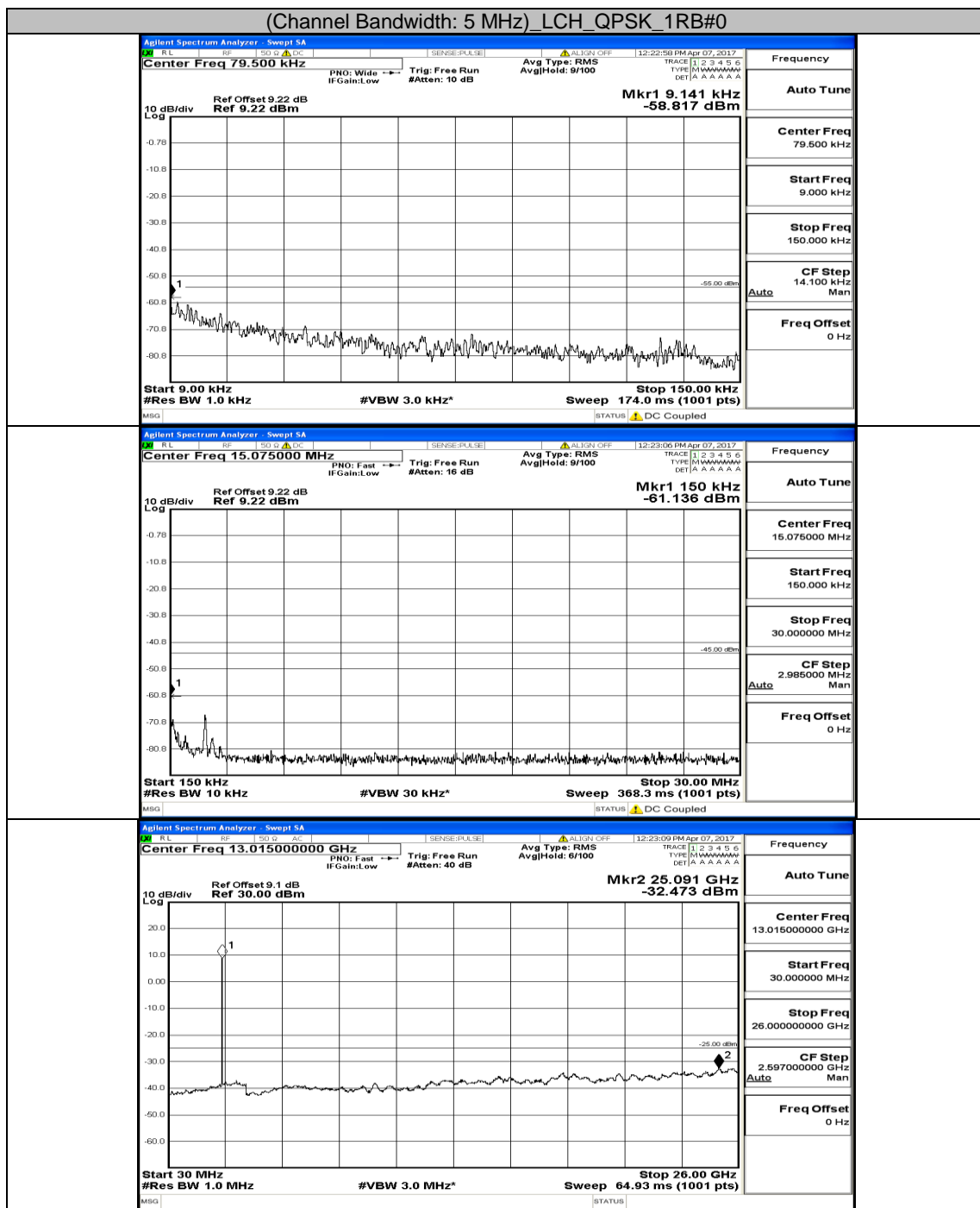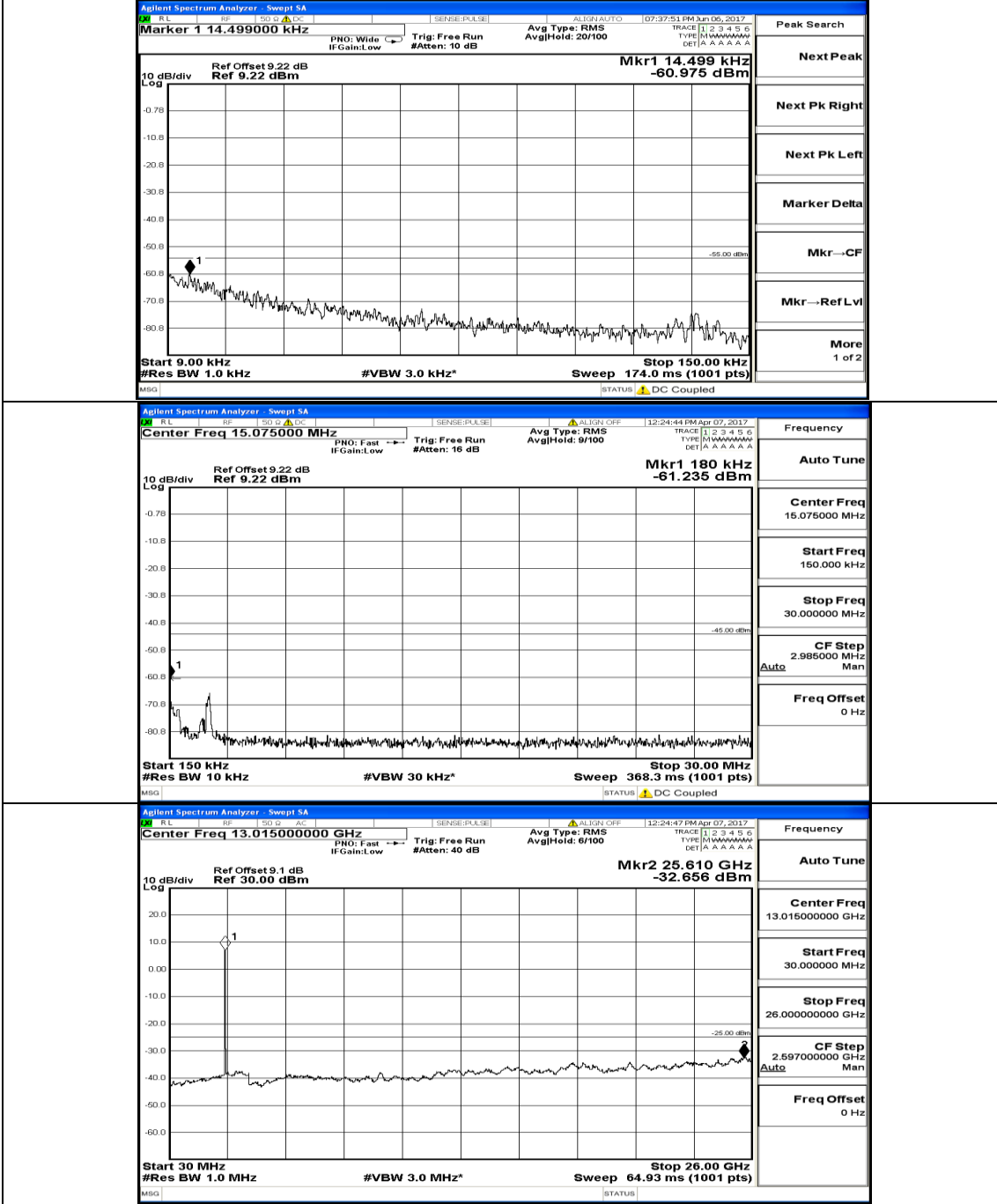# Appendix E:Conducted Spurious Emission
LTE Band 7 Test Results
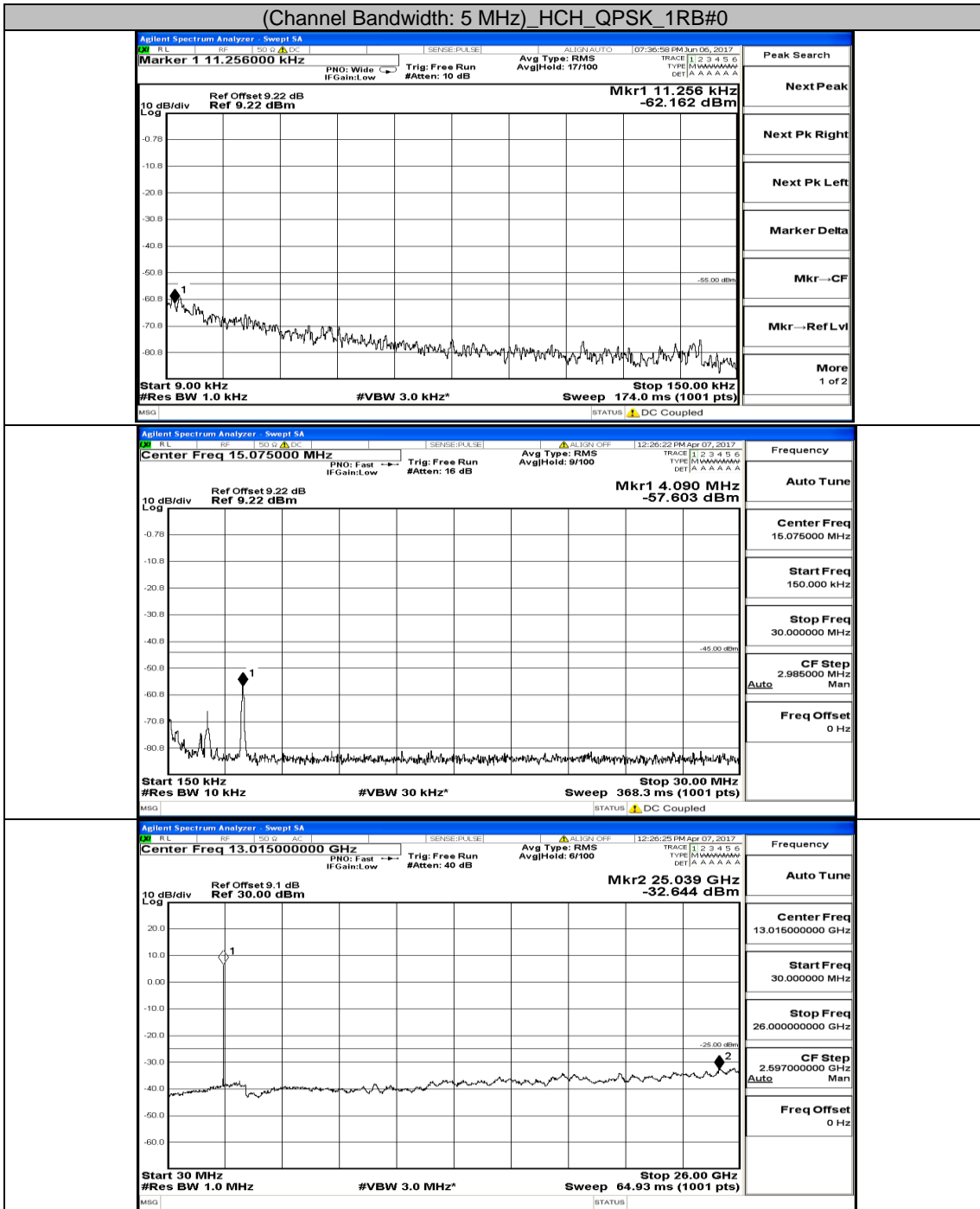
Channel Bandwidth: 5 MHz

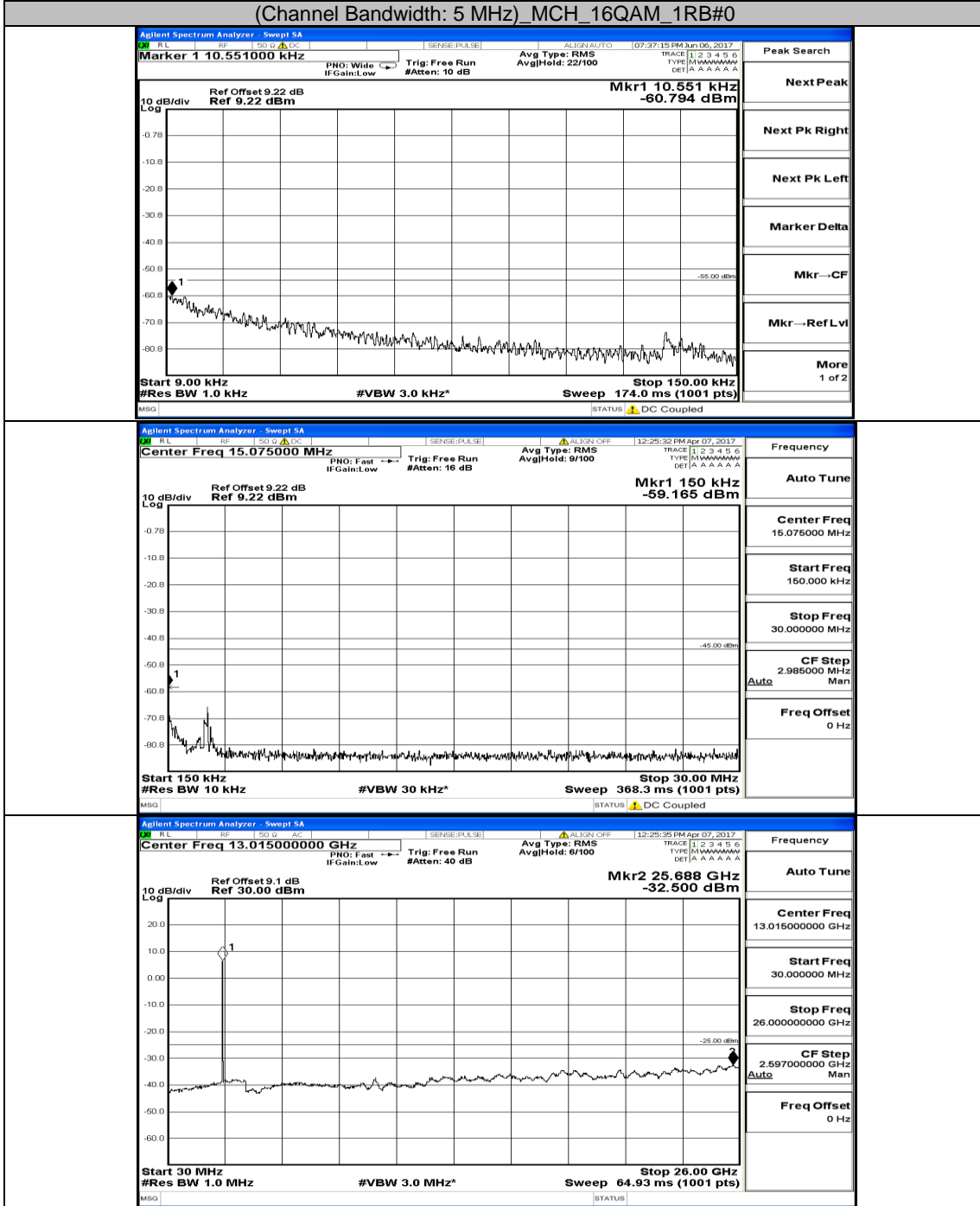| (Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#0 |
|---|
| |
| |
| |

(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#0

Screen 1

Agilent Spectrum Analyzer - Swept SA

R L | RF | 50 Ω | DC | SENSE:PULSE | ALIGN AUTO | 07:37:51 PM Jun 06, 2017

Marker 1 14.499000 kHz

PNO: Wide | Trig: Free Run | Avg Type: RMS | TRACE 1 2 3 4 5 6
IFGain:Low | #Atten: 10 dB | Avg|Hold: 20/100 | TYPE M W W W W W
| | | DET A A A A A A

Ref Offset 9.22 dB
10 dB/div   Ref 9.22 dBm
Log

Mkr1 14.499 kHz
−60.975 dBm

-0.78
-10.8
-20.8
-30.8
-40.8
-50.8   -55.00 dBm
-60.8 ◆ 1
-70.8
-80.8

Start 9.00 kHz   Stop 150.00 kHz
#Res BW 1.0 kHz   #VBW 3.0 kHz*   Sweep 174.0 ms (1001 pts)

MSG   STATUS DC Coupled

Screen 2

Agilent Spectrum Analyzer - Swept SA

R L | RF | 50 Ω | DC | SENSE:PULSE | ALIGN OFF | 12:24:44 PM Apr 07, 2017

Center Freq 15.075000 MHz

PNO: Fast | Trig: Free Run | Avg Type: RMS | TRACE 1 2 3 4 5 6
IFGain:Low | #Atten: 16 dB | Avg|Hold: 9/100 | TYPE M W W W W W
| | | DET A A A A A A

Ref Offset 9.22 dB
10 dB/div   Ref 9.22 dBm
Log

Mkr1 180 kHz
−61.235 dBm

-0.78
-10.8
-20.8
-30.8
-40.8   -45.00 dBm
-50.8
-60.8 1
-70.8
-80.8

Start 150 kHz   Stop 30.00 MHz
#Res BW 10 kHz   #VBW 30 kHz*   Sweep 368.3 ms (1001 pts)

MSG   STATUS DC Coupled

Screen 3

Agilent Spectrum Analyzer - Swept SA

R L | RF | 50 Ω | AC | SENSE:PULSE | ALIGN OFF | 12:24:47 PM Apr 07, 2017

Center Freq 13.015000000 GHz

PNO: Fast | Trig: Free Run | Avg Type: RMS | TRACE 1 2 3 4 5 6
IFGain:Low | #Atten: 40 dB | Avg|Hold: 6/100 | TYPE M W W W W W
| | | DET A A A A A A

Ref Offset 9.1 dB
10 dB/div   Ref 30.00 dBm
Log

Mkr2 25.610 GHz
−32.656 dBm

20.0
10.0   ◇ 1
0.00
-10.0
-20.0   -25.00 dBm
-30.0   ◆
-40.0
-50.0
-60.0

Start 30 MHz   Stop 26.00 GHz
#Res BW 1.0 MHz   #VBW 3.0 MHz*   Sweep 64.93 ms (1001 pts)

MSG   STATUS

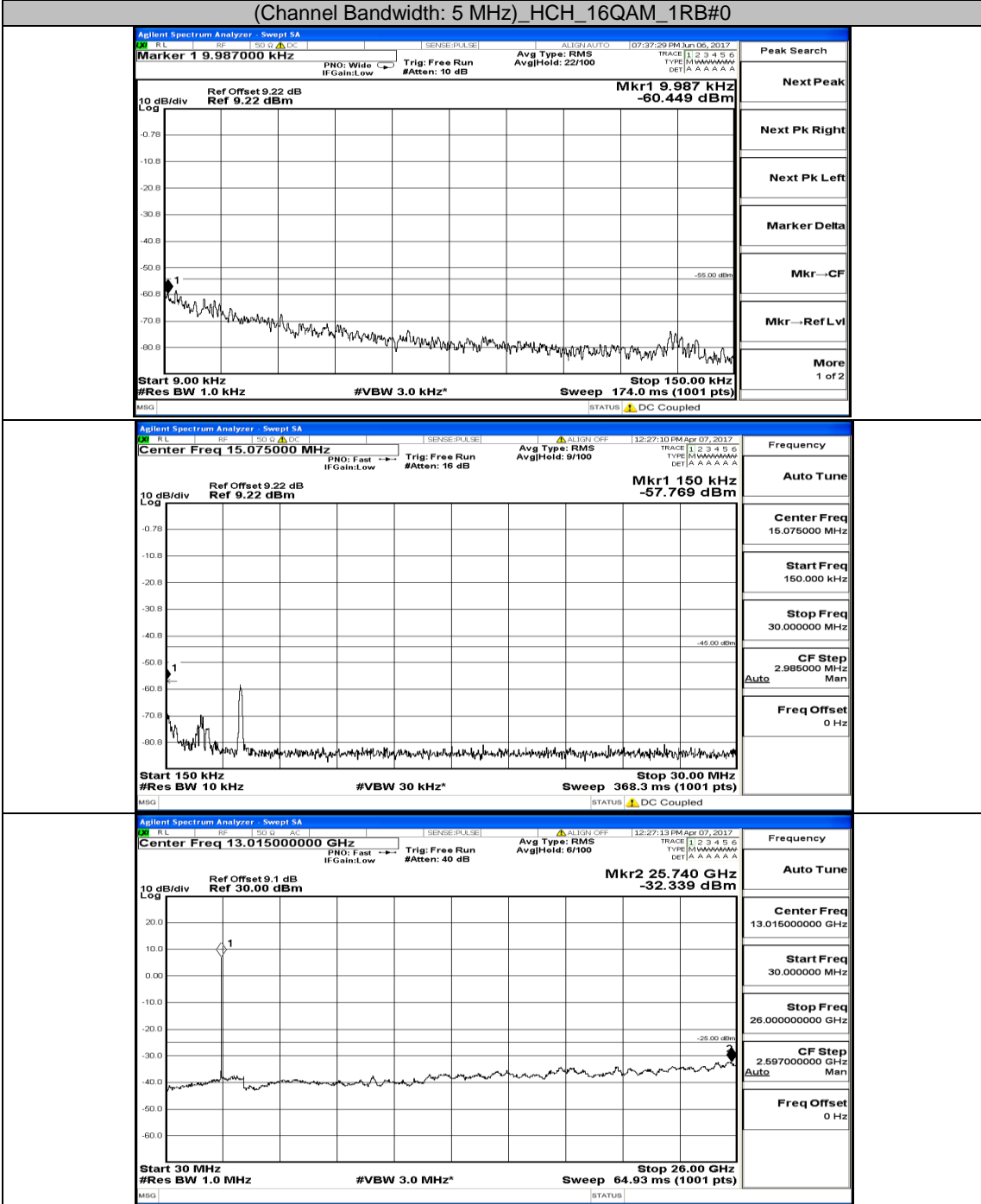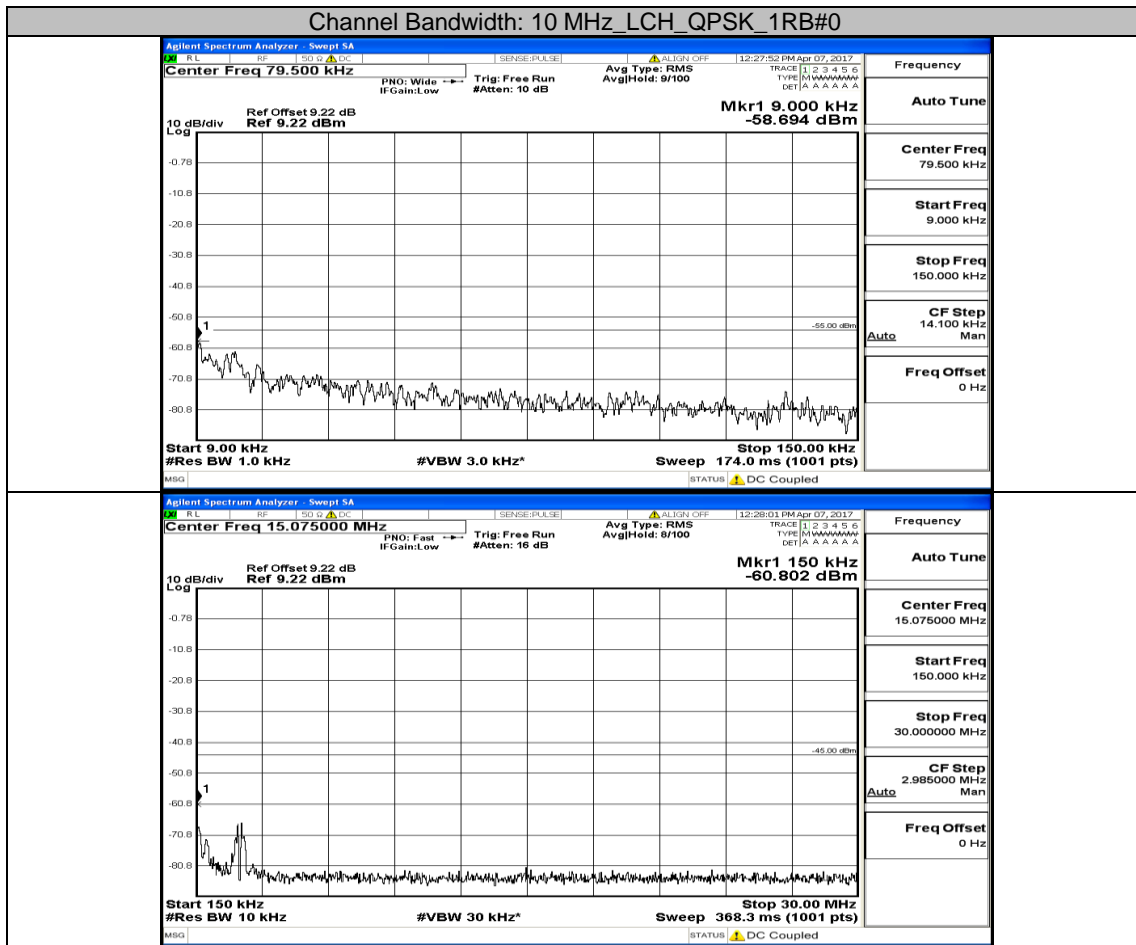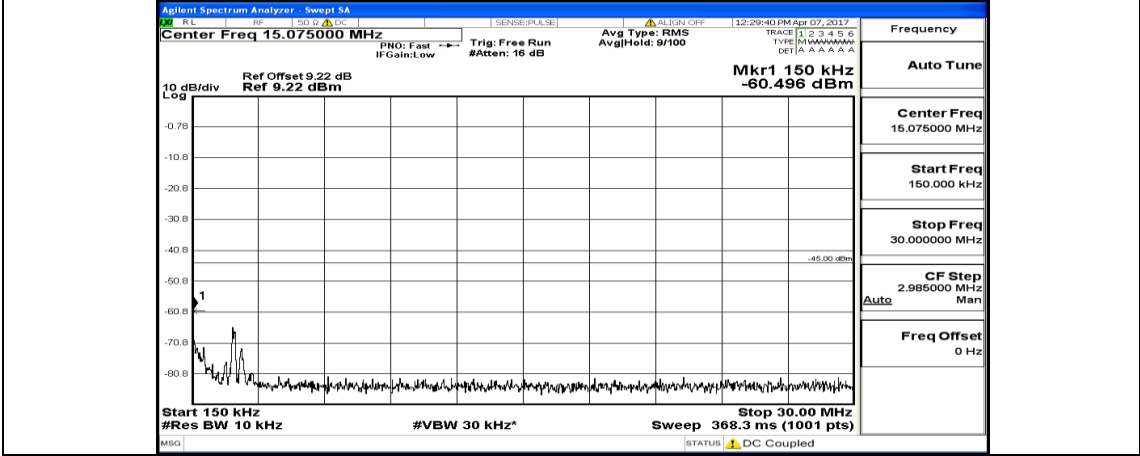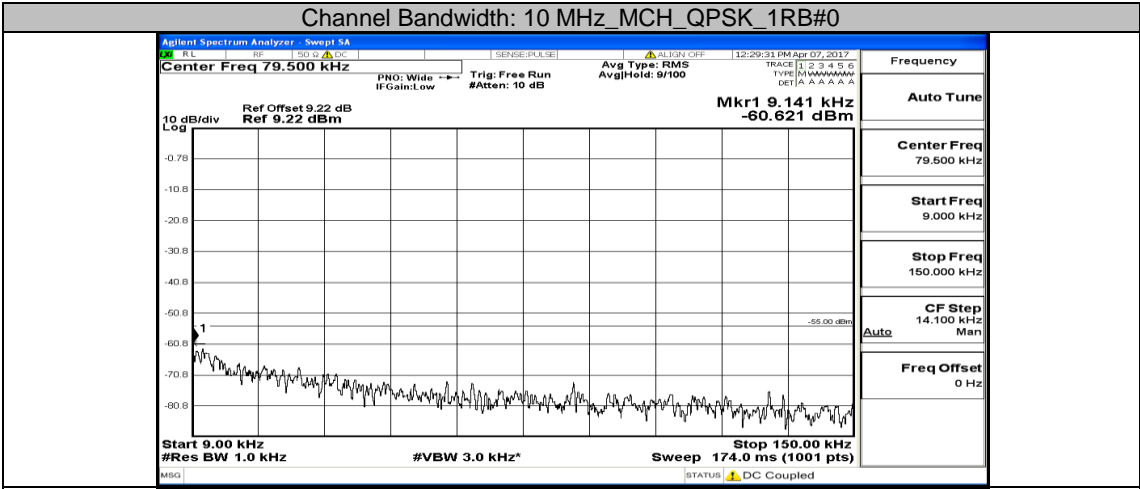## (Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#0

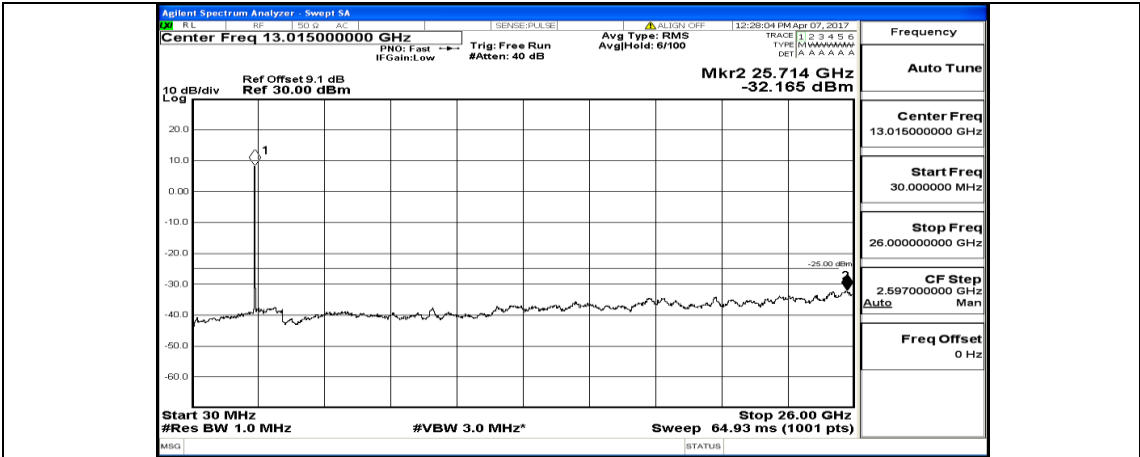## (Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#0

Agilent Spectrum Analyzer - Swept SA

LXI R L RF 50 Ω DC SENSE:PULSE ALIGN OFF 12:23:46 PM Apr 07, 2017

Center Freq 79.500 kHz

PNO: Wide Trig: Free Run Avg Type: RMS TRACE 1 2 3 4 5 6
IFGain:Low #Atten: 10 dB AvgHold: 9/100 TYPE M W W W W W
DET A A A A A A

Mkr1 9.000 kHz
-59.278 dBm

Ref Offset 9.22 dB
10 dB/div Ref 9.22 dBm
Log

-0.78
-10.8
-20.8
-30.8
-40.8
-50.8 -55.00 dBm
1
-60.8
-70.8
-80.8

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

Start 9.00 kHz Stop 150.00 kHz
#Res BW 1.0 kHz #VBW 3.0 kHz* Sweep 174.0 ms (1001 pts)
MSG STATUS DC Coupled

Agilent Spectrum Analyzer - Swept SA

LXI R L RF 50 Ω DC SENSE:PULSE ALIGN OFF 12:23:55 PM Apr 07, 2017

Center Freq 15.075000 MHz

PNO: Fast Trig: Free Run Avg Type: RMS TRACE 1 2 3 4 5 6
IFGain:Low #Atten: 16 dB AvgHold: 9/100 TYPE M W W W W W
DET A A A A A A

Mkr1 150 kHz
-59.716 dBm

Ref Offset 9.22 dB
10 dB/div Ref 9.22 dBm
Log

-0.78
-10.8
-20.8
-30.8
-40.8 -45.00 dBm
-50.8
1
-60.8
-70.8
-80.8

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

Start 150 kHz Stop 30.00 MHz
#Res BW 10 kHz #VBW 30 kHz* Sweep 368.3 ms (1001 pts)
MSG STATUS DC Coupled

Agilent Spectrum Analyzer - Swept SA

LXI R L RF 50 Ω AC SENSE:PULSE ALIGN OFF 12:23:58 PM Apr 07, 2017

Center Freq 13.015000000 GHz

PNO: Fast Trig: Free Run Avg Type: RMS TRACE 1 2 3 4 5 6
IFGain:Low #Atten: 40 dB AvgHold: 6/100 TYPE M W W W W W
DET A A A A A A

Mkr2 25.610 GHz
-32.082 dBm

Ref Offset 9.1 dB
10 dB/div Ref 30.00 dBm
Log

20.0
10.0 1
0.00
-10.0
-20.0
-25.00 dBm
-30.0
-40.0
-50.0
-60.0

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

Start 30 MHz Stop 26.00 GHz
#Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 64.93 ms (1001 pts)
MSG STATUS

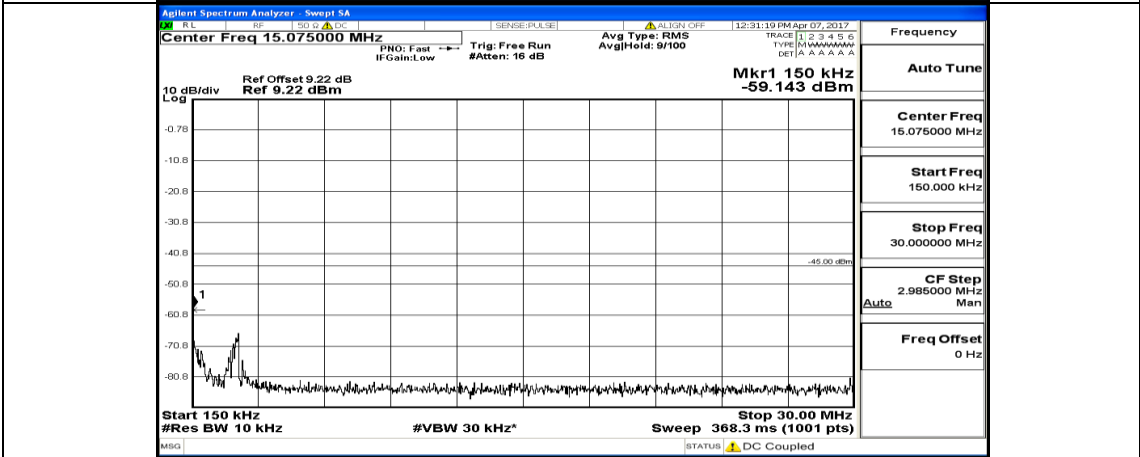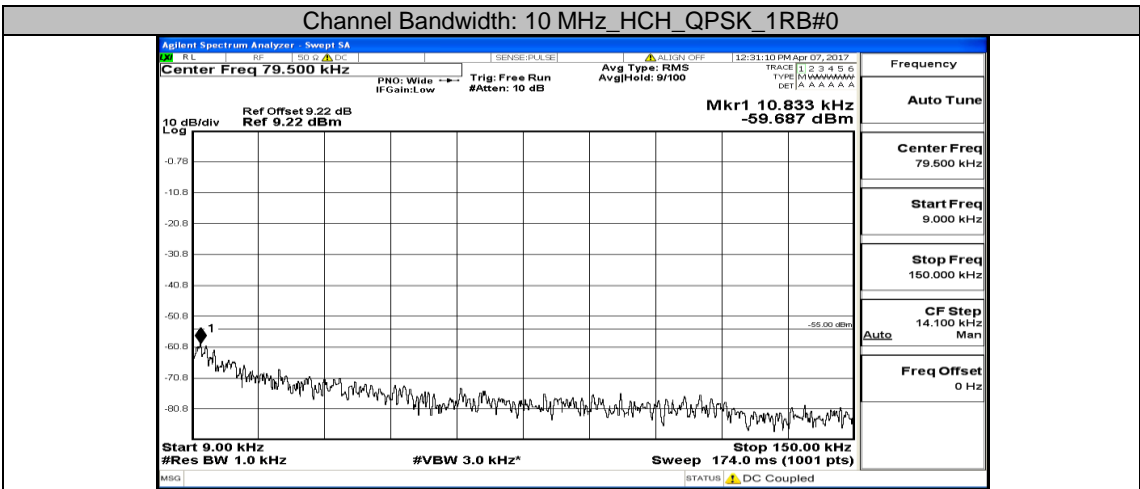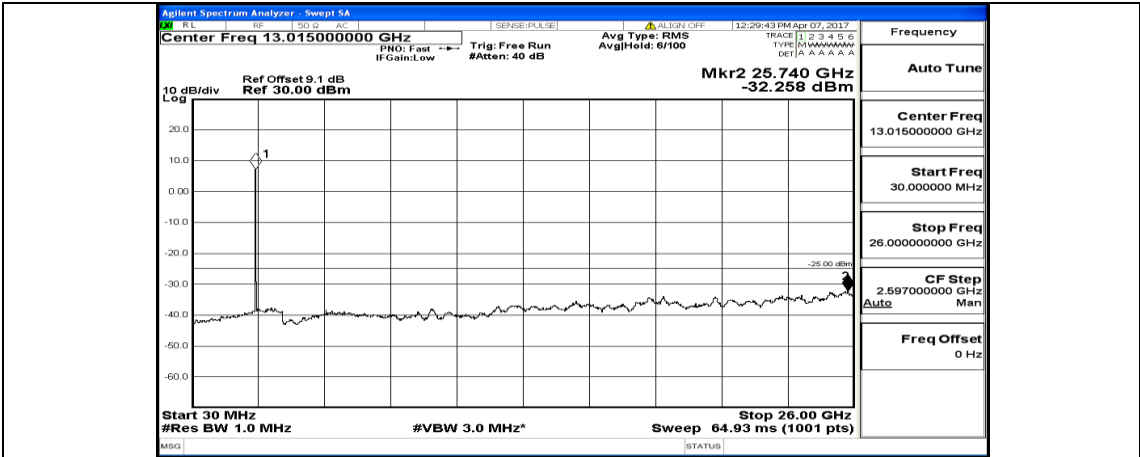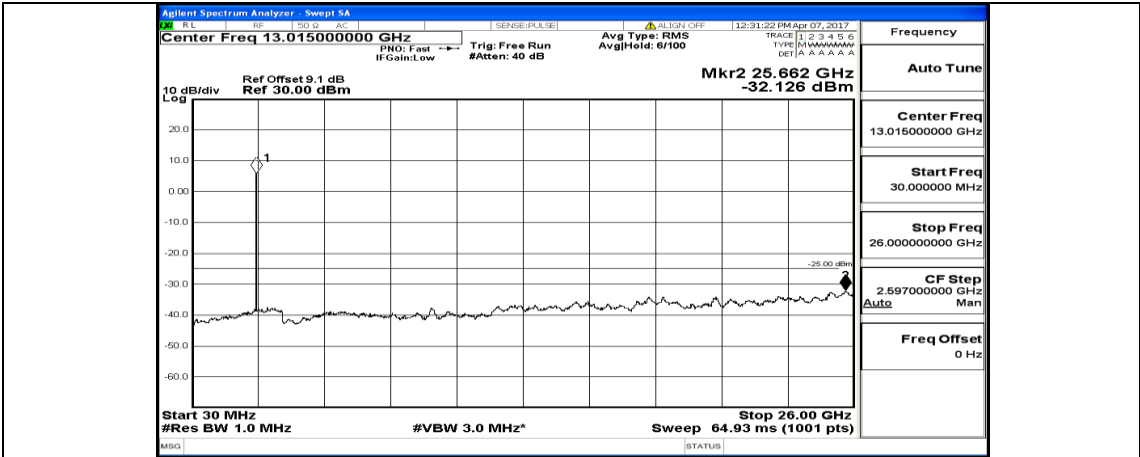## (Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#0

(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#0

Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz_LCH_QPSK_1RB#0

Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#0

Channel Bandwidth: 10 MHz_HCH_QPSK_1RB#0

Channel Bandwidth: 10 MHz_LCH_16QAM_1RB#0

Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#0
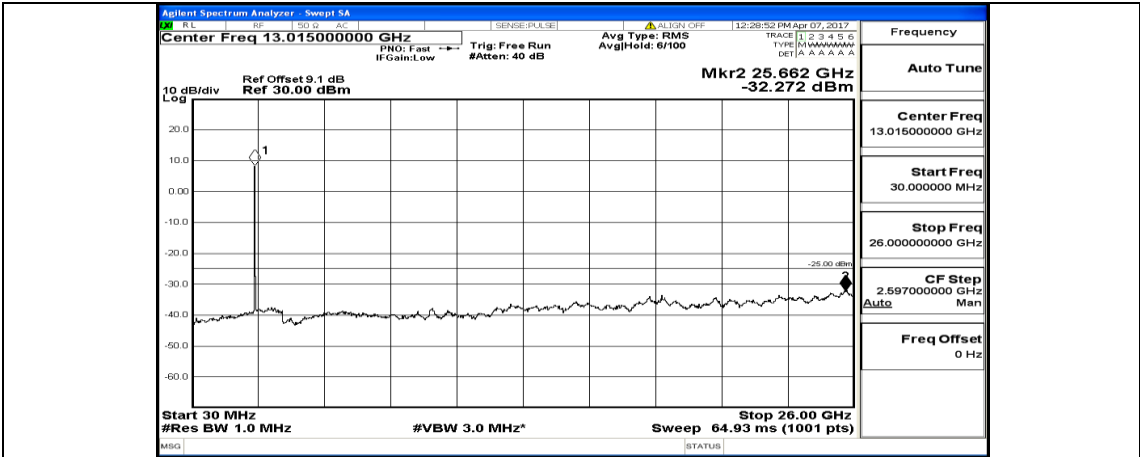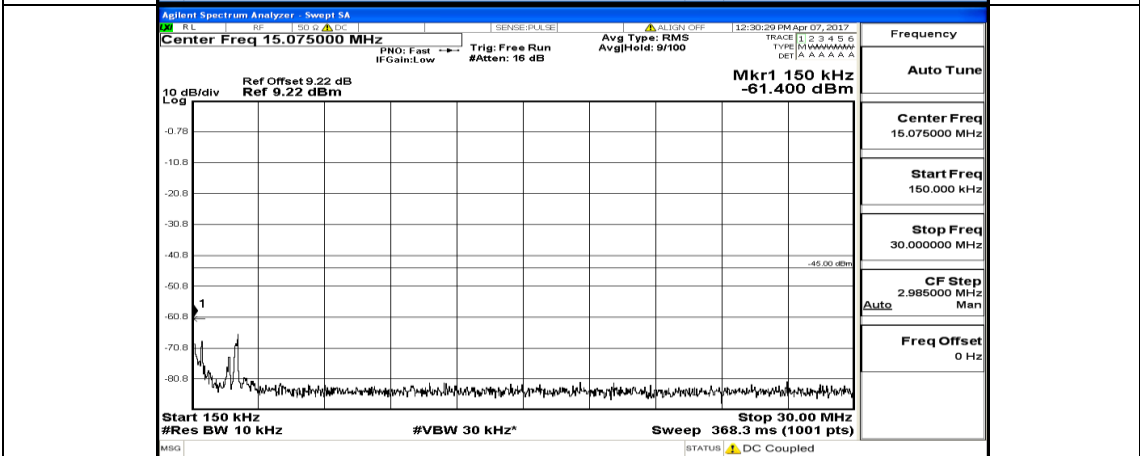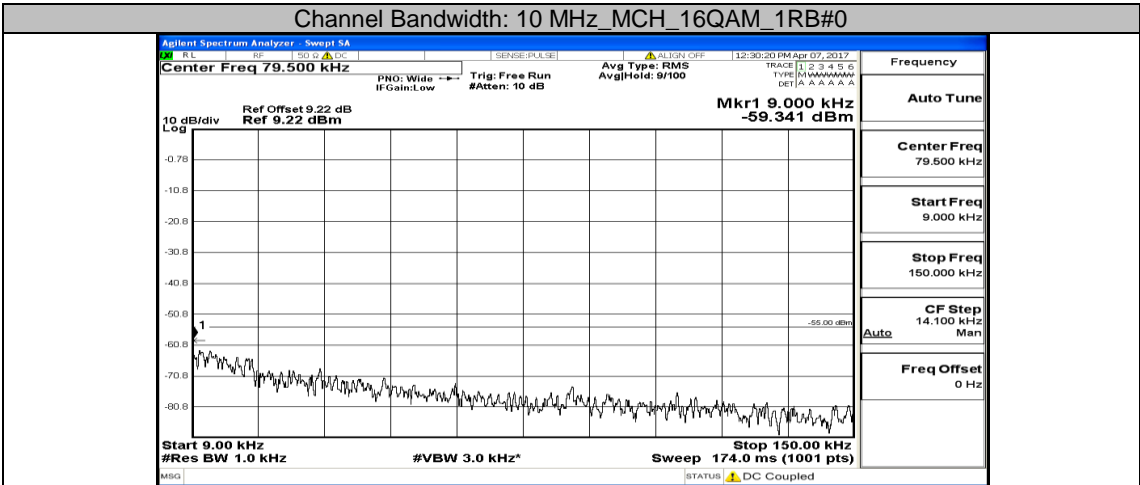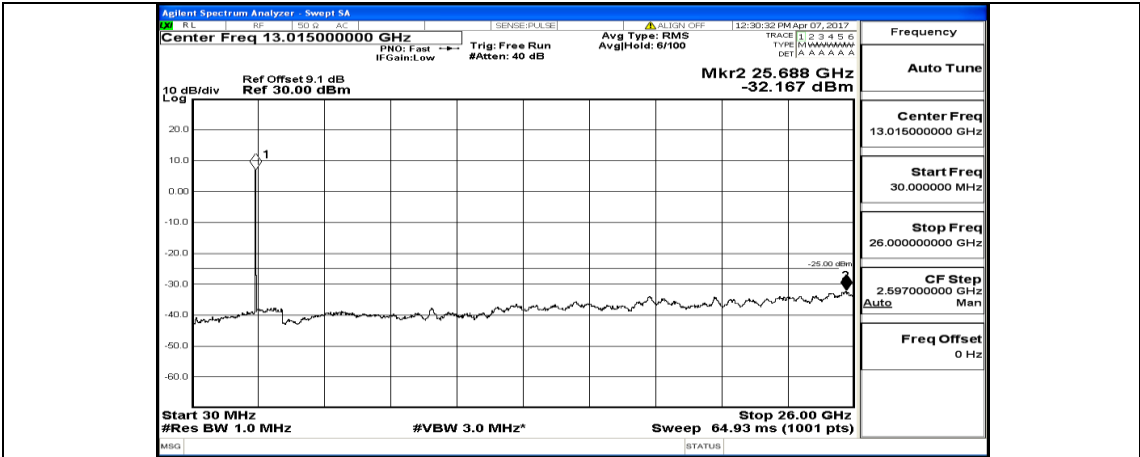
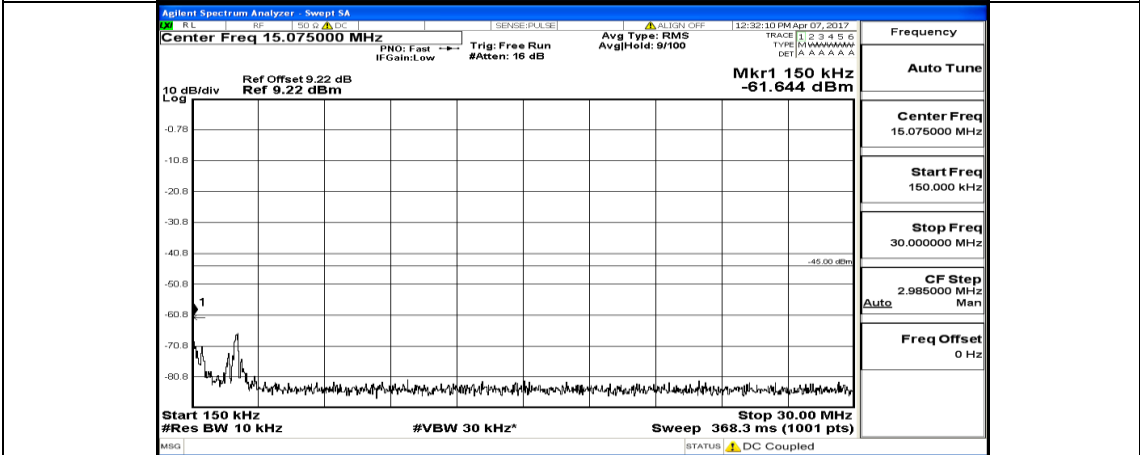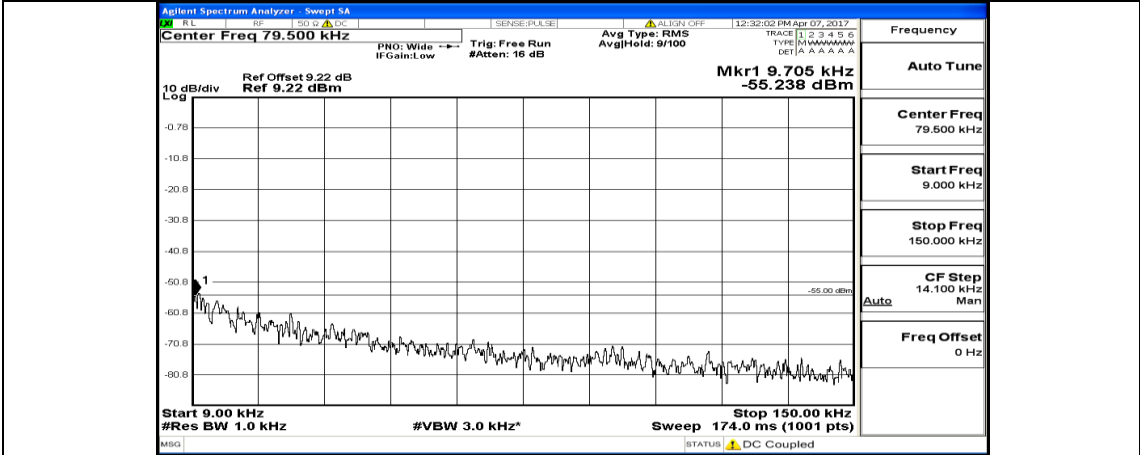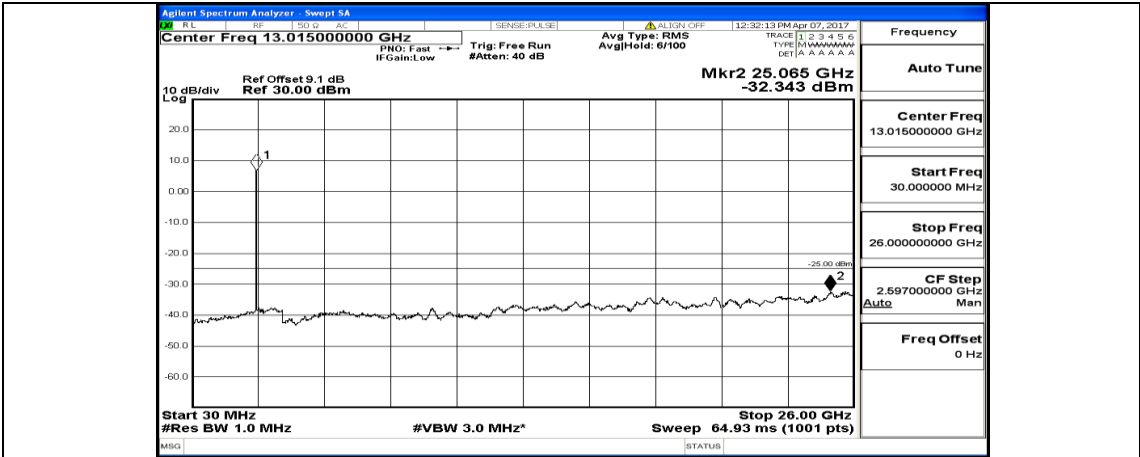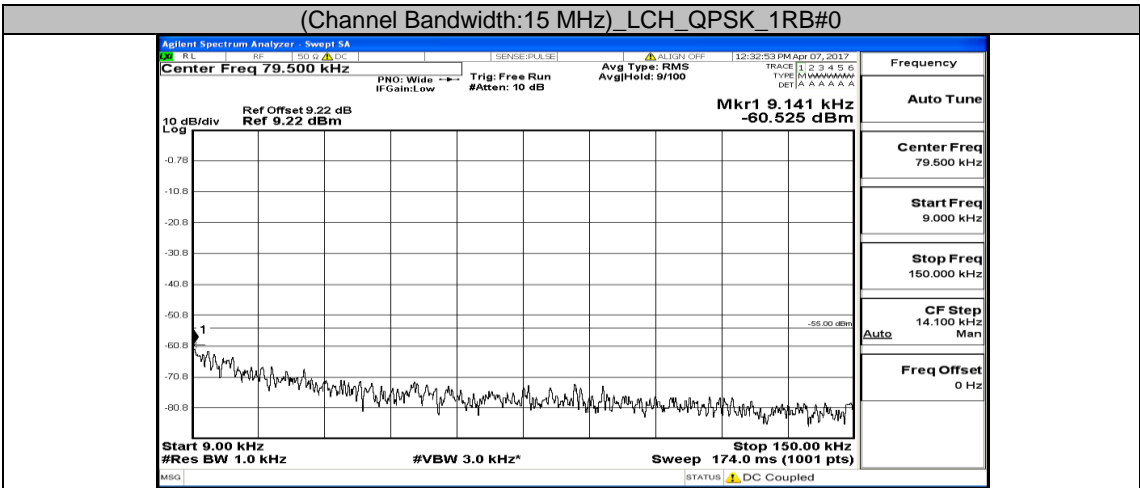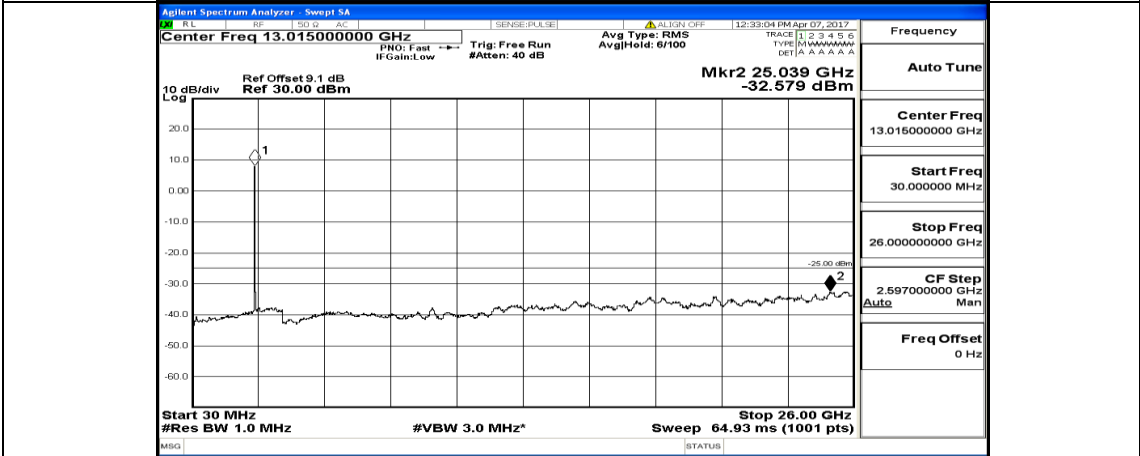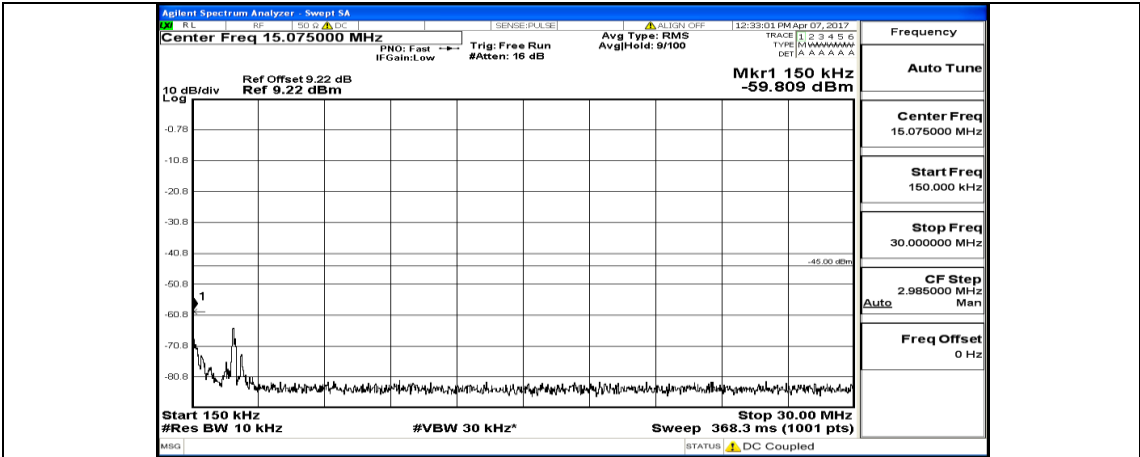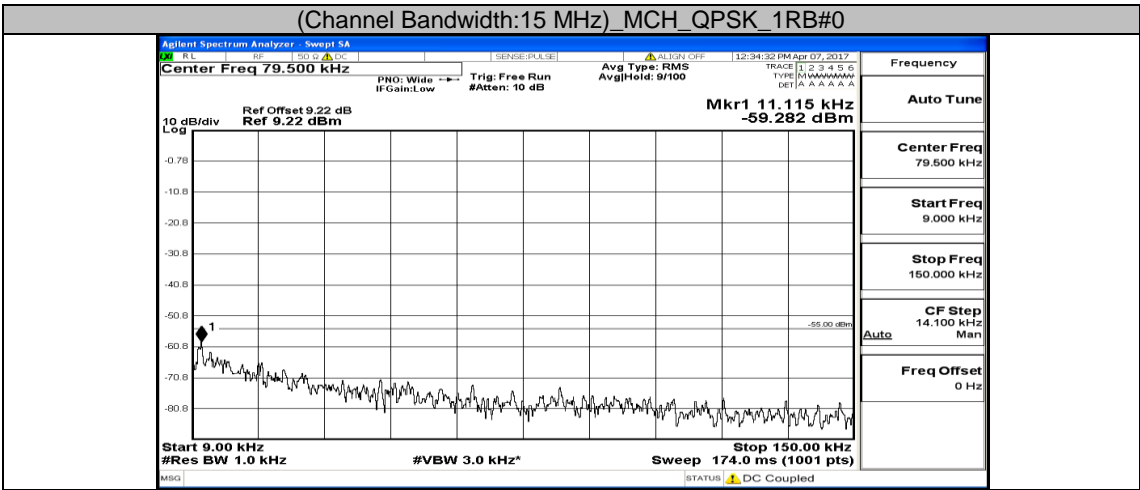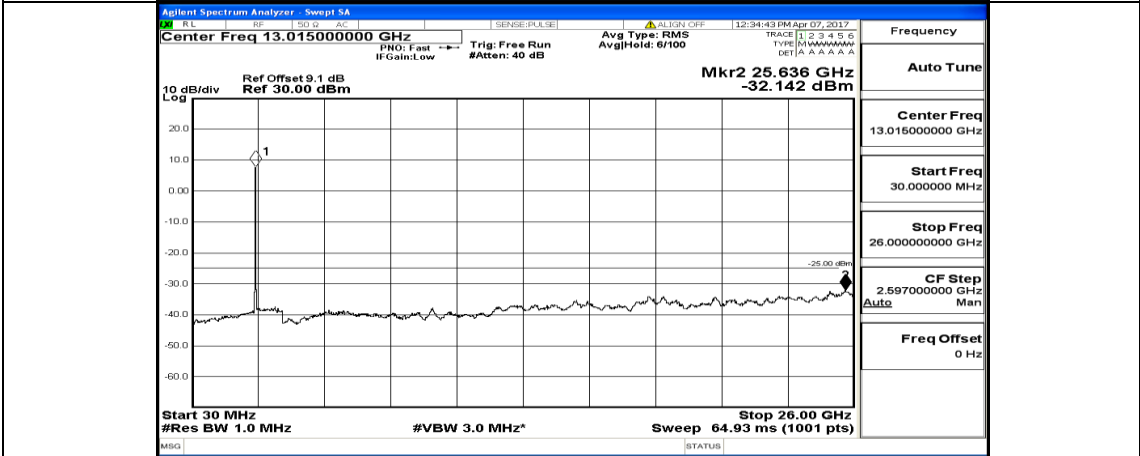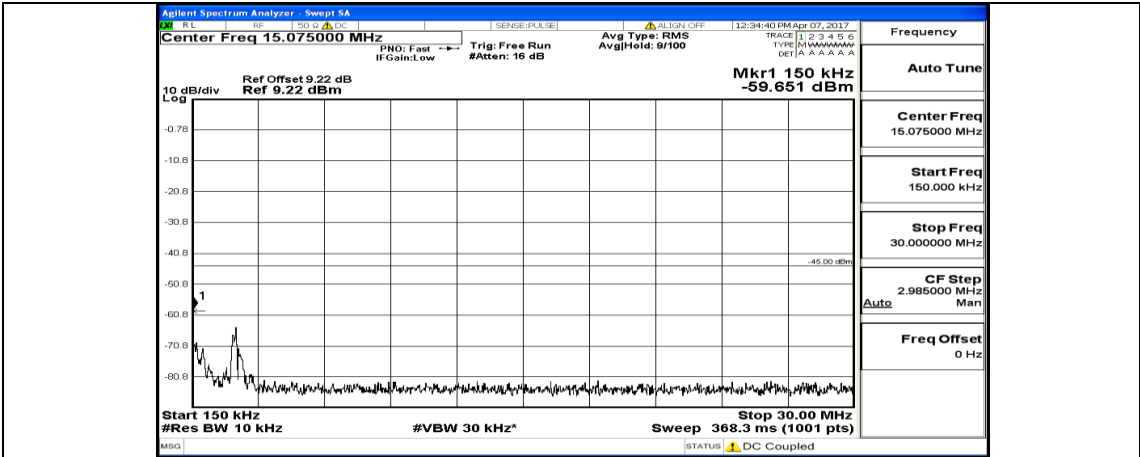## Channel Bandwidth: 10 MHz_HCH_16QAM_1RB#0

