



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.

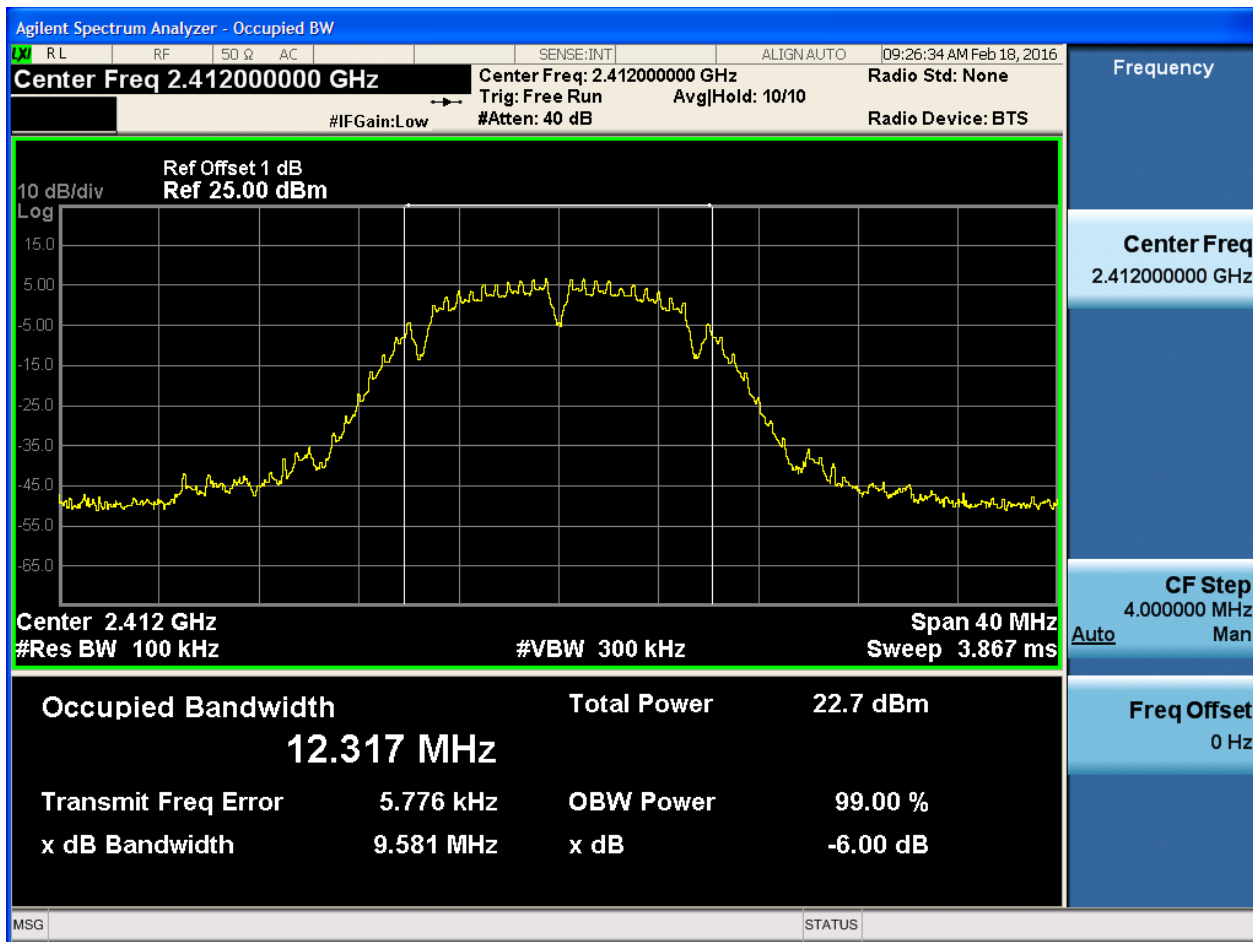
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	DTS6dBBW[MHz]	Verdict
11B	L	2412	Ant 1	9.58	pass
11B	M	2437	Ant 1	9.13	pass
11B	H	2462	Ant 1	10.07	pass
11G	L	2412	Ant 1	15.15	pass
11G	M	2437	Ant 1	15.17	pass
11G	H	2462	Ant 1	15.16	pass
11N20	L	2412	Ant 1	17.64	pass
11N20	M	2437	Ant 1	17.61	pass
11N20	H	2462	Ant 1	17.65	pass
11N40	L	2422	Ant 1	35.30	pass
11N40	M	2437	Ant 1	35.24	pass
11N40	H	2452	Ant 1	35.27	pass



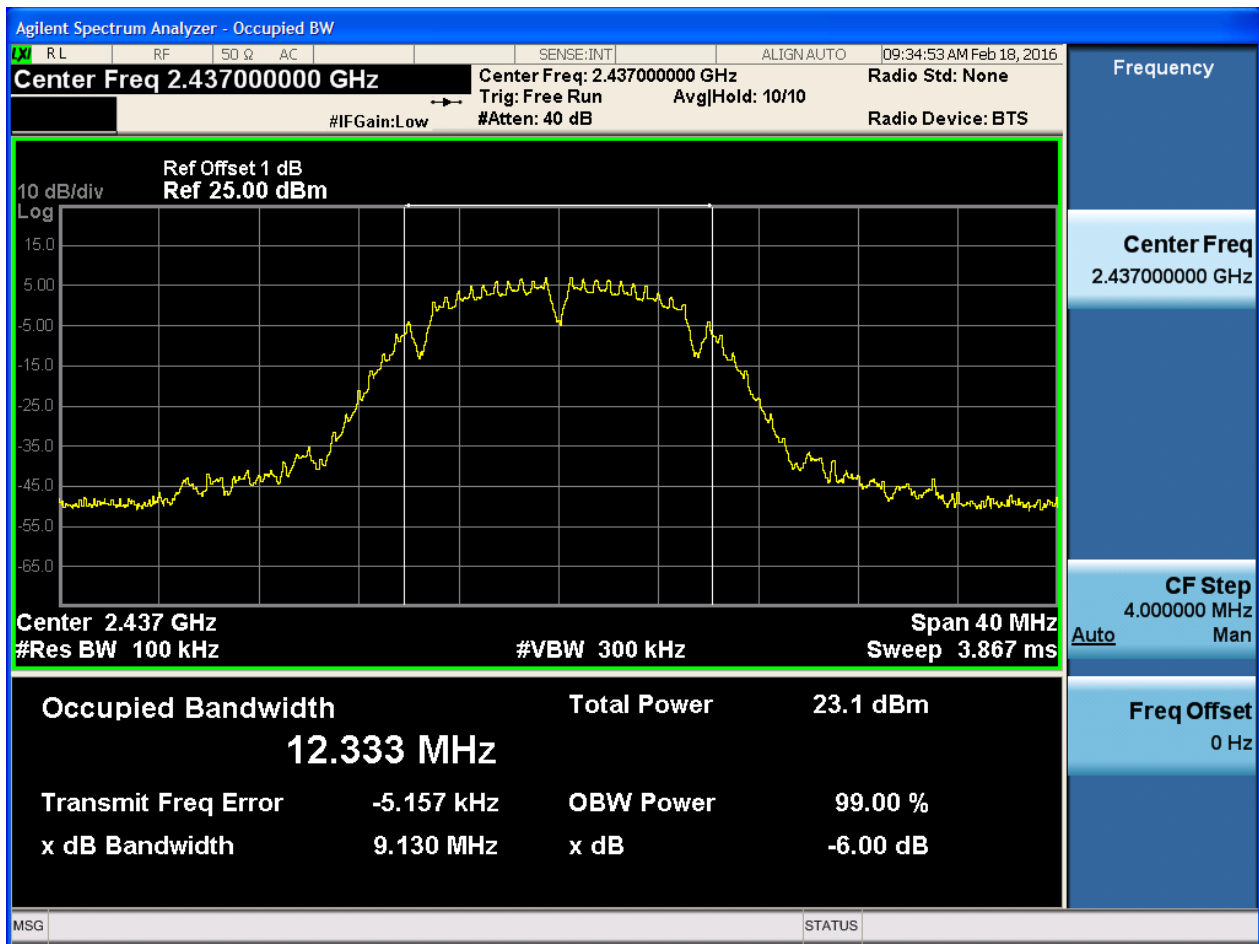
Part II - Test Plots

2.1 11B_L@Ant 1



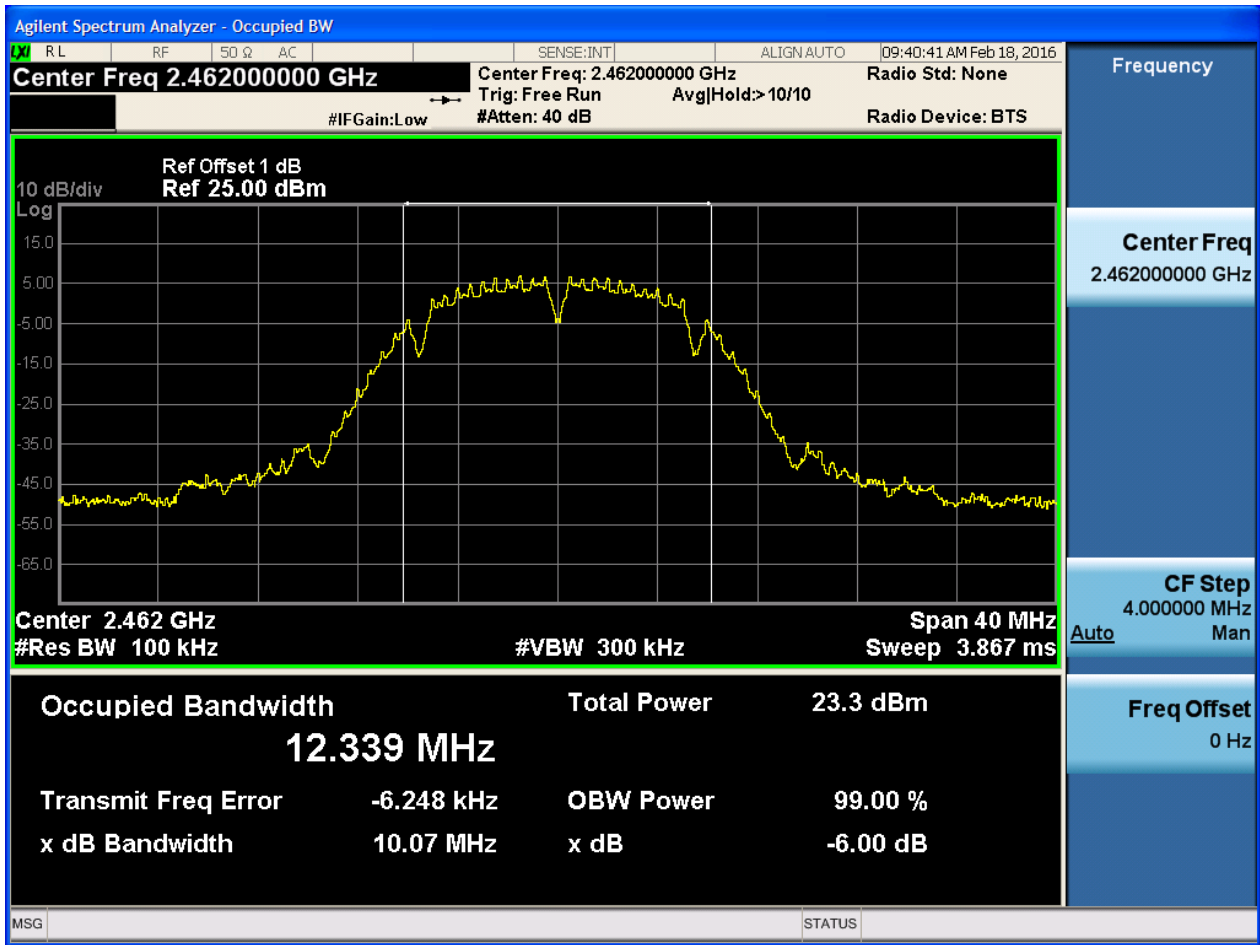


2.2 11B_M@Ant 1



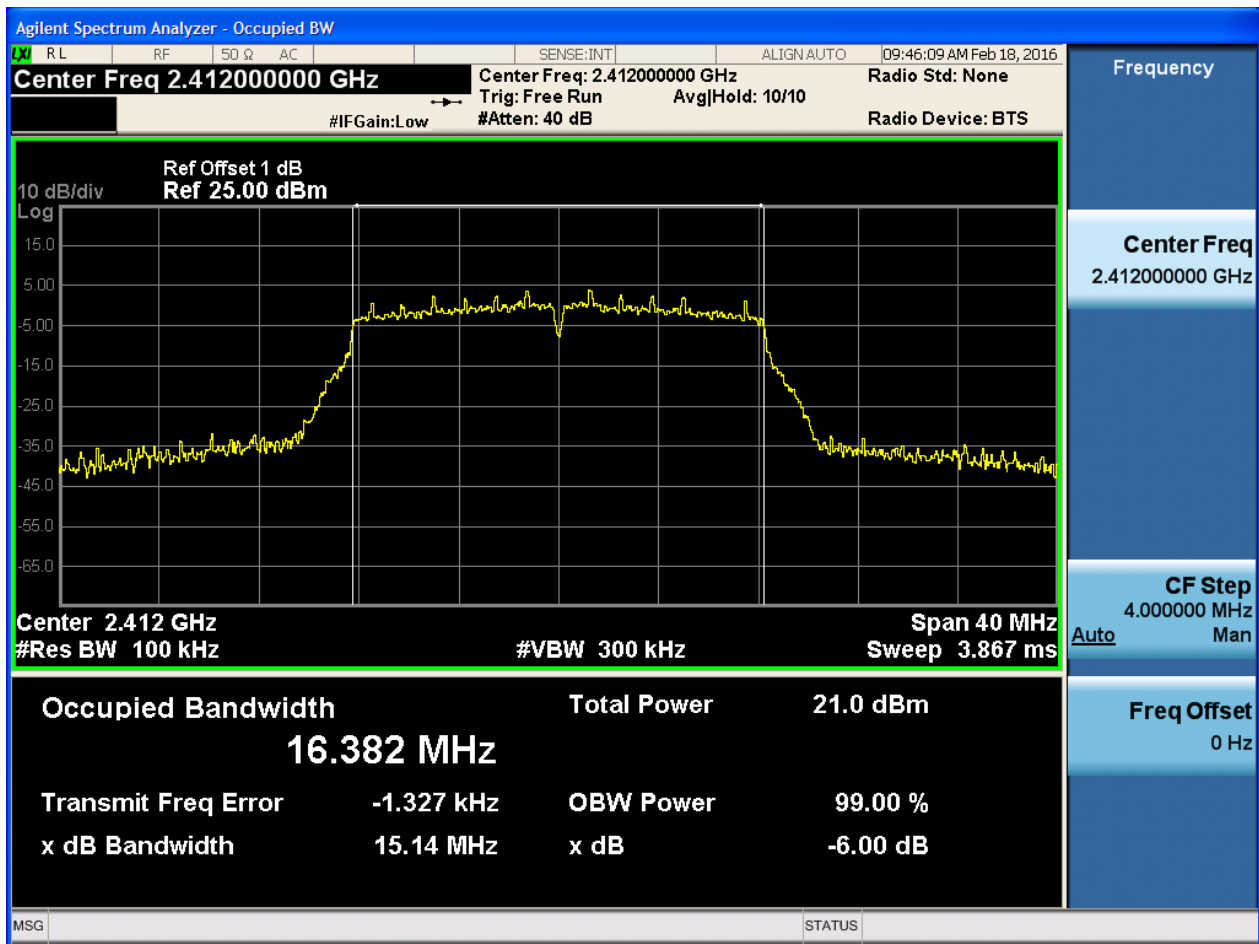


2.3 11B_H@Ant 1



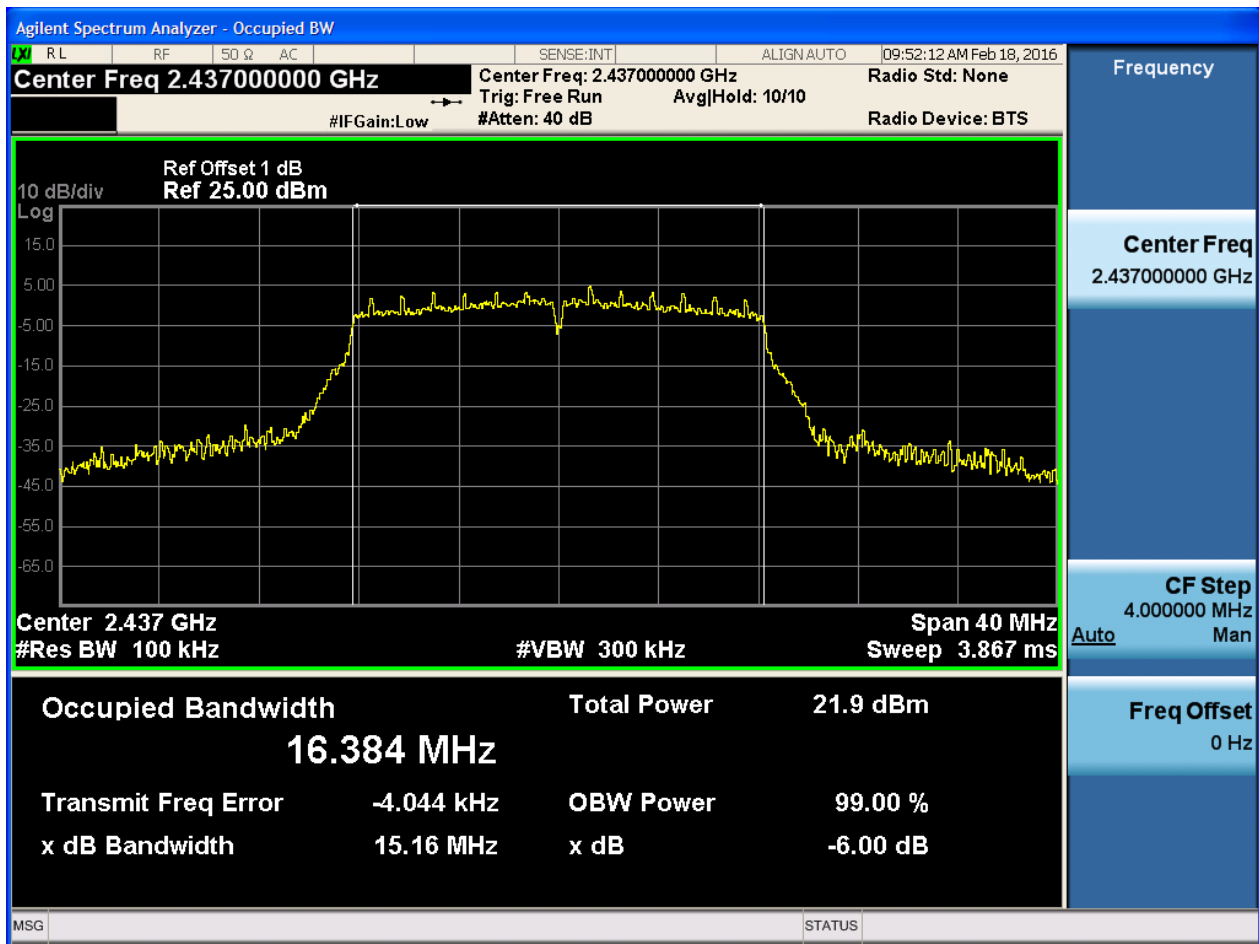


2.4 11G_L@Ant 1



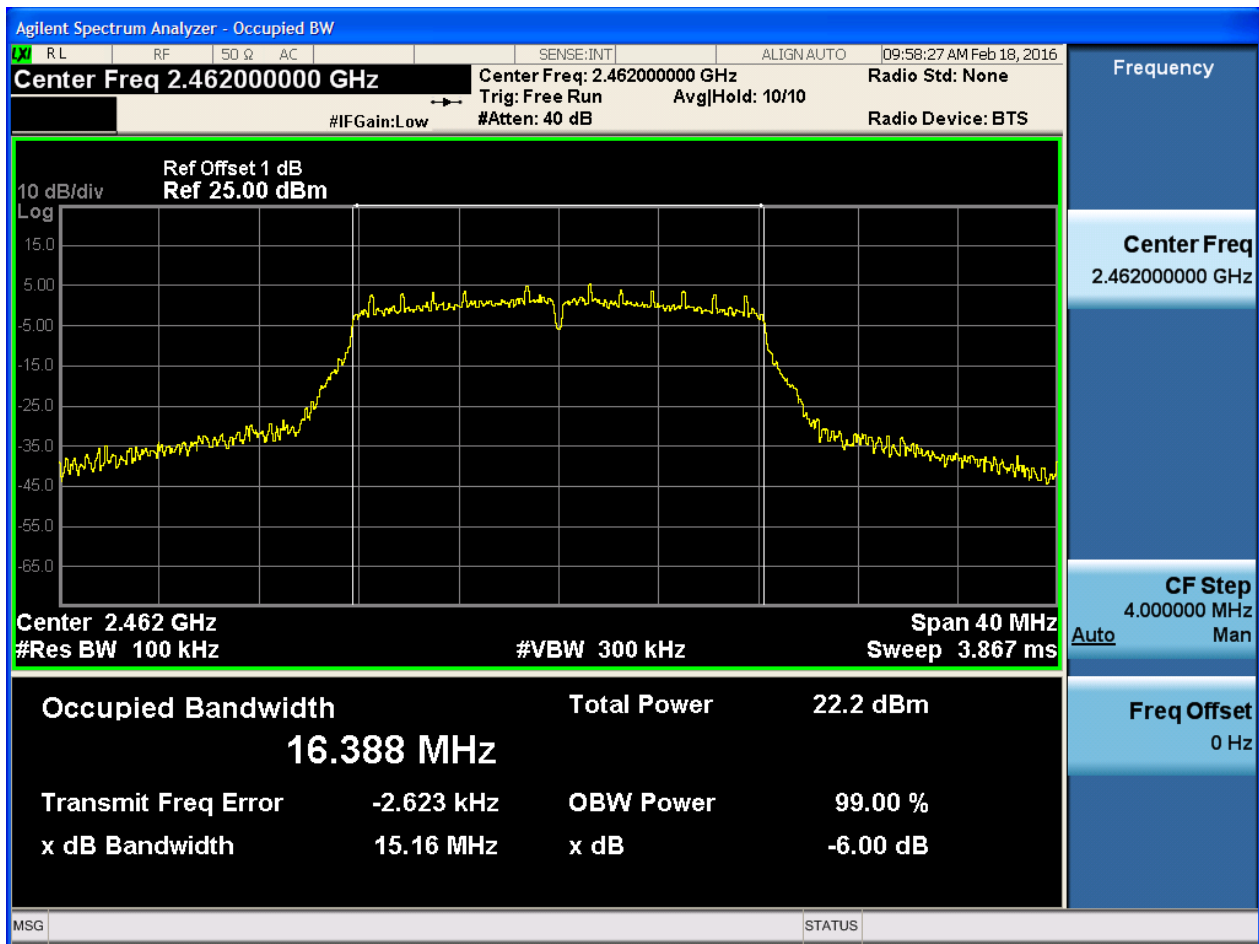


2.5 11G_M@Ant 1



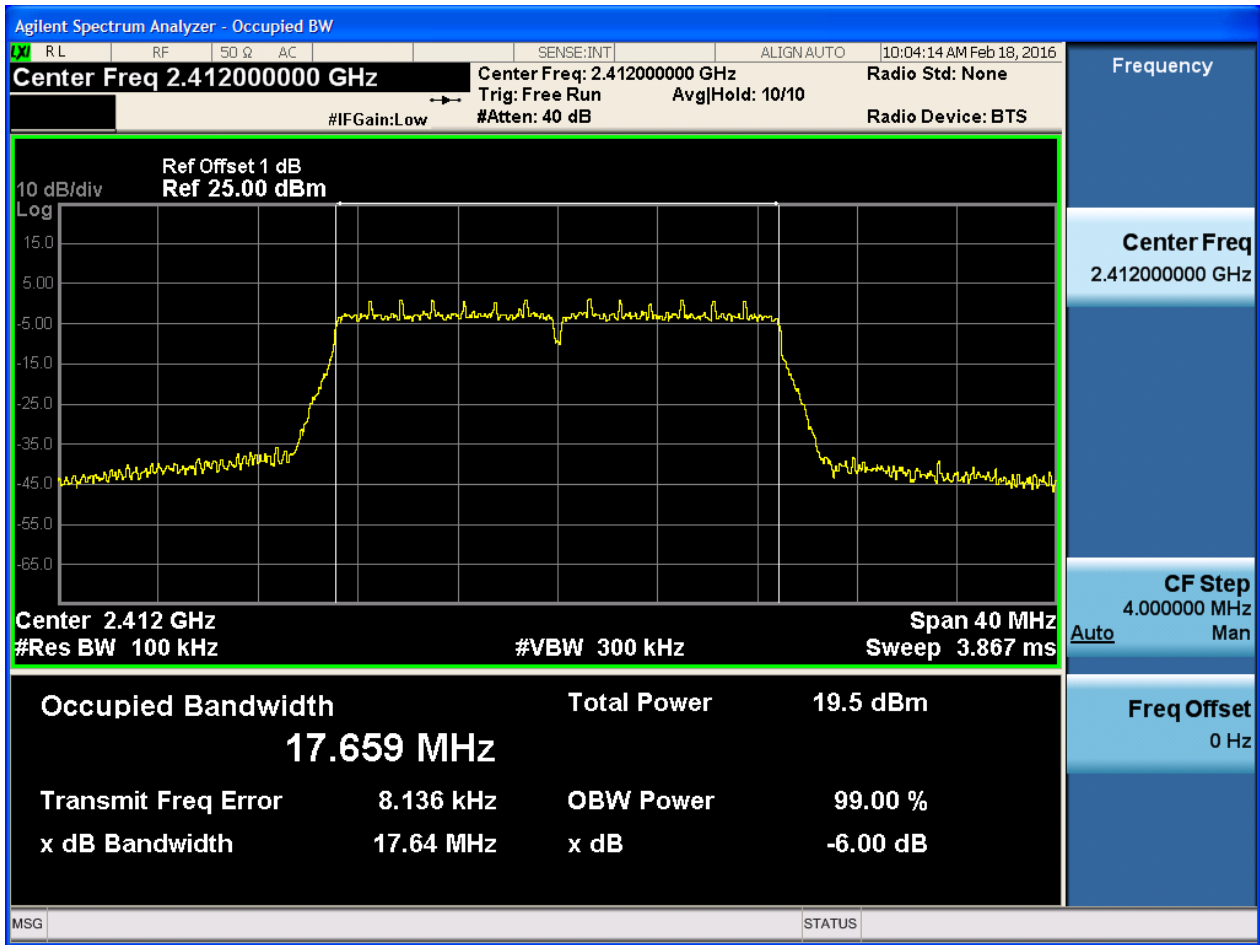


2.6 11G_H@Ant 1



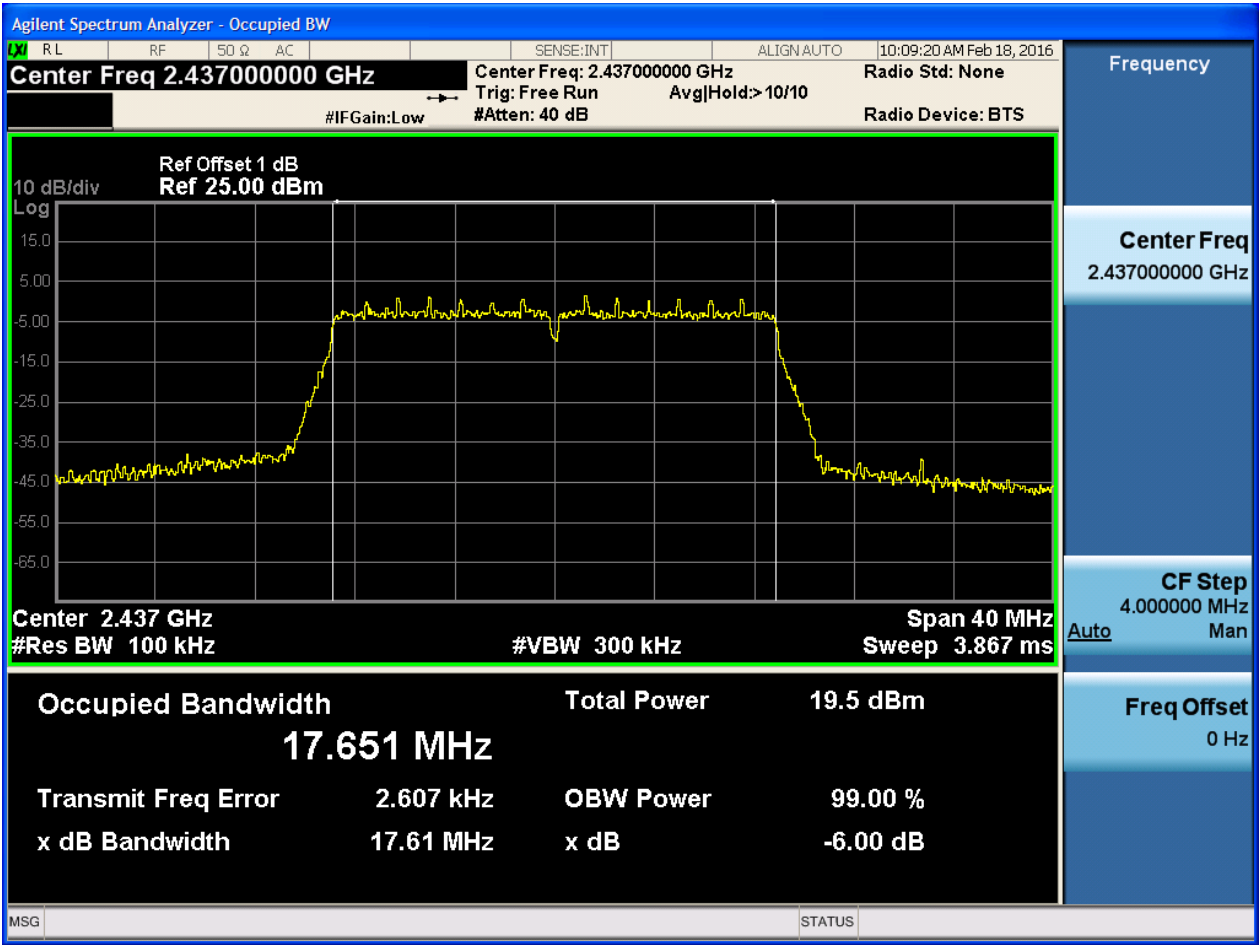


2.7 11N20_L@Ant 1



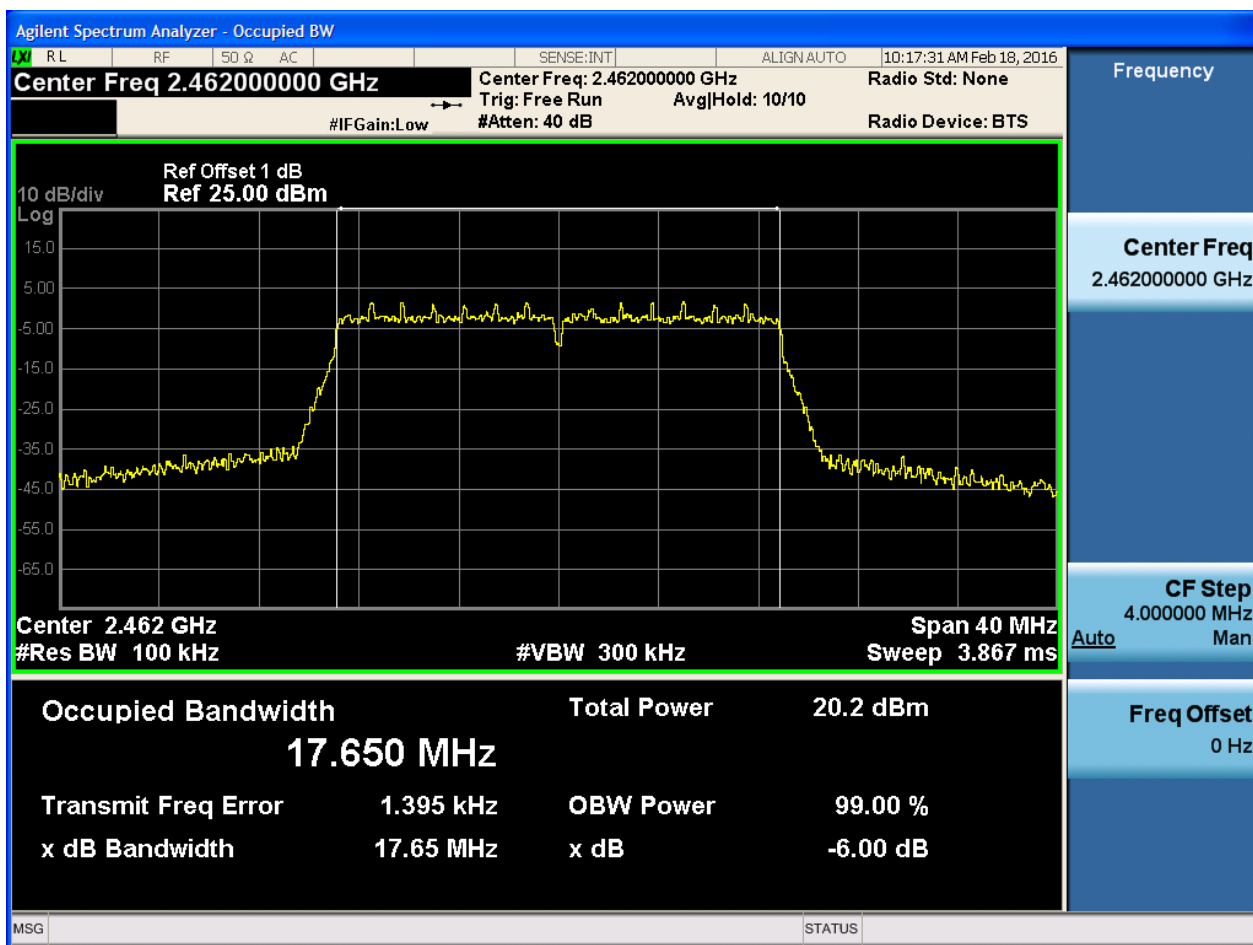


2.8 11N20_M@Ant 1



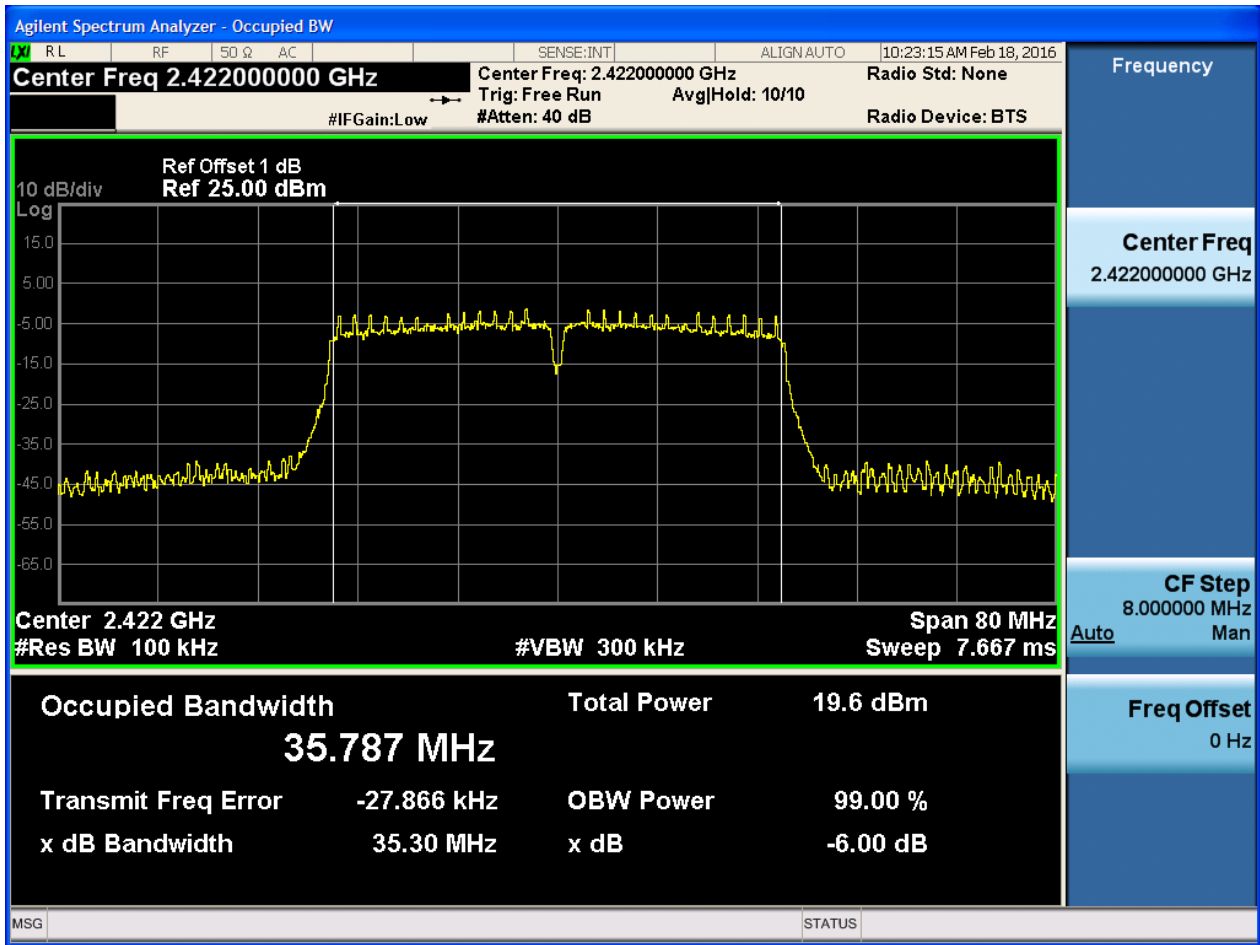


2.9 11N20_H@Ant 1



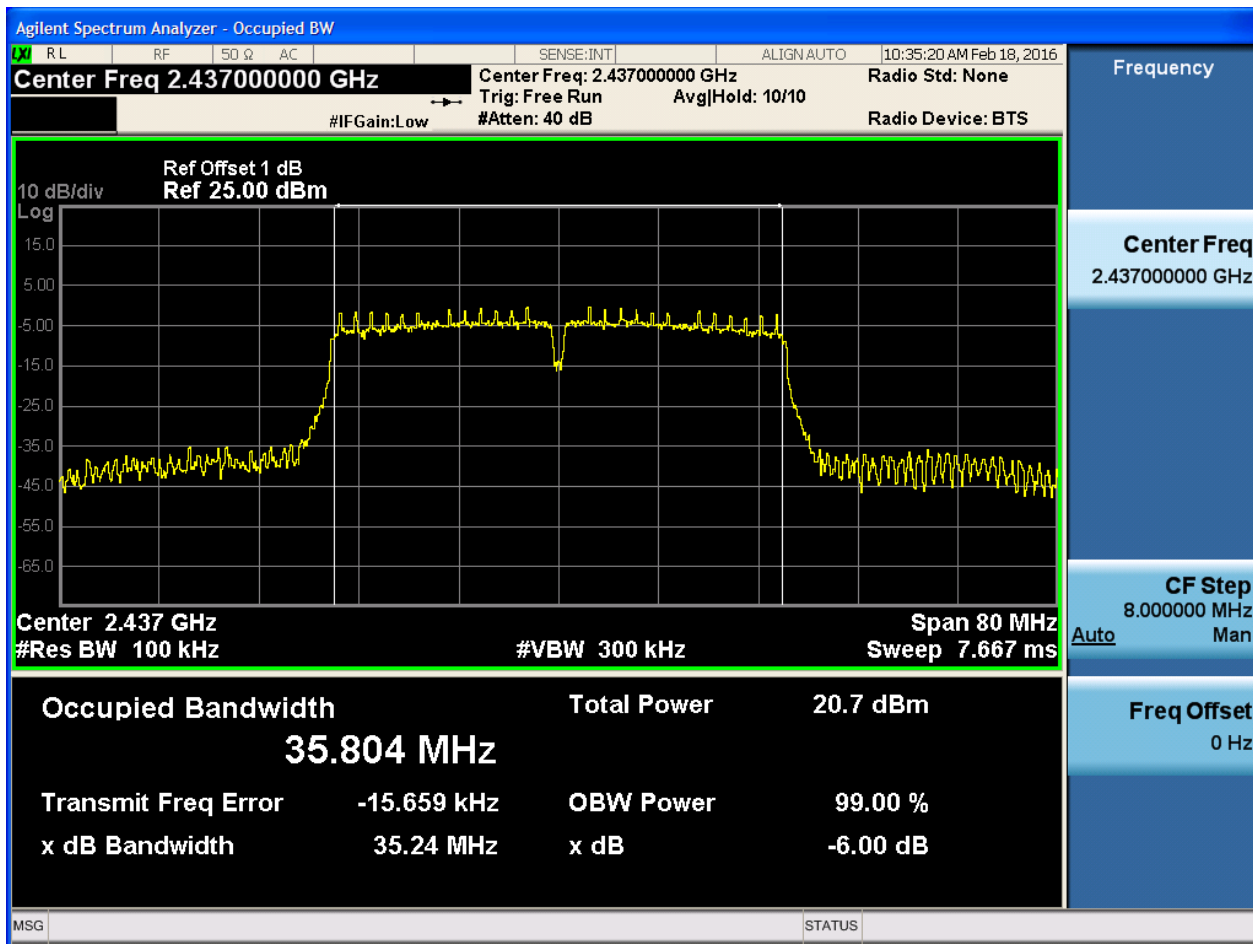


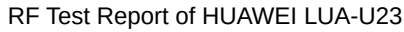
2.10 11N40_L@Ant 1





2.11 11N40_M@Ant 1





Agilent Spectrum Analyzer - Occupied BW

Center Freq 2.45200000 GHz

Center Freq: 2.45200000 GHz
Trig: Free Run
#Atten: 40 dB

Radio Std: None
Radio Device: BTS

#IFGain: Low

Ref Offset 1 dB
Ref 25.00 dBm

10 dB/div
Log

Center 2.452 GHz
#Res BW 100 kHz

Span 80 MHz
Sweep 7.667 ms

#VBW 300 kHz

Occupied Bandwidth
35.762 MHz

Total Power
20.1 dBm

Transmit Freq Error
-17.489 kHz

OBW Power
99.00 %

x dB Bandwidth
35.27 MHz

x dB
-6.00 dB

Frequency

Center Freq
2.45200000 GHz

CF Step
8.000000 MHz
Man

Auto

Freq Offset
0 Hz

MSG

STATUS

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.

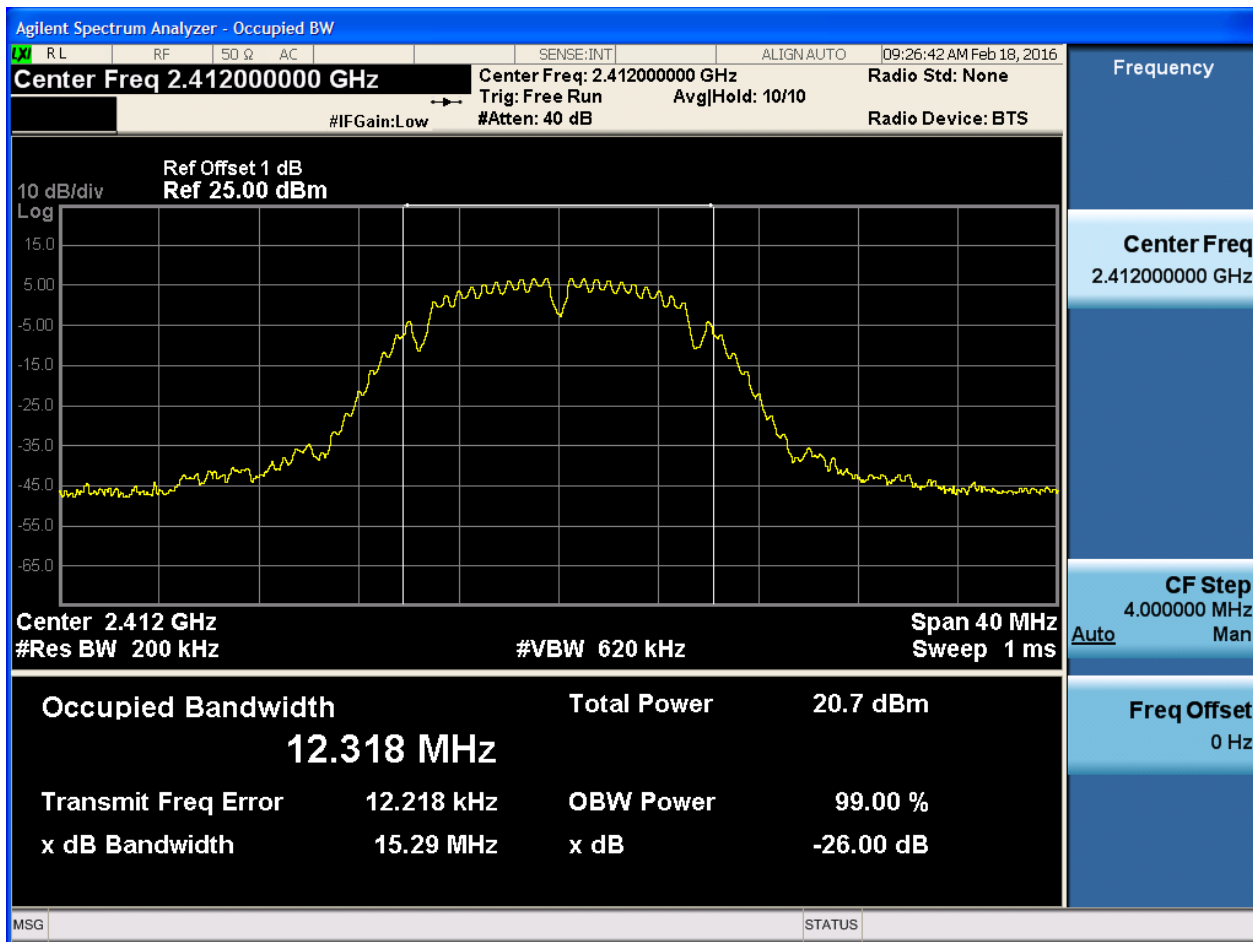
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Occupied Bandwidth [MHz]	Verdict
11B	L	2412	Ant 1	12.22	pass
11B	M	2437	Ant 1	12.22	pass
11B	H	2462	Ant 1	12.25	pass
11G	L	2412	Ant 1	16.56	pass
11G	M	2437	Ant 1	16.56	pass
11G	H	2462	Ant 1	16.55	pass
11N20	L	2412	Ant 1	17.77	pass
11N20	M	2437	Ant 1	17.71	pass
11N20	H	2462	Ant 1	17.74	pass
11N40	L	2422	Ant 1	35.95	pass
11N40	M	2437	Ant 1	35.98	pass
11N40	H	2452	Ant 1	35.95	pass



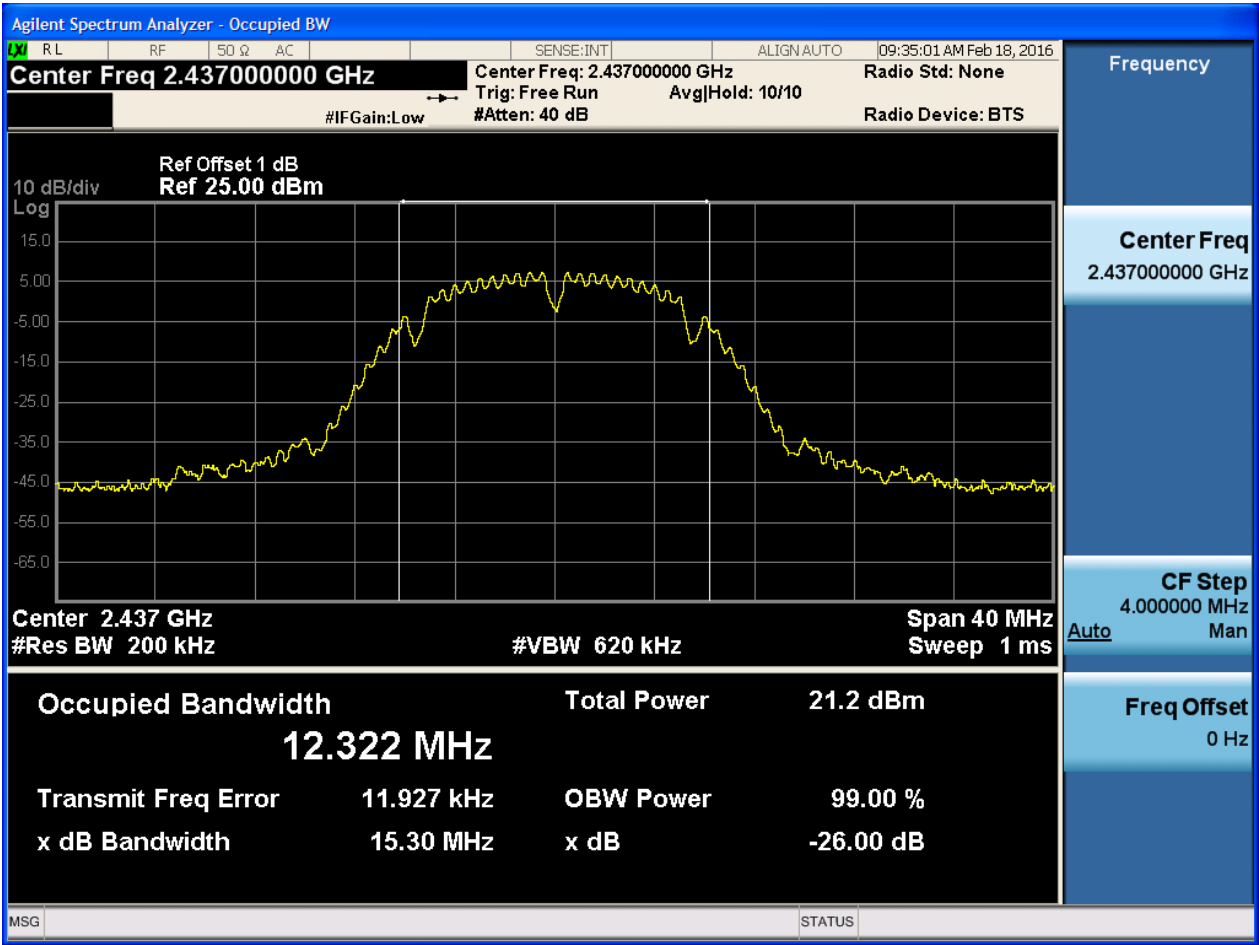
Part II - Test Plots

2.1 11B_L@Ant 1



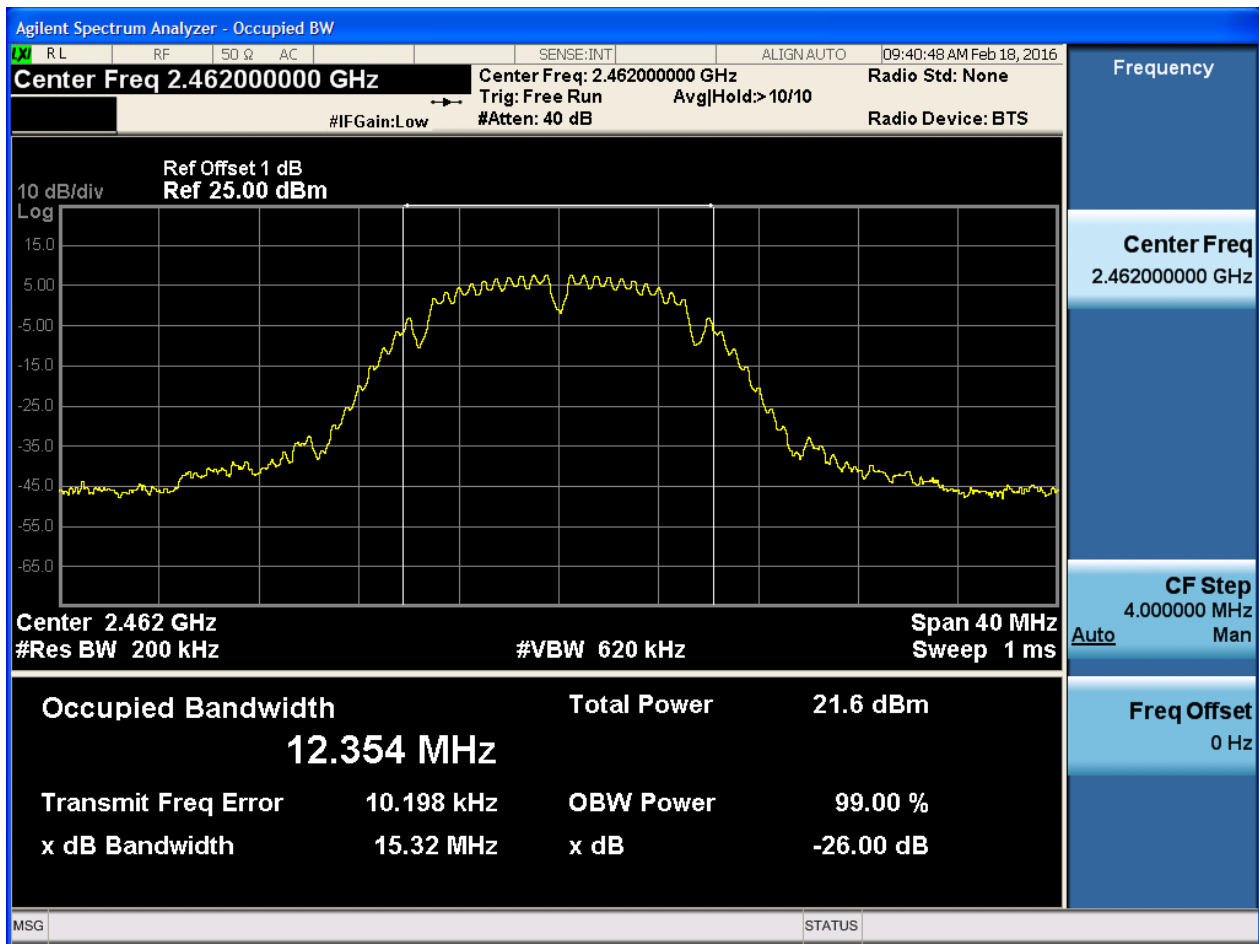


2.2 11B_M@Ant 1



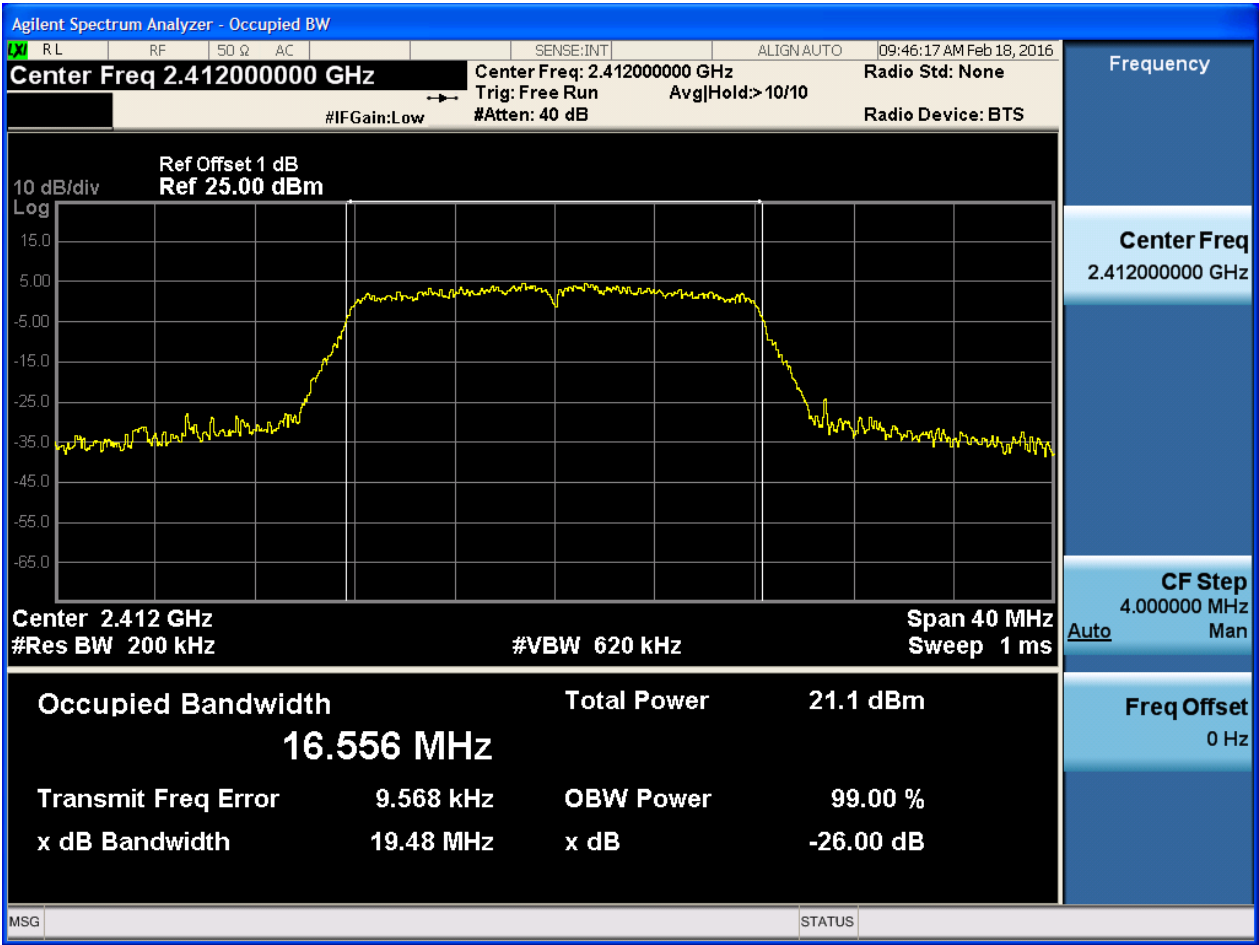


2.3 11B_H@Ant 1



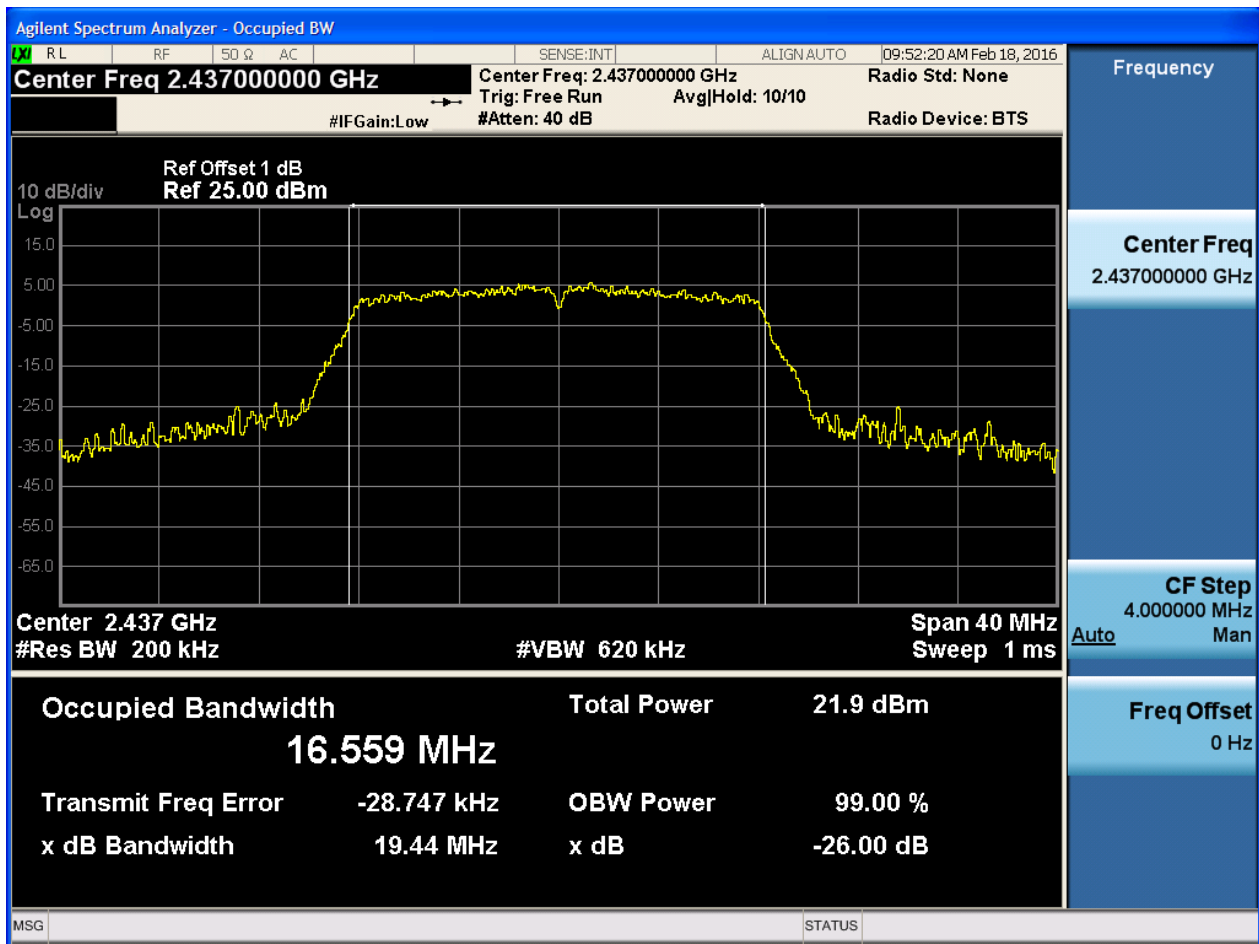


2.4 11G_L@Ant 1



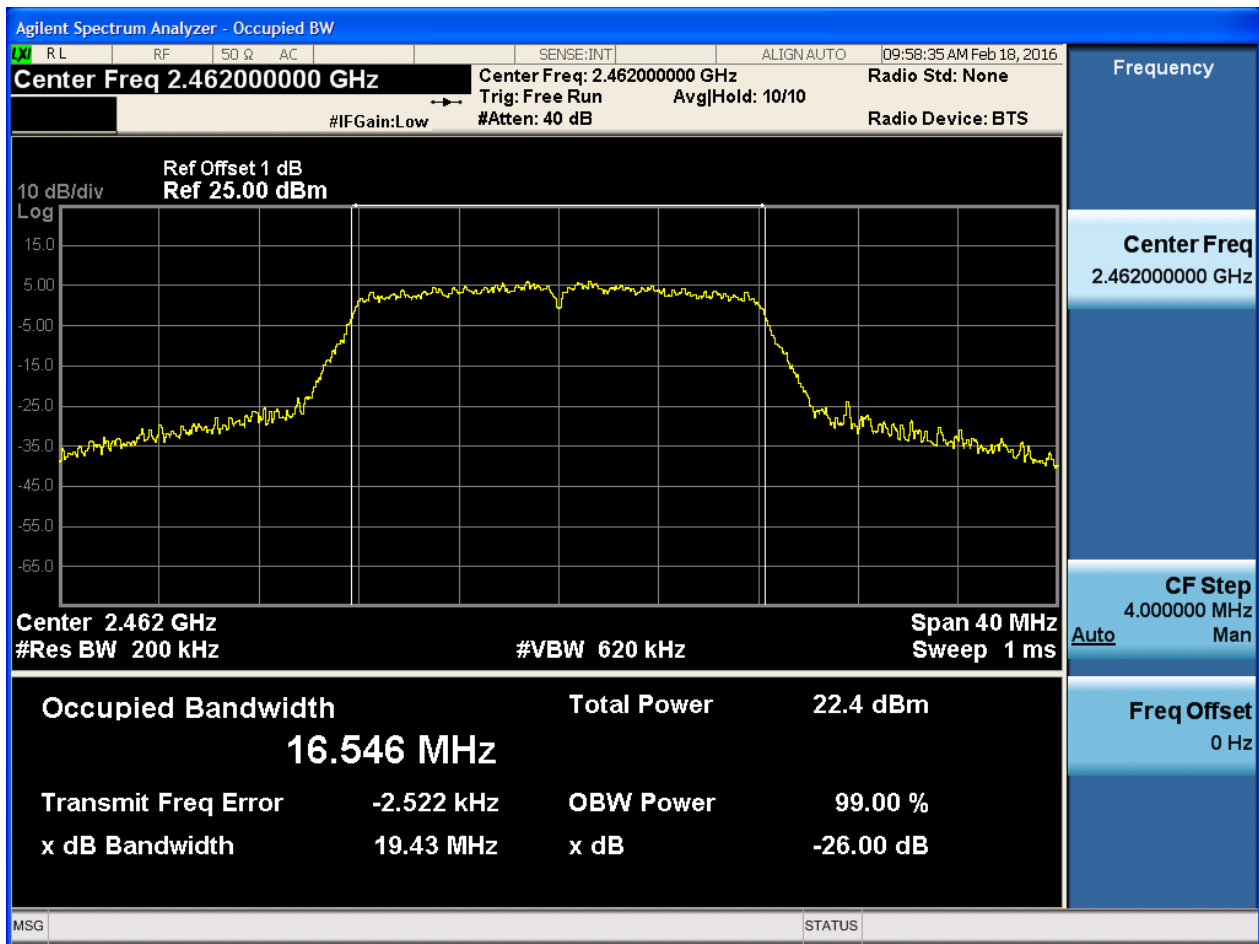


2.5 11G_M@Ant 1



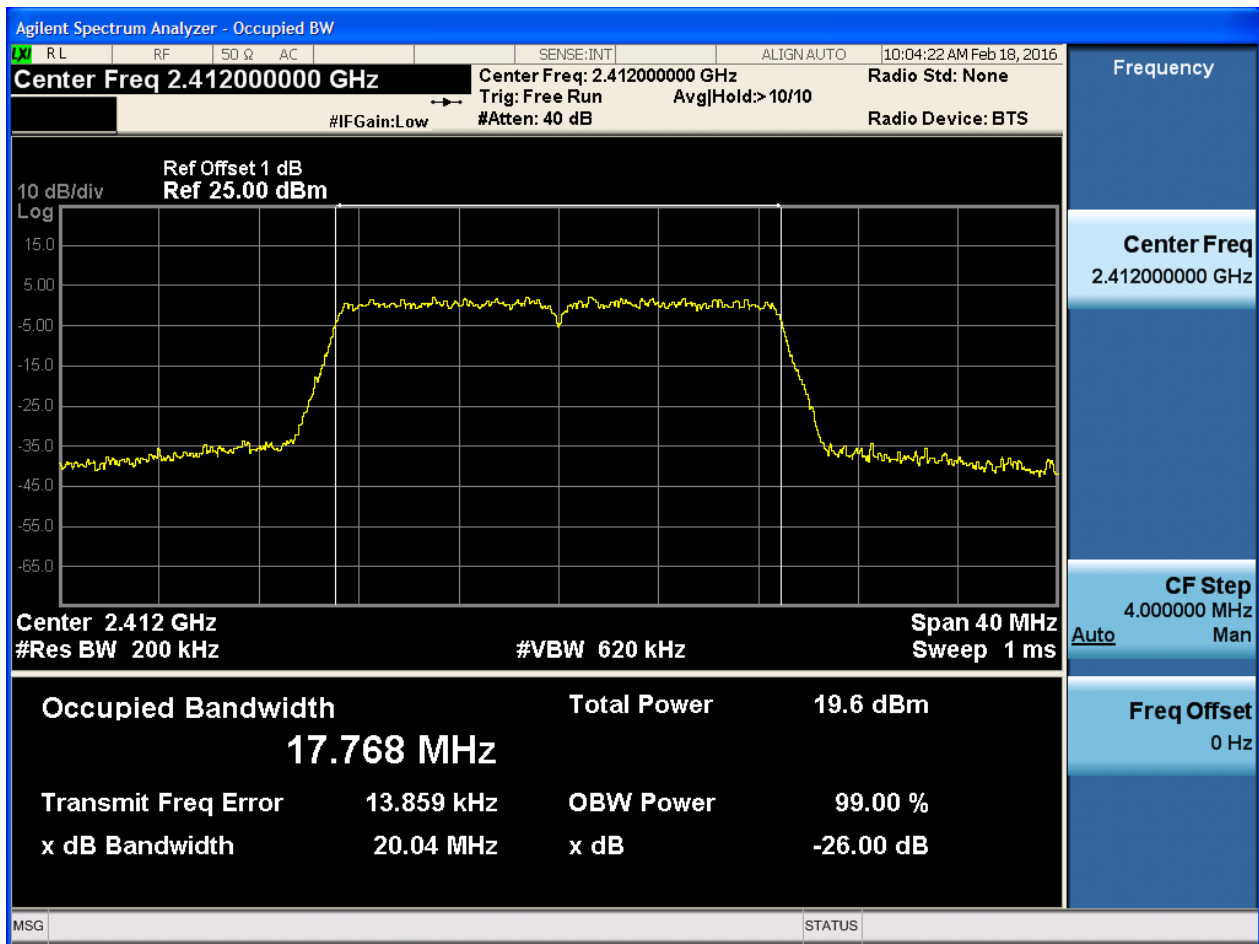


2.6 11G_H@Ant 1



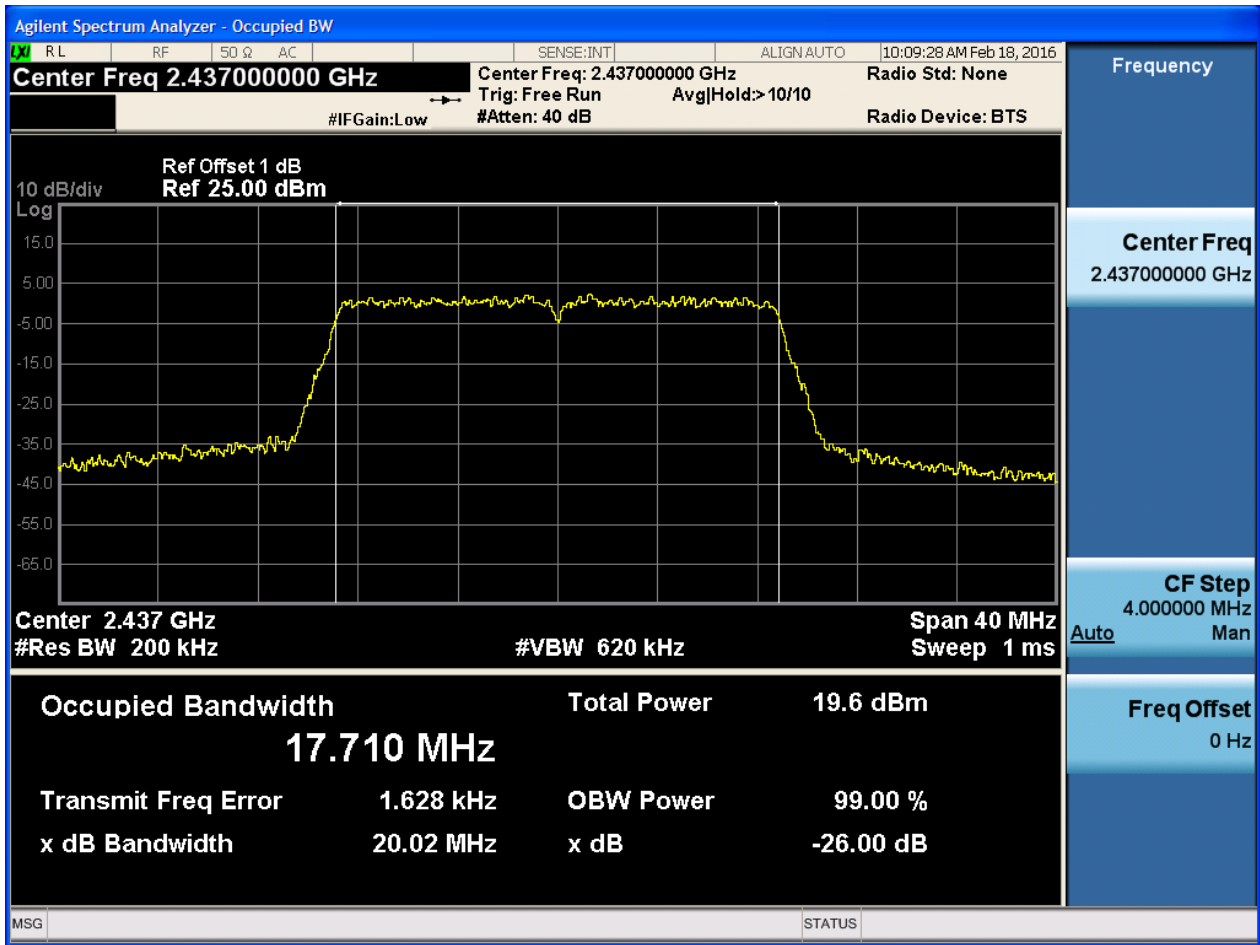


2.7 11N20_L@Ant 1



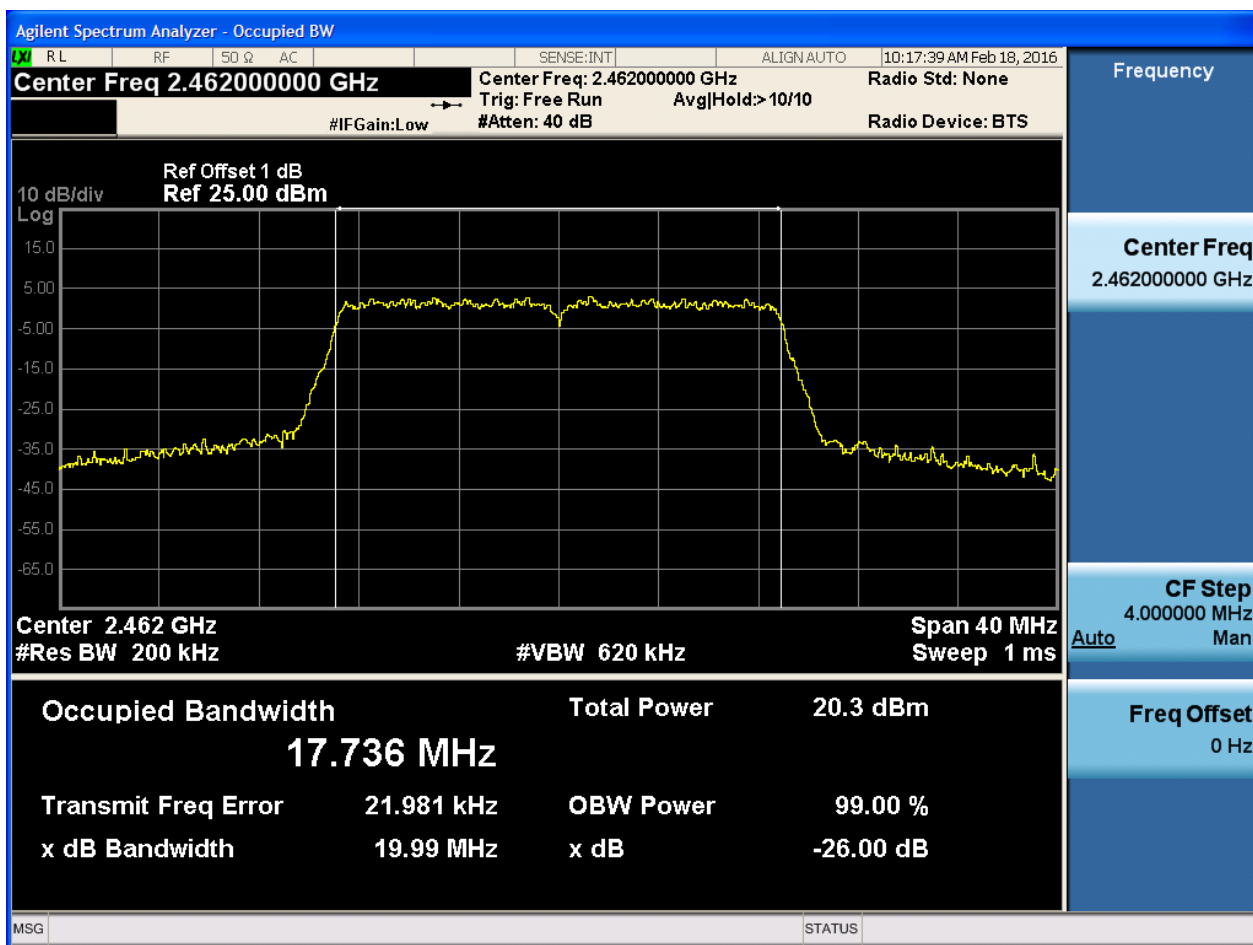


2.8 11N20_M@Ant 1



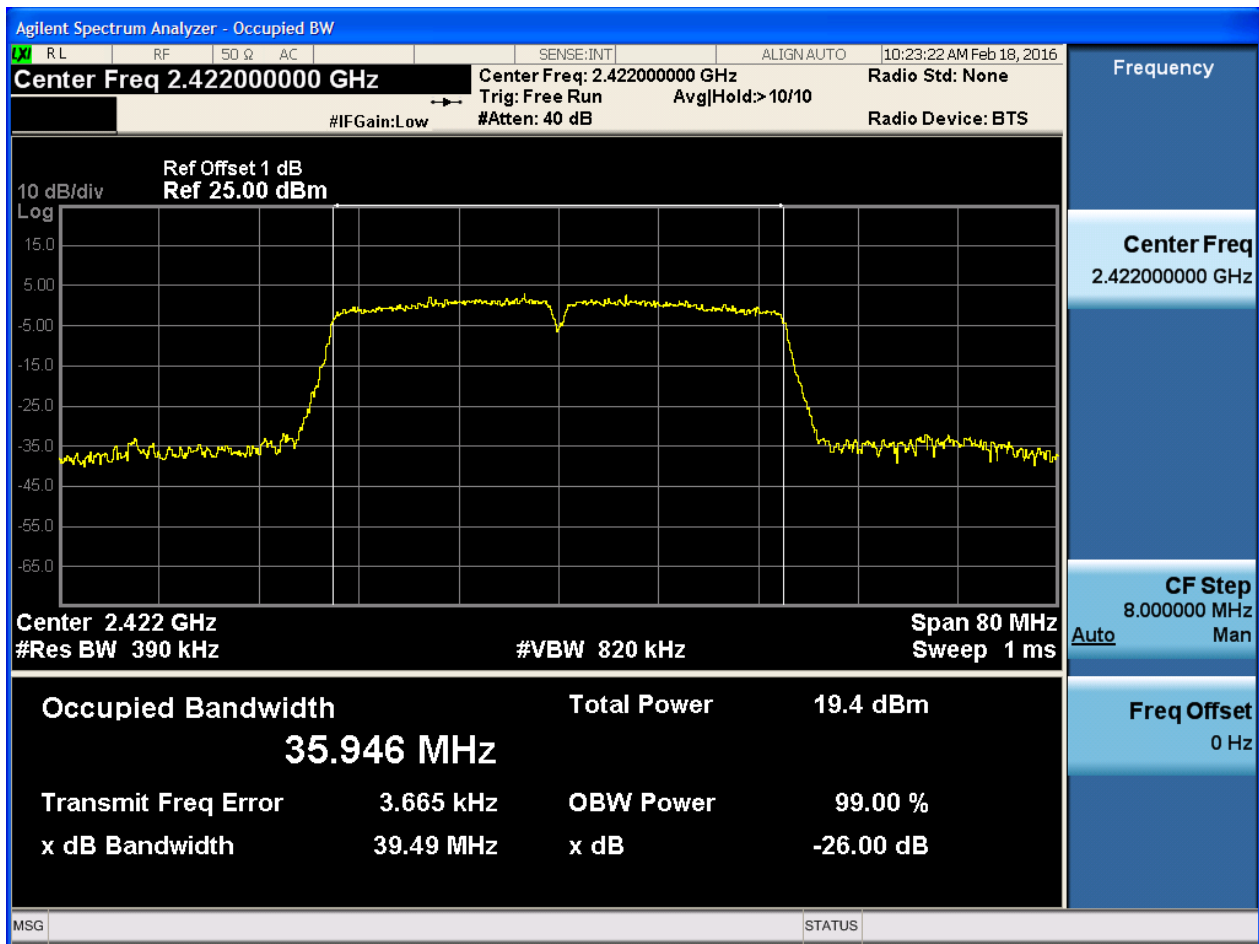


2.9 11N20_H@Ant 1



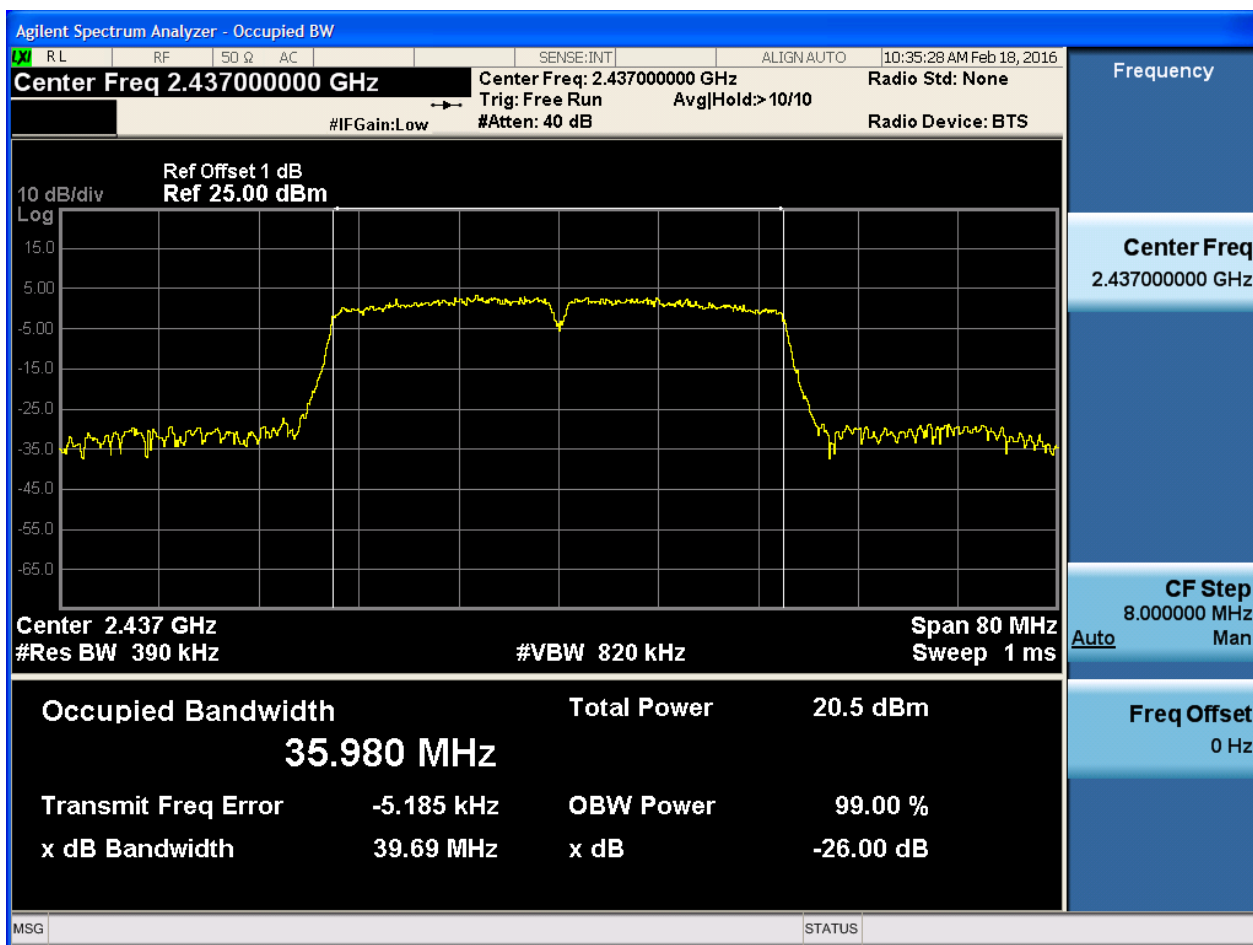


2.10 11N40_L@Ant 1



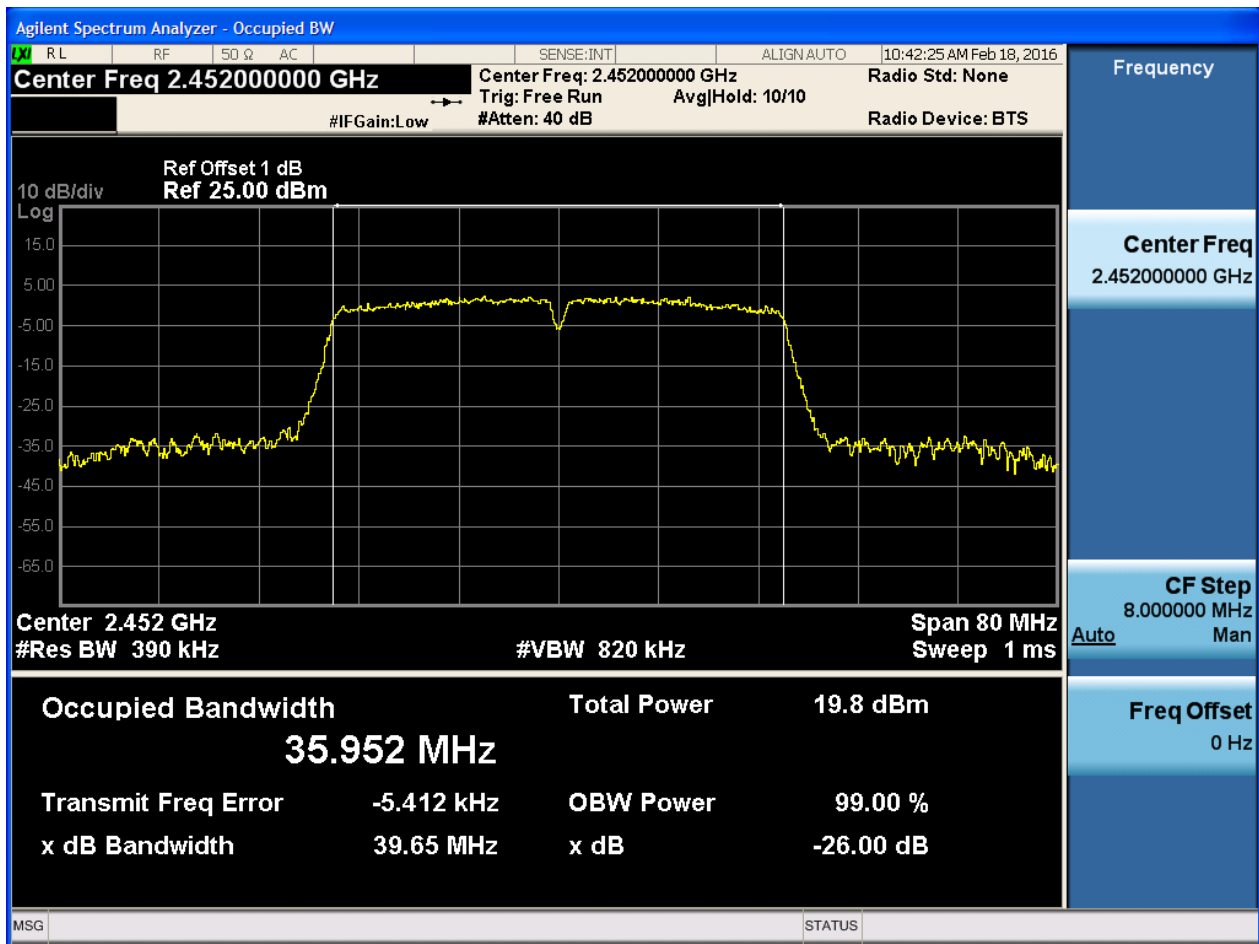


2.11 11N40_M@Ant 1





2.12 11N40_H@Ant 1



Appendix C: Duty cycle

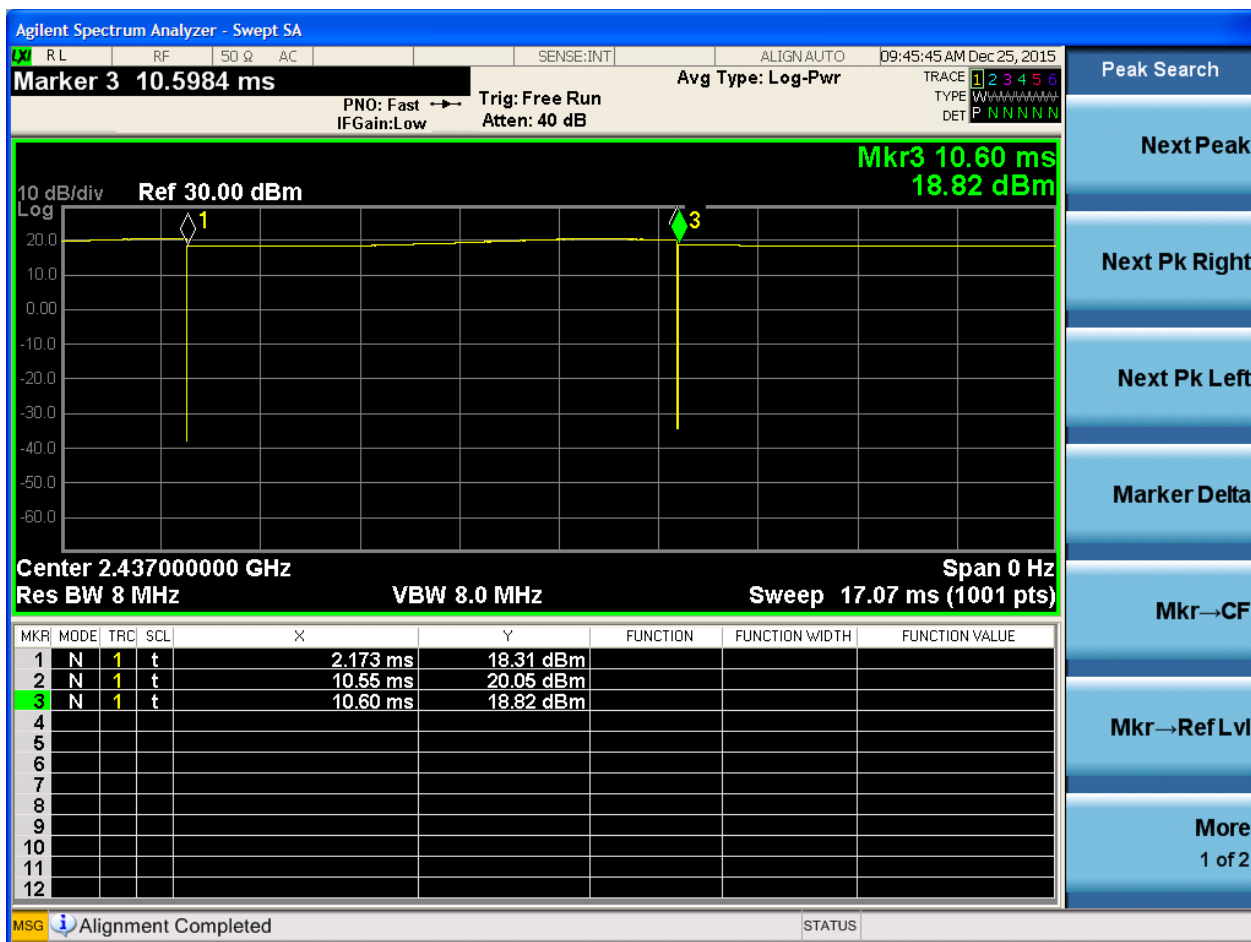
Part I - Test Results

Test Mode	TX Freq. [MHz]	Ant	Duty cycle [%]
11B	CH1,CH6,CH11	Ant 1	99.5
11G	CH1,CH6,CH11	Ant 1	98.5
11N20SISO	CH1,CH6,CH11	Ant 1	97.5
11N40SISO	CH3,CH6,CH9	Ant 1	96.7



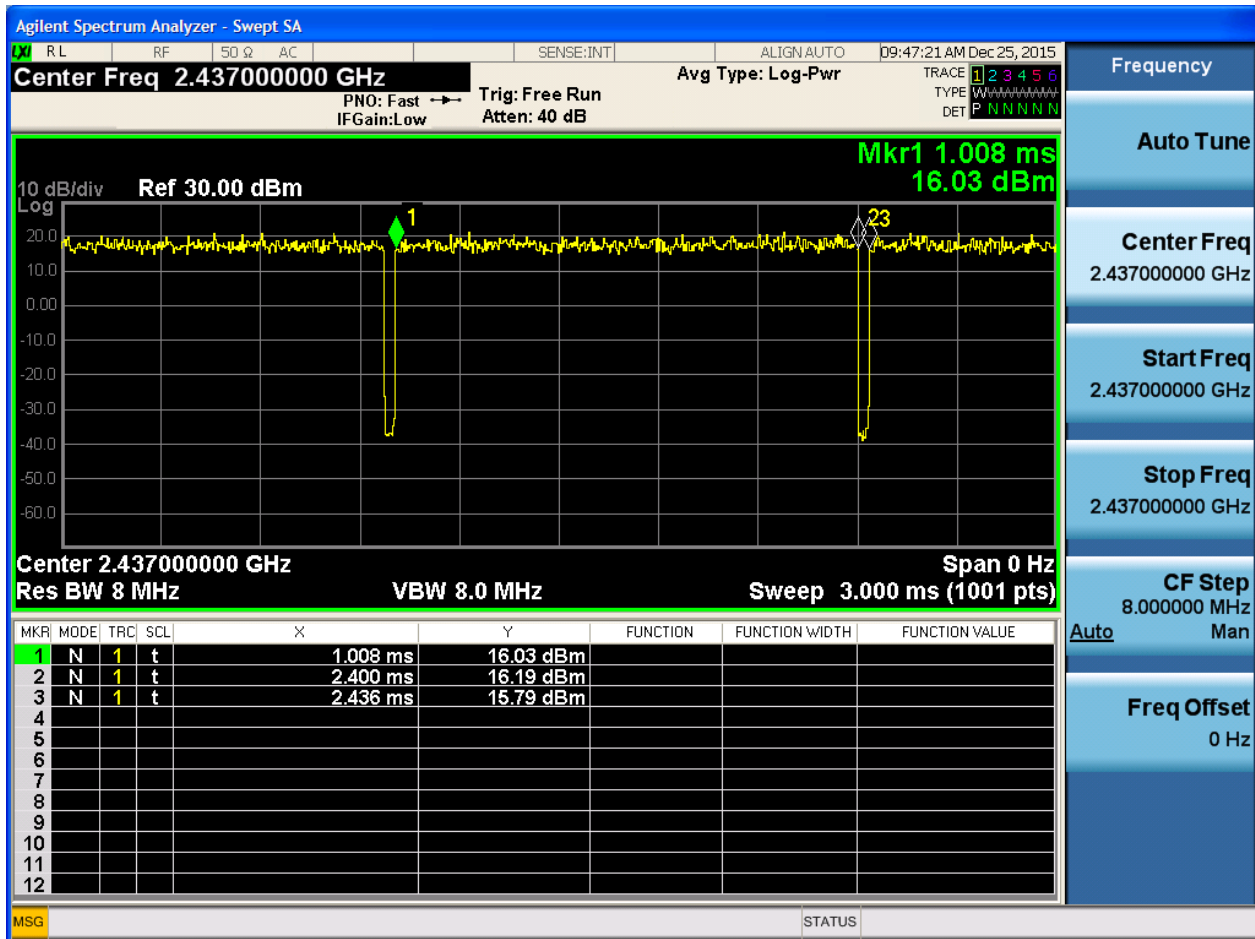
Part II - Test Plots

2.1 11B_M@Ant 1



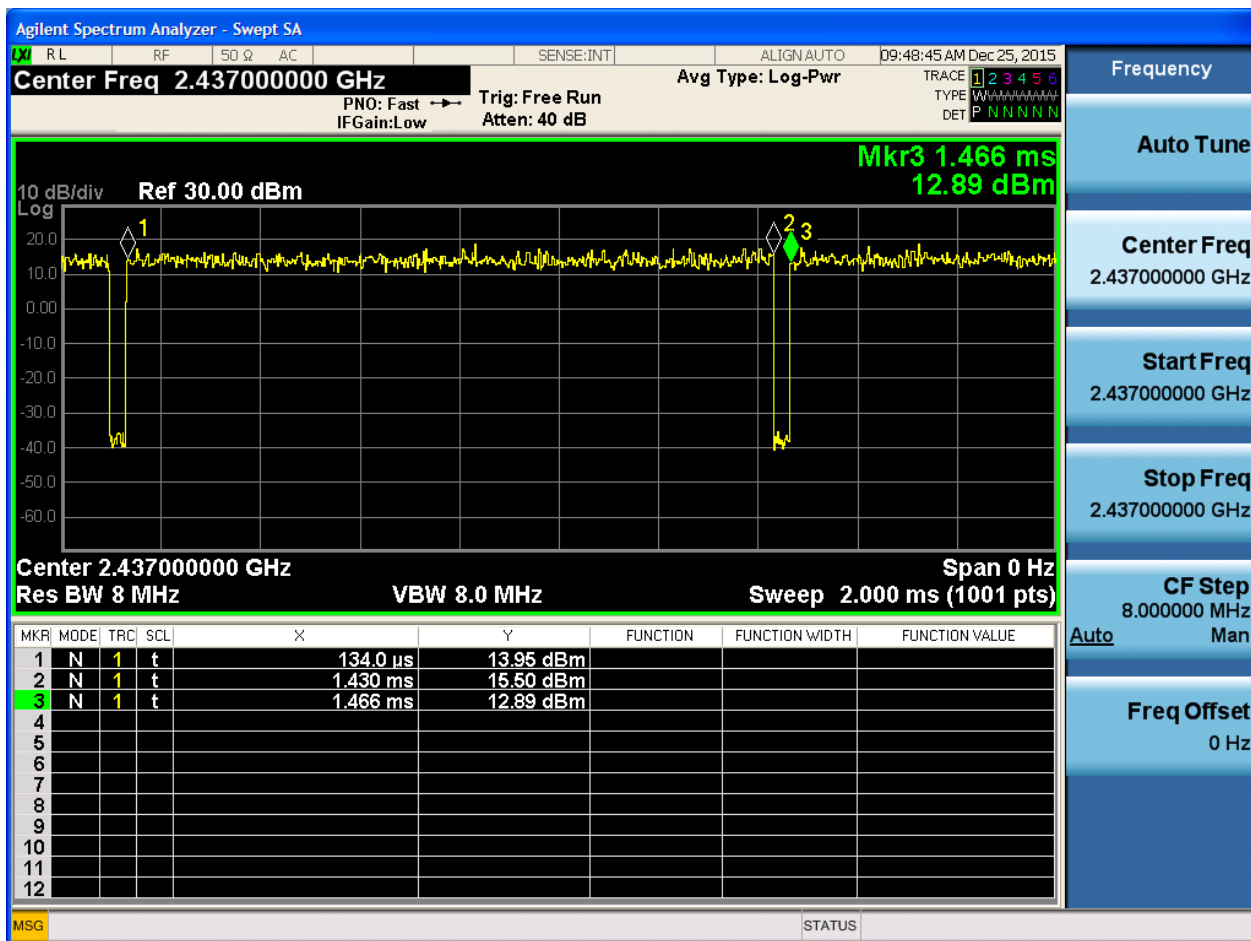


2.2 11G_M@Ant 1



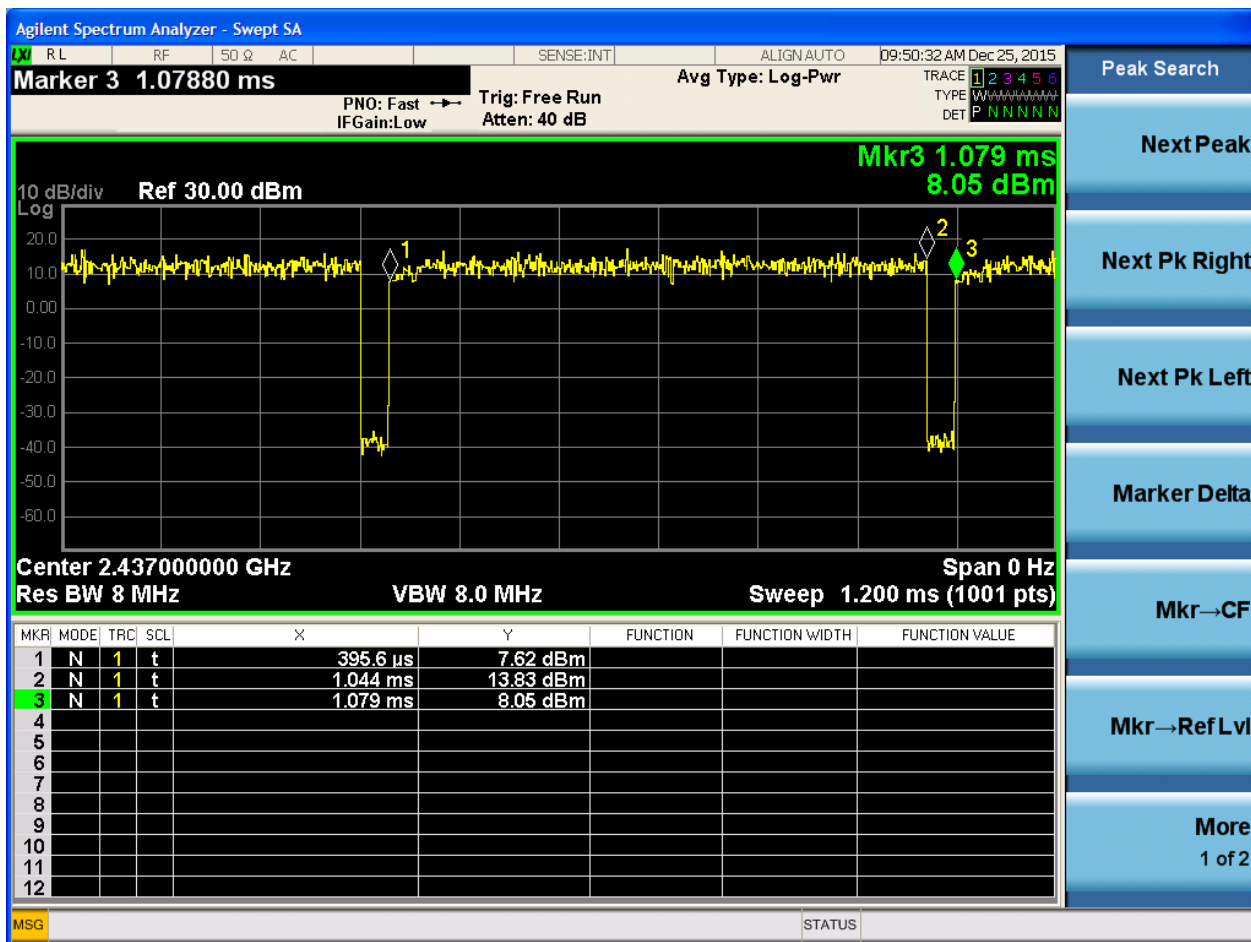


2.3 11N20SISO_M@Ant 1





2.4 1140SISO_M@Ant 1



Appendix D: Maximum Conducted Average Output Power

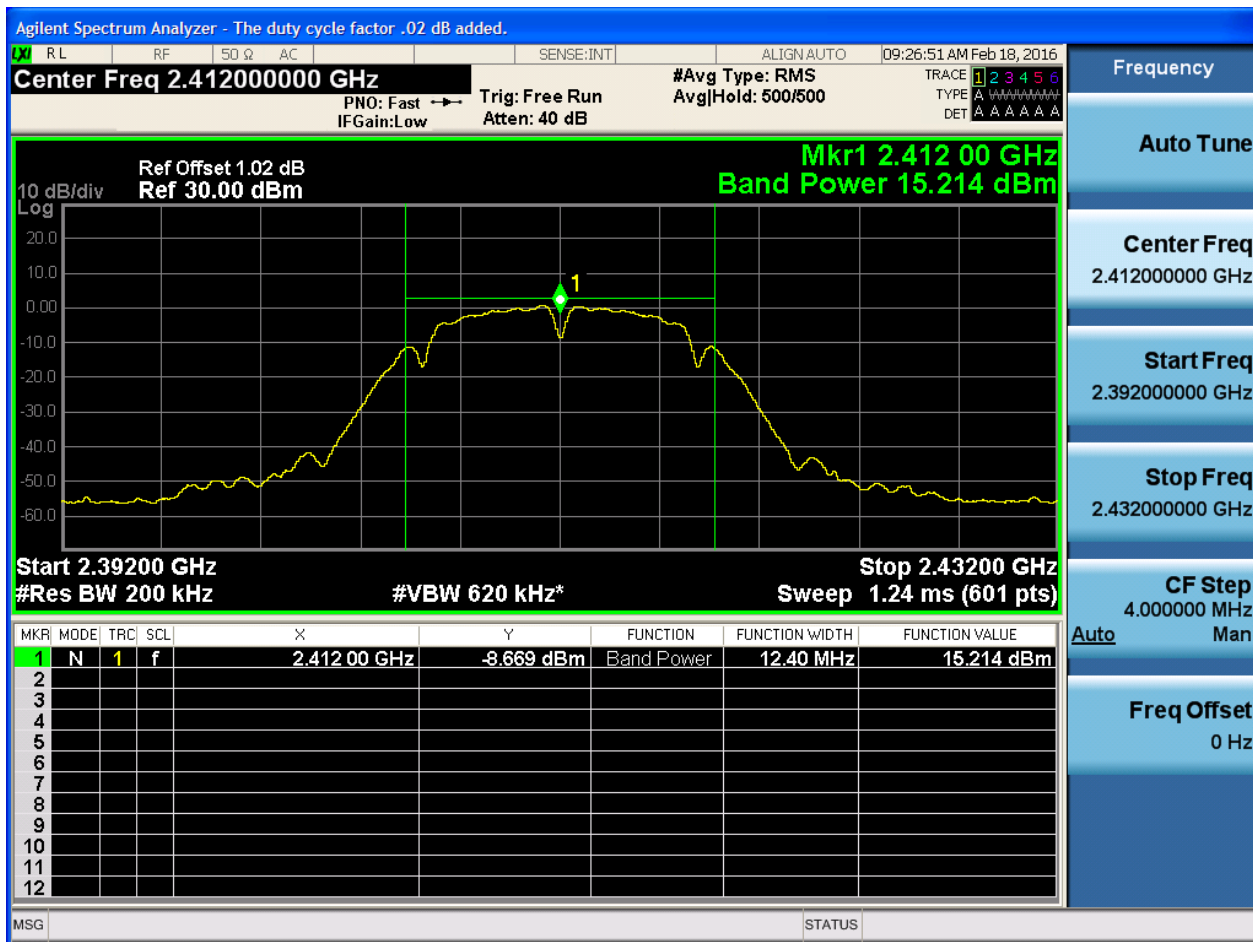
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Power[dBm]	Verdict
11B	L	2412	Ant 1	15.21	pass
11B	M	2437	Ant 1	15.68	pass
11B	H	2462	Ant 1	16.07	pass
11G	L	2412	Ant 1	13.93	pass
11G	M	2437	Ant 1	14.71	pass
11G	H	2462	Ant 1	15.14	pass
11N20	L	2412	Ant 1	12.29	pass
11N20	M	2437	Ant 1	12.26	pass
11N20	H	2462	Ant 1	13.11	pass
11N40	L	2422	Ant 1	12.12	pass
11N40	M	2437	Ant 1	13.17	pass
11N40	H	2452	Ant 1	12.34	pass



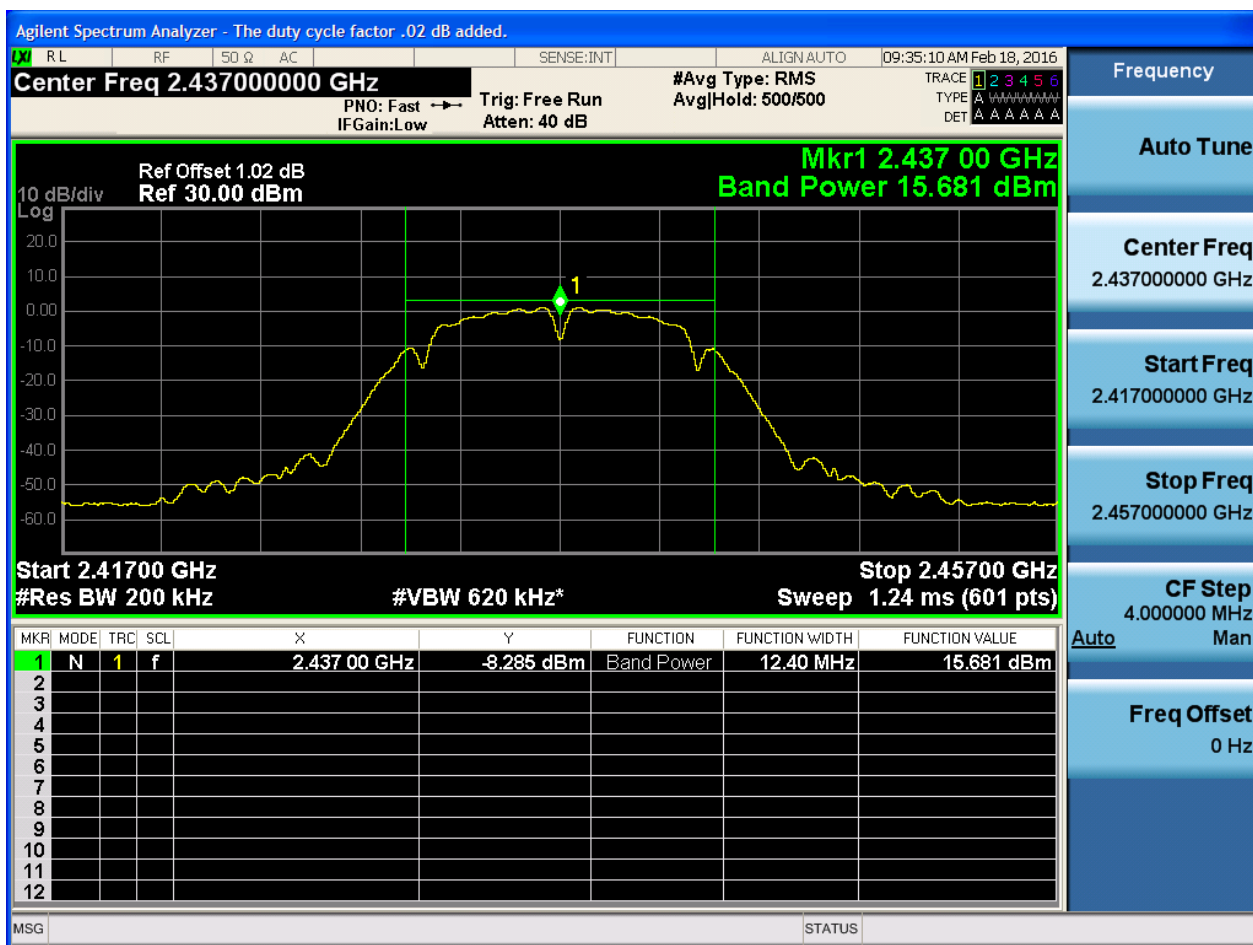
Part II - Test Plots

2.1 11B_L@Ant 1



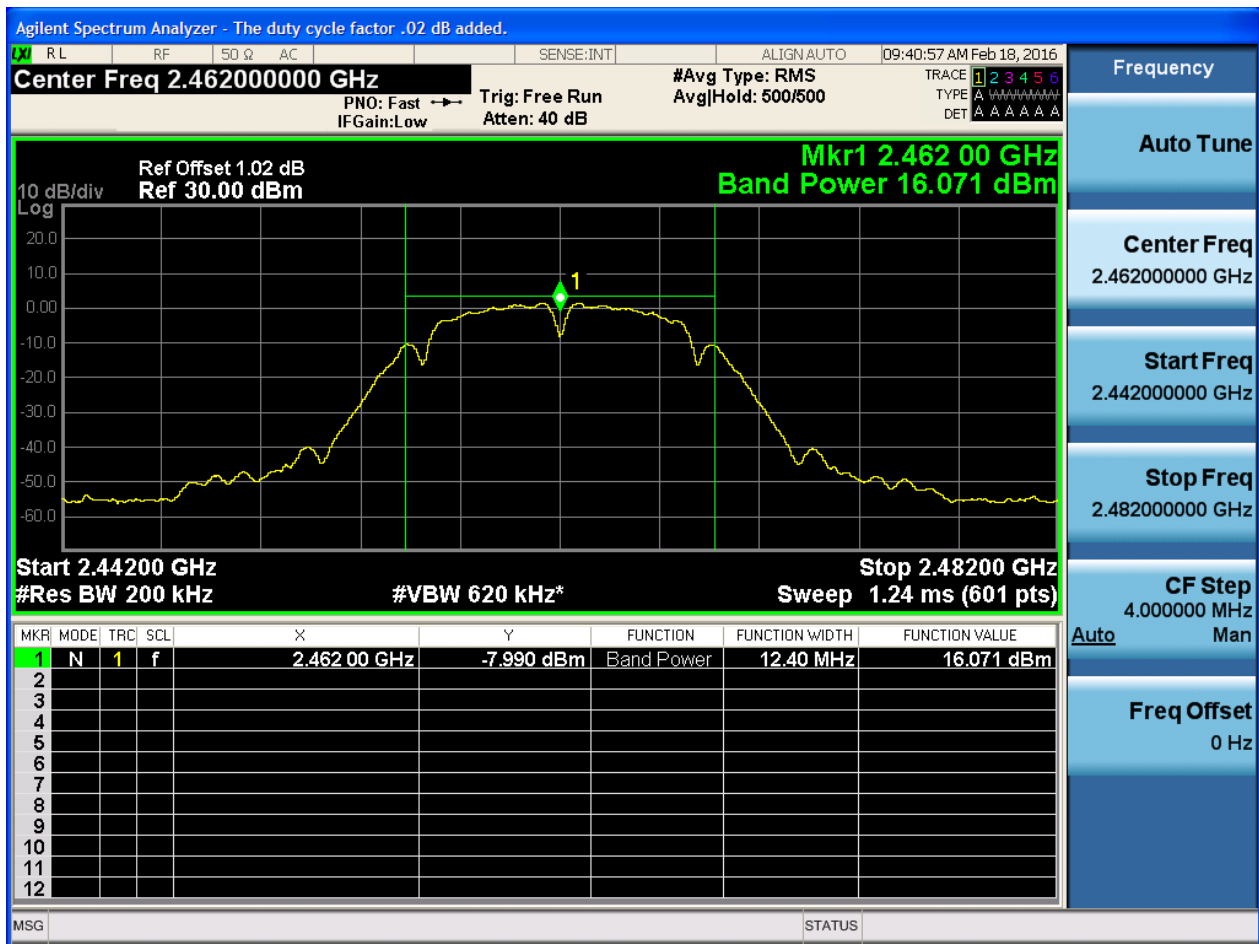


2.2 11B_M@Ant 1



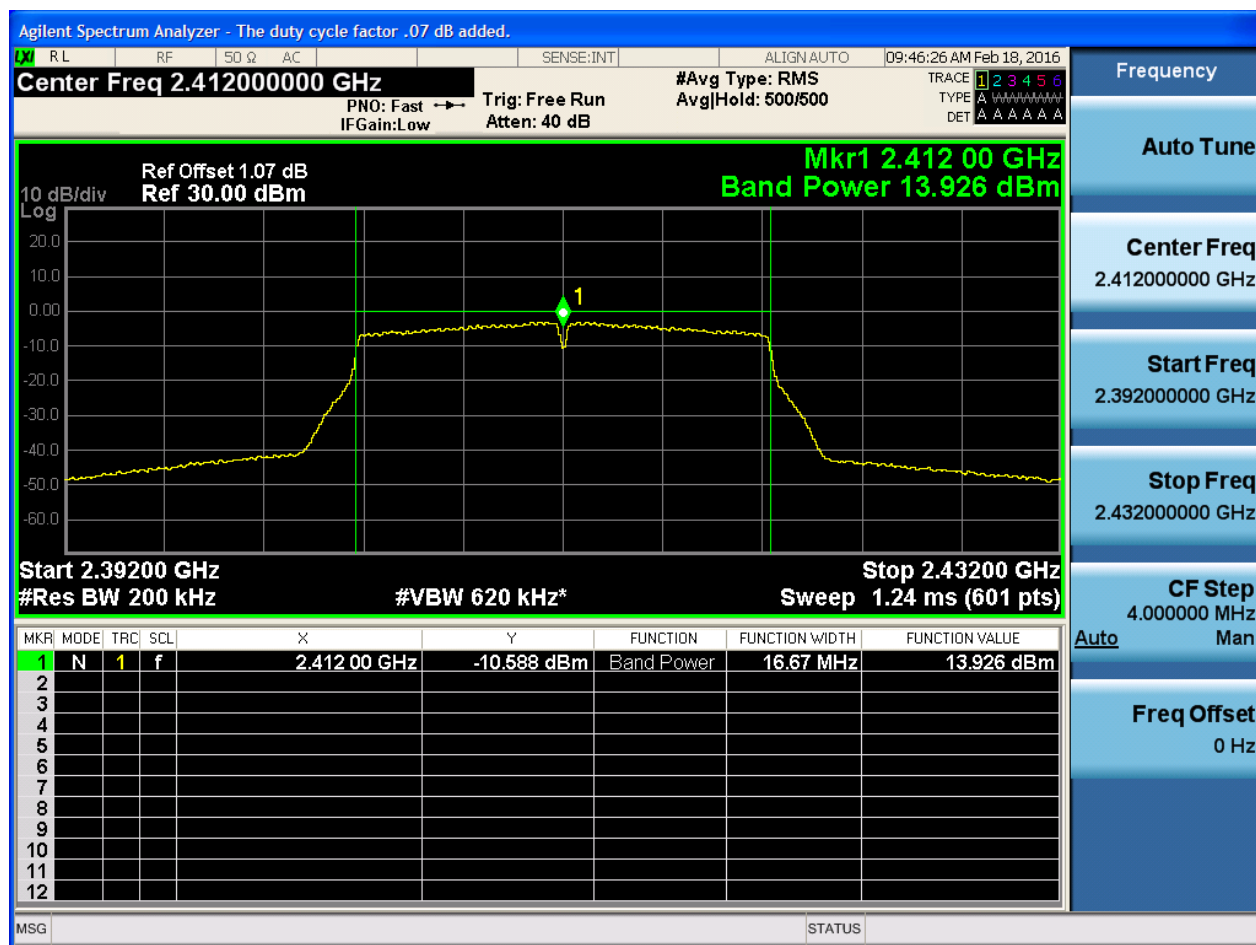


2.3 11B_H@Ant 1



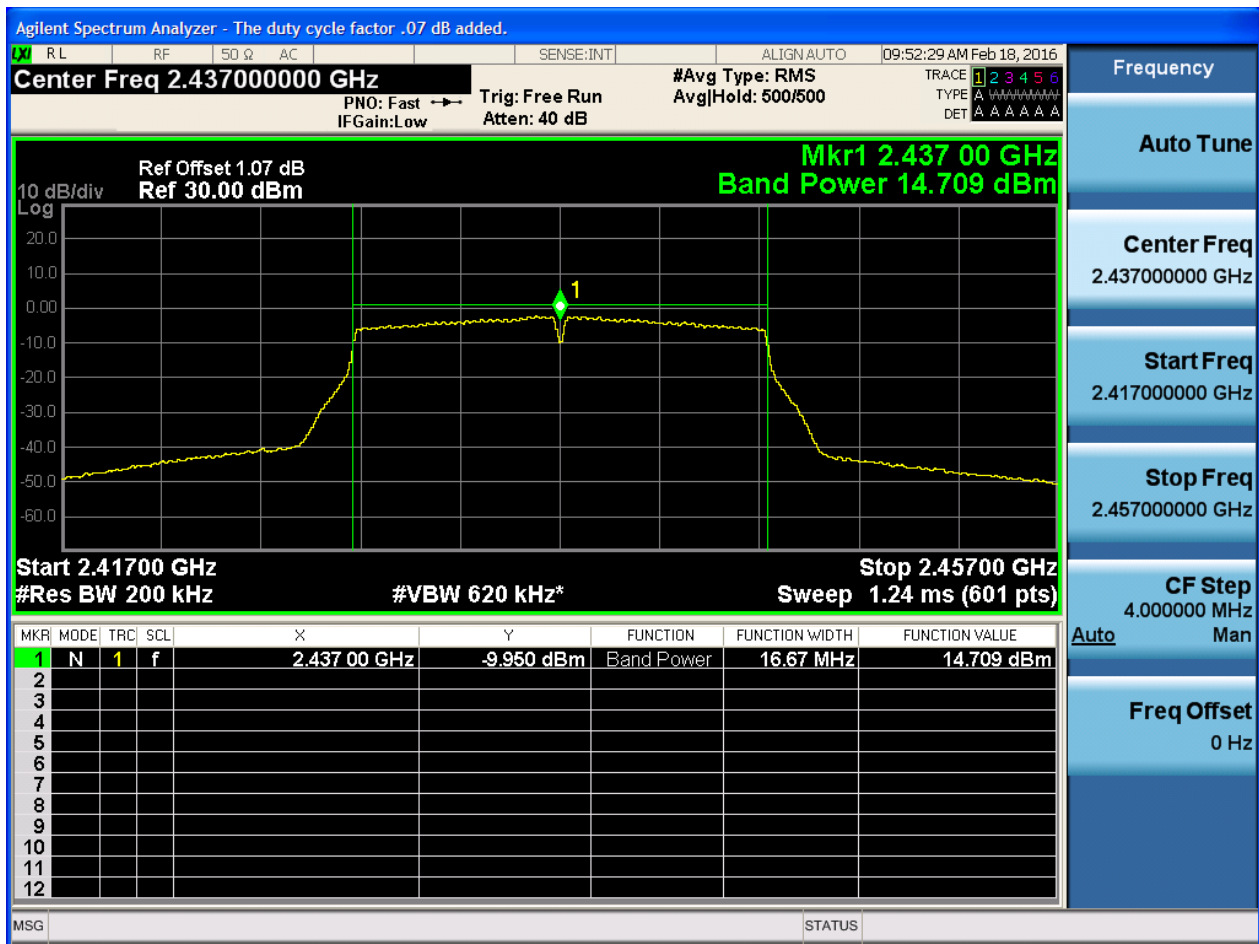


2.4 11G_L@Ant 1



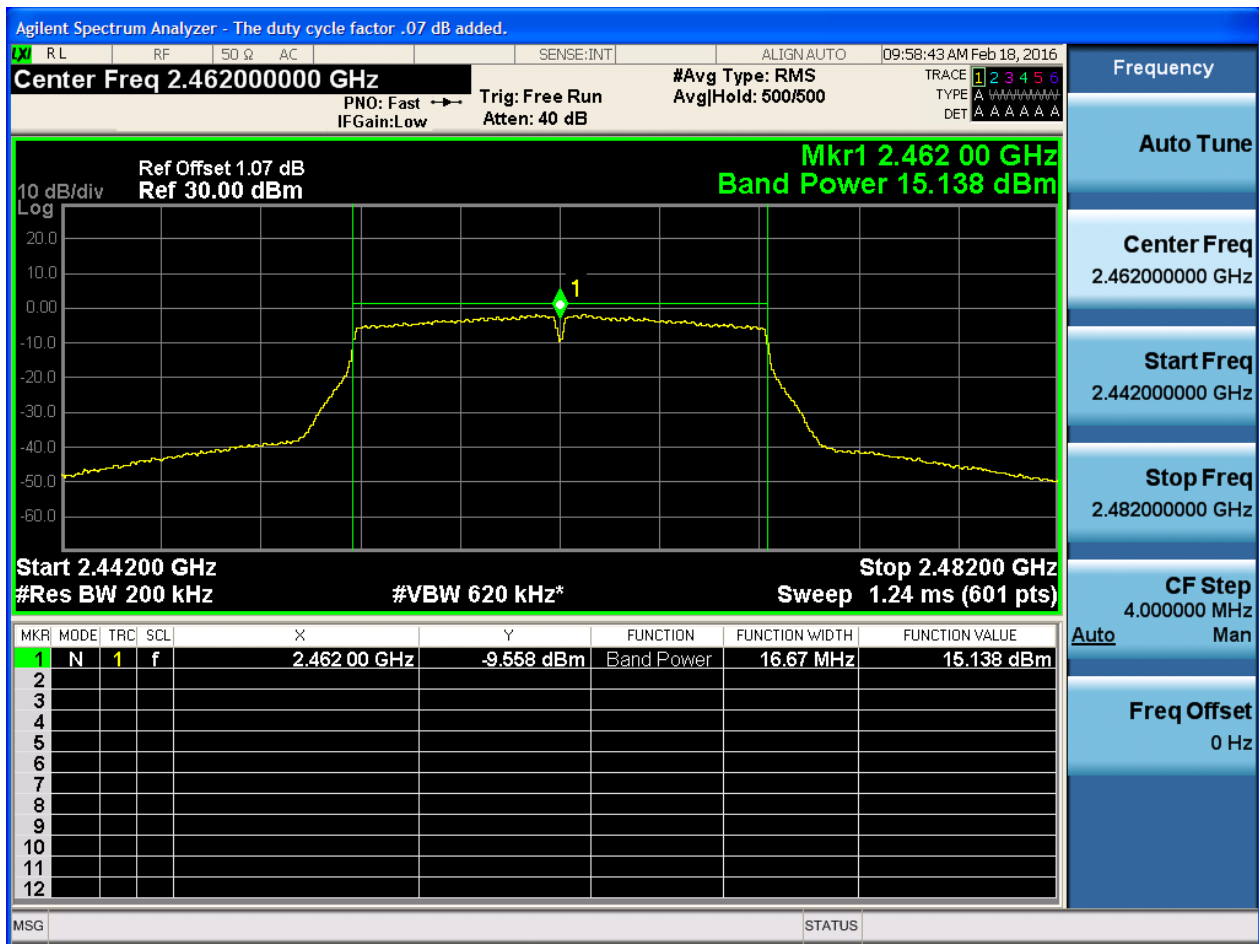


2.5 11G_M@Ant 1



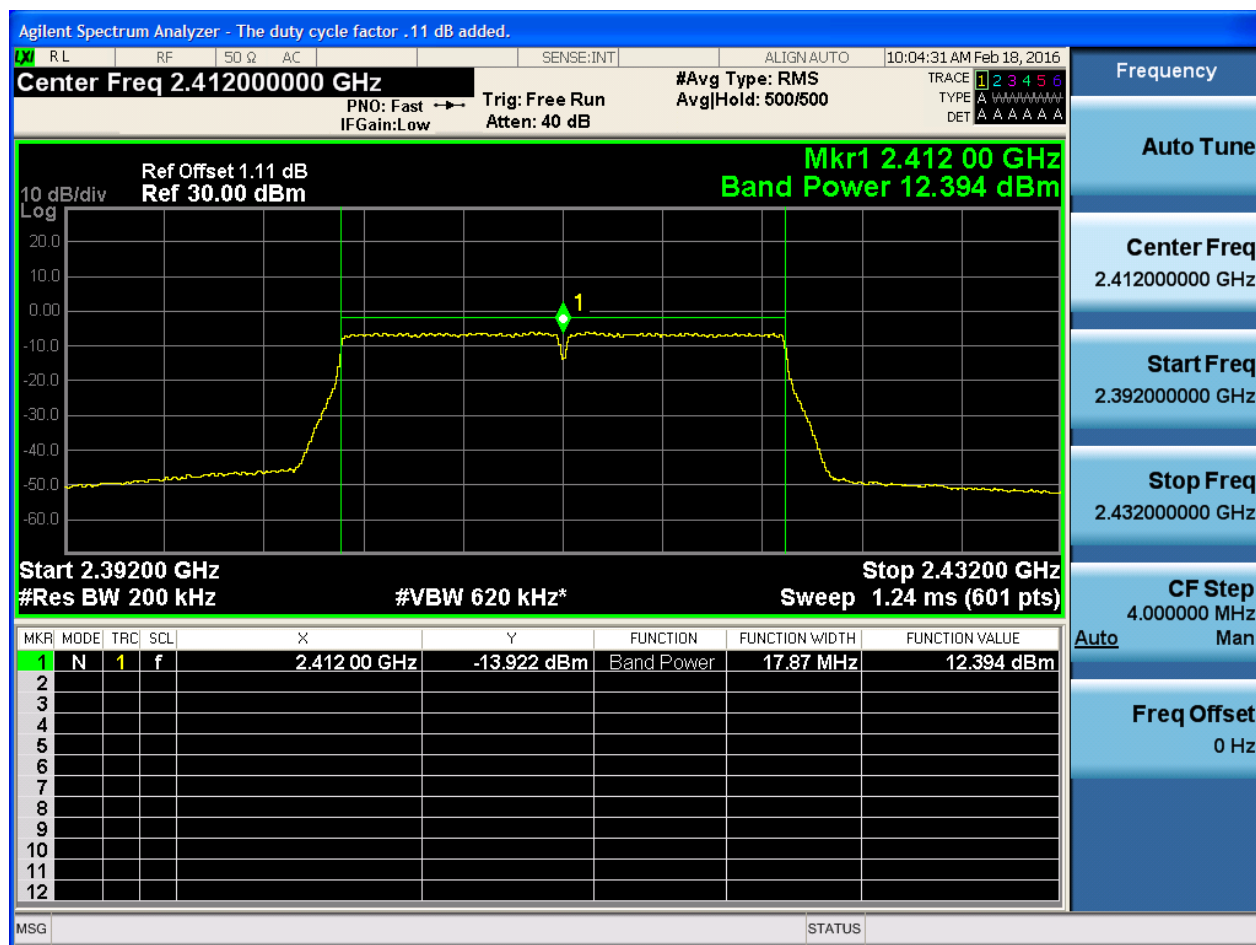


2.6 11G_H@Ant 1



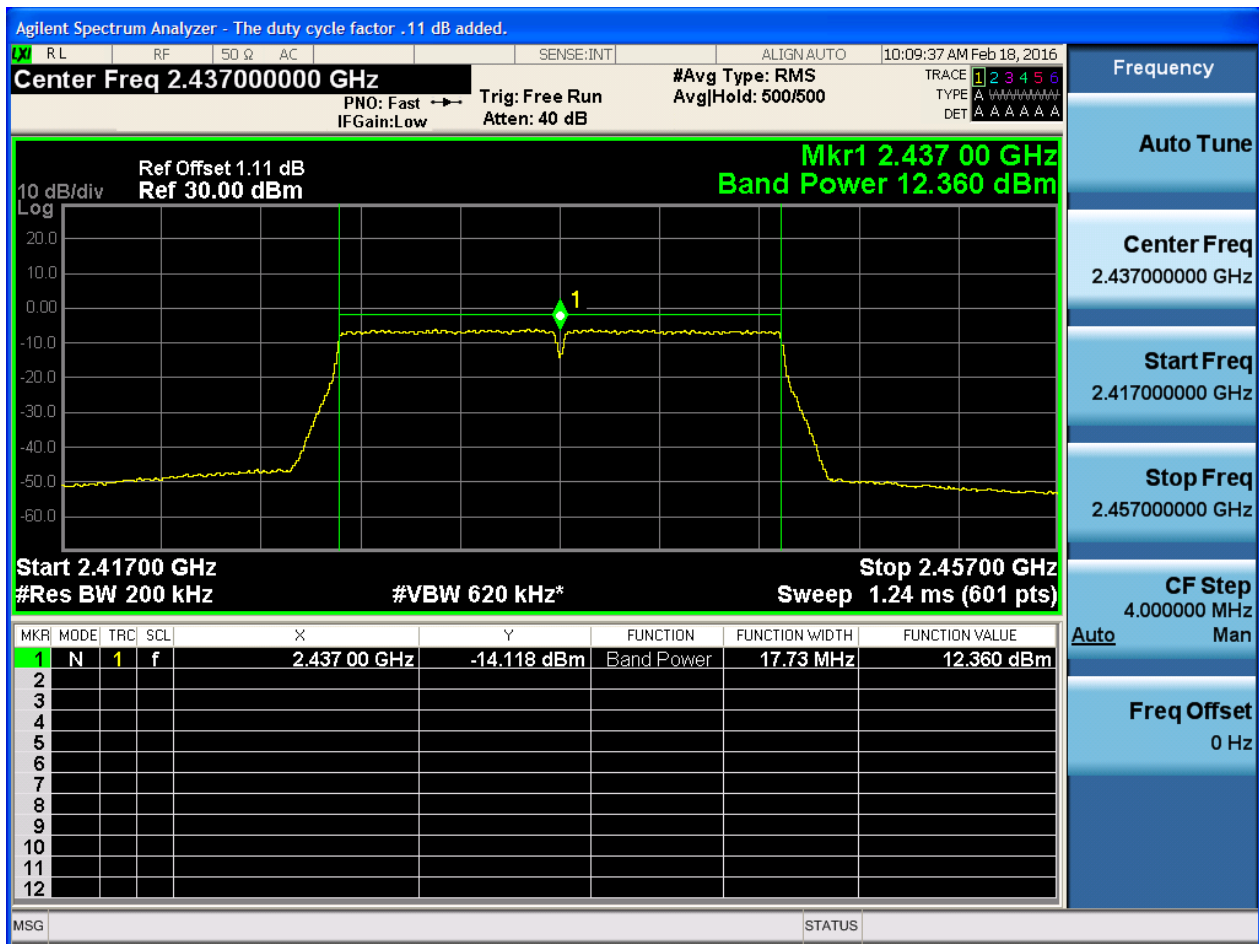


2.7 11N20_L@Ant 1



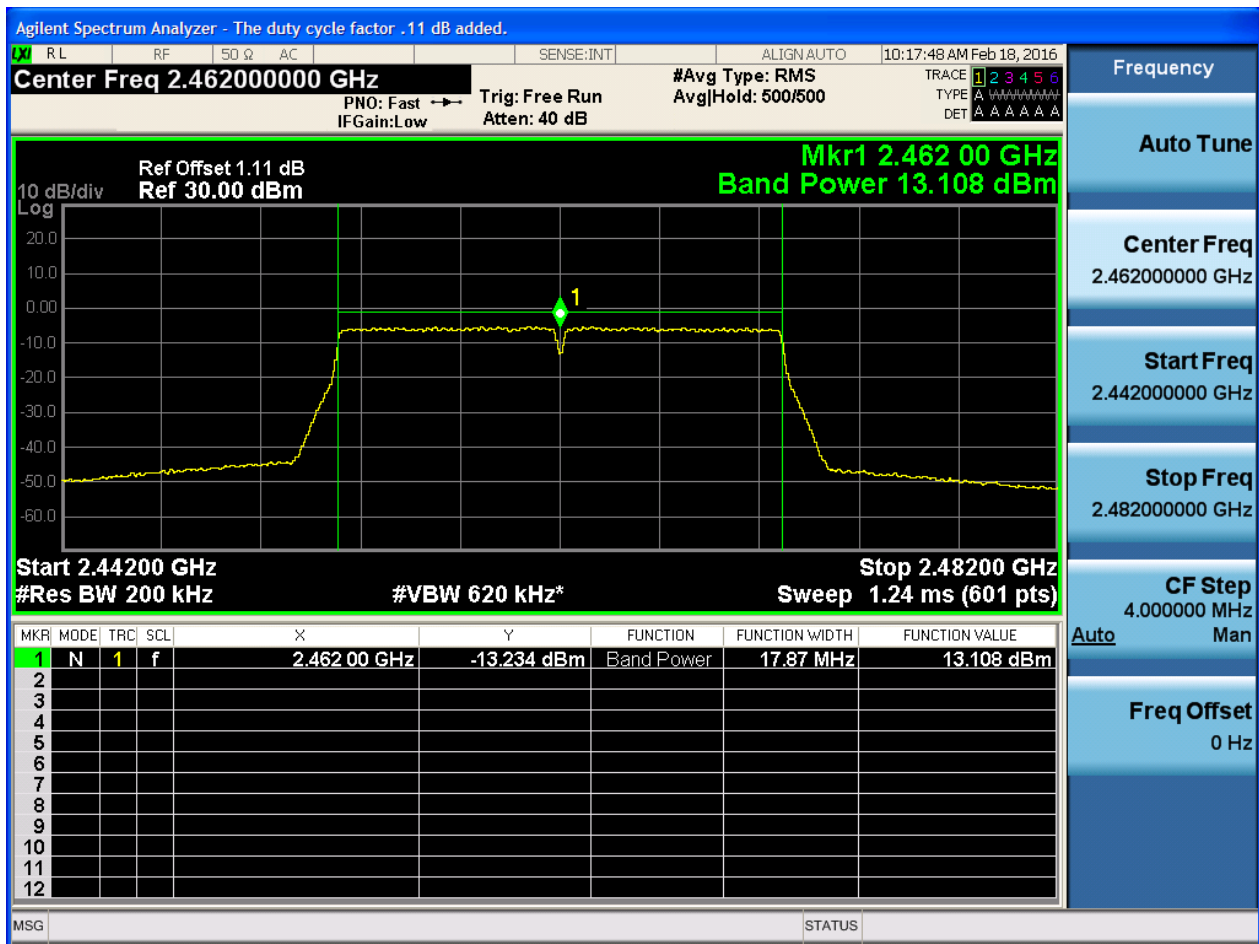


2.8 11N20_M@Ant 1



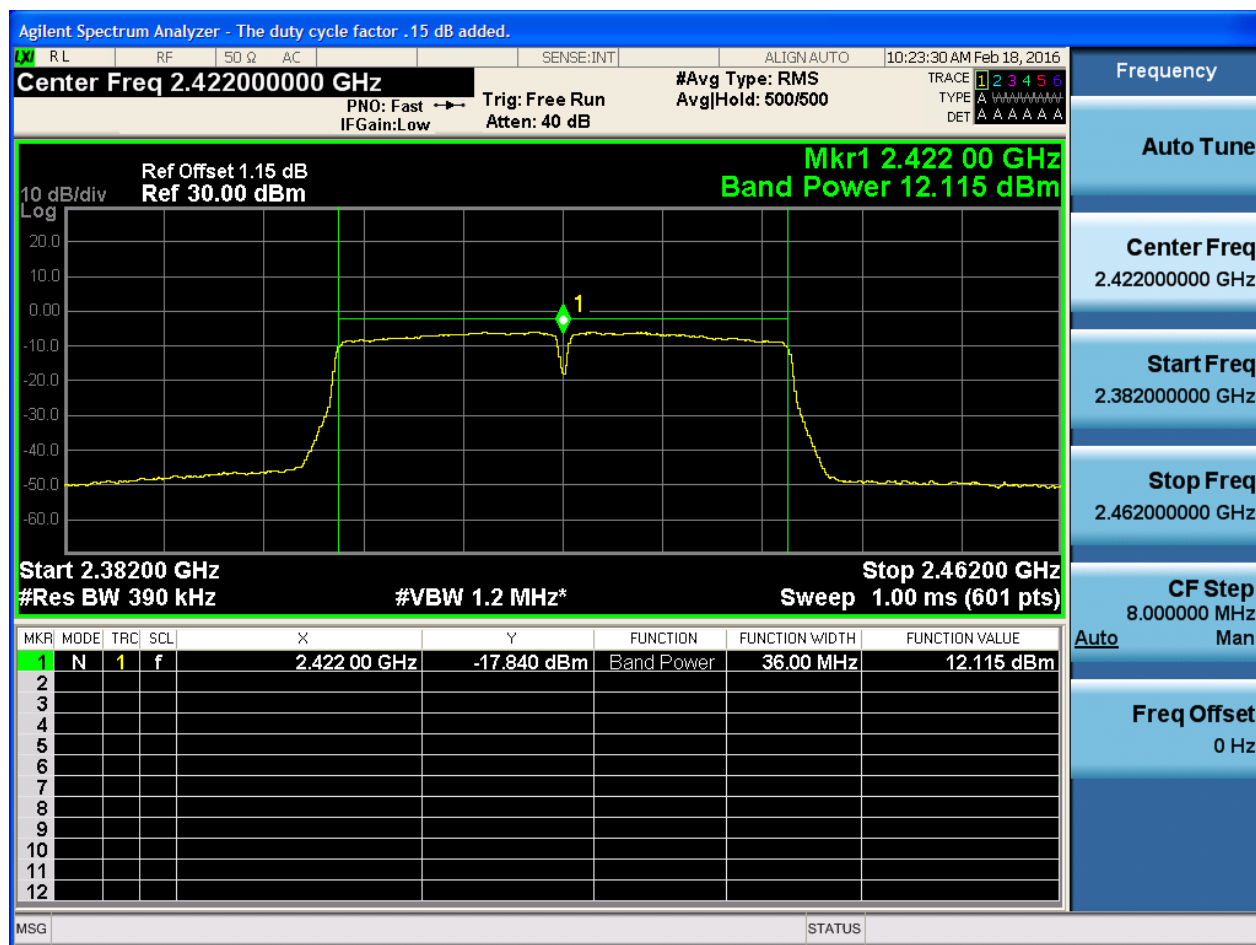


2.9 11N20_H@Ant 1



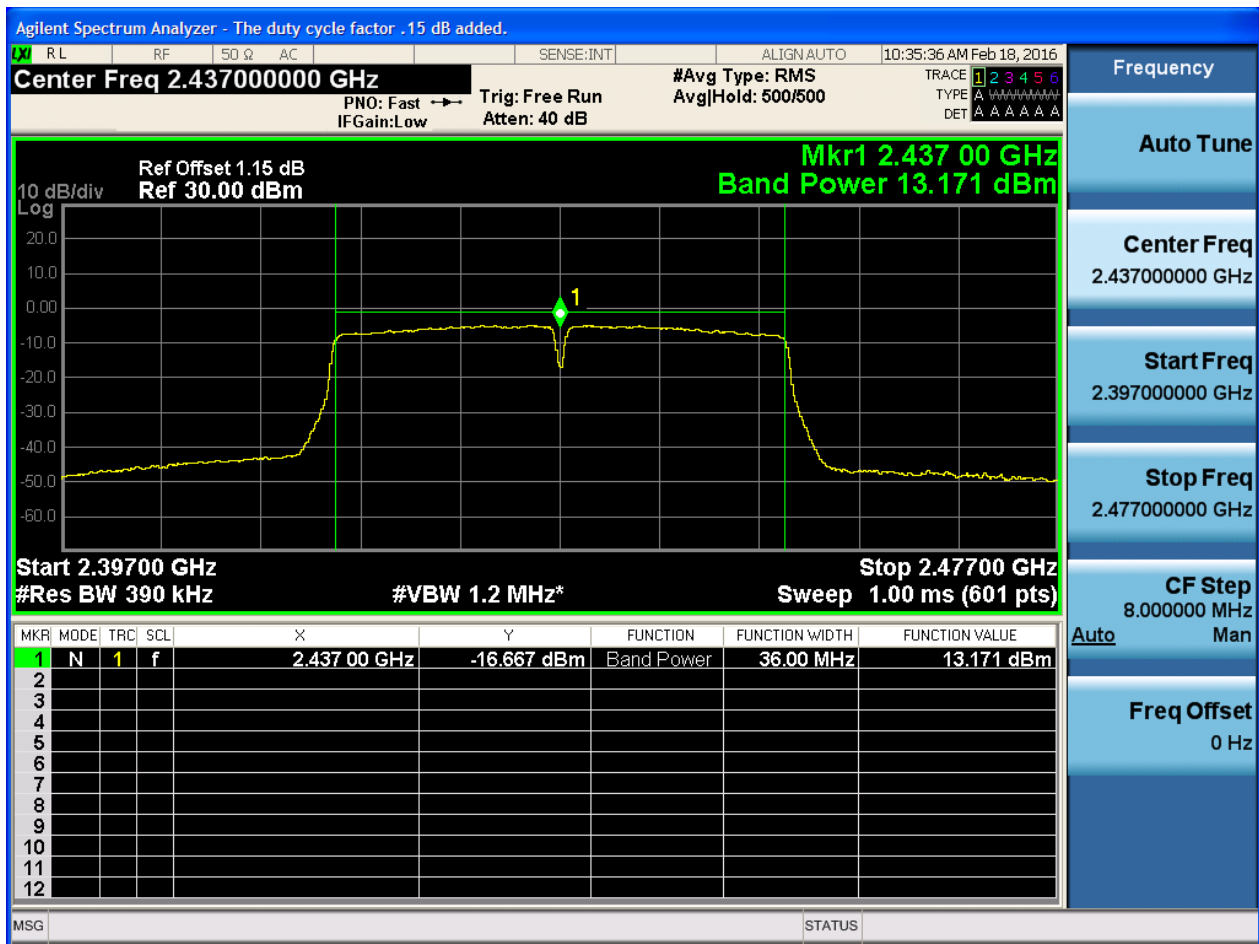


2.10 11N40_L@Ant 1



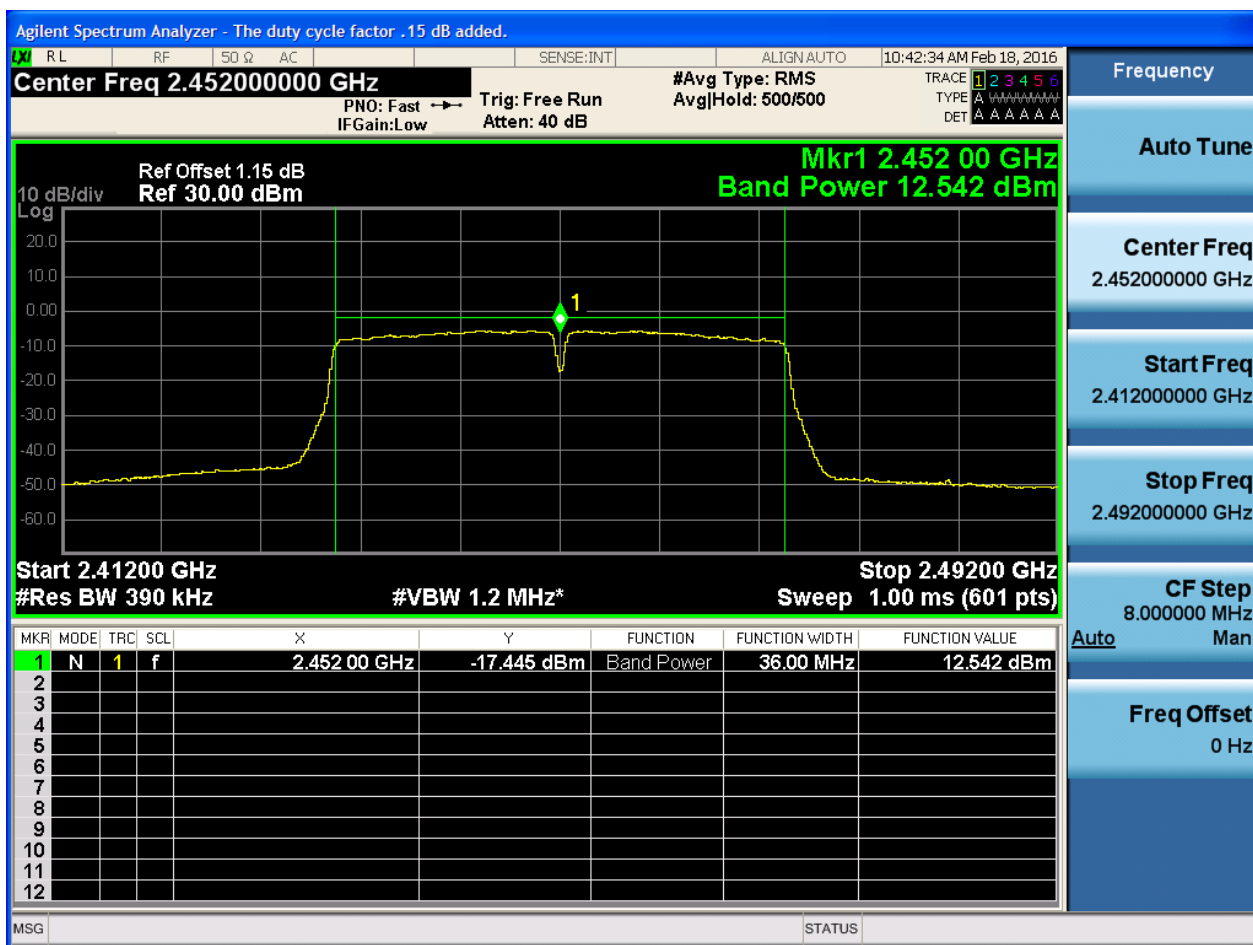


2.11 11N40_M@Ant 1





2.12 11N40_H@Ant 1



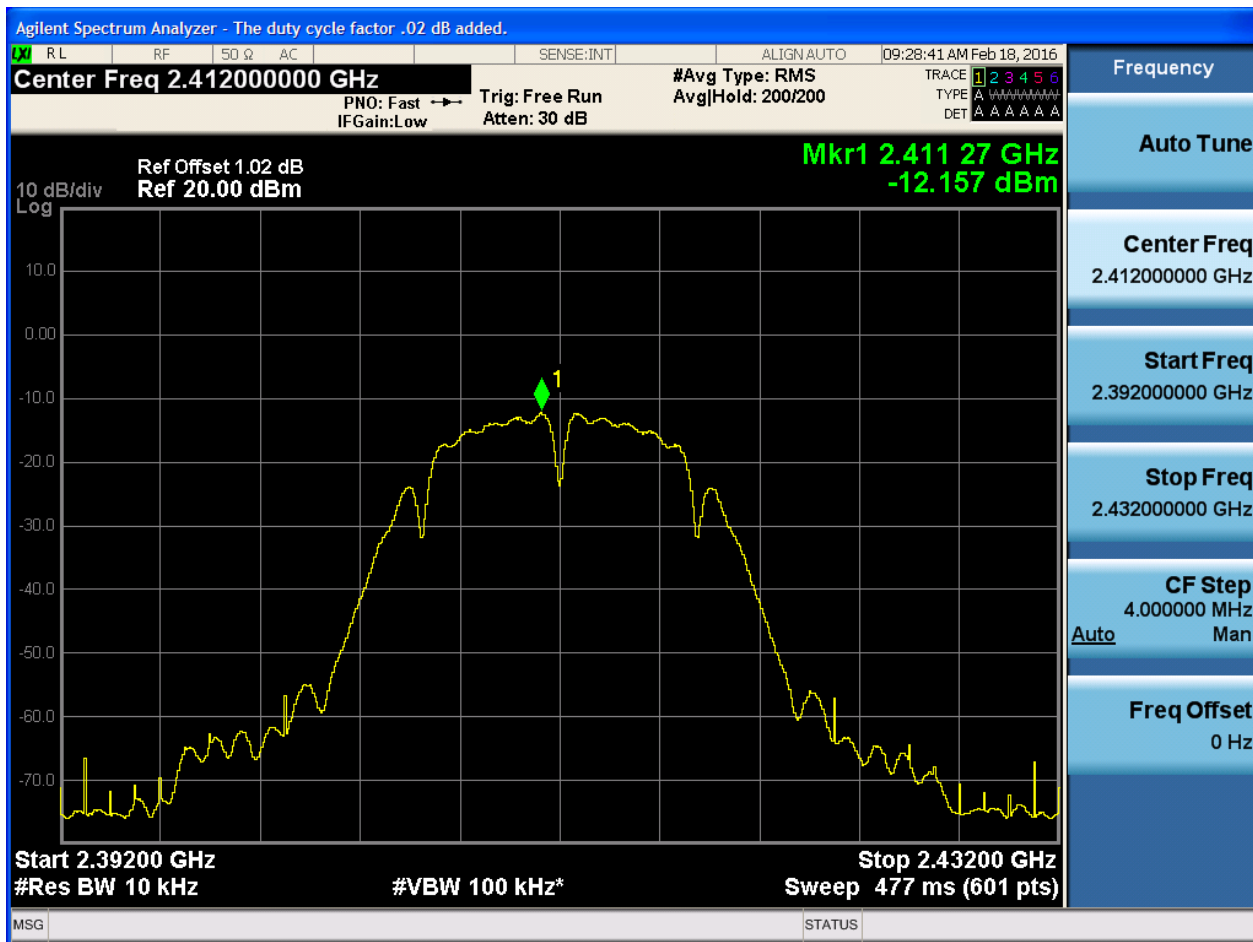
Appendix E: Maximum Power Spectral Density Level

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	PD[MHz]	Verdict
11B	L	2412	Ant 1	-12.16	pass
11B	M	2437	Ant 1	-11.81	pass
11B	H	2462	Ant 1	-11.33	pass
11G	L	2412	Ant 1	-14.92	pass
11G	M	2437	Ant 1	-14.09	pass
11G	H	2462	Ant 1	-13.77	pass
11N20	L	2412	Ant 1	-17.76	pass
11N20	M	2437	Ant 1	-17.80	pass
11N20	H	2462	Ant 1	-16.99	pass
11N40	L	2422	Ant 1	-20.36	pass
11N40	M	2437	Ant 1	-19.62	pass
11N40	H	2452	Ant 1	-20.21	pass

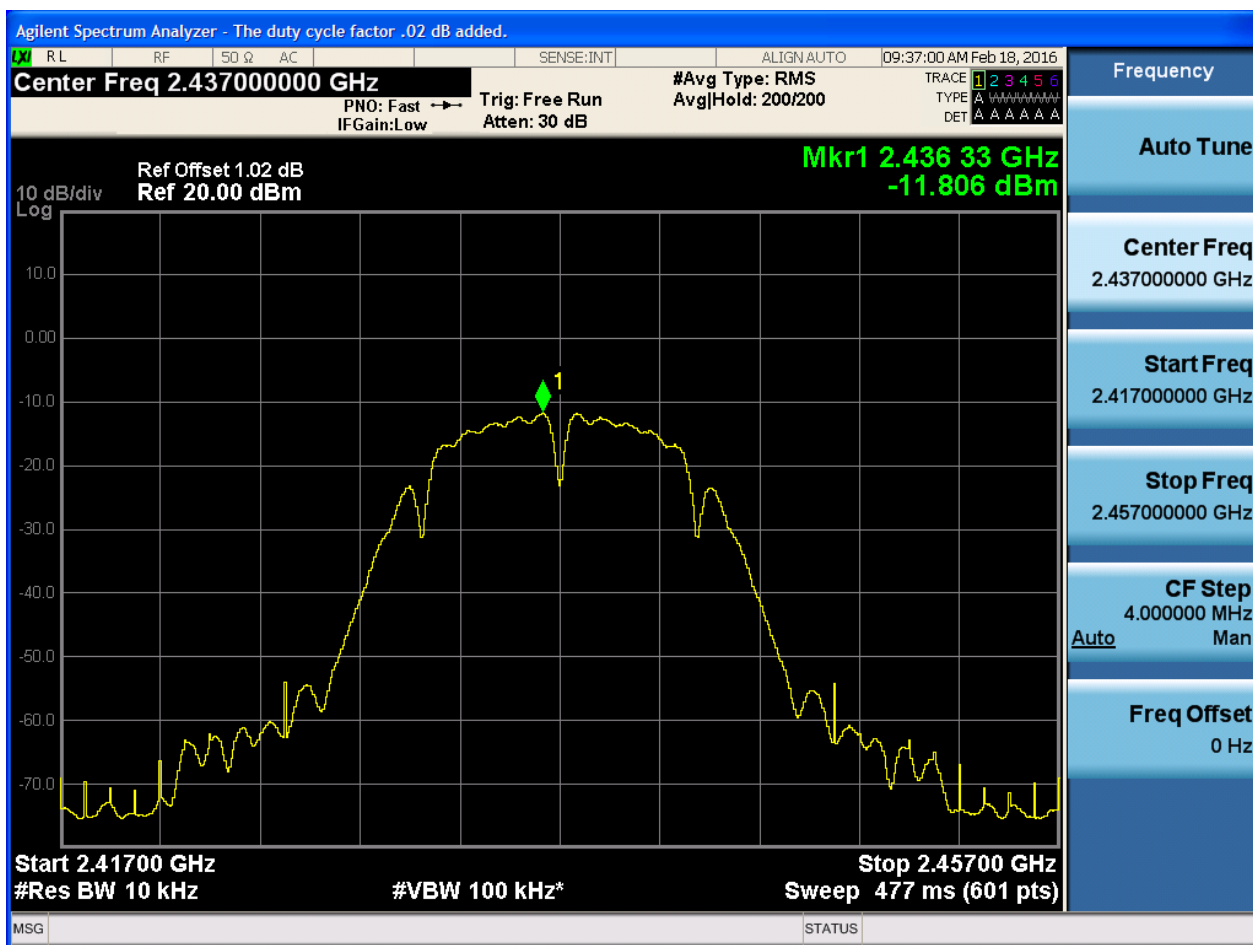
Part II - Test Plots

2.1 11B_L@Ant 1



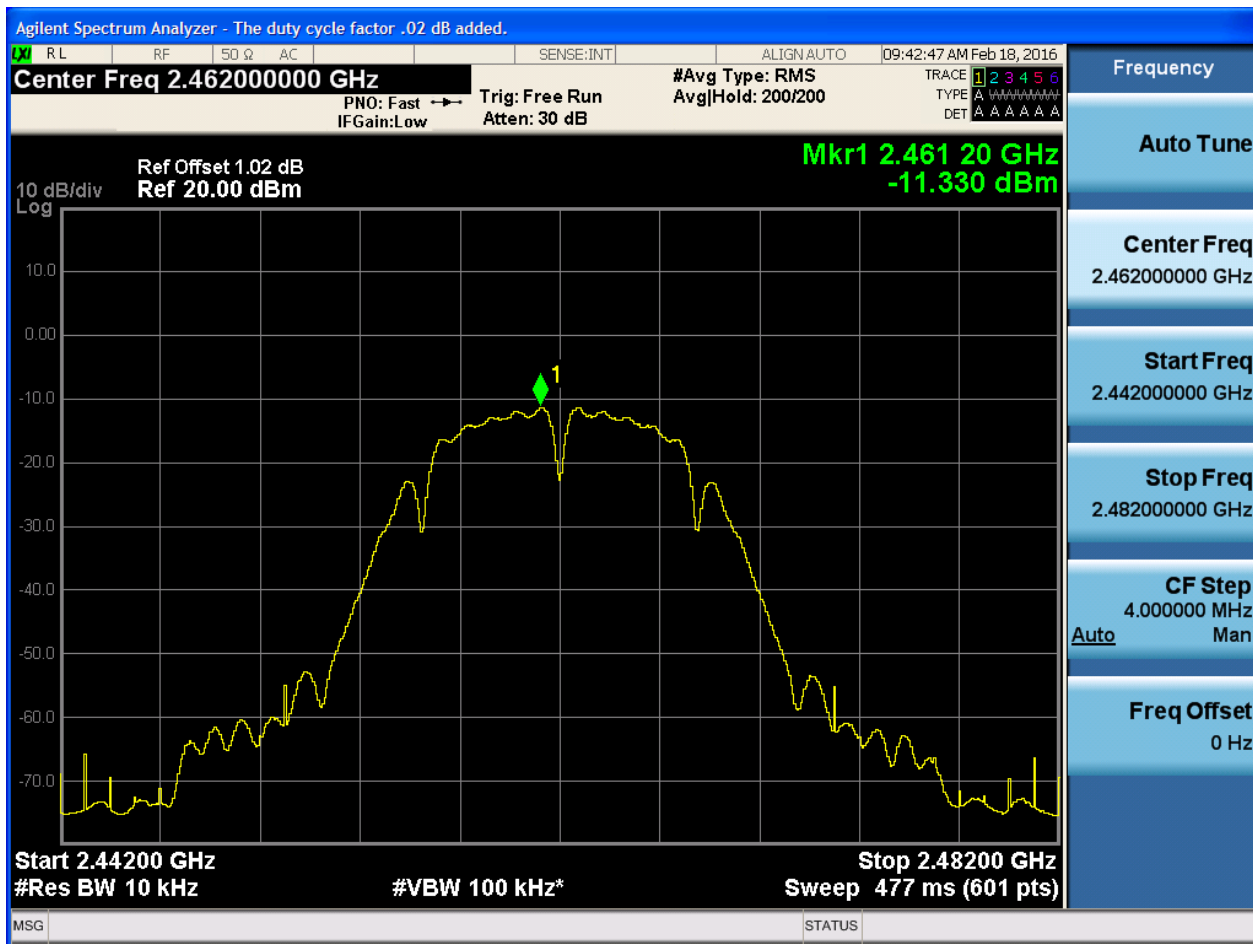


2.2 11B_M@Ant 1



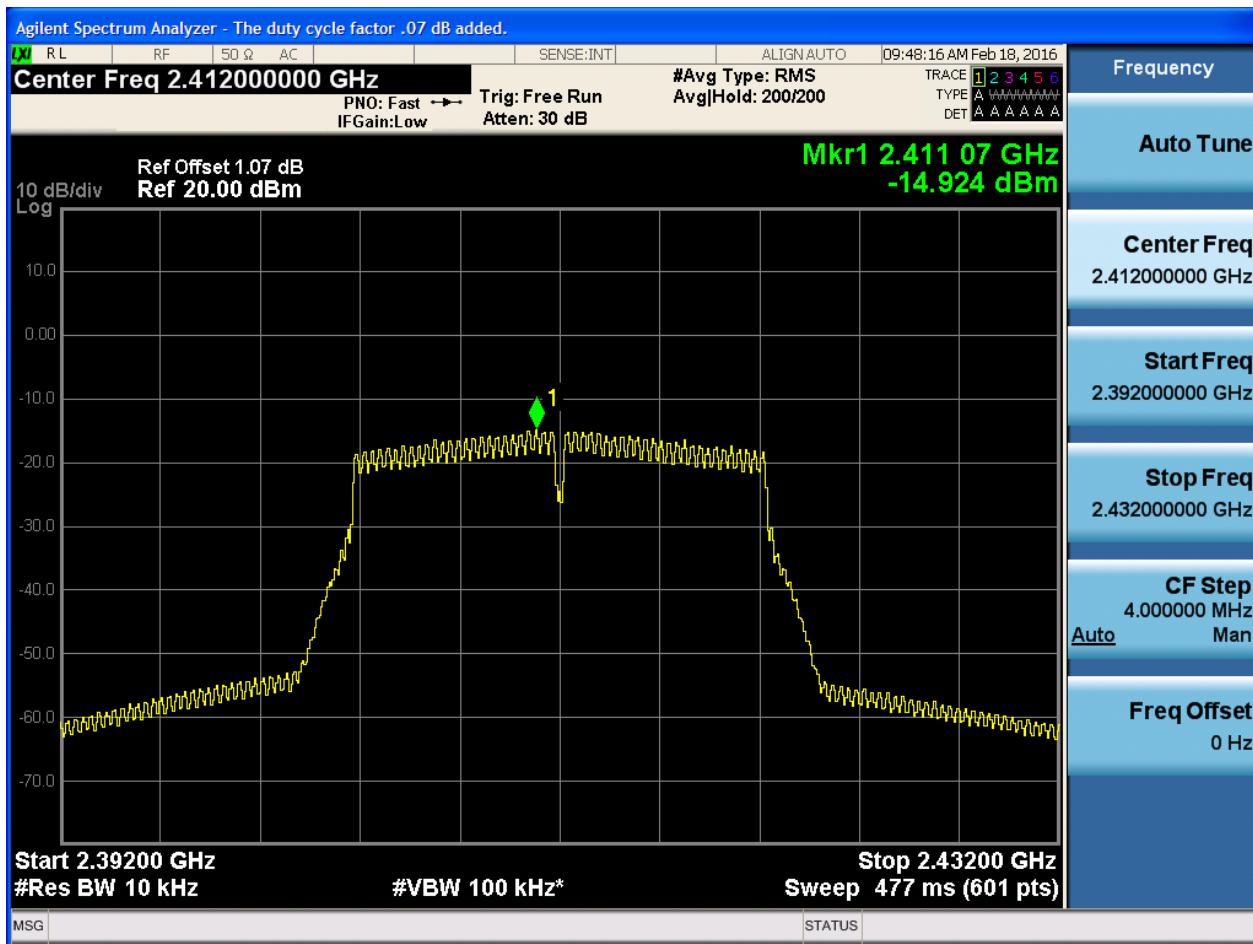


2.3 11B_H@Ant 1



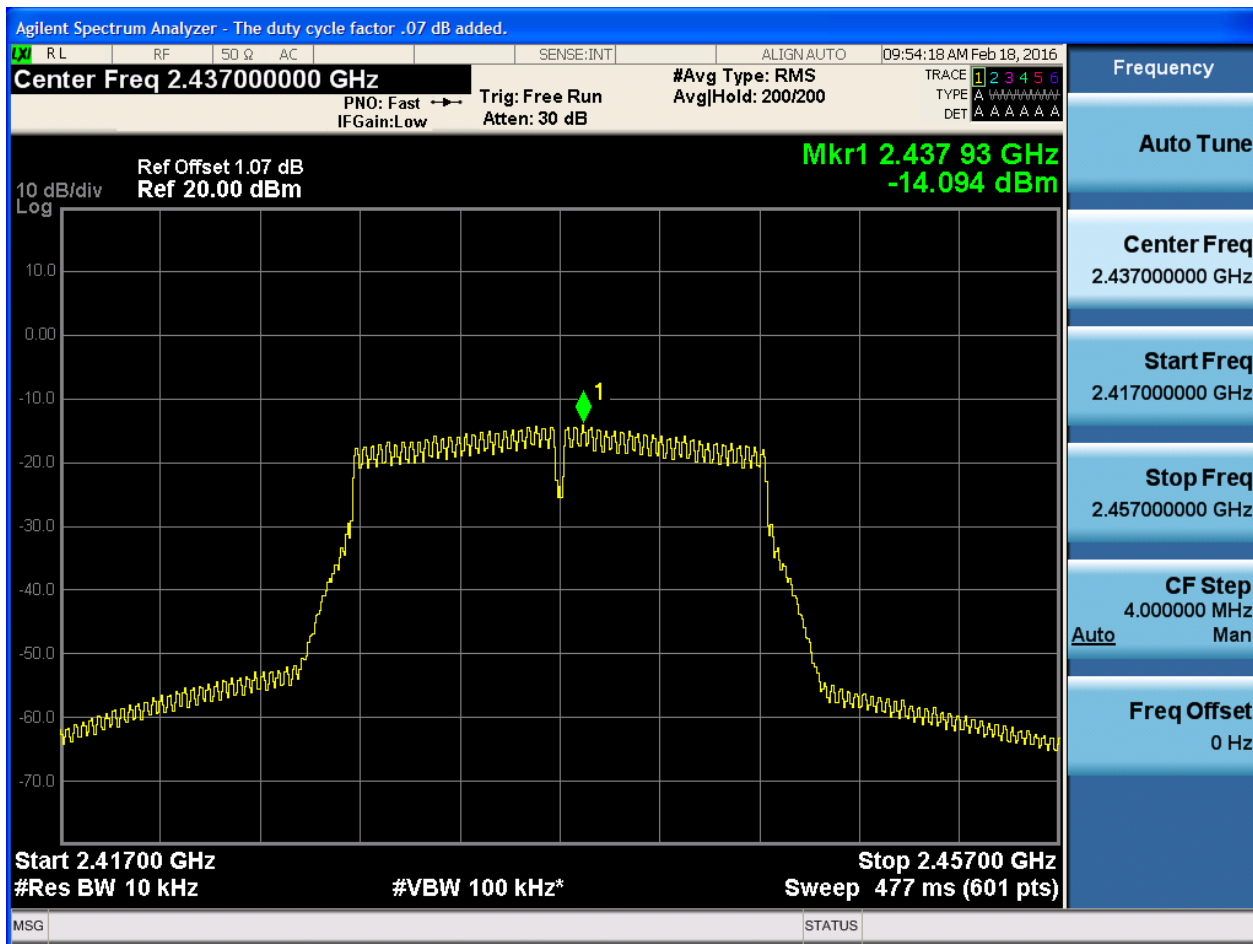


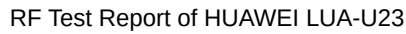
2.4 11G_L@Ant 1





2.5 11G_M@Ant 1





Agilent Spectrum Analyzer - The duty cycle factor .07 dB added.

Center Freq 2.46200000 GHz

#Avg Type: RMS
Avg|Hold: 200/200

Trig: Free Run
Atten: 30 dB

Ref Offset 1.07 dB
Ref 20.00 dBm

Mkr1 2.462 93 GHz
-13.765 dBm

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

Stop 2.48200 GHz
Sweep 477 ms (601 pts)

Frequency

Auto Tune

Center Freq
2.46200000 GHz

Start Freq
2.442000000 GHz

Stop Freq
2.482000000 GHz

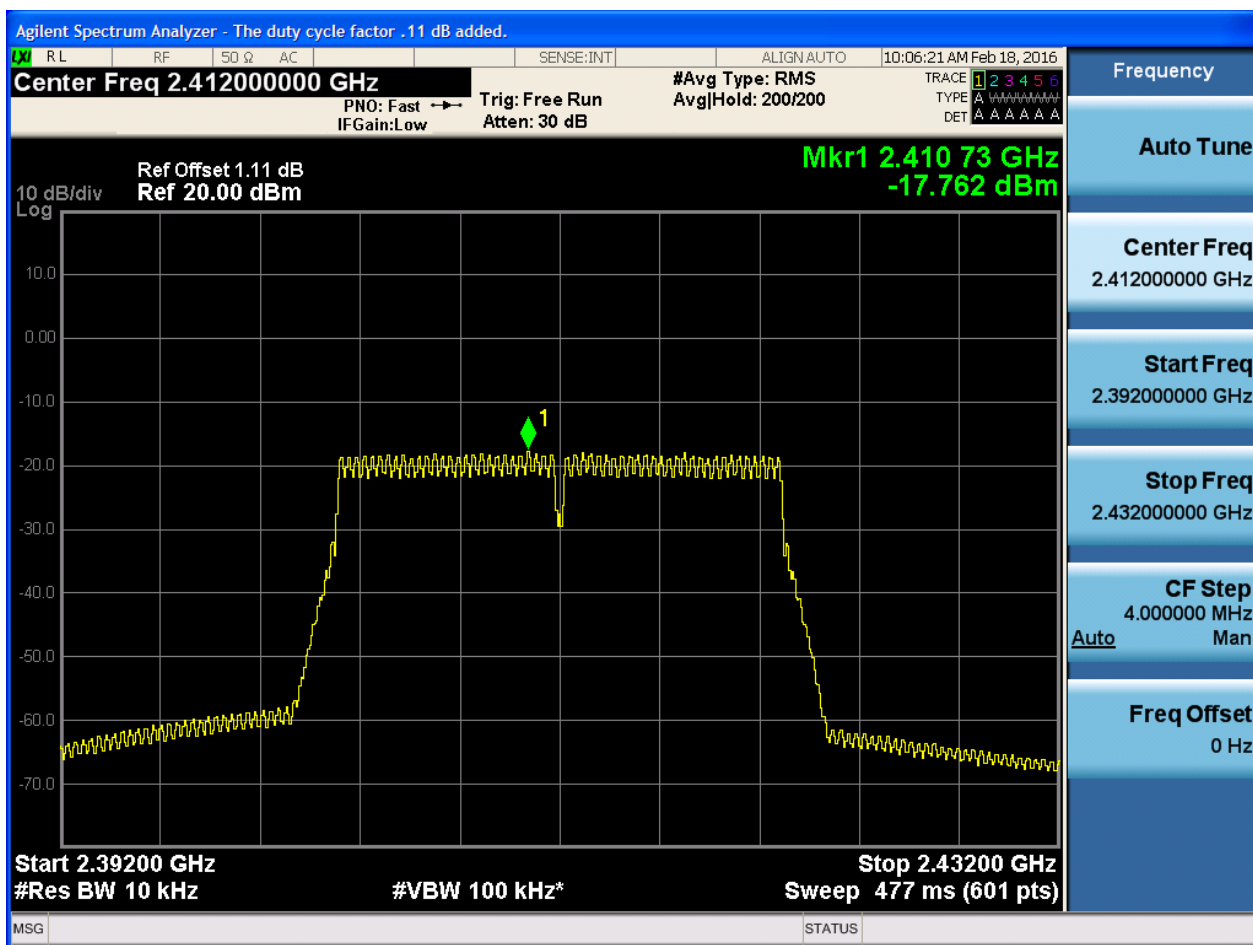
CF Step
4.000000 MHz
Man

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 signal with a peak at 2.46293 GHz, marked with a green diamond and labeled '1'. The signal is centered around 2.462 GHz, with a bandwidth of 10 kHz. The plot is labeled 'Mkr1 2.462 93 GHz -13.765 dBm'. The plot is also labeled 'Start 2.44200 GHz', 'Stop 2.48200 GHz', and 'Sweep 477 ms (601 pts)'. The plot is also labeled 'Ref Offset 1.07 dB' and 'Ref 20.00 dBm'. The plot is also labeled '10 dB/div Log'. The plot is also labeled 'PNO: Fast' and 'IFGain:Low'. The plot is also labeled 'Trig: Free Run' and 'Atten: 30 dB'. The plot is also labeled '#Avg Type: RMS' and 'Avg|Hold: 200/200'. The plot is also labeled 'ALIGN AUTO' and '10:00:33 AM Feb 18, 2016'. The plot is also labeled 'TRACE 1 2 3 4 5 6' and 'TYPE A A A A A A' and 'DET A A A A A A'. The plot is also labeled 'MSG' and 'STATUS'.

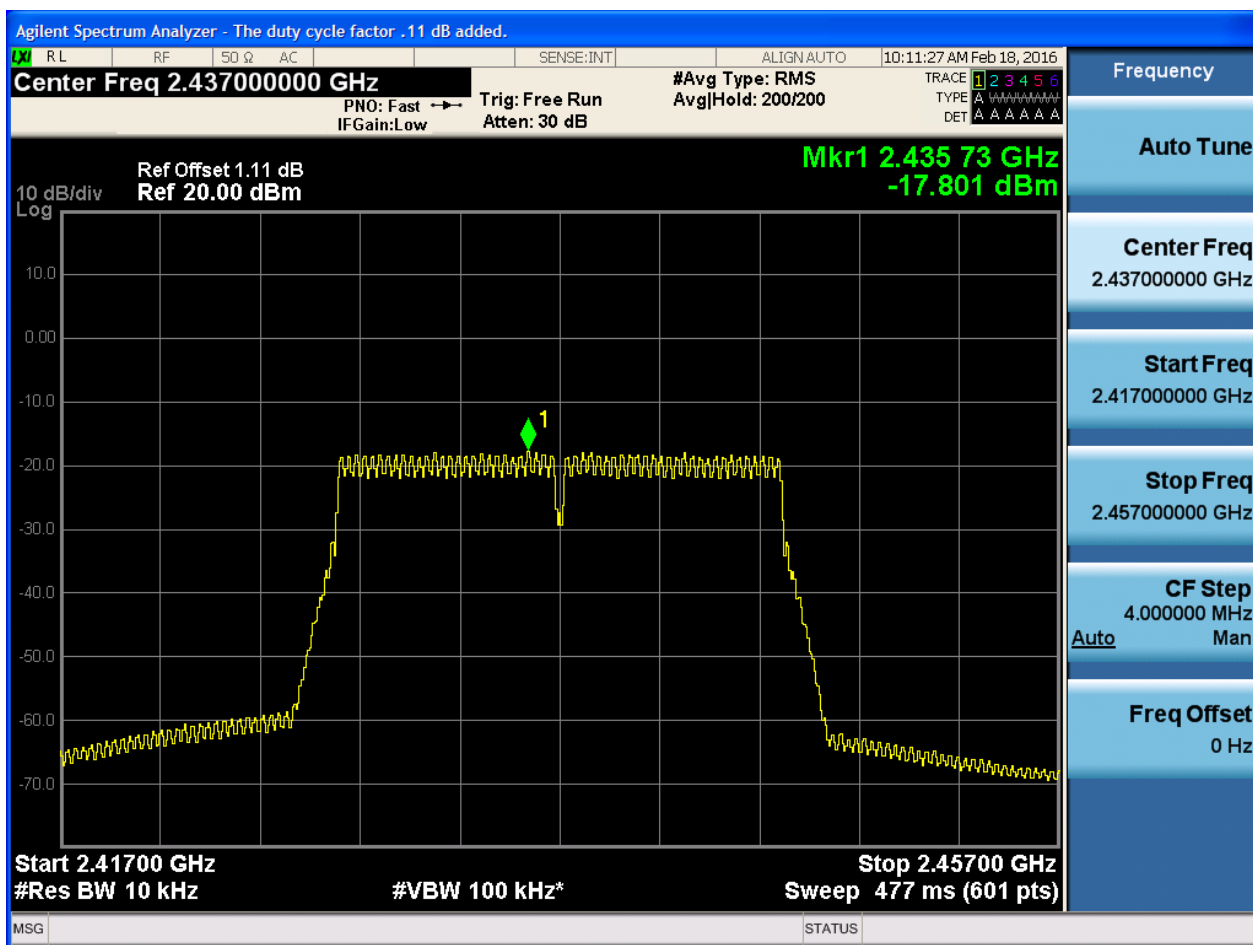


2.7 11N20_L@Ant 1



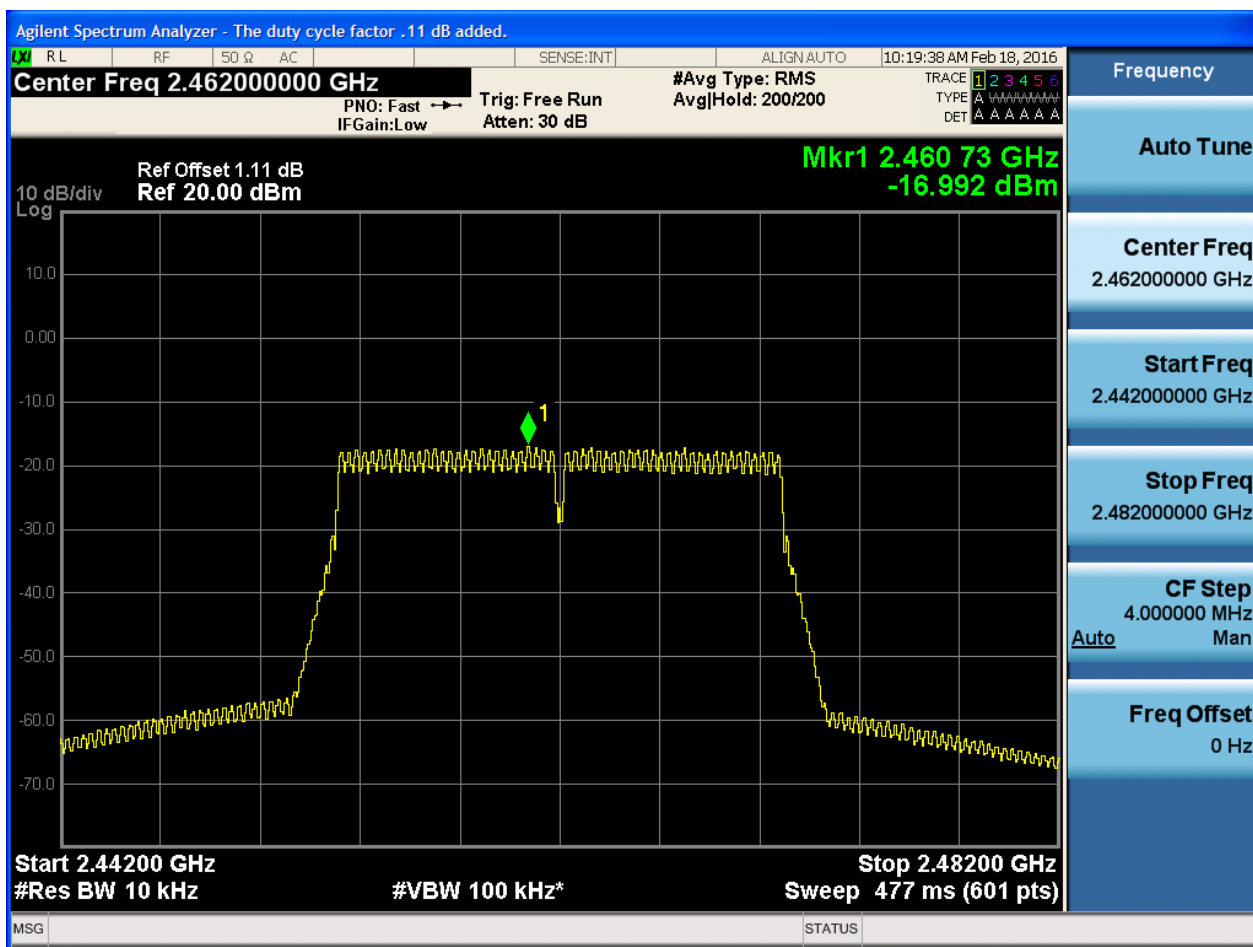


2.8 11N20_M@Ant 1



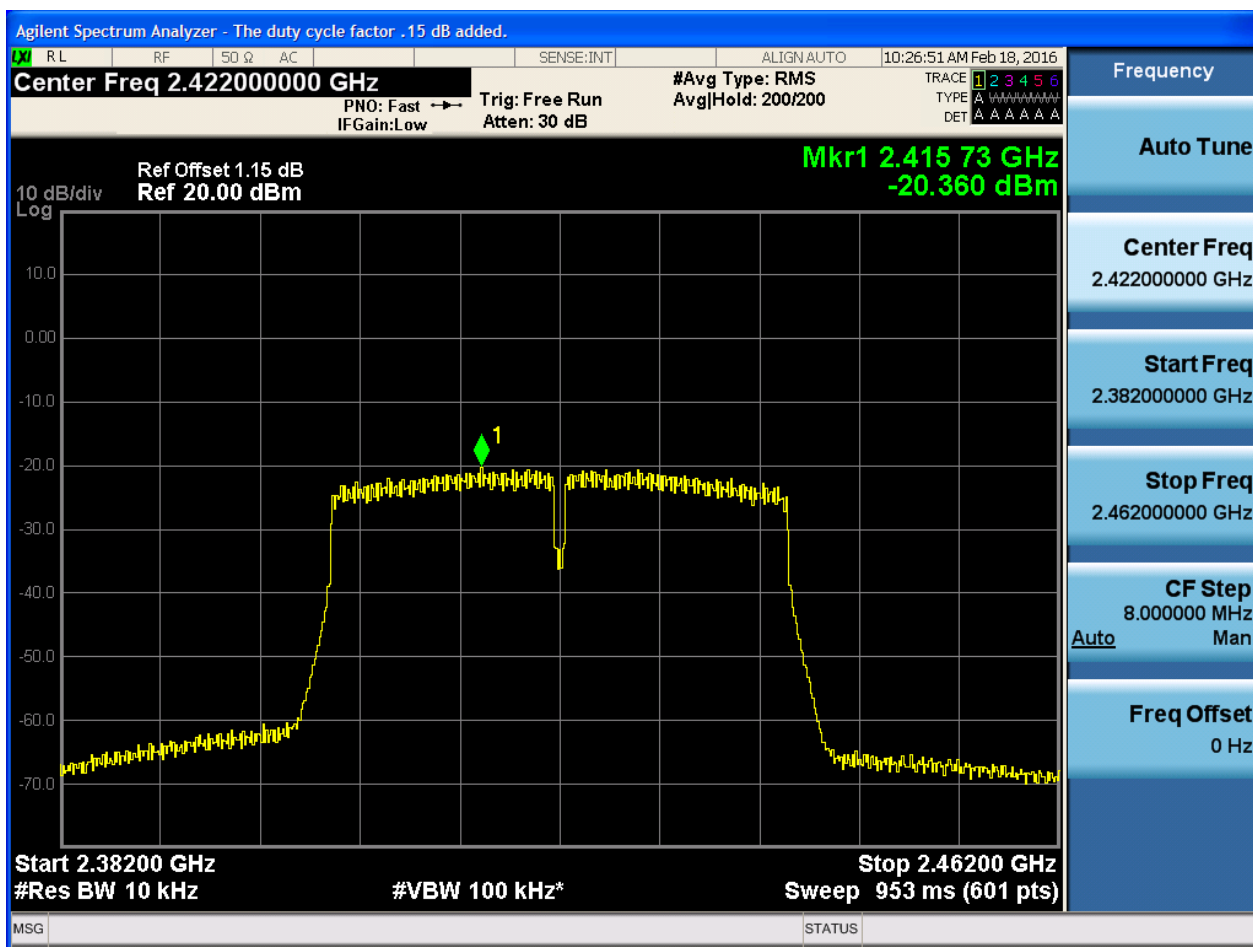


2.9 11N20_H@Ant 1



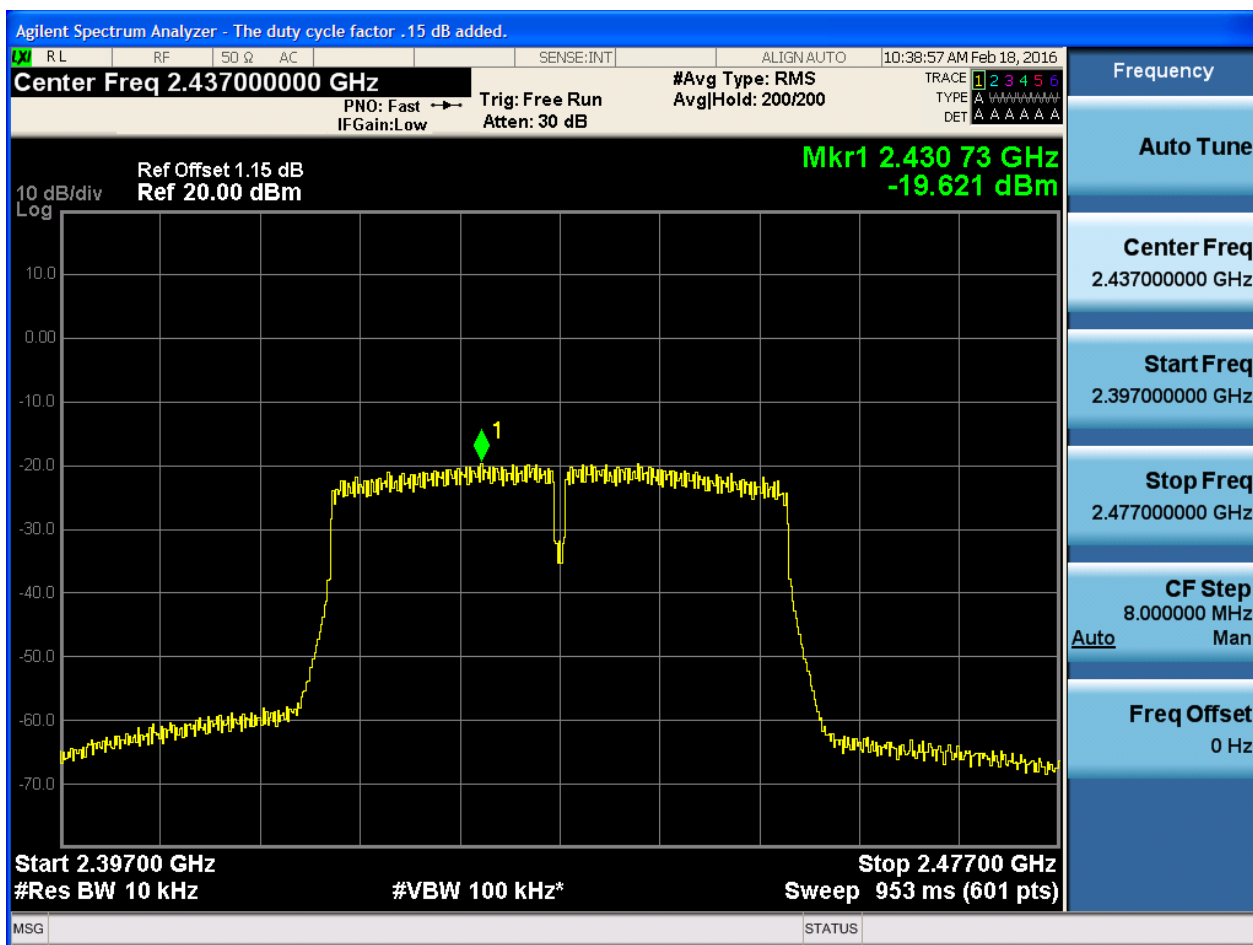


2.10 11N40_L@Ant 1



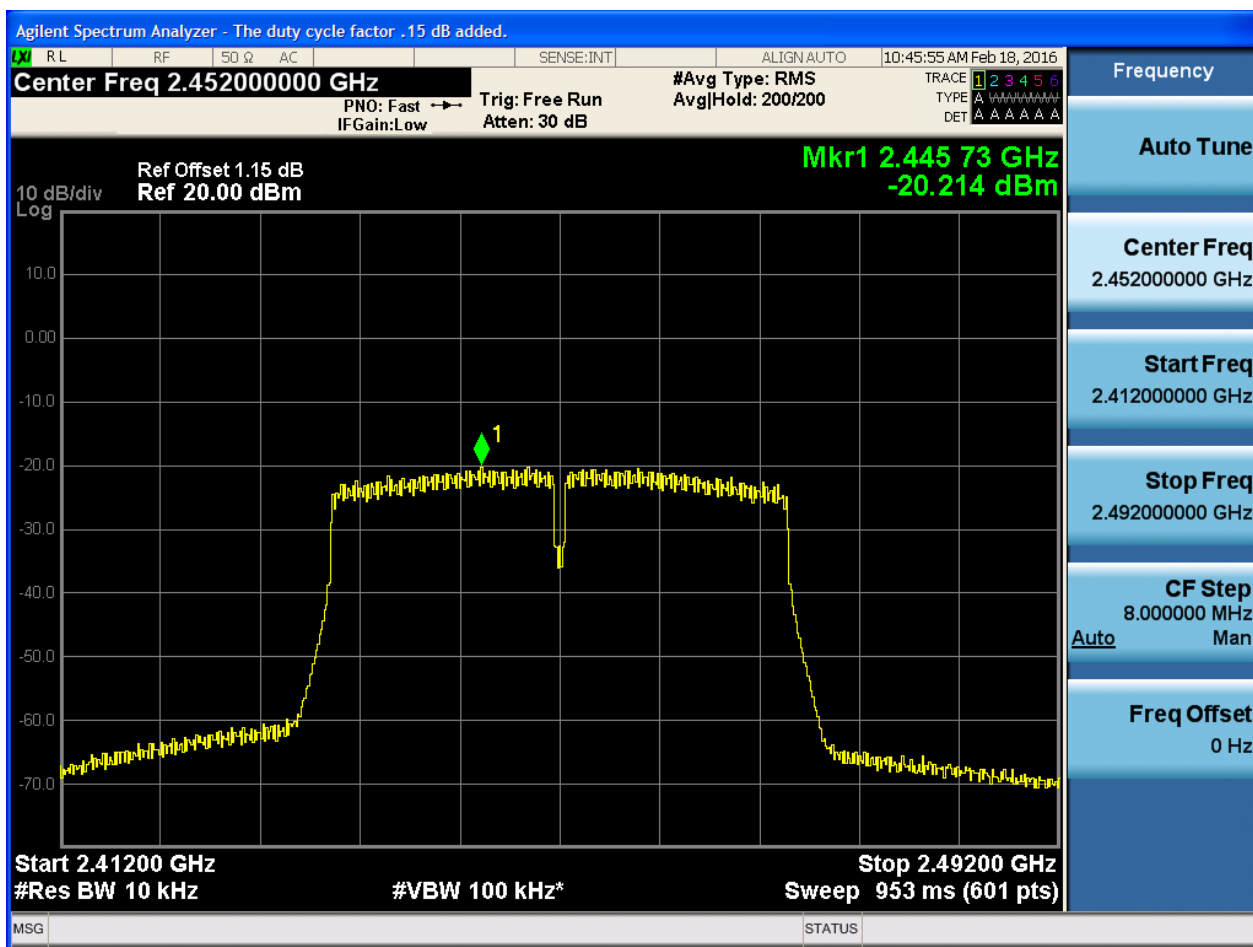


2.11 11N40_M@Ant 1





2.12 11N40_H@Ant 1



Appendix F: Band Edges Compliance

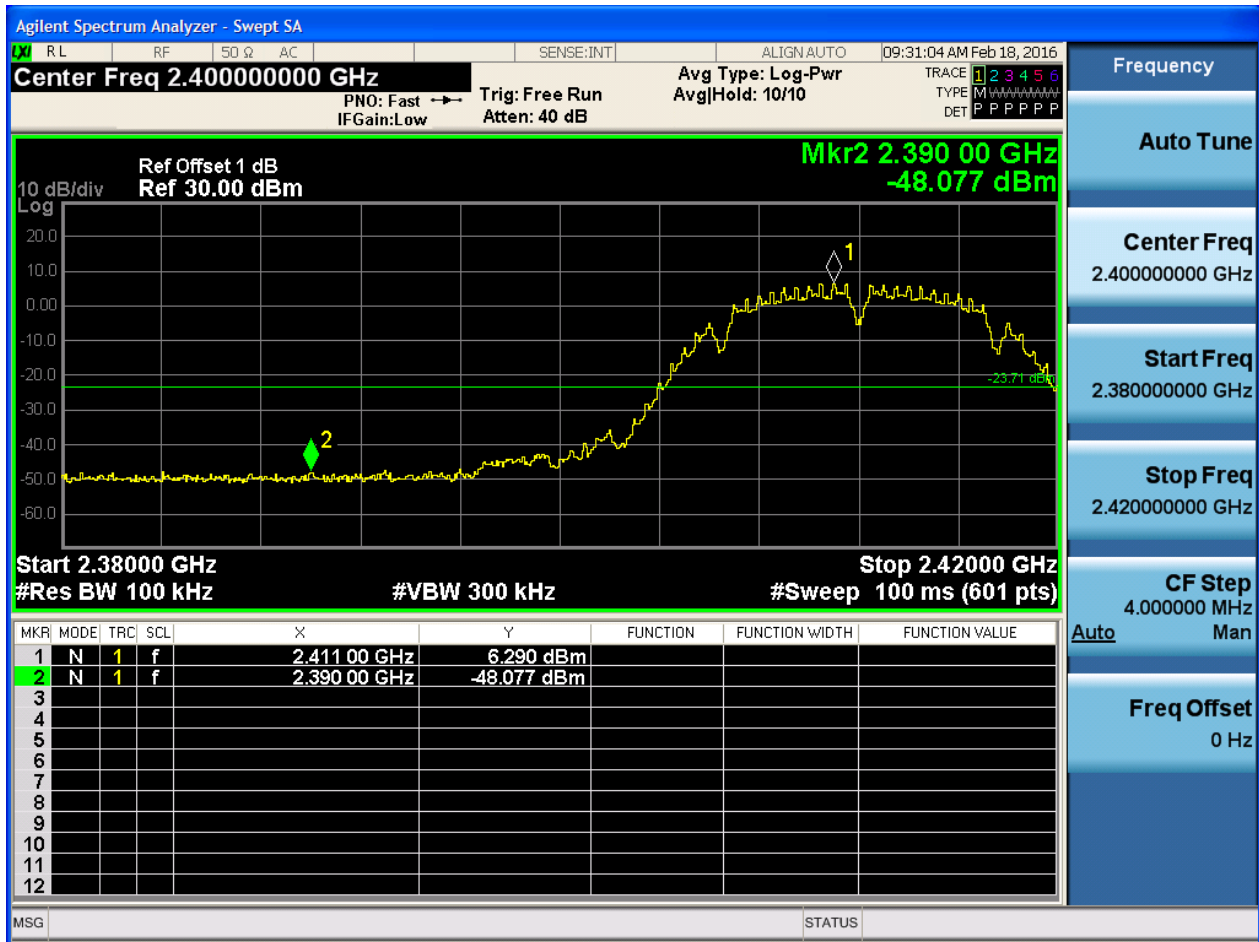
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Carrier Power[dBm]	Max.Spurious Level[dBm]	Verdict
11B	L	2412	Ant 1	6.29	-48.08	pass
11B	H	2462	Ant 1	7.41	-48.98	pass
11G	L	2412	Ant 1	3.58	-42.22	pass
11G	H	2462	Ant 1	4.62	-42.04	pass
11N20	L	2412	Ant 1	0.89	-45.65	pass
11N20	H	2462	Ant 1	1.72	-44.48	pass
11N40	L	2422	Ant 1	-0.95	-41.96	pass
11N40	H	2452	Ant 1	-1.36	-45.54	pass



Part II - Test Plots

2.1 11B_L@Ant 1



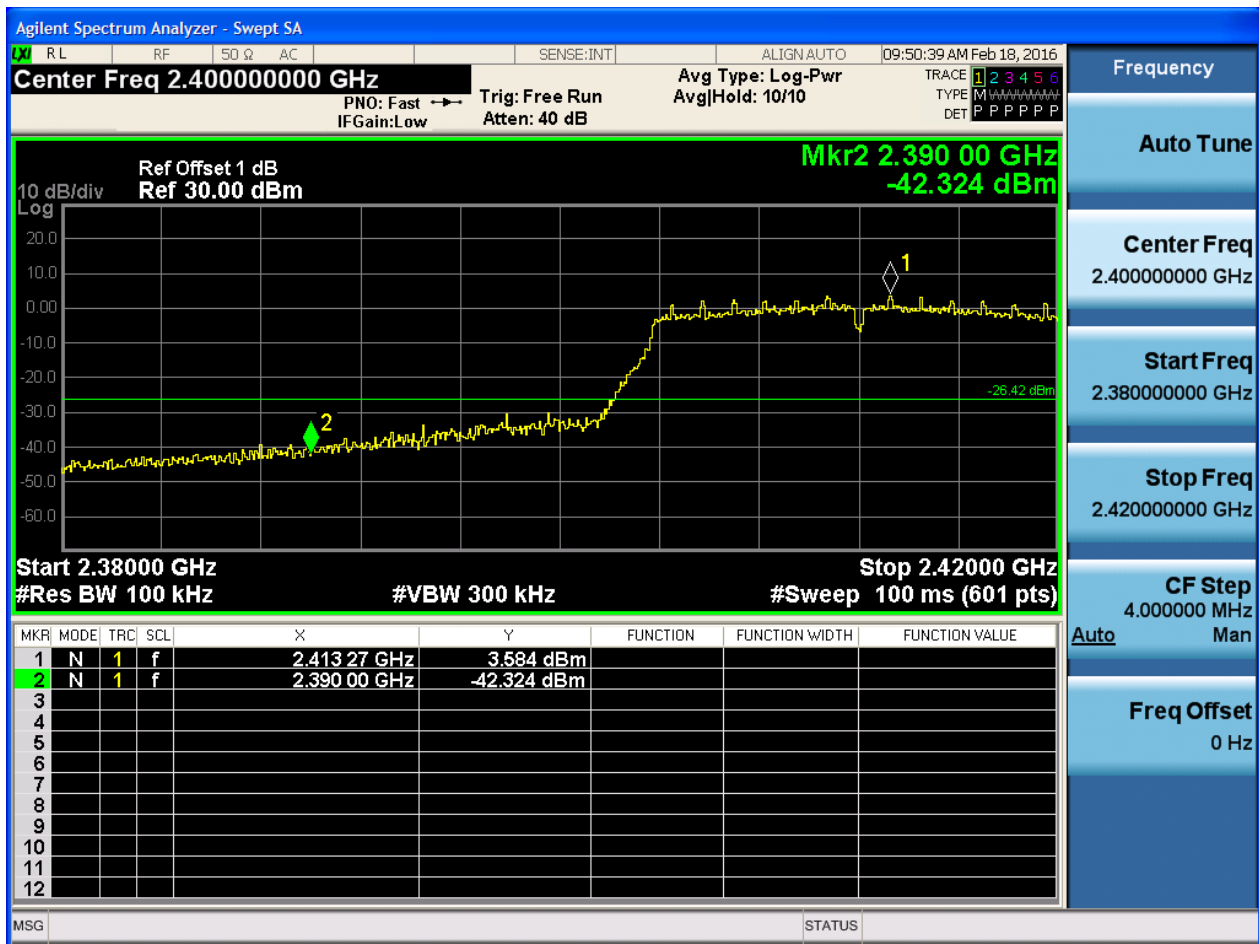


2.2 11B_H@Ant 1





2.3 11G_L@Ant 1



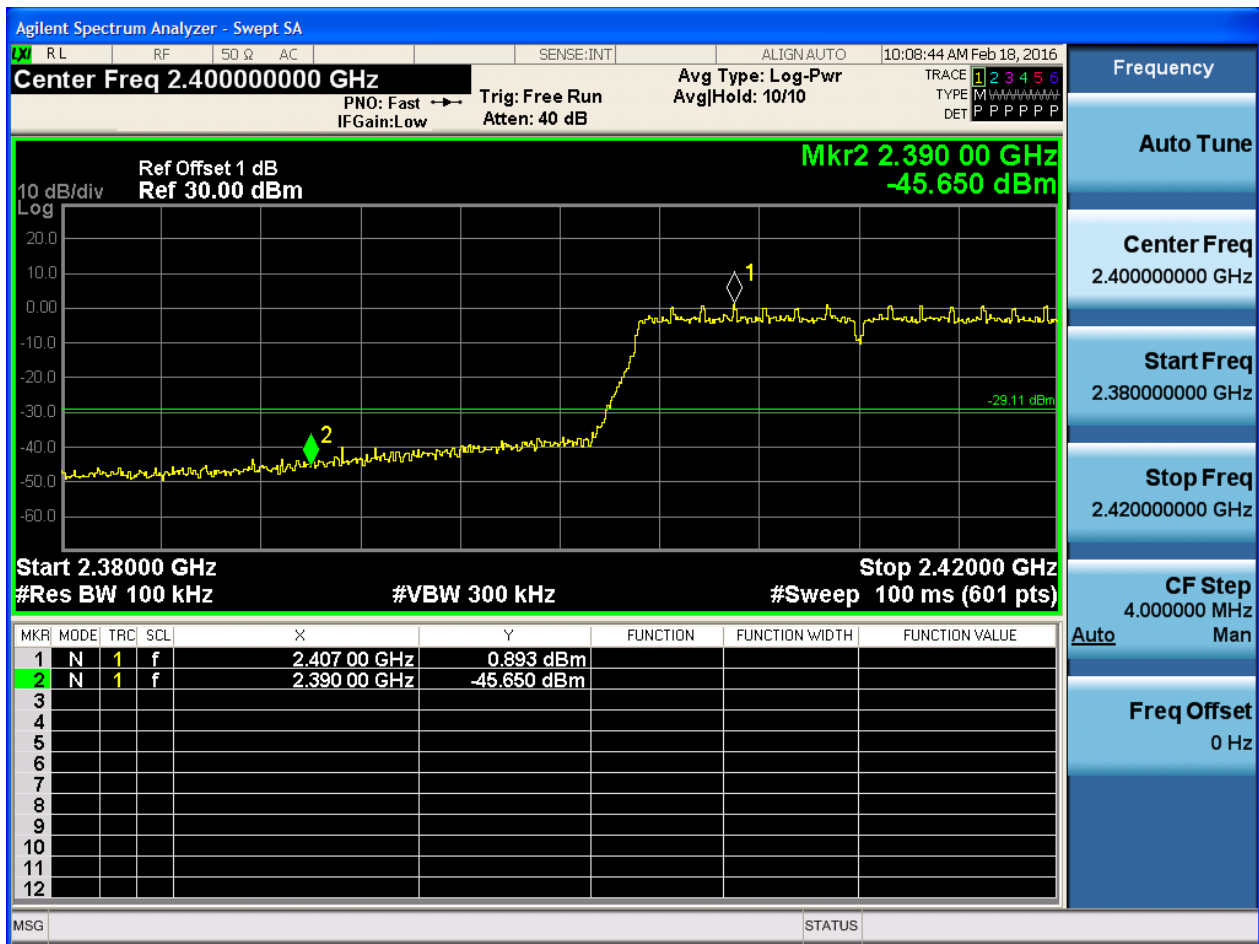


2.4 11G_H@Ant 1



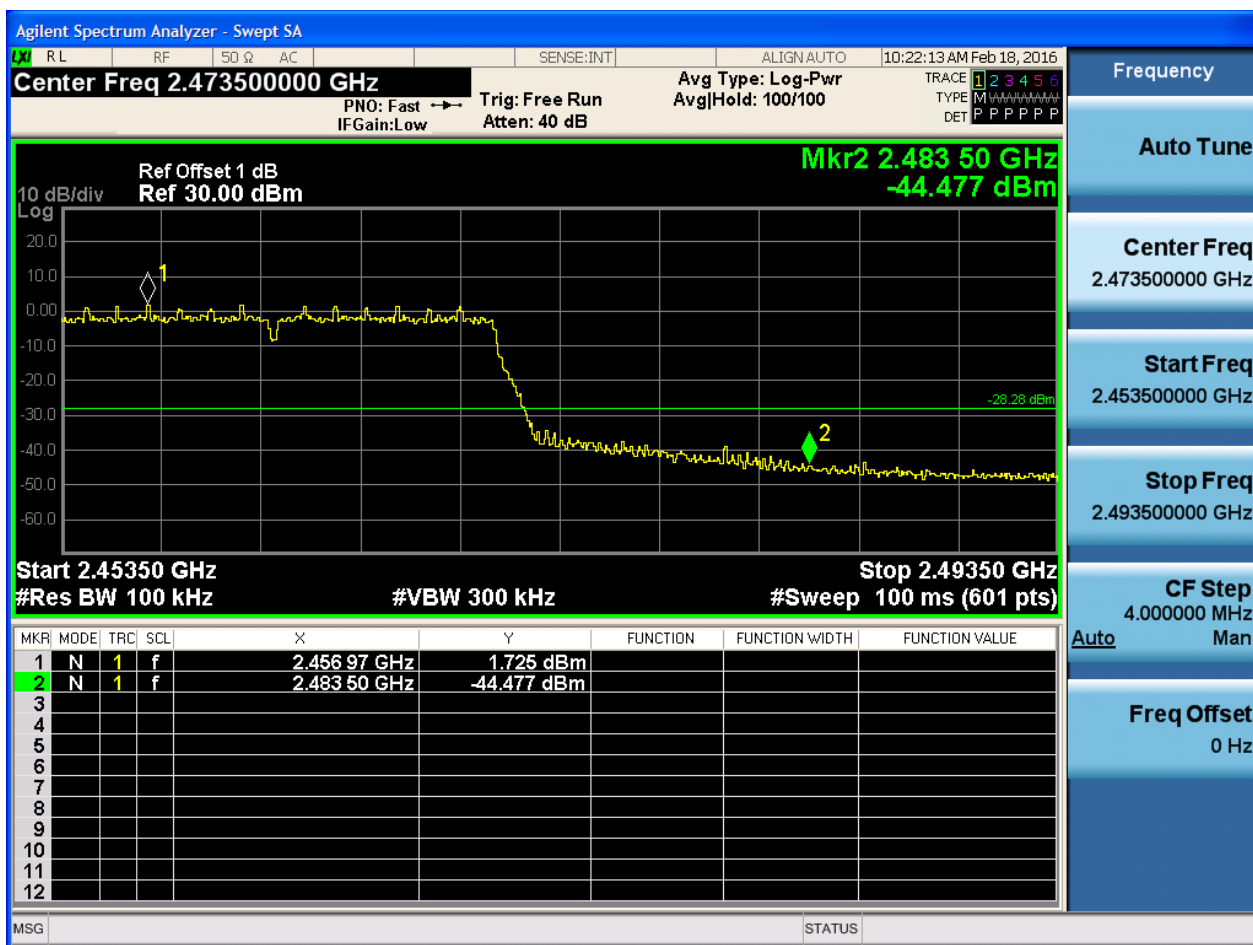


2.5 11N20_L@Ant 1



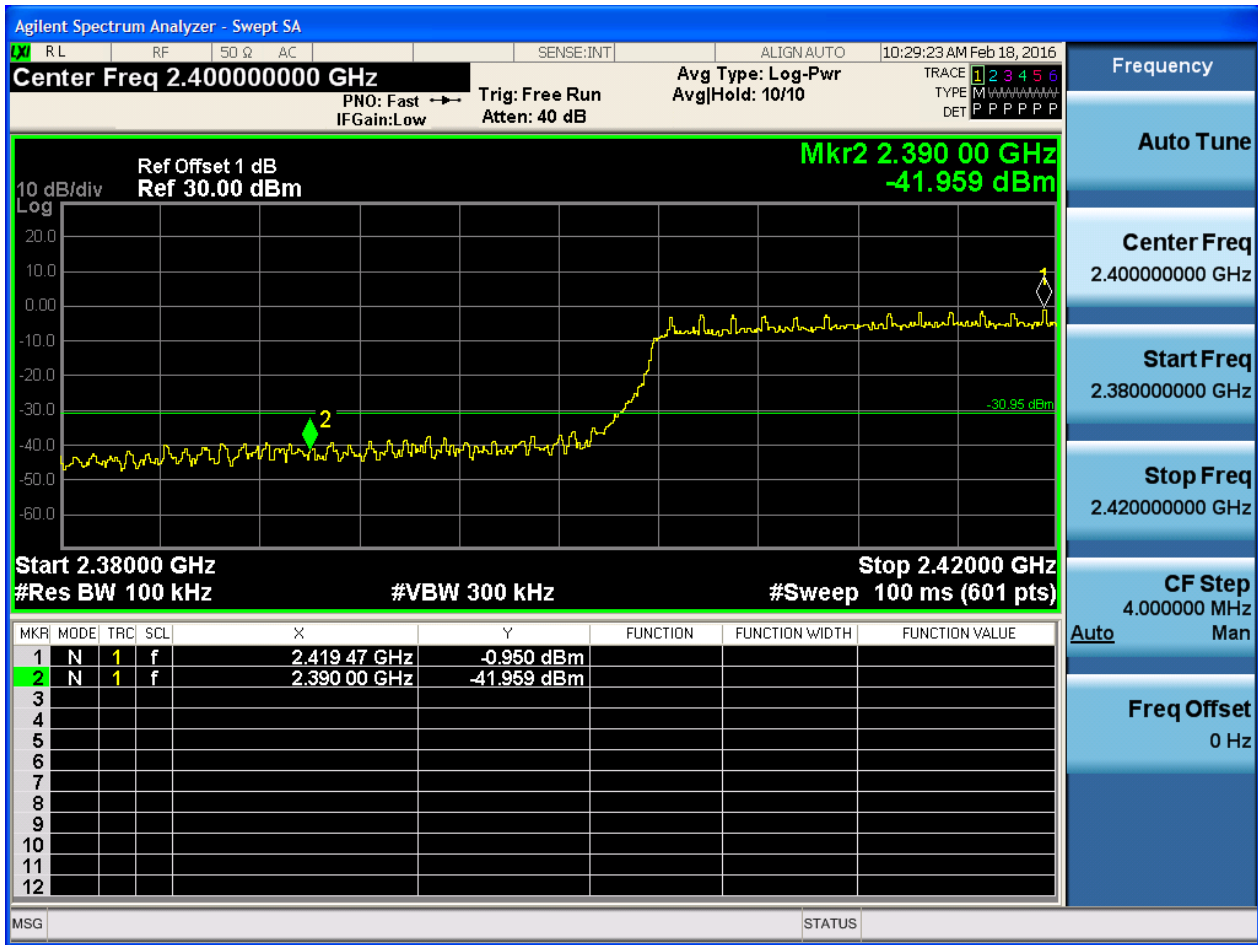


2.6 11N20_H@Ant 1



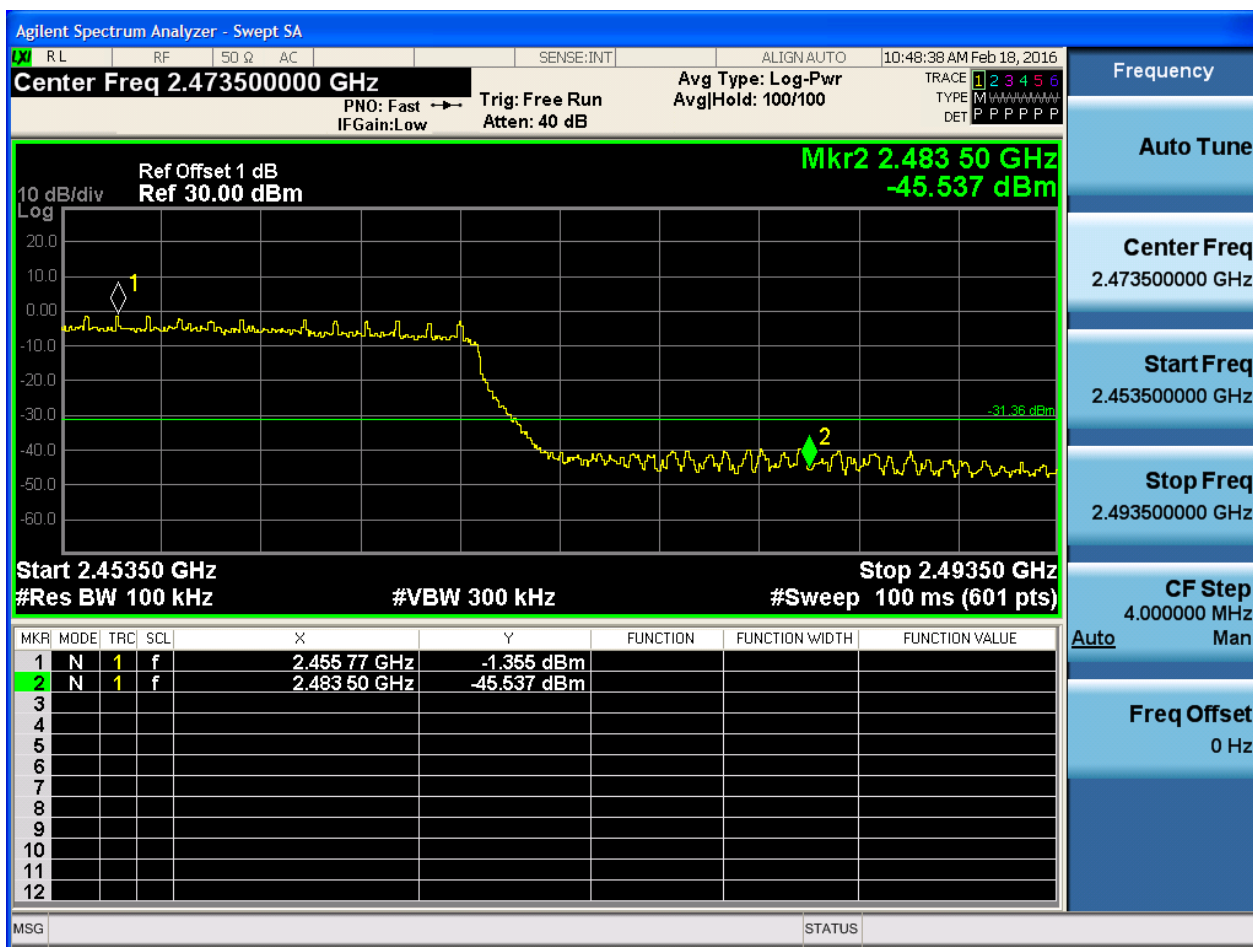


2.7 11N40_L@Ant 1





2.8 11N40_H@Ant 1



Appendix 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

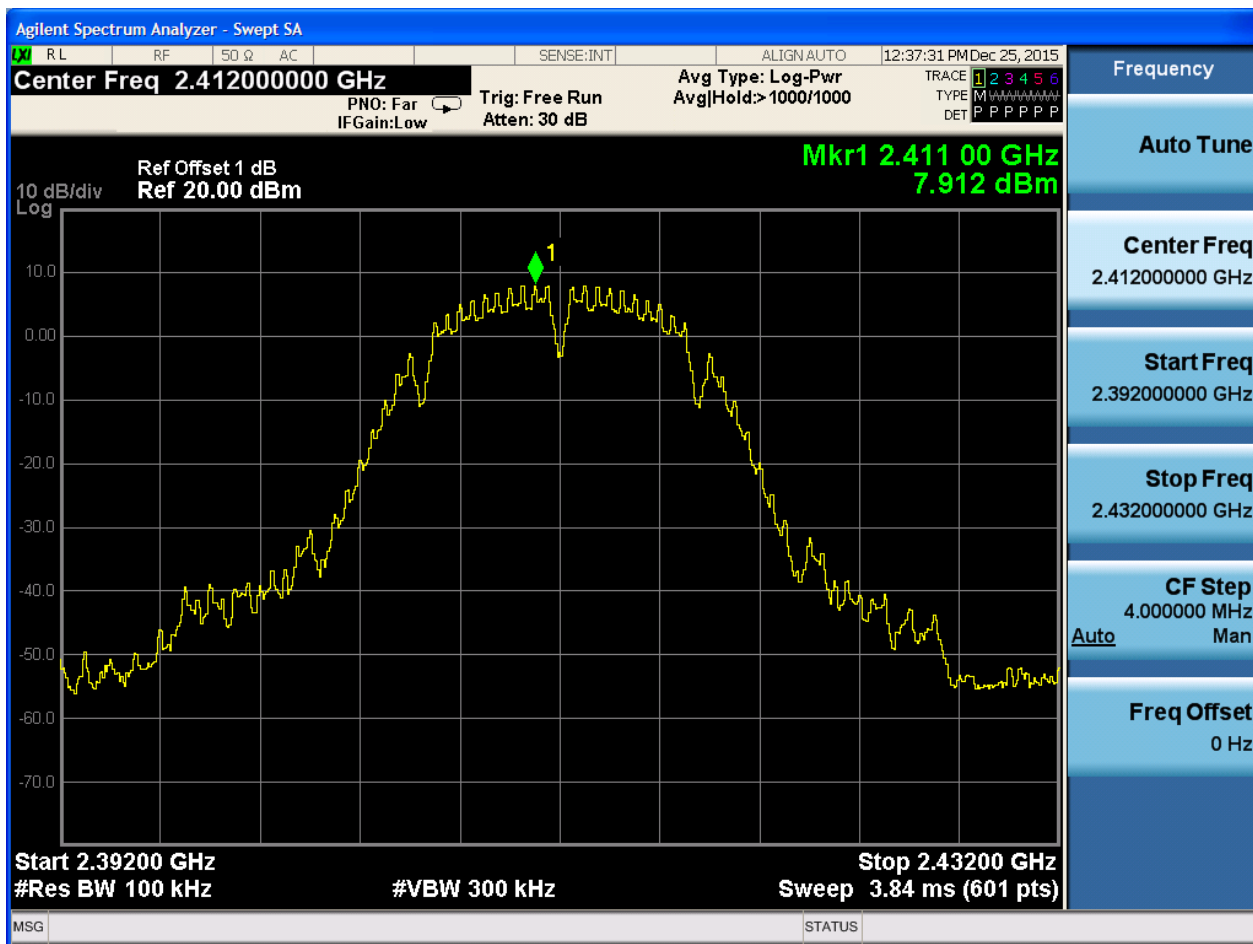
Test Mode	Test Channel	Frequency[MHz]	Ant	Pref[dBm]	Puw[dBm]	Verdict
11B	L	2412	Ant 1	6.61	<limit	pass
11B	M	2437	Ant 1	7.01	<limit	pass
11B	H	2462	Ant 1	7.45	<limit	pass
11G	L	2412	Ant 1	4.28	<limit	pass
11G	M	2437	Ant 1	4.76	<limit	pass
11G	H	2462	Ant 1	5.21	<limit	pass
11N20	L	2412	Ant 1	1.35	<limit	pass
11N20	M	2437	Ant 1	1.54	<limit	pass
11N20	H	2462	Ant 1	2.20	<limit	pass
11N40	L	2422	Ant 1	-1.06	<limit	pass
11N40	M	2437	Ant 1	-0.32	<limit	pass
11N40	H	2452	Ant 1	-0.86	<limit	pass



Part II - Test Plots

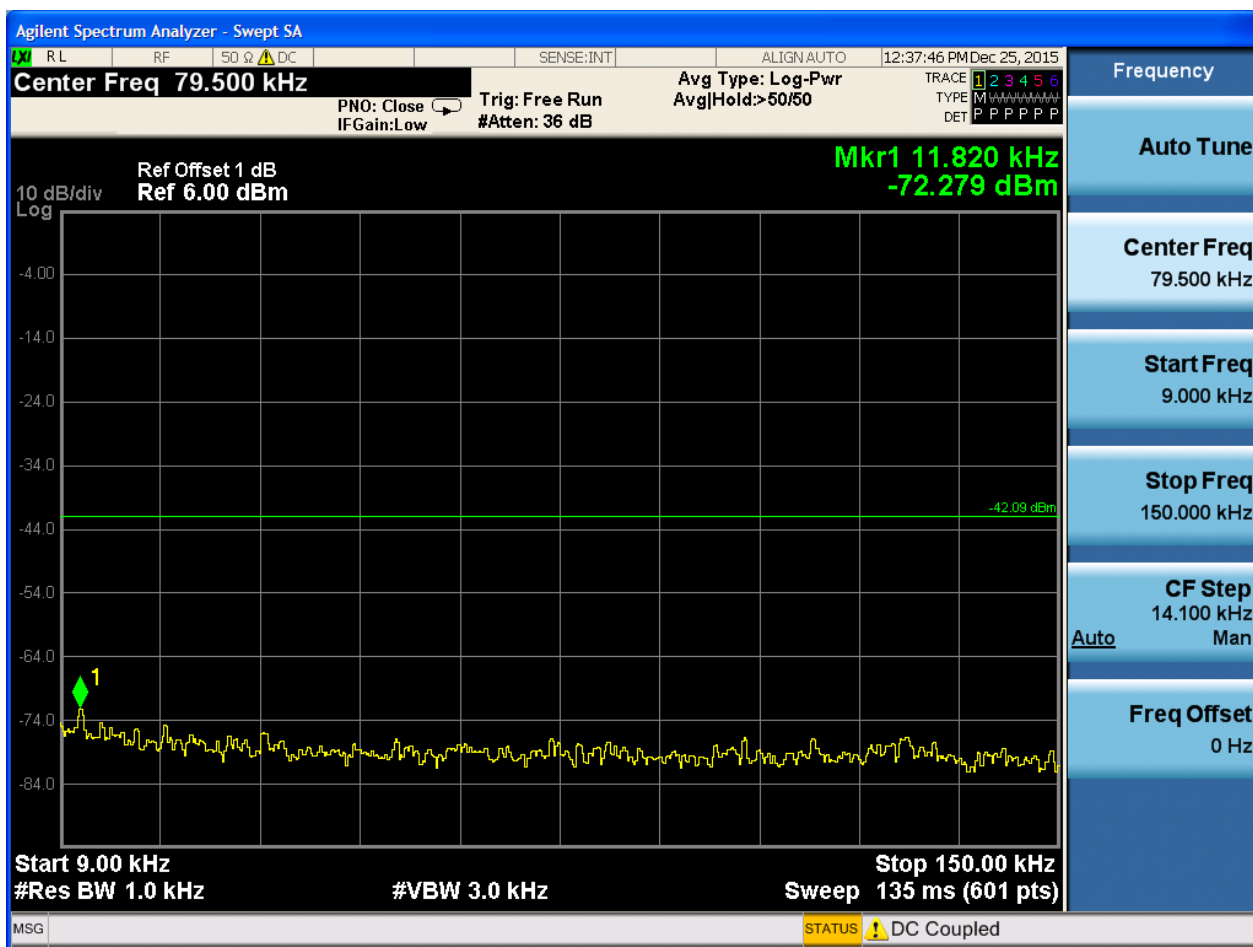
2.1 11B_L@Ant 1

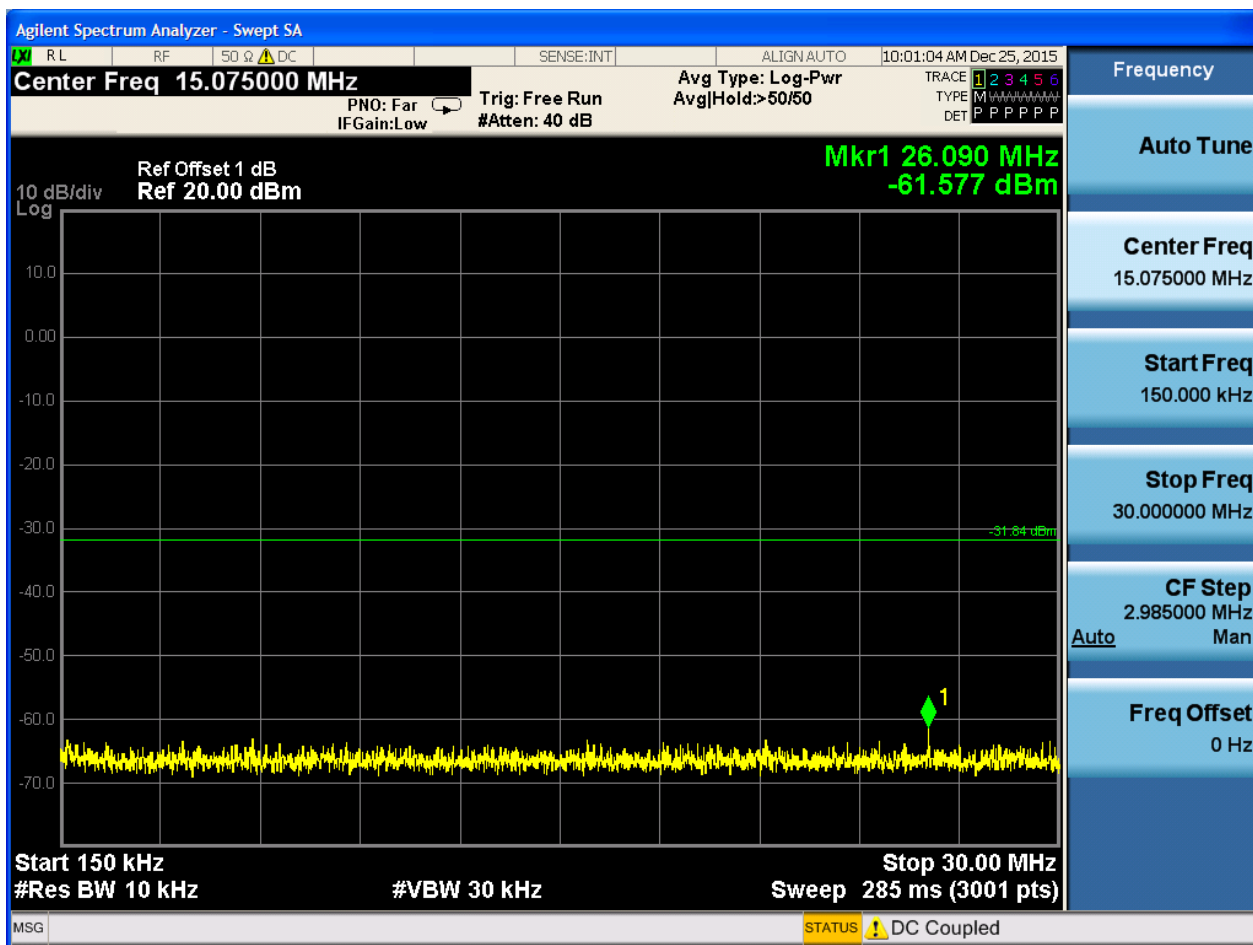
Pref:

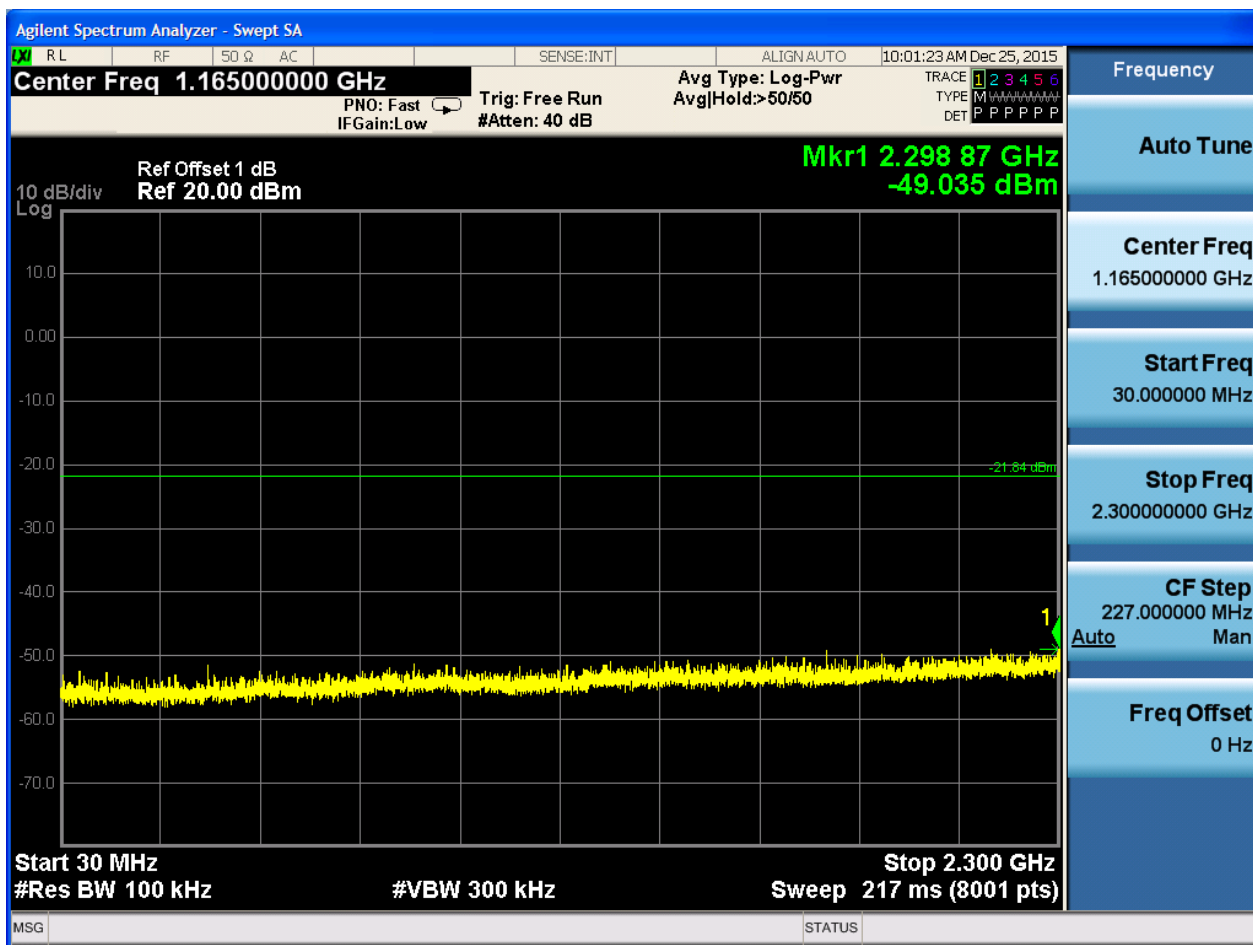


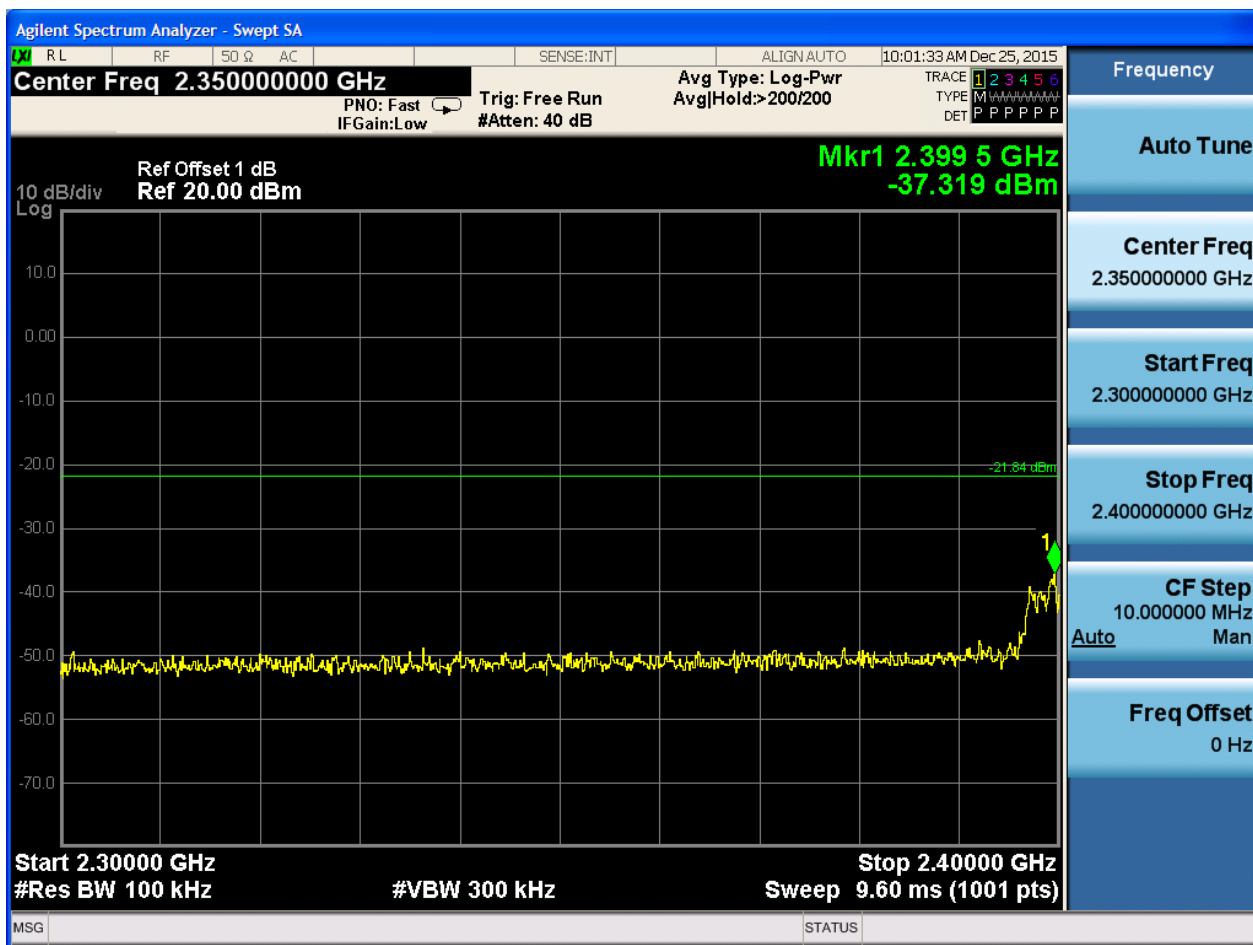


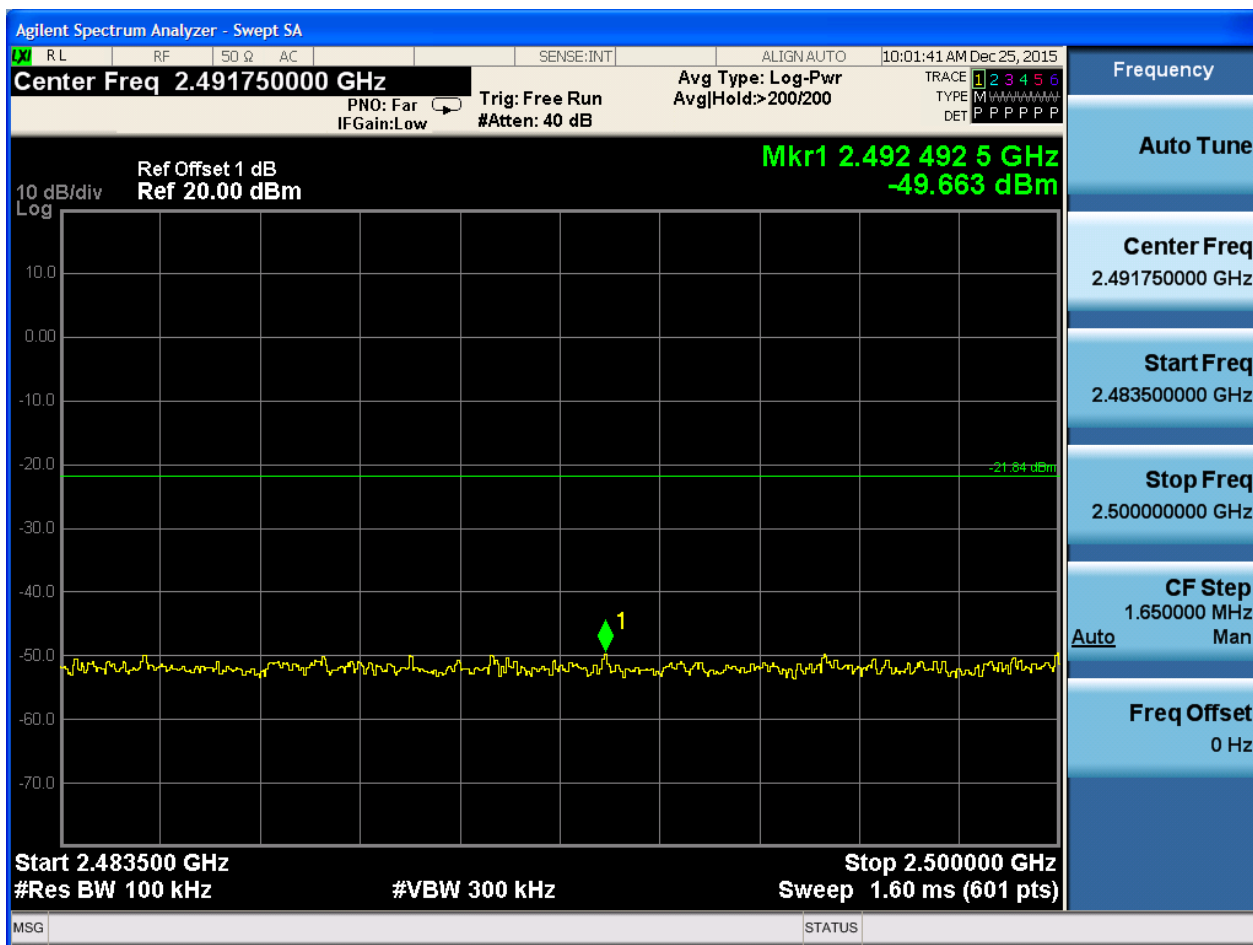
Puw:









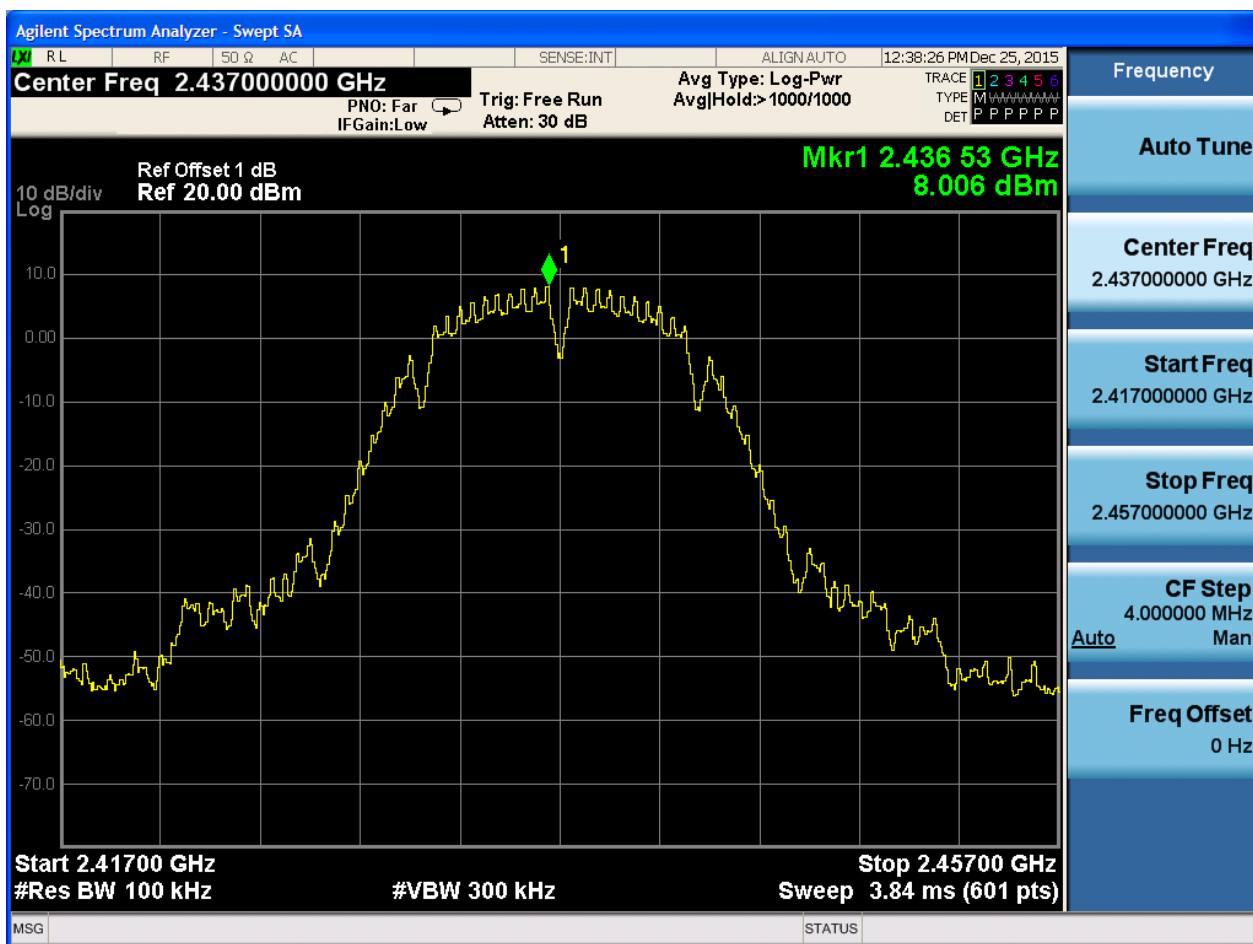






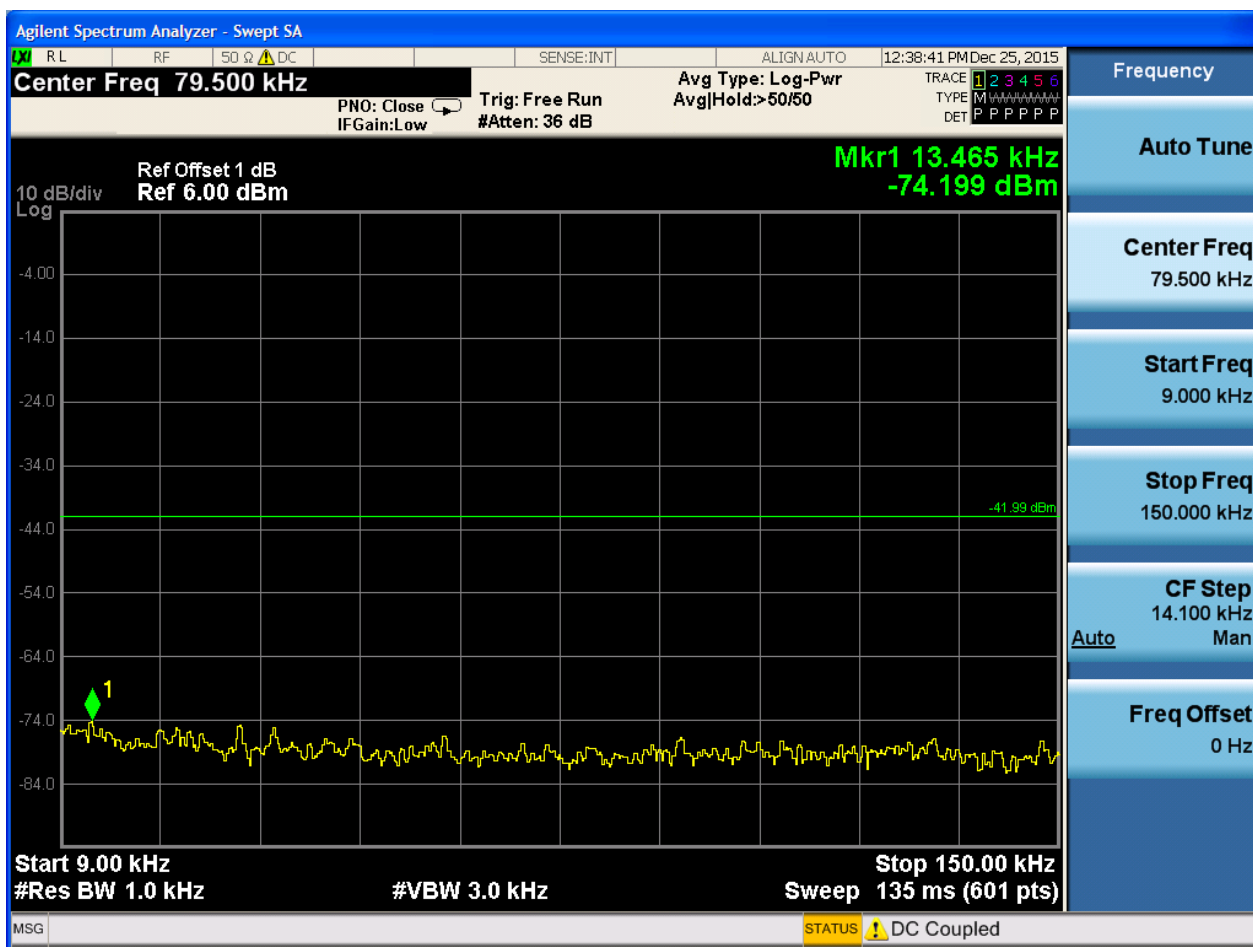
2.2 11B_M@Ant 1

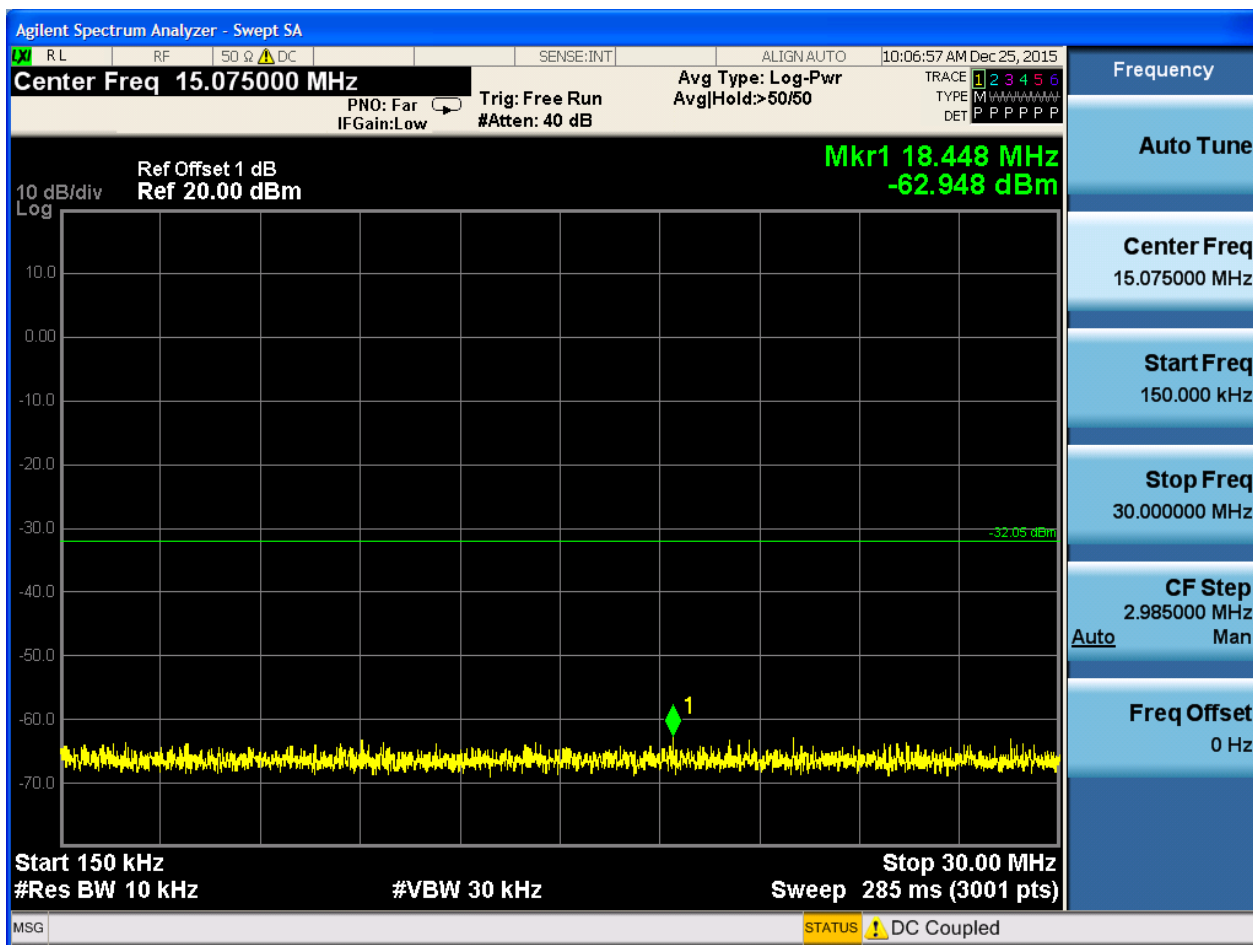
Pref:



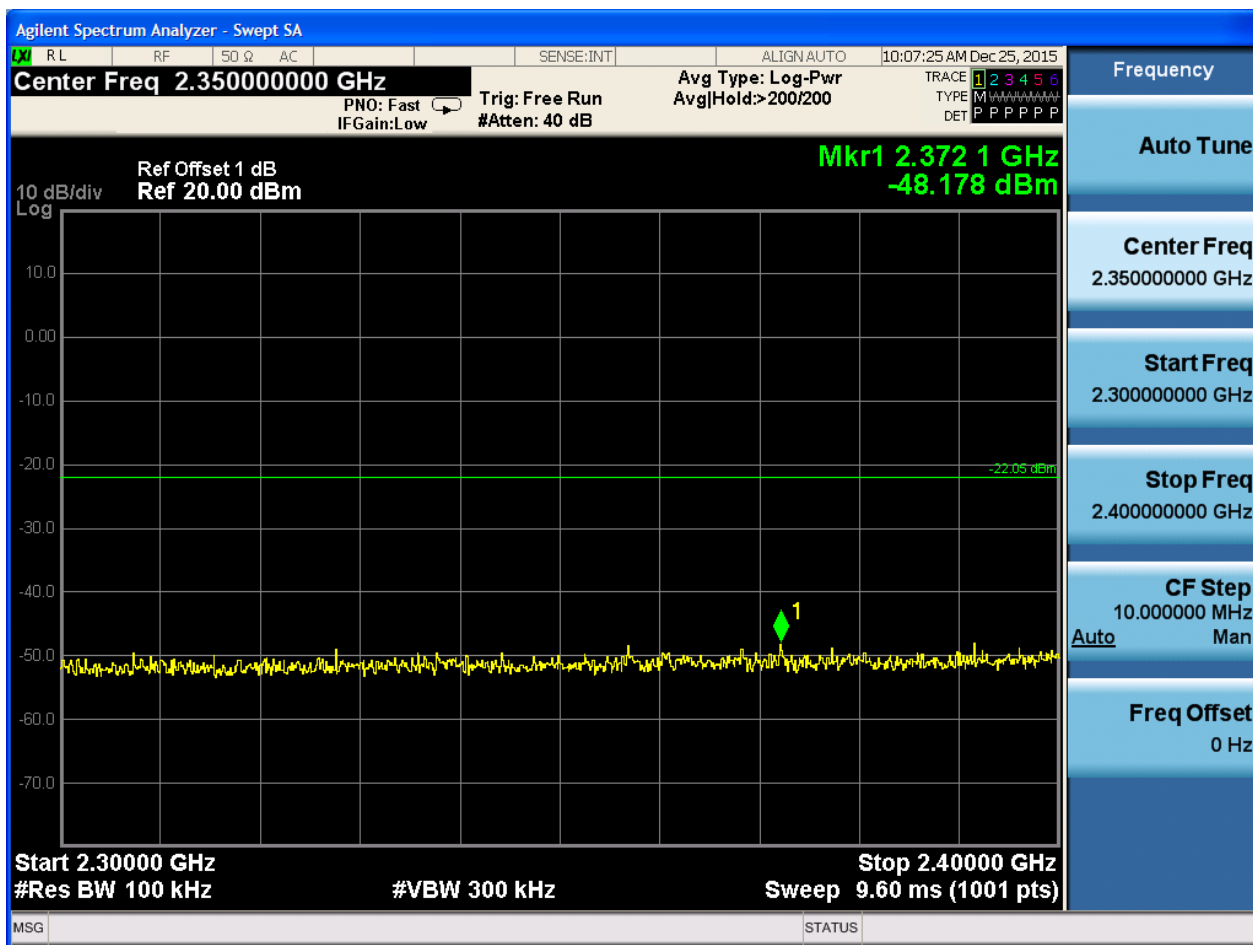


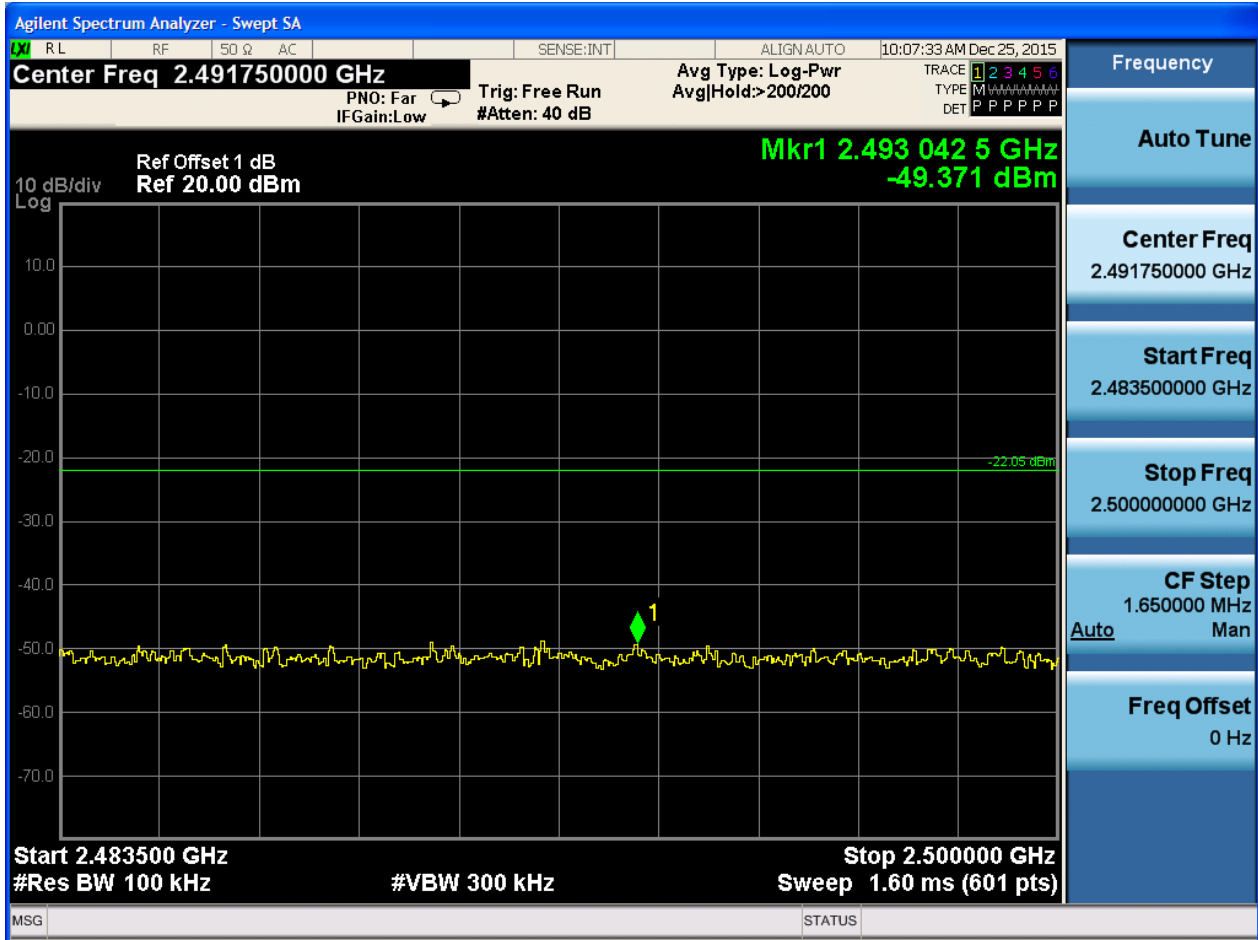
Puw:









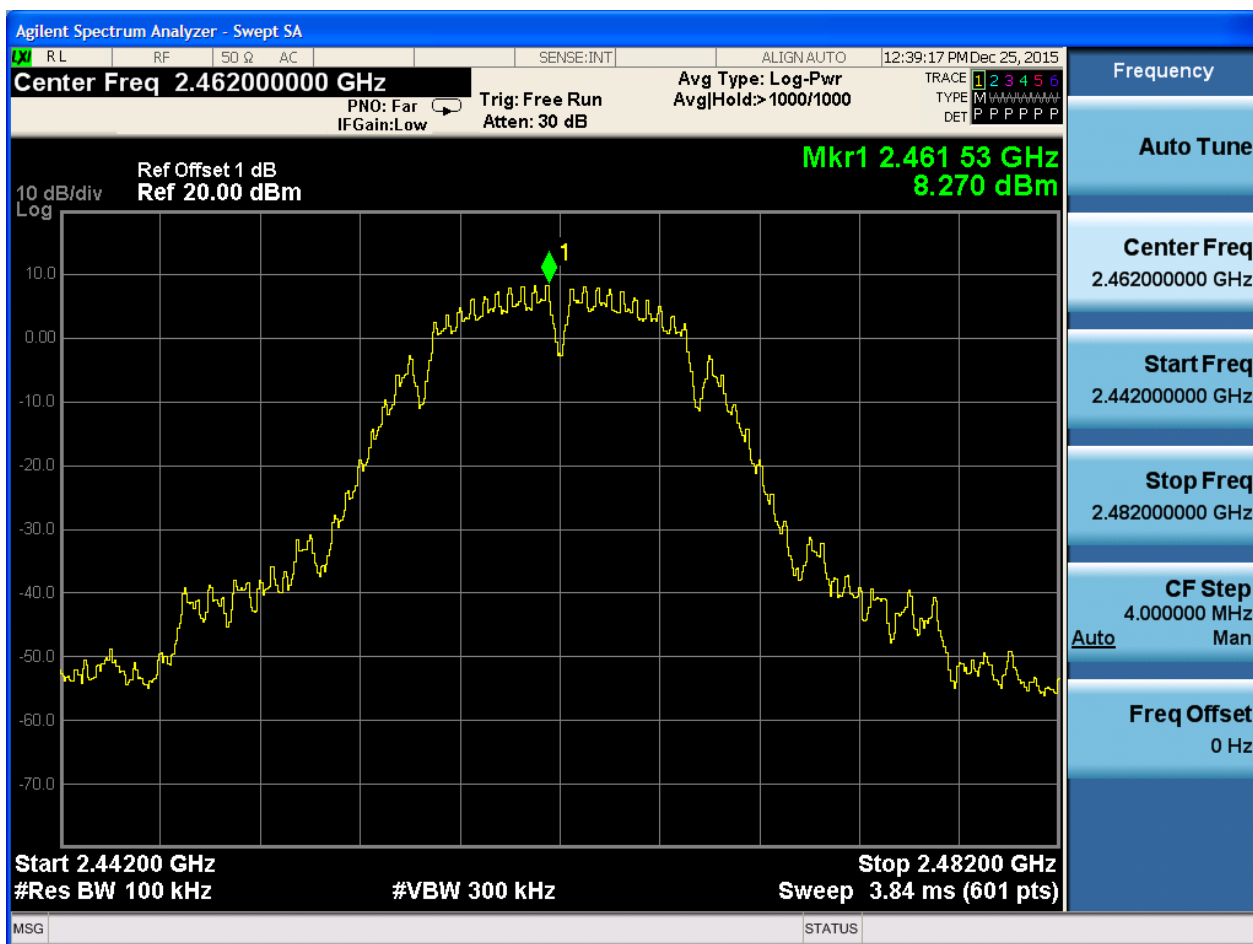






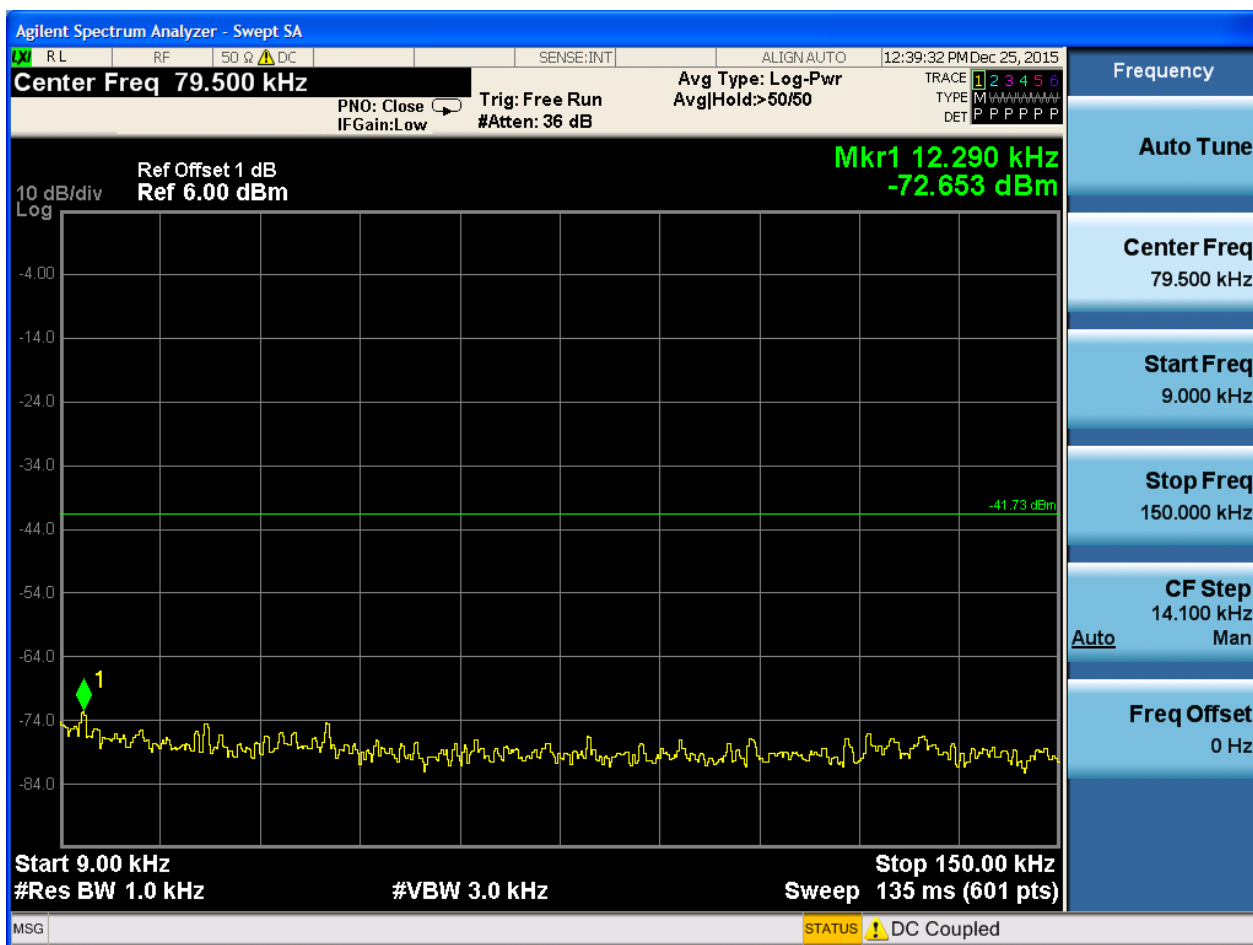
2.3 11B_H@Ant 1

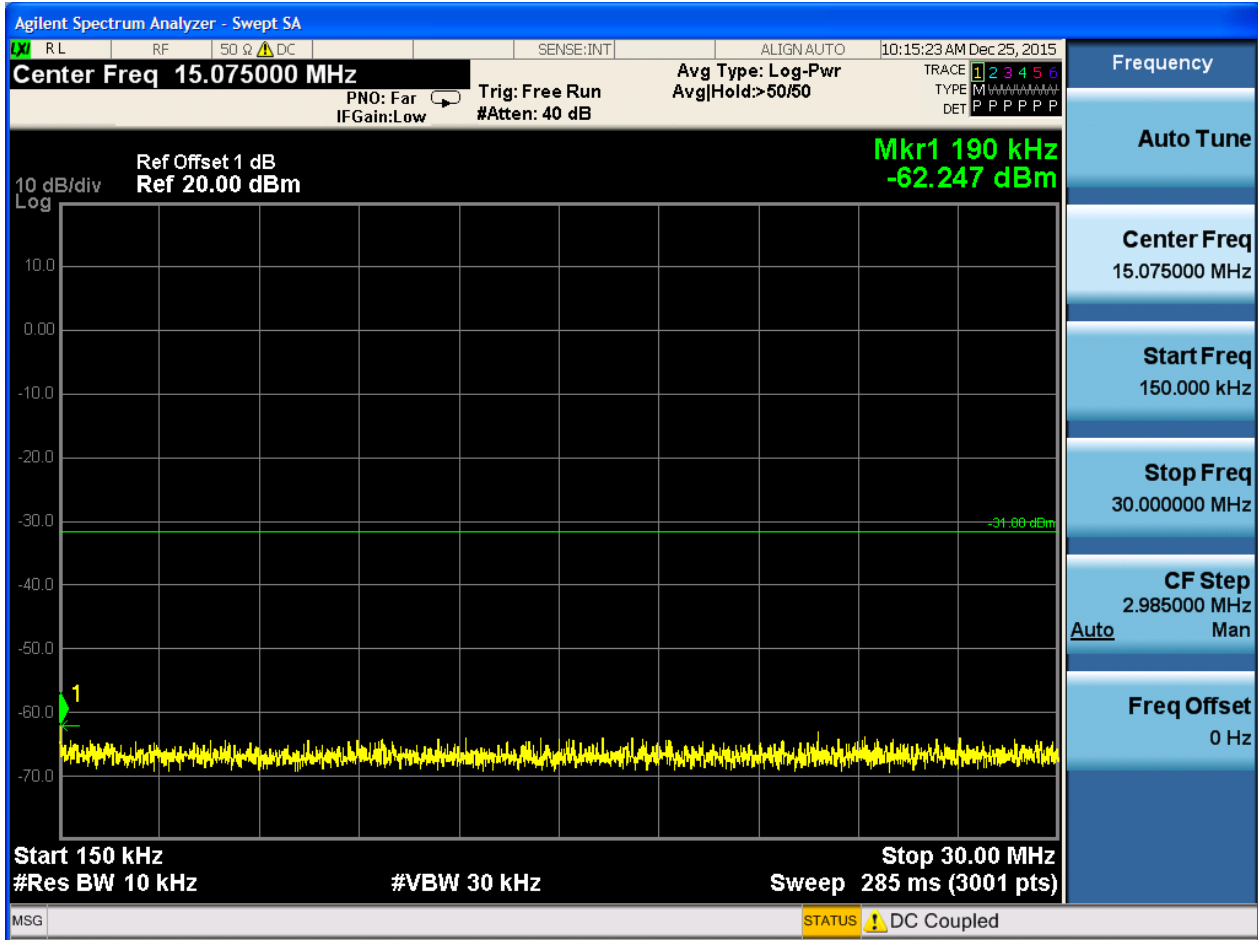
Pref:

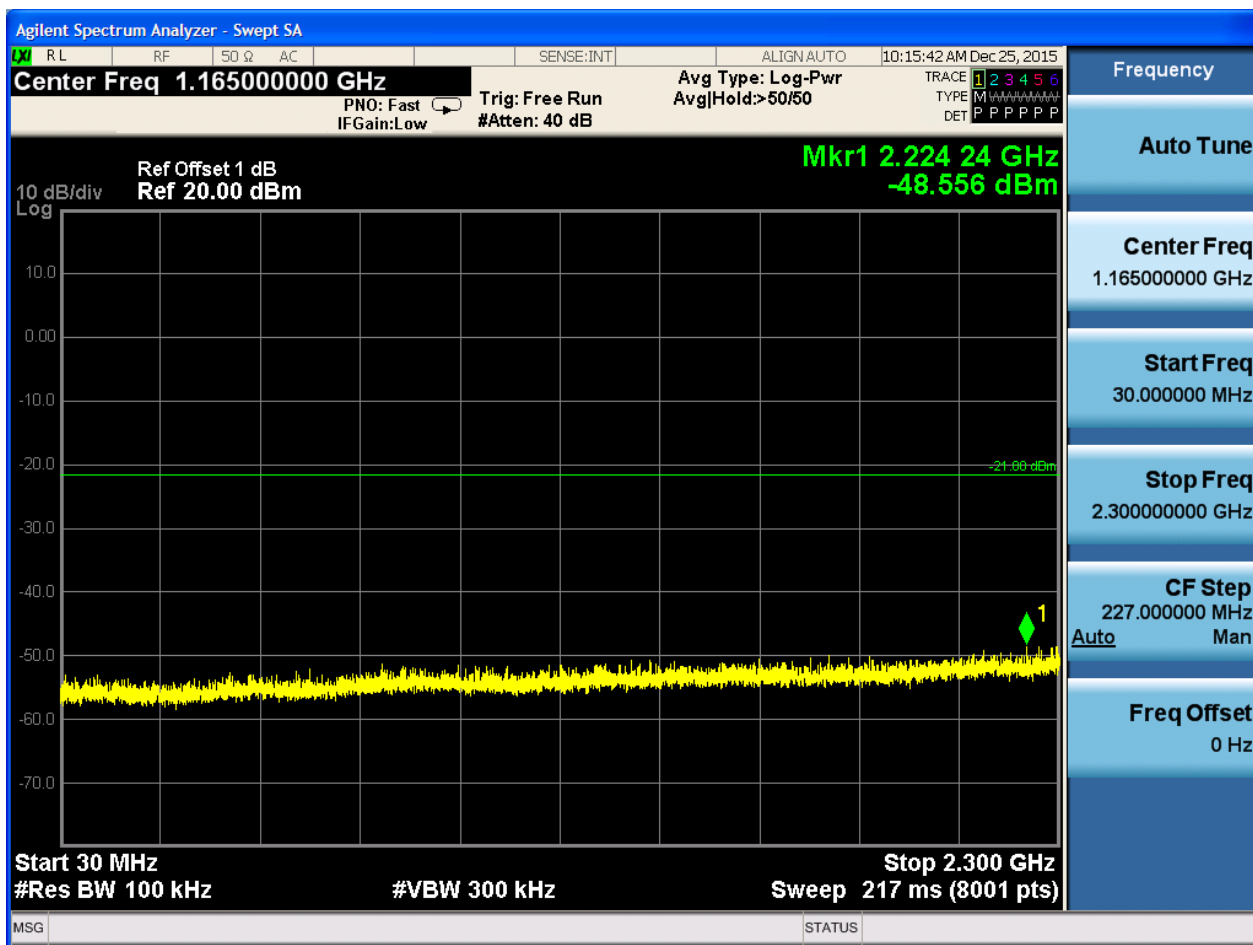


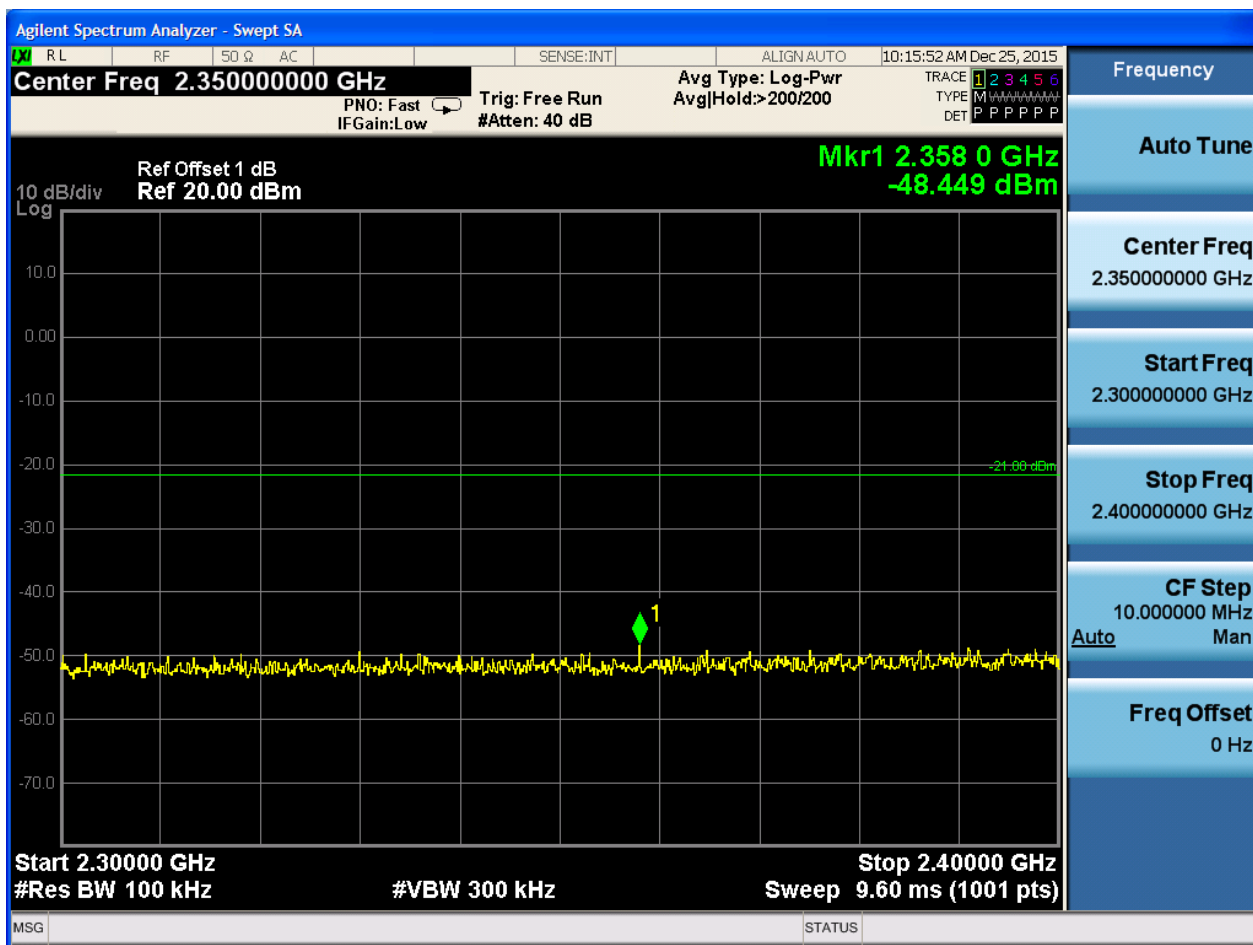


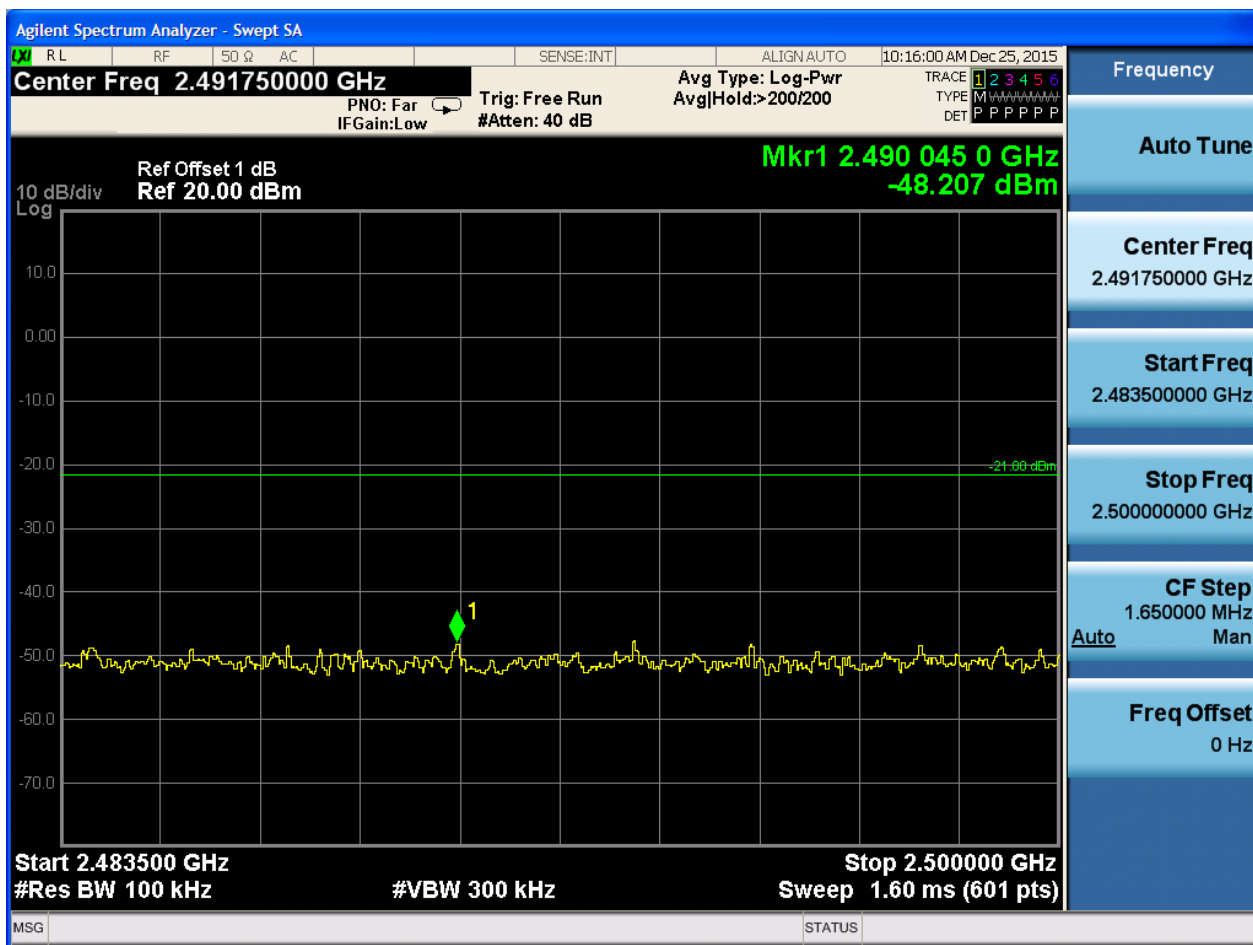
Puw:









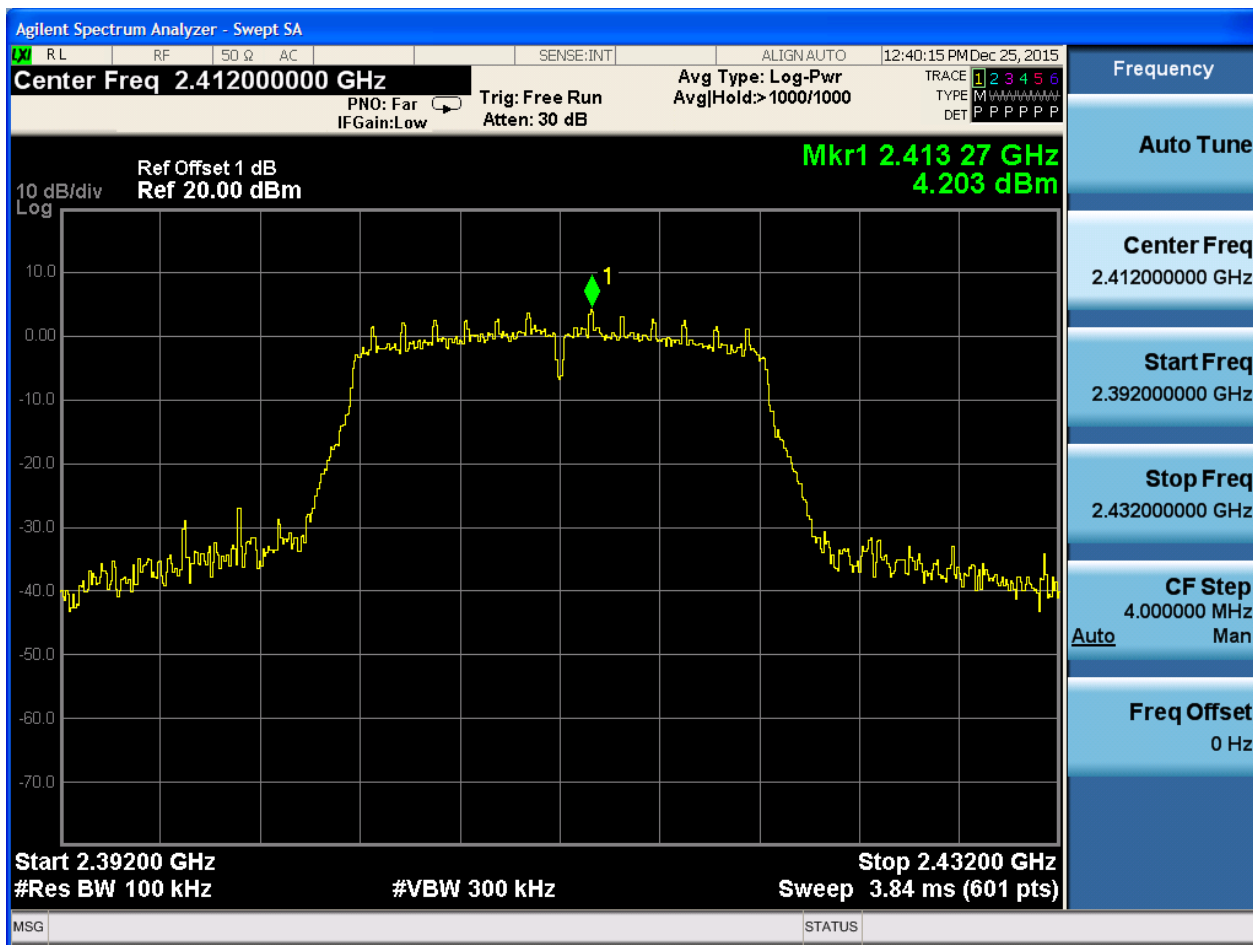






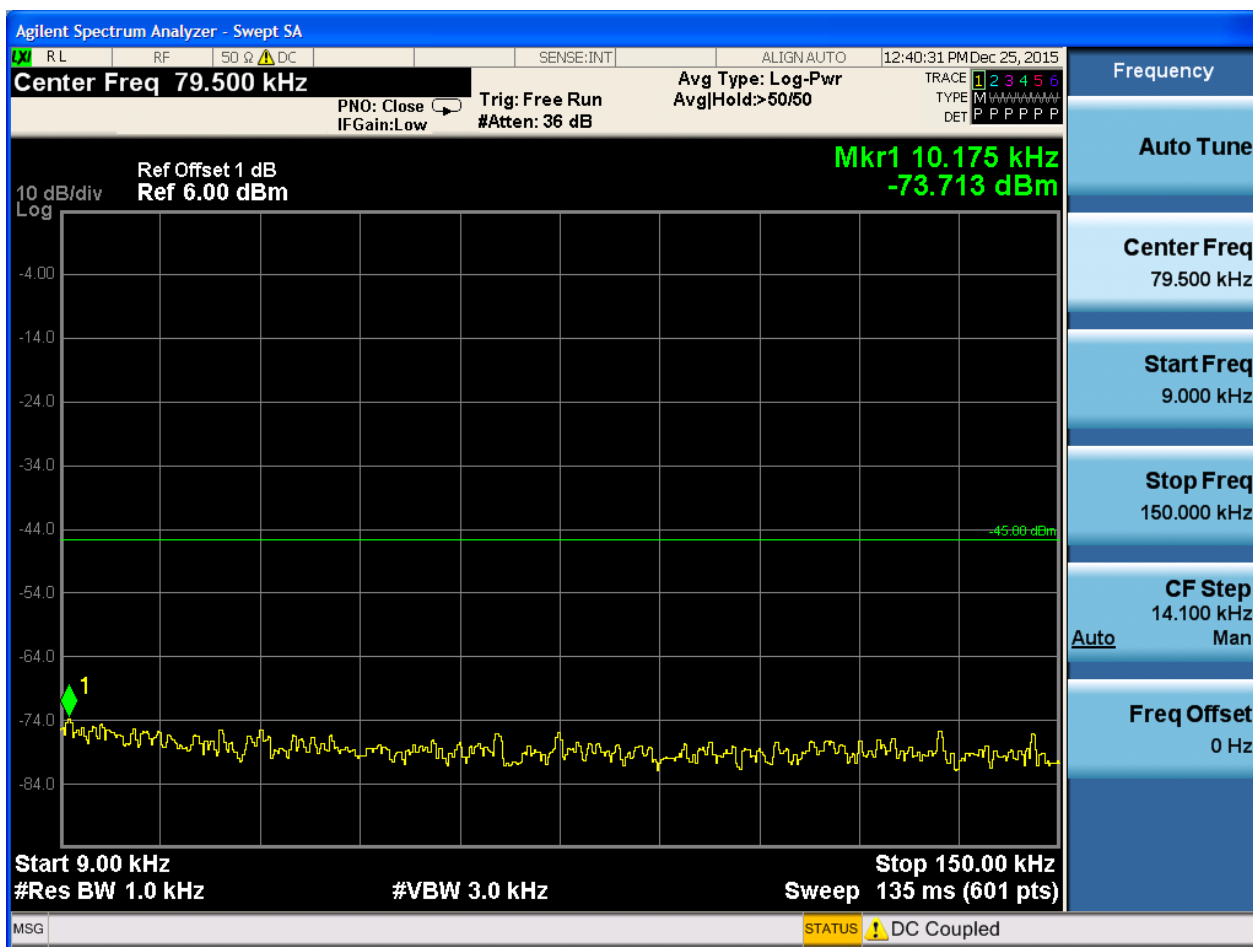
2.4 11G_L@Ant 1

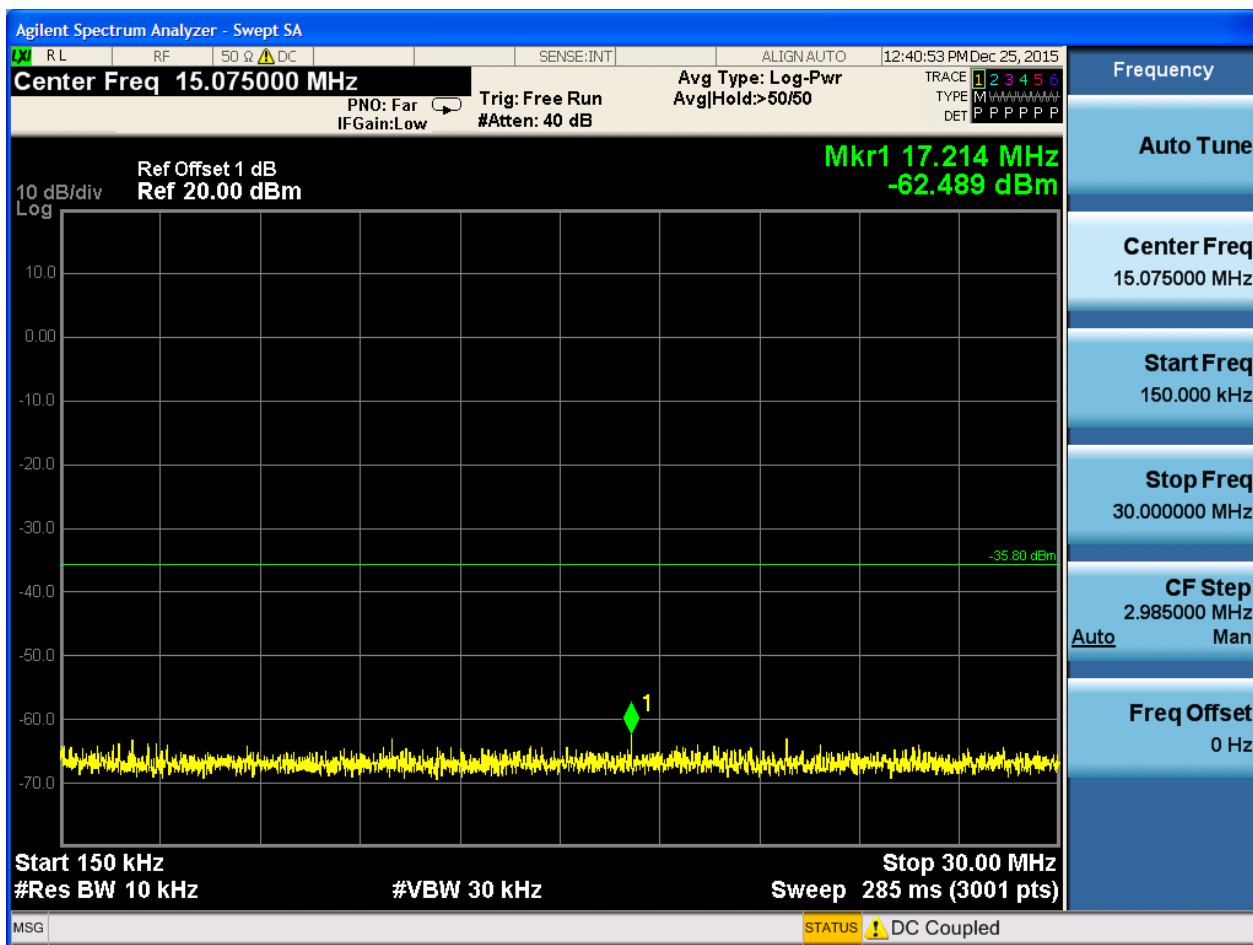
Pref:

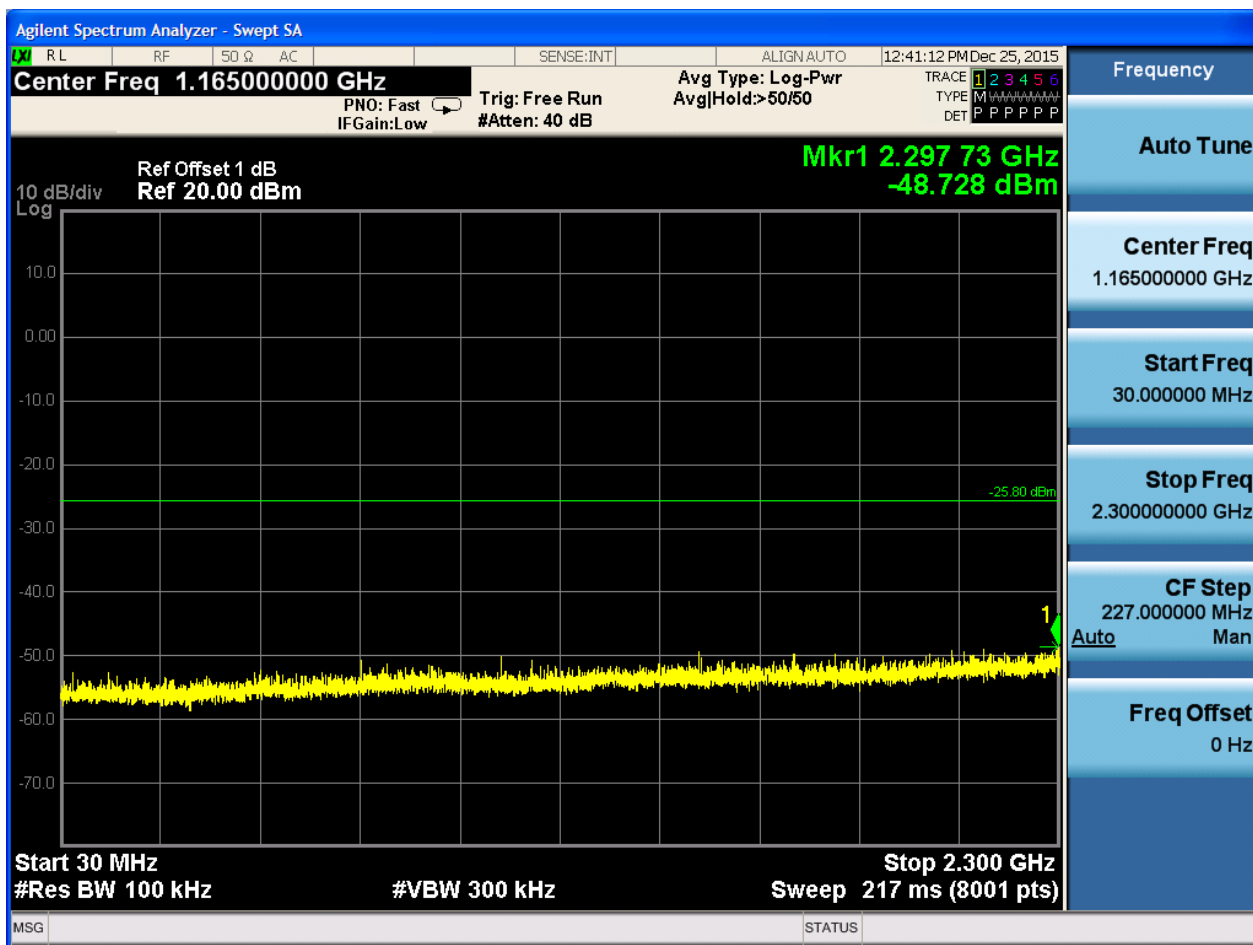


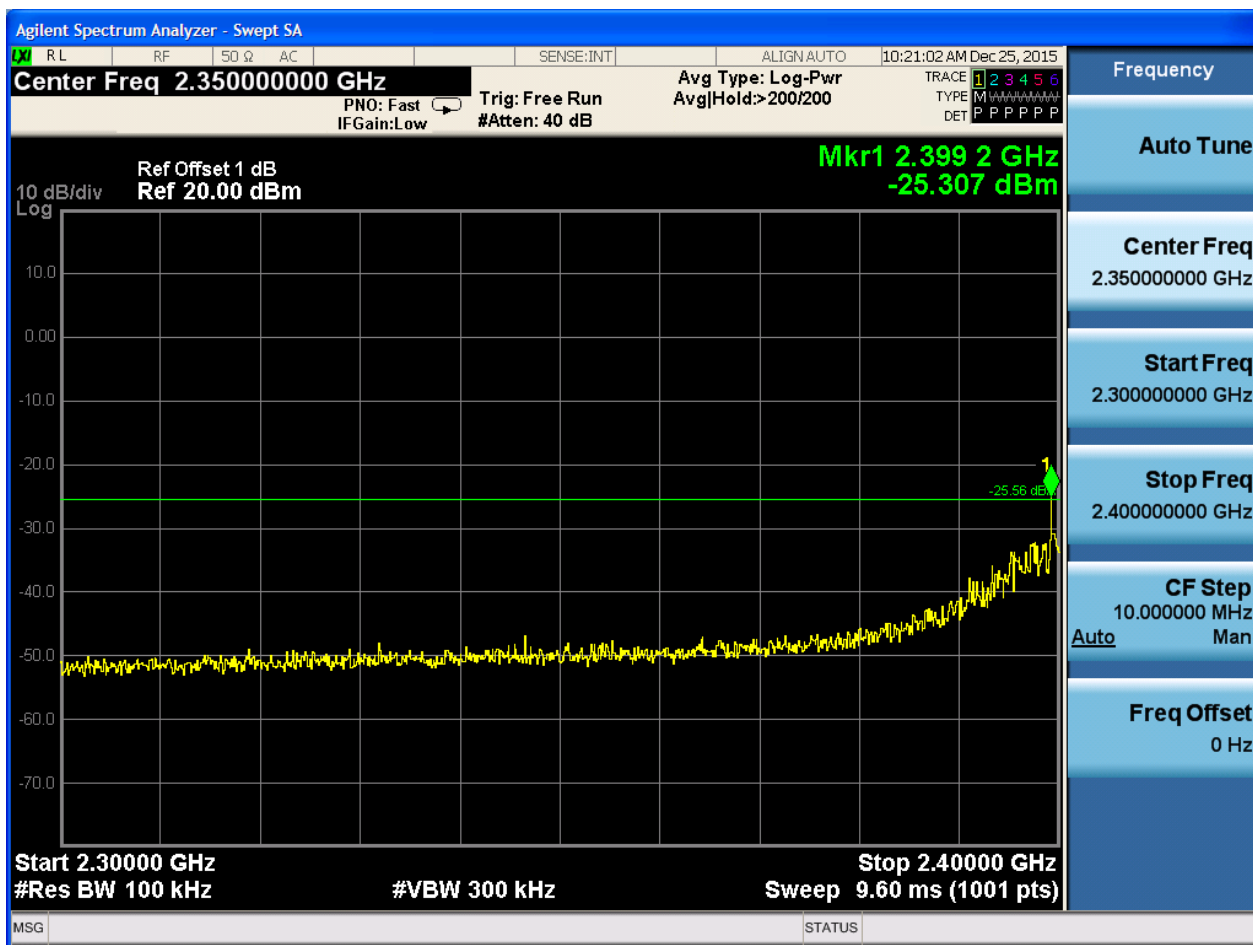


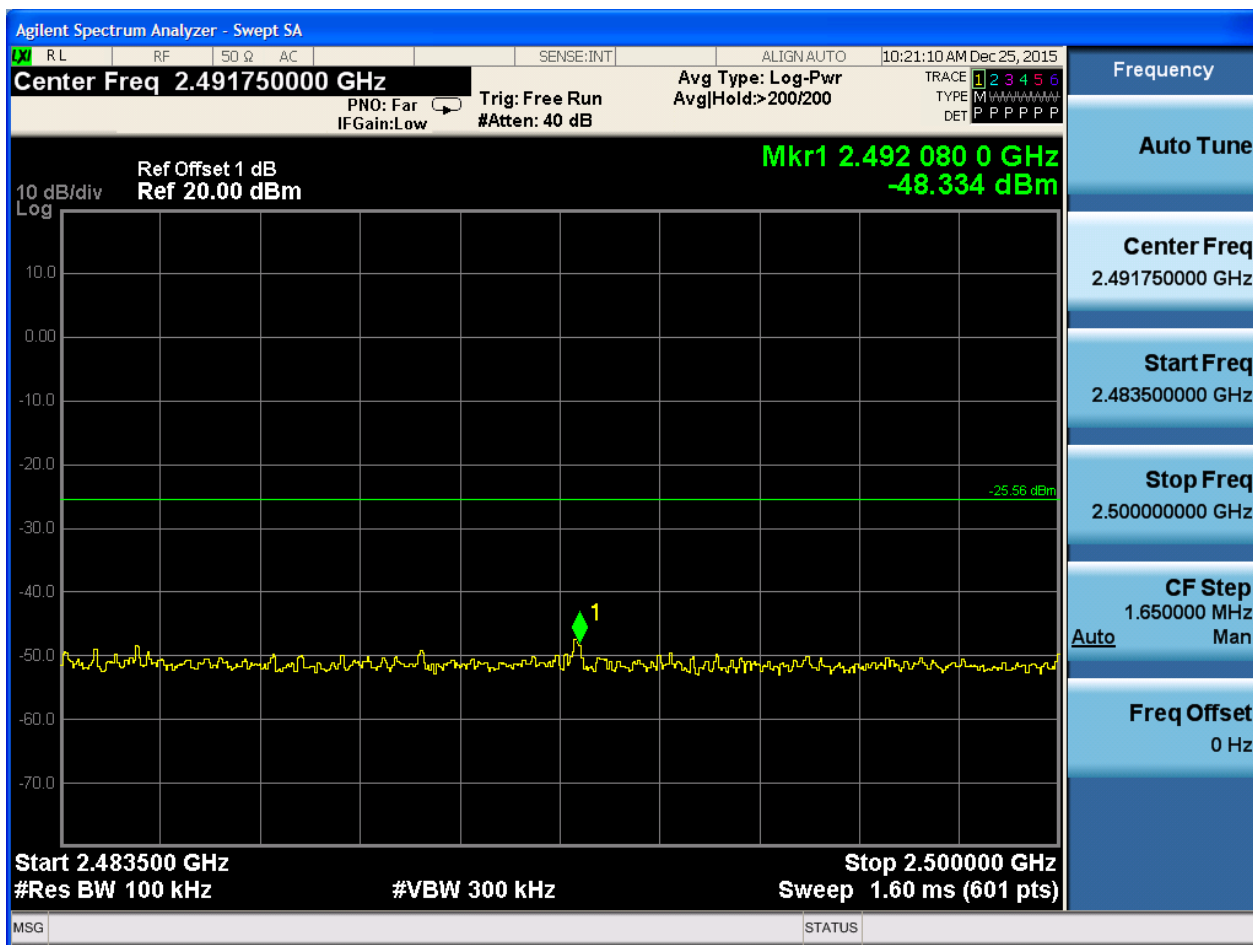
Puw:

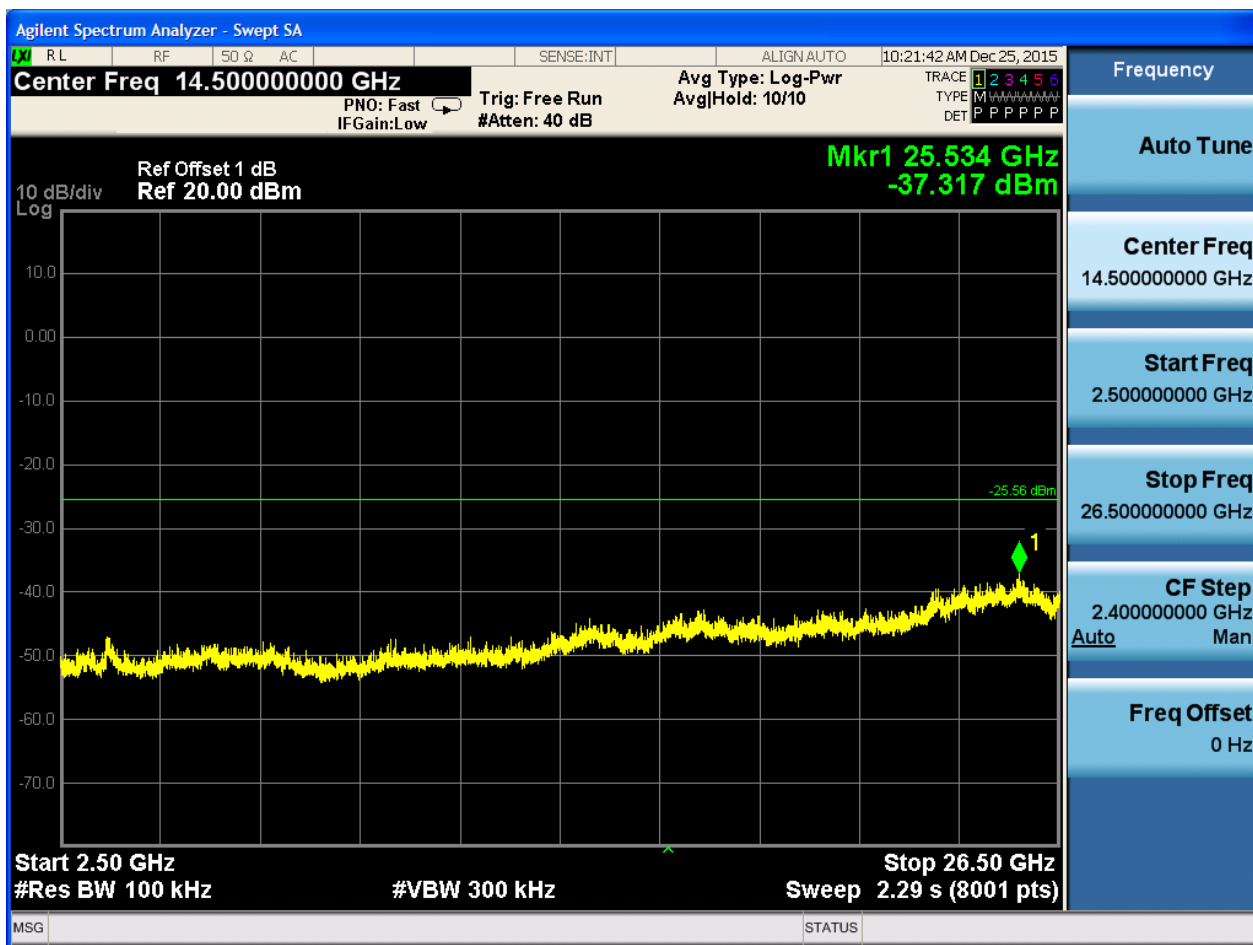








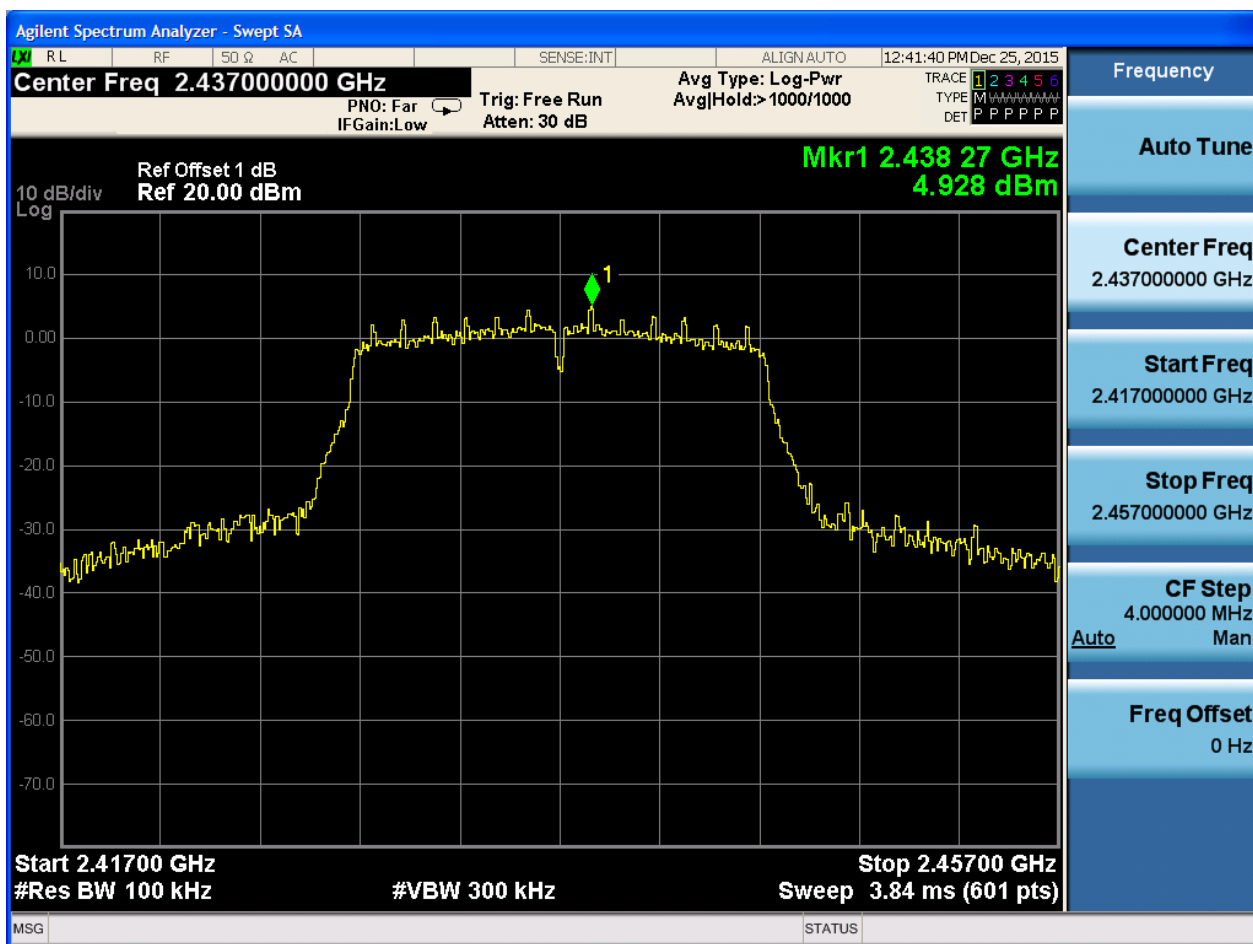






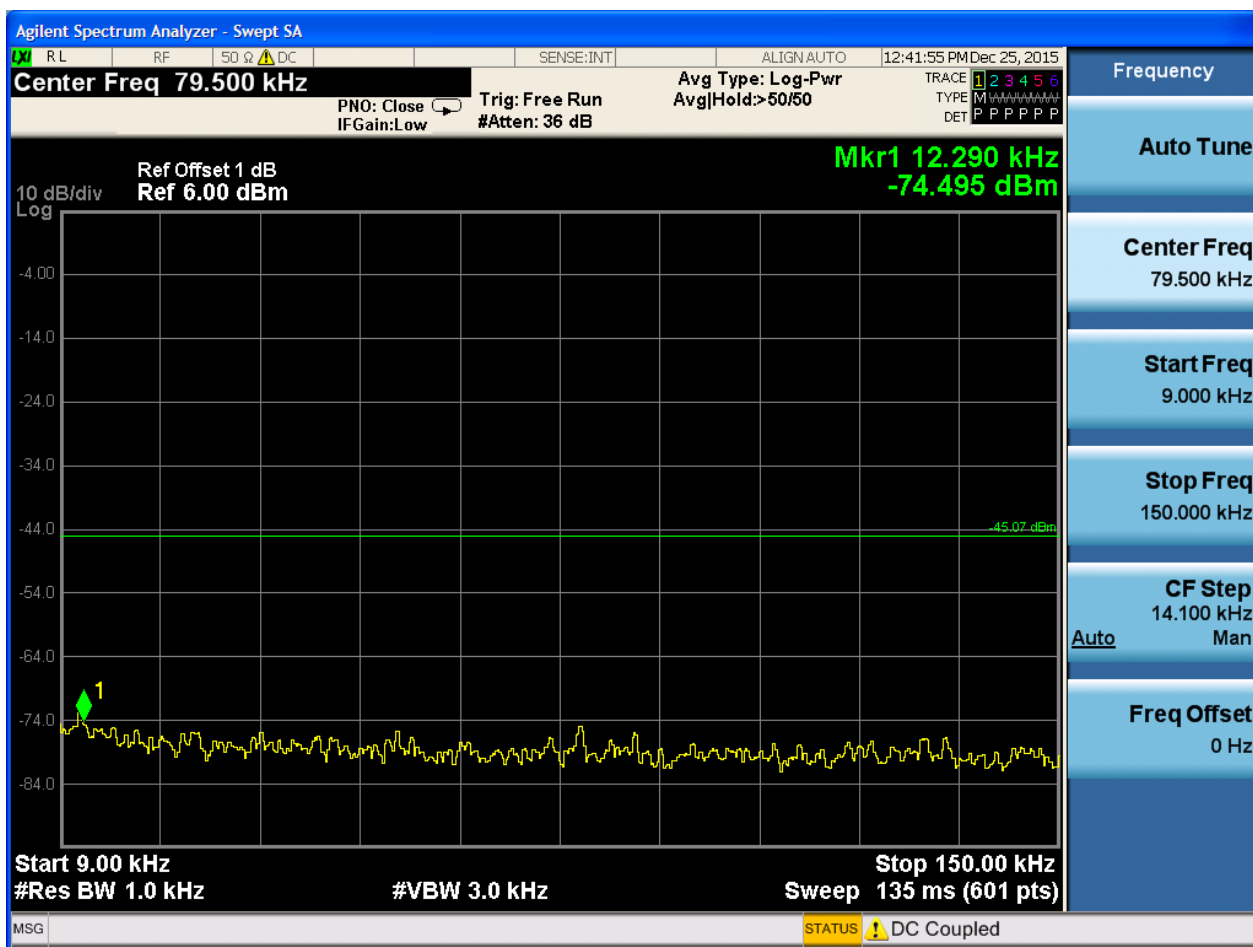
2.5 11G_M@Ant 1

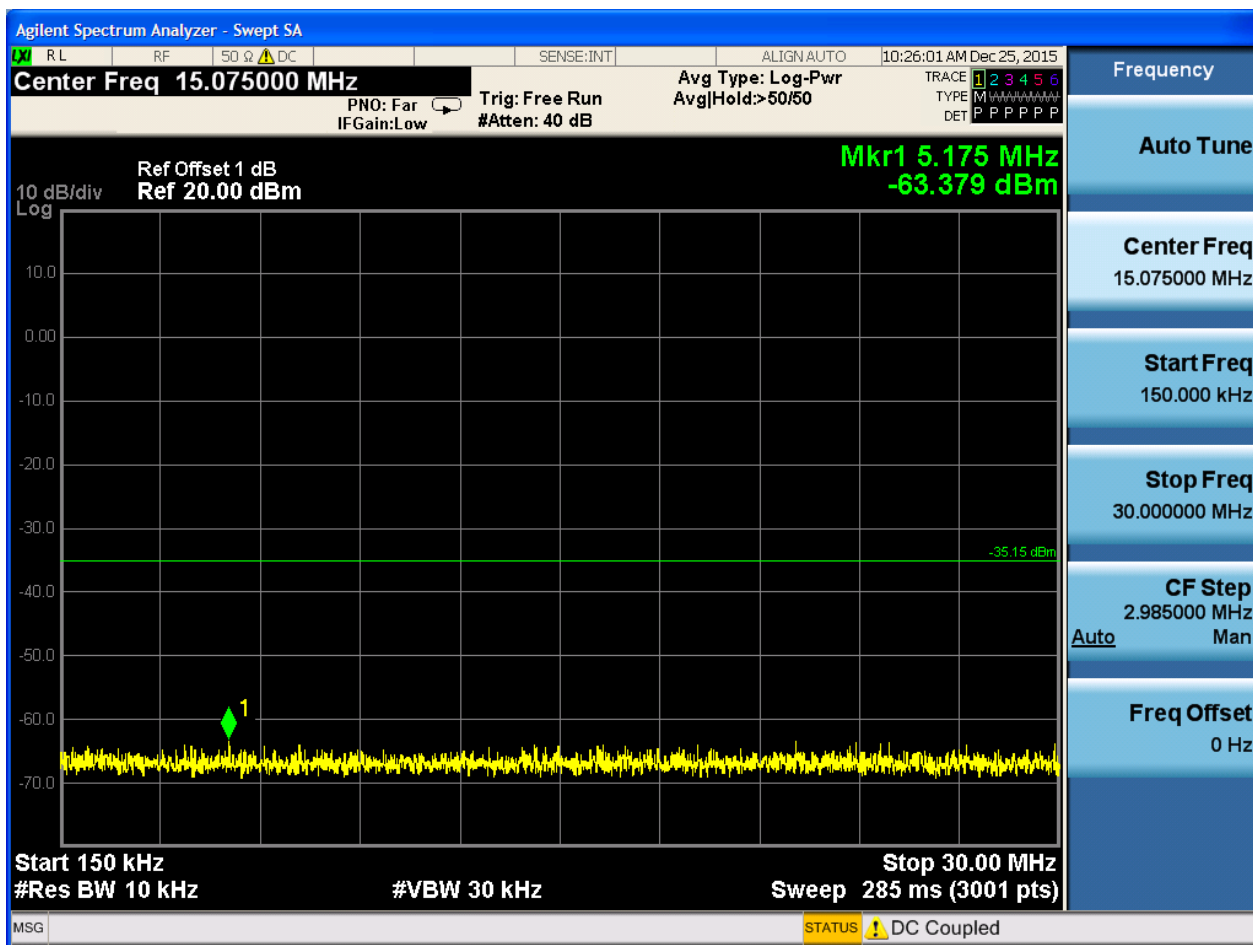
Pref:

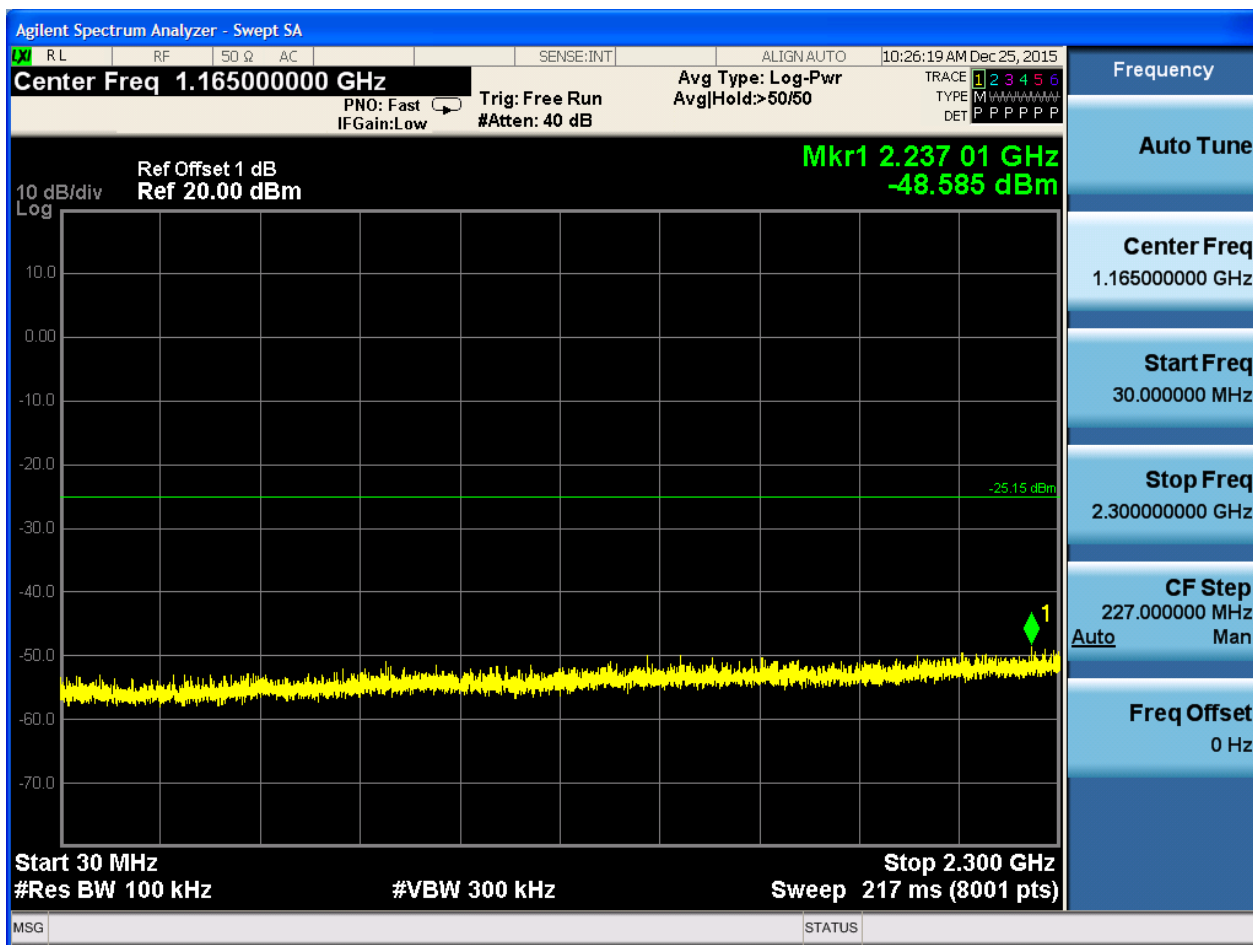


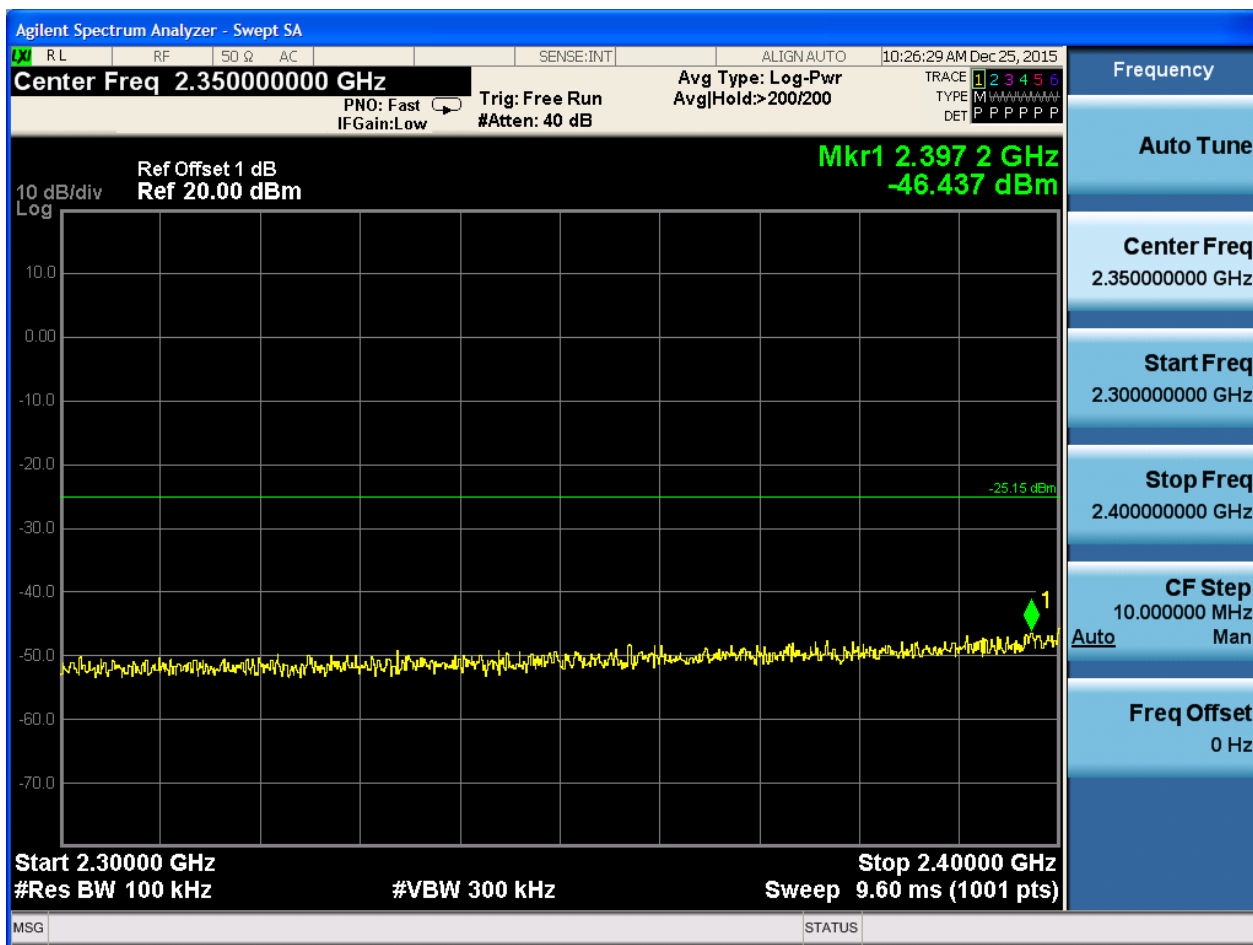


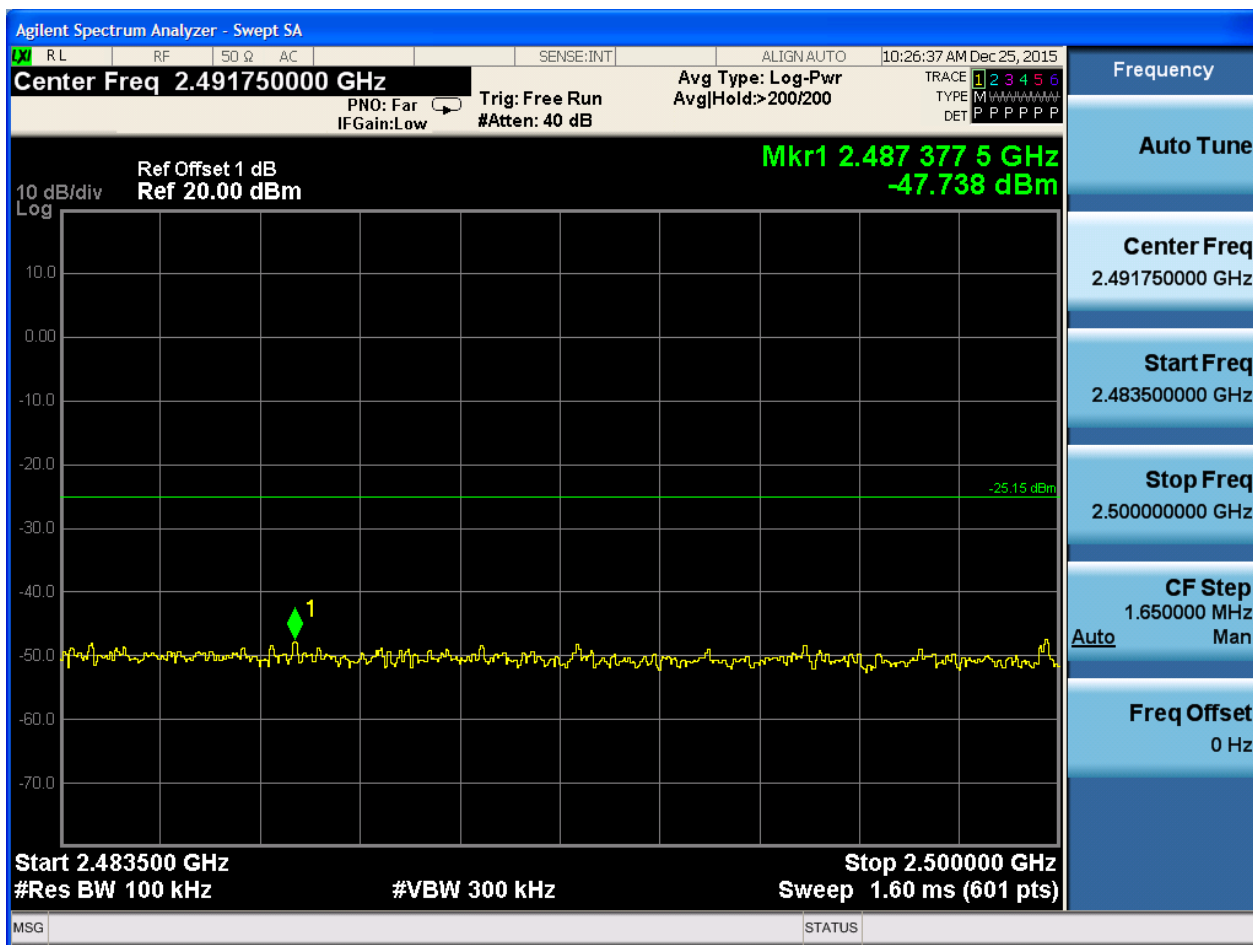
Puw:









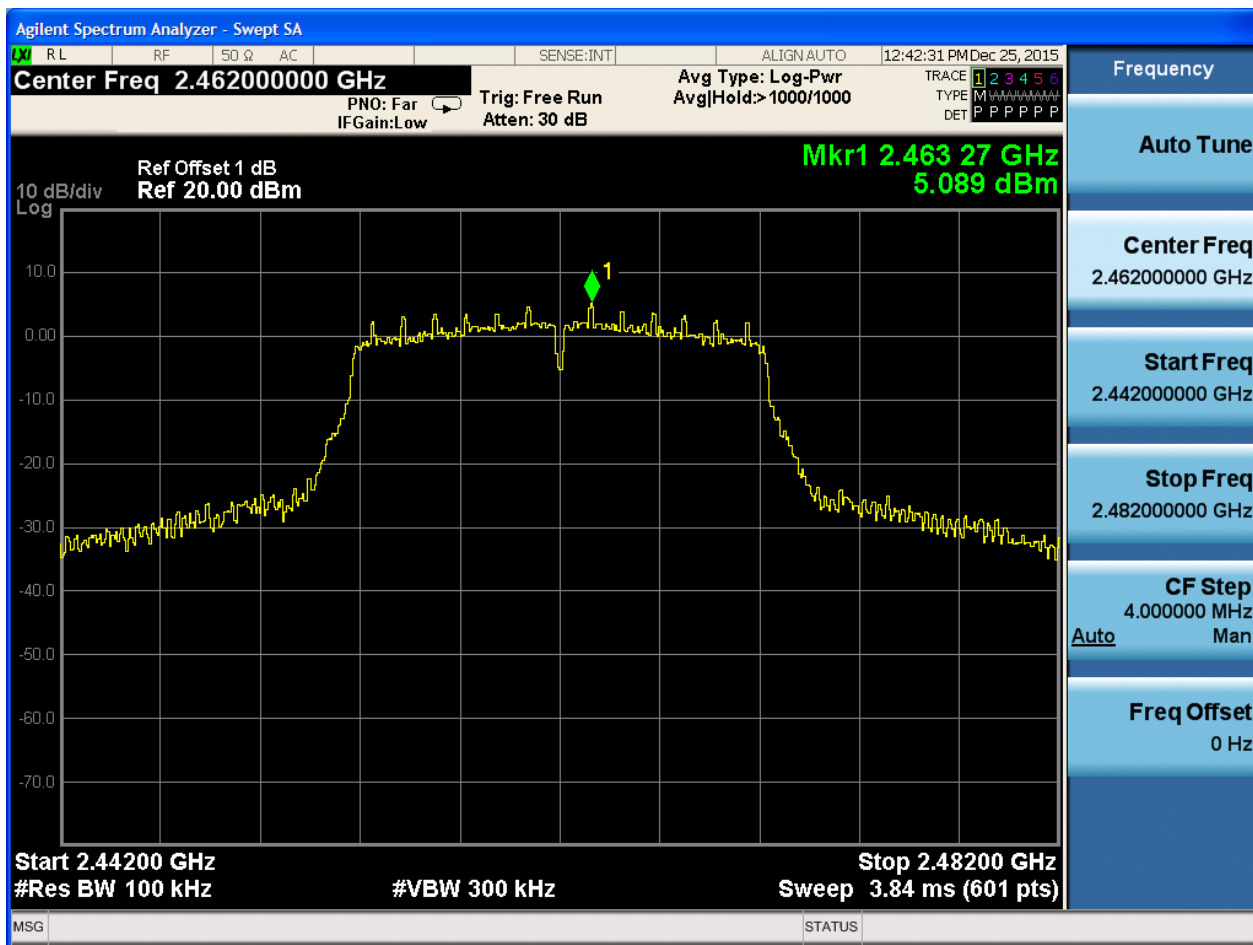






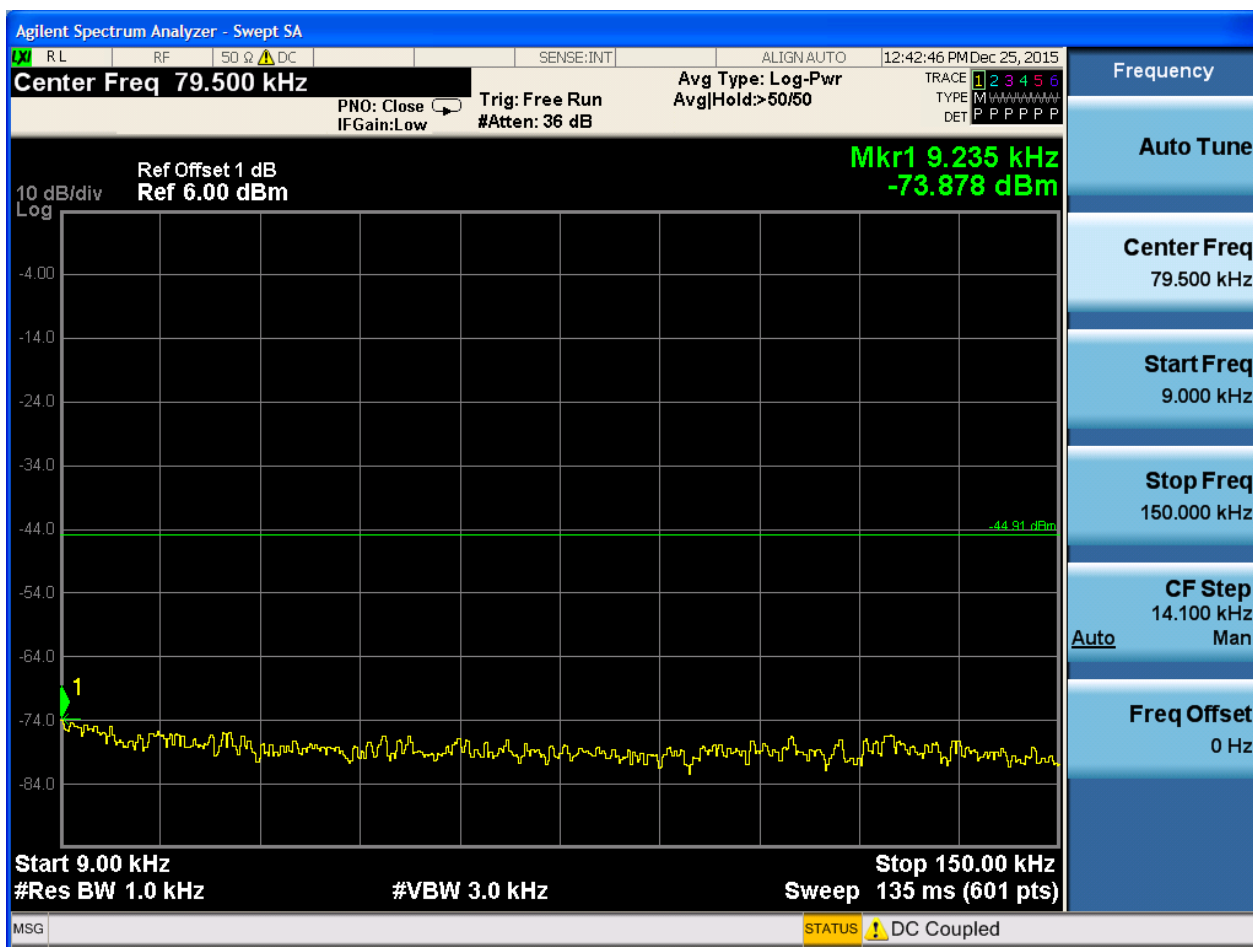
2.6 11G_H@Ant 1

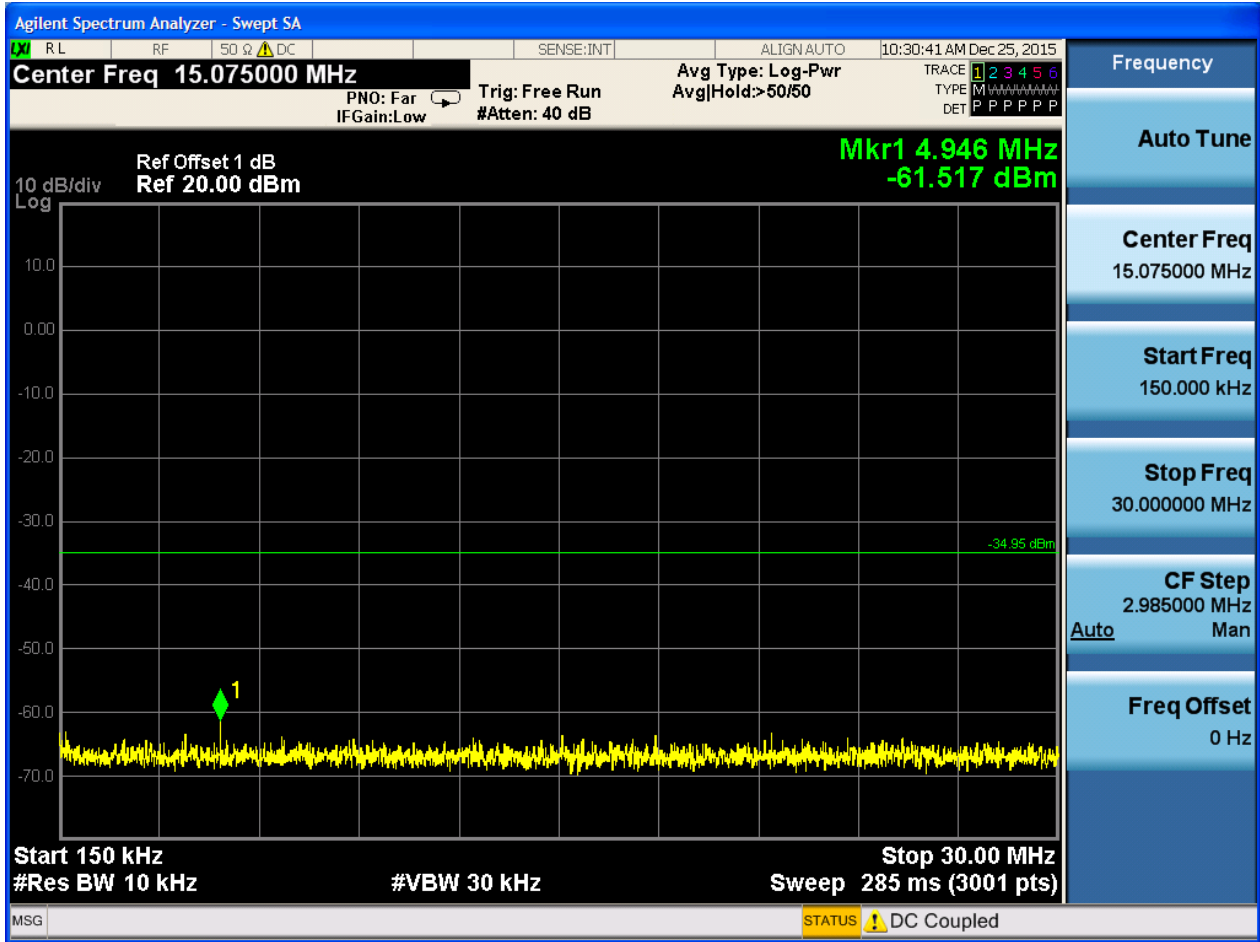
Pref:

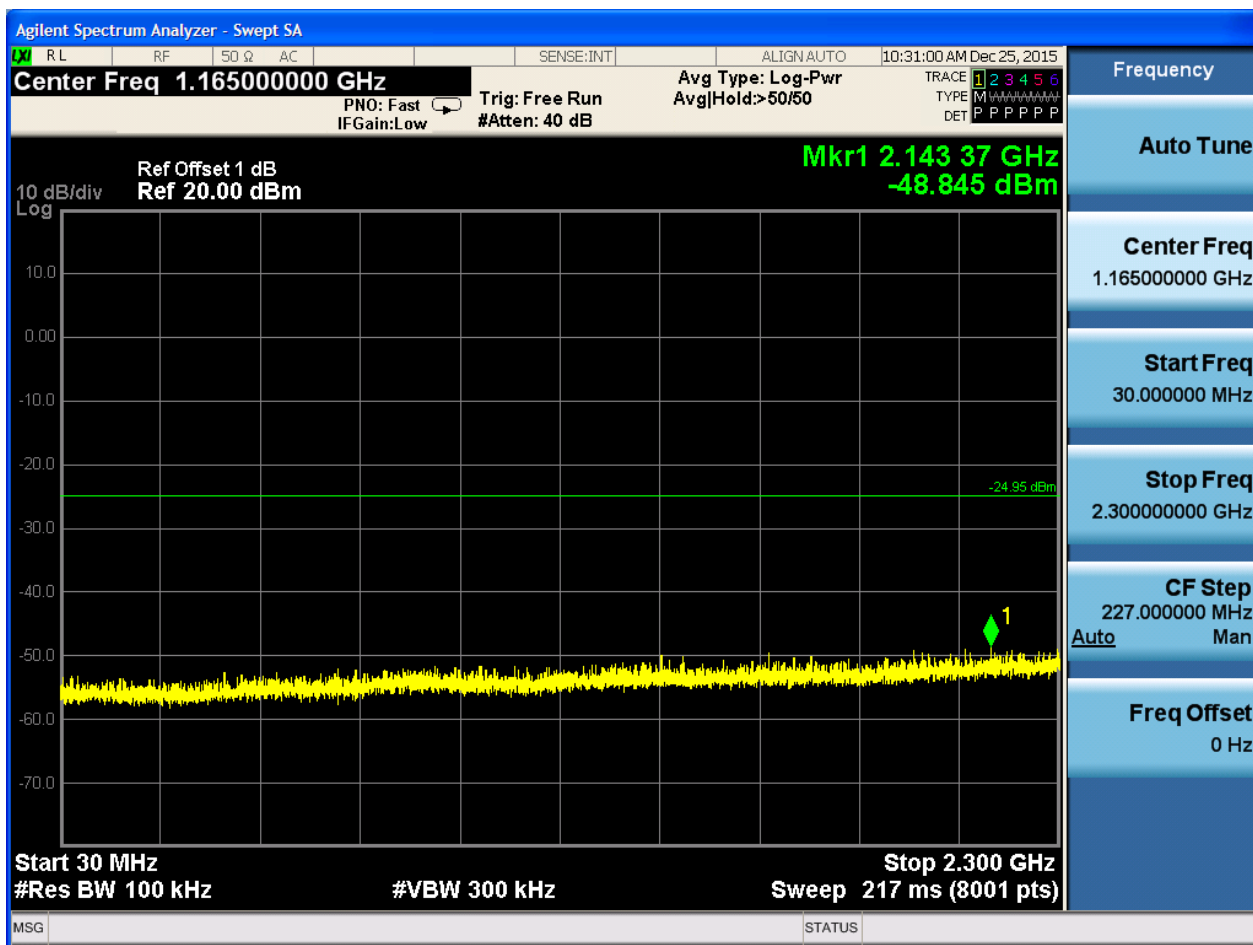


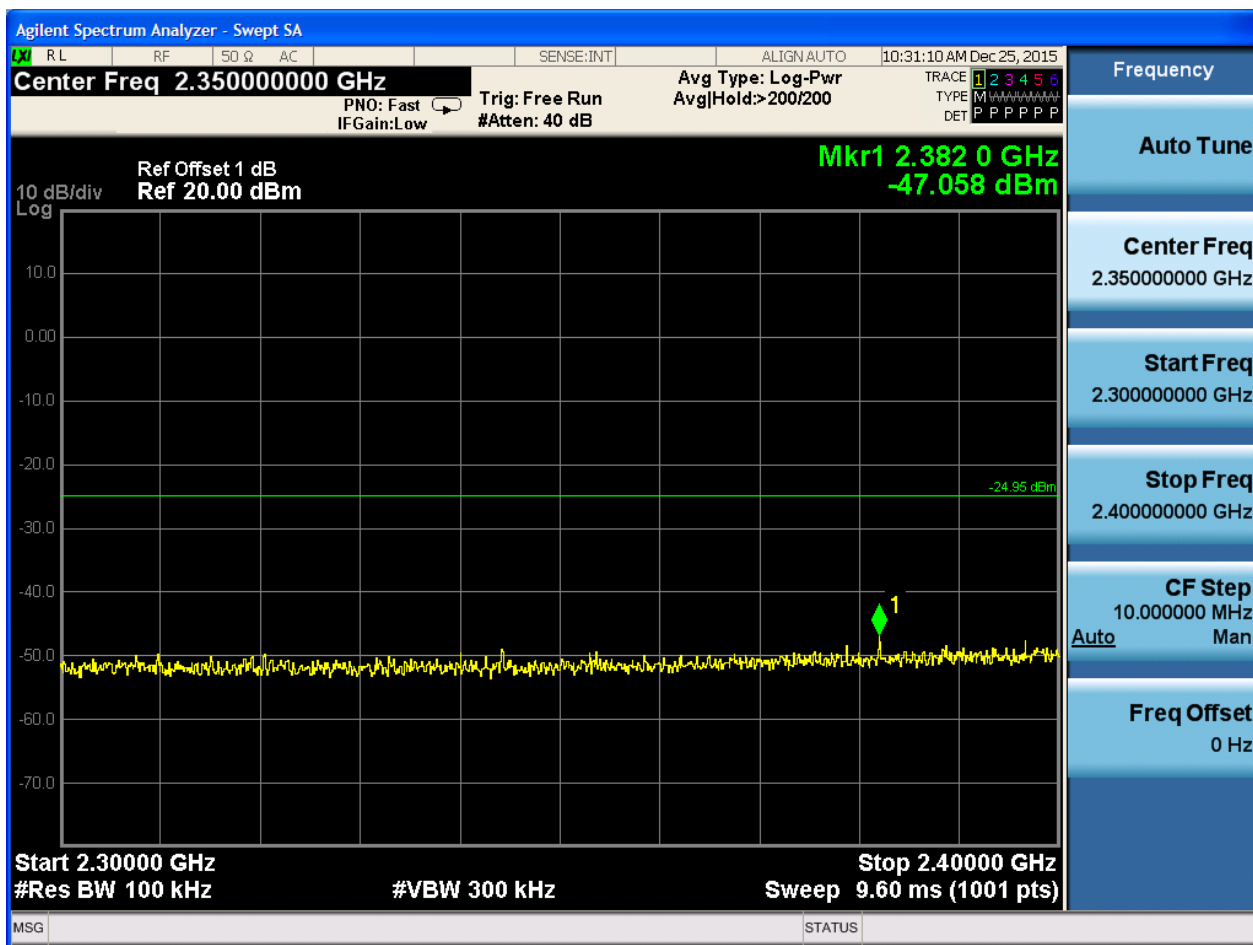


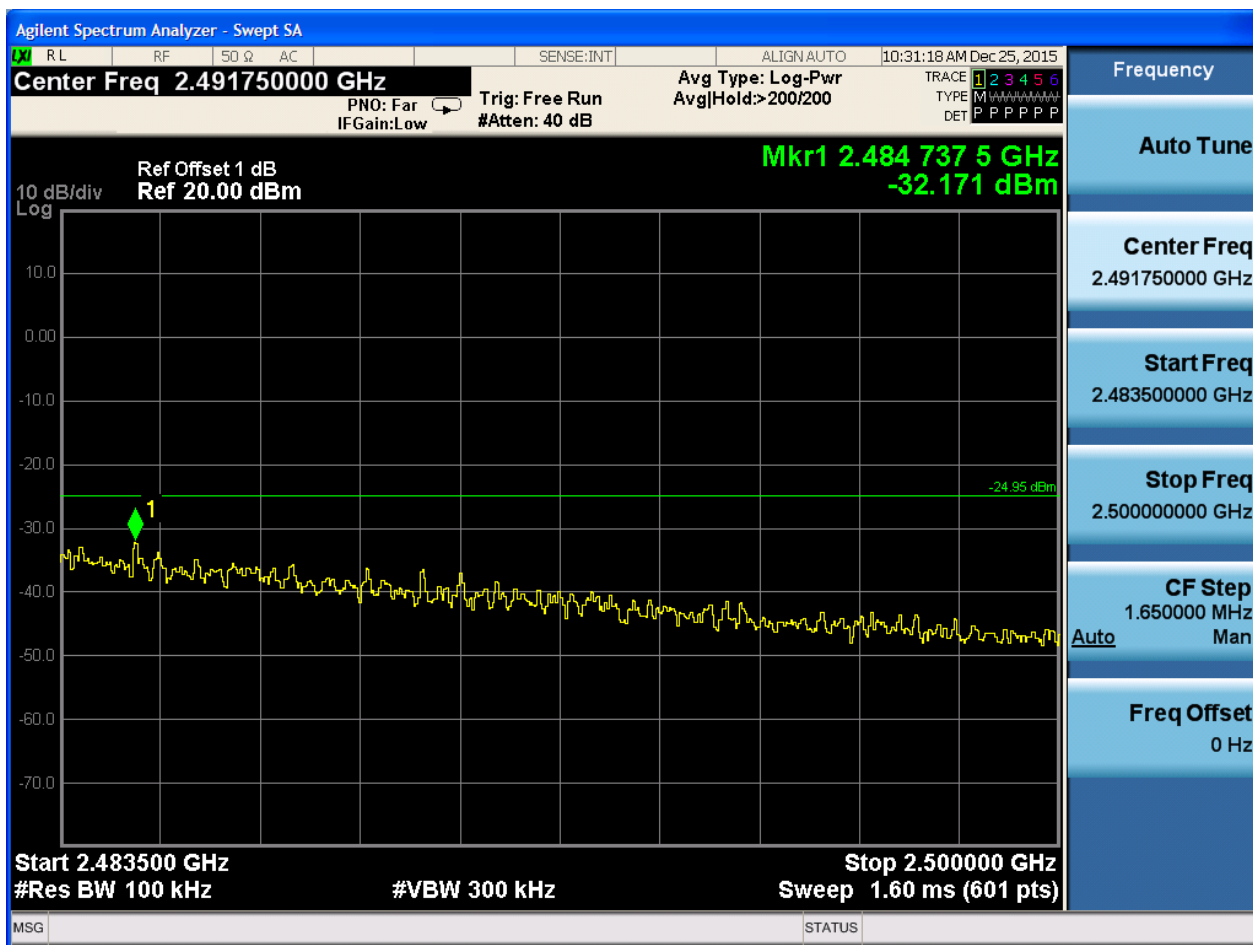
Puw:









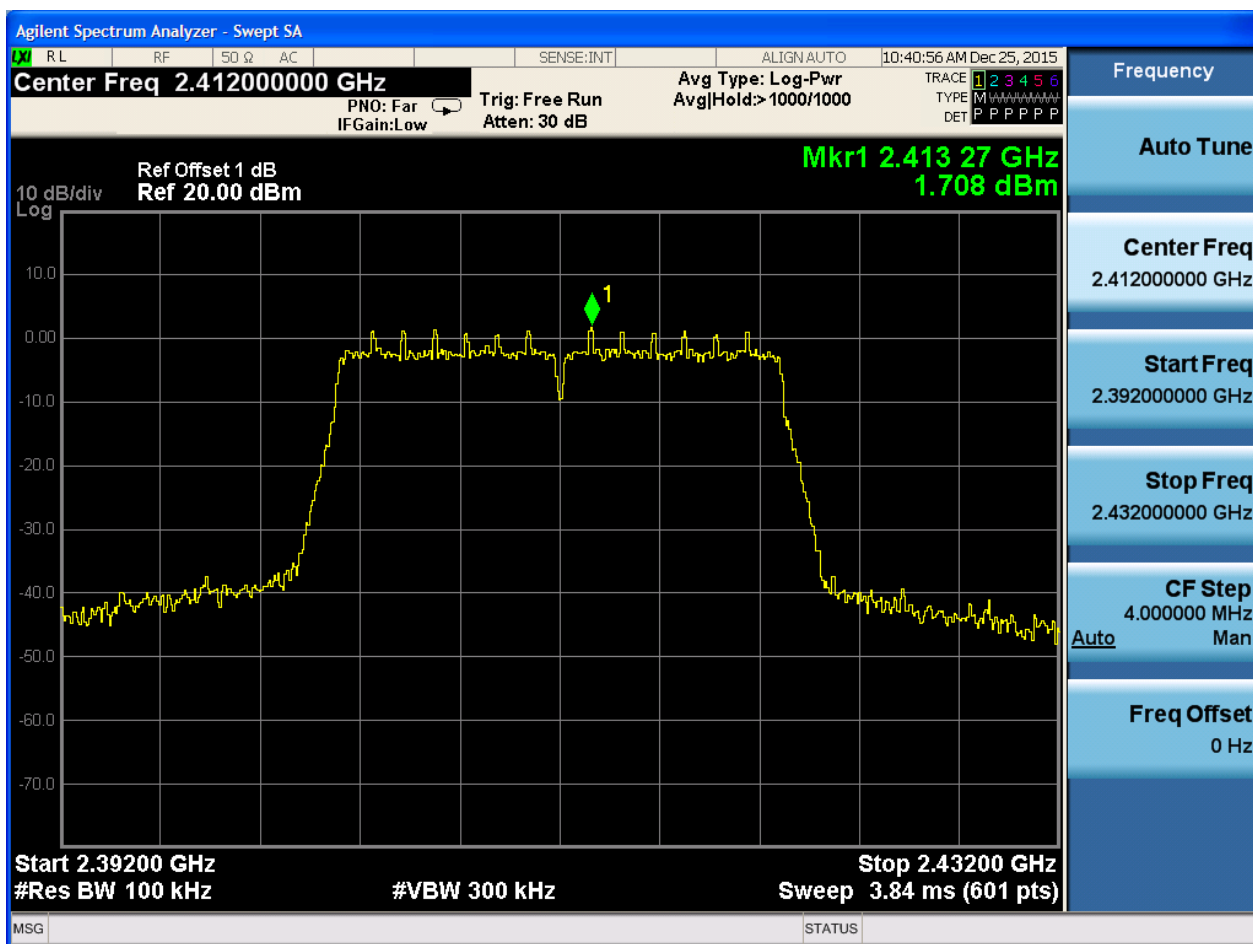






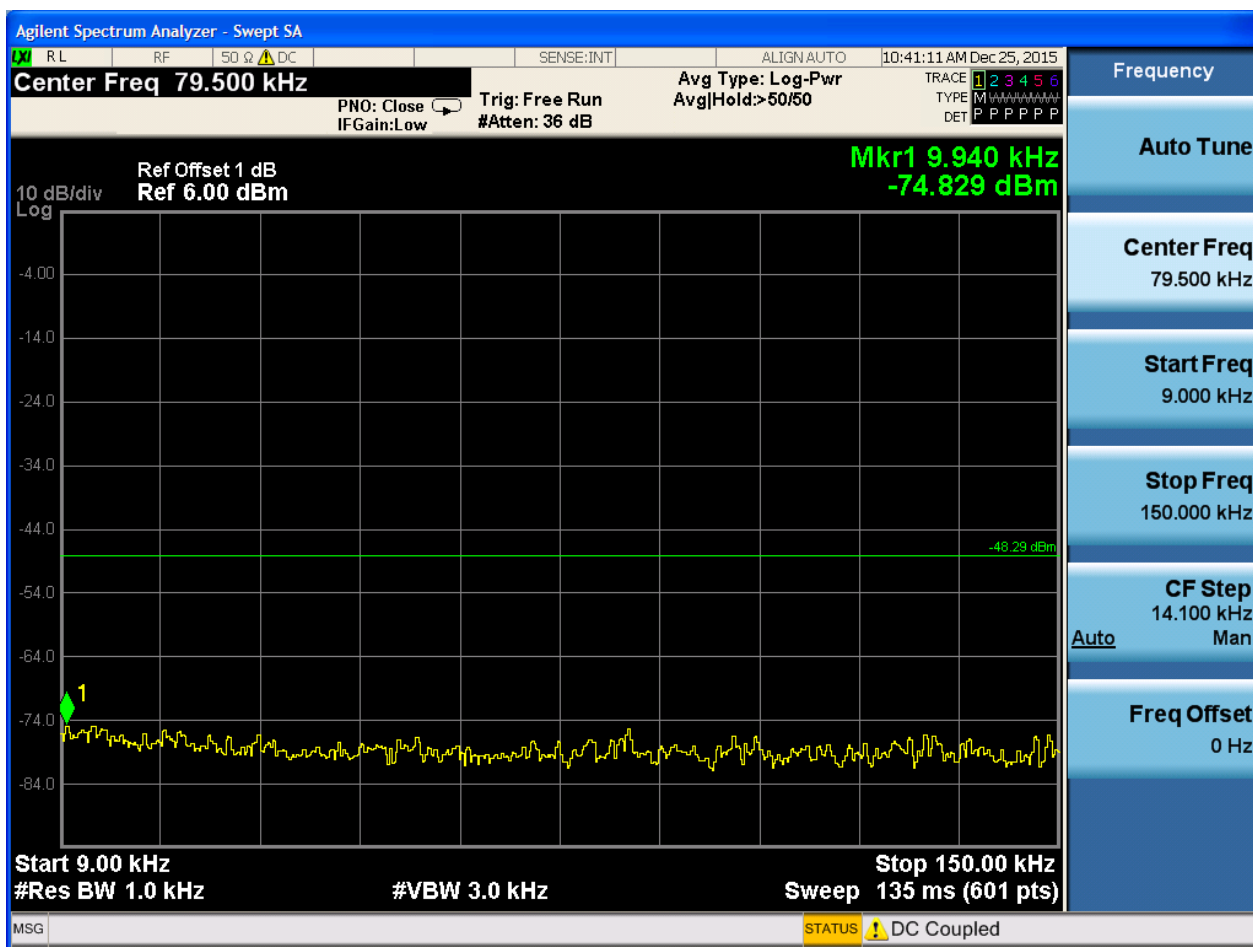
2.7 11N20_L@Ant 1

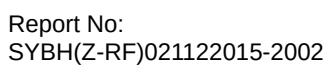
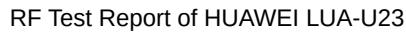
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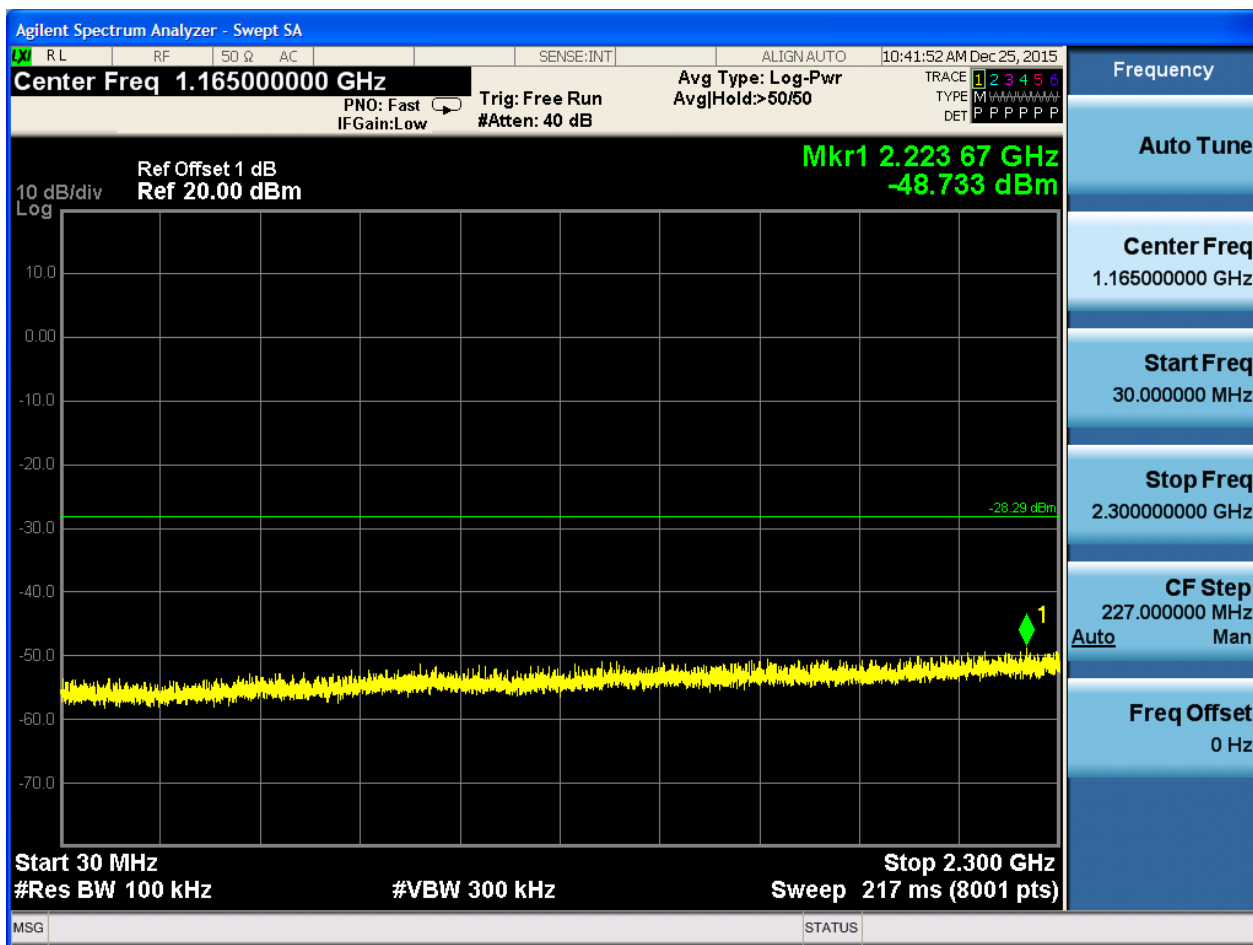


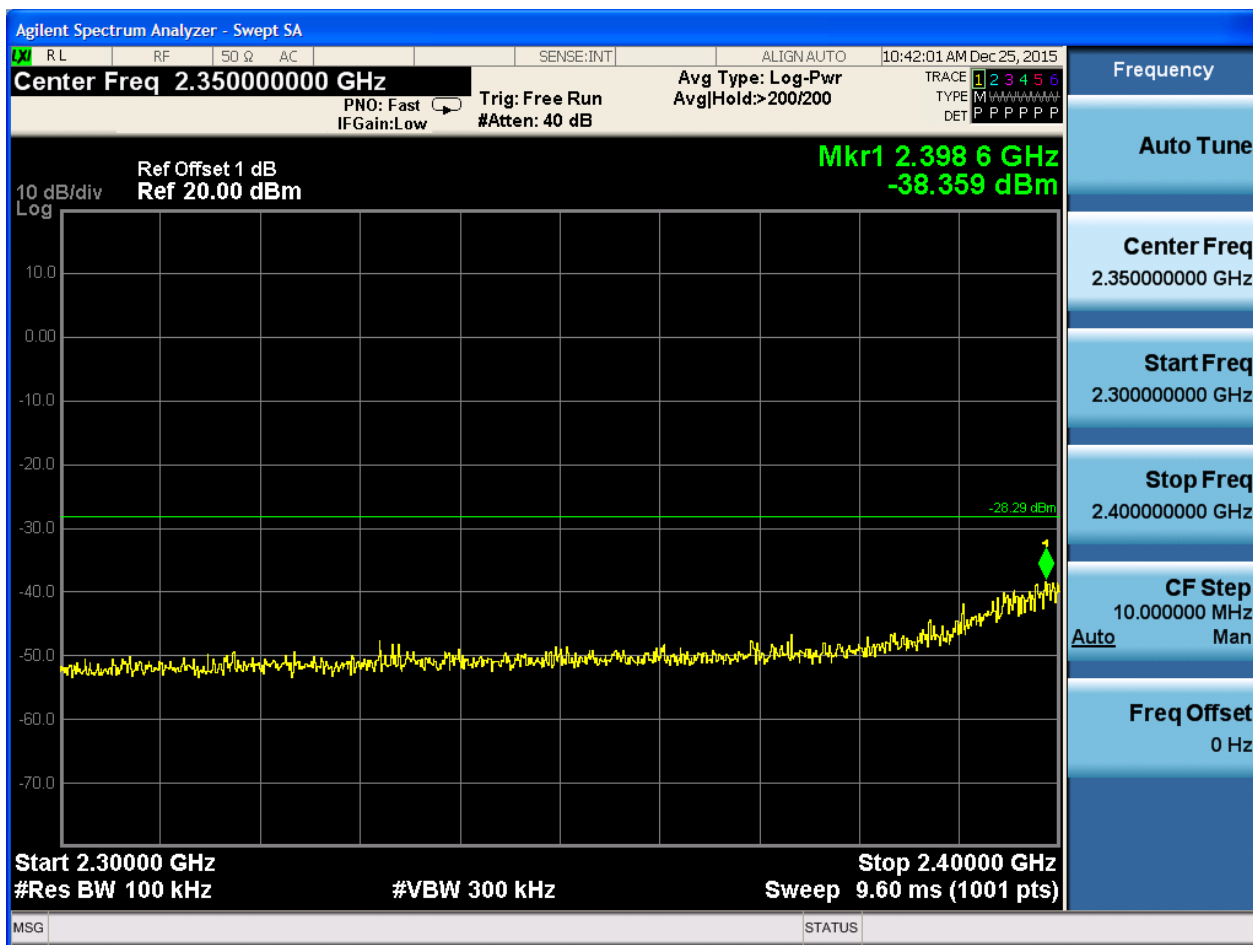


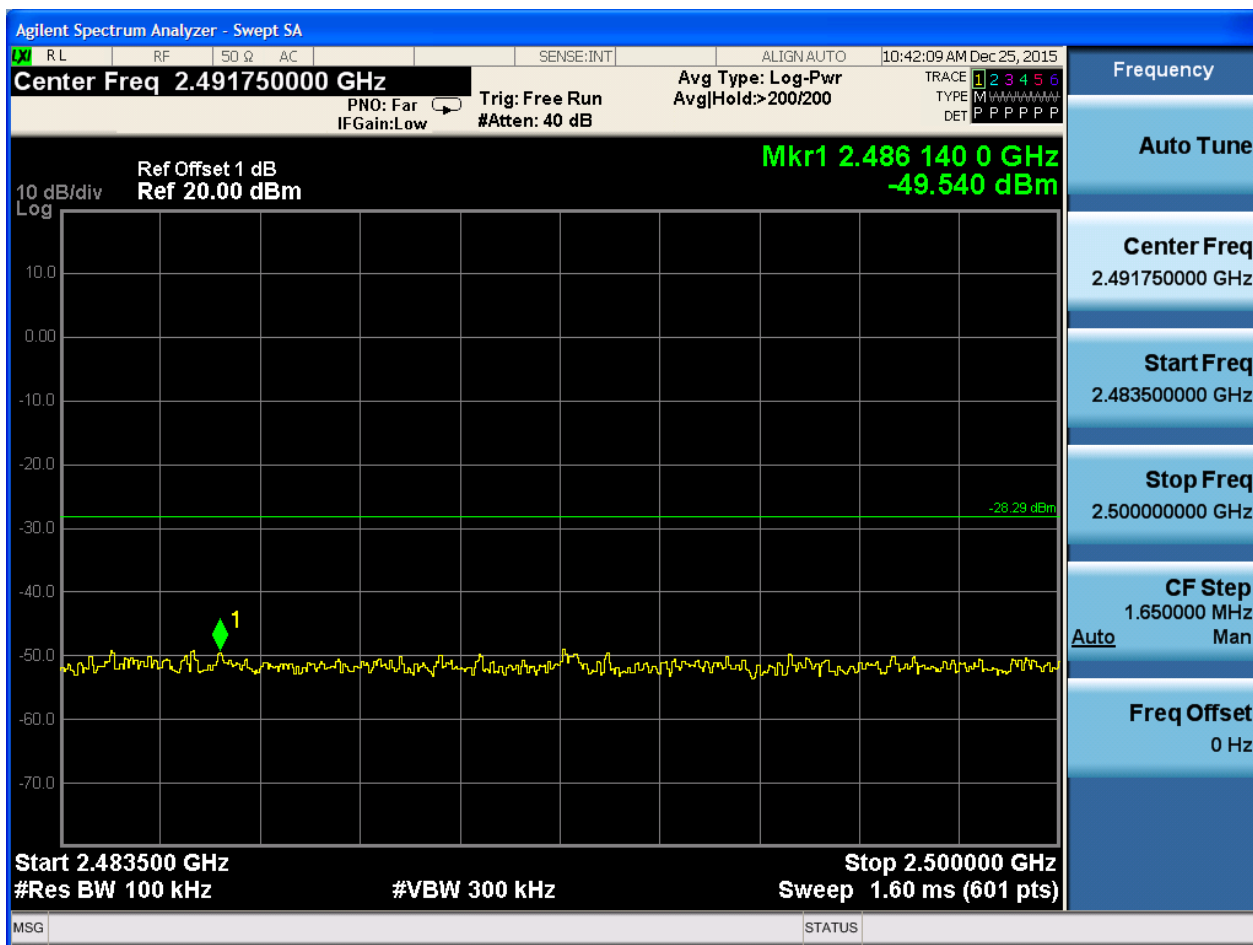
Puw:









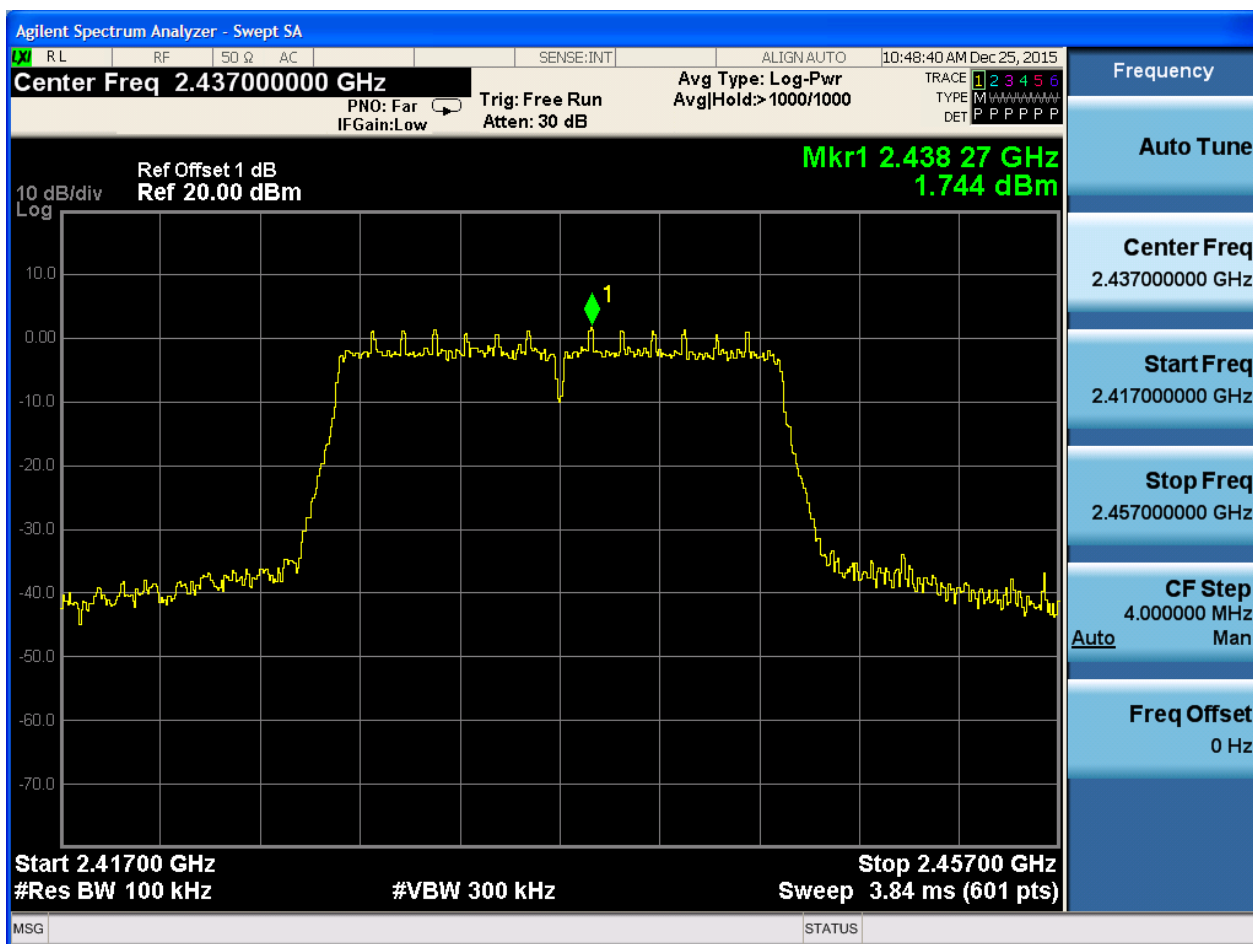






2.8 11N20_M@Ant 1

Pref:





Puw:

