



Appendix for Testreport

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.

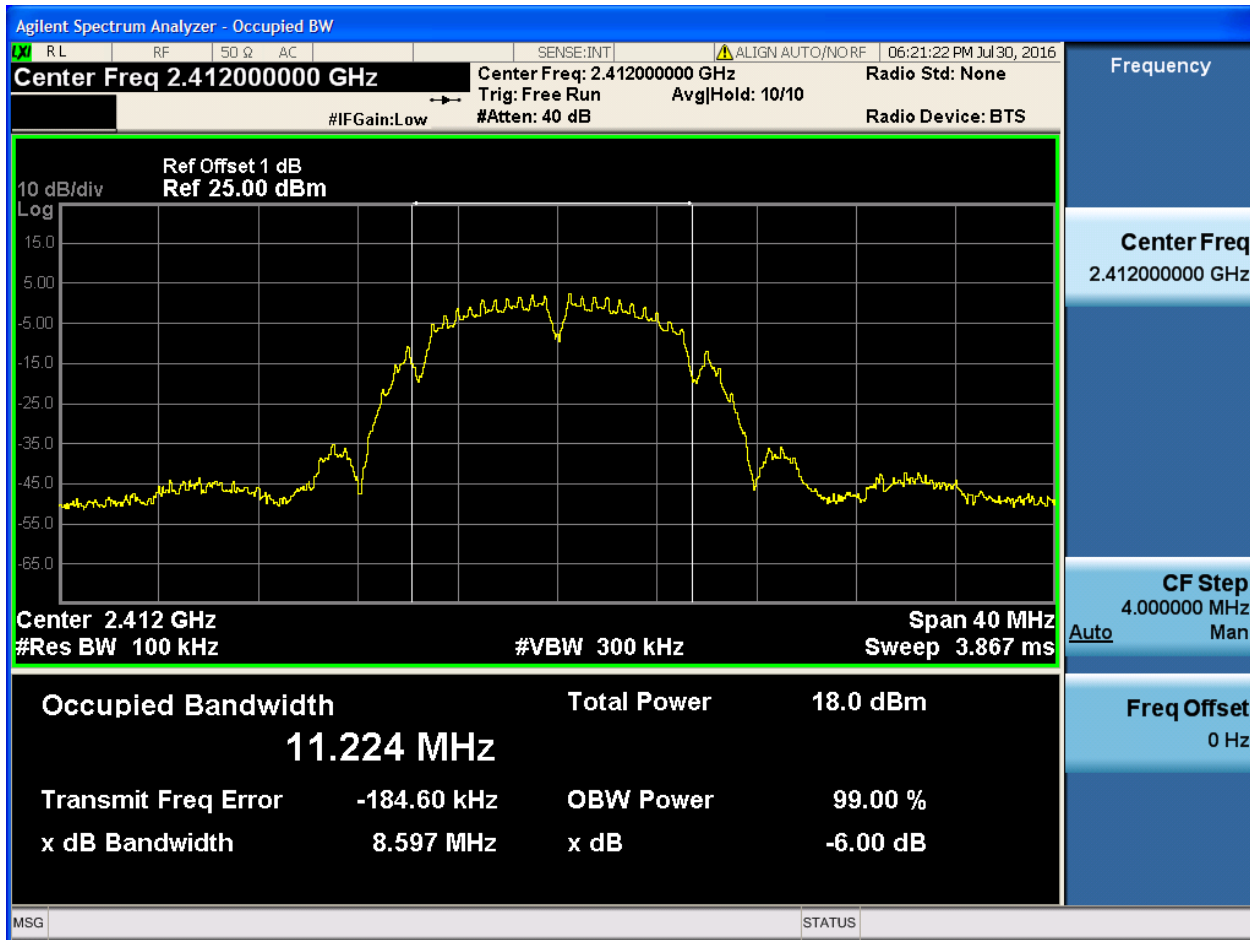
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	DTS6dBBW[MHz]	Verdict
11B	L	2412	Ant 1	8.60	pass
11B	M	2437	Ant 1	8.59	pass
11B	H	2462	Ant 1	8.09	pass
11G	L	2412	Ant 1	16.40	pass
11G	M	2437	Ant 1	16.41	pass
11G	H	2462	Ant 1	15.72	pass
11N20	L	2412	Ant 1	17.62	pass
11N20	M	2437	Ant 1	17.58	pass
11N20	H	2462	Ant 1	16.82	pass
11N40	L	2422	Ant 1	35.38	pass
11N40	M	2437	Ant 1	35.40	pass
11N40	H	2452	Ant 1	35.18	pass



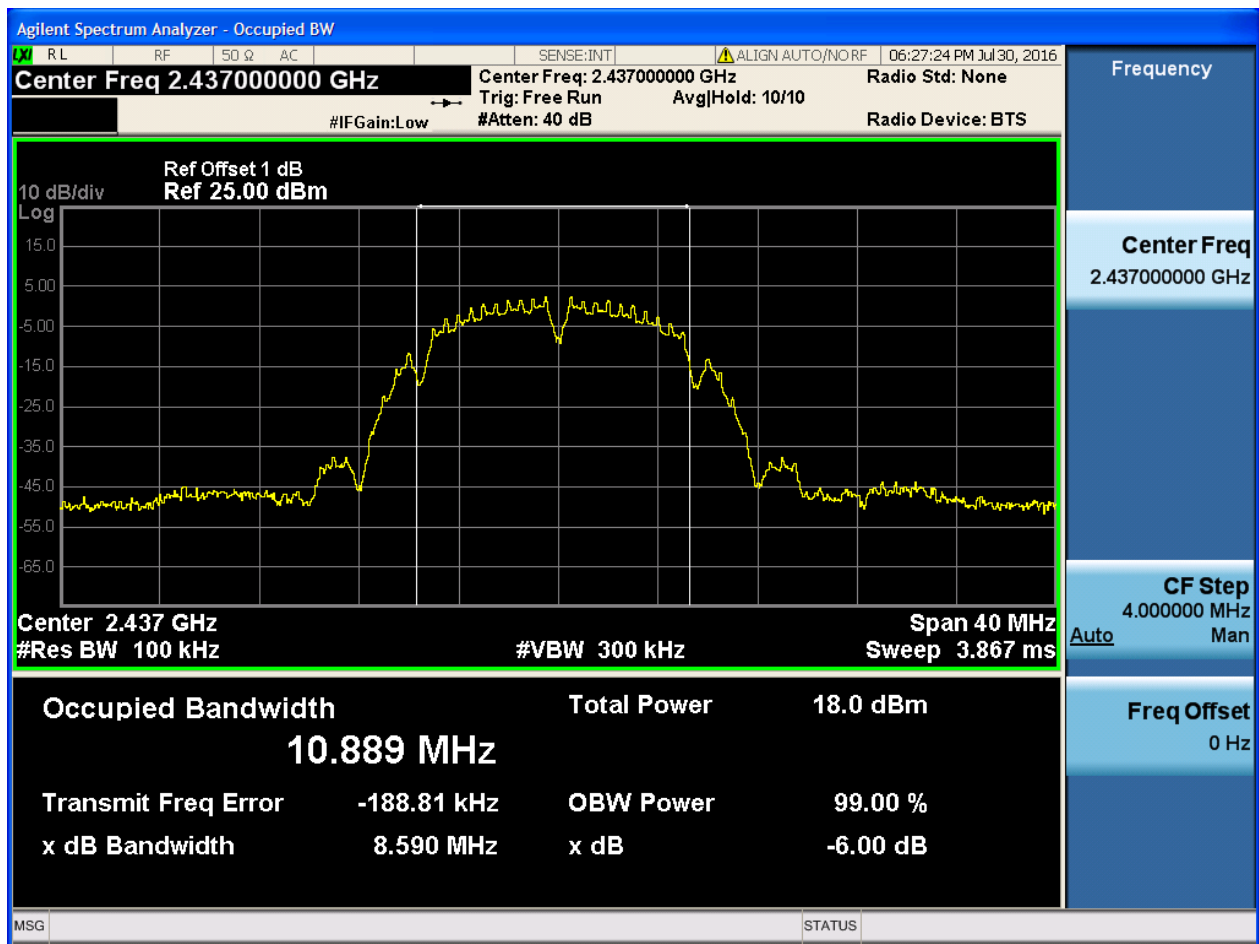
Part II - Test Plots

2.1 11B_L@Ant 1



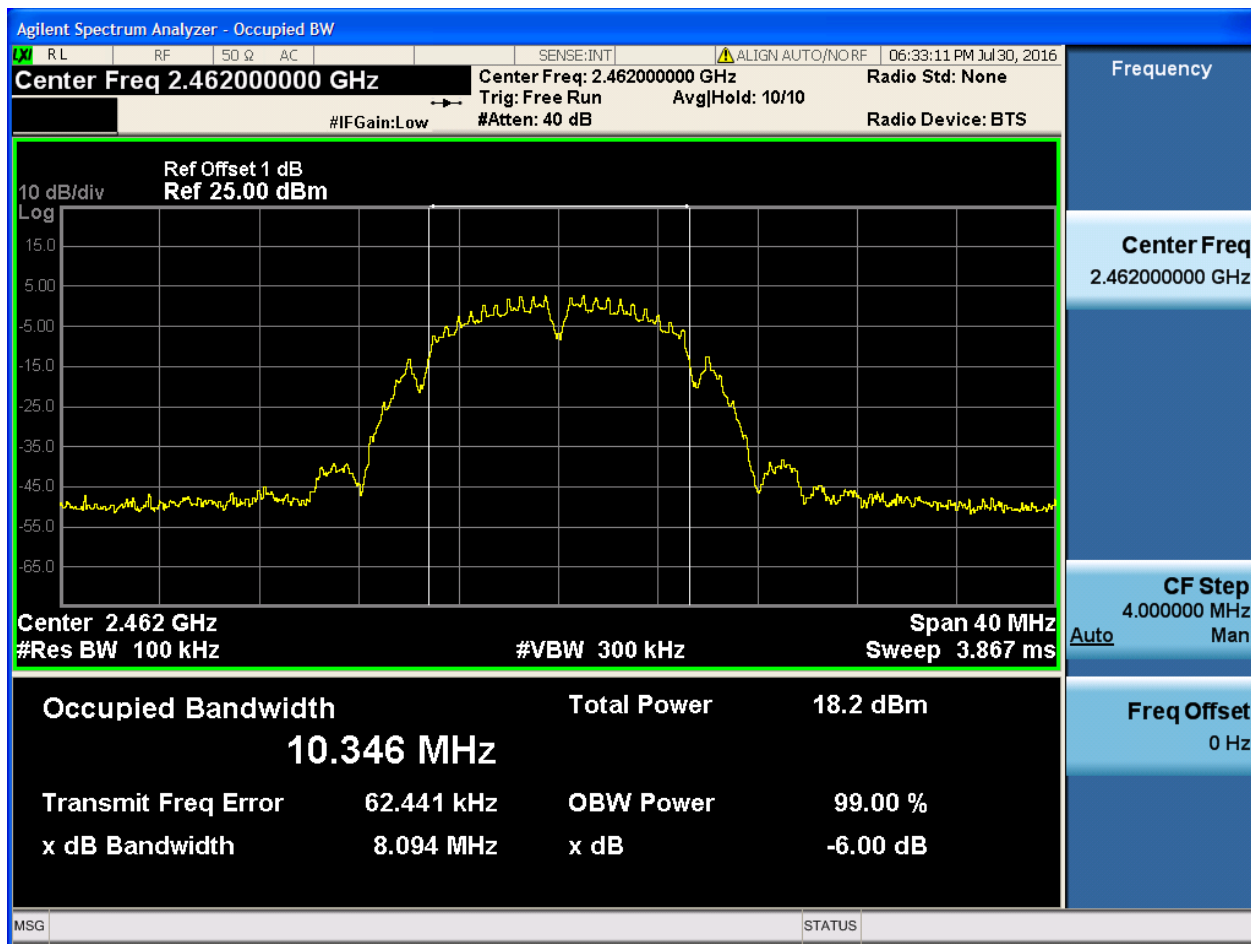


2.2 11B_M@Ant 1



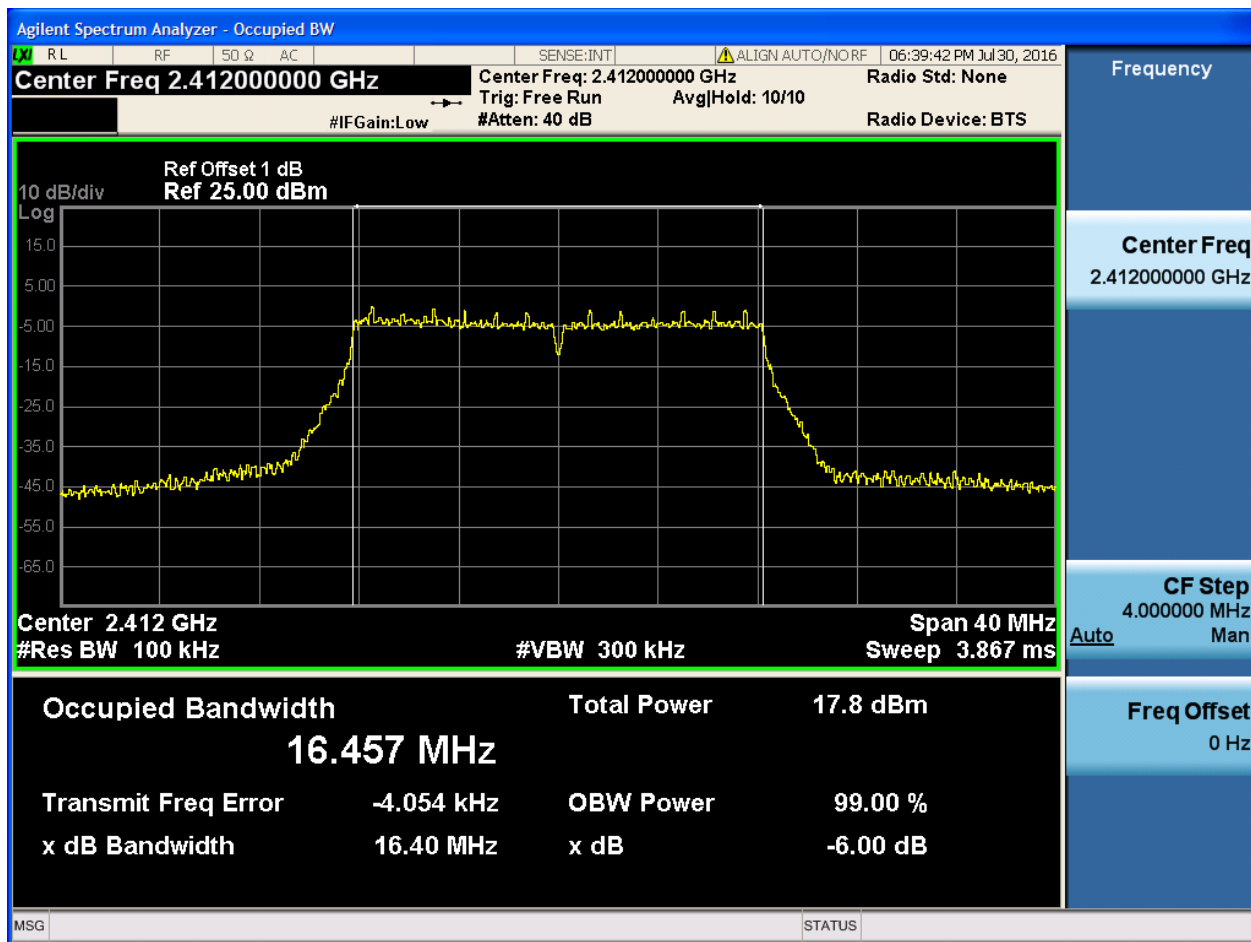


2.3 11B_H@Ant 1



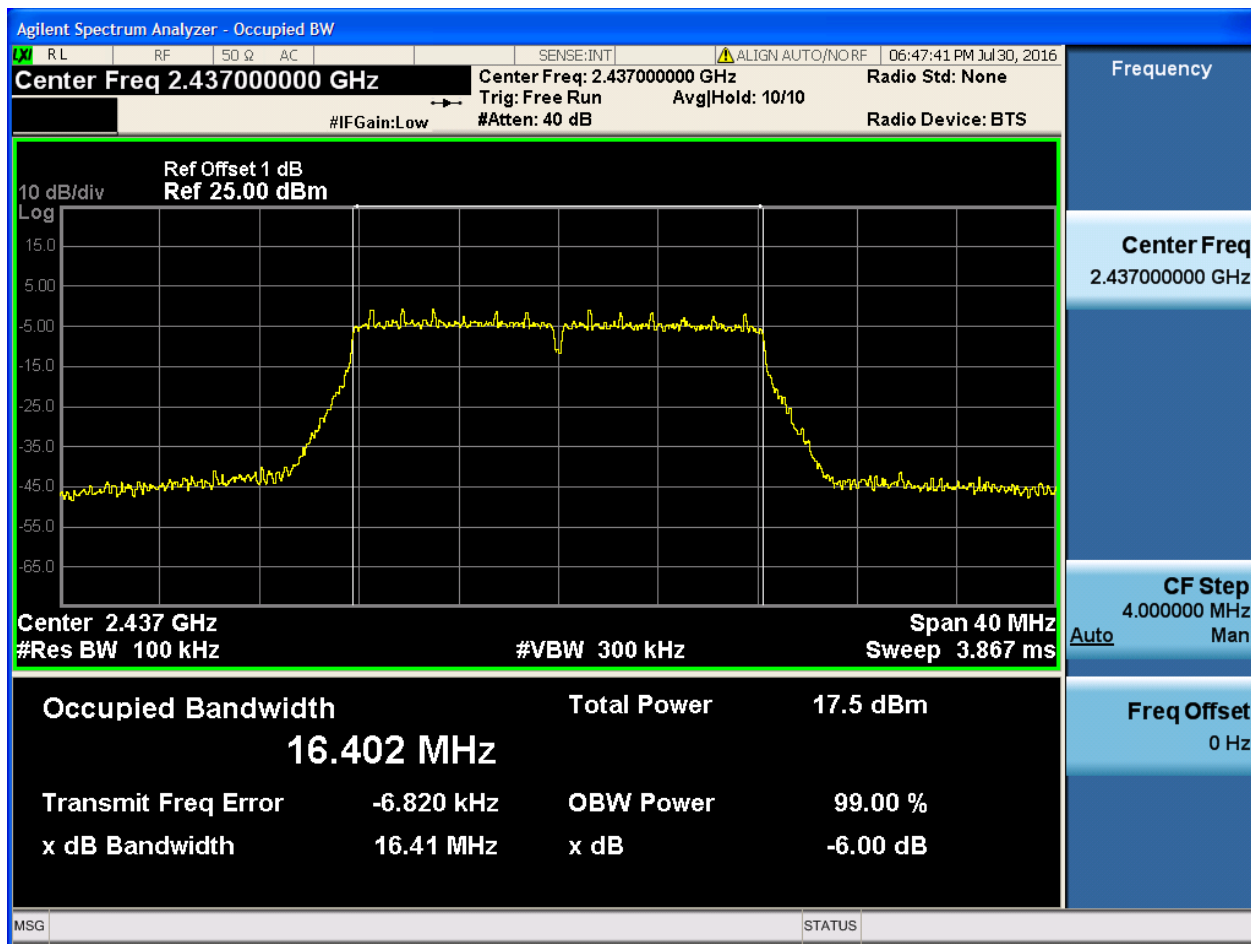


2.4 11G_L@Ant 1



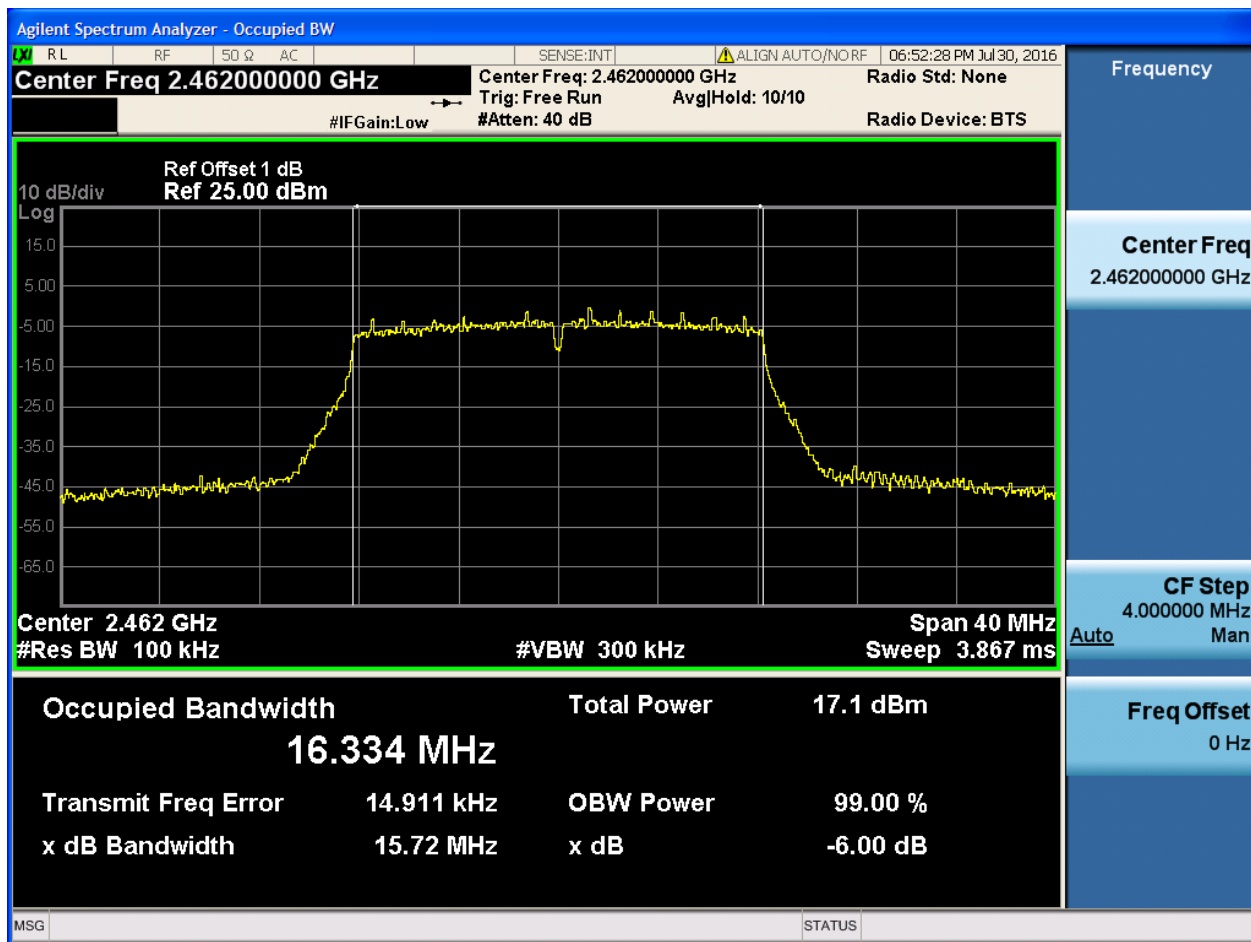


2.5 11G_M@Ant 1



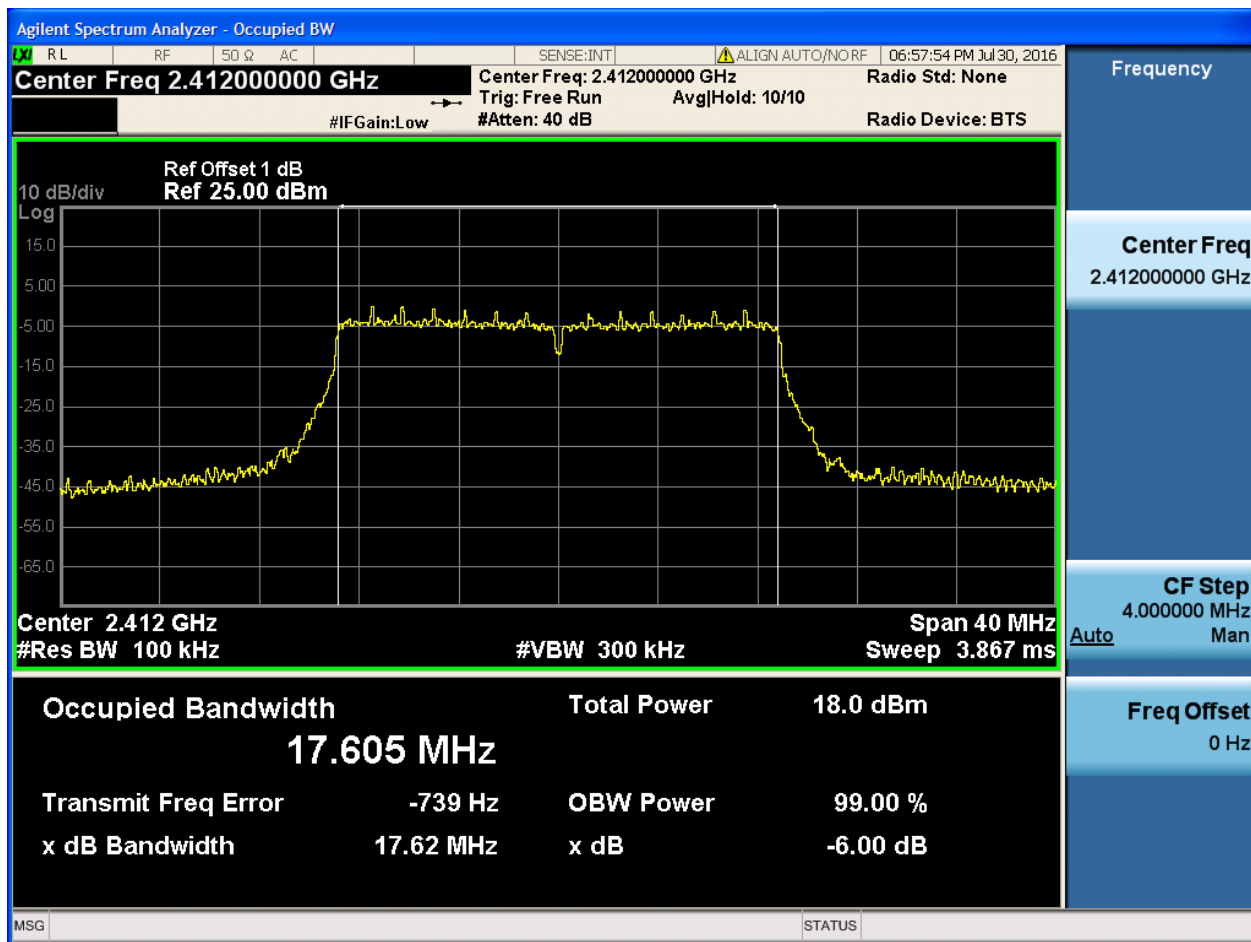


2.6 11G_H@Ant 1



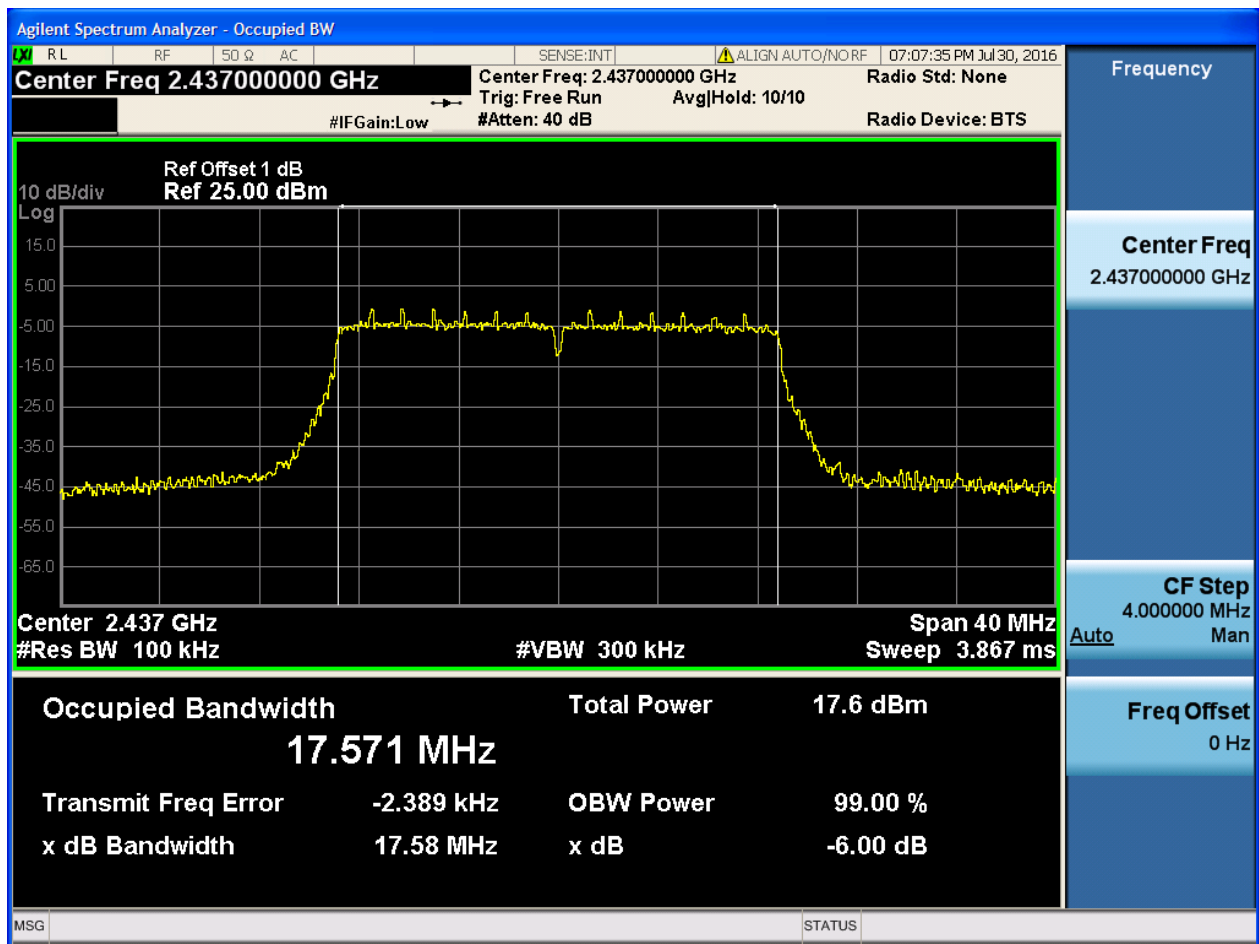


2.7 11N20_L@Ant 1



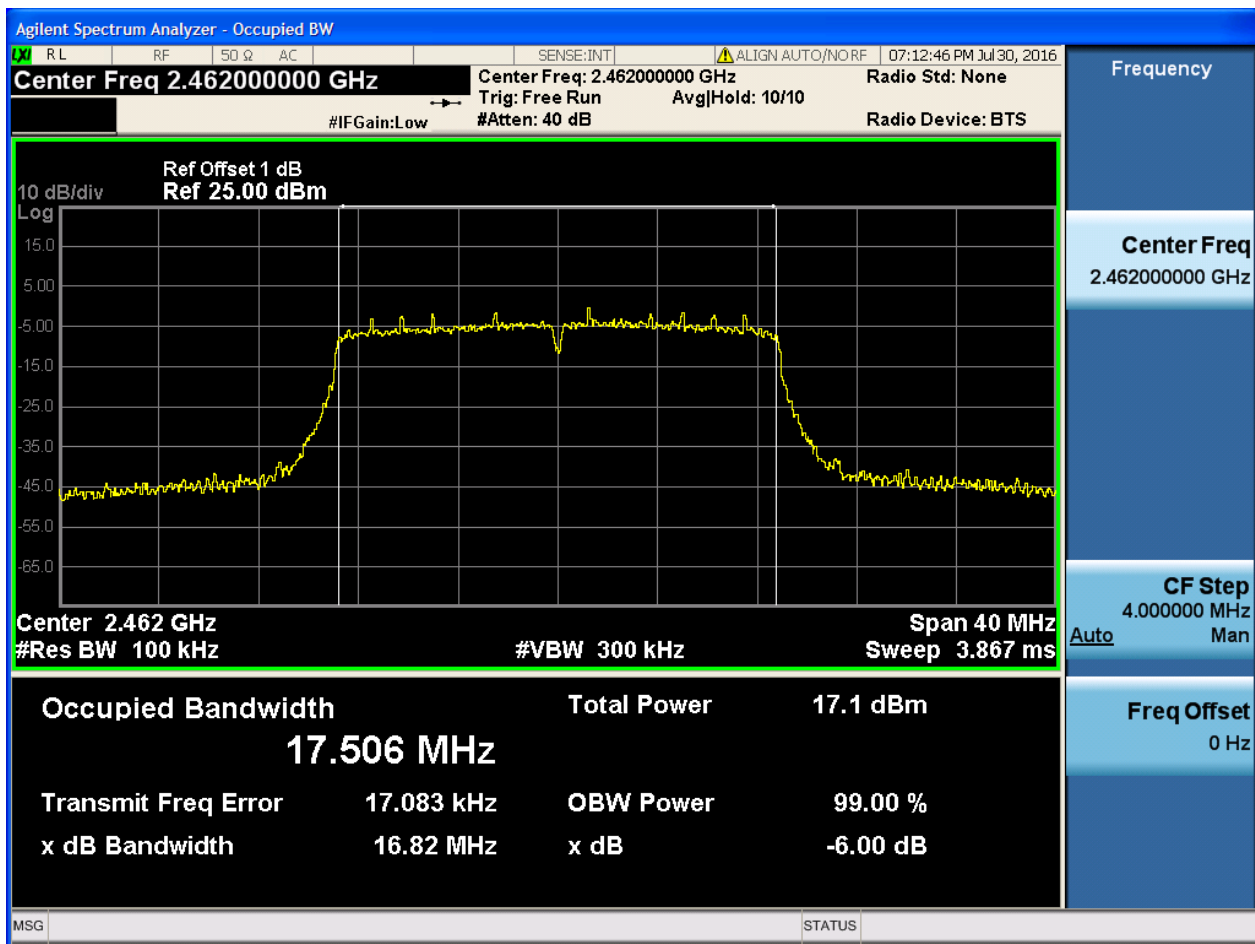


2.8 11N20_M@Ant 1



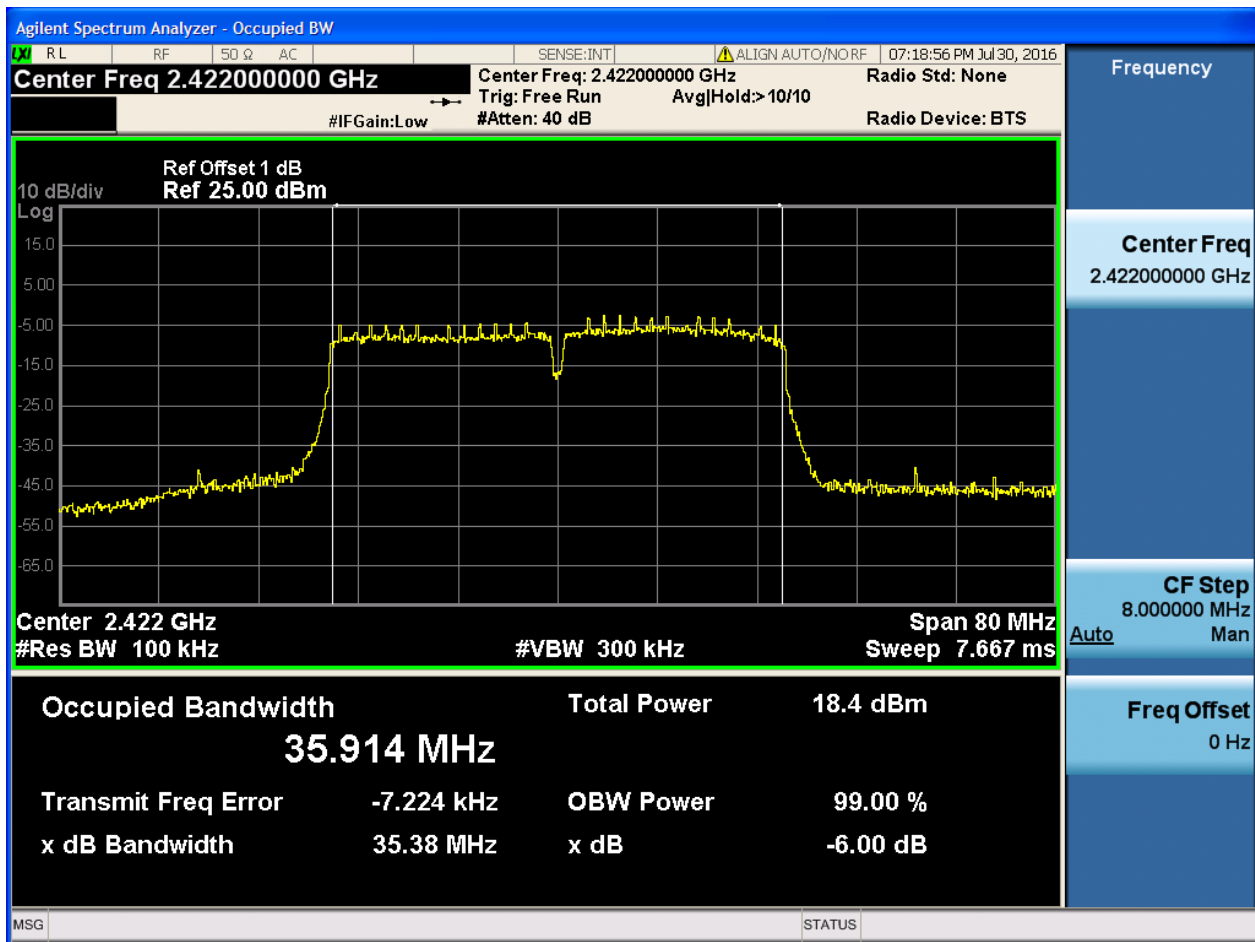


2.9 11N20_H@Ant 1

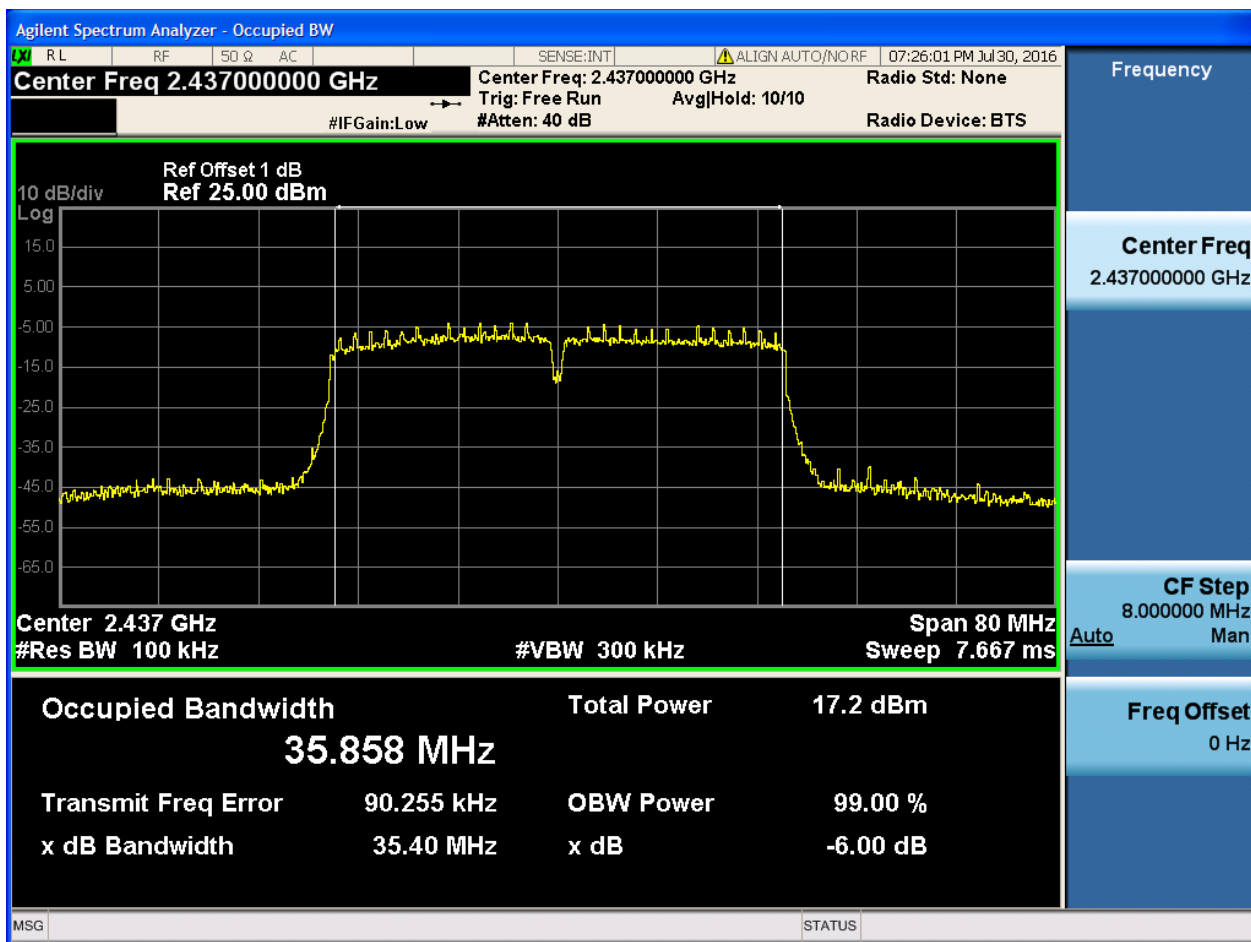




2.10 11N40_L@Ant 1

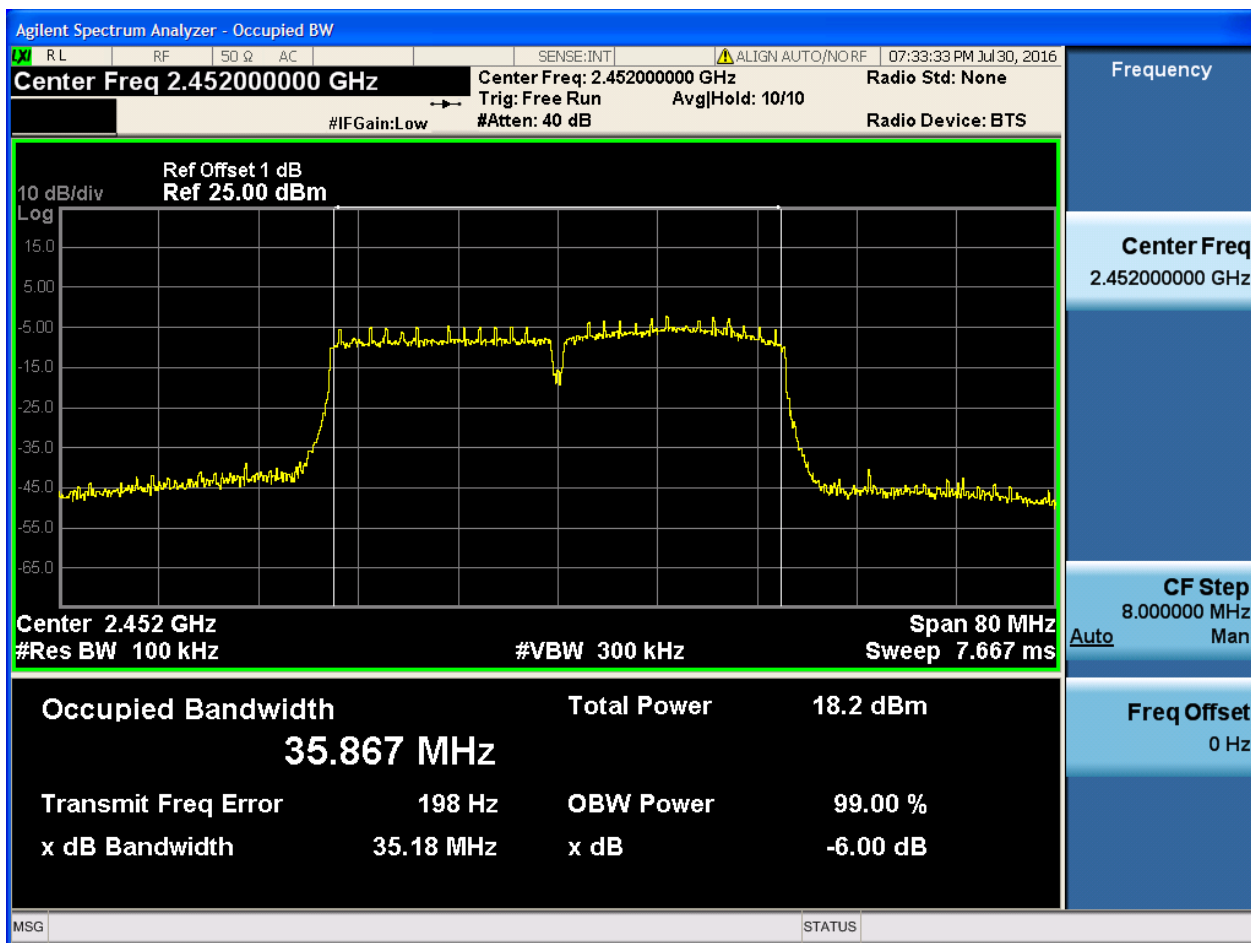


2.11 11N40_M@Ant 1



2.12 11N40_H@Ant

1



Appendix B: Occupied Bandwidth

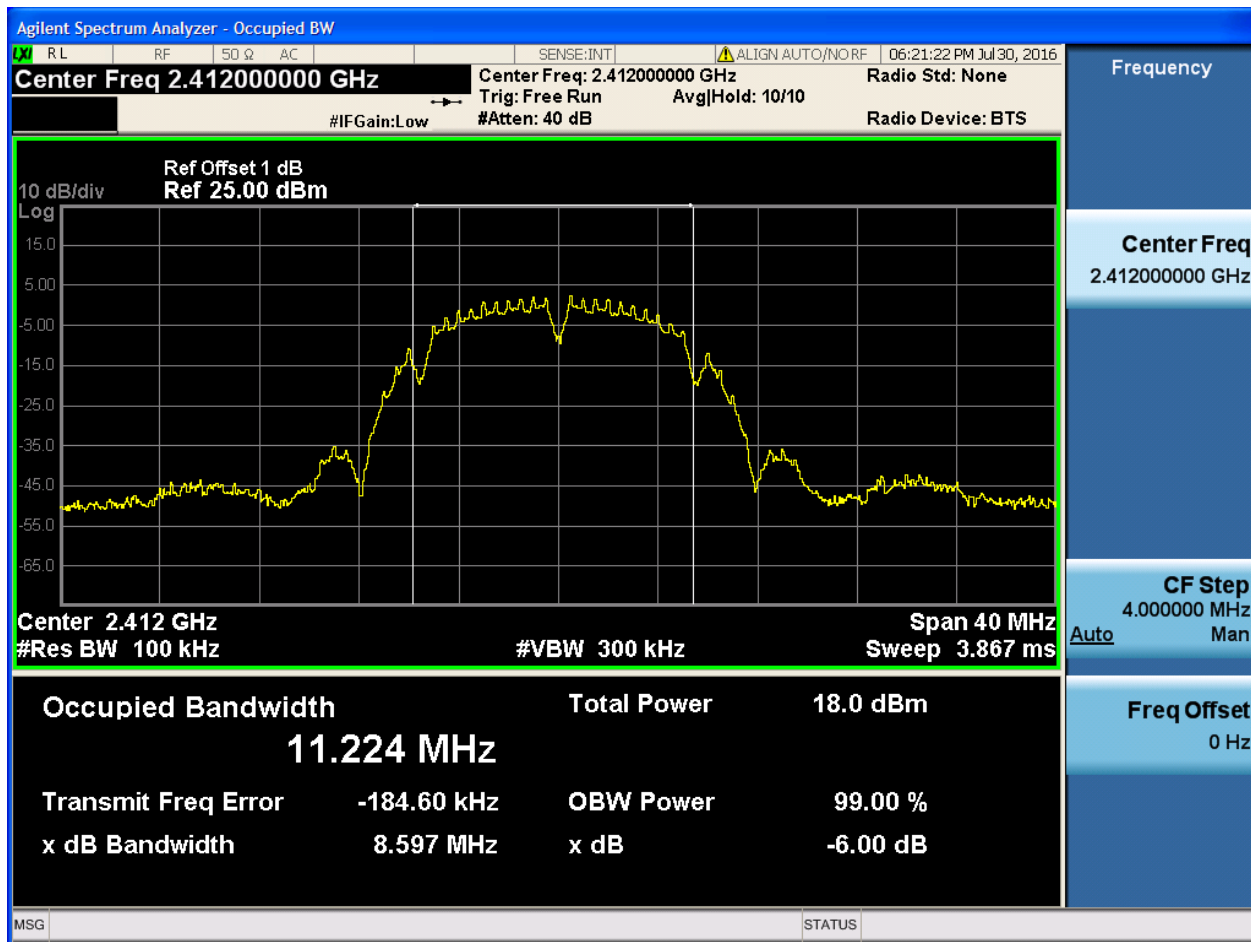
For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Occupied Bandwidth [MHz]	Verdict
11B	L	2412	Ant 1	11.22	pass
11B	M	2437	Ant 1	10.89	pass
11B	H	2462	Ant 1	10.35	pass
11G	L	2412	Ant 1	16.46	pass
11G	M	2437	Ant 1	16.40	pass
11G	H	2462	Ant 1	16.33	pass
11N20	L	2412	Ant 1	17.61	pass
11N20	M	2437	Ant 1	17.57	pass
11N20	H	2462	Ant 1	17.51	pass
11N40	L	2422	Ant 1	35.91	pass
11N40	M	2437	Ant 1	35.86	pass
11N40	H	2452	Ant 1	35.87	pass

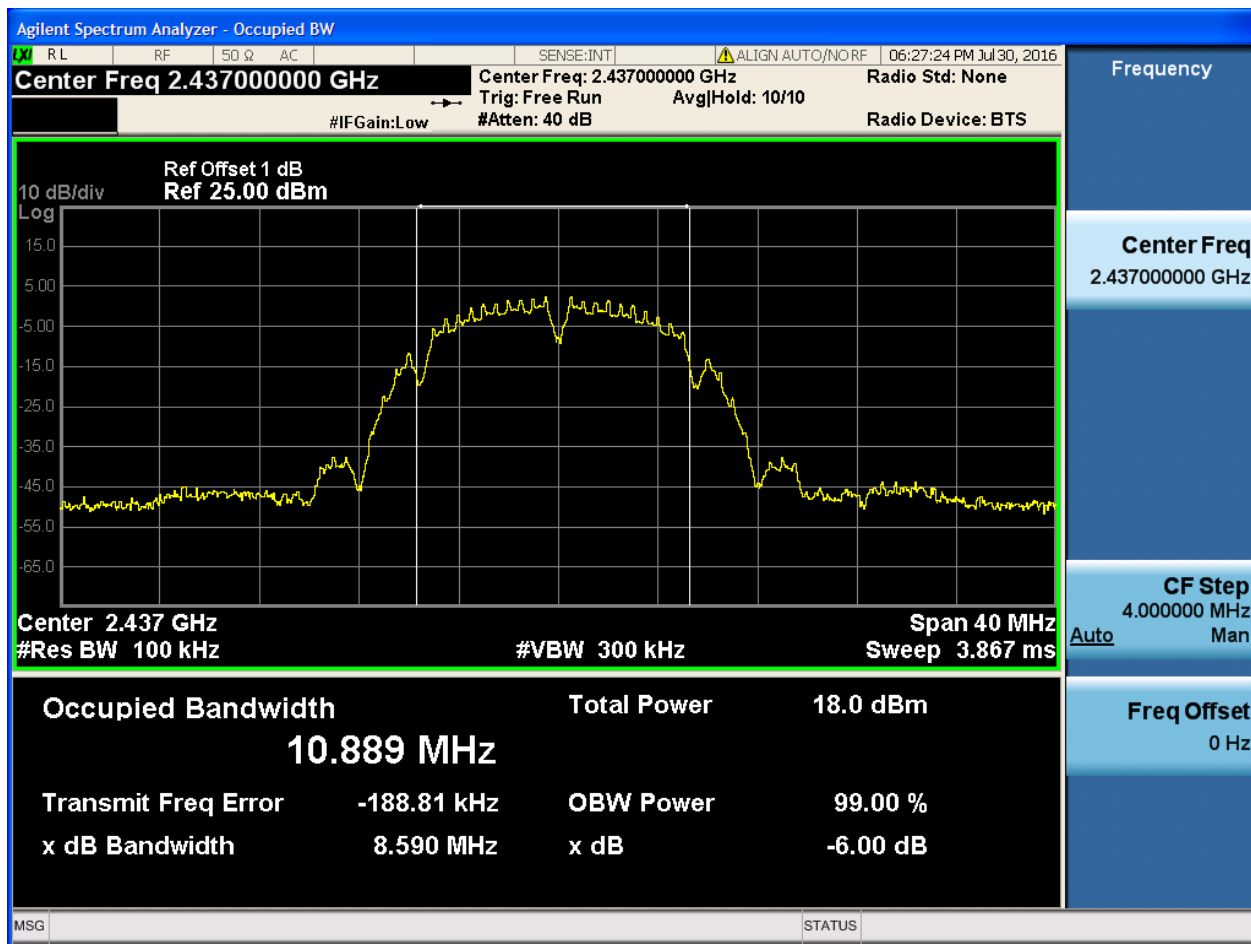
Part II - Test Plots

2.1 11B_L@Ant 1



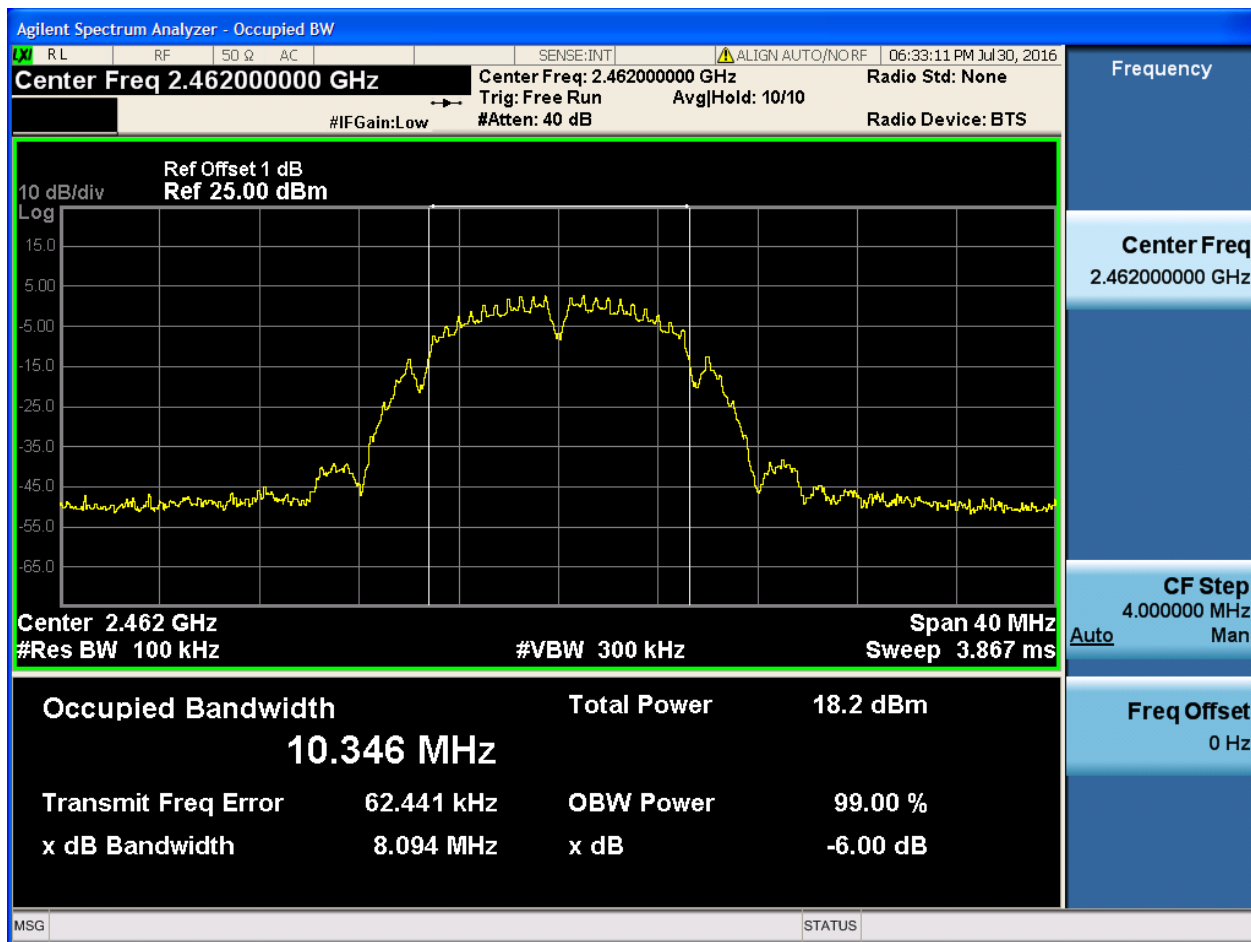


2.2 11B_M@Ant 1



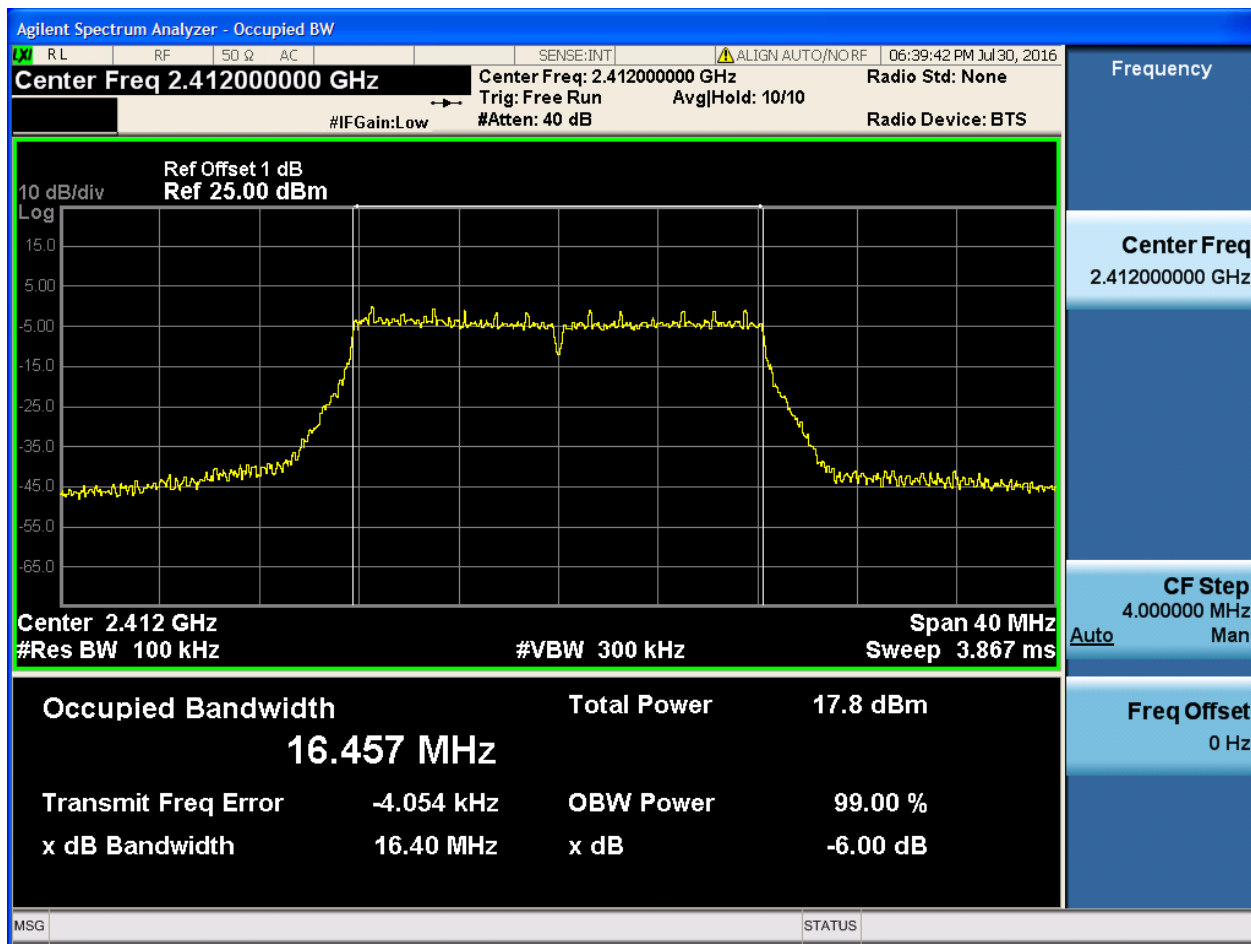


2.3 11B_H@Ant 1



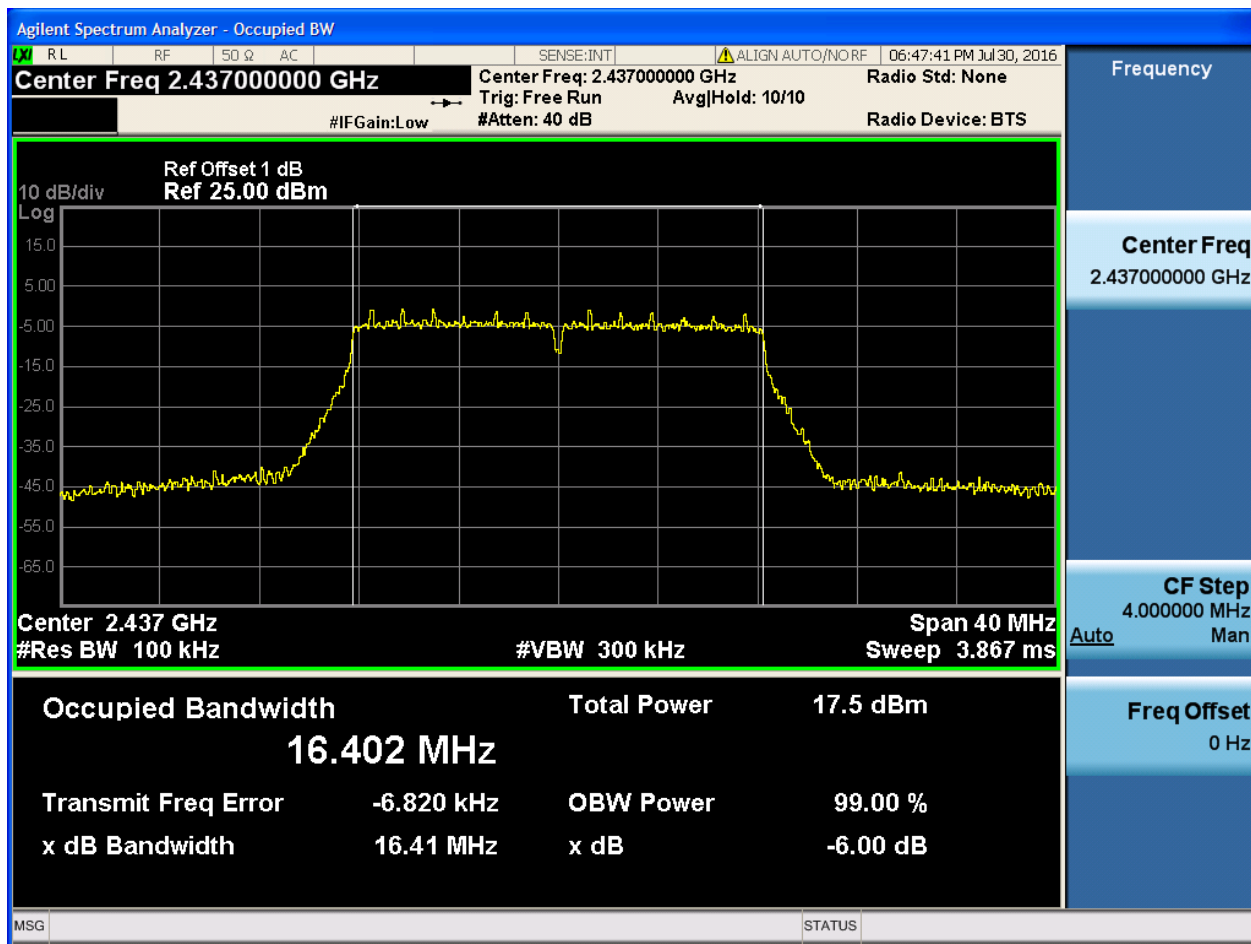


2.4 11G_L@Ant 1



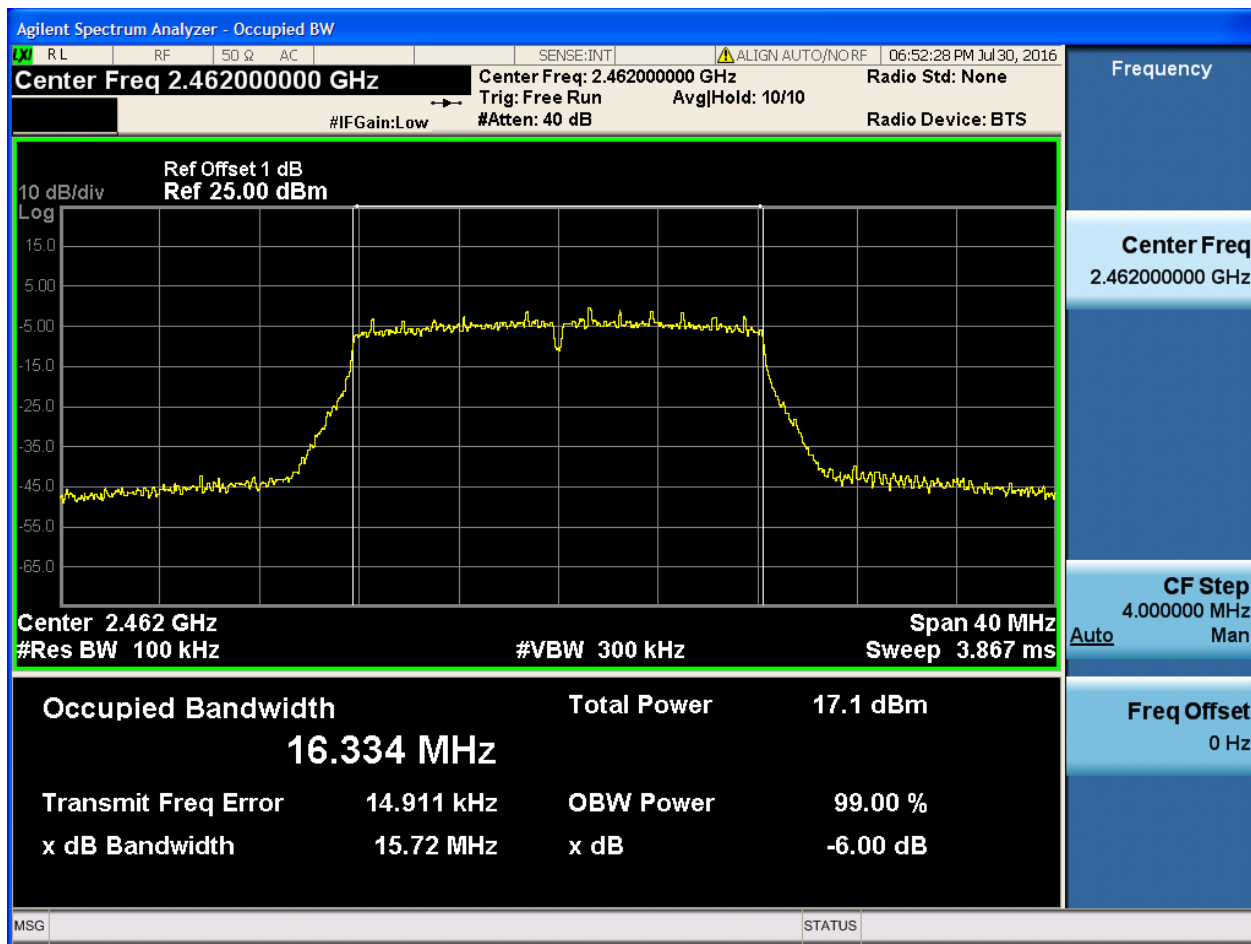


2.5 11G_M@Ant 1



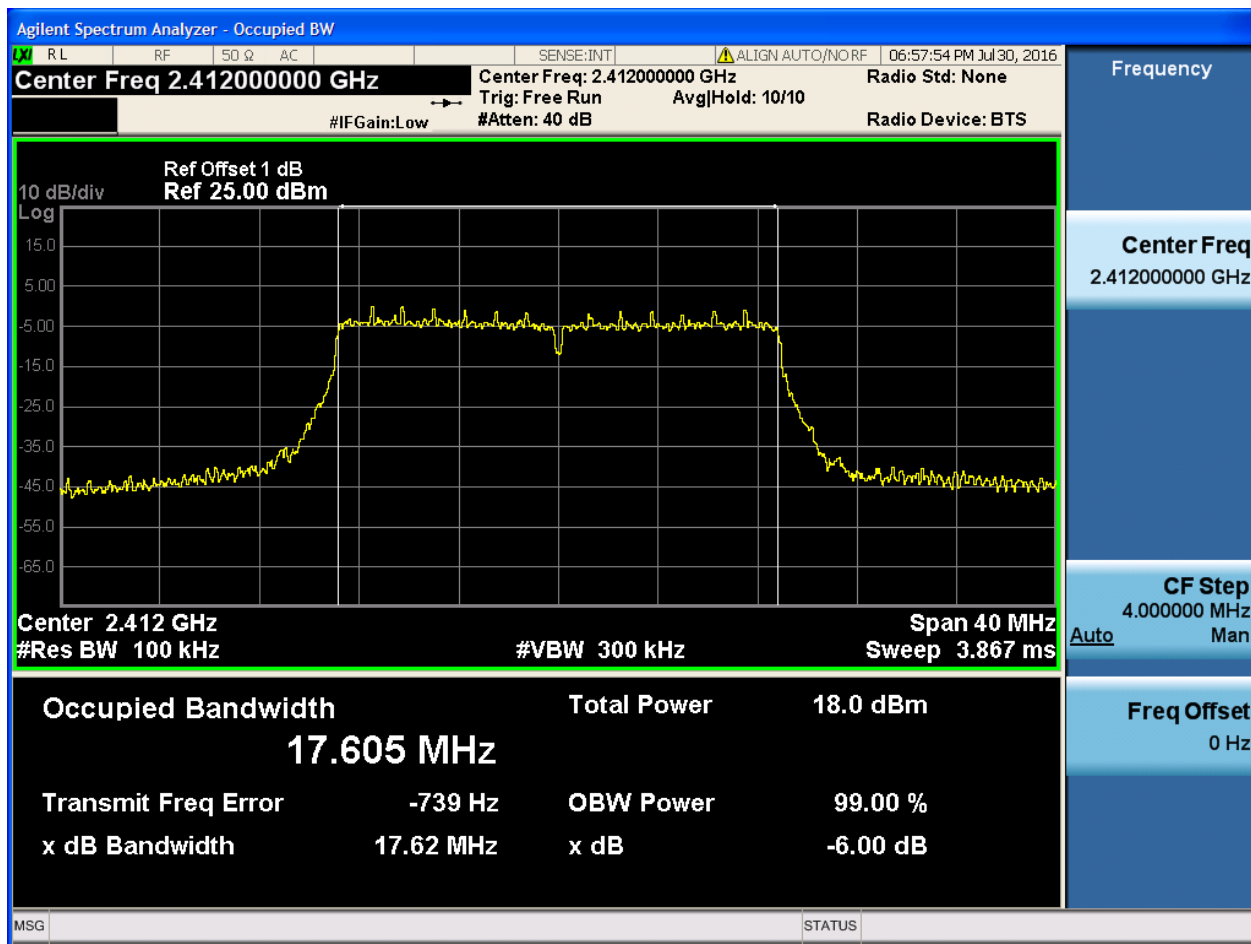


2.6 11G_H@Ant 1



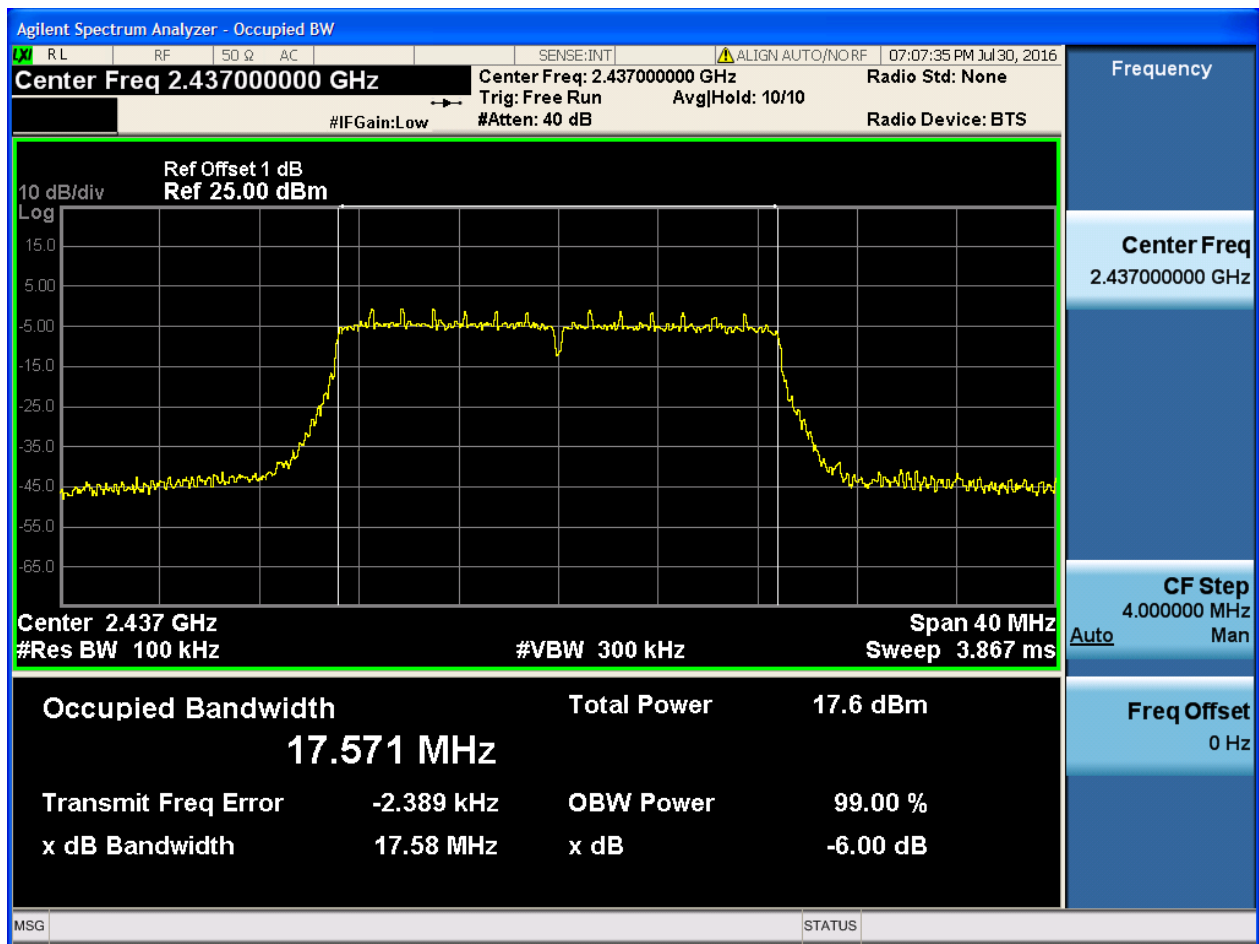


2.7 11N20_L@Ant 1



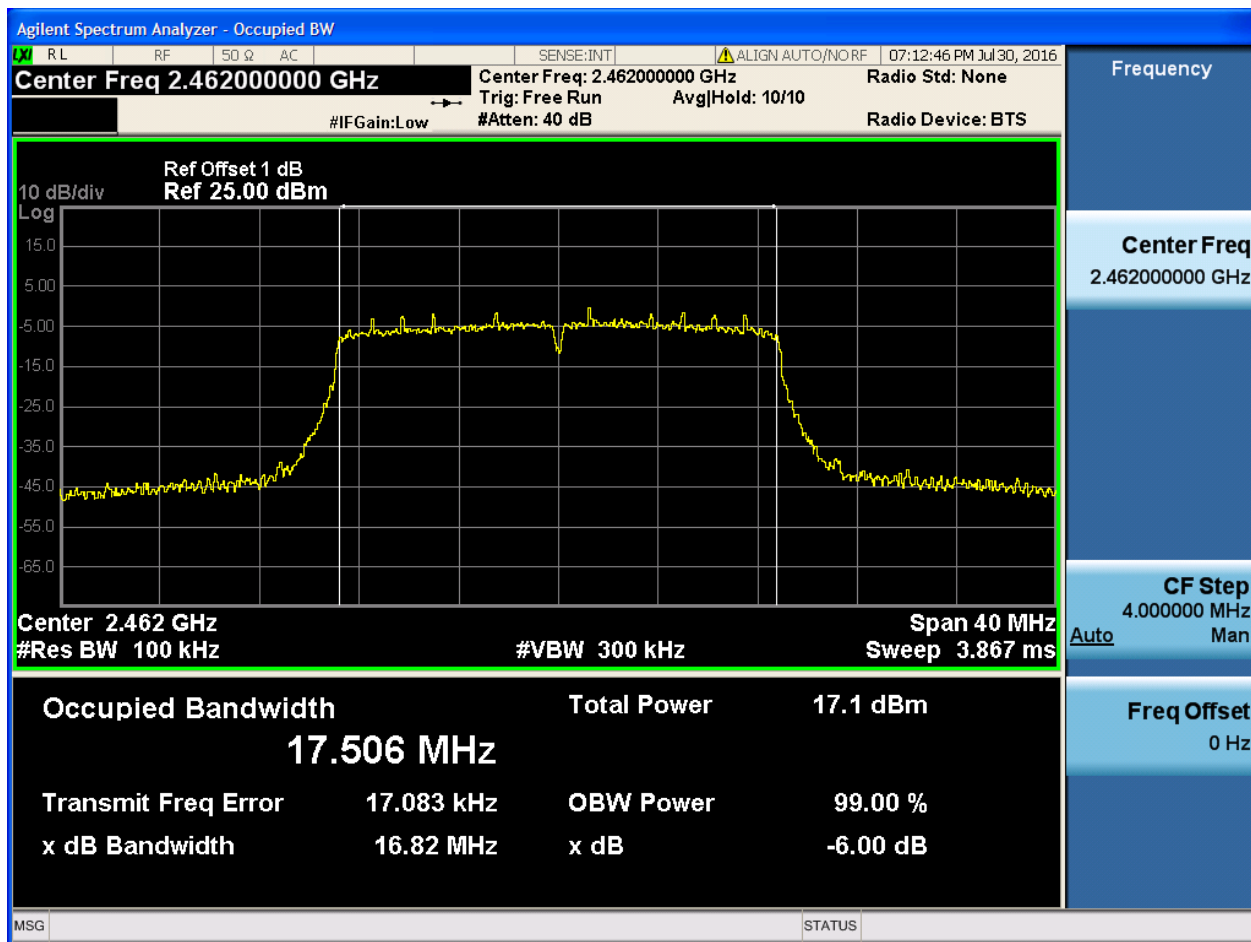


2.8 11N20_M@Ant 1



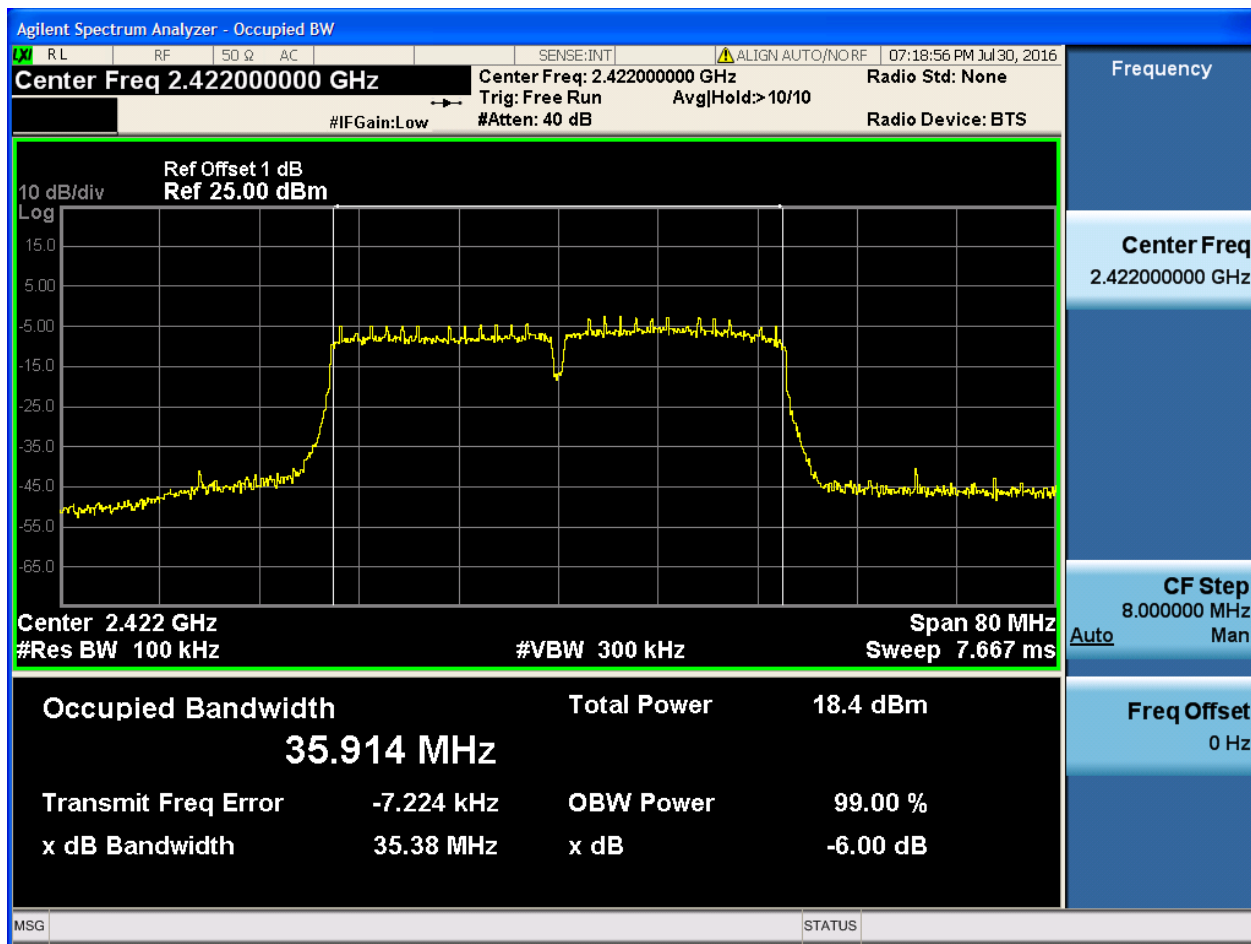


2.9 11N20_H@Ant 1



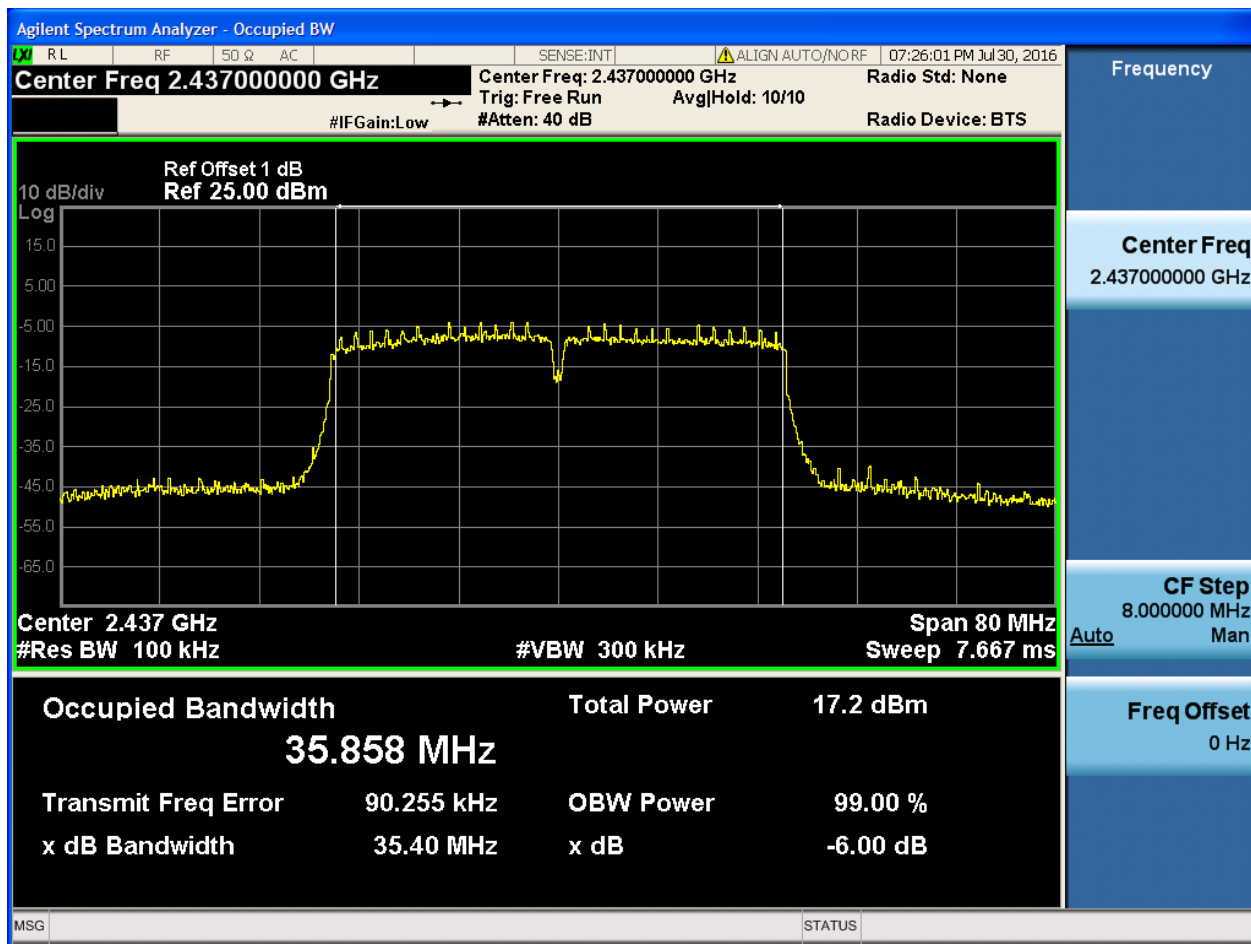


2.10 11N40_L@Ant 1



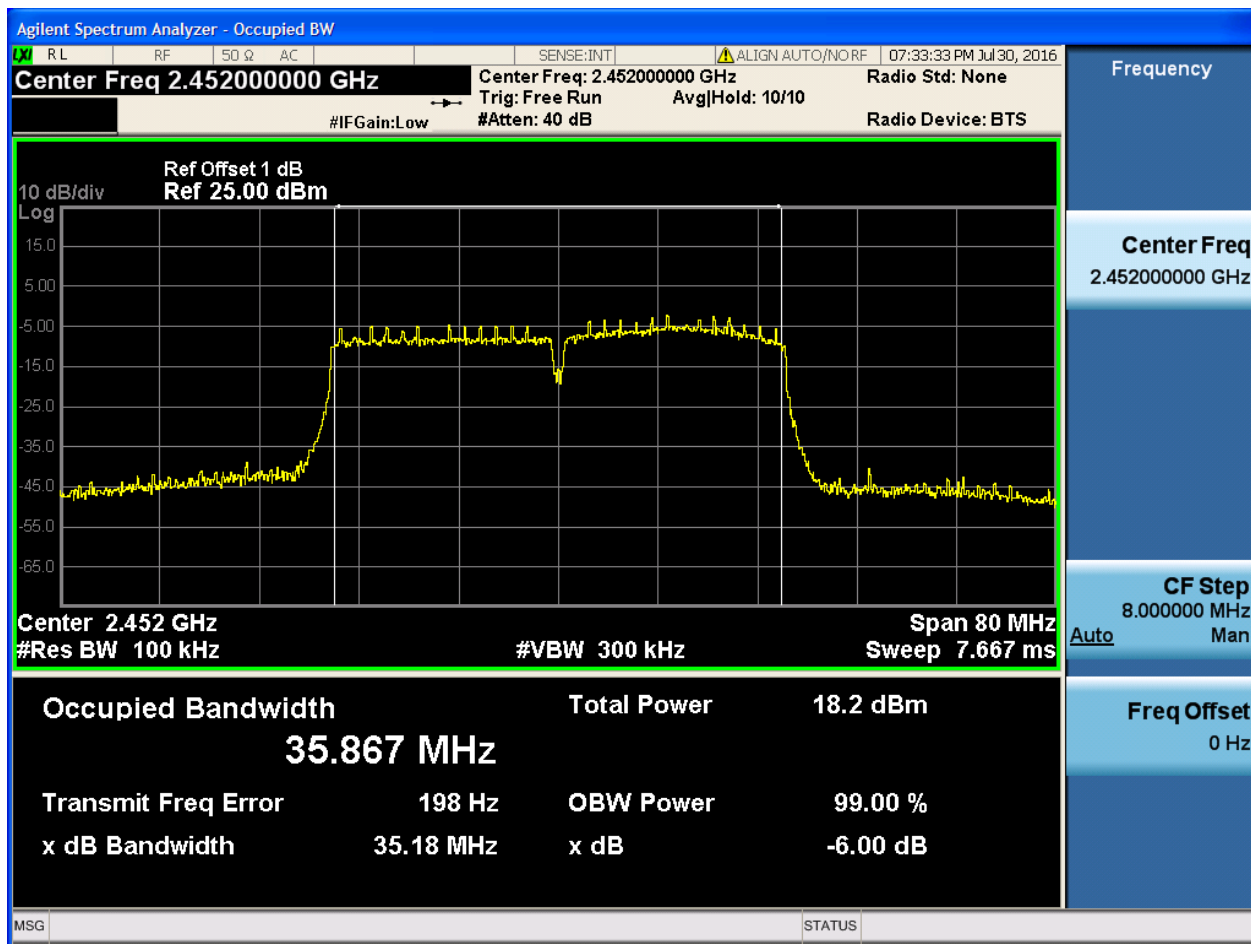


2.11 11N40_M@Ant 1





2.12 11N40_H@Ant 1



Appendix C: Duty cycle

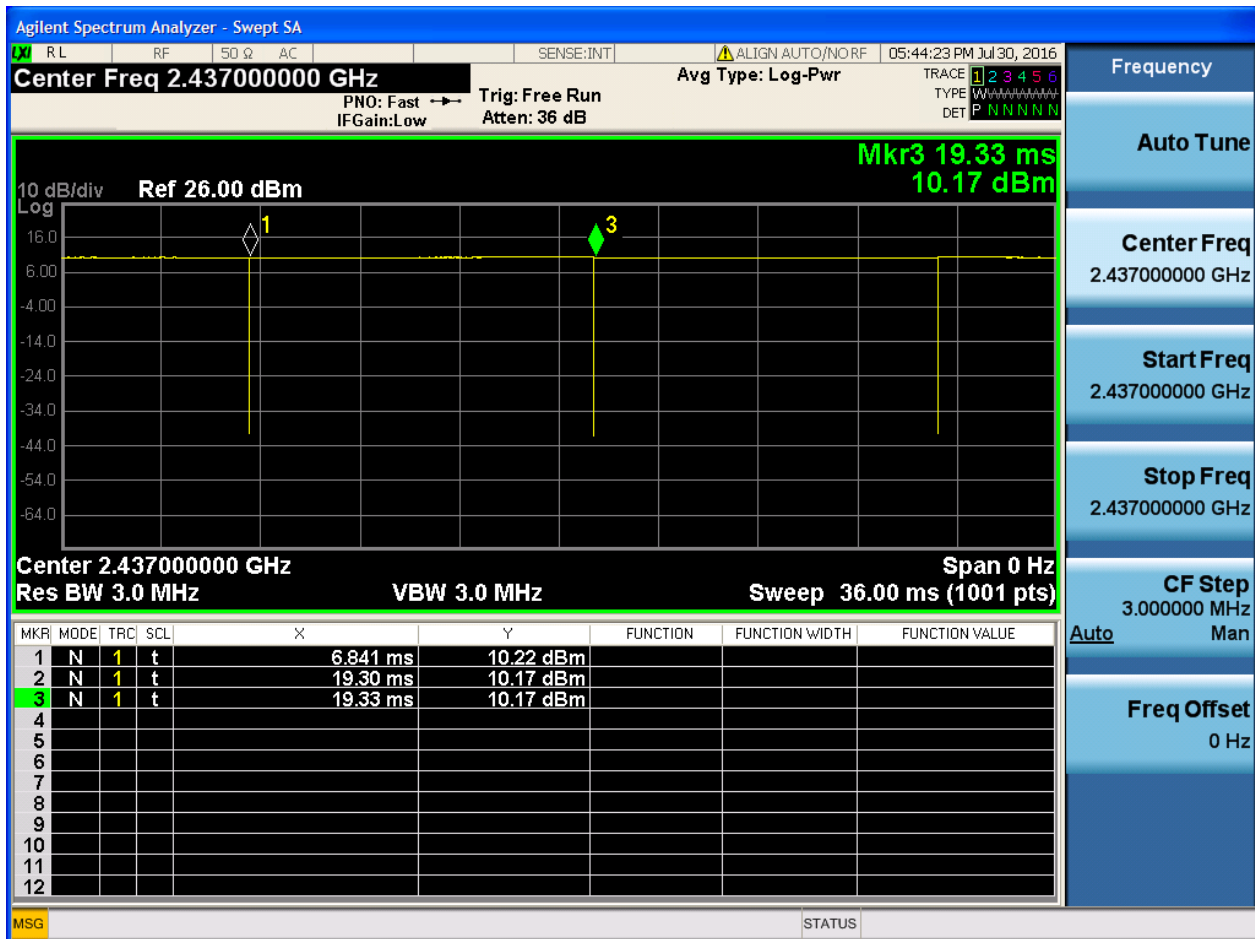
Part I - Test Results

Test Mode	TX Freq. [MHz]	Ant	Duty cycle [%]
11B	CH1,CH6,CH11	Ant 1	99.76
11G	CH1,CH6,CH11	Ant 1	97.96
11N20SISO	CH1,CH6,CH11	Ant 1	97.75
11N40SISO	CH3,CH6,CH9	Ant 1	95.49



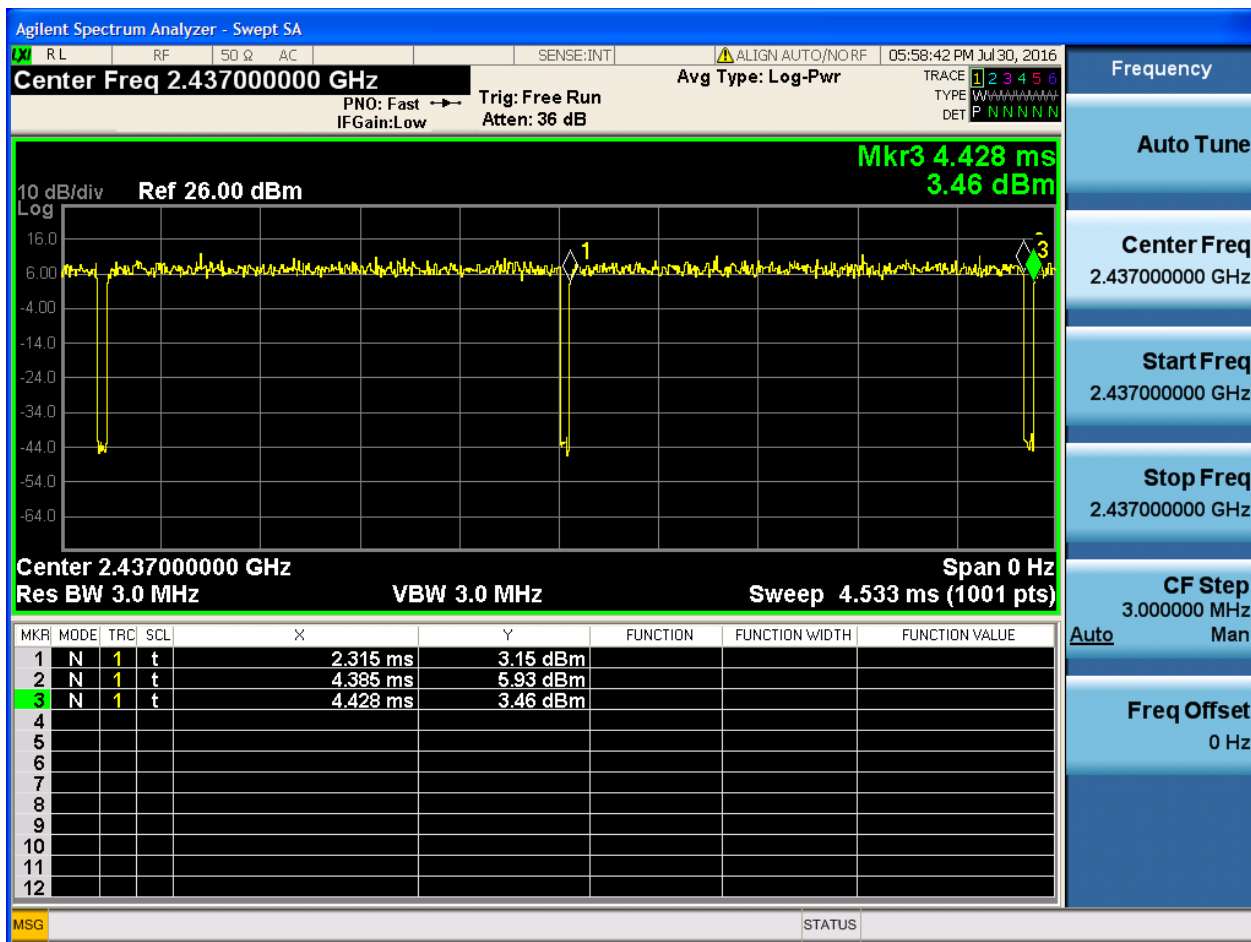
Part II - Test Plots

2.1 11B_M@Ant 1



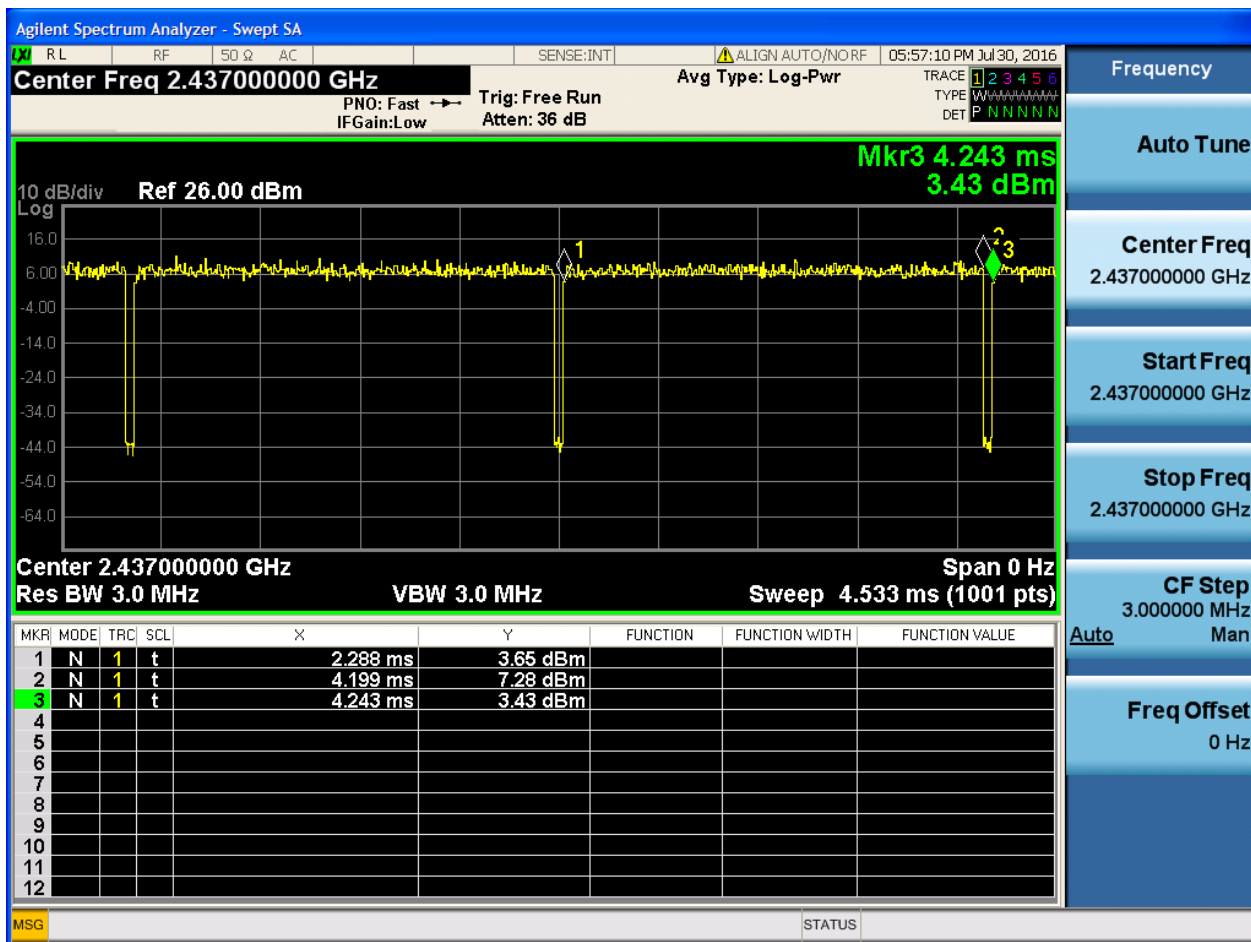


2.2 11G_M@Ant 1



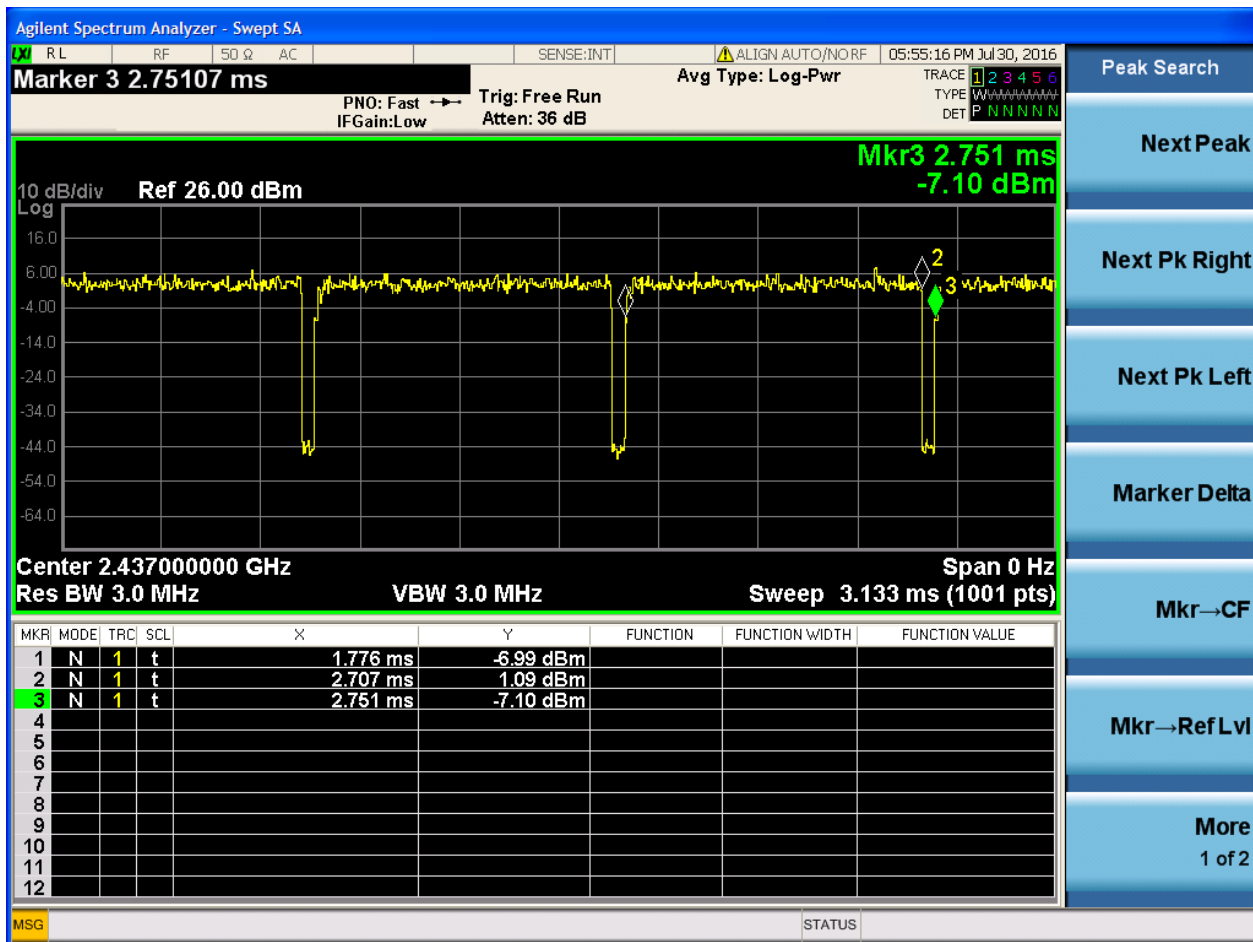


2.3 11N20SISO_M@Ant 1





2.4 11N40SISO_M@Ant 1



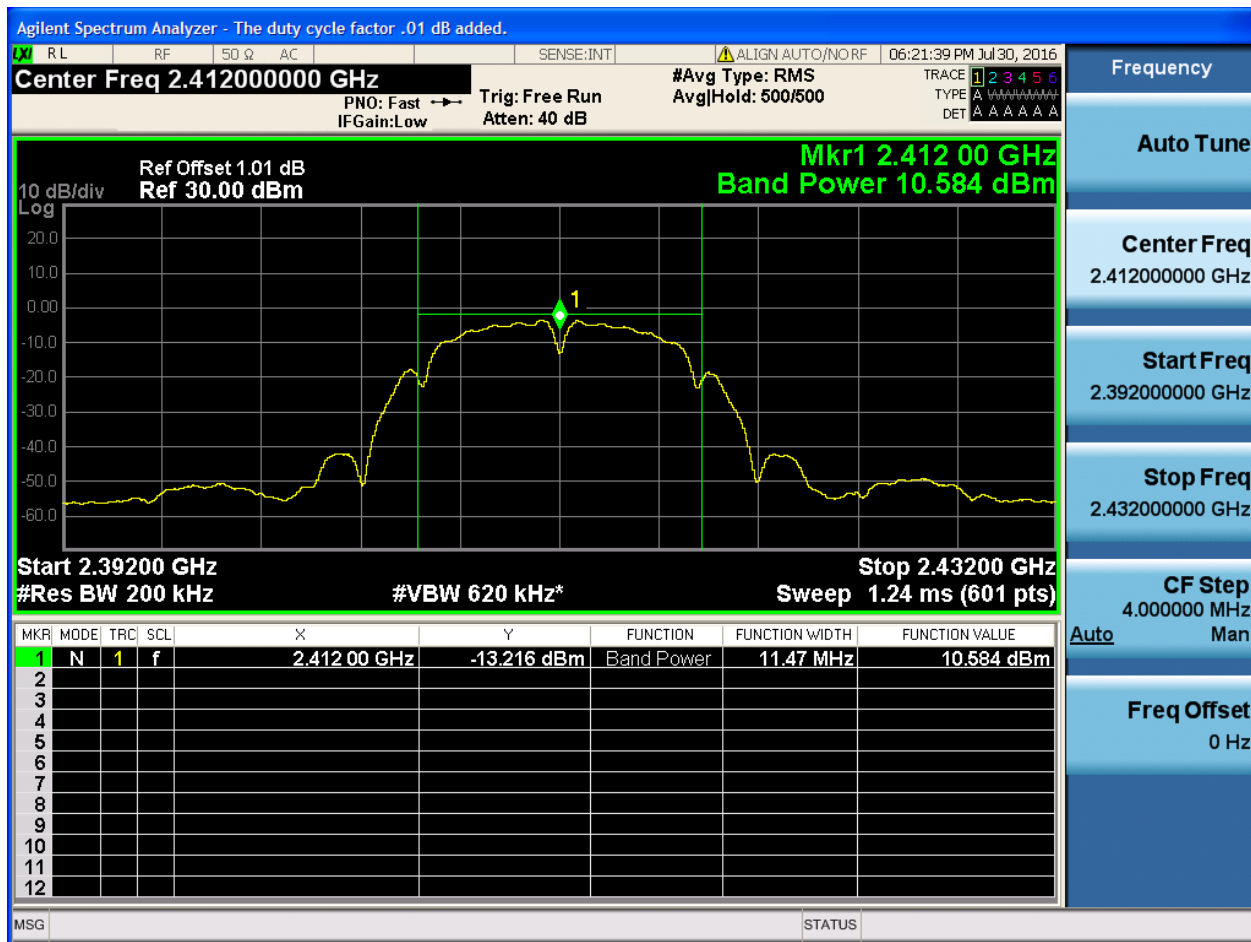
Appendix D: Maximum Conducted Average Output Power

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Power[dBm]	Verdict
11B	L	2412	Ant 1	10.58	pass
11B	M	2437	Ant 1	10.51	pass
11B	H	2462	Ant 1	10.78	pass
11G	L	2412	Ant 1	10.81	pass
11G	M	2437	Ant 1	10.43	pass
11G	H	2462	Ant 1	10.11	pass
11N20	L	2412	Ant 1	10.88	pass
11N20	M	2437	Ant 1	10.43	pass
11N20	H	2462	Ant 1	10.06	pass
11N40	L	2422	Ant 1	11.05	pass
11N40	M	2437	Ant 1	9.84	pass
11N40	H	2452	Ant 1	10.89	pass

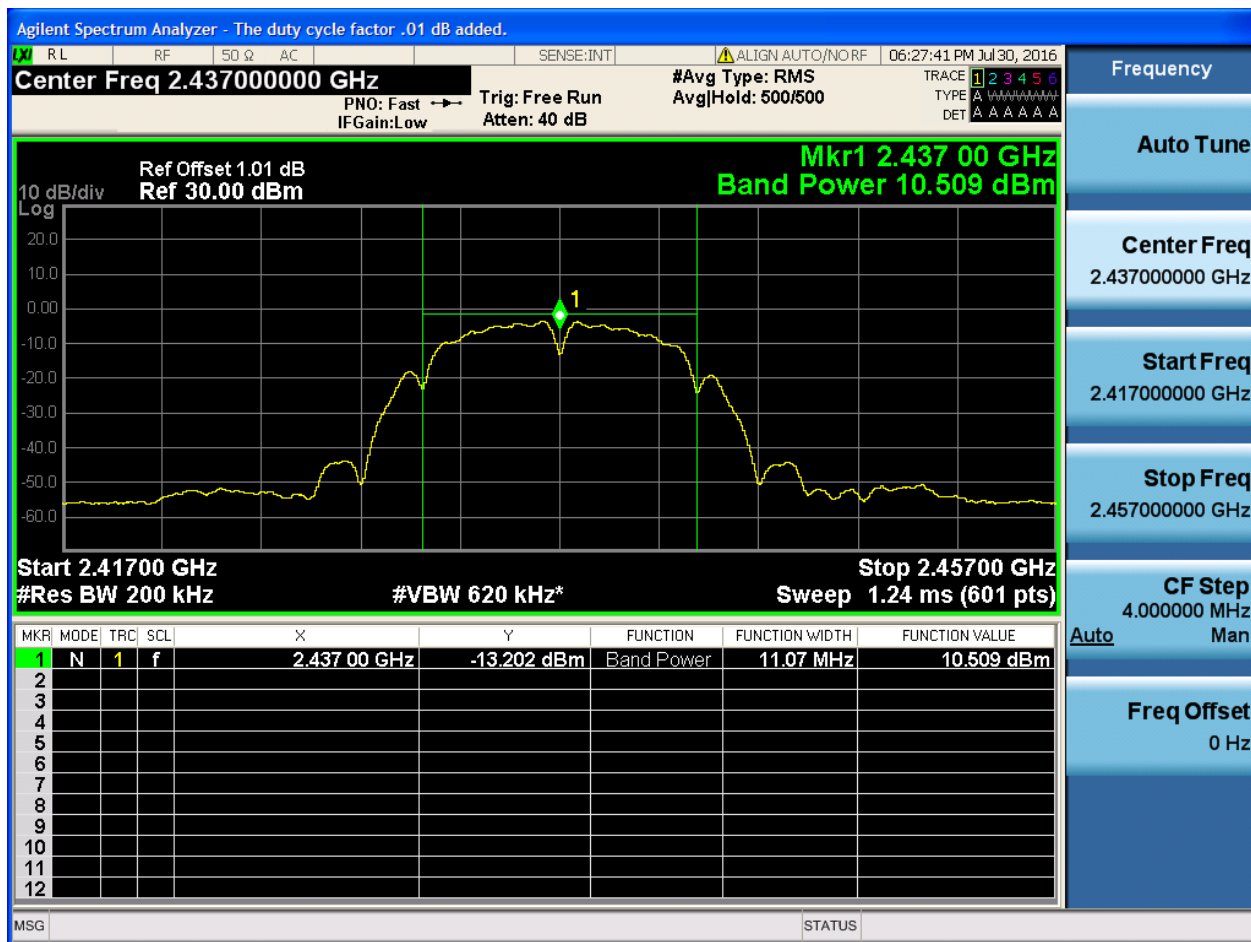
Part II - Test Plots

2.1 11B_L@Ant 1



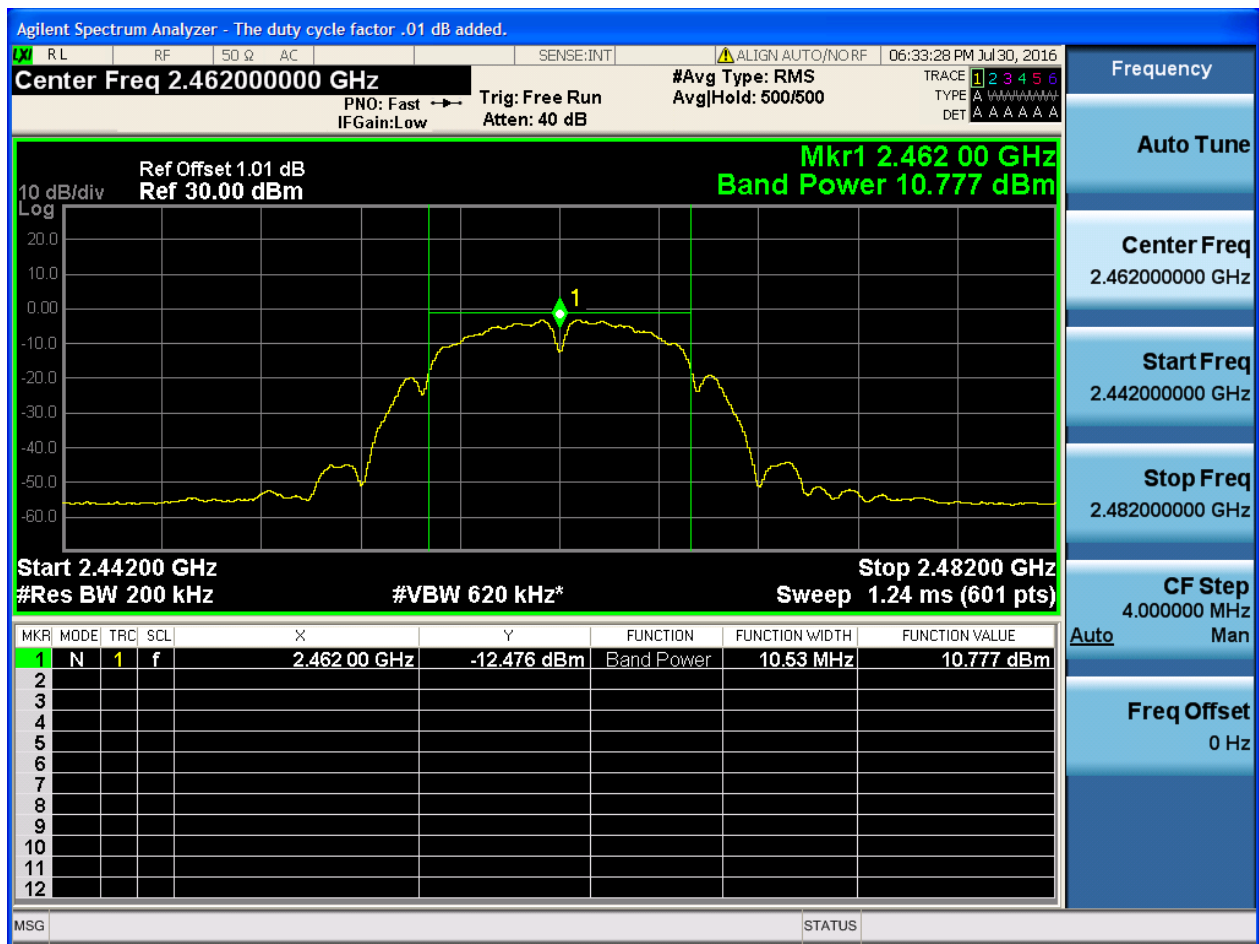


2.2 11B_M@Ant 1



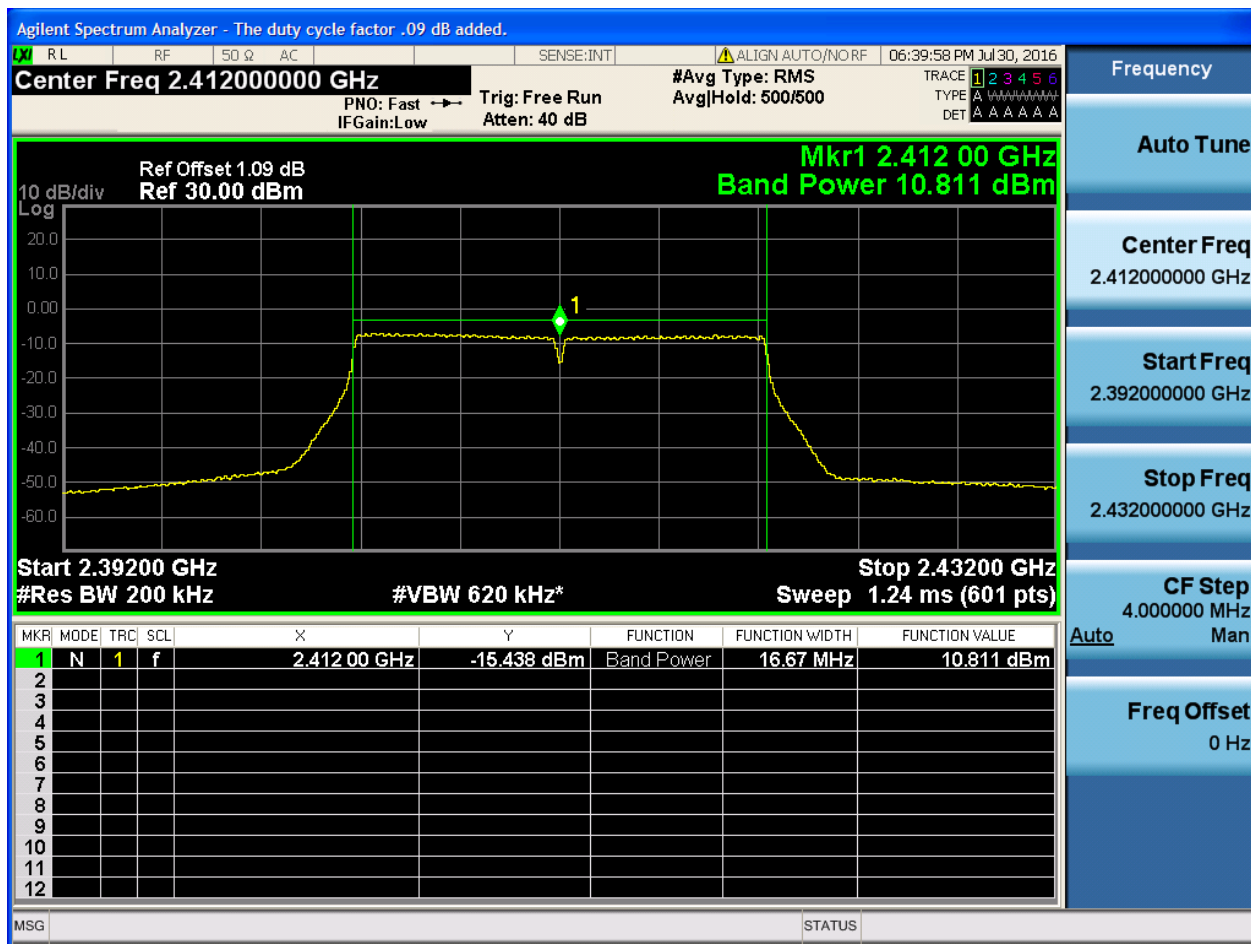


2.3 11B_H@Ant 1



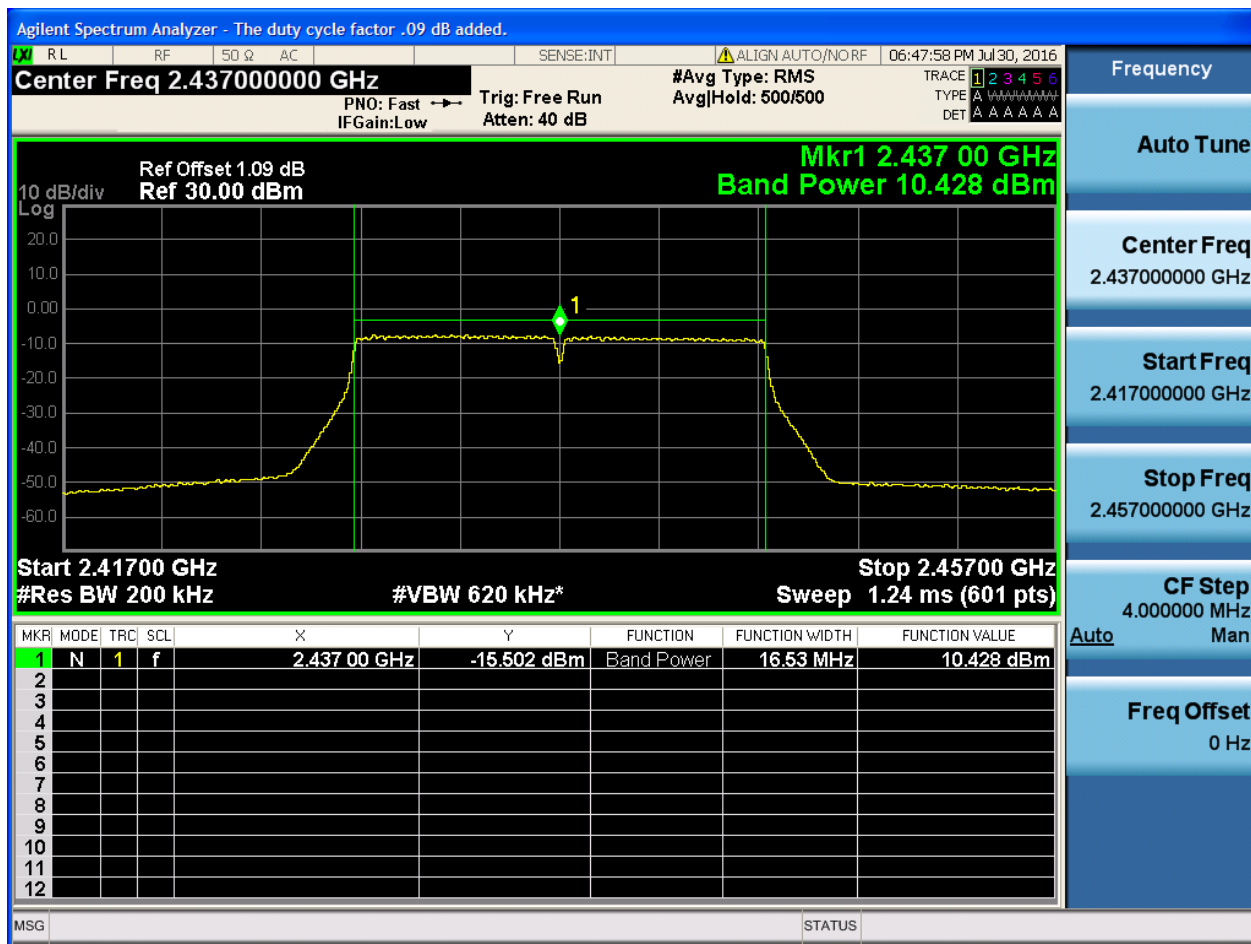


2.4 11G_L@Ant 1



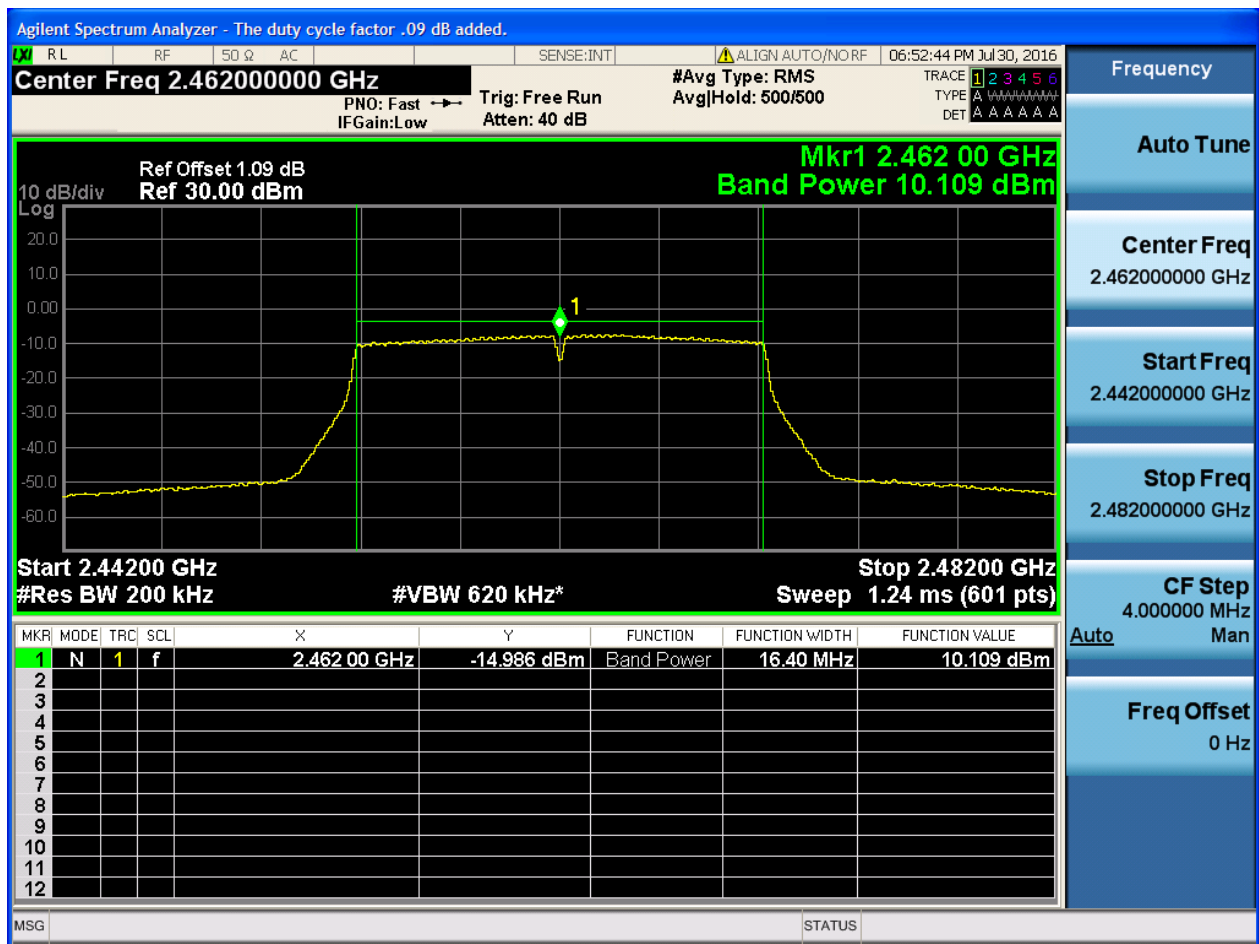


2.5 11G_M@Ant 1



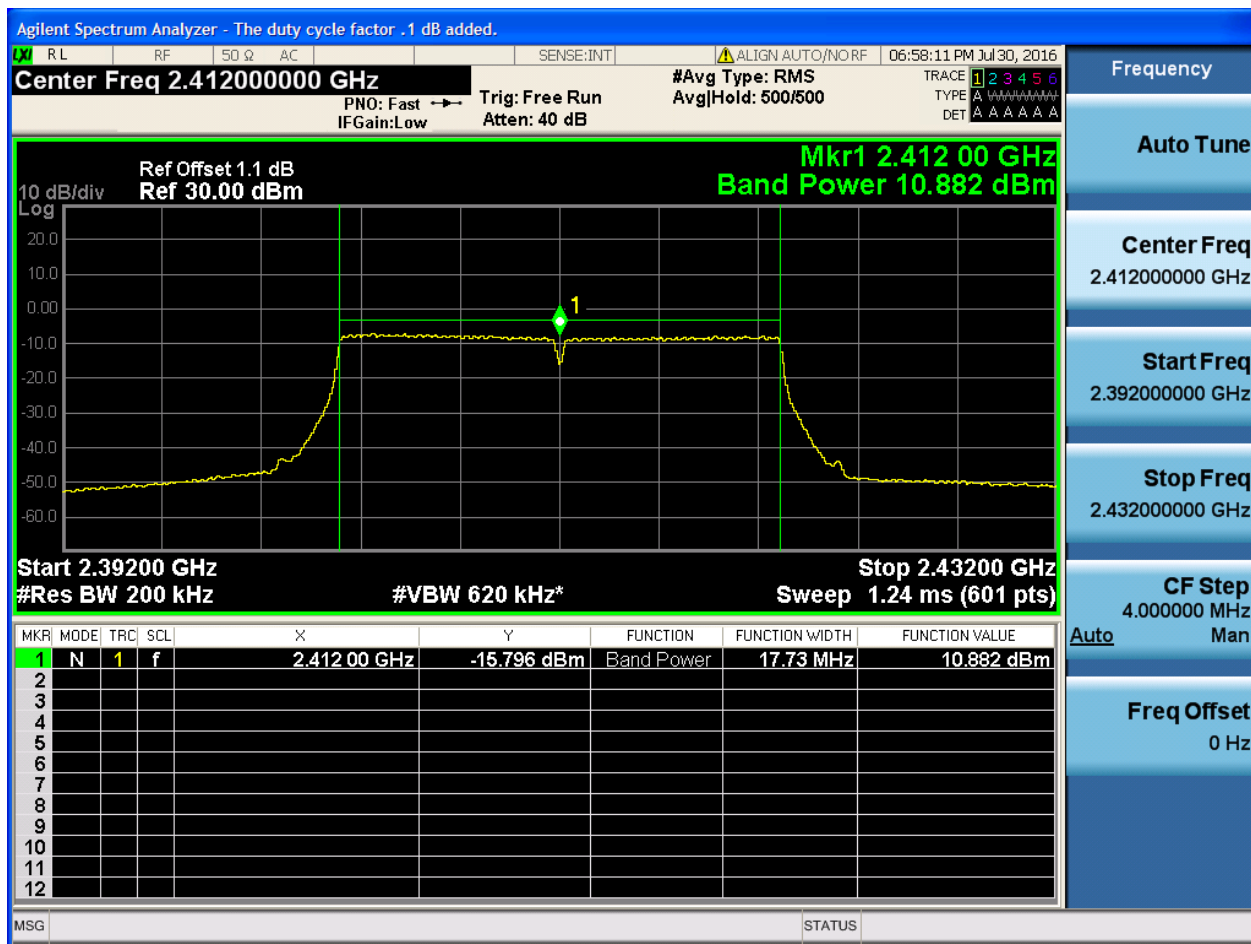


2.6 11G_H@Ant 1



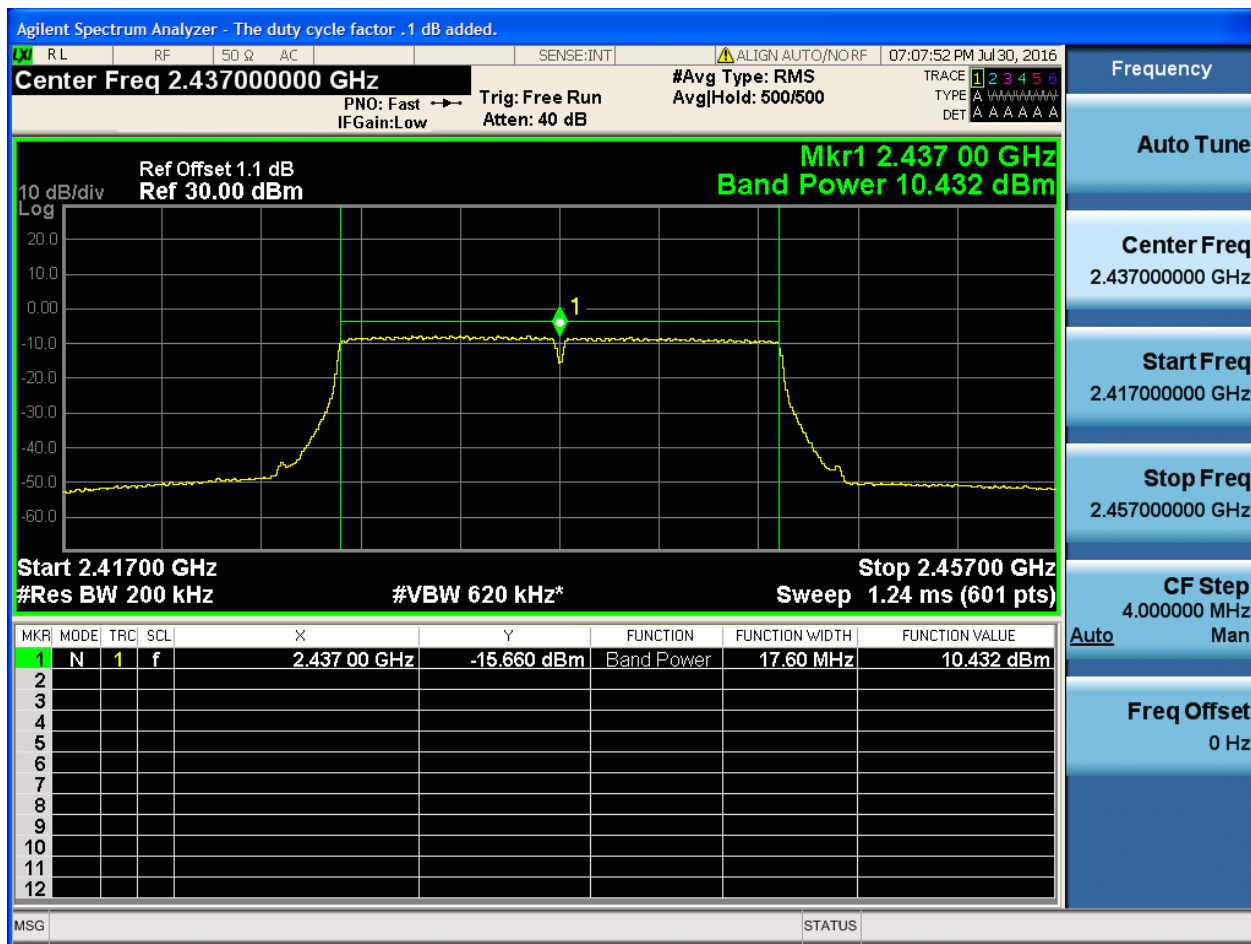


2.7 11N20_L@Ant 1



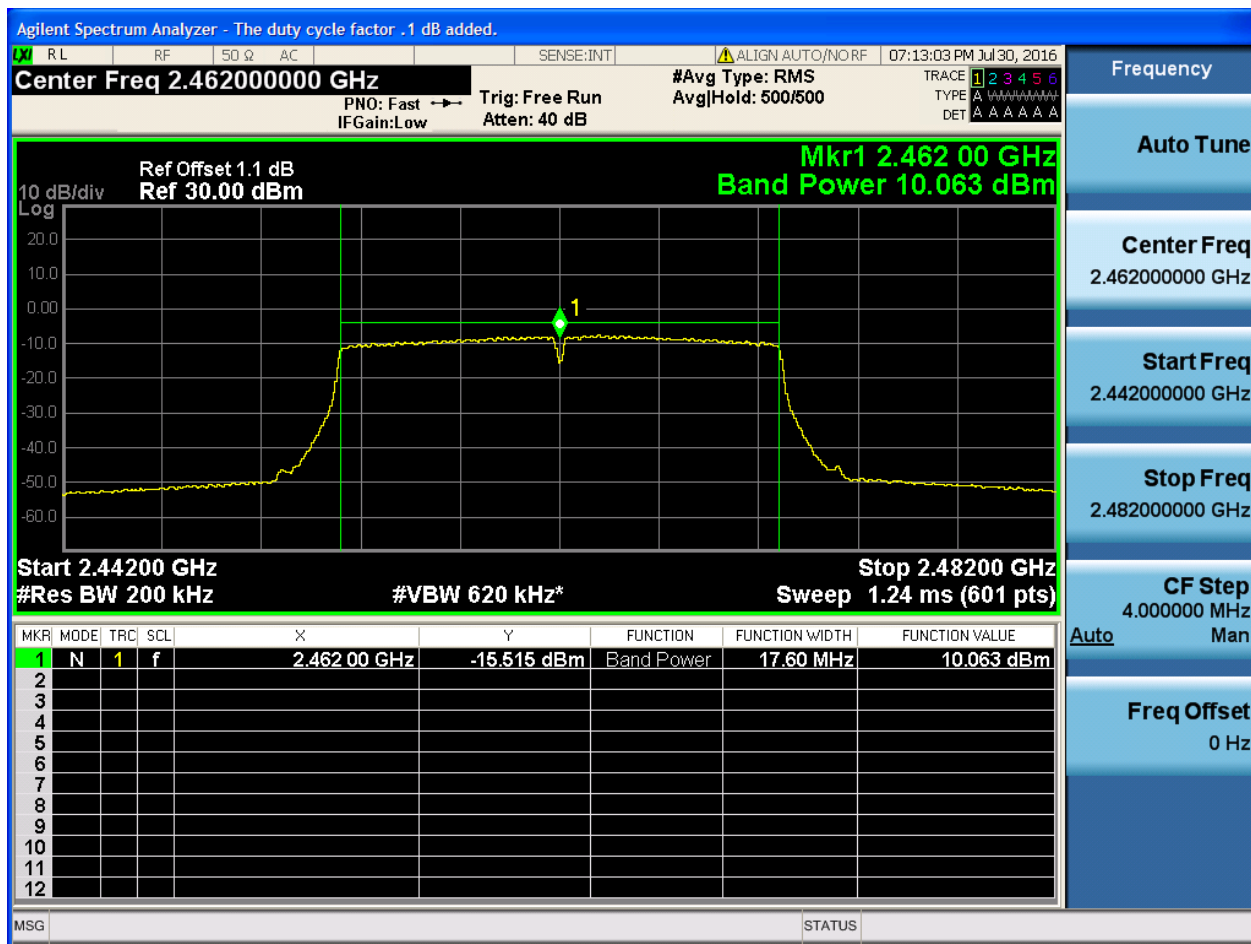


2.8 11N20_M@Ant 1



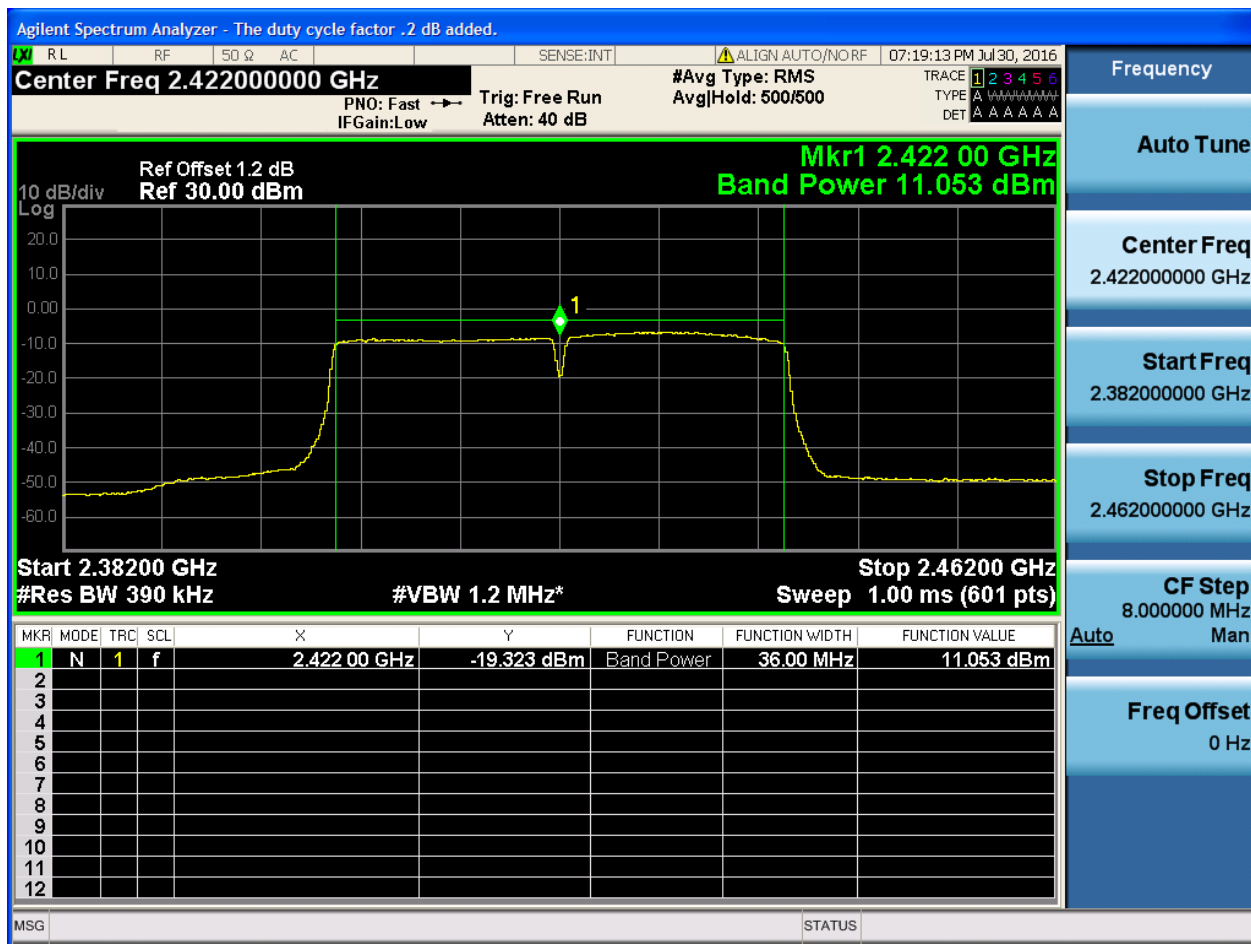


2.9 11N20_H@Ant 1



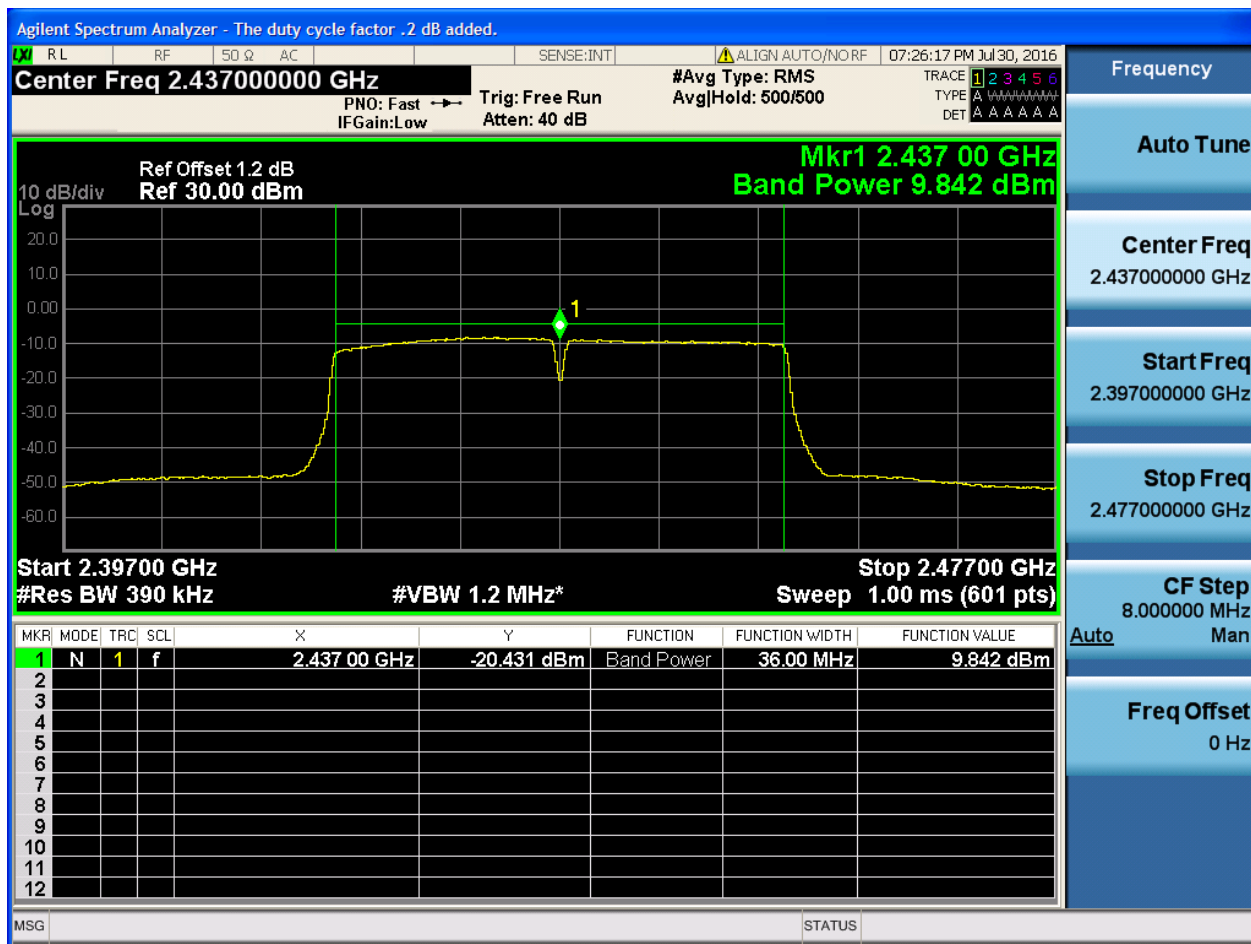


2.10 11N40_L@Ant 1



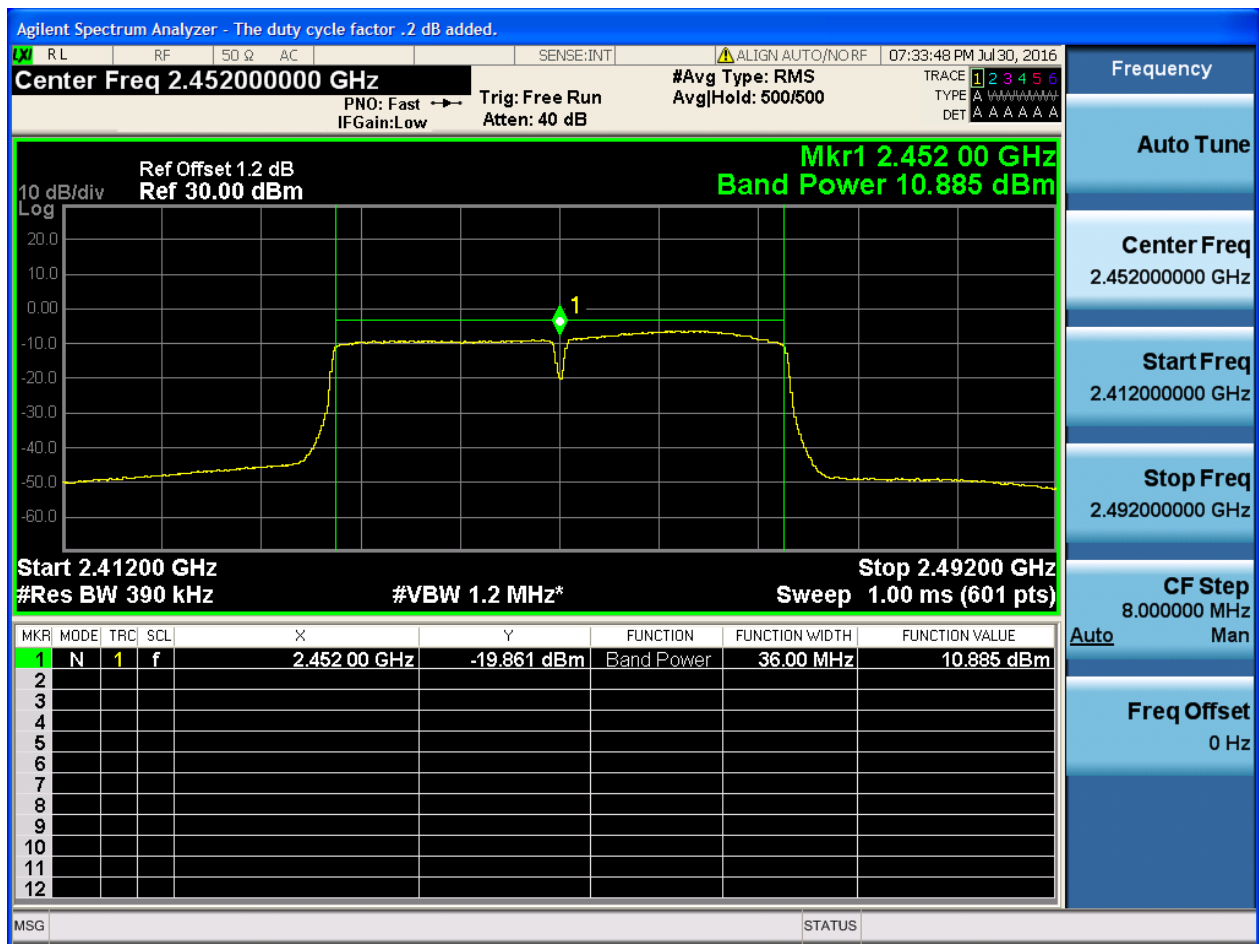


2.11 11N40_M@Ant 1





2.12 11N40_H@Ant 1



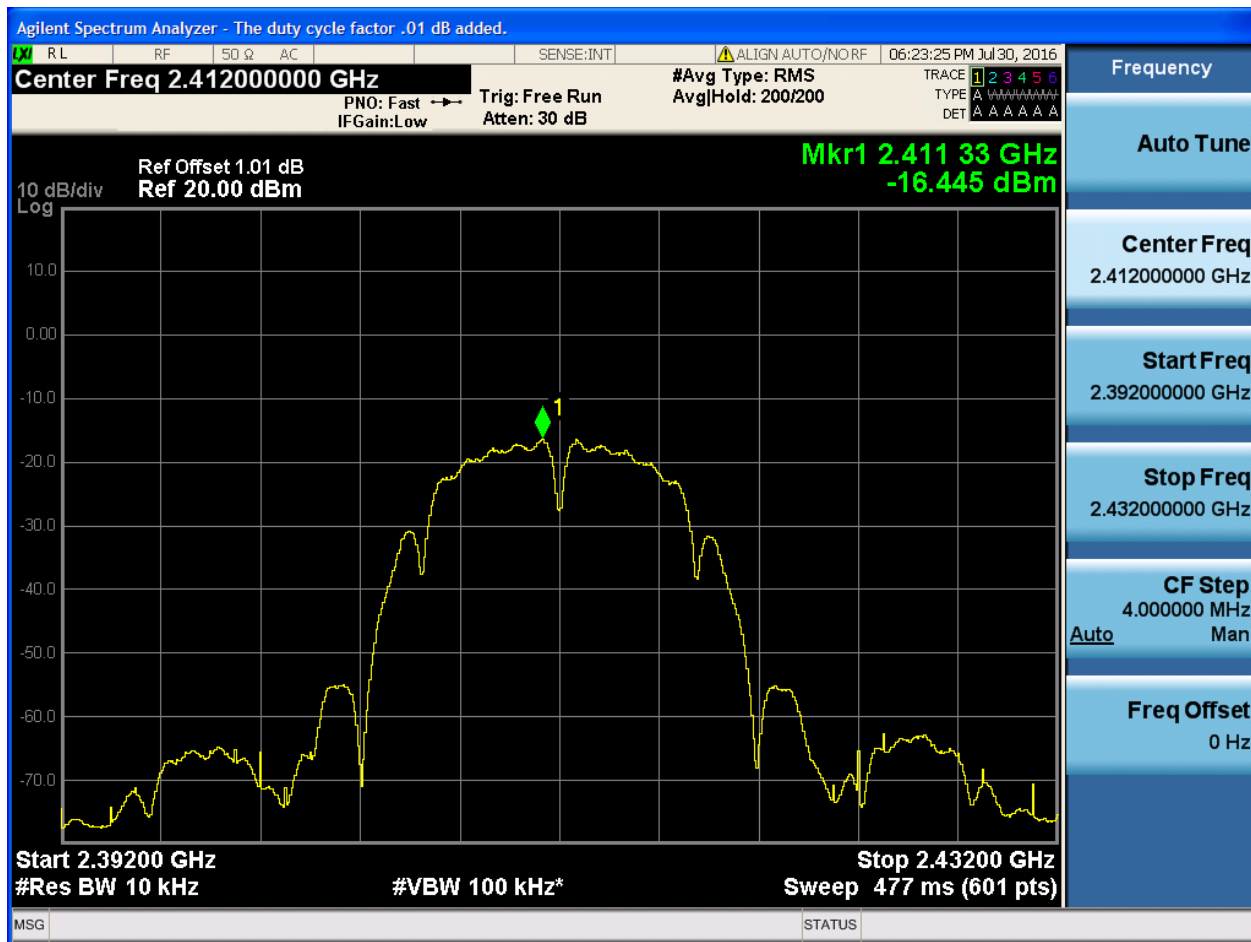
Appendix E: Maximum Power Spectral Density Level

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	PD[MHz]	Verdict
11B	L	2412	Ant 1	-16.445	pass
11B	M	2437	Ant 1	-16.195	pass
11B	H	2462	Ant 1	-15.681	pass
11G	L	2412	Ant 1	-18.974	pass
11G	M	2437	Ant 1	-19.429	pass
11G	H	2462	Ant 1	-19.174	pass
11N20	L	2412	Ant 1	-19.165	pass
11N20	M	2437	Ant 1	-19.696	pass
11N20	H	2462	Ant 1	-19.510	pass
11N40	L	2422	Ant 1	-21.695	pass
11N40	M	2437	Ant 1	-23.118	pass
11N40	H	2452	Ant 1	-21.186	pass

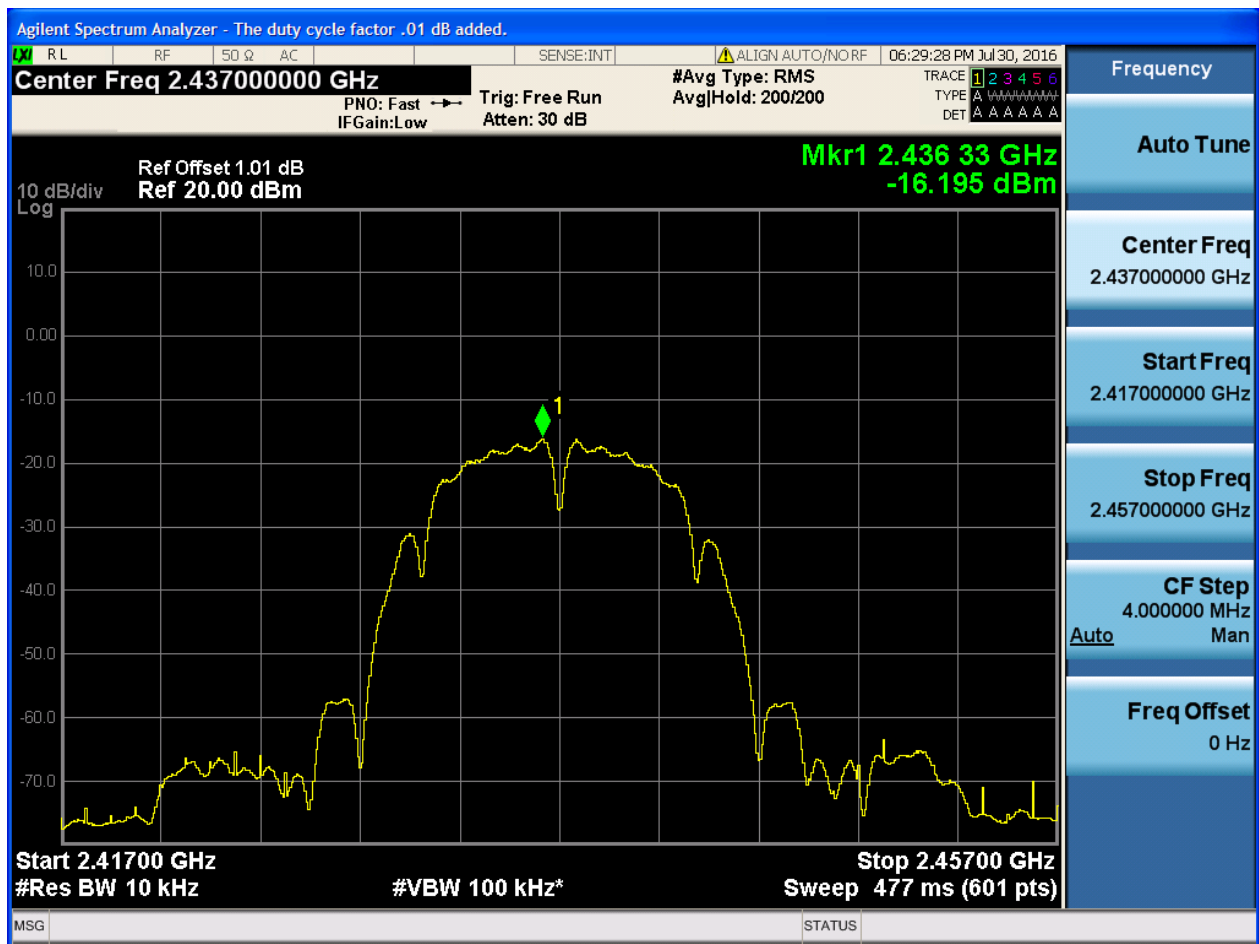
Part II - Test Plots

2.1 11B_L@Ant 1



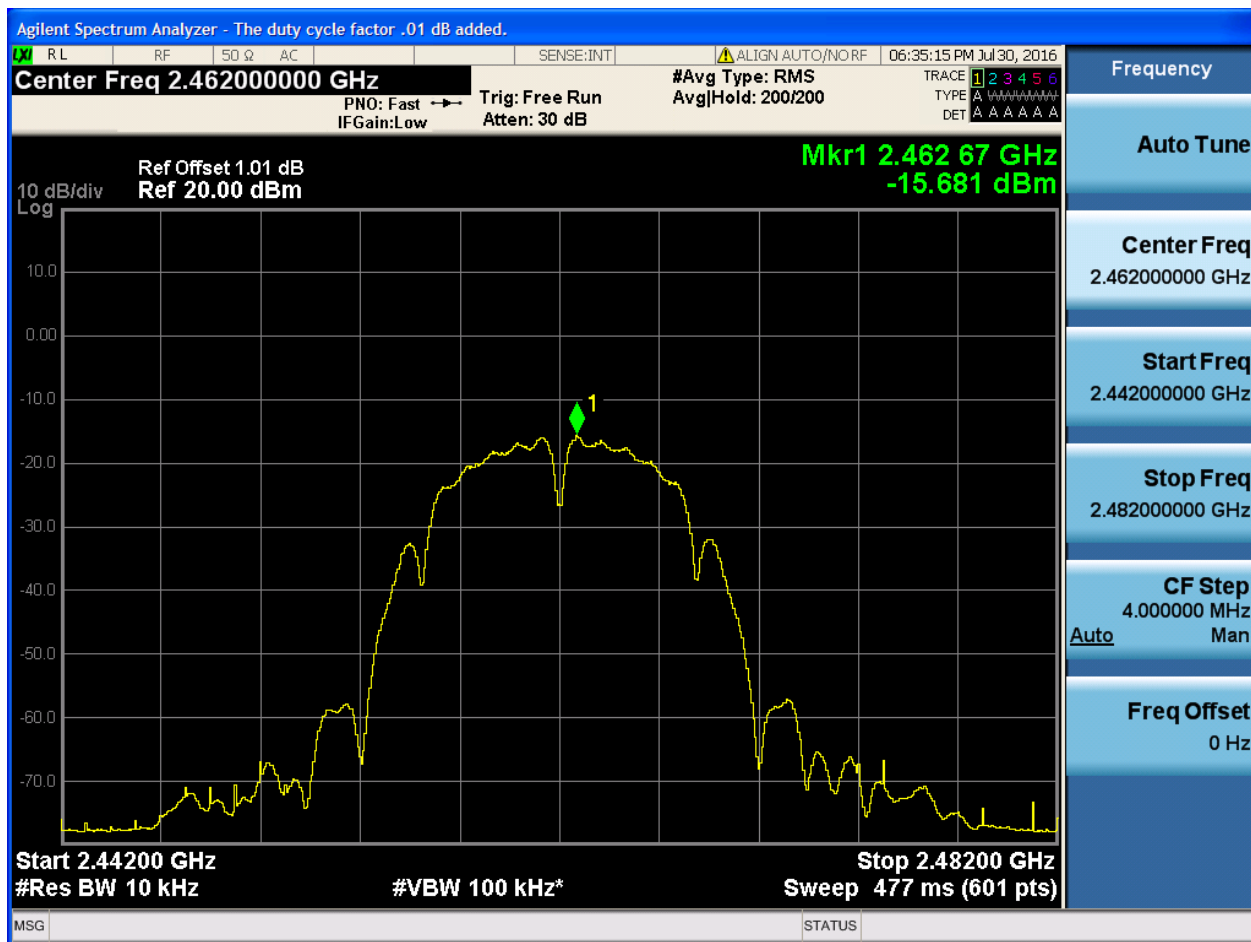


2.2 11B_M@Ant 1



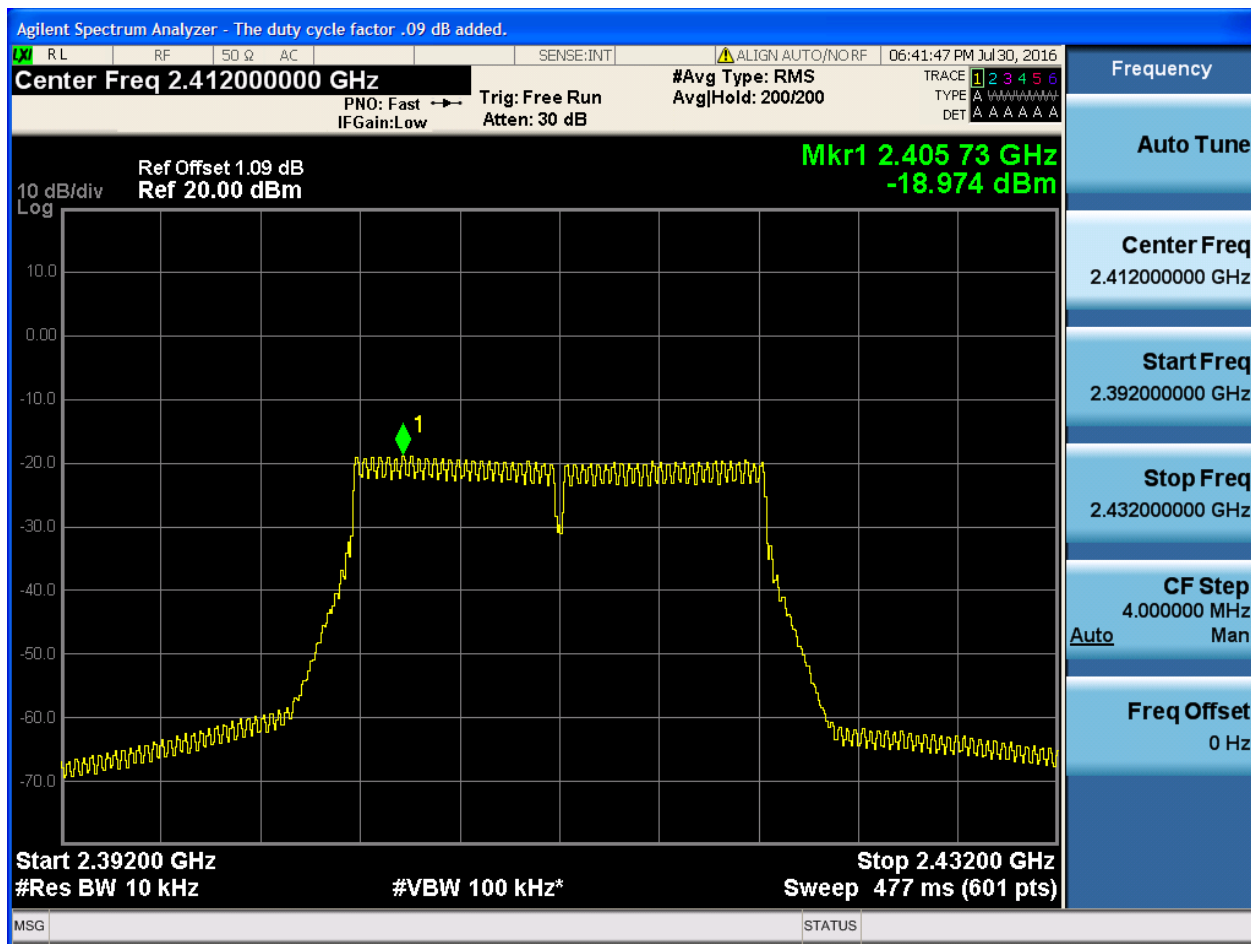


2.3 11B_H@Ant 1



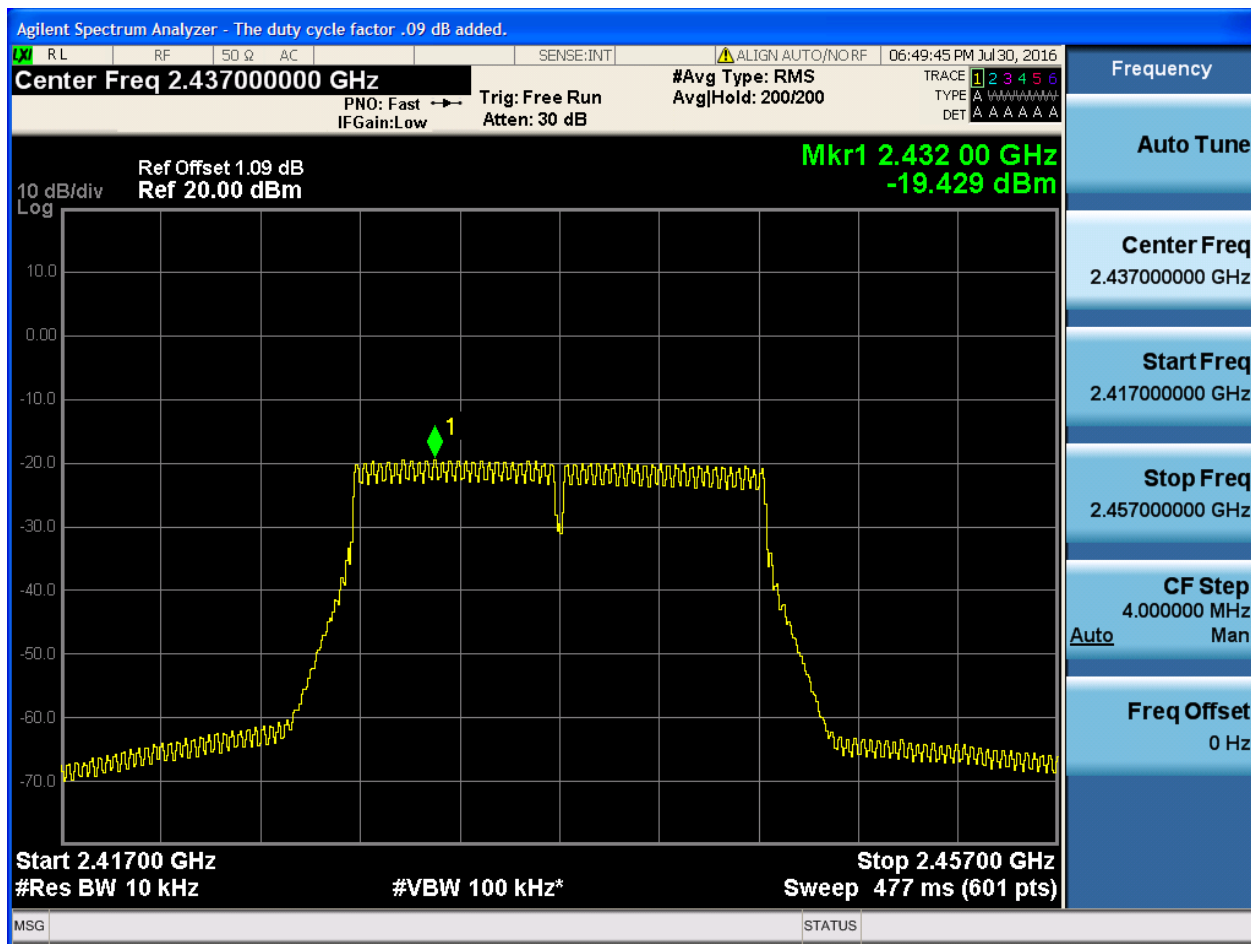


2.4 11G_L@Ant 1



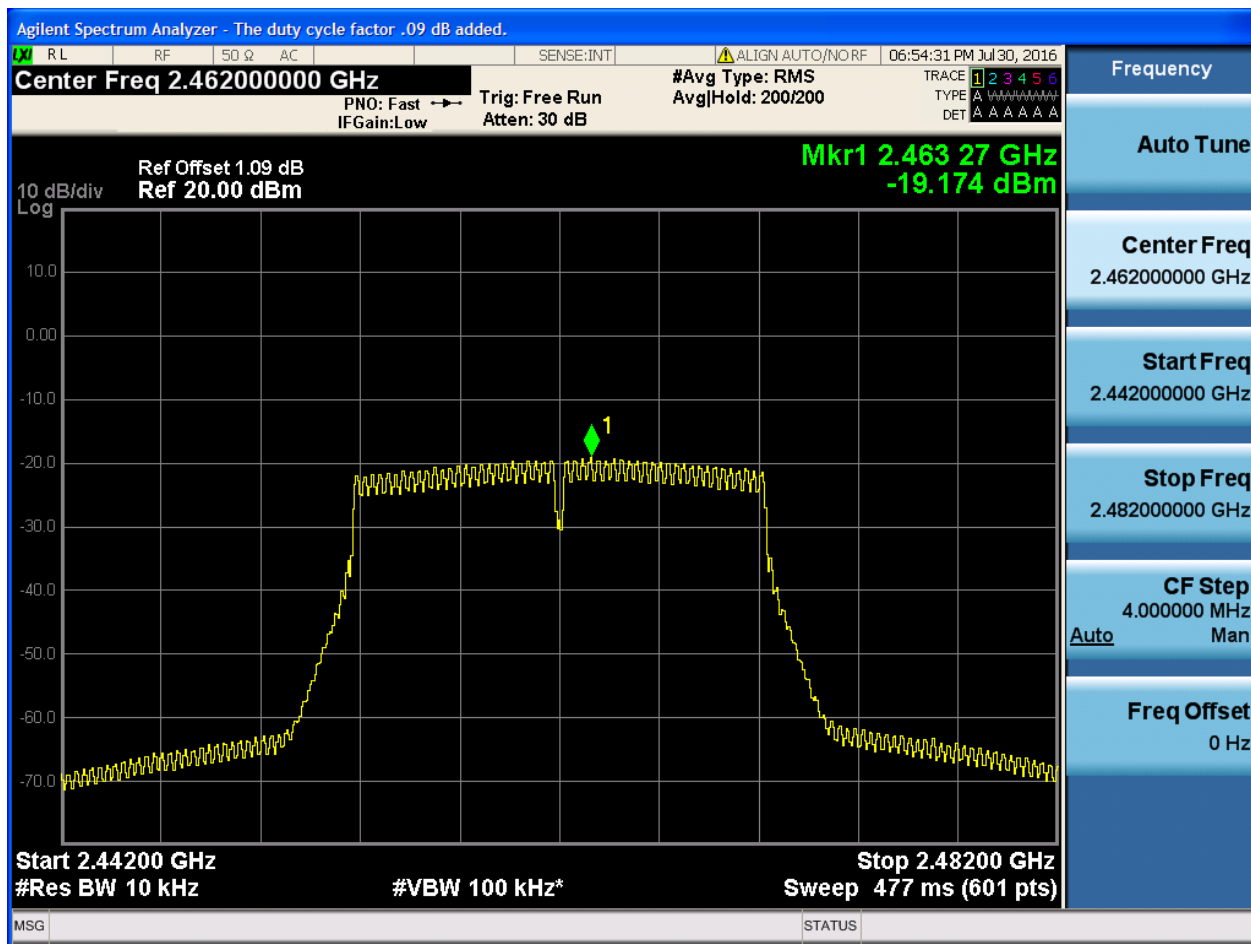


2.5 11G_M@Ant 1



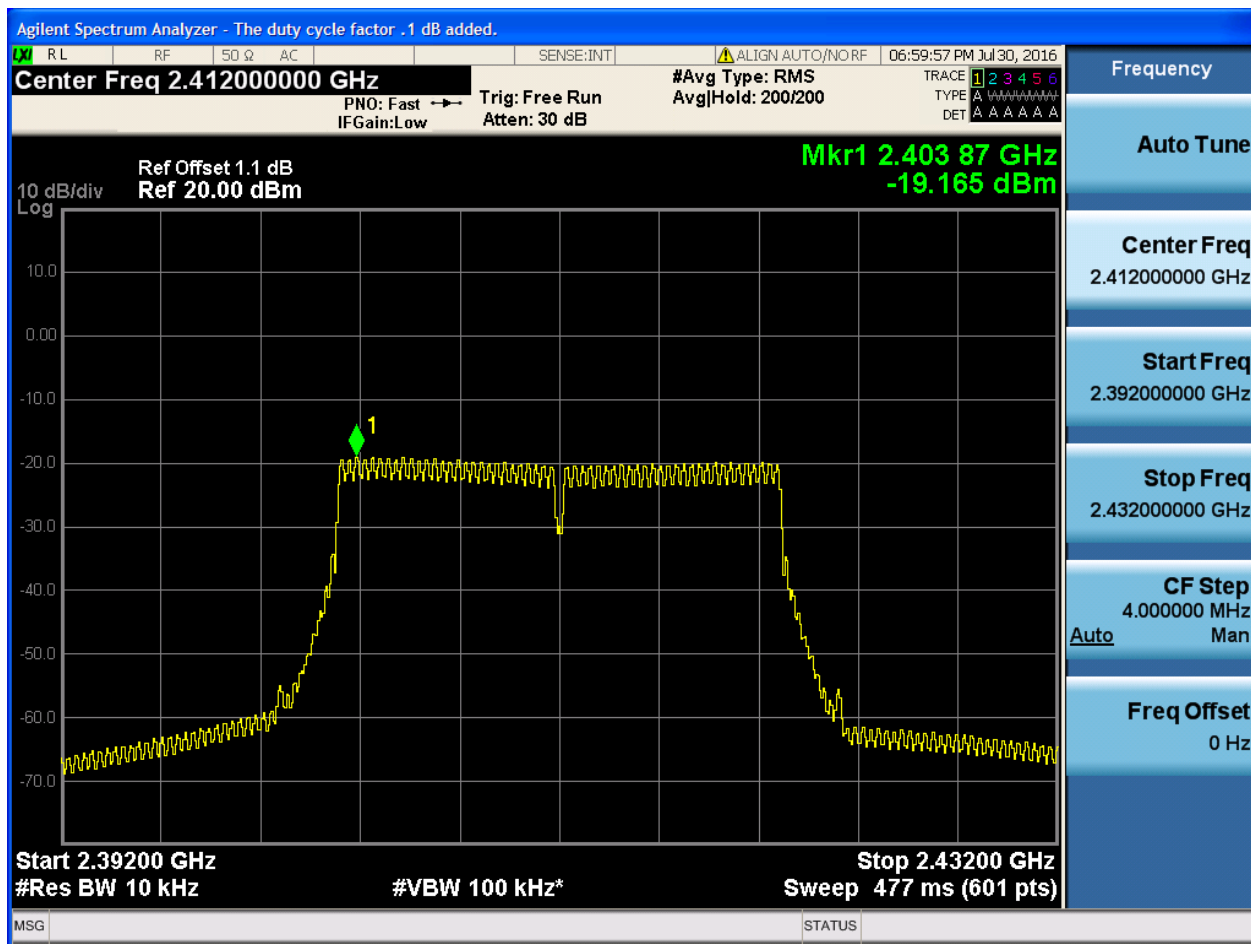


2.6 11G_H@Ant 1



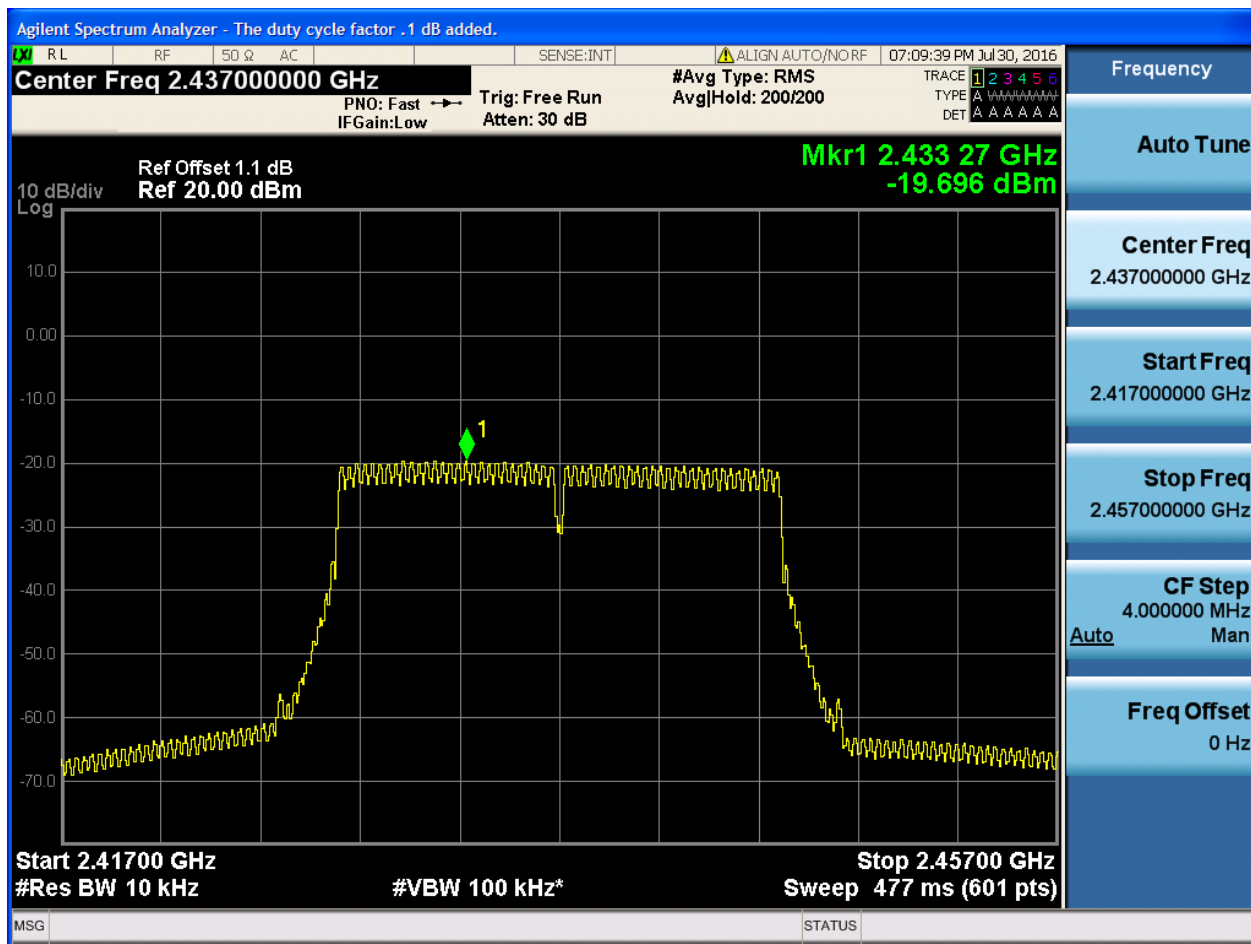


2.7 11N20_L@Ant 1



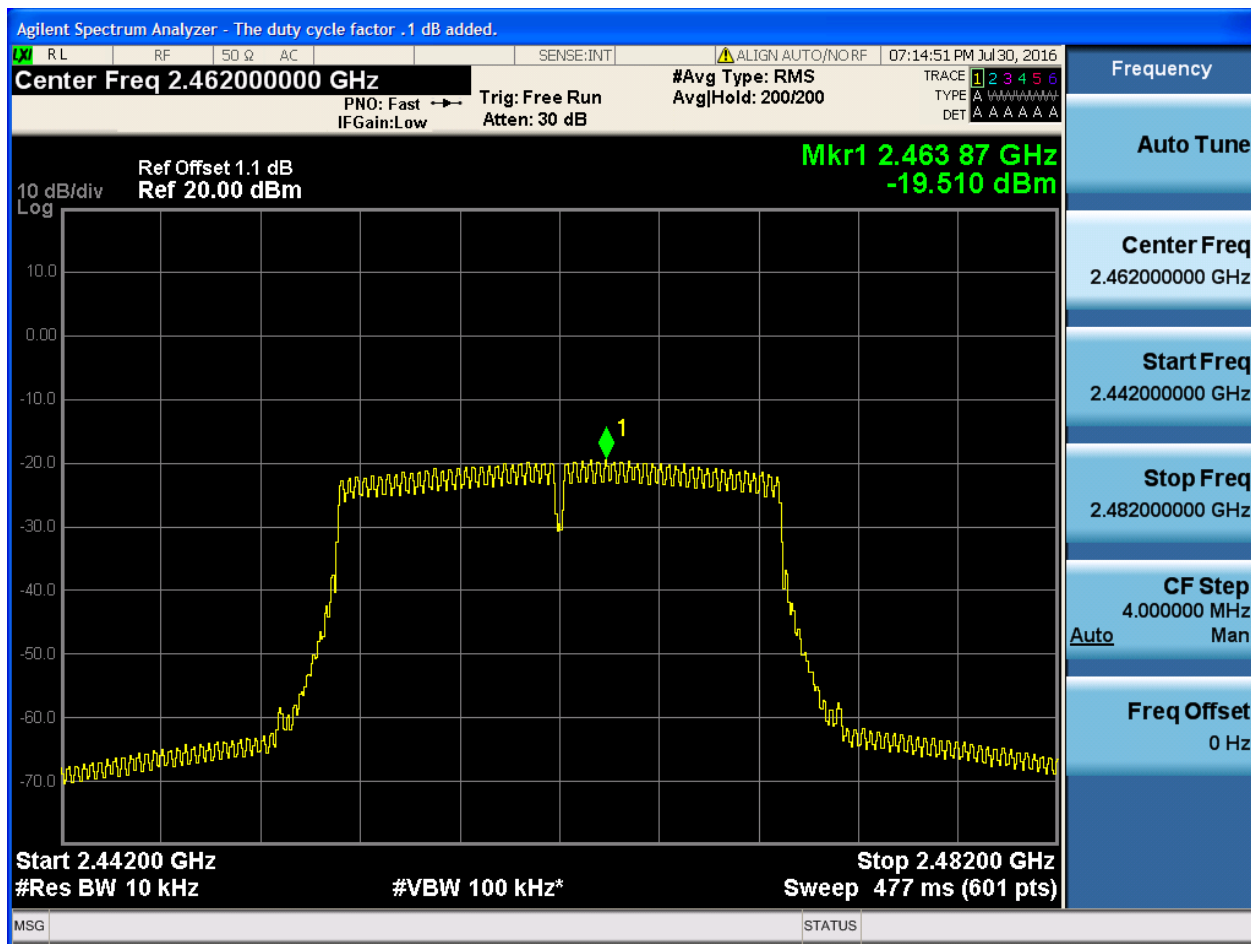


2.8 11N20_M@Ant 1



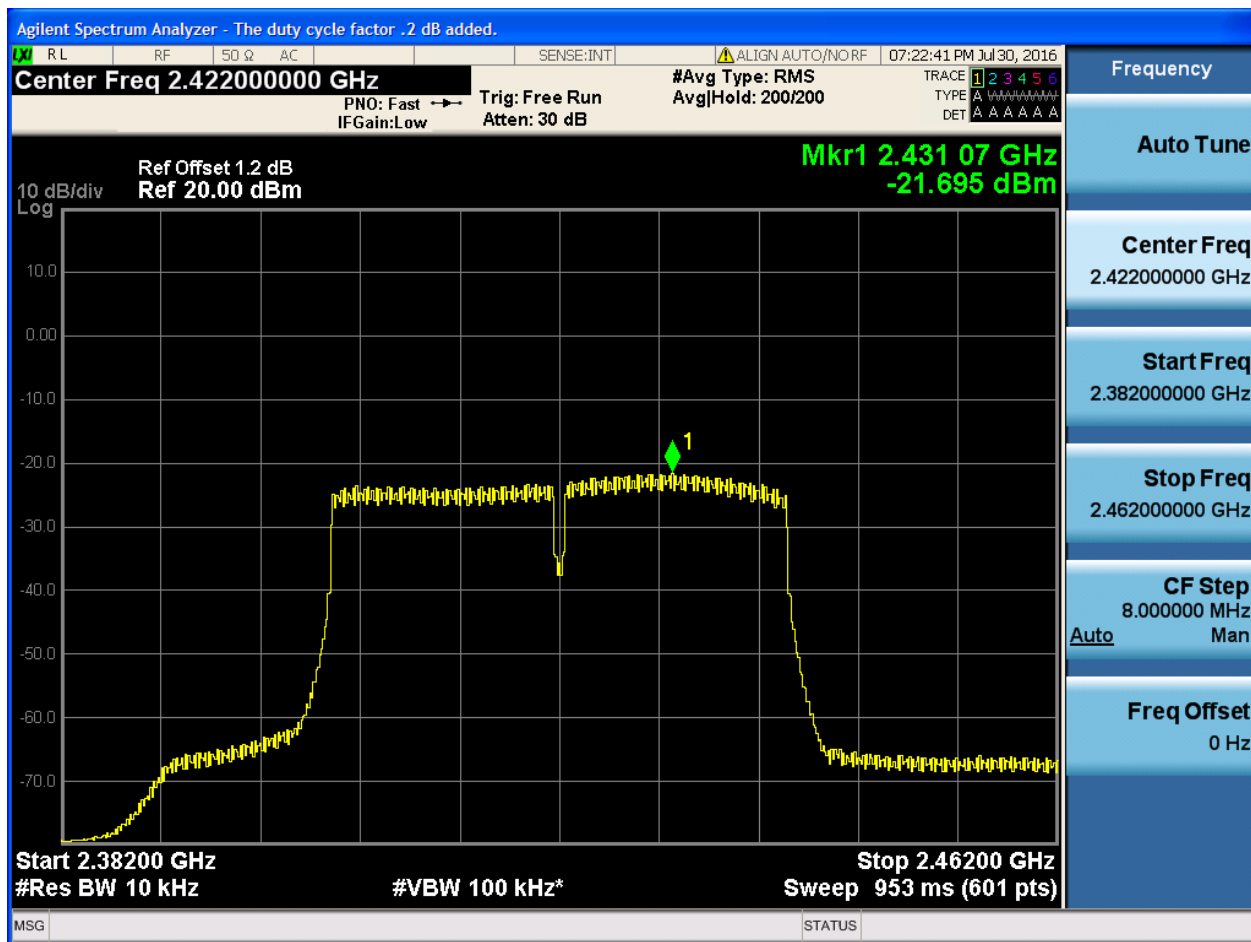


2.9 11N20_H@Ant 1



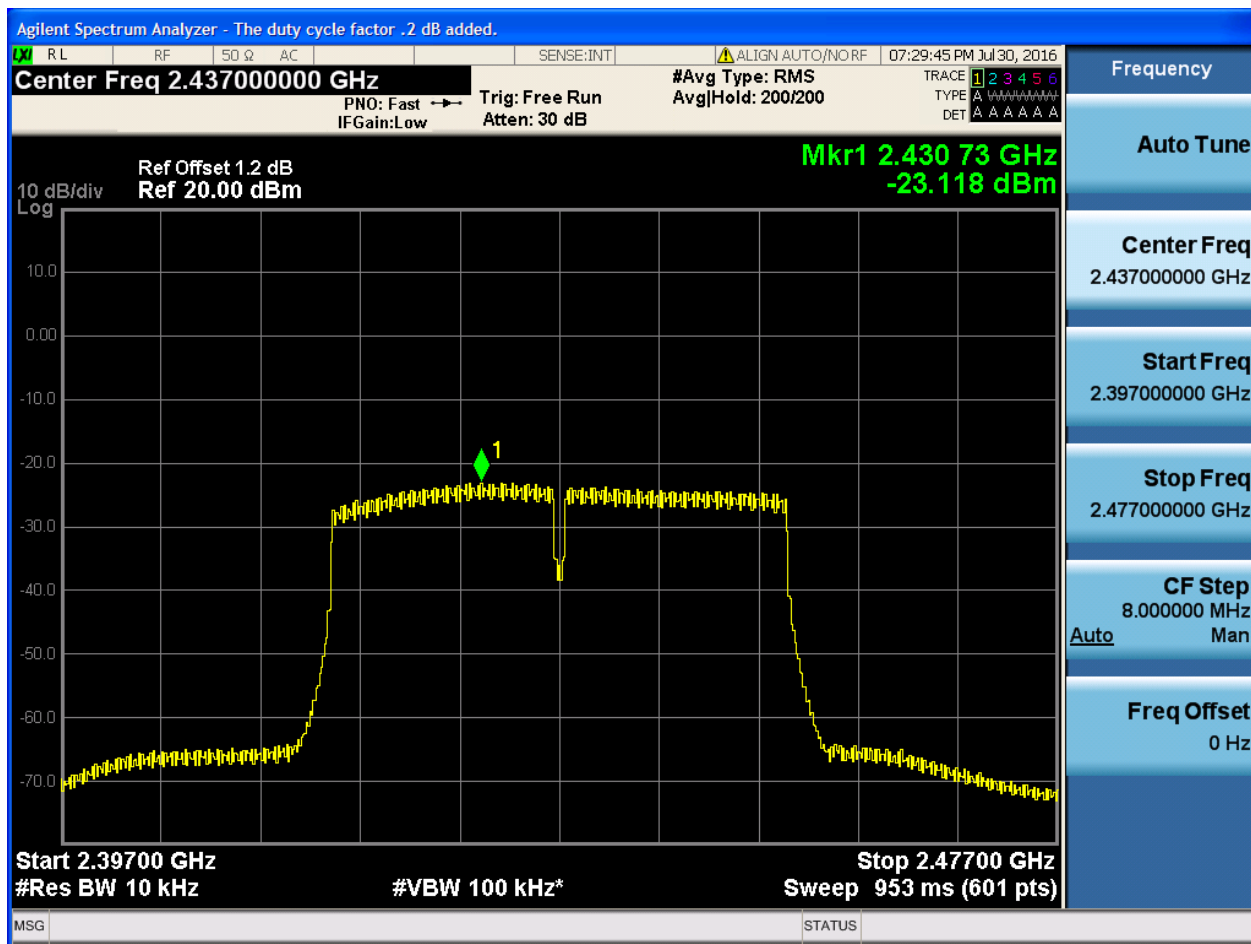


2.10 11N40_L@Ant 1



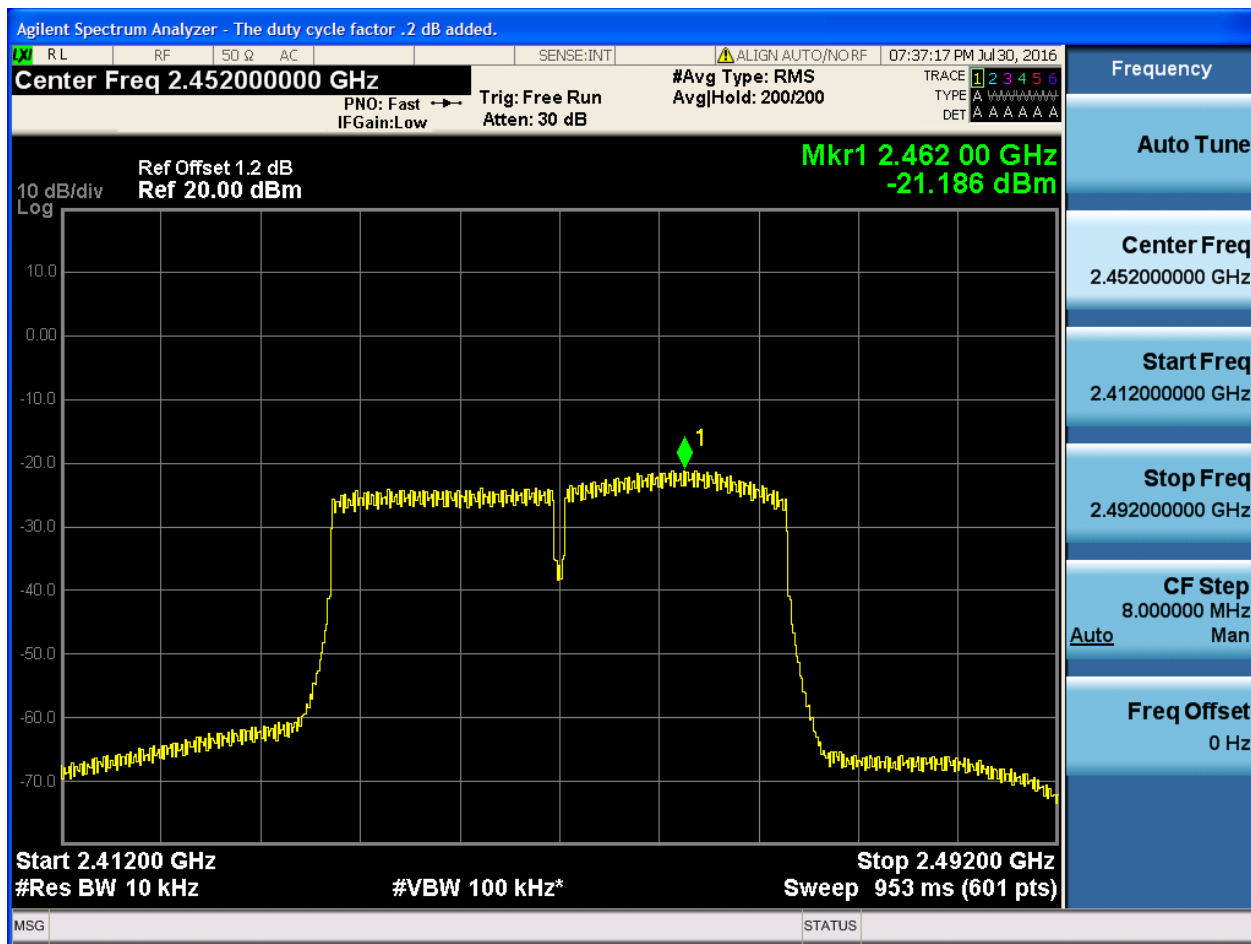


2.11 11N40_M@Ant 1





2.12 11N40_H@Ant 1



Appendix 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	2.138	-50.216	pass
11B	H	2462	Ant 1	2.783	-49.405	pass
11G	L	2412	Ant 1	-0.292	-47.904	pass
11G	H	2462	Ant 1	-0.852	-47.180	pass
11N20	L	2412	Ant 1	-0.336	-48.669	pass
11N20	H	2462	Ant 1	-0.778	-46.797	pass
11N40	L	2422	Ant 1	-4.476	-47.891	pass
11N40	H	2452	Ant 1	-2.103	-45.543	pass



Part II - Test Plots

2.1 11B_L@Ant 1





Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO/NORF 06:37:51 PM Jul 30, 2016

Center Freq 2.473500000 GHz Avg Type: Log-Pwr Avg/Hold: 100/100

PNO: Fast Trg: Free Run
IFGain:Low Atten: 40 dB

TRACE 1 2 3 4 5 6
TYPE M W W W W W W W
DET P P P P P P

Ref Offset 1 dB
Ref 30.00 dBm

**Mkr2 2.483 50 GHz
-49.405 dBm**

10 dB/div
Log

Start 2.45350 GHz Stop 2.49350 GHz
#Res BW 100 kHz #VBW 300 kHz #Sweep 100 ms (601 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.462 50 GHz	2.783 dBm			
2	N	1	f	2.483 50 GHz	-49.405 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

MSG STATUS

Frequency

Auto Tune

Center Freq
2.473500000 GHz

Start Freq
2.453500000 GHz

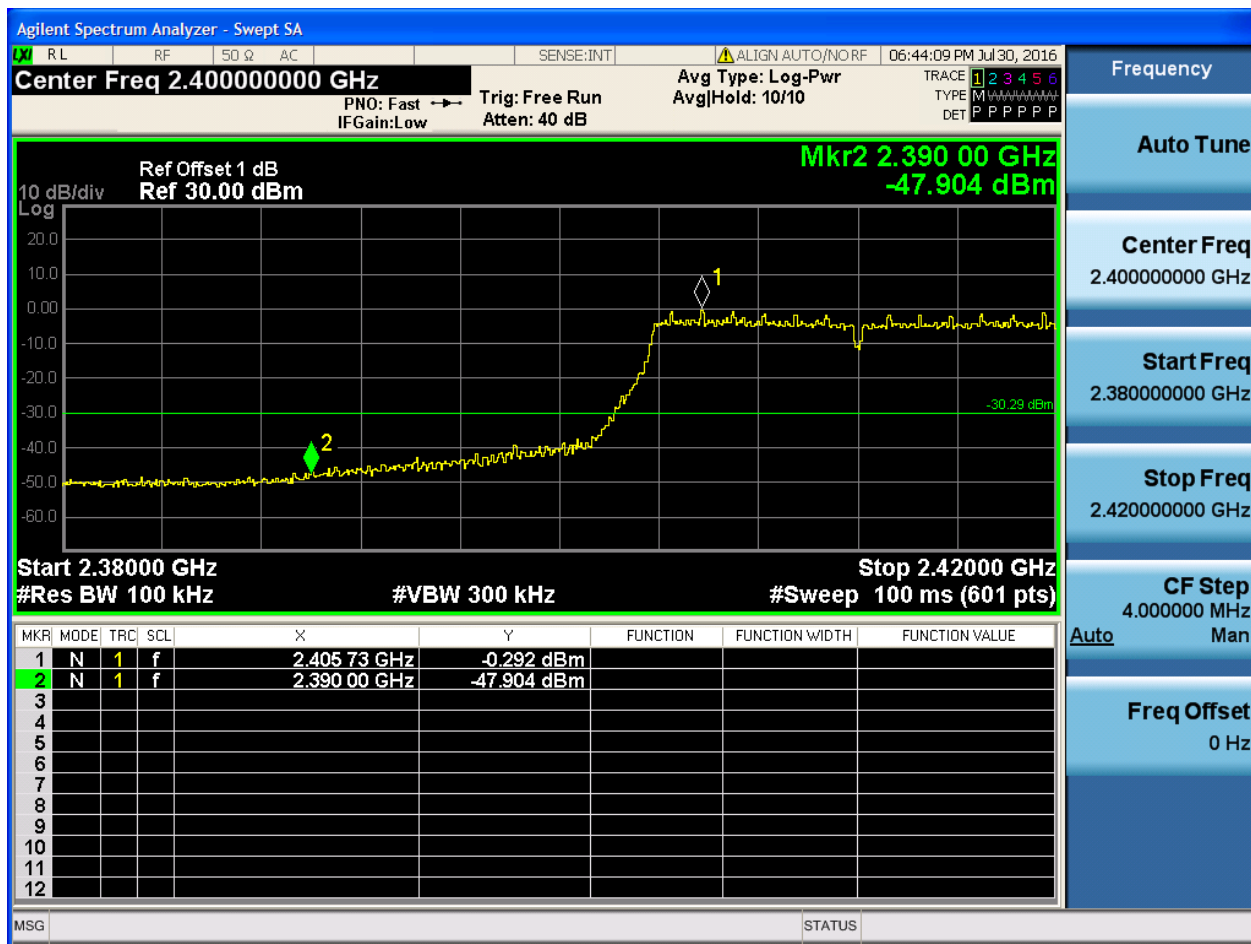
Stop Freq
2.493500000 GHz

CF Step
4.000000 MHz
Man

Freq Offset
0 Hz

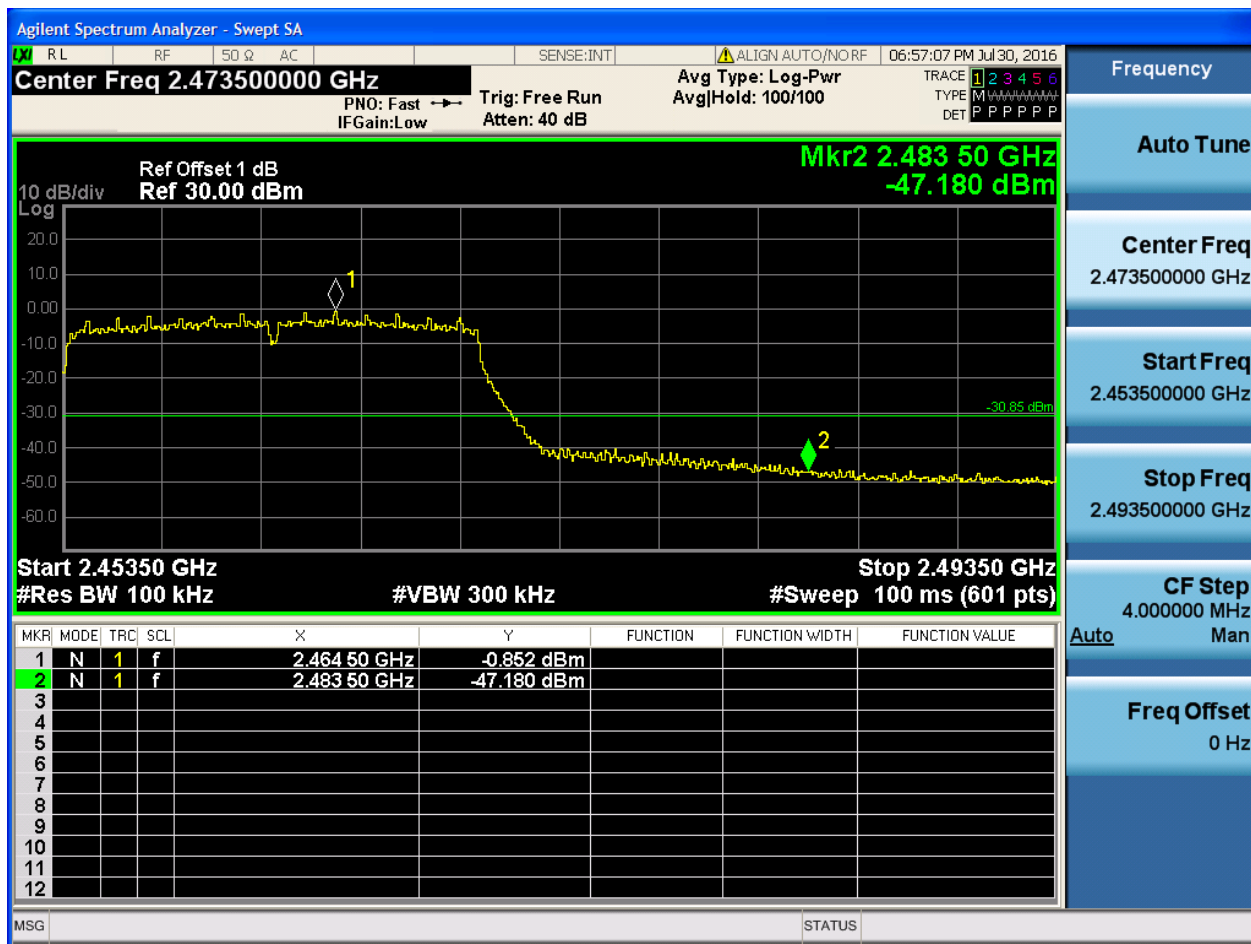


2.3 11G_L@Ant 1



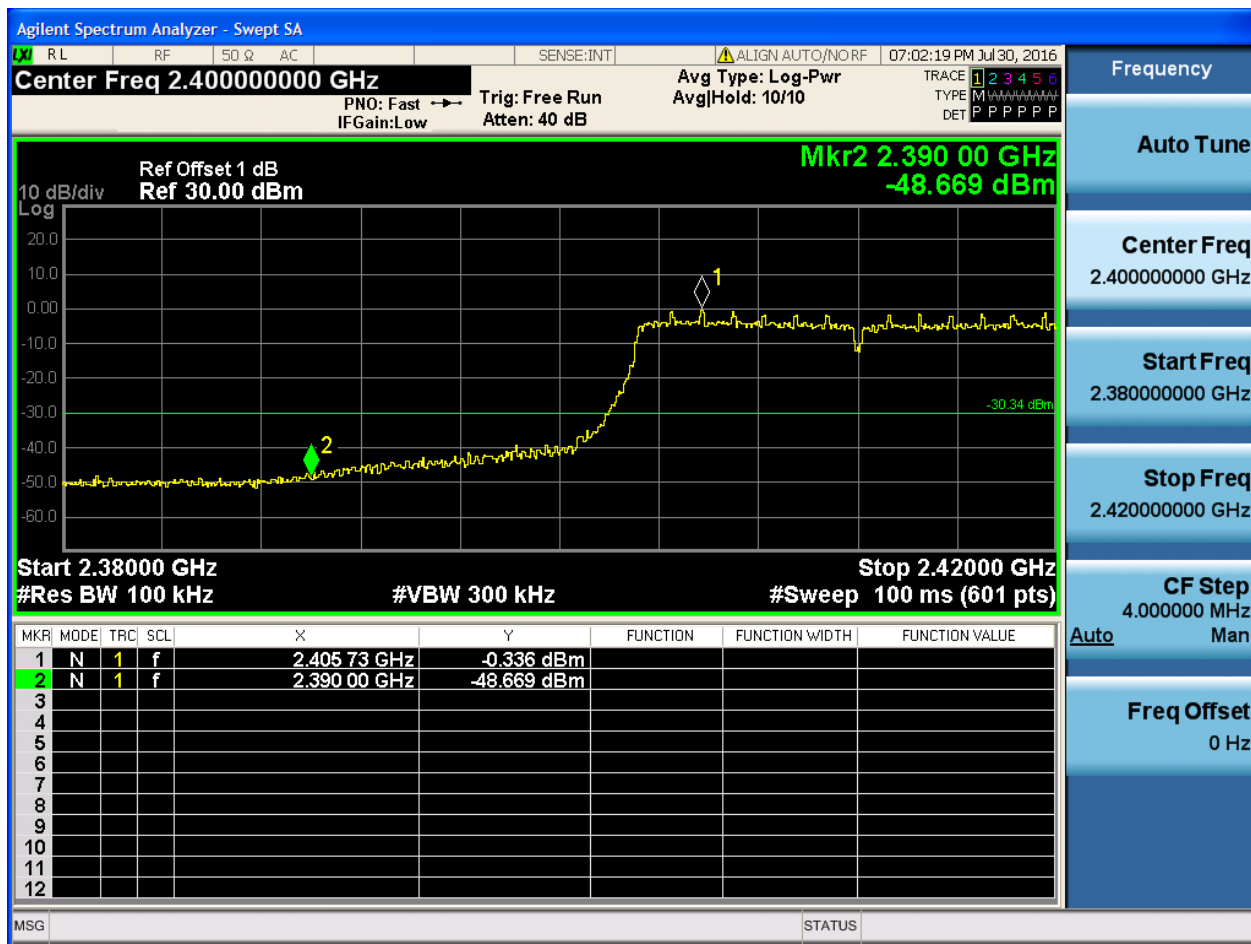


2.4 11G_H@Ant 1



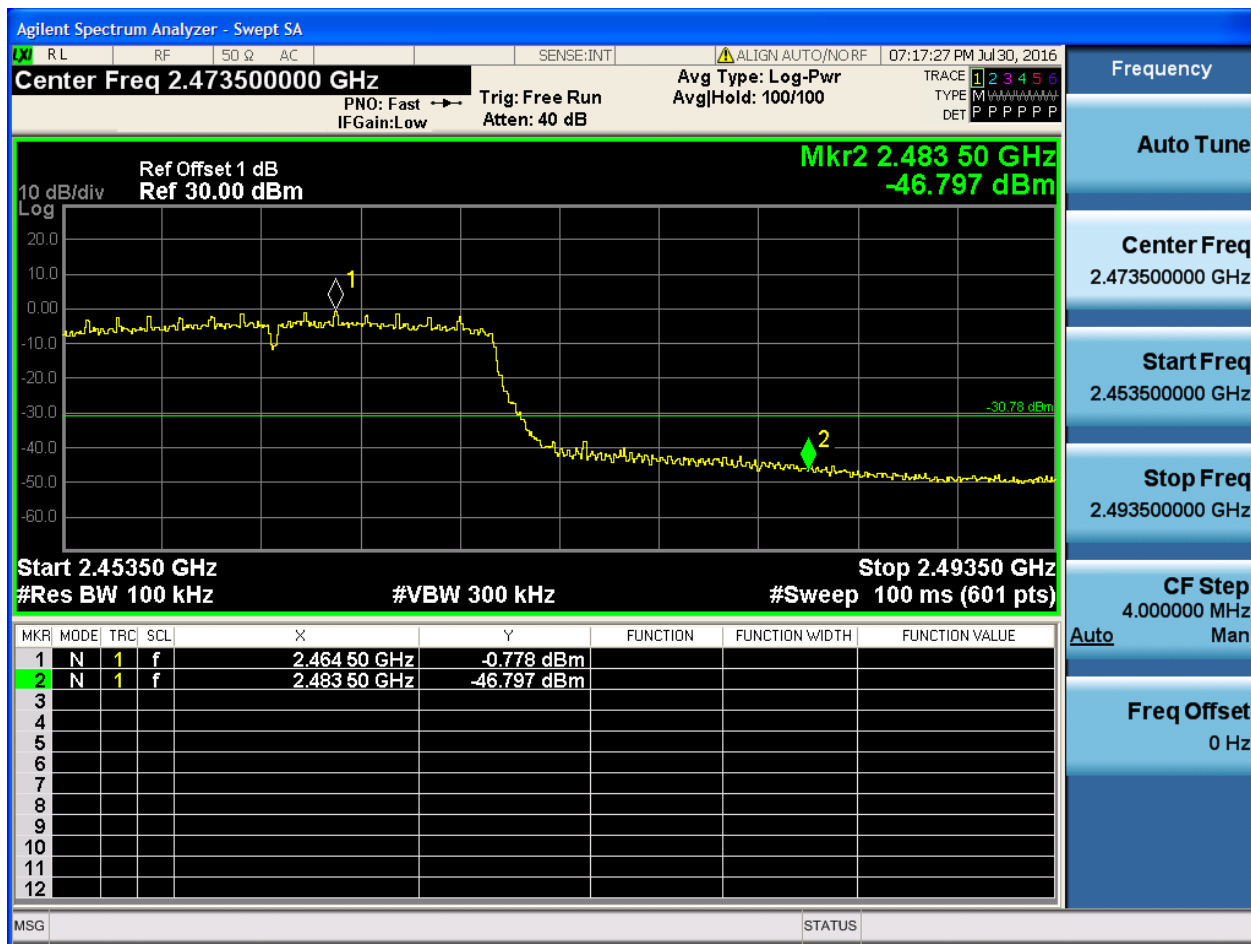


2.5 11N20_L@Ant 1



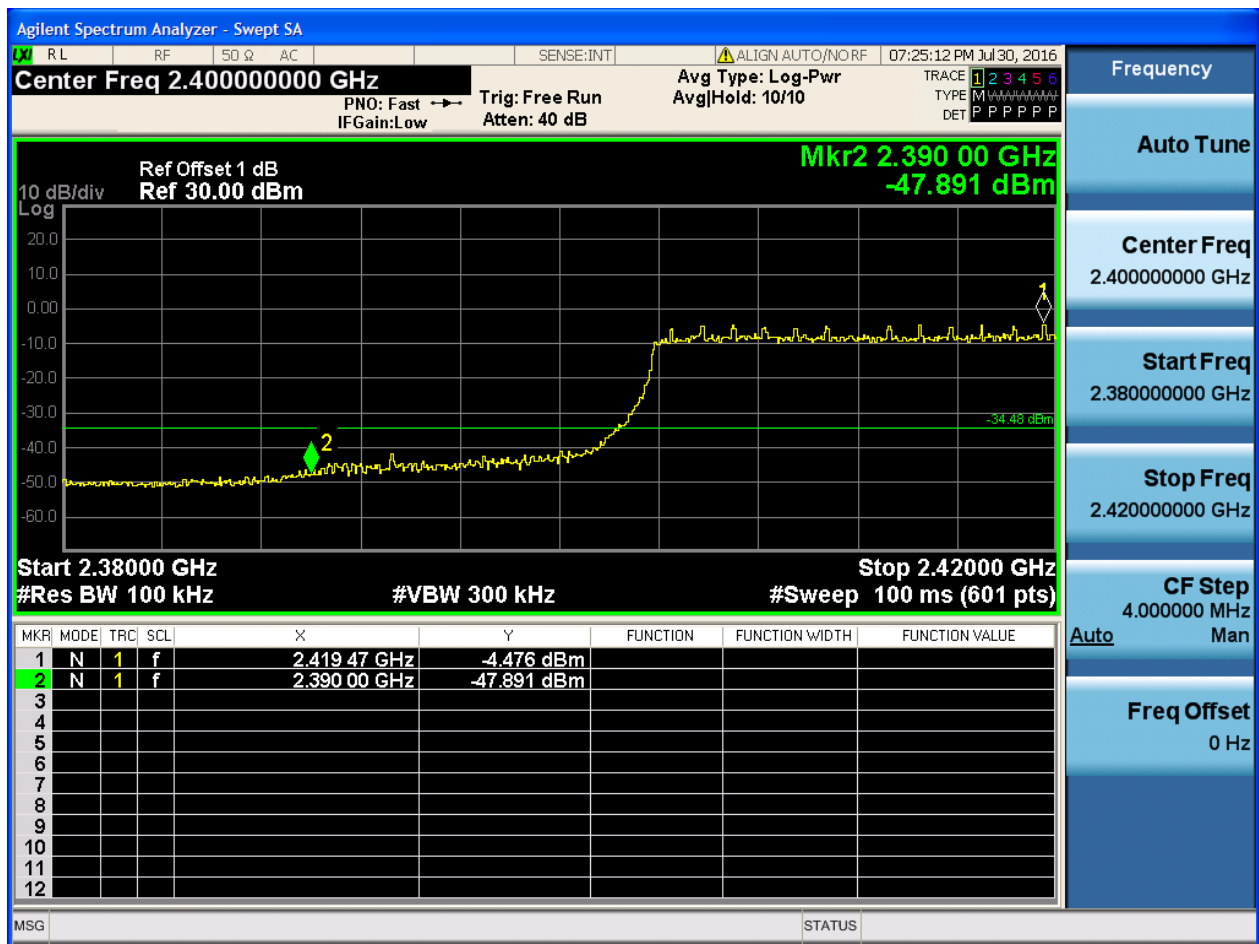


2.6 11N20_H@Ant 1



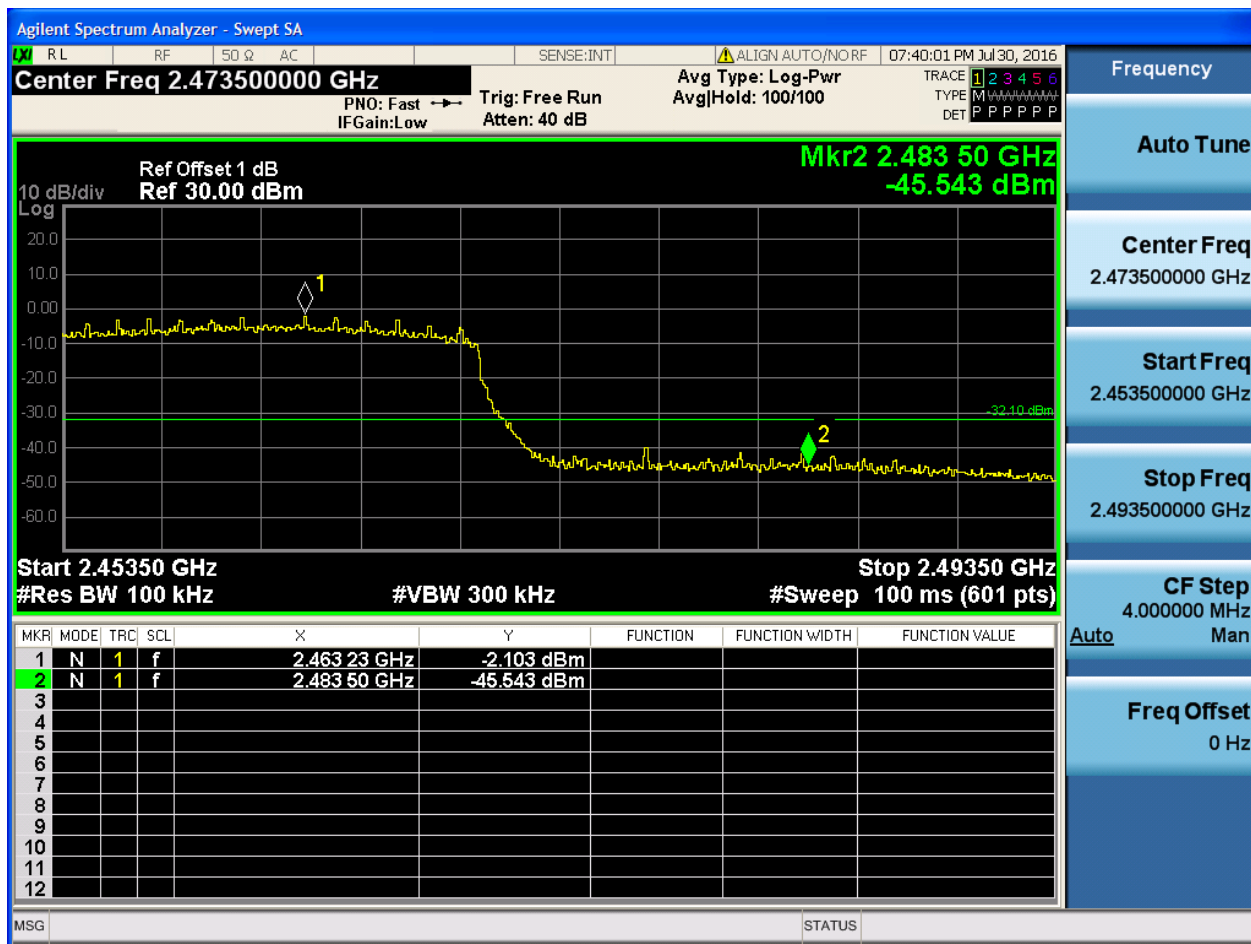


2.7 11N40_L@Ant 1





2.8 11N40_H@Ant 1



Appendix 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	2.255	<limit	pass
11B	M	2437	Ant 1	2.463	<limit	pass
11B	H	2462	Ant 1	2.855	<limit	pass
11G	L	2412	Ant 1	-0.107	<limit	pass
11G	M	2437	Ant 1	-0.746	<limit	pass
11G	H	2462	Ant 1	-0.389	<limit	pass
11N20	L	2412	Ant 1	-0.222	<limit	pass
11N20	M	2437	Ant 1	-0.816	<limit	pass
11N20	H	2462	Ant 1	-0.357	<limit	pass
11N40	L	2422	Ant 1	-2.069	<limit	pass
11N40	M	2437	Ant 1	-3.878	<limit	pass
11N40	H	2452	Ant 1	-1.439	<limit	pass



Part II - Test Plots

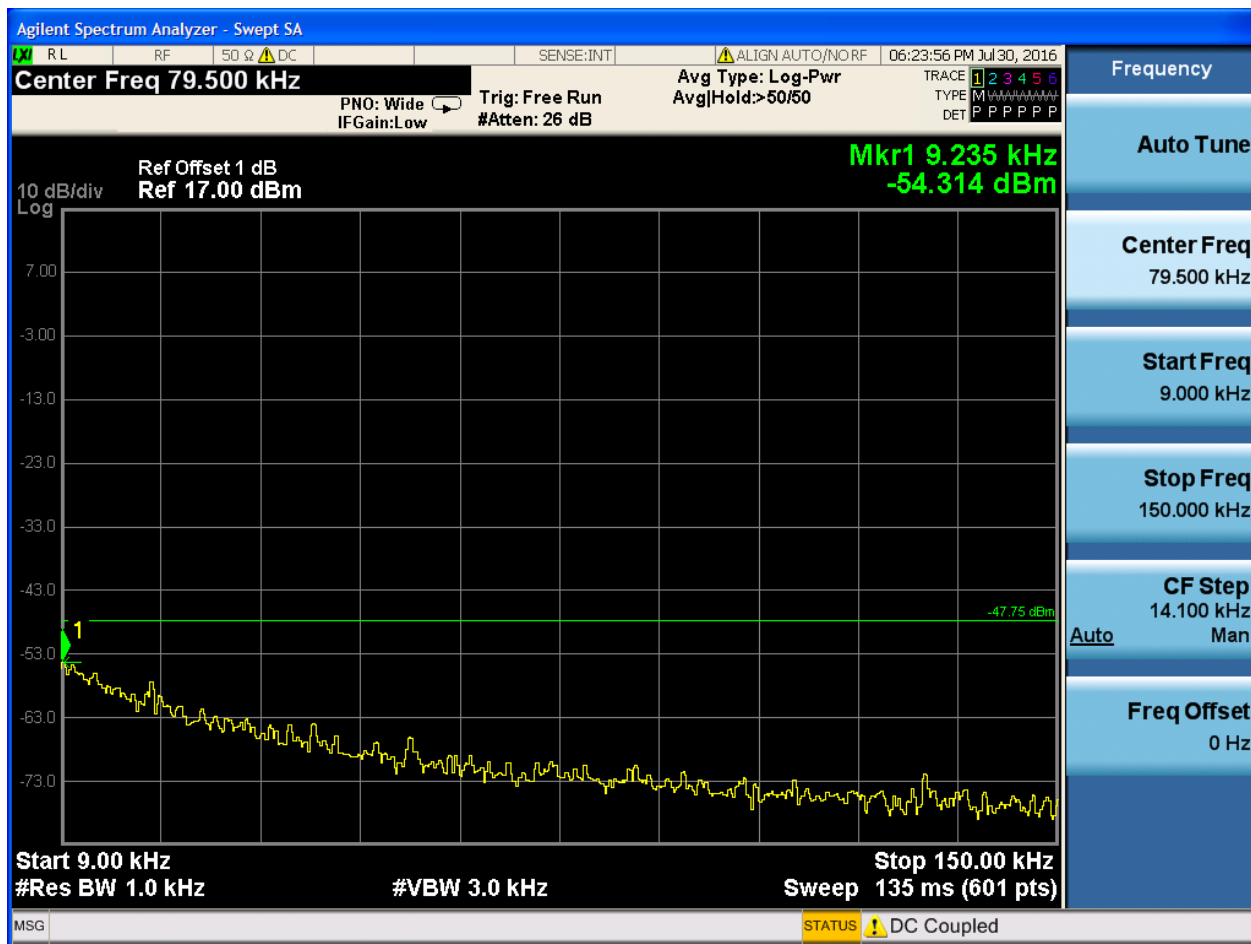
2.1 11B_L@Ant 1

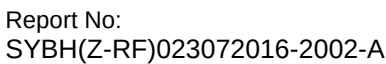
Pref:

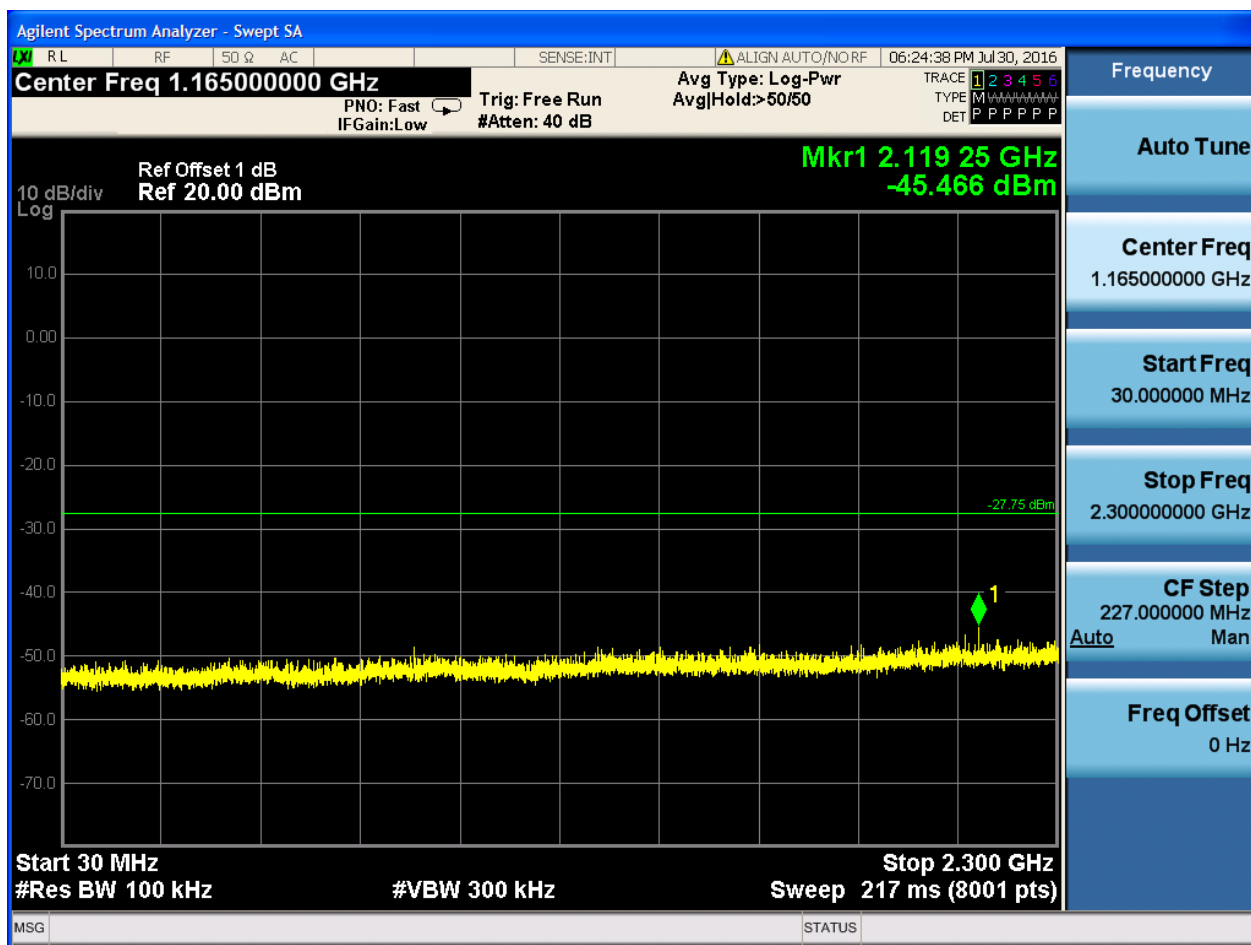


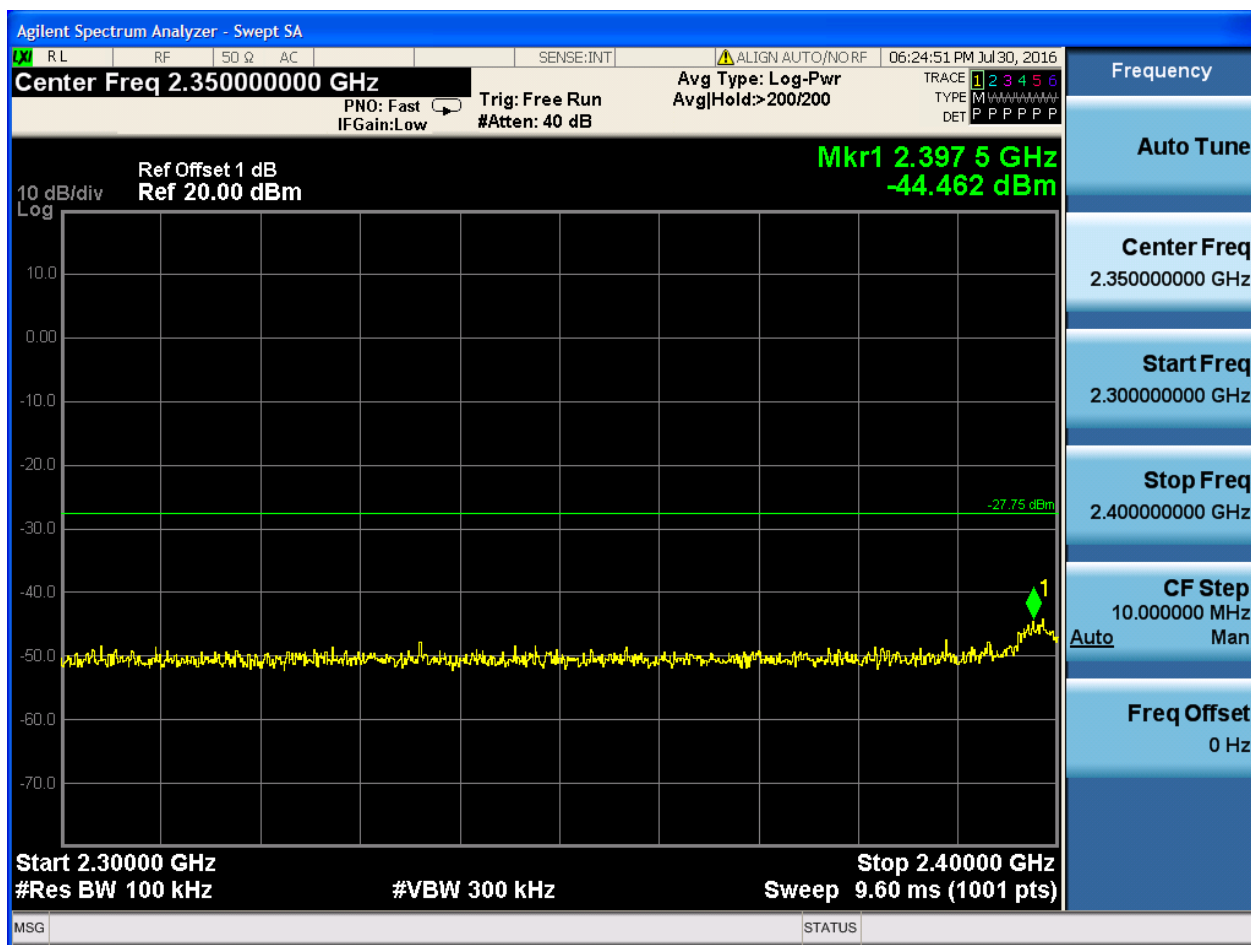


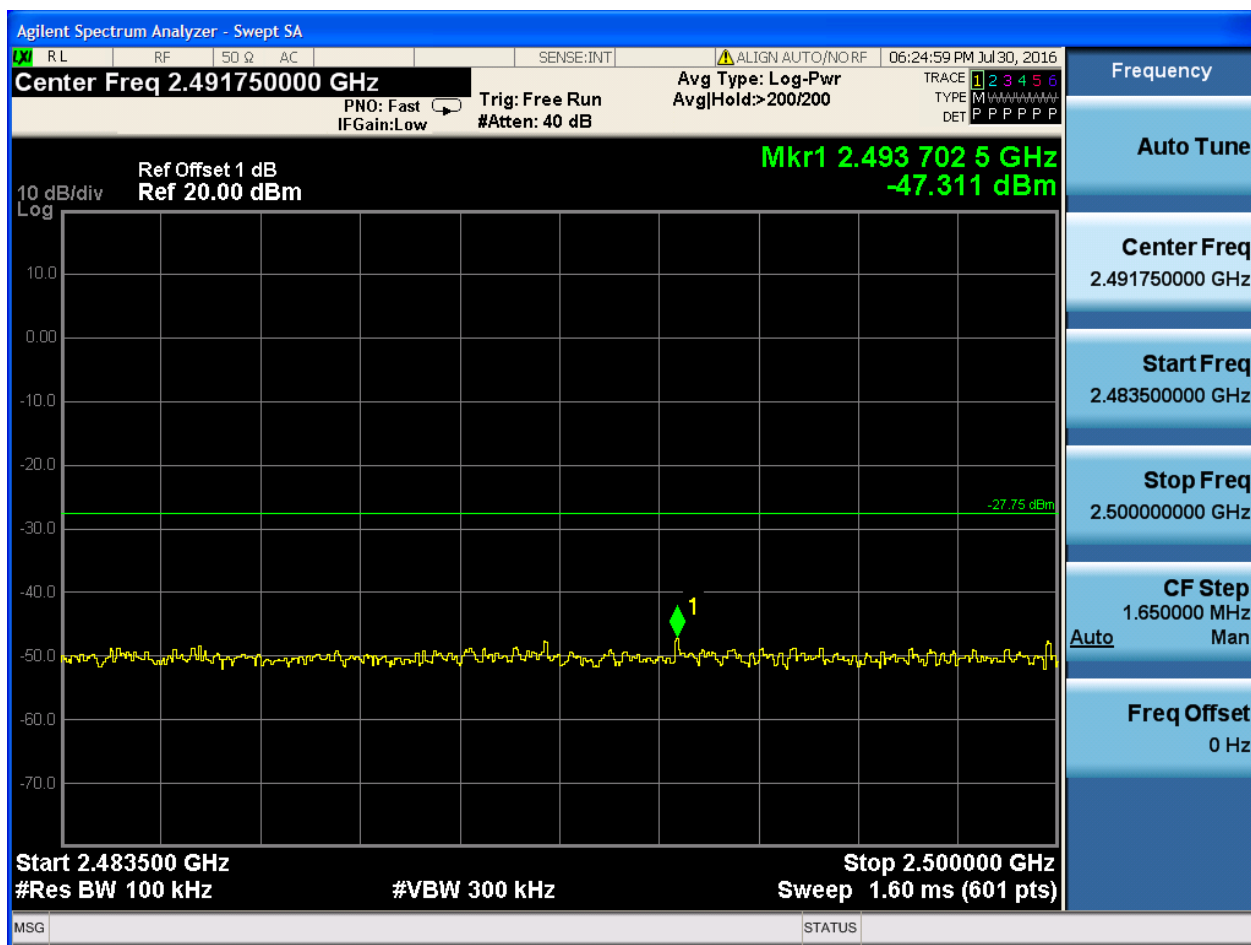
Puw:

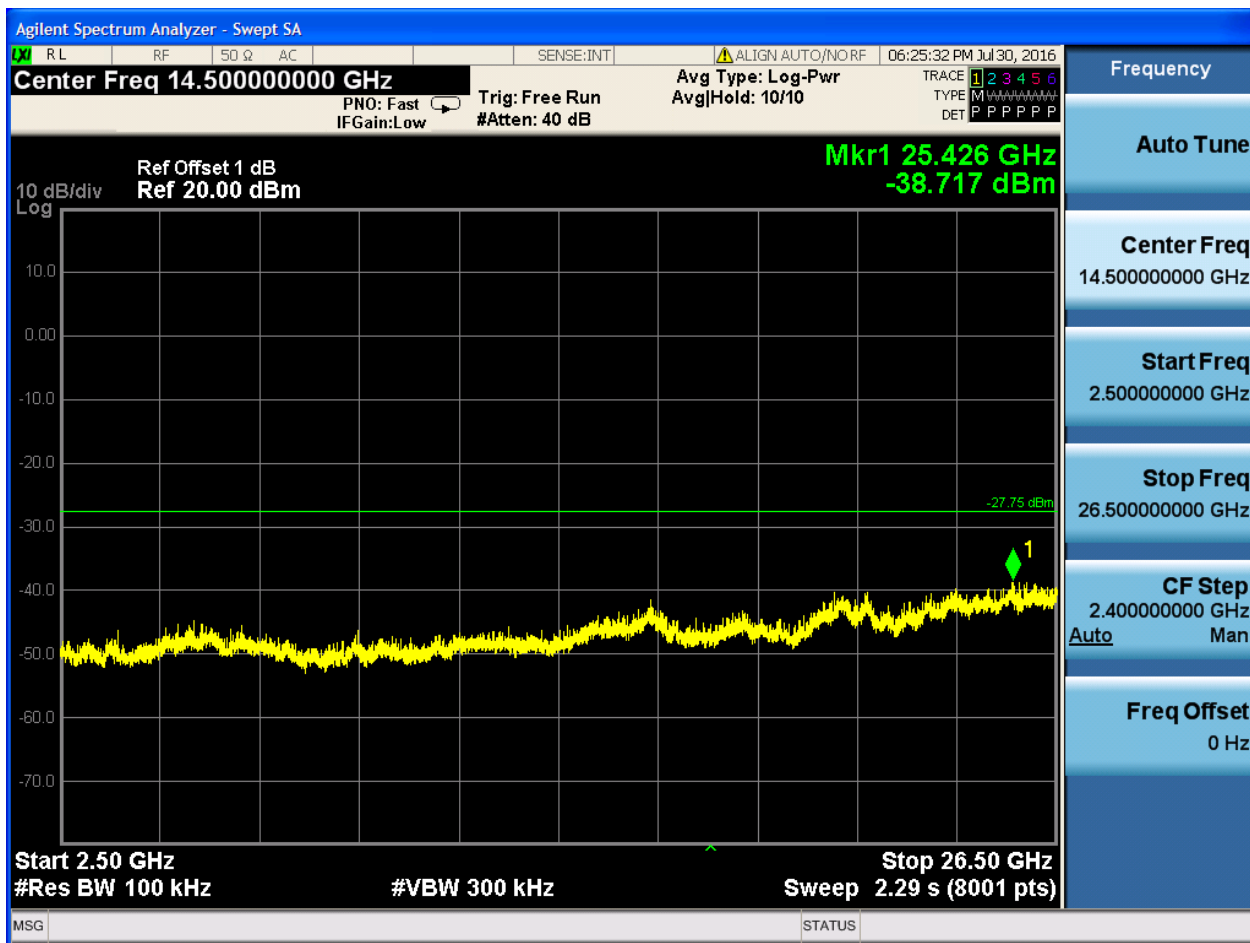














2.2 11B_M@Ant 1

Pref:





Agilent Spectrum Analyzer - Swept SA

Center Freq 79.500 kHz

Ref Offset 1 dB
Ref 17.00 dBm

Mkr1 9.000 kHz
-53.682 dBm

Start 9.00 kHz
#Res BW 1.0 kHz

Stop 150.00 kHz
Sweep 135 ms (601 pts)

#VBW 3.0 kHz

10 dB/div
Log

7.00
-3.00
-13.0
-23.0
-33.0
-43.0
-53.0
-63.0
-73.0

Start Freq 9.000 kHz
Stop Freq 150.000 kHz
CF Step 14.100 kHz
Auto
Freq Offset 0 Hz

Auto Tune

Center Freq 79.500 kHz

Start Freq 9.000 kHz

Stop Freq 150.000 kHz

CF Step 14.100 kHz
Man

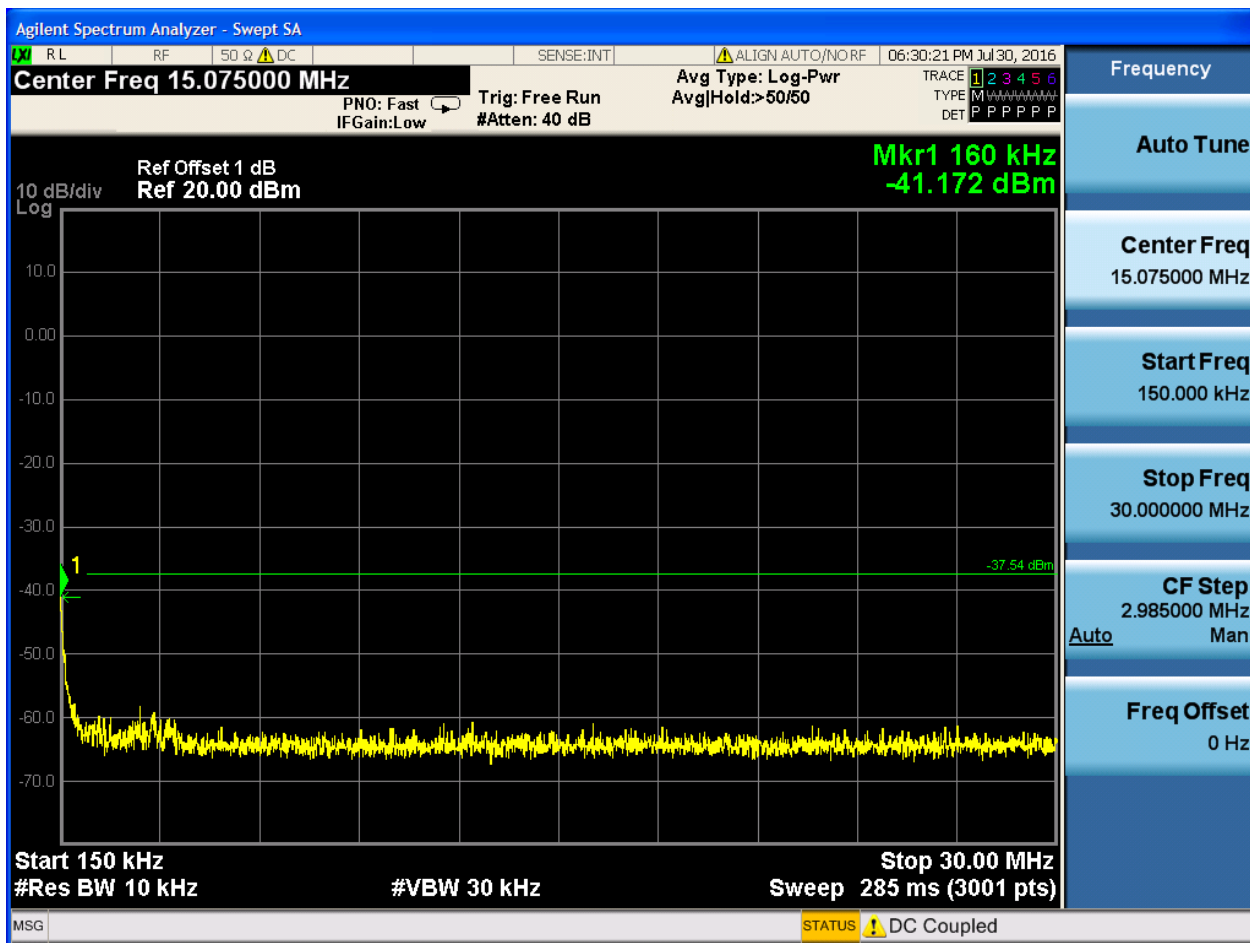
Auto

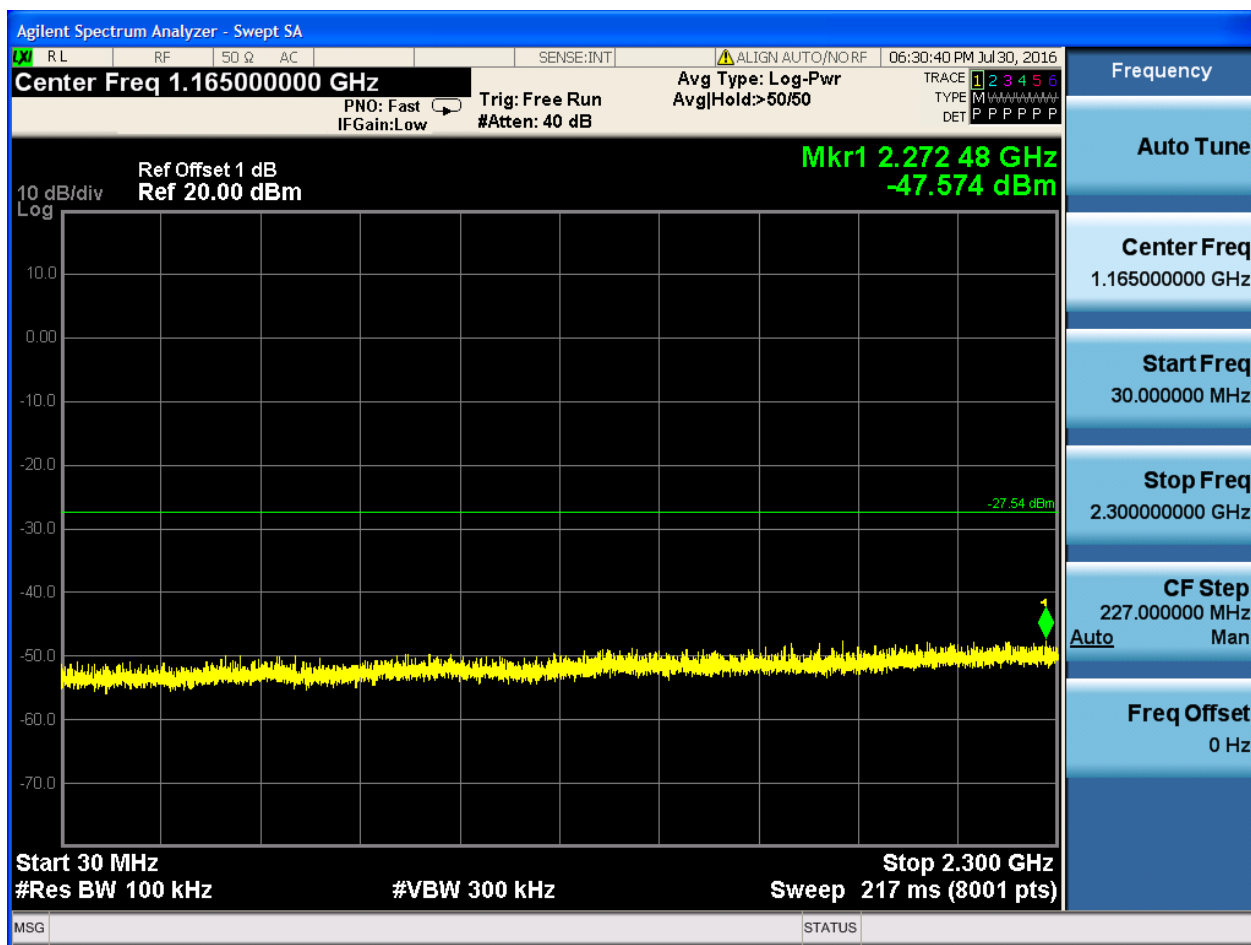
Freq Offset 0 Hz

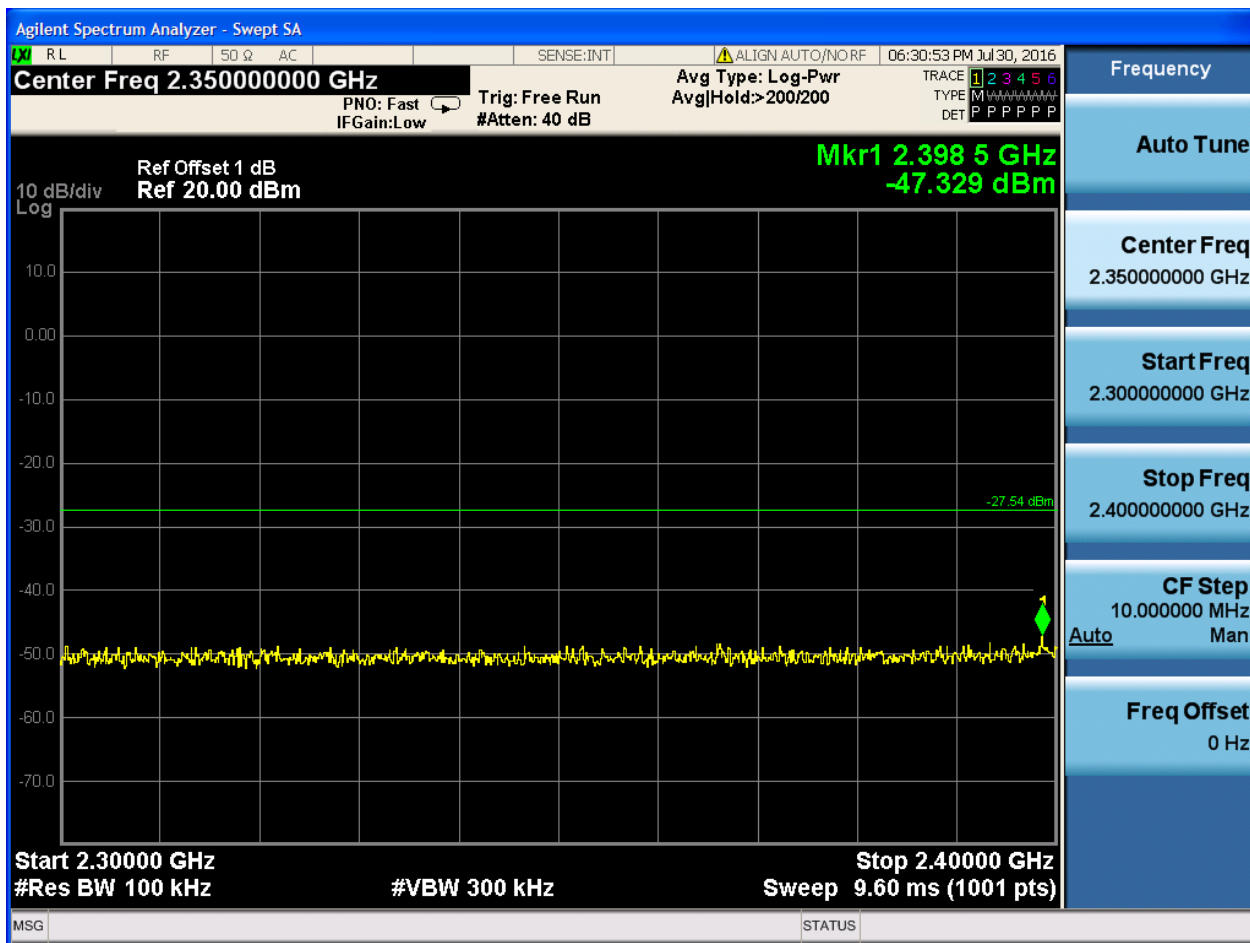
MSG

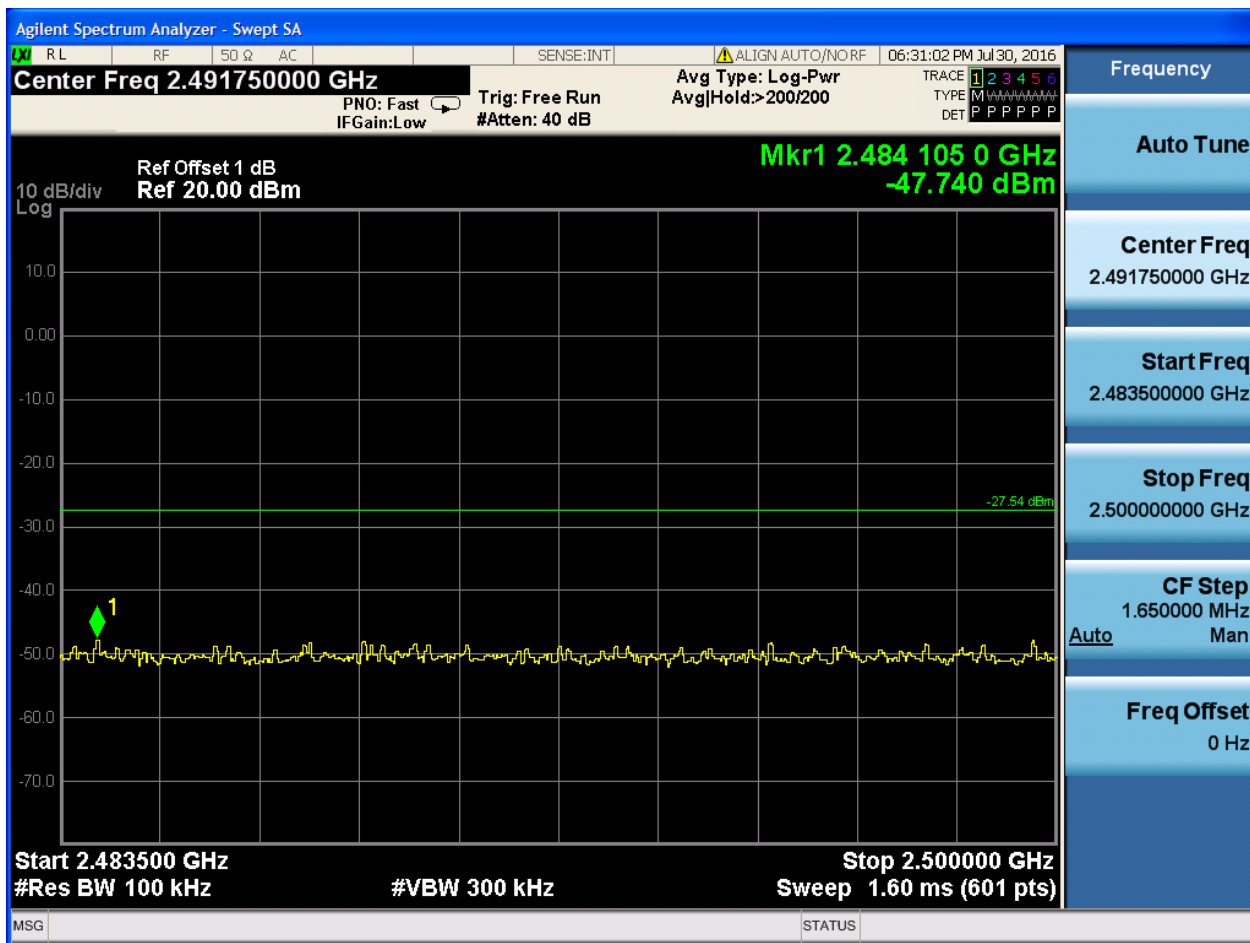
STATUS

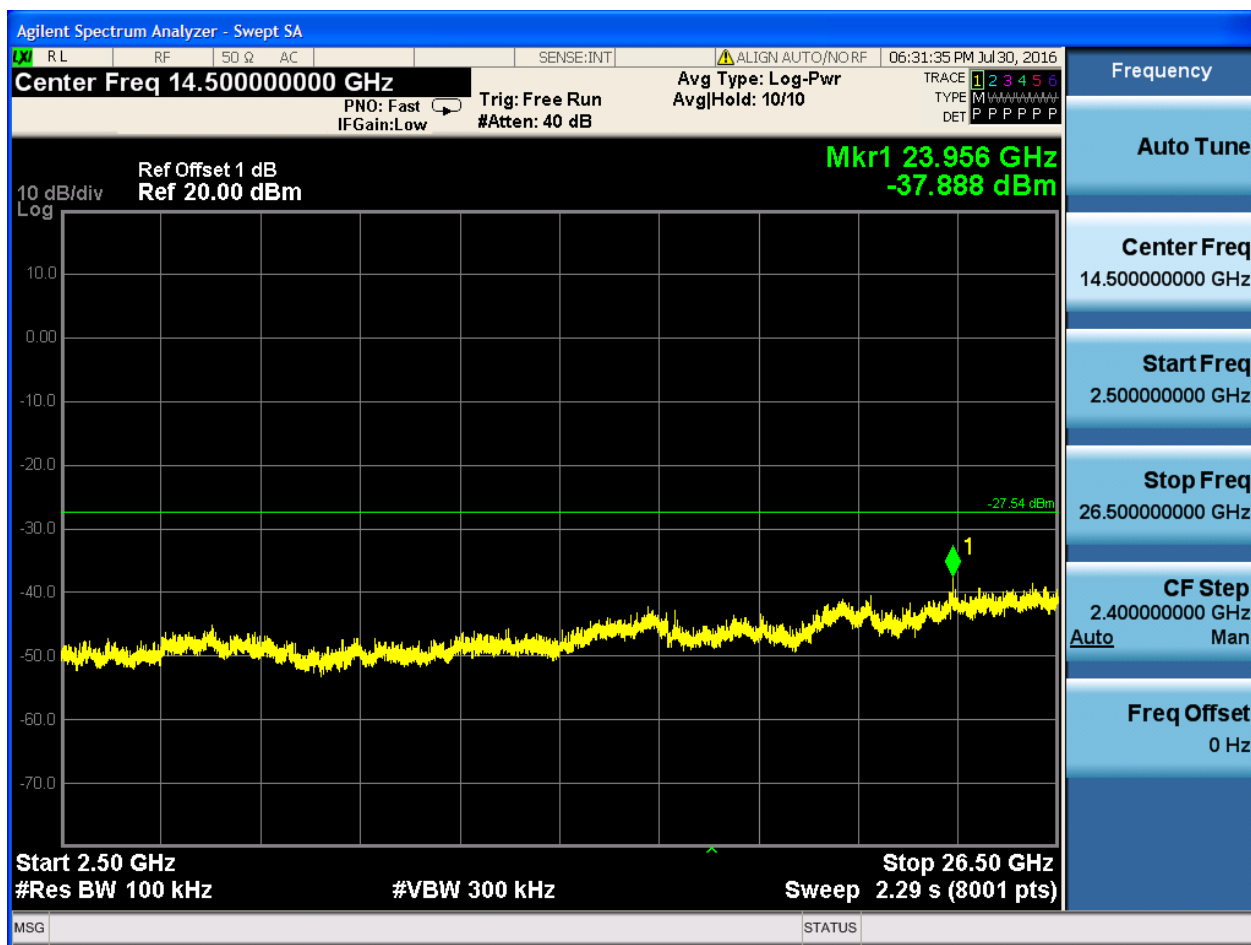
DC Coupled













2.3 11B_H@Ant 1

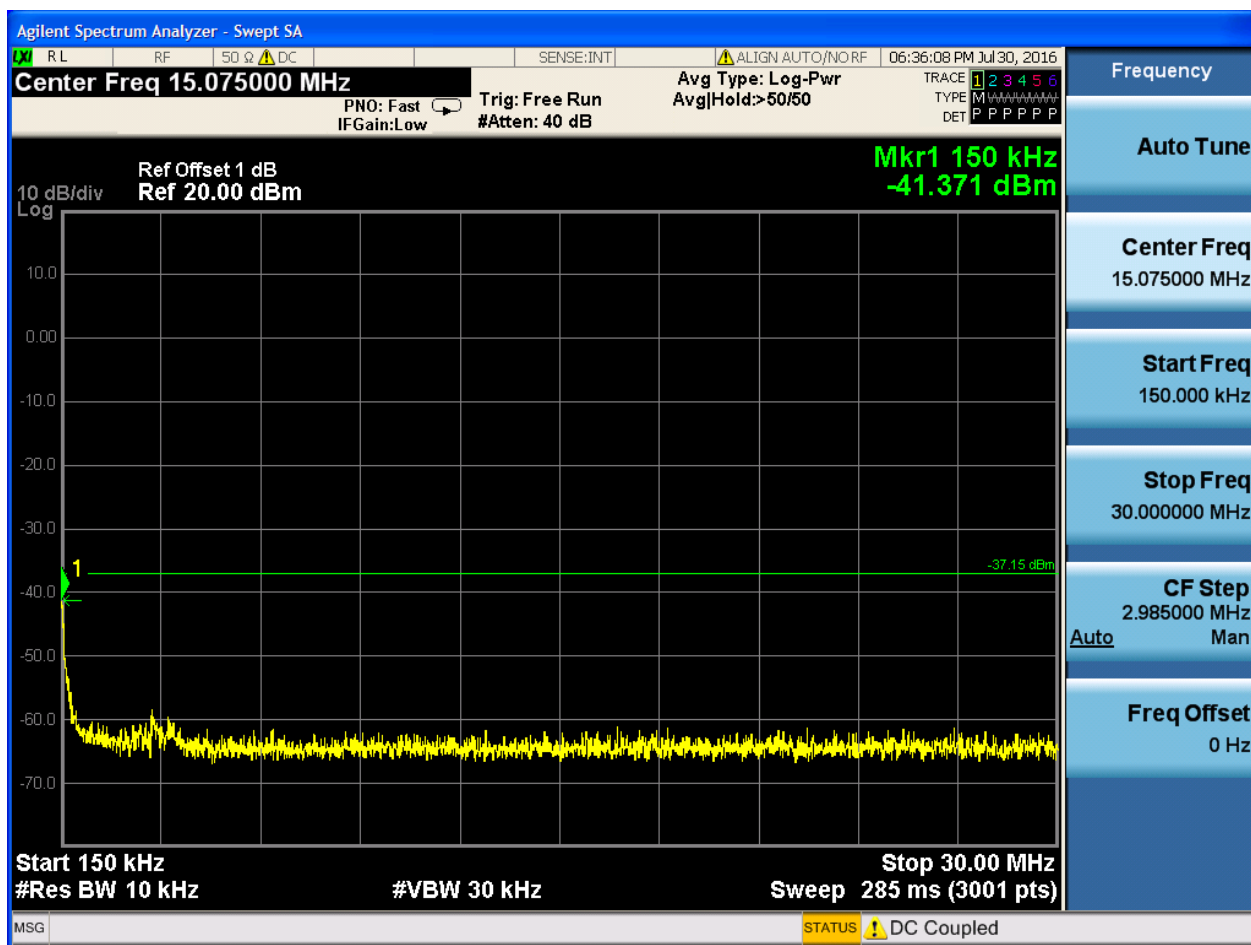
Pref:

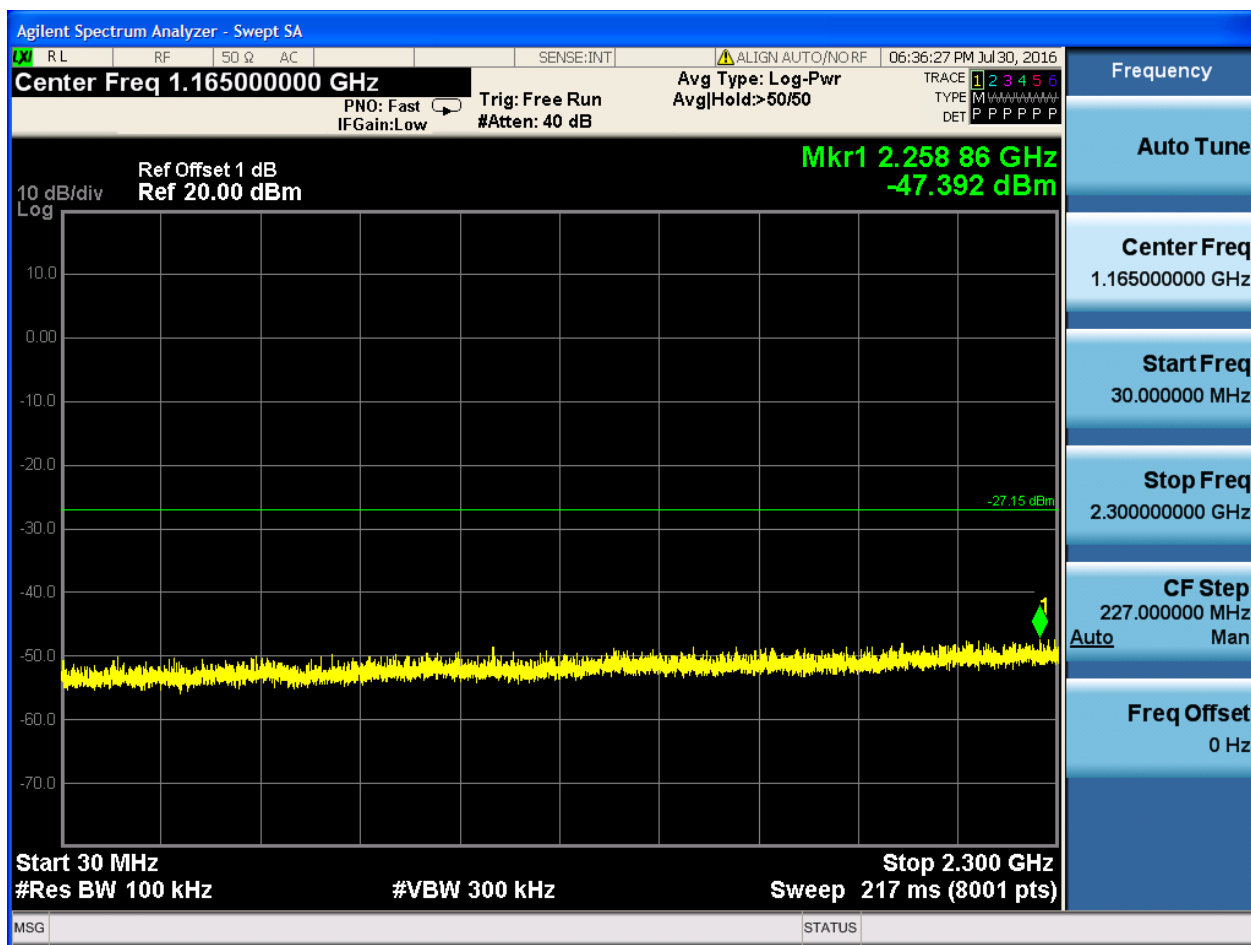


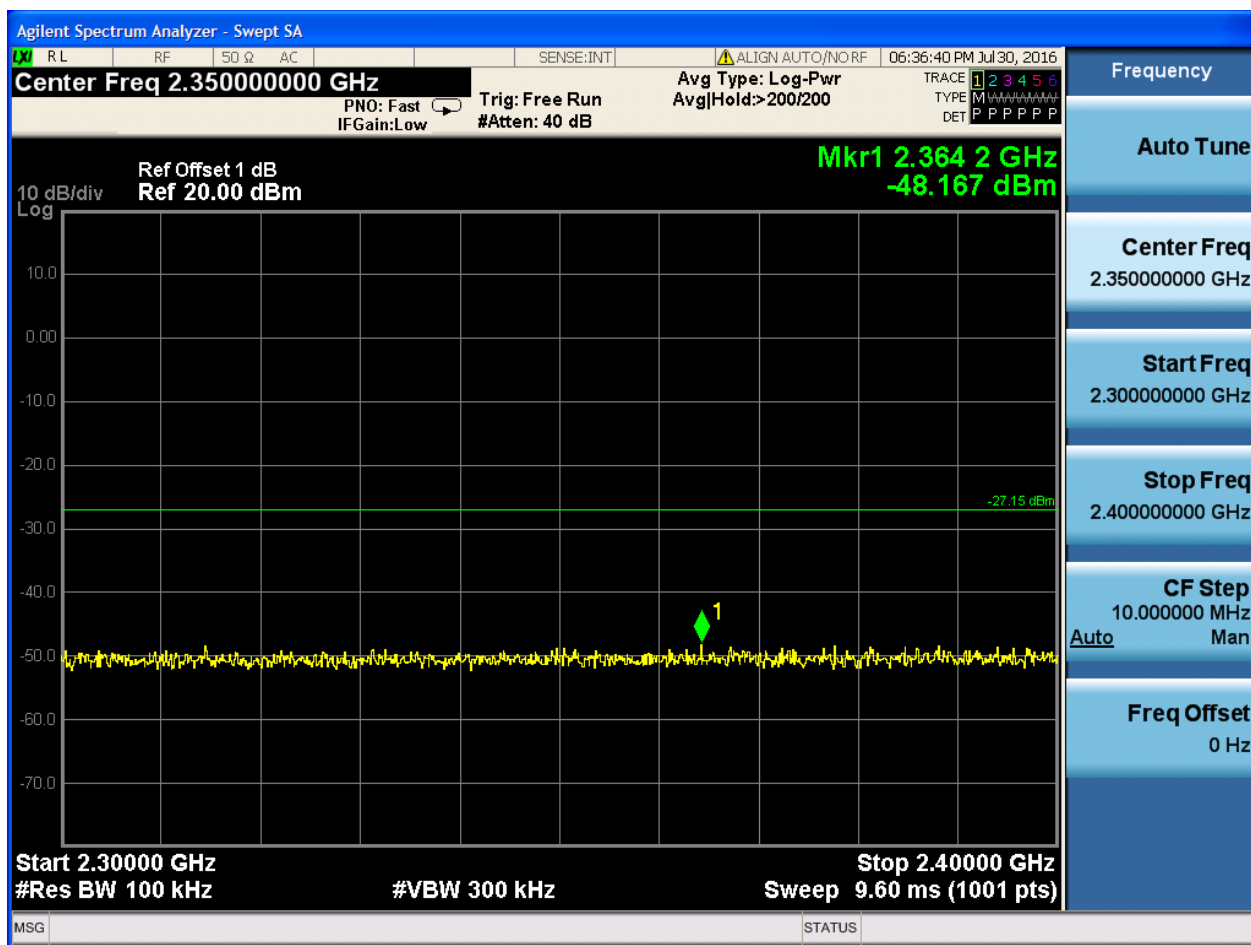


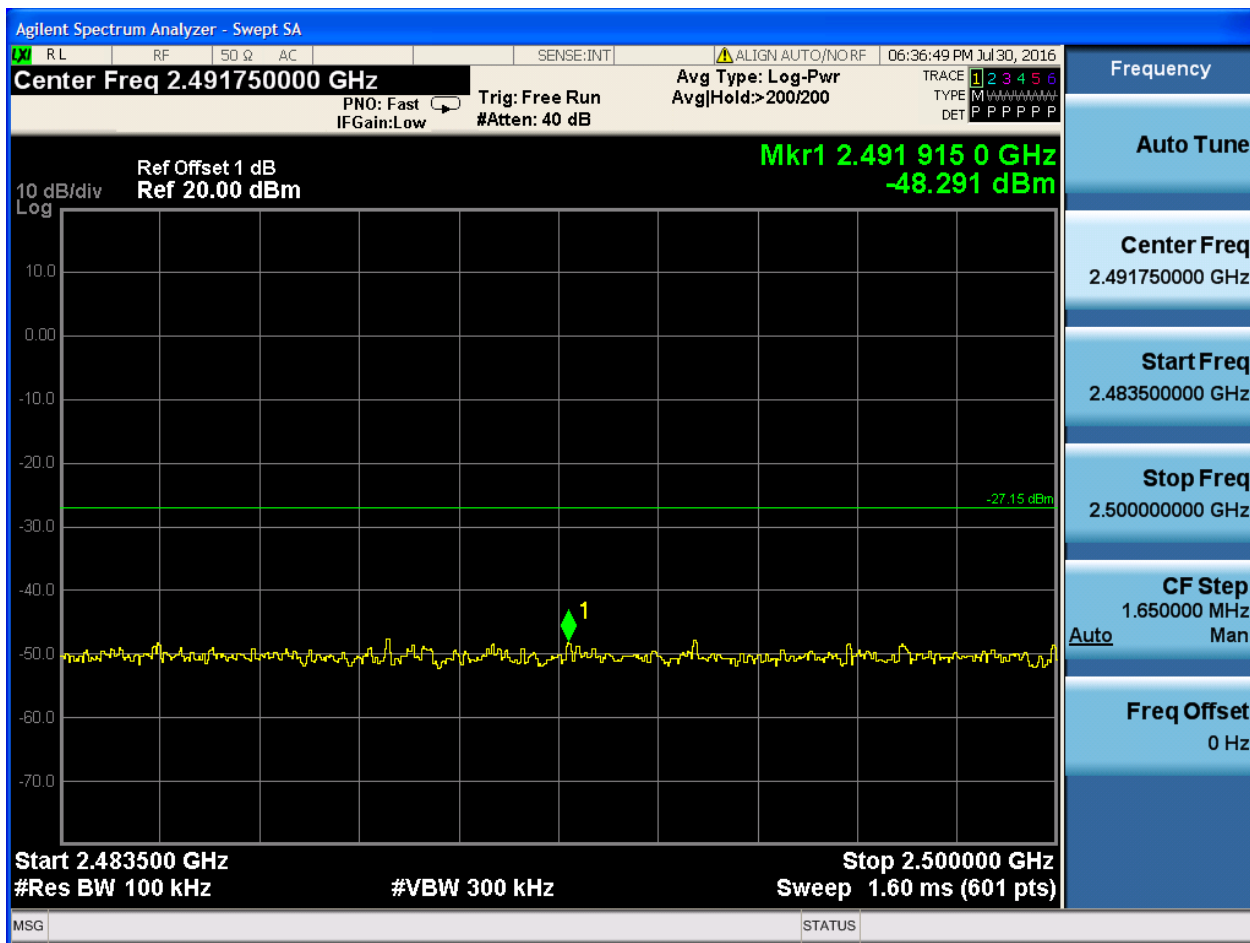
Puw:

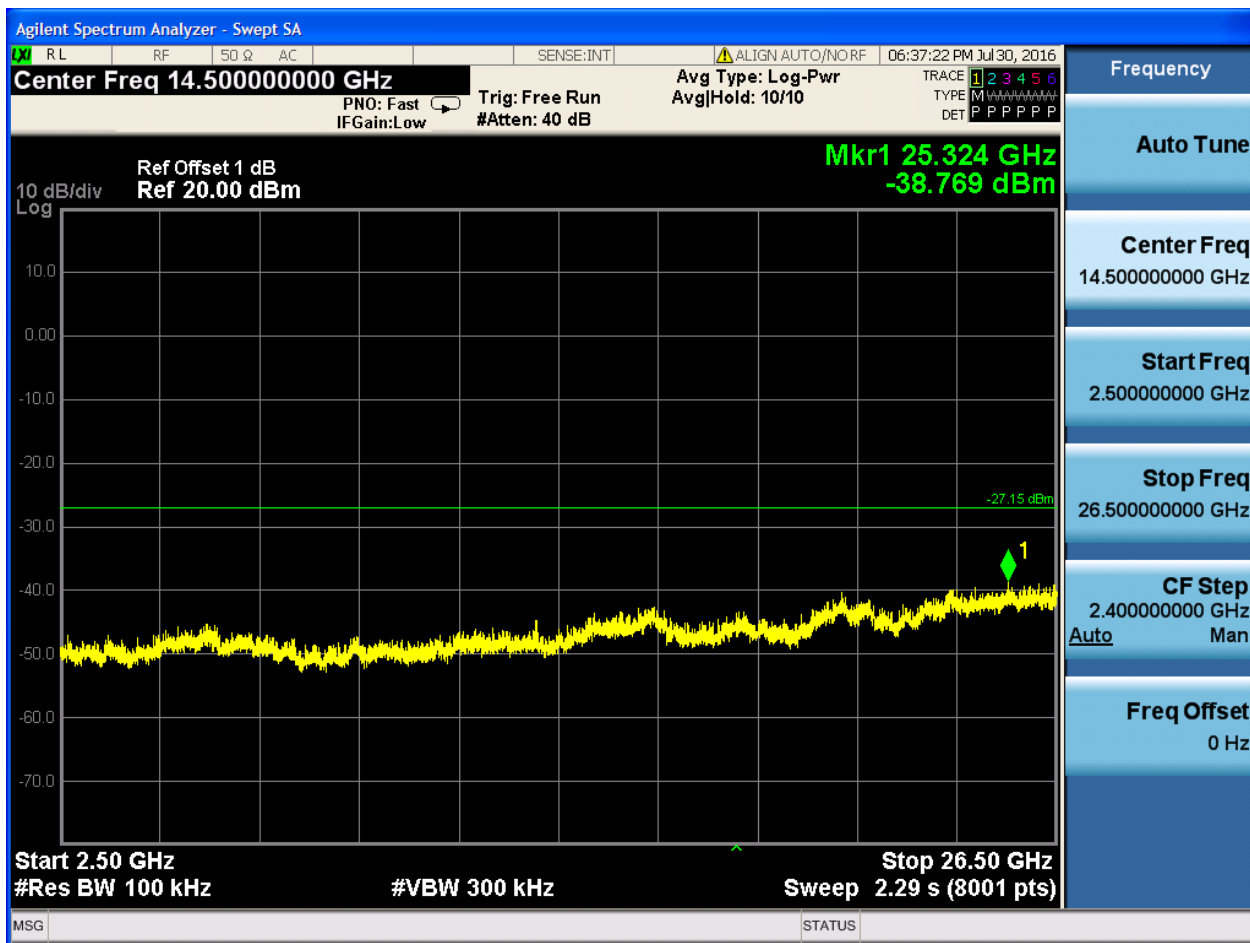








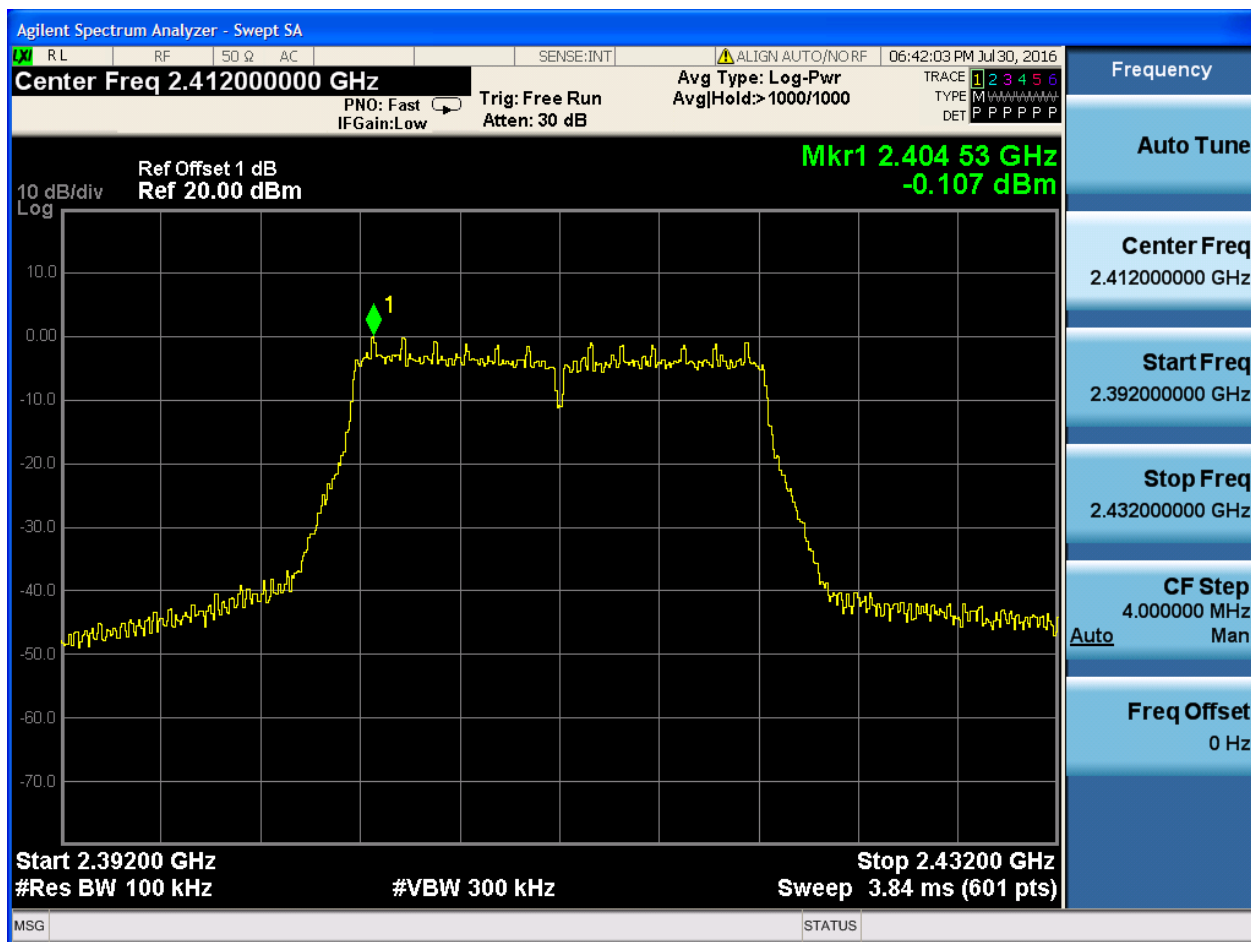






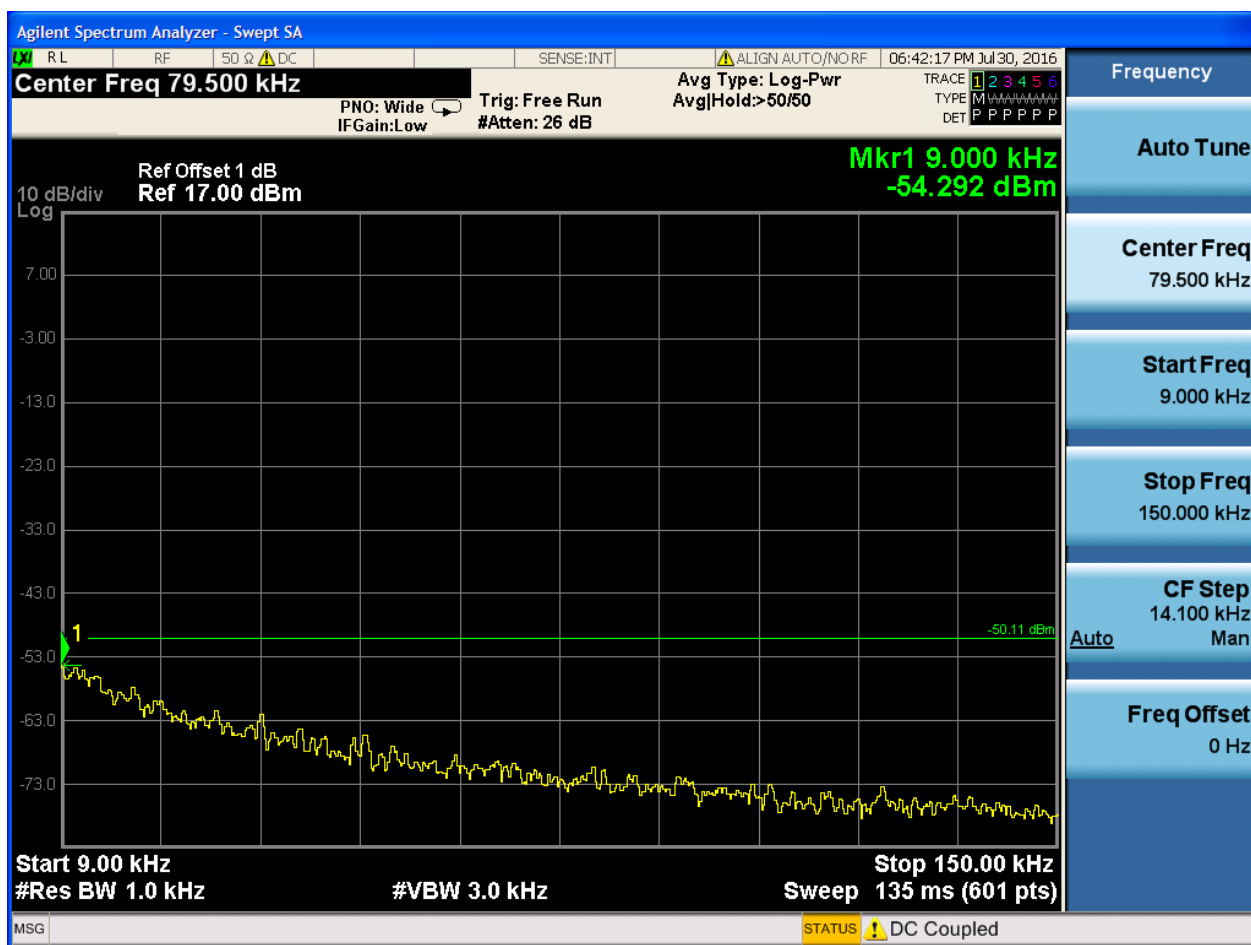
2.4 11G_L@Ant 1

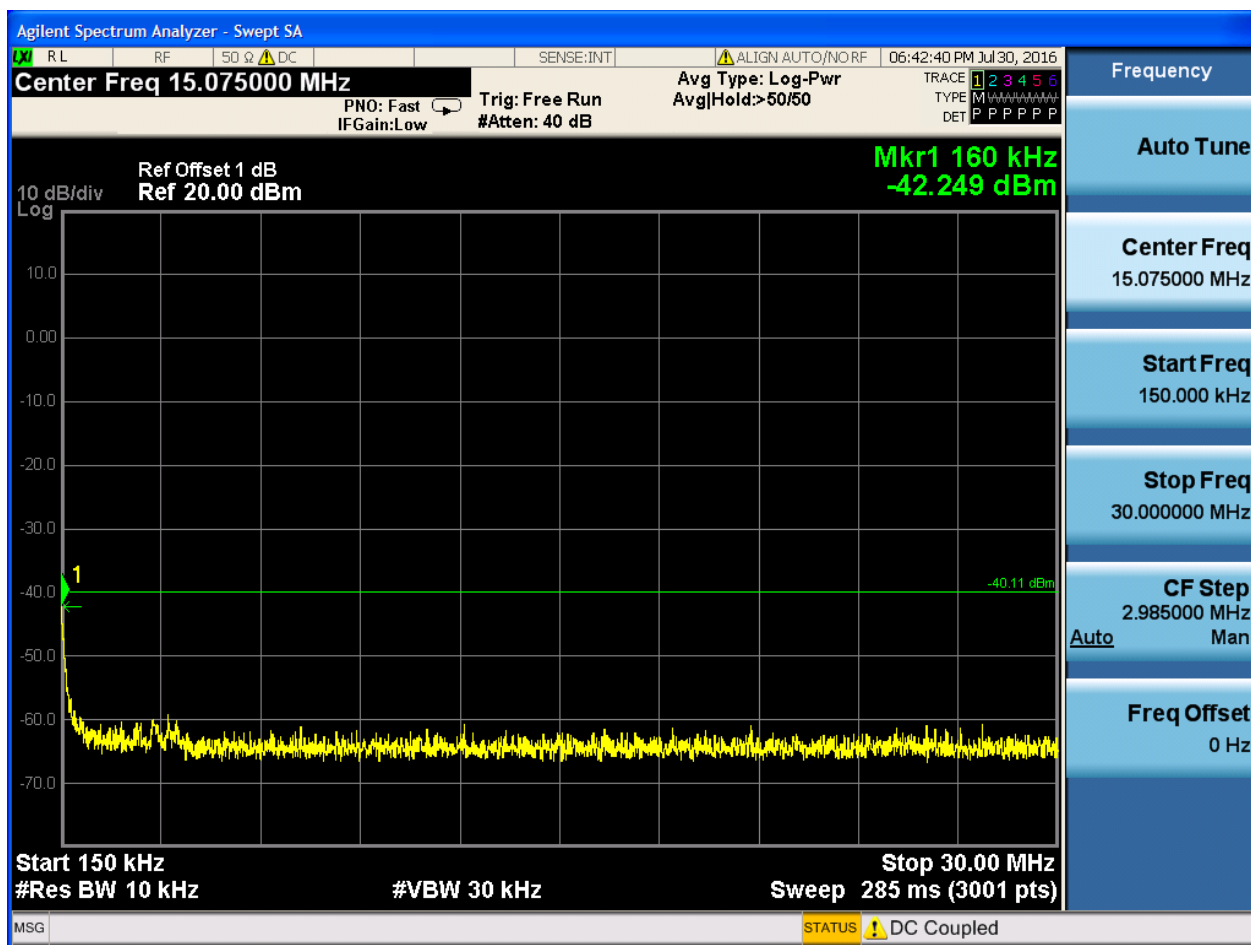
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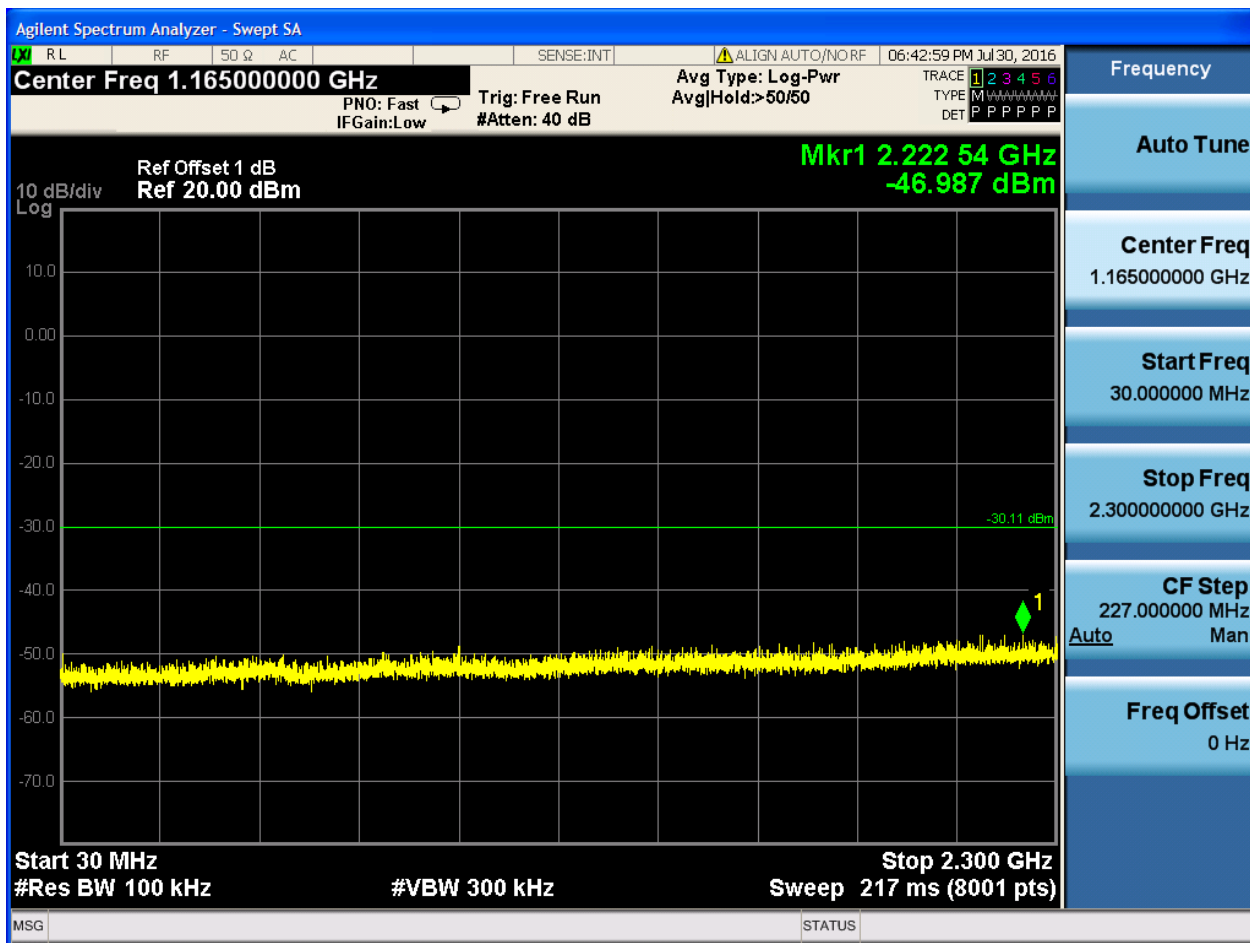


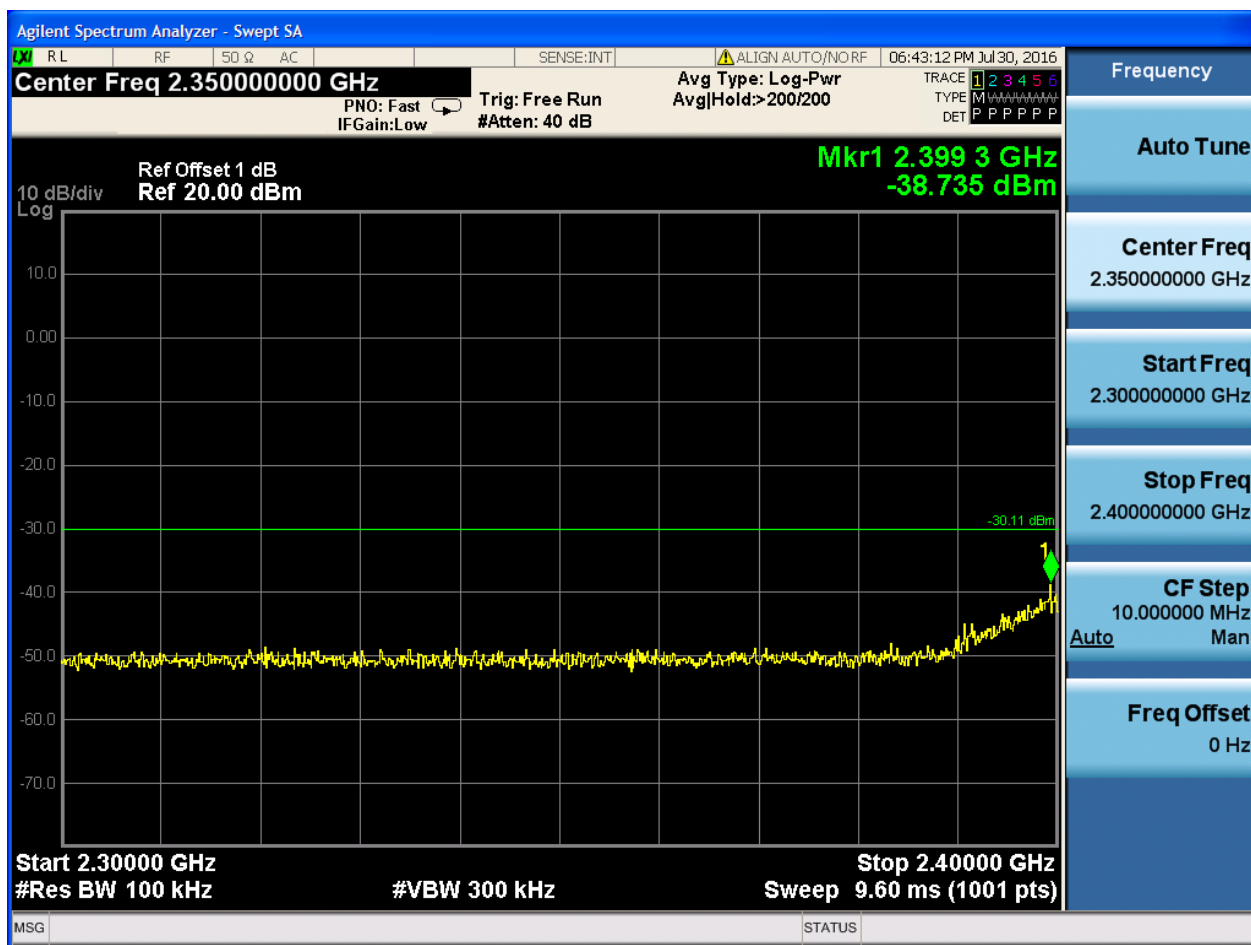


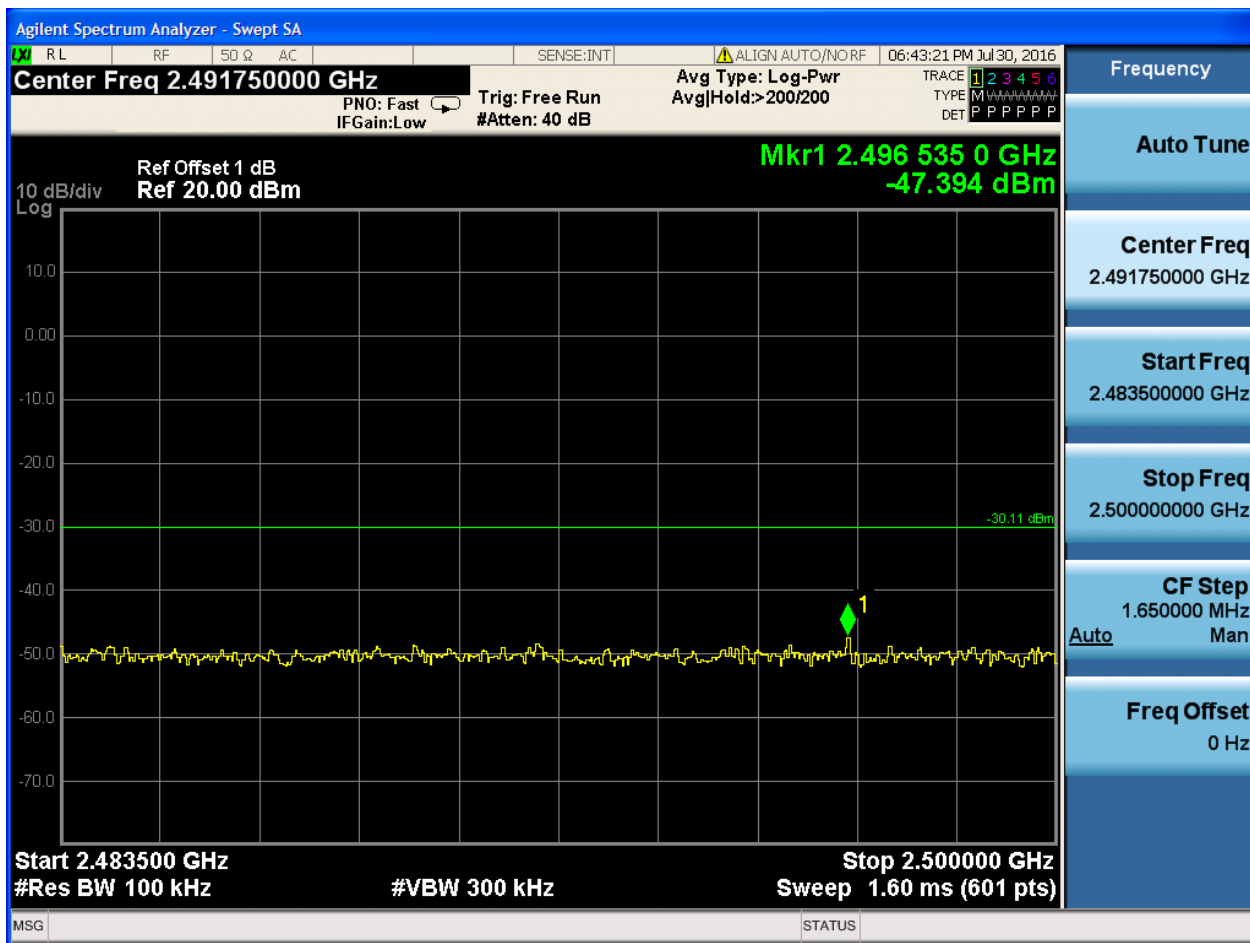
Puw:

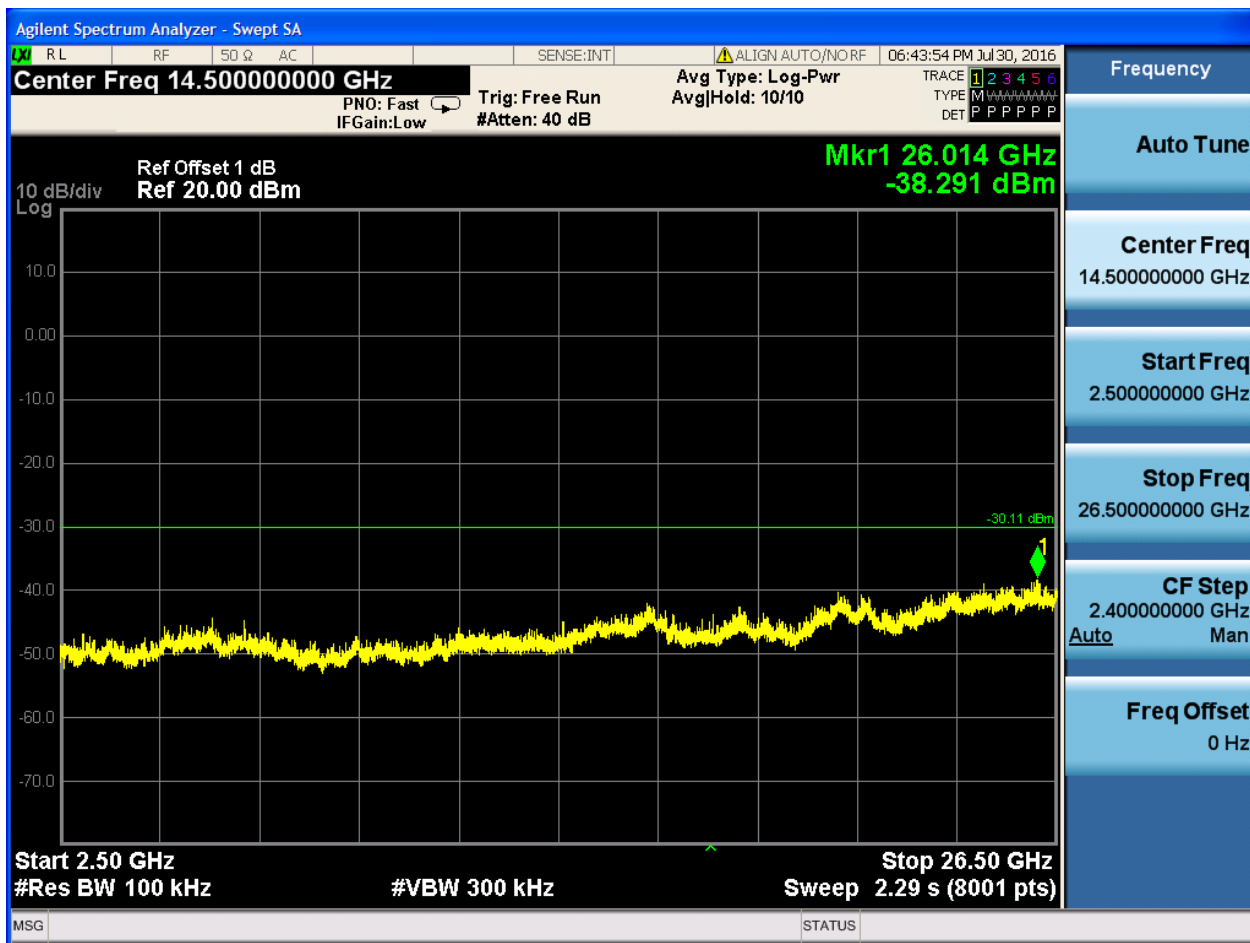








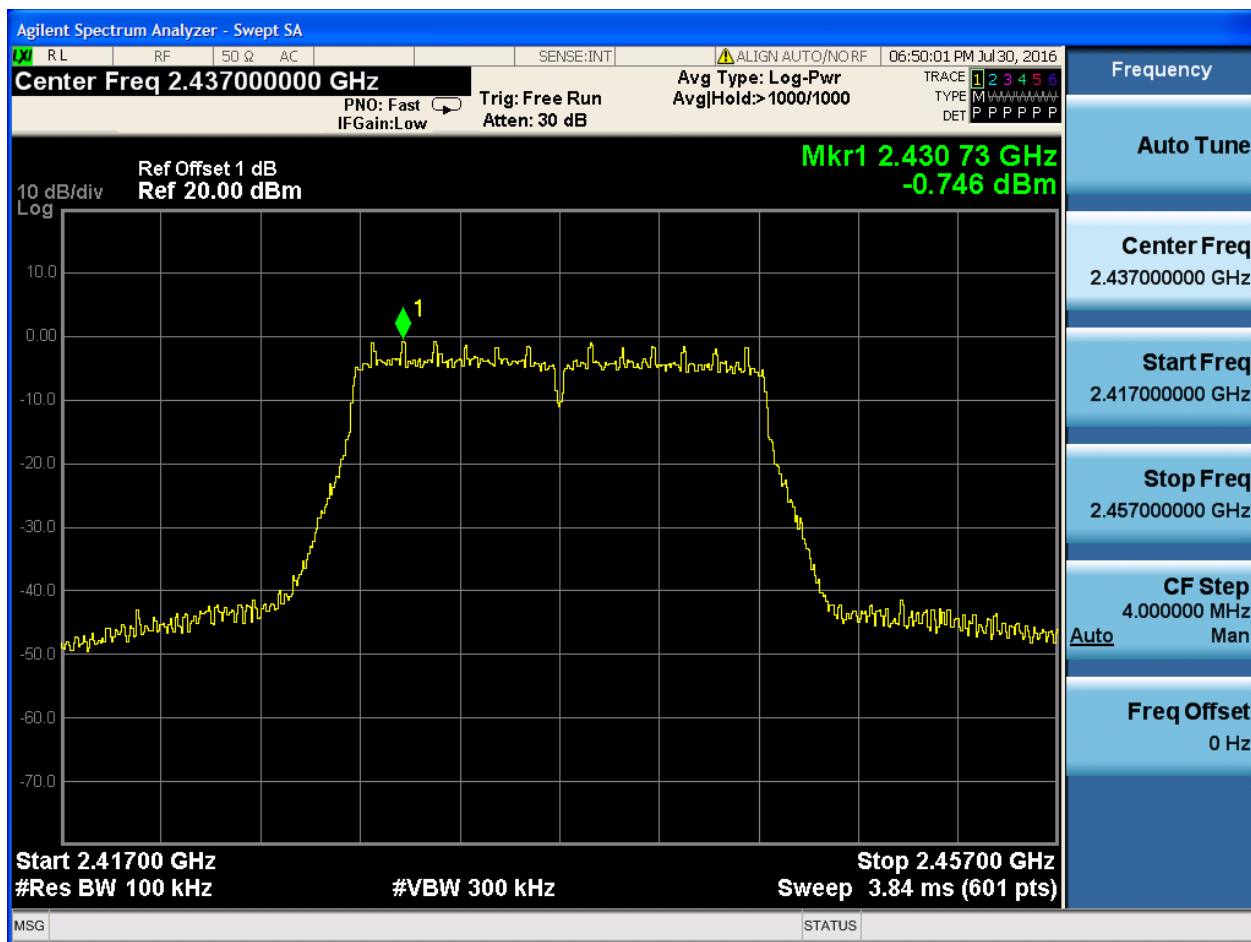






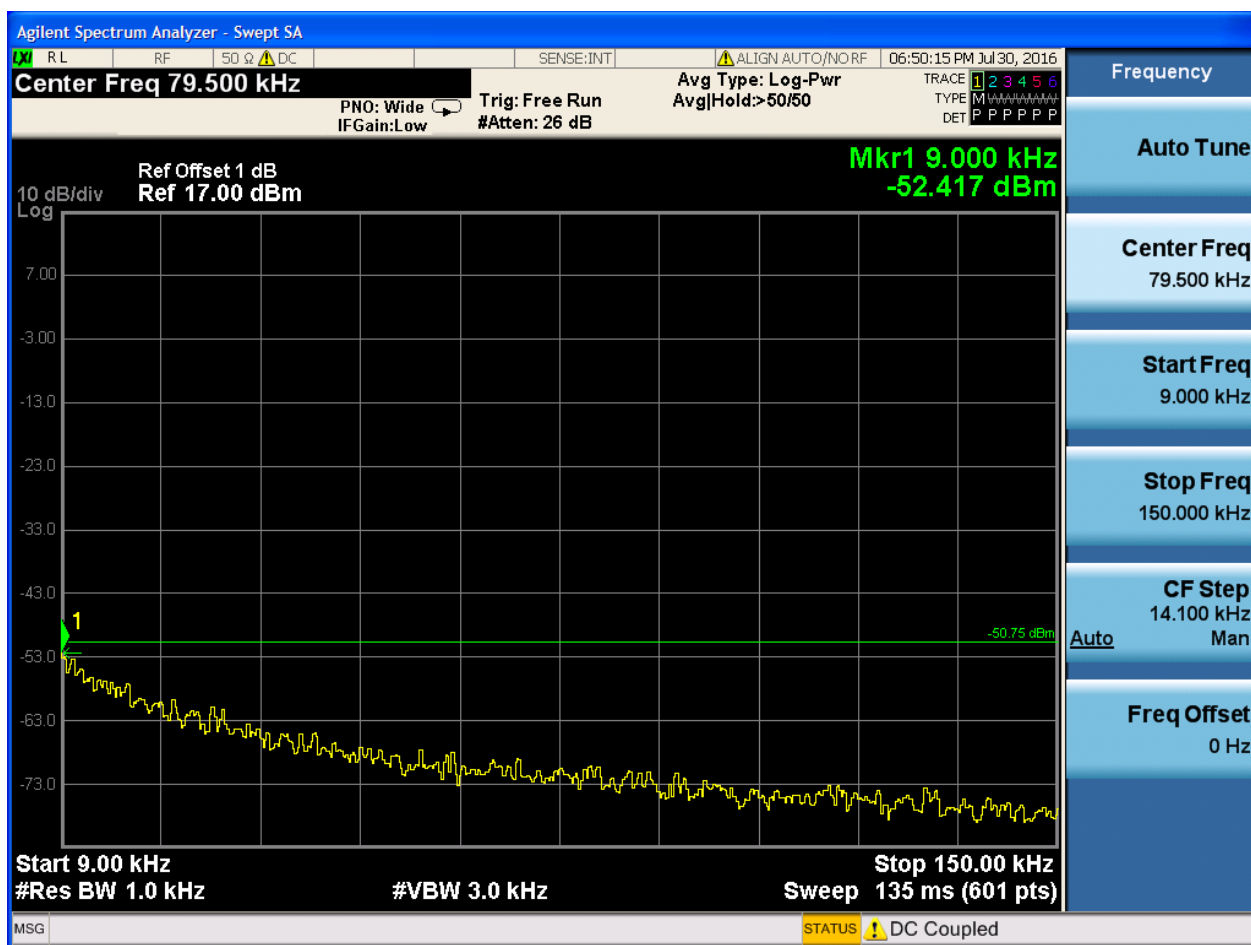
2.5 11G_M@Ant 1

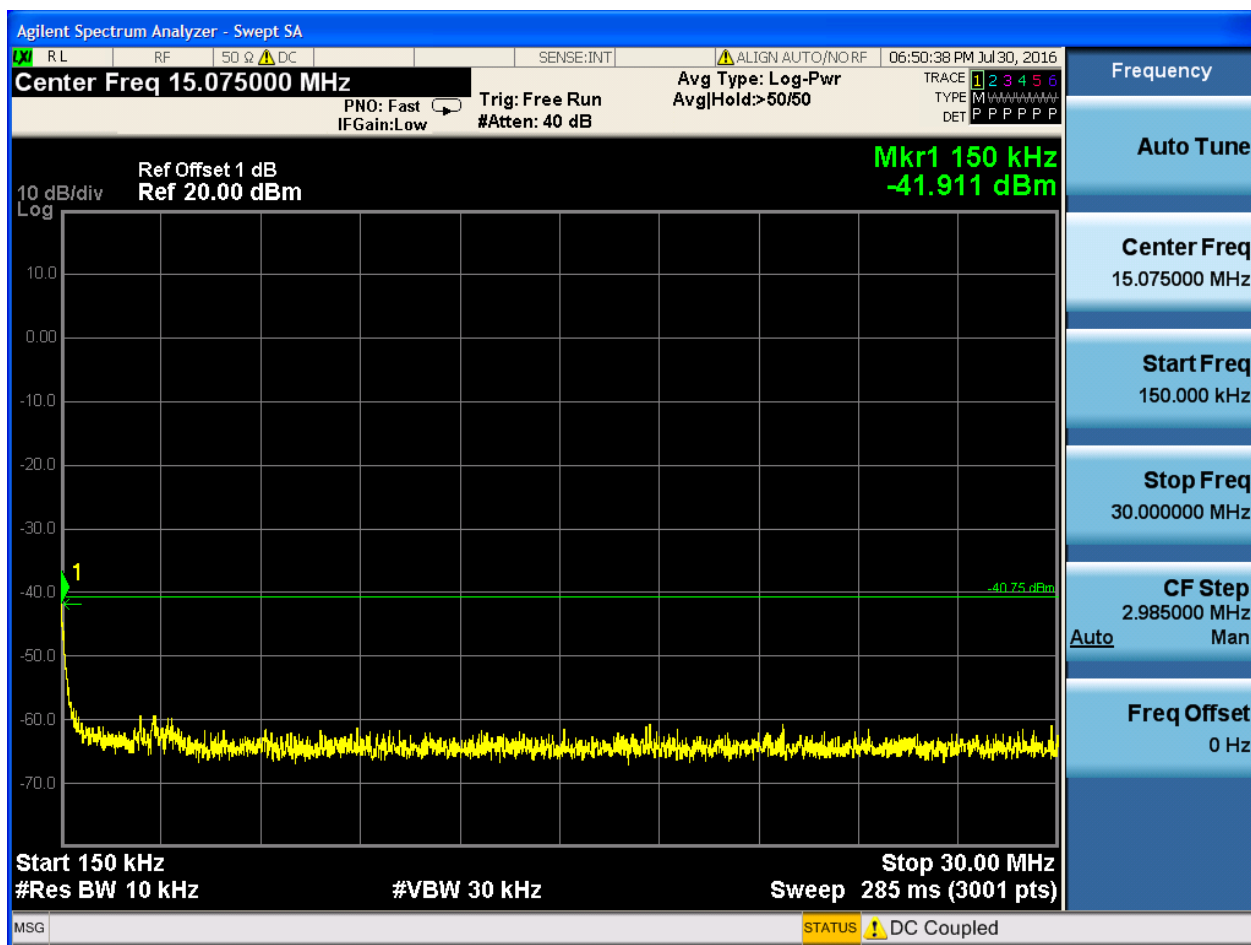
Pref:

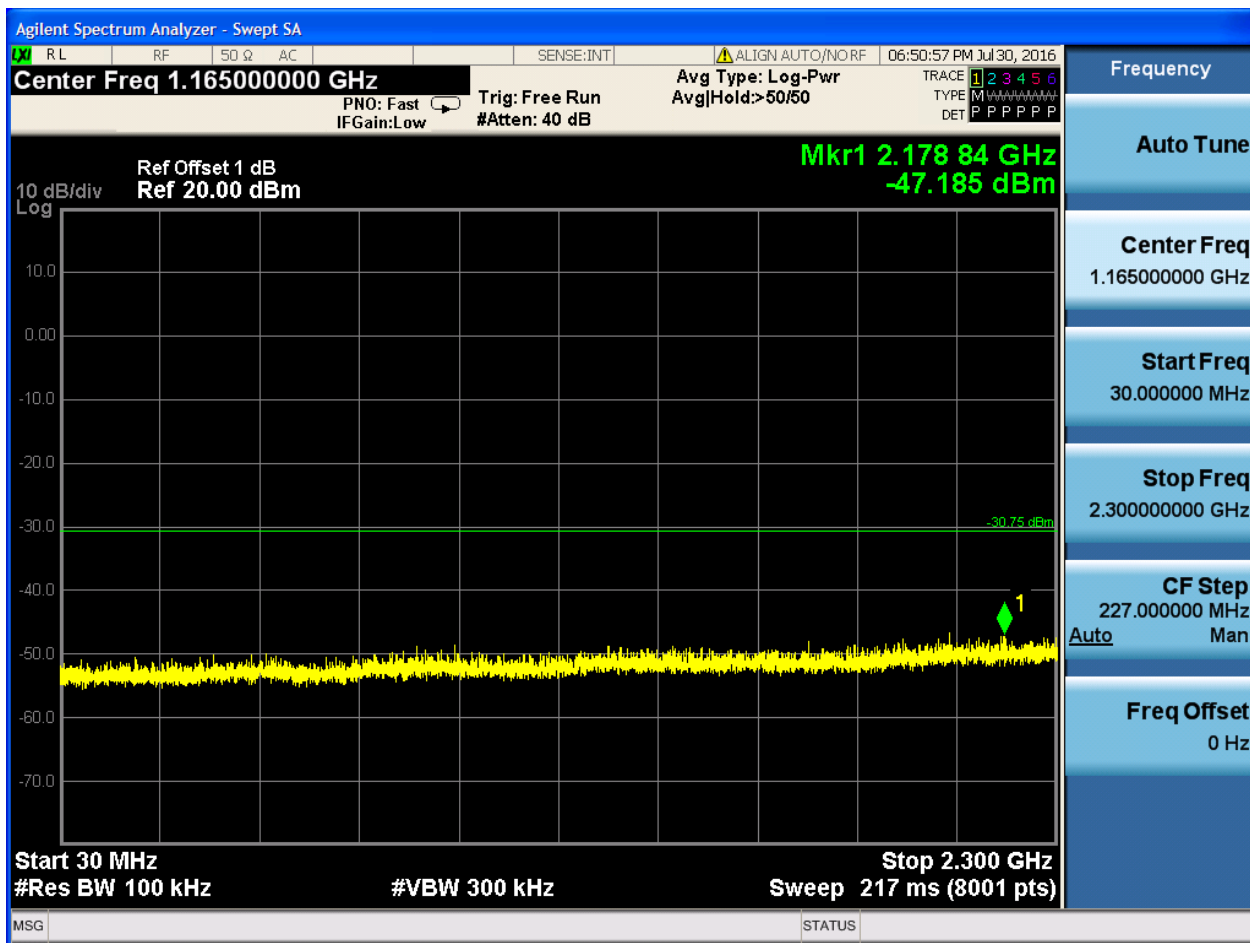


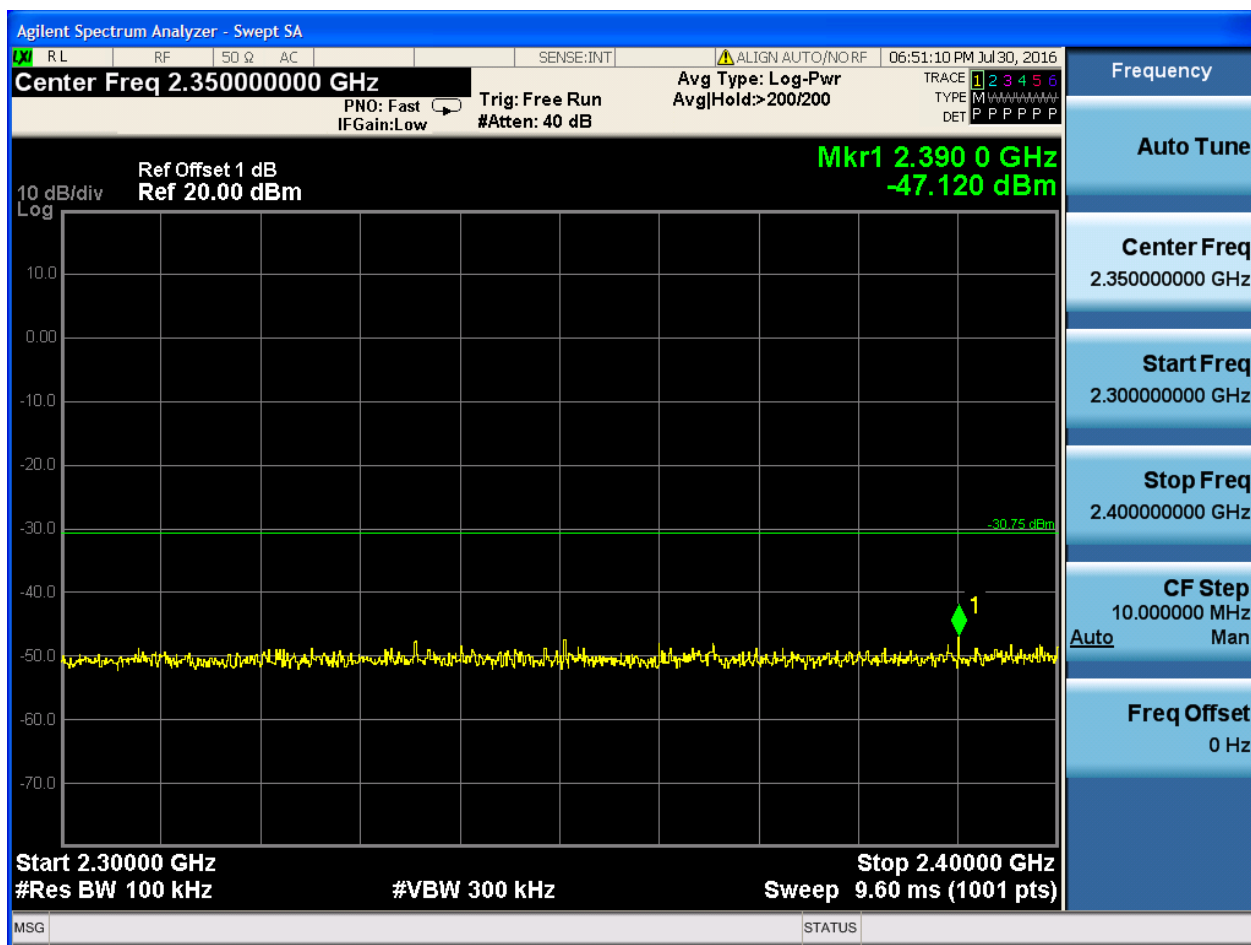


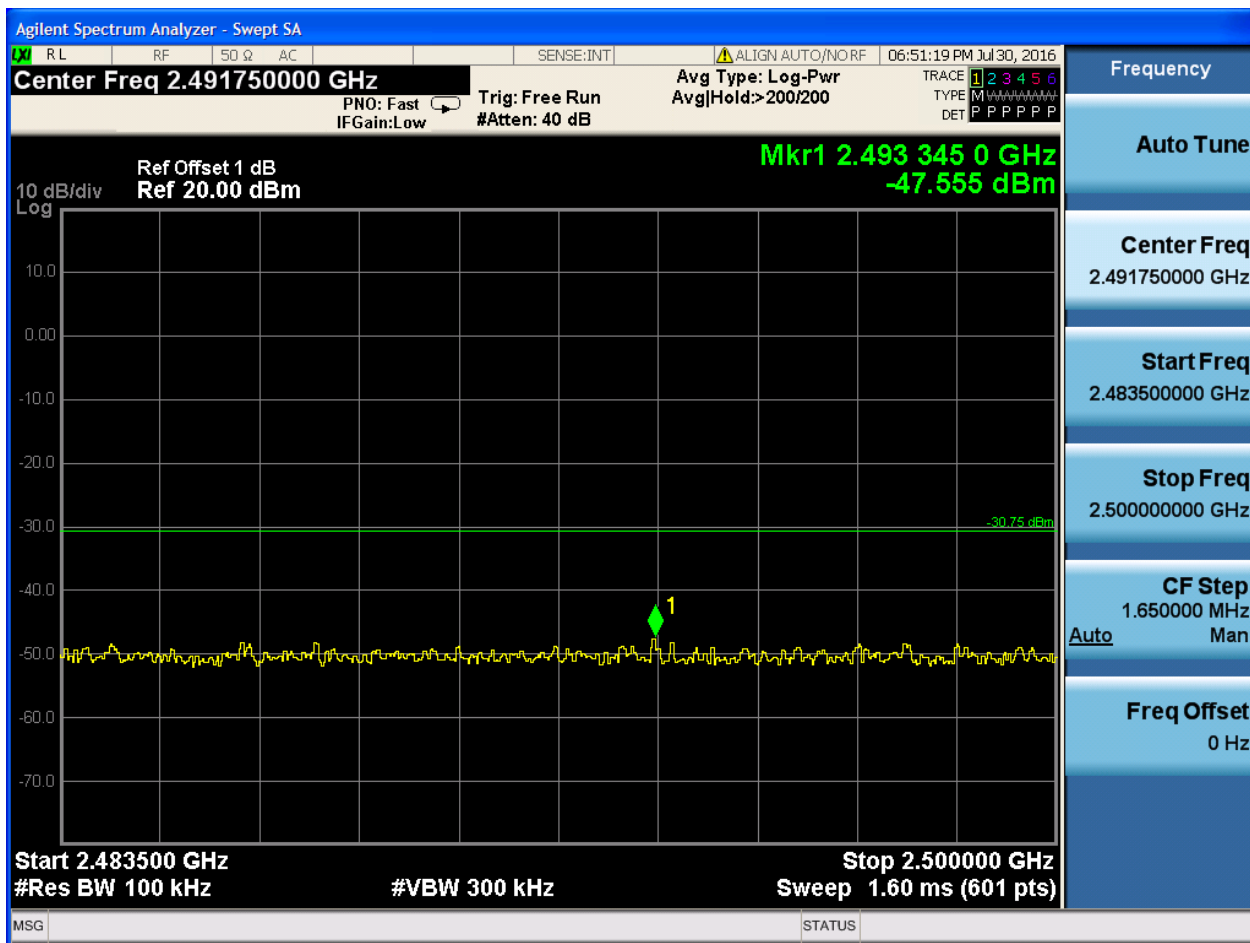
Puw:

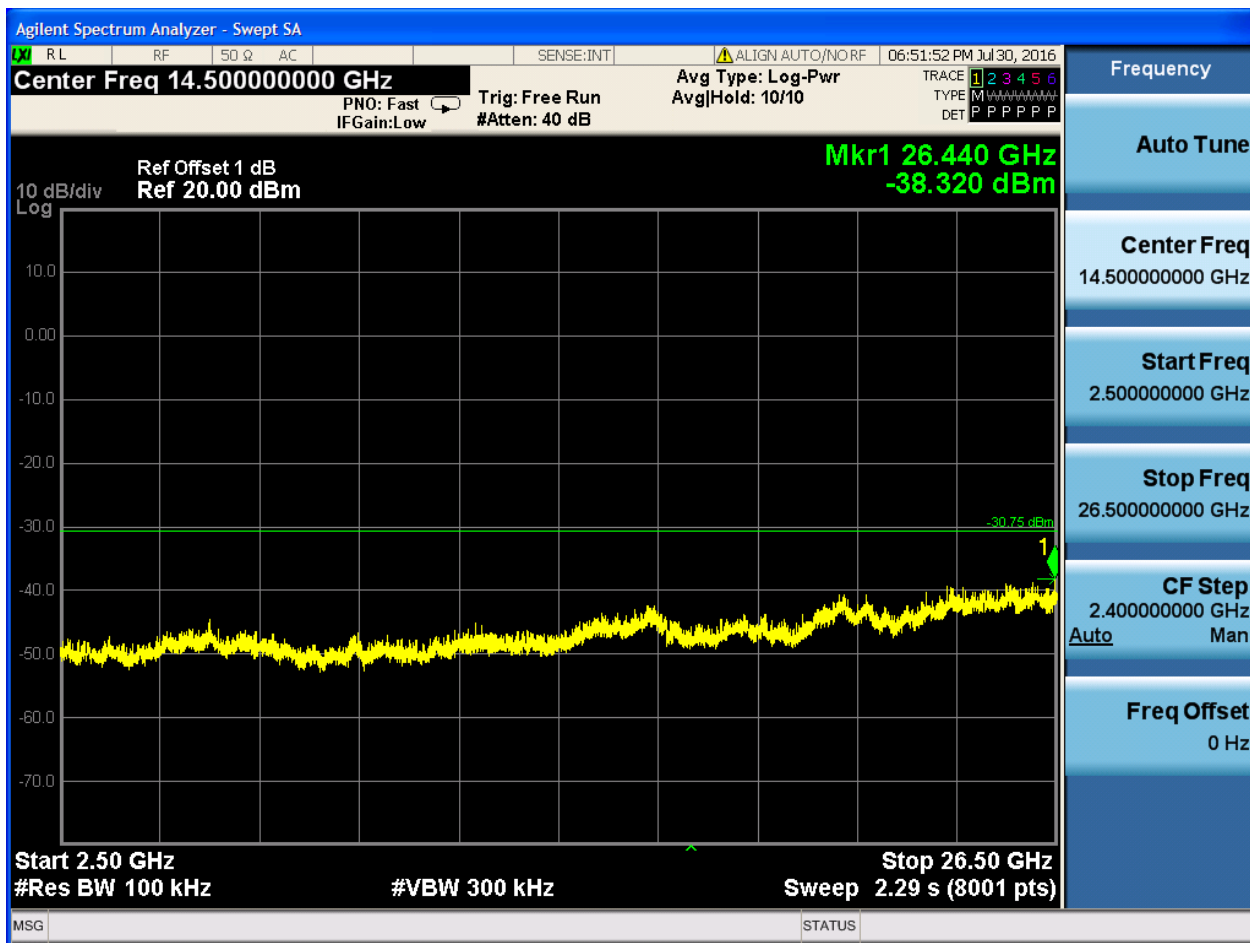








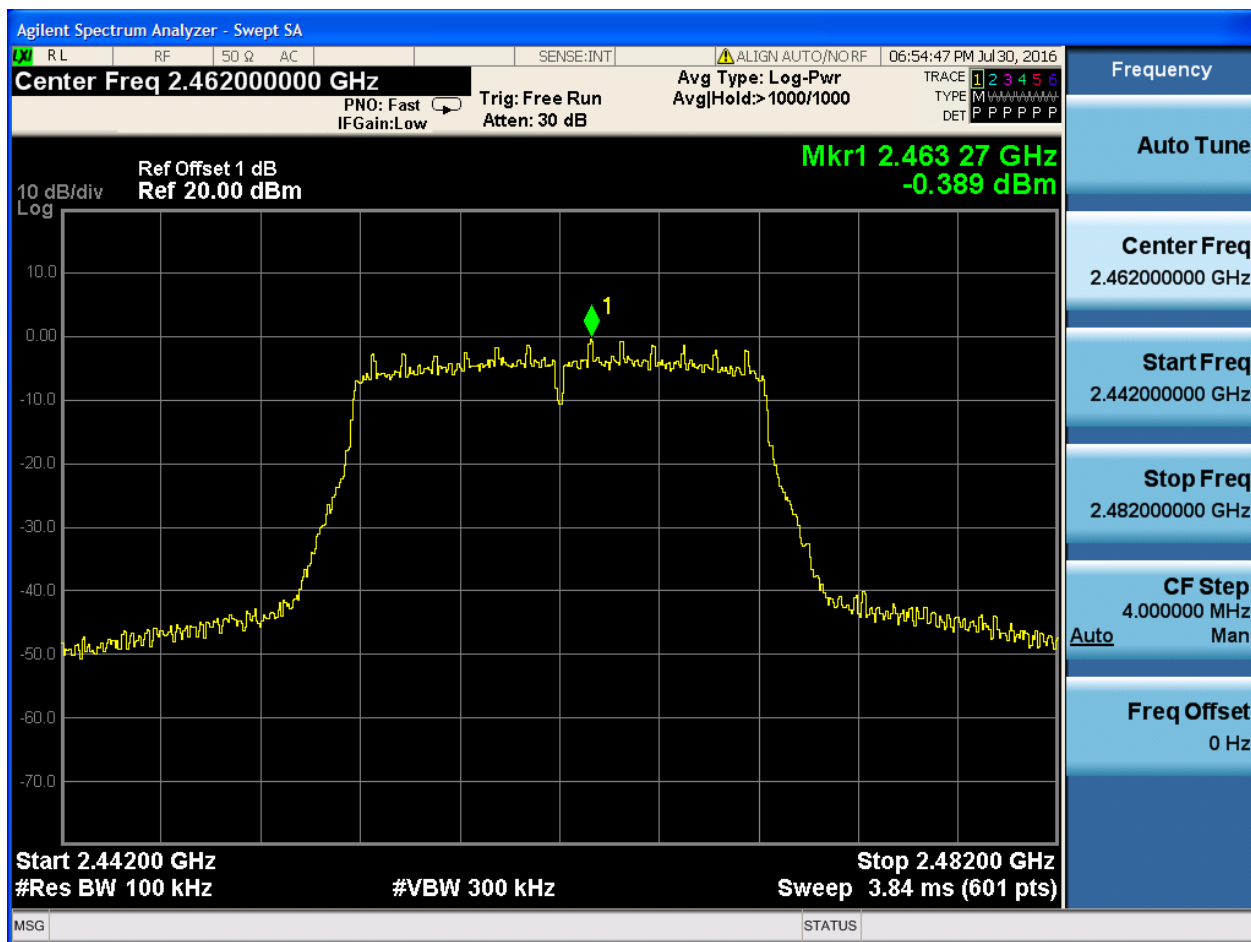






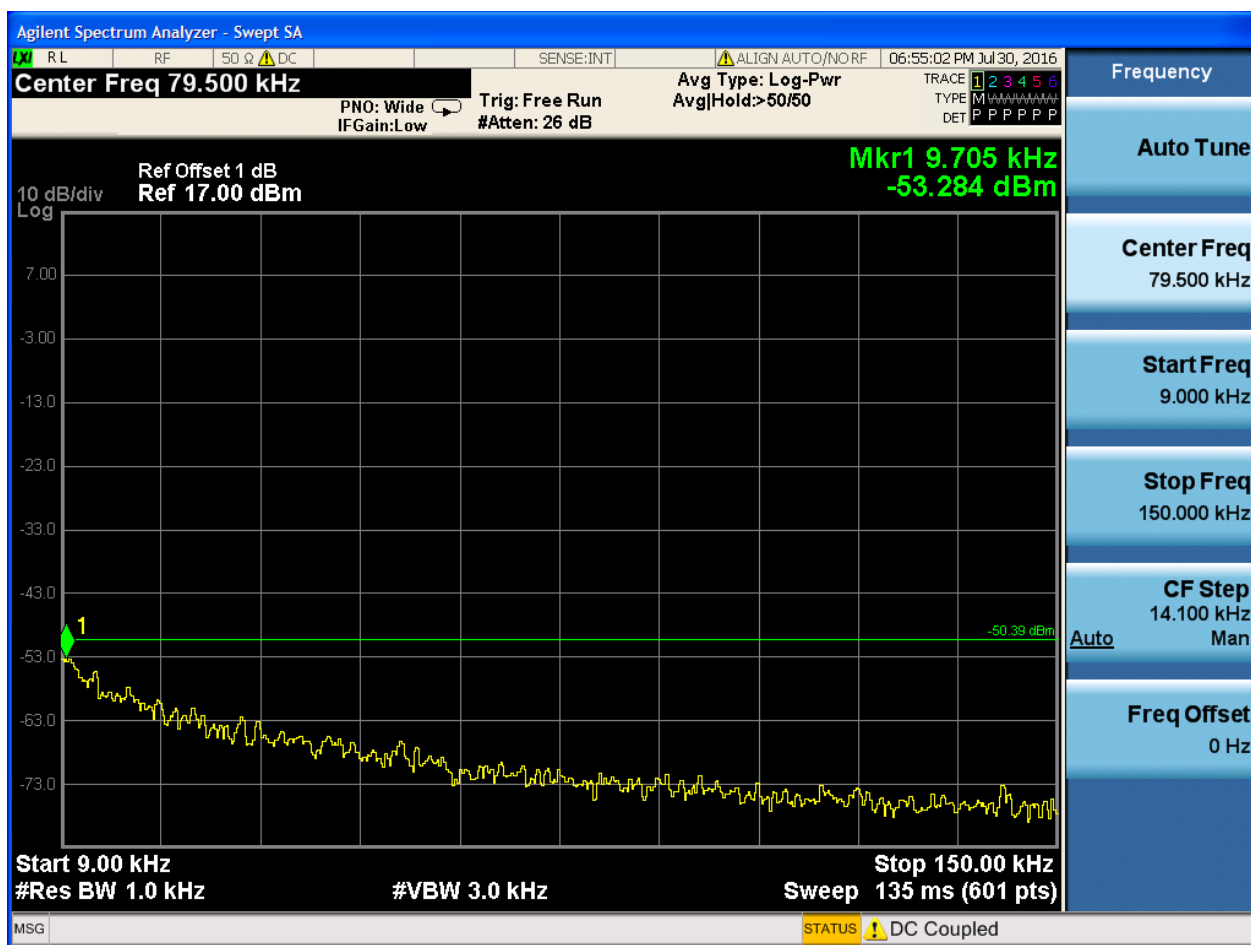
2.6 11G_H@Ant 1

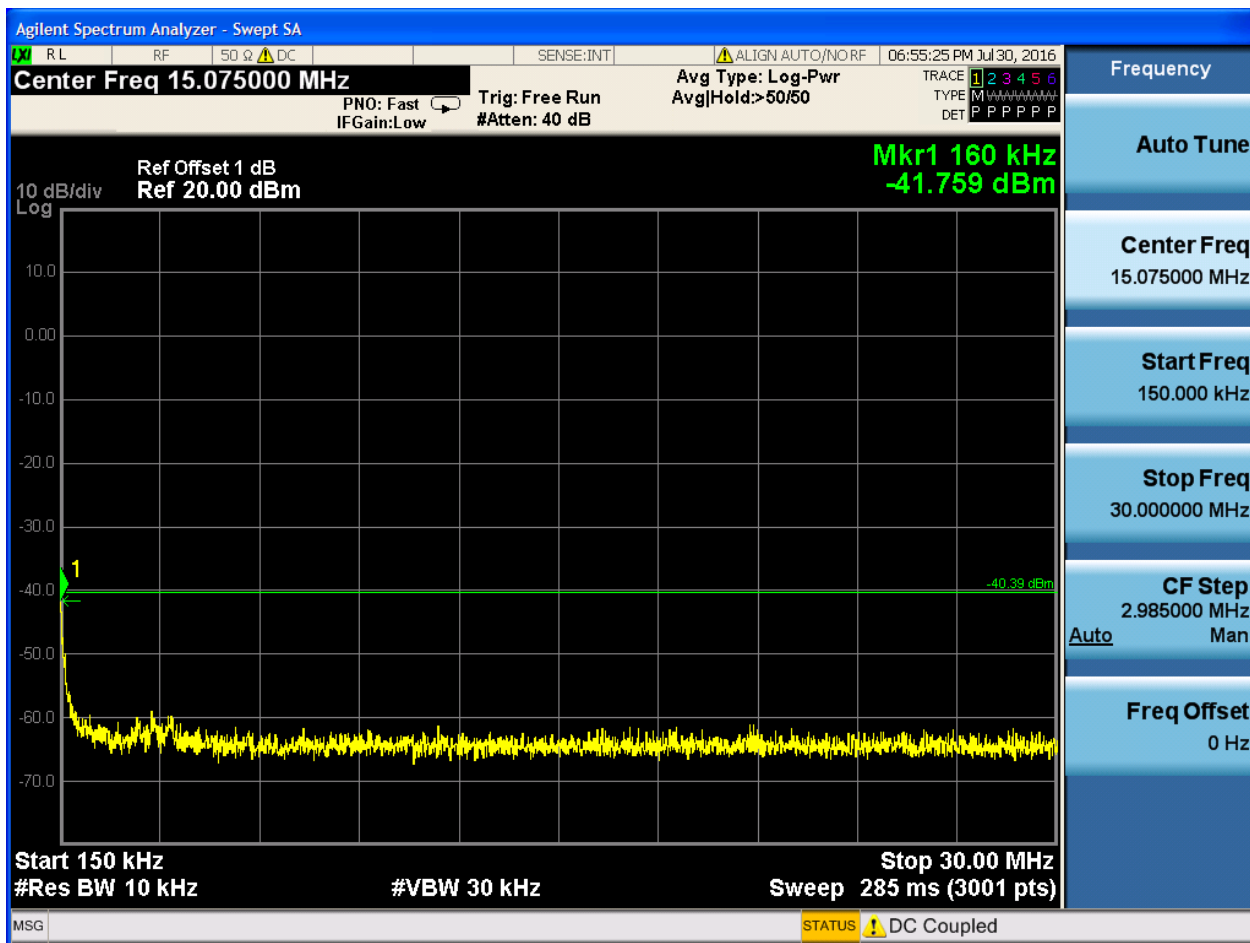
Pref:

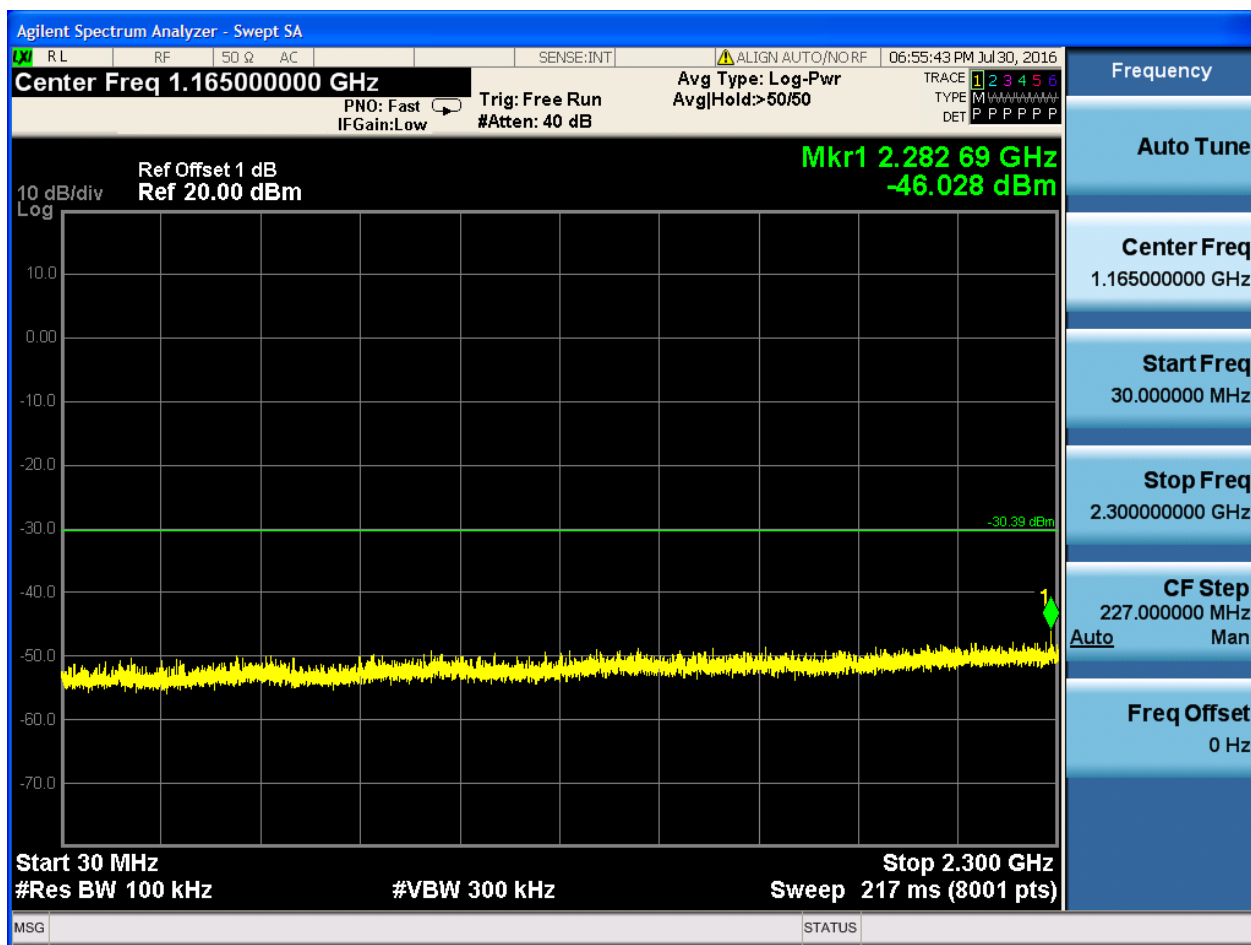


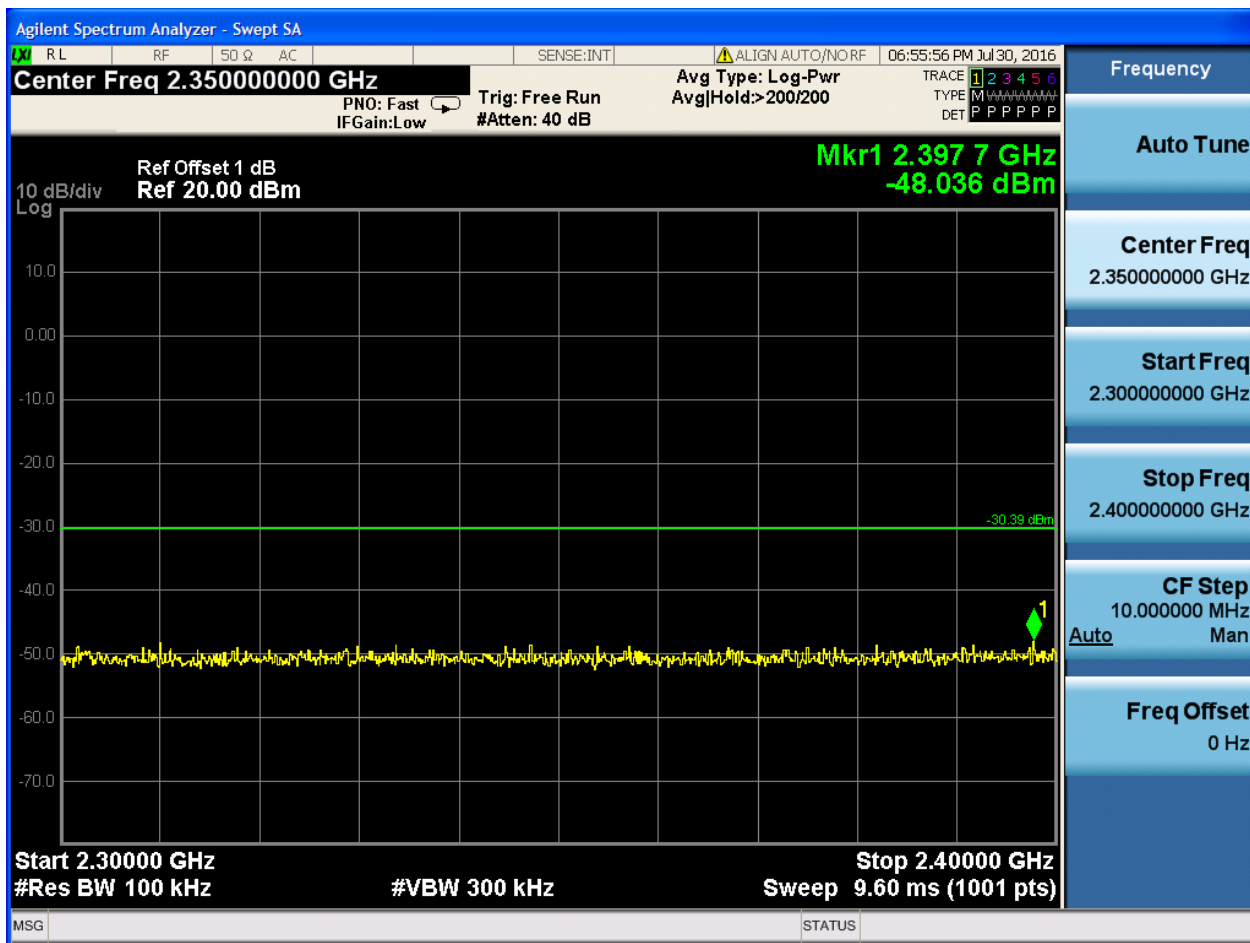


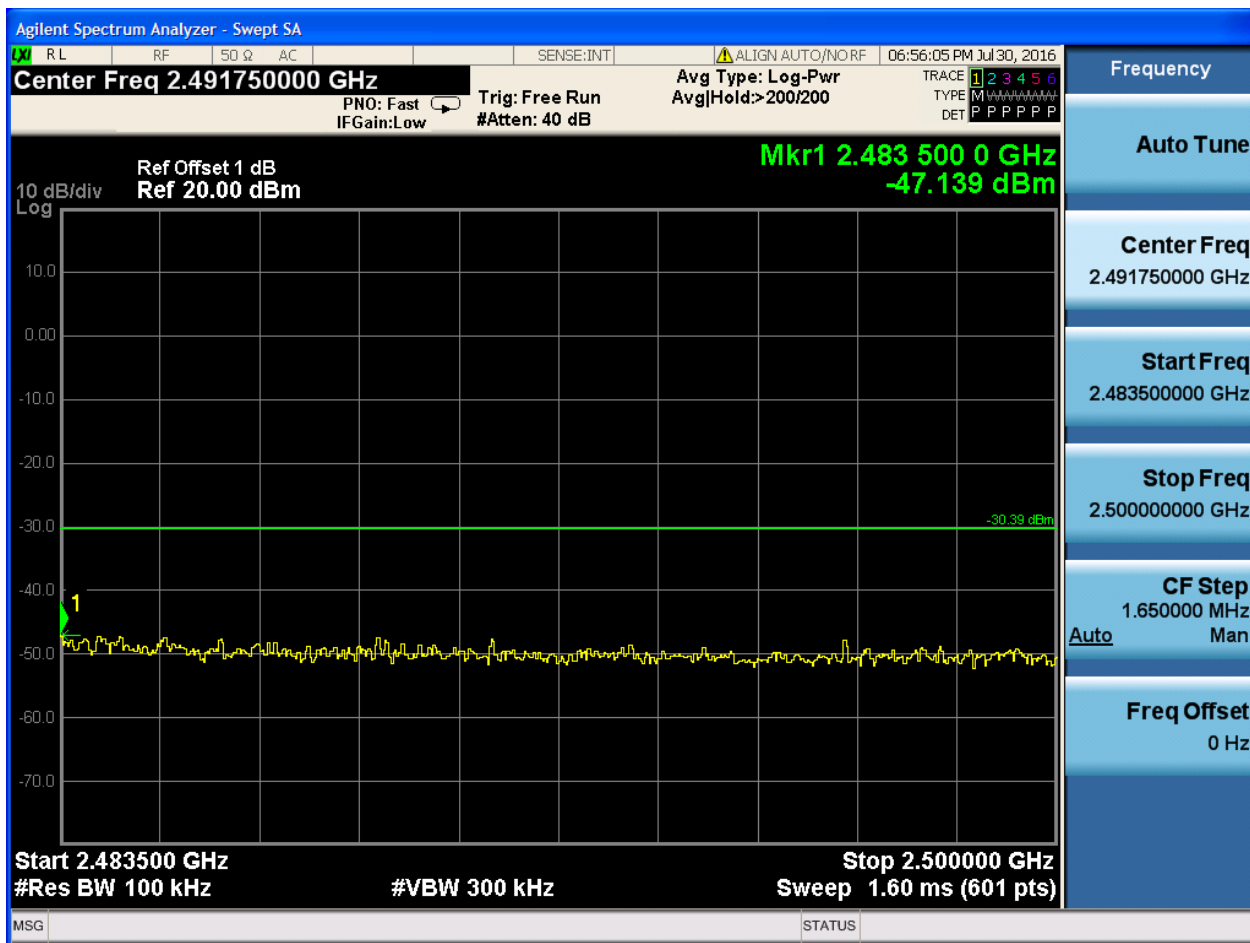
Puw:

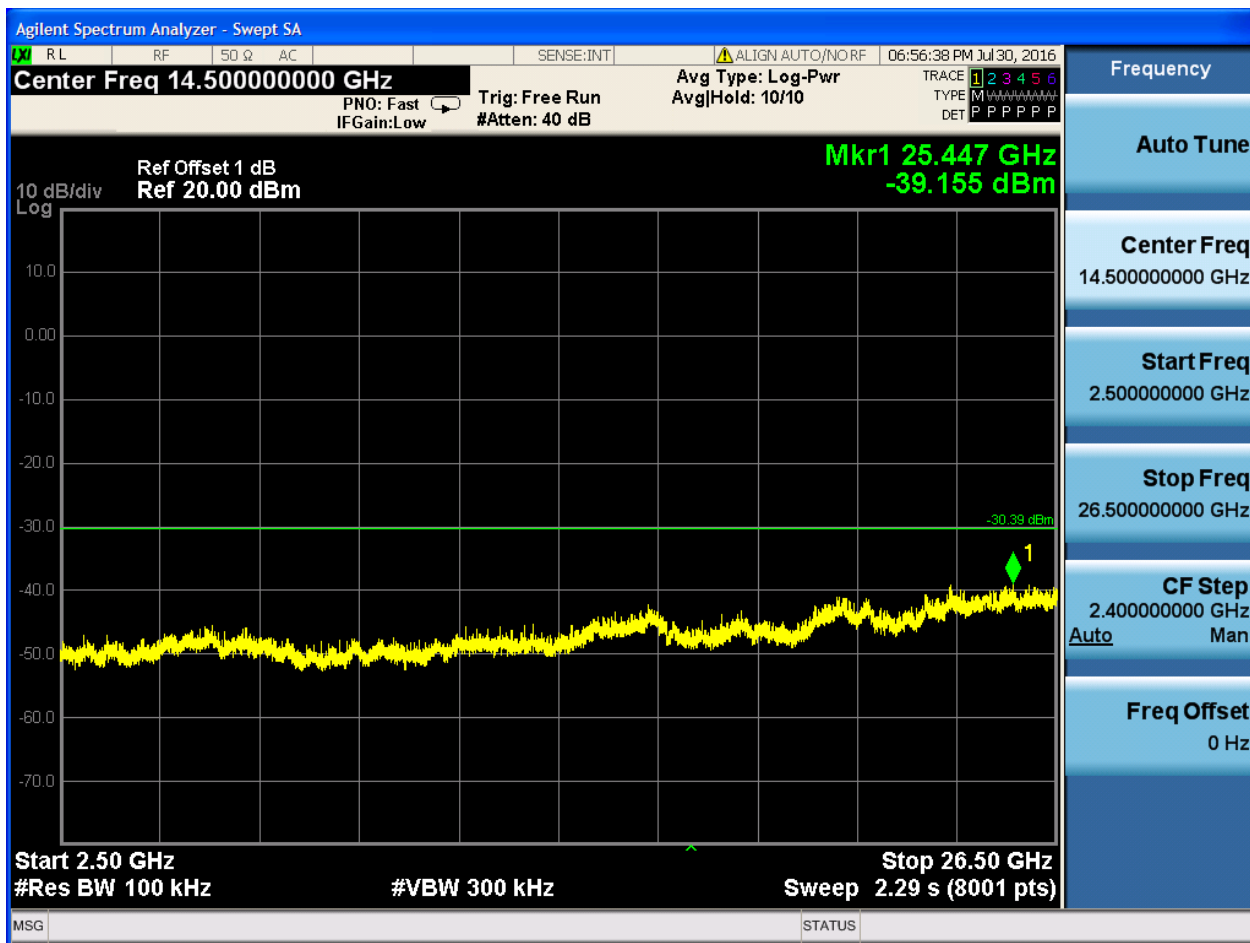








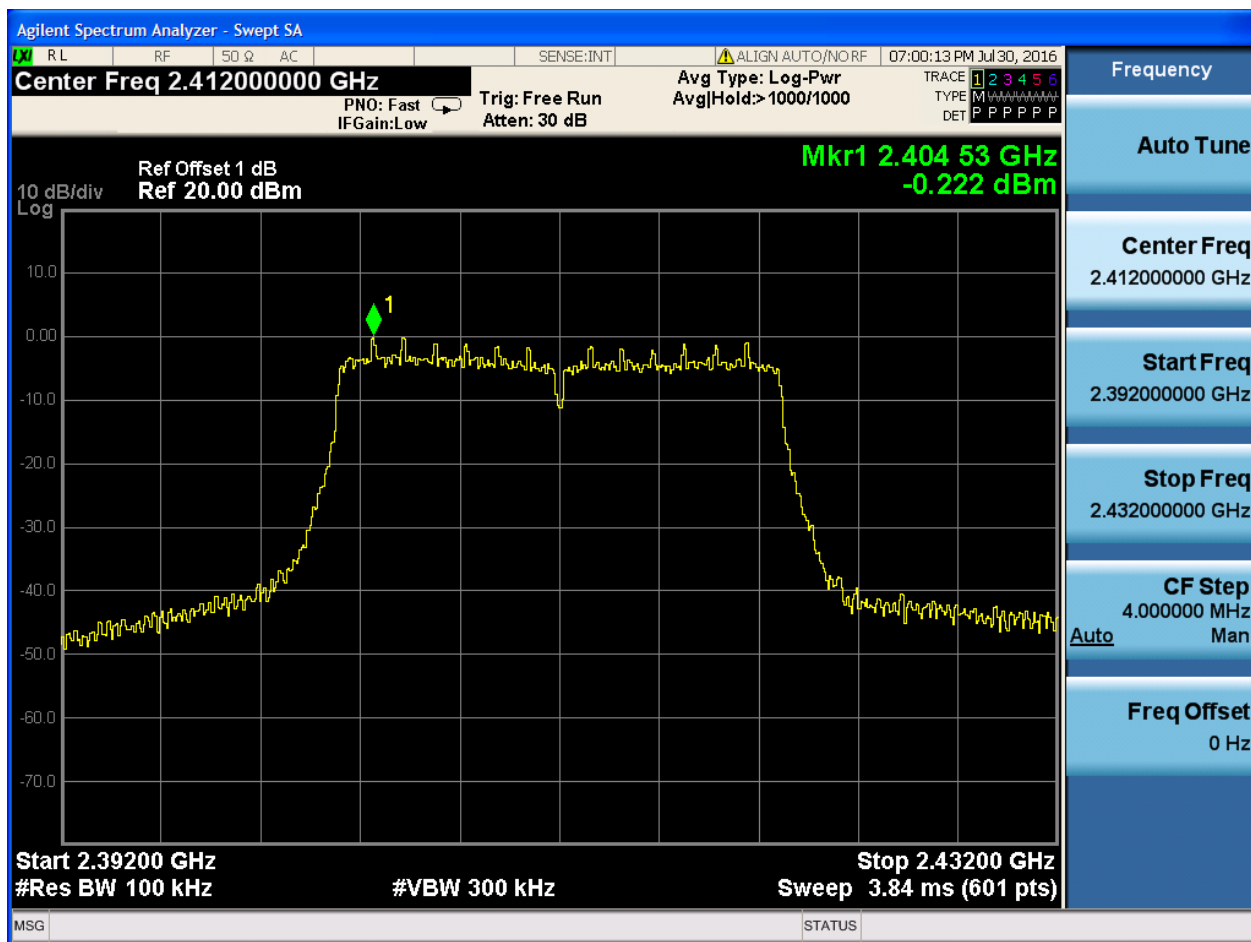






2.7 11N20_L@Ant 1

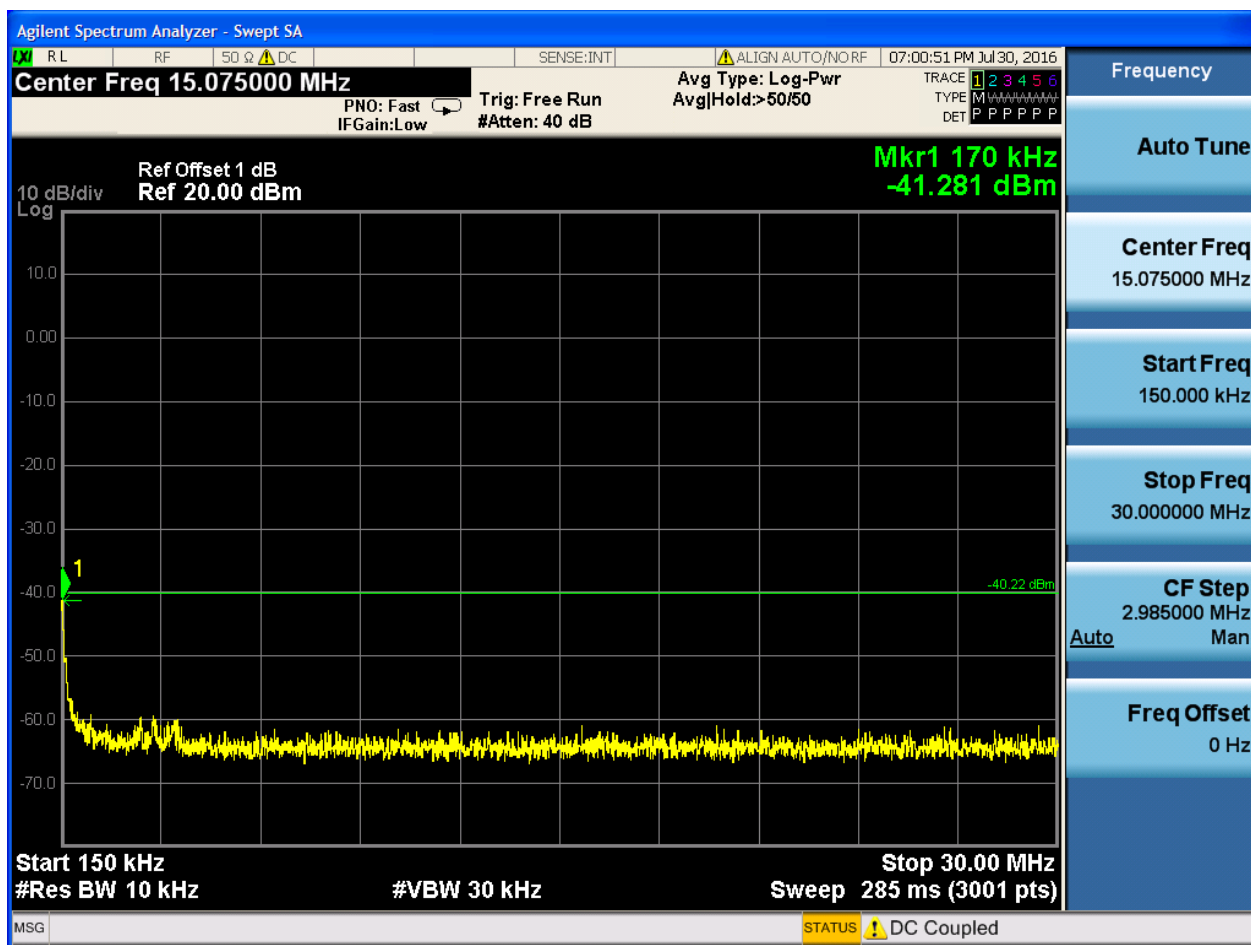
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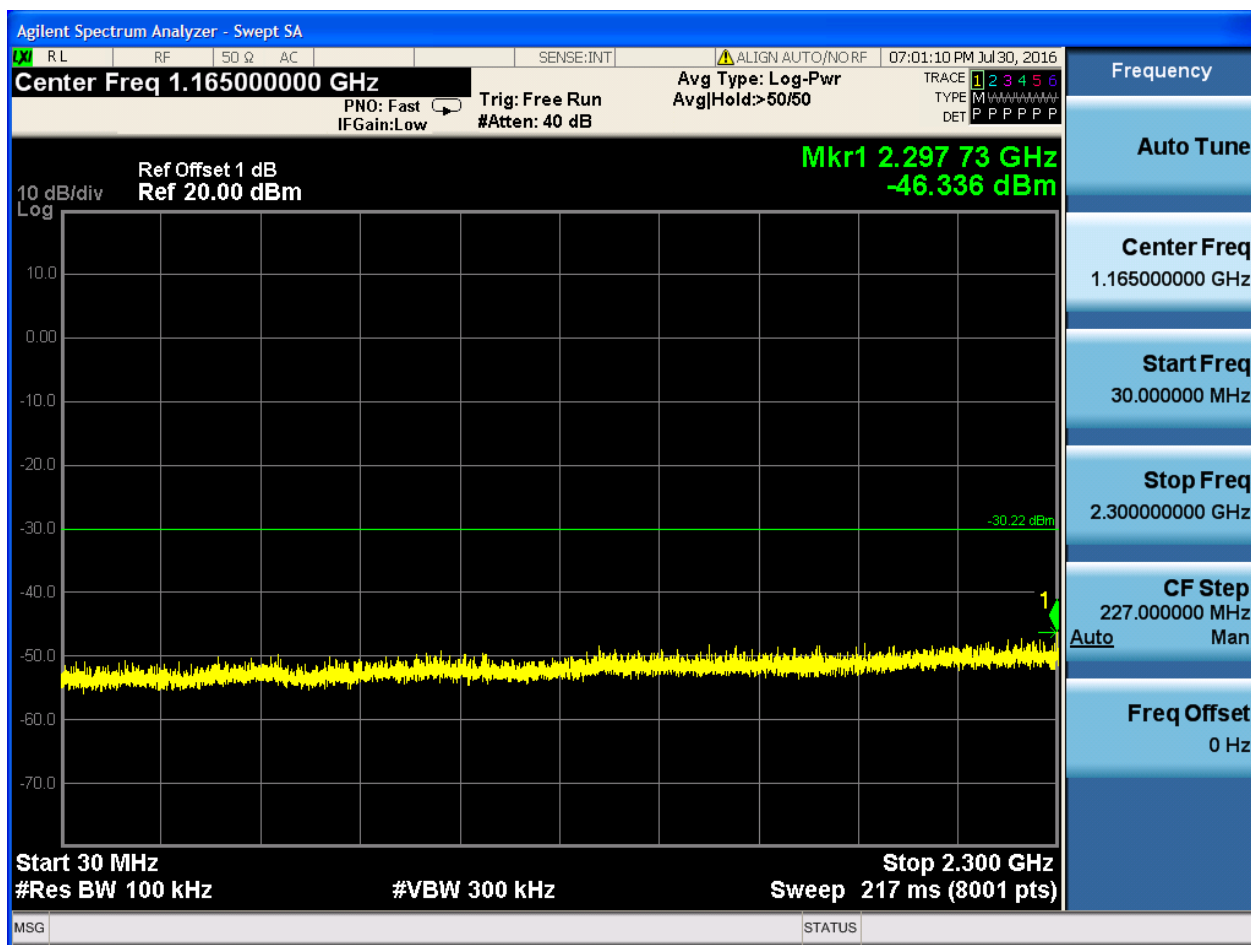


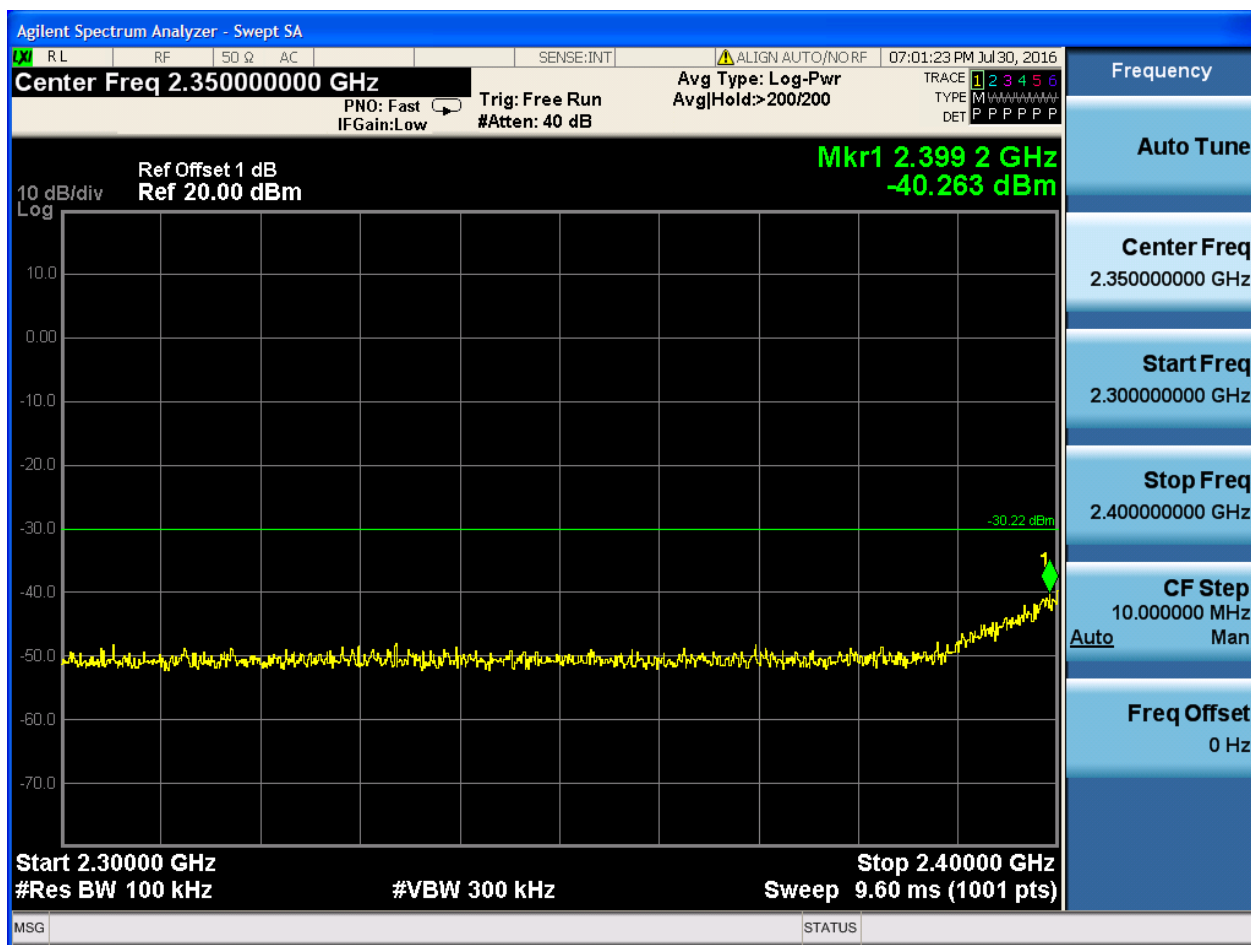


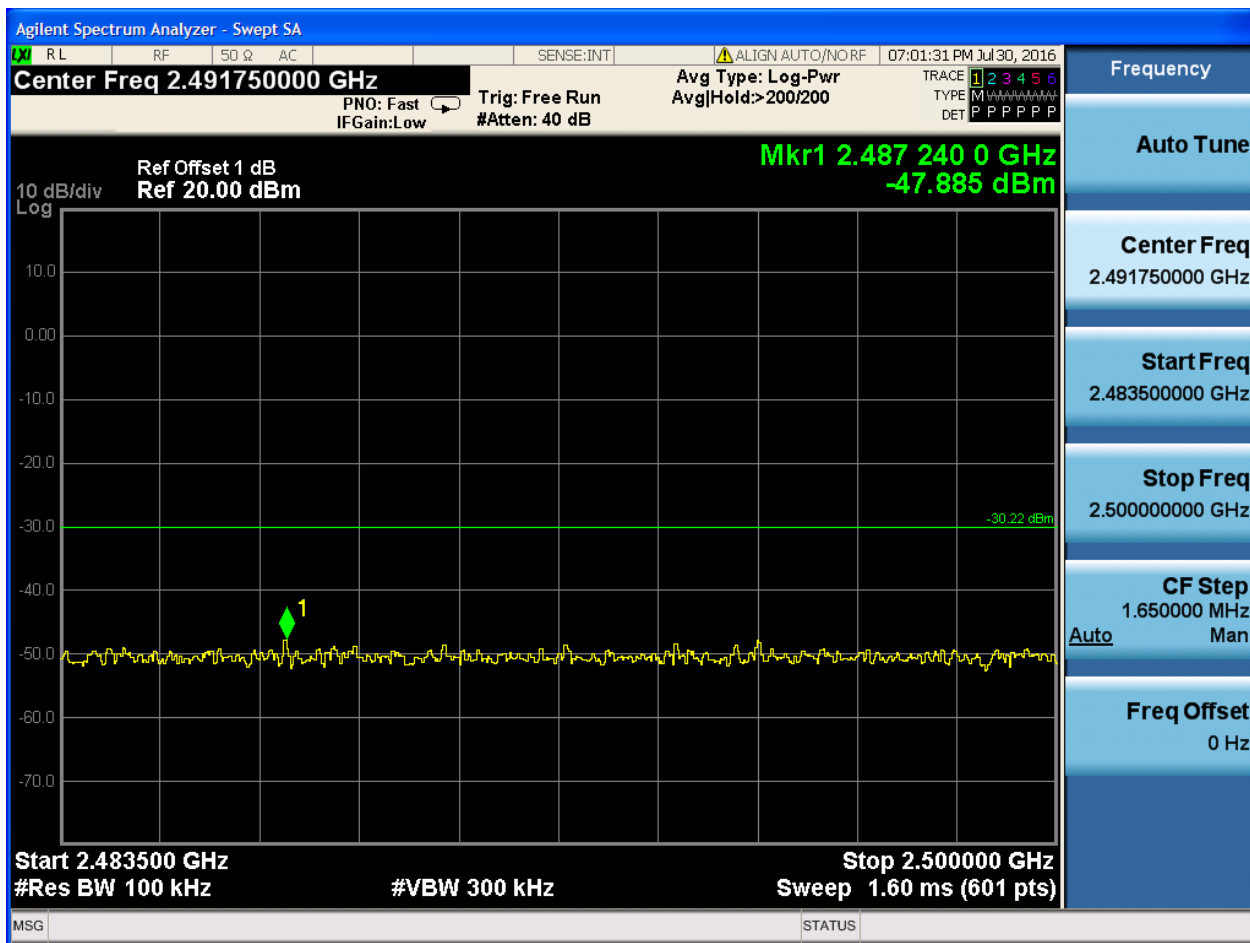
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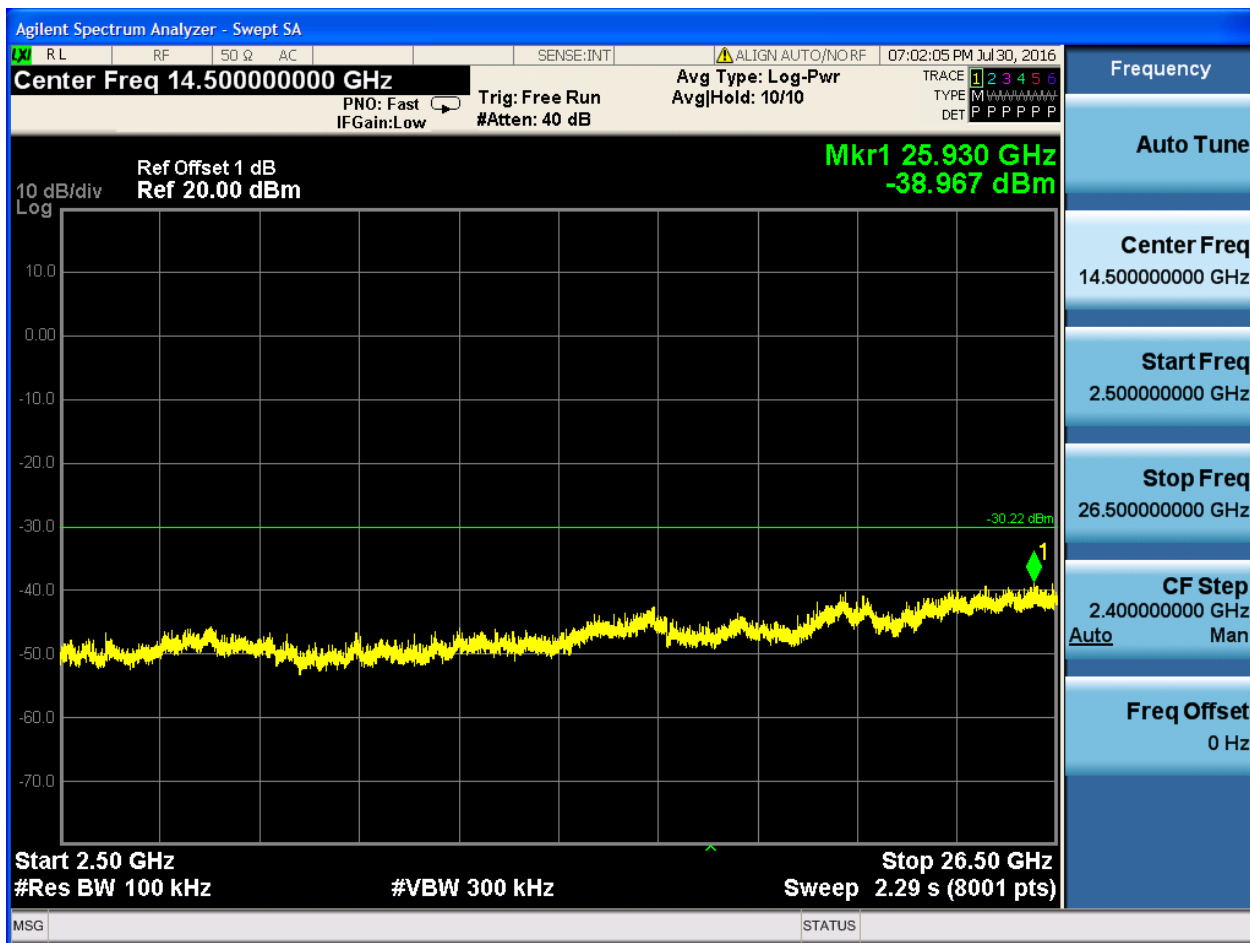








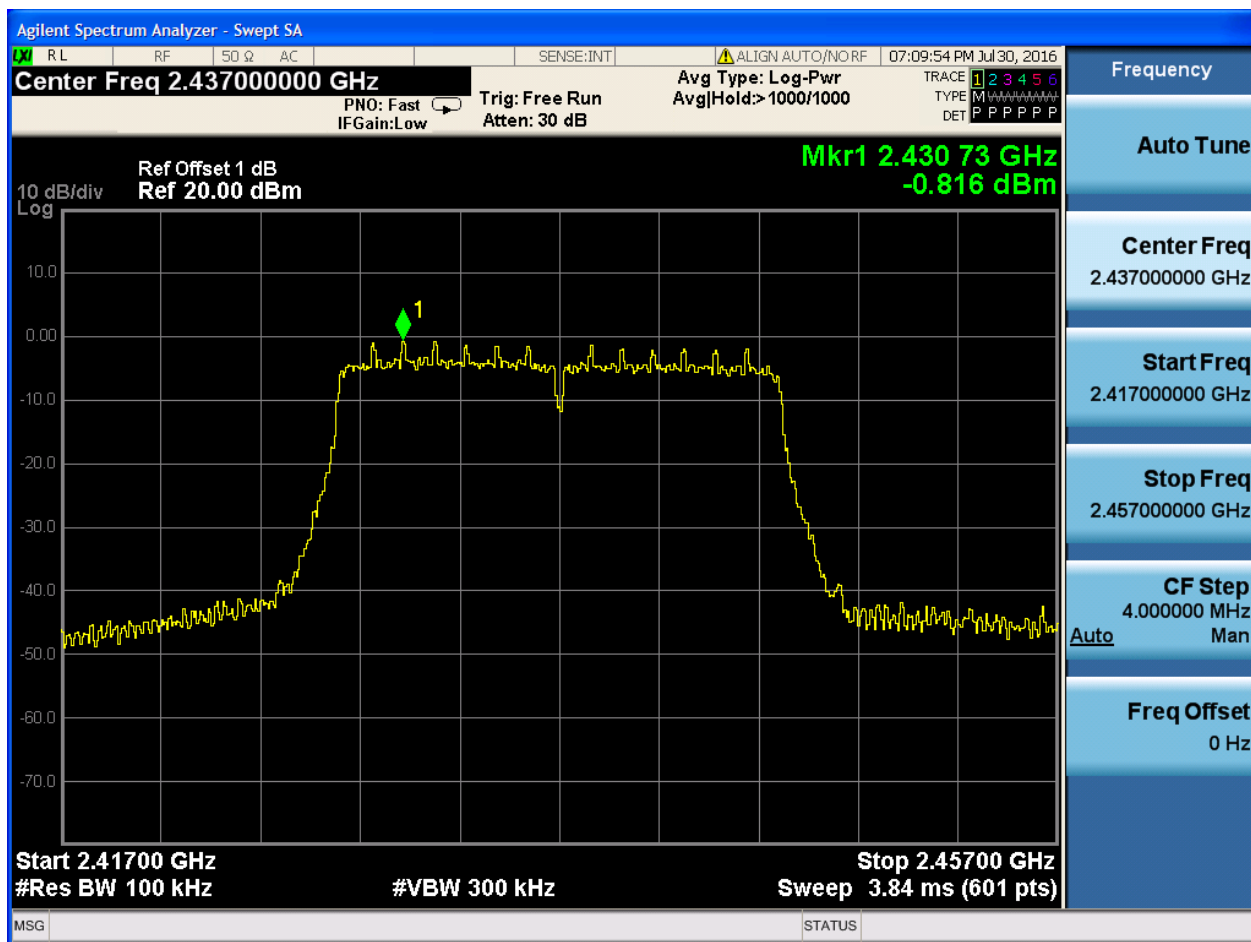






2.8 11N20_M@Ant 1

Pref:





Puw:

