



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.

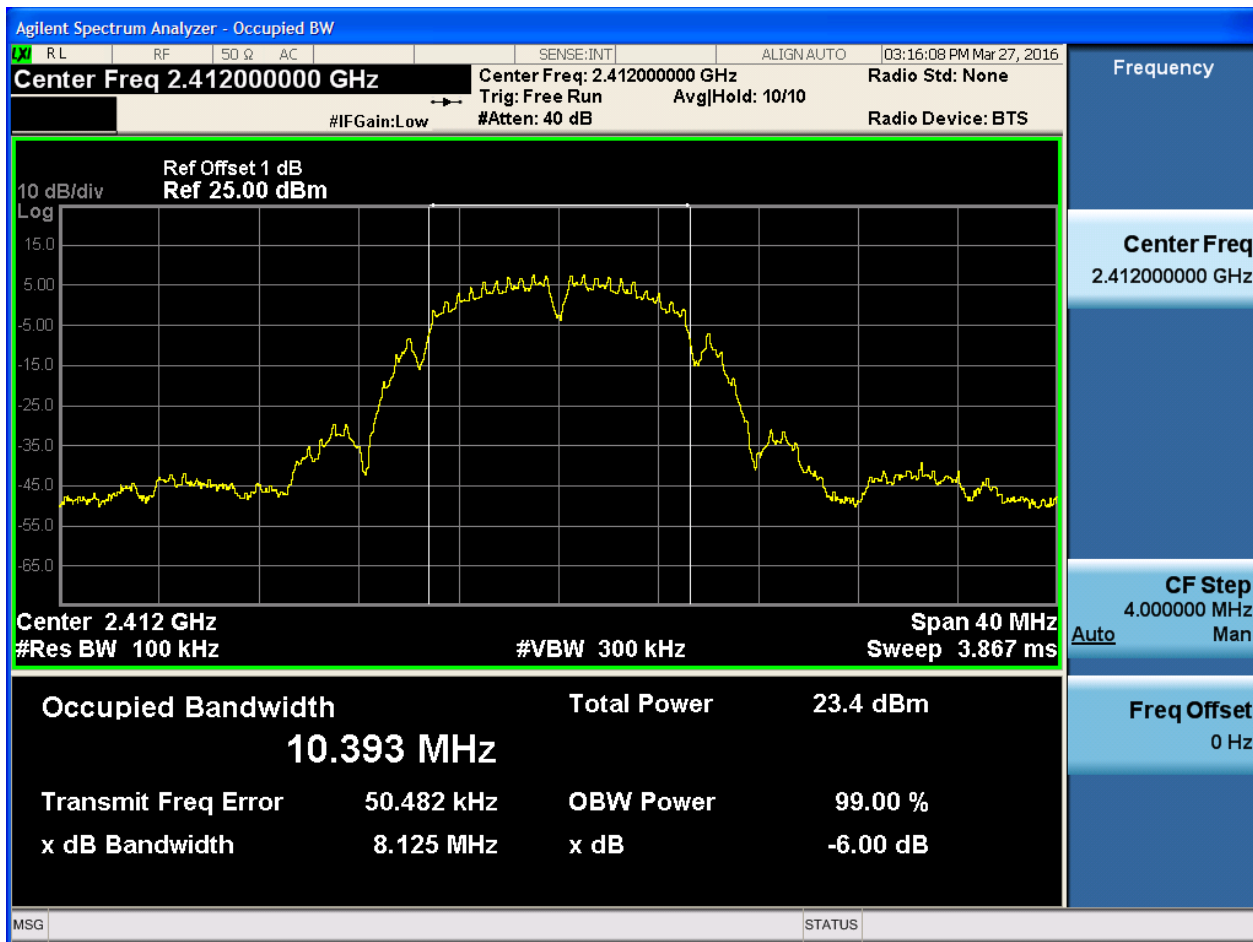
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	DTS6dBBW[MHz]	Verdict
11B	L	2412	Ant 1	8.13	pass
11B	M	2437	Ant 1	8.58	pass
11B	H	2462	Ant 1	8.60	pass
11G	L	2412	Ant 1	16.34	pass
11G	M	2437	Ant 1	16.12	pass
11G	H	2462	Ant 1	16.36	pass
11N20	L	2412	Ant 1	17.26	pass
11N20	M	2437	Ant 1	17.37	pass
11N20	H	2462	Ant 1	17.22	pass
11N40	L	2422	Ant 1	35.23	pass
11N40	M	2437	Ant 1	35.44	pass
11N40	H	2452	Ant 1	33.88	pass



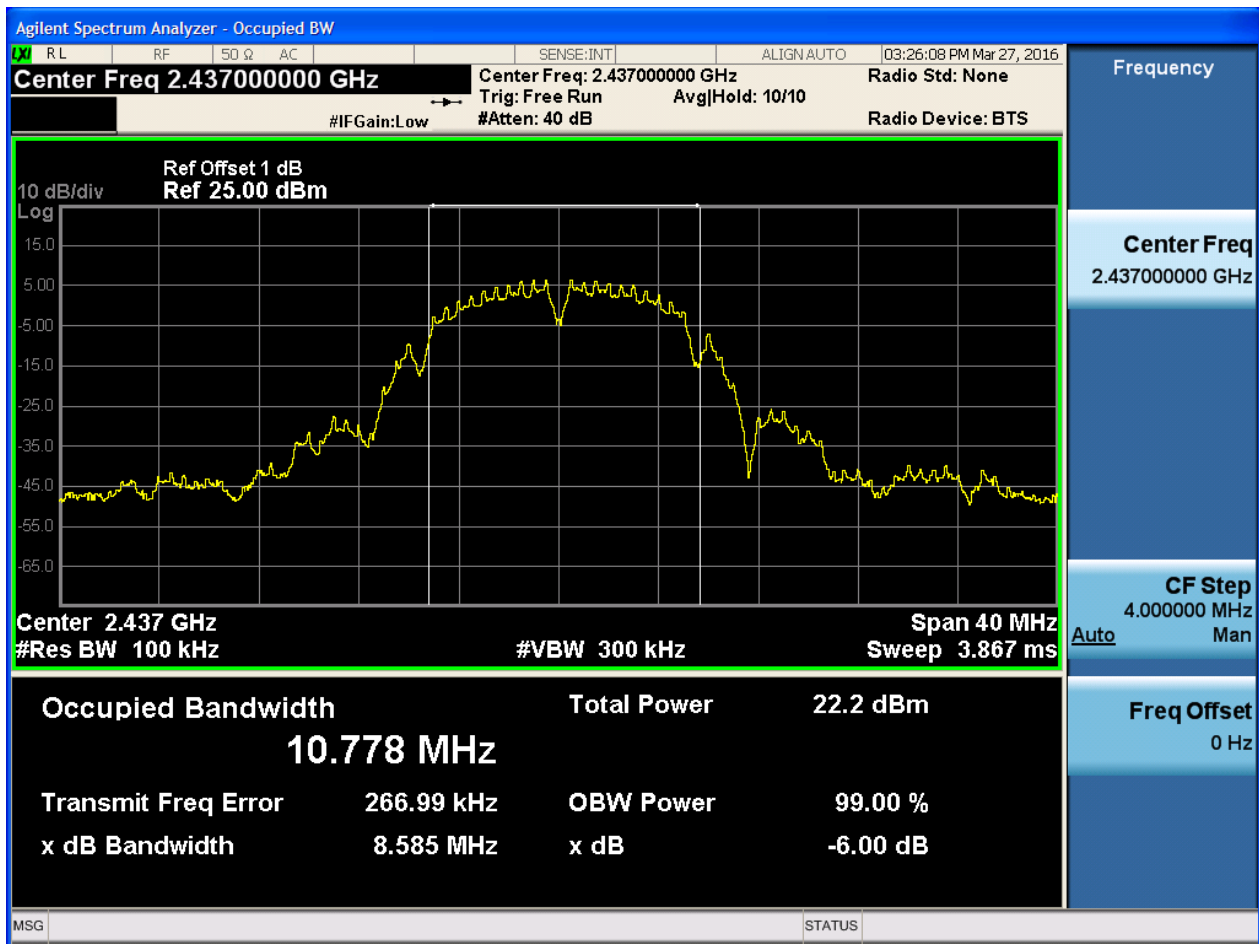
Part II - Test Plots

2.1 11B_L@Ant 1



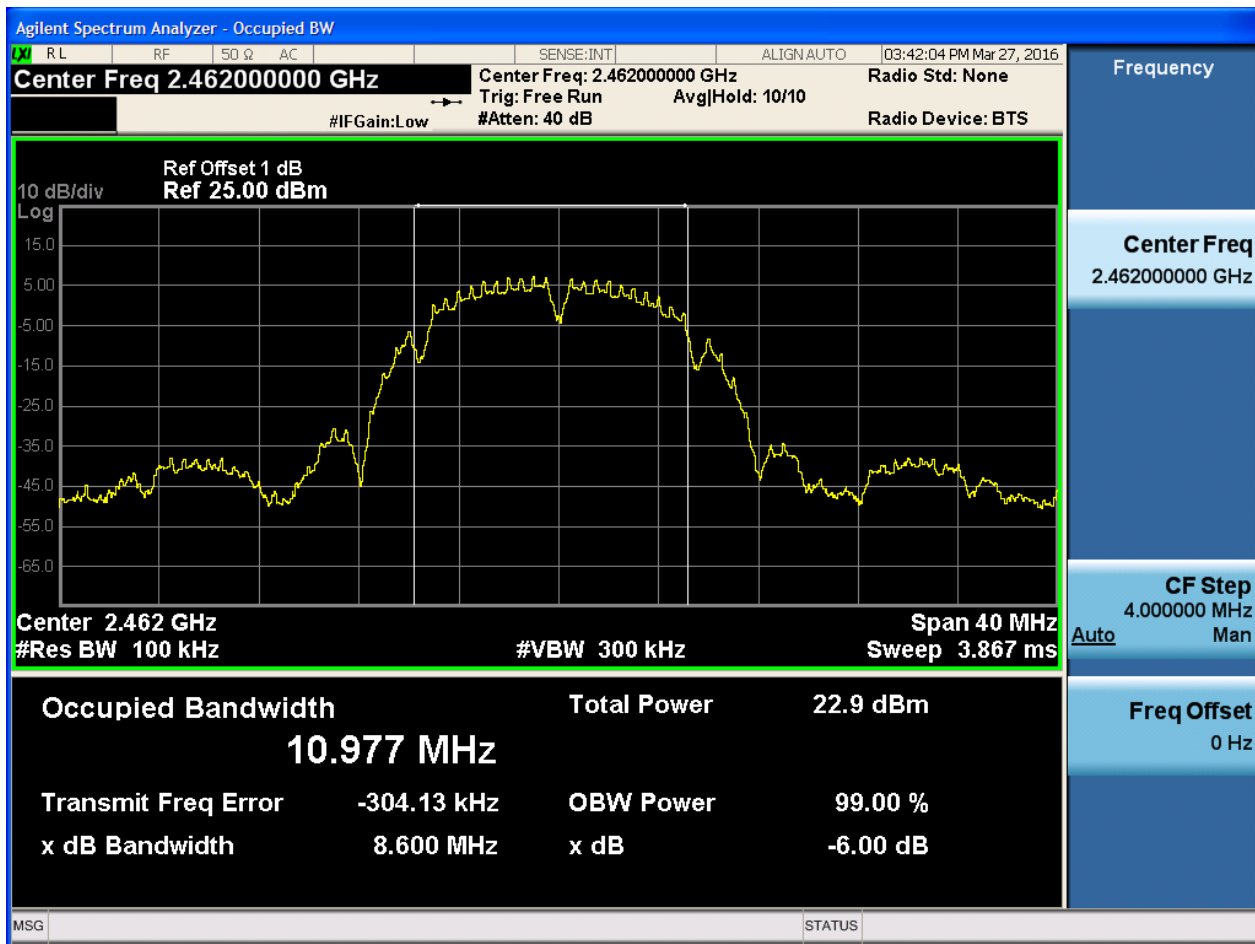


2.2 11B_M@Ant 1



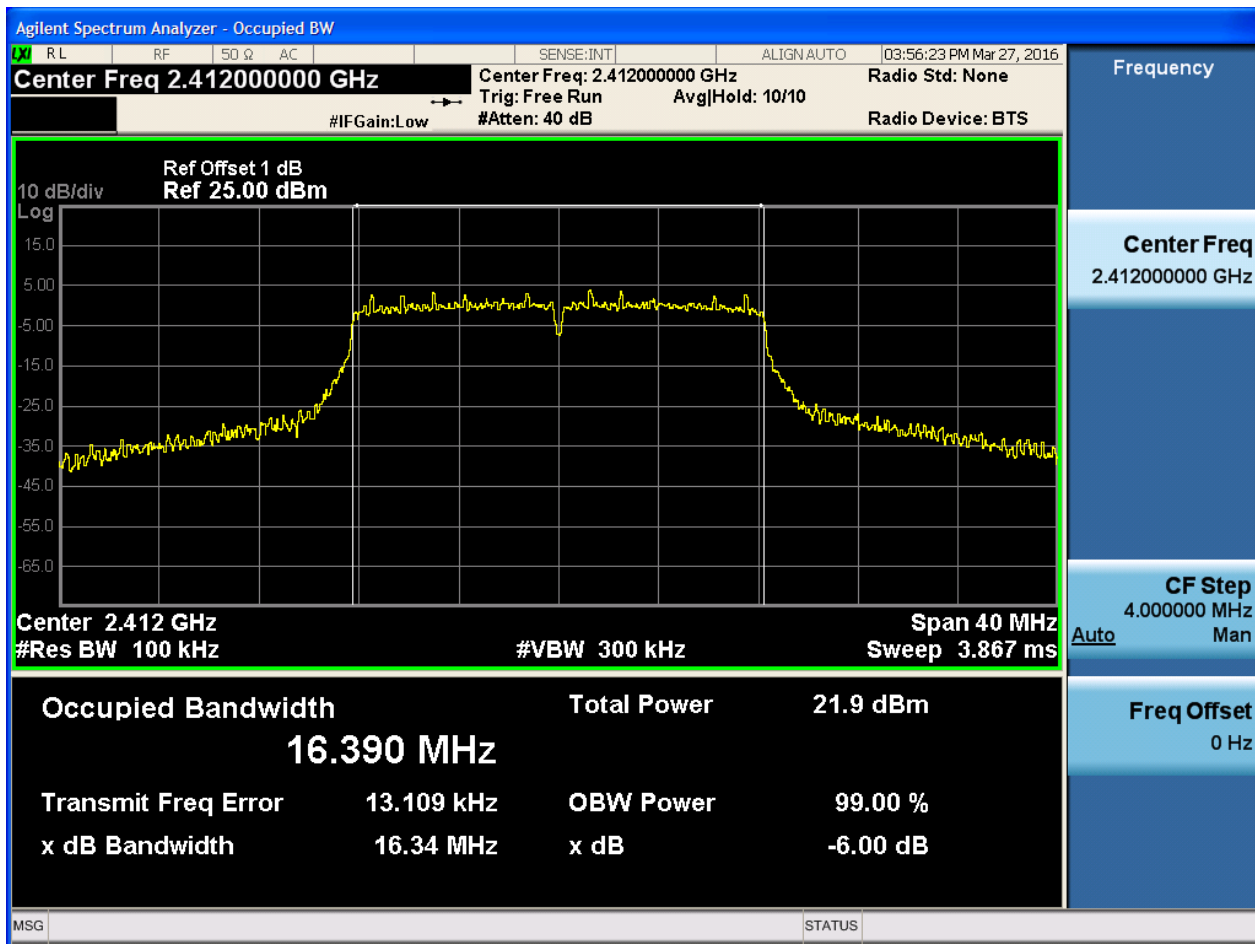


2.3 11B_H@Ant 1



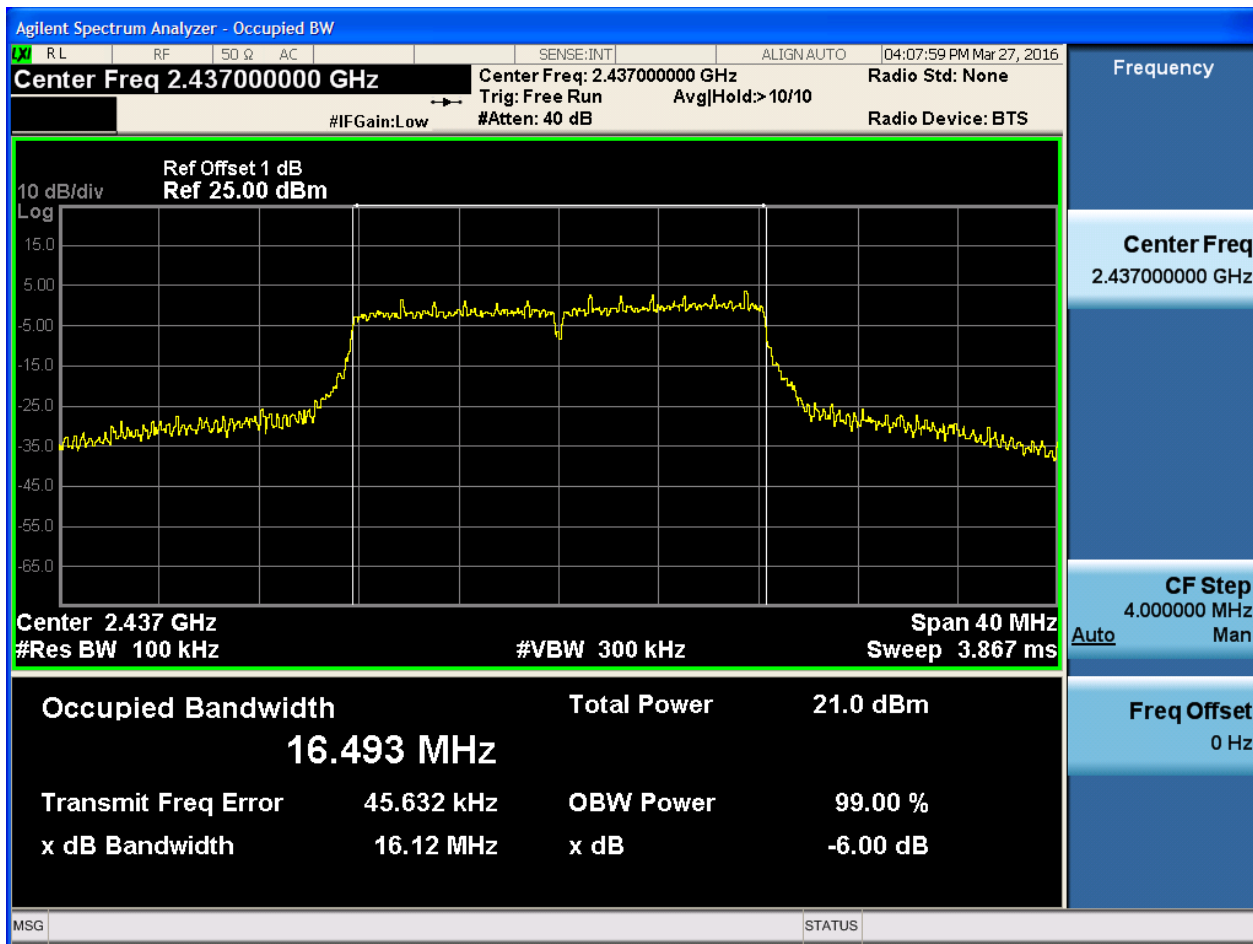


2.4 11G_L@Ant 1



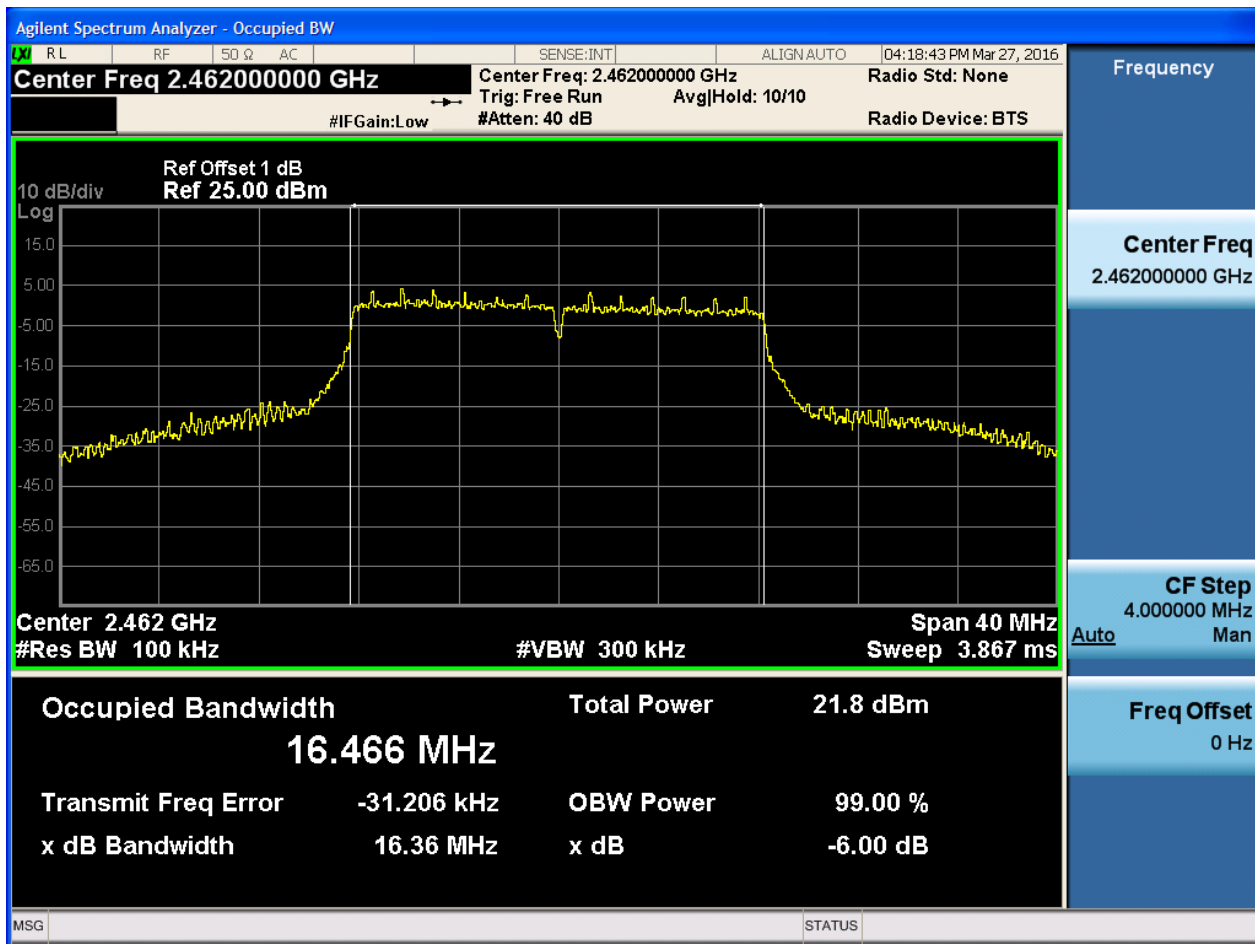


2.5 11G_M@Ant 1



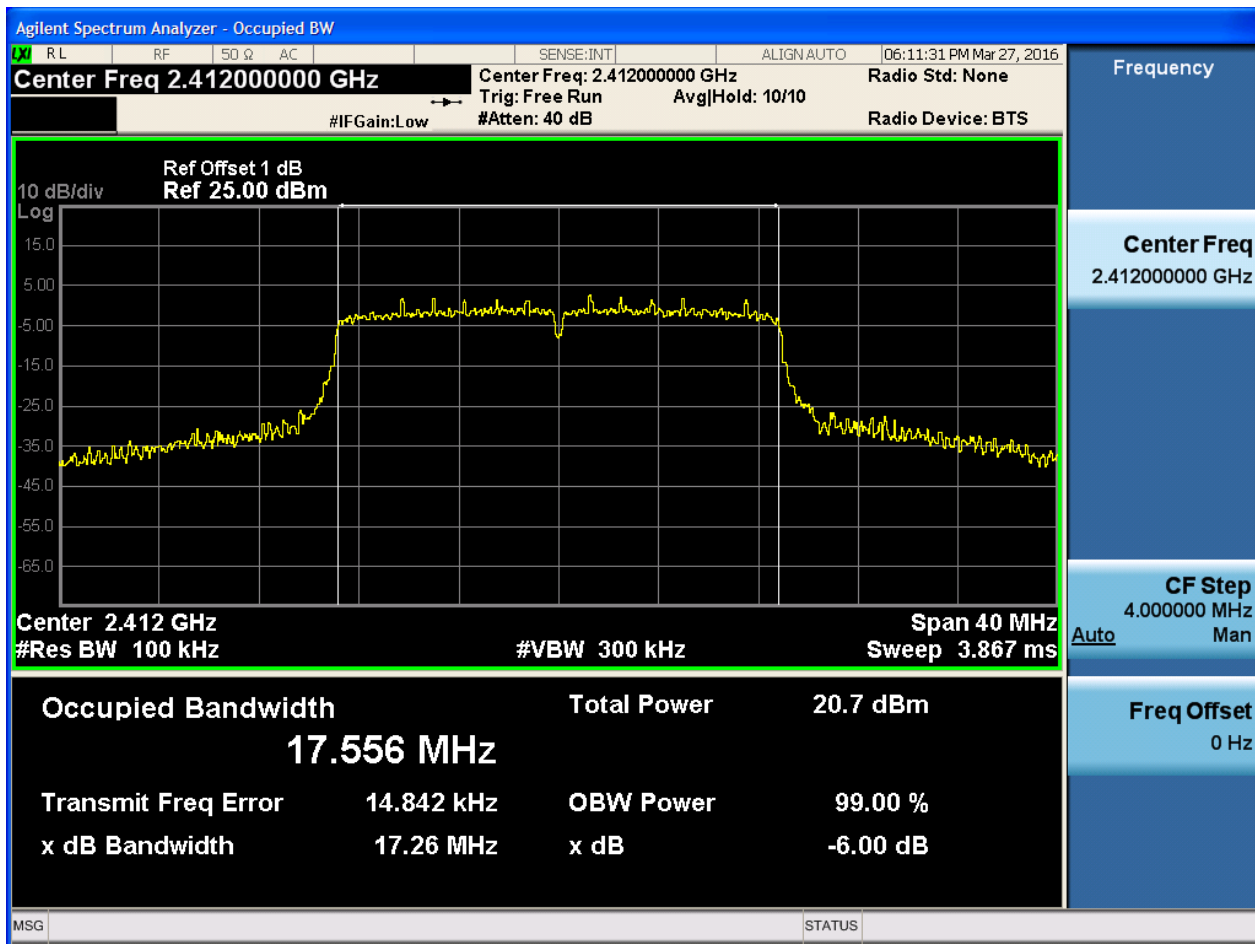


2.6 11G_H@Ant 1



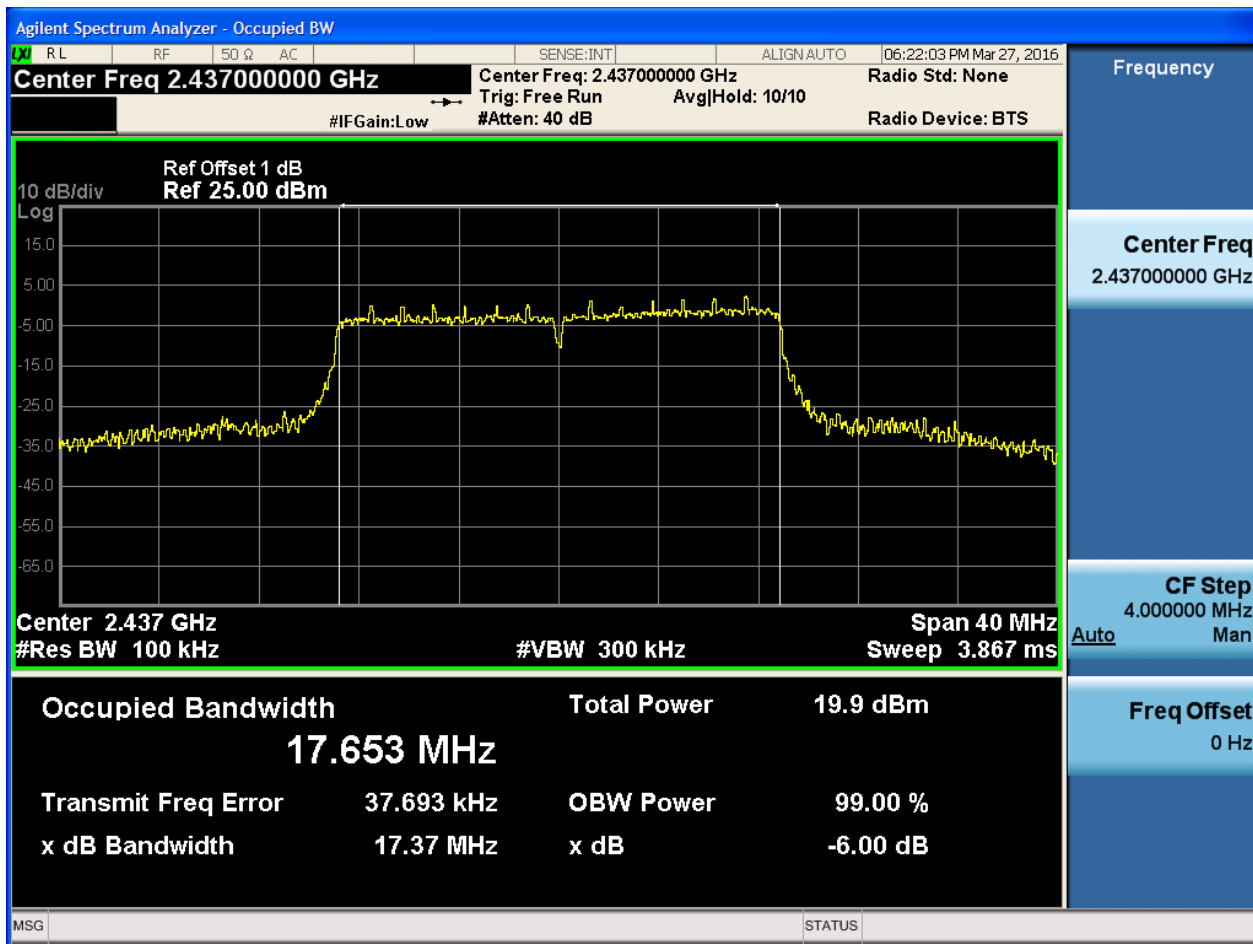


2.7 11N20_L@Ant 1



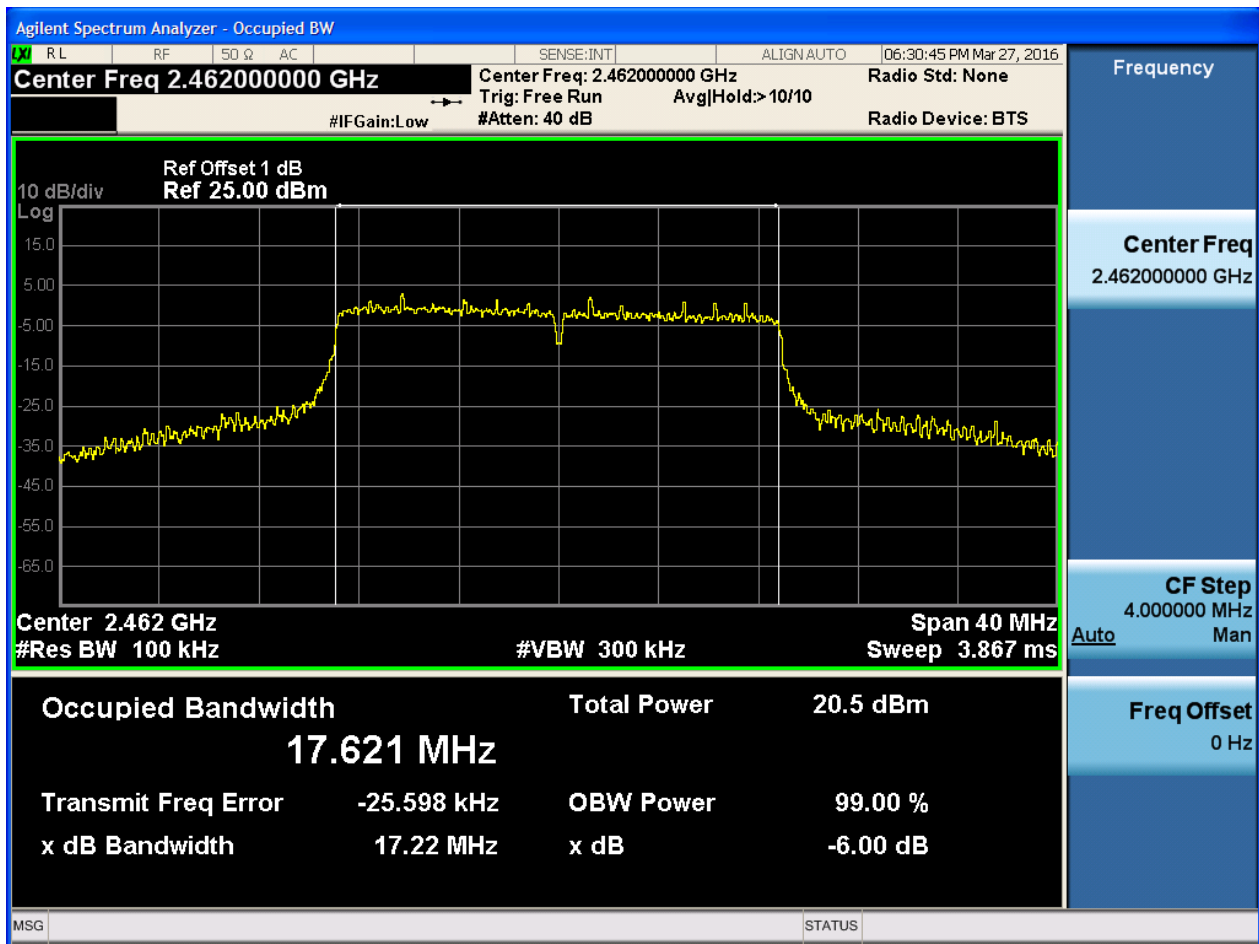


2.8 11N20_M@Ant 1



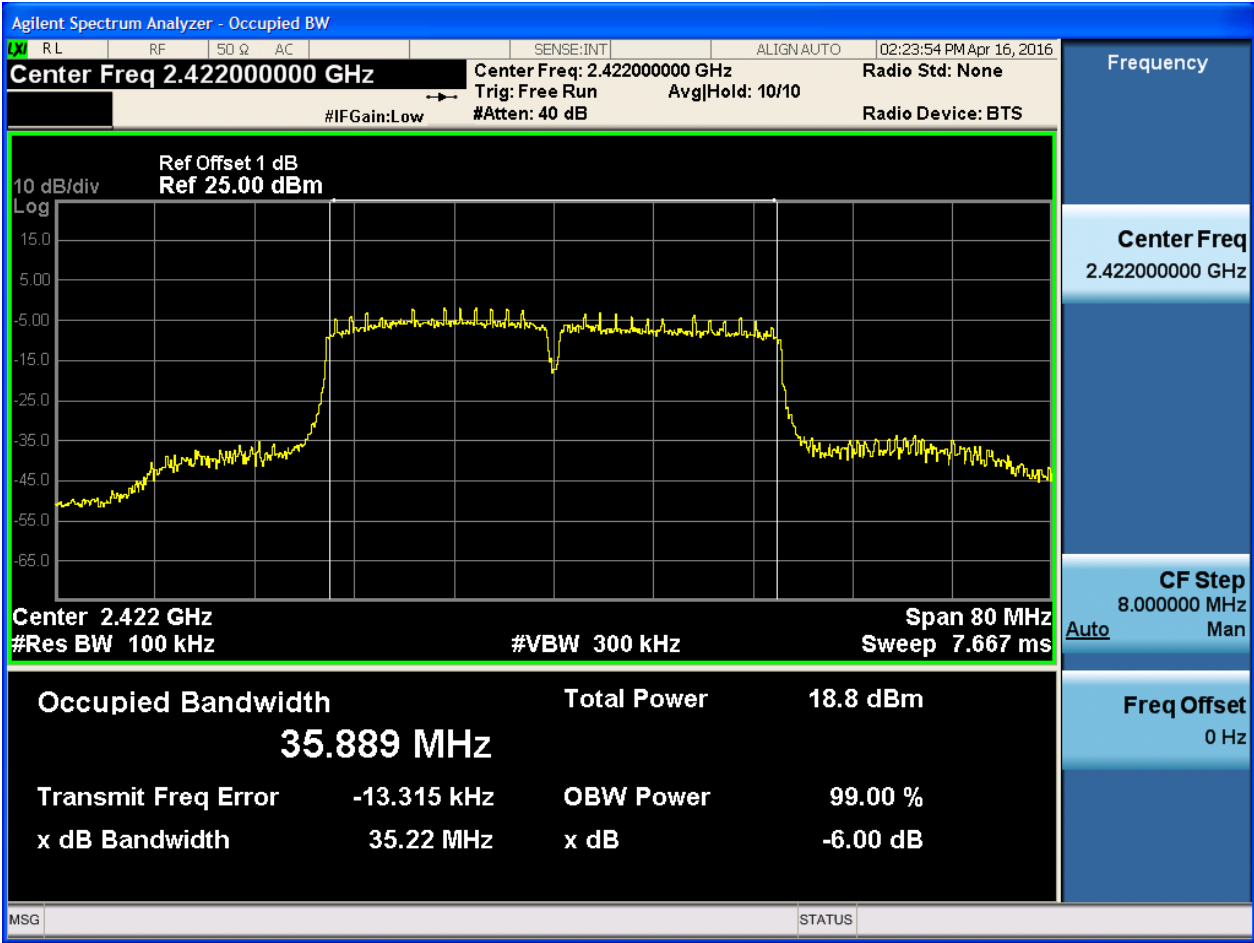


2.9 11N20_H@Ant 1



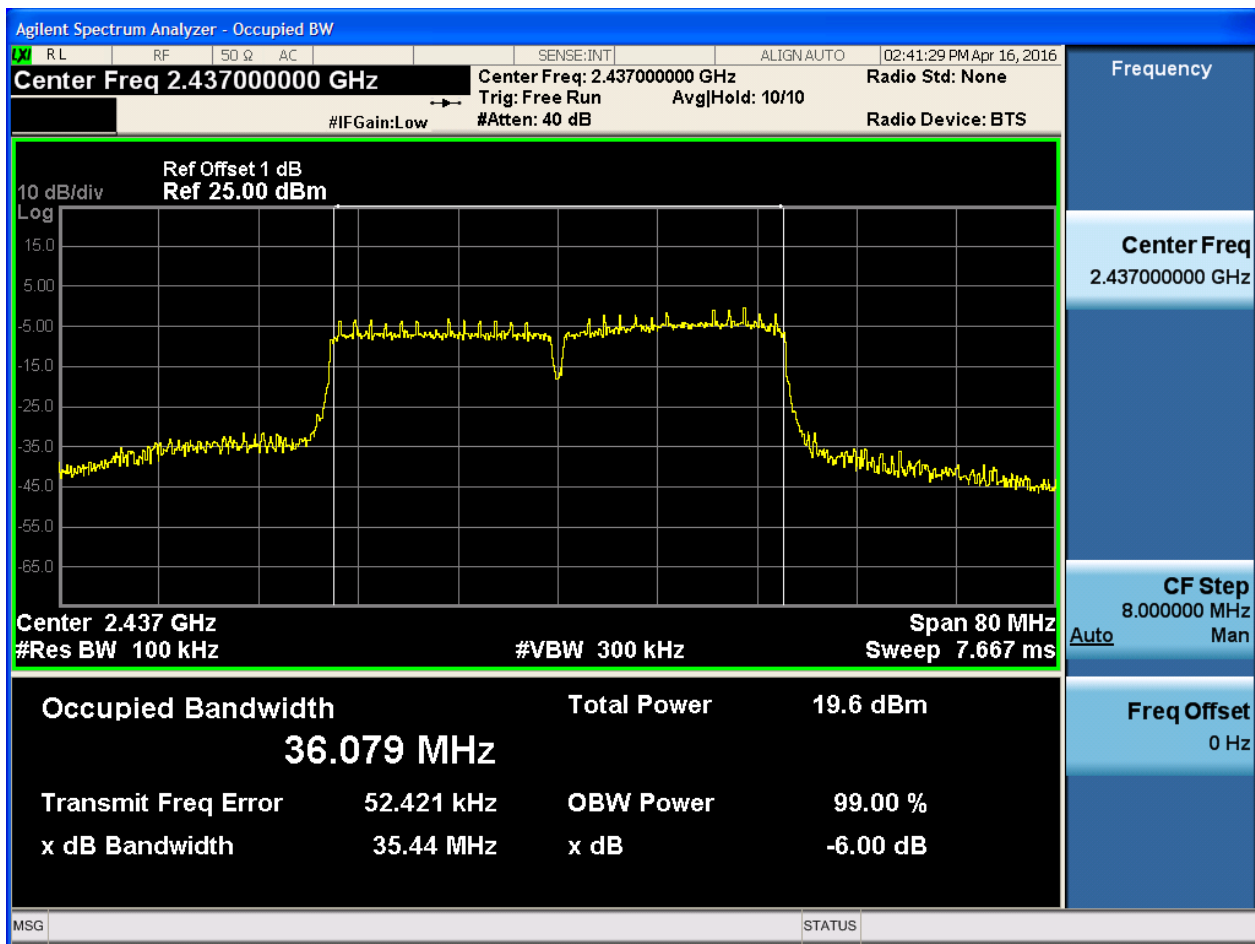


2.10 11N40_L@Ant 1



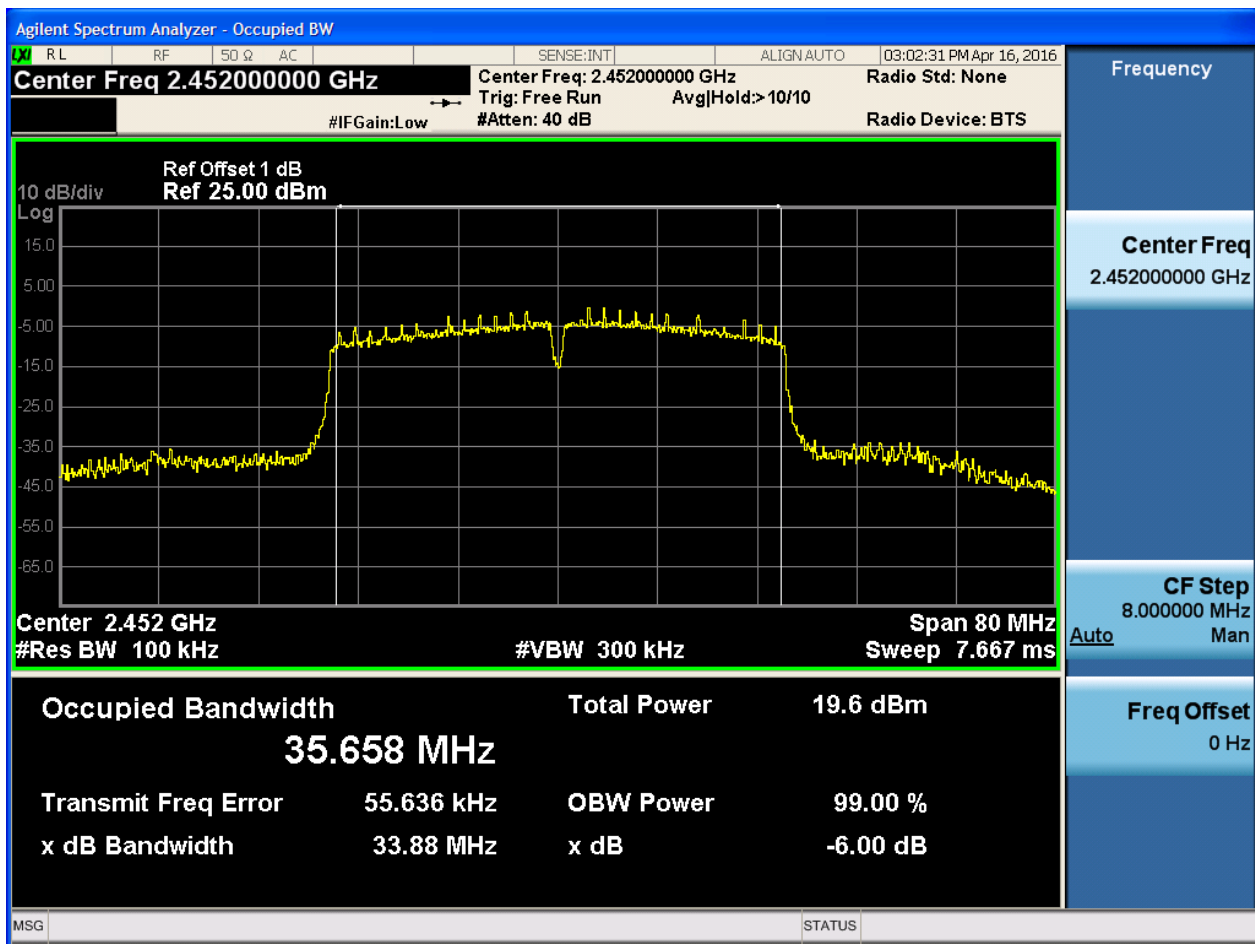


2.11 11N40_M@Ant 1





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.

