



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.

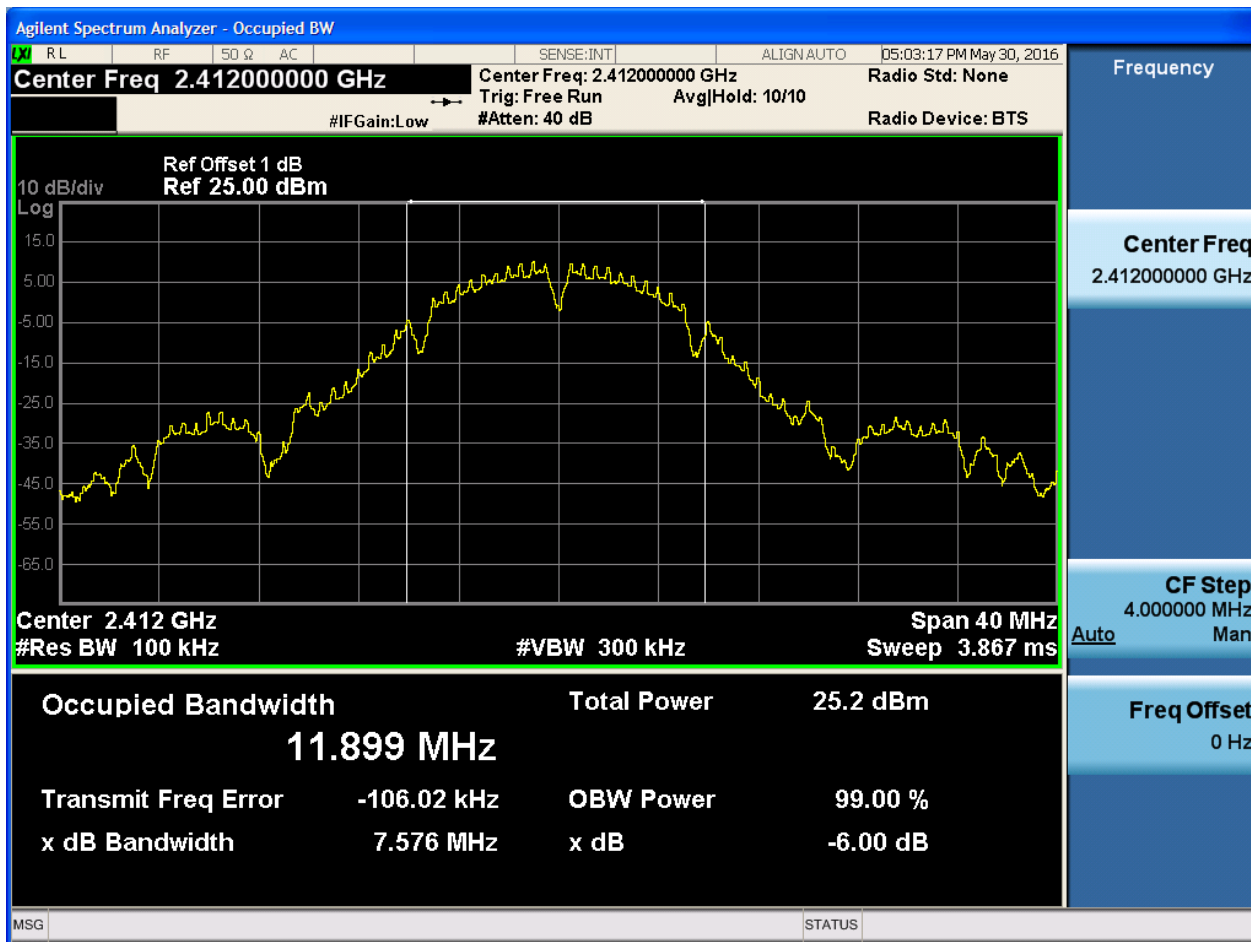
For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	DTS6dBBW[MHz]	Verdict
11B	L	2412	Ant 1	7.58	pass
11B	M	2437	Ant 1	7.13	pass
11B	H	2462	Ant 1	7.55	pass
11G	L	2412	Ant 1	15.97	pass
11G	M	2437	Ant 1	16.02	pass
11G	H	2462	Ant 1	16.07	pass
11N20	L	2412	Ant 1	16.37	pass
11N20	M	2437	Ant 1	16.04	pass
11N20	H	2462	Ant 1	15.72	pass

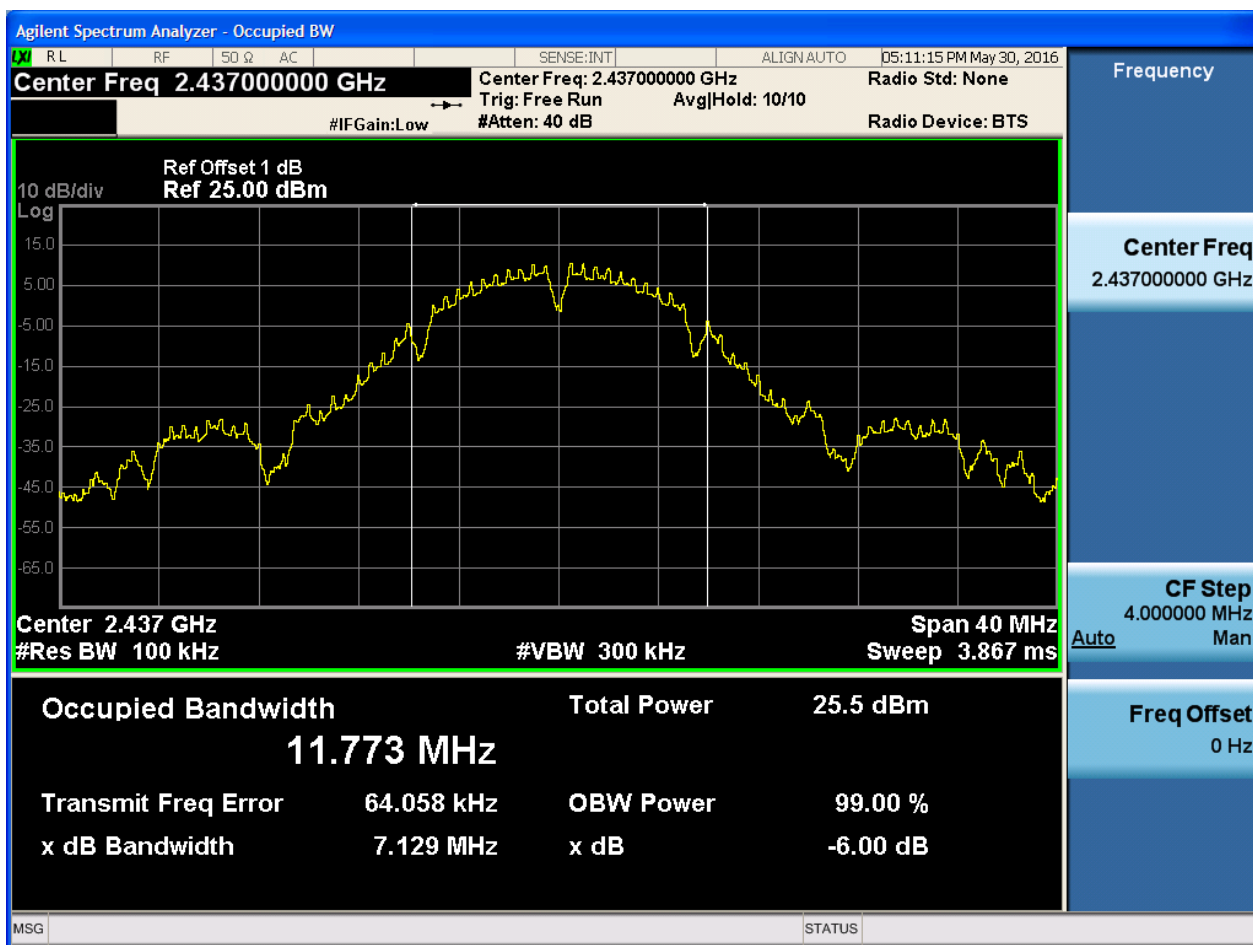
Part II - Test Plots

2.1 11B_L@Ant 1



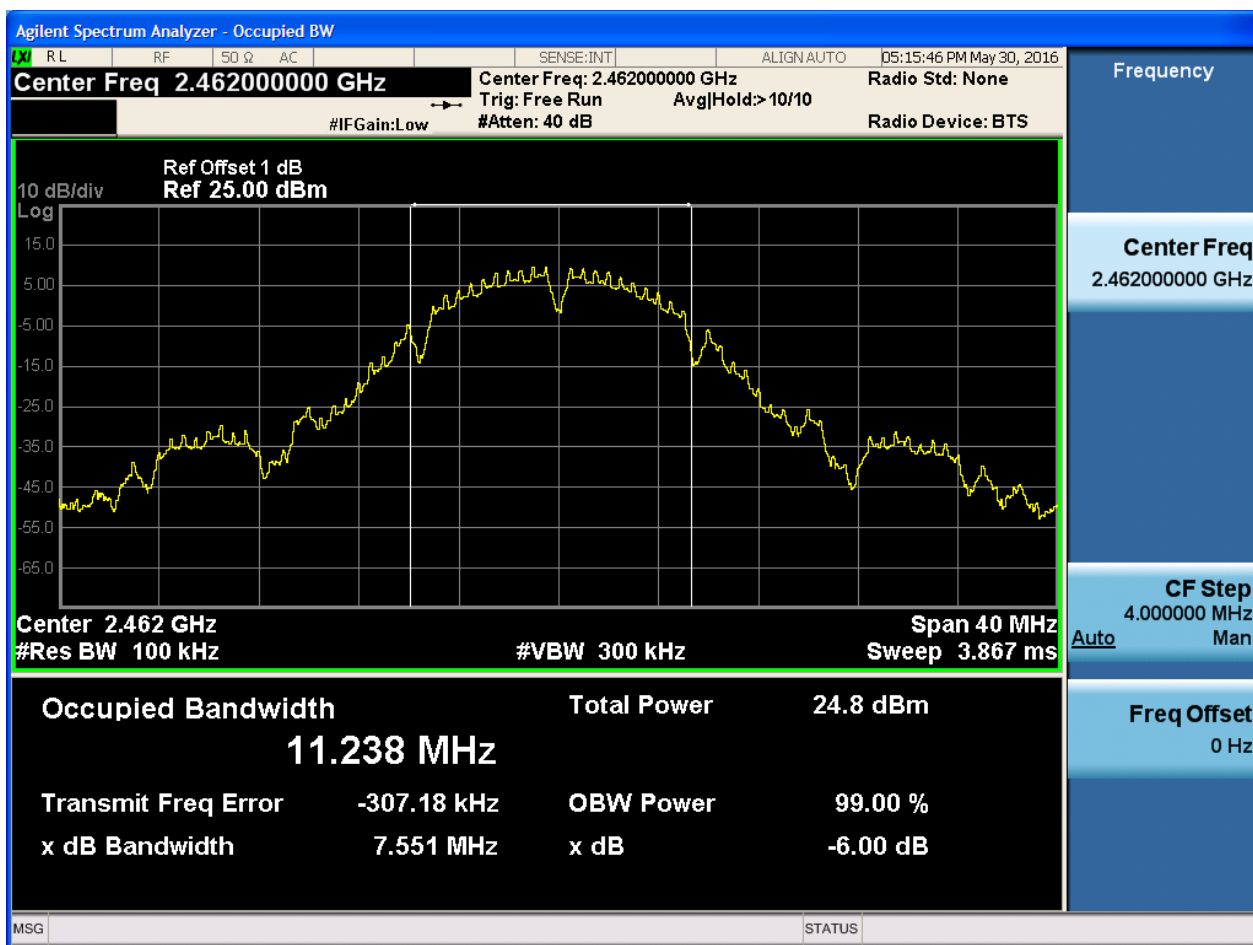


2.2 11B_M@Ant 1



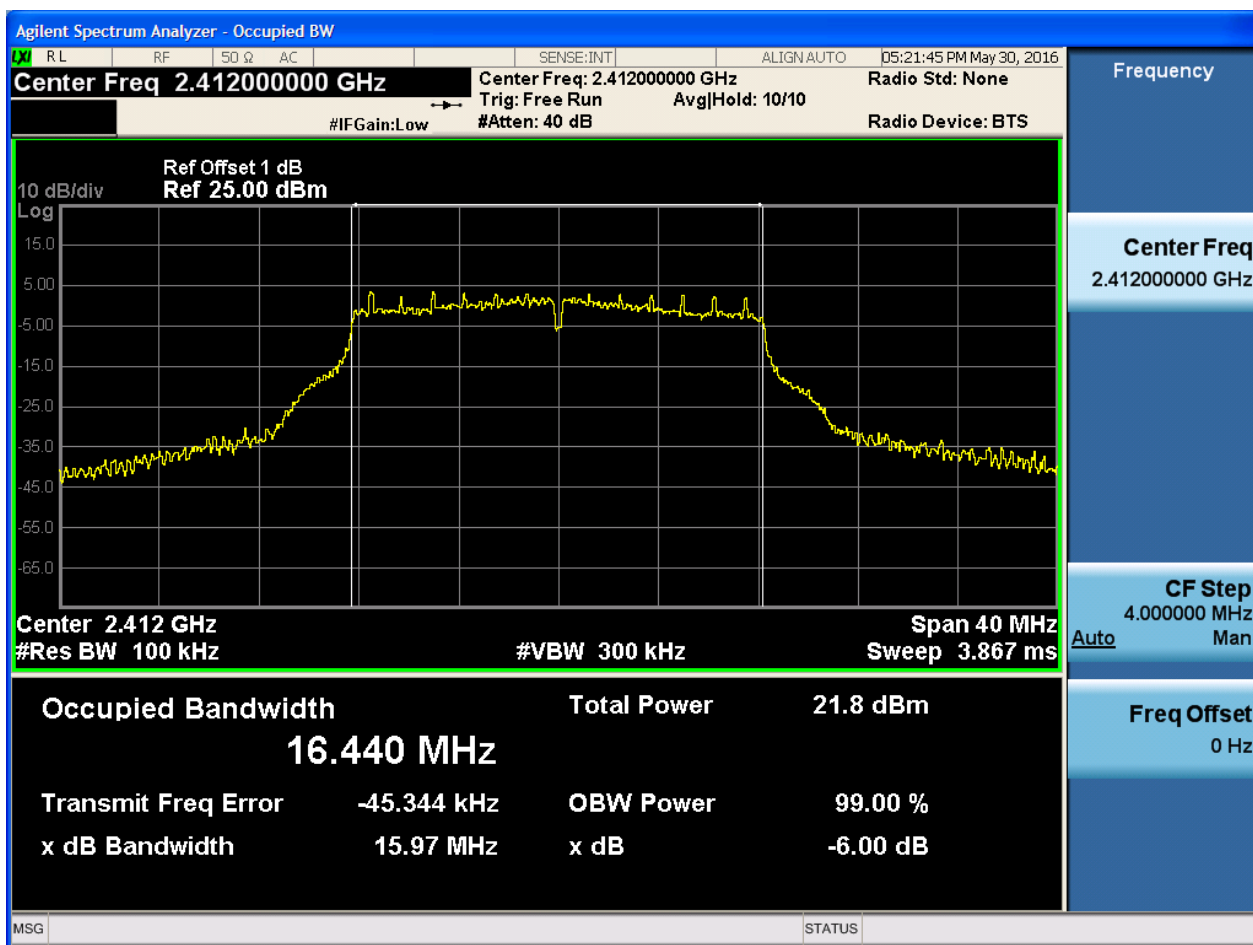


2.3 11B_H@Ant 1



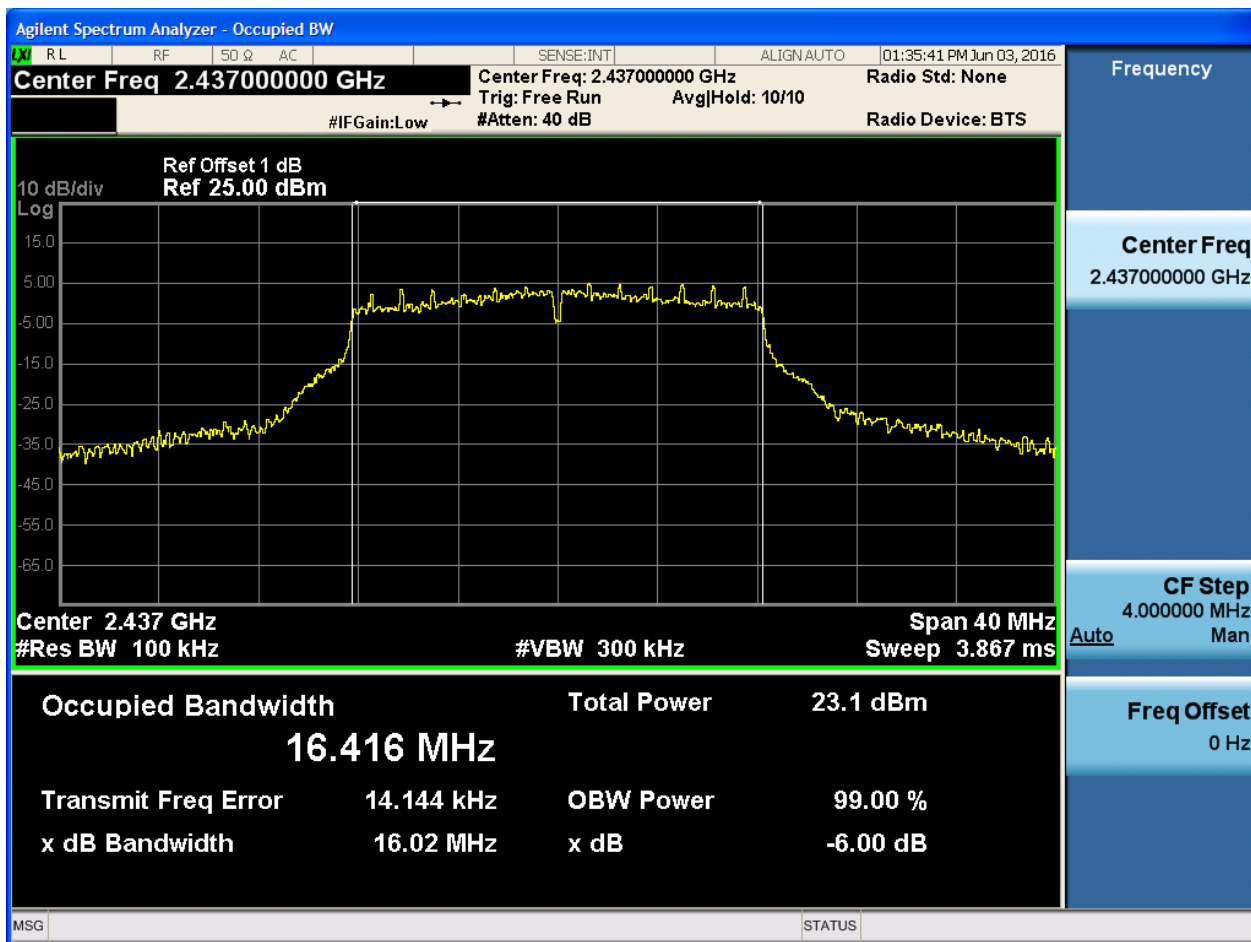


2.4 11G_L@Ant 1



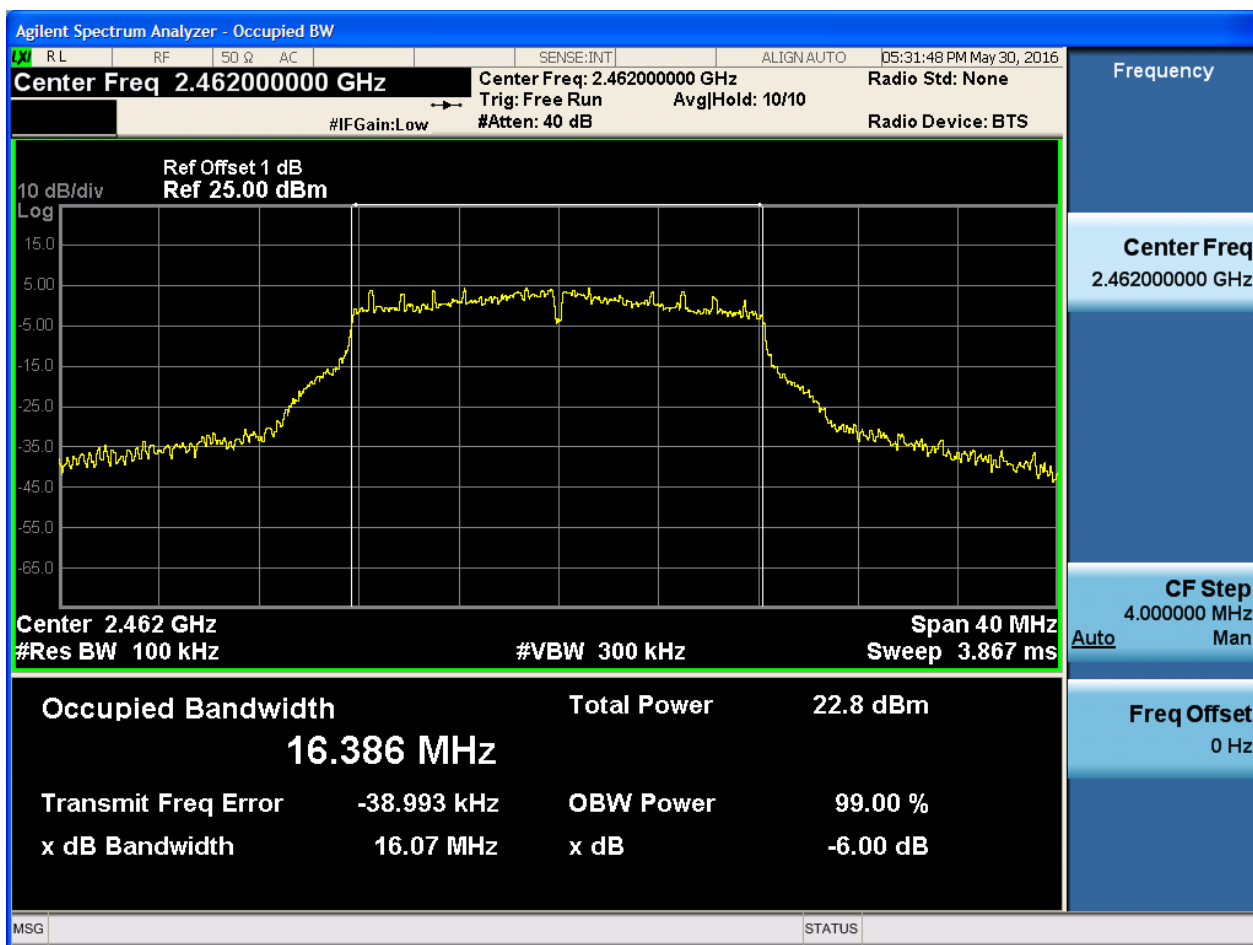


2.5 11G_M@Ant 1



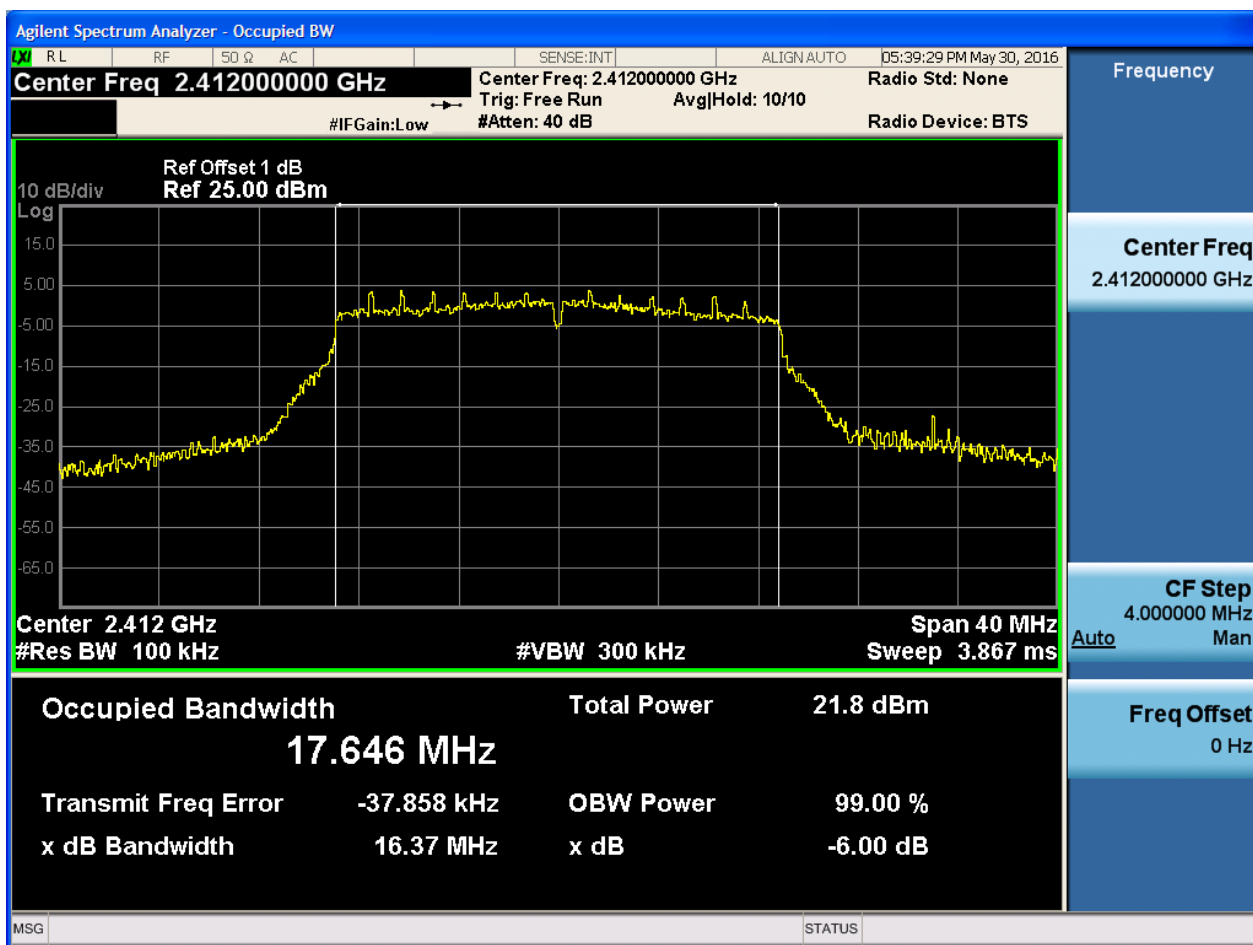


2.6 11G_H@Ant 1



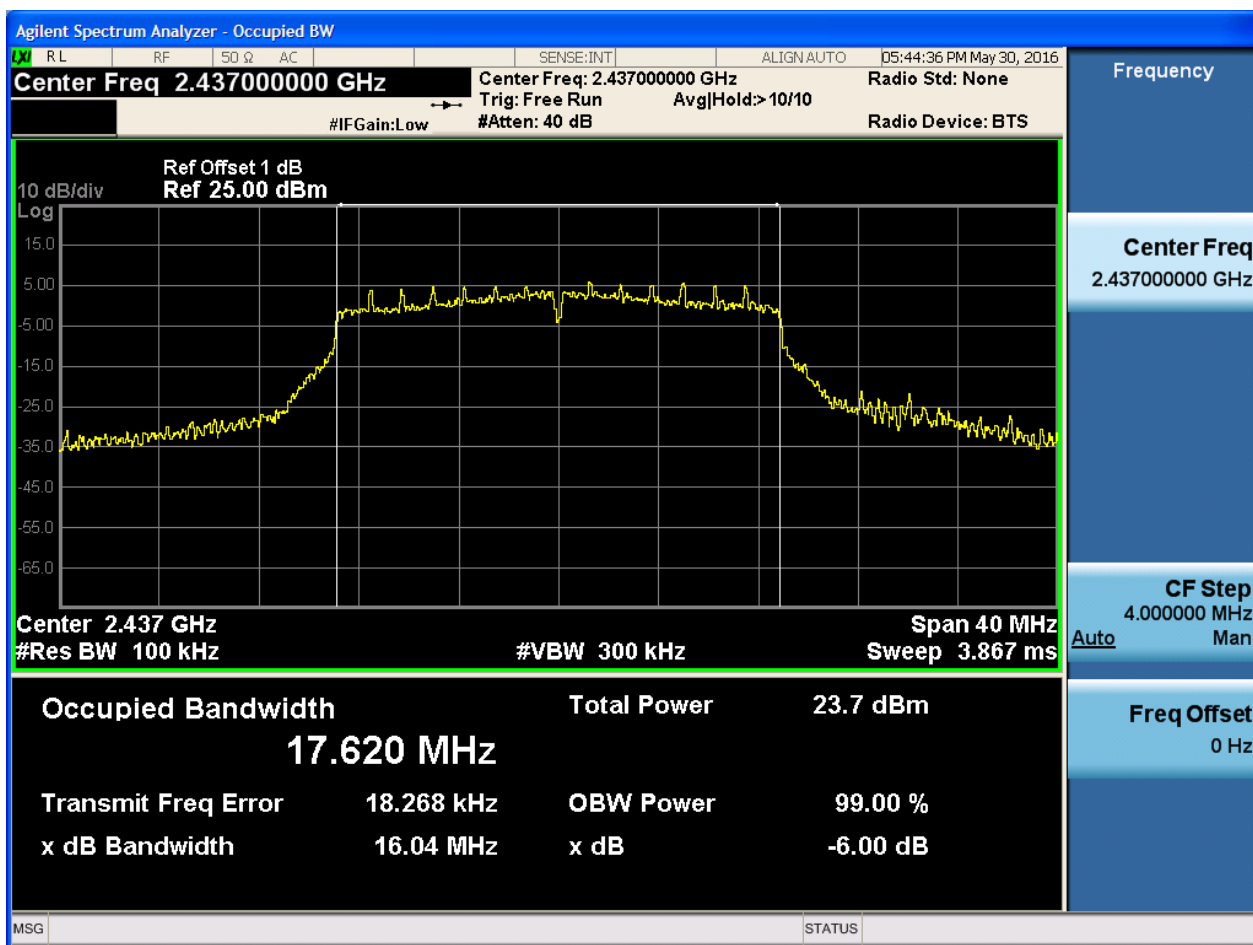


2.7 11N20_L@Ant 1



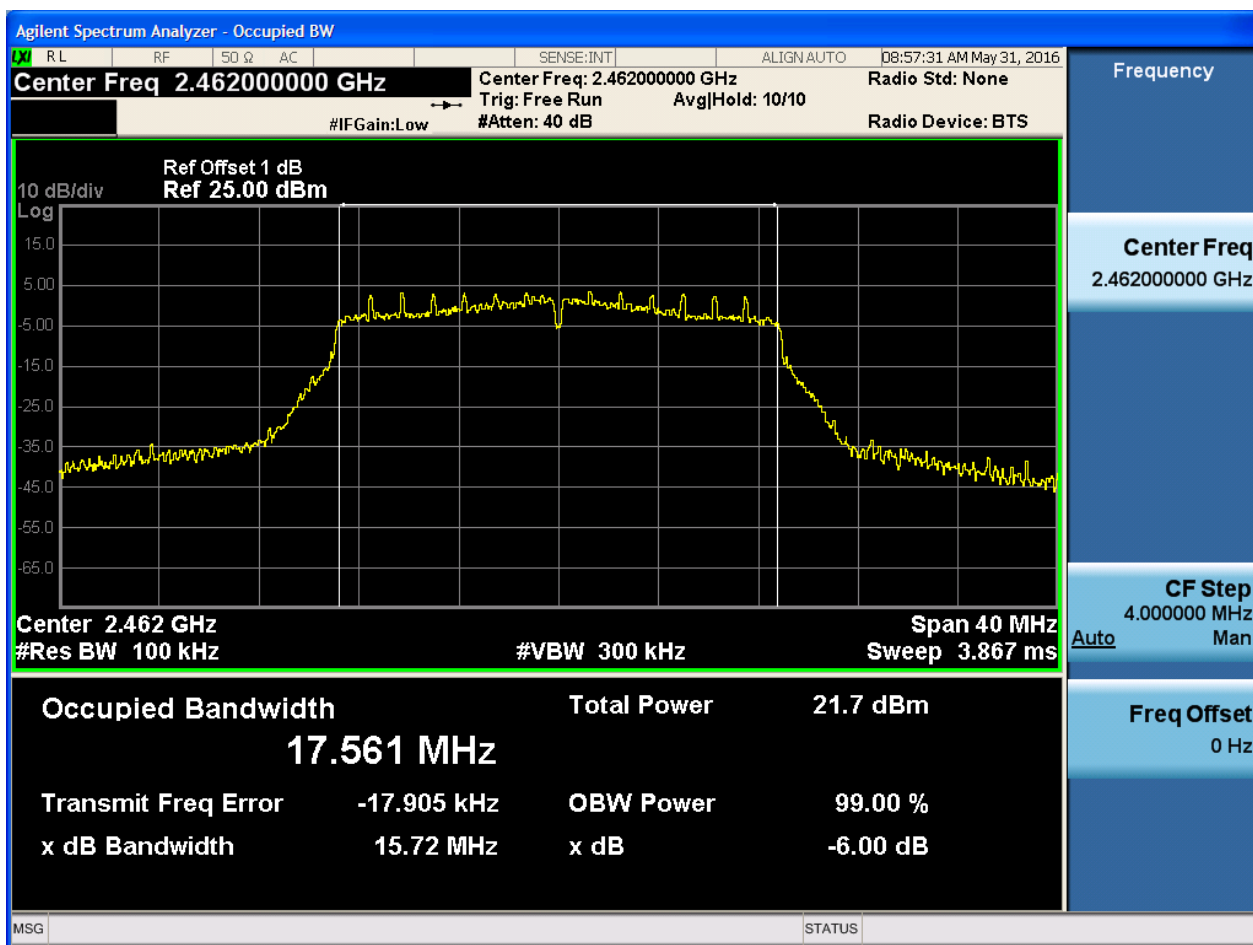


2.8 11N20_M@Ant 1





2.9 11N20_H@Ant 1



Appendix B: Occupied Bandwidth

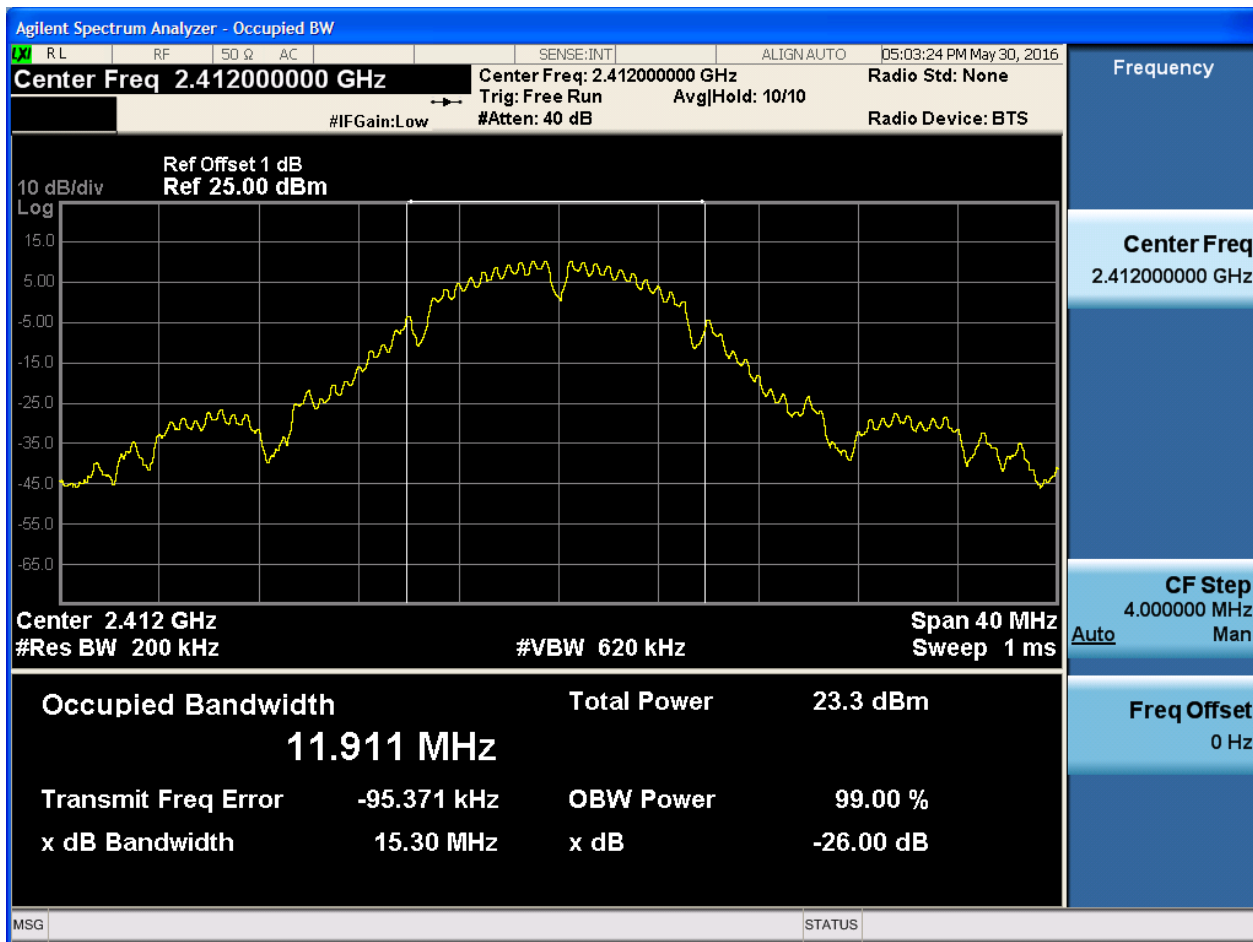
For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Occupied Bandwidth [MHz]	Verdict
11B	L	2412	Ant 1	11.91	pass
11B	M	2437	Ant 1	11.73	pass
11B	H	2462	Ant 1	11.50	pass
11G	L	2412	Ant 1	16.59	pass
11G	M	2437	Ant 1	16.58	pass
11G	H	2462	Ant 1	16.50	pass
11N20	L	2412	Ant 1	17.76	pass
11N20	M	2437	Ant 1	17.77	pass
11N20	H	2462	Ant 1	17.63	pass

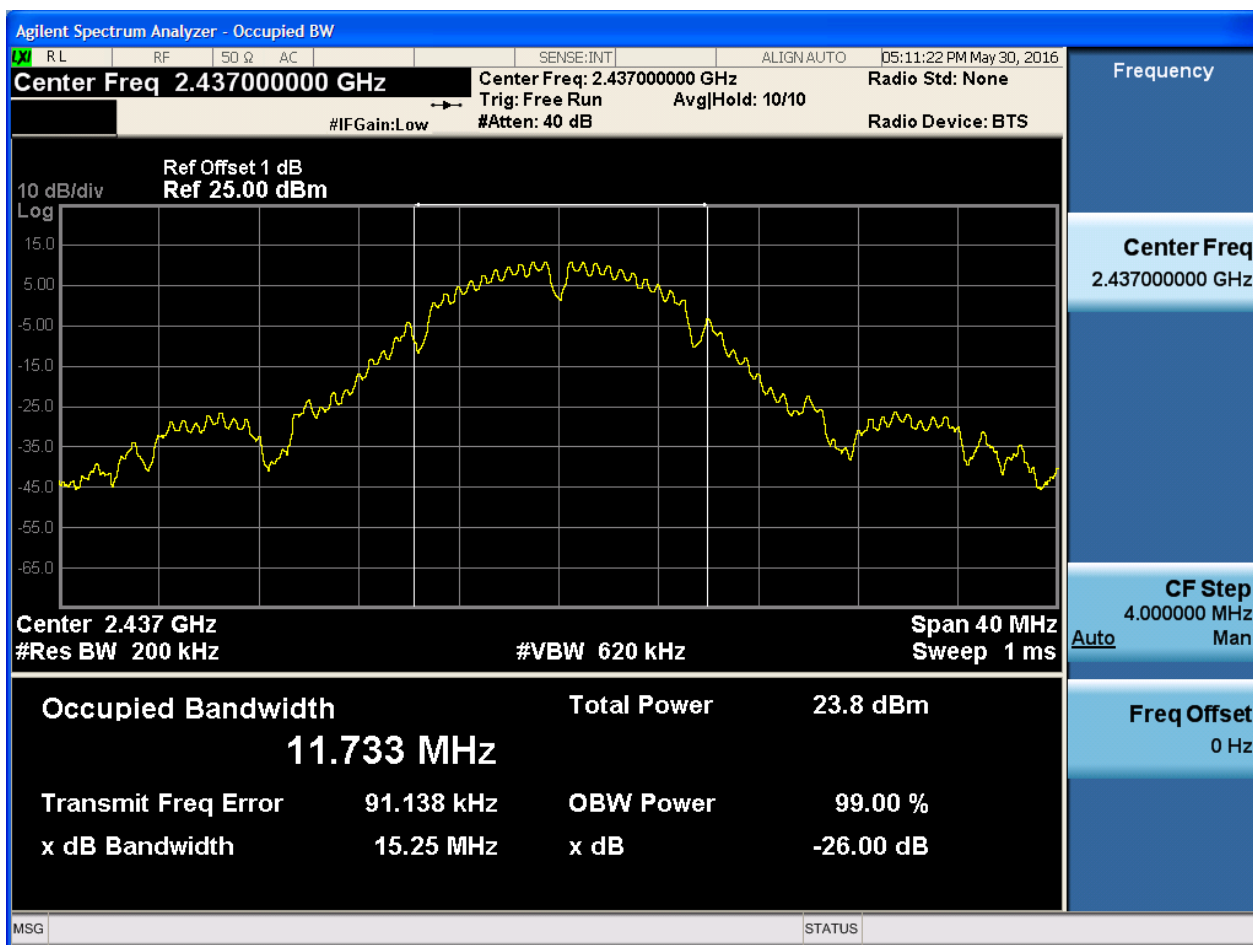
Part II - Test Plots

2.1 11B_L@Ant 1



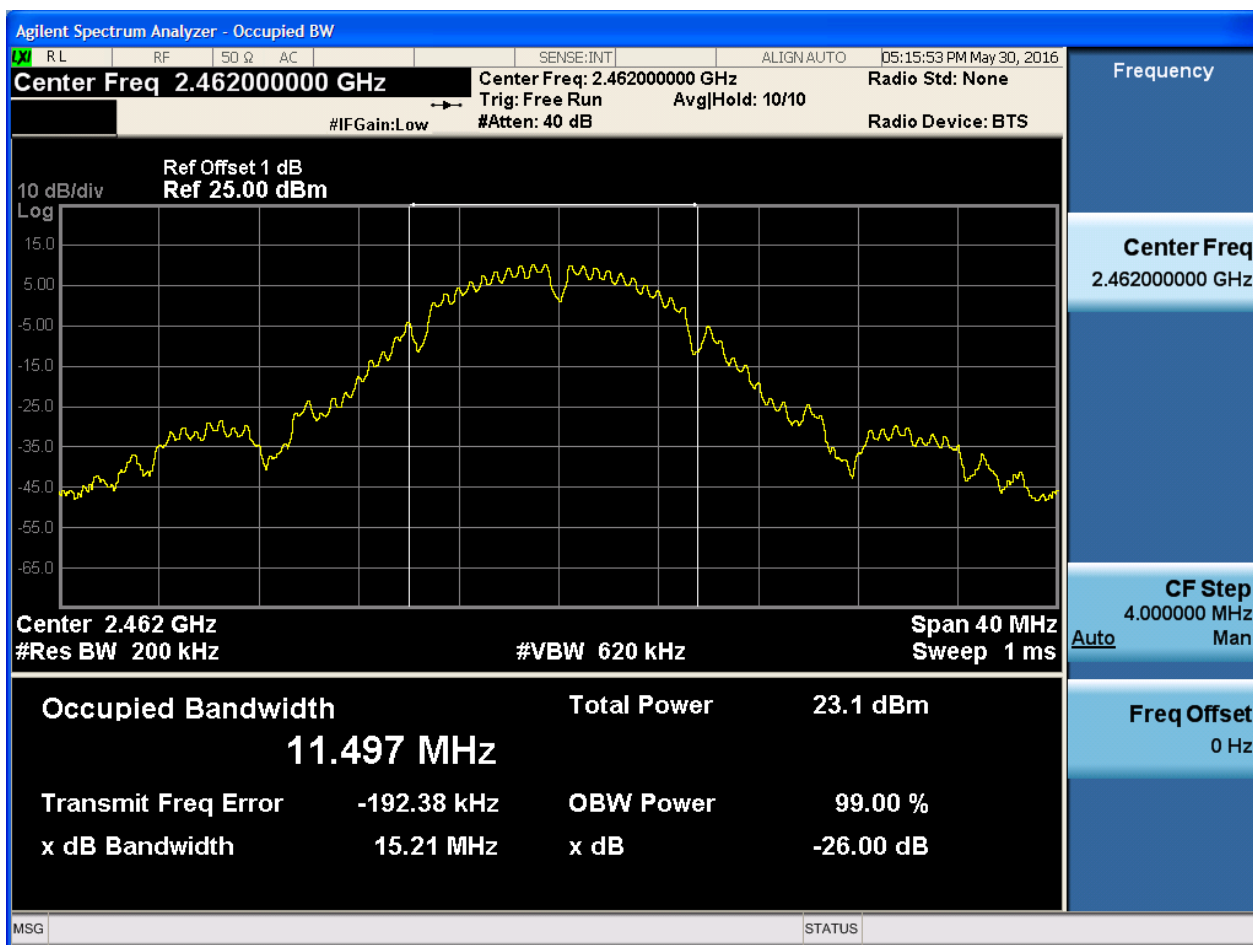


2.2 11B_M@Ant 1



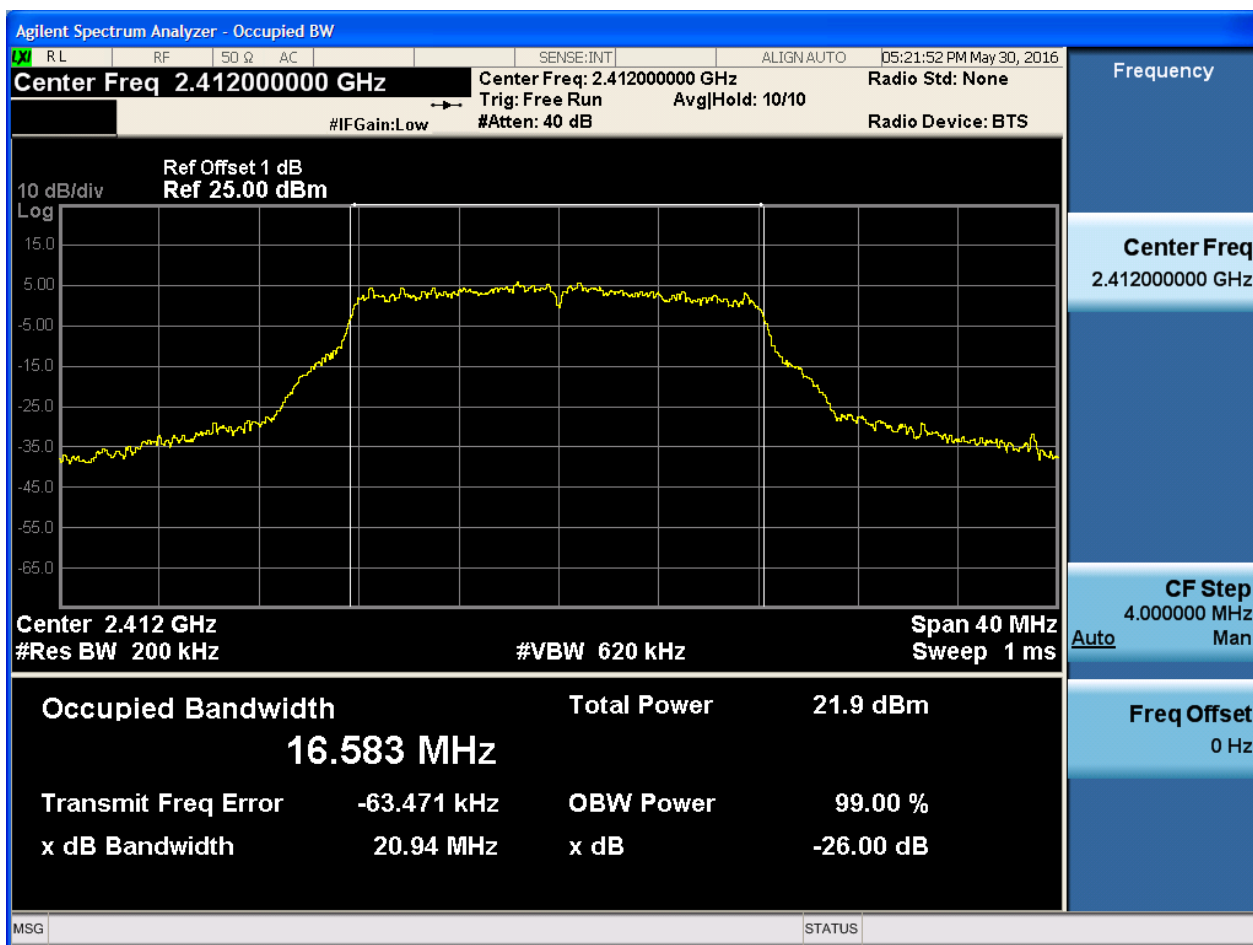


2.3 11B_H@Ant 1



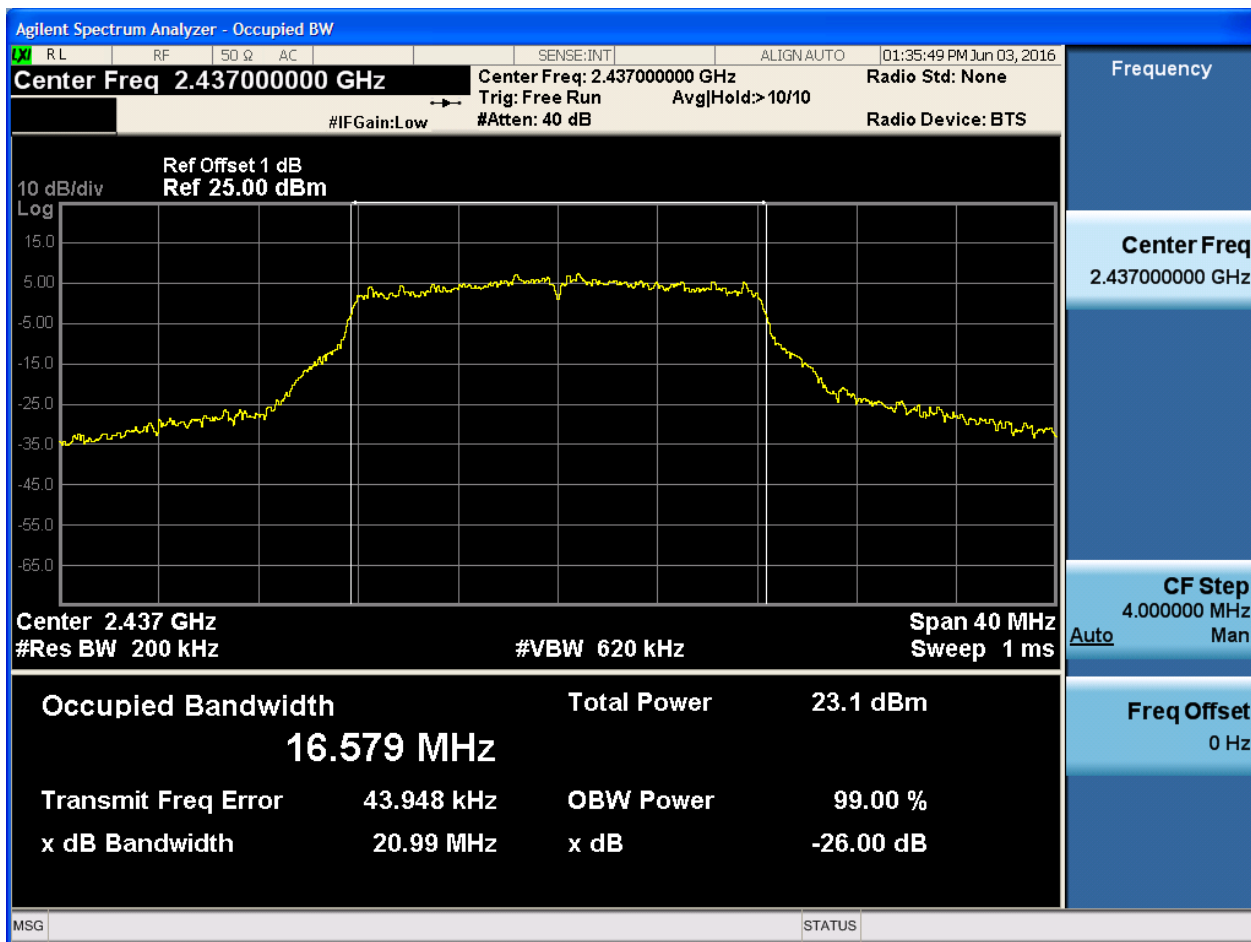


2.4 11G_L@Ant 1



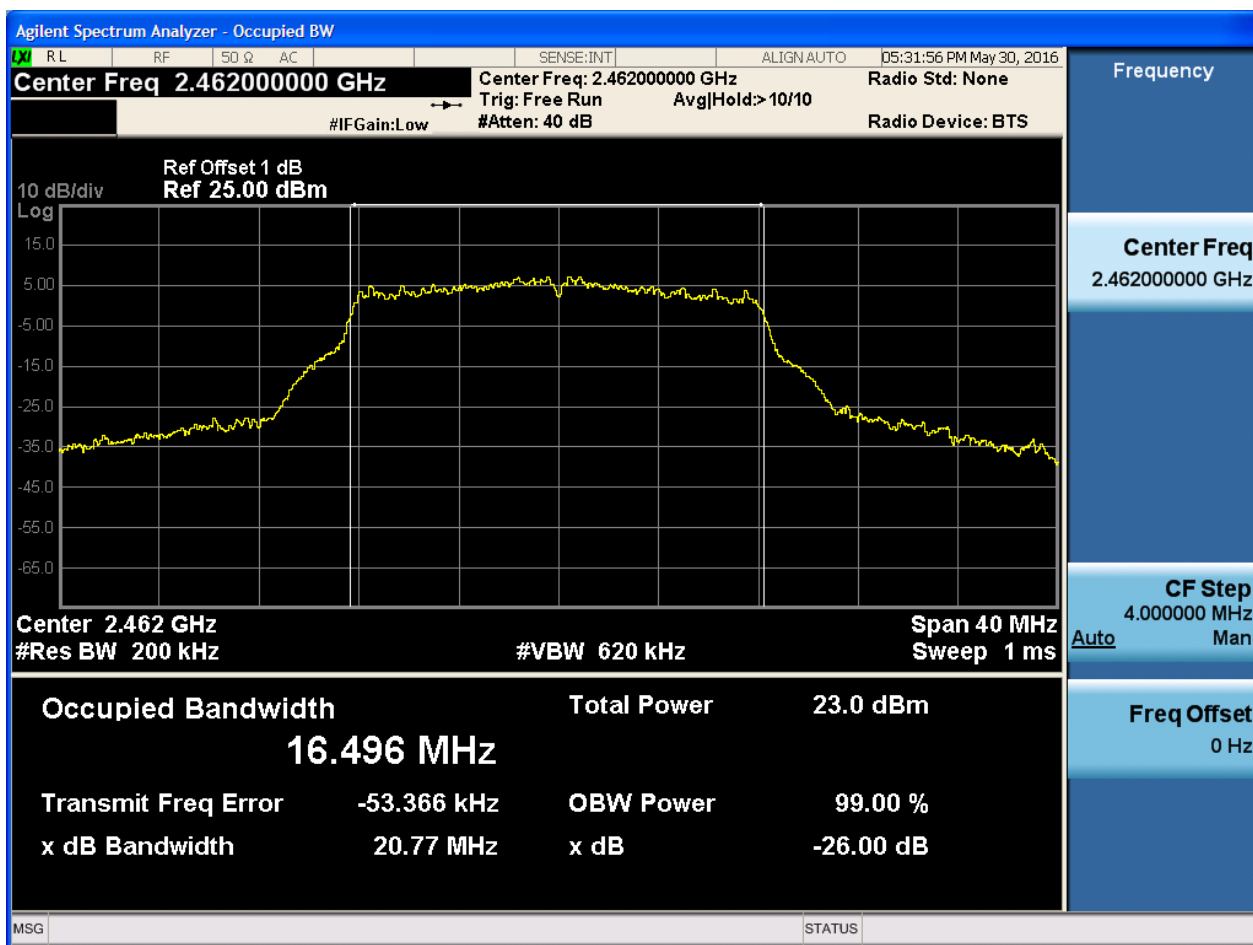


2.5 11G_M@Ant 1



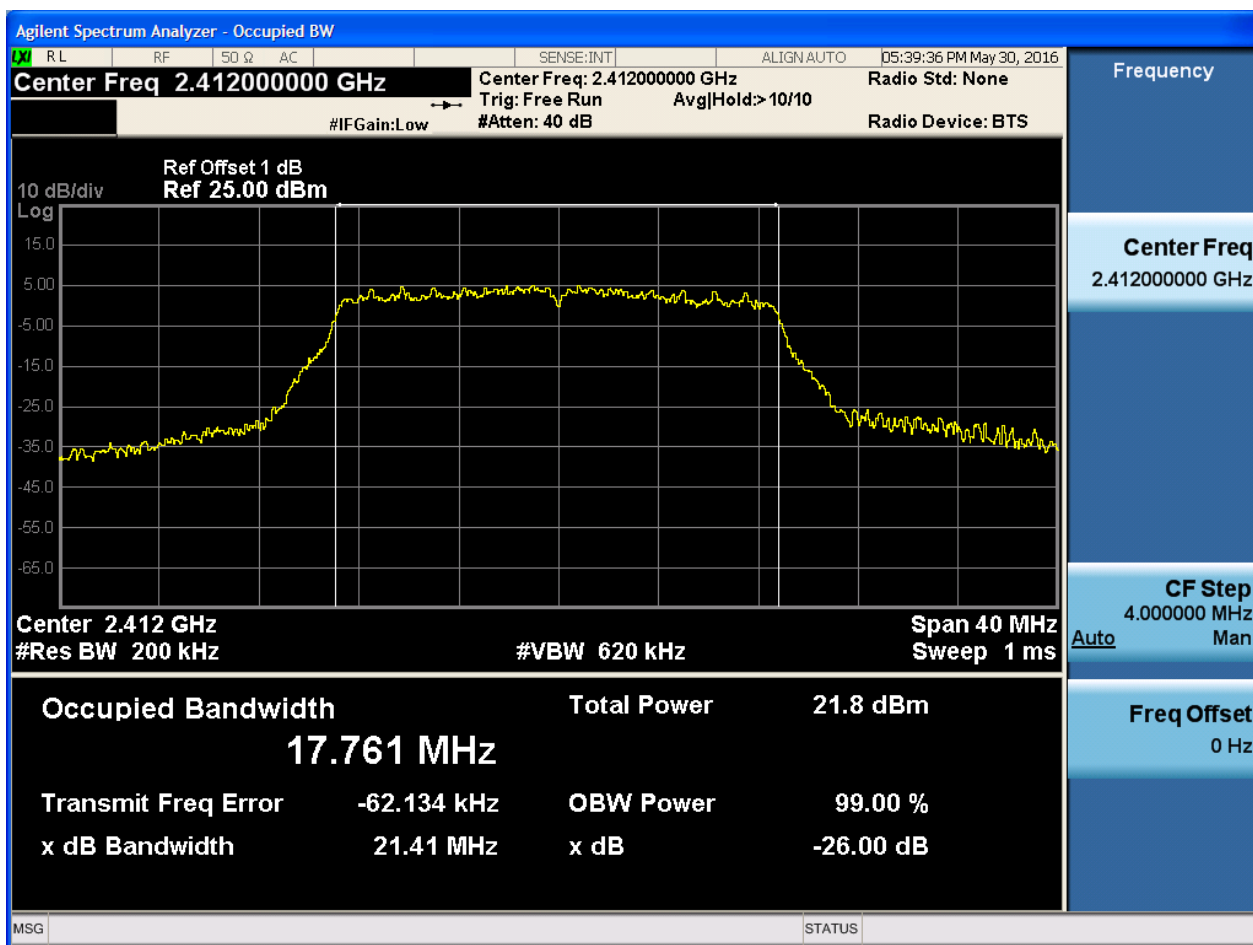


2.6 11G_H@Ant 1



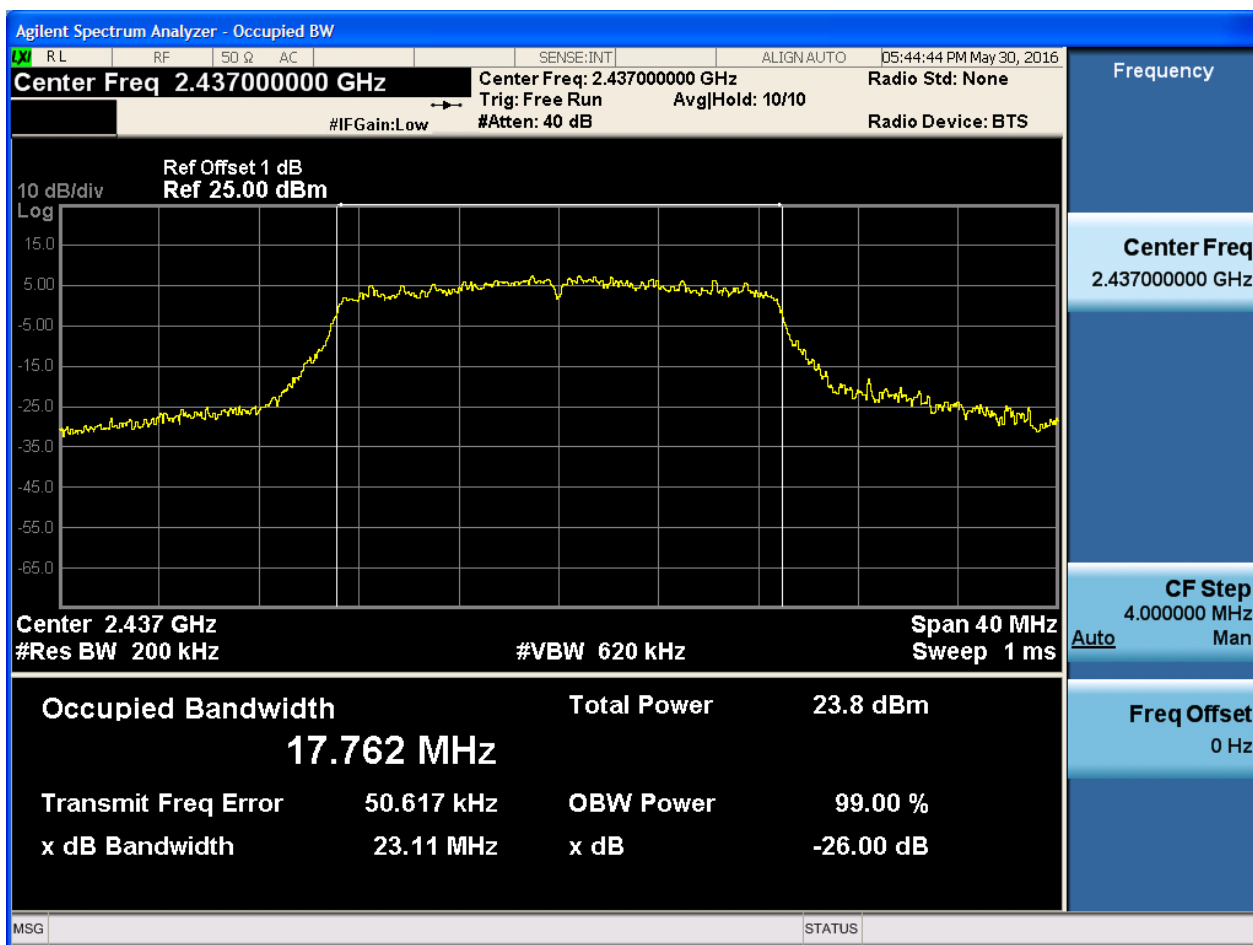


2.7 11N20_L@Ant 1



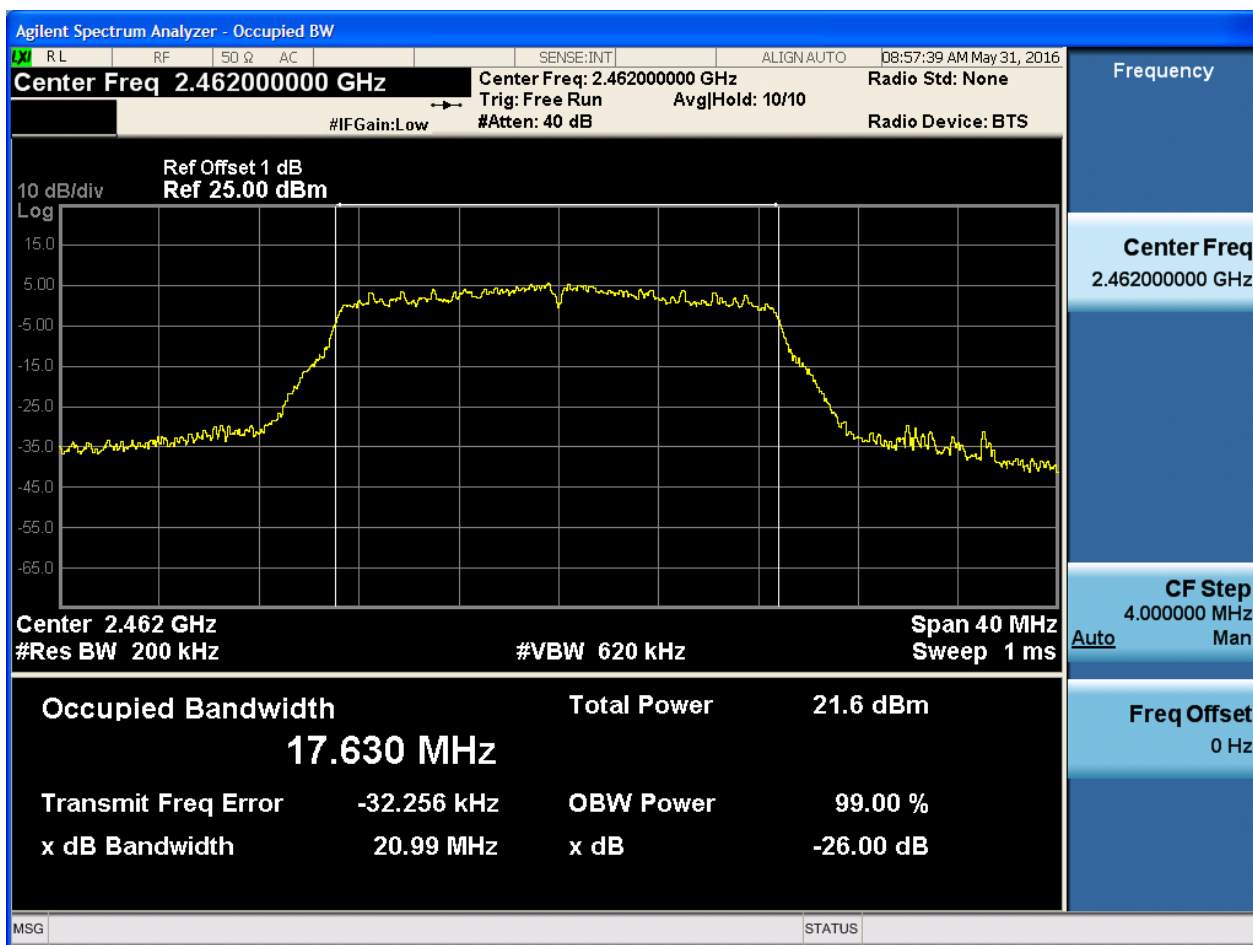


2.8 11N20_M@Ant 1





2.9 11N20_H@Ant 1



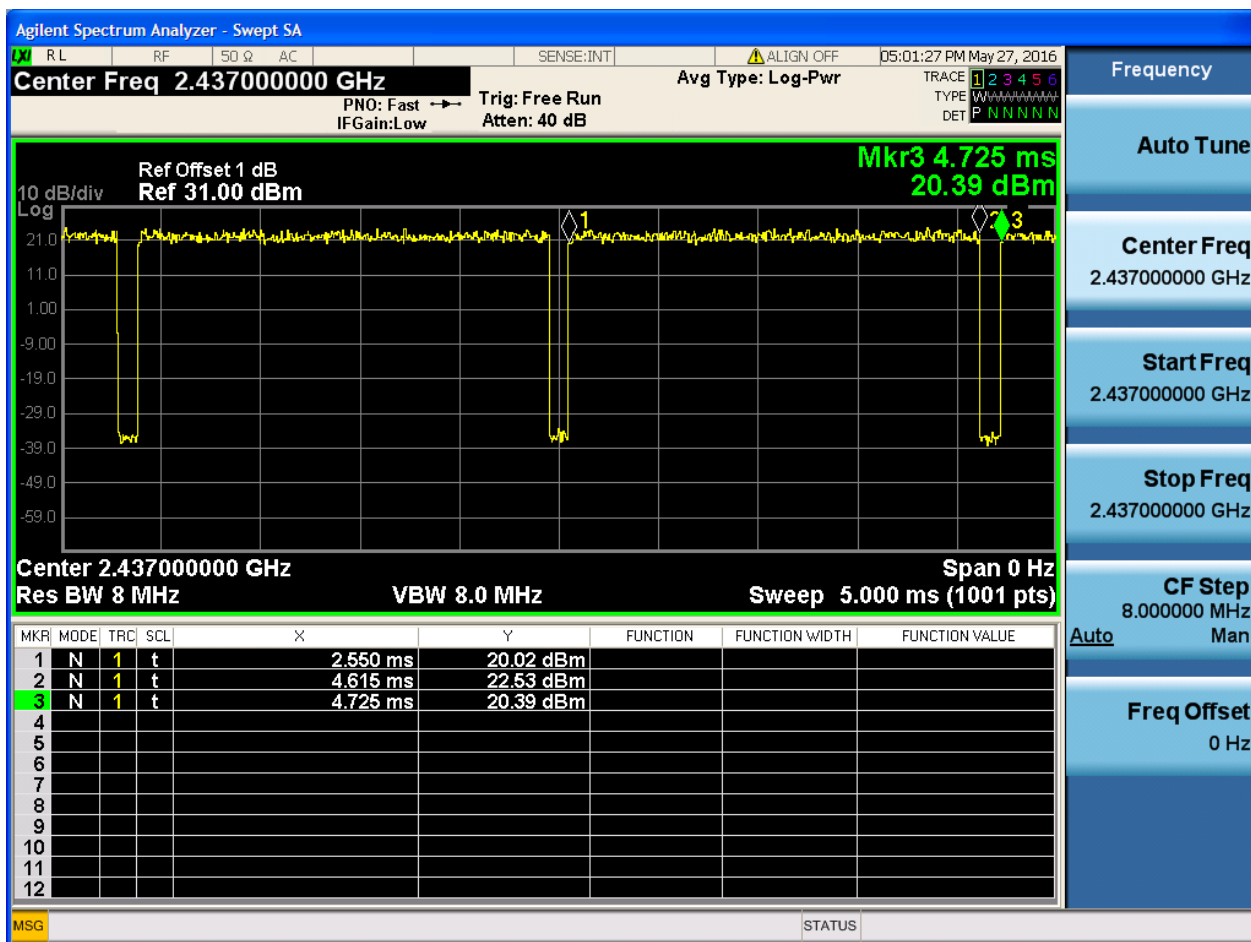
Appendix C: Duty Cycle

Part I - Test Results

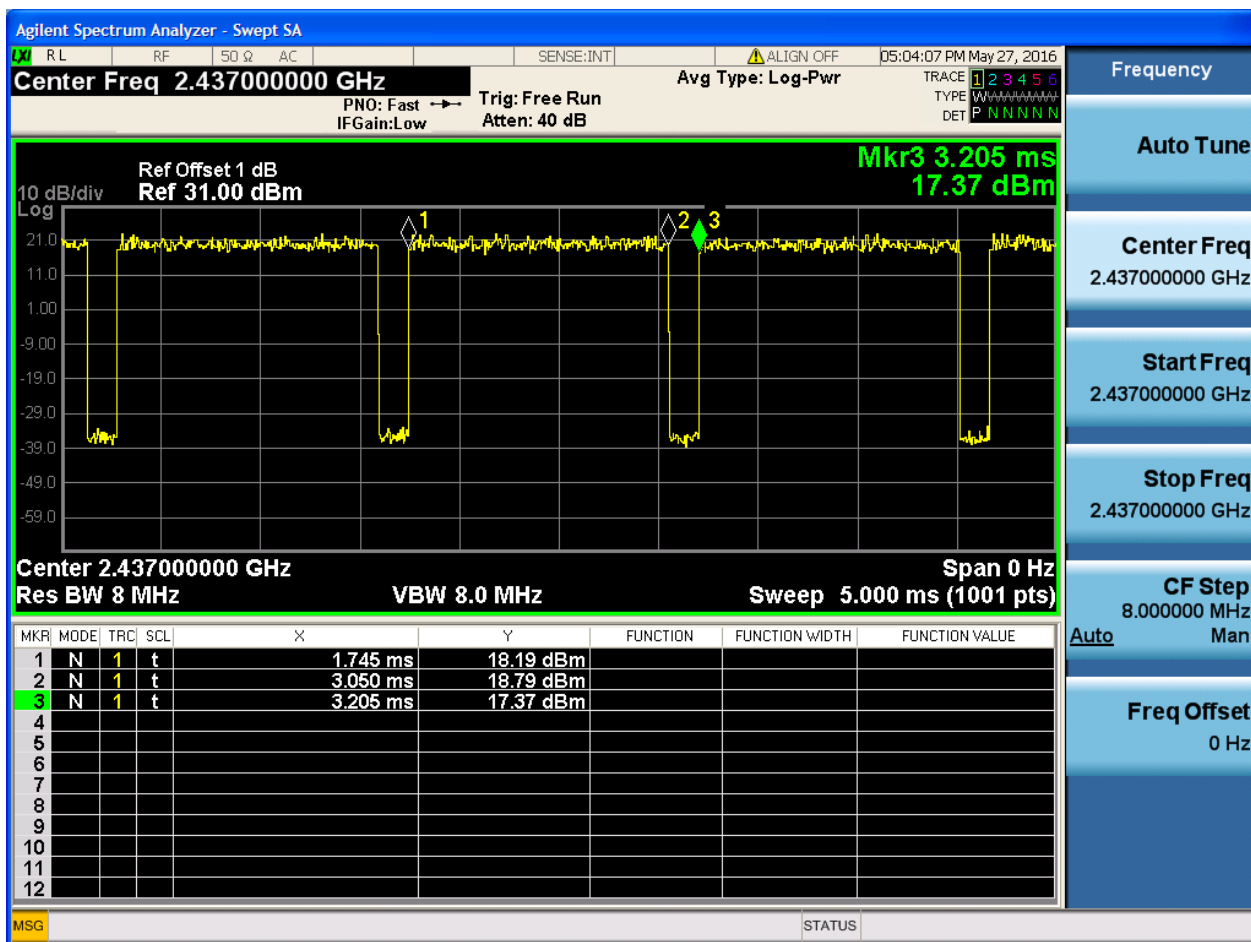
Test Mode	TX Freq. [MHz]	Duty cycle [%]
11B	Ant 1: CH1,CH6,CH11	98
11G	Ant 1: CH1,CH6,CH11	95
11N_20M_SISO	Ant 1: CH1,CH6,CH11	89



2.2 11G



2.3 11N20



Appendix D: Maximum Conducted Average Output Power

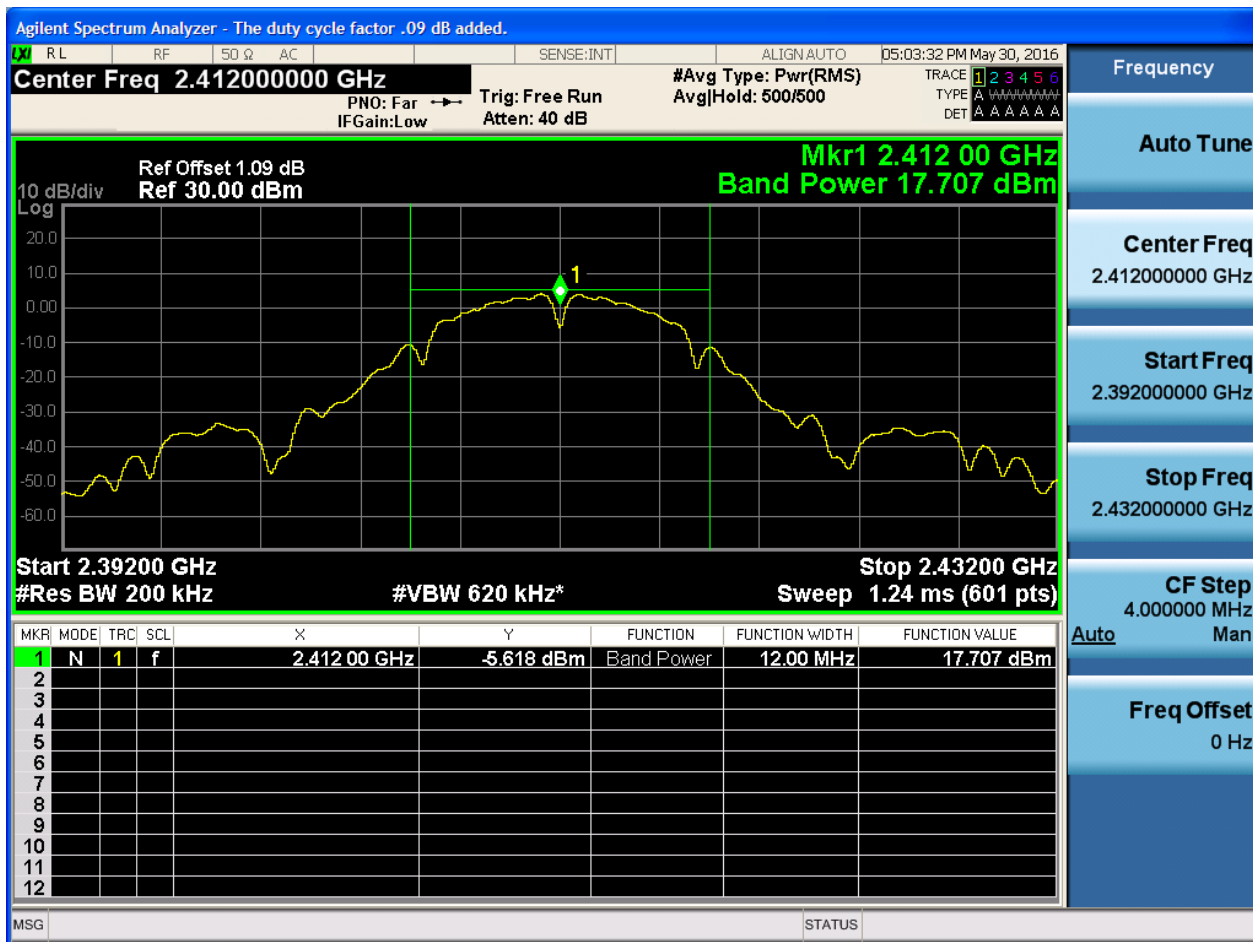
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Power[dBm]	Verdict
11B	L	2412	Ant 1	17.71	pass
11B	M	2437	Ant 1	18.32	pass
11B	H	2462	Ant 1	17.60	pass
11G	L	2412	Ant 1	14.80	pass
11G	M	2437	Ant 1	16.05	pass
11G	H	2462	Ant 1	15.90	pass
11N20	L	2412	Ant 1	14.59	pass
11N20	M	2437	Ant 1	16.57	pass
11N20	H	2462	Ant 1	14.40	pass



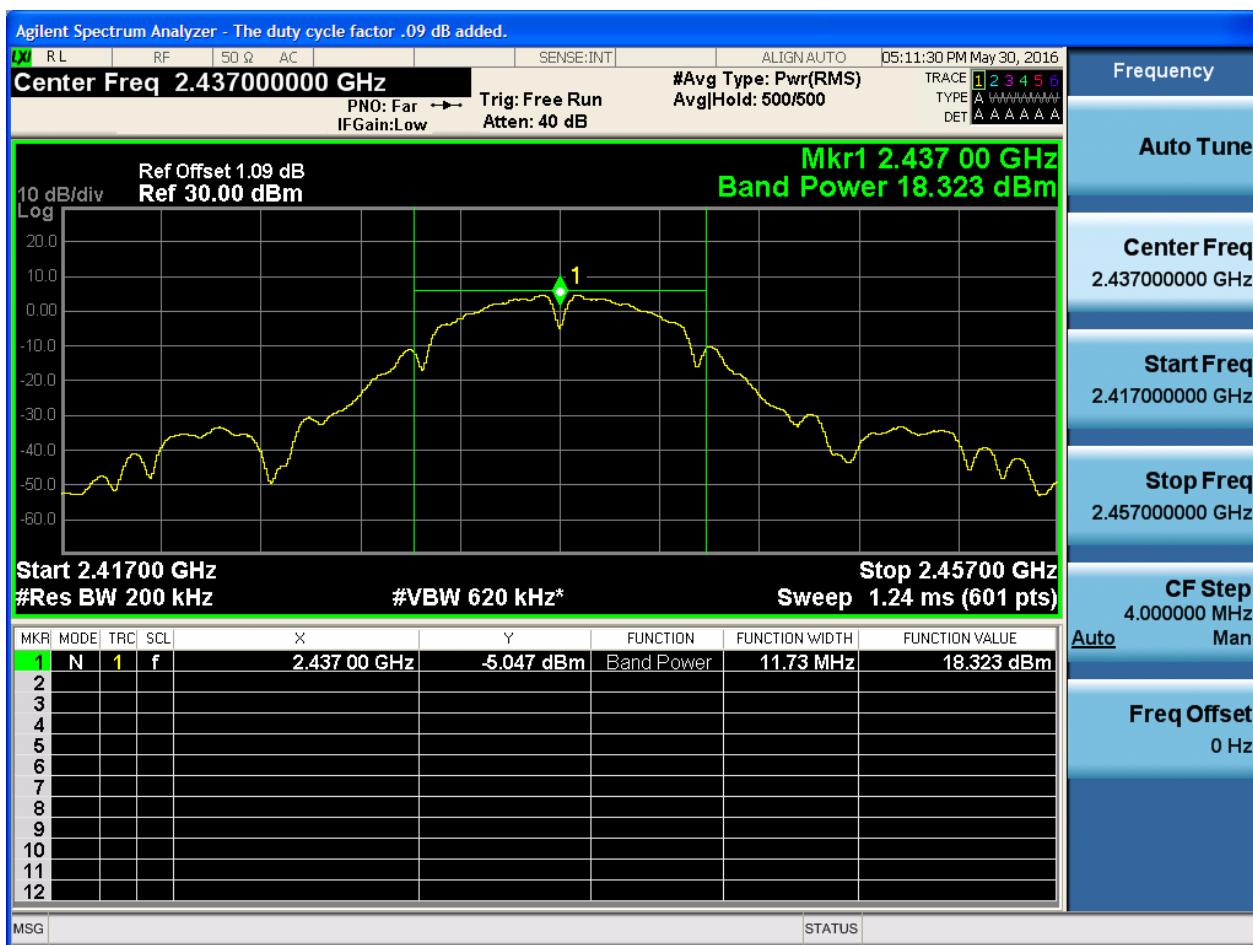
Part II - Test Plots

2.1 11B_L@Ant 1





2.2 11B_M@Ant 1





Agilent Spectrum Analyzer - The duty cycle factor .09 dB added.

Center Freq 2.46200000 GHz

Ref Offset 1.09 dB
Ref 30.00 dBm

Mkr1 2.462 00 GHz
Band Power 17.597 dBm

Start 2.44200 GHz
#Res BW 200 kHz

Stop 2.48200 GHz
Sweep 1.24 ms (601 pts)

#VBW 620 kHz*

Trig: Free Run
Atten: 40 dB

PNO: Far
IFGain:Low

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

Auto

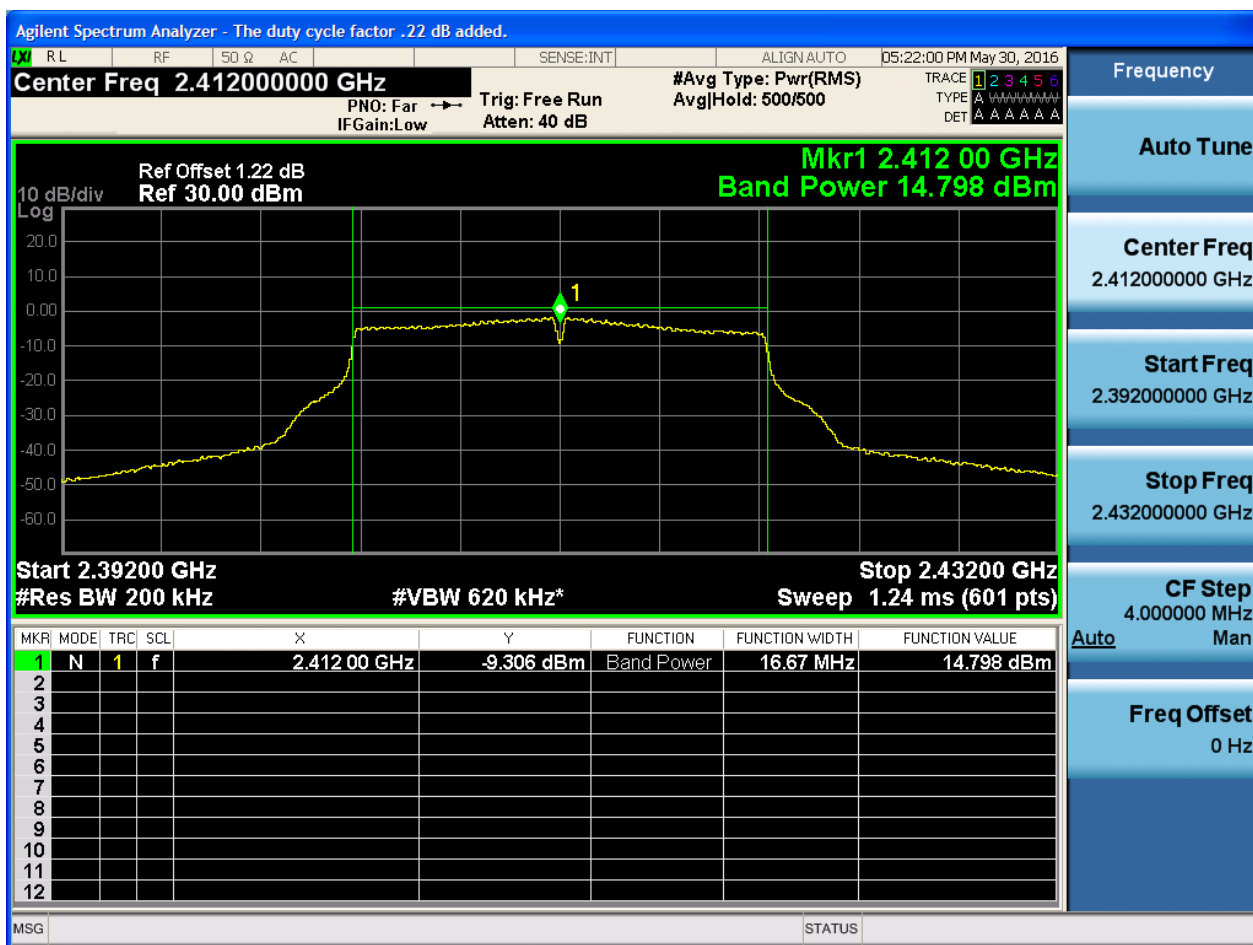
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.462 00 GHz	-5.482 dBm	Band Power	11.60 MHz	17.597 dBm
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

MSG

STATUS

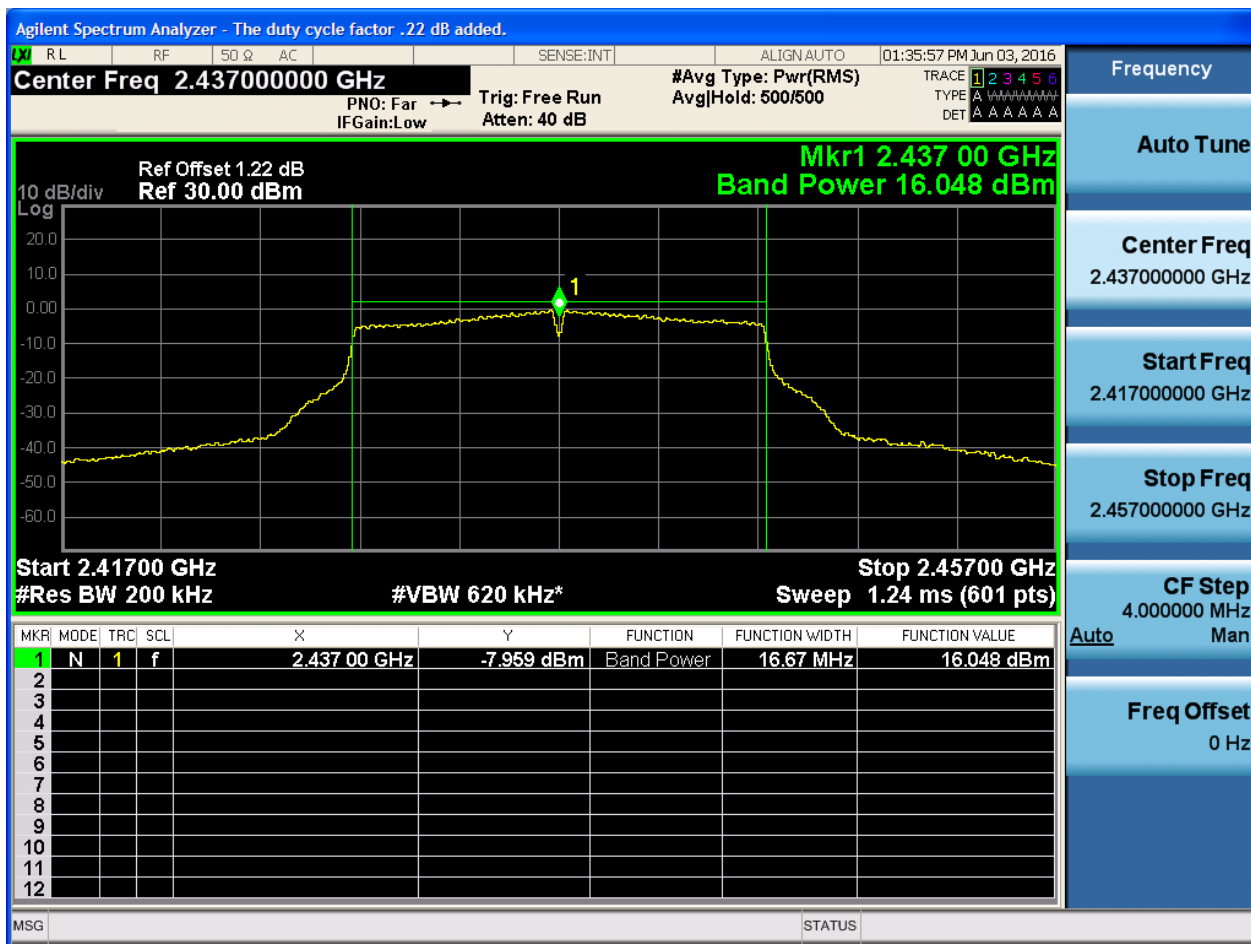


2.4 11G_L@Ant 1





2.5 11G_M@Ant 1





Agilent Spectrum Analyzer - The duty cycle factor .22 dB added.

Center Freq 2.46200000 GHz #Avg Type: Pwr(RMS) TRACE 1 2 3 4 5 6
 PNO: Far → Trig: Free Run Avg/Hold: 500/500
 IFGain:Low Atten: 40 dB TYPE A WWWWWWWW
 DET A A A A A A

Ref Offset 1.22 dB
 Ref 30.00 dBm

Mkr1 2.462 00 GHz
 Band Power 15.902 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	-7.252 dBm	Band Power	16.53 MHz	15.902 dBm
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

MSG STATUS

Frequency
Auto Tune
Center Freq
 2.462000000 GHz
Start Freq
 2.442000000 GHz
Stop Freq
 2.482000000 GHz
CF Step
 4.000000 MHz
 Man
Auto
Freq Offset
 0 Hz



Agilent Spectrum Analyzer - The duty cycle factor .51 dB added.

[X] RL	RF	50 Ω AC	SENSE:INT	ALIGN:AUTO	D5:39:44 PM May 30, 2016
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Center Freq 2.41200000 GHz #Avg Type: Pwr(RMS) TRACE 1 2 3 4 5 6
 PNO: Far → Trig: Free Run Avg|Hold: 500/500 TYPE A WWWWWWWW
 IFGain:Low Atten: 40 dB DET A A A A A A

Ref Offset 1.51 dB
 Ref 30.00 dBm

Mkr1 2.412 00 GHz
 Band Power 14.586 dBm

Start 2.39200 GHz Stop 2.43200 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	2.412 00 GHz	-9.936 dBm	Band Power	17.87 MHz	14.586 dBm
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

MSG STATUS

Frequency Auto Tune Center Freq 2.41200000 GHz Start Freq 2.392000000 GHz Stop Freq 2.432000000 GHz CF Step 4.000000 MHz Man Freq Offset 0 Hz



Agilent Spectrum Analyzer - The duty cycle factor .51 dB added.

Center Freq 2.43700000 GHz #Avg Type: Pwr(RMS) Avg|Hold: 500/500

Ref Offset 1.51 dB Ref 30.00 dBm

10 dB/div Log

Mkr1 2.437 00 GHz Band Power 16.573 dBm

Start 2.41700 GHz #Res BW 200 kHz #VBW 620 kHz* Stop 2.45700 GHz Sweep 1.24 ms (601 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.437 00 GHz	-7.699 dBm	Band Power	17.87 MHz	16.573 dBm
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

Frequency

Auto Tune

Center Freq 2.43700000 GHz

Start Freq 2.41700000 GHz

Stop Freq 2.45700000 GHz

CF Step 4.000000 MHz

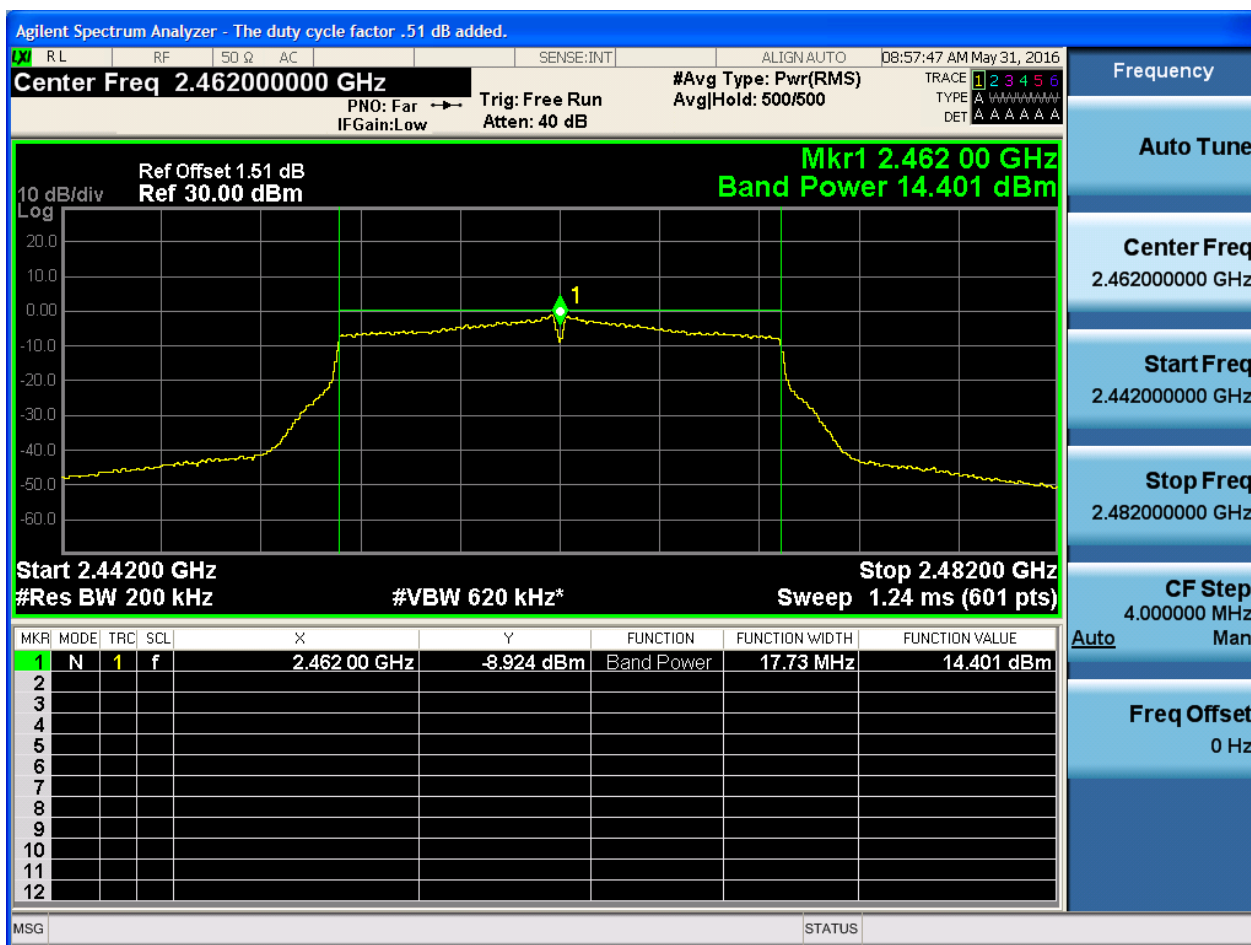
Auto Man

Freq Offset 0 Hz

MSG STATUS



2.9 11N20_H@Ant 1



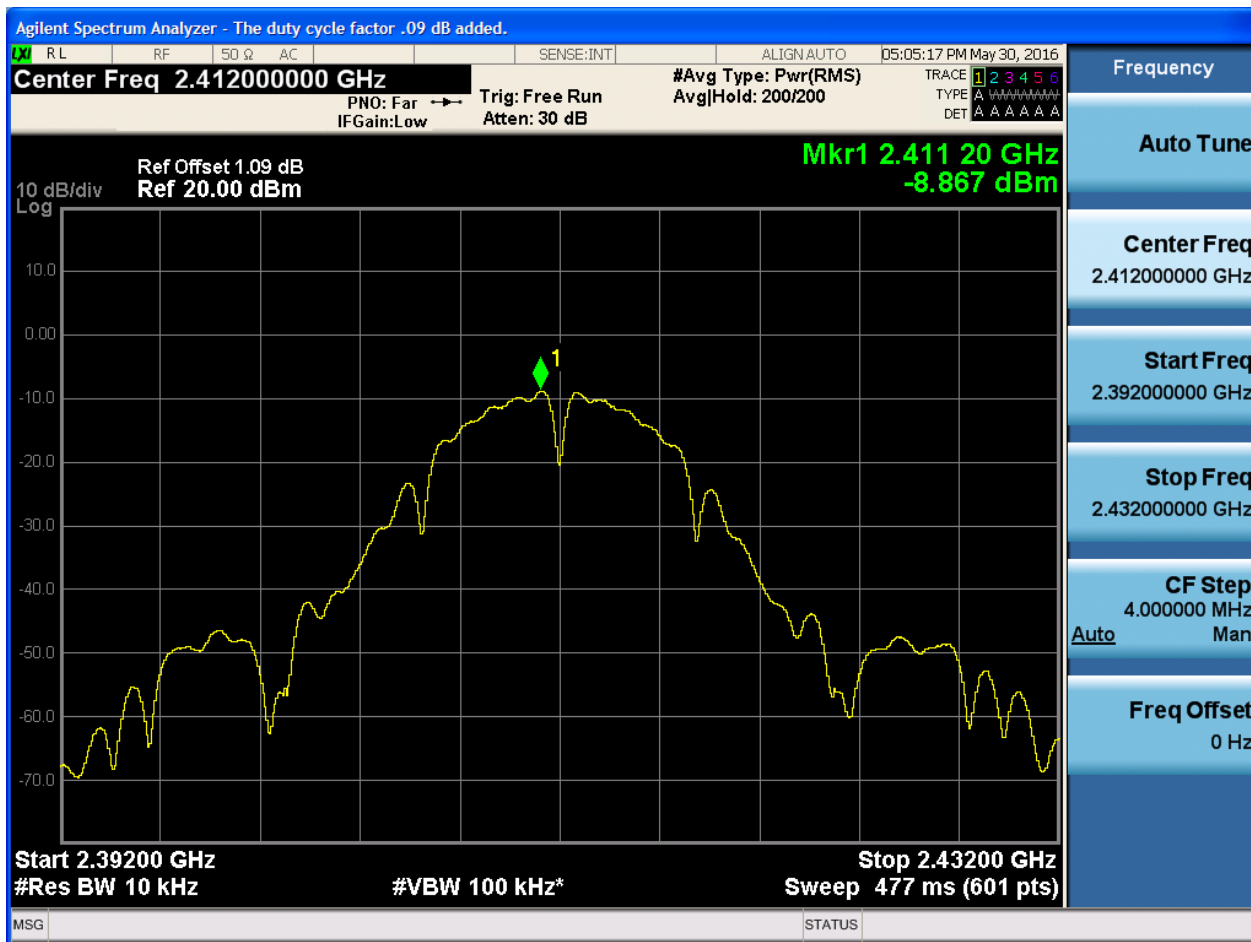
Appendix E: Maximum Power Spectral Density Level

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	PD[MHz]	Verdict
11B	L	2412	Ant 1	-8.87	pass
11B	M	2437	Ant 1	-8.28	pass
11B	H	2462	Ant 1	-8.75	pass
11G	L	2412	Ant 1	-13.35	pass
11G	M	2437	Ant 1	-12.15	pass
11G	H	2462	Ant 1	-11.31	pass
11N20	L	2412	Ant 1	-14.02	pass
11N20	M	2437	Ant 1	-11.87	pass
11N20	H	2462	Ant 1	-13.04	pass

Part II - Test Plots

2.1 11B_L@Ant 1





2.2 11B_M@Ant 1



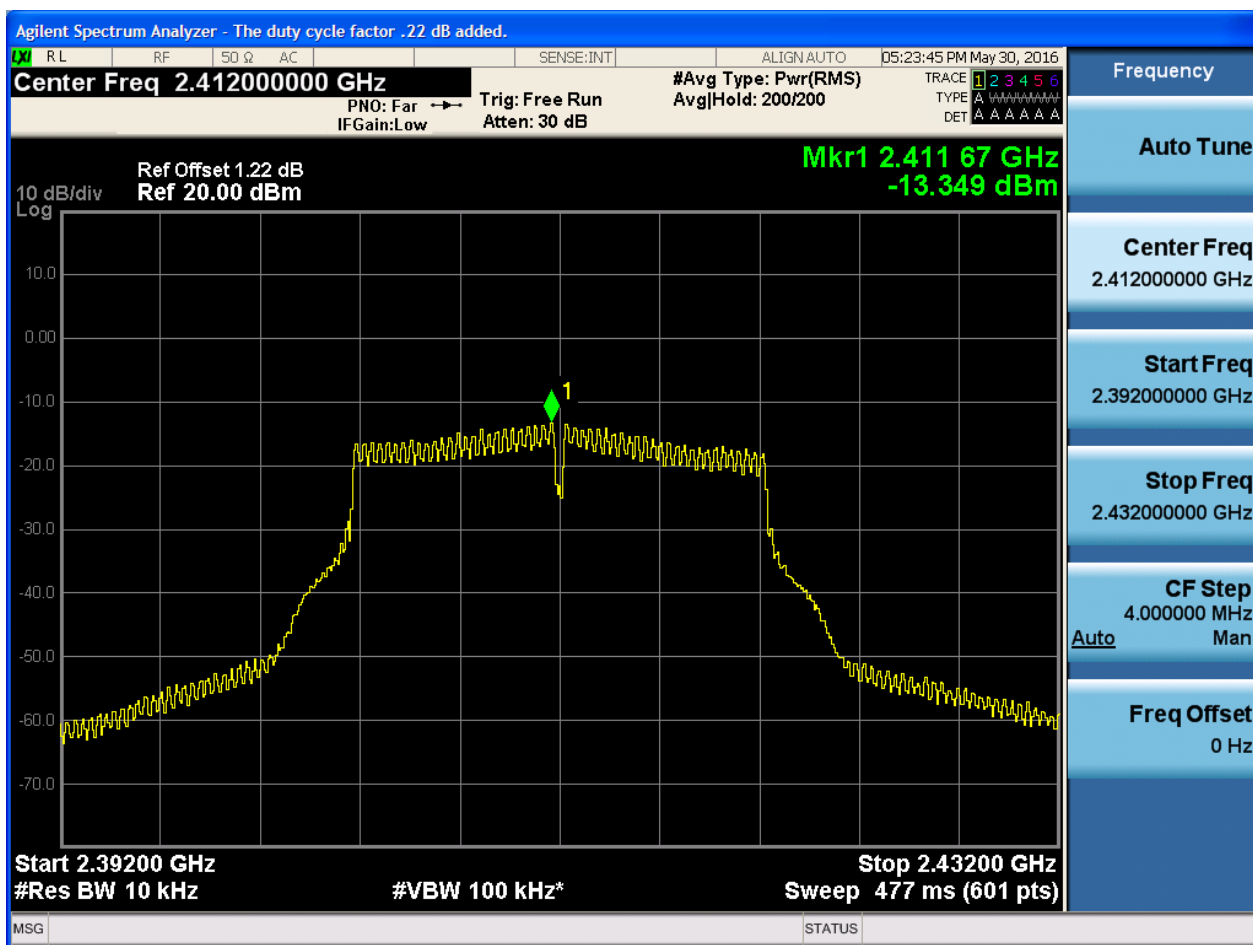


2.3 11B_H@Ant 1



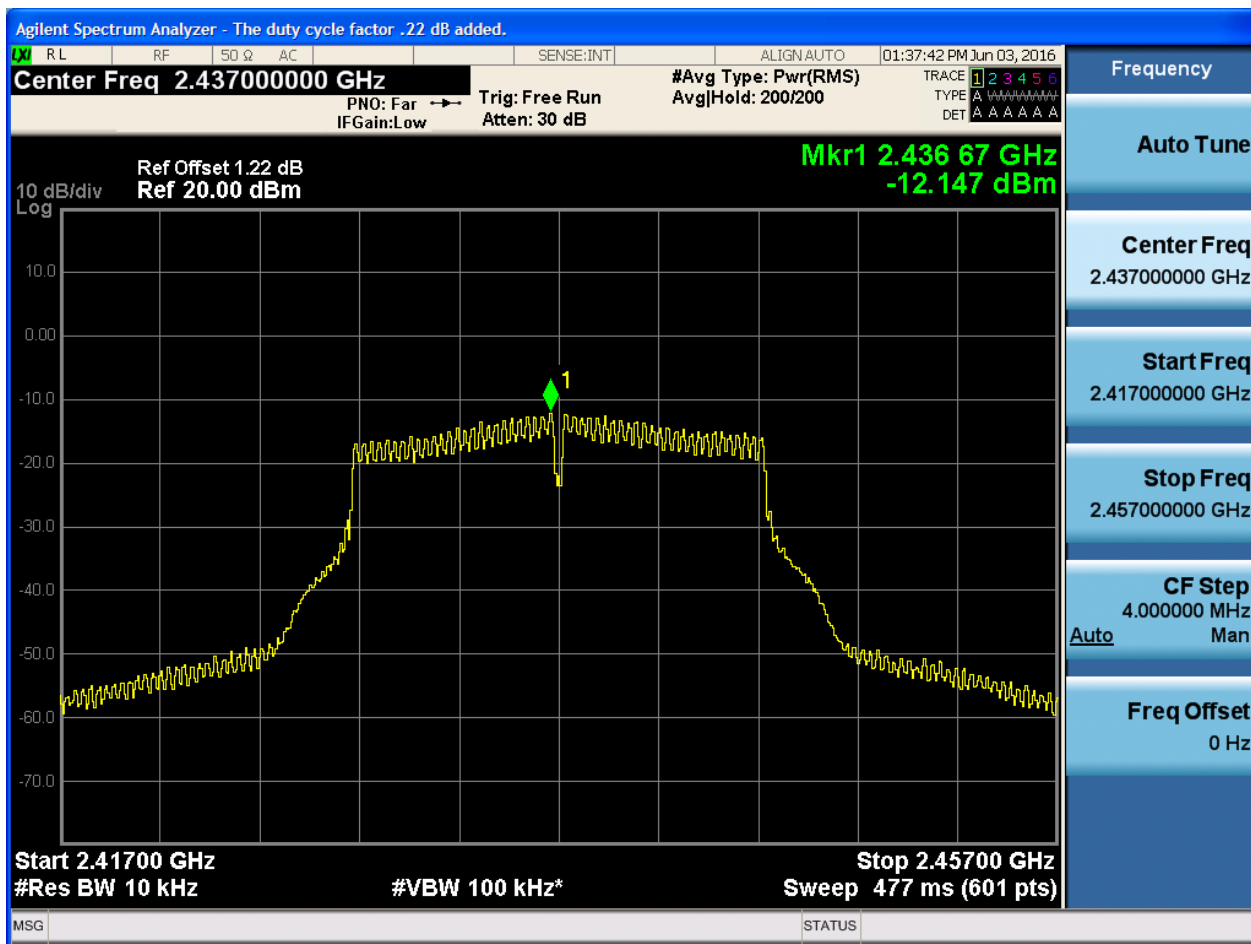


2.4 11G_L@Ant 1



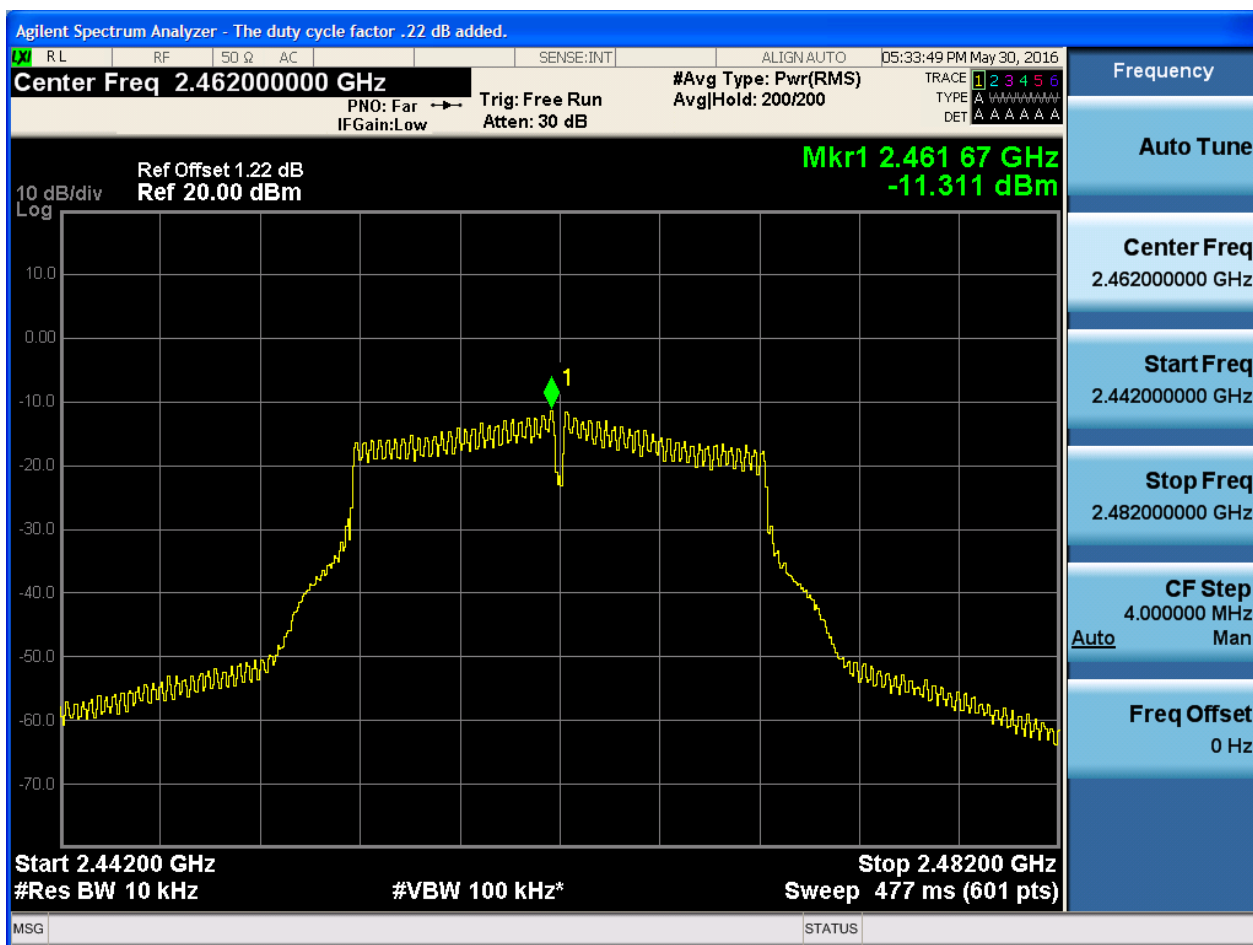


2.5 11G_M@Ant 1



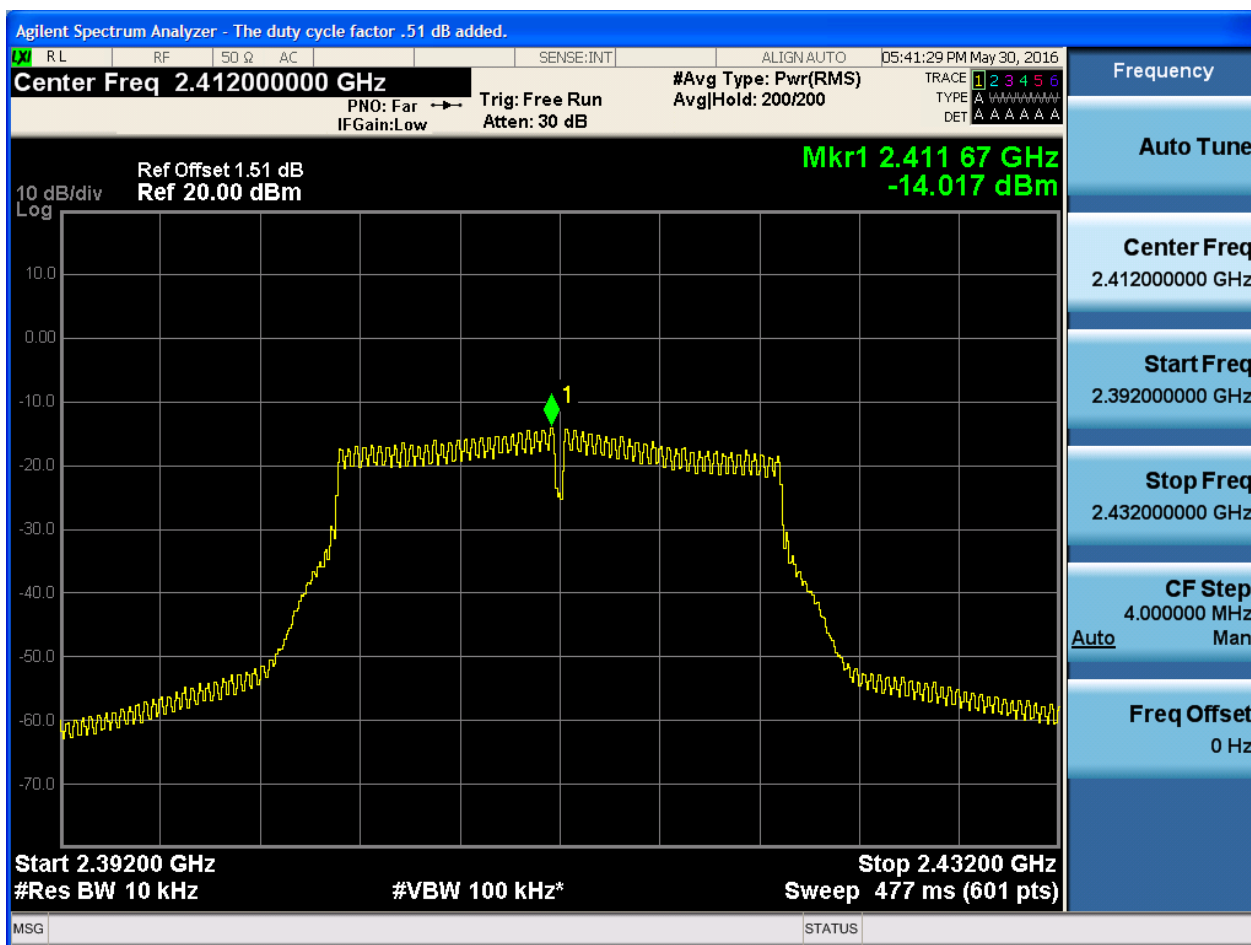


2.6 11G_H@Ant 1



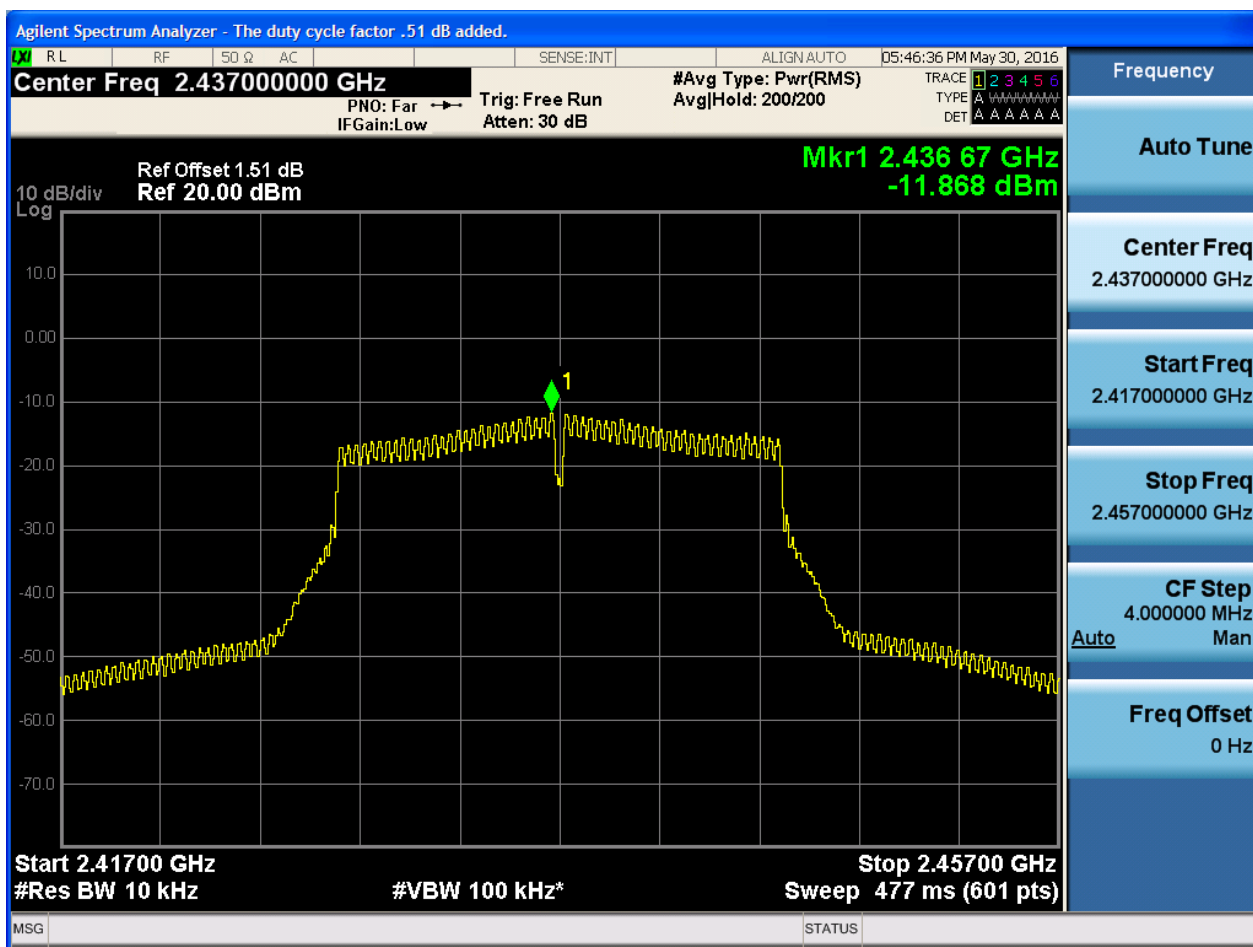


2.7 11N20_L@Ant 1



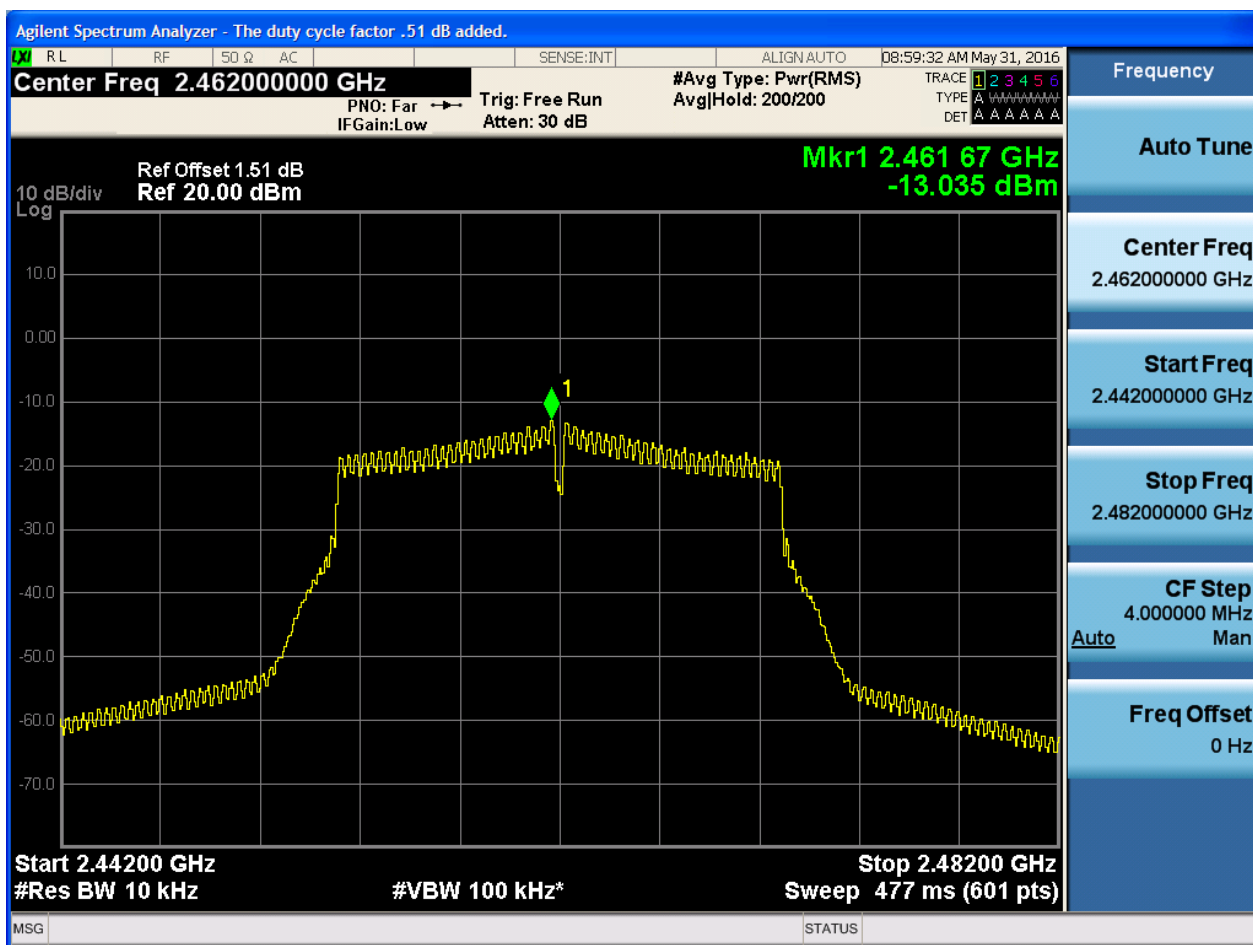


2.8 11N20_M@Ant 1





2.9 11N20_H@Ant 1



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	9.76	-50.09	pass
11B	H	2462	Ant 1	9.71	-46.11	pass
11G	L	2412	Ant 1	3.73	-45.32	pass
11G	H	2462	Ant 1	4.16	-42.46	pass
11N20	L	2412	Ant 1	3.42	-43.72	pass
11N20	H	2462	Ant 1	3.26	-42.94	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



Appendix G: 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".

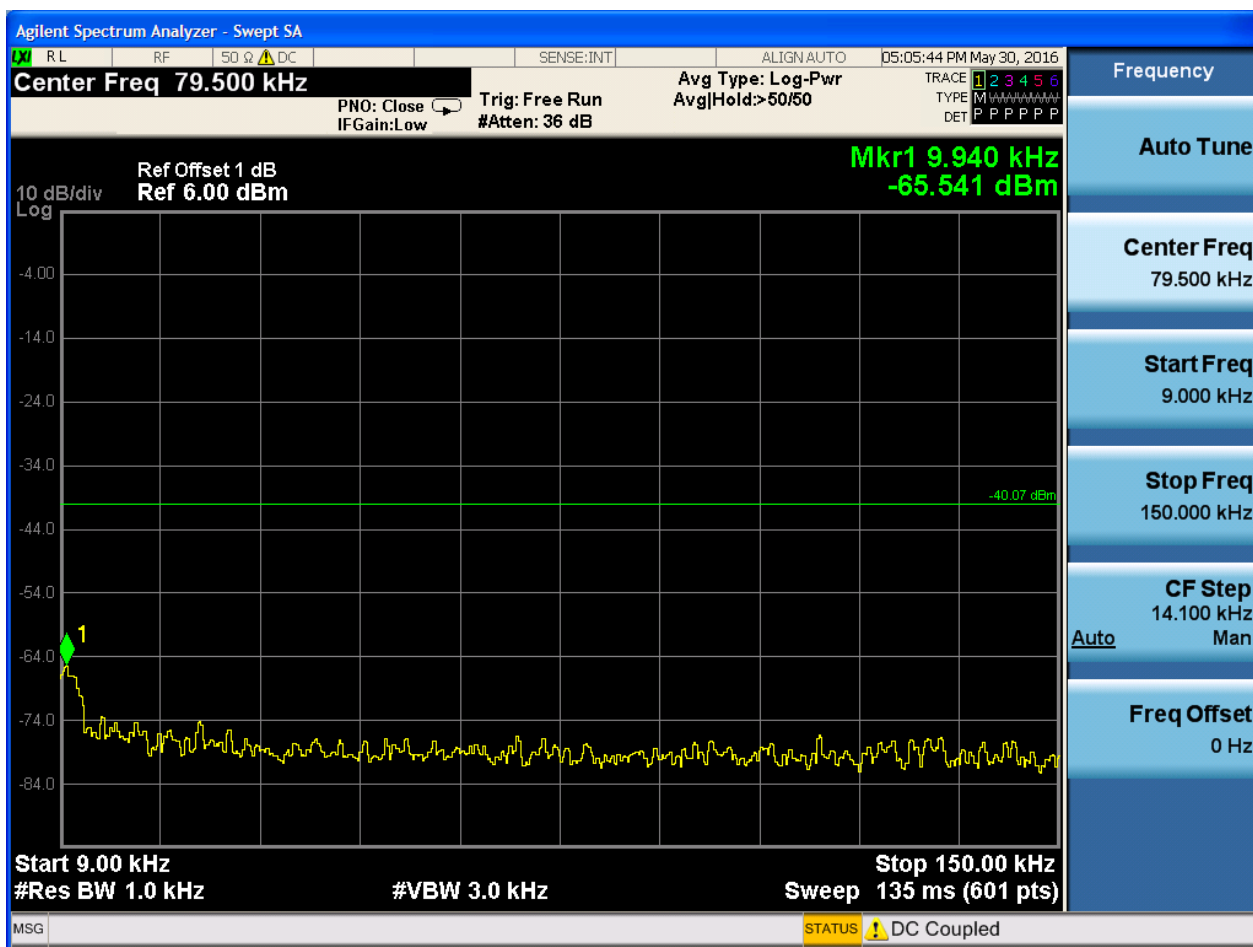
Part I - Test Results

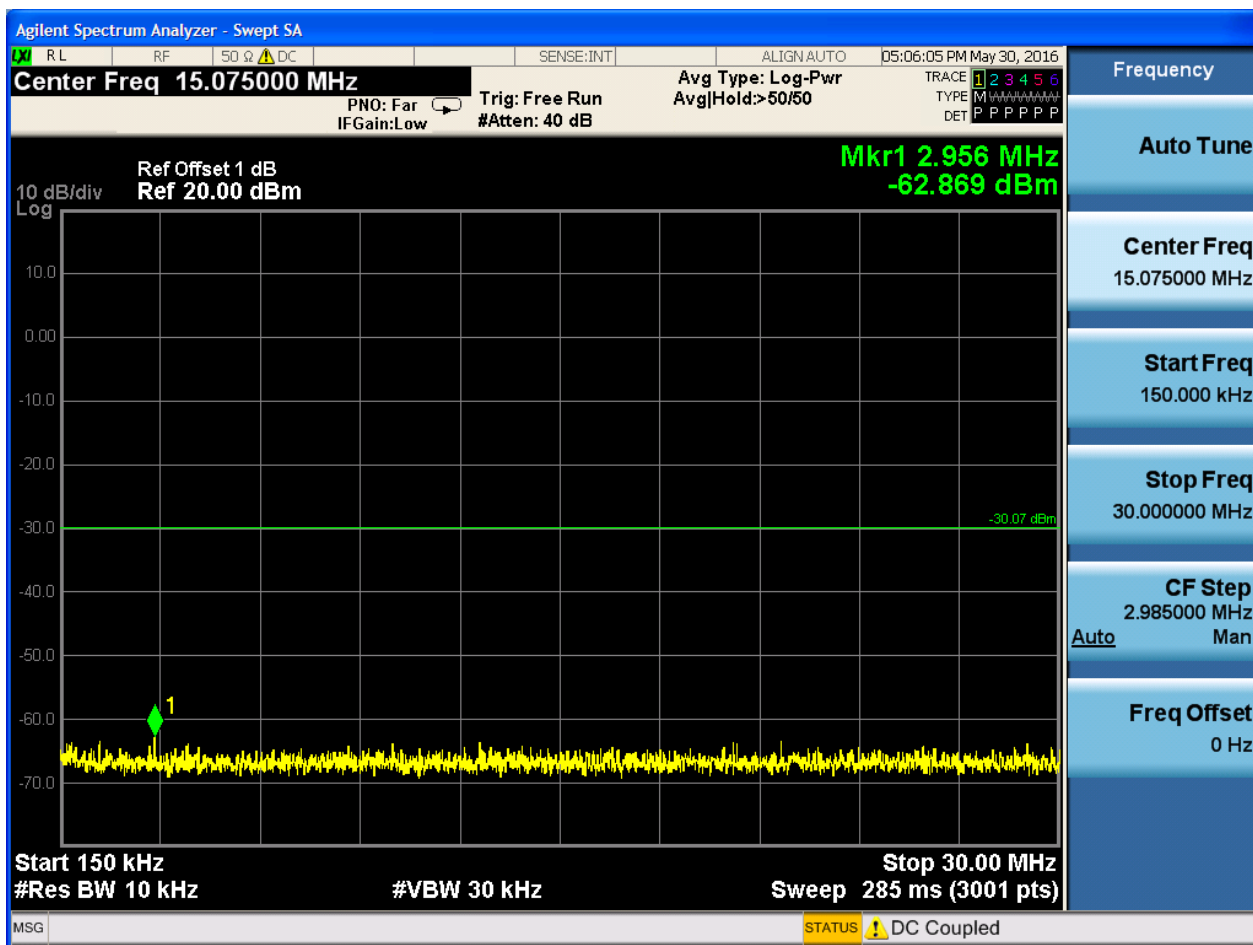
Test Mode	Test Channel	Frequency[MHz]	Ant	Pref[dBm]	Puw[dBm]	Verdict
11B	L	2412	Ant 1	9.93	<limit	pass
11B	M	2437	Ant 1	10.67	<limit	pass
11B	H	2462	Ant 1	10.01	<limit	pass
11G	L	2412	Ant 1	3.75	<limit	pass
11G	M	2437	Ant 1	4.94	<limit	pass
11G	H	2462	Ant 1	4.69	<limit	pass
11N20	L	2412	Ant 1	3.84	<limit	pass
11N20	M	2437	Ant 1	5.92	<limit	pass
11N20	H	2462	Ant 1	3.41	<limit	pass

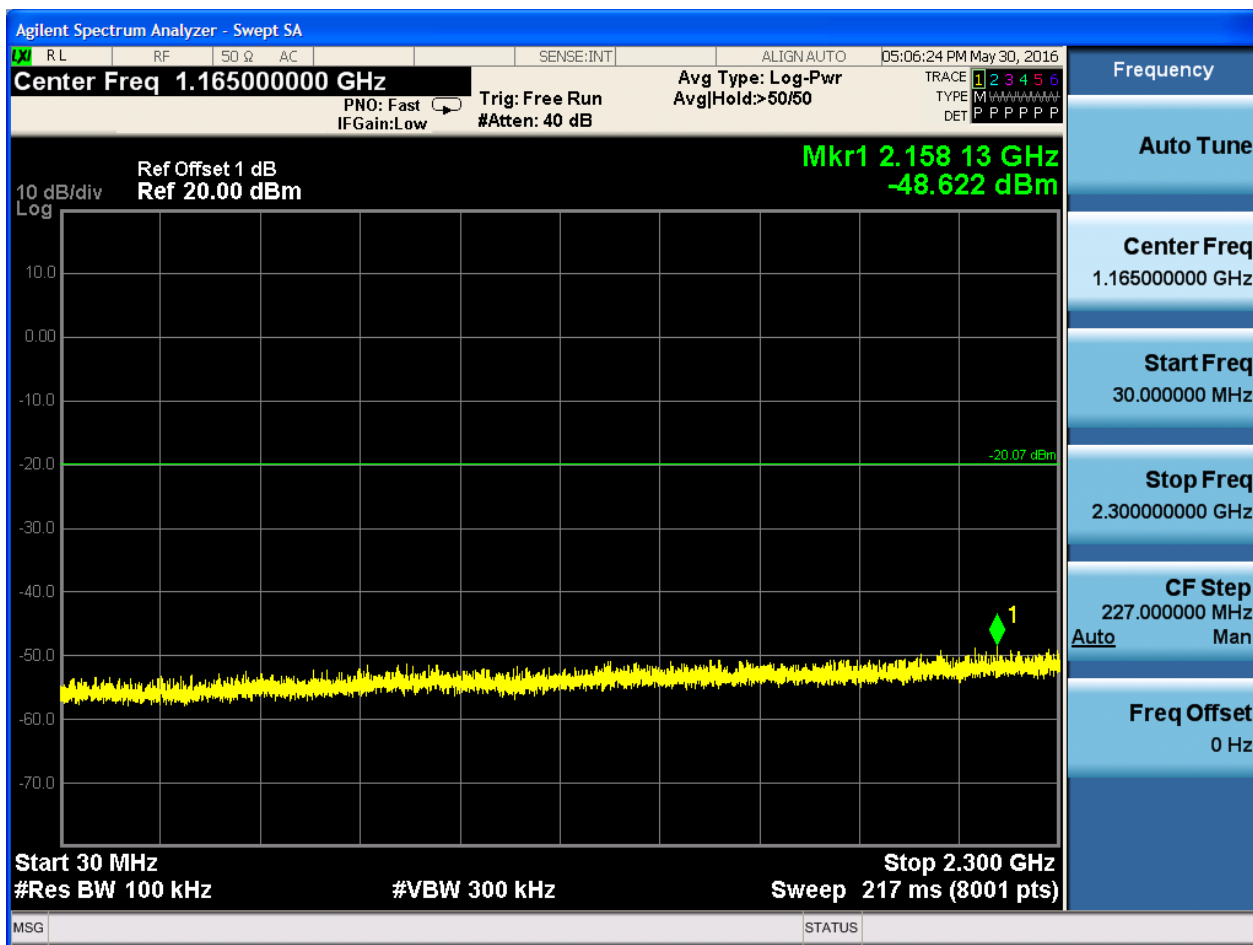


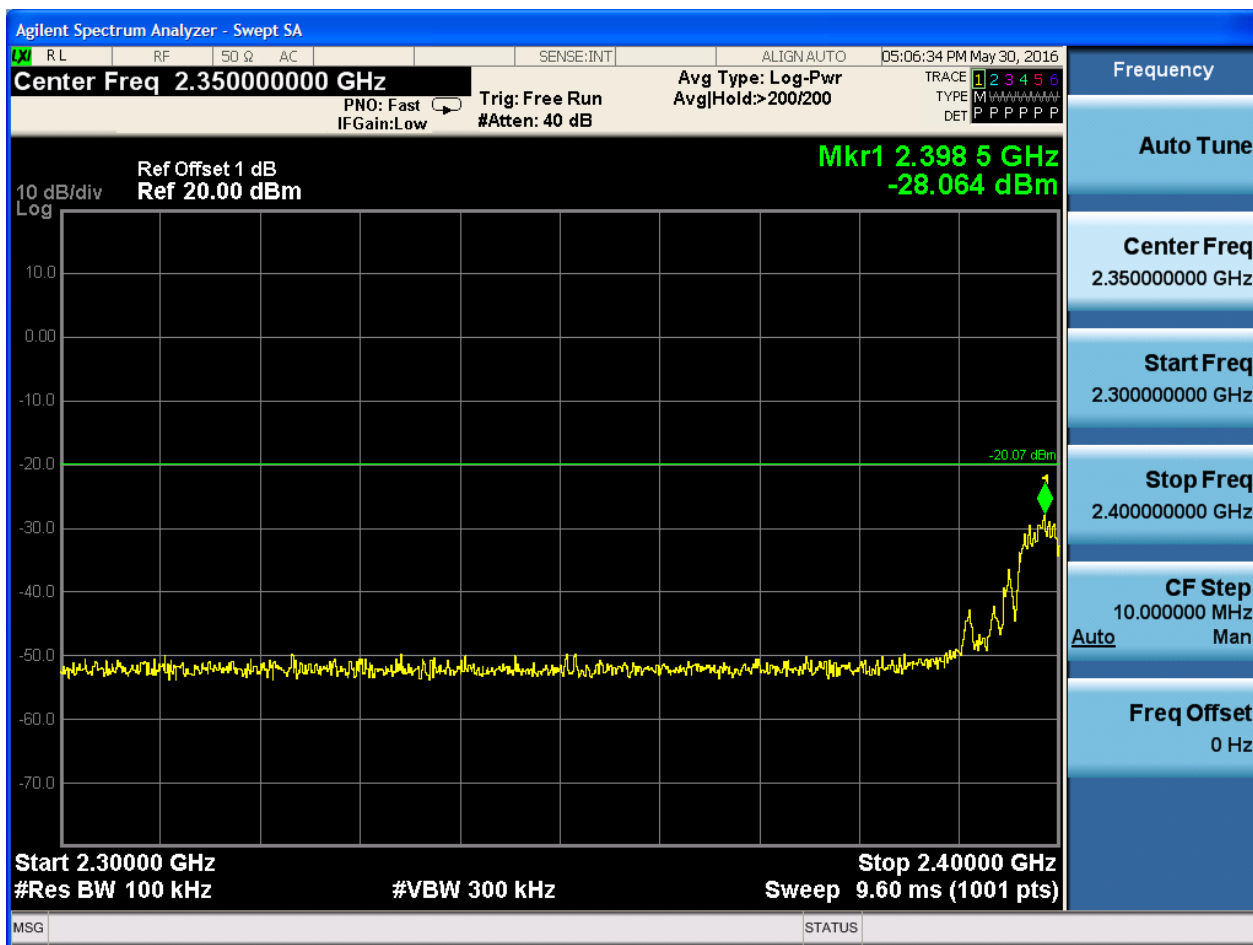


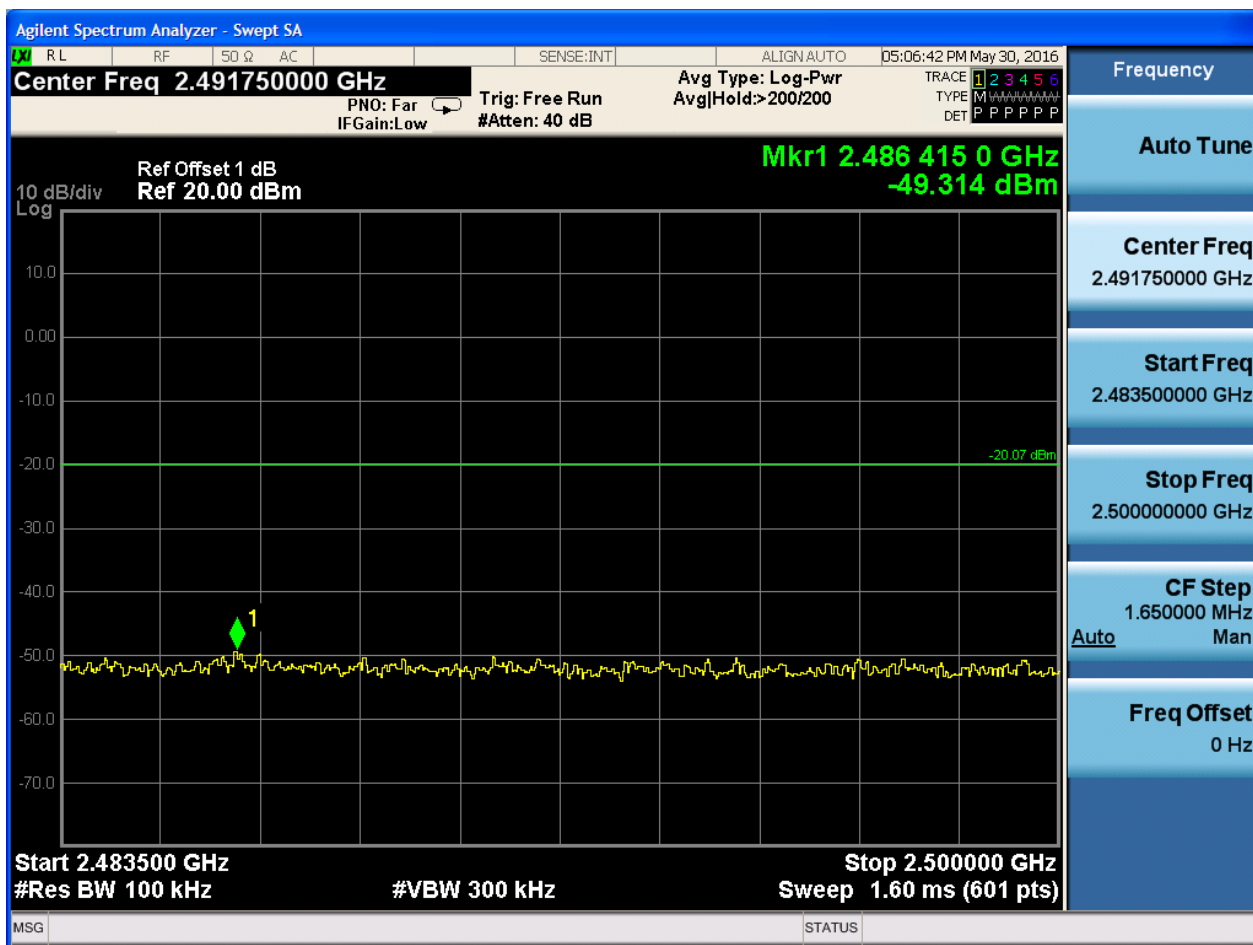
Puw:









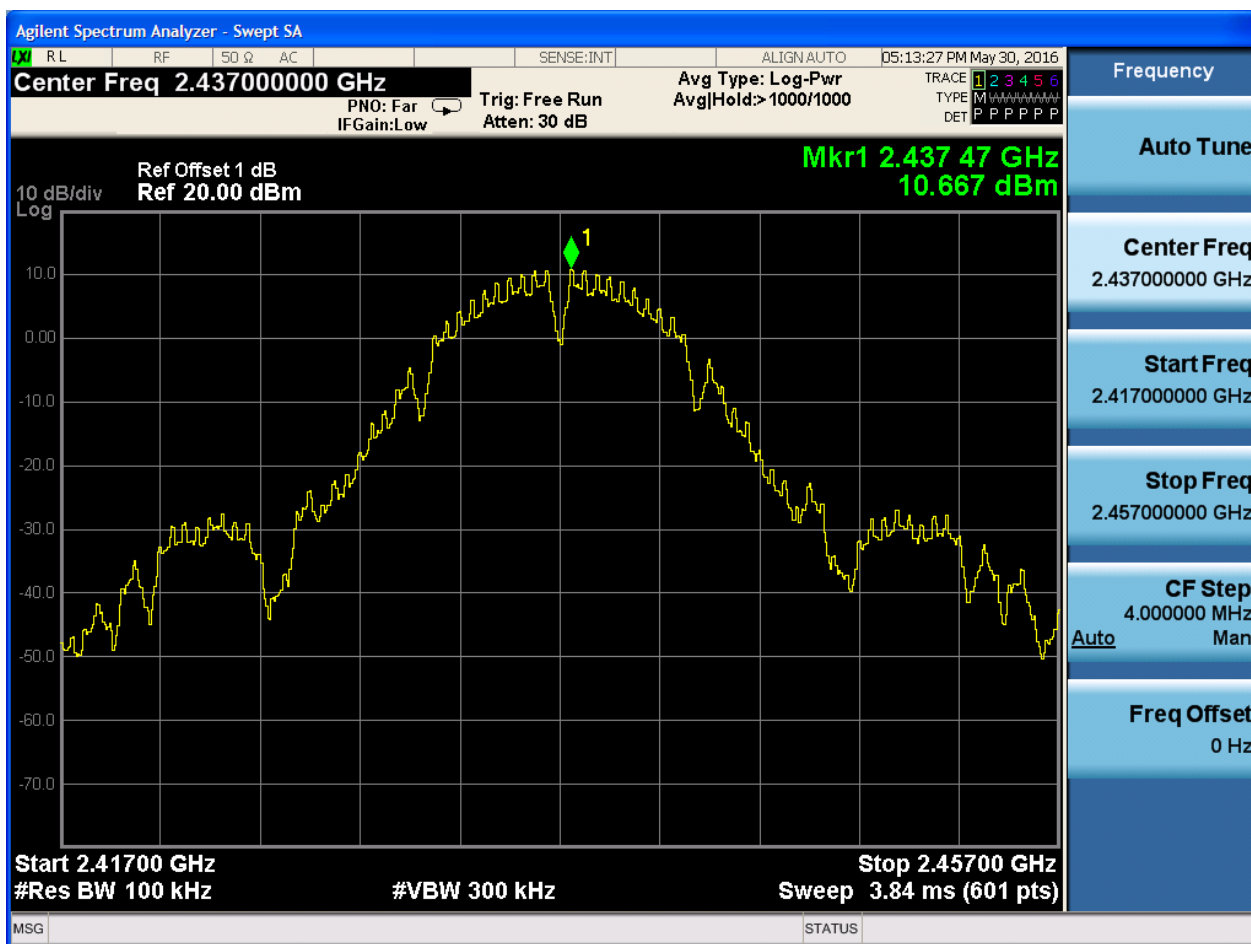






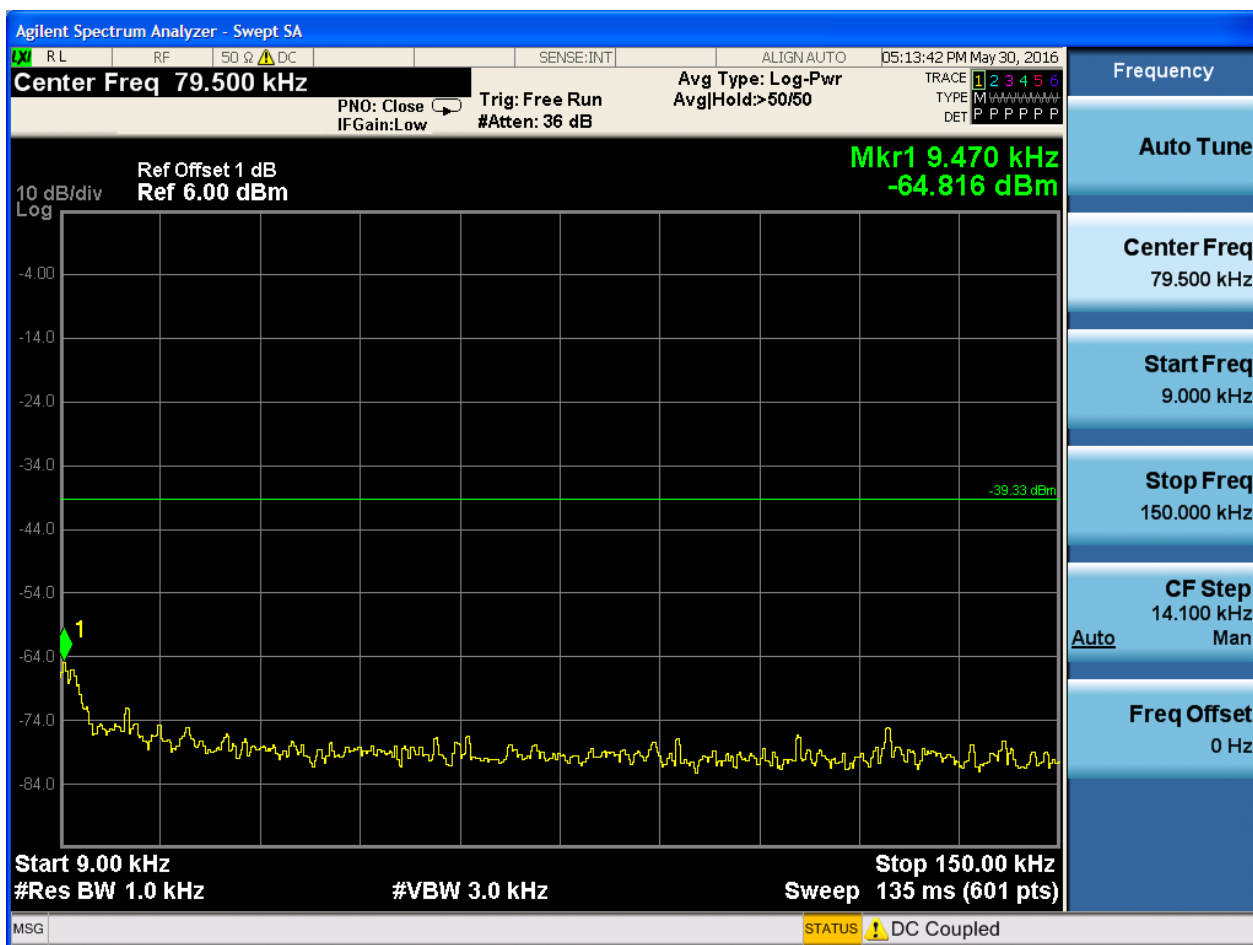
2.2 11B_M@Ant 1

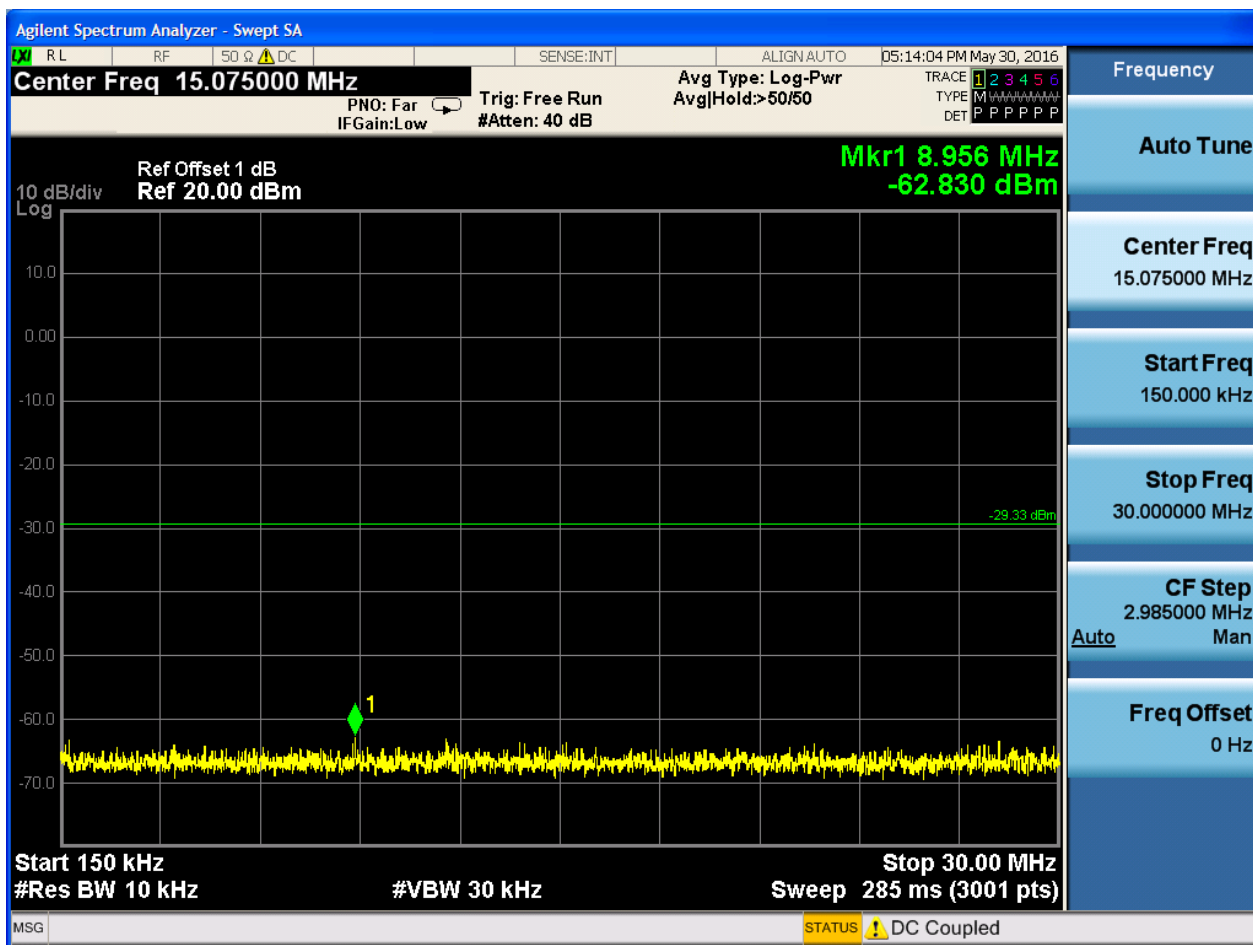
Pref:

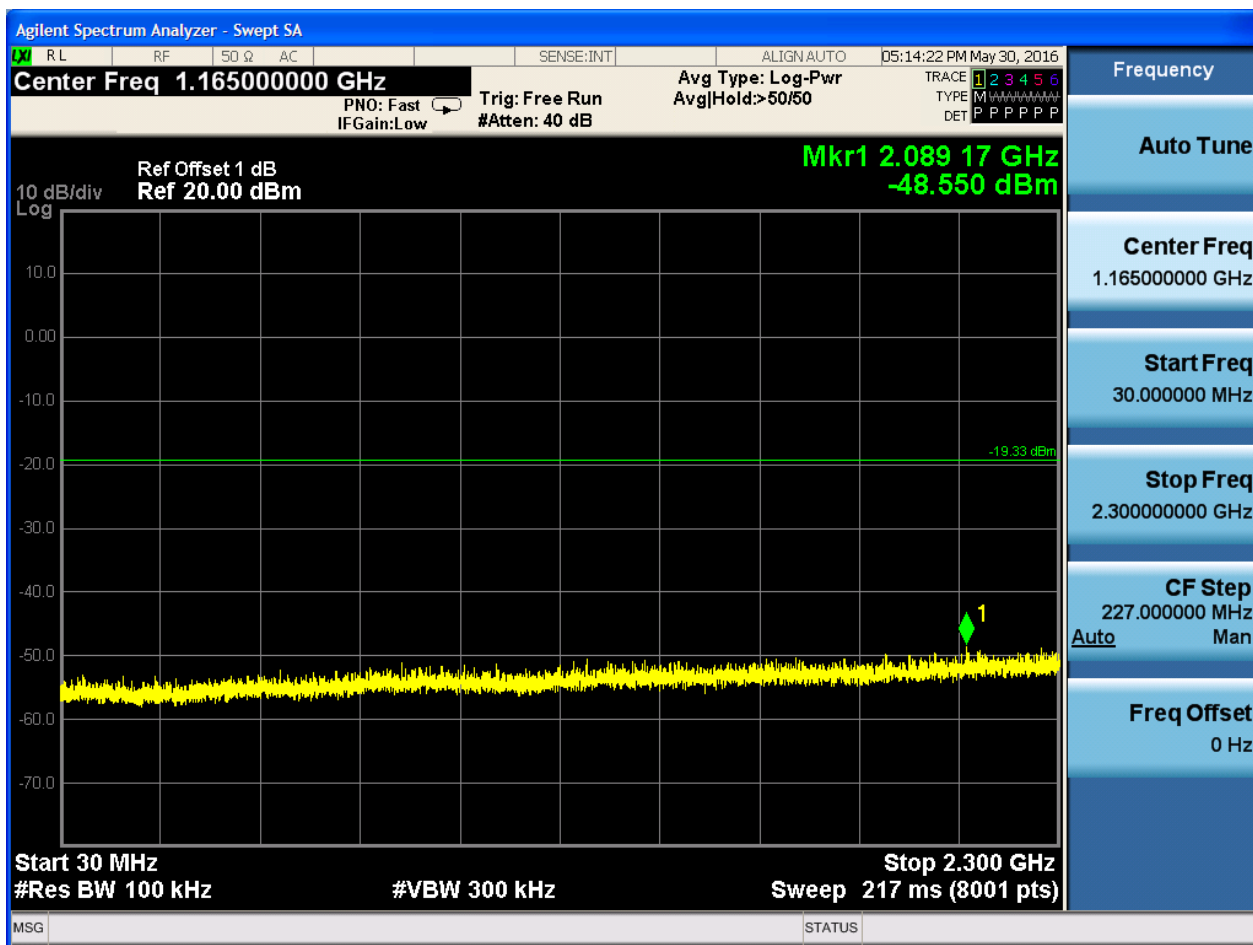


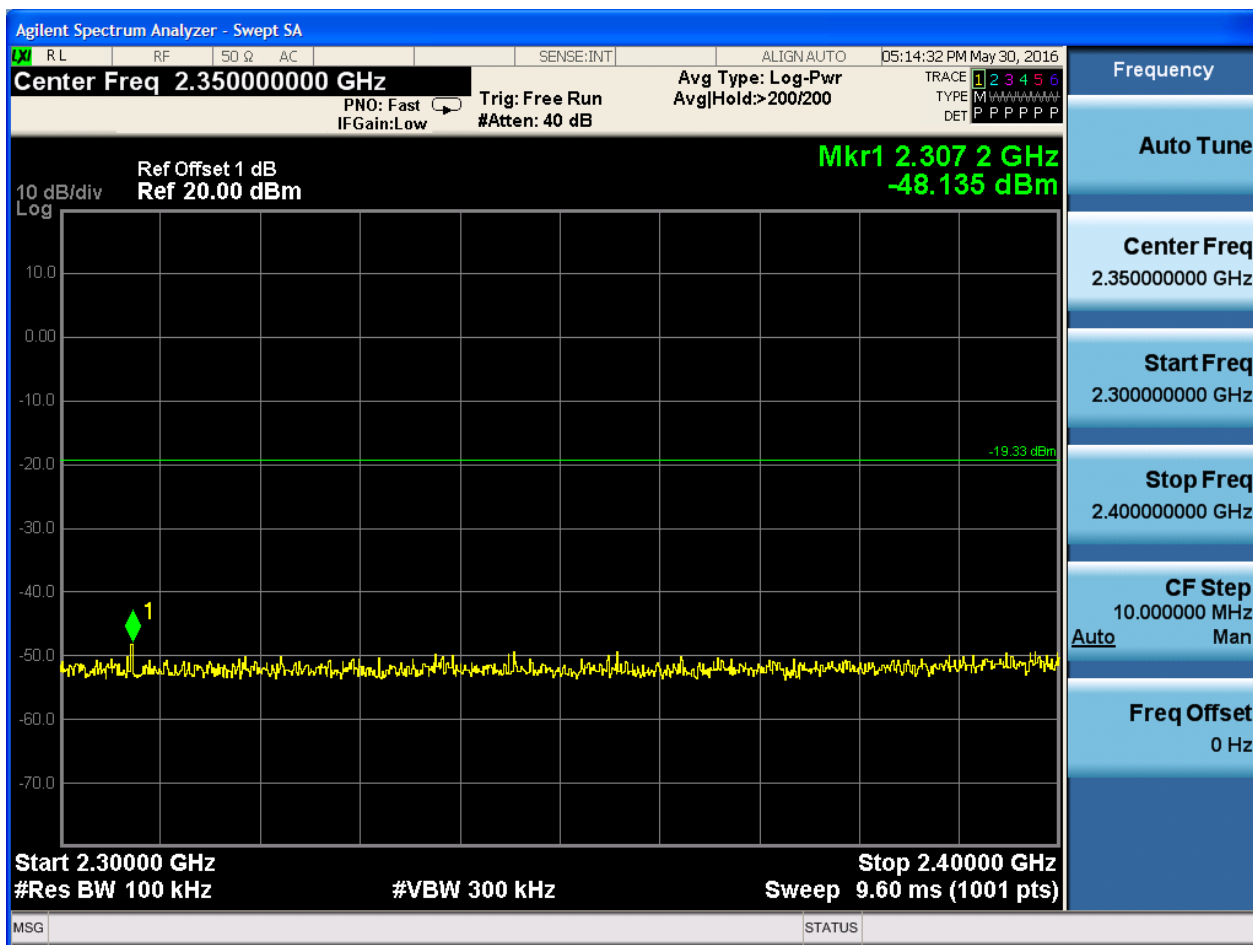


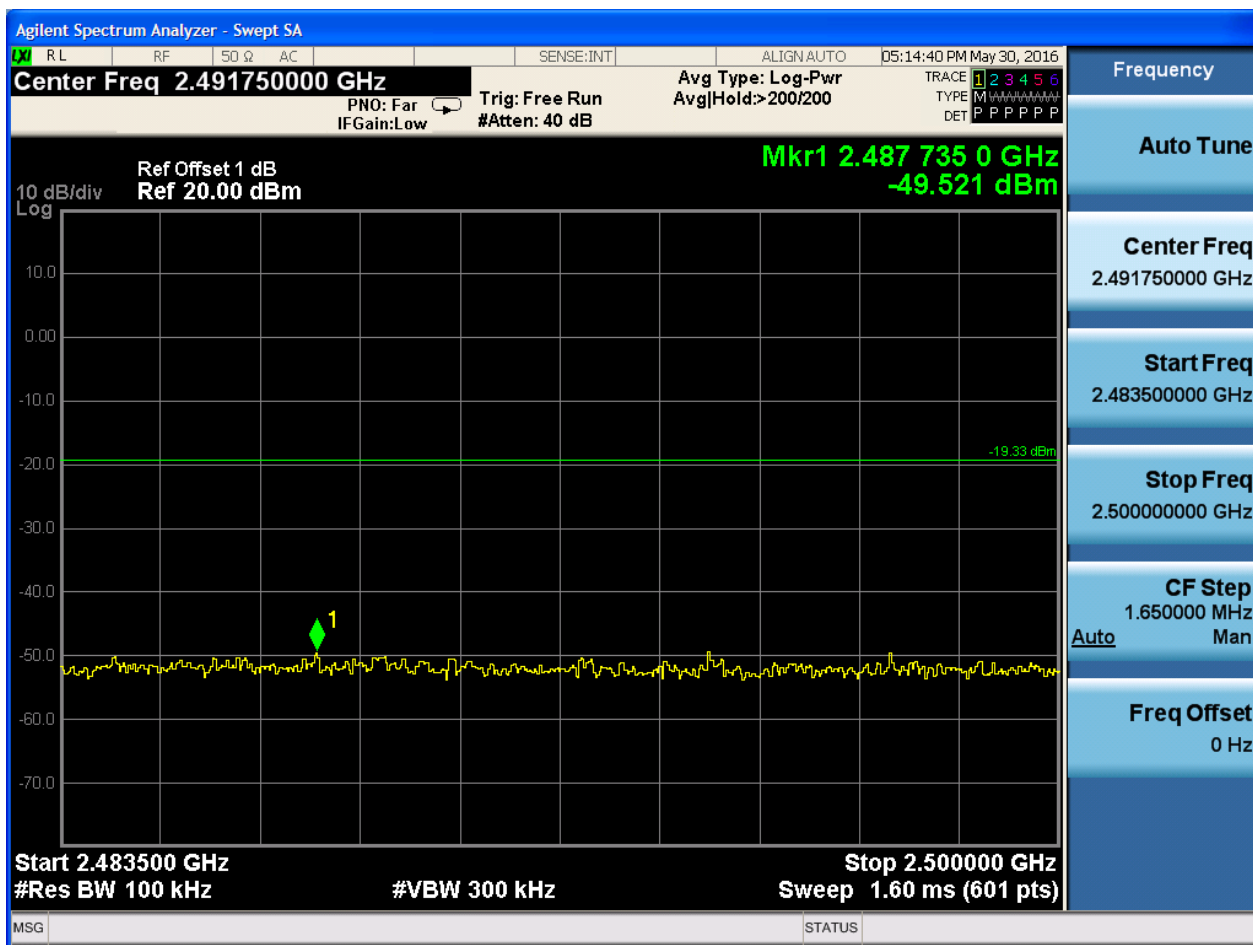
Puw:









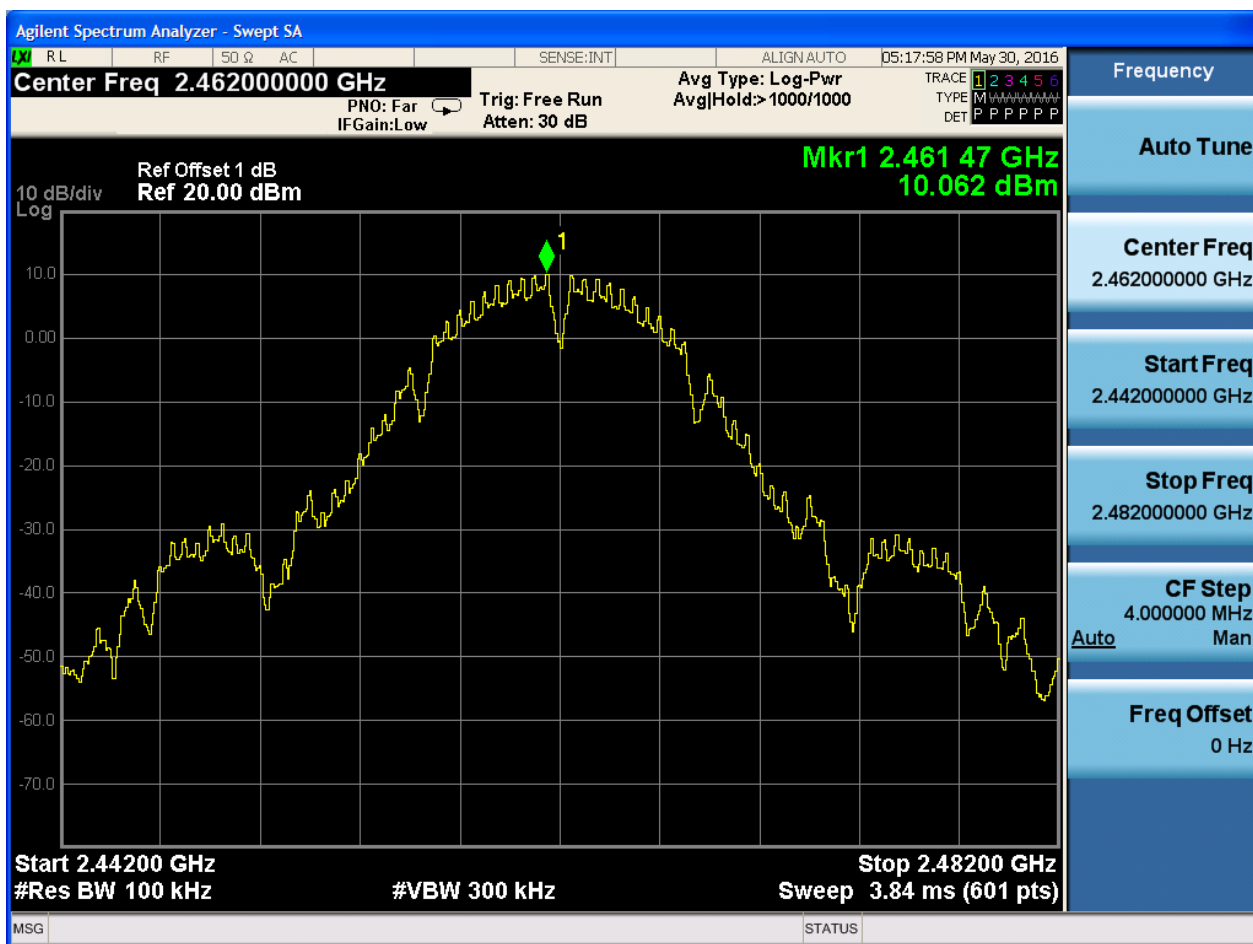






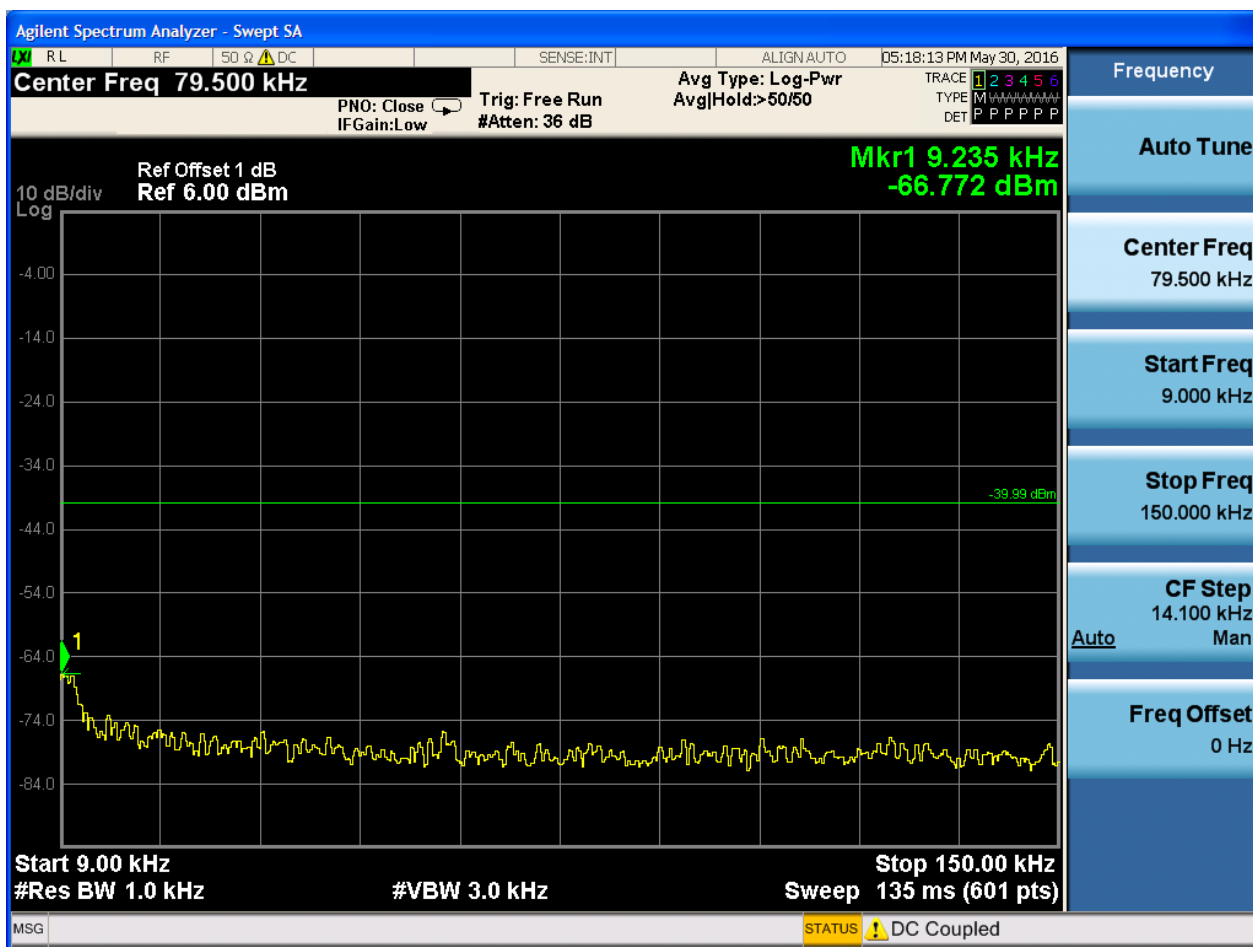
2.3 11B_H@Ant 1

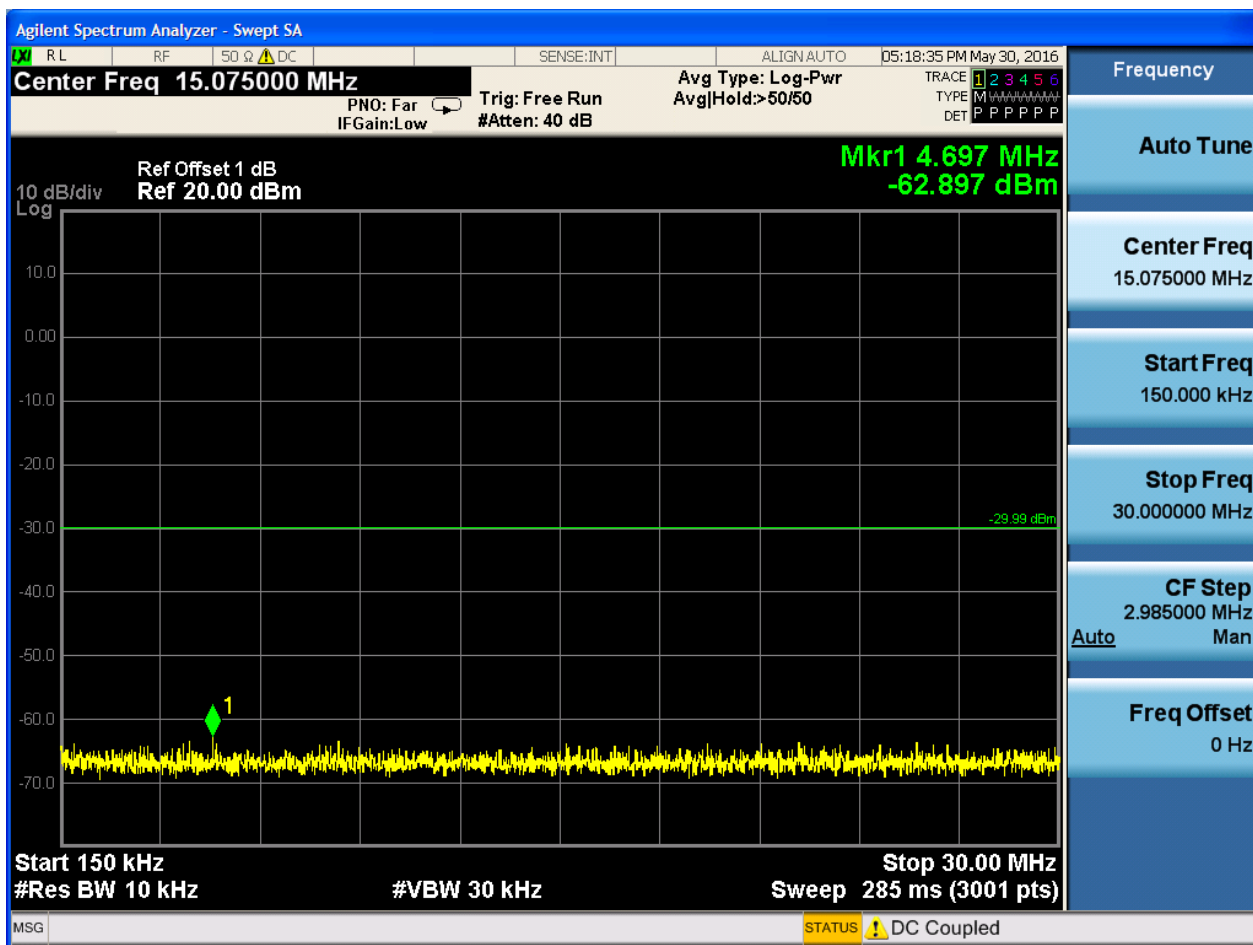
Pref:

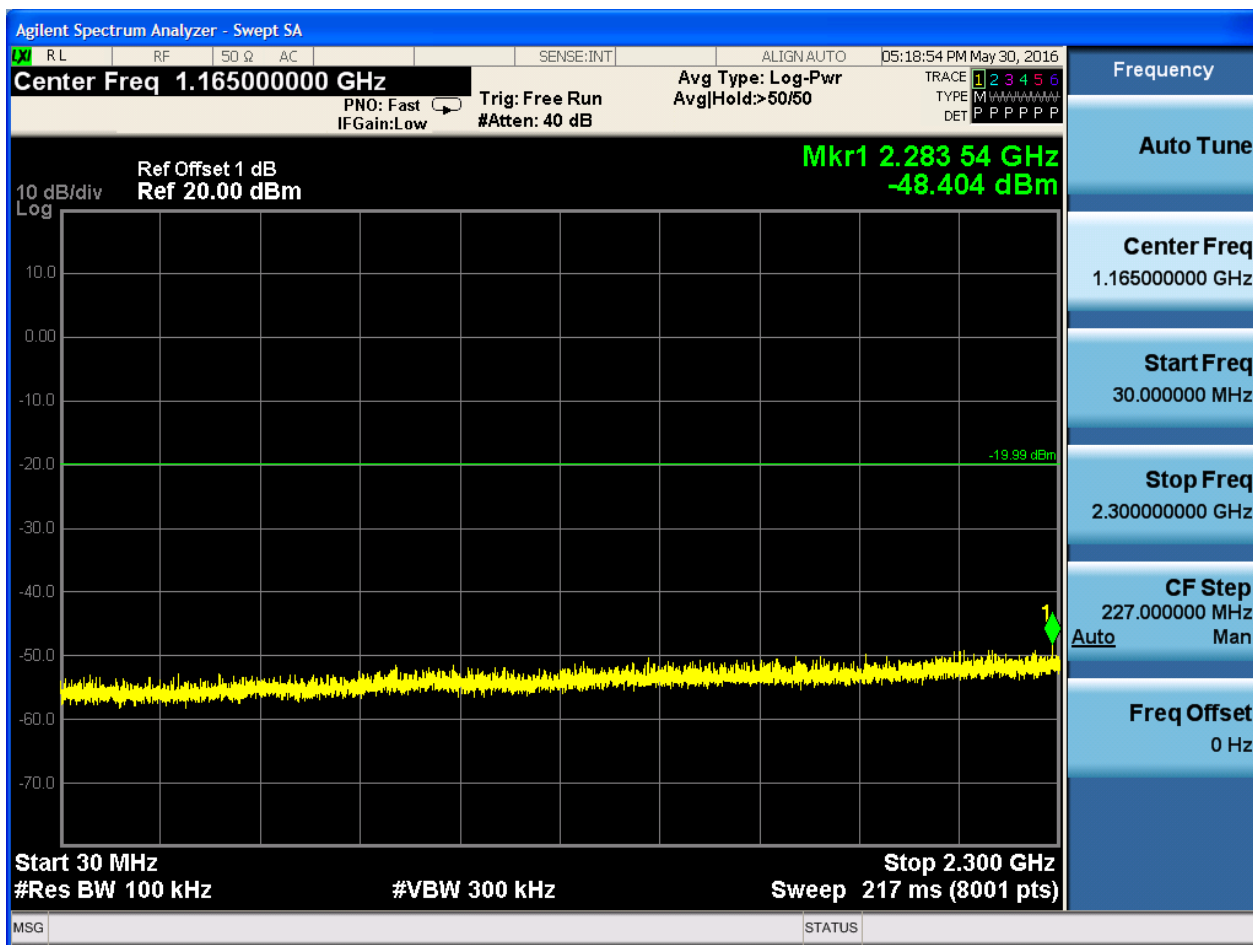


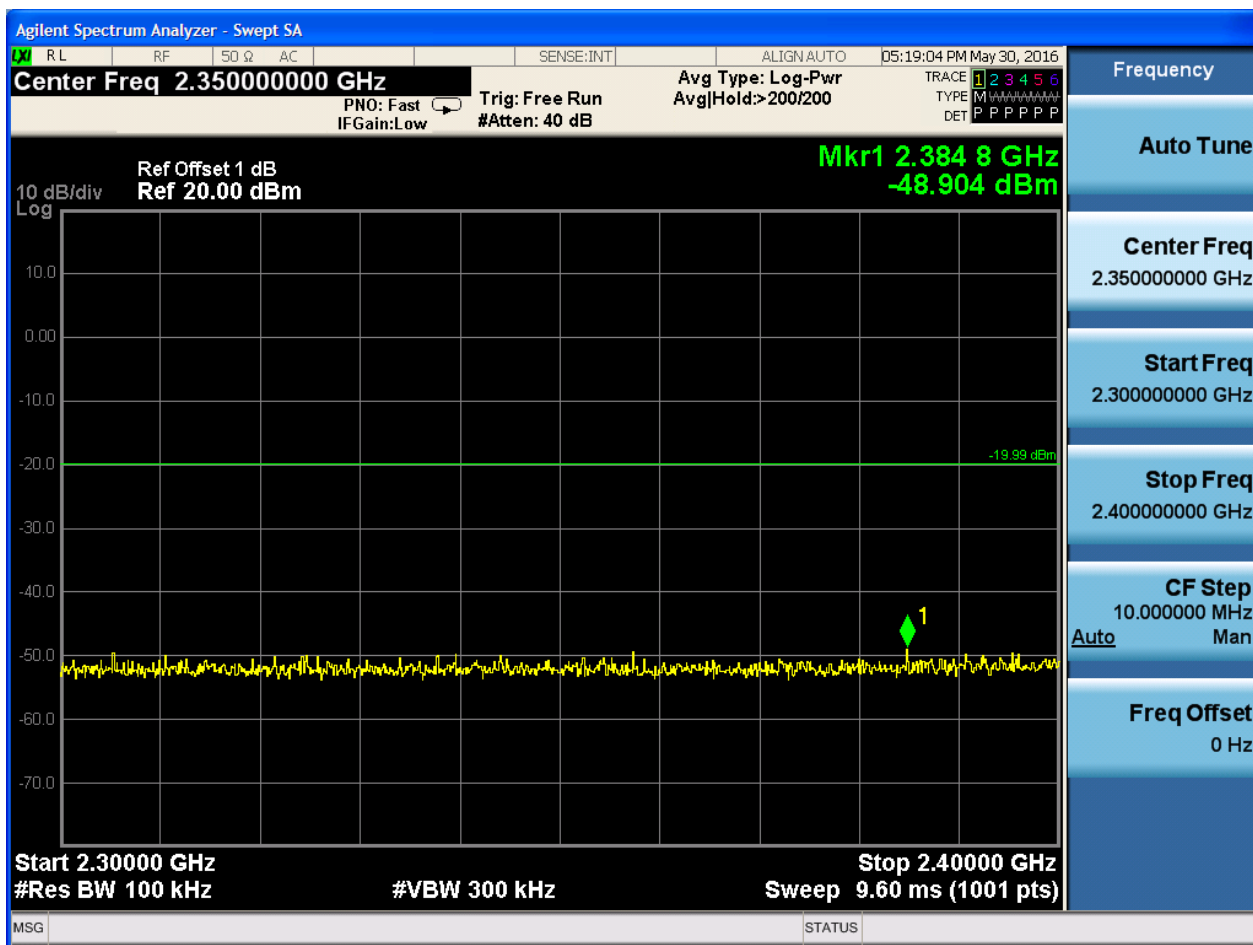


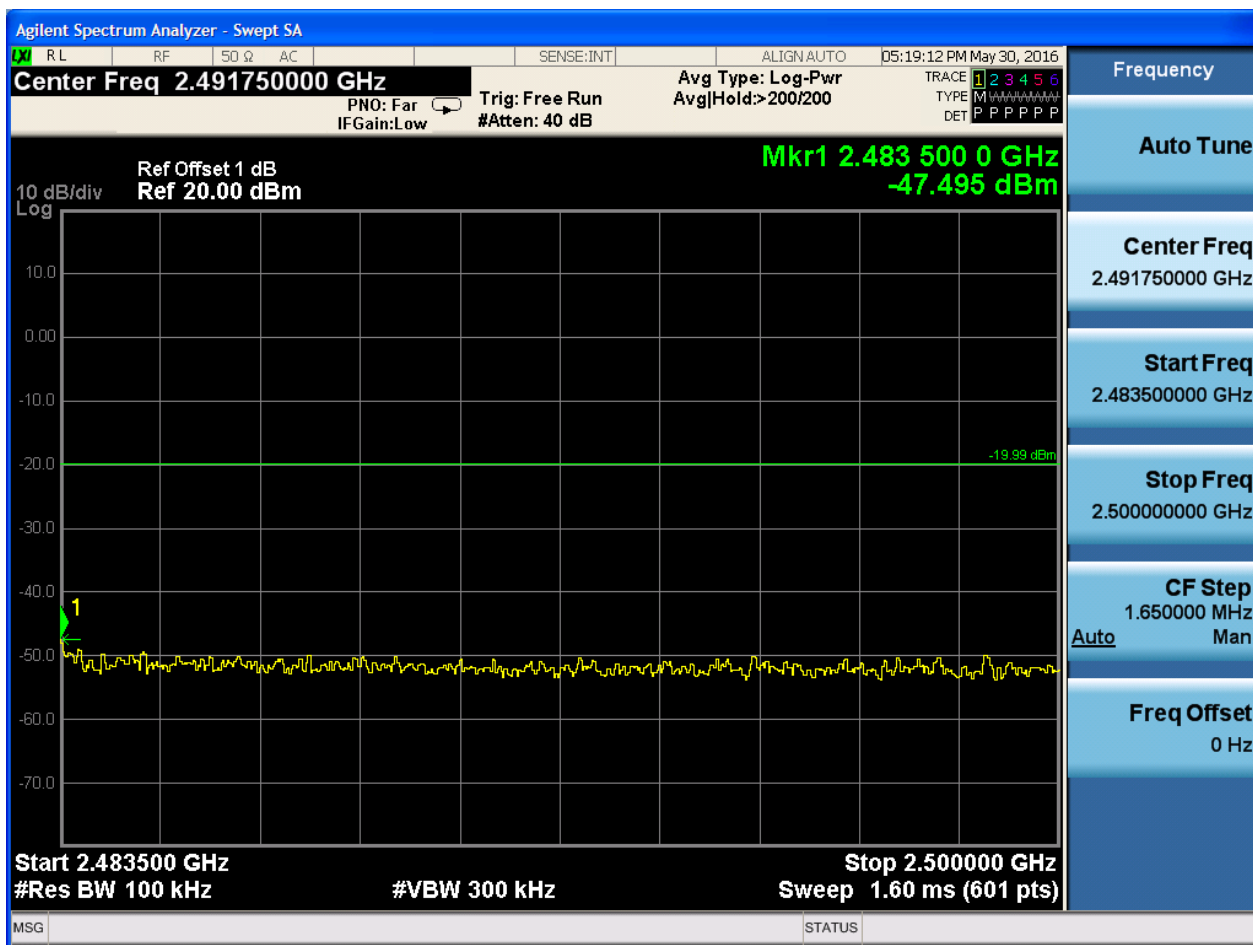
Puw:









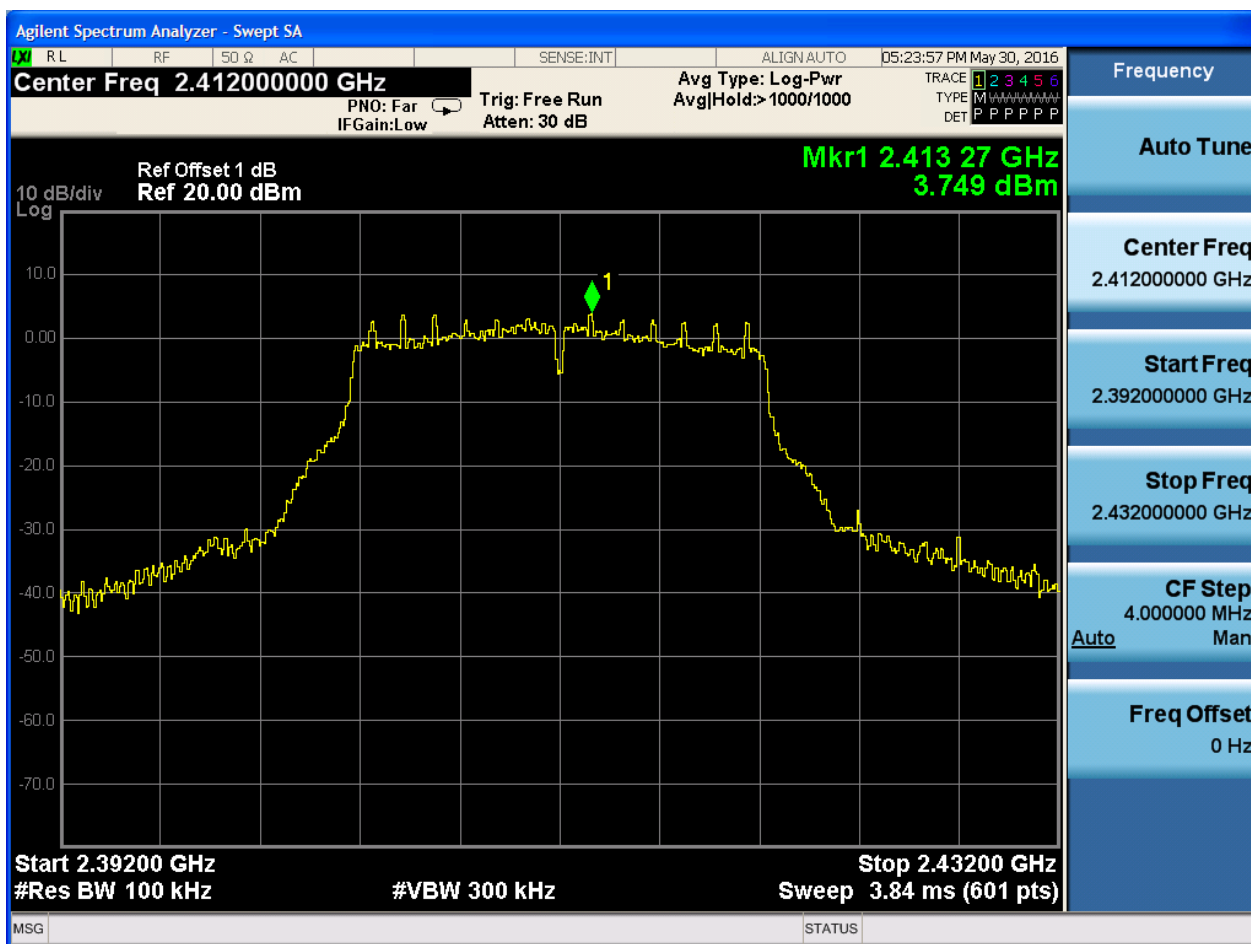






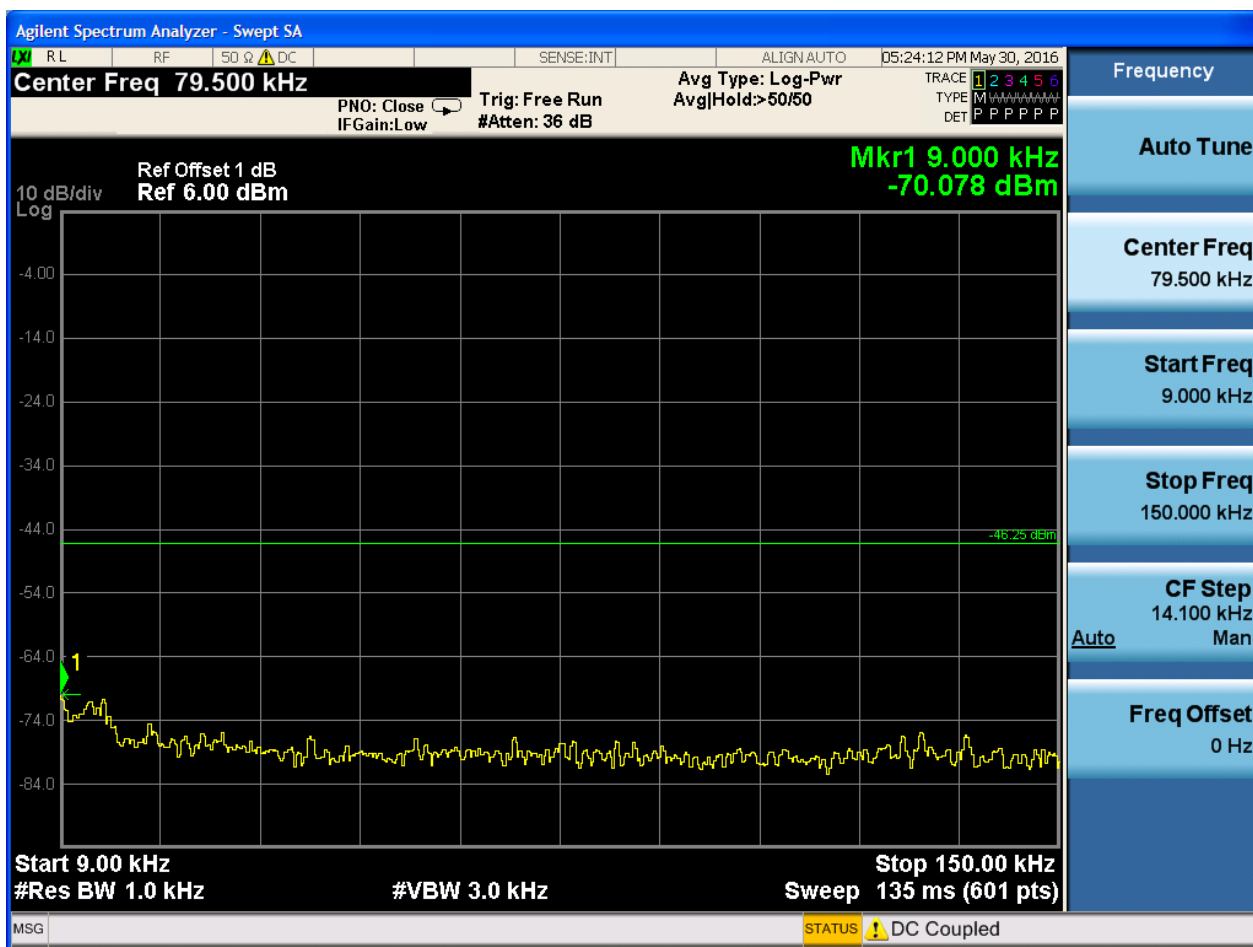
2.4 11G_L@Ant 1

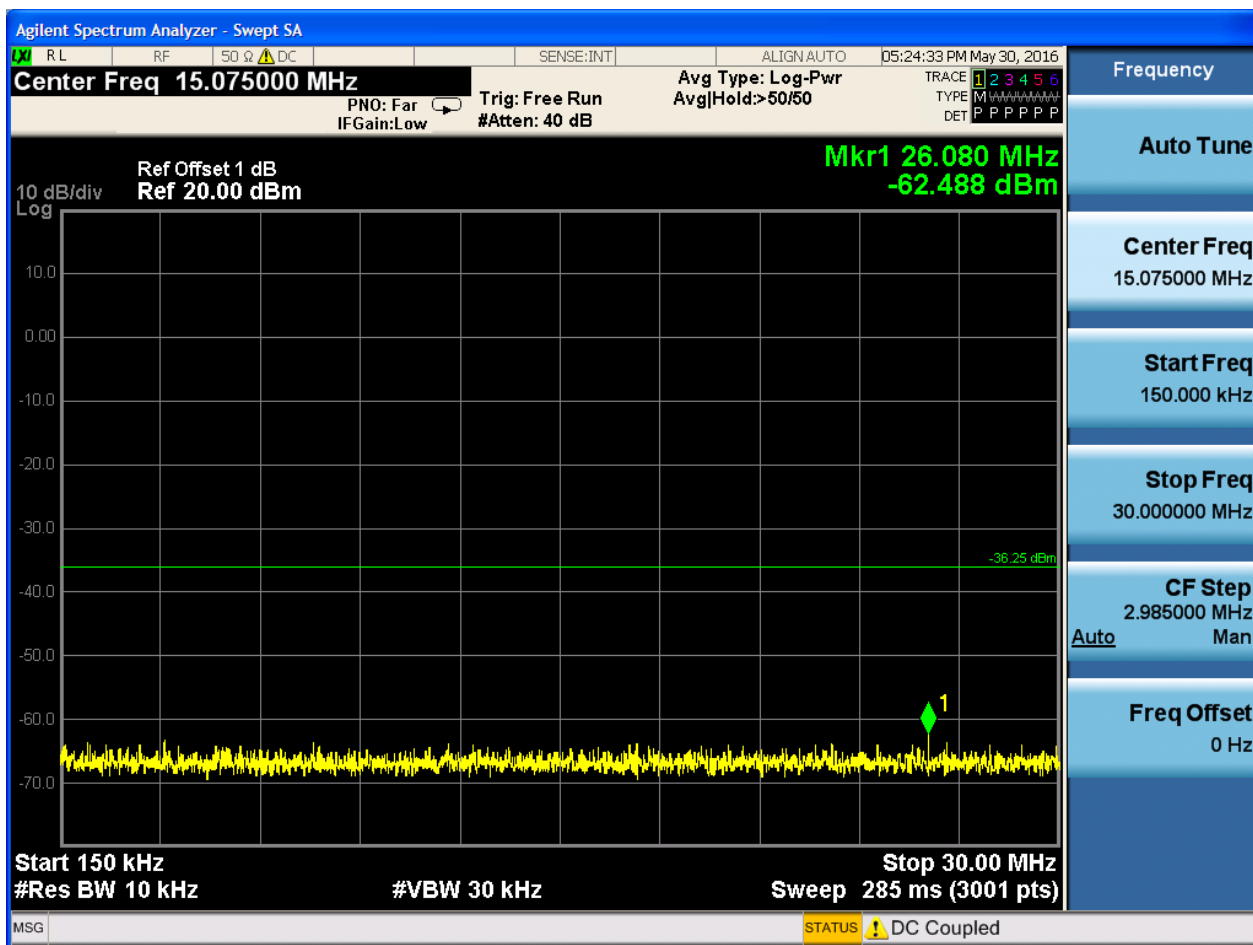
Pref:

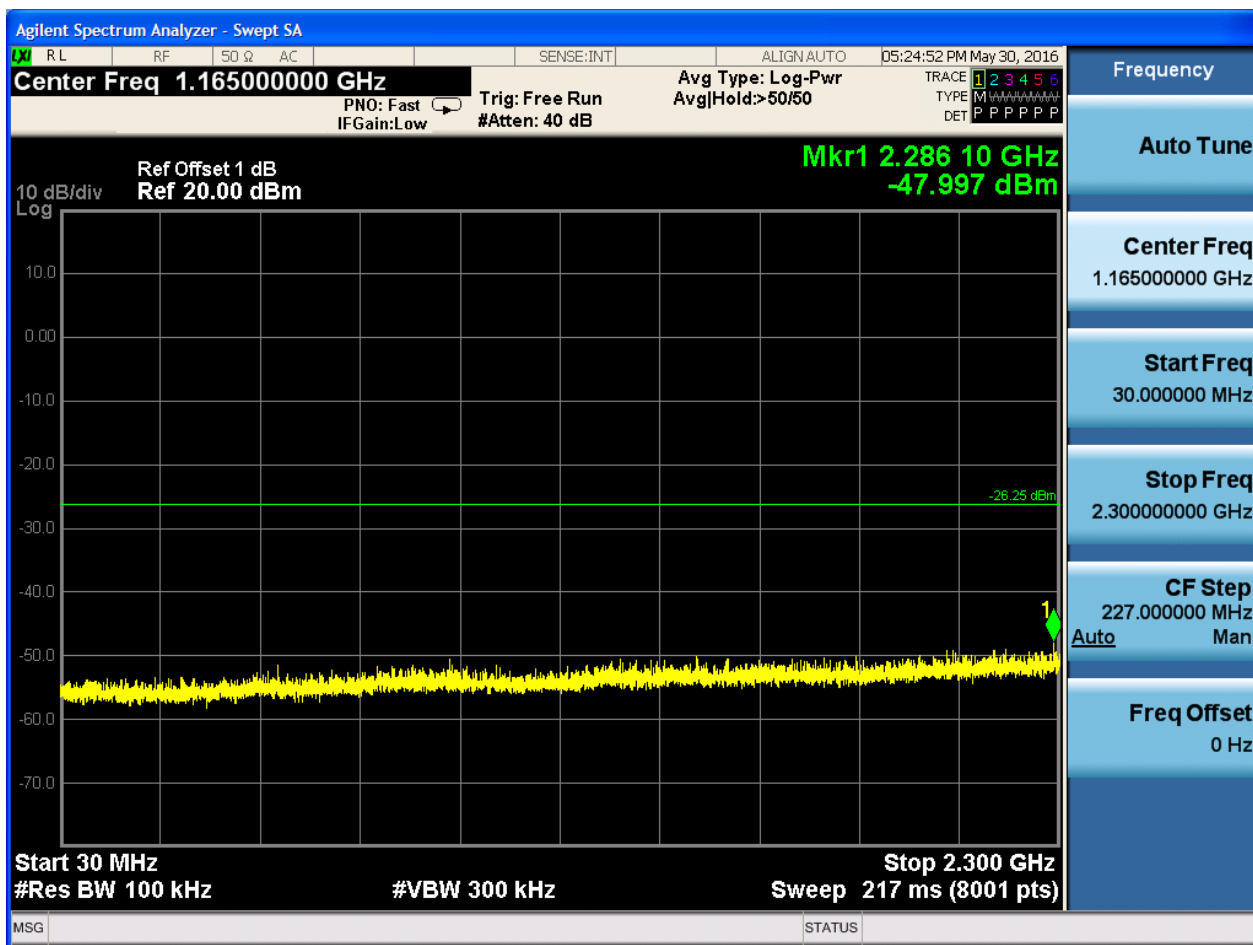


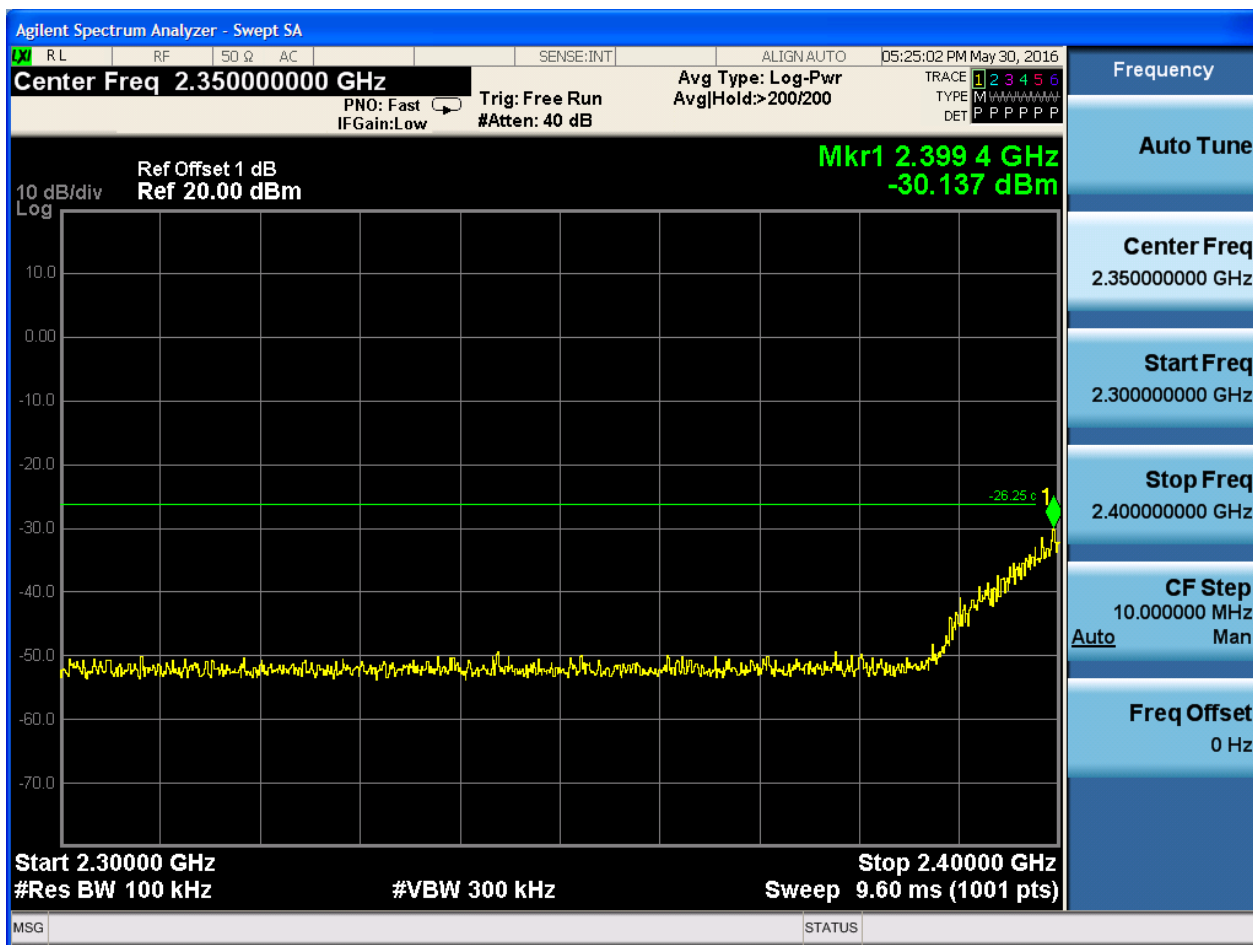


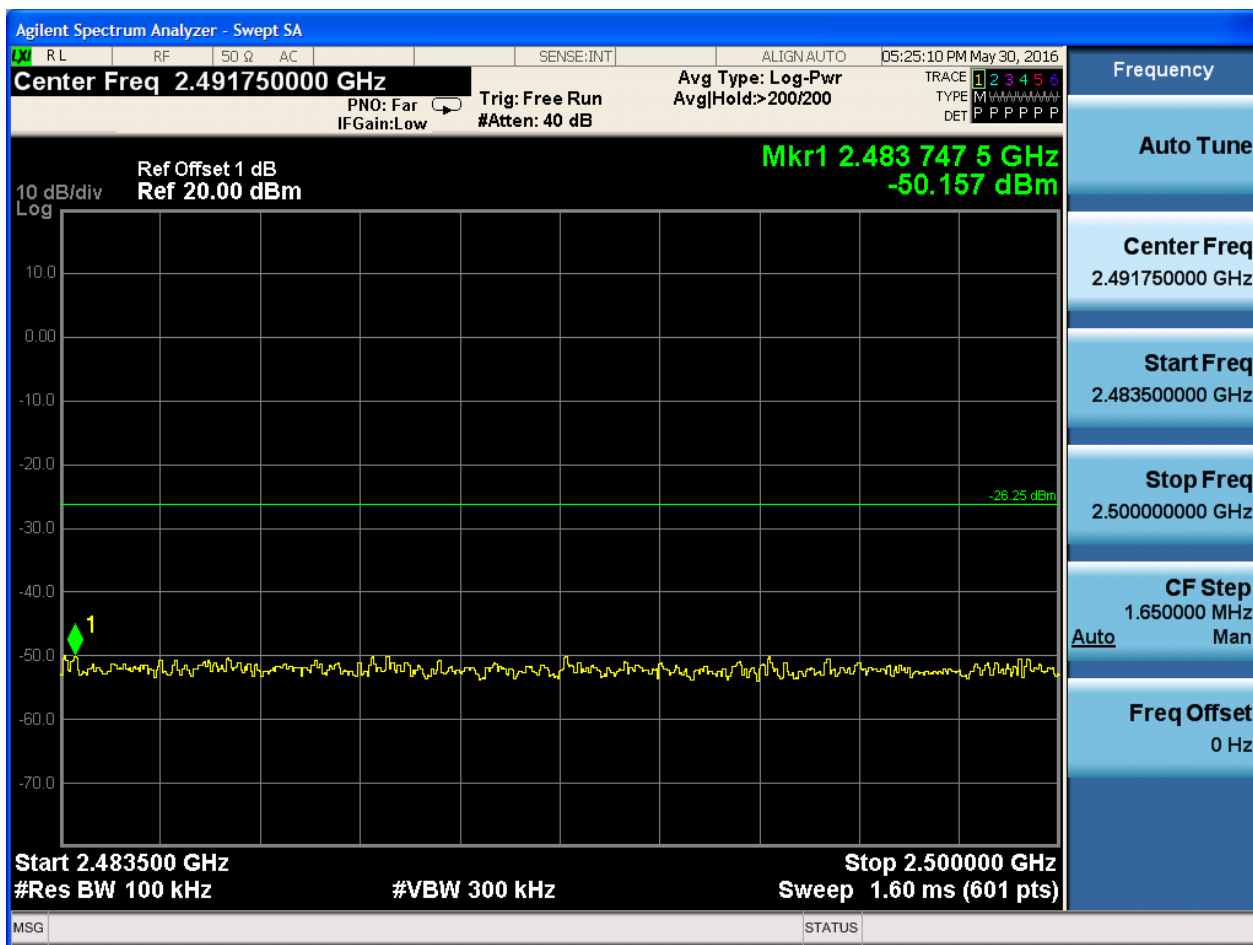
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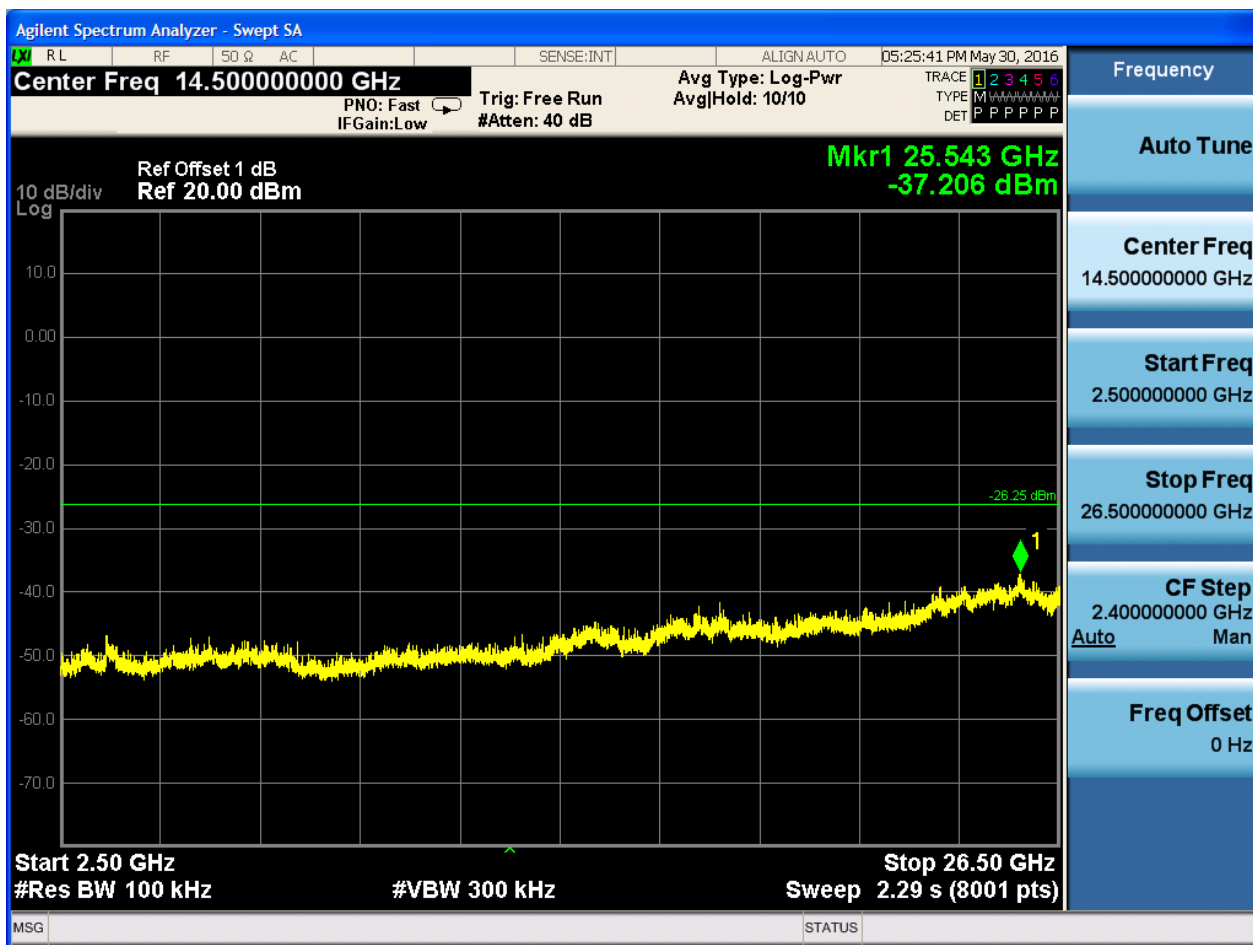








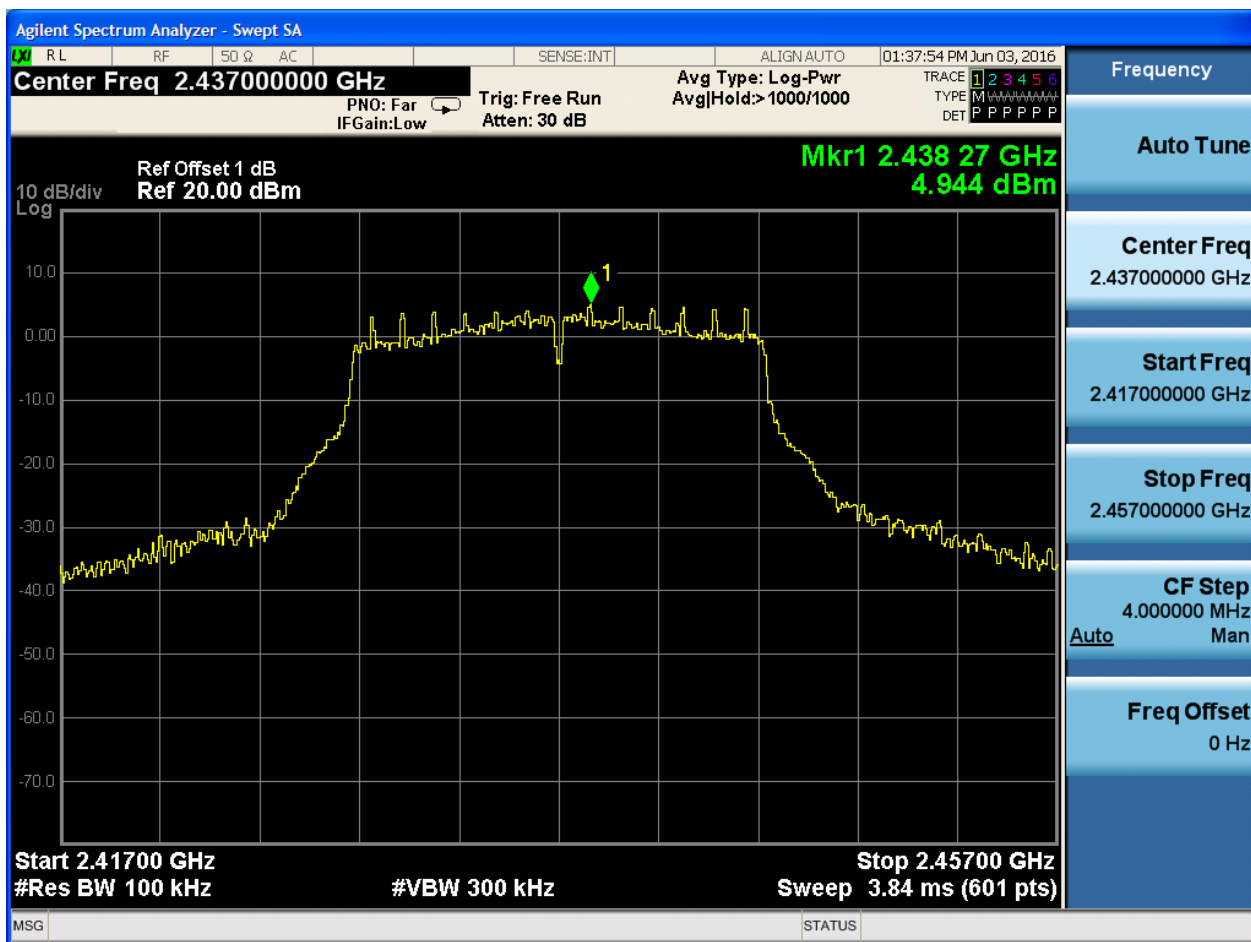






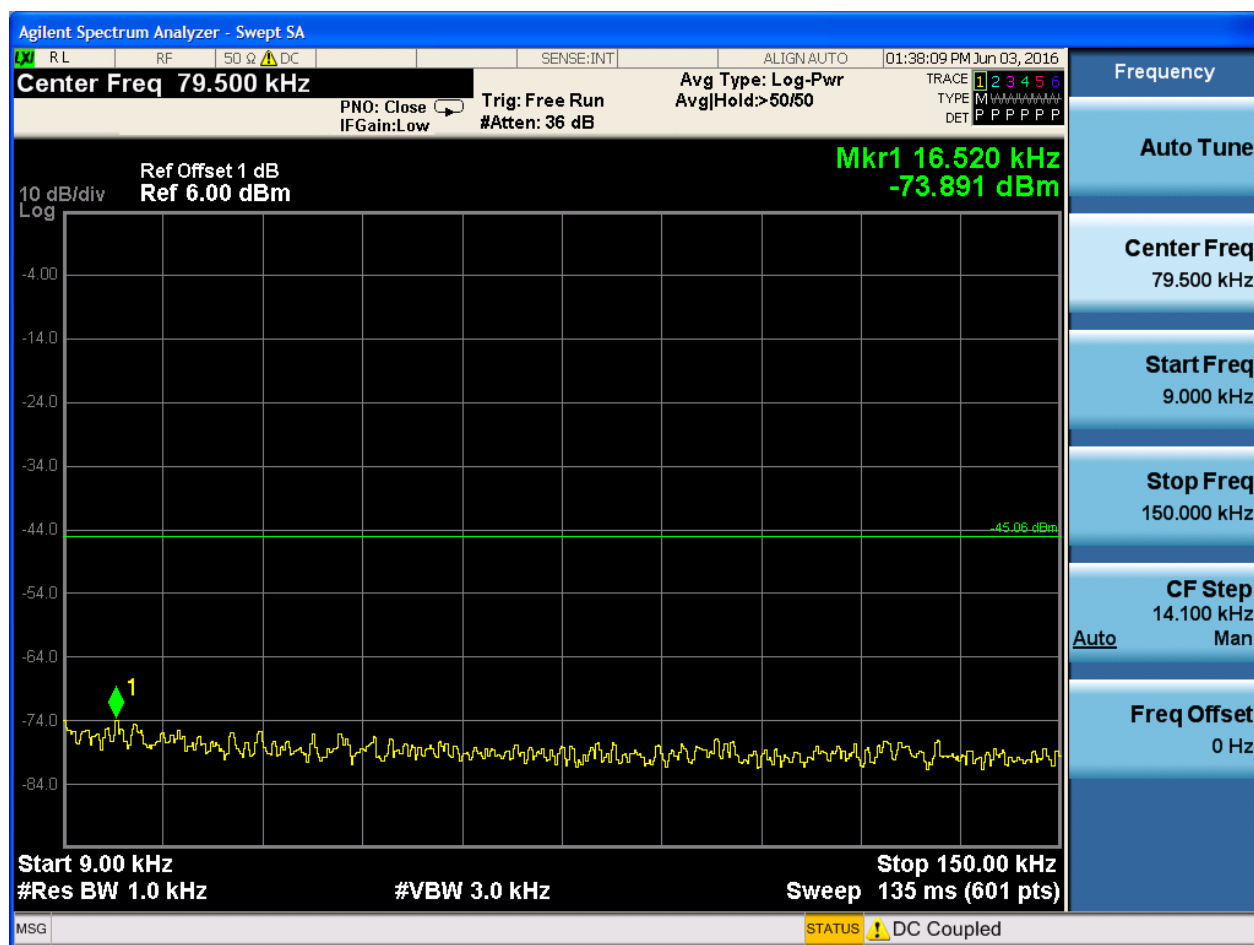
2.5 11G_M@Ant 1

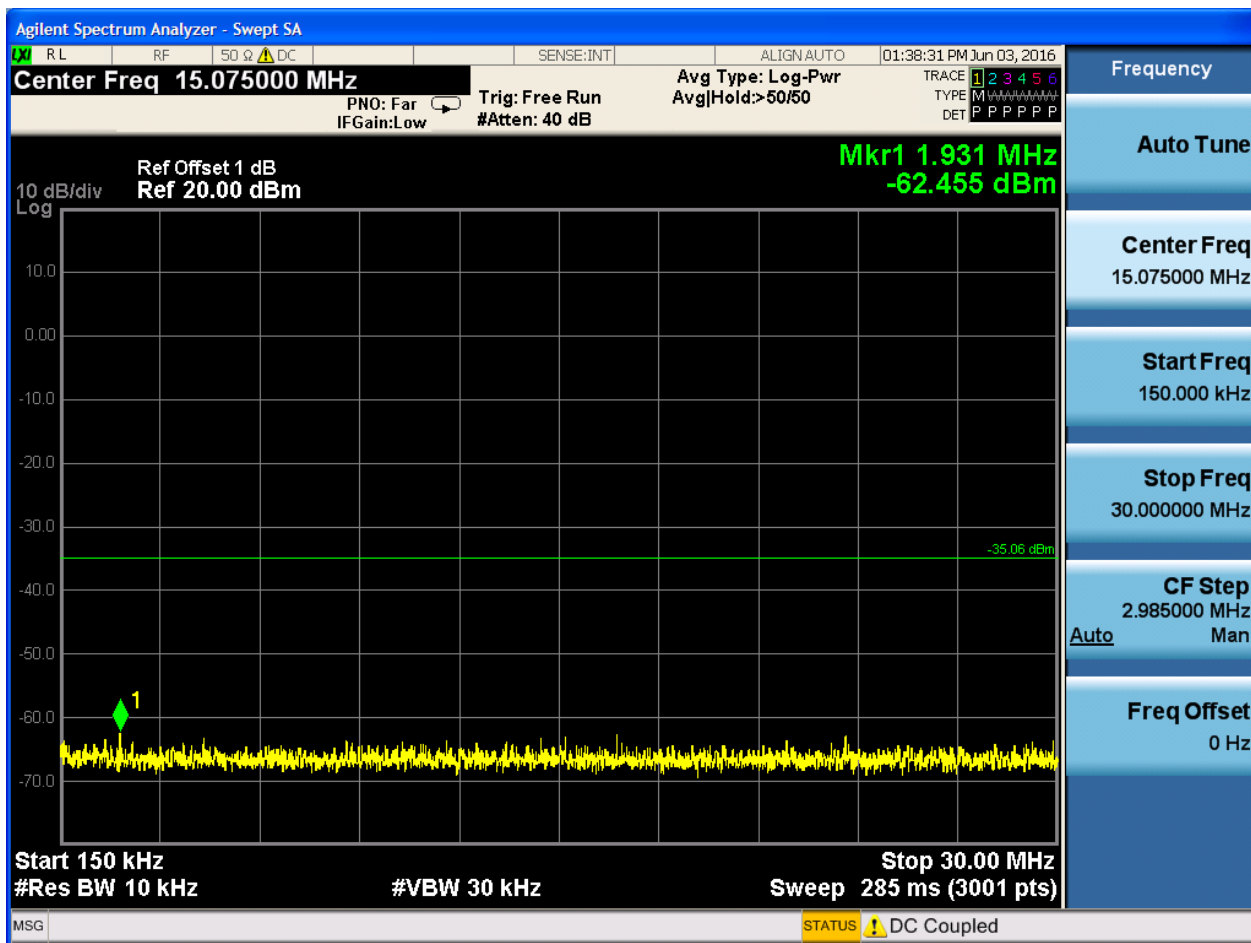
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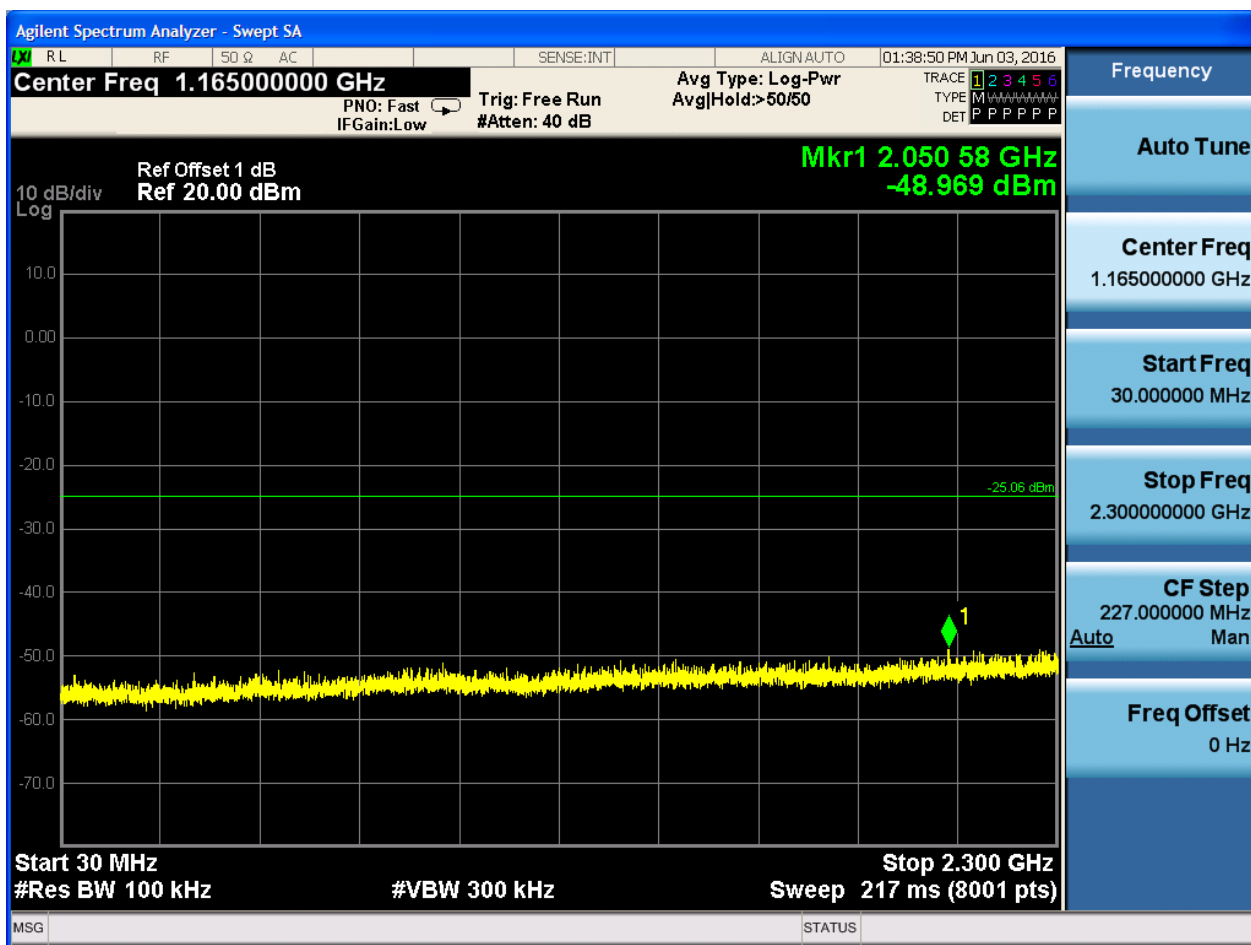


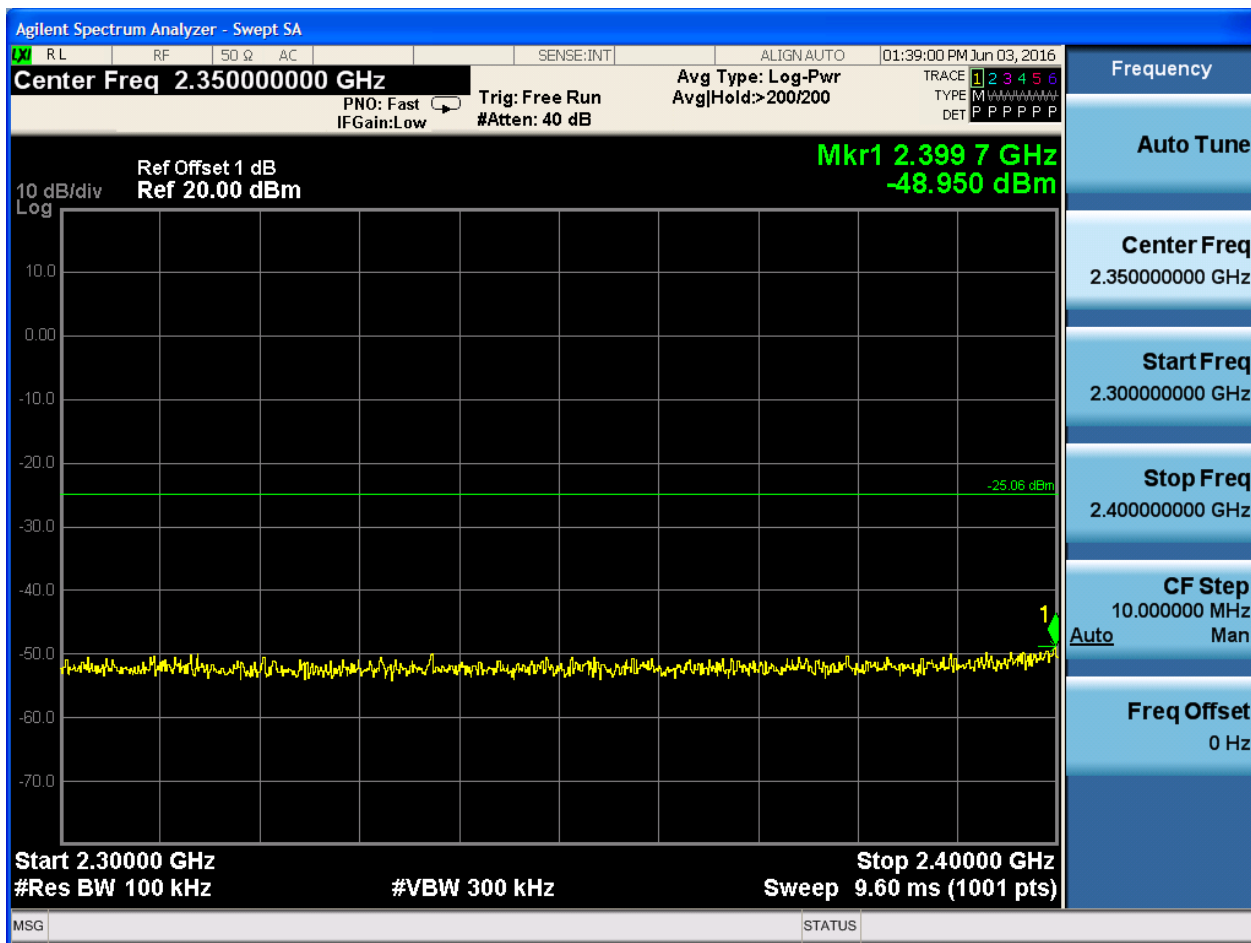


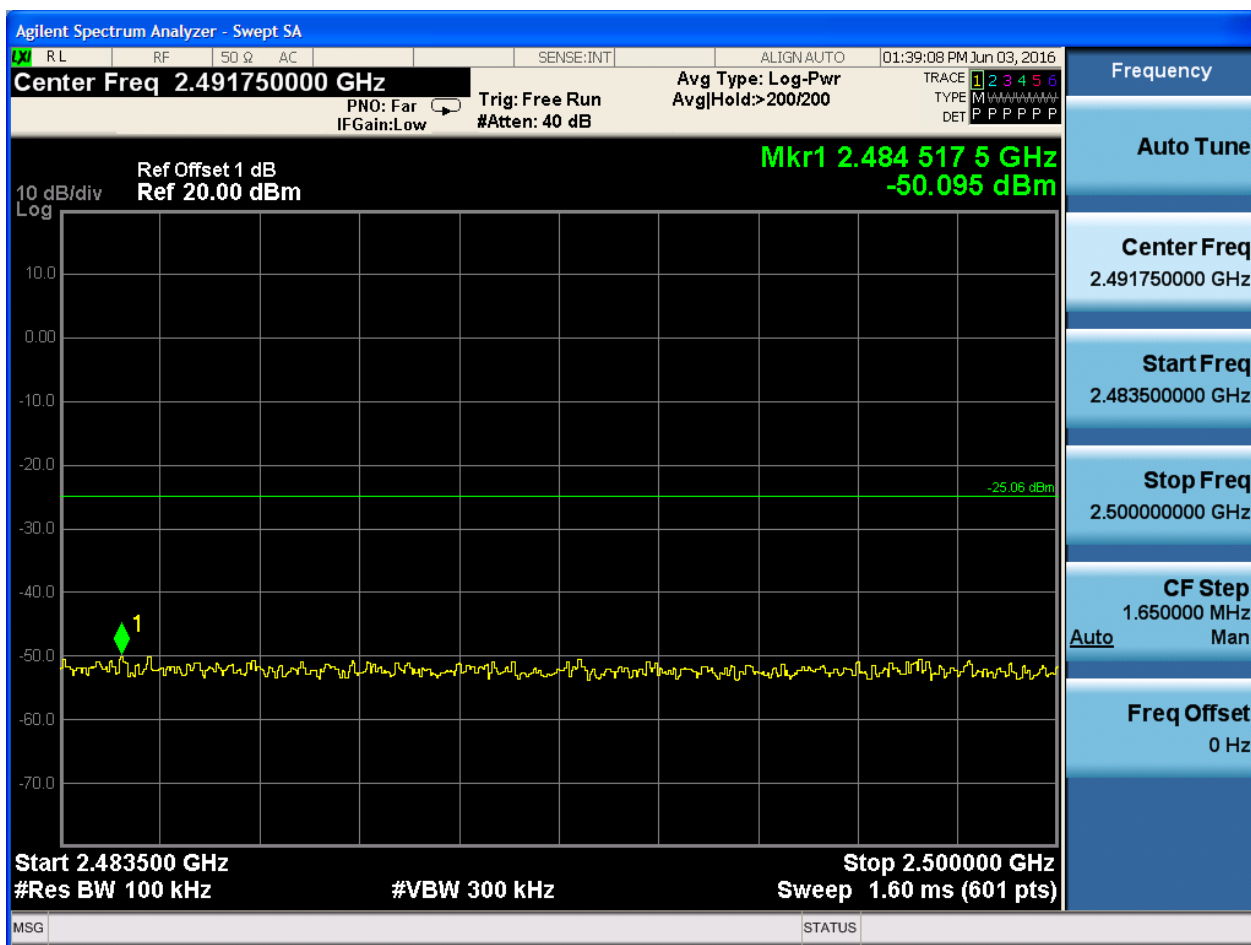
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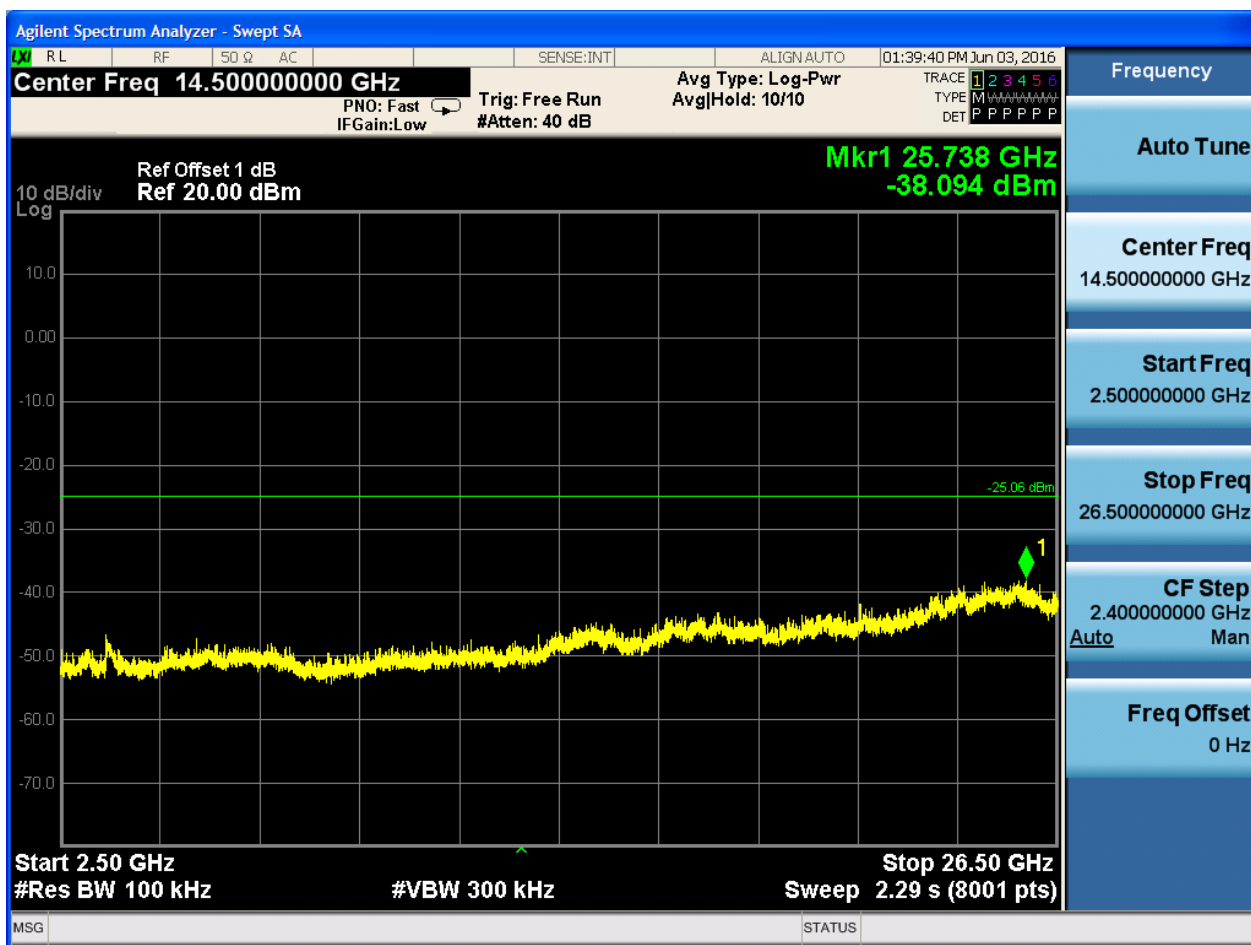






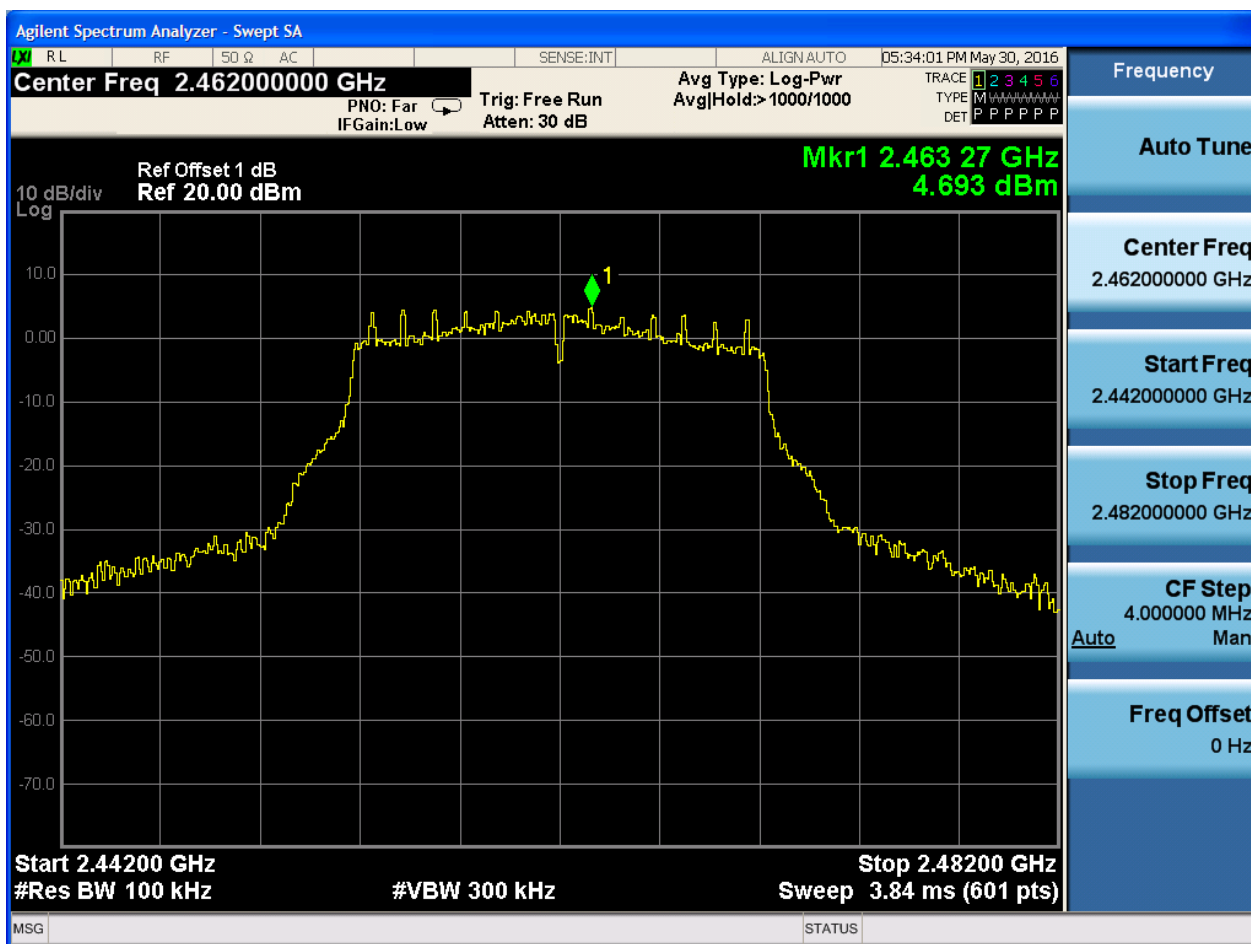






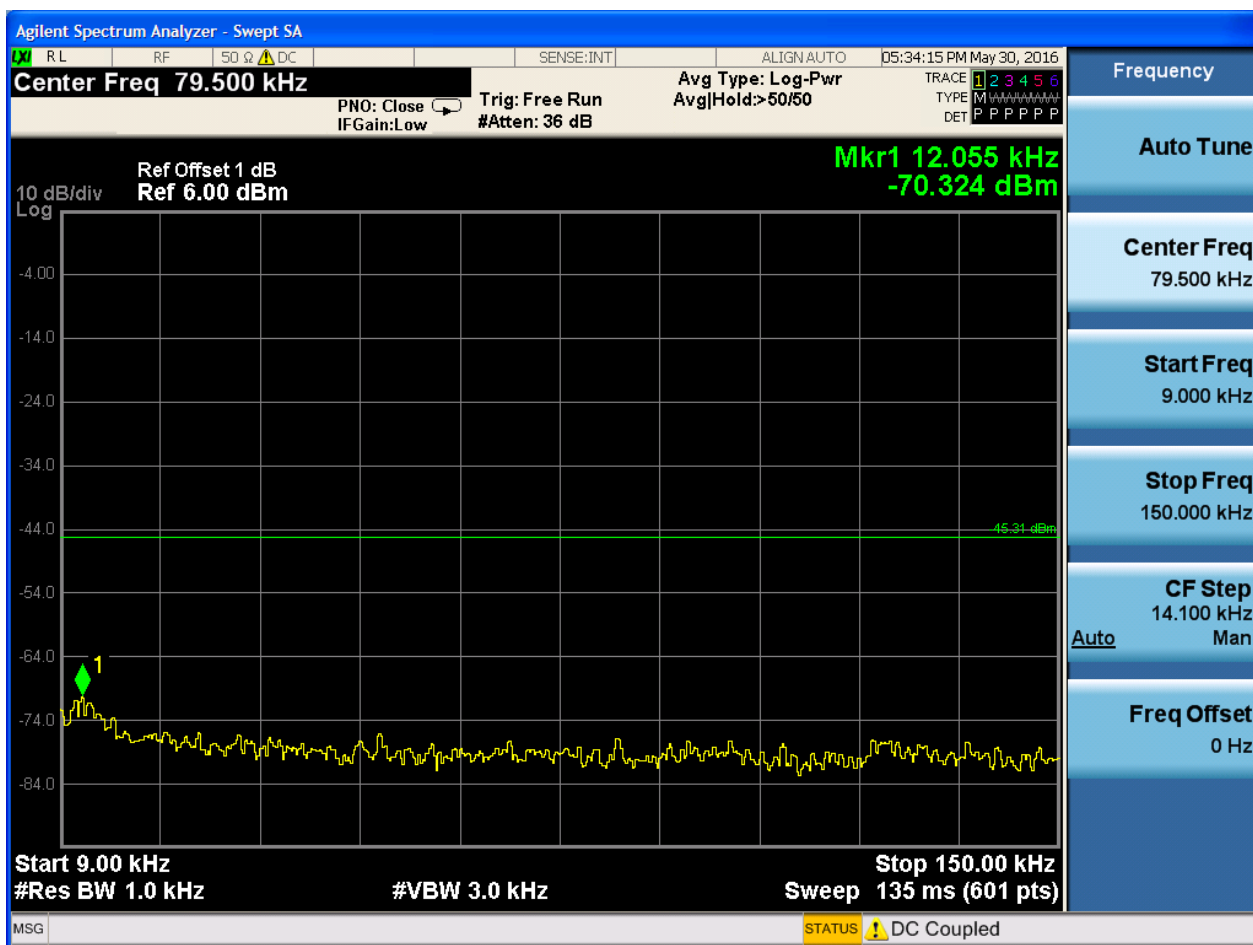
2.6 11G_H@Ant 1

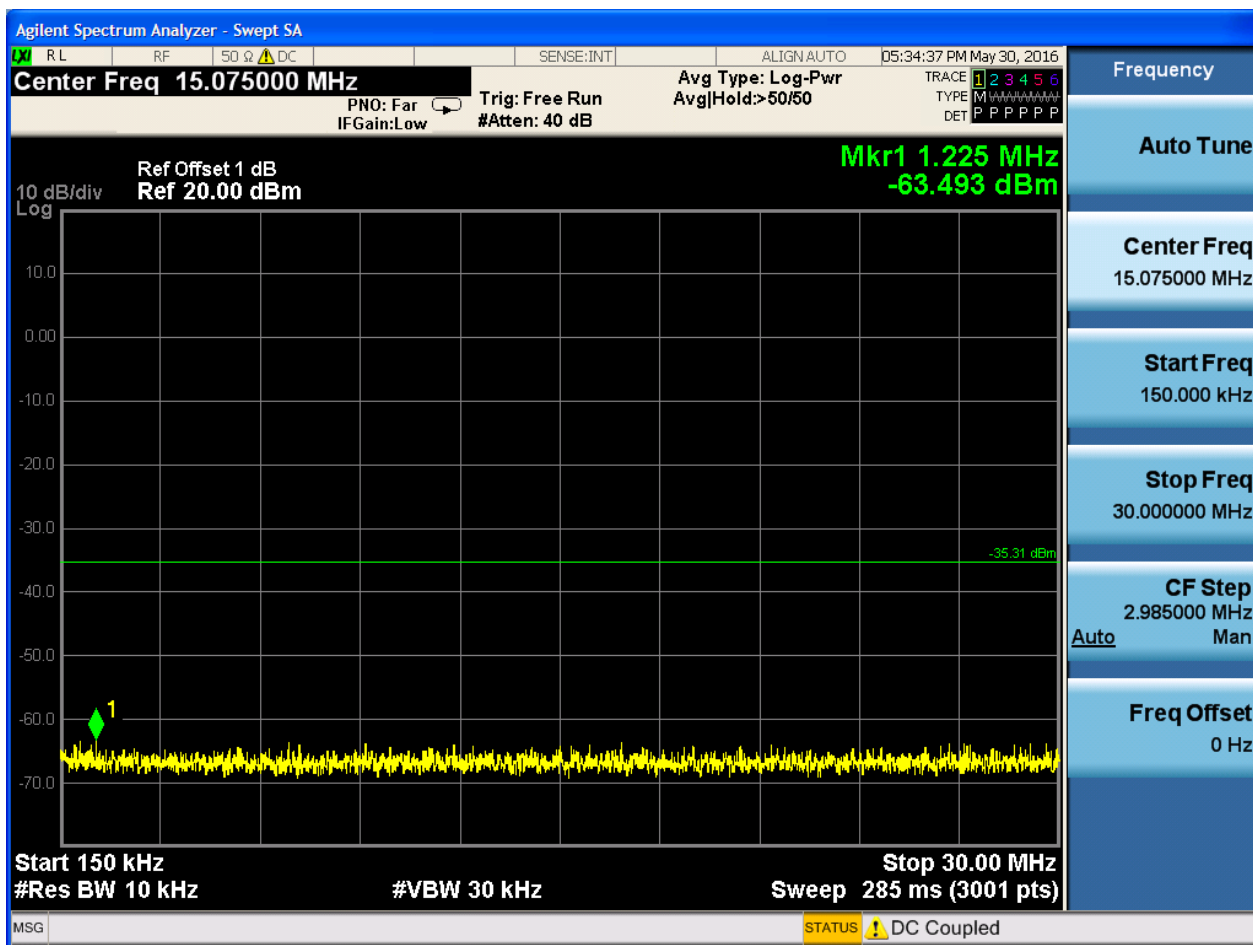
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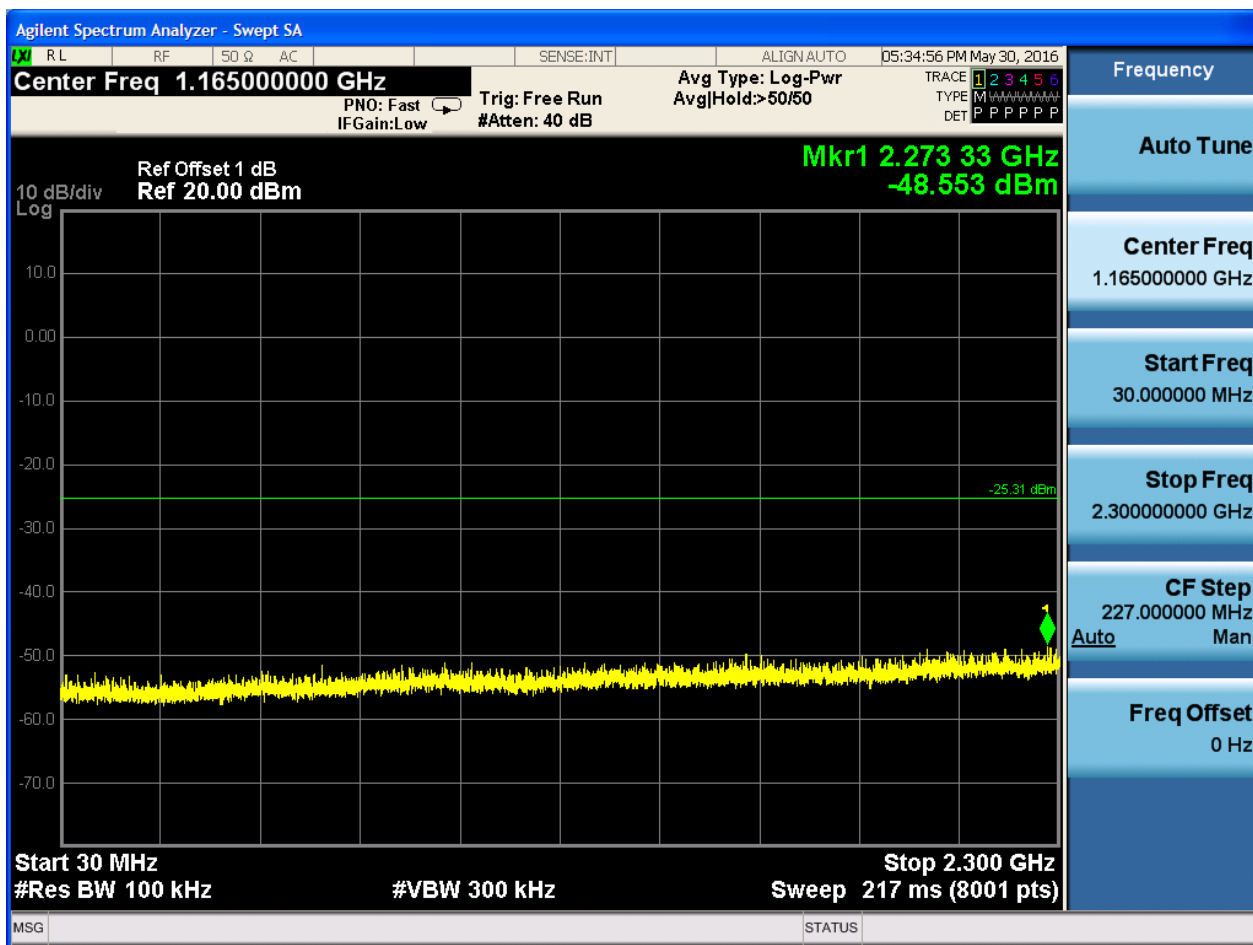


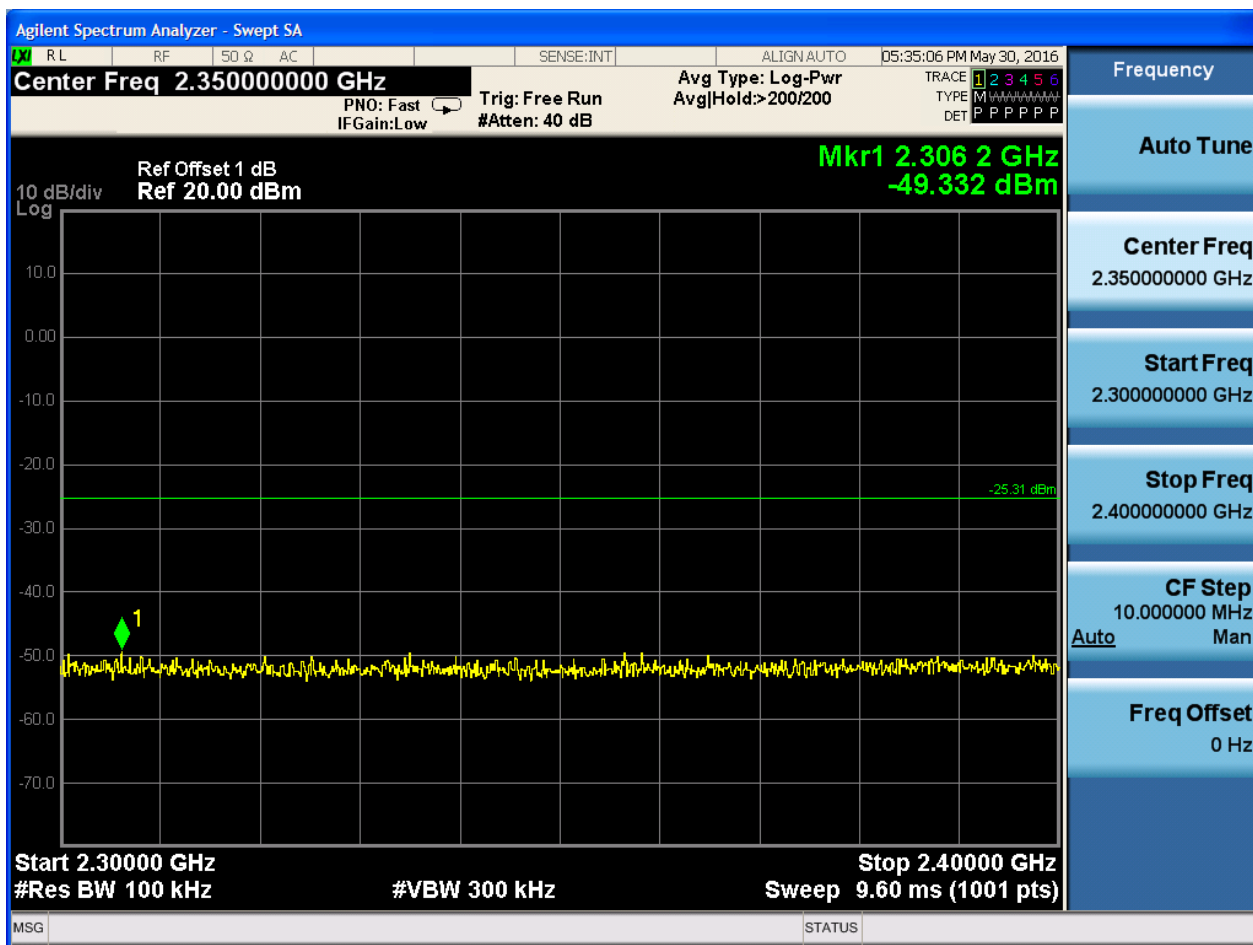


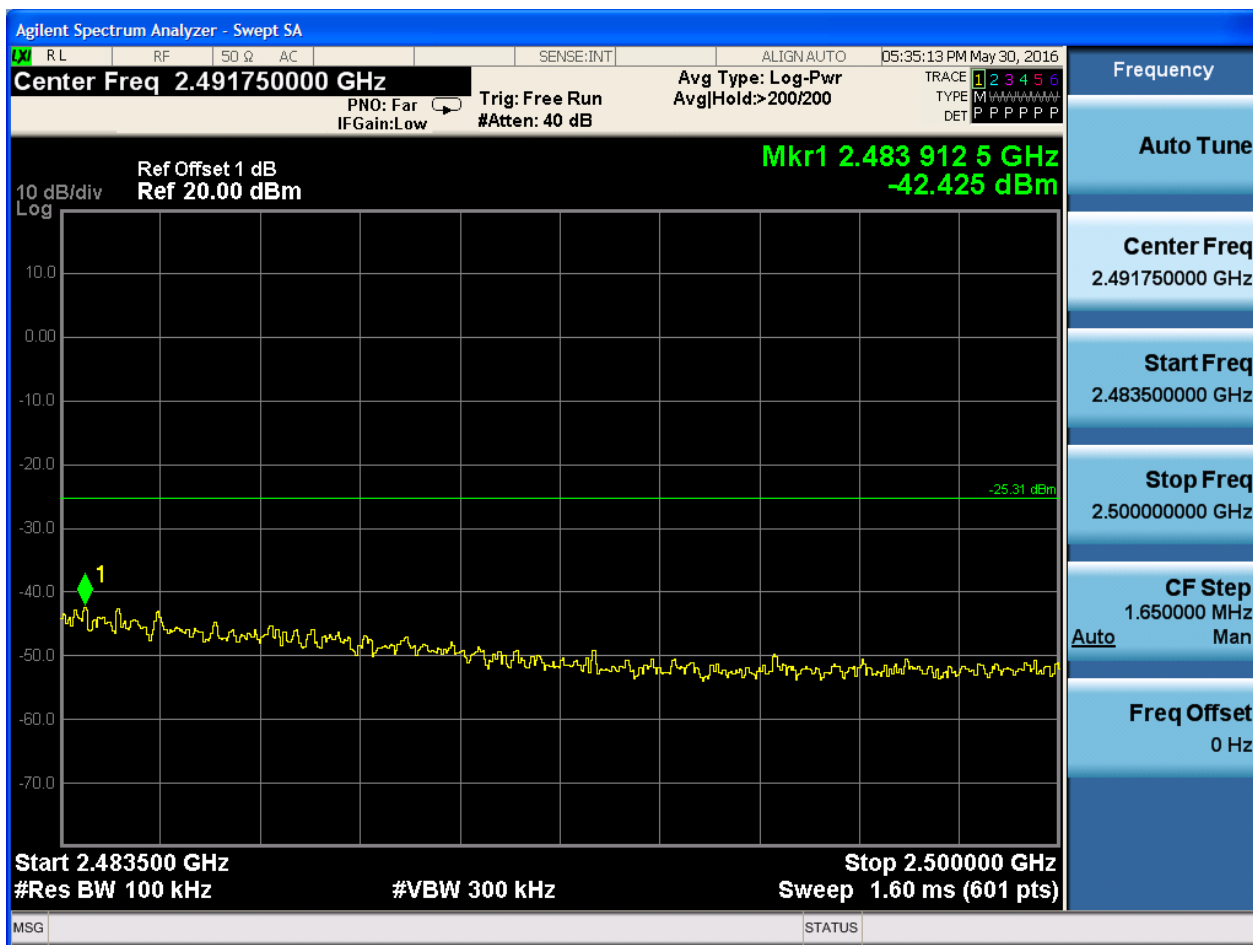
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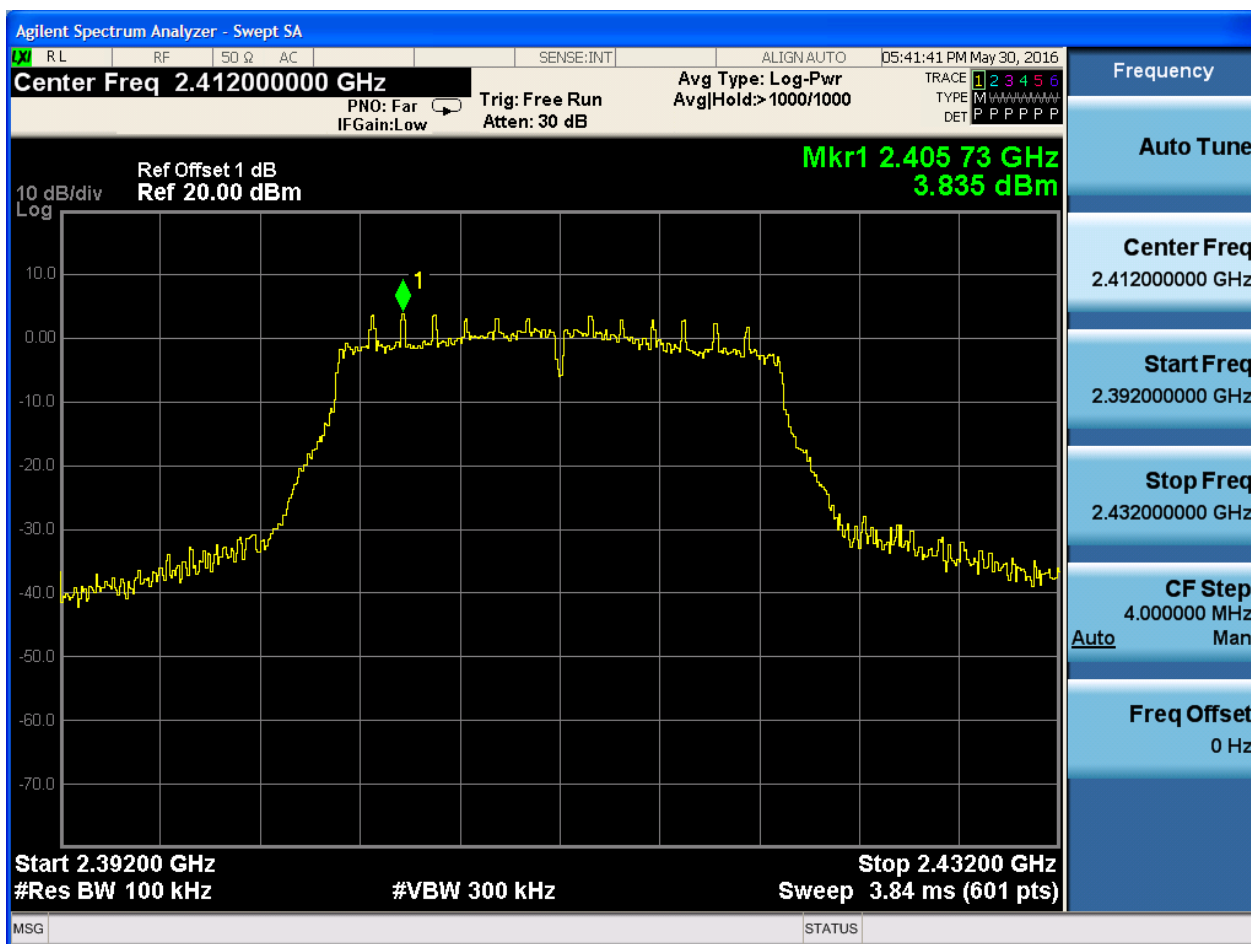






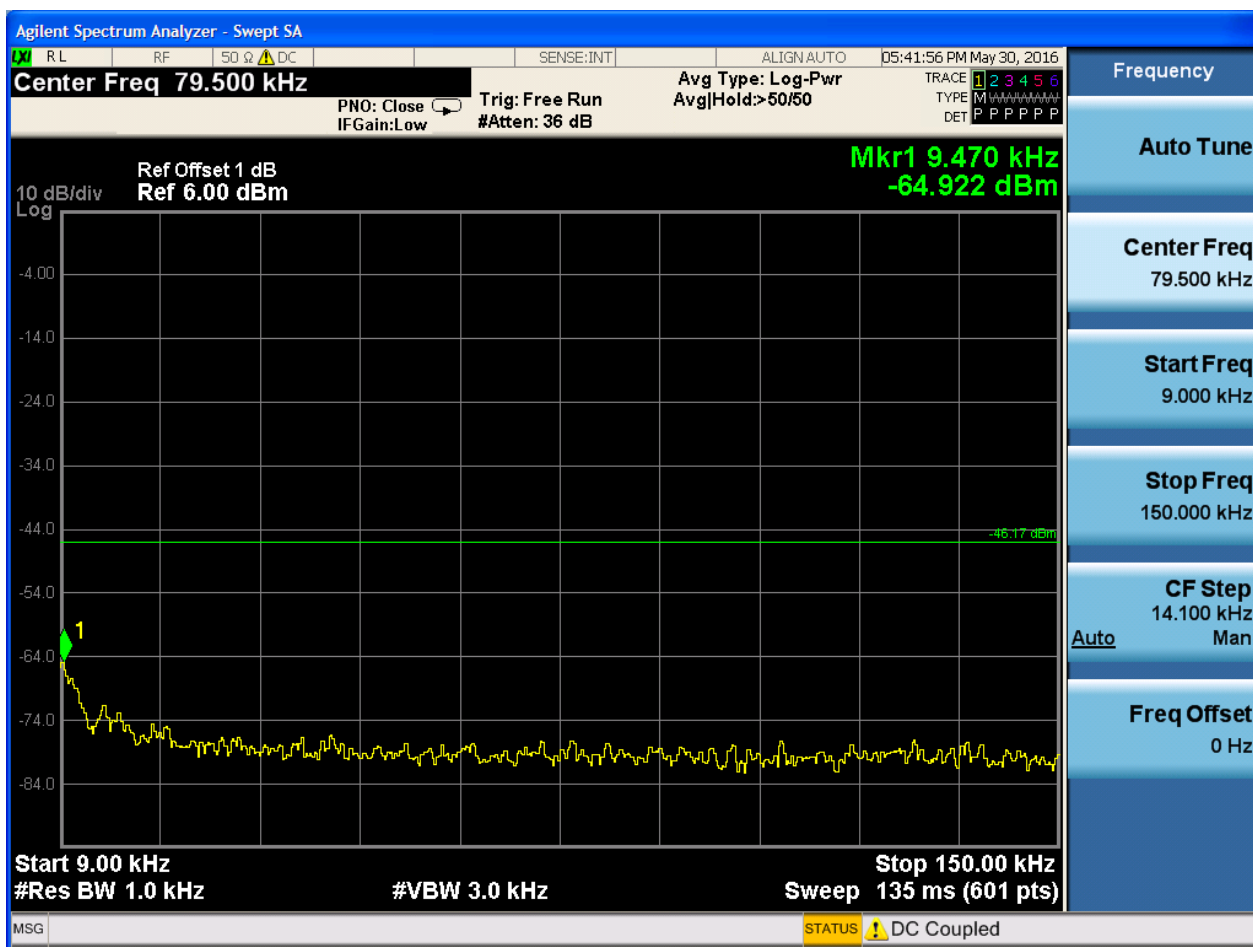
2.7 11N20_L@Ant 1

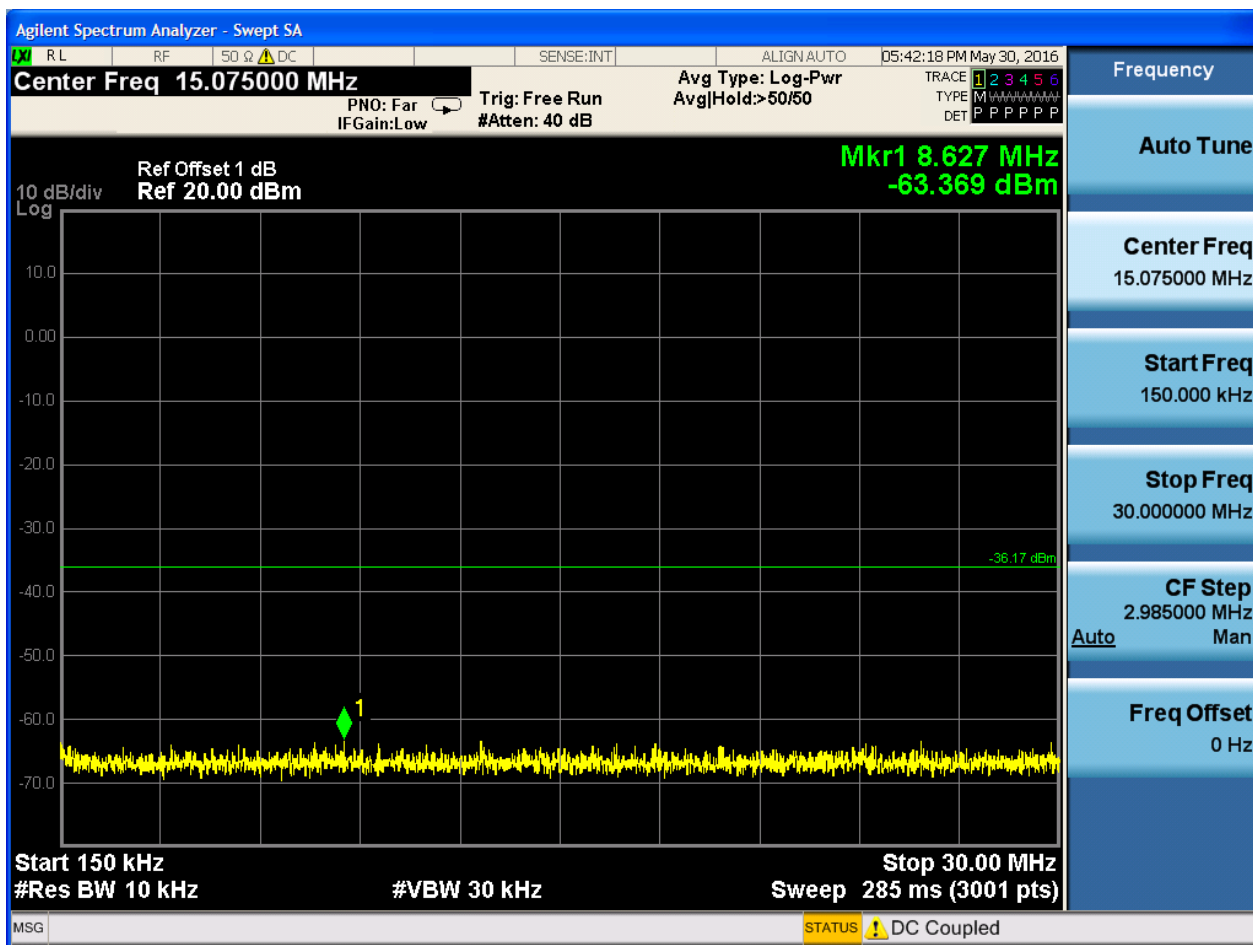
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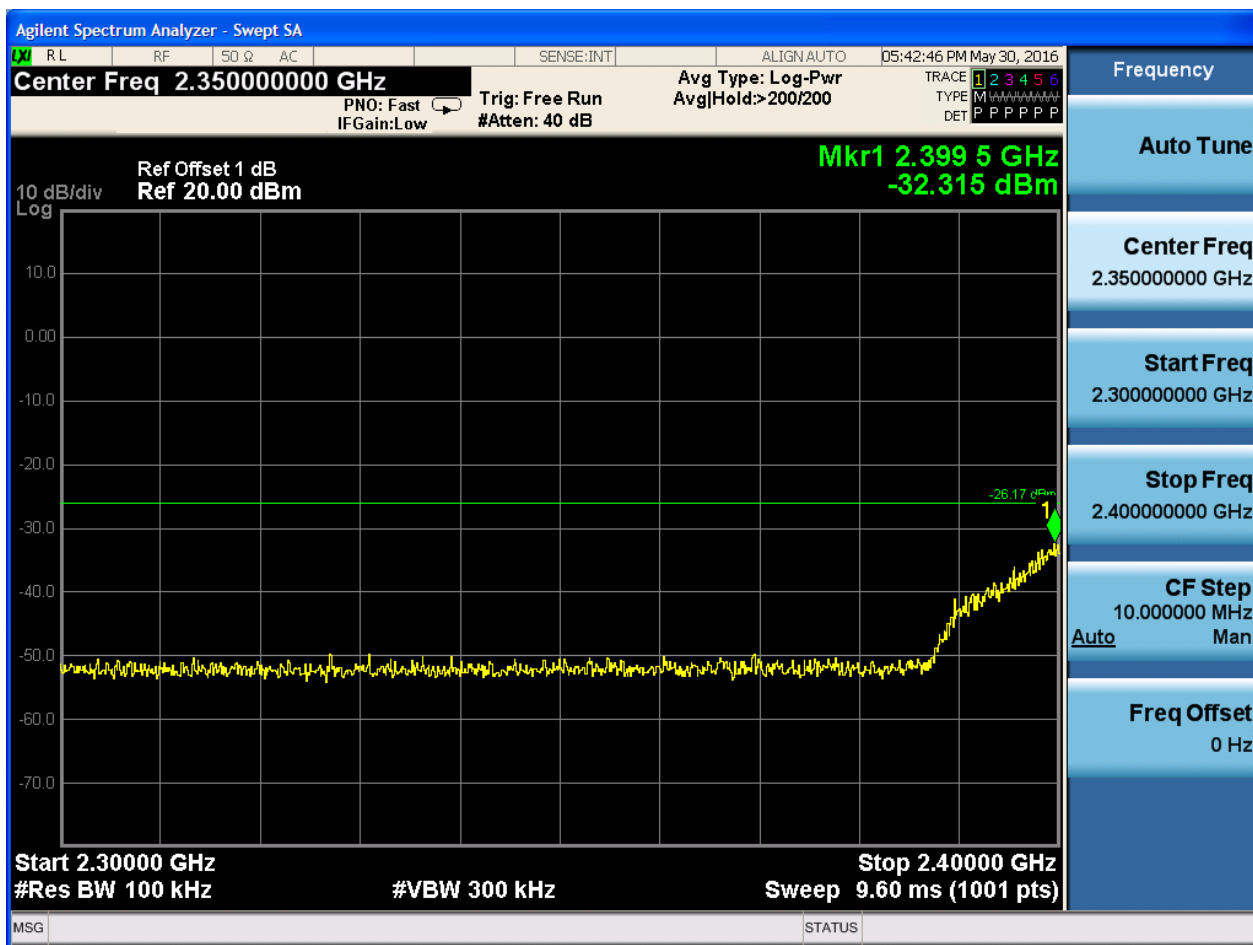


Puw:









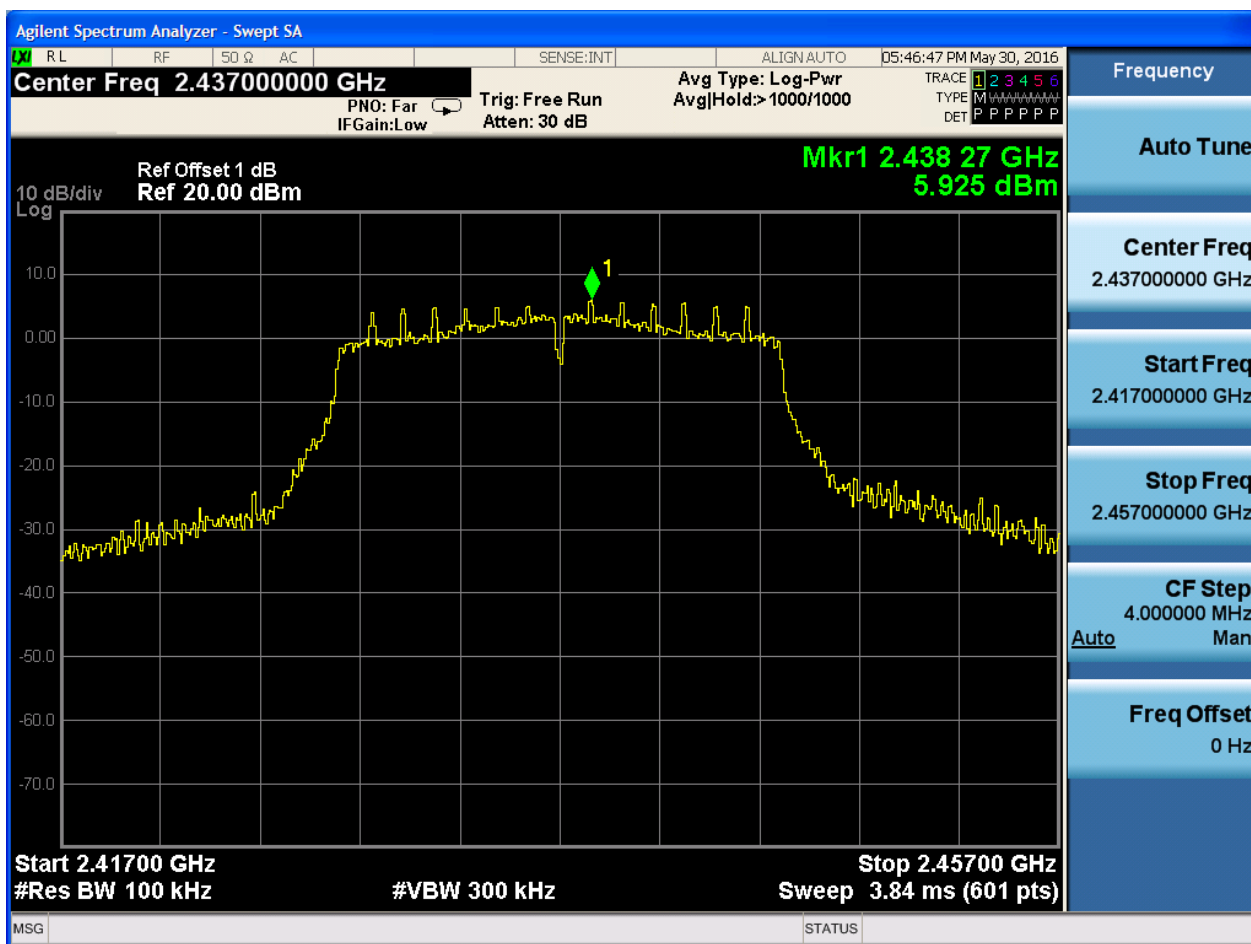






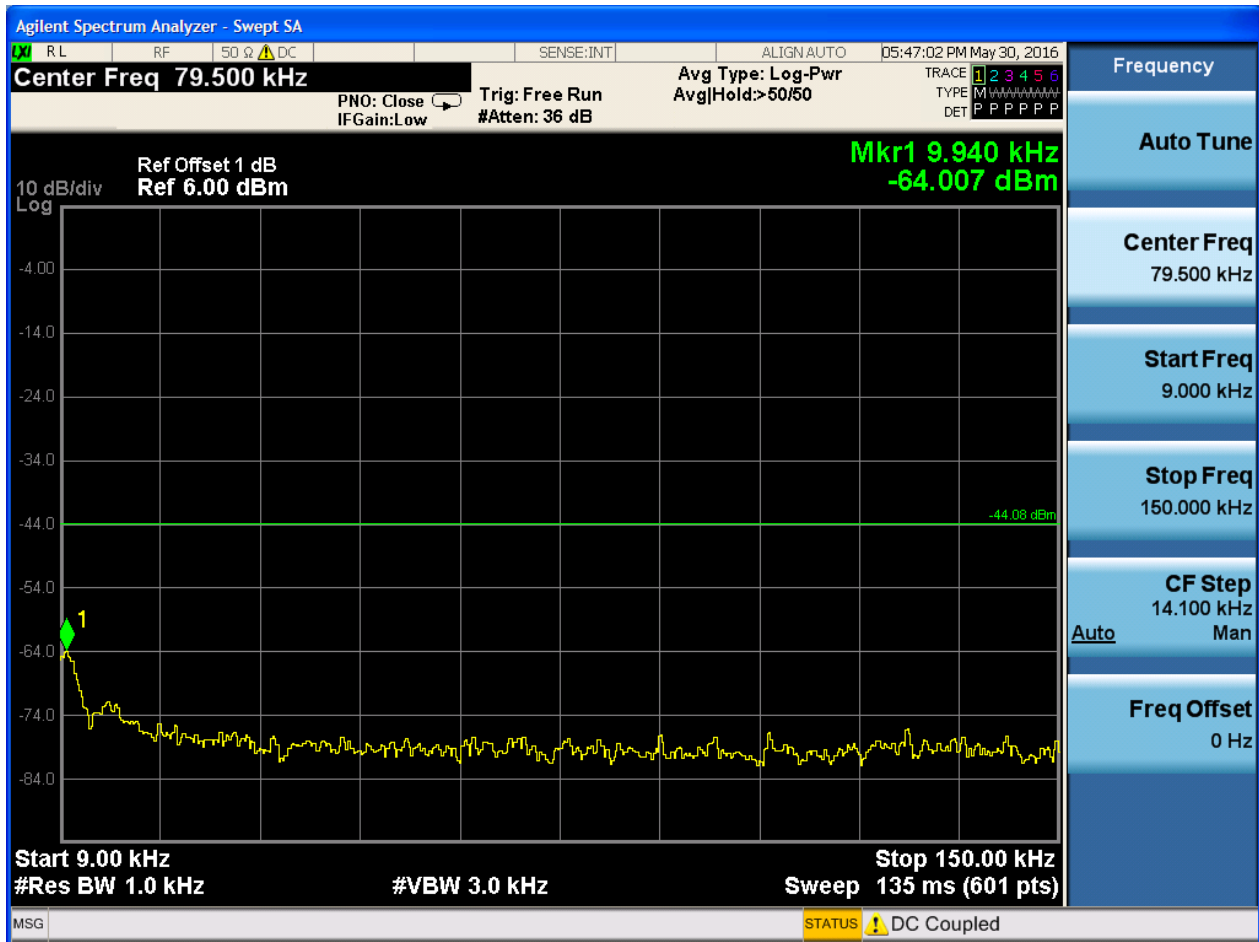
2.8 11N20_M@Ant 1

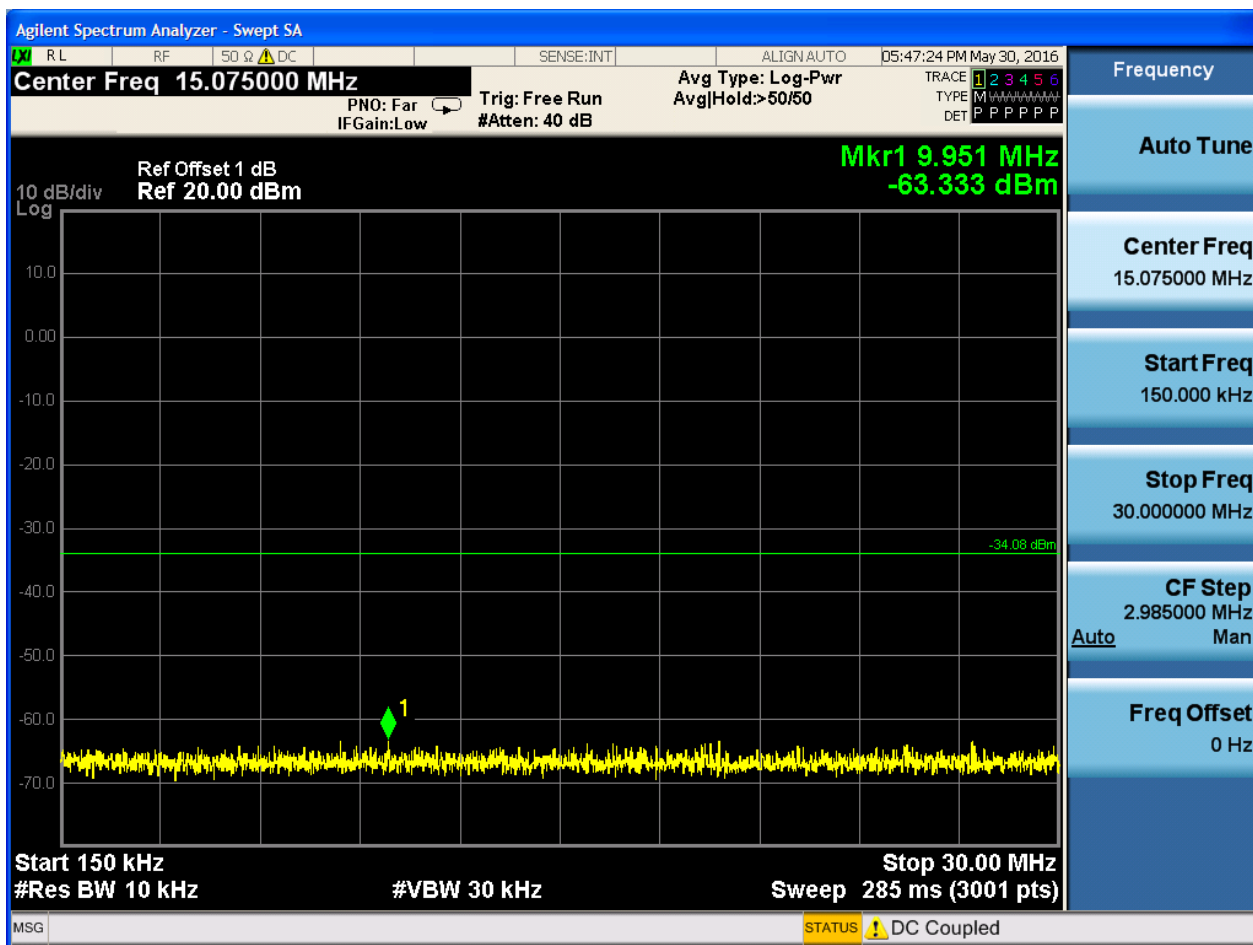
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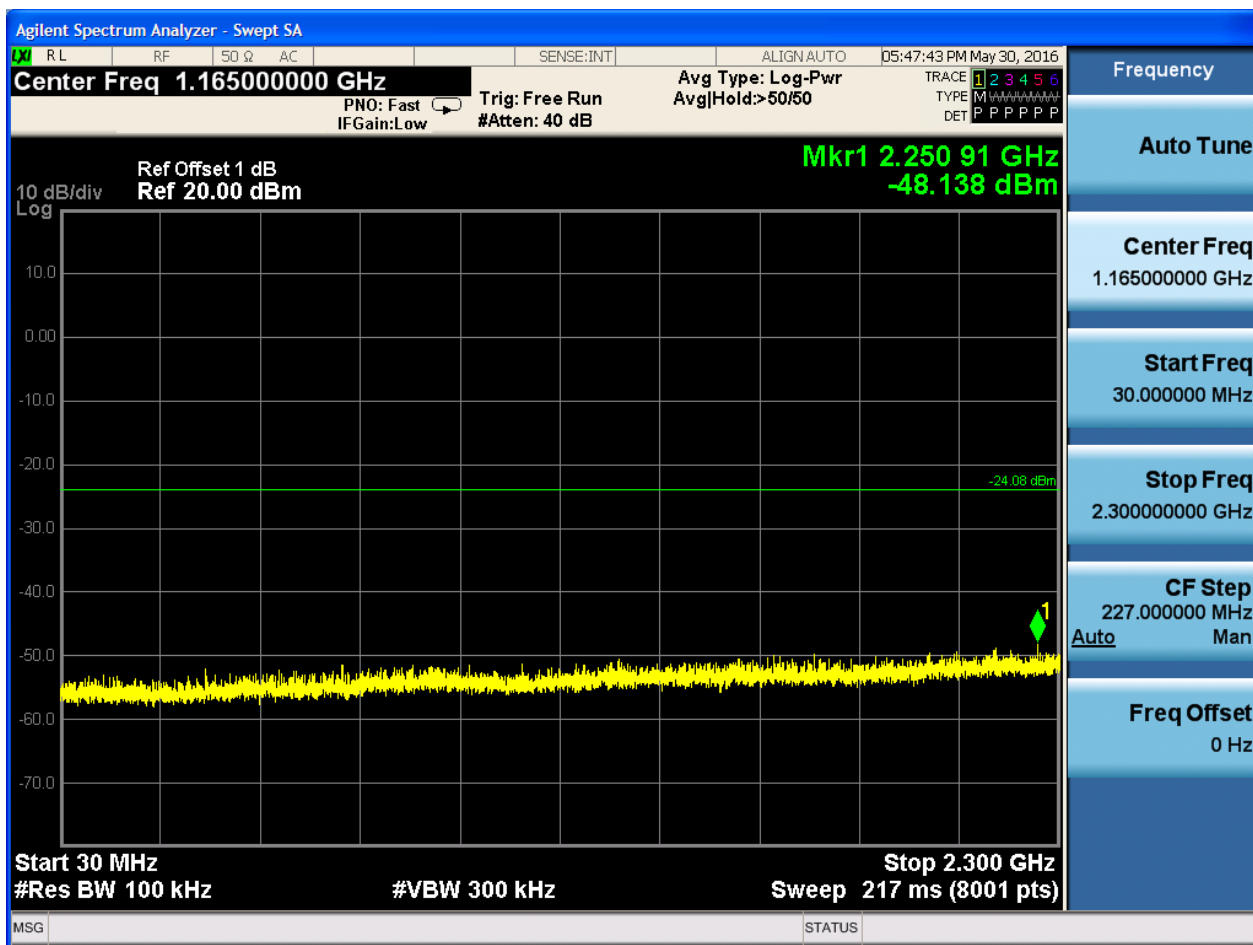


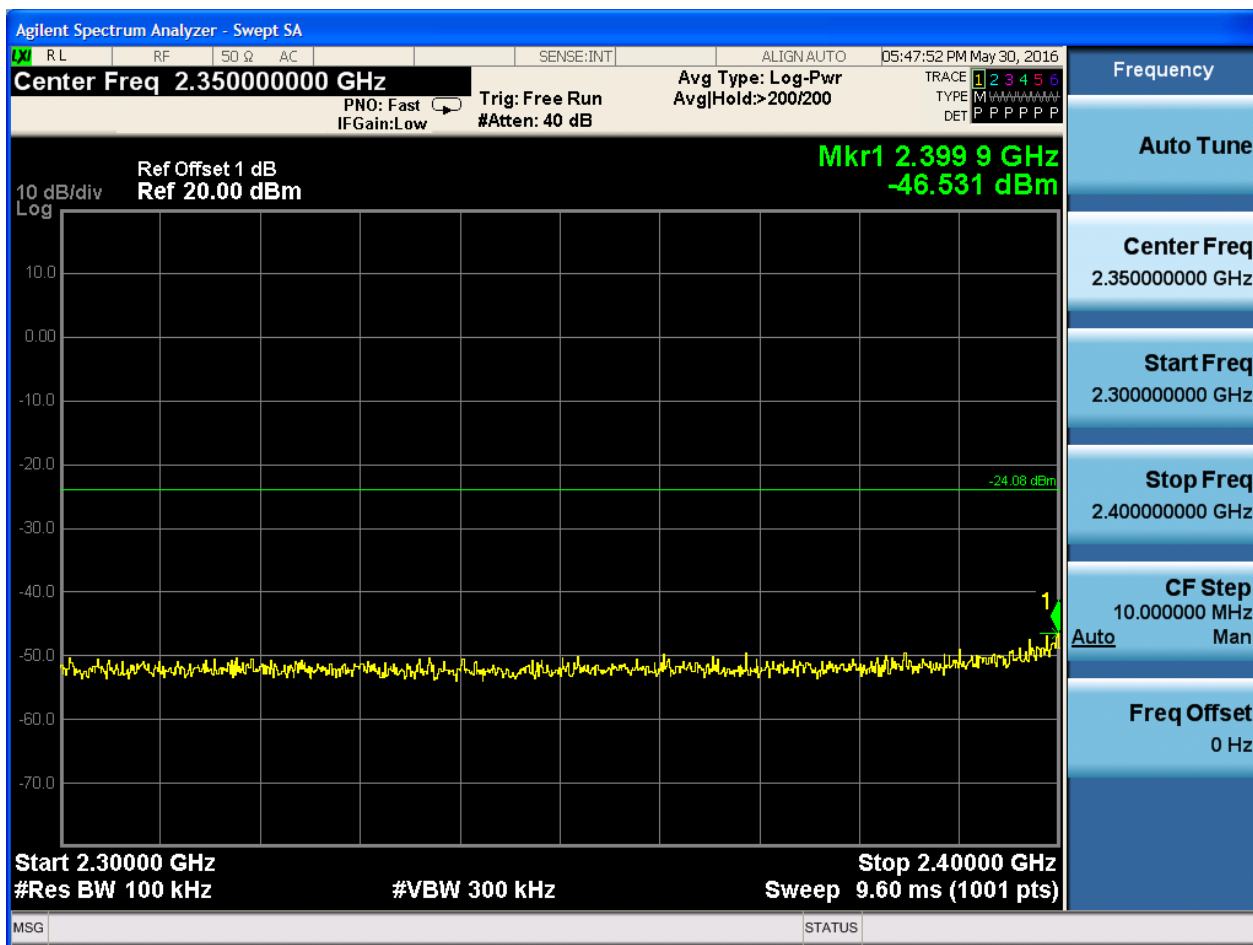


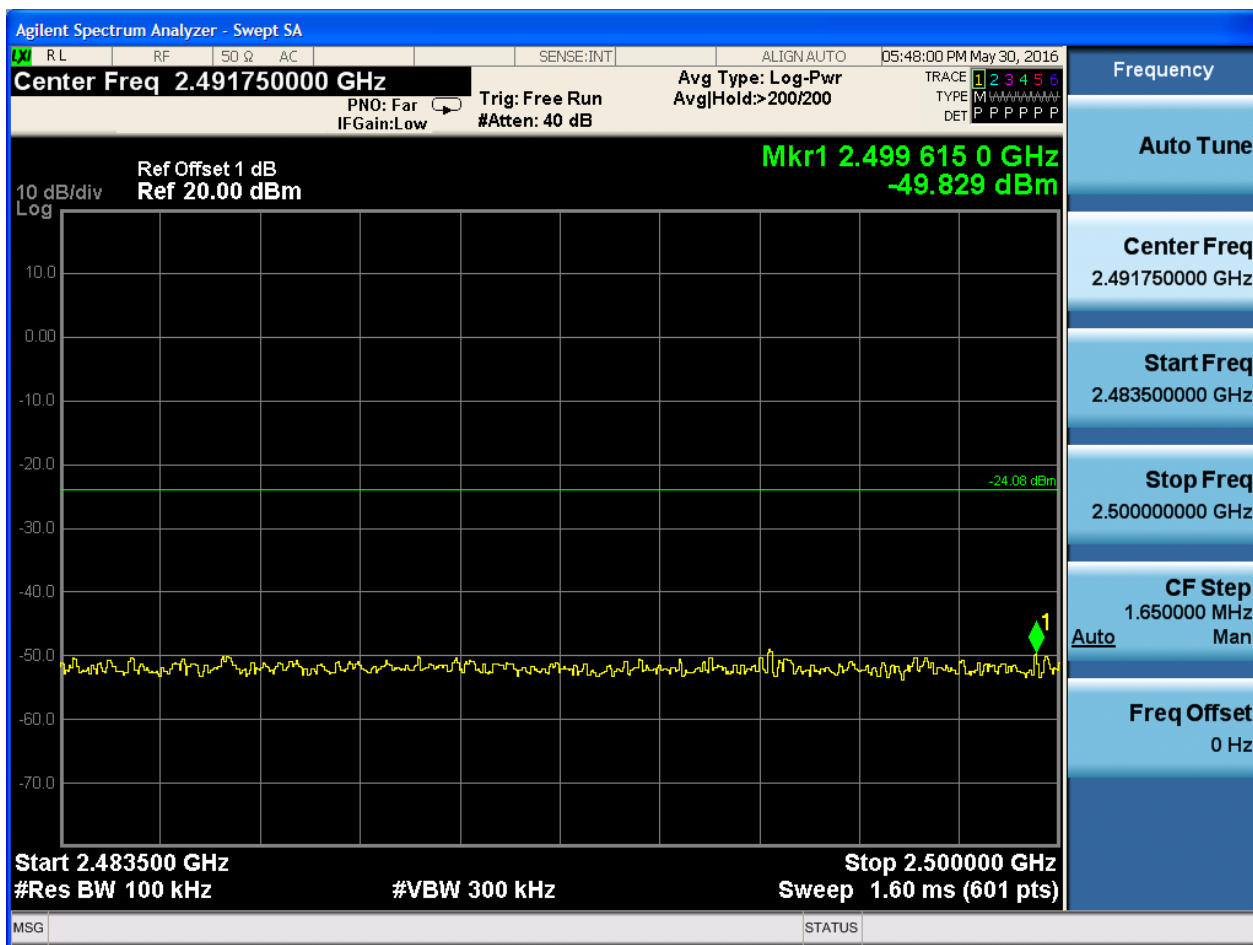
Puw:















2.9 11N20_H@Ant 1

Pref:

