

## Appendix C

### RF Test Data for 2.4G WIFI (Conducted Measurement)

**Product Name: 300 Mbps Wireless Broadband Router**

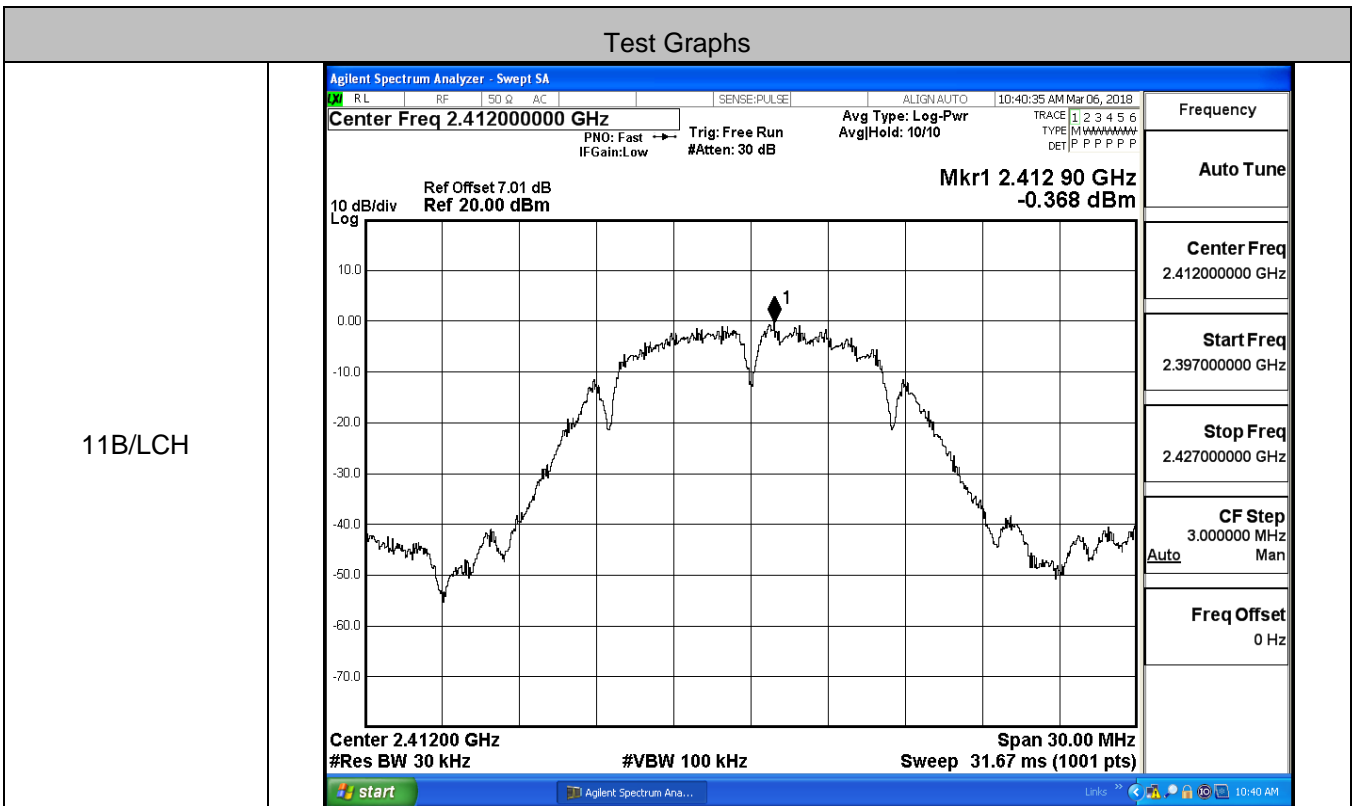
**Trade Mark: Perfect**

**Test Model: PFTP-WR300**

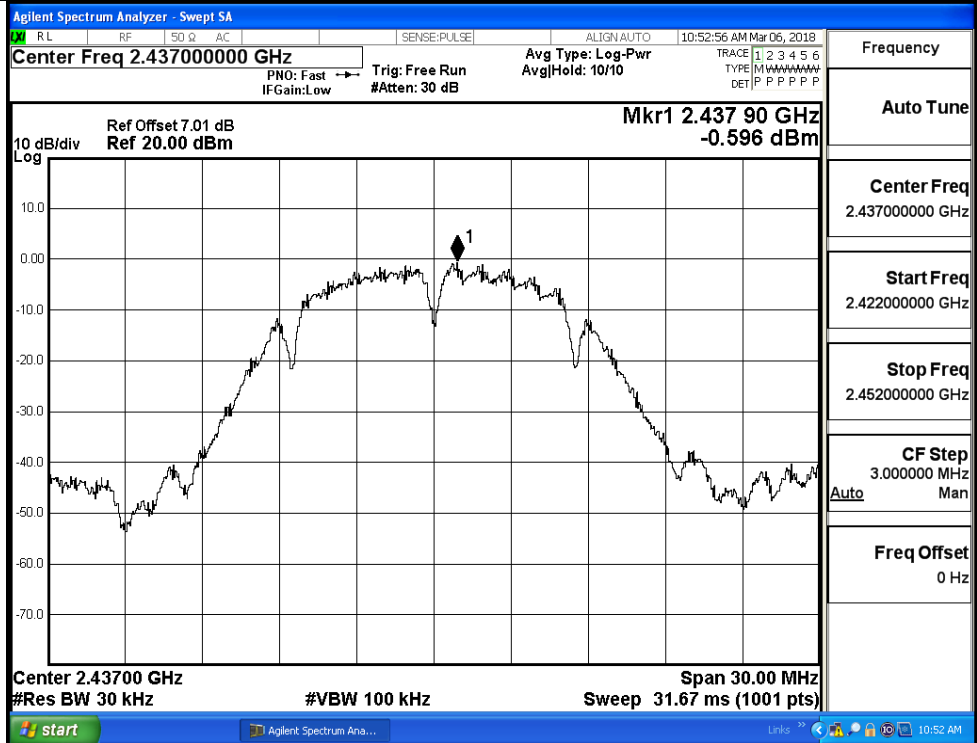
#### Environmental Conditions

Temperature:	23.4 °C
Relative Humidity:	52.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Mina.xu
Supervised by:	Tom.Liu

#### A.1 Maximum Power Spectral Density



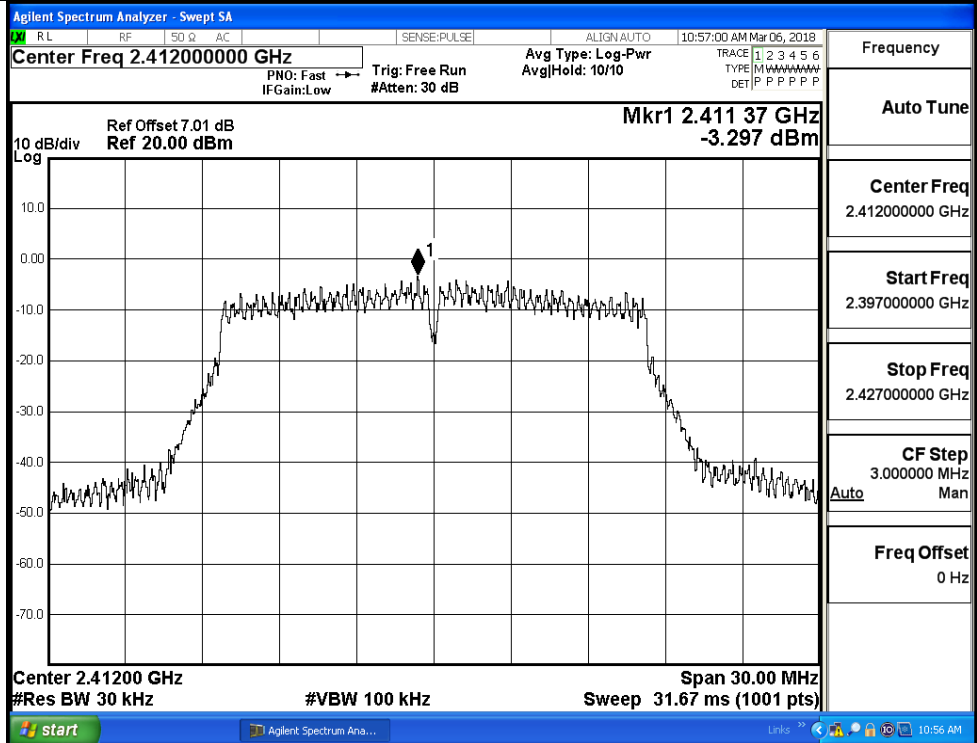
11B/MCH



11B/HCH

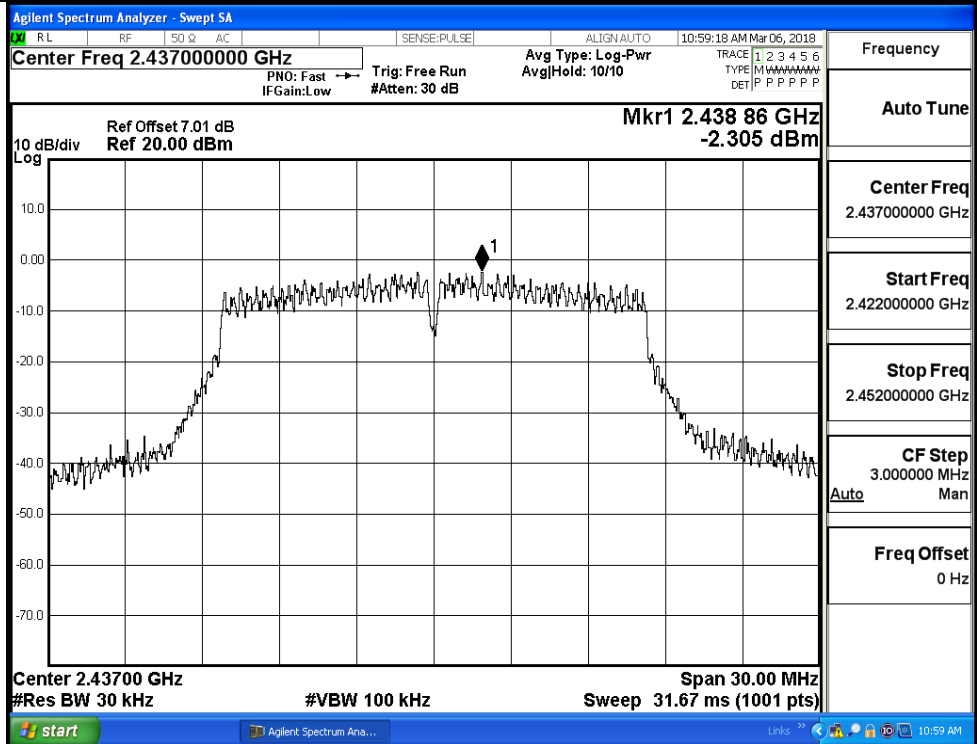


11G/LCH



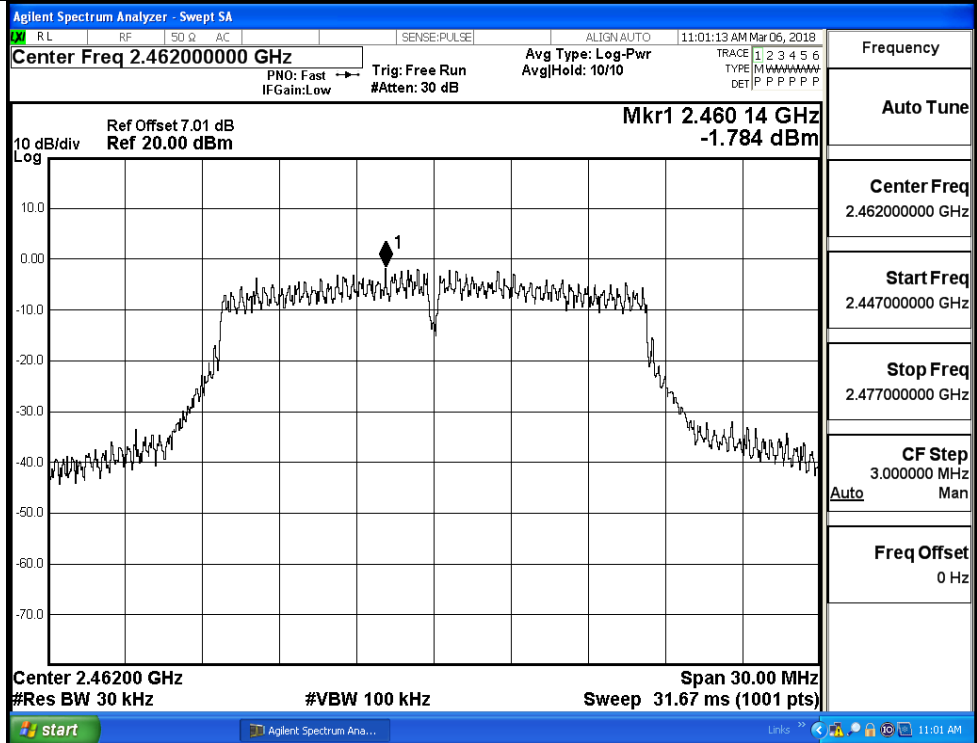
Frequency
Auto Tune
Center Freq 2.41200000 GHz
Start Freq 2.397000000 GHz
Stop Freq 2.427000000 GHz
CF Step 3.000000 MHz Auto
Freq Offset 0 Hz

11G/MCH

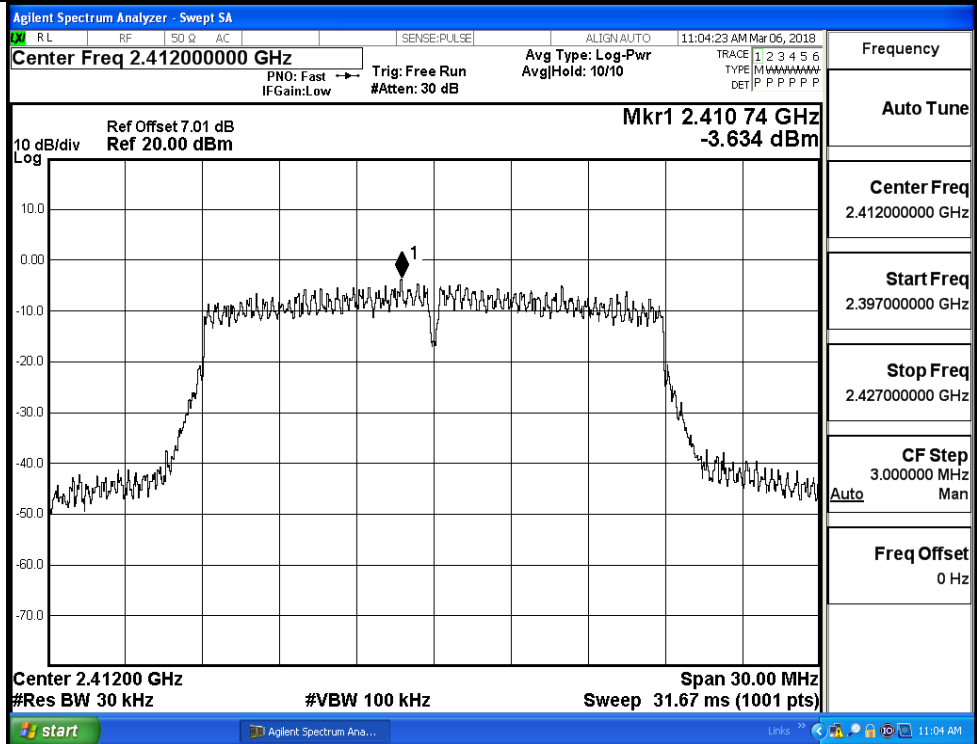


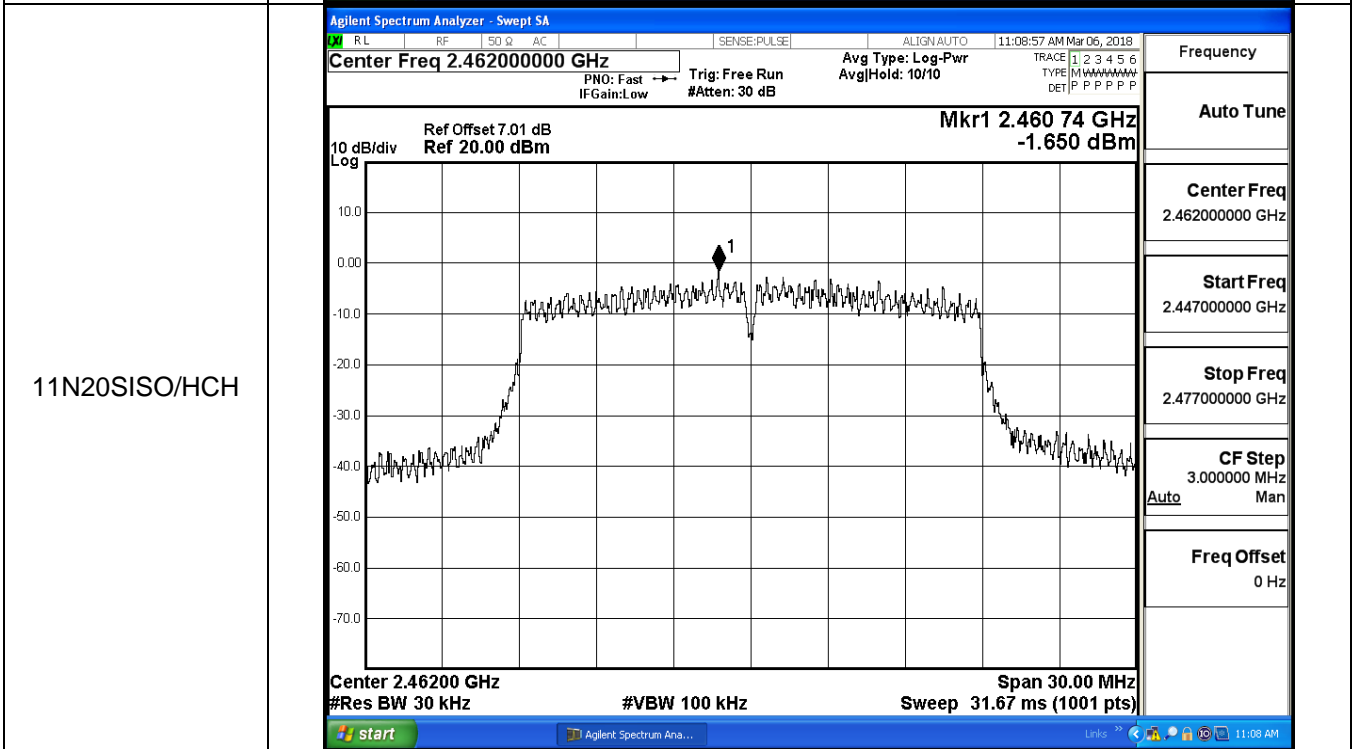
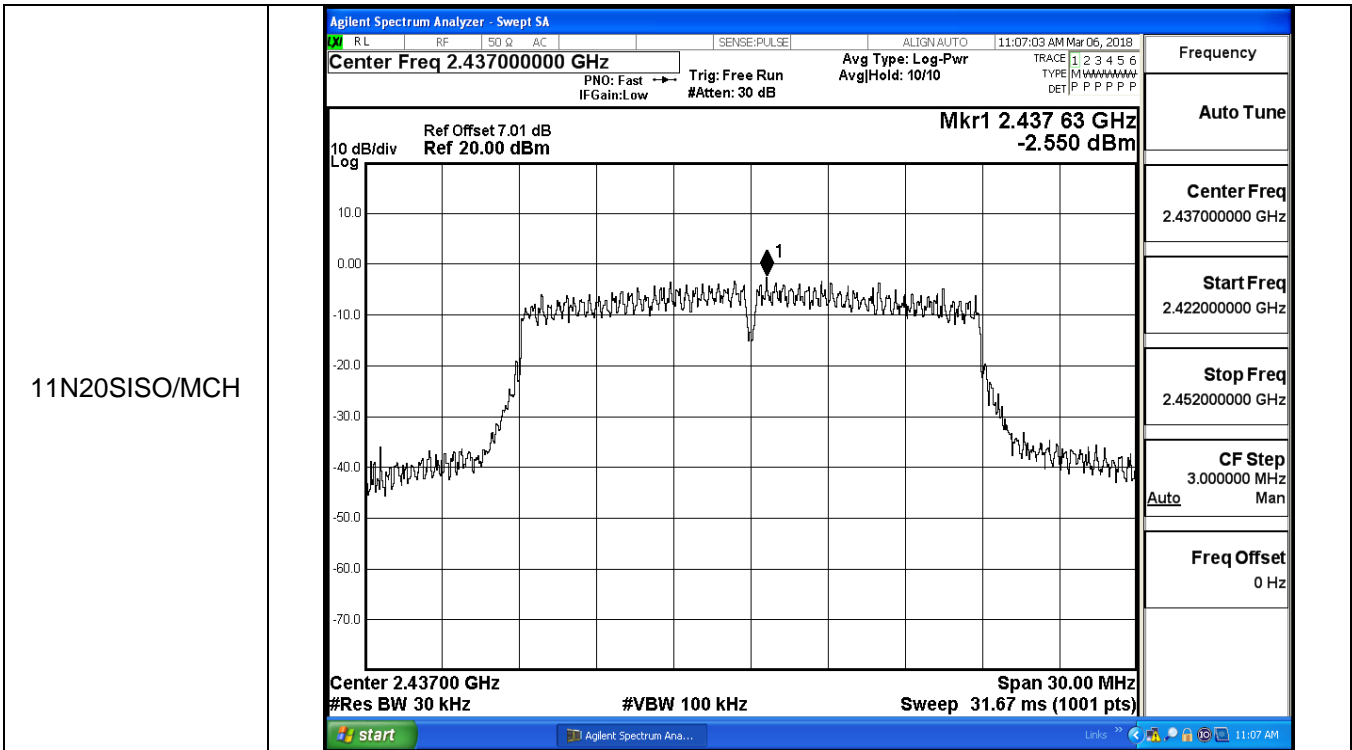
Frequency
Auto Tune
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Start Freq 2.422000000 GHz
Stop Freq 2.452000000 GHz
CF Step 3.000000 MHz Auto
Freq Offset 0 Hz

11G/HCH

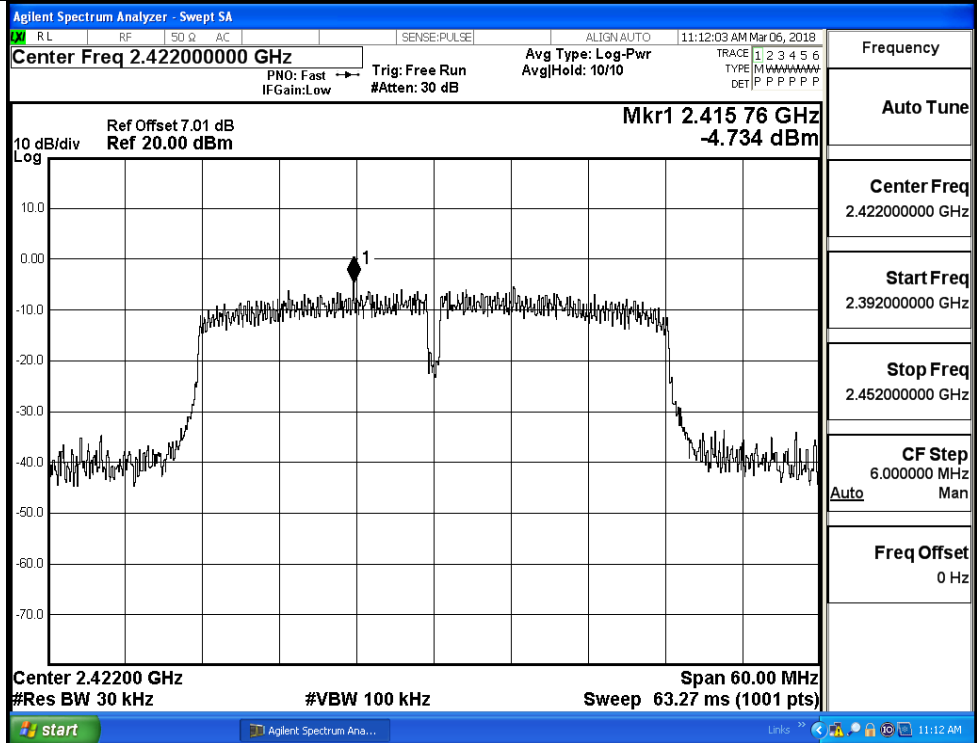


11N20SISO/LCH

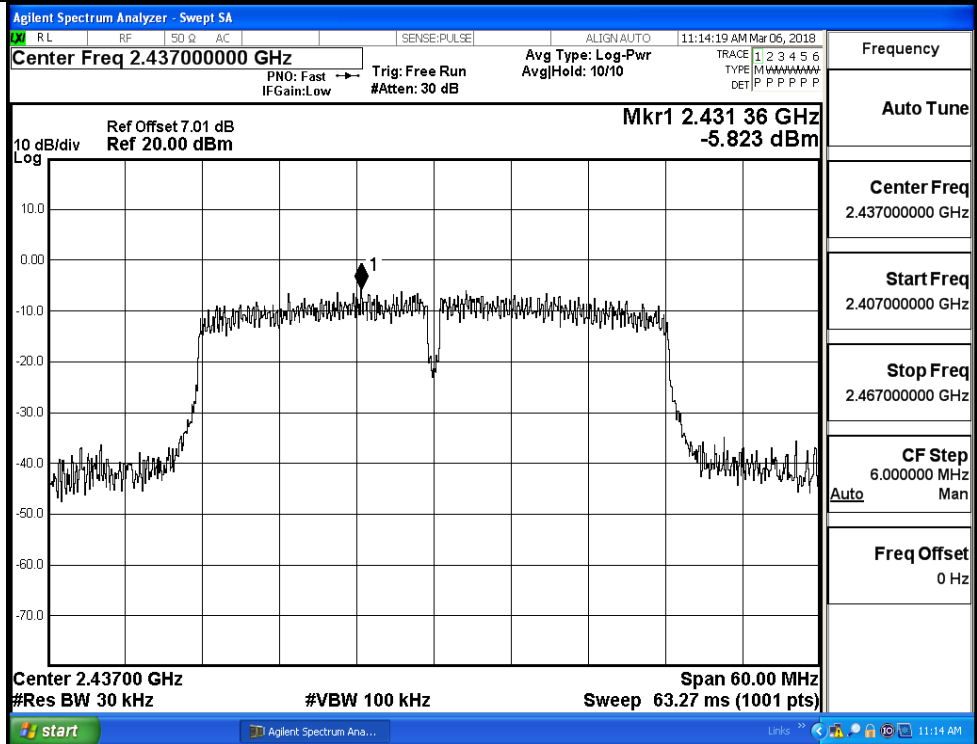


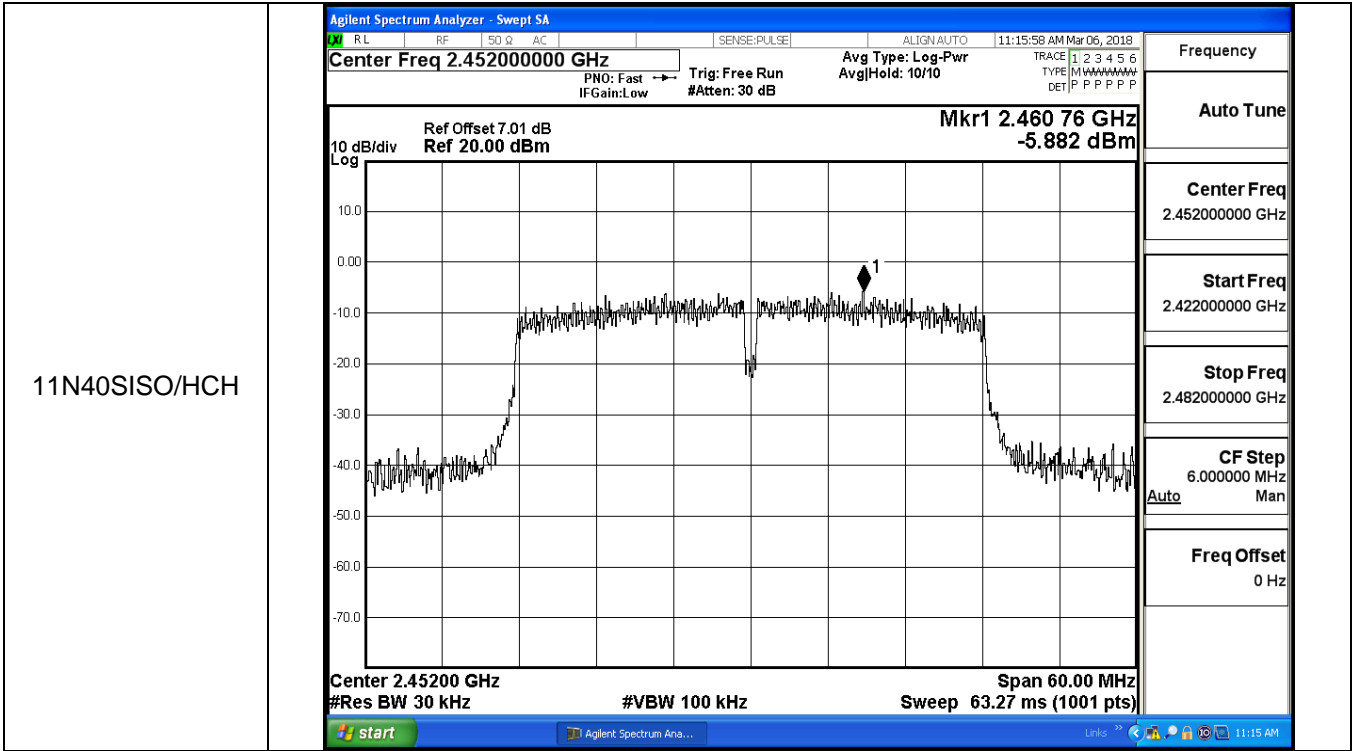


11N40SISO/LCH

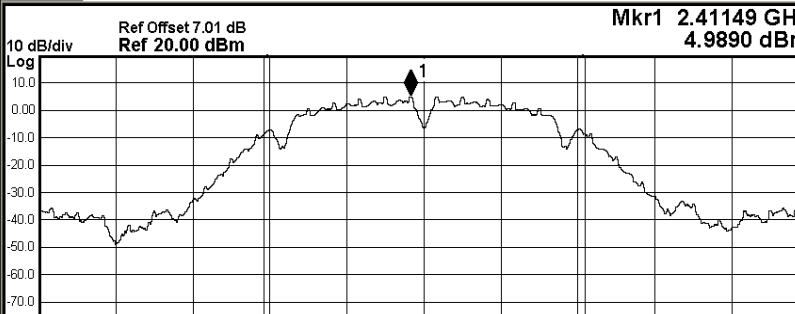
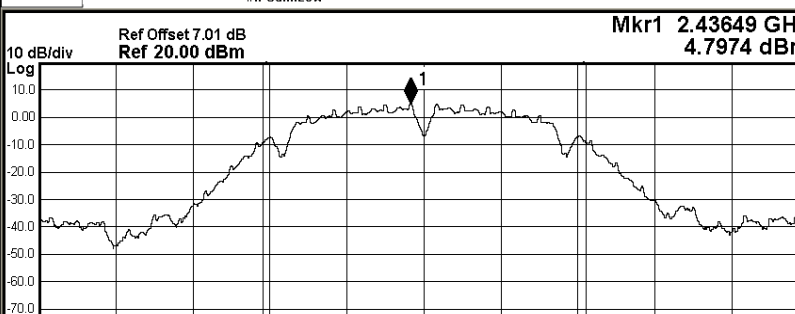


11N40SISO/MCH



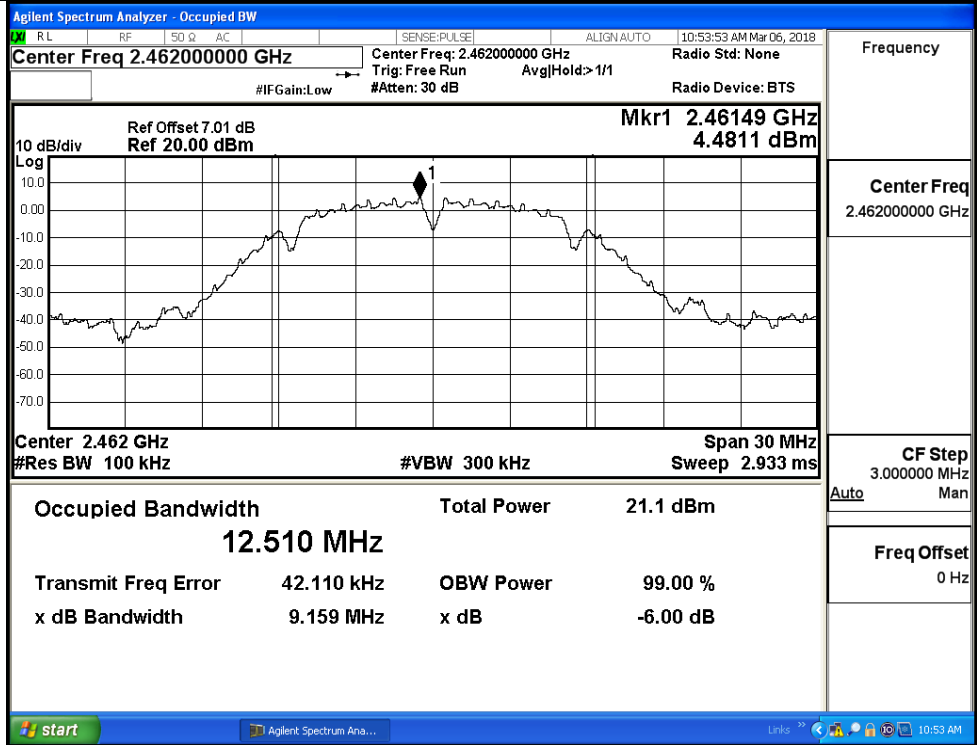


A.2 6dB Bandwidth

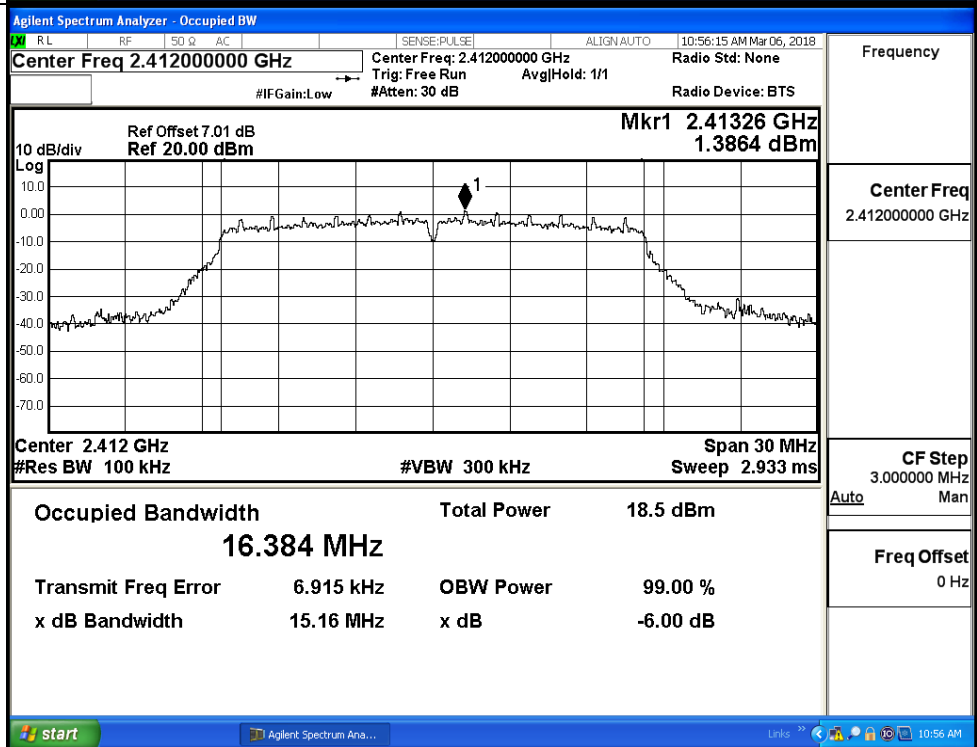
Test Graphs																	
11B/LCH	<div style="border: 1px solid black; padding: 5px;"> <p style="font-size: small; margin: 0;">Agilent Spectrum Analyzer - Occupied BW</p> <p style="font-size: x-small; margin: 0;">RL RF 50 Ω AC SENSE:PULSE ALIGN: AUTO 10:39:50 AM Mar 06, 2018</p> <p style="font-size: small; margin: 0;">Center Freq 2.41200000 GHz Center Freq: 2.41200000 GHz Radio Std: None</p> <p style="font-size: x-small; margin: 0;">#IFGain: Low #Atten: 30 dB Trig: Free Run AvgHold: 1/1 Radio Device: BTS</p> <div style="border: 1px solid black; padding: 2px;"> <p style="font-size: x-small; margin: 0;">Ref Offset 7.01 dB Mkr1 2.41149 GHz</p> <p style="font-size: x-small; margin: 0;">Ref 20.00 dB 4.9890 dBm</p>  </div> <p style="font-size: x-small; margin: 0;">Center 2.412 GHz Span 30 MHz</p> <p style="font-size: x-small; margin: 0;">#Res BW 100 kHz #VBW 300 kHz Sweep 2.933 ms</p> <table style="width: 100%; font-size: x-small; border-collapse: collapse;"> <tr> <td colspan="2">Occupied Bandwidth</td> <td>Total Power</td> <td>21.6 dBm</td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>12.464 MHz</b></td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>30.411 kHz</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>x dB Bandwidth</td> <td>9.159 MHz</td> <td>x dB</td> <td>-6.00 dB</td> </tr> </table> <p style="font-size: x-small; margin: 0;">start Agilent Spectrum Ana... 10:39 AM</p> </div>	Occupied Bandwidth		Total Power	21.6 dBm	<b>12.464 MHz</b>				Transmit Freq Error	30.411 kHz	OBW Power	99.00 %	x dB Bandwidth	9.159 MHz	x dB	-6.00 dB
Occupied Bandwidth		Total Power	21.6 dBm														
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11B/MCH	<div style="border: 1px solid black; padding: 5px;"> <p style="font-size: small; margin: 0;">Agilent Spectrum Analyzer - Occupied BW</p> <p style="font-size: x-small; margin: 0;">RL RF 50 Ω AC SENSE:PULSE ALIGN: AUTO 10:52:11 AM Mar 06, 2018</p> <p style="font-size: small; margin: 0;">Center Freq 2.43700000 GHz Center Freq: 2.43700000 GHz Radio Std: None</p> <p style="font-size: x-small; margin: 0;">#IFGain: Low #Atten: 30 dB Trig: Free Run AvgHold: 1/1 Radio Device: BTS</p> <div style="border: 1px solid black; padding: 2px;"> <p style="font-size: x-small; margin: 0;">Ref Offset 7.01 dB Mkr1 2.43649 GHz</p> <p style="font-size: x-small; margin: 0;">Ref 20.00 dB 4.7974 dBm</p>  </div> <p style="font-size: x-small; margin: 0;">Center 2.437 GHz Span 30 MHz</p> <p style="font-size: x-small; margin: 0;">#Res BW 100 kHz #VBW 300 kHz Sweep 2.933 ms</p> <table style="width: 100%; font-size: x-small; border-collapse: collapse;"> <tr> <td colspan="2">Occupied Bandwidth</td> <td>Total Power</td> <td>21.4 dBm</td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>12.512 MHz</b></td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>47.756 kHz</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>x dB Bandwidth</td> <td>9.158 MHz</td> <td>x dB</td> <td>-6.00 dB</td> </tr> </table> <p style="font-size: x-small; margin: 0;">start Agilent Spectrum Ana... 10:52 AM</p> </div>	Occupied Bandwidth		Total Power	21.4 dBm	<b>12.512 MHz</b>				Transmit Freq Error	47.756 kHz	OBW Power	99.00 %	x dB Bandwidth	9.158 MHz	x dB	-6.00 dB
Occupied Bandwidth		Total Power	21.4 dBm														
<b>12.512 MHz</b>																	
Transmit Freq Error	47.756 kHz	OBW Power	99.00 %														
x dB Bandwidth	9.158 MHz	x dB	-6.00 dB														



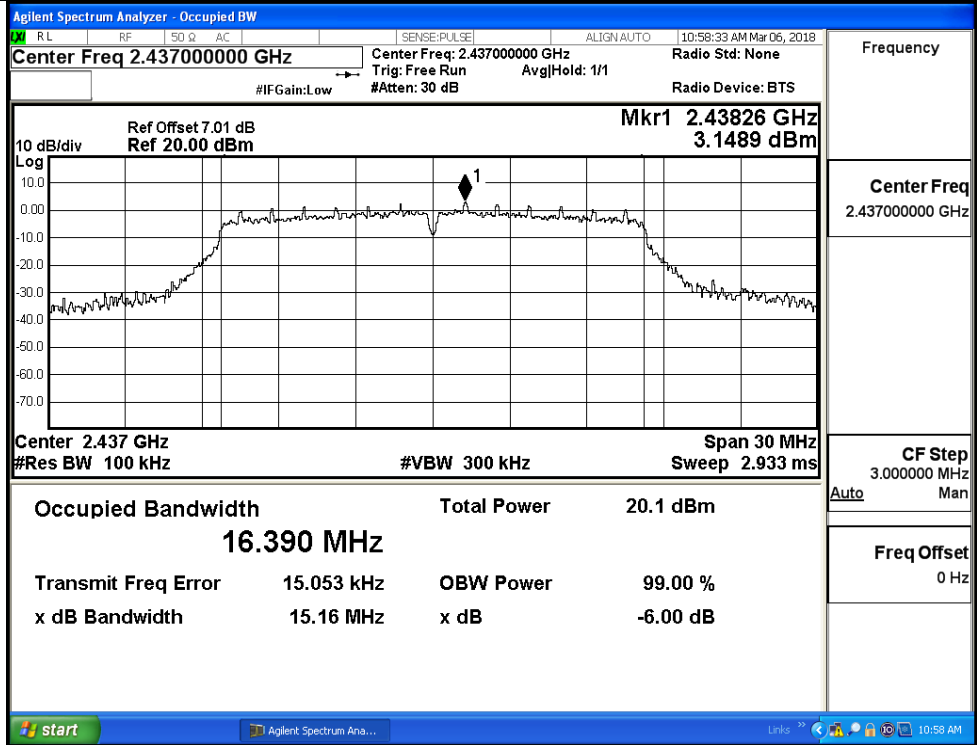
11B/HCH



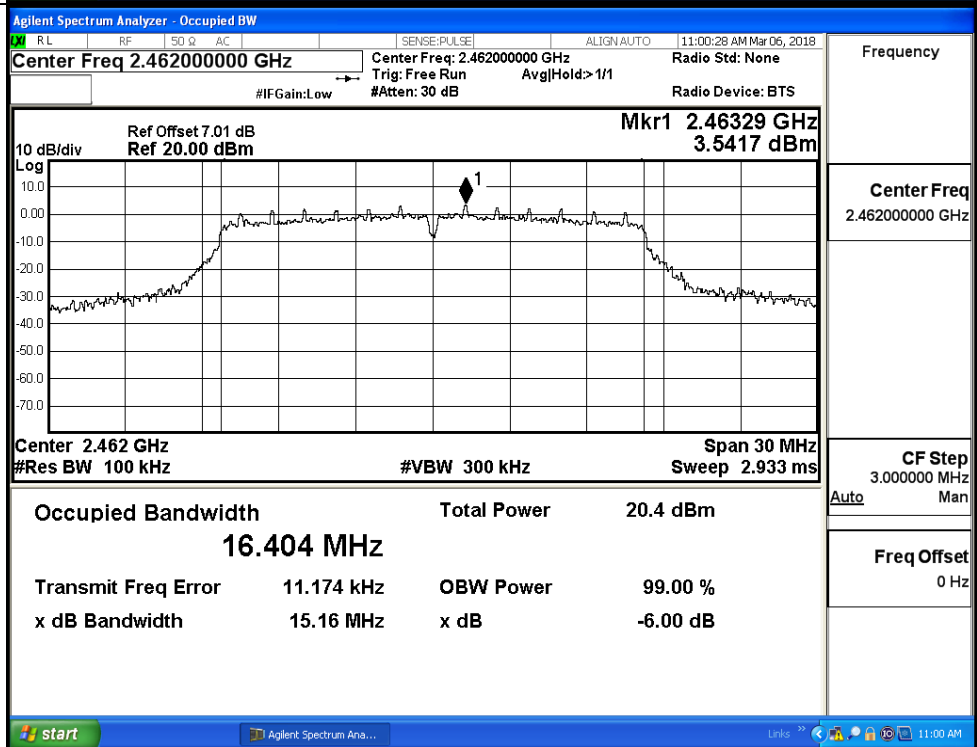
11G/LCH



11G/MCH



11G/HCH



<p>11N20SISO/LCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.41200000 GHz</p> <p>Center Freq: 2.41200000 GHz</p> <p>Radio Std: None</p> <p>Trig: Free Run</p> <p>AvglHold: 1/1</p> <p>#IFGain: Low</p> <p>#Atten: 30 dB</p> <p>Radio Device: BTS</p> <p>10 dB/div</p> <p>Ref Offset 7.01 dB</p> <p>Ref 20.00 dBm</p> <p>Mkr1 2.41326 GHz</p> <p>1.2762 dBm</p> <p>Center 2.412 GHz</p> <p>#Res BW 100 kHz</p> <p>#VBW 300 kHz</p> <p>Span 30 MHz</p> <p>Sweep 2.933 ms</p> <p>Occupied Bandwidth 17.543 MHz</p> <p>Total Power 18.5 dBm</p> <p>Transmit Freq Error 8.160 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 15.15 MHz</p> <p>x dB -6.00 dB</p> <p>Frequency 2.41200000 GHz</p> <p>CF Step 3.000000 MHz</p> <p>Auto Man</p> <p>Freq Offset 0 Hz</p>
<p>11N20SISO/MCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.43700000 GHz</p> <p>Center Freq: 2.43700000 GHz</p> <p>Radio Std: None</p> <p>Trig: Free Run</p> <p>AvglHold: 1/1</p> <p>#IFGain: Low</p> <p>#Atten: 30 dB</p> <p>Radio Device: BTS</p> <p>10 dB/div</p> <p>Ref Offset 7.01 dB</p> <p>Ref 20.00 dBm</p> <p>Mkr1 2.43826 GHz</p> <p>2.9175 dBm</p> <p>Center 2.437 GHz</p> <p>#Res BW 100 kHz</p> <p>#VBW 300 kHz</p> <p>Span 30 MHz</p> <p>Sweep 2.933 ms</p> <p>Occupied Bandwidth 17.559 MHz</p> <p>Total Power 19.8 dBm</p> <p>Transmit Freq Error 17.232 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 15.16 MHz</p> <p>x dB -6.00 dB</p> <p>Frequency 2.43700000 GHz</p> <p>CF Step 3.000000 MHz</p> <p>Auto Man</p> <p>Freq Offset 0 Hz</p>

<p>11N20SISO/HCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.46200000 GHz</p> <p>Center Freq: 2.46200000 GHz</p> <p>Mkr1 2.46329 GHz</p> <p>3.2418 dBm</p> <p>10 dB/div</p> <p>Ref Offset 7.01 dB</p> <p>Ref 20.00 dBm</p> <p>Center 2.462 GHz</p> <p>#Res BW 100 kHz</p> <p>#VBW 300 kHz</p> <p>Span 30 MHz</p> <p>Sweep 2.933 ms</p> <p>Occupied Bandwidth 17.559 MHz</p> <p>Total Power 19.9 dBm</p> <p>Transmit Freq Error 16.796 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 15.10 MHz</p> <p>x dB -6.00 dB</p>
<p>11N40SISO/LCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.42200000 GHz</p> <p>Center Freq: 2.42200000 GHz</p> <p>Mkr1 2.41948 GHz</p> <p>-0.38271 dBm</p> <p>10 dB/div</p> <p>Ref Offset 7.01 dB</p> <p>Ref 20.00 dBm</p> <p>Center 2.422 GHz</p> <p>#Res BW 100 kHz</p> <p>#VBW 300 kHz</p> <p>Span 60 MHz</p> <p>Sweep 5.8 ms</p> <p>Occupied Bandwidth 35.811 MHz</p> <p>Total Power 20.4 dBm</p> <p>Transmit Freq Error 29.746 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 35.24 MHz</p> <p>x dB -6.00 dB</p>

<p>11N40SISO/MCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.43700000 GHz</p> <p>Center Freq: 2.43700000 GHz Trig: Free Run #IFGain: Low #Atten: 30 dB</p> <p>Radio Std: None AvglHold: 1/1 Radio Device: BTS</p> <p>10 dB/div Ref Offset 7.01 dB Ref 20.00 dBm</p> <p>Mkr1 2.43952 GHz -0.69089 dBm</p> <p>Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 60 MHz Sweep 5.8 ms</p> <p>Occupied Bandwidth 35.813 MHz Total Power 20.1 dBm</p> <p>Transmit Freq Error 29.627 kHz OBW Power 99.00 % x dB Bandwidth 35.23 MHz x dB -6.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.43700000 GHz</p> <p>CF Step 6.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>
<p>11N40SISO/HCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.45200000 GHz</p> <p>Center Freq: 2.45200000 GHz Trig: Free Run #IFGain: Low #Atten: 30 dB</p> <p>Radio Std: None AvglHold: 1/1 Radio Device: BTS</p> <p>10 dB/div Ref Offset 7.01 dB Ref 20.00 dBm</p> <p>Mkr1 2.45452 GHz -0.37969 dBm</p> <p>Center 2.452 GHz #Res BW 100 kHz #VBW 300 kHz Span 60 MHz Sweep 5.8 ms</p> <p>Occupied Bandwidth 35.810 MHz Total Power 20.4 dBm</p> <p>Transmit Freq Error 33.046 kHz OBW Power 99.00 % x dB Bandwidth 35.19 MHz x dB -6.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.45200000 GHz</p> <p>CF Step 6.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>

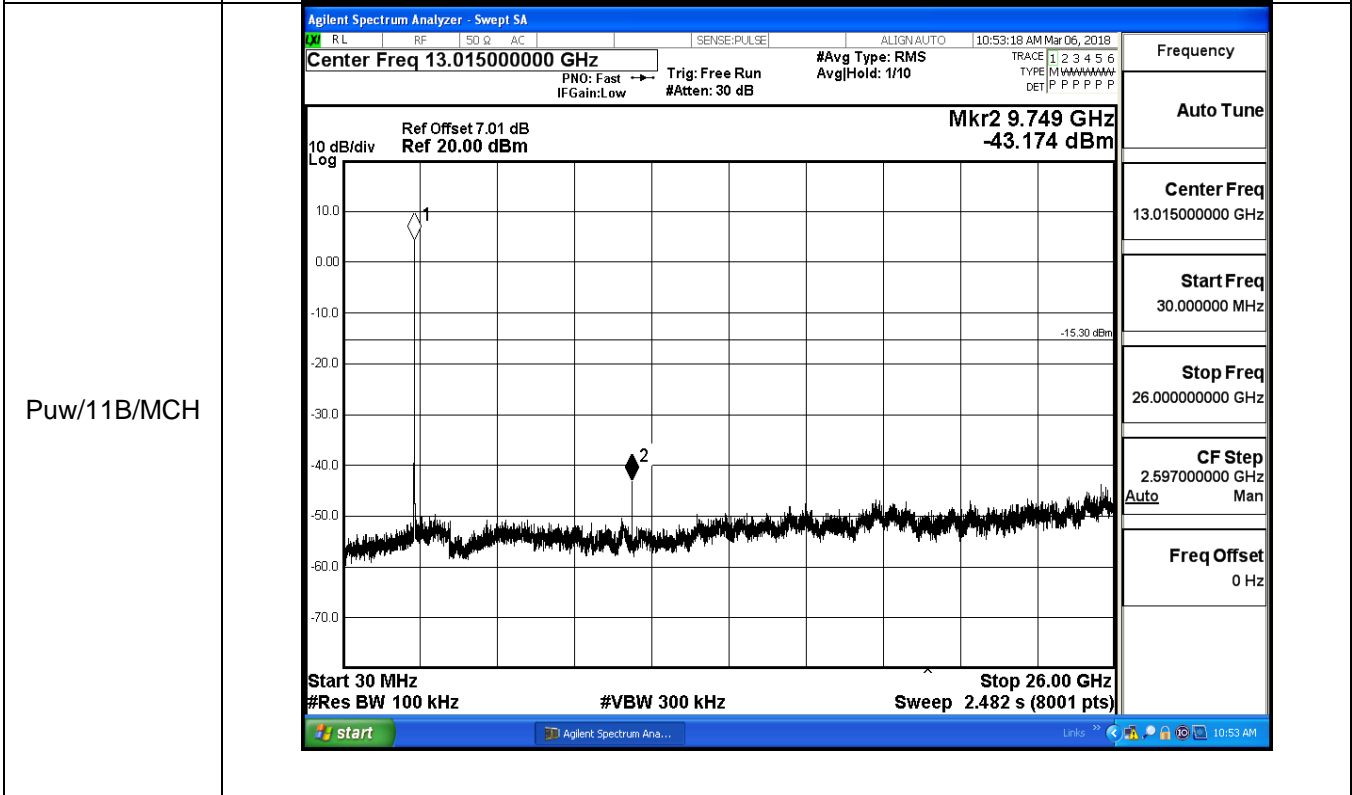
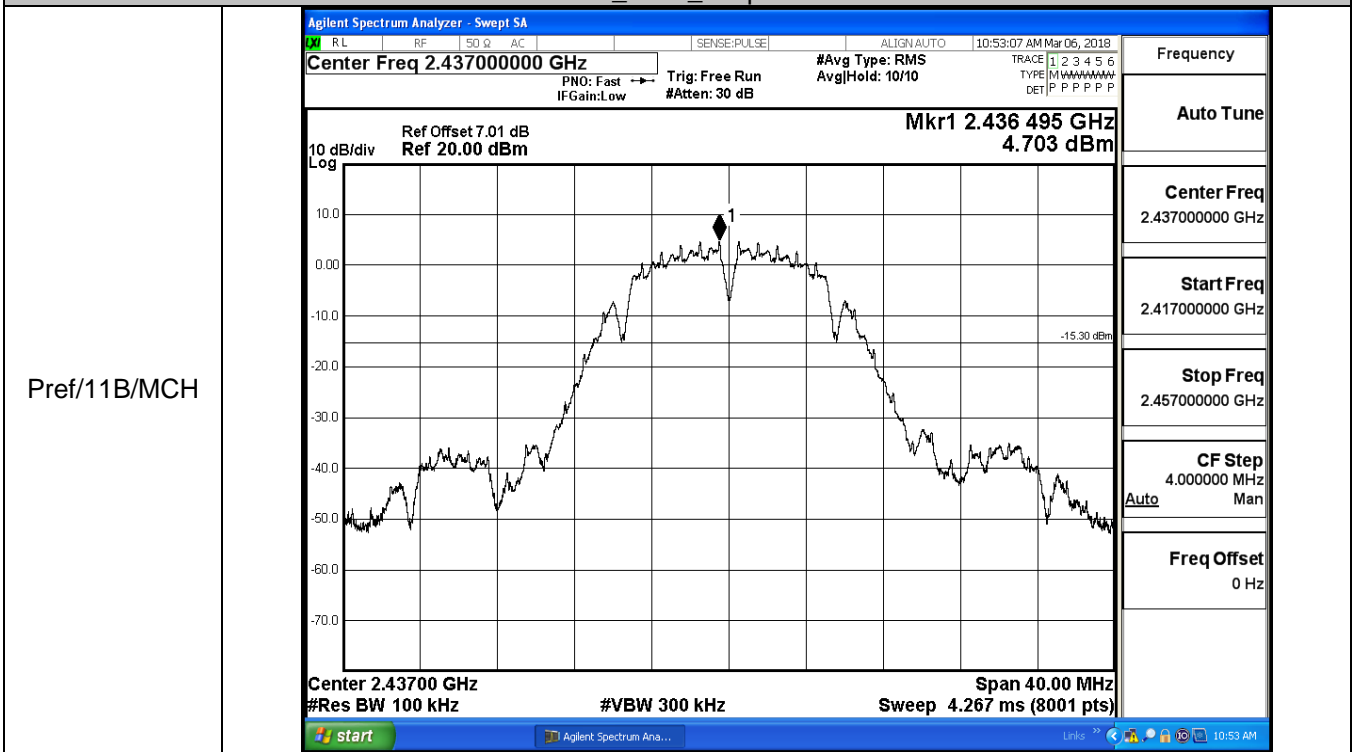
### A.3 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	4.892	-40.298	-15.108	PASS
	MCH	4.703	-43.174	-15.297	PASS
	HCH	4.508	-44.538	-15.492	PASS
11G	LCH	0.804	-44.517	-19.196	PASS
	MCH	1.86	-45.377	-18.140	PASS
	HCH	3.045	-44.226	-16.955	PASS
11N20 SISO	LCH	1.4	-44.919	-18.600	PASS
	MCH	2.697	-44.062	-17.303	PASS
	HCH	2.541	-44.326	-17.459	PASS
11N40 SISO	LCH	-0.196	-44.488	-20.196	PASS
	MCH	-0.762	-44.854	-20.762	PASS
	HCH	-0.407	-45.198	-20.407	PASS

11B\_LCH\_Graphs

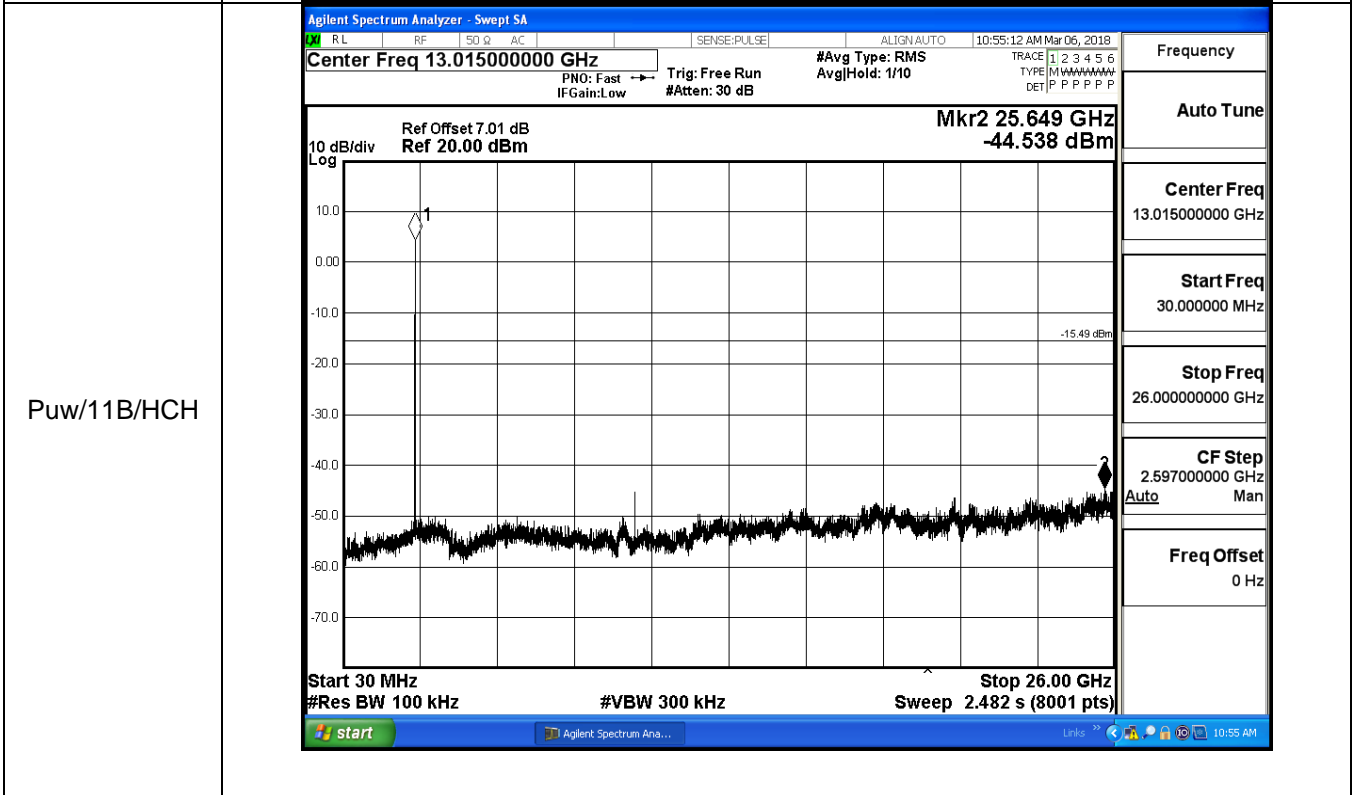
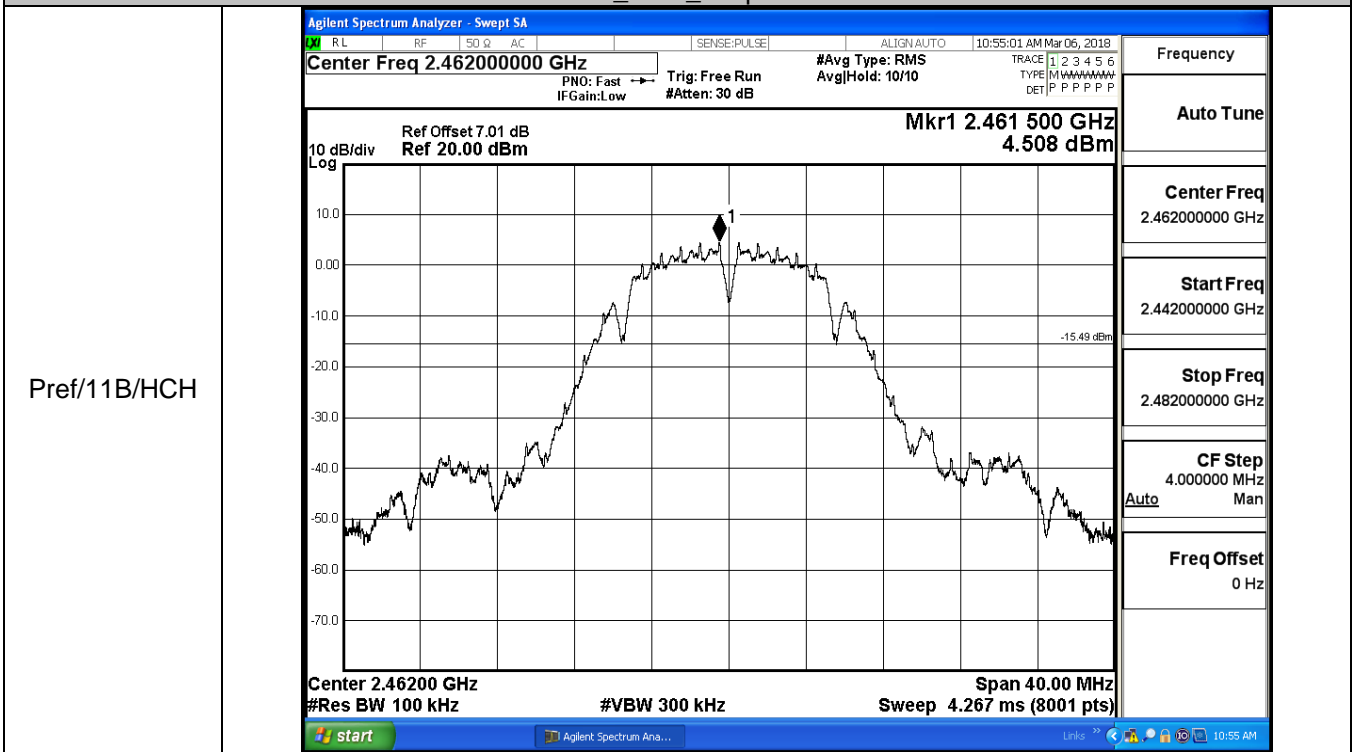
<p>Pref/11B/LCH</p>	
<p>Puw/11B/LCH</p>	

11B\_MCH\_Graphs

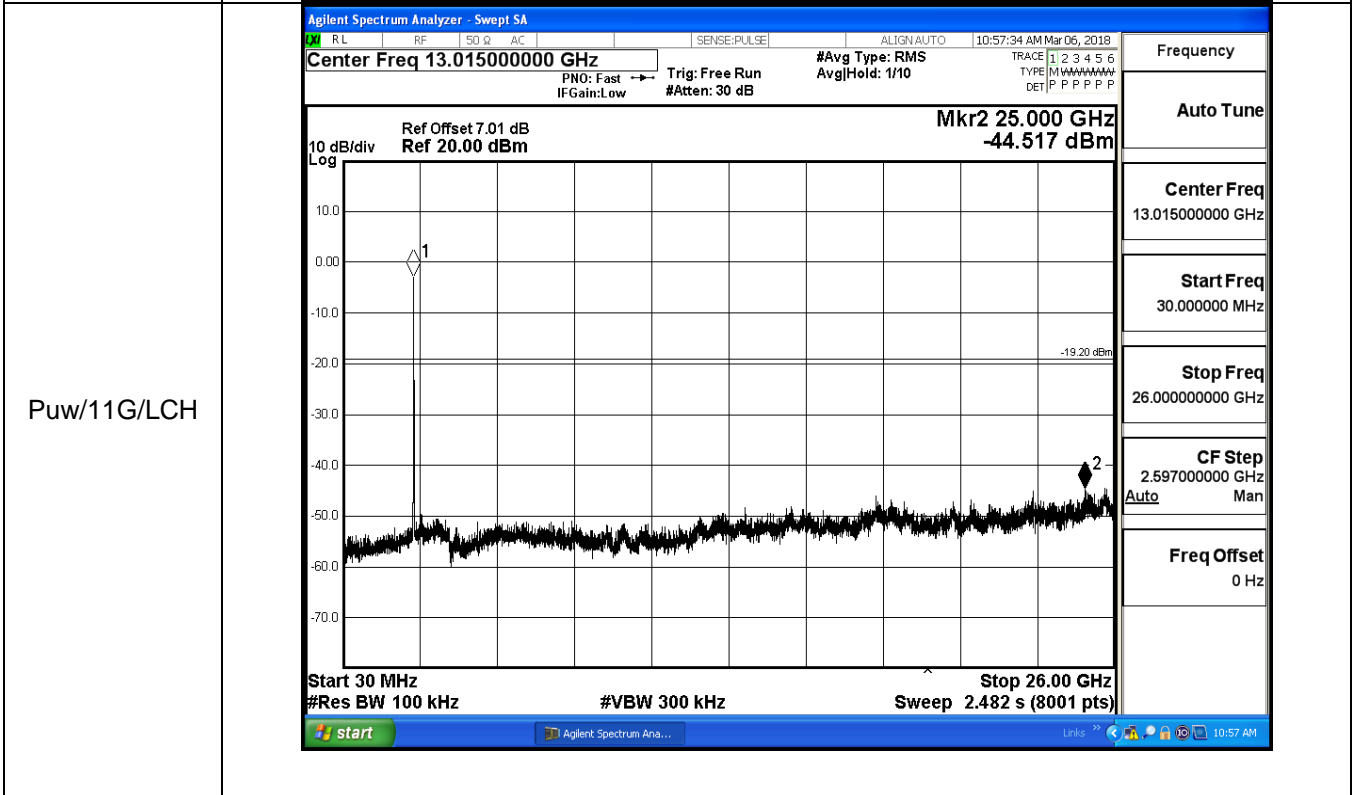
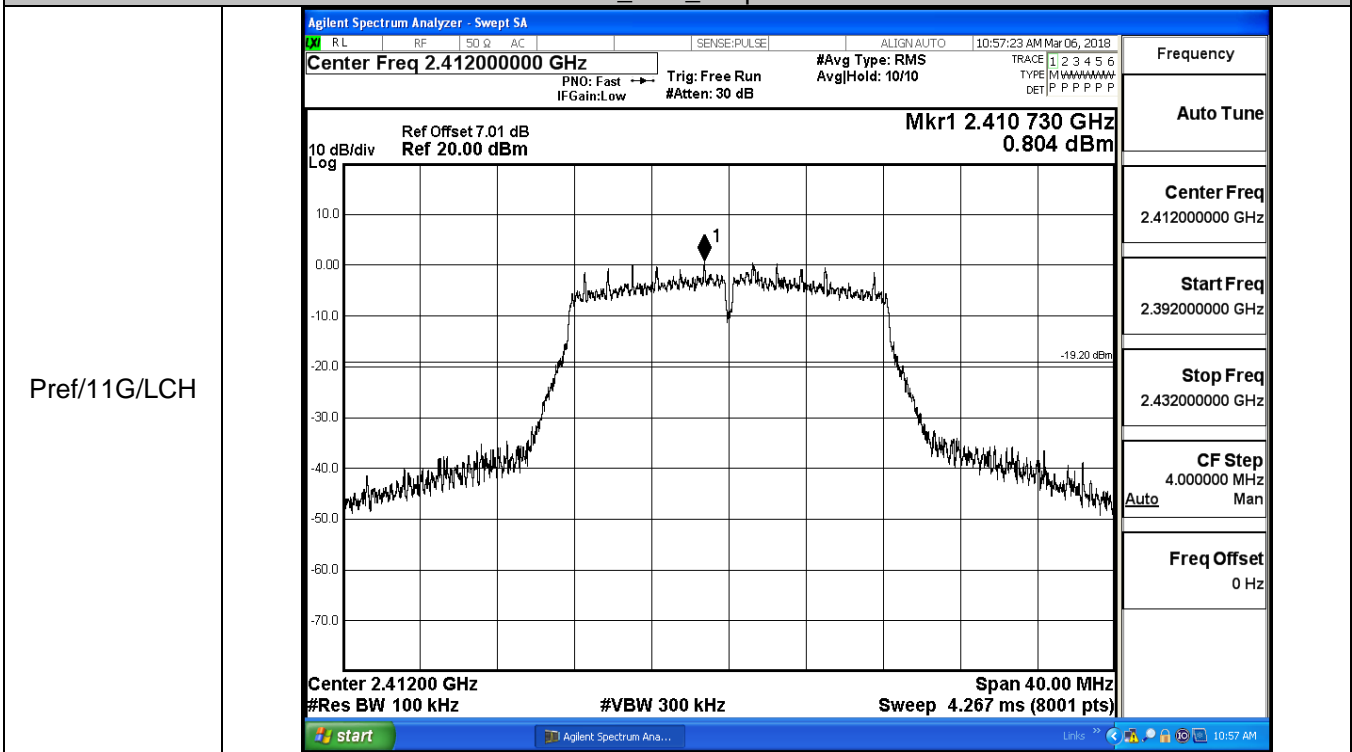




11B\_HCH\_Graphs

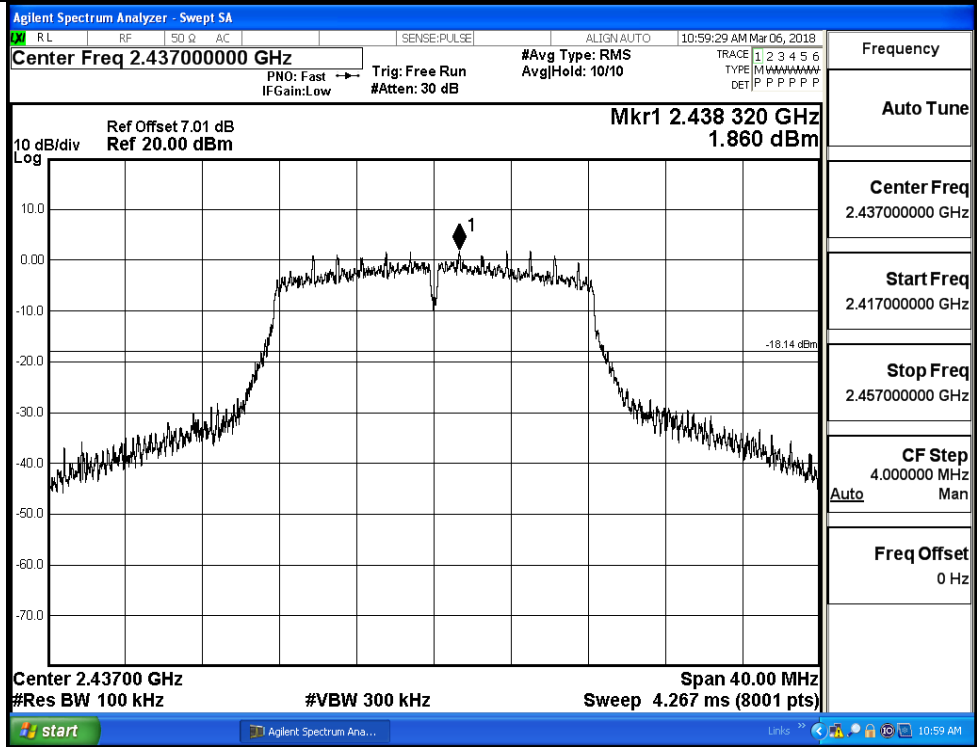


11G\_LCH\_Graphs

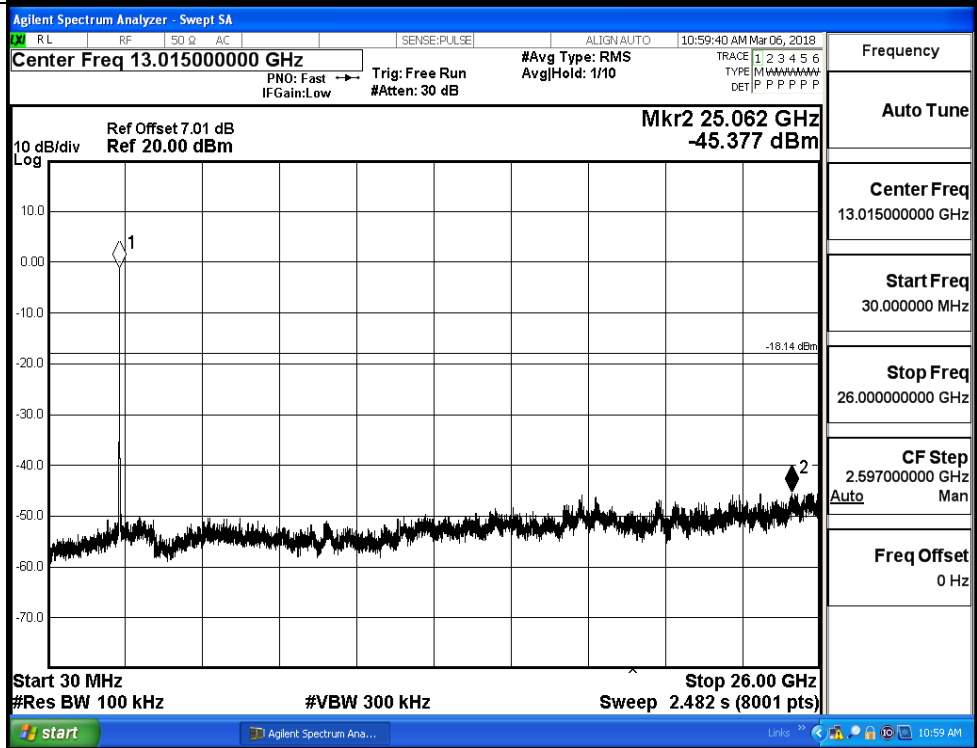


11G\_MCH\_Graphs

Pref/11G/MCH



Puw/11G/MCH

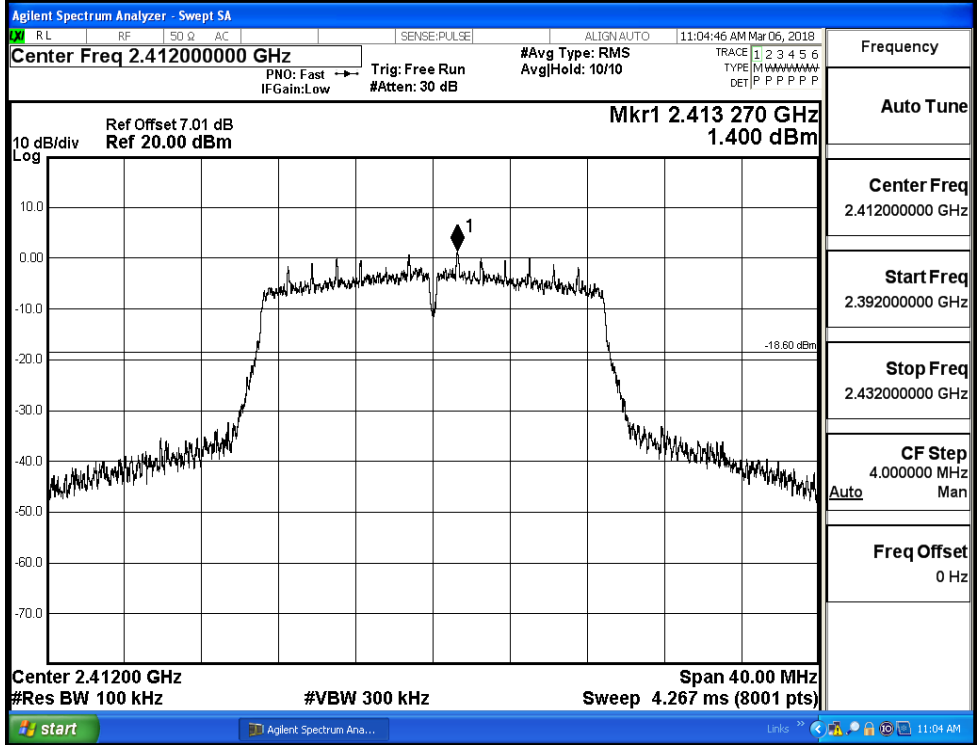


11G\_HCH\_Graphs

<p>Pref/11G/HCH</p>	
<p>Puw/11G/HCH</p>	

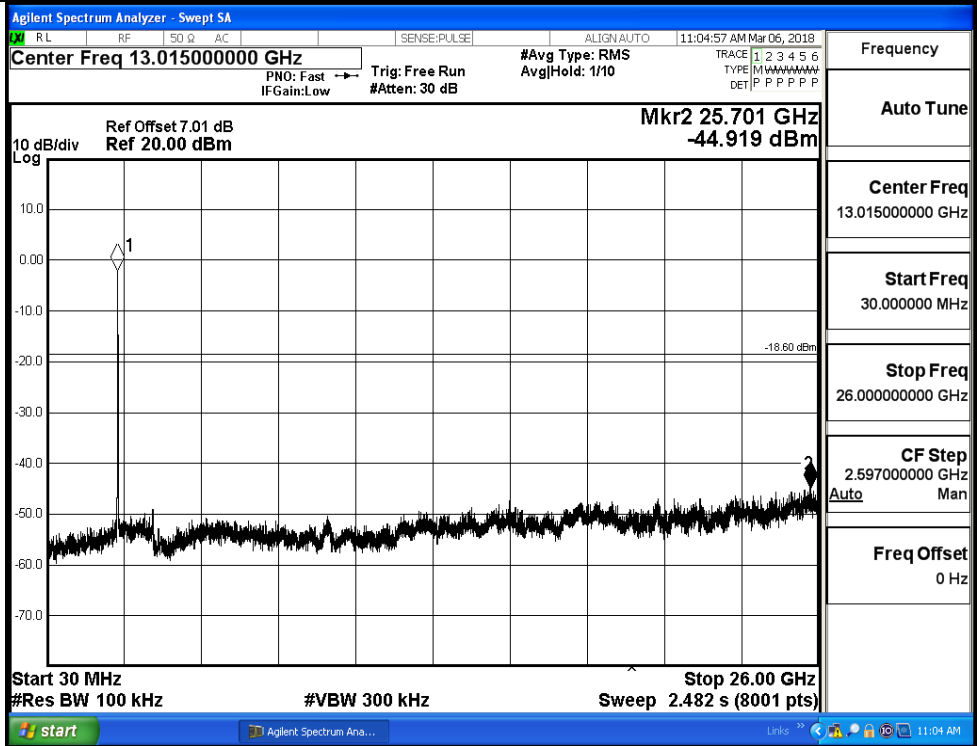
11N20SISO\_LCH\_Graphs

Pref/11N20SIS  
O/LCH



Frequency	
Auto Tune	
Center Freq	2.412000000 GHz
Start Freq	2.392000000 GHz
Stop Freq	2.432000000 GHz
CF Step	4.000000 MHz Auto
Freq Offset	0 Hz

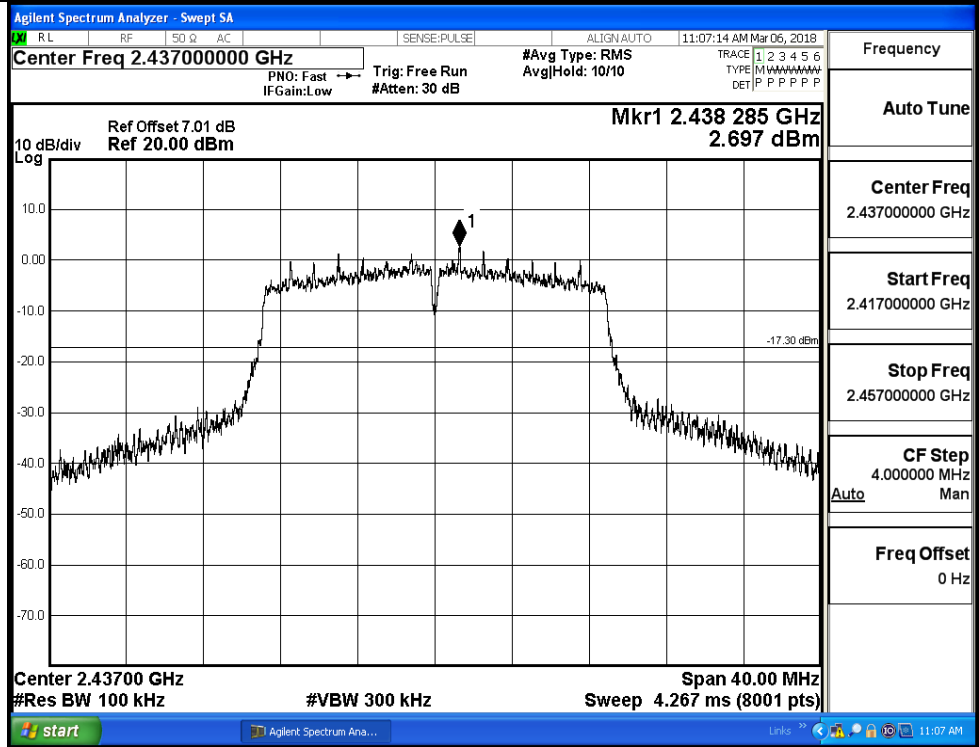
Puw/11N20  
SISO/LCH



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

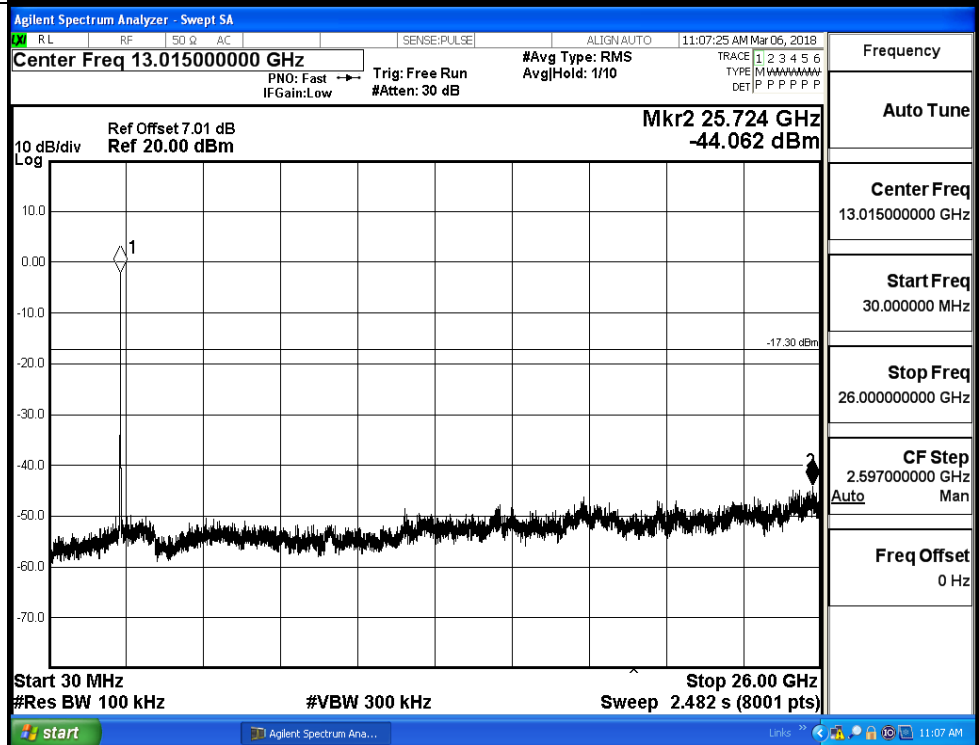
11N20SISO\_MCH\_Graphs

Pref/11N20  
SISO/MCH



Frequency
Auto Tune
Center Freq 2.437000000 GHz
Start Freq 2.417000000 GHz
Stop Freq 2.457000000 GHz
CF Step 4.000000 MHz Auto Man
Freq Offset 0 Hz

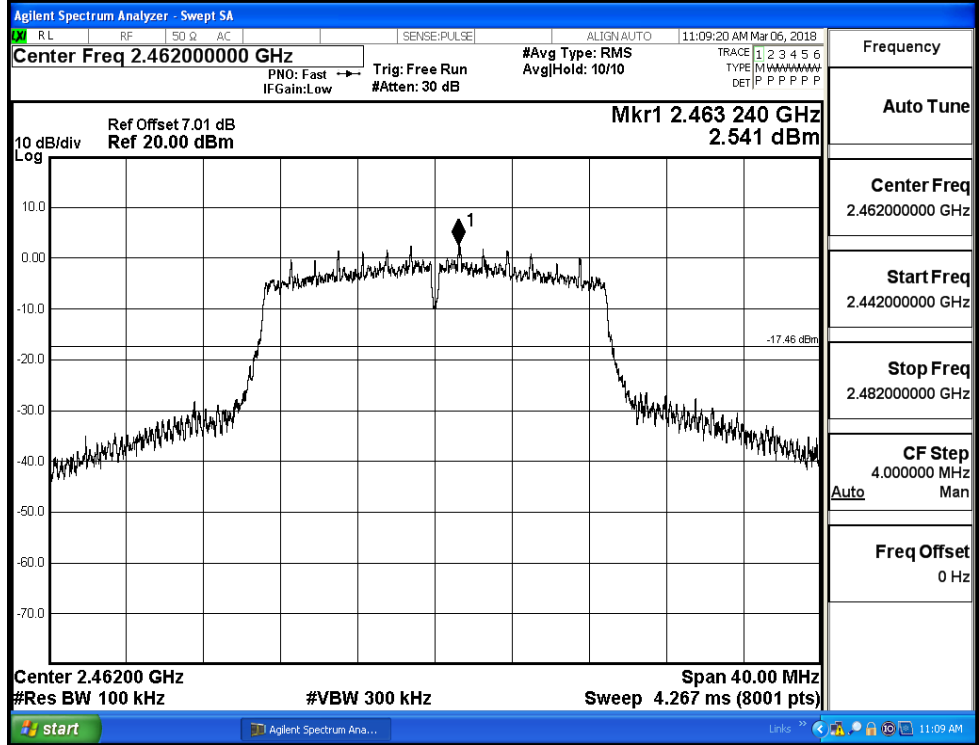
Puw/11N20  
SISO/MCH



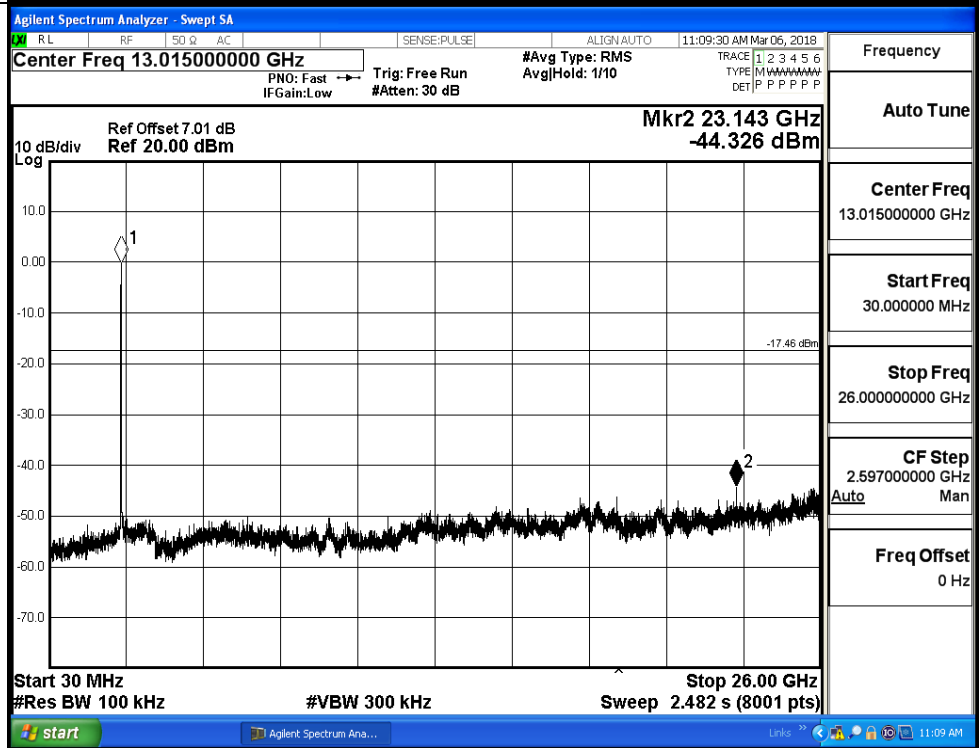
Frequency
Auto Tune
Center Freq 13.015000000 GHz
Start Freq 30.000000 MHz
Stop Freq 26.000000000 GHz
CF Step 2.597000000 GHz Auto Man
Freq Offset 0 Hz

11N20SISO\_HCH\_Graphs

Pref/11N20  
SISO/HCH

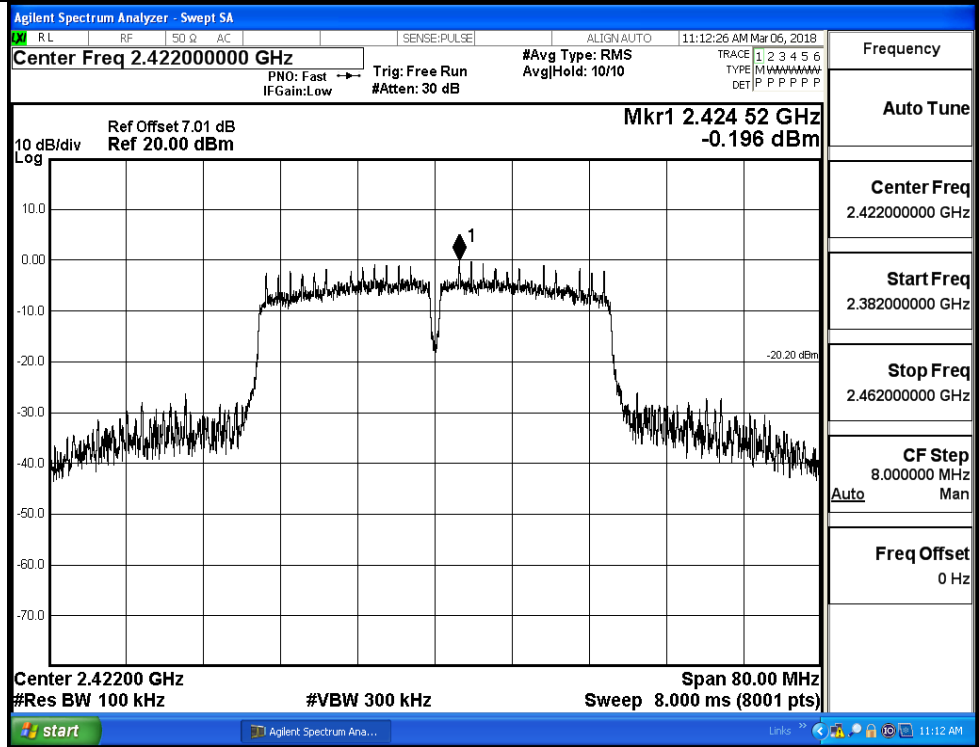


Puw/11N20  
SISO/HCH

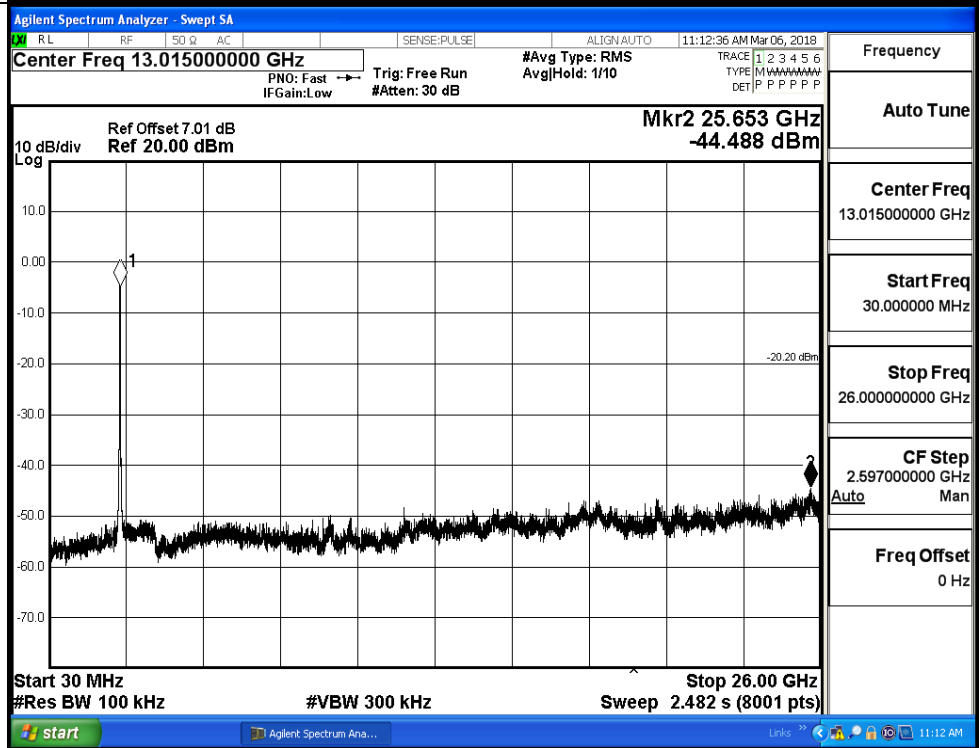


11N40SISO\_LCH\_Graphs

Pref/11N40  
SISO/LCH



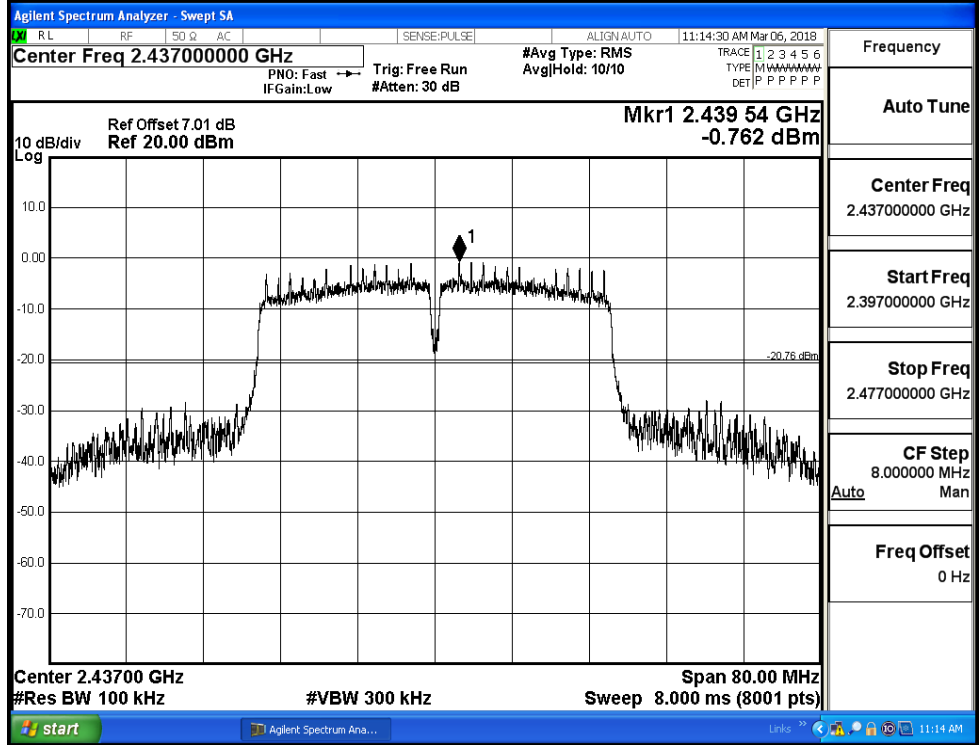
Puw/11N40  
SISO/LCH



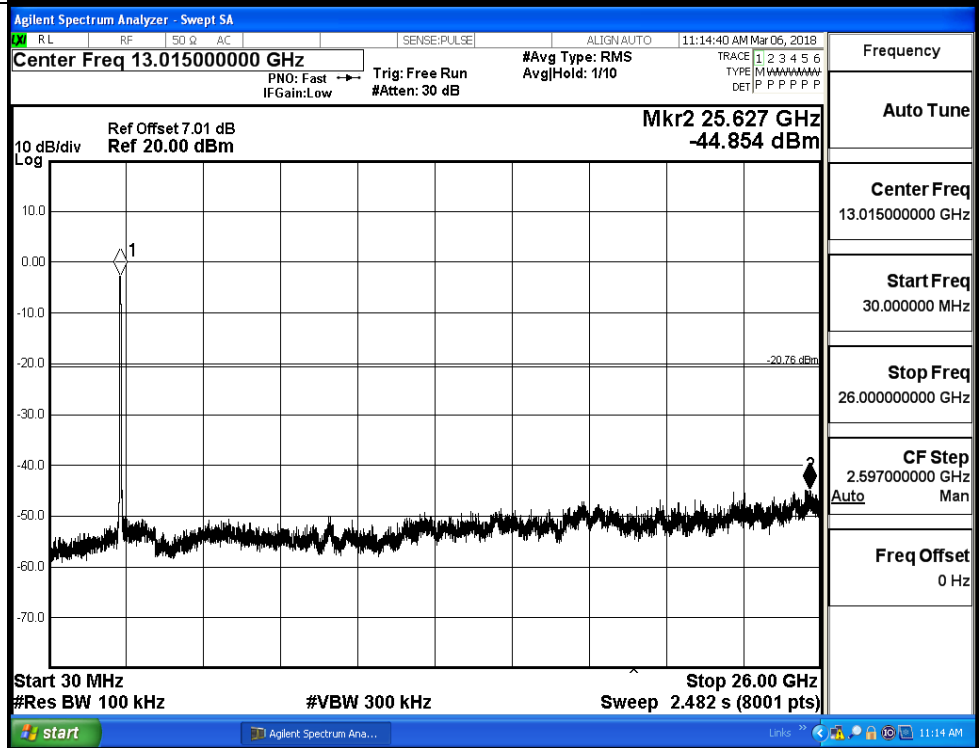


11N40SISO\_MCH\_Graphs

Pref/11N40  
SISO/MCH

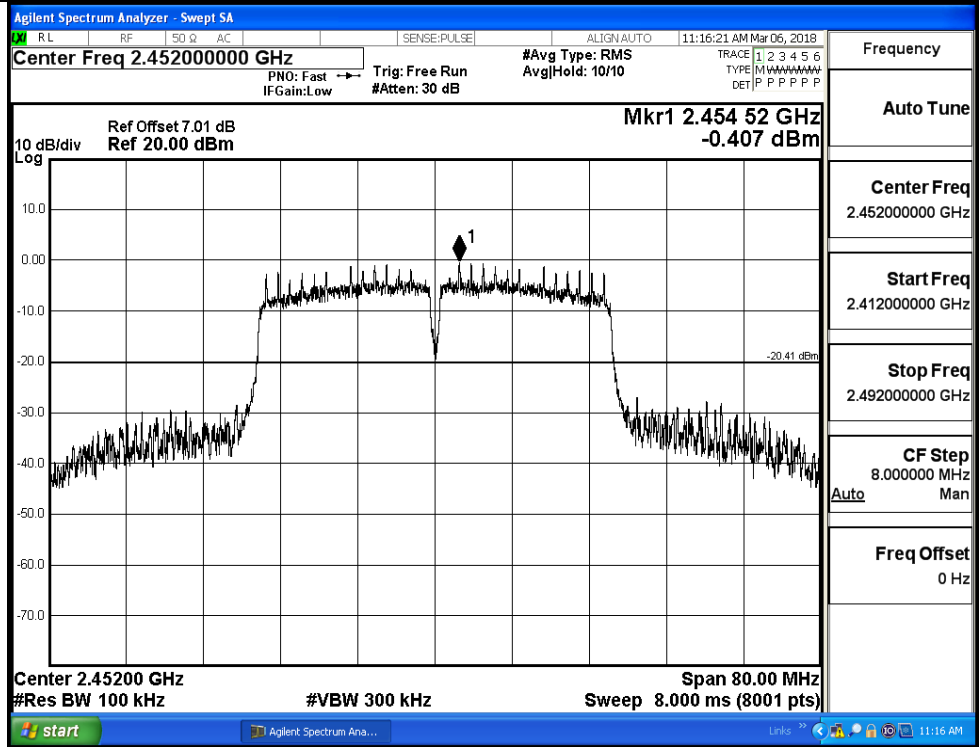


Puw/11N40  
SISO/MCH

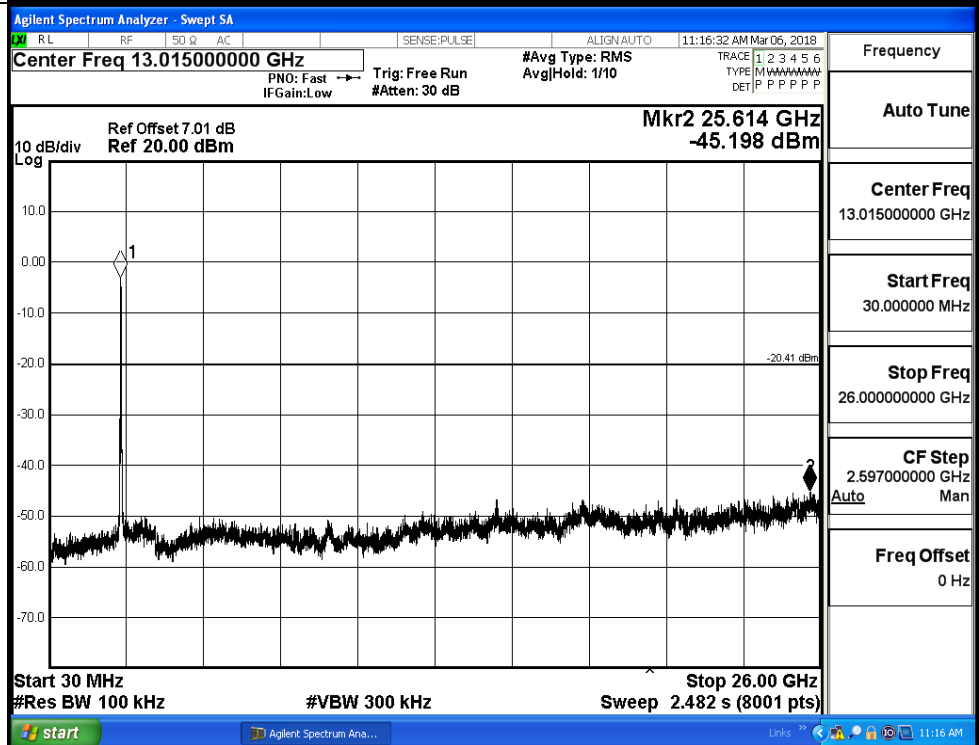


11N40SISO\_HCH\_Graphs

Pref/11N40  
SISO/HCH

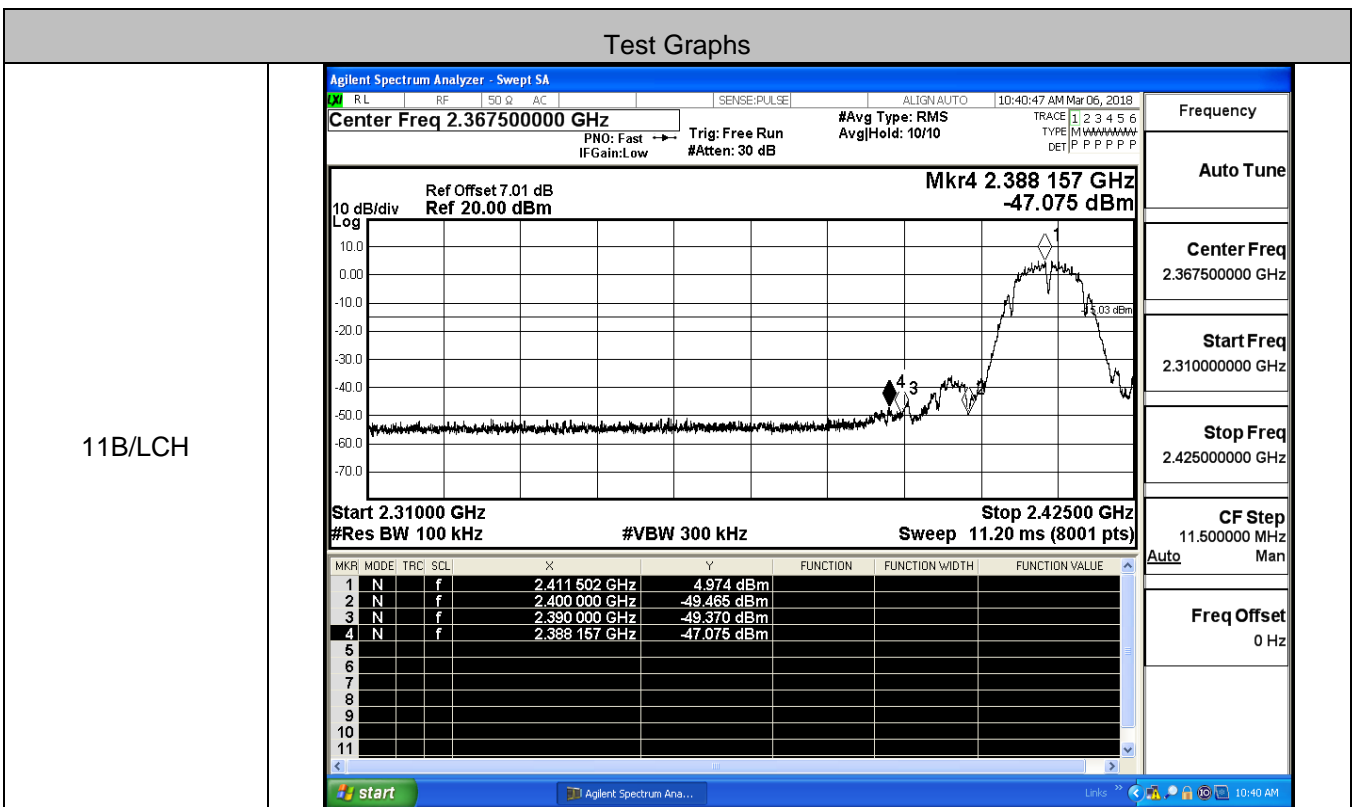


Puw/11N40  
SISO/HCH

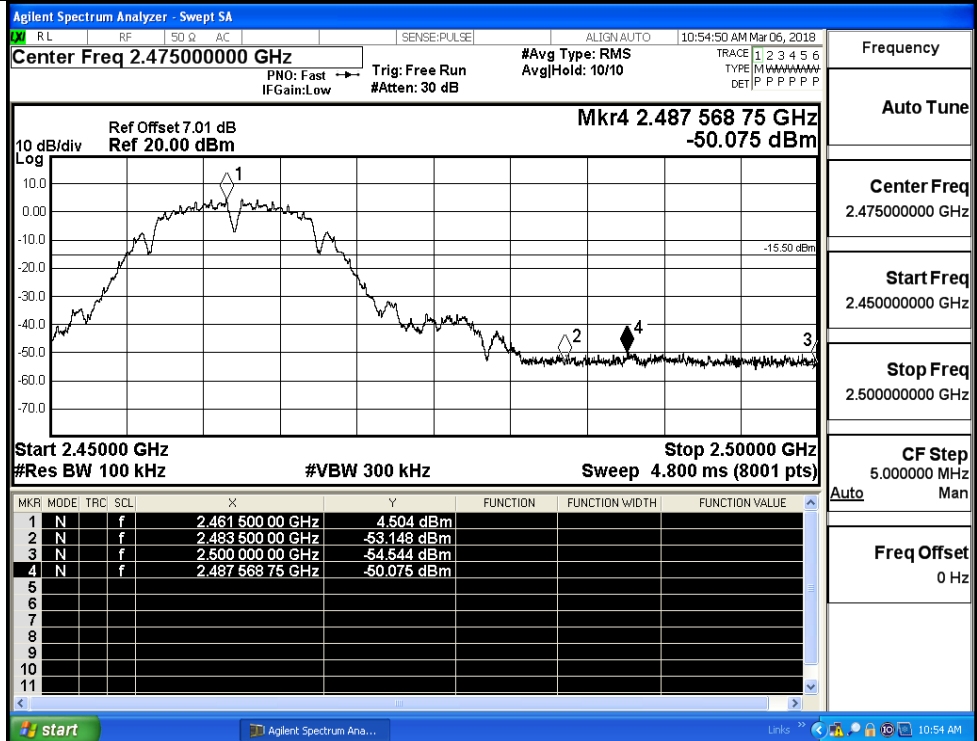


### A.4 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	4.974	-47.075	-15.03	PASS
	HCH	4.504	-50.075	-15.5	PASS
11G	LCH	1.308	-47.424	-18.69	PASS
	HCH	3.205	-41.052	-16.8	PASS
11N20SISO	LCH	0.510	-44.938	-19.49	PASS
	HCH	2.318	-40.925	-17.68	PASS
11N40SISO	LCH	-0.185	-31.201	-20.19	PASS
	HCH	-0.427	-30.693	-20.43	PASS



11B/HCH



Frequency

Auto Tune

Center Freq  
2.47500000 GHz

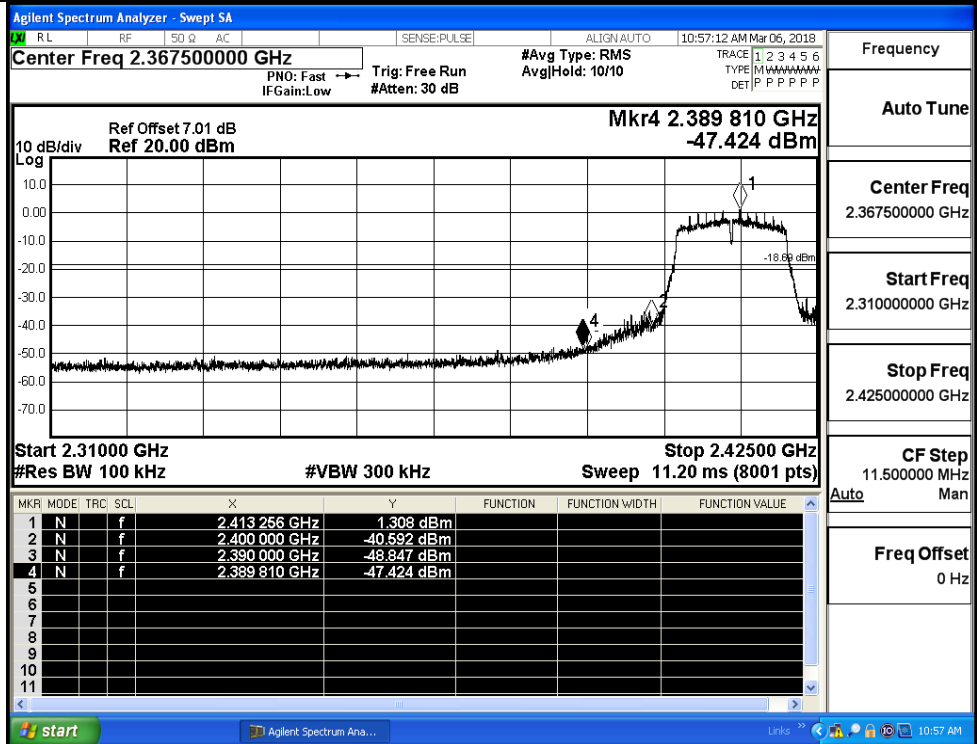
Start Freq  
2.45000000 GHz

Stop Freq  
2.50000000 GHz

CF Step  
5.000000 MHz

Freq Offset  
0 Hz

11G/LCH



Frequency

Auto Tune

Center Freq  
2.36750000 GHz

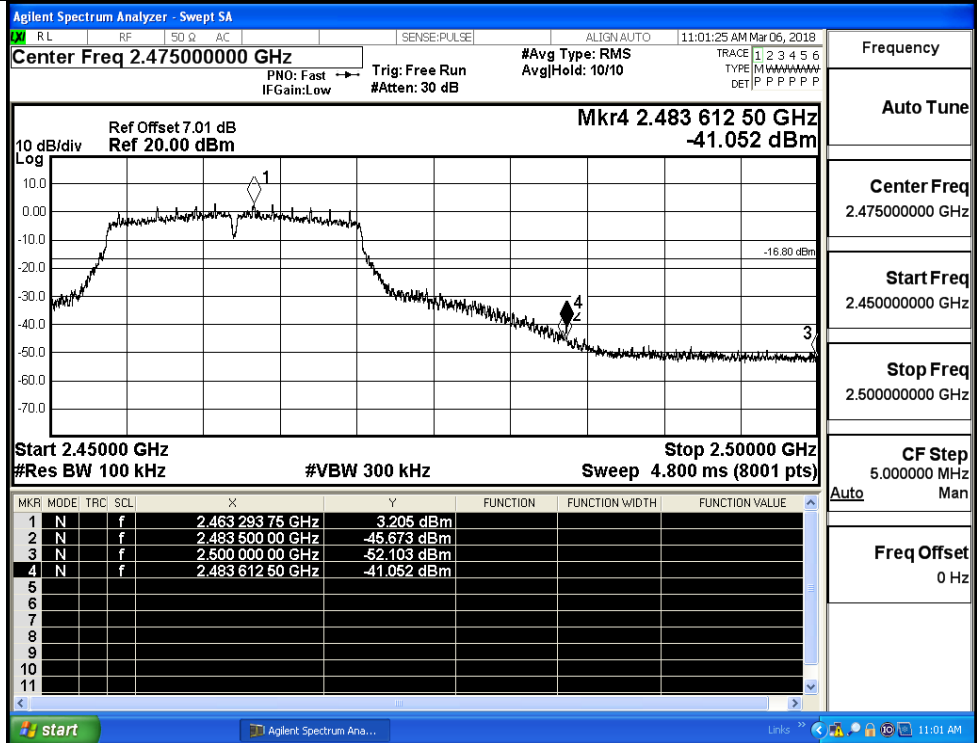
Start Freq  
2.31000000 GHz

Stop Freq  
2.42500000 GHz

CF Step  
11.500000 MHz

Freq Offset  
0 Hz

11G/HCH



Frequency

Auto Tune

Center Freq  
2.47500000 GHz

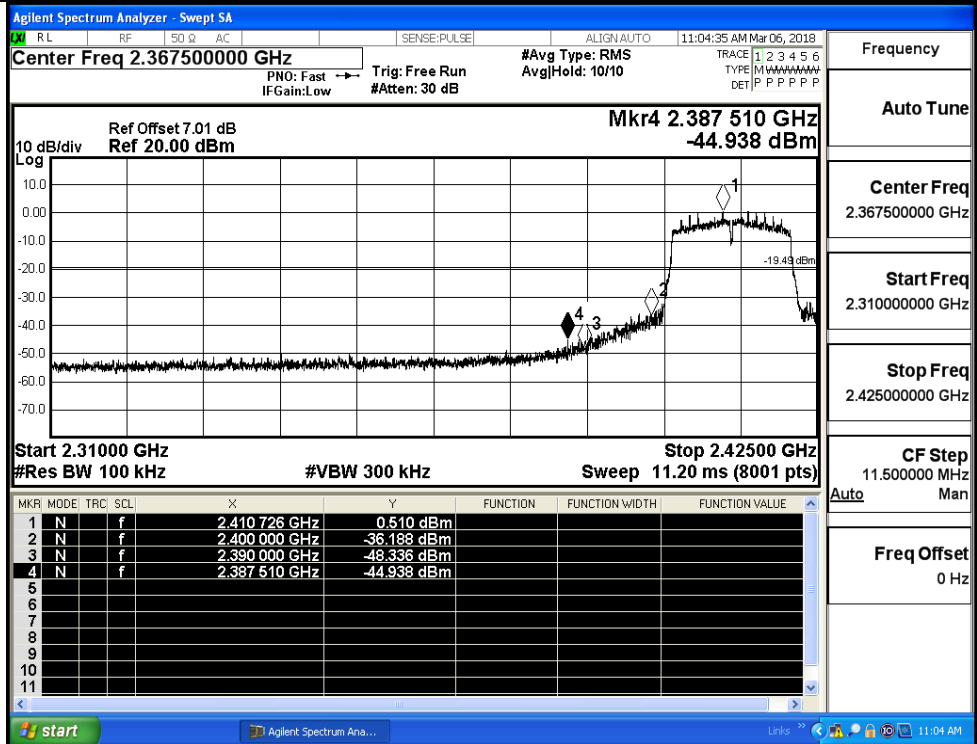
Start Freq  
2.45000000 GHz

Stop Freq  
2.50000000 GHz

CF Step  
5.000000 MHz

Freq Offset  
0 Hz

11N20SISO/LCH



Frequency

Auto Tune

Center Freq  
2.36750000 GHz

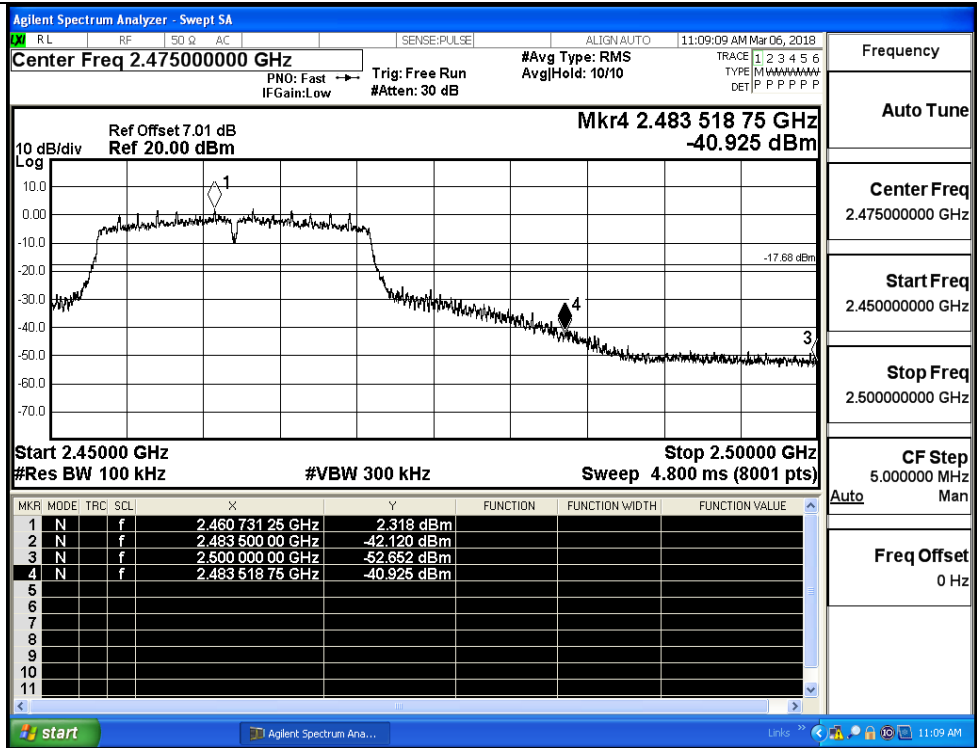
Start Freq  
2.31000000 GHz

Stop Freq  
2.42500000 GHz

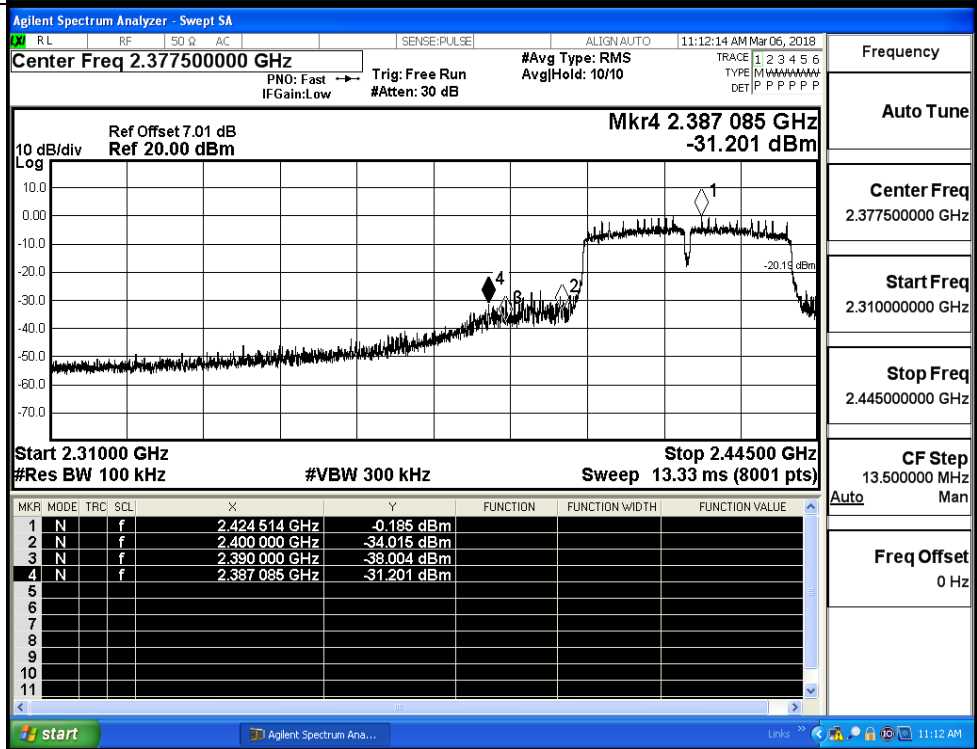
CF Step  
11.500000 MHz

Freq Offset  
0 Hz

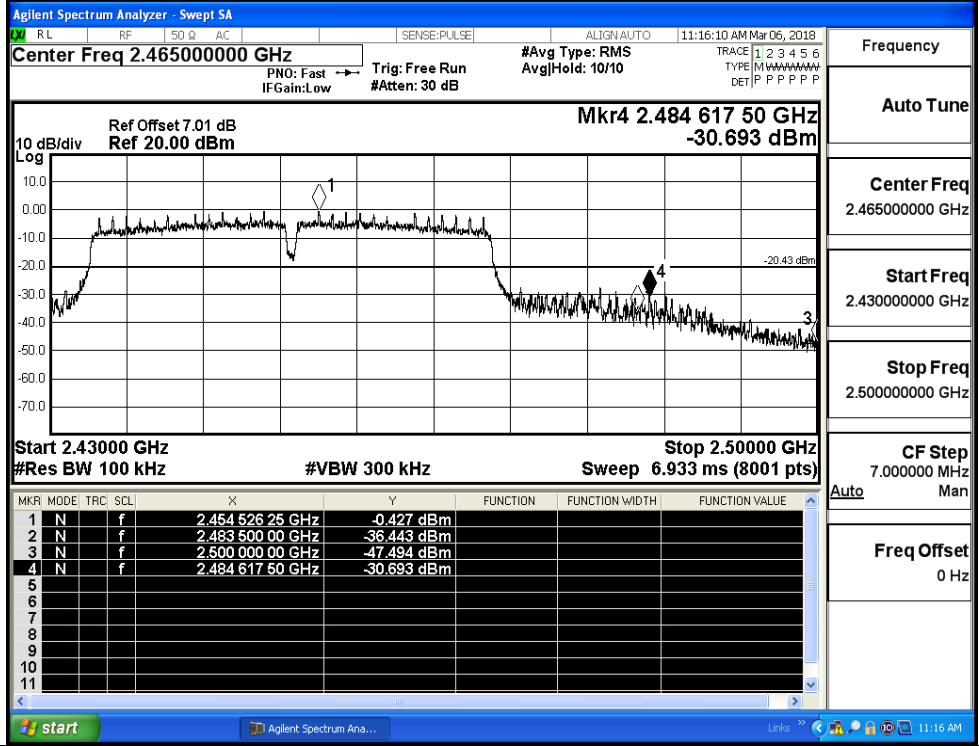
11N20SISO/HCH



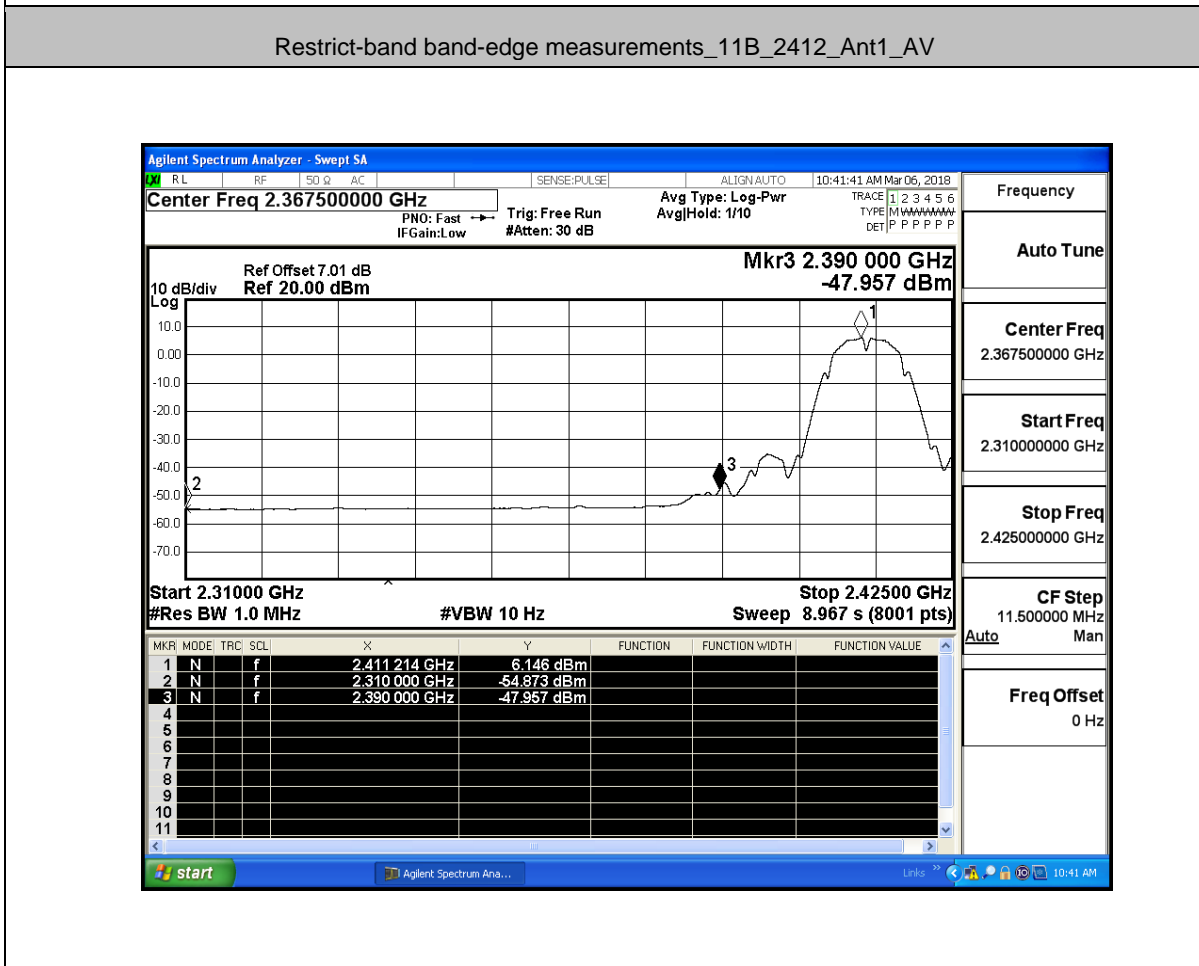
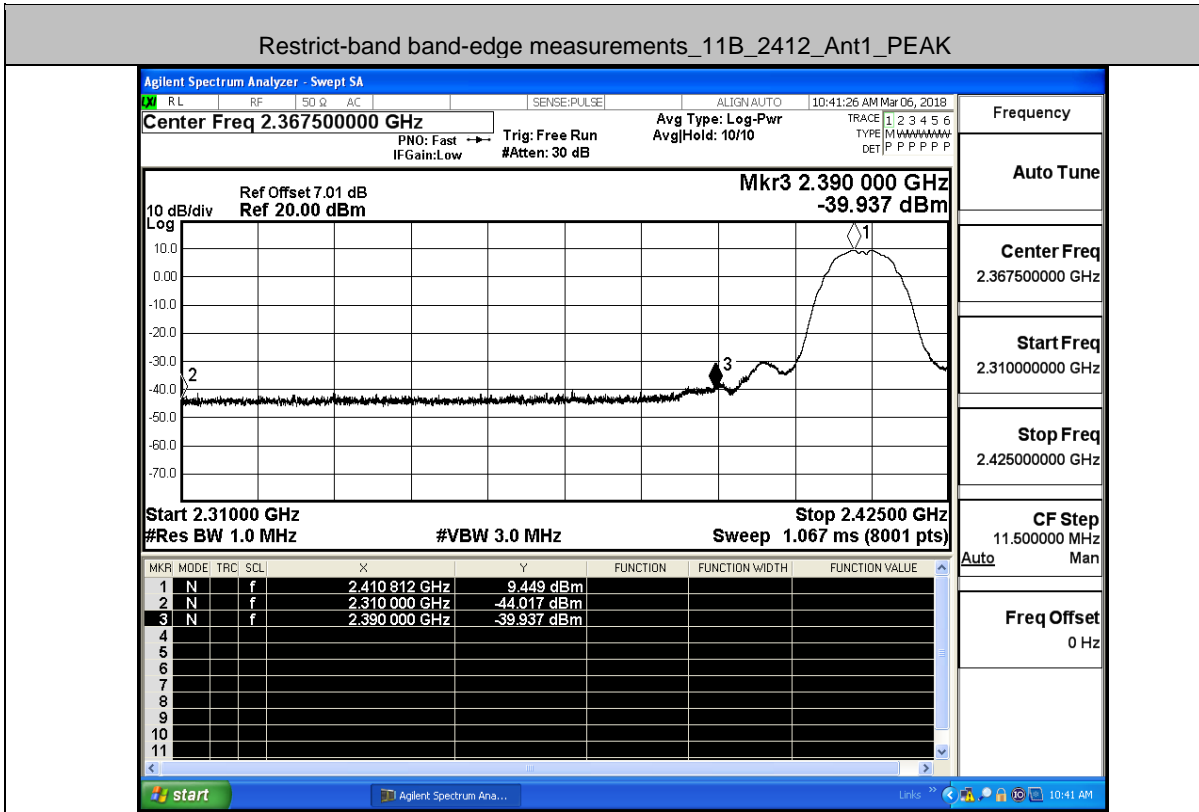
11N40SISO/LCH



11N40SISO/HCH

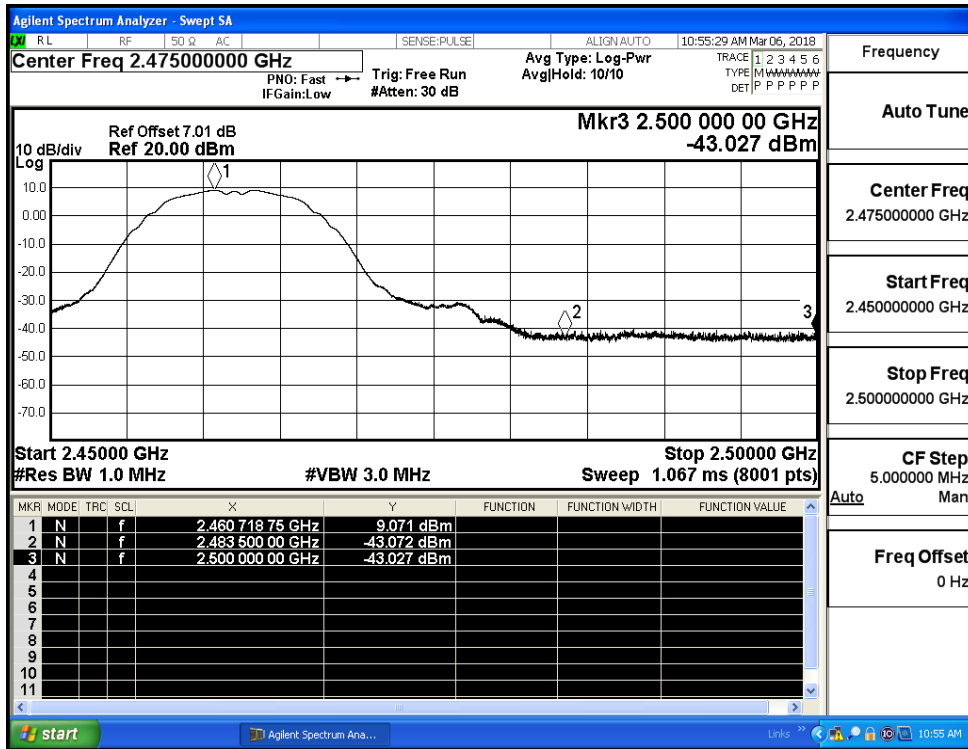


### A.5 Restrict-band band-edge measurements

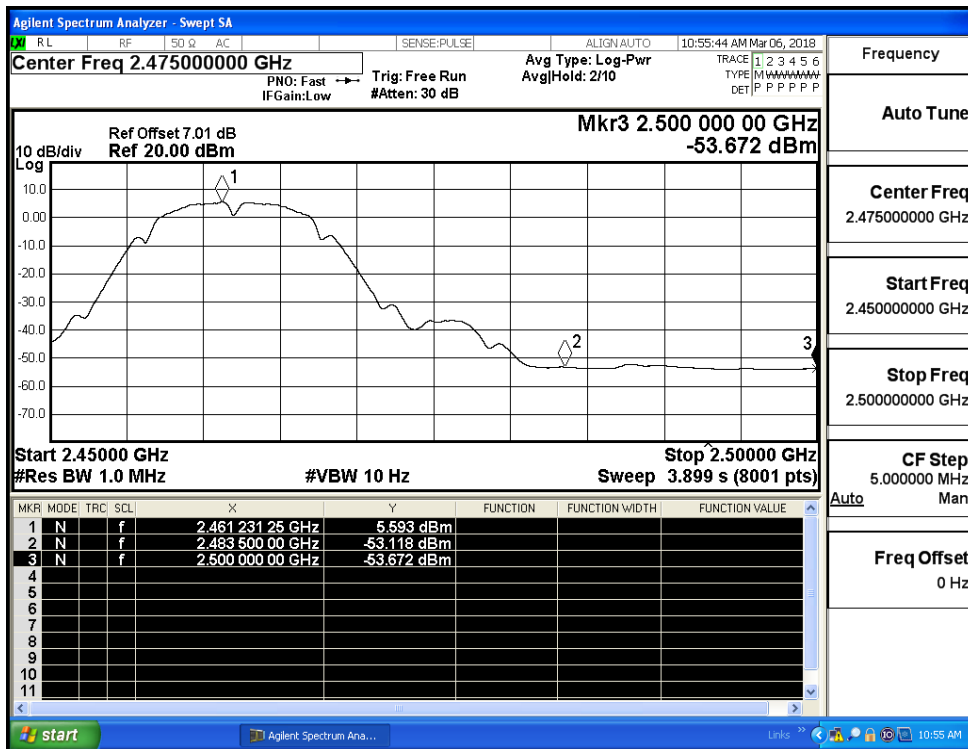




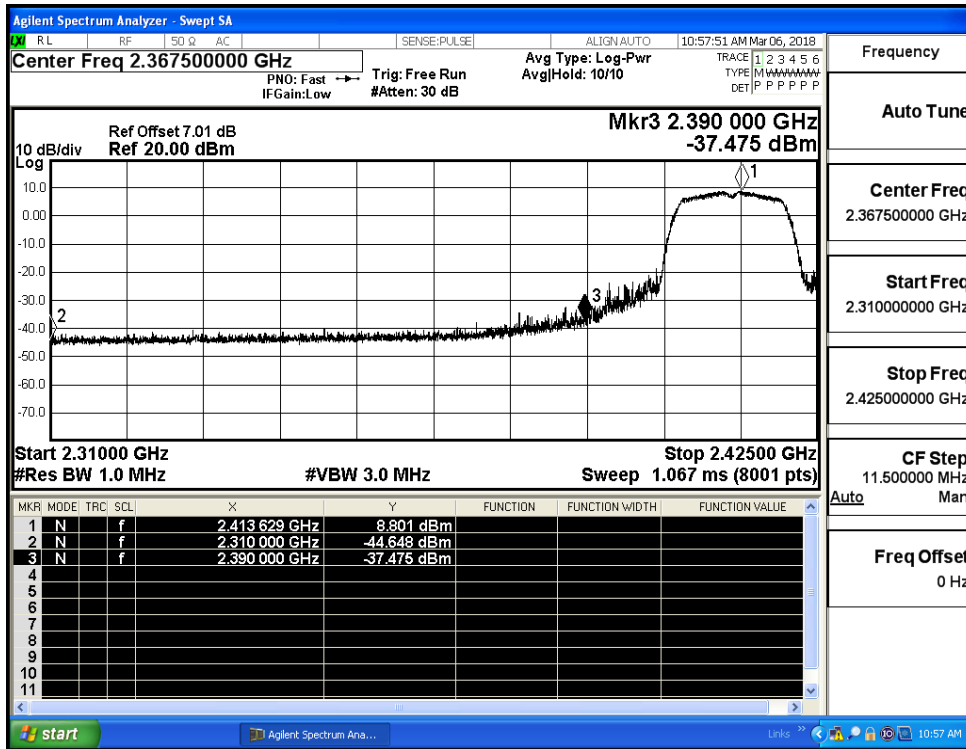
Restrict-band band-edge measurements\_11B\_2462\_Ant1\_PEAK



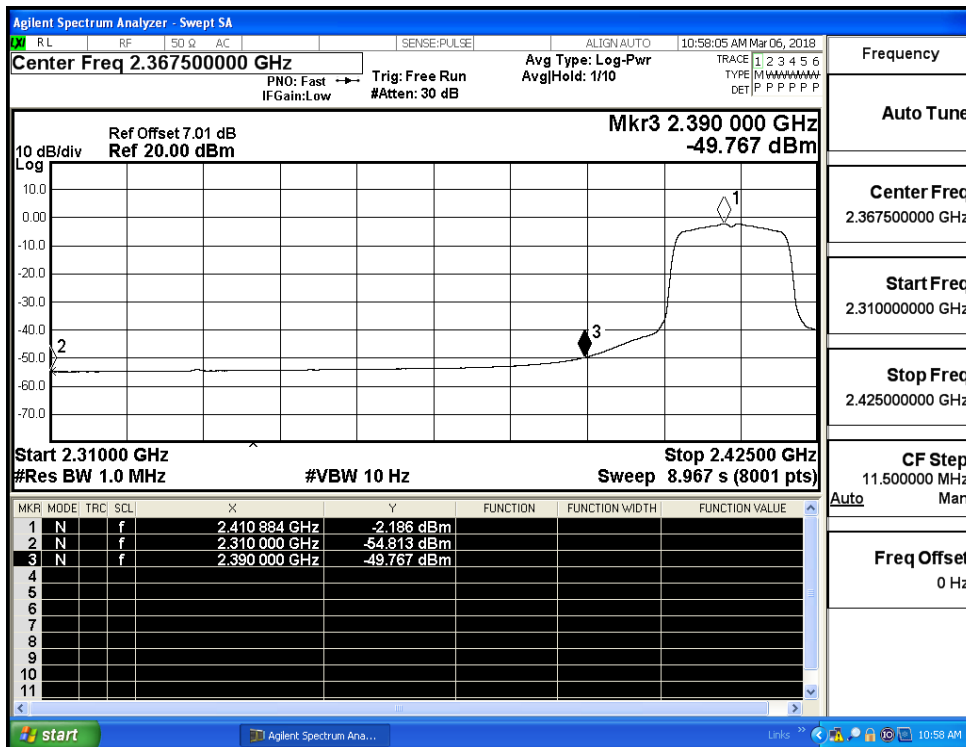
Restrict-band band-edge measurements\_11B\_2462\_Ant1\_AV



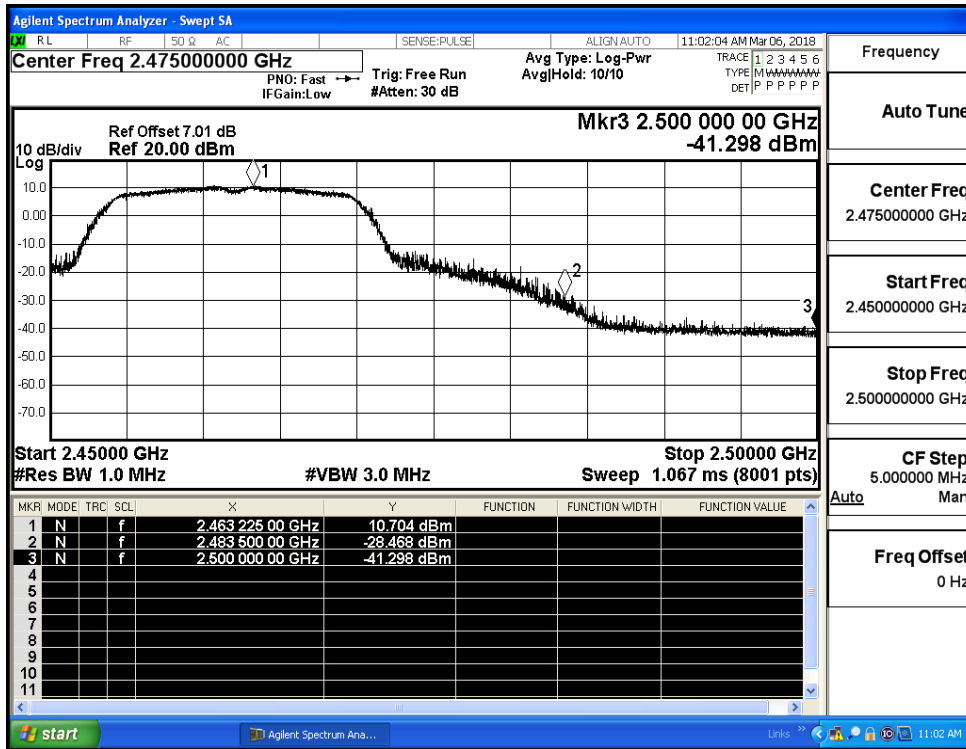
Restrict-band band-edge measurements\_11G\_2412\_Ant1\_PEAK



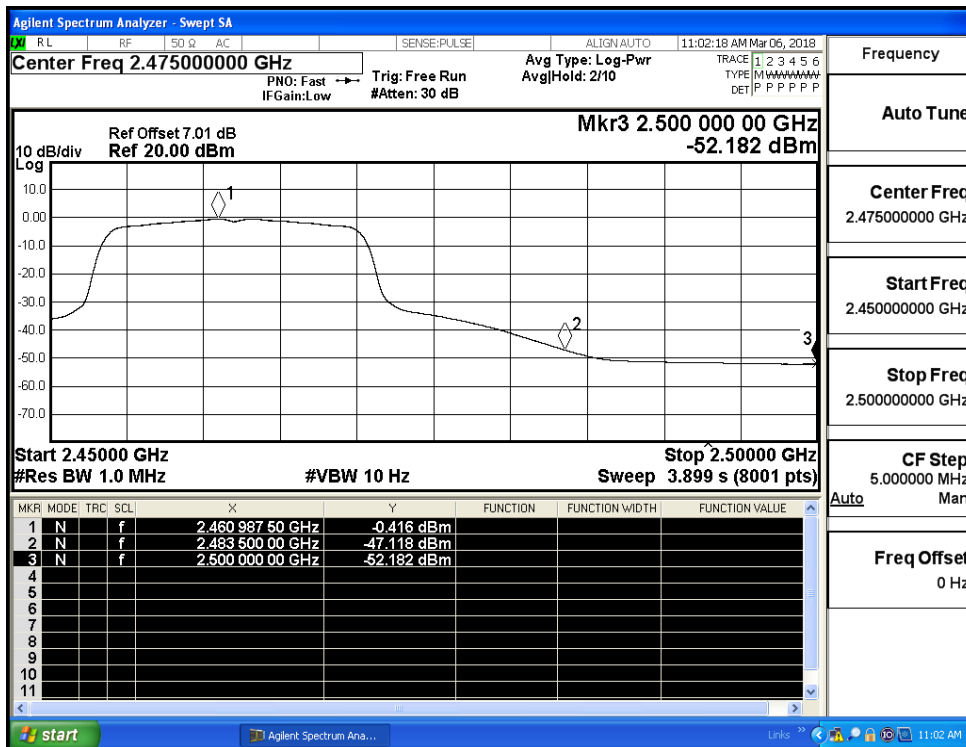
Restrict-band band-edge measurements\_11G\_2412\_Ant1\_AV



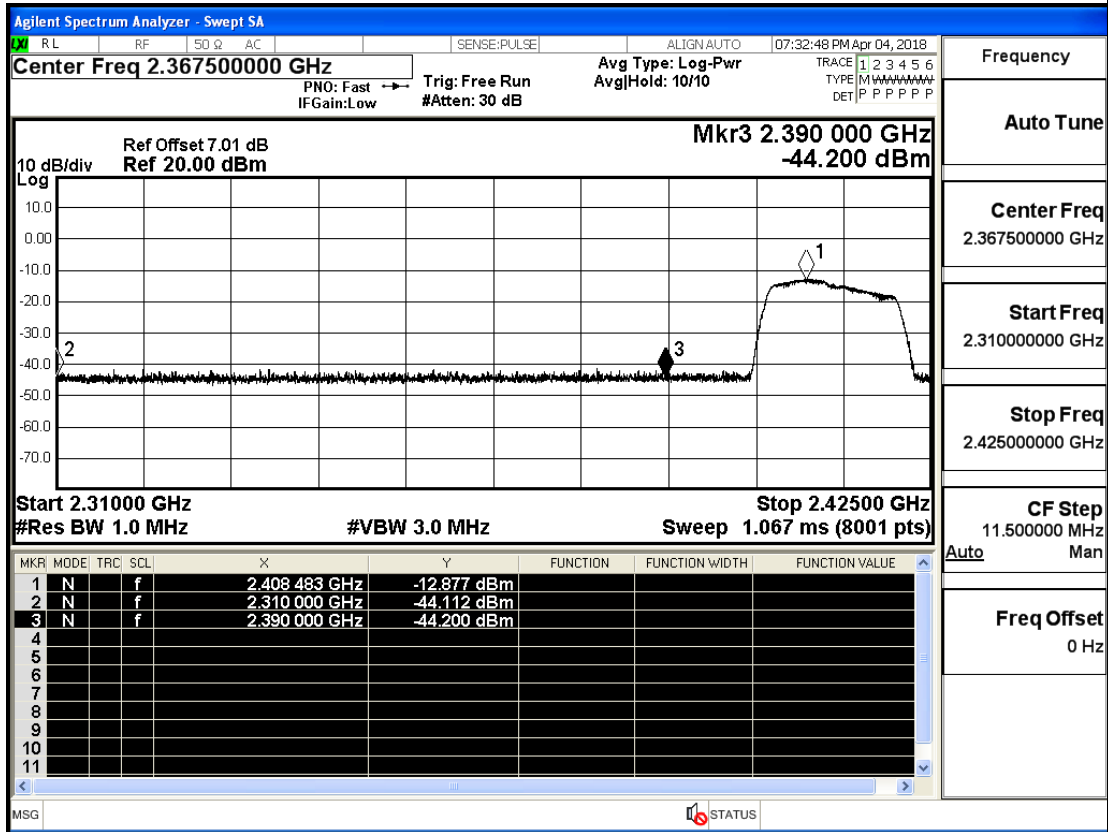
Restrict-band band-edge measurements\_11G\_2462\_Ant1\_PEAK



Restrict-band band-edge measurements\_11G\_2462\_Ant1\_AV

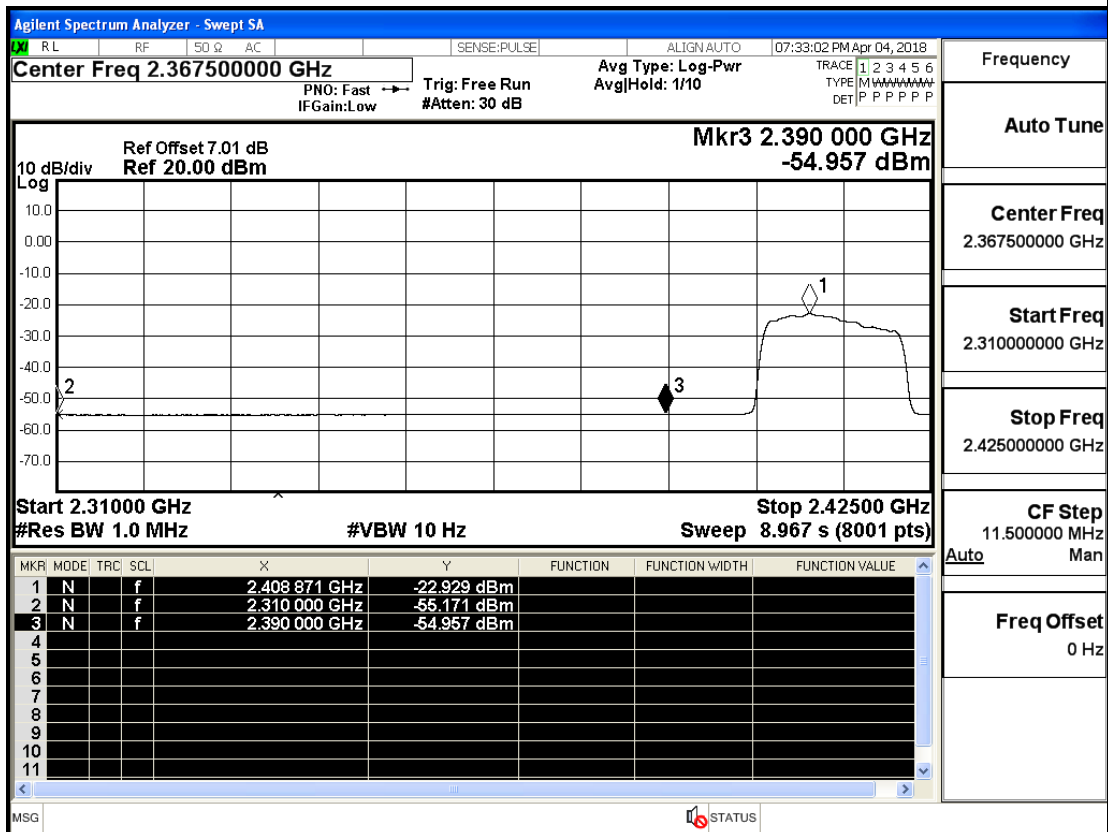


Restrict-band band-edge measurements\_11N20SISO\_2412\_Ant1\_PEAK



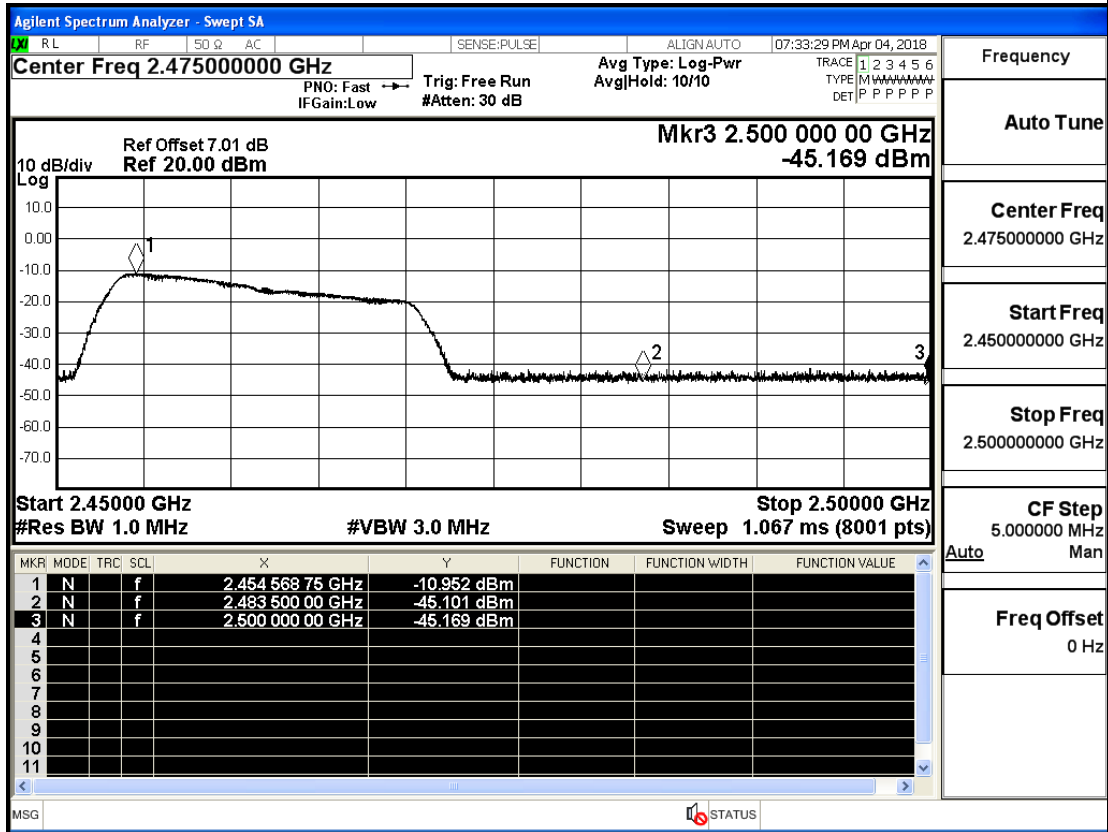
Frequency	
Auto Tune	
Center Freq	2.367500000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.425000000 GHz
CF Step	11.500000 MHz
Auto	Man
Freq Offset	0 Hz

Restrict-band band-edge measurements\_11N20SISO\_2412\_Ant1\_AV

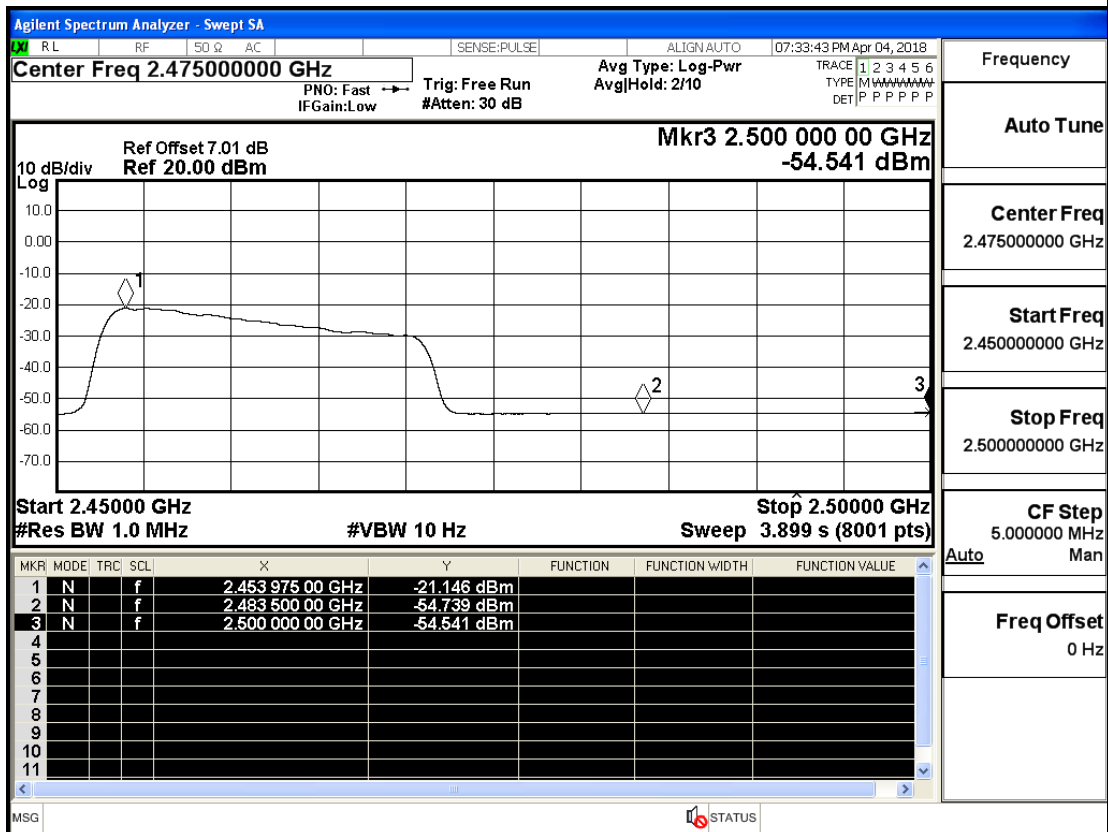


Frequency	
Auto Tune	
Center Freq	2.367500000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.425000000 GHz
CF Step	11.500000 MHz
Auto	Man
Freq Offset	0 Hz

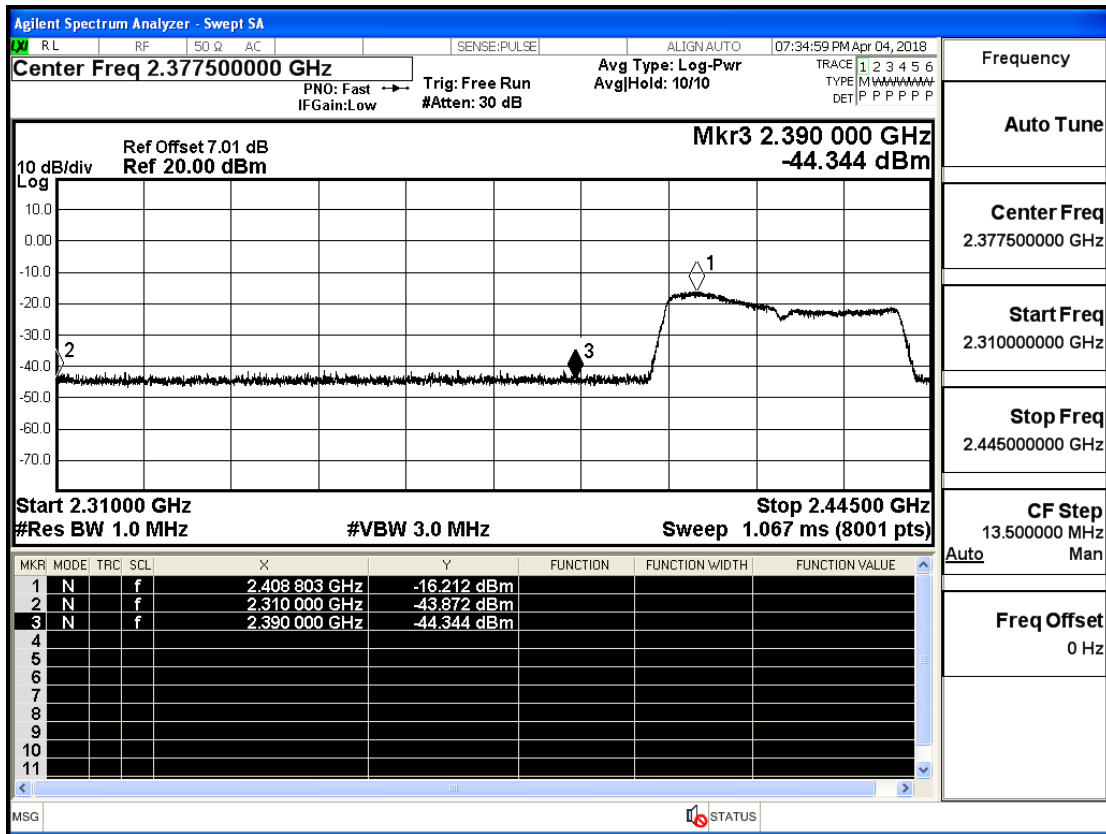
Restrict-band band-edge measurements\_11N20SISO\_2462\_Ant1\_PEAK



Restrict-band band-edge measurements\_11N20SISO\_2462\_Ant1\_AV

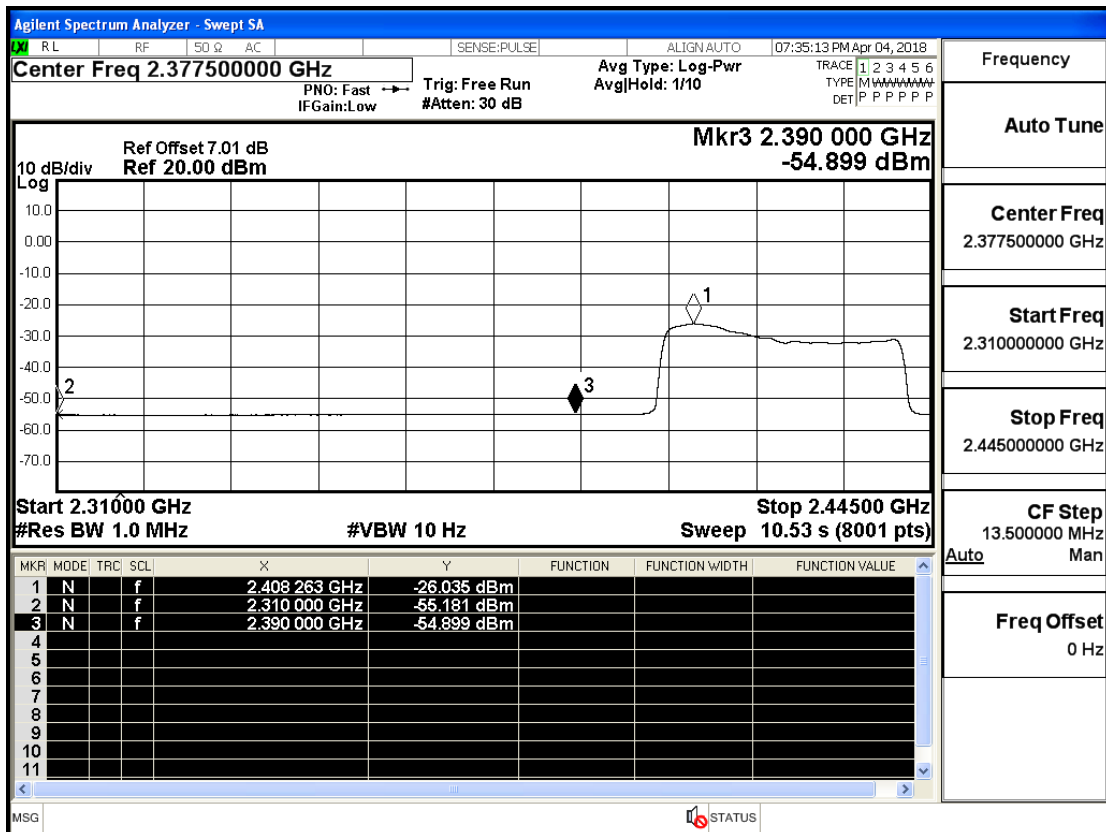


Restrict-band band-edge measurements\_11N40SISO\_2422\_Ant1\_PEAK



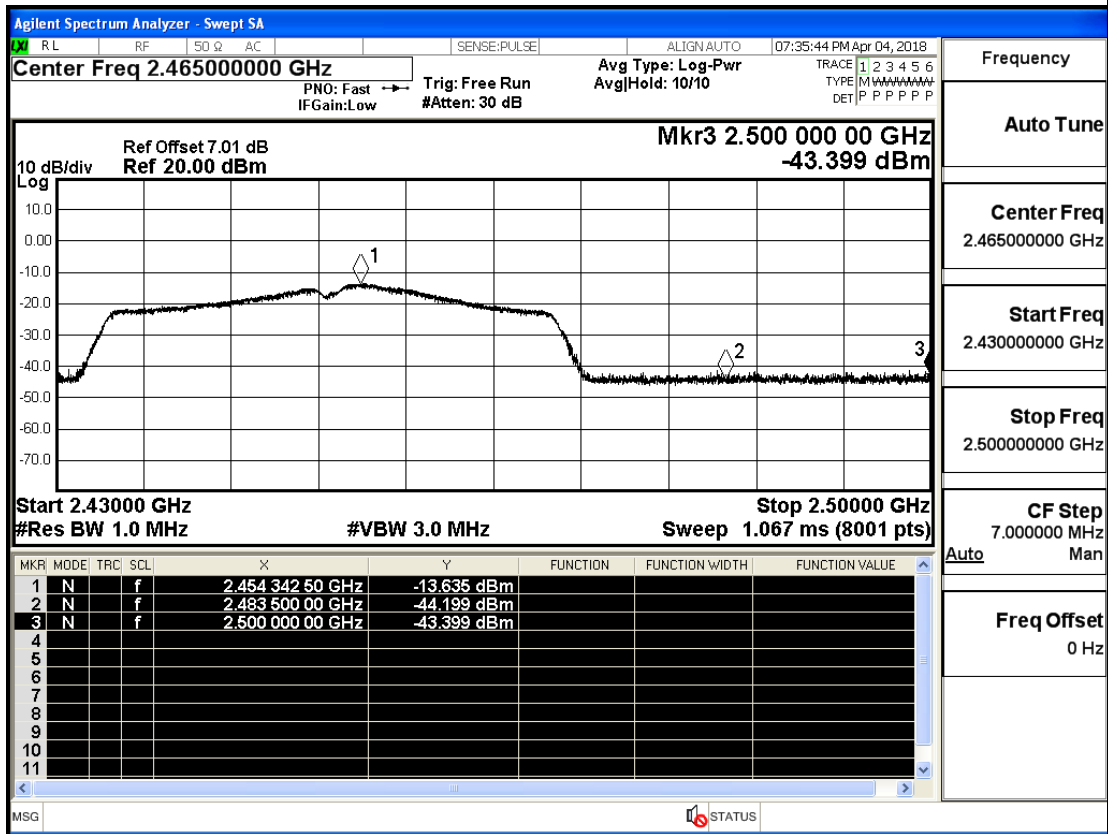
Frequency	
Auto Tune	
Center Freq	2.377500000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.445000000 GHz
CF Step	13.500000 MHz
Auto	Man
Freq Offset	0 Hz

Restrict-band band-edge measurements\_11N40SISO\_2422\_Ant1\_AV



Frequency	
Auto Tune	
Center Freq	2.377500000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.445000000 GHz
CF Step	13.500000 MHz
Auto	Man
Freq Offset	0 Hz

Restrict-band band-edge measurements\_11N40SISO\_2452\_Ant1\_PEAK



Restrict-band band-edge measurements\_11N40SISO\_2452\_Ant1\_AV

