



Appendix for Test report

Appendix A: DTS (6 dB) Bandwidth

In this document, the "DTS6dBBW" refers to the measured "DTS (6 dB) Bandwidth" value. In this Appendix, the "fc(DTS6dBBW)" refers to the centre of the measured "DTS6dBBW". The introduction of the "fc(DTS6dBBW)" is due to that other measurements use it as the spectrum analyzer setting.

For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

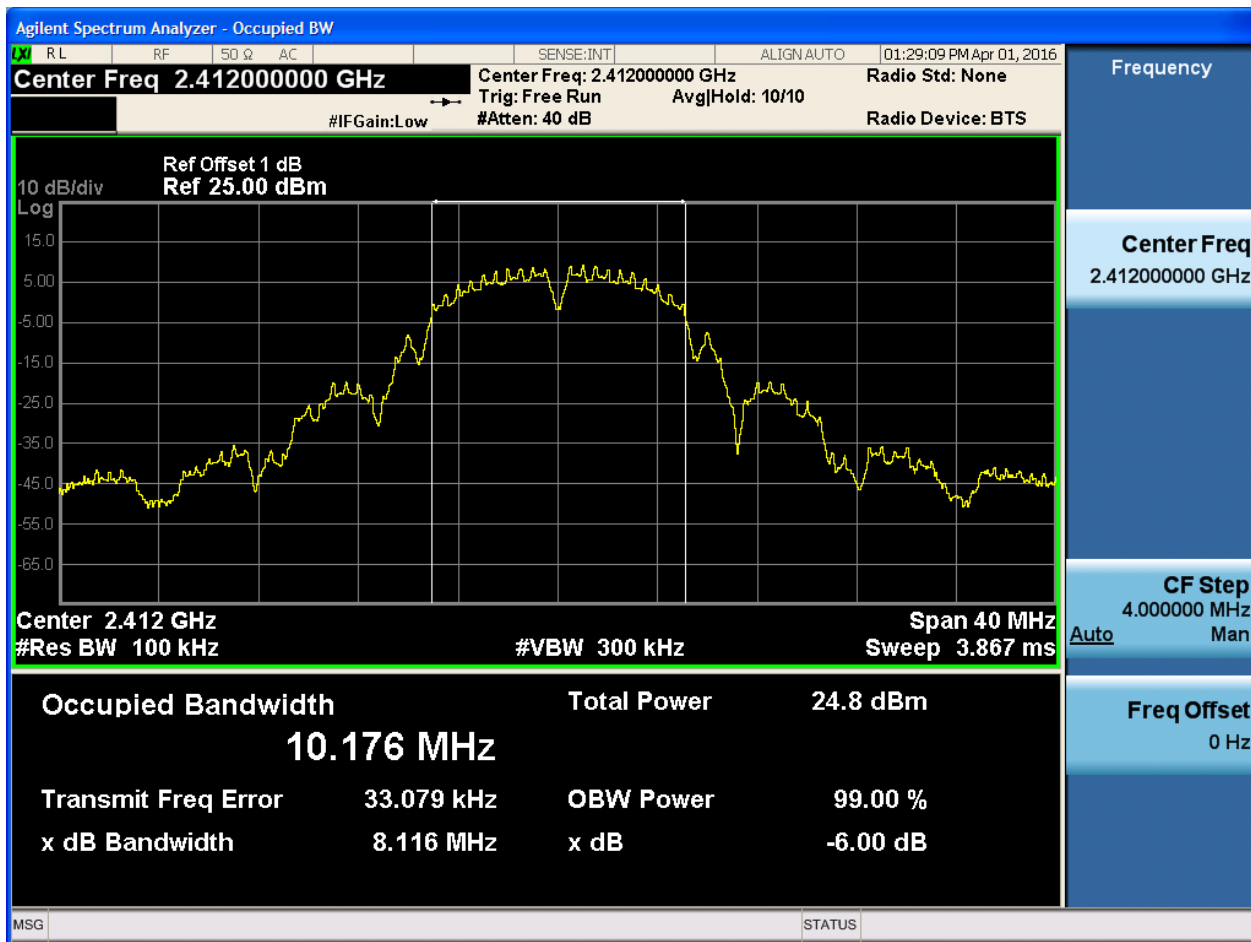
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	DTS6dBBW[MHz]	Verdict
11B	L	2412	Ant 1	8.12	pass
11B	M	2437	Ant 1	8.11	pass
11B	H	2462	Ant 1	8.10	pass
11G	L	2412	Ant 1	16.42	pass
11G	M	2437	Ant 1	16.42	pass
11G	H	2462	Ant 1	16.11	pass
11N20	L	2412	Ant 1	17.65	pass
11N20	M	2437	Ant 1	17.64	pass
11N20	H	2462	Ant 1	17.20	pass
11N40	L	2422	Ant 1	35.41	pass
11N40	M	2437	Ant 1	35.98	pass
11N40	H	2452	Ant 1	32.71	pass



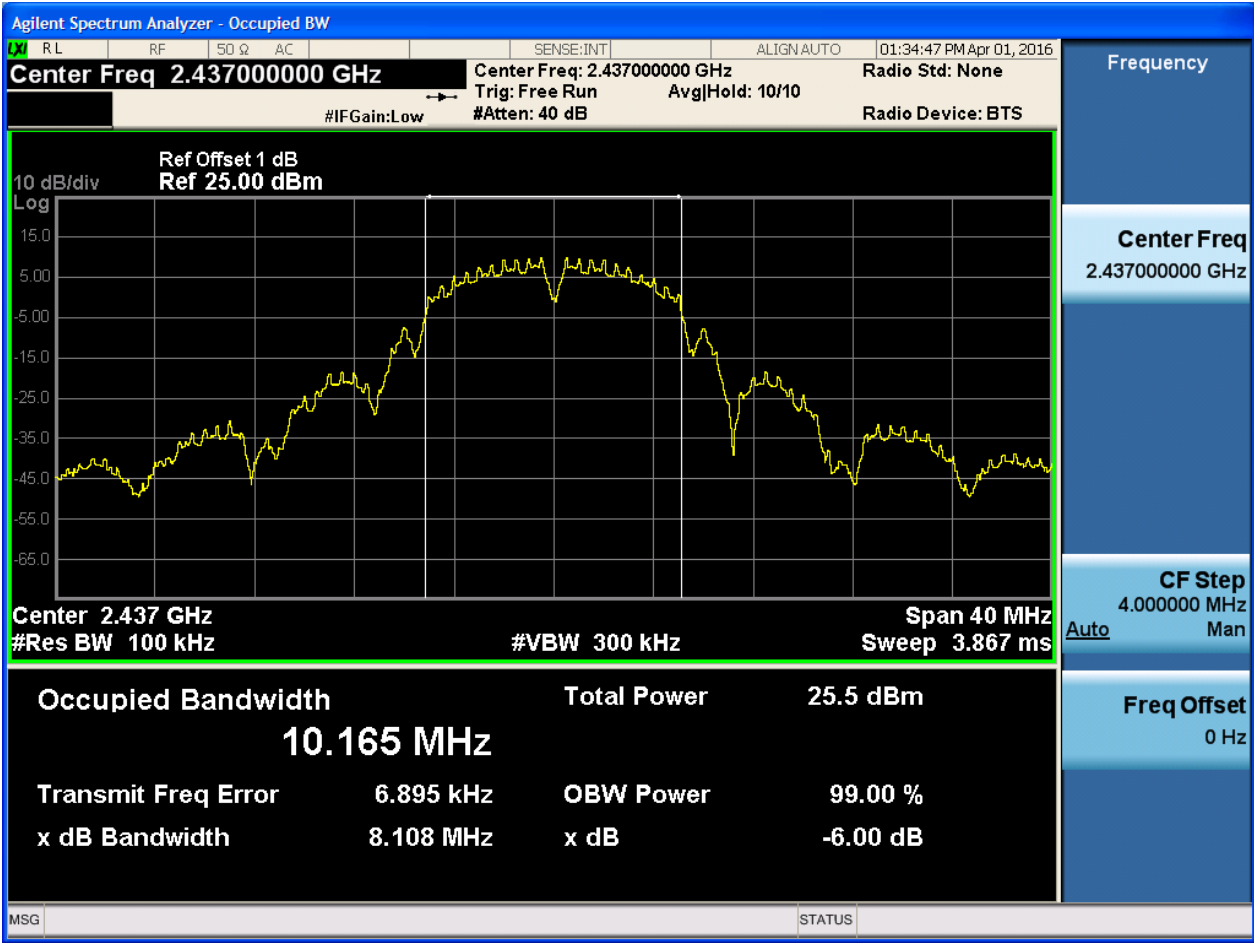
Part II - Test Plots

2.1 11B_L@Ant 1



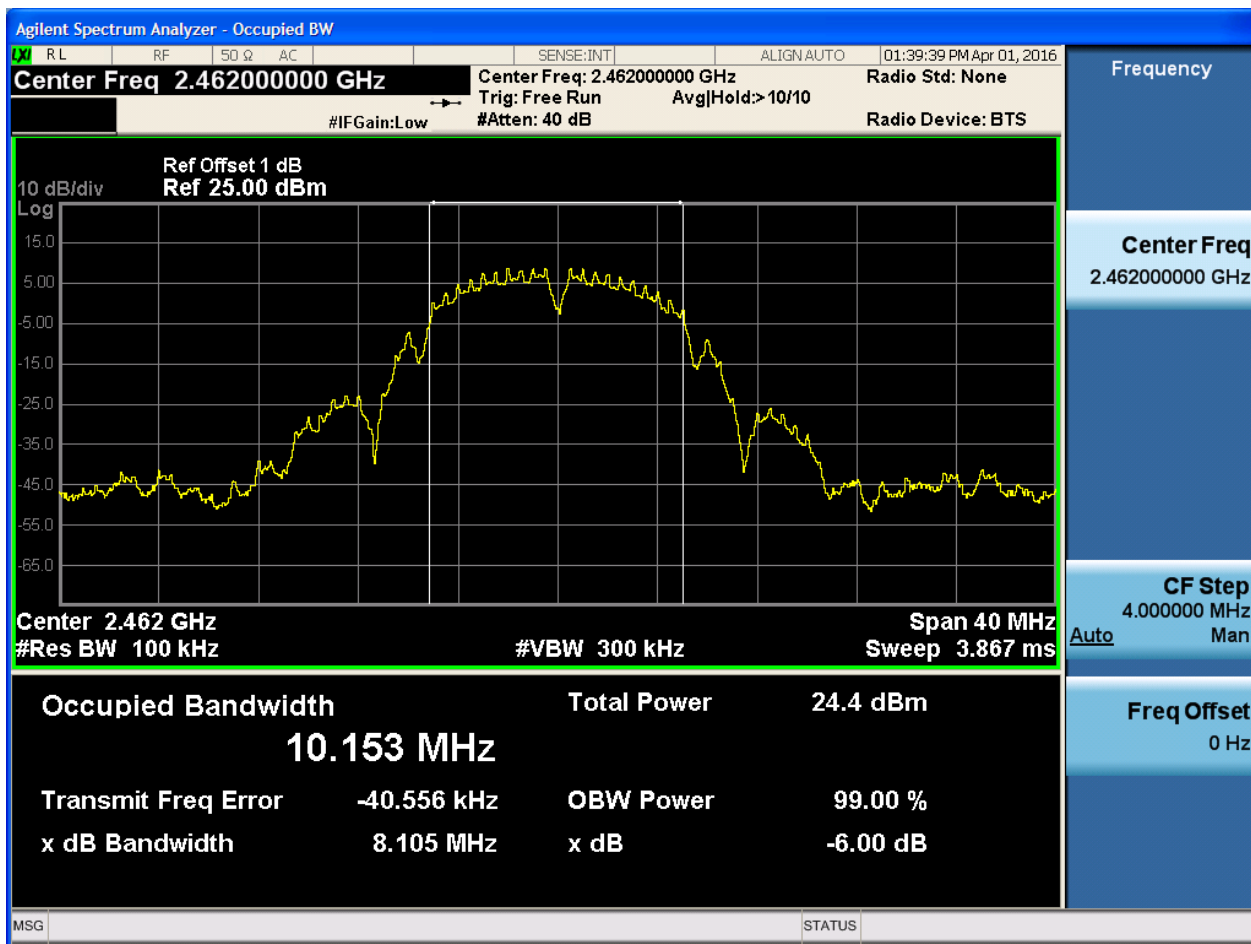


2.2 11B_M@Ant 1



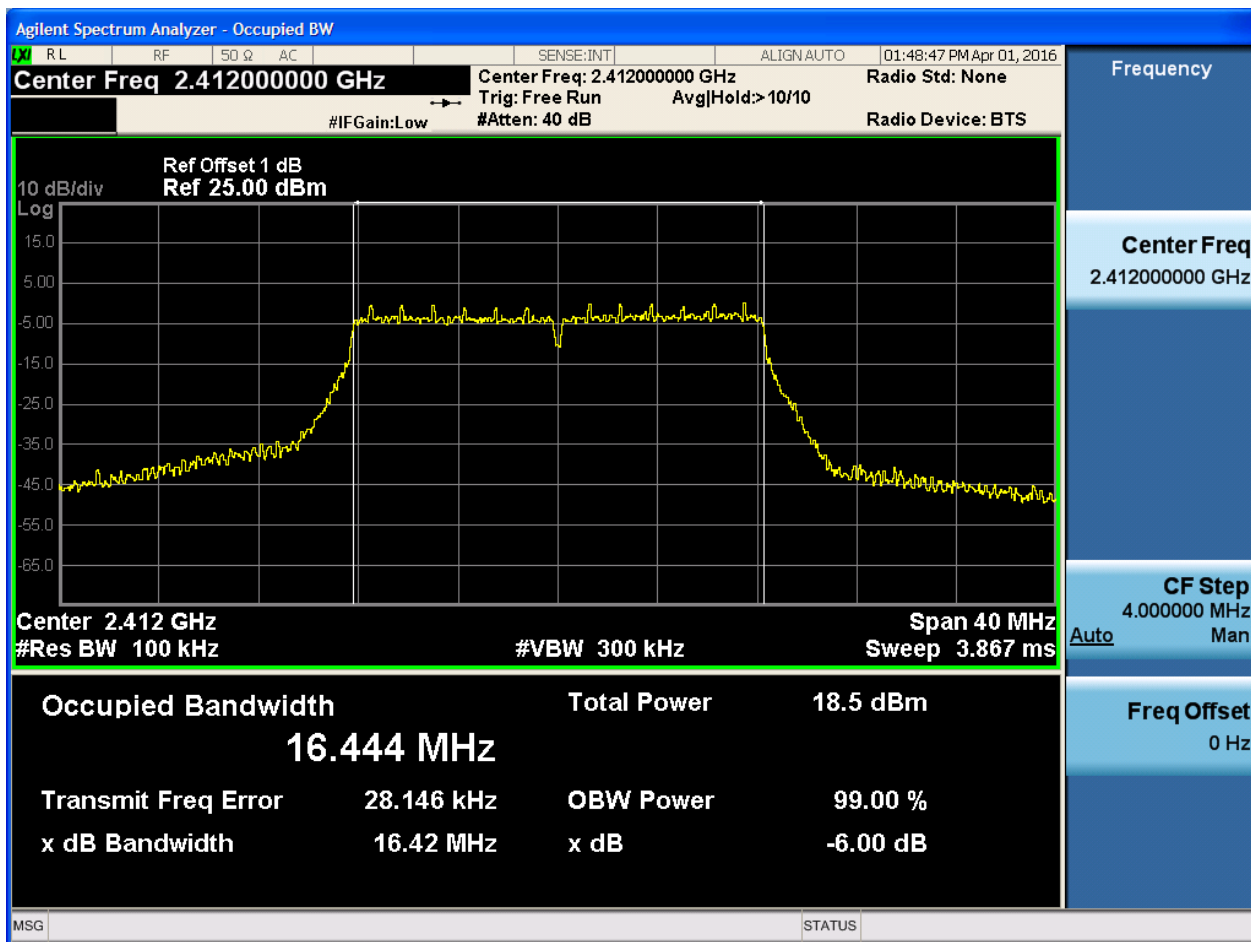


2.3 11B_H@Ant 1



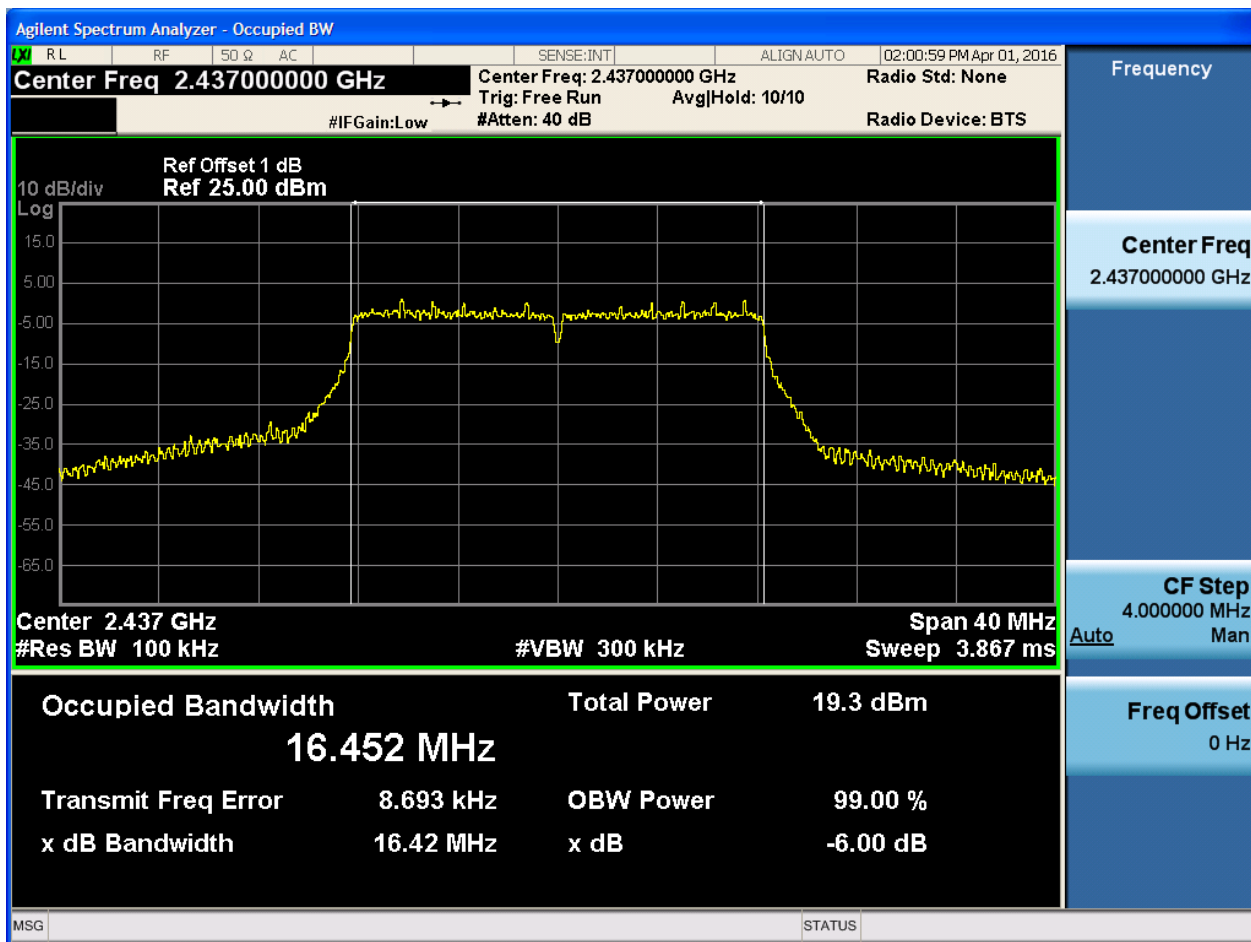


2.4 11G_L@Ant 1



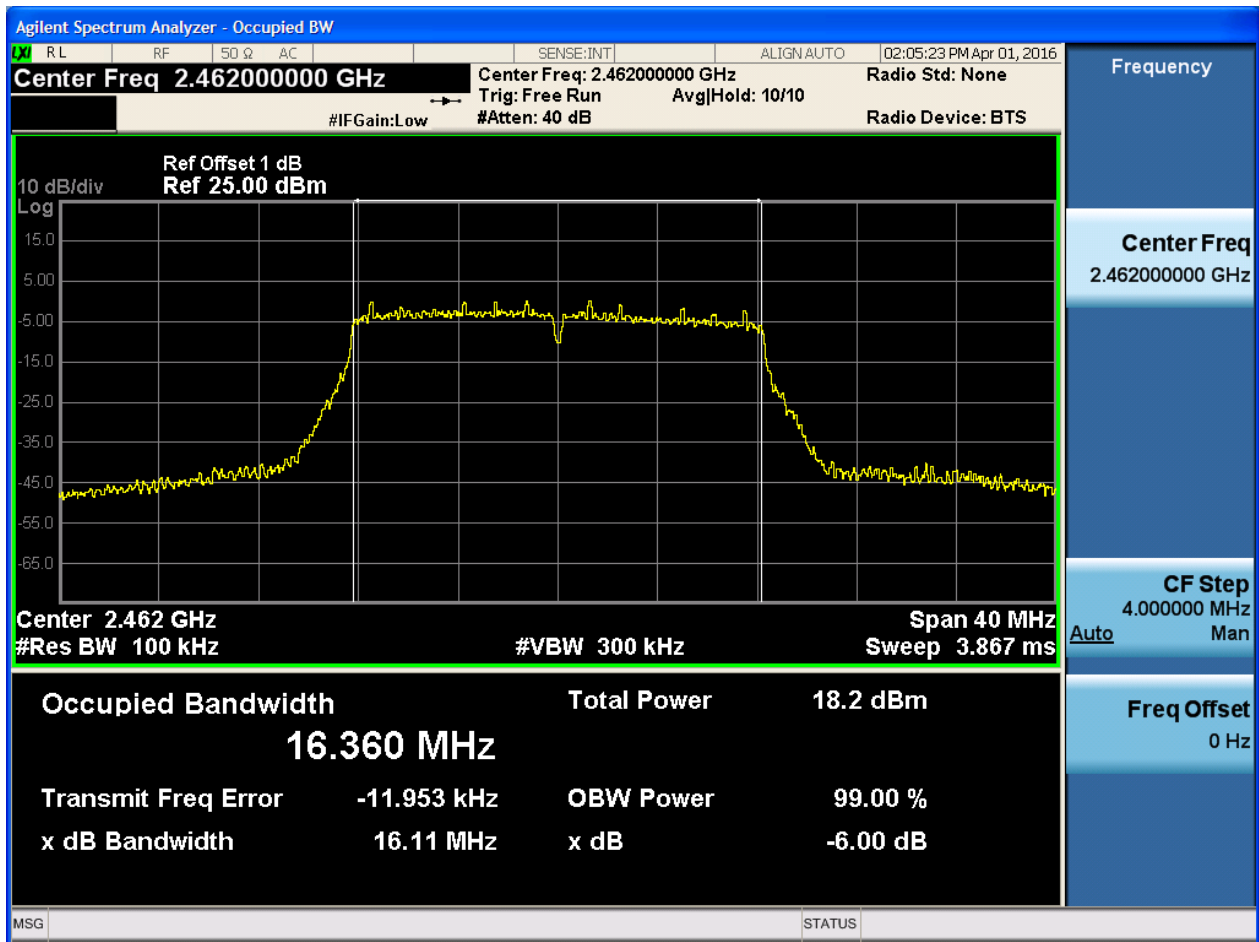


2.5 11G_M@Ant 1



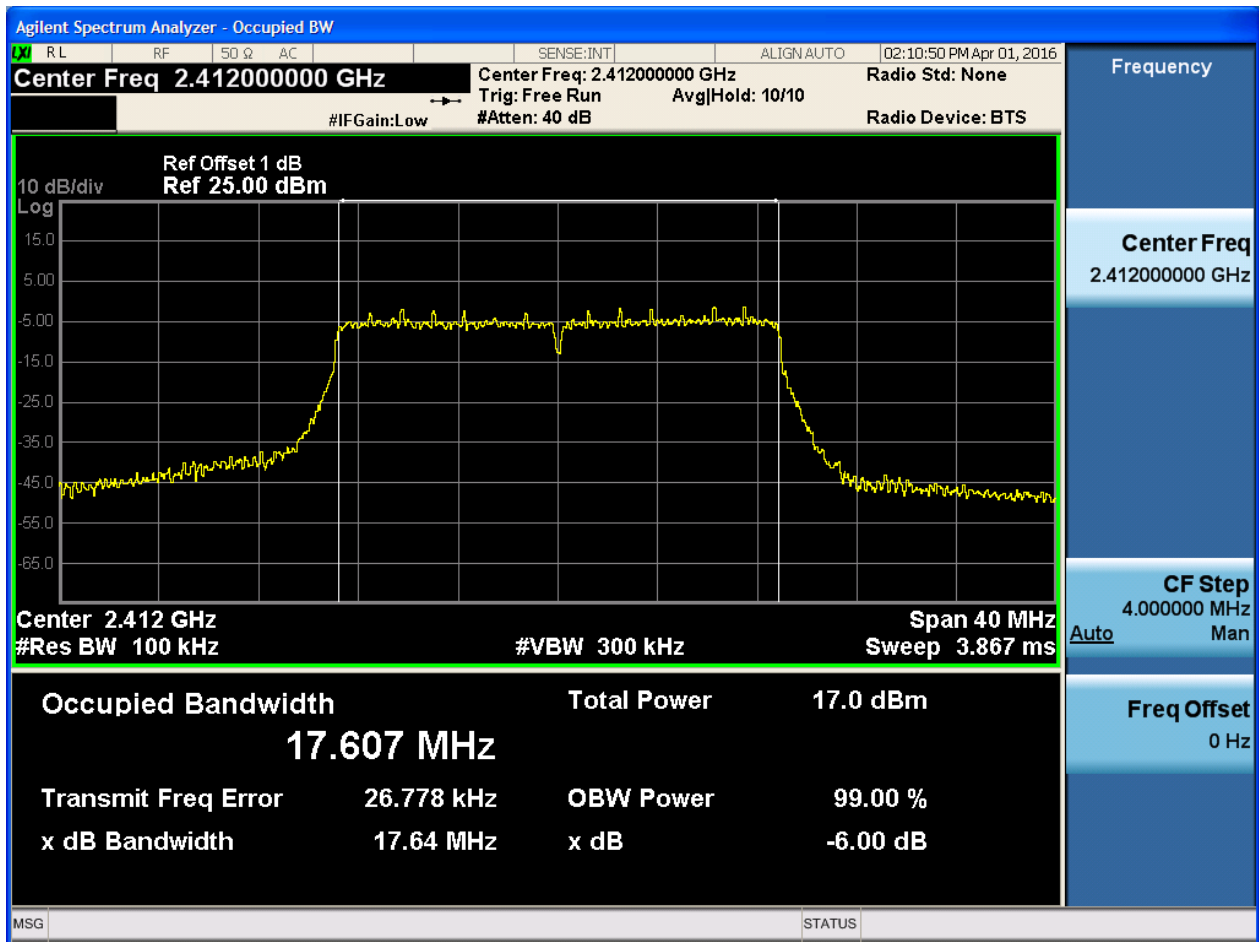


2.6 11G_H@Ant 1



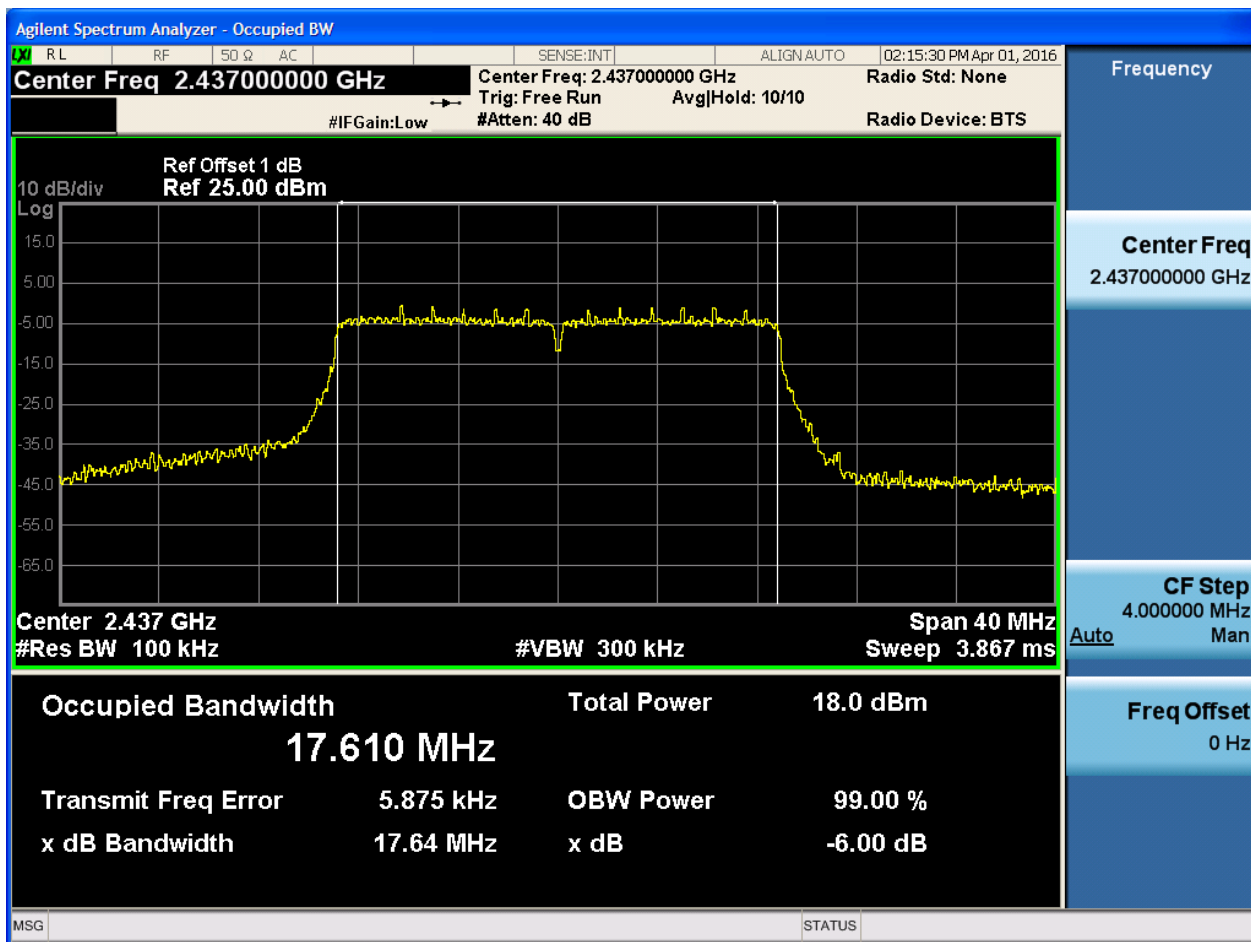


2.7 11N20_L@Ant 1



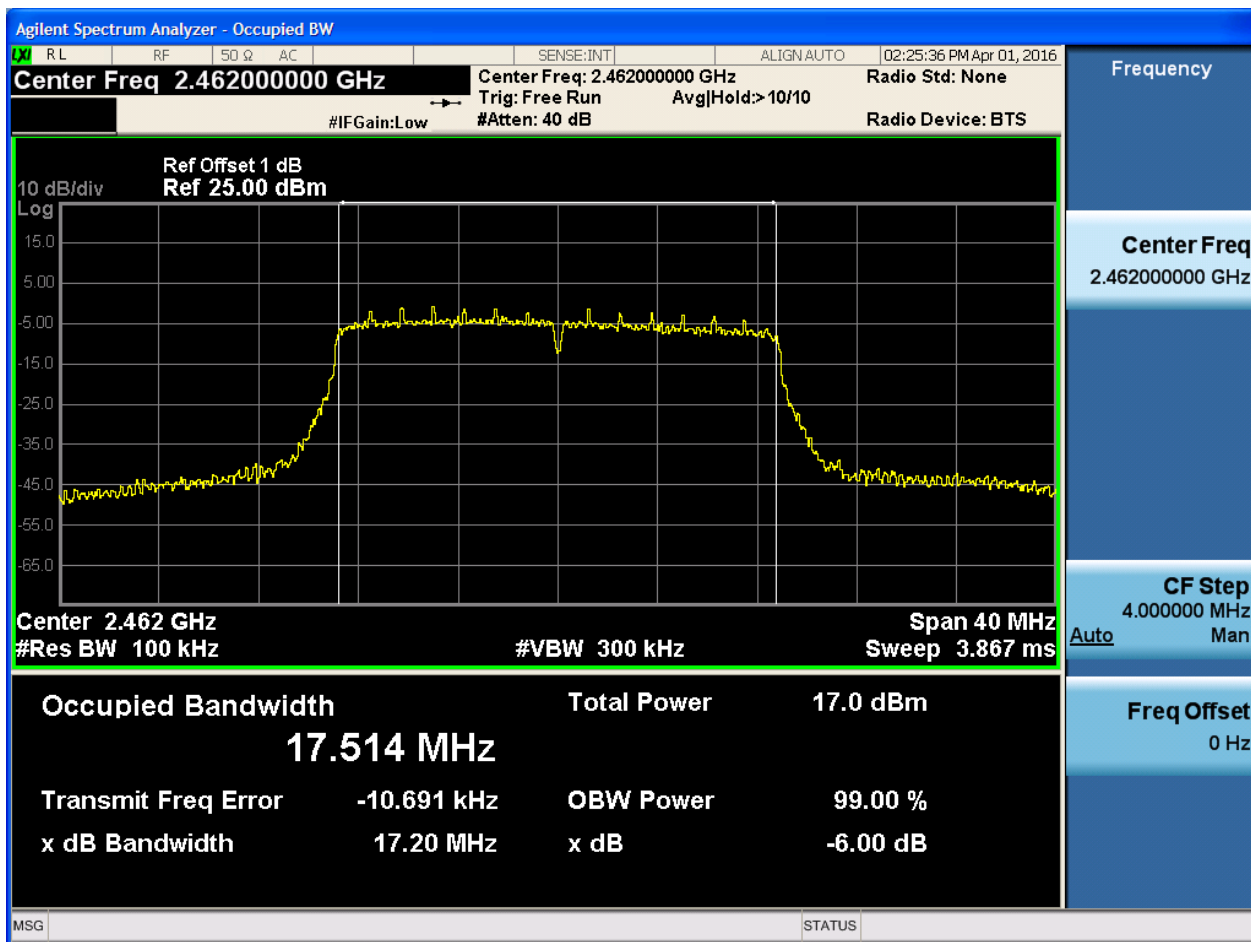


2.8 11N20_M@Ant 1



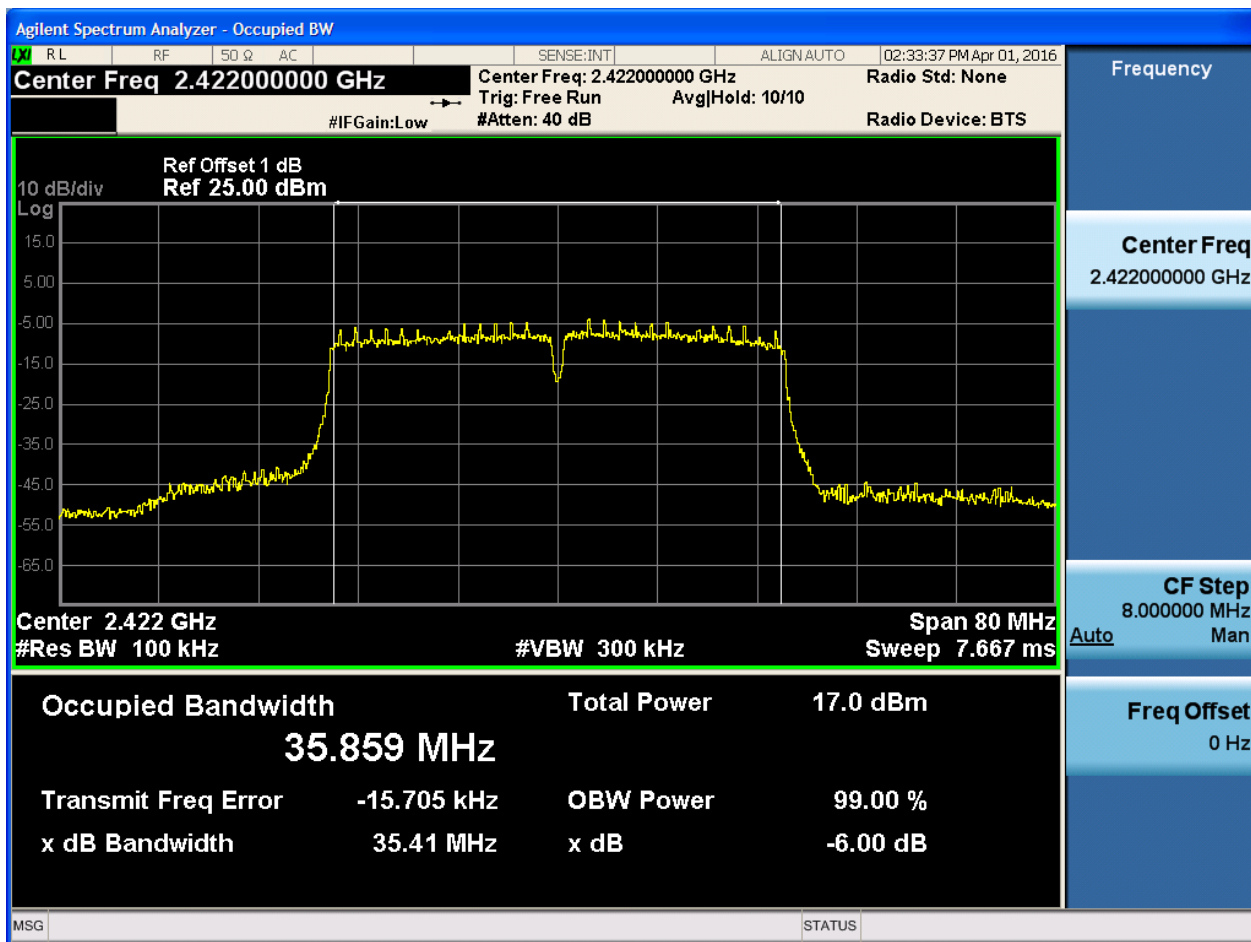


2.9 11N20_H@Ant 1



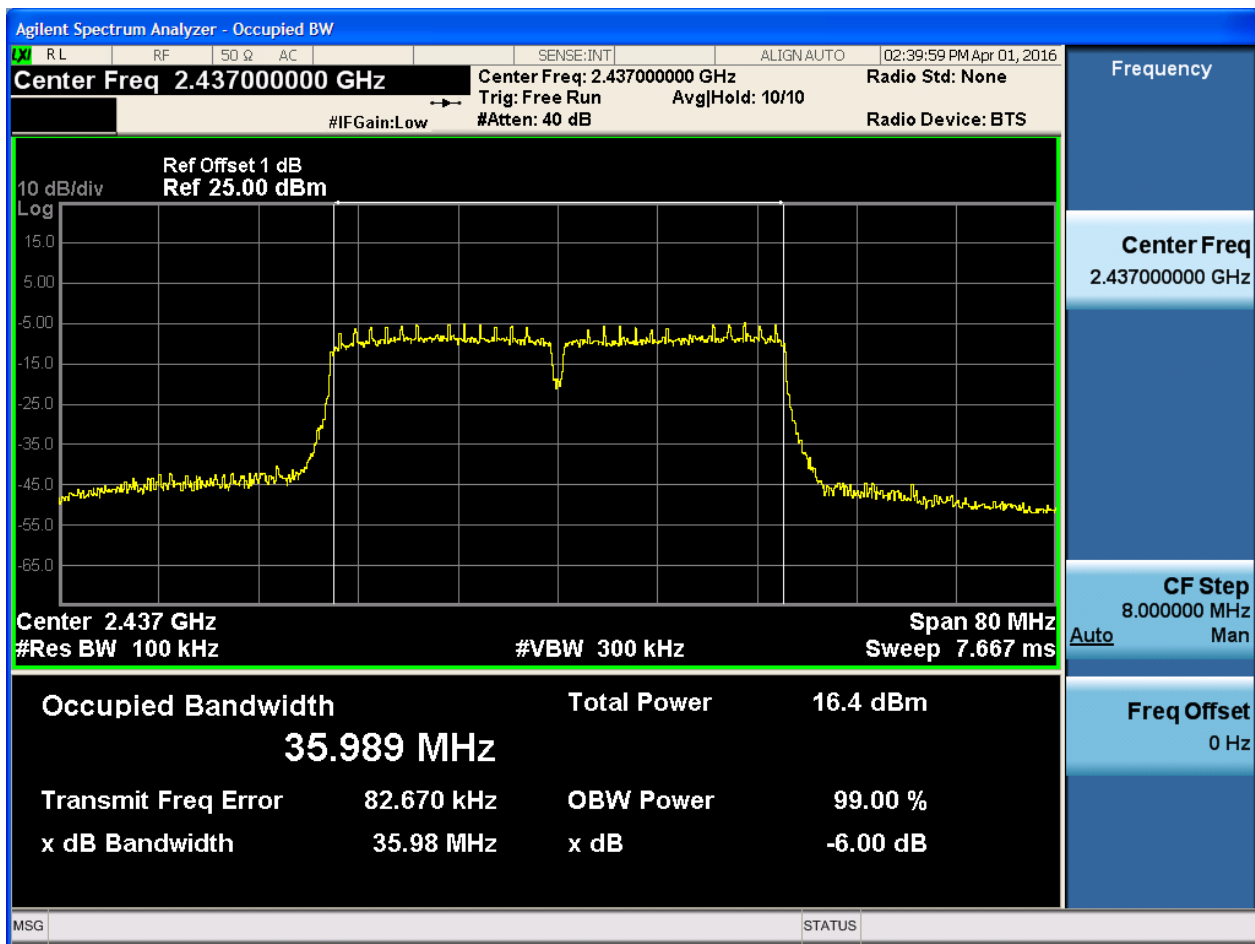


2.10 11N40_L@Ant 1



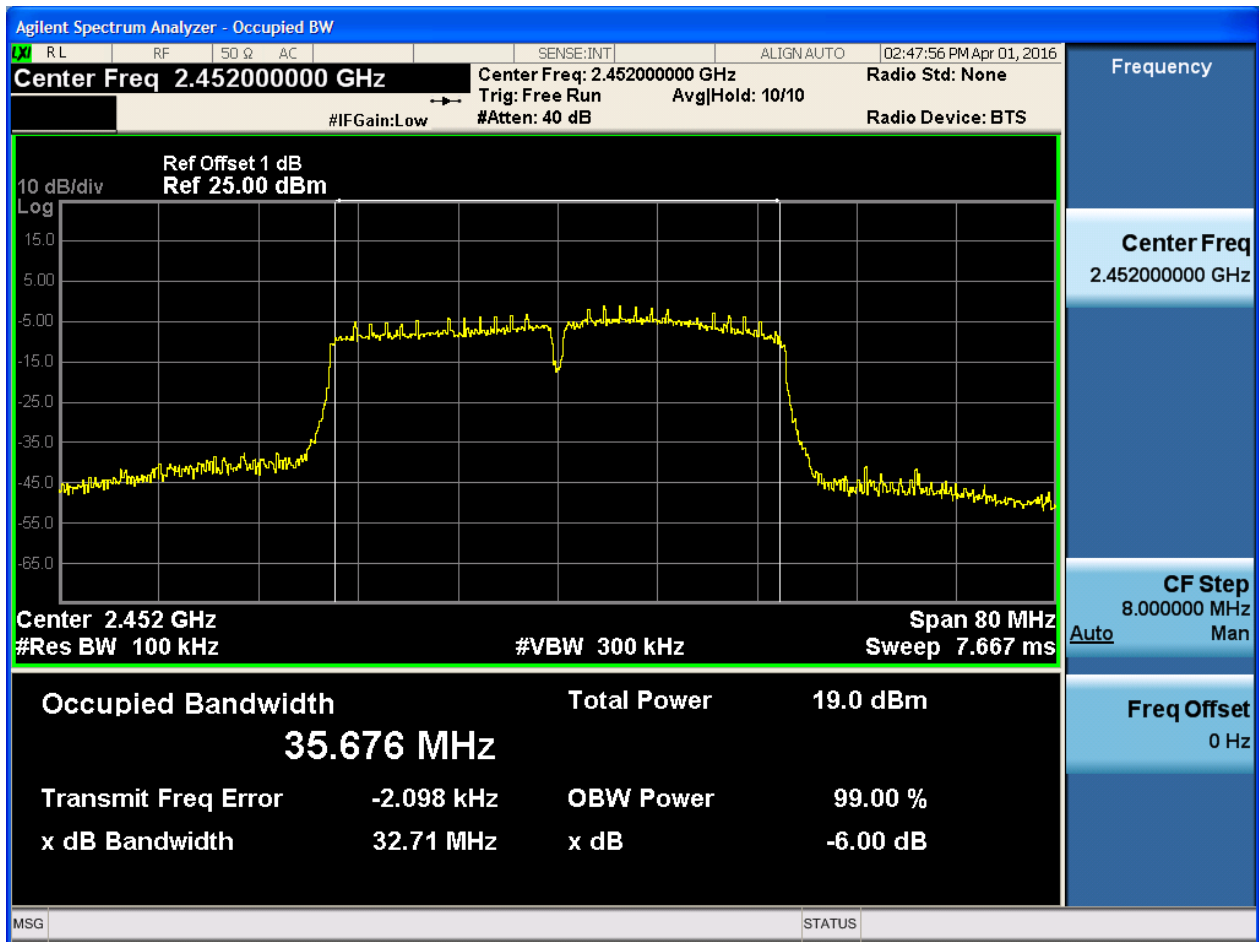


2.11 11N40_M@Ant 1





2.12 11N40_H@Ant 1



Appendix B: Occupied Bandwidth

For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

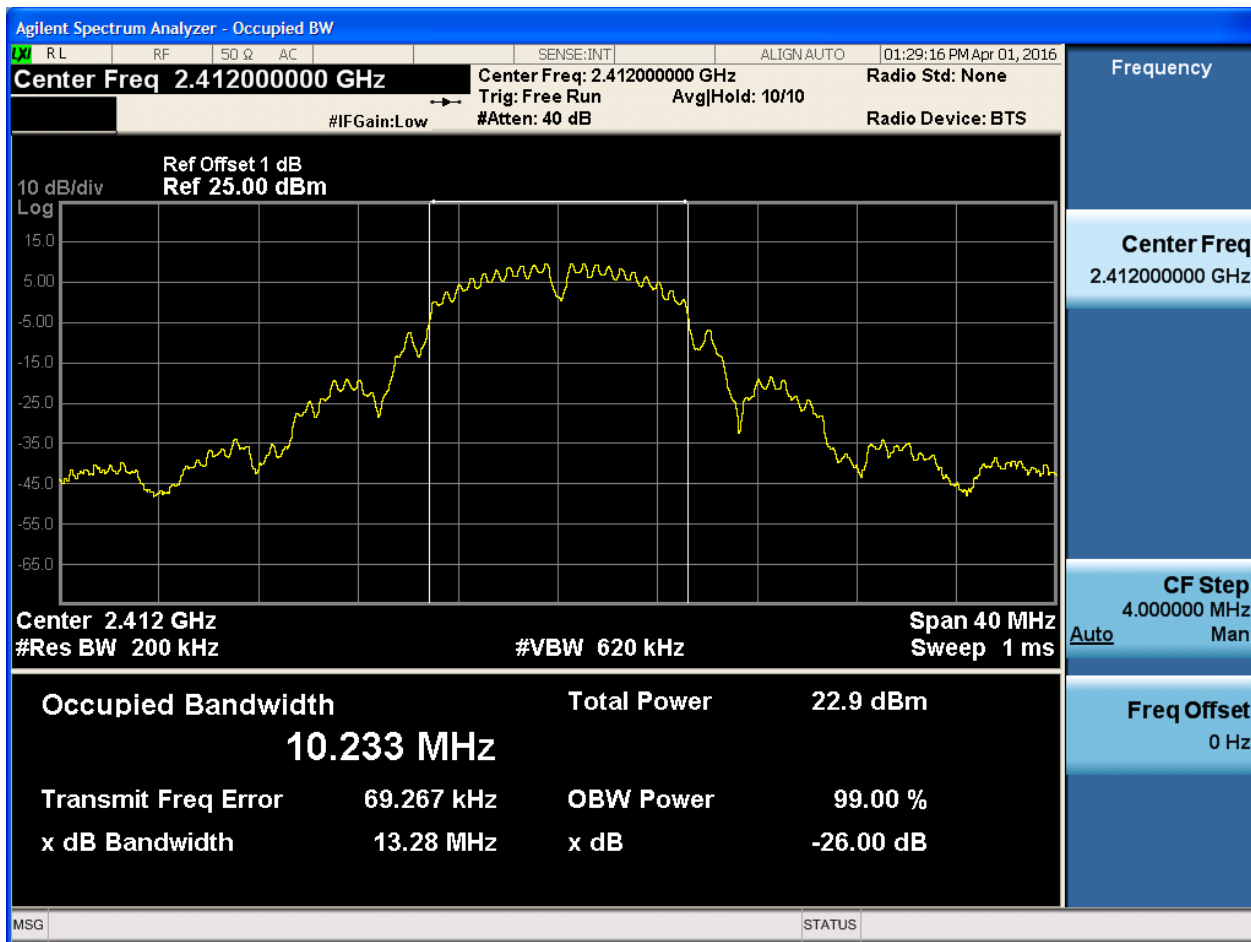
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Occupied Bandwidth [MHz]	Verdict
11B	L	2412	Ant 1	10.23	pass
11B	M	2437	Ant 1	10.23	pass
11B	H	2462	Ant 1	10.21	pass
11G	L	2412	Ant 1	16.53	pass
11G	M	2437	Ant 1	16.56	pass
11G	H	2462	Ant 1	16.39	pass
11N20	L	2412	Ant 1	17.63	pass
11N20	M	2437	Ant 1	17.63	pass
11N20	H	2462	Ant 1	17.49	pass
11N40	L	2422	Ant 1	35.86	pass
11N40	M	2437	Ant 1	36.06	pass
11N40	H	2452	Ant 1	35.71	pass



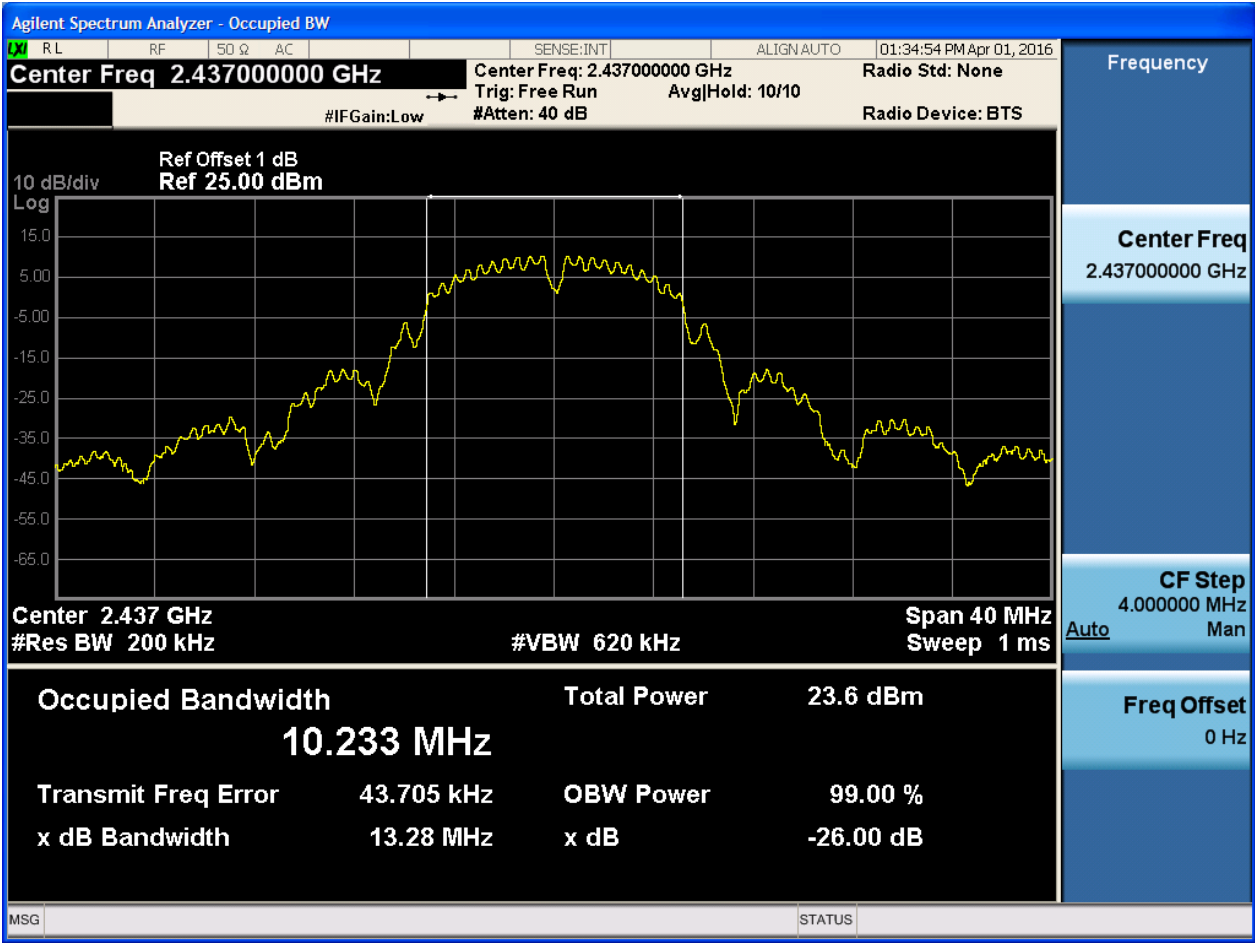
Part II - Test Plots

2.1 11B_L@Ant 1



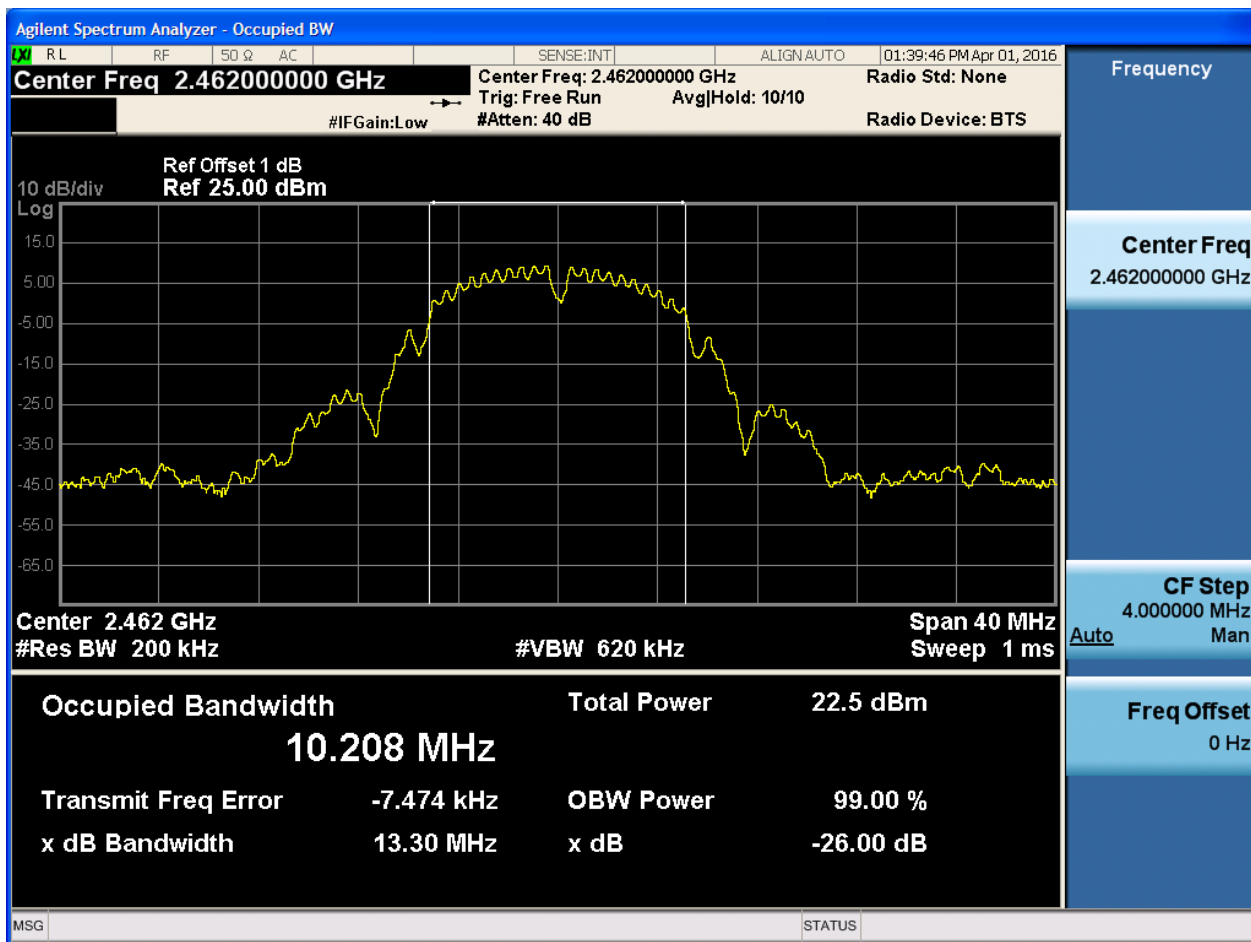


2.2 11B_M@Ant 1



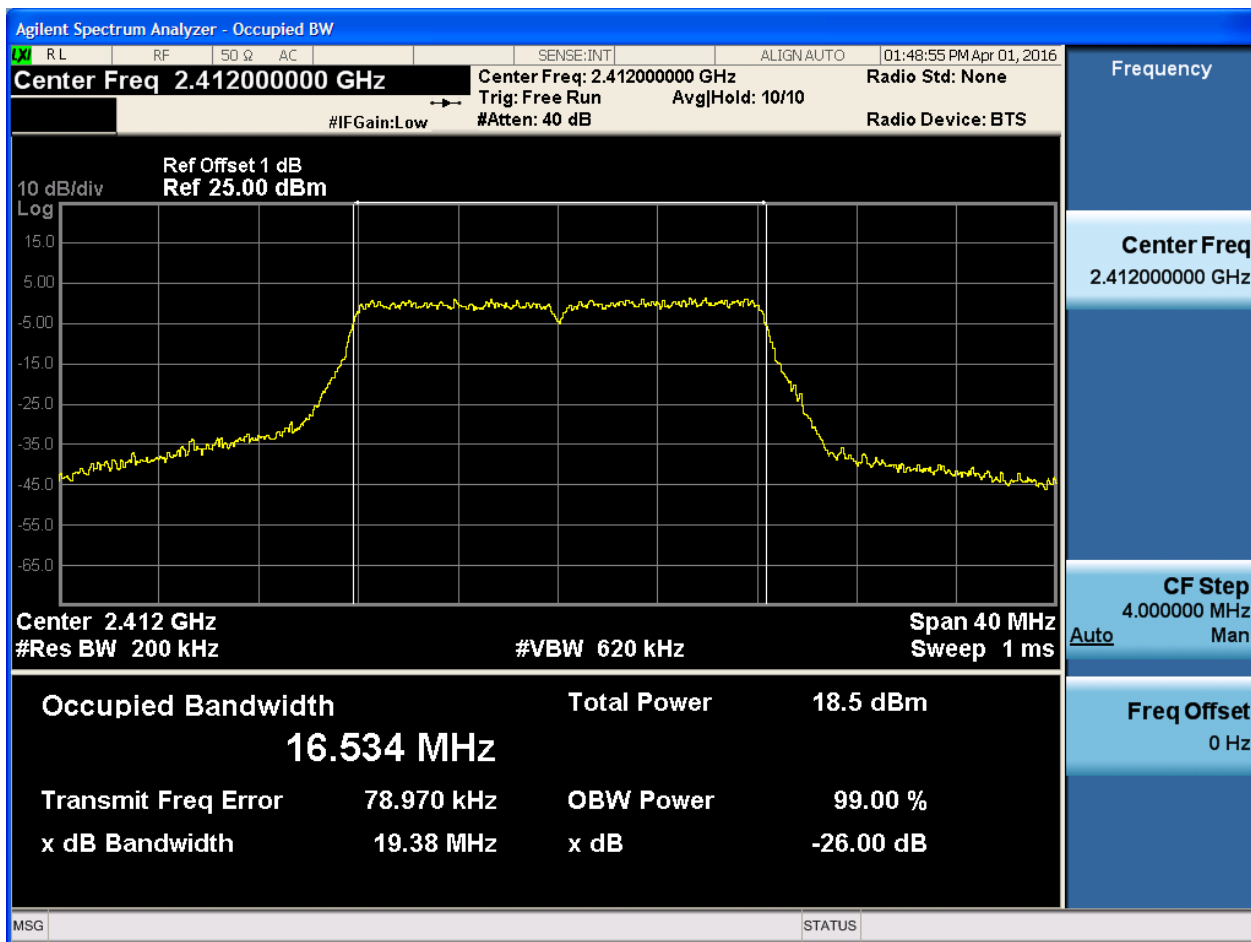


2.3 11B_H@Ant 1



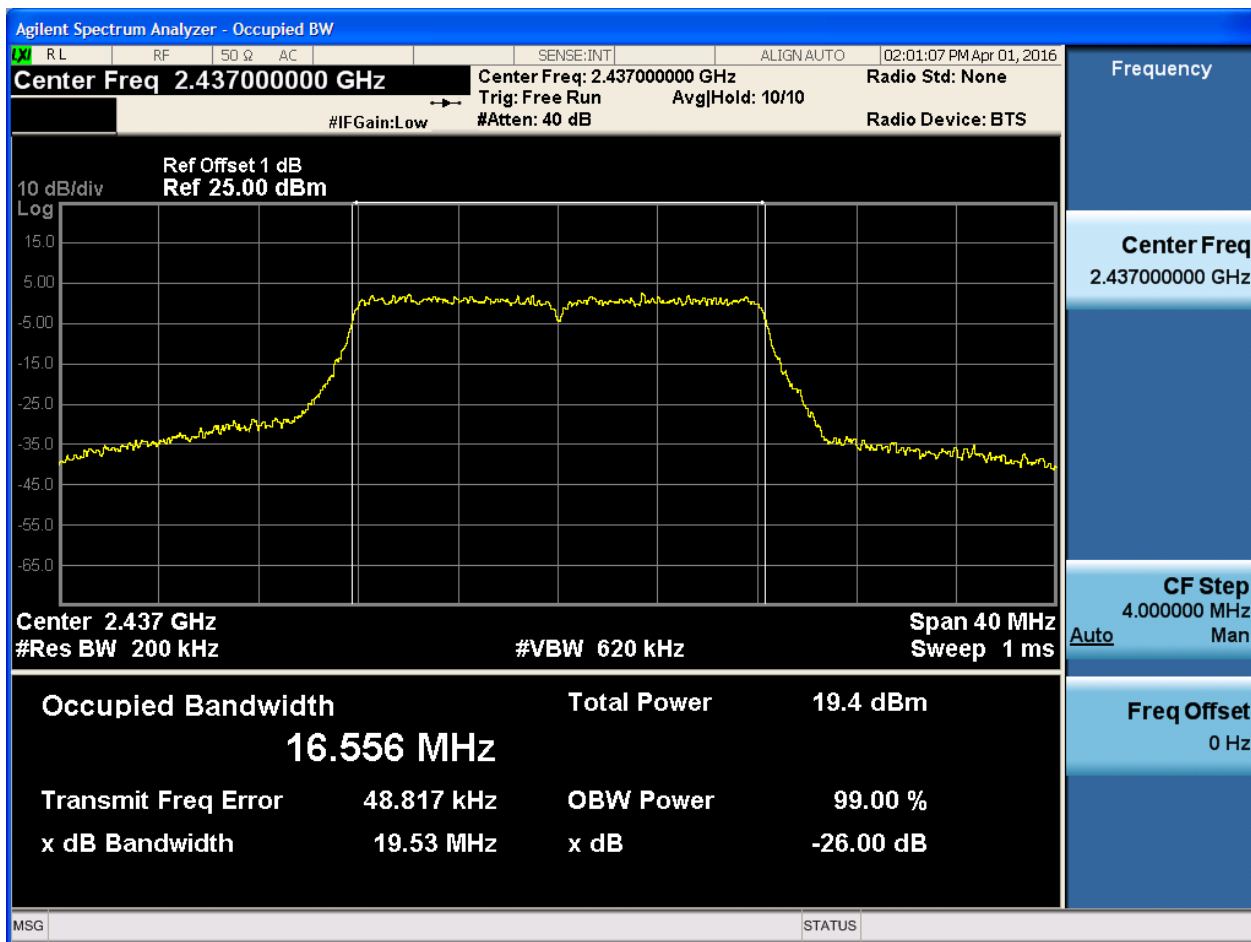


2.4 11G_L@Ant 1



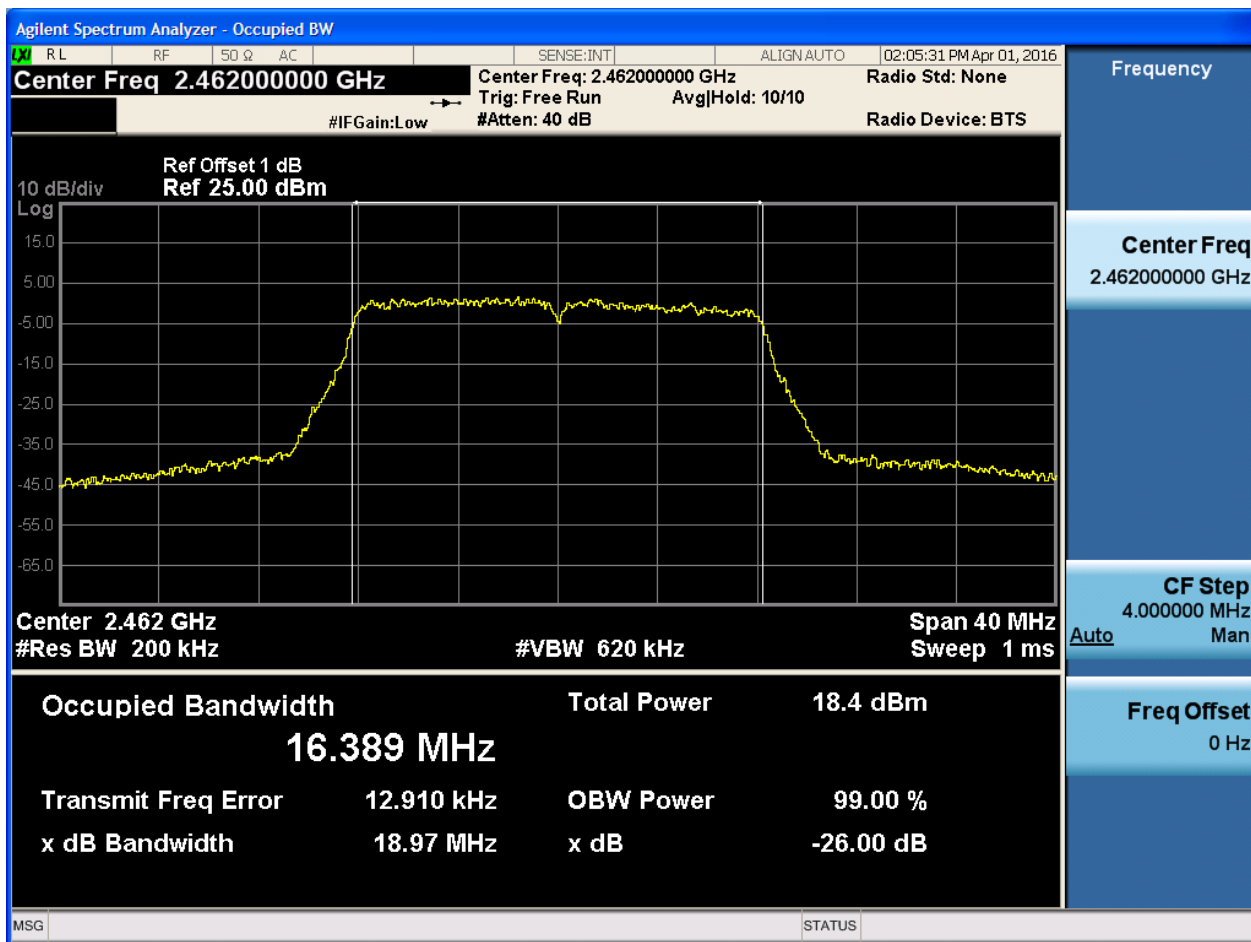


2.5 11G_M@Ant 1



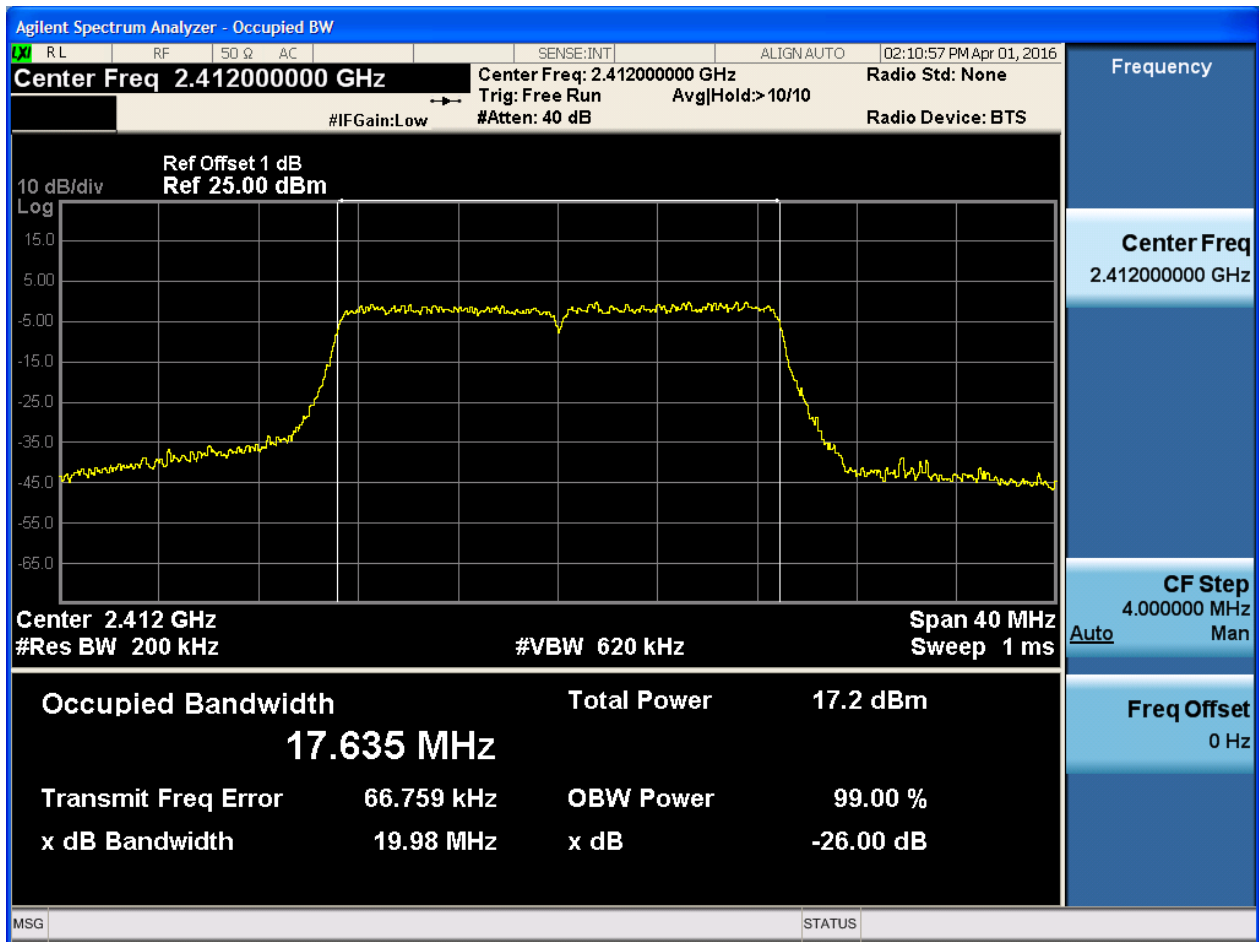


2.6 11G_H@Ant 1



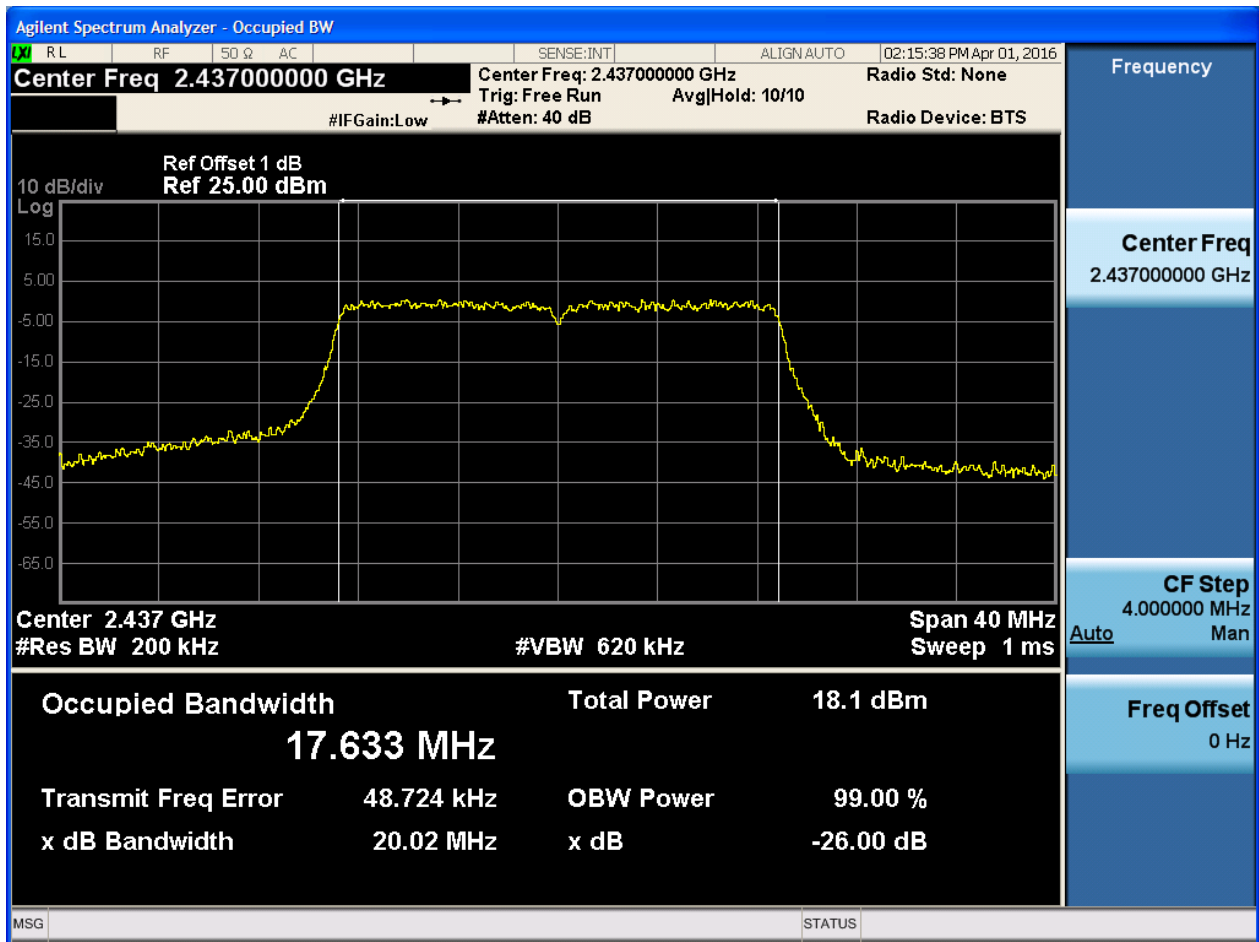


2.7 11N20_L@Ant 1



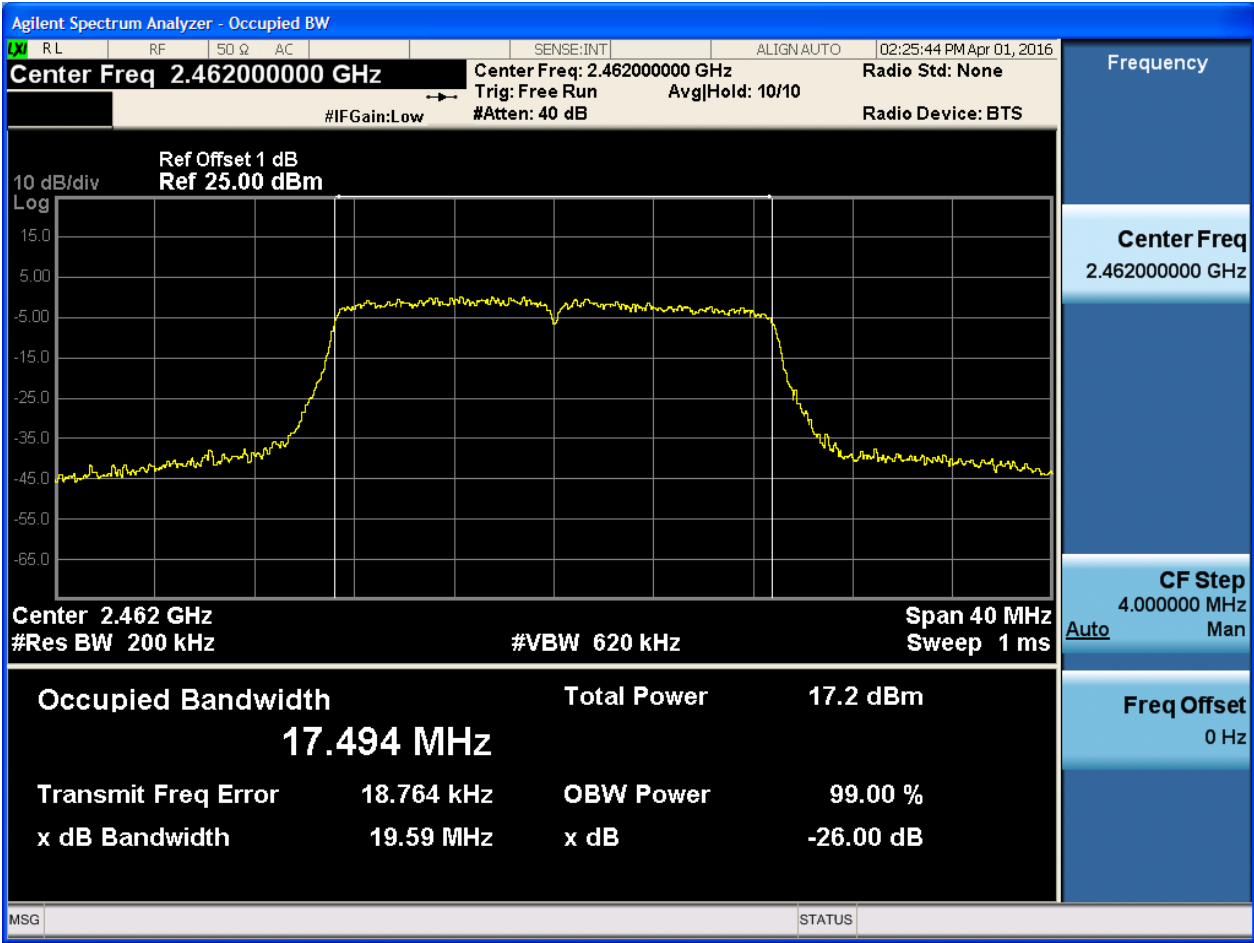


2.8 11N20_M@Ant 1



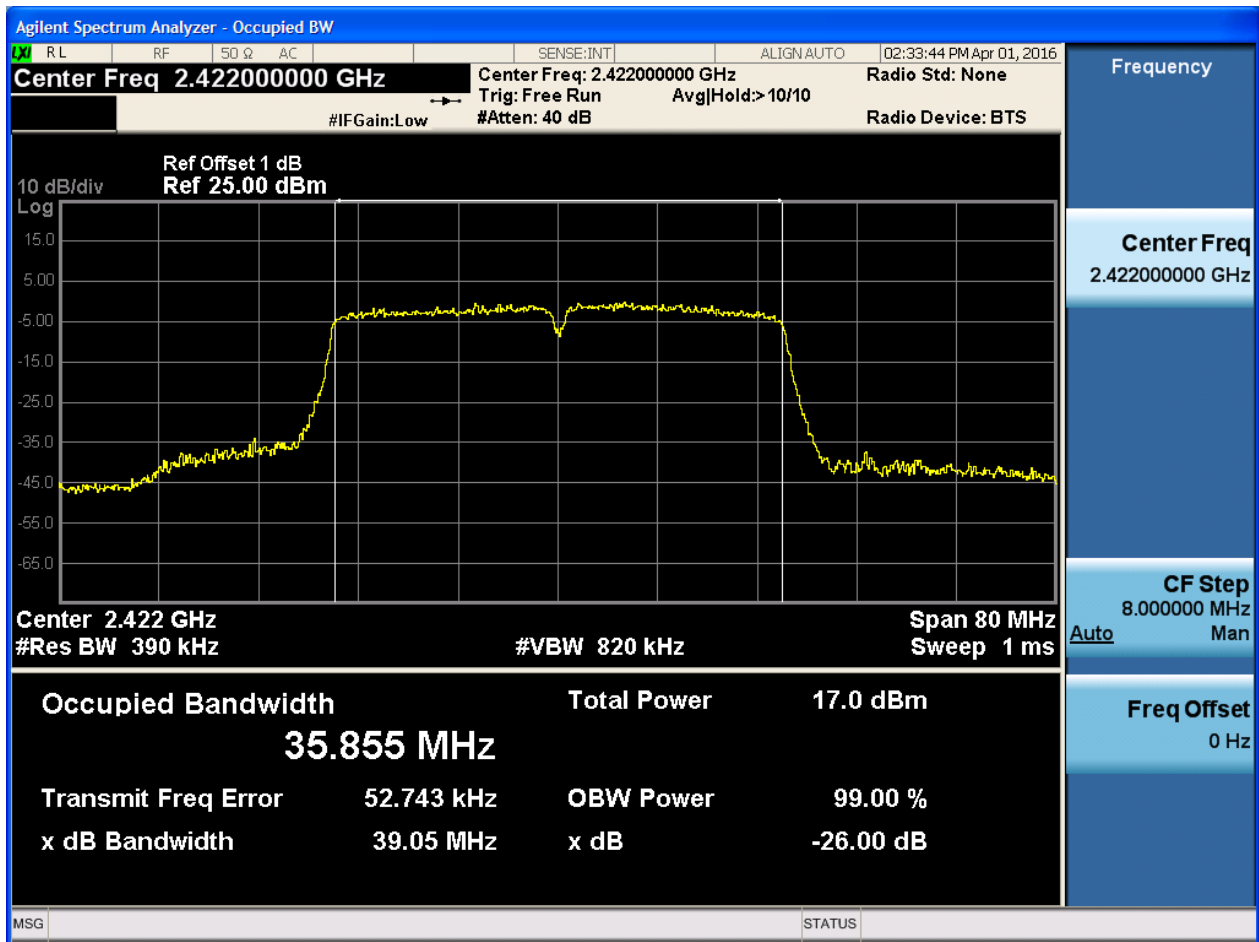


2.9 11N20_H@Ant 1



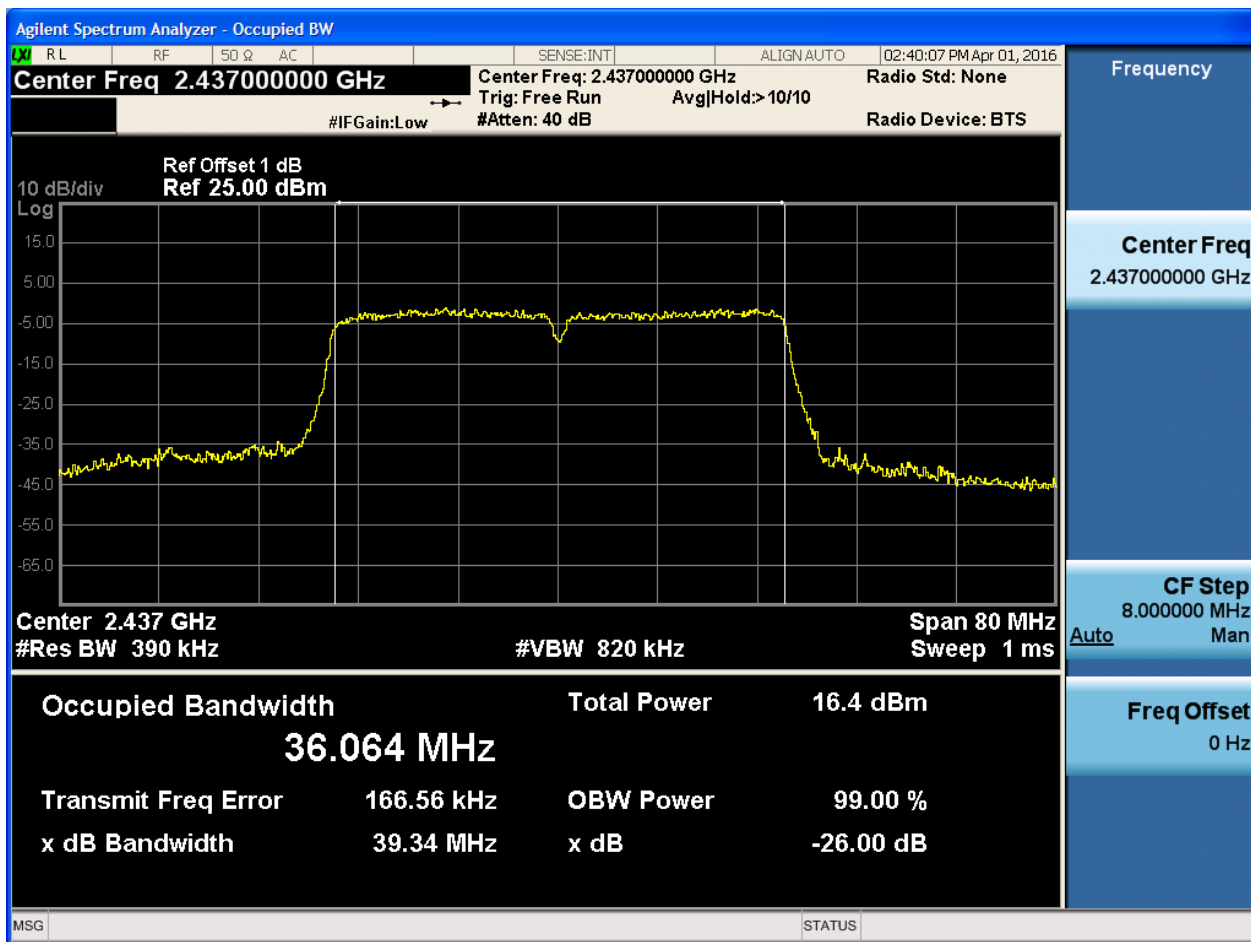


2.10 11N40_L@Ant 1



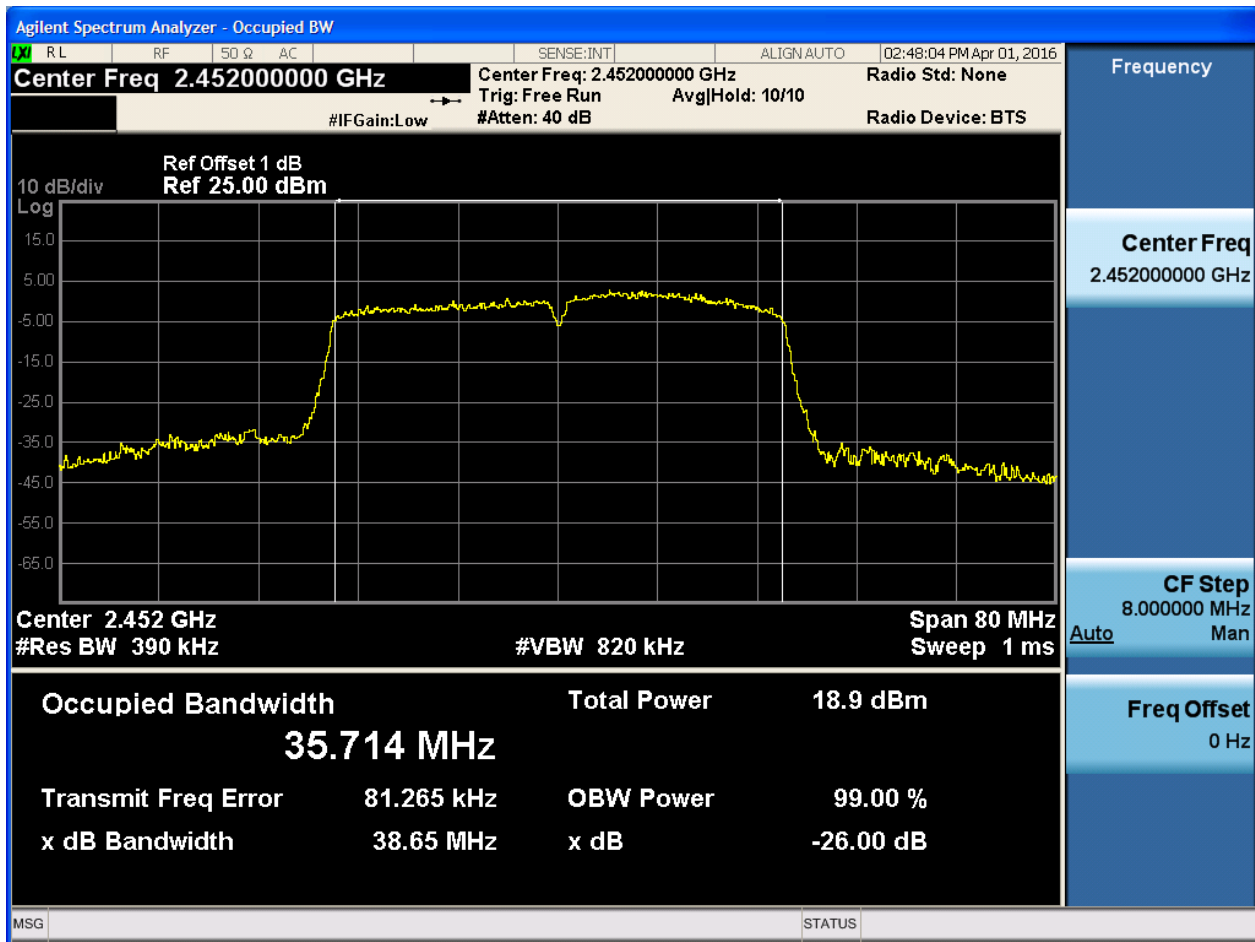


2.11 11N40_M@Ant 1





2.12 11N40_H@Ant 1



Appendix C: Duty cycle

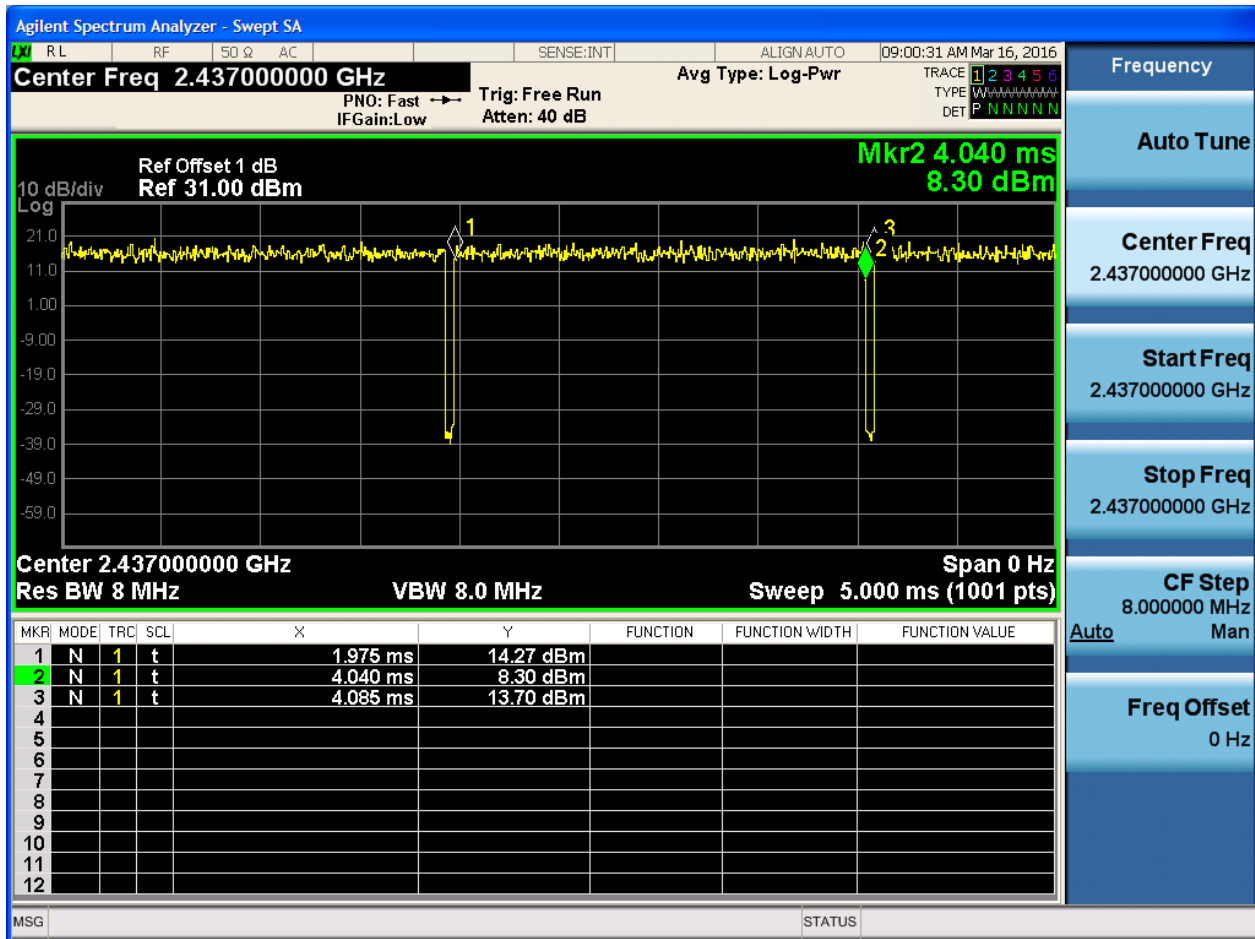
Part I - Test Results

Test Mode	TX Freq. [MHz]	Ant	Duty cycle [%]
11B	CH1,CH6,CH11	Ant 1	99.7
11G	CH1,CH6,CH11	Ant 1	97.9
11N20SISO	CH1,CH6,CH11	Ant 1	97.5
11N40SISO	CH3,CH6,CH9	Ant 1	95.5



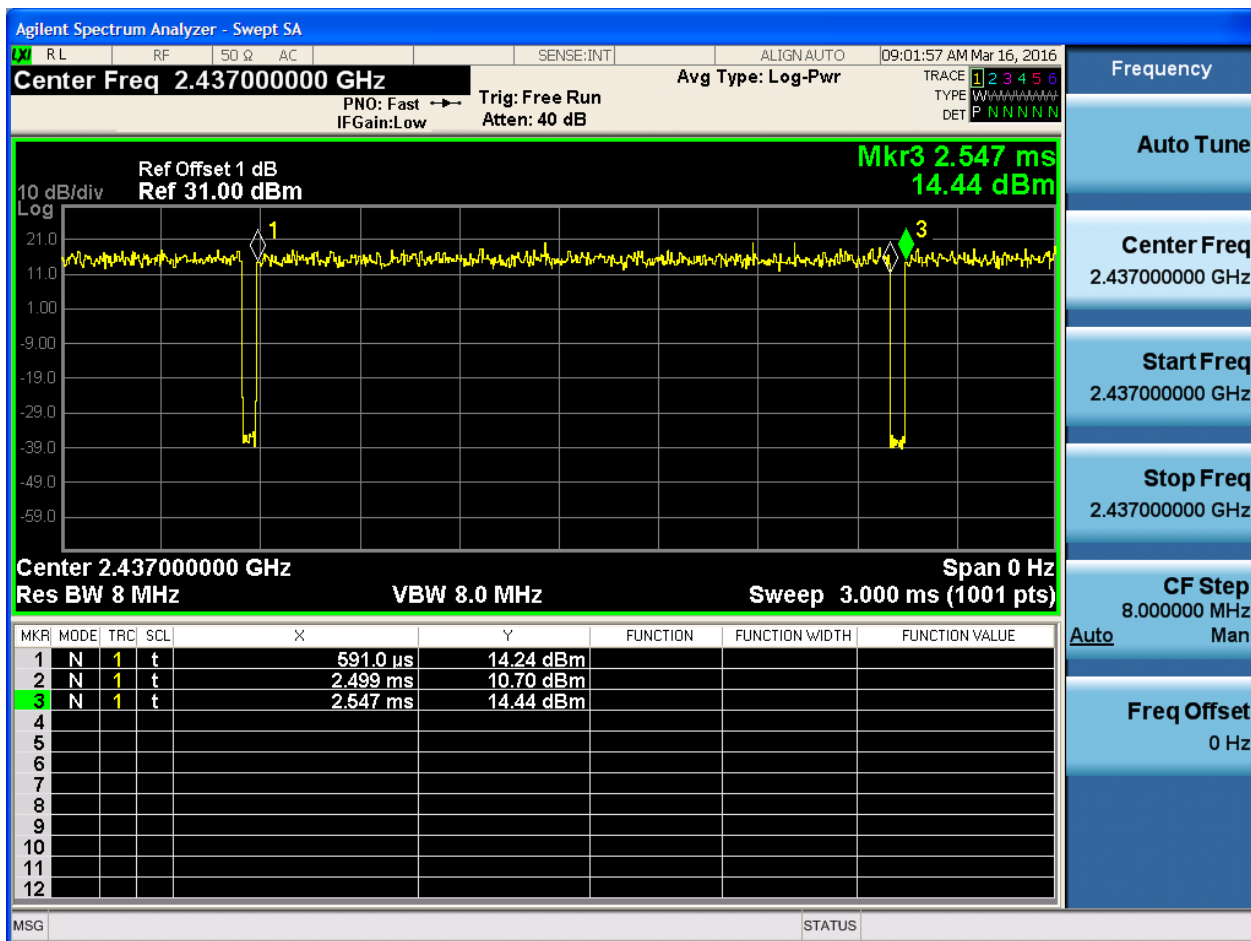


2.2 11G_M@Ant 1



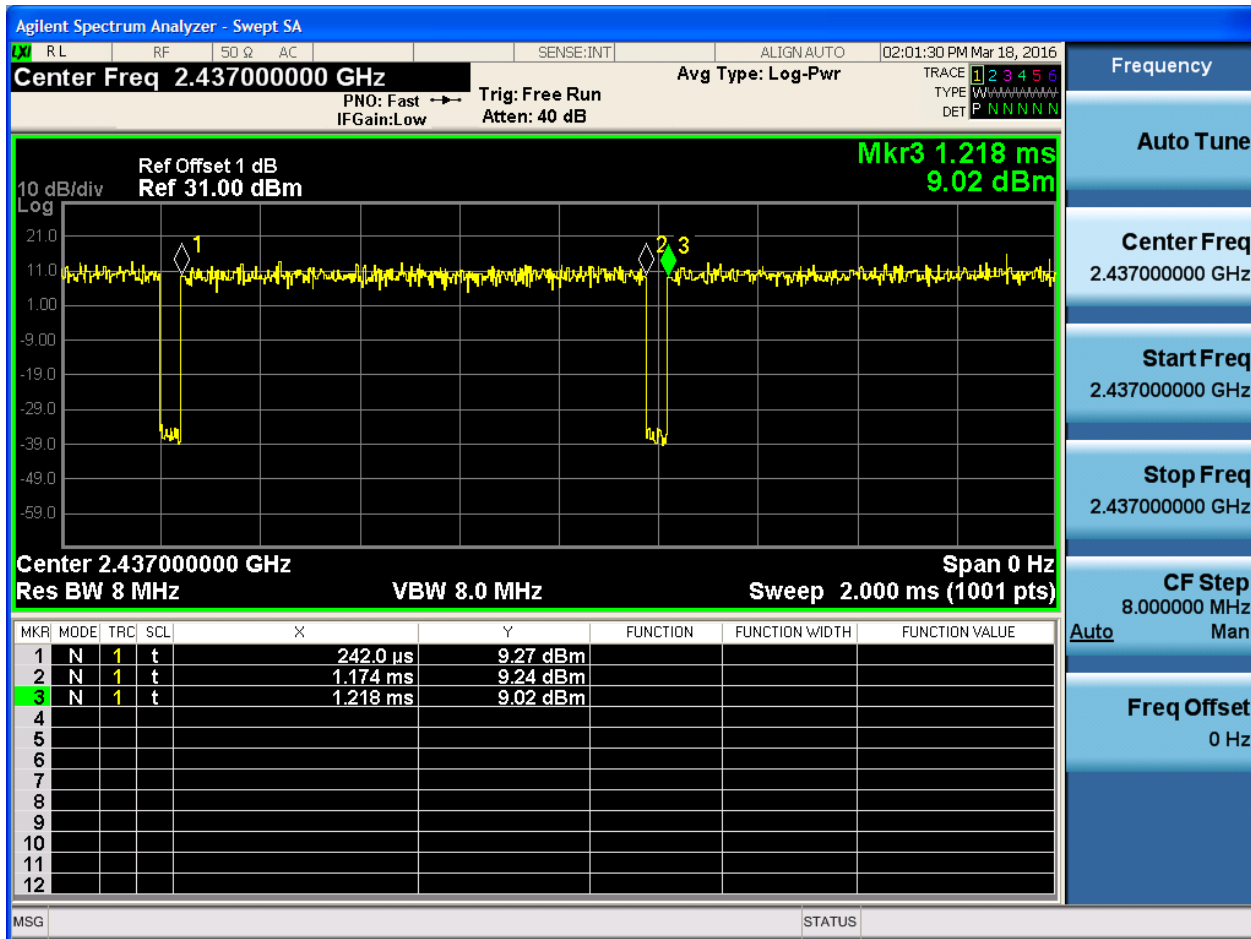


2.3 11N20SISO_M@Ant 1





2.4 11N40SISO_M@Ant 1



Appendix D: Maximum Conducted Average Output Power

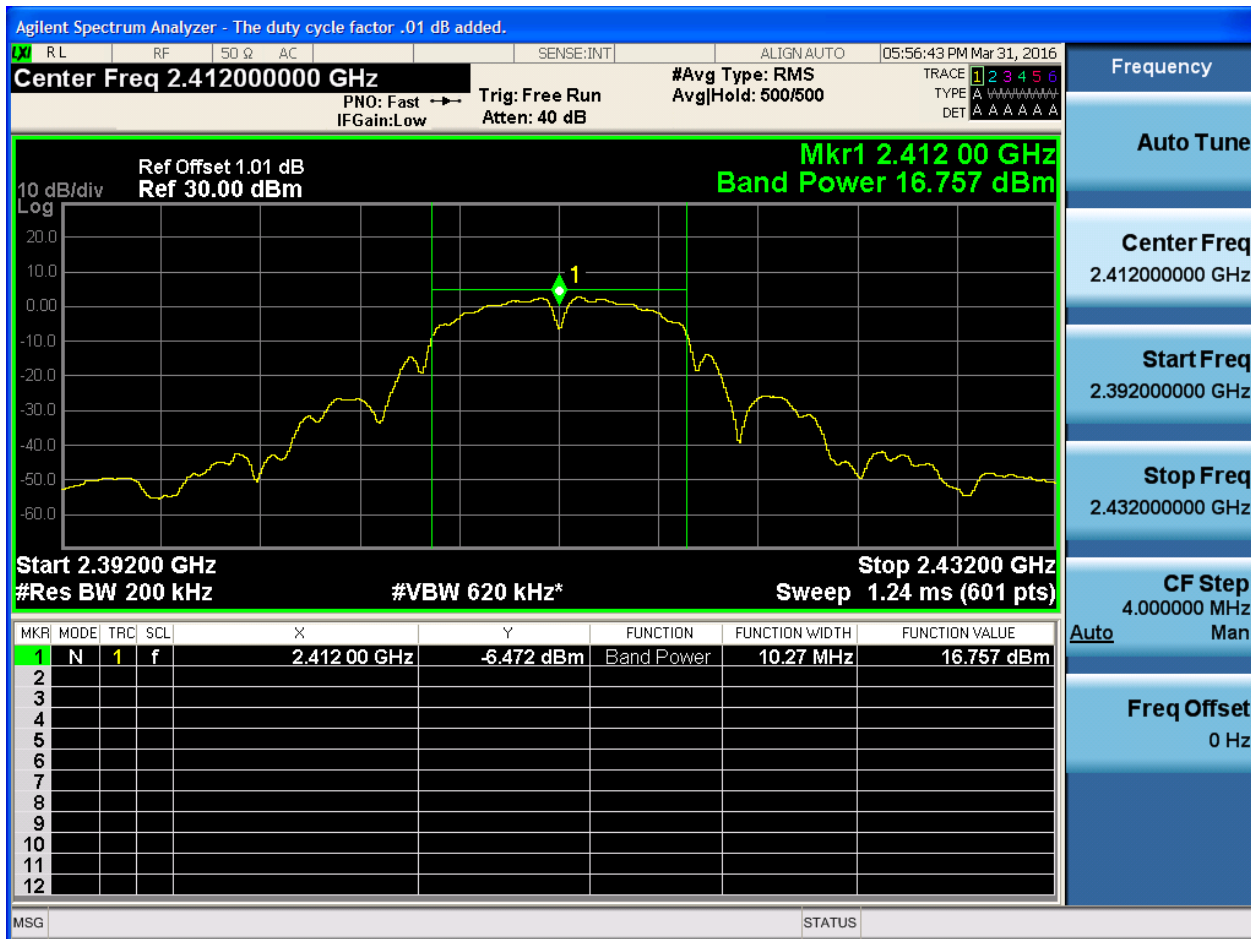
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Power[dBm]	Verdict
11B	L	2412	Ant 1	16.76	pass
11B	M	2437	Ant 1	17.55	pass
11B	H	2462	Ant 1	17.33	pass
11G	L	2412	Ant 1	11.45	pass
11G	M	2437	Ant 1	12.31	pass
11G	H	2462	Ant 1	11.26	pass
11N20	L	2412	Ant 1	10.04	pass
11N20	M	2437	Ant 1	10.88	pass
11N20	H	2462	Ant 1	9.94	pass
11N40	L	2422	Ant 1	9.69	pass
11N40	M	2437	Ant 1	9.17	pass
11N40	H	2452	Ant 1	11.65	pass



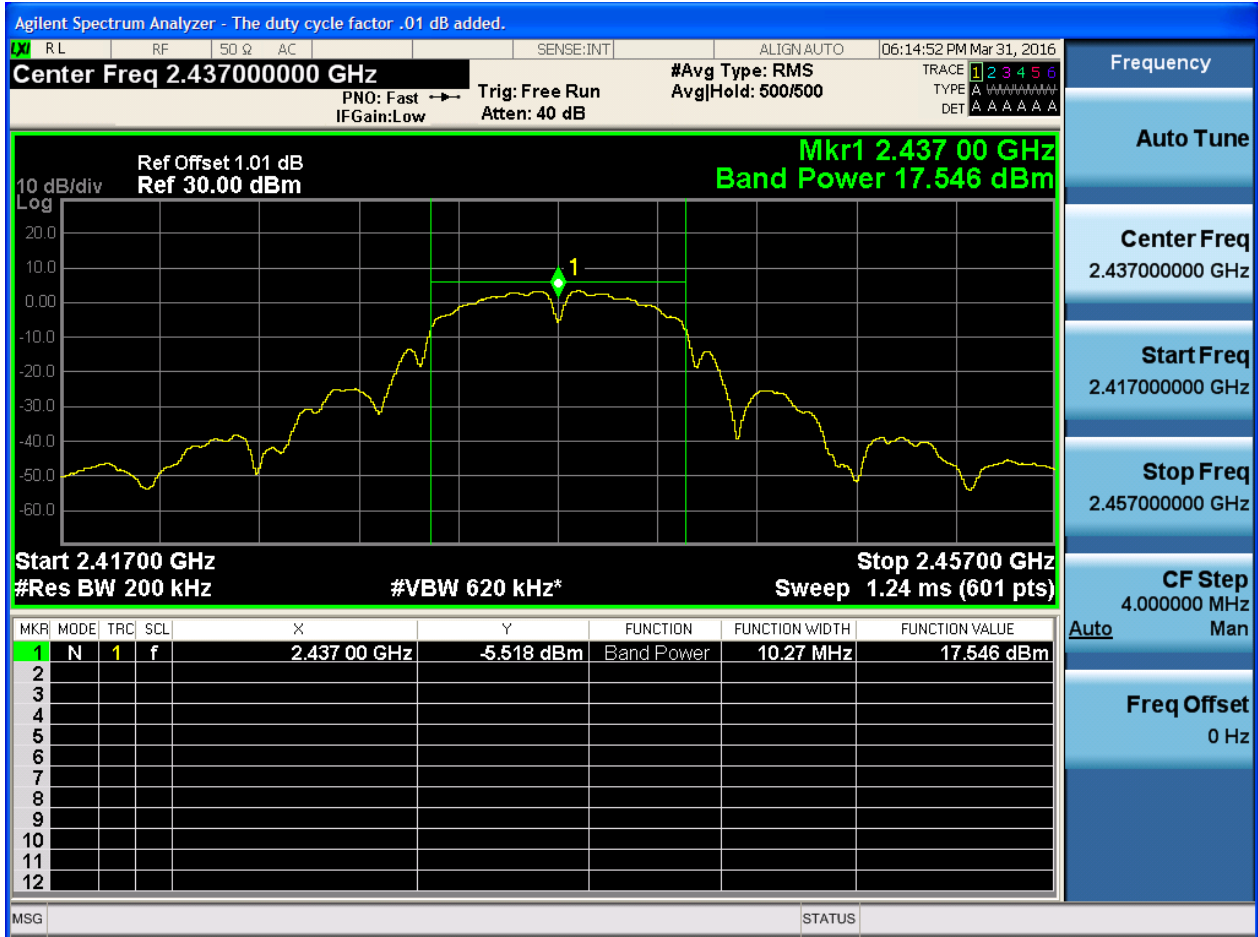
Part II - Test Plots

2.1 11B_L@Ant 1



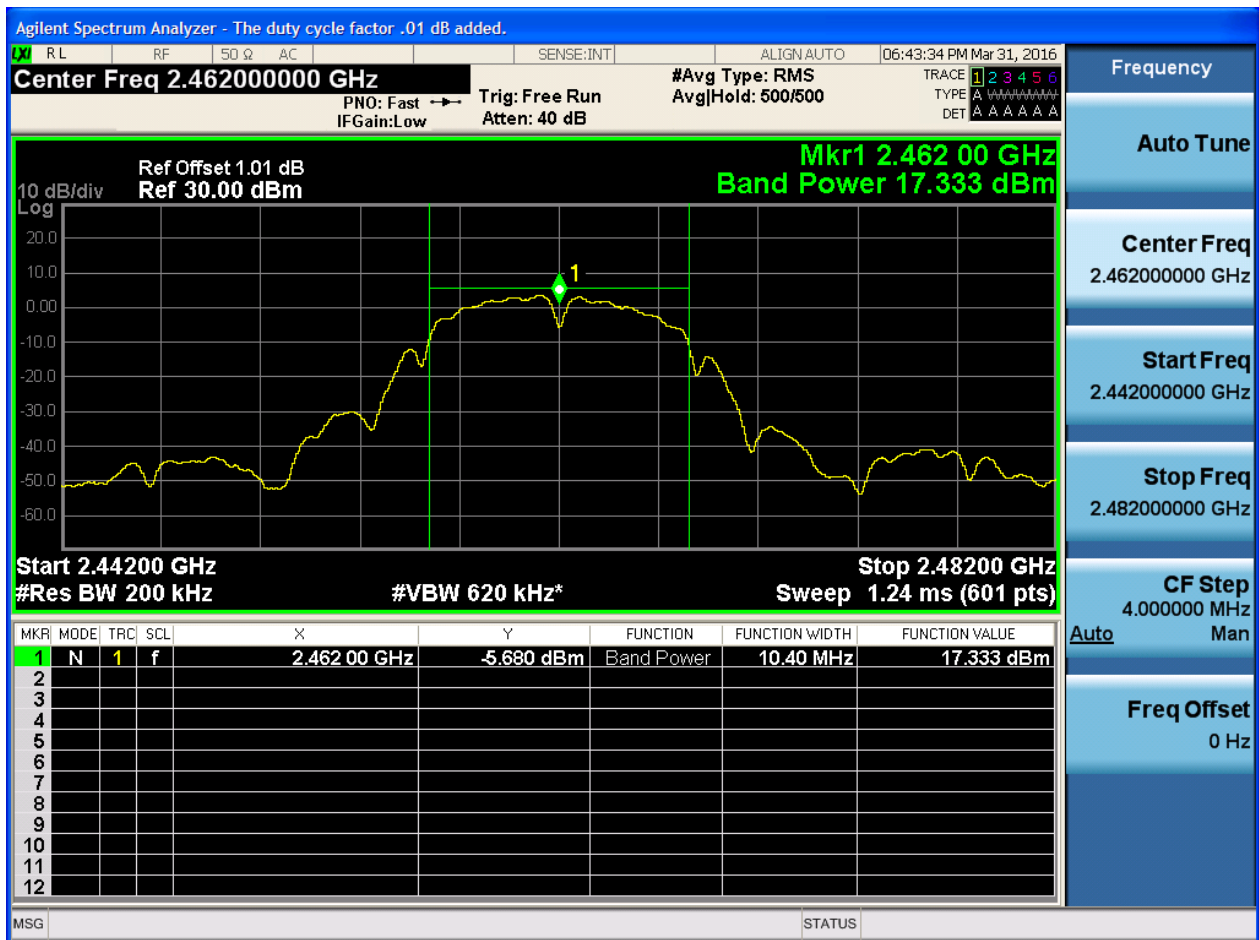


2.2 11B_M@Ant 1



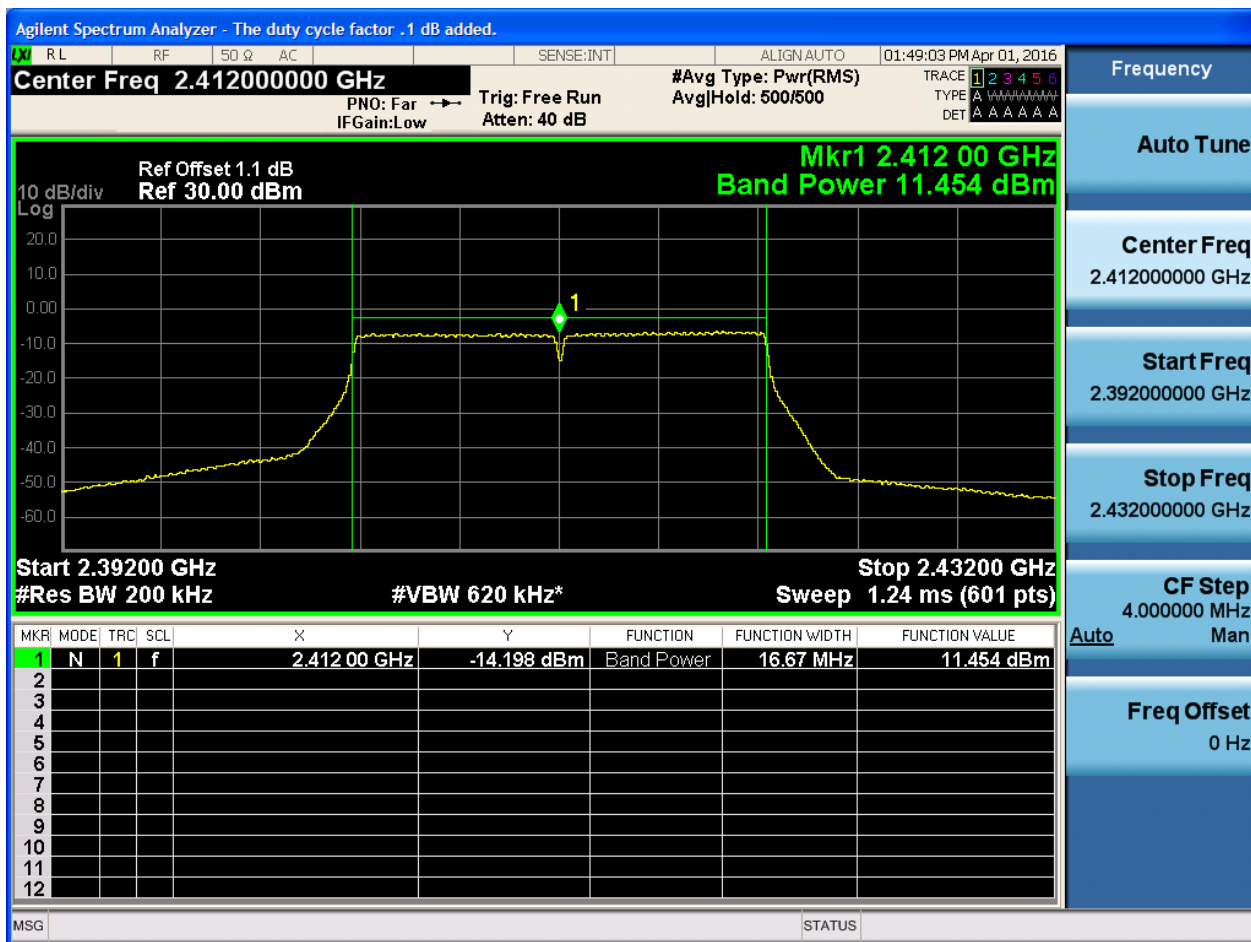


2.3 11B_H@Ant 1



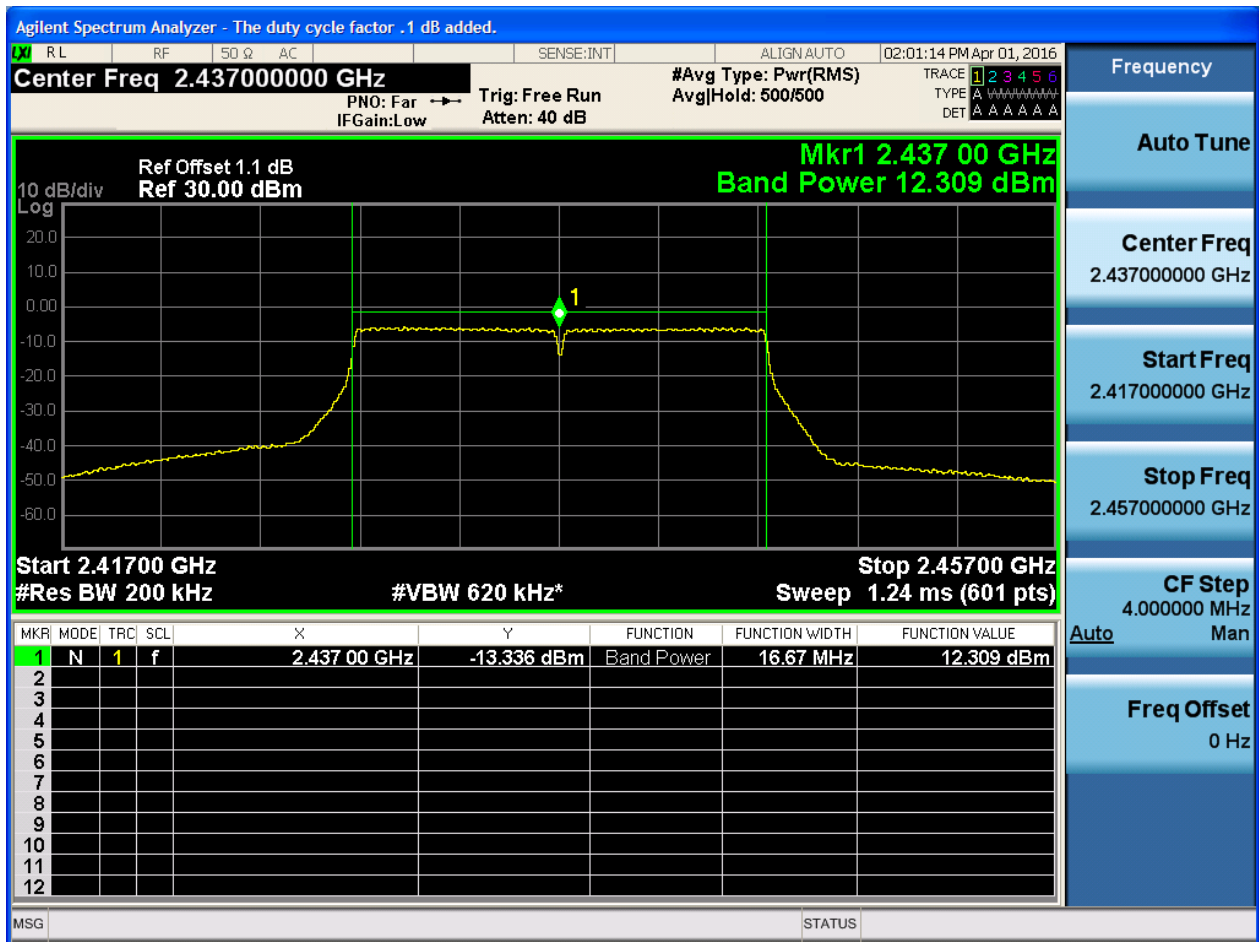


2.4 11G_L@Ant 1





2.5 11G_M@Ant 1





Agilent Spectrum Analyzer - The duty cycle factor .1 dB added.

Center Freq 2.46200000 GHz #Avg Type: Pwr(RMS) Avg|Hold: 500/500

Ref Offset 1.1 dB Ref 30.00 dBm

Mkr1 2.462 00 GHz Band Power 11.256 dBm

Start 2.44200 GHz Stop 2.48200 GHz

#Res BW 200 kHz #VBW 620 kHz* Sweep 1.24 ms (601 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.462 00 GHz	-13.568 dBm	Band Power	16.40 MHz	11.256 dBm
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

Frequency

Auto Tune

Center Freq 2.46200000 GHz

Start Freq 2.44200000 GHz

Stop Freq 2.48200000 GHz

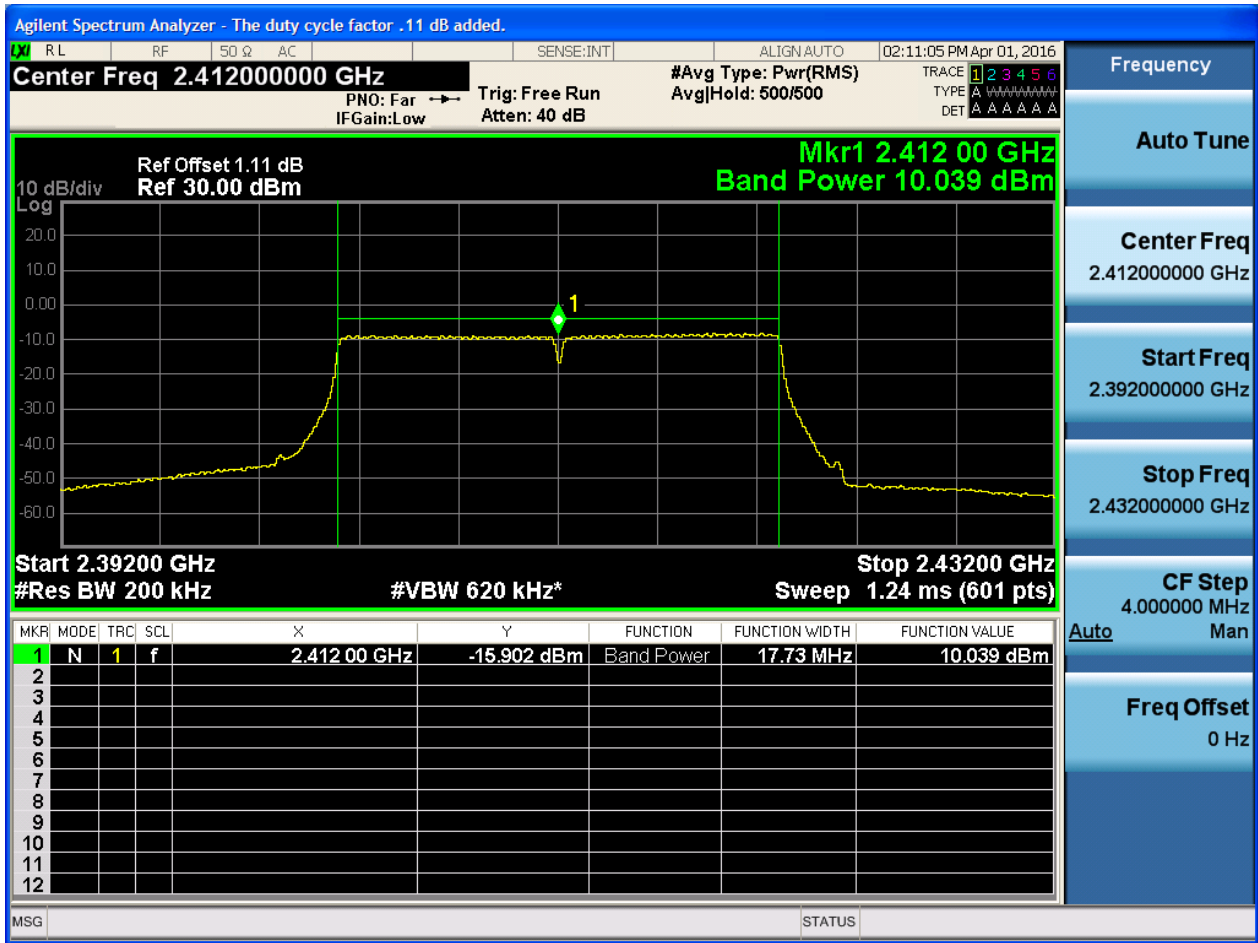
CF Step 4.000000 MHz Man

Freq Offset 0 Hz

MSG STATUS

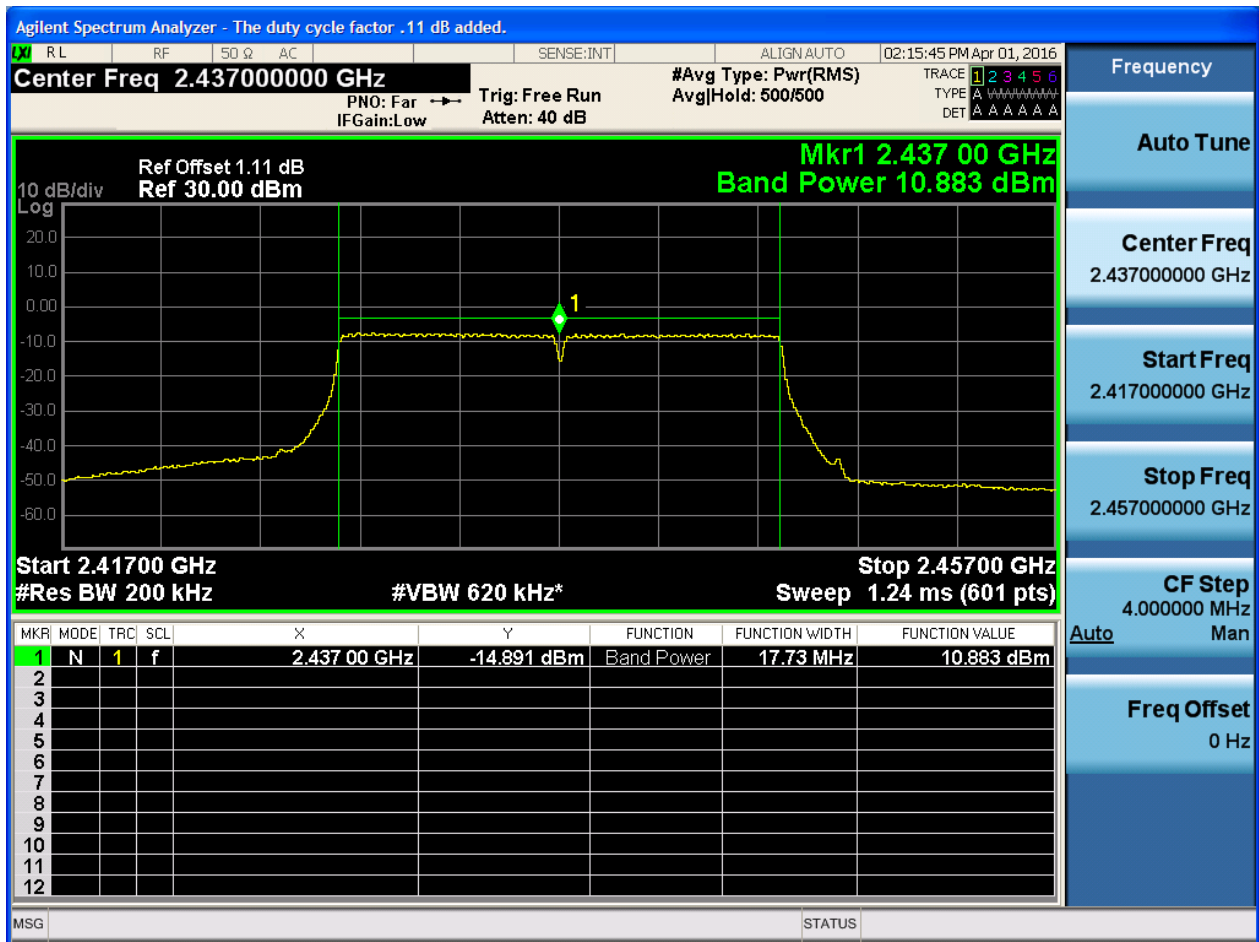


2.7 11N20_L@Ant 1



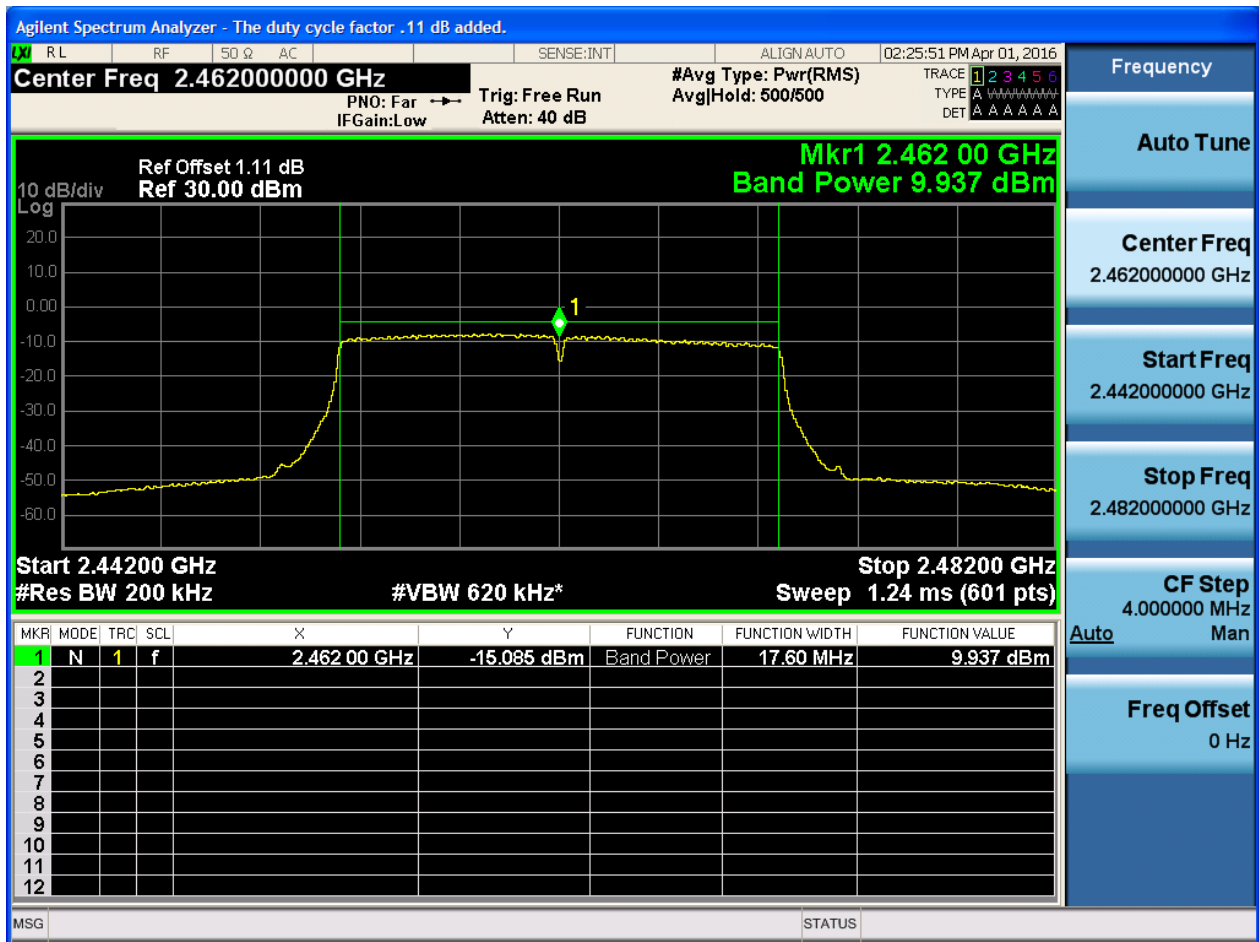


2.8 11N20_M@Ant 1





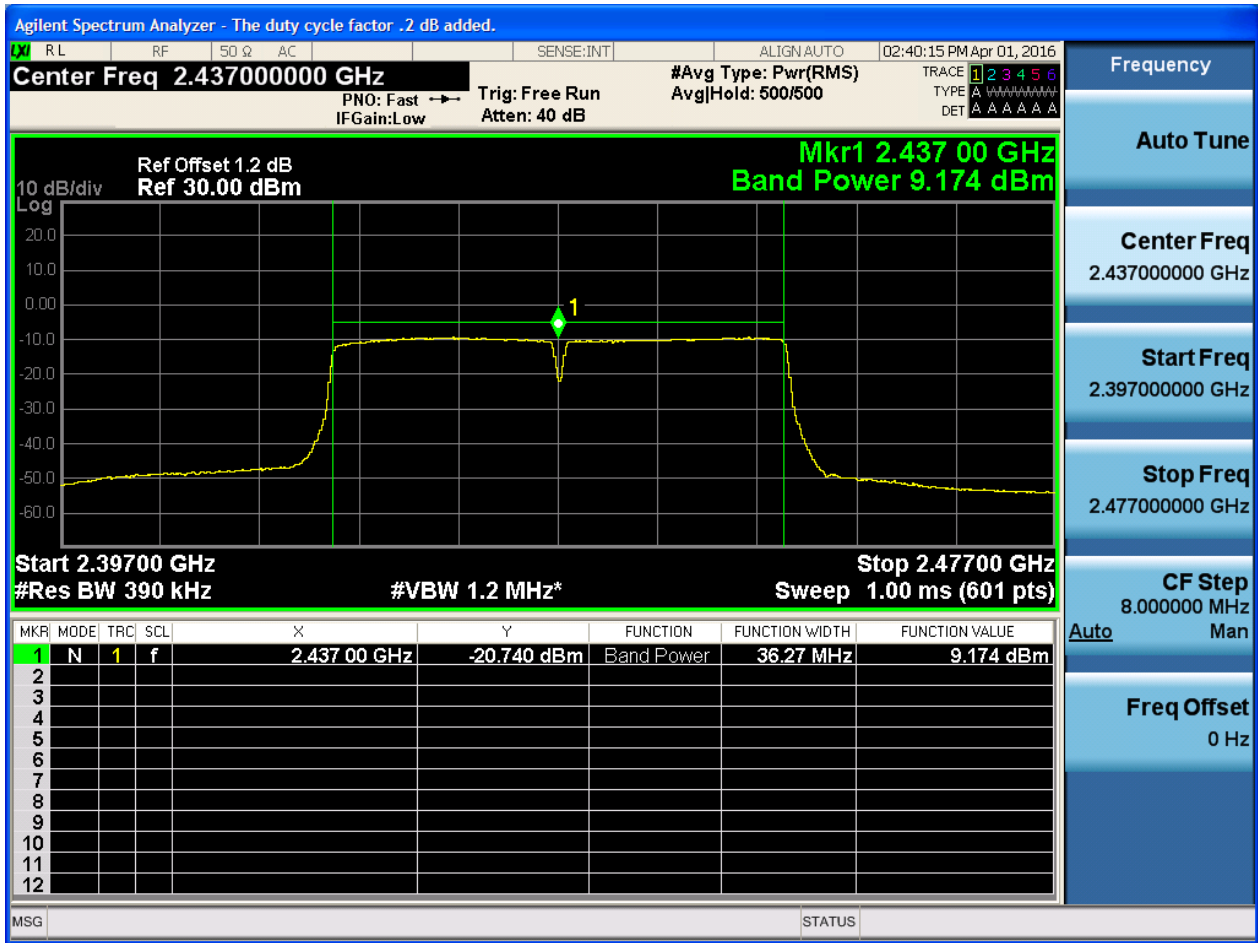
2.9 11N20_H@Ant 1



[illegible]

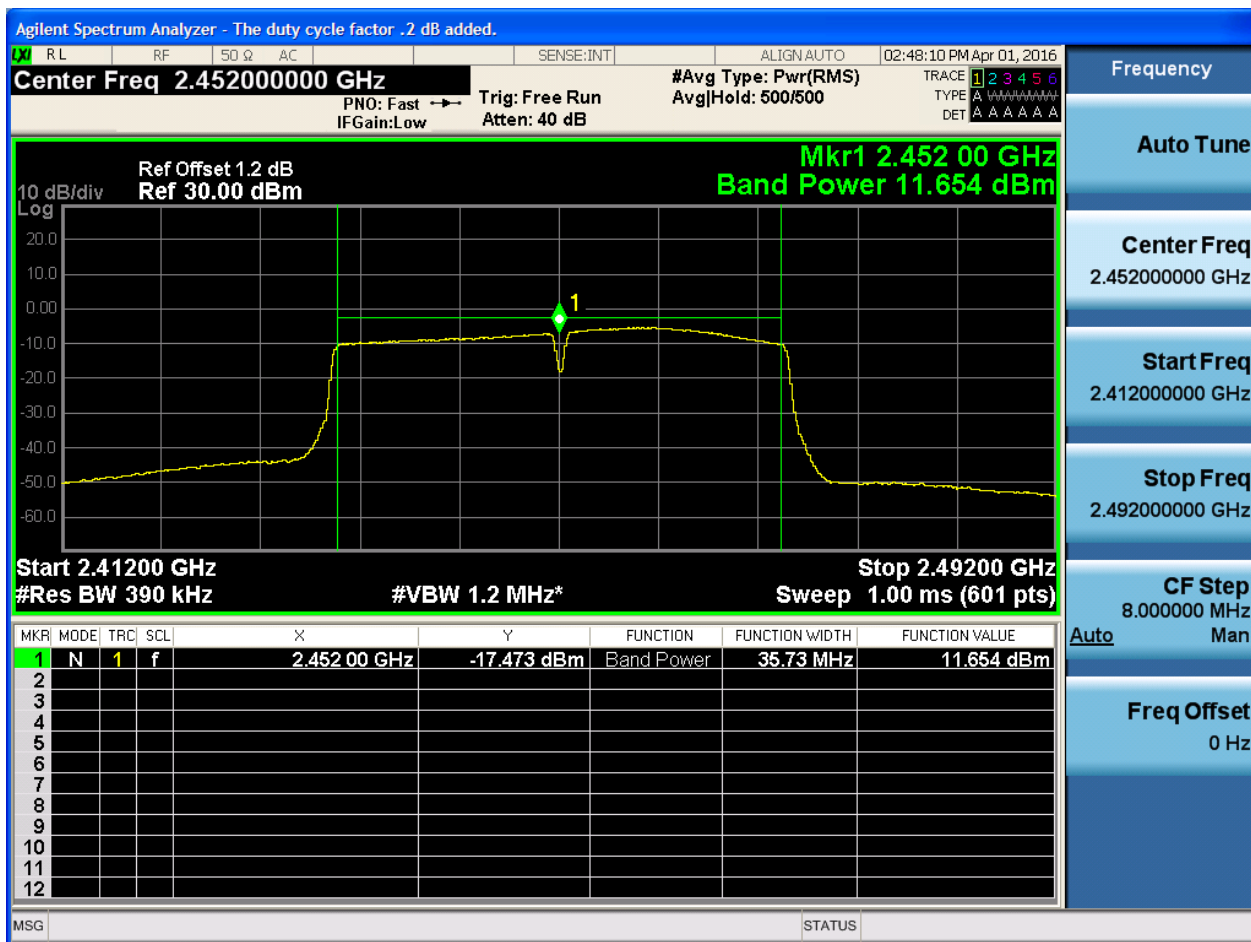


2.11 11N40_M@Ant 1





2.12 11N40_H@Ant 1



Appendix E: Maximum Power Spectral Density Level

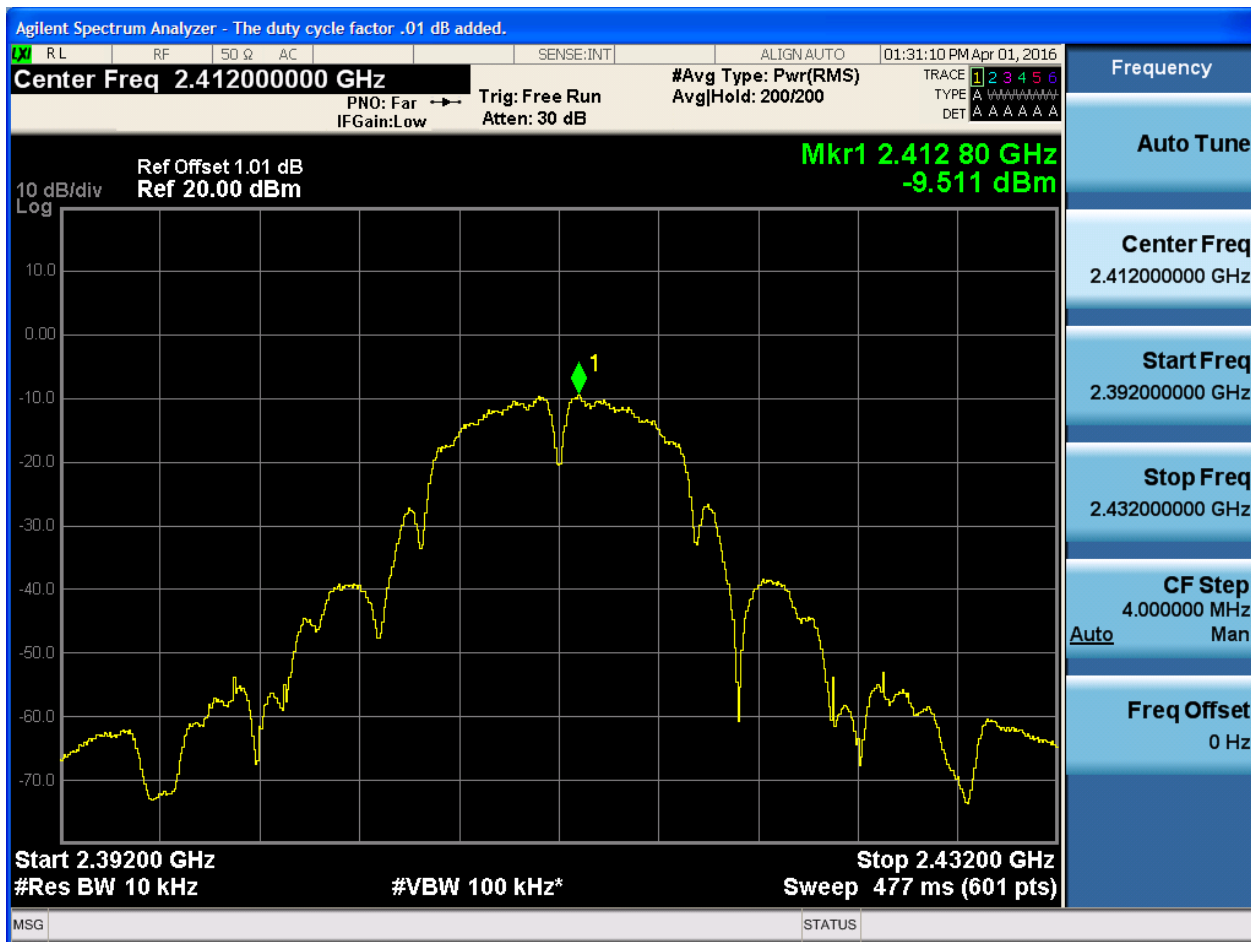
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	PD[MHz]	Verdict
11B	L	2412	Ant 1	-9.51	pass
11B	M	2437	Ant 1	-8.56	pass
11B	H	2462	Ant 1	-9.34	pass
11G	L	2412	Ant 1	-18.39	pass
11G	M	2437	Ant 1	-17.84	pass
11G	H	2462	Ant 1	-18.07	pass
11N20	L	2412	Ant 1	-20.16	pass
11N20	M	2437	Ant 1	-19.31	pass
11N20	H	2462	Ant 1	-19.61	pass
11N40	L	2422	Ant 1	-23.13	pass
11N40	M	2437	Ant 1	-24.29	pass
11N40	H	2452	Ant 1	-20.42	pass



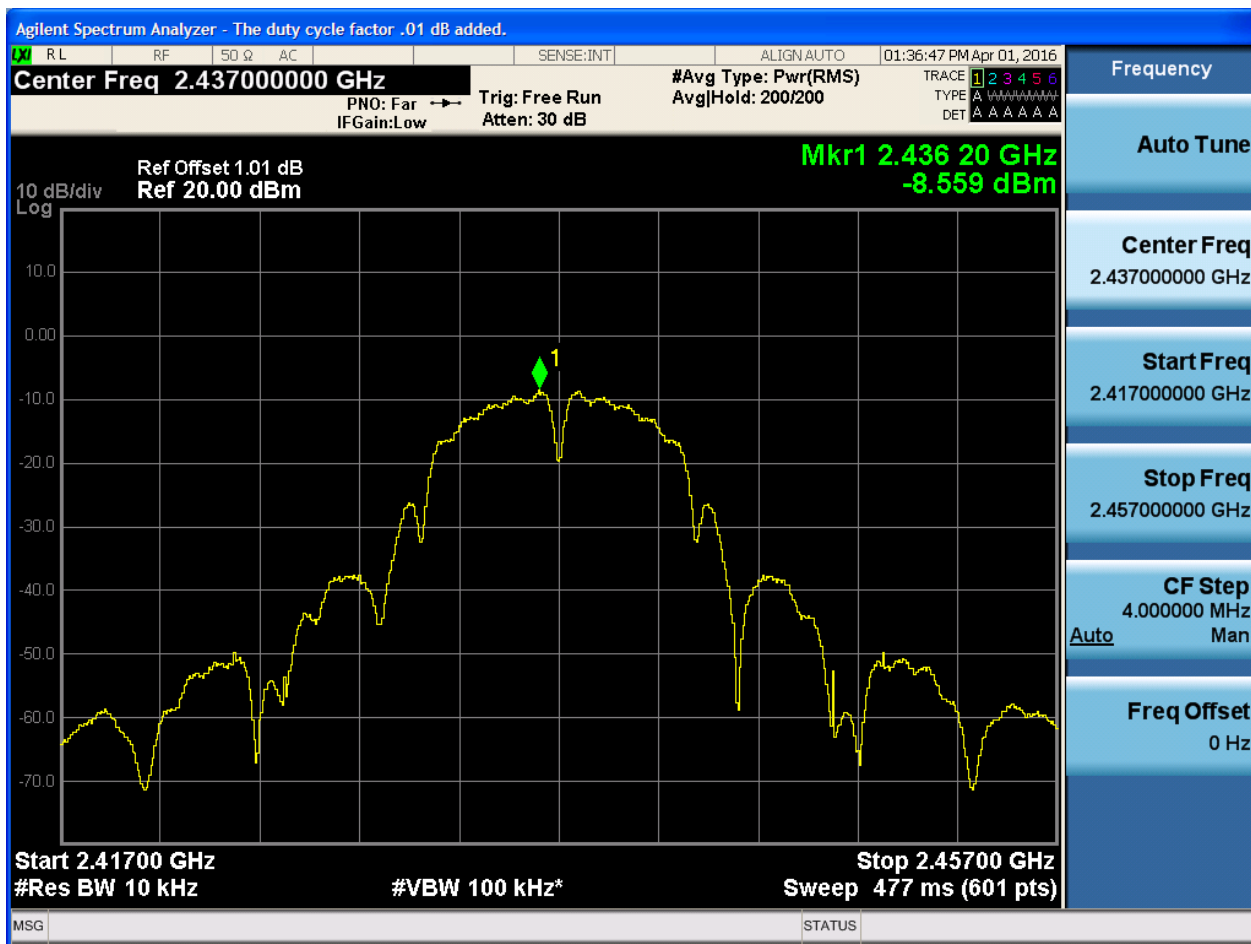
Part II - Test Plots

2.1 11B_L@Ant 1





2.2 11B_M@Ant 1





Agilent Spectrum Analyzer - The duty cycle factor .01 dB added.

Center Freq 2.46200000 GHz

Ref Offset 1.01 dB
Ref 20.00 dBm

10 dB/div
Log

Start 2.44200 GHz
#Res BW 10 kHz

Stop 2.48200 GHz
Sweep 477 ms (601 pts)

#VBW 100 kHz*

Mkr1 2.461 20 GHz
-9.337 dBm

Auto Tune

Center Freq
2.46200000 GHz

Start Freq
2.44200000 GHz

Stop Freq
2.48200000 GHz

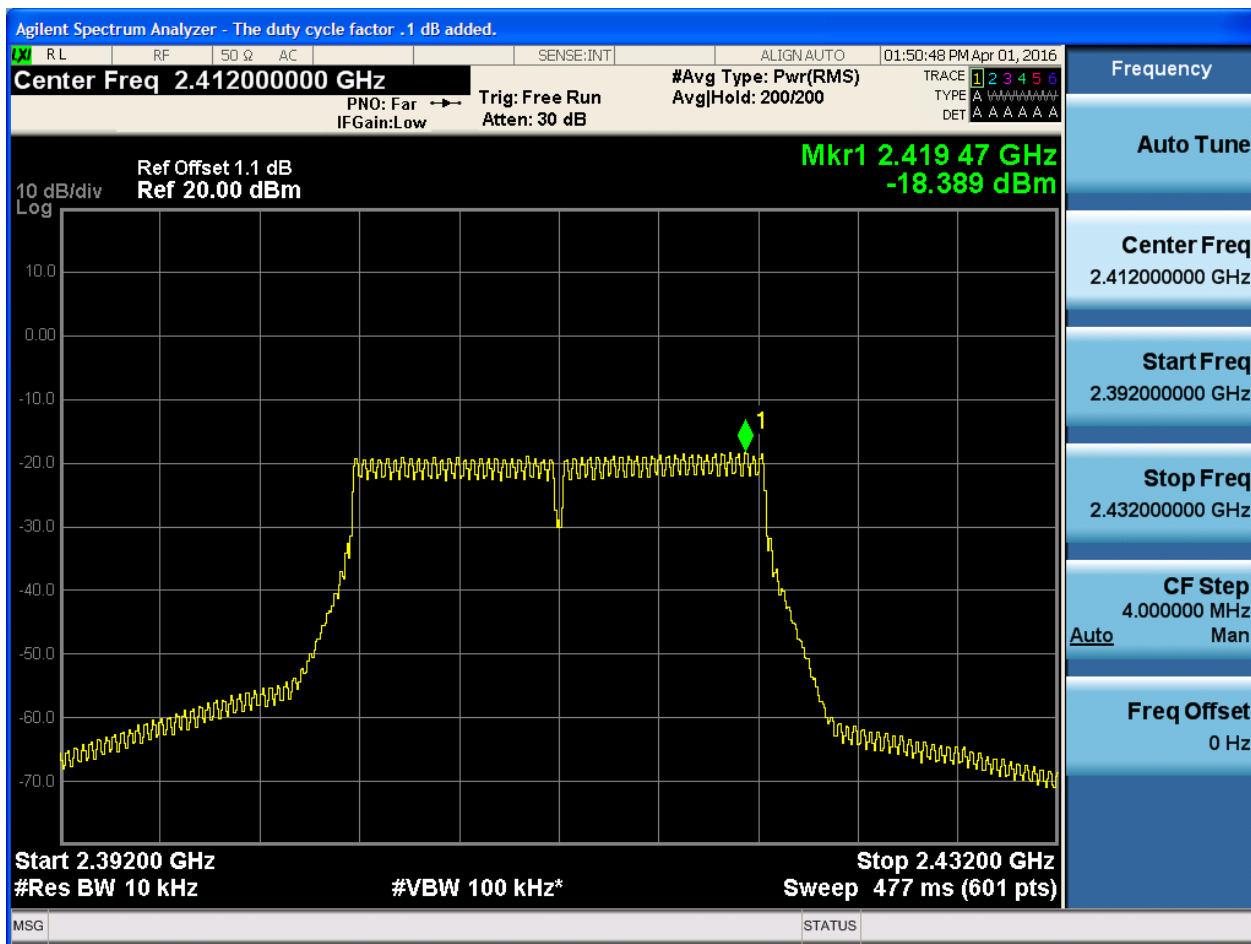
CF Step
4.000000 MHz
Man

Freq Offset
0 Hz

The image shows a screenshot of an Agilent Spectrum Analyzer. The main display is a plot of power spectral density (PSD) in dBm/Hz versus frequency in GHz. The plot shows a noisy signal with a prominent peak at approximately 2.461 GHz, marked with a green diamond and labeled '1'. The peak power is -9.337 dBm. The plot is centered at 2.462 GHz. The frequency range is from 2.442 GHz to 2.482 GHz. The resolution bandwidth (RBW) is 10 kHz. The video bandwidth (VBW) is 100 kHz. The sweep time is 477 ms. The reference level is 20.00 dBm. The reference offset is 1.01 dB. The plot is in log scale. The y-axis is labeled '10 dB/div Log'. The x-axis is labeled 'Start 2.44200 GHz' and 'Stop 2.48200 GHz'. The plot is titled 'Center Freq 2.46200000 GHz'. The plot is also titled 'Mkr1 2.461 20 GHz -9.337 dBm'. The plot is also titled 'Auto Tune'. The plot is also titled 'Center Freq 2.46200000 GHz'. The plot is also titled 'Start Freq 2.44200000 GHz'. The plot is also titled 'Stop Freq 2.48200000 GHz'. The plot is also titled 'CF Step 4.000000 MHz Man'. The plot is also titled 'Freq Offset 0 Hz'. The plot is also titled 'MSG' and 'STATUS'.



2.4 11G_L@Ant 1





Agilent Spectrum Analyzer - The duty cycle factor .1 dB added.

Center Freq 2.43700000 GHz

Ref Offset 1.1 dB
Ref 20.00 dBm

Mkr1 2.431 07 GHz
-17.840 dBm

Start 2.41700 GHz
#Res BW 10 kHz

Stop 2.45700 GHz
Sweep 477 ms (601 pts)

#VBW 100 kHz*

Trig: Free Run
Atten: 30 dB

Frequency

Auto Tune

Center Freq
2.43700000 GHz

Start Freq
2.41700000 GHz

Stop Freq
2.45700000 GHz

CF Step
4.000000 MHz
Man

Freq Offset
0 Hz

The image shows a screenshot of an Agilent Spectrum Analyzer. The main display area shows a spectrum plot with a yellow trace. The x-axis represents frequency, ranging from 2.41700 GHz to 2.45700 GHz. The y-axis represents power, ranging from -70.0 dBm to 10.0 dBm. A prominent peak is visible at 2.43107 GHz, marked with a yellow diamond and labeled '1'. The peak power is -17.840 dBm. The plot shows a wideband signal with a flat top and sloping sides. The background is black with a white grid. The top of the screen displays various settings and status information, including the center frequency, reference level, and trigger mode. The right side of the screen has a blue sidebar with buttons for 'Auto Tune', 'Center Freq', 'Start Freq', 'Stop Freq', 'CF Step', and 'Freq Offset'. The bottom of the screen shows the sweep time and resolution bandwidth.

Frequency
Auto Tune
Center Freq 2.43700000 GHz
Start Freq 2.41700000 GHz
Stop Freq 2.45700000 GHz
CF Step 4.000000 MHz Man
Freq Offset 0 Hz



Agilent Spectrum Analyzer - The duty cycle factor .1 dB added.

Center Freq 2.46200000 GHz

Ref Offset 1.1 dB
Ref 20.00 dBm

10 dB/div
Log

Mkr1 2.460 73 GHz
-18.072 dBm

Start 2.44200 GHz
#Res BW 10 kHz
#VBW 100 kHz*

Stop 2.48200 GHz
Sweep 477 ms (601 pts)

Auto Tune

Center Freq
2.46200000 GHz

Start Freq
2.44200000 GHz

Stop Freq
2.48200000 GHz

CF Step
4.000000 MHz
Man

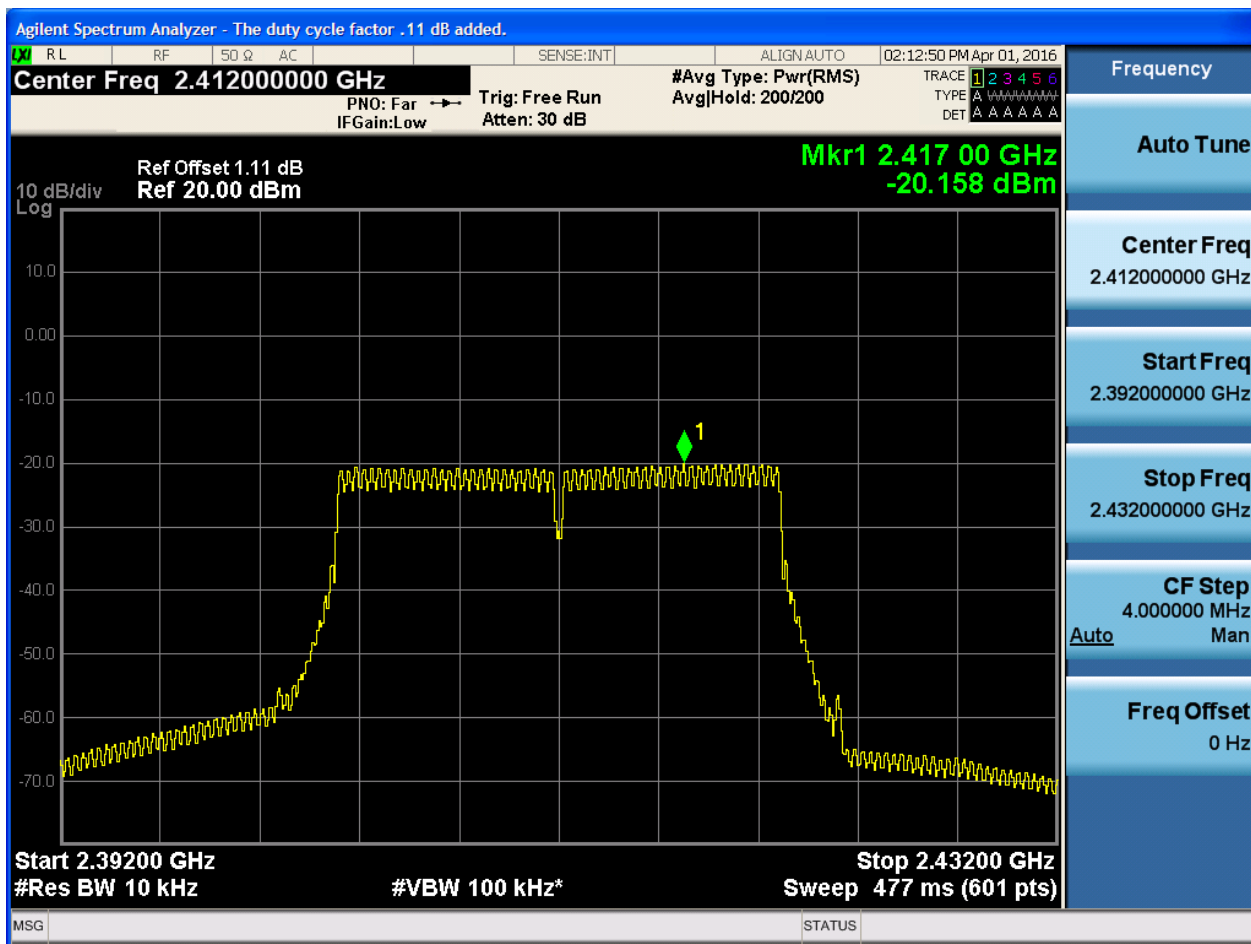
Freq Offset
0 Hz

MSG STATUS

The image shows a screenshot of an Agilent Spectrum Analyzer. The main display area shows a spectrum plot with a yellow trace. The trace has a flat top at approximately -20 dBm, with a small peak labeled '1' at 2.46073 GHz. The y-axis is labeled '10 dB/div Log' and ranges from -70.0 to 10.0. The x-axis is labeled 'Start 2.44200 GHz' and 'Stop 2.48200 GHz'. The top of the screen shows various settings: 'Center Freq 2.46200000 GHz', 'Ref Offset 1.1 dB', 'Ref 20.00 dBm', 'Mkr1 2.460 73 GHz -18.072 dBm', 'Start 2.44200 GHz', '#Res BW 10 kHz', '#VBW 100 kHz*', 'Stop 2.48200 GHz', and 'Sweep 477 ms (601 pts)'. The right side of the screen has a blue sidebar with buttons for 'Auto Tune', 'Center Freq', 'Start Freq', 'Stop Freq', 'CF Step', and 'Freq Offset'. The bottom of the screen has a status bar with 'MSG' and 'STATUS' indicators.

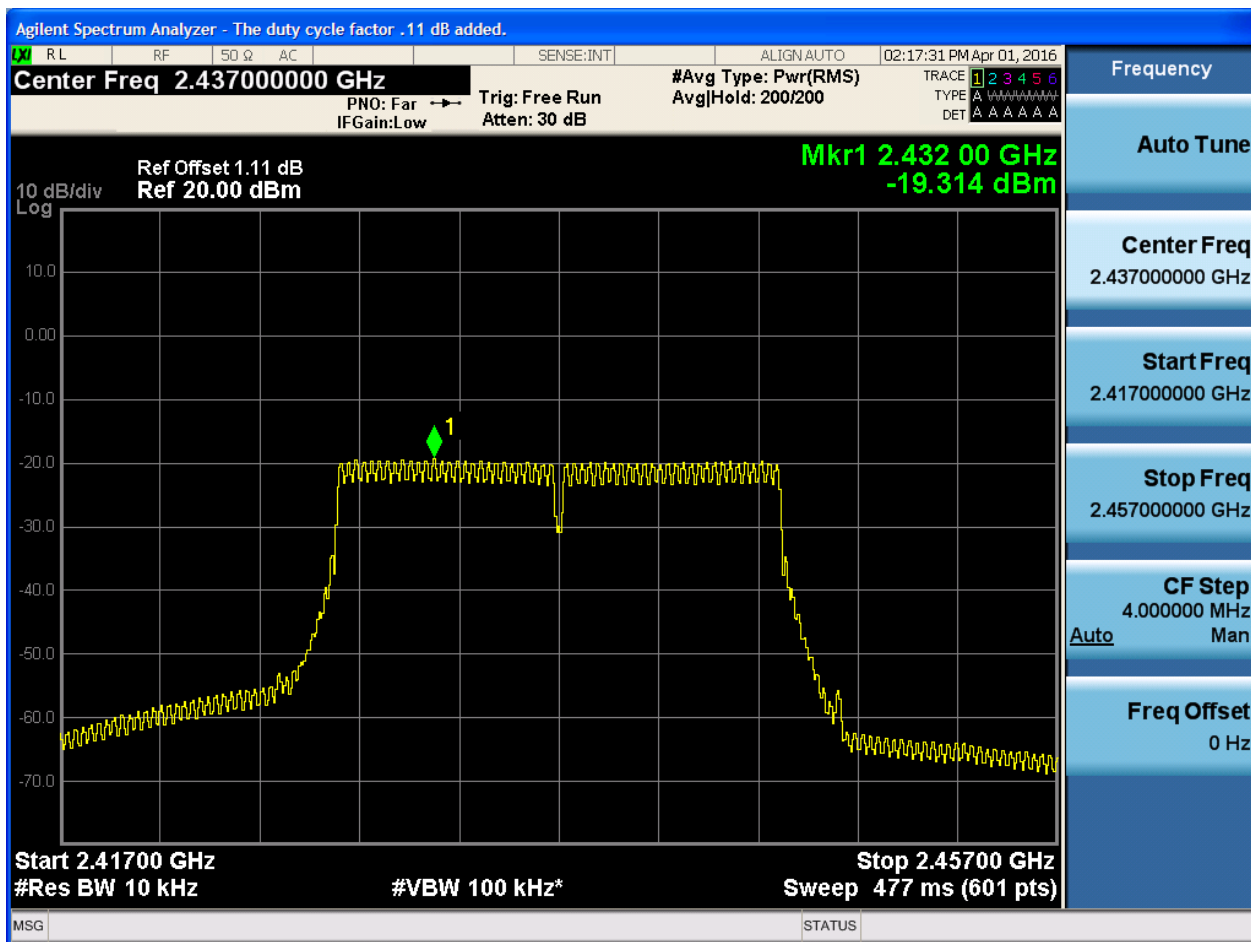


2.7 11N20_L@Ant 1





2.8 11N20_M@Ant 1





Agilent Spectrum Analyzer - The duty cycle factor .11 dB added.

Center Freq 2.462000000 GHz #Avg Type: Pwr(RMS) Avg|Hold: 200/200

Ref Offset 1.11 dB Ref 20.00 dBm

Mkr1 2.458 87 GHz -19.614 dBm

Start 2.44200 GHz Stop 2.48200 GHz

#Res BW 10 kHz #VBW 100 kHz* Sweep 477 ms (601 pts)

Frequency

Auto Tune

Center Freq 2.462000000 GHz

Start Freq 2.442000000 GHz

Stop Freq 2.482000000 GHz

CF Step 4.000000 MHz

Freq Offset 0 Hz

The image shows a screenshot of an Agilent Spectrum Analyzer. The main display area shows a spectrum plot with a yellow trace. A green diamond marker labeled '1' is positioned at the peak of the signal, which is at a frequency of 2.45887 GHz and a power level of -19.614 dBm. The plot has a grid with a vertical axis labeled '10 dB/div Log' and a horizontal axis. The signal is a narrowband peak with some noise. The background is black, and the grid lines are white. The top of the screen shows various settings and status information, including 'Center Freq 2.462000000 GHz', 'Ref Offset 1.11 dB', 'Ref 20.00 dBm', and 'Mkr1 2.458 87 GHz -19.614 dBm'. The bottom of the screen shows 'Start 2.44200 GHz', 'Stop 2.48200 GHz', '#Res BW 10 kHz', '#VBW 100 kHz*', and 'Sweep 477 ms (601 pts)'. On the right side, there is a vertical panel with buttons for 'Frequency', 'Auto Tune', 'Center Freq', 'Start Freq', 'Stop Freq', 'CF Step', and 'Freq Offset'. The 'Auto Tune' button is highlighted in blue. The 'Center Freq' button shows the value '2.462000000 GHz'. The 'Start Freq' button shows '2.442000000 GHz'. The 'Stop Freq' button shows '2.482000000 GHz'. The 'CF Step' button shows '4.000000 MHz'. The 'Freq Offset' button shows '0 Hz'. The top status bar shows 'Agilent Spectrum Analyzer - The duty cycle factor .11 dB added.', 'Center Freq 2.462000000 GHz', '#Avg Type: Pwr(RMS) Avg|Hold: 200/200', and the date '02:27:37 PM Apr 01, 2016'. The bottom status bar shows 'MSG' and 'STATUS'.



Agilent Spectrum Analyzer - The duty cycle factor .2 dB added.

Center Freq 2.422000000 GHz

Ref Offset 1.2 dB
Ref 20.00 dBm

10 dB/div
Log

Mkr1 2.425 73 GHz
-23.132 dBm

Start 2.38200 GHz
#Res BW 10 kHz
#VBW 100 kHz*

Stop 2.46200 GHz
Sweep 953 ms (601 pts)

Auto Tune

Center Freq
2.422000000 GHz

Start Freq
2.382000000 GHz

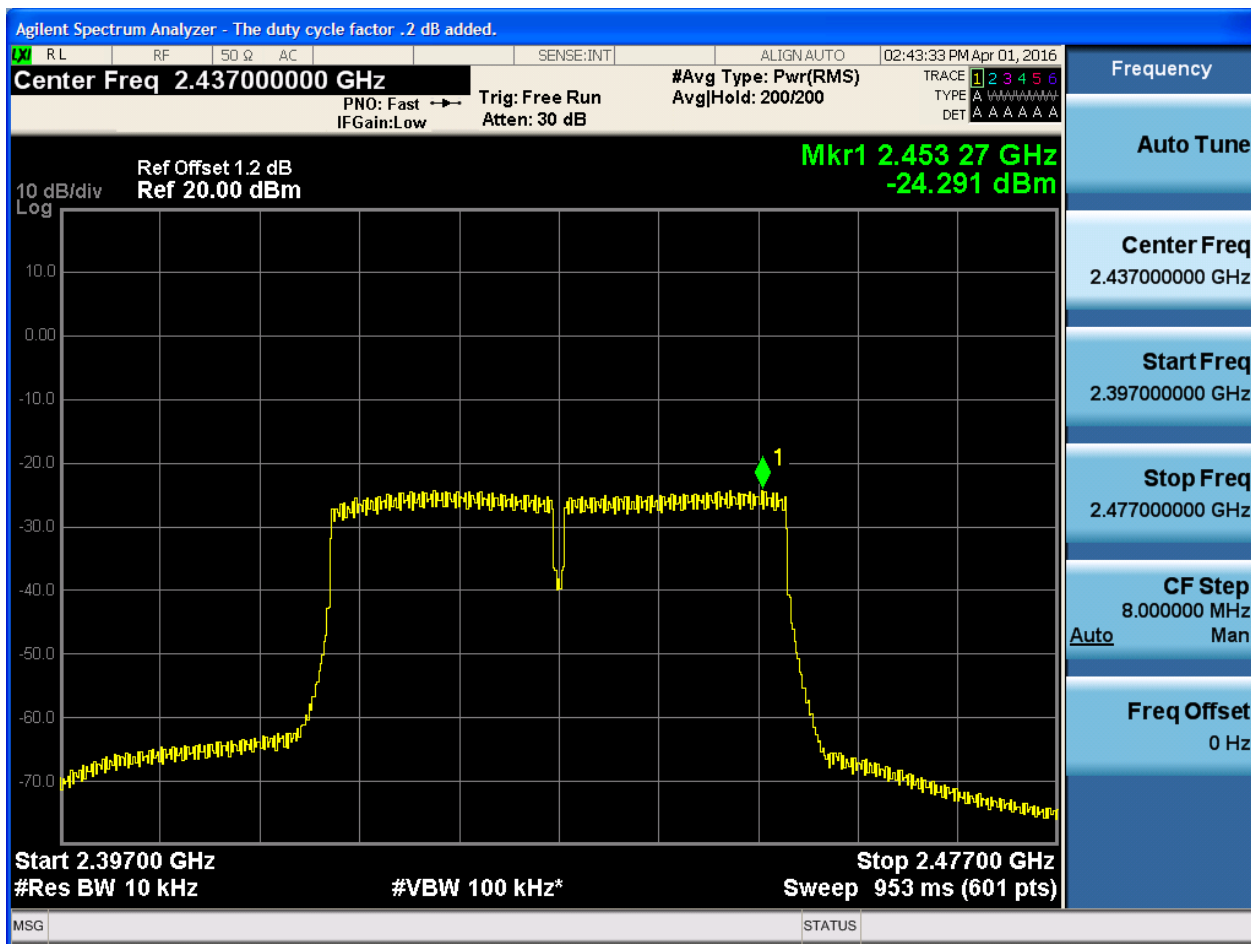
Stop Freq
2.462000000 GHz

CF Step
8.000000 MHz
Man

Freq Offset
0 Hz



2.11 11N40_M@Ant 1





Agilent Spectrum Analyzer - The duty cycle factor .2 dB added.

Center Freq 2.45200000 GHz

Ref Offset 1.2 dB
Ref 20.00 dBm

Mkr1 2.459 47 GHz
-20.423 dBm

Start 2.41200 GHz
#Res BW 10 kHz

Stop 2.49200 GHz
Sweep 953 ms (601 pts)

#VBW 100 kHz*

Trig: Free Run
Atten: 30 dB

PNO: Fast
IFGain:Low

Frequency

Auto Tune

Center Freq
2.45200000 GHz

Start Freq
2.41200000 GHz

Stop Freq
2.49200000 GHz

CF Step
8.000000 MHz
Man

Freq Offset
0 Hz

Appendix F: Band Edges Compliance

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Carrier Power[dBm]	Max.Spurious Level[dBm]	Verdict
11B	L	2412	Ant 1	8.53	-50.05	pass
11B	H	2462	Ant 1	8.86	-44.46	pass
11G	L	2412	Ant 1	0.11	-50.14	pass
11G	H	2462	Ant 1	0.18	-48.24	pass
11N20	L	2412	Ant 1	-1.29	-50.31	pass
11N20	H	2462	Ant 1	-1.08	-46.53	pass
11N40	L	2422	Ant 1	-4.74	-49.82	pass
11N40	H	2452	Ant 1	-1.19	-45.05	pass



Part II - Test Plots

2.1 11B_L@Ant 1



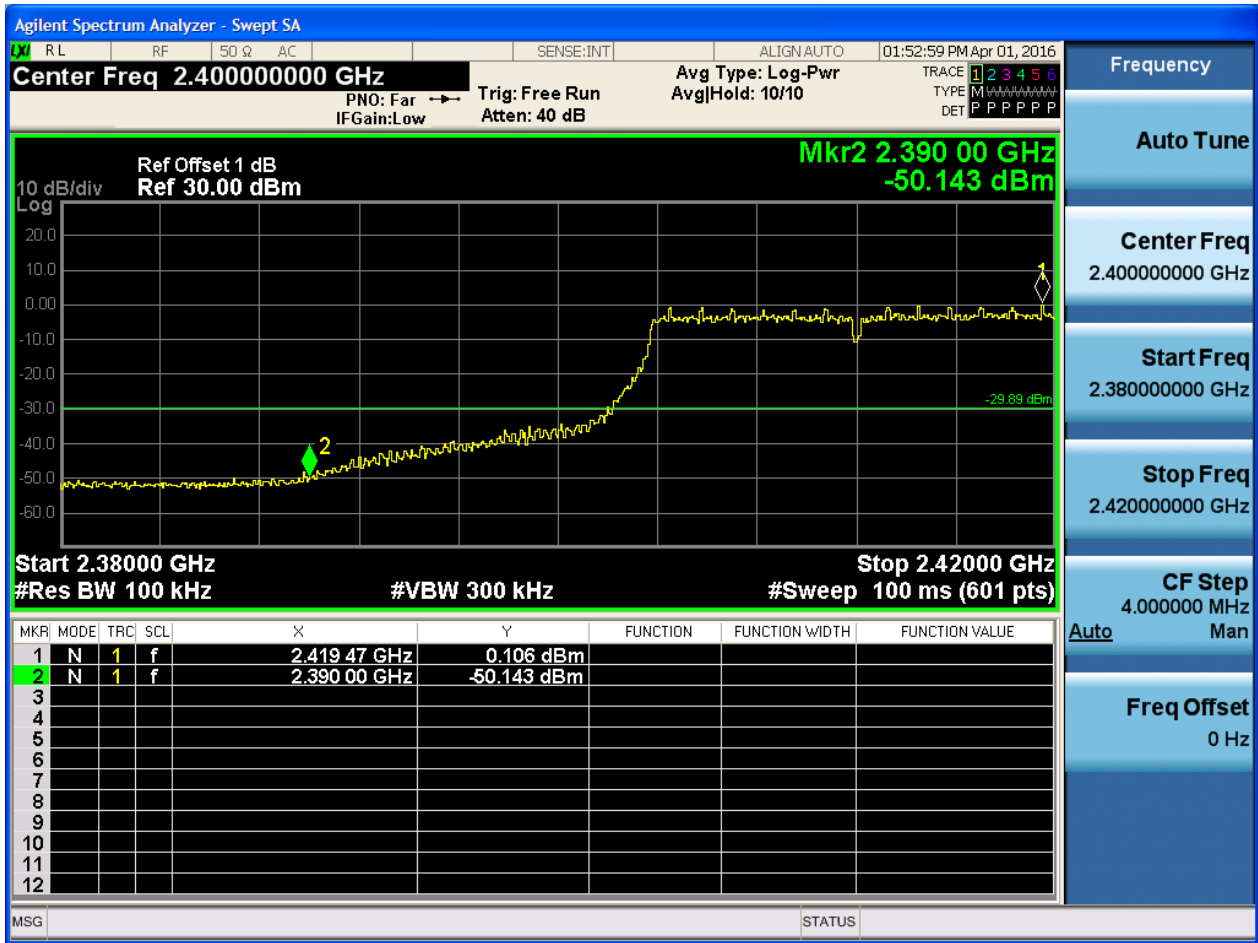


2.2 11B_H@Ant 1



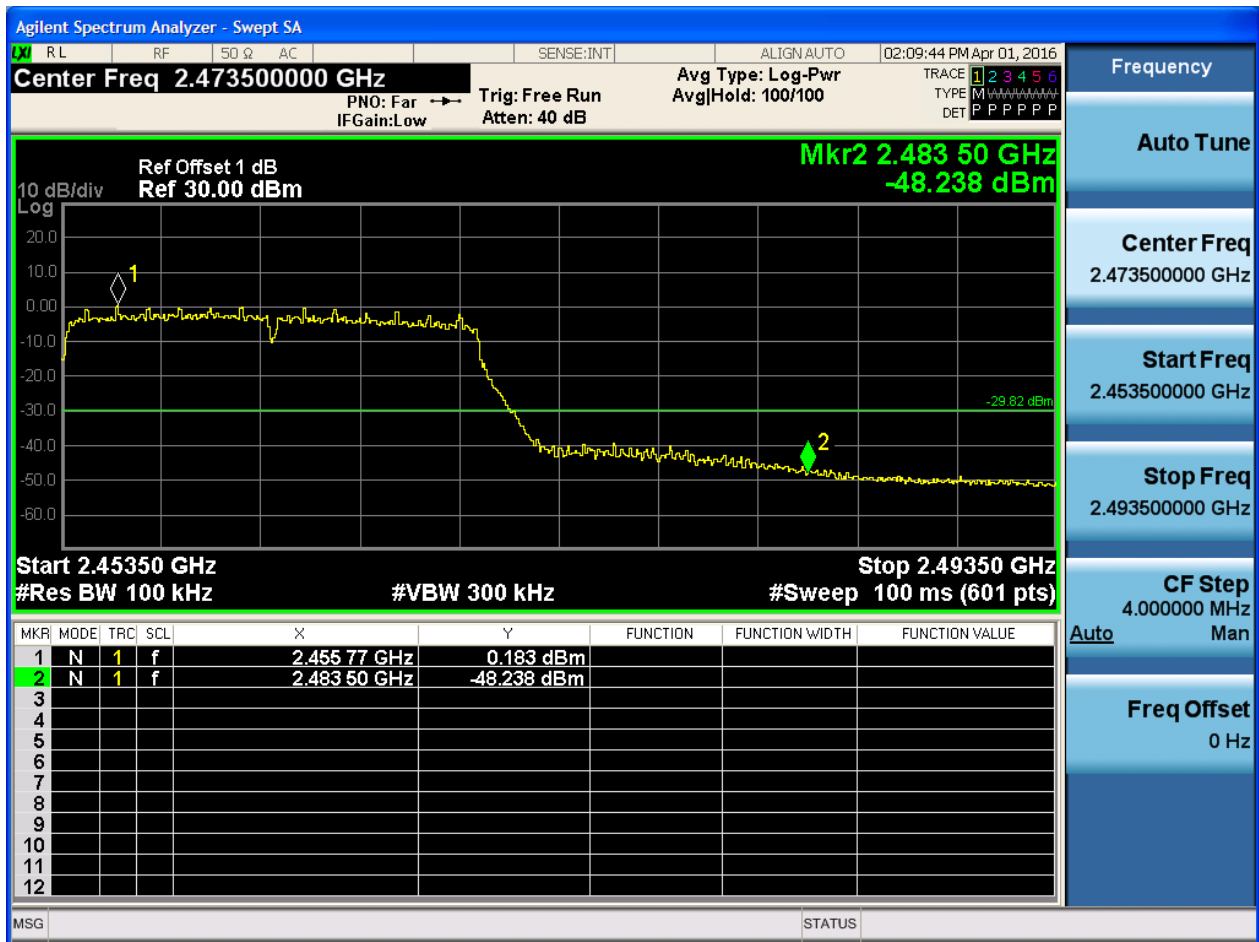


2.3 11G_L@Ant 1



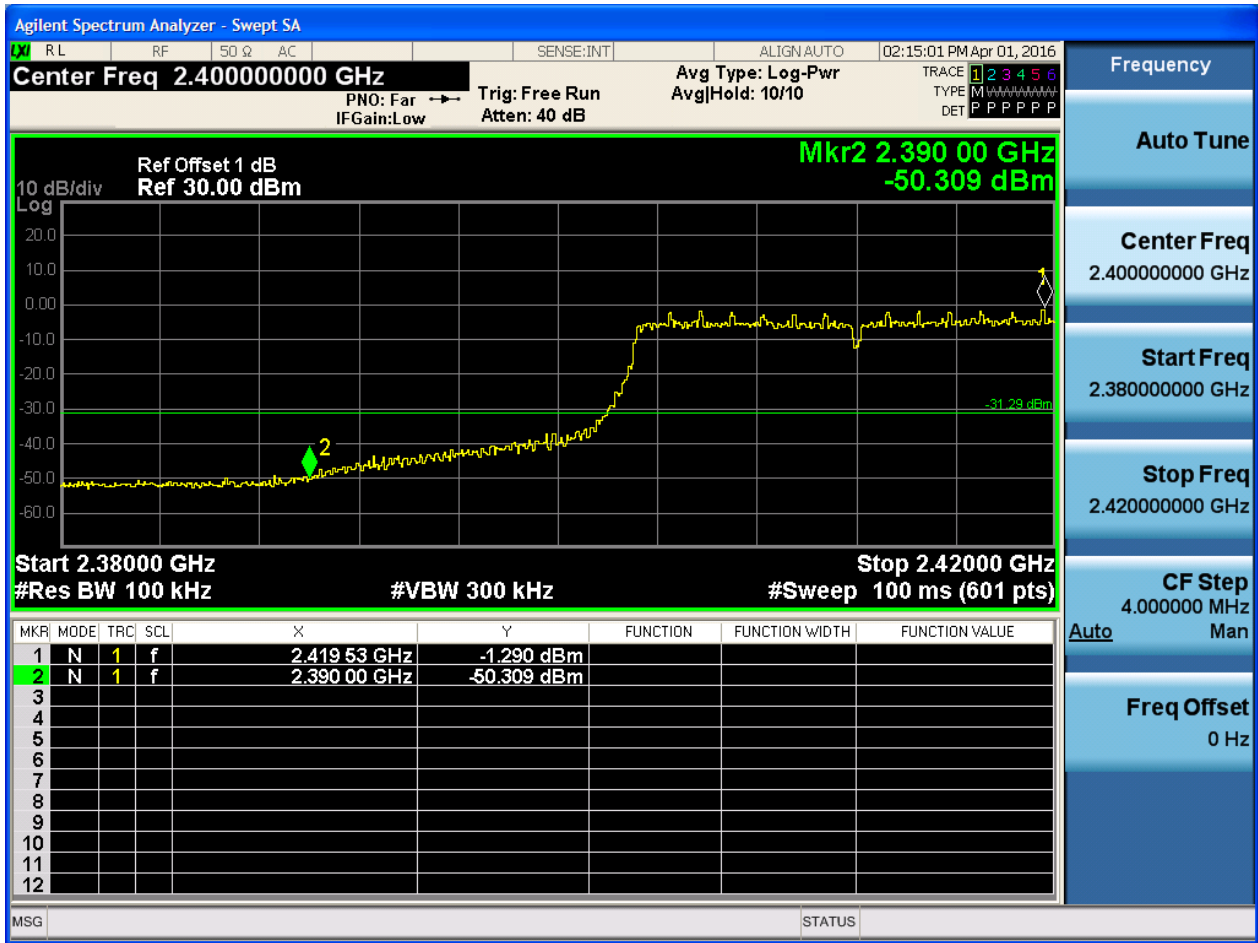


2.4 11G_H@Ant 1



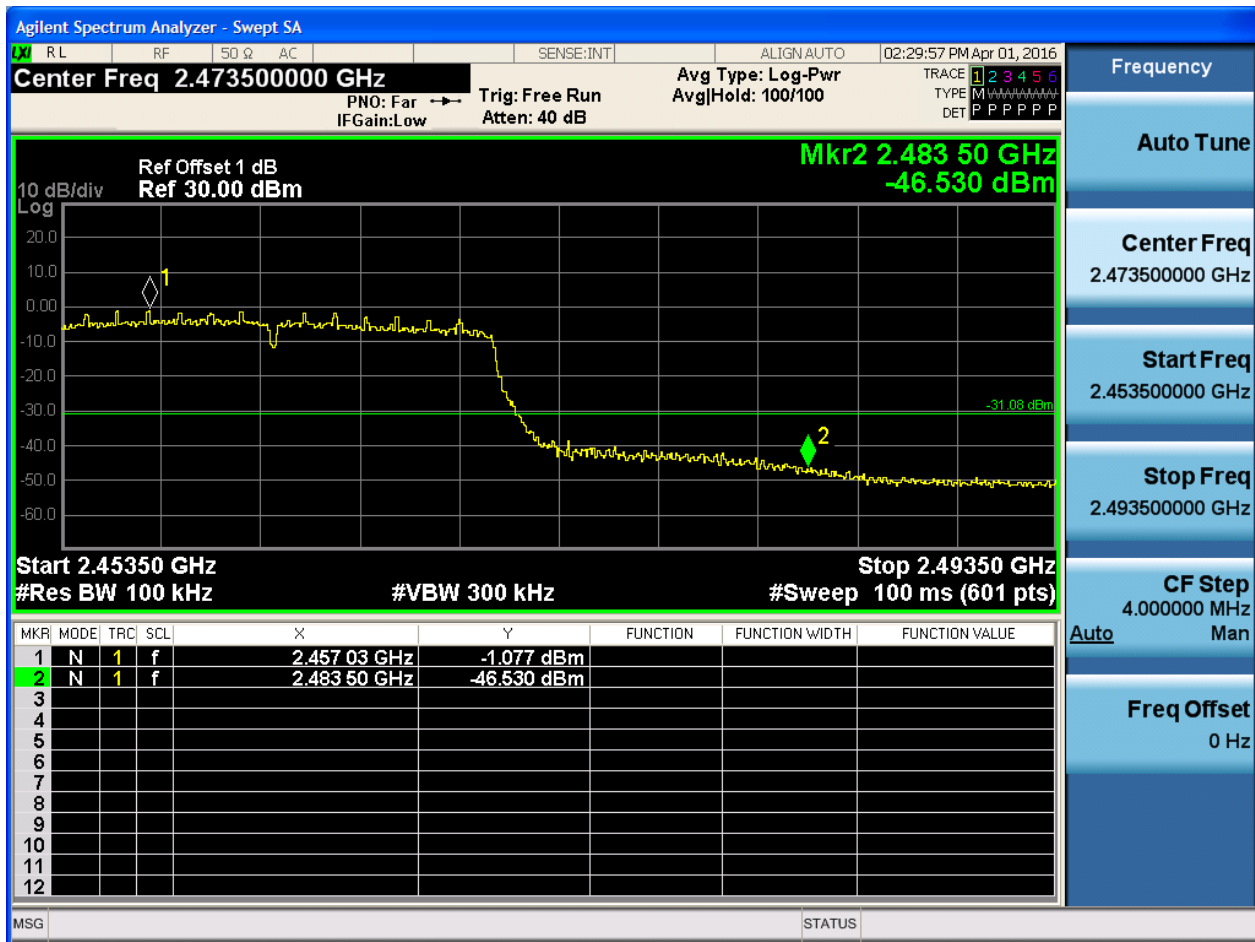


2.5 11N20_L@Ant 1



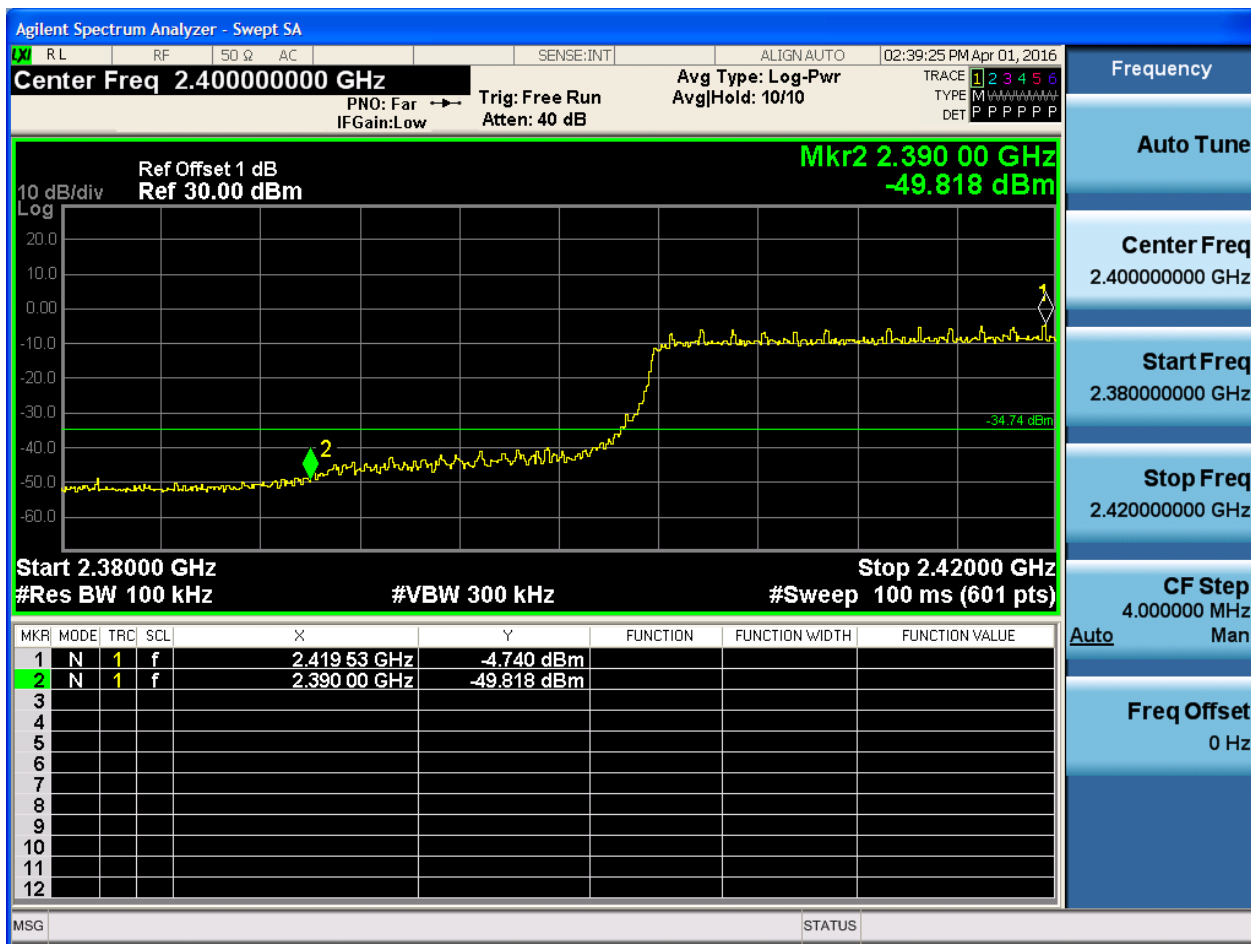


2.6 11N20_H@Ant 1



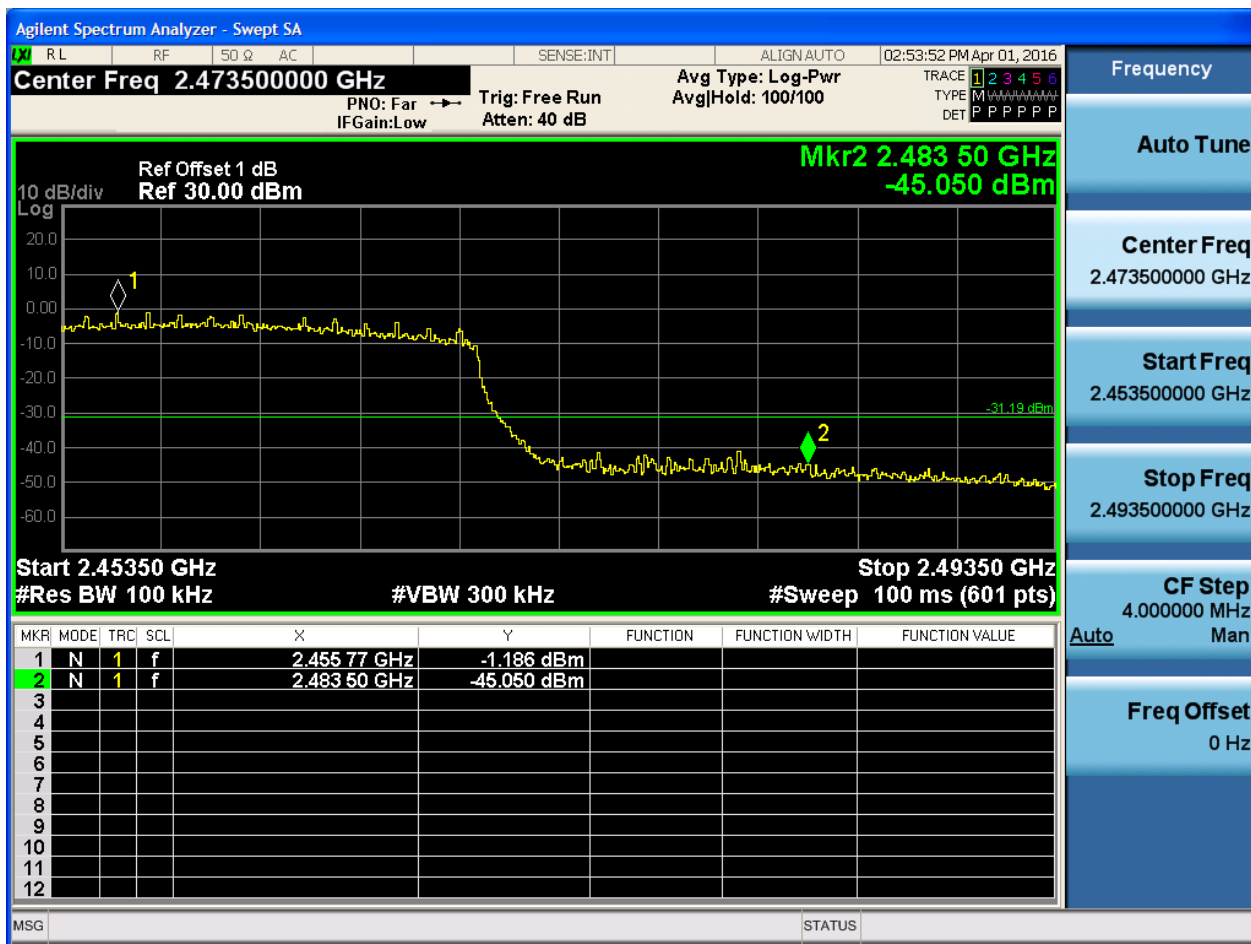


2.7 11N40_L@Ant 1





2.8 11N40_H@Ant 1



Appendix H: Unwanted Emissions into Non-Restricted Frequency

Bands

In this Appendix, the "Pref", which is used as the reference level, refers to the peak power level in any 100 kHz bandwidth within the fundamental emission, the "Puw" refers to the maximum emission power in 100 kHz band segments outside of the authorized frequency band.

Considering that the higher ratio of RBW to the span for the frequency ranges below 30 MHz makes the results determination be complicated, a narrower RBW other than 100 kHz is used for these ranges. The measured value should add a RBW correction factor (RBWCF) where $RBWCF [dB] = 10 \times \lg(100 [kHz]/\text{narrower RBW [kHz]})$. As to this Appendix, the narrower RBW is 1 kHz and RBWCF is 20 dB for the frequency 9 kHz to 150 kHz, and the narrower RBW is 10 kHz and RBWCF is 10 dB for the frequency 150 kHz to 30 MHz.

For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain and used as respective results for each chain, due to the relative-limit requirement.

In the result table, the "< Limit" denotes that "The Puw [dBm] is less than Pref[dBm]-30[dBm], see test plots for detailed".

Part I - Test Results

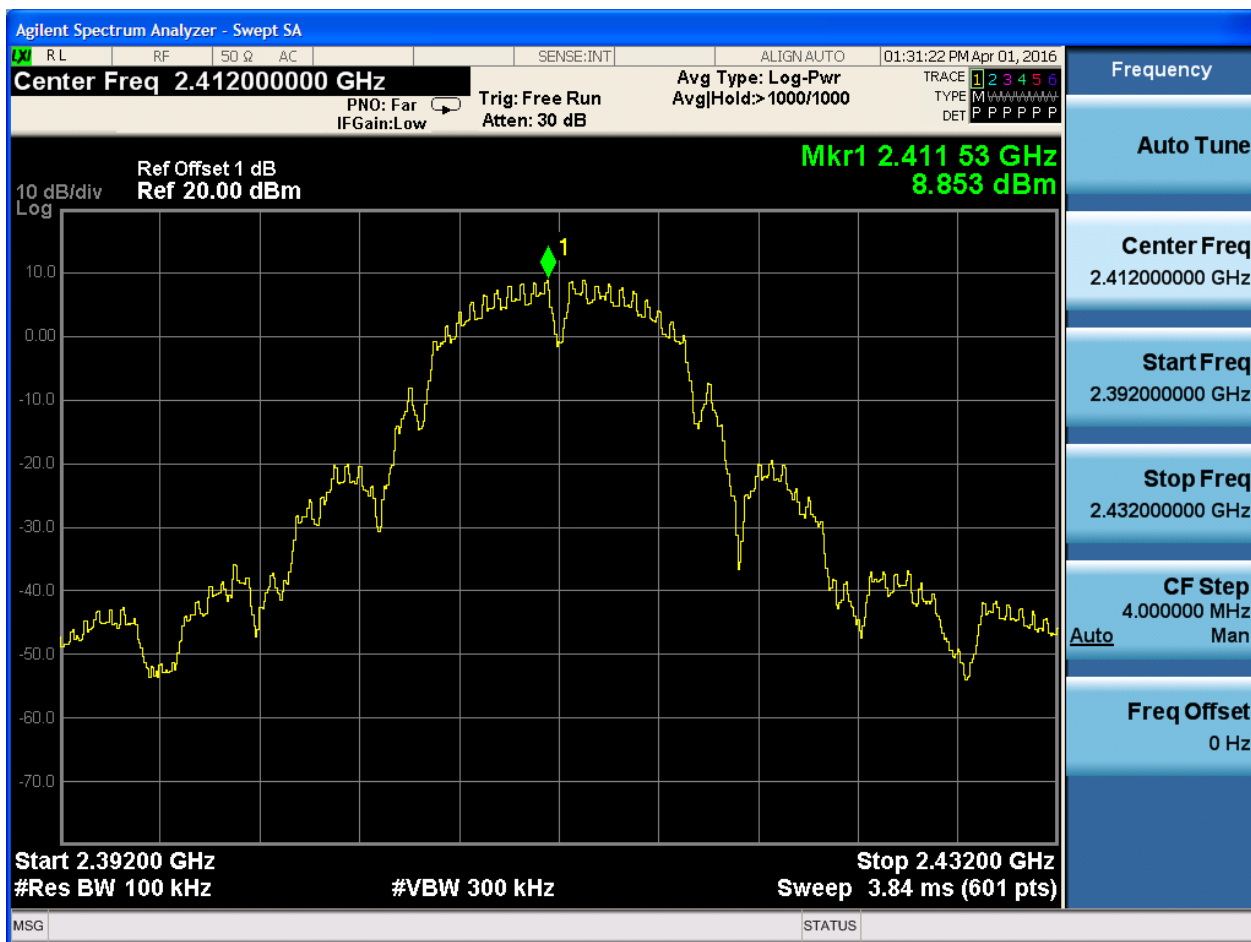
Test Mode	Test Channel	Frequency[MHz]	Ant	Pref[dBm]	Puw[dBm]	Verdict
11B	L	2412	Ant 1	8.85	<limit	pass
11B	M	2437	Ant 1	9.85	<limit	pass
11B	H	2462	Ant 1	8.80	<limit	pass
11G	L	2412	Ant 1	0.33	<limit	pass
11G	M	2437	Ant 1	0.97	<limit	pass
11G	H	2462	Ant 1	0.32	<limit	pass
11N20	L	2412	Ant 1	-1.12	<limit	pass
11N20	M	2437	Ant 1	-0.47	<limit	pass
11N20	H	2462	Ant 1	-0.95	<limit	pass
11N40	L	2422	Ant 1	-3.70	<limit	pass
11N40	M	2437	Ant 1	-4.81	<limit	pass
11N40	H	2452	Ant 1	-1.02	<limit	pass



Part II - Test Plots

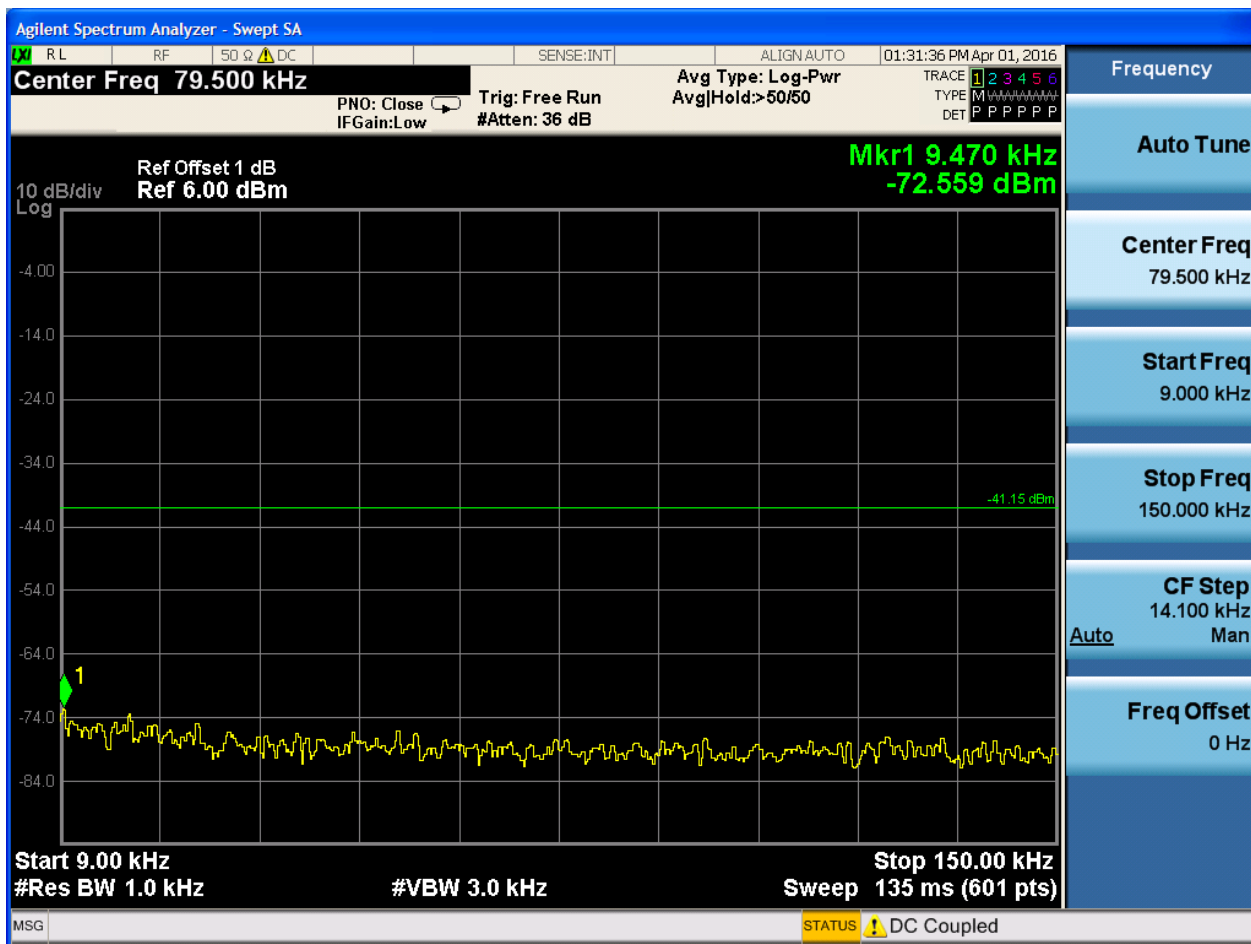
2.1 11B_L@Ant 1

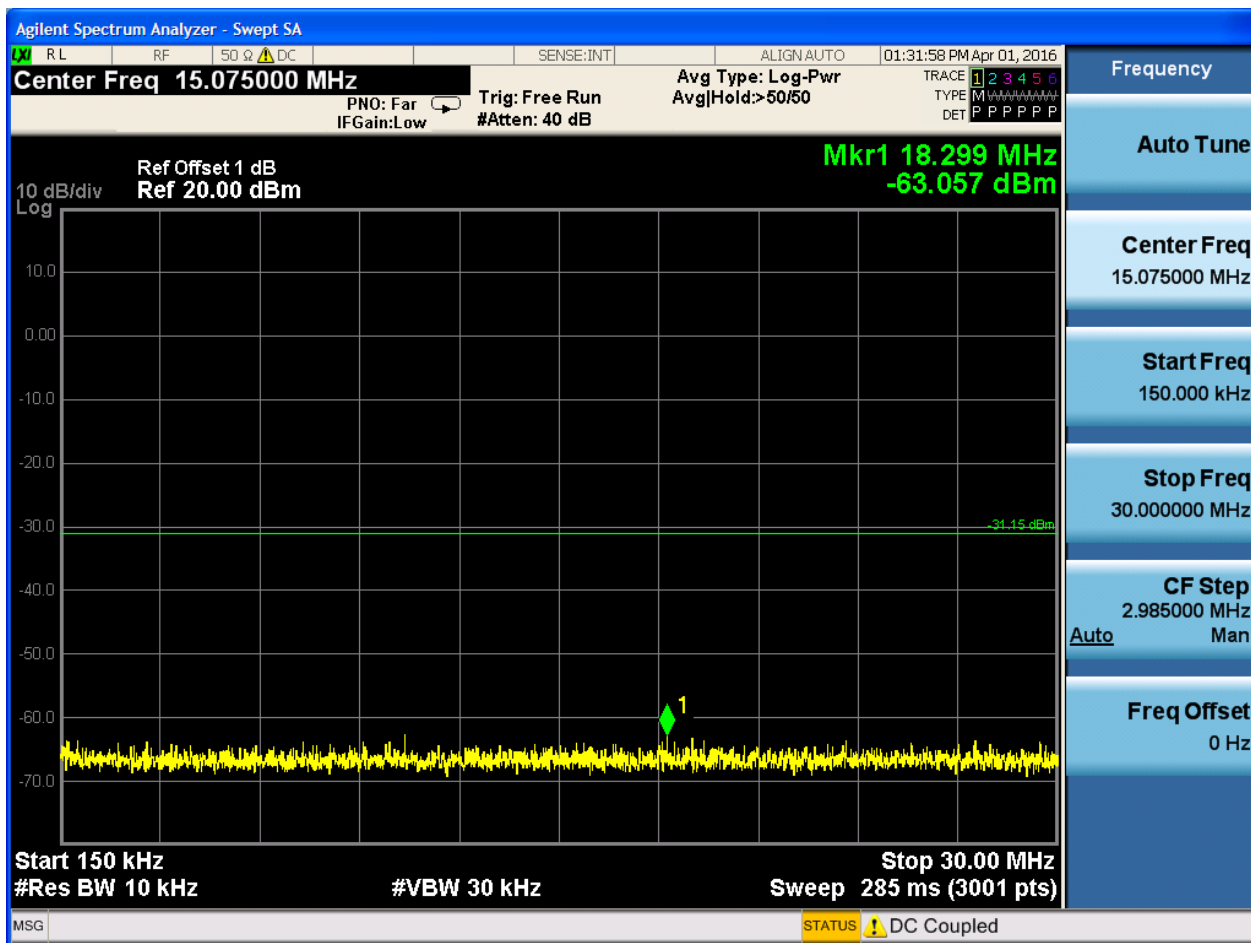
Pref:

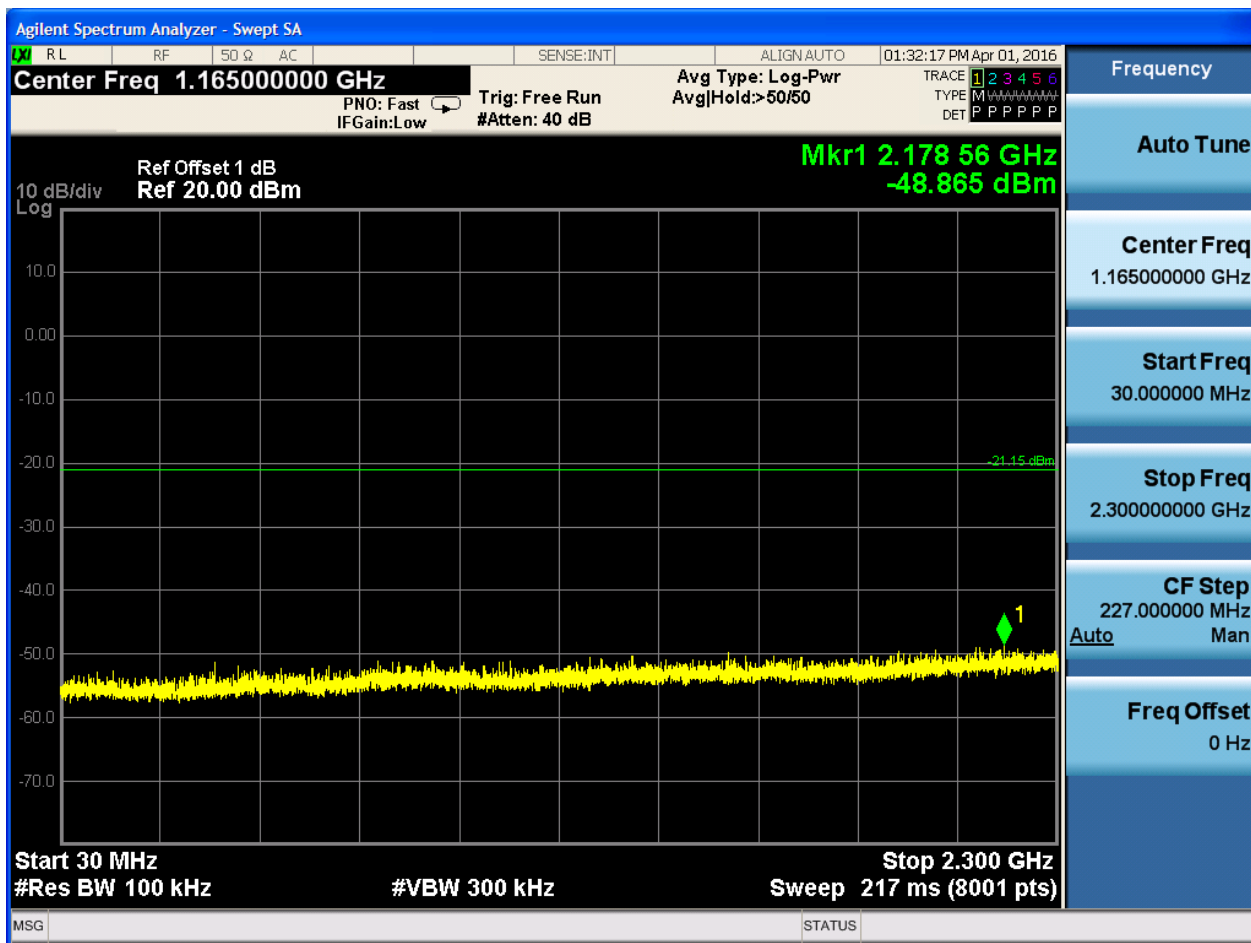


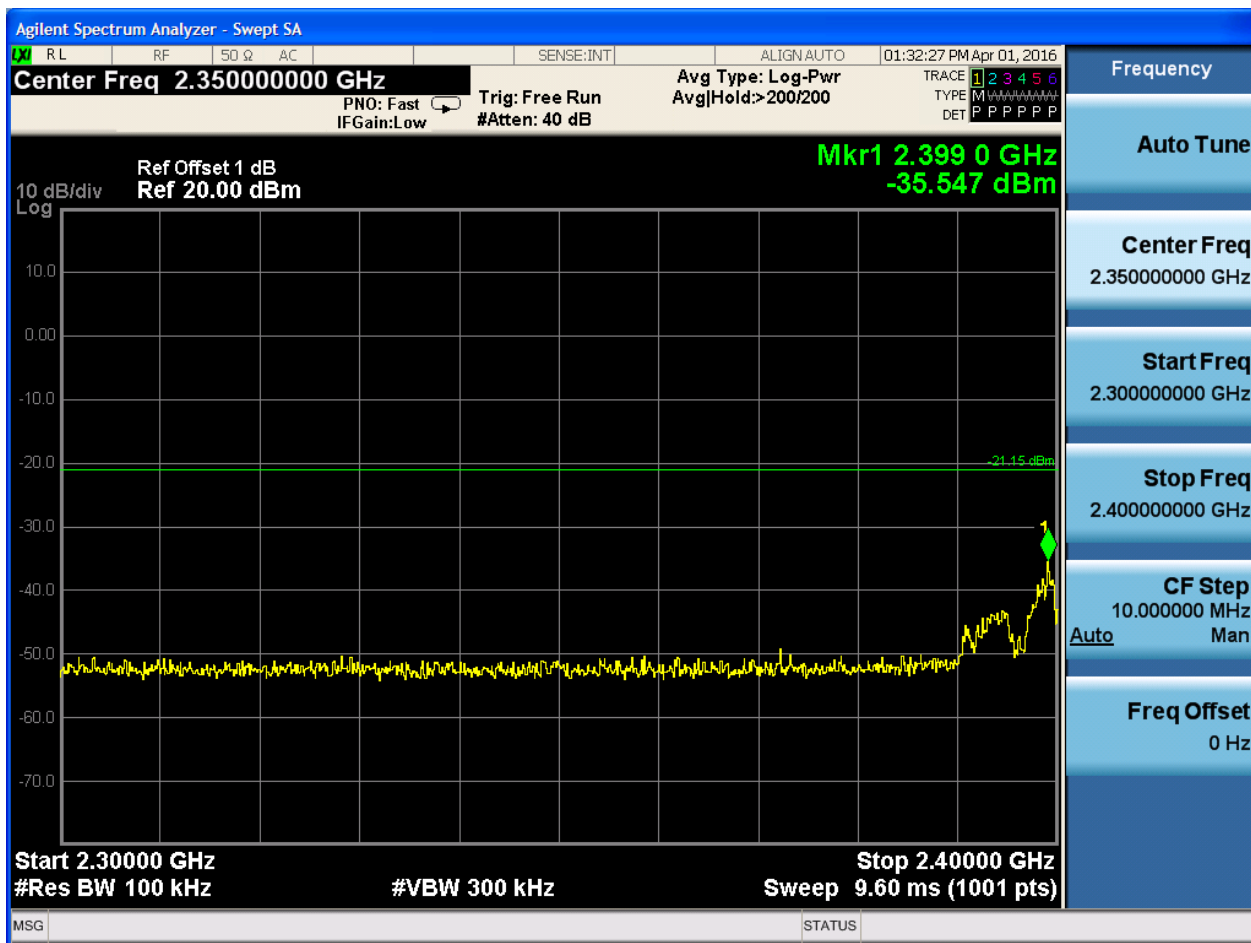


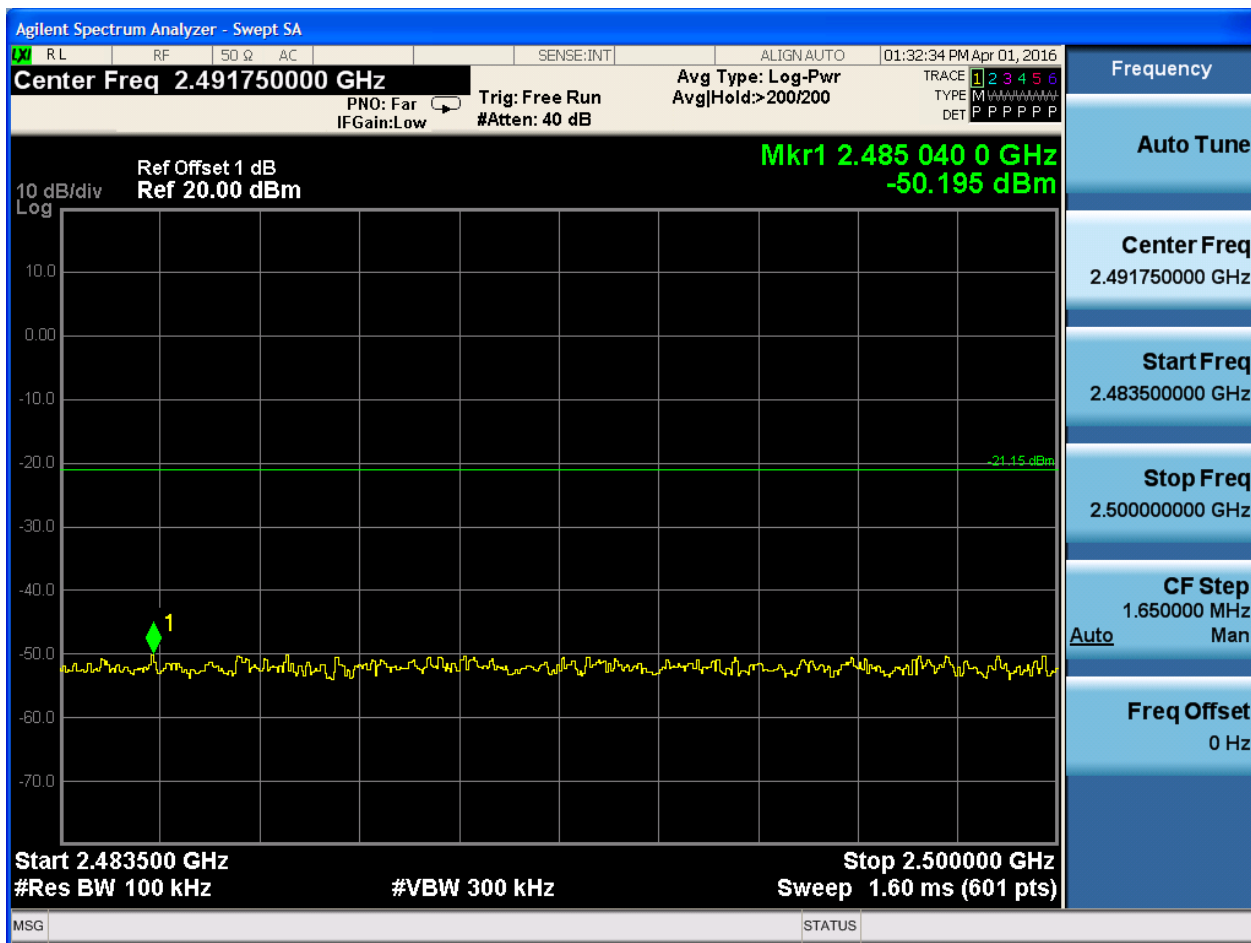
PuW:









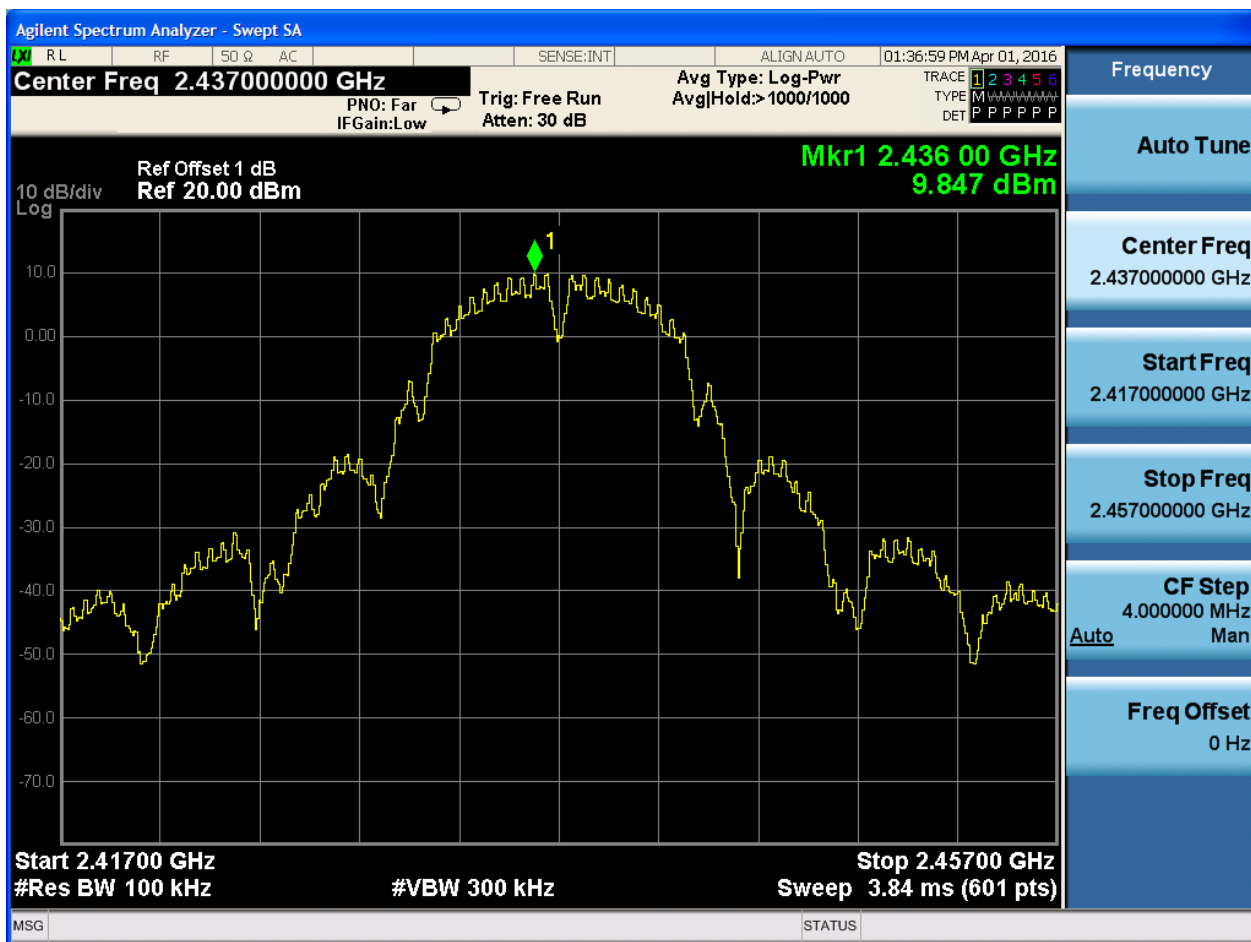






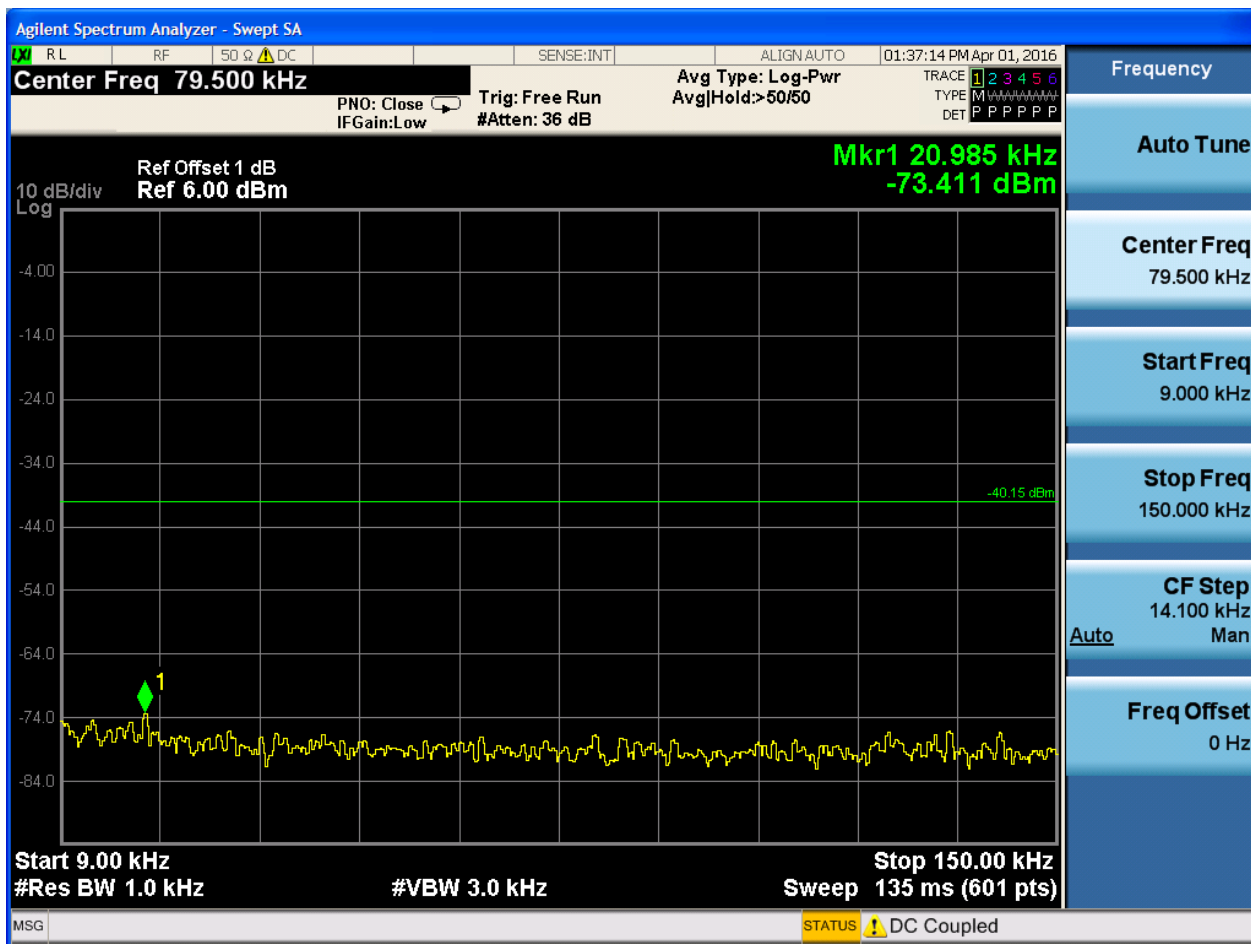
2.2 11B_M@Ant 1

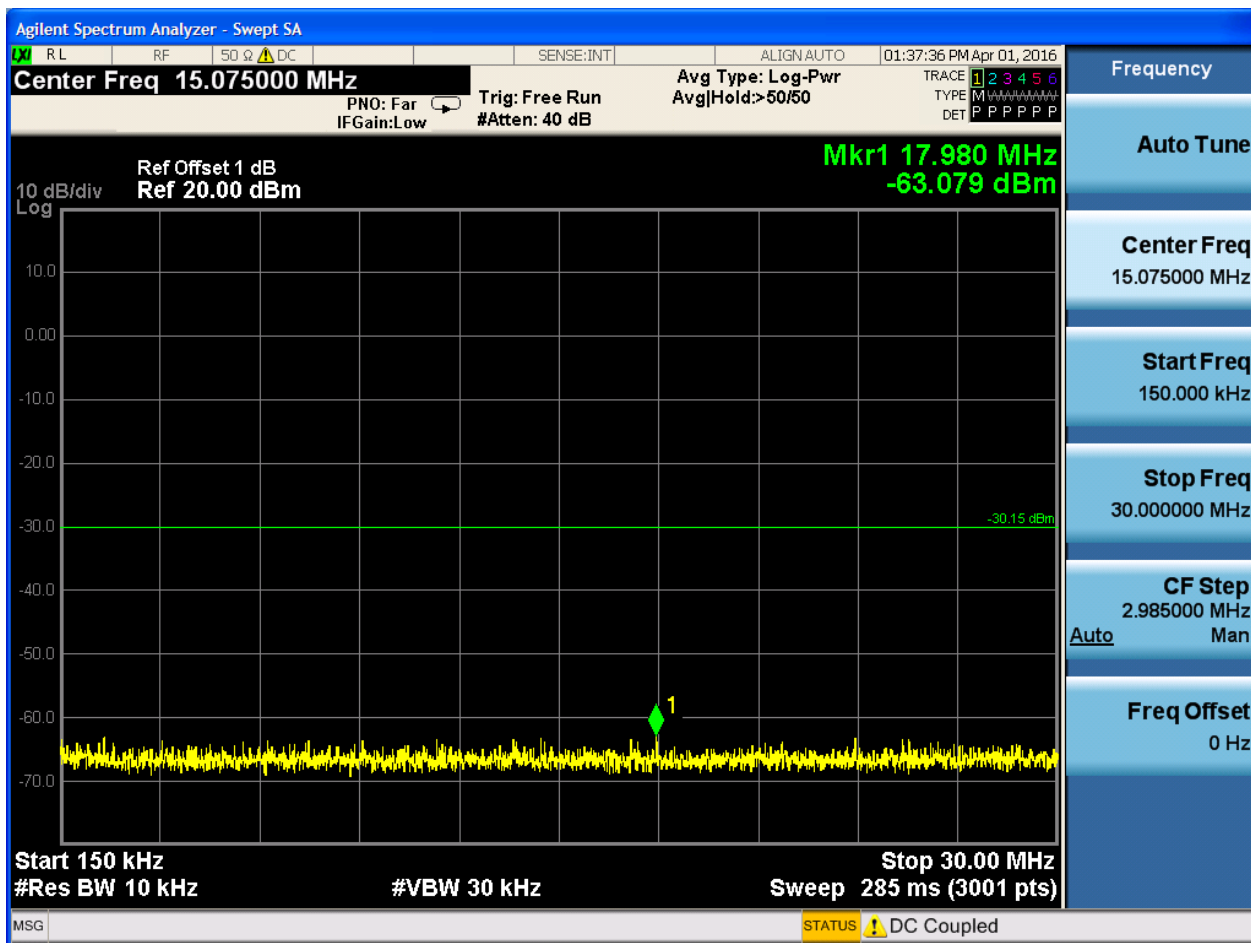
Pref:

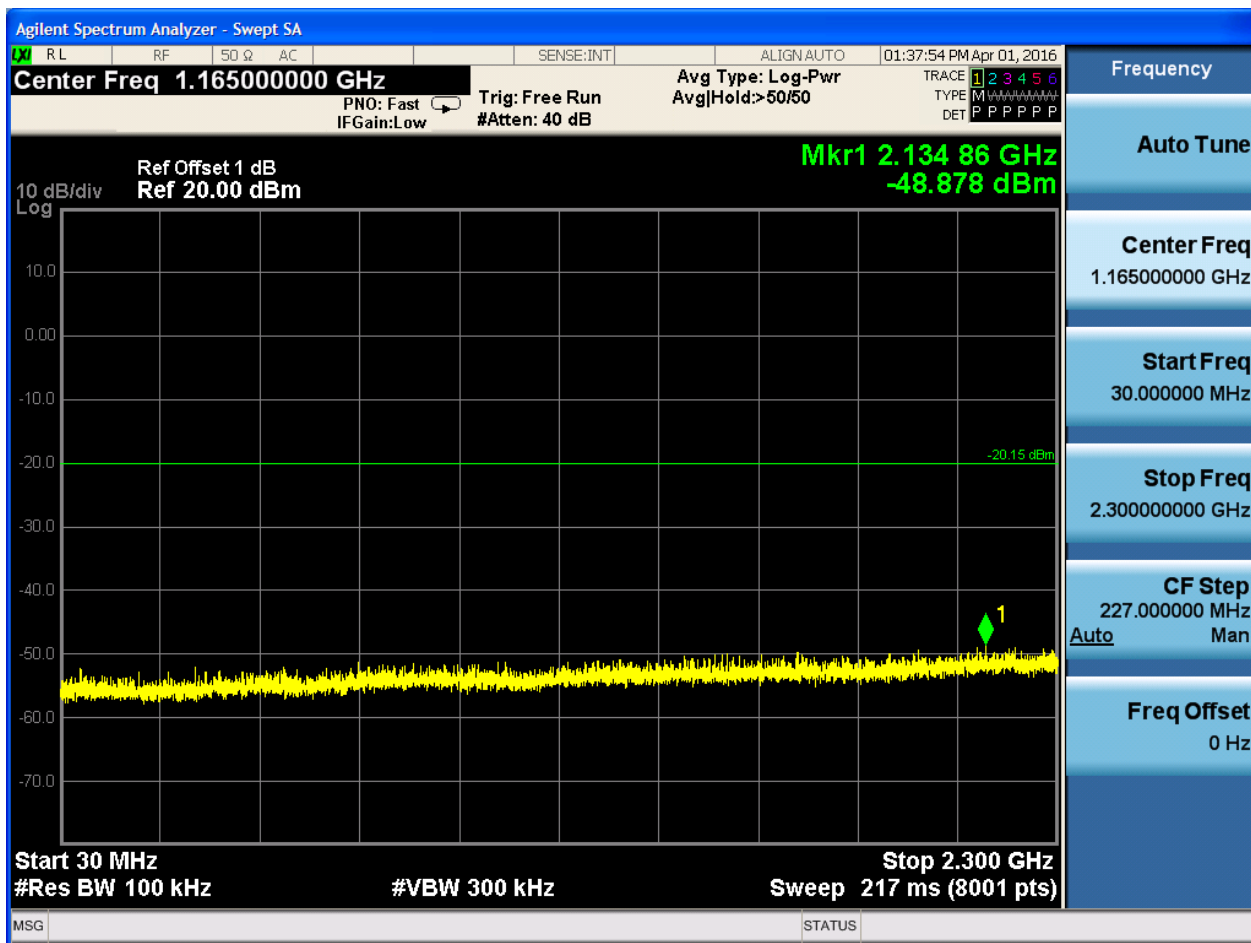


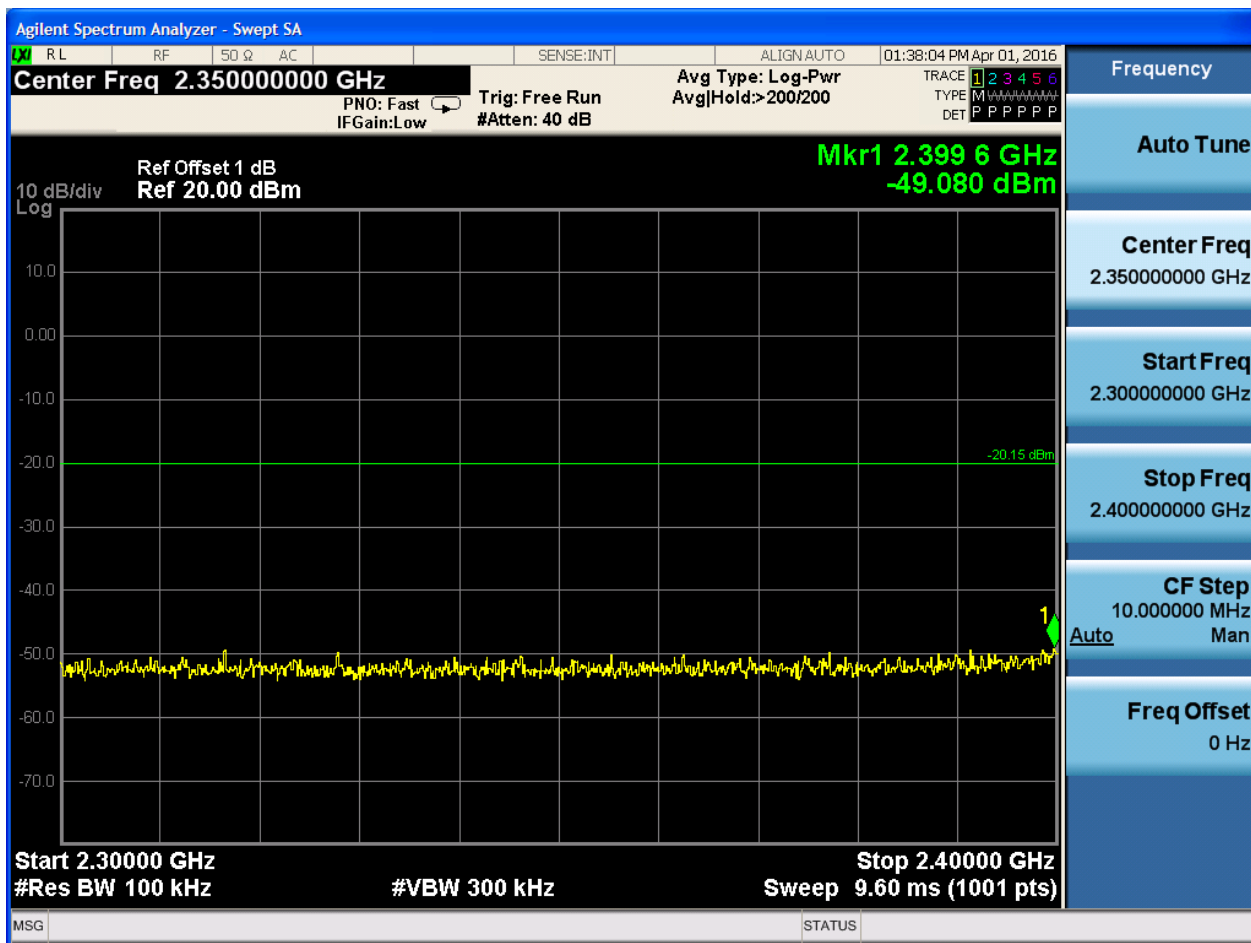


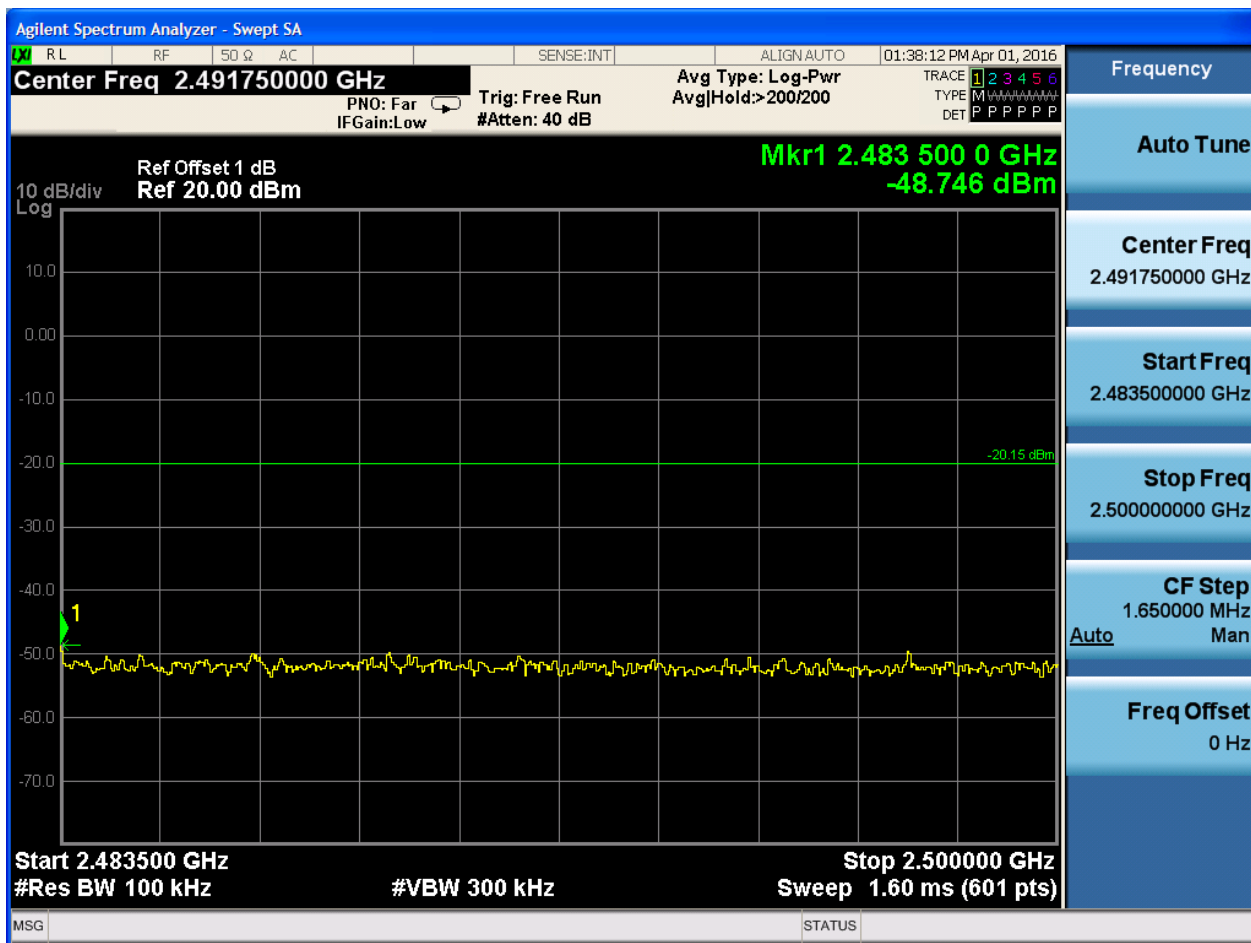
PuW:













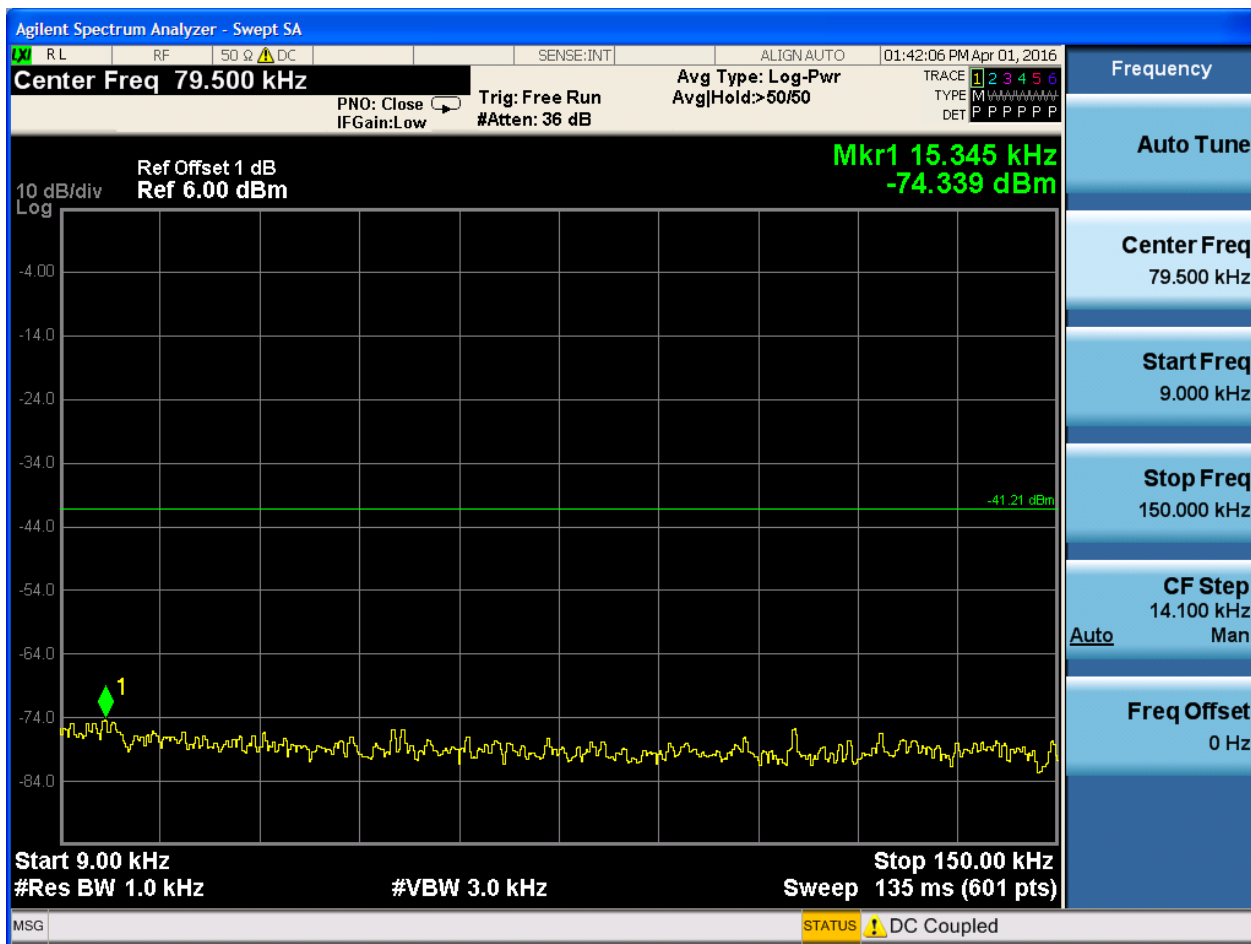
2.3 11B_H@Ant 1

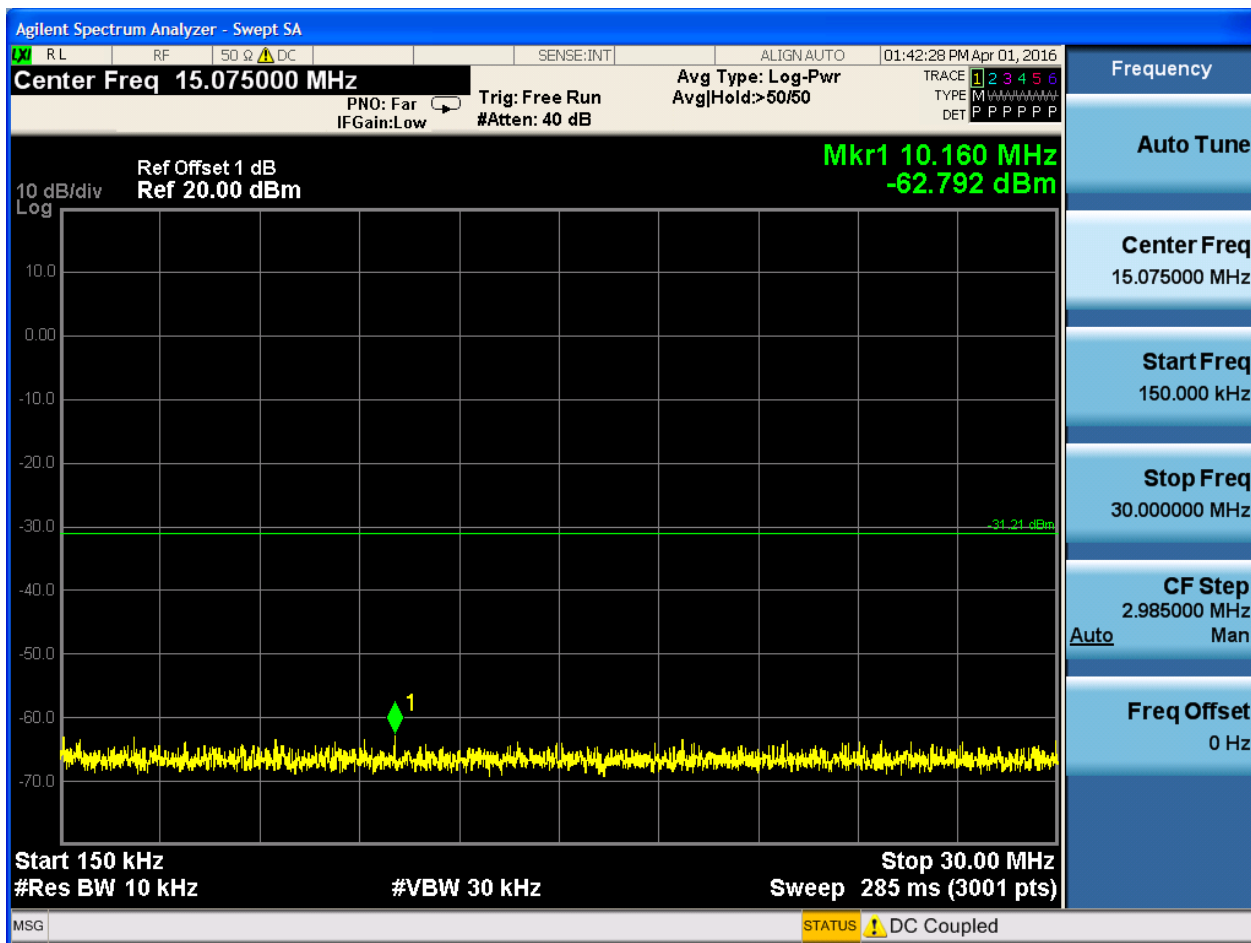
Pref:

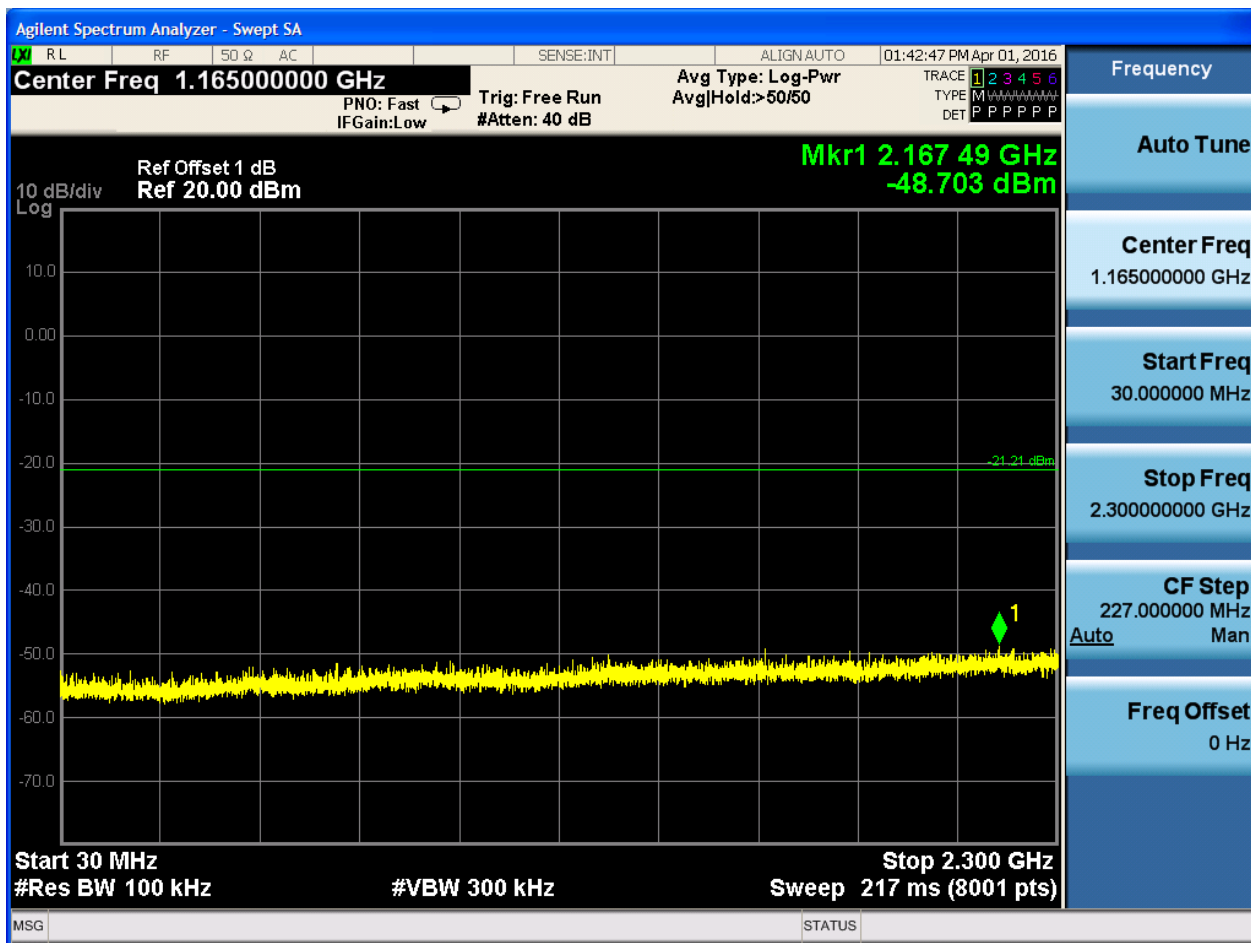


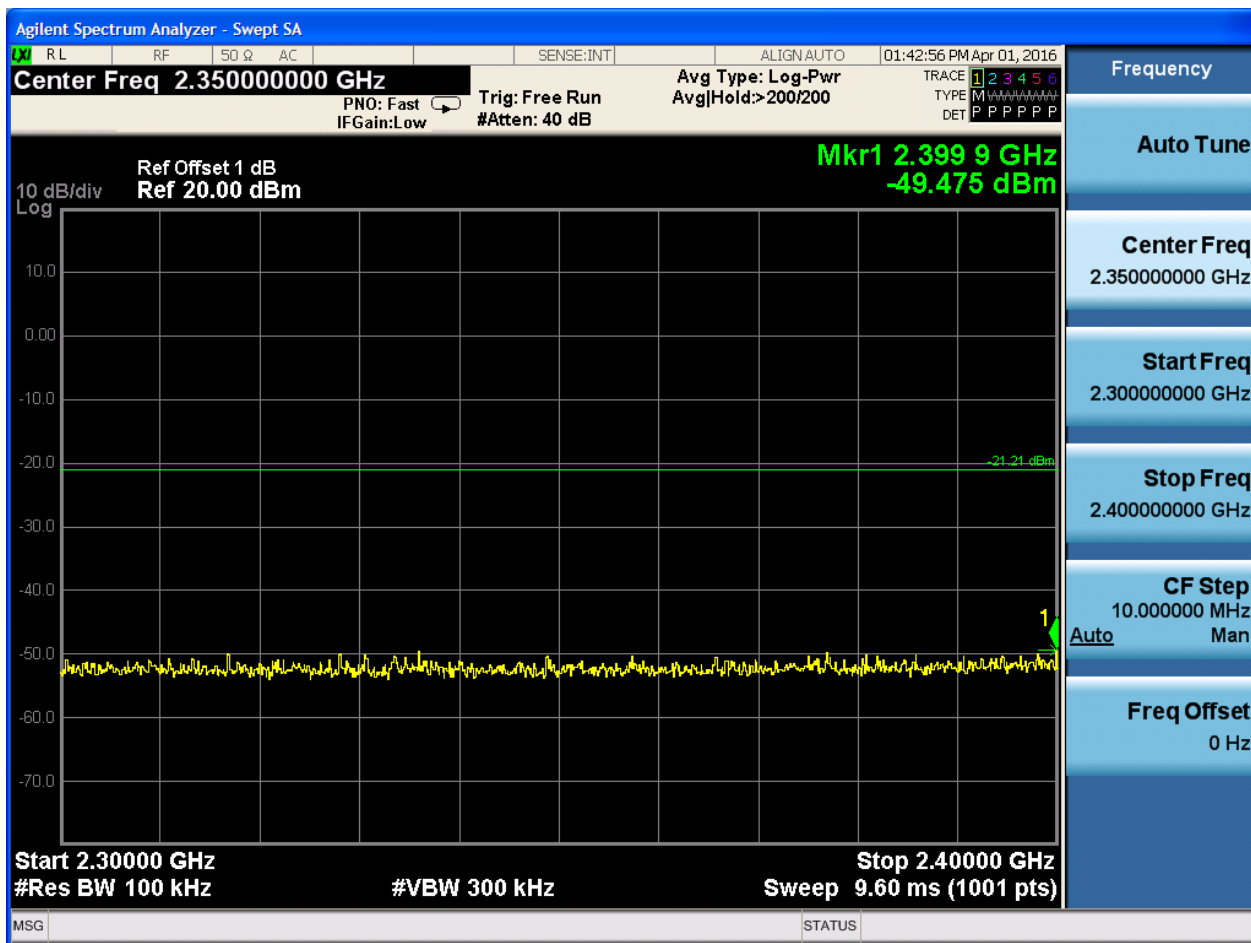


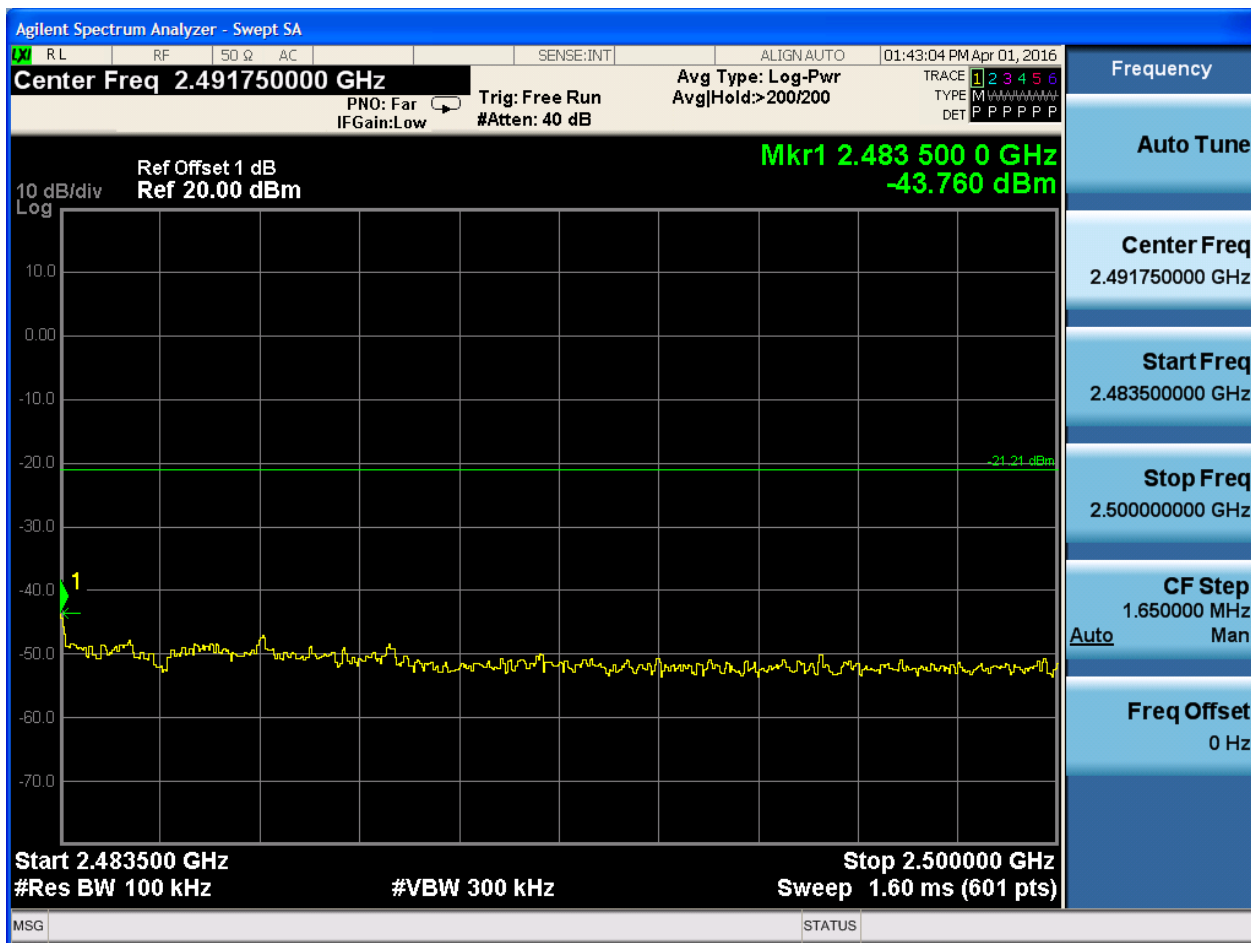
Puw:









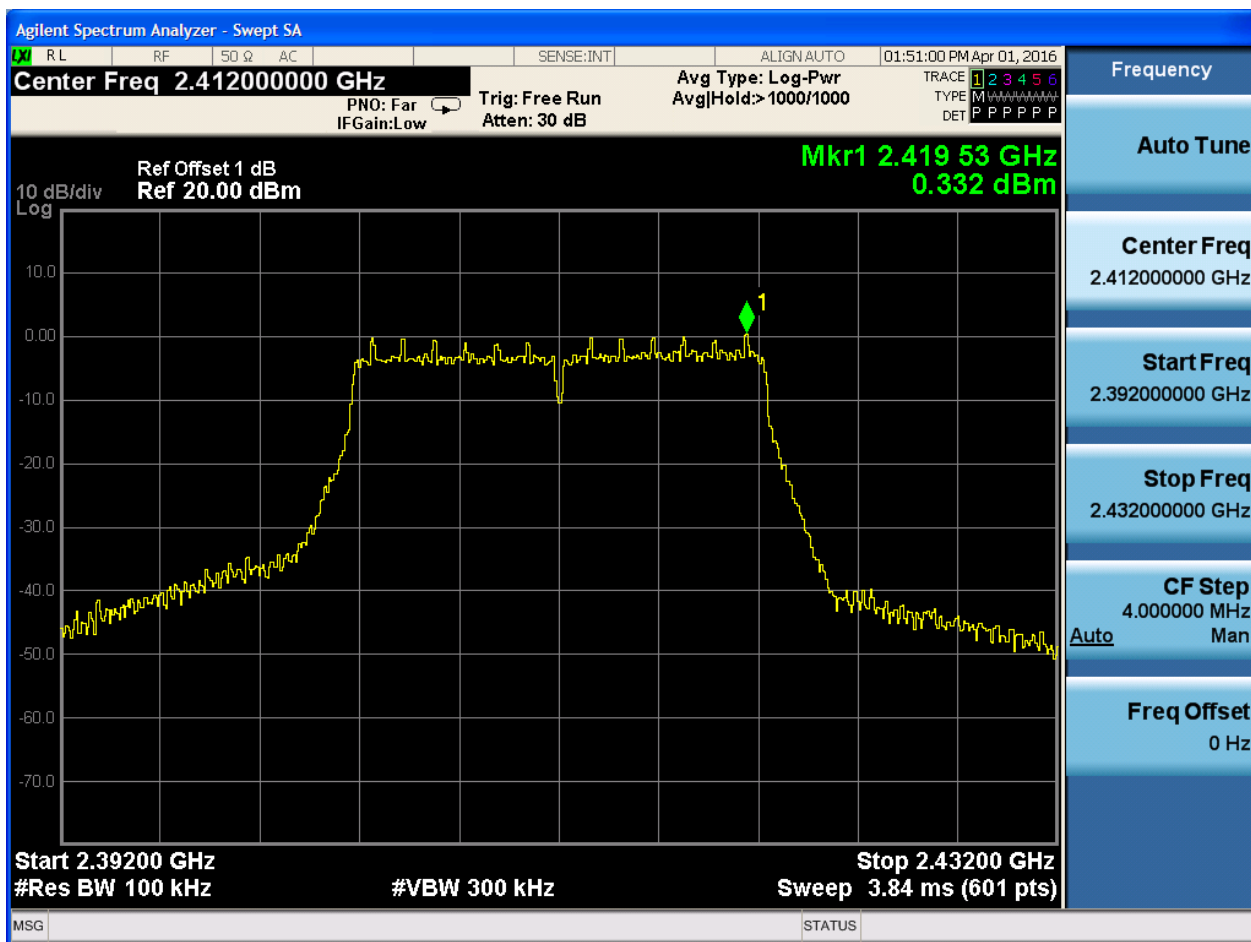






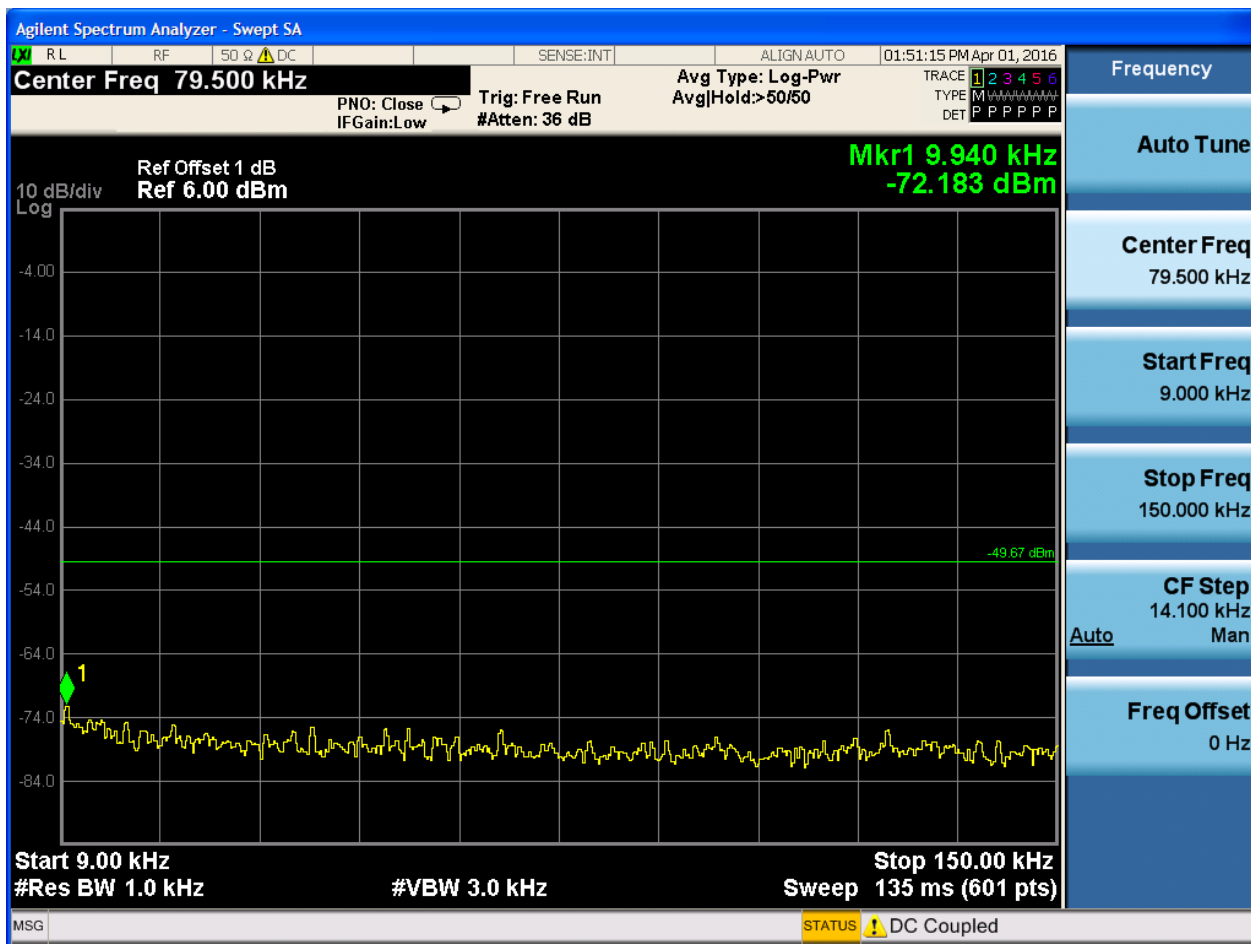
2.4 11G_L@Ant 1

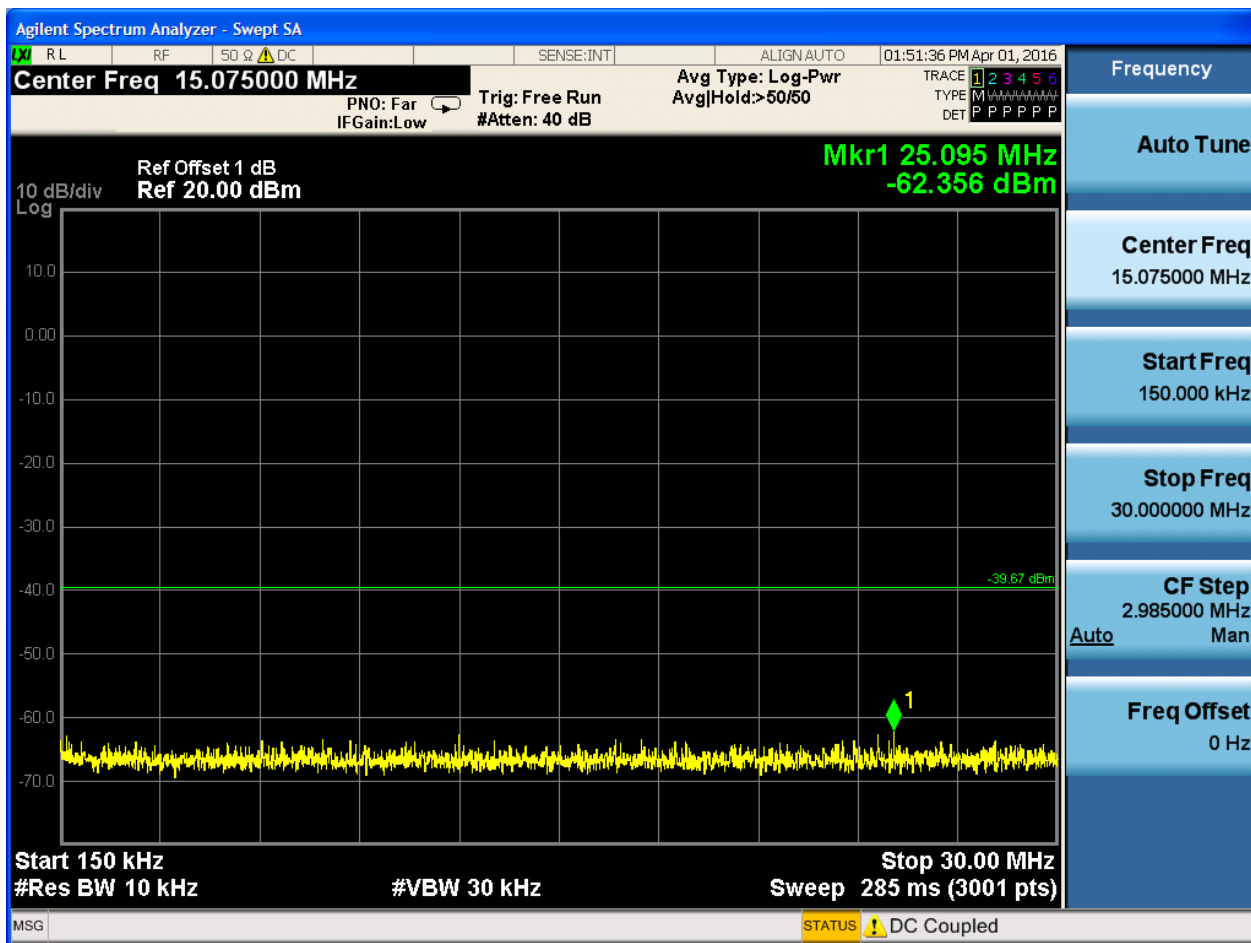
Pref:

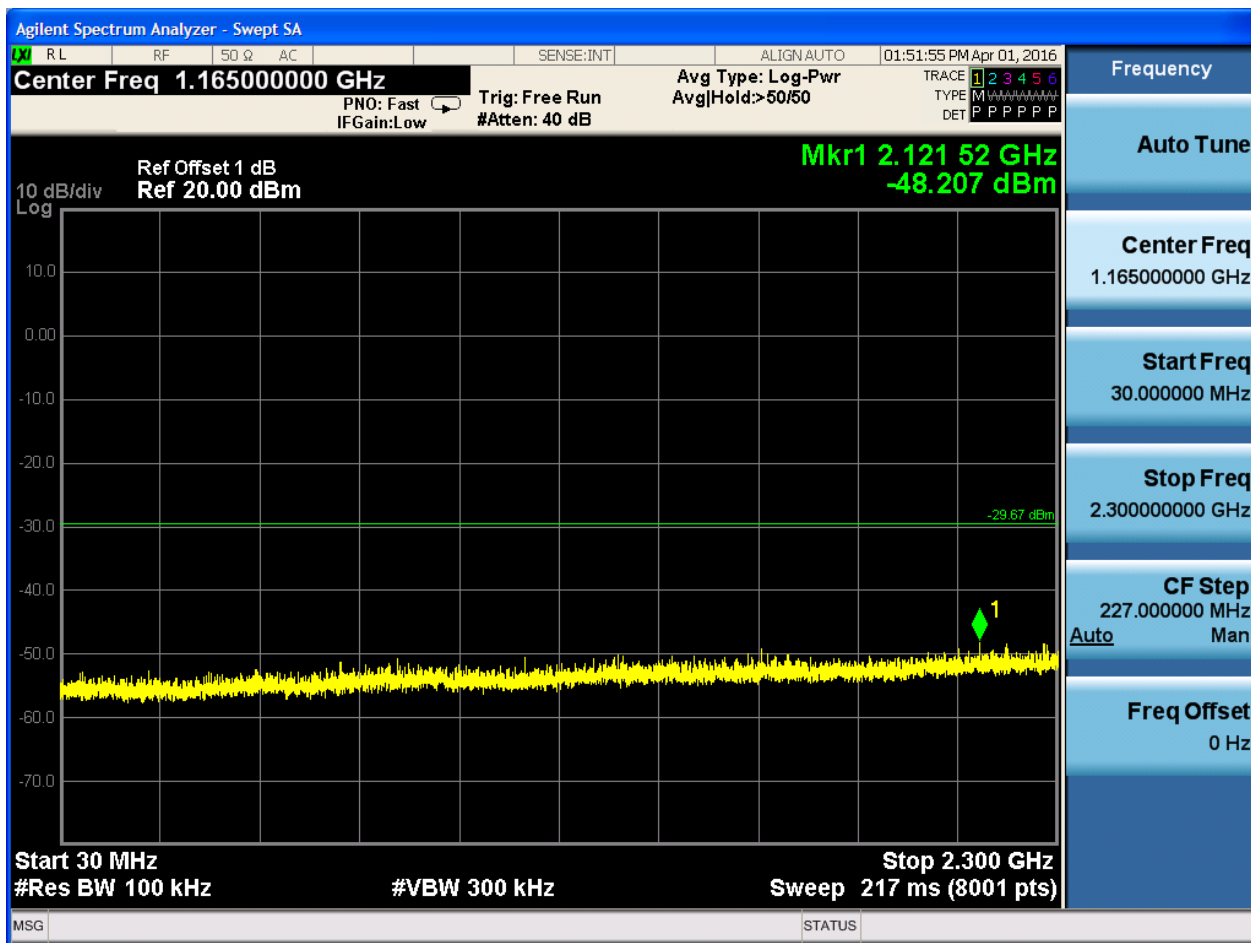


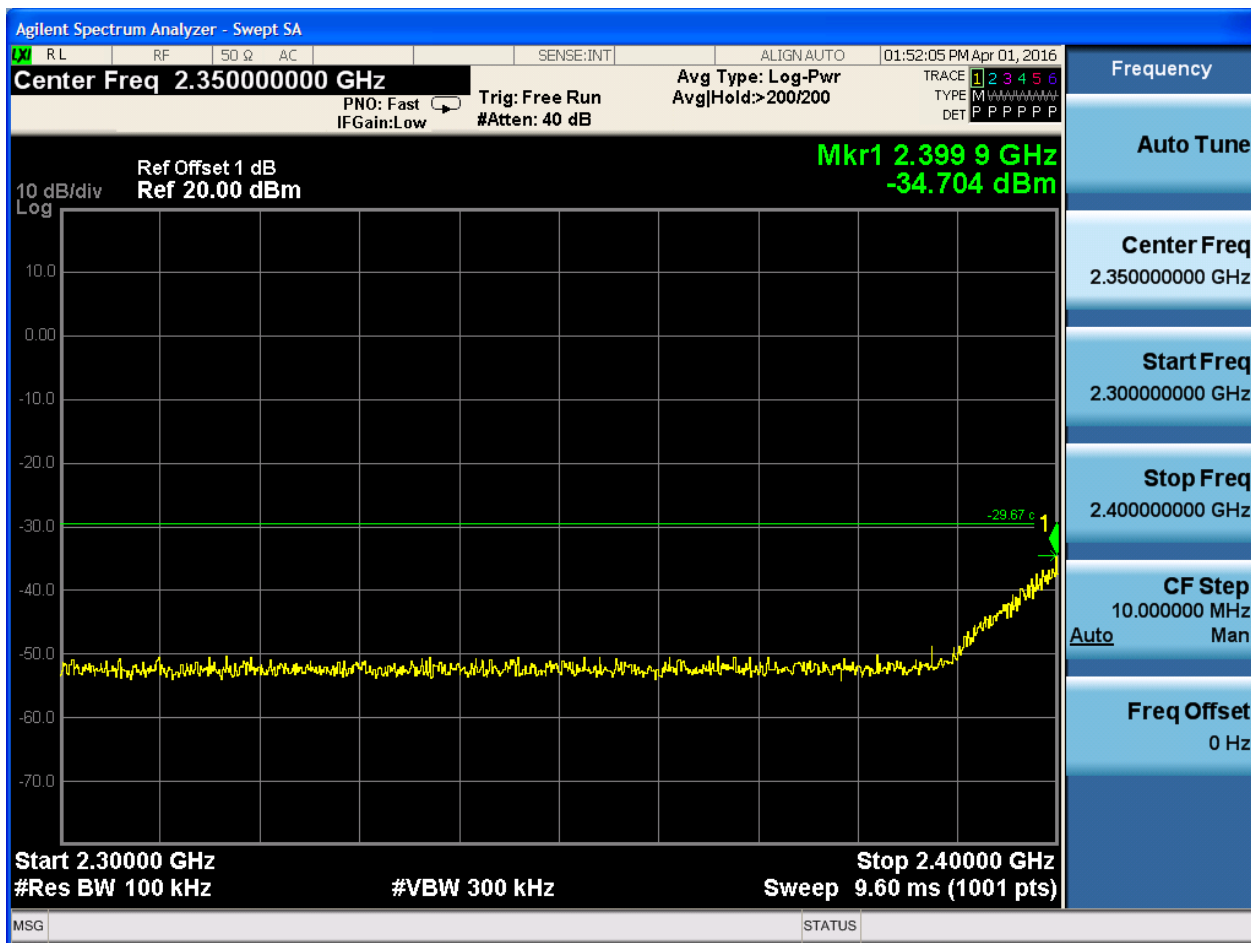


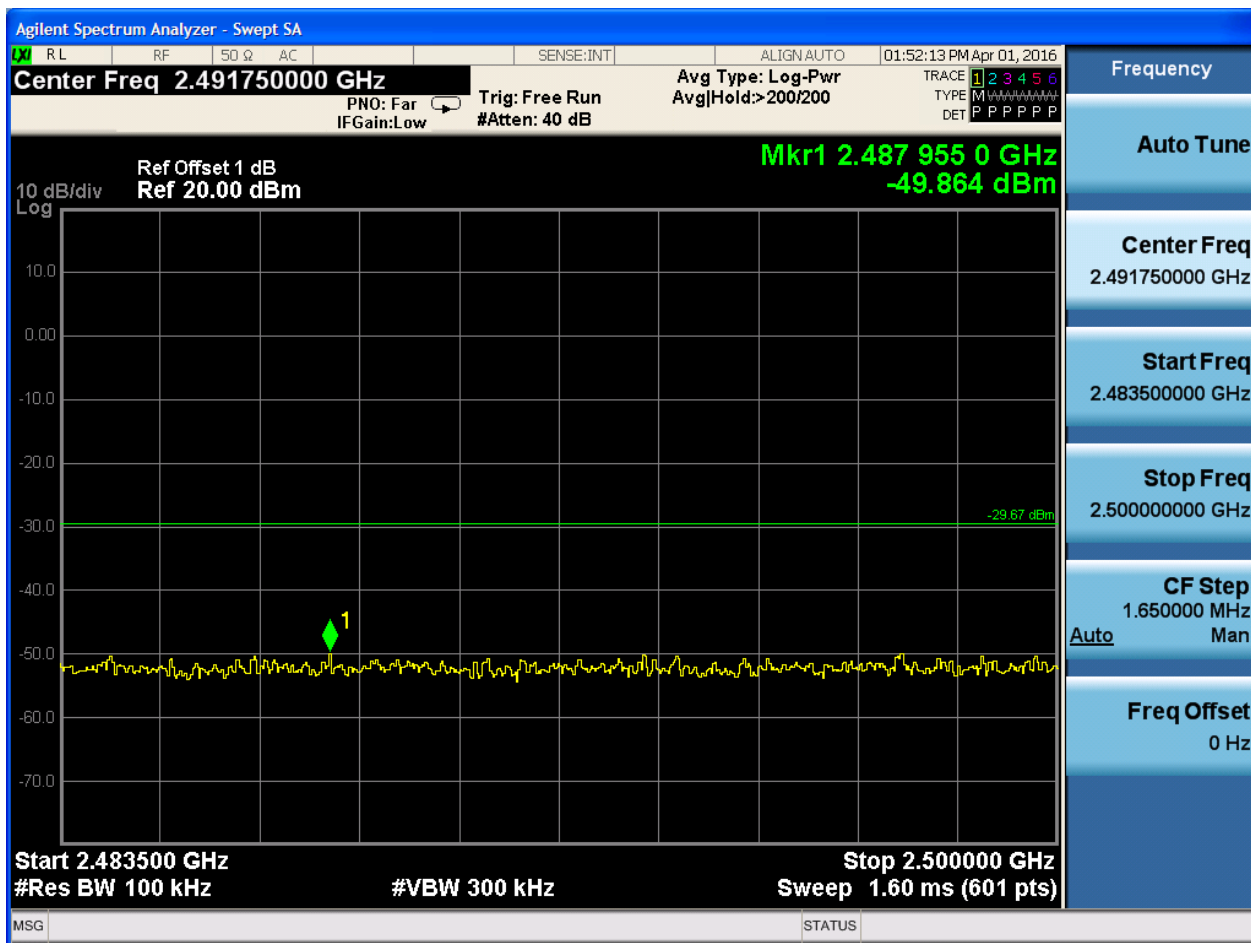
PuW:









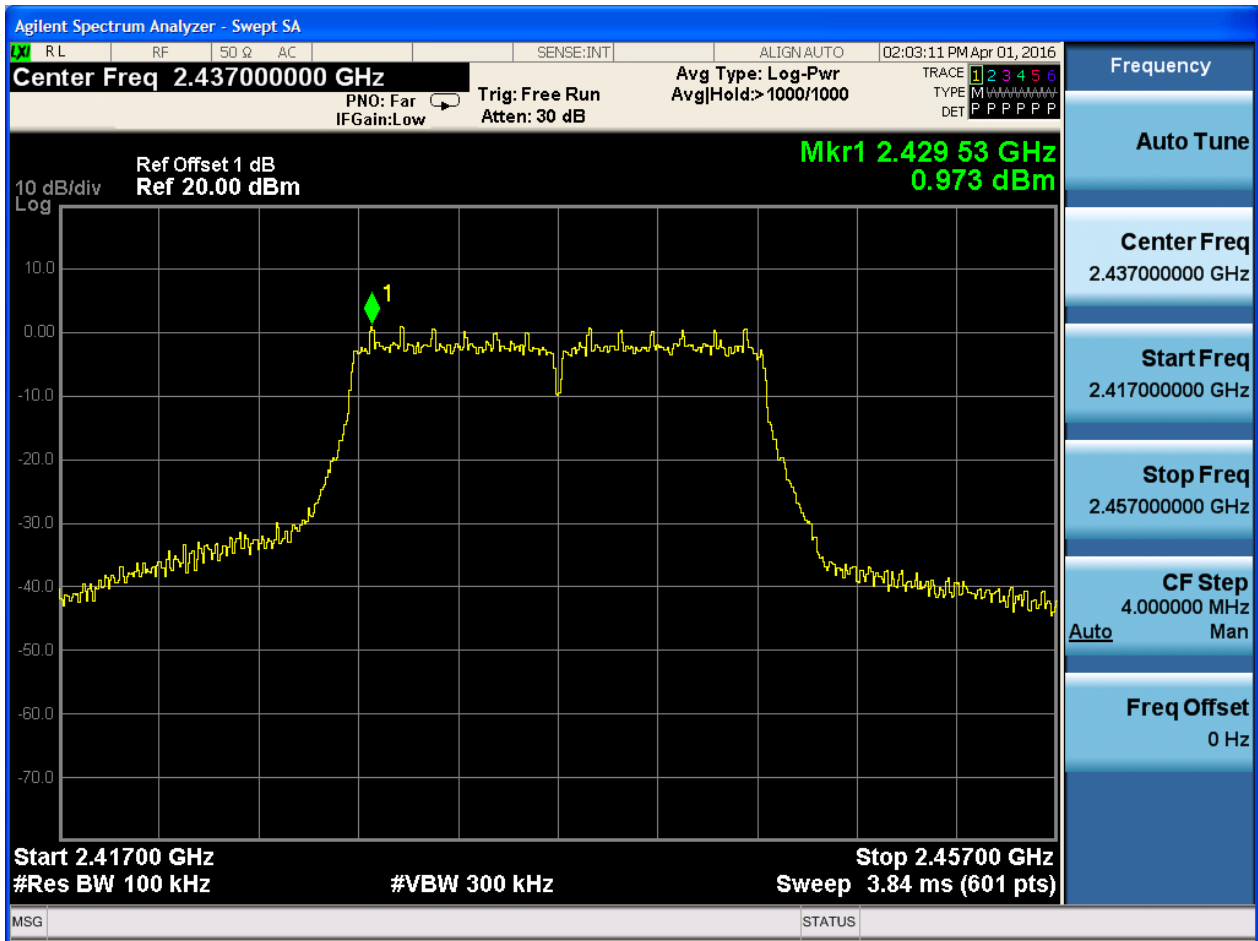






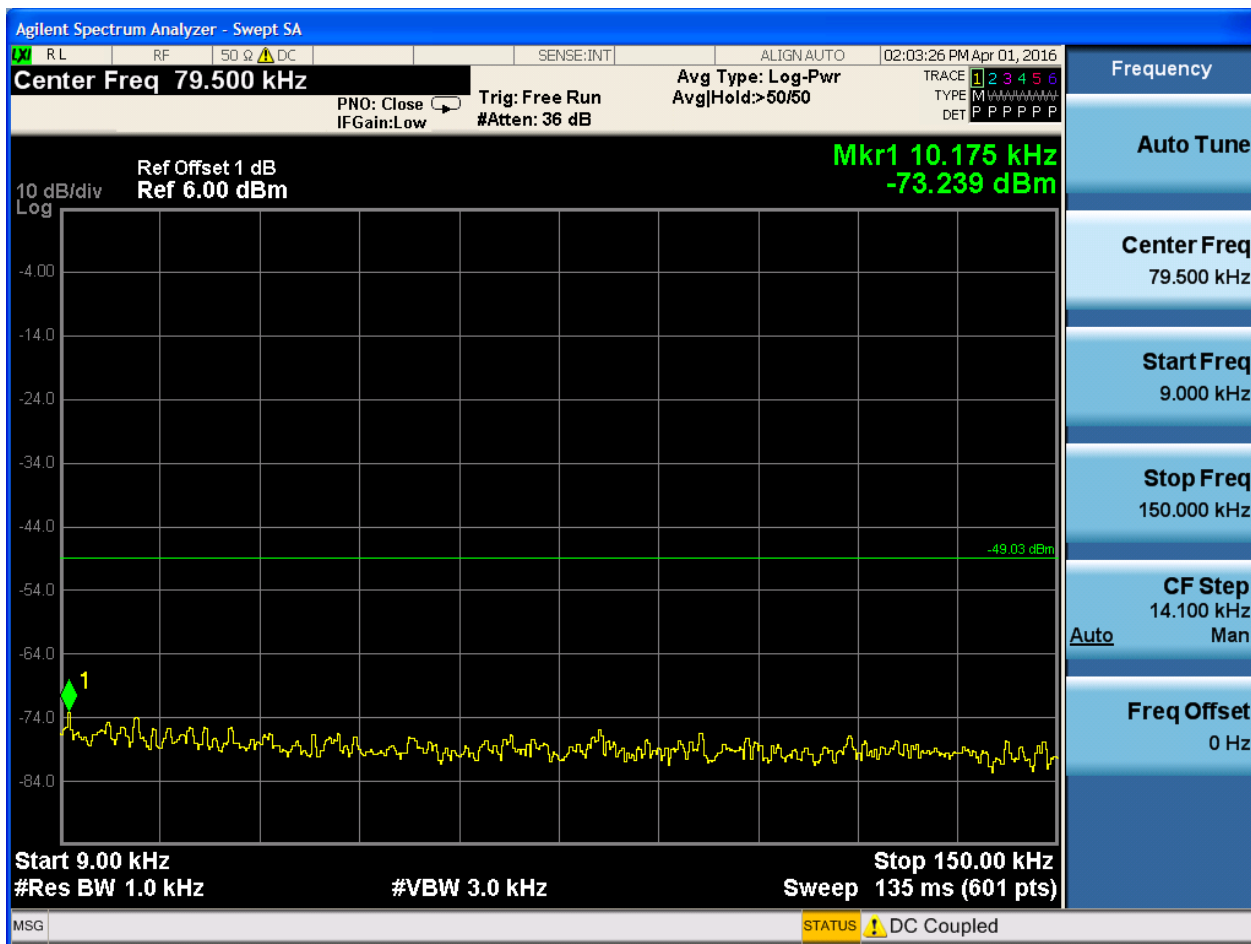
2.5 11G_M@Ant 1

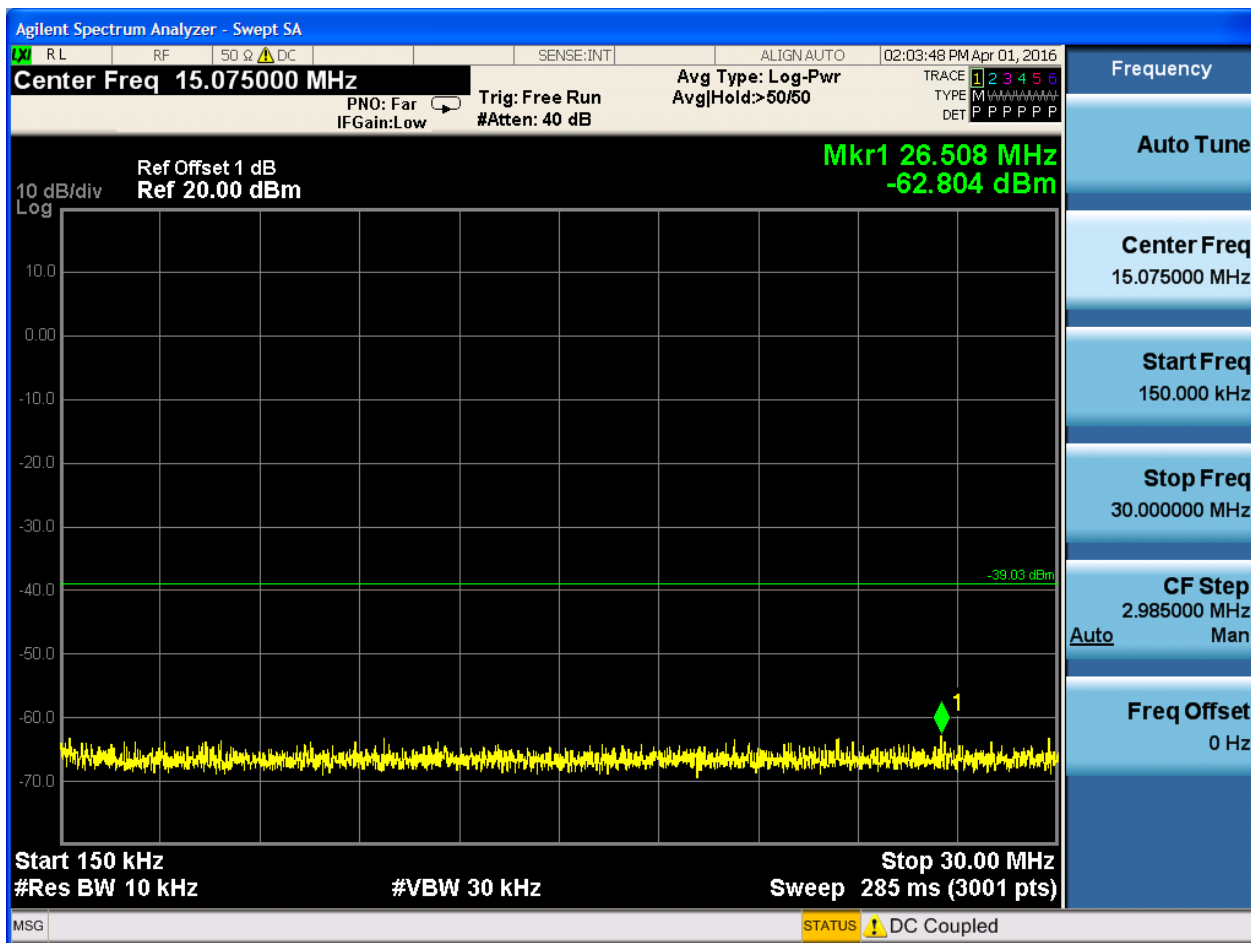
Pref:

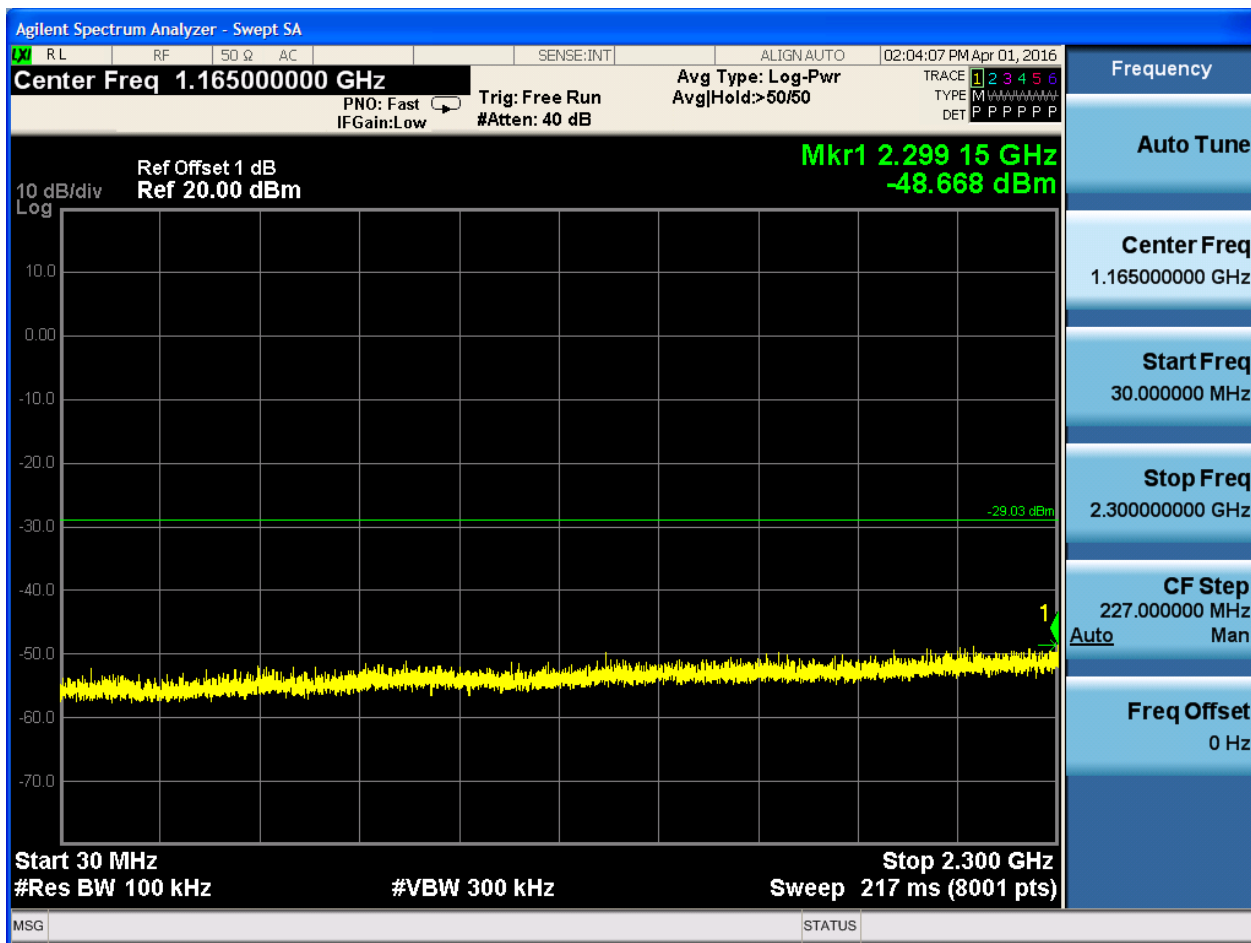


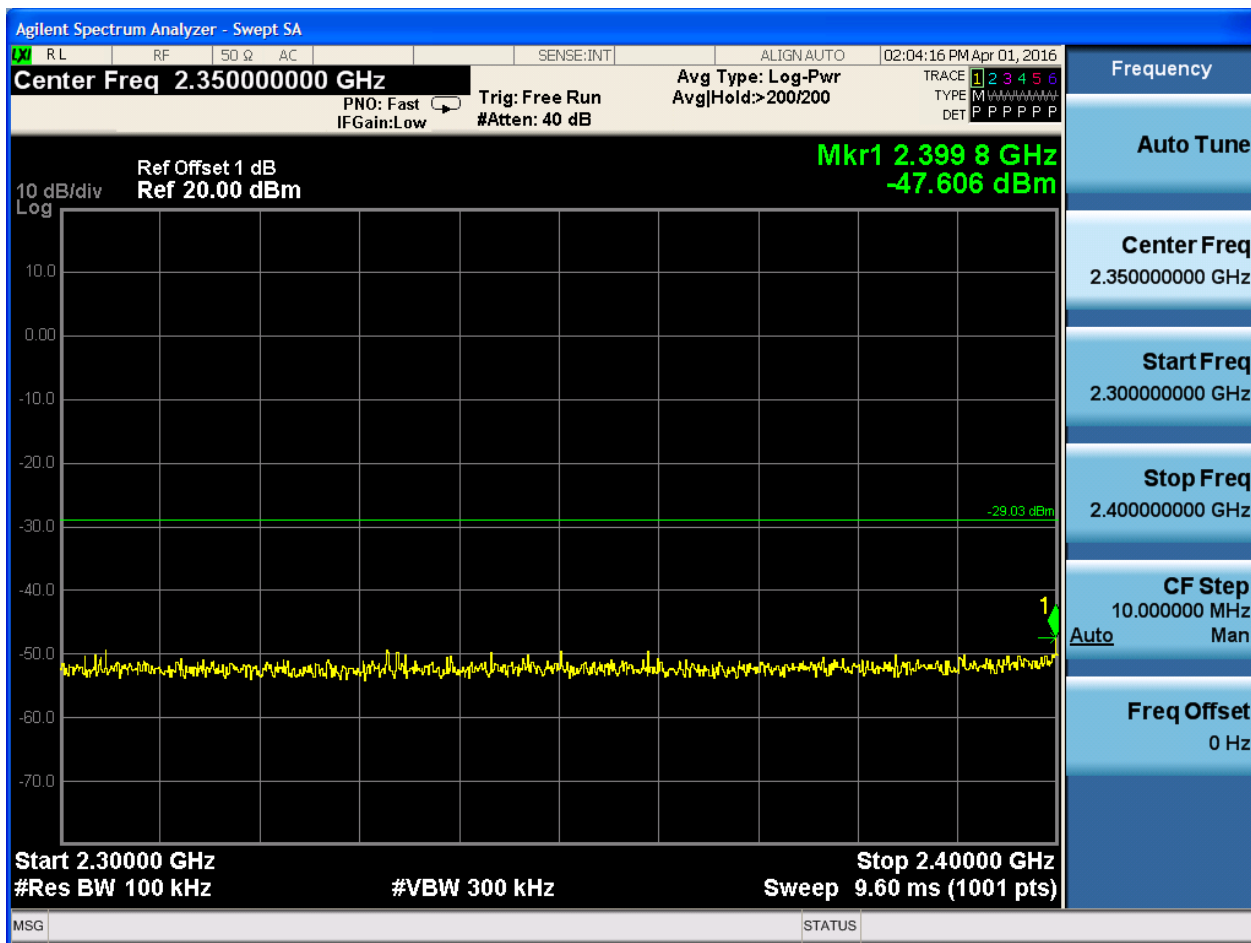


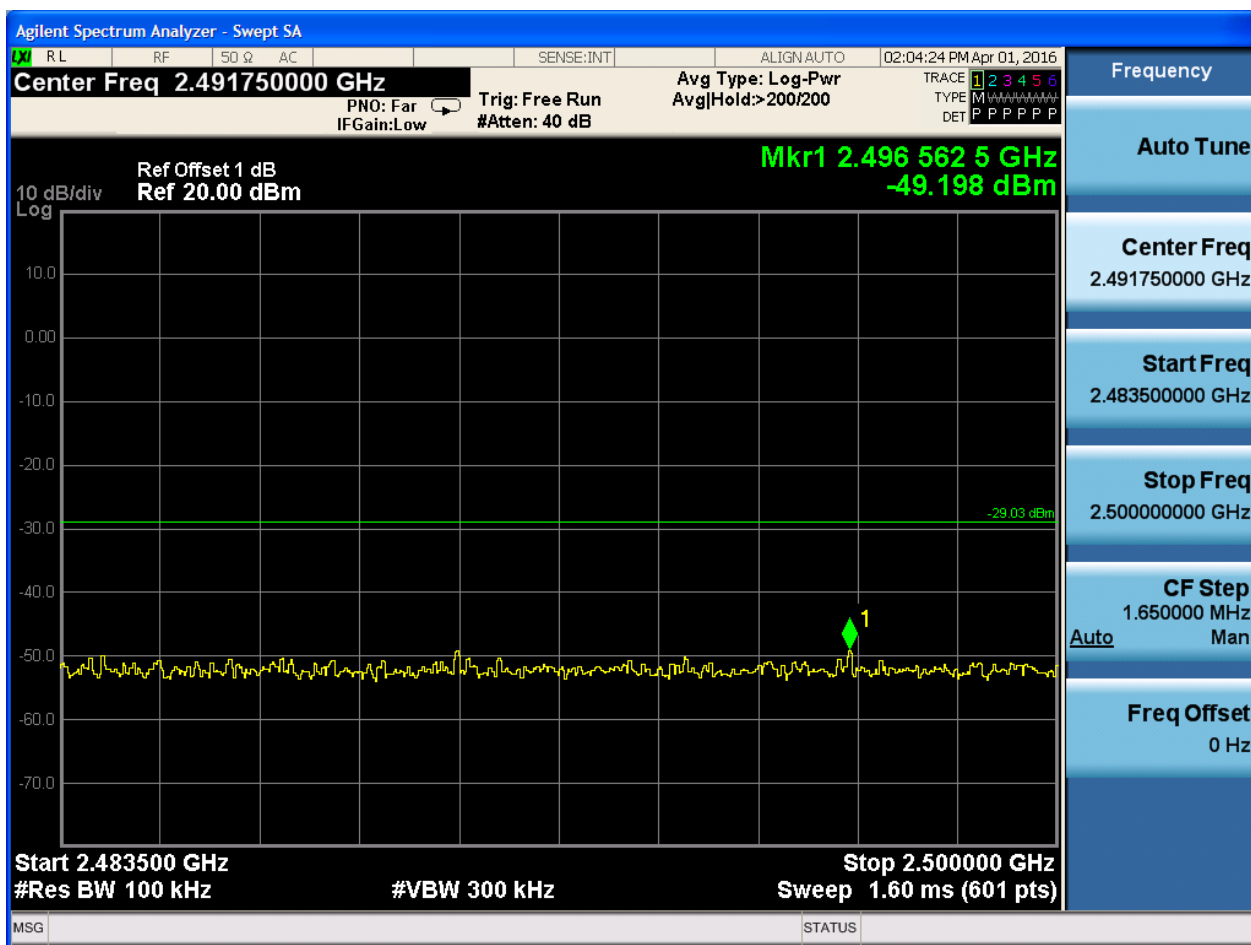
Puw:









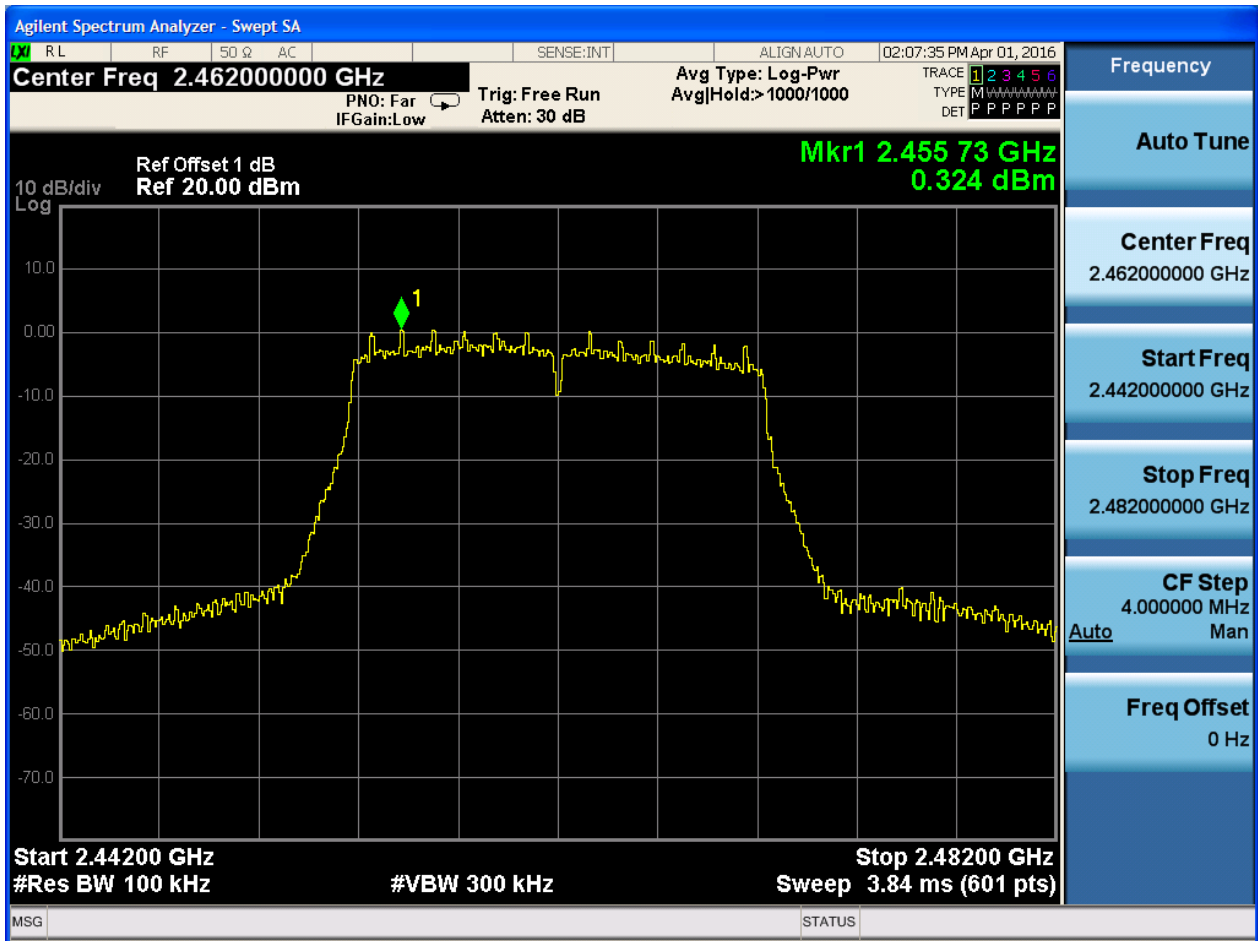






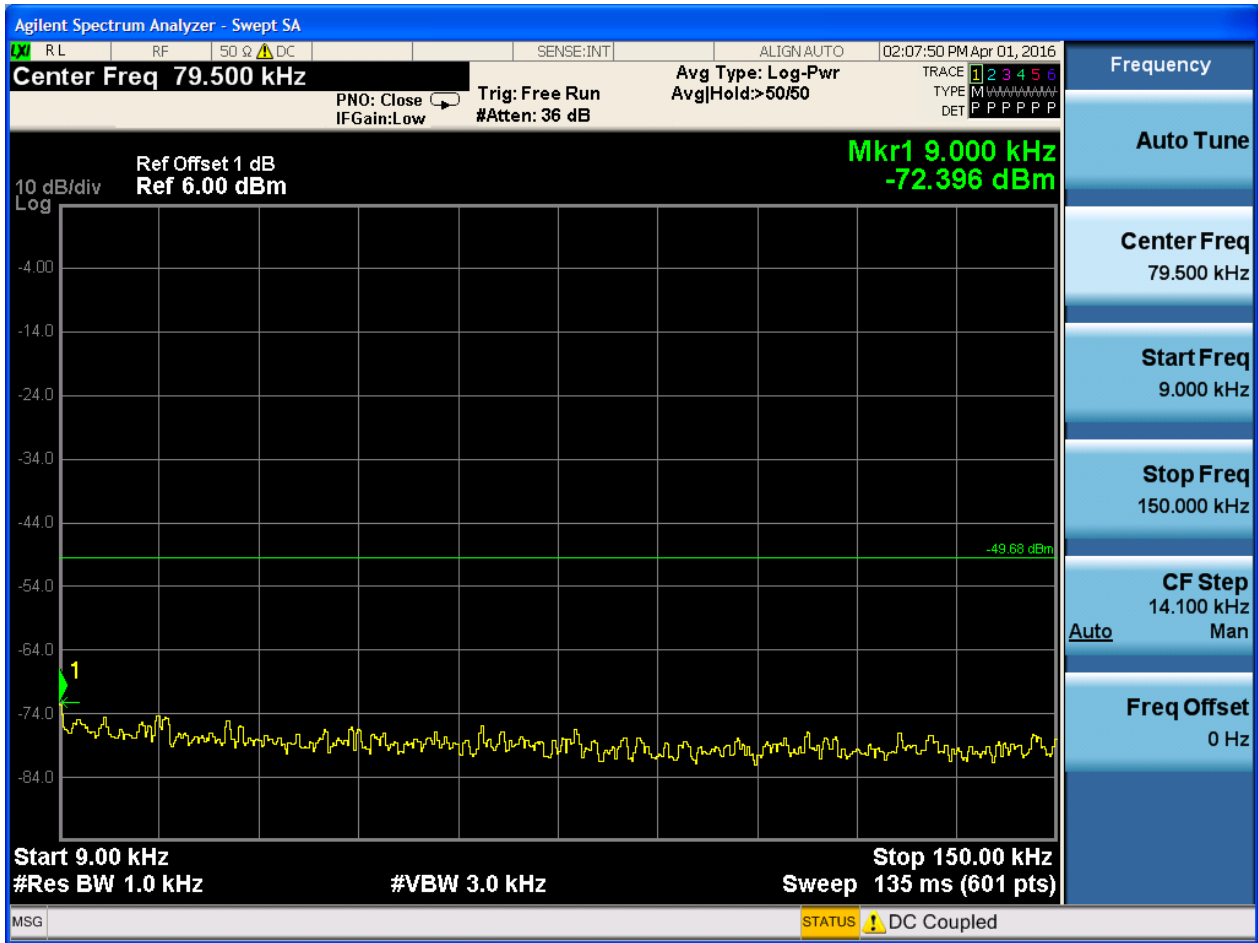
2.6 11G_H@Ant 1

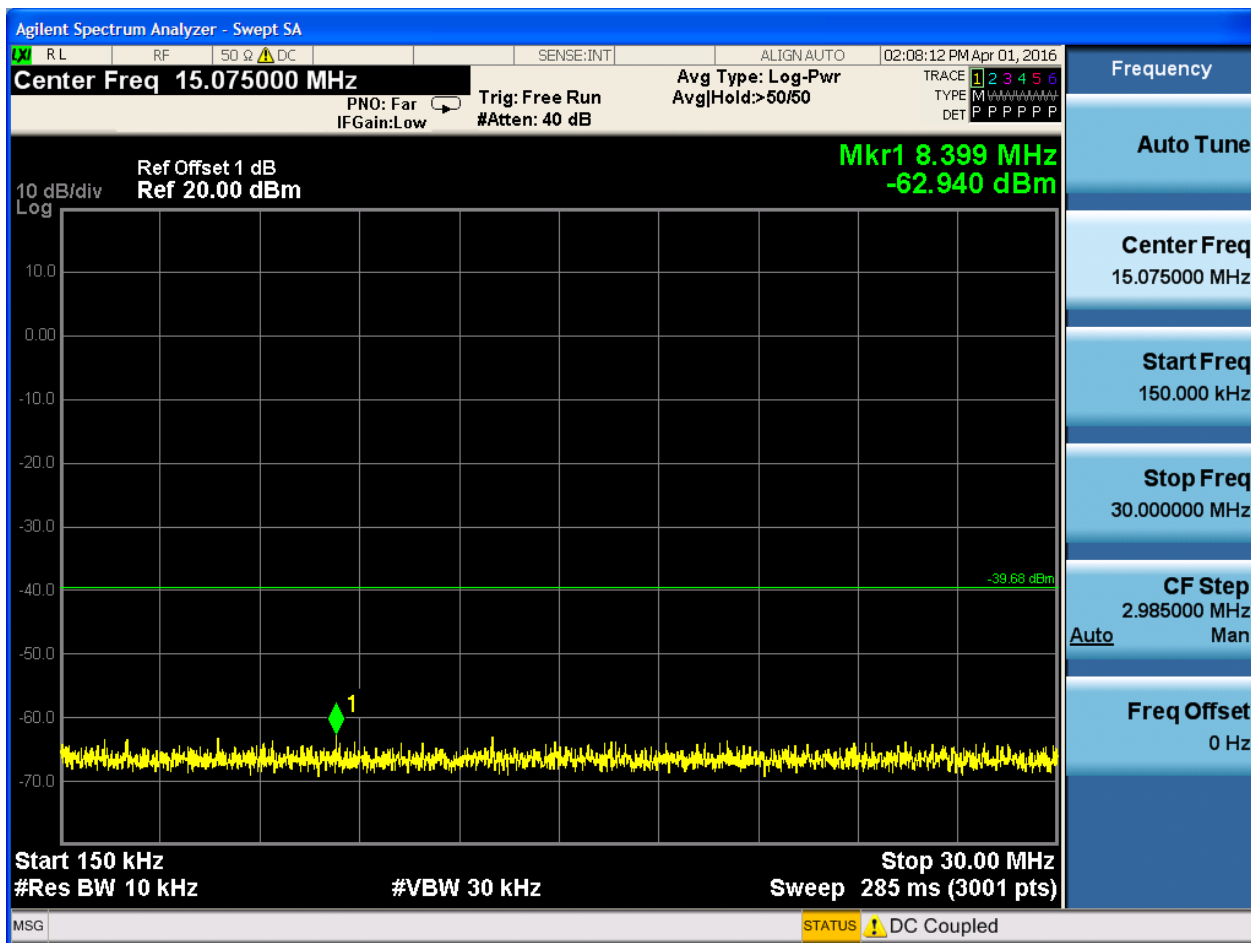
Pref:

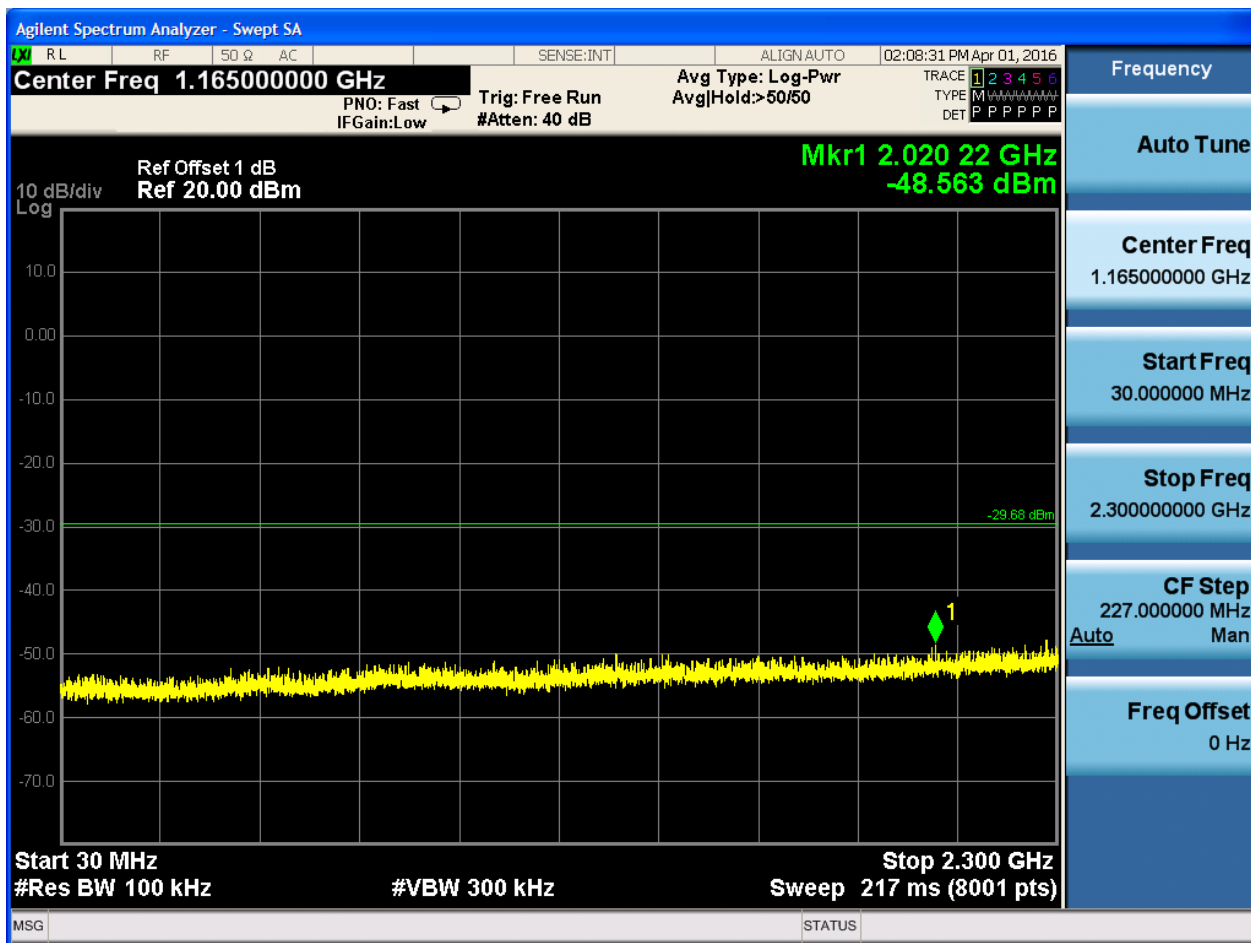


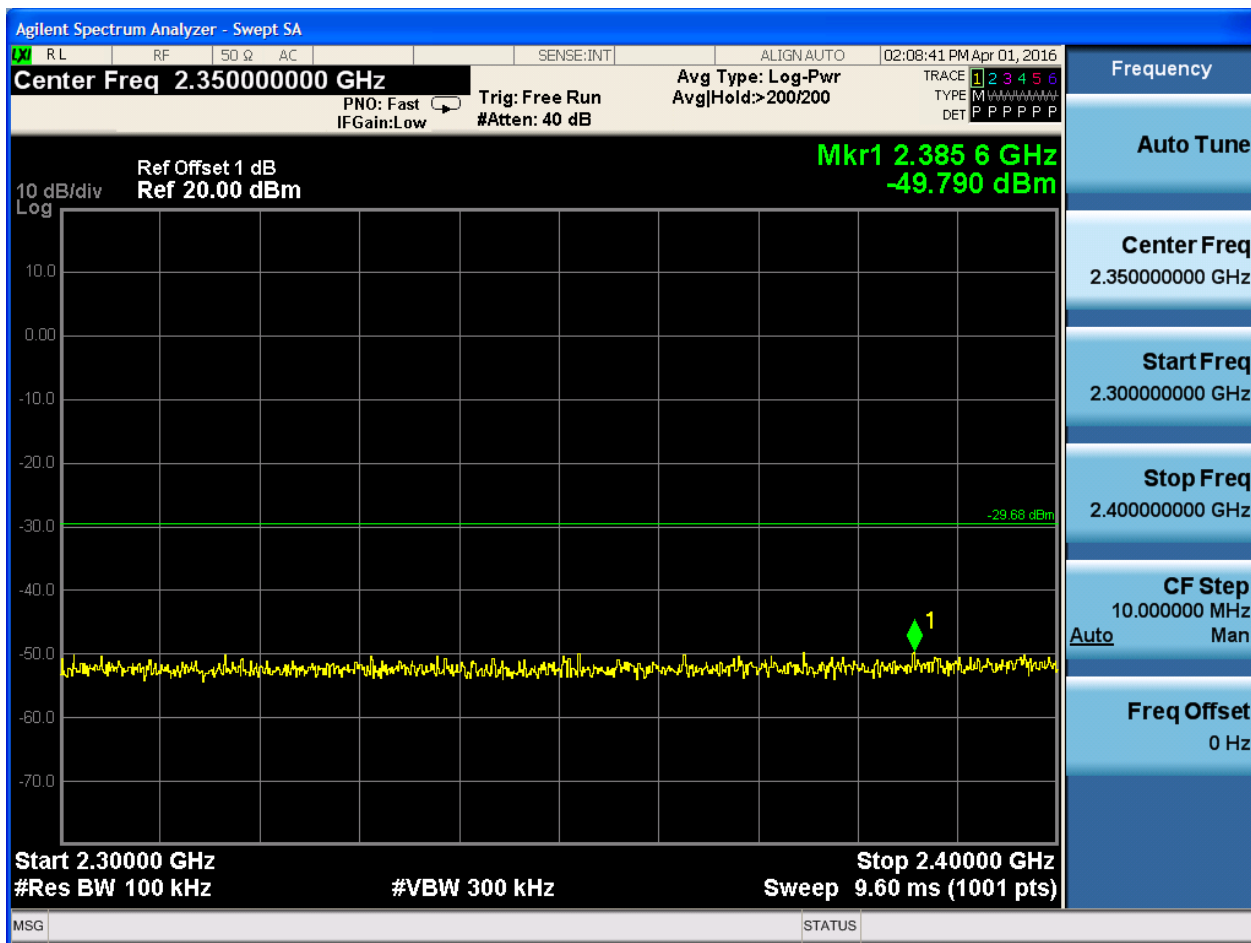


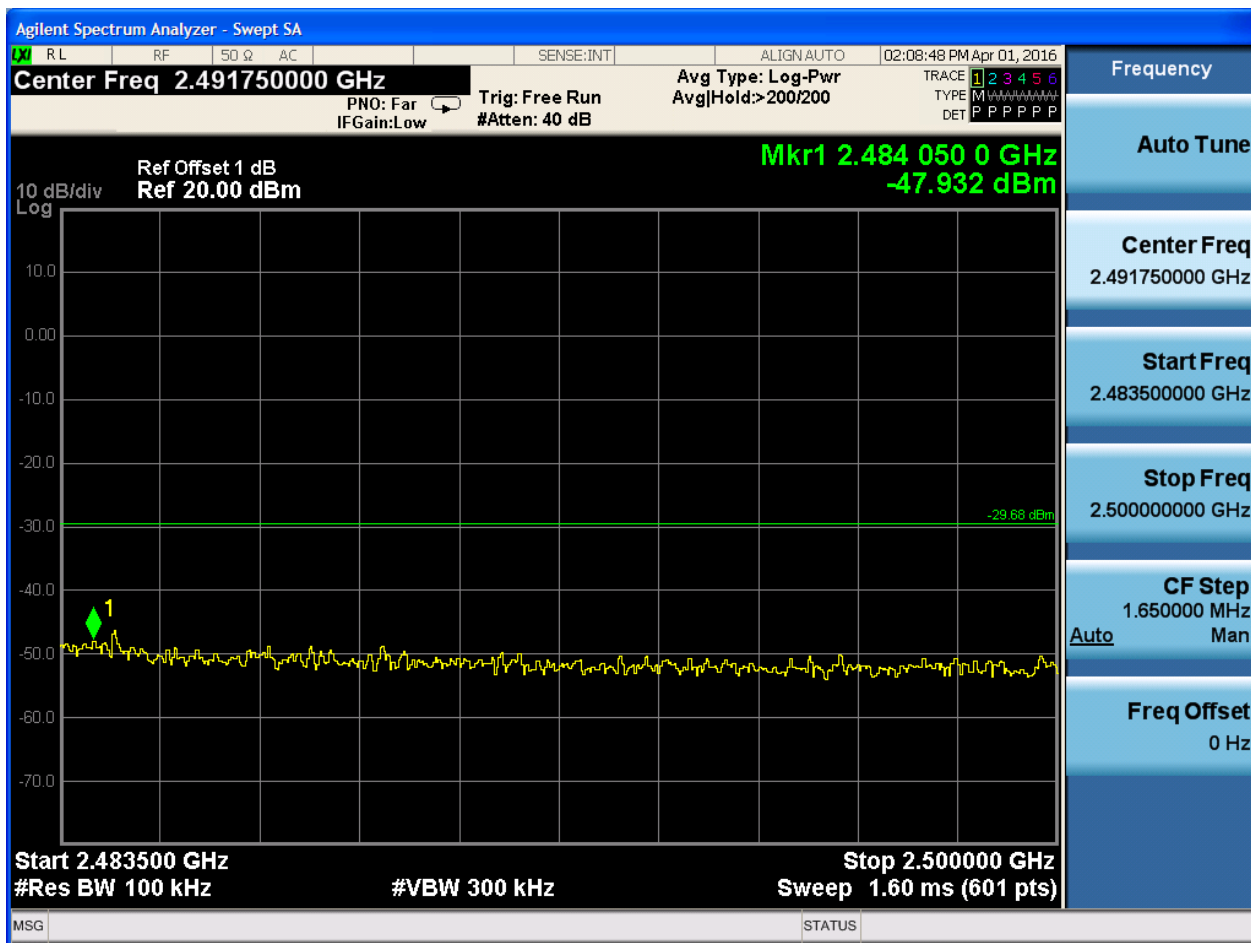
Puw:









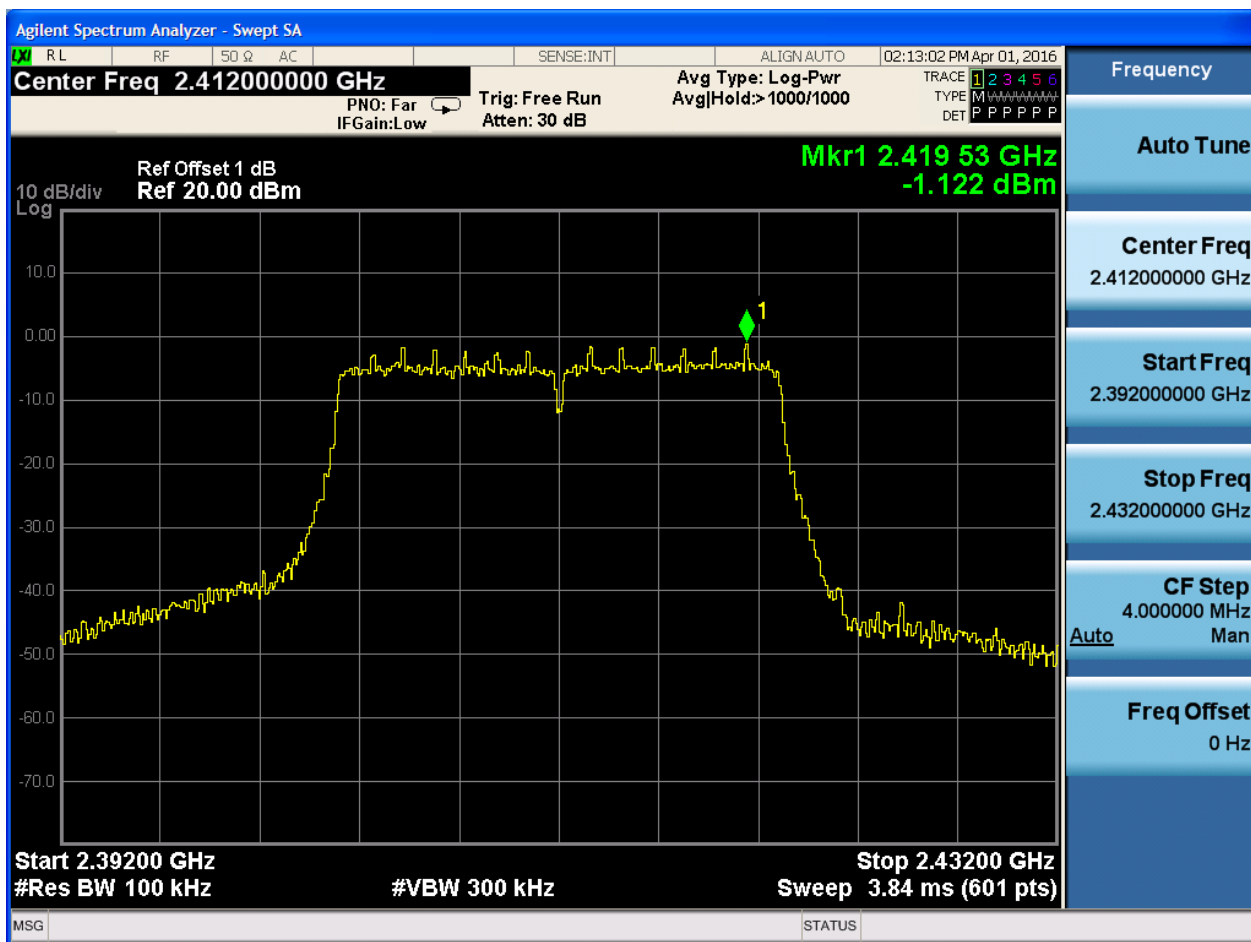






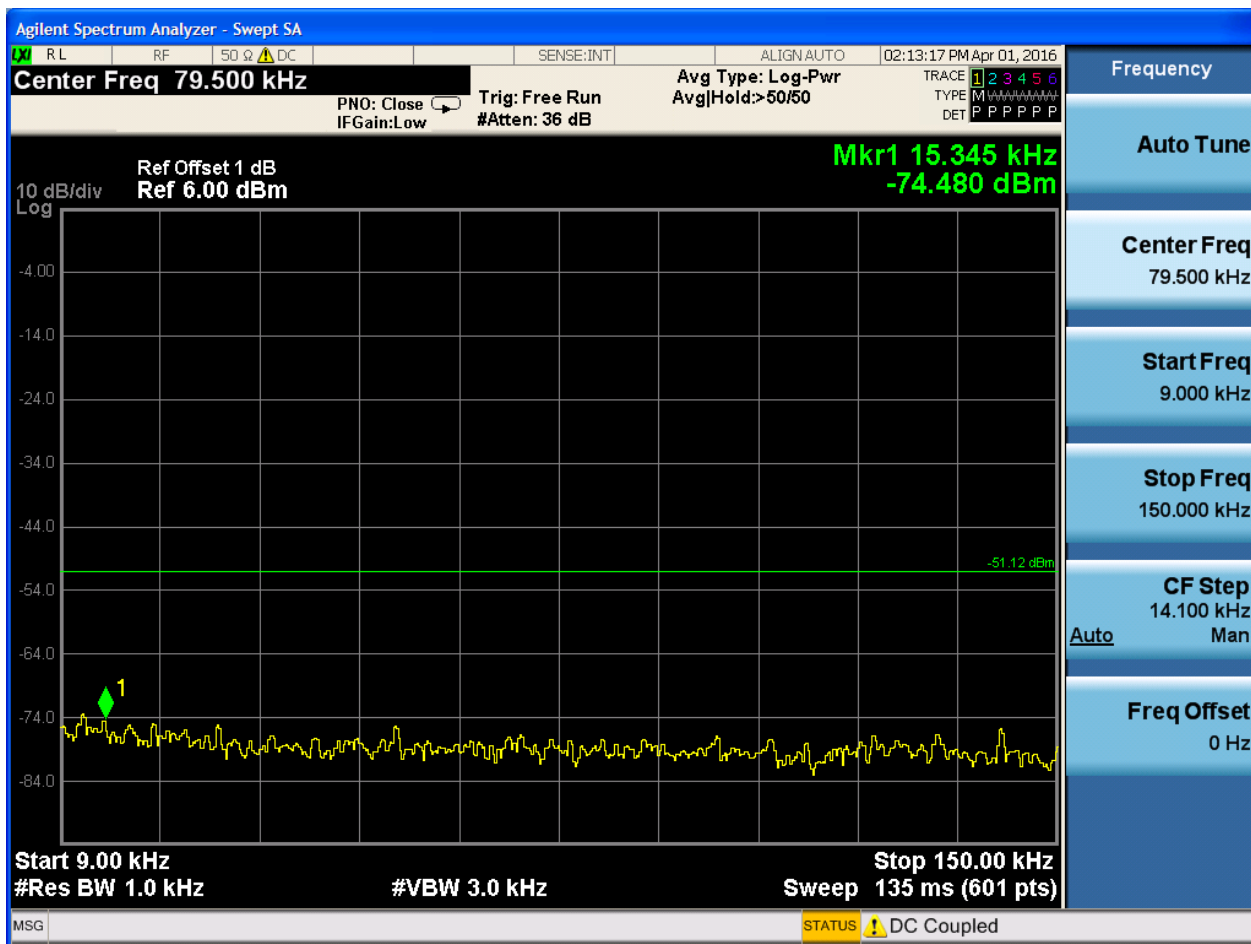
2.7 11N20_L@Ant 1

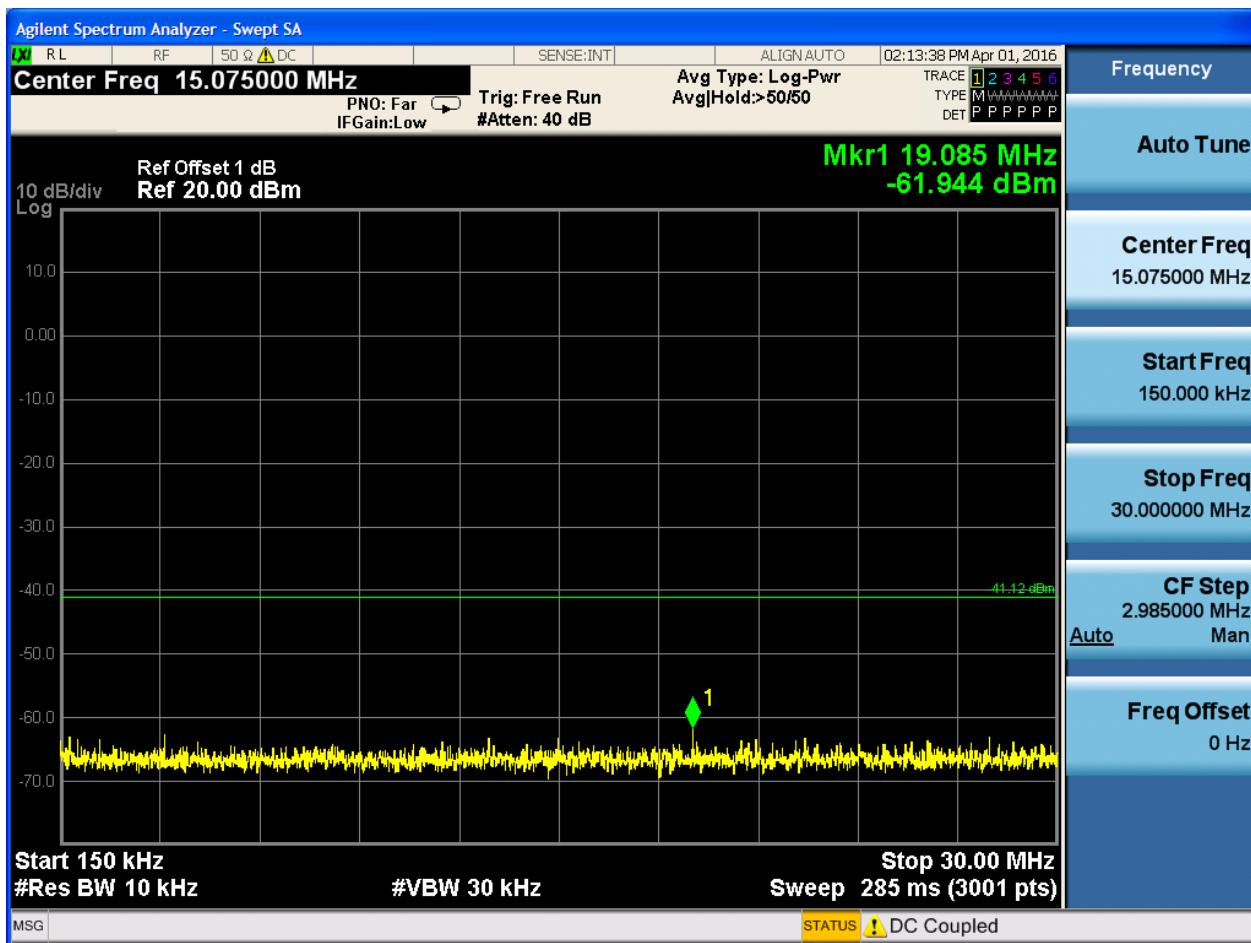
Pref:



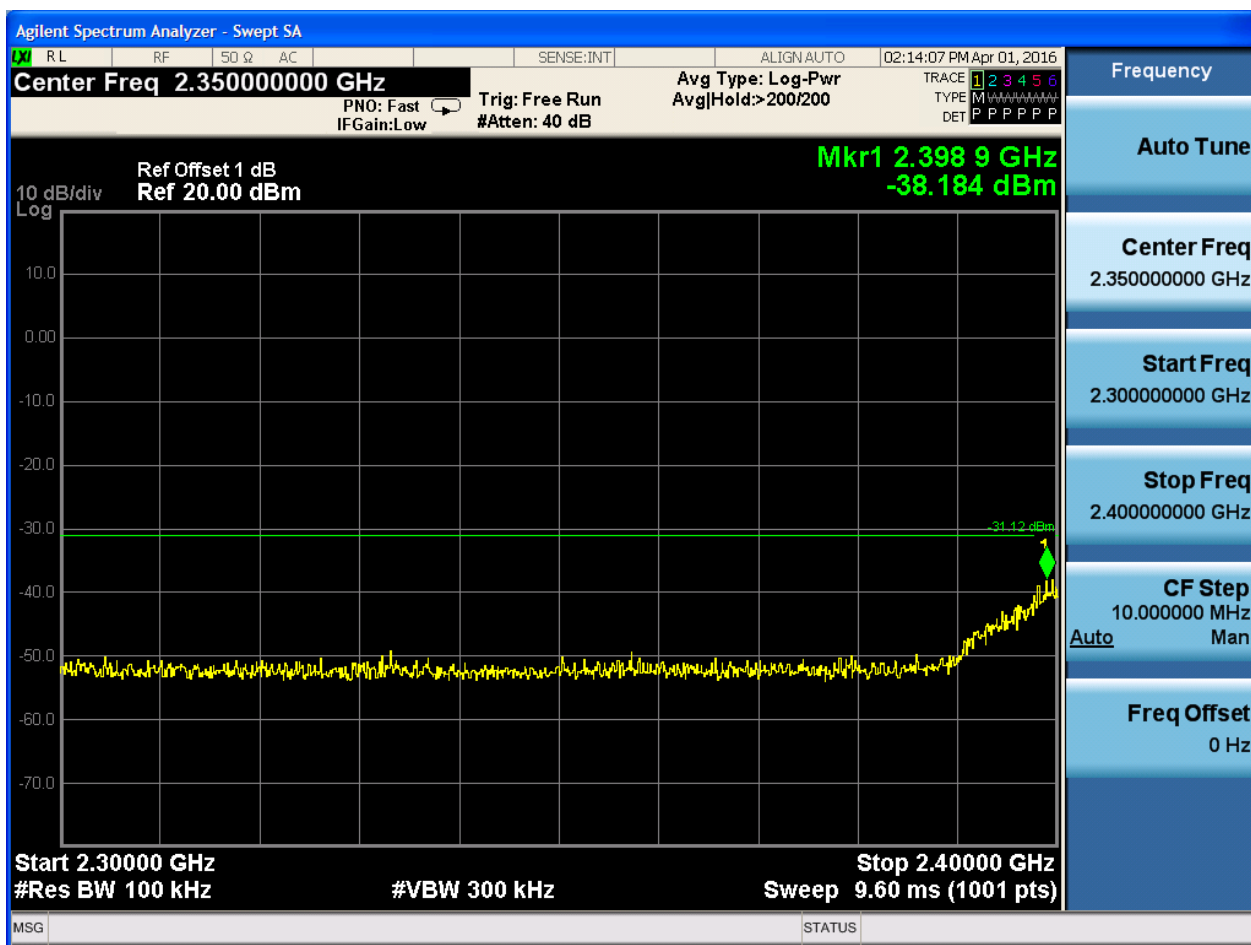


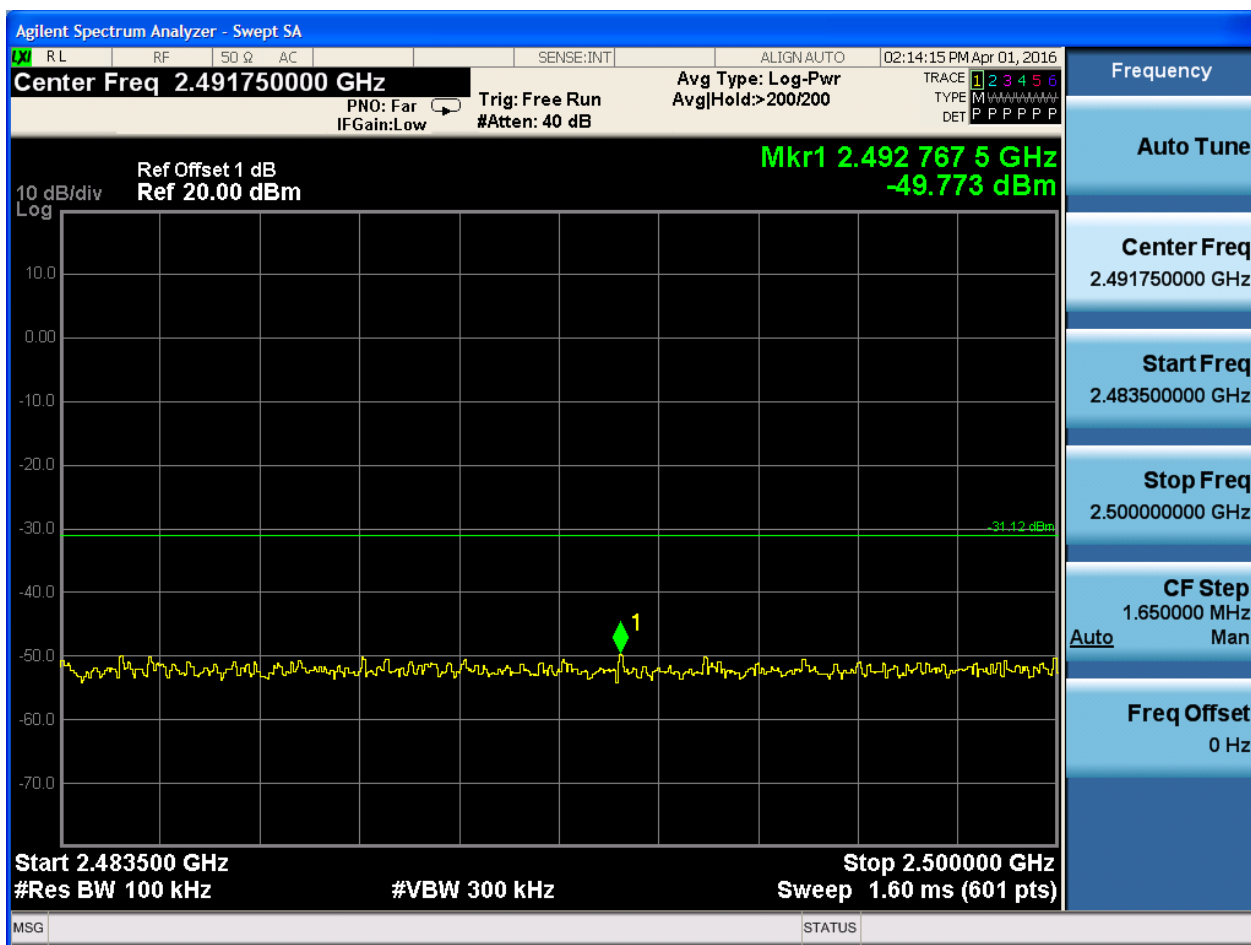
PuW:









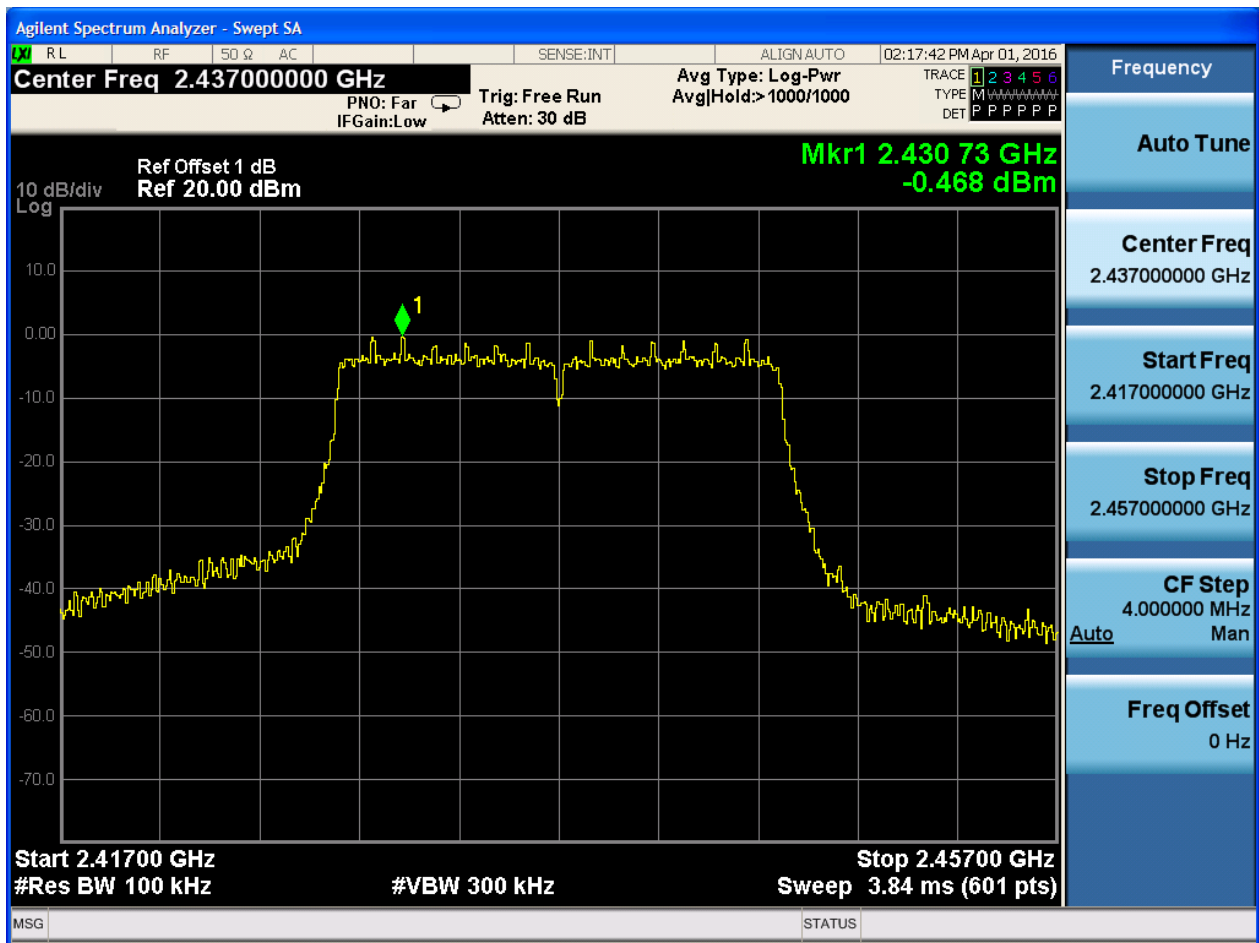






2.8 11N20_M@Ant 1

Pref:





PuW:

