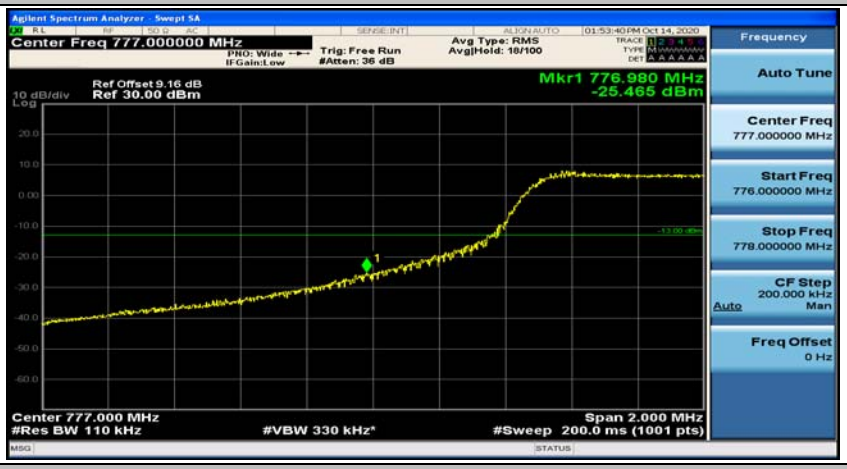
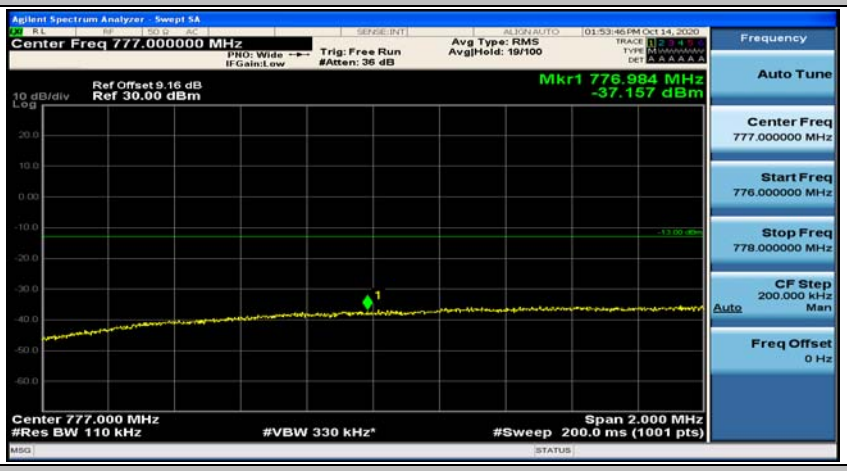
Channel Bandwidth: 10 MHz_LCH_QPSK_25RB#0



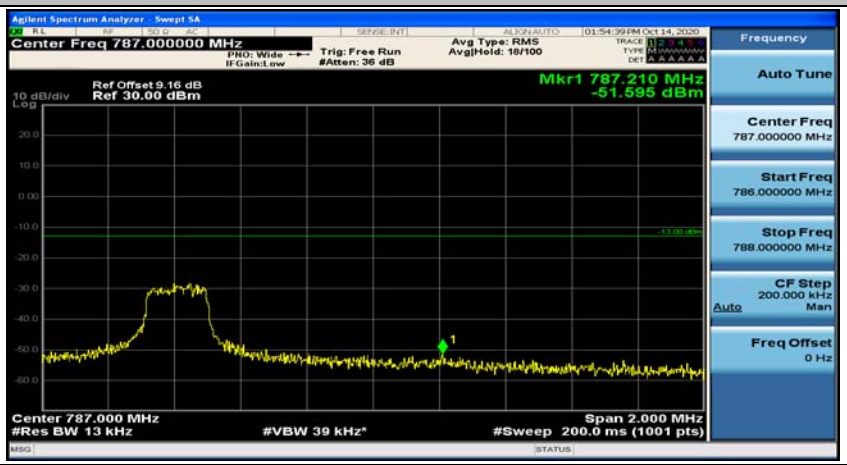
Channel Bandwidth: 10 MHz_LCH_QPSK_25RB#12



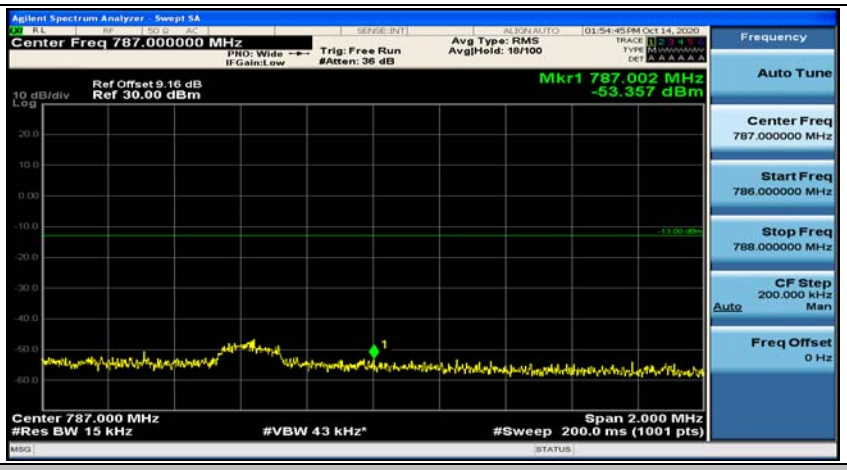
Channel Bandwidth: 10 MHz_LCH_QPSK_25RB#25

Channel Bandwidth: 10 MHz_LCH_QPSK_50RB#0

Channel Bandwidth: 10 MHz_HCH_QPSK_1RB#0



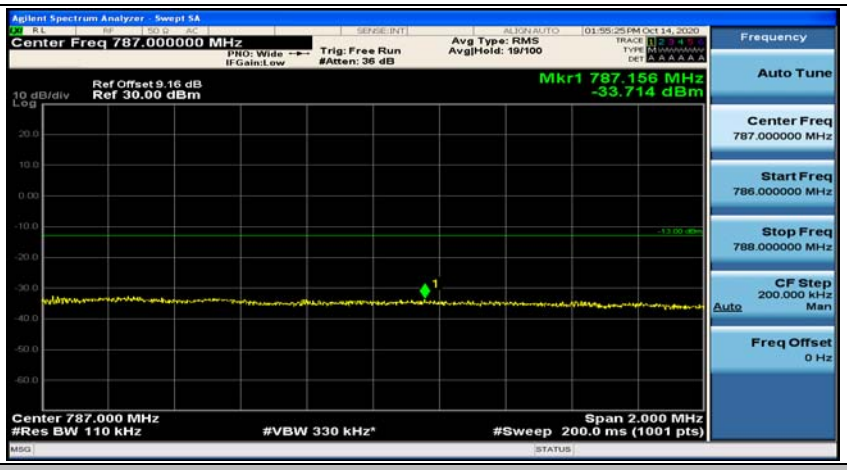
Channel Bandwidth: 10 MHz_HCH_QPSK_1RB#24



Channel Bandwidth: 10 MHz_HCH_QPSK_1RB#49

Channel Bandwidth: 10 MHz_HCH_QPSK_25RB#0

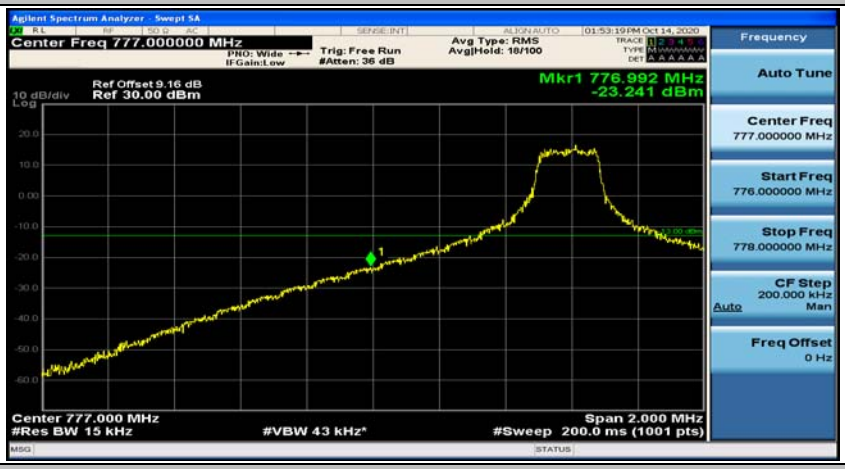
Channel Bandwidth: 10 MHz_HCH_QPSK_25RB#12



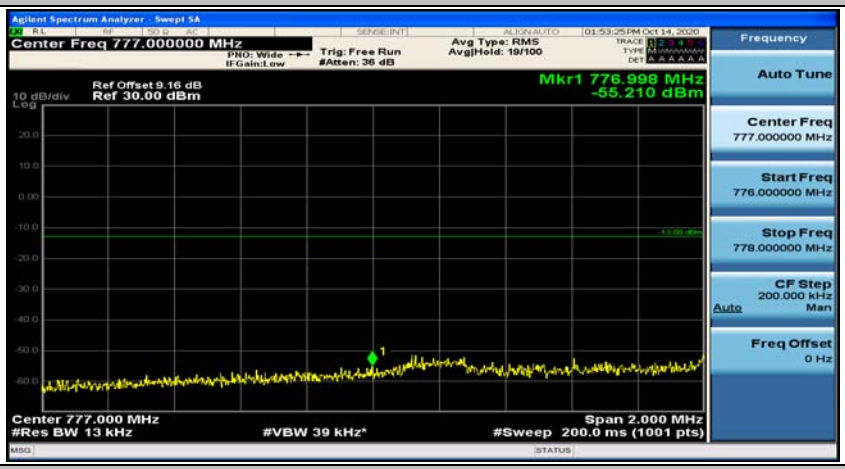
Channel Bandwidth: 10 MHz_HCH_QPSK_25RB#25

Channel Bandwidth: 10 MHz_HCH_QPSK_50RB#0

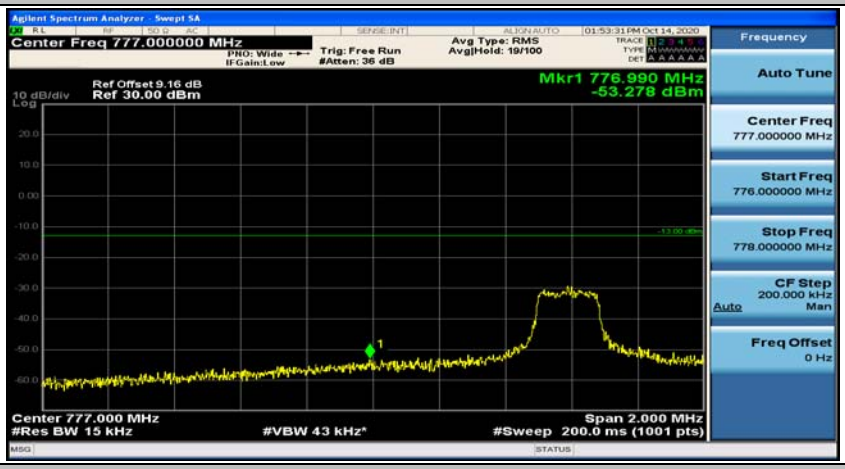
Channel Bandwidth: 10 MHz_LCH_16QAM_1RB#0



Channel Bandwidth: 10 MHz_LCH_16QAM_1RB#24

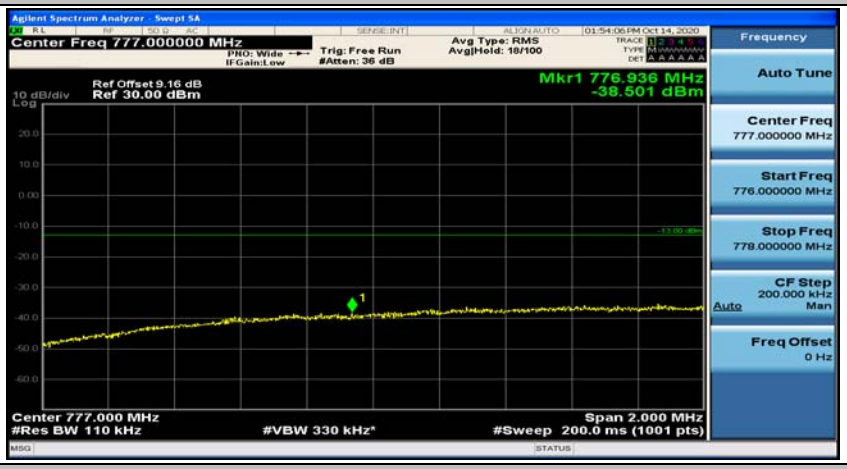


Channel Bandwidth: 10 MHz_LCH_16QAM_1RB#49



Channel Bandwidth: 10 MHz_LCH_16QAM_25RB#0

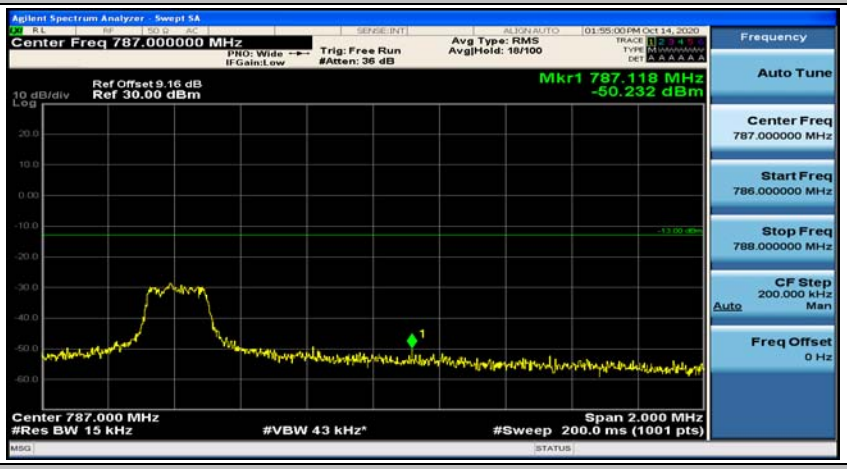
Channel Bandwidth: 10 MHz_LCH_16QAM_25RB#12



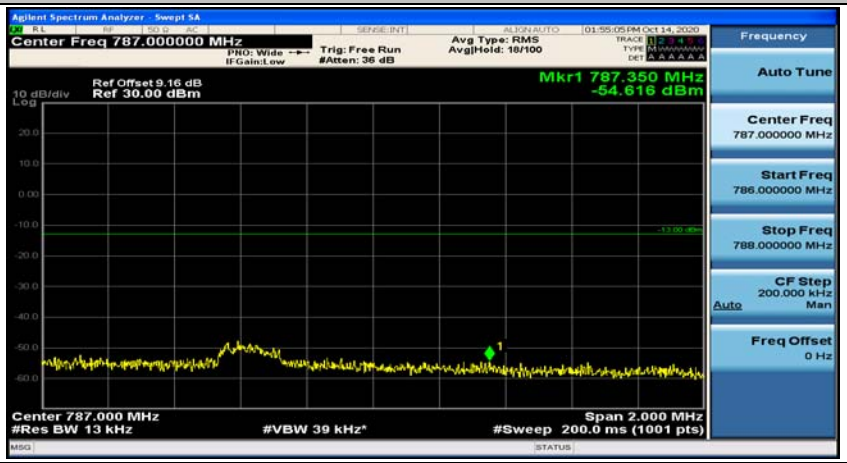
Channel Bandwidth: 10 MHz_LCH_16QAM_25RB#25

Channel Bandwidth: 10 MHz_LCH_16QAM_50RB#0

Channel Bandwidth: 10 MHz_HCH_16QAM_1RB#0



Channel Bandwidth: 10 MHz_HCH_16QAM_1RB#24



Channel Bandwidth: 10 MHz_HCH_16QAM_1RB#49

Channel Bandwidth: 10 MHz_HCH_16QAM_25RB#0

Channel Bandwidth: 10 MHz_HCH_16QAM_25RB#12

Channel Bandwidth: 10 MHz_HCH_16QAM_25RB#25

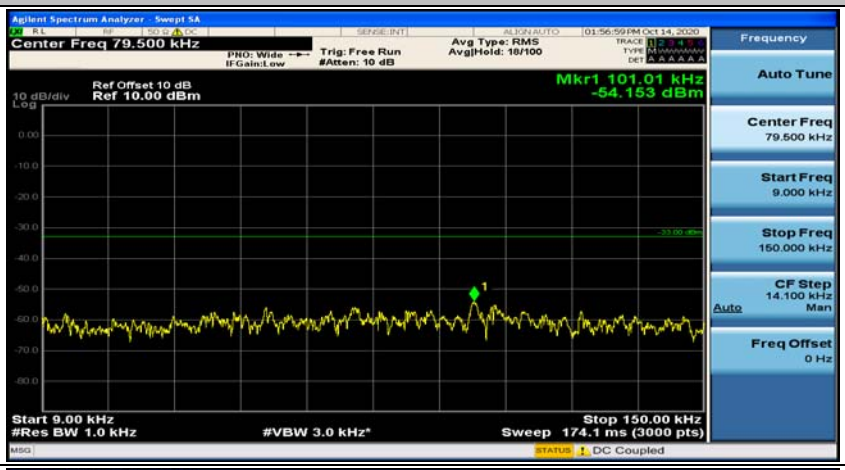
Channel Bandwidth: 10 MHz_HCH_16QAM_50RB#0

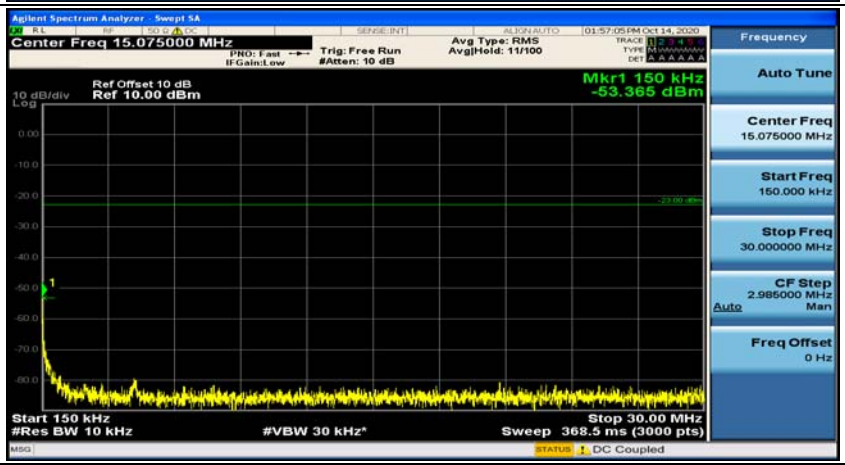
Appendix E: Conducted Spurious Emission

Test Graphs

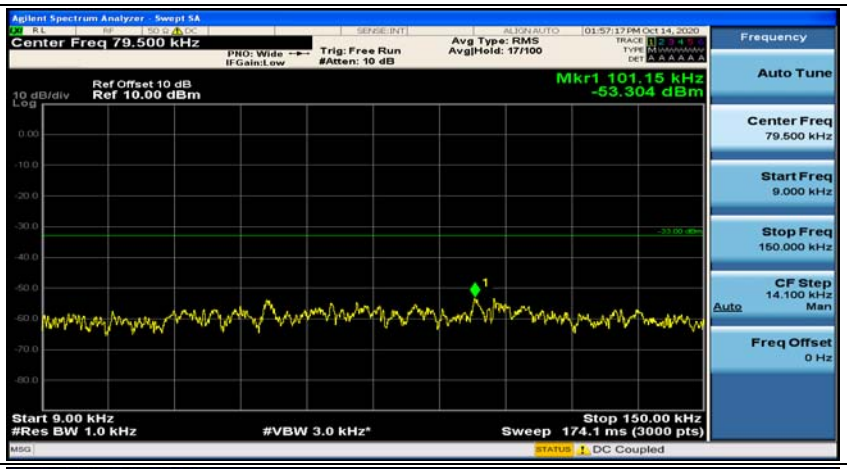
Channel Bandwidth: 5 MHz

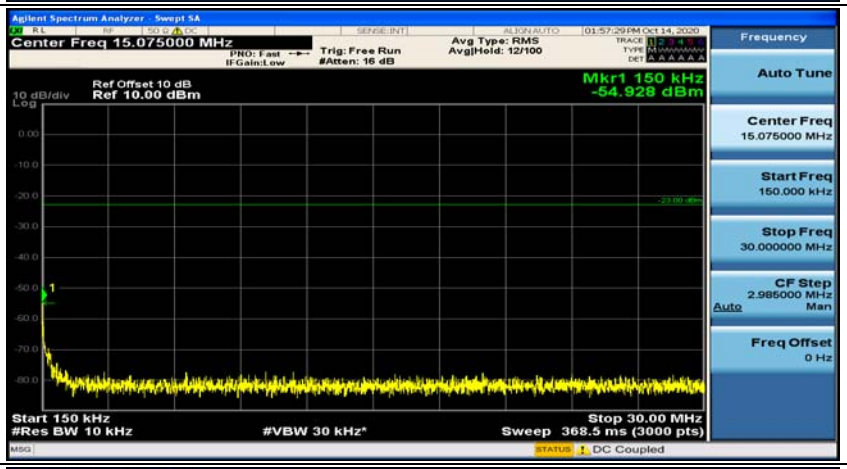
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#0



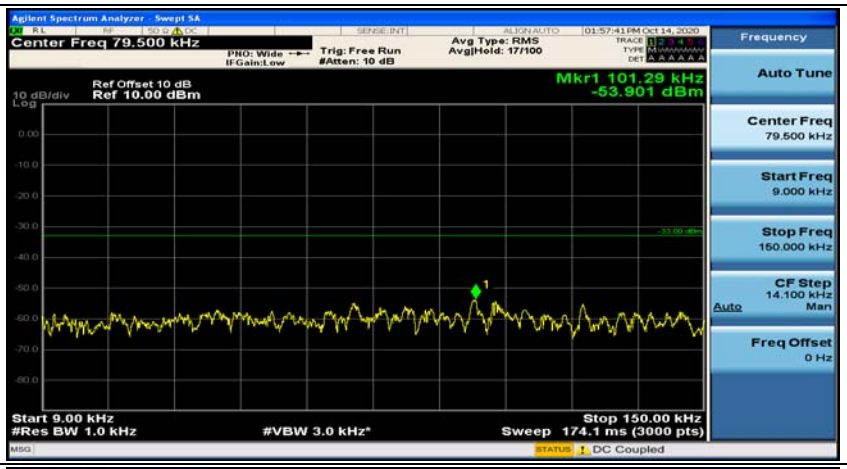


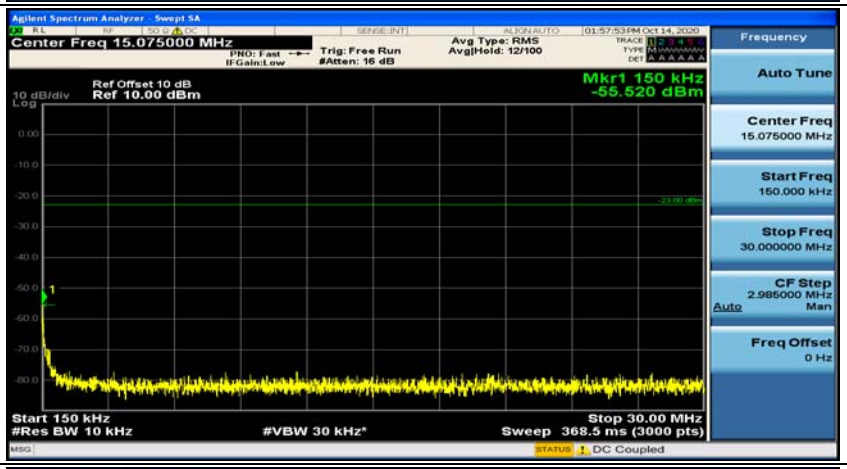
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#12





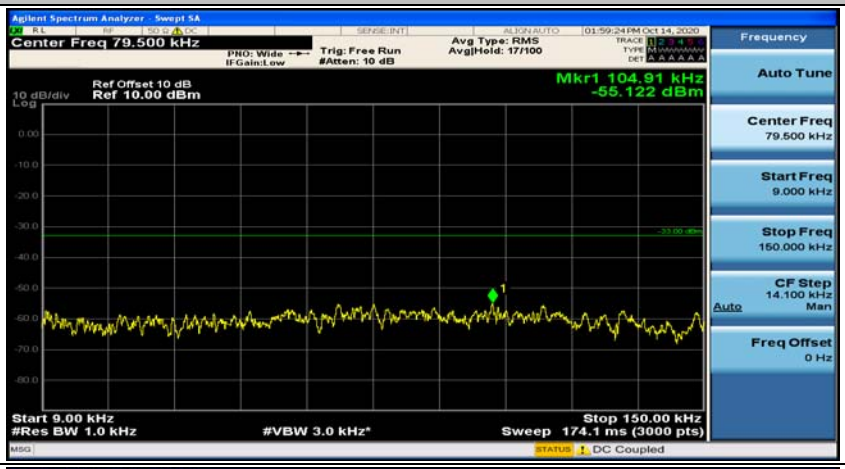
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#24

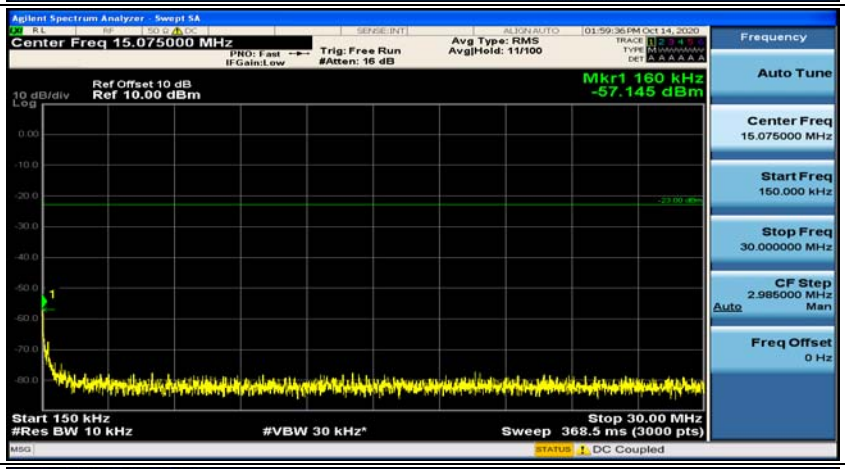

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
01:57:41 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div
Ref 10.00 dBm
Mkr1 101.29 kHz
-53.901 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 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
01:57:53 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div
Ref 10.00 dBm
Mkr1 150 kHz
-55.520 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

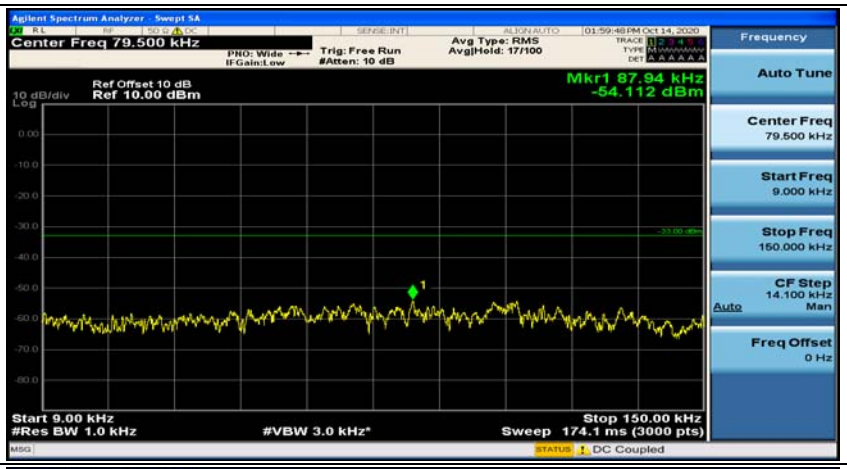
Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
01:57:59 PM Oct 14, 2020
Ref Offset 9.96 dB
10 dB/div
Ref 30.00 dBm
Mkr2 23.532 GHz
-28.589 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
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

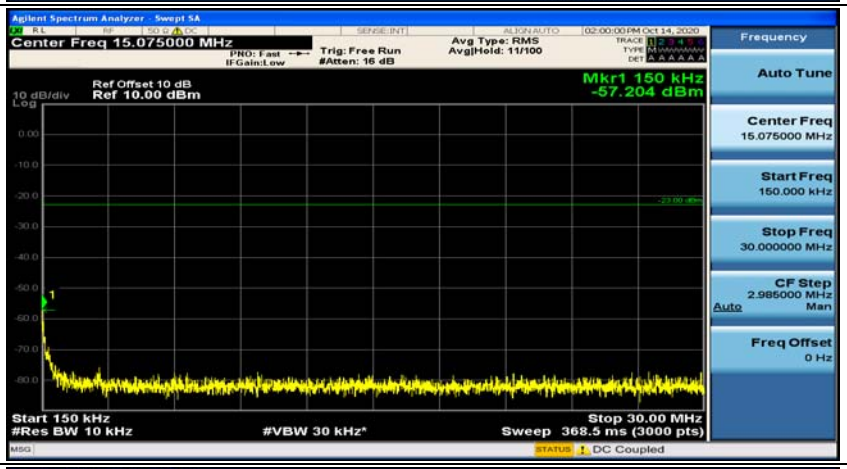
(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#0



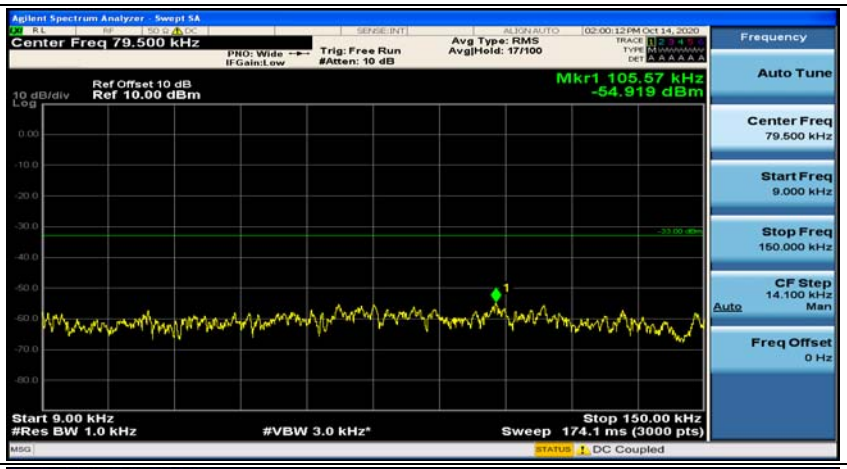


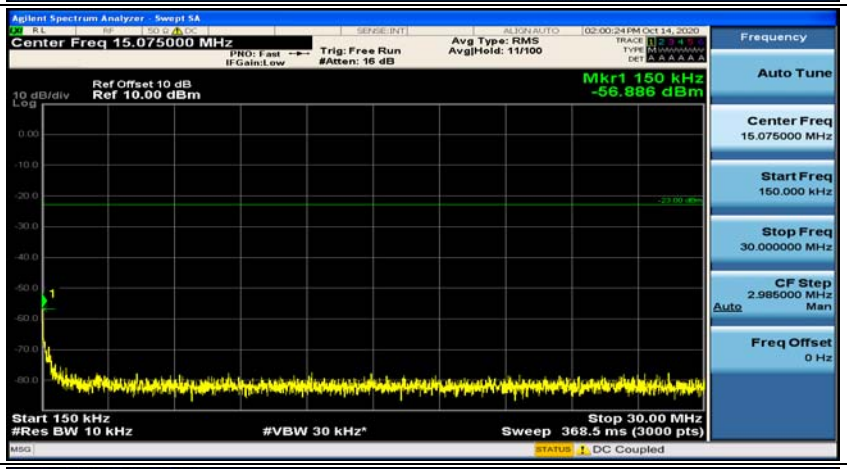
(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#12





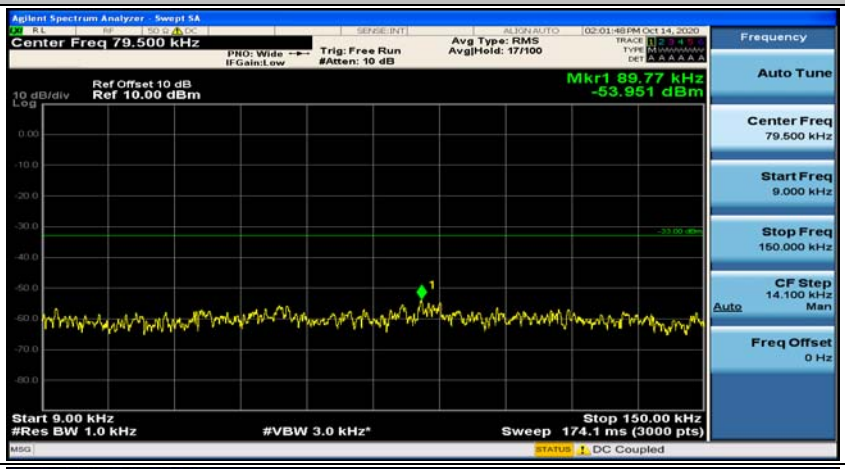
(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#24

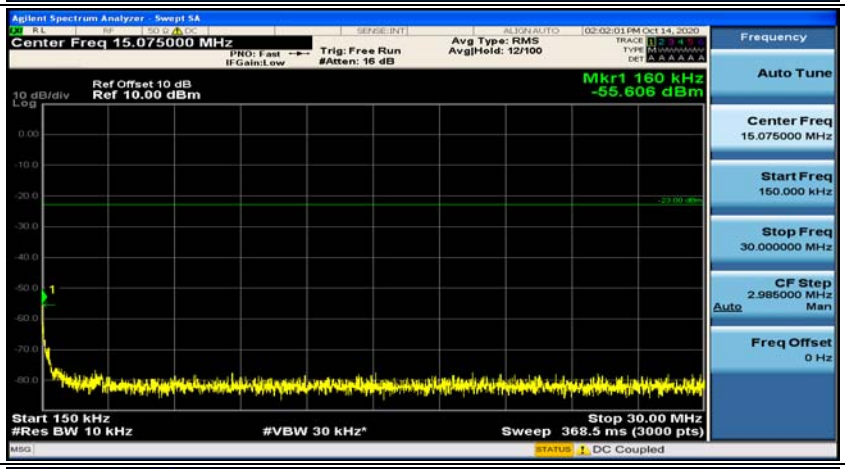

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
02:00:12 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div Ref 10.00 dBm
Log
Mkr1 105.57 kHz
-54.919 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 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
02:00:24 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div Ref 10.00 dBm
Log
Mkr1 150 kHz
-56.886 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

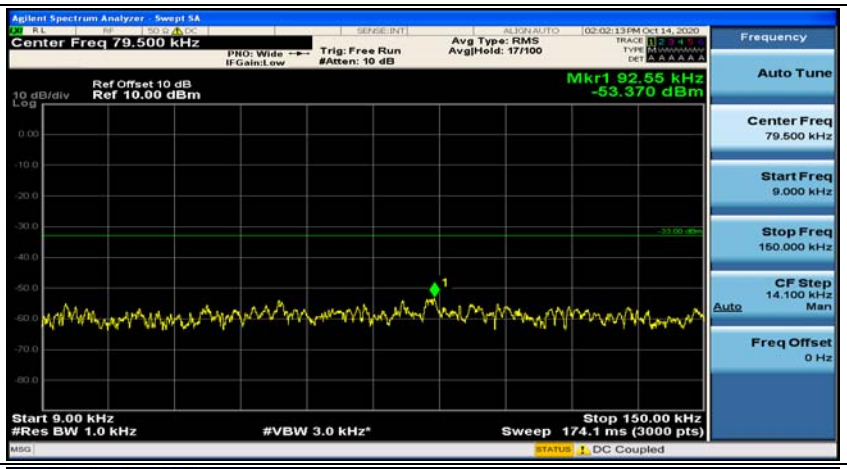
Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
02:00:29 PM Oct 14, 2020
Ref Offset 9.96 dB
10 dB/div Ref 30.00 dBm
Log
Mkr2 25.905 GHz
-29.029 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 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

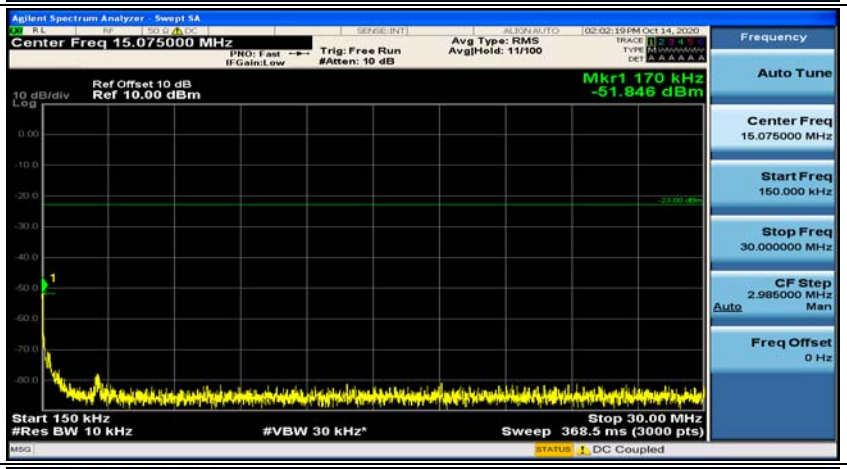
(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#0



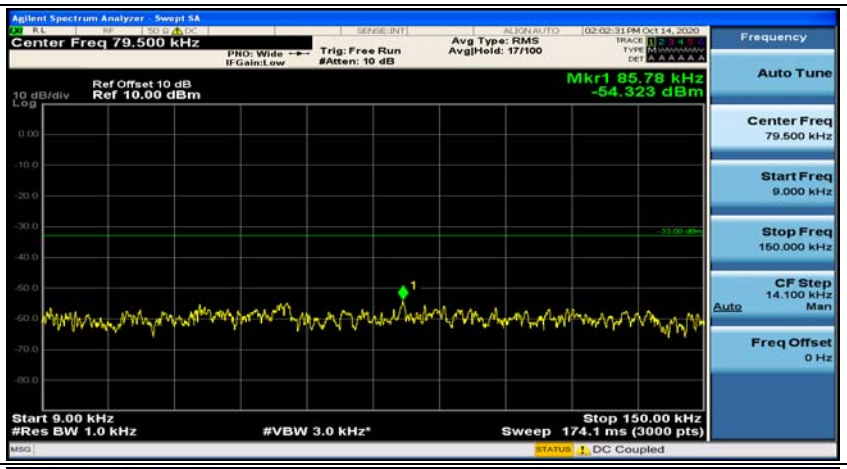


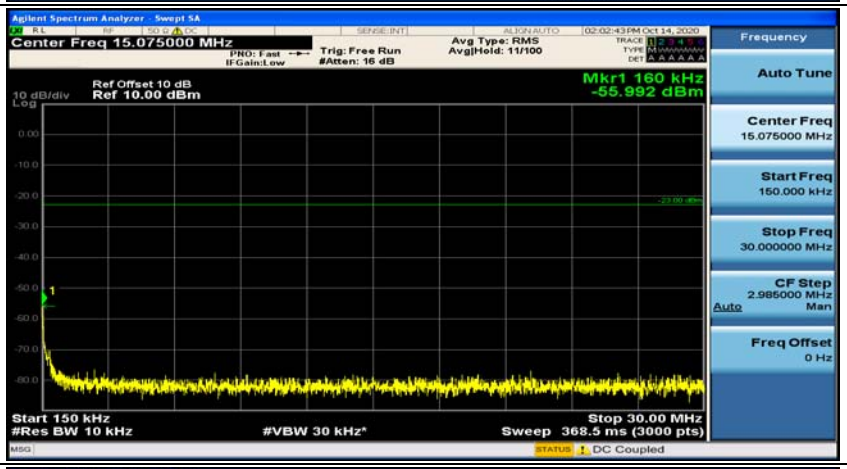
(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#12





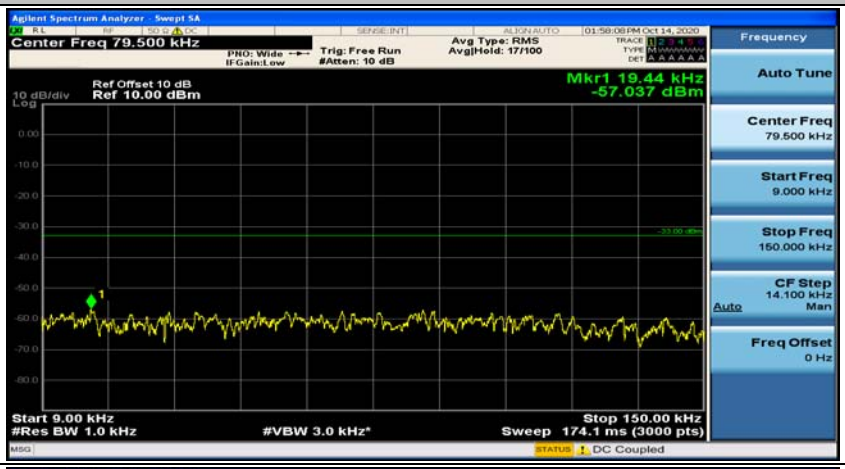
(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#24

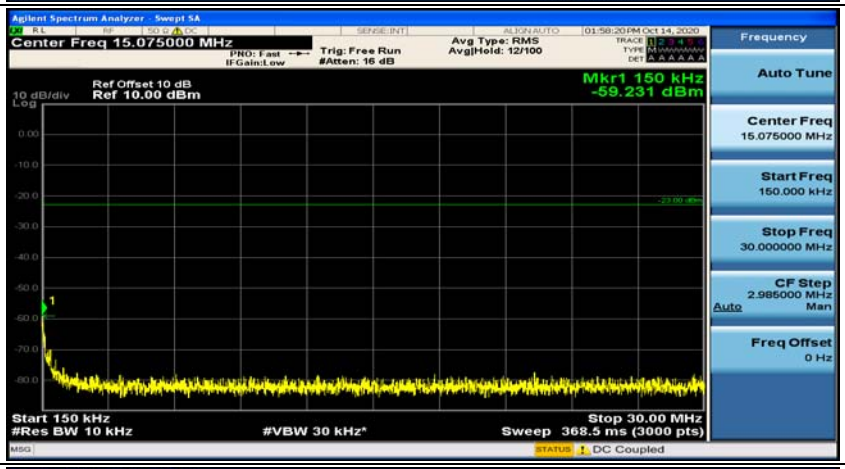

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
02:02:31 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div
Ref 10.00 dBm
Mkr1 85.78 kHz
-54.323 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 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
02:02:43 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div
Ref 10.00 dBm
Mkr1 160 kHz
-55.992 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

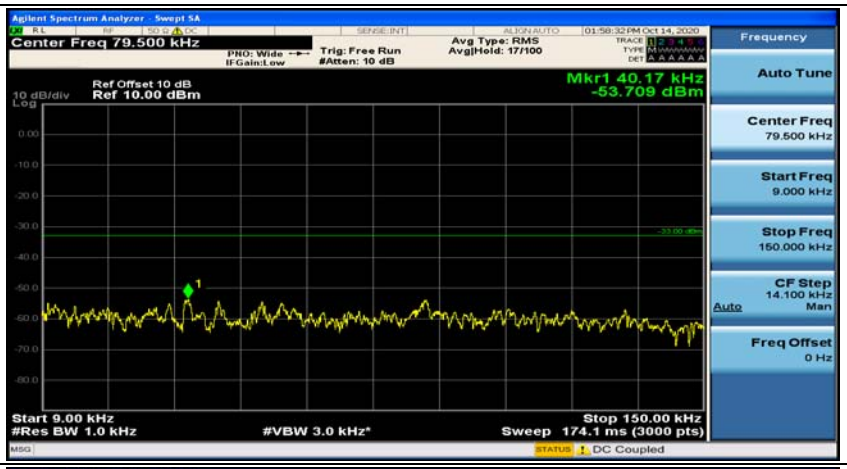
Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
02:02:49 PM Oct 14, 2020
Ref Offset 9.96 dB
10 dB/div
Ref 30.00 dBm
Mkr2 23.376 GHz
-29.002 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
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

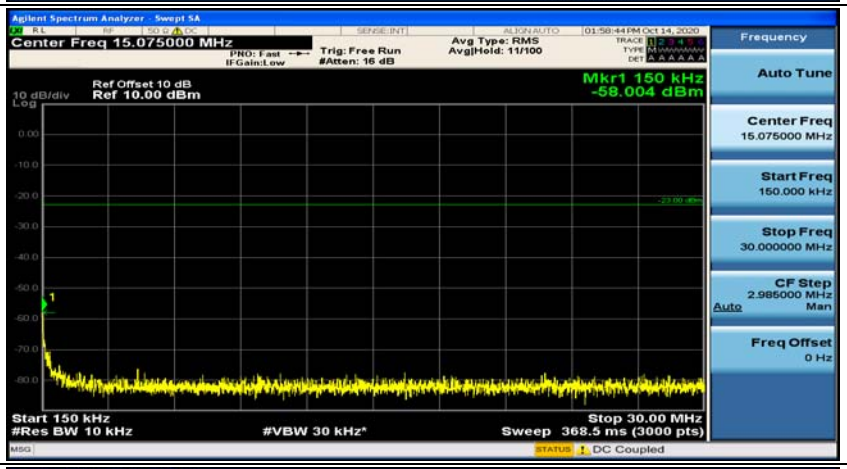
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#0



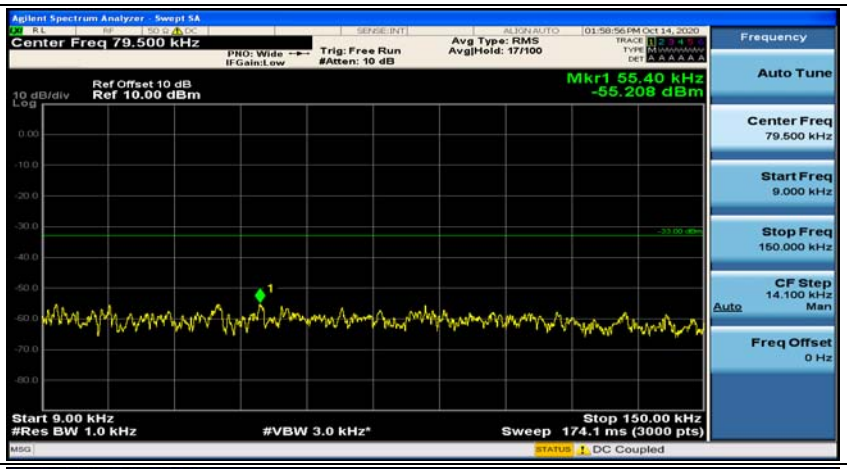


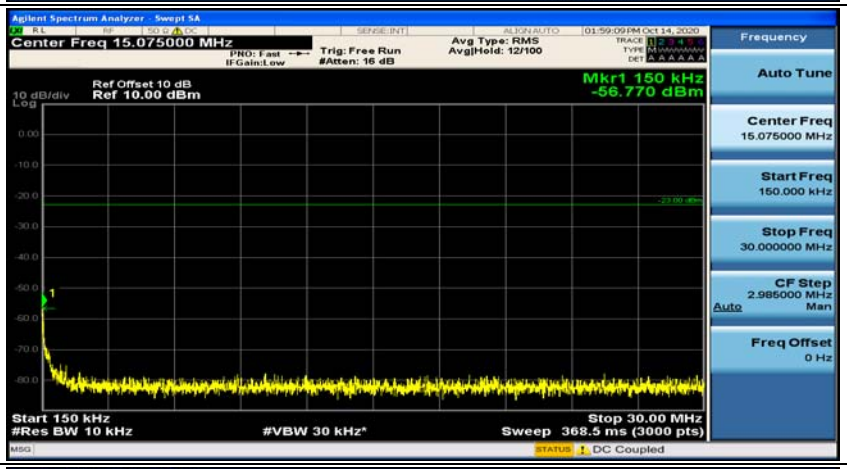
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#12





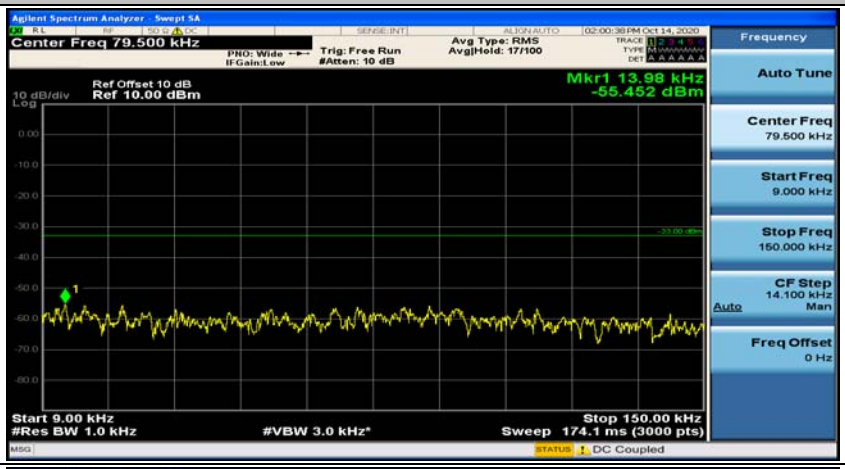
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#24

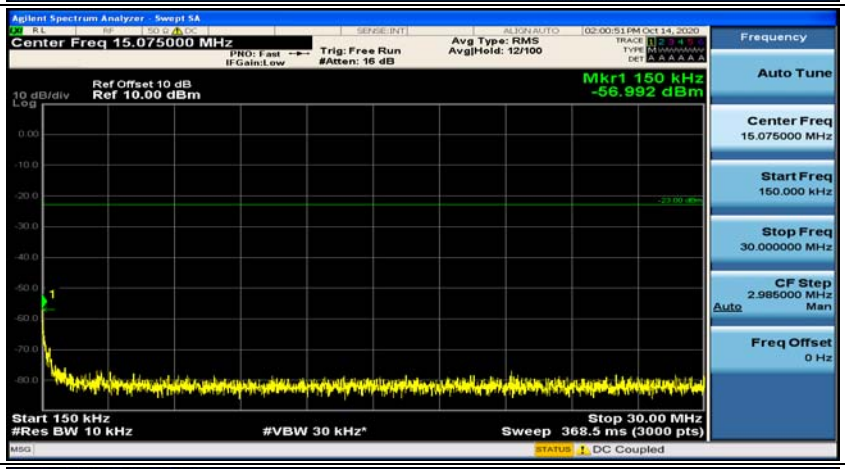

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
01:58:56 PM Oct 14, 2020
Frequency
Auto Tune
Ref Offset 10 dB
10 dB/div
Ref 10.00 dBm
Mkr1 55.40 kHz
-55.208 dBm
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop 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: 12/100
01:59:09 PM Oct 14, 2020
Frequency
Auto Tune
Ref Offset 10 dB
10 dB/div
Ref 10.00 dBm
Mkr1 150 kHz
-56.770 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

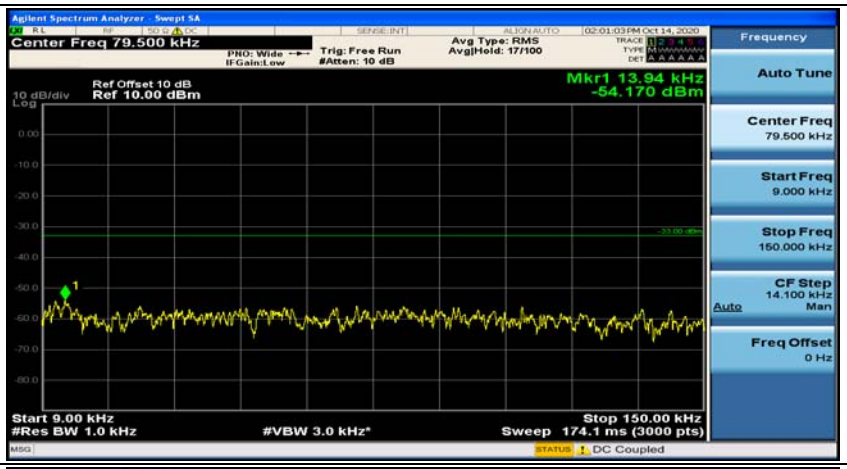
Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
01:59:15 PM Oct 14, 2020
Frequency
Auto Tune
Ref Offset 9.96 dB
10 dB/div
Ref 30.00 dBm
Mkr2 25.368 GHz
-28.499 dBm
Center Freq
13.015000000 GHz
Start Freq
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)

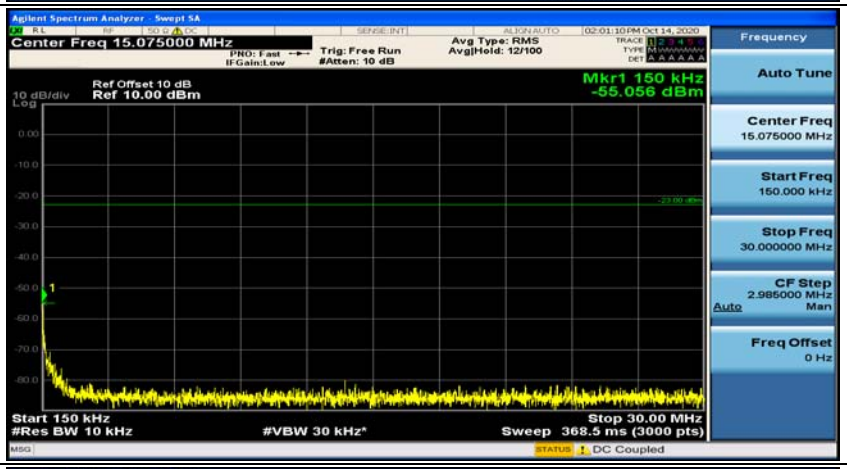
(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#0



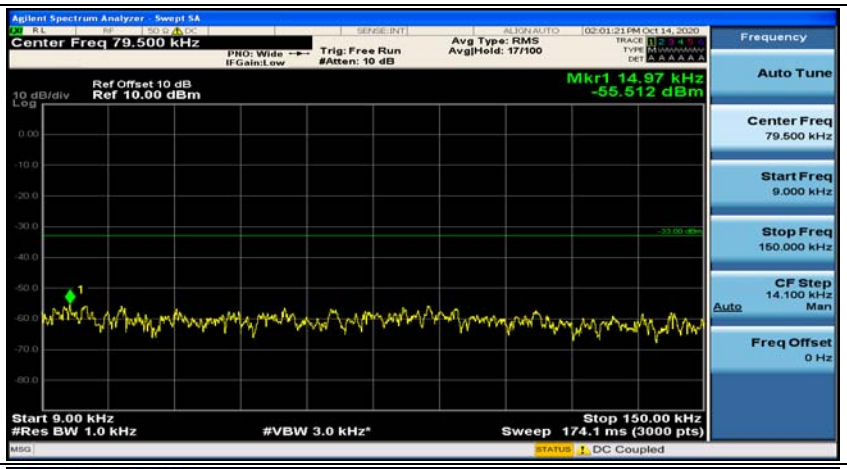


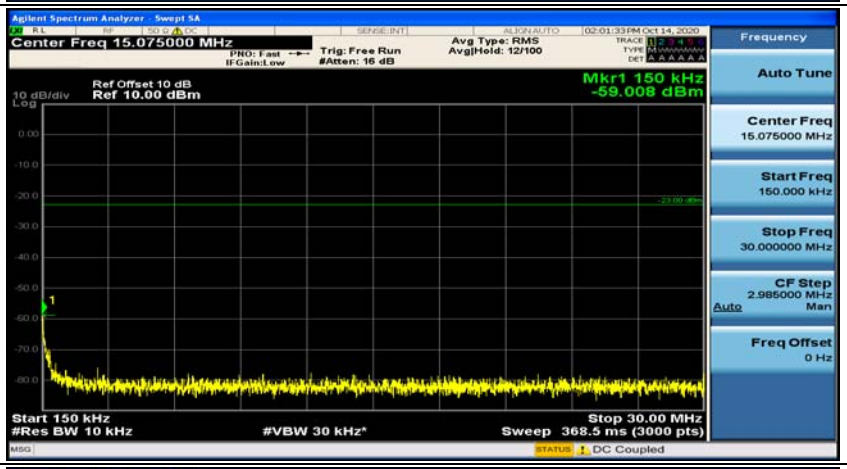
(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#12





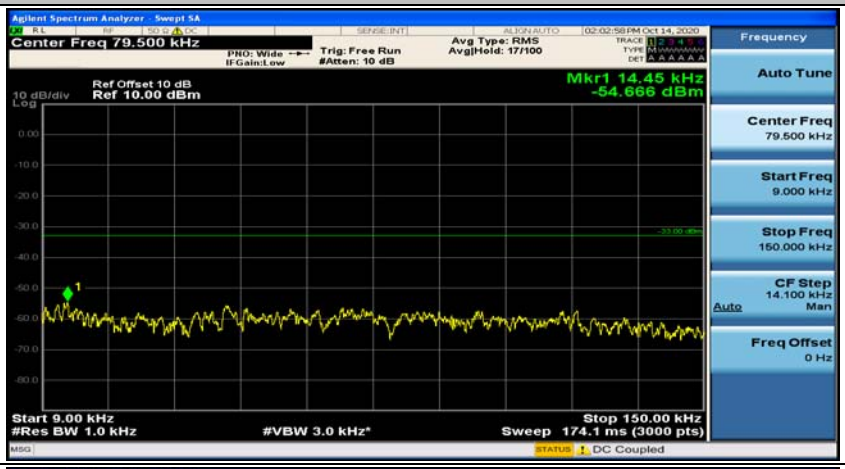
(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#24

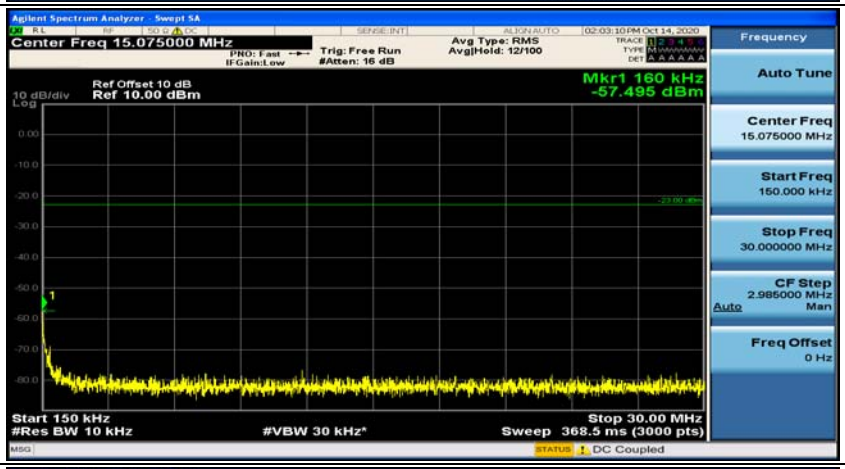

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
02:01:21 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div Ref 10.00 dBm
Log
Mkr1 14.97 kHz
-55.512 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 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
02:01:33 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div Ref 10.00 dBm
Log
Mkr1 150 kHz
-59.008 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

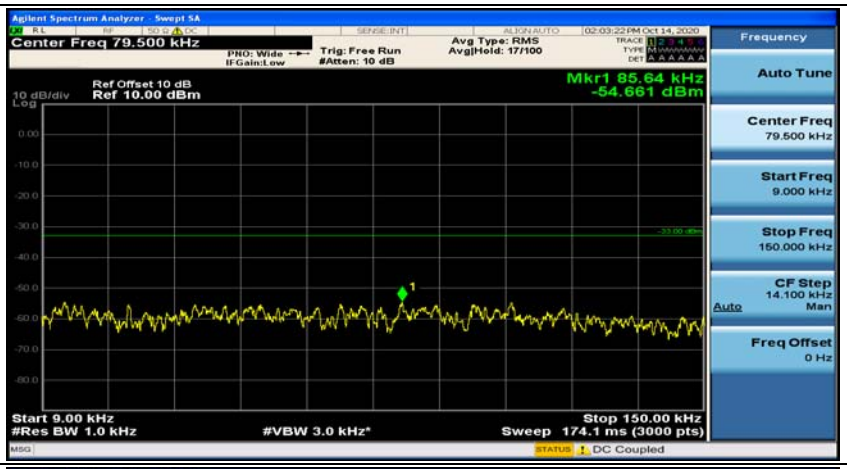
Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
02:01:39 PM Oct 14, 2020
Ref Offset 9.96 dB
10 dB/div Ref 30.00 dBm
Log
Mkr2 25.887 GHz
-29.001 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 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

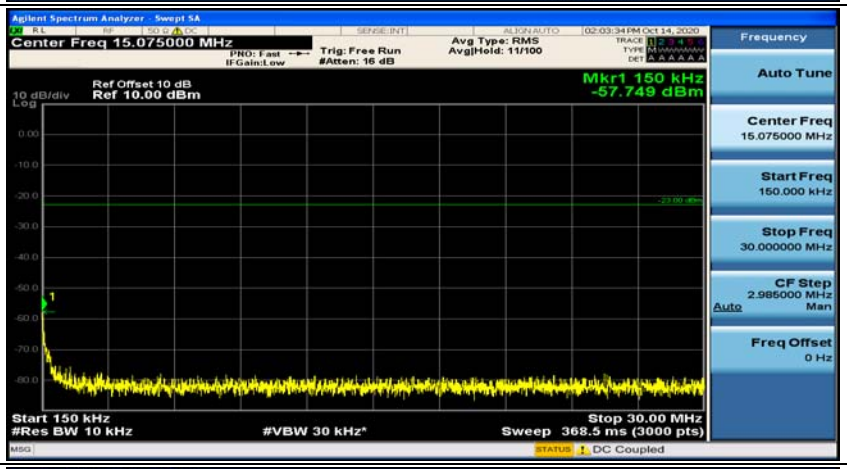
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#0



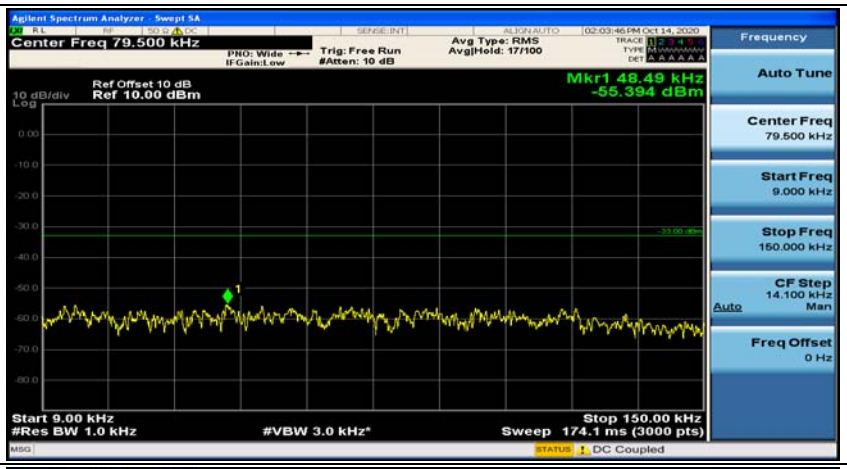


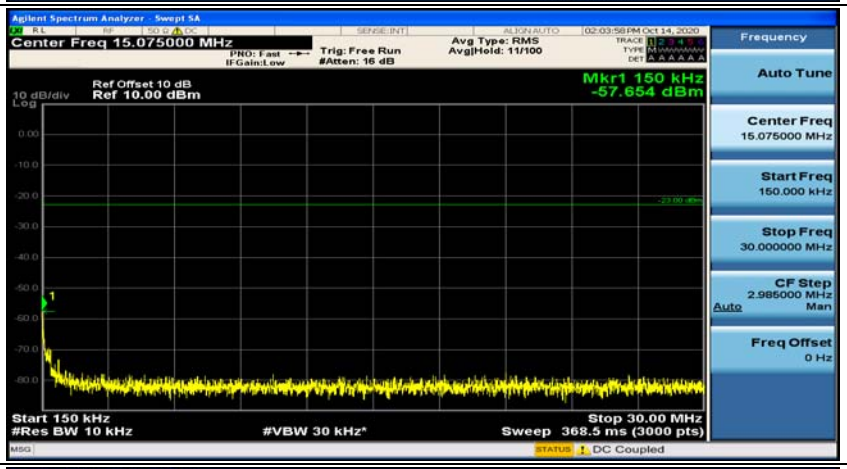
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#12





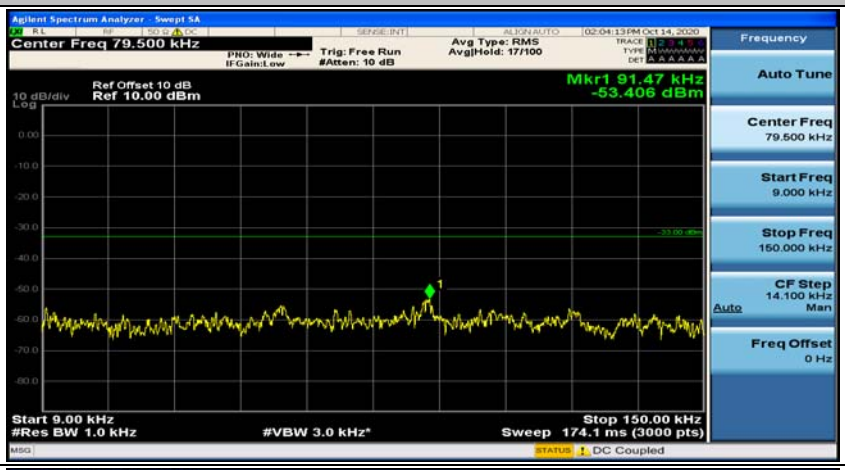
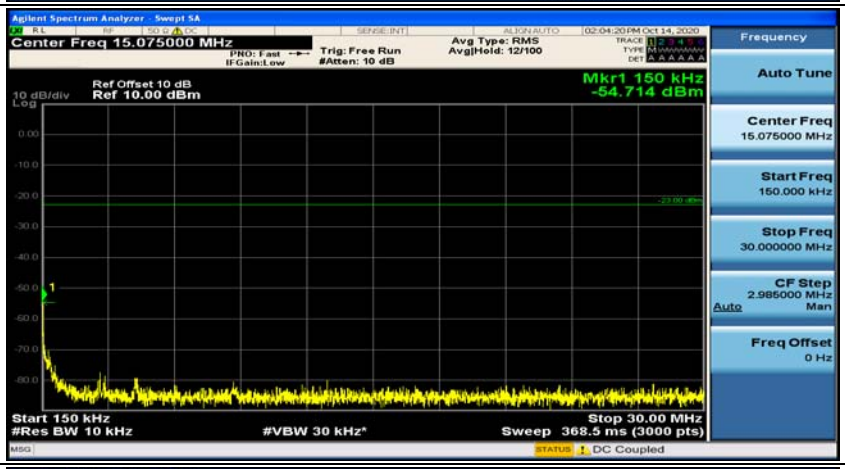
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#24

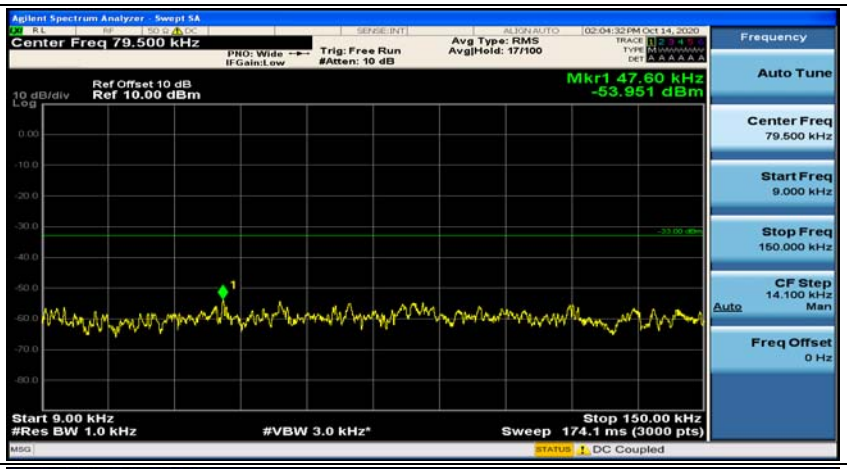

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
02:03:46 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 48.49 kHz
-55.394 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 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

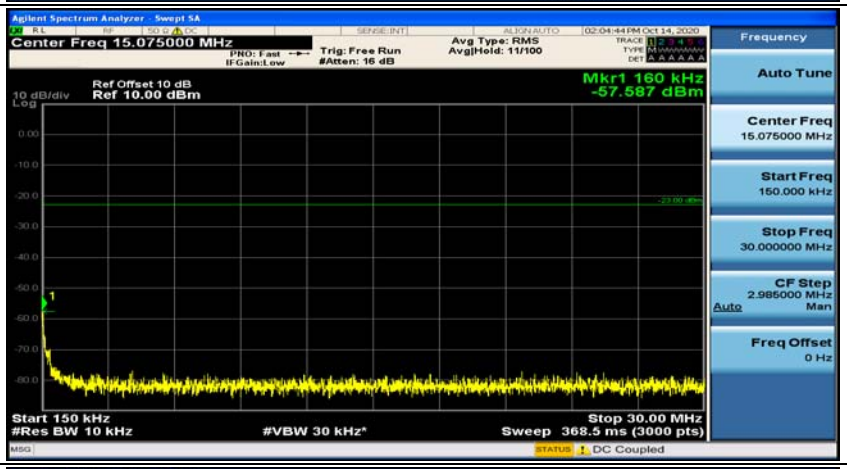

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 11/100
02:03:58 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 150 kHz
-57.654 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 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
02:04:04 PM Oct 14, 2020
Ref Offset 9.96 dB
10 dB/div
Ref 30.00 dBm
Log
Mkr2 25.463 GHz
-28.669 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

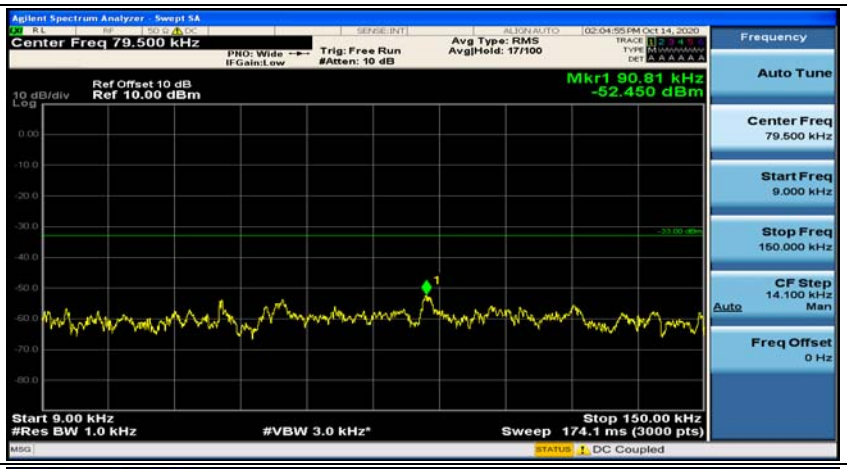
Channel Bandwidth: 10 MHz

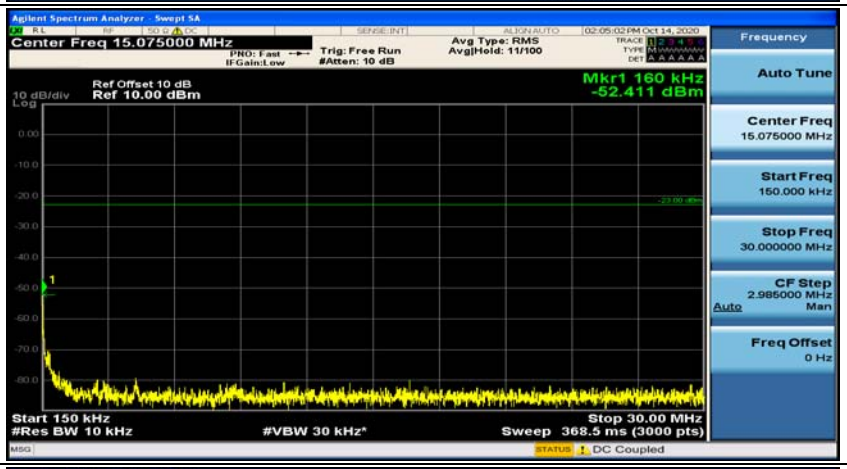
Channel Bandwidth: 10 MHz_LCH_QPSK_1RB#0


Channel Bandwidth: 10 MHz_LCH_QPSK_1RB#24





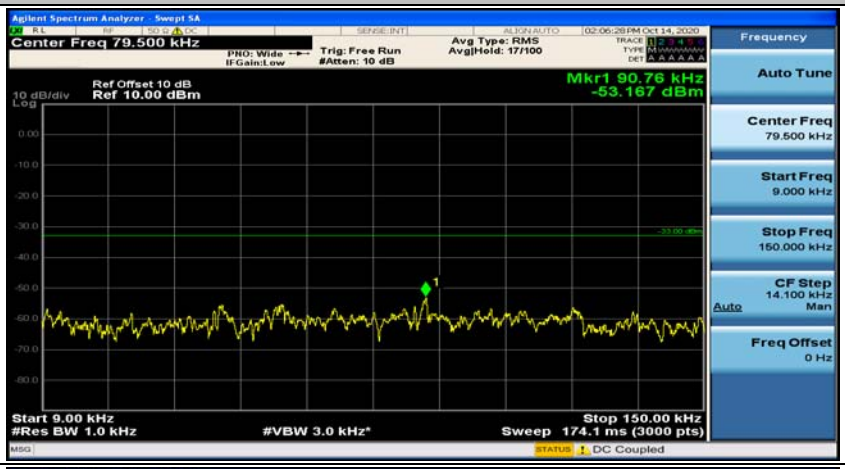
Channel Bandwidth: 10 MHz_LCH_QPSK_1RB#49

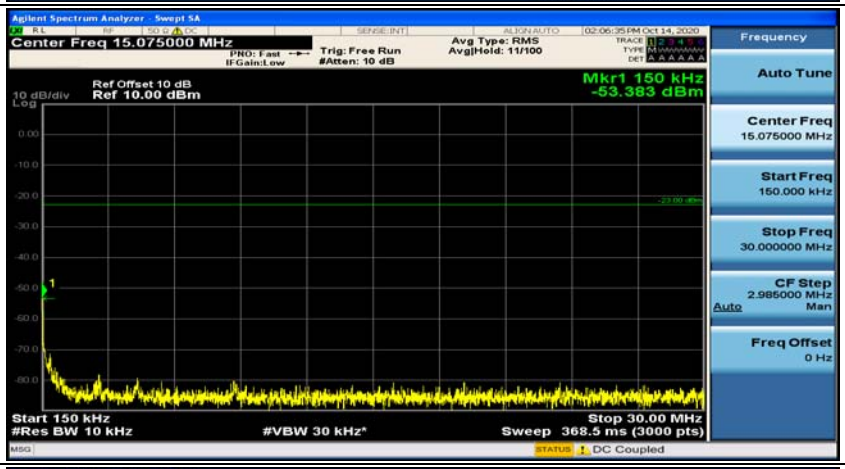

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
02:04:55 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div Ref 10.00 dBm
Log
Mkr1 90.81 kHz
-52.450 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 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: 10 dB
Avg Type: RMS
Avg|Hold: 11/100
02:05:02 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div Ref 10.00 dBm
Log
Mkr1 160 kHz
-52.411 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

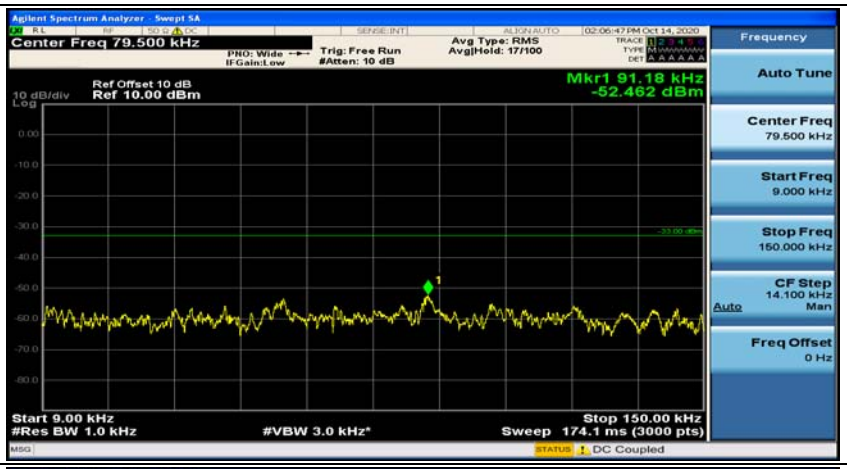
Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
02:05:08 PM Oct 14, 2020
Ref Offset 9.96 dB
10 dB/div Ref 30.00 dBm
Log
Mkr2 25.160 GHz
-28.861 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 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

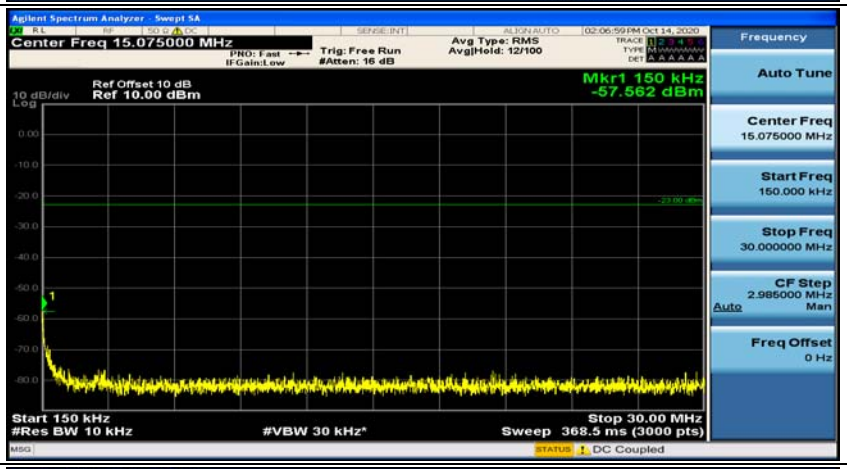
Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#0



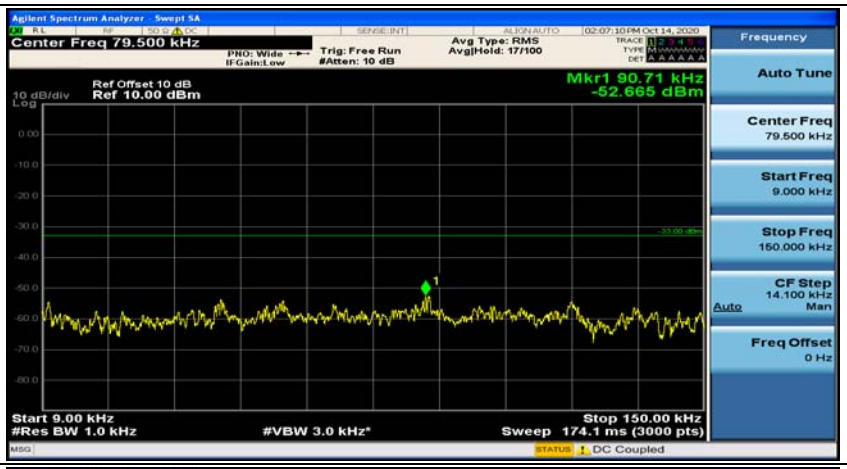


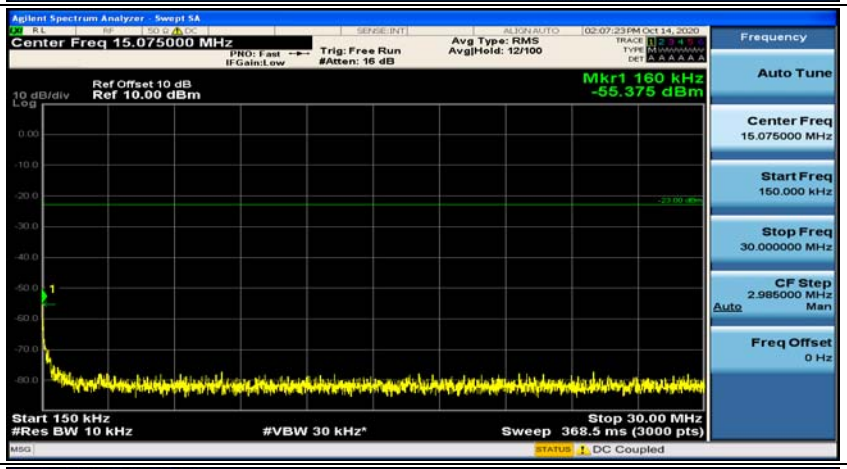
Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#24





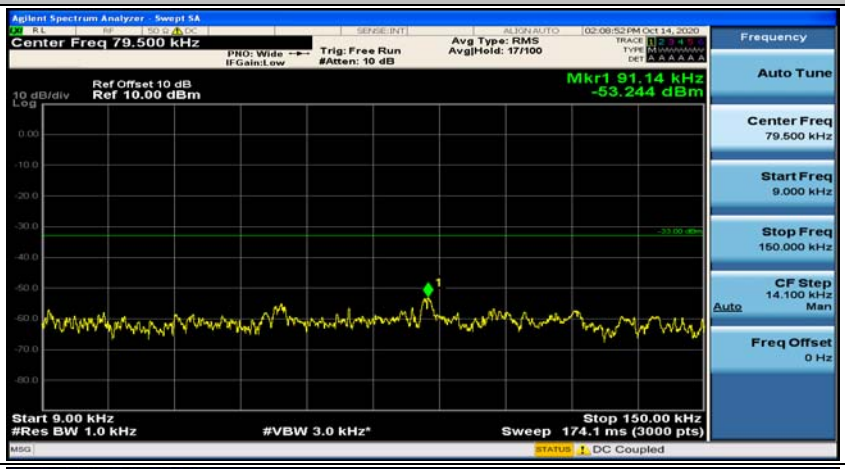
Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#49

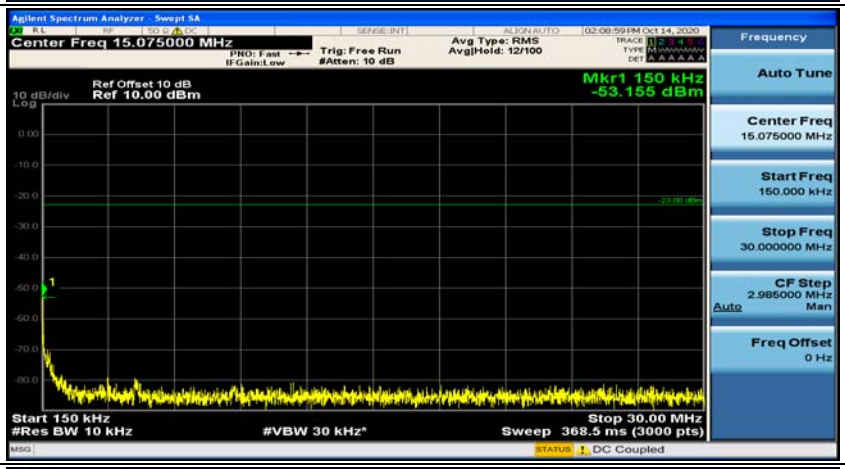

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
02:07:10 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div
Ref 10.00 dBm
Mkr1 90.71 kHz
-52.665 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 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
02:07:23 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div
Ref 10.00 dBm
Mkr1 160 kHz
-55.375 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

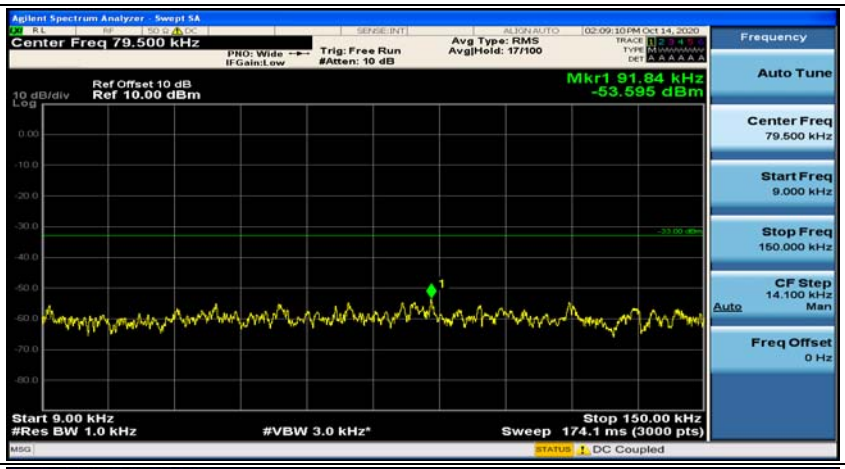
Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
02:07:28 PM Oct 14, 2020
Ref Offset 9.96 dB
10 dB/div
Ref 30.00 dBm
Mkr2 25.368 GHz
-28.684 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
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

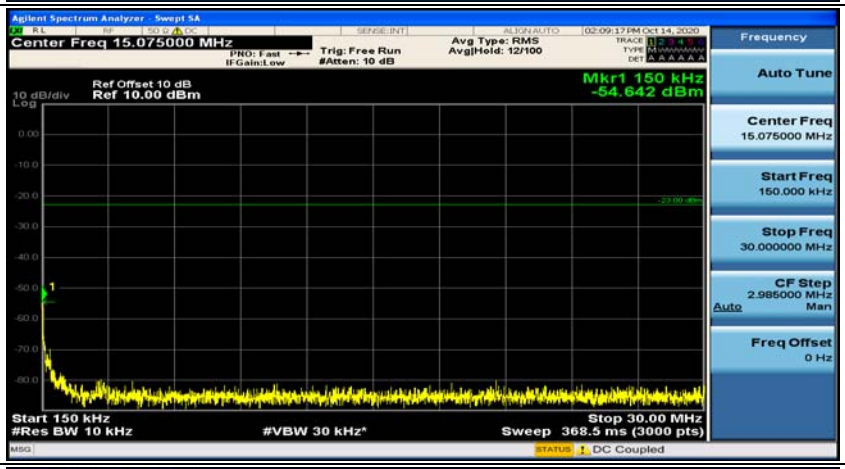
Channel Bandwidth: 10 MHz_HCH_QPSK_1RB#0



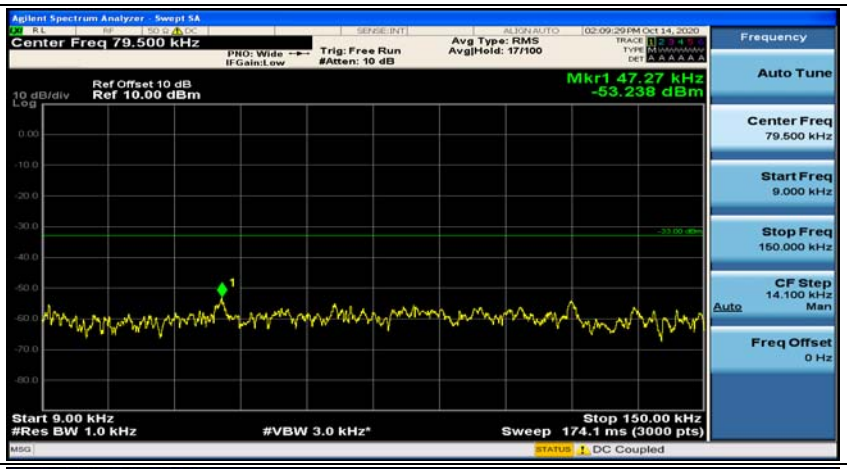


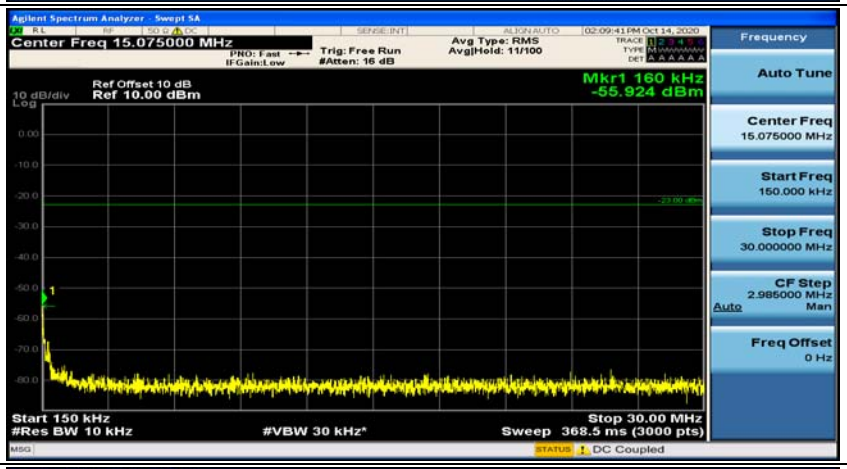
Channel Bandwidth: 10 MHz_HCH_QPSK_1RB#24





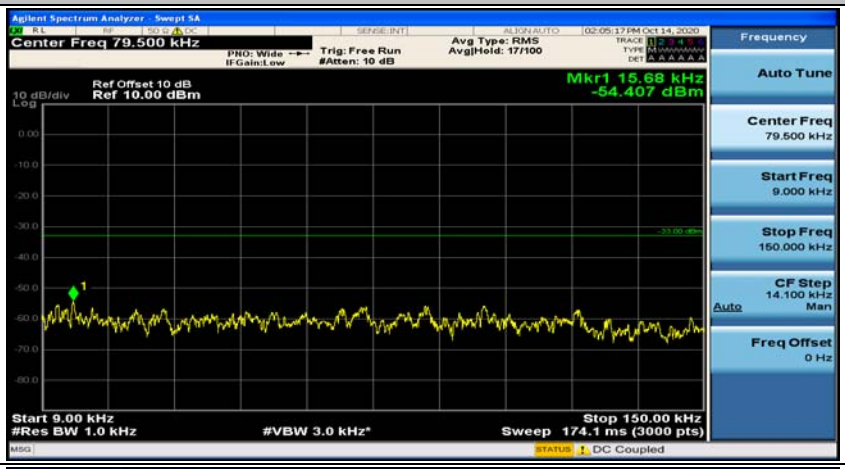
Channel Bandwidth: 10 MHz_HCH_QPSK_1RB#49

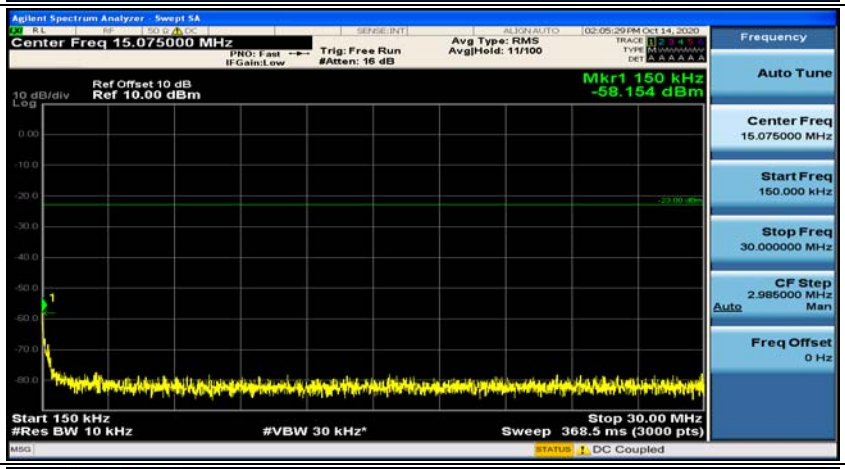

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
02:09:29 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div Ref 10.00 dBm
Log
Mkr1 47.27 kHz
-53.238 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 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
02:09:41 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div Ref 10.00 dBm
Log
Mkr1 160 kHz
-55.924 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

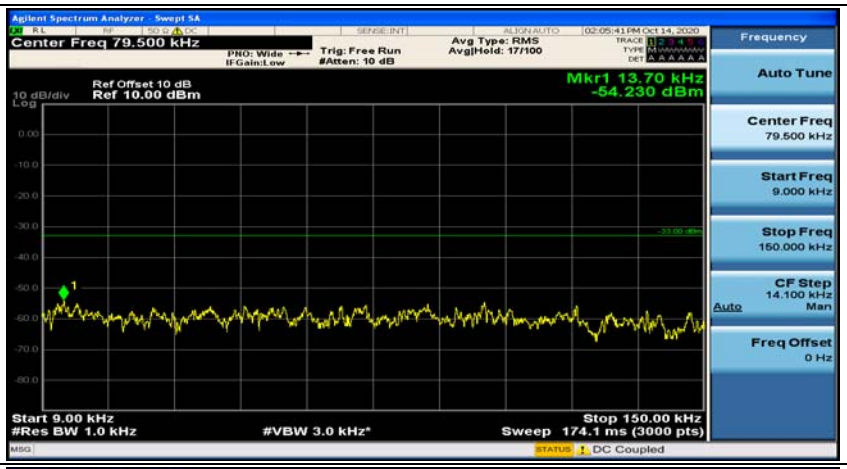
Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
02:09:47 PM Oct 14, 2020
Ref Offset 9.96 dB
10 dB/div Ref 30.00 dBm
Log
Mkr2 25.541 GHz
-28.946 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 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

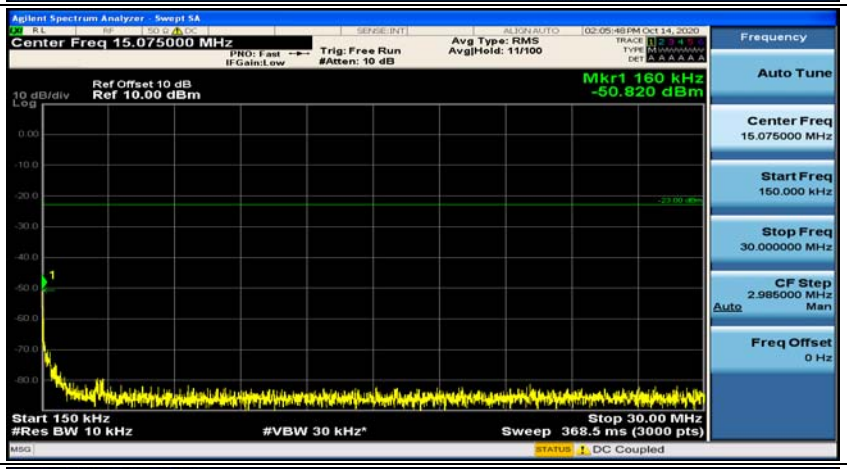
Channel Bandwidth: 10 MHz_LCH_16QAM_1RB#0



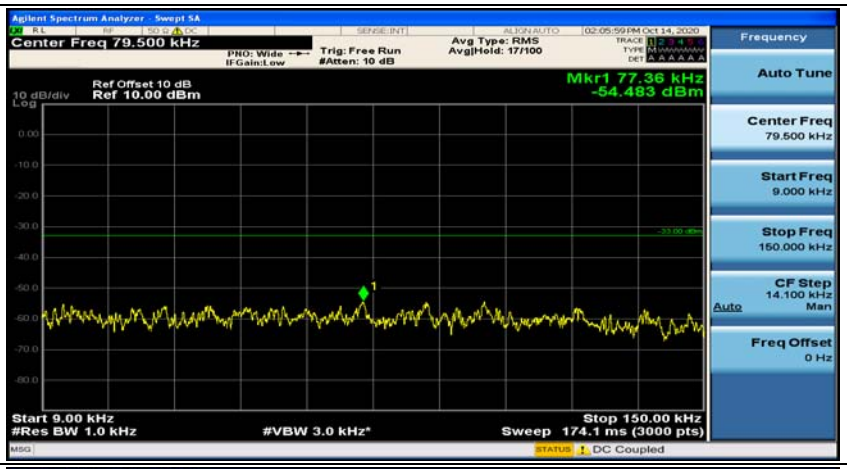


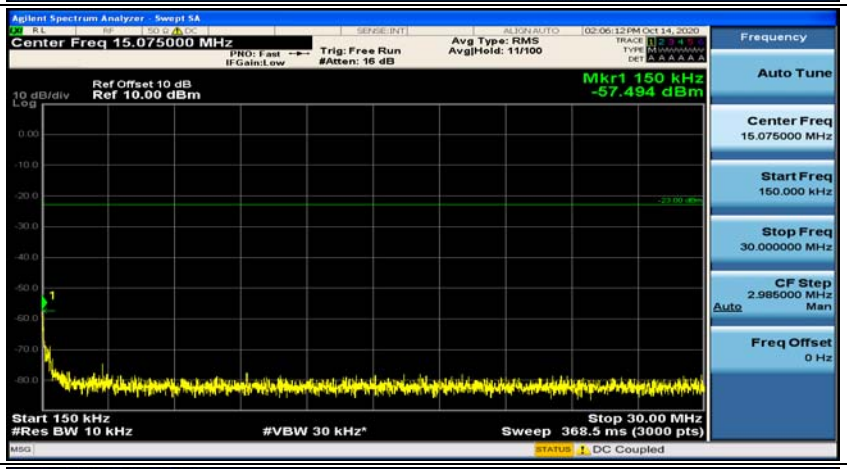
Channel Bandwidth: 10 MHz_LCH_16QAM_1RB#24



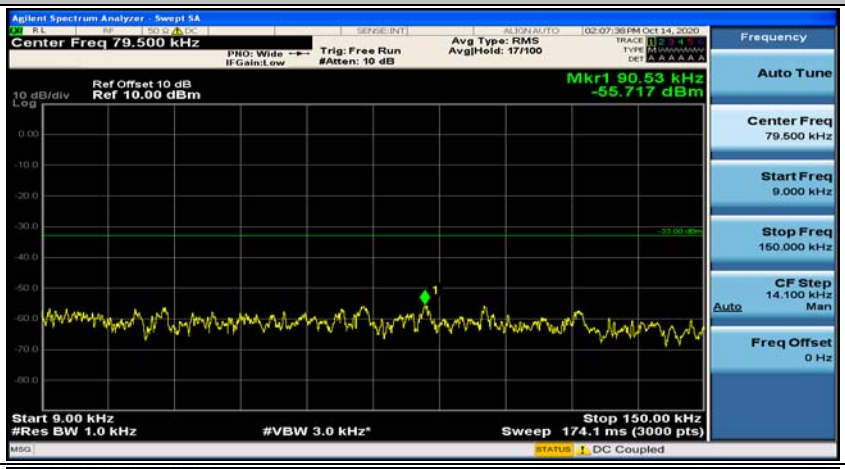
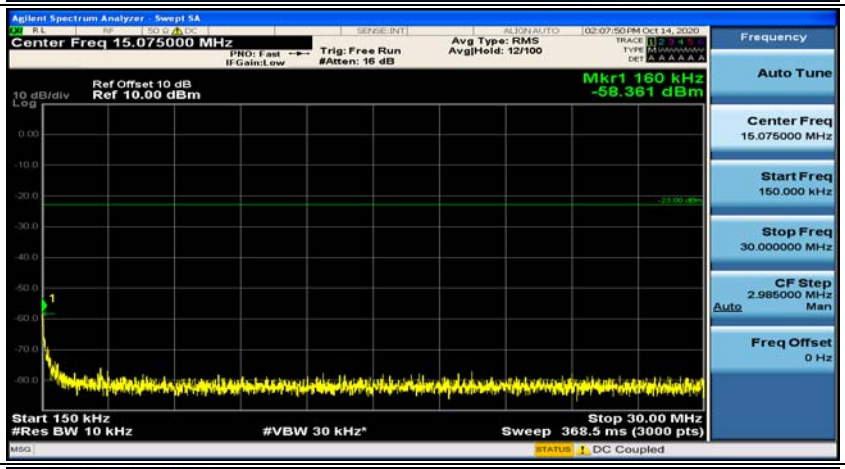


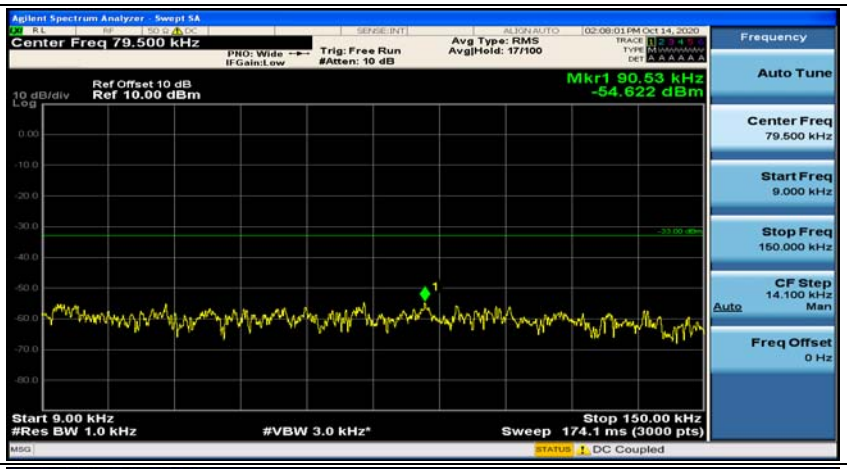
Channel Bandwidth: 10 MHz_LCH_16QAM_1RB#49

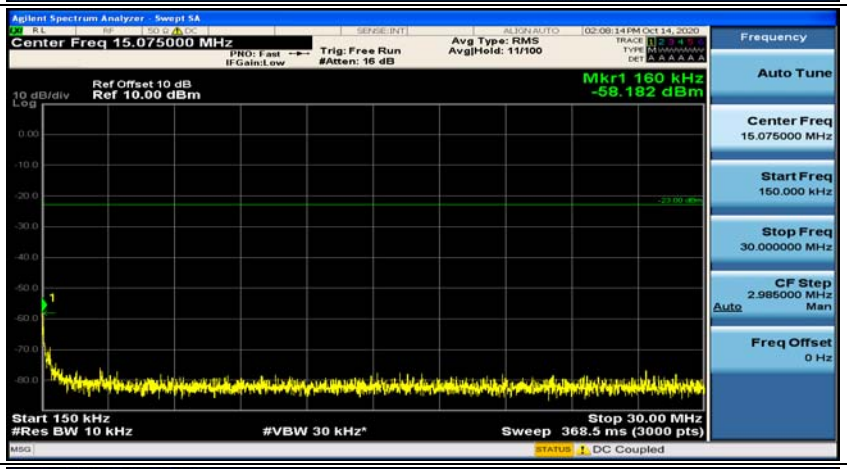

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
02:05:59 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 77.36 kHz
-54.483 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 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
02:06:12 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 150 kHz
-57.494 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

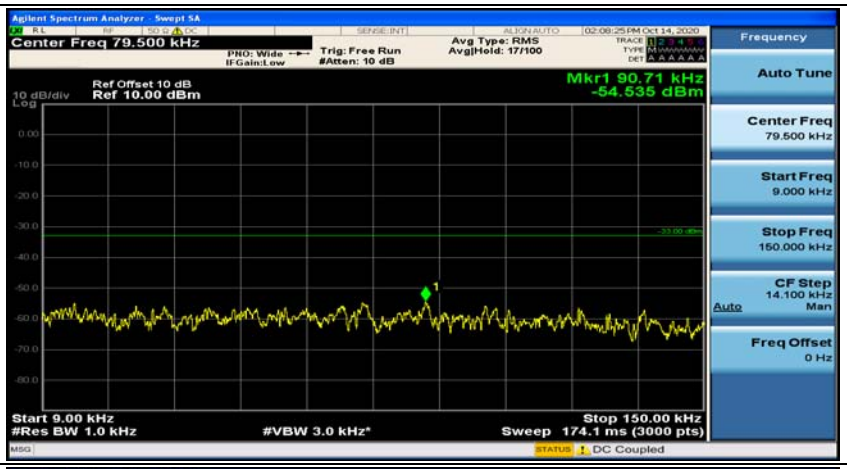
Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
02:06:17 PM Oct 14, 2020
Ref Offset 9.96 dB
10 dB/div
Ref 30.00 dBm
Log
Mkr2 25.385 GHz
-28.662 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 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

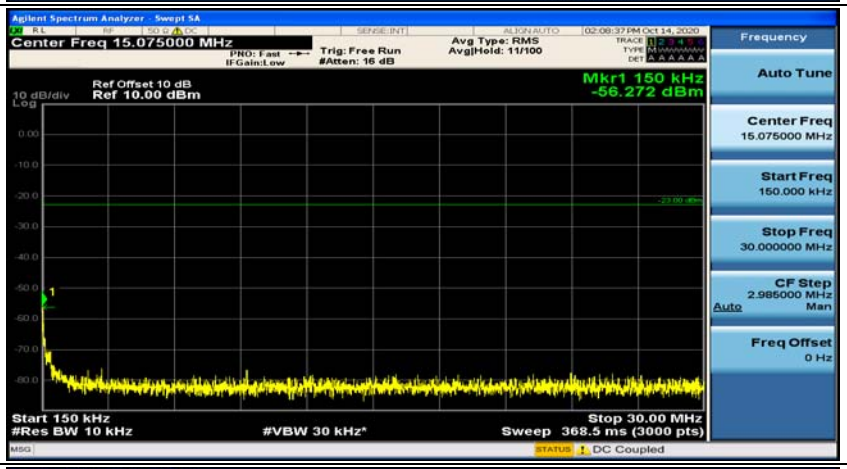
Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#0


Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#24





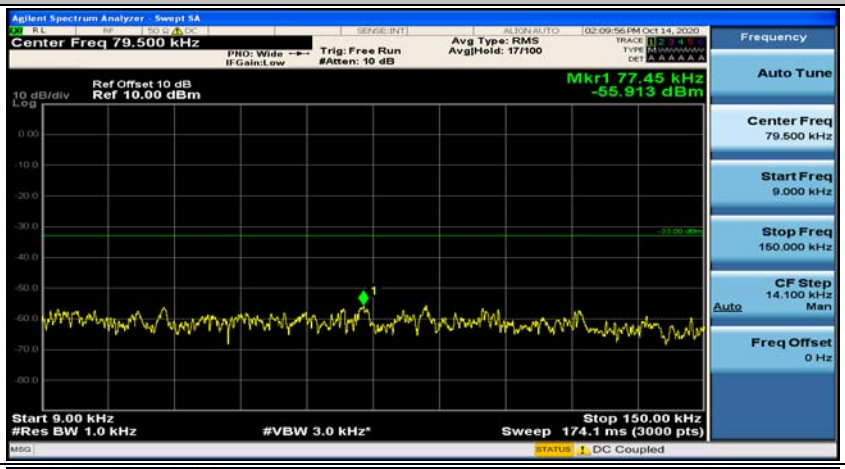
Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#49

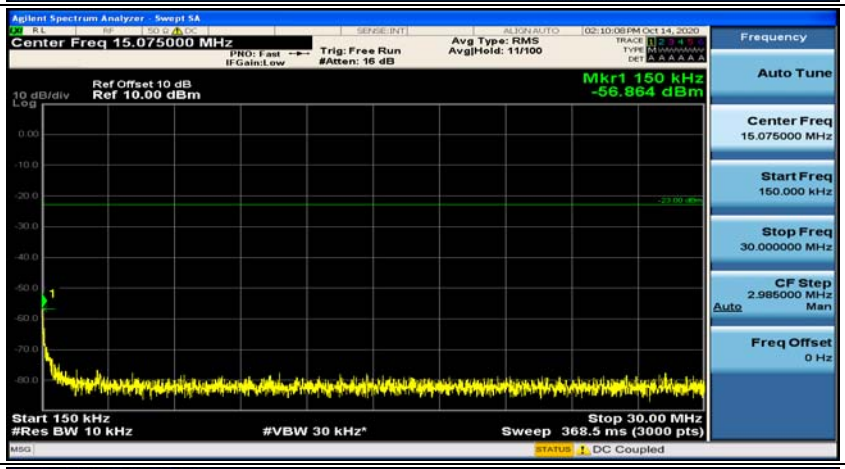

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
02:08:25 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div Ref 10.00 dBm
Log
Mkr1 90.71 kHz
-54.535 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 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
02:08:37 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div Ref 10.00 dBm
Log
Mkr1 150 kHz
-56.272 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

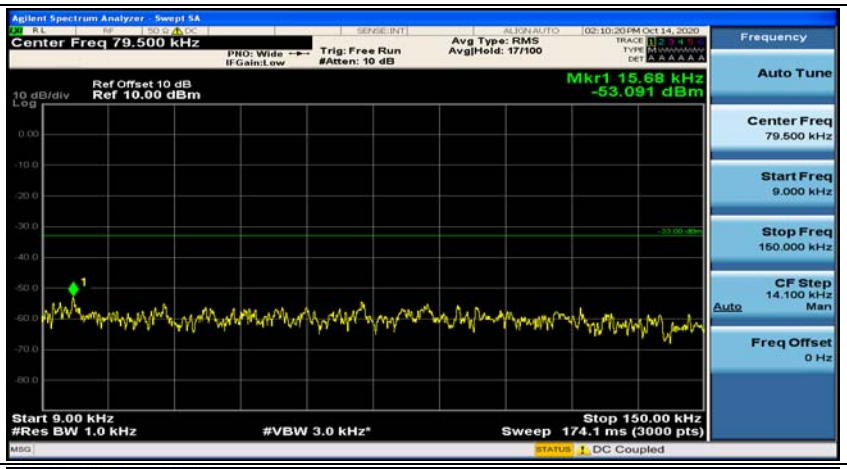
Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
02:08:43 PM Oct 14, 2020
Ref Offset 9.96 dB
10 dB/div Ref 30.00 dBm
Log
Mkr2 25.489 GHz
-28.456 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 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

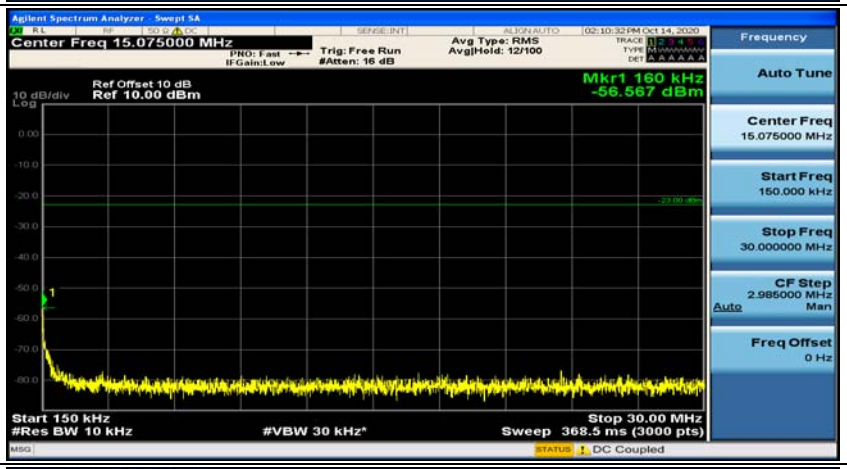
Channel Bandwidth: 10 MHz_HCH_16QAM_1RB#0



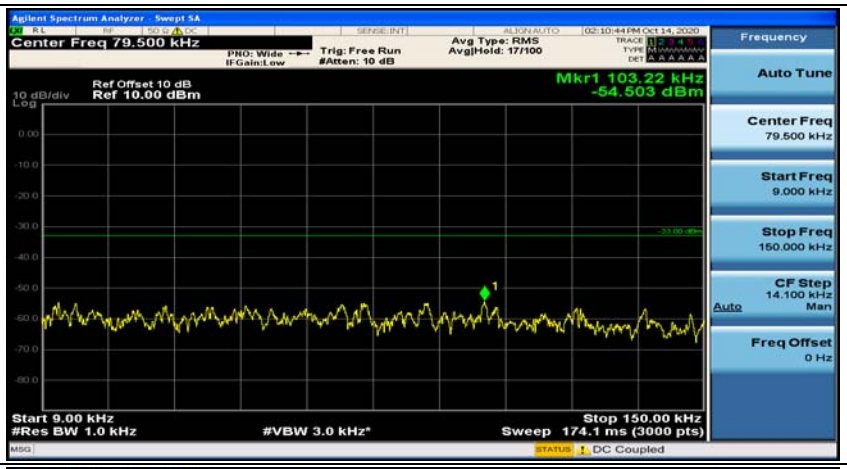


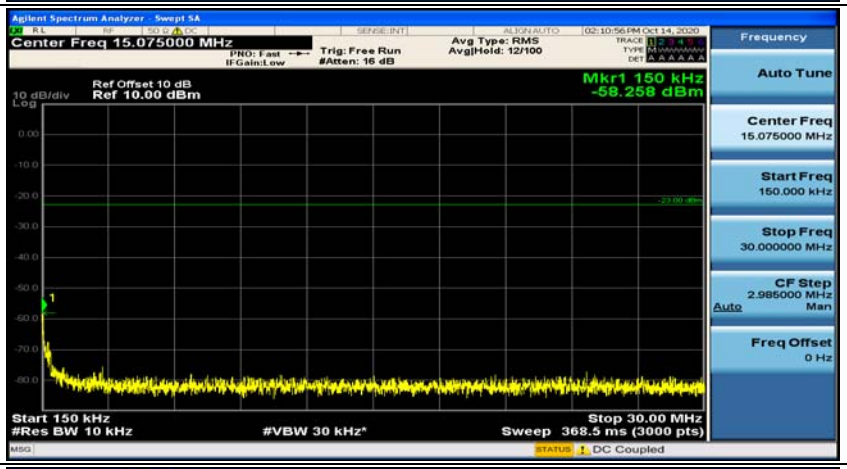
Channel Bandwidth: 10 MHz_HCH_16QAM_1RB#24





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
02:10:44 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div Ref 10.00 dBm
Log
Mkr1 103.22 kHz
-54.503 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: 12/100
02:10:56 PM Oct 14, 2020
Ref Offset 10 dB
10 dB/div Ref 10.00 dBm
Log
Mkr1 150 kHz
-58.258 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
02:11:02 PM Oct 14, 2020
Ref Offset 9.96 dB
10 dB/div Ref 30.00 dBm
Log
Mkr2 25.957 GHz
-28.635 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: 5 MHz

Channel Bandwidth: 5 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	4.18	0.005916	± 2.5	PASS
		VN	TN	-0.79	-0.001118	± 2.5	PASS
		VH	TN	1.84	0.002604	± 2.5	PASS
	MCH	VL	TN	3.29	0.004634	± 2.5	PASS
		VN	TN	2.67	0.003761	± 2.5	PASS
		VH	TN	0.52	0.000732	± 2.5	PASS
	HCH	VL	TN	2.19	0.003069	± 2.5	PASS
		VN	TN	-1.58	-0.002214	± 2.5	PASS
		VH	TN	0.04	0.000056	± 2.5	PASS
16QAM	LCH	VL	TN	-1.18	-0.001670	± 2.5	PASS
		VN	TN	1.1	0.001557	± 2.5	PASS
		VH	TN	-1	-0.001415	± 2.5	PASS
	MCH	VL	TN	2.57	0.003620	± 2.5	PASS
		VN	TN	3.03	0.004268	± 2.5	PASS
		VH	TN	-1.56	-0.002197	± 2.5	PASS
	HCH	VL	TN	0.58	0.000813	± 2.5	PASS
		VN	TN	1.35	0.001892	± 2.5	PASS
		VH	TN	2.85	0.003994	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	3.89	0.005506	± 2.5	PASS
		VN	-20	3.92	0.005548	± 2.5	PASS
		VN	-10	3.76	0.005322	± 2.5	PASS
		VN	0	2.28	0.003227	± 2.5	PASS
		VN	10	2.32	0.003284	± 2.5	PASS
		VN	20	2.67	0.003779	± 2.5	PASS
		VN	30	-0.24	-0.000340	± 2.5	PASS
		VN	40	3.91	0.005534	± 2.5	PASS
		VN	50	3.78	0.005350	± 2.5	PASS

	MCH	VN	-30	3.16	0.004451	± 2.5	PASS
		VN	-20	-1.26	-0.001775	± 2.5	PASS
		VN	-10	1.39	0.001958	± 2.5	PASS
		VN	0	1.88	0.002648	± 2.5	PASS
		VN	10	2.74	0.003859	± 2.5	PASS
		VN	20	3.33	0.004690	± 2.5	PASS
		VN	30	2.49	0.003507	± 2.5	PASS
		VN	40	-0.84	-0.001183	± 2.5	PASS
		VN	50	0.47	0.000662	± 2.5	PASS
	HCH	VN	-30	-0.6	-0.000841	± 2.5	PASS
		VN	-20	2.68	0.003756	± 2.5	PASS
		VN	-10	3.38	0.004737	± 2.5	PASS
		VN	0	-1.28	-0.001794	± 2.5	PASS
		VN	10	2.9	0.004064	± 2.5	PASS
		VN	20	4.47	0.006265	± 2.5	PASS
		VN	30	-1.09	-0.001528	± 2.5	PASS
		VN	40	2.94	0.004121	± 2.5	PASS
		VN	50	-1.12	-0.001570	± 2.5	PASS
16QAM	LCH	VN	-30	-1.84	-0.002604	± 2.5	PASS
		VN	-20	-0.29	-0.000410	± 2.5	PASS
		VN	-10	-0.48	-0.000679	± 2.5	PASS
		VN	0	-0.37	-0.000524	± 2.5	PASS
		VN	10	2.34	0.003312	± 2.5	PASS
		VN	20	3.07	0.004345	± 2.5	PASS
		VN	30	2.8	0.003963	± 2.5	PASS
		VN	40	1.97	0.002788	± 2.5	PASS
		VN	50	-1.87	-0.002647	± 2.5	PASS
	MCH	VN	-30	2.35	0.003294	± 2.5	PASS
		VN	-20	3.25	0.004555	± 2.5	PASS
		VN	-10	0.11	0.000154	± 2.5	PASS
		VN	0	0.8	0.001121	± 2.5	PASS
		VN	10	0.62	0.000869	± 2.5	PASS
		VN	20	0.16	0.000224	± 2.5	PASS
		VN	30	3.77	0.005284	± 2.5	PASS
		VN	40	0.65	0.000911	± 2.5	PASS
		VN	50	2.51	0.003518	± 2.5	PASS
	HCH	VN	-30	-0.43	-0.000603	± 2.5	PASS
		VN	-20	-0.91	-0.001275	± 2.5	PASS
		VN	-10	-1.89	-0.002649	± 2.5	PASS
		VN	0	1.16	0.001626	± 2.5	PASS
		VN	10	0.59	0.000827	± 2.5	PASS

		VN	20	1.42	0.001990	± 2.5	PASS
		VN	30	-0.25	-0.000350	± 2.5	PASS
		VN	40	-0.1	-0.000140	± 2.5	PASS
		VN	50	0.37	0.000519	± 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	-1.76	-0.002482	± 2.5	PASS
		VN	TN	3.09	0.004358	± 2.5	PASS
		VH	TN	-1.08	-0.001523	± 2.5	PASS
	MCH	VL	TN	3.95	0.005563	± 2.5	PASS
		VN	TN	2.44	0.003437	± 2.5	PASS
		VH	TN	-0.49	-0.000690	± 2.5	PASS
	HCH	VL	TN	2.9	0.004079	± 2.5	PASS
		VN	TN	2.17	0.003052	± 2.5	PASS
		VH	TN	-0.28	-0.000394	± 2.5	PASS
16QAM	LCH	VL	TN	3.53	0.004979	± 2.5	PASS
		VN	TN	4.33	0.006107	± 2.5	PASS
		VH	TN	2.65	0.003738	± 2.5	PASS
	MCH	VL	TN	4.21	0.005930	± 2.5	PASS
		VN	TN	-0.3	-0.000423	± 2.5	PASS
		VH	TN	-1.53	-0.002155	± 2.5	PASS
	HCH	VL	TN	0.53	0.000745	± 2.5	PASS
		VN	TN	2.33	0.003277	± 2.5	PASS
		VH	TN	2.4	0.003376	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	-1.87	-0.002638	± 2.5	PASS
		VN	-20	-0.92	-0.001298	± 2.5	PASS
		VN	-10	1.61	0.002271	± 2.5	PASS
		VN	0	2.9	0.004090	± 2.5	PASS
		VN	10	4.87	0.006869	± 2.5	PASS
		VN	20	3.09	0.004358	± 2.5	PASS
		VN	30	4.35	0.006135	± 2.5	PASS
		VN	40	-1.35	-0.001904	± 2.5	PASS
		VN	50	3.93	0.005543	± 2.5	PASS
	MCH	VN	-30	1.97	0.002775	± 2.5	PASS

		VN	-20	4.07	0.005732	± 2.5	PASS
		VN	-10	-0.59	-0.000831	± 2.5	PASS
		VN	0	0.88	0.001239	± 2.5	PASS
		VN	10	-0.15	-0.000211	± 2.5	PASS
		VN	20	-0.79	-0.001113	± 2.5	PASS
		VN	30	0.22	0.000310	± 2.5	PASS
		VN	40	4.99	0.007028	± 2.5	PASS
		VN	50	4.45	0.006268	± 2.5	PASS
	HCH	VN	-30	2.14	0.003010	± 2.5	PASS
		VN	-20	1.88	0.002644	± 2.5	PASS
		VN	-10	1.82	0.002560	± 2.5	PASS
		VN	0	0.93	0.001308	± 2.5	PASS
		VN	10	-0.78	-0.001097	± 2.5	PASS
		VN	20	0.8	0.001125	± 2.5	PASS
		VN	30	-0.24	-0.000338	± 2.5	PASS
		VN	40	3.9	0.005485	± 2.5	PASS
		VN	50	0.34	0.000478	± 2.5	PASS
16QAM	LCH	VN	-30	-1.77	-0.002493	± 2.5	PASS
		VN	-20	3.48	0.004901	± 2.5	PASS
		VN	-10	4.91	0.006915	± 2.5	PASS
		VN	0	1.29	0.001817	± 2.5	PASS
		VN	10	3.29	0.004634	± 2.5	PASS
		VN	20	-1.54	-0.002169	± 2.5	PASS
		VN	30	4.32	0.006085	± 2.5	PASS
		VN	40	-1.84	-0.002592	± 2.5	PASS
		VN	50	0.54	0.000761	± 2.5	PASS
	MCH	VN	-30	1.78	0.002504	± 2.5	PASS
		VN	-20	-1.53	-0.002152	± 2.5	PASS
		VN	-10	-1.9	-0.002672	± 2.5	PASS
		VN	0	-1.81	-0.002546	± 2.5	PASS
		VN	10	-1.03	-0.001449	± 2.5	PASS
		VN	20	-0.32	-0.000450	± 2.5	PASS
		VN	30	-0.87	-0.001224	± 2.5	PASS
		VN	40	4.34	0.006104	± 2.5	PASS
		VN	50	3.59	0.005049	± 2.5	PASS
	HCH	VN	-30	4.48	0.006301	± 2.5	PASS
		VN	-20	4.64	0.006526	± 2.5	PASS
		VN	-10	0.77	0.001083	± 2.5	PASS
		VN	0	2.77	0.003896	± 2.5	PASS
		VN	10	-0.19	-0.000267	± 2.5	PASS
		VN	20	-1.66	-0.002335	± 2.5	PASS

		VN	30	2.75	0.003868	± 2.5	PASS
		VN	40	2.81	0.003952	± 2.5	PASS
		VN	50	-0.44	-0.000619	± 2.5	PASS