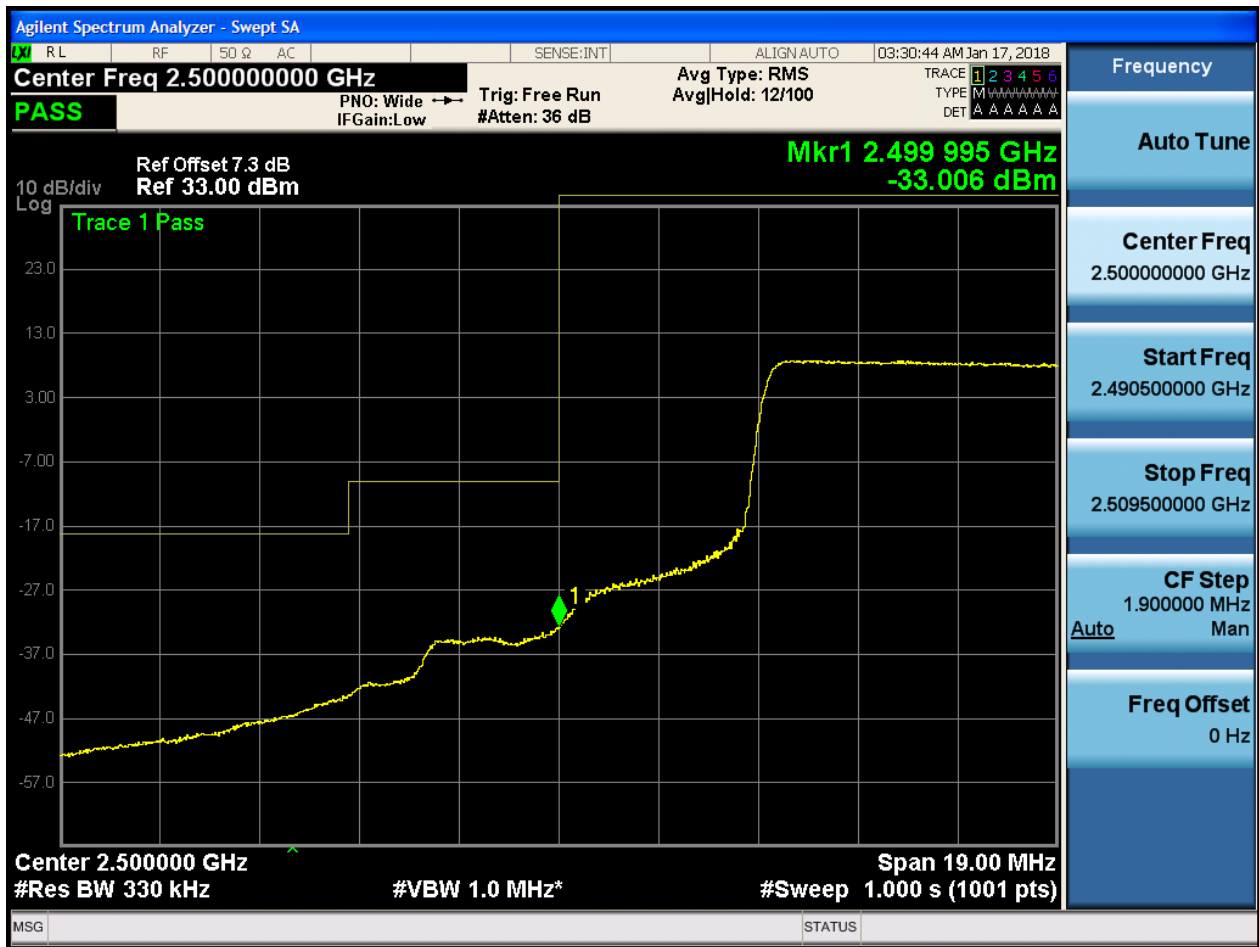




5.1.1.1.3.1.3 Test RB = RB36#18





Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 03:31:04 AM Jan 17, 2018

Center Freq 2.500000000 GHz Avg Type: RMS
PASS PNO: Wide IFGain:Low Trig: Free Run AvgHold: 12/100
TRACE 1 2 3 4 5 6
TYPE M M M M M M M M
DET A A A A A A

Ref Offset 7.3 dB
Ref 33.00 dBm

Mkr1 2.499 995 GHz
-26.429 dBm

10 dB/div
Log

Trace 1 Pass

Center 2.500000 GHz Span 19.00 MHz
#Res BW 330 kHz #VBW 1.0 MHz* #Sweep 1.000 s (1001 pts)

MSG STATUS

Frequency

Auto Tune

Center Freq
2.500000000 GHz

Start Freq
2.490500000 GHz

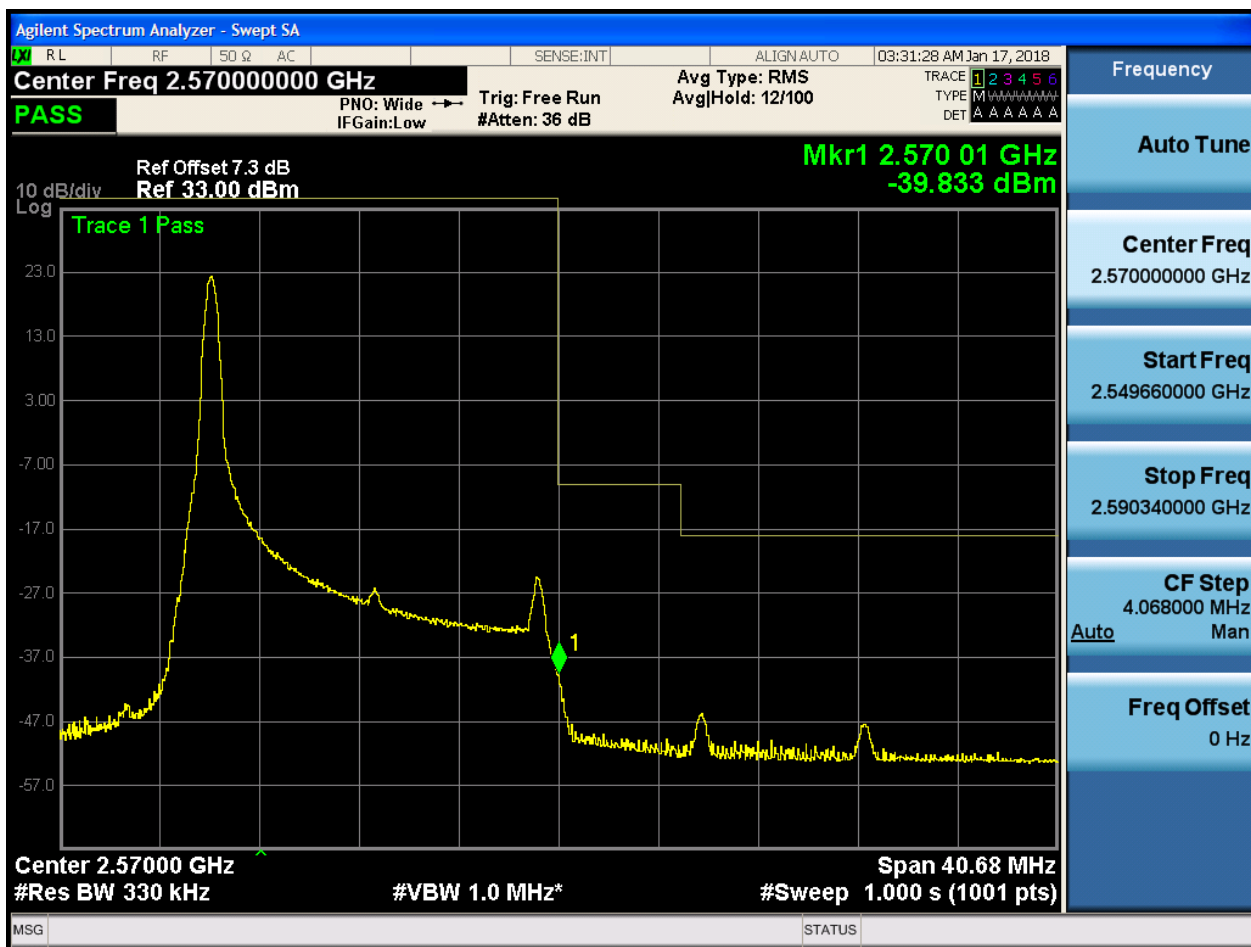
Stop Freq
2.509500000 GHz

CF Step
1.900000 MHz
Auto Man

Freq Offset
0 Hz

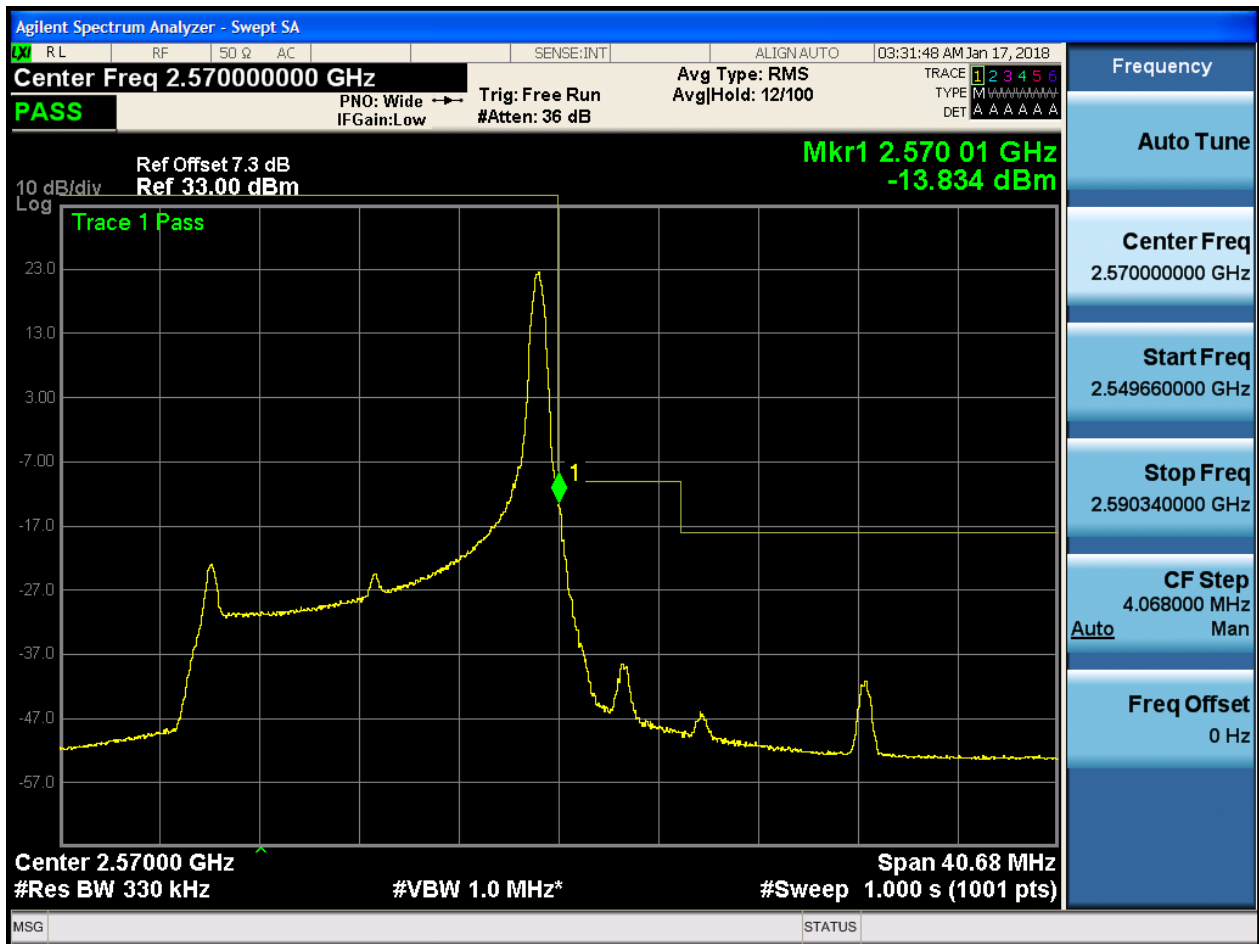
5.1.1.1.3.2 Test Channel = HCH

5.1.1.1.3.2.1 Test RB = RB1#0





5.1.1.1.3.2.2 Test RB = RB1#74





5.1.1.1.3.2.3 Test RB = RB36#18





Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 03:32:26 AM Jan 17, 2018

Center Freq 2.57000000 GHz Avg Type: RMS
PASS PNO: Wide IFGain:Low Trig: Free Run AvgHold: 12/100
#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 7.3 dB
Ref 33.00 dBm

Mkr1 2.570 01 GHz
-26.766 dBm

10 dB/div
Log

Trace 1 Pass

Center 2.57000 GHz
#Res BW 330 kHz

#VBW 1.0 MHz*

Span 40.68 MHz
#Sweep 1.000 s (1001 pts)

MSG STATUS

Frequency

Auto Tune

Center Freq
2.570000000 GHz

Start Freq
2.549660000 GHz

Stop Freq
2.590340000 GHz

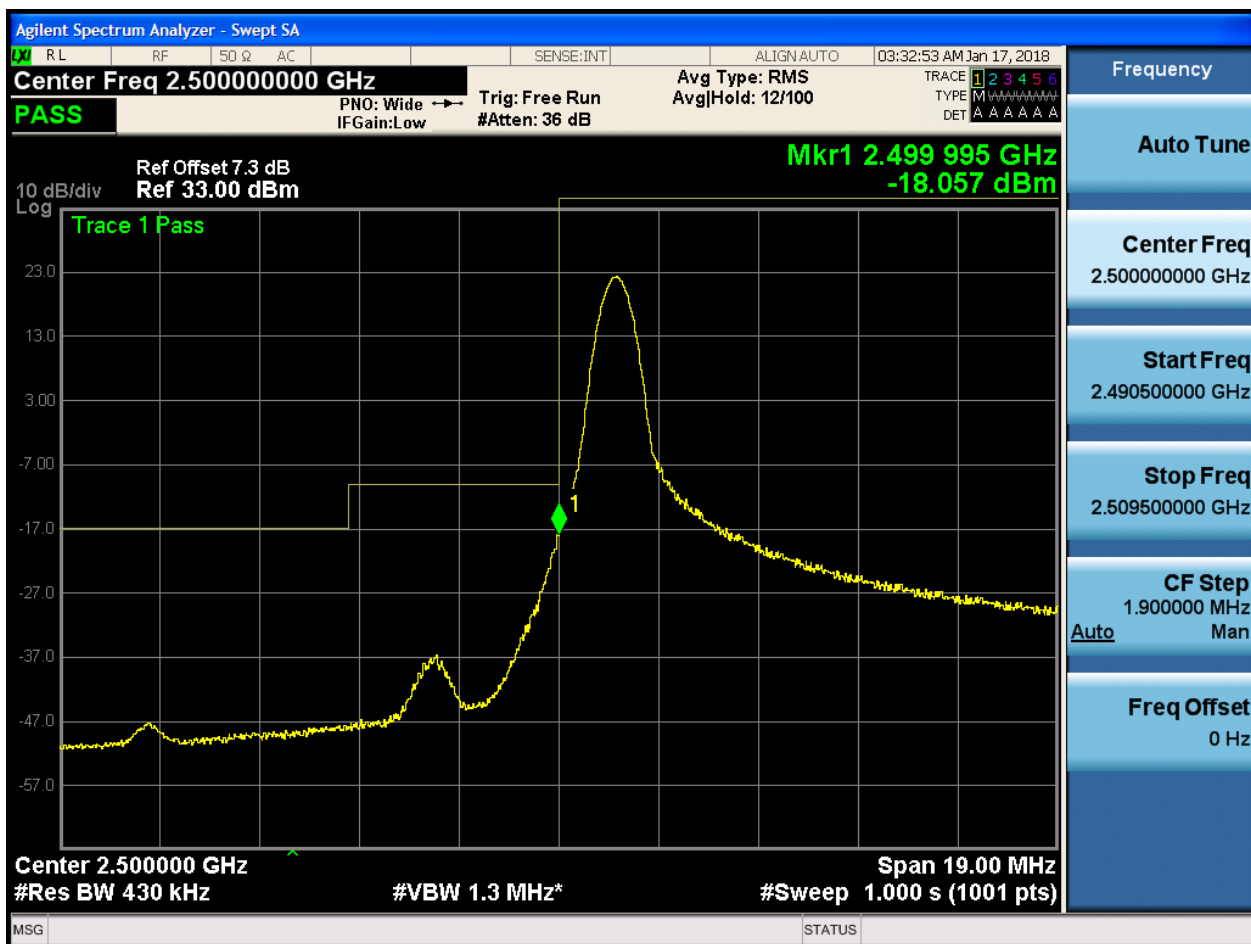
CF Step
4.068000 MHz
Auto Man

Freq Offset
0 Hz

5.1.1.1.4 Test Bandwidth = 20

5.1.1.1.4.1 Test Channel = LCH

5.1.1.1.4.1.1 Test RB = RB1#0





Agilent Spectrum Analyzer - Swept SA

Center Freq 2.50000000 GHz

PASS

Ref Offset 7.3 dB
Ref 33.00 dBm

Mkr1 2.499 995 GHz
-38.765 dBm

10 dB/div
Log

Trace 1 Pass

Center 2.500000 GHz
#Res BW 430 kHz
#VBW 1.3 MHz*

Span 19.00 MHz
#Sweep 1.000 s (1001 pts)

Frequency

Auto Tune

Center Freq
2.500000000 GHz

Start Freq
2.490500000 GHz

Stop Freq
2.509500000 GHz

CF Step
1.900000 MHz
Auto

Freq Offset
0 Hz

The screenshot shows a swept spectrum on a logarithmic scale. The main trace is labeled 'Trace 1 Pass'. A peak is identified with a marker '1' at 2.499995 GHz with a power level of -38.765 dBm. The background shows a stepped frequency response. The right side of the screen features a control panel with various settings and a measurement table.

Trace	1	2	3	4	5	6
TYPE	M	M	M	M	M	M
DET	A	A	A	A	A	A



5.1.1.1.4.1.3 Test RB = RB50#25





Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 03:33:52 AM Jan 17, 2018

Center Freq 2.500000000 GHz Avg Type: RMS
PASS PNO: Wide Trg: Free Run AvgHld: 12/100
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 7.3 dB
Ref 33.00 dBm

Mkr1 2.499 995 GHz
-28.803 dBm

10 dB/div
Log

Trace 1 Pass

Center 2.500000 GHz Span 19.00 MHz
#Res BW 430 kHz #VBW 1.3 MHz* #Sweep 1.000 s (1001 pts)

MSG STATUS

Frequency

Auto Tune

Center Freq
2.500000000 GHz

Start Freq
2.490500000 GHz

Stop Freq
2.509500000 GHz

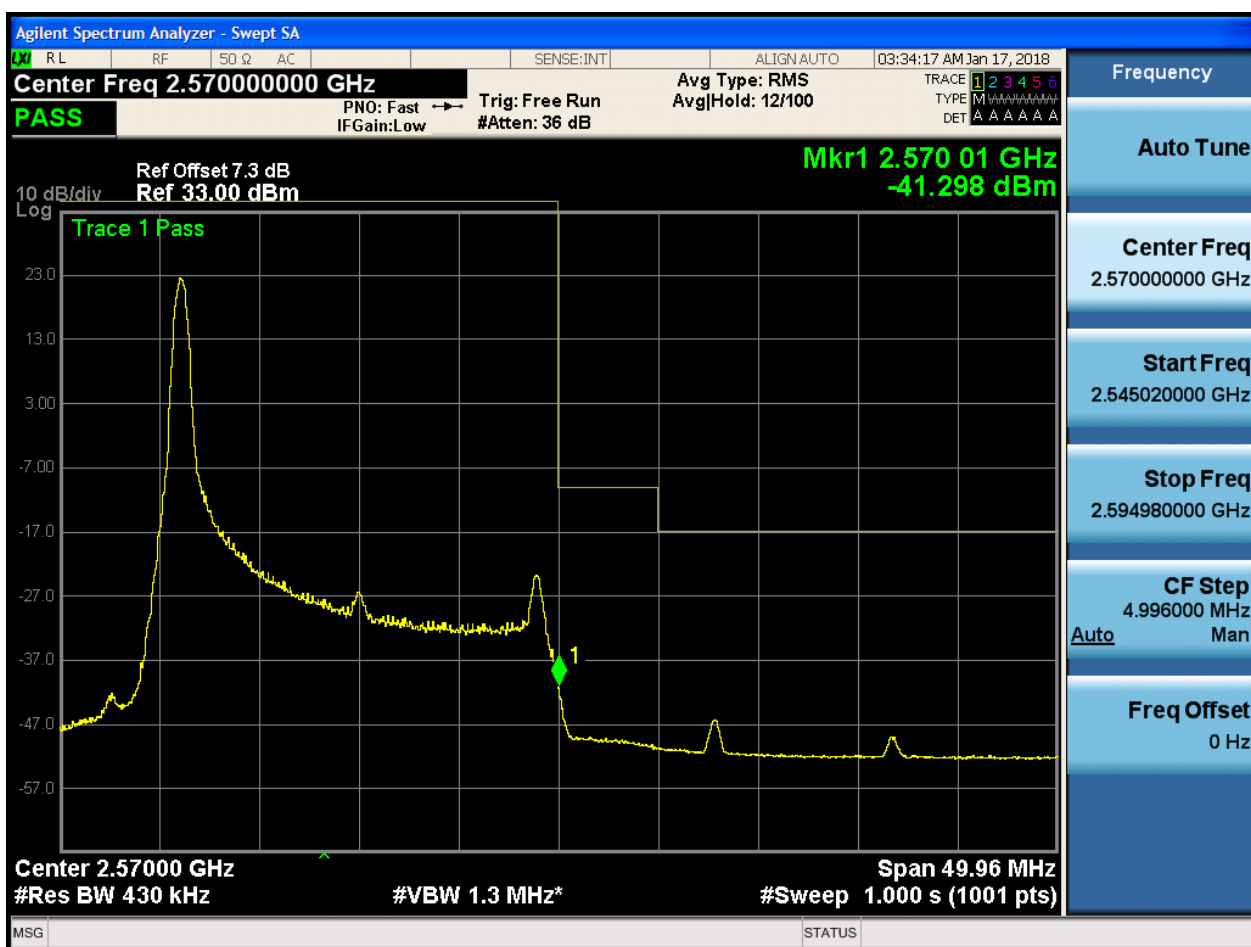
CF Step
1.900000 MHz
Auto Man

Freq Offset
0 Hz



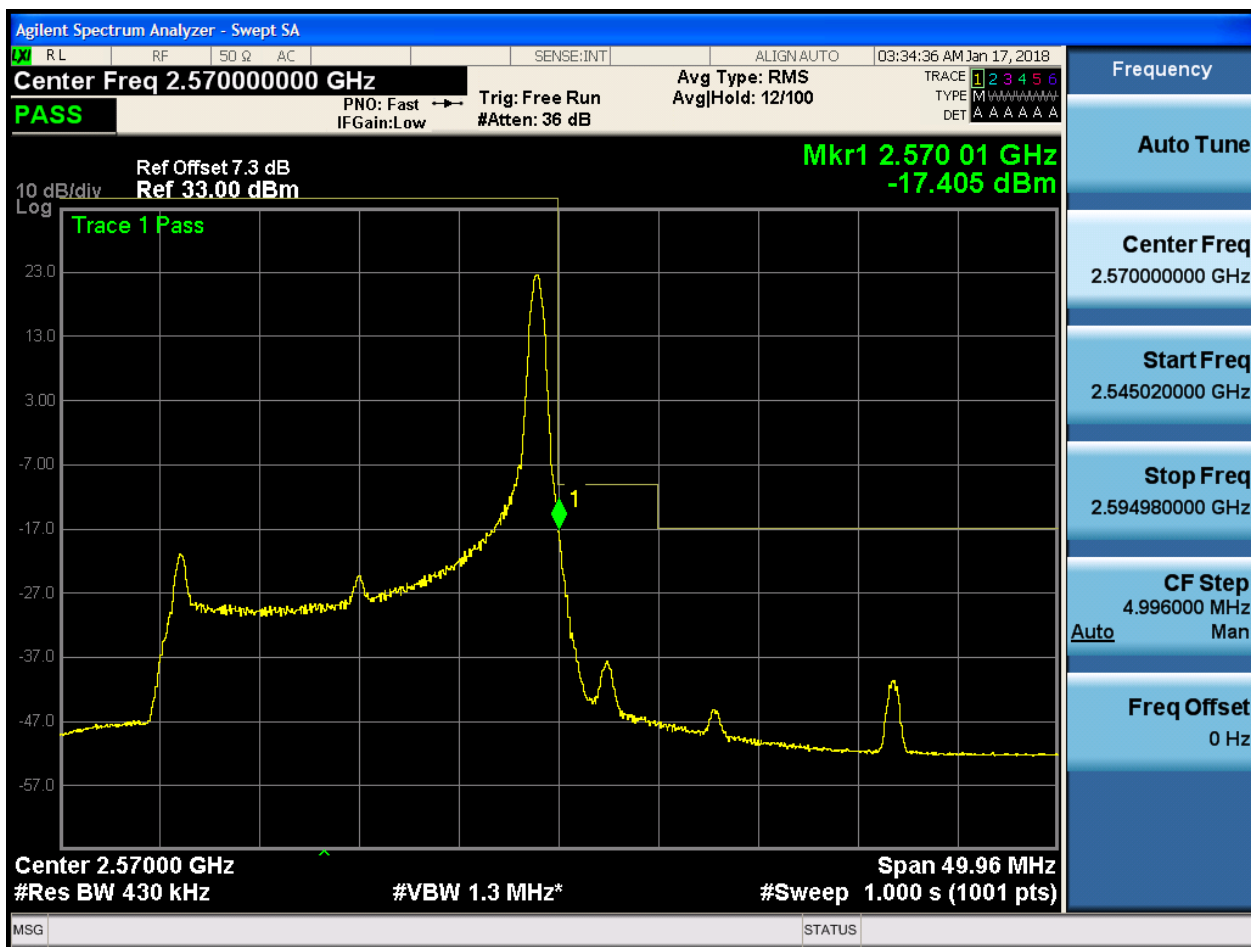
5.1.1.1.4.2 Test Channel = HCH

5.1.1.1.4.2.1 Test RB = RB1#0



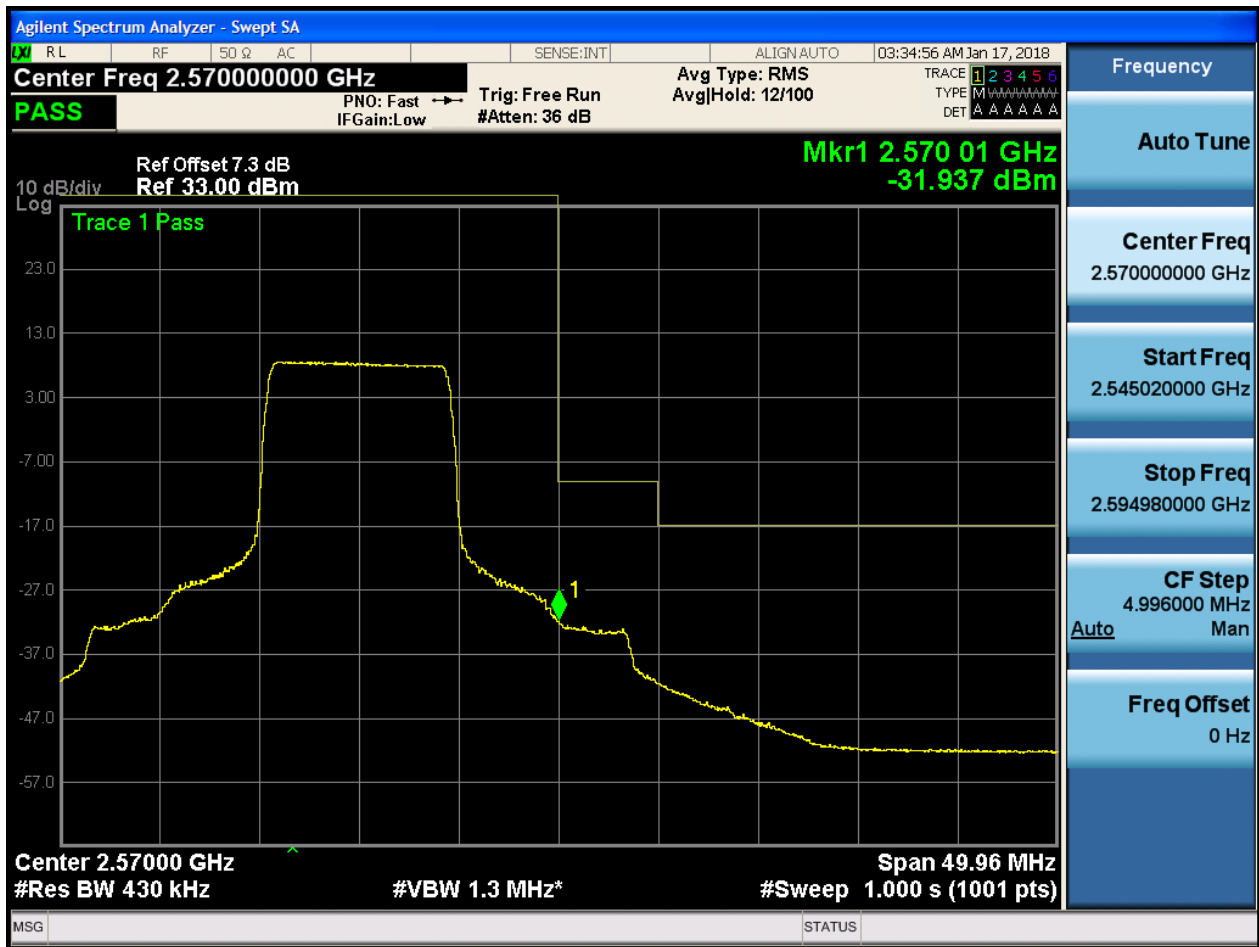


5.1.1.1.4.2.2 Test RB = RB1#99





5.1.1.1.4.2.3 Test RB = RB50#25





5.1.1.1.4.2.4 Test RB = RB100#0



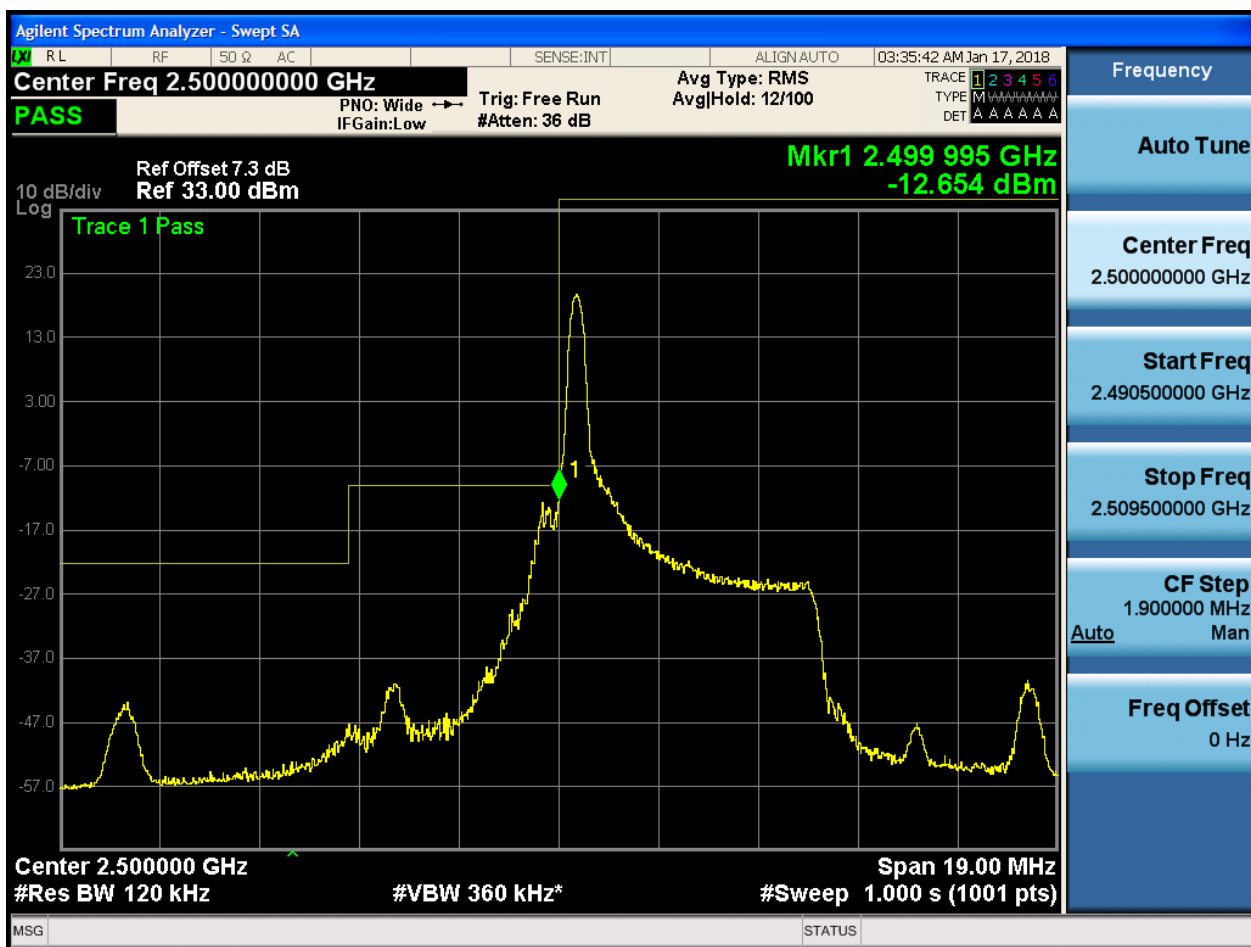


5.1.1.2 Test Mode = LTE/TM2

5.1.1.2.1 Test Bandwidth = 5

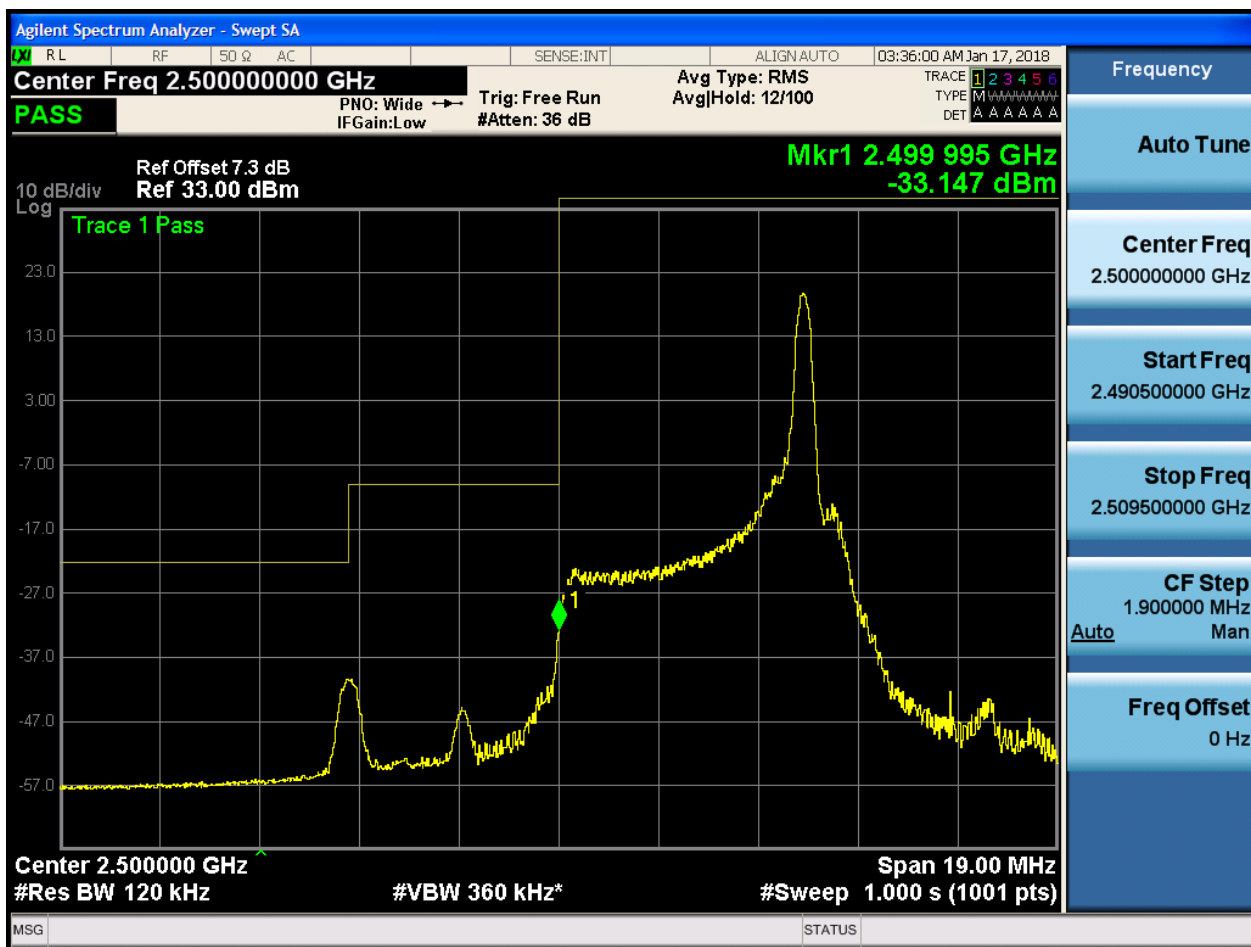
5.1.1.2.1.1 Test Channel = LCH

5.1.1.2.1.1.1 Test RB = RB1#0



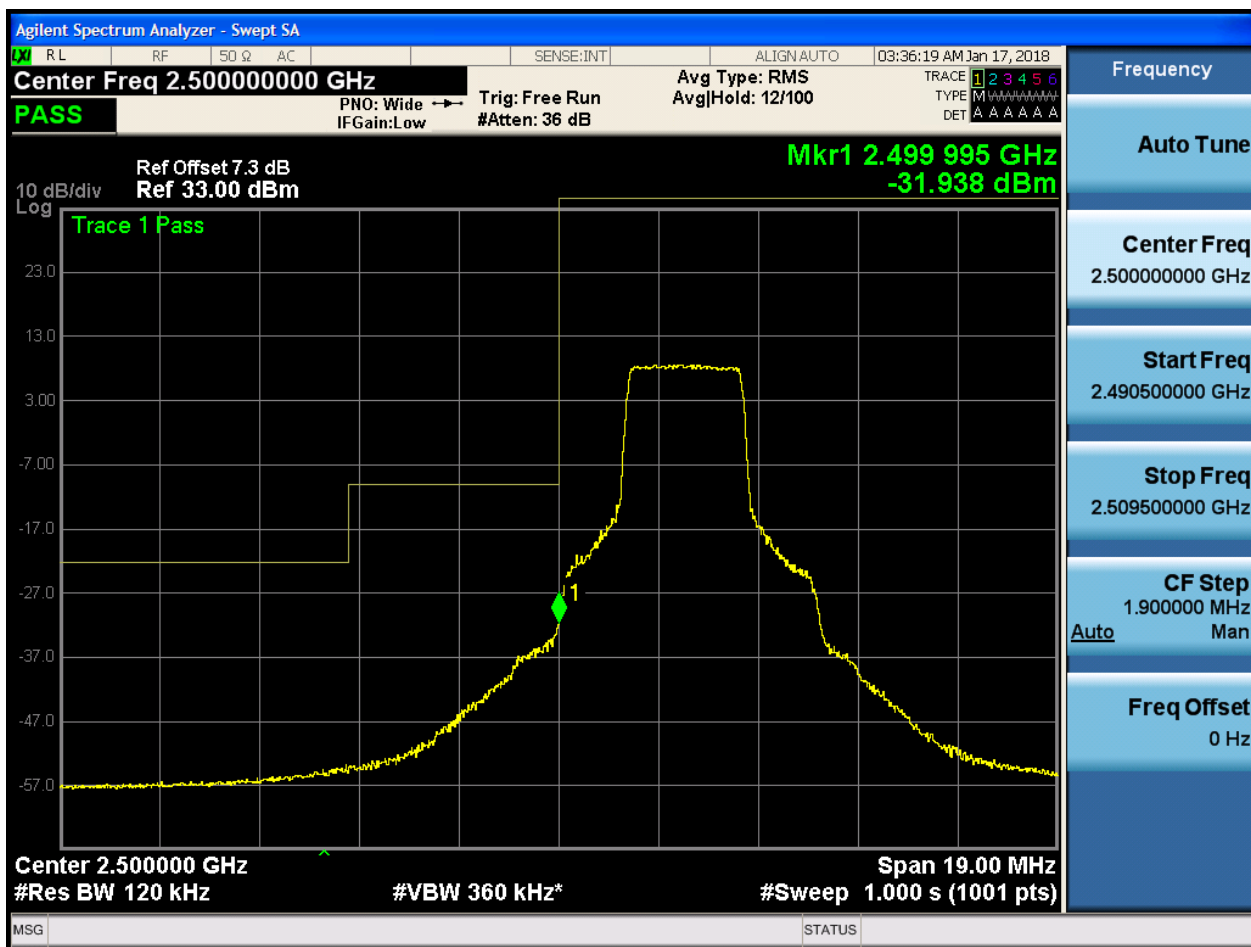


5.1.1.2.1.1.2 Test RB = RB1#24

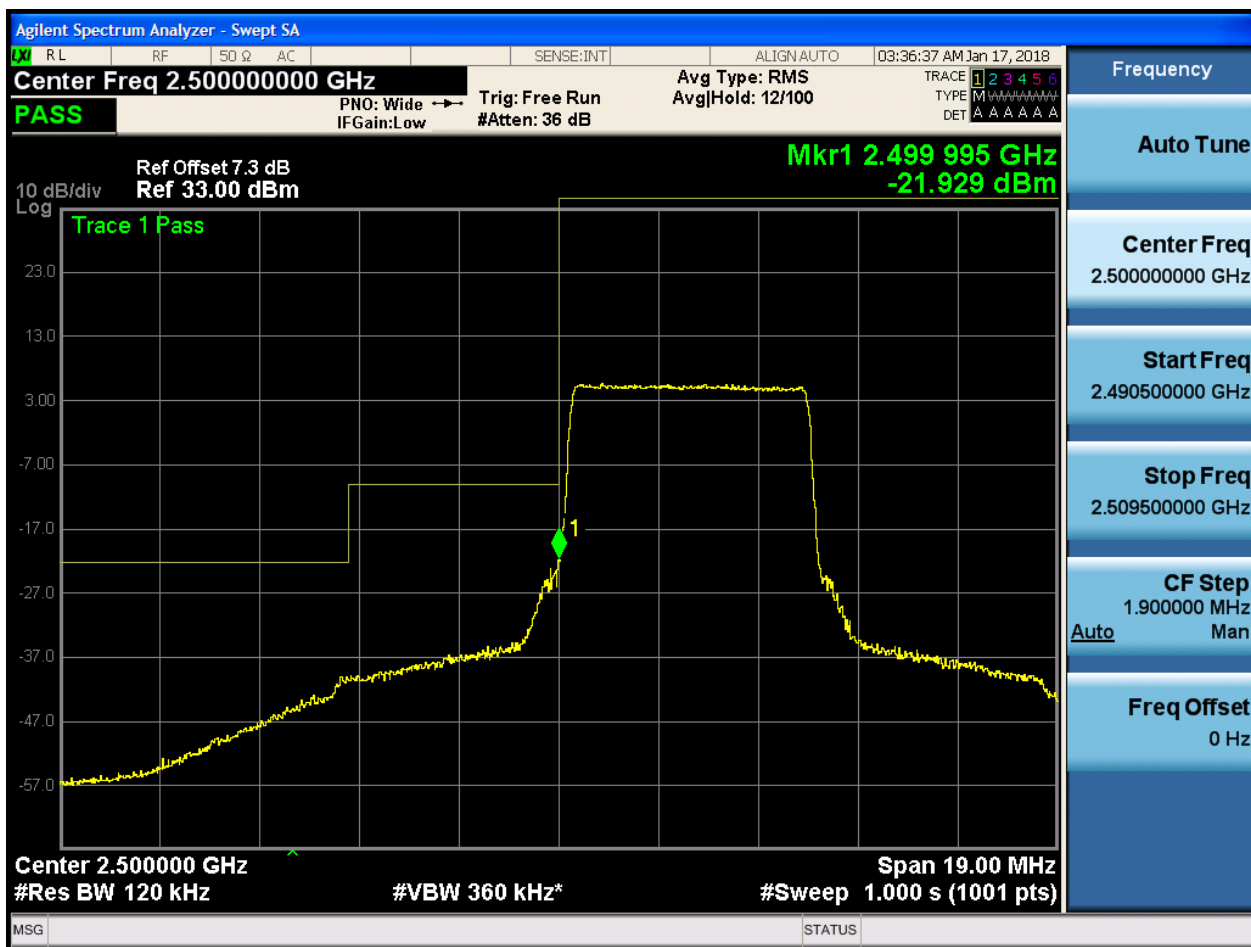




5.1.1.2.1.1.3 Test RB = RB12#6



5.1.1.2.1.1.4 Test RB = RB25#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

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 03:37:20 AM Jan 17, 2018

Center Freq 2.57000000 GHz Avg Type: RMS
PASS PNO: Wide IFGain:Low Trig: Free Run AvgHold: 12/100
#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 7.3 dB
Ref 33.00 dBm

Mkr1 2.570 005 GHz
-13.724 dBm

10 dB/div
Log

Trace 1 Pass

Center 2.57000 GHz
#Res BW 120 kHz
#VBW 360 kHz*
Span 22.00 MHz
#Sweep 1.000 s (1001 pts)

MSG STATUS

Frequency

Auto Tune

Center Freq
2.57000000 GHz

Start Freq
2.559000000 GHz

Stop Freq
2.581000000 GHz

CF Step
2.200000 MHz
Auto Man

Freq Offset
0 Hz



Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 03:37:38 AM Jan 17, 2018

Center Freq 2.570000000 GHz Avg Type: RMS
PASS PNO: Wide IFGain:Low Trig: Free Run AvgHold: 12/100
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 A

Ref Offset 7.3 dB
Ref 33.00 dBm

Mkr1 2.570 005 GHz
-29.941 dBm

10 dB/div
Log

Trace 1 Pass

Center 2.57000 GHz
#Res BW 120 kHz #VBW 360 kHz* Span 22.00 MHz
#Sweep 1.000 s (1001 pts)

MSG STATUS



5.1.1.2.1.2.4 Test RB = RB25#0

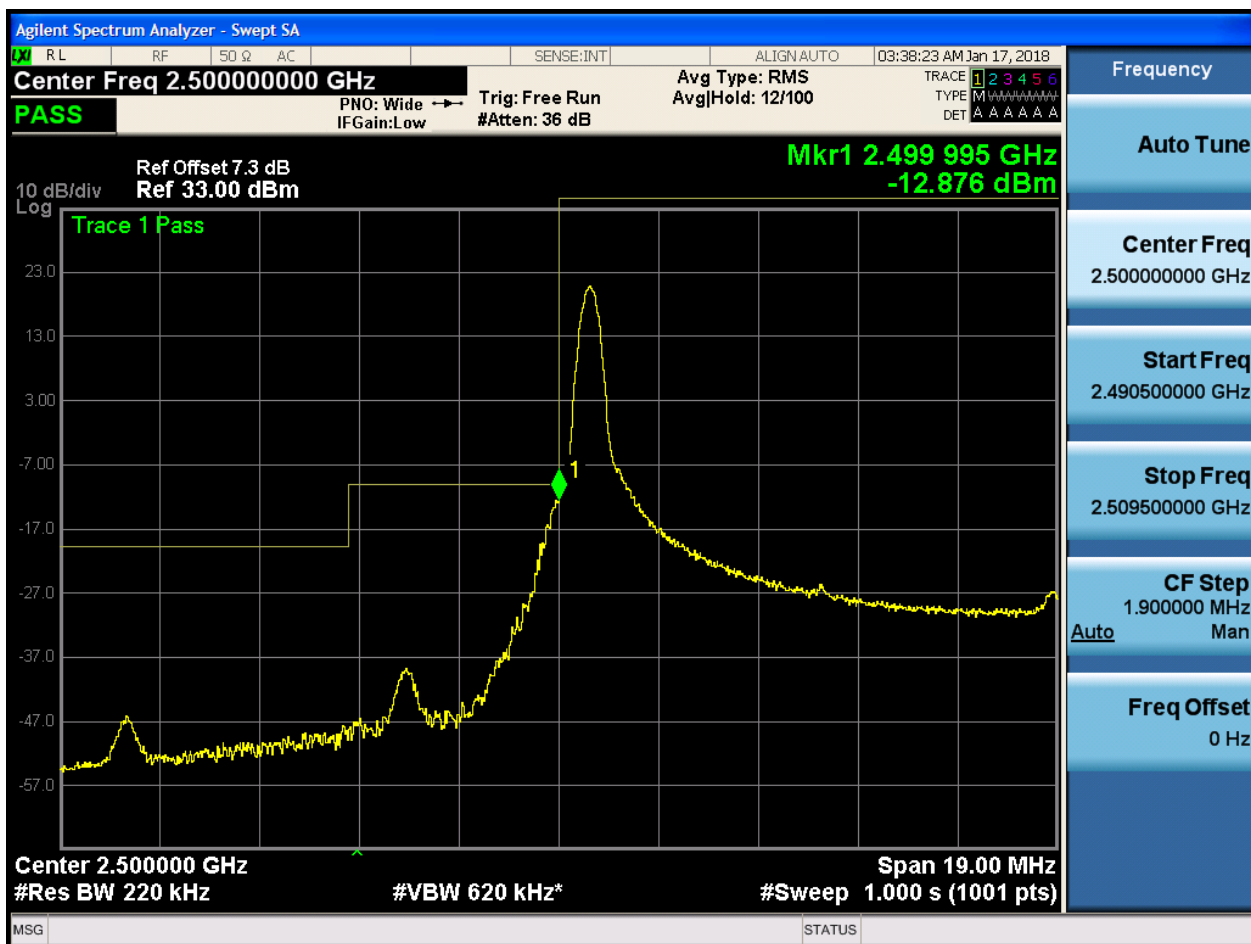




5.1.1.2.2 Test Bandwidth = 10

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 03:38:41 AM Jan 17, 2018

Center Freq 2.500000000 GHz Avg Type: RMS
PASS PNO: Wide IFGain:Low Trig: Free Run AvgHold: 12/100
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 7.3 dB
Ref 33.00 dBm

Mkr1 2.499 995 GHz
-36.692 dBm

10 dB/div
Log

Trace 1 Pass

Center 2.500000 GHz
#Res BW 220 kHz #VBW 620 kHz* Span 19.00 MHz
#Sweep 1.000 s (1001 pts)

MSG STATUS



Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN: AUTO 03:39:00 AM Jan 17, 2018

Center Freq 2.500000000 GHz Avg Type: RMS Trg: Free Run
#Res BW 220 kHz IF Gain: Low #Atten: 36 dB

PASS PNO: Wide TYPE M DET A A A A A A

Ref Offset 7.3 dB Mkr1 2.499 995 GHz
Ref 33.00 dBm -33.610 dBm

10 dB/div Log

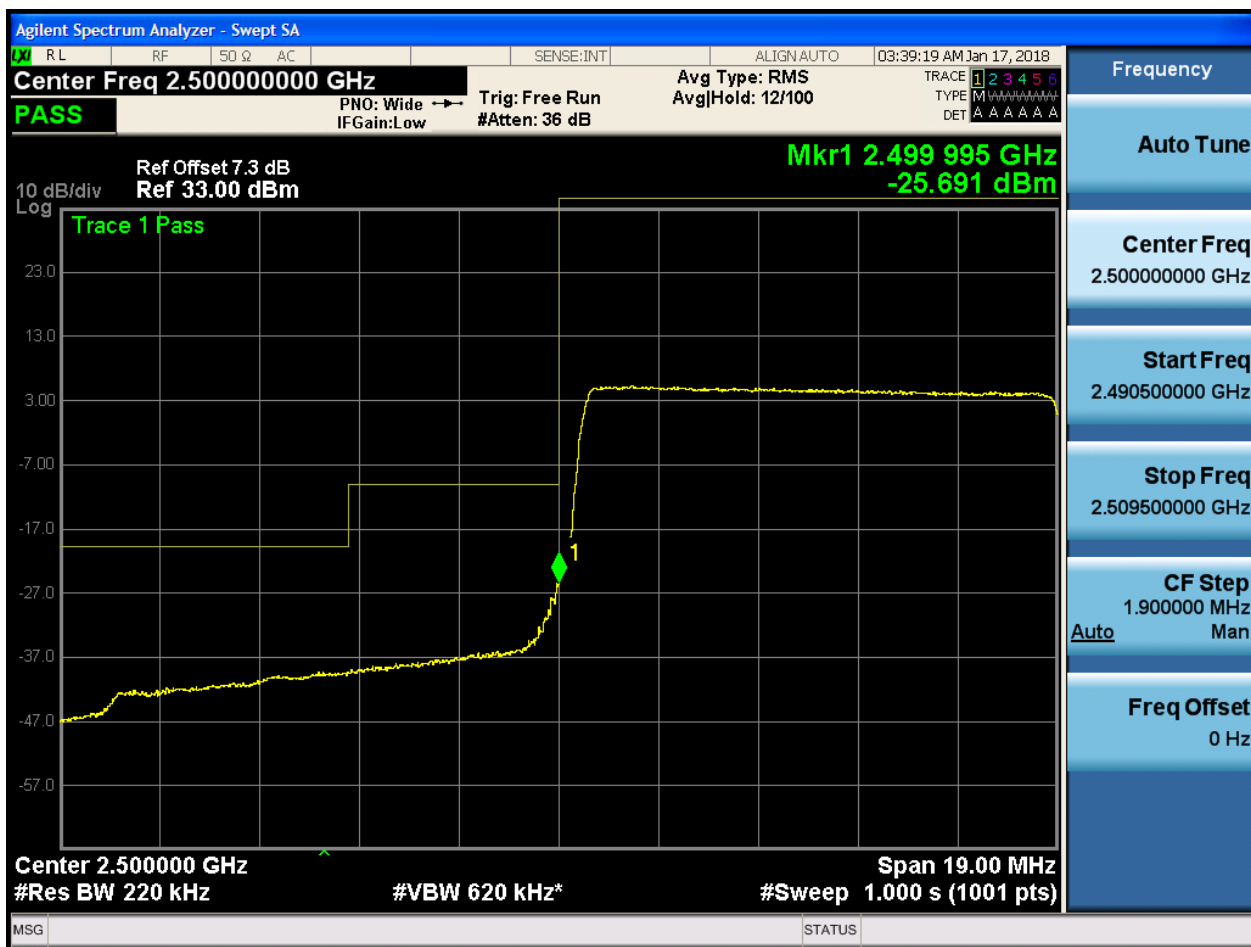
Trace 1 Pass

Center 2.500000 GHz Span 19.00 MHz
#Res BW 220 kHz #VBW 620 kHz* #Sweep 1.000 s (1001 pts)

MSG STATUS

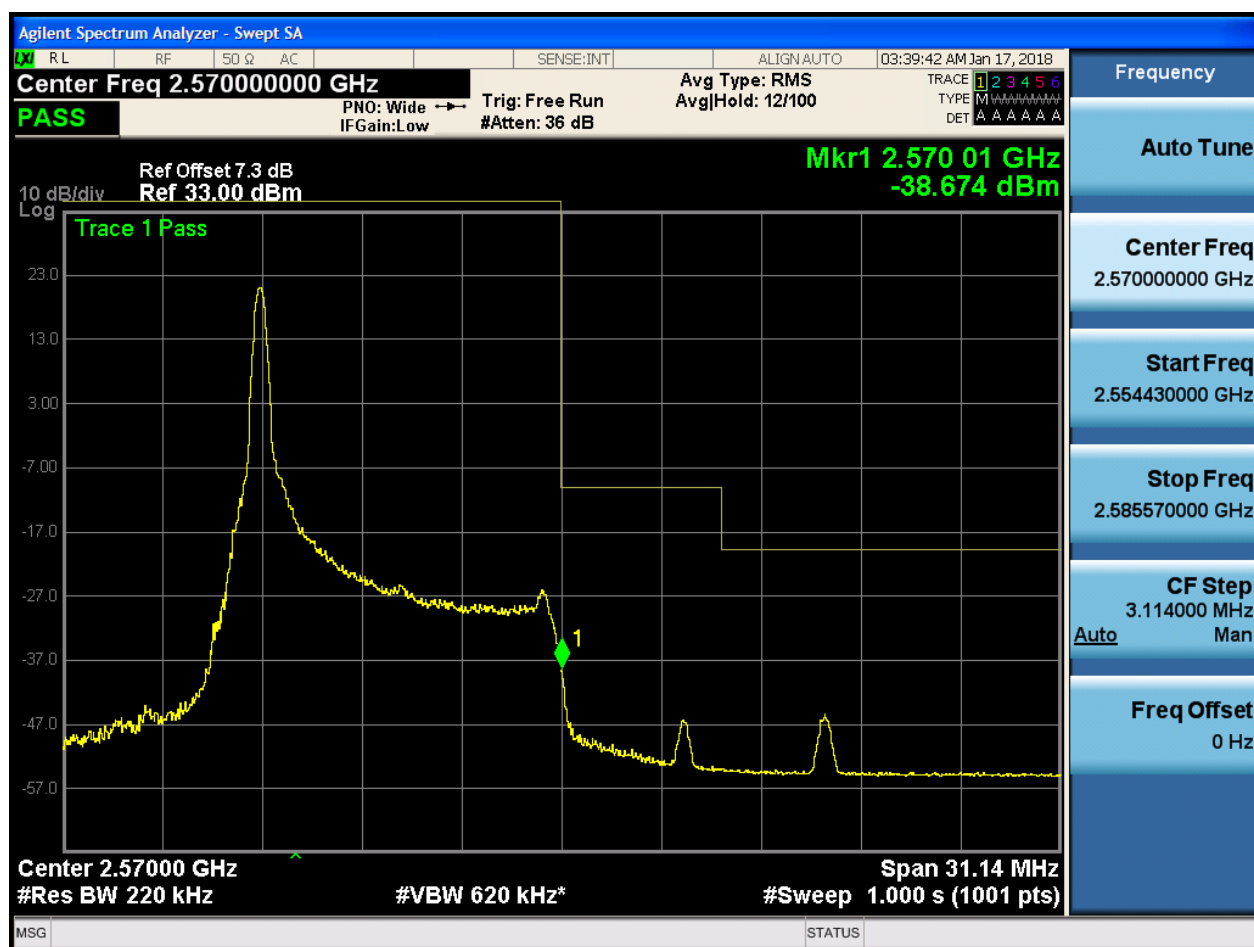


5.1.1.2.2.1.4 Test RB = RB50#0

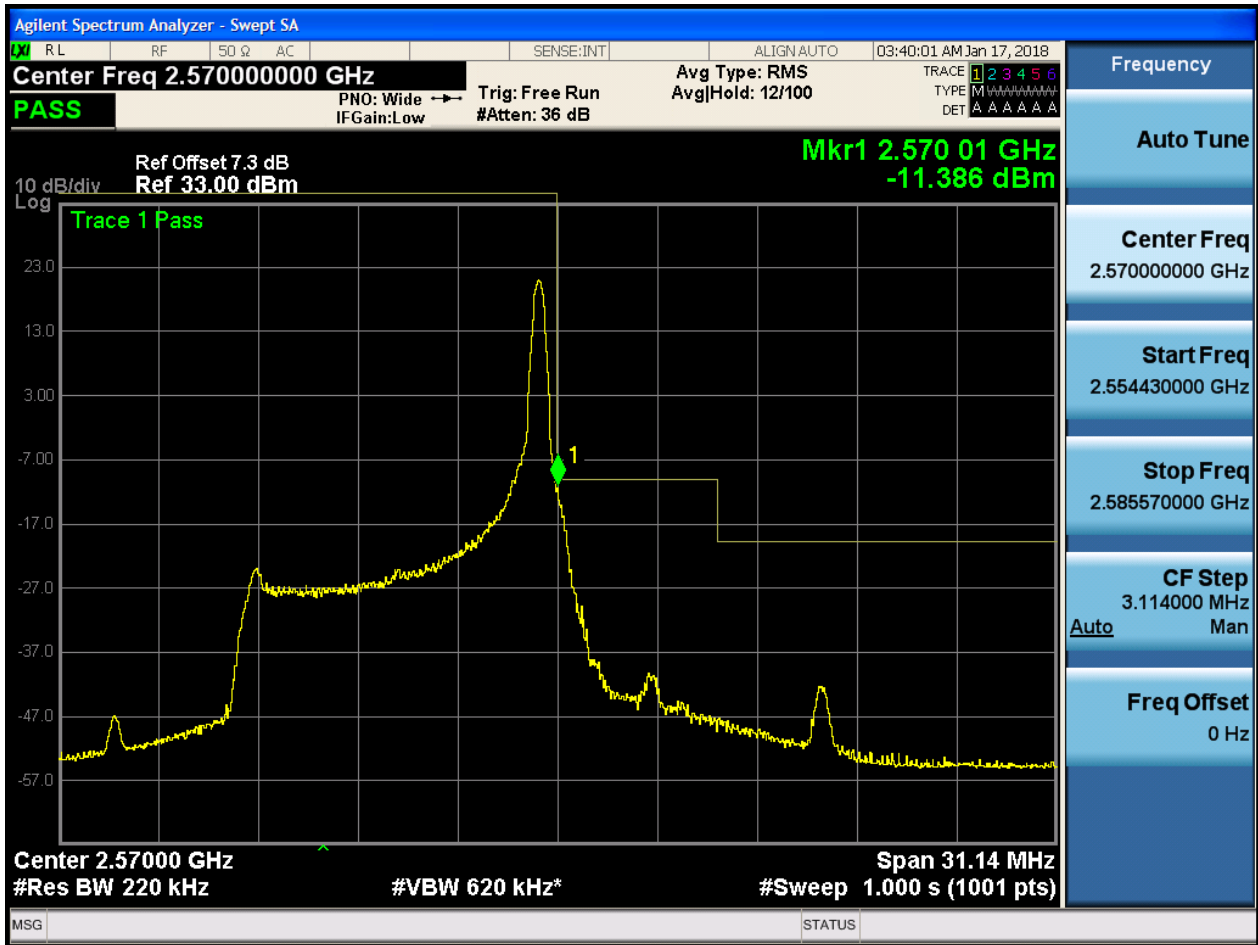


5.1.1.2.2.2 Test Channel = HCH

5.1.1.2.2.2.1 Test RB = RB1#0

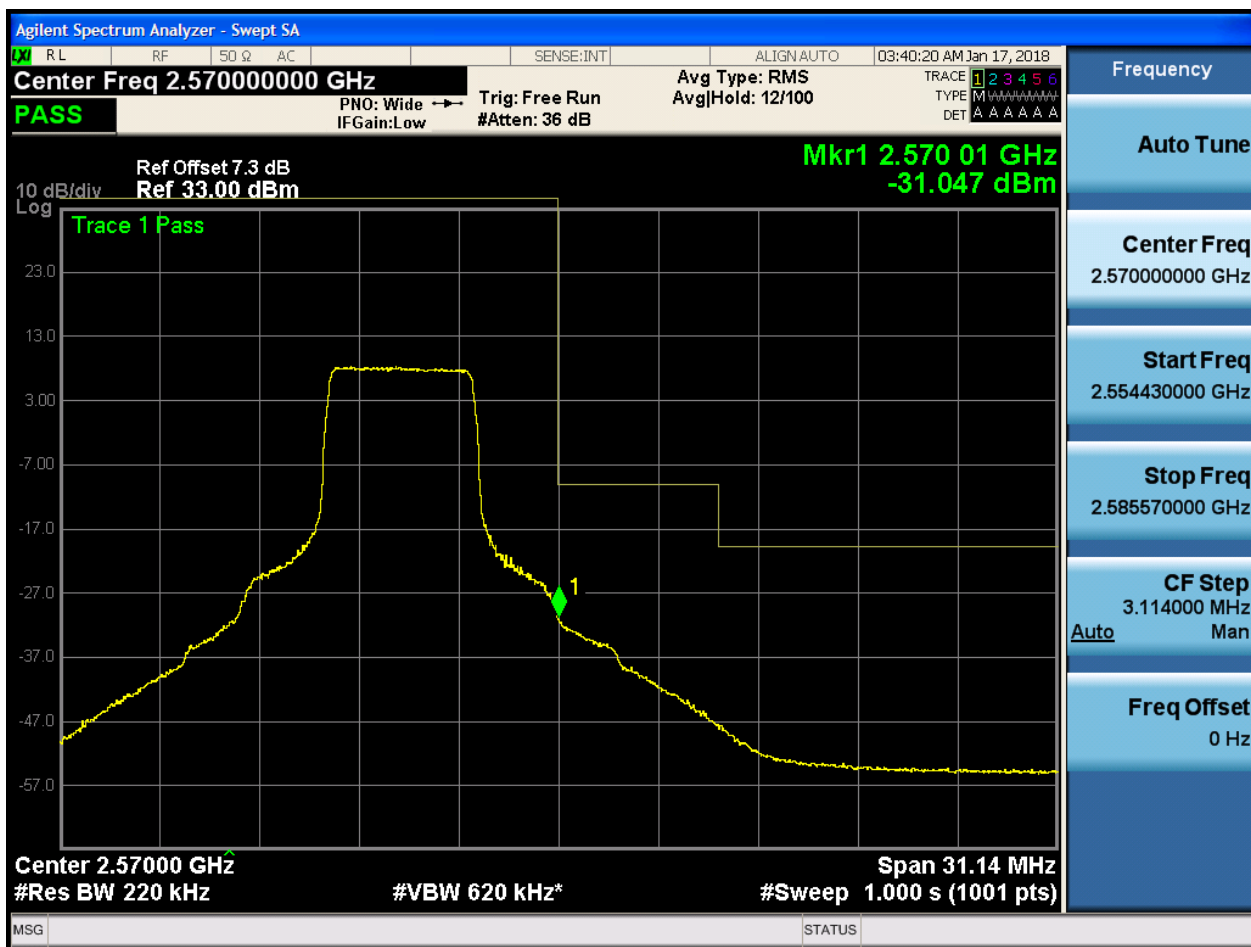


5.1.1.2.2.2 Test RB = RB1#49





5.1.1.2.2.3 Test RB = RB25#13





Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 03:40:39 AM Jan 17, 2018

Center Freq 2.57000000 GHz Avg Type: RMS
PASS PNO: Wide IFGain:Low Trig: Free Run AvgHold: 12/100
#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 7.3 dB
Ref 33.00 dBm

Mkr1 2.570 01 GHz
-24.189 dBm

10 dB/div
Log

Trace 1 Pass

Center 2.57000 GHz Span 31.14 MHz
#Res BW 220 kHz #VBW 620 kHz #Sweep 1.000 s (1001 pts)

MSG STATUS

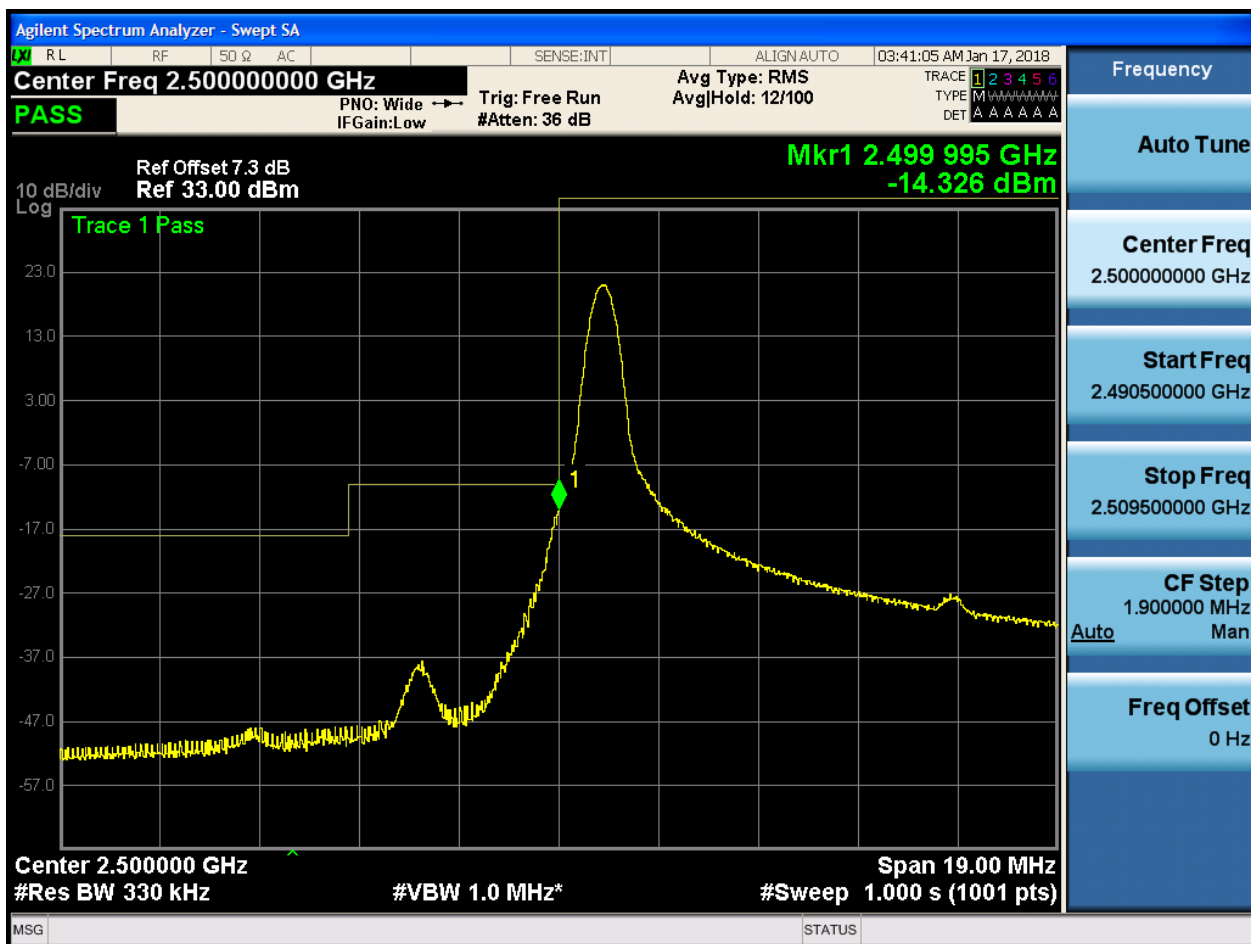
Frequency
Auto Tune
Center Freq 2.570000000 GHz
Start Freq 2.554430000 GHz
Stop Freq 2.585570000 GHz
CF Step 3.114000 MHz Auto Man
Freq Offset 0 Hz



5.1.1.2.3 Test Bandwidth = 15

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 2.500000000 GHz

PASS

Ref Offset 7.3 dB
Ref 33.00 dBm

Mkr1 2.499 995 GHz
-39.170 dBm

10 dB/div
Log

Trace 1 Pass

Center 2.500000 GHz
#Res BW 330 kHz
#VBW 1.0 MHz*
Span 19.00 MHz
#Sweep 1.000 s (1001 pts)

Frequency

Auto Tune

Center Freq
2.500000000 GHz

Start Freq
2.490500000 GHz

Stop Freq
2.509500000 GHz

CF Step
1.900000 MHz
Auto

Freq Offset
0 Hz

The screenshot shows a spectrum analyzer interface with a dark background and a grid. A yellow trace represents the signal spectrum. A prominent peak is visible, marked with a green diamond and labeled '1'. The peak is at a frequency of 2.499995 GHz and has a power level of -39.170 dBm. The center frequency is set to 2.500000 GHz. The span is 19.00 MHz. The resolution bandwidth (Res BW) is 330 kHz. The video bandwidth (VBW) is 1.0 MHz. The sweep time is 1.000 s (1001 pts). The display also shows various other settings like Ref Offset, Ref, and a marker at the peak. The status bar at the bottom indicates 'MSG' and 'STATUS'.



Agilent Spectrum Analyzer - Swept SA

Center Freq 2.500000000 GHz

PASS

Ref Offset 7.3 dB
Ref 33.00 dBm

Mkr1 2.499 995 GHz
-33.024 dBm

Trace 1 Pass

Center 2.500000 GHz
#Res BW 330 kHz
#VBW 1.0 MHz*
Span 19.00 MHz
#Sweep 1.000 s (1001 pts)

Frequency

Auto Tune

Center Freq
2.500000000 GHz

Start Freq
2.490500000 GHz

Stop Freq
2.509500000 GHz

CF Step
1.900000 MHz
Auto Man

Freq Offset
0 Hz



Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 03:42:03 AM Jan 17, 2018

Center Freq 2.500000000 GHz Avg Type: RMS
PASS PNO: Wide IFGain:Low Trig: Free Run AvgHold: 12/100
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 7.3 dB
Ref 33.00 dBm

Mkr1 2.499 995 GHz
-28.799 dBm

10 dB/div
Log

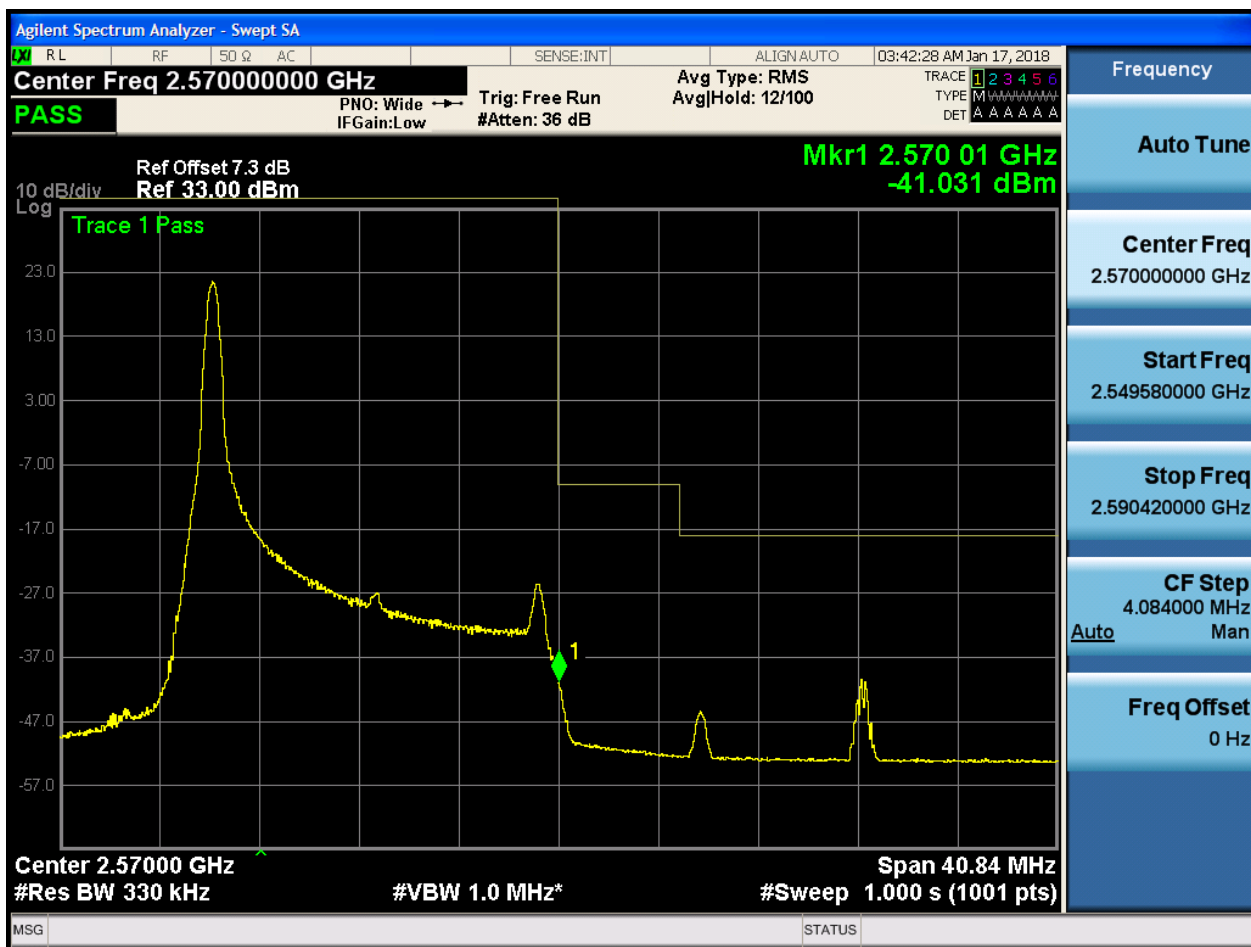
Trace 1 Pass

Center 2.500000 GHz Span 19.00 MHz
#Res BW 330 kHz #VBW 1.0 MHz* #Sweep 1.000 s (1001 pts)

Frequency
Auto Tune
Center Freq
2.500000000 GHz
Start Freq
2.490500000 GHz
Stop Freq
2.509500000 GHz
CF Step
1.900000 MHz
Auto Man
Freq Offset
0 Hz

