



Agilent Spectrum Analyzer - Swept SA

RL RF 50  $\Omega$  AC SENSE:INT ALIGN AUTO 09:19:55 AM Jan 13, 2018

Center Freq 2.500000000 GHz Avg Type: RMS  
PASS PNO: Fast Trig: Free Run AvgHold: 12/100  
IFGain:Low #Atten: 36 dB

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

Ref Offset 7.5 dB  
Ref 33.00 dBm

Mkr1 2.499 995 GHz  
-49.125 dBm

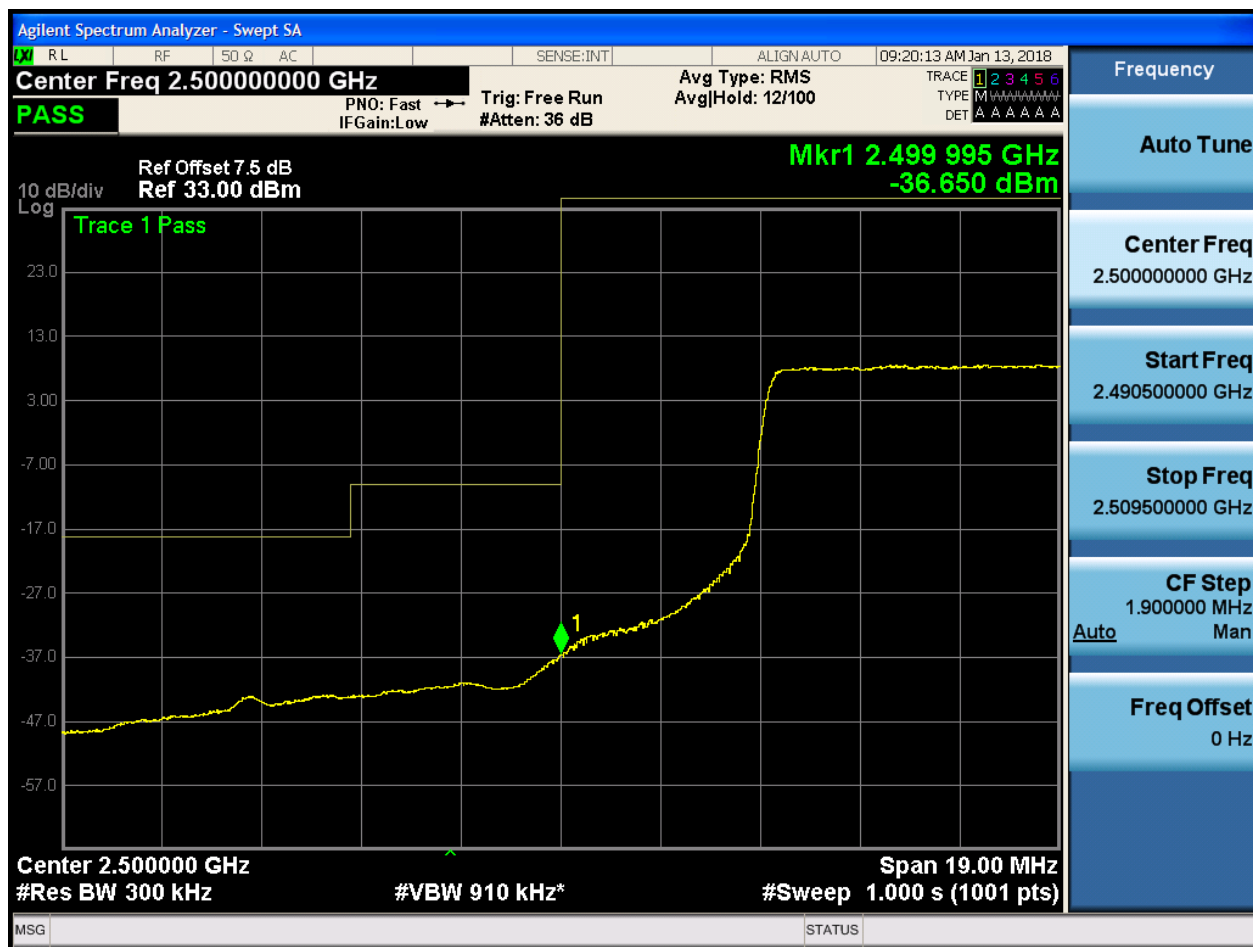
10 dB/div  
Log

Trace 1 Pass

Center 2.500000 GHz Span 19.00 MHz  
#Res BW 300 kHz #VBW 910 kHz #Sweep 1.000 s (1001 pts)

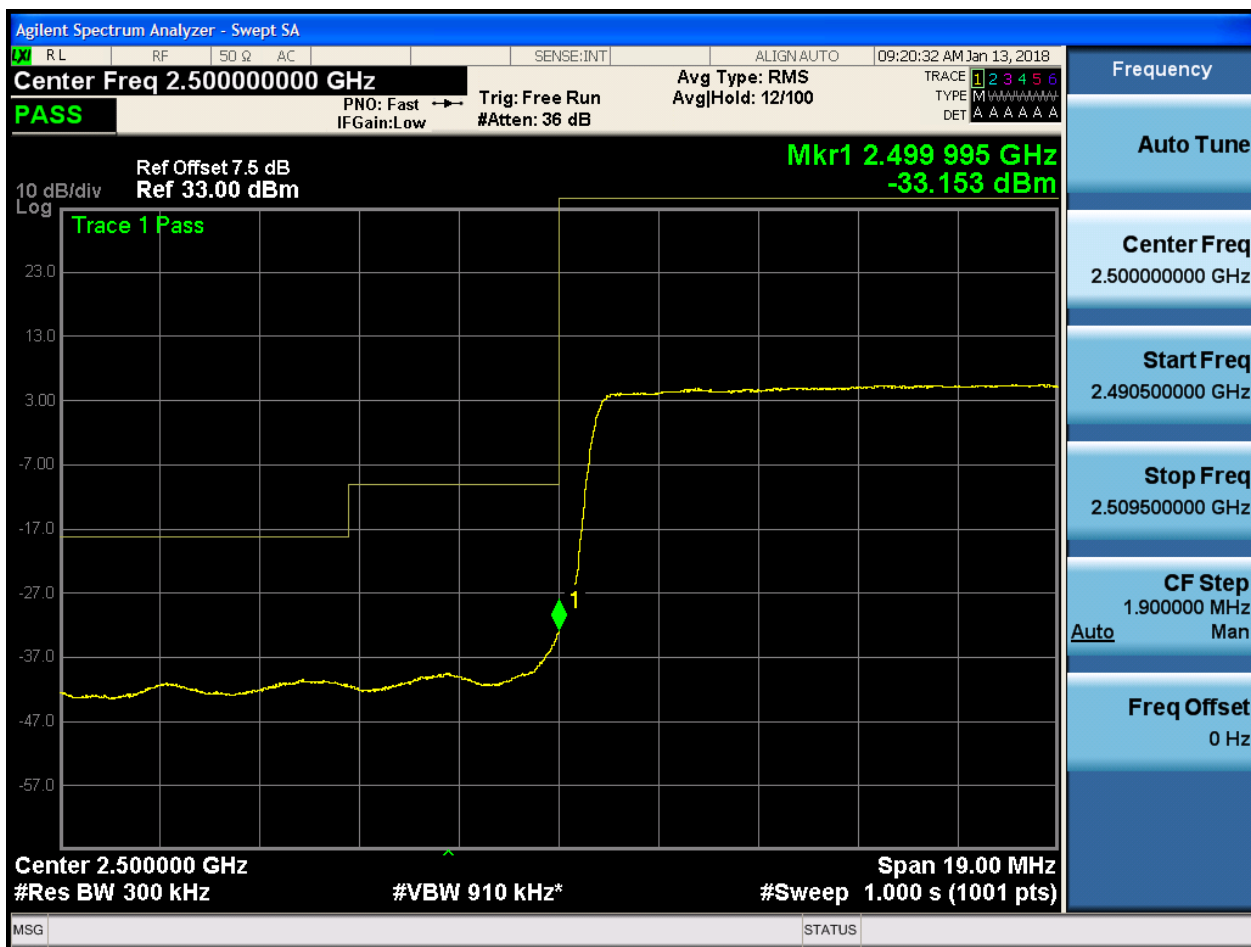
MSG STATUS

#### 5.1.1.2.3.1.3 Test RB = RB36#18





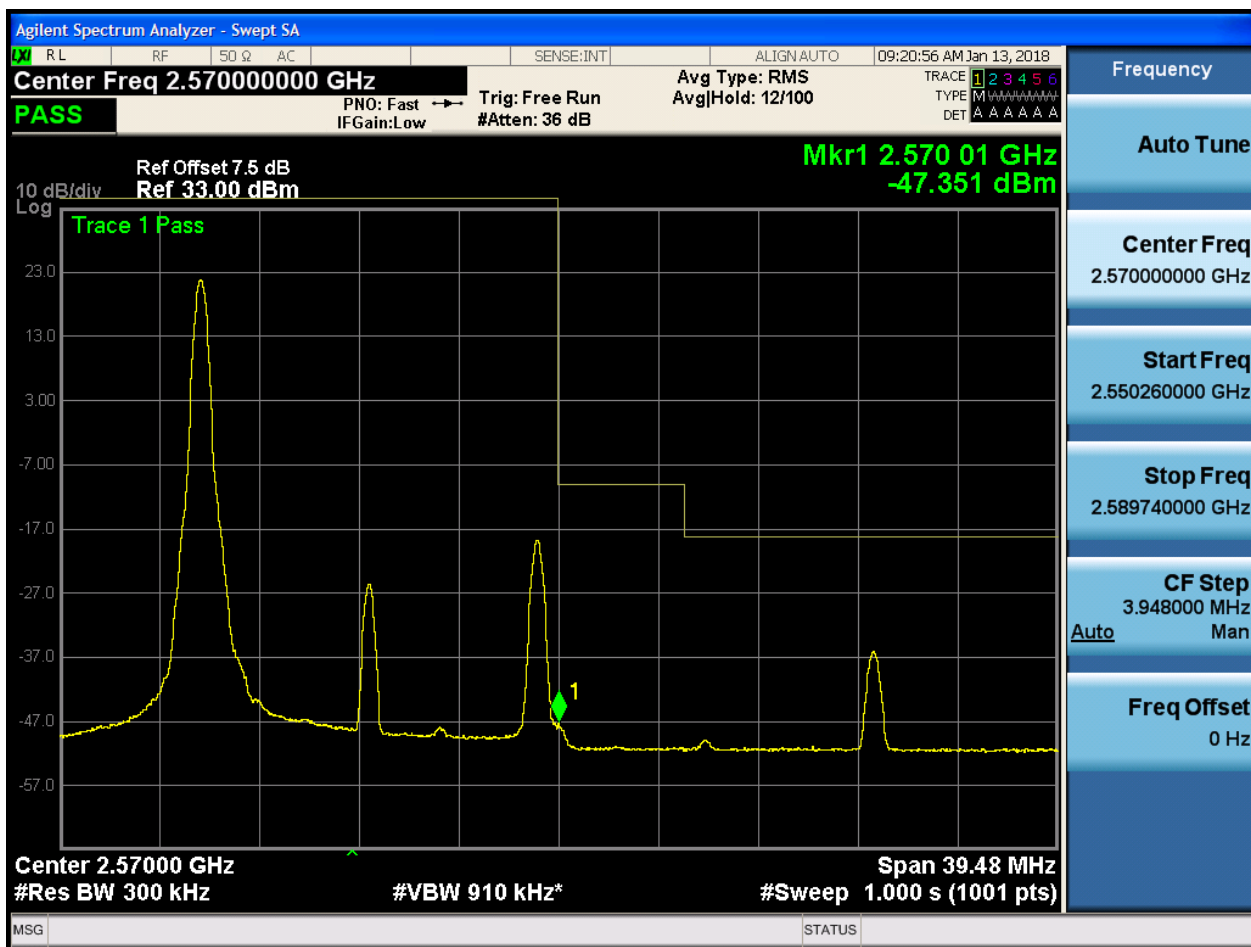
## 5.1.1.2.3.1.4 Test RB = RB75#0





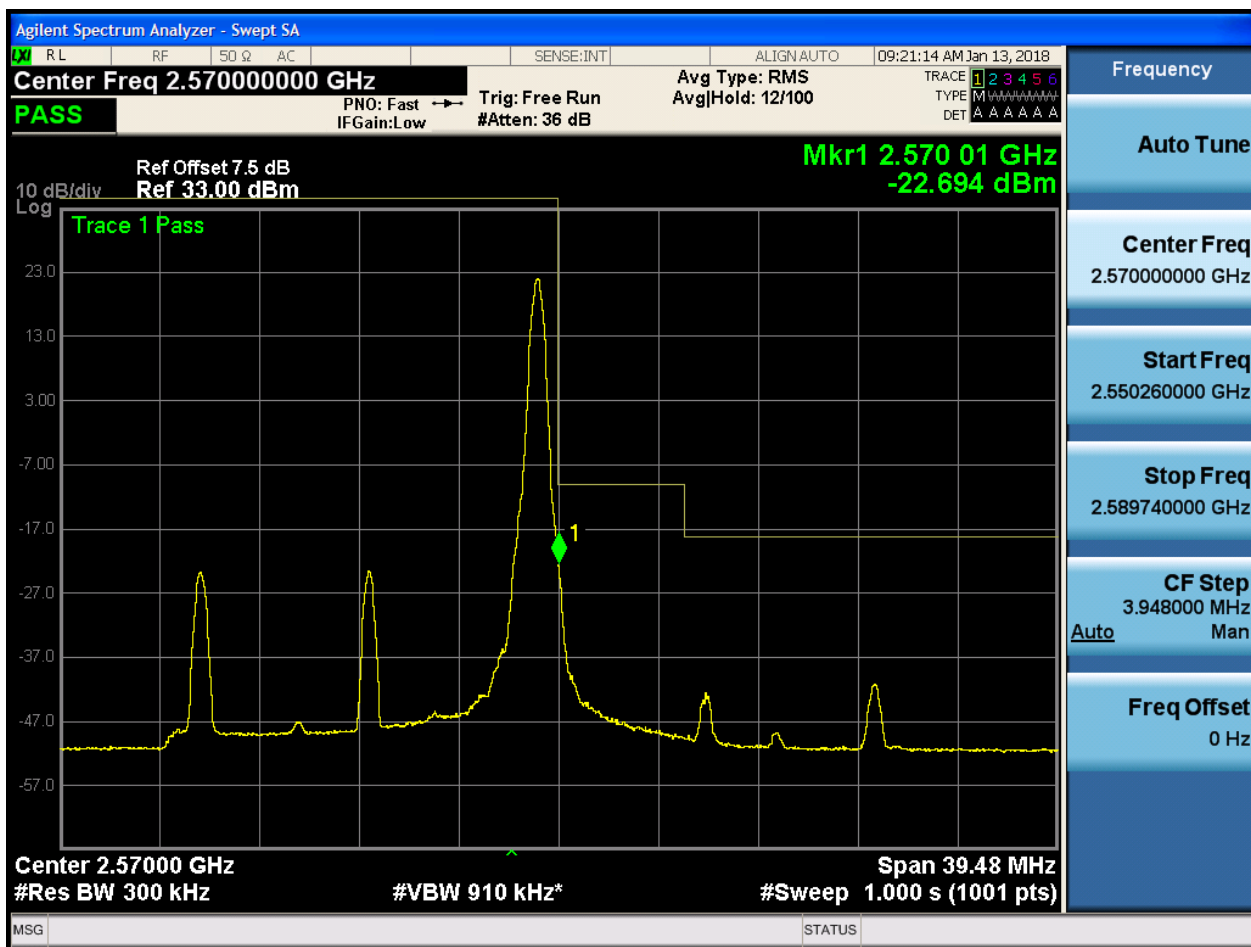
## 5.1.1.2.3.2 Test Channel = HCH

## 5.1.1.2.3.2.1 Test RB = RB1#0



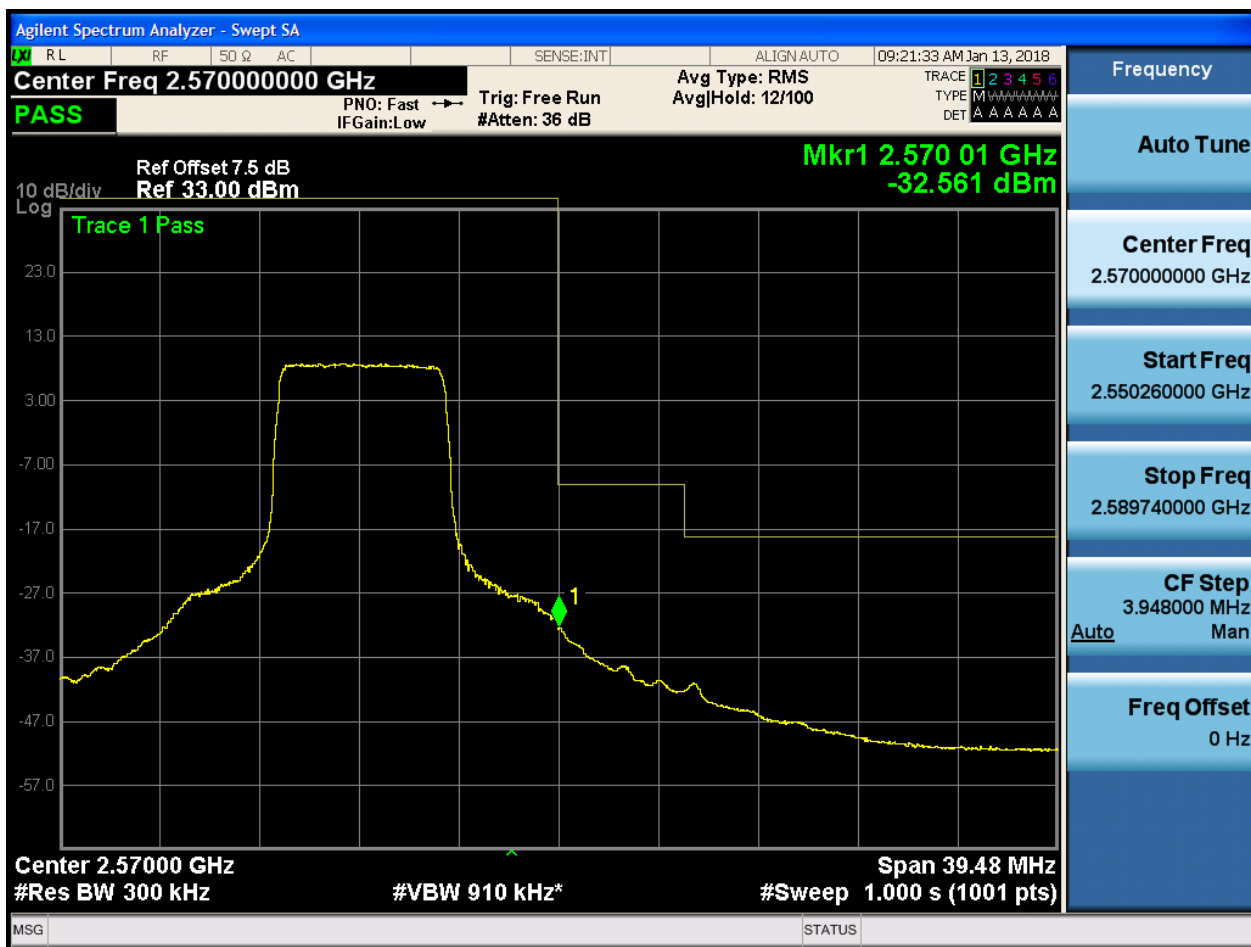


## 5.1.1.2.3.2.2 Test RB = RB1#74





## 5.1.1.2.3.2.3 Test RB = RB36#18





## 5.1.1.2.3.2.4 Test RB = RB75#0

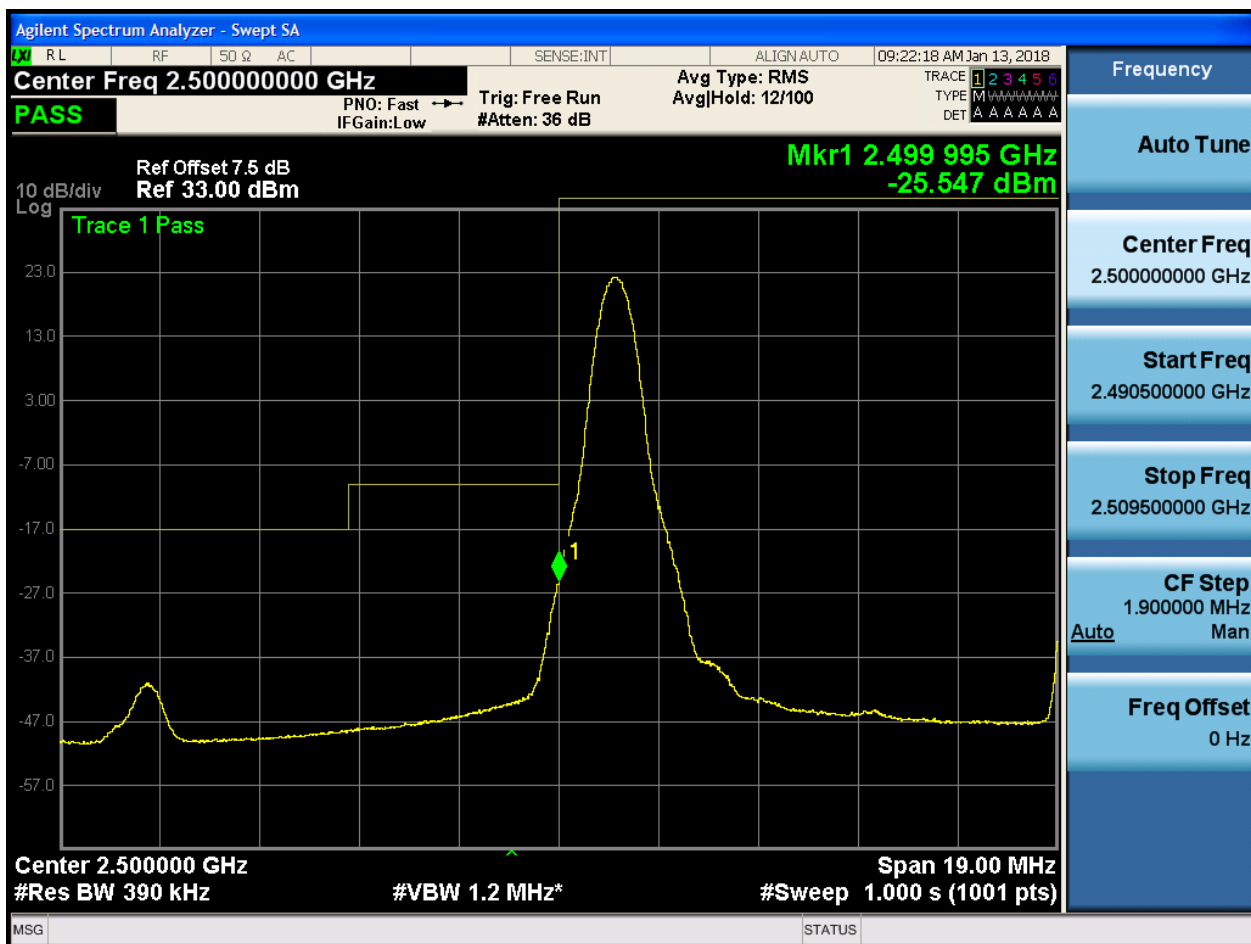




## 5.1.1.2.4 Test Bandwidth = 20

## 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

Center Freq 2.500000000 GHz

PASS

Ref Offset 7.5 dB  
Ref 33.00 dBm

Mkr1 2.499 995 GHz  
-50.046 dBm

10 dB/div  
Log

Trace 1 Pass

Center 2.500000 GHz  
#Res BW 390 kHz  
#VBW 1.2 MHz\*

Span 19.00 MHz  
#Sweep 1.000 s (1001 pts)

Frequency

Auto Tune

Center Freq  
2.500000000 GHz

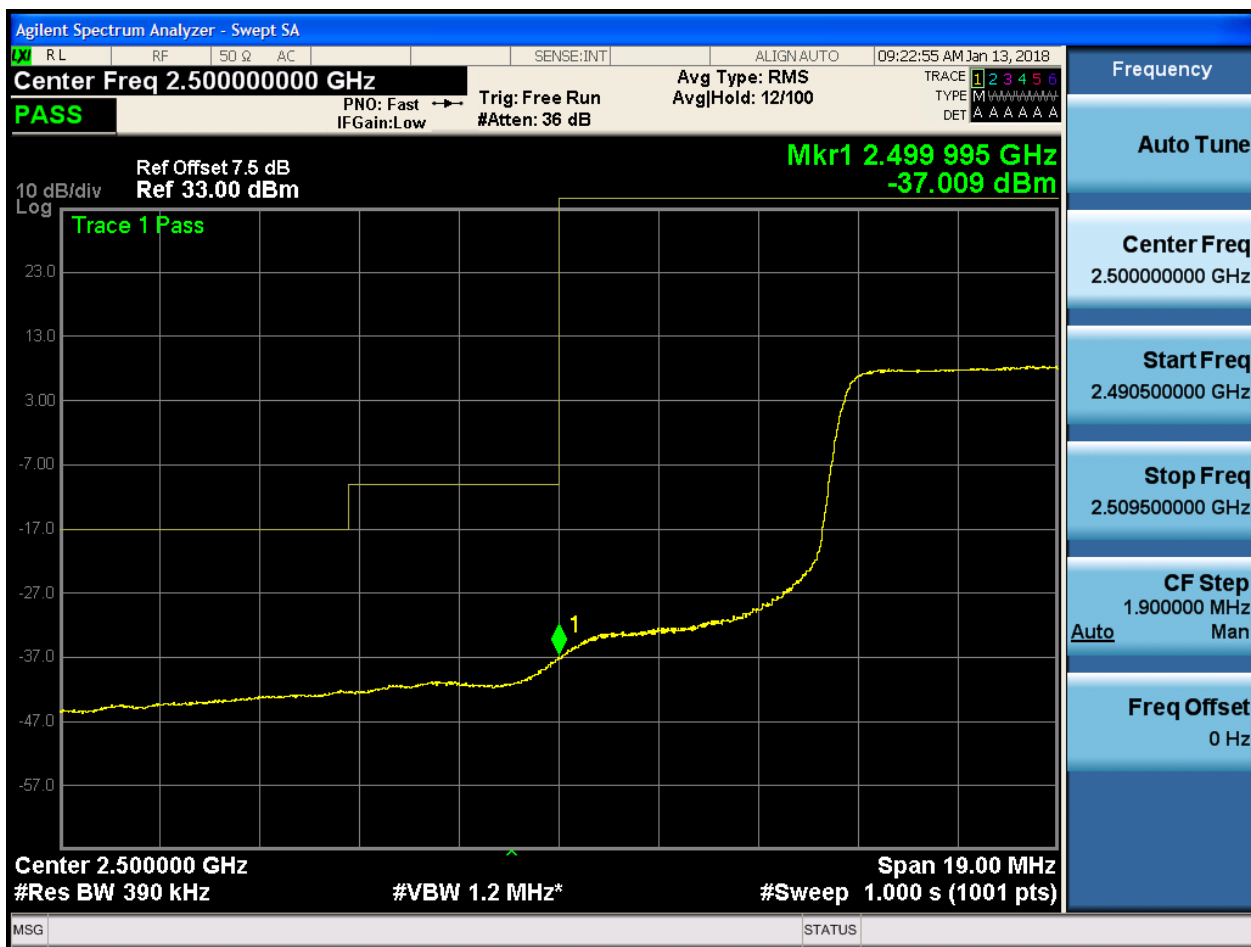
Start Freq  
2.490500000 GHz

Stop Freq  
2.509500000 GHz

CF Step  
1.900000 MHz  
Auto

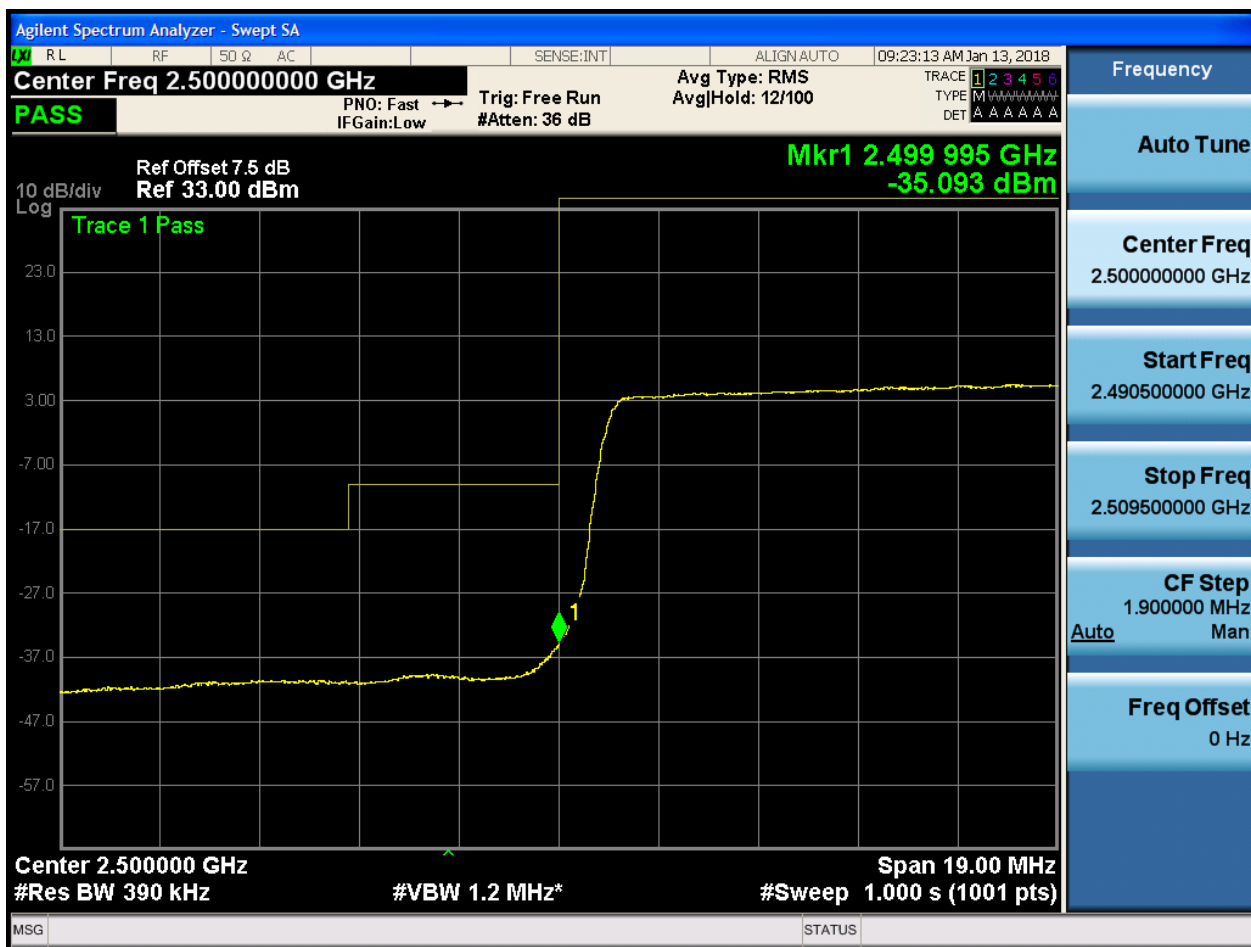
Freq Offset  
0 Hz

#### 5.1.1.2.4.1.3 Test RB = RB50#25





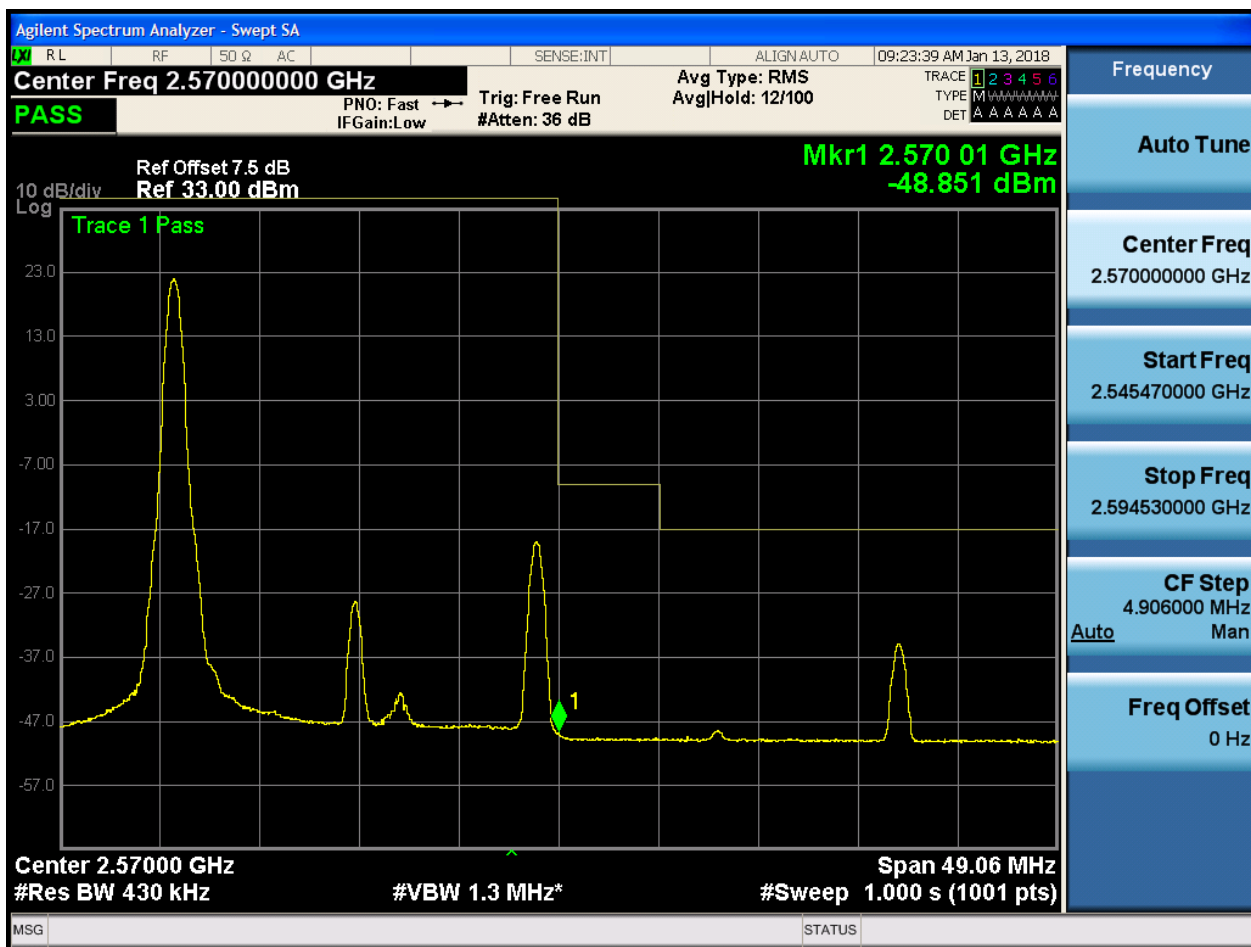
## 5.1.1.2.4.1.4 Test RB = RB100#0





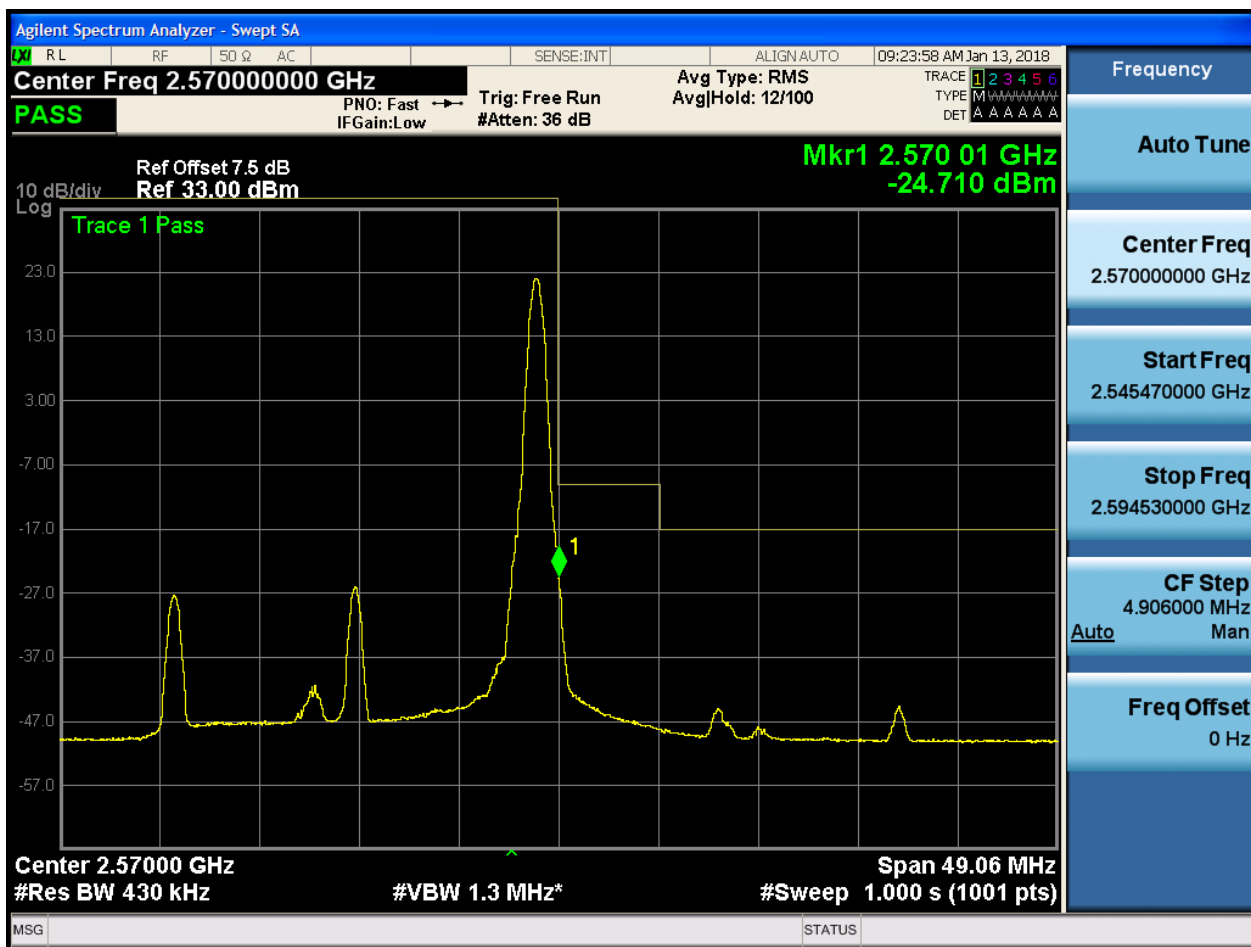
## 5.1.1.2.4.2 Test Channel = HCH

## 5.1.1.2.4.2.1 Test RB = RB1#0



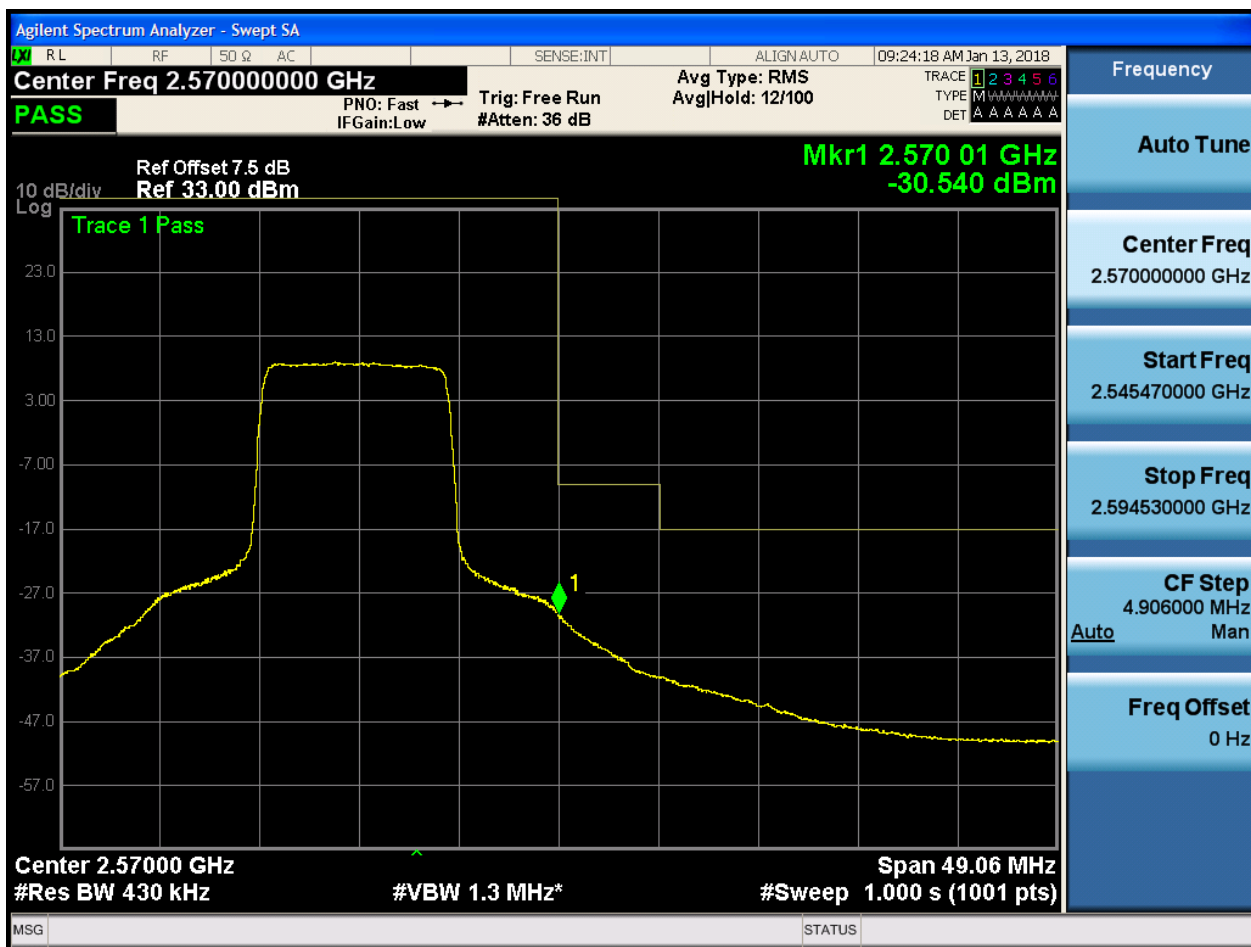


## 5.1.1.2.4.2.2 Test RB = RB1#99





## 5.1.1.2.4.2.3 Test RB = RB50#25





## 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

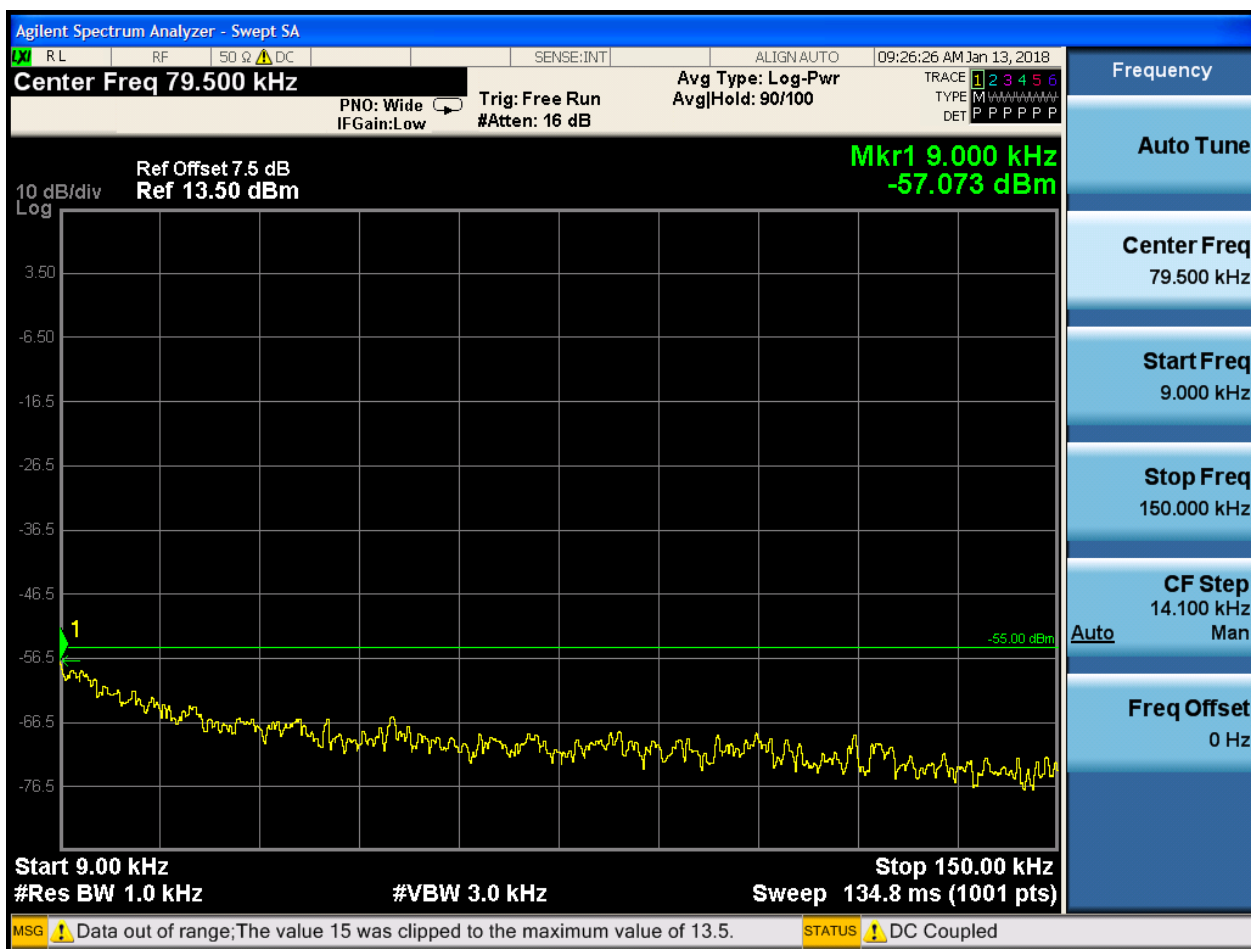
##### 6.1.1 Test Band = BAND7

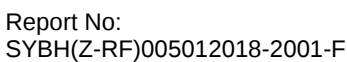
##### 6.1.1.1 Test Mode = LTE/TM1

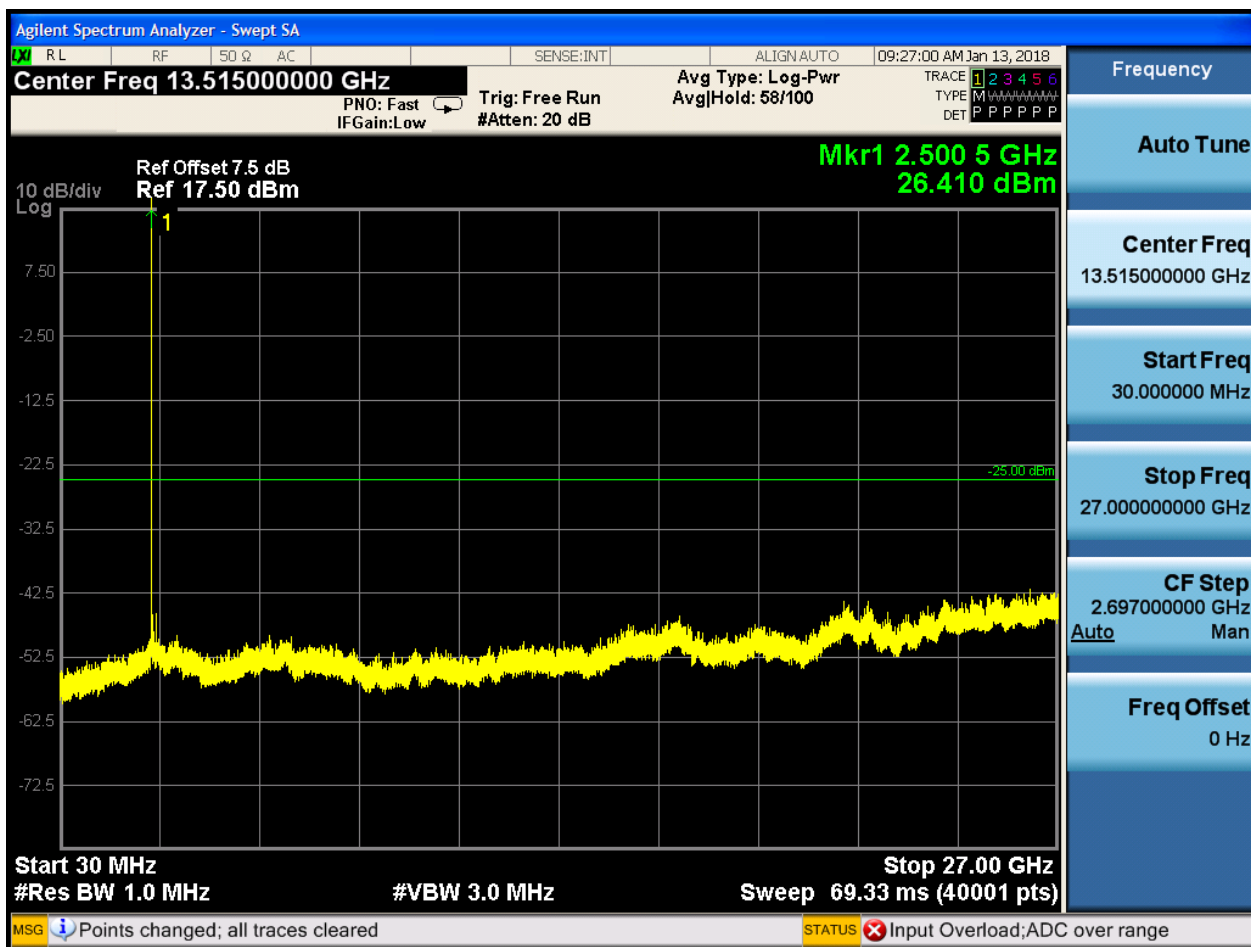
##### 6.1.1.1.1 Test Bandwidth = 5

##### 6.1.1.1.1.1 Test Channel = LCH

##### 6.1.1.1.1.1.1 Test RB = RB1#0

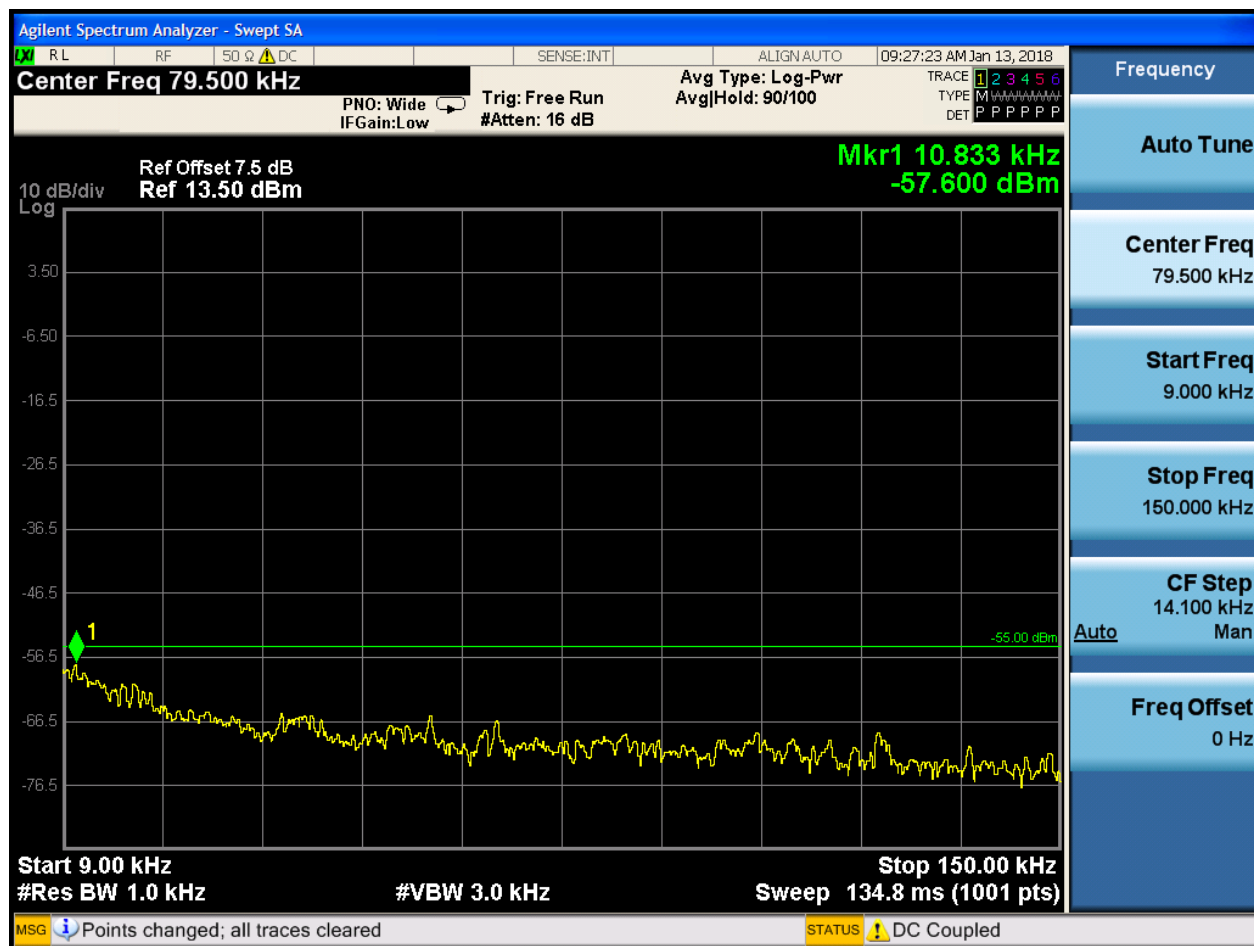






#### 6.1.1.1.1.2 Test Channel = MCH

#### 6.1.1.1.1.2.1 Test RB = RB1#0

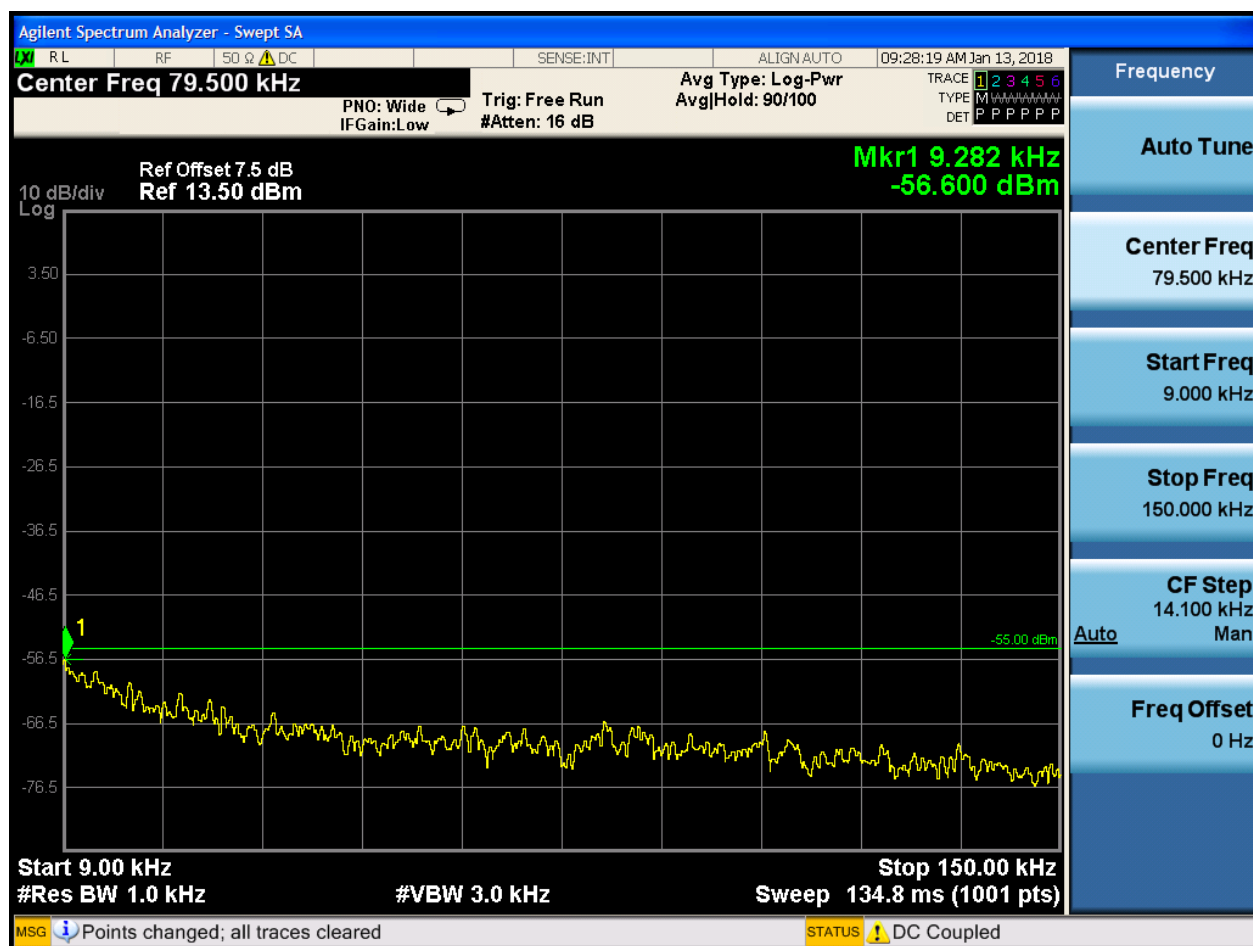


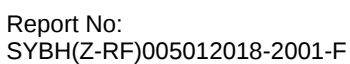


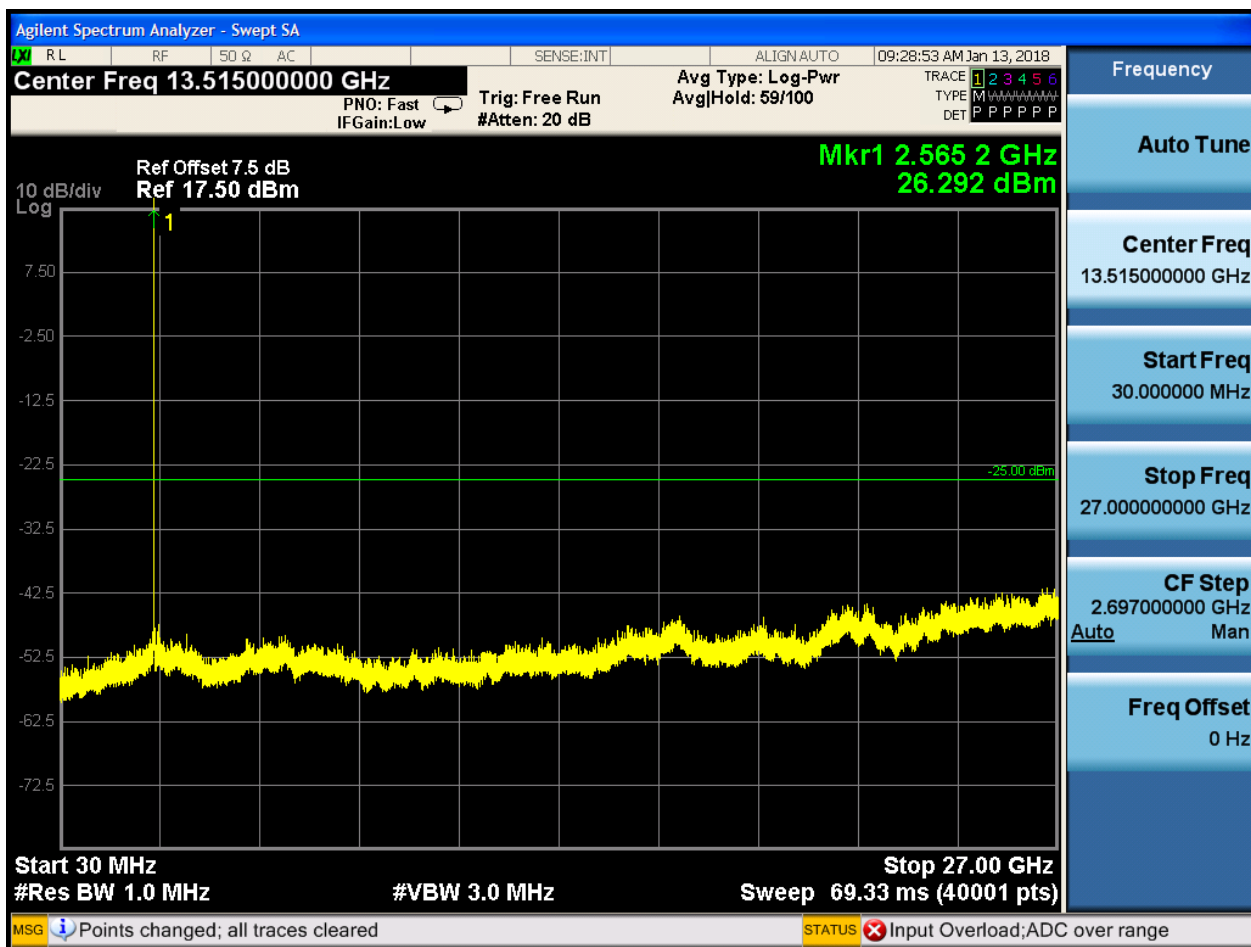


#### 6.1.1.1.1.3 Test Channel = HCH

#### 6.1.1.1.1.3.1 Test RB = RB1#0





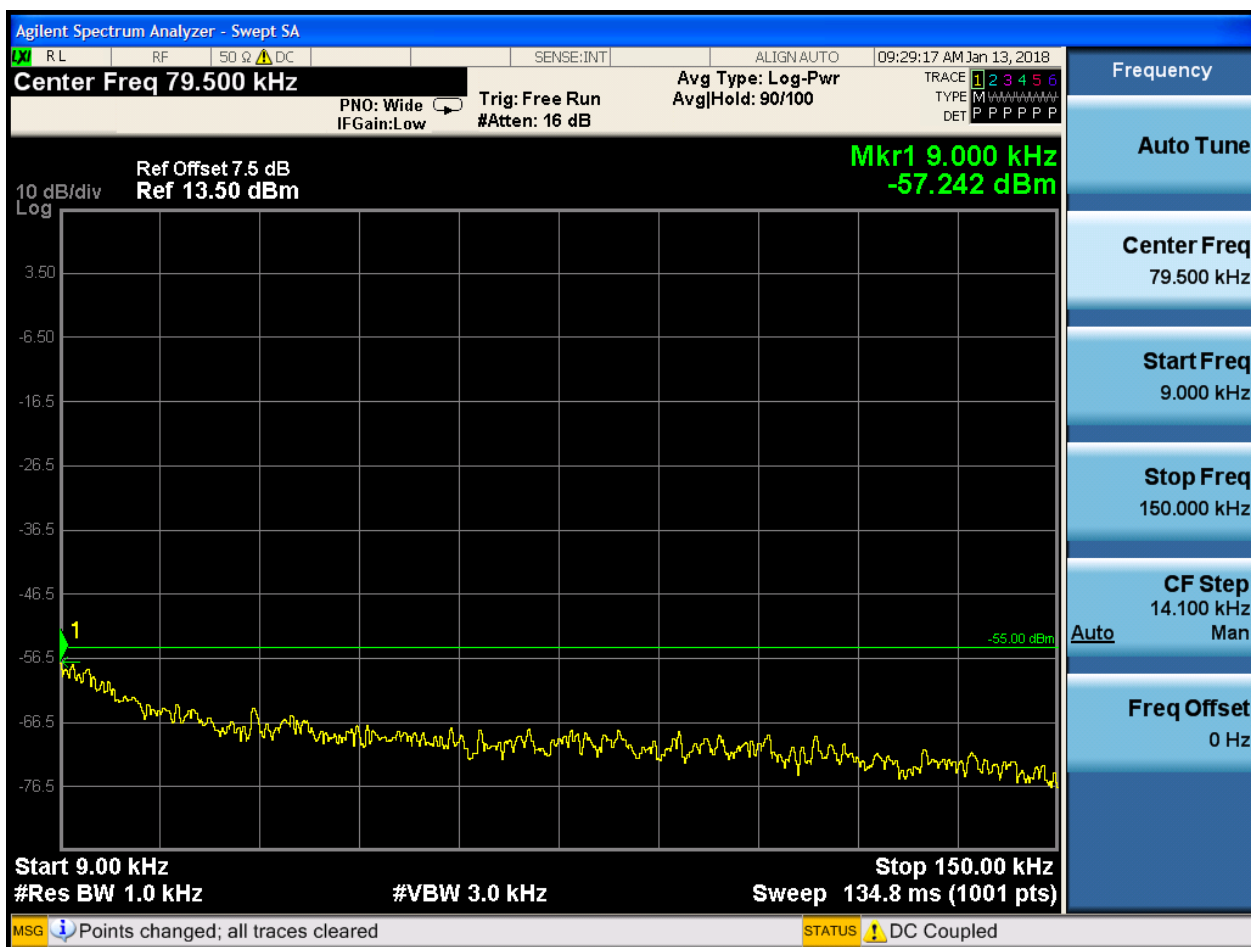


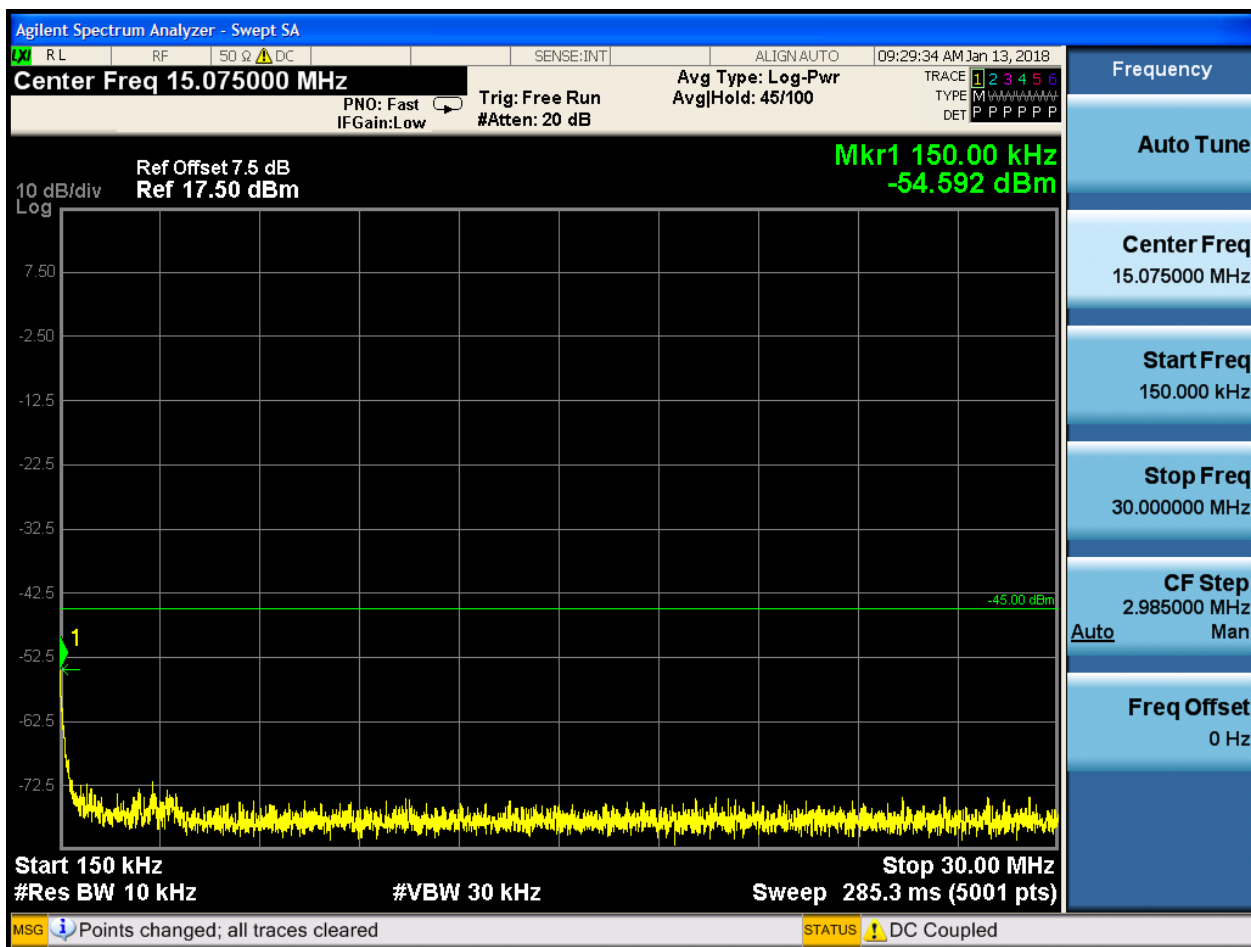


## 6.1.1.1.2 Test Bandwidth = 10

## 6.1.1.1.2.1 Test Channel = LCH

## 6.1.1.1.2.1.1 Test RB = RB1#0



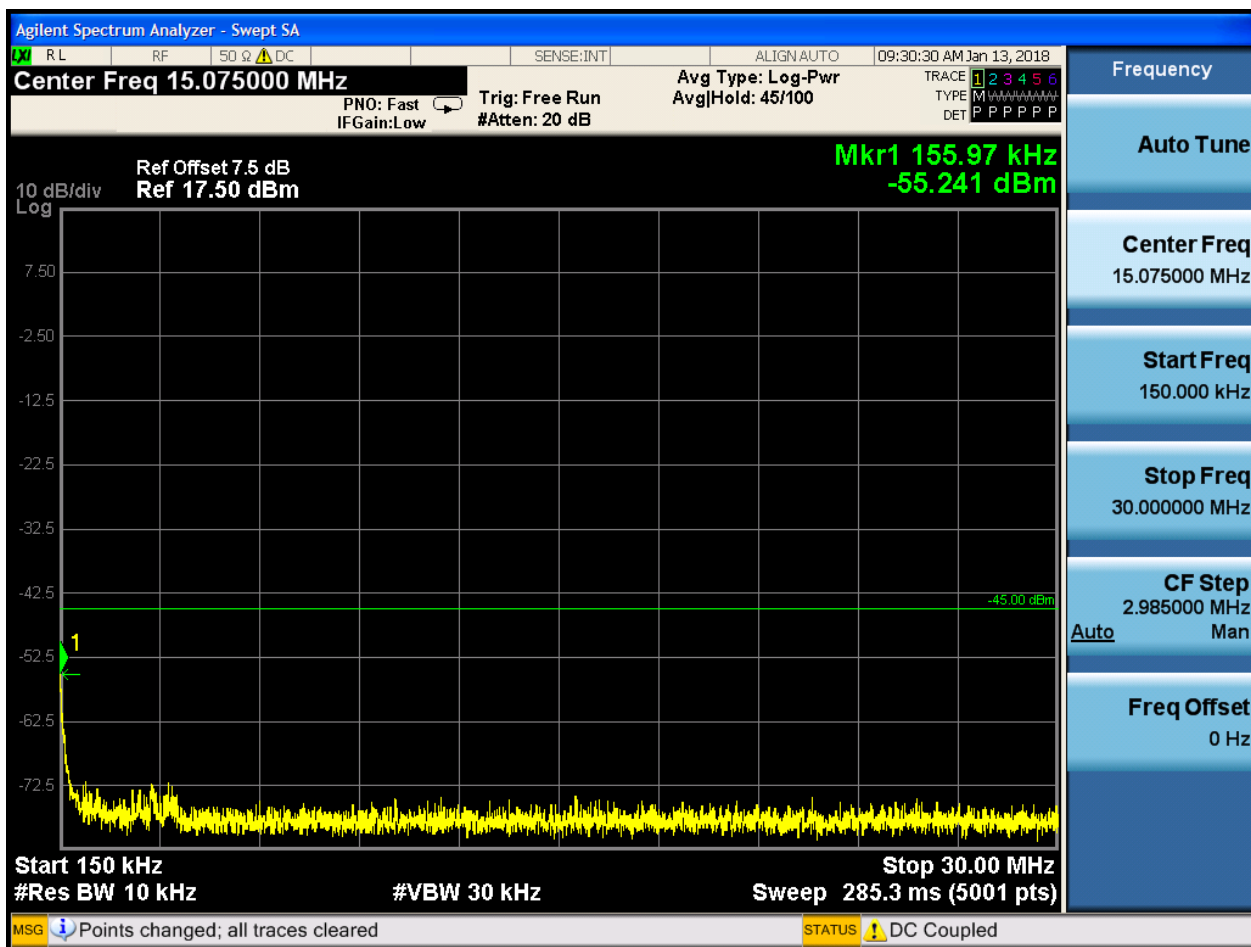




#### 6.1.1.1.2.2 Test Channel = MCH

#### 6.1.1.1.2.2.1 Test RB = RB1#0

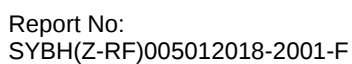


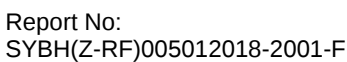






#### 6.1.1.1.2.3.1 Test RB = RB1#0





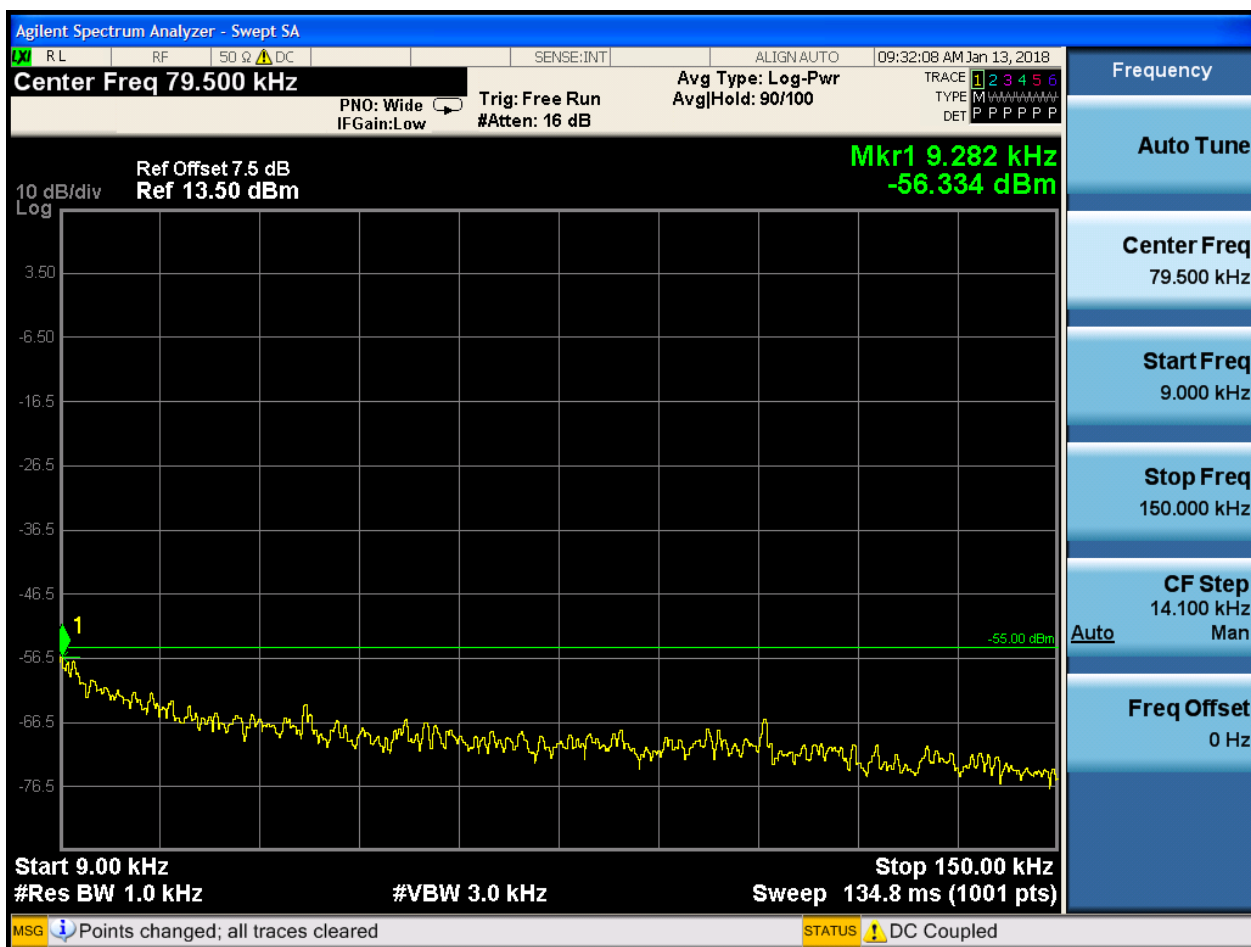


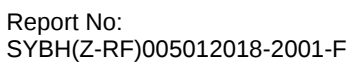


## 6.1.1.1.3 Test Bandwidth = 15

## 6.1.1.1.3.1 Test Channel = LCH

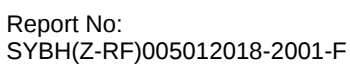
## 6.1.1.1.3.1.1 Test RB = RB1#0

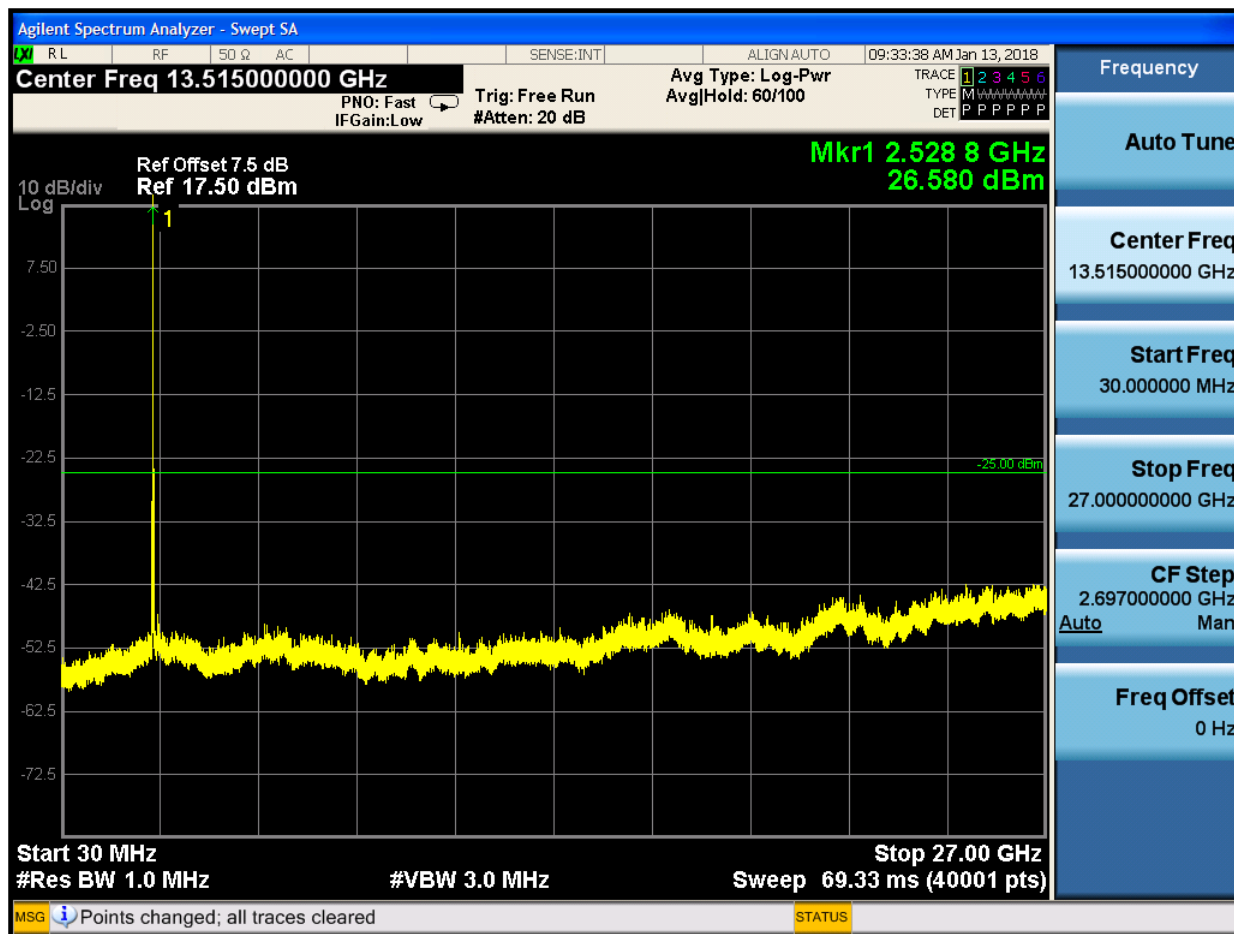
















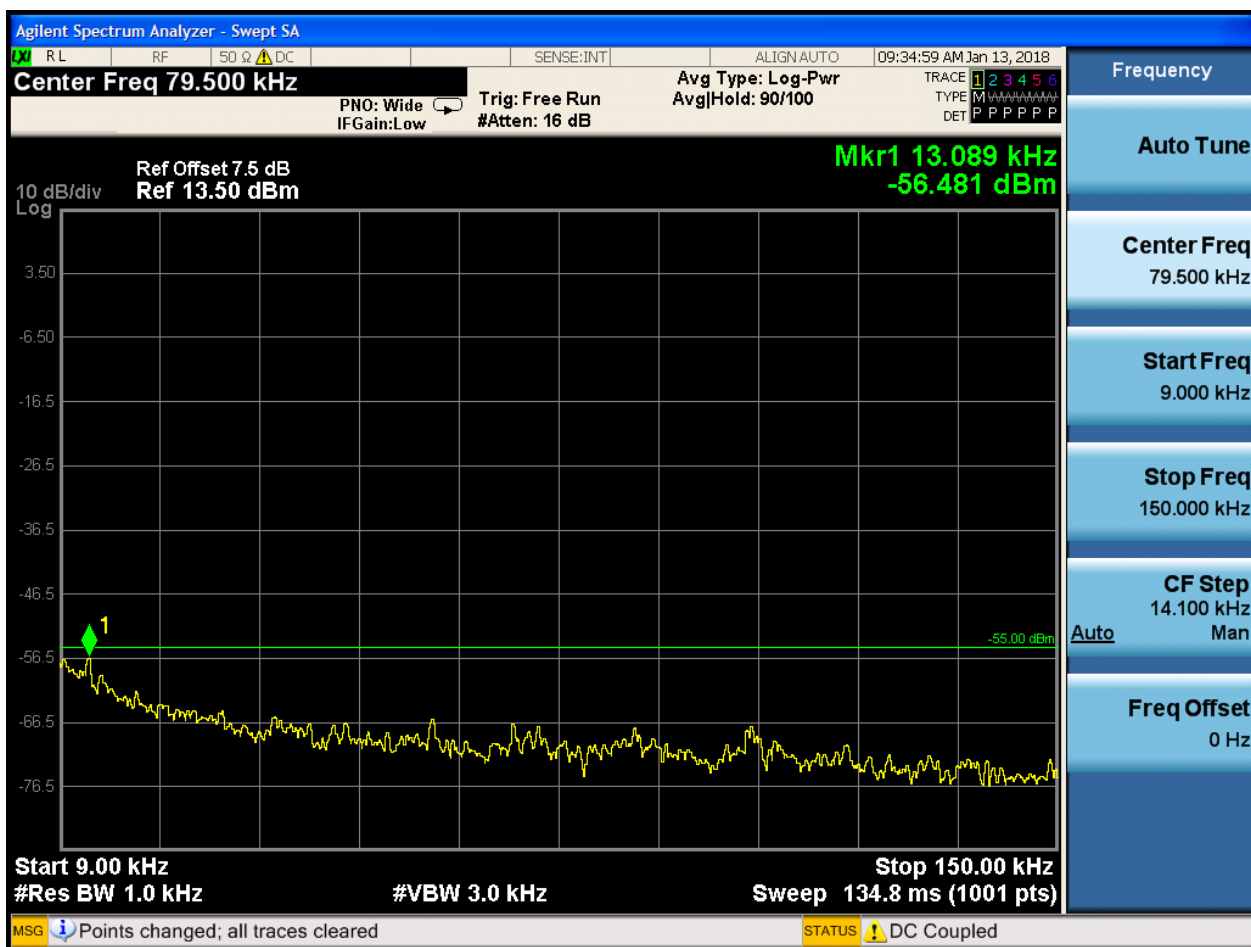


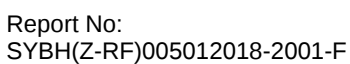


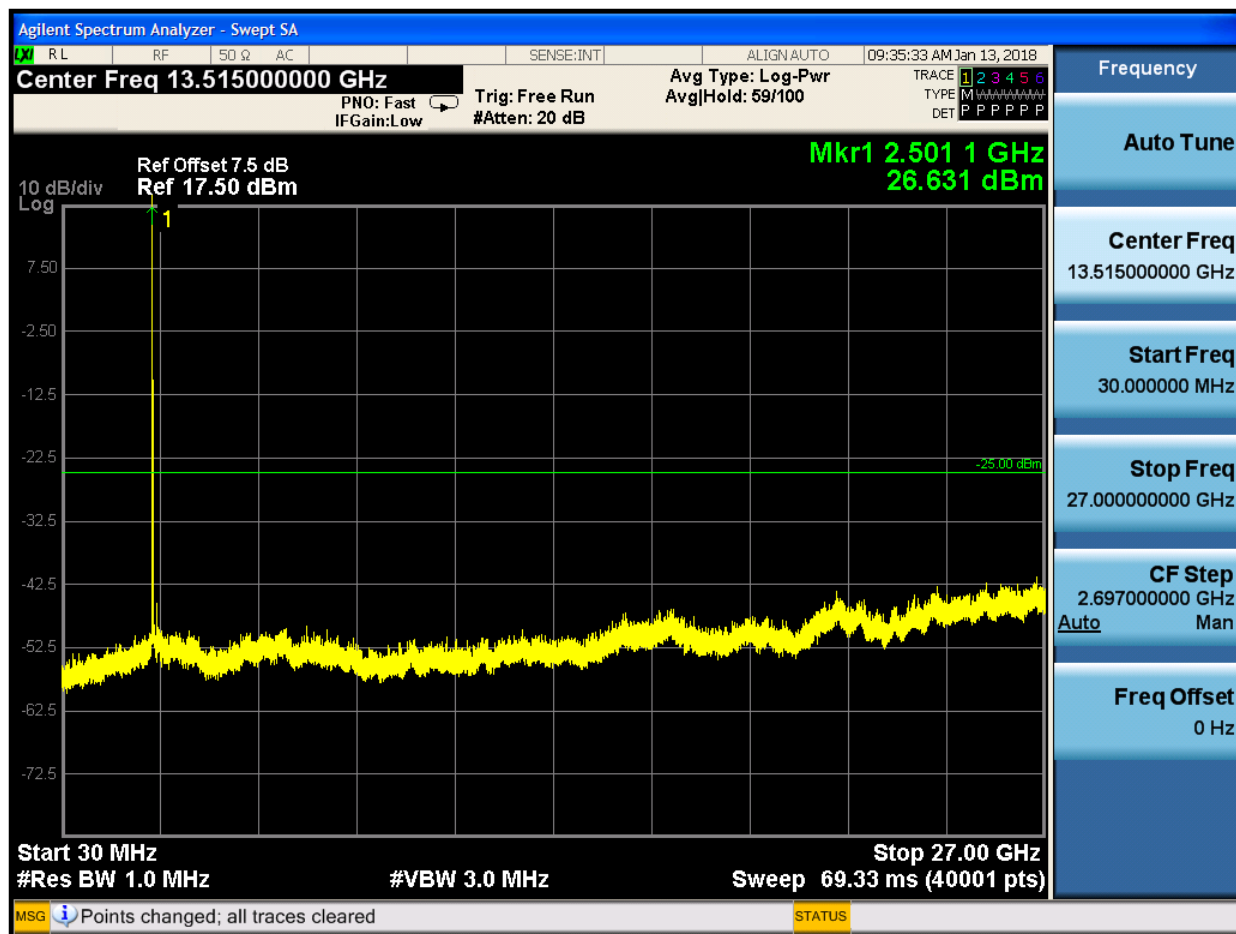
## 6.1.1.1.4 Test Bandwidth = 20

## 6.1.1.1.4.1 Test Channel = LCH

## 6.1.1.1.4.1.1 Test RB = RB1#0

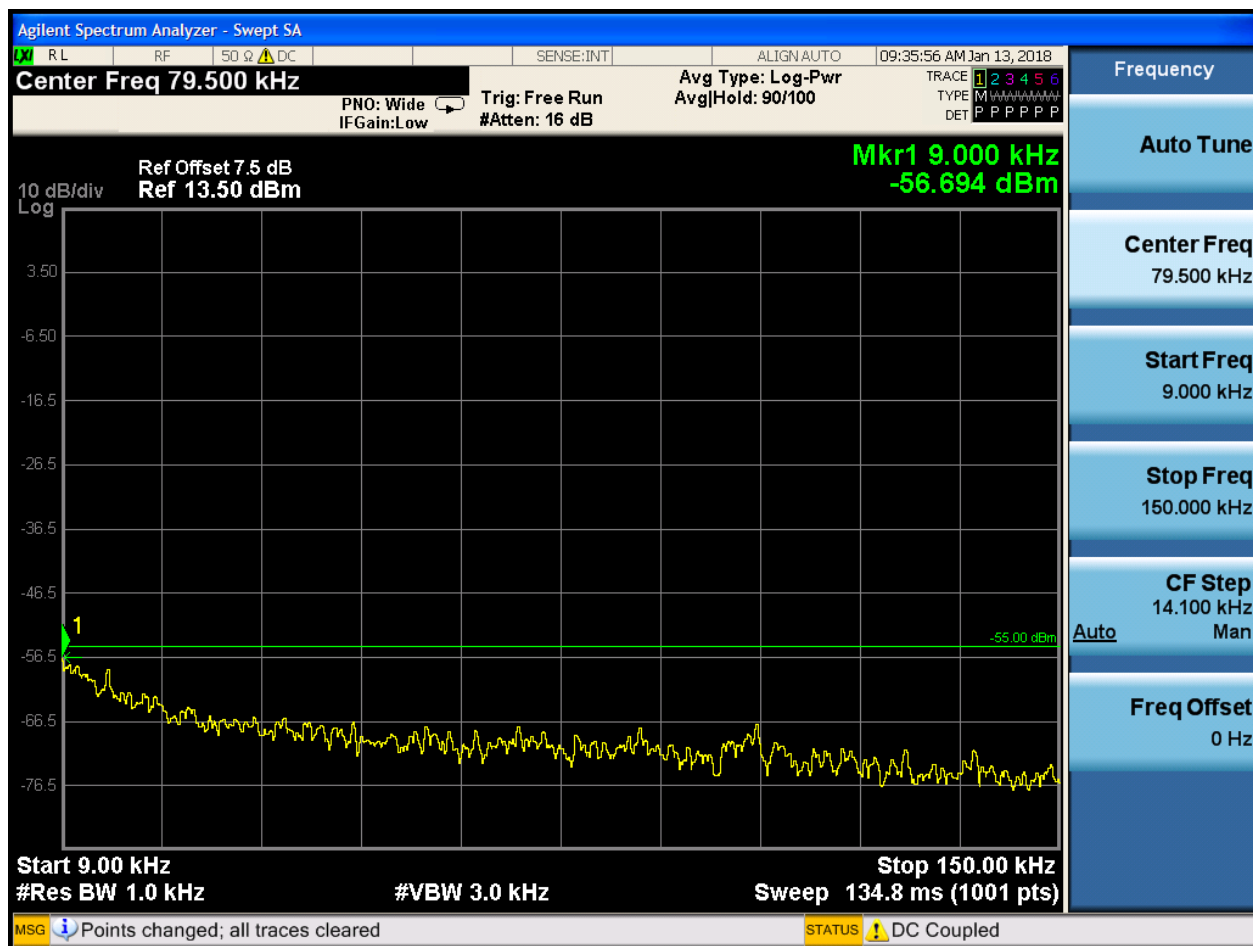


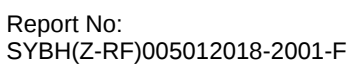


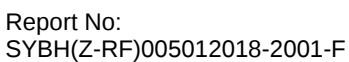


#### 6.1.1.1.4.2 Test Channel = MCH

#### 6.1.1.1.4.2.1 Test RB = RB1#0



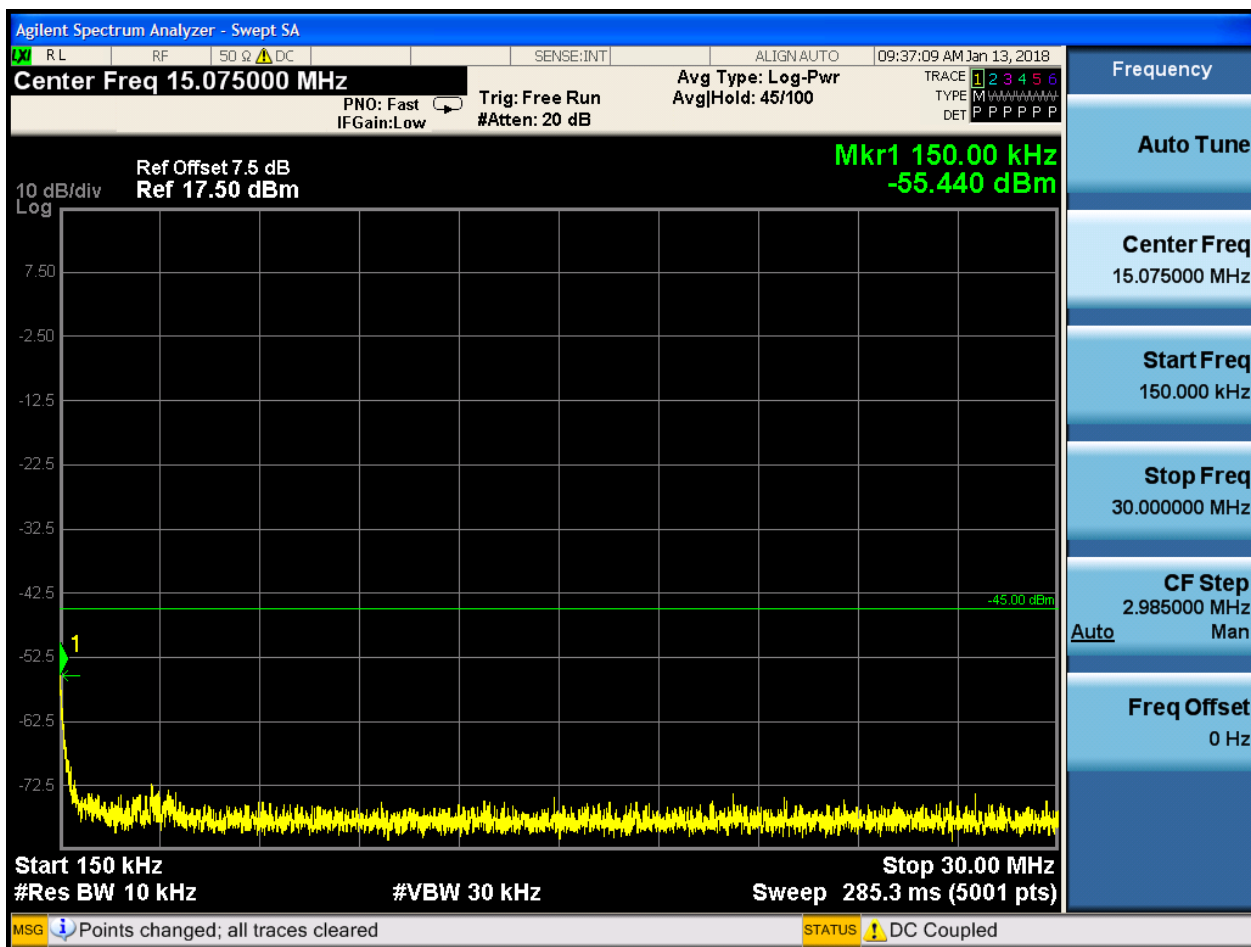


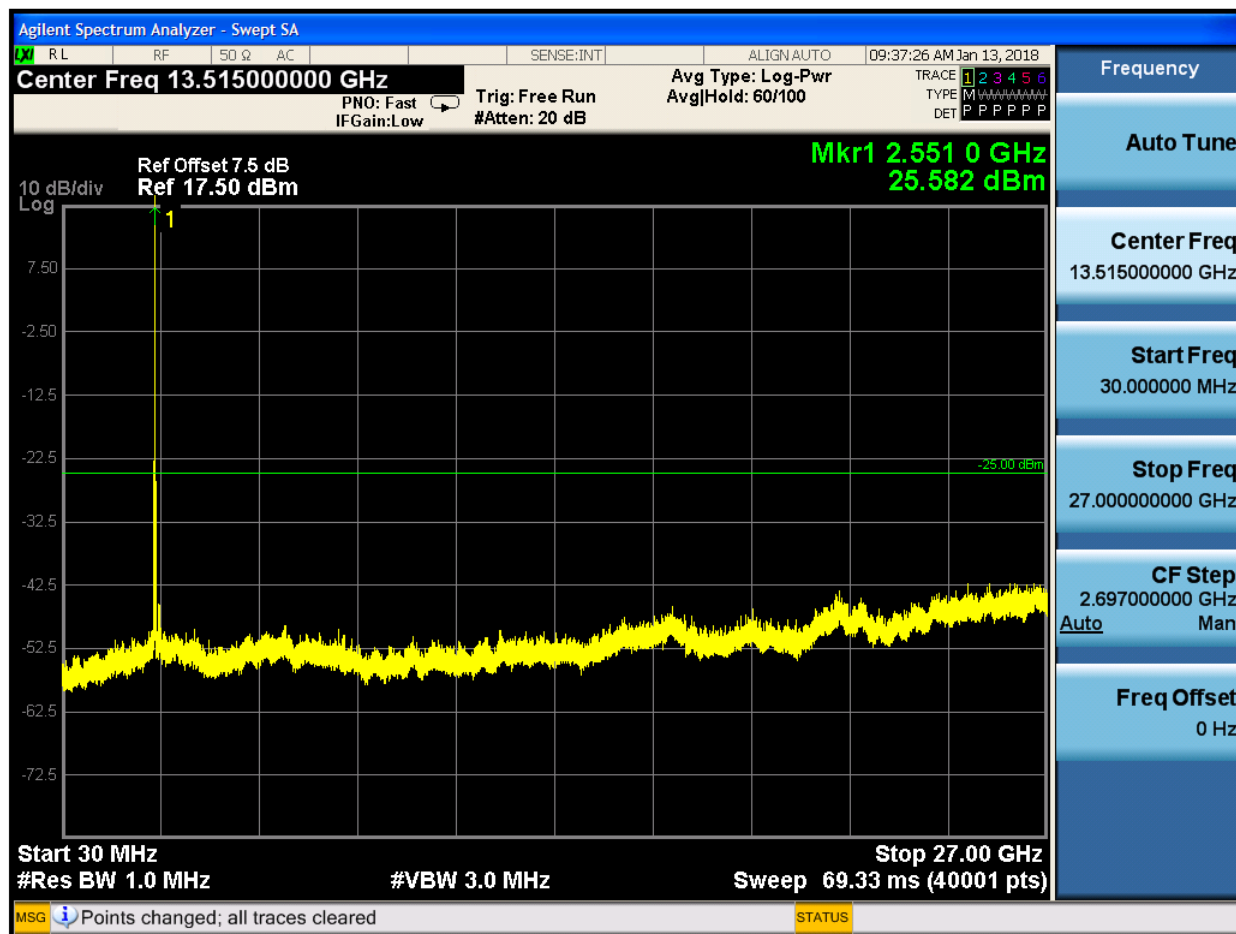


#### 6.1.1.1.4.3 Test Channel = HCH

#### 6.1.1.1.4.3.1 Test RB = RB1#0







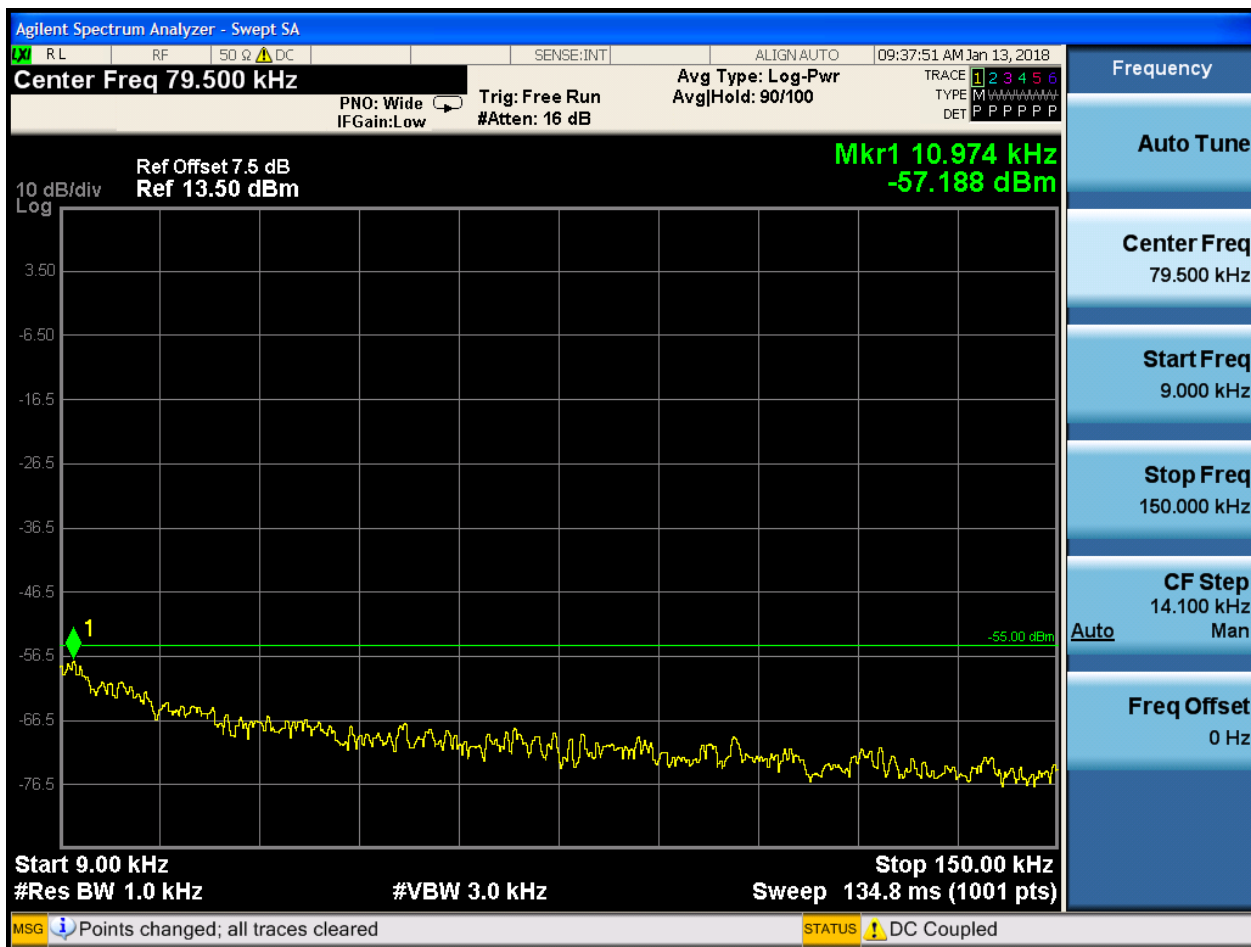


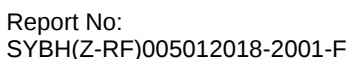
## 6.1.1.2 Test Mode = LTE/TM2

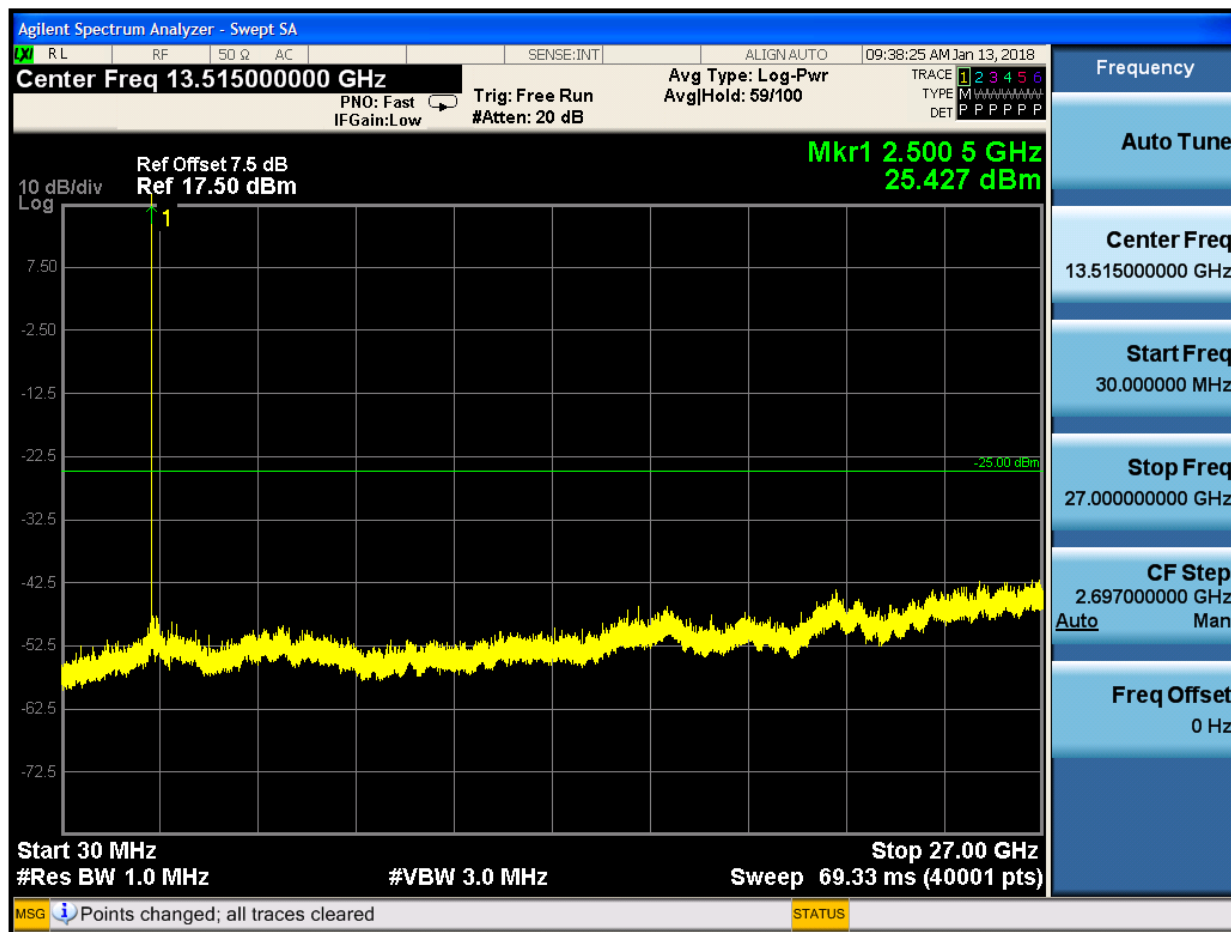
## 6.1.1.2.1 Test Bandwidth = 5

## 6.1.1.2.1.1 Test Channel = LCH

## 6.1.1.2.1.1.1 Test RB = RB1#0

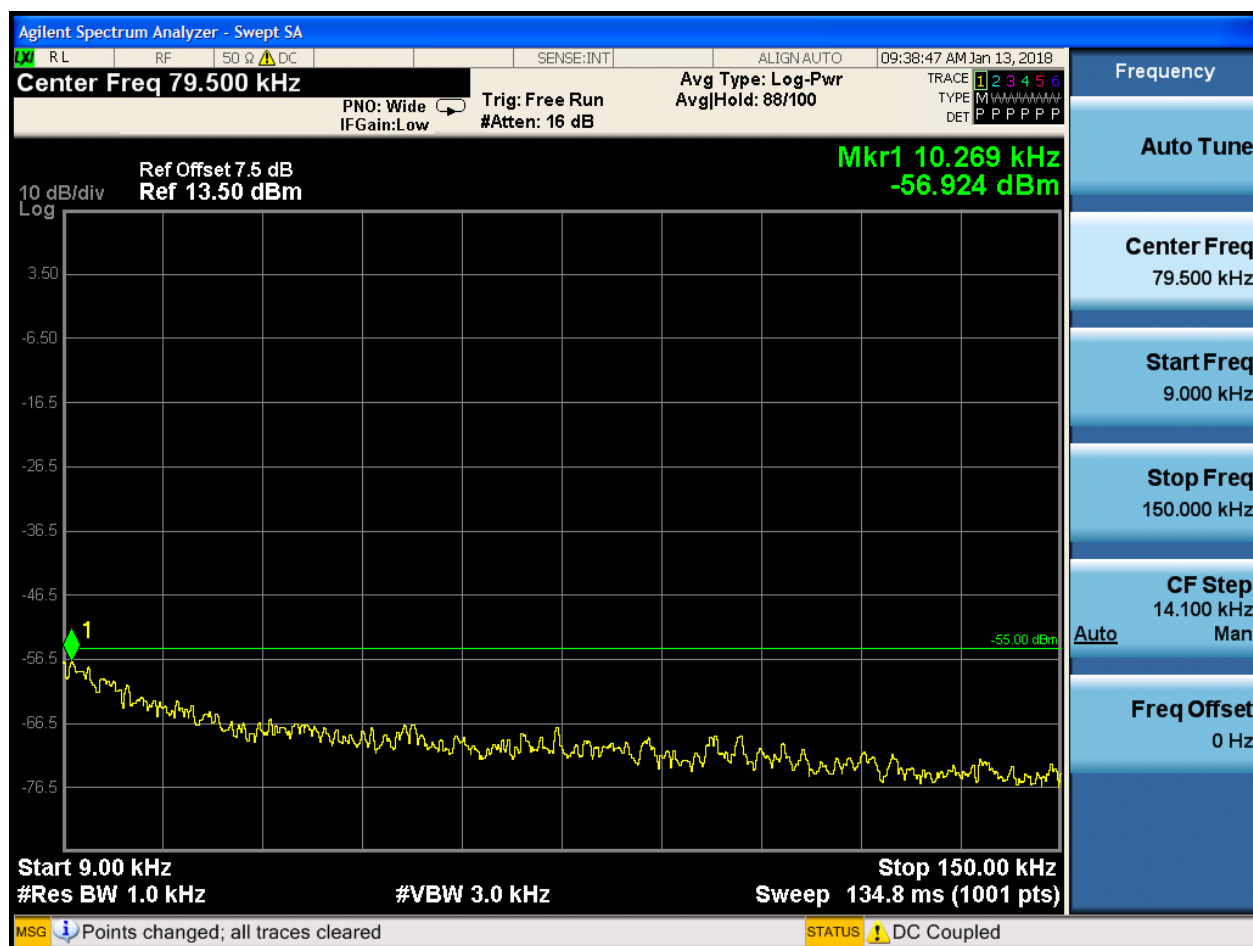






#### 6.1.1.2.1.2 Test Channel = MCH

#### 6.1.1.2.1.2.1 Test RB = RB1#0



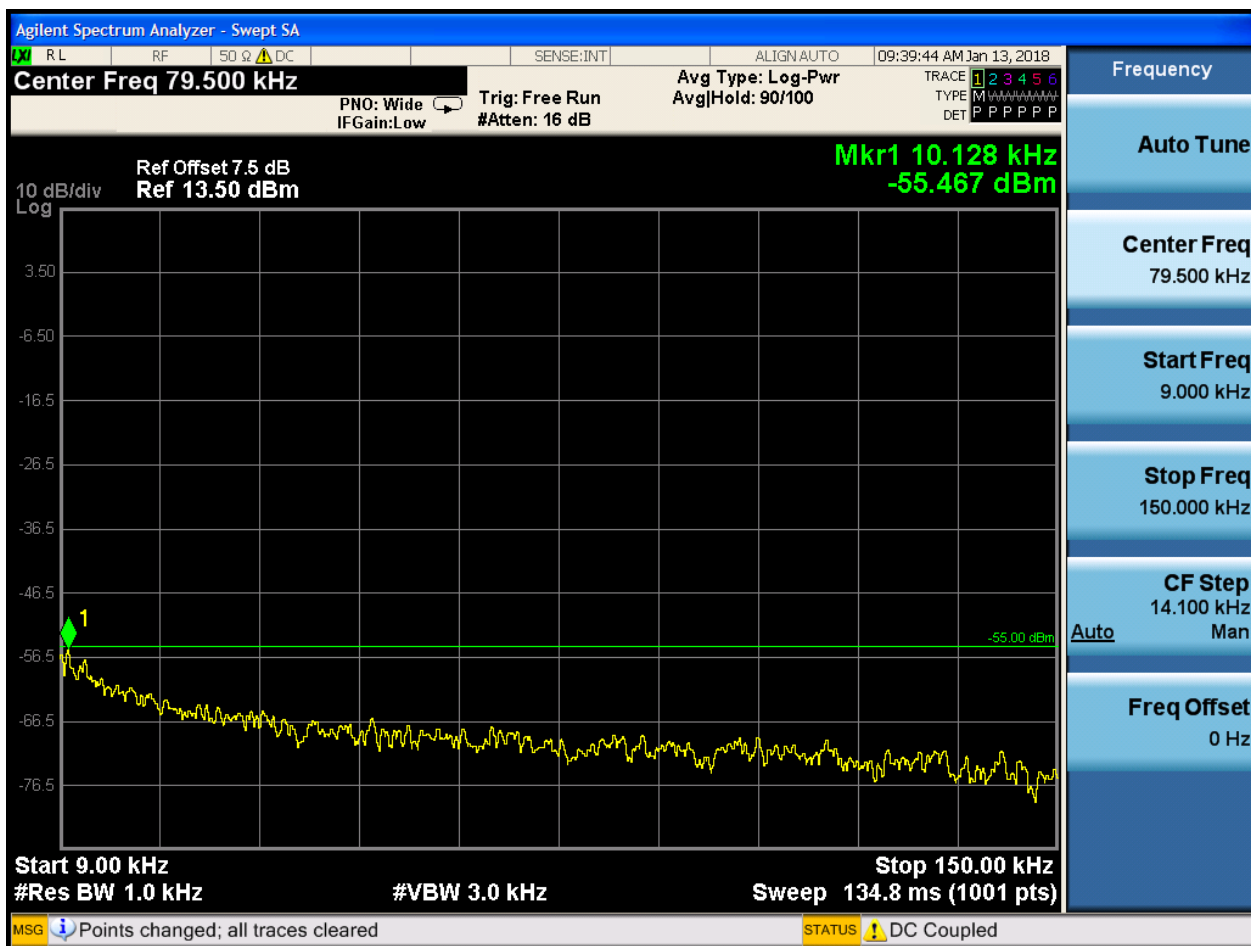


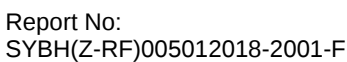


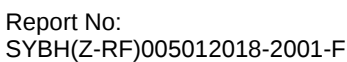


## 6.1.1.2.1.3 Test Channel = HCH

## 6.1.1.2.1.3.1 Test RB = RB1#0



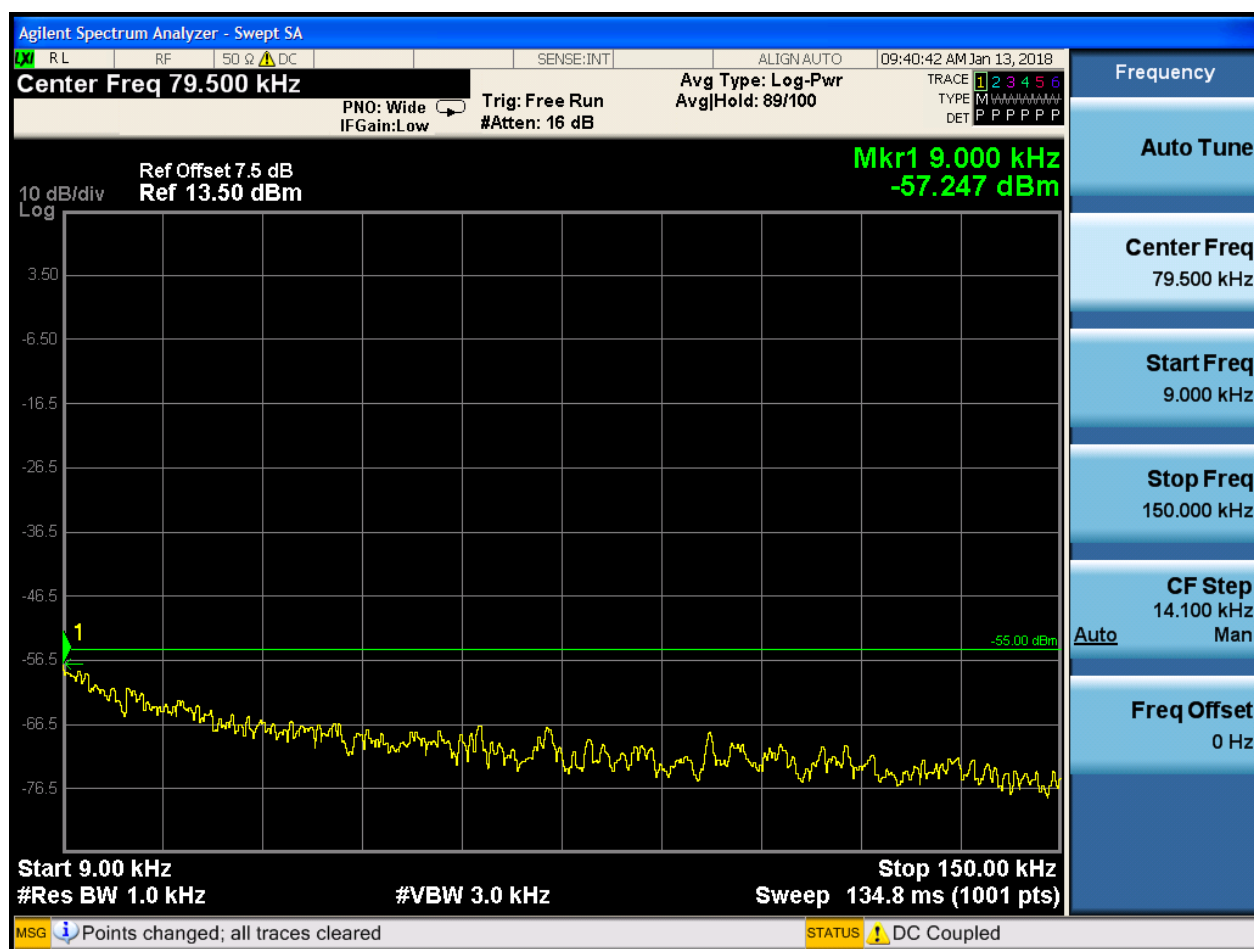




#### 6.1.1.2.2 Test Bandwidth = 10

#### 6.1.1.2.2.1 Test Channel = LCH

#### 6.1.1.2.2.1.1 Test RB = RB1#0

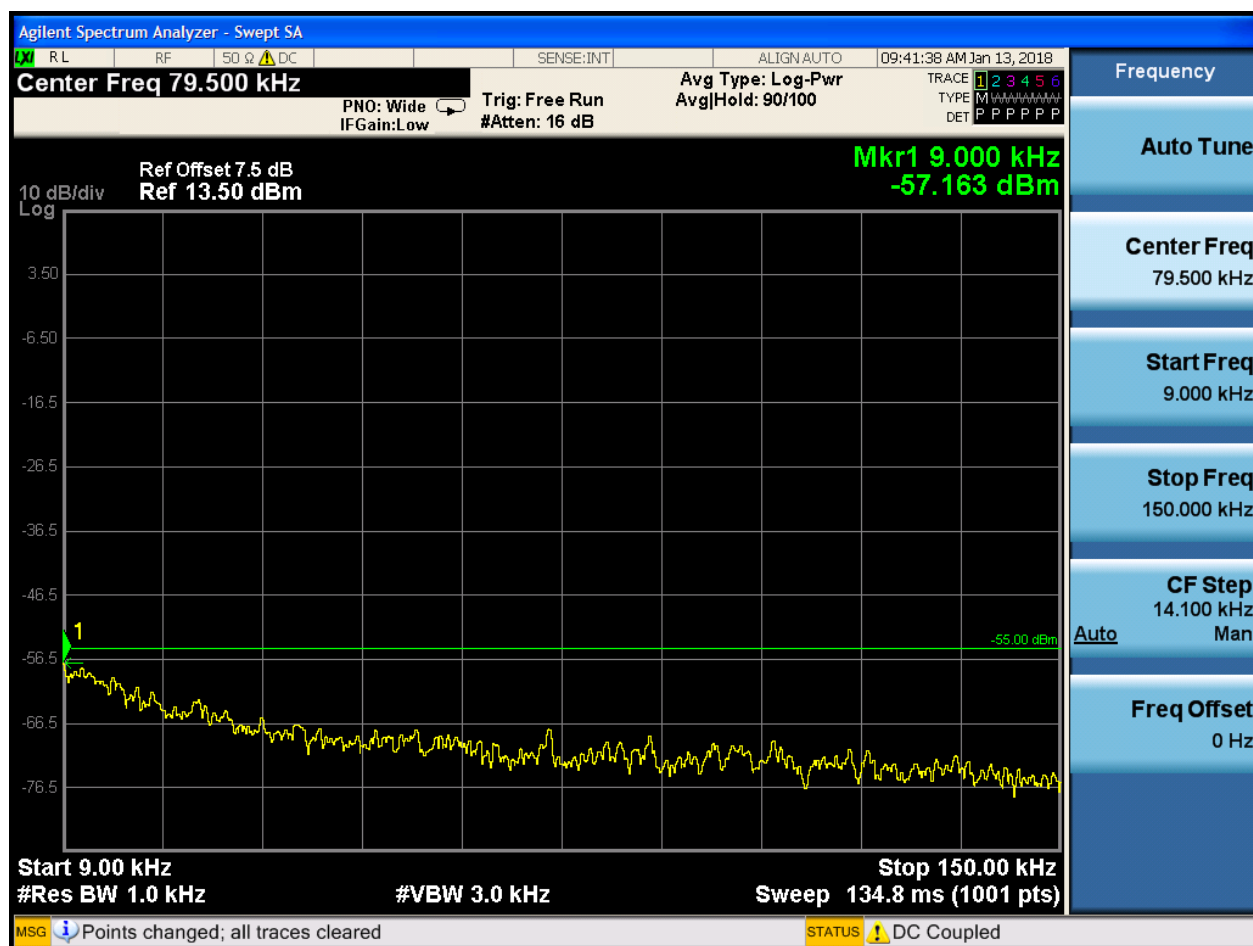






#### 6.1.1.2.2.2 Test Channel = MCH

#### 6.1.1.2.2.2.1 Test RB = RB1#0

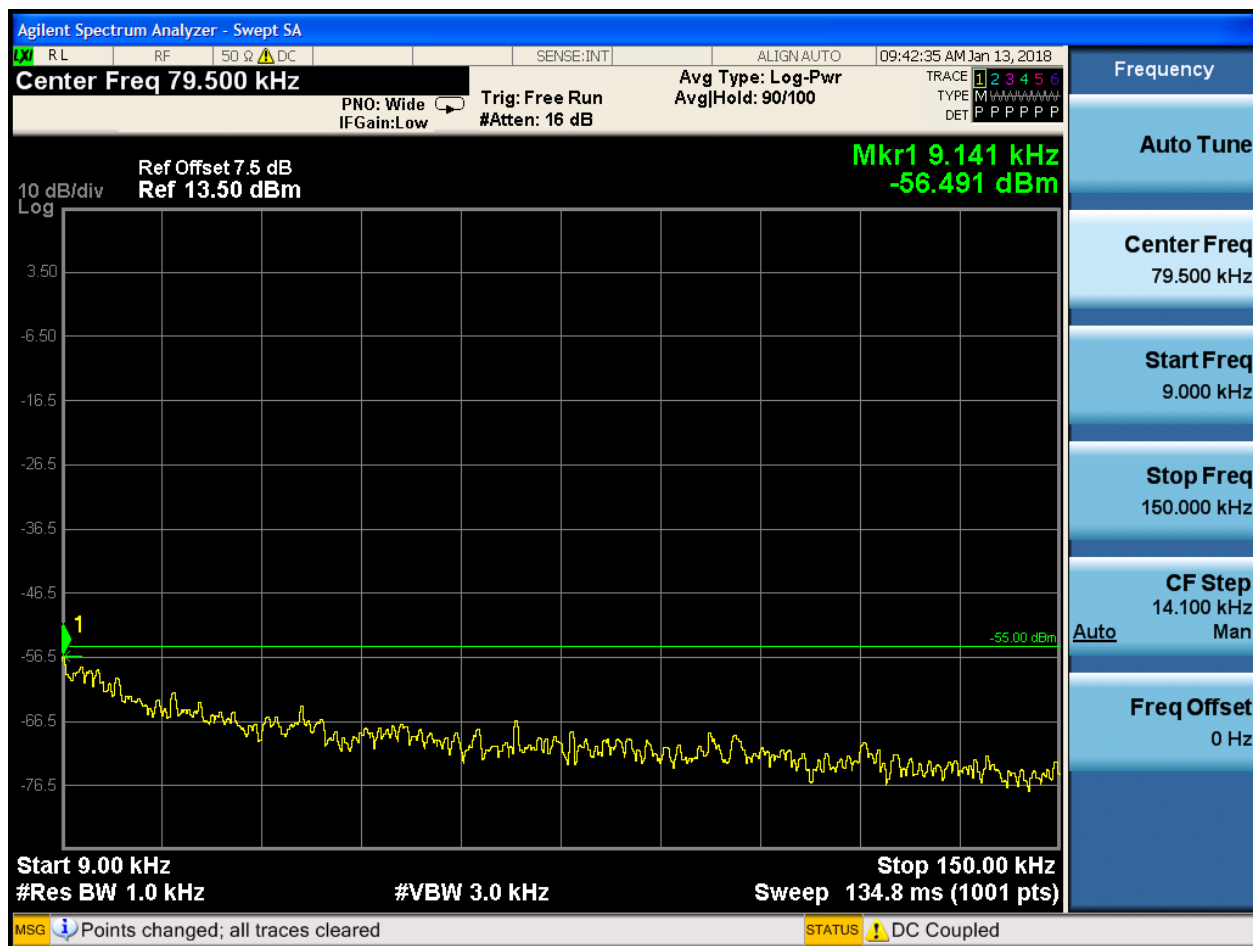


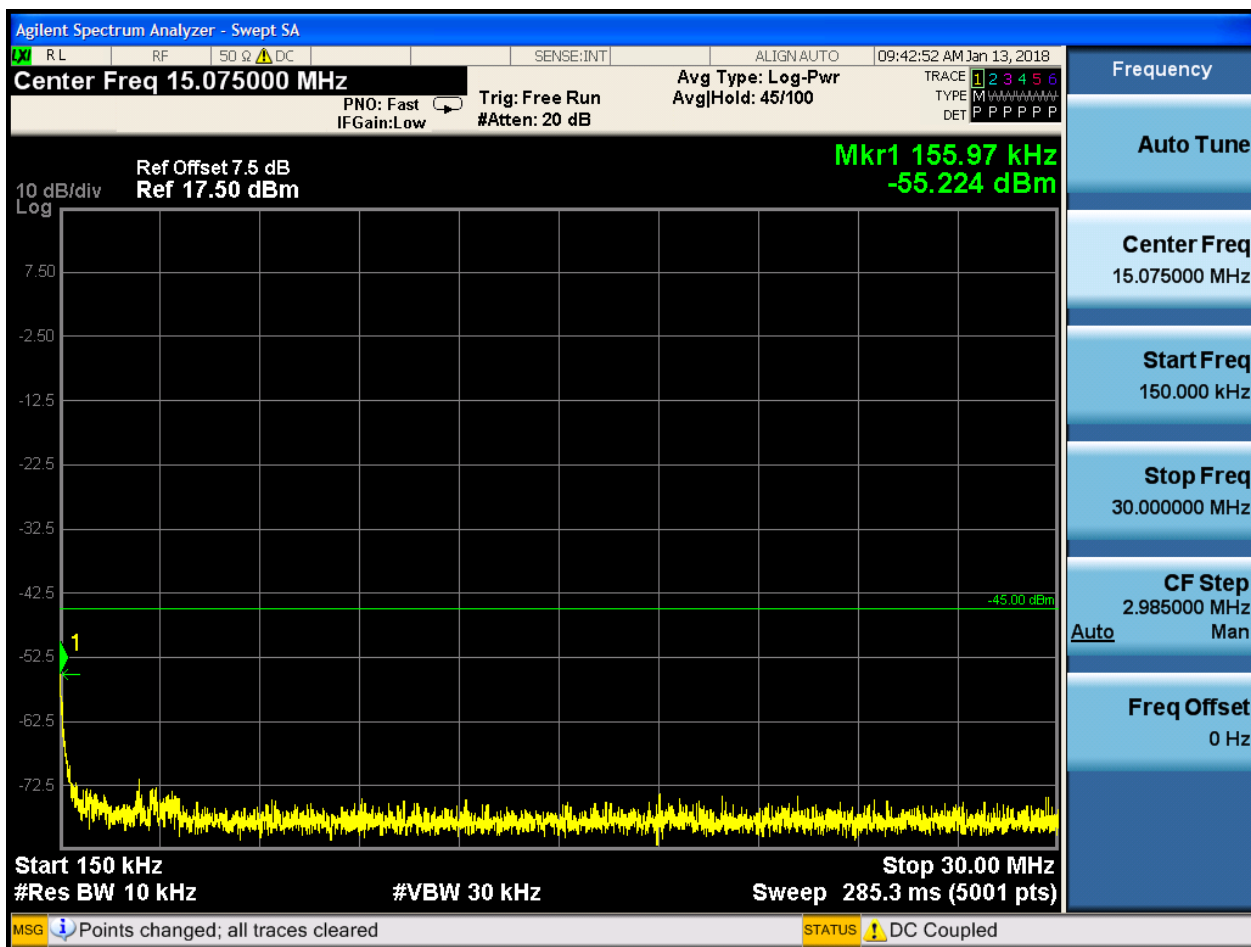






#### 6.1.1.2.2.3.1 Test RB = RB1#0





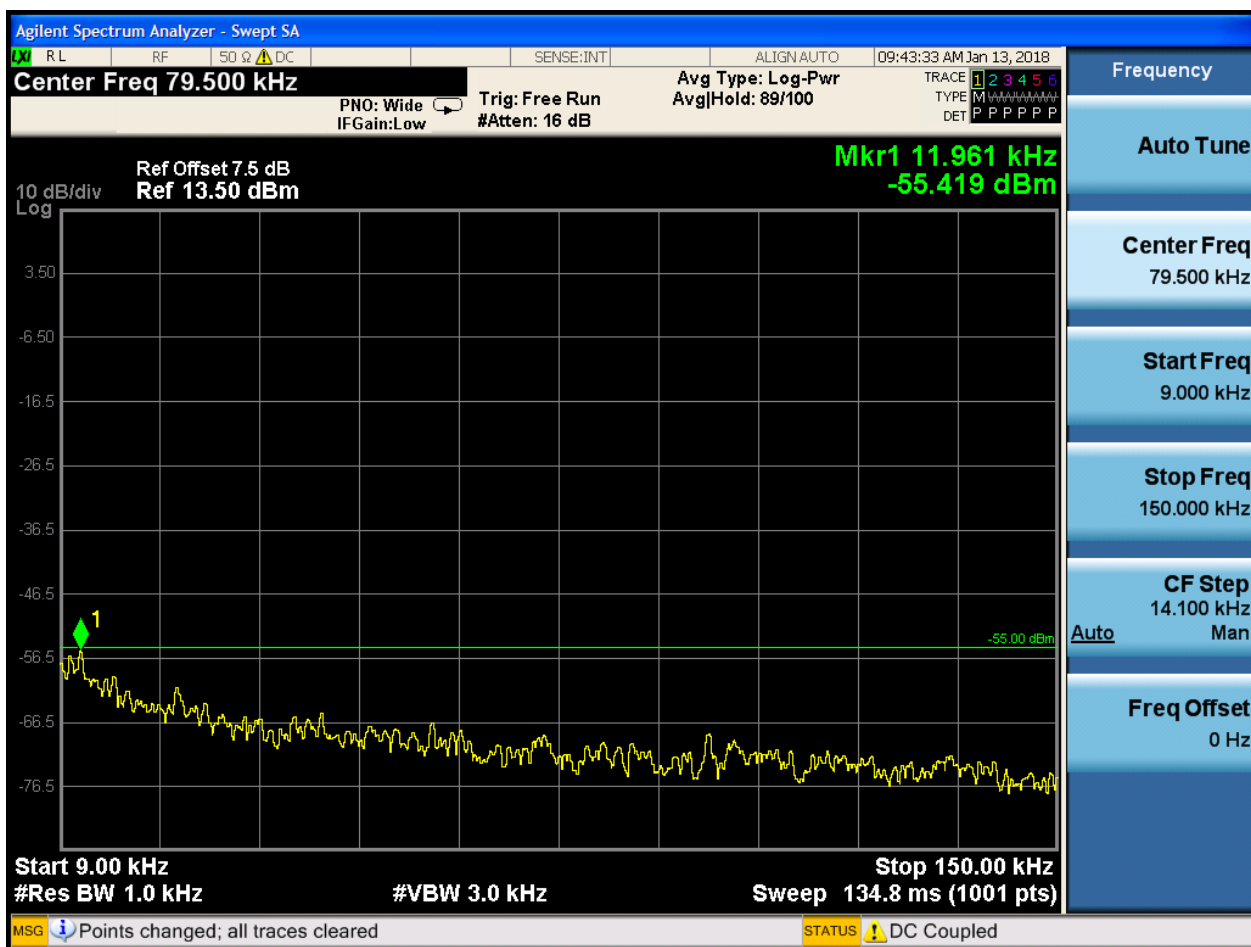


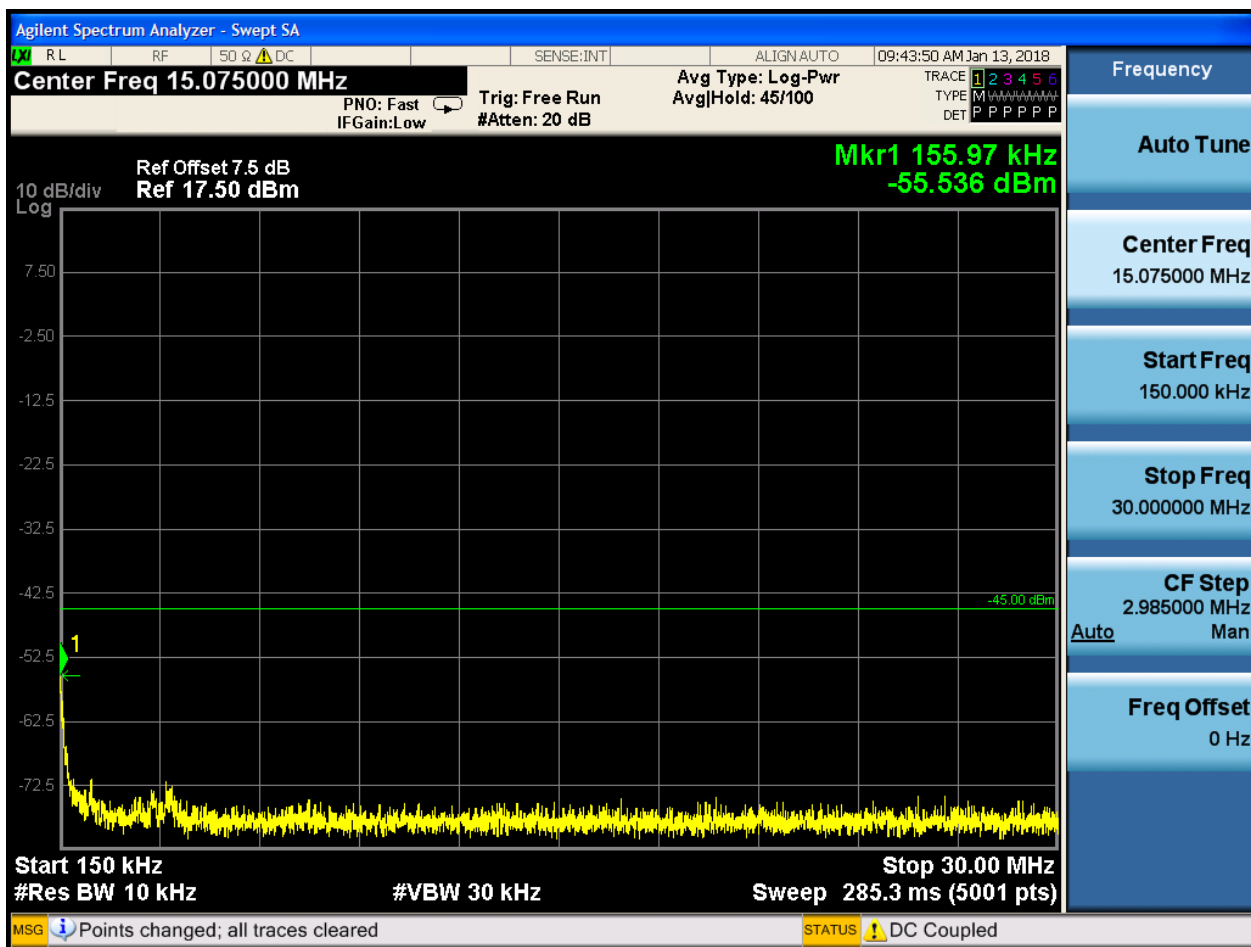


## 6.1.1.2.3 Test Bandwidth = 15

## 6.1.1.2.3.1 Test Channel = LCH

## 6.1.1.2.3.1.1 Test RB = RB1#0

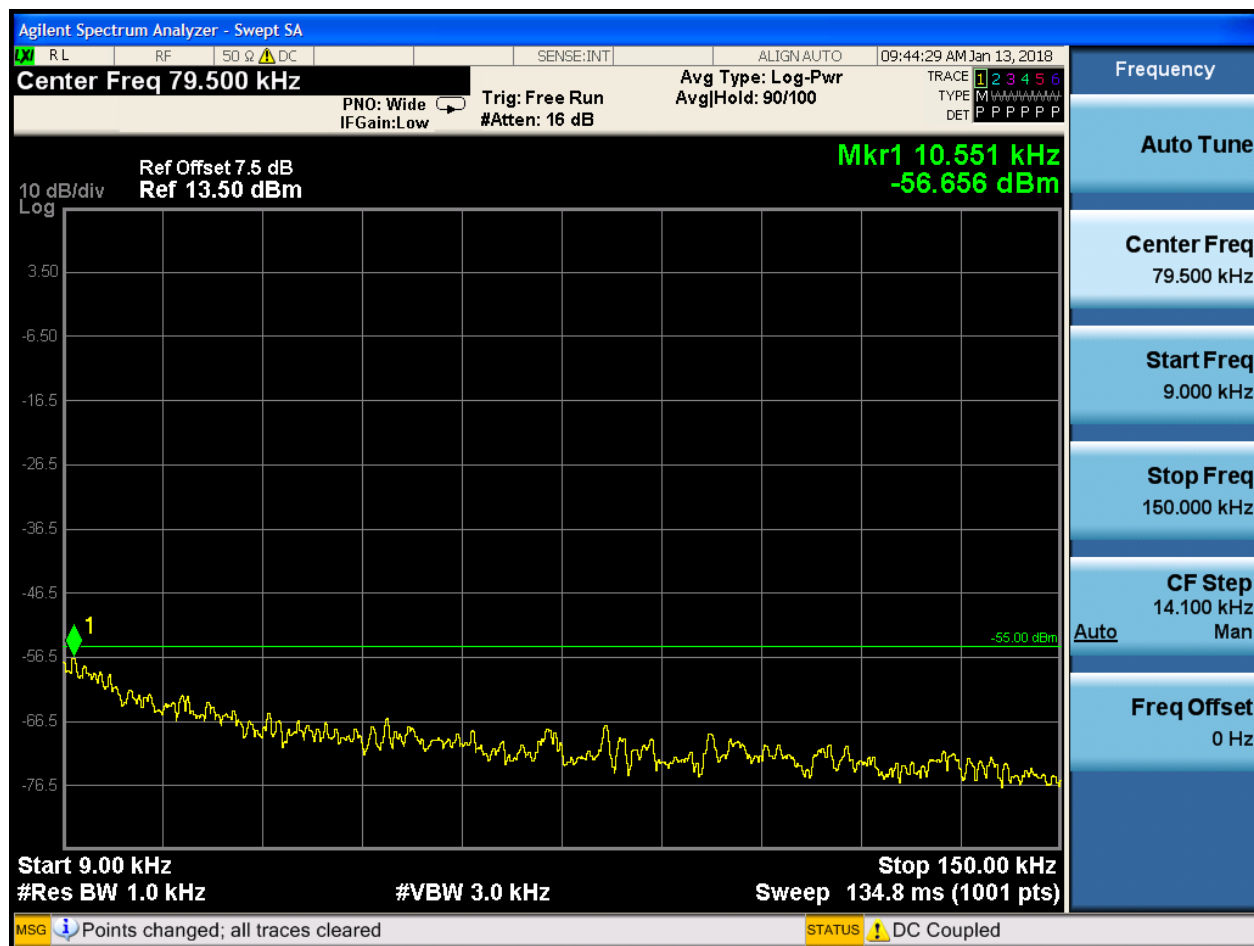


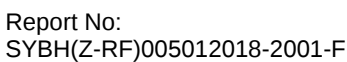




#### 6.1.1.2.3.2 Test Channel = MCH

#### 6.1.1.2.3.2.1 Test RB = RB1#0

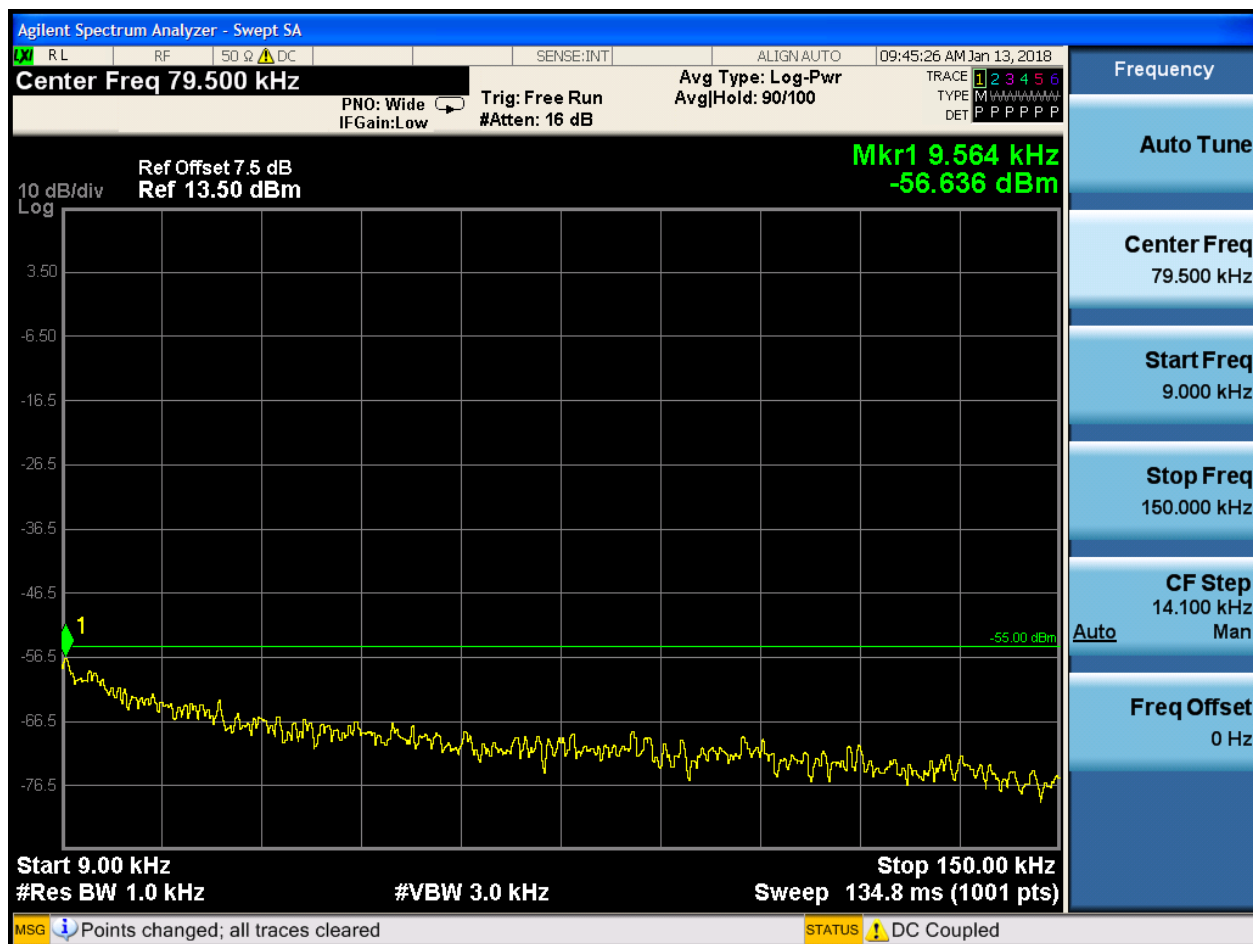


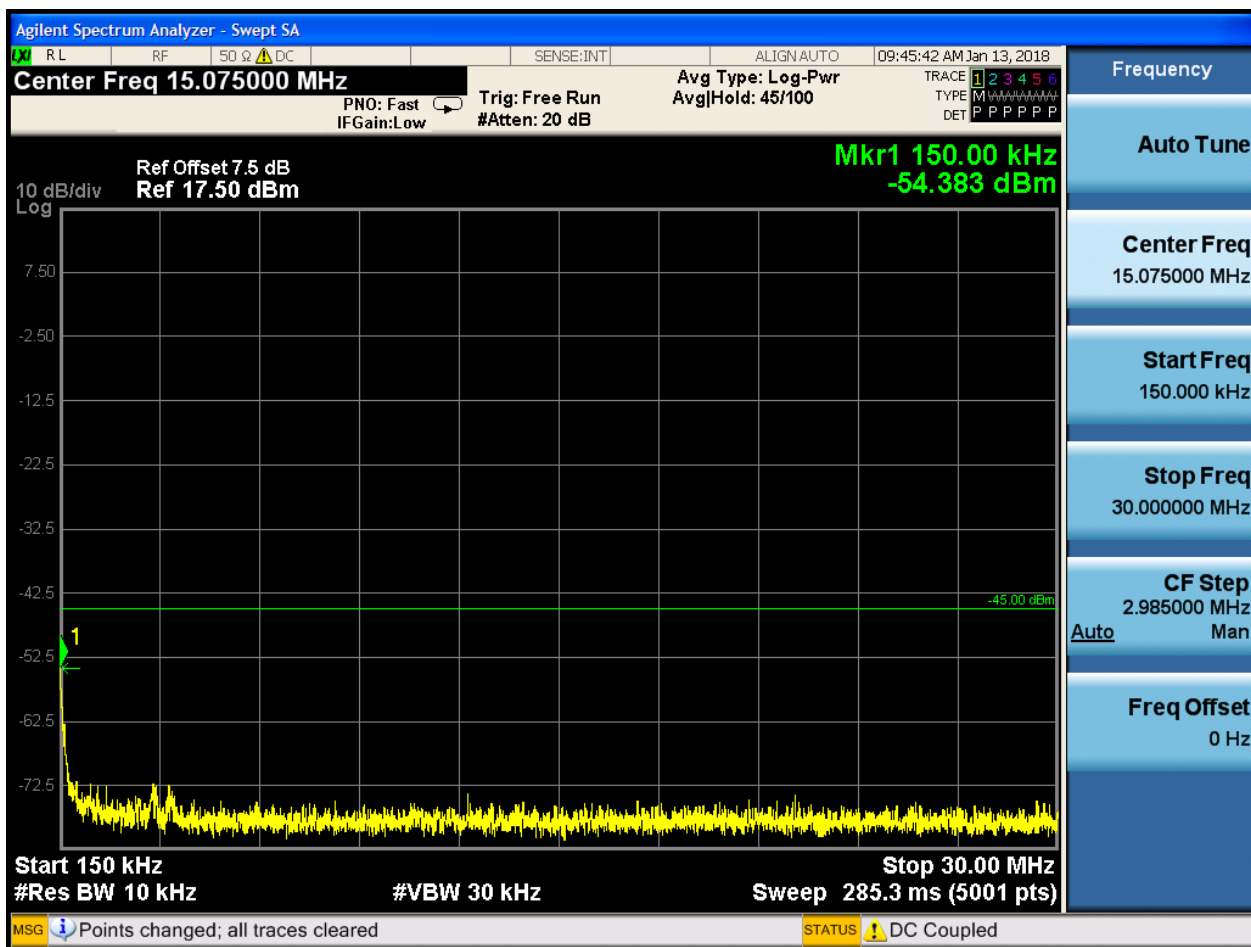


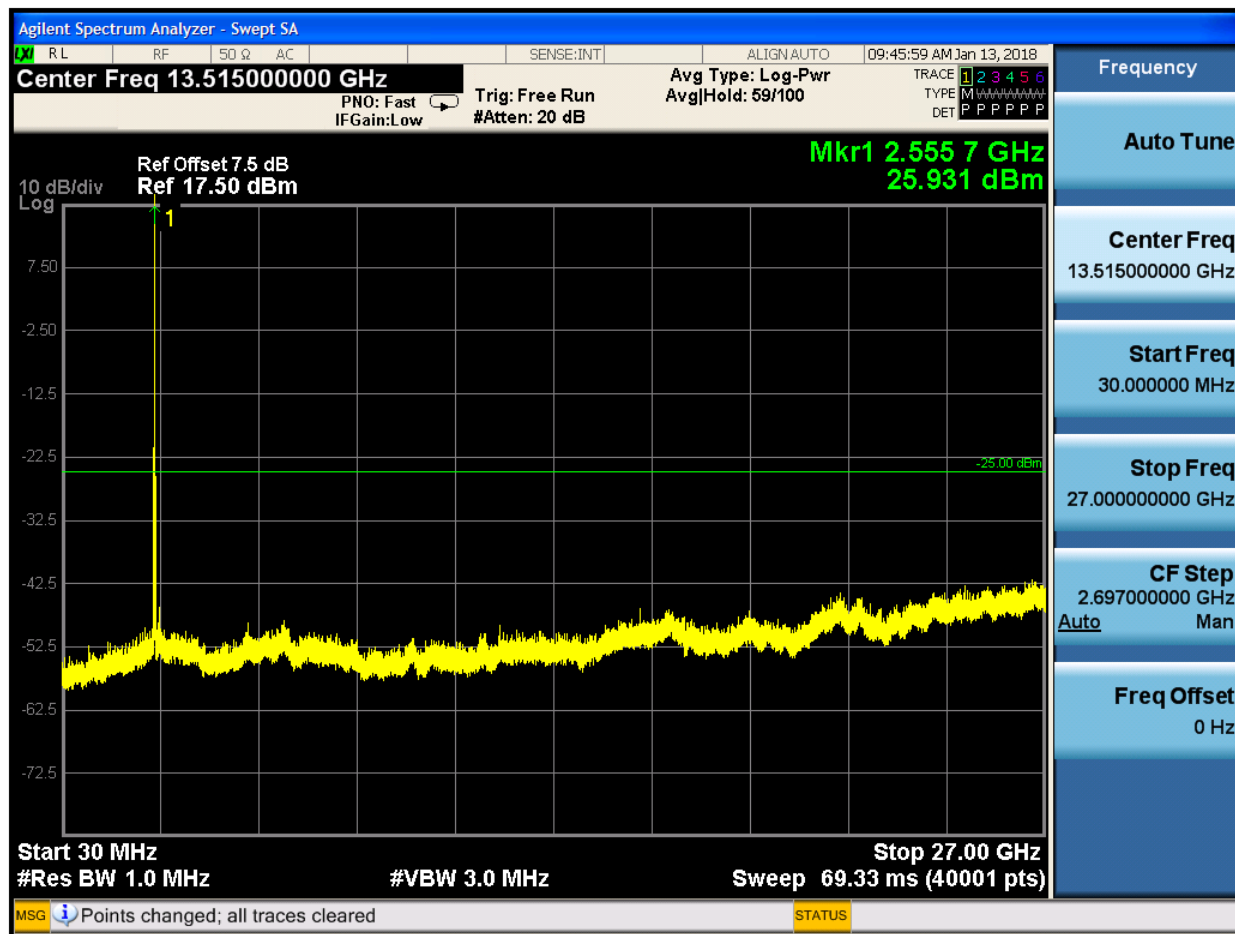


#### 6.1.1.2.3.3 Test Channel = HCH

#### 6.1.1.2.3.3.1 Test RB = RB1#0





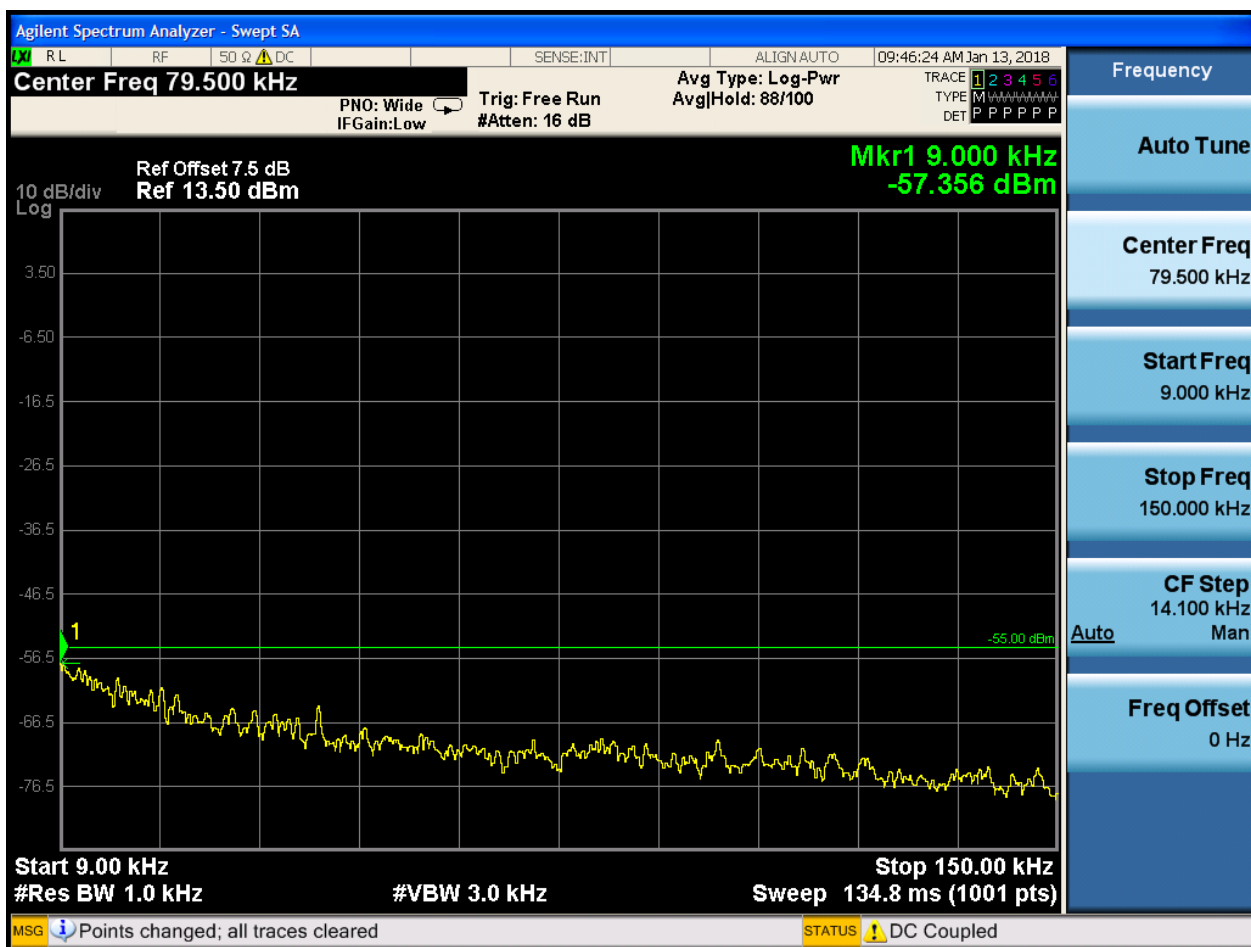


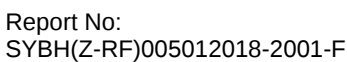


## 6.1.1.2.4 Test Bandwidth = 20

## 6.1.1.2.4.1 Test Channel = LCH

## 6.1.1.2.4.1.1 Test RB = RB1#0

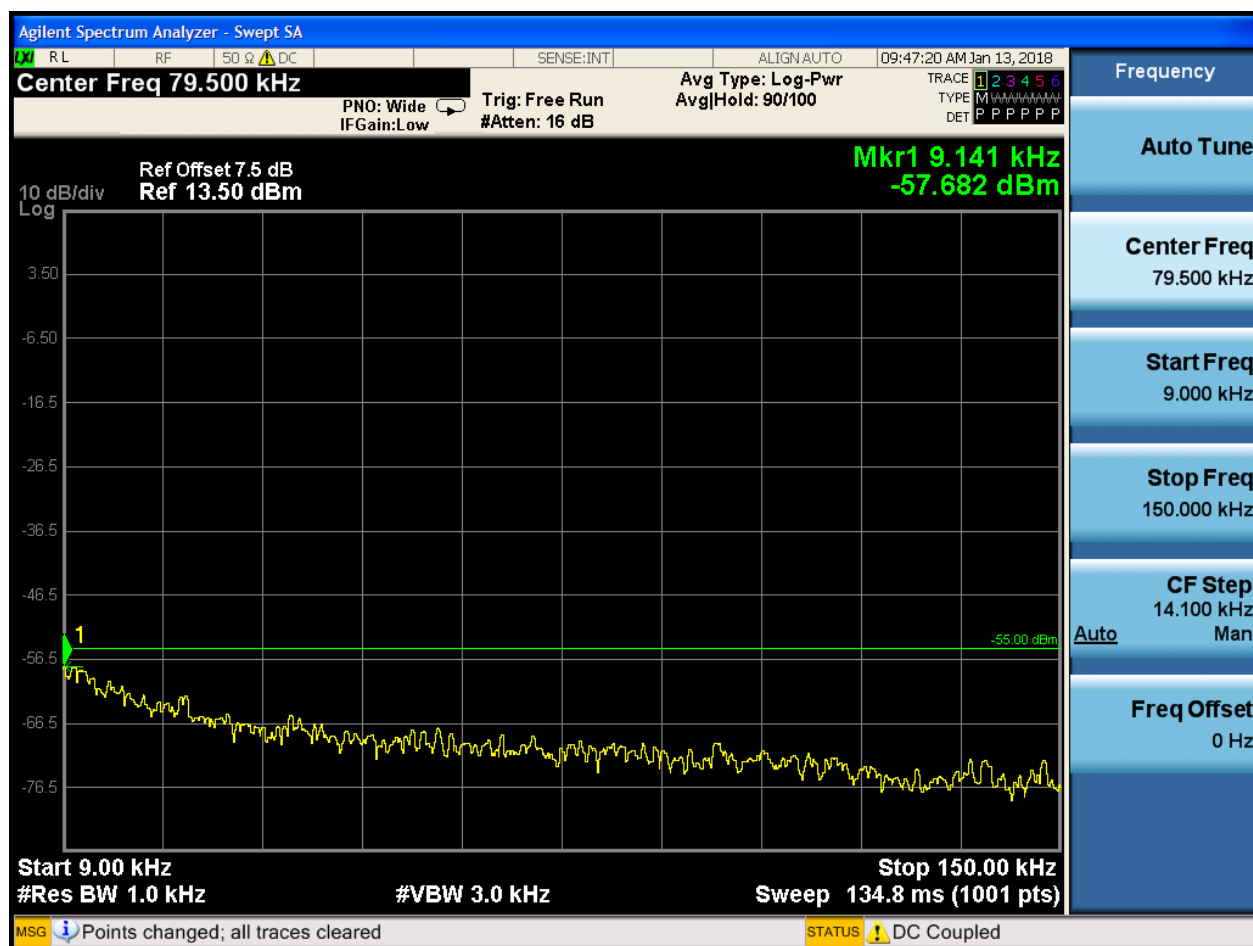


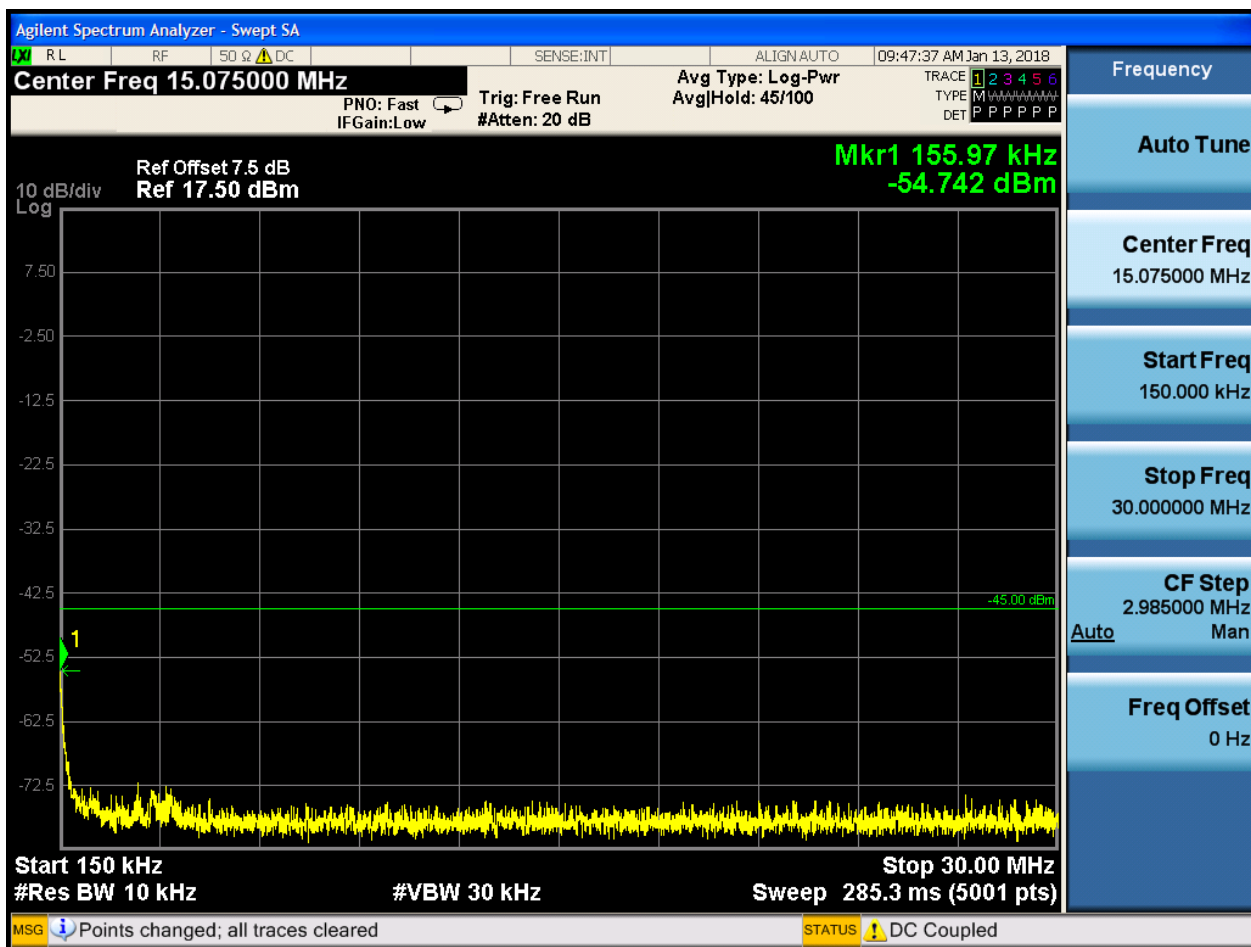


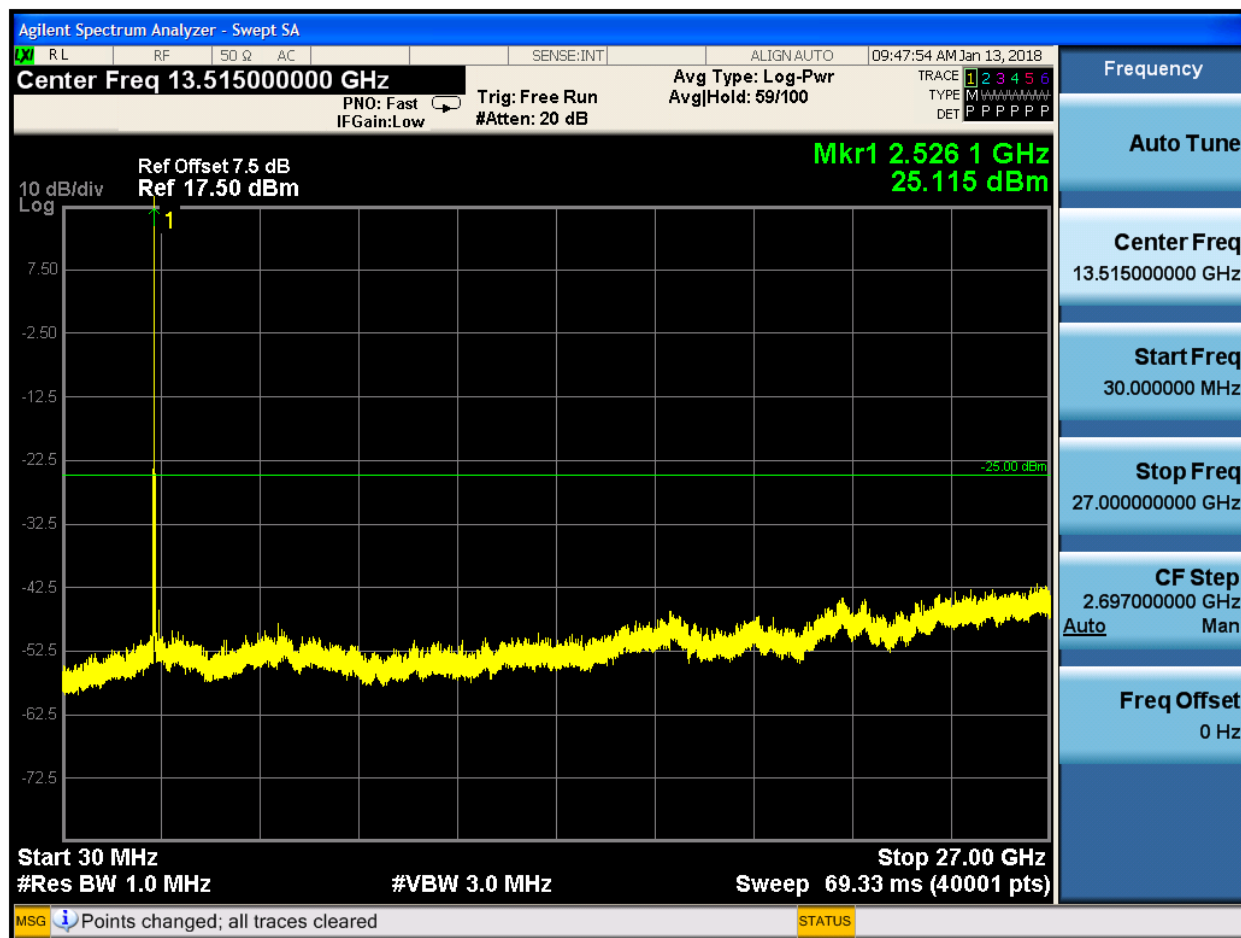


#### 6.1.1.2.4.2 Test Channel = MCH

#### 6.1.1.2.4.2.1 Test RB = RB1#0

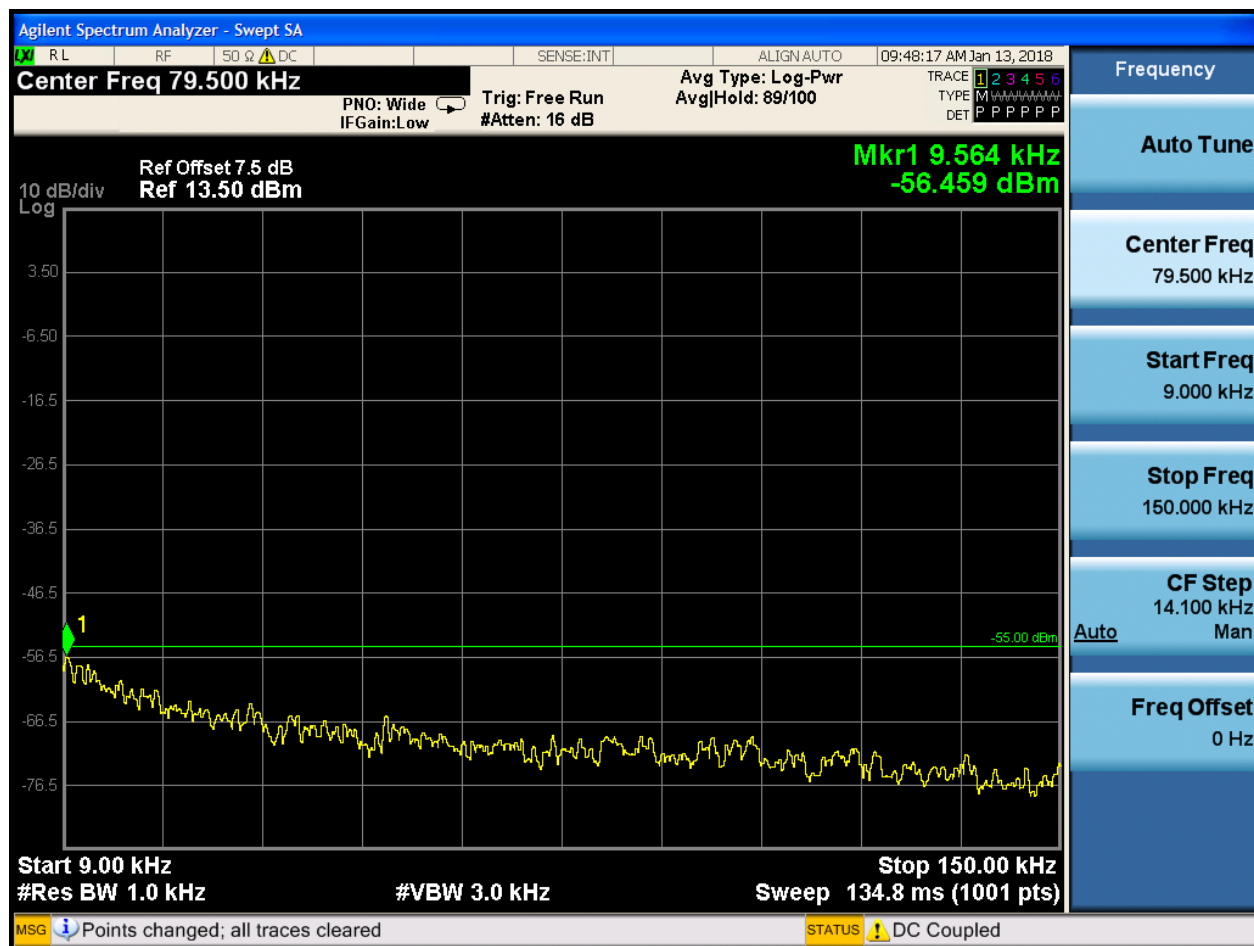


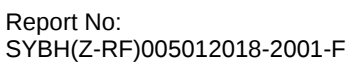




#### 6.1.1.2.4.3 Test Channel = HCH

#### 6.1.1.2.4.3.1 Test RB = RB1#0







## 7Appendix\_G: Field Strength of Spurious Radiation

Note: We tested all modes, but the data presented below is the worst case.

9kHz~150kHz, RBW = 200Hz, VBW = 600 Hz, Detector: PK

150kHz~30MHz, RBW = 9kHz, VBW = 30k Hz, Detector: PK

30MHz~1GHz, RBW = 100 kHz, VBW = 300 kHz. Detector: PK

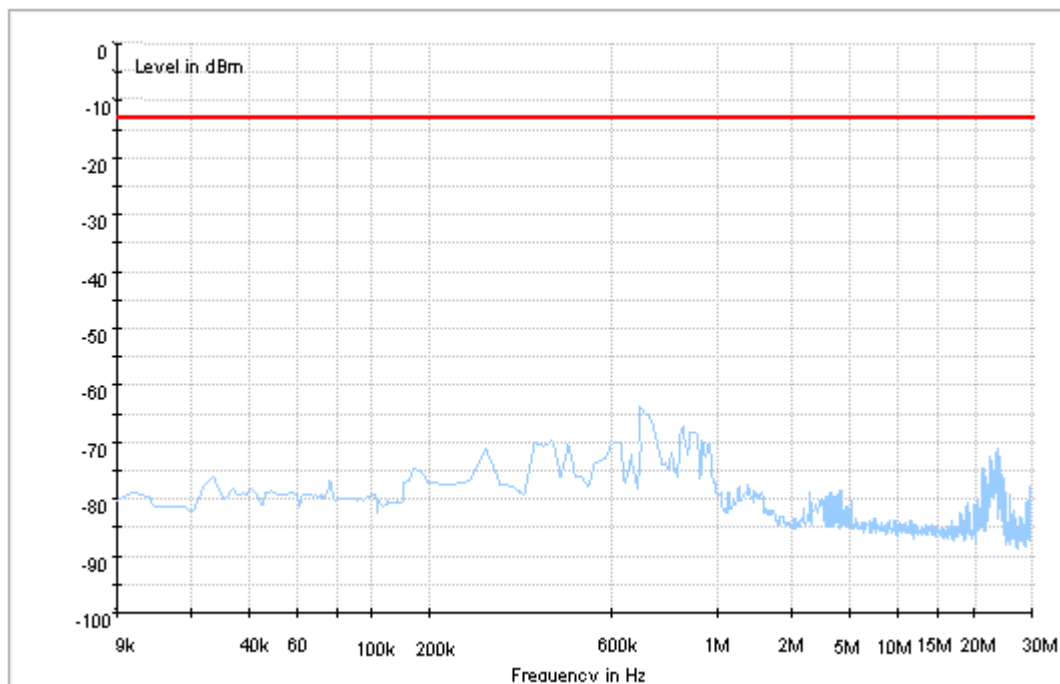
Above 1GHz, RBW = 1 MHz, VBW = 3 MHz. Detector: PK

### Part I - Test Plots

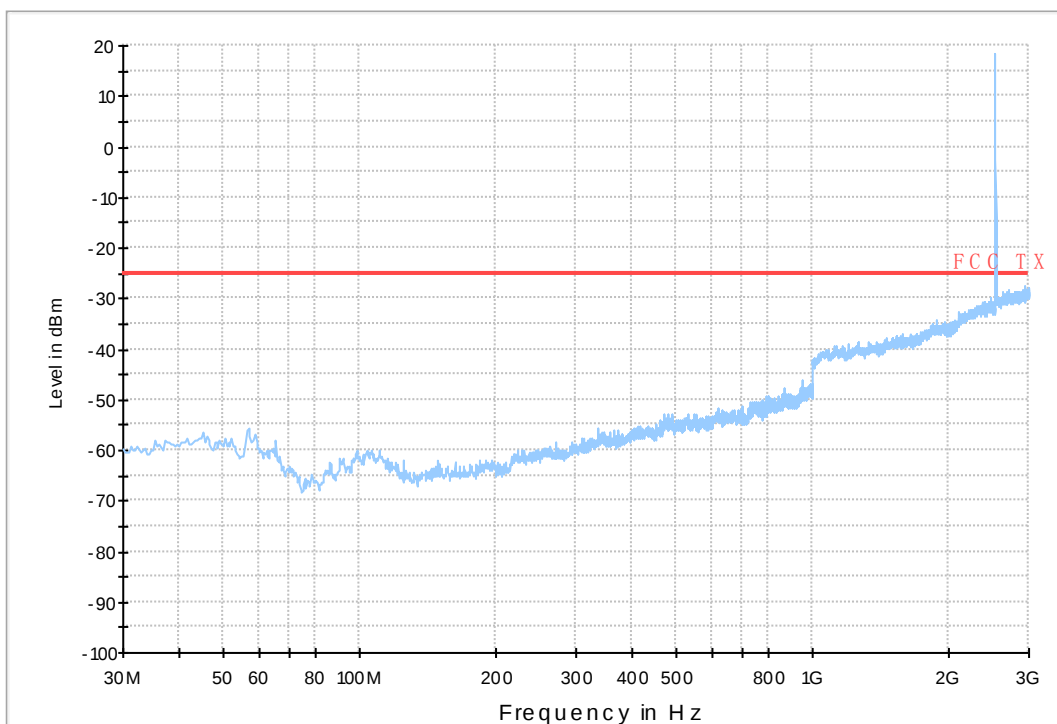
#### 7.1 For LTE

##### 7.1.1 Test Band = BAND7

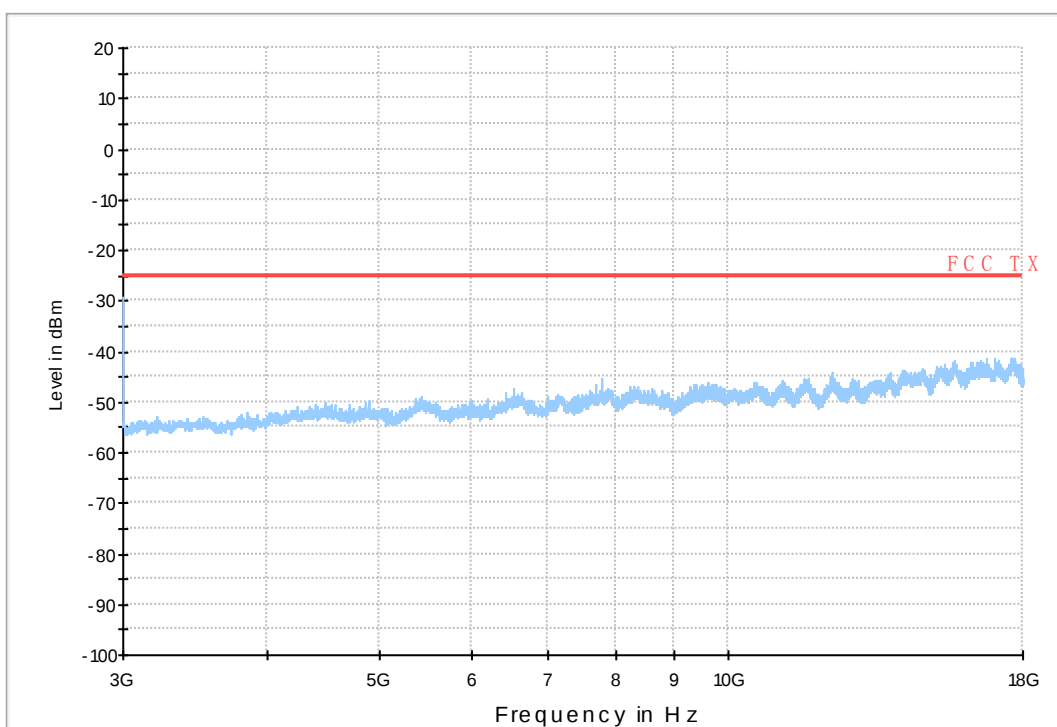
##### 7.1.1.1 Test Bandwidth = 5

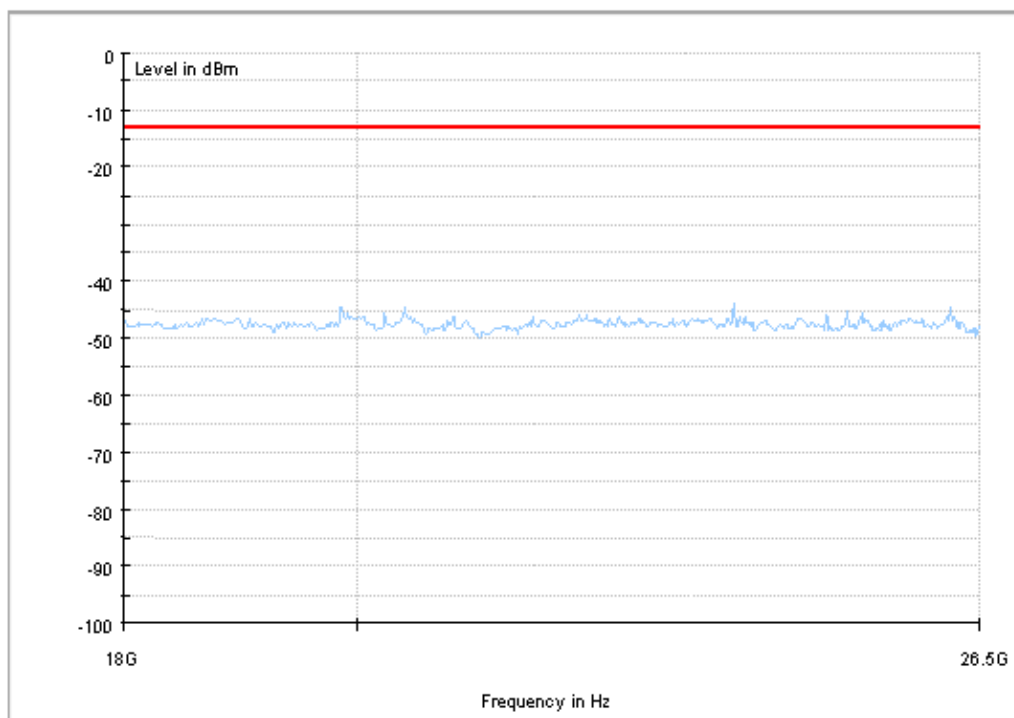


Copy of RSE-TX-DIRECTOR ABOVE 1.5G Limit -25\_L

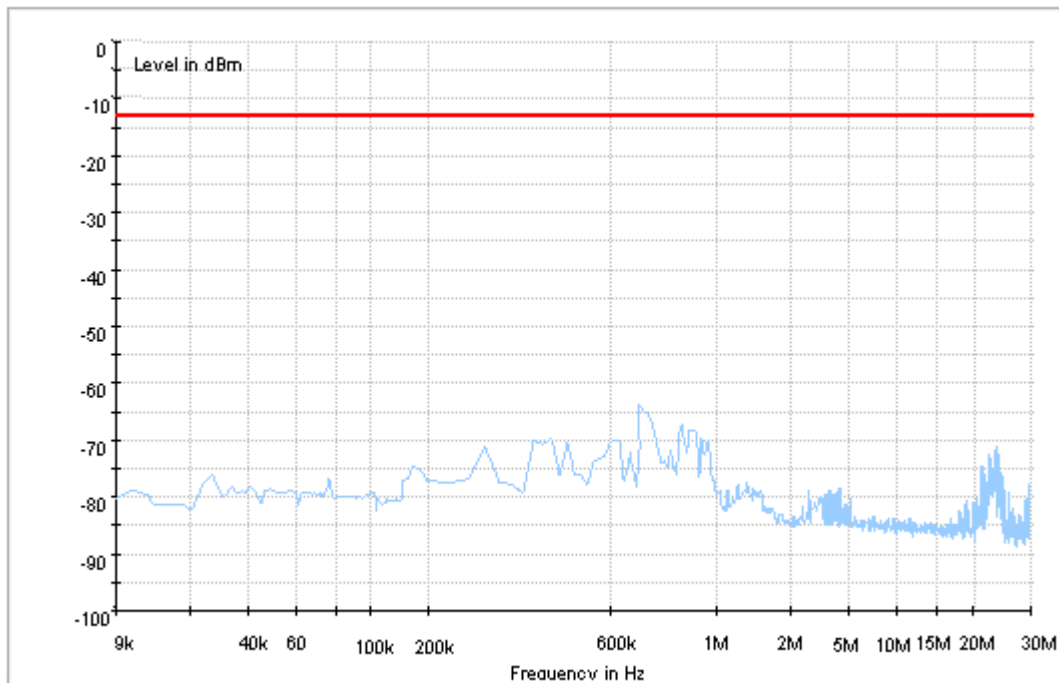


Copy of RSE-TX-DIRECTOR ABOVE 1.5G Limit -25\_H

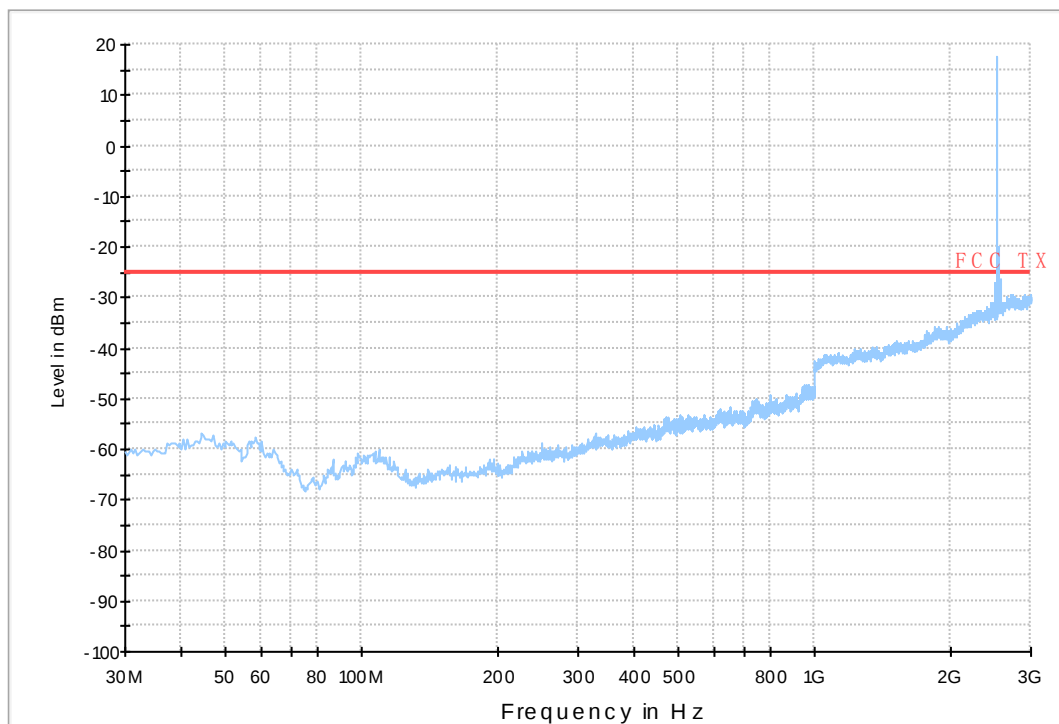




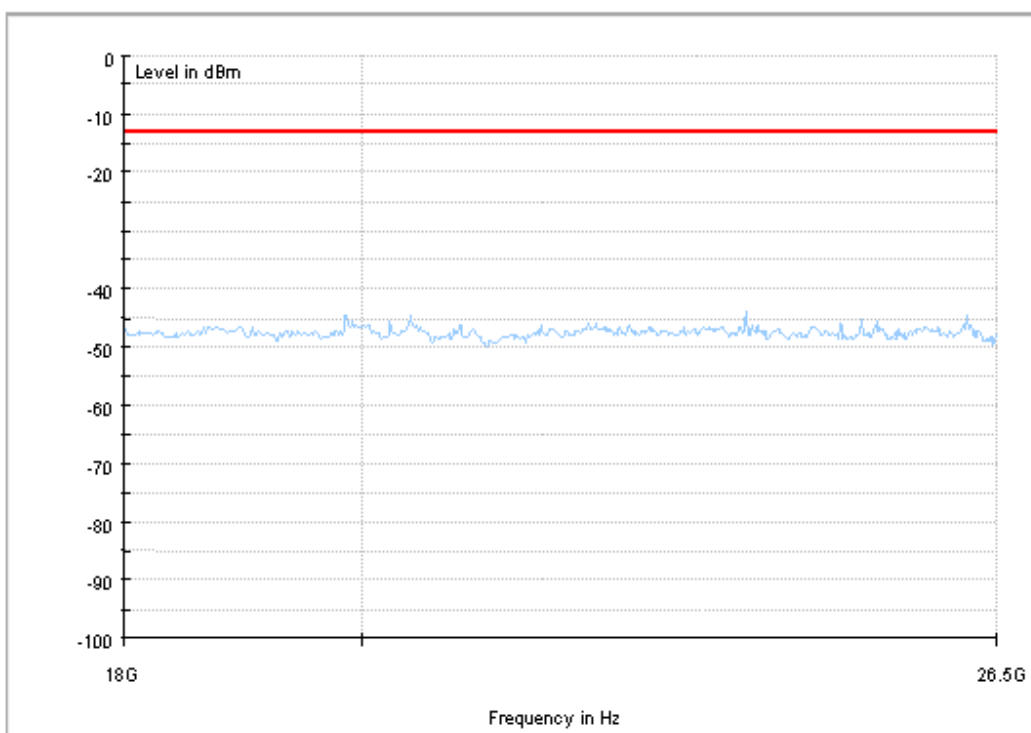
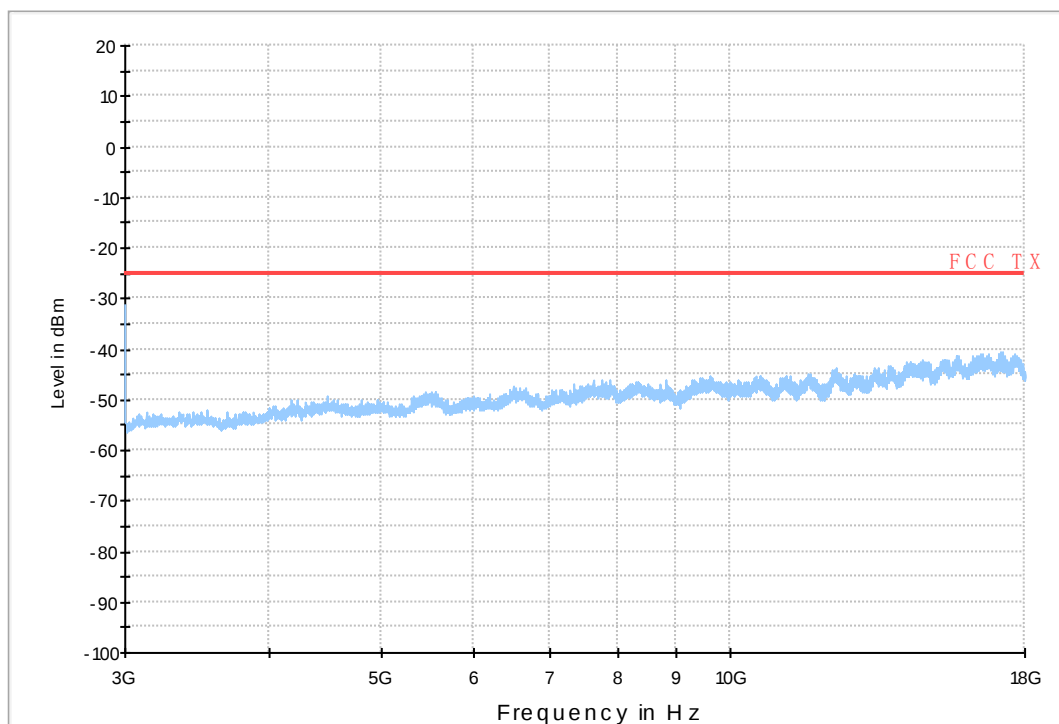
### 7.1.1.2 Test Bandwidth = 20



Copy of RSE-TX-DIRECTOR ABOVE 1.5G Limit -25\_L



Copy of RSE-TX-DIRECTOR ABOVE 1.5G Limit -25\_H



## 8Appendix\_H: Frequency Stability

### 8.1 For LTE

#### 8.1.1Frequency Error vs. Voltage:

| Test Band | Test Mode | Test Bandwidth (MHz) | Test Channel | Test Temp. | Test Volt. | Freq. Error [Hz] | Freq. vs. rated [ppm] | Verdict |
|-----------|-----------|----------------------|--------------|------------|------------|------------------|-----------------------|---------|
| BAND7     | LTE/TM1   | 5                    | LCH          | TN         | VL         | 2.25             | 0.0009                | PASS    |
|           |           |                      |              |            | VN         | 1.36             | 0.00054               | PASS    |
|           |           |                      |              |            | VH         | 1.80             | 0.00072               | PASS    |
|           |           |                      | MCH          | TN         | VL         | -4.66            | -0.00184              | PASS    |
|           |           |                      |              |            | VN         | -2.92            | -0.00115              | PASS    |
|           |           |                      |              |            | VH         | -4.56            | -0.0018               | PASS    |
|           |           |                      | HCH          | TN         | VL         | 0.69             | 0.00027               | PASS    |
|           |           |                      |              |            | VN         | -0.34            | -0.00013              | PASS    |
|           |           |                      |              |            | VH         | -0.37            | -0.00014              | PASS    |
|           |           | 10                   | LCH          | TN         | VL         | -3.81            | -0.00152              | PASS    |
|           |           |                      |              |            | VN         | -3.06            | -0.00122              | PASS    |
|           |           |                      |              |            | VH         | -1.87            | -0.00075              | PASS    |
|           |           |                      | MCH          | TN         | VL         | -4.65            | -0.00183              | PASS    |
|           |           |                      |              |            | VN         | -4.06            | -0.0016               | PASS    |
|           |           |                      |              |            | VH         | -4.72            | -0.00186              | PASS    |
|           |           |                      | HCH          | TN         | VL         | -2.73            | -0.00106              | PASS    |
|           |           |                      |              |            | VN         | -1.43            | -0.00056              | PASS    |
|           |           |                      |              |            | VH         | -2.40            | -0.00094              | PASS    |
|           |           | 15                   | LCH          | TN         | VL         | 1.57             | 0.00063               | PASS    |
|           |           |                      |              |            | VN         | -0.76            | -0.0003               | PASS    |
|           |           |                      |              |            | VH         | -0.69            | -0.00028              | PASS    |
|           |           |                      | MCH          | TN         | VL         | 1.65             | 0.00065               | PASS    |
|           |           |                      |              |            | VN         | -3.53            | -0.00139              | PASS    |
|           |           |                      |              |            | VH         | -3.19            | -0.00126              | PASS    |
|           |           |                      | HCH          | TN         | VL         | 3.59             | 0.0014                | PASS    |
|           |           |                      |              |            | VN         | 3.00             | 0.00117               | PASS    |
|           |           |                      |              |            | VH         | 1.95             | 0.00076               | PASS    |
|           |           | 20                   | LCH          | TN         | VL         | 1.93             | 0.00077               | PASS    |
|           |           |                      |              |            | VN         | 1.90             | 0.00076               | PASS    |
|           |           |                      |              |            | VH         | 0.36             | 0.00014               | PASS    |
|           |           |                      | MCH          | TN         | VL         | -3.48            | -0.00137              | PASS    |

| Test Band | Test Mode | Test Bandwidth (MHz) | Test Channel | Test Temp. | Test Volt. | Freq. Error [Hz] | Freq. vs. rated [ppm] | Verdict |
|-----------|-----------|----------------------|--------------|------------|------------|------------------|-----------------------|---------|
|           | LTE/TM2   |                      | HCH          | TN         | VN         | -2.36            | -0.00093              | PASS    |
|           |           |                      |              |            | VH         | -3.25            | -0.00128              | PASS    |
|           |           |                      |              |            | VL         | 0.56             | 0.00022               | PASS    |
|           |           |                      |              |            | VN         | 0.13             | 0.00005               | PASS    |
|           |           |                      |              |            | VH         | 0.27             | 0.00011               | PASS    |
|           |           |                      |              |            | VL         | 1.42             | 0.00057               | PASS    |
|           |           | 5                    | LCH          | TN         | VN         | 1.57             | 0.00063               | PASS    |
|           |           |                      |              |            | VH         | 1.76             | 0.0007                | PASS    |
|           |           |                      |              |            | VL         | -2.59            | -0.00102              | PASS    |
|           |           |                      | MCH          | TN         | VN         | -4.49            | -0.00177              | PASS    |
|           |           |                      |              |            | VH         | -4.23            | -0.00167              | PASS    |
|           |           |                      |              |            | VL         | -0.09            | -0.00004              | PASS    |
|           |           |                      | HCH          | TN         | VN         | -0.13            | -0.00005              | PASS    |
|           |           |                      |              |            | VH         | 2.42             | 0.00094               | PASS    |
|           |           |                      |              |            | VL         | -3.33            | -0.00133              | PASS    |
|           |           | 10                   | LCH          | TN         | VN         | -4.39            | -0.00175              | PASS    |
|           |           |                      |              |            | VH         | -3.42            | -0.00137              | PASS    |
|           |           |                      |              |            | VL         | -3.71            | -0.00146              | PASS    |
|           |           |                      | MCH          | TN         | VN         | -3.12            | -0.00123              | PASS    |
|           |           |                      |              |            | VH         | -3.06            | -0.00121              | PASS    |
|           |           |                      |              |            | VL         | -3.20            | -0.00125              | PASS    |
|           |           |                      | HCH          | TN         | VN         | -2.92            | -0.00114              | PASS    |
|           |           |                      |              |            | VH         | -2.89            | -0.00113              | PASS    |
|           |           |                      |              |            | VL         | 1.37             | 0.00055               | PASS    |
|           |           | 15                   | LCH          | TN         | VN         | -0.41            | -0.00016              | PASS    |
|           |           |                      |              |            | VH         | -1.67            | -0.00067              | PASS    |
|           |           |                      |              |            | VL         | -4.19            | -0.00165              | PASS    |
|           |           |                      | MCH          | TN         | VN         | -2.93            | -0.00116              | PASS    |
|           |           |                      |              |            | VH         | -6.28            | -0.00248              | PASS    |
|           |           |                      |              |            | VL         | 2.25             | 0.00088               | PASS    |
|           |           |                      | HCH          | TN         | VN         | 0.80             | 0.00031               | PASS    |
|           |           |                      |              |            | VH         | 1.67             | 0.00065               | PASS    |
|           |           |                      |              |            | VL         | 1.56             | 0.00062               | PASS    |
|           |           | 20                   | LCH          | TN         | VN         | 2.65             | 0.00106               | PASS    |
|           |           |                      |              |            | VH         | -1.70            | -0.00068              | PASS    |
|           |           |                      |              |            | VL         | -1.86            | -0.00073              | PASS    |
|           |           |                      | MCH          | TN         | VN         | -2.79            | -0.0011               | PASS    |
|           |           |                      |              |            | VH         | -3.53            | -0.00139              | PASS    |
|           |           |                      |              |            | VL         | 0.00             | 0                     | PASS    |
|           |           |                      | HCH          | TN         | VL         | 0.00             | 0                     | PASS    |

| Test Band | Test Mode | Test Bandwidth (MHz) | Test Channel | Test Temp. | Test Volt. | Freq. Error [Hz] | Freq. vs. rated [ppm] | Verdict |
|-----------|-----------|----------------------|--------------|------------|------------|------------------|-----------------------|---------|
|           |           |                      |              |            | VN         | -0.43            | -0.00017              | PASS    |
|           |           |                      |              |            | VH         | 1.49             | 0.00058               | PASS    |

### 8.1.2 Frequency Error vs. Temperature:

| Test Band | Test Mode | Test Bandwidth (MHz) | Test Channel | Test Volt. | Test Temp | Freq. Error [Hz] | Freq. vs. rated [ppm] | Verdict |
|-----------|-----------|----------------------|--------------|------------|-----------|------------------|-----------------------|---------|
| BAND7     | LTE/TM1   | 5                    | LCH          | VN         | -30       | 2.46             | 0.00098               | PASS    |
|           |           |                      |              |            | -20       | 1.07             | 0.00043               | PASS    |
|           |           |                      |              |            | -10       | -0.01            | 0                     | PASS    |
|           |           |                      |              |            | 0         | 1.36             | 0.00054               | PASS    |
|           |           |                      |              |            | 10        | -0.06            | -0.00002              | PASS    |
|           |           |                      |              |            | 20        | 2.89             | 0.00115               | PASS    |
|           |           |                      |              |            | 30        | 3.05             | 0.00122               | PASS    |
|           |           |                      |              |            | 40        | 1.10             | 0.00044               | PASS    |
|           |           |                      |              |            | 50        | 1.99             | 0.0008                | PASS    |
|           |           |                      | MCH          | VN         | -30       | -1.97            | -0.00078              | PASS    |
|           |           |                      |              |            | -20       | -3.59            | -0.00142              | PASS    |
|           |           |                      |              |            | -10       | -3.85            | -0.00152              | PASS    |
|           |           |                      |              |            | 0         | -4.86            | -0.00192              | PASS    |
|           |           |                      |              |            | 10        | -3.82            | -0.00151              | PASS    |
|           |           |                      |              |            | 20        | -3.03            | -0.0012               | PASS    |
|           |           |                      |              |            | 30        | -4.09            | -0.00161              | PASS    |
|           |           |                      |              |            | 40        | -3.13            | -0.00123              | PASS    |
|           |           |                      |              |            | 50        | -4.26            | -0.00168              | PASS    |
|           |           |                      | HCH          | VN         | -30       | 1.13             | 0.00044               | PASS    |
|           |           |                      |              |            | -20       | 1.60             | 0.00062               | PASS    |
|           |           |                      |              |            | -10       | -0.87            | -0.00034              | PASS    |
|           |           |                      |              |            | 0         | 0.46             | 0.00018               | PASS    |
|           |           |                      |              |            | 10        | -0.93            | -0.00036              | PASS    |
|           |           |                      |              |            | 20        | 0.90             | 0.00035               | PASS    |
|           |           |                      |              |            | 30        | -0.80            | -0.00031              | PASS    |
|           |           |                      |              |            | 40        | -0.10            | -0.00004              | PASS    |
|           |           |                      |              |            | 50        | 0.40             | 0.00016               | PASS    |
|           |           | 10                   | LCH          | VN         | -30       | -4.33            | -0.00173              | PASS    |
|           |           |                      |              |            | -20       | -2.45            | -0.00098              | PASS    |
|           |           |                      |              |            | -10       | -2.52            | -0.00101              | PASS    |
|           |           |                      |              |            | 0         | -3.36            | -0.00134              | PASS    |

| Test Band | Test Mode | Test Bandwidth (MHz) | Test Channel | Test Volt. | Test Temp | Freq. Error [Hz] | Freq. vs. rated [ppm] | Verdict |
|-----------|-----------|----------------------|--------------|------------|-----------|------------------|-----------------------|---------|
|           |           |                      |              |            | 10        | -3.48            | -0.00139              | PASS    |
|           |           |                      |              |            | 20        | -2.50            | -0.001                | PASS    |
|           |           |                      |              |            | 30        | -4.22            | -0.00168              | PASS    |
|           |           |                      |              |            | 40        | -4.81            | -0.00192              | PASS    |
|           |           |                      |              |            | 50        | -3.68            | -0.00147              | PASS    |
|           |           |                      | MCH          | VN         | -30       | -3.62            | -0.00143              | PASS    |
|           |           |                      |              |            | -20       | -1.36            | -0.00054              | PASS    |
|           |           |                      |              |            | -10       | -2.45            | -0.00097              | PASS    |
|           |           |                      |              |            | 0         | -2.96            | -0.00117              | PASS    |
|           |           |                      |              |            | 10        | -3.02            | -0.00119              | PASS    |
|           |           |                      |              |            | 20        | -3.10            | -0.00122              | PASS    |
|           |           |                      |              |            | 30        | -4.73            | -0.00187              | PASS    |
|           |           |                      |              |            | 40        | -4.29            | -0.00169              | PASS    |
|           |           |                      |              |            | 50        | -3.73            | -0.00147              | PASS    |
|           |           |                      | HCH          | VN         | -30       | -3.08            | -0.0012               | PASS    |
|           |           |                      |              |            | -20       | -3.82            | -0.00149              | PASS    |
|           |           |                      |              |            | -10       | -3.35            | -0.00131              | PASS    |
|           |           |                      |              |            | 0         | -2.06            | -0.0008               | PASS    |
|           |           |                      |              |            | 10        | -2.55            | -0.00099              | PASS    |
|           |           |                      |              |            | 20        | -4.61            | -0.0018               | PASS    |
|           |           |                      |              |            | 30        | -3.79            | -0.00148              | PASS    |
|           |           |                      |              |            | 40        | -3.10            | -0.00121              | PASS    |
|           |           |                      |              |            | 50        | -3.12            | -0.00122              | PASS    |
|           |           | 15                   | LCH          | VN         | -30       | 0.47             | 0.00019               | PASS    |
|           |           |                      |              |            | -20       | 0.01             | 0                     | PASS    |
|           |           |                      |              |            | -10       | 0.00             | 0                     | PASS    |
|           |           |                      |              |            | 0         | 1.23             | 0.00049               | PASS    |
|           |           |                      |              |            | 10        | 1.77             | 0.00071               | PASS    |
|           |           |                      |              |            | 20        | 0.01             | 0                     | PASS    |
|           |           |                      |              |            | 30        | -0.03            | -0.00001              | PASS    |
|           |           |                      |              |            | 40        | -1.19            | -0.00047              | PASS    |
|           |           |                      |              |            | 50        | 0.36             | 0.00014               | PASS    |
|           |           |                      | MCH          | VN         | -30       | -1.86            | -0.00073              | PASS    |
|           |           |                      |              |            | -20       | -3.45            | -0.00136              | PASS    |
|           |           |                      |              |            | -10       | -1.99            | -0.00079              | PASS    |
|           |           |                      |              |            | 0         | -4.52            | -0.00178              | PASS    |
|           |           |                      |              |            | 10        | -1.85            | -0.00073              | PASS    |
|           |           |                      |              |            | 20        | -2.68            | -0.00106              | PASS    |
|           |           |                      |              |            | 30        | -3.96            | -0.00156              | PASS    |

| Test Band | Test Mode | Test Bandwidth (MHz) | Test Channel | Test Volt. | Test Temp | Freq. Error [Hz] | Freq. vs. rated [ppm] | Verdict |
|-----------|-----------|----------------------|--------------|------------|-----------|------------------|-----------------------|---------|
|           |           |                      |              |            | 40        | -4.32            | -0.0017               | PASS    |
|           |           |                      |              |            | 50        | -3.42            | -0.00135              | PASS    |
|           |           |                      | HCH          | VN         | -30       | 2.47             | 0.00096               | PASS    |
|           |           |                      |              |            | -20       | 2.39             | 0.00093               | PASS    |
|           |           |                      |              |            | -10       | 1.86             | 0.00073               | PASS    |
|           |           |                      |              |            | 0         | 1.22             | 0.00048               | PASS    |
|           |           |                      |              |            | 10        | 1.03             | 0.0004                | PASS    |
|           |           |                      |              |            | 20        | 2.47             | 0.00096               | PASS    |
|           |           |                      |              |            | 30        | 1.59             | 0.00062               | PASS    |
|           |           |                      |              |            | 40        | 2.13             | 0.00083               | PASS    |
|           |           |                      |              |            | 50        | 2.53             | 0.00099               | PASS    |
|           |           | 20                   | LCH          | VN         | -30       | 2.03             | 0.00081               | PASS    |
|           |           |                      |              |            | -20       | 2.39             | 0.00095               | PASS    |
|           |           |                      |              |            | -10       | 0.09             | 0.00004               | PASS    |
|           |           |                      |              |            | 0         | 2.15             | 0.00086               | PASS    |
|           |           |                      |              |            | 10        | 1.07             | 0.00043               | PASS    |
|           |           |                      |              |            | 20        | 1.07             | 0.00043               | PASS    |
|           |           |                      |              |            | 30        | 1.42             | 0.00057               | PASS    |
|           |           |                      |              |            | 40        | 1.95             | 0.00078               | PASS    |
|           |           |                      |              |            | 50        | 1.49             | 0.00059               | PASS    |
|           |           |                      | MCH          | VN         | -30       | -3.85            | -0.00152              | PASS    |
|           |           |                      |              |            | -20       | -2.90            | -0.00114              | PASS    |
|           |           |                      |              |            | -10       | -4.35            | -0.00172              | PASS    |
|           |           |                      |              |            | 0         | -2.85            | -0.00112              | PASS    |
|           |           |                      |              |            | 10        | -4.48            | -0.00177              | PASS    |
|           |           |                      |              |            | 20        | -2.62            | -0.00103              | PASS    |
|           |           |                      |              |            | 30        | -3.32            | -0.00131              | PASS    |
|           |           |                      |              |            | 40        | -3.66            | -0.00144              | PASS    |
|           |           |                      |              |            | 50        | -3.03            | -0.0012               | PASS    |
|           |           |                      | HCH          | VN         | -30       | -0.53            | -0.00021              | PASS    |
|           |           |                      |              |            | -20       | -0.31            | -0.00012              | PASS    |
|           |           |                      |              |            | -10       | -0.70            | -0.00027              | PASS    |
|           |           |                      |              |            | 0         | -0.49            | -0.00019              | PASS    |
|           |           |                      |              |            | 10        | 0.80             | 0.00031               | PASS    |
|           |           |                      |              |            | 20        | -0.72            | -0.00028              | PASS    |
|           |           |                      |              |            | 30        | 0.01             | 0                     | PASS    |
|           |           |                      |              |            | 40        | 1.04             | 0.00041               | PASS    |
|           |           |                      |              |            | 50        | 0.27             | 0.00011               | PASS    |
|           | LTE/TM2   | 5                    | LCH          | VN         | -30       | 1.82             | 0.00073               | PASS    |

| Test Band | Test Mode | Test Bandwidth (MHz) | Test Channel | Test Volt. | Test Temp | Freq. Error [Hz] | Freq. vs. rated [ppm] | Verdict |
|-----------|-----------|----------------------|--------------|------------|-----------|------------------|-----------------------|---------|
|           |           |                      |              |            | -20       | 2.40             | 0.00096               | PASS    |
|           |           |                      |              |            | -10       | 1.90             | 0.00076               | PASS    |
|           |           |                      |              |            | 0         | 1.29             | 0.00052               | PASS    |
|           |           |                      |              |            | 10        | 1.49             | 0.0006                | PASS    |
|           |           |                      |              |            | 20        | 1.63             | 0.00065               | PASS    |
|           |           |                      |              |            | 30        | 2.40             | 0.00096               | PASS    |
|           |           |                      |              |            | 40        | 0.29             | 0.00012               | PASS    |
|           |           |                      |              |            | 50        | 0.64             | 0.00026               | PASS    |
|           |           |                      | MCH          | VN         | -30       | -2.70            | -0.00107              | PASS    |
|           |           |                      |              |            | -20       | -4.13            | -0.00163              | PASS    |
|           |           |                      |              |            | -10       | -4.12            | -0.00163              | PASS    |
|           |           |                      |              |            | 0         | -2.50            | -0.00099              | PASS    |
|           |           |                      |              |            | 10        | -3.40            | -0.00134              | PASS    |
|           |           |                      |              |            | 20        | -2.53            | -0.001                | PASS    |
|           |           |                      |              |            | 30        | -2.55            | -0.00101              | PASS    |
|           |           |                      |              |            | 40        | -3.30            | -0.0013               | PASS    |
|           |           |                      |              |            | 50        | -3.66            | -0.00144              | PASS    |
|           |           |                      | HCH          | VN         | -30       | -0.67            | -0.00026              | PASS    |
|           |           |                      |              |            | -20       | 0.40             | 0.00016               | PASS    |
|           |           |                      |              |            | -10       | 1.29             | 0.0005                | PASS    |
|           |           |                      |              |            | 0         | 0.66             | 0.00026               | PASS    |
|           |           |                      |              |            | 10        | 0.66             | 0.00026               | PASS    |
|           |           |                      |              |            | 20        | -0.41            | -0.00016              | PASS    |
|           |           |                      |              |            | 30        | -0.40            | -0.00016              | PASS    |
|           |           |                      |              |            | 40        | 1.99             | 0.00078               | PASS    |
|           |           |                      |              |            | 50        | 0.33             | 0.00013               | PASS    |
|           |           | 10                   | LCH          | VN         | -30       | -2.98            | -0.00119              | PASS    |
|           |           |                      |              |            | -20       | -2.66            | -0.00106              | PASS    |
|           |           |                      |              |            | -10       | -4.21            | -0.00168              | PASS    |
|           |           |                      |              |            | 0         | -3.40            | -0.00136              | PASS    |
|           |           |                      |              |            | 10        | -3.18            | -0.00127              | PASS    |
|           |           |                      |              |            | 20        | -4.52            | -0.0018               | PASS    |
|           |           |                      |              |            | 30        | -4.32            | -0.00172              | PASS    |
|           |           |                      |              |            | 40        | -2.73            | -0.00109              | PASS    |
|           |           |                      |              |            | 50        | -3.48            | -0.00139              | PASS    |
|           |           |                      | MCH          | VN         | -30       | -4.49            | -0.00177              | PASS    |
|           |           |                      |              |            | -20       | -3.99            | -0.00157              | PASS    |
|           |           |                      |              |            | -10       | -3.29            | -0.0013               | PASS    |
|           |           |                      |              |            | 0         | -4.16            | -0.00164              | PASS    |

| Test Band | Test Mode | Test Bandwidth (MHz) | Test Channel | Test Volt. | Test Temp | Freq. Error [Hz] | Freq. vs. rated [ppm] | Verdict |
|-----------|-----------|----------------------|--------------|------------|-----------|------------------|-----------------------|---------|
|           |           |                      |              |            | 10        | -3.58            | -0.00141              | PASS    |
|           |           |                      |              |            | 20        | -2.98            | -0.00118              | PASS    |
|           |           |                      |              |            | 30        | -4.32            | -0.0017               | PASS    |
|           |           |                      |              |            | 40        | -3.15            | -0.00124              | PASS    |
|           |           |                      |              |            | 50        | -3.22            | -0.00127              | PASS    |
|           |           |                      | HCH          | VN         | -30       | -3.96            | -0.00154              | PASS    |
|           |           |                      |              |            | -20       | -3.05            | -0.00119              | PASS    |
|           |           |                      |              |            | -10       | -3.93            | -0.00153              | PASS    |
|           |           |                      |              |            | 0         | -2.55            | -0.00099              | PASS    |
|           |           |                      |              |            | 10        | -3.82            | -0.00149              | PASS    |
|           |           |                      |              |            | 20        | -3.36            | -0.00131              | PASS    |
|           |           |                      |              |            | 30        | -4.85            | -0.00189              | PASS    |
|           |           |                      |              |            | 40        | -2.78            | -0.00108              | PASS    |
|           |           |                      |              |            | 50        | -1.40            | -0.00055              | PASS    |
|           |           | 15                   | LCH          | VN         | -30       | -0.62            | -0.00025              | PASS    |
|           |           |                      |              |            | -20       | -0.96            | -0.00038              | PASS    |
|           |           |                      |              |            | -10       | -2.92            | -0.00116              | PASS    |
|           |           |                      |              |            | 0         | -0.24            | -0.0001               | PASS    |
|           |           |                      |              |            | 10        | -1.73            | -0.00069              | PASS    |
|           |           |                      |              |            | 20        | -0.29            | -0.00012              | PASS    |
|           |           |                      |              |            | 30        | -0.54            | -0.00022              | PASS    |
|           |           |                      |              |            | 40        | -0.63            | -0.00025              | PASS    |
|           |           |                      |              |            | 50        | -1.23            | -0.00049              | PASS    |
|           |           |                      | MCH          | VN         | -30       | -3.09            | -0.00122              | PASS    |
|           |           |                      |              |            | -20       | -2.86            | -0.00113              | PASS    |
|           |           |                      |              |            | -10       | -2.86            | -0.00113              | PASS    |
|           |           |                      |              |            | 0         | -3.65            | -0.00144              | PASS    |
|           |           |                      |              |            | 10        | -4.28            | -0.00169              | PASS    |
|           |           |                      |              |            | 20        | 0.10             | 0.00004               | PASS    |
|           |           |                      |              |            | 30        | -2.55            | -0.00101              | PASS    |
|           |           |                      |              |            | 40        | -4.06            | -0.0016               | PASS    |
|           |           |                      |              |            | 50        | -3.38            | -0.00133              | PASS    |
|           |           |                      | HCH          | VN         | -30       | 2.52             | 0.00098               | PASS    |
|           |           |                      |              |            | -20       | 1.67             | 0.00065               | PASS    |
|           |           |                      |              |            | -10       | 1.02             | 0.0004                | PASS    |
|           |           |                      |              |            | 0         | 2.65             | 0.00103               | PASS    |
|           |           |                      |              |            | 10        | -0.07            | -0.00003              | PASS    |
|           |           |                      |              |            | 20        | 0.96             | 0.00037               | PASS    |
|           |           |                      |              |            | 30        | 0.84             | 0.00033               | PASS    |

| Test Band | Test Mode | Test Bandwidth (MHz) | Test Channel | Test Volt. | Test Temp | Freq. Error [Hz] | Freq. vs. rated [ppm] | Verdict |
|-----------|-----------|----------------------|--------------|------------|-----------|------------------|-----------------------|---------|
|           |           | 20                   |              |            | 40        | 1.90             | 0.00074               | PASS    |
|           |           |                      |              |            | 50        | 1.57             | 0.00061               | PASS    |
|           |           |                      | LCH          | VN         | -30       | 3.49             | 0.00139               | PASS    |
|           |           |                      |              |            | -20       | 1.70             | 0.00068               | PASS    |
|           |           |                      |              |            | -10       | 0.47             | 0.00019               | PASS    |
|           |           |                      |              |            | 0         | 1.02             | 0.00041               | PASS    |
|           |           |                      |              |            | 10        | 2.80             | 0.00112               | PASS    |
|           |           |                      |              |            | 20        | 2.43             | 0.00097               | PASS    |
|           |           |                      |              |            | 30        | 0.39             | 0.00016               | PASS    |
|           |           |                      |              |            | 40        | 1.60             | 0.00064               | PASS    |
|           |           |                      |              |            | 50        | 6.27             | 0.0025                | PASS    |
|           |           |                      | MCH          | VN         | -30       | -3.43            | -0.00135              | PASS    |
|           |           |                      |              |            | -20       | -4.06            | -0.0016               | PASS    |
|           |           |                      |              |            | -10       | -1.67            | -0.00066              | PASS    |
|           |           |                      |              |            | 0         | -4.11            | -0.00162              | PASS    |
|           |           |                      |              |            | 10        | -3.00            | -0.00118              | PASS    |
|           |           |                      |              |            | 20        | -5.05            | -0.00199              | PASS    |
|           |           |                      |              |            | 30        | -4.22            | -0.00166              | PASS    |
|           |           |                      |              |            | 40        | -4.71            | -0.00186              | PASS    |
|           |           |                      |              |            | 50        | -4.78            | -0.00189              | PASS    |
|           |           |                      | HCH          | VN         | -30       | 1.44             | 0.00056               | PASS    |
|           |           |                      |              |            | -20       | -1.32            | -0.00052              | PASS    |
|           |           |                      |              |            | -10       | 1.29             | 0.0005                | PASS    |
|           |           |                      |              |            | 0         | -2.62            | -0.00102              | PASS    |
|           |           |                      |              |            | 10        | -0.43            | -0.00017              | PASS    |
|           |           |                      |              |            | 20        | -0.64            | -0.00025              | PASS    |
|           |           |                      |              |            | 30        | -0.90            | -0.00035              | PASS    |
|           |           |                      |              |            | 40        | -1.95            | -0.00076              | PASS    |
|           |           |                      |              |            | 50        | -0.17            | -0.00007              | PASS    |

END