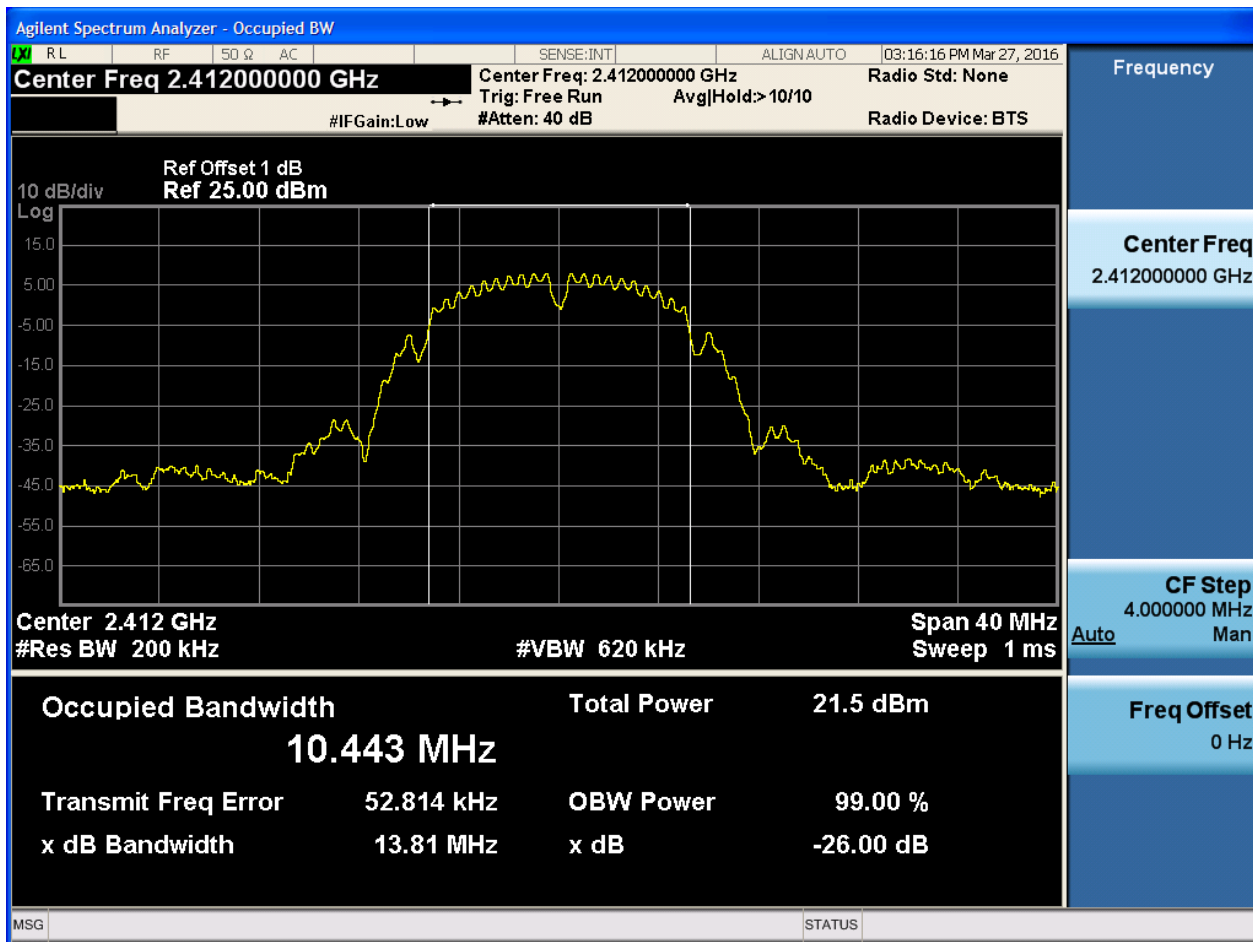
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Occupied Bandwidth [MHz]	Verdict
11B	L	2412	Ant 1	10.44	pass
11B	M	2437	Ant 1	10.82	pass
11B	H	2462	Ant 1	11.05	pass
11G	L	2412	Ant 1	16.44	pass
11G	M	2437	Ant 1	16.63	pass
11G	H	2462	Ant 1	16.57	pass
11N20	L	2412	Ant 1	17.55	pass
11N20	M	2437	Ant 1	17.72	pass
11N20	H	2462	Ant 1	17.66	pass
11N40	L	2422	Ant 1	35.93	pass
11N40	M	2437	Ant 1	36.15	pass
11N40	H	2452	Ant 1	35.66	pass



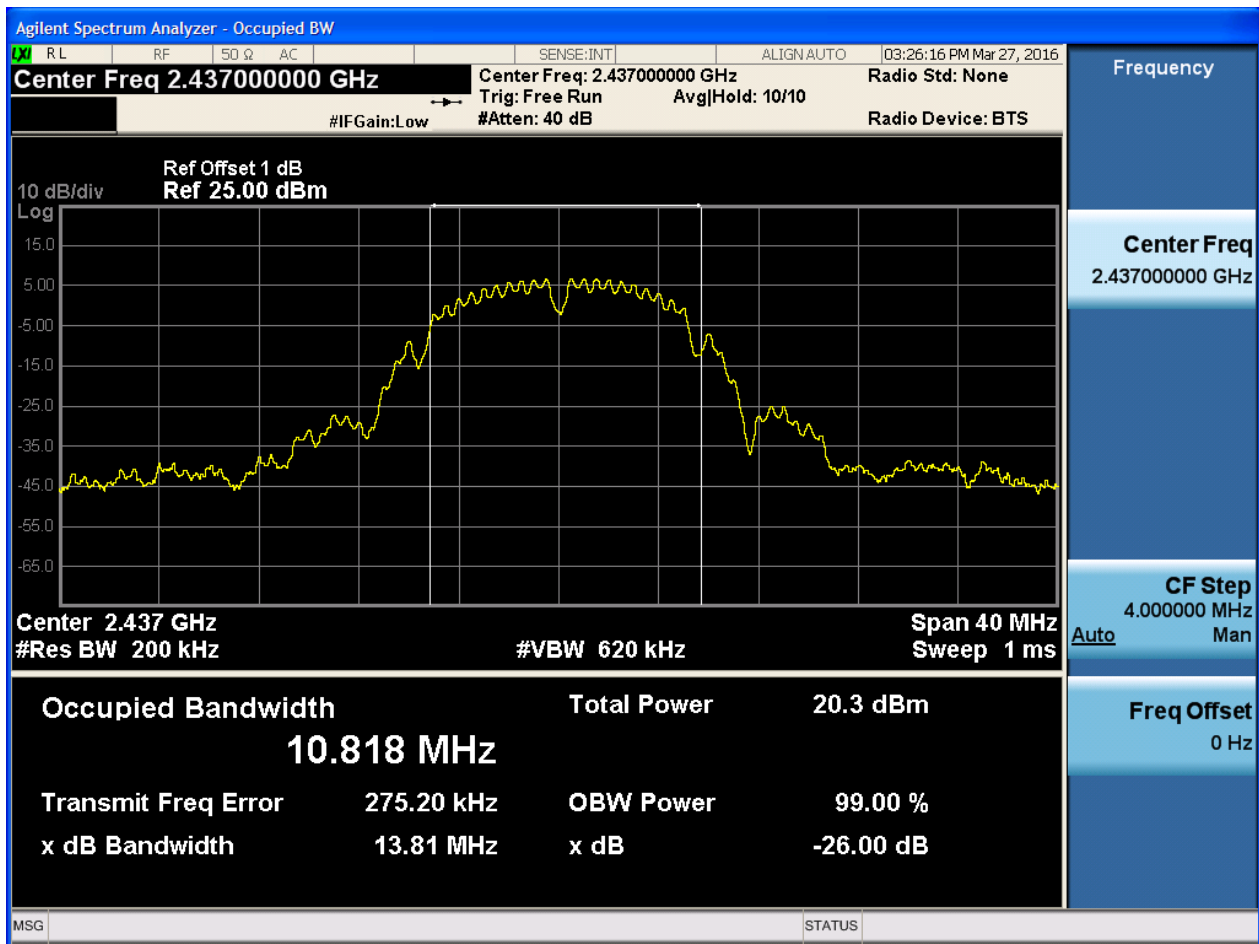
Part II - Test Plots

2.1 11B_L@Ant 1



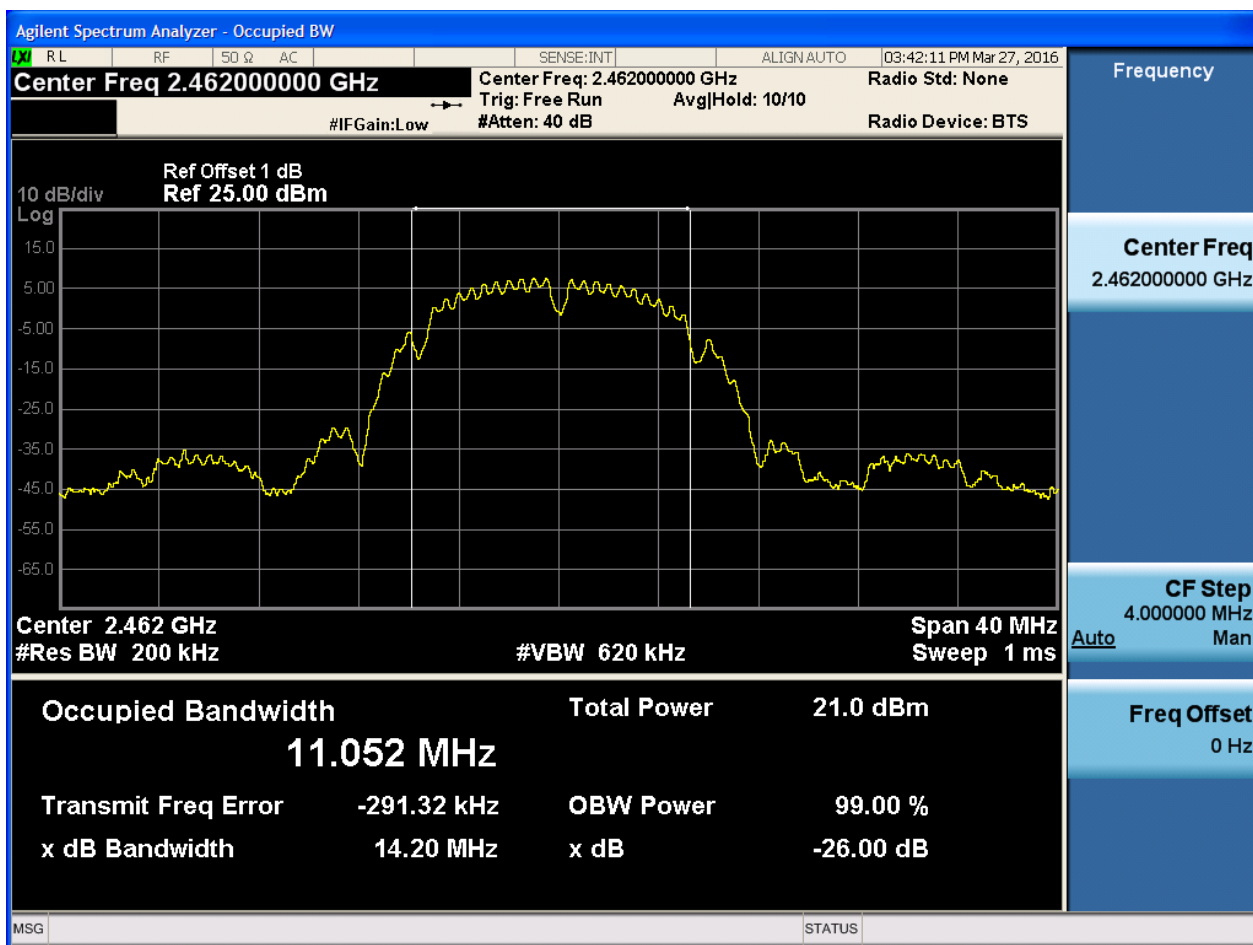


2.2 11B_M@Ant 1



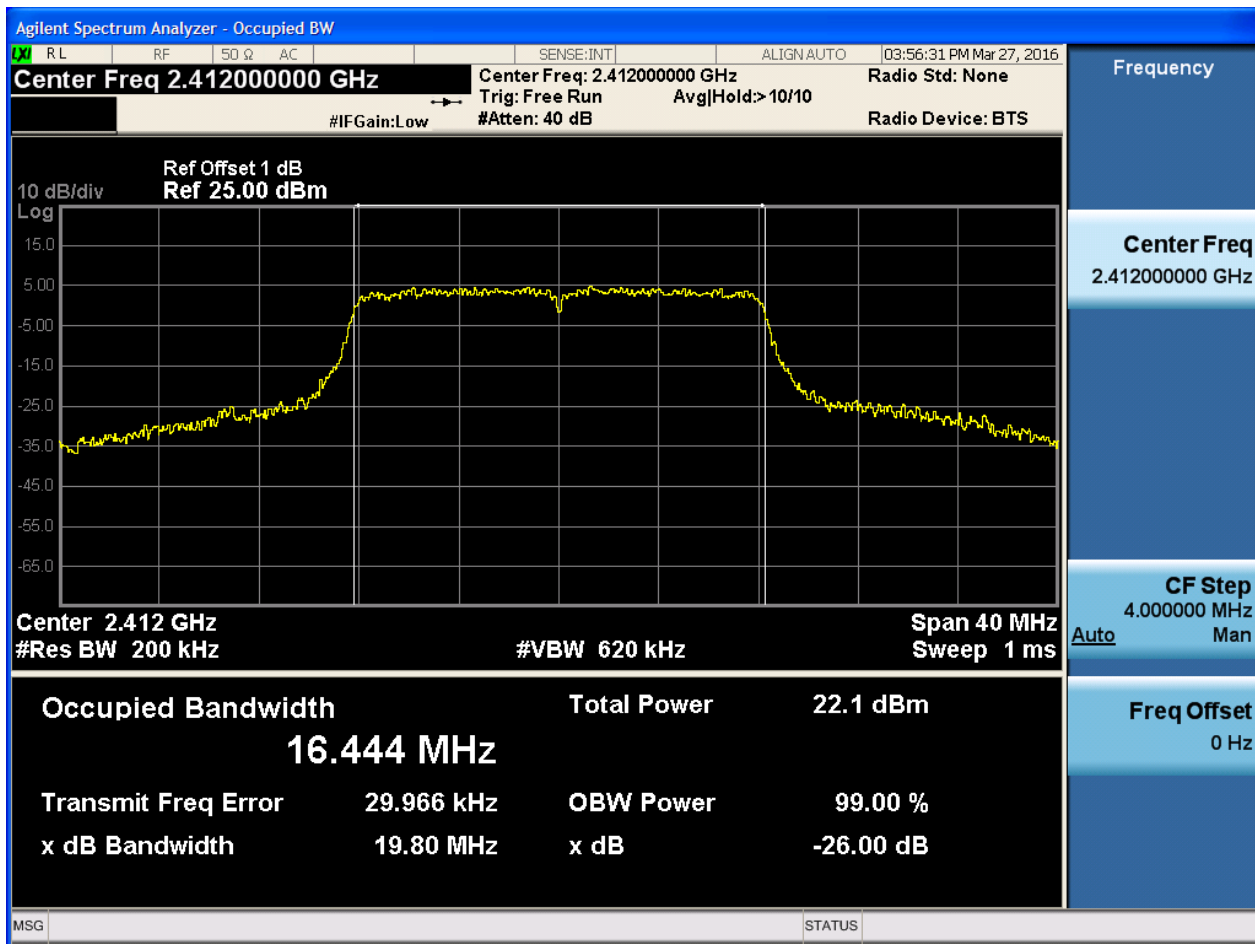


2.3 11B_H@Ant 1



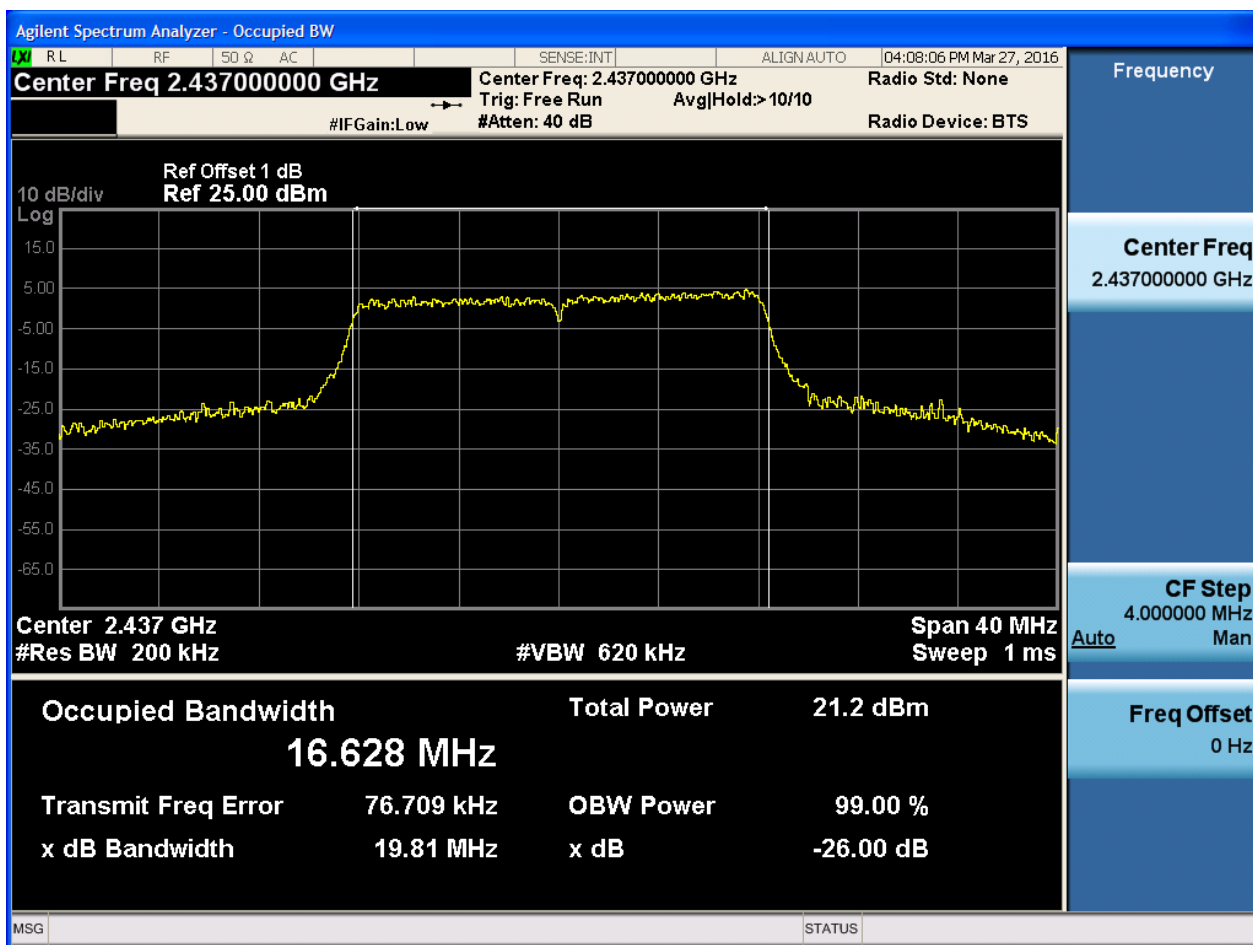


2.4 11G_L@Ant 1



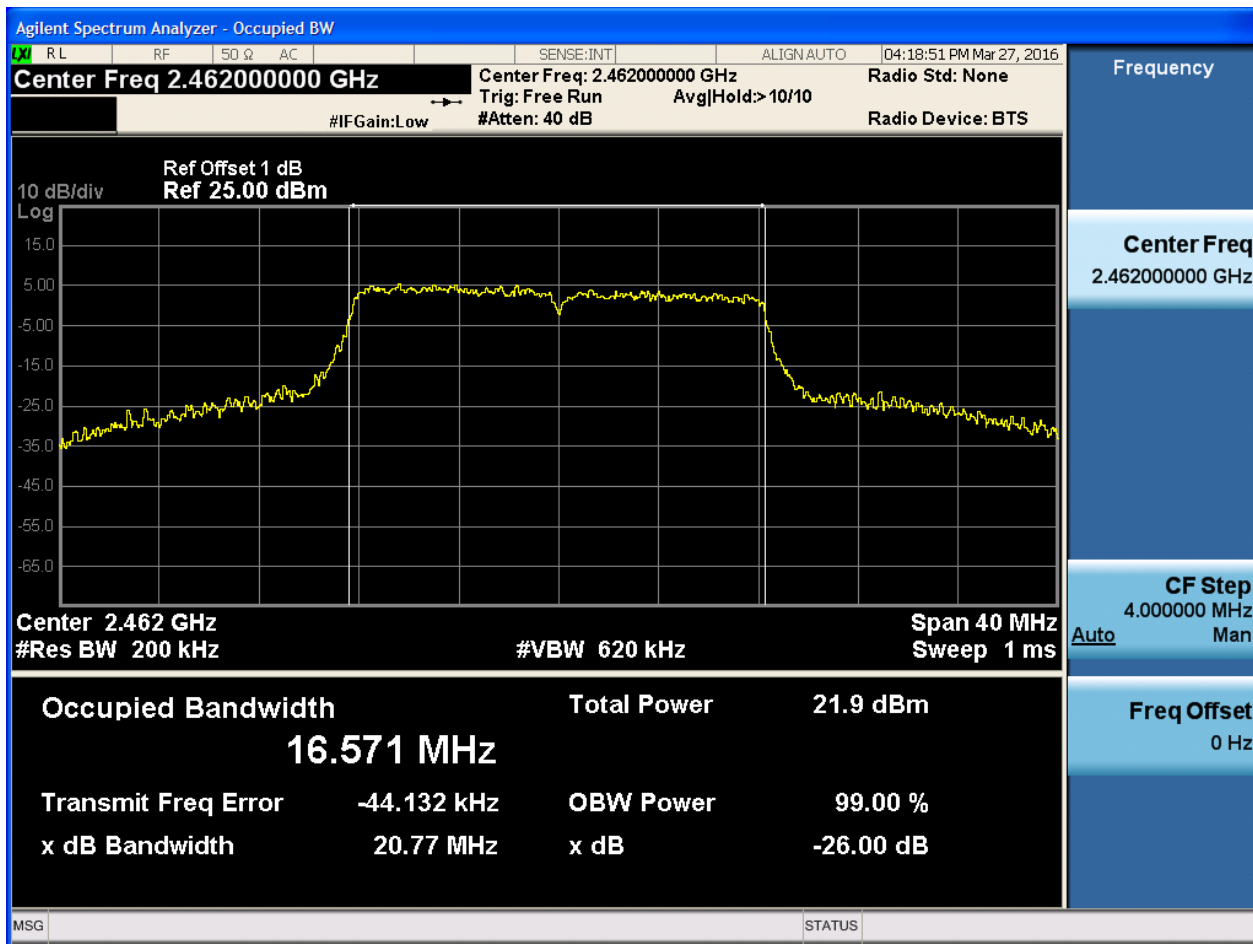


2.5 11G_M@Ant 1



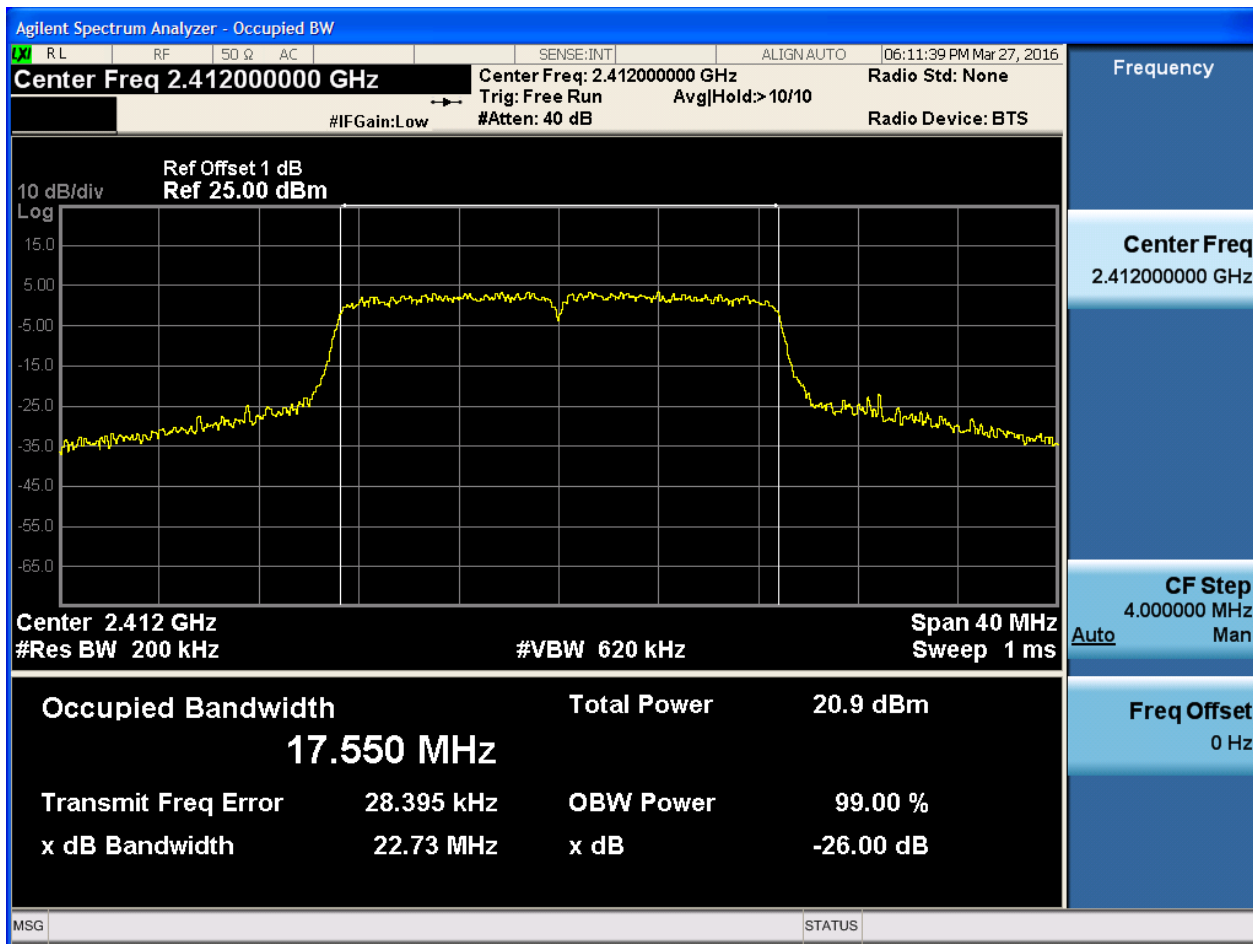


2.6 11G_H@Ant 1



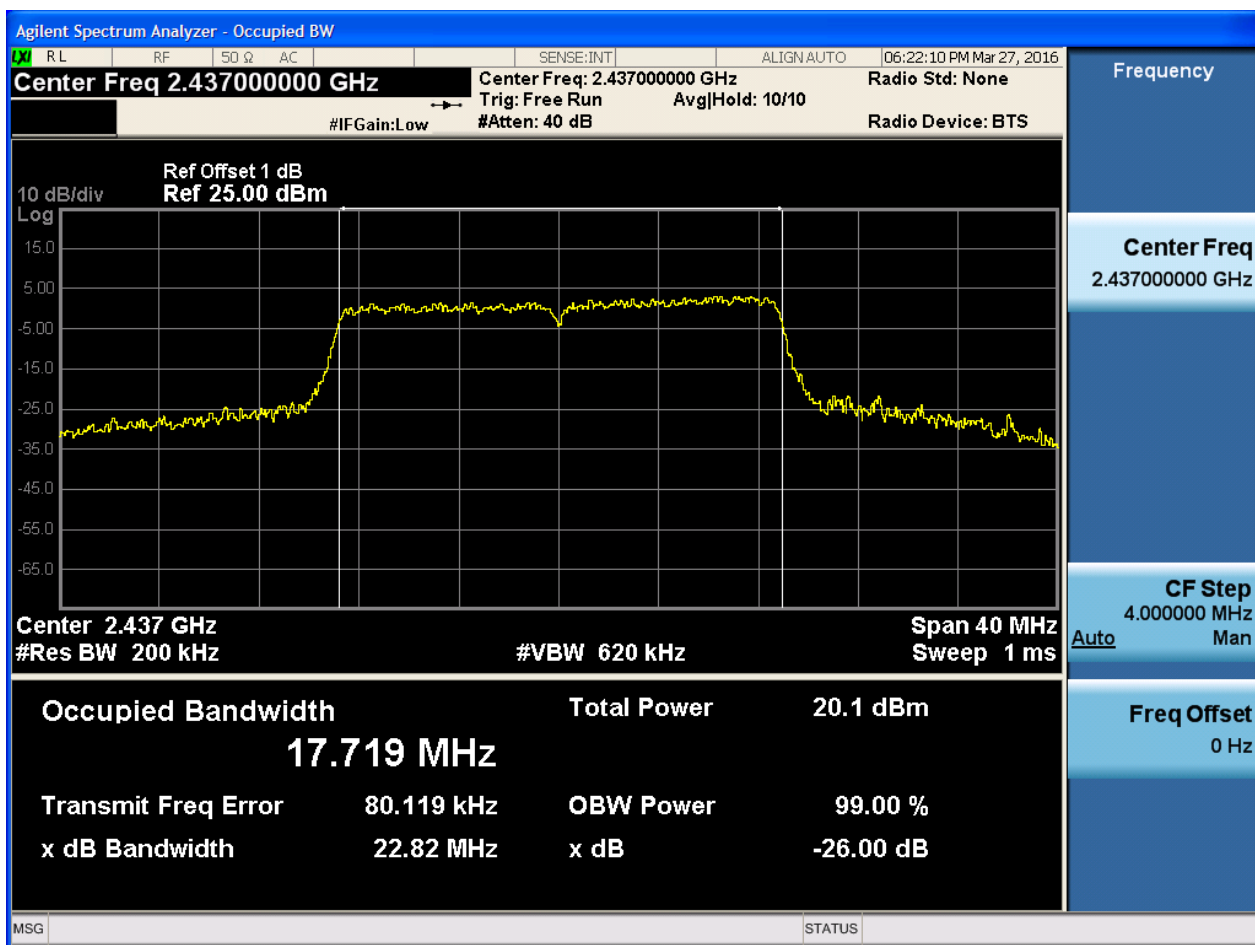


2.7 11N20_L@Ant 1



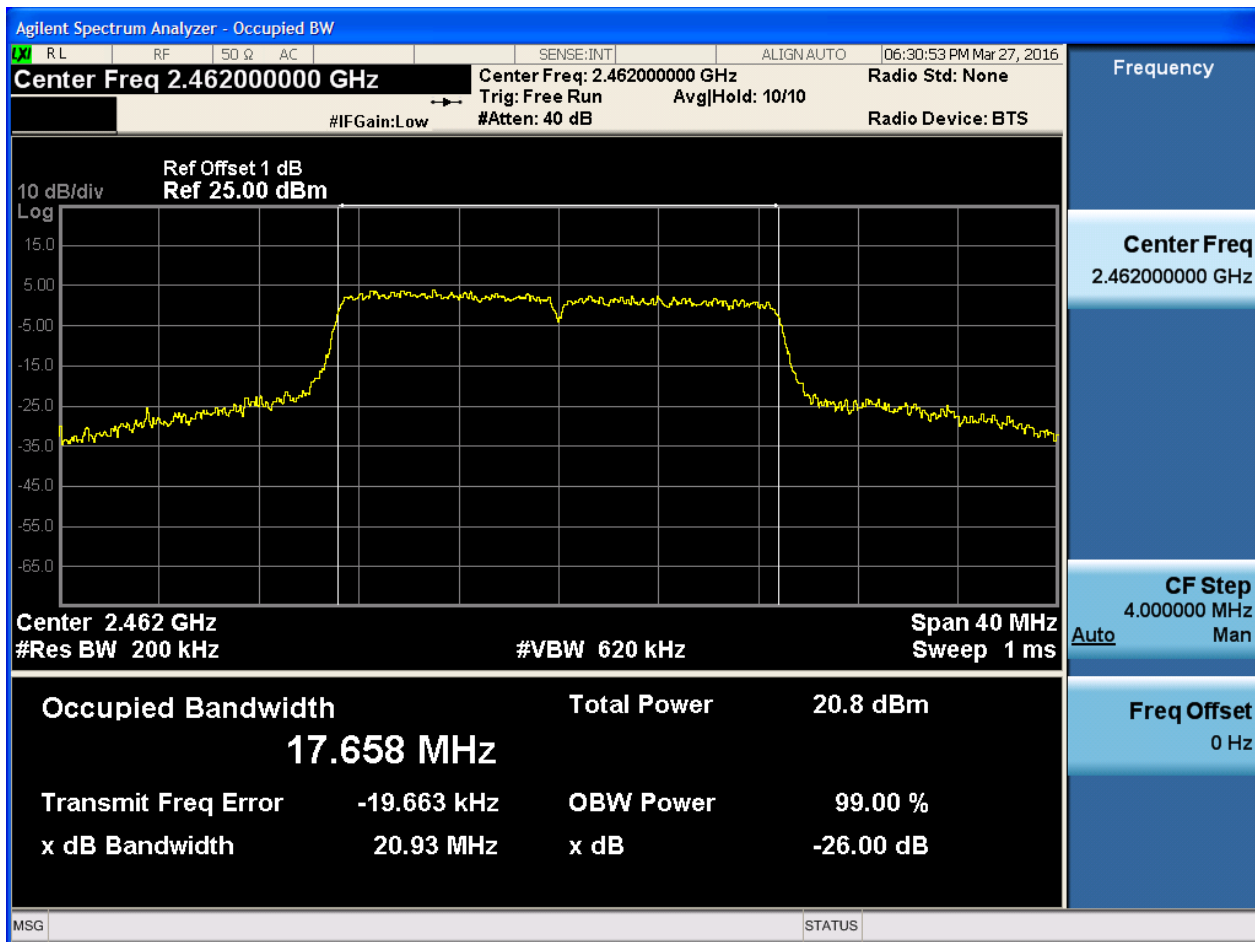


2.8 11N20_M@Ant 1



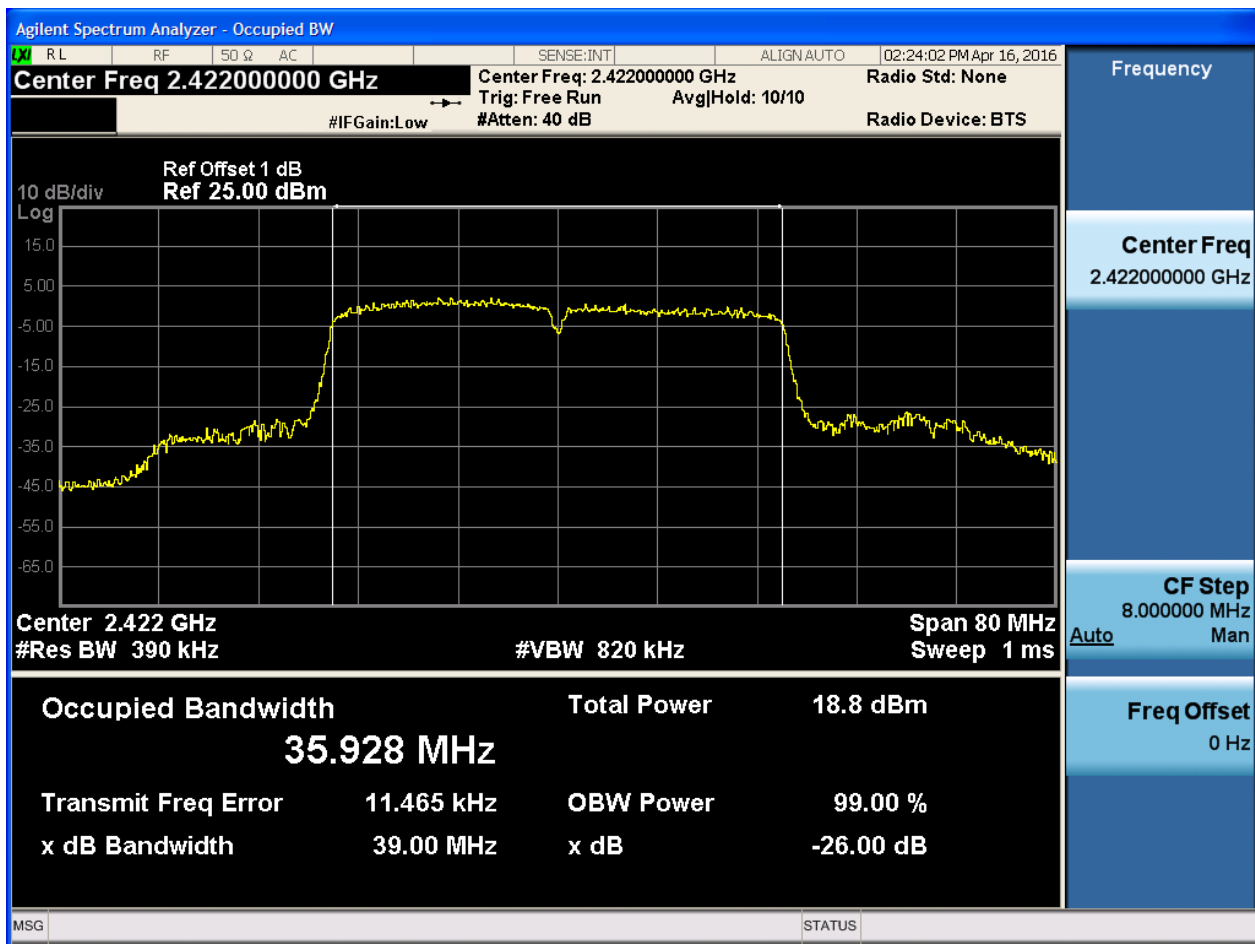


2.9 11N20_H@Ant 1



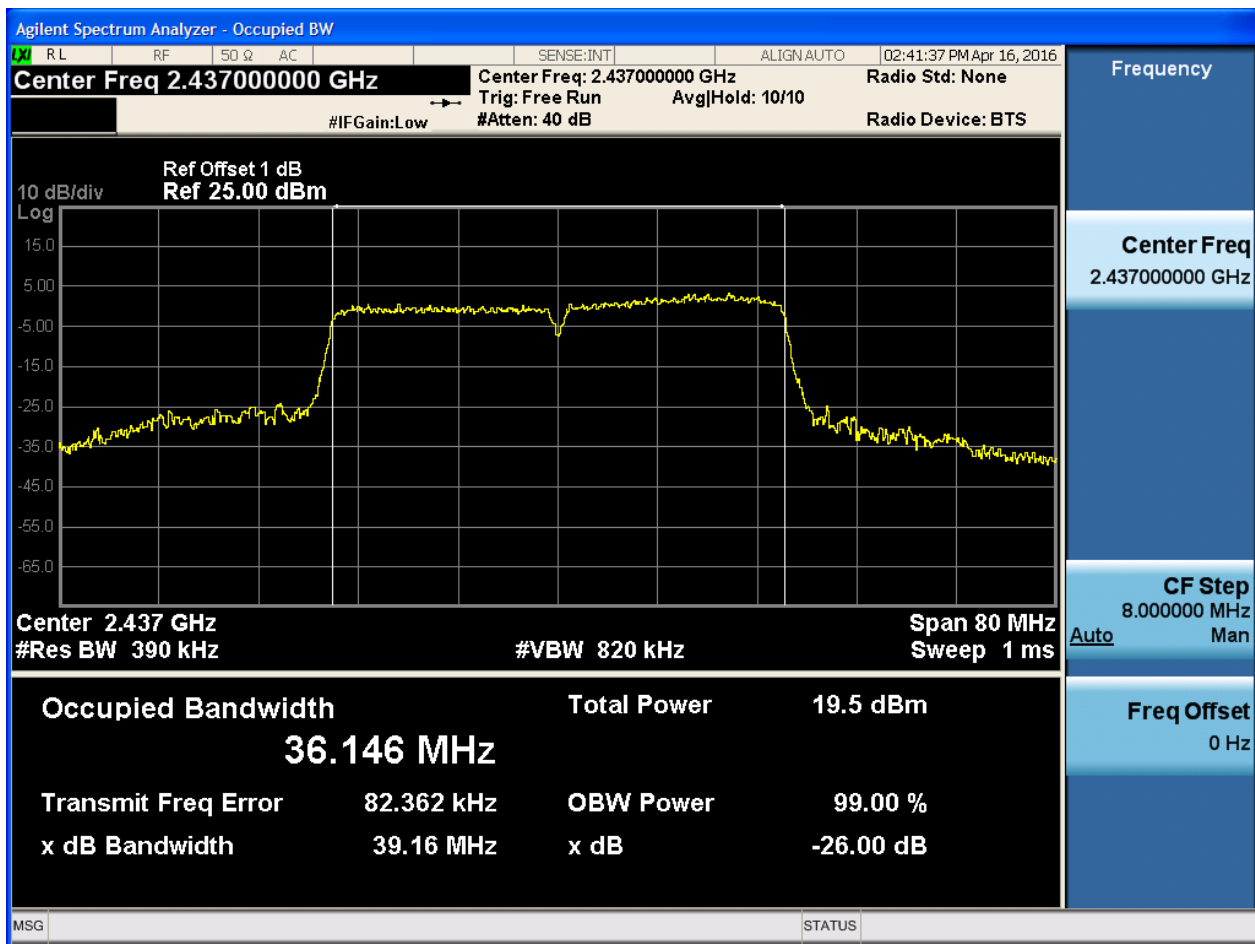


2.10 11N40_L@Ant 1



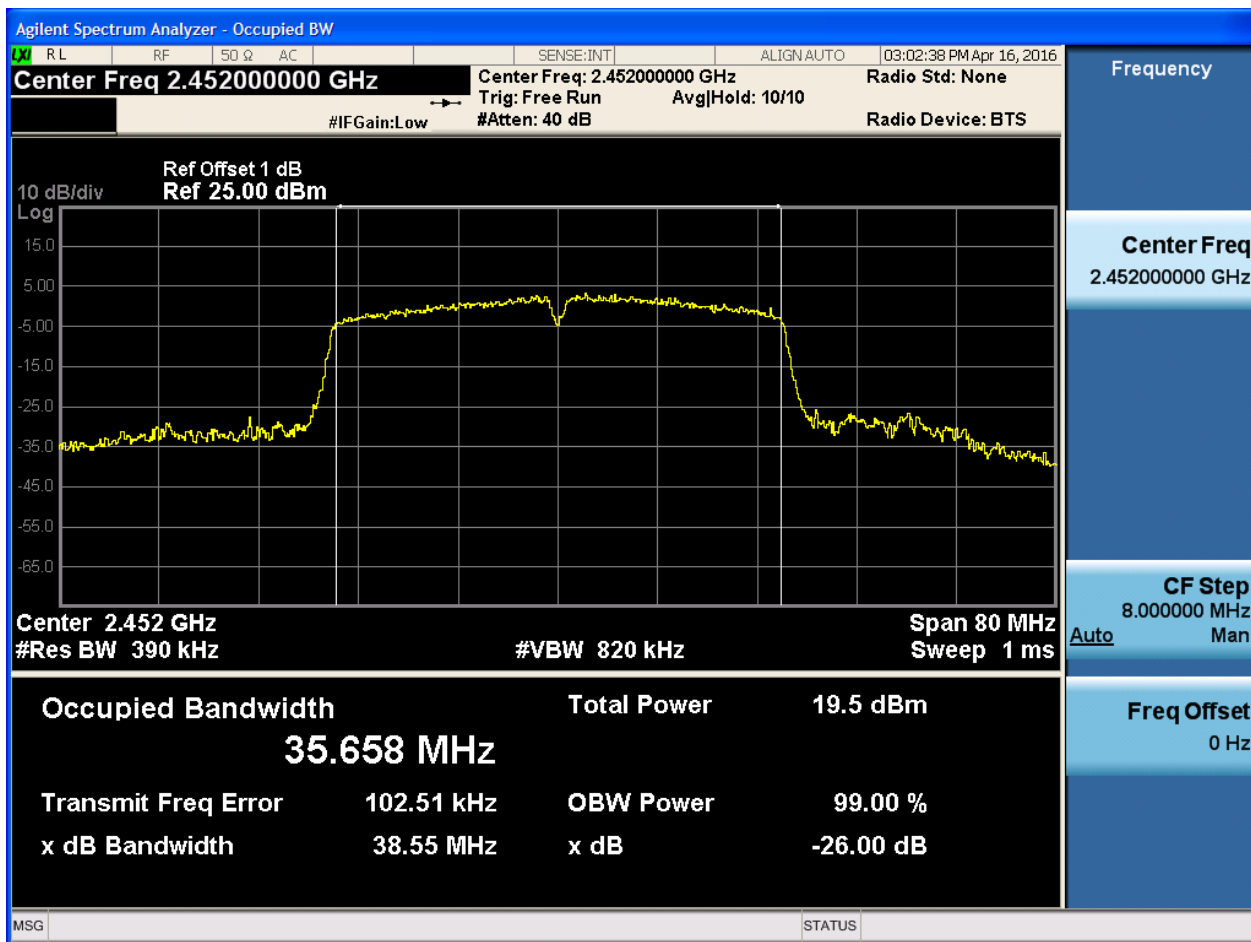


2.11 11N40_M@Ant 1





2.12 11N40_H@Ant 1



Appendix C: Duty Cycle

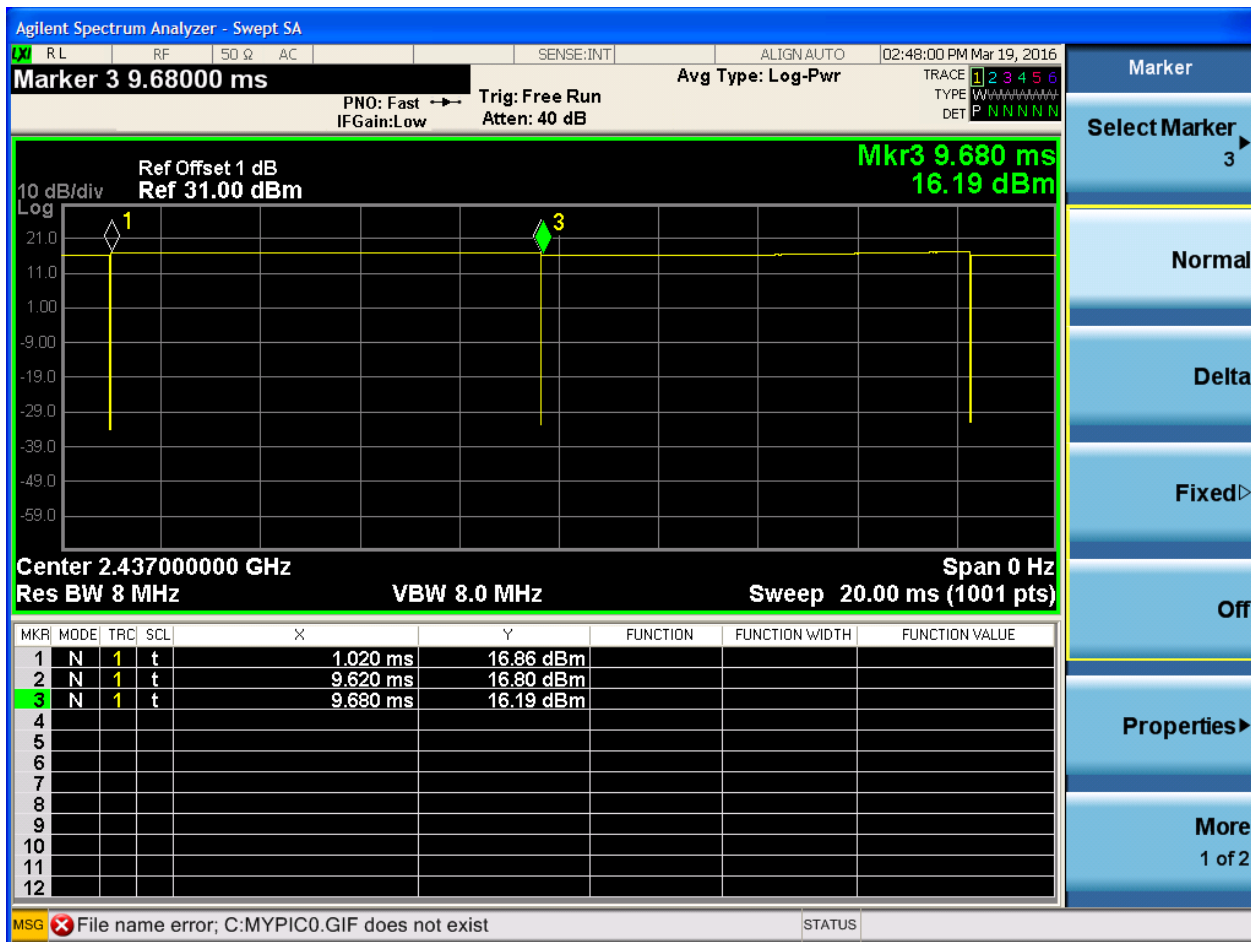
Part I - Test Results

Test Mode	TX Freq. [MHz]	Duty cycle [%]
11B	Ant 1: CH1,CH6,CH11	99
11G	Ant 1: CH1,CH6,CH11	98
11N_20M_SISO	Ant 1: CH1,CH6,CH11	98
11N_40M_SISO	Ant 1: CH3,CH6,CH9	96



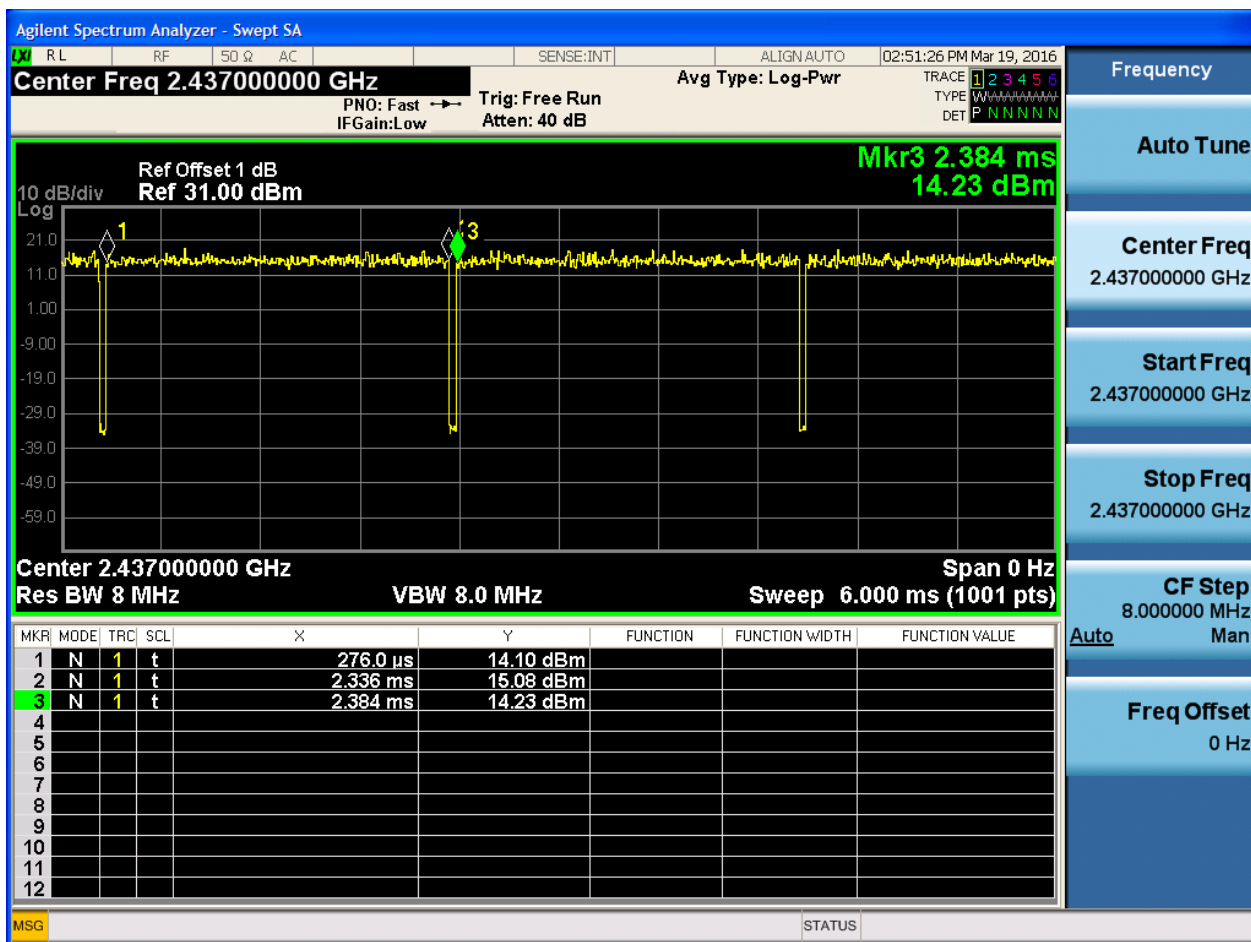
Part II - Test Plots

2.1 11B



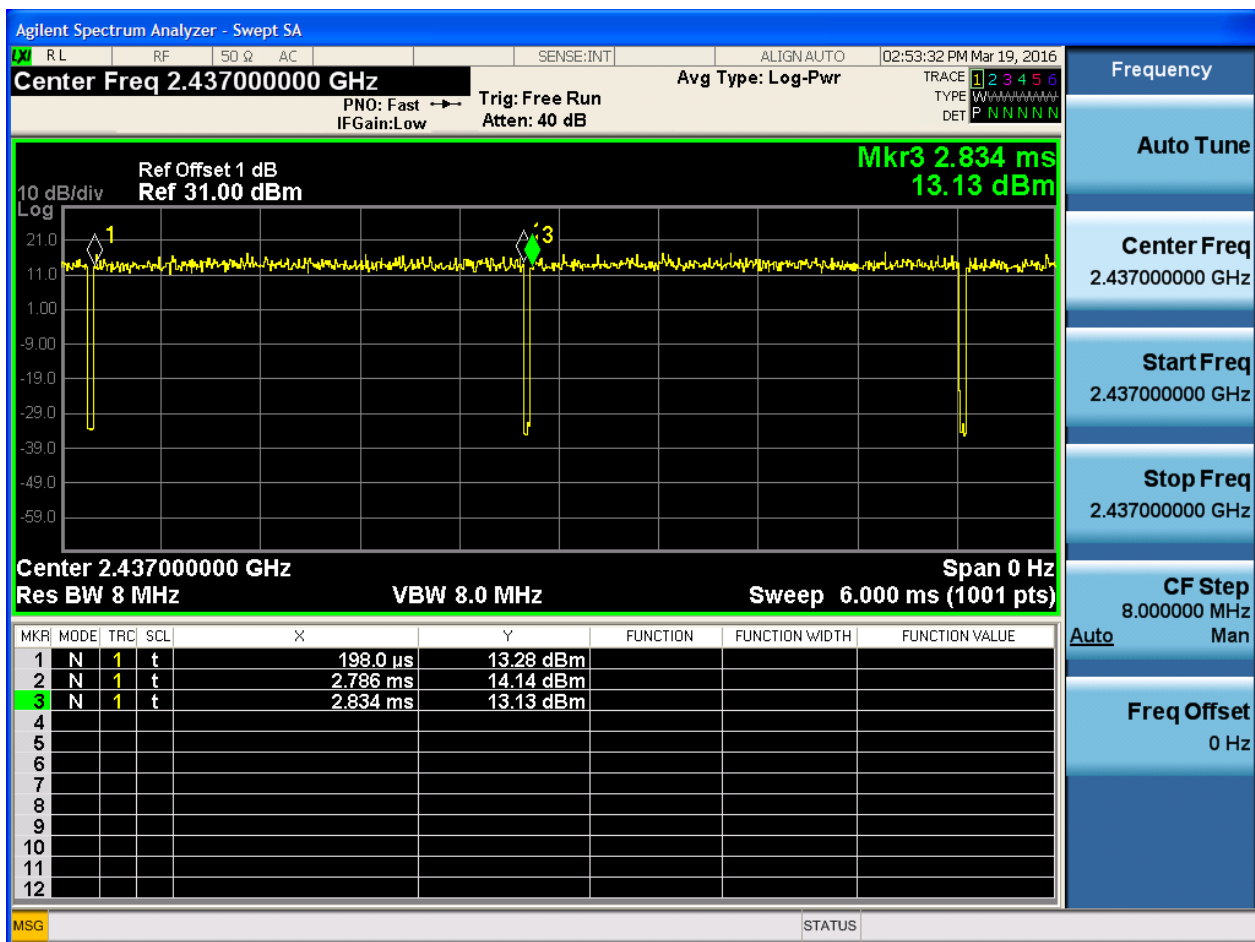


2.2 11G



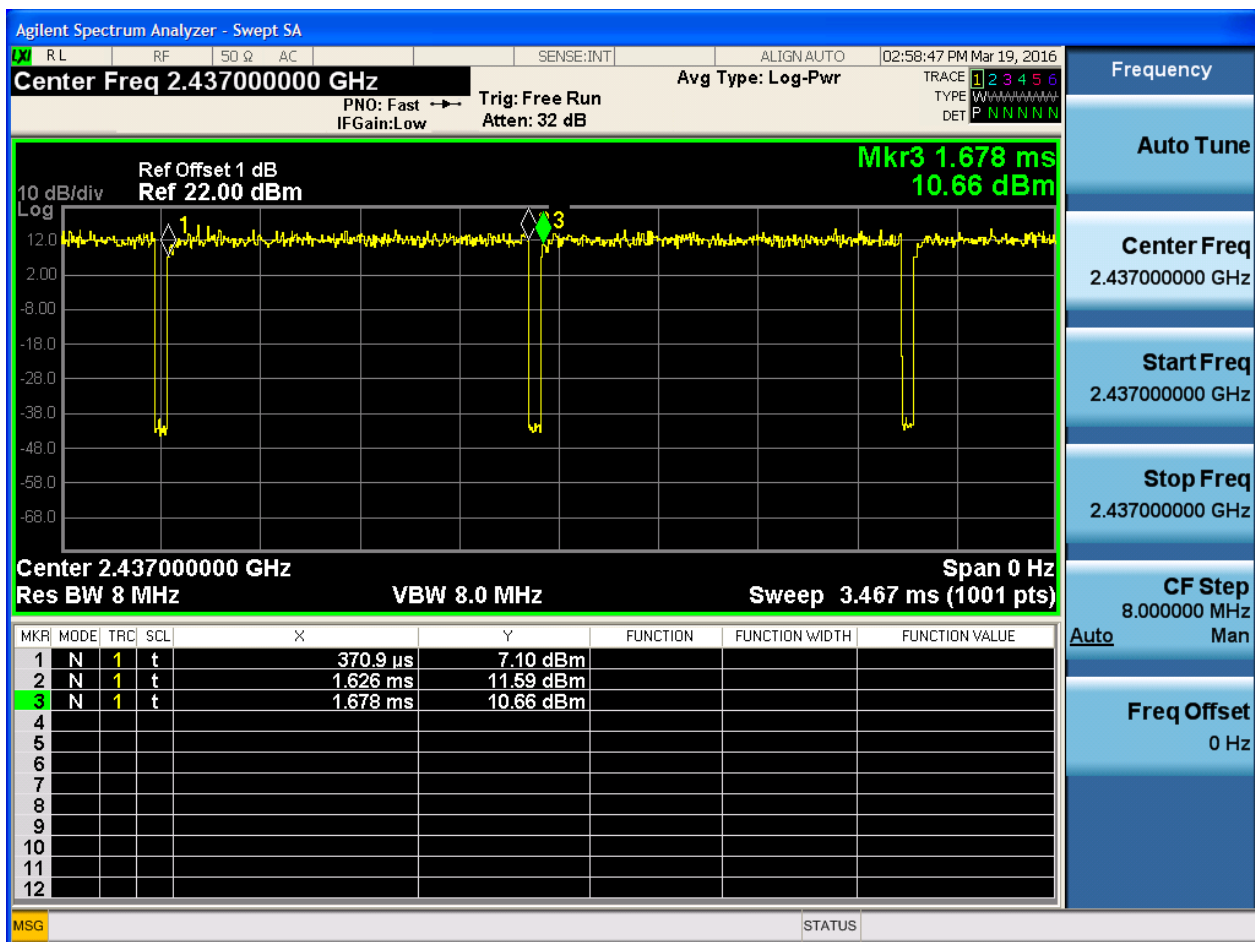


2.3 11N20





2.4 11N40



Appendix D: Maximum Conducted Average Output Power

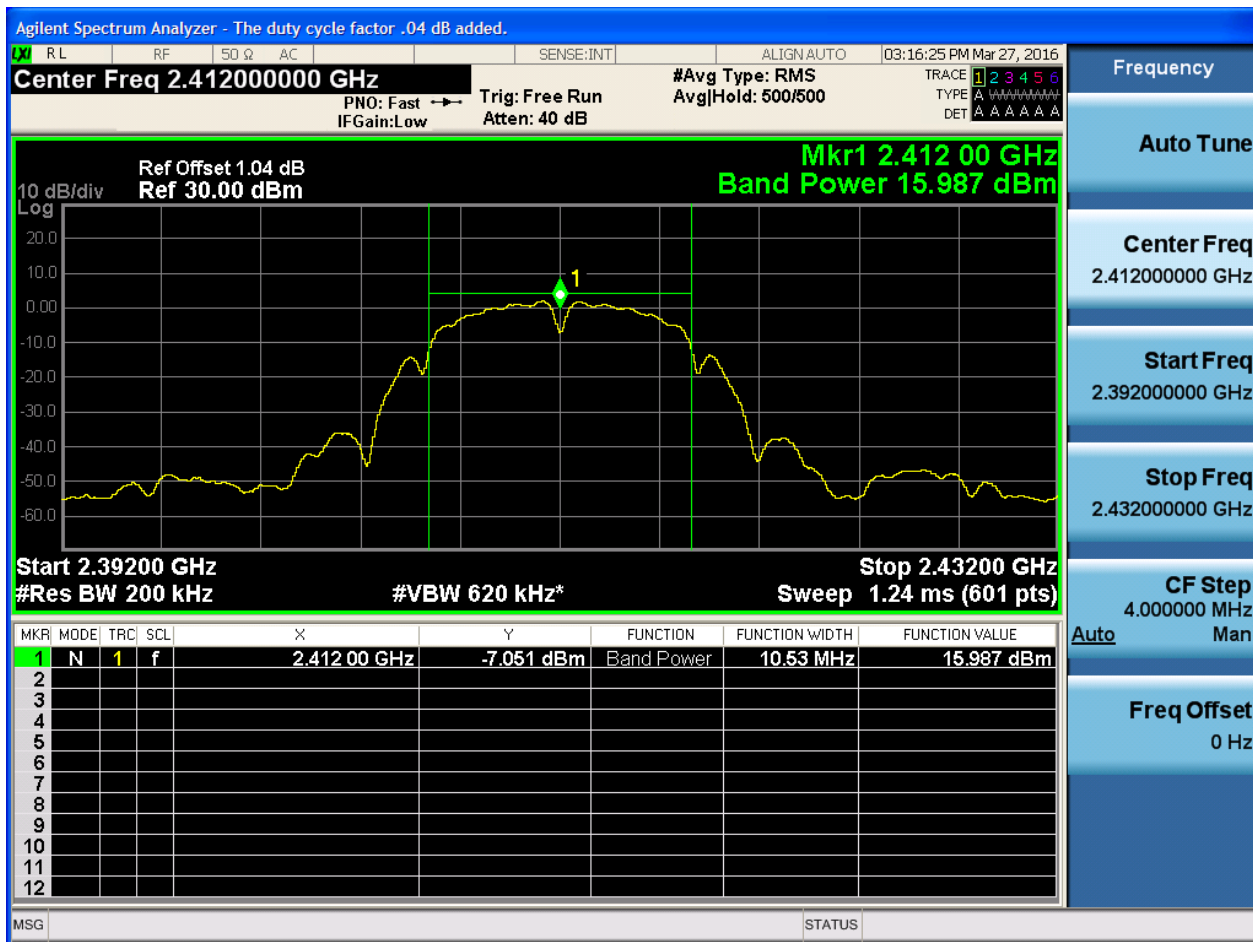
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Power[dBm]	Verdict
11B	L	2412	Ant 1	15.99	pass
11B	M	2437	Ant 1	14.77	pass
11B	H	2462	Ant 1	15.48	pass
11G	L	2412	Ant 1	14.86	pass
11G	M	2437	Ant 1	14.03	pass
11G	H	2462	Ant 1	14.71	pass
11N20	L	2412	Ant 1	13.59	pass
11N20	M	2437	Ant 1	12.86	pass
11N20	H	2462	Ant 1	13.56	pass
11N40	L	2422	Ant 1	11.52	pass
11N40	M	2437	Ant 1	12.30	pass
11N40	H	2452	Ant 1	12.30	pass



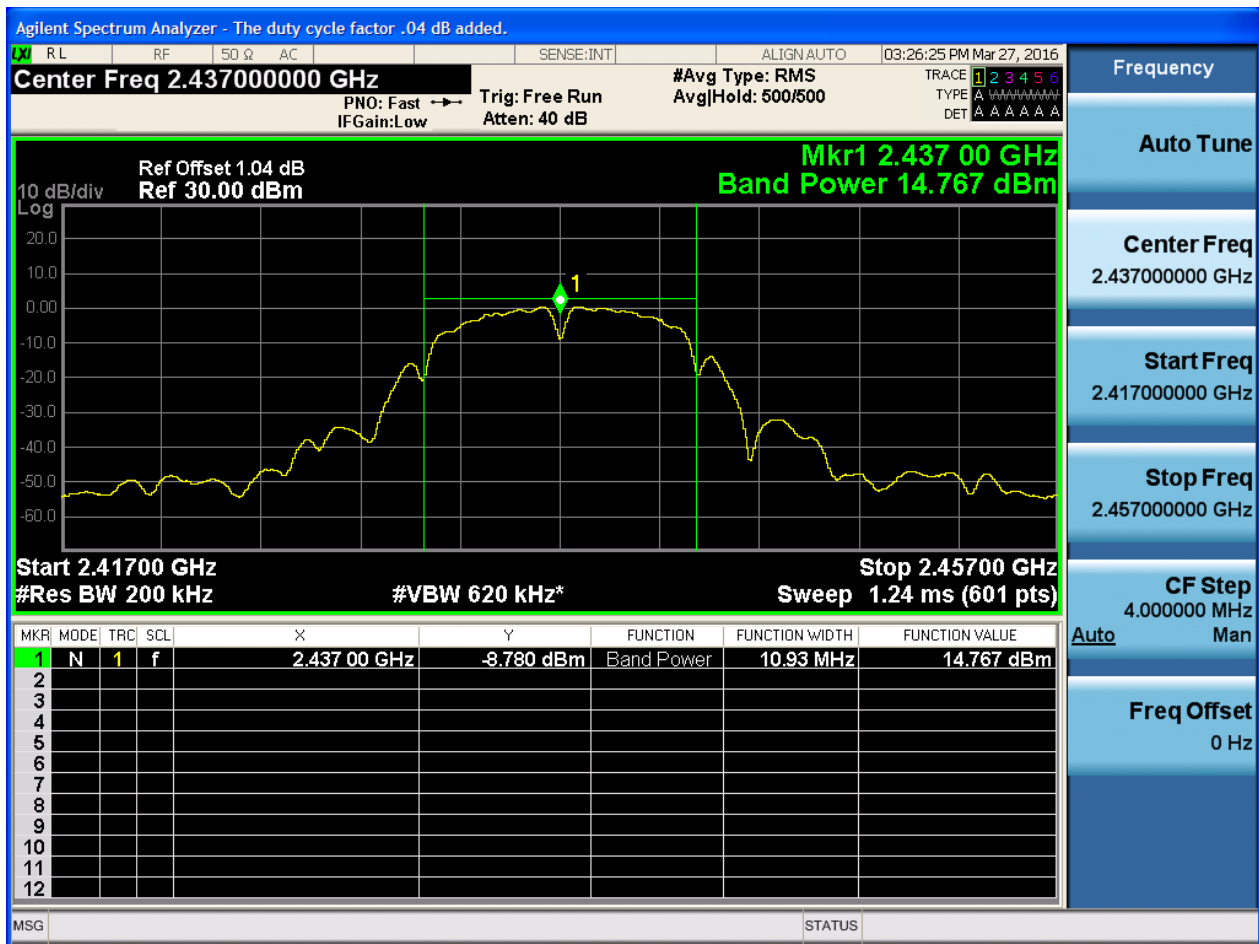
Part II - Test Plots

2.1 11B_L@Ant 1



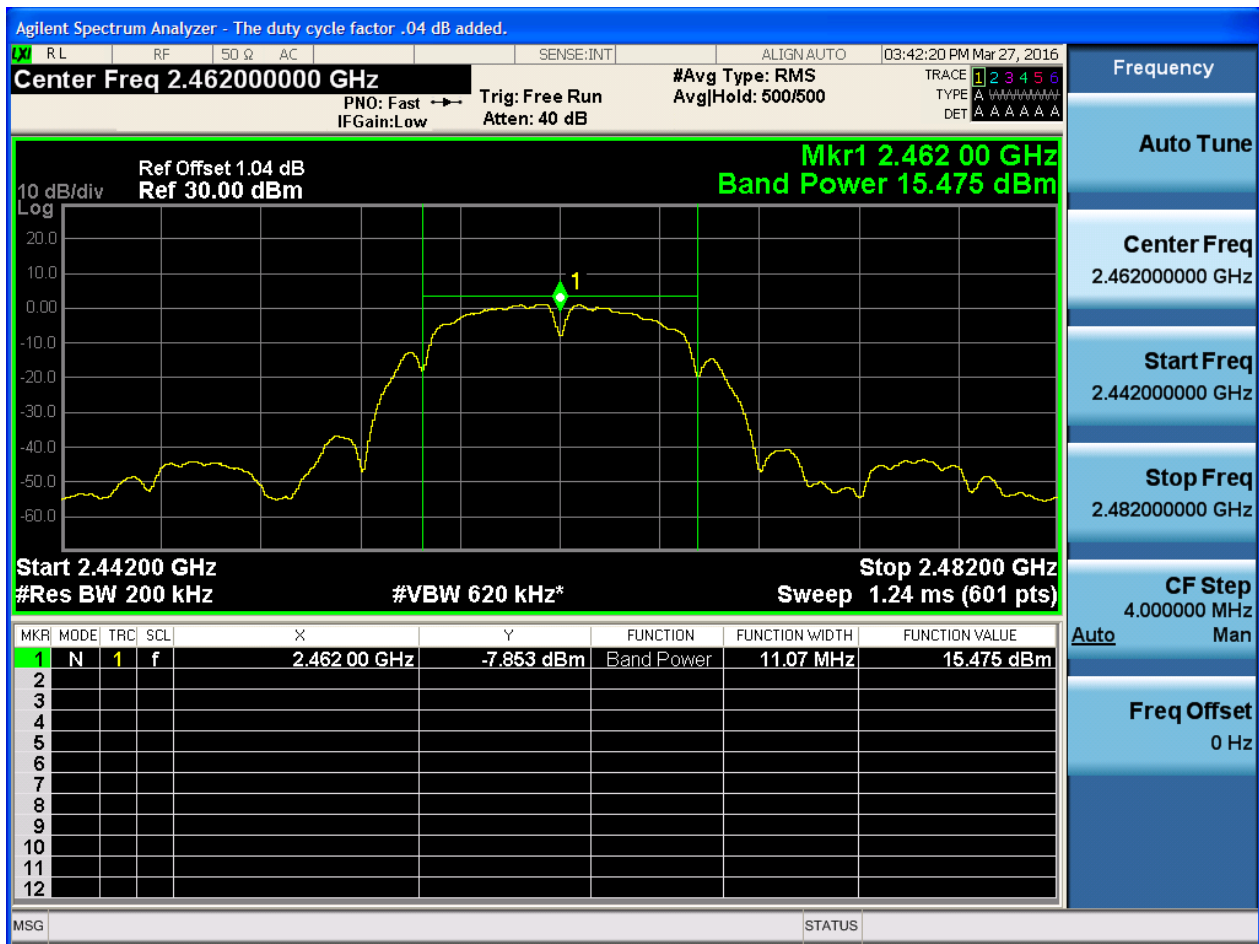


2.2 11B_M@Ant 1



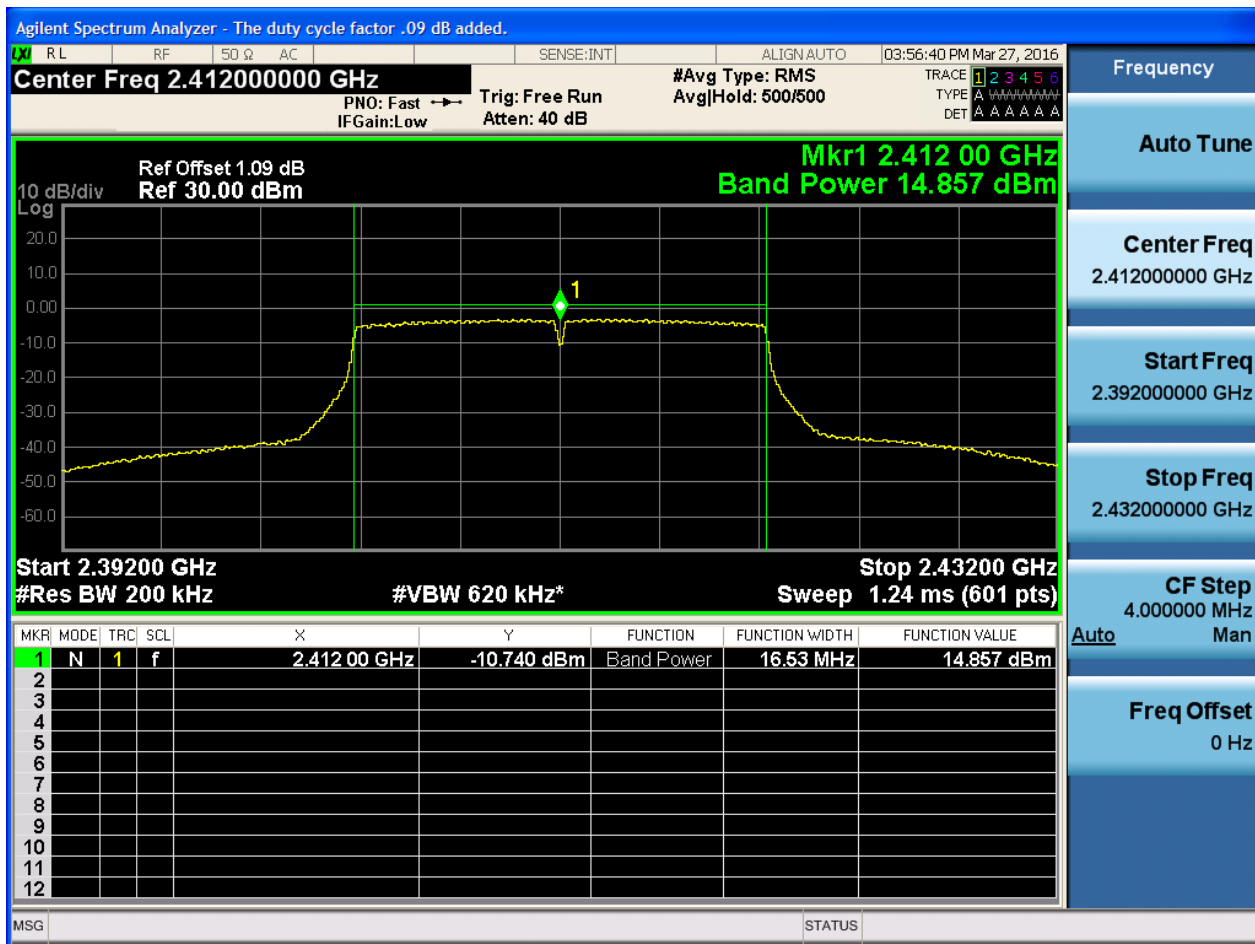


2.3 11B_H@Ant 1



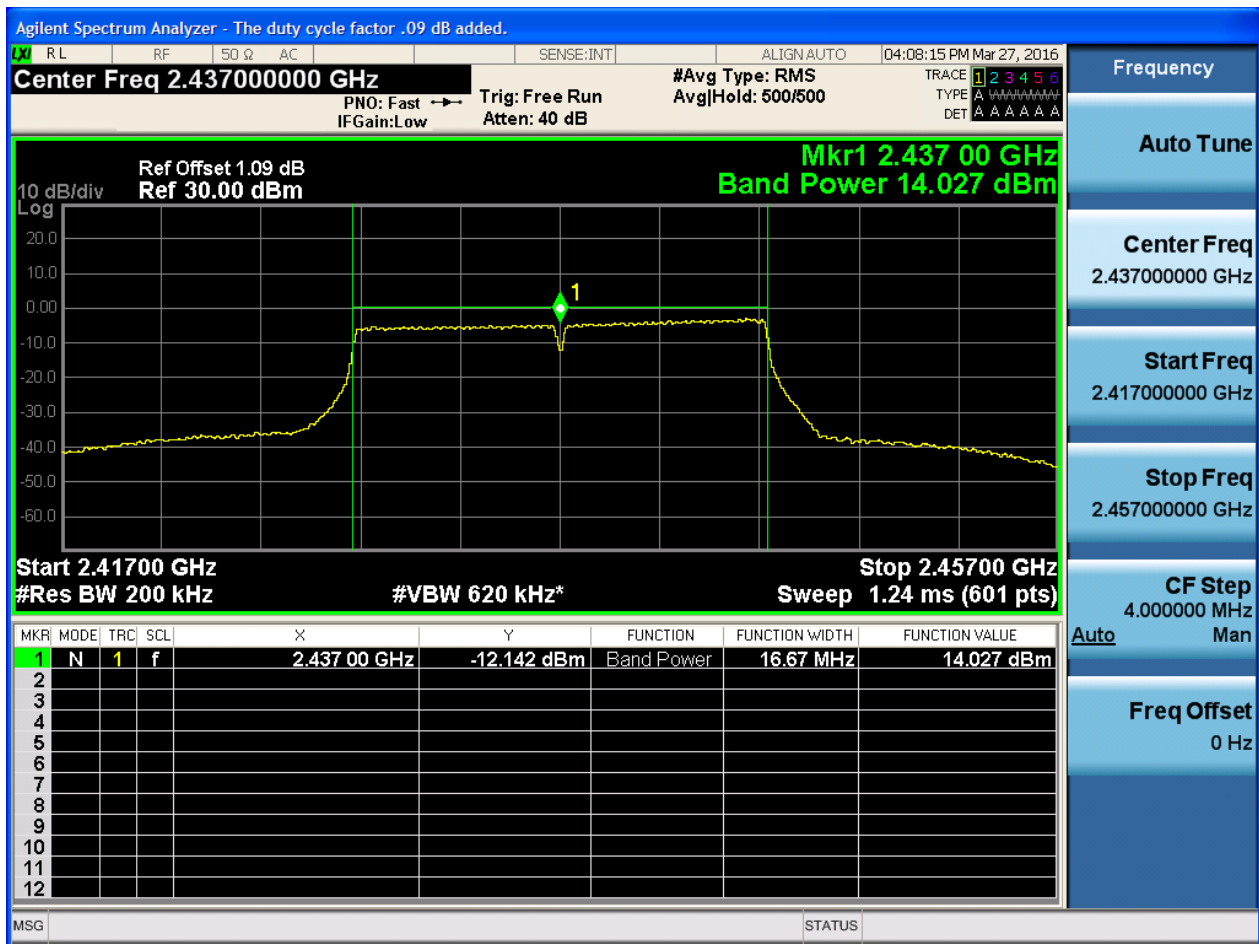


2.4 11G_L@Ant 1



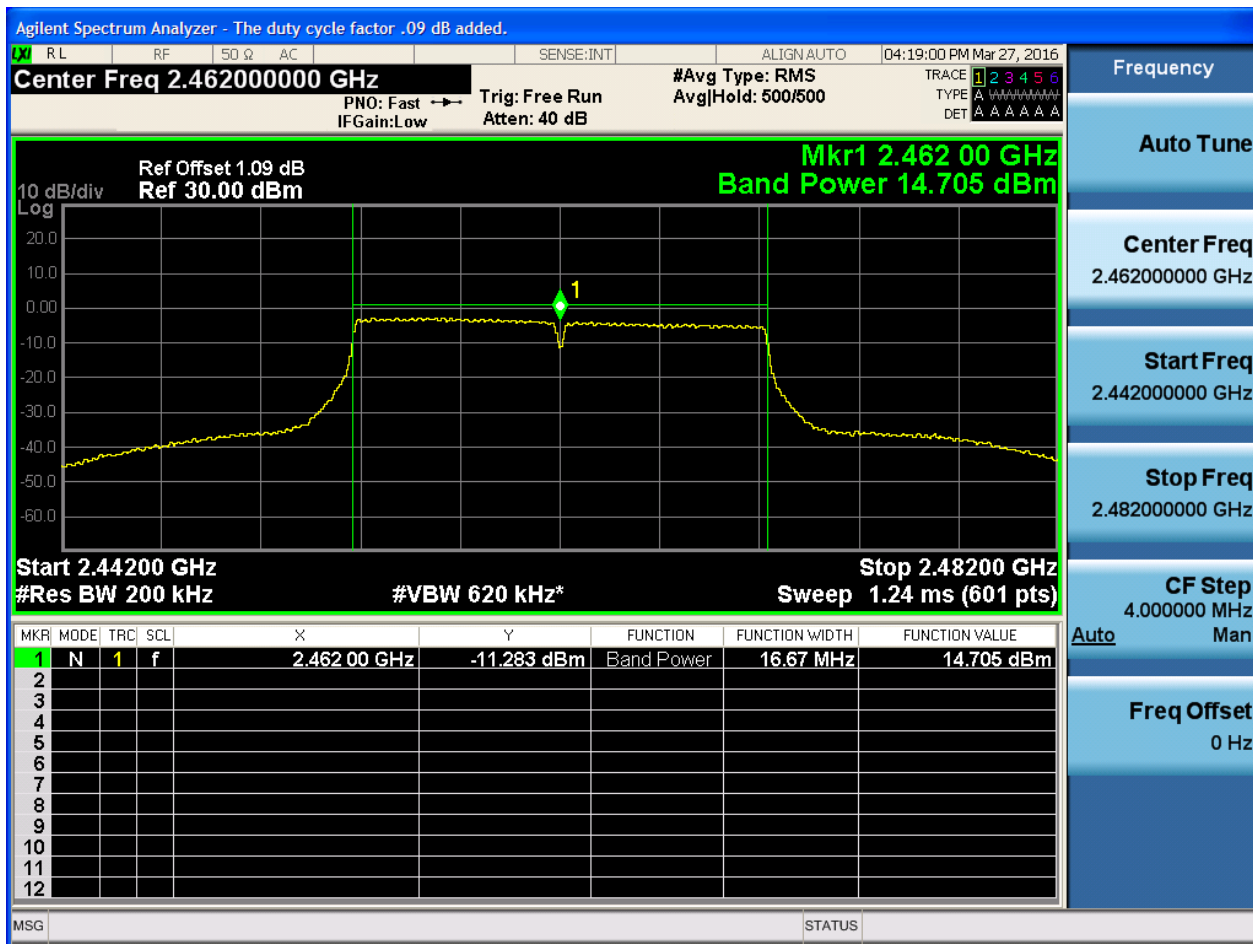


2.5 11G_M@Ant 1



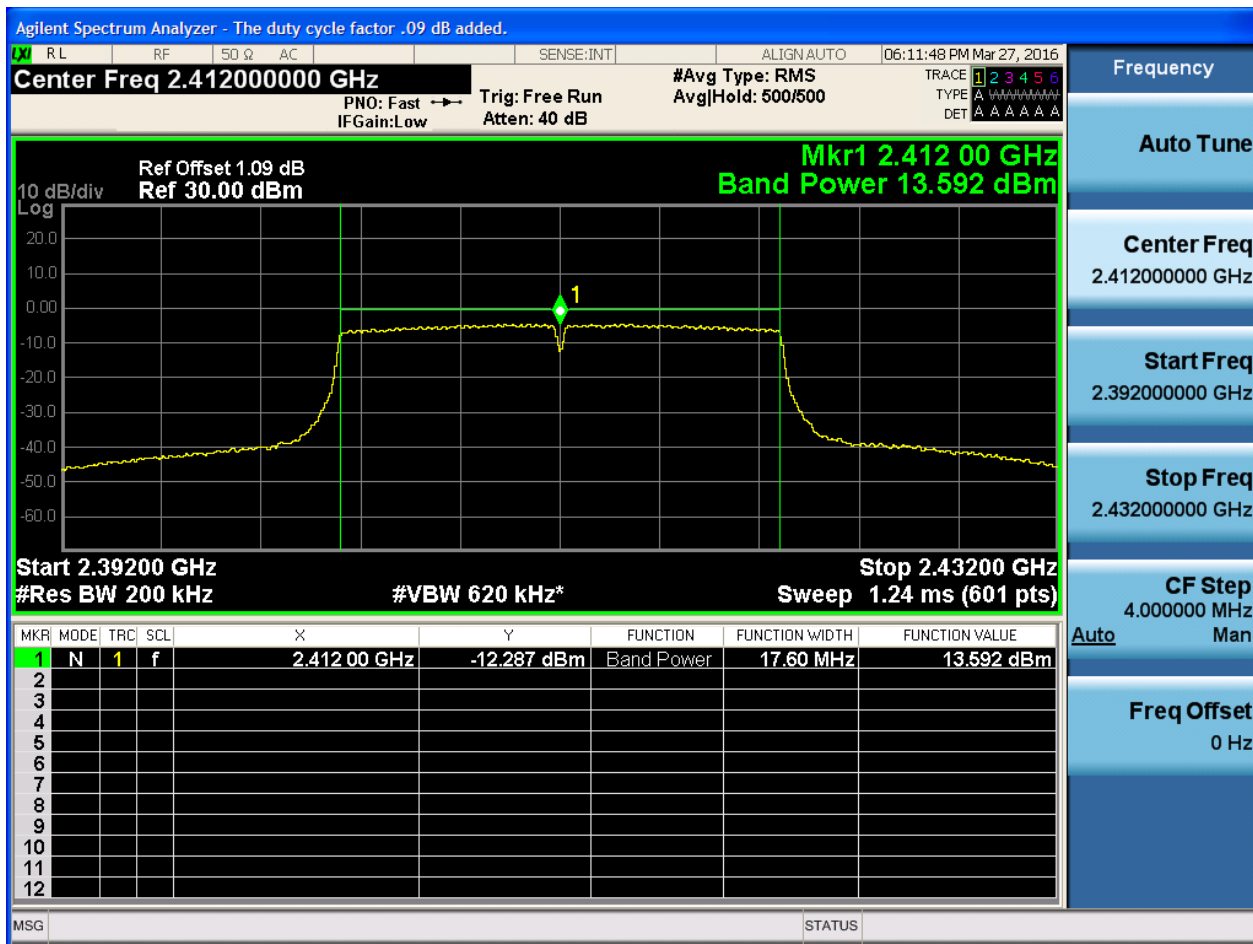


2.6 11G_H@Ant 1



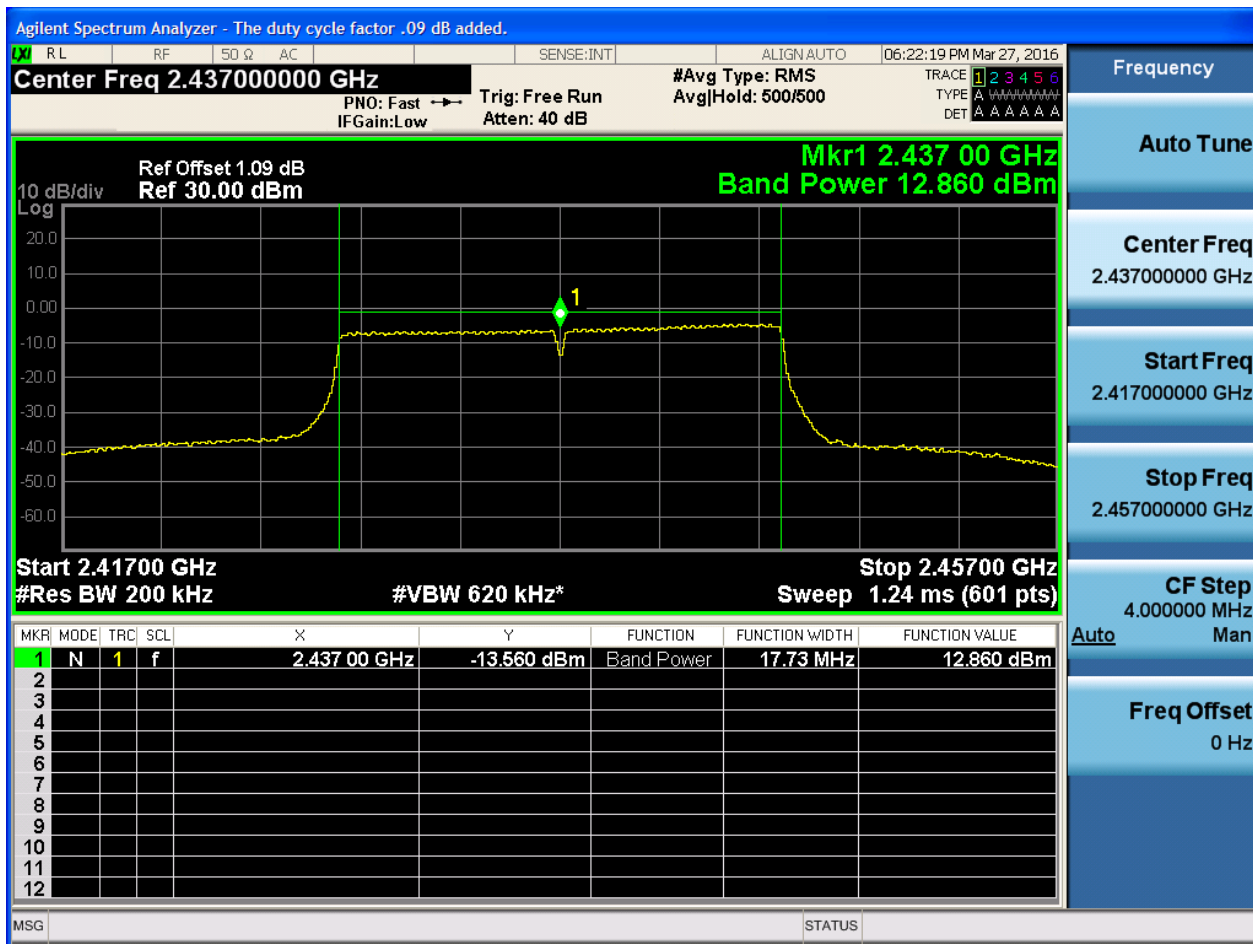


2.7 11N20_L@Ant 1



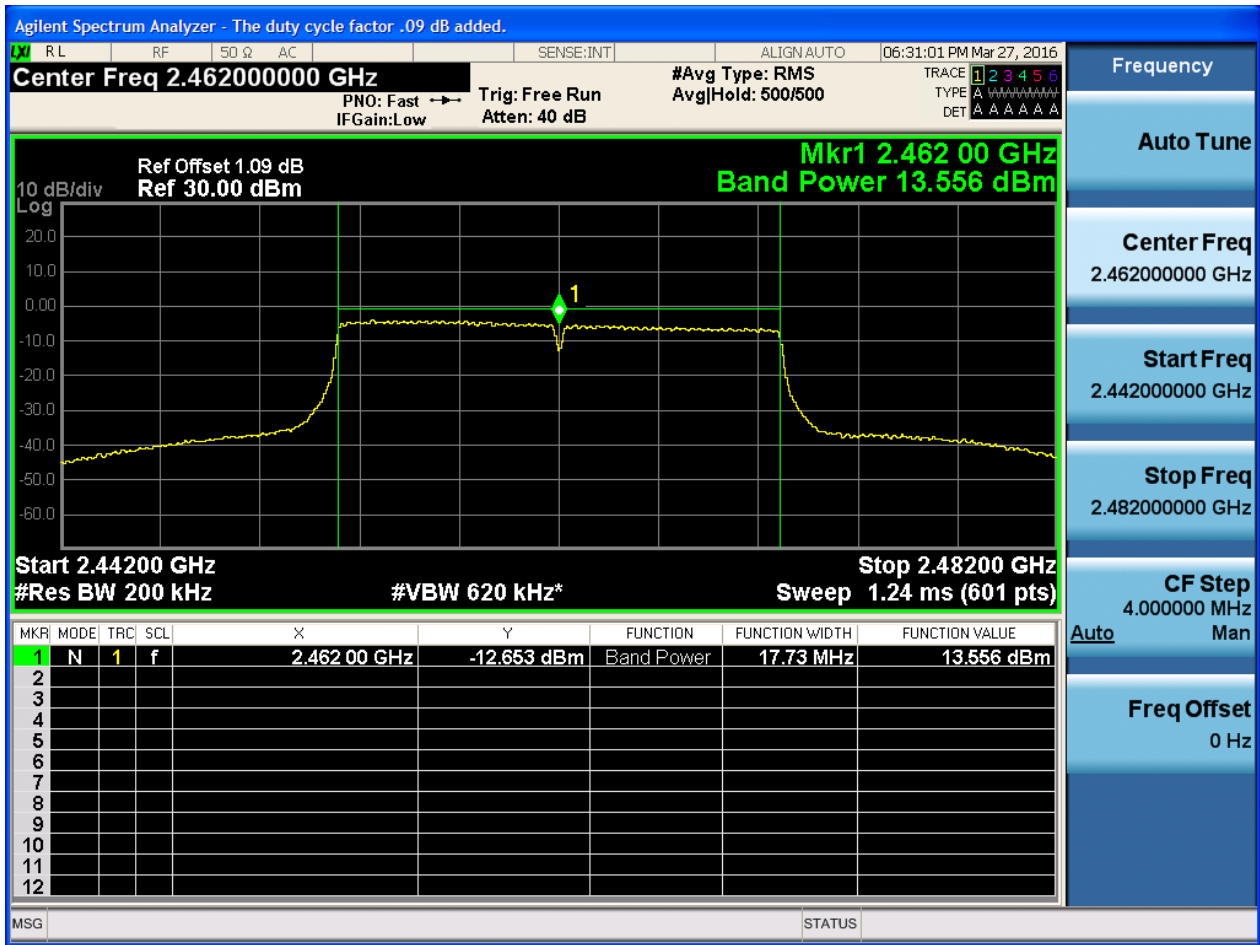


2.8 11N20_M@Ant 1



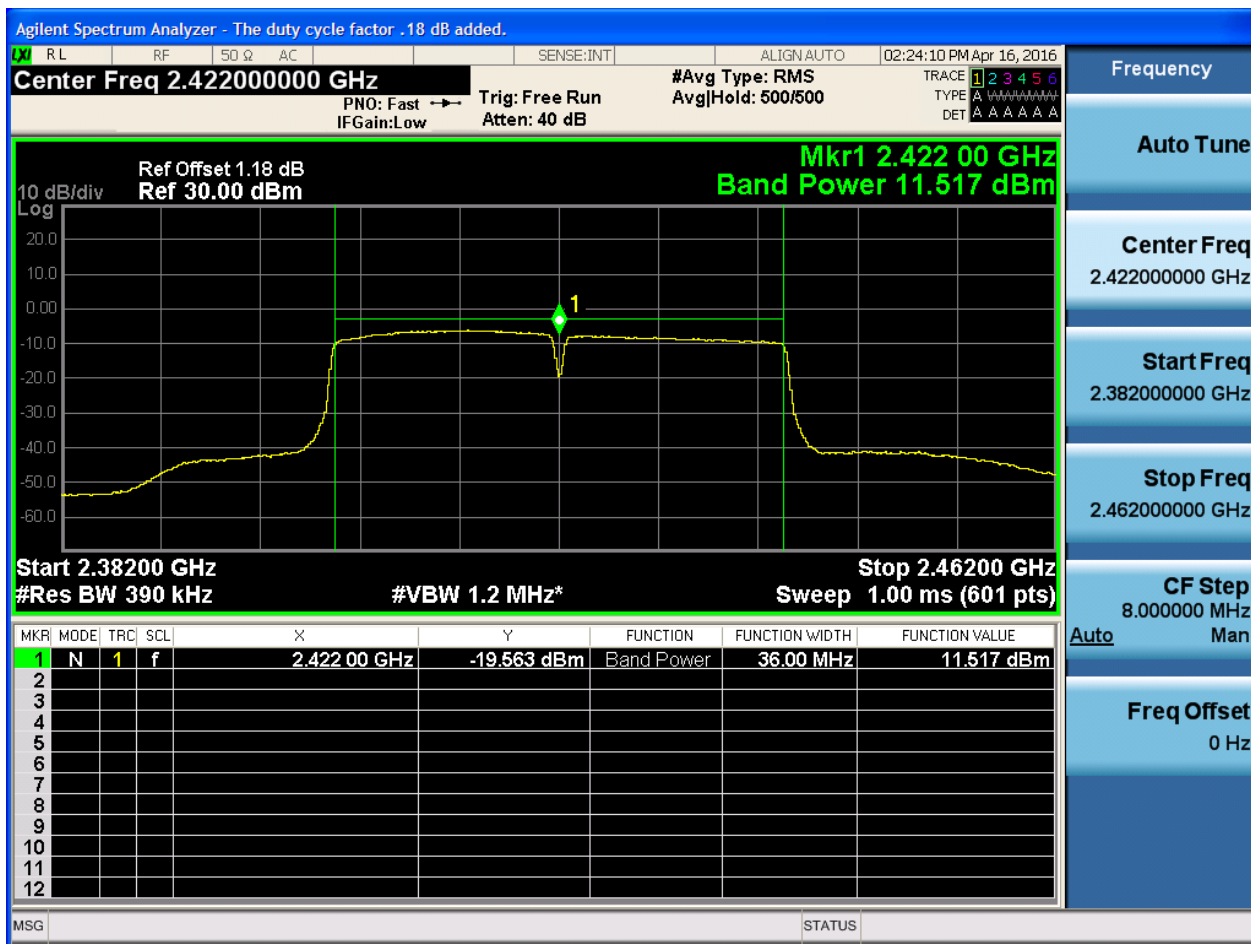


2.9 11N20_H@Ant 1



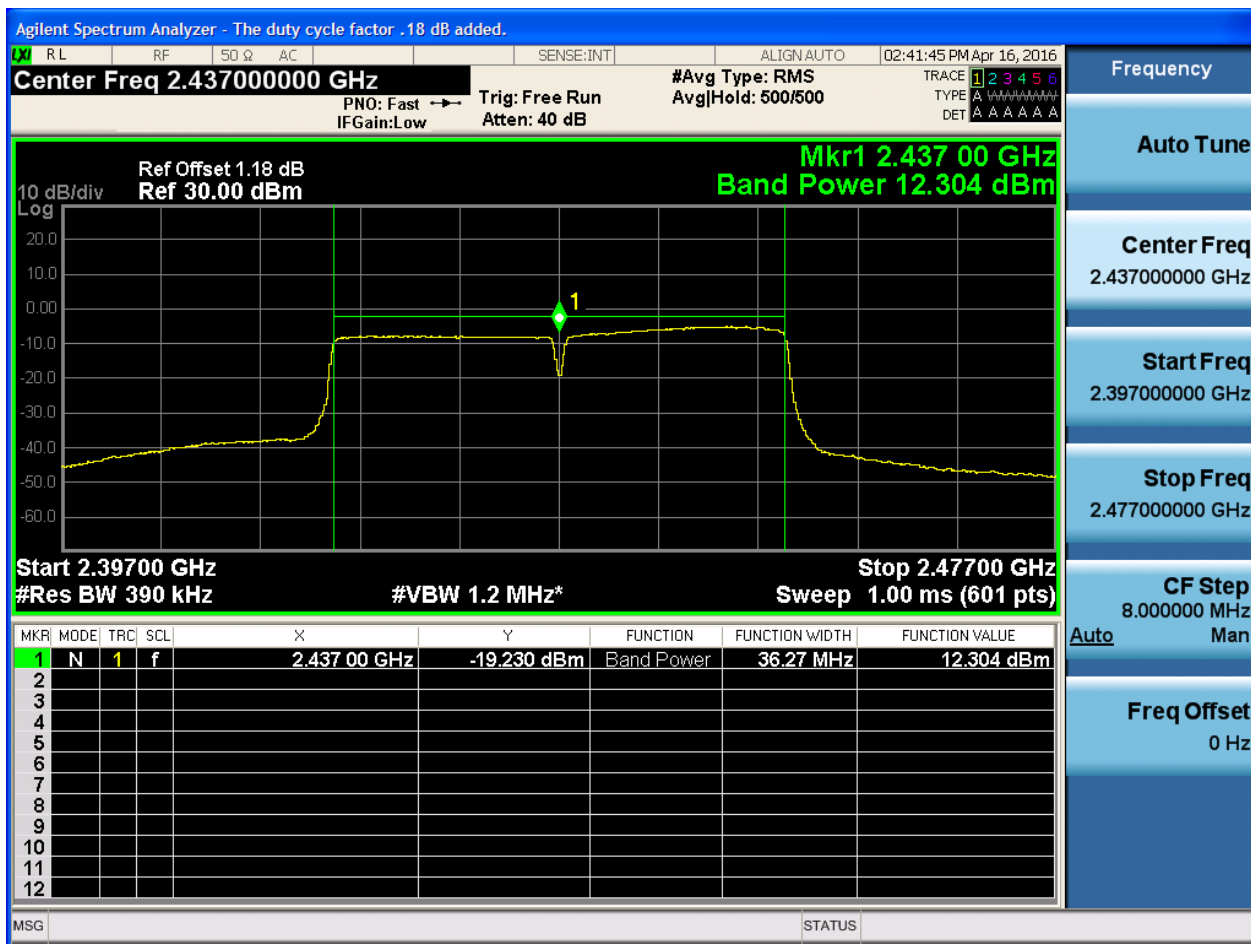


2.10 11N40_L@Ant 1



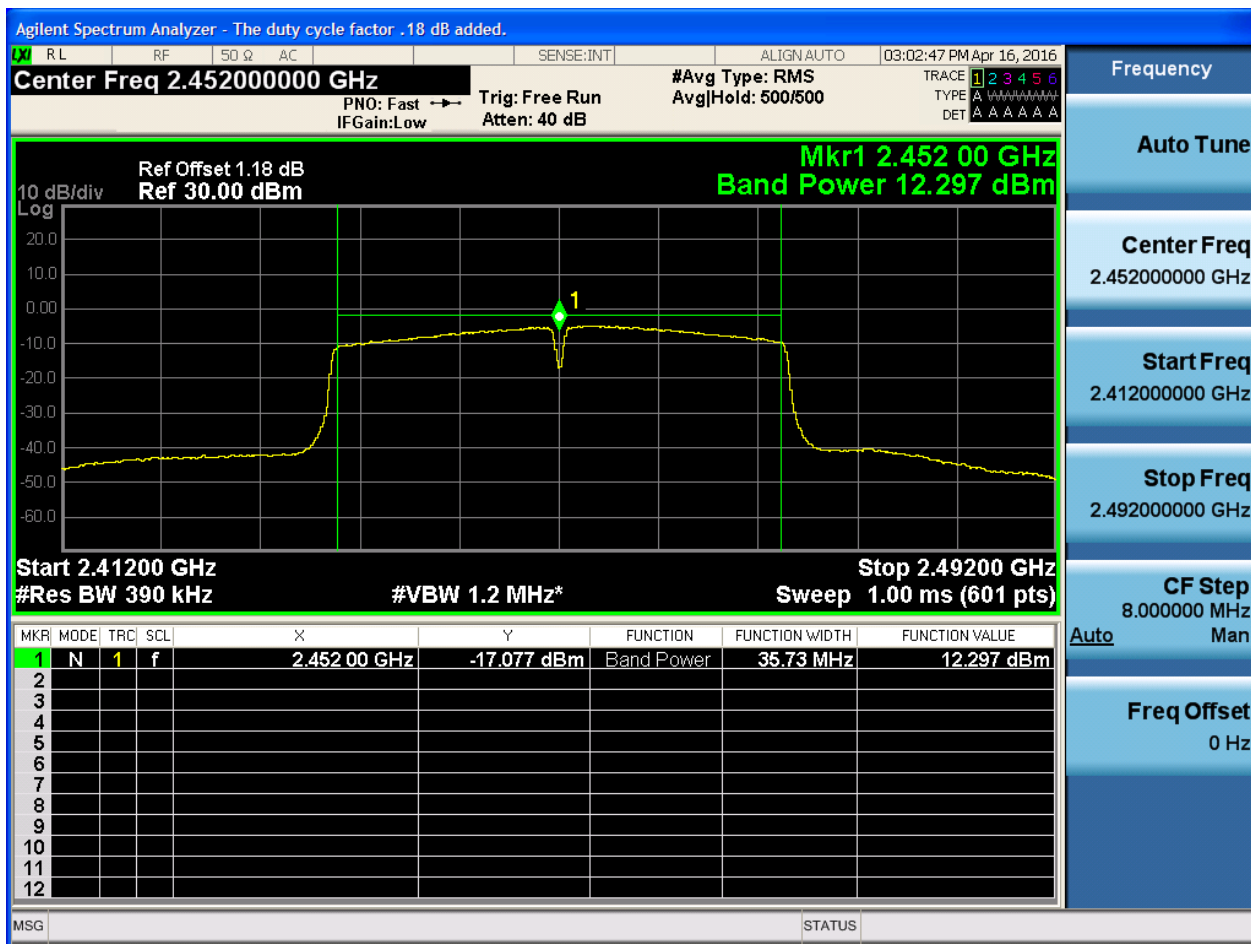


2.11 11N40_M@Ant 1





2.12 11N40_H@Ant 1



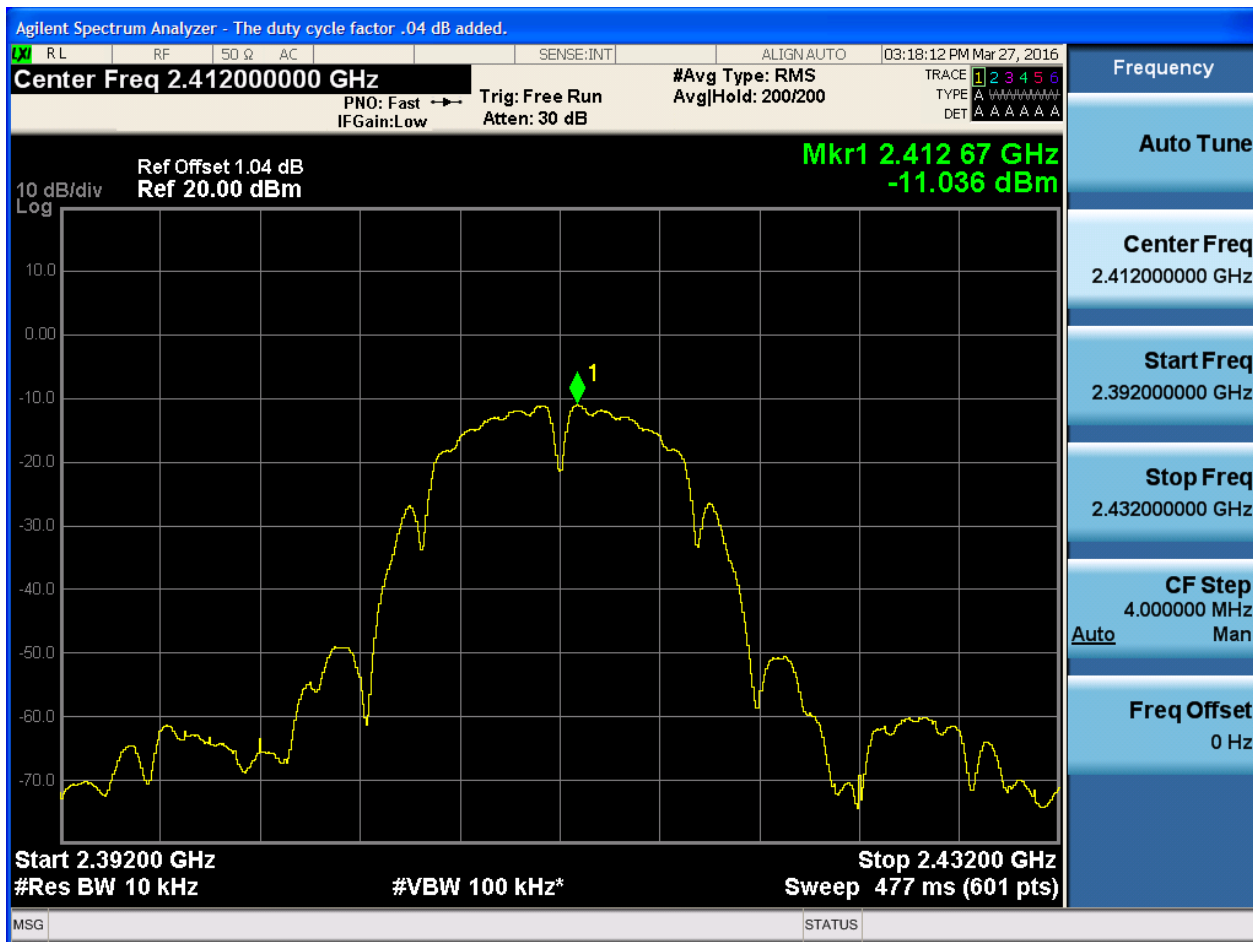
Appendix E: Maximum Power Spectral Density Level

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	PD[MHz]	Verdict
11B	L	2412	Ant 1	-11.04	pass
11B	M	2437	Ant 1	-12.15	pass
11B	H	2462	Ant 1	-11.60	pass
11G	L	2412	Ant 1	-14.87	pass
11G	M	2437	Ant 1	-15.08	pass
11G	H	2462	Ant 1	-14.51	pass
11N20	L	2412	Ant 1	-16.55	pass
11N20	M	2437	Ant 1	-16.47	pass
11N20	H	2462	Ant 1	-16.11	pass
11N40	L	2422	Ant 1	-21.04	pass
11N40	M	2437	Ant 1	-19.86	pass
11N40	H	2452	Ant 1	-19.78	pass

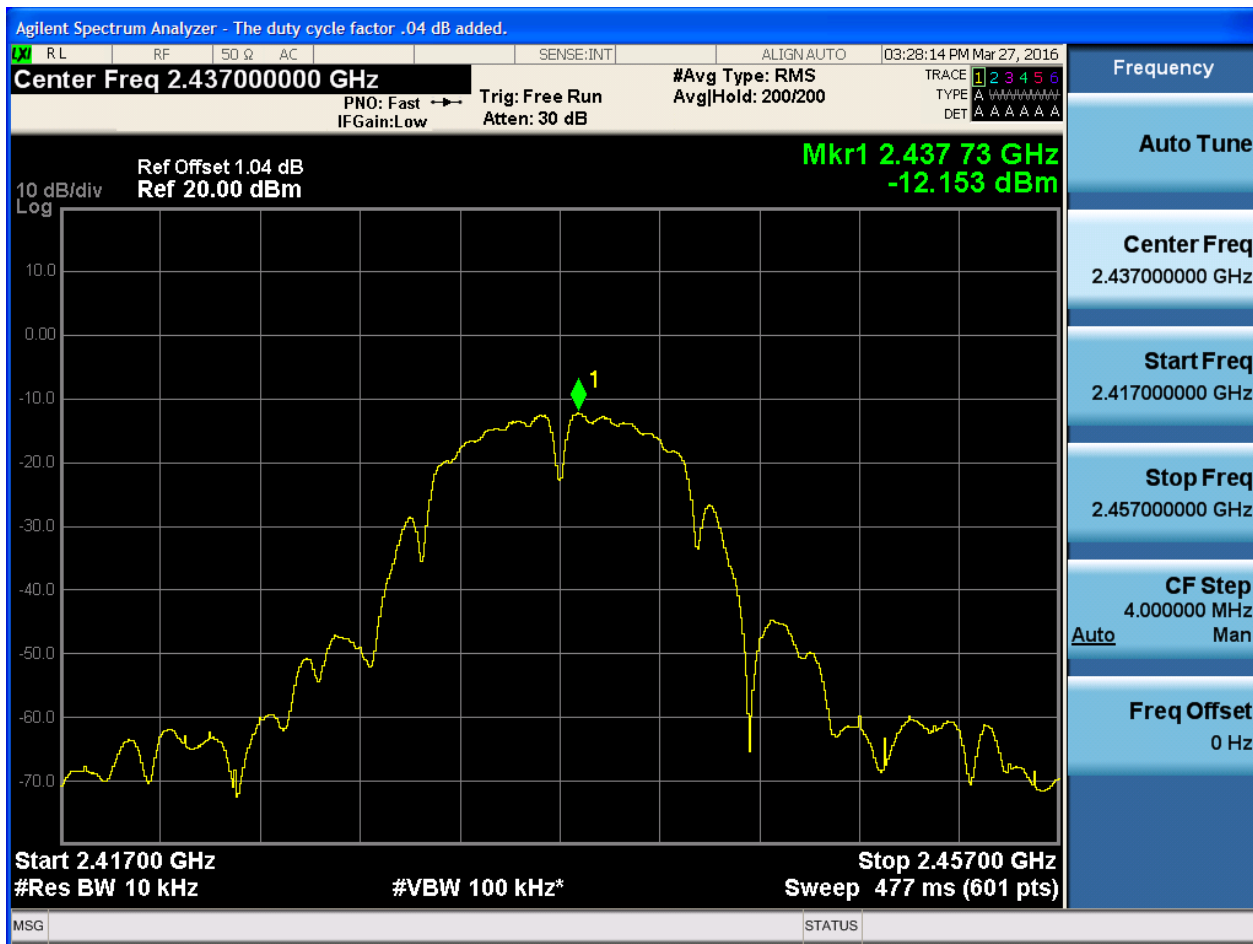
Part II - Test Plots

2.1 11B_L@Ant 1



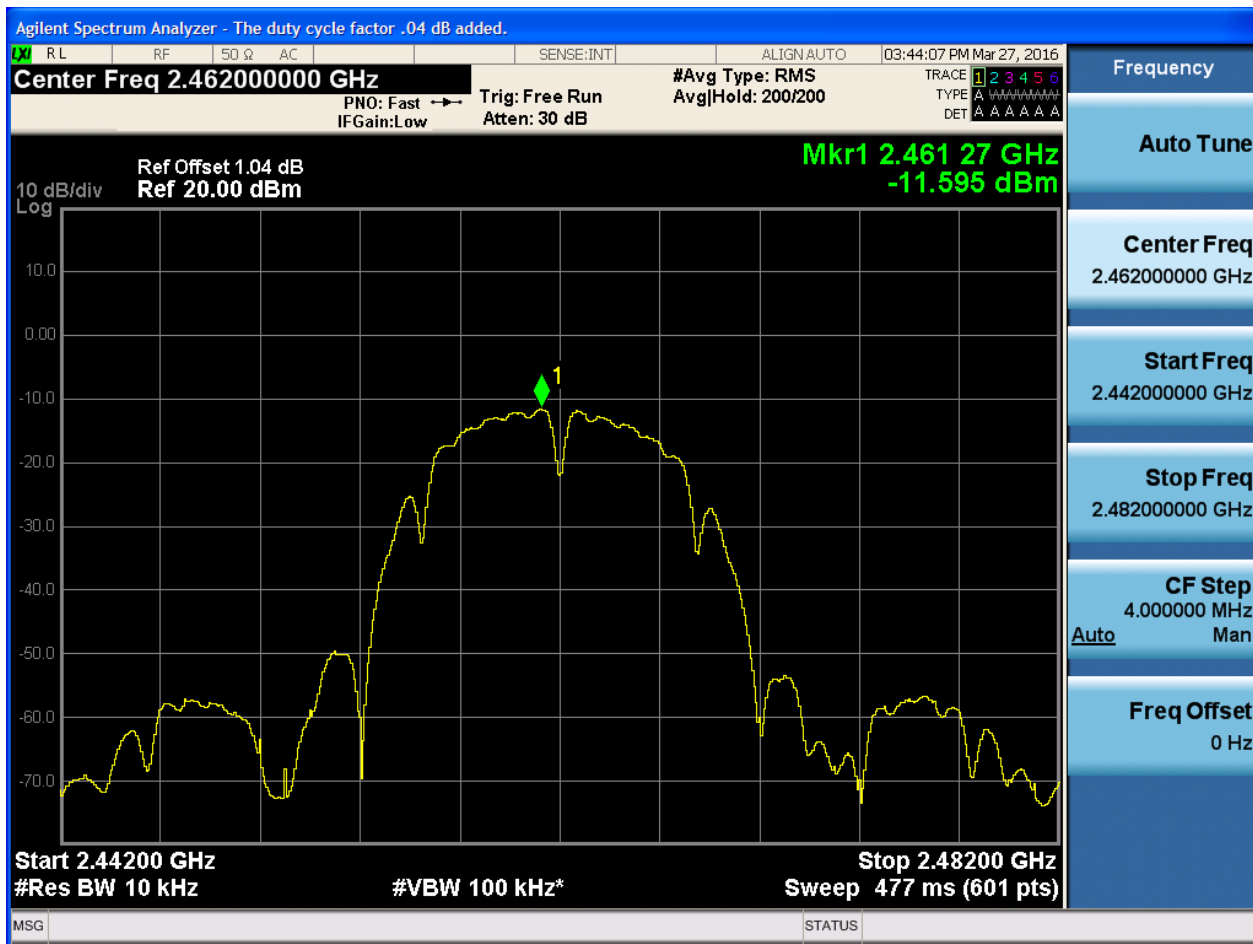


2.2 11B_M@Ant 1



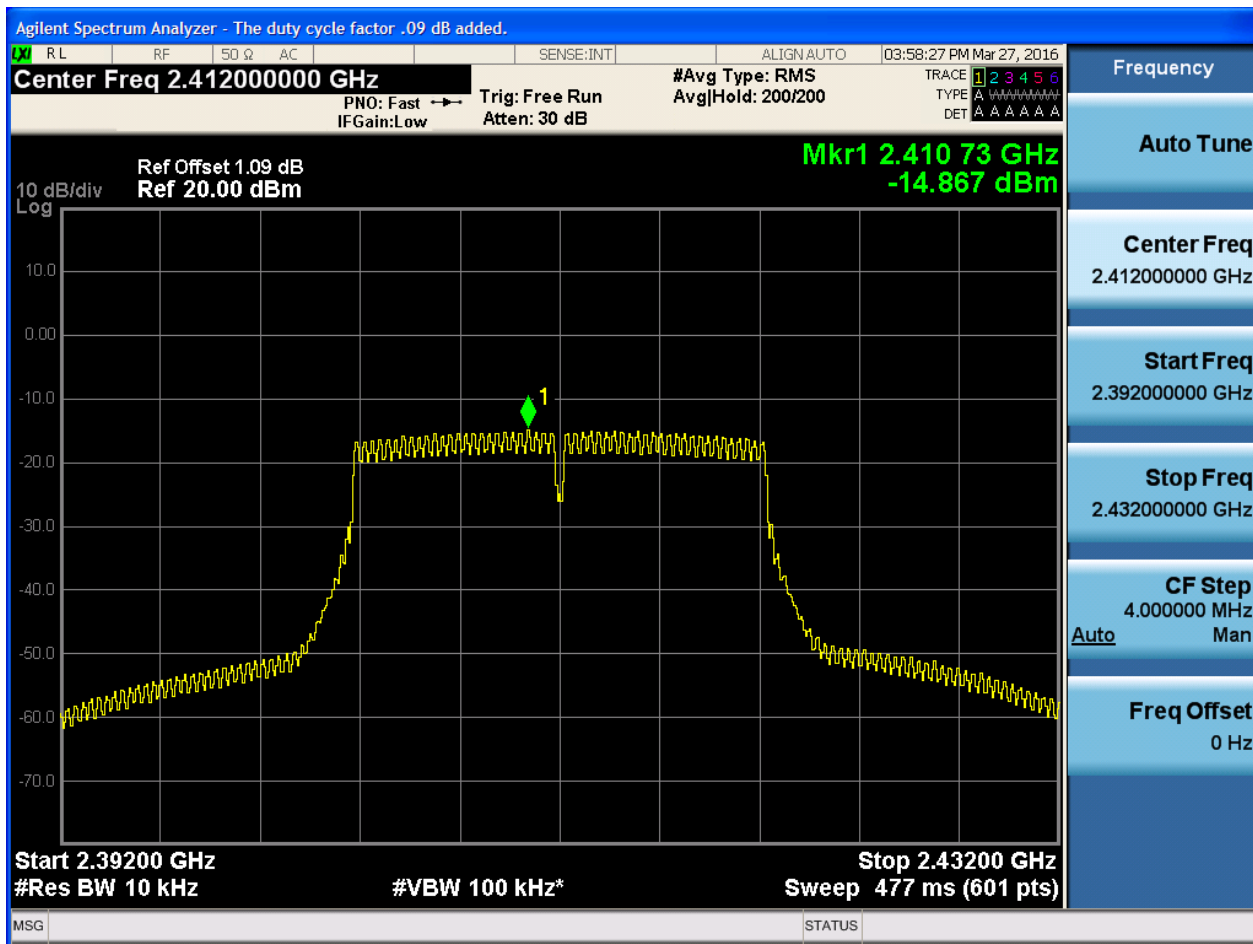


2.3 11B_H@Ant 1



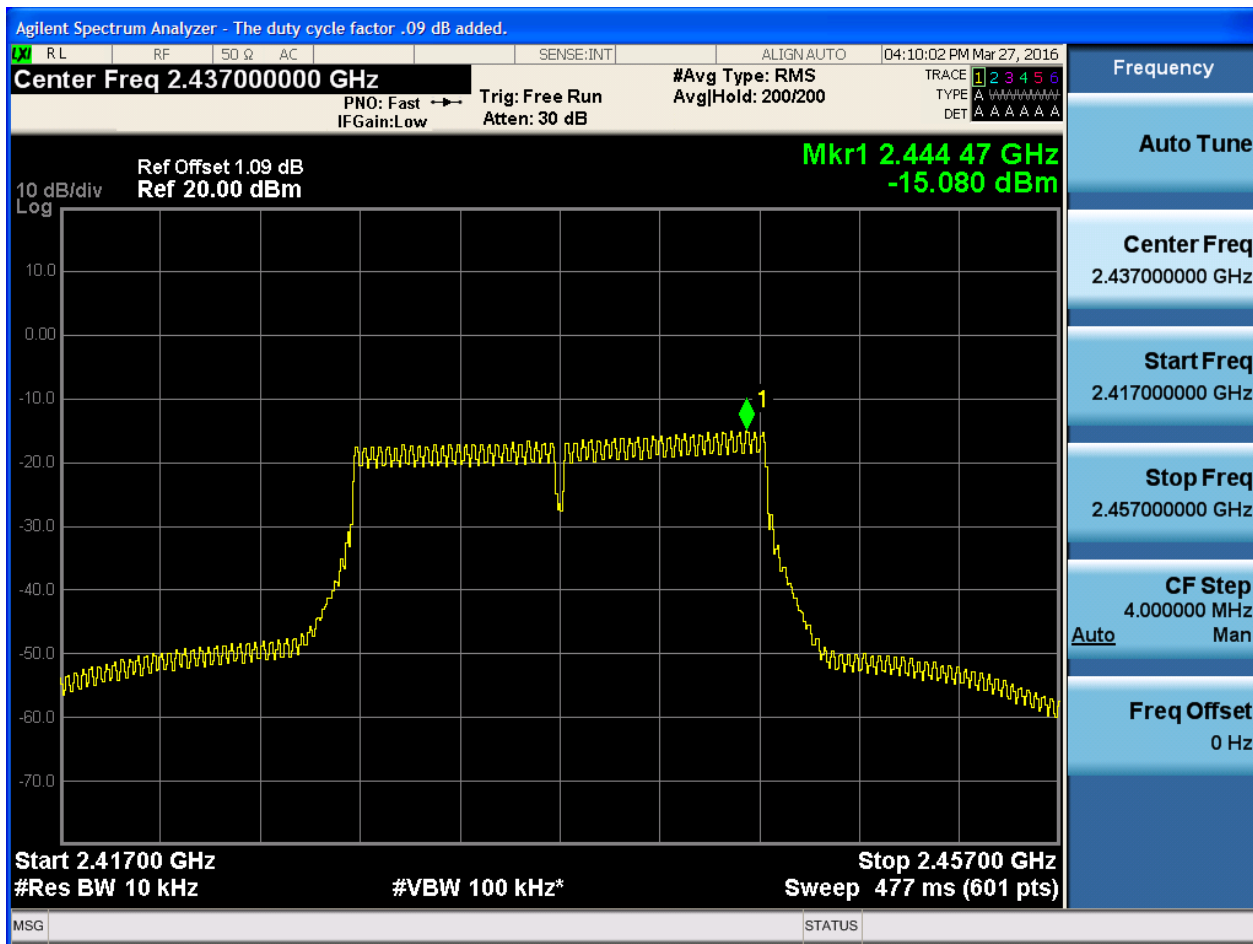


2.4 11G_L@Ant 1



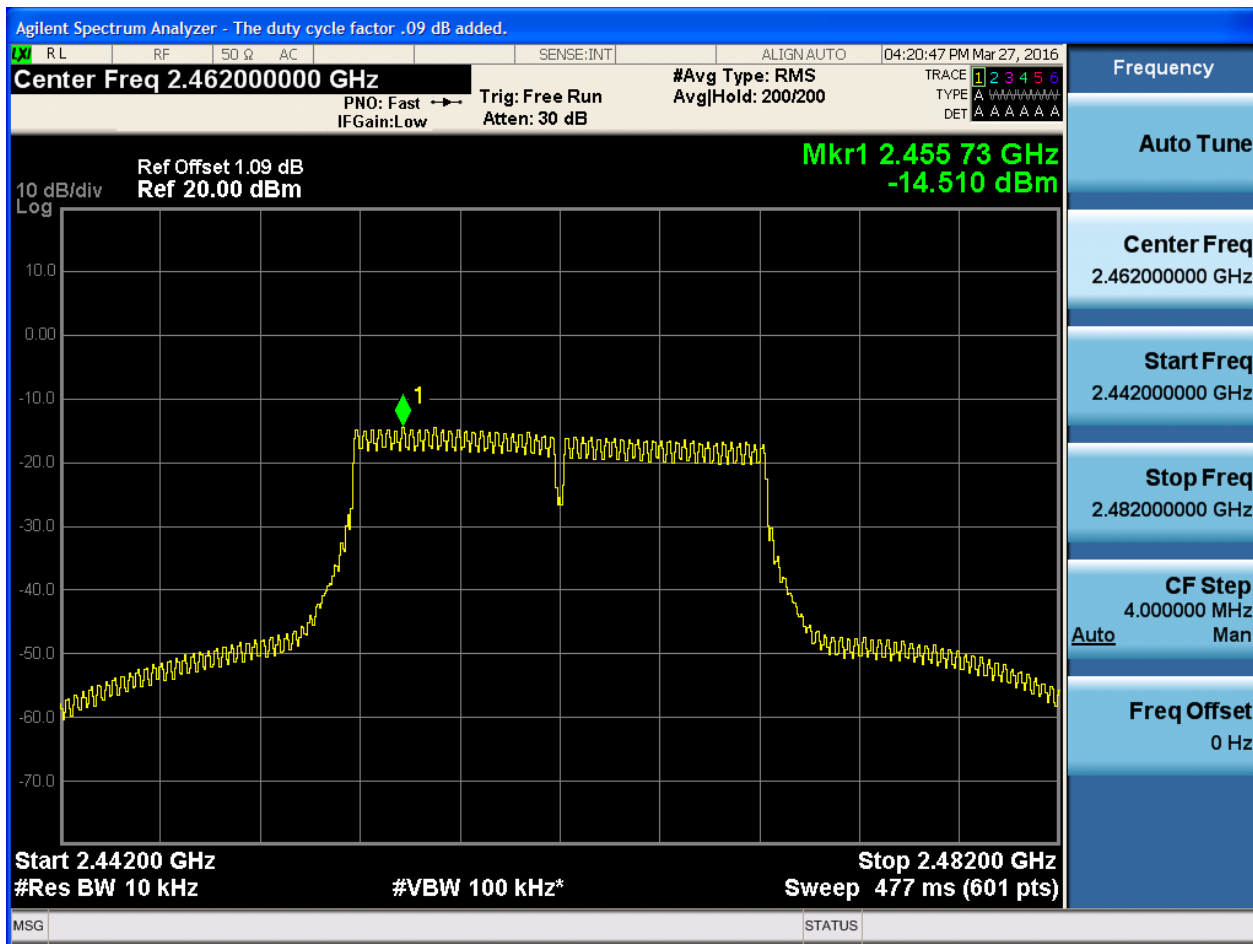


2.5 11G_M@Ant 1



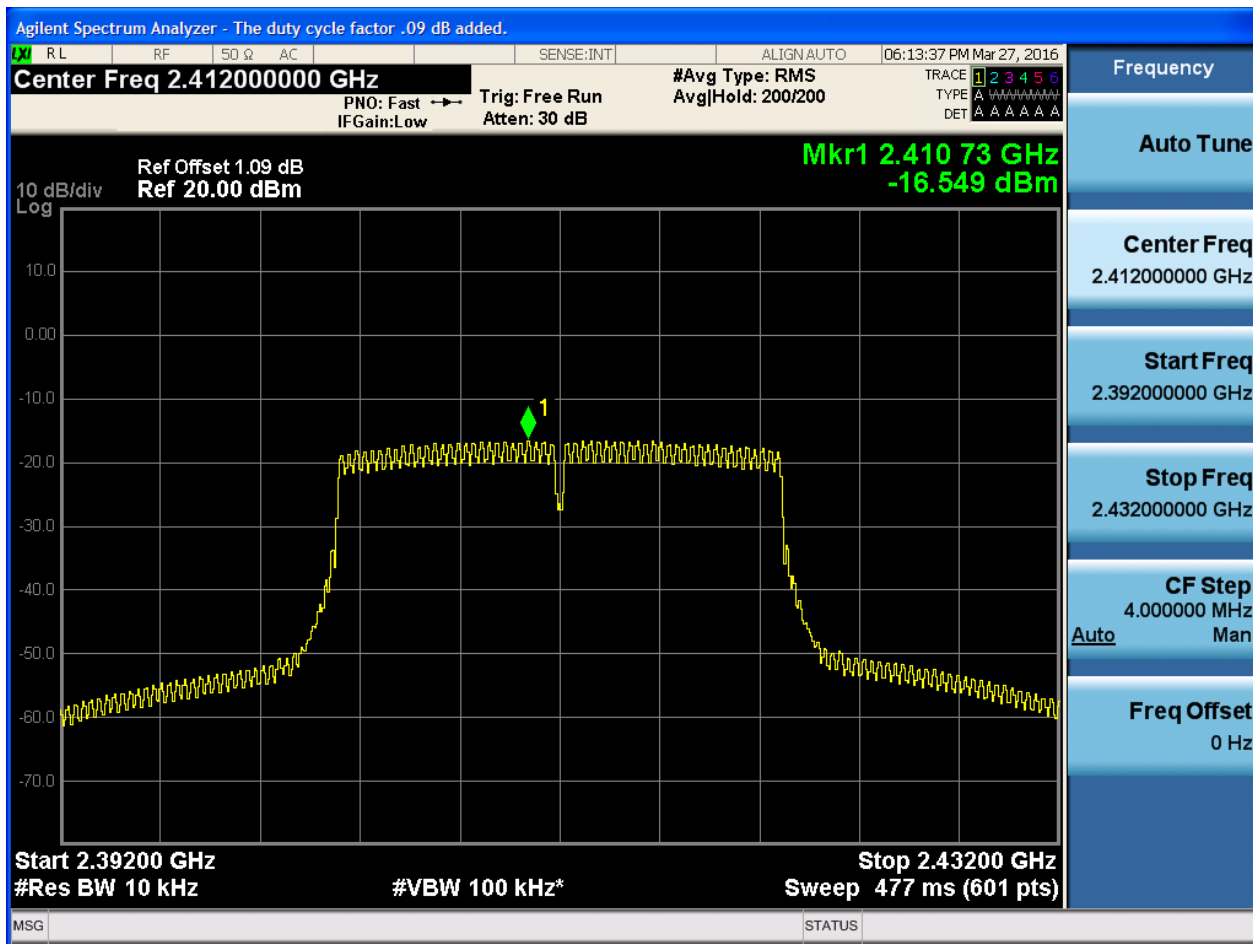


2.6 11G_H@Ant 1



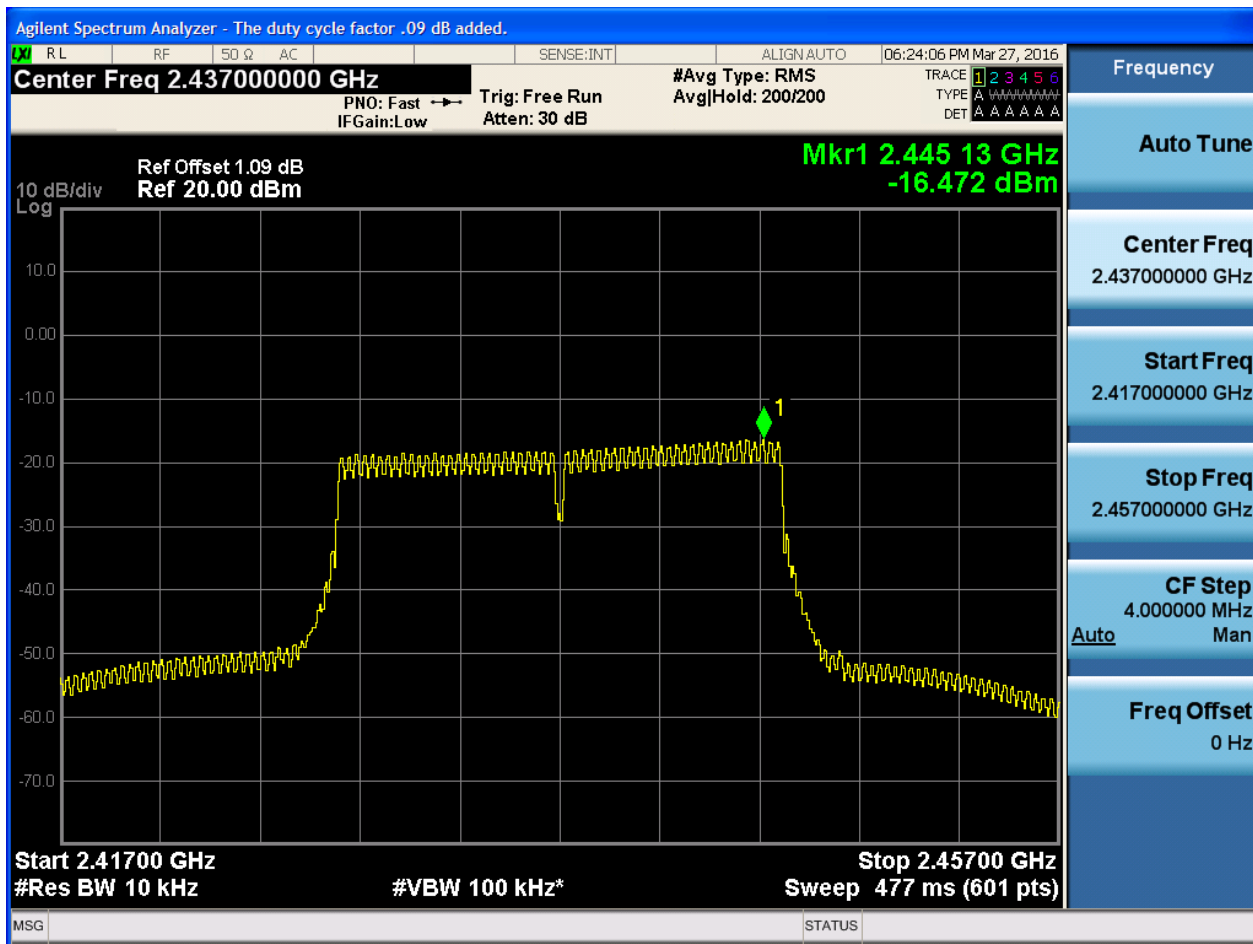


2.7 11N20_L@Ant 1



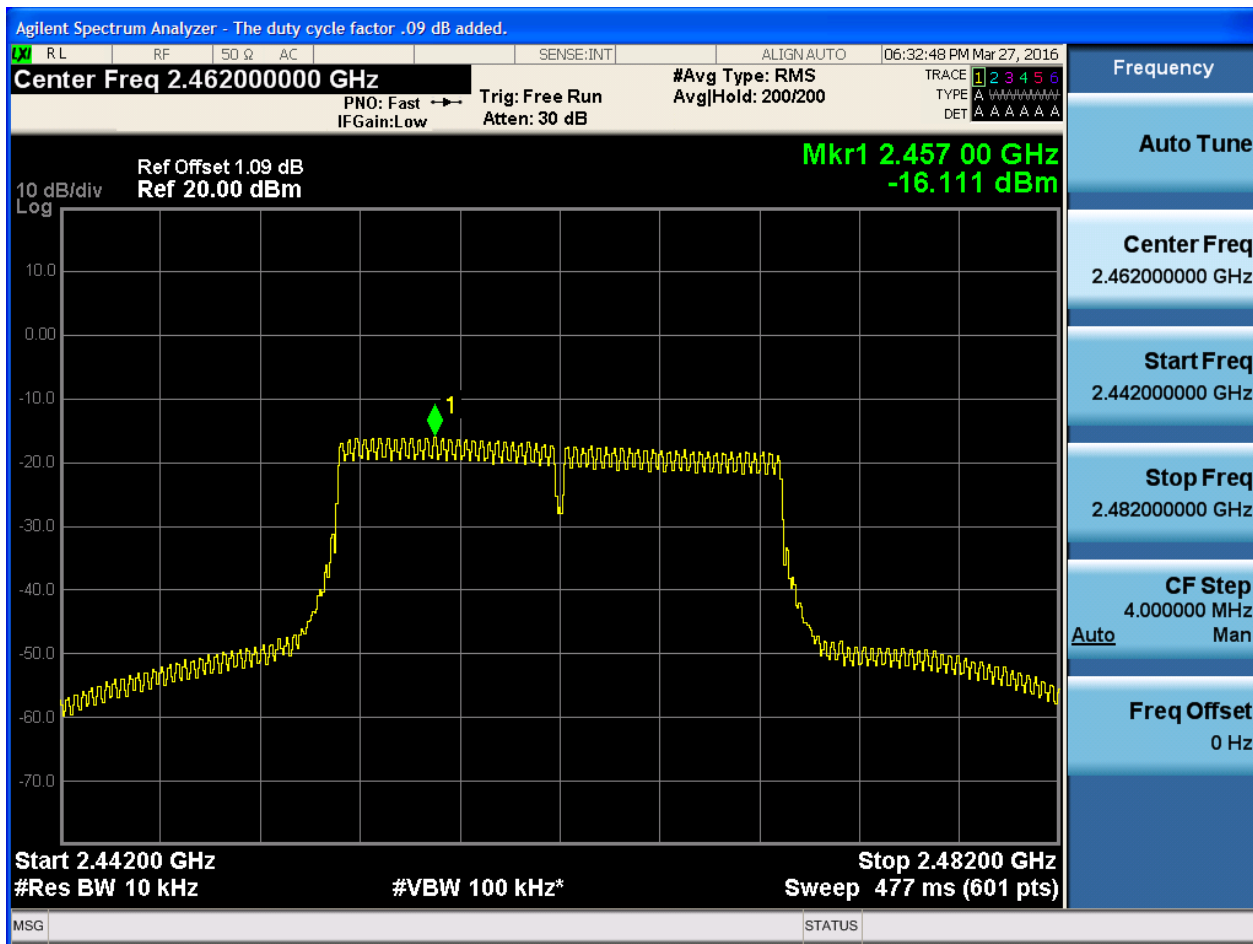


2.8 11N20_M@Ant 1





2.9 11N20_H@Ant 1





Agilent Spectrum Analyzer - The duty cycle factor .18 dB added.

Center Freq 2.422000000 GHz

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

Ref Offset 1.18 dB
Ref 20.00 dBm

Mkr1 2.415 73 GHz
-21.041 dBm

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

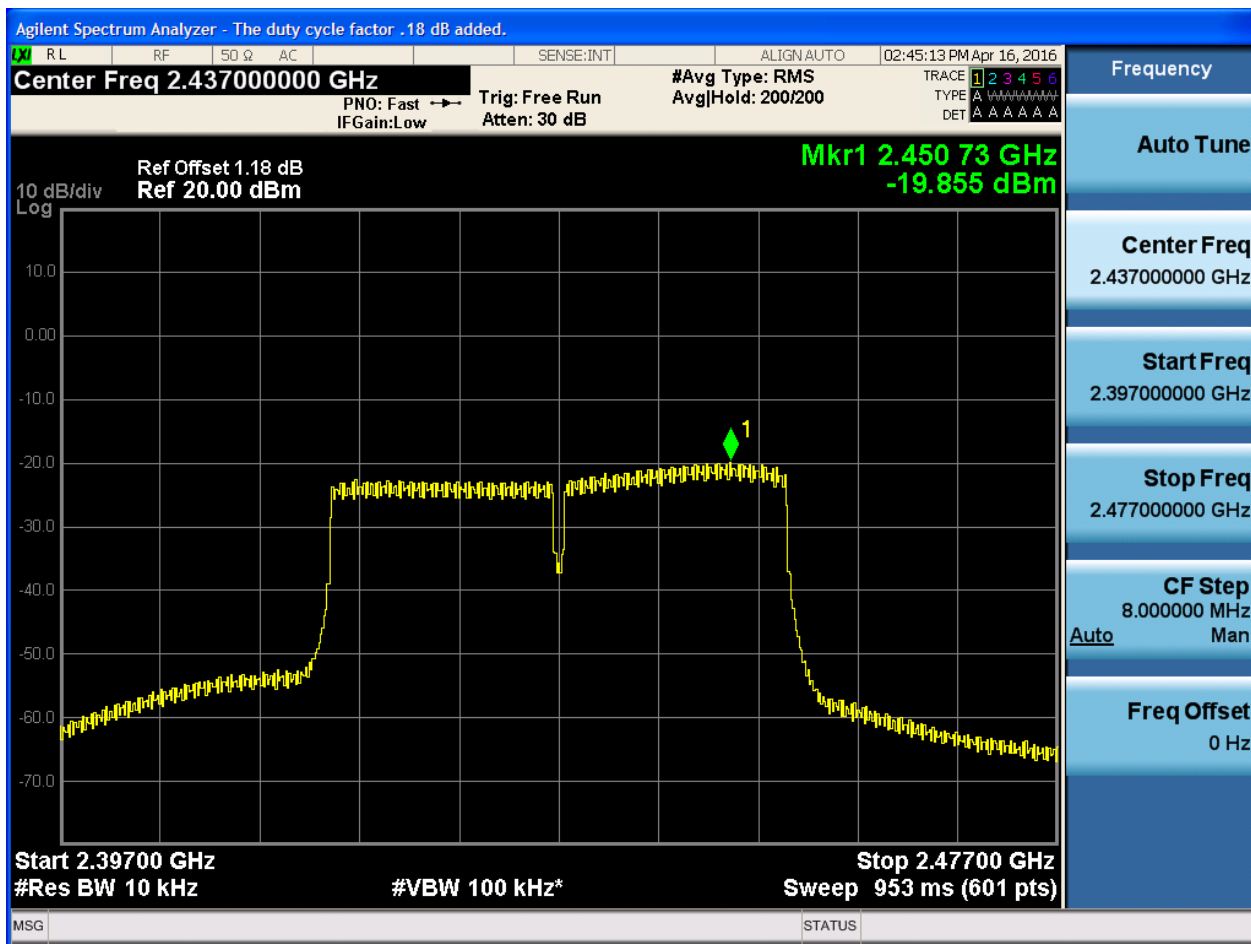
Stop 2.46200 GHz
Sweep 953 ms (601 pts)

The image shows a screenshot of an Agilent Spectrum Analyzer. The main display is a log-frequency plot with a yellow trace. The x-axis represents frequency in GHz, ranging from 2.38200 to 2.46200. The y-axis represents power in dBm, ranging from -70.0 to 10.0. A prominent signal is visible, centered around 2.41573 GHz, with a power level of -21.041 dBm. The signal has a bandwidth of approximately 80 MHz. The display includes various control buttons and readouts, such as 'Center Freq', 'Start Freq', 'Stop Freq', 'CF Step', 'Freq Offset', 'Ref Offset', 'Ref', 'PNO', 'Trig', 'Atten', 'Sweep', and 'Sense'. The top status bar shows the date and time as 02:27:39 PM Apr 16, 2016.

Frequency
Auto Tune
Center Freq 2.422000000 GHz
Start Freq 2.382000000 GHz
Stop Freq 2.462000000 GHz
CF Step 8.000000 MHz Man
Auto
Freq Offset 0 Hz

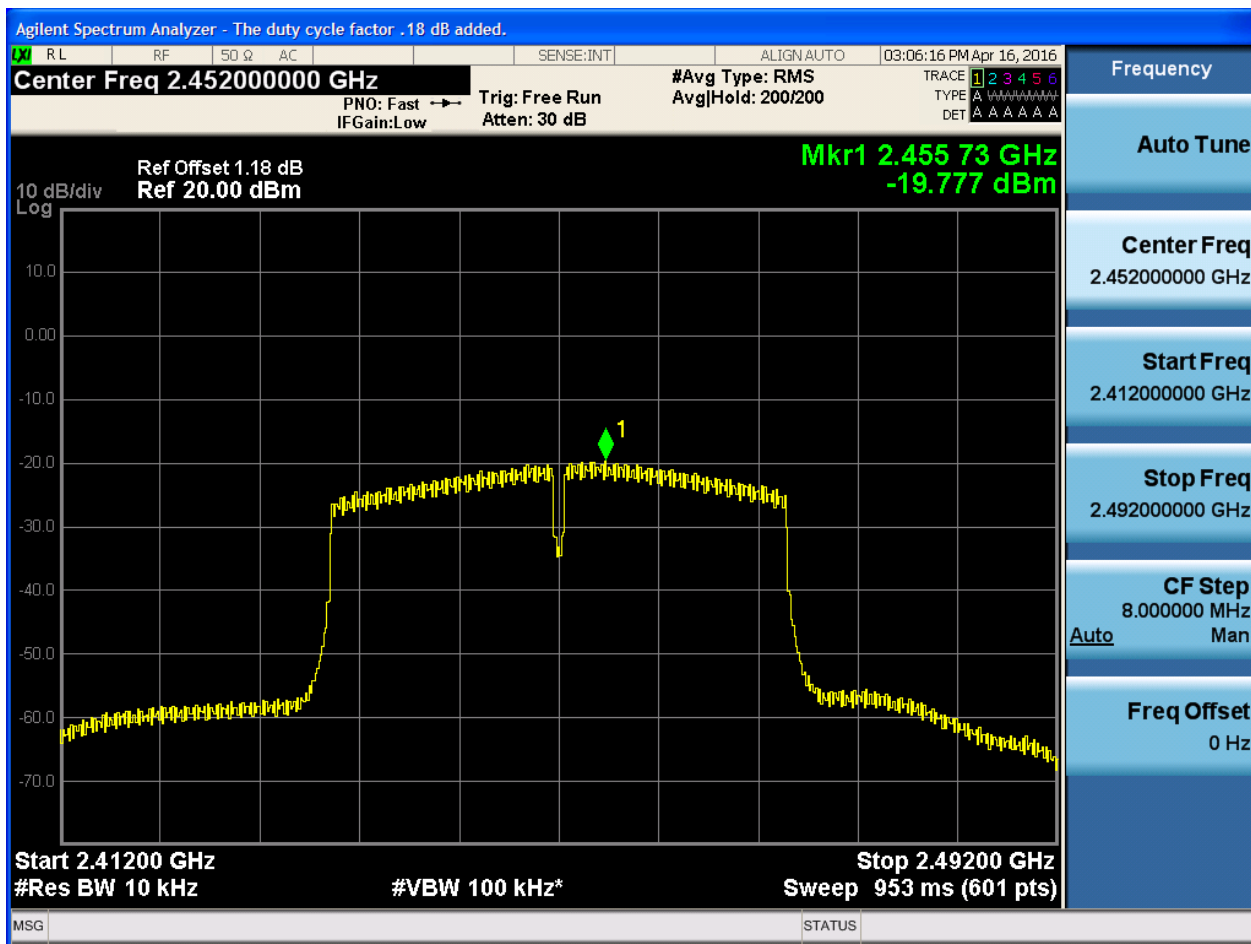


2.11 11N40_M@Ant 1





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	7.60	-49.21	pass
11B	H	2462	Ant 1	7.13	-46.05	pass
11G	L	2412	Ant 1	3.46	-46.15	pass
11G	H	2462	Ant 1	4.13	-38.75	pass
11N20	L	2412	Ant 1	2.10	-45.39	pass
11N20	H	2462	Ant 1	2.94	-37.66	pass
11N40	L	2422	Ant 1	-1.80	-43.73	pass
11N40	H	2452	Ant 1	-0.42	-38.29	pass



Part II - Test Plots

2.1 11B_L@Ant 1



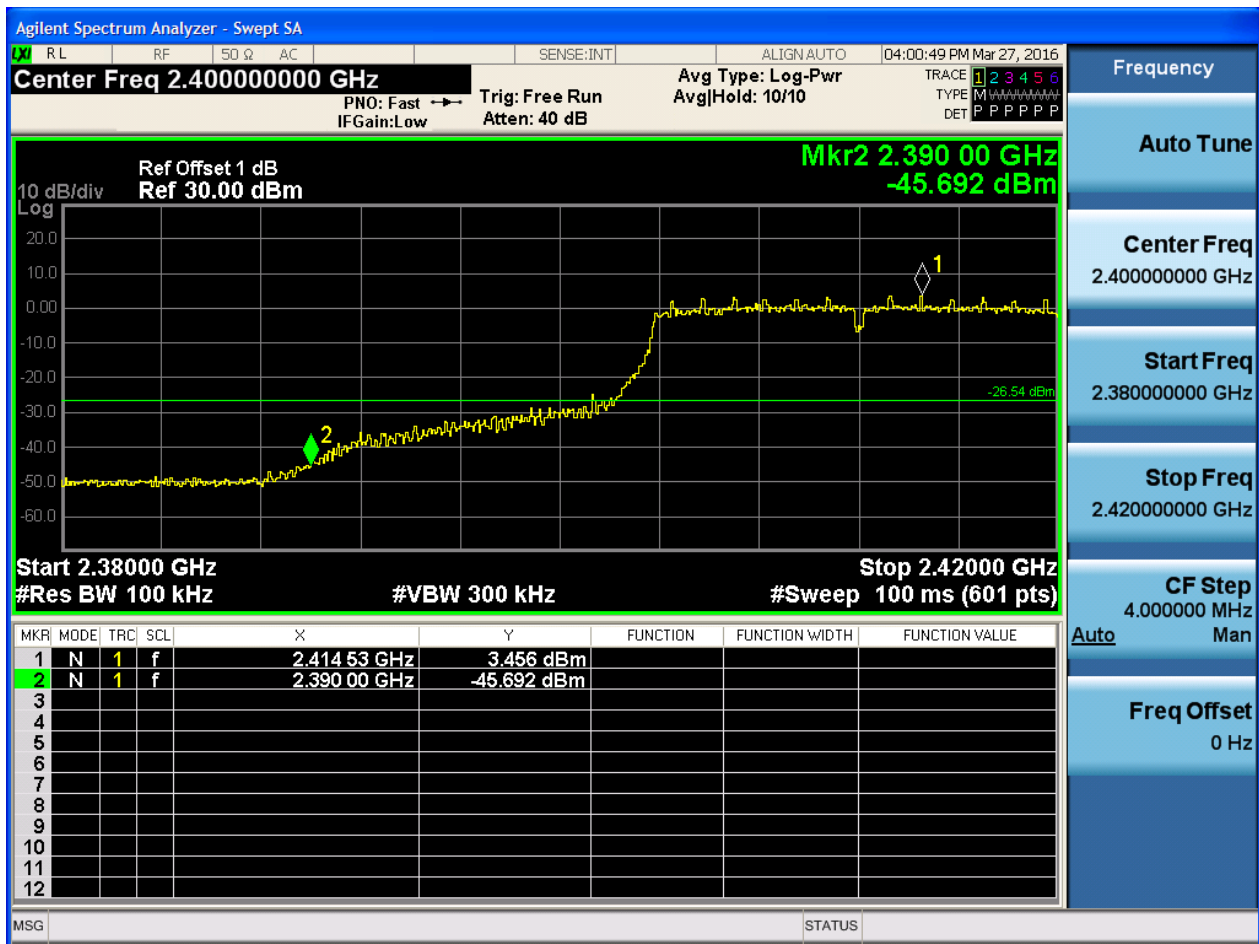


2.2 11B_H@Ant 1





2.3 11G_L@Ant 1



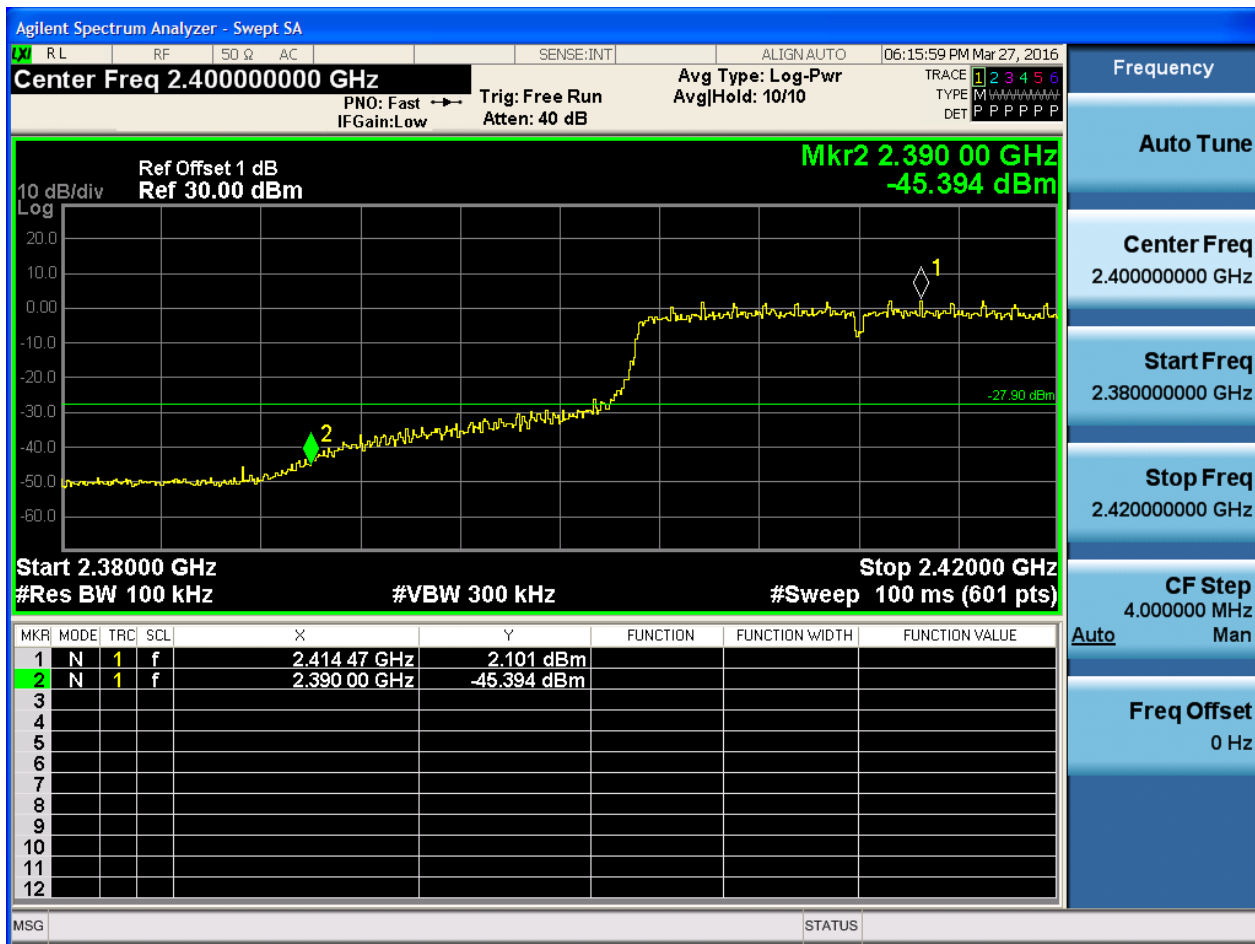


2.4 11G_H@Ant 1





2.5 11N20_L@Ant 1





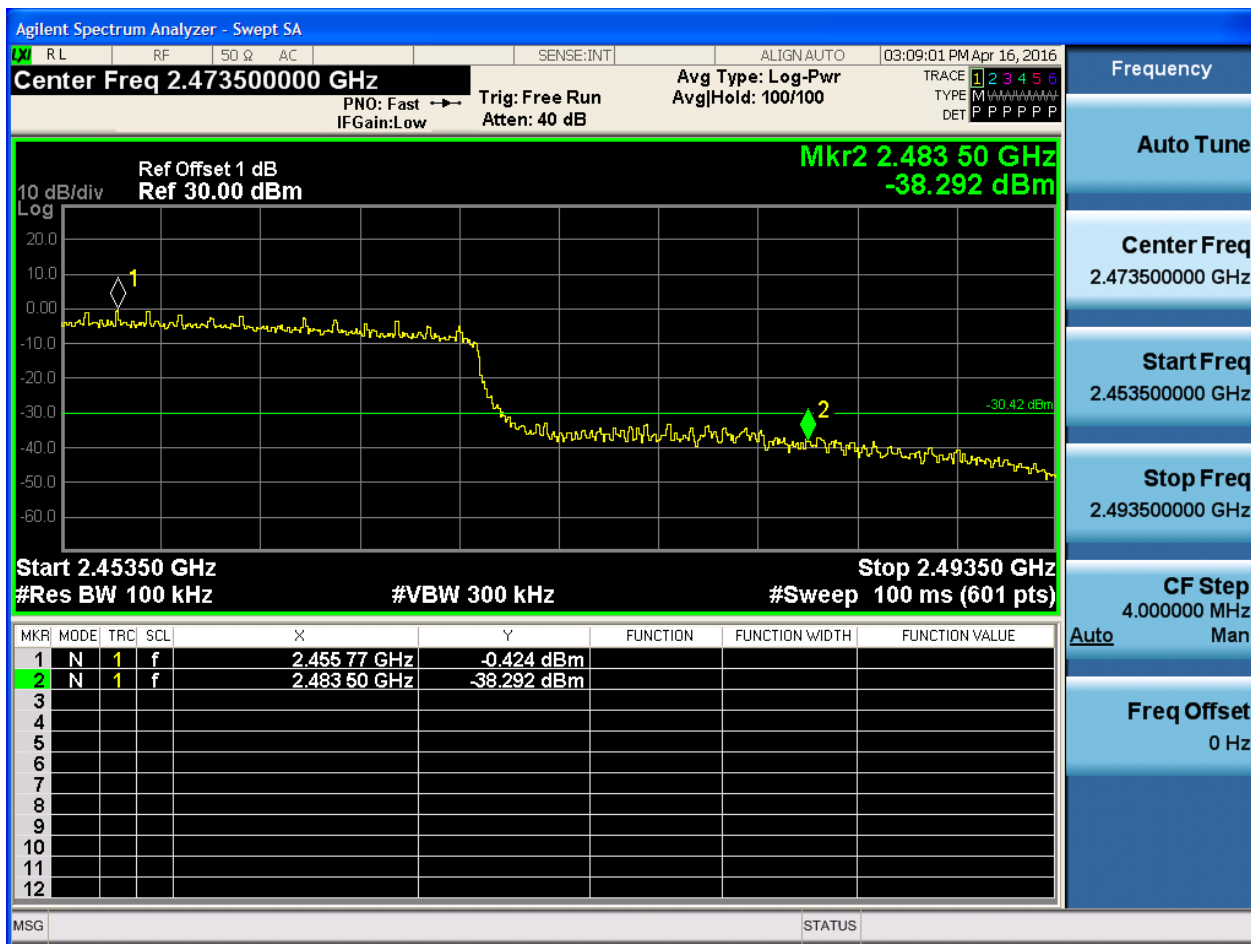
2.6 11N20_H@Ant 1



[illegible]



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

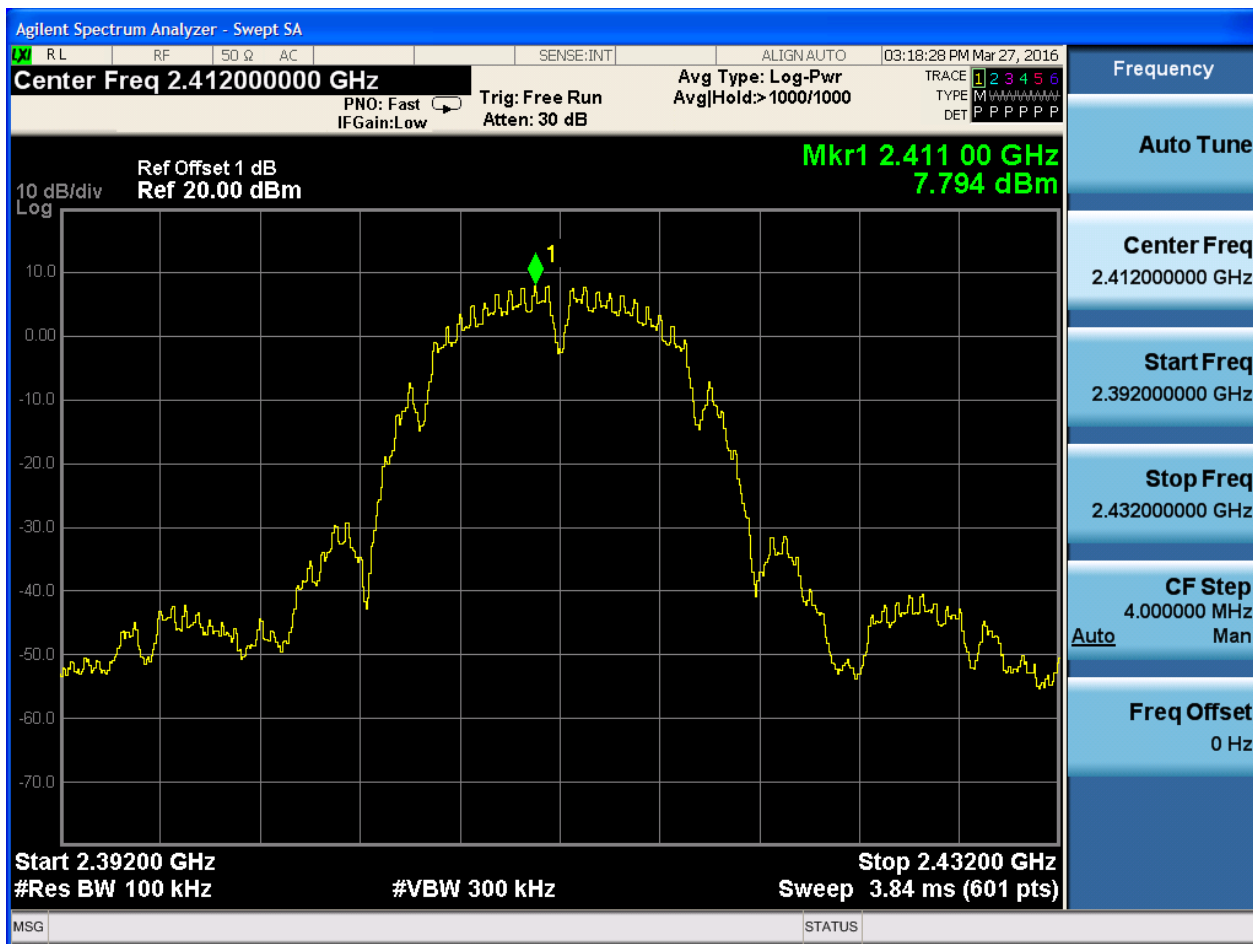
Test Mode	Test Channel	Frequency[MHz]	Ant	Pref[dBm]	Puw[dBm]	Verdict
11B	L	2412	Ant 1	7.79	<limit	pass
11B	M	2437	Ant 1	6.59	<limit	pass
11B	H	2462	Ant 1	7.31	<limit	pass
11G	L	2412	Ant 1	3.73	<limit	pass
11G	M	2437	Ant 1	3.76	<limit	pass
11G	H	2462	Ant 1	4.33	<limit	pass
11N20	L	2412	Ant 1	2.61	<limit	pass
11N20	M	2437	Ant 1	2.43	<limit	pass
11N20	H	2462	Ant 1	3.15	<limit	pass
11N40	L	2422	Ant 1	-1.50	<limit	pass
11N40	M	2437	Ant 1	-0.46	<limit	pass
11N40	H	2452	Ant 1	-0.22	<limit	pass



Part II - Test Plots

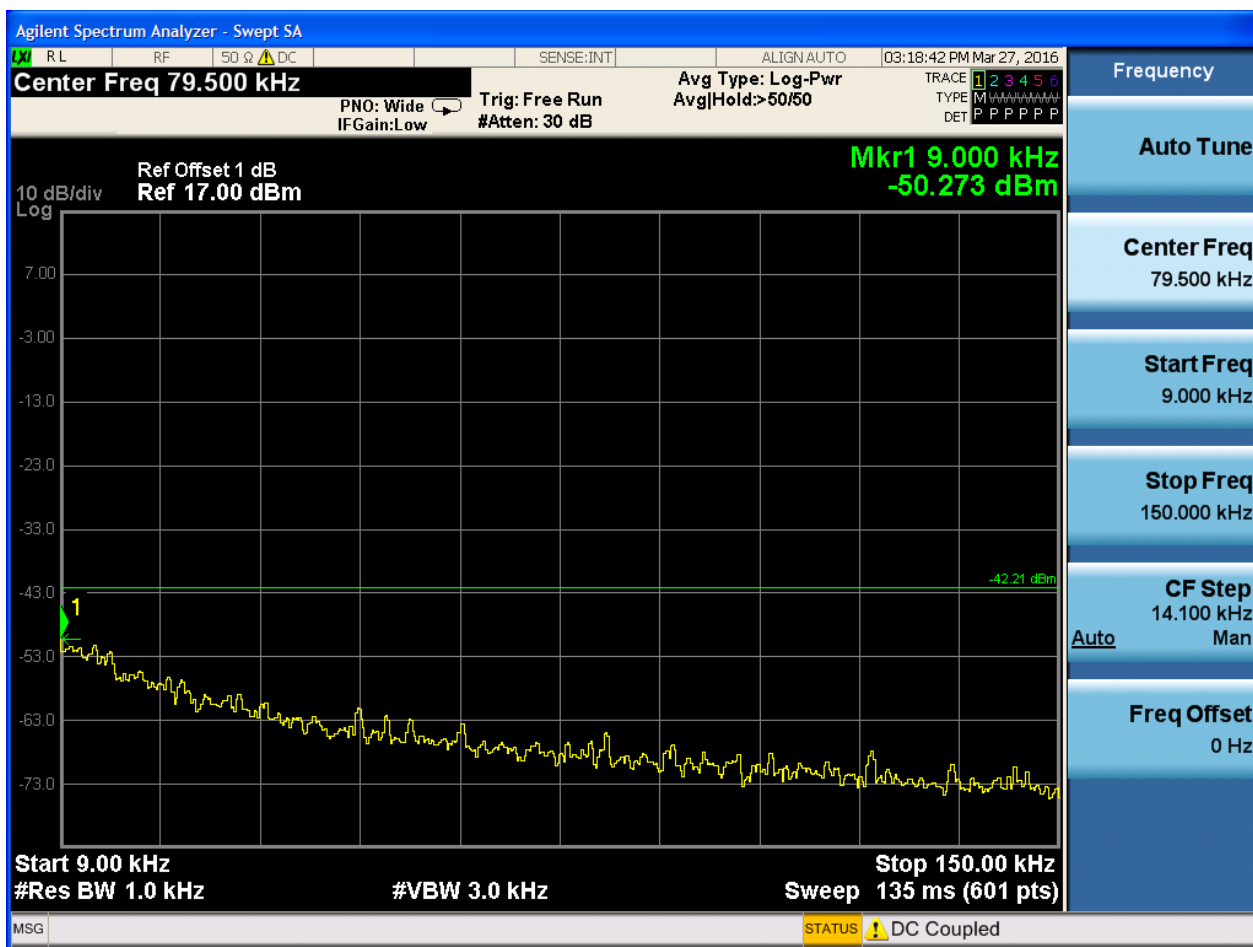
2.1 11B_L@Ant 1

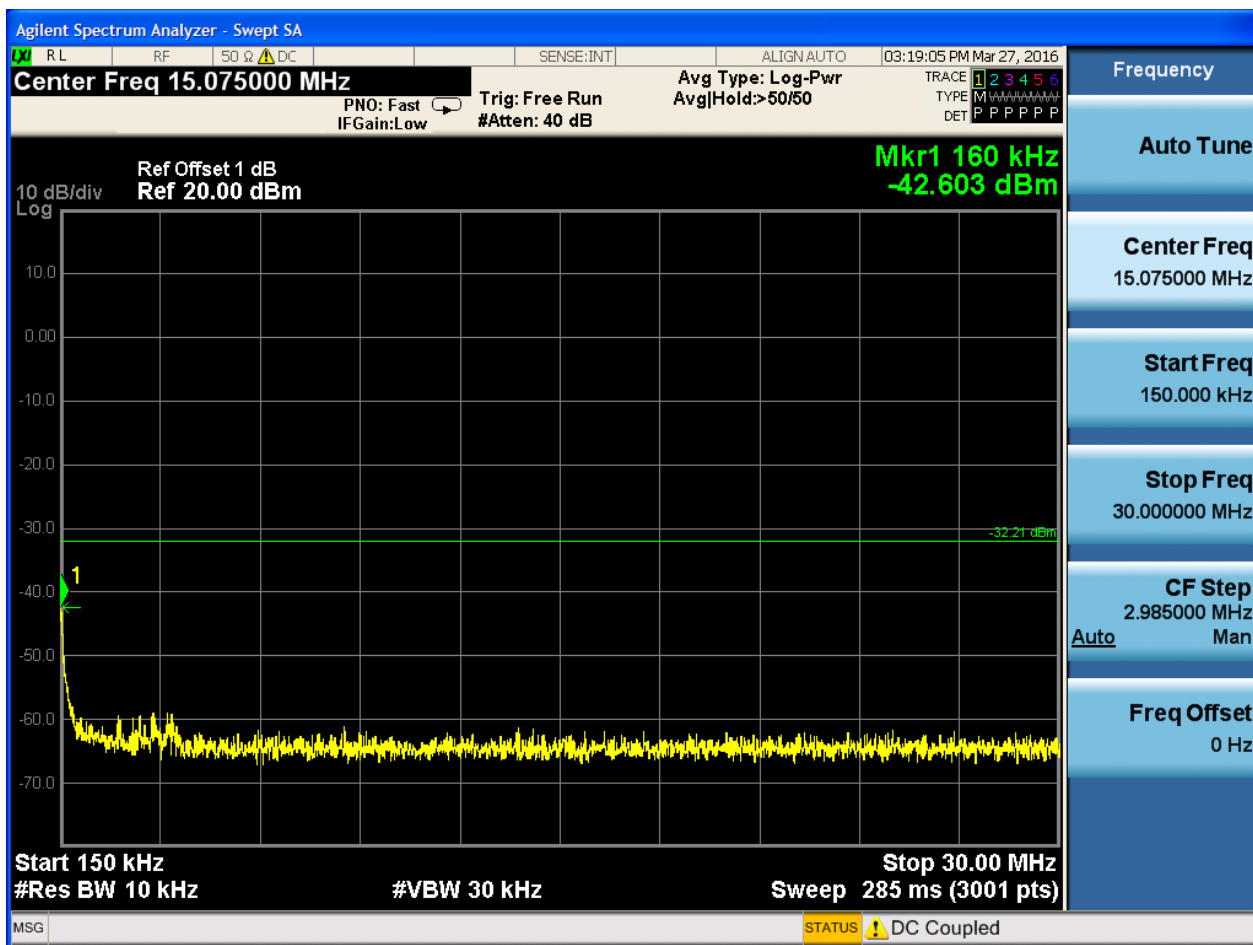
Pref:

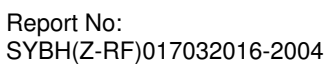


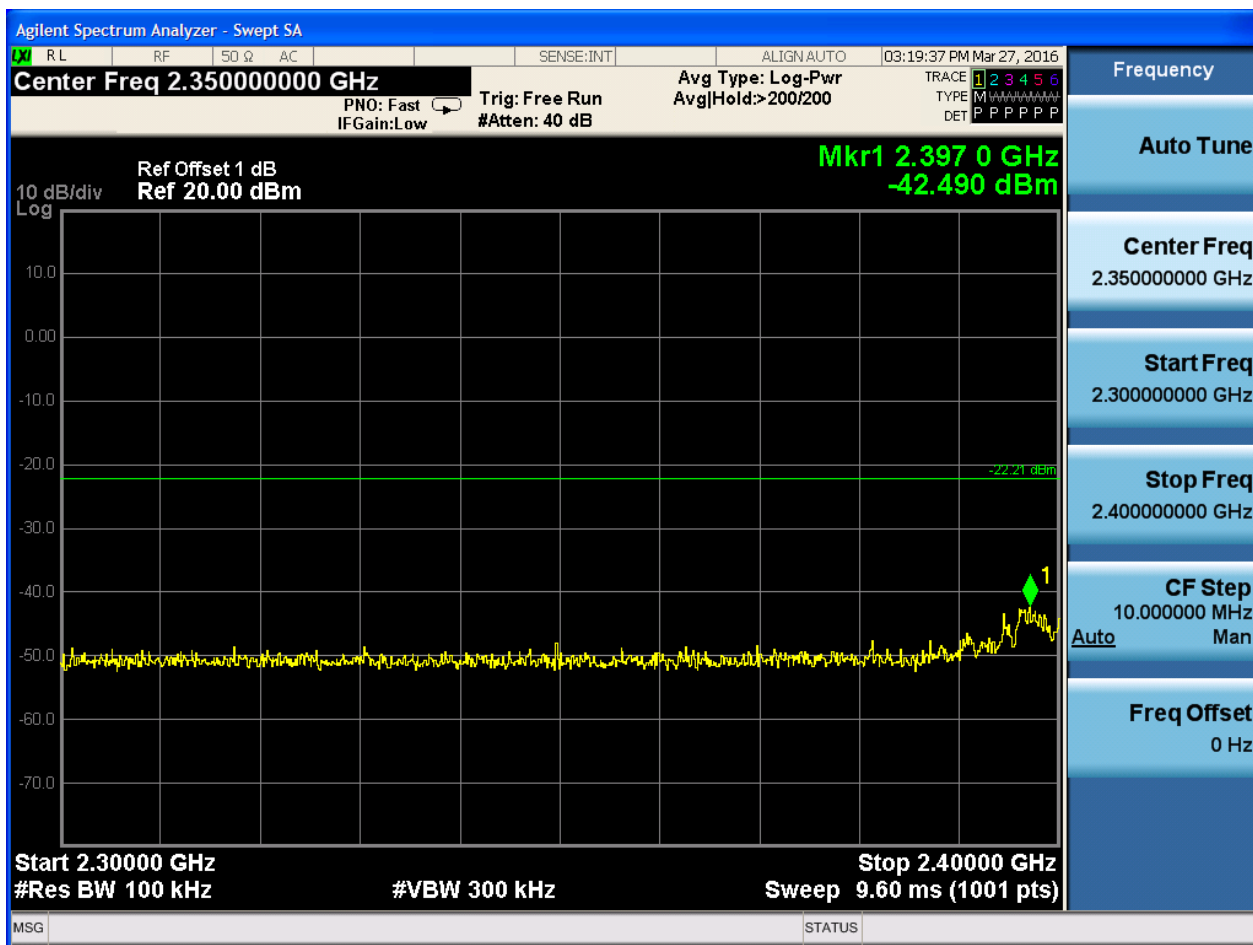


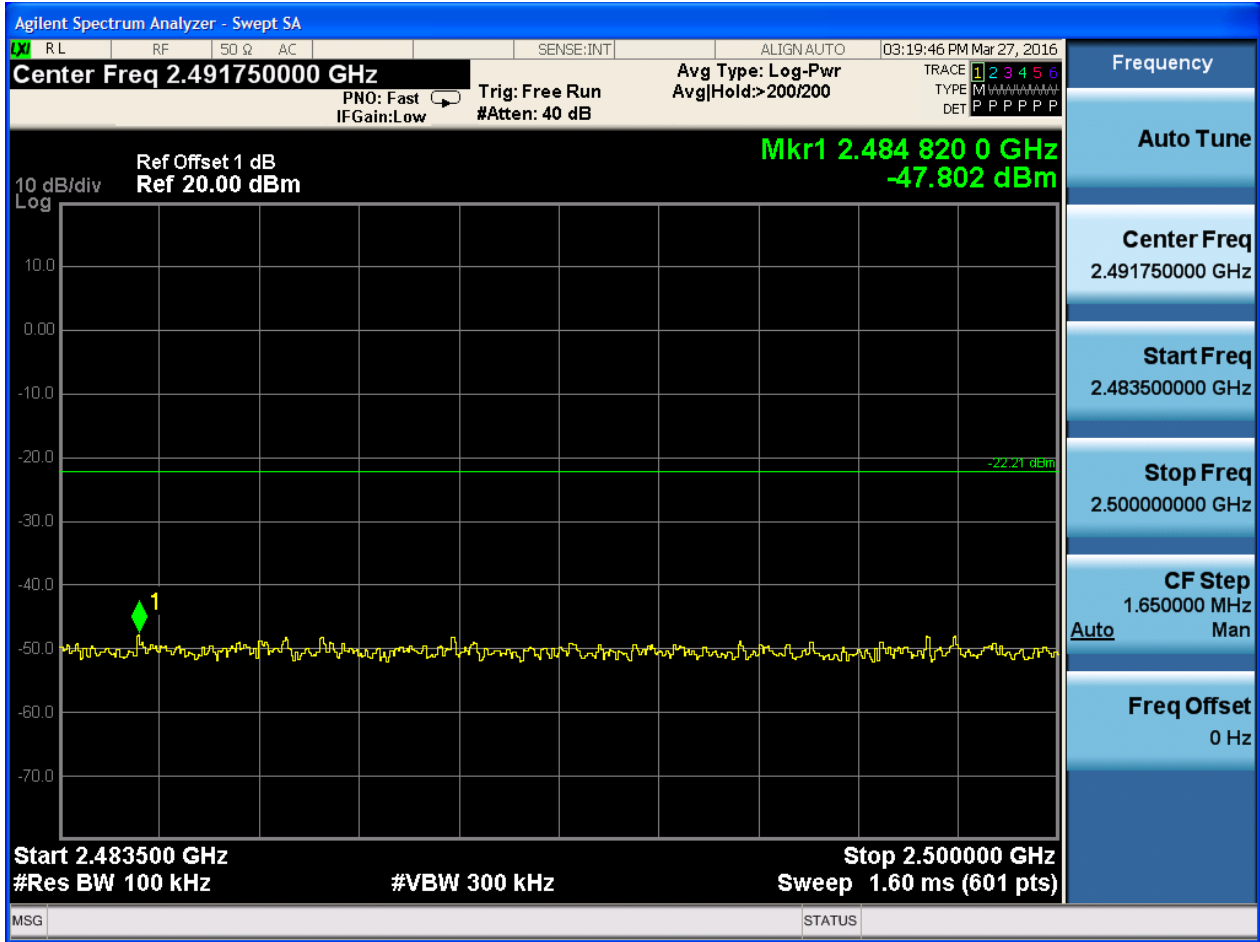
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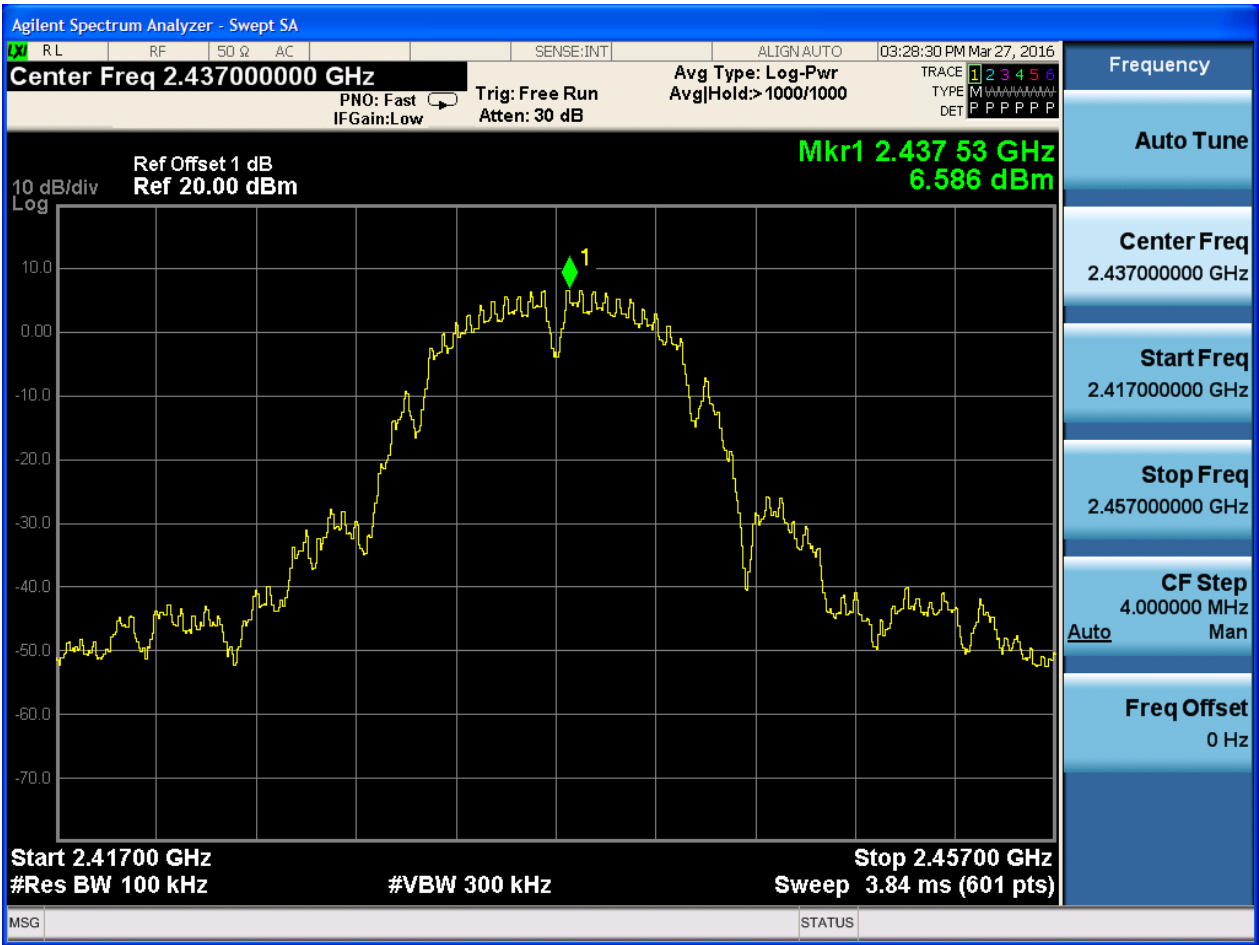


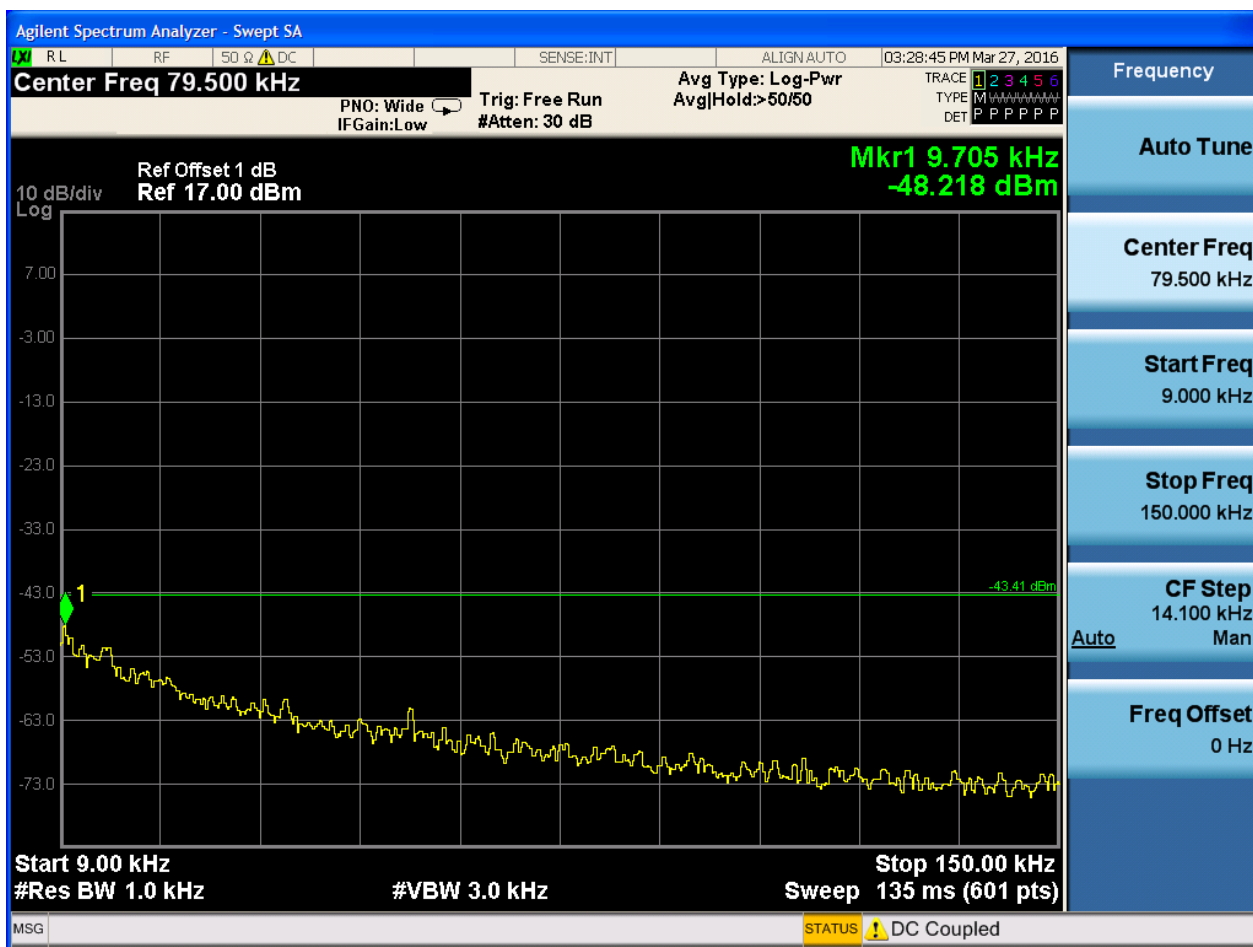


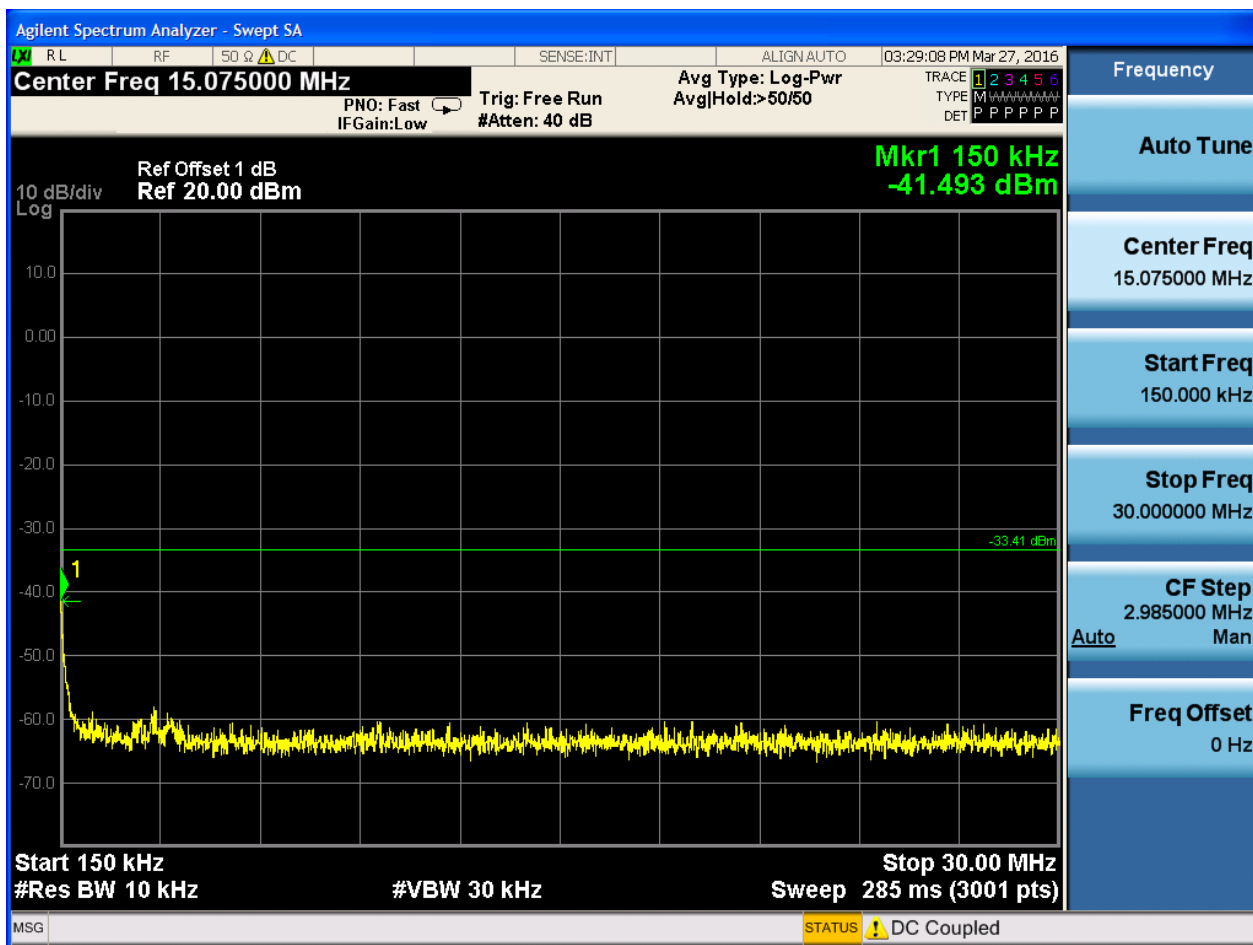


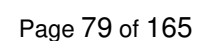
2.2 11B_M@Ant 1

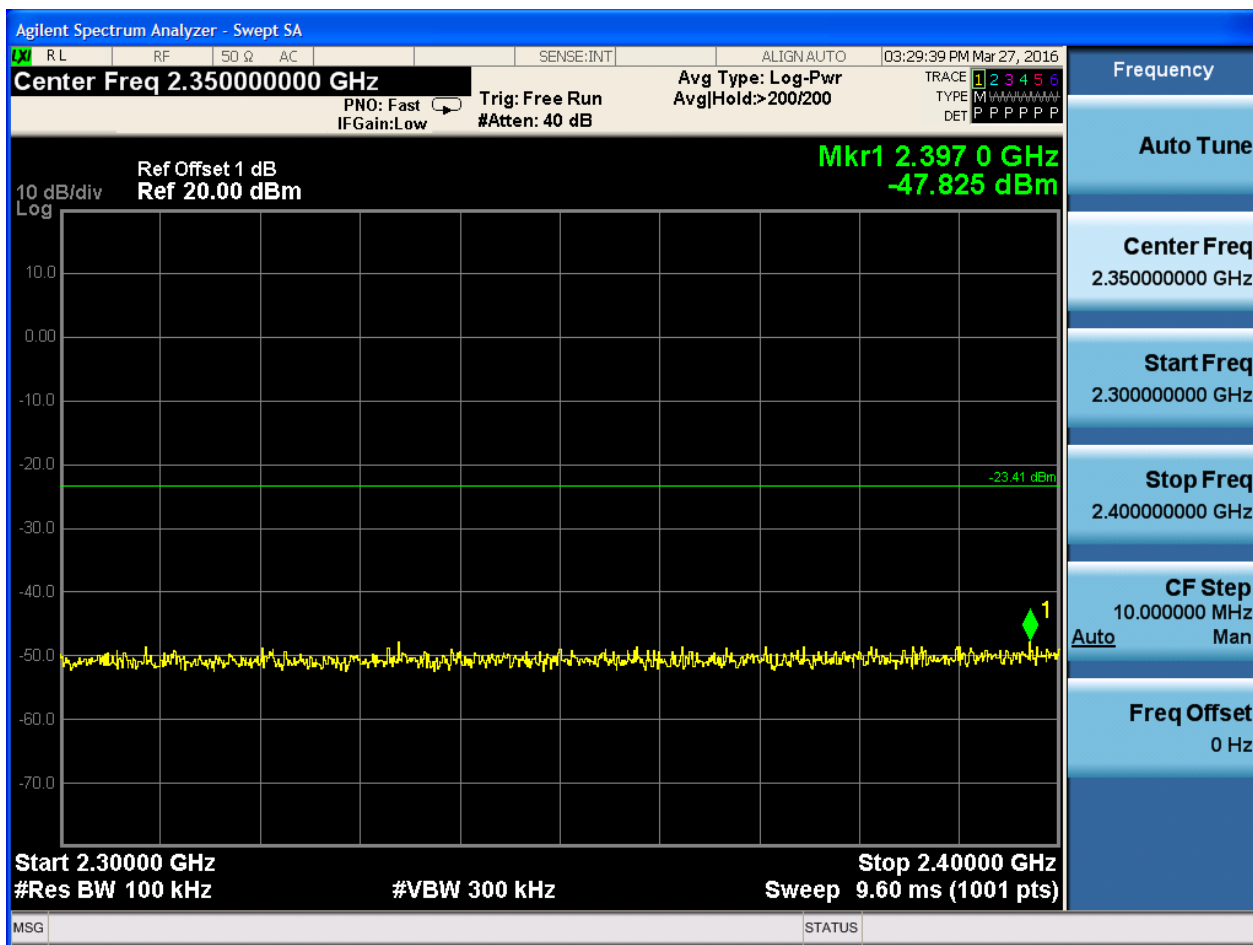
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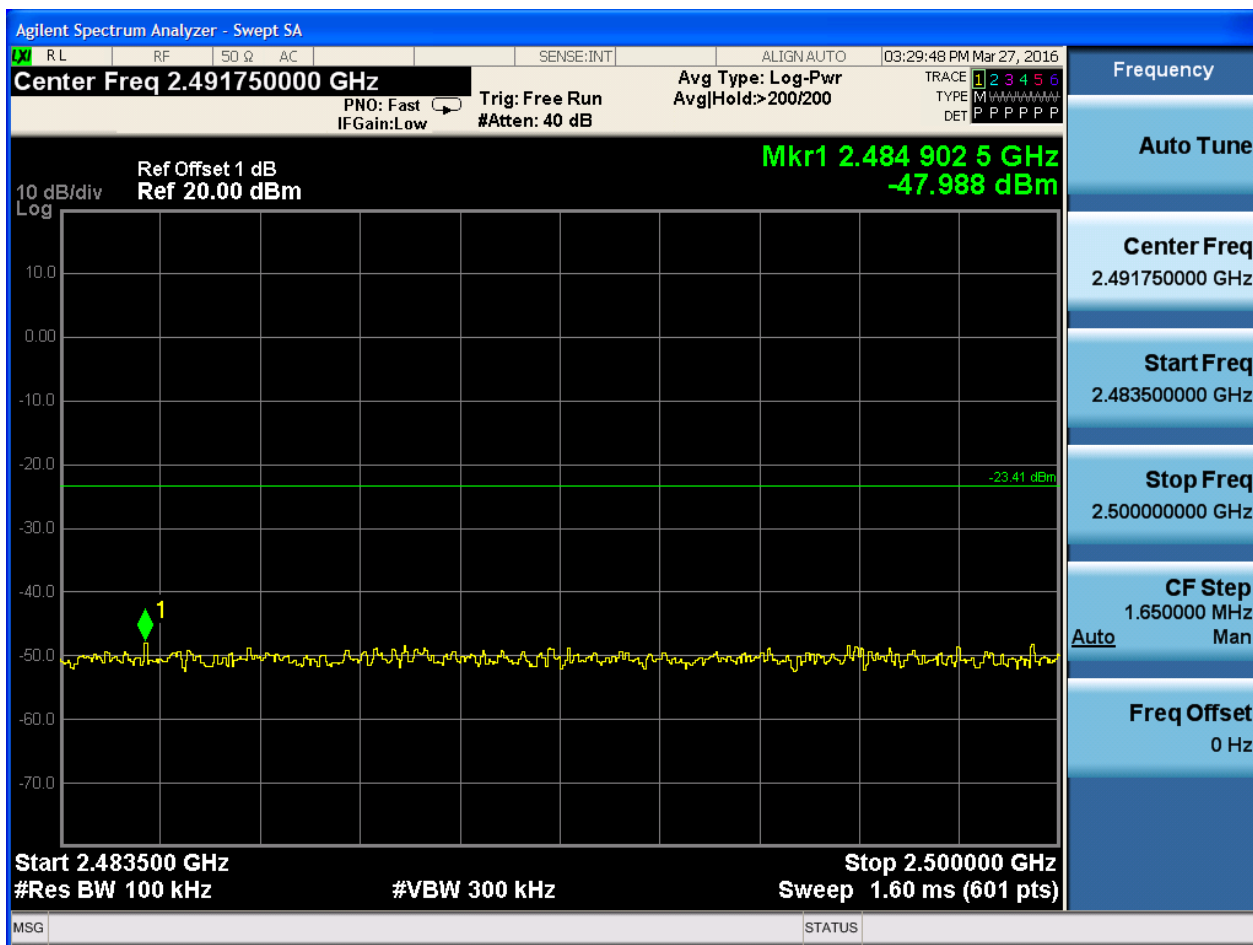


P_uw:







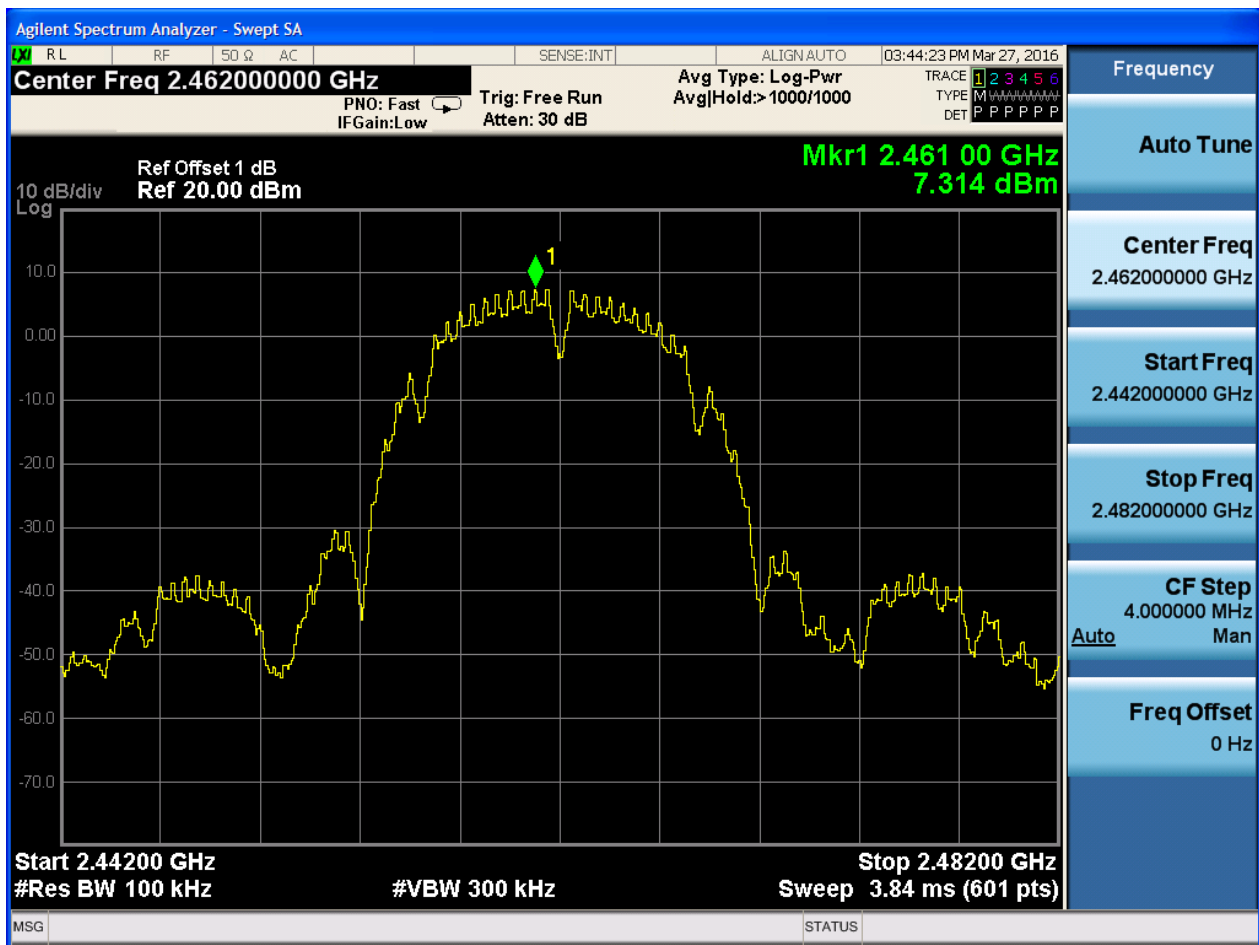






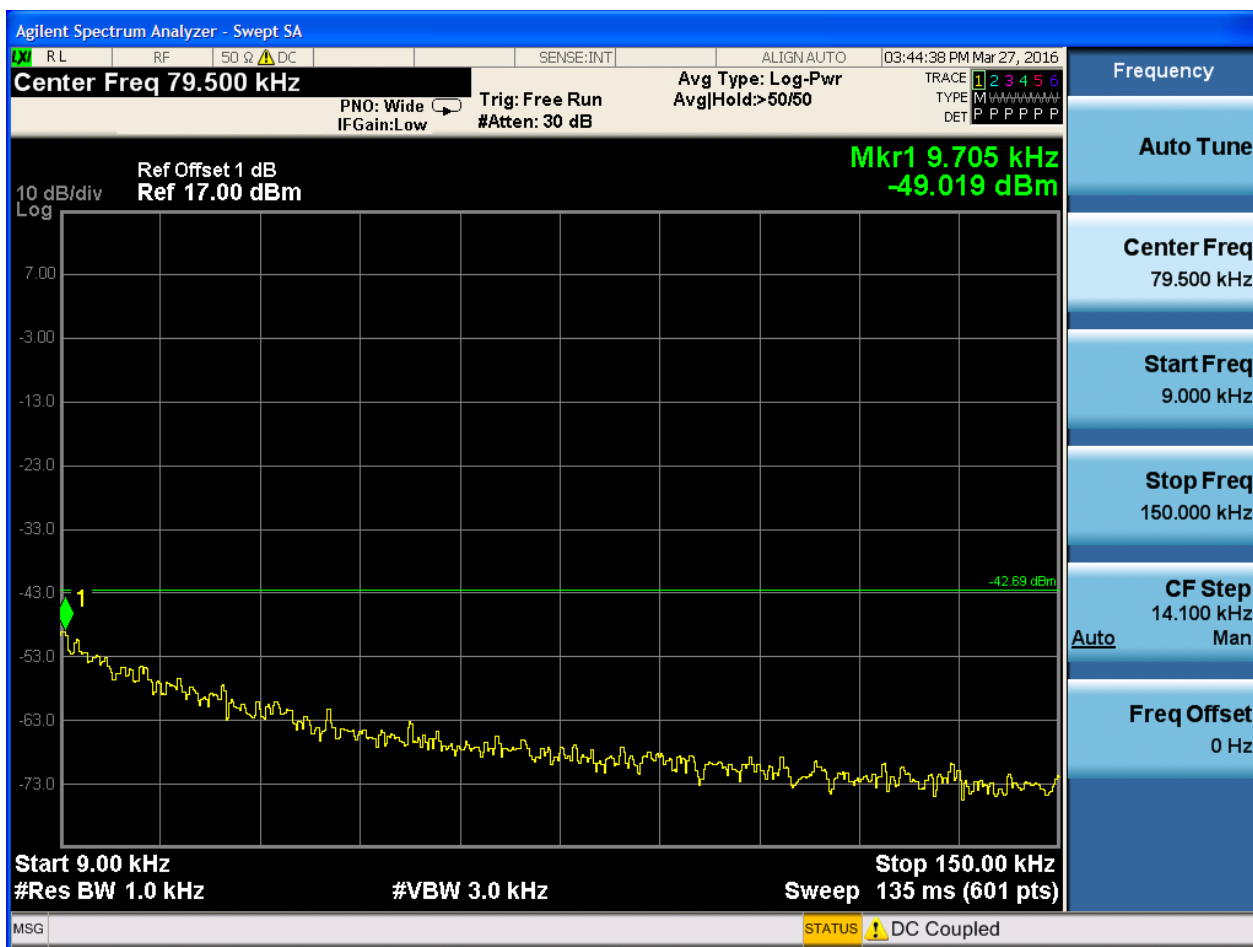
2.3 11B_H@Ant 1

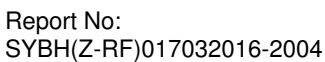
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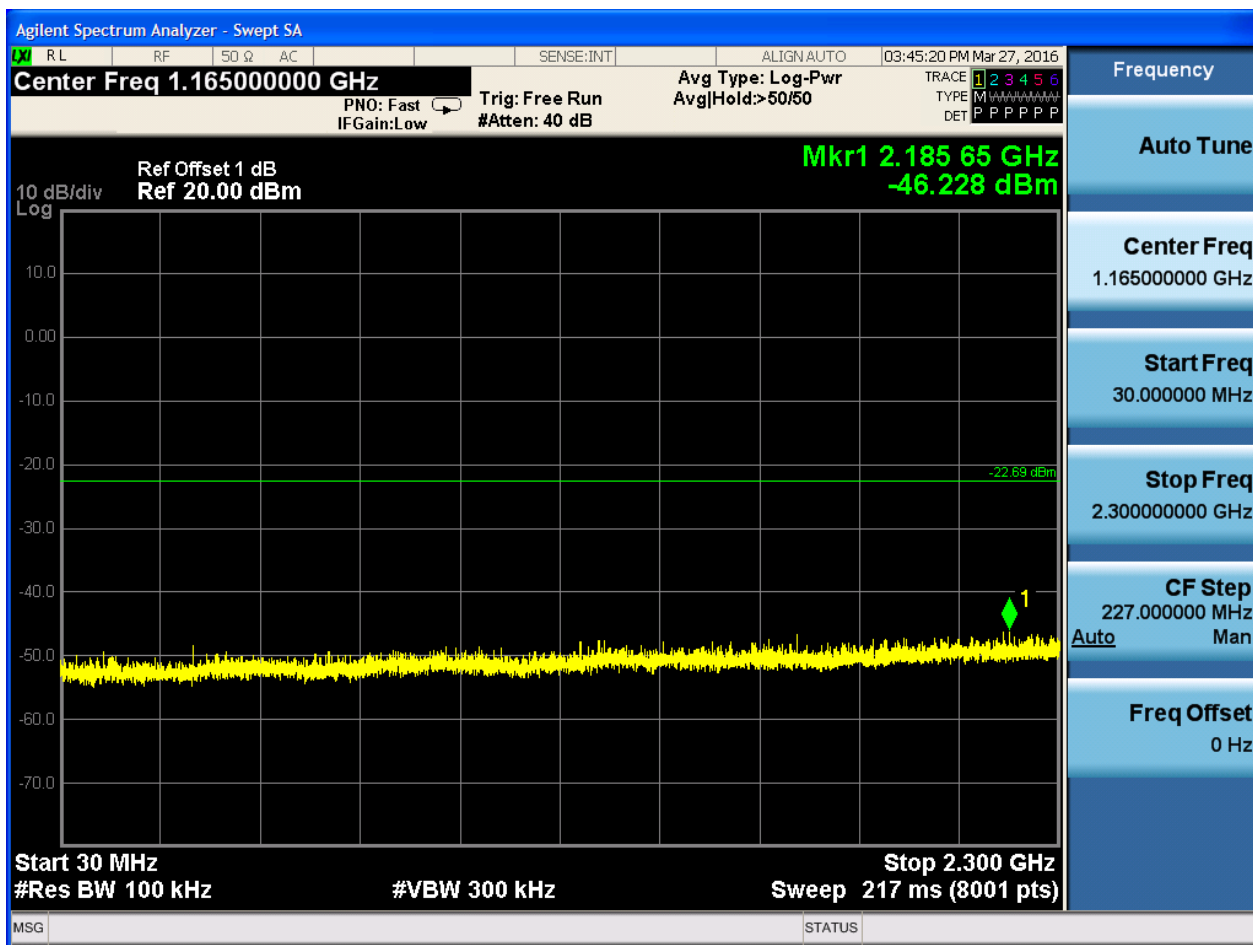


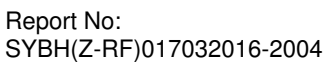


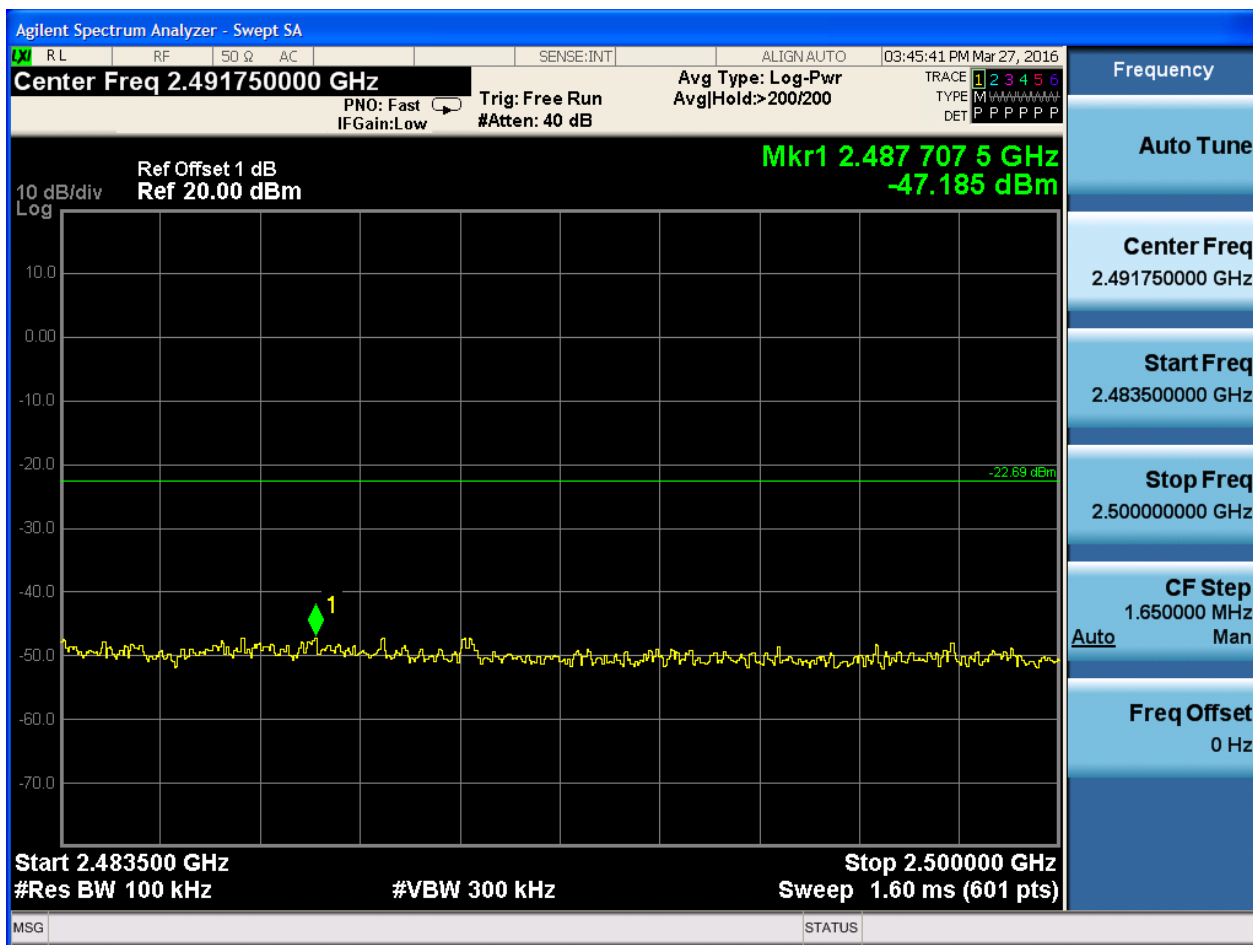
Puw:

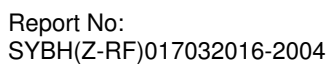








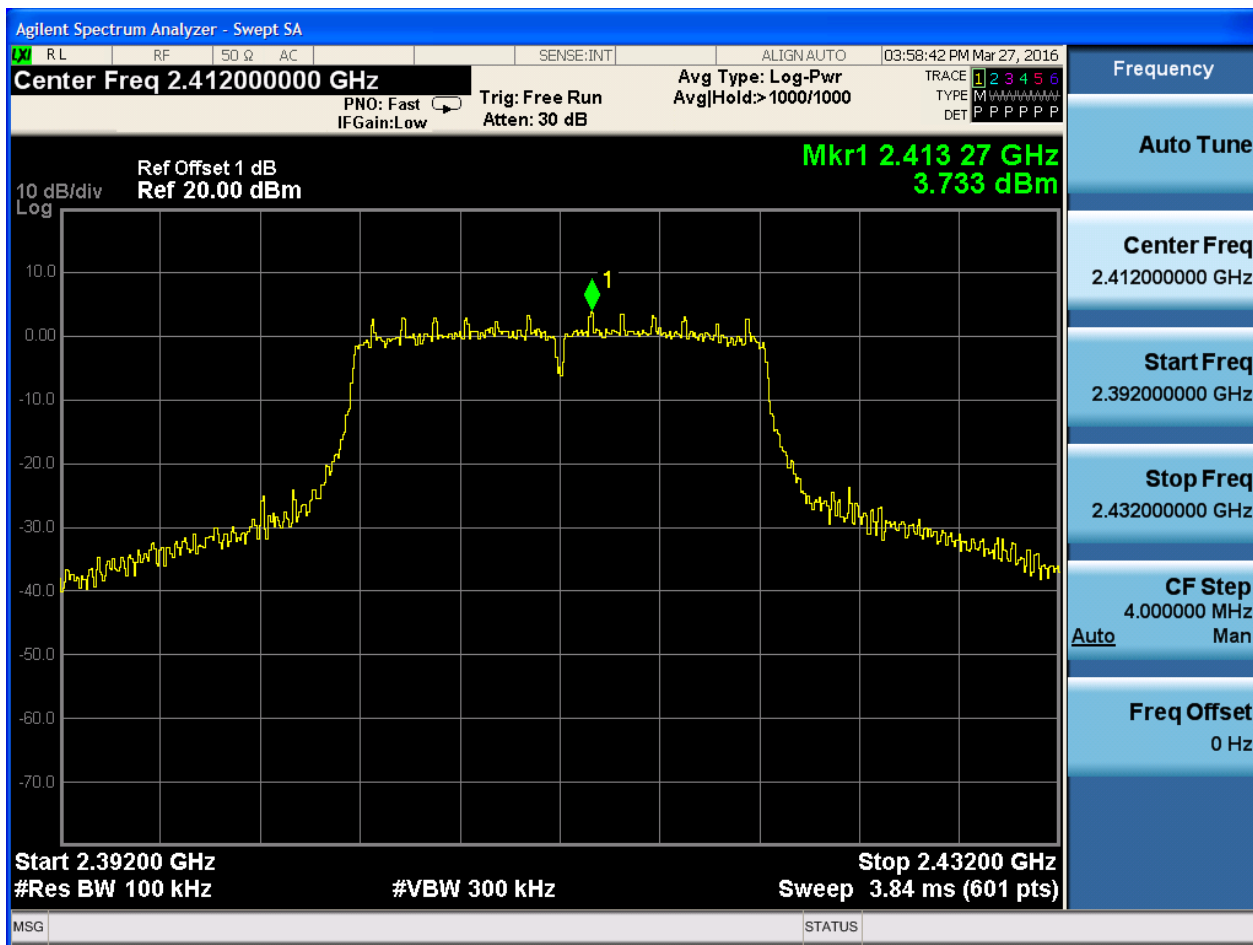






2.4 11G_L@Ant 1

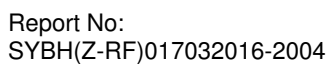
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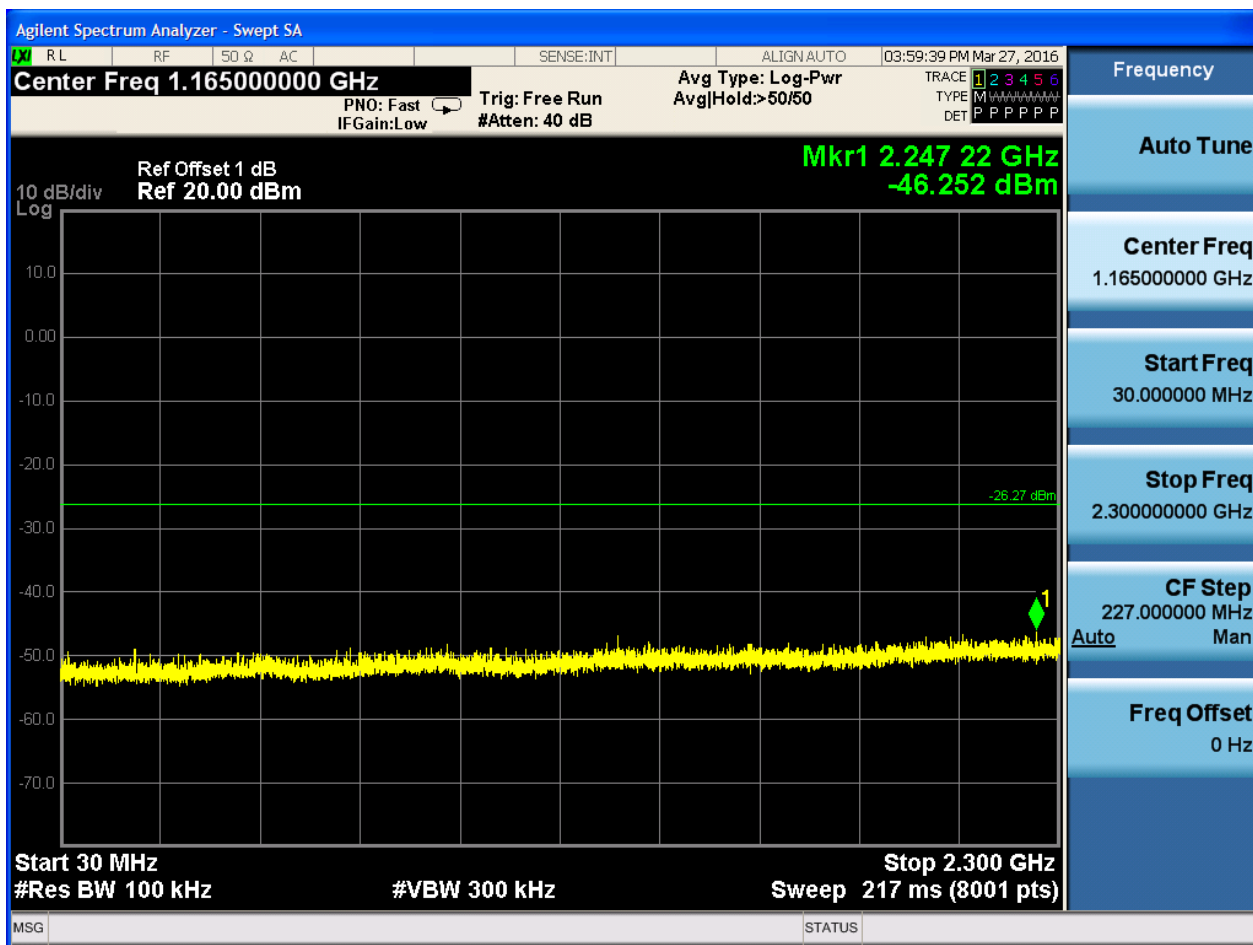


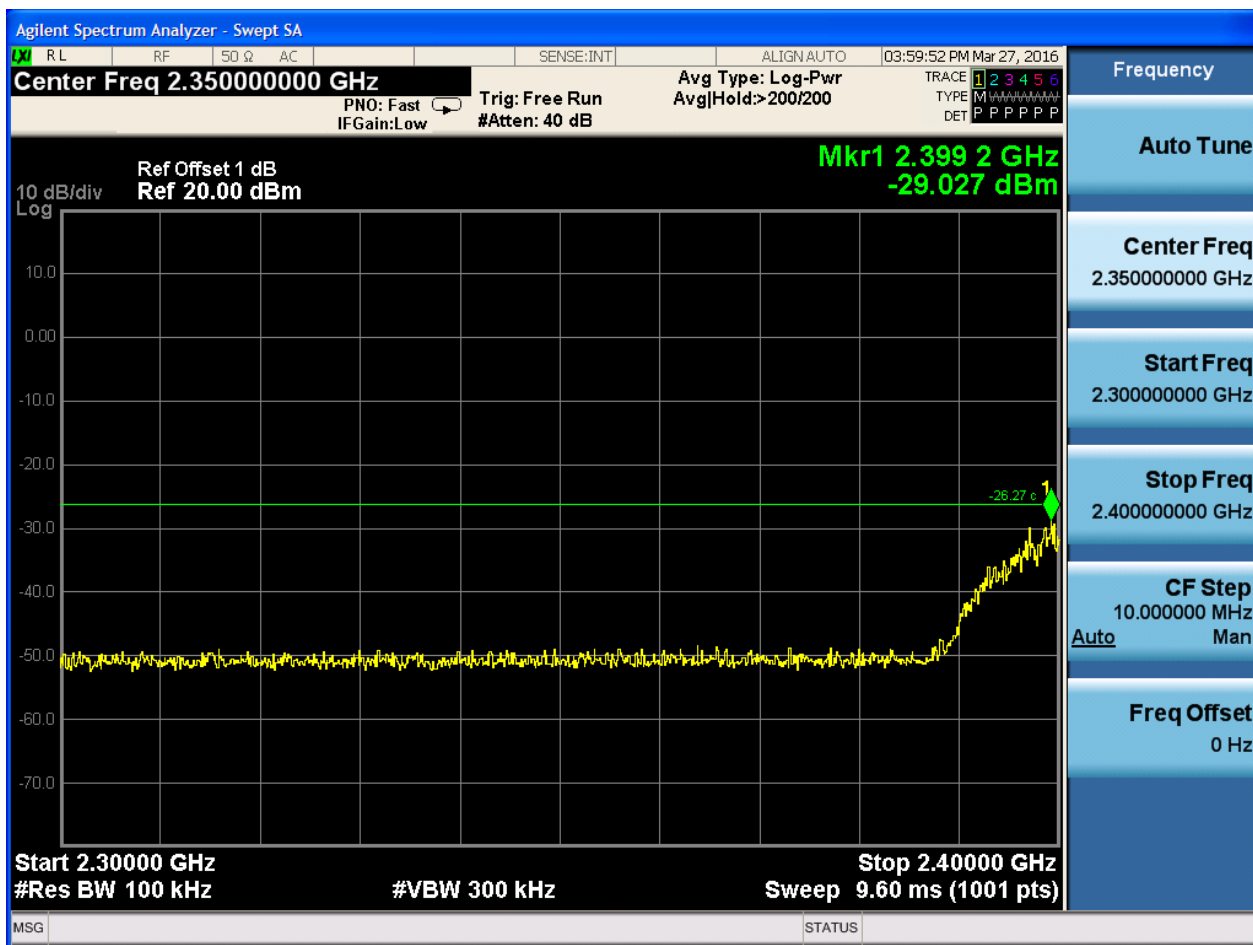


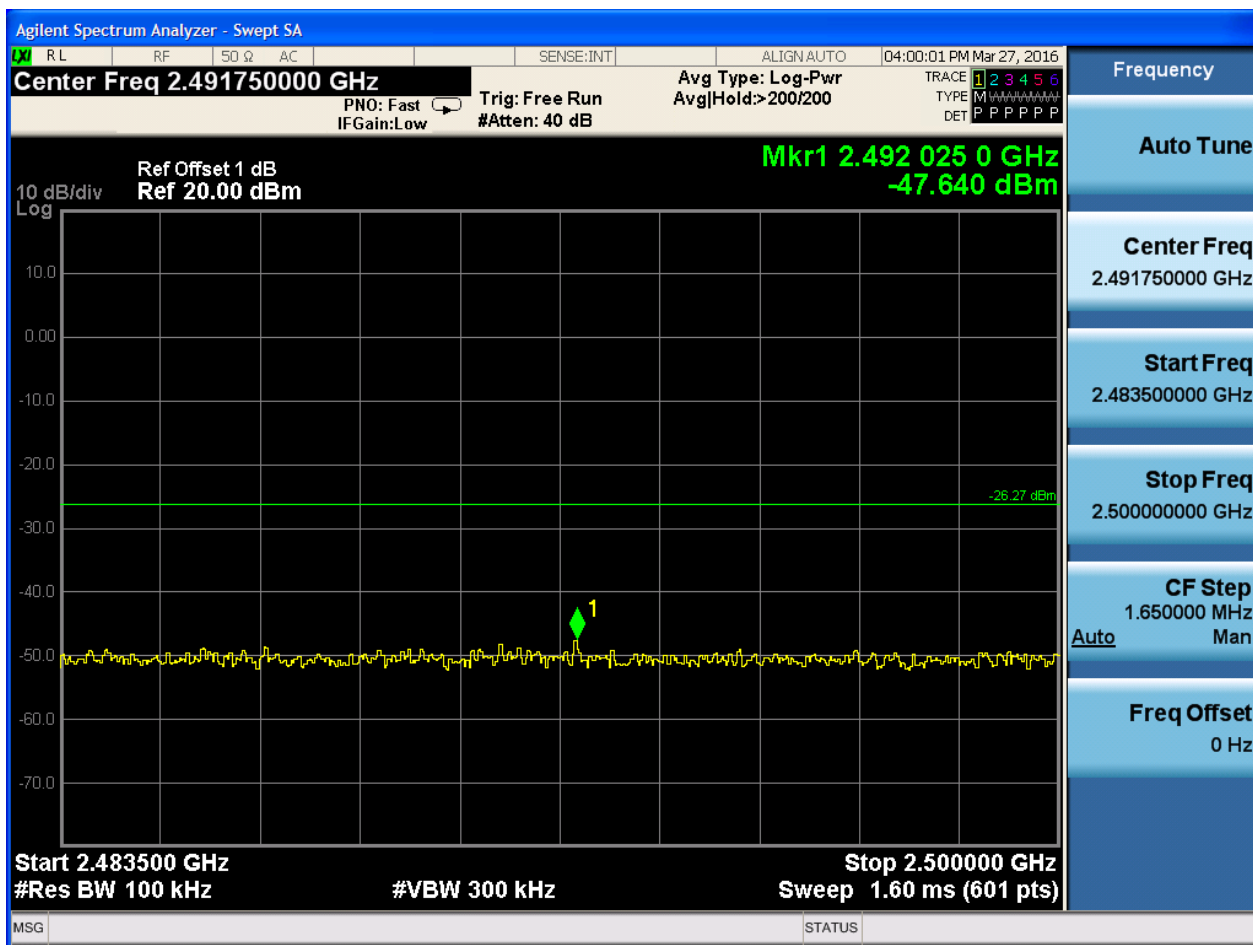
Puw:

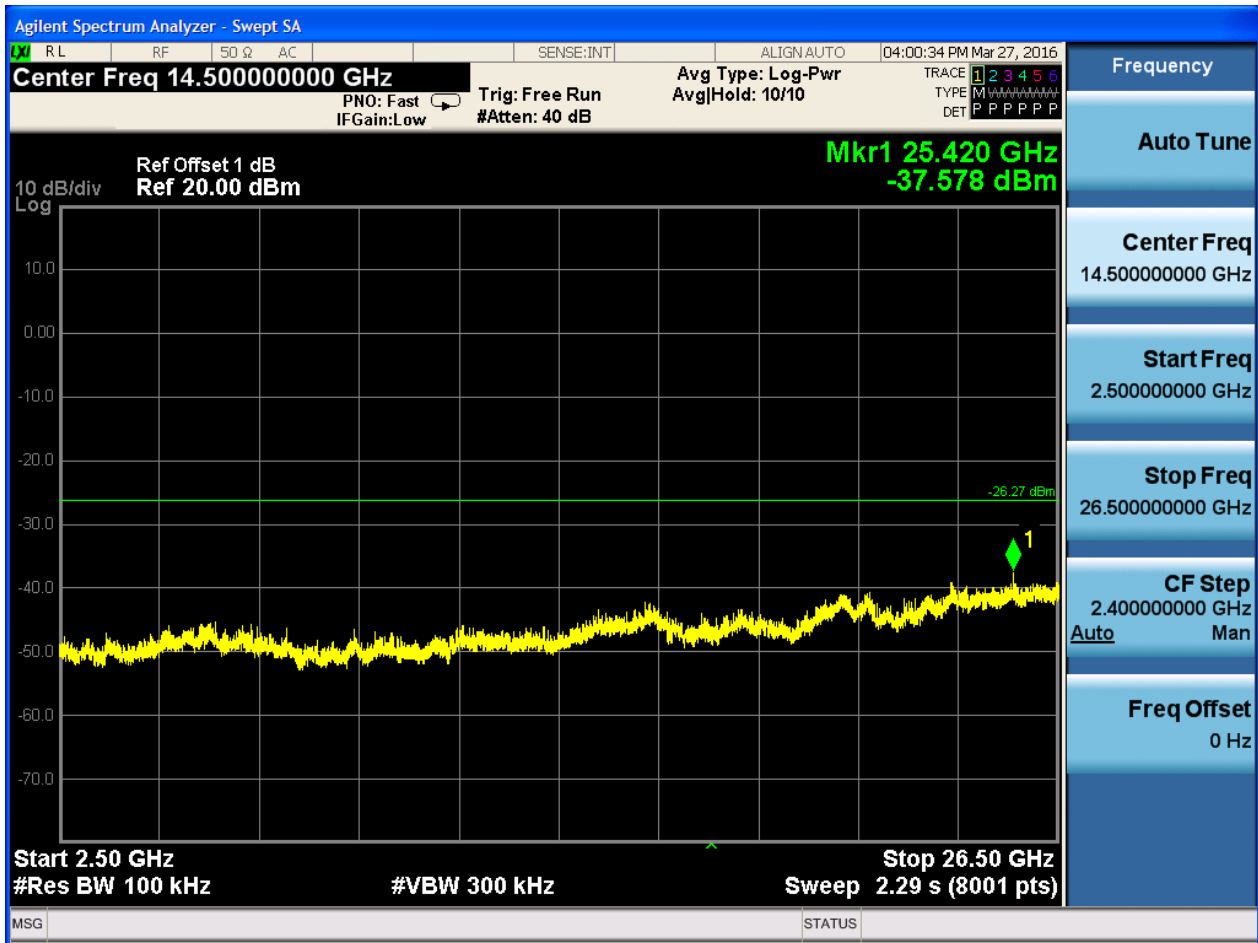








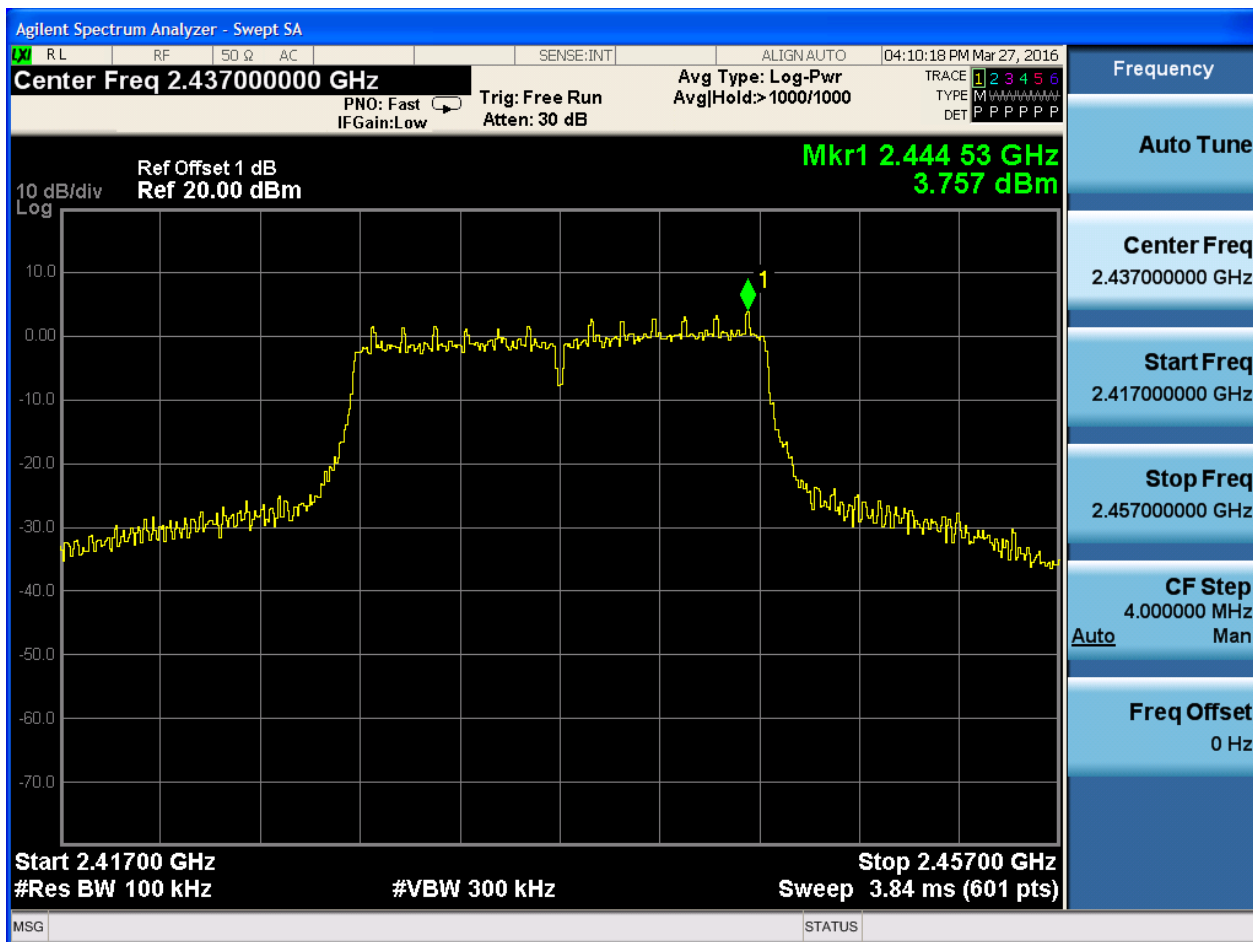


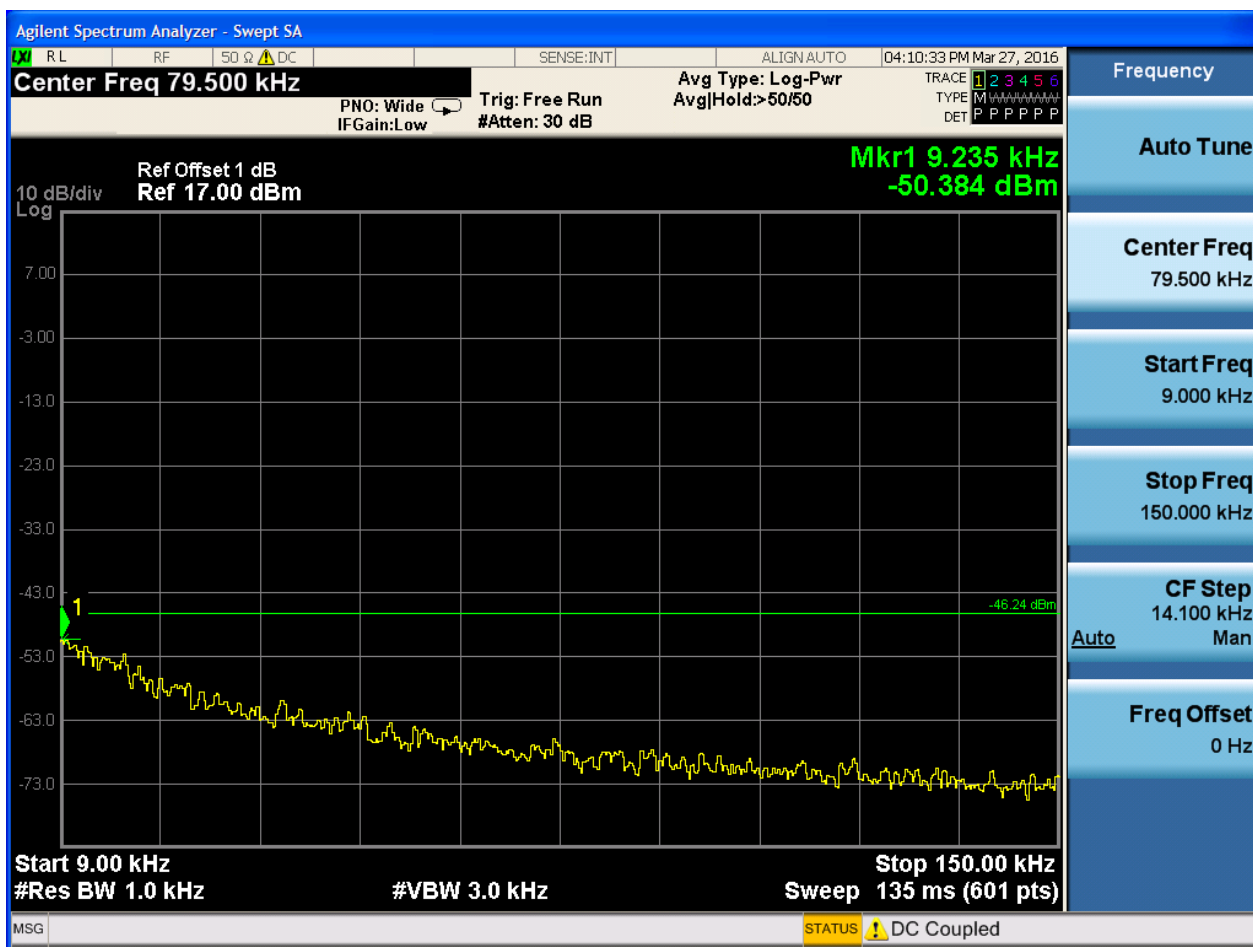


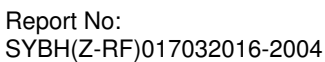


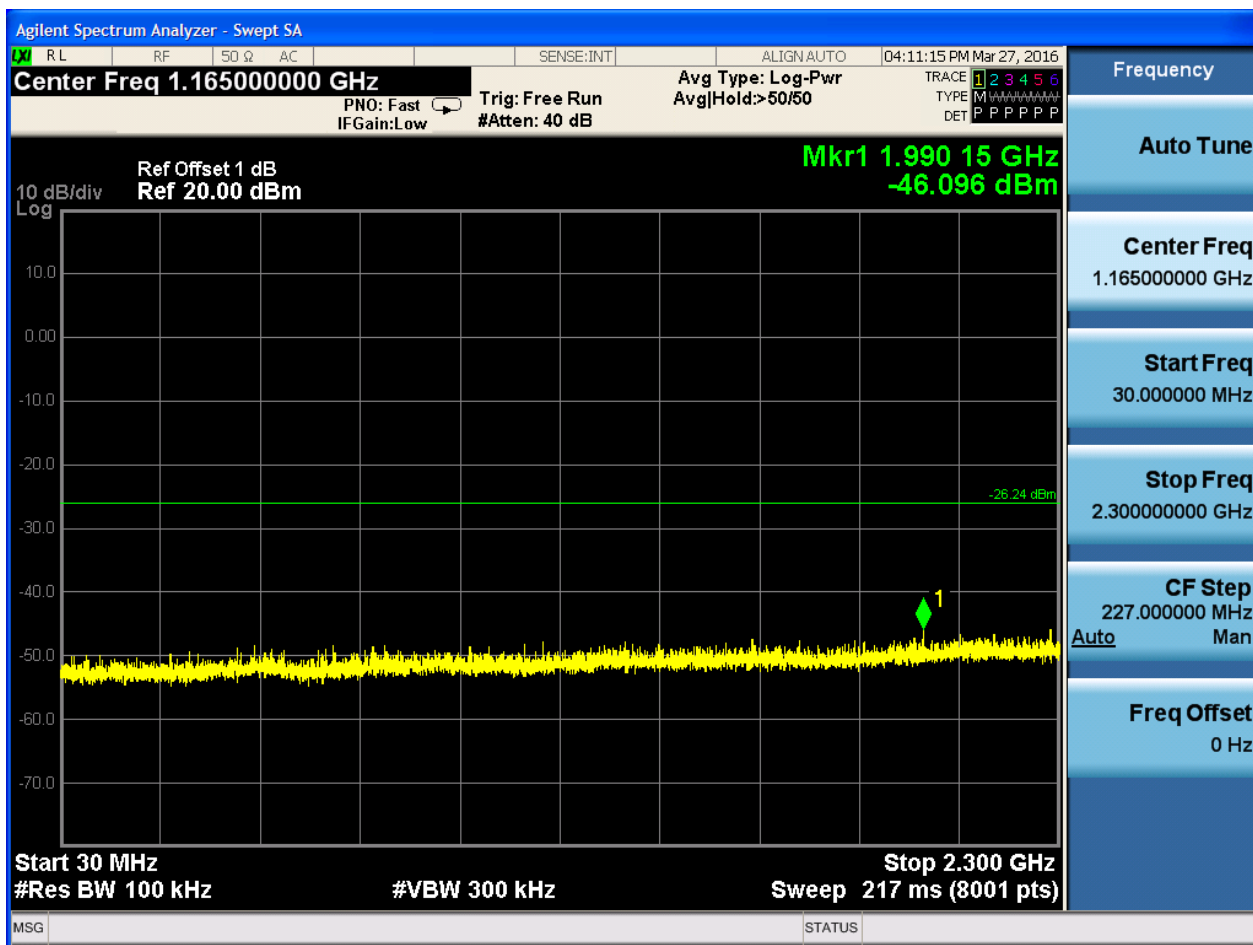
2.5 11G_M@Ant 1

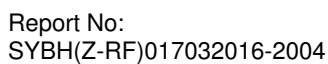
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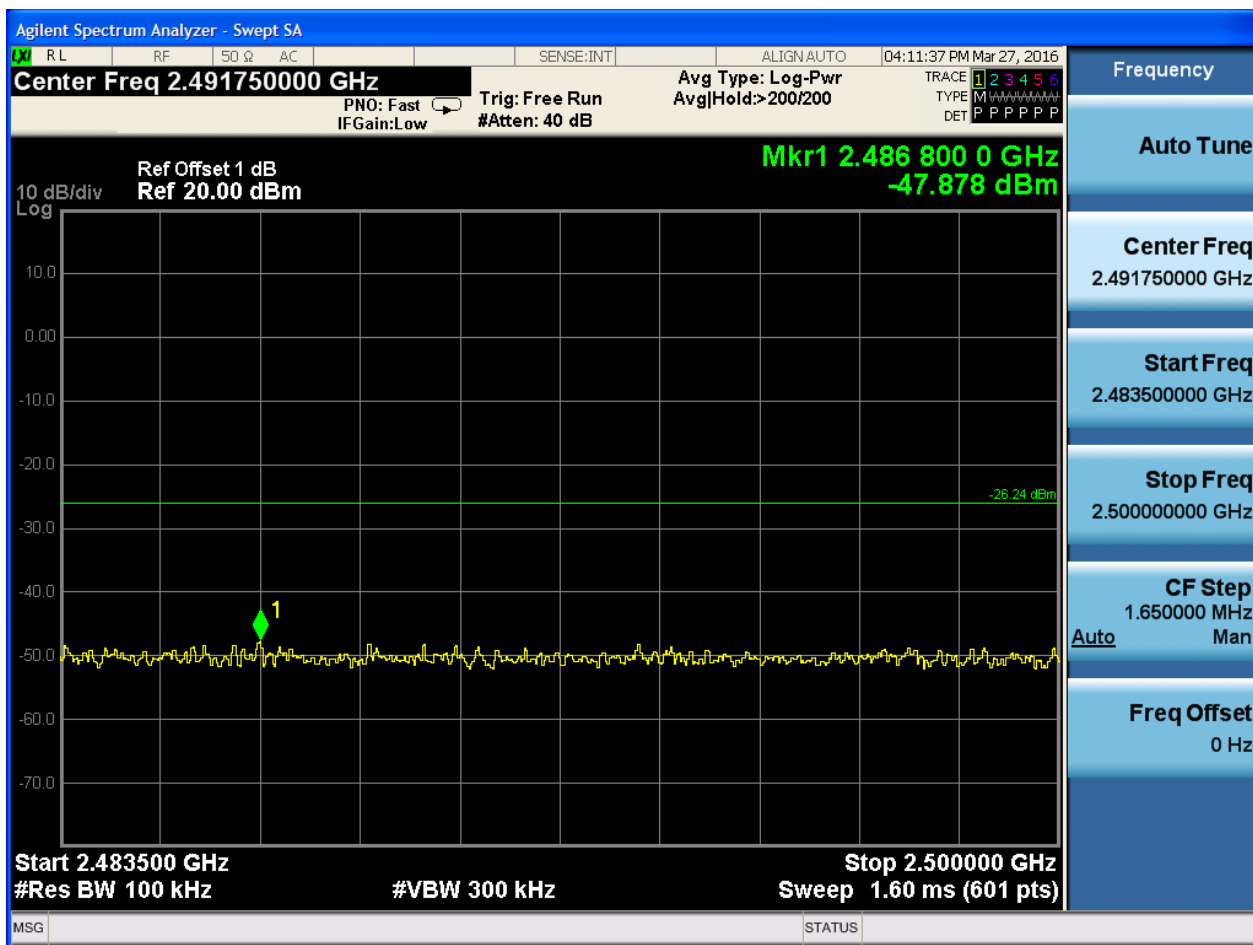


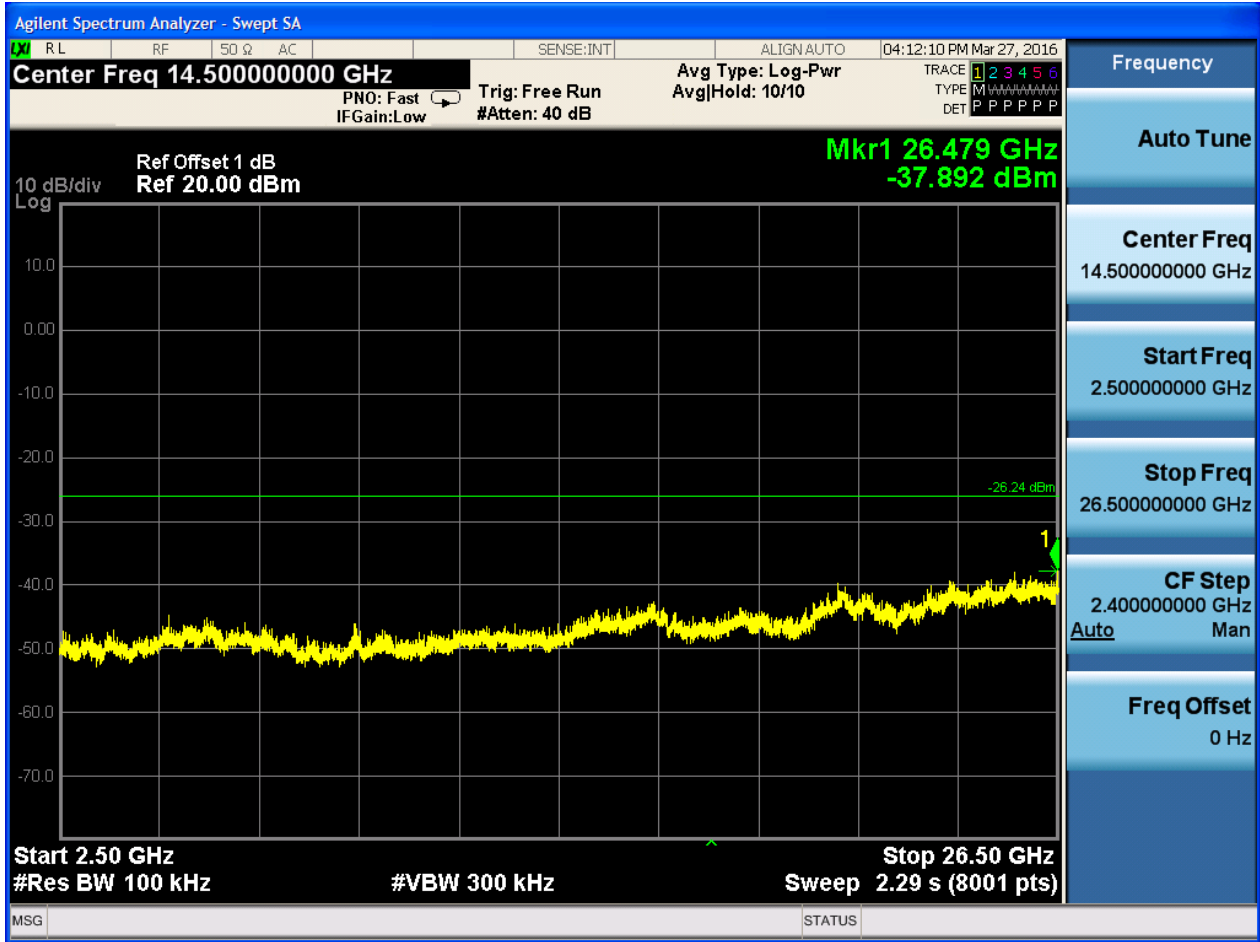
P_uw:







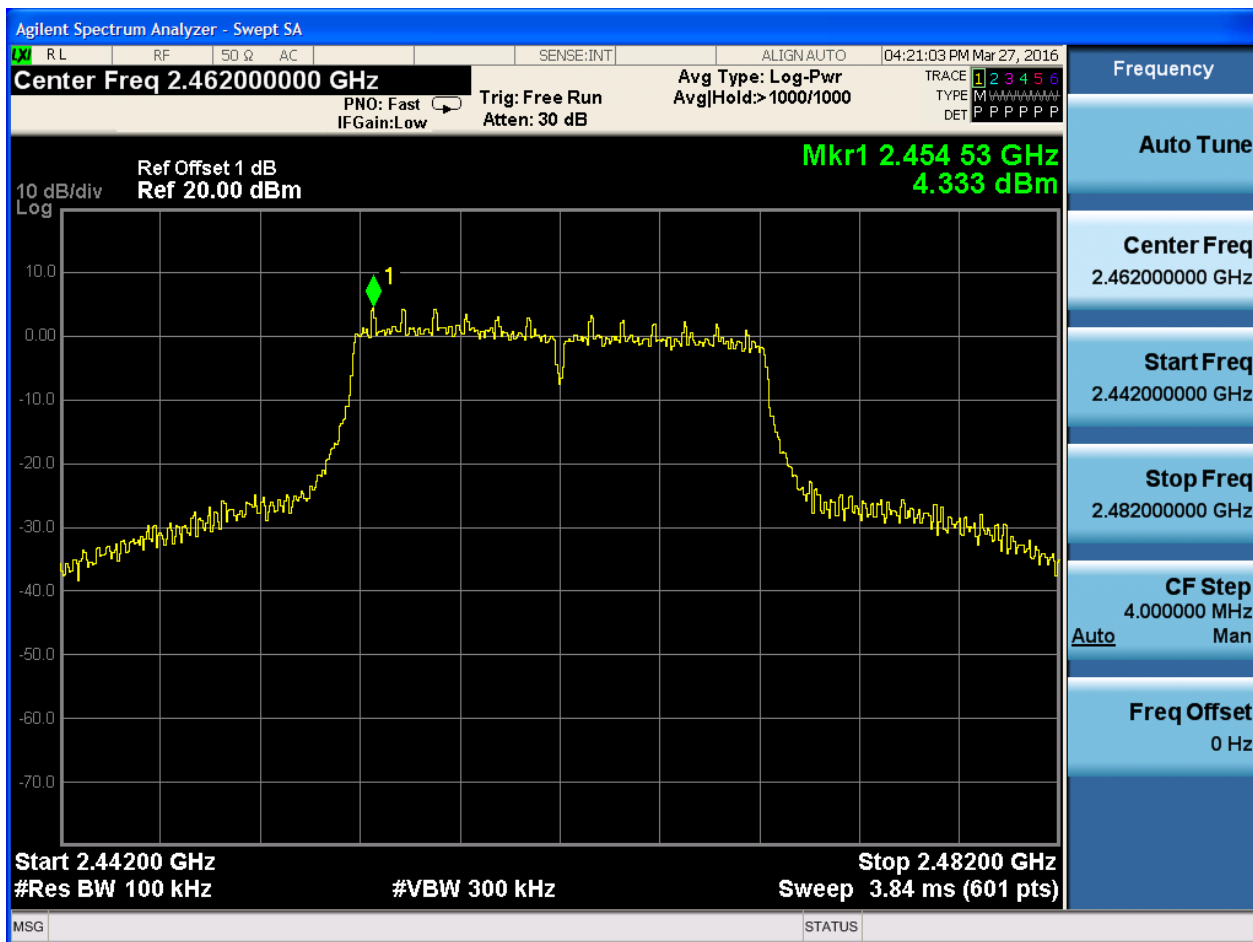






2.6 11G_H@Ant 1

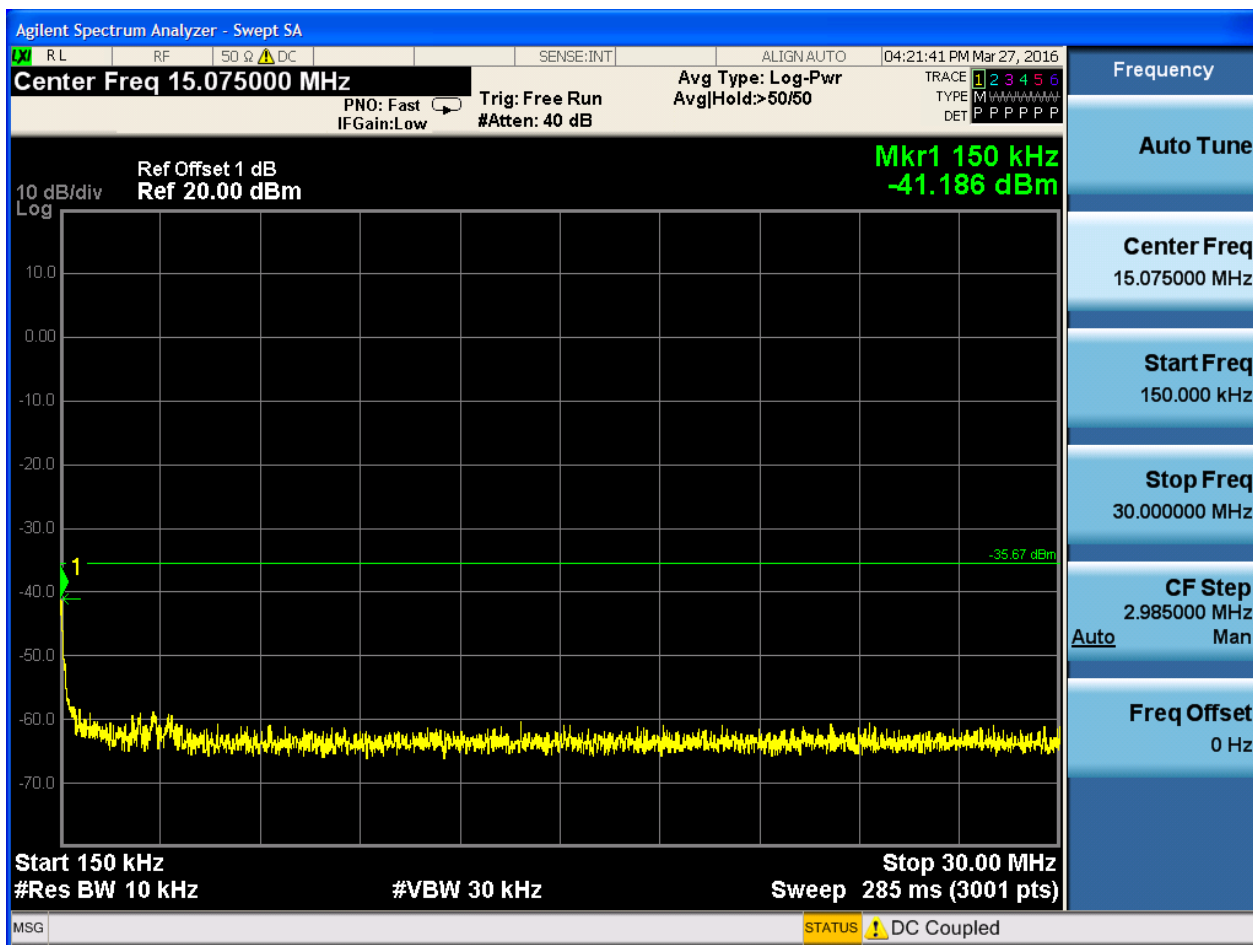
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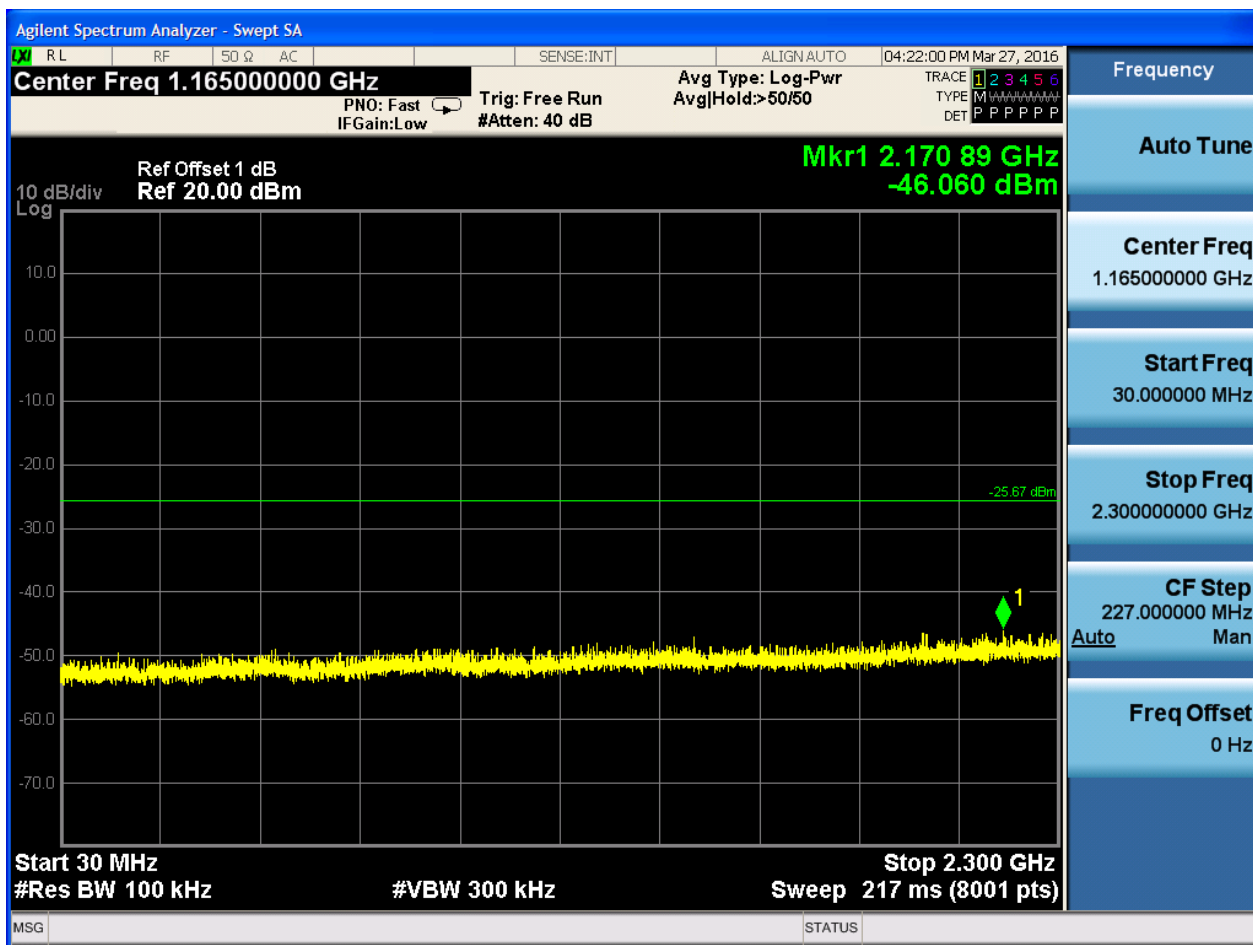


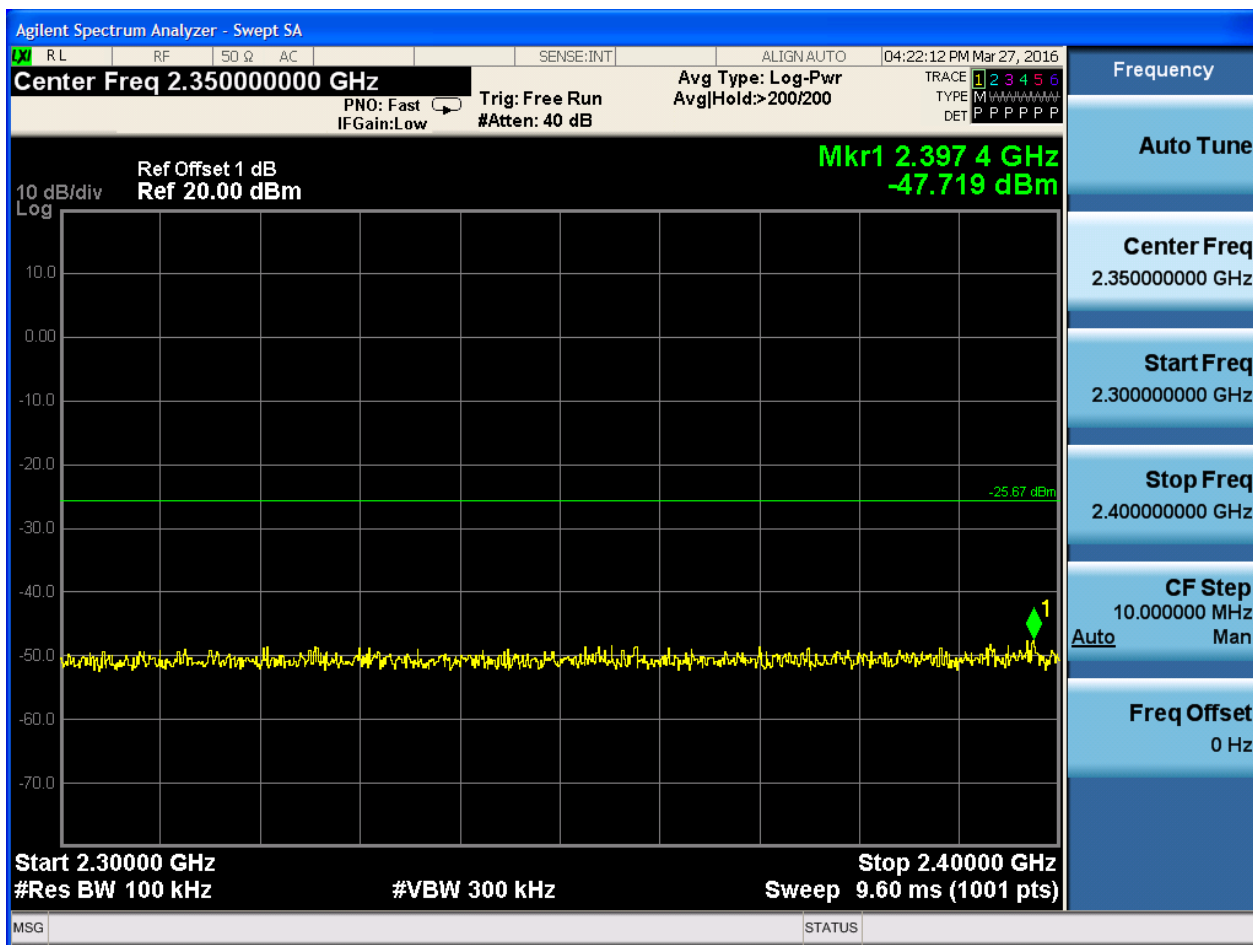


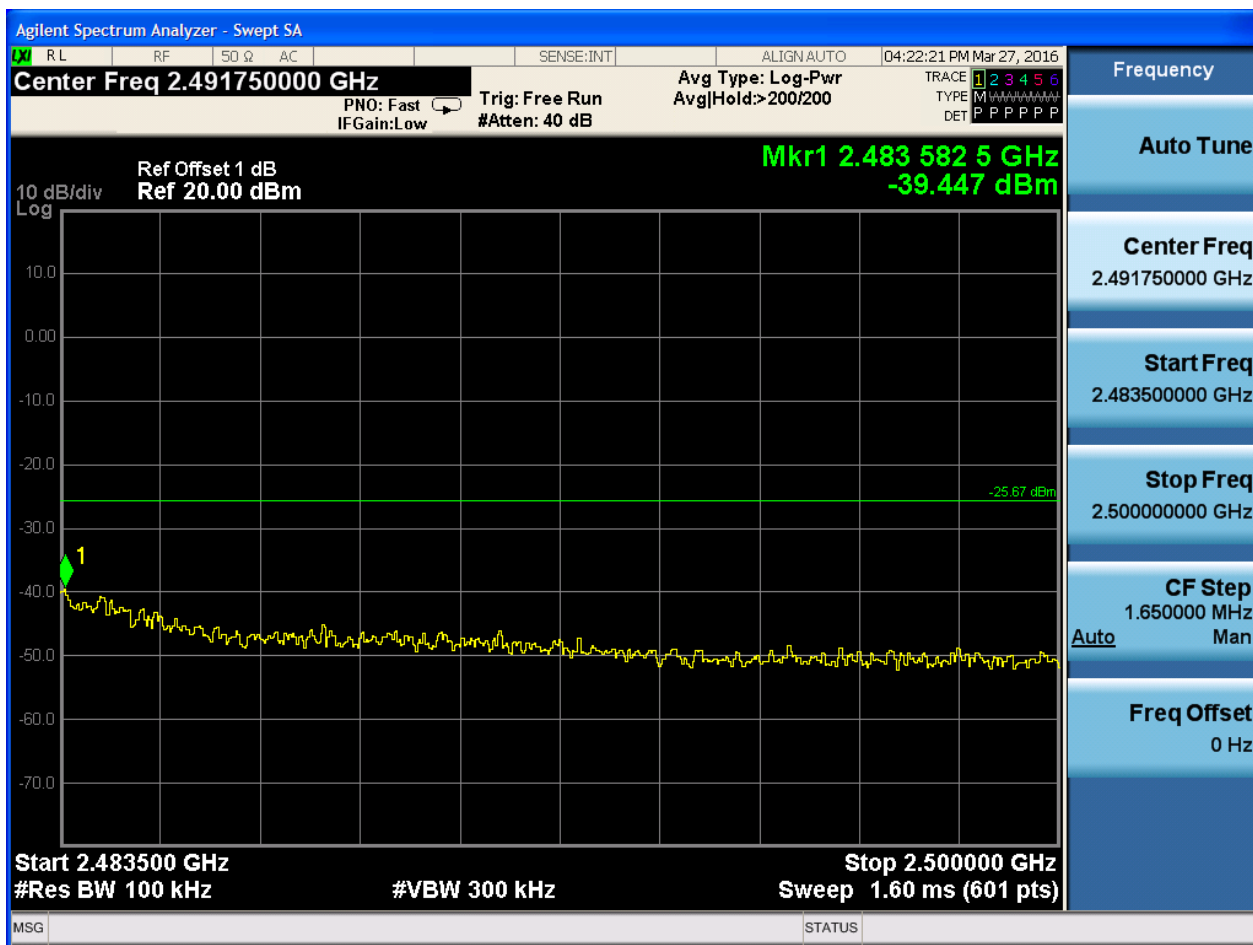
Puw:

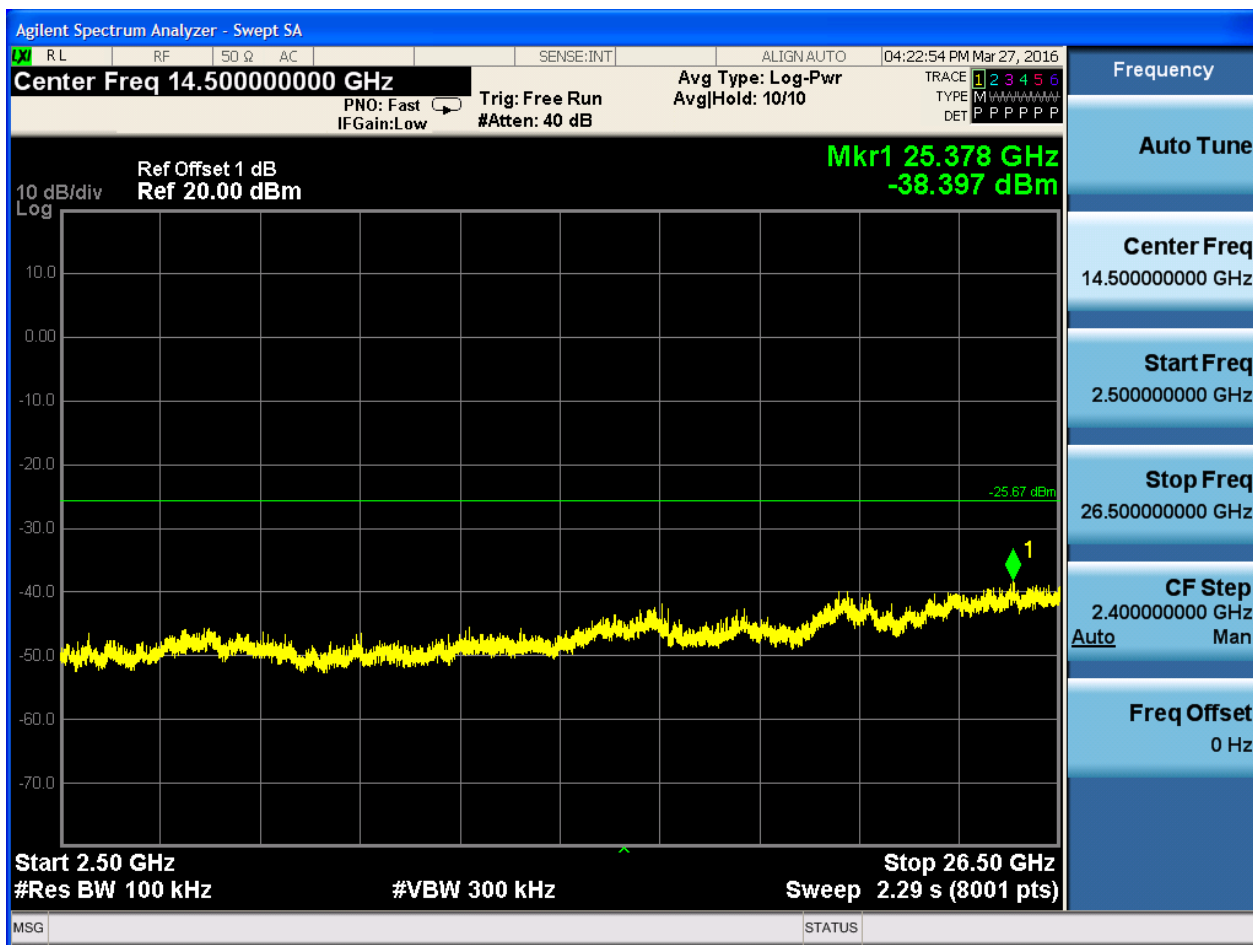








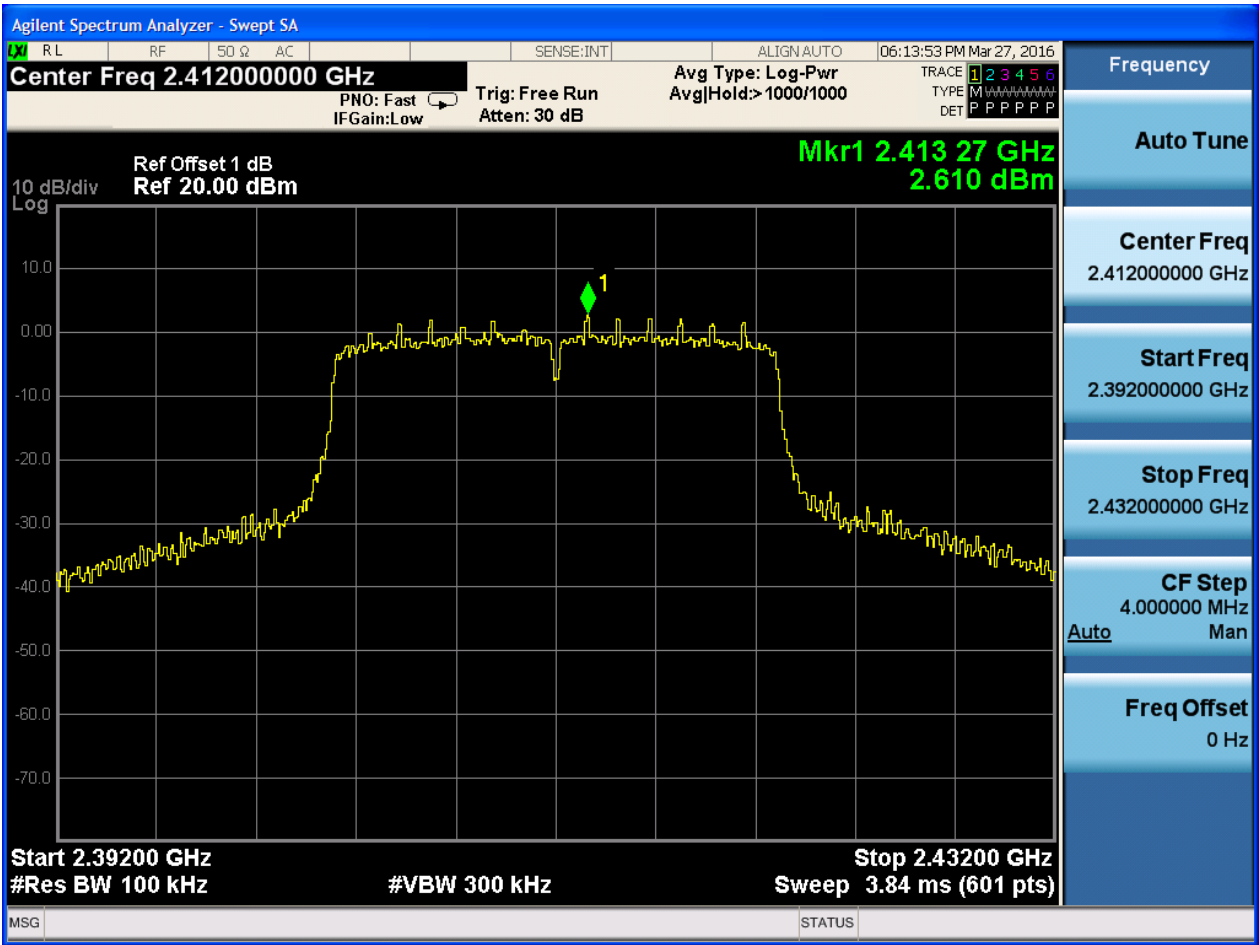






2.7 11N20_L@Ant 1

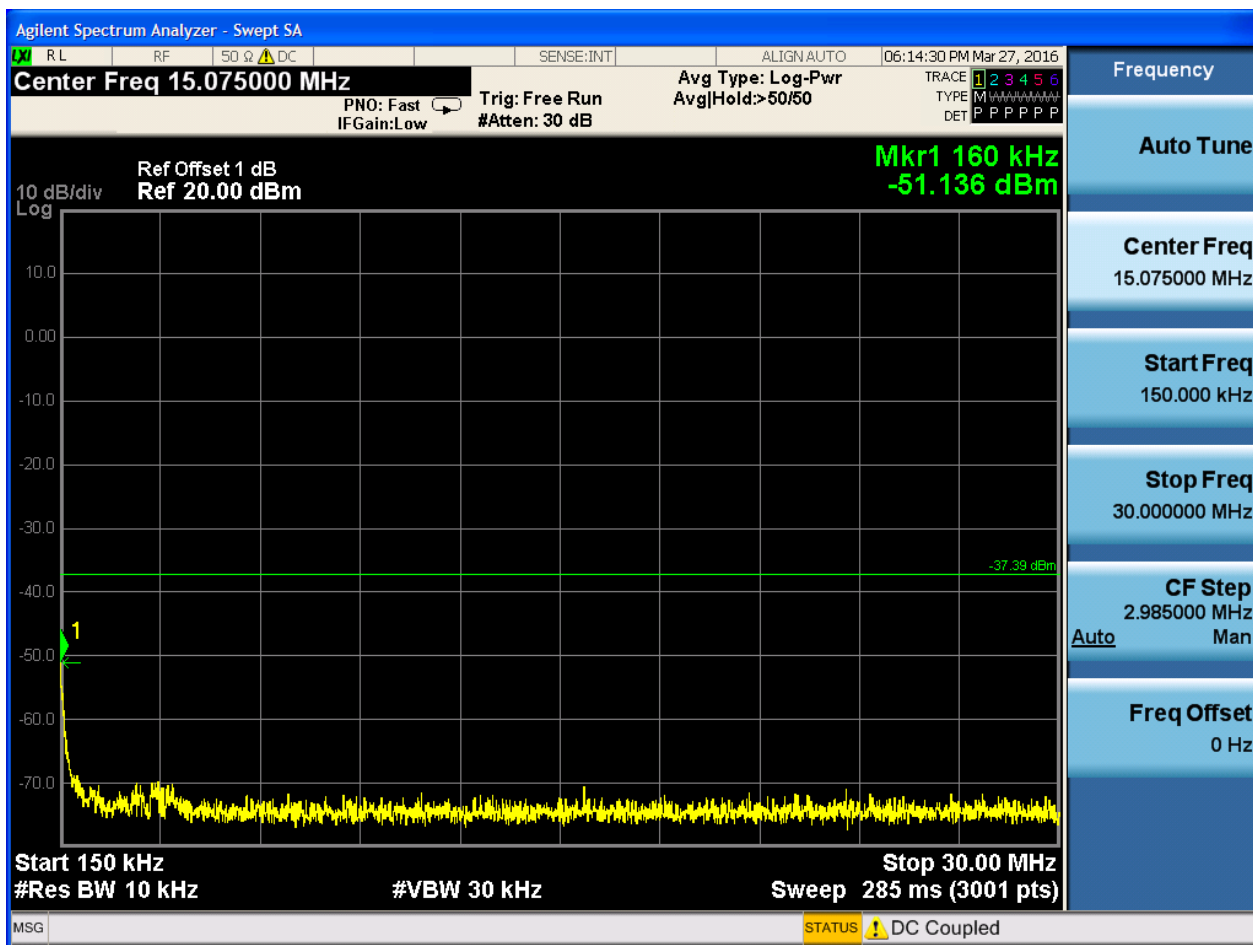
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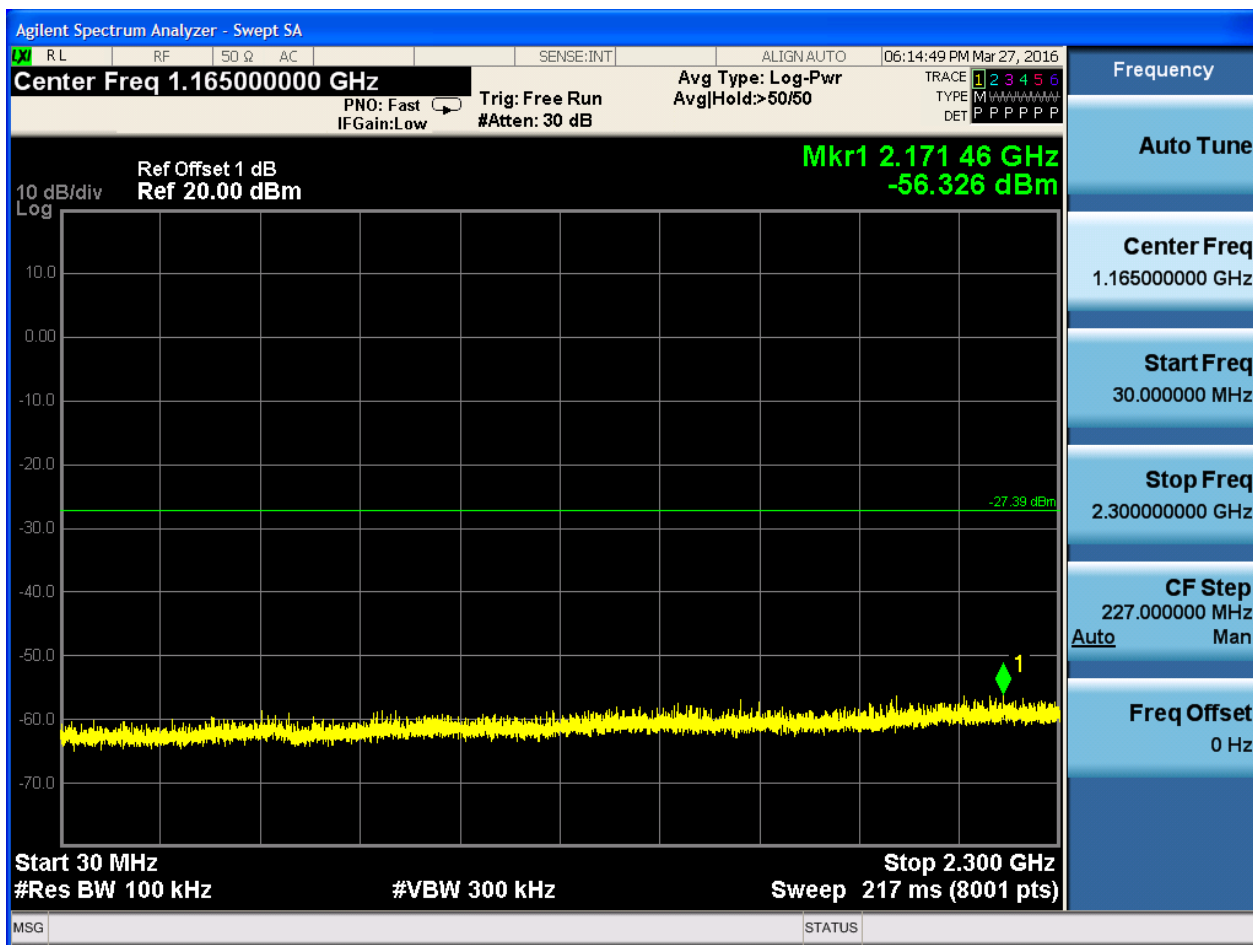


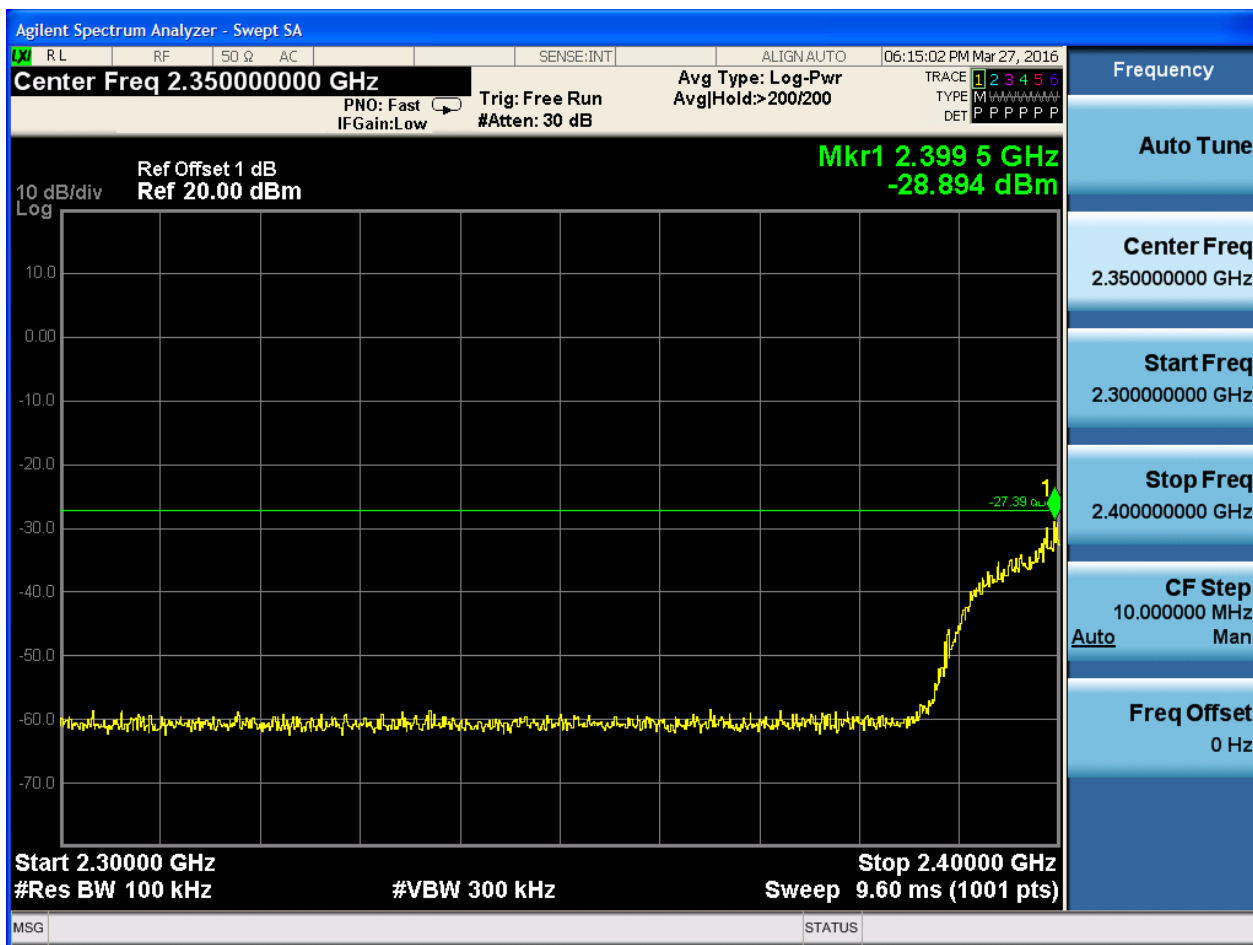


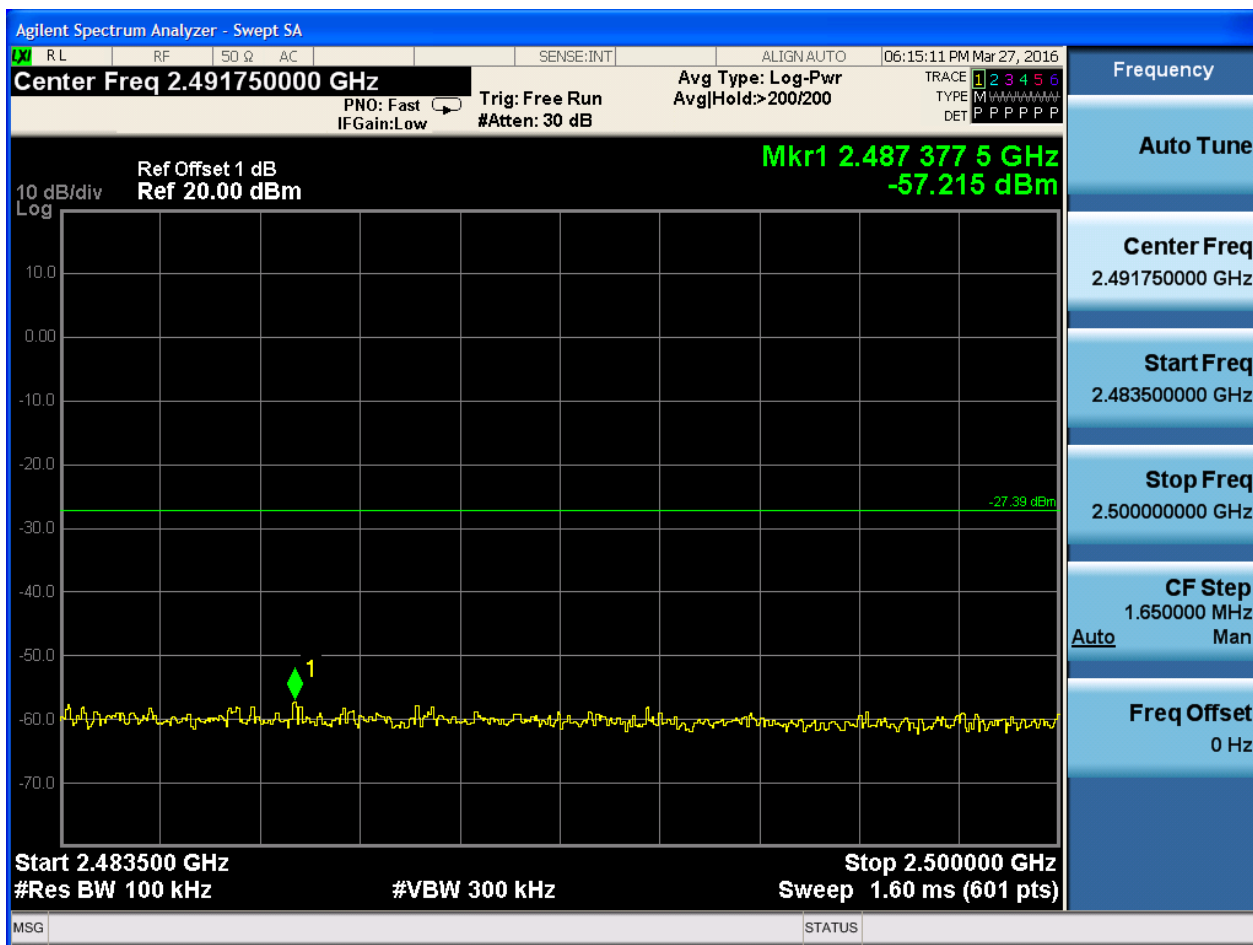
Puw:









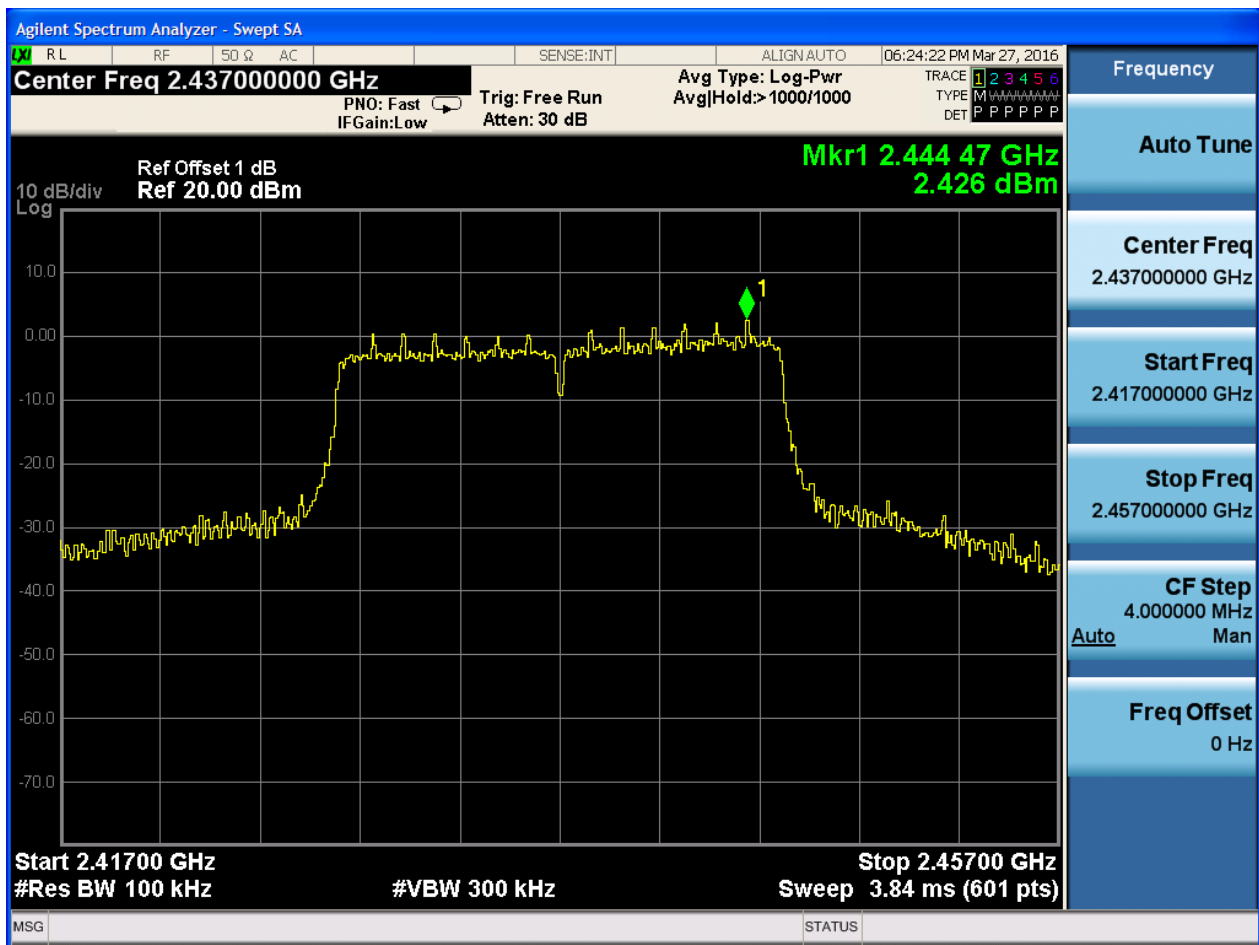






2.8 11N20_M@Ant 1

Pref:



P_uw: