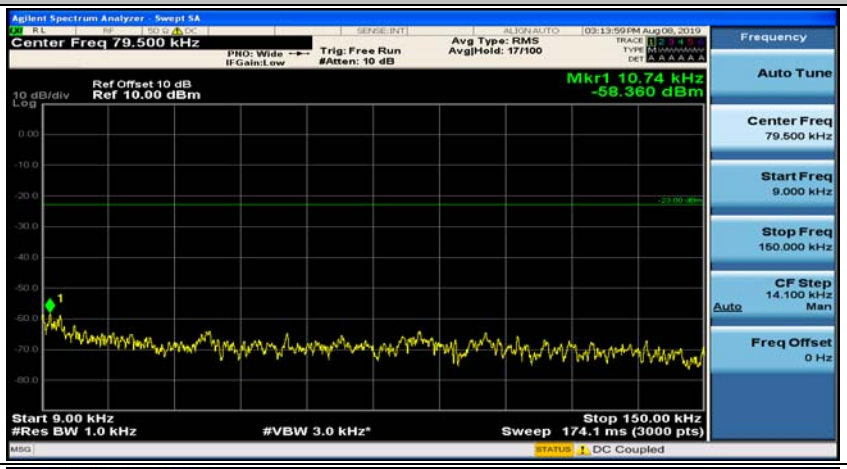
(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#99

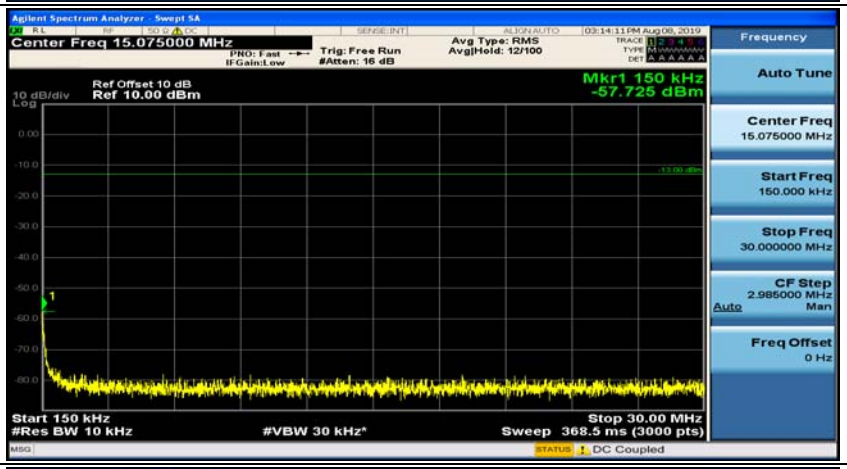

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
03:12:15 PM Aug 08, 2019
Frequency
Auto Tune
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 9.00 kHz
-59.328 dBm
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz
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


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: 13/100
03:12:27 PM Aug 08, 2019
Frequency
Auto Tune
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 150 kHz
-57.213 dBm
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
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled

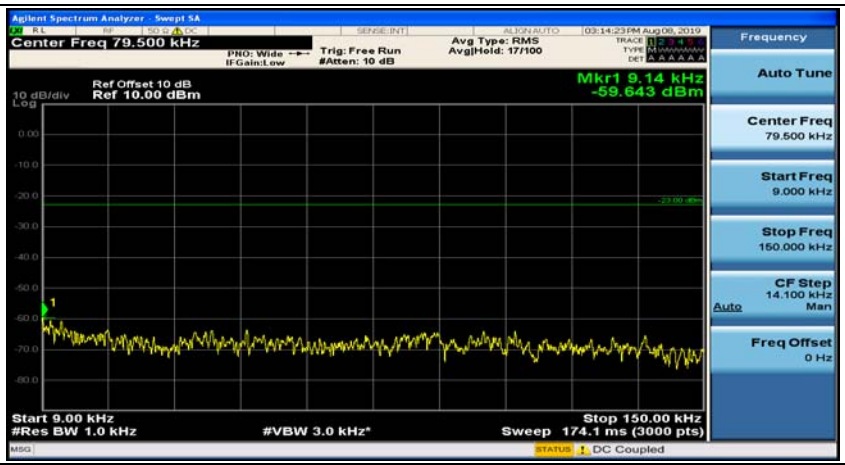

Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
03:12:33 PM Aug 08, 2019
Frequency
Auto Tune
Ref Offset 9.95 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr2 25.671 GHz
-24.695 dBm
Center Freq
13.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.597000000 GHz
Auto
Man
Freq Offset
0 Hz
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)

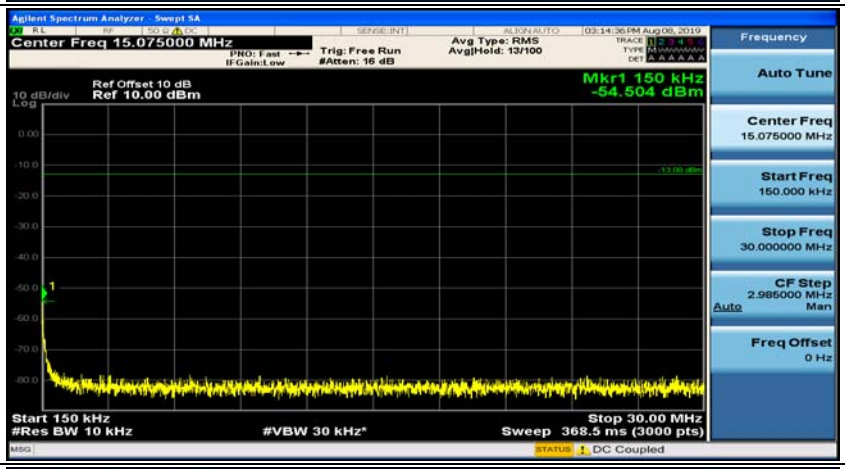
(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#0

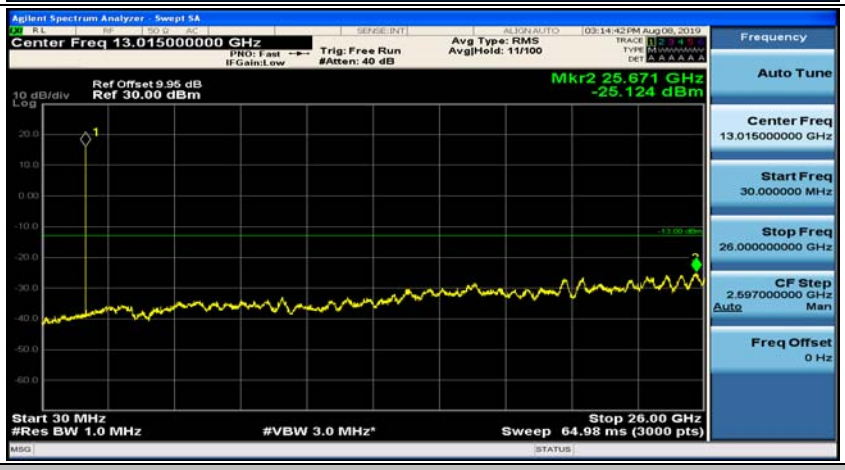




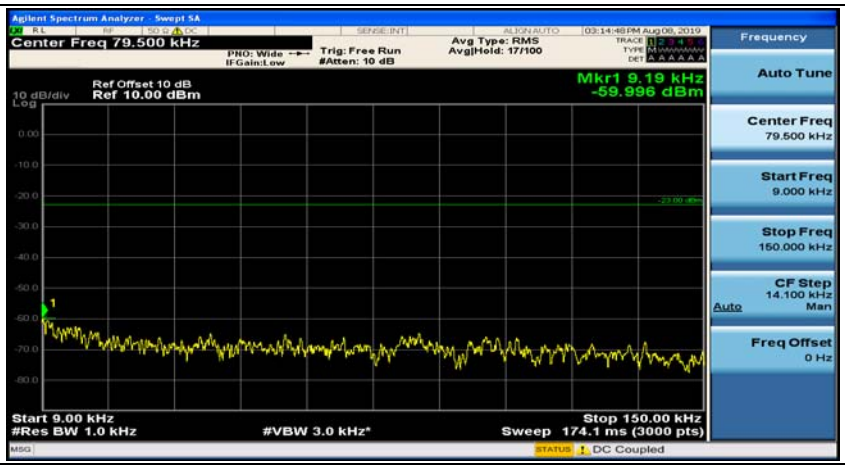
(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#49

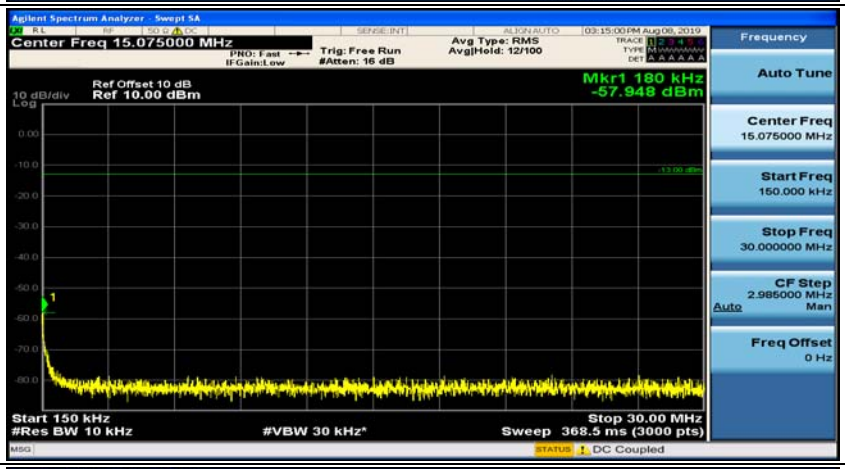


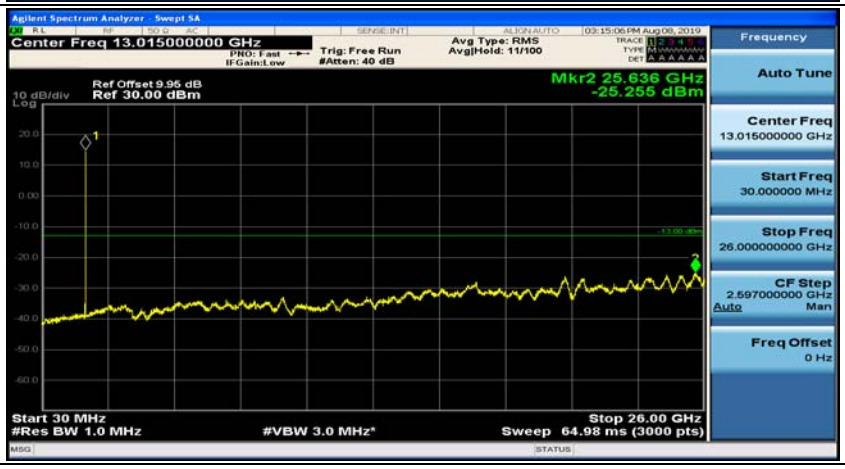


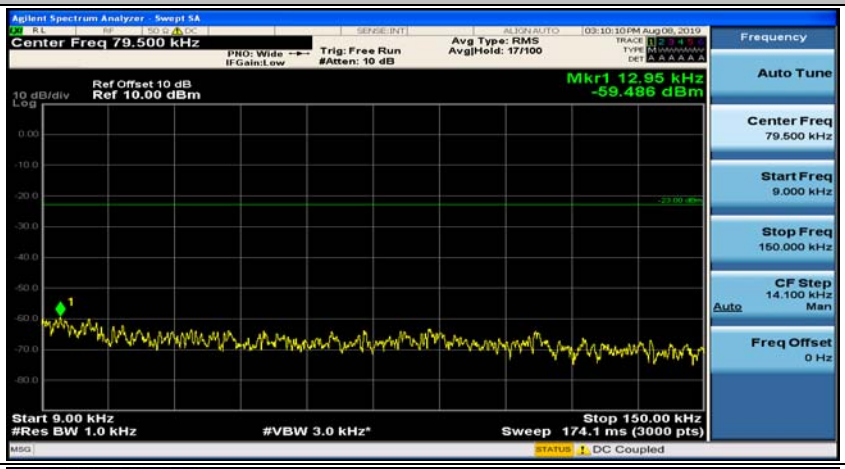
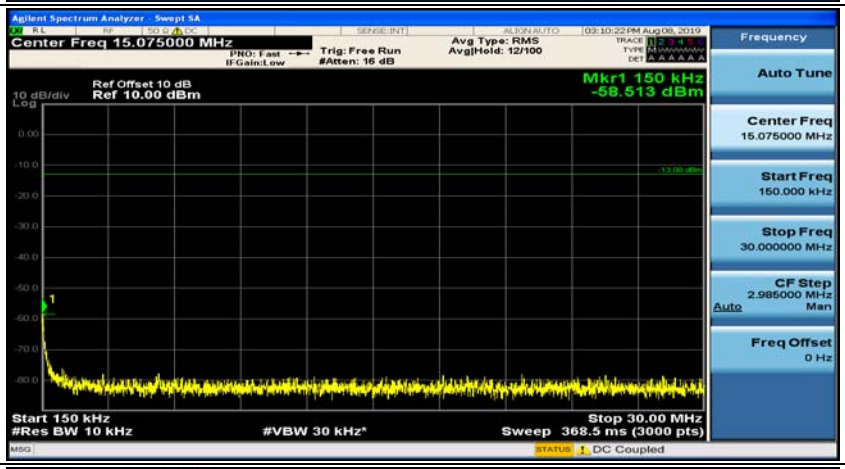
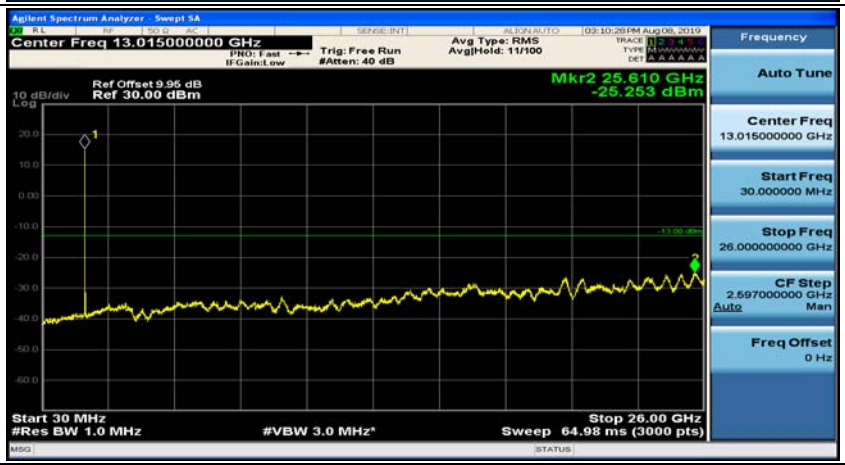


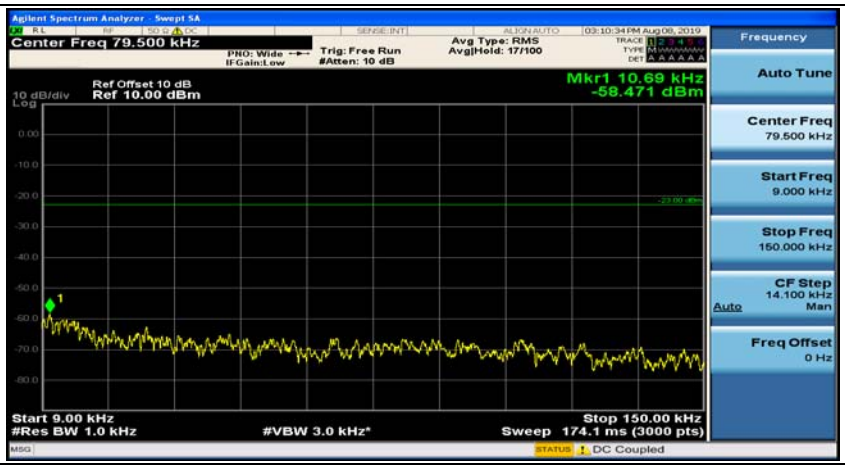
(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#99

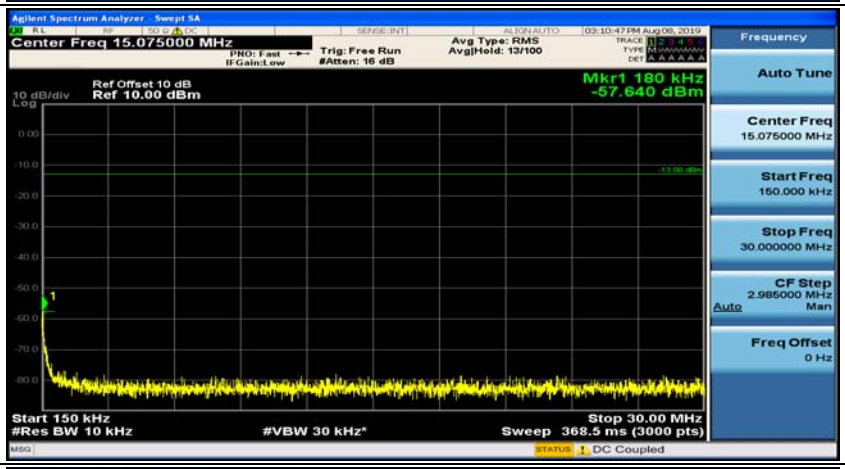

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
03:14:48 PM Aug 08, 2019
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 9.19 kHz
-59.996 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 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

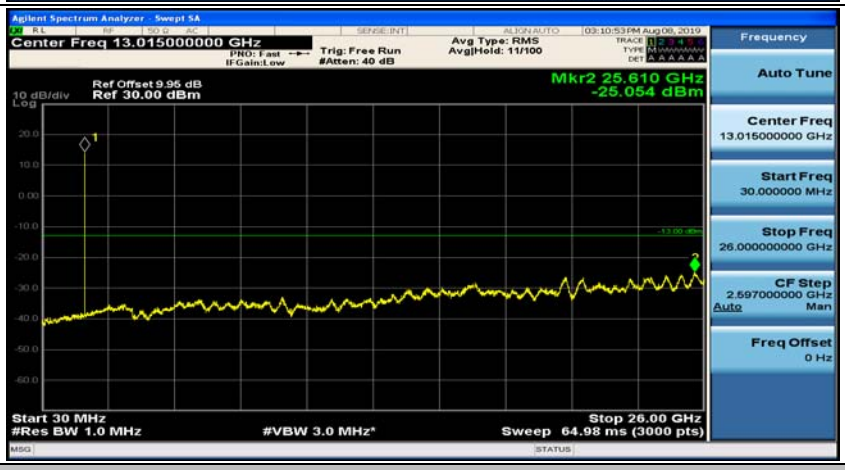

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 12/100
03:15:00 PM Aug 08, 2019
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 180 kHz
-57.948 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 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: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
03:15:06 PM Aug 08, 2019
Ref Offset 9.95 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr2 25.636 GHz
-25.255 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

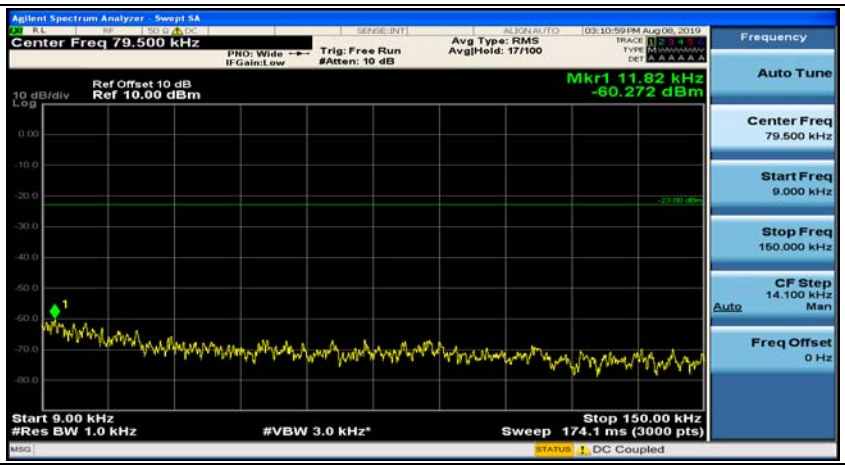
(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#0



(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#49

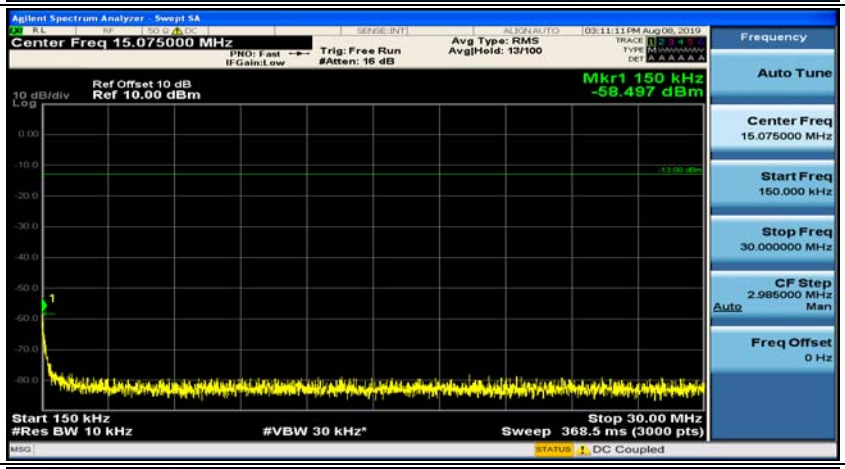


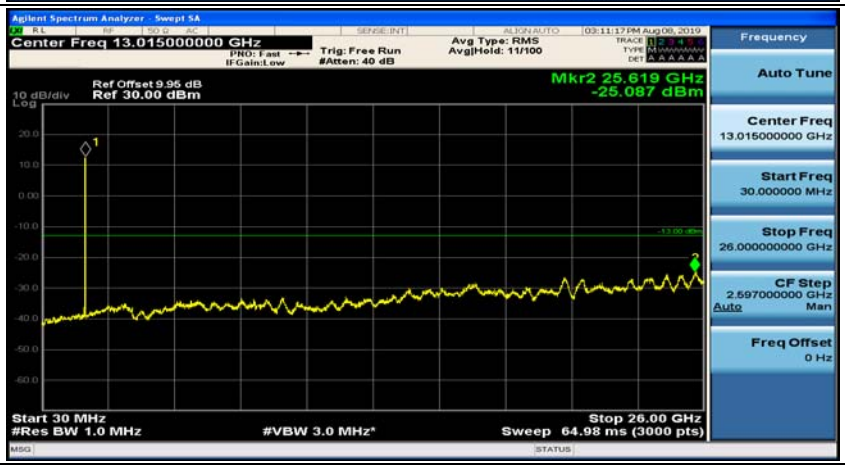


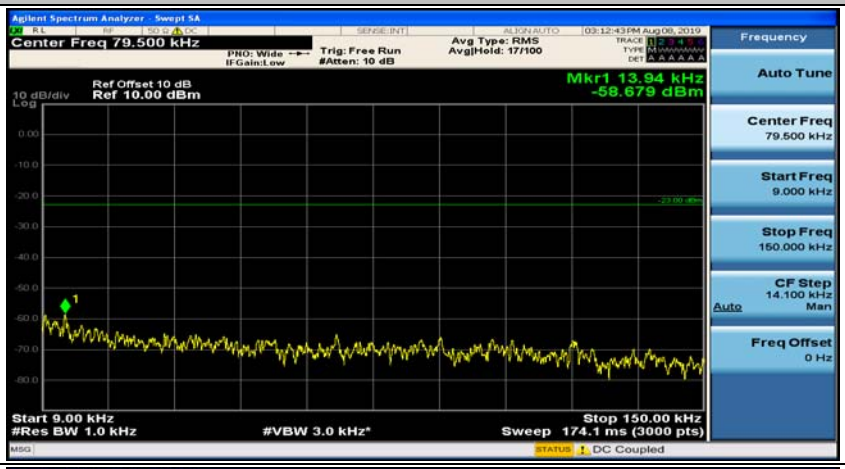
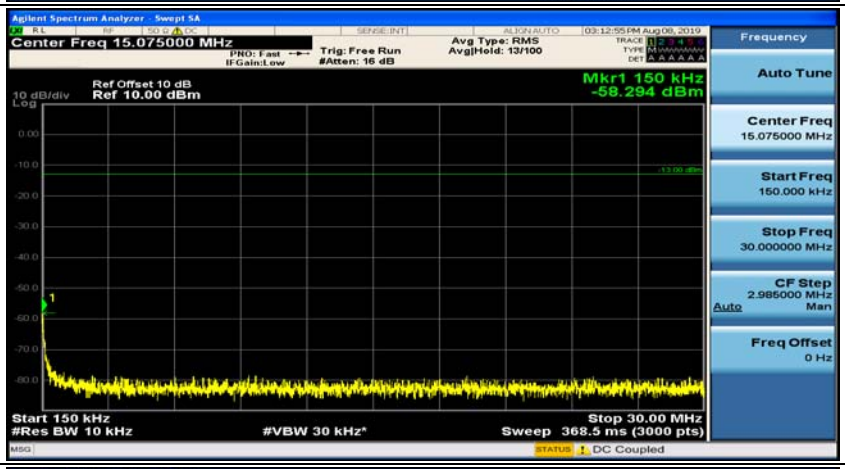
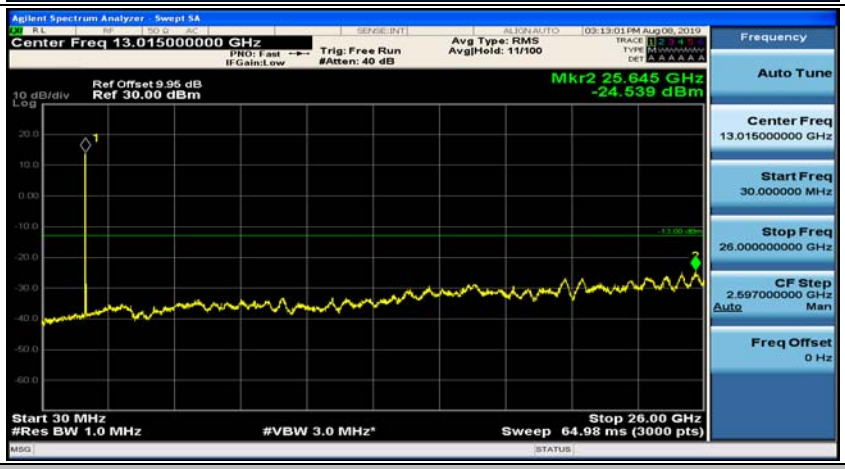


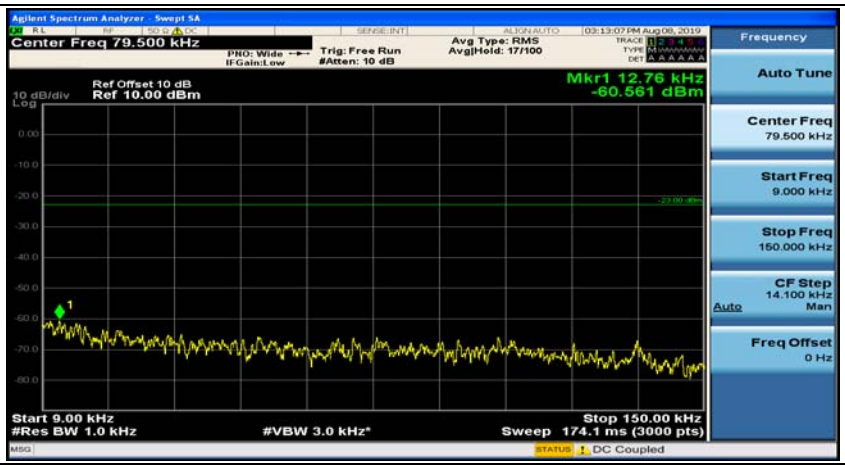
(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#99

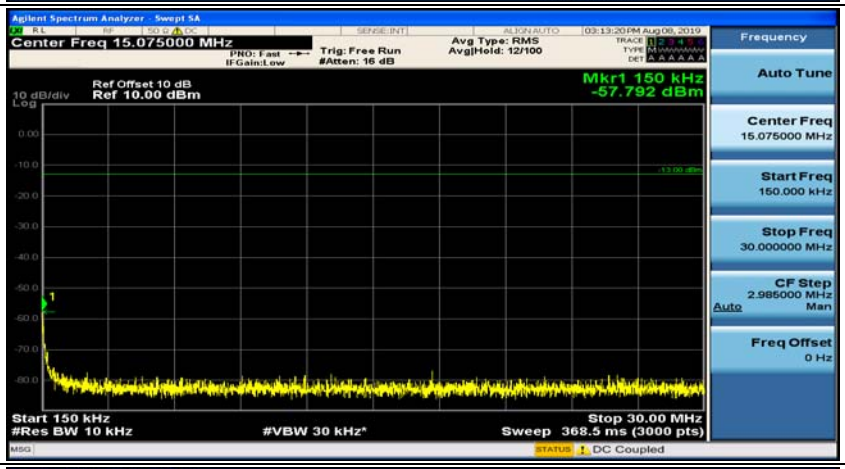

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
03:10:59 PM Aug 08, 2019
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 11.82 kHz
-60.272 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 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: 13/100
03:11:11 PM Aug 08, 2019
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 150 kHz
-58.497 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

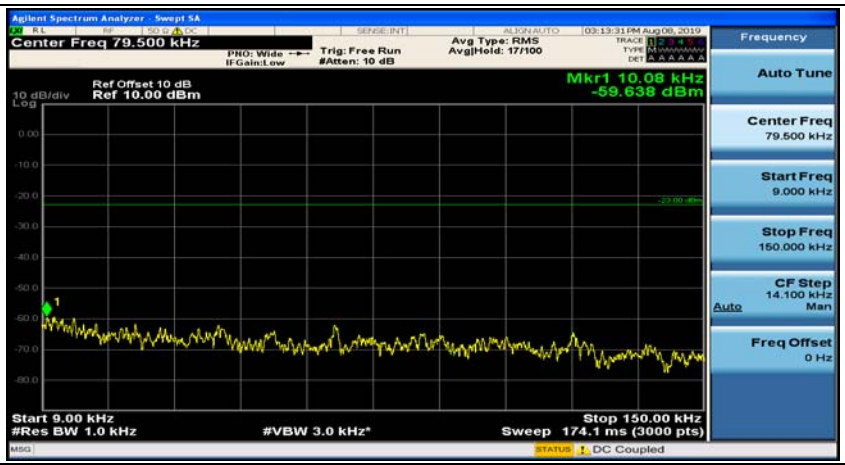

Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
03:11:17 PM Aug 08, 2019
Ref Offset 9.95 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr2 25.619 GHz
-25.087 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 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

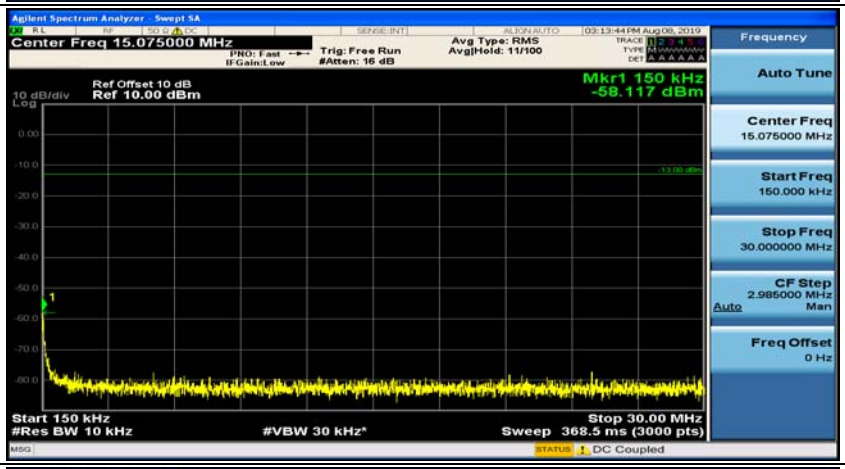
(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#0



(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#49

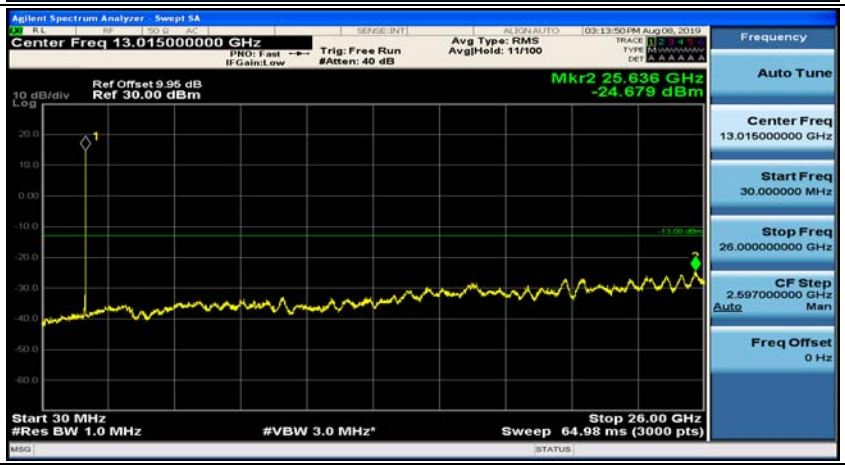


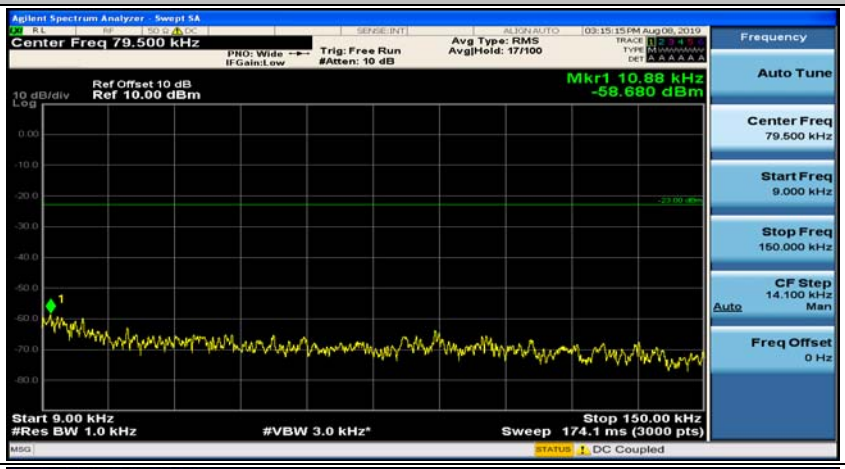
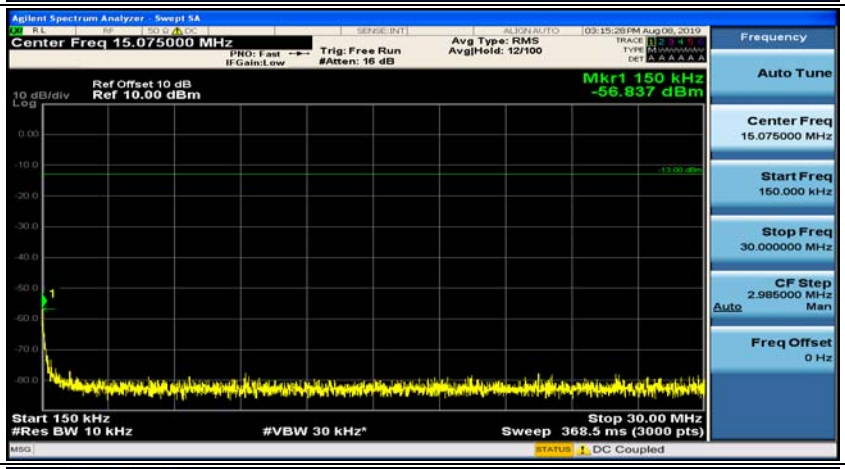
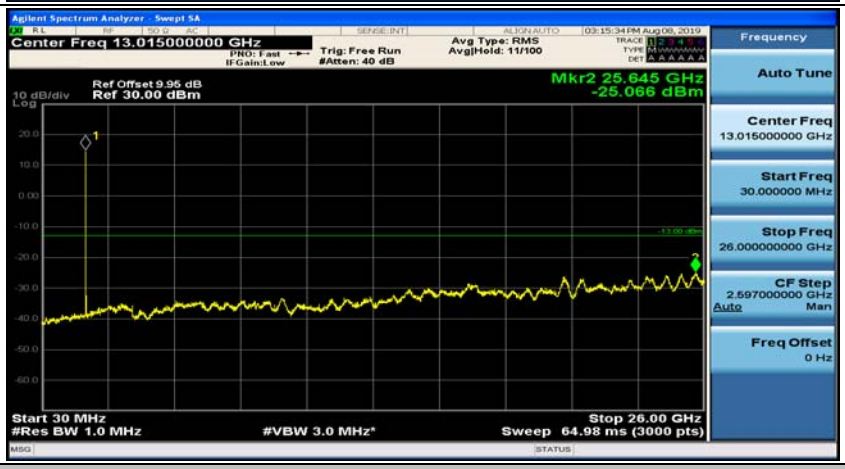


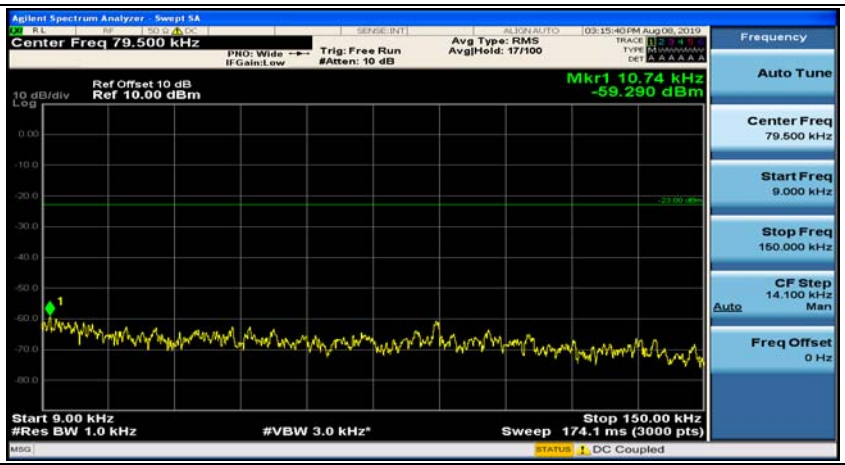
(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#99

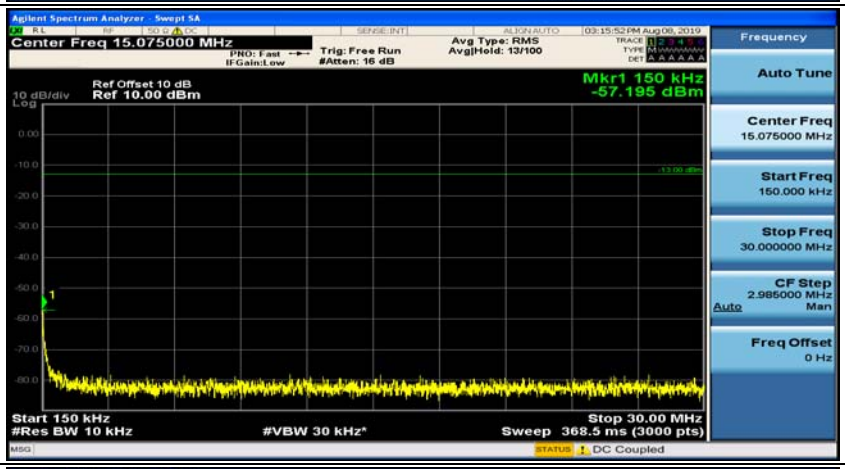

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
03:13:31 PM Aug 08, 2019
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 10.08 kHz
-59.638 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 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

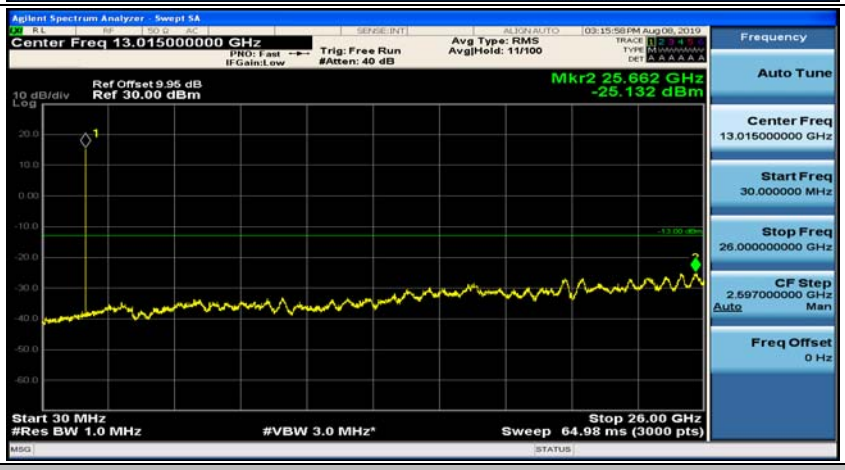

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 11/100
03:13:44 PM Aug 08, 2019
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 150 kHz
-58.117 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 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: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
03:13:50 PM Aug 08, 2019
Ref Offset 9.95 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr2 25.636 GHz
-24.679 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

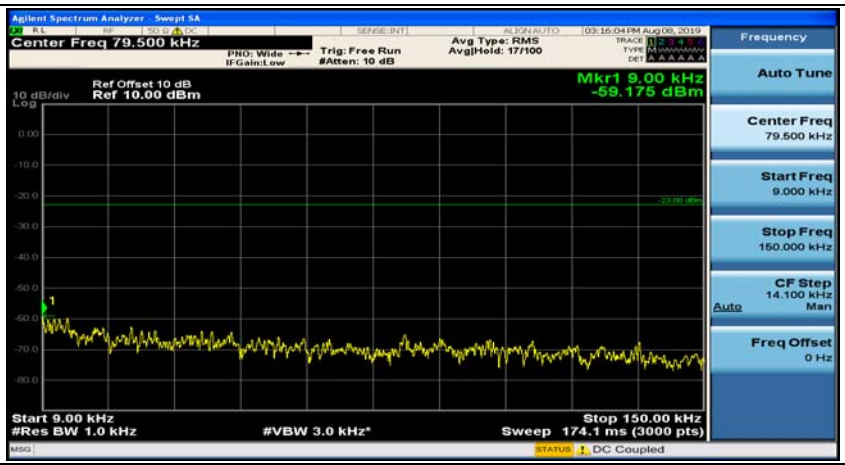
(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#0



(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#49

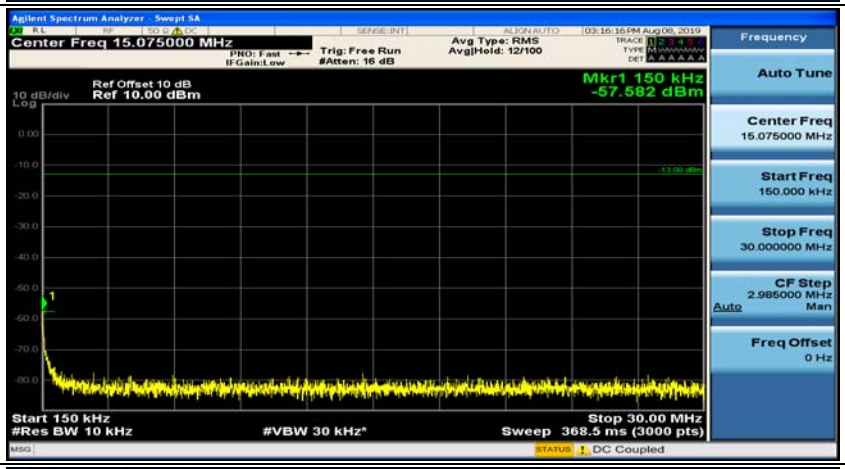


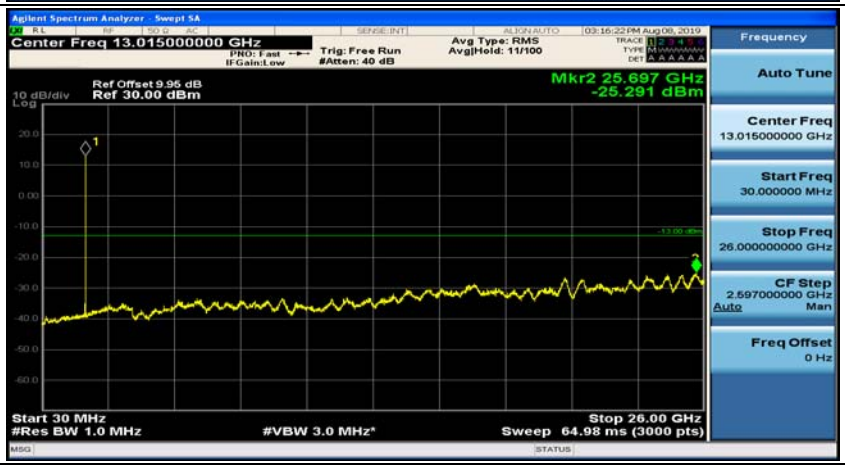




(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#99


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
03:16:04 PM Aug 08, 2019
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 9.00 kHz
-59.175 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
03:16:16 PM Aug 08, 2019
Ref Offset 10 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 150 kHz
-57.582 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: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
03:16:22 PM Aug 08, 2019
Ref Offset 9.95 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr2 25.697 GHz
-25.291 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

Appendix F: Frequency Stability

Test Result

Channel Bandwidth: 1.4 MHz

Channel Bandwidth: 1.4 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	3.18	0.001859	± 2.5	PASS
		VN	TN	2.23	0.001304	± 2.5	PASS
		VH	TN	-0.19	-0.000111	± 2.5	PASS
	MCH	VL	TN	-1.94	-0.001120	± 2.5	PASS
		VN	TN	-1.59	-0.000918	± 2.5	PASS
		VH	TN	3.15	0.001818	± 2.5	PASS
	HCH	VL	TN	2.08	0.001186	± 2.5	PASS
		VN	TN	0.8	0.000456	± 2.5	PASS
		VH	TN	1.79	0.001020	± 2.5	PASS
16QAM	LCH	VL	TN	-1.42	-0.000830	± 2.5	PASS
		VN	TN	-0.15	-0.000088	± 2.5	PASS
		VH	TN	0.35	0.000205	± 2.5	PASS
	MCH	VL	TN	4.63	0.002672	± 2.5	PASS
		VN	TN	-1.88	-0.001085	± 2.5	PASS
		VH	TN	-0.4	-0.000231	± 2.5	PASS
	HCH	VL	TN	3.65	0.002081	± 2.5	PASS
		VN	TN	-0.32	-0.000182	± 2.5	PASS
		VH	TN	2.44	0.001391	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	1.75	0.001023	± 2.5	PASS
		VN	-20	4.68	0.002736	± 2.5	PASS
		VN	-10	1.34	0.000783	± 2.5	PASS
		VN	0	1.24	0.000725	± 2.5	PASS
		VN	10	2.49	0.001456	± 2.5	PASS
		VN	20	4.63	0.002706	± 2.5	PASS
		VN	30	3.6	0.002104	± 2.5	PASS
		VN	40	-1.13	-0.000661	± 2.5	PASS
		VN	50	3.52	0.002058	± 2.5	PASS
	MCH	VN	-30	0.41	0.000237	± 2.5	PASS

		VN	-20	0.73	0.000421	± 2.5	PASS
		VN	-10	3.84	0.002216	± 2.5	PASS
		VN	0	3.41	0.001968	± 2.5	PASS
		VN	10	4.58	0.002644	± 2.5	PASS
		VN	20	-0.31	-0.000179	± 2.5	PASS
		VN	30	-0.8	-0.000462	± 2.5	PASS
		VN	40	1.78	0.001027	± 2.5	PASS
		VN	50	1.26	0.000727	± 2.5	PASS
	HCH	VN	-30	2.86	0.001630	± 2.5	PASS
		VN	-20	3.07	0.001750	± 2.5	PASS
		VN	-10	-1.95	-0.001112	± 2.5	PASS
		VN	0	0.01	0.000006	± 2.5	PASS
		VN	10	4.19	0.002388	± 2.5	PASS
		VN	20	-1.63	-0.000929	± 2.5	PASS
		VN	30	1.84	0.001049	± 2.5	PASS
		VN	40	-1.47	-0.000838	± 2.5	PASS
		VN	50	-1.77	-0.001009	± 2.5	PASS
16QAM	LCH	VN	-30	-1.02	-0.000596	± 2.5	PASS
		VN	-20	0.76	0.000444	± 2.5	PASS
		VN	-10	0.28	0.000164	± 2.5	PASS
		VN	0	2.97	0.001736	± 2.5	PASS
		VN	10	-0.51	-0.000298	± 2.5	PASS
		VN	20	0.21	0.000123	± 2.5	PASS
		VN	30	1.8	0.001052	± 2.5	PASS
		VN	40	3.04	0.001777	± 2.5	PASS
		VN	50	3.97	0.002321	± 2.5	PASS
	MCH	VN	-30	-0.79	-0.000450	± 2.5	PASS
		VN	-20	1.58	0.000901	± 2.5	PASS
		VN	-10	3.26	0.001858	± 2.5	PASS
		VN	0	3.86	0.002200	± 2.5	PASS
		VN	10	2.56	0.001459	± 2.5	PASS
		VN	20	4.27	0.002434	± 2.5	PASS
		VN	30	1.49	0.000849	± 2.5	PASS
		VN	40	4.88	0.002782	± 2.5	PASS
		VN	50	-1.95	-0.001112	± 2.5	PASS
	HCH	VN	-30	3.33	0.001898	± 2.5	PASS
		VN	-20	0.46	0.000262	± 2.5	PASS
		VN	-10	3.87	0.002206	± 2.5	PASS
		VN	0	-0.3	-0.000171	± 2.5	PASS
		VN	10	4.49	0.002559	± 2.5	PASS
		VN	20	0.94	0.000536	± 2.5	PASS

		VN	30	2.69	0.001533	± 2.5	PASS
		VN	40	2.99	0.001704	± 2.5	PASS
		VN	50	-0.45	-0.000257	± 2.5	PASS

Channel Bandwidth: 3 MHz

Channel Bandwidth: 3 MHz+							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	3.74	0.002185	± 2.5	PASS
		VN	TN	-1.54	-0.000900	± 2.5	PASS
		VH	TN	3.45	0.002016	± 2.5	PASS
	MCH	VL	TN	3.83	0.002211	± 2.5	PASS
		VN	TN	1.61	0.000929	± 2.5	PASS
		VH	TN	-0.09	-0.000052	± 2.5	PASS
	HCH	VL	TN	1.58	0.000901	± 2.5	PASS
		VN	TN	3.39	0.001933	± 2.5	PASS
		VH	TN	0.78	0.000445	± 2.5	PASS
16QAM	LCH	VL	TN	2.76	0.001613	± 2.5	PASS
		VN	TN	-0.93	-0.000543	± 2.5	PASS
		VH	TN	-2	-0.001169	± 2.5	PASS
	MCH	VL	TN	1.29	0.000745	± 2.5	PASS
		VN	TN	3.01	0.001737	± 2.5	PASS
		VH	TN	1.6	0.000924	± 2.5	PASS
	HCH	VL	TN	1.7	0.000969	± 2.5	PASS
		VN	TN	-0.15	-0.000086	± 2.5	PASS
		VH	TN	2.76	0.001574	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	1.57	0.000917	± 2.5	PASS
		VN	-20	0.92	0.000538	± 2.5	PASS
		VN	-10	-1.53	-0.000894	± 2.5	PASS
		VN	0	3	0.001753	± 2.5	PASS
		VN	10	4.13	0.002413	± 2.5	PASS
		VN	20	0.24	0.000140	± 2.5	PASS
		VN	30	1.52	0.000888	± 2.5	PASS
		VN	40	0.39	0.000228	± 2.5	PASS
		VN	50	4.67	0.002729	± 2.5	PASS
	MCH	VN	-30	1.79	0.001033	± 2.5	PASS
		VN	-20	0.58	0.000335	± 2.5	PASS

		VN	-10	0.46	0.000266	± 2.5	PASS
		VN	0	-1.24	-0.000716	± 2.5	PASS
		VN	10	1.84	0.001062	± 2.5	PASS
		VN	20	0.42	0.000242	± 2.5	PASS
		VN	30	1.15	0.000664	± 2.5	PASS
		VN	40	2.17	0.001253	± 2.5	PASS
		VN	50	4.59	0.002649	± 2.5	PASS
	HCH	VN	-30	3.88	0.002213	± 2.5	PASS
		VN	-20	0.05	0.000029	± 2.5	PASS
		VN	-10	-0.15	-0.000086	± 2.5	PASS
		VN	0	0.54	0.000308	± 2.5	PASS
		VN	10	4.69	0.002675	± 2.5	PASS
		VN	20	3.95	0.002253	± 2.5	PASS
		VN	30	3.96	0.002258	± 2.5	PASS
		VN	40	0.68	0.000388	± 2.5	PASS
		VN	50	3.67	0.002093	± 2.5	PASS
16QAM	LCH	VN	-30	-0.34	-0.000196	± 2.5	PASS
		VN	-20	1.8	0.001039	± 2.5	PASS
		VN	-10	-1.78	-0.001027	± 2.5	PASS
		VN	0	1.53	0.000883	± 2.5	PASS
		VN	10	2.13	0.001229	± 2.5	PASS
		VN	20	2.52	0.001455	± 2.5	PASS
		VN	30	-1.26	-0.000727	± 2.5	PASS
		VN	40	3.58	0.002066	± 2.5	PASS
		VN	50	0.12	0.000069	± 2.5	PASS
	MCH	VN	-30	0.55	0.000314	± 2.5	PASS
		VN	-20	-0.7	-0.000399	± 2.5	PASS
		VN	-10	-0.28	-0.000160	± 2.5	PASS
		VN	0	4.99	0.002846	± 2.5	PASS
		VN	10	1.05	0.000599	± 2.5	PASS
		VN	20	3.3	0.001882	± 2.5	PASS
		VN	30	-0.17	-0.000097	± 2.5	PASS
		VN	40	-0.18	-0.000103	± 2.5	PASS
		VN	50	0.34	0.000194	± 2.5	PASS
	HCH	VN	-30	3.13	0.001785	± 2.5	PASS
		VN	-20	-1.98	-0.001129	± 2.5	PASS
		VN	-10	1.96	0.001118	± 2.5	PASS
		VN	0	-1.03	-0.000587	± 2.5	PASS
		VN	10	3.11	0.001774	± 2.5	PASS
		VN	20	0.89	0.000508	± 2.5	PASS
		VN	30	-1.13	-0.000644	± 2.5	PASS

		VN	40	-0.27	-0.000154	± 2.5	PASS
		VN	50	-1.38	-0.000787	± 2.5	PASS

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	4.8	0.002803	± 2.5	PASS
		VN	TN	0.43	0.000251	± 2.5	PASS
		VH	TN	-1.05	-0.000613	± 2.5	PASS
	MCH	VL	TN	2.48	0.001431	± 2.5	PASS
		VN	TN	3.86	0.002228	± 2.5	PASS
		VH	TN	-0.22	-0.000127	± 2.5	PASS
	HCH	VL	TN	1.99	0.001136	± 2.5	PASS
		VN	TN	-1.48	-0.000845	± 2.5	PASS
		VH	TN	-1.68	-0.000959	± 2.5	PASS
16QAM	LCH	VL	TN	4.95	0.002891	± 2.5	PASS
		VN	TN	-1.03	-0.000601	± 2.5	PASS
		VH	TN	0.86	0.000502	± 2.5	PASS
	MCH	VL	TN	1.18	0.000681	± 2.5	PASS
		VN	TN	4.67	0.002696	± 2.5	PASS
		VH	TN	0.92	0.000531	± 2.5	PASS
	HCH	VL	TN	4.46	0.002545	± 2.5	PASS
		VN	TN	0.91	0.000519	± 2.5	PASS
		VH	TN	4.93	0.002813	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	-1.68	-0.000981	± 2.5	PASS
		VN	-20	2.28	0.001331	± 2.5	PASS
		VN	-10	1.96	0.001145	± 2.5	PASS
		VN	0	-1.85	-0.001080	± 2.5	PASS
		VN	10	3.34	0.001950	± 2.5	PASS
		VN	20	1.66	0.000969	± 2.5	PASS
		VN	30	-1.4	-0.000818	± 2.5	PASS
		VN	40	2.94	0.001717	± 2.5	PASS
		VN	50	0.89	0.000520	± 2.5	PASS
	MCH	VN	-30	3.99	0.002303	± 2.5	PASS
		VN	-20	-0.1	-0.000058	± 2.5	PASS
		VN	-10	-0.45	-0.000260	± 2.5	PASS

		VN	0	-0.49	-0.000283	± 2.5	PASS
		VN	10	0.58	0.000335	± 2.5	PASS
		VN	20	4.94	0.002851	± 2.5	PASS
		VN	30	-1.18	-0.000681	± 2.5	PASS
		VN	40	2.82	0.001628	± 2.5	PASS
		VN	50	-1.56	-0.000900	± 2.5	PASS
	HCH	VN	-30	-0.53	-0.000302	± 2.5	PASS
		VN	-20	-0.21	-0.000110	± 2.5	PASS
		VN	-10	4.35	0.002280	± 2.5	PASS
		VN	0	-1.96	-0.001028	± 2.5	PASS
		VN	10	-0.03	-0.000016	± 2.5	PASS
		VN	20	3.95	0.002071	± 2.5	PASS
		VN	30	-1.83	-0.000959	± 2.5	PASS
		VN	40	1.78	0.000933	± 2.5	PASS
		VN	50	1.63	0.000855	± 2.5	PASS
16QAM	LCH	VN	-30	2.54	0.001466	± 2.5	PASS
		VN	-20	2.37	0.001368	± 2.5	PASS
		VN	-10	0.67	0.000387	± 2.5	PASS
		VN	0	4.97	0.002869	± 2.5	PASS
		VN	10	0.45	0.000260	± 2.5	PASS
		VN	20	2.78	0.001605	± 2.5	PASS
		VN	30	2.45	0.001414	± 2.5	PASS
		VN	40	3.94	0.002274	± 2.5	PASS
		VN	50	1.32	0.000762	± 2.5	PASS
	MCH	VN	-30	2.09	0.001193	± 2.5	PASS
		VN	-20	-0.86	-0.000491	± 2.5	PASS
		VN	-10	0.95	0.000542	± 2.5	PASS
		VN	0	1.78	0.001016	± 2.5	PASS
		VN	10	3.31	0.001889	± 2.5	PASS
		VN	20	3.2	0.001826	± 2.5	PASS
		VN	30	4.6	0.002625	± 2.5	PASS
		VN	40	1.11	0.000633	± 2.5	PASS
		VN	50	3.56	0.002031	± 2.5	PASS
	HCH	VN	-30	2.71	0.001421	± 2.5	PASS
		VN	-20	3.93	0.002060	± 2.5	PASS
		VN	-10	-0.97	-0.000509	± 2.5	PASS
		VN	0	3.45	0.001809	± 2.5	PASS
		VN	10	3.59	0.001882	± 2.5	PASS
		VN	20	-1.08	-0.000566	± 2.5	PASS
		VN	30	1.58	0.000828	± 2.5	PASS
		VN	40	0.9	0.000472	± 2.5	PASS

		VN	50	0.57	0.000299	± 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	3.93	0.002292	± 2.5	PASS
		VN	TN	1.78	0.001038	± 2.5	PASS
		VH	TN	3.37	0.001965	± 2.5	PASS
	MCH	VL	TN	3.63	0.002095	± 2.5	PASS
		VN	TN	1.79	0.001033	± 2.5	PASS
		VH	TN	-1.94	-0.001120	± 2.5	PASS
	HCH	VL	TN	-1.24	-0.000709	± 2.5	PASS
		VN	TN	3.8	0.002171	± 2.5	PASS
		VH	TN	4.65	0.002657	± 2.5	PASS
16QAM	LCH	VL	TN	-1.99	-0.001160	± 2.5	PASS
		VN	TN	4.07	0.002373	± 2.5	PASS
		VH	TN	-0.07	-0.000041	± 2.5	PASS
	MCH	VL	TN	3.25	0.001876	± 2.5	PASS
		VN	TN	2.32	0.001339	± 2.5	PASS
		VH	TN	-1.73	-0.000999	± 2.5	PASS
	HCH	VL	TN	4.16	0.002377	± 2.5	PASS
		VN	TN	2.32	0.001326	± 2.5	PASS
		VH	TN	-0.1	-0.000057	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
16QAM	LCH	VN	-30	2.68	0.001563	± 2.5	PASS
		VN	-20	-1.58	-0.000921	± 2.5	PASS
		VN	-10	3.9	0.002274	± 2.5	PASS
		VN	0	4.77	0.002781	± 2.5	PASS
		VN	10	1.15	0.000671	± 2.5	PASS
		VN	20	2.23	0.001300	± 2.5	PASS
		VN	30	-0.76	-0.000443	± 2.5	PASS
		VN	40	-0.12	-0.000070	± 2.5	PASS
		VN	50	1.36	0.000793	± 2.5	PASS
	MCH	VN	-30	1.01	0.000583	± 2.5	PASS
		VN	-20	1.85	0.001068	± 2.5	PASS
		VN	-10	1.65	0.000952	± 2.5	PASS
		VN	0	0.63	0.000364	± 2.5	PASS

		VN	10	1.29	0.000745	± 2.5	PASS
		VN	20	-0.69	-0.000398	± 2.5	PASS
		VN	30	2.44	0.001408	± 2.5	PASS
		VN	40	1.28	0.000739	± 2.5	PASS
		VN	50	-1.47	-0.000848	± 2.5	PASS
	HCH	VN	-30	-1.37	-0.000783	± 2.5	PASS
		VN	-20	2.11	0.001206	± 2.5	PASS
		VN	-10	4.11	0.002349	± 2.5	PASS
		VN	0	0.43	0.000246	± 2.5	PASS
		VN	10	1.83	0.001046	± 2.5	PASS
		VN	20	4.1	0.002343	± 2.5	PASS
		VN	30	4.09	0.002337	± 2.5	PASS
		VN	40	2.57	0.001469	± 2.5	PASS
		VN	50	4.42	0.002526	± 2.5	PASS
QPSK	LCH	VN	-30	-0.95	-0.000548	± 2.5	PASS
		VN	-20	3.38	0.001951	± 2.5	PASS
		VN	-10	4.37	0.002522	± 2.5	PASS
		VN	0	-0.46	-0.000266	± 2.5	PASS
		VN	10	-1.97	-0.001137	± 2.5	PASS
		VN	20	1.16	0.000670	± 2.5	PASS
		VN	30	1.62	0.000935	± 2.5	PASS
		VN	40	0.89	0.000514	± 2.5	PASS
		VN	50	-0.7	-0.000404	± 2.5	PASS
	MCH	VN	-30	2.63	0.001503	± 2.5	PASS
		VN	-20	3.77	0.002154	± 2.5	PASS
		VN	-10	0.68	0.000389	± 2.5	PASS
		VN	0	2.66	0.001520	± 2.5	PASS
		VN	10	-0.37	-0.000211	± 2.5	PASS
		VN	20	1.37	0.000783	± 2.5	PASS
		VN	30	1.95	0.001114	± 2.5	PASS
		VN	40	-0.89	-0.000509	± 2.5	PASS
		VN	50	-1.57	-0.000897	± 2.5	PASS
	HCH	VN	-30	3.15	0.001800	± 2.5	PASS
		VN	-20	3.92	0.002240	± 2.5	PASS
		VN	-10	3.92	0.002240	± 2.5	PASS
		VN	0	-0.06	-0.000034	± 2.5	PASS
		VN	10	2.1	0.001200	± 2.5	PASS
		VN	20	-0.65	-0.000371	± 2.5	PASS
		VN	30	1.72	0.000983	± 2.5	PASS
		VN	40	1.46	0.000834	± 2.5	PASS
		VN	50	-1.8	-0.001029	± 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	4.11	0.002393	± 2.5	PASS
		VN	TN	2.06	0.001199	± 2.5	PASS
		VH	TN	3.3	0.001921	± 2.5	PASS
	MCH	VL	TN	-0.95	-0.000548	± 2.5	PASS
		VN	TN	3.53	0.002038	± 2.5	PASS
		VH	TN	-1.77	-0.001022	± 2.5	PASS
	HCH	VL	TN	0.46	0.000263	± 2.5	PASS
		VN	TN	0.98	0.000561	± 2.5	PASS
		VH	TN	-1.78	-0.001019	± 2.5	PASS
16QAM	LCH	VL	TN	-0.79	-0.000460	± 2.5	PASS
		VN	TN	2.67	0.001555	± 2.5	PASS
		VH	TN	4.76	0.002771	± 2.5	PASS
	MCH	VL	TN	0.73	0.000421	± 2.5	PASS
		VN	TN	3.57	0.002061	± 2.5	PASS
		VH	TN	2.9	0.001674	± 2.5	PASS
	HCH	VL	TN	2.4	0.001373	± 2.5	PASS
		VN	TN	4.99	0.002856	± 2.5	PASS
		VH	TN	-0.97	-0.000555	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	3.61	0.002102	± 2.5	PASS
		VN	-20	3.73	0.002172	± 2.5	PASS
		VN	-10	1.92	0.001118	± 2.5	PASS
		VN	0	3.37	0.001962	± 2.5	PASS
		VN	10	3.25	0.001892	± 2.5	PASS
		VN	20	2.09	0.001217	± 2.5	PASS
		VN	30	2.07	0.001205	± 2.5	PASS
		VN	40	2.22	0.001293	± 2.5	PASS
		VN	50	2.31	0.001345	± 2.5	PASS
	MCH	VN	-30	-1.15	-0.000664	± 2.5	PASS
		VN	-20	3.38	0.001951	± 2.5	PASS
		VN	-10	4.21	0.002430	± 2.5	PASS
		VN	0	-0.77	-0.000444	± 2.5	PASS
		VN	10	1.32	0.000762	± 2.5	PASS
		VN	20	4.67	0.002696	± 2.5	PASS

		VN	30	0.25	0.000144	± 2.5	PASS
		VN	40	2.22	0.001281	± 2.5	PASS
		VN	50	2.82	0.001628	± 2.5	PASS
	HCH	VN	-30	0.19	0.000109	± 2.5	PASS
		VN	-20	-1.78	-0.001019	± 2.5	PASS
		VN	-10	3.57	0.002043	± 2.5	PASS
		VN	0	1.43	0.000818	± 2.5	PASS
		VN	10	2.87	0.001642	± 2.5	PASS
		VN	20	2.74	0.001568	± 2.5	PASS
		VN	30	3.09	0.001768	± 2.5	PASS
		VN	40	2.65	0.001516	± 2.5	PASS
		VN	50	-0.98	-0.000561	± 2.5	PASS
16QAM	LCH	VN	-30	-1.76	-0.001016	± 2.5	PASS
		VN	-20	2.42	0.001397	± 2.5	PASS
		VN	-10	-0.37	-0.000214	± 2.5	PASS
		VN	0	1.27	0.000733	± 2.5	PASS
		VN	10	3.28	0.001893	± 2.5	PASS
		VN	20	-0.41	-0.000237	± 2.5	PASS
		VN	30	4.66	0.002690	± 2.5	PASS
		VN	40	-0.41	-0.000237	± 2.5	PASS
		VN	50	2.75	0.001587	± 2.5	PASS
	MCH	VN	-30	1.8	0.001030	± 2.5	PASS
		VN	-20	-0.54	-0.000309	± 2.5	PASS
		VN	-10	4.6	0.002632	± 2.5	PASS
		VN	0	4.7	0.002690	± 2.5	PASS
		VN	10	-0.24	-0.000137	± 2.5	PASS
		VN	20	1.53	0.000876	± 2.5	PASS
		VN	30	-1.31	-0.000750	± 2.5	PASS
		VN	40	-1.79	-0.001024	± 2.5	PASS
		VN	50	4	0.002289	± 2.5	PASS
	HCH	VN	-30	2.82	0.001614	± 2.5	PASS
		VN	-20	-1.11	-0.000635	± 2.5	PASS
		VN	-10	4.05	0.002318	± 2.5	PASS
		VN	0	-1.26	-0.000721	± 2.5	PASS
		VN	10	1.4	0.000801	± 2.5	PASS
		VN	20	1.45	0.000830	± 2.5	PASS
		VN	30	-1.54	-0.000881	± 2.5	PASS
		VN	40	-1.31	-0.000750	± 2.5	PASS
		VN	50	-1.46	-0.000835	± 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	-0.44	-0.000256	± 2.5	PASS
		VN	TN	3.76	0.002186	± 2.5	PASS
		VH	TN	4.76	0.002767	± 2.5	PASS
	MCH	VL	TN	2.08	0.001201	± 2.5	PASS
		VN	TN	-1.71	-0.000987	± 2.5	PASS
		VH	TN	2.28	0.001316	± 2.5	PASS
	HCH	VL	TN	2.51	0.001438	± 2.5	PASS
		VN	TN	0.89	0.000510	± 2.5	PASS
		VH	TN	4.4	0.002521	± 2.5	PASS
16QAM	LCH	VL	TN	4.28	0.002488	± 2.5	PASS
		VN	TN	2.69	0.001564	± 2.5	PASS
		VH	TN	1.21	0.000703	± 2.5	PASS
	MCH	VL	TN	0.24	0.000139	± 2.5	PASS
		VN	TN	3.19	0.001841	± 2.5	PASS
		VH	TN	-1.23	-0.000710	± 2.5	PASS
	HCH	VL	TN	0.96	0.000550	± 2.5	PASS
		VN	TN	-1.5	-0.000860	± 2.5	PASS
		VH	TN	3.33	0.001908	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	-0.97	-0.000564	± 2.5	PASS
		VN	-20	4.89	0.002843	± 2.5	PASS
		VN	-10	3.84	0.002233	± 2.5	PASS
		VN	0	3.02	0.001756	± 2.5	PASS
		VN	10	-1.47	-0.000855	± 2.5	PASS
		VN	20	4.47	0.002599	± 2.5	PASS
		VN	30	1.43	0.000831	± 2.5	PASS
		VN	40	-1.01	-0.000587	± 2.5	PASS
		VN	50	2.28	0.001326	± 2.5	PASS
	MCH	VN	-30	0.74	0.000427	± 2.5	PASS
		VN	-20	-1.22	-0.000704	± 2.5	PASS
		VN	-10	-0.69	-0.000398	± 2.5	PASS
		VN	0	-0.67	-0.000387	± 2.5	PASS
		VN	10	2.18	0.001258	± 2.5	PASS
		VN	20	-1.36	-0.000785	± 2.5	PASS

		VN	30	-0.09	-0.000052	± 2.5	PASS
		VN	40	3.63	0.002095	± 2.5	PASS
		VN	50	-0.02	-0.000012	± 2.5	PASS
	HCH	VN	-30	1.87	0.001072	± 2.5	PASS
		VN	-20	1.24	0.000711	± 2.5	PASS
		VN	-10	0.55	0.000315	± 2.5	PASS
		VN	0	-0.37	-0.000212	± 2.5	PASS
		VN	10	1.61	0.000923	± 2.5	PASS
		VN	20	1.95	0.001117	± 2.5	PASS
		VN	30	1.69	0.000968	± 2.5	PASS
		VN	40	-0.76	-0.000436	± 2.5	PASS
		VN	50	3.6	0.002063	± 2.5	PASS
16QAM	LCH	VN	-30	1.98	0.001143	± 2.5	PASS
		VN	-20	1.53	0.000883	± 2.5	PASS
		VN	-10	-0.3	-0.000173	± 2.5	PASS
		VN	0	3.15	0.001818	± 2.5	PASS
		VN	10	-1.69	-0.000975	± 2.5	PASS
		VN	20	-0.88	-0.000508	± 2.5	PASS
		VN	30	-1.44	-0.000831	± 2.5	PASS
		VN	40	3.66	0.002113	± 2.5	PASS
		VN	50	-0.26	-0.000150	± 2.5	PASS
	MCH	VN	-30	2.71	0.001553	± 2.5	PASS
		VN	-20	2.76	0.001582	± 2.5	PASS
		VN	-10	3.61	0.002069	± 2.5	PASS
		VN	0	0.52	0.000298	± 2.5	PASS
		VN	10	4.63	0.002653	± 2.5	PASS
		VN	20	-0.41	-0.000235	± 2.5	PASS
		VN	30	2.93	0.001679	± 2.5	PASS
		VN	40	3.64	0.002086	± 2.5	PASS
		VN	50	-1.22	-0.000699	± 2.5	PASS
	HCH	VN	-30	2.59	0.001484	± 2.5	PASS
		VN	-20	1	0.000573	± 2.5	PASS
		VN	-10	1.47	0.000842	± 2.5	PASS
		VN	0	0.62	0.000355	± 2.5	PASS
		VN	10	2.15	0.001232	± 2.5	PASS
		VN	20	-0.01	-0.000006	± 2.5	PASS
		VN	30	4.01	0.002298	± 2.5	PASS
		VN	40	3.25	0.001862	± 2.5	PASS
		VN	50	4.37	0.002504	± 2.5	PASS