Channel Bandwidth: 15 MHz

(Channel Bandwidth:15 MHz)_LCH_QPSK_1RB#0
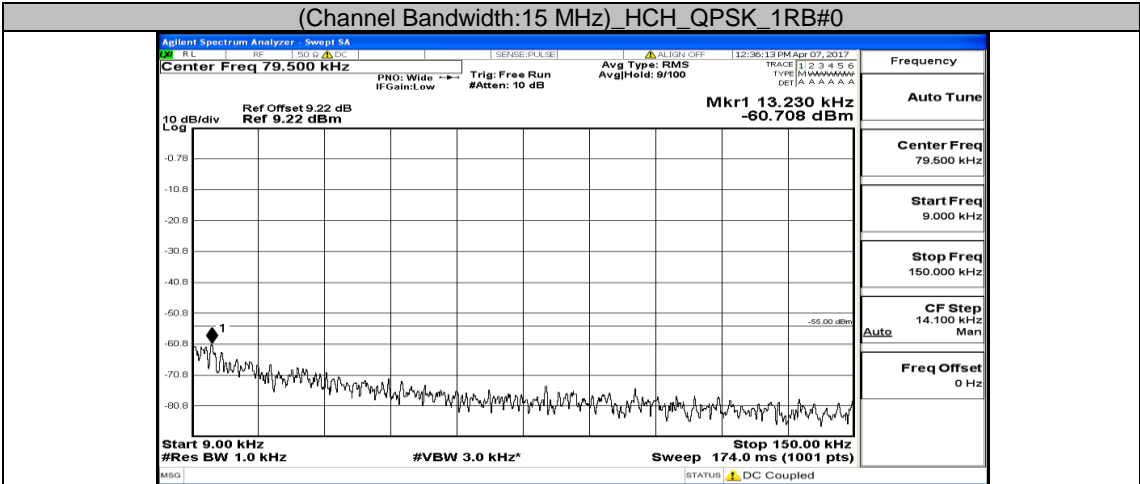
(Channel Bandwidth:15 MHz)_MCH_QPSK_1RB#0

(Channel Bandwidth:15 MHz)_HCH_QPSK_1RB#0

(Channel Bandwidth:15 MHz)_LCH_16QAM_1RB#0

(Channel Bandwidth:15 MHz)_MCH_16QAM_1RB#0

(Channel Bandwidth:15 MHz)_HCH_16QAM_1RB#0

Screen 1

Agilent Spectrum Analyzer - Swept SA

R L RF 50 Ω DC SENSE:PULSE ALIGN OFF 12:37:04 PM Apr 07, 2017

Center Freq 79.500 kHz

PNO: Wide Trig: Free Run Avg Type: RMS TRACE 1 2 3 4 5 6
IFGain:Low #Atten: 10 dB Avg|Hold: 9/100 TYPE M W W W W W
DET A A A A A A

Mkr1 9.141 kHz
-61.279 dBm

Ref Offset 9.22 dB
10 dB/div Ref 9.22 dBm
Log

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

-0.78
-10.8
-20.8
-30.8
-40.8
-50.8   -55.00 dBm
-60.8 1
-70.8
-80.8

Start 9.00 kHz Stop 150.00 kHz
#Res BW 1.0 kHz #VBW 3.0 kHz* Sweep 174.0 ms (1001 pts)
MSG STATUS DC Coupled

Screen 2

Agilent Spectrum Analyzer - Swept SA

R L RF 50 Ω DC SENSE:PULSE ALIGN OFF 12:37:13 PM Apr 07, 2017

Center Freq 15.075000 MHz

PNO: Fast Trig: Free Run Avg Type: RMS TRACE 1 2 3 4 5 6
IFGain:Low #Atten: 16 dB Avg|Hold: 9/100 TYPE M W W W W W
DET A A A A A A

Mkr1 150 kHz
-60.159 dBm

Ref Offset 9.22 dB
10 dB/div Ref 9.22 dBm
Log

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

-0.78
-10.8
-20.8
-30.8
-40.8   -45.00 dBm
-50.8
-60.8 1
-70.8
-80.8

Start 150 kHz Stop 30.00 MHz
#Res BW 10 kHz #VBW 30 kHz* Sweep 368.3 ms (1001 pts)
MSG STATUS DC Coupled

Screen 3

Agilent Spectrum Analyzer - Swept SA

R L RF 50 Ω AC SENSE:PULSE ALIGN OFF 12:37:16 PM Apr 07, 2017

Center Freq 13.015000000 GHz

PNO: Fast Trig: Free Run Avg Type: RMS TRACE 1 2 3 4 5 6
IFGain:Low #Atten: 40 dB Avg|Hold: 6/100 TYPE M W W W W W
DET A A A A A A

Mkr2 25.533 GHz
-32.375 dBm

Ref Offset 9.1 dB
10 dB/div Ref 30.00 dBm
Log

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

20.0
10.0 1
0.00
-10.0
-20.0   -25.00 dBm
-30.0
-40.0
-50.0
-60.0

Start 30 MHz Stop 26.00 GHz
#Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 64.93 ms (1001 pts)
MSG STATUS

Channel Bandwidth: 20 MHz

(Channel Bandwidth:20 MHz)_LCH_QPSK_1RB#0

(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#0

Plot 1

Agilent Spectrum Analyzer - Swept SA

Center Freq 79.500 kHz
SENSE:PULSE — ALIGN OFF — 12:39:35 PM Apr 07, 2017
Avg Type: RMS
Avg|Hold: 9/100
TRACE 1 2 3 4 5 6
TYPE M W W W W W
DET A A A A A A

PNO: Wide — Trig: Free Run
IFGain:Low — #Atten: 10 dB

Frequency
Auto Tune

Ref Offset 9.22 dB
10 dB/div Ref 9.22 dBm
Log

Mkr1 10.692 kHz
-62.285 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

-0.78
-10.8
-20.8
-30.8
-40.8
-50.8 .... -55.00 dBm
-60.8 1
-70.8
-80.8

Start 9.00 kHz
#Res BW 1.0 kHz   #VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.0 ms (1001 pts)

MSG   STATUS DC Coupled

Plot 2

Agilent Spectrum Analyzer - Swept SA

Center Freq 15.075000 MHz
SENSE:PULSE — ALIGN OFF — 12:39:44 PM Apr 07, 2017
Avg Type: RMS
Avg|Hold: 9/100
TRACE 1 2 3 4 5 6
TYPE M W W W W W
DET A A A A A A

PNO: Fast — Trig: Free Run
IFGain:Low — #Atten: 16 dB

Frequency
Auto Tune

Ref Offset 9.22 dB
10 dB/div Ref 9.22 dBm
Log

Mkr1 150 kHz
-58.613 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

-0.78
-10.8
-20.8
-30.8
-40.8 .... -45.00 dBm
-50.8
-60.8 1
-70.8
-80.8

Start 150 kHz
#Res BW 10 kHz   #VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.3 ms (1001 pts)

MSG   STATUS DC Coupled

Plot 3

Agilent Spectrum Analyzer - Swept SA

Center Freq 13.015000000 GHz
SENSE:PULSE — ALIGN OFF — 12:39:47 PM Apr 07, 2017
Avg Type: RMS
Avg|Hold: 6/100
TRACE 1 2 3 4 5 6
TYPE M W W W W W
DET A A A A A A

PNO: Fast — Trig: Free Run
IFGain:Low — #Atten: 40 dB

Frequency
Auto Tune

Ref Offset 9.1 dB
10 dB/div Ref 30.00 dBm
Log

Mkr2 25.065 GHz
-32.494 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

20.0
10.0 1
0.00
-10.0
-20.0 .... -25.00 dBm
-30.0   2
-40.0
-50.0
-60.0

Start 30 MHz
#Res BW 1.0 MHz   #VBW 3.0 MHz*
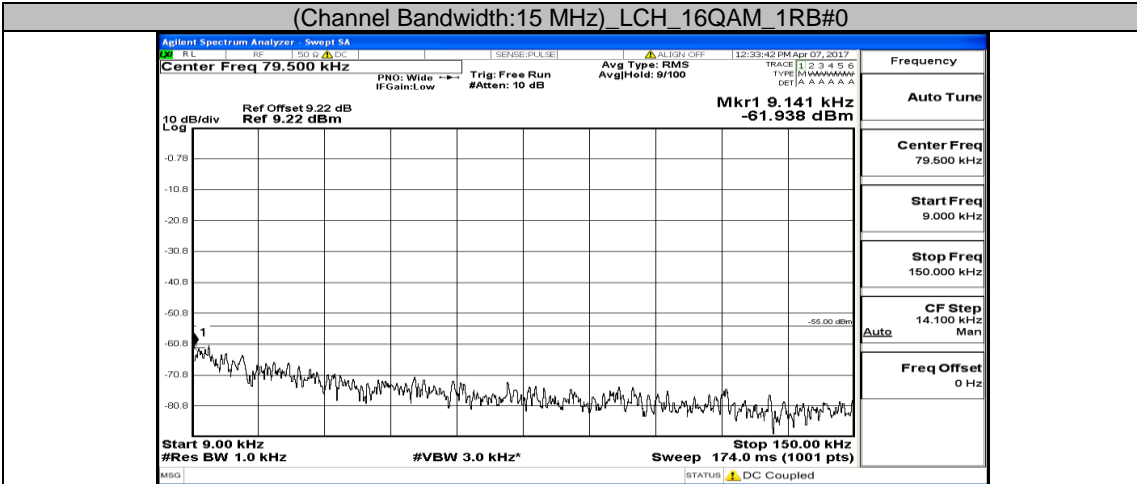Stop 26.00 GHz
Sweep 64.93 ms (1001 pts)

MSG   STATUS

(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#0

(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#0

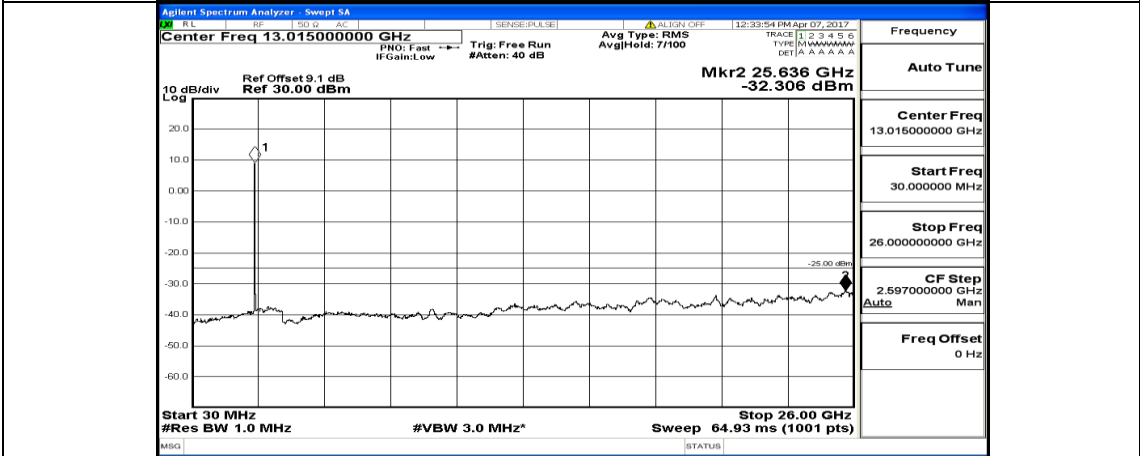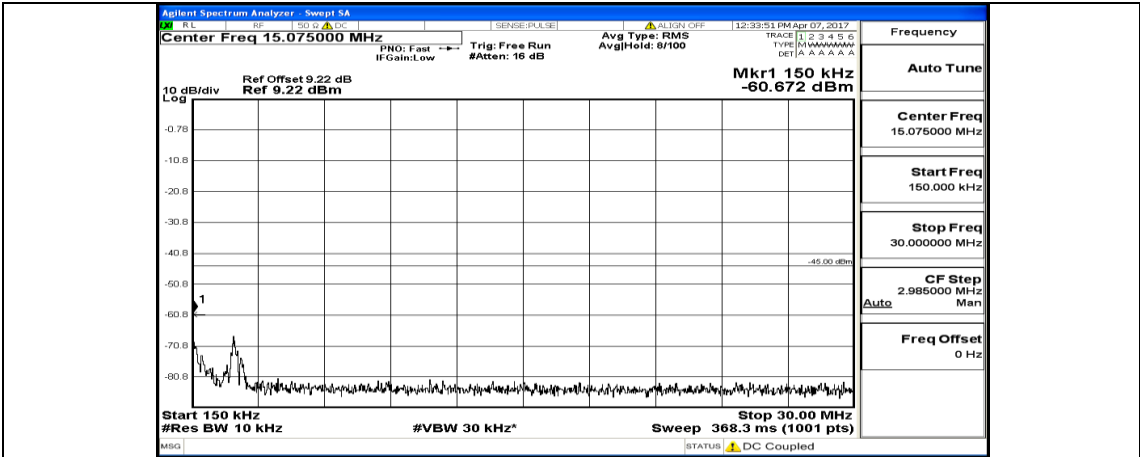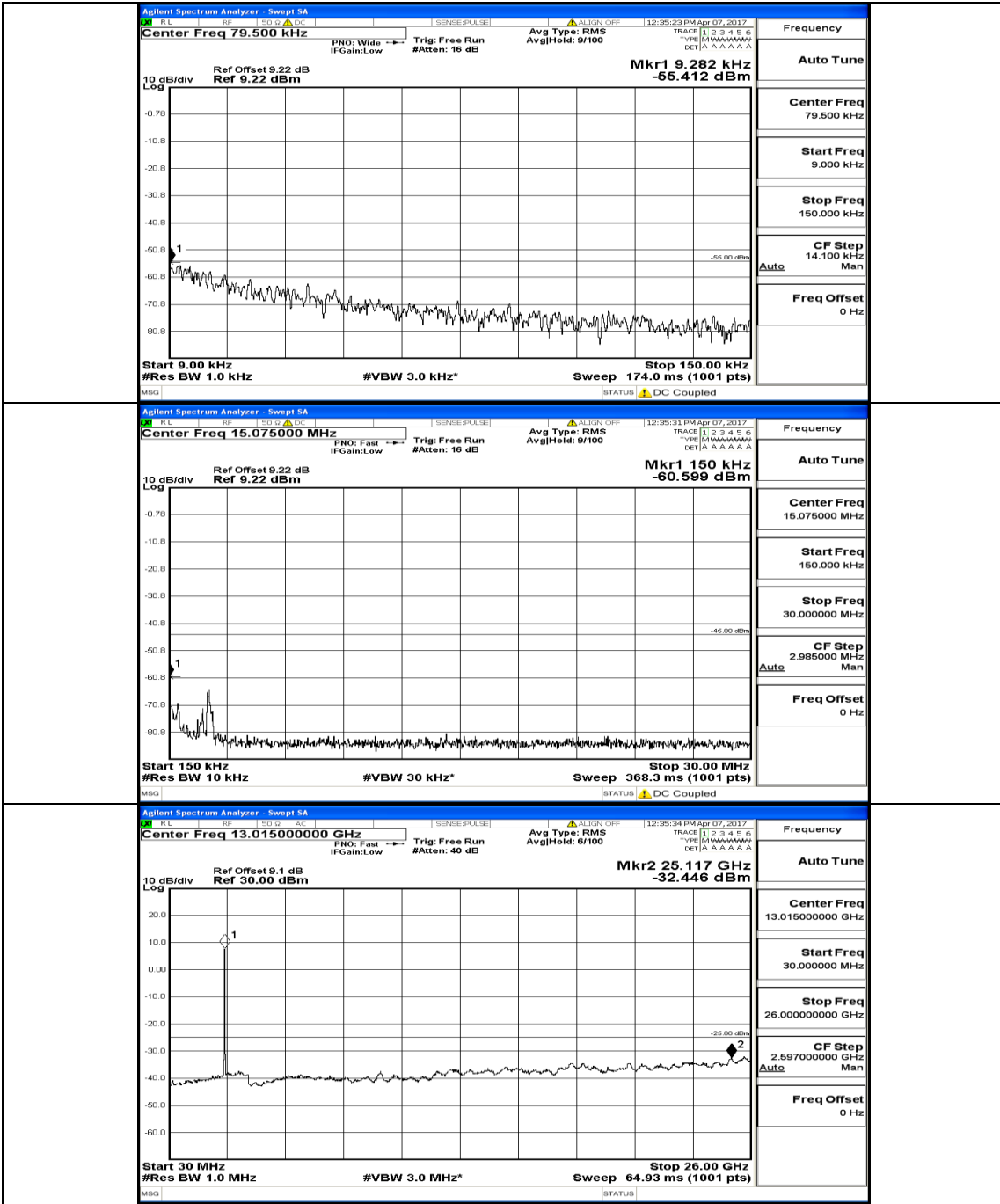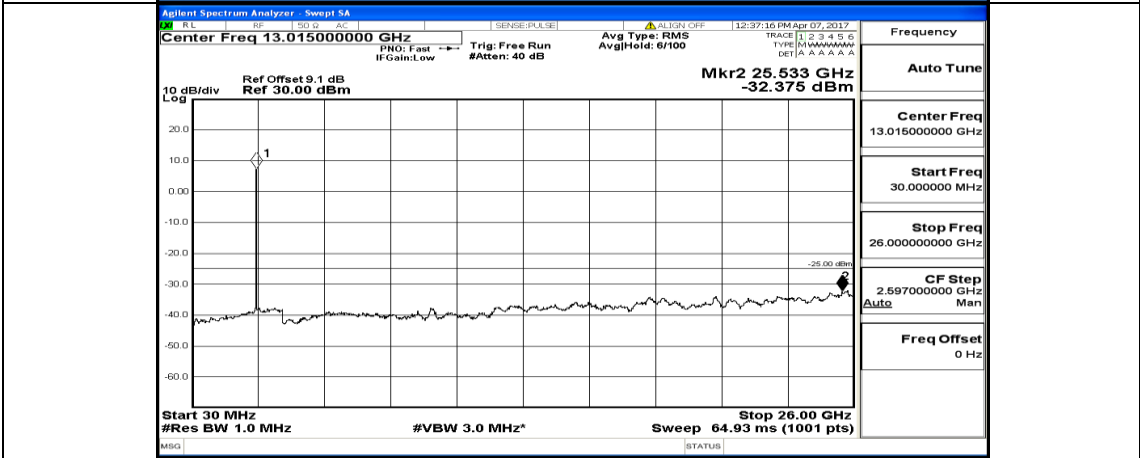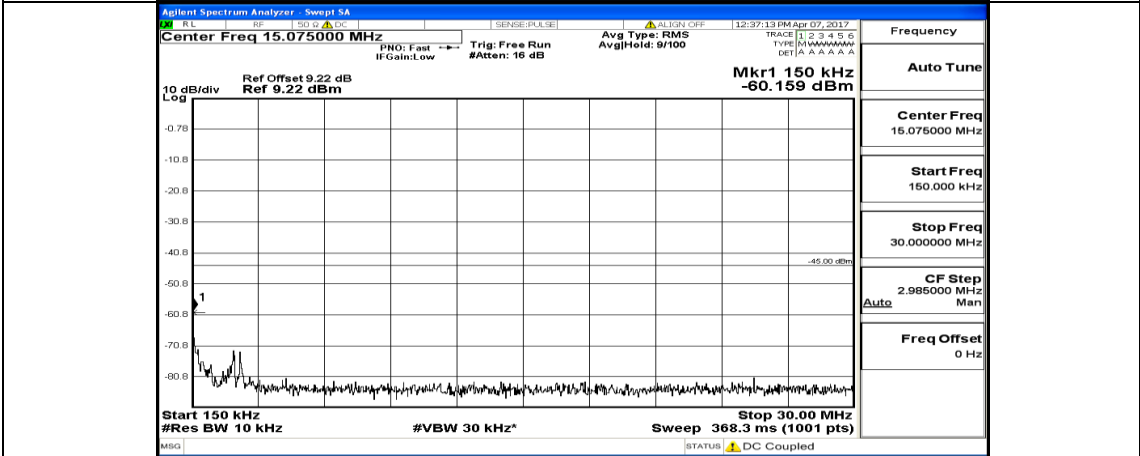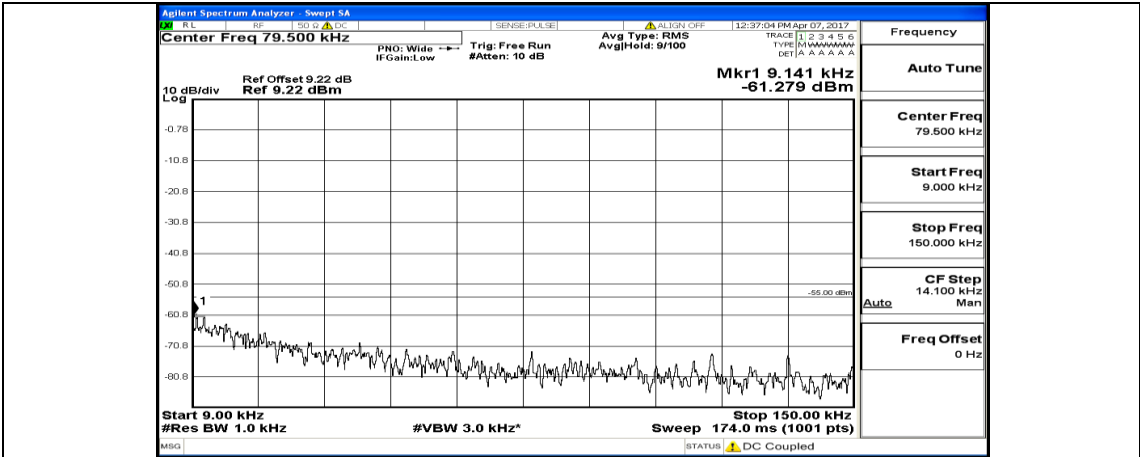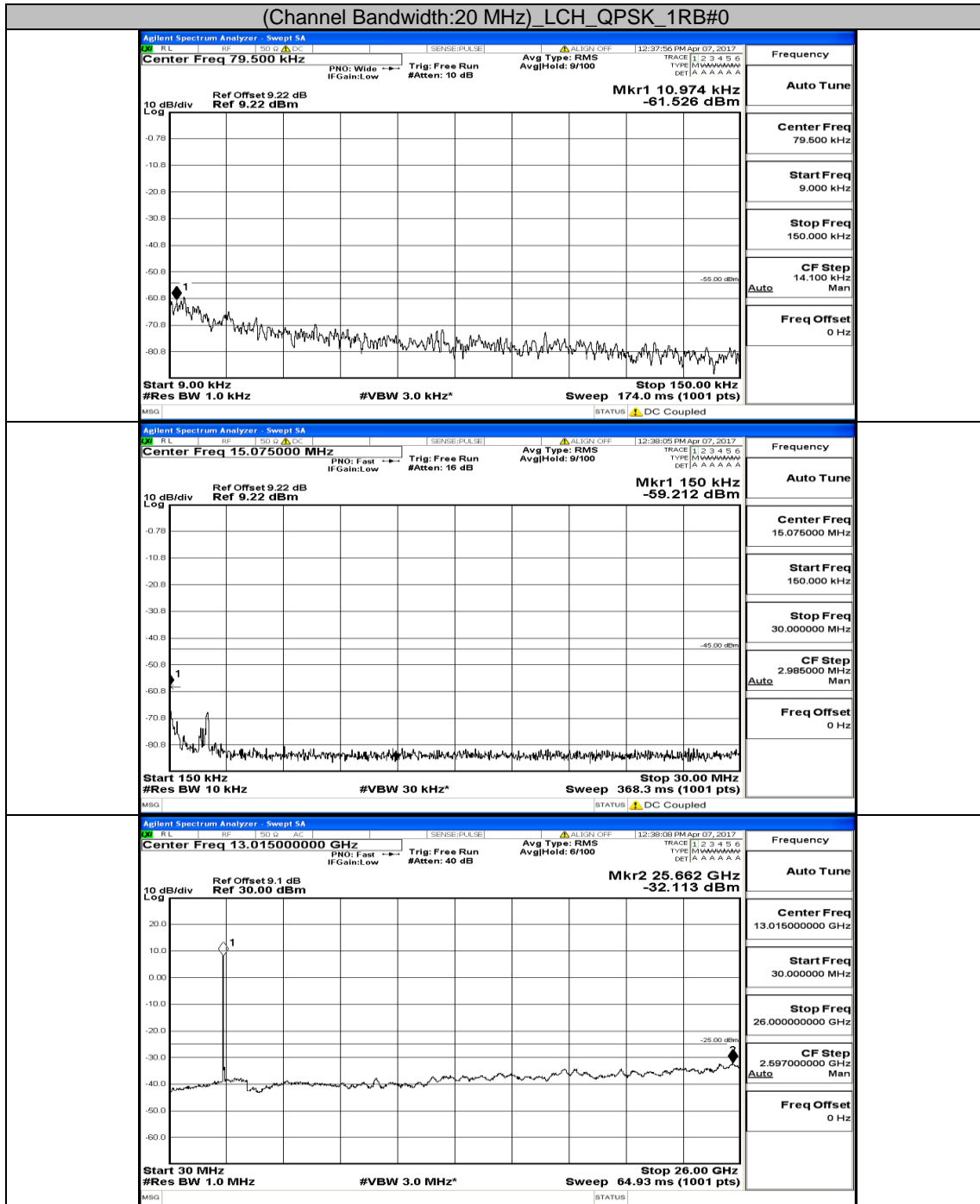## (Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#0

Agilent Spectrum Analyzer - Swept SA

Marker 1 10.269000 kHz

SENSE:PULSE   ALIGN AUTO   07:37:39 PM Jun 06, 2017

Avg Type: RMS
AvgHold: 24/100

PNO: Wide   Trig: Free Run
IFGain:Low   #Atten: 10 dB

Ref Offset 9.22 dB
Ref 9.22 dBm
10 dB/div
Log

Mkr1 10.269 kHz
-56.991 dBm

Start 9.00 kHz   Stop 150.00 kHz
#Res BW 1.0 kHz   #VBW 3.0 kHz*   Sweep 174.0 ms (1001 pts)

Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More 1 of 2

Agilent Spectrum Analyzer - Swept SA

Center Freq 15.075000 MHz

SENSE:PULSE   ALIGN OFF   12:40:35 PM Apr 07, 2017

Avg Type: RMS
AvgHold: 9/100

PNO: Fast   Trig: Free Run
IFGain:Low   #Atten: 16 dB

Ref Offset 9.22 dB
Ref 9.22 dBm
10 dB/div
Log

Mkr1 150 kHz
-60.602 dBm

Start 150 kHz   Stop 30.00 MHz
#Res BW 10 kHz   #VBW 30 kHz*   Sweep 368.3 ms (1001 pts)

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

SENSE:PULSE   ALIGN OFF   12:40:38 PM Apr 07, 2017

Avg Type: RMS
AvgHold: 6/100

PNO: Fast   Trig: Free Run
IFGain:Low   #Atten: 40 dB

Ref Offset 9.1 dB
Ref 30.00 dBm
10 dB/div
Log

Mkr2 25.662 GHz
-32.378 dBm

Start 30 MHz   Stop 26.00 GHz
#Res BW 1.0 MHz   #VBW 3.0 MHz*   Sweep 64.93 ms (1001 pts)

Frequency
Auto Tune
Center Freq 13.015000000 GHz
Start Freq 30.000000 MHz
Stop Freq 26.000000000 GHz
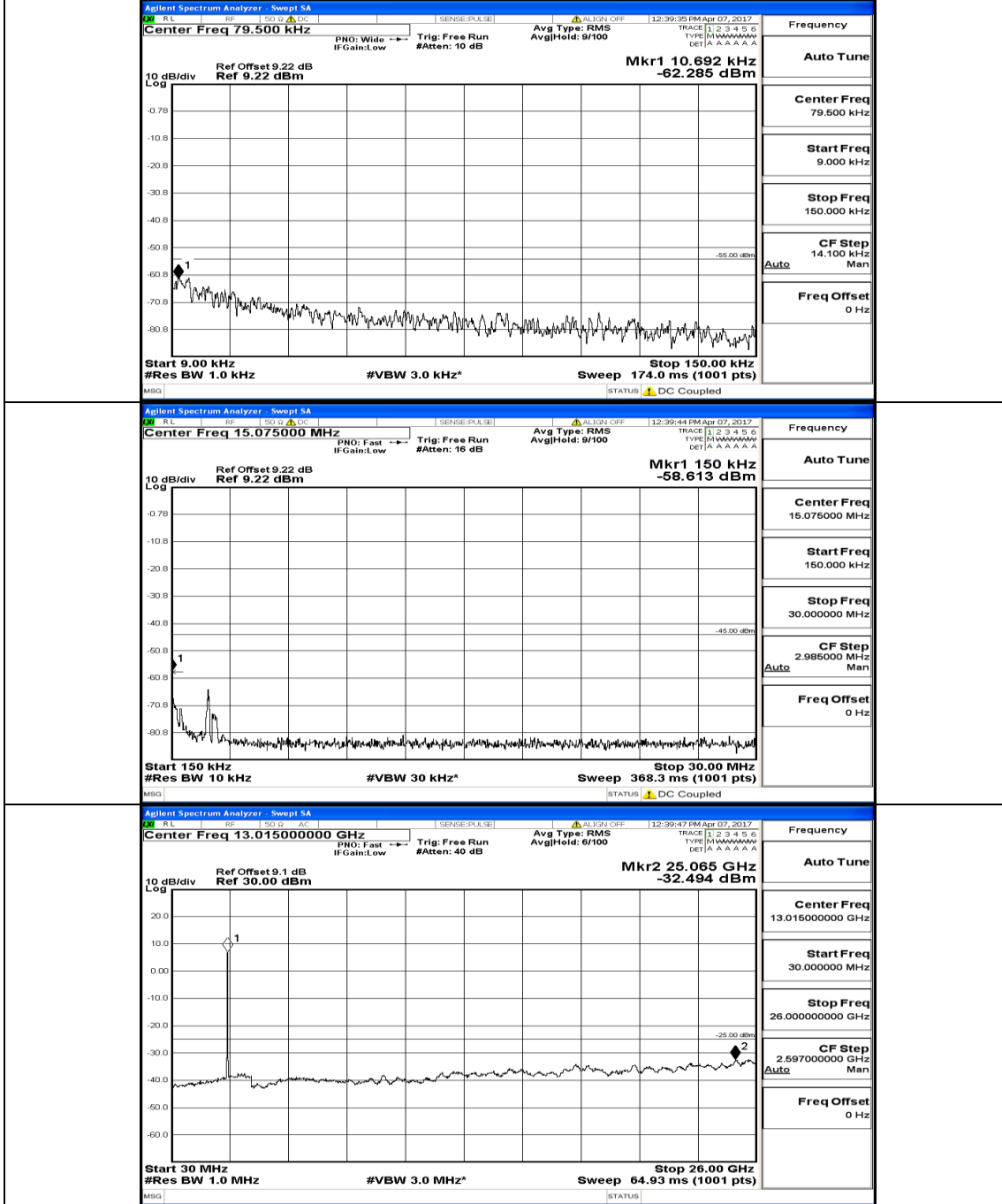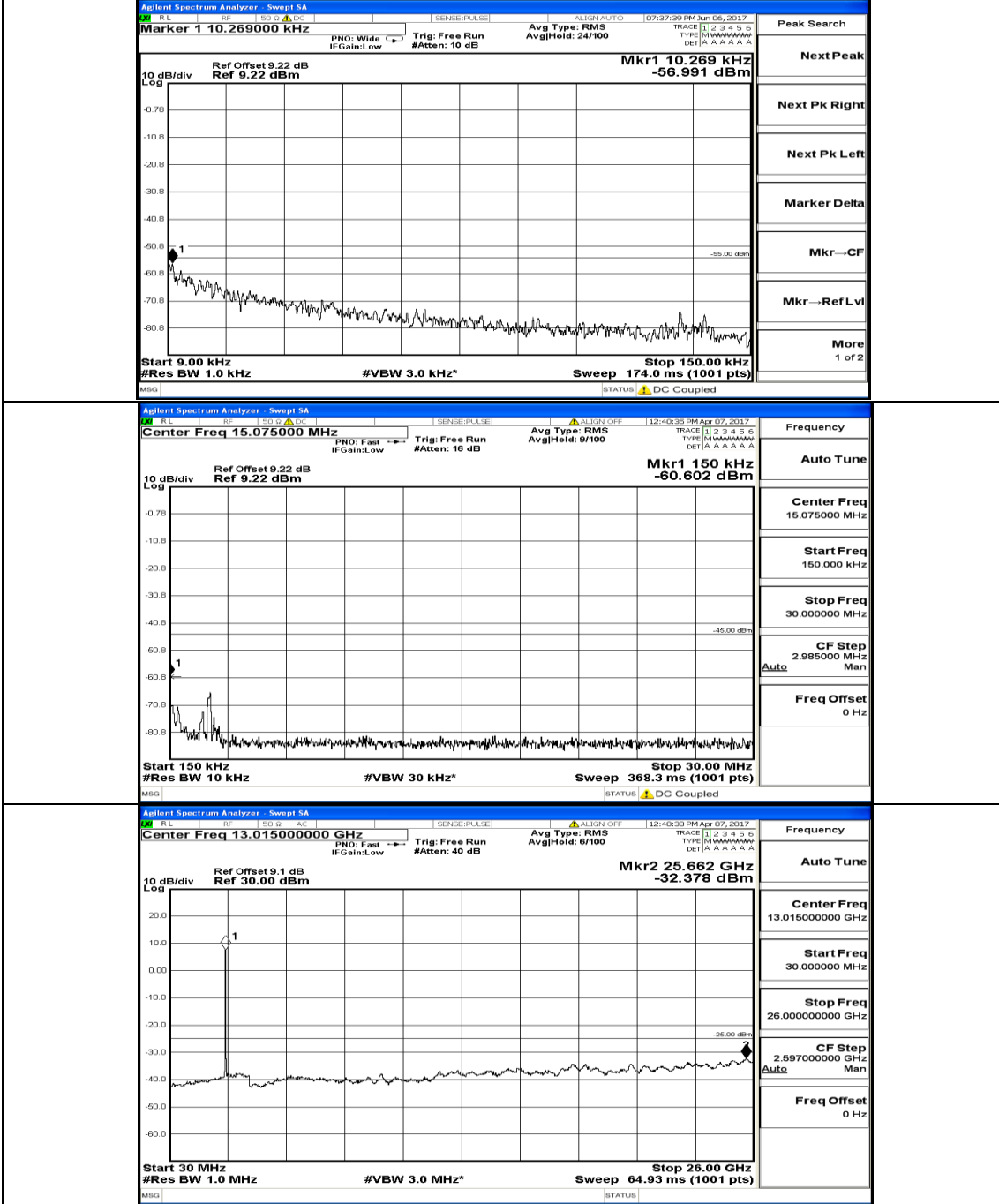CF Step 2.597000000 GHz Auto Man
Freq Offset 0 Hz

(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#0