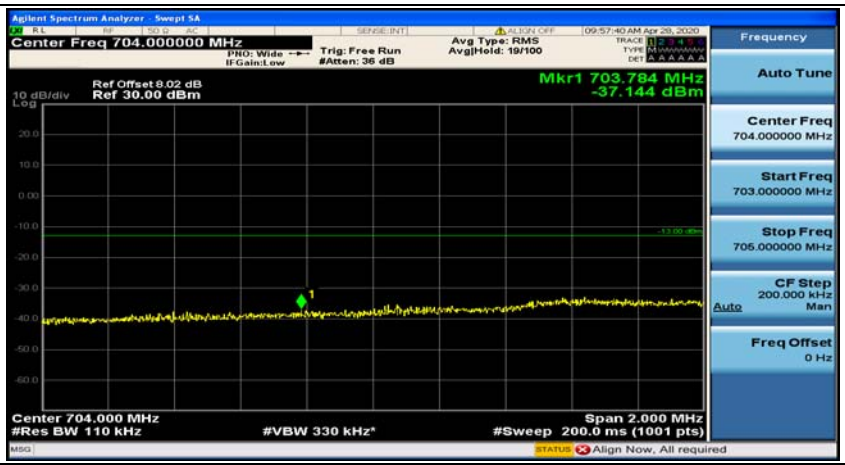
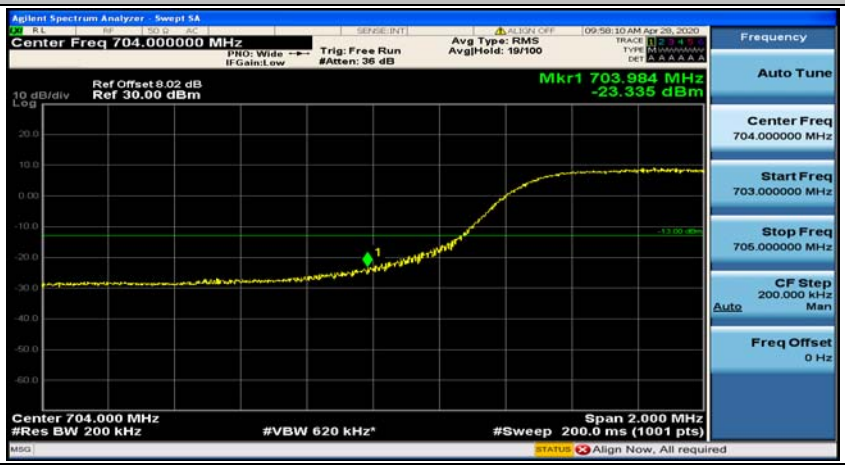
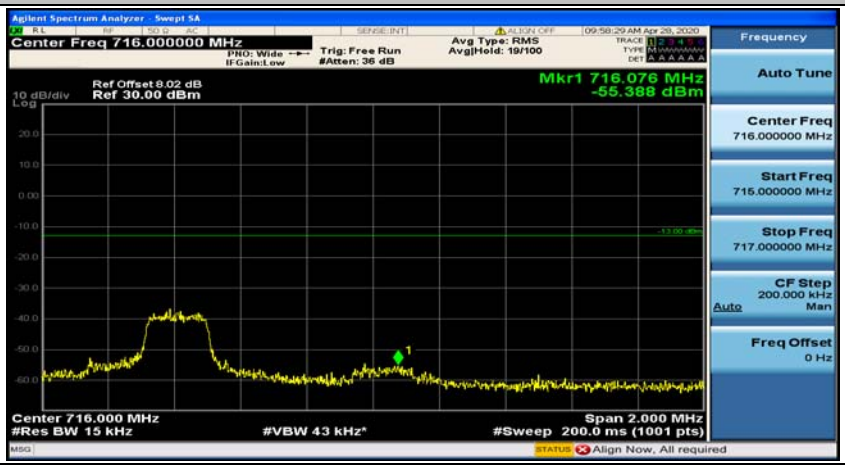


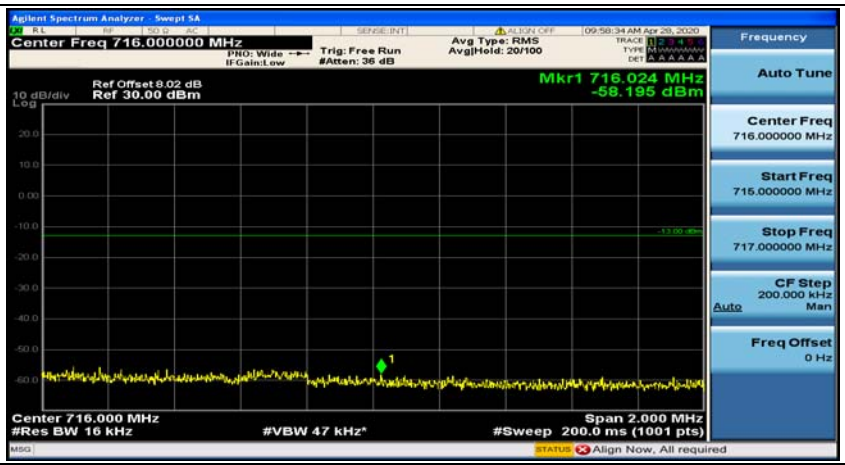
Channel Bandwidth: 10 MHz_LCH_QPSK_50RB#0



Channel Bandwidth: 10 MHz_HCH_QPSK_1RB#0

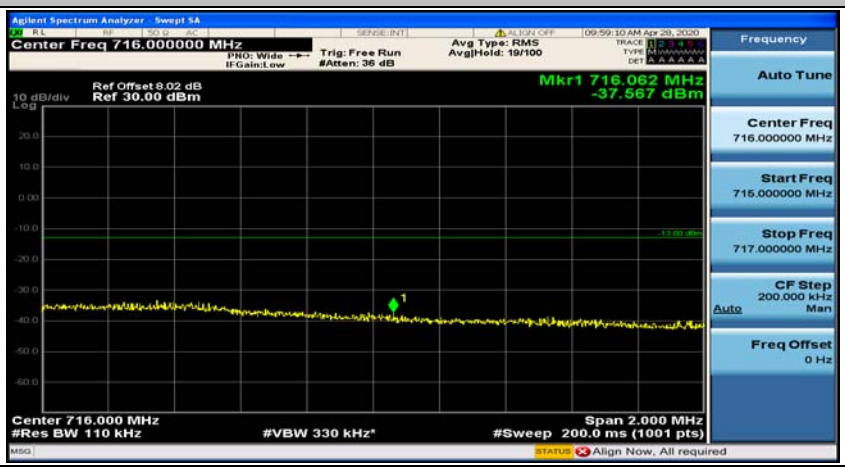


Channel Bandwidth: 10 MHz_HCH_QPSK_1RB#24

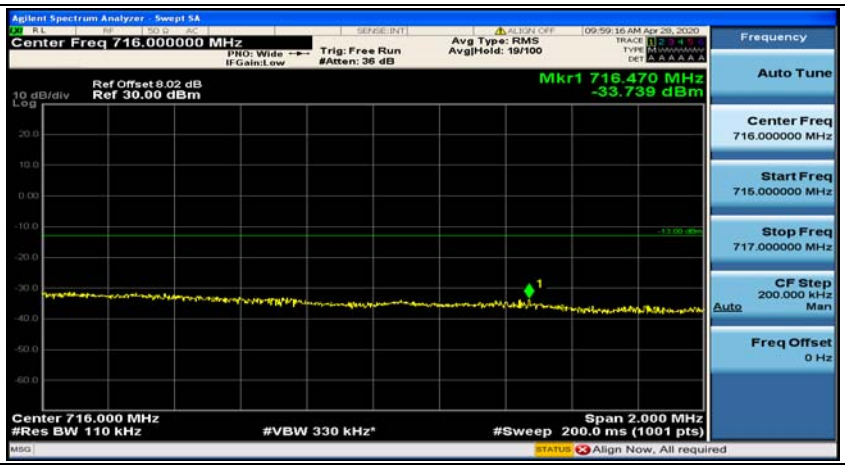


Channel Bandwidth: 10 MHz_HCH_QPSK_1RB#49

Channel Bandwidth: 10 MHz_HCH_QPSK_25RB#0

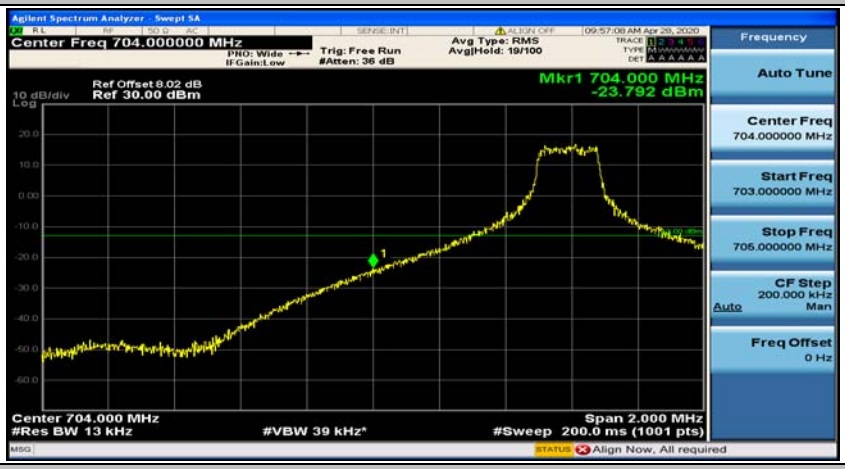
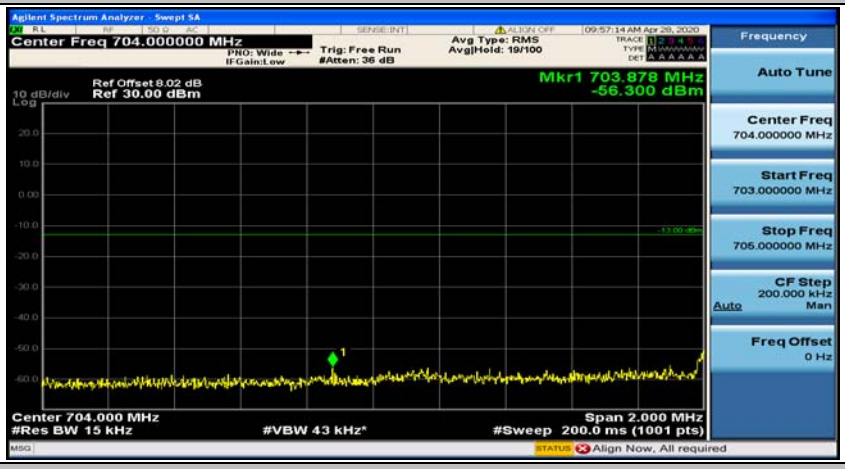
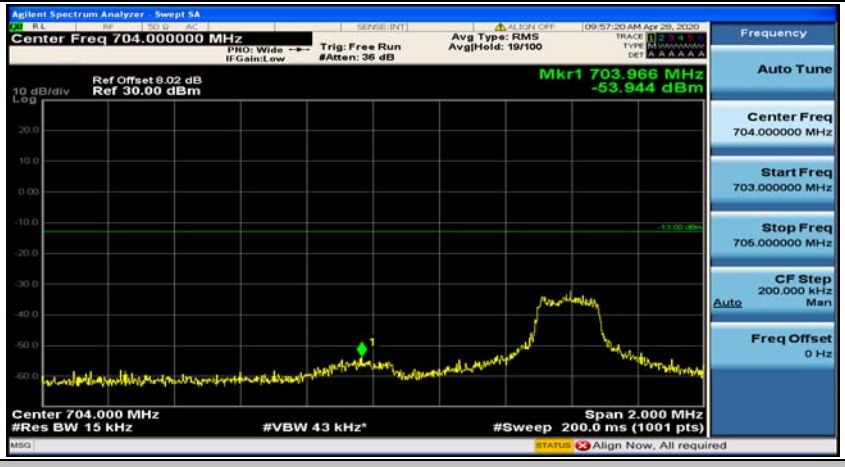


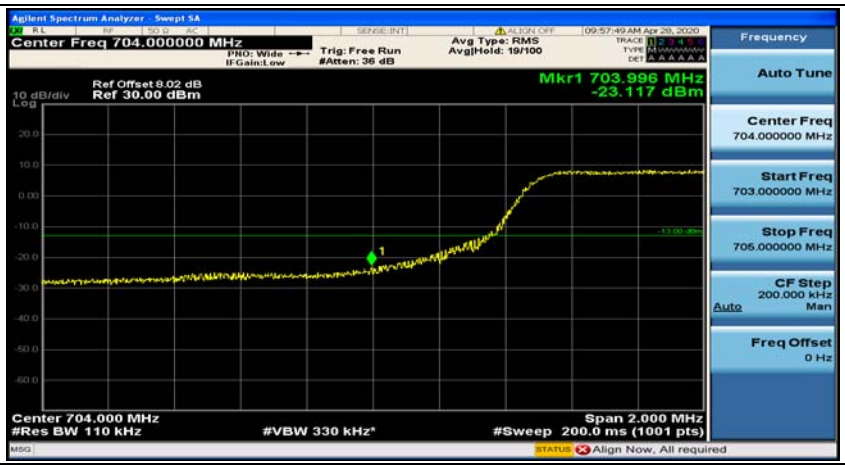
Channel Bandwidth: 10 MHz_HCH_QPSK_25RB#12



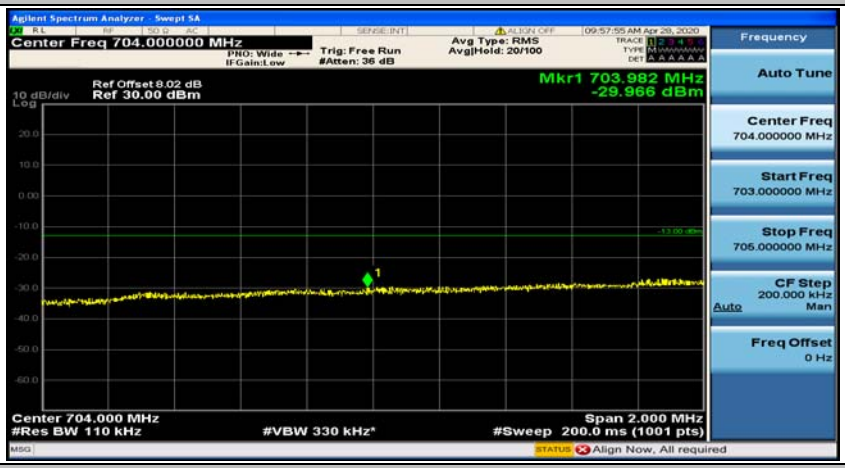
Channel Bandwidth: 10 MHz_HCH_QPSK_25RB#25

Channel Bandwidth: 10 MHz_HCH_QPSK_50RB#0

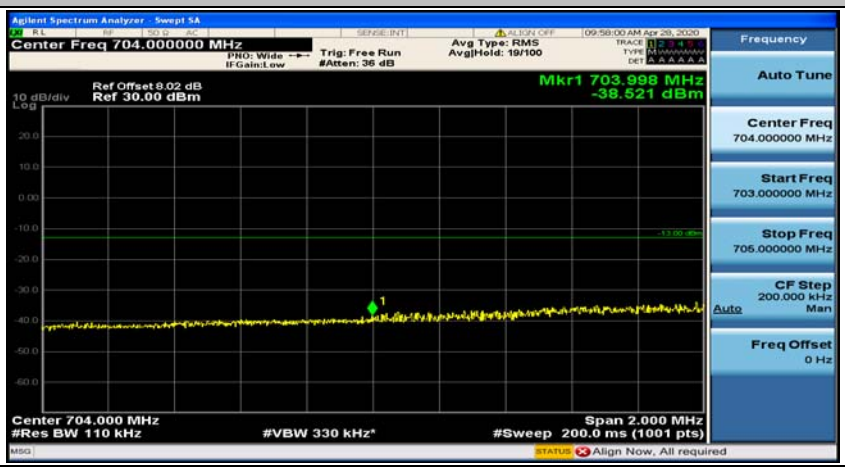
Channel Bandwidth: 10 MHz_LCH_16QAM_1RB#0

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

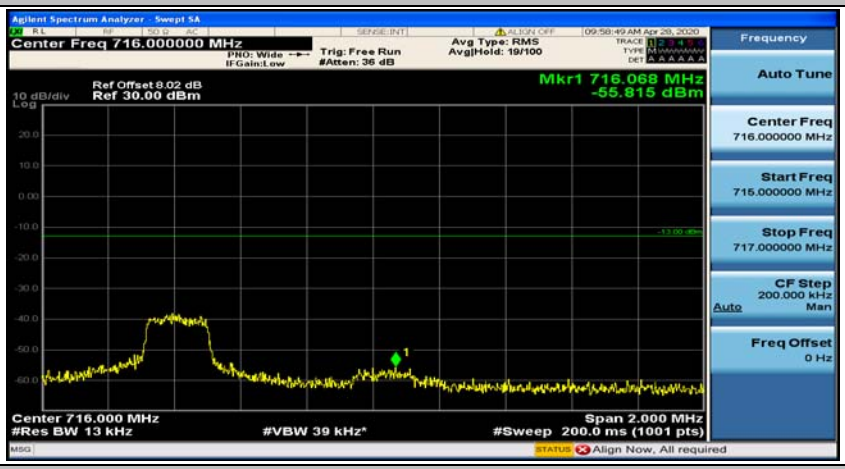


Channel Bandwidth: 10 MHz_LCH_16QAM_25RB#25

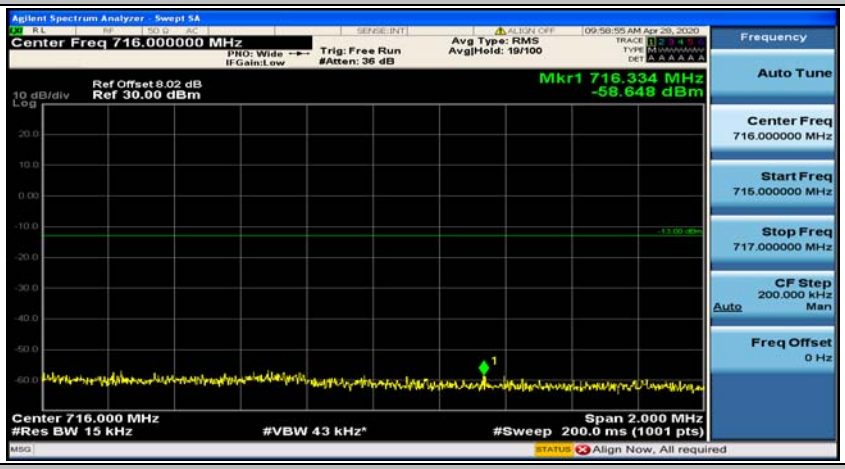


Channel Bandwidth: 10 MHz_LCH_16QAM_50RB#0

Channel Bandwidth: 10 MHz_HCH_16QAM_1RB#0

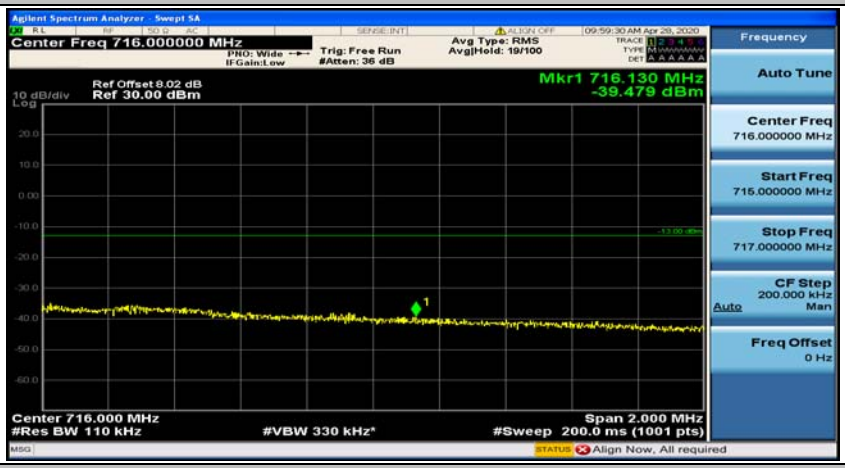


Channel Bandwidth: 10 MHz_HCH_16QAM_1RB#24

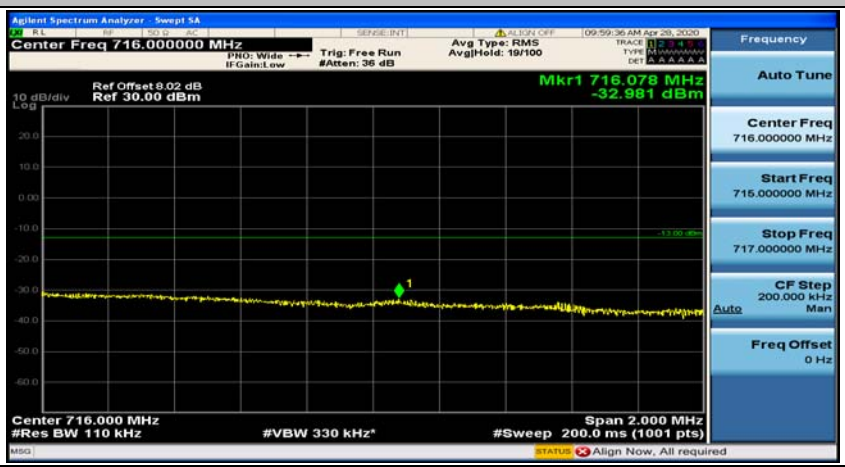


Channel Bandwidth: 10 MHz_HCH_16QAM_1RB#49

Channel Bandwidth: 10 MHz_HCH_16QAM_25RB#0



Channel Bandwidth: 10 MHz_HCH_16QAM_25RB#12



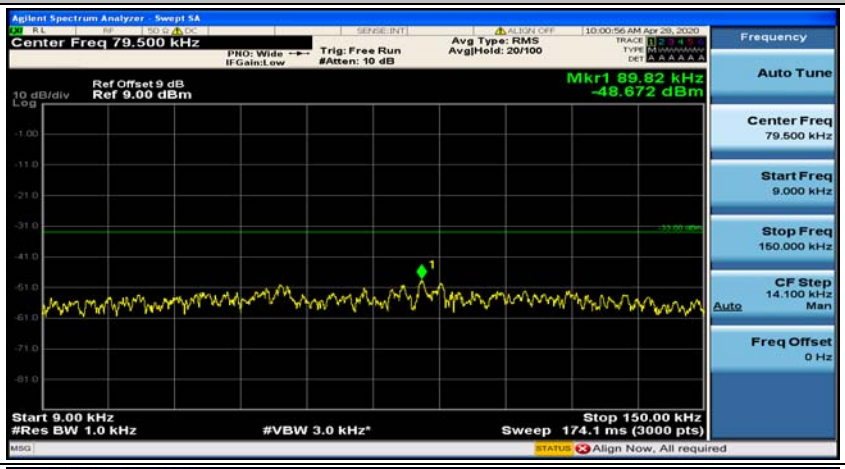
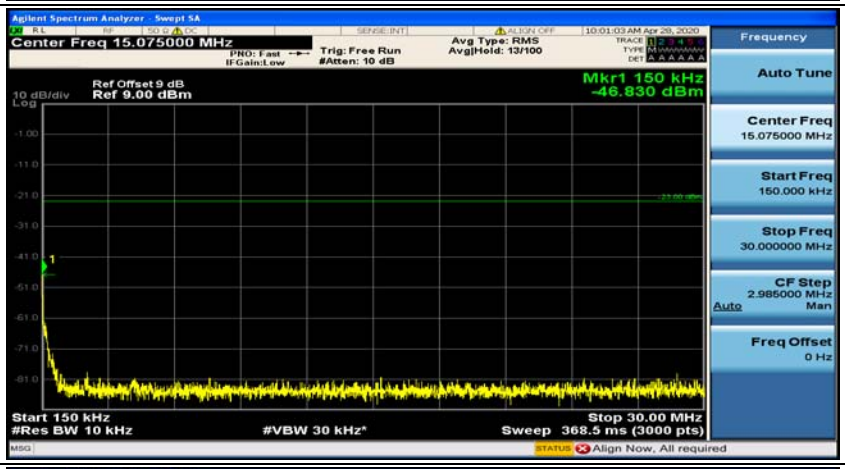
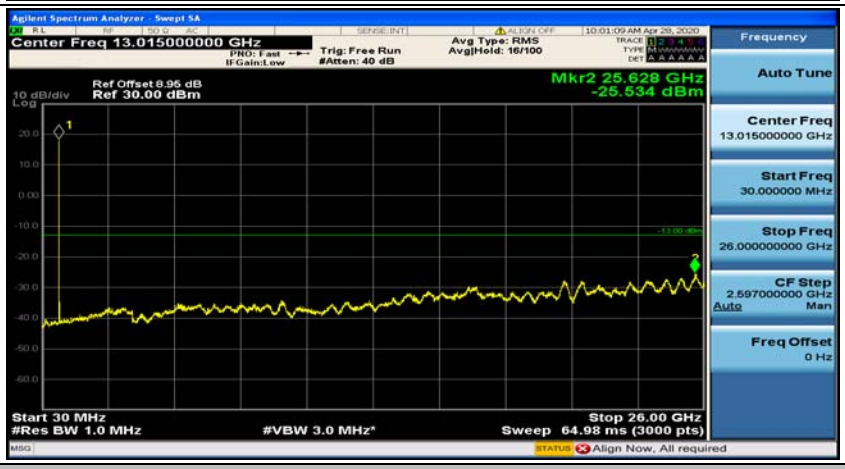
Channel Bandwidth: 10 MHz_HCH_16QAM_25RB#25

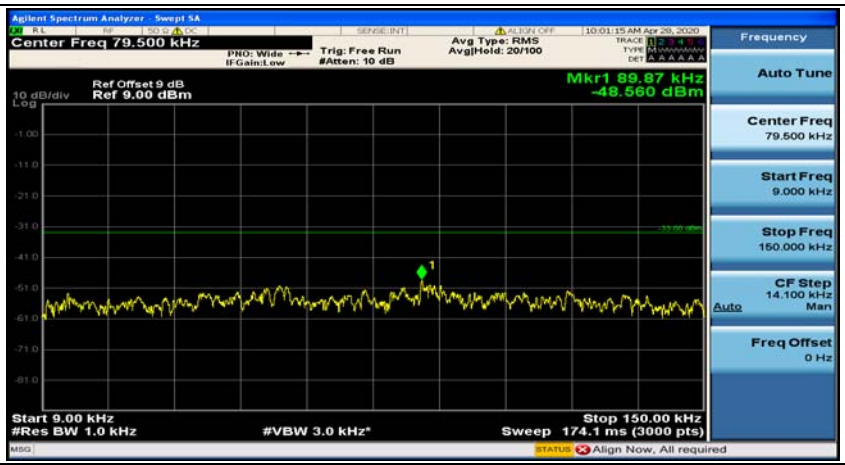
Channel Bandwidth: 10 MHz_HCH_16QAM_50RB#0

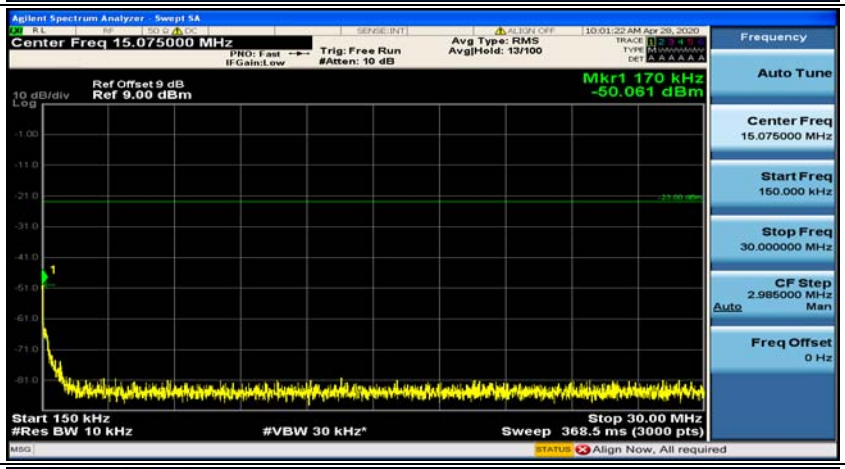
Appendix E: Conducted Spurious Emission

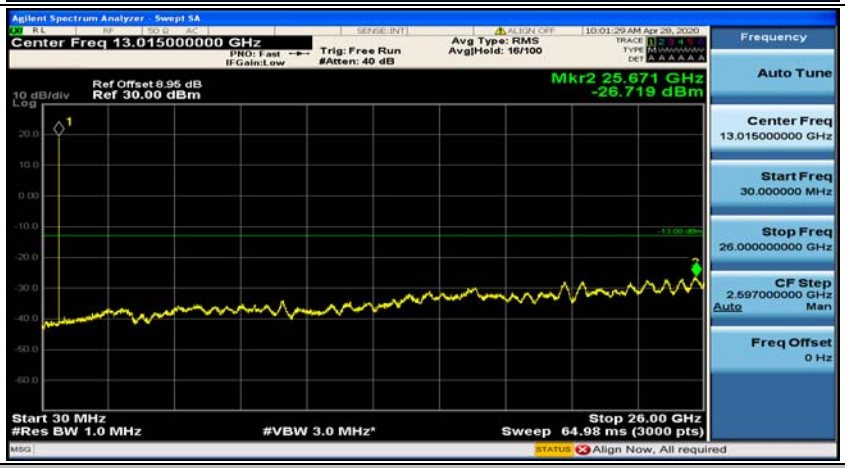
Test Graphs

Channel Bandwidth: 5 MHz

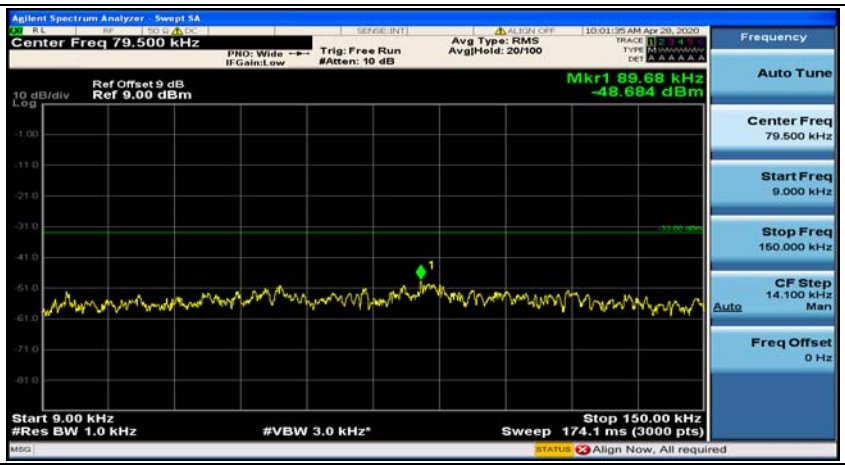
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#0



(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#12

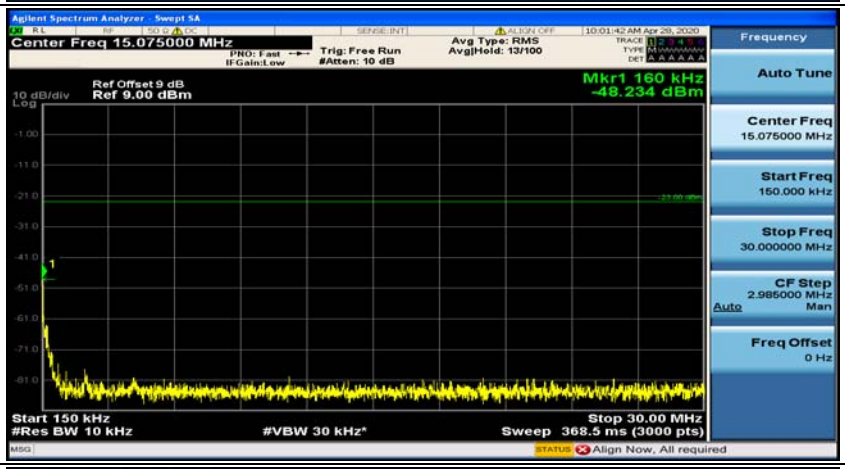


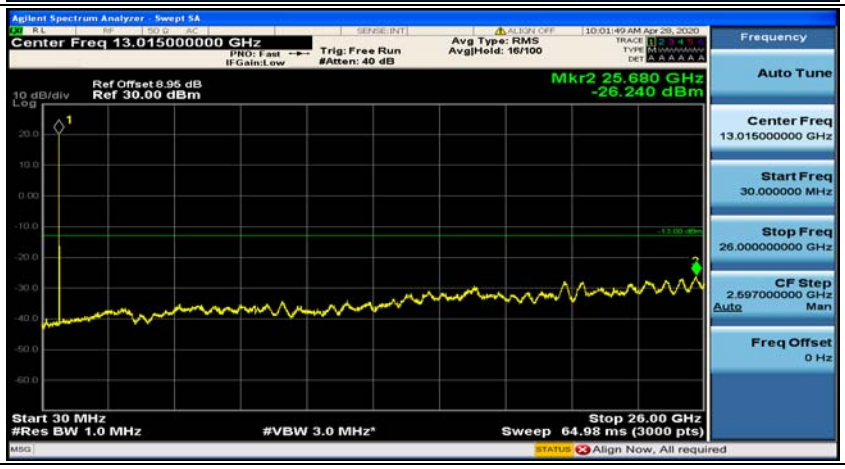


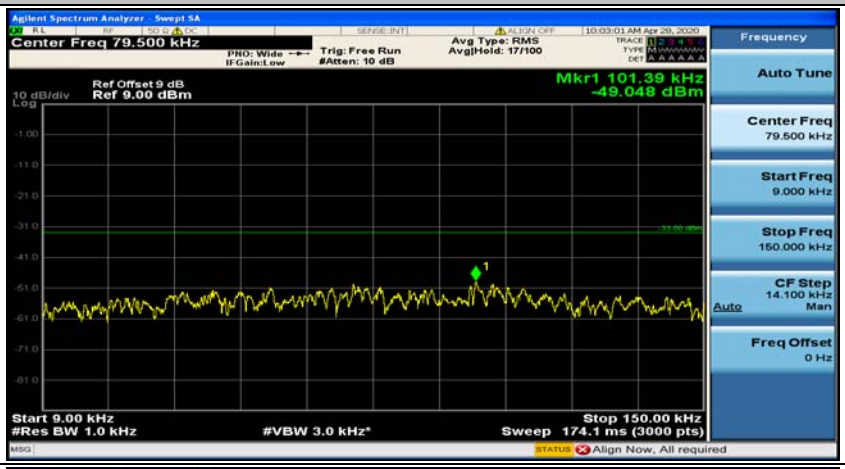
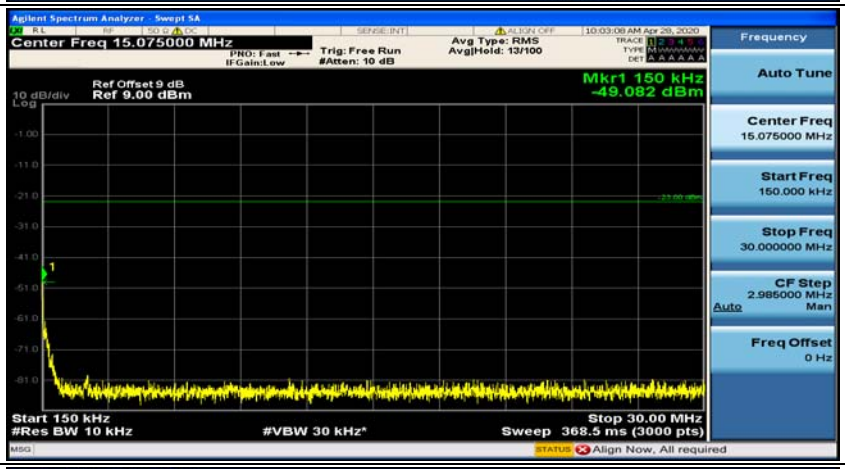
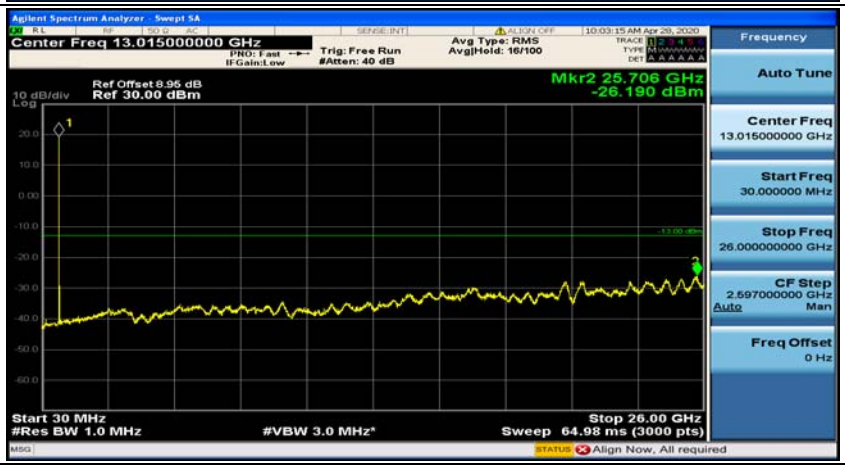


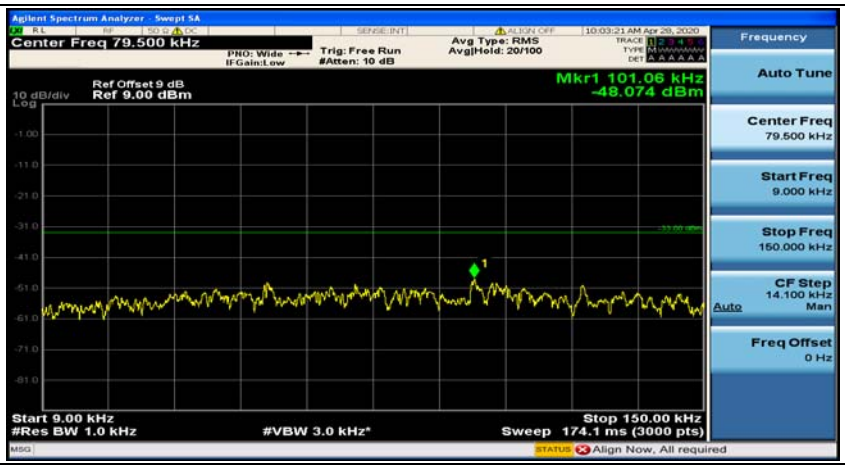
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#24

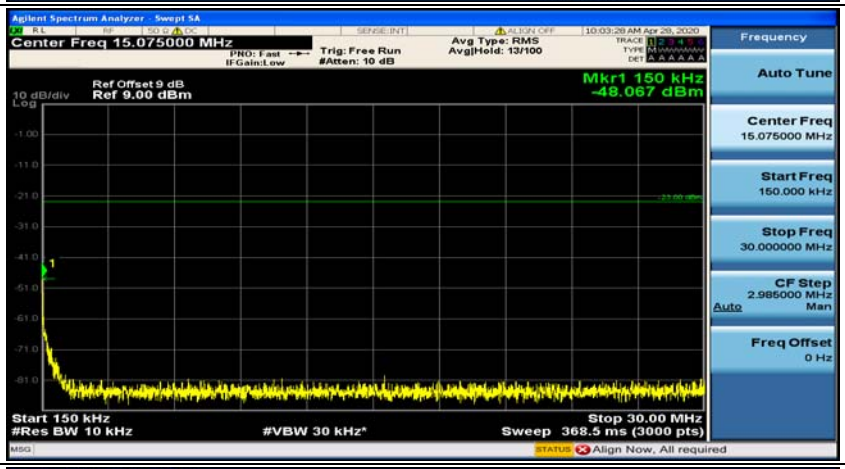

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 20/100
10:01:35 AM Apr 28, 2020
Frequency
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Mkr1 89.68 kHz
-48.684 dBm
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop 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)
Align Now, All required


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: 13/100
10:01:42 AM Apr 28, 2020
Frequency
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Mkr1 160 kHz
-48.234 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)
Align Now, All required

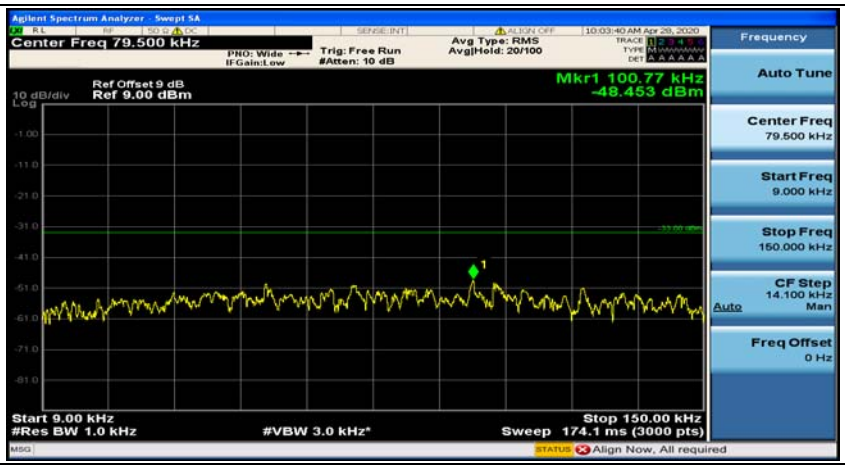

Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 16/100
10:01:49 AM Apr 28, 2020
Frequency
Ref Offset 8.95 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr2 25.680 GHz
-26.240 dBm
Auto Tune
Center Freq
13.015000000 GHz
Start 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)
Align Now, All required

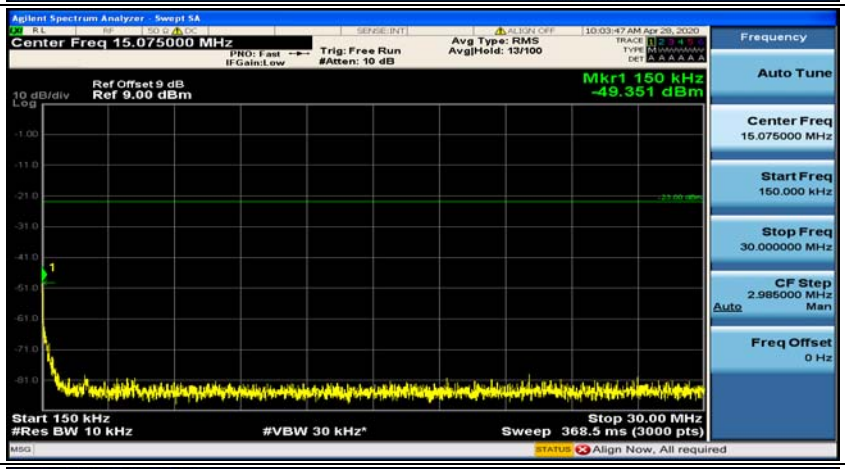
(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#0



(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#12

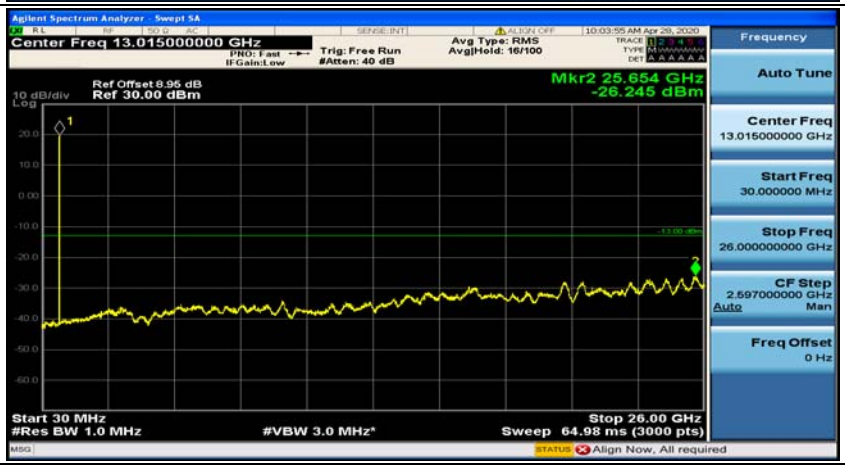


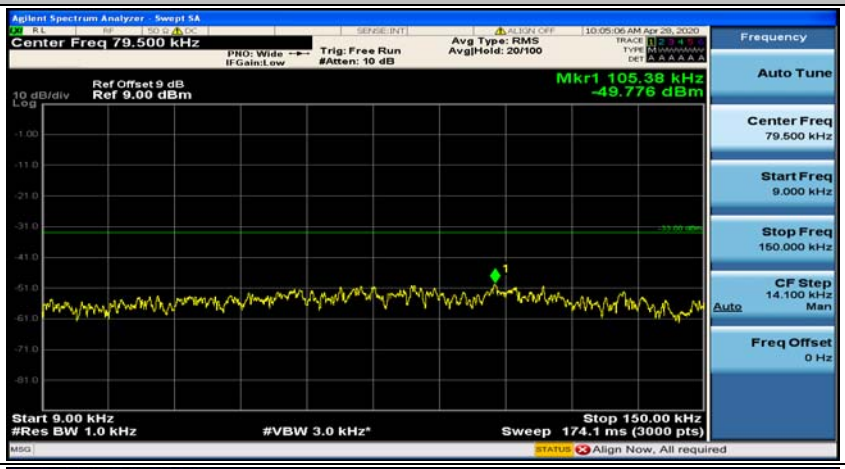
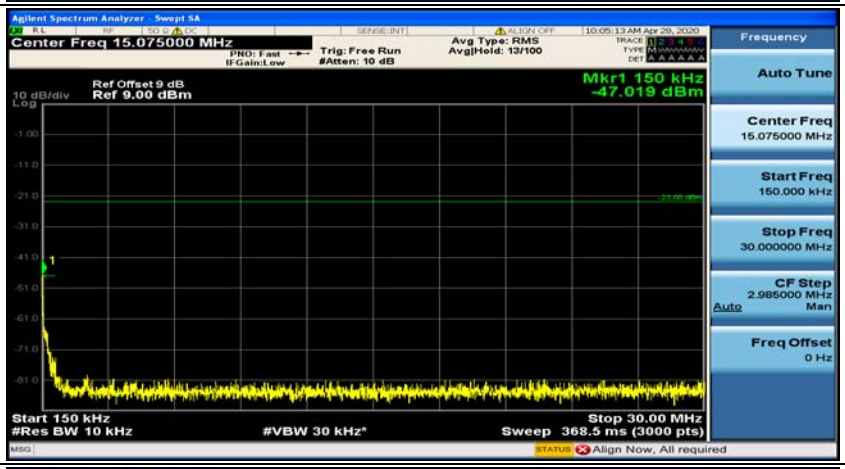
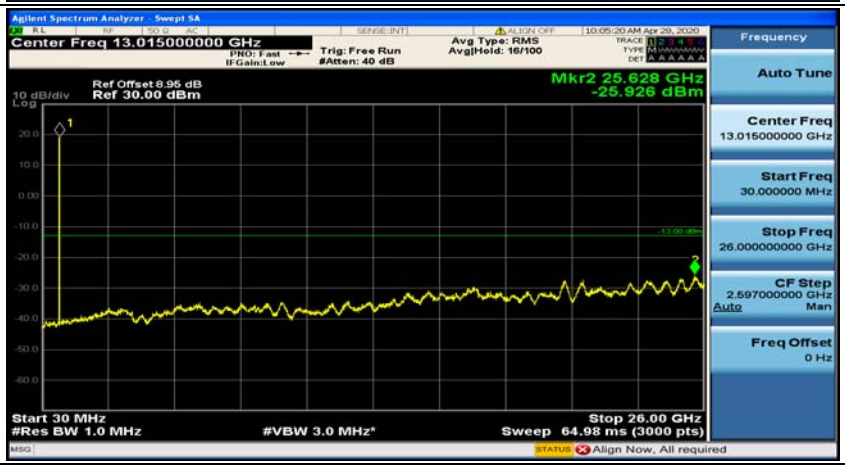


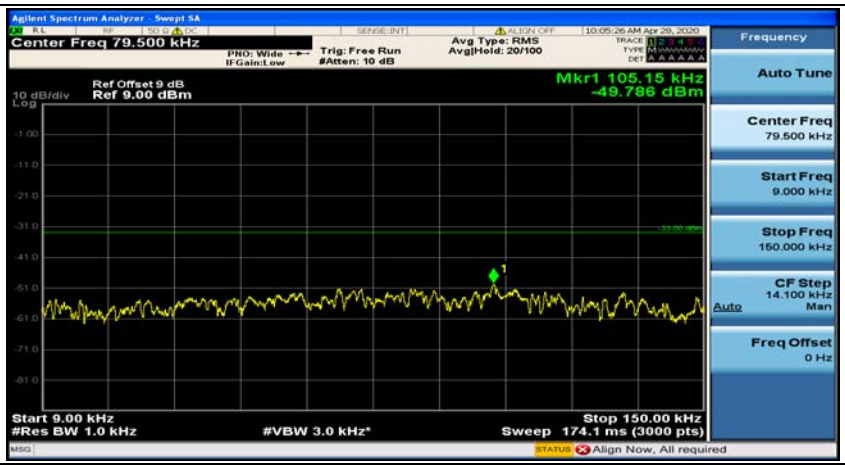
(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#24

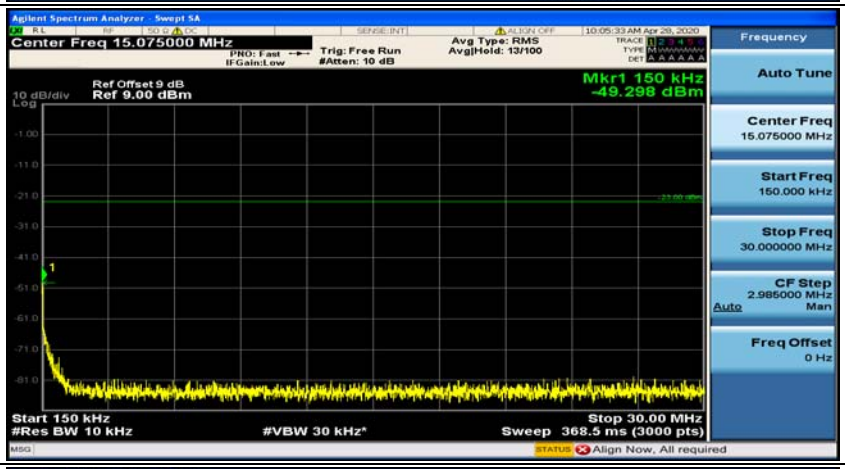

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 20/100
10:03:40 AM Apr 28, 2020
Frequency
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Mkr1 100.77 kHz
-48.453 dBm
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
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)
Align Now, All required

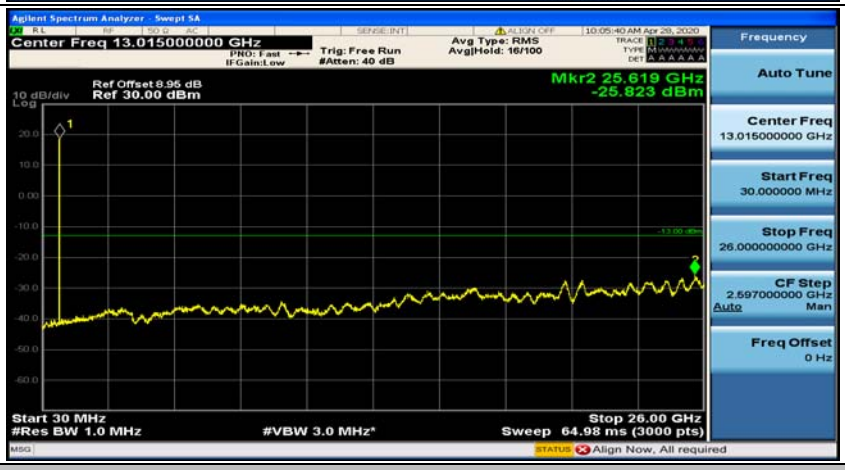

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 13/100
10:03:47 AM Apr 28, 2020
Frequency
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Mkr1 150 kHz
-49.351 dBm
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 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)
Align Now, All required


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: 16/100
10:03:55 AM Apr 28, 2020
Frequency
Ref Offset 8.95 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr2 25.654 GHz
-26.245 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)
Align Now, All required

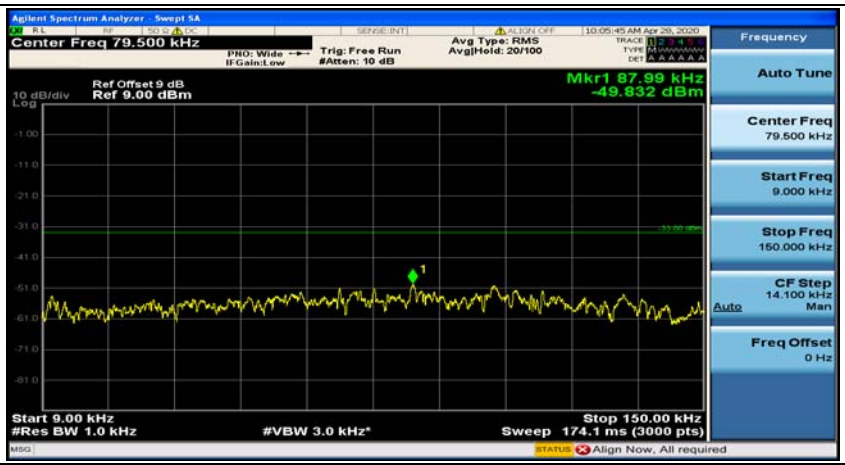
(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#0



(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#12

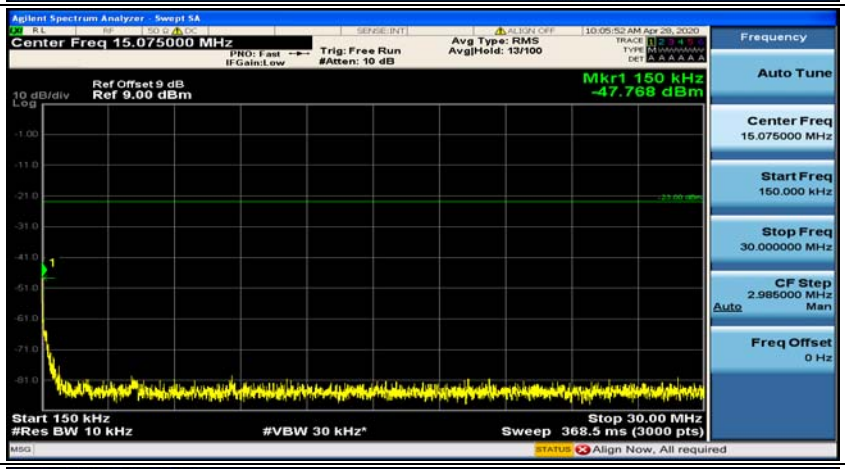


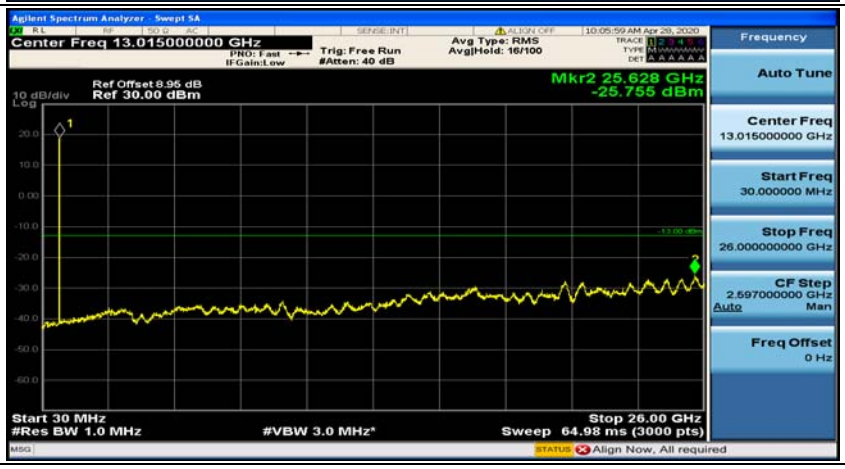




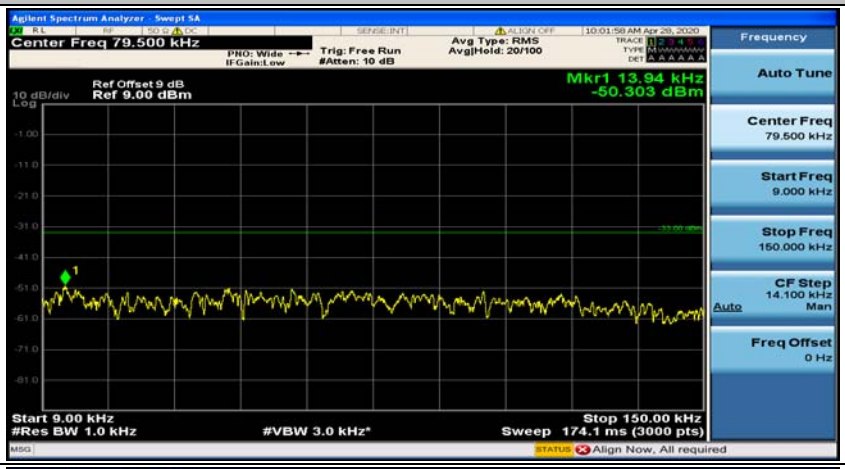
(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#24

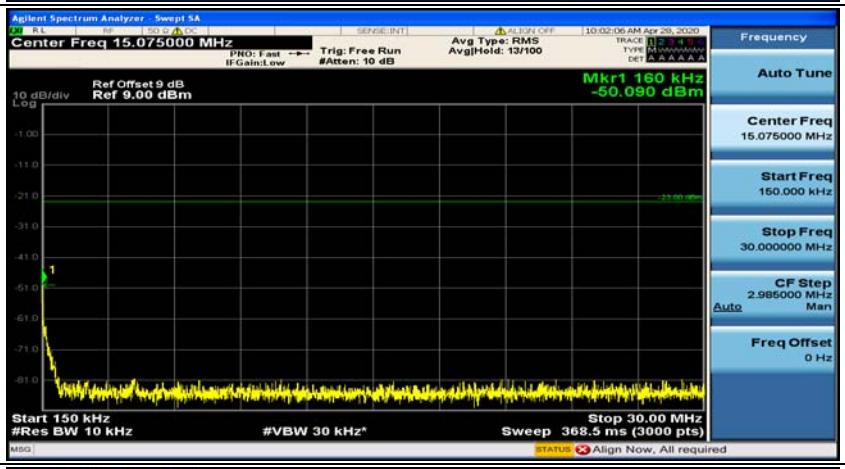

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 20/100
10:05:45 AM Apr 28, 2020
Frequency
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Mkr1 87.99 kHz
-49.832 dBm
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop 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)
Align Now, All required

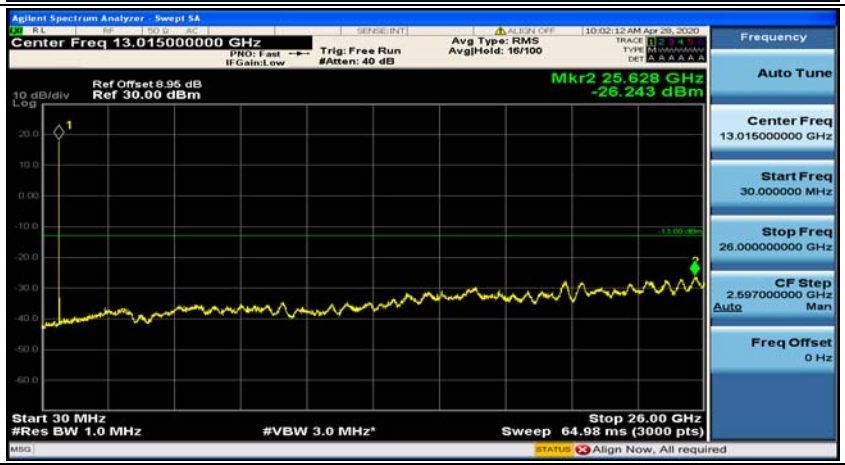

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 13/100
10:05:52 AM Apr 28, 2020
Frequency
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Mkr1 150 kHz
-47.768 dBm
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 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)
Align Now, All required


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: 16/100
10:05:59 AM Apr 28, 2020
Frequency
Ref Offset 8.95 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr2 25.628 GHz
-25.755 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)
Align Now, All required

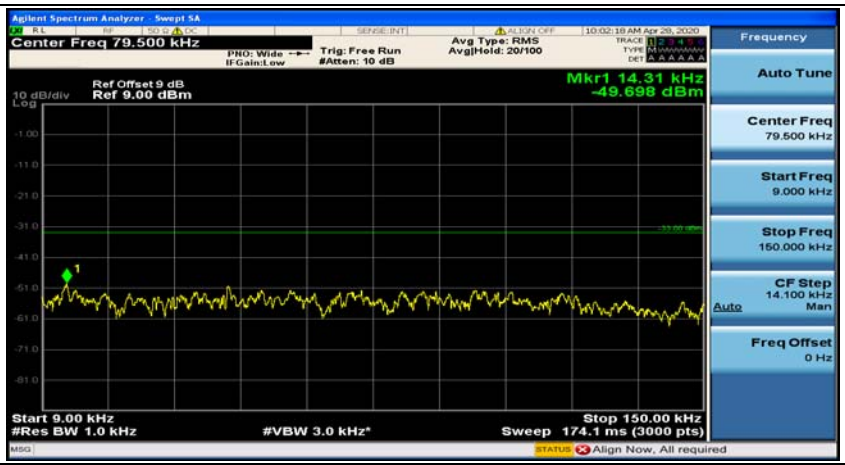
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#0

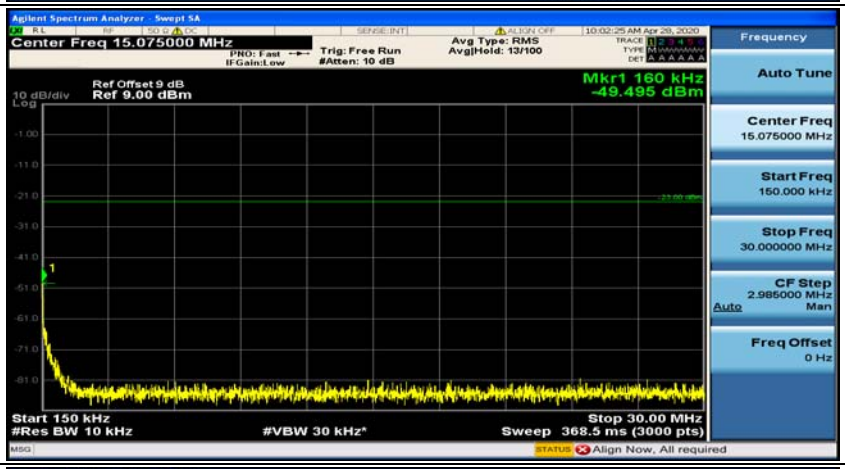




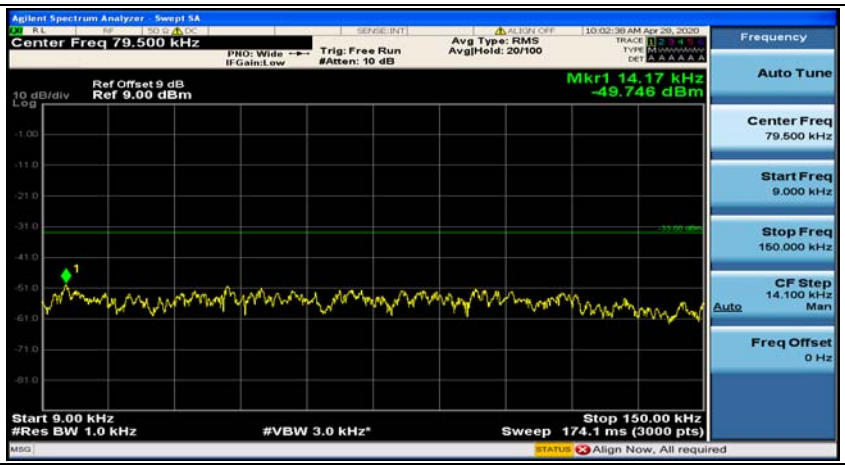


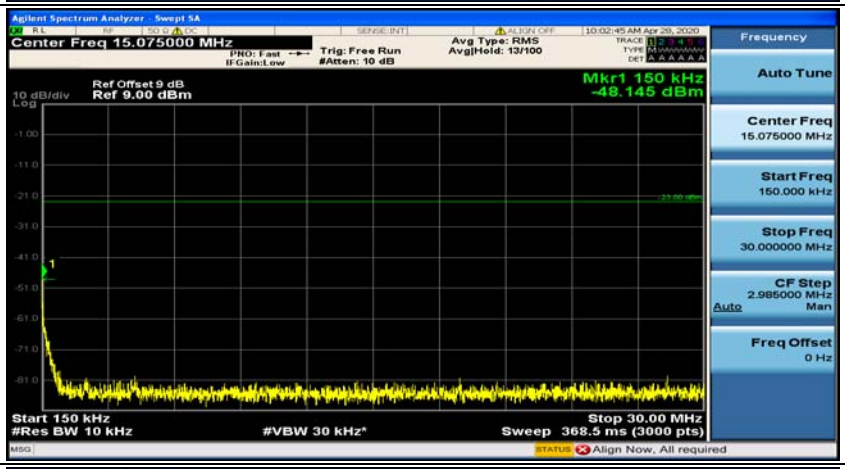
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#12

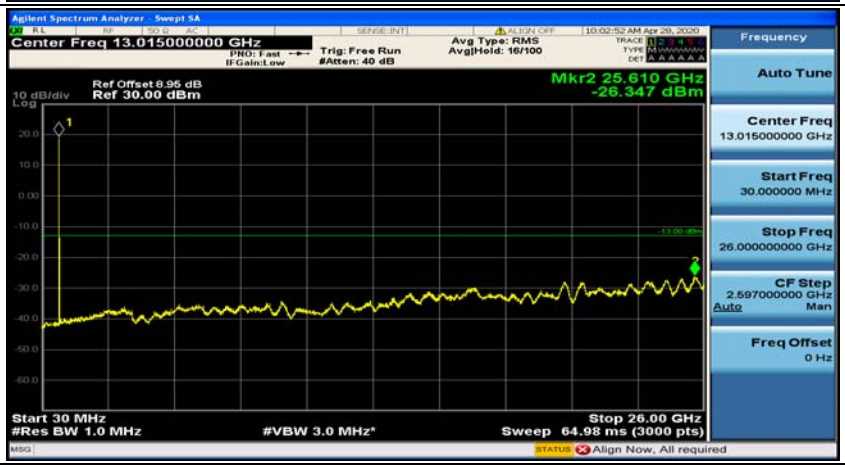


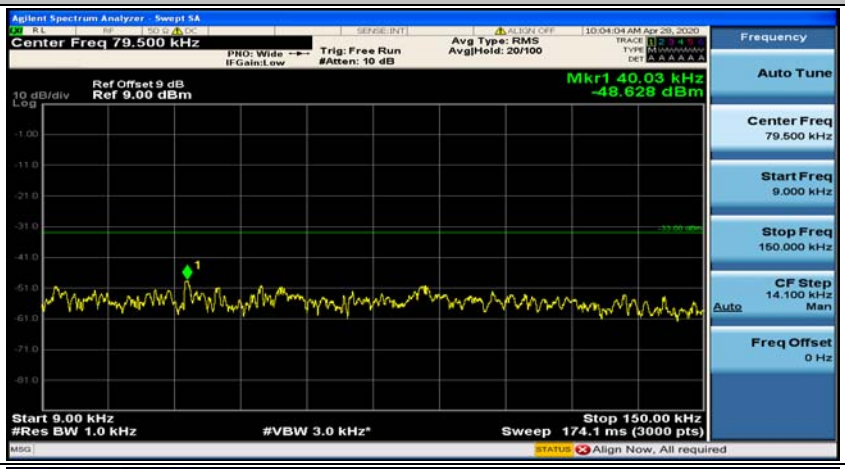
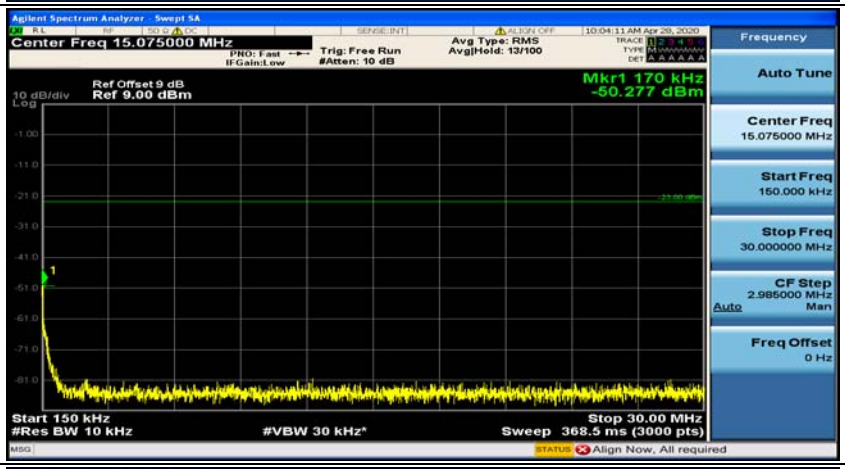
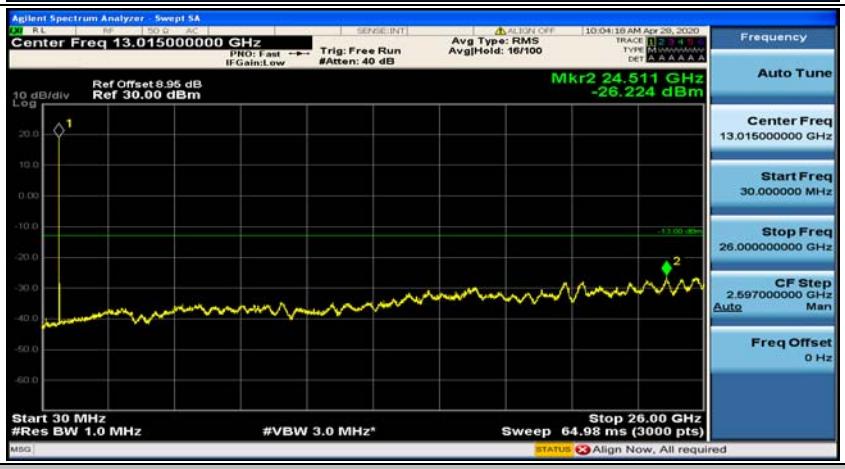


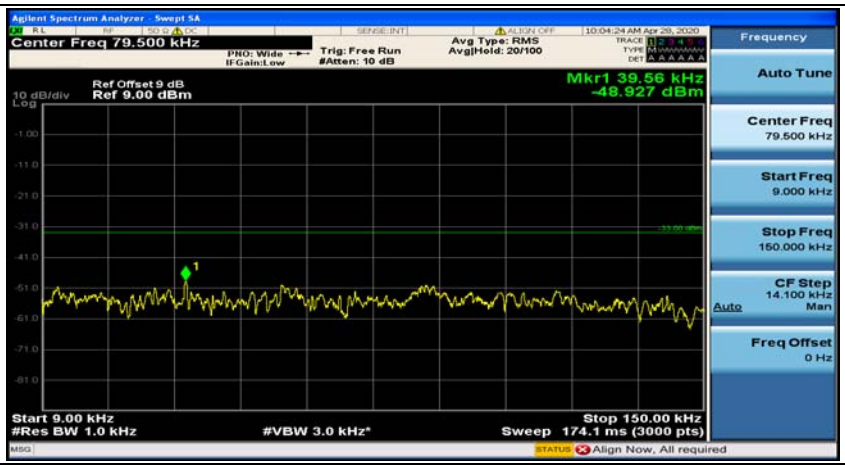
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#24

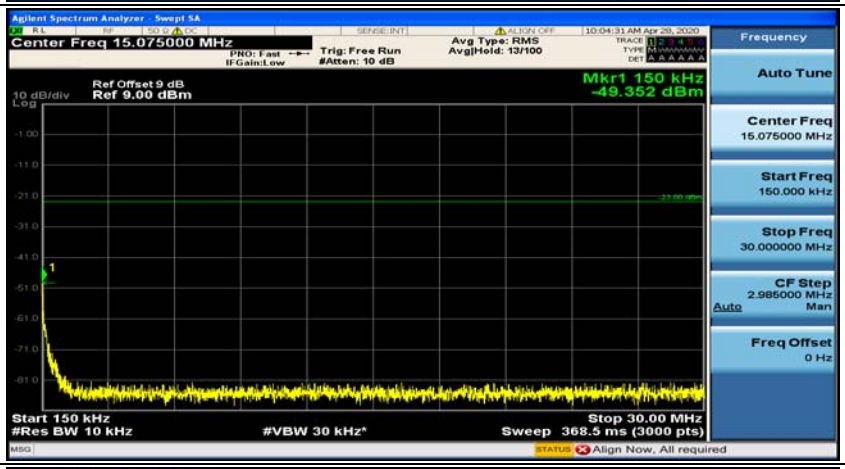

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 20/100
10:02:38 AM Apr 28, 2020
Frequency
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Mkr1 14.17 kHz
-49.746 dBm
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop 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)
Align Now, All required

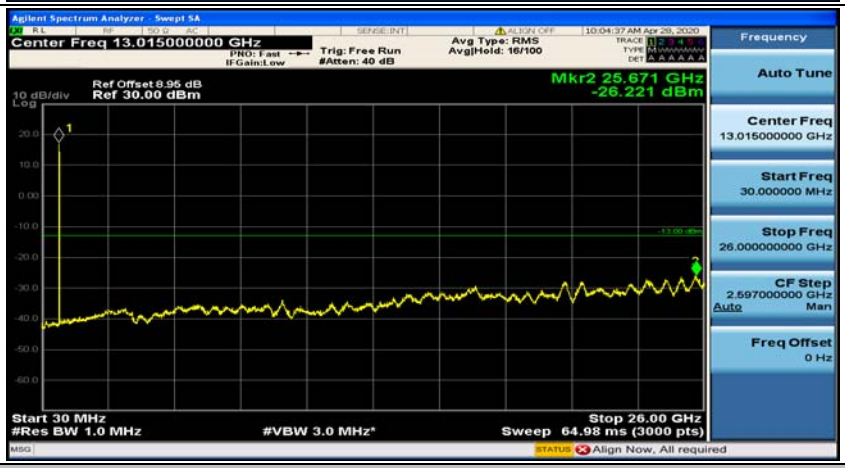

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 13/100
10:02:45 AM Apr 28, 2020
Frequency
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Mkr1 150 kHz
-48.145 dBm
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 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)
Align Now, All required


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: 16/100
10:02:52 AM Apr 28, 2020
Frequency
Ref Offset 8.95 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr2 25.610 GHz
-26.347 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)
Align Now, All required

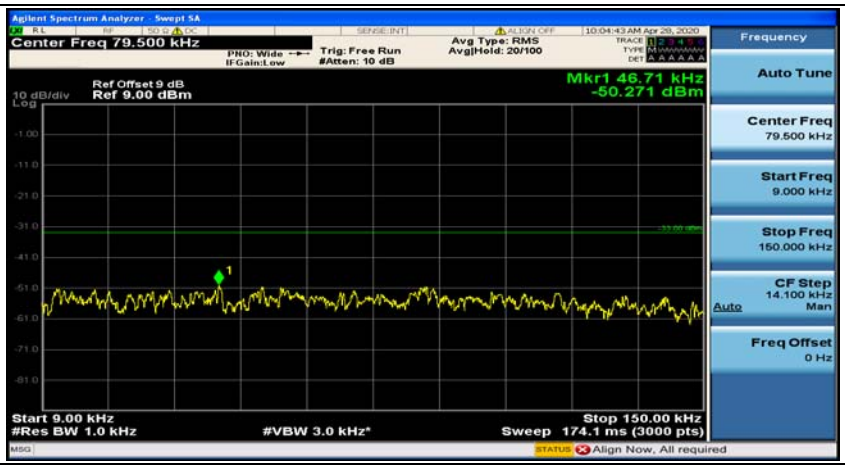
(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#0



(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#12

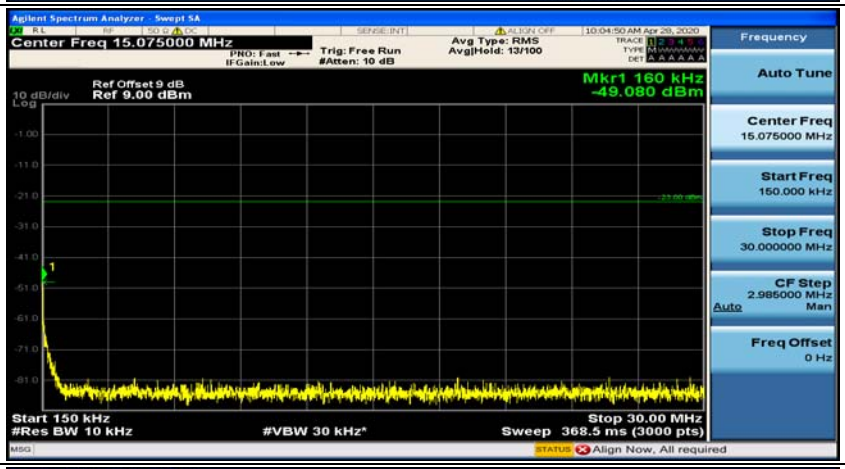


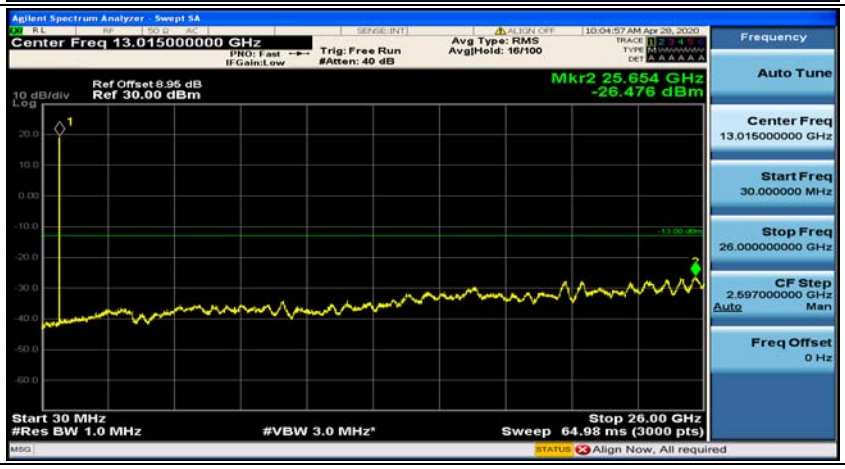


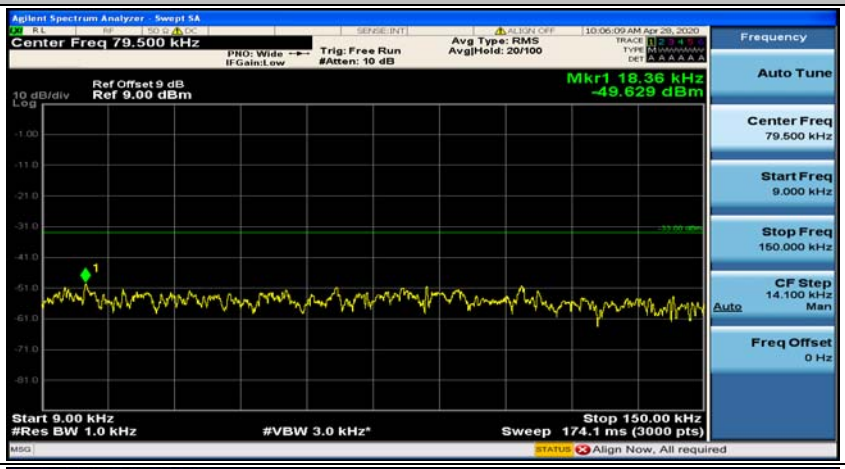
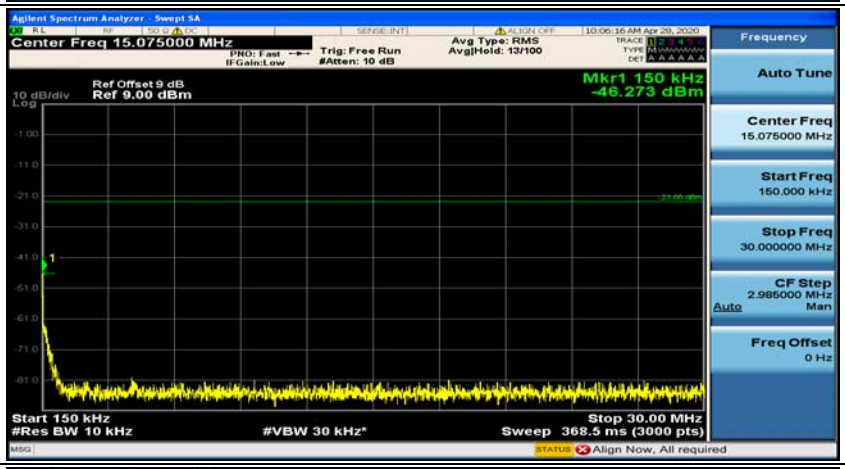
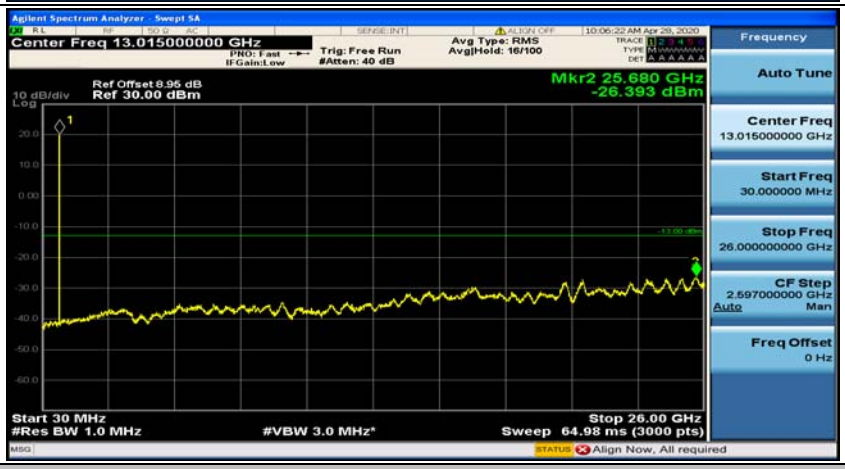


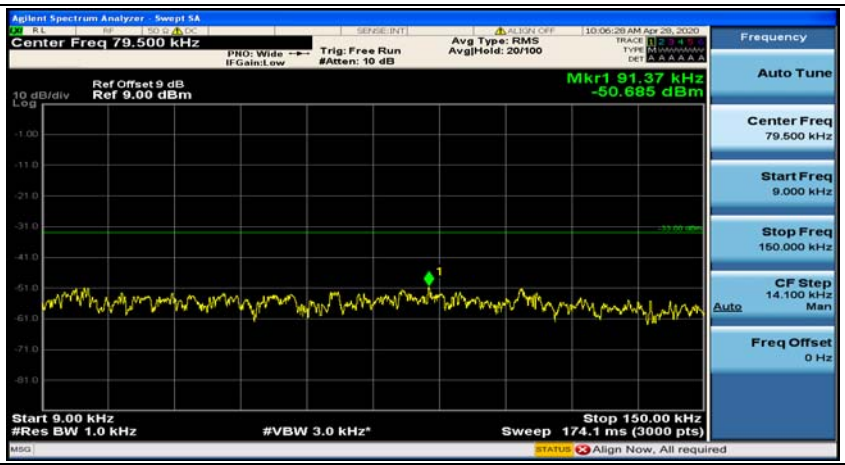
(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#24

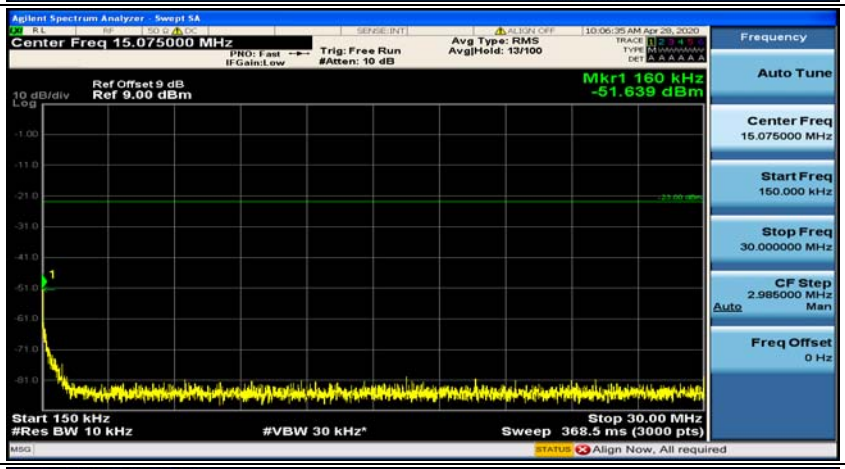

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 20/100
10:04:43 AM Apr 28, 2020
Frequency
Auto Tune
Mkr1 46.71 kHz
-50.271 dBm
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop 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)
Align Now, All required

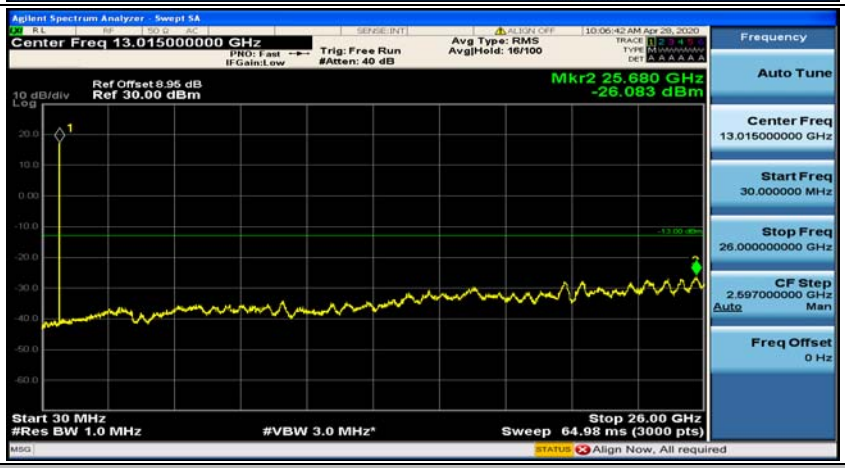

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 13/100
10:04:50 AM Apr 28, 2020
Frequency
Auto Tune
Mkr1 160 kHz
-49.080 dBm
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Center Freq
15.075000 MHz
Start Freq
150.000 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)
Align Now, All required


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: 16/100
10:04:57 AM Apr 28, 2020
Frequency
Auto Tune
Mkr2 25.654 GHz
-26.476 dBm
Ref Offset 8.95 dB
10 dB/div
Log
Ref 30.00 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)
Align Now, All required

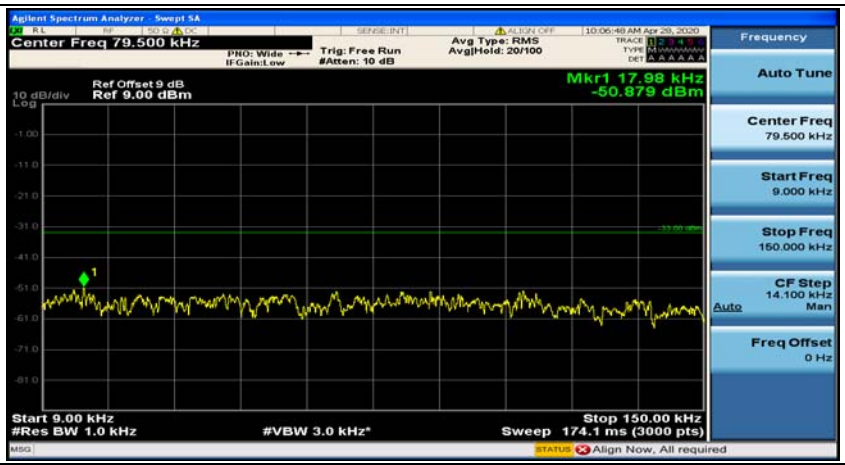
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#0



(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#12

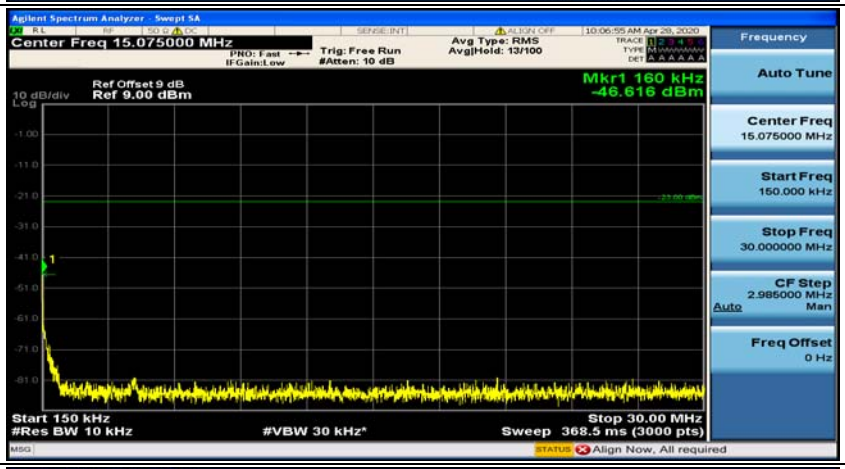


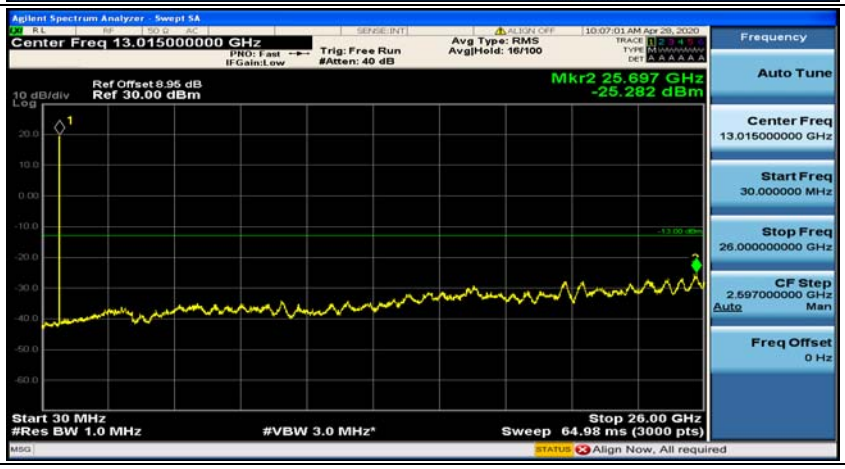




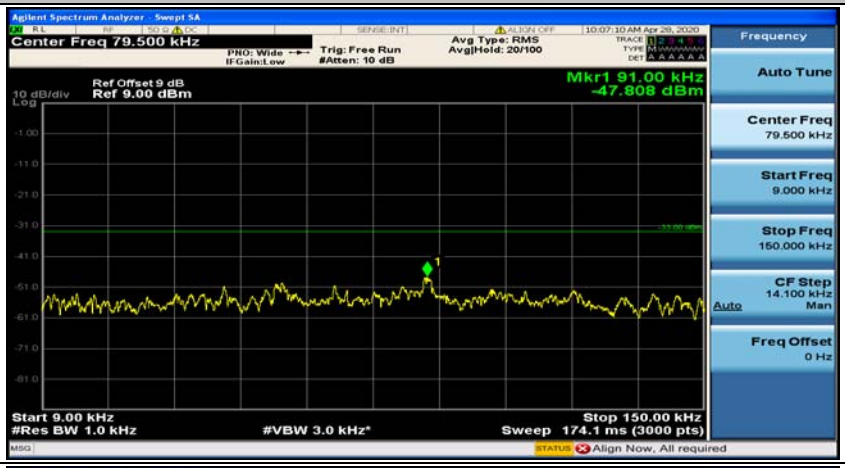
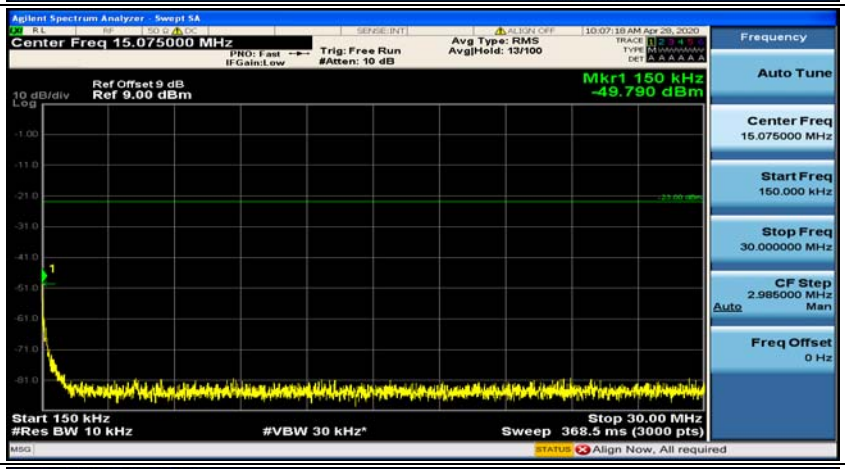
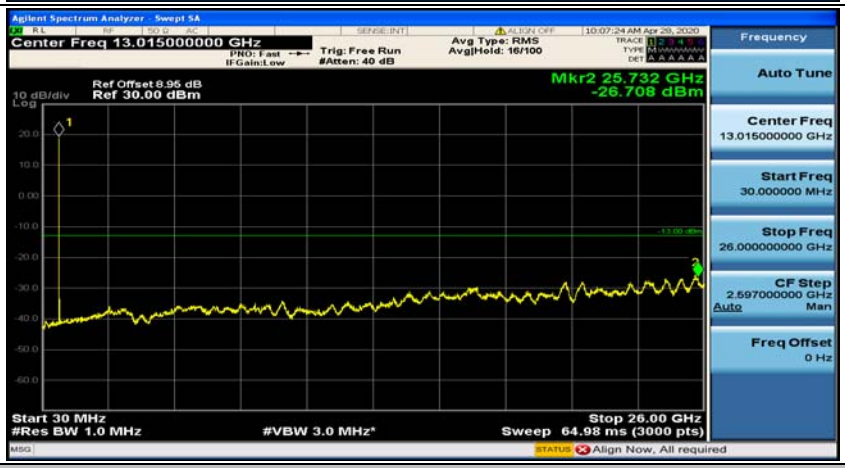
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#24

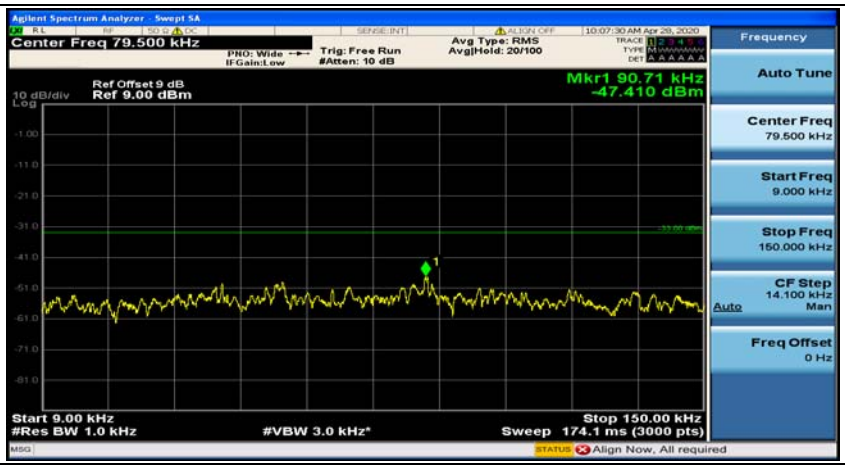

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 20/100
10:06:48 AM Apr 28, 2020
Frequency
Mkr1 17.98 kHz
-50.879 dBm
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop 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)
Align Now, All required

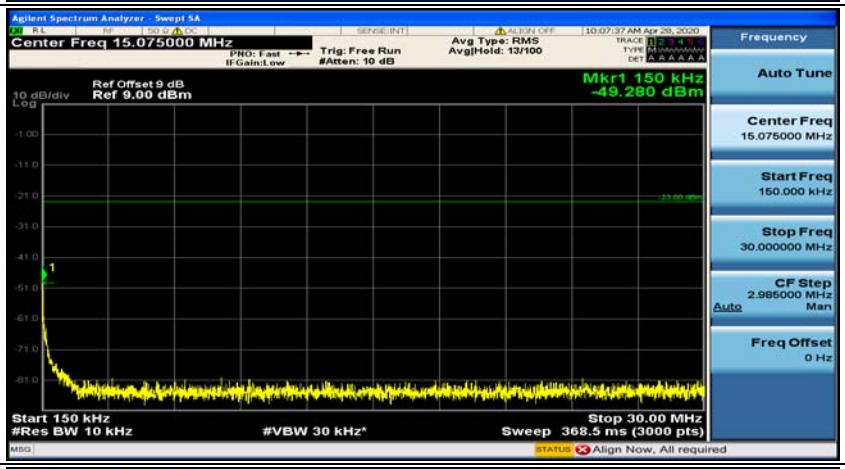

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 13/100
10:06:55 AM Apr 28, 2020
Frequency
Mkr1 160 kHz
-46.616 dBm
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 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)
Align Now, All required

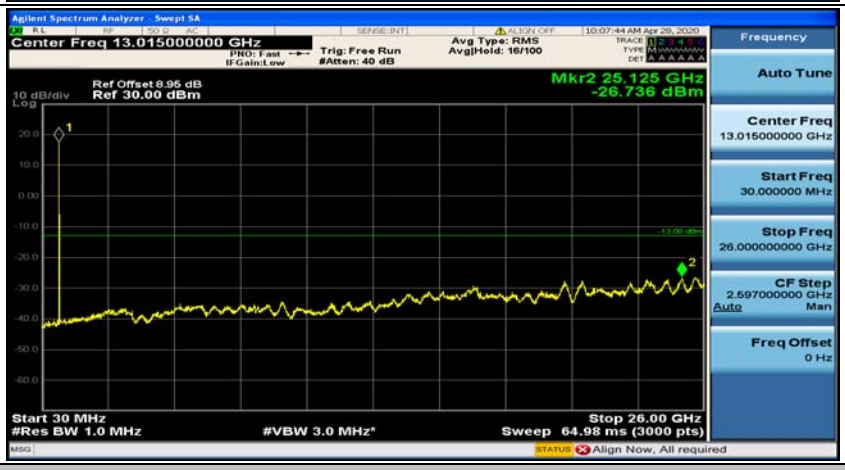

Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 16/100
10:07:01 AM Apr 28, 2020
Frequency
Mkr2 25.697 GHz
-25.282 dBm
Ref Offset 8.95 dB
10 dB/div
Log
Ref 30.00 dBm
Auto Tune
Center Freq
13.015000000 GHz
Start 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)
Align Now, All required

Channel Bandwidth: 10 MHz

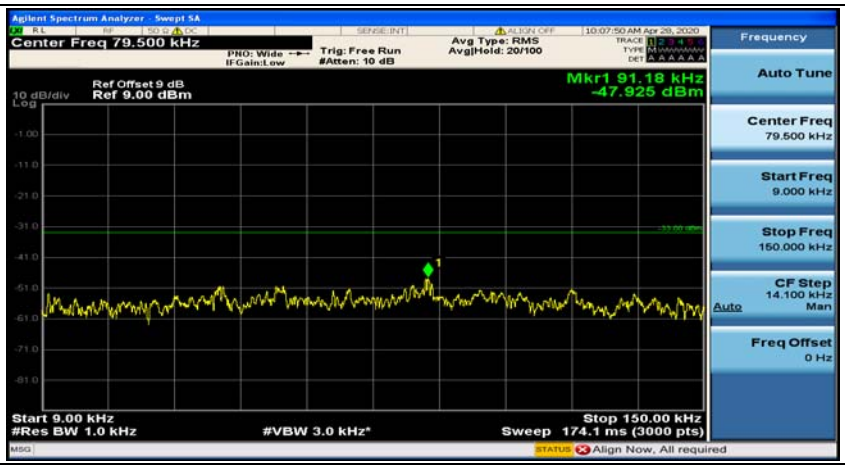
Channel Bandwidth: 10 MHz_LCH_QPSK_1RB#0



Channel Bandwidth: 10 MHz_LCH_QPSK_1RB#24

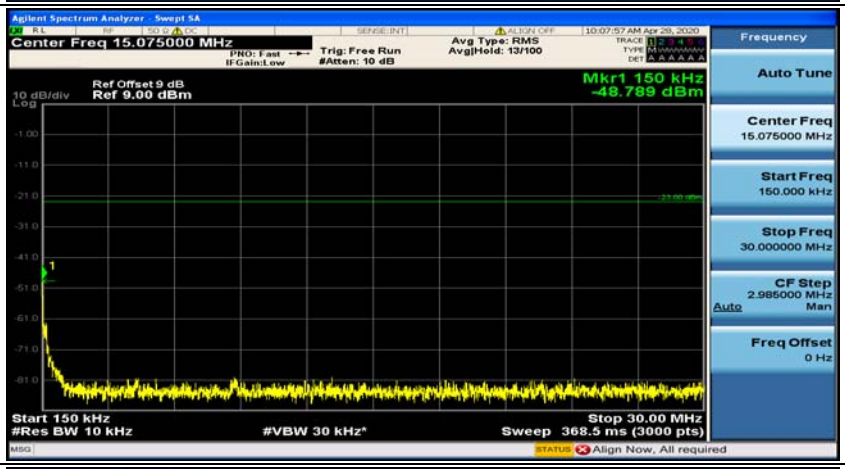


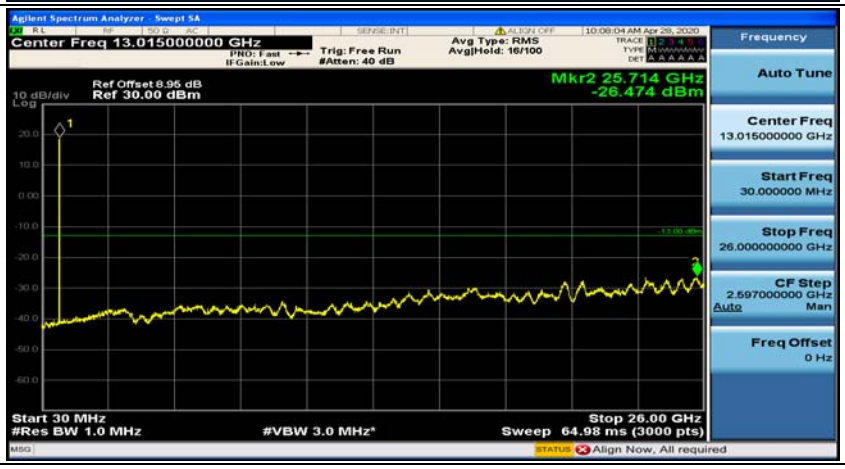


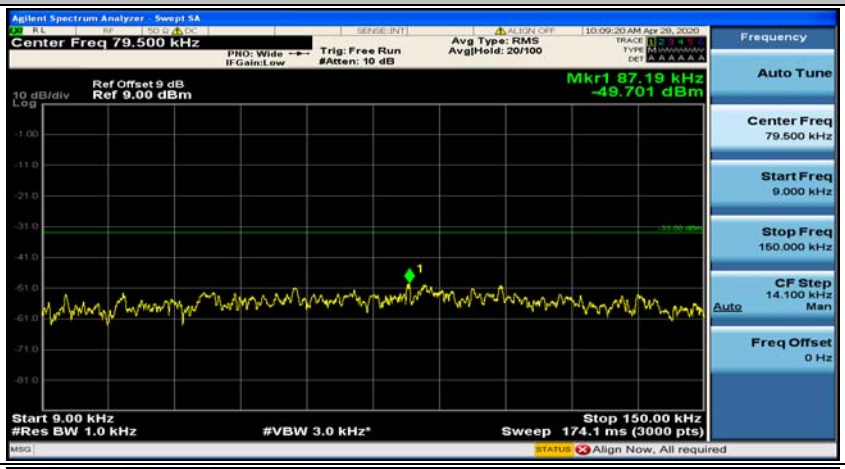
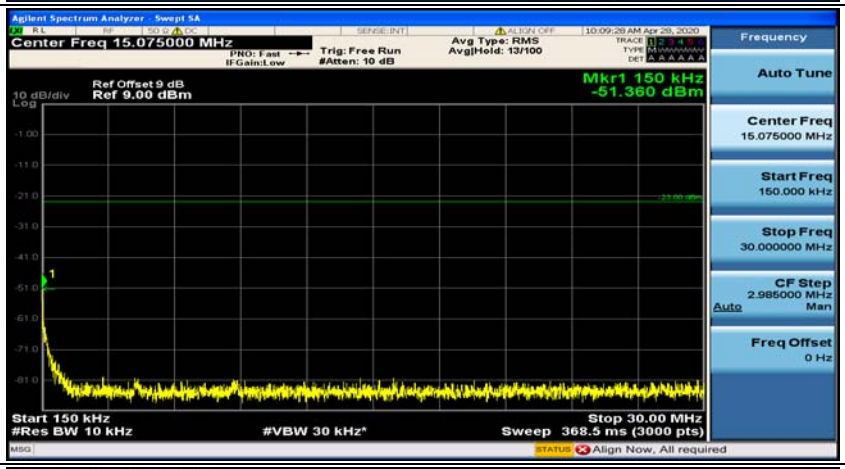
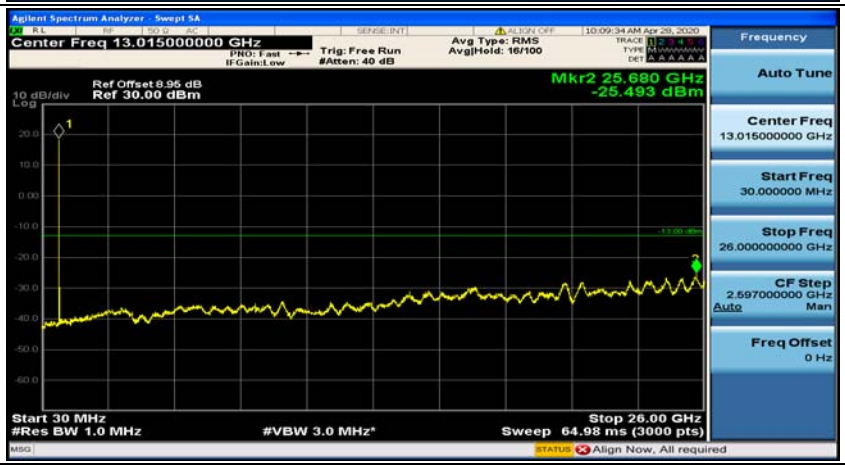


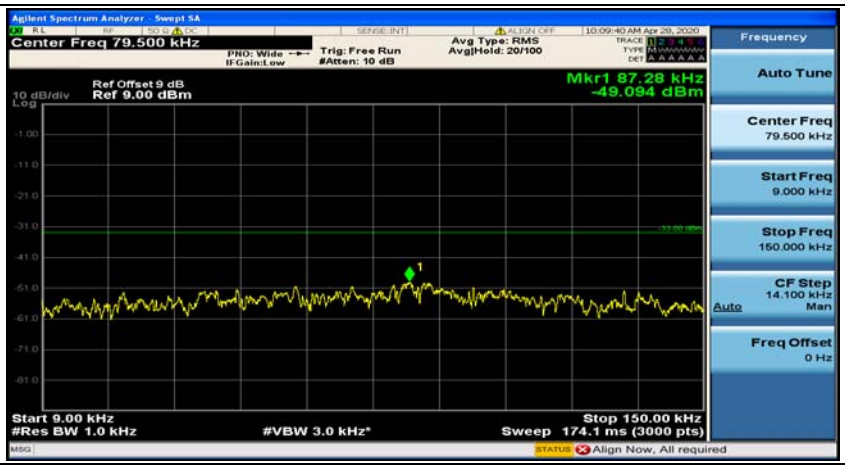
Channel Bandwidth: 10 MHz_LCH_QPSK_1RB#49

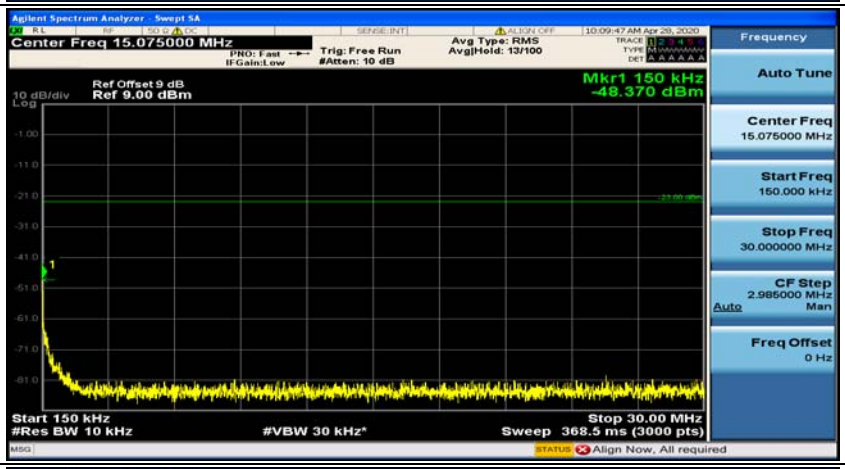

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 20/100
10:07:50 AM Apr 28, 2020
Frequency
Mkr1 91.18 kHz
-47.925 dBm
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop 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)
Align Now, All required


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: 13/100
10:07:57 AM Apr 28, 2020
Frequency
Mkr1 150 kHz
-48.789 dBm
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 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)
Align Now, All required

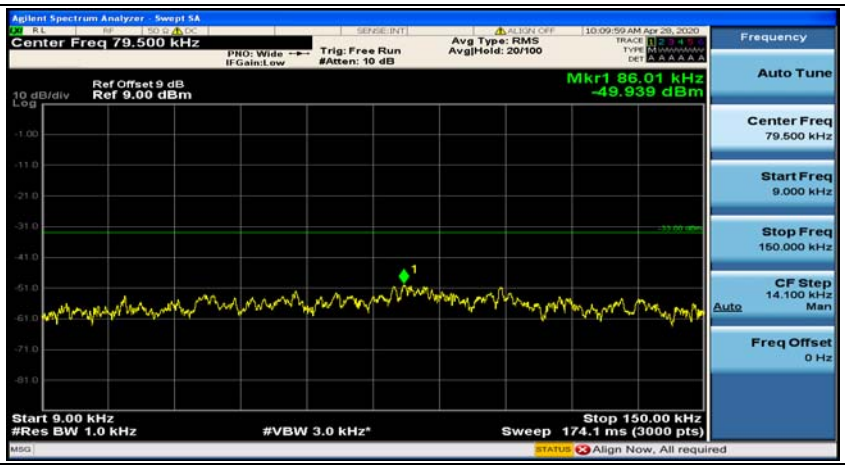

Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 16/100
10:08:04 AM Apr 28, 2020
Frequency
Mkr2 25.714 GHz
-26.474 dBm
Ref Offset 8.95 dB
10 dB/div
Log
Ref 30.00 dBm
Auto Tune
Center Freq
13.015000000 GHz
Start 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)
Align Now, All required

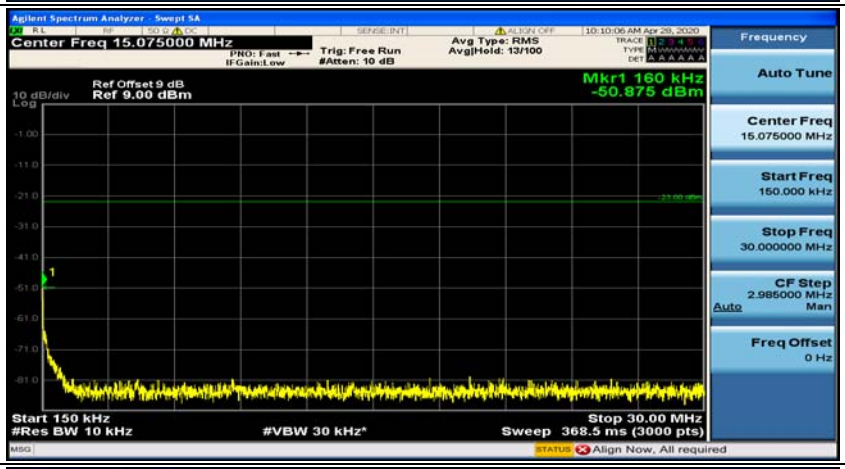
Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#0



Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#24

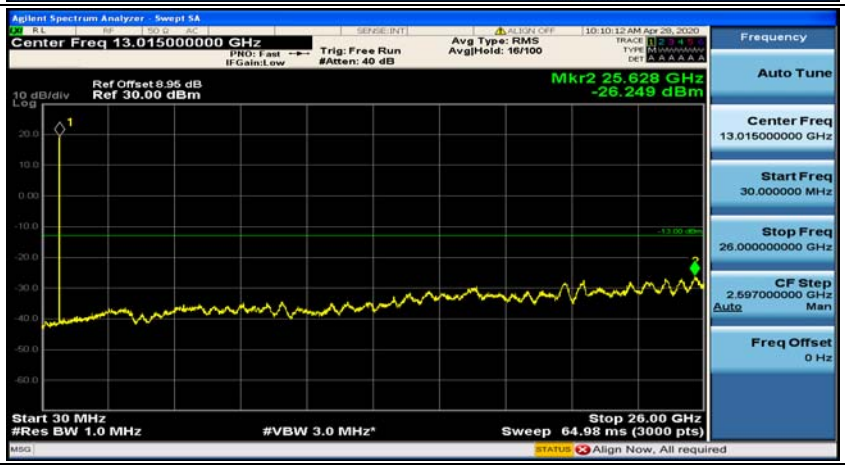


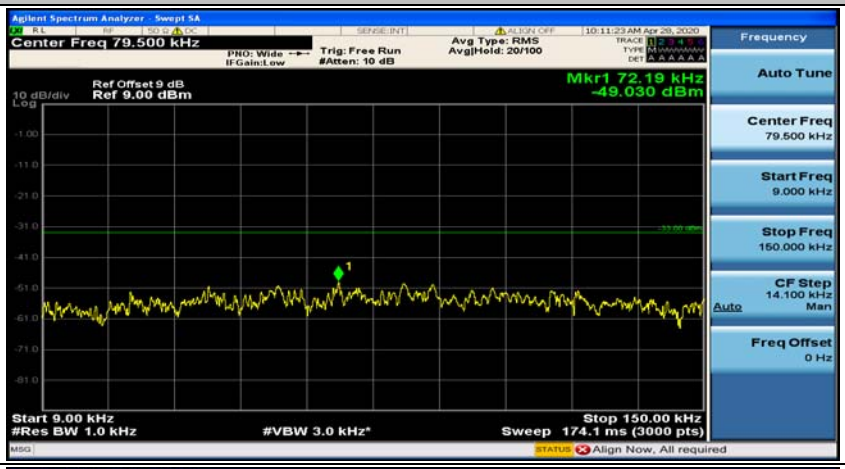
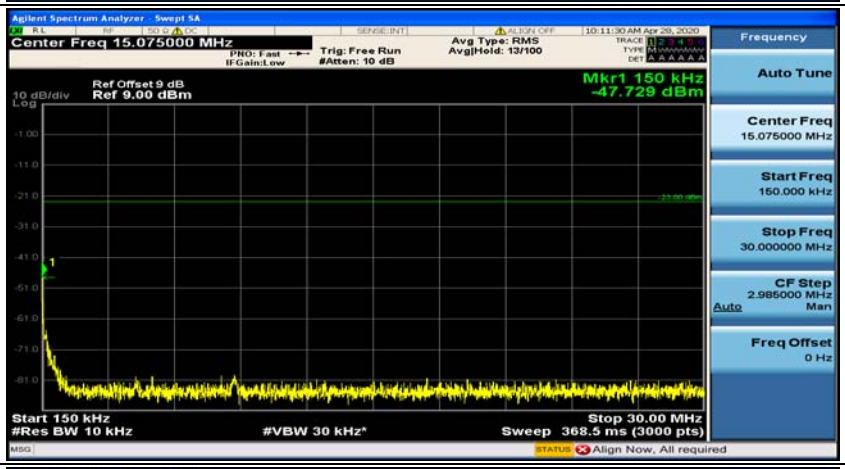
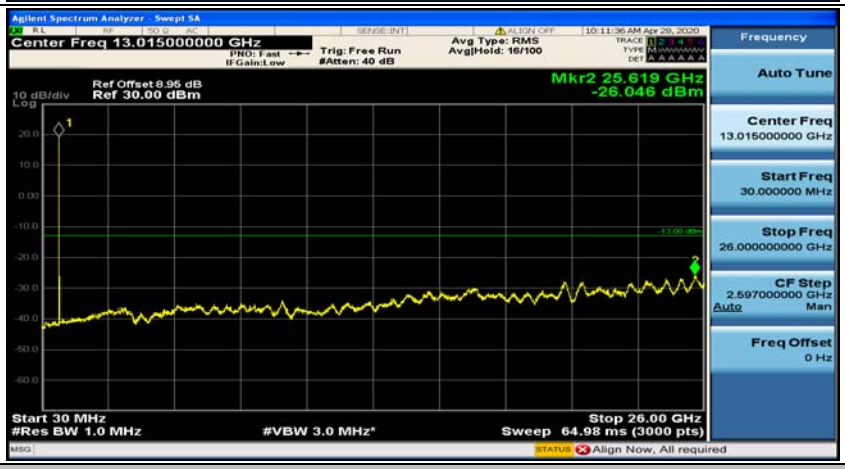


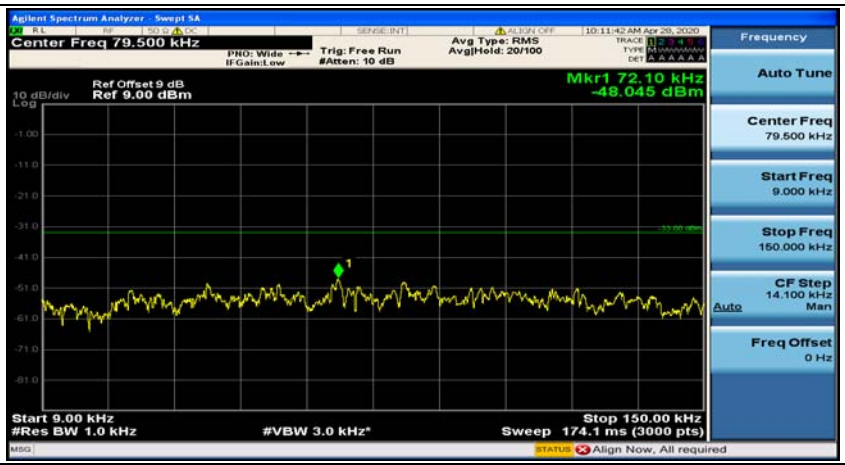
Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#49

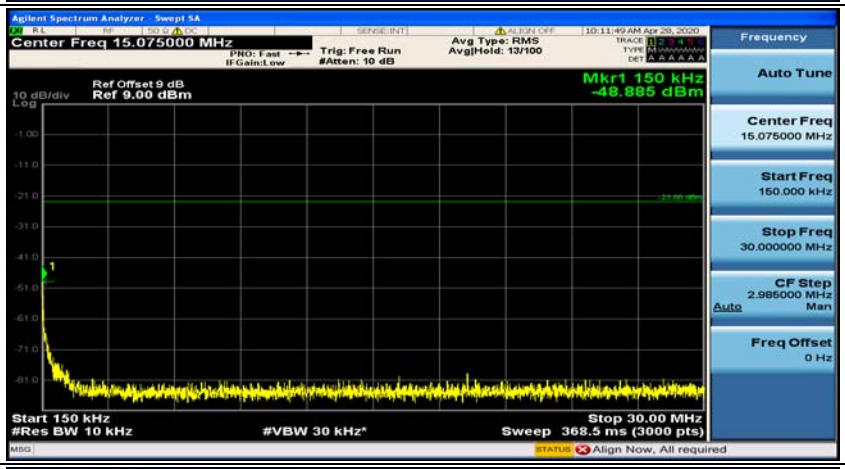

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 20/100
10:09:59 AM Apr 28, 2020
Frequency
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Mkr1 86.01 kHz
-49.939 dBm
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop 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)
Align Now, All required

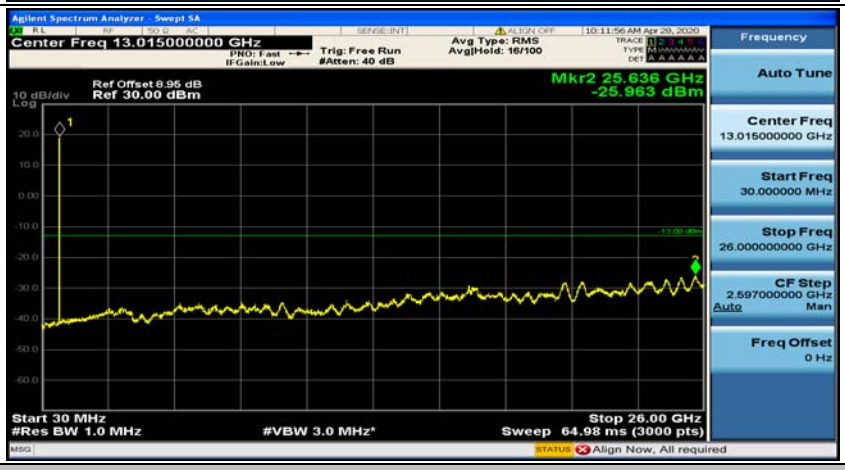

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 13/100
10:10:06 AM Apr 28, 2020
Frequency
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Mkr1 160 kHz
-50.875 dBm
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 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)
Align Now, All required


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: 16/100
10:10:12 AM Apr 28, 2020
Frequency
Ref Offset 8.95 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr2 25.628 GHz
-26.249 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)
Align Now, All required

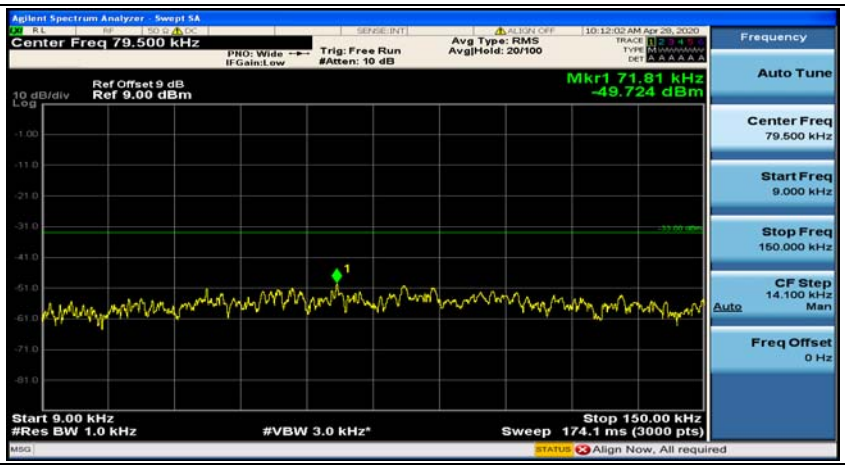
Channel Bandwidth: 10 MHz_HCH_QPSK_1RB#0



Channel Bandwidth: 10 MHz_HCH_QPSK_1RB#24

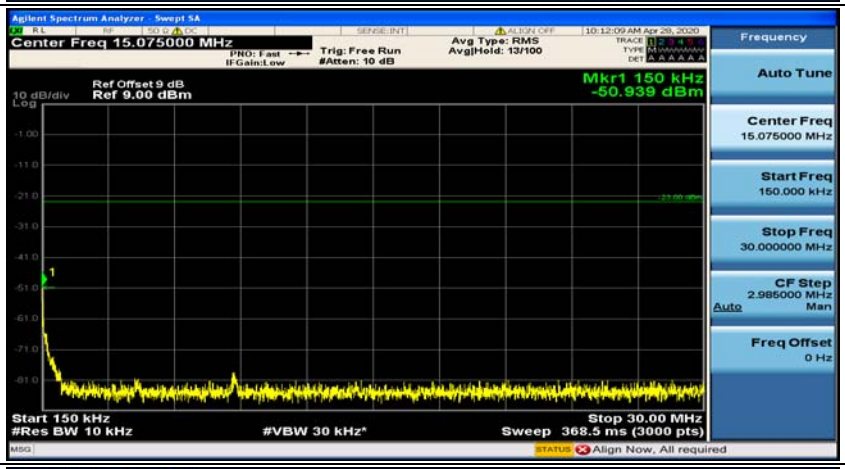


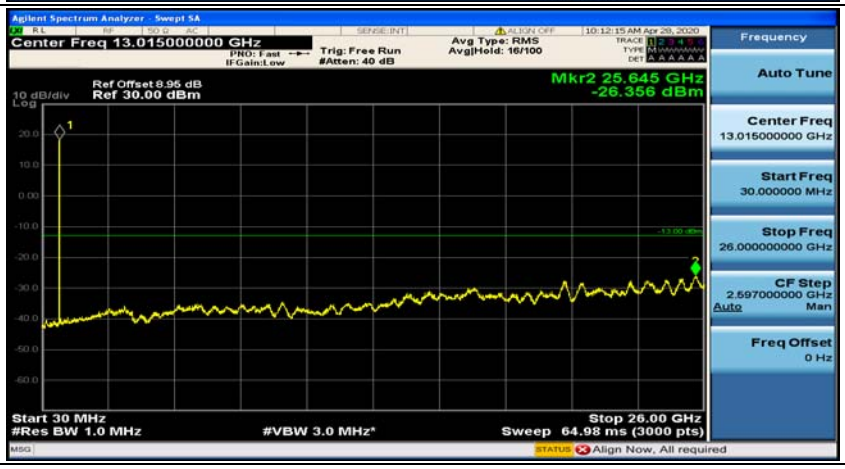


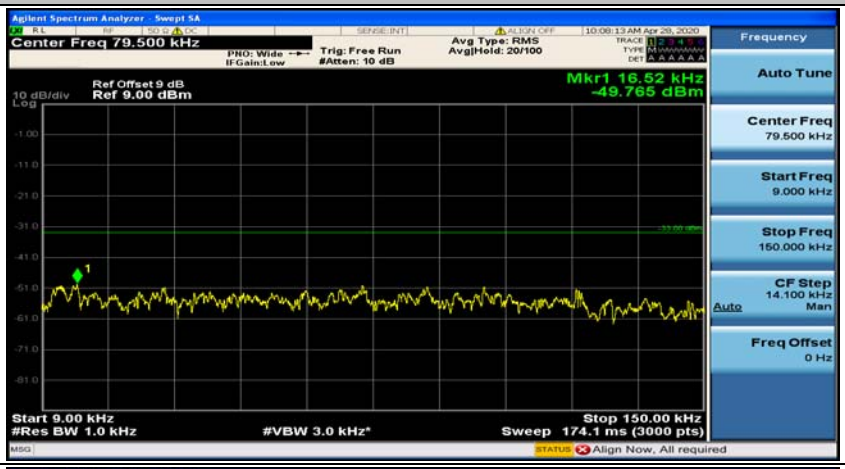
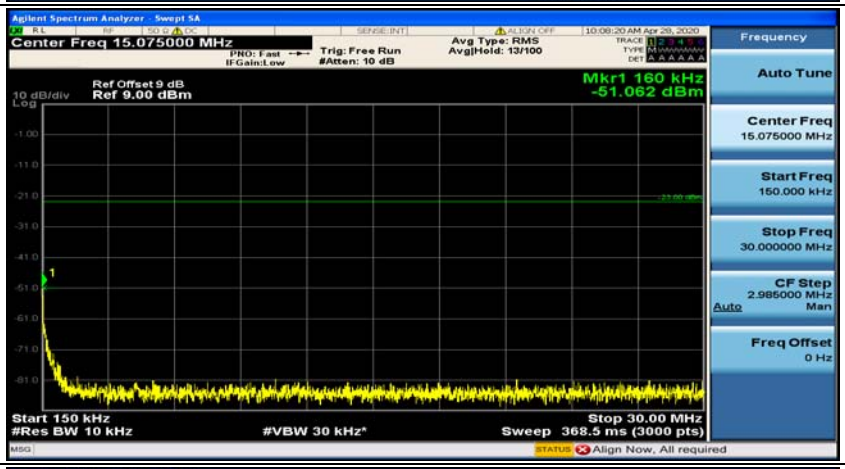
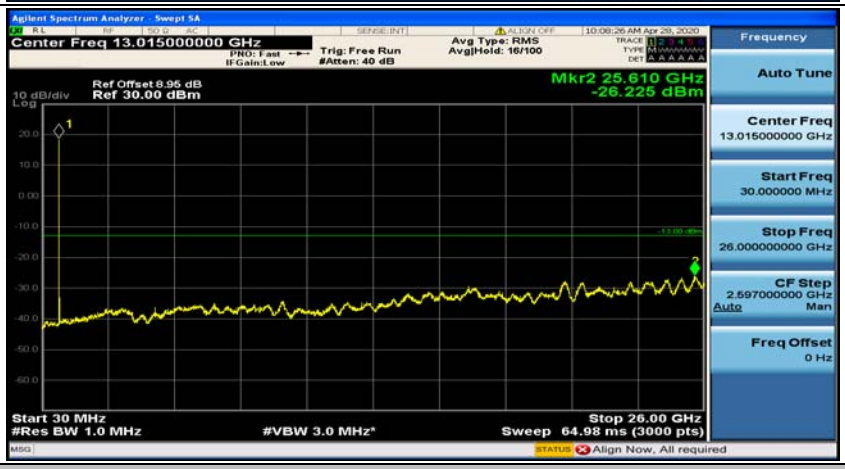


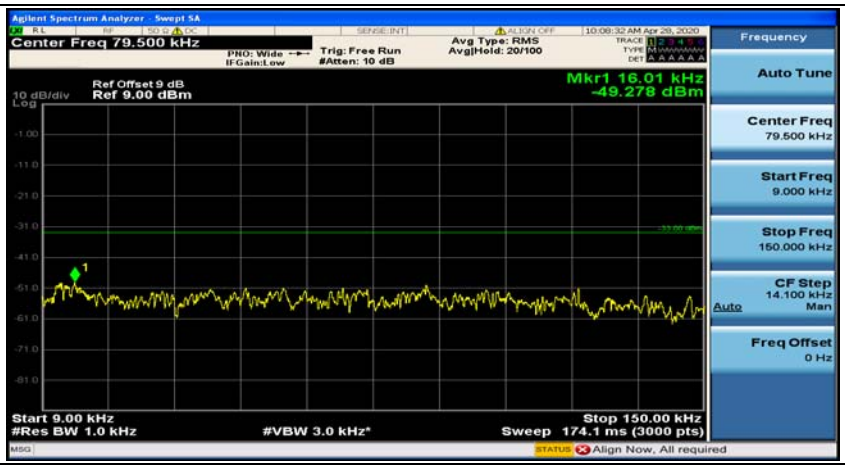
Channel Bandwidth: 10 MHz_HCH_QPSK_1RB#49

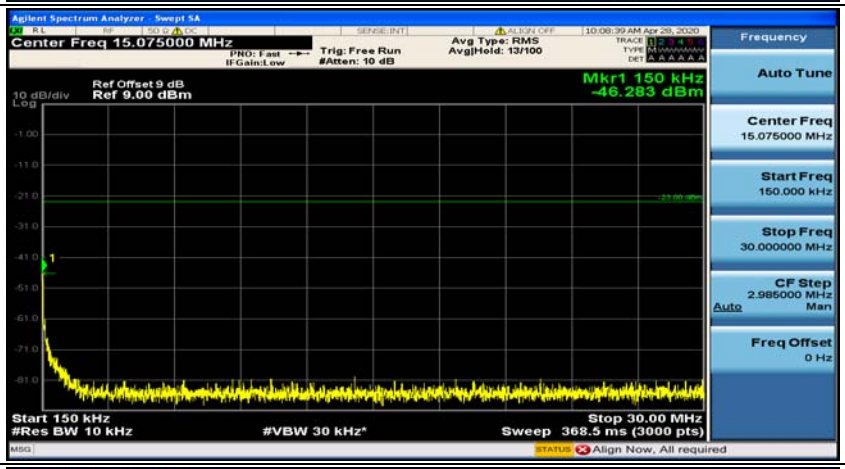

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 20/100
10:12:02 AM Apr 28, 2020
Frequency
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Mkr1 71.81 kHz
-49.724 dBm
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop 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)
Align Now, All required


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: 13/100
10:12:09 AM Apr 28, 2020
Frequency
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Mkr1 150 kHz
-50.939 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)
Align Now, All required

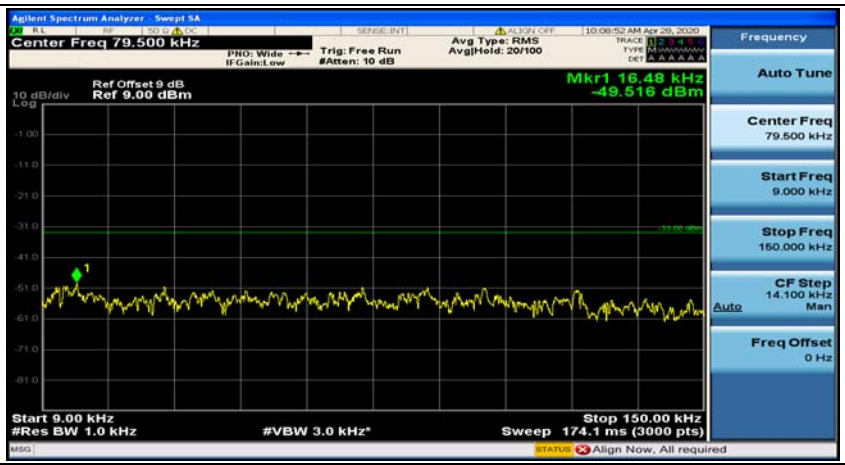

Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 16/100
10:12:15 AM Apr 28, 2020
Frequency
Ref Offset 8.95 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr2 25.645 GHz
-26.356 dBm
Auto Tune
Center Freq
13.015000000 GHz
Start 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)
Align Now, All required

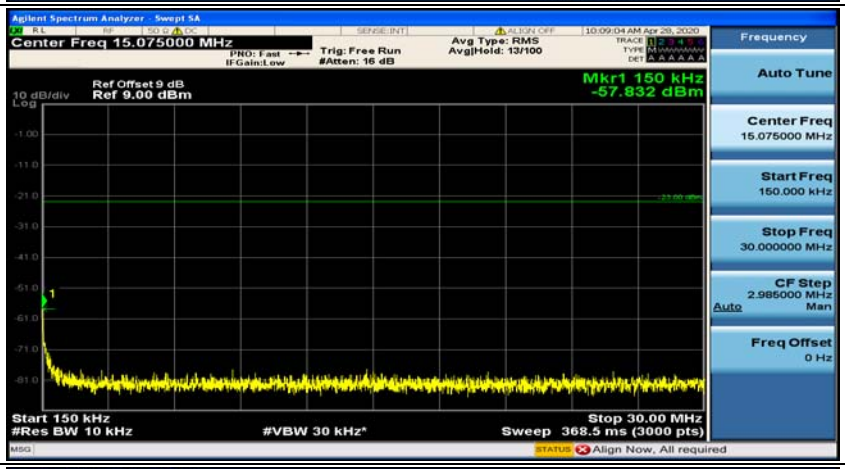
Channel Bandwidth: 10 MHz_LCH_16QAM_1RB#0



Channel Bandwidth: 10 MHz_LCH_16QAM_1RB#24

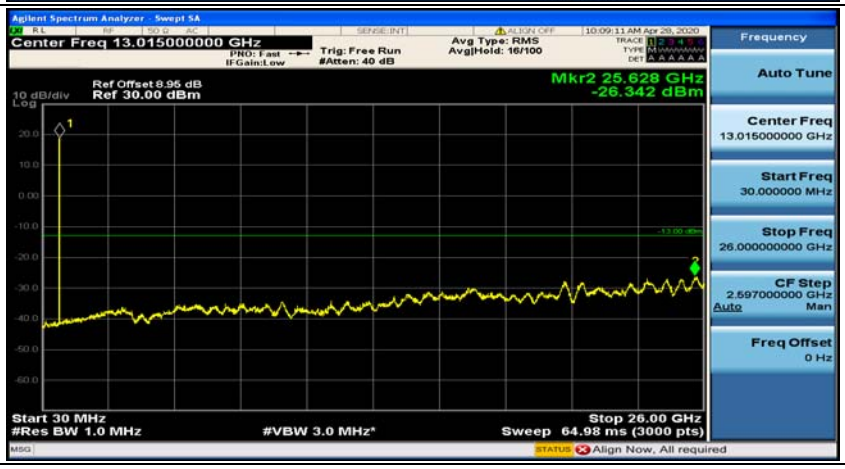


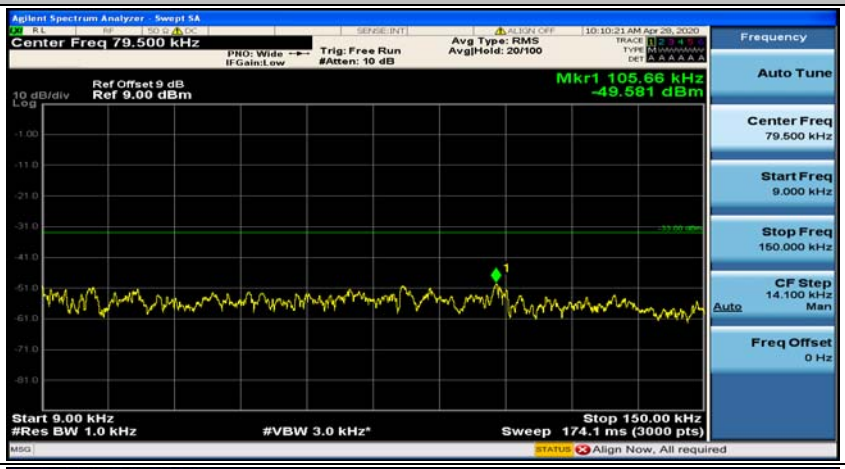
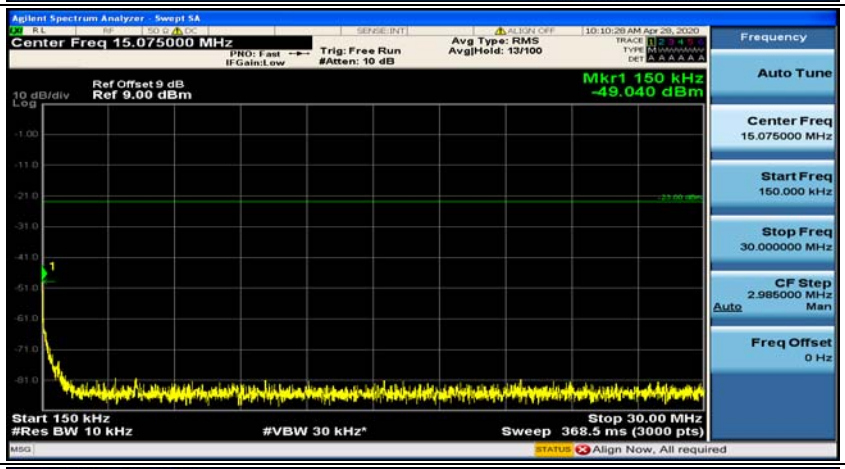
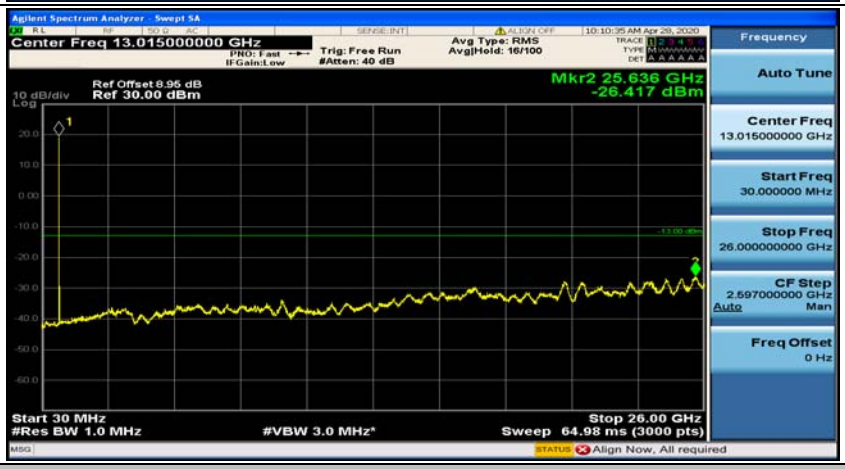


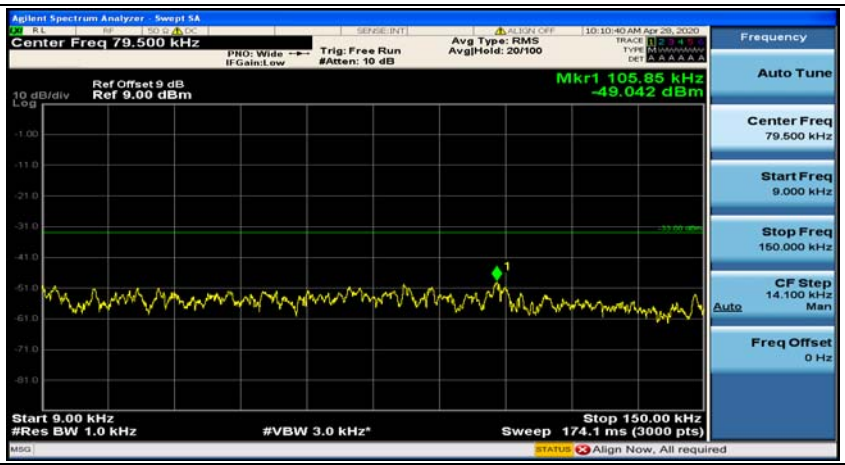
Channel Bandwidth: 10 MHz_LCH_16QAM_1RB#49

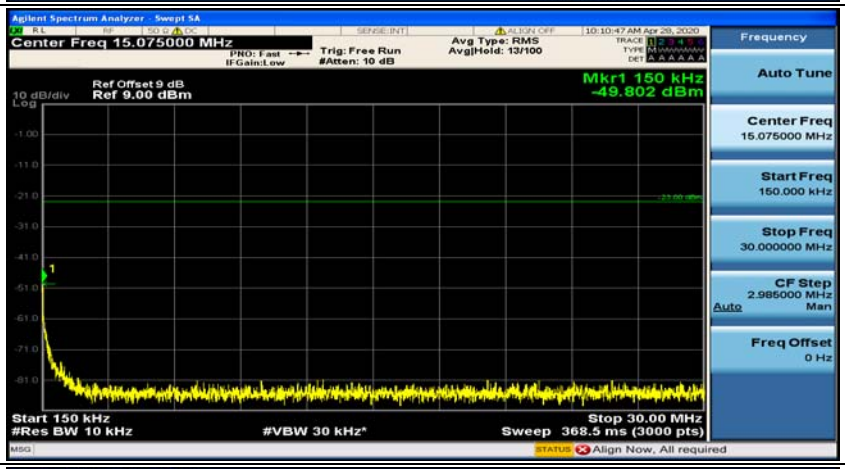

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 20/100
10:08:52 AM Apr 28, 2020
Mkr1 16.48 kHz
-49.516 dBm
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
Align Now, All required
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

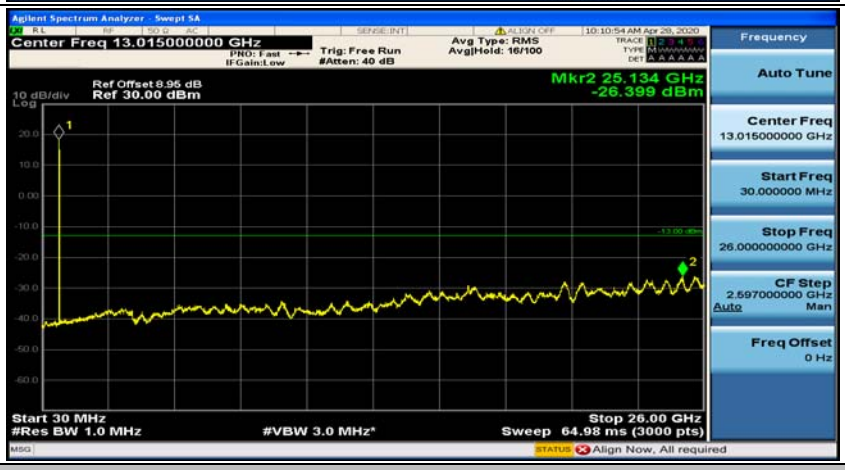

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 13/100
10:09:04 AM Apr 28, 2020
Mkr1 150 kHz
-57.832 dBm
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
Align Now, All required
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: 16/100
10:09:11 AM Apr 28, 2020
Mkr2 25.628 GHz
-26.342 dBm
Ref Offset 8.95 dB
10 dB/div
Log
Ref 30.00 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Align Now, All required
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

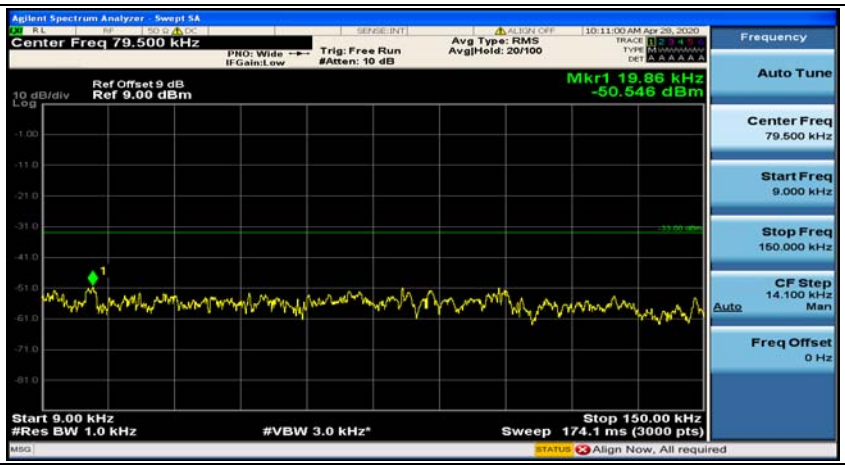
Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#0



Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#24

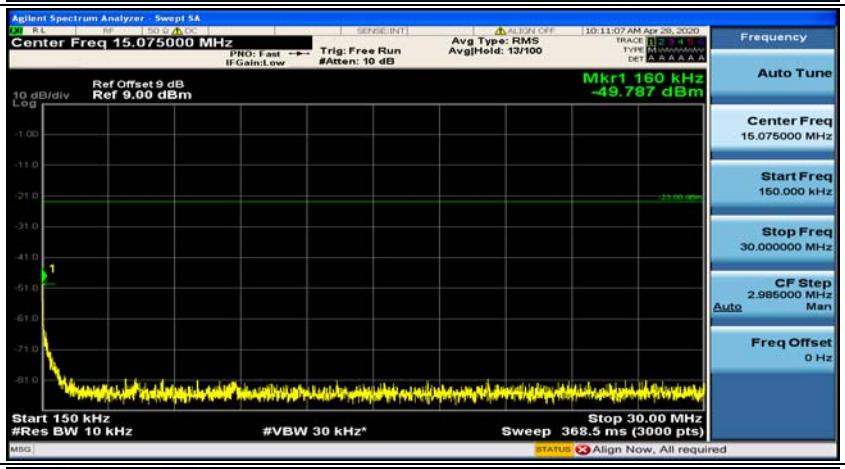


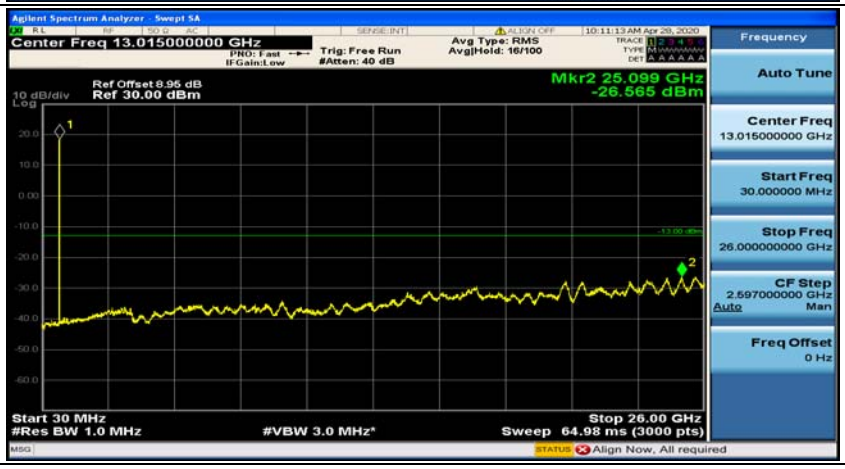


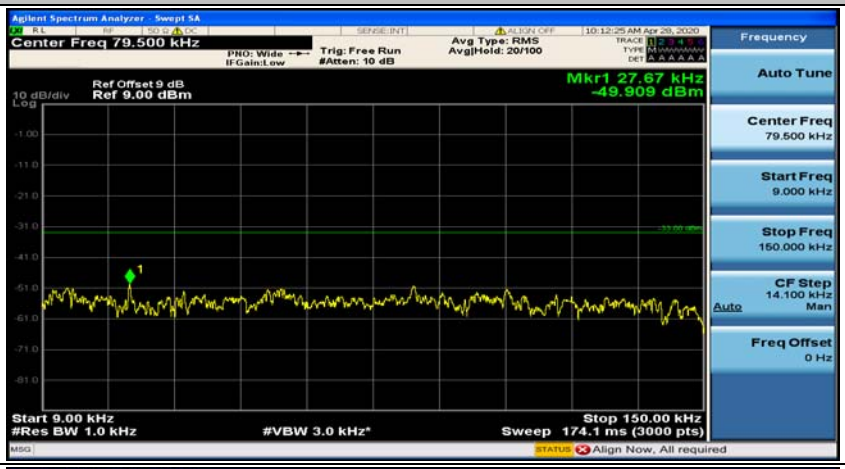
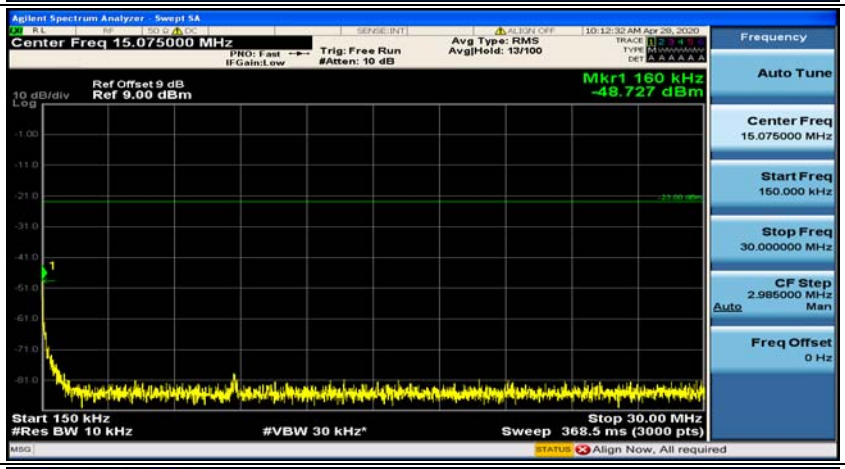
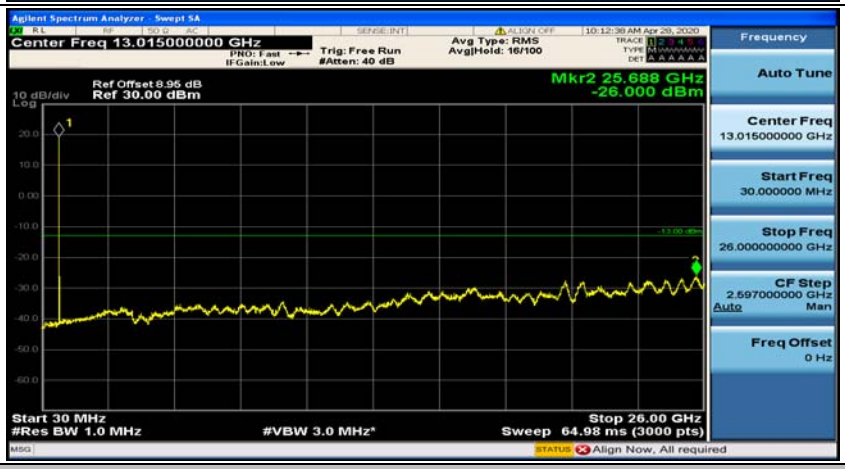


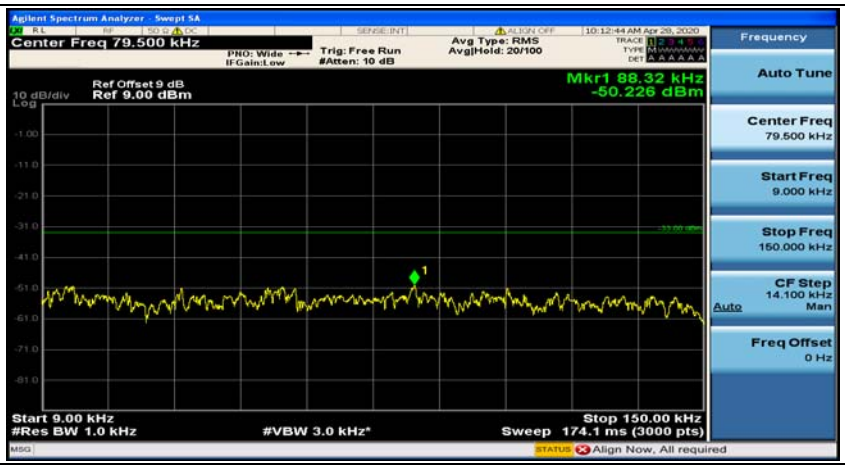
Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#49

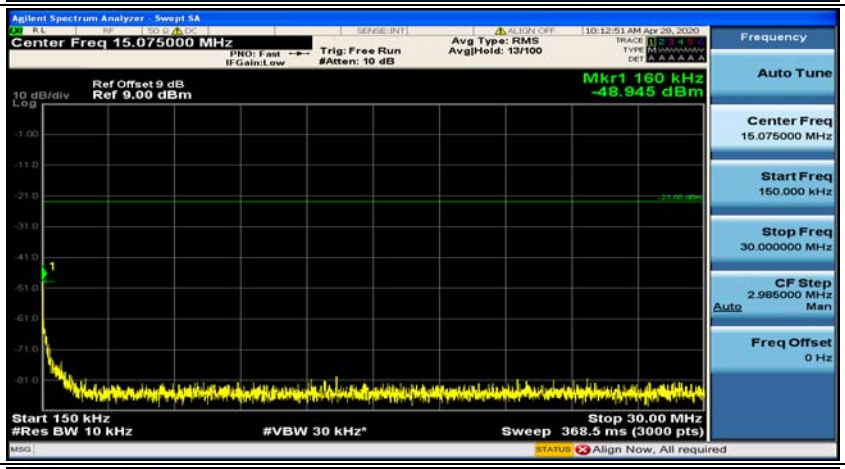

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 20/100
10:11:00 AM Apr 28, 2020
Frequency
Mkr1 19.86 kHz
-50.546 dBm
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop 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)
Align Now, All required

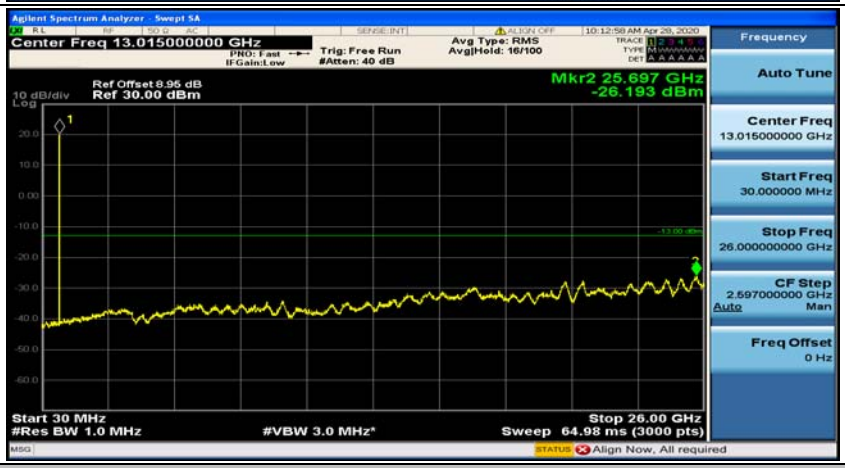

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 13/100
10:11:07 AM Apr 28, 2020
Frequency
Mkr1 160 kHz
-49.787 dBm
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 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)
Align Now, All required


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: 16/100
10:11:13 AM Apr 28, 2020
Frequency
Mkr2 25.099 GHz
-26.565 dBm
Ref Offset 8.95 dB
10 dB/div
Log
Ref 30.00 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)
Align Now, All required

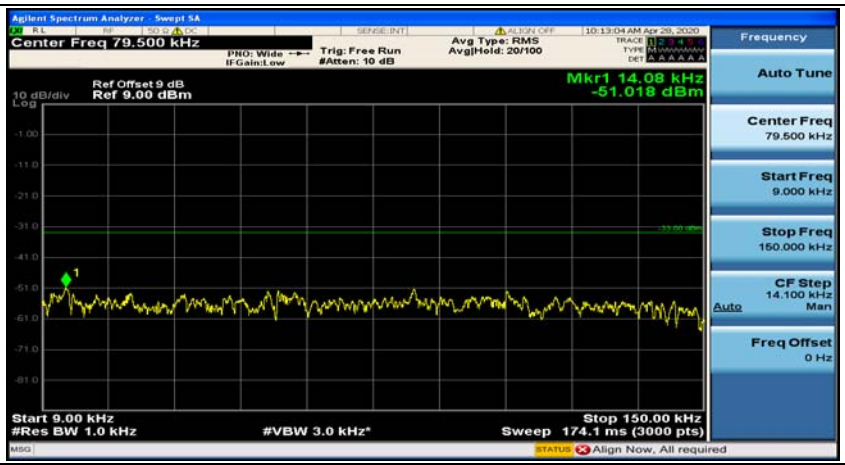
Channel Bandwidth: 10 MHz_HCH_16QAM_1RB#0



Channel Bandwidth: 10 MHz_HCH_16QAM_1RB#24

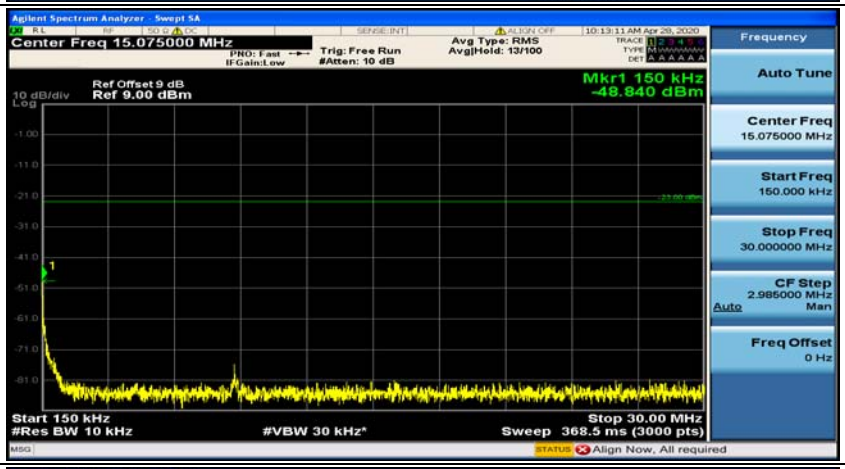


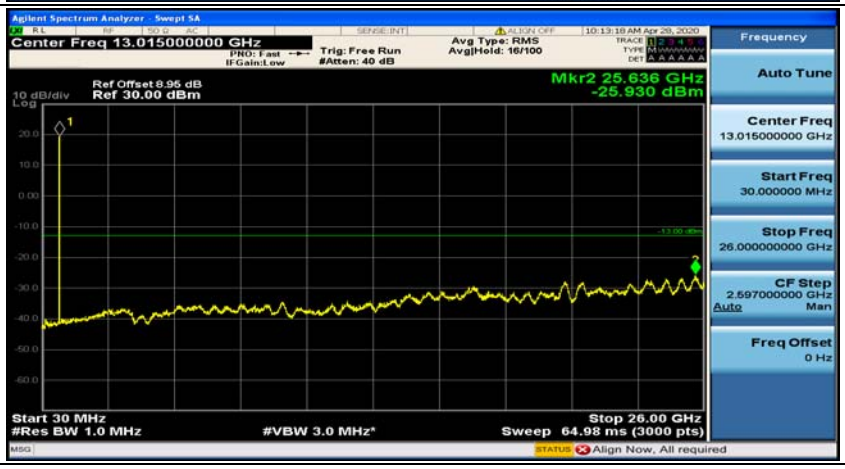




Channel Bandwidth: 10 MHz_HCH_16QAM_1RB#49


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: 20/100
10:13:04 AM Apr 28, 2020
Frequency
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Mkr1 14.08 kHz
-51.018 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)
Align Now, All required


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: 13/100
10:13:11 AM Apr 28, 2020
Frequency
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Mkr1 150 kHz
-48.840 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)
Align Now, All required


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: 16/100
10:13:18 AM Apr 28, 2020
Frequency
Ref Offset 8.95 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr2 25.636 GHz
-25.930 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)
Align Now, All required

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	-0.42	-0.000594	± 2.5	PASS
		VN	TN	-1.92	-0.002718	± 2.5	PASS
		VH	TN	4.15	0.005874	± 2.5	PASS
	MCH	VL	TN	0.78	0.001099	± 2.5	PASS
		VN	TN	1.36	0.001915	± 2.5	PASS
		VH	TN	1.02	0.001437	± 2.5	PASS
	HCH	VL	TN	-1.85	-0.002593	± 2.5	PASS
		VN	TN	2.3	0.003224	± 2.5	PASS
		VH	TN	-0.41	-0.000575	± 2.5	PASS
16QAM	LCH	VL	TN	-0.25	-0.000354	± 2.5	PASS
		VN	TN	2.43	0.003439	± 2.5	PASS
		VH	TN	2.84	0.004020	± 2.5	PASS
	MCH	VL	TN	4.92	0.006930	± 2.5	PASS
		VN	TN	2.42	0.003408	± 2.5	PASS
		VH	TN	2.82	0.003972	± 2.5	PASS
	HCH	VL	TN	2.91	0.004078	± 2.5	PASS
		VN	TN	-0.55	-0.000771	± 2.5	PASS
		VH	TN	2.66	0.003728	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	4.74	0.006709	± 2.5	PASS
		VN	-20	4.8	0.006794	± 2.5	PASS
		VN	-10	1.57	0.002222	± 2.5	PASS
		VN	0	-0.05	-0.000071	± 2.5	PASS
		VN	10	2.93	0.004147	± 2.5	PASS
		VN	20	-1.99	-0.002817	± 2.5	PASS
		VN	30	1.96	0.002774	± 2.5	PASS
		VN	40	1.48	0.002095	± 2.5	PASS
		VN	50	1.65	0.002335	± 2.5	PASS
	MCH	VN	-30	-0.27	-0.000380	± 2.5	PASS

		VN	-20	1.01	0.001423	± 2.5	PASS
		VN	-10	4.06	0.005718	± 2.5	PASS
		VN	0	-0.31	-0.000437	± 2.5	PASS
		VN	10	2.02	0.002845	± 2.5	PASS
		VN	20	-0.57	-0.000803	± 2.5	PASS
		VN	30	-1.86	-0.002620	± 2.5	PASS
		VN	40	2.15	0.003028	± 2.5	PASS
		VN	50	-1	-0.001408	± 2.5	PASS
	HCH	VN	-30	0.93	0.001303	± 2.5	PASS
		VN	-20	1.32	0.001850	± 2.5	PASS
		VN	-10	2.78	0.003896	± 2.5	PASS
		VN	0	0.53	0.000743	± 2.5	PASS
		VN	10	-1.25	-0.001752	± 2.5	PASS
		VN	20	0.59	0.000827	± 2.5	PASS
		VN	30	2.07	0.002901	± 2.5	PASS
		VN	40	1.82	0.002551	± 2.5	PASS
		VN	50	4.71	0.006601	± 2.5	PASS
16QAM	LCH	VN	-30	2.31	0.003270	± 2.5	PASS
		VN	-20	2.98	0.004218	± 2.5	PASS
		VN	-10	2.62	0.003708	± 2.5	PASS
		VN	0	2.69	0.003808	± 2.5	PASS
		VN	10	-1.58	-0.002236	± 2.5	PASS
		VN	20	4.36	0.006171	± 2.5	PASS
		VN	30	4.47	0.006327	± 2.5	PASS
		VN	40	3.83	0.005421	± 2.5	PASS
		VN	50	2.41	0.003411	± 2.5	PASS
	MCH	VN	-30	1.55	0.002172	± 2.5	PASS
		VN	-20	3.83	0.005368	± 2.5	PASS
		VN	-10	-0.62	-0.000869	± 2.5	PASS
		VN	0	1.86	0.002607	± 2.5	PASS
		VN	10	3.13	0.004387	± 2.5	PASS
		VN	20	4.01	0.005620	± 2.5	PASS
		VN	30	0.72	0.001009	± 2.5	PASS
		VN	40	-1.39	-0.001948	± 2.5	PASS
		VN	50	1.73	0.002425	± 2.5	PASS
	HCH	VN	-30	1.57	0.002200	± 2.5	PASS
		VN	-20	0.82	0.001149	± 2.5	PASS
		VN	-10	4.01	0.005620	± 2.5	PASS
		VN	0	2.37	0.003322	± 2.5	PASS
		VN	10	0.18	0.000252	± 2.5	PASS
		VN	20	2.61	0.003658	± 2.5	PASS

		VN	30	4.25	0.005957	± 2.5	PASS
		VN	40	-0.47	-0.000659	± 2.5	PASS
		VN	50	-1.82	-0.002551	± 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	-1.44	-0.002031	± 2.5	PASS
		VN	TN	0.49	0.000691	± 2.5	PASS
		VH	TN	0.32	0.000451	± 2.5	PASS
	MCH	VL	TN	-1.18	-0.001662	± 2.5	PASS
		VN	TN	2.34	0.003296	± 2.5	PASS
		VH	TN	-1.31	-0.001845	± 2.5	PASS
	HCH	VL	TN	-0.76	-0.001069	± 2.5	PASS
		VN	TN	-1.46	-0.002053	± 2.5	PASS
		VH	TN	1.23	0.001730	± 2.5	PASS
16QAM	LCH	VL	TN	4.22	0.005952	± 2.5	PASS
		VN	TN	-0.05	-0.000071	± 2.5	PASS
		VH	TN	1.94	0.002736	± 2.5	PASS
	MCH	VL	TN	2.8	0.003944	± 2.5	PASS
		VN	TN	4.7	0.006620	± 2.5	PASS
		VH	TN	0.75	0.001056	± 2.5	PASS
	HCH	VL	TN	-1.91	-0.002686	± 2.5	PASS
		VN	TN	1.36	0.001913	± 2.5	PASS
		VH	TN	-0.99	-0.001392	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	4.13	0.005825	± 2.5	PASS
		VN	-20	-1.3	-0.001834	± 2.5	PASS
		VN	-10	4.41	0.006220	± 2.5	PASS
		VN	0	0.62	0.000874	± 2.5	PASS
		VN	10	-1.61	-0.002271	± 2.5	PASS
		VN	20	4.53	0.006389	± 2.5	PASS
		VN	30	3.23	0.004556	± 2.5	PASS
		VN	40	-1.31	-0.001848	± 2.5	PASS
		VN	50	2.76	0.003893	± 2.5	PASS
	MCH	VN	-30	-1.51	-0.002127	± 2.5	PASS
		VN	-20	1.15	0.001620	± 2.5	PASS

		VN	-10	-0.42	-0.000592	± 2.5	PASS
		VN	0	0.9	0.001268	± 2.5	PASS
		VN	10	4.23	0.005958	± 2.5	PASS
		VN	20	-1.35	-0.001901	± 2.5	PASS
		VN	30	-0.87	-0.001225	± 2.5	PASS
		VN	40	-0.18	-0.000254	± 2.5	PASS
		VN	50	3.71	0.005225	± 2.5	PASS
	HCH	VN	-30	0.52	0.000731	± 2.5	PASS
		VN	-20	3.61	0.005077	± 2.5	PASS
		VN	-10	3.61	0.005077	± 2.5	PASS
		VN	0	-0.52	-0.000731	± 2.5	PASS
		VN	10	0.85	0.001195	± 2.5	PASS
		VN	20	0.69	0.000970	± 2.5	PASS
		VN	30	0.89	0.001252	± 2.5	PASS
		VN	40	2.17	0.003052	± 2.5	PASS
		VN	50	0.85	0.001195	± 2.5	PASS
16QAM	LCH	VN	-30	3.03	0.004268	± 2.5	PASS
		VN	-20	4.19	0.005901	± 2.5	PASS
		VN	-10	0.65	0.000915	± 2.5	PASS
		VN	0	1.96	0.002761	± 2.5	PASS
		VN	10	-1.49	-0.002099	± 2.5	PASS
		VN	20	1.74	0.002451	± 2.5	PASS
		VN	30	1.5	0.002113	± 2.5	PASS
		VN	40	2.02	0.002845	± 2.5	PASS
		VN	50	4.07	0.005732	± 2.5	PASS
	MCH	VN	-30	-1.59	-0.002236	± 2.5	PASS
		VN	-20	4.04	0.005682	± 2.5	PASS
		VN	-10	4.54	0.006385	± 2.5	PASS
		VN	0	3.8	0.005345	± 2.5	PASS
		VN	10	0.44	0.000619	± 2.5	PASS
		VN	20	2.66	0.003741	± 2.5	PASS
		VN	30	-0.96	-0.001350	± 2.5	PASS
		VN	40	-0.15	-0.000211	± 2.5	PASS
		VN	50	-1.79	-0.002518	± 2.5	PASS
	HCH	VN	-30	-1.76	-0.002475	± 2.5	PASS
		VN	-20	-1.95	-0.002743	± 2.5	PASS
		VN	-10	4.06	0.005710	± 2.5	PASS
		VN	0	1.63	0.002293	± 2.5	PASS
		VN	10	2.27	0.003193	± 2.5	PASS
		VN	20	4.76	0.006695	± 2.5	PASS
		VN	30	2.34	0.003291	± 2.5	PASS

		VN	40	2.38	0.003347	± 2.5	PASS
		VN	50	2.93	0.004121	± 2.5	PASS