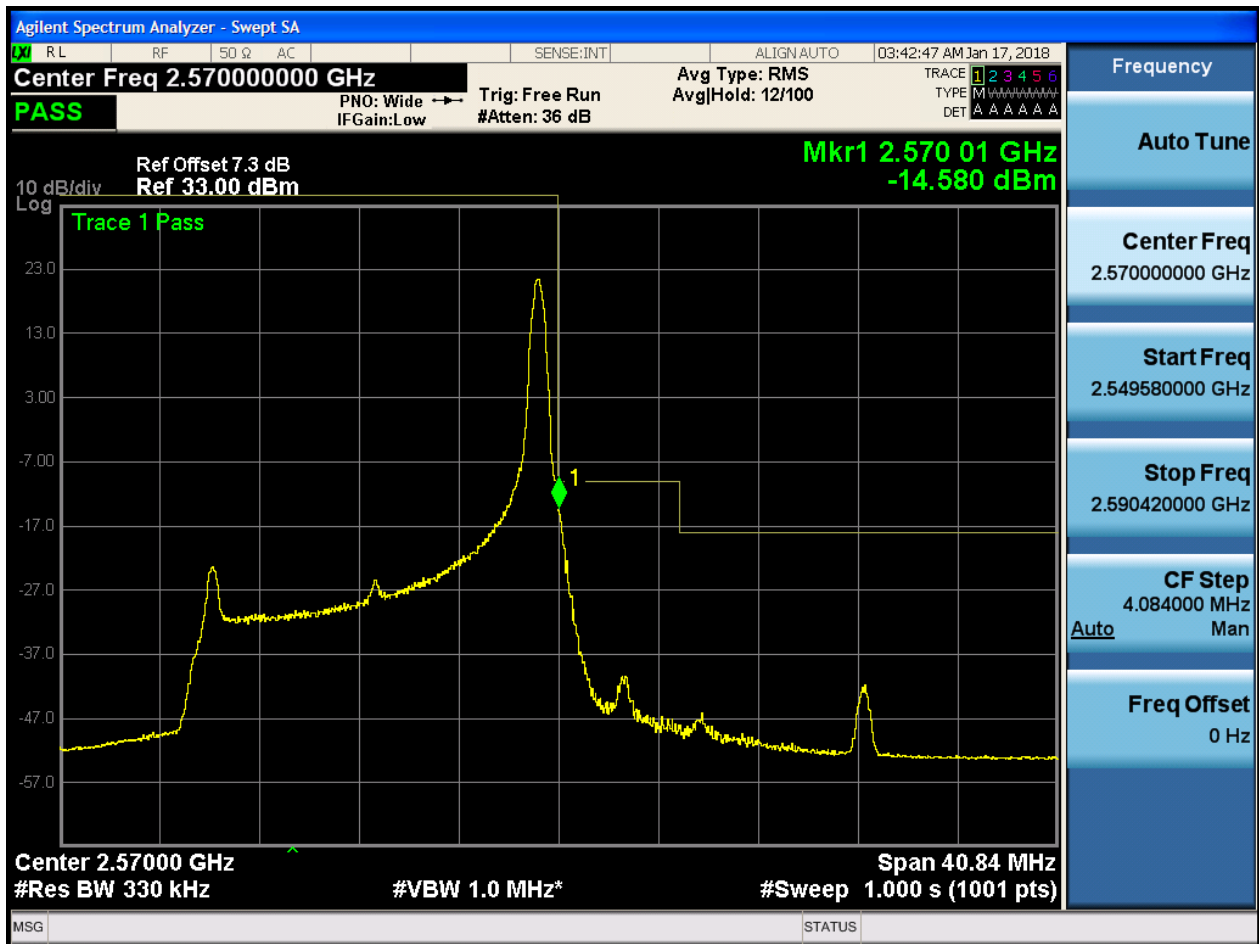
5.1.1.2.3.2 Test Channel = HCH

5.1.1.2.3.2.1 Test RB = RB1#0





5.1.1.2.3.2.2 Test RB = RB1#74





5.1.1.2.3.2.3 Test RB = RB36#18





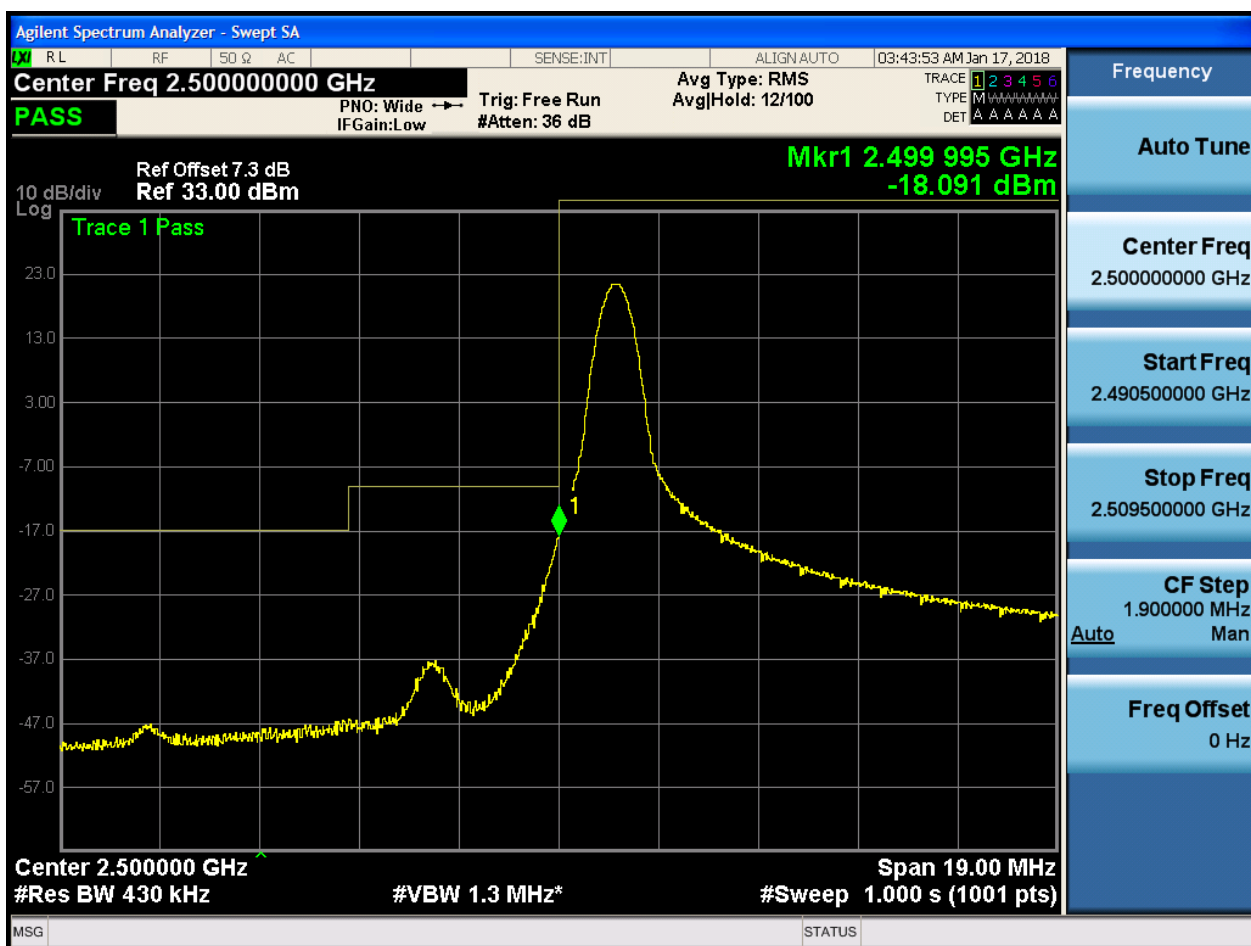
5.1.1.2.3.2.4 Test RB = RB75#0



5.1.1.2.4 Test Bandwidth = 20

5.1.1.2.4.1 Test Channel = LCH

5.1.1.2.4.1.1 Test RB = RB1#0





Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 03:44:13 AM Jan 17, 2018

Center Freq 2.500000000 GHz Avg Type: RMS
#Res BW 430 kHz IFGain:Low Trig: Free Run AvgHld: 12/100
PNO: Wide → #Atten: 36 dB TYPE M A A A A A A A
PASS DET A A A A A A A A

10 dB/div Ref Offset 7.3 dB Mkr1 2.499 995 GHz
Log Ref 33.00 dBm -39.721 dBm

Trace 1 Pass

Center 2.500000 GHz Span 19.00 MHz
#Res BW 430 kHz #VBW 1.3 MHz* #Sweep 1.000 s (1001 pts)

MSG STATUS

Frequency
Auto Tune
Center Freq
2.500000000 GHz
Start Freq
2.490500000 GHz
Stop Freq
2.509500000 GHz
CF Step
1.900000 MHz
Auto Man
Freq Offset
0 Hz



Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 03:44:32 AM Jan 17, 2018

Center Freq 2.500000000 GHz Avg Type: RMS Trg: Free Run
 PASS PNO: Wide IFGain:Low #Atten: 36 dB

Ref Offset 7.3 dB
 Ref 33.00 dBm

Mkr1 2.499 995 GHz
 -33.175 dBm

10 dB/div
 Log

Trace 1 Pass

Center 2.500000 GHz
 #Res BW 430 kHz
 #VBW 1.3 MHz*
 Span 19.00 MHz
 #Sweep 1.000 s (1001 pts)

MSG STATUS

Frequency

Auto Tune

Center Freq
 2.500000000 GHz

Start Freq
 2.490500000 GHz

Stop Freq
 2.509500000 GHz

CF Step
 1.900000 MHz
 Auto Man

Freq Offset
 0 Hz



Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 03:44:52 AM Jan 17, 2018

Center Freq 2.500000000 GHz Avg Type: RMS
PASS PNO: Wide IFGain:Low Trig: Free Run AvgHold: 12/100
TRACE 1 2 3 4 5 6
TYPE M W W W W W W W W
DET A A A A A A

Ref Offset 7.3 dB
Ref 33.00 dBm

Mkr1 2.499 995 GHz
-29.814 dBm

10 dB/div
Log

Trace 1 Pass

Center 2.500000 GHz Span 19.00 MHz
#Res BW 430 kHz #VBW 1.3 MHz* #Sweep 1.000 s (1001 pts)

MSG STATUS

Frequency

Auto Tune

Center Freq
2.500000000 GHz

Start Freq
2.490500000 GHz

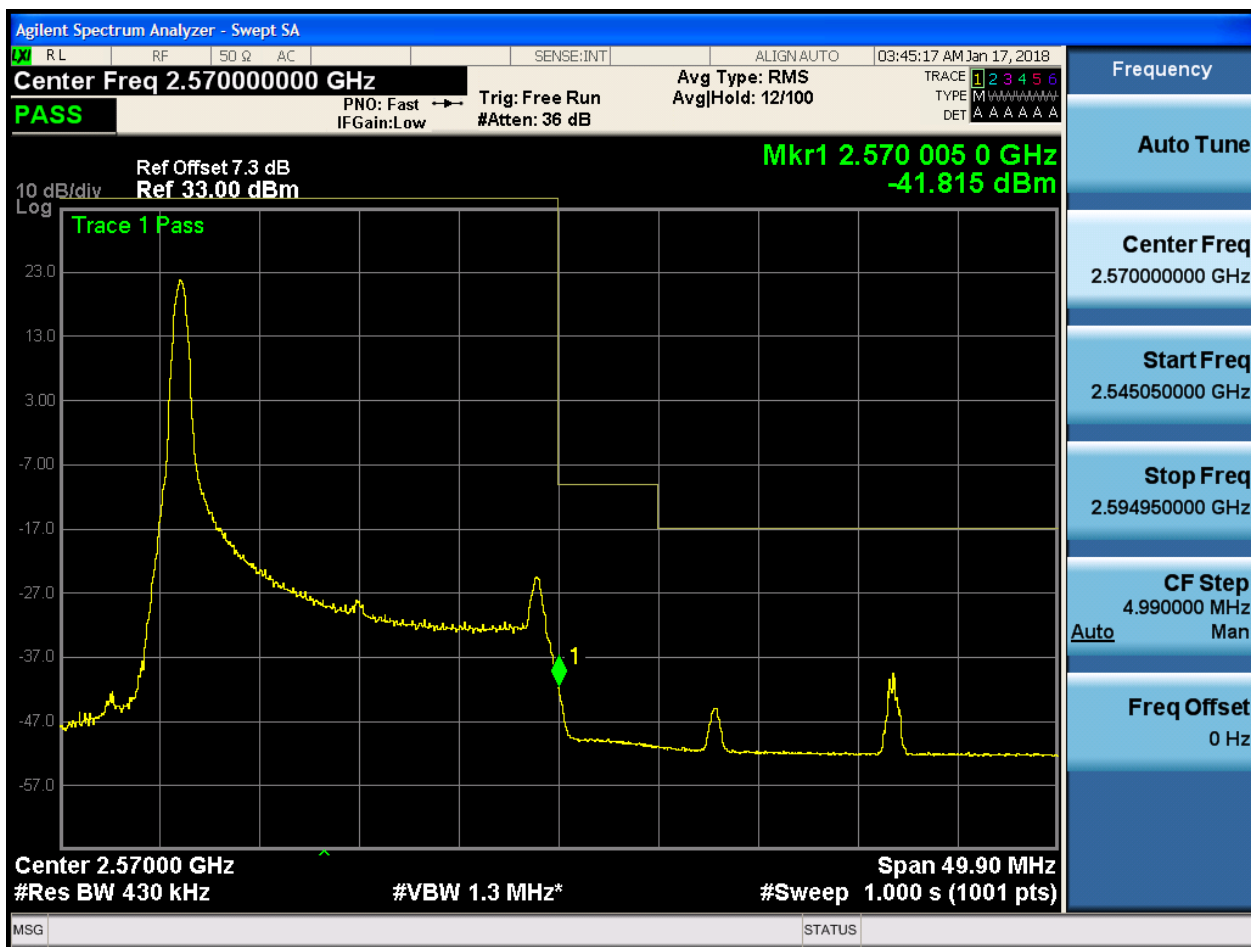
Stop Freq
2.509500000 GHz

CF Step
1.900000 MHz
Auto Man

Freq Offset
0 Hz

5.1.1.2.4.2 Test Channel = HCH

5.1.1.2.4.2.1 Test RB = RB1#0





Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 03:45:36 AM Jan 17, 2018

Center Freq 2.570000000 GHz Avg Type: RMS
 PASS PNO: Fast IFGain:Low Trig: Free Run AvgHold: 12/100
 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 7.3 dB
 Ref 33.00 dBm

Mkr1 2.570 005 0 GHz
 -18.125 dBm

10 dB/div
 Log

Trace 1 Pass

Center 2.57000 GHz
 #Res BW 430 kHz
 #VBW 1.3 MHz*
 Span 49.90 MHz
 #Sweep 1.000 s (1001 pts)

Frequency	
Auto Tune	
Center Freq	2.570000000 GHz
Start Freq	2.545050000 GHz
Stop Freq	2.594950000 GHz
CF Step	4.990000 MHz
Auto	Man
Freq Offset	0 Hz

MSG STATUS



Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 03:45:56 AM Jan 17, 2018

Center Freq 2.570000000 GHz Avg Type: RMS
PNO: Fast IFGain:Low Trig: Free Run AvgHold: 12/100
PASS #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 7.3 dB
Ref 33.00 dBm

Mkr1 2.570 005 0 GHz
-32.207 dBm

10 dB/div
Log

Trace 1 Pass

Center 2.57000 GHz
#Res BW 430 kHz
#VBW 1.3 MHz*
Span 49.90 MHz
#Sweep 1.000 s (1001 pts)

MSG STATUS

Frequency

Auto Tune

Center Freq
2.570000000 GHz

Start Freq
2.545050000 GHz

Stop Freq
2.594950000 GHz

CF Step
4.990000 MHz
Auto Man

Freq Offset
0 Hz



5.1.1.2.4.2.4 Test RB = RB100#0



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

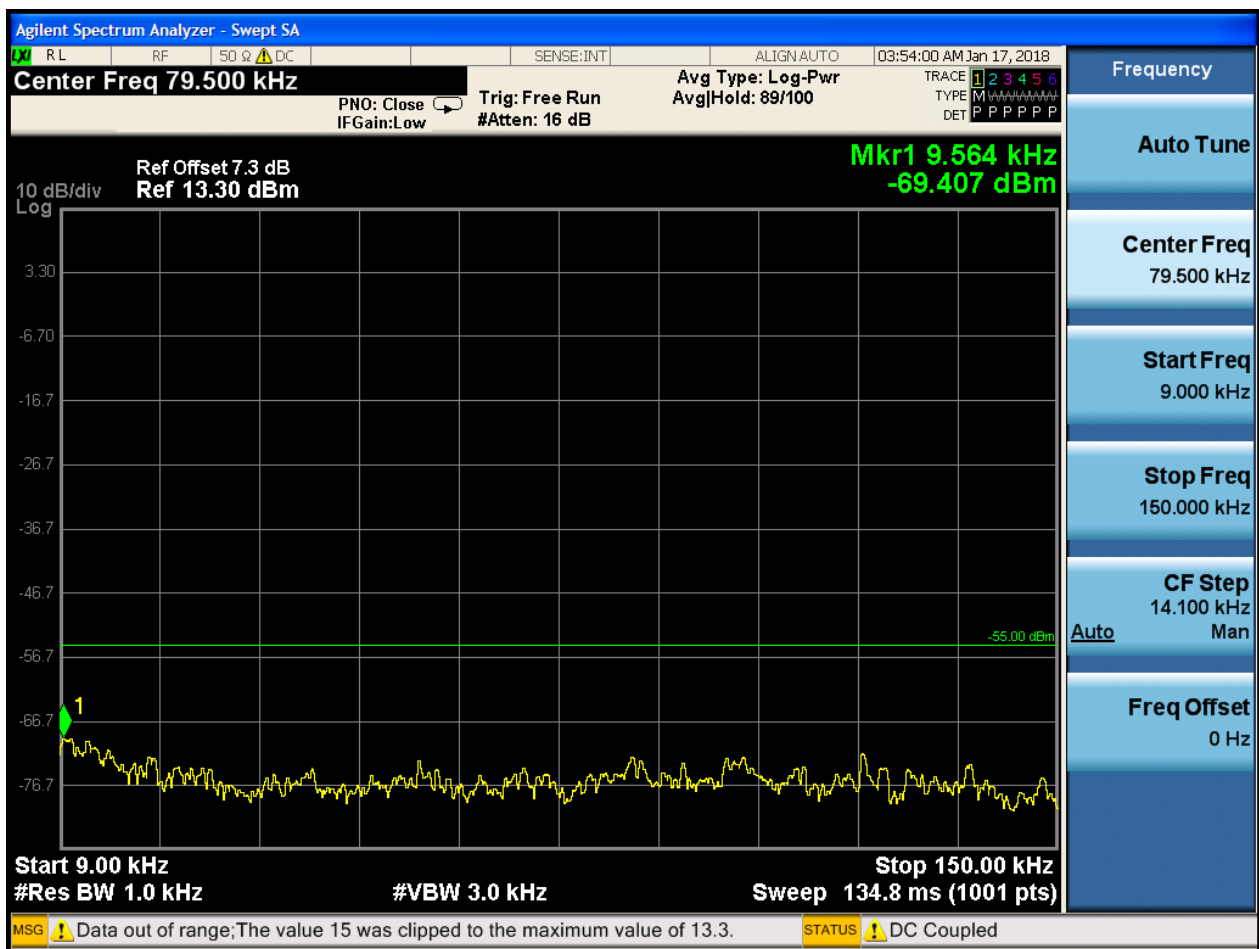
6.1.1 Test Band = BAND7

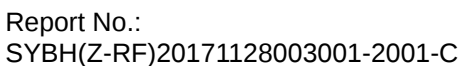
6.1.1.1 Test Mode = LTE/TM1

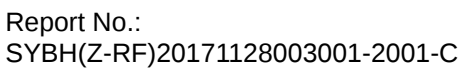
6.1.1.1.1 Test Bandwidth = 5

6.1.1.1.1.1 Test Channel = LCH

6.1.1.1.1.1.1 Test RB = RB1#0

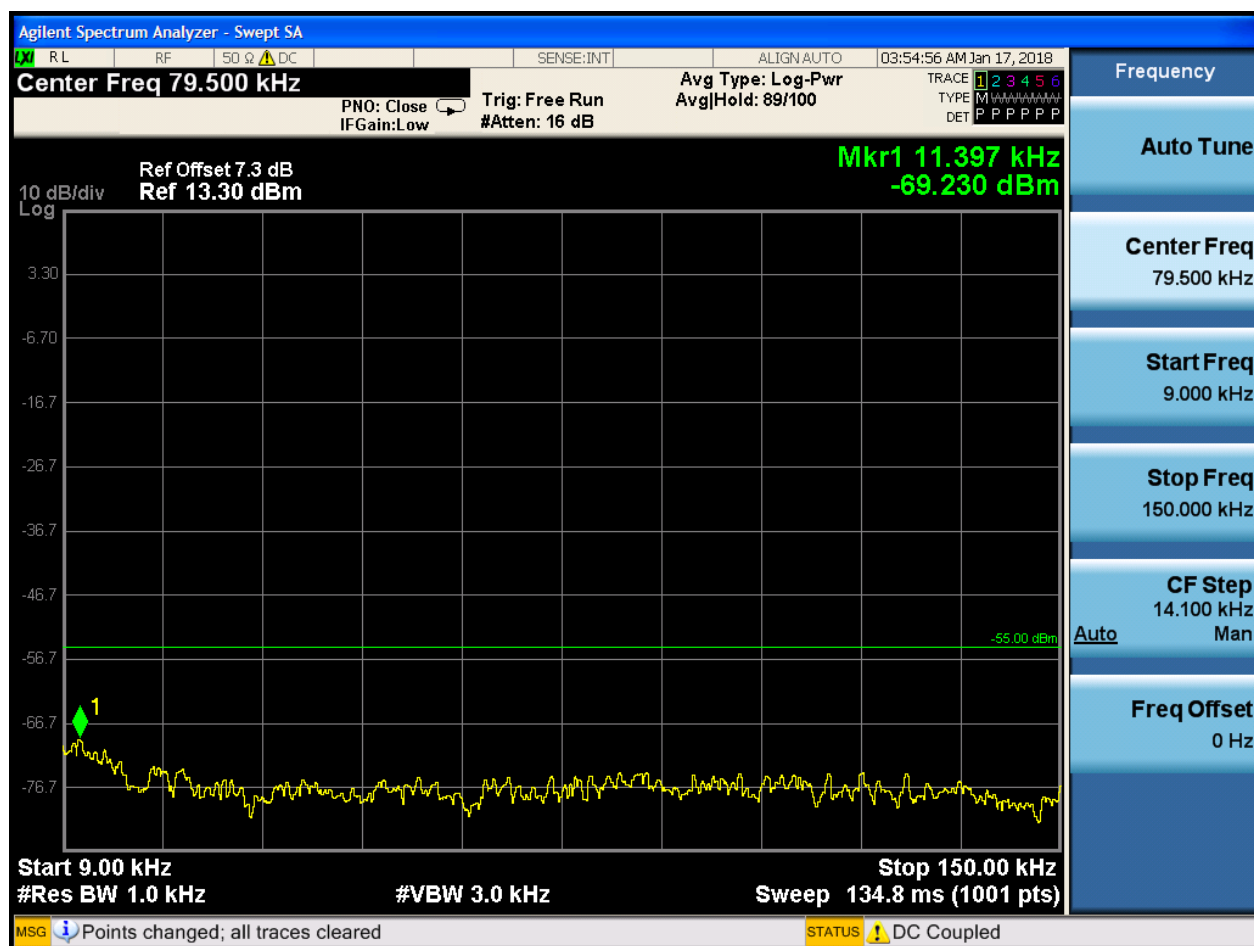


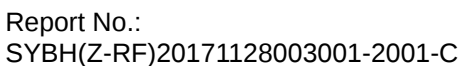


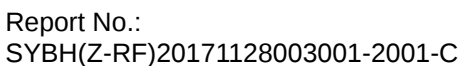


6.1.1.1.1.2 Test Channel = MCH

6.1.1.1.1.2.1 Test RB = RB1#0

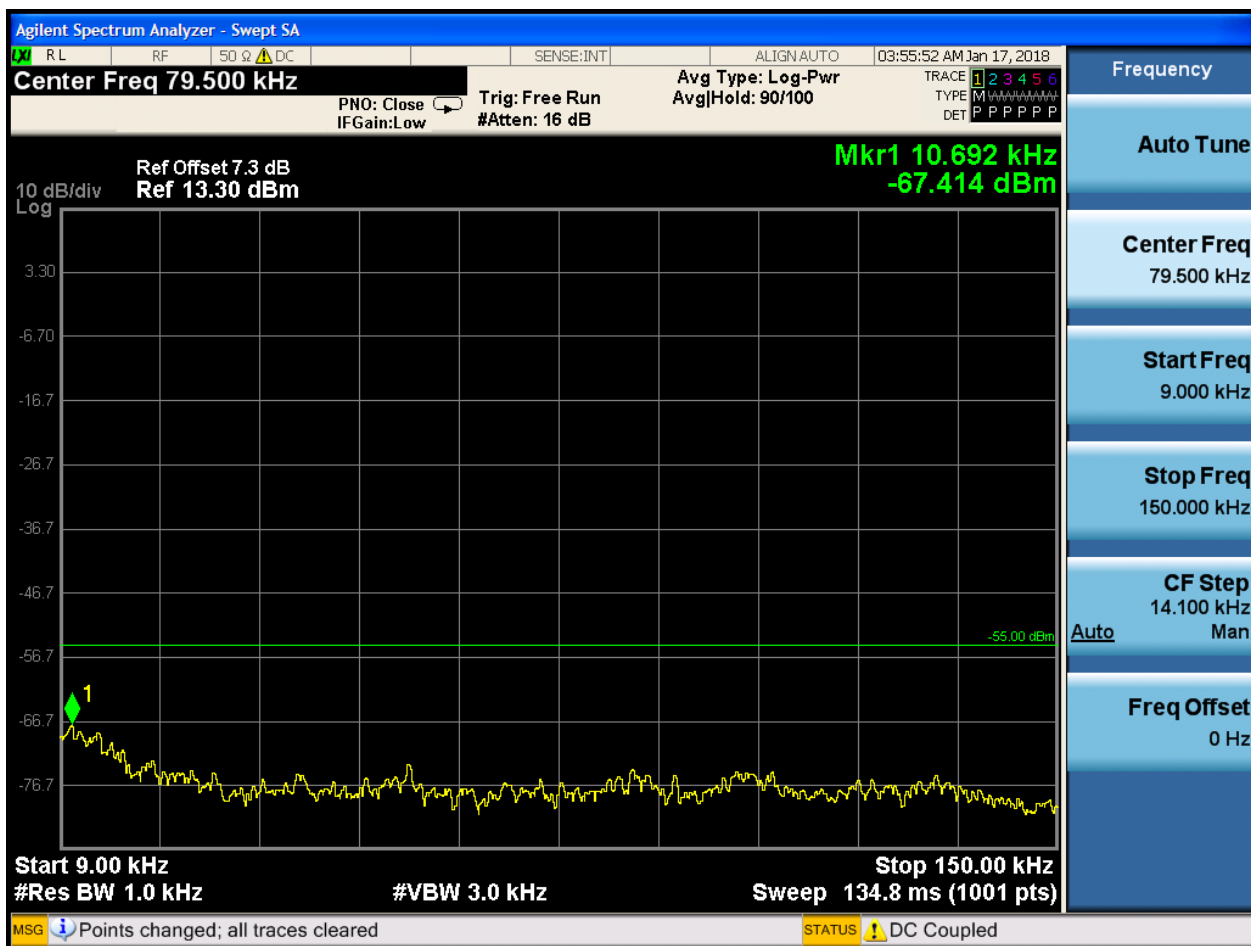


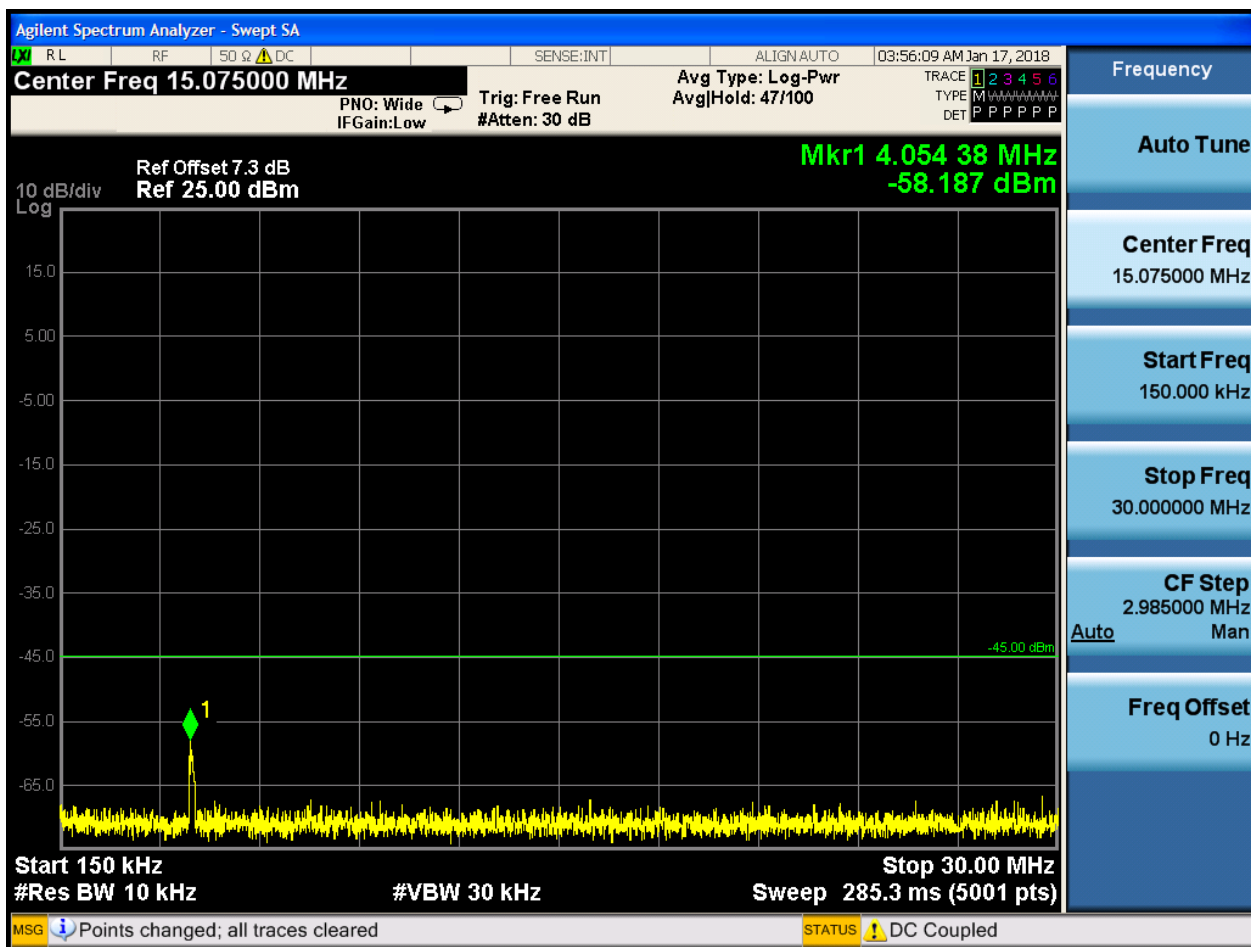


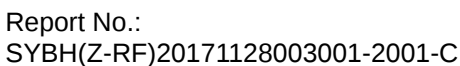


6.1.1.1.1.3 Test Channel = HCH

6.1.1.1.1.3.1 Test RB = RB1#0



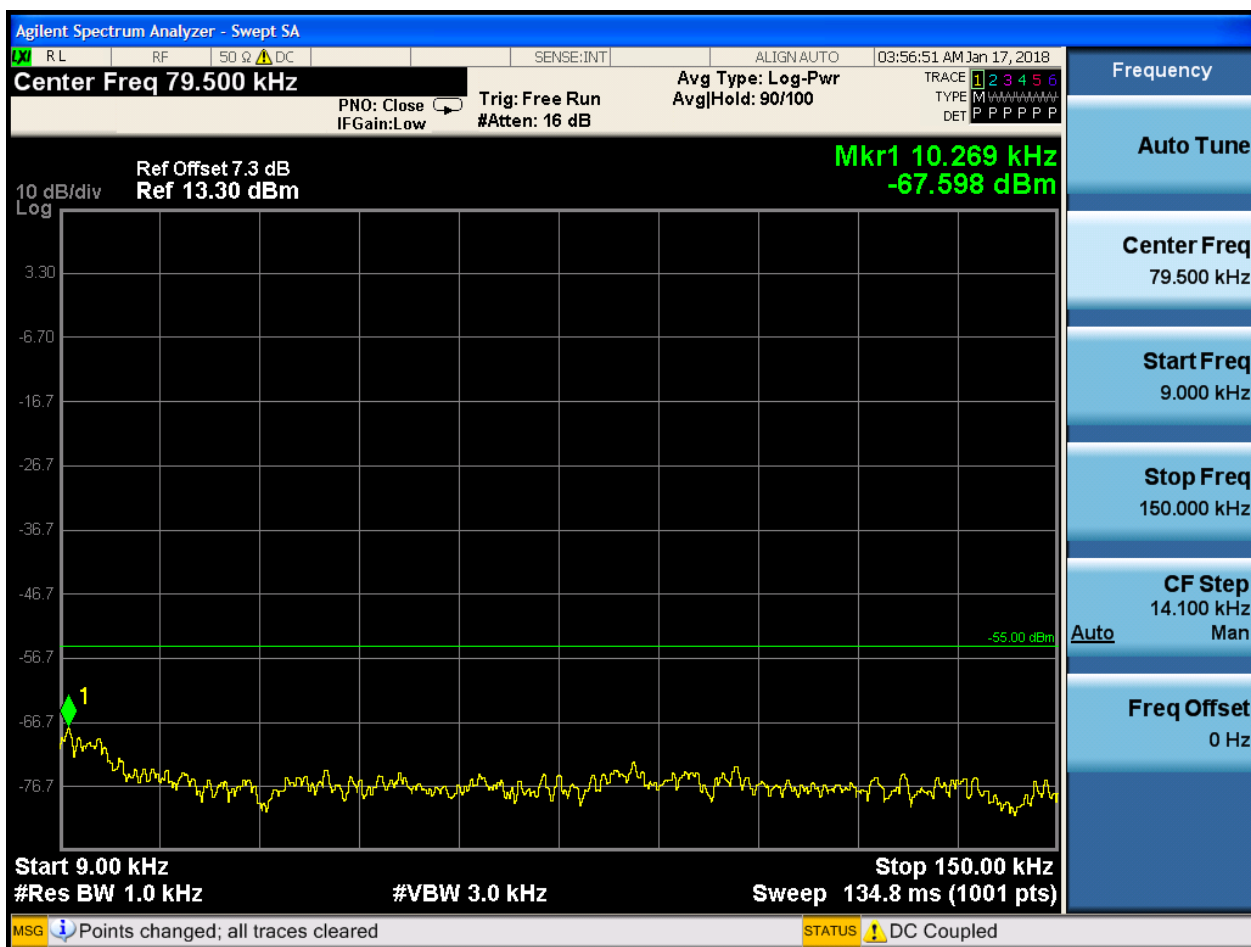


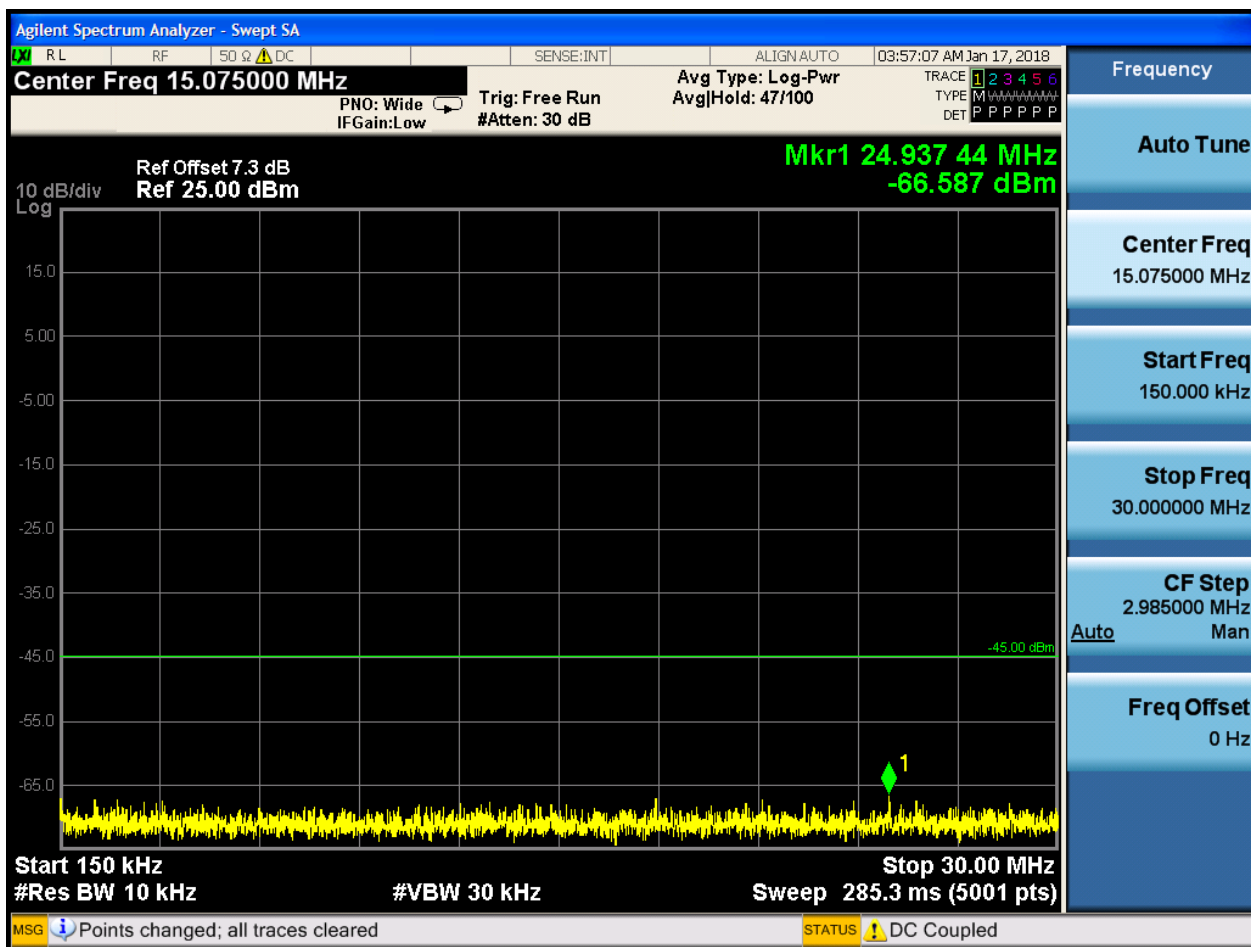


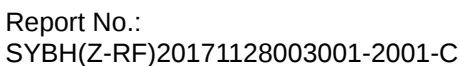
6.1.1.1.2 Test Bandwidth = 10

6.1.1.1.2.1 Test Channel = LCH

6.1.1.1.2.1.1 Test RB = RB1#0

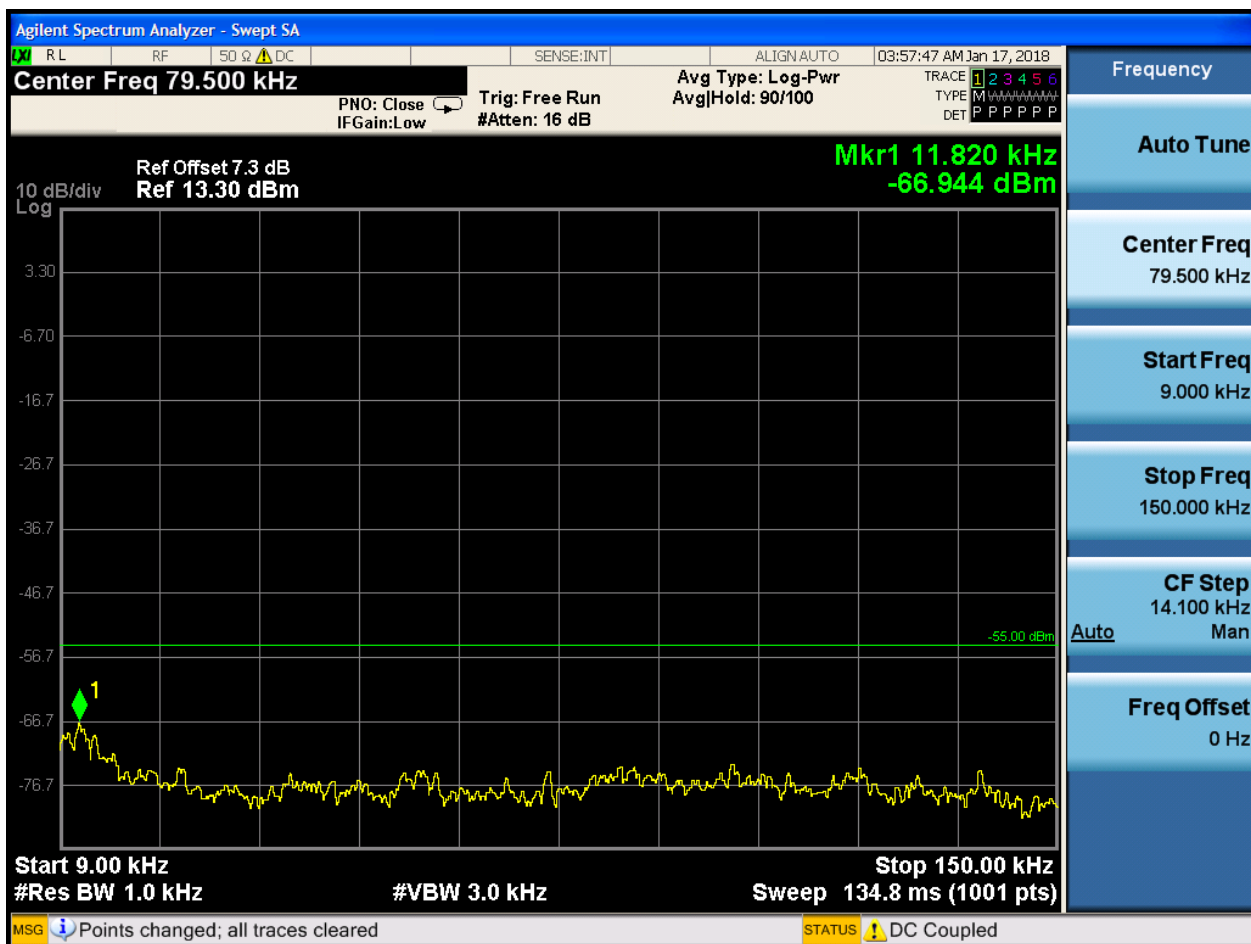


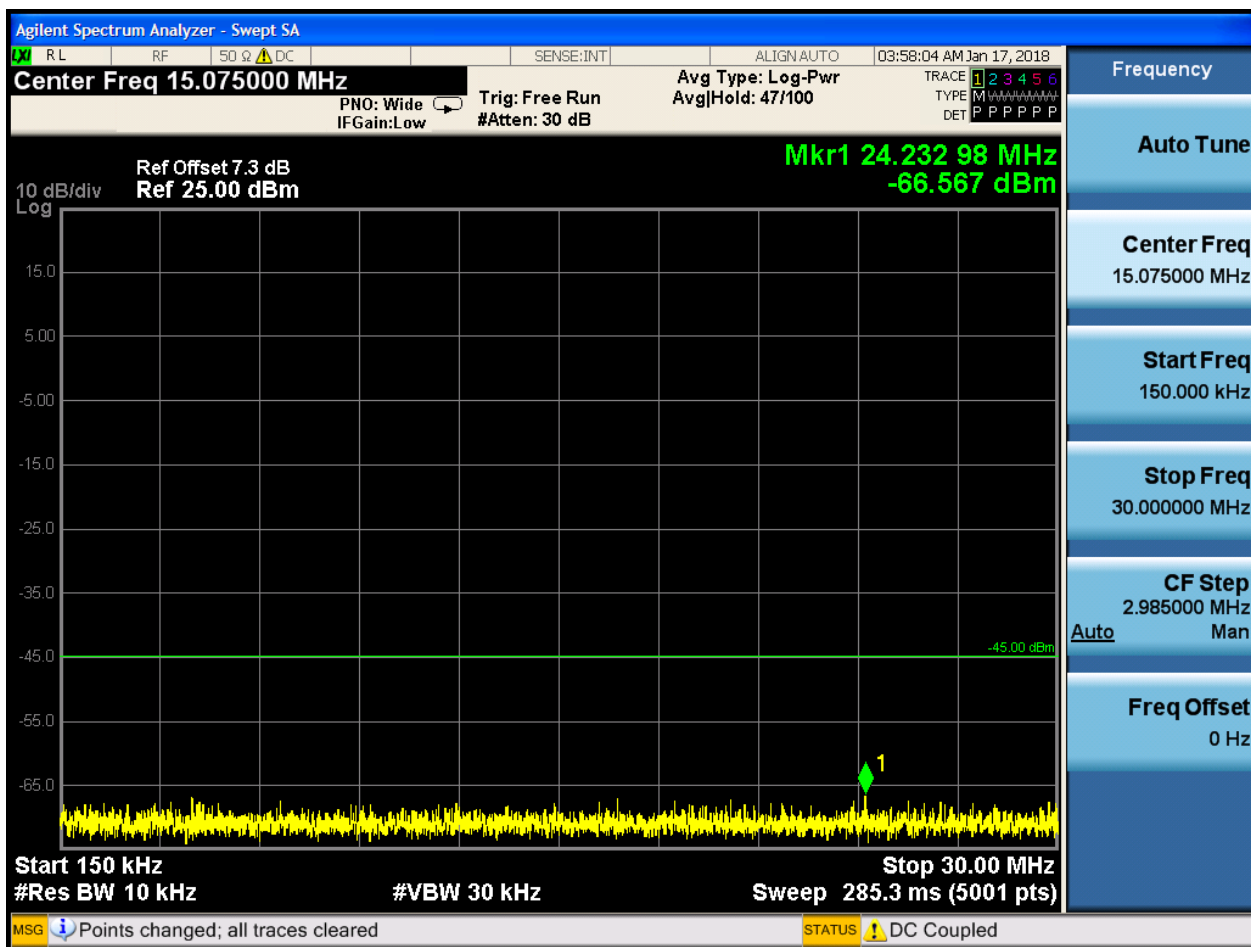


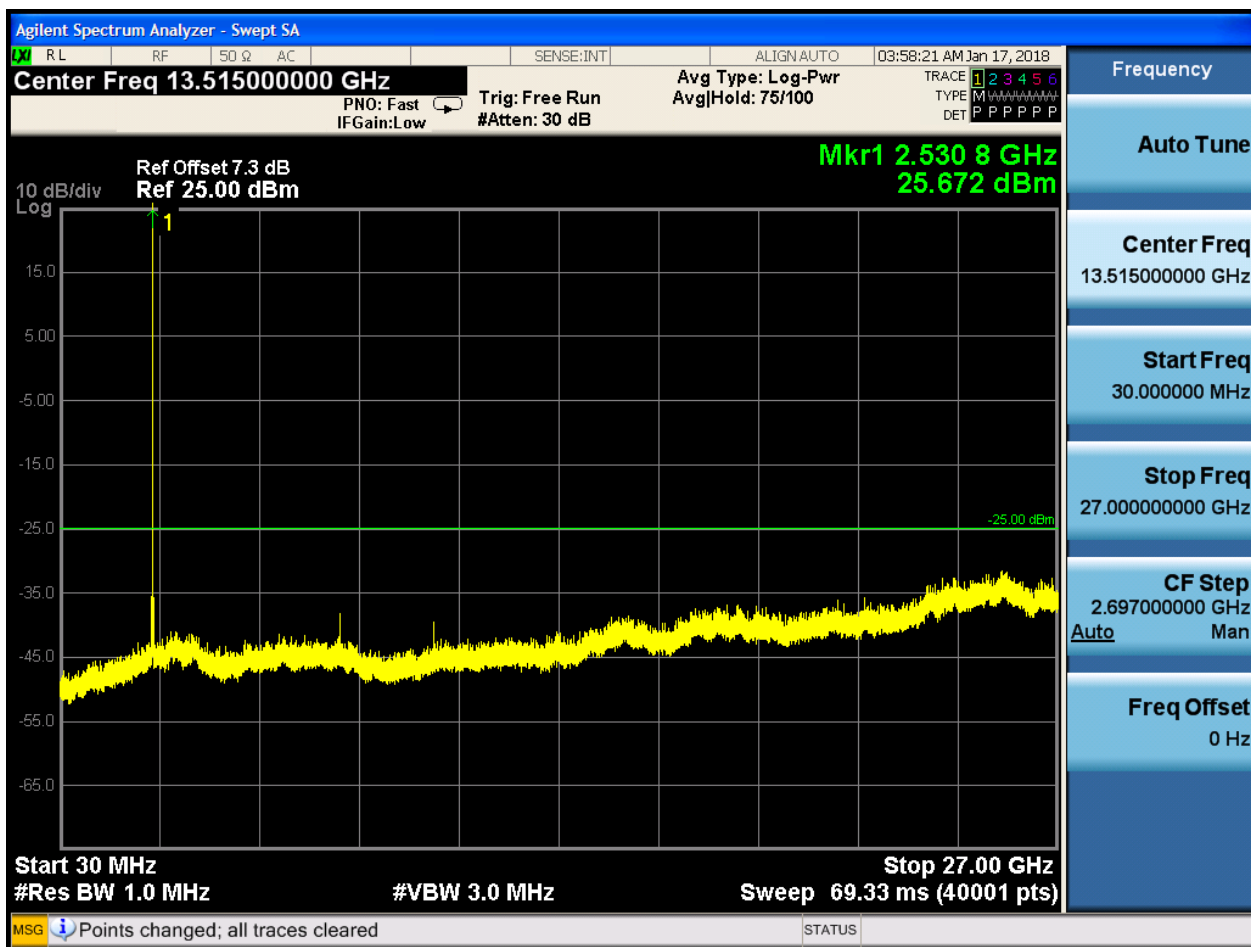


6.1.1.1.2.2 Test Channel = MCH

6.1.1.1.2.2.1 Test RB = RB1#0

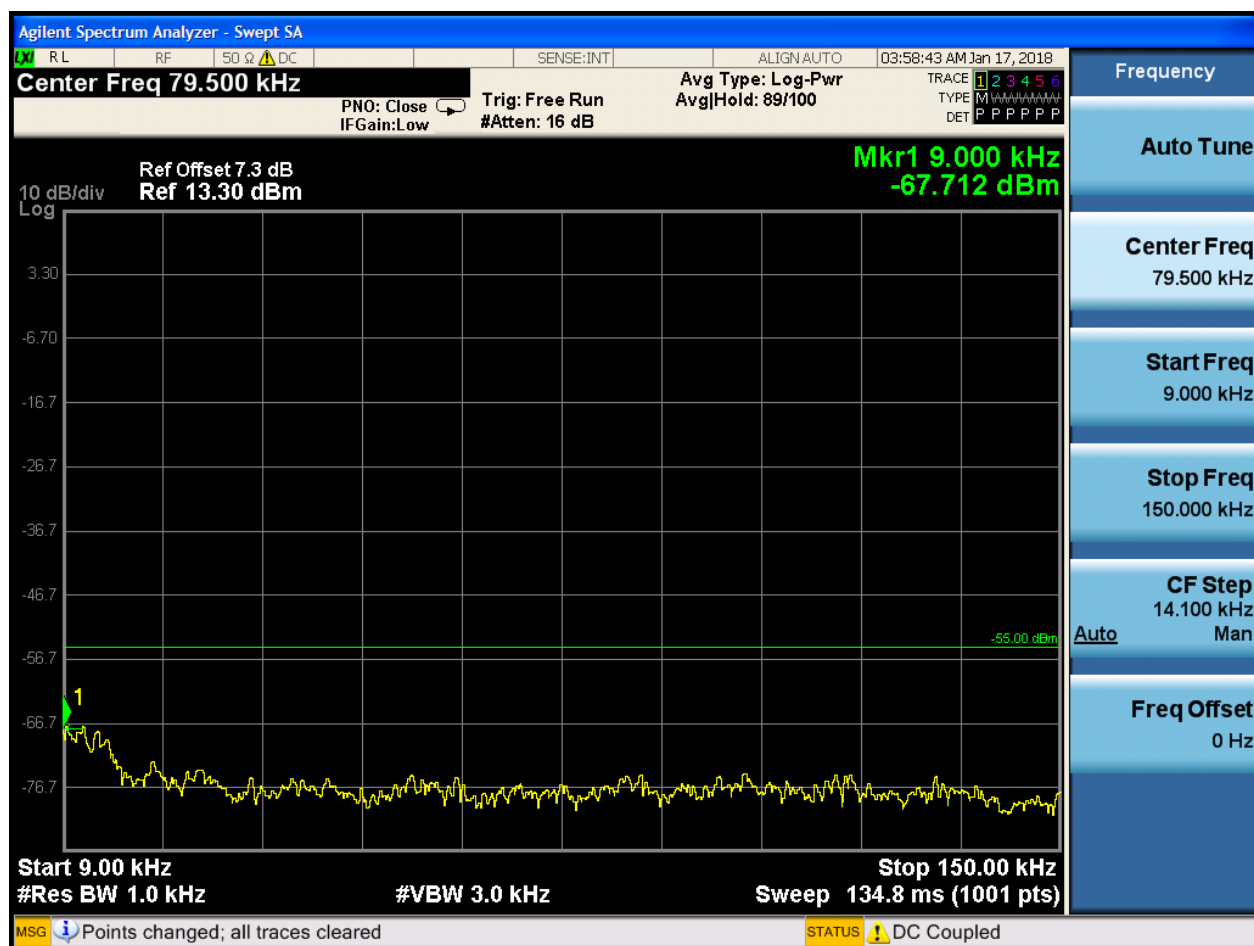


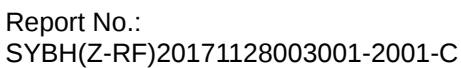


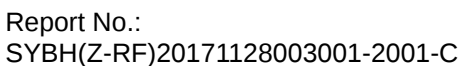


6.1.1.1.2.3 Test Channel = HCH

6.1.1.1.2.3.1 Test RB = RB1#0









6.1.1.1.3 Test Bandwidth = 15

6.1.1.1.3.1 Test Channel = LCH

6.1.1.1.3.1.1 Test RB = RB1#0

