



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.

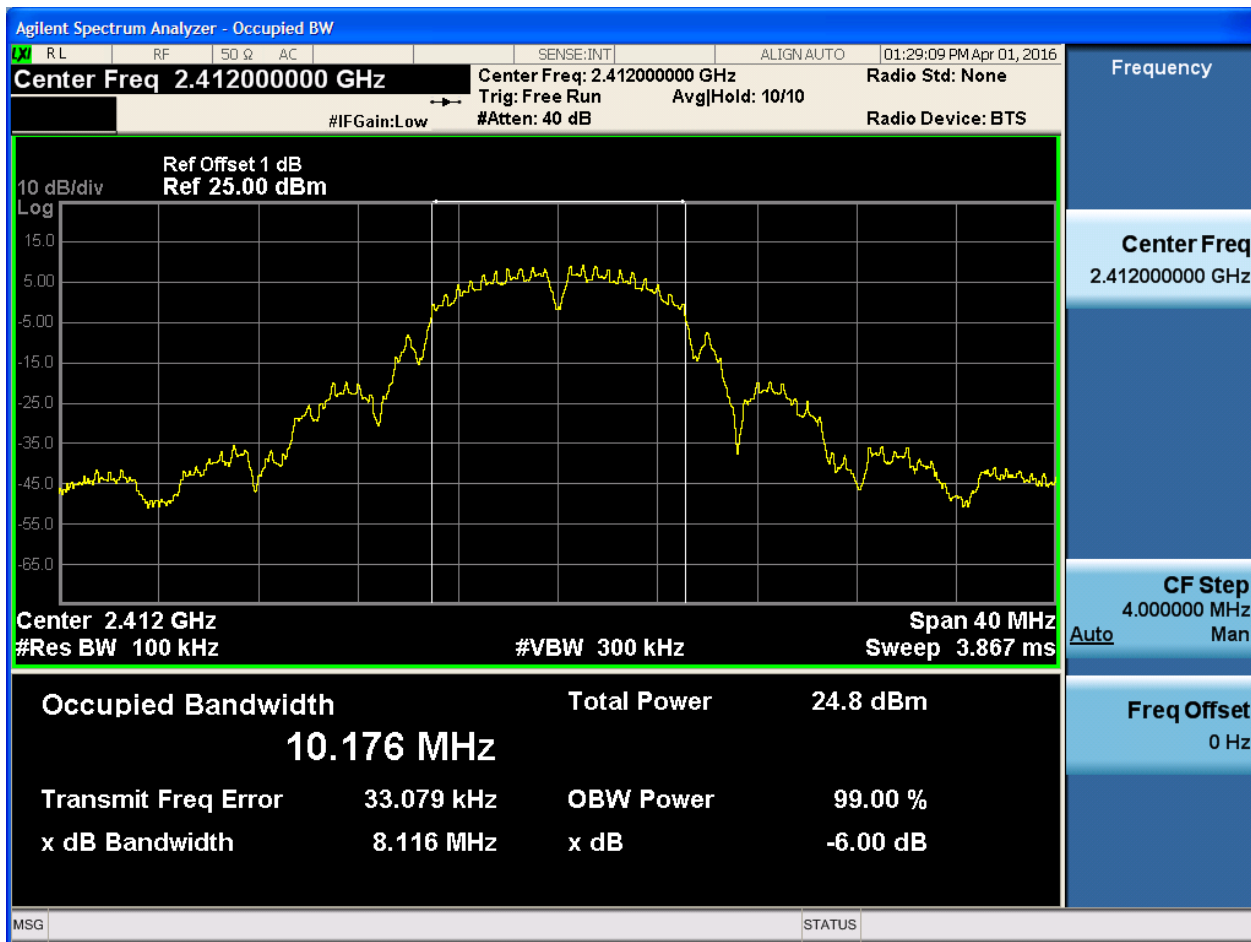
Part I - Test Results

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



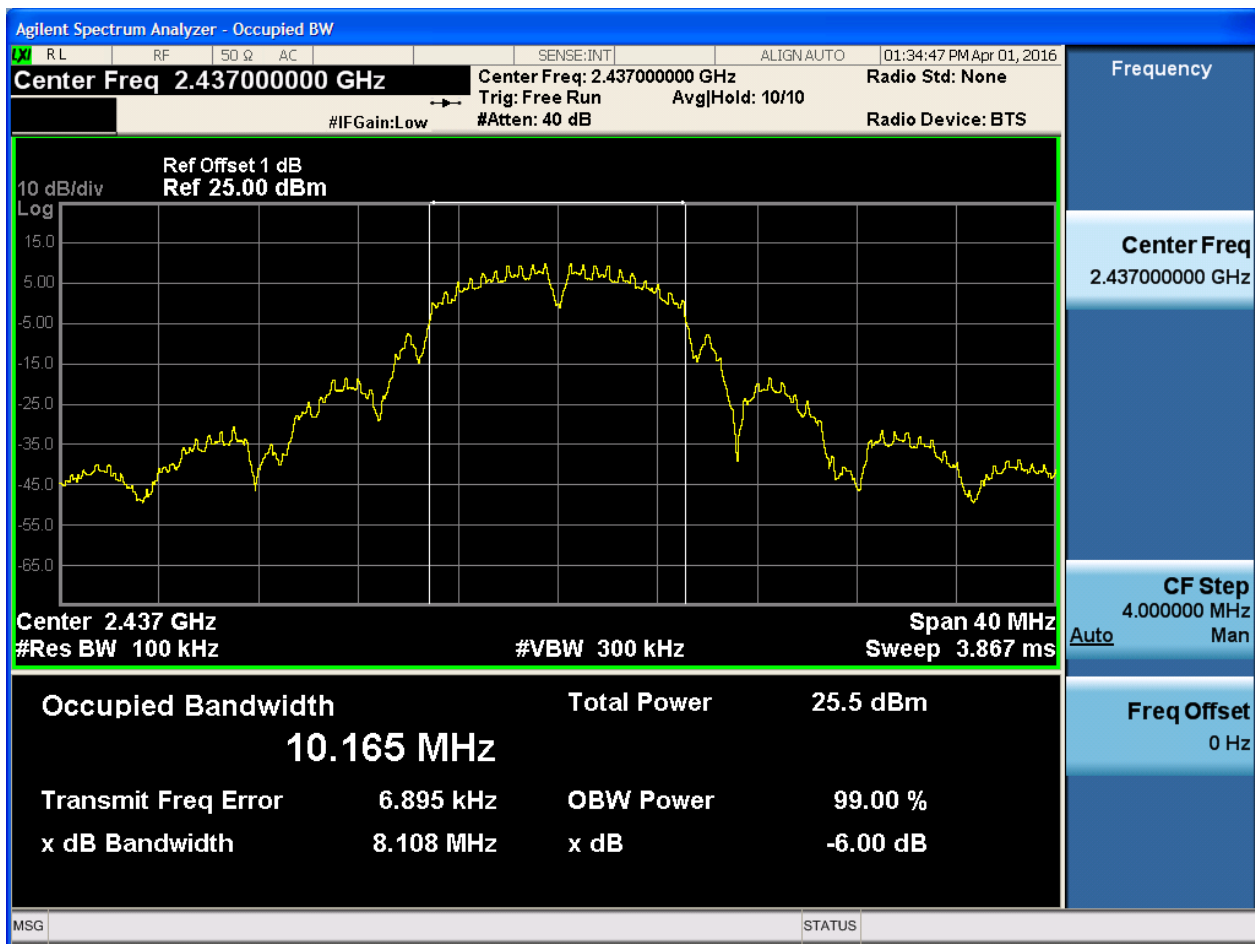
Part II - Test Plots

2.1 11B_L@Ant 1



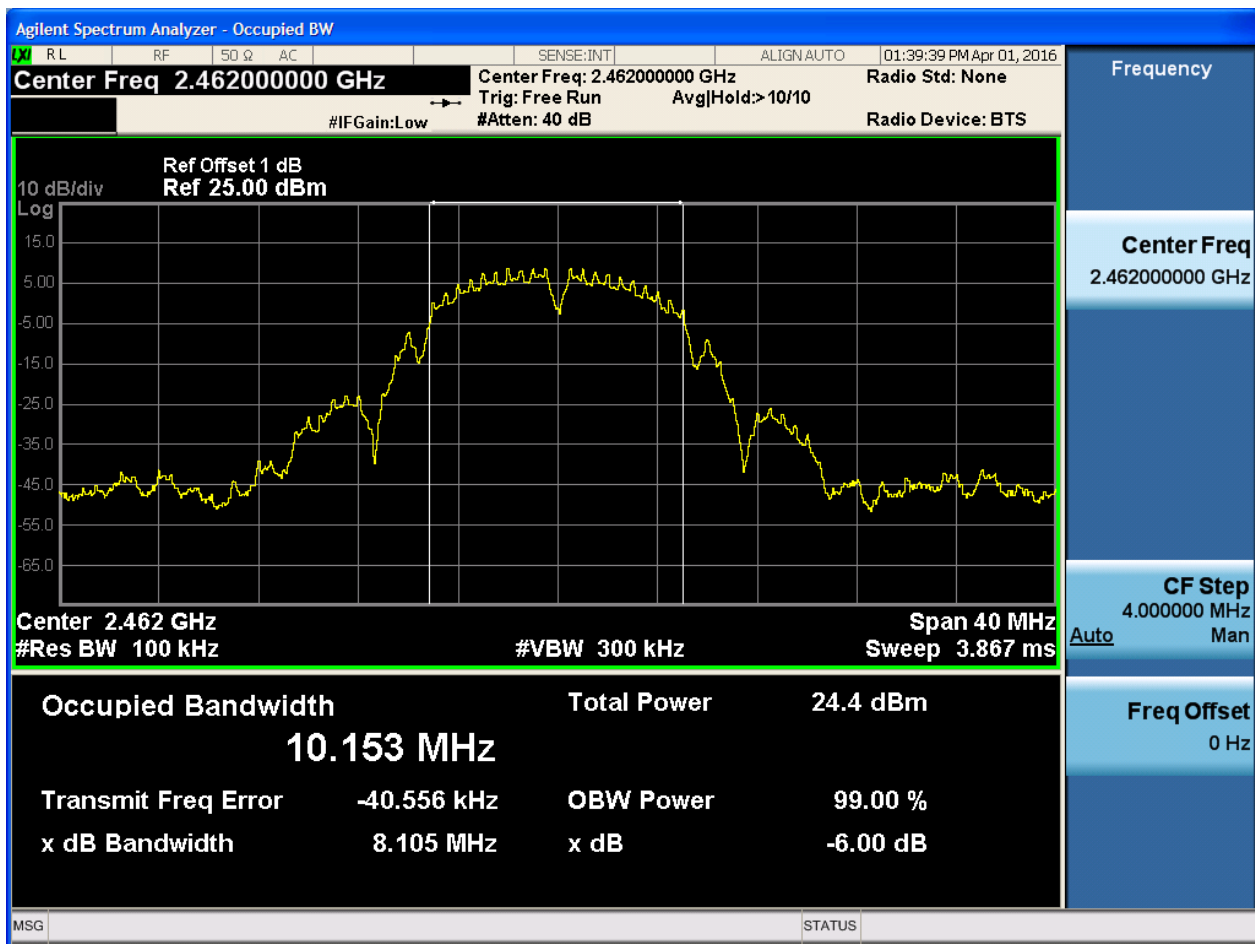


2.2 11B_M@Ant 1



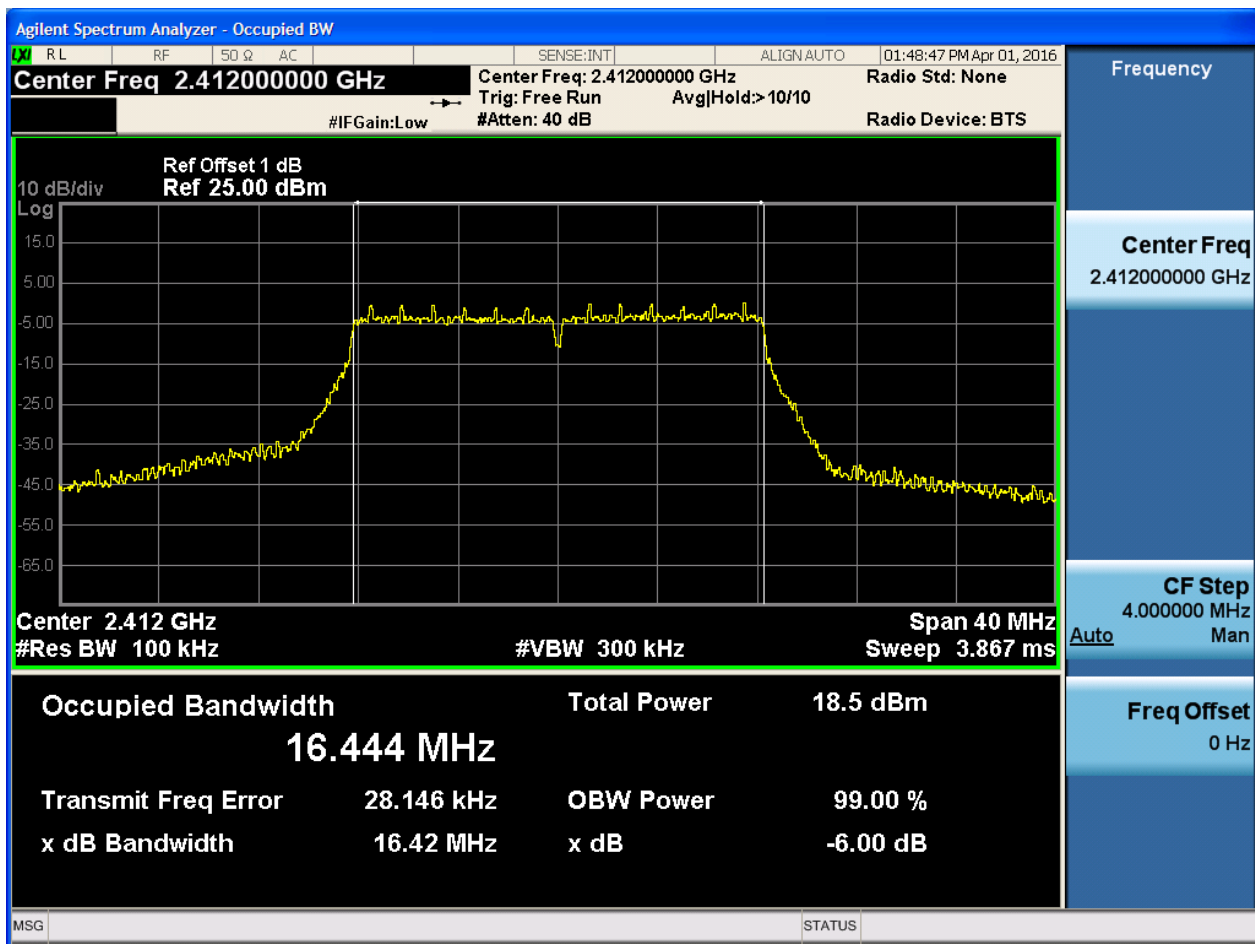


2.3 11B_H@Ant 1



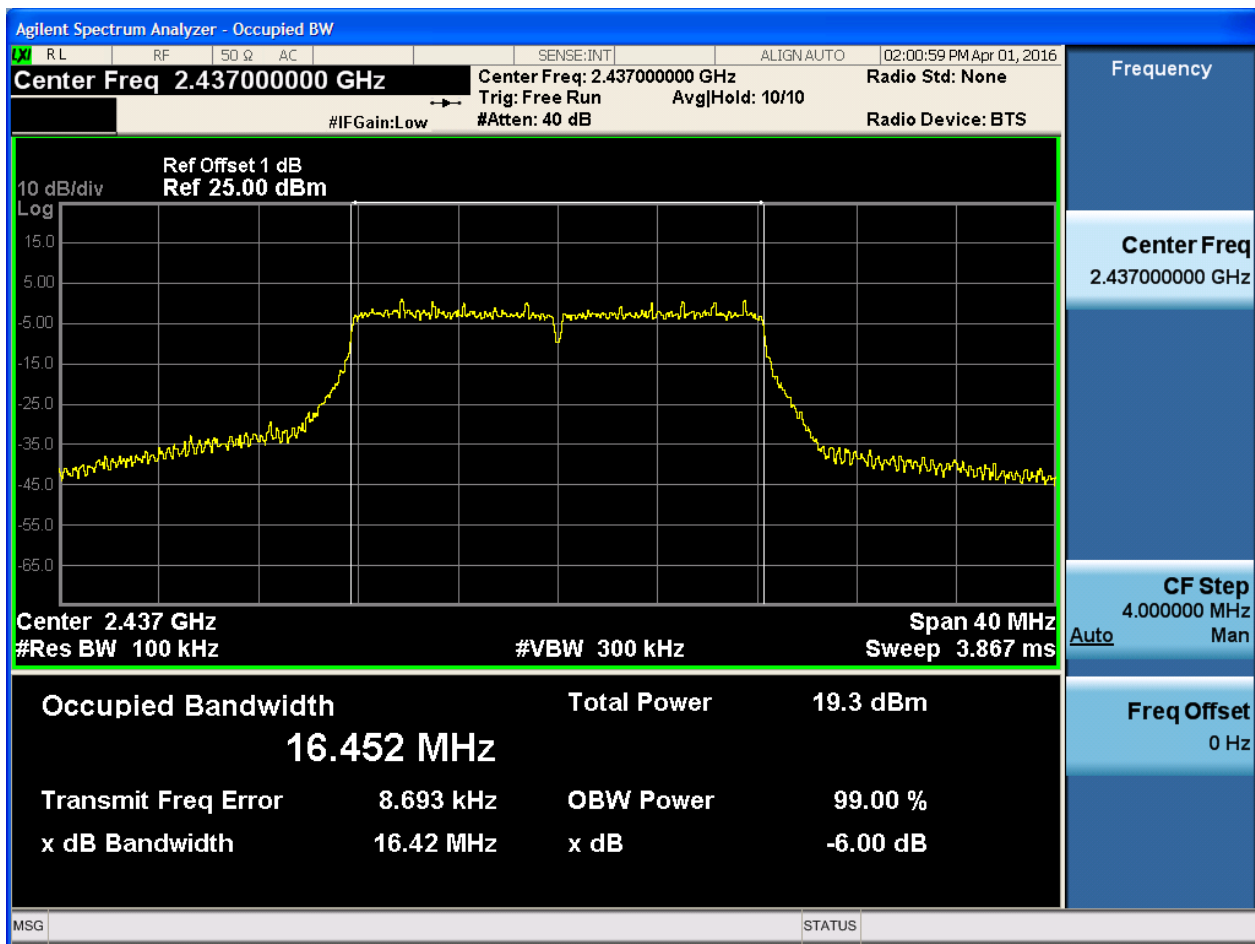


2.4 11G_L@Ant 1



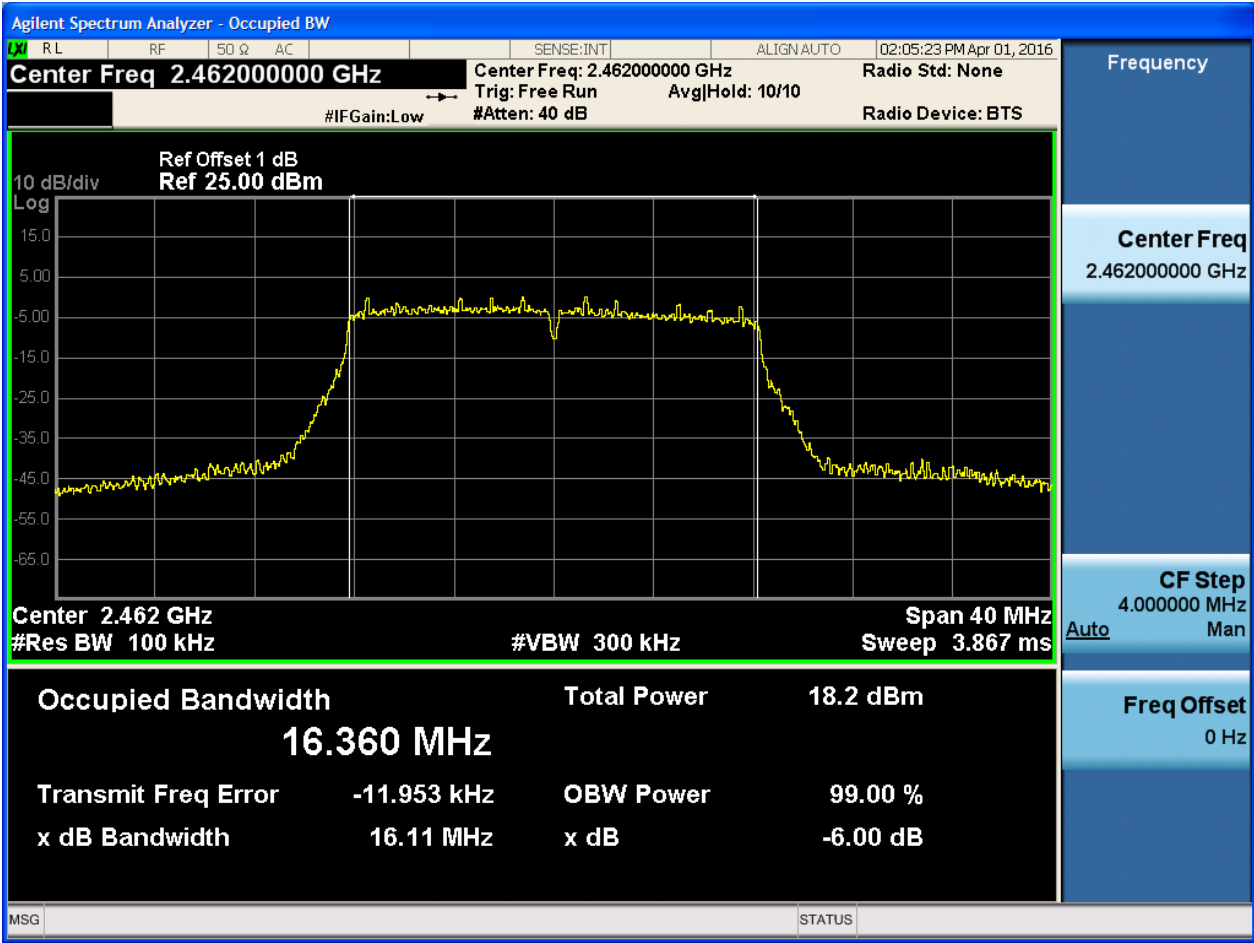


2.5 11G_M@Ant 1



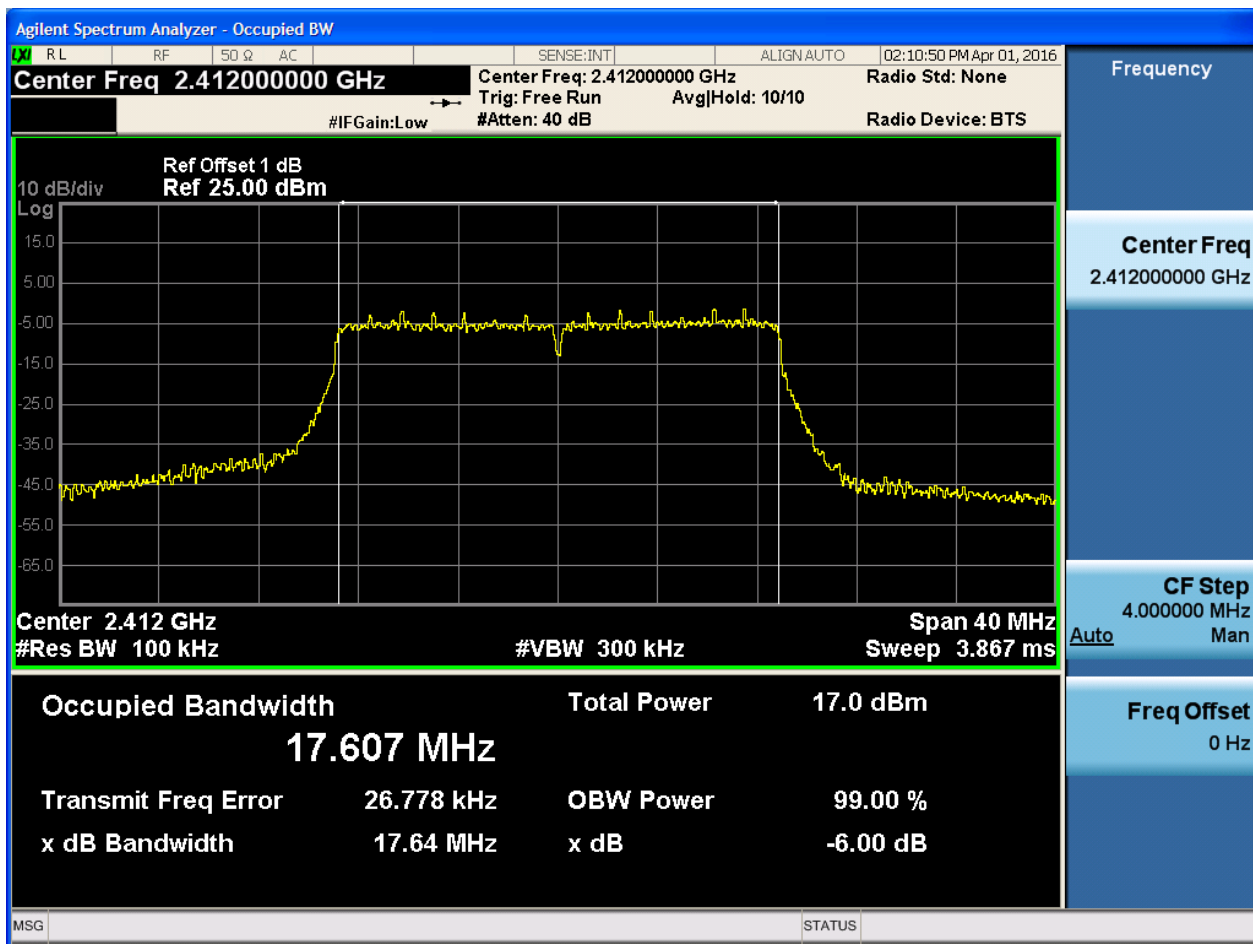


2.6 11G_H@Ant 1



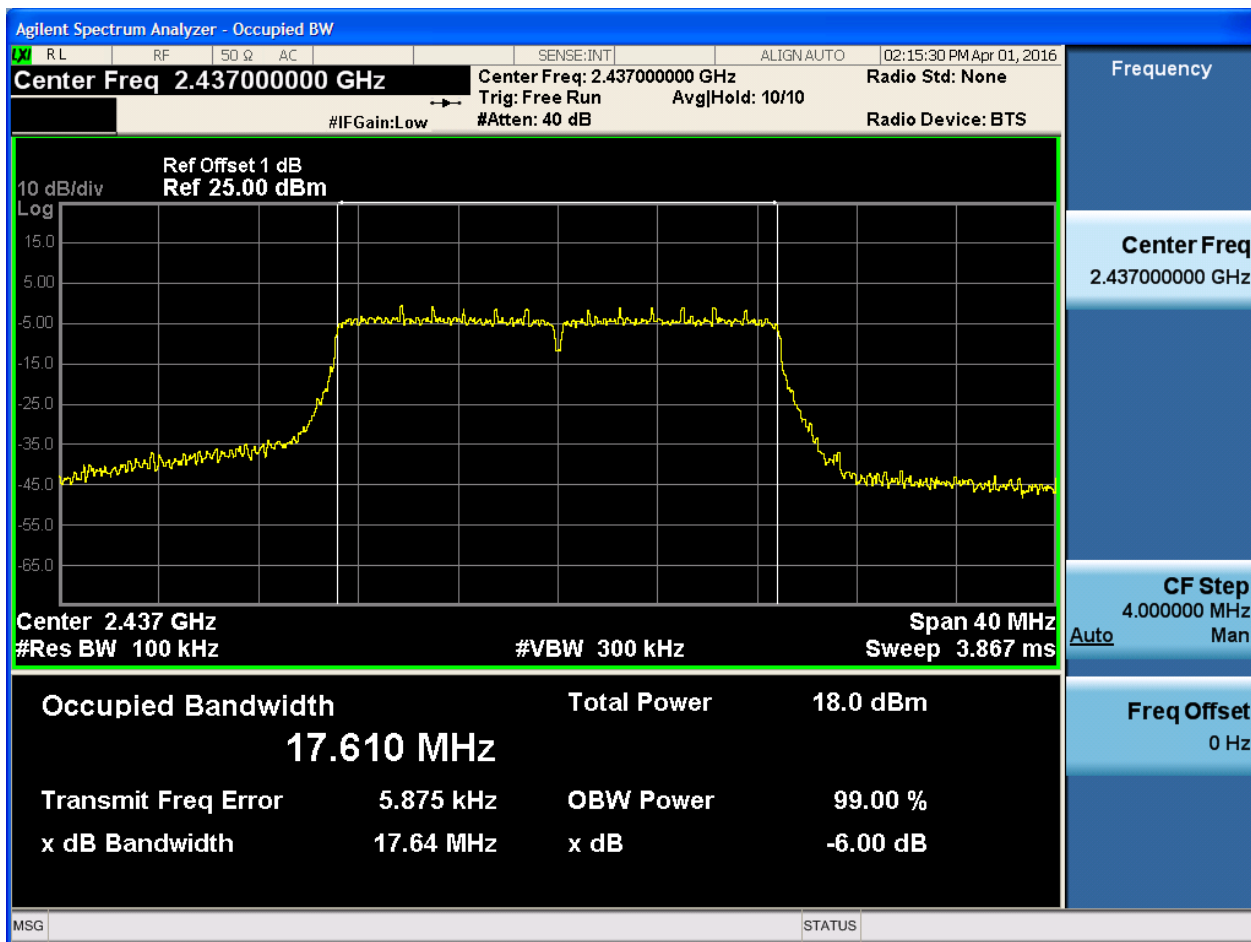


2.7 11N20_L@Ant 1



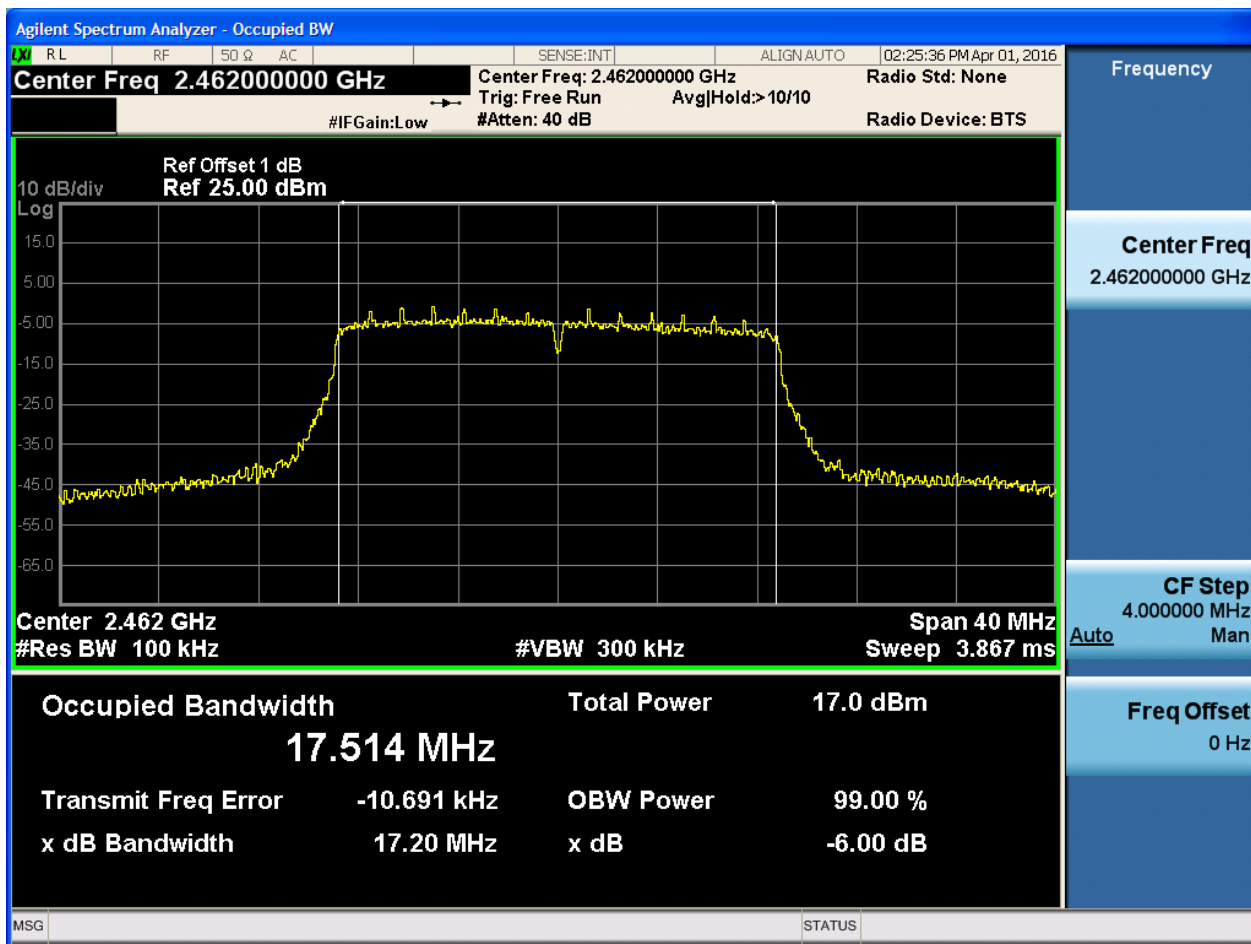


2.8 11N20_M@Ant 1



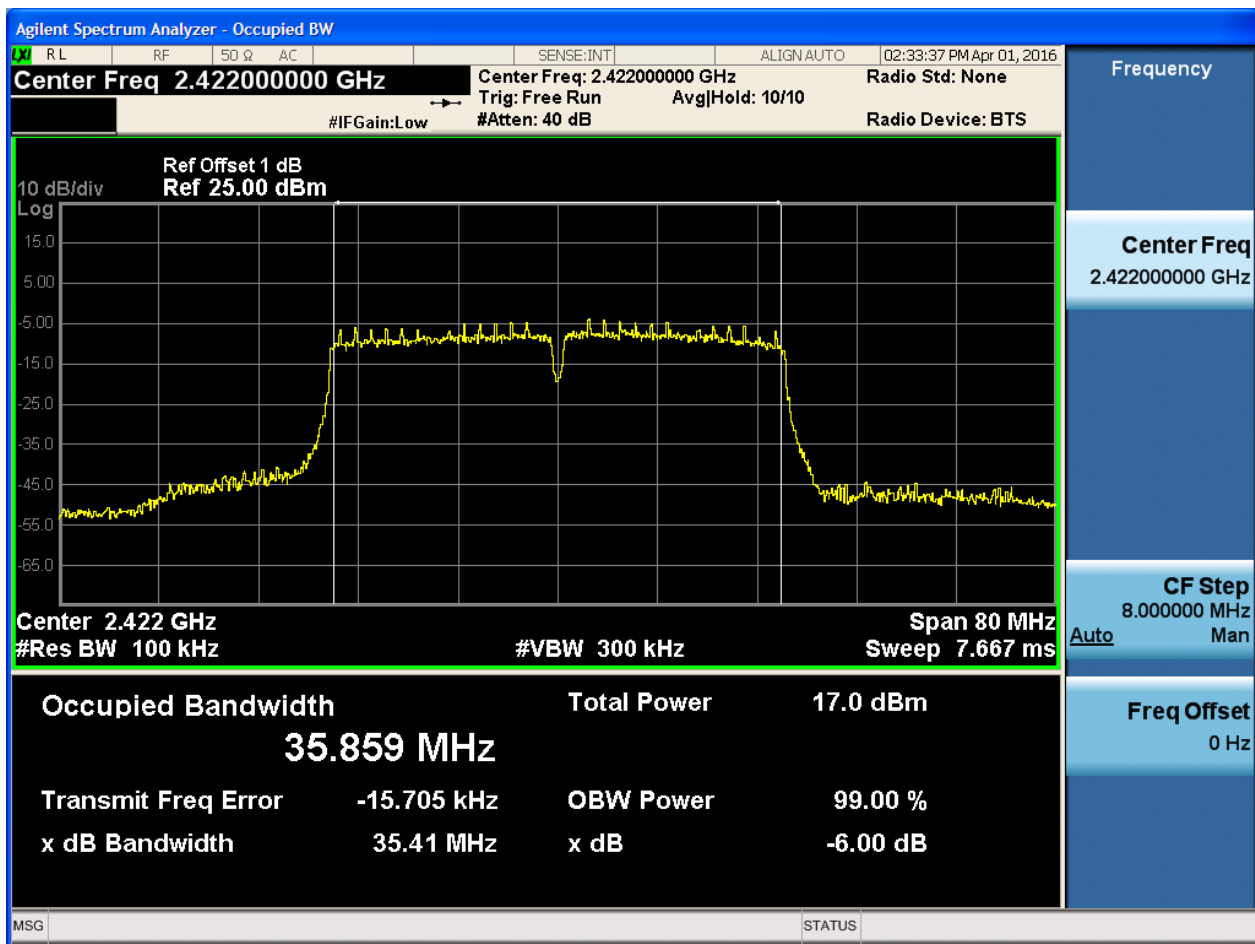


2.9 11N20_H@Ant 1



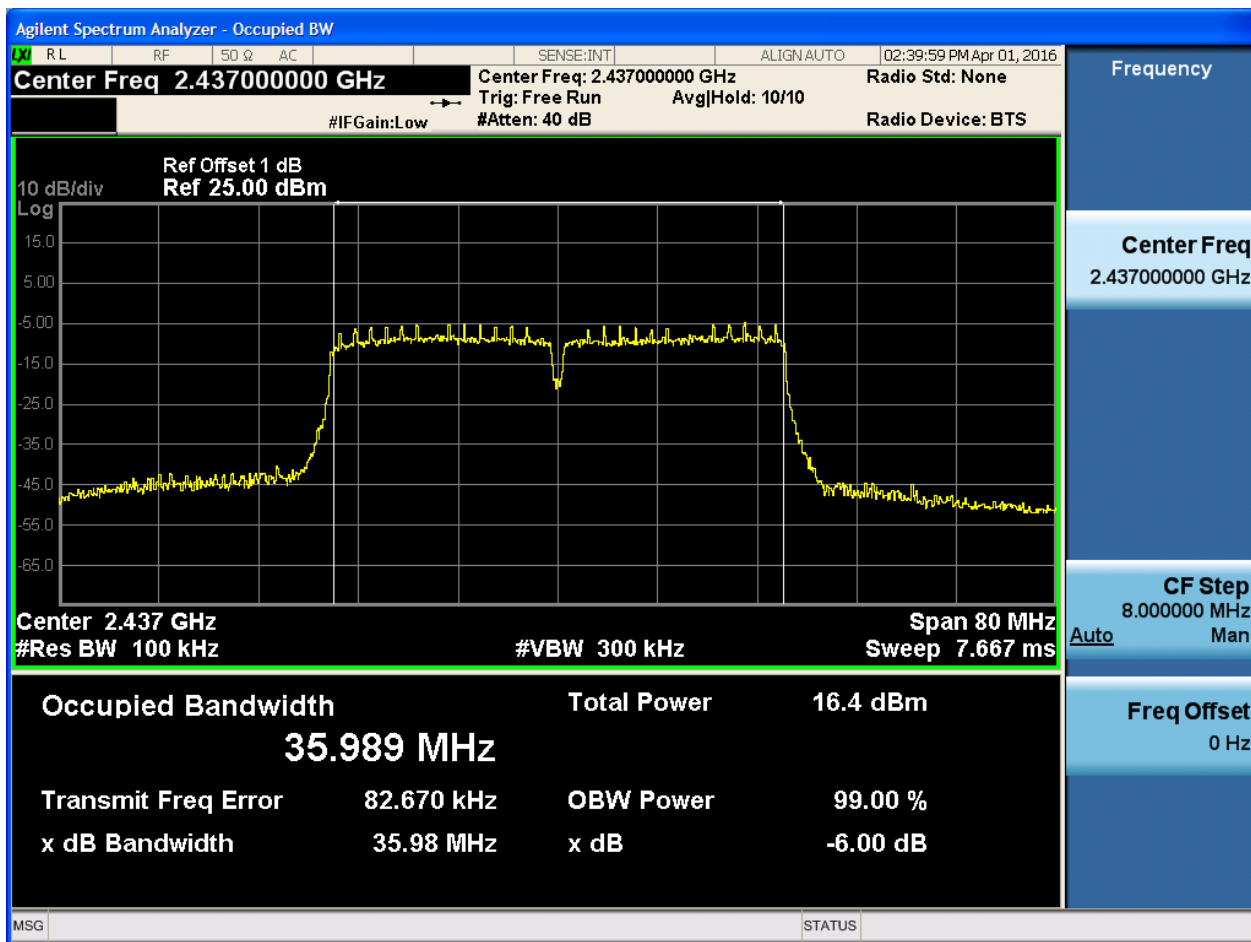


2.10 11N40_L@Ant 1



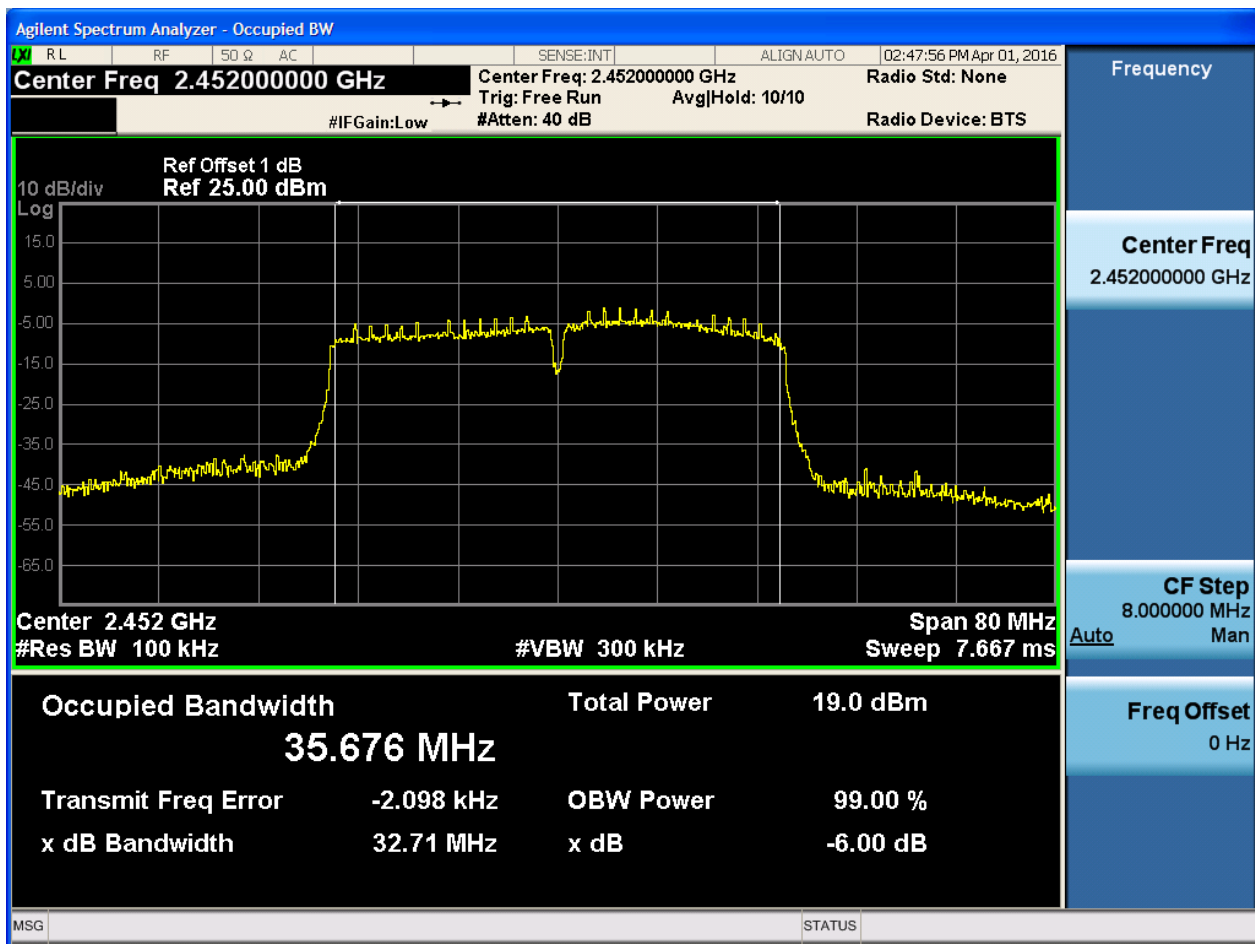


2.11 11N40_M@Ant 1





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.

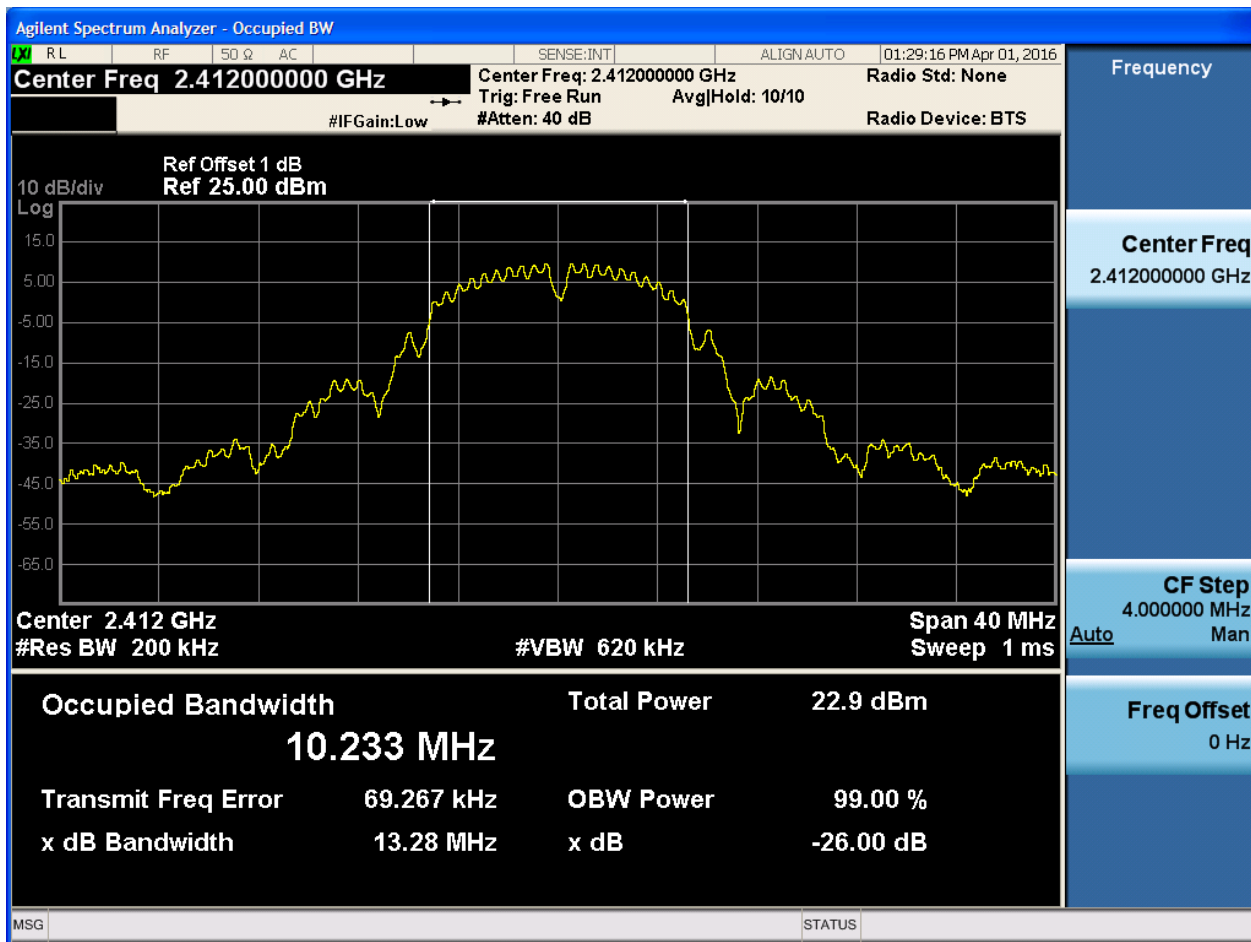
Part I - Test Results

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



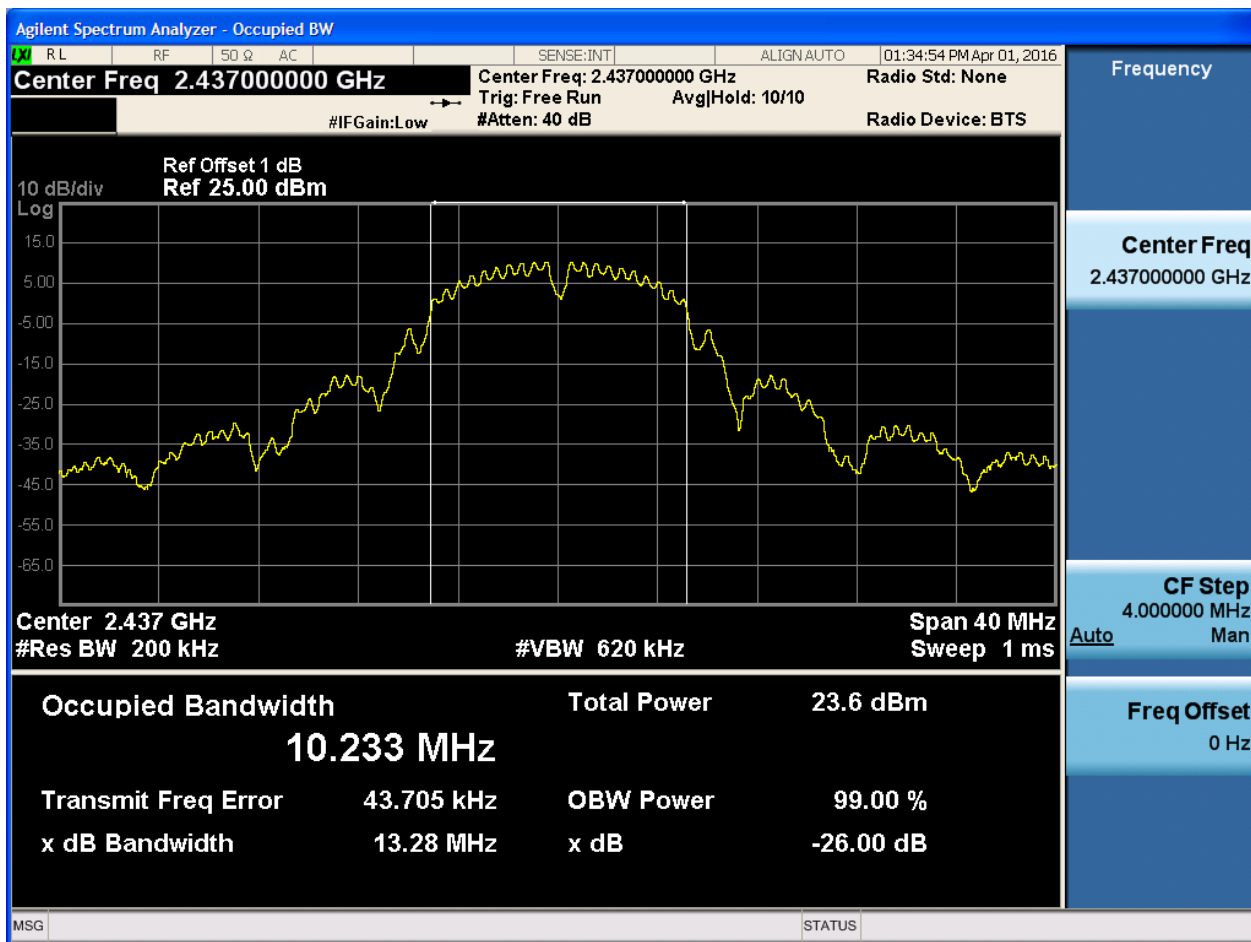
Part II - Test Plots

2.1 11B_L@Ant 1



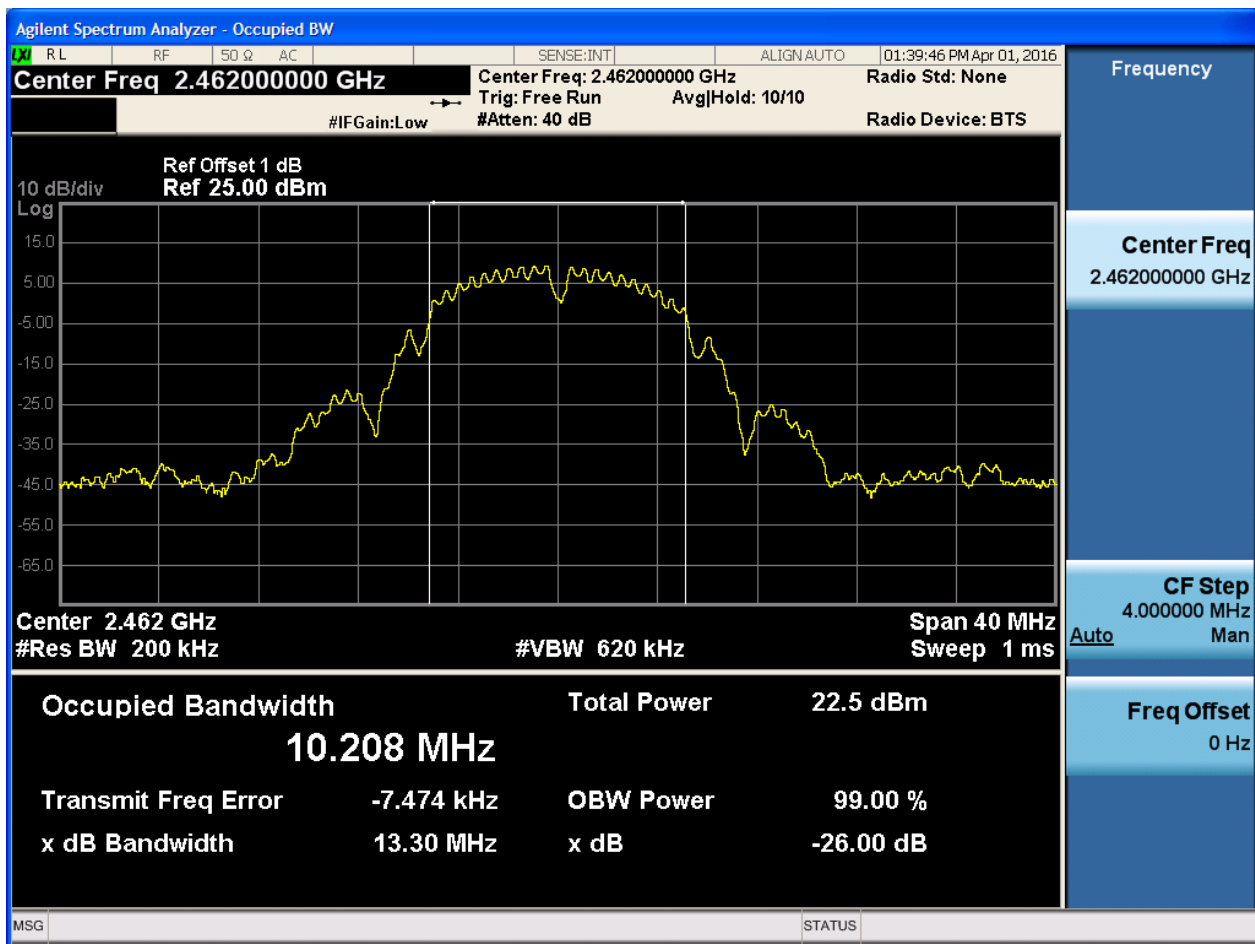


2.2 11B_M@Ant 1



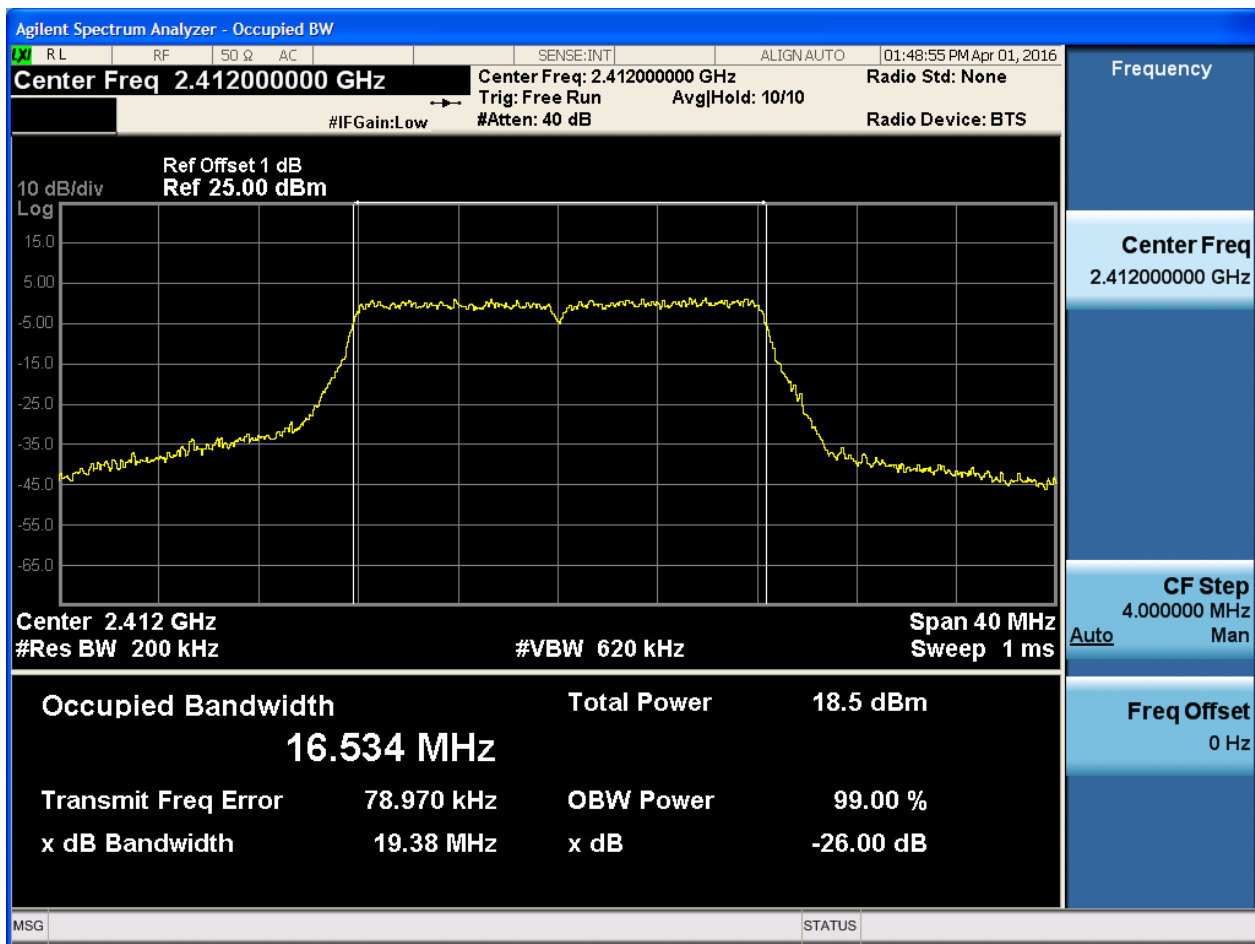


2.3 11B_H@Ant 1



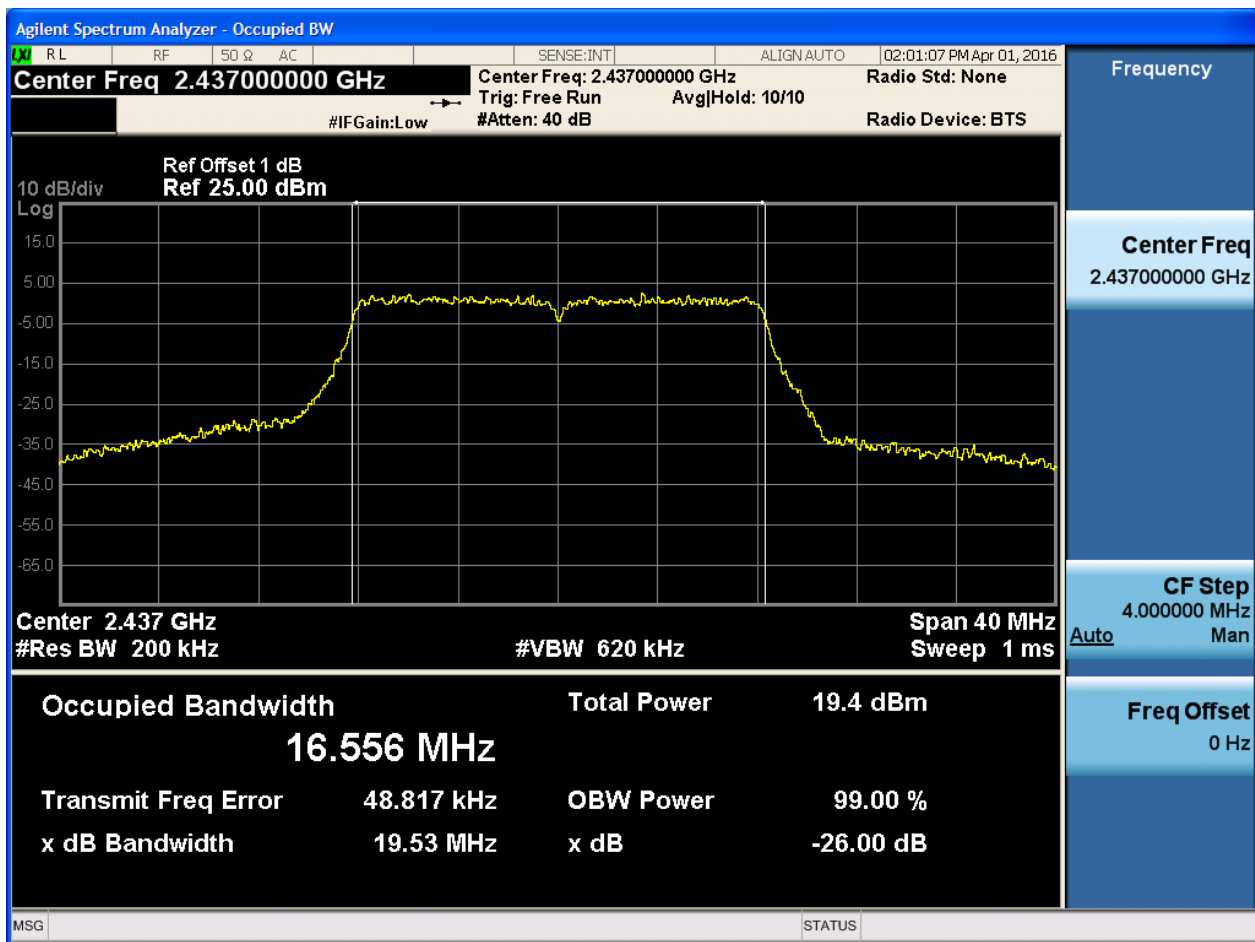


2.4 11G_L@Ant 1



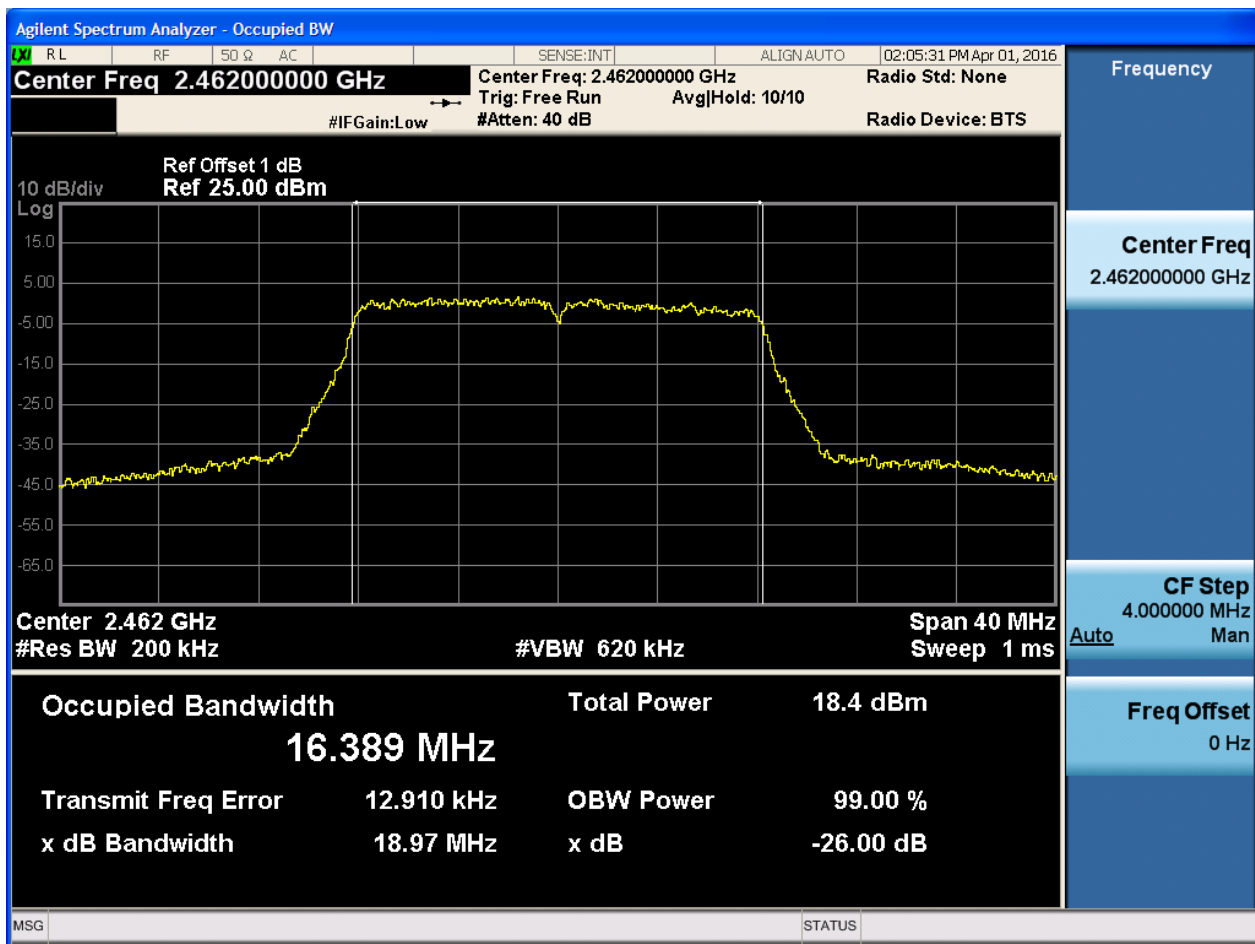


2.5 11G_M@Ant 1



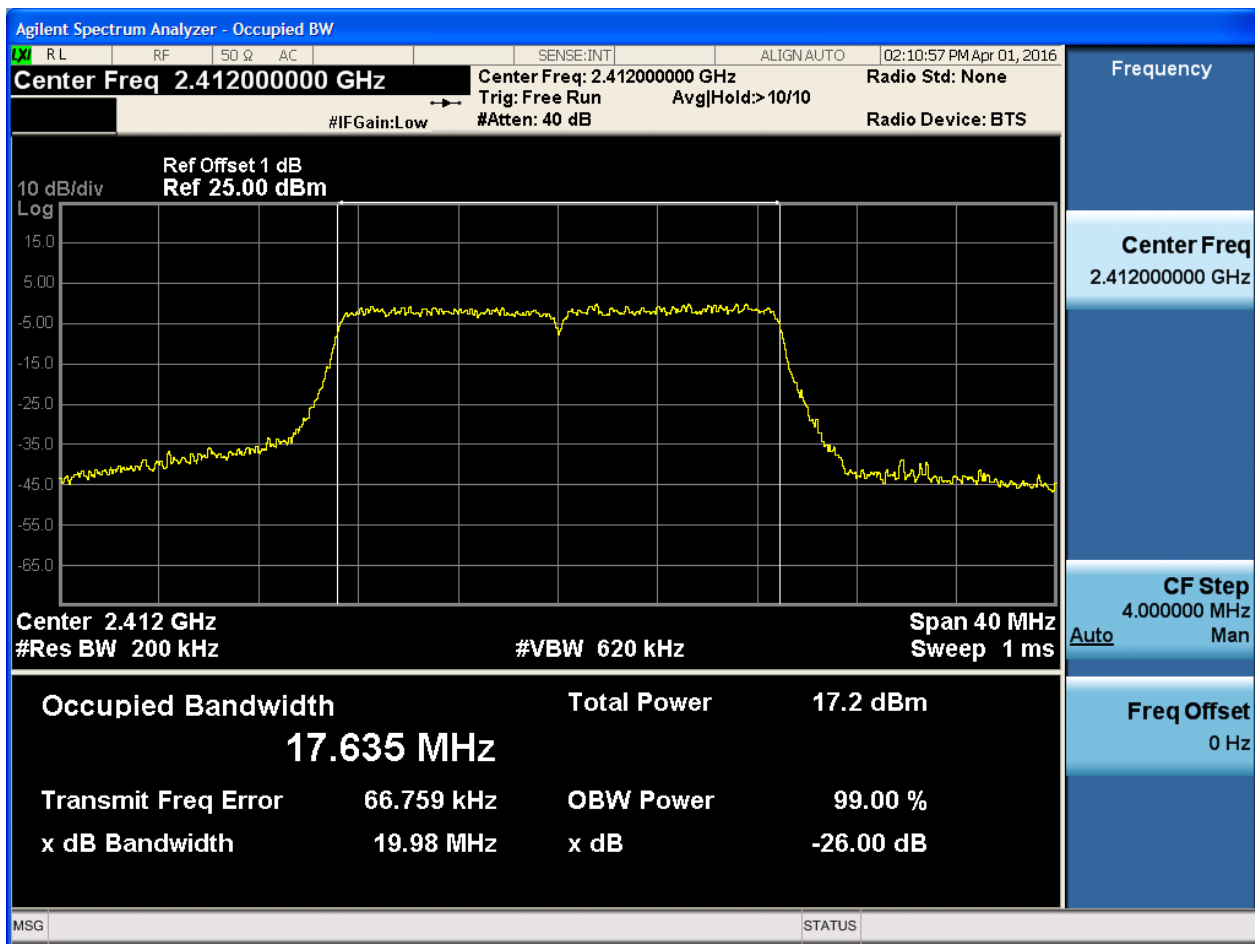


2.6 11G_H@Ant 1



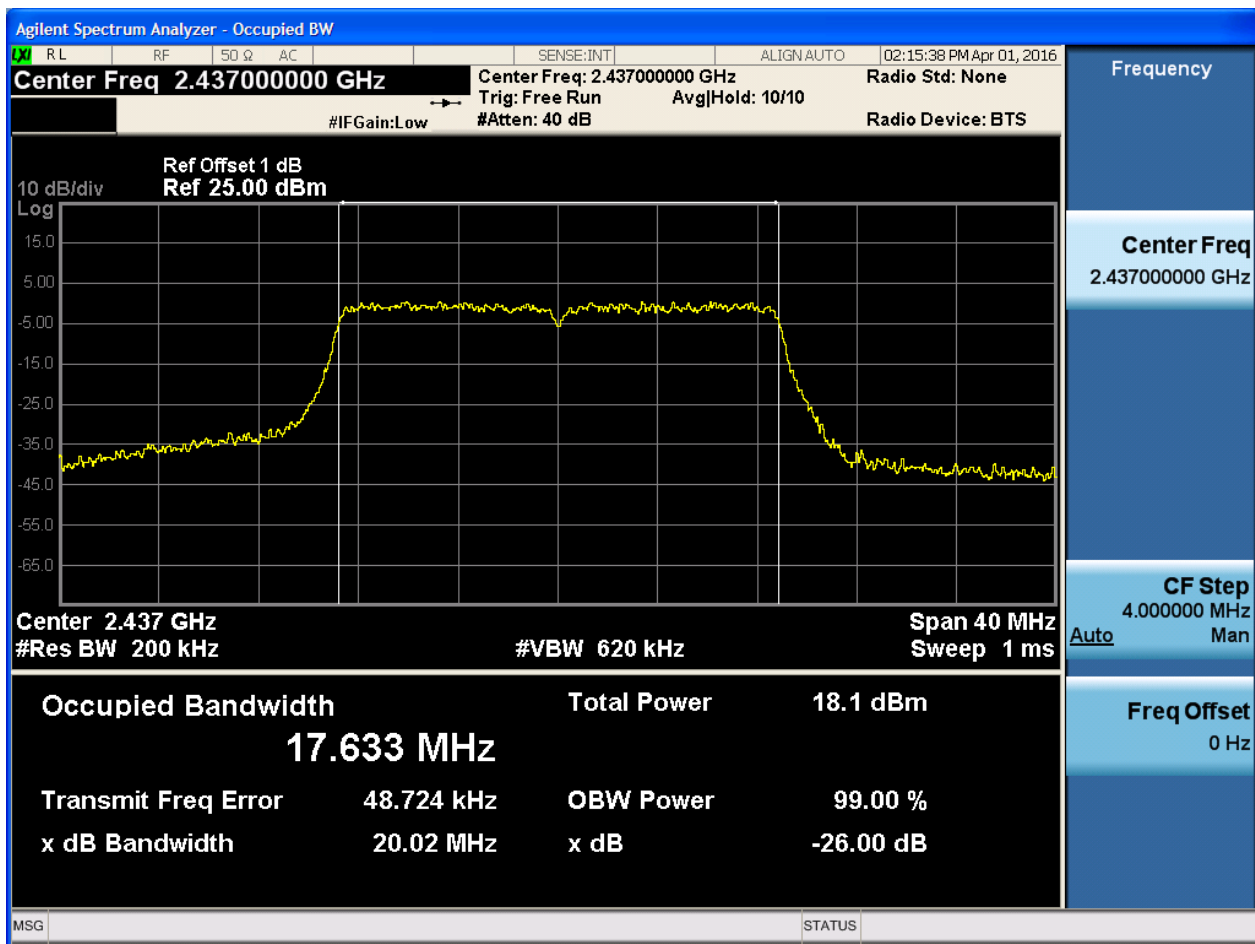


2.7 11N20_L@Ant 1



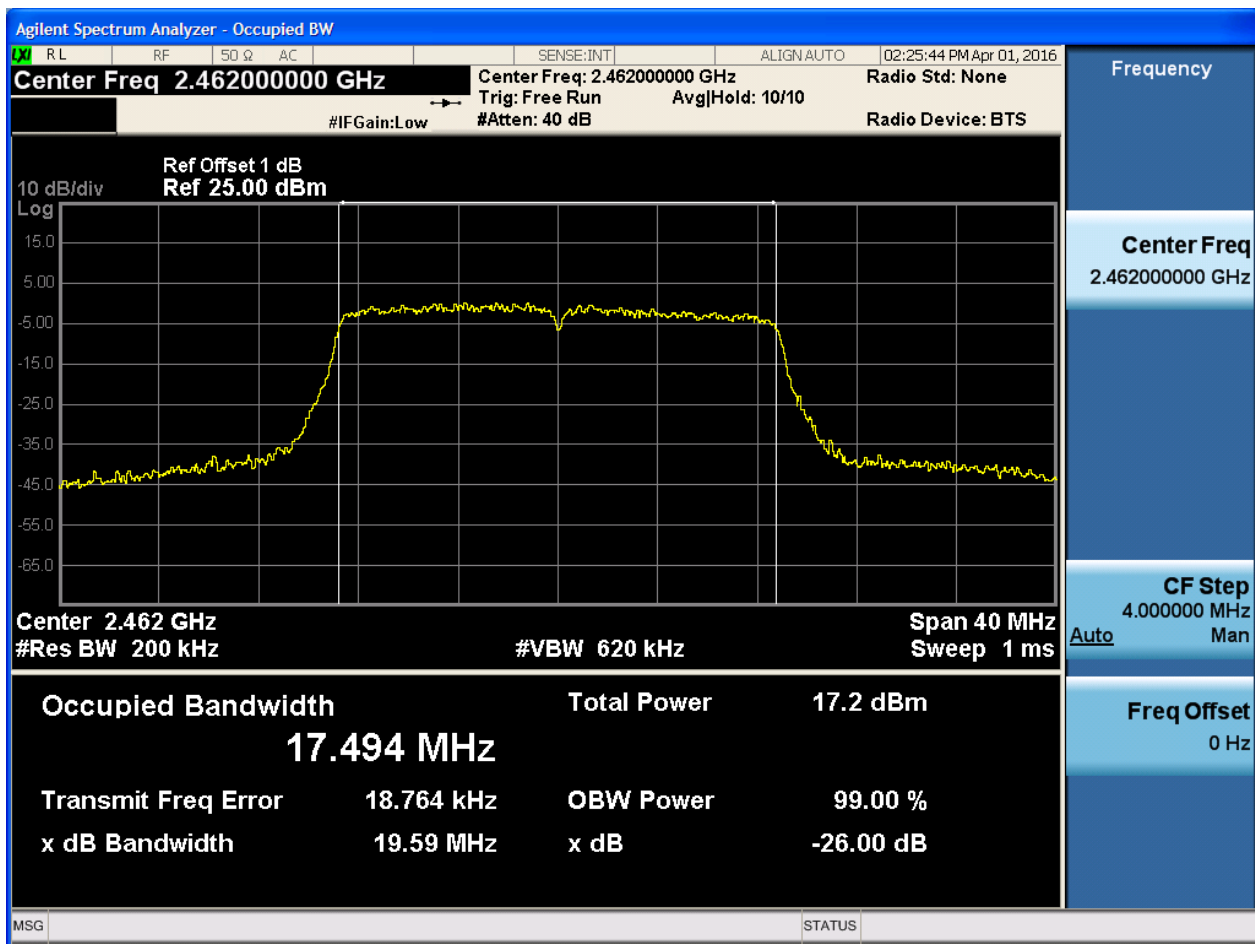


2.8 11N20_M@Ant 1



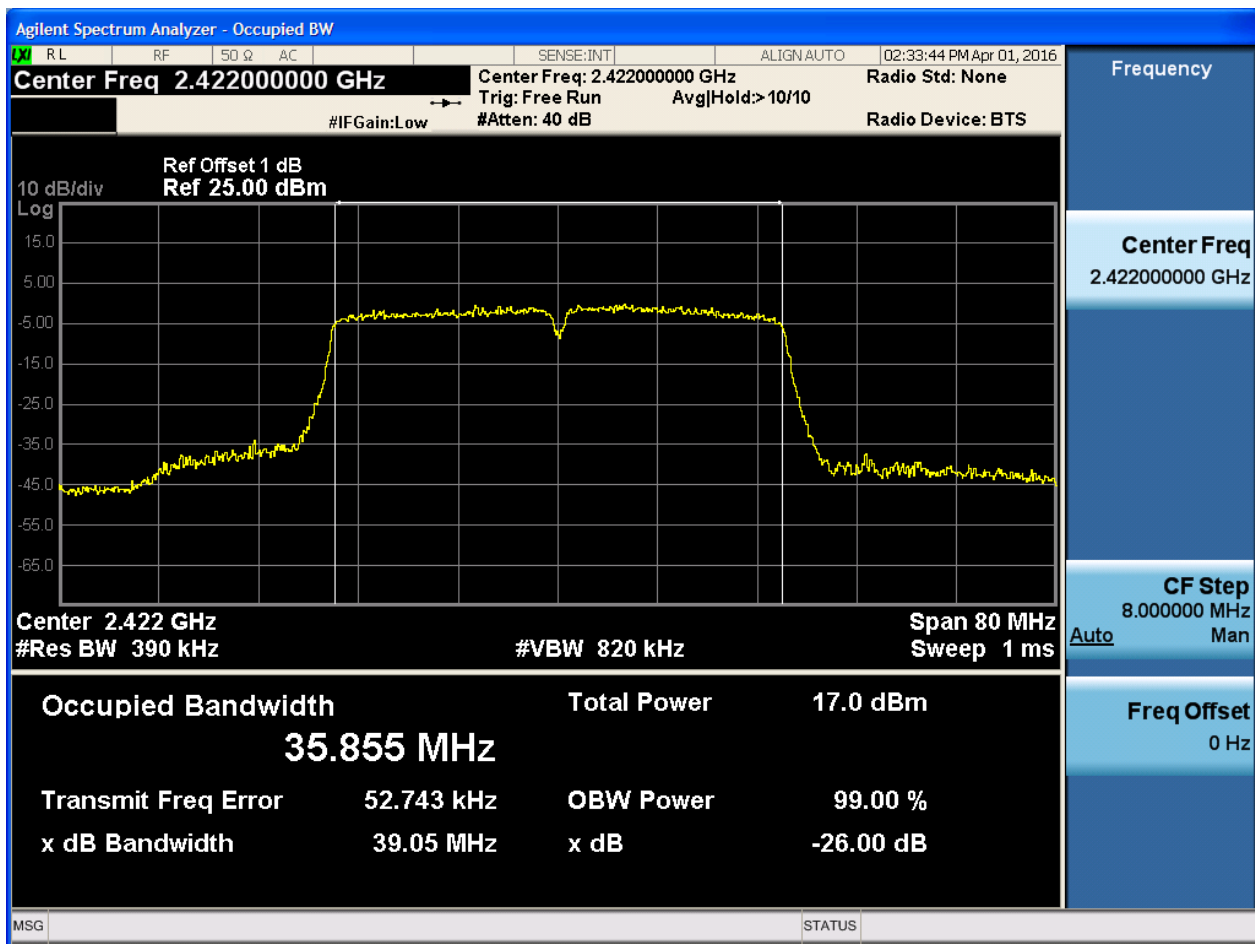


2.9 11N20_H@Ant 1



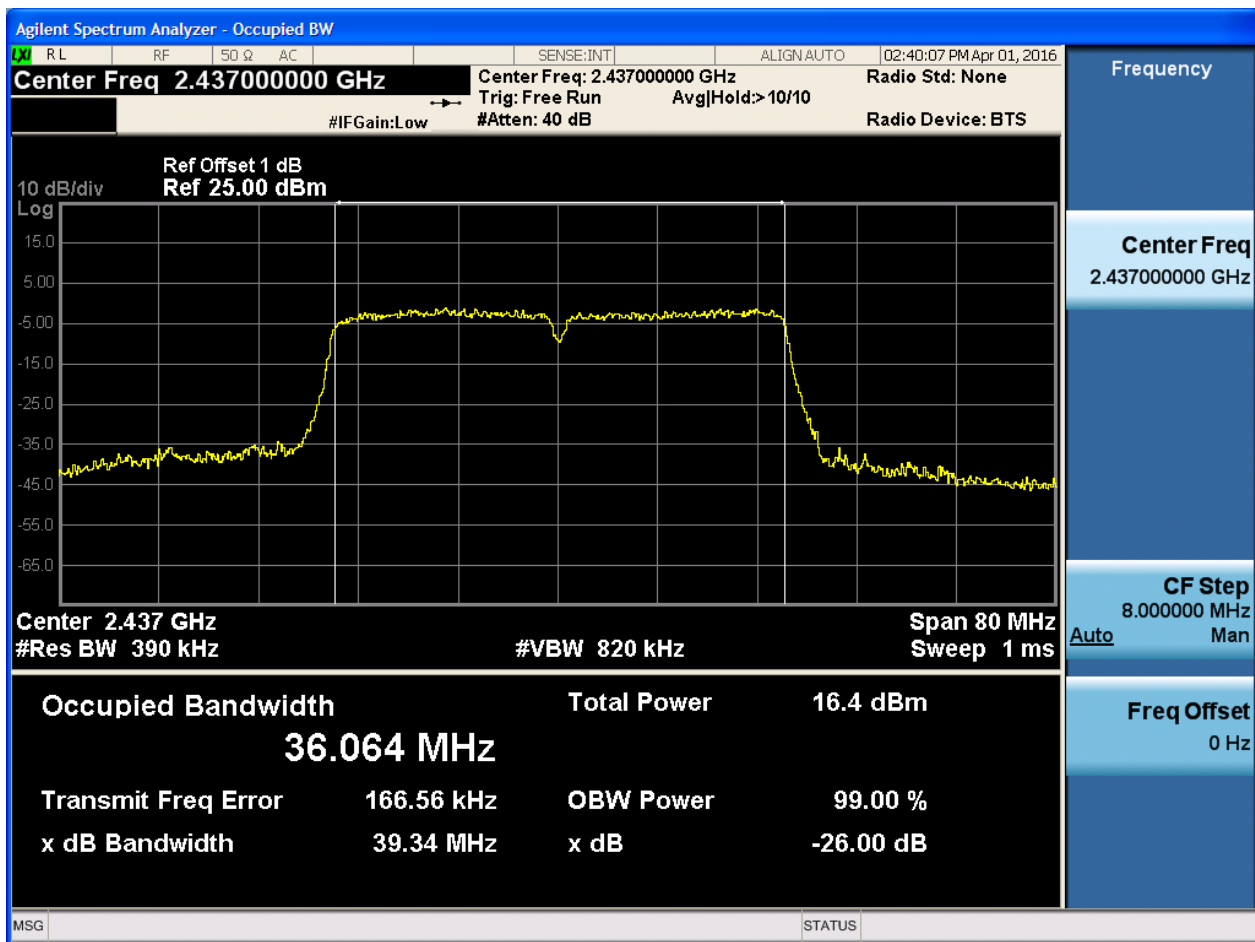


2.10 11N40_L@Ant 1



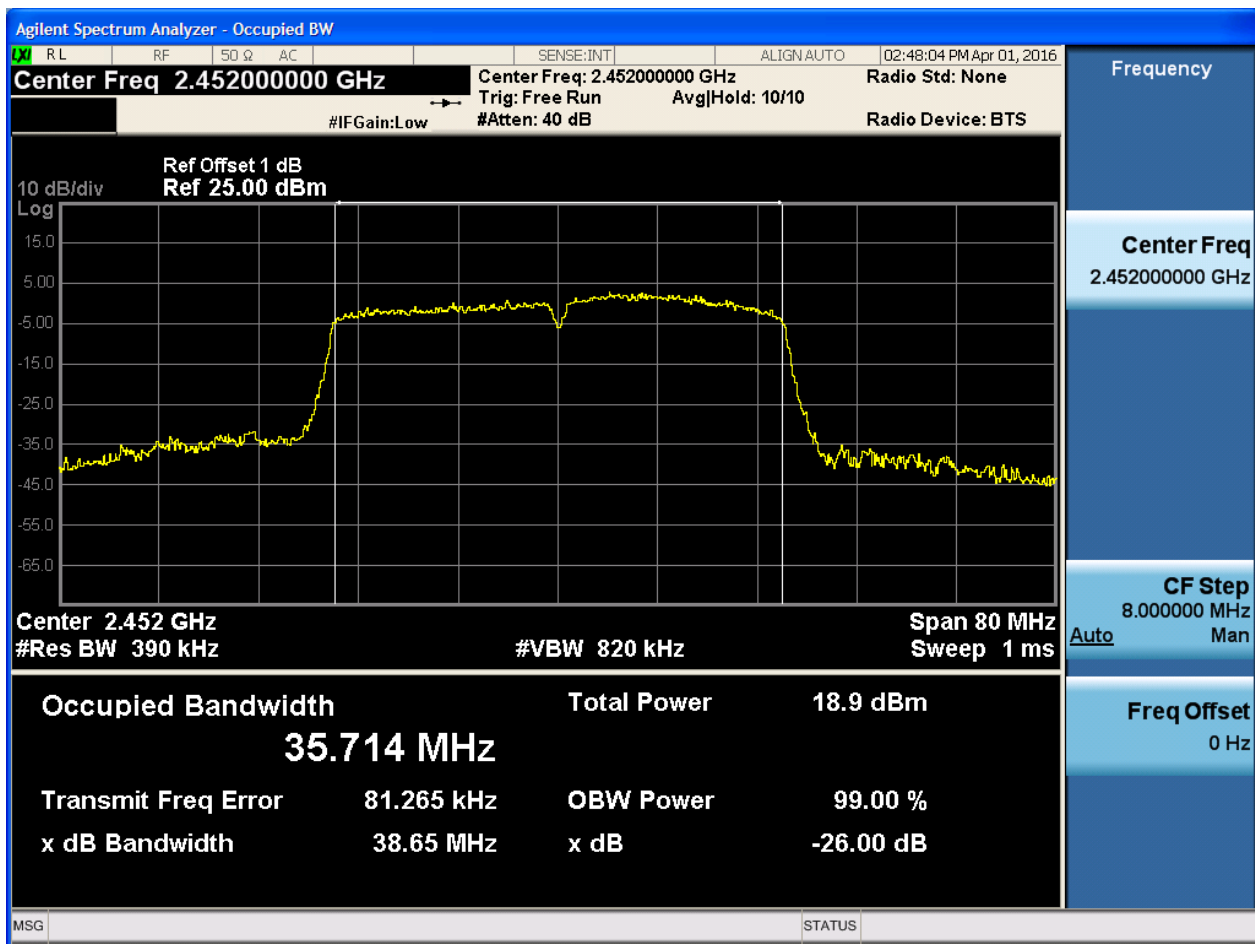


2.11 11N40_M@Ant 1





2.12 11N40_H@Ant 1



Appendix C: Duty cycle

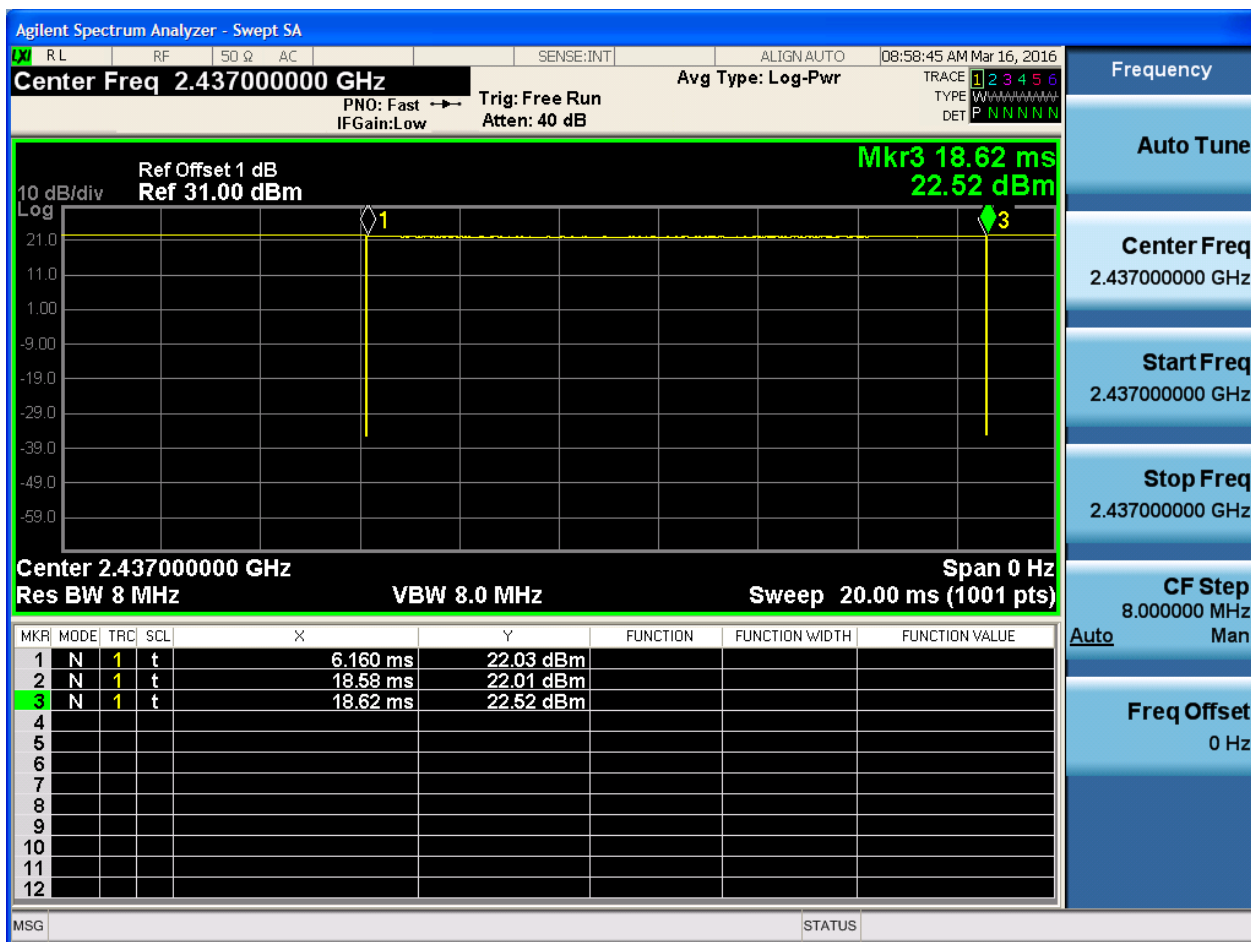
Part I - Test Results

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



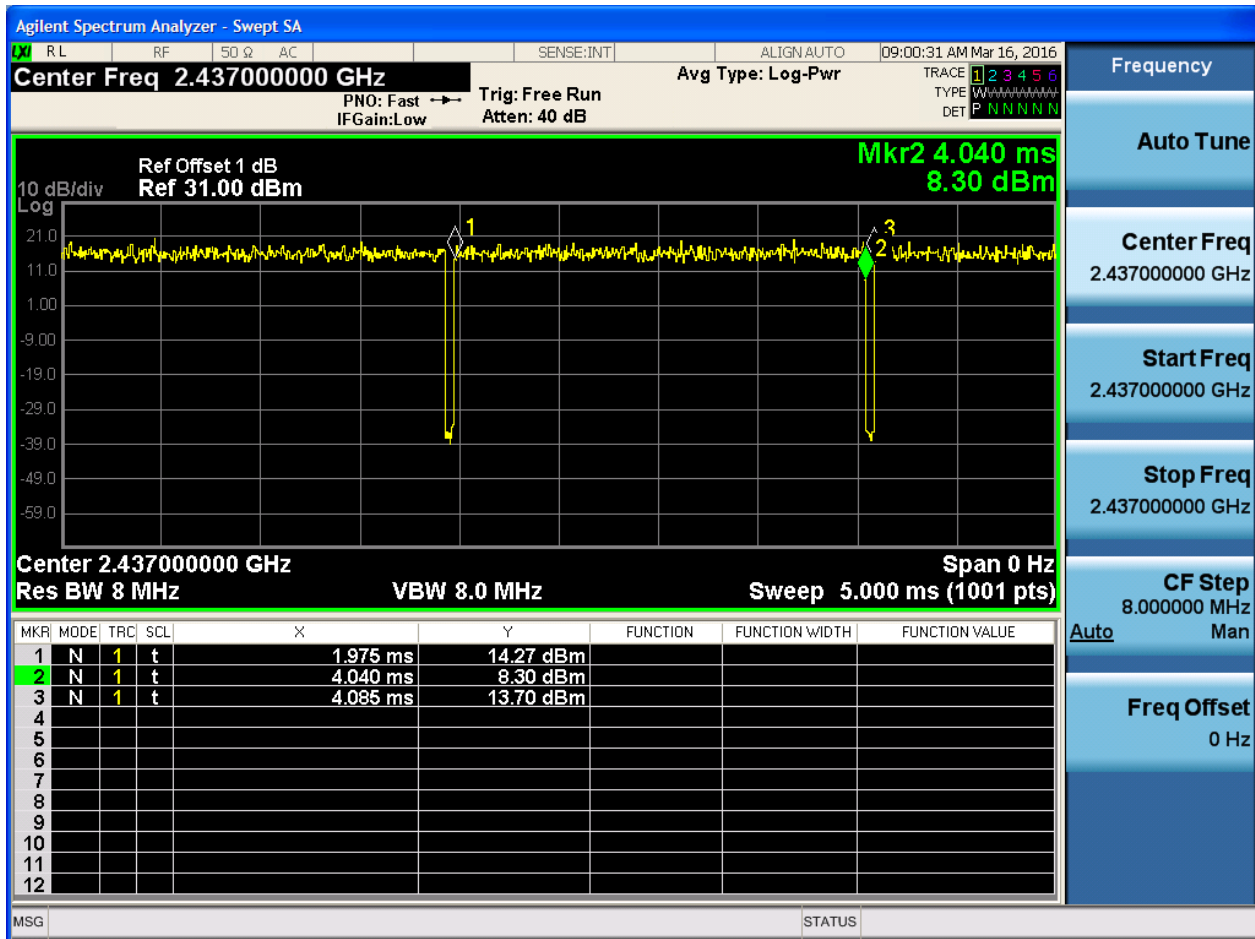
Part II - Test Plots

2.1 11B_M@Ant 1



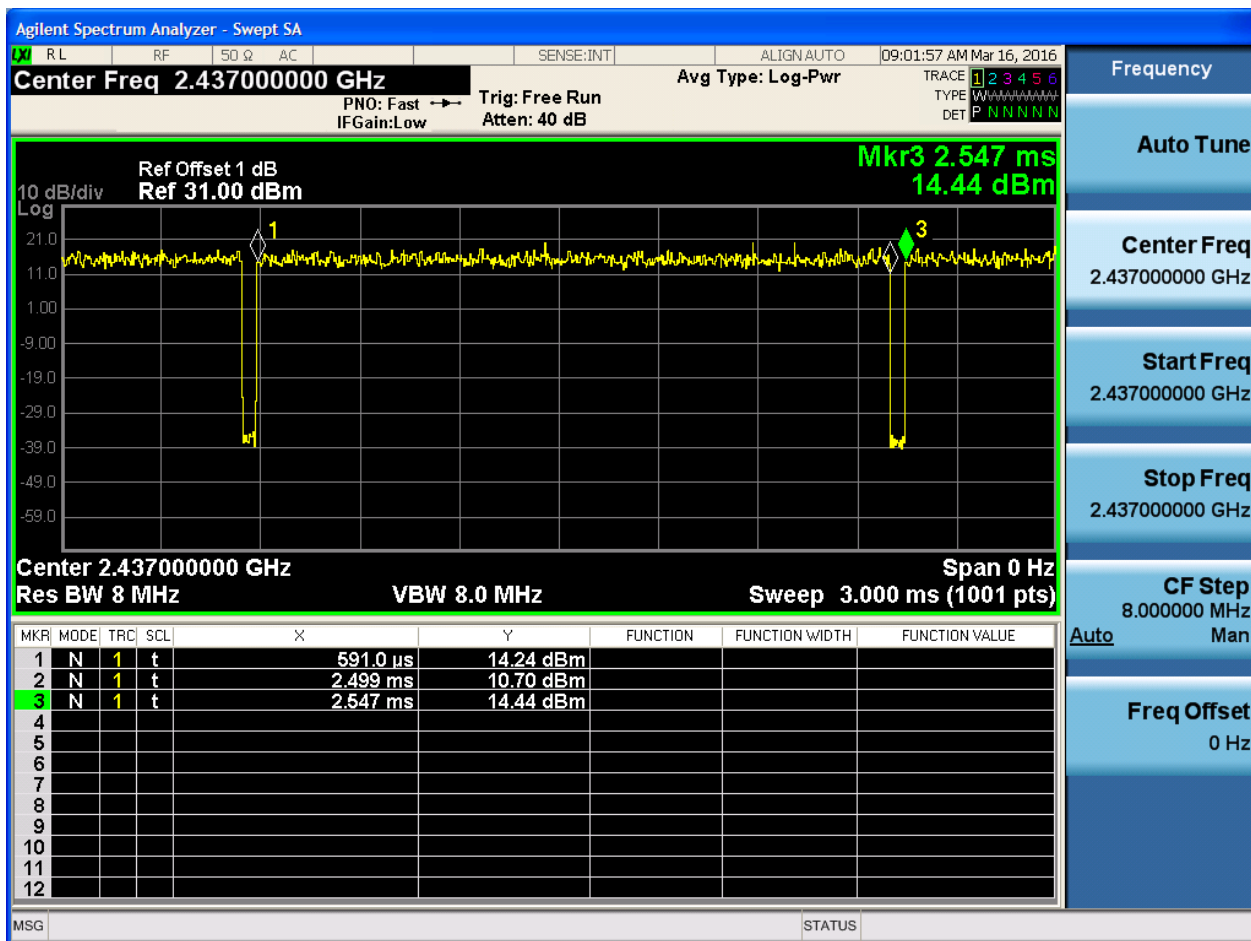


2.2 11G_M@Ant 1



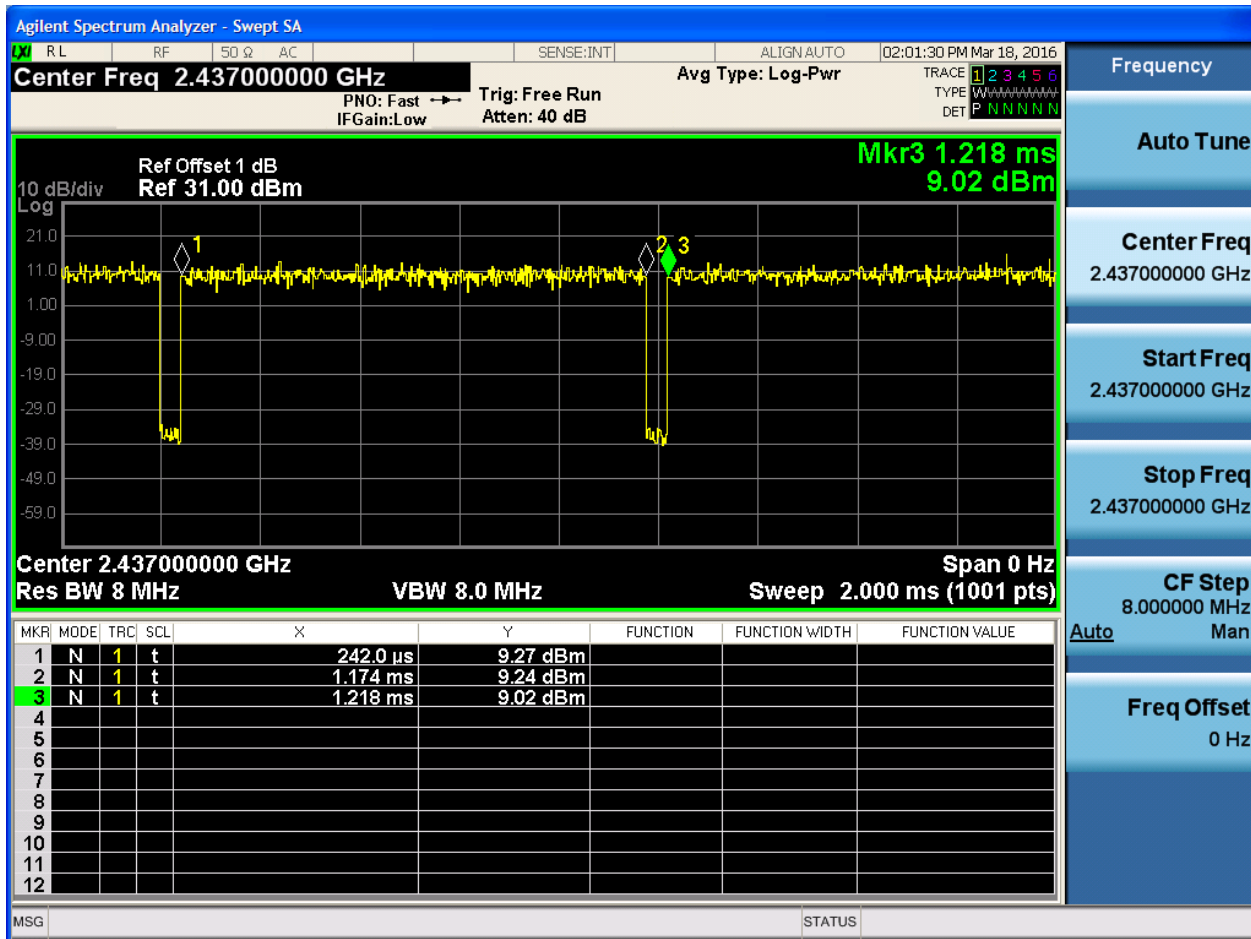


2.3 11N20SISO_M@Ant 1





2.4 11N40SISO_M@Ant 1



Appendix D: Maximum Conducted Average Output Power

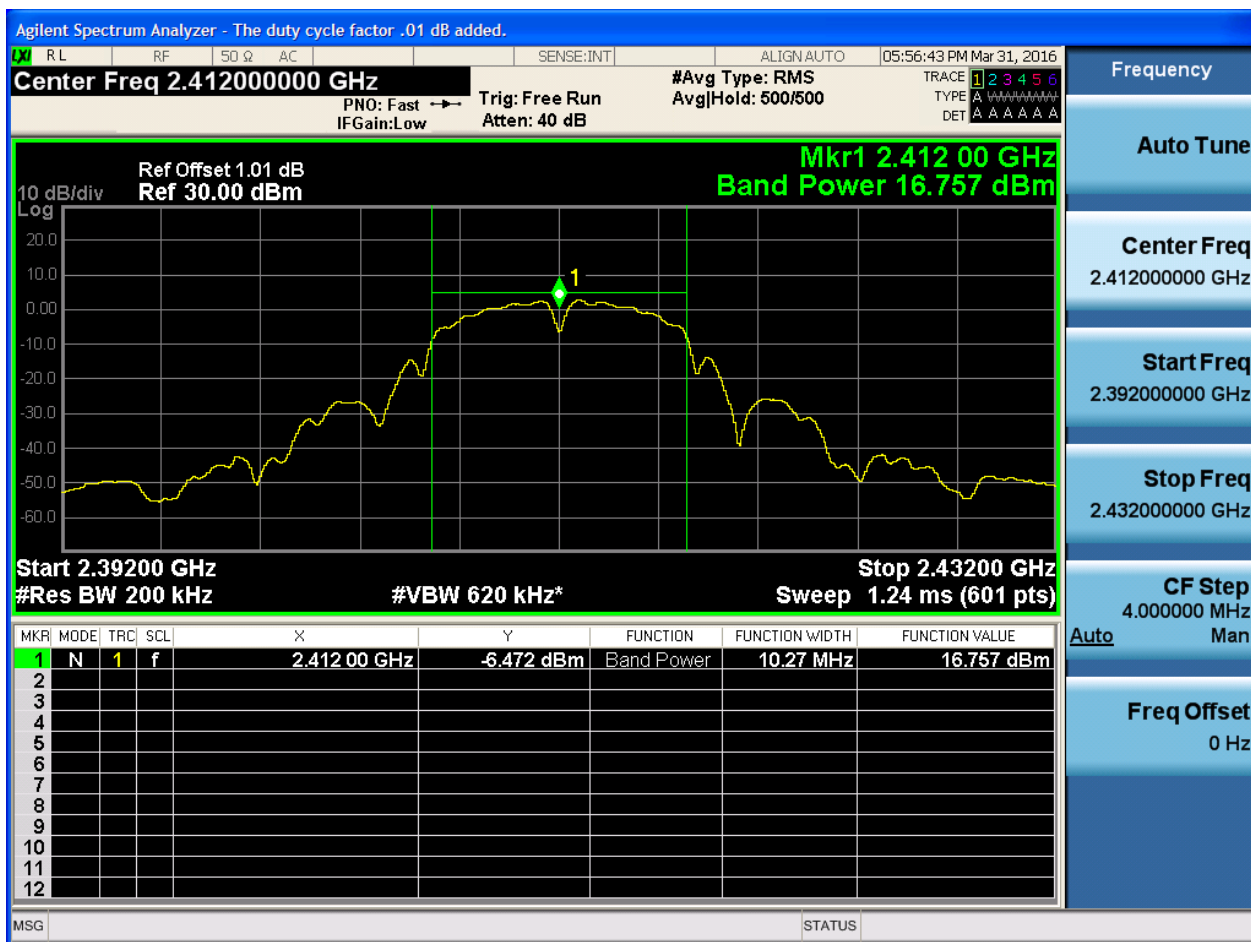
Part I - Test Results

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



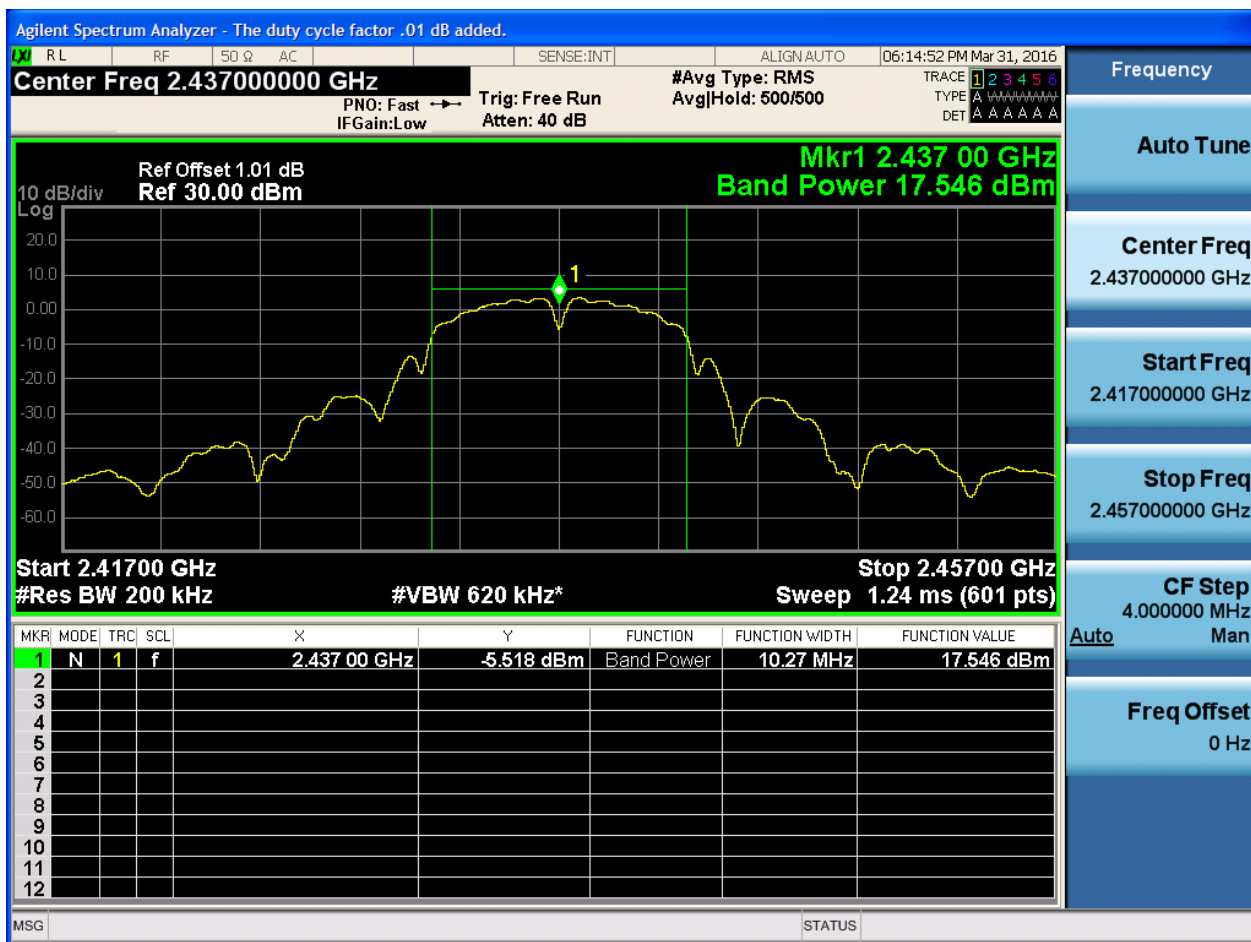
Part II - Test Plots

2.1 11B_L@Ant 1



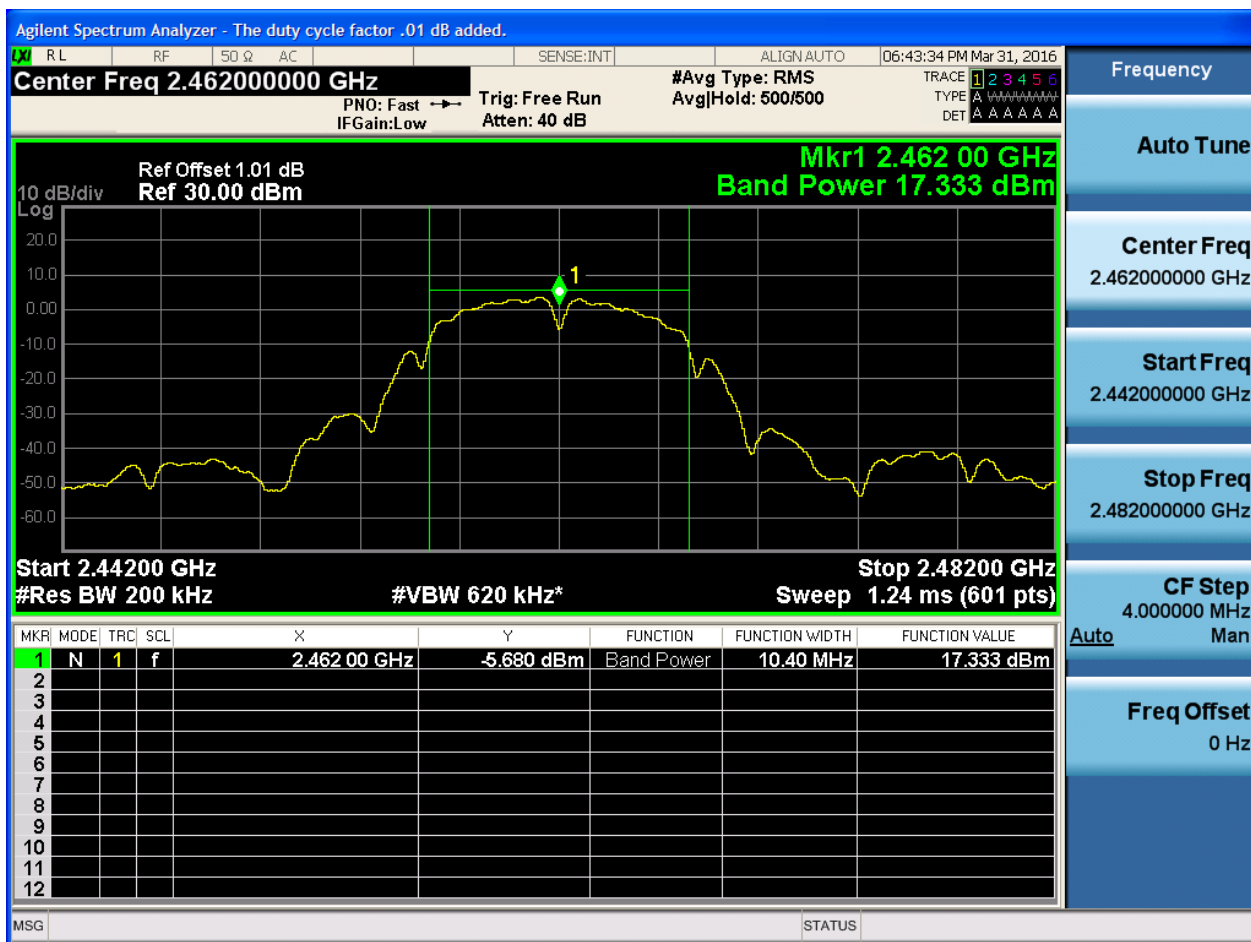


2.2 11B_M@Ant 1



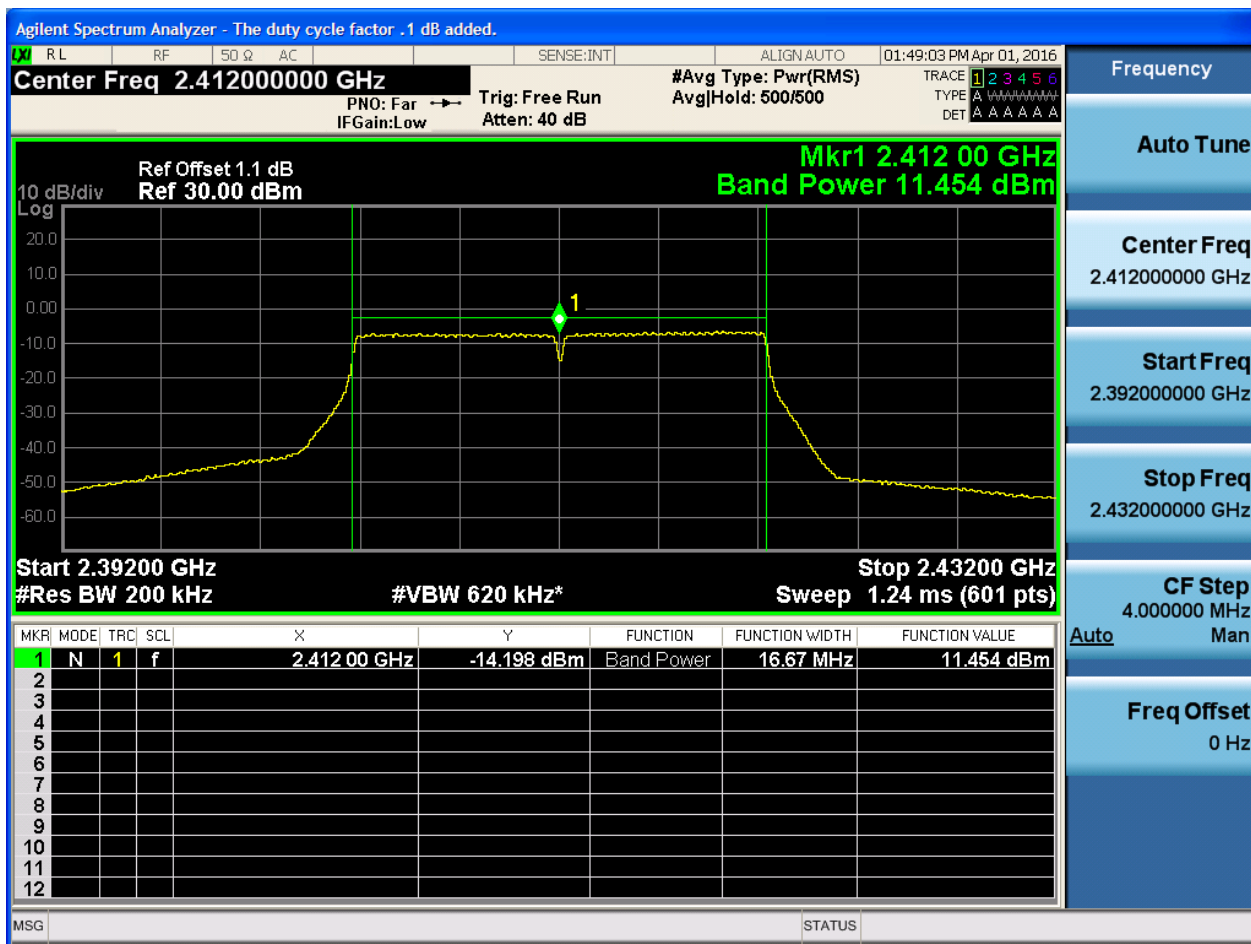


2.3 11B_H@Ant 1



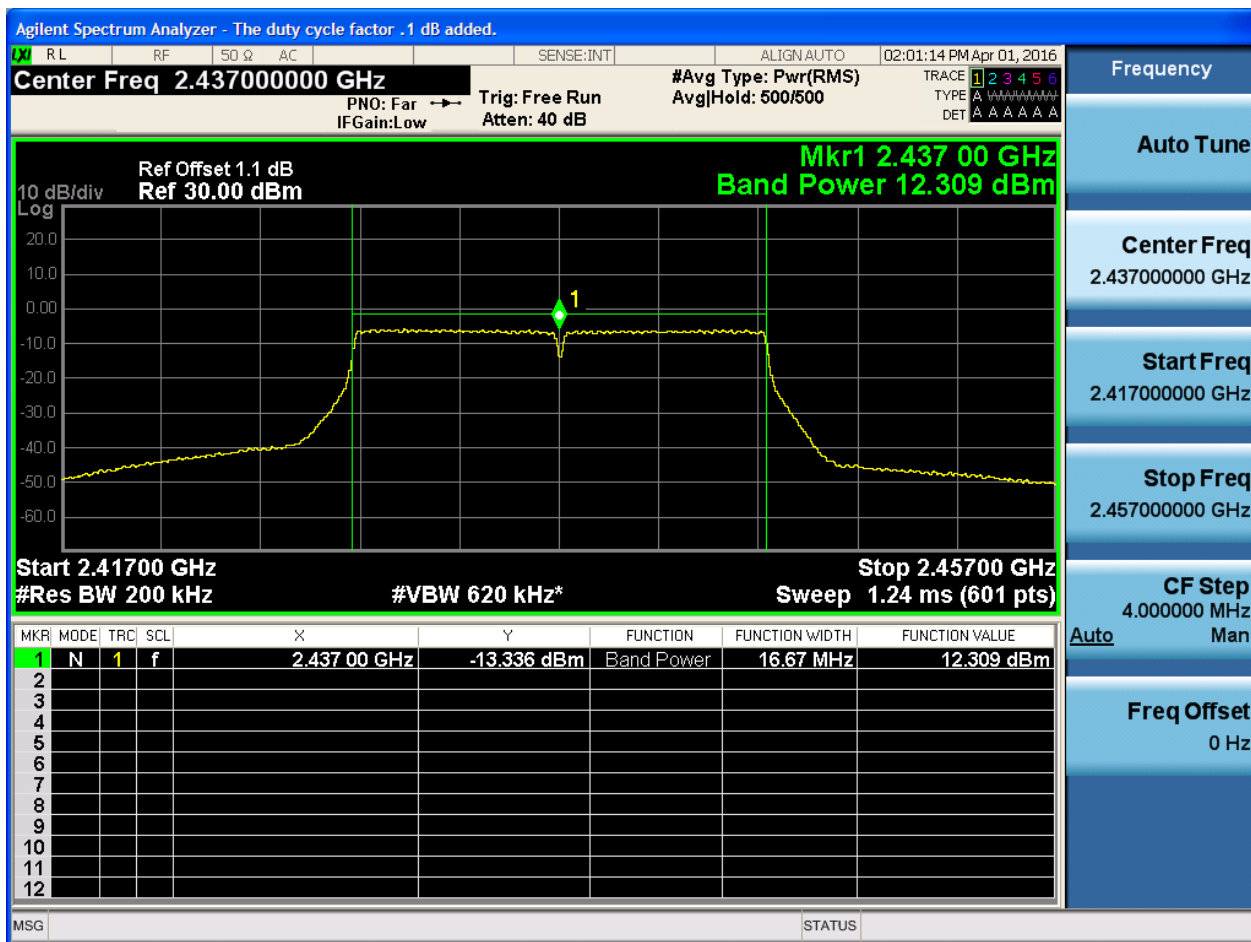


2.4 11G_L@Ant 1



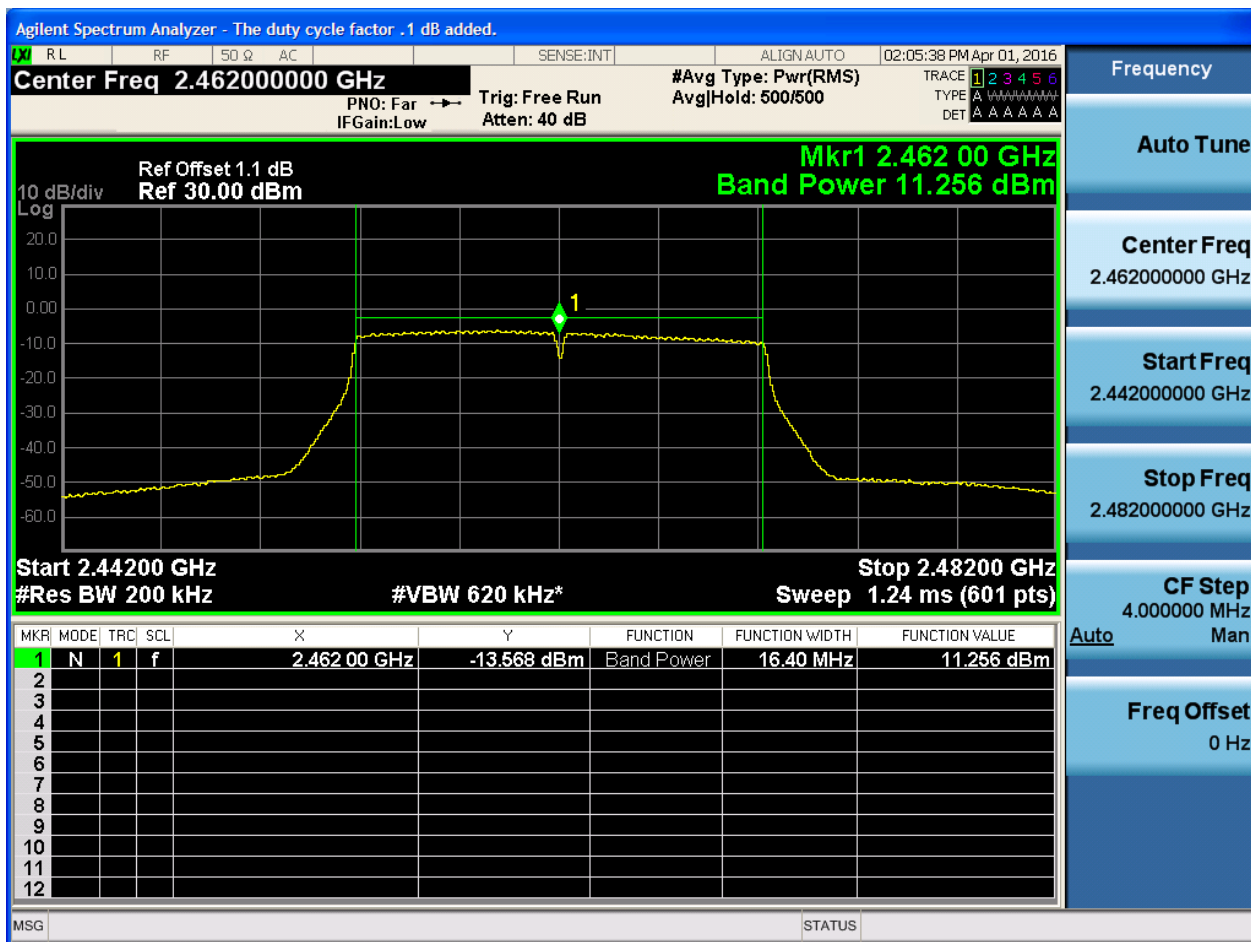


2.5 11G_M@Ant 1



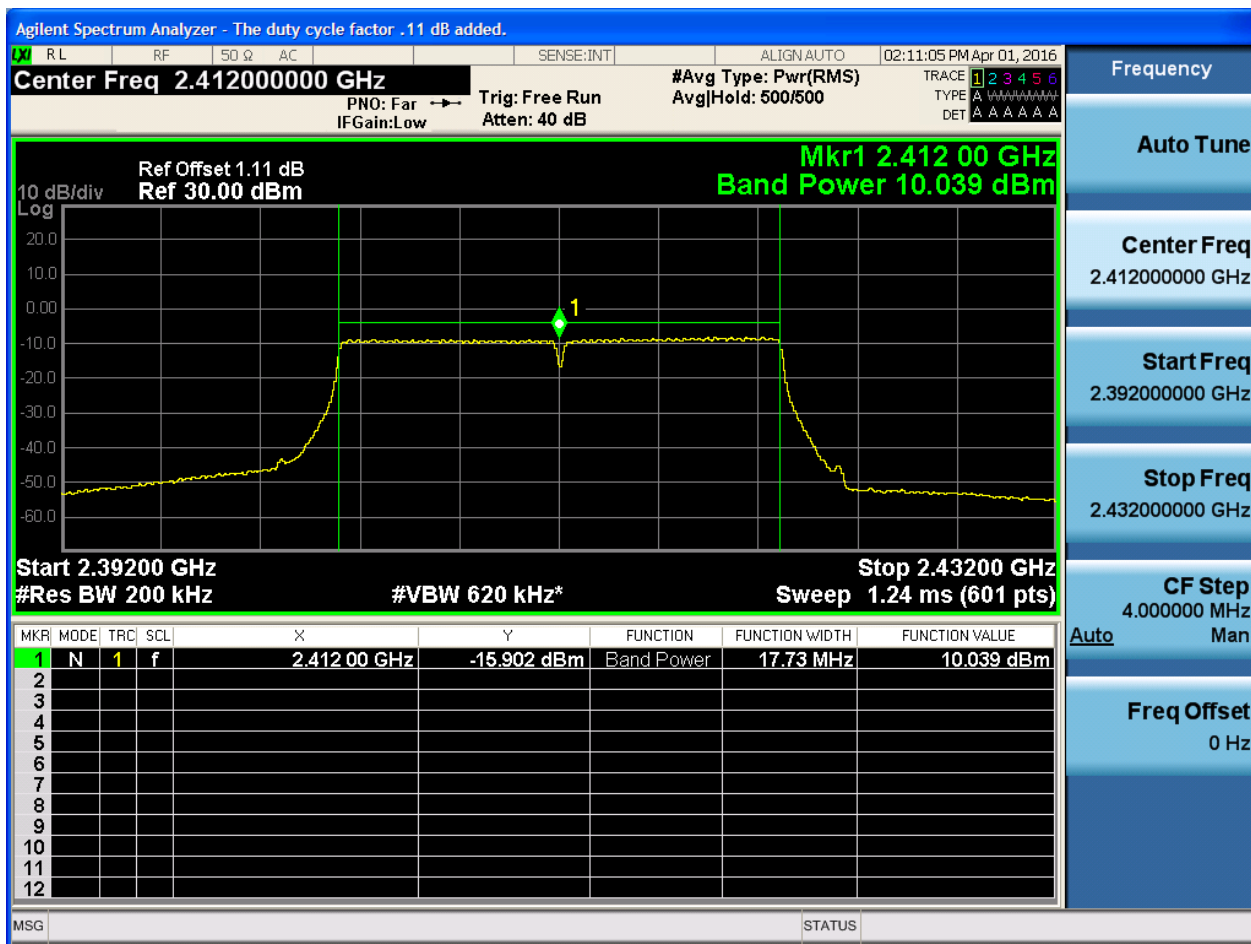


2.6 11G_H@Ant 1



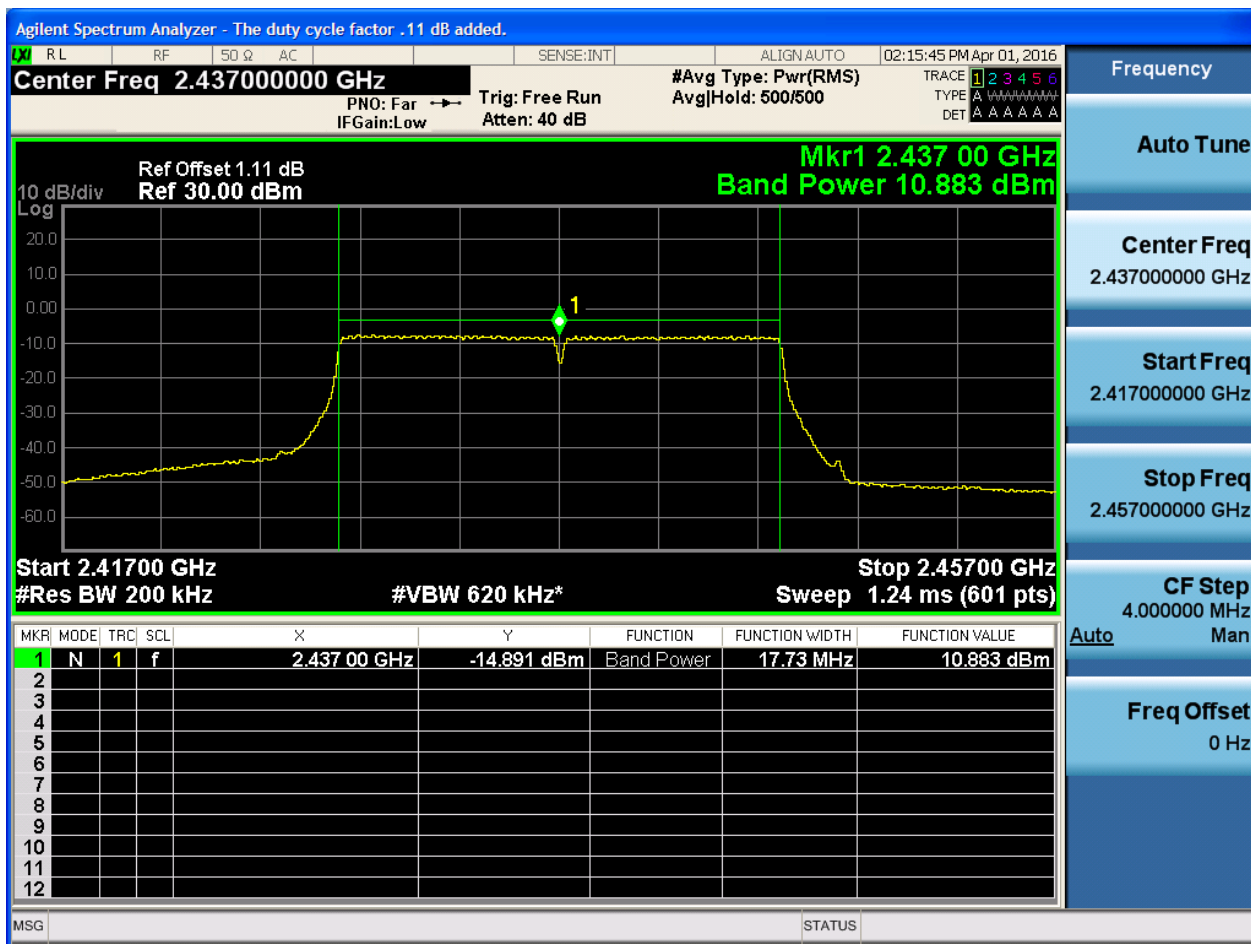


2.7 11N20_L@Ant 1





2.8 11N20_M@Ant 1





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

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

Ref Offset 1.11 dB Ref 30.00 dBm

Mkr1 2.462 00 GHz Band Power 9.937 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	-15.085 dBm	Band Power	17.60 MHz	9.937 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



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

Center Freq 2.42200000 GHz

#Avg Type: Pwr(RMS) AvgHold: 500/500

TRAC 1 2 3 4 5 6

TYPE A W W W W W W W W

DET A A A A A A

PNO: Fast → Trg: Free Run

IFGain:Low Atten: 40 dB

Ref Offset 1.2 dB

Ref 30.00 dBm

Mkr1 2.422 00 GHz

Band Power 9.690 dBm

Start 2.38200 GHz

#Res BW 390 kHz

#VBW 1.2 MHz*

Stop 2.46200 GHz

Sweep 1.00 ms (601 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.422 00 GHz	-19.096 dBm	Band Power	36.00 MHz	9.690 dBm
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

Frequency

Auto Tune

Center Freq 2.42200000 GHz

Start Freq 2.38200000 GHz

Stop Freq 2.46200000 GHz

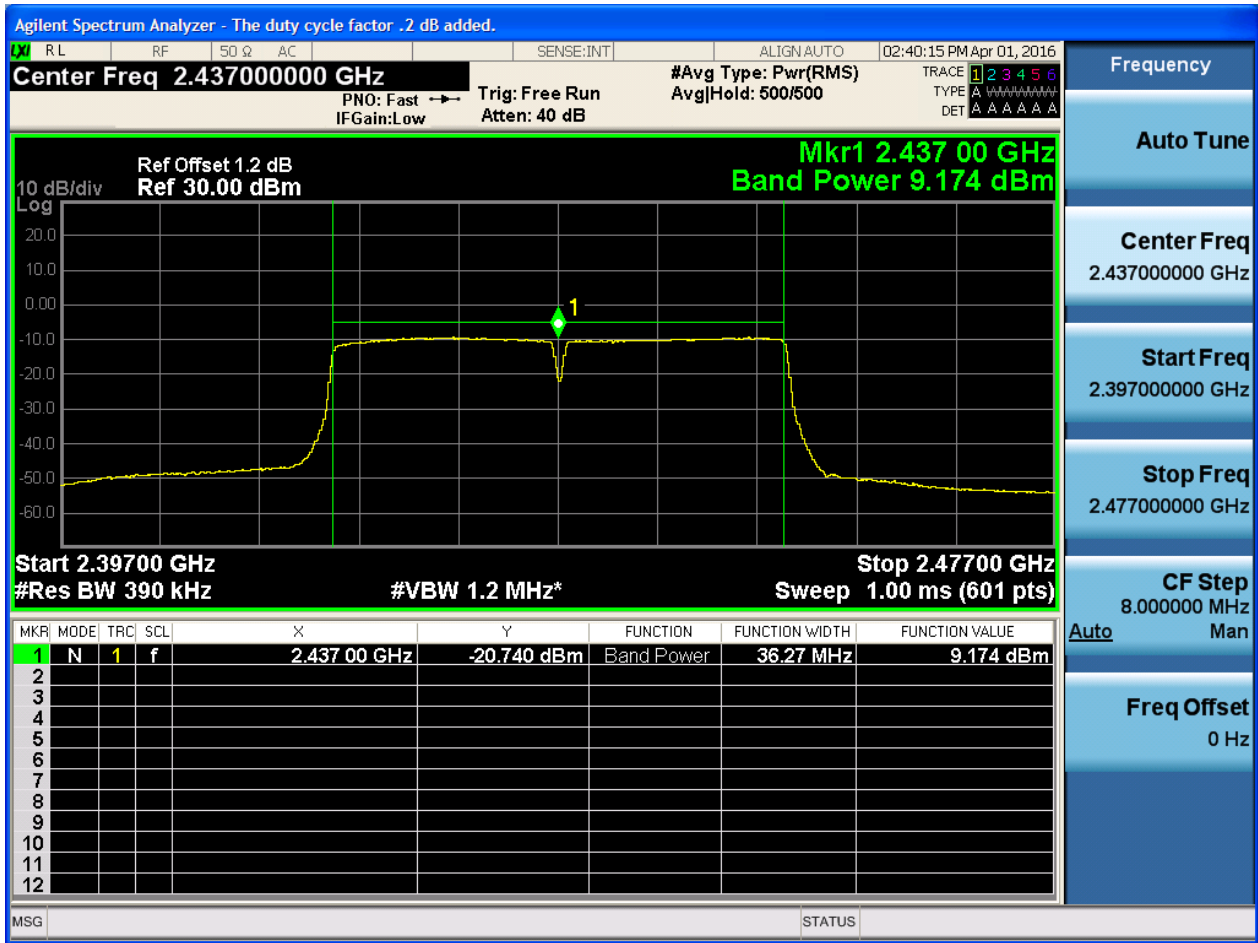
CF Step 8.000000 MHz Man

Freq Offset 0 Hz

MSG STATUS

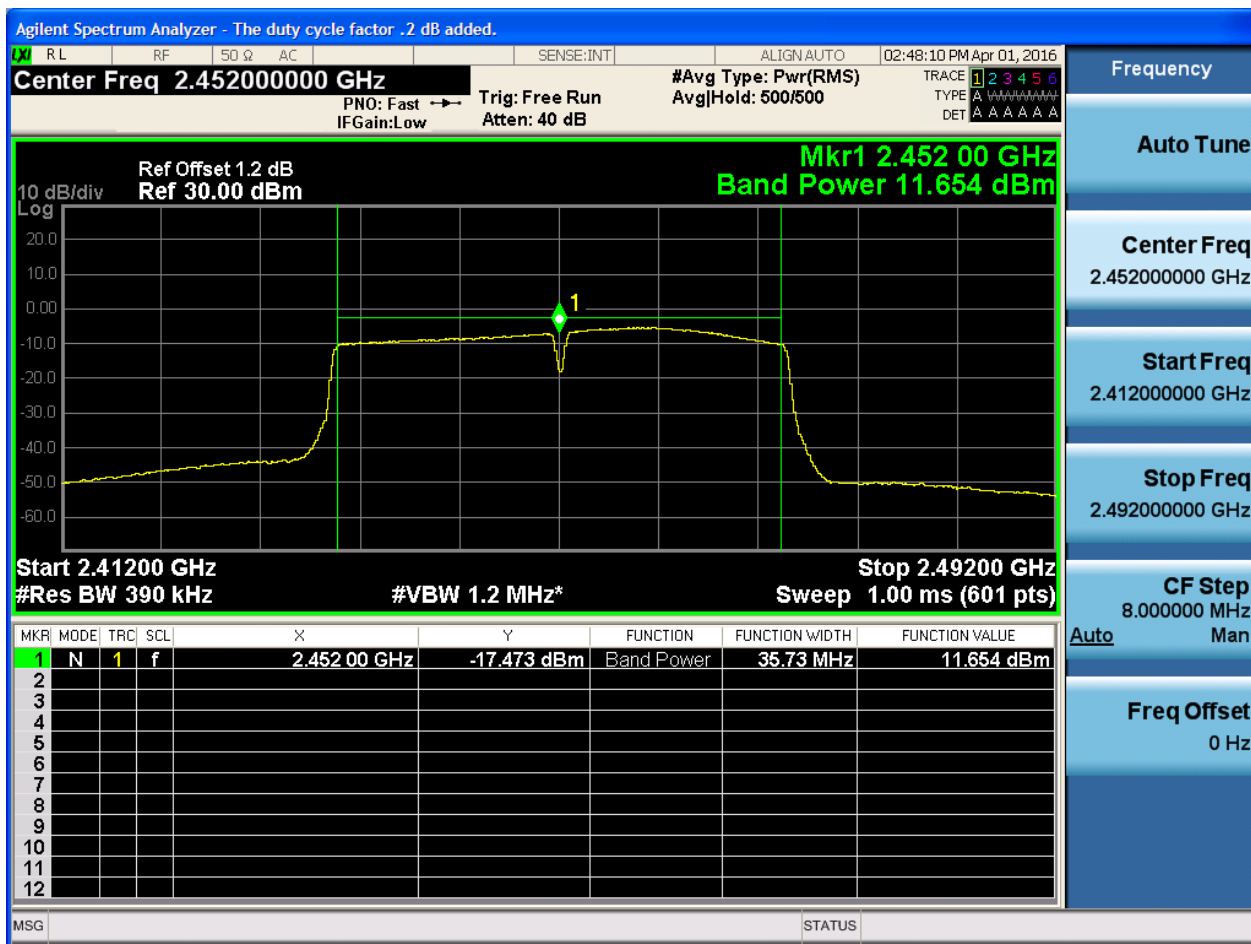


2.11 11N40_M@Ant 1





2.12 11N40_H@Ant 1



Appendix E: Maximum Power Spectral Density Level

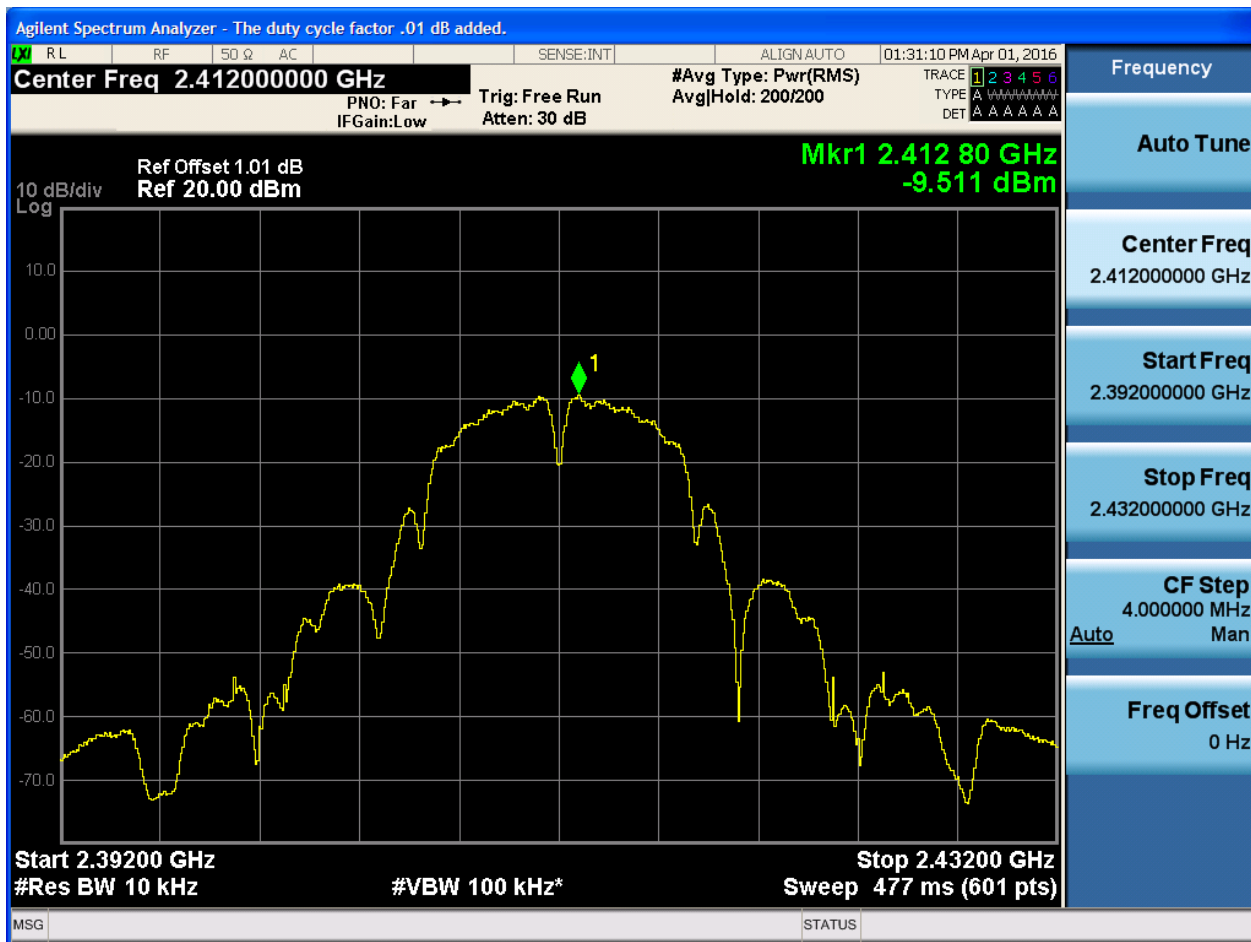
Part I - Test Results

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



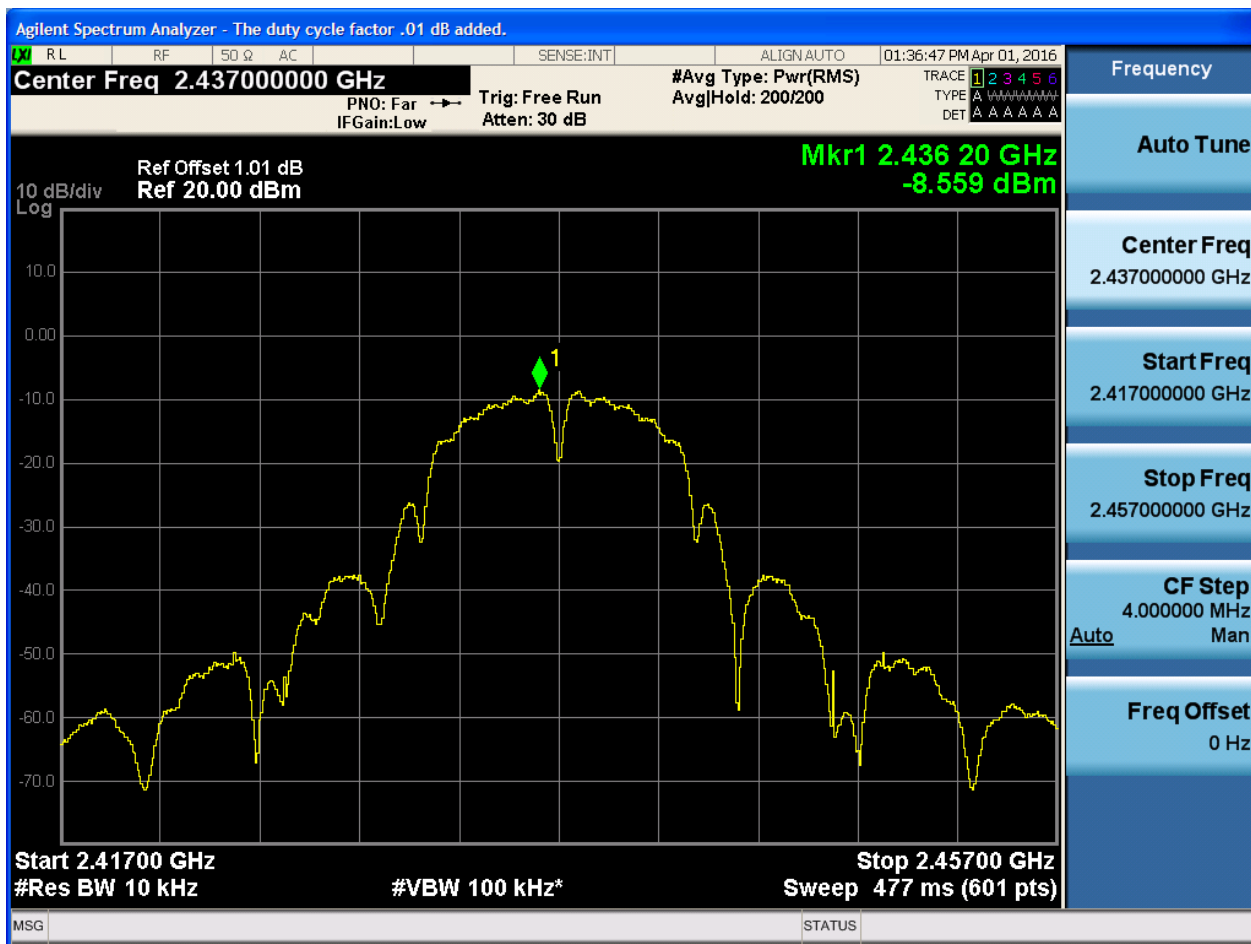
Part II - Test Plots

2.1 11B_L@Ant 1



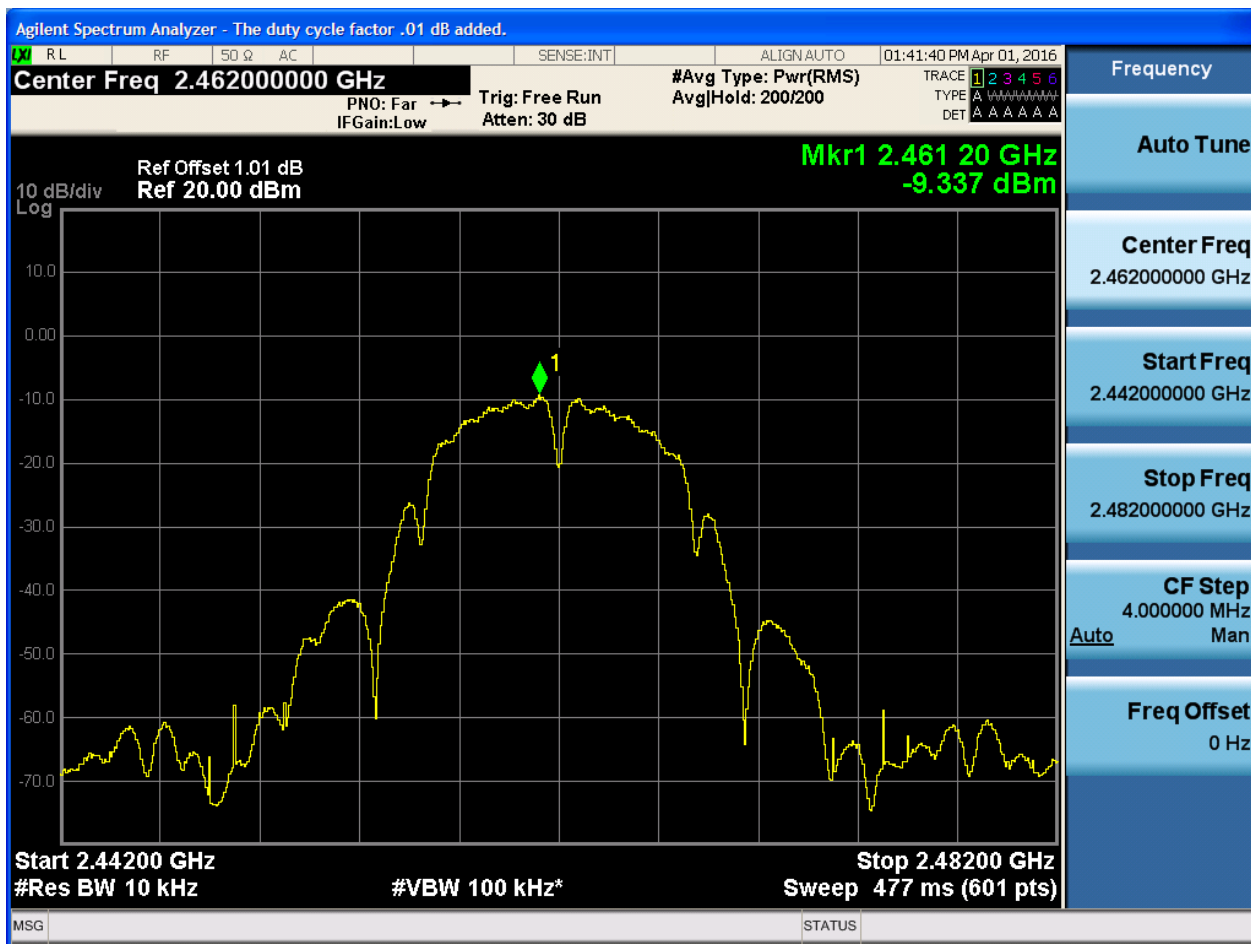


2.2 11B_M@Ant 1



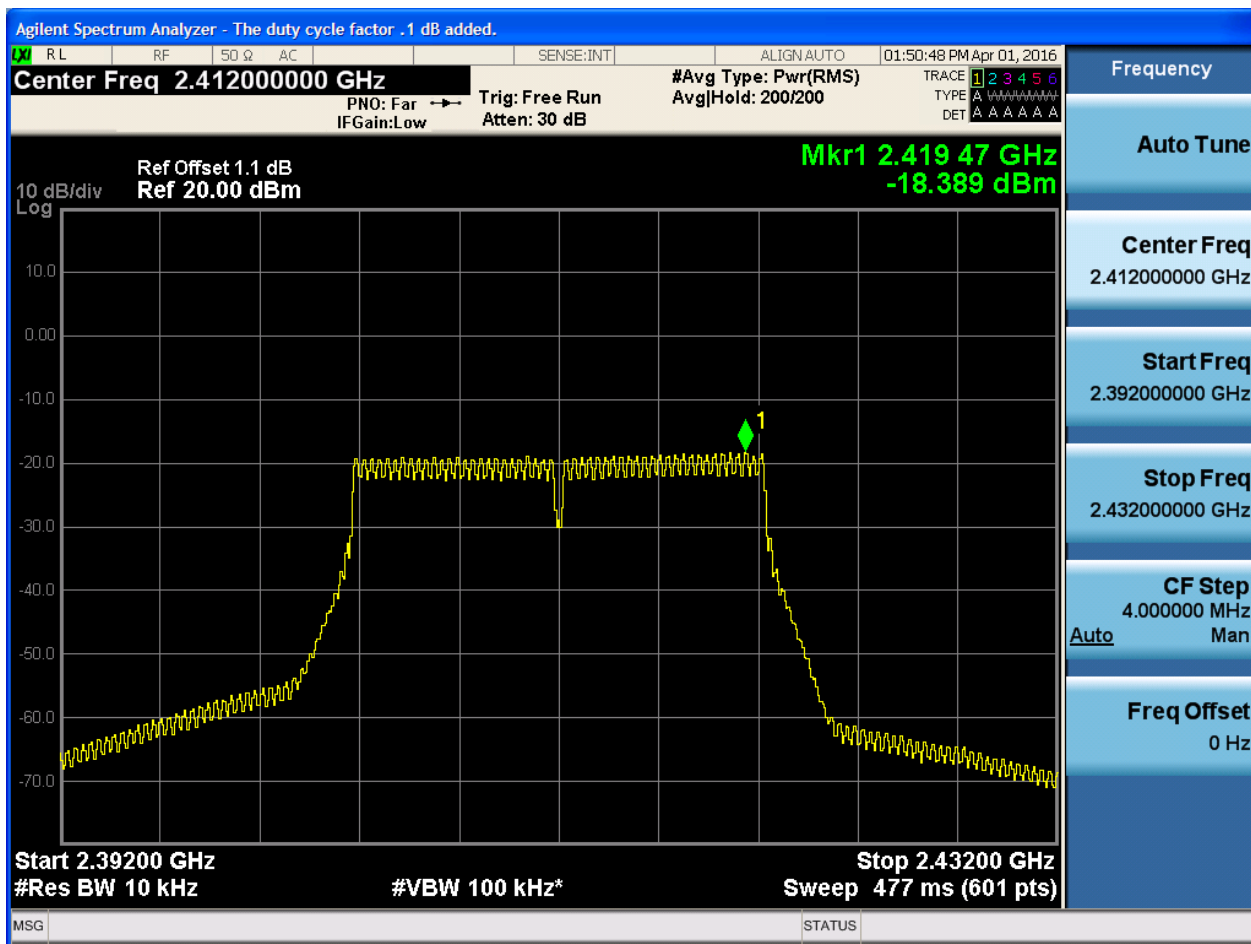


2.3 11B_H@Ant 1

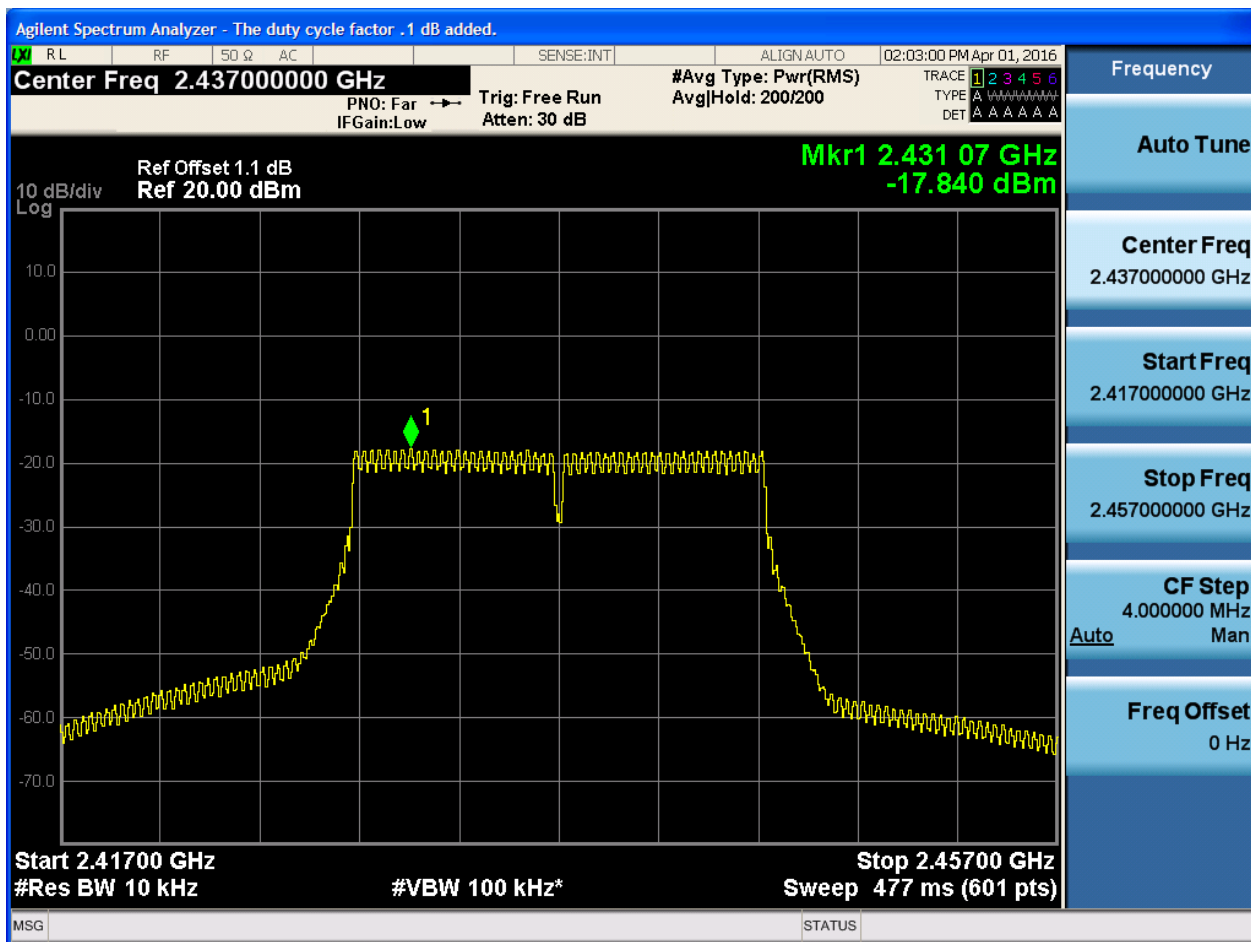




2.4 11G_L@Ant 1



2.5 11G_M@Ant 1





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

Center Freq 2.46200000 GHz

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

Stop 2.48200 GHz
Sweep 477 ms (601 pts)

#VBW 100 kHz*

10 dB/div
Log

1

Auto Tune

Center Freq
2.46200000 GHz

Start Freq
2.44200000 GHz

Stop Freq
2.48200000 GHz

CF Step
4.000000 MHz
Man

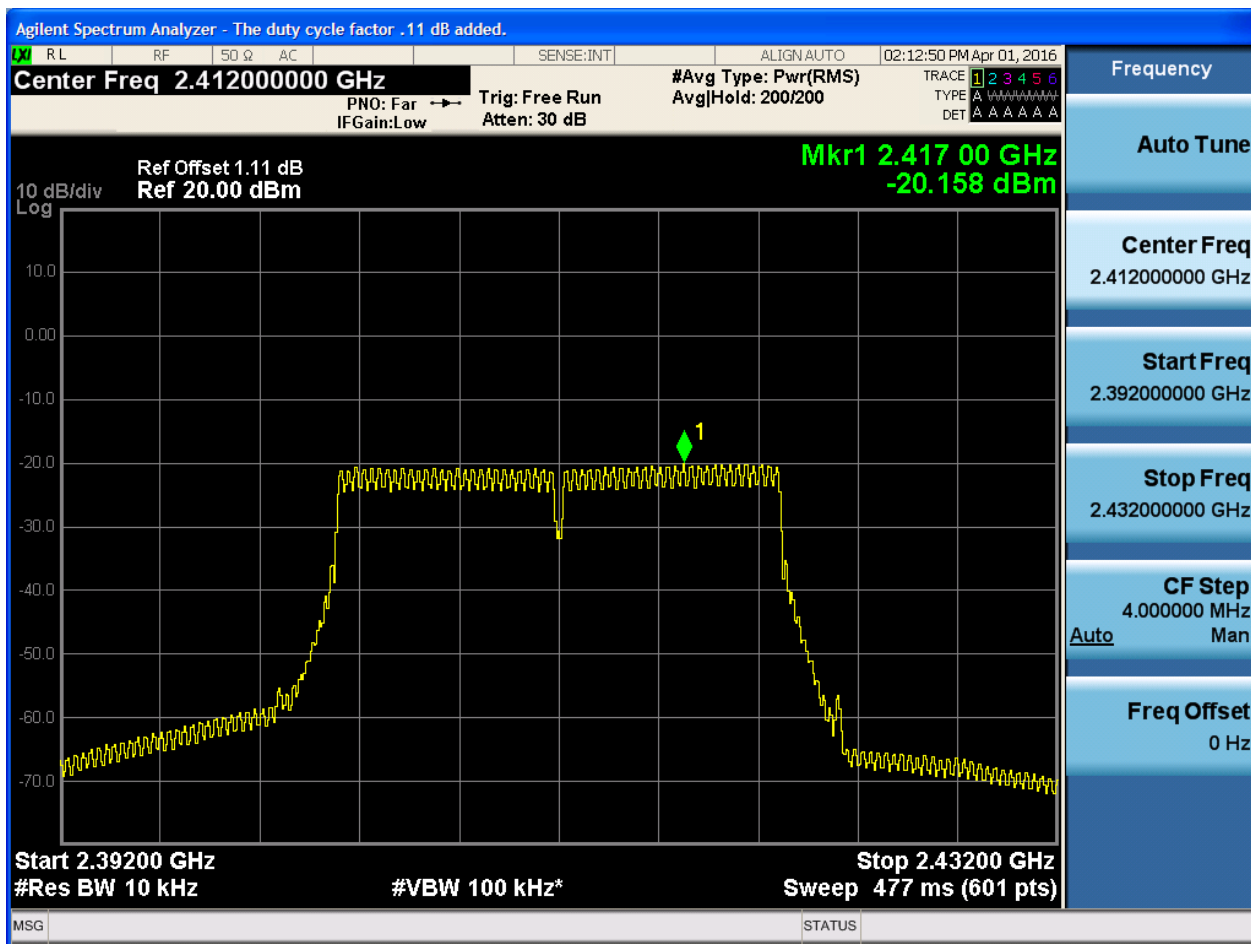
Freq Offset
0 Hz

MSG STATUS

The image shows a screenshot of an Agilent Spectrum Analyzer. The main display area shows a signal spectrum with a peak at 2.46073 GHz and a power level of -18.072 dBm. The signal is centered around 2.46200 GHz. The display includes various settings and parameters such as Center Freq, Ref Offset, Ref Power, Start Freq, Stop Freq, CF Step, Freq Offset, and a grid showing the signal spectrum. The signal is marked with a yellow diamond and the number 1. The display also shows the duty cycle factor as .1 dB added.



2.7 11N20_L@Ant 1





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

Center Freq 2.43700000 GHz

Ref Offset 1.11 dB
Ref 20.00 dBm

10 dB/div
Log

Mkr1 2.432 00 GHz
-19.314 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

PNO: Far
IFGain:Low

#Avg Type: Pwr(RMS)
AvgHold: 200/200

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

Frequency

Auto Tune

Center Freq
2.43700000 GHz

Start Freq
2.41700000 GHz

Stop Freq
2.45700000 GHz

CF Step
4.000000 MHz
Man

Auto

Freq Offset
0 Hz

The screenshot displays a spectrum analyzer interface. The main plot area shows a signal trace with a prominent peak at 2.432 GHz, marked with a green diamond and labeled '1'. The peak is at -19.314 dBm. The trace is yellow and noisy. The background is black with a white grid. The y-axis is labeled '10 dB/div Log' and ranges from -70.0 to 10.0. The x-axis is labeled 'Start 2.41700 GHz' and 'Stop 2.45700 GHz'. The center frequency is 'Center Freq 2.43700000 GHz'. The resolution bandwidth is '#Res BW 10 kHz' and the video bandwidth is '#VBW 100 kHz*'. The sweep time is 'Sweep 477 ms (601 pts)'. The reference level is 'Ref 20.00 dBm' and the reference offset is 'Ref Offset 1.11 dB'. The trigger is 'Trig: Free Run' and the attenuation is 'Atten: 30 dB'. The peak noise offset is 'PNO: Far' and the IF gain is 'IFGain:Low'. The average type is '#Avg Type: Pwr(RMS)' and the average hold is 'AvgHold: 200/200'. The trace is 'TRACE 1' and the type is 'TYPE A W W W W W W W W'. The detector is 'DET A A A A A A'. The frequency is 'Frequency' and the auto tune is 'Auto Tune'. The center frequency is 'Center Freq 2.43700000 GHz'. The start frequency is 'Start Freq 2.41700000 GHz' and the stop frequency is 'Stop Freq 2.45700000 GHz'. The center frequency step is 'CF Step 4.000000 MHz Man' and the frequency offset is 'Freq Offset 0 Hz'.



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 signal spectrum with a peak at 2.45887 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 signal is a noisy burst centered around 2.45887 GHz. The peak is marked with a green diamond and labeled '1'. The power level at the peak is -19.614 dBm. The display also shows various settings like 'Center Freq 2.462000000 GHz', 'Ref Offset 1.11 dB', 'Ref 20.00 dBm', '#Avg Type: Pwr(RMS)', 'Avg|Hold: 200/200', '#Res BW 10 kHz', '#VBW 100 kHz*', and 'Sweep 477 ms (601 pts)'. The top status bar shows 'Agilent Spectrum Analyzer - The duty cycle factor .11 dB added.' and '02:27:37 PM Apr 01, 2016'. The right side of the screen has a blue sidebar with buttons for 'Frequency', 'Auto Tune', 'Center Freq', 'Start Freq', 'Stop Freq', 'CF Step', and 'Freq Offset'.



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

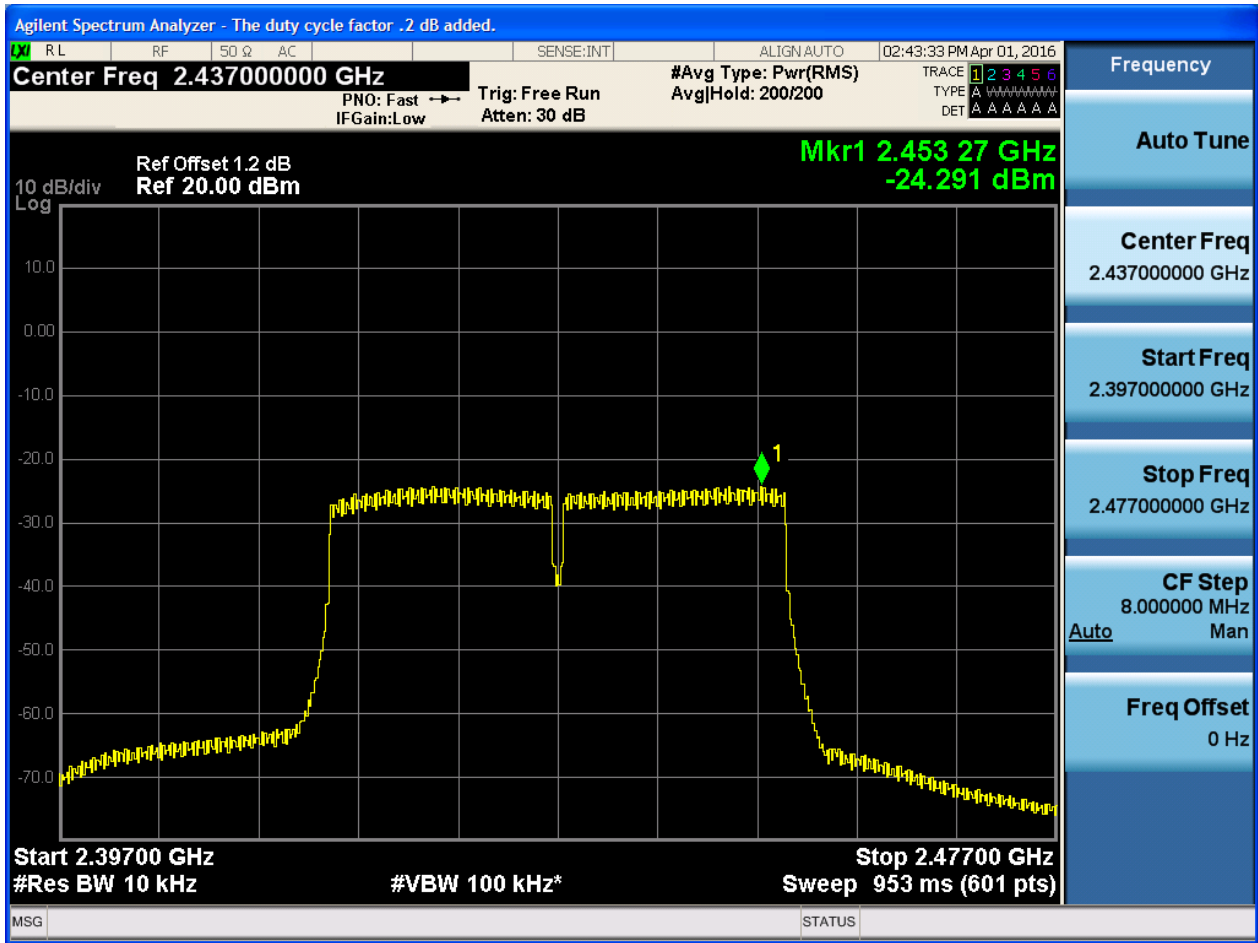
CF Step
8.000000 MHz
Man

Freq Offset
0 Hz

The screenshot displays a spectrum analyzer interface. The main plot area shows a yellow signal trace on a grid. The signal is centered at 2.42573 GHz, marked with a green diamond and labeled '1'. The signal level is -23.132 dBm. The plot has a vertical scale of 10 dB/div and a logarithmic frequency axis. The signal is a rectangular pulse with a bandwidth of 10 kHz. The background is dark gray with a light gray grid. The top of the screen shows various settings and status information, including the center frequency, reference level, and sweep parameters. 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'.

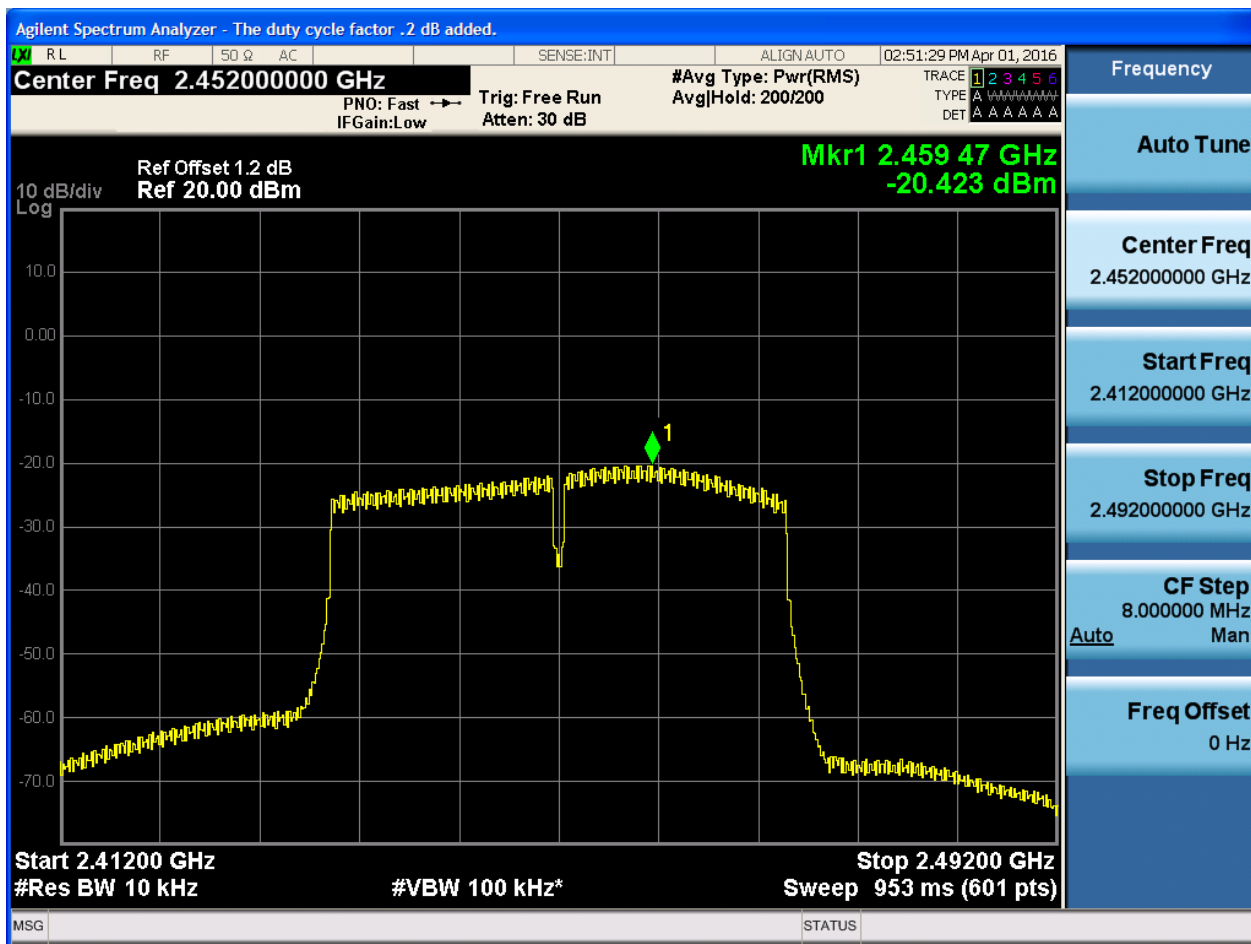


2.11 11N40_M@Ant 1





2.12 11N40_H@Ant 1



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



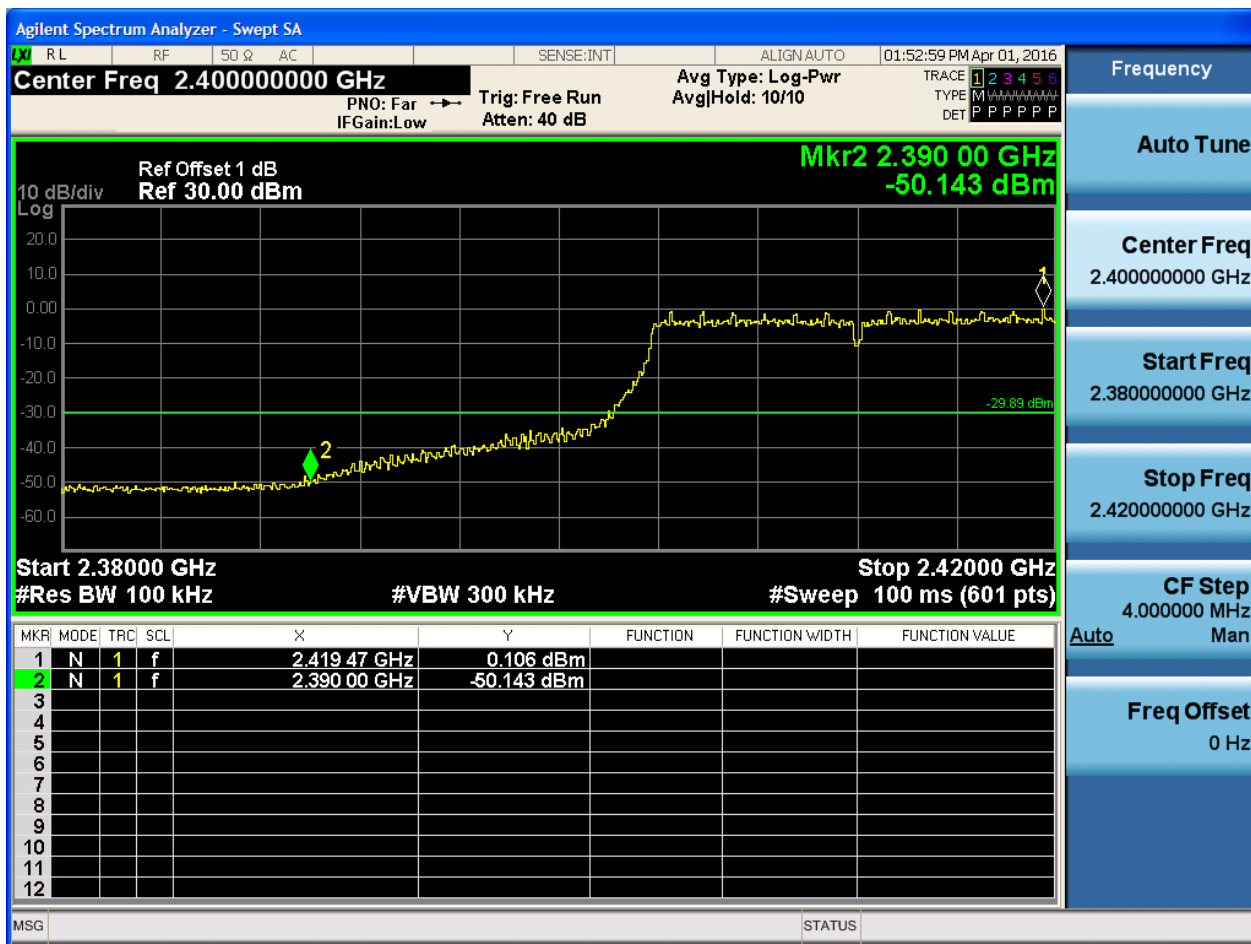


2.2 11B_H@Ant 1



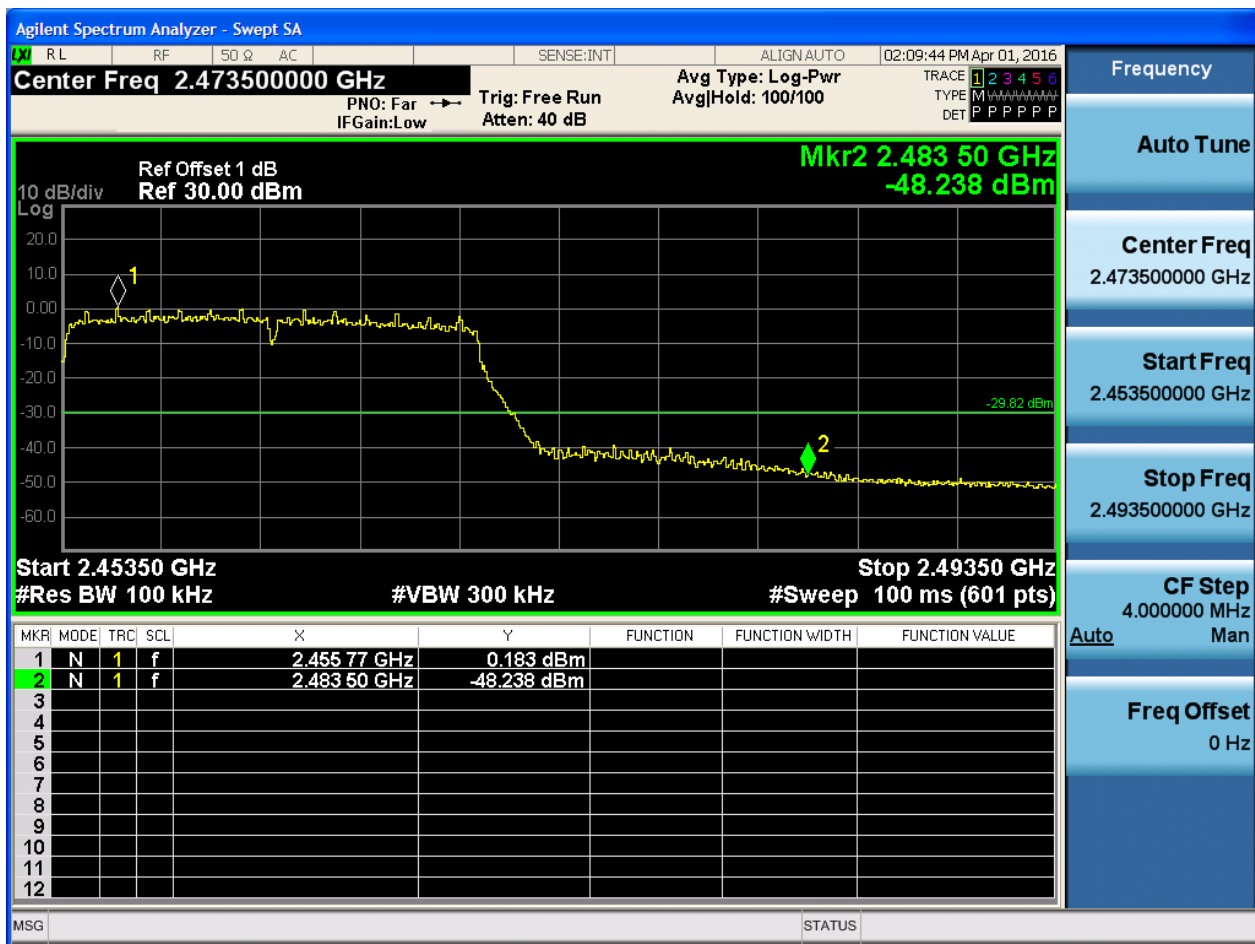


2.3 11G_L@Ant 1



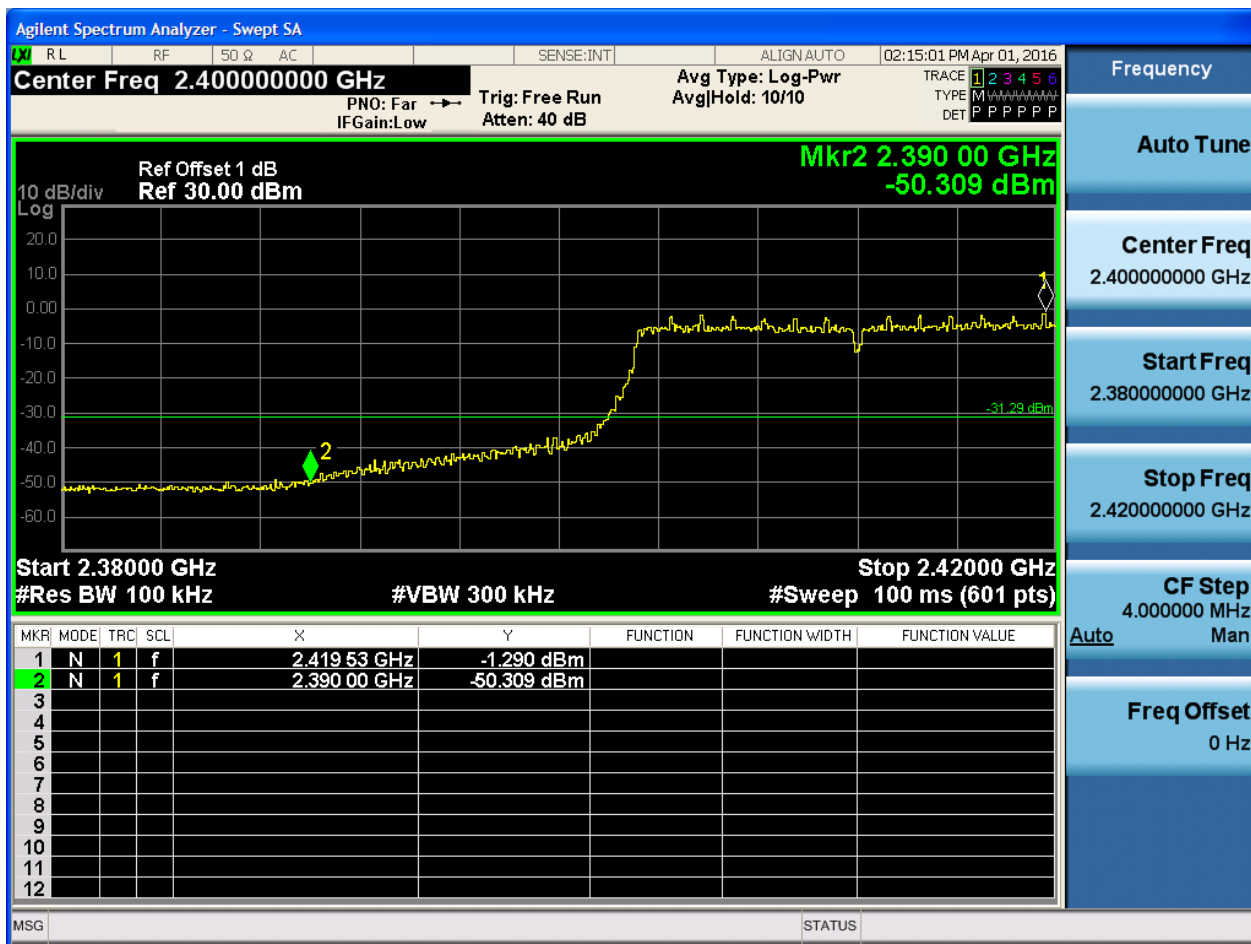


2.4 11G_H@Ant 1



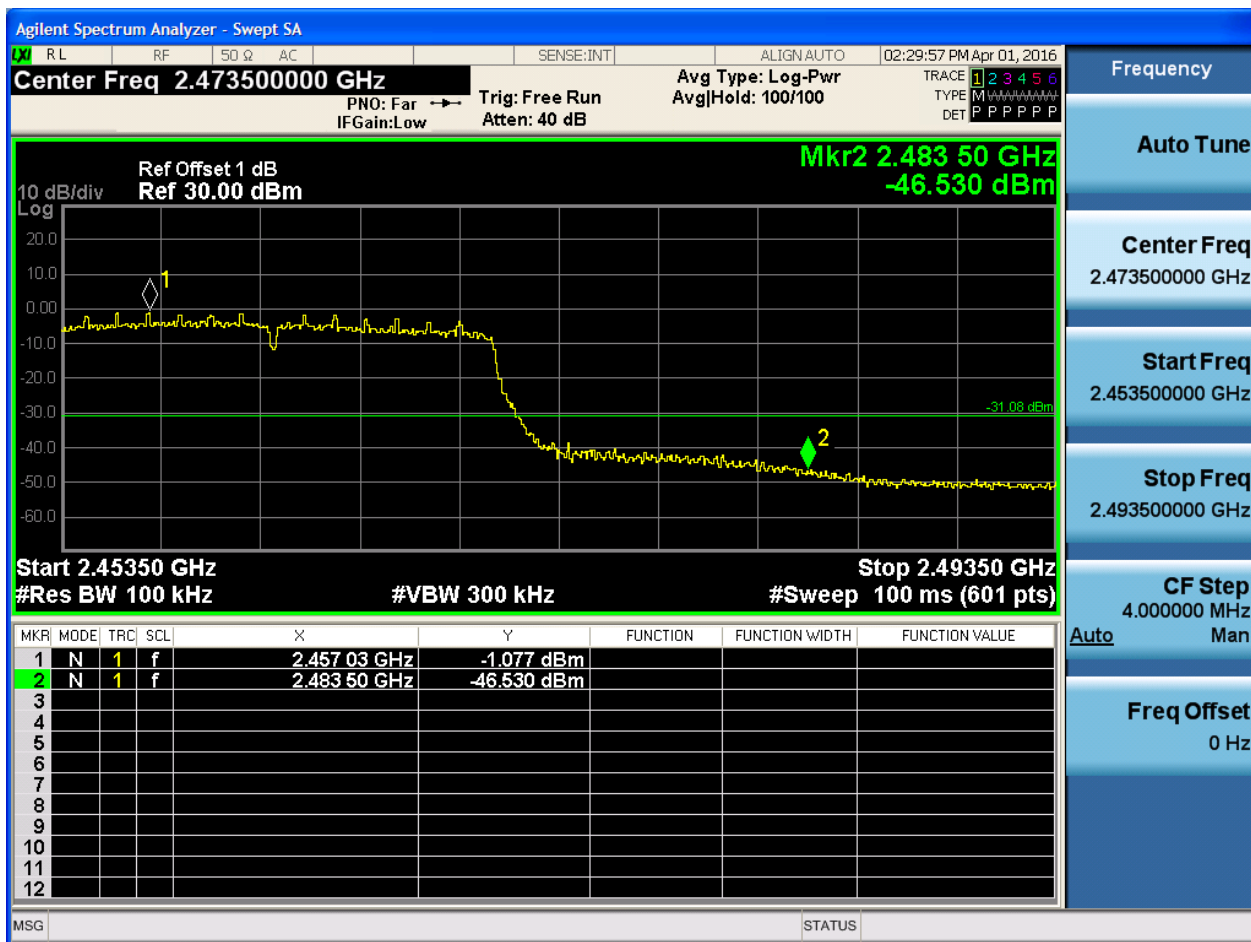


2.5 11N20_L@Ant 1



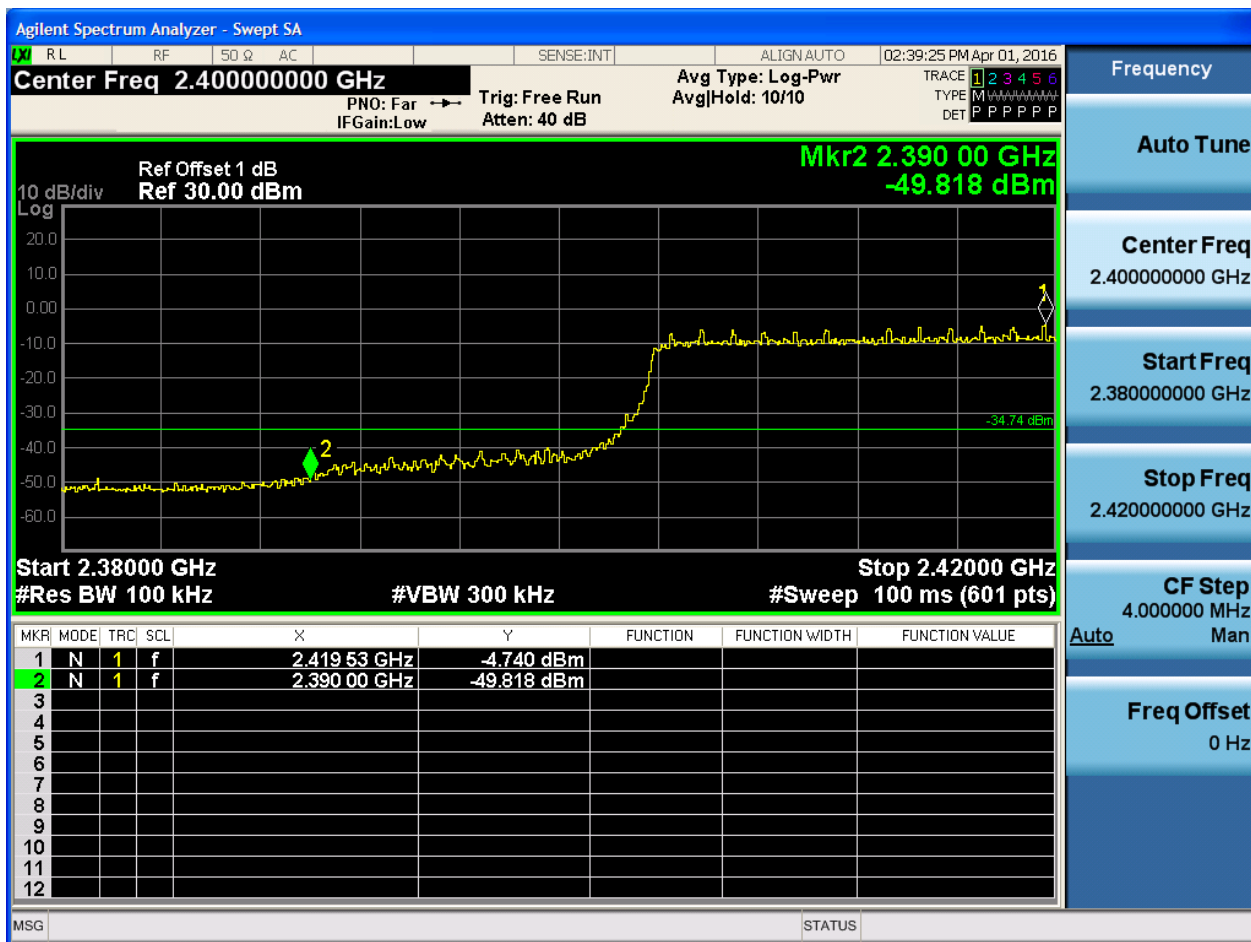


2.6 11N20_H@Ant 1



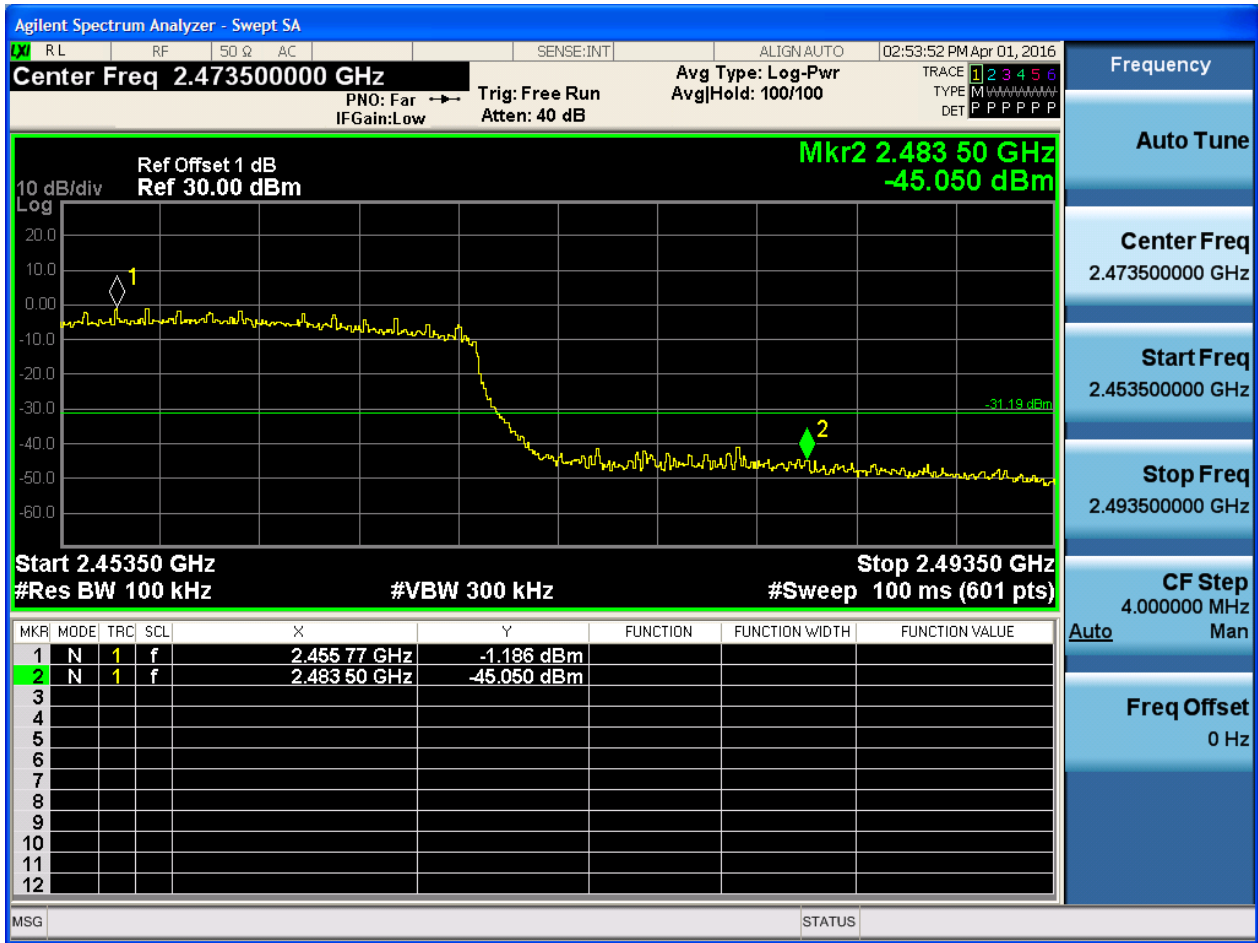


2.7 11N40_L@Ant 1





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

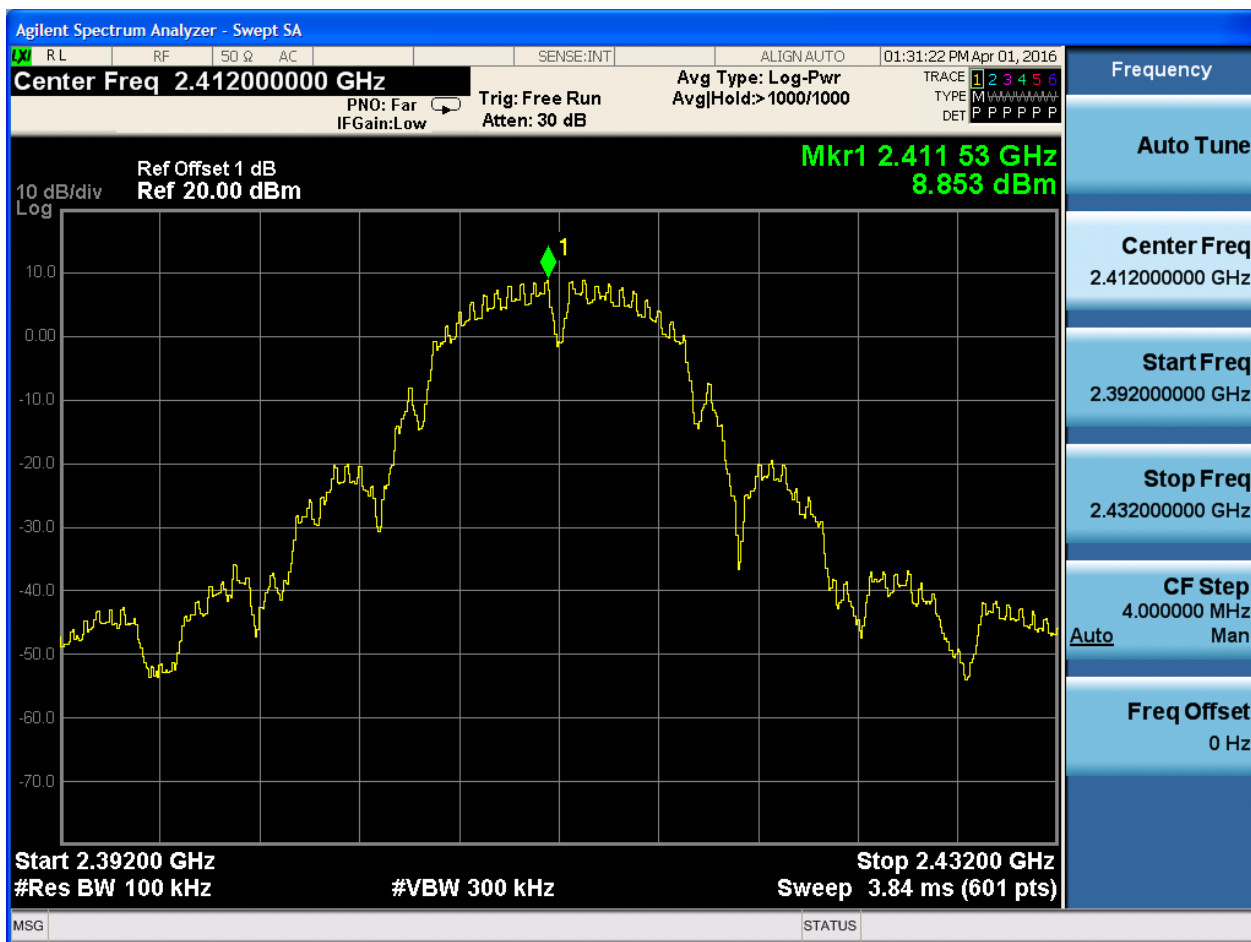
Test Mode	Test Channel	Frequency[MHz]	Ant	Pref[dBm]	Puw[dBm]	Verdict
11B	L	2412	Ant 1	8.85	<limit	pass
11B	M	2437	Ant 1	9.85	<limit	pass
11B	H	2462	Ant 1	8.80	<limit	pass
11G	L	2412	Ant 1	0.33	<limit	pass
11G	M	2437	Ant 1	0.97	<limit	pass
11G	H	2462	Ant 1	0.32	<limit	pass
11N20	L	2412	Ant 1	-1.12	<limit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

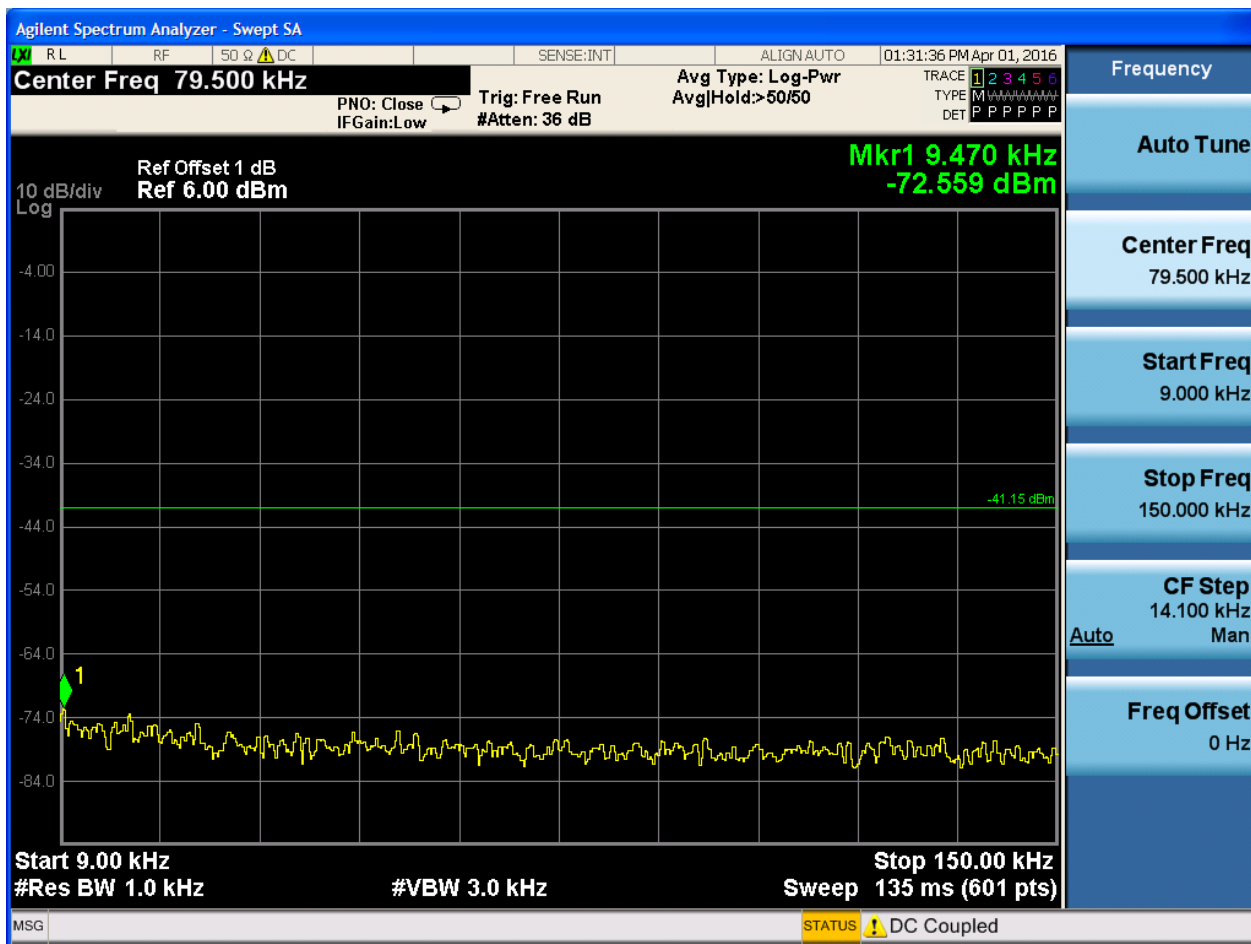
2.1 11B_L@Ant 1

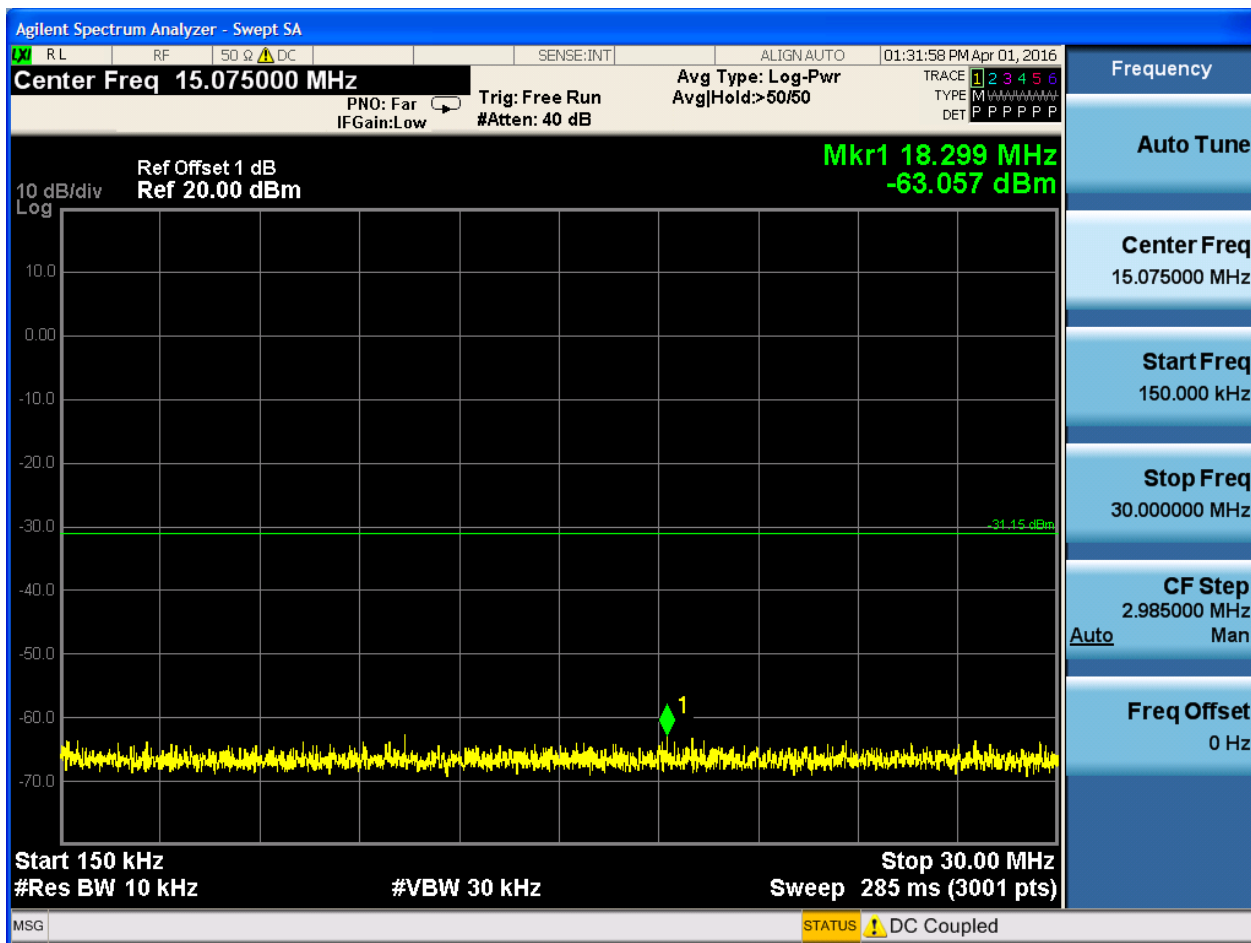
Pref:

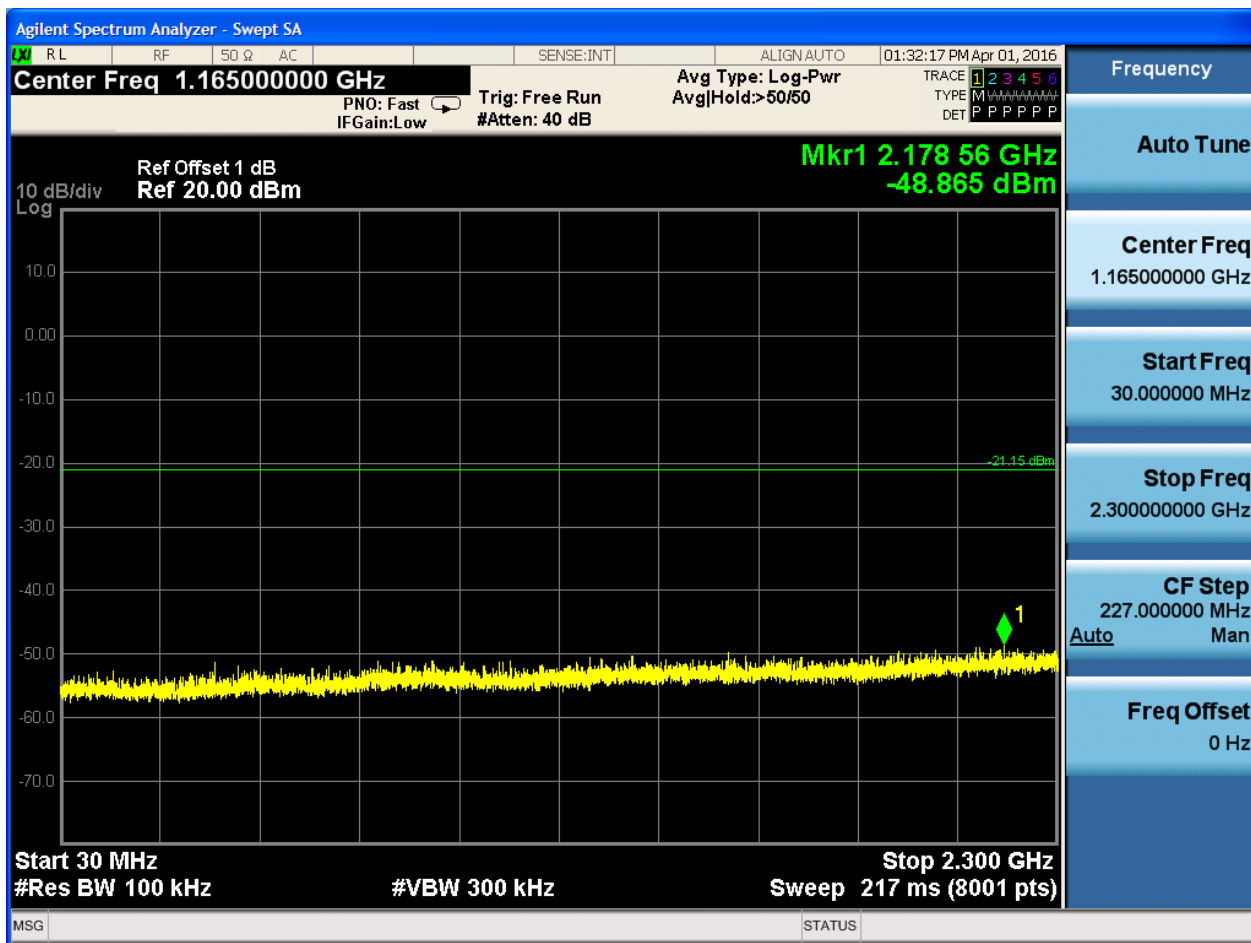


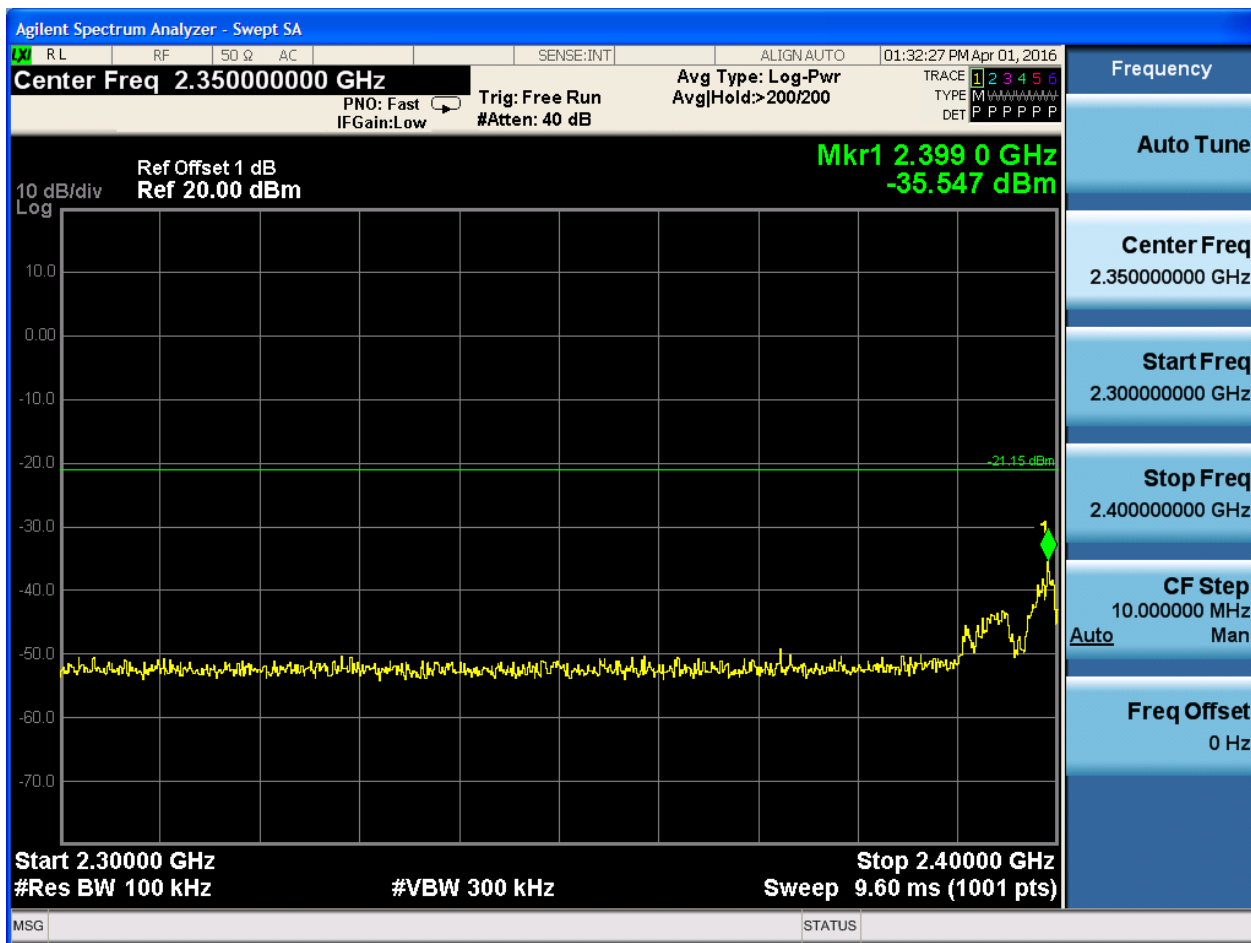


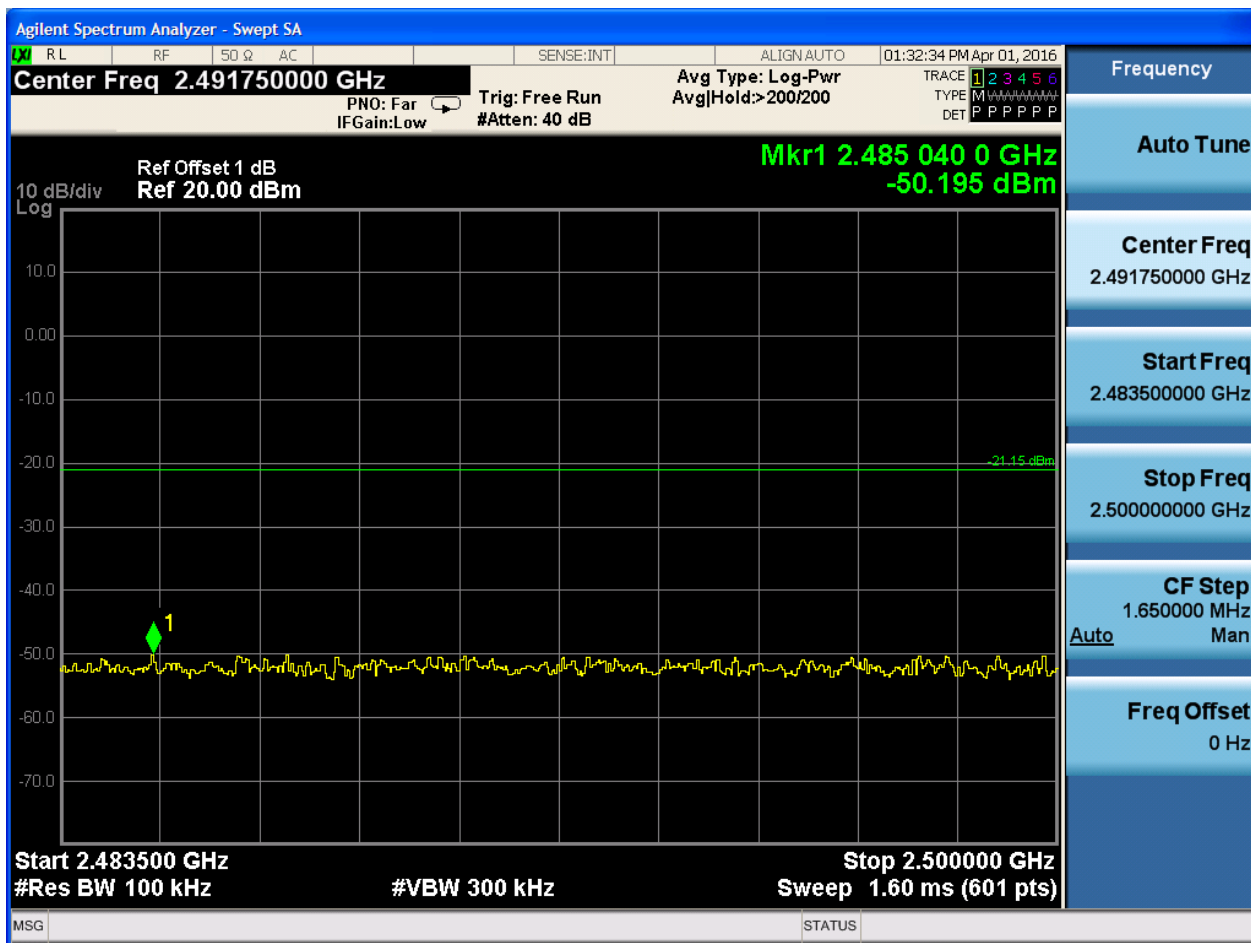
Puw:









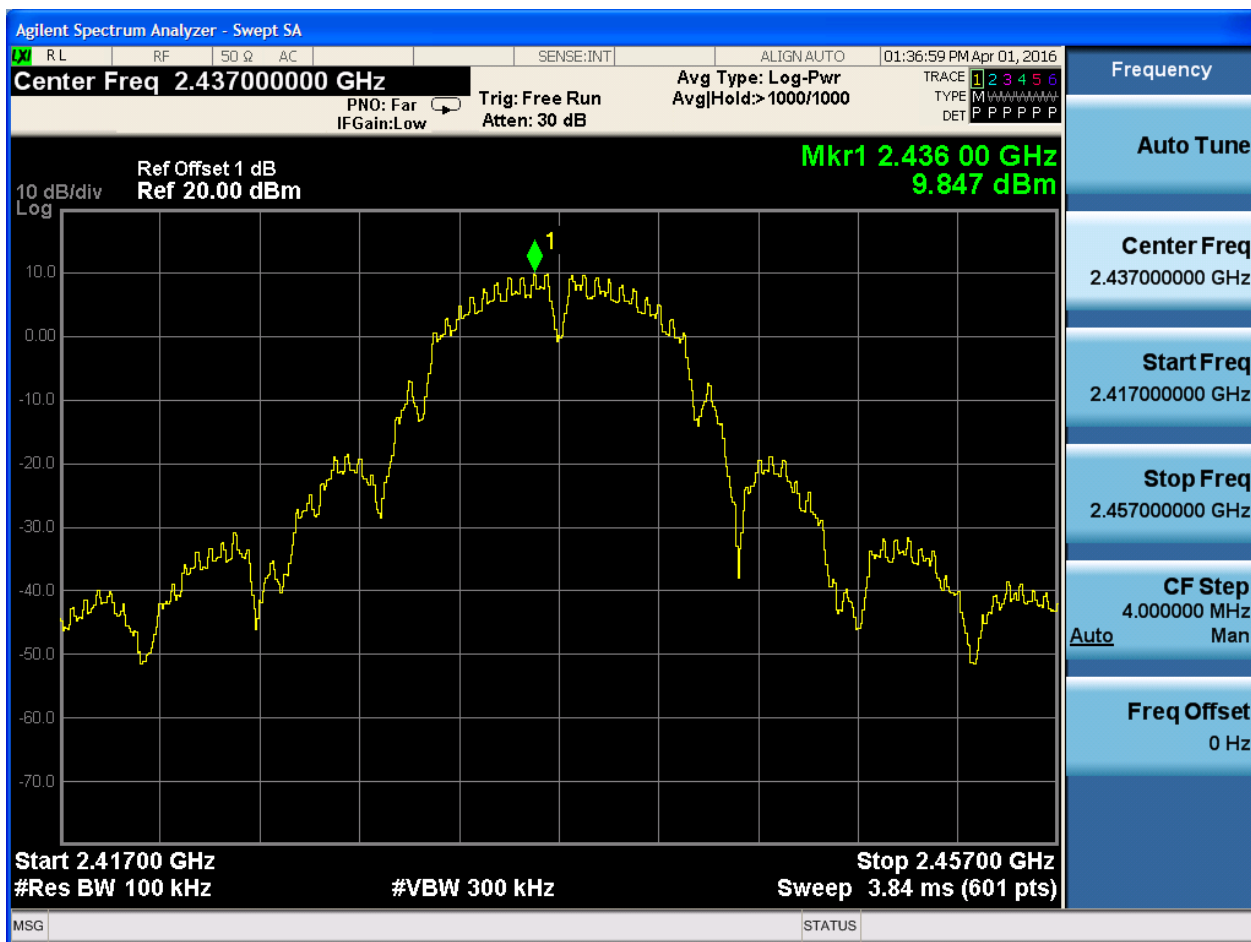






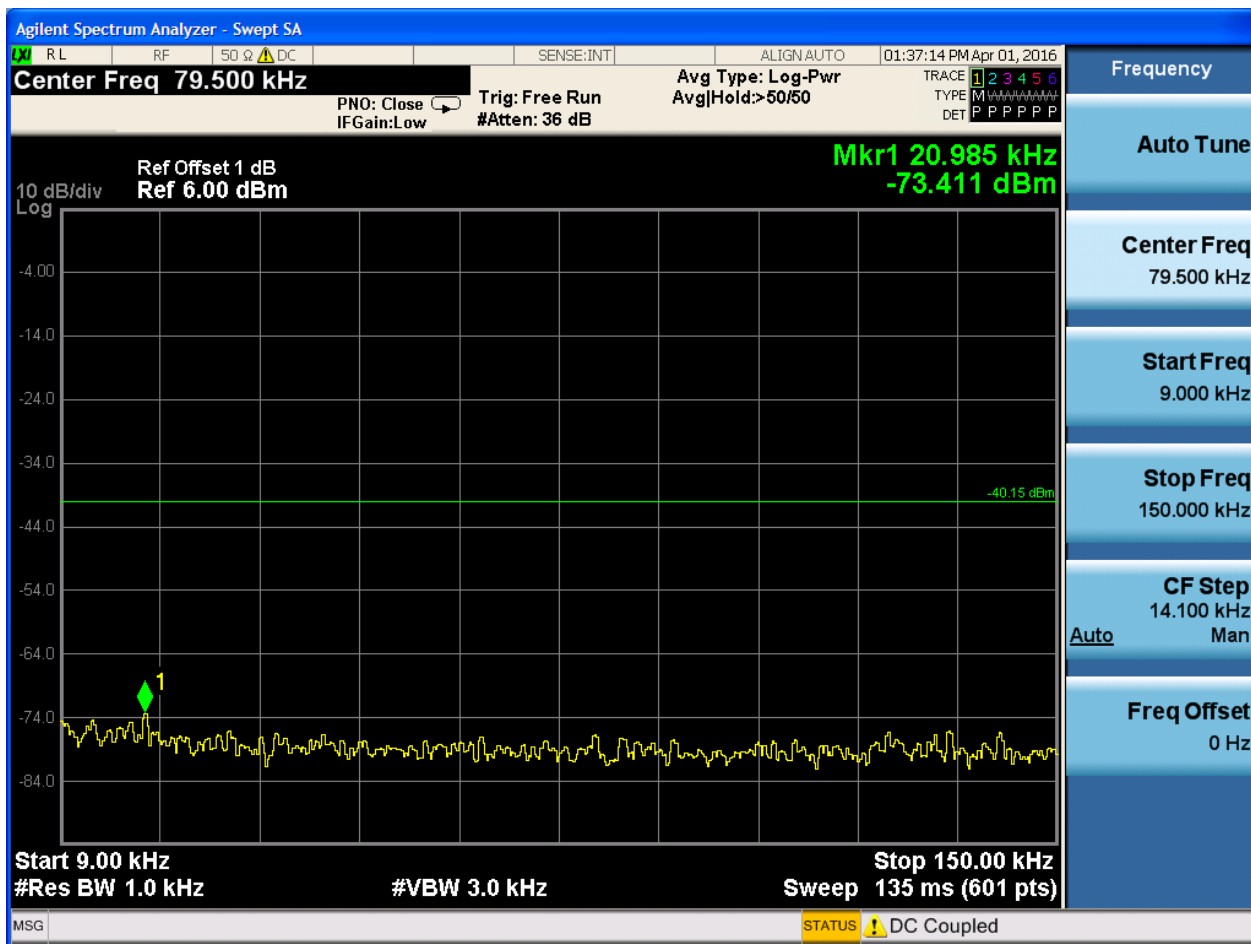
2.2 11B_M@Ant 1

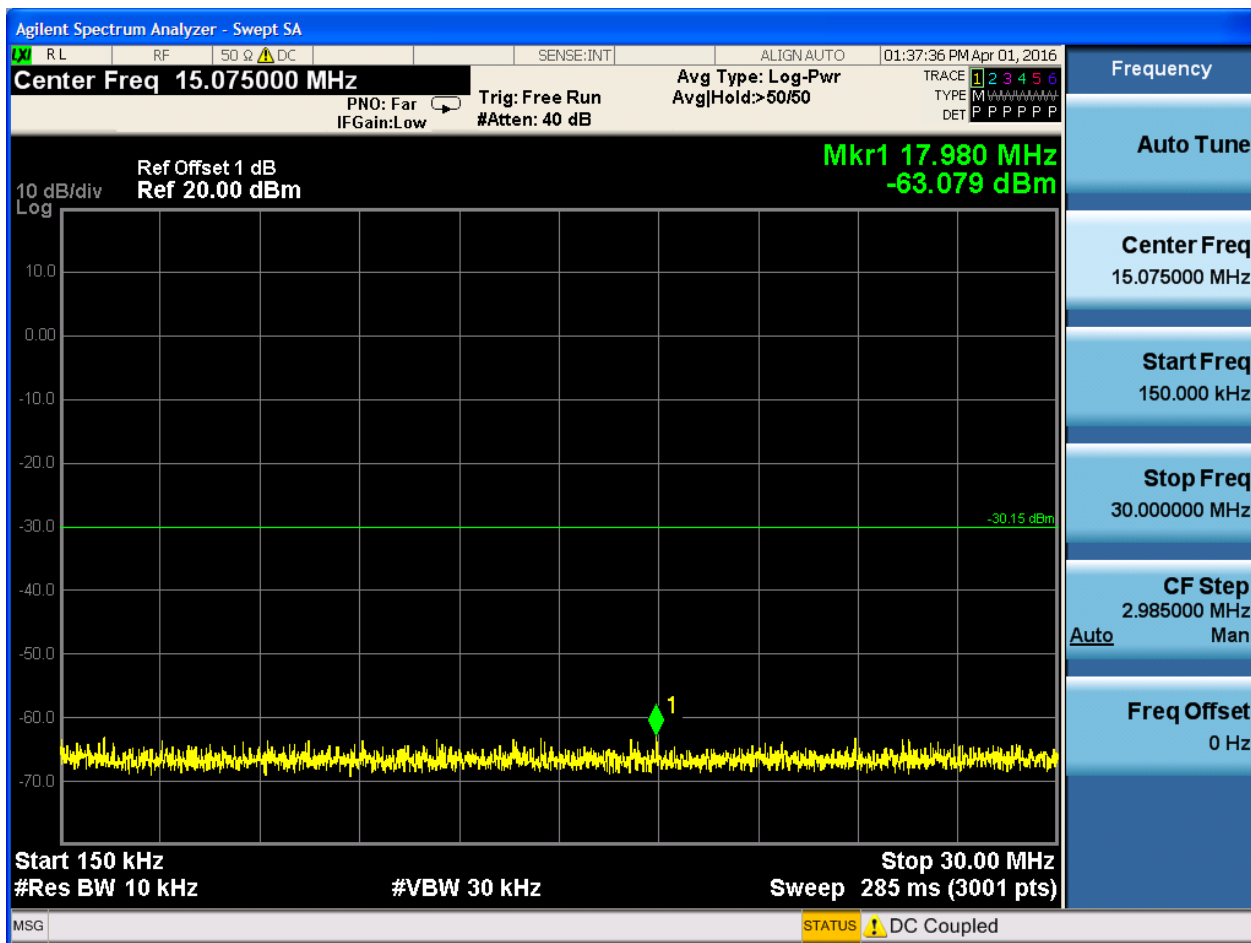
Pref:

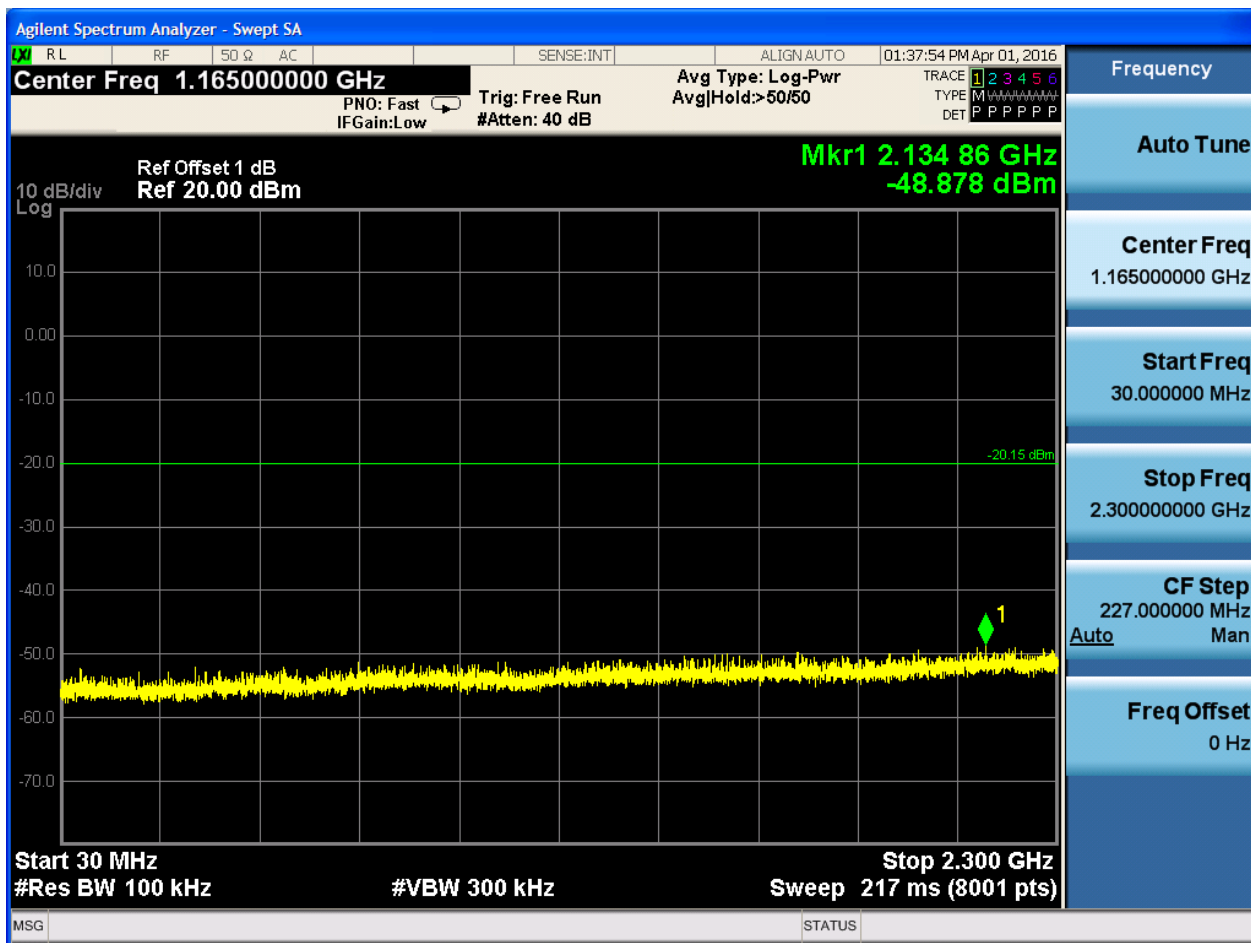


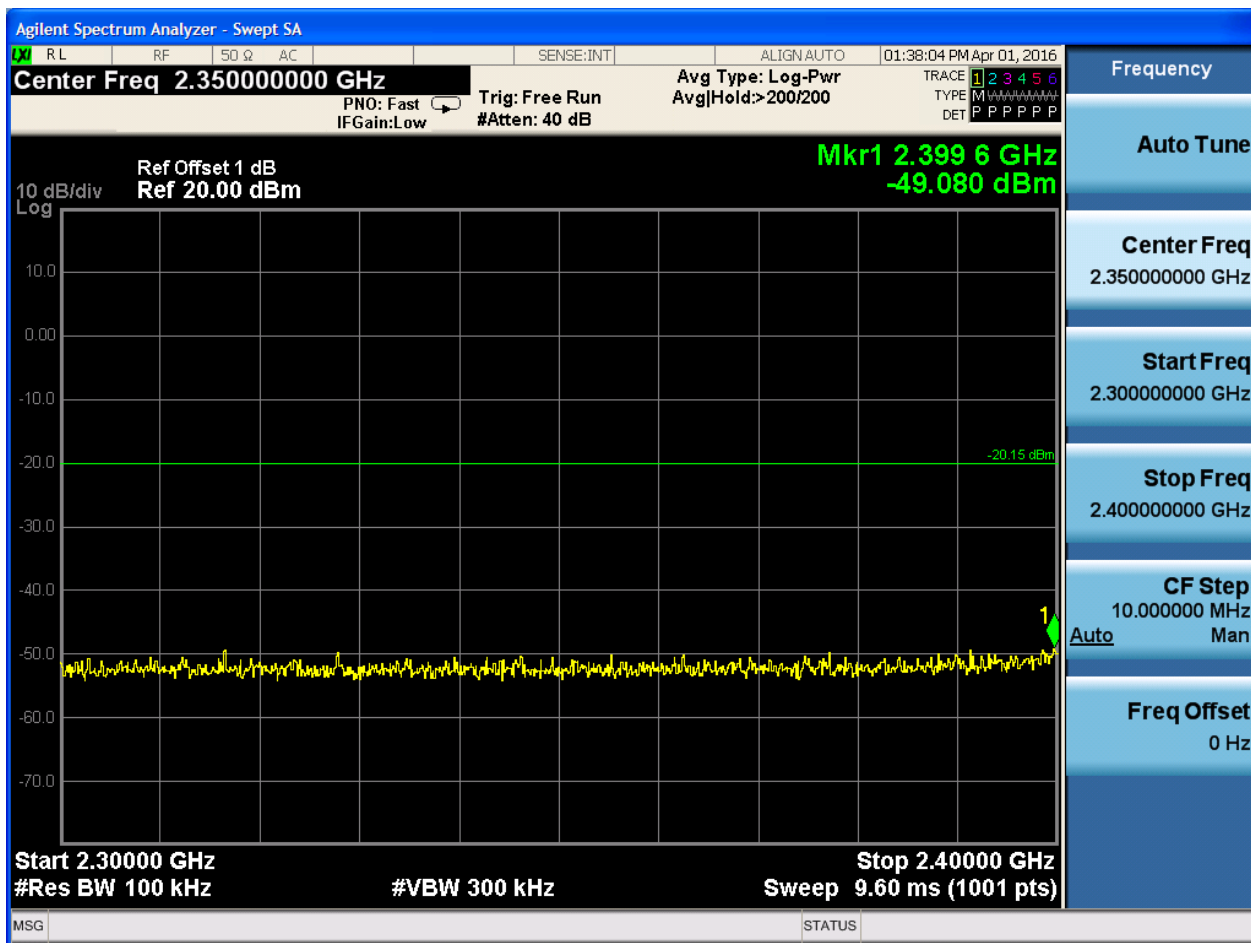


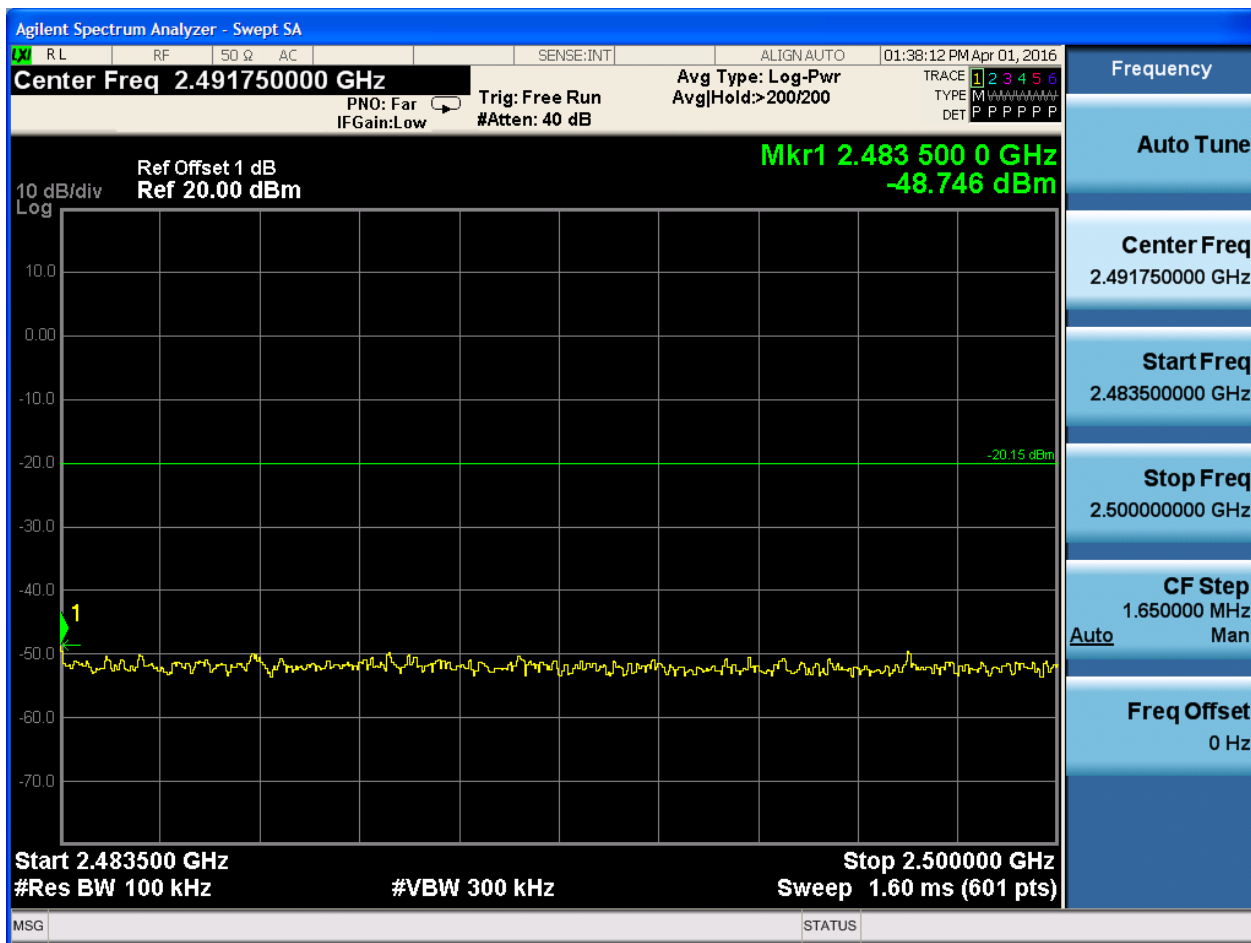
PuW:















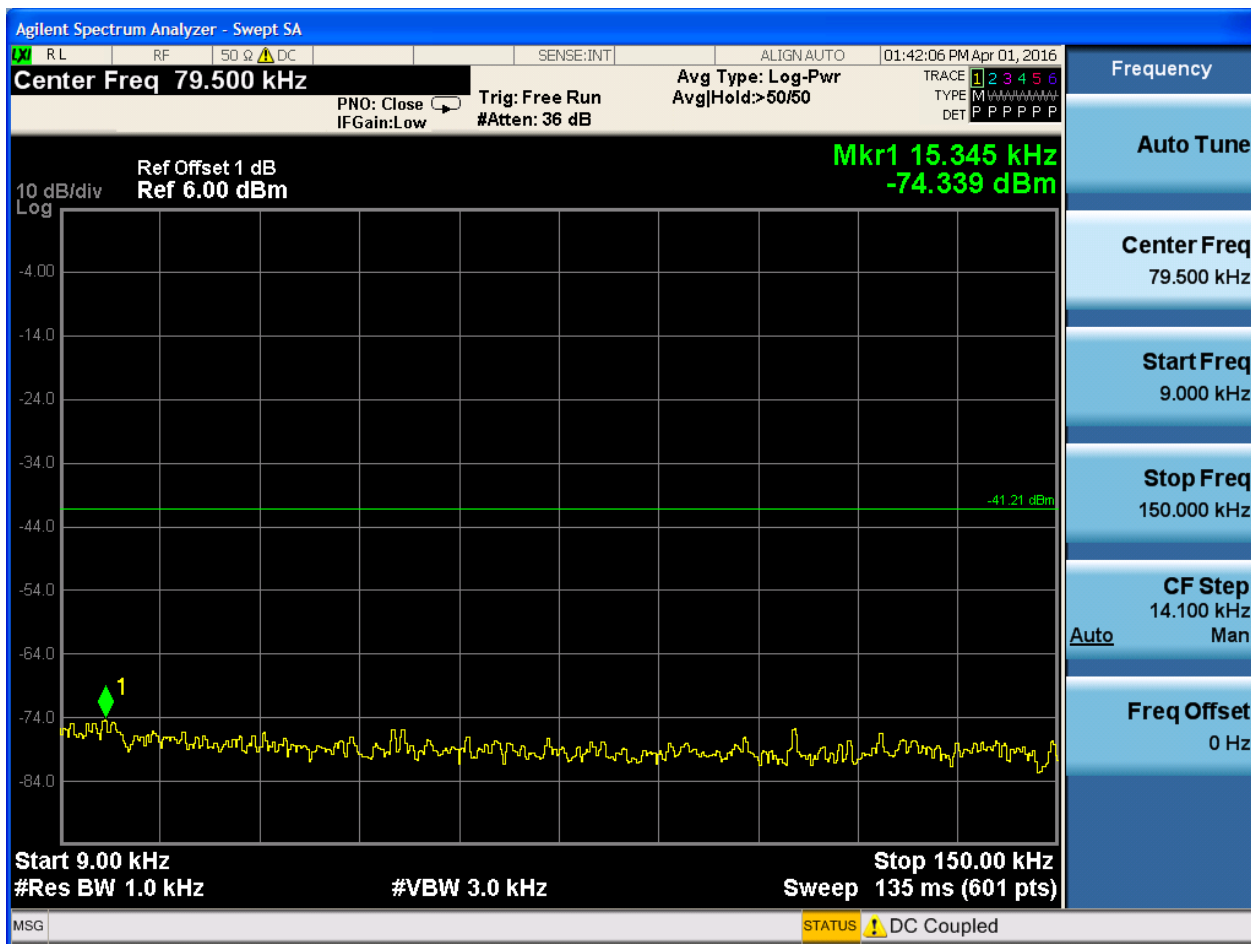
2.3 11B_H@Ant 1

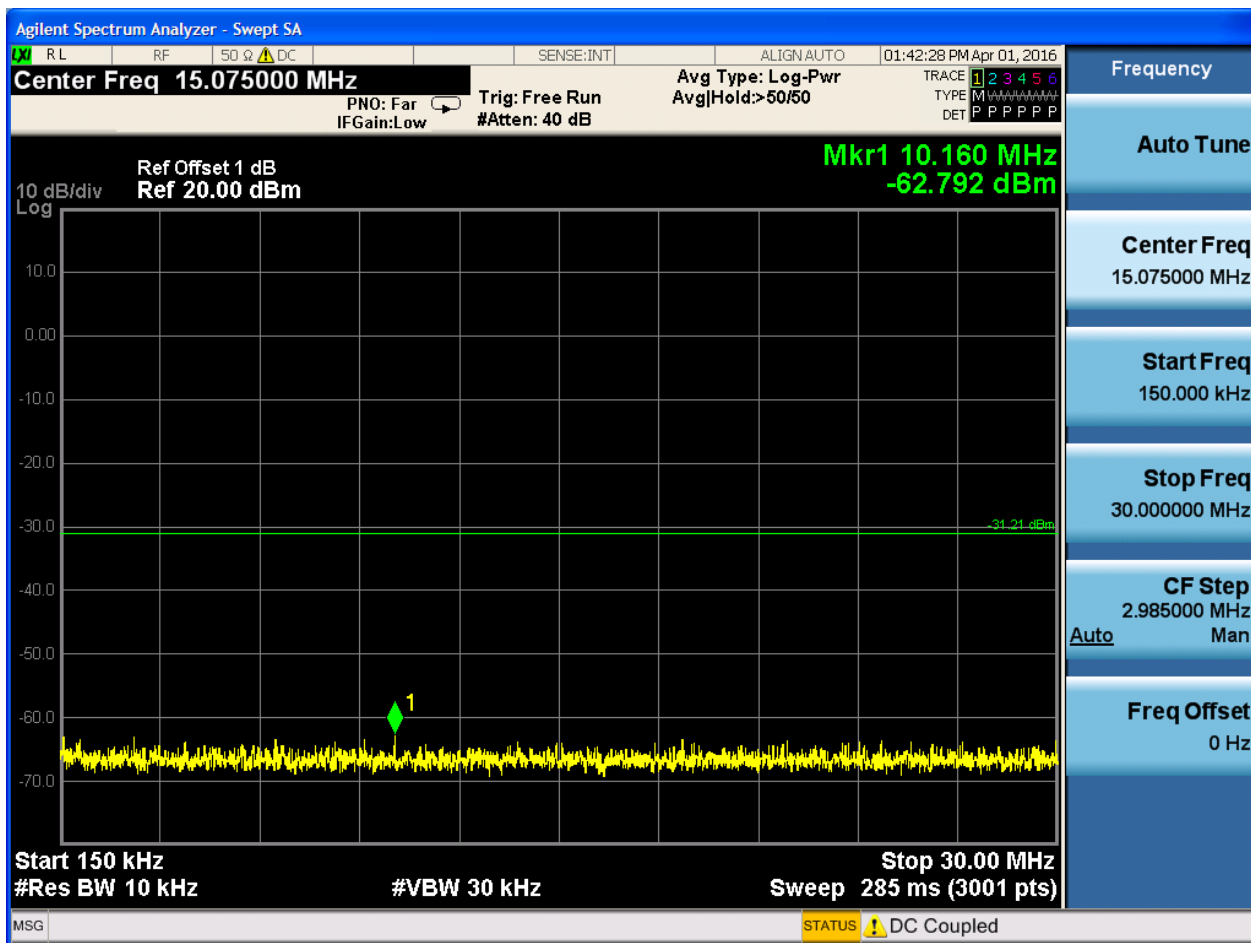
Pref:

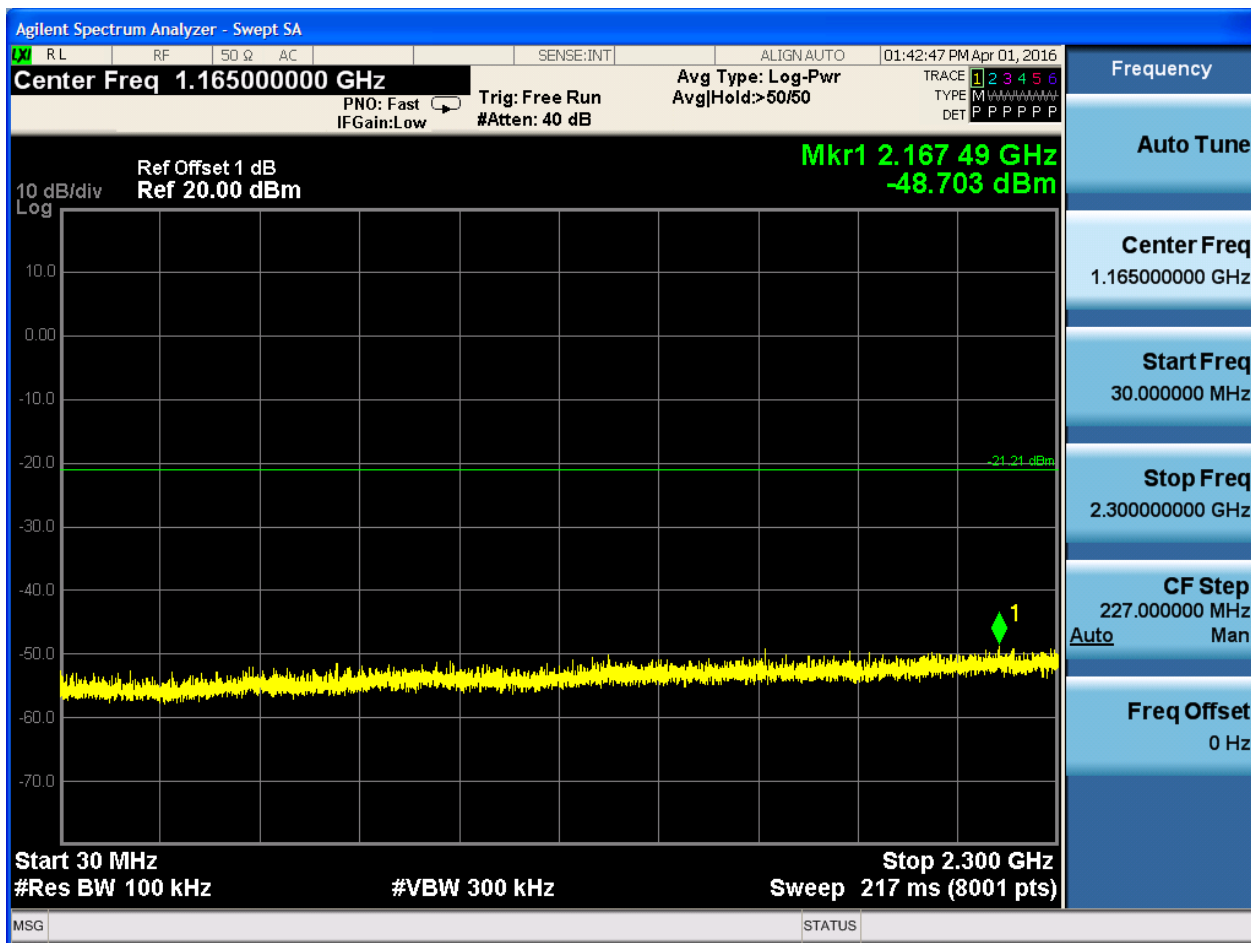


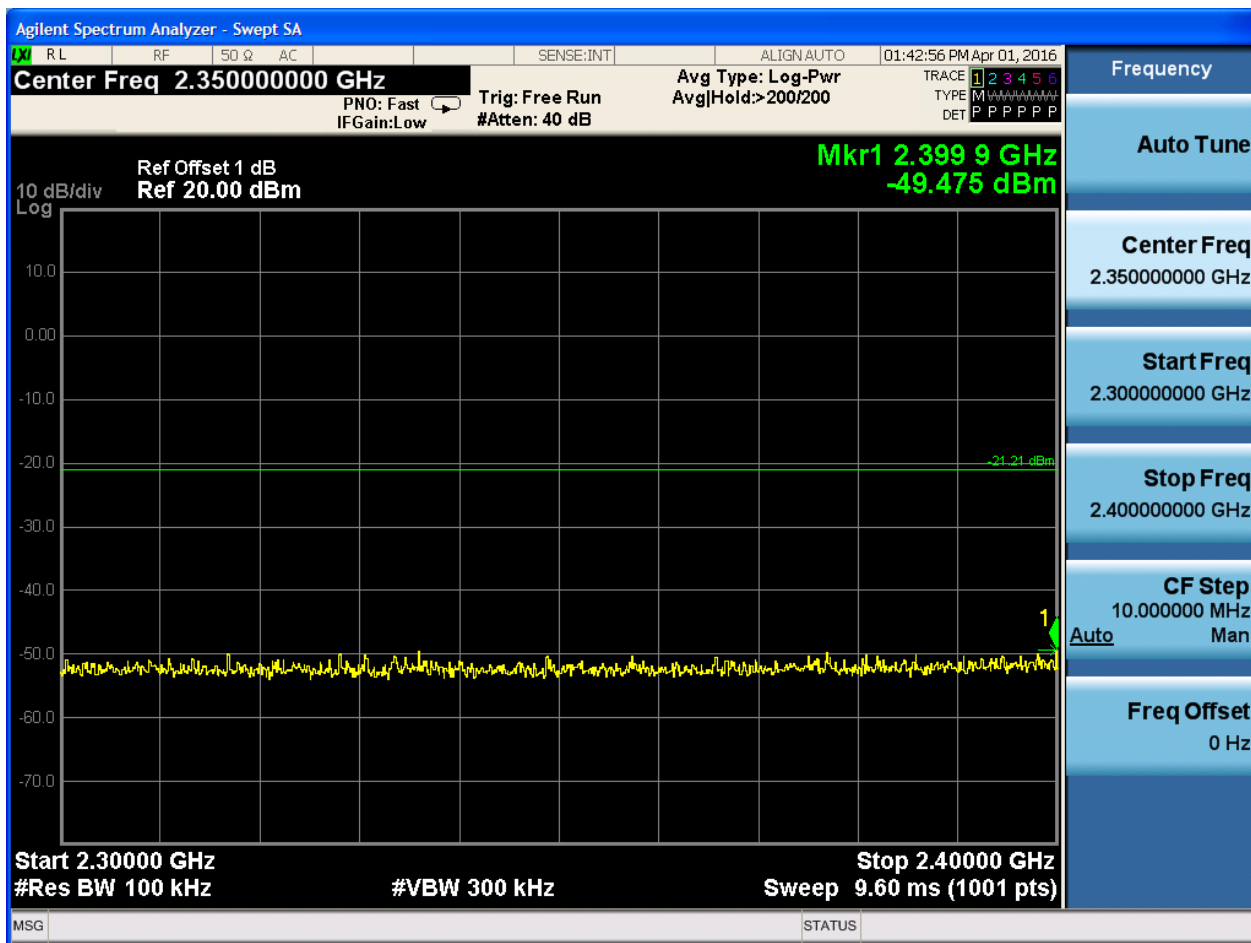


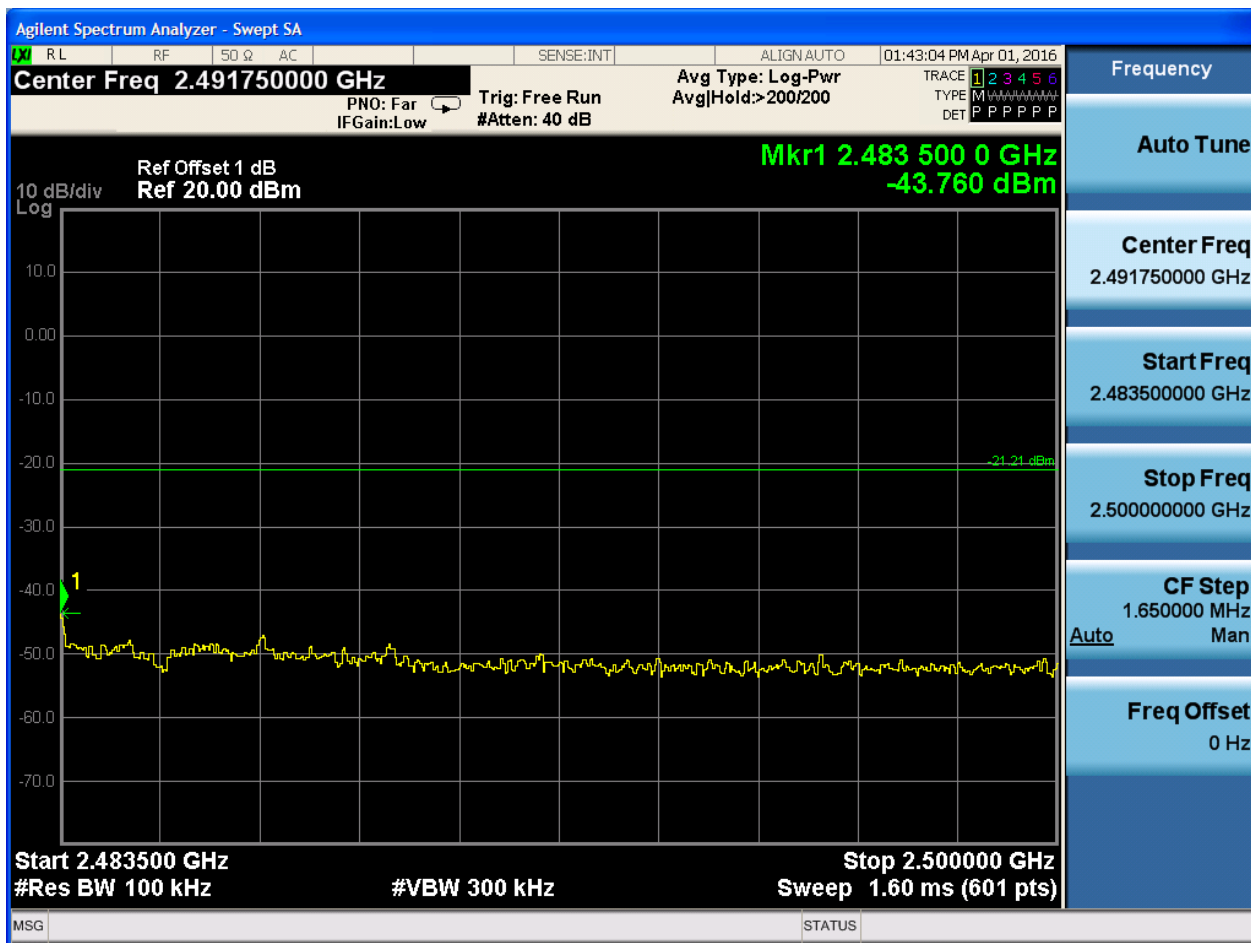
Puw:









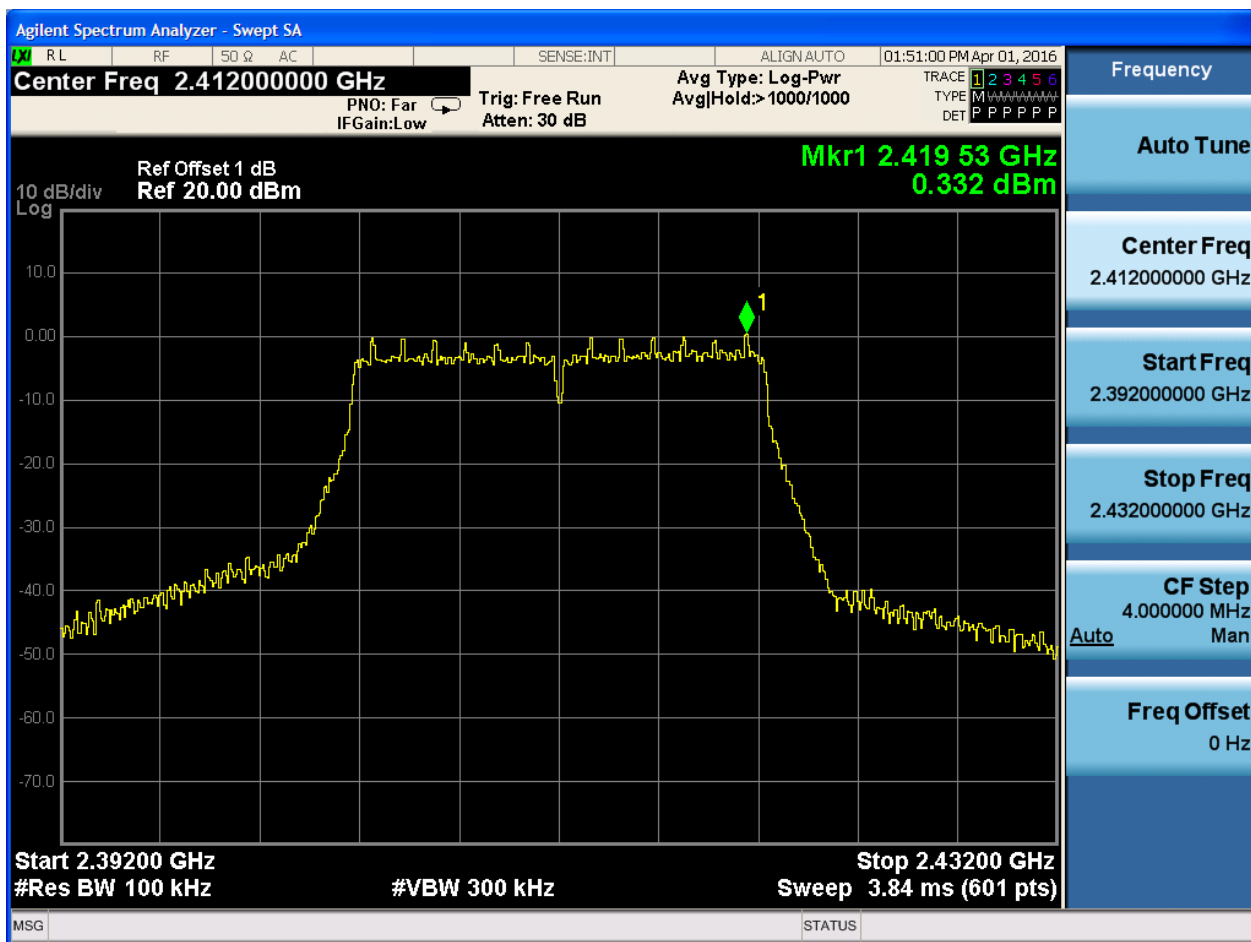






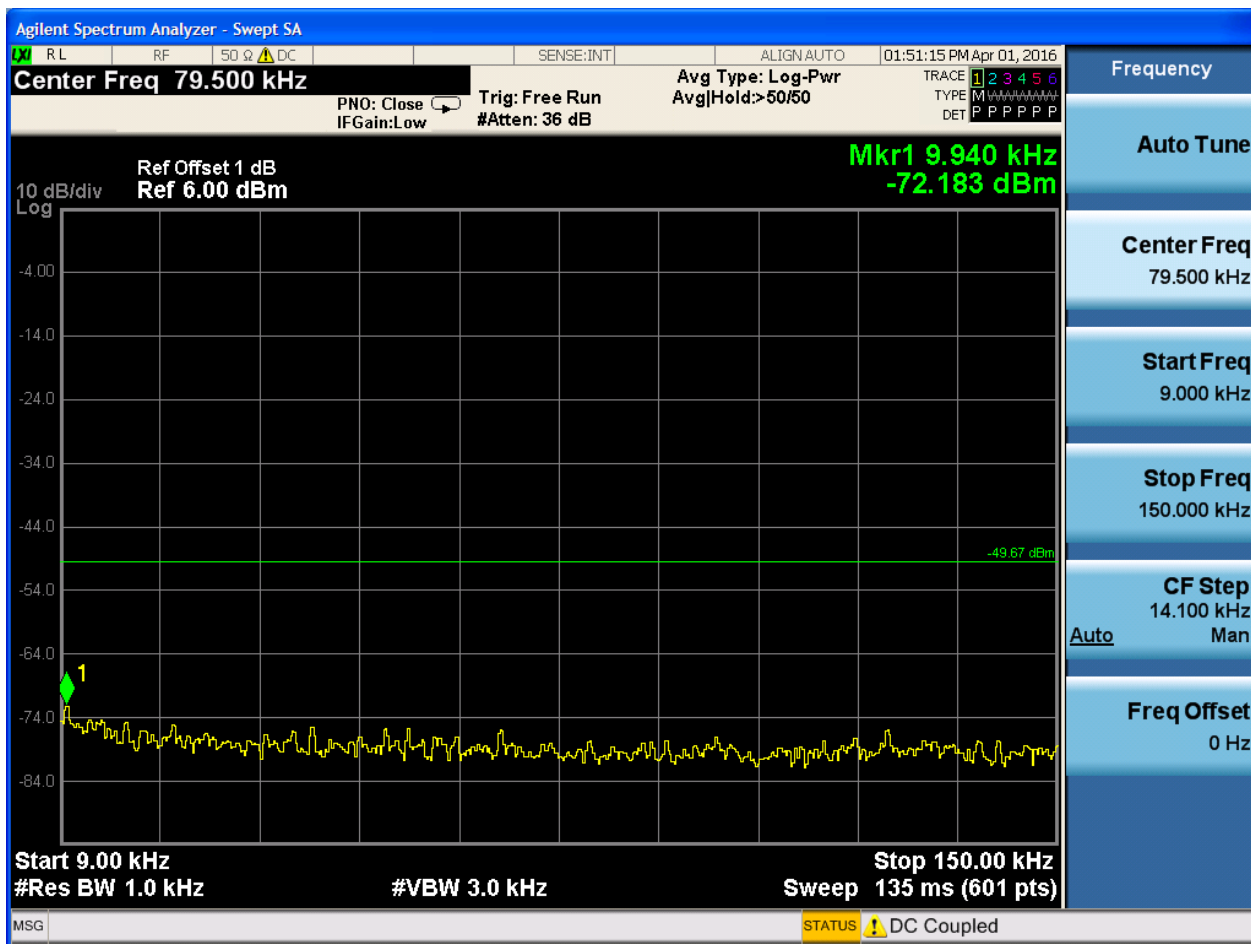
2.4 11G_L@Ant 1

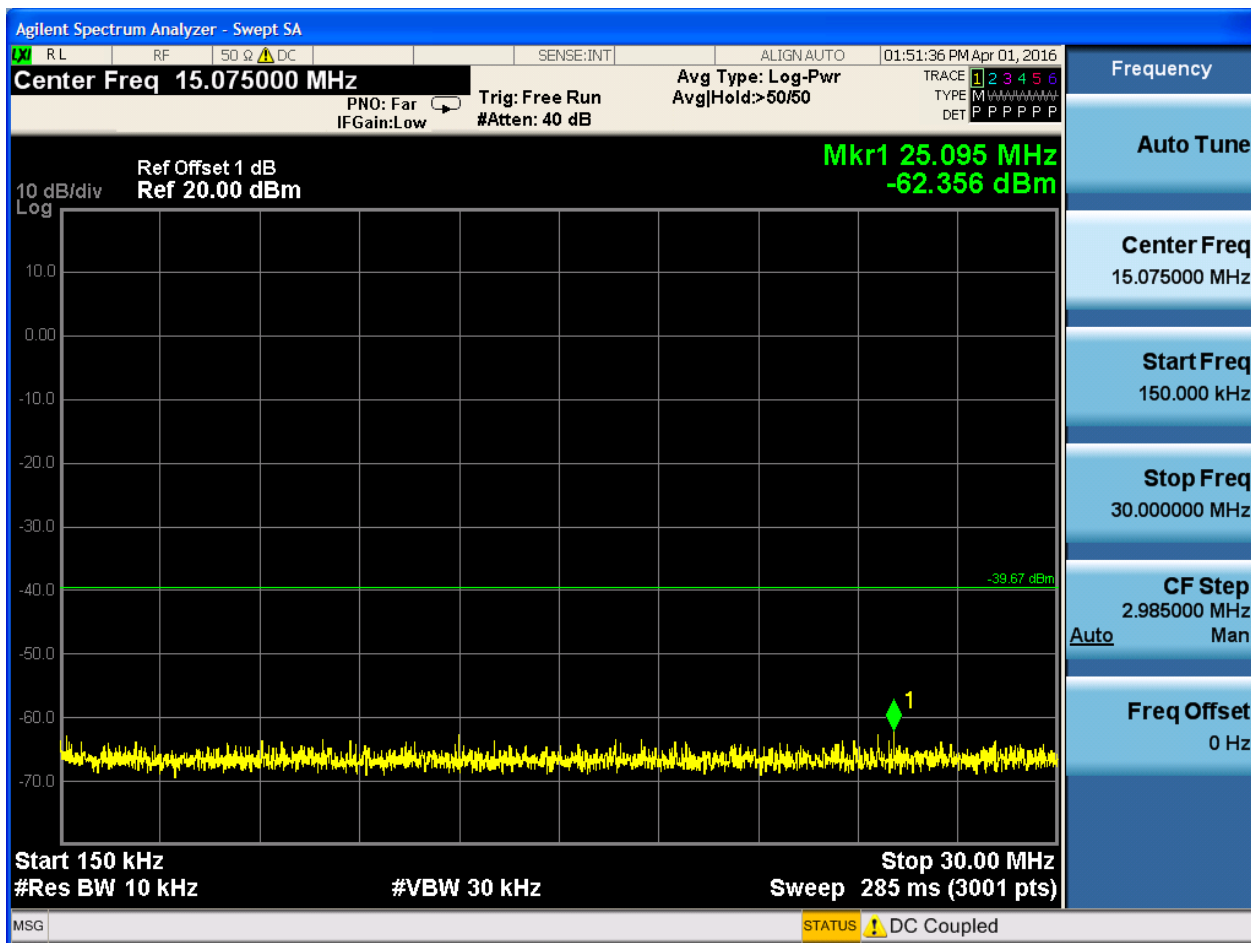
Pref:

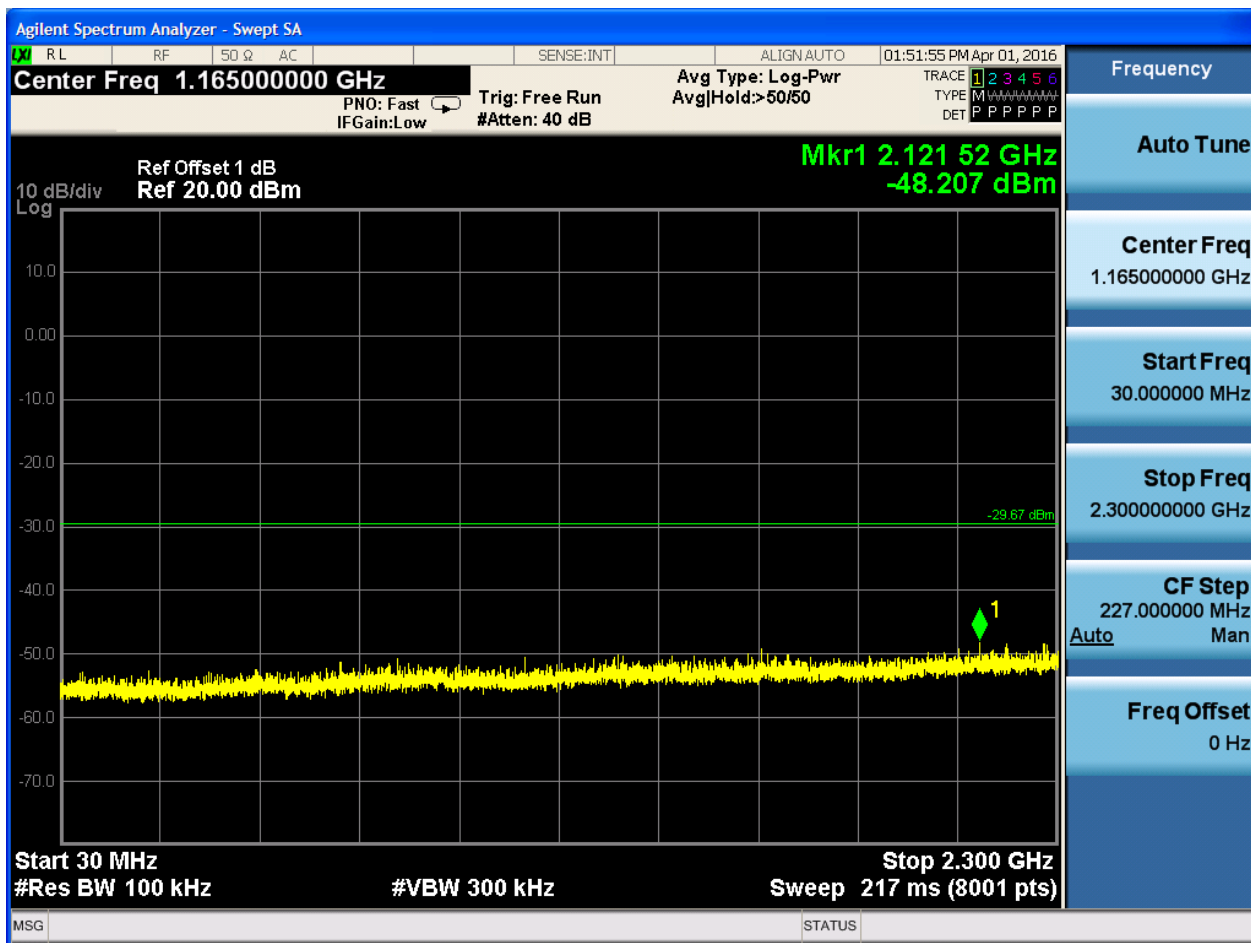


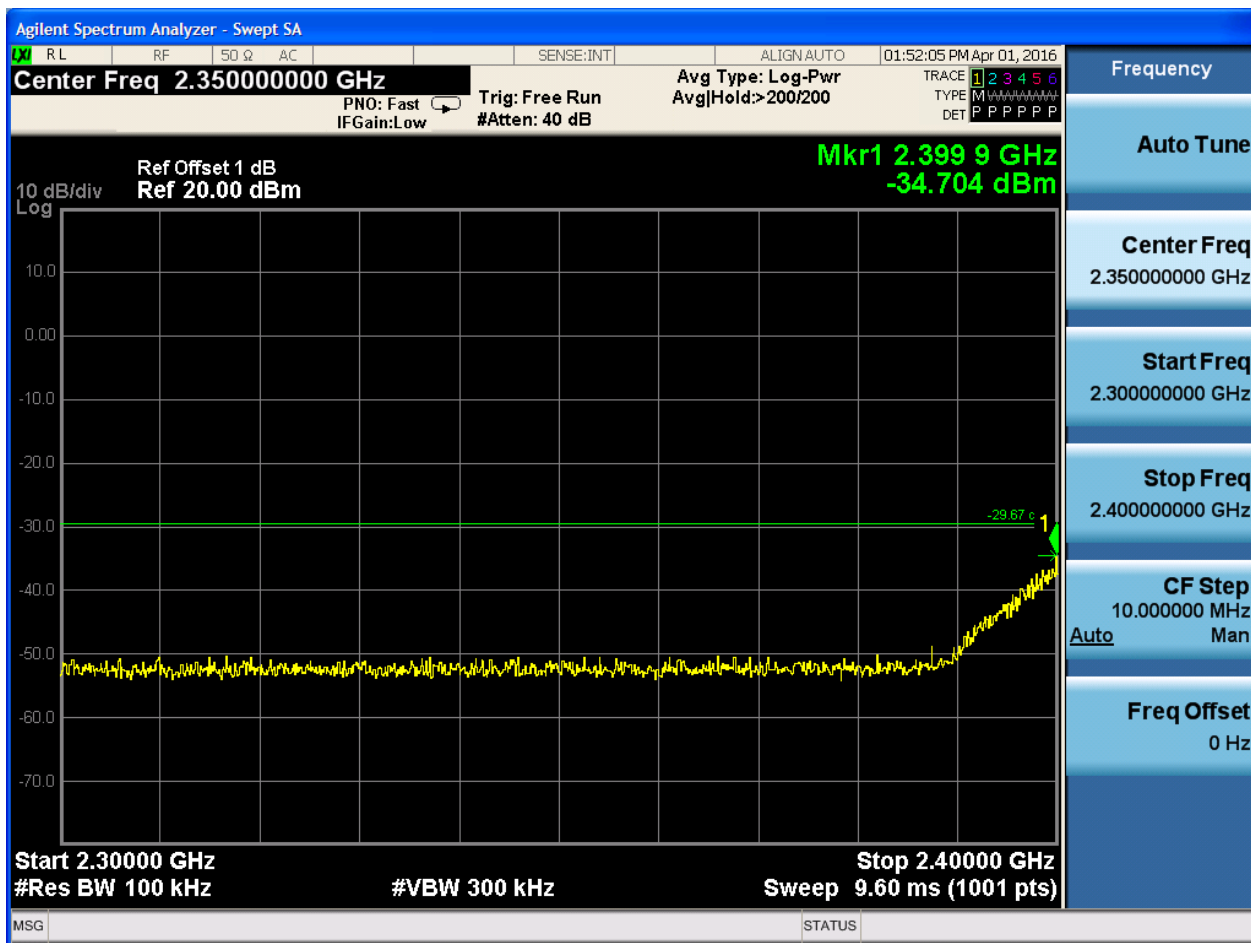


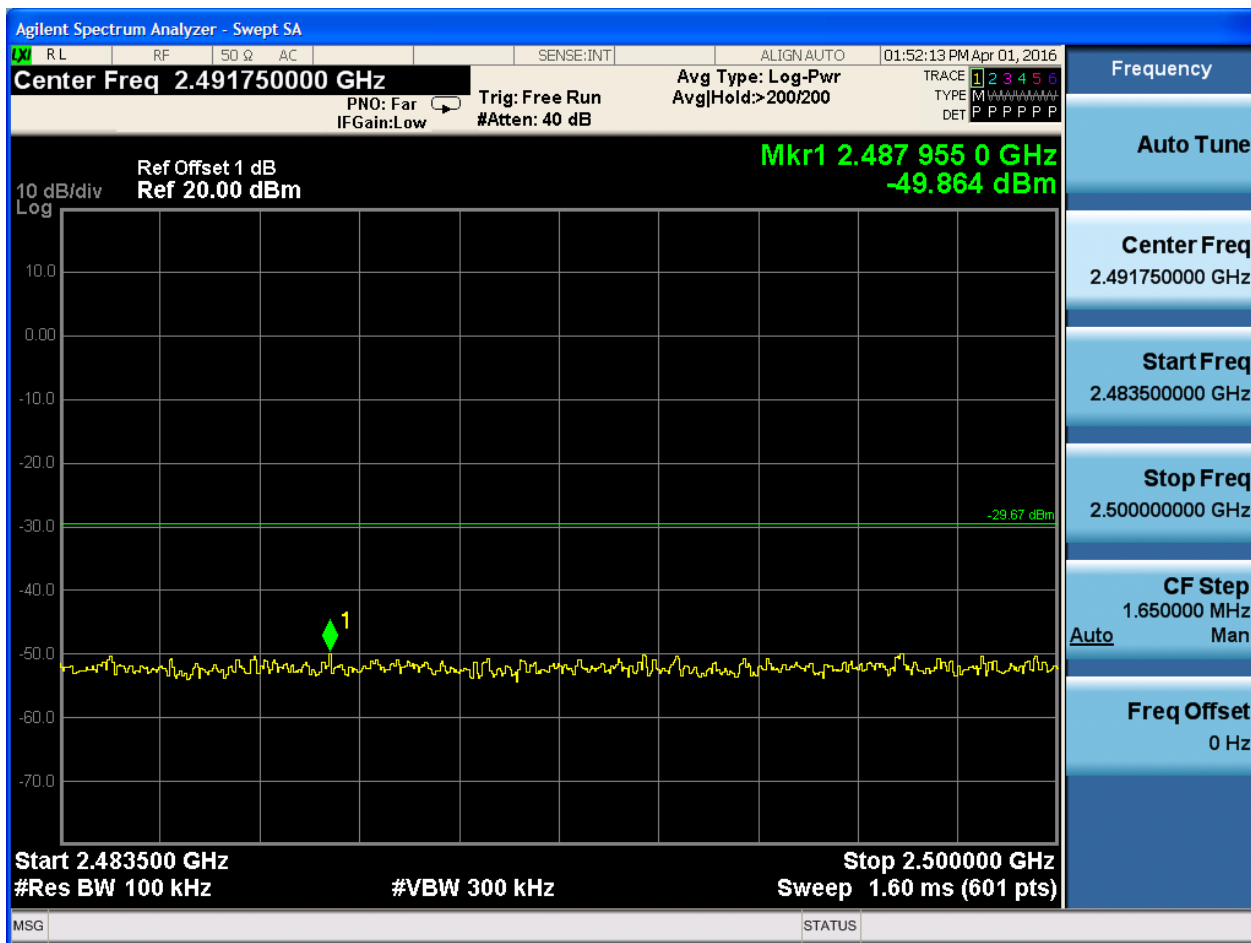
Puw:









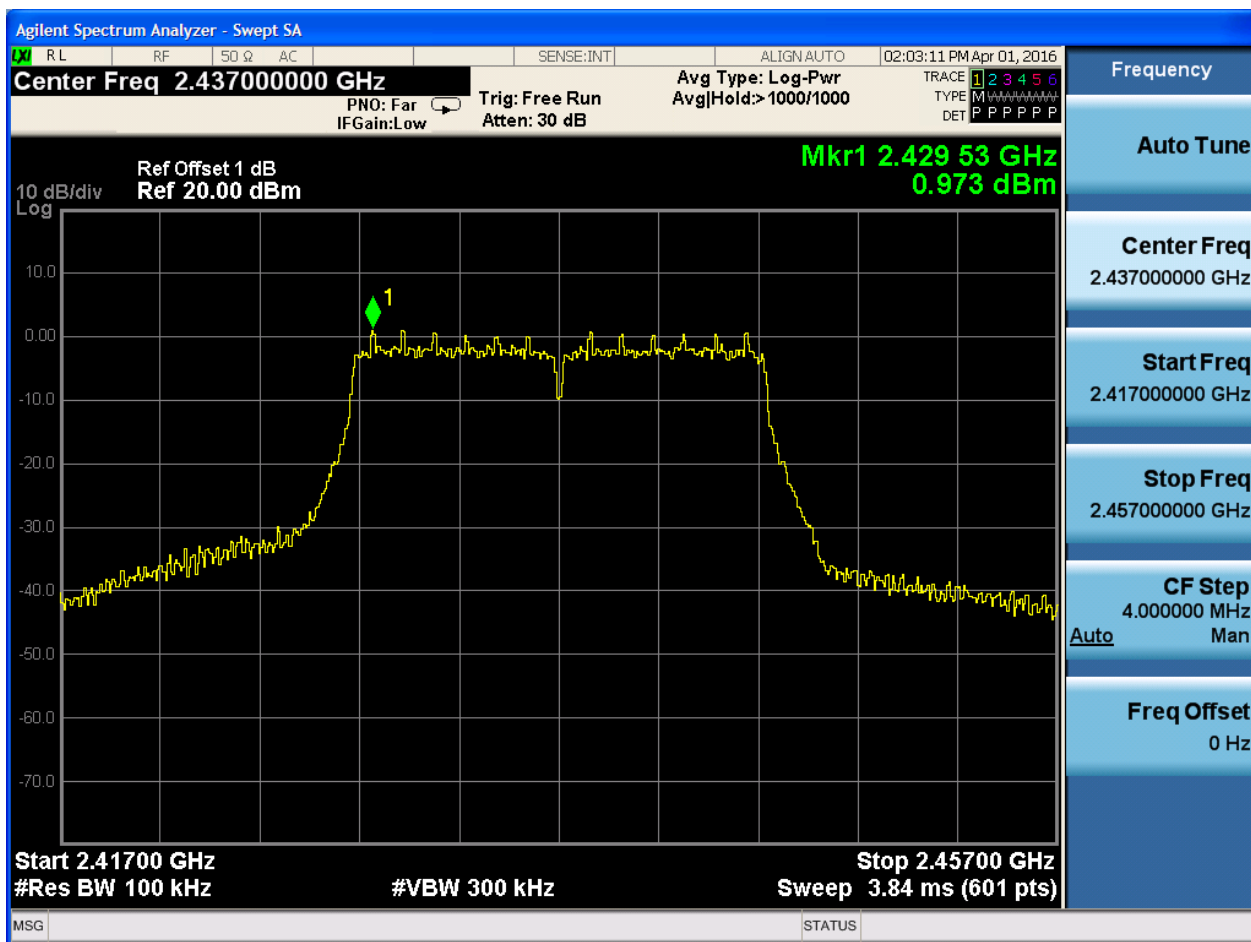






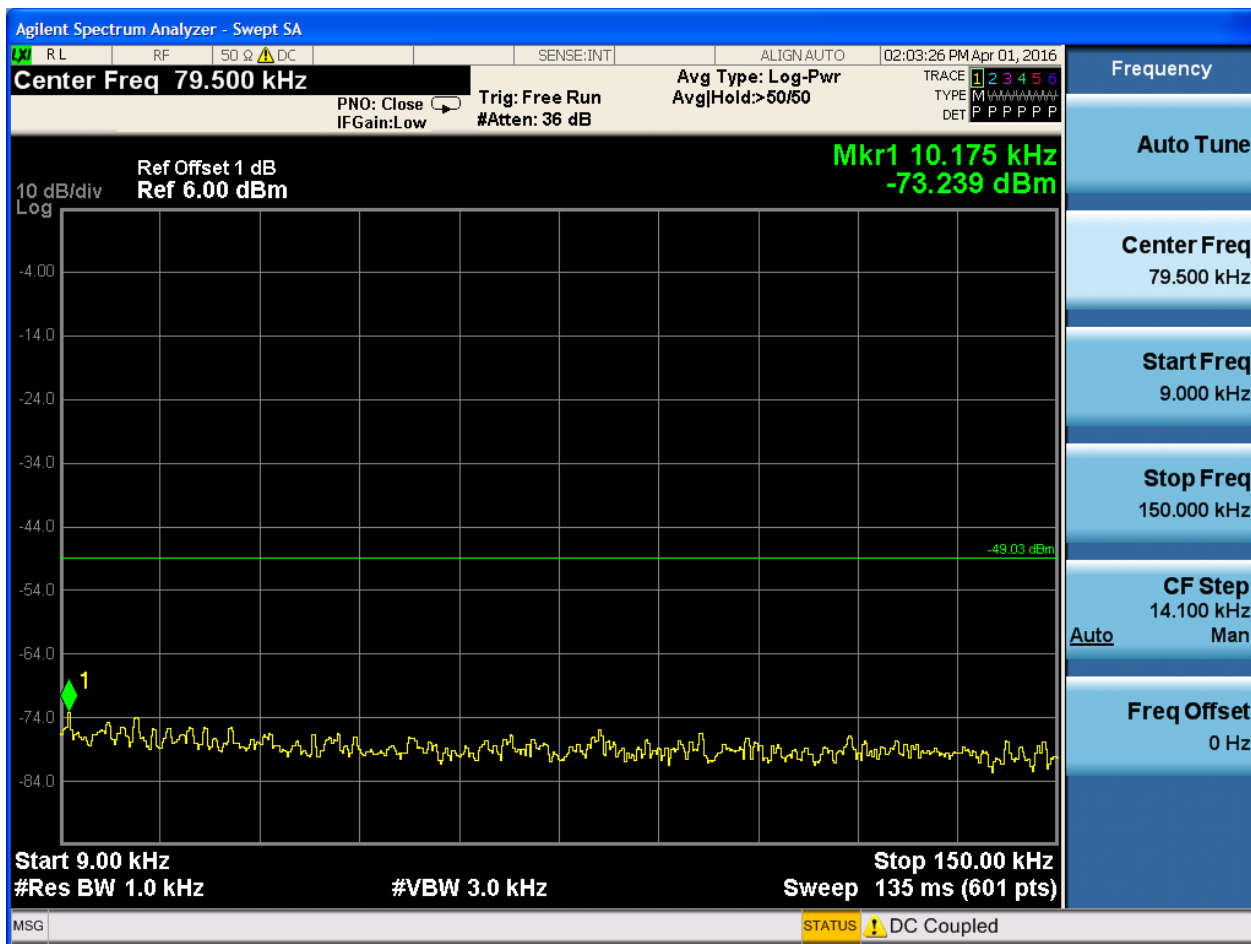
2.5 11G_M@Ant 1

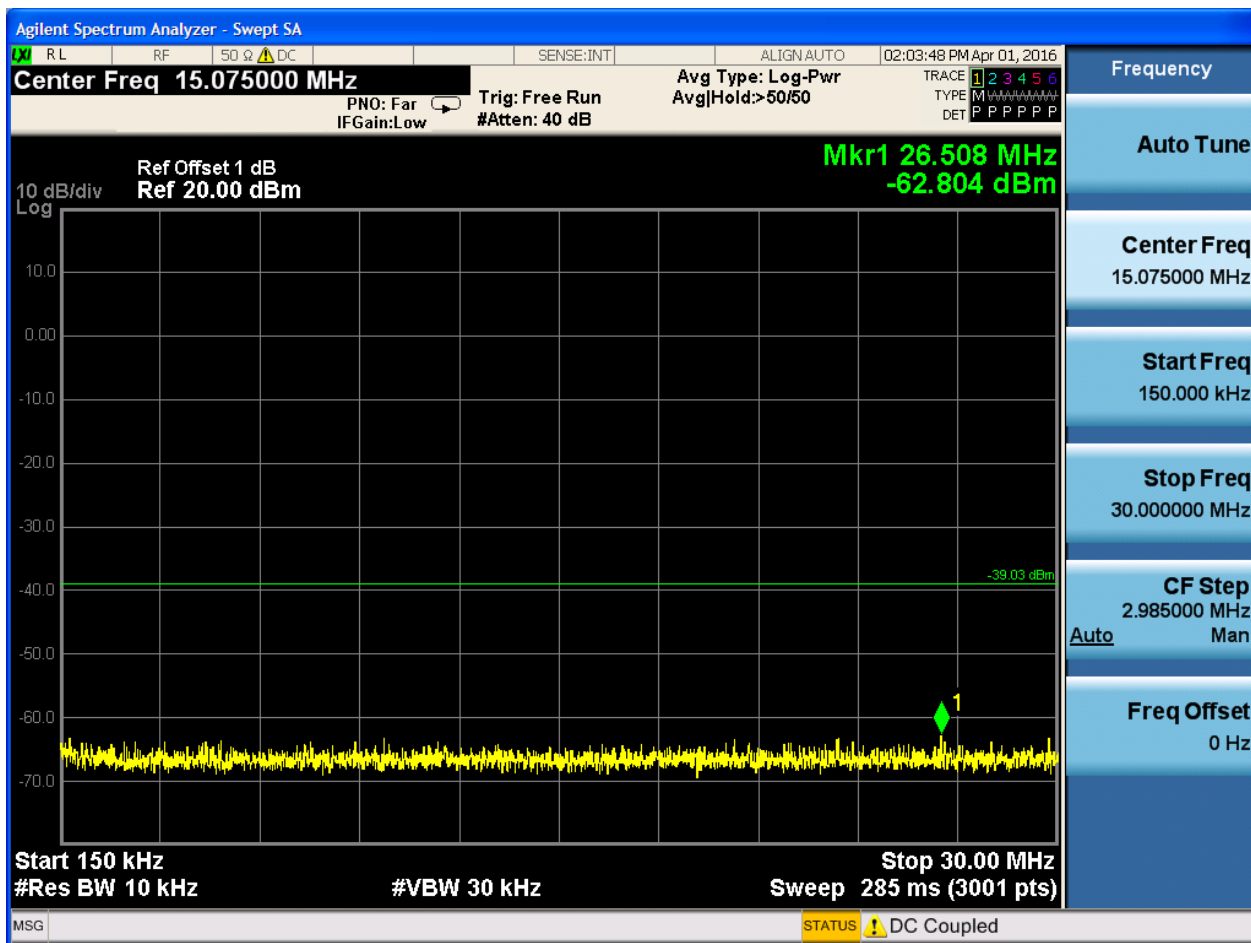
Pref:

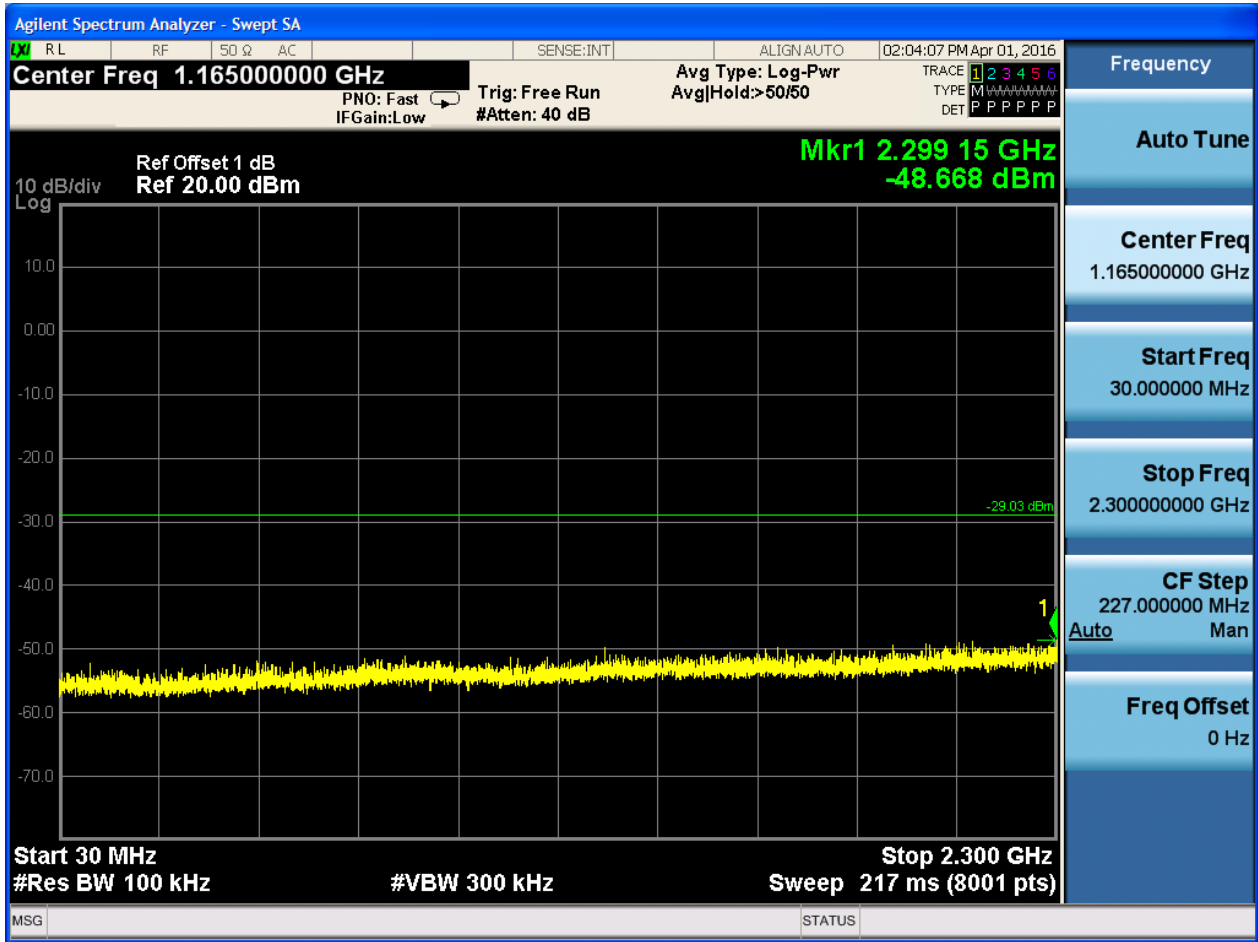


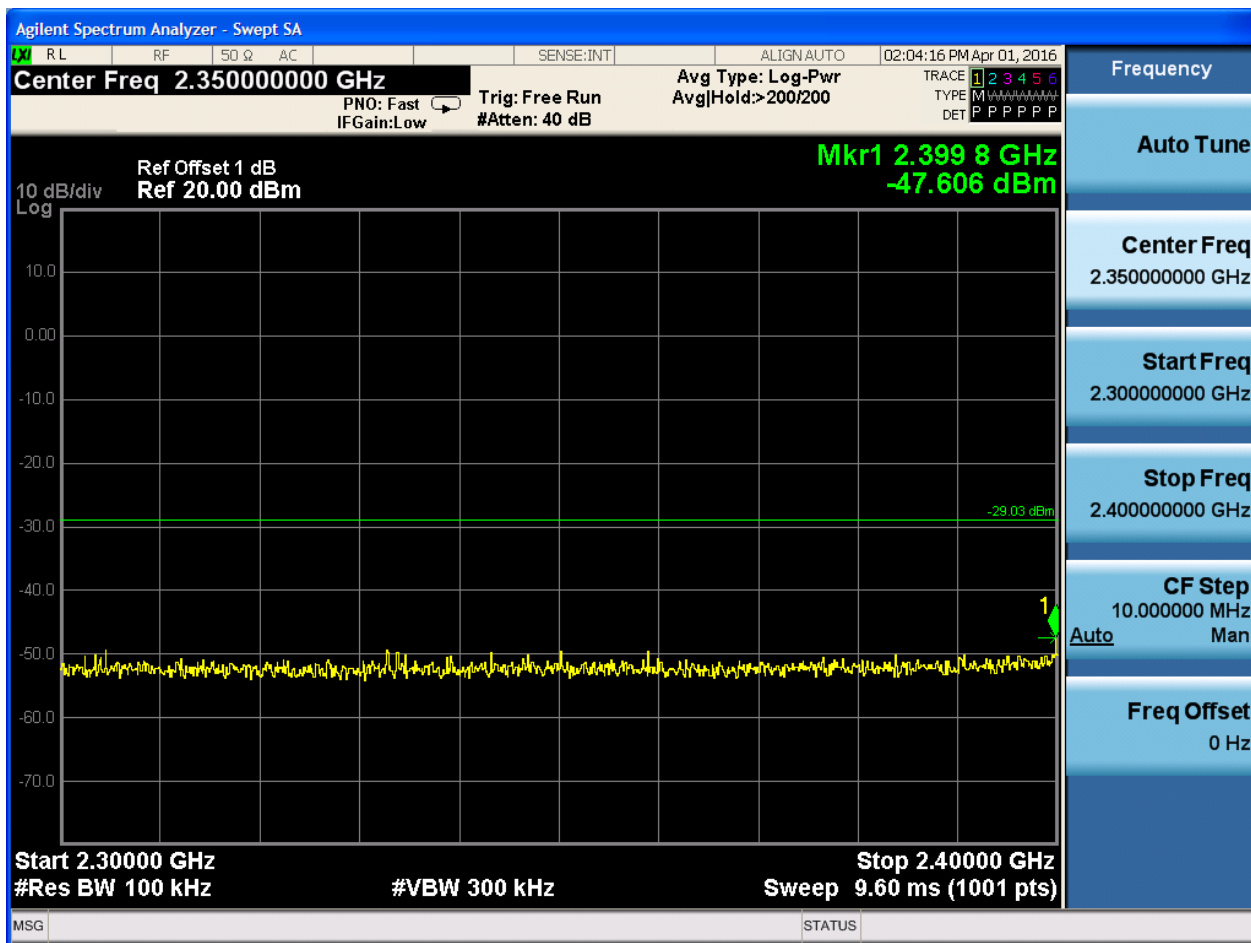


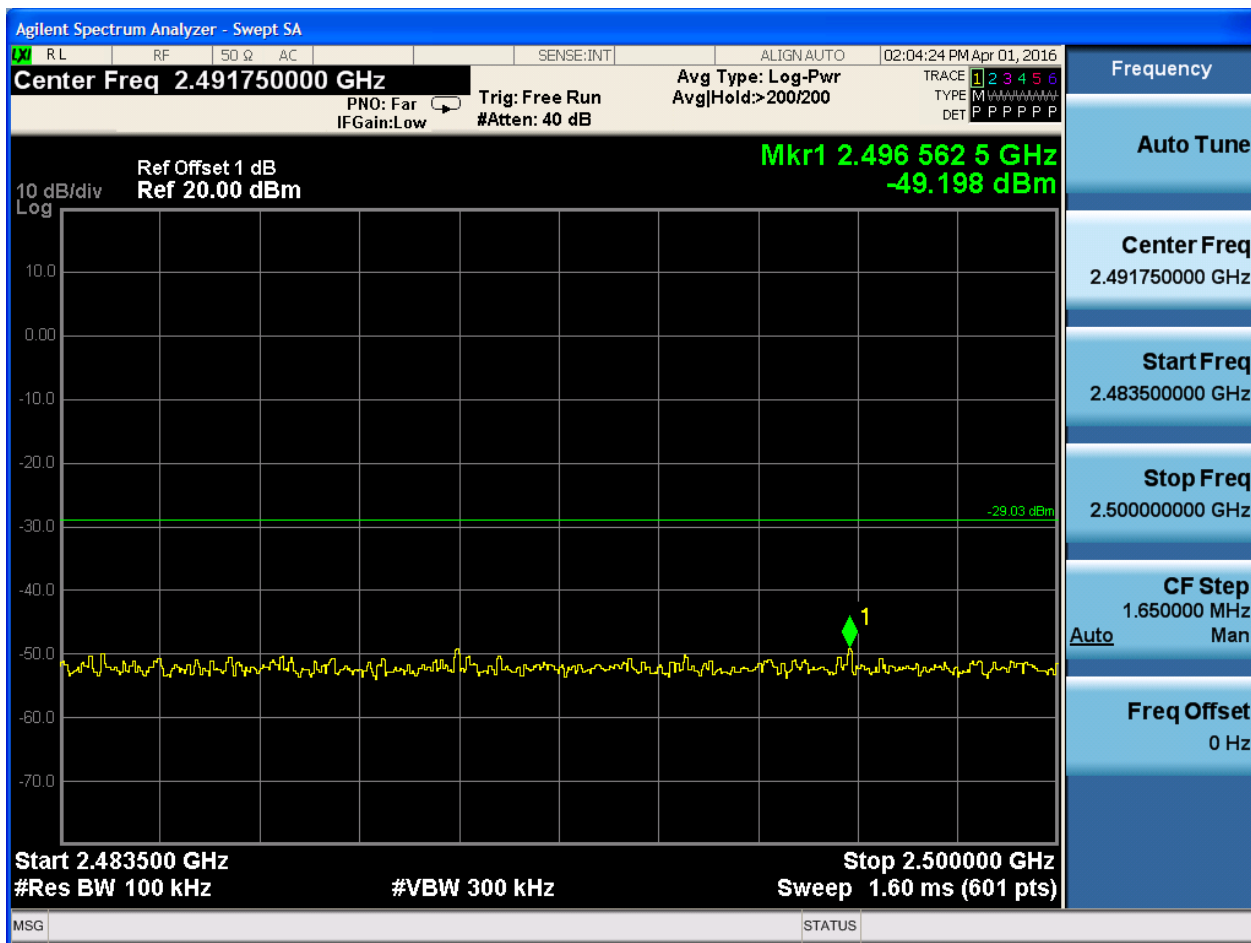
Puw:









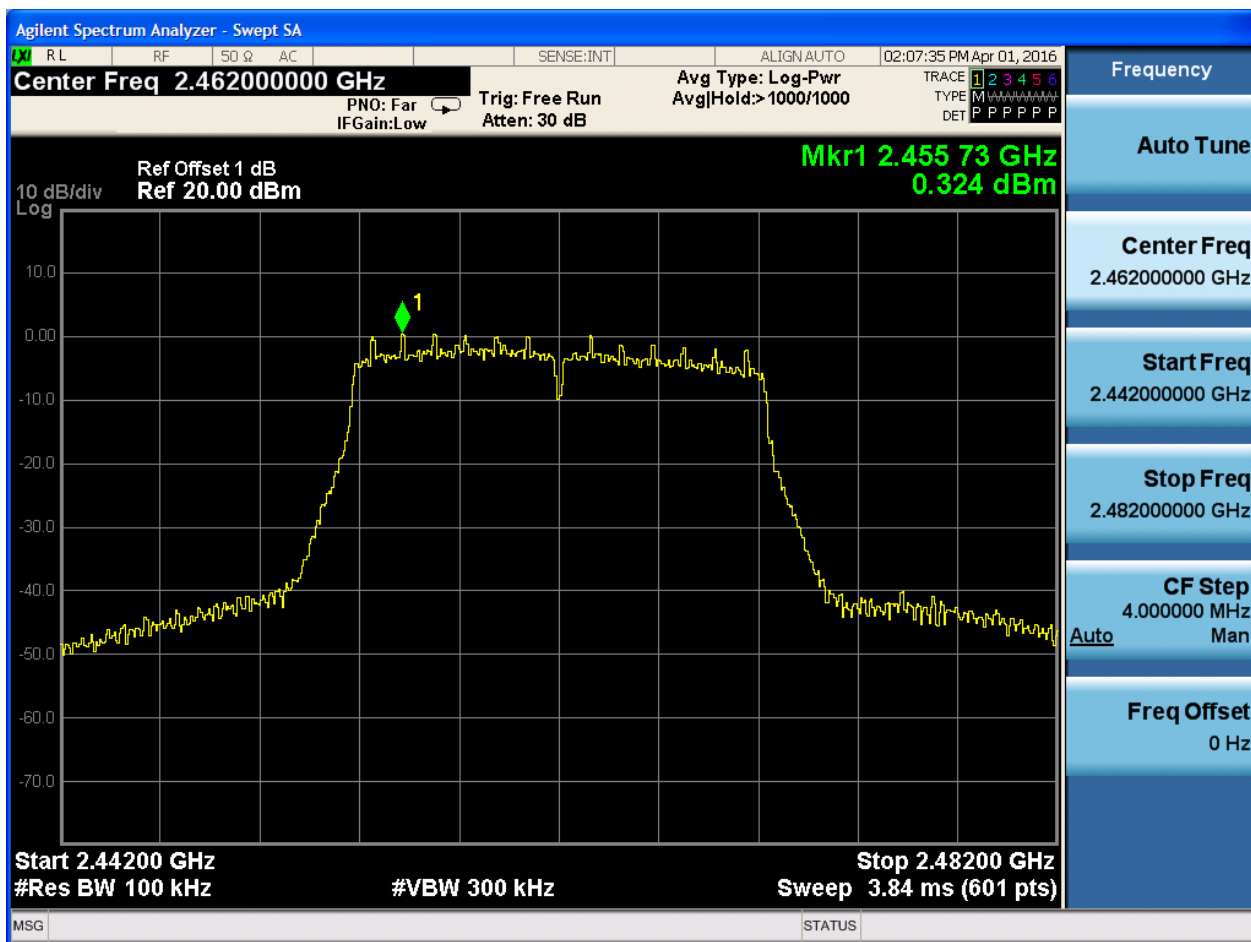






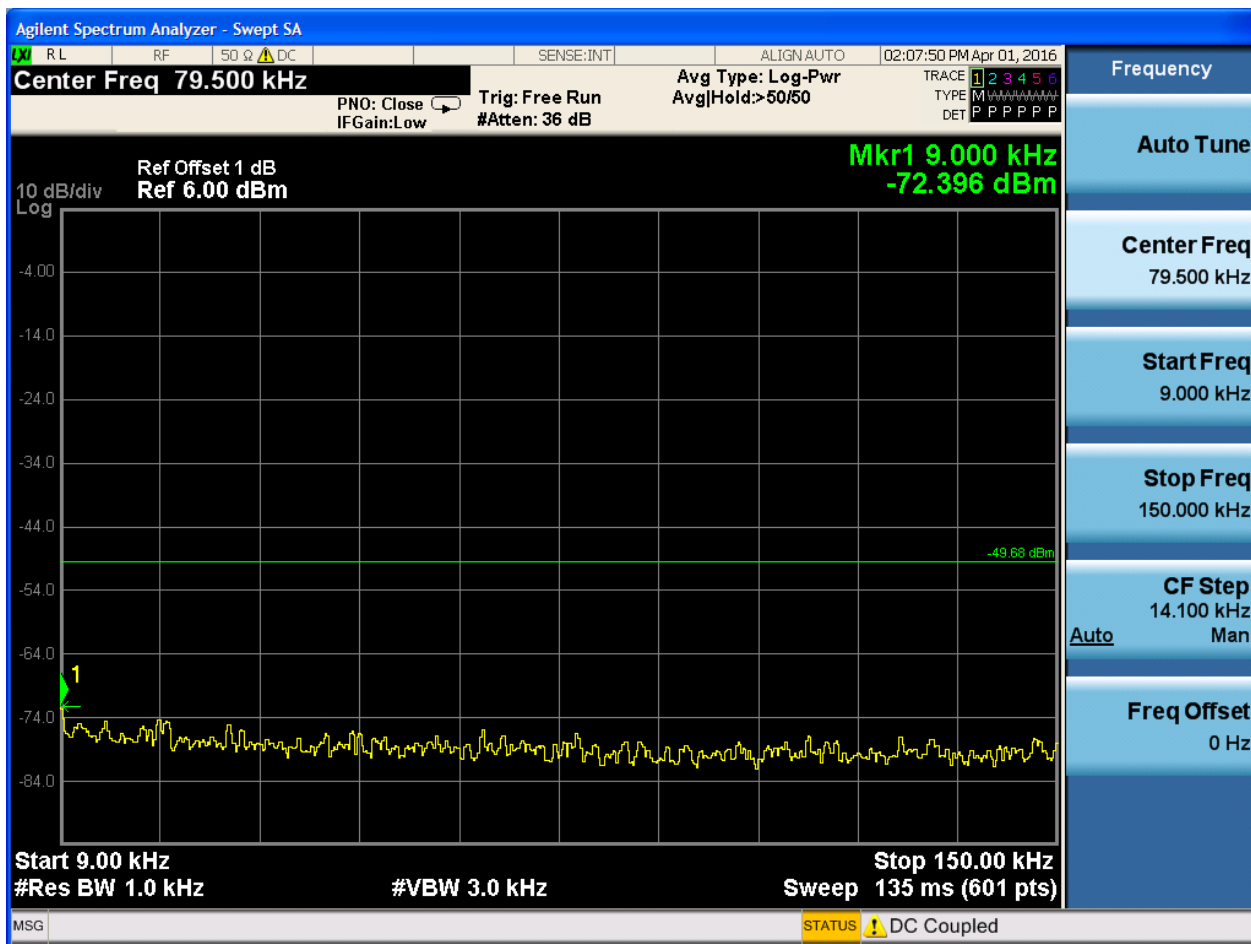
2.6 11G_H@Ant 1

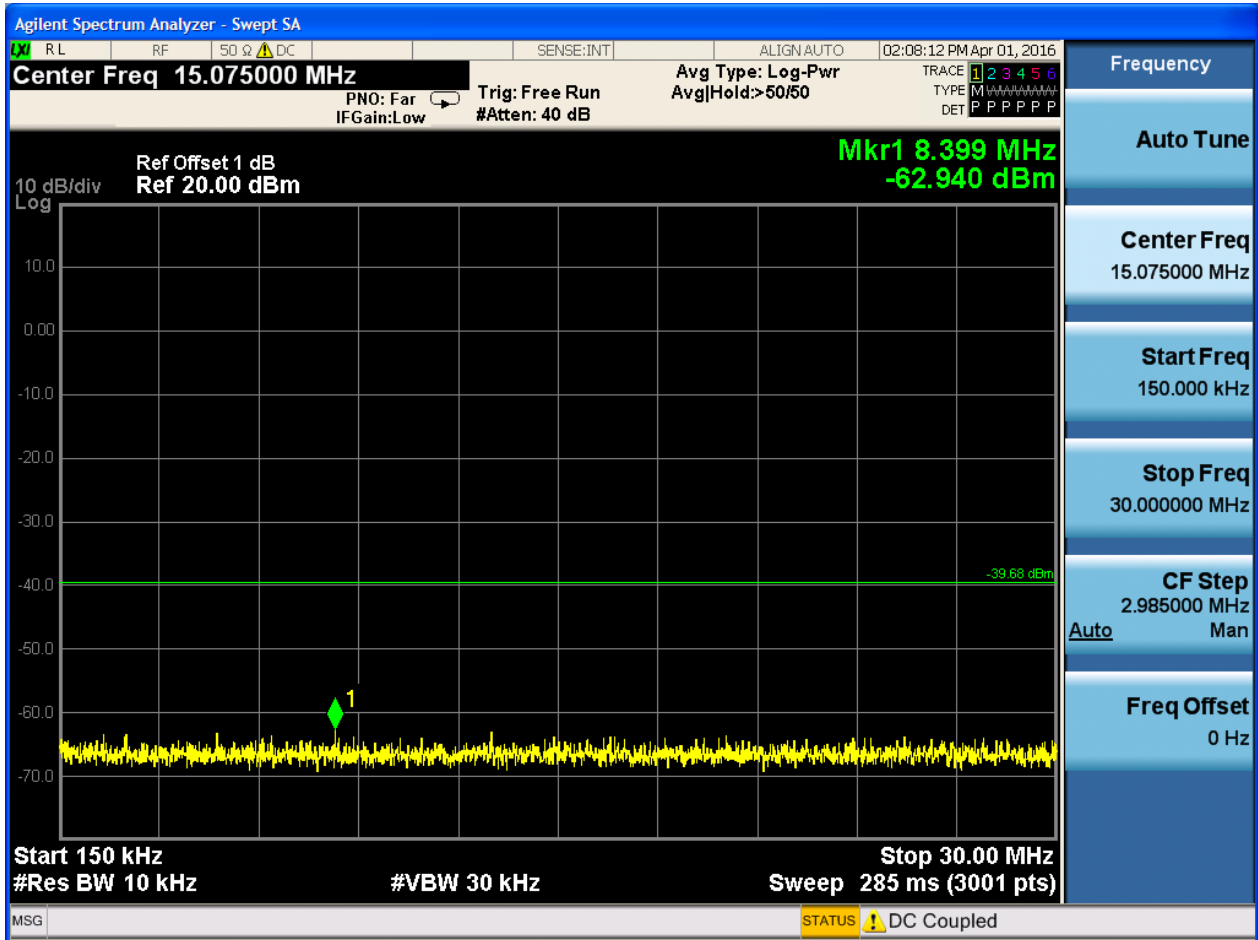
Pref:

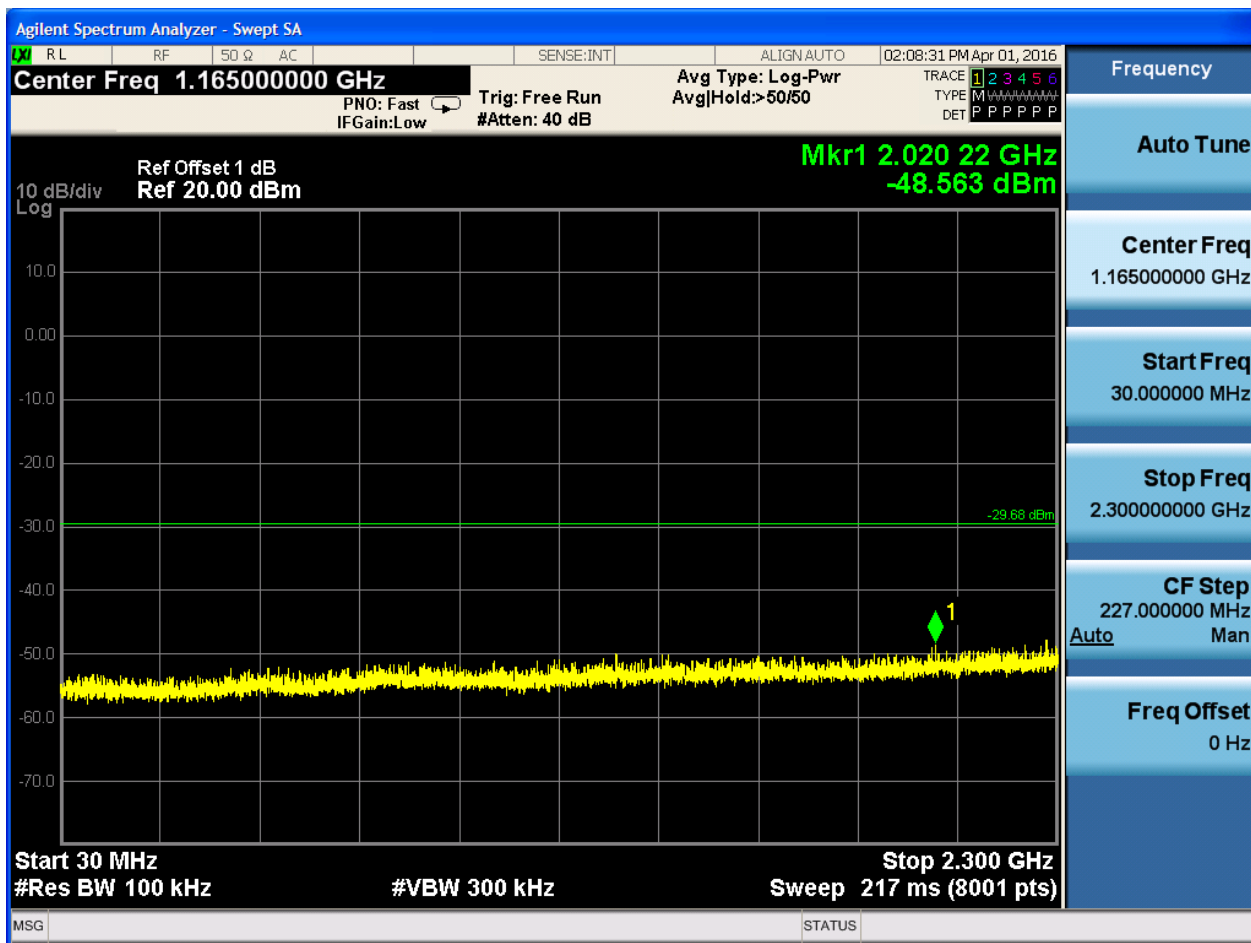


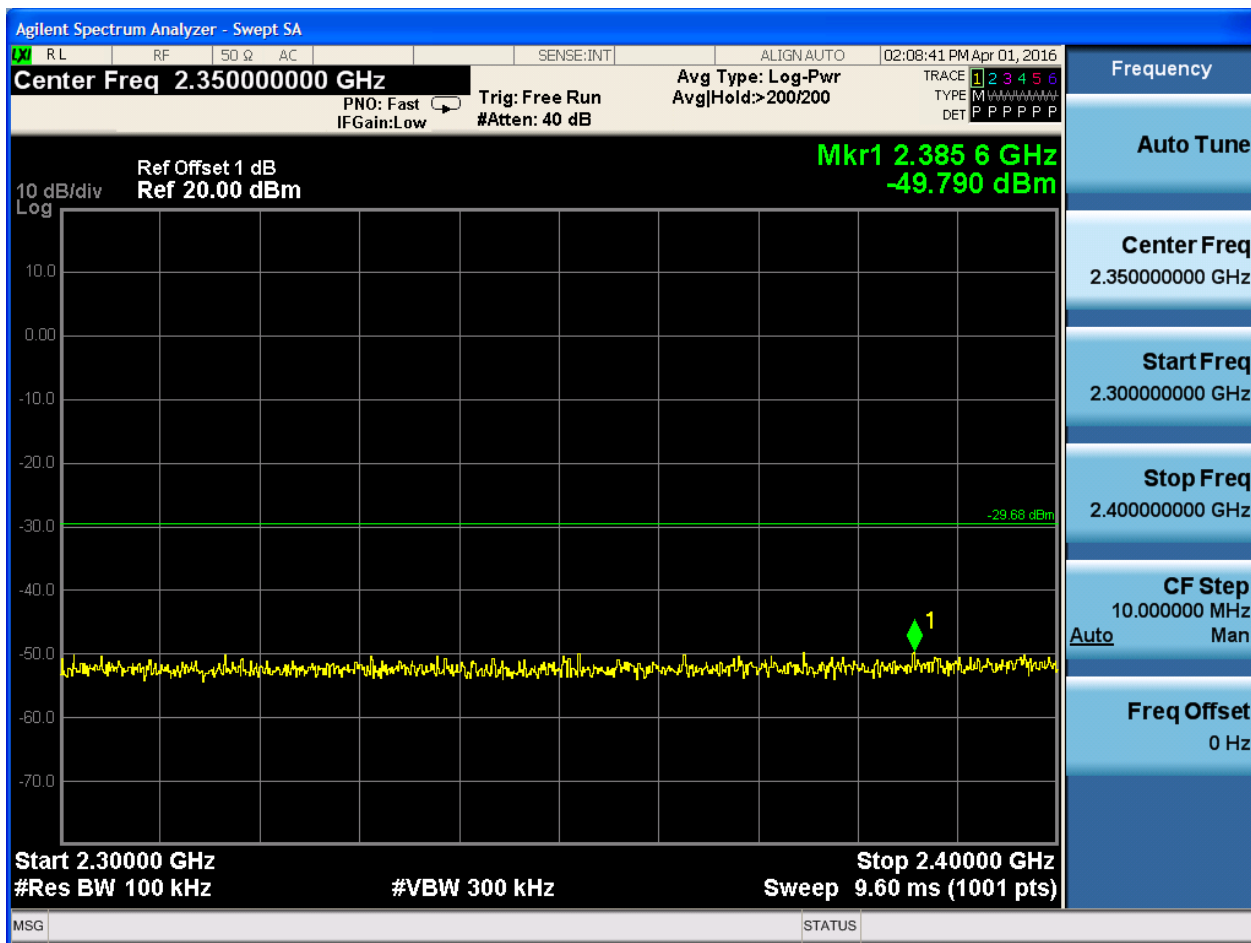


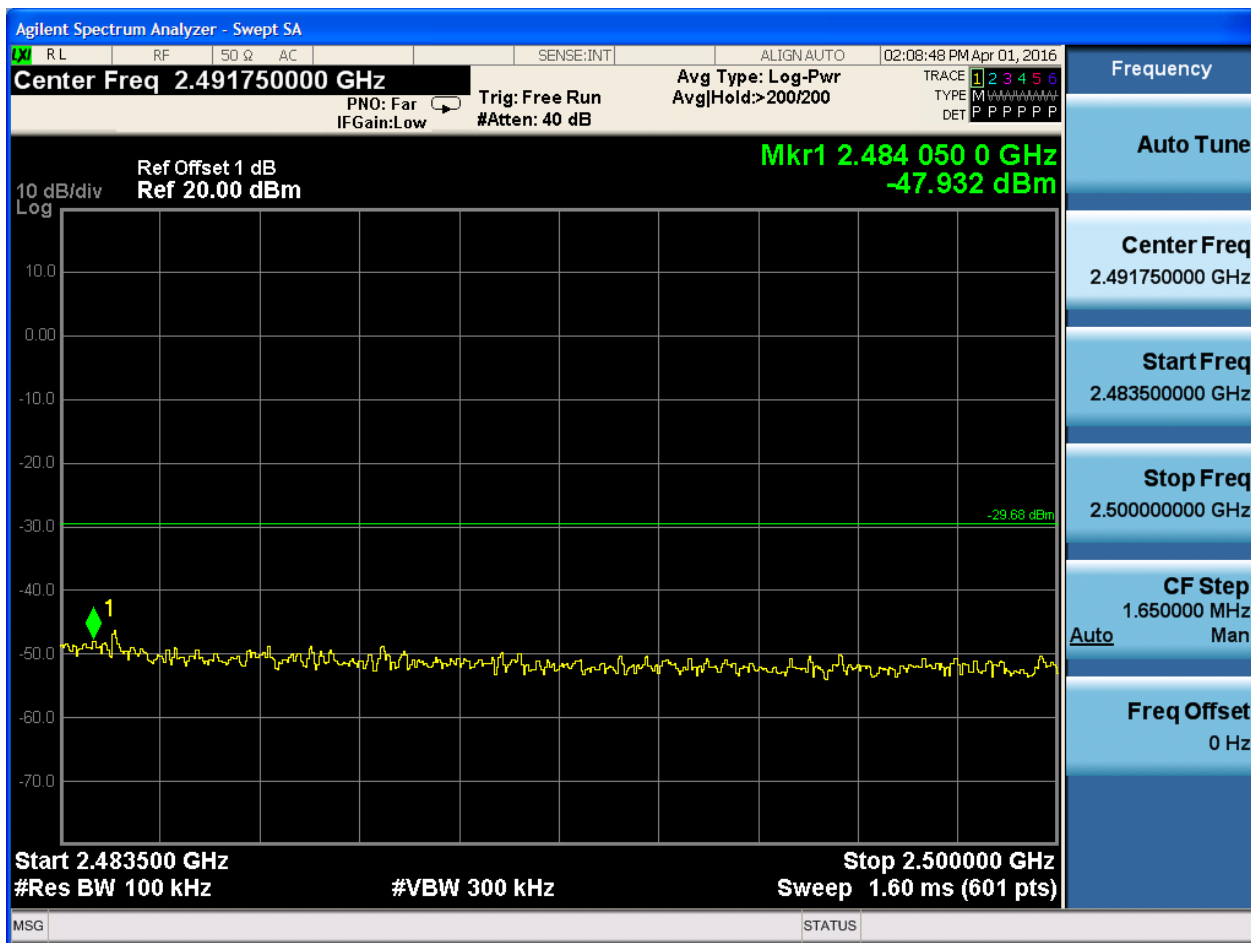
Puw:









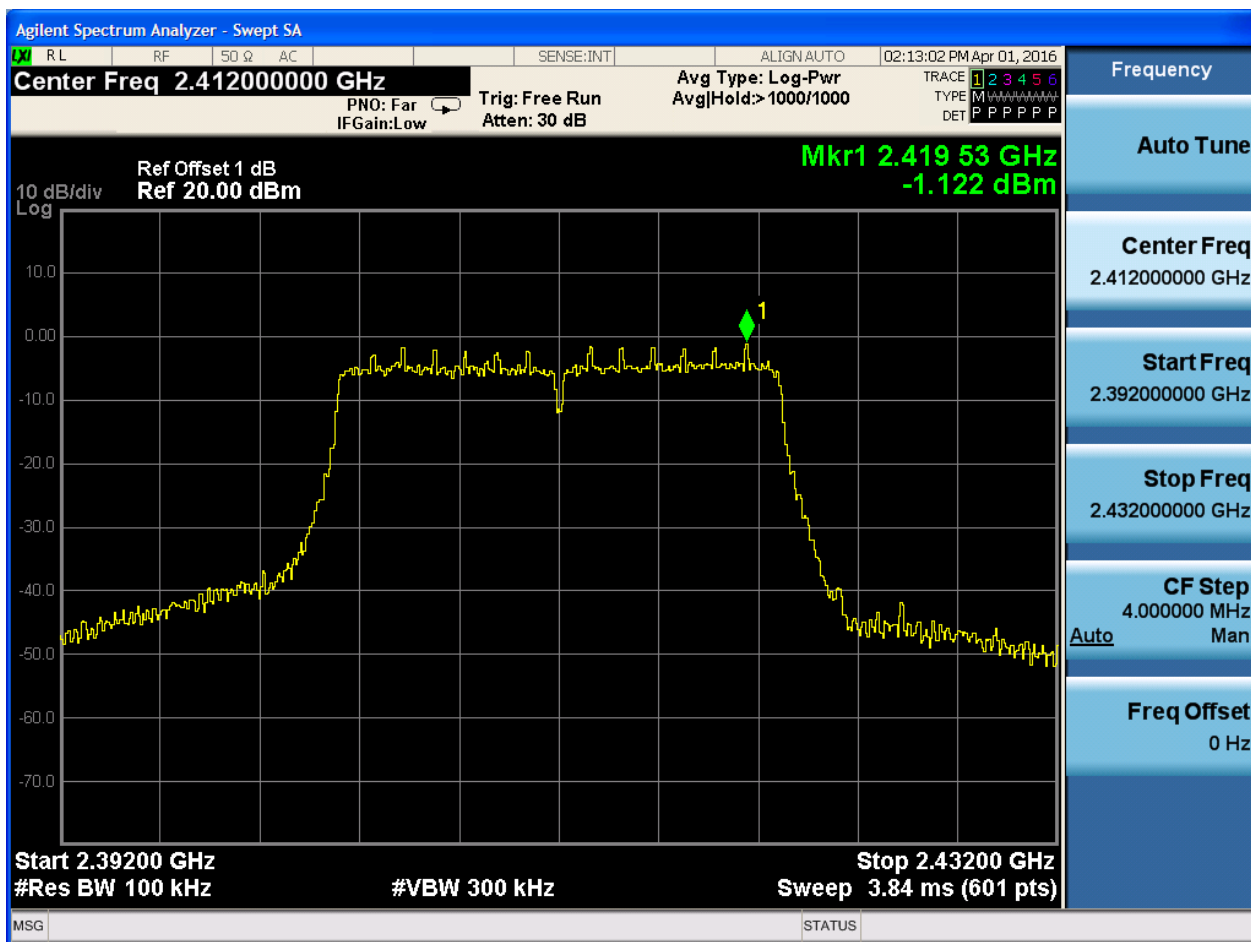






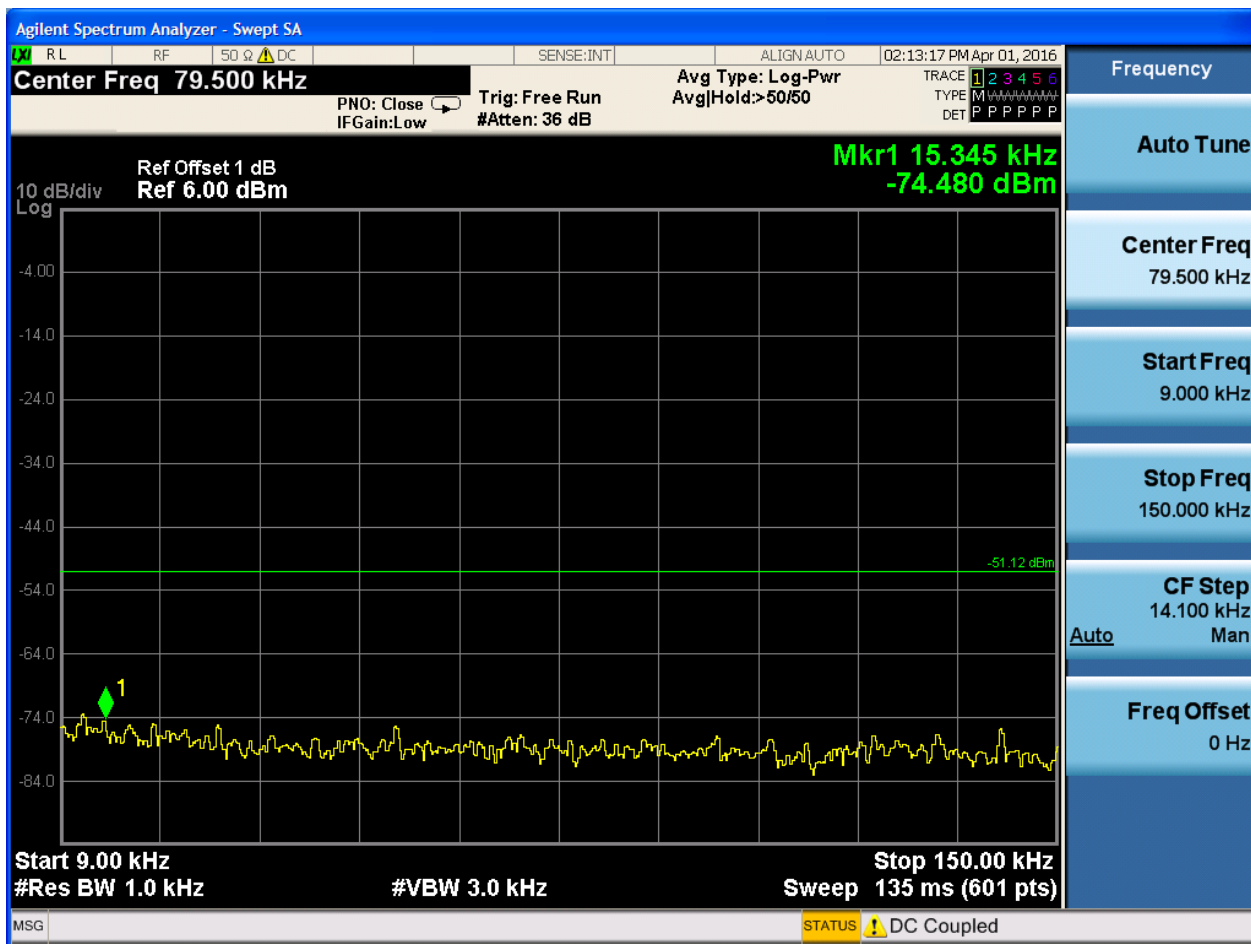
2.7 11N20_L@Ant 1

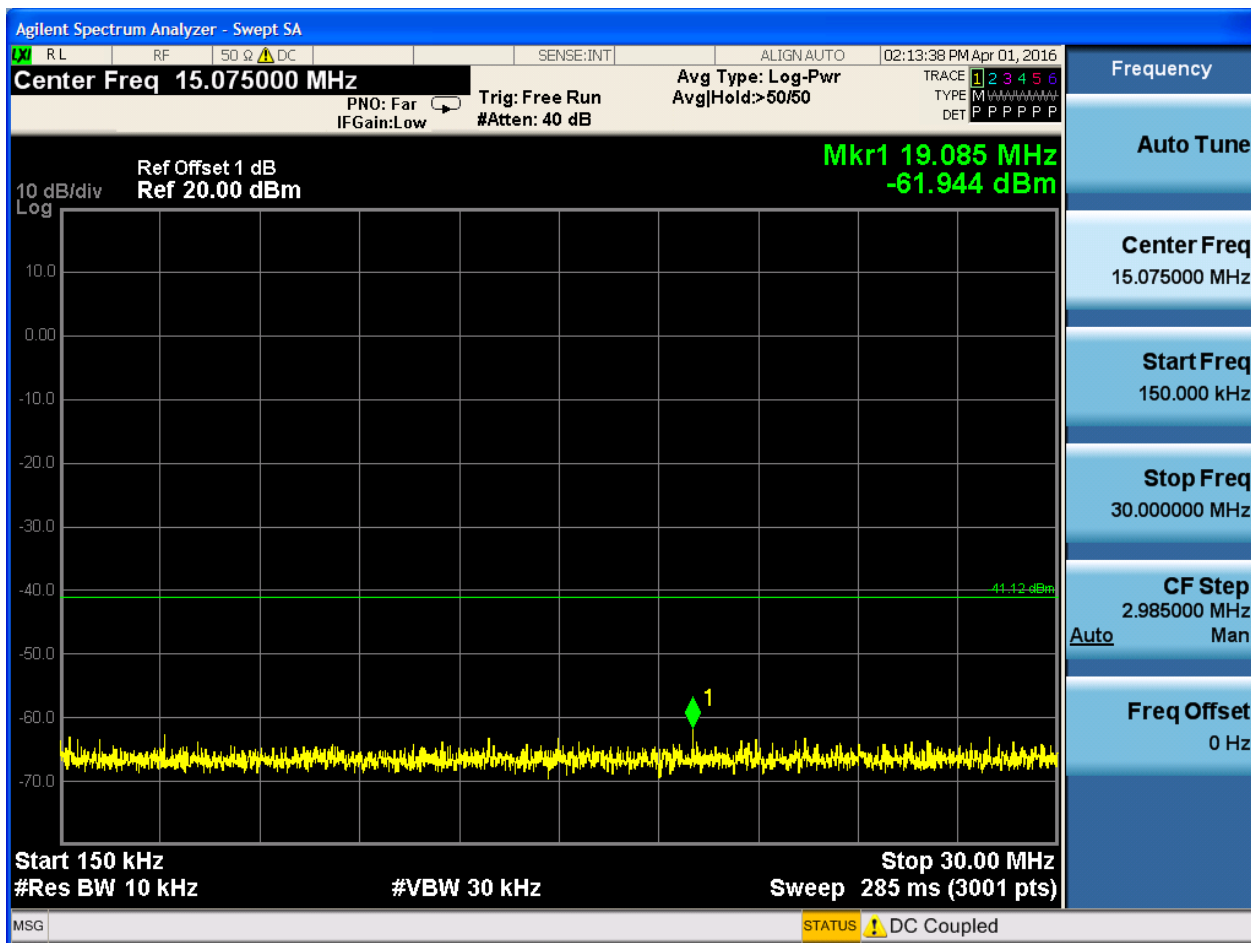
Pref:



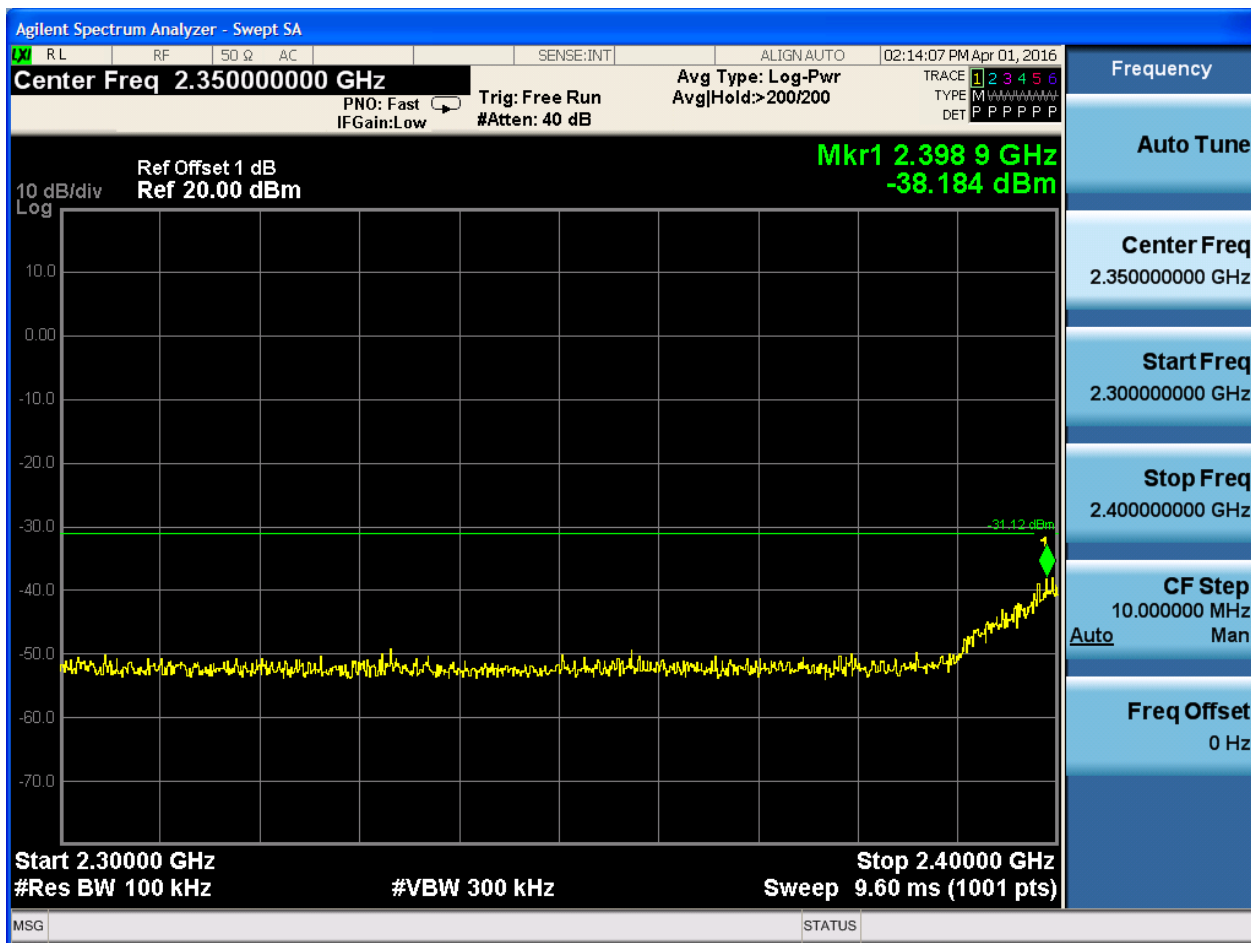


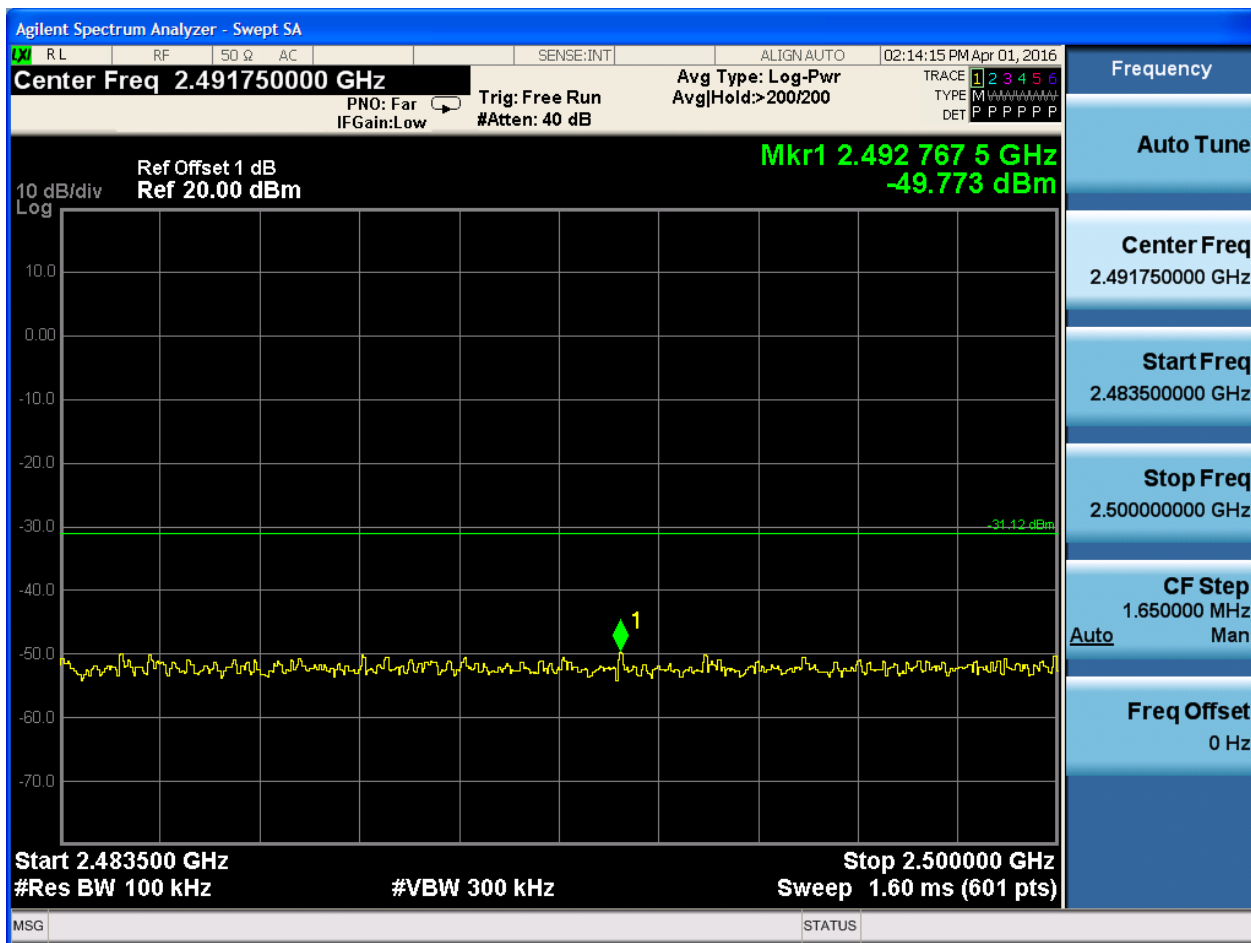
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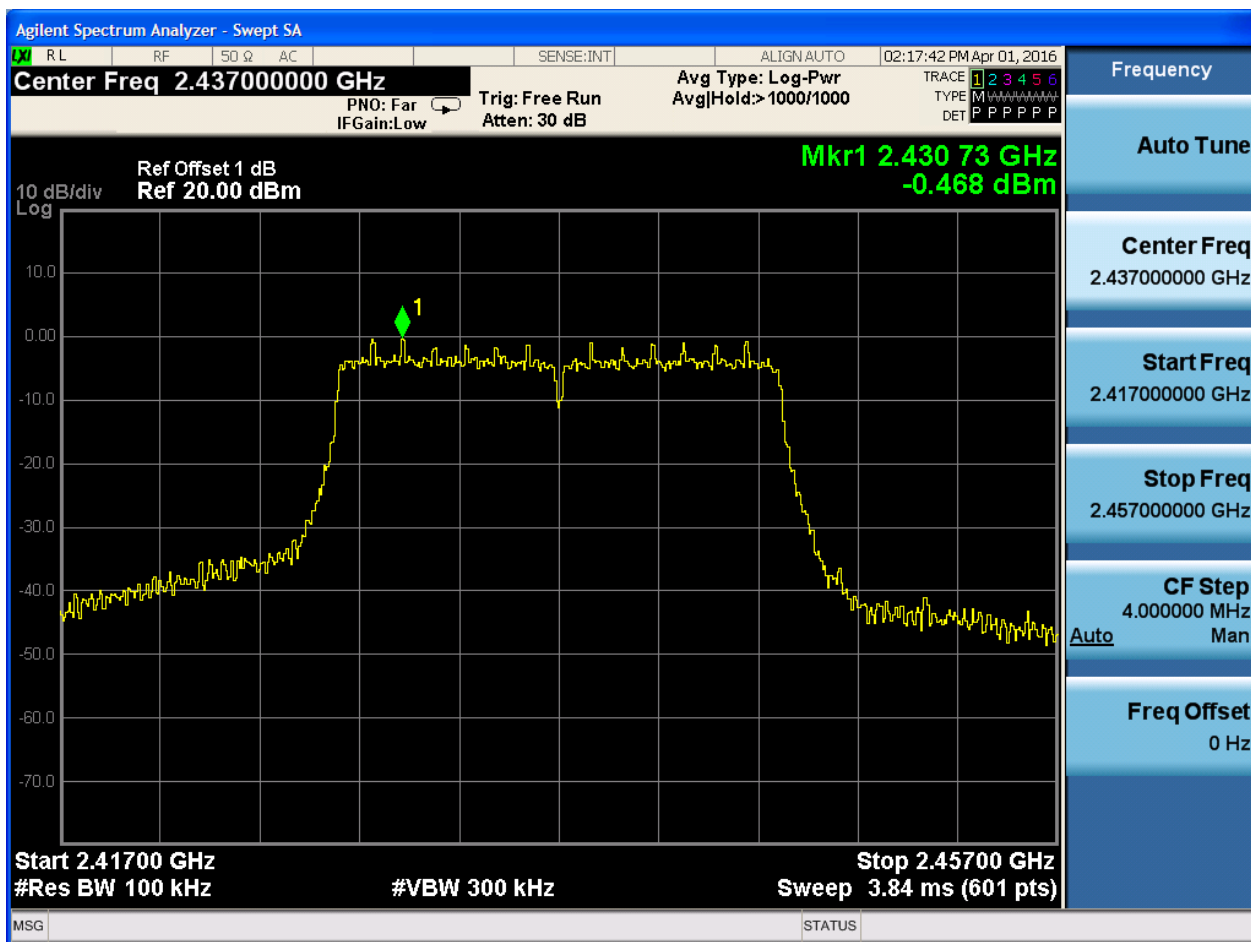






2.8 11N20_M@Ant 1

Pref:





Puw:

