



Appendix for Test report

Appendix A: DTS (6 dB) Bandwidth

In this document, the "DTS6dBBW" refers to the measured "DTS (6 dB) Bandwidth" value. In this Appendix, the "fc(DTS6dBBW)" refers to the centre of the measured "DTS6dBBW". The introduction of the "fc(DTS6dBBW)" is due to that other measurements use it as the spectrum analyzer setting.

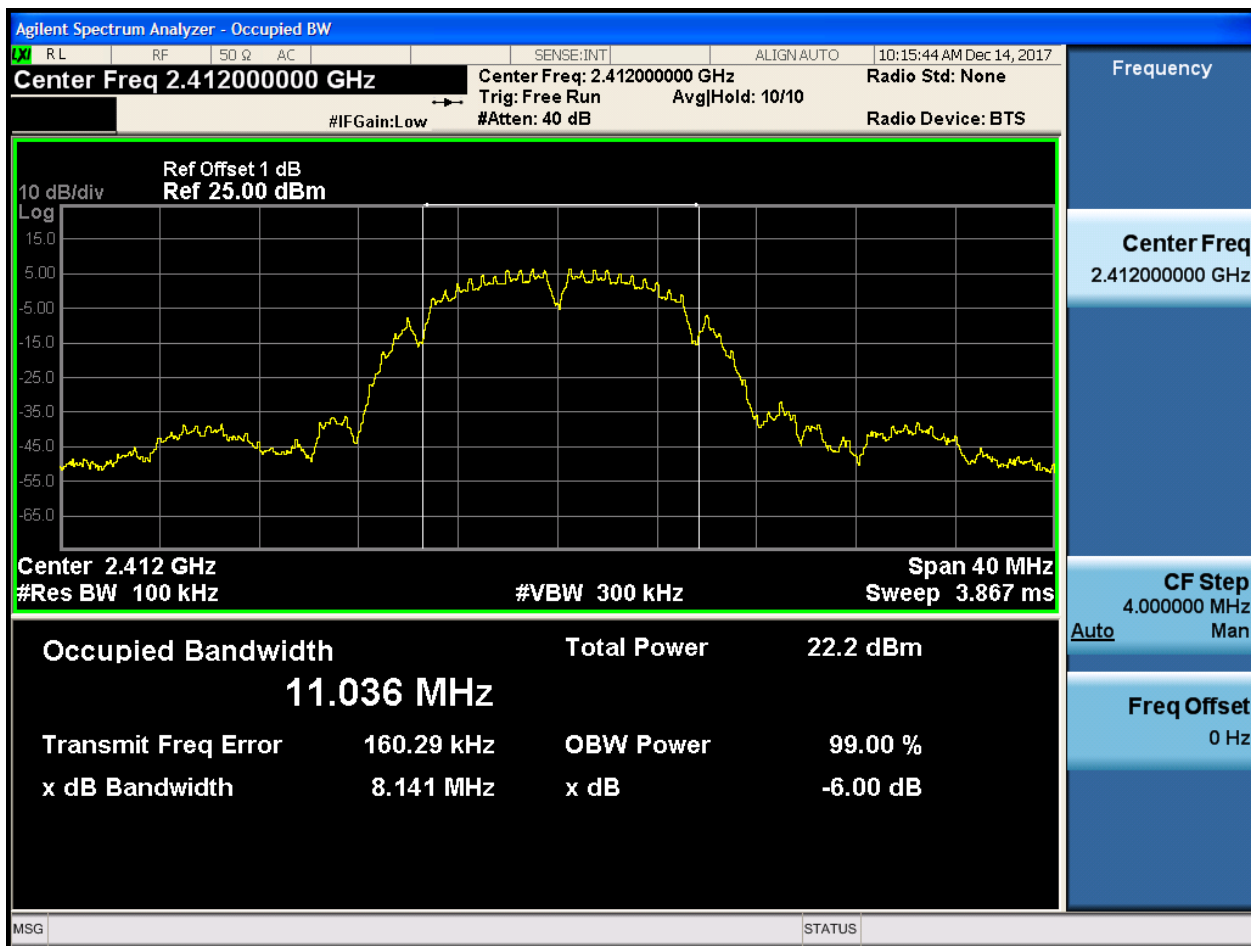
For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	DTS6dBBW[MHz]	Verdict
11B	L	2412	Ant 1	8.14	pass
11B	M	2437	Ant 1	8.15	pass
11B	H	2462	Ant 1	8.11	pass
11G	L	2412	Ant 1	16.39	pass
11G	M	2437	Ant 1	16.40	pass
11G	H	2462	Ant 1	16.38	pass
11N20	L	2412	Ant 1	17.62	pass
11N20	M	2437	Ant 1	17.60	pass
11N20	H	2462	Ant 1	17.60	pass
11N40	L	2422	Ant 1	35.54	pass
11N40	M	2437	Ant 1	35.52	pass
11N40	H	2452	Ant 1	35.42	pass

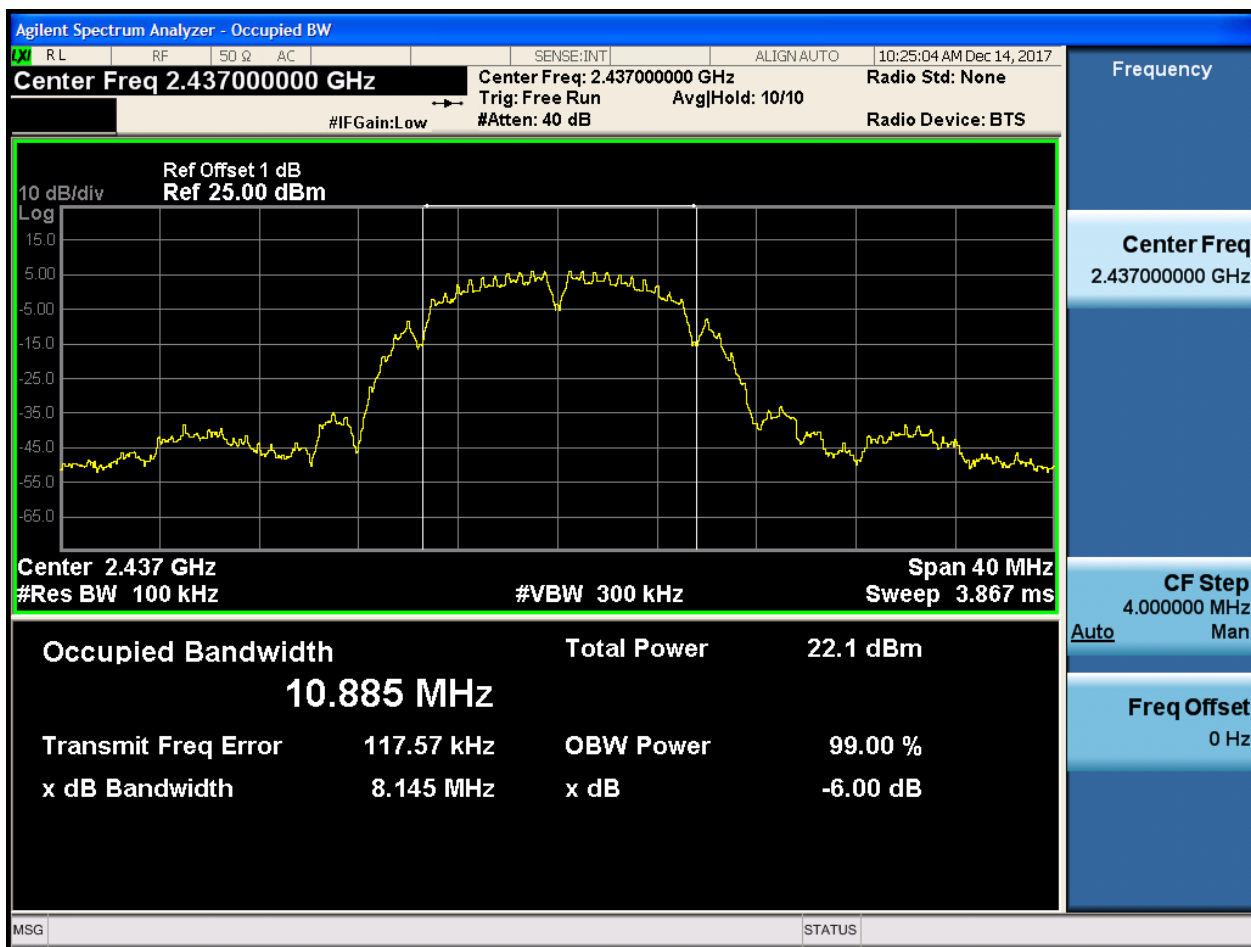
Part II - Test Plots

2.1 11B_L@Ant 1



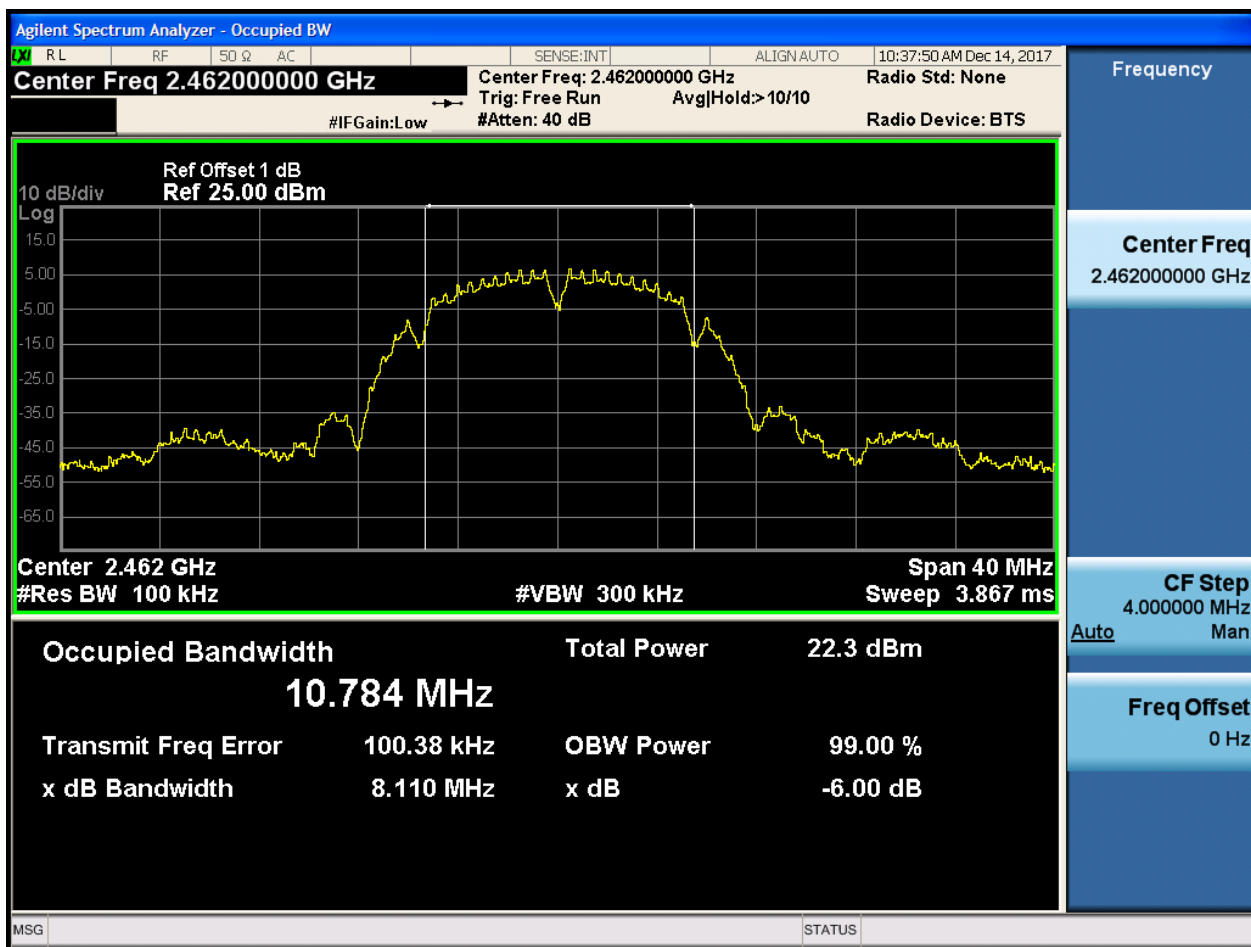


2.2 11B_M@Ant 1



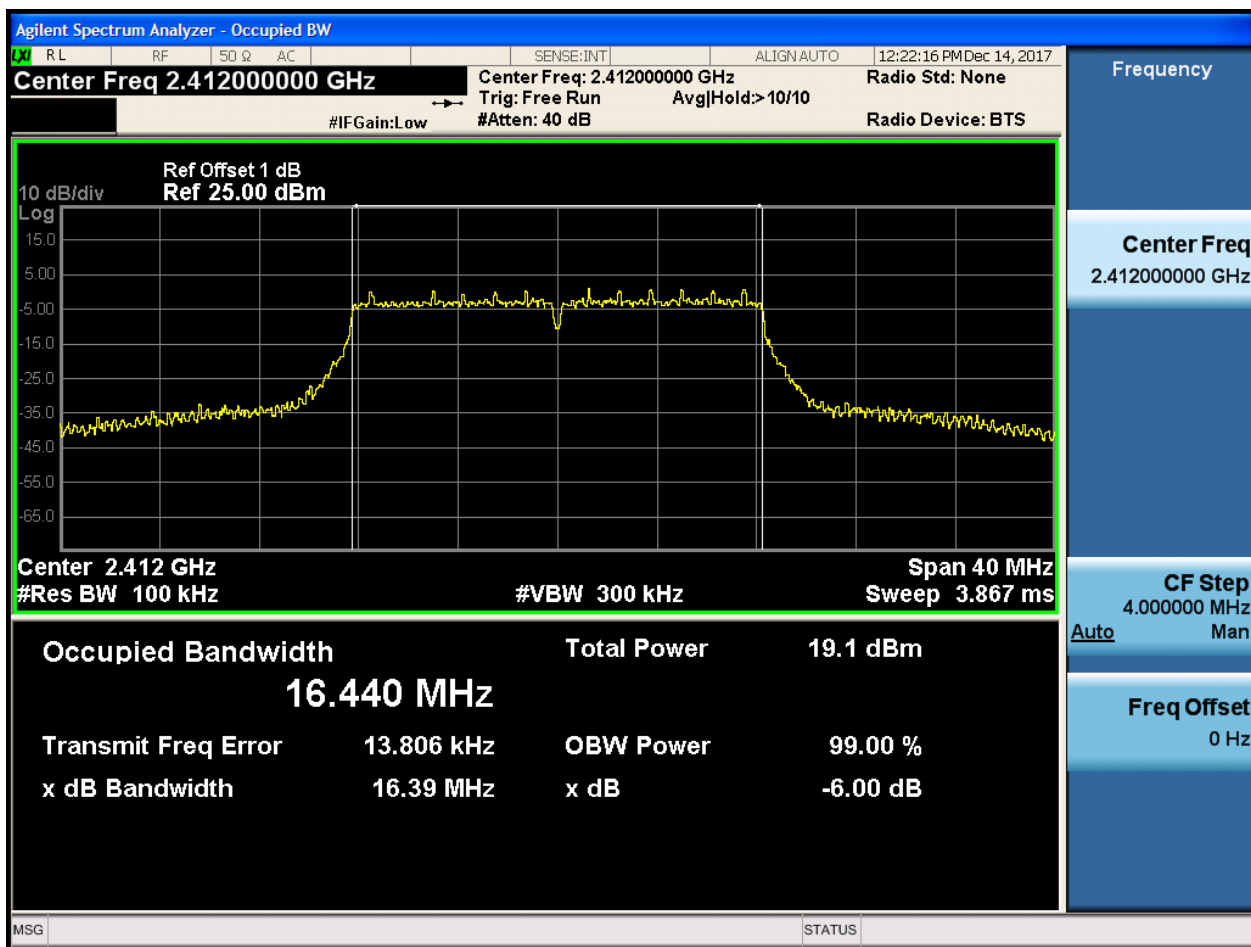


2.3 11B_H@Ant 1



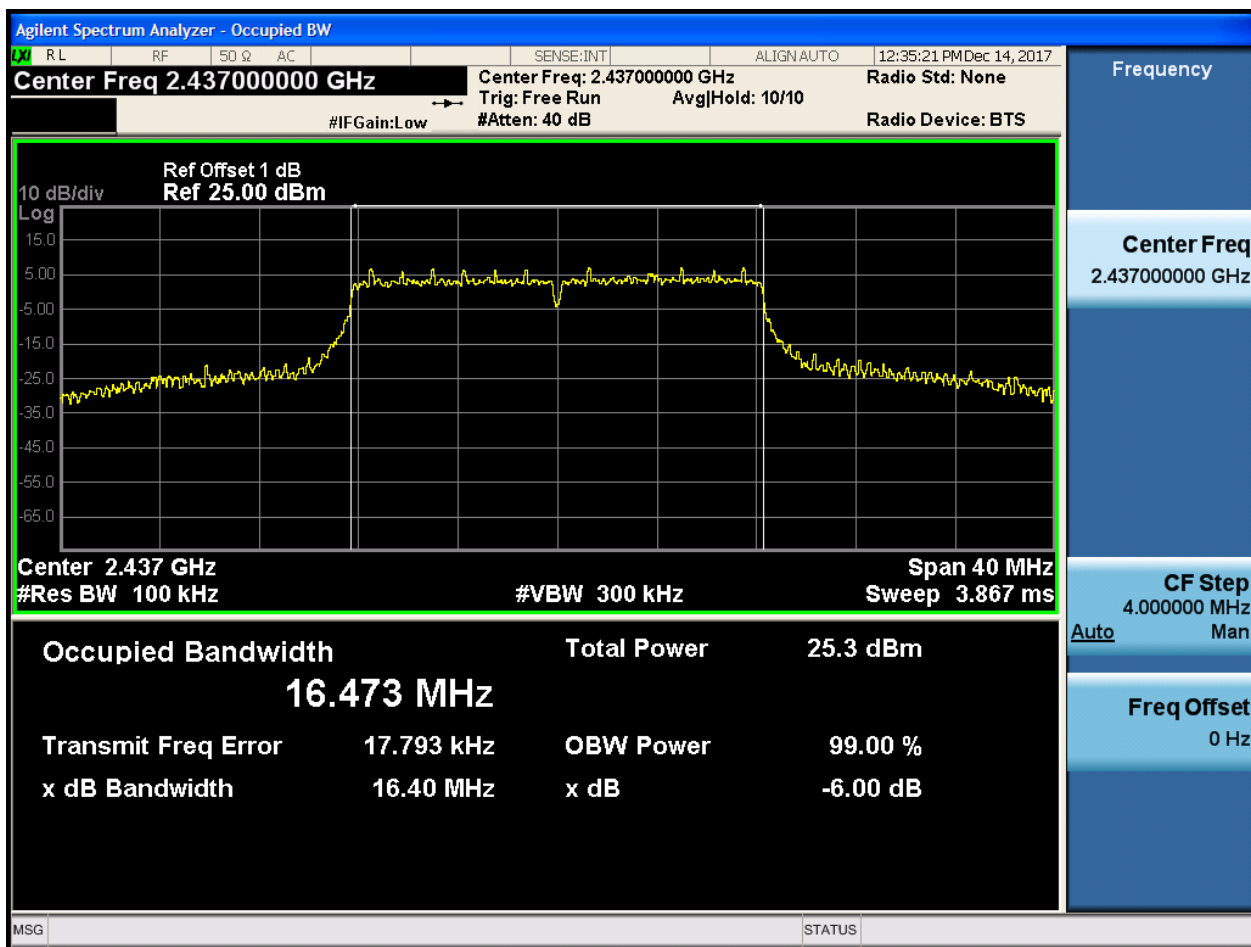


2.4 11G_L@Ant 1

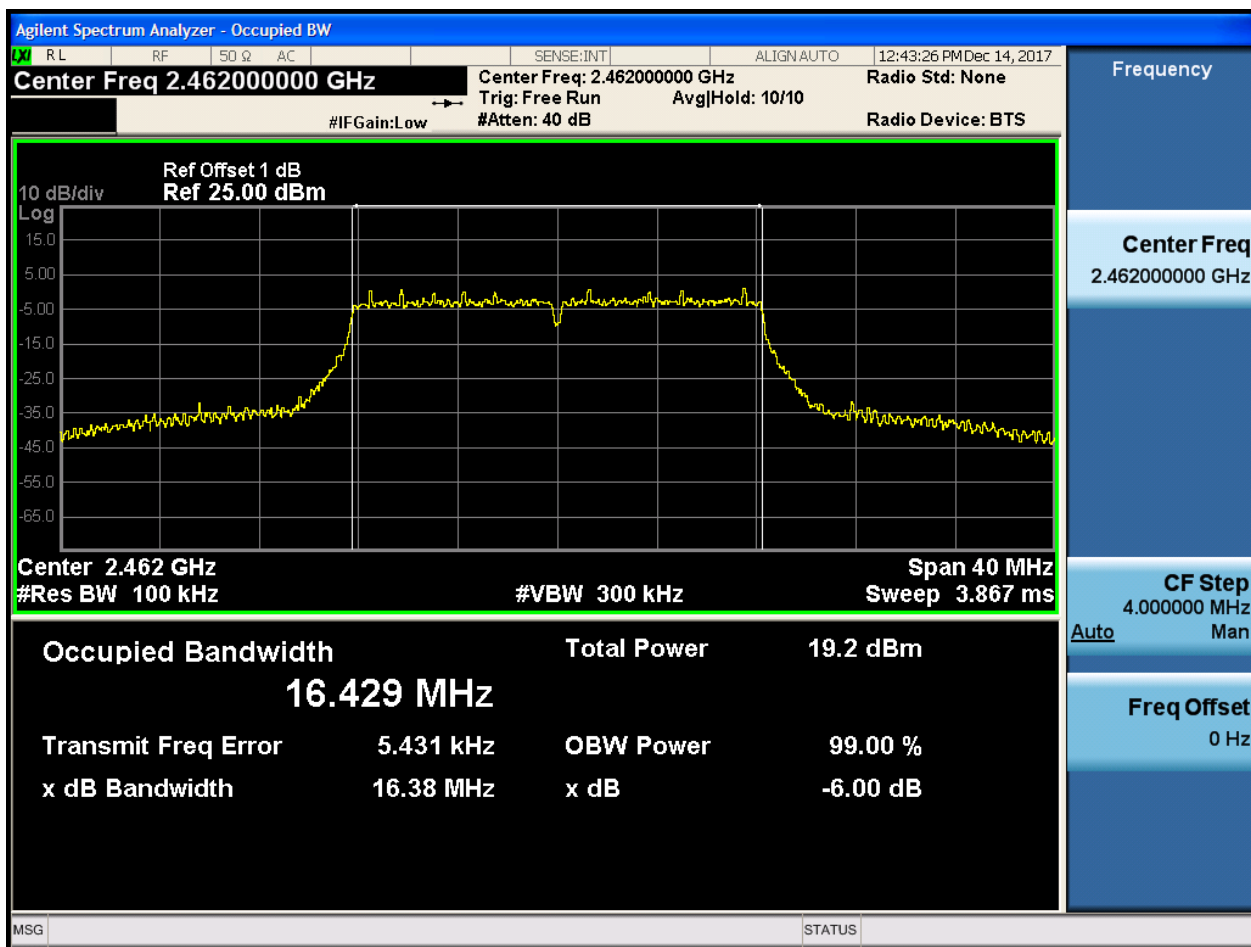




2.5 11G_M@Ant 1

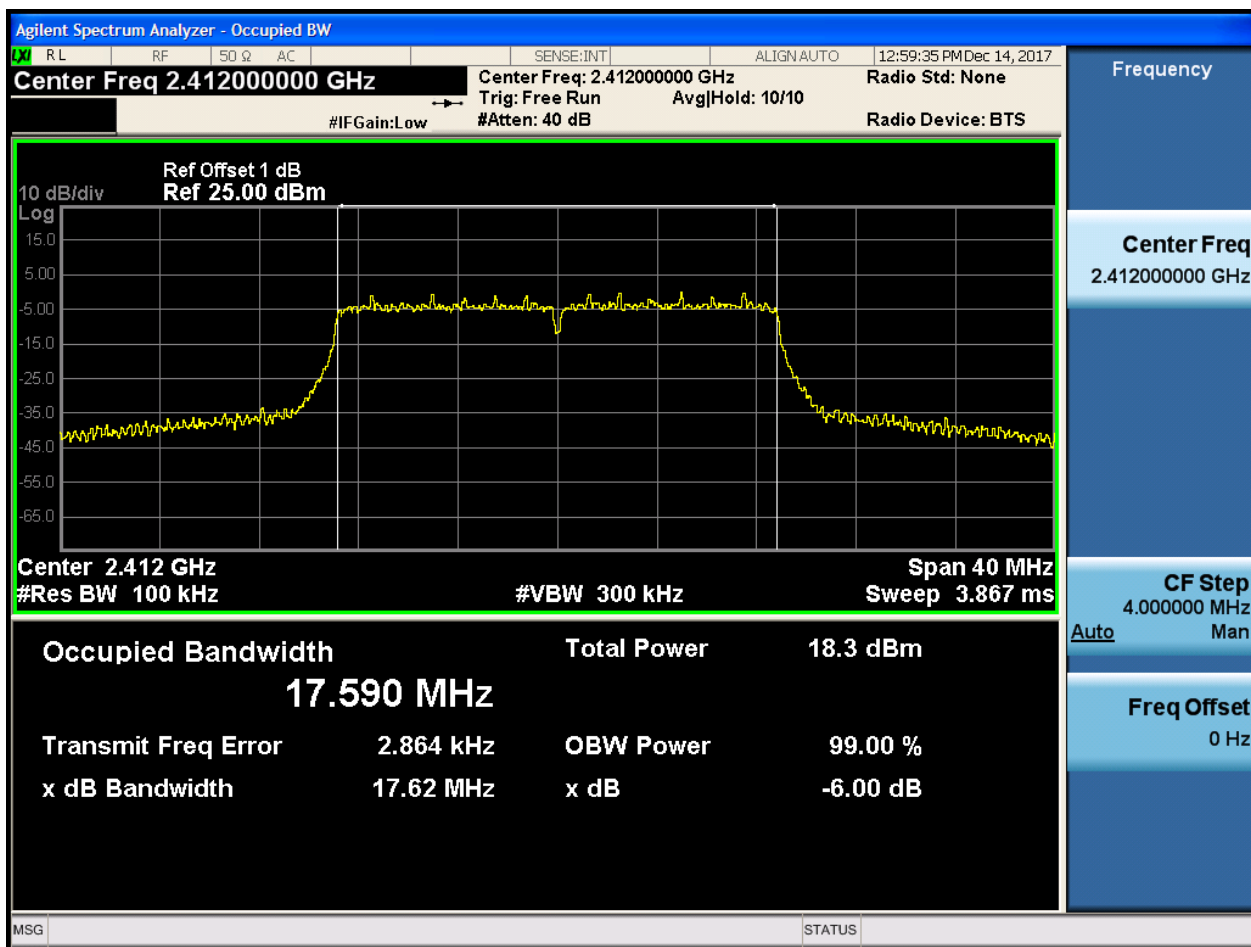


2.6 11G_H@Ant 1

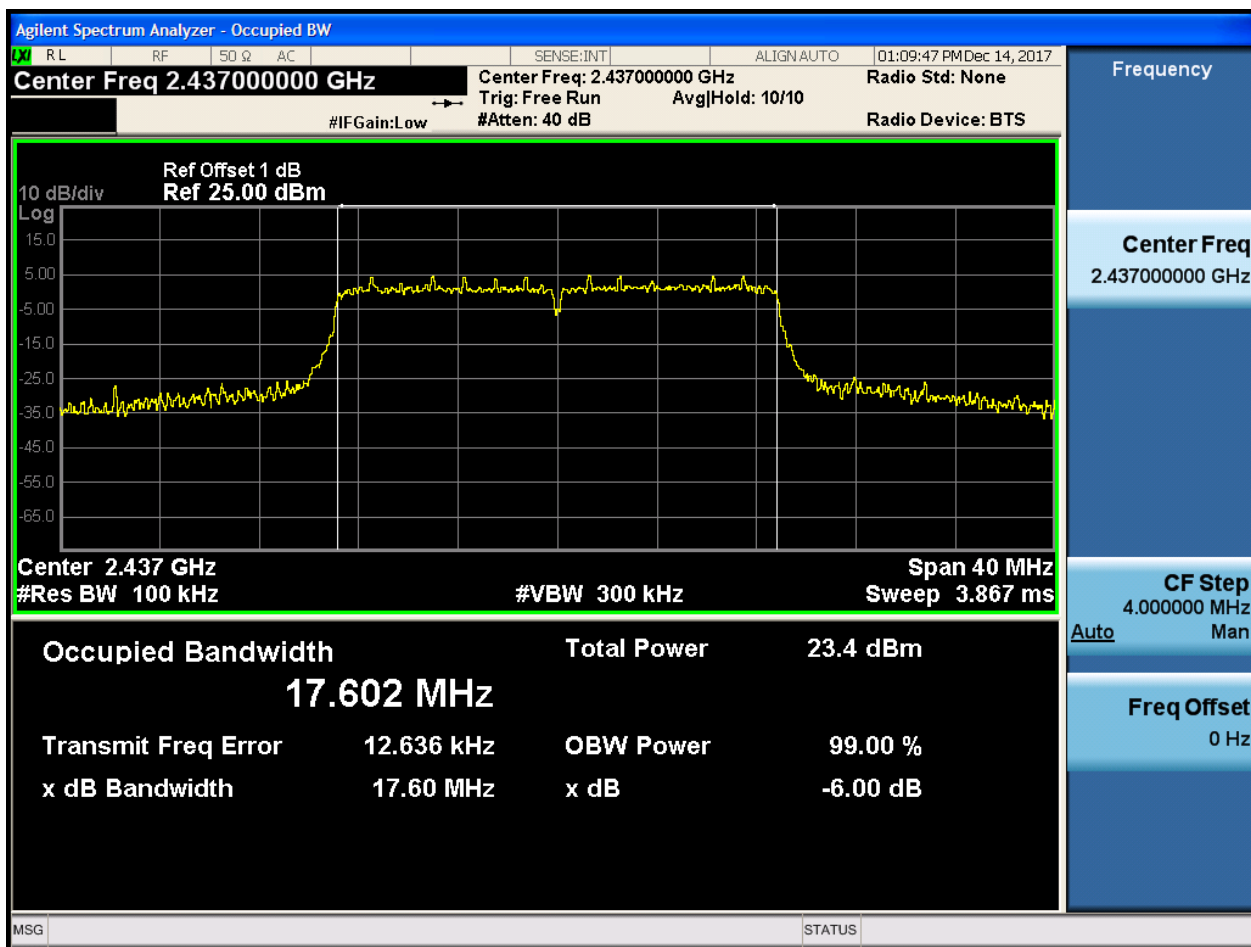




2.7 11N20_L@Ant 1

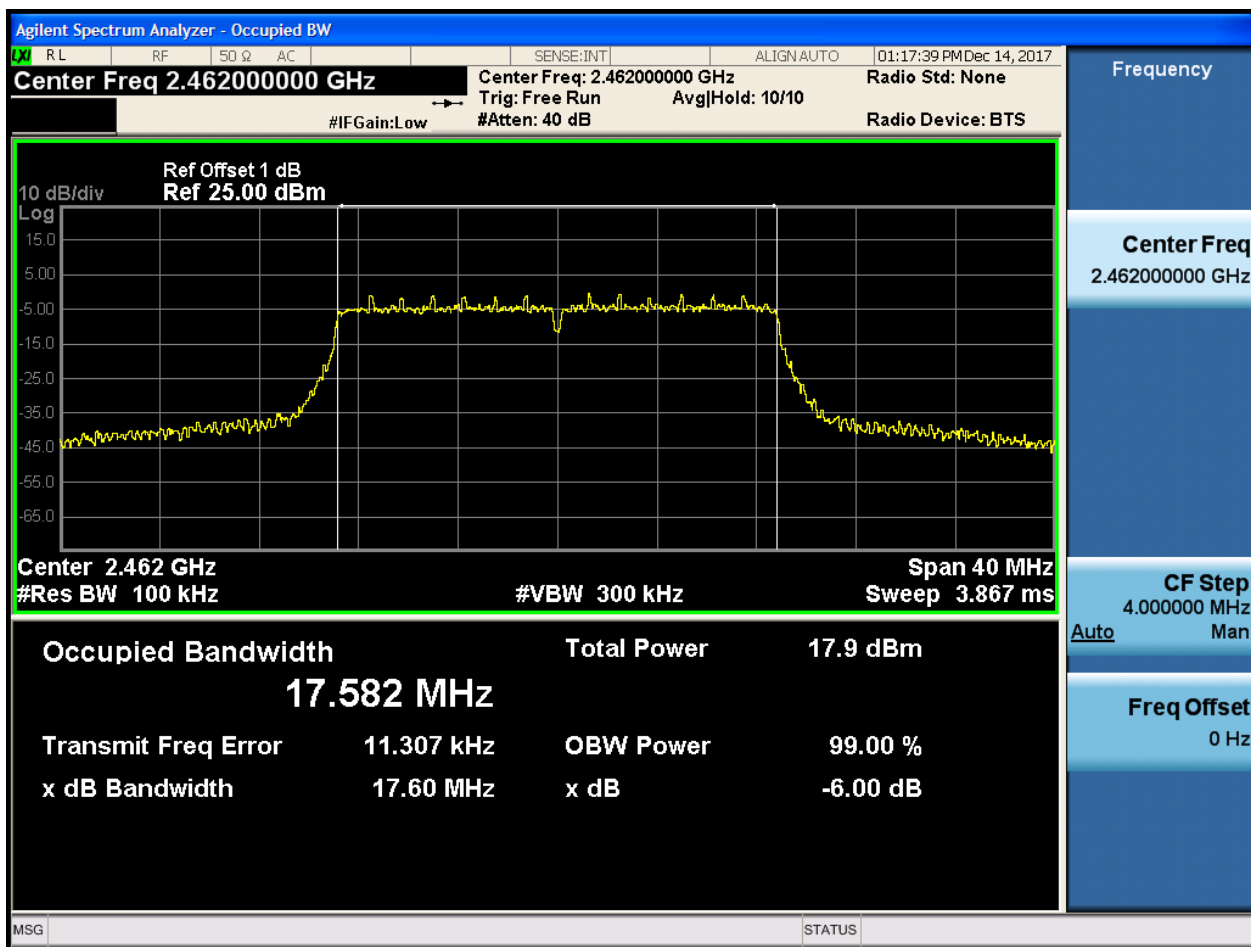


2.8 11N20_M@Ant 1



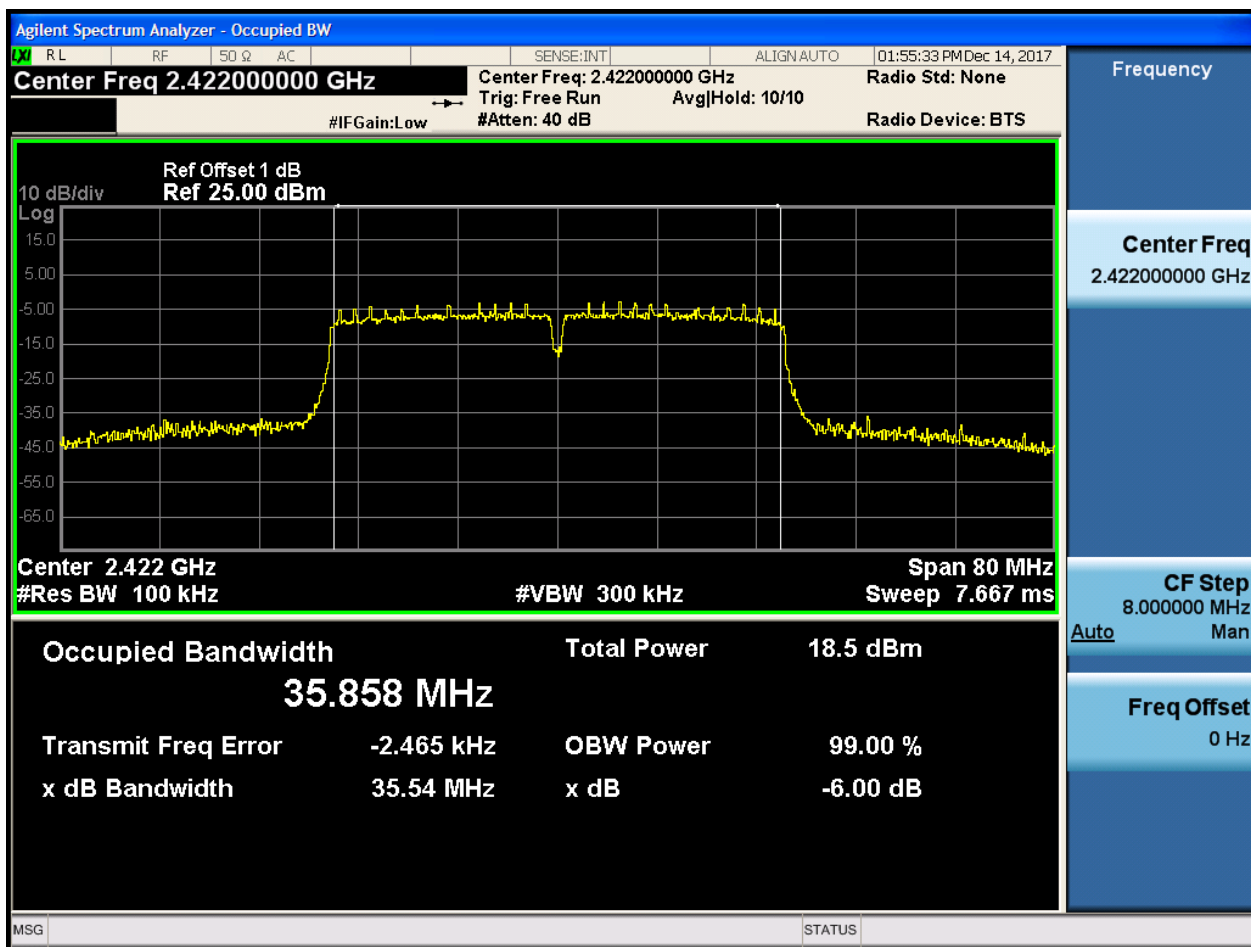


2.9 11N20_H@Ant 1



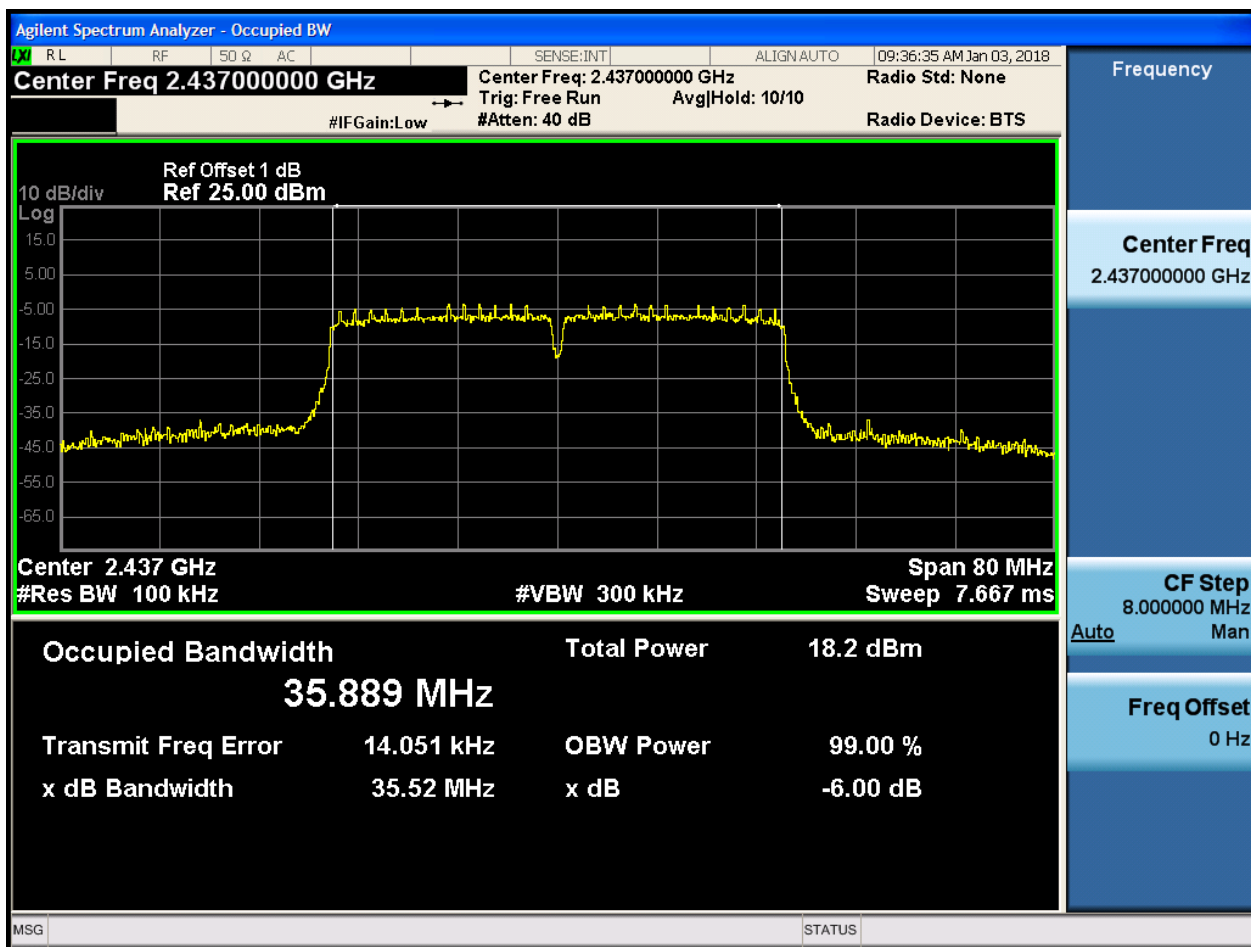


2.10 11N40_L@Ant 1



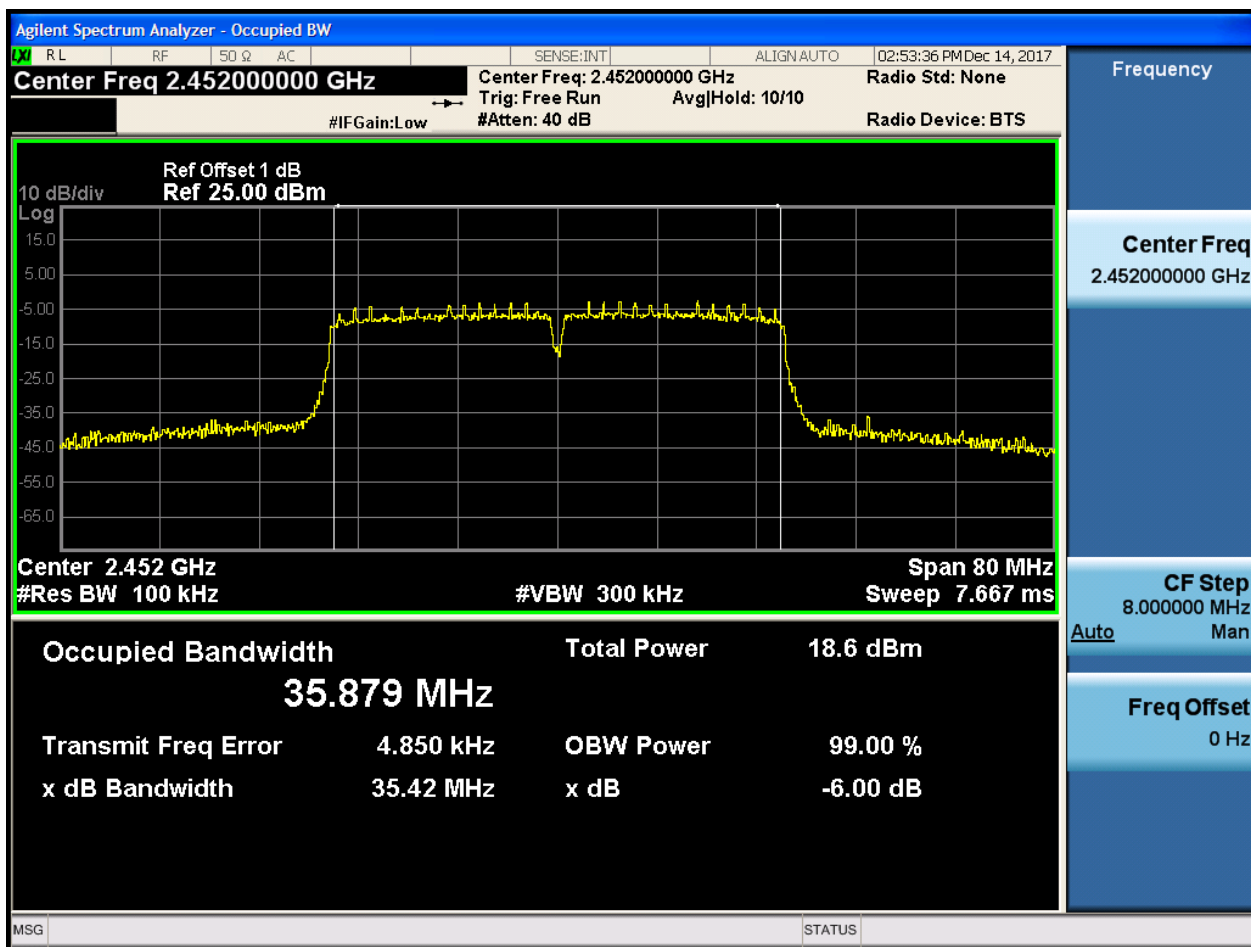


2.11 11N40_M@Ant 1





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.

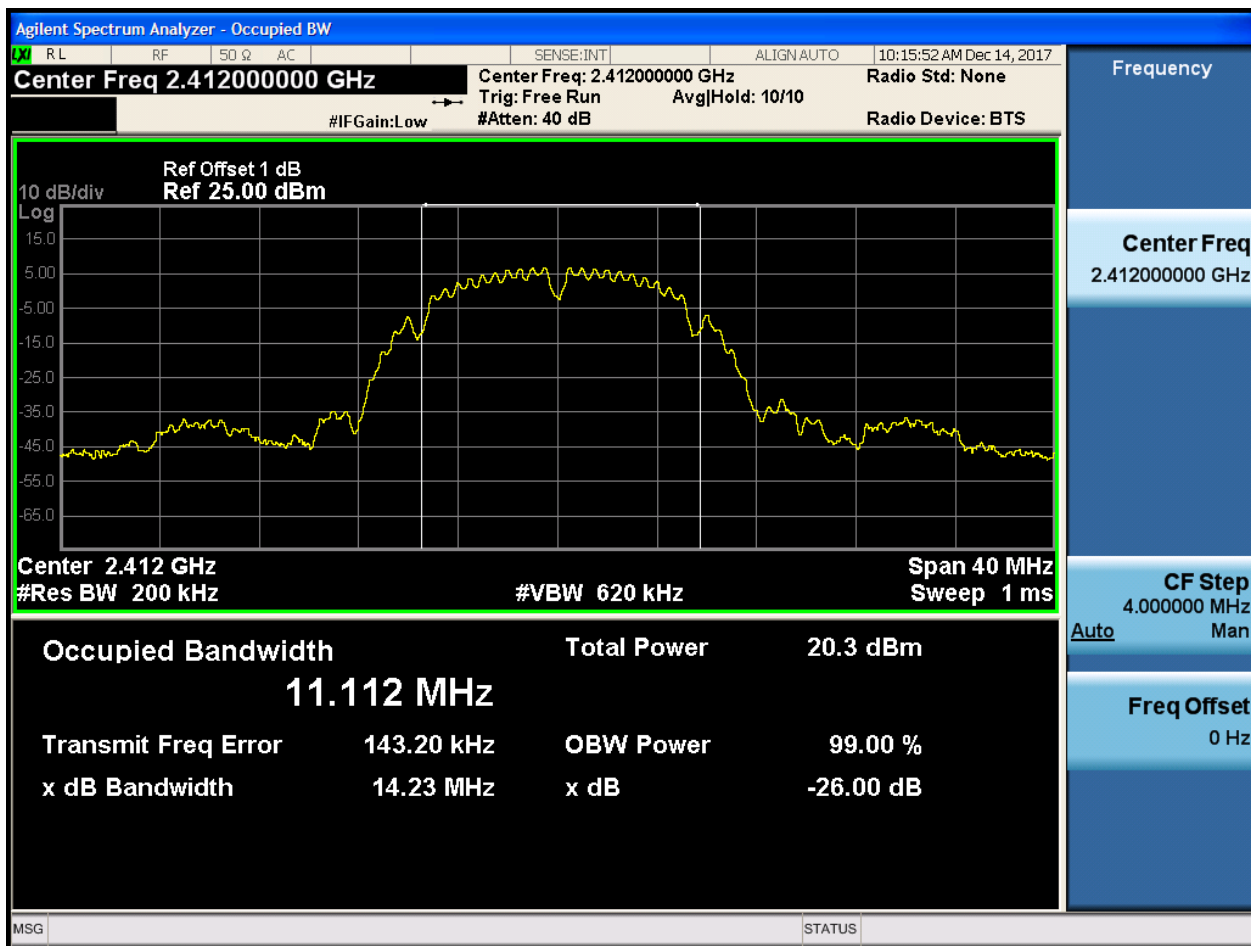
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Occupied Bandwidth [MHz]	Verdict
11B	L	2412	Ant 1	11.11	pass
11B	M	2437	Ant 1	11.04	pass
11B	H	2462	Ant 1	10.98	pass
11G	L	2412	Ant 1	16.54	pass
11G	M	2437	Ant 1	16.61	pass
11G	H	2462	Ant 1	16.52	pass
11N20	L	2412	Ant 1	17.61	pass
11N20	M	2437	Ant 1	17.61	pass
11N20	H	2462	Ant 1	17.60	pass
11N40	L	2422	Ant 1	35.91	pass
11N40	M	2437	Ant 1	35.93	pass
11N40	H	2452	Ant 1	35.89	pass



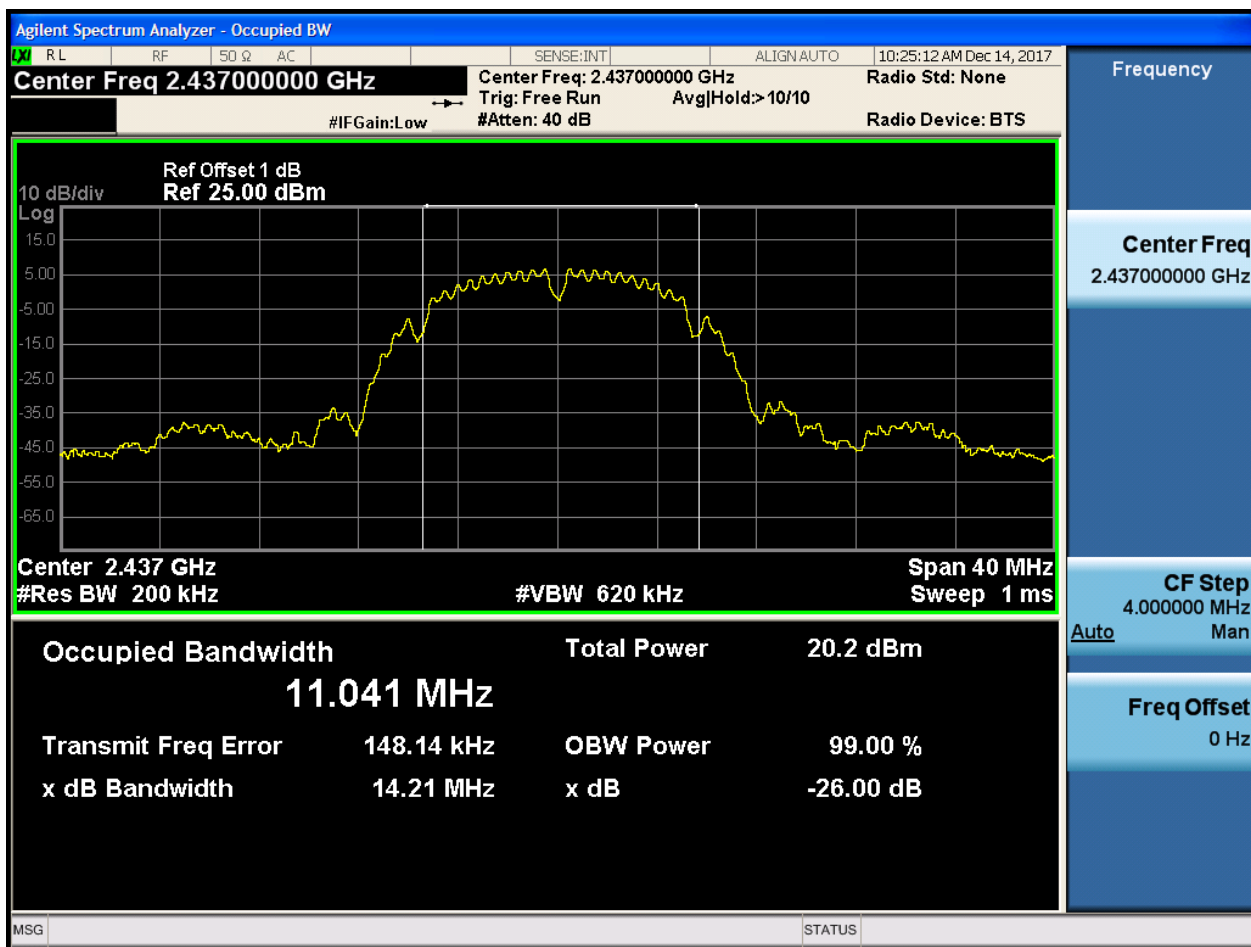
Part II - Test Plots

2.1 11B_L@Ant 1



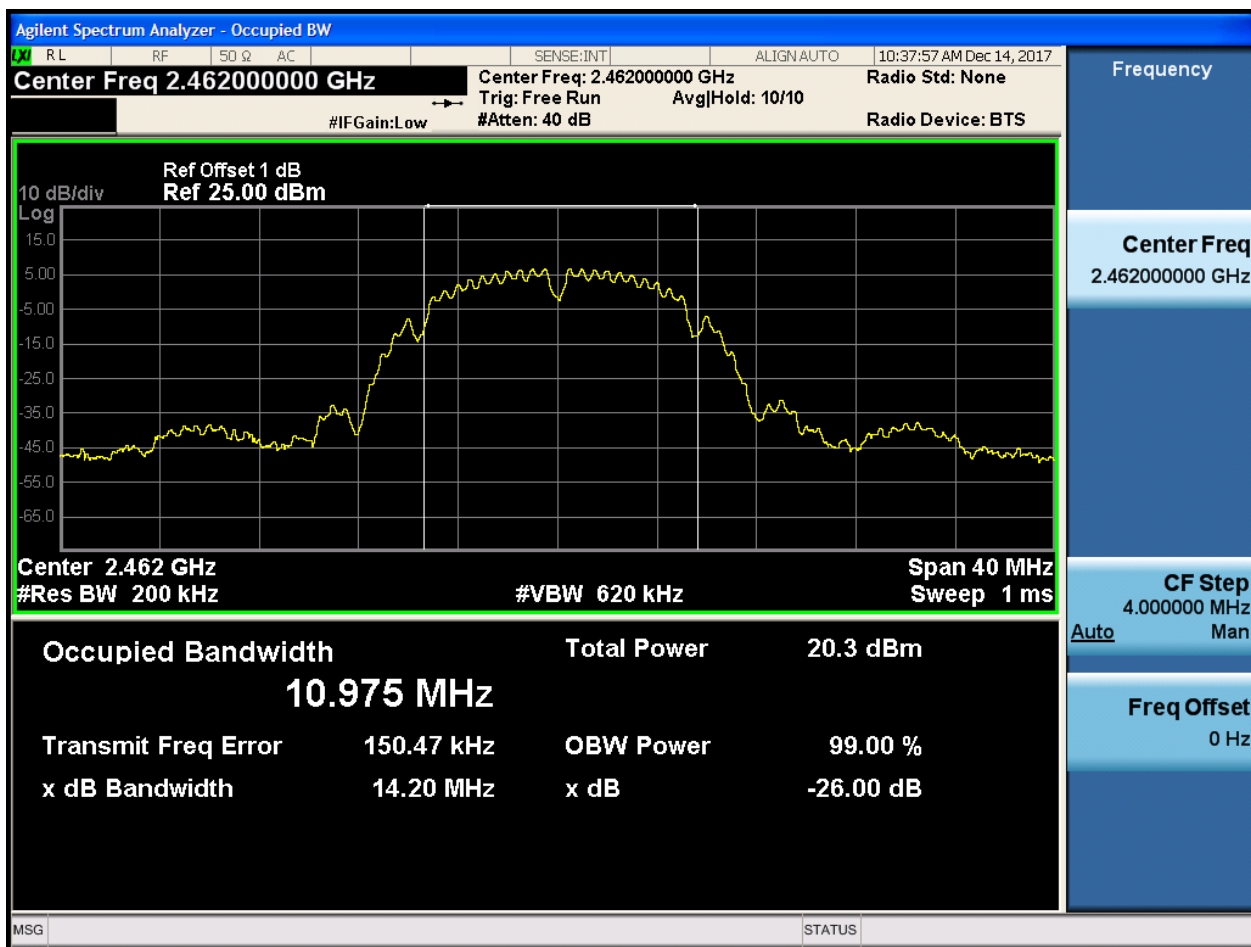


2.2 11B_M@Ant 1



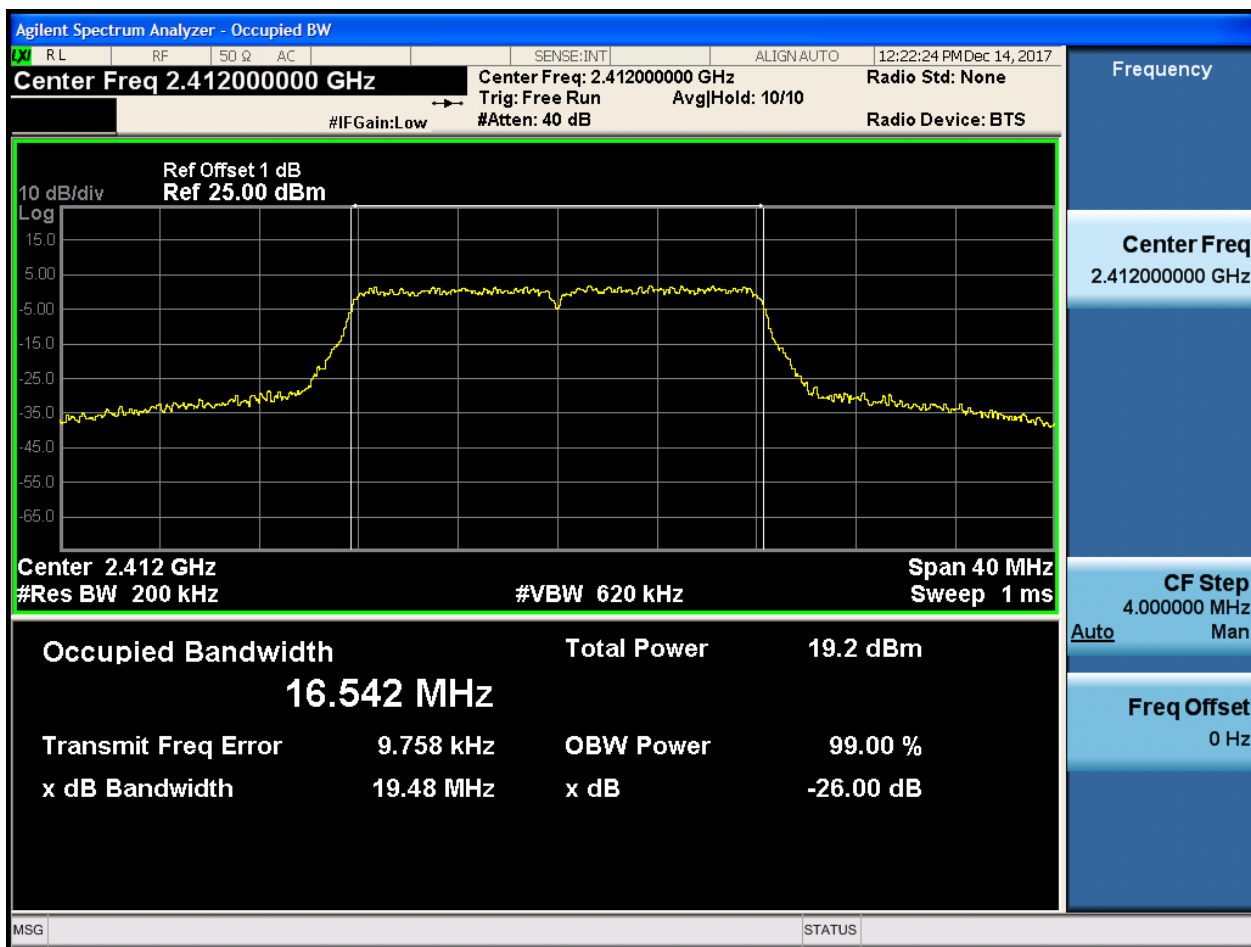


2.3 11B_H@Ant 1



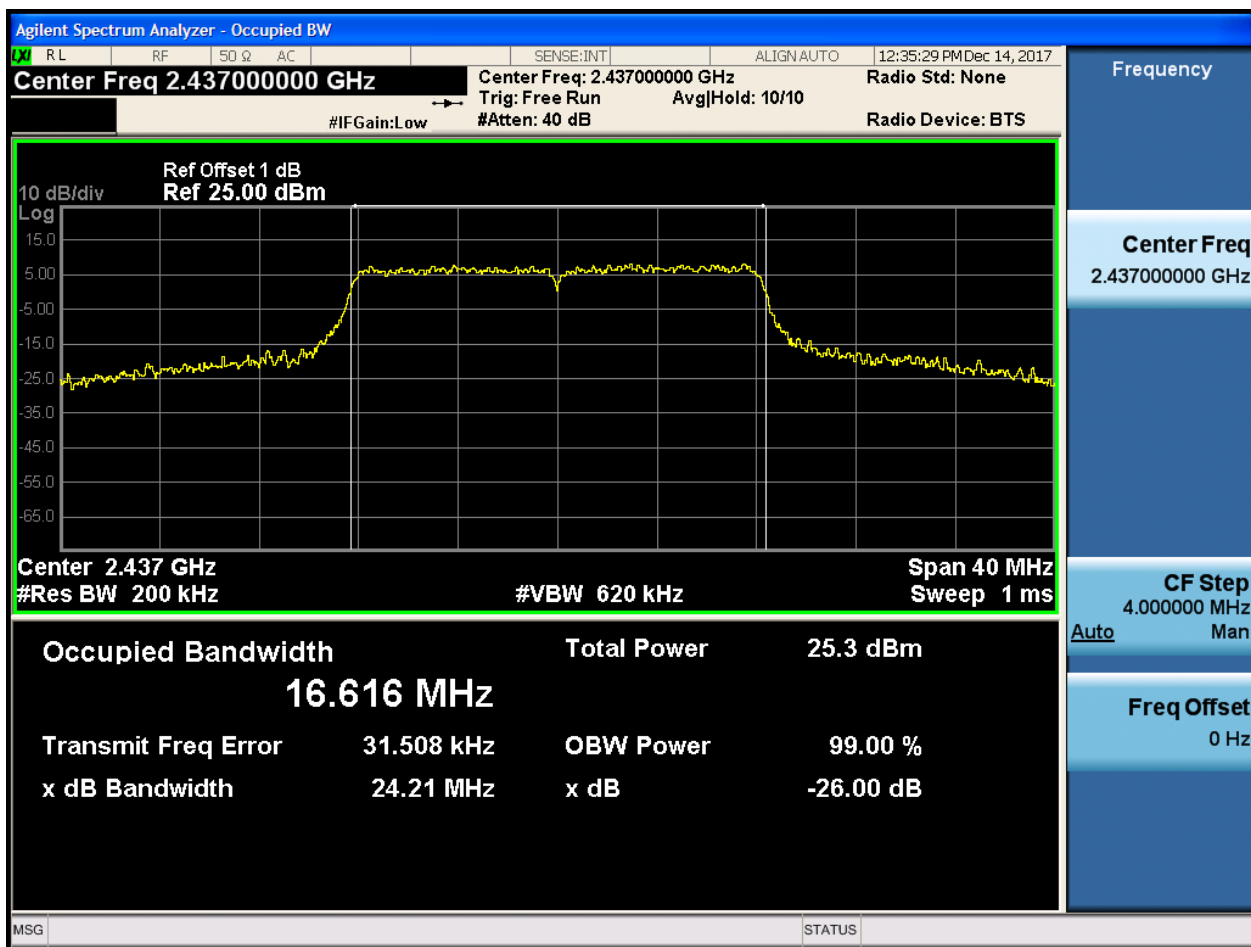


2.4 11G_L@Ant 1



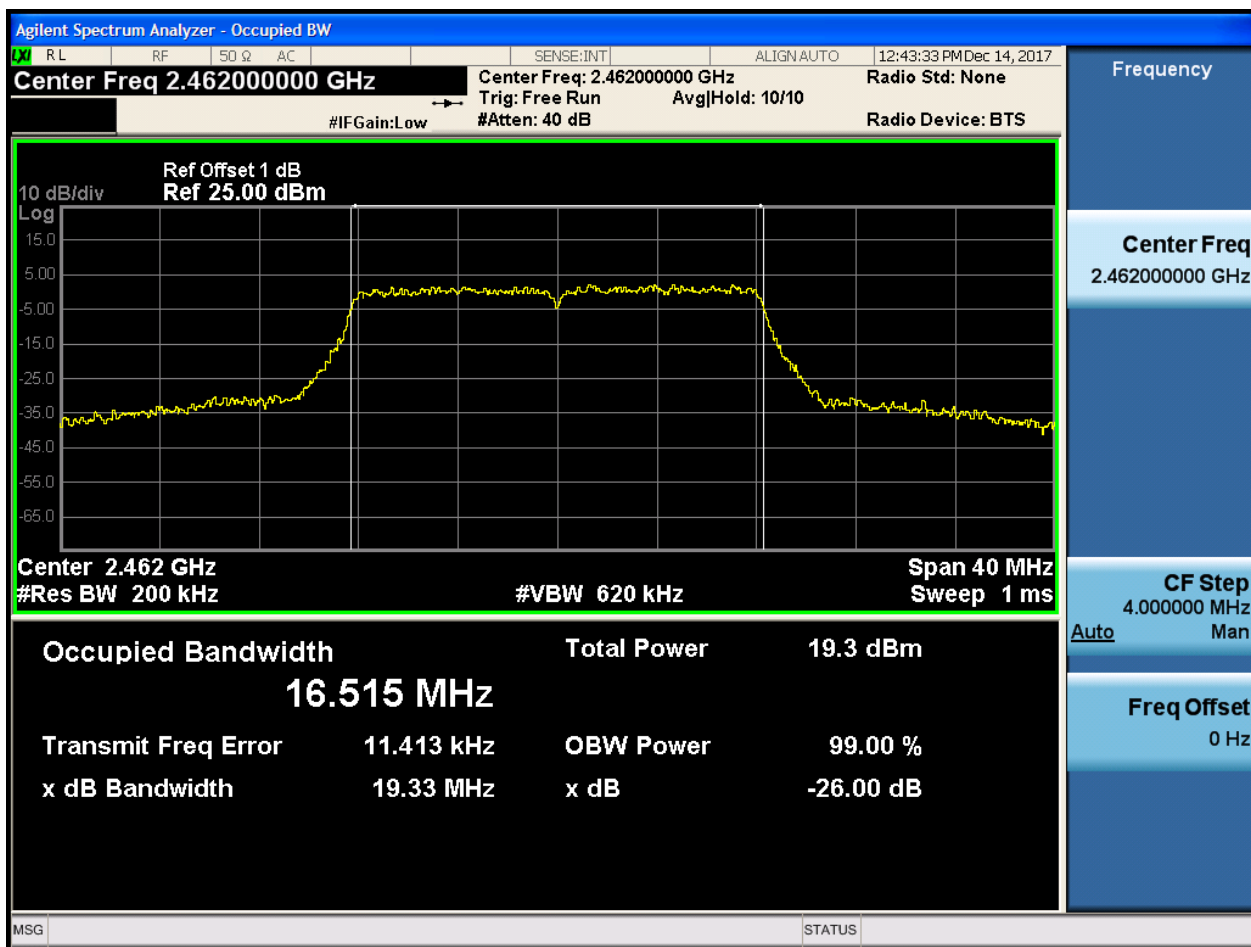


2.5 11G_M@Ant 1



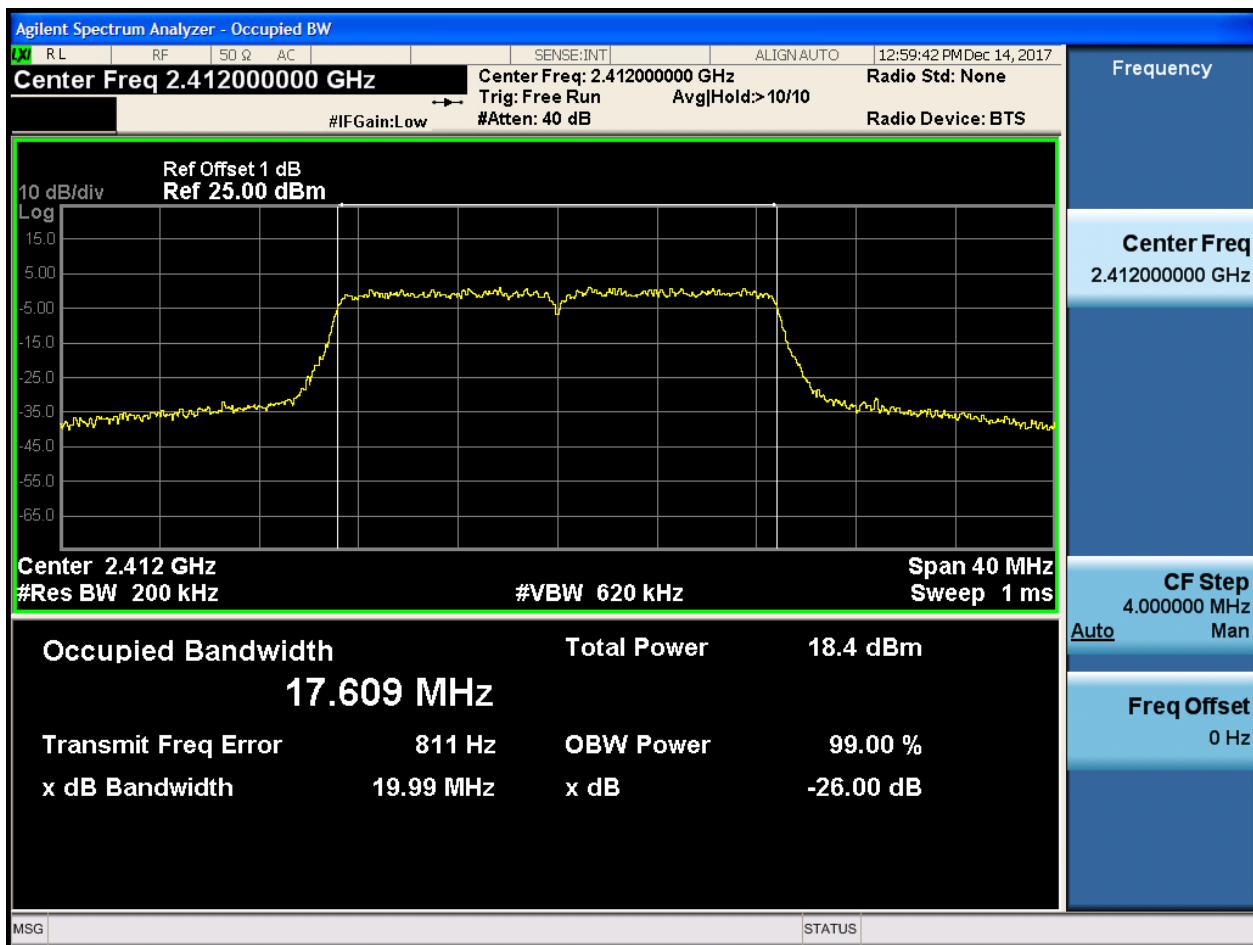


2.6 11G_H@Ant 1

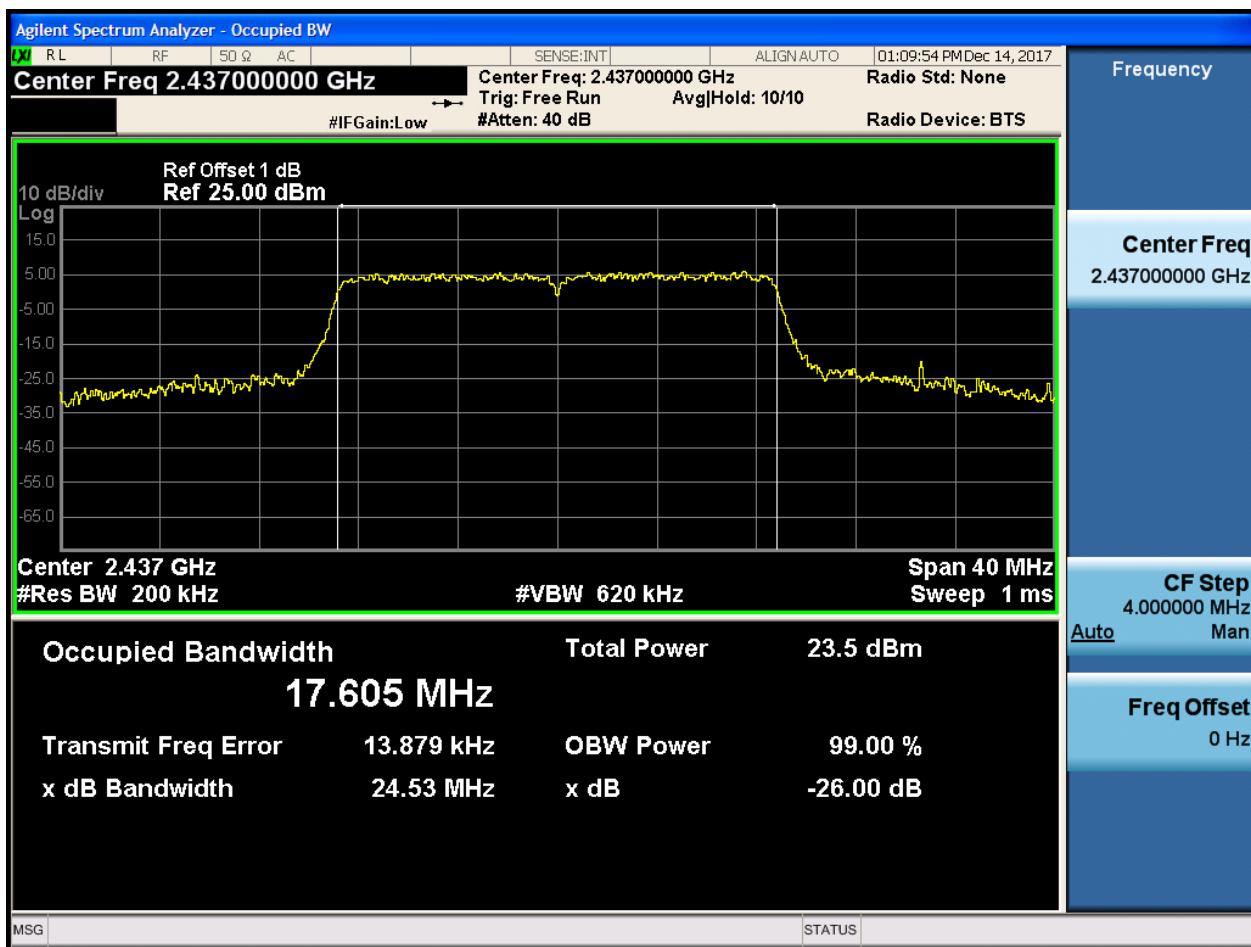




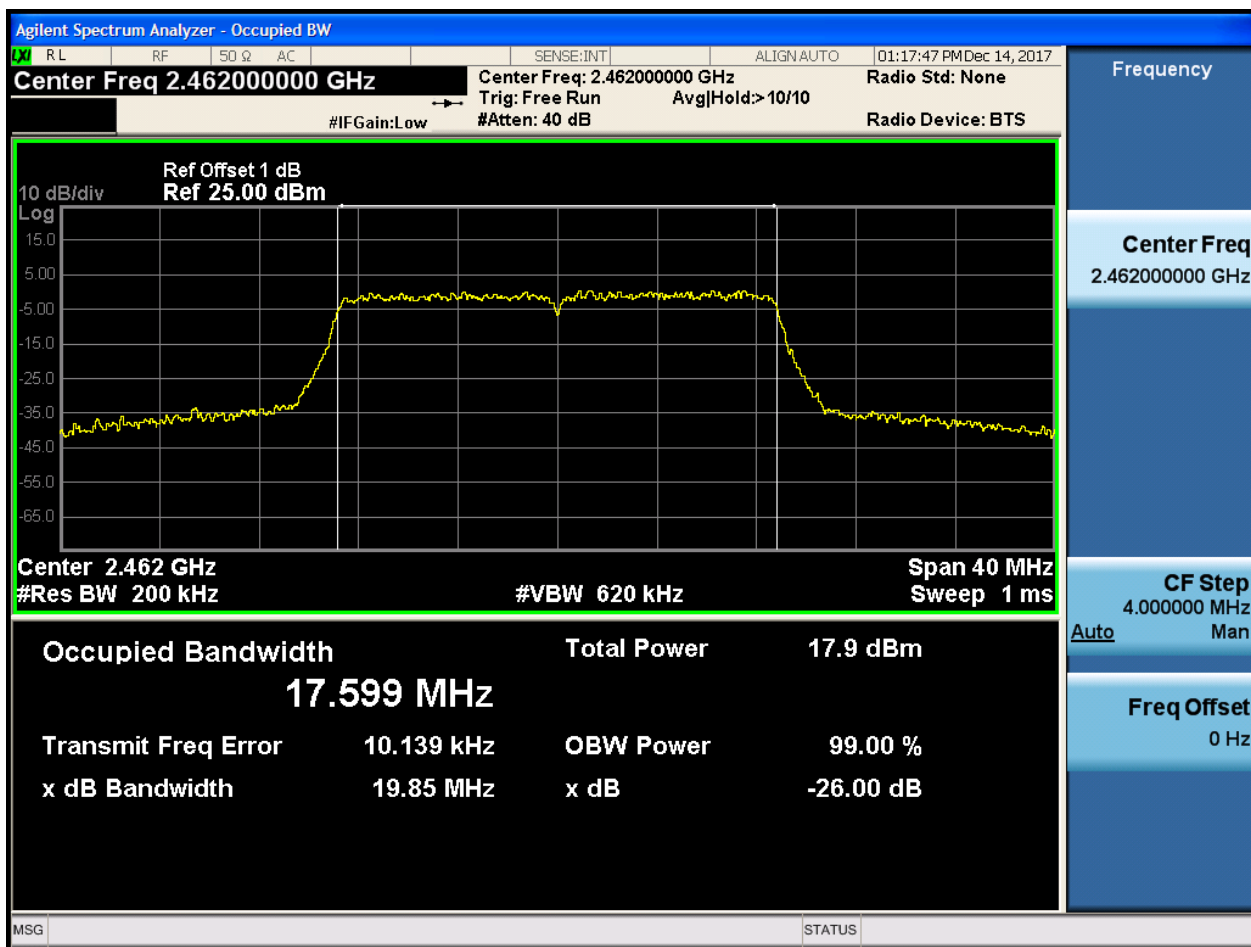
2.7 11N20_L@Ant 1



2.8 11N20_M@Ant 1

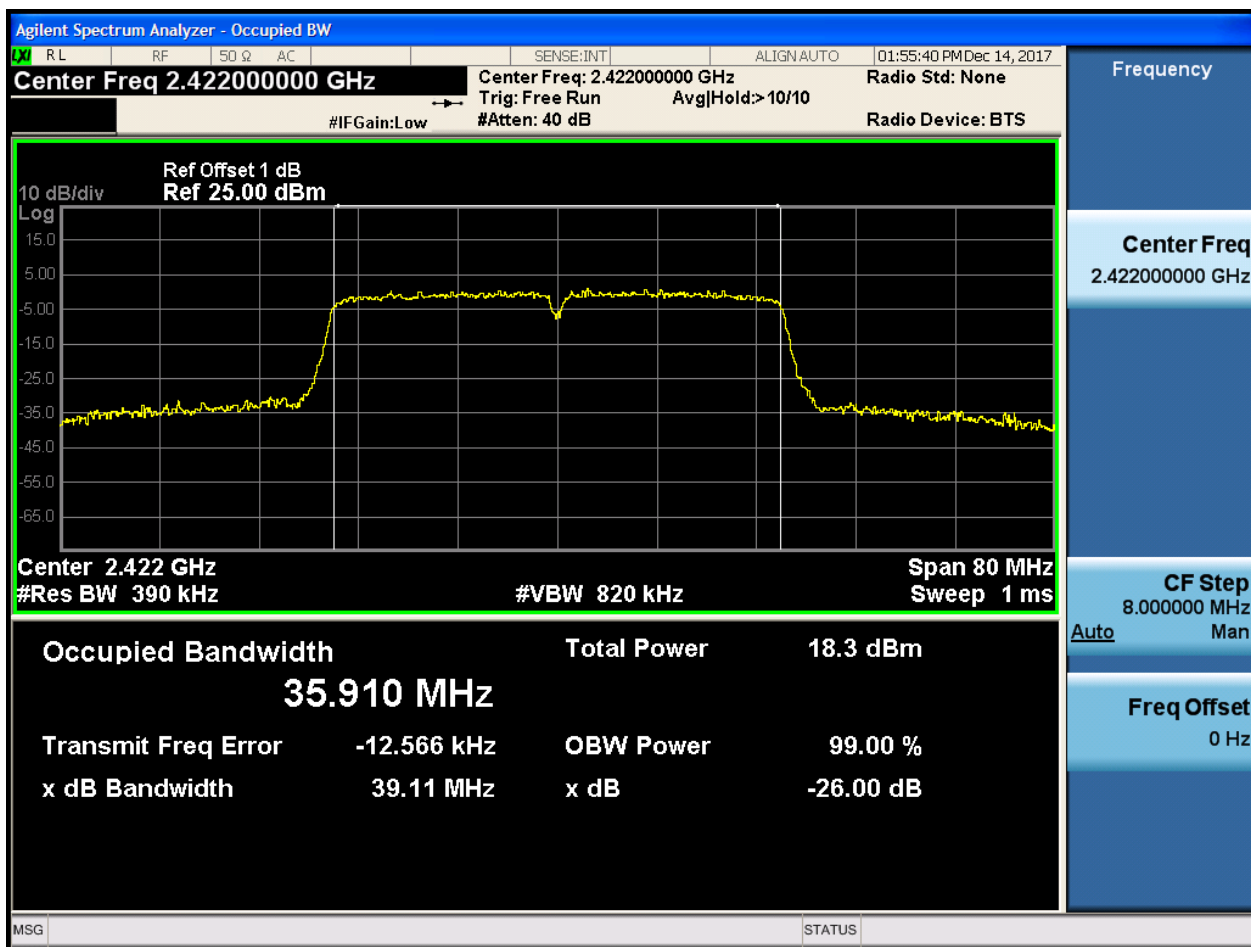


2.9 11N20_H@Ant 1



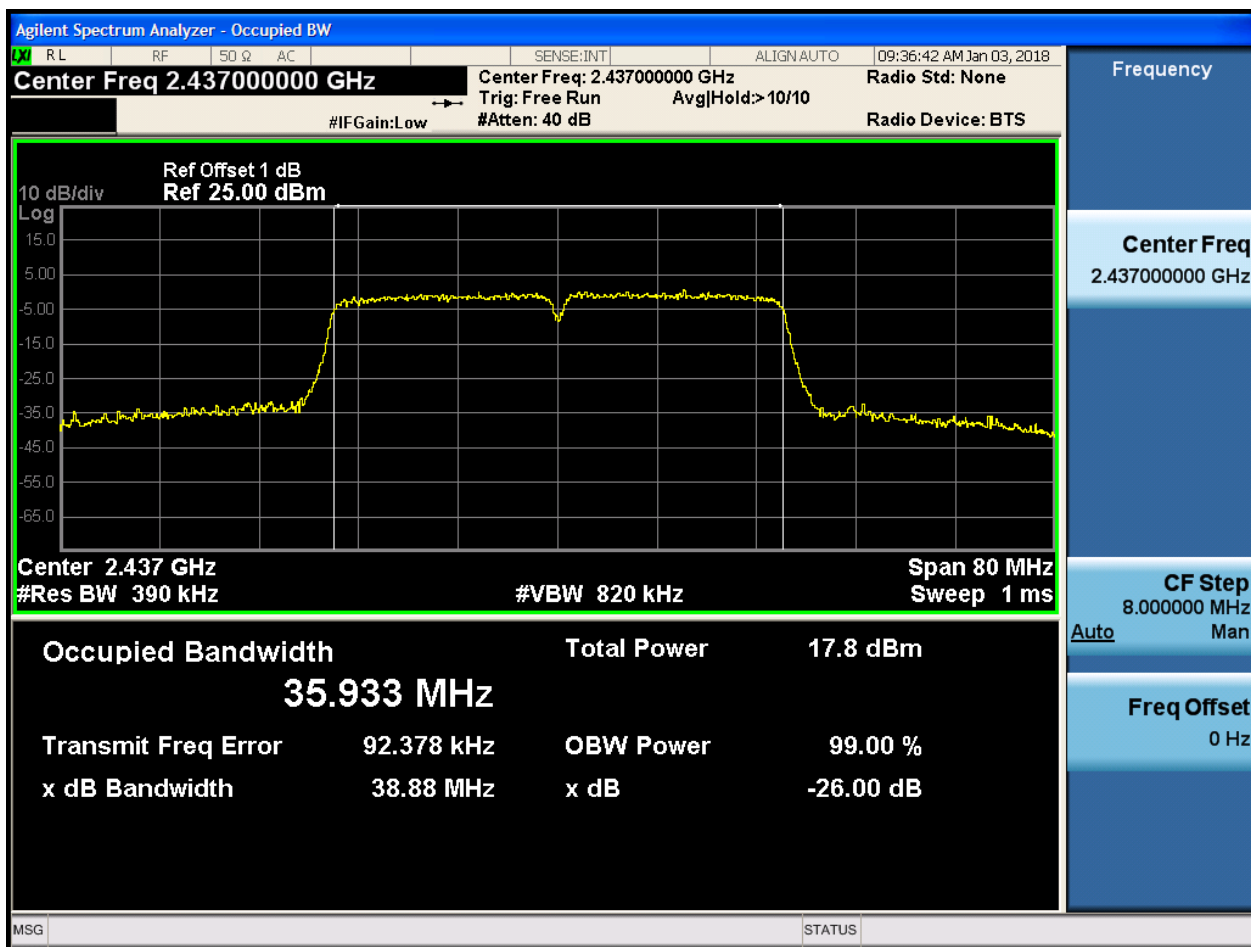


2.10 11N40_L@Ant 1



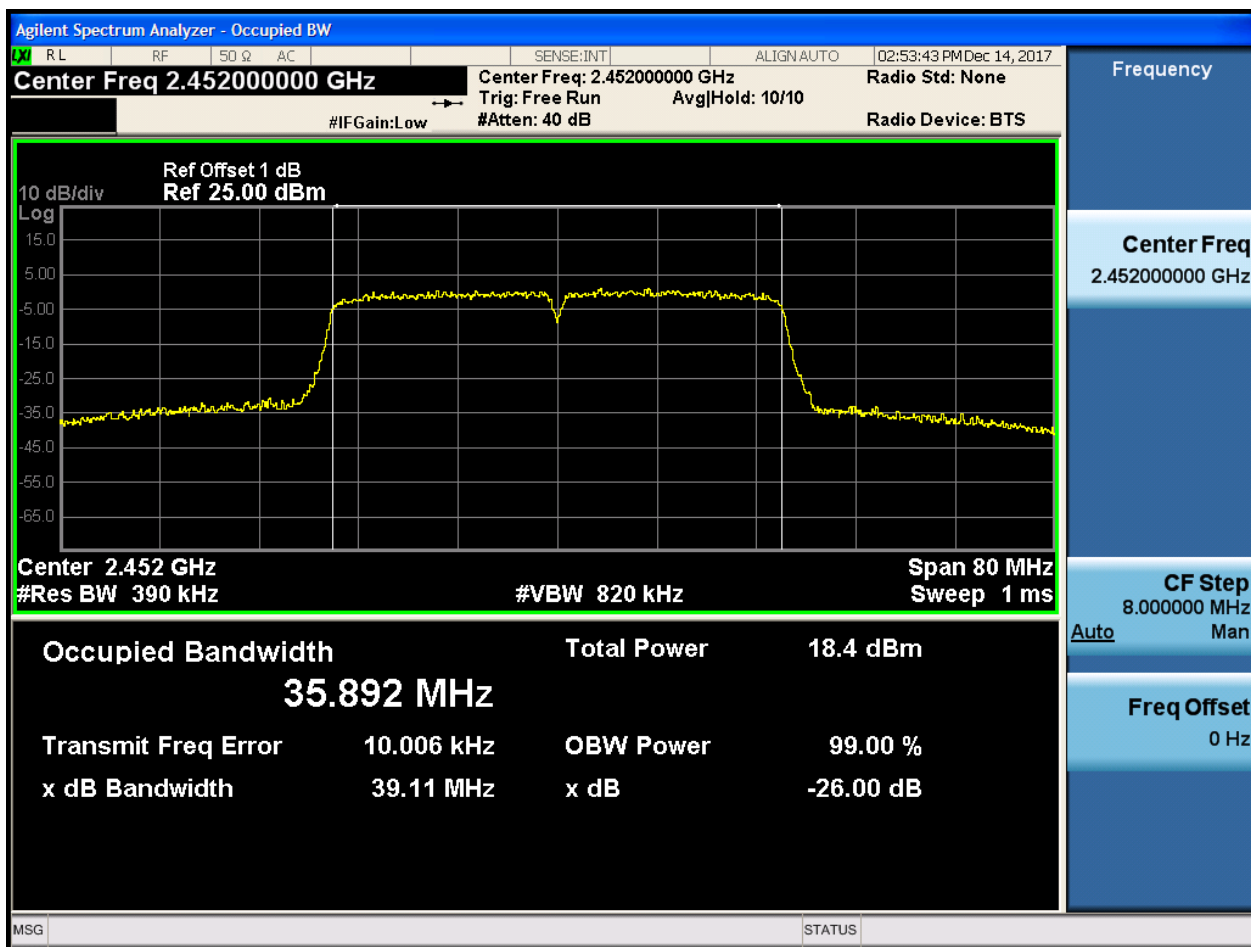


2.11 11N40_M@Ant 1





2.12 11N40_H@Ant 1



Appendix C: Duty Cycle

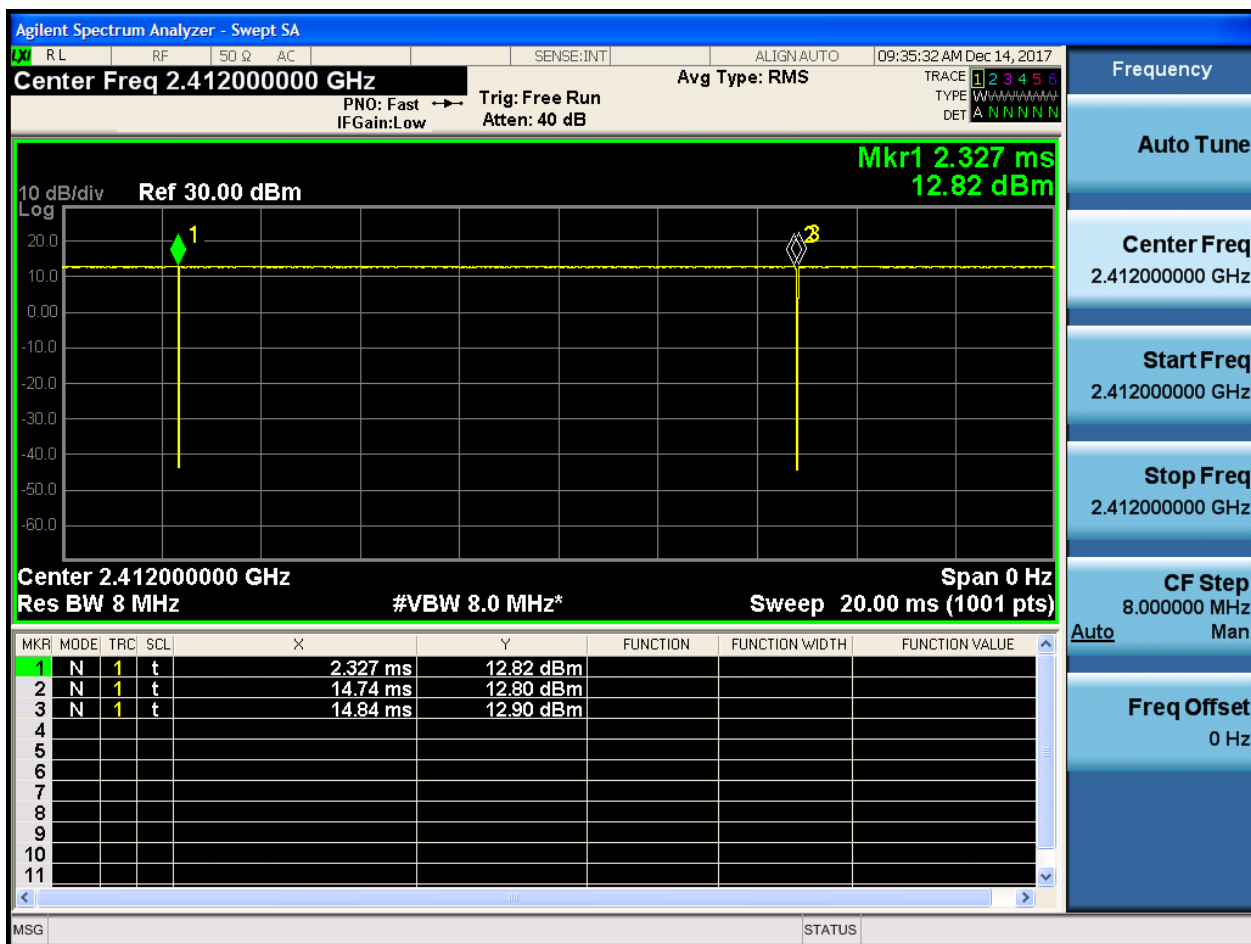
Part I - Test Results

Test Mode	TX Freq. [MHz]	Duty cycle [%]
11B	Ant 1: CH1,CH6,CH11	99
11G	Ant 1: CH1,CH6,CH11	97
11N_20	Ant 1: CH1,CH6,CH11	97
11N_40	Ant 1: CH3,CH6,CH9	95



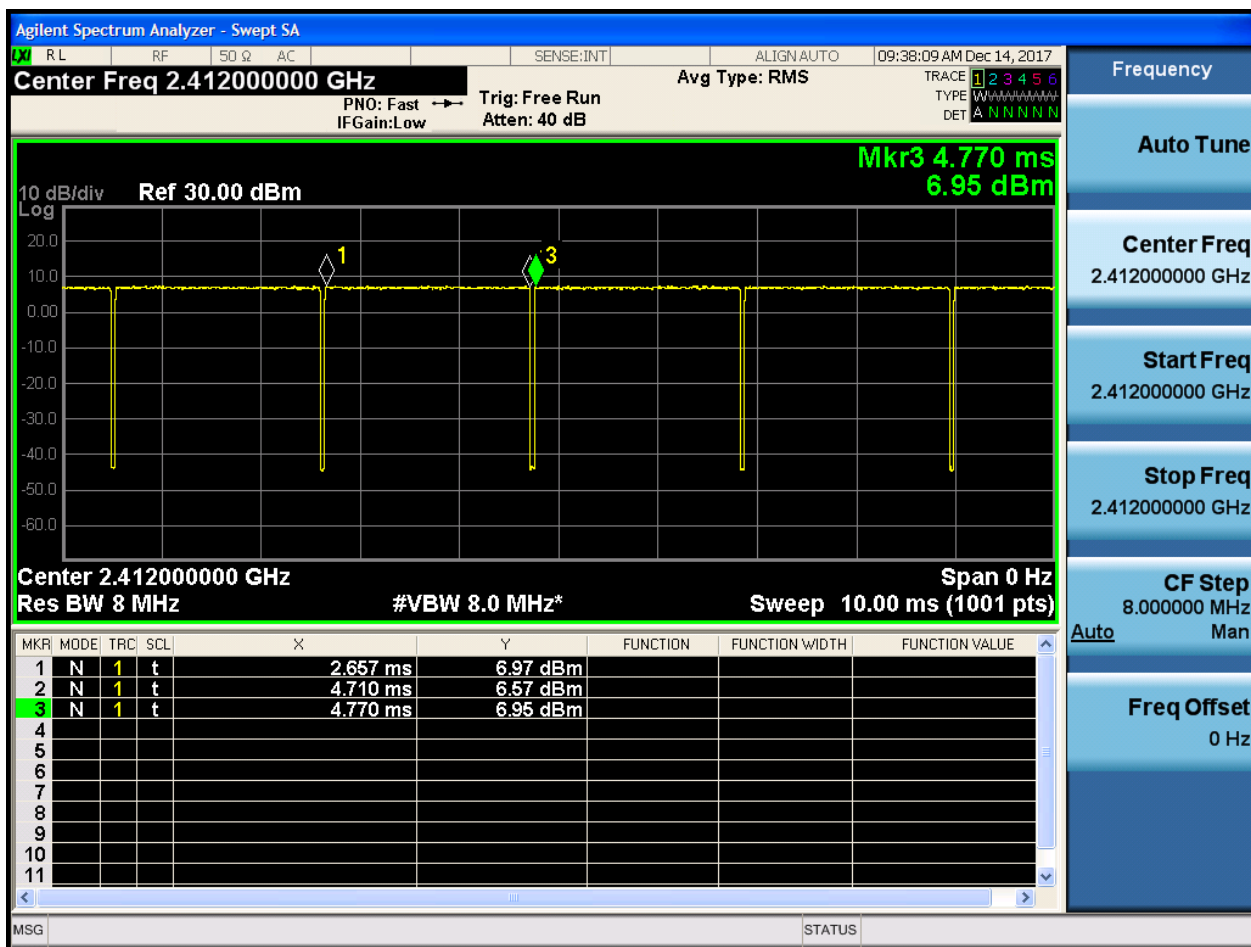
Part II - Test Plots

2.1 11B @Ant 1



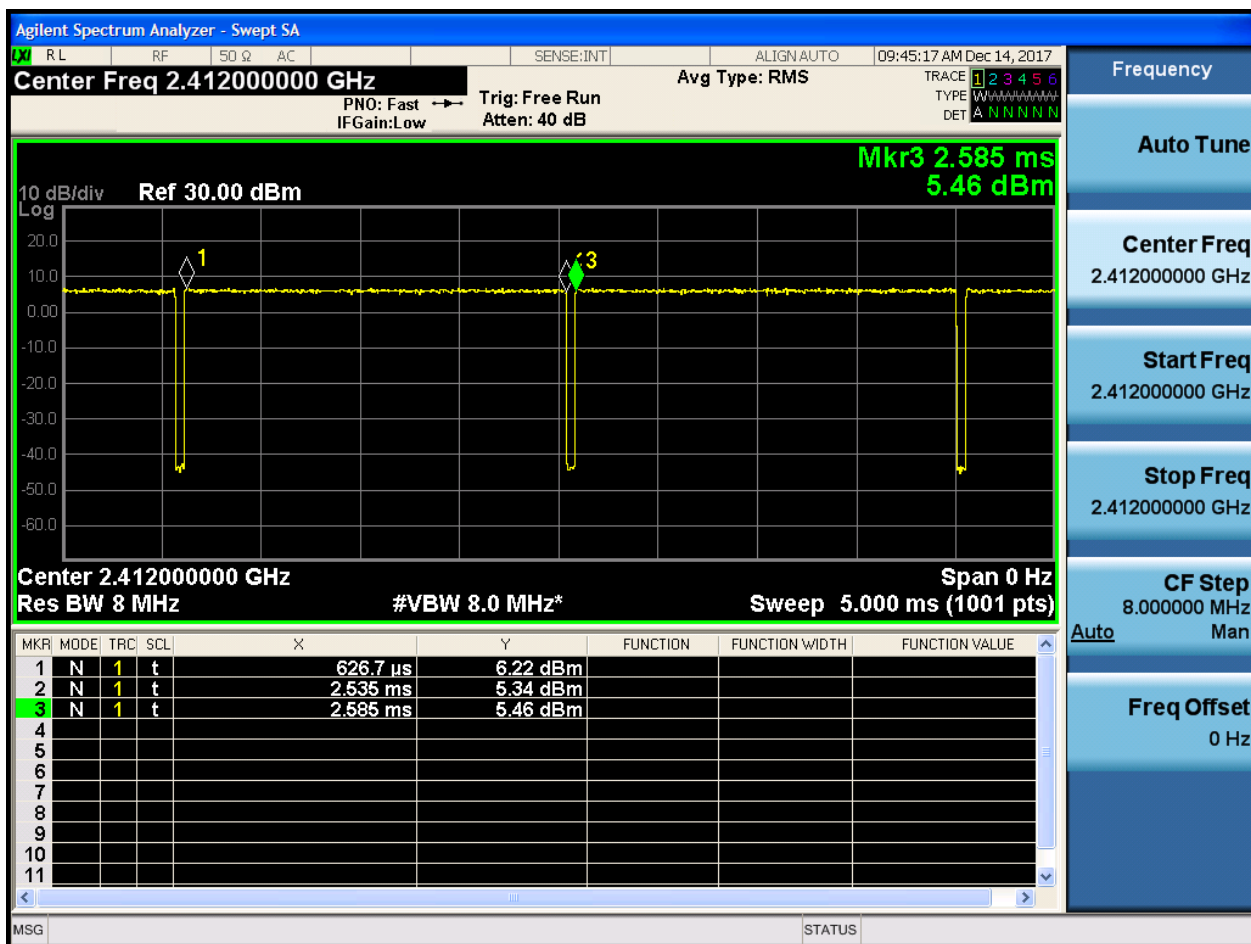


2.2 11G@Ant 1



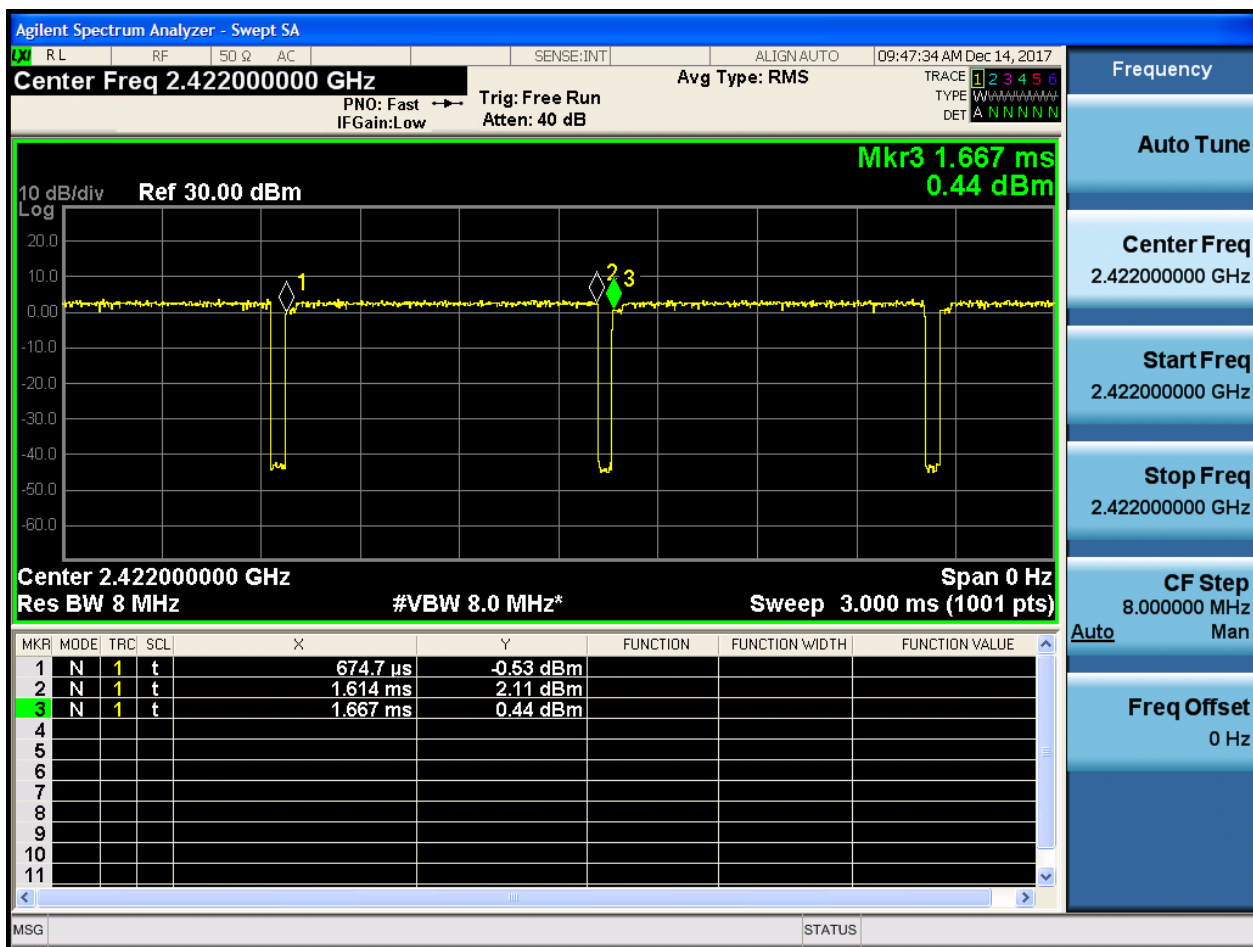


2.3 11N20@Ant 1





2.4 11N40@Ant 1



Appendix D: Maximum Conducted Average Output Power

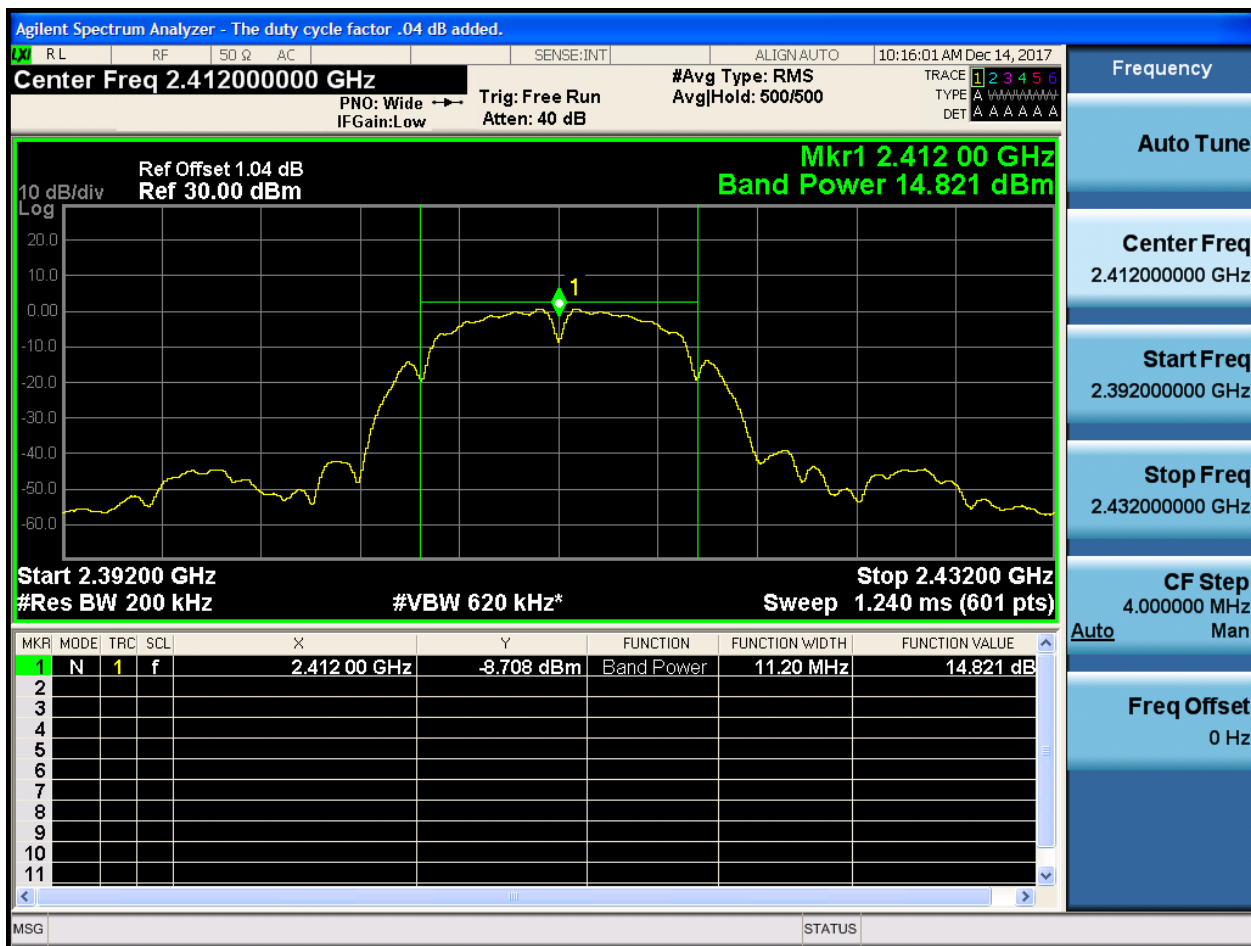
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Duty Cycle [%]	Power[dBm]	Verdict
11B	L	2412	Ant 1	99	14.82	pass
11B	M	2437	Ant 1	99	14.68	pass
11B	H	2462	Ant 1	99	14.81	pass
11G	L	2412	Ant 1	97	12.17	pass
11G	M	2437	Ant 1	97	10.95	pass
11G	H	2462	Ant 1	97	12.27	pass
11N20	L	2412	Ant 1	97	11.29	pass
11N20	M	2437	Ant 1	97	10.25	pass
11N20	H	2462	Ant 1	97	10.85	pass
11N40	L	2422	Ant 1	95	8.02	pass
11N40	M	2437	Ant 1	95	8.37	pass
11N40	H	2452	Ant 1	95	7.59	pass



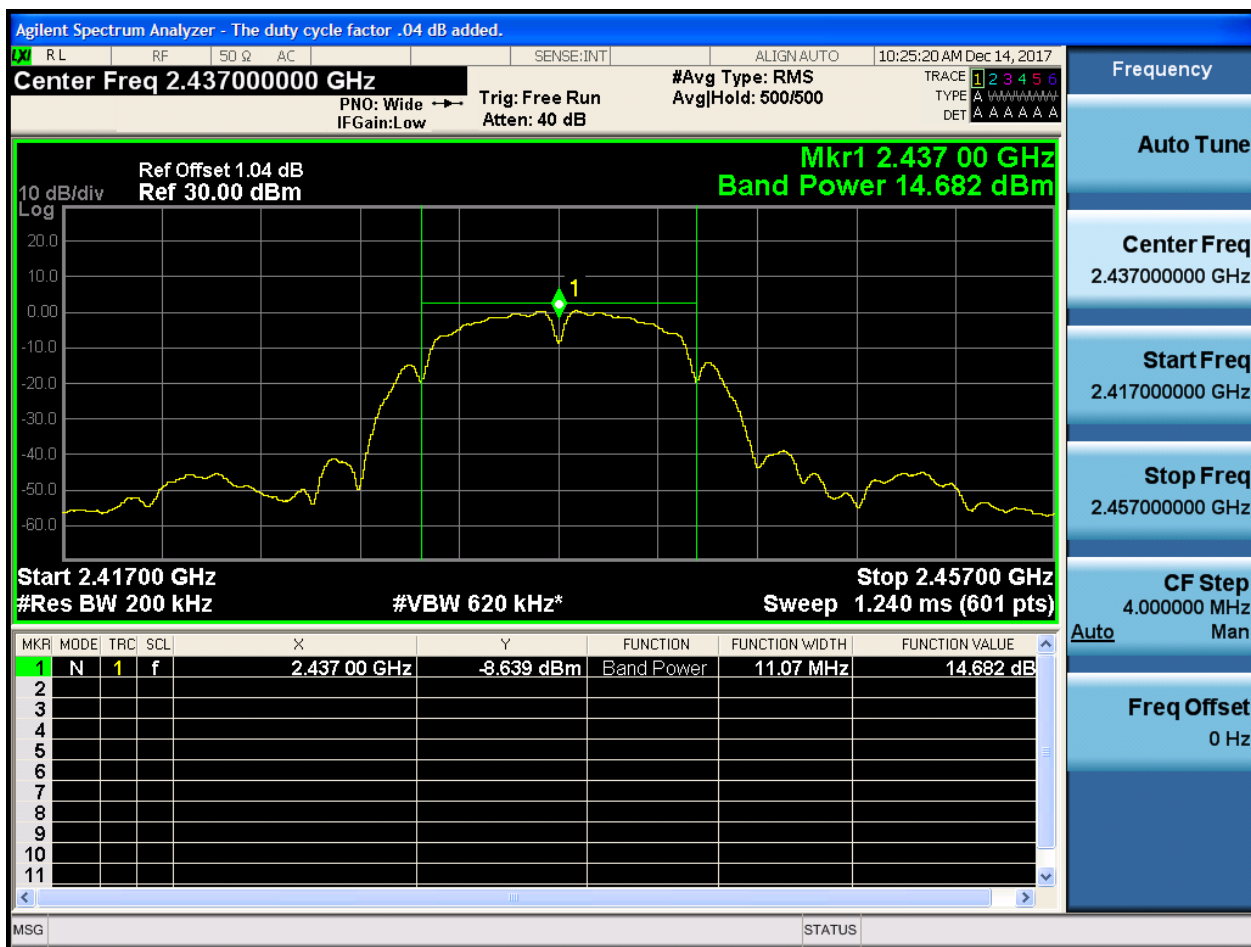
Part II - Test Plots

2.1 11B_L@Ant 1



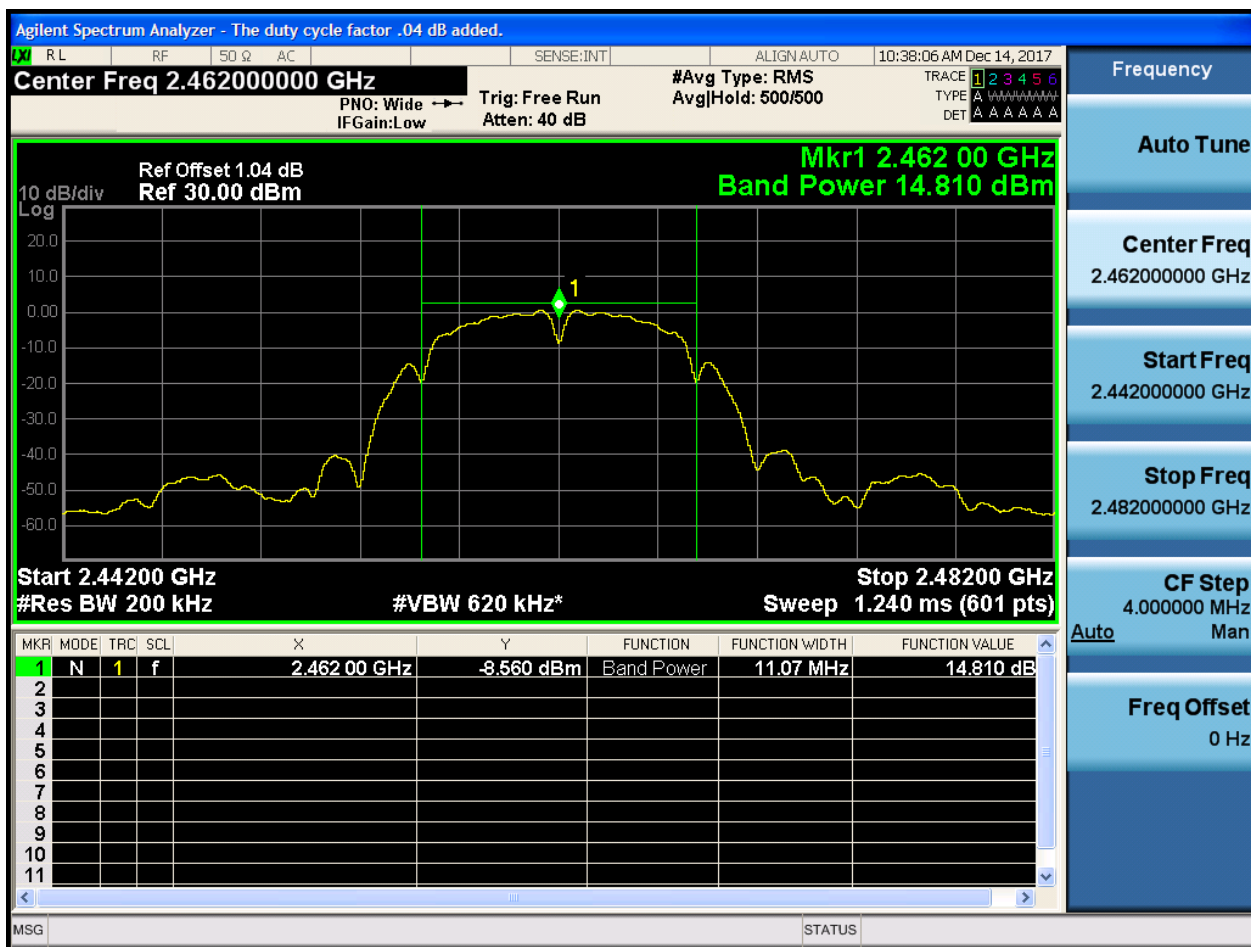


2.2 11B_M@Ant 1



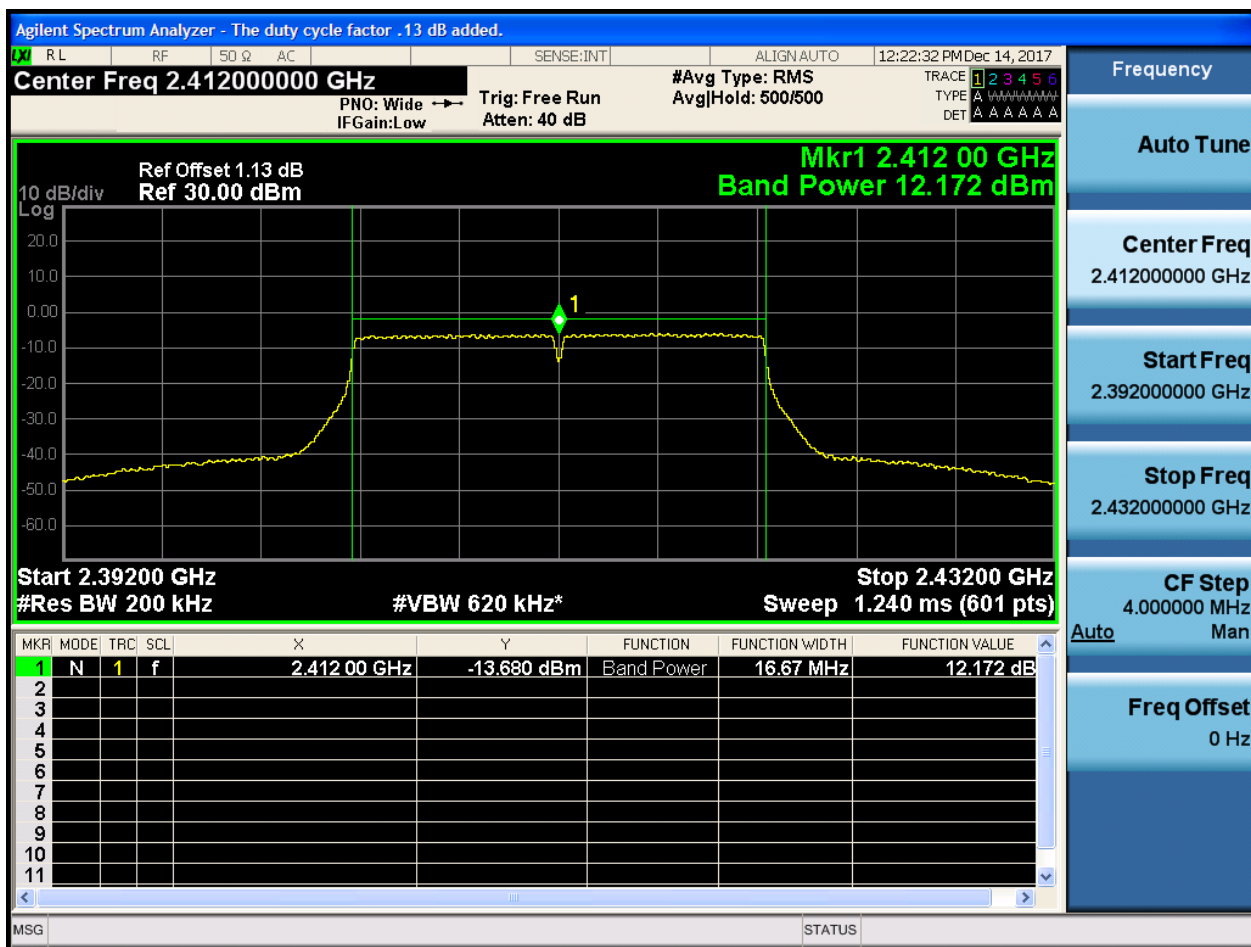


2.3 11B_H@Ant 1



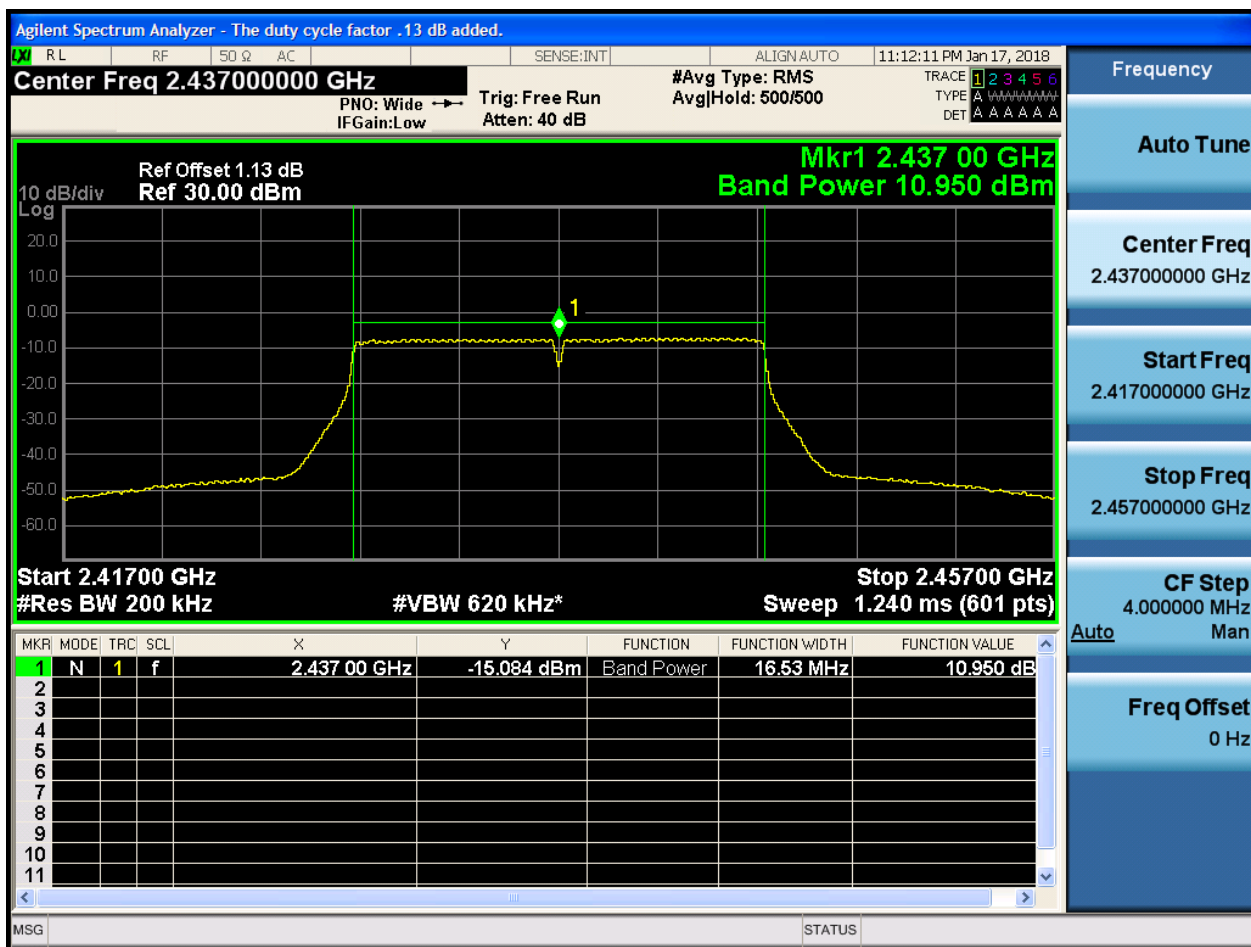


2.4 11G_L@Ant 1



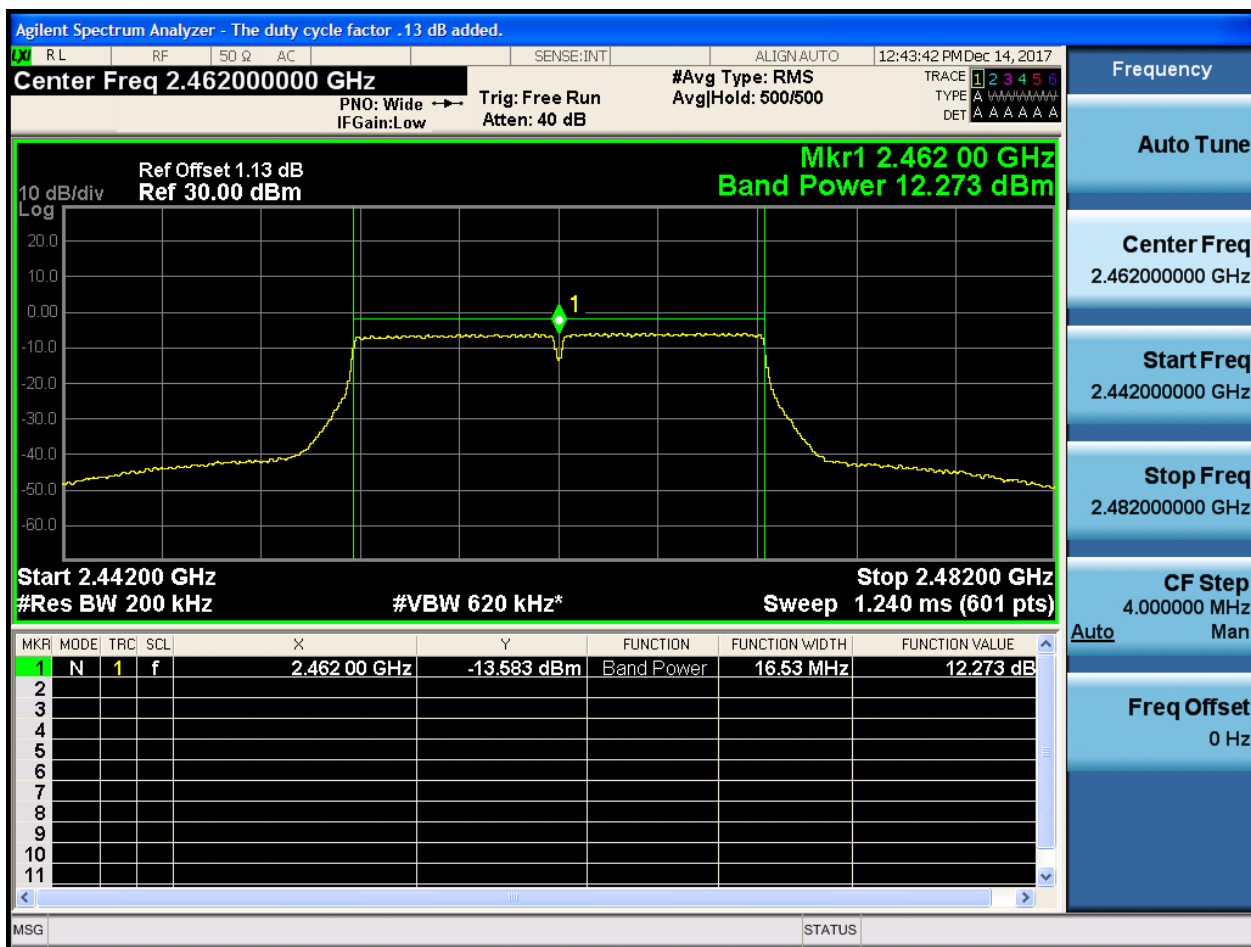


2.5 11G_M@Ant 1



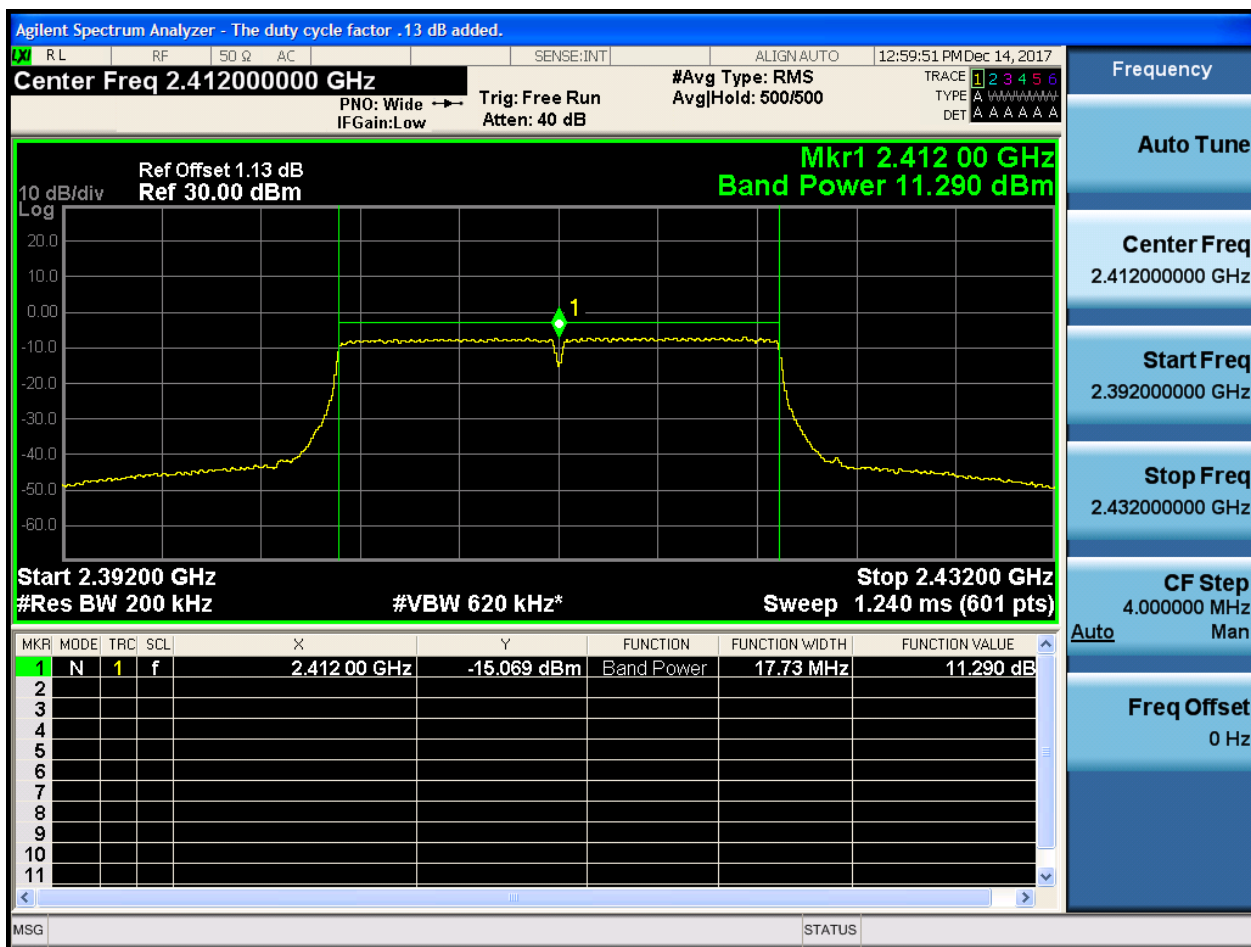


2.6 11G_H@Ant 1



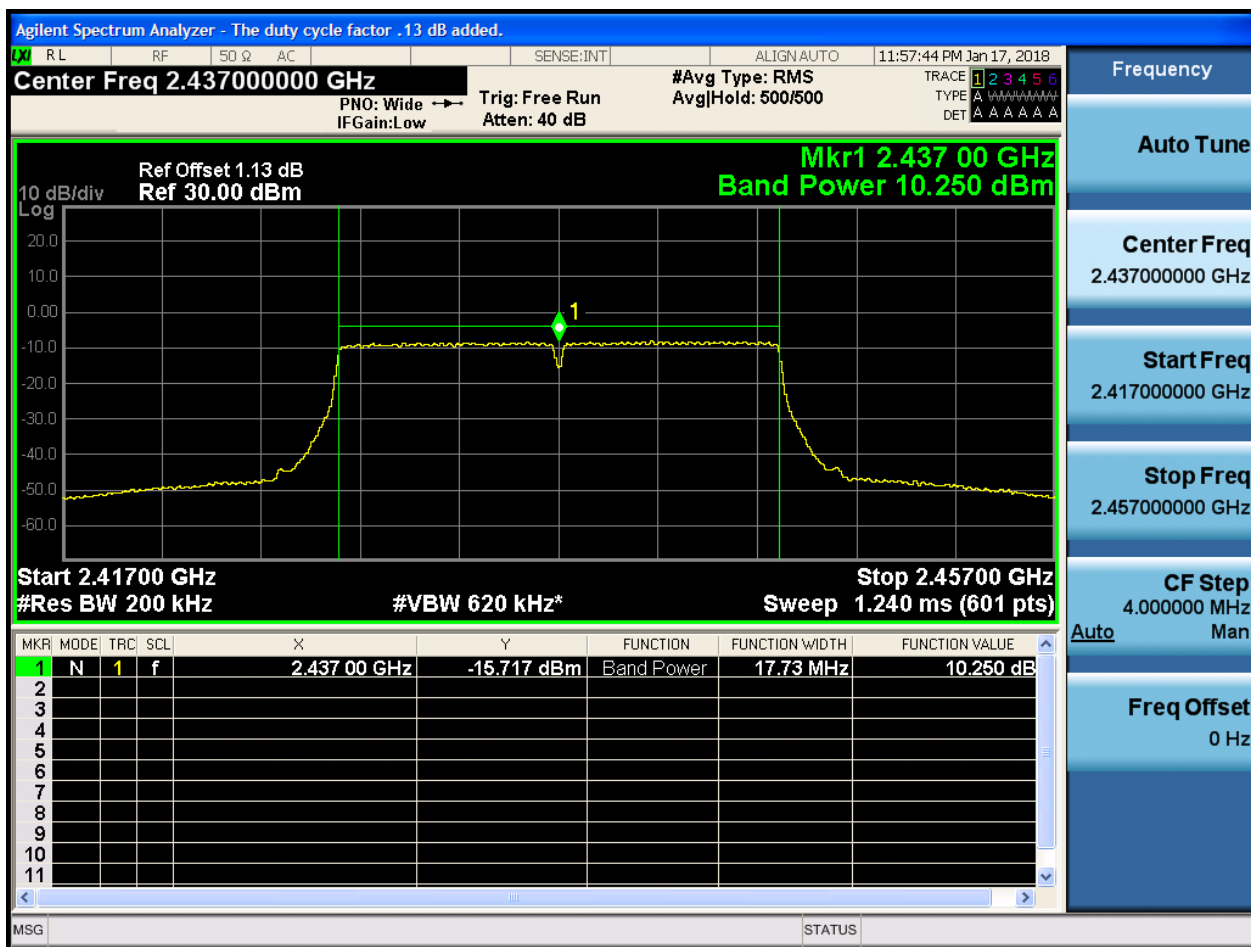


2.7 11N20_L@Ant 1



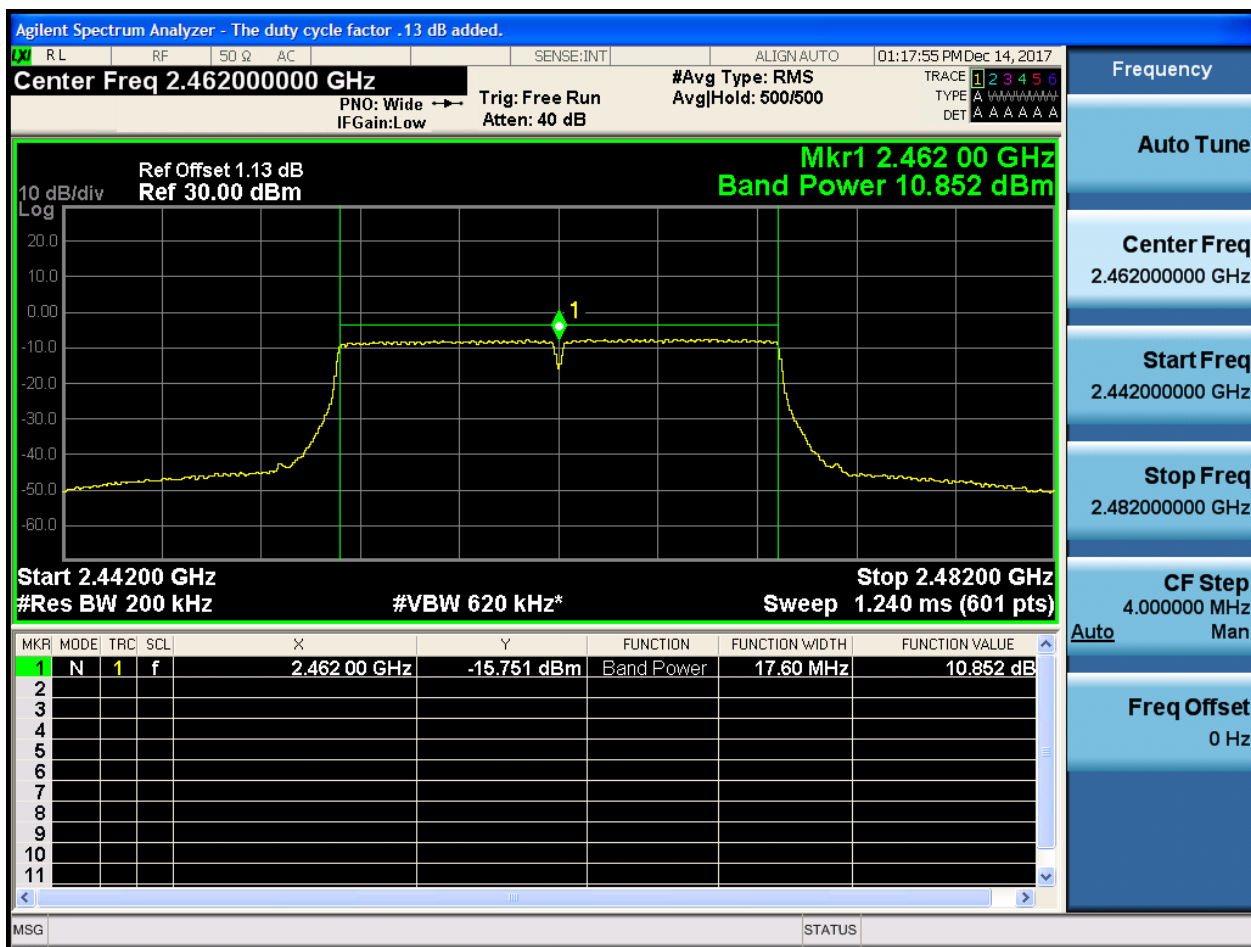


2.8 11N20_M@Ant 1



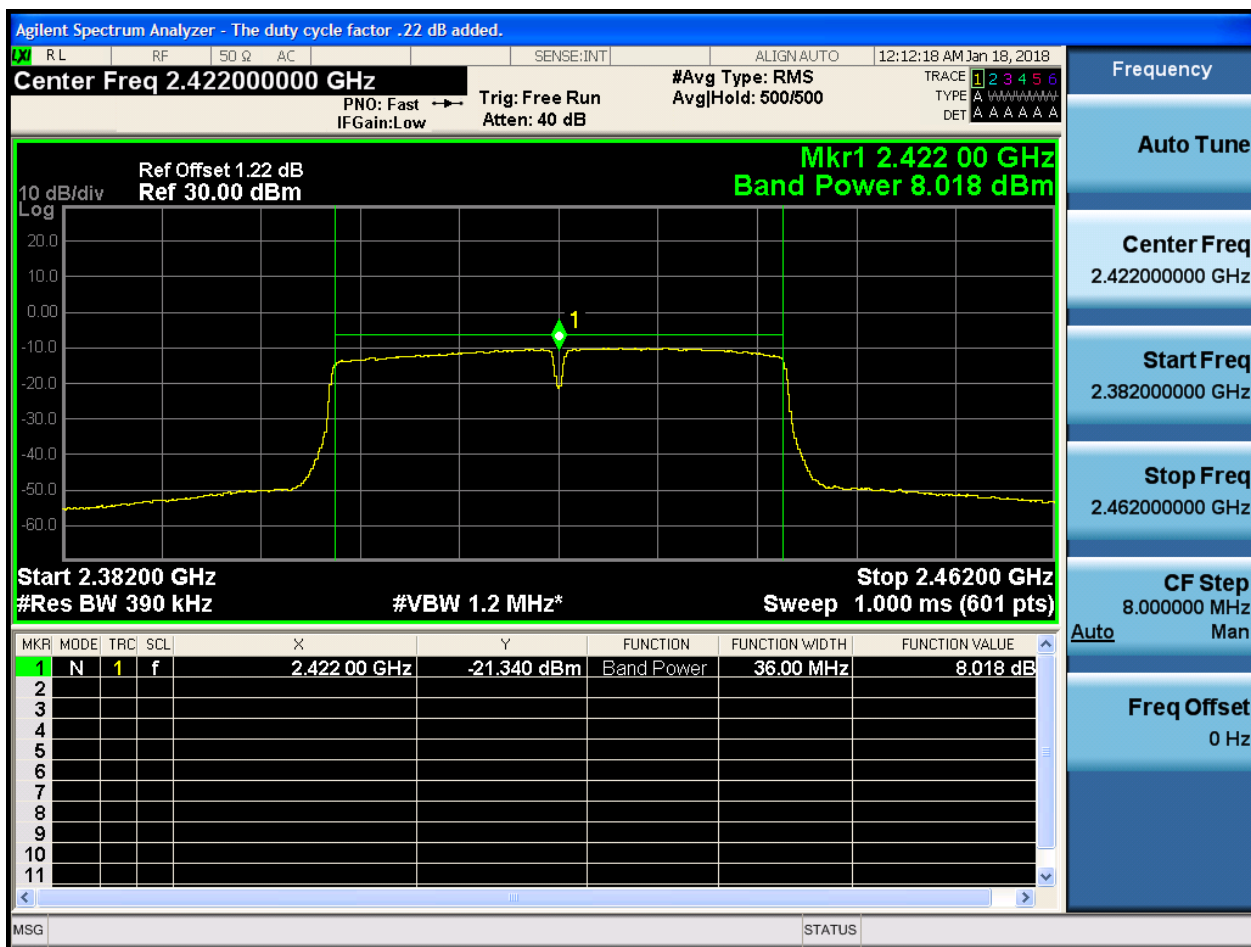


2.9 11N20_H@Ant 1



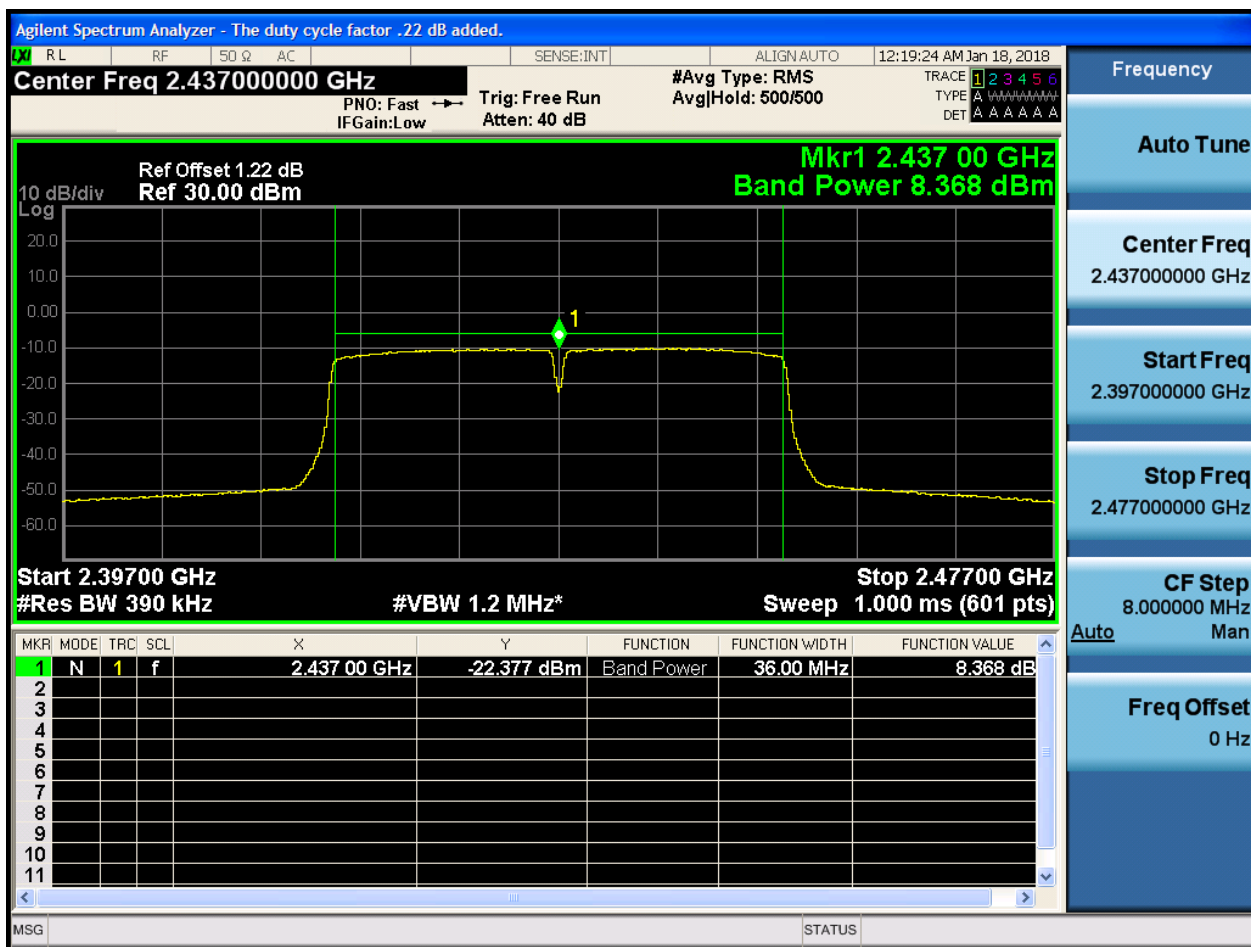


2.10 11N40_L@Ant 1



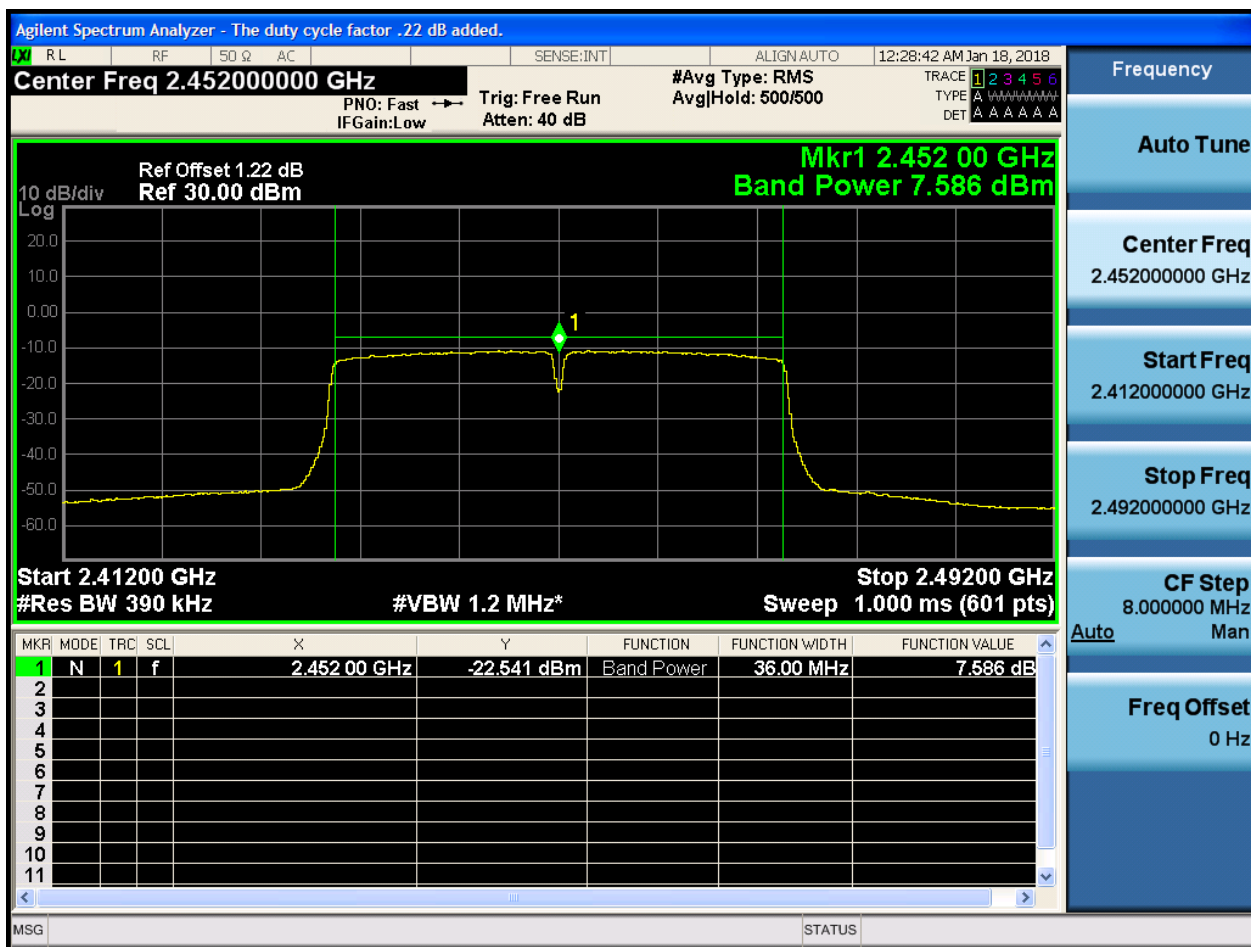


2.11 11N40_M@Ant 1





2.12 11N40_H@Ant 1



Appendix E: Maximum Power Spectral Density Level

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Duty Cycle [%]	PSD[dBm/10 kHz]	Verdict
11B	L	2412	Ant 1	99	-11.55	pass
11B	M	2437	Ant 1	99	-11.80	pass
11B	H	2462	Ant 1	99	-11.47	pass
11G	L	2412	Ant 1	97	-17.02	pass
11G	M	2437	Ant 1	97	-18.71	pass
11G	H	2462	Ant 1	97	-17.23	pass
11N20	L	2412	Ant 1	97	-18.27	pass
11N20	M	2437	Ant 1	97	-19.45	pass
11N20	H	2462	Ant 1	97	-18.22	pass
11N40	L	2422	Ant 1	95	-23.40	pass
11N40	M	2437	Ant 1	95	-23.56	pass
11N40	H	2452	Ant 1	95	-24.43	pass

Part II - Test Plots

2.1 11B_L@Ant 1





2.2 11B_M@Ant 1



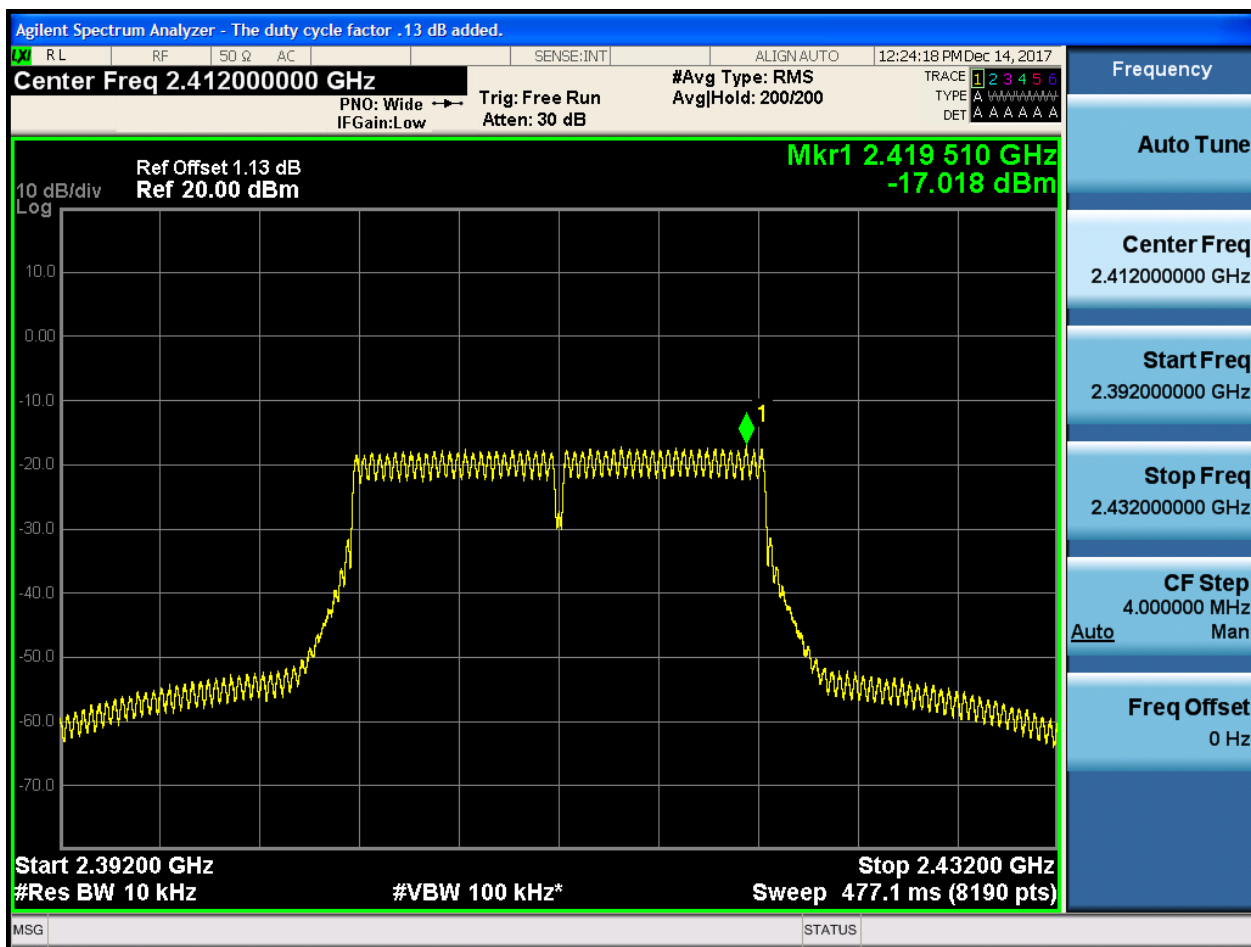


2.3 11B_H@Ant 1

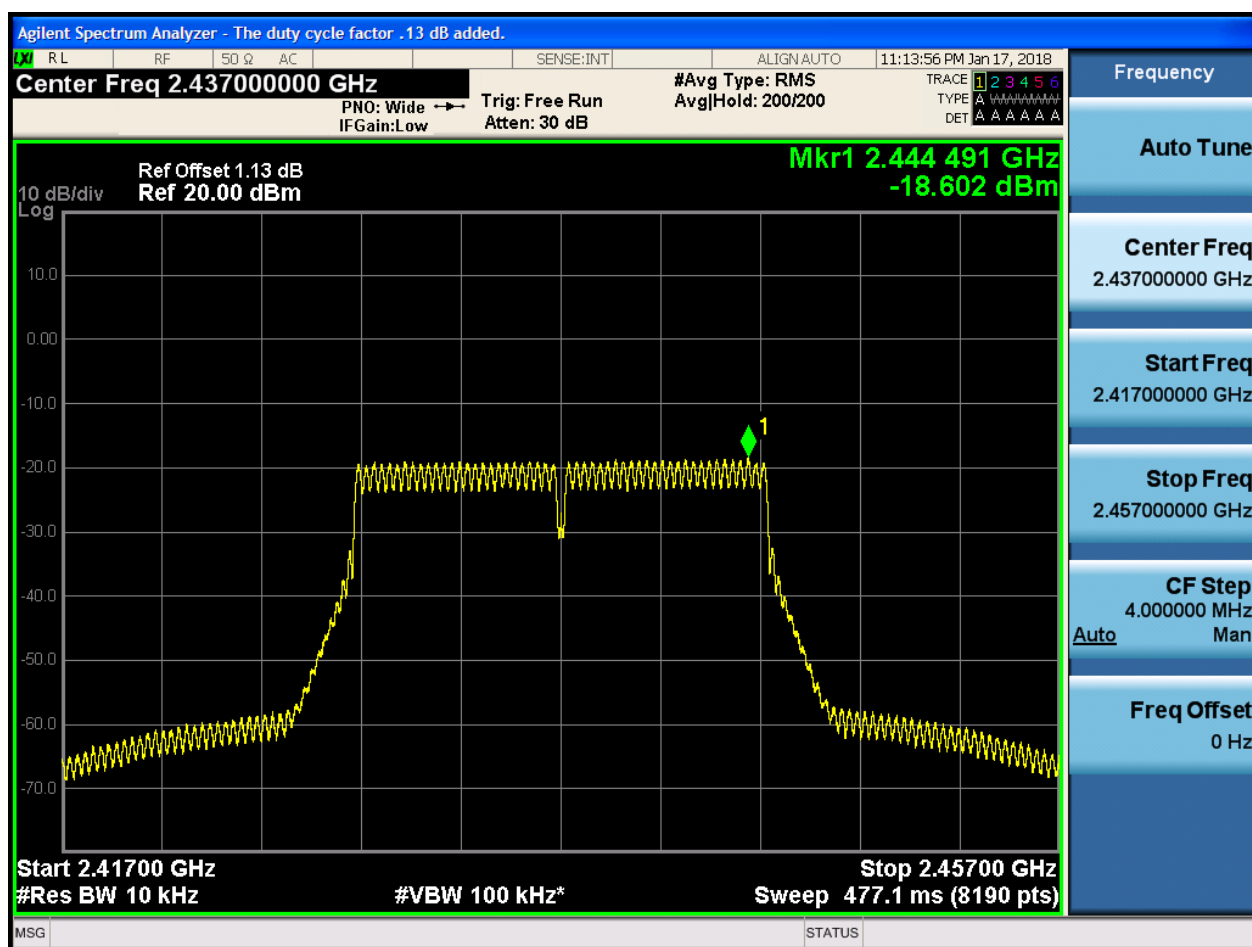




2.4 11G_L@Ant 1

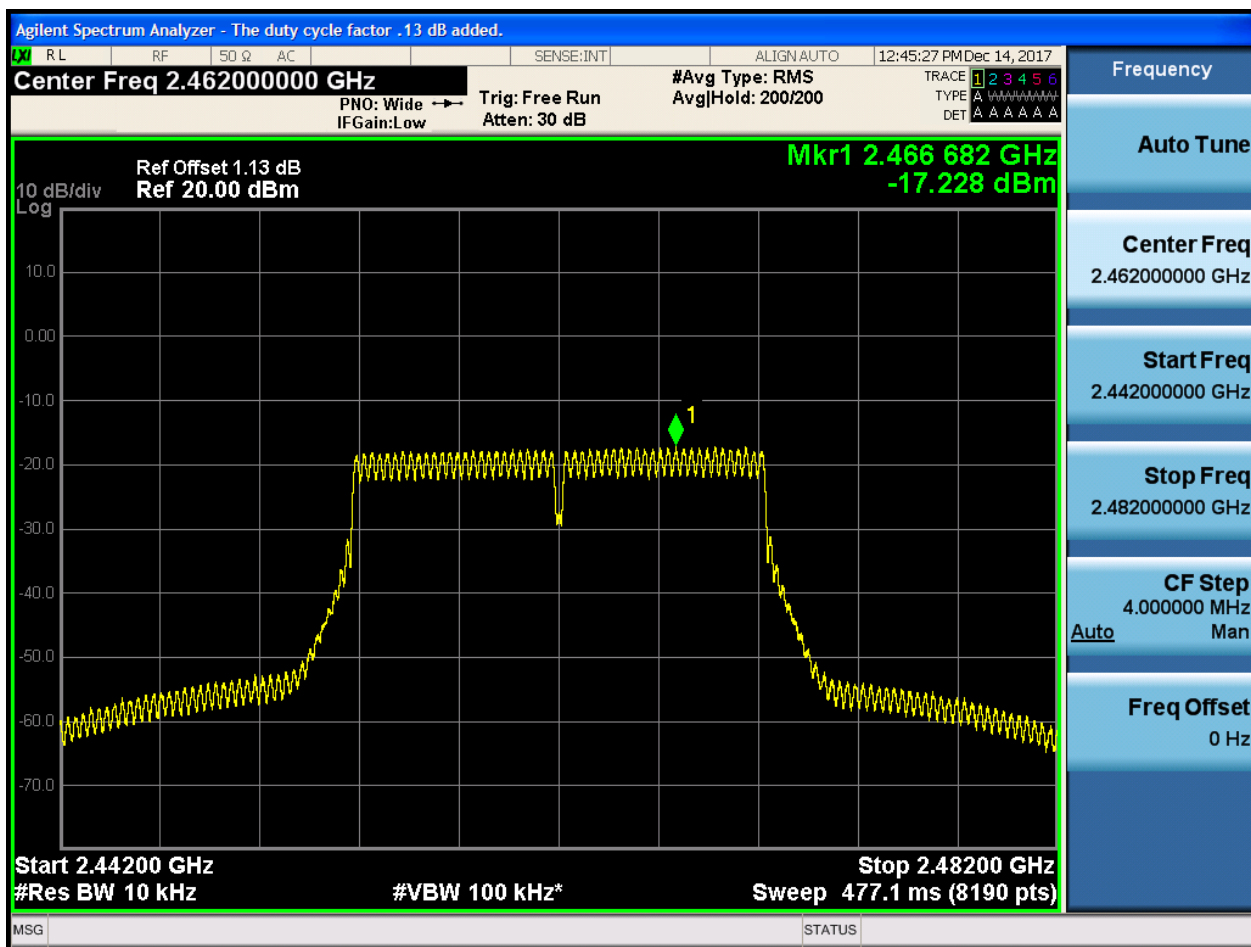


2.5 11G_M@Ant 1



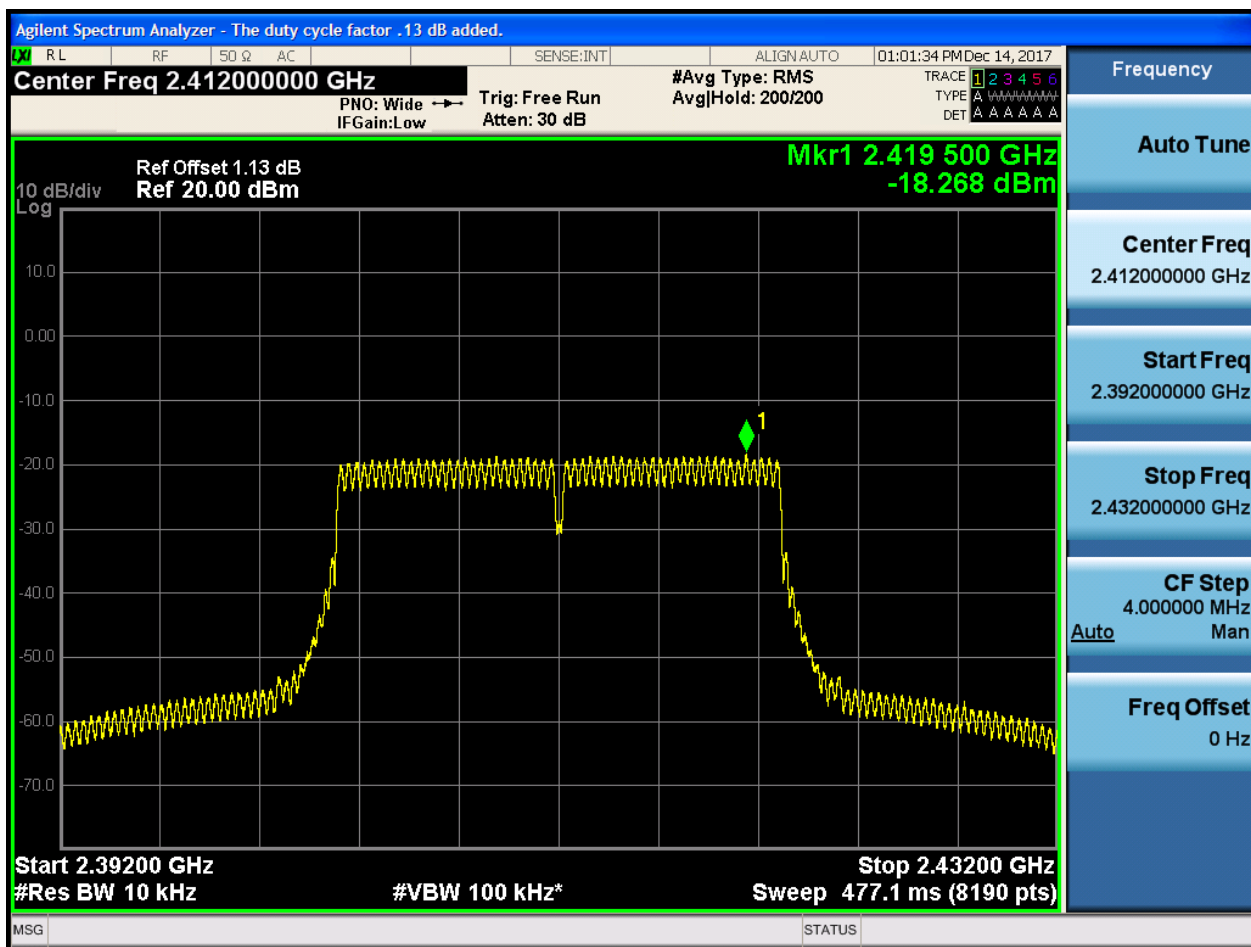


2.6 11G_H@Ant 1



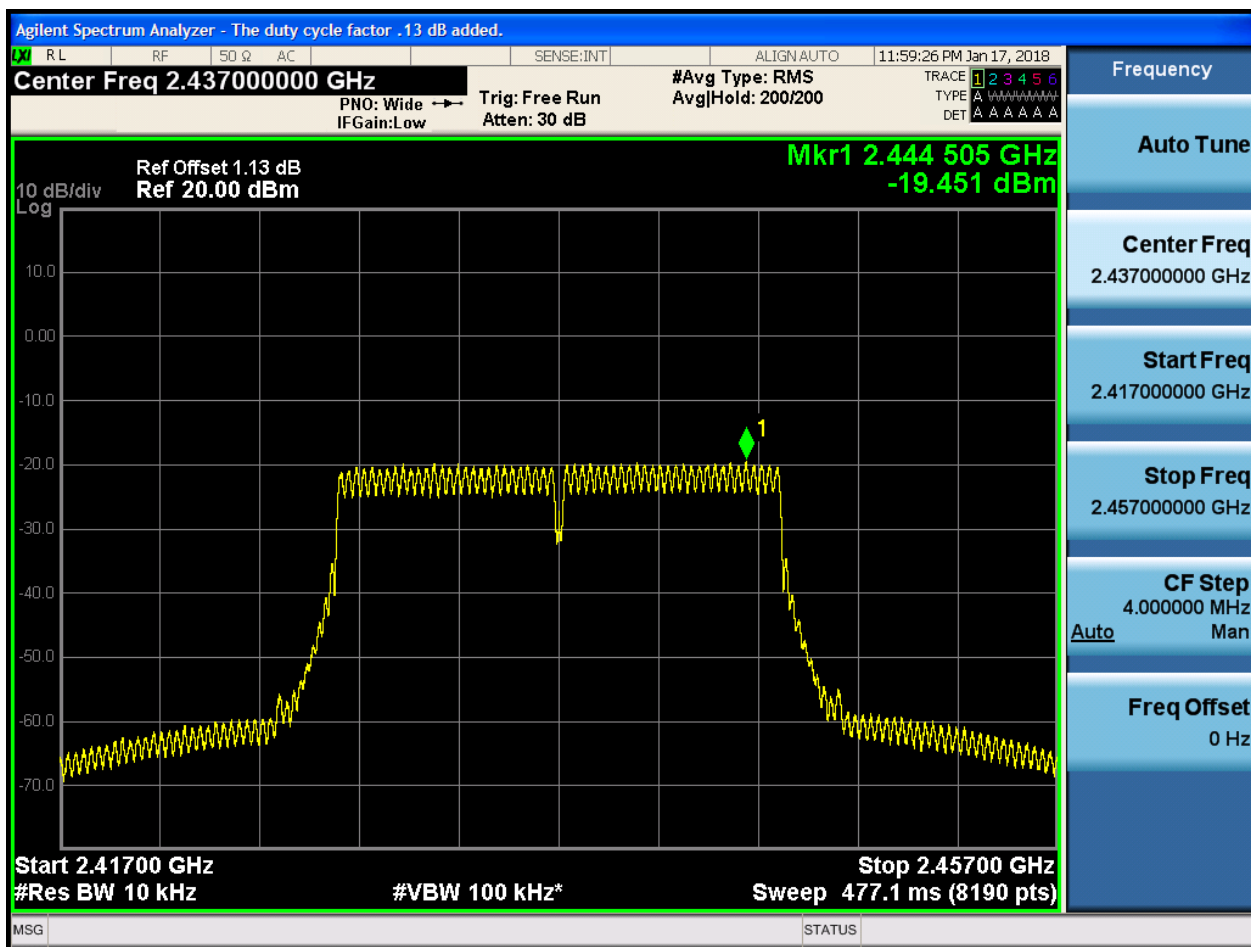


2.7 11N20_L@Ant 1

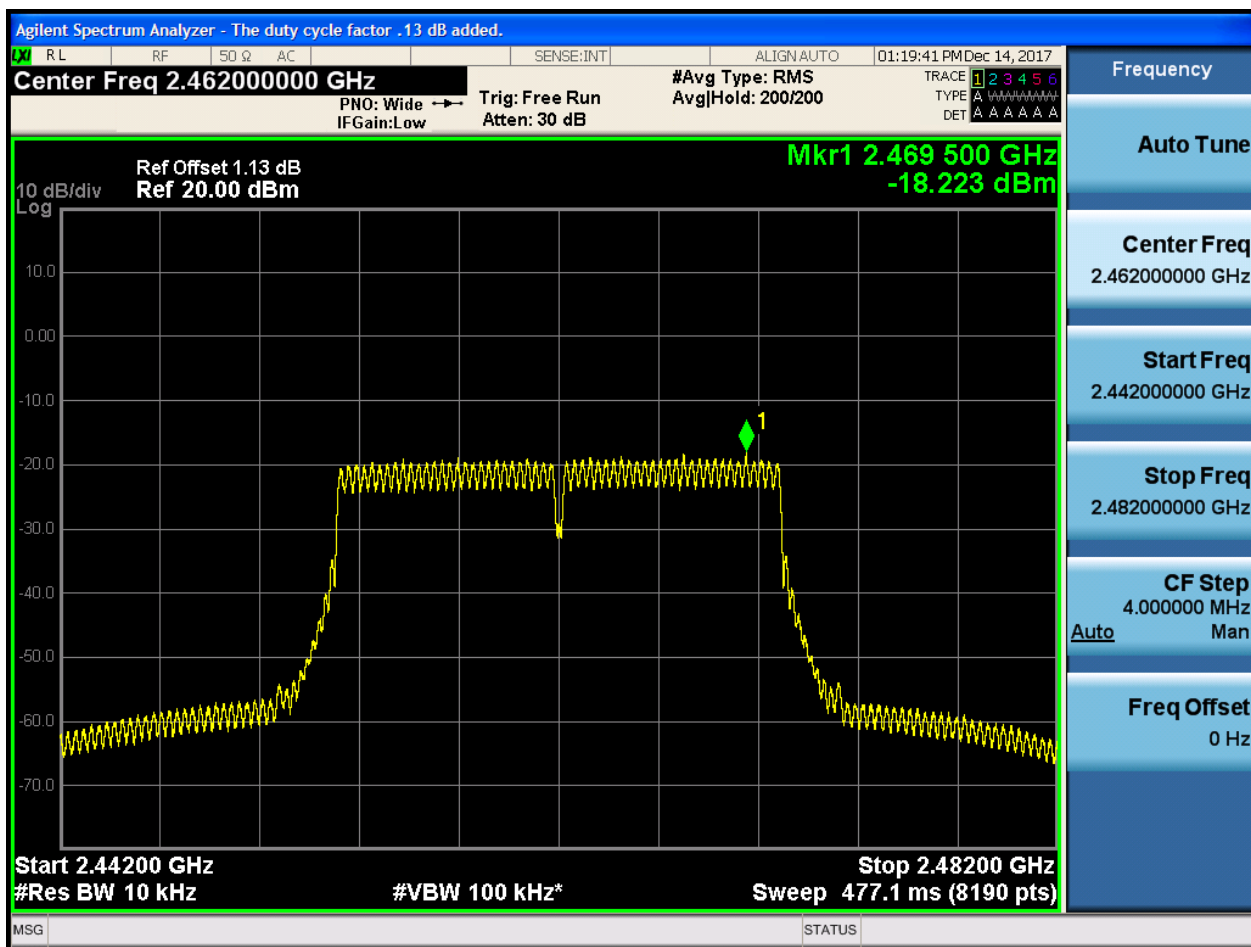




2.8 11N20_M@Ant 1

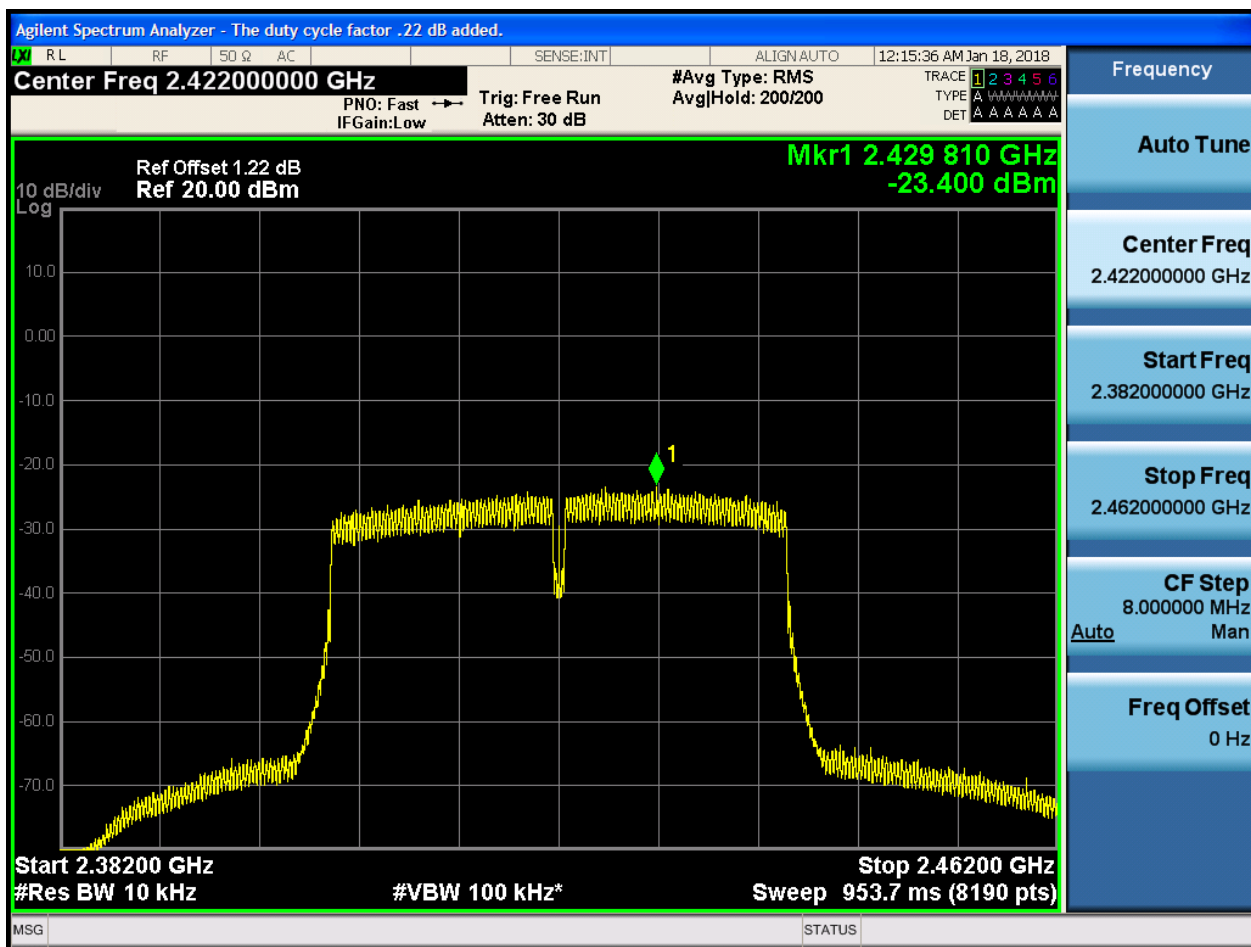


2.9 11N20_H@Ant 1



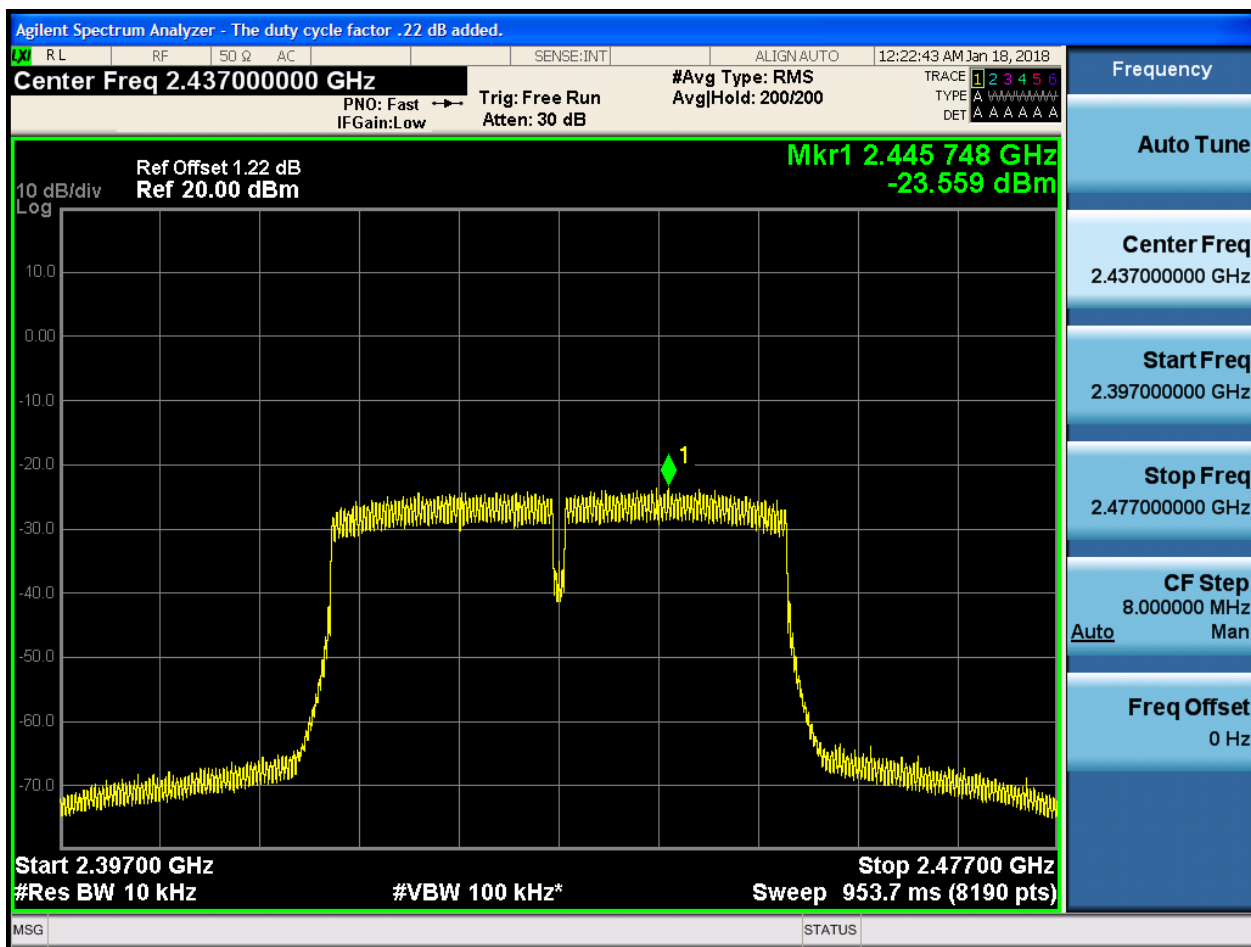


2.10 11N40_L@Ant 1

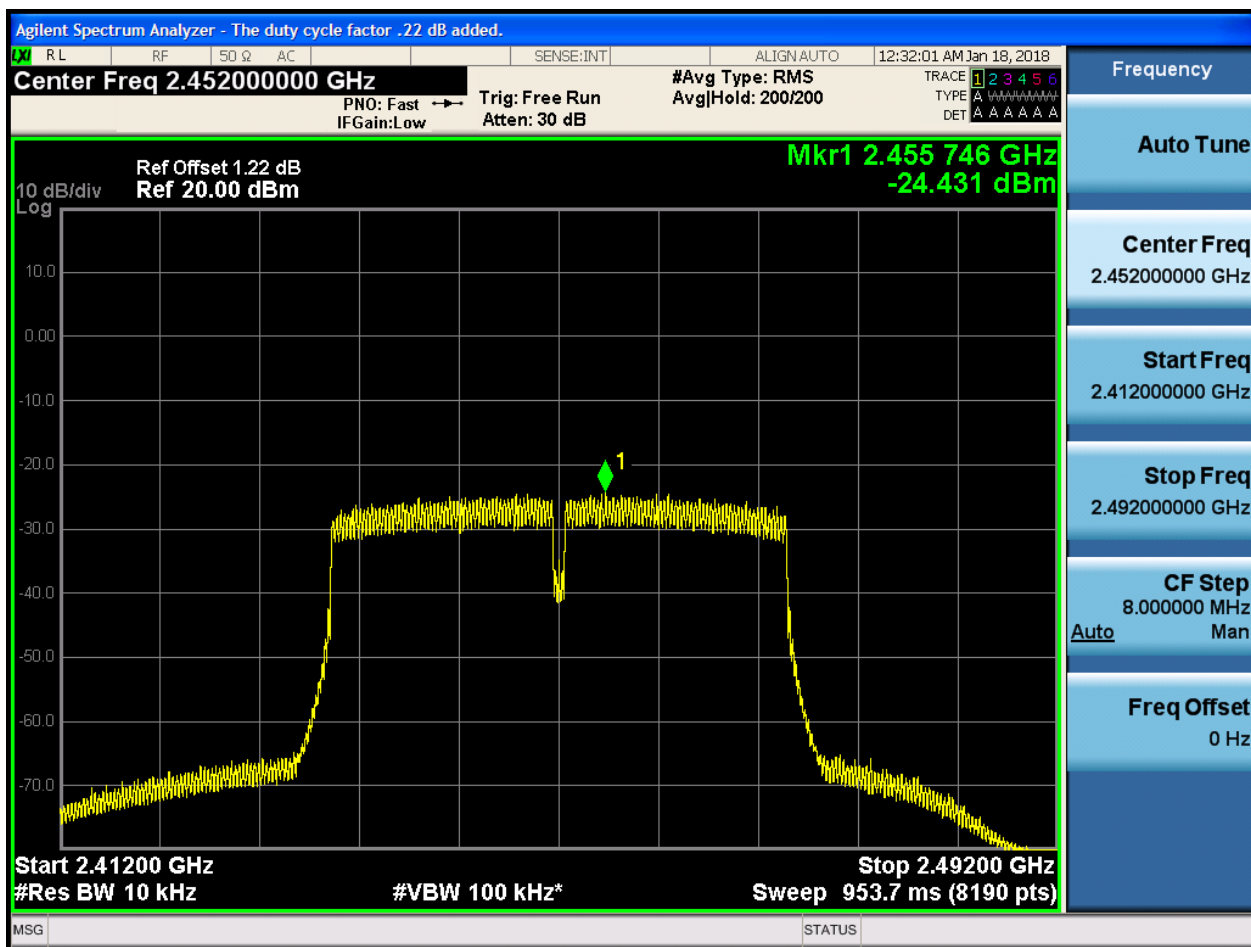




2.11 11N40_M@Ant 1



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	6.32	-44.70	pass
11B	H	2462	Ant 1	6.48	-48.55	pass
11G	L	2412	Ant 1	0.62	-33.78	pass
11G	H	2462	Ant 1	0.82	-43.64	pass
11N20	L	2412	Ant 1	-0.26	-38.06	pass
11N20	H	2462	Ant 1	-0.53	-42.28	pass
11N40	L	2422	Ant 1	-3.24	-37.16	pass
11N40	H	2452	Ant 1	-2.75	-41.48	pass



Part II - Test Plots

2.1 11B_L@Ant 1





Agilent Spectrum Analyzer - Swept SA

Center Freq 2.473500000 GHz

Ref Offset 1 dB
Ref 30.00 dBm

10 dB/div
Log

Mkr2 2.483 50 GHz
-48.549 dBm

Start 2.45350 GHz
#Res BW 100 kHz

#VBW 300 kHz

Stop 2.49350 GHz
#Sweep 100.0 ms (601 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.461 50 GHz	6.479 dBm			
2	N	1	f	2.483 50 GHz	-48.549 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								

Frequency

Auto Tune

Center Freq
2.473500000 GHz

Start Freq
2.453500000 GHz

Stop Freq
2.493500000 GHz

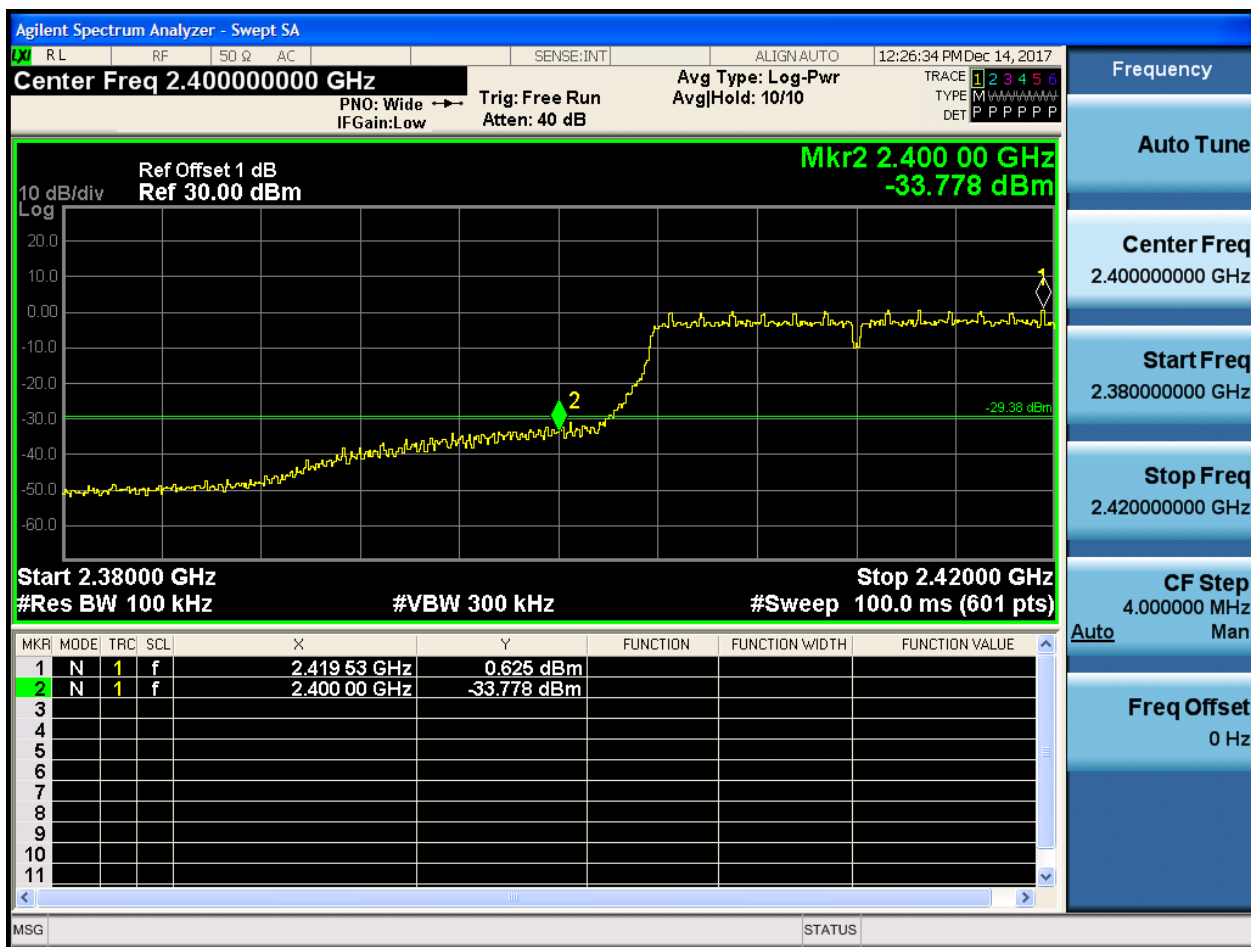
CF Step
4.000000 MHz

Auto

Freq Offset
0 Hz

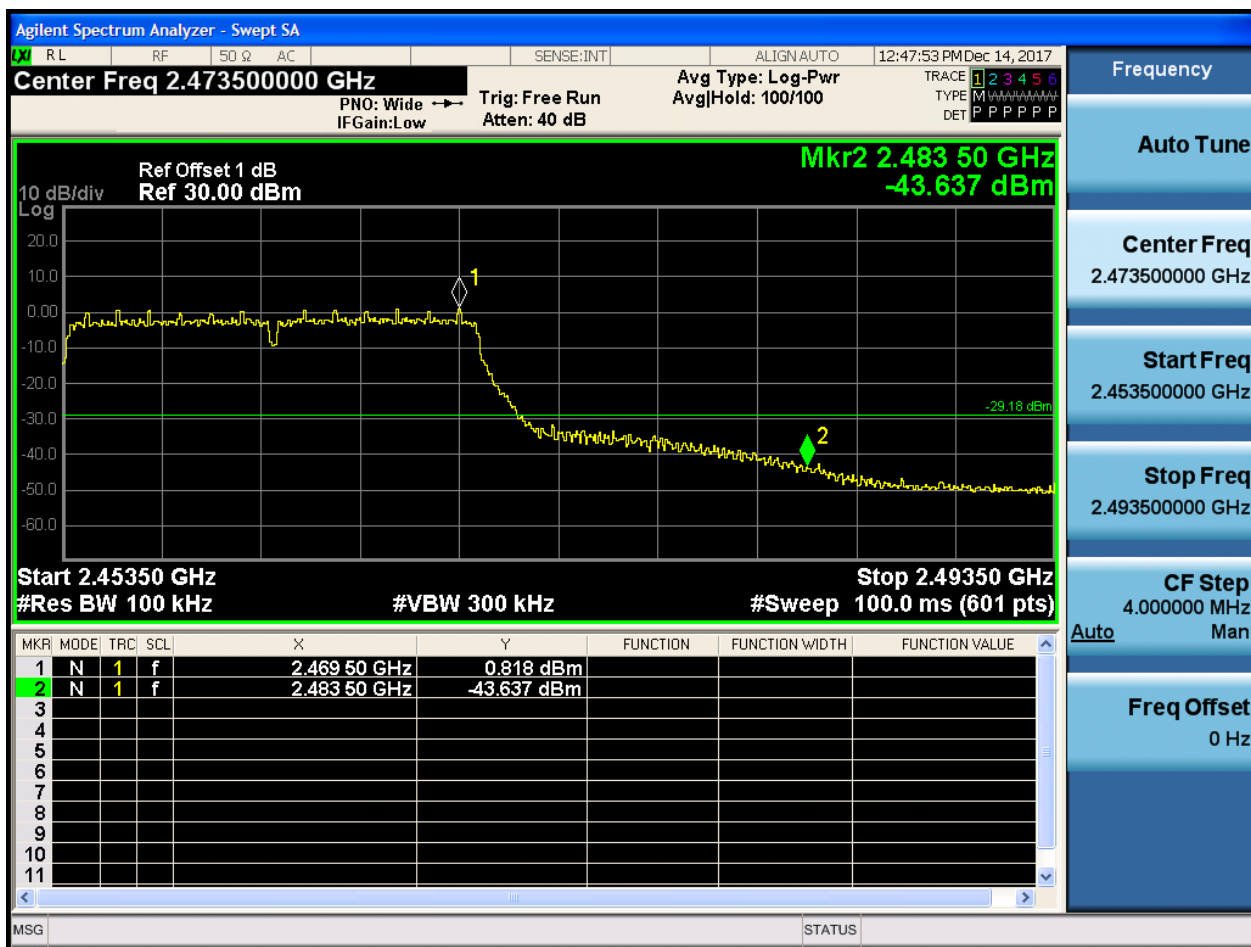


2.3 11G_L@Ant 1





2.4 11G_H@Ant 1





Agilent Spectrum Analyzer - Swept SA

Center Freq 2.40000000 GHz

Ref Offset 1 dB
Ref 30.00 dBm

10 dB/div
Log

Mkr2 2.400 00 GHz
-38.064 dBm

Start 2.38000 GHz
#Res BW 100 kHz

Stop 2.42000 GHz
#Sweep 100.0 ms (601 pts)

#VBW 300 kHz

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.419 53 GHz	-0.264 dBm			
2	N	1	f	2.400 00 GHz	-38.064 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								

Frequency

Auto Tune

Center Freq
2.400000000 GHz

Start Freq
2.380000000 GHz

Stop Freq
2.420000000 GHz

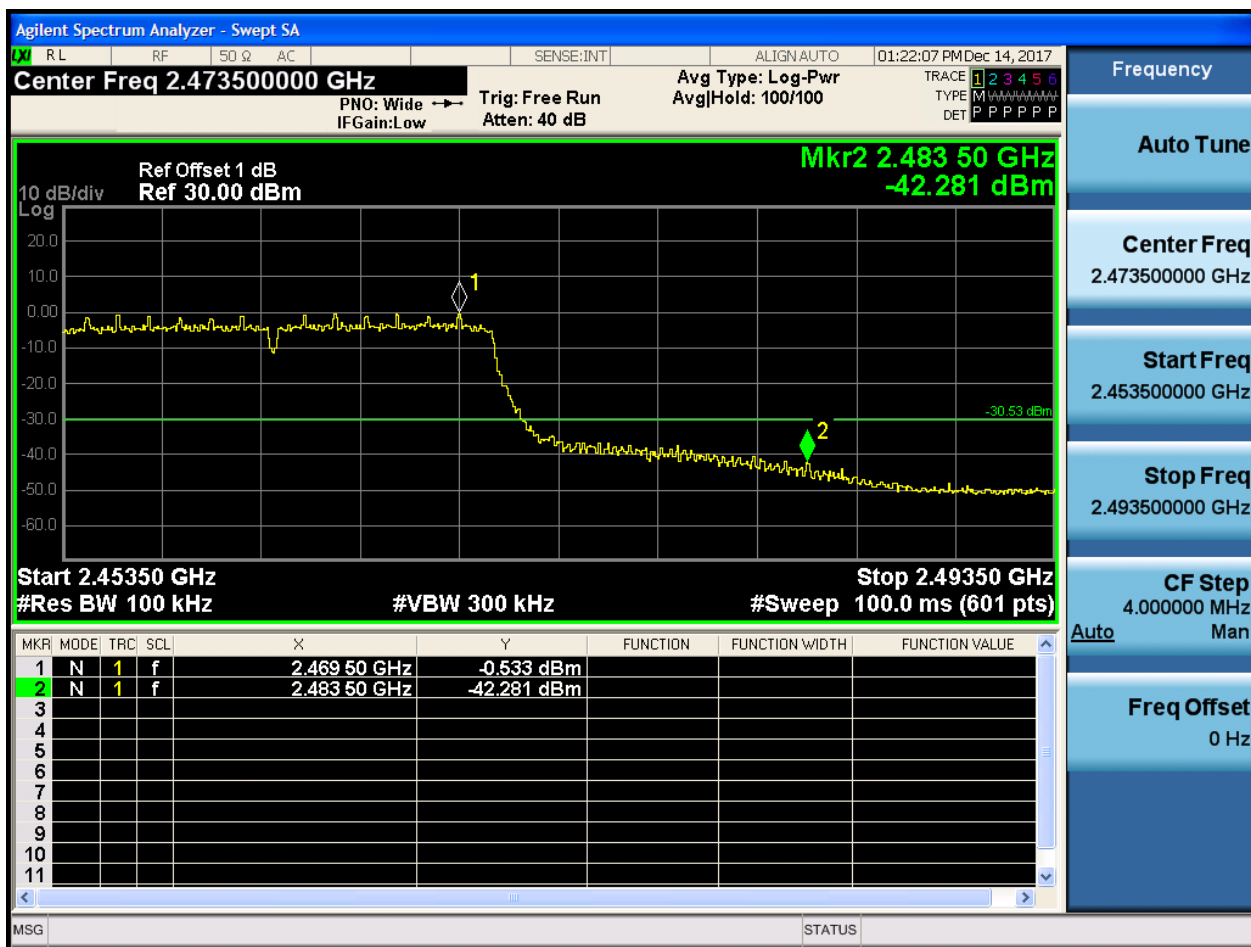
CF Step
4.000000 MHz

Auto

Freq Offset
0 Hz



2.6 11N20_H@Ant 1





Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 02:01:29 PM Dec 14, 2017

Center Freq 2.40000000 GHz Avg Type: Log-Pwr
PNO: Wide → Trig: Free Run Attenuation: 40 dB TYPE M P P P P P
IFGain: Low DET

Ref Offset 1 dB
Ref 30.00 dBm

Mkr2 2.400 00 GHz -37.161 dBm

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.414 47 GHz	-3.235 dBm			
2	N	1	f	2.400 00 GHz	-37.161 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								

Start 2.38000 GHz #Res BW 100 kHz **Stop 2.42000 GHz #Sweep 100.0 ms (601 pts)**

#VBW 300 kHz

Frequency Auto Tune Center Freq 2.40000000 GHz Start Freq 2.380000000 GHz Stop Freq 2.420000000 GHz CF Step 4.000000 MHz Man Freq Offset 0 Hz

MSG STATUS

[illegible]

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	6.56	<limit	pass
11B	M	2437	Ant 1	6.56	<limit	pass
11B	H	2462	Ant 1	6.51	<limit	pass
11G	L	2412	Ant 1	1.08	<limit	pass
11G	M	2437	Ant 1	7.33	<limit	pass
11G	H	2462	Ant 1	0.94	<limit	pass
11N20	L	2412	Ant 1	0.14	<limit	pass
11N20	M	2437	Ant 1	5.30	<limit	pass
11N20	H	2462	Ant 1	-0.30	<limit	pass
11N40	L	2422	Ant 1	-2.70	<limit	pass
11N40	M	2437	Ant 1	-3.00	<limit	pass
11N40	H	2452	Ant 1	-2.56	<limit	pass

Part II - Test Plots

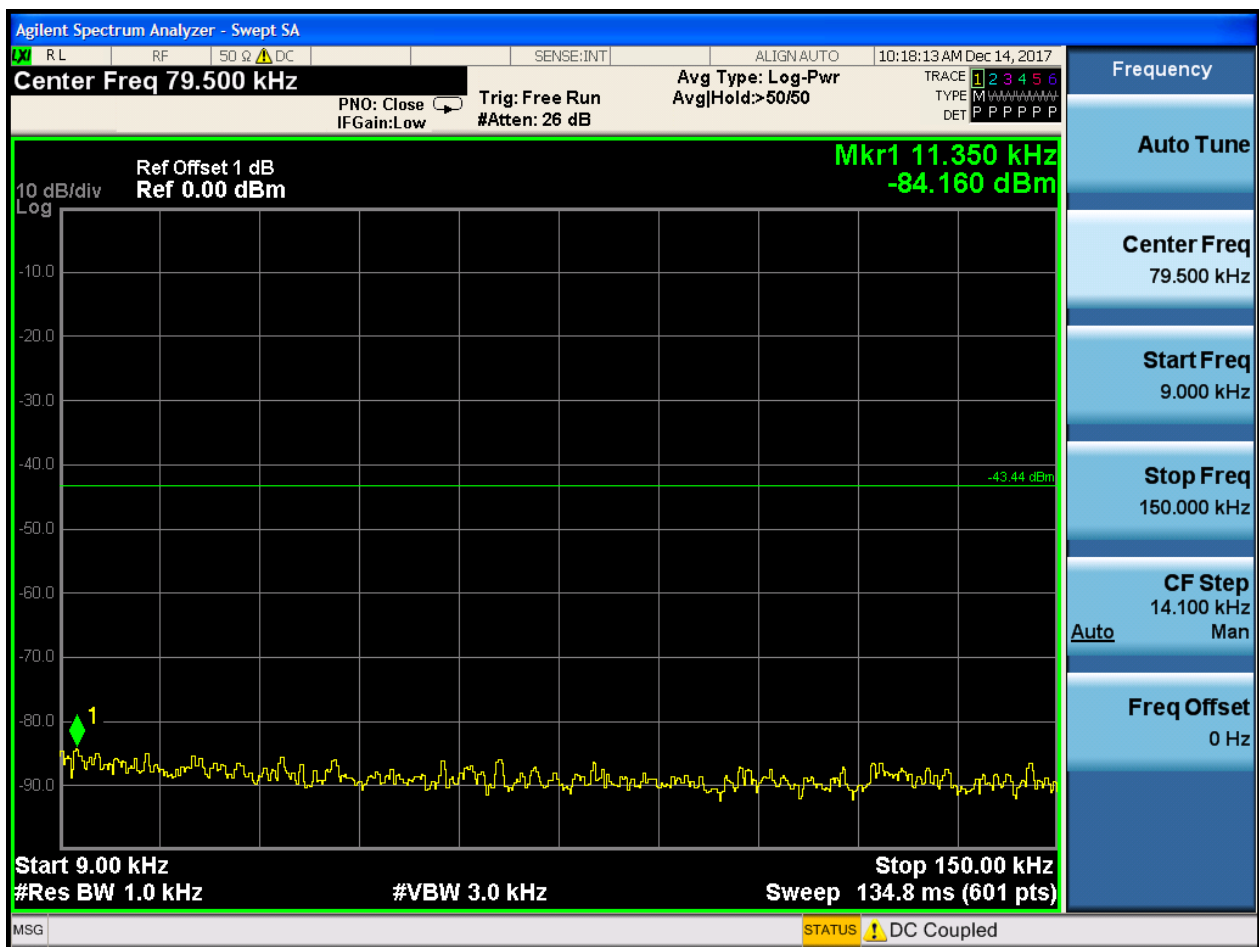
2.1 11B L@Ant 1

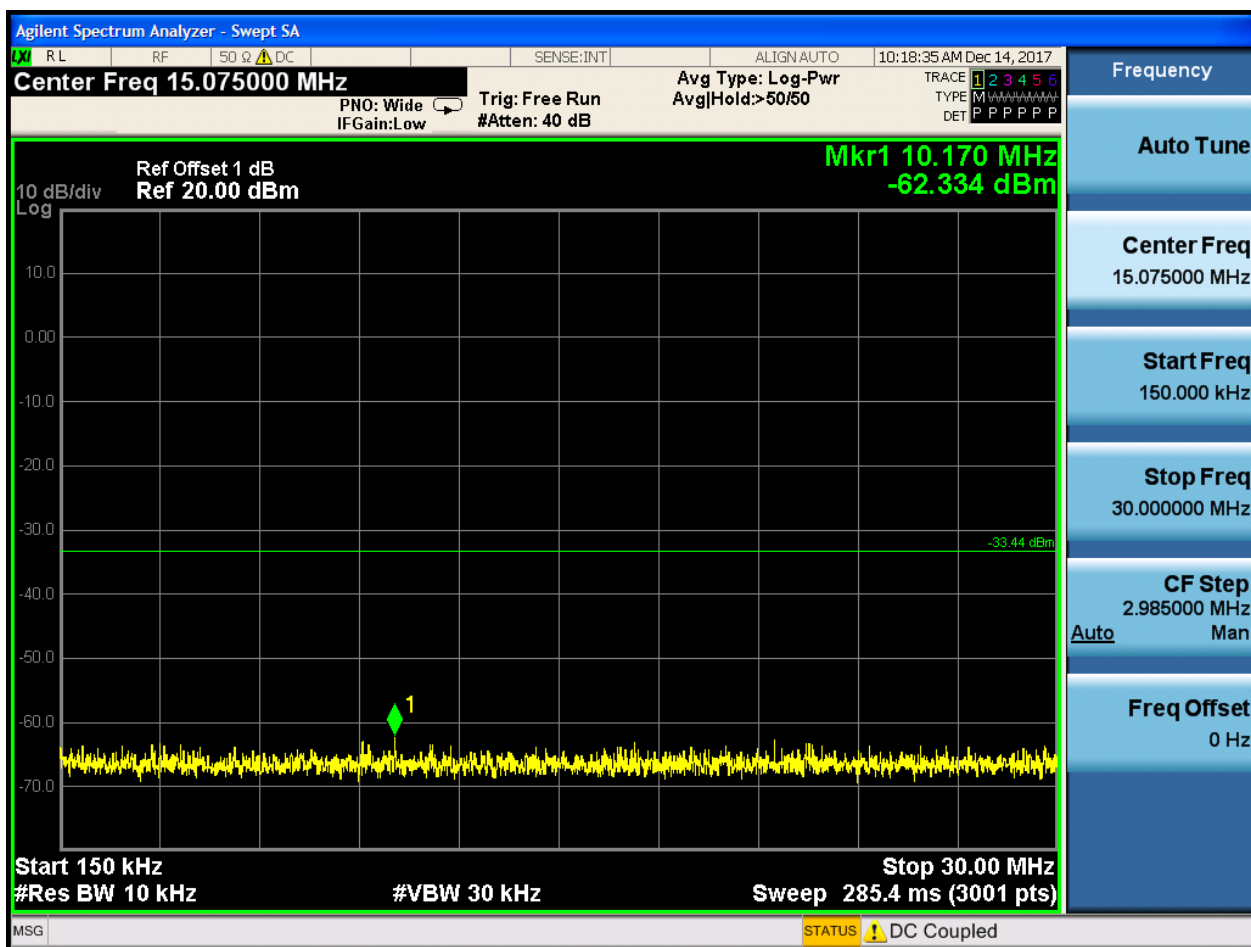
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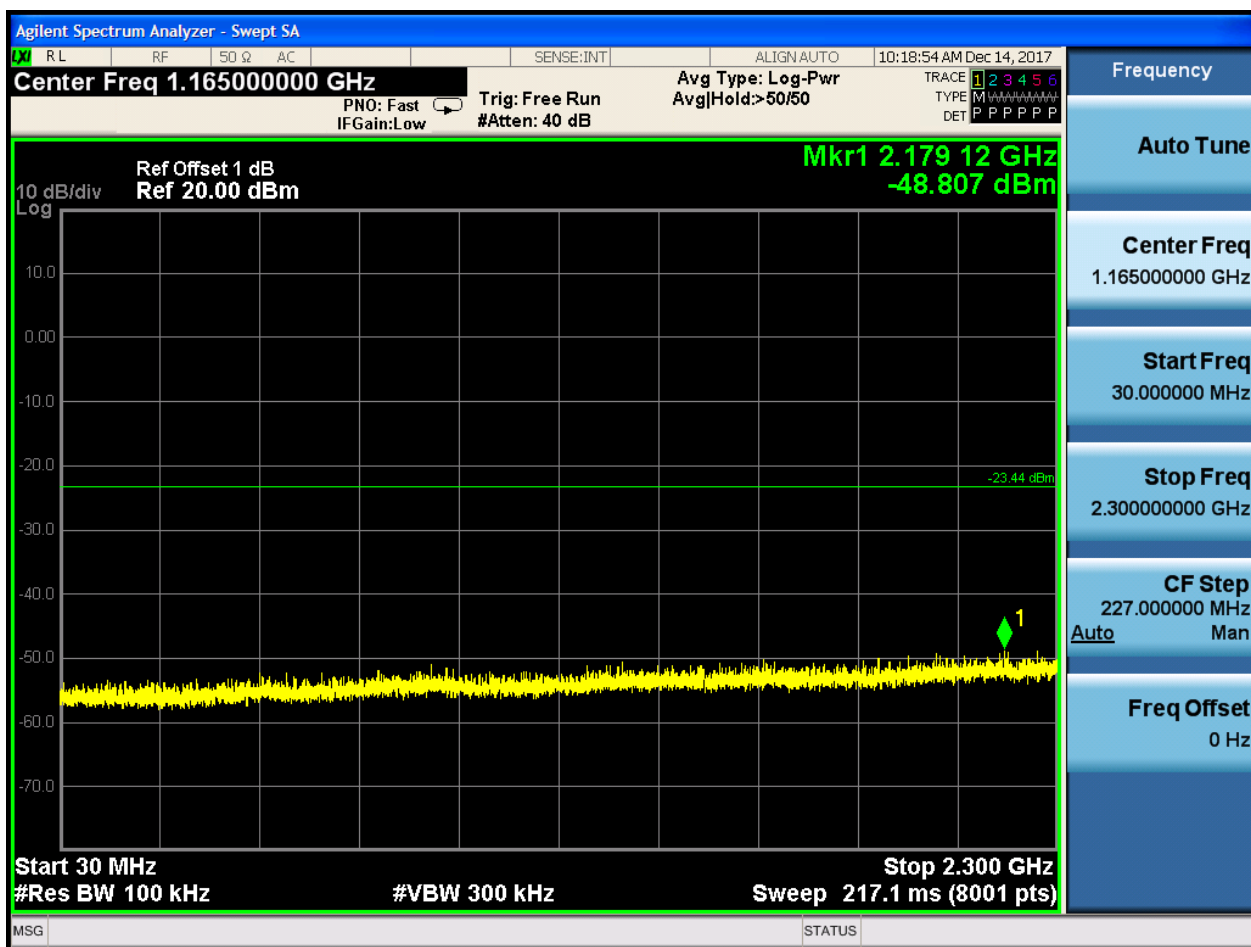


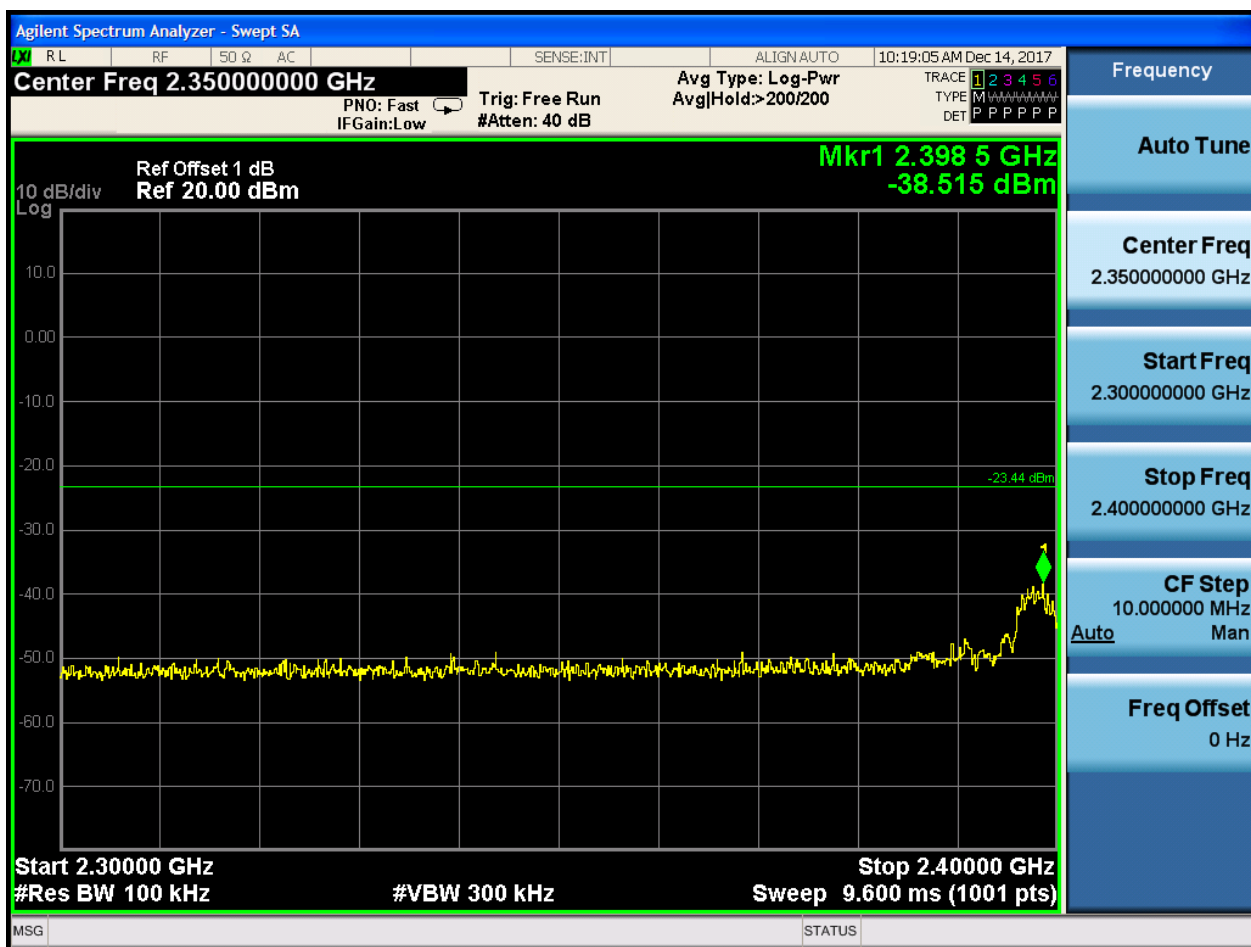


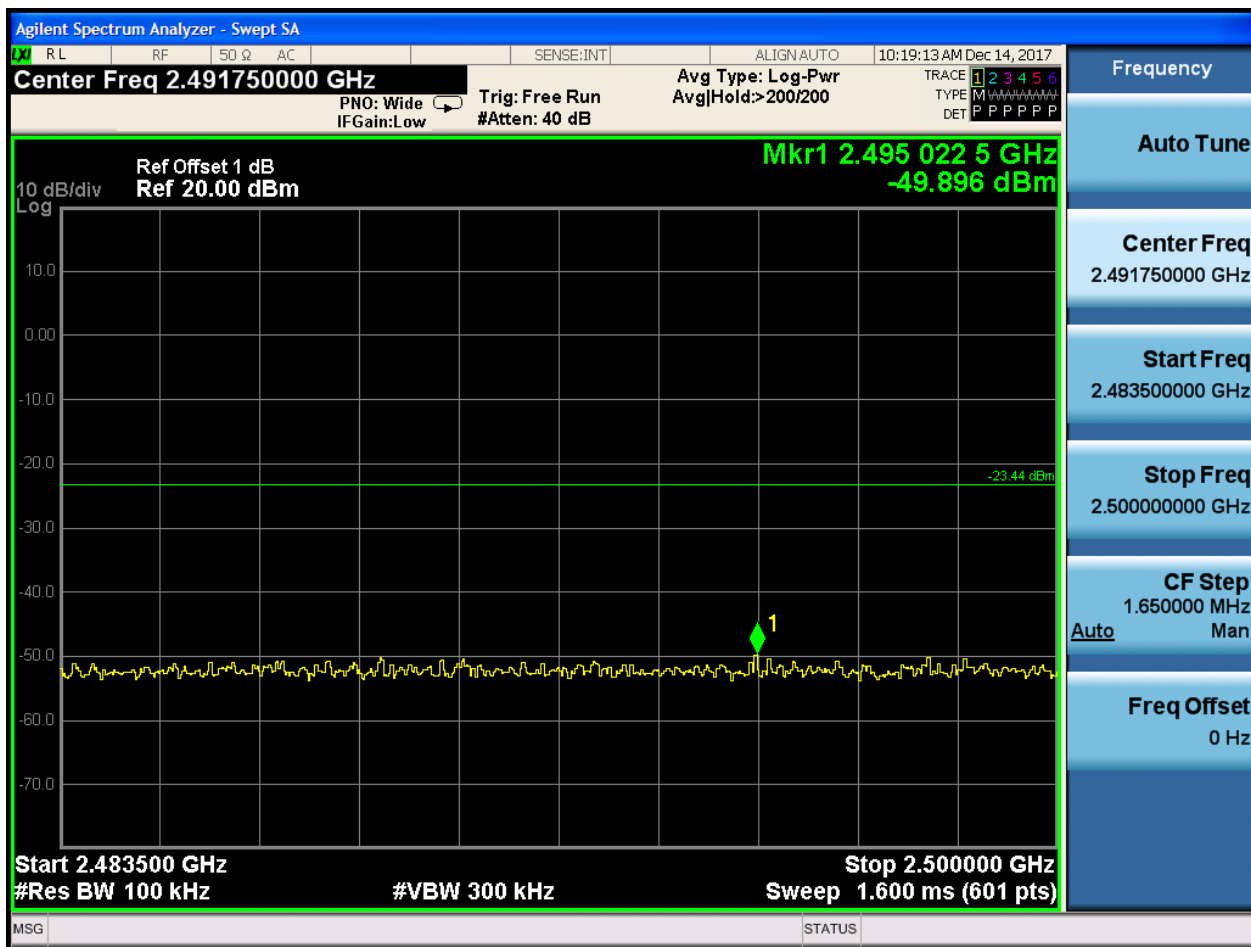
PuW:















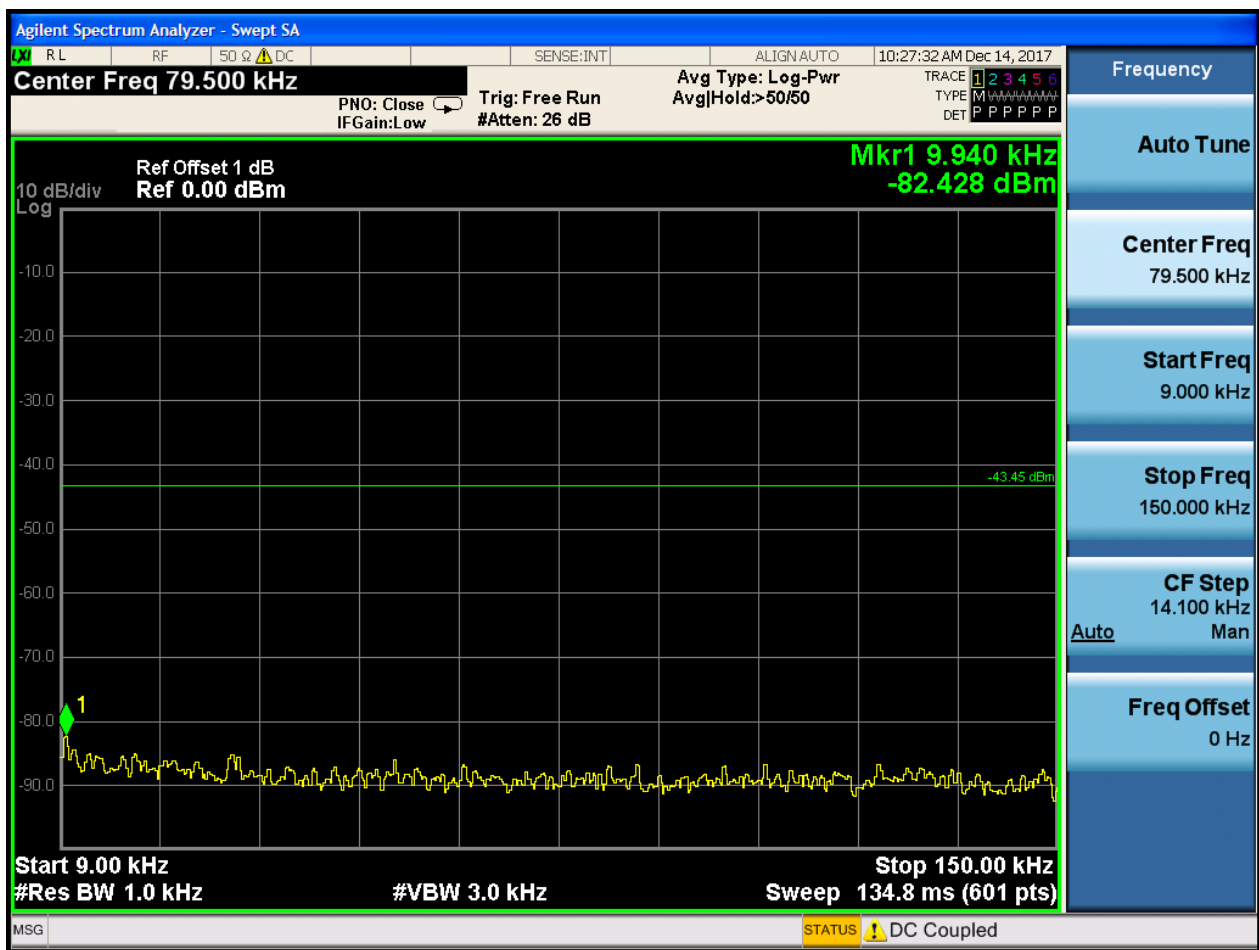
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