

5.1.1.1.4.1.2 Test RB = RB1#49





Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 09:54:12 PM Jan 15, 2018

Center Freq 824.000000 MHz Avg Type: RMS
PNO: Wide Trig: Free Run
IFGain:Low #Atten: 36 dB

TRACE 1 2 3 4 5 6
TYPE M W W W W W W W
DET A A A A A A

Ref Offset 6.9 dB
Ref 30.00 dBm

Mkr1 824.000 MHz
-33.868 dBm

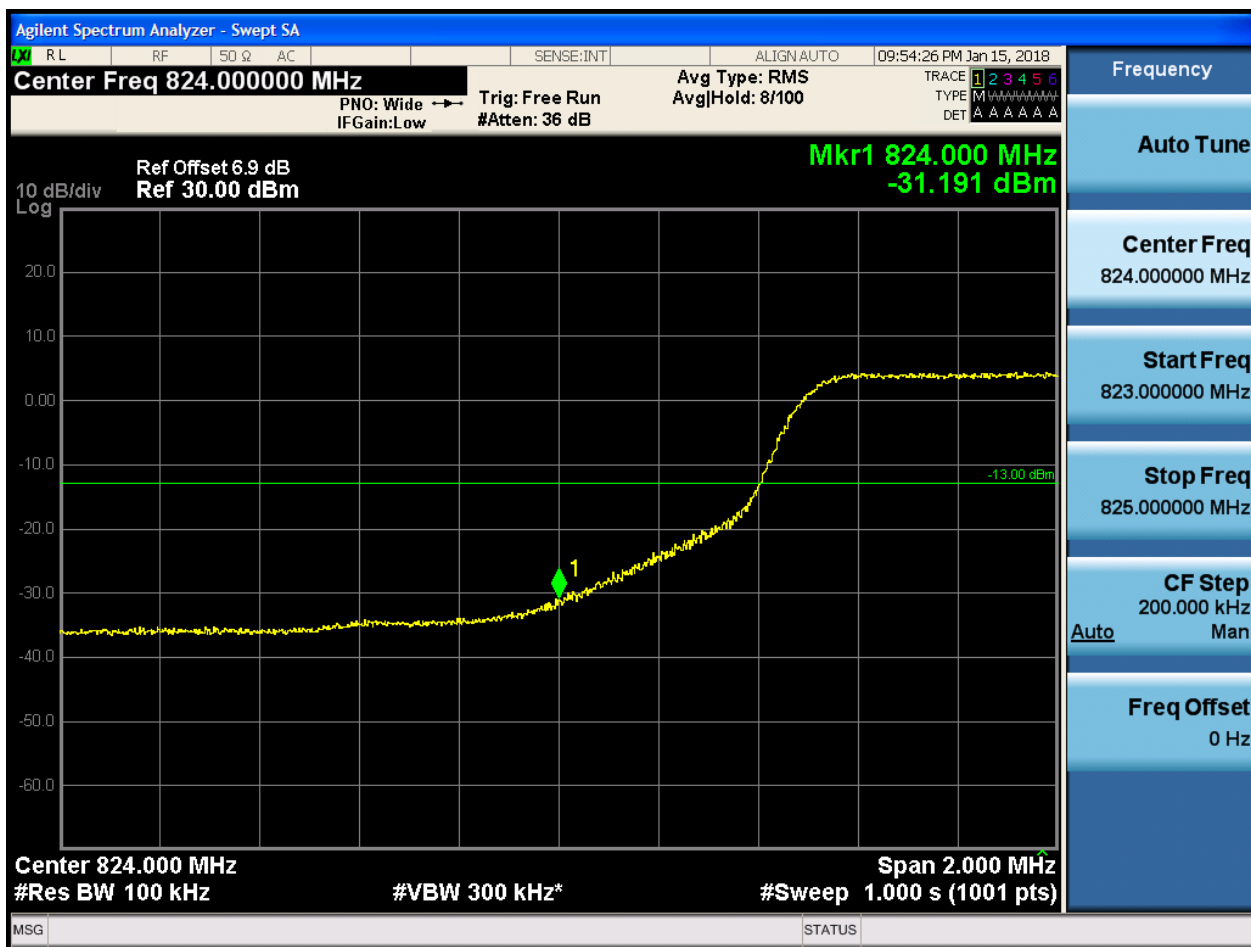
10 dB/div
Log

Center 824.000 MHz
#Res BW 100 kHz
#VBW 300 kHz*
Span 2.000 MHz
#Sweep 1.000 s (1001 pts)

MSG STATUS



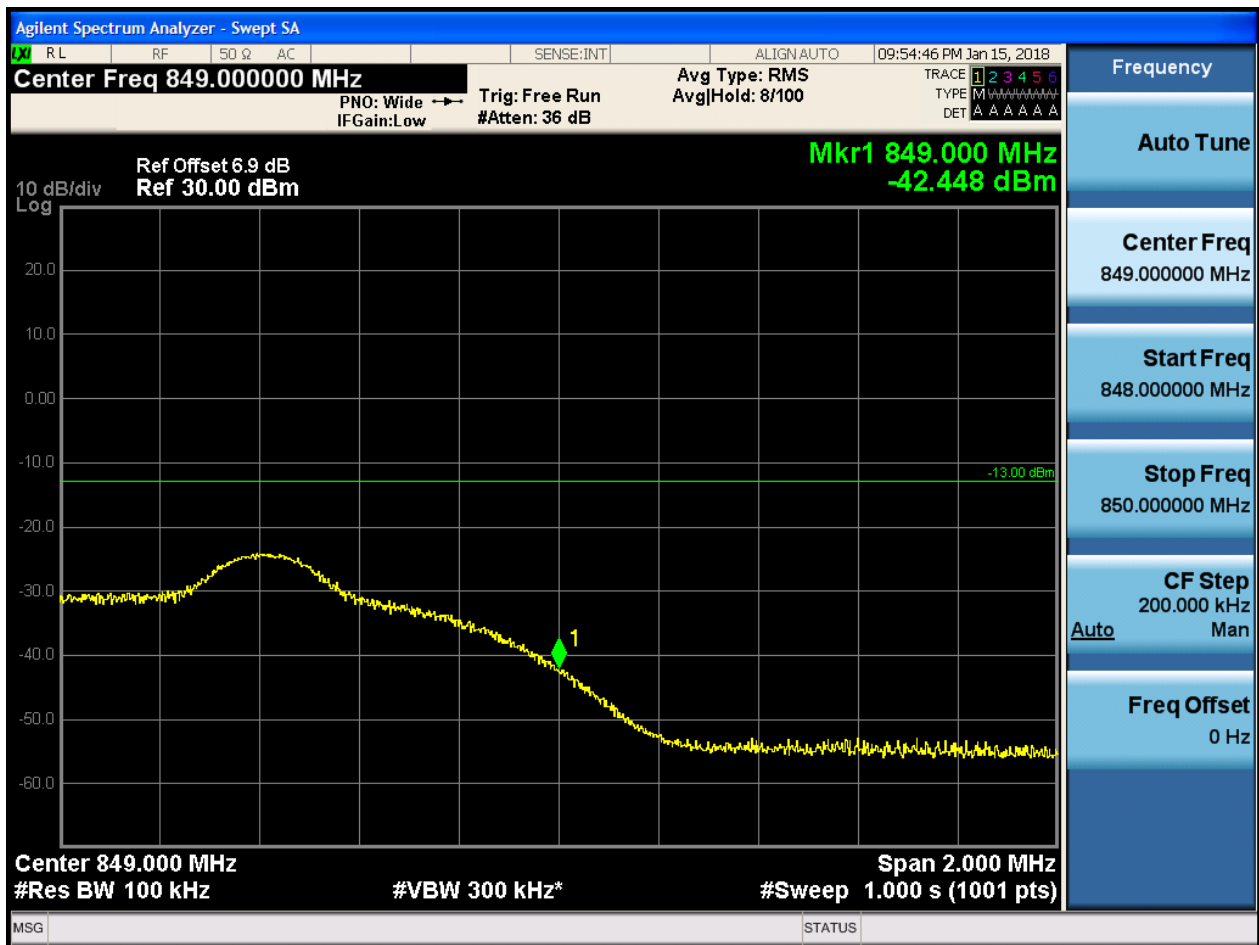
5.1.1.1.4.1.4 Test RB = RB50#0





5.1.1.1.4.2 Test Channel = HCH

5.1.1.1.4.2.1 Test RB = RB1#0



[illegible]



Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 09:55:14 PM Jan 15, 2018

Center Freq 849.000000 MHz Avg Type: RMS
PNO: Wide IFGain:Low Trig: Free Run AvgHold: 8/100
#Atten: 36 dB

TRACE 1 2 3 4 5 6
TYPE M W W W W W W W
DET A A A A A A

Ref Offset 6.9 dB
Ref 30.00 dBm

Mkr1 849.010 MHz
-33.155 dBm

10 dB/div
Log

Center 849.000 MHz
#Res BW 100 kHz

#VBW 300 kHz*

Span 2.000 MHz
#Sweep 1.000 s (1001 pts)

MSG STATUS

Frequency

Auto Tune

Center Freq
849.000000 MHz

Start Freq
848.000000 MHz

Stop Freq
850.000000 MHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz



Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 09:55:28 PM Jan 15, 2018

Center Freq 849.000000 MHz Avg Type: RMS
PNO: Wide IFGain:Low Trig: Free Run AvgHold: 8/100
#Atten: 36 dB

TRACE 1 2 3 4 5 6
TYPE M W W W W W W W
DET A A A A A A

Ref Offset 6.9 dB
Ref 30.00 dBm

Mkr1 849.010 MHz
-32.010 dBm

10 dB/div
Log

Center 849.000 MHz
#Res BW 100 kHz
#VBW 300 kHz*
Span 2.000 MHz
#Sweep 1.000 s (1001 pts)

MSG STATUS

Frequency

Auto Tune

Center Freq
849.000000 MHz

Start Freq
848.000000 MHz

Stop Freq
850.000000 MHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

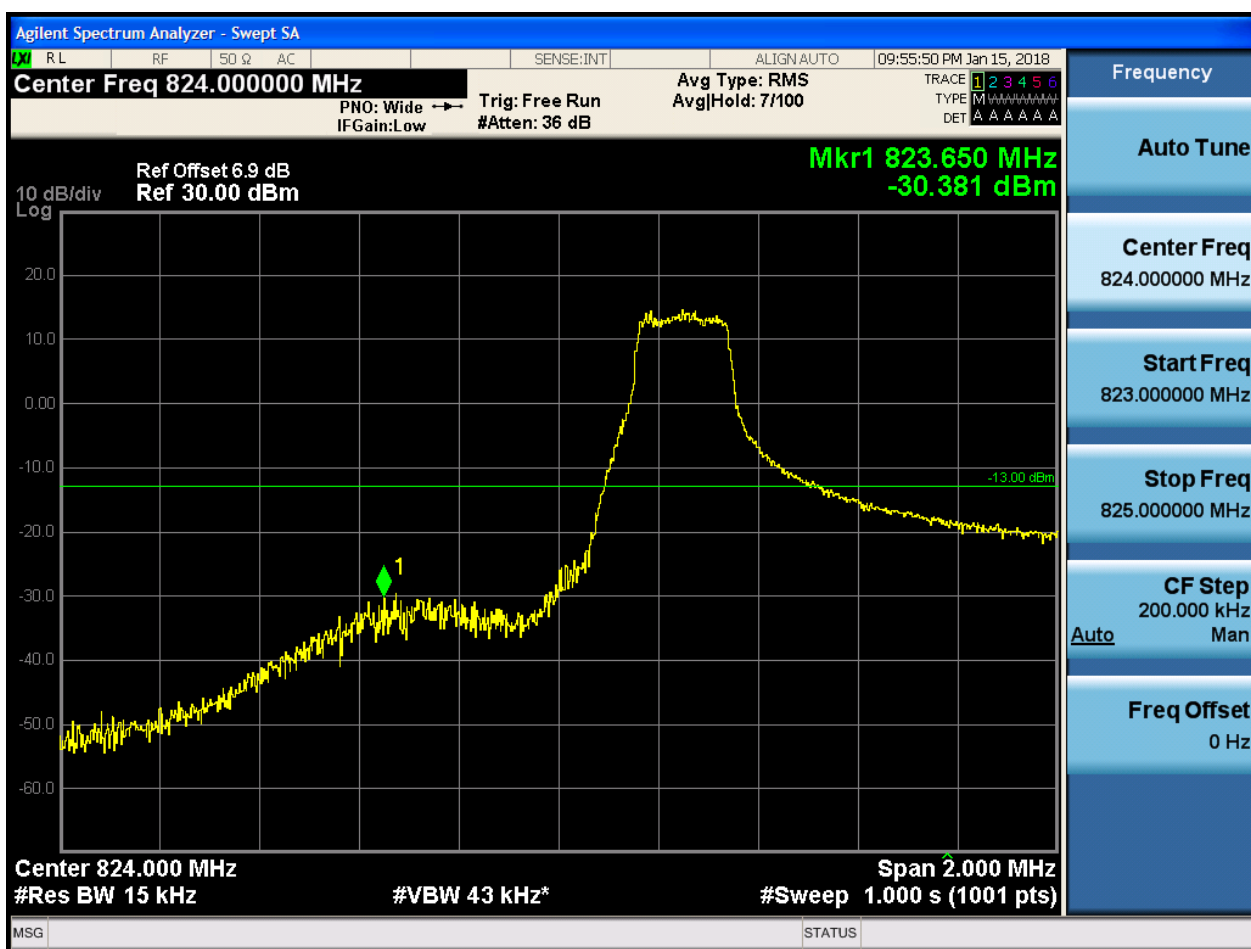


5.1.1.2 Test Mode = LTE/TM2

5.1.1.2.1 Test Bandwidth = 1.4

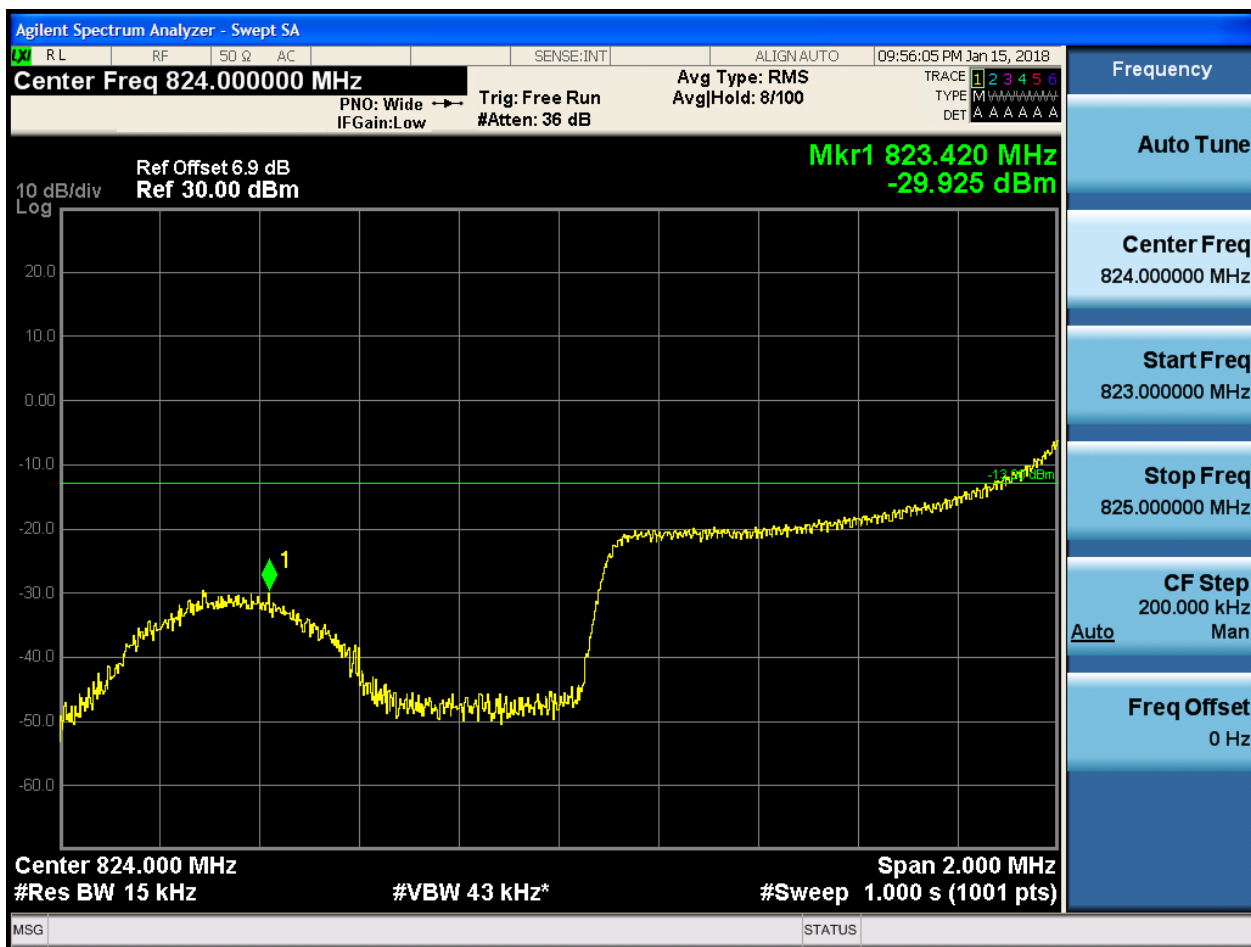
5.1.1.2.1.1 Test Channel = LCH

5.1.1.2.1.1.1 Test RB = RB1#0





5.1.1.2.1.1.2 Test RB = RB1#5





Agilent Spectrum Analyzer - Swept SA

Center Freq 824.000000 MHz

Ref Offset 6.9 dB
Ref 30.00 dBm

10 dB/div
Log

Mkr1 823.990 MHz
-31.628 dBm

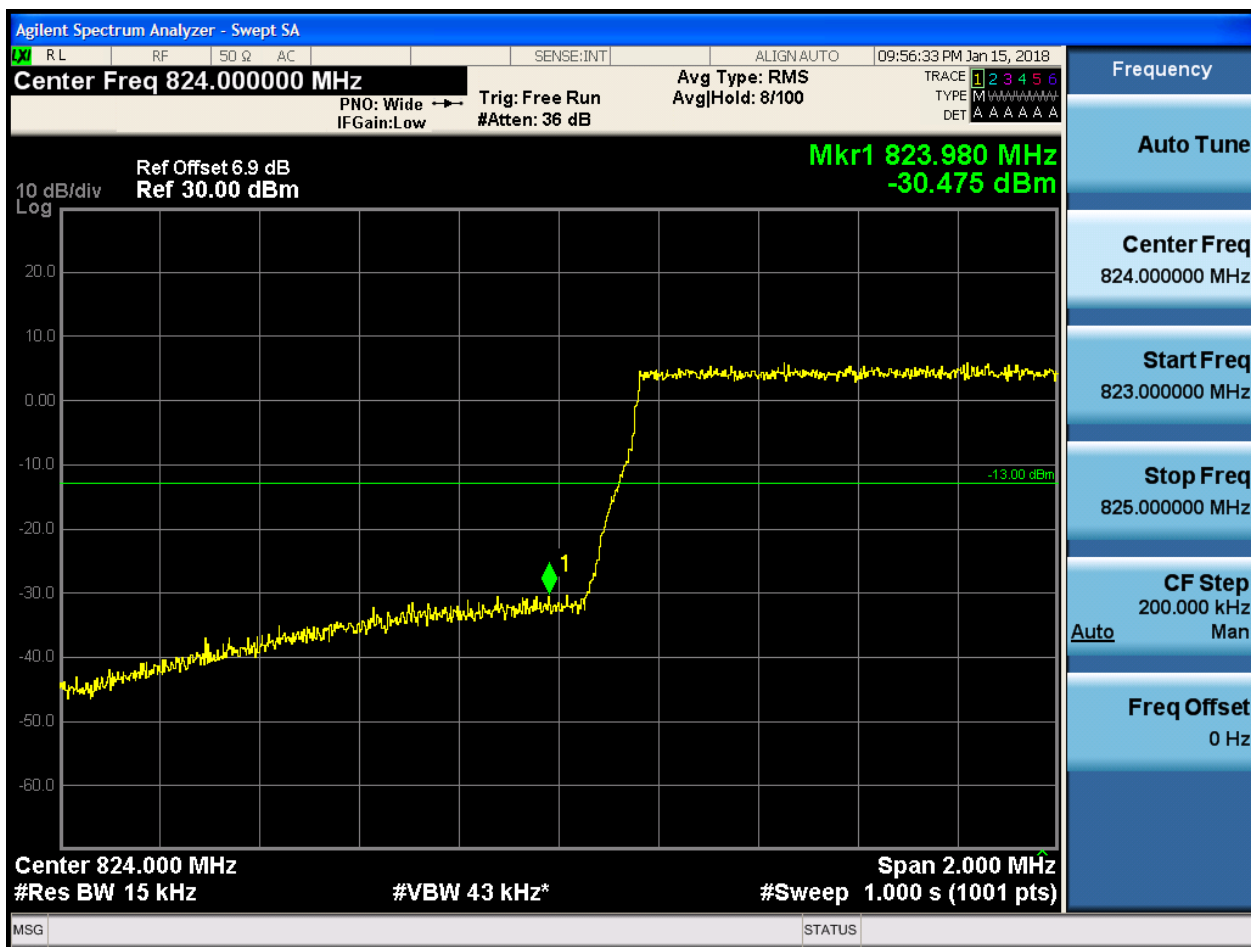
Center 824.000 MHz
#Res BW 15 kHz
#VBW 43 kHz*
Span 2.000 MHz
#Sweep 1.000 s (1001 pts)

MSG STATUS

The image shows a screenshot of an Agilent Spectrum Analyzer in Swept SA mode. The main display area shows a frequency spectrum plot with a yellow trace. The trace starts at approximately -50 dBm at 823.5 MHz and rises to about -13 dBm at 824.5 MHz. A green horizontal line is drawn at -13.00 dBm. A yellow marker labeled '1' is positioned at 823.990 MHz with a level of -31.628 dBm. The plot has a grid with major lines every 10 dB and minor lines every 2 dB. The x-axis represents frequency, and the y-axis represents power in dBm. The display includes various control panels and status indicators. At the top, there's a header bar with 'Agilent Spectrum Analyzer - Swept SA'. Below it, a control panel shows 'Center Freq 824.000000 MHz', 'Ref Offset 6.9 dB', 'Ref 30.00 dBm', '10 dB/div', 'Log', 'Mkr1 823.990 MHz', and '-31.628 dBm'. On the right side, there's a panel with 'Center Freq 824.000000 MHz', 'Start Freq 823.000000 MHz', 'Stop Freq 825.000000 MHz', 'CF Step 200.000 kHz', 'Auto', 'Freq Offset 0 Hz', and 'Span 2.000 MHz'. At the bottom, there's a status bar with 'MSG' and 'STATUS'.



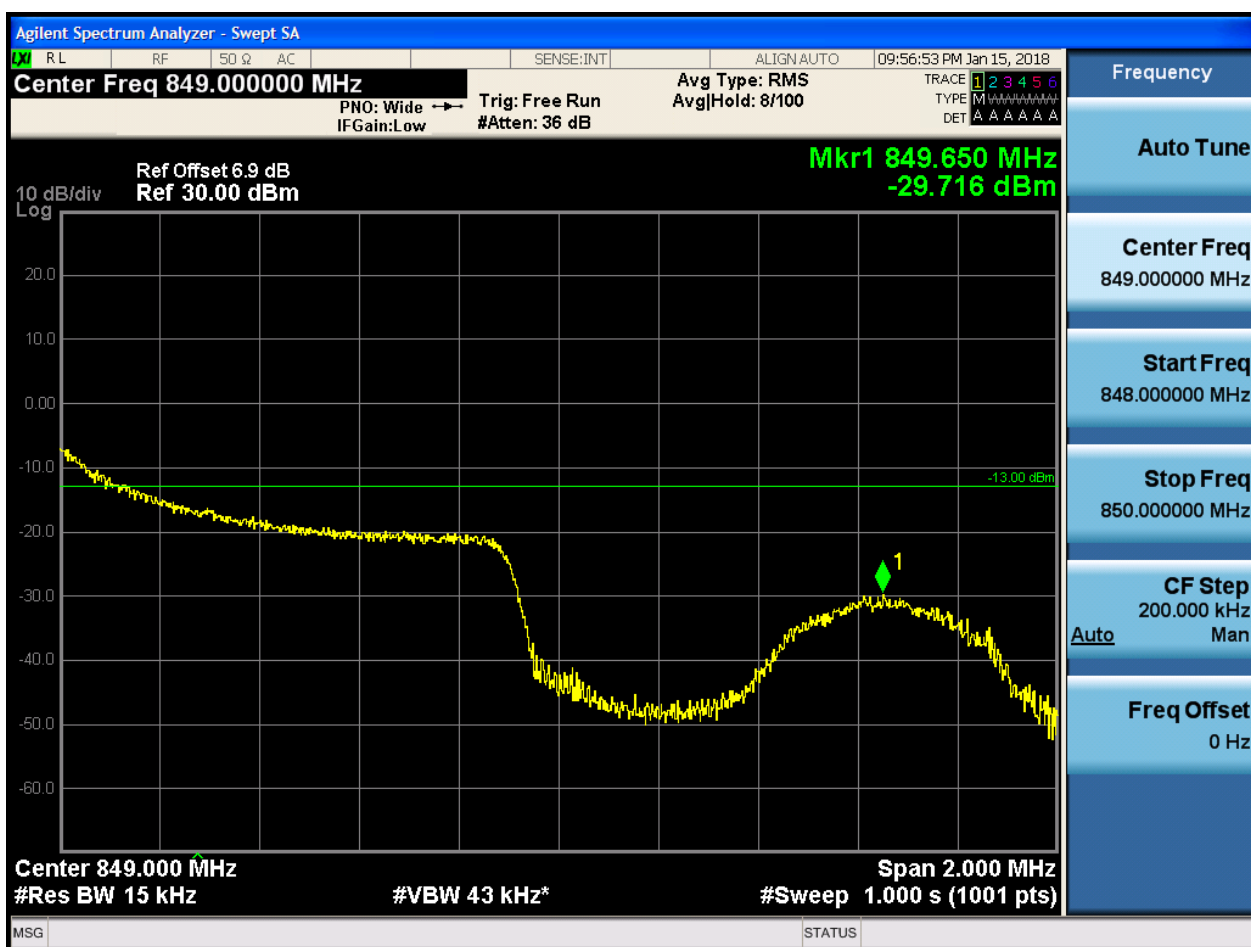
5.1.1.2.1.1.4 Test RB = RB6#0





5.1.1.2.1.2 Test Channel = HCH

5.1.1.2.1.2.1 Test RB = RB1#0





Agilent Spectrum Analyzer - Swept SA

Center Freq 849.000000 MHz

Ref Offset 6.9 dB
Ref 30.00 dBm

10 dB/div
Log

Mkr1 849.000 MHz
-22.222 dBm

Center 849.000 MHz
#Res BW 15 kHz
#VBW 43 kHz*
Span 2.000 MHz
#Sweep 1.000 s (1001 pts)

Frequency

Auto Tune

Center Freq
849.000000 MHz

Start Freq
848.000000 MHz

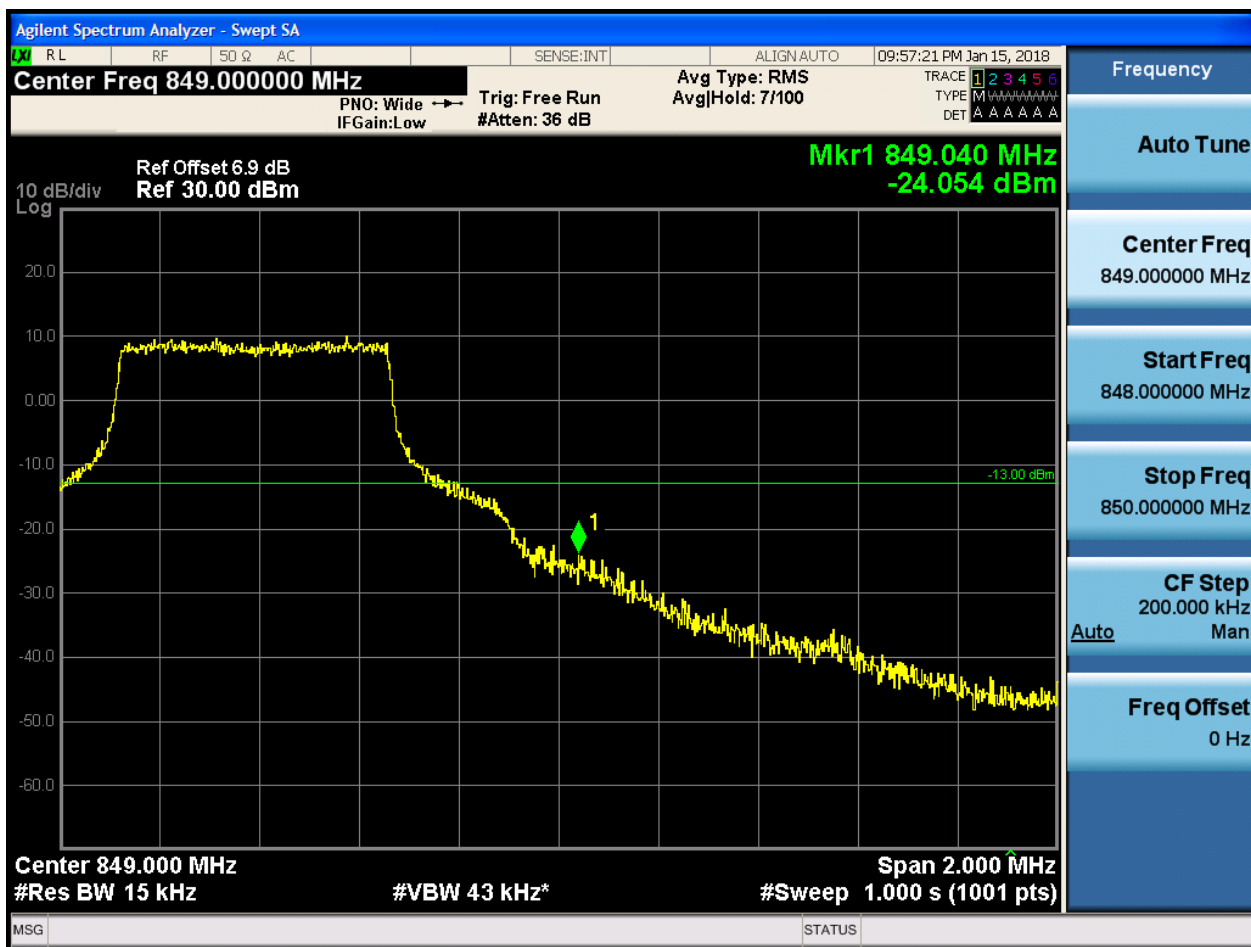
Stop Freq
850.000000 MHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

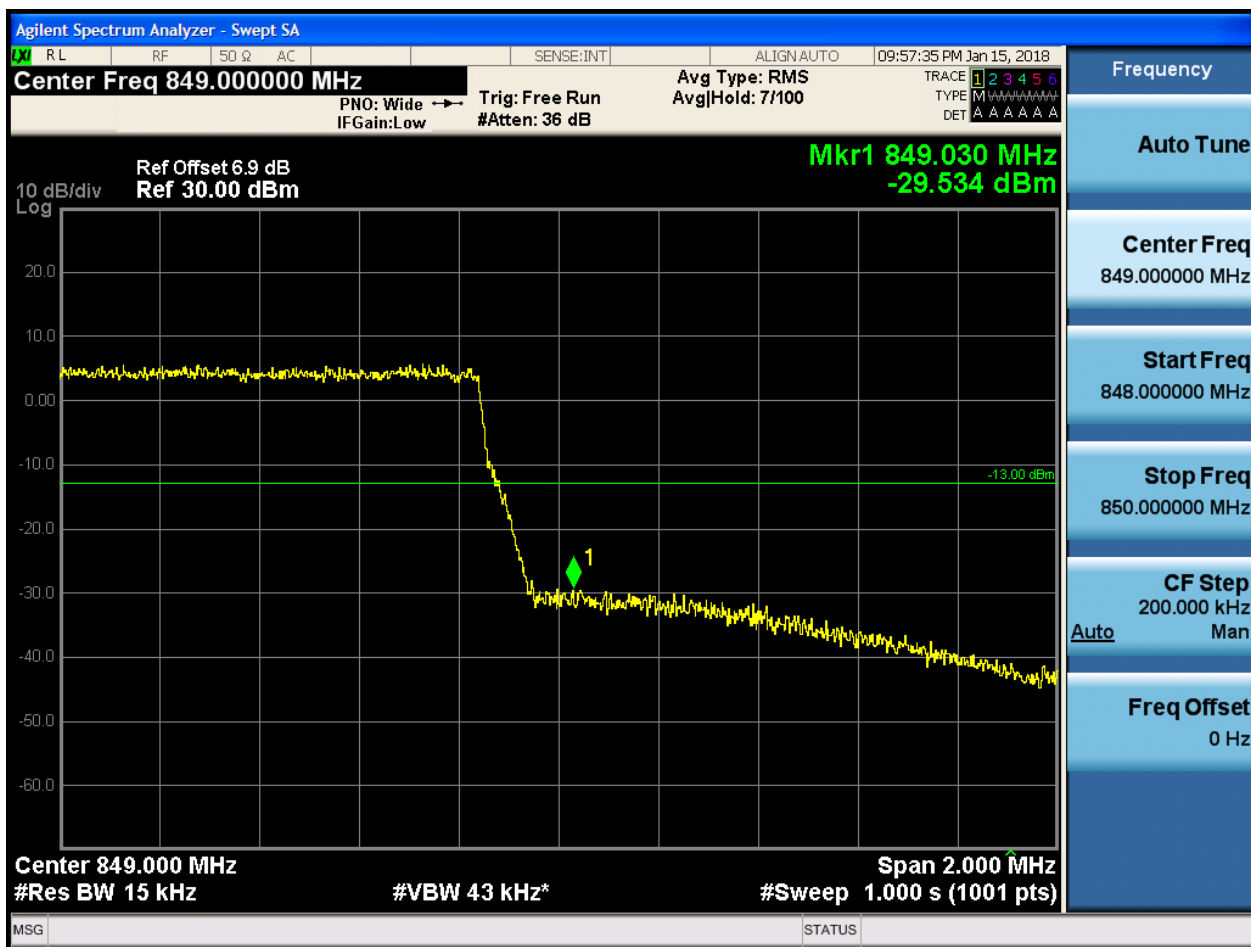


5.1.1.2.1.2.3 Test RB = RB3#2





5.1.1.2.1.2.4 Test RB = RB6#0

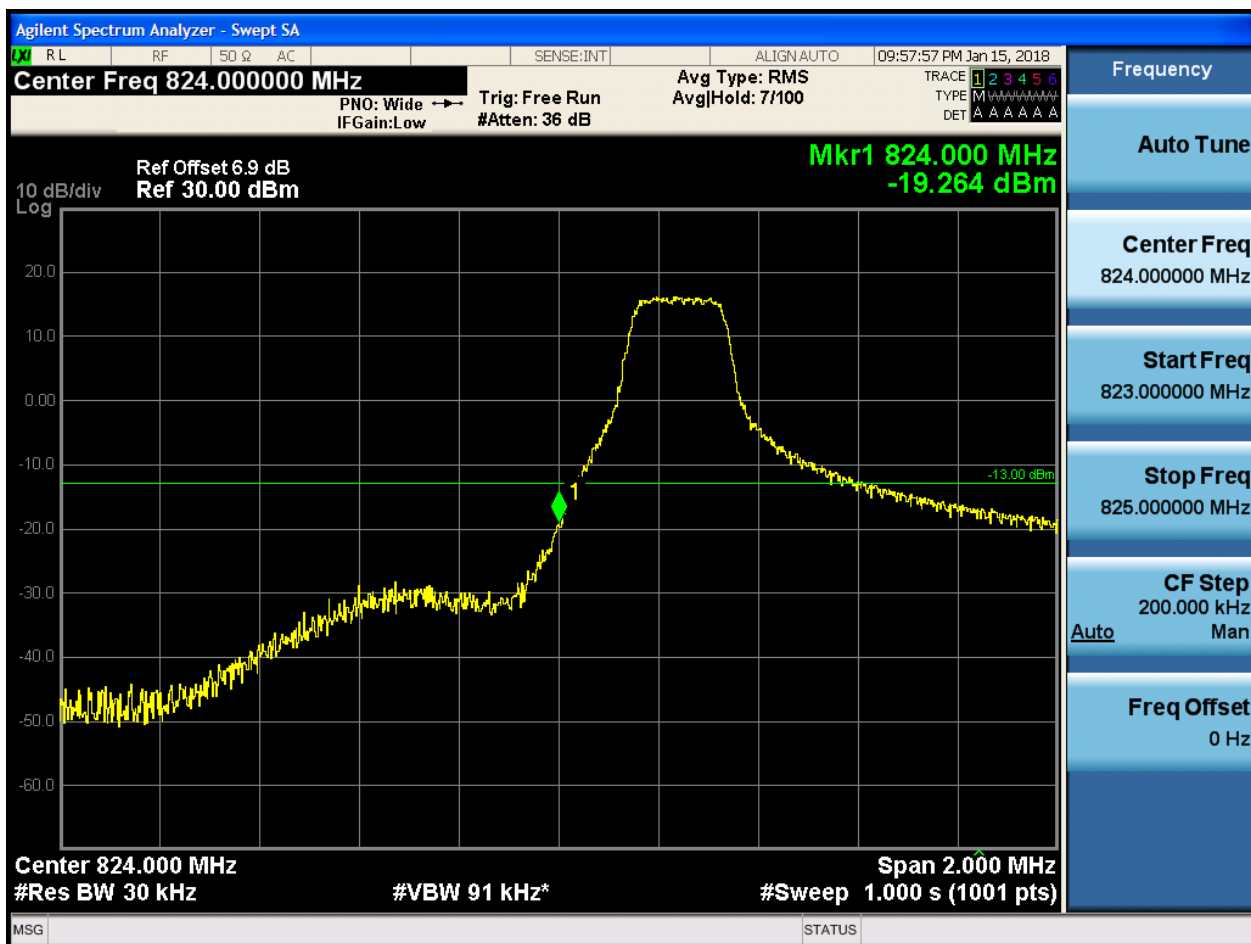




5.1.1.2.2 Test Bandwidth = 3

5.1.1.2.2.1 Test Channel = LCH

5.1.1.2.2.1.1 Test RB = RB1#0





Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 09:58:11 PM Jan 15, 2018

Center Freq 824.000000 MHz Avg Type: RMS
PNO: Wide IFGain:Low Trig: Free Run AvgHold: 8/100
#Atten: 36 dB

TRACE 1 2 3 4 5 6
TYPE M W W W W W W W W W
DET A A A A A A

Ref Offset 6.9 dB
Ref 30.00 dBm

Mkr1 824.000 MHz
-34.230 dBm

10 dB/div
Log

-13.00 dBm

Center 824.000 MHz
#Res BW 30 kHz

#VBW 91 kHz*

Span 2.000 MHz
#Sweep 1.000 s (1001 pts)

MSG STATUS

Frequency

Auto Tune

Center Freq
824.000000 MHz

Start Freq
823.000000 MHz

Stop Freq
825.000000 MHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz



Agilent Spectrum Analyzer - Swept SA

Center Freq 824.000000 MHz

Ref Offset 6.9 dB
Ref 30.00 dBm

10 dB/div
Log

Mkr1 823.990 MHz
-33.128 dBm

Center 824.000 MHz
#Res BW 30 kHz

#VBW 91 kHz*

Span 2.000 MHz
#Sweep 1.000 s (1001 pts)

Auto Tune

Center Freq
824.000000 MHz

Start Freq
823.000000 MHz

Stop Freq
825.000000 MHz

CF Step
200.000 kHz
Auto

Freq Offset
0 Hz

Frequency

Auto Tune

Center Freq
824.000000 MHz

Start Freq
823.000000 MHz

Stop Freq
825.000000 MHz

CF Step
200.000 kHz
Man

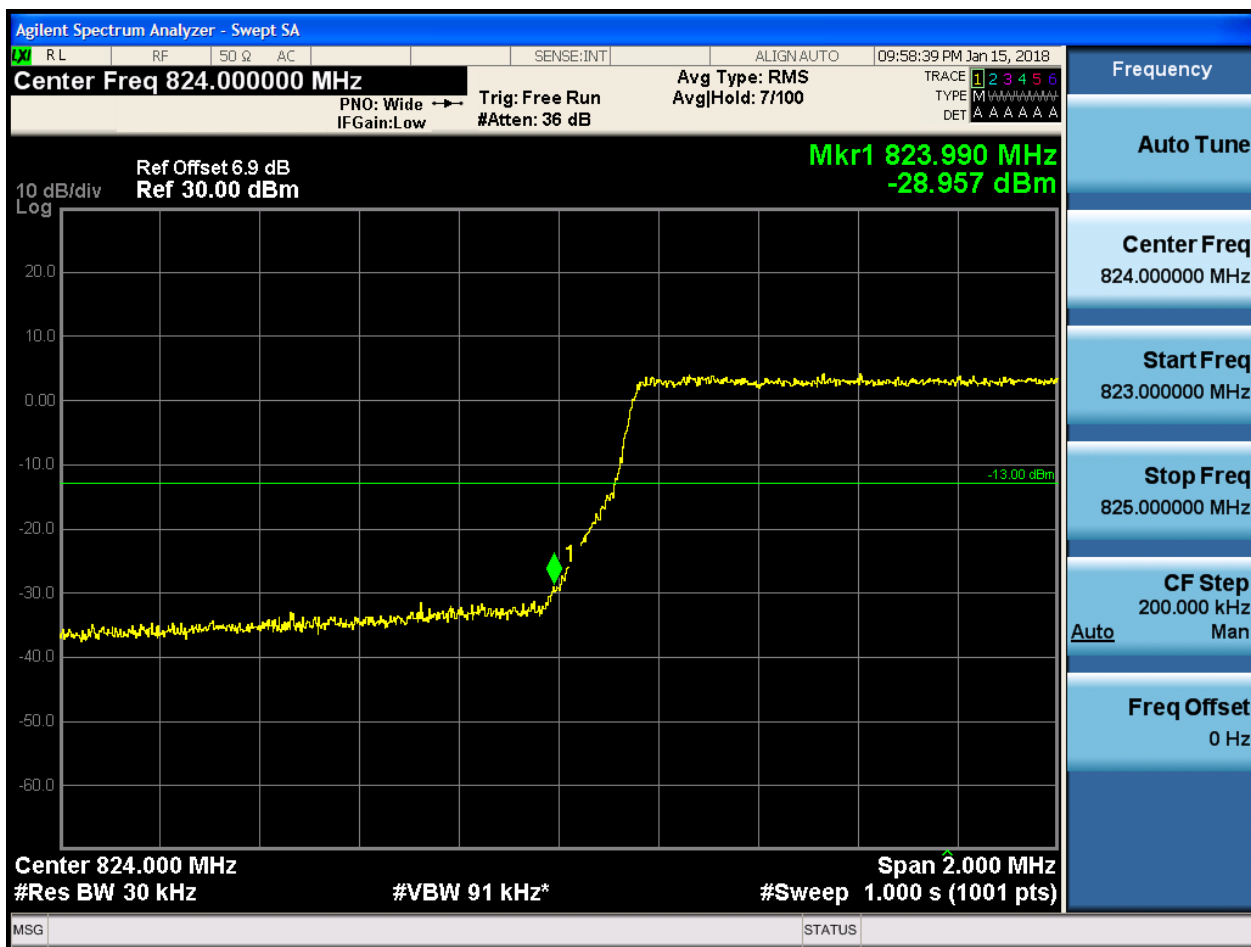
Freq Offset
0 Hz

MSG

STATUS

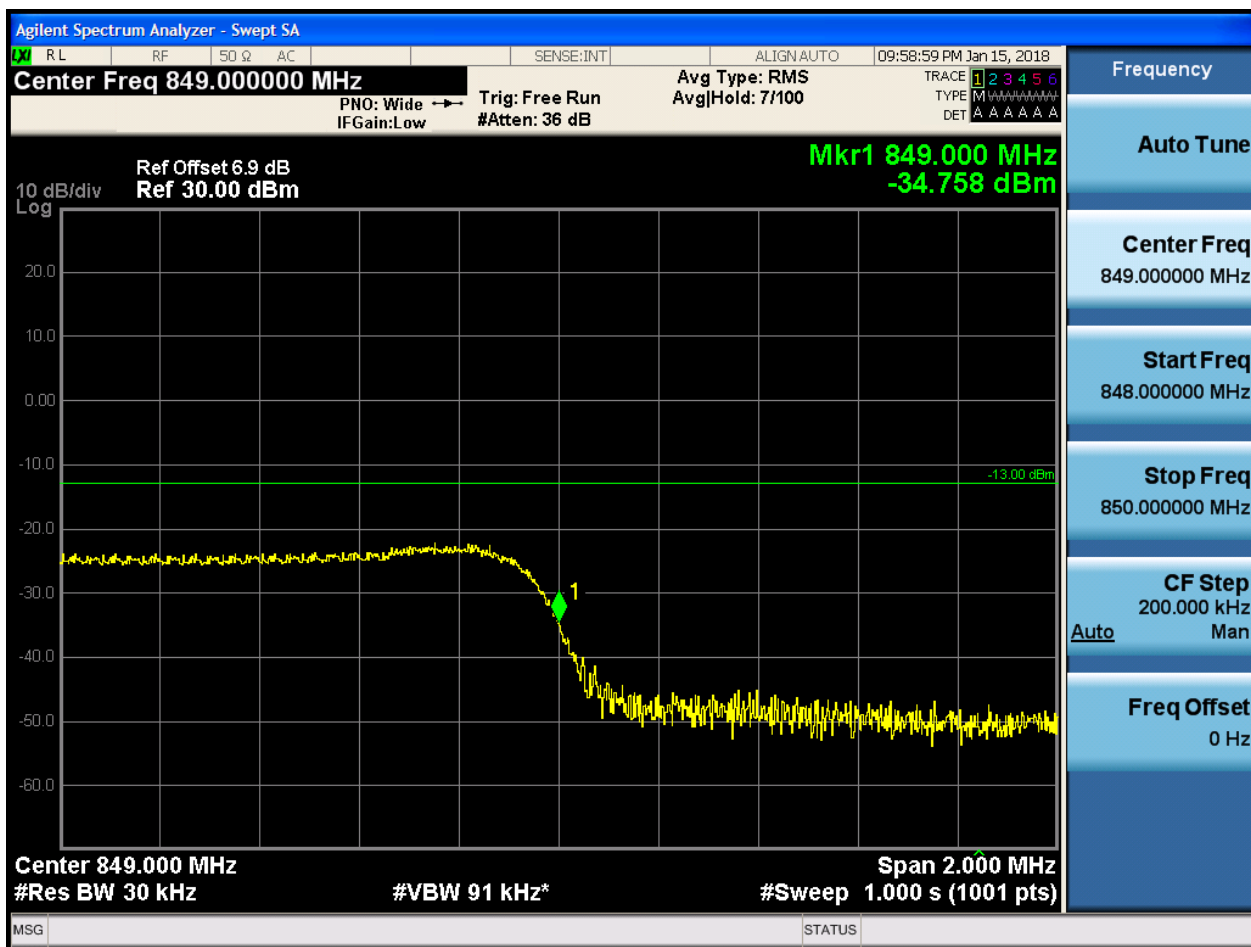


5.1.1.2.2.1.4 Test RB = RB15#0

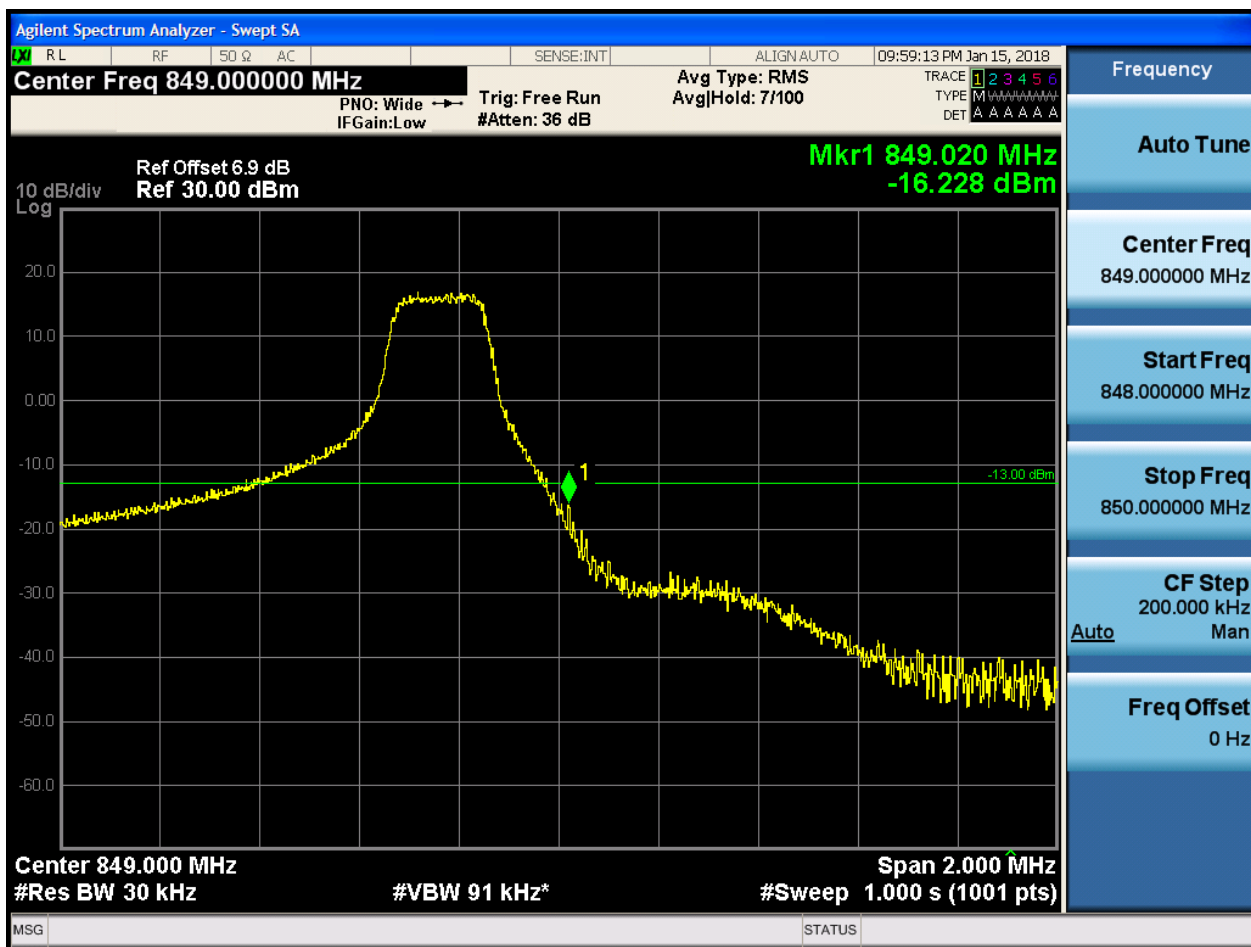


5.1.1.2.2.2 Test Channel = HCH

5.1.1.2.2.2.1 Test RB = RB1#0



5.1.1.2.2.2.2 Test RB = RB1#14



5.1.1.2.2.2.3 Test RB = RB8#4





Agilent Spectrum Analyzer - Swept SA

Center Freq 849.000000 MHz

Ref Offset 6.9 dB
Ref 30.00 dBm

10 dB/div
Log

Mkr1 849.000 MHz
-29.942 dBm

Center 849.000 MHz
#Res BW 30 kHz
#VBW 91 kHz*

Span 2.000 MHz
#Sweep 1.000 s (1001 pts)

Frequency

Auto Tune

Center Freq
849.000000 MHz

Start Freq
848.000000 MHz

Stop Freq
850.000000 MHz

CF Step
200.000 kHz
Auto

Freq Offset
0 Hz

Center 849.000 MHz
#Res BW 30 kHz
#VBW 91 kHz*

Span 2.000 MHz
#Sweep 1.000 s (1001 pts)

MSG

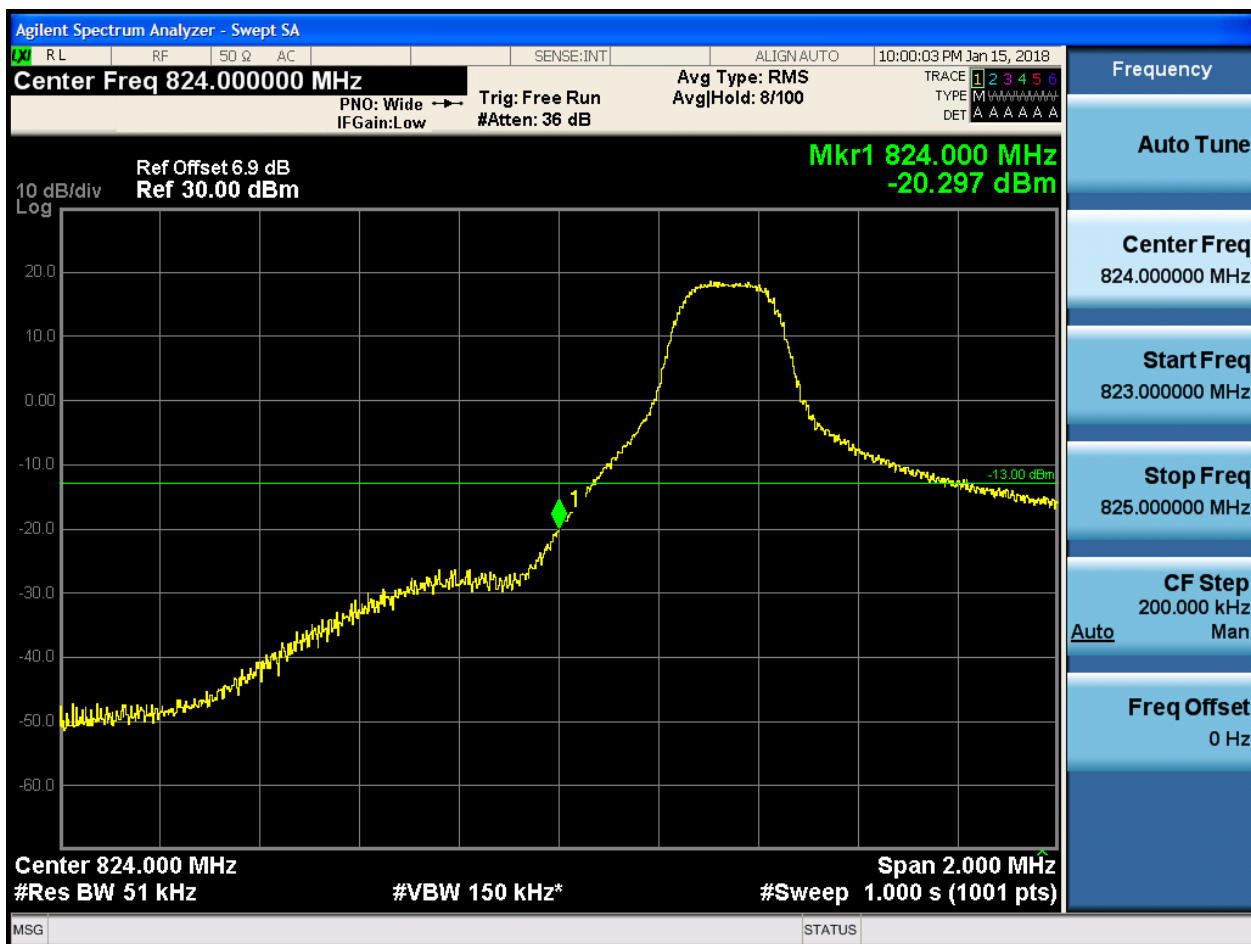
STATUS



5.1.1.2.3 Test Bandwidth = 5

5.1.1.2.3.1 Test Channel = LCH

5.1.1.2.3.1.1 Test RB = RB1#0





Agilent Spectrum Analyzer - Swept SA

Center Freq 824.000000 MHz

PNO: Wide → Trig: Free Run
IFGain: Low #Atten: 36 dB

Avg Type: RMS
Avg/Hold: 8/100

TRACE 1 2 3 4 5 6
TYPE M W W W W W W W
DET A A A A A A

Ref Offset 6.9 dB
Ref 30.00 dBm

Mkr1 824.000 MHz
-38.253 dBm

10 dB/div Log

-13.00 dBm

Center 824.000 MHz
#Res BW 51 kHz

#VBW 150 kHz*

Span 2.000 MHz
#Sweep 1.000 s (1001 pts)

Frequency
Auto Tune
Center Freq 824.000000 MHz
Start Freq 823.000000 MHz
Stop Freq 825.000000 MHz
CF Step 200.000 kHz <u>Auto</u> Man
Freq Offset 0 Hz



Agilent Spectrum Analyzer - Swept SA

Center Freq 824.000000 MHz

Ref Offset 6.9 dB
Ref 30.00 dBm

10 dB/div
Log

Mkr1 823.990 MHz
-33.169 dBm

Center 824.000 MHz
#Res BW 51 kHz

#VBW 150 kHz*

Span 2.000 MHz
#Sweep 1.000 s (1001 pts)

Frequency

Auto Tune

Center Freq
824.000000 MHz

Start Freq
823.000000 MHz

Stop Freq
825.000000 MHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

The image shows a screenshot of an Agilent Spectrum Analyzer in Swept SA mode. The main display is a log-frequency plot with a yellow trace representing the spectrum. A green marker labeled '1' is positioned at 823.990 MHz with a level of -33.169 dBm. The center frequency is set to 824.000 MHz, and the span is 2.000 MHz. The resolution bandwidth (Res BW) is 51 kHz, and the video bandwidth (VBW) is 150 kHz. The reference level is 30.00 dBm, and the offset is 6.9 dB. The trace is set to 10 dB/div and log scale. The right side of the screen shows various settings and parameters, including Frequency, Auto Tune, Center Freq, Start Freq, Stop Freq, CF Step, and Freq Offset. The bottom status bar shows MSG and STATUS indicators.



Agilent Spectrum Analyzer - Swept SA

Center Freq 824.000000 MHz

Ref Offset 6.9 dB
Ref 30.00 dBm

10 dB/div
Log

Mkr1 824.000 MHz
-29.562 dBm

Center 824.000 MHz
#Res BW 51 kHz
#VBW 150 kHz*

Span 2.000 MHz
#Sweep 1.000 s (1001 pts)

Frequency

Auto Tune

Center Freq
824.000000 MHz

Start Freq
823.000000 MHz

Stop Freq
825.000000 MHz

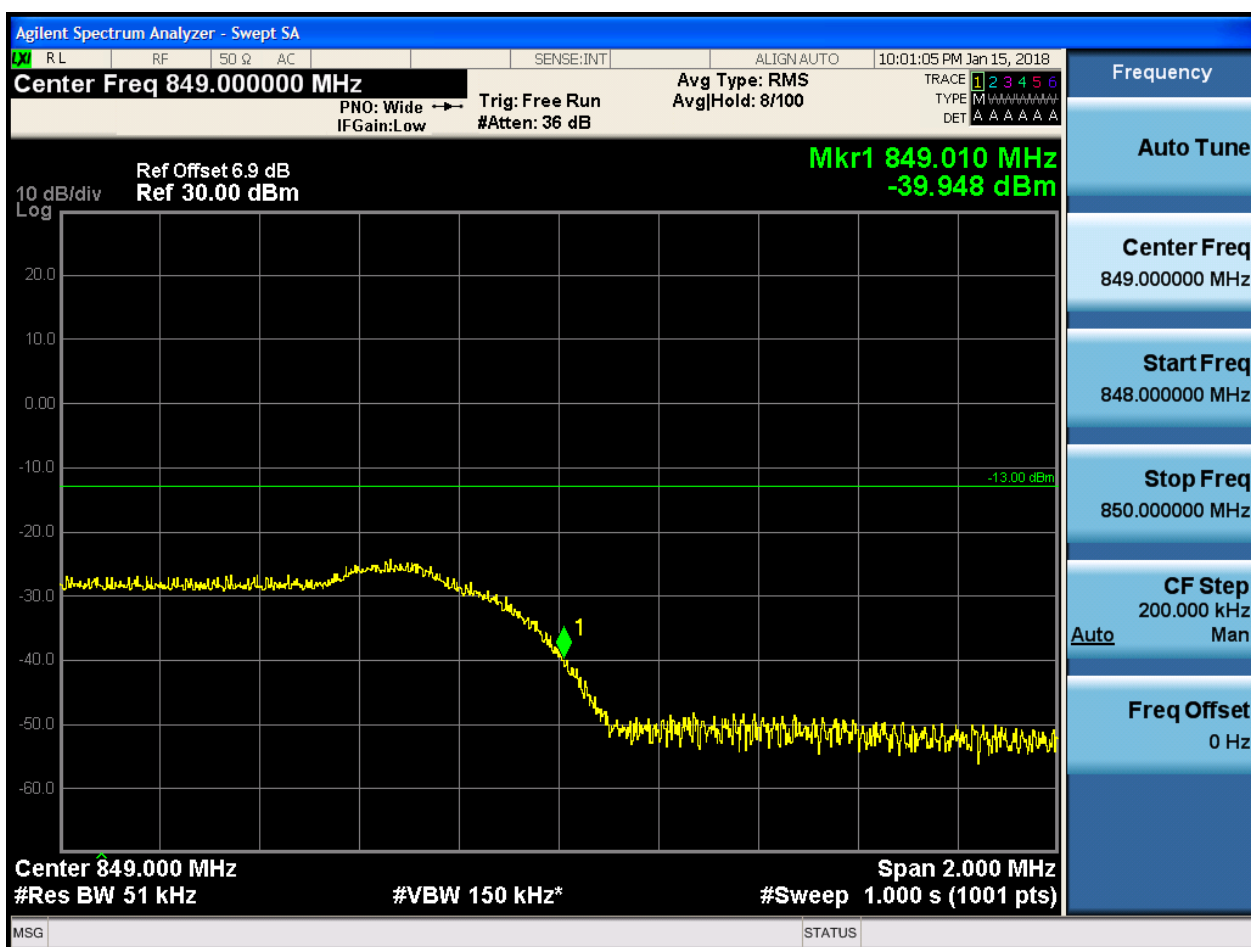
CF Step
200.000 kHz
Auto

Freq Offset
0 Hz

MSG STATUS

5.1.1.2.3.2 Test Channel = HCH

5.1.1.2.3.2.1 Test RB = RB1#0





Agilent Spectrum Analyzer - Swept SA

Center Freq 849.000000 MHz

Ref Offset 6.9 dB
Ref 30.00 dBm

10 dB/div
Log

Mkr1 849.000 MHz
-20.241 dBm

Center 849.000 MHz
#Res BW 51 kHz
#VBW 150 kHz*

Span 2.000 MHz
#Sweep 1.000 s (1001 pts)

Frequency

Auto Tune

Center Freq
849.000000 MHz

Start Freq
848.000000 MHz

Stop Freq
850.000000 MHz

CF Step
200.000 kHz
Auto

Freq Offset
0 Hz

The image shows a screenshot of an Agilent Spectrum Analyzer in Swept SA mode. The main display area shows a frequency spectrum with a yellow trace. The center frequency is 849.000000 MHz. The reference level is 30.00 dBm, and the reference offset is 6.9 dB. The signal level at the center is -20.241 dBm. The span is 2.000 MHz, and the resolution bandwidth (Res BW) is 51 kHz. The video bandwidth (VBW) is 150 kHz. The sweep time is 1.000 s (1001 pts). The display includes various control panels on the right and bottom, and a status bar at the top.



Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 10:01:33 PM Jan 15, 2018

Center Freq 849.000000 MHz Avg Type: RMS
PNO: Wide IFGain:Low Trig: Free Run AvgHold: 8/100
#Atten: 36 dB

TRACE 1 2 3 4 5 6
TYPE M W W W W W W W
DET A A A A A A

Ref Offset 6.9 dB
Ref 30.00 dBm

Mkr1 849.010 MHz
-33.889 dBm

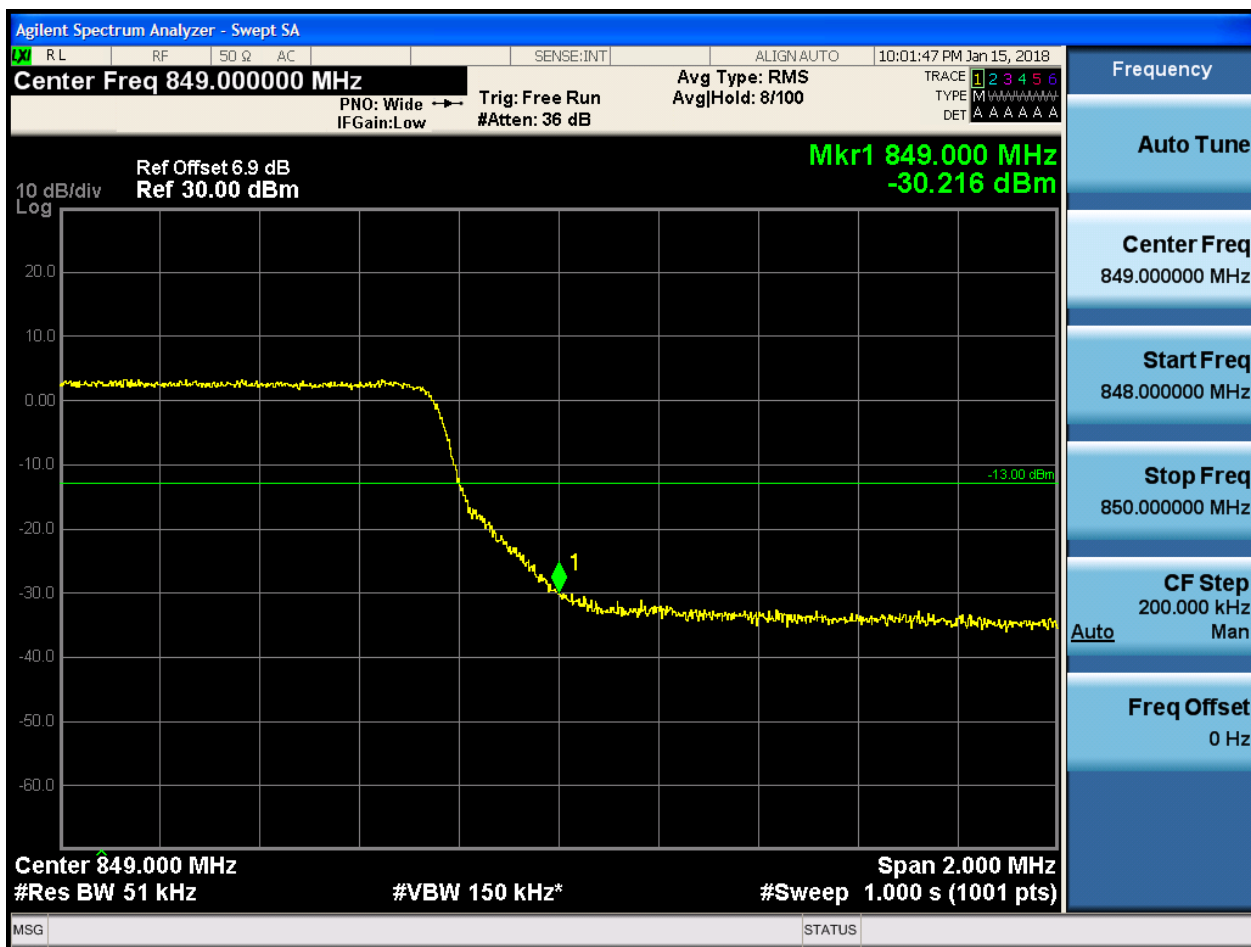
10 dB/div
Log

Center 849.000 MHz
#Res BW 51 kHz
#VBW 150 kHz*
Span 2.000 MHz
#Sweep 1.000 s (1001 pts)

MSG STATUS



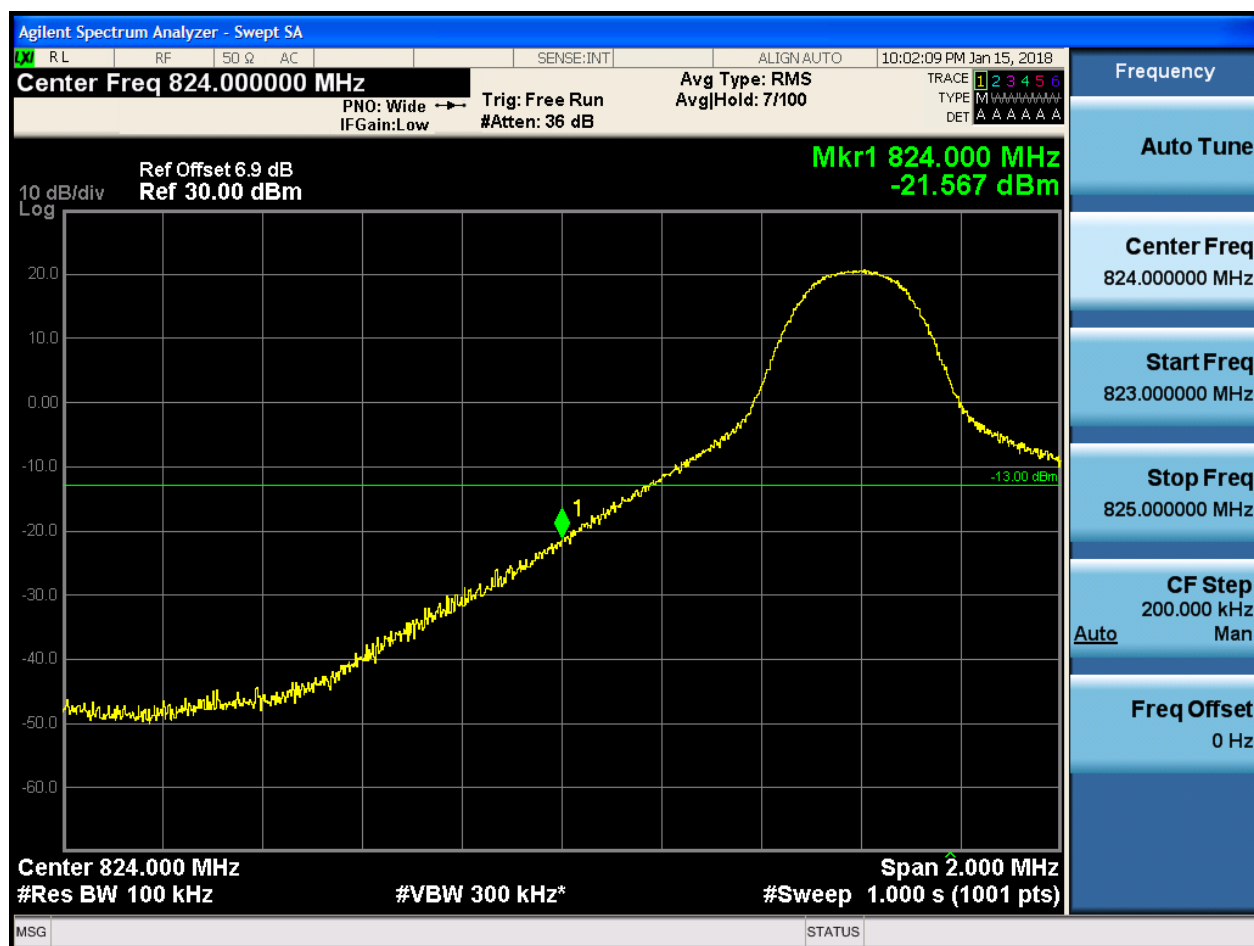
5.1.1.2.3.2.4 Test RB = RB25#0



5.1.1.2.4 Test Bandwidth = 10

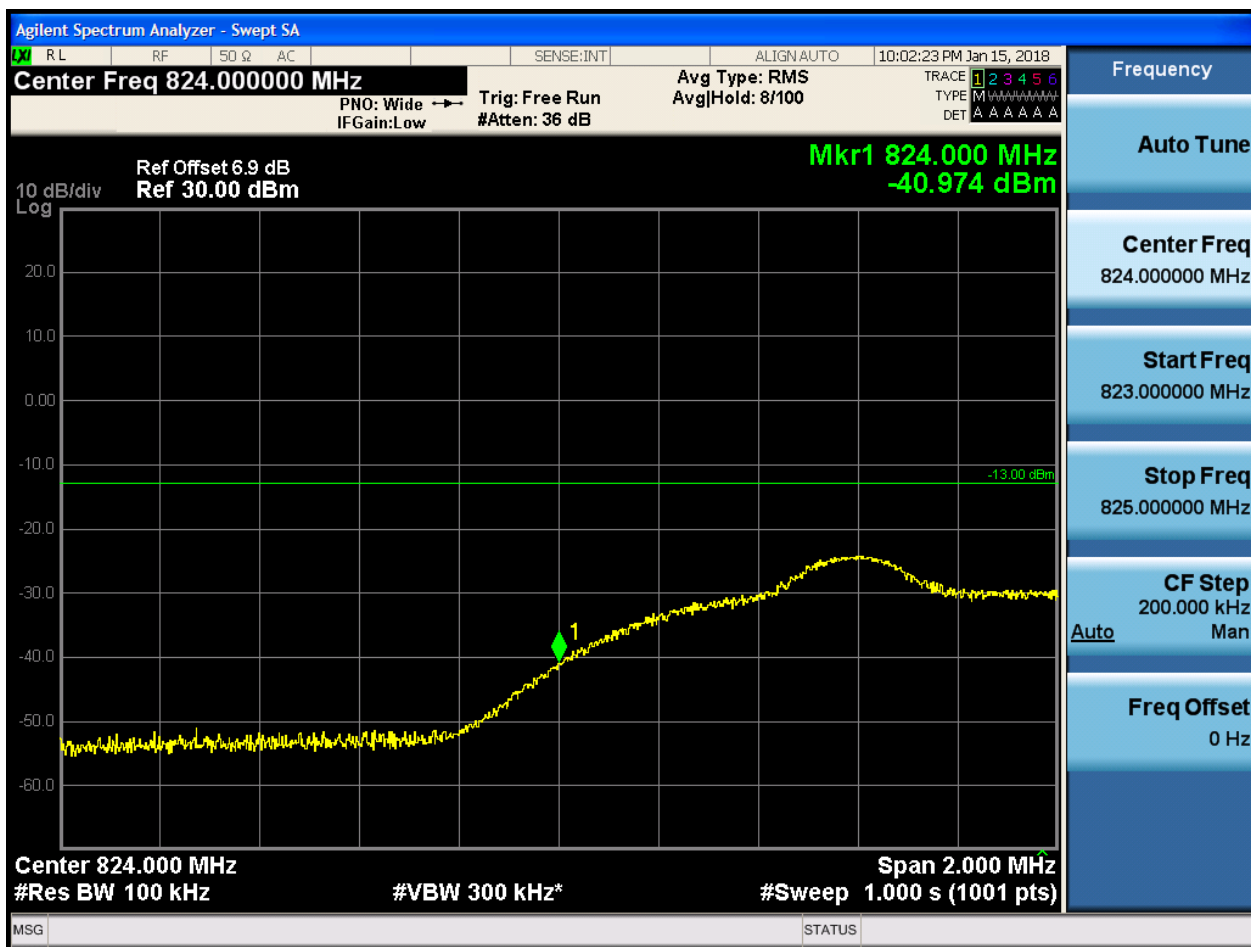
5.1.1.2.4.1 Test Channel = LCH

5.1.1.2.4.1.1 Test RB = RB1#0



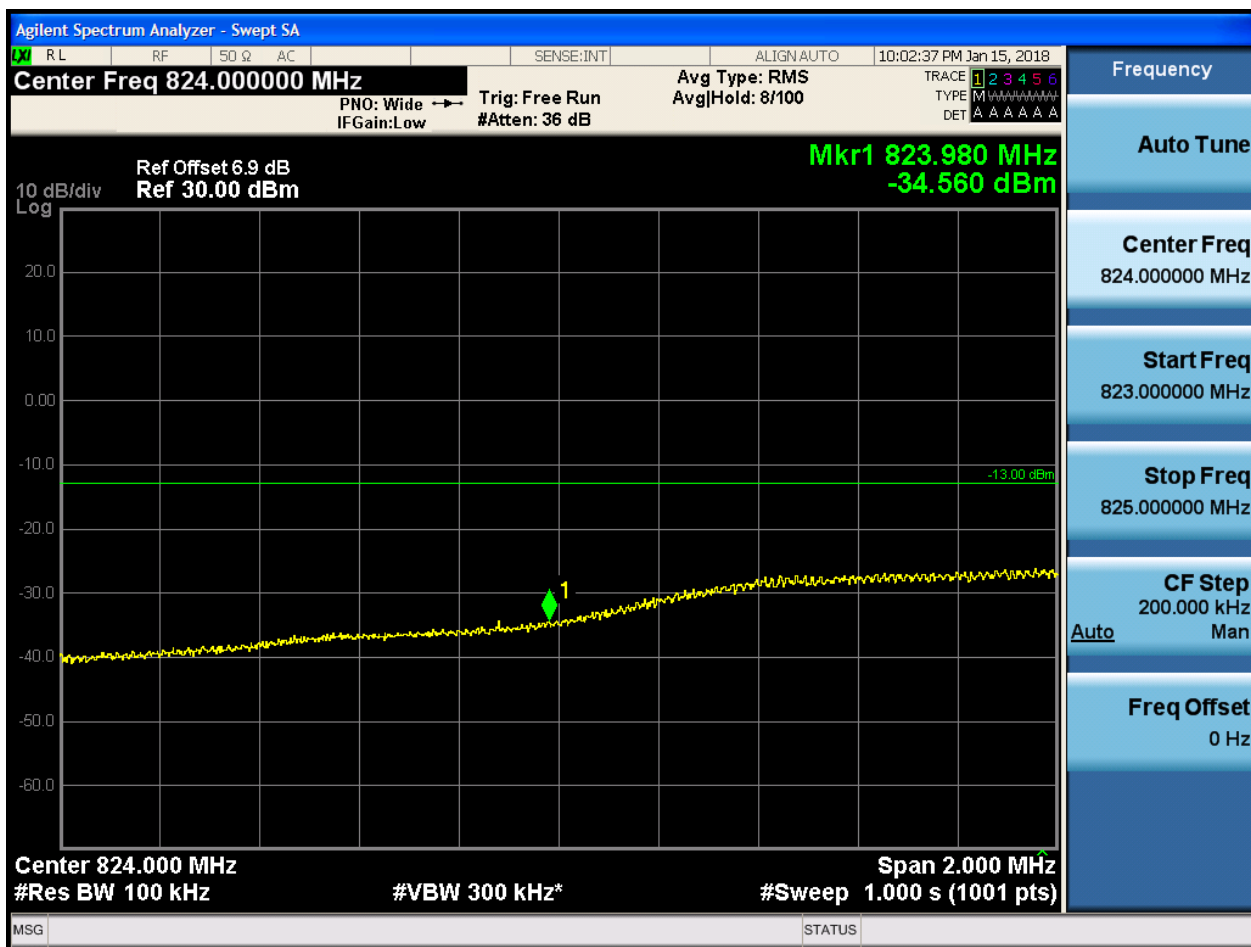


5.1.1.2.4.1.2 Test RB = RB1#49

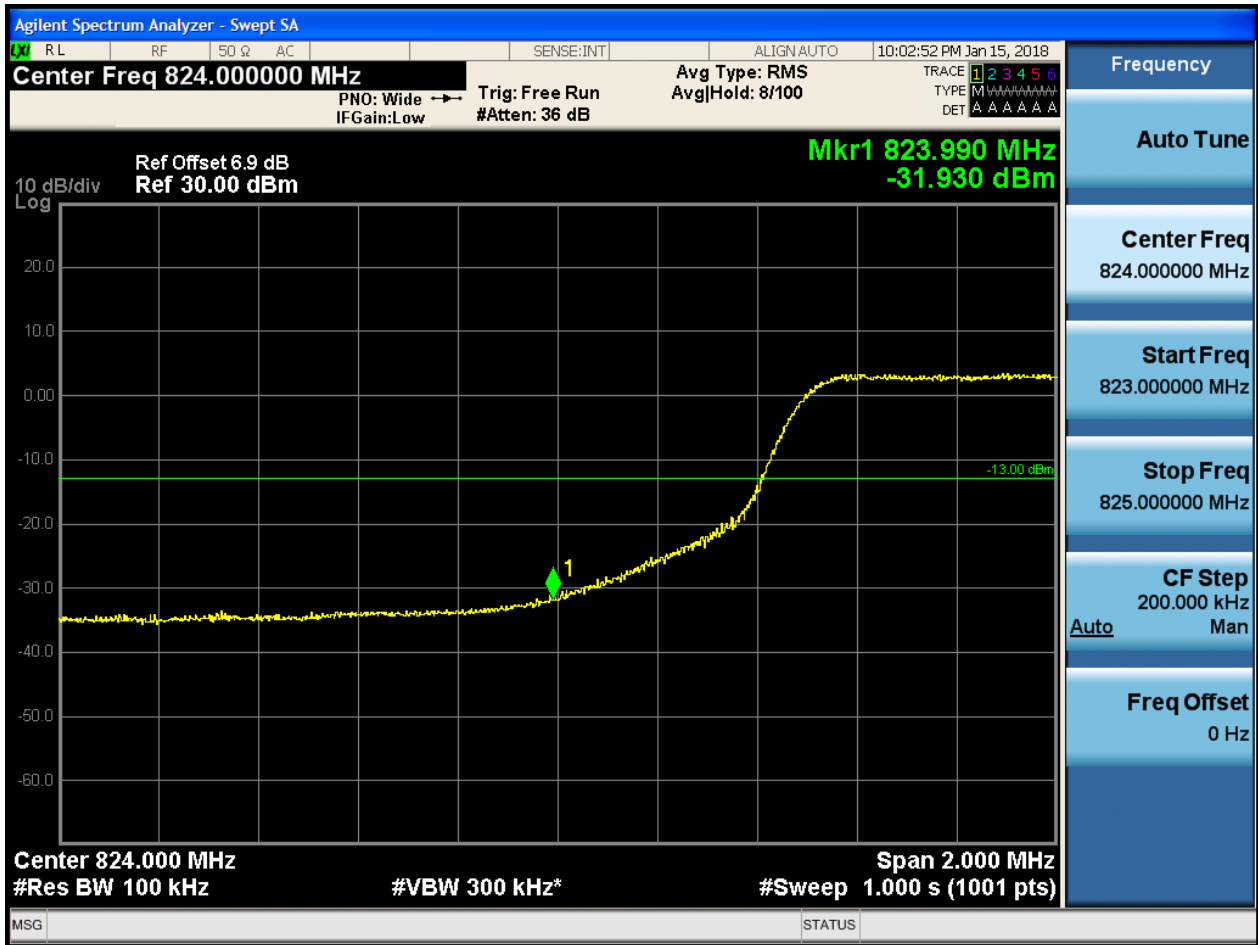




5.1.1.2.4.1.3 Test RB = RB25#13



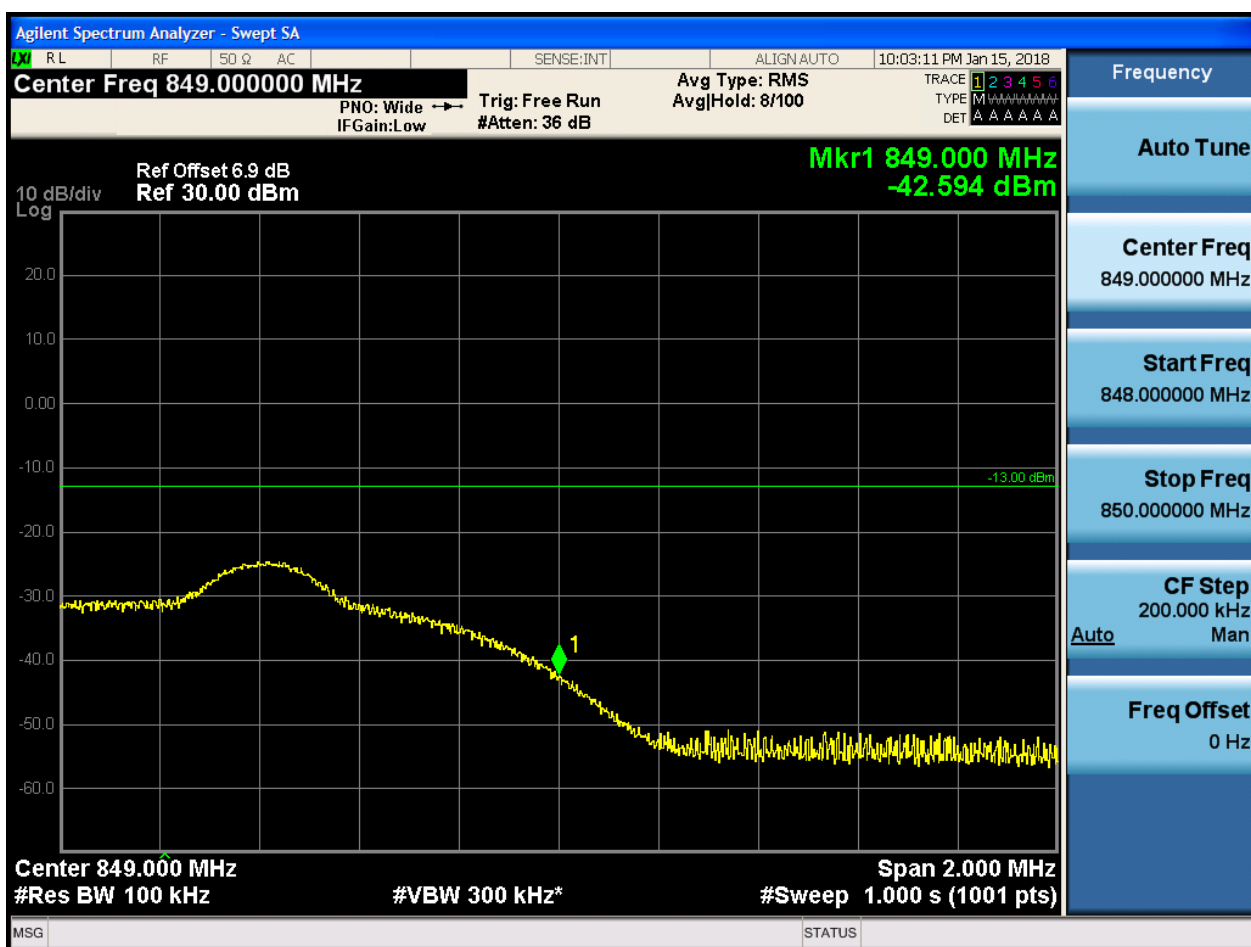
5.1.1.2.4.1.4 Test RB = RB50#0





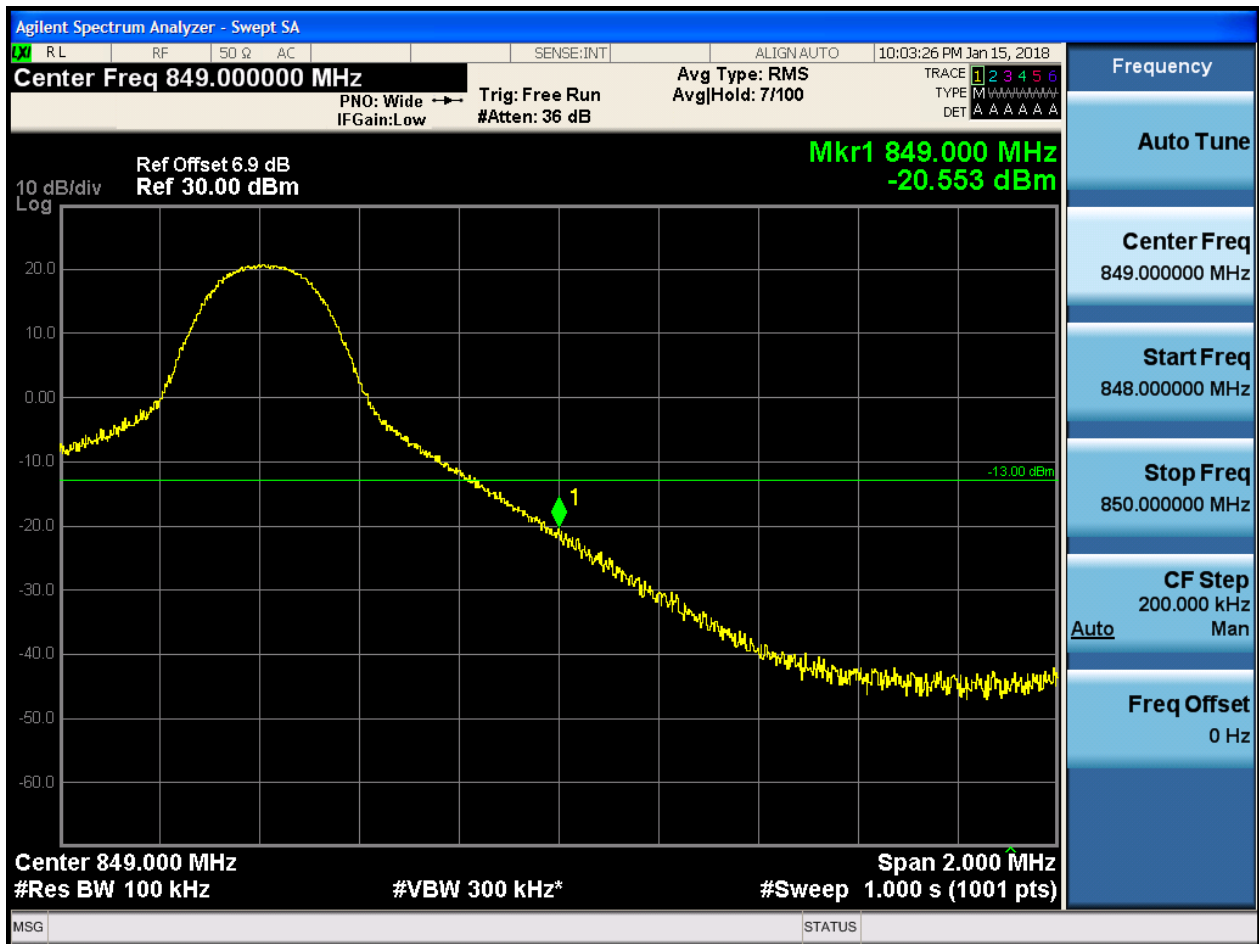
5.1.1.2.4.2 Test Channel = HCH

5.1.1.2.4.2.1 Test RB = RB1#0





5.1.1.2.4.2.2 Test RB = RB1#49





Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 10:03:40 PM Jan 15, 2018

Center Freq 849.000000 MHz Avg Type: RMS
PNO: Wide IFGain:Low Trig: Free Run AvgHold: 8/100
#Atten: 36 dB

TRACE 1 2 3 4 5 6
TYPE M W W W W W W W
DET A A A A A A

Ref Offset 6.9 dB
Ref 30.00 dBm

Mkr1 849.040 MHz
-33.027 dBm

10 dB/div
Log

Center 849.000 MHz
#Res BW 100 kHz
#VBW 300 kHz*
Span 2.000 MHz
#Sweep 1.000 s (1001 pts)

MSG STATUS



Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 10:03:54 PM Jan 15, 2018

Center Freq 849.000000 MHz Avg Type: RMS
PNO: Wide IFGain:Low Trig: Free Run AvgHold: 8/100
#Atten: 36 dB

TRACE 1 2 3 4 5 6
TYPE M W W W W W W W
DET A A A A A A

Ref Offset 6.9 dB
Ref 30.00 dBm

Mkr1 849.000 MHz
-32.476 dBm

10 dB/div
Log

20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0

848.000000 MHz
849.000000 MHz
850.000000 MHz

Auto Tune

Center Freq
849.000000 MHz

Start Freq
848.000000 MHz

Stop Freq
850.000000 MHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

Center 849.000 MHz
#Res BW 100 kHz
#VBW 300 kHz*
Span 2.000 MHz
#Sweep 1.000 s (1001 pts)

MSG STATUS

6Appendix_F: Spurious Emission at Antenna Terminal

NOTE: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of $< RBW/2$ so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points = $k * (Span / RBW)$ " with k between 4 and 5, which results in an acceptable level error of less than 0.5 dB.

Part I - Test Plots

6.1 For LTE

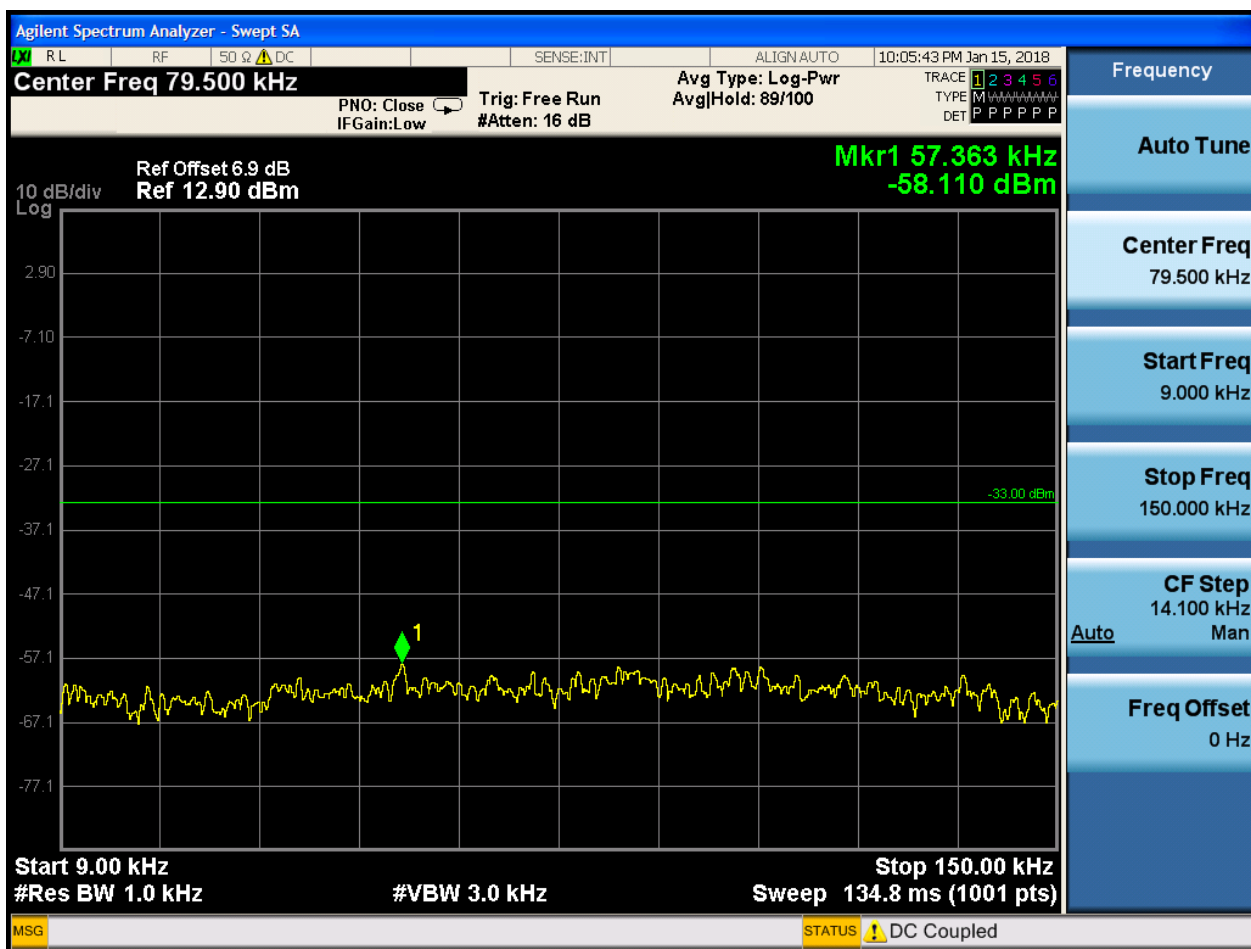
6.1.1 Test Band = BAND5

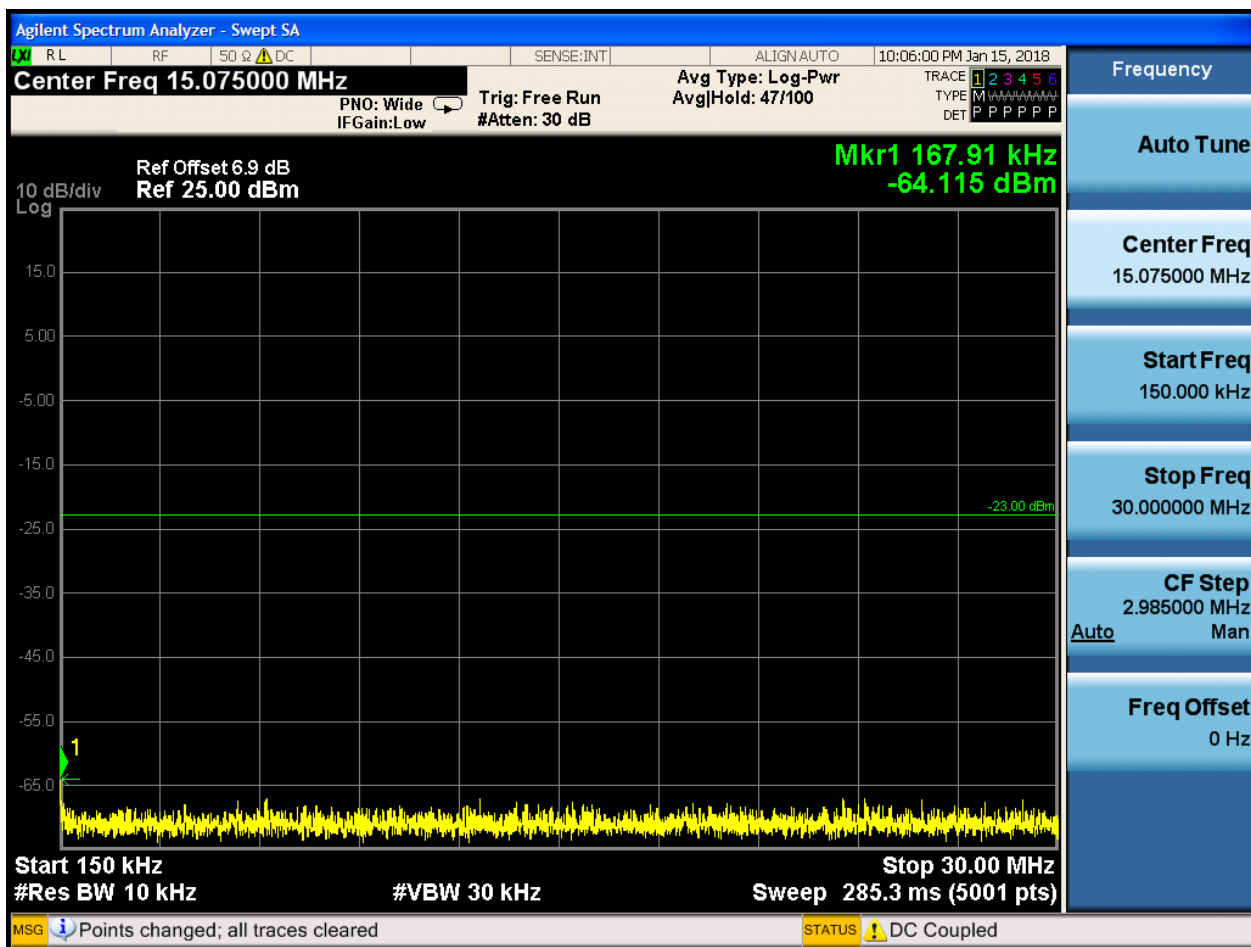
6.1.1.1 Test Mode = LTE/TM1

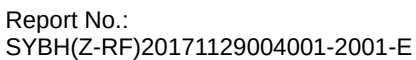
6.1.1.1.1 Test Bandwidth = 1.4

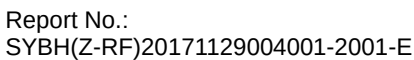
6.1.1.1.1.1 Test Channel = LCH

6.1.1.1.1.1.1 Test RB = RB1#0



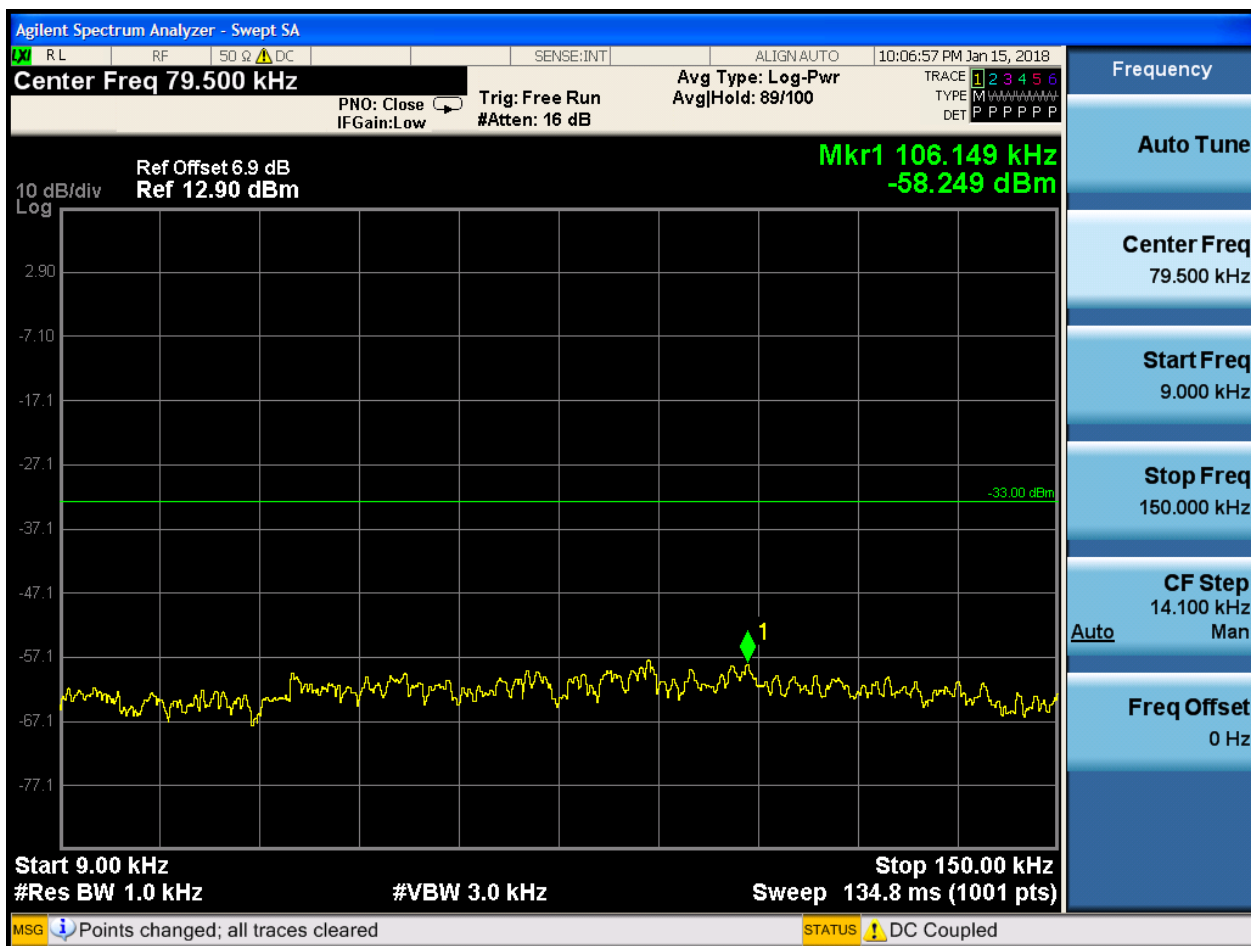


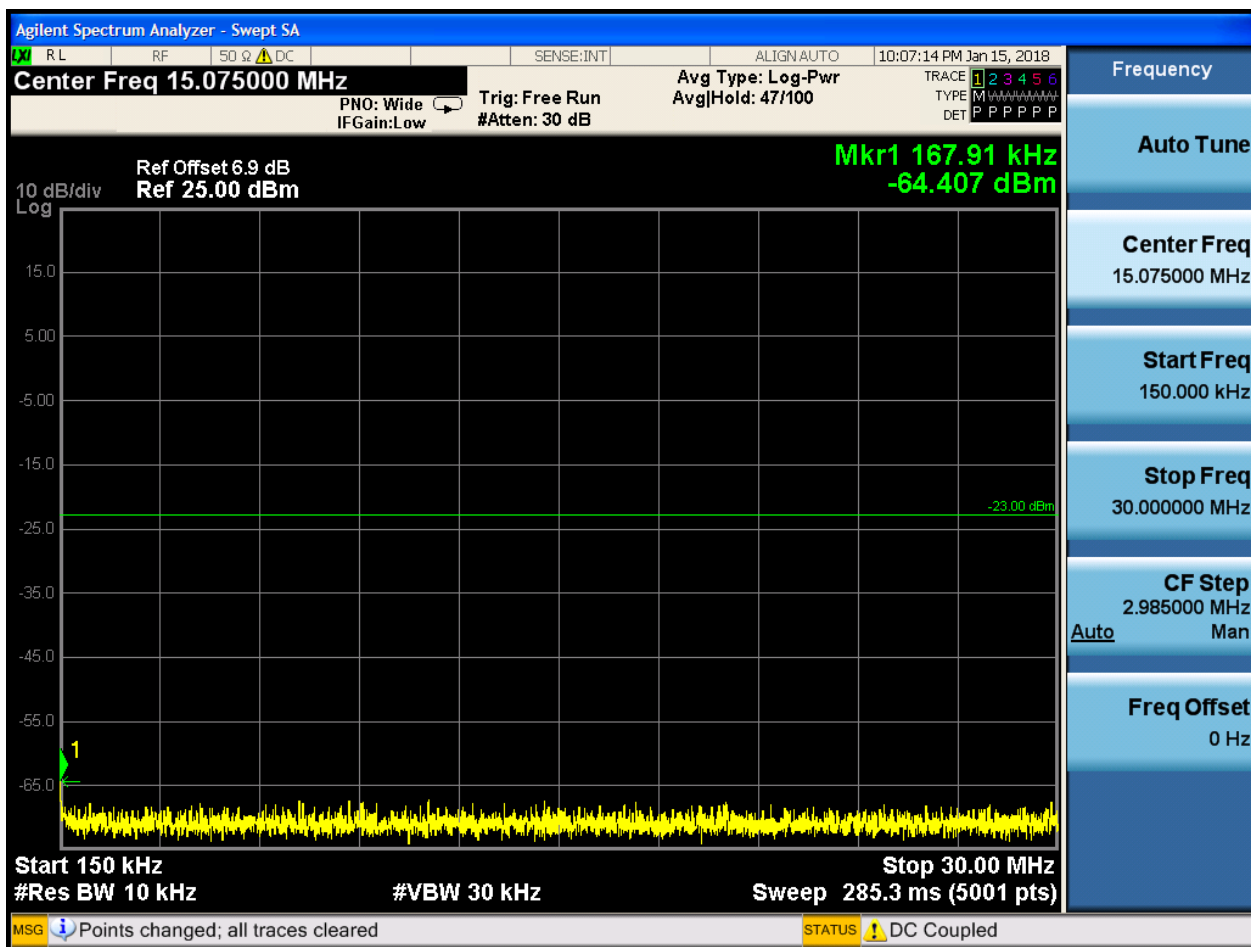


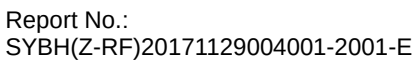


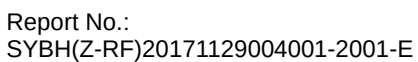
6.1.1.1.1.2 Test Channel = MCH

6.1.1.1.1.2.1 Test RB = RB1#0



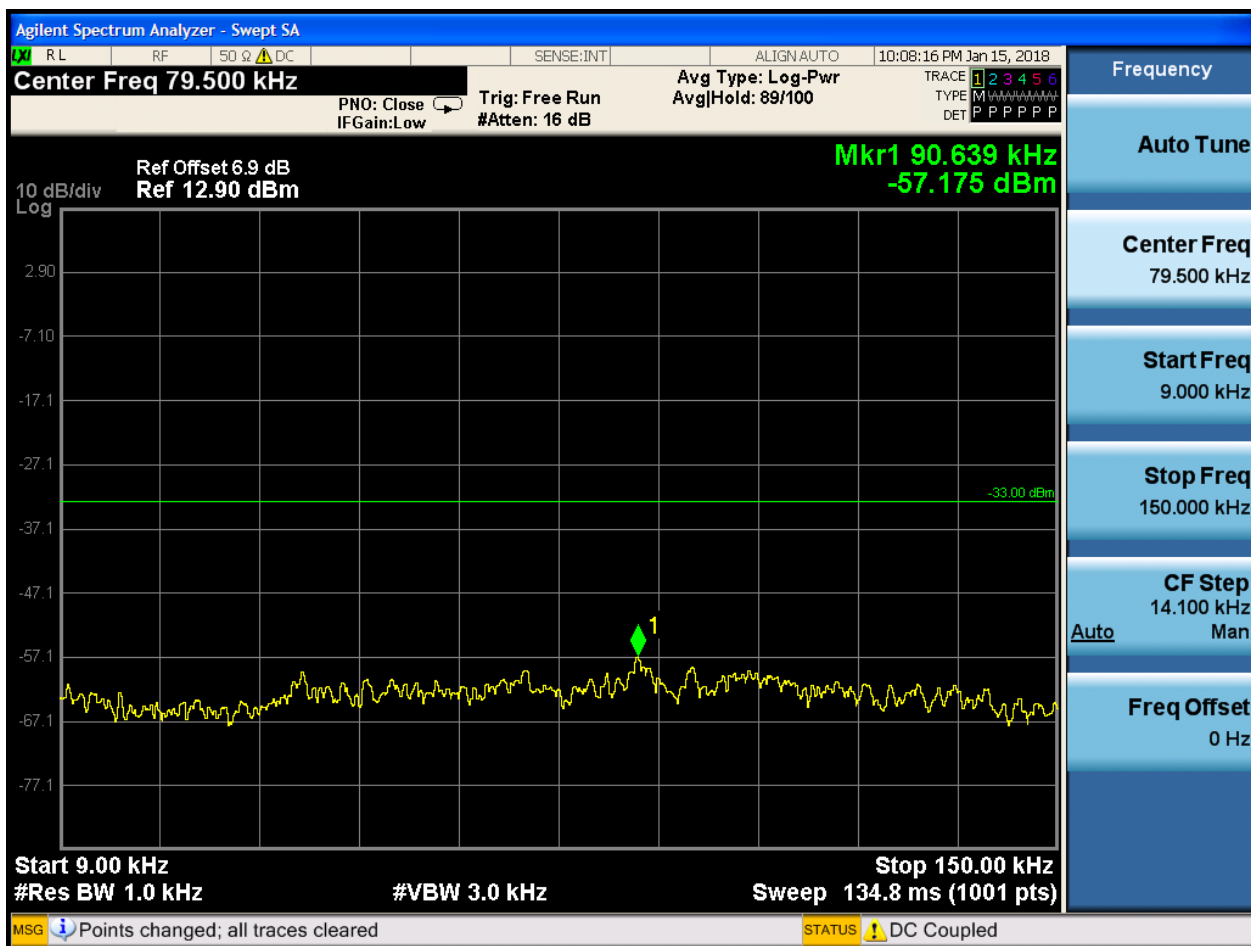


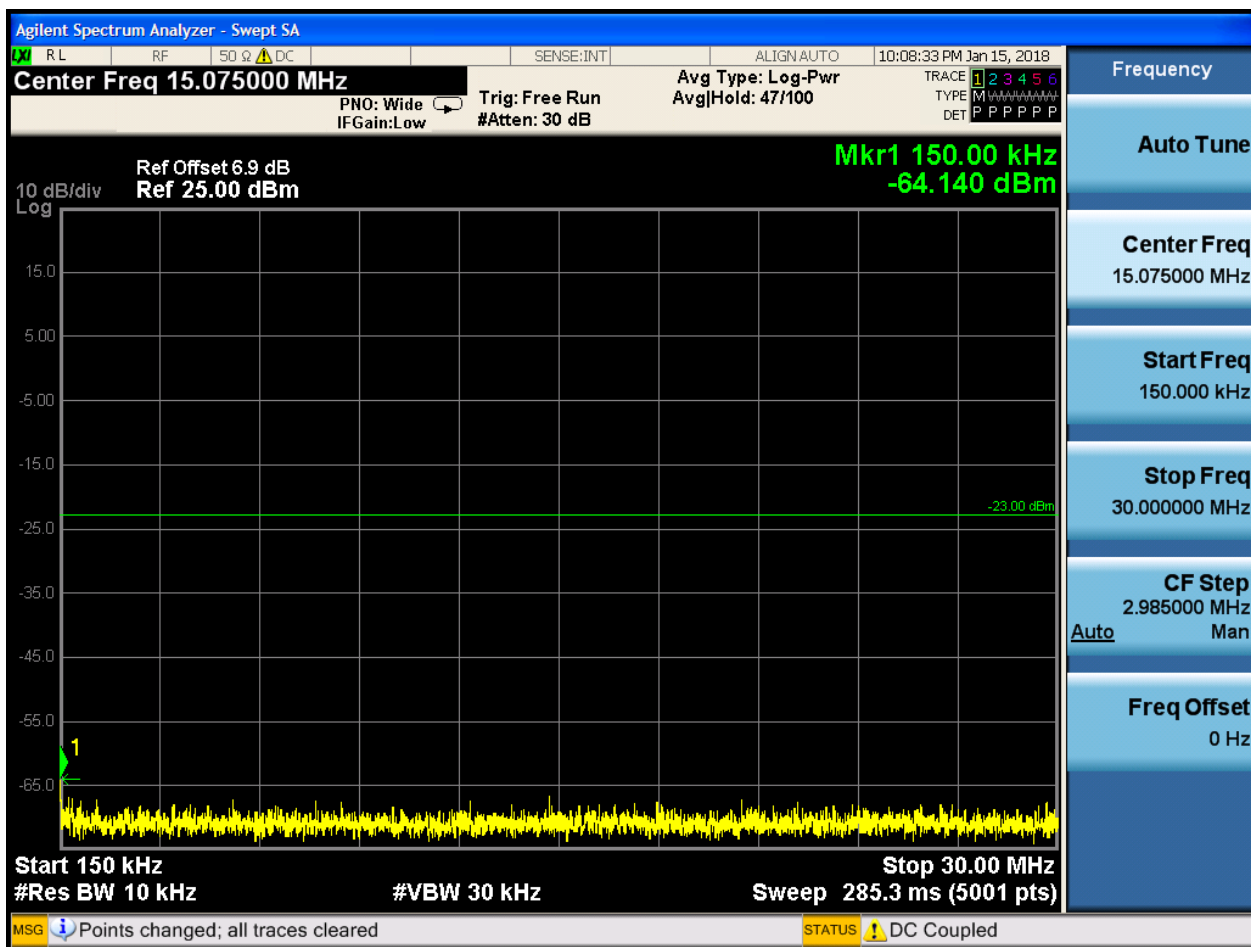


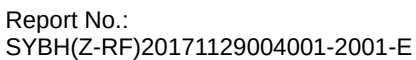


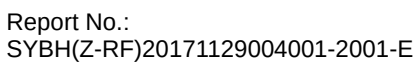
6.1.1.1.1.3 Test Channel = HCH

6.1.1.1.1.3.1 Test RB = RB1#0





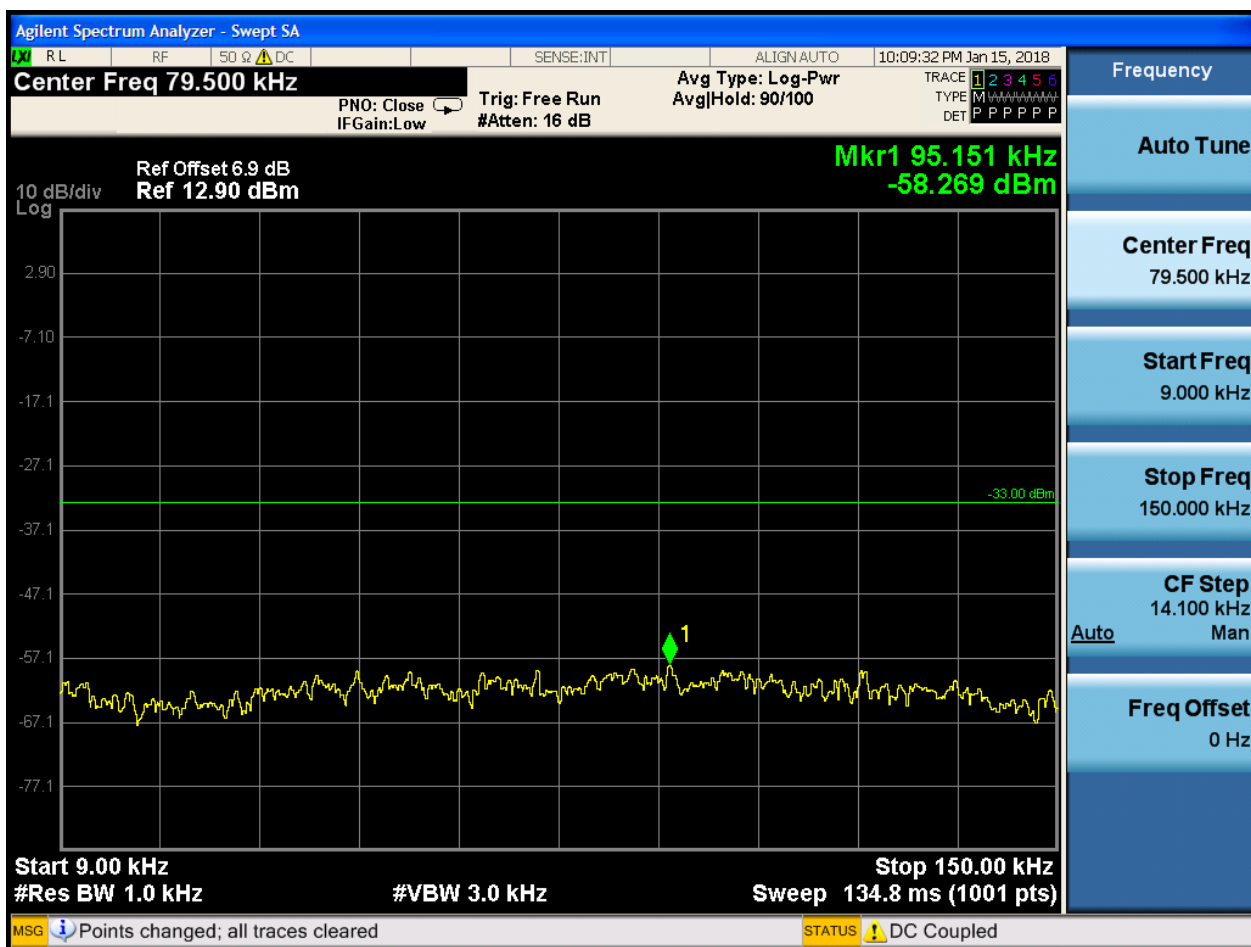




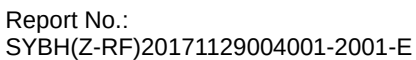
6.1.1.1.2 Test Bandwidth = 3

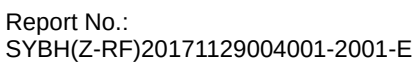
6.1.1.1.2.1 Test Channel = LCH

6.1.1.1.2.1.1 Test RB = RB1#0





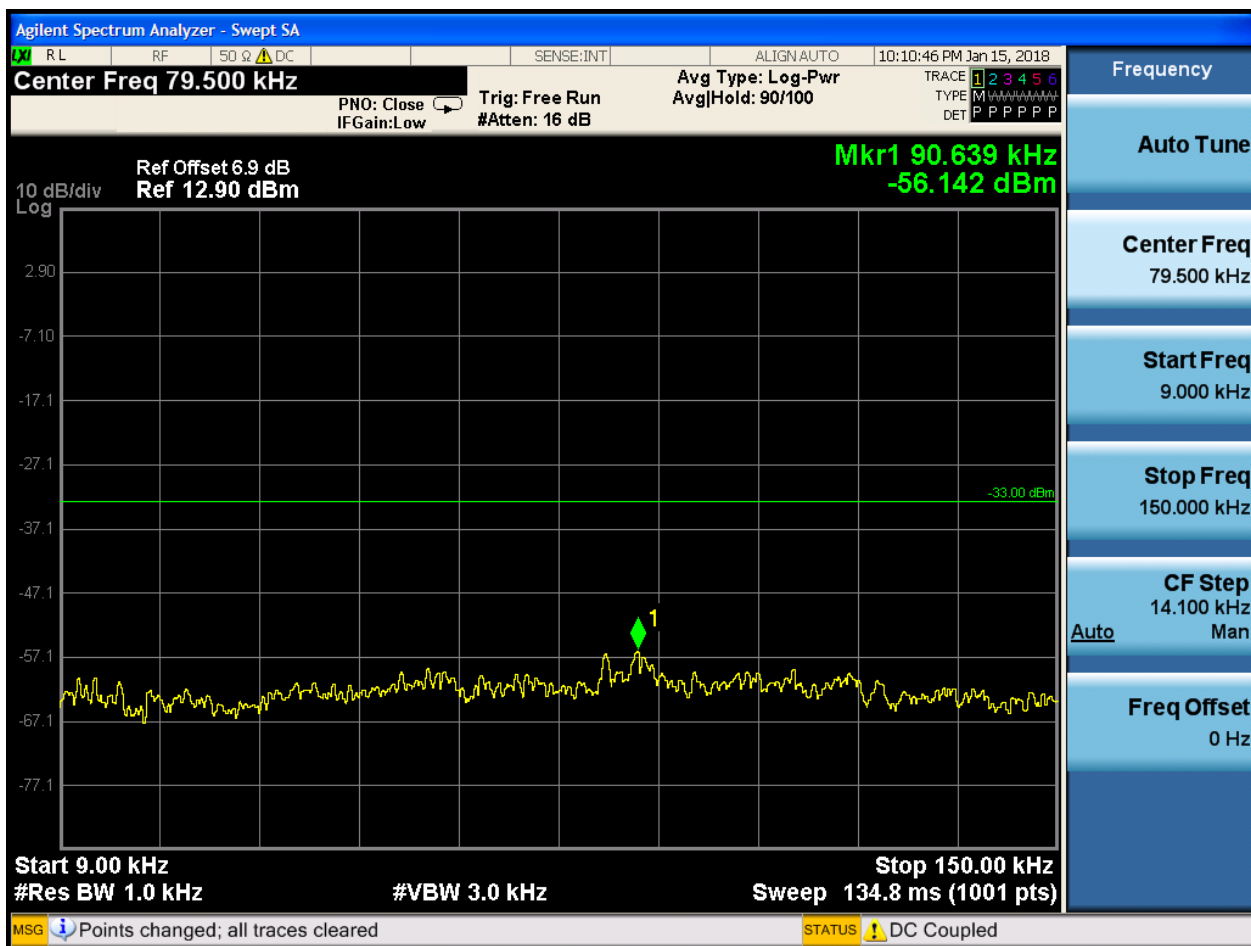


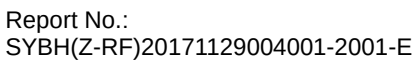


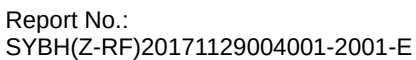


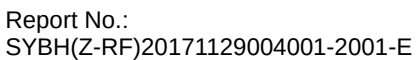
6.1.1.1.2.2 Test Channel = MCH

6.1.1.1.2.2.1 Test RB = RB1#0





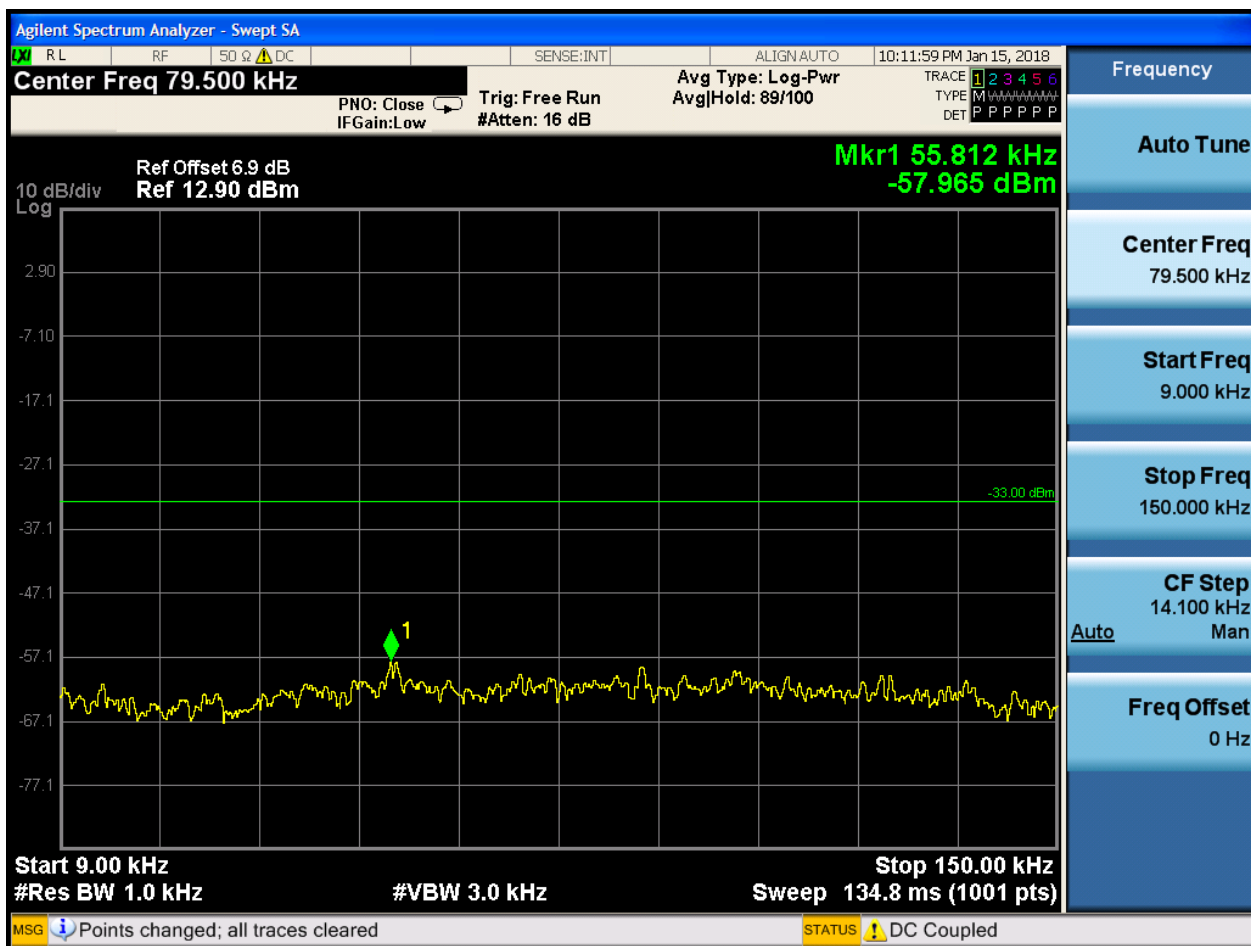


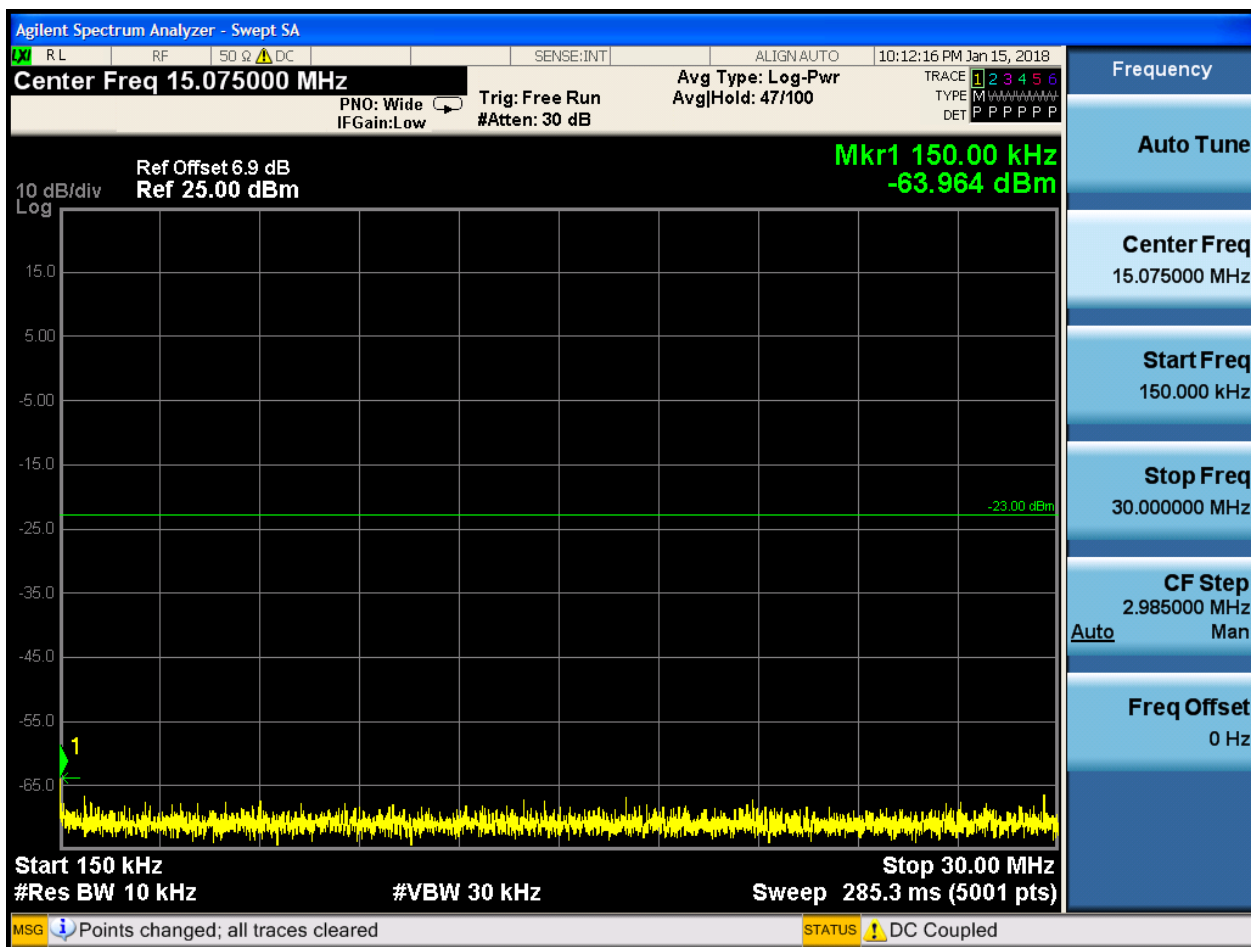


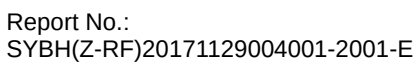


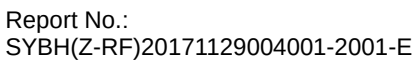
6.1.1.1.2.3 Test Channel = HCH

6.1.1.1.2.3.1 Test RB = RB1#0





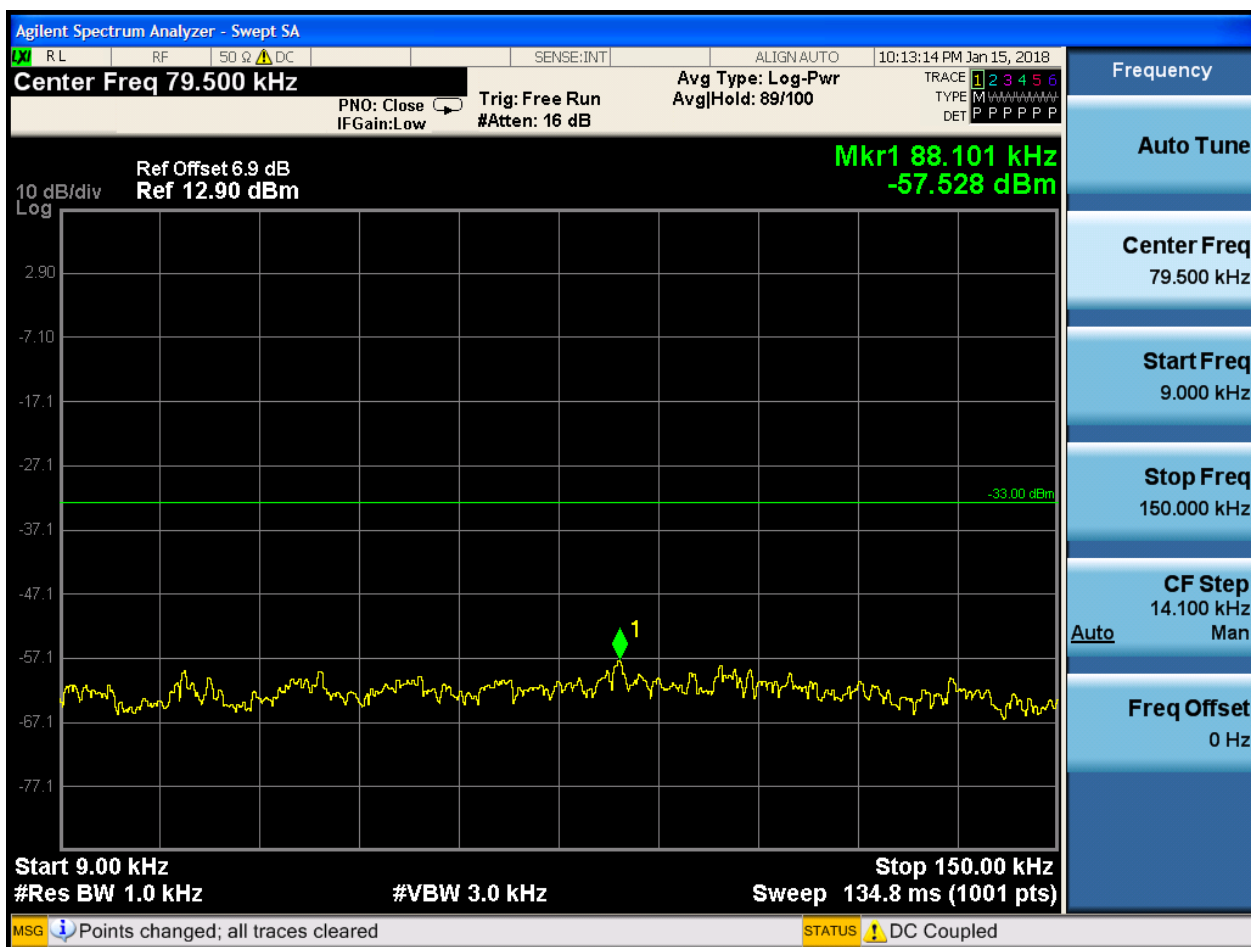


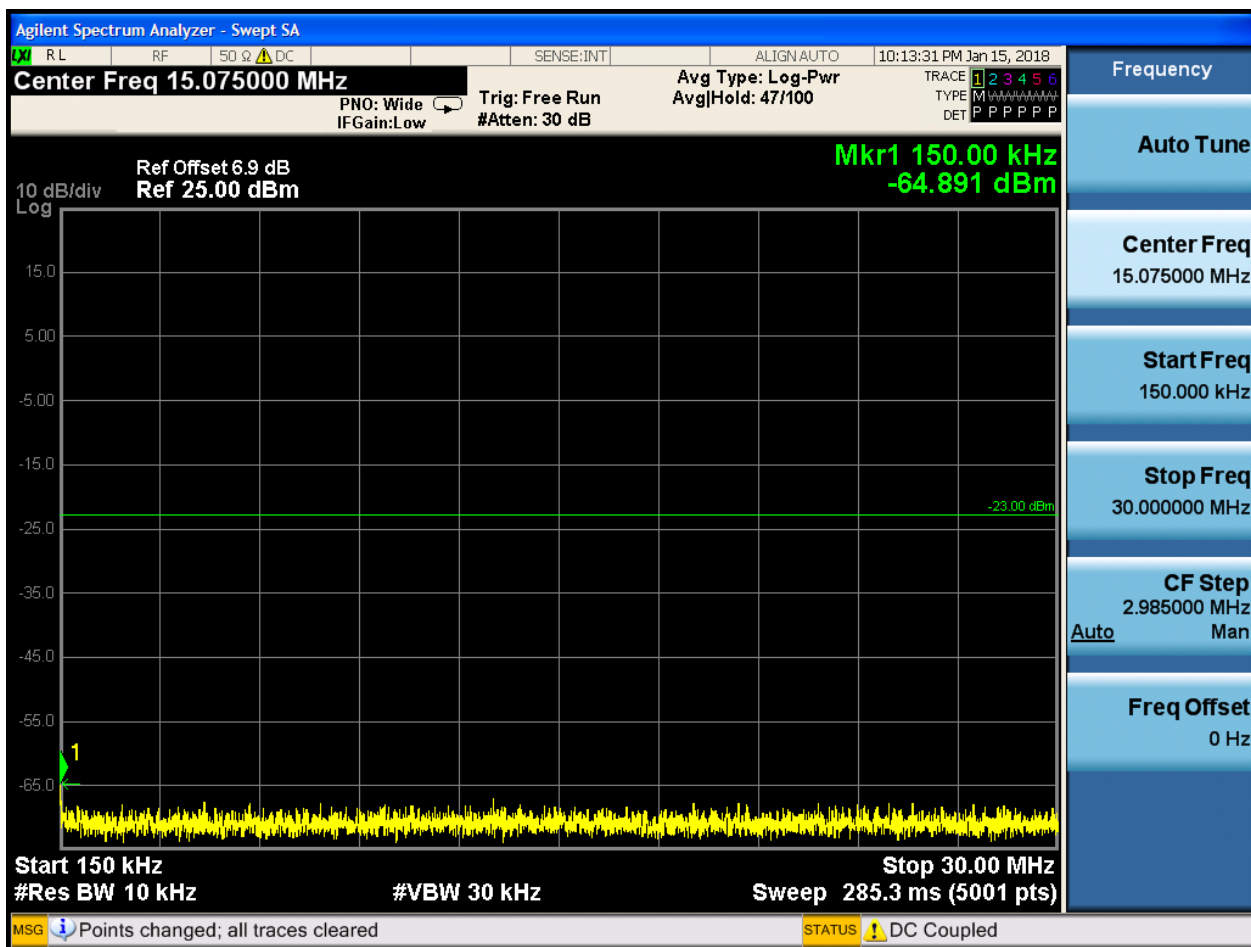


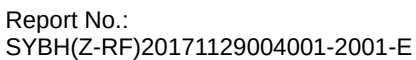
6.1.1.1.3 Test Bandwidth = 5

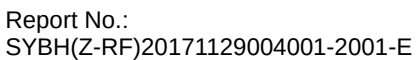
6.1.1.1.3.1 Test Channel = LCH

6.1.1.1.3.1.1 Test RB = RB1#0



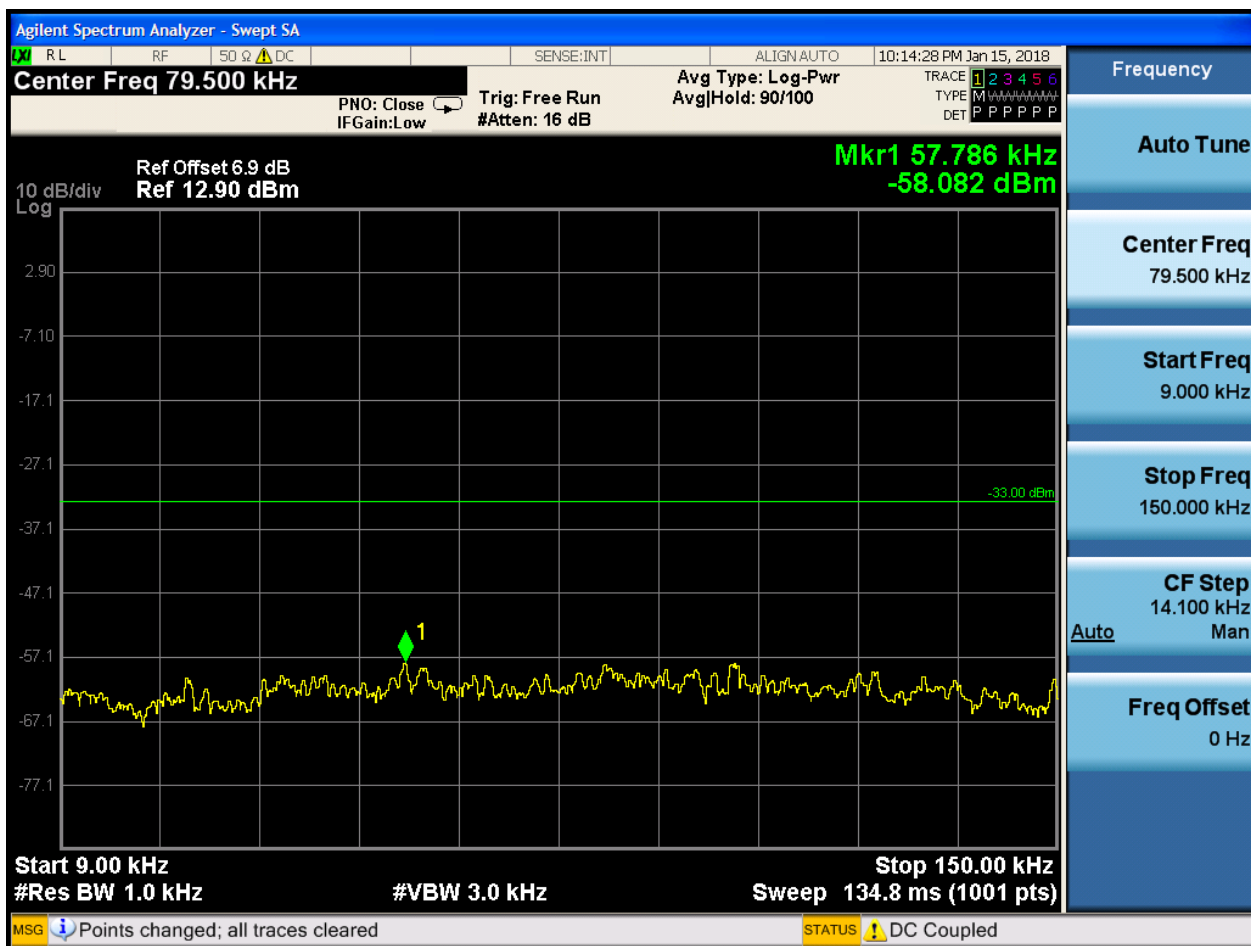


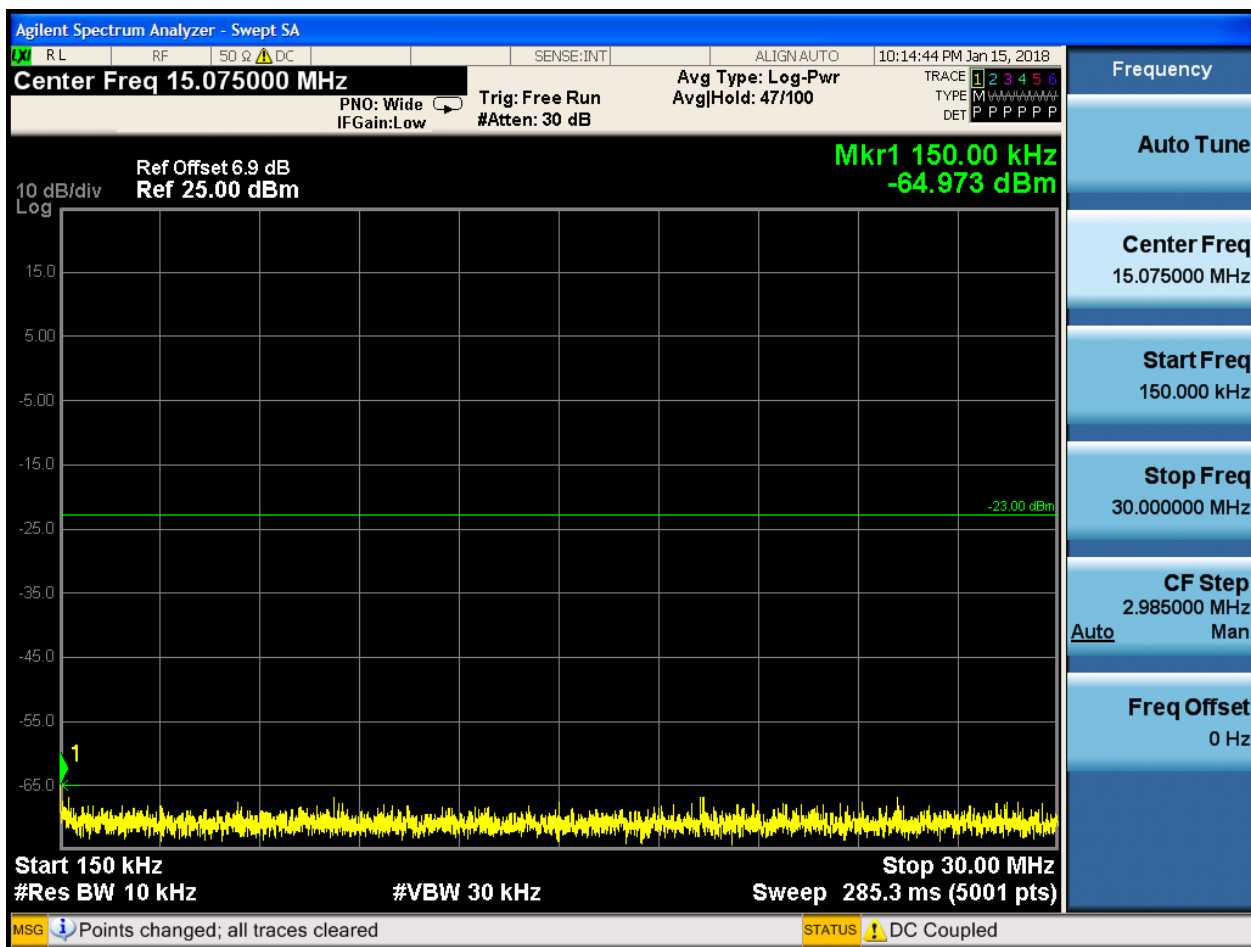


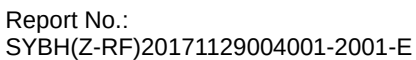


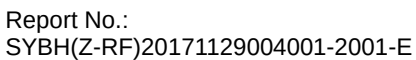
6.1.1.1.3.2 Test Channel = MCH

6.1.1.1.3.2.1 Test RB = RB1#0









6.1.1.1.3.3 Test Channel = HCH

6.1.1.1.3.3.1 Test RB = RB1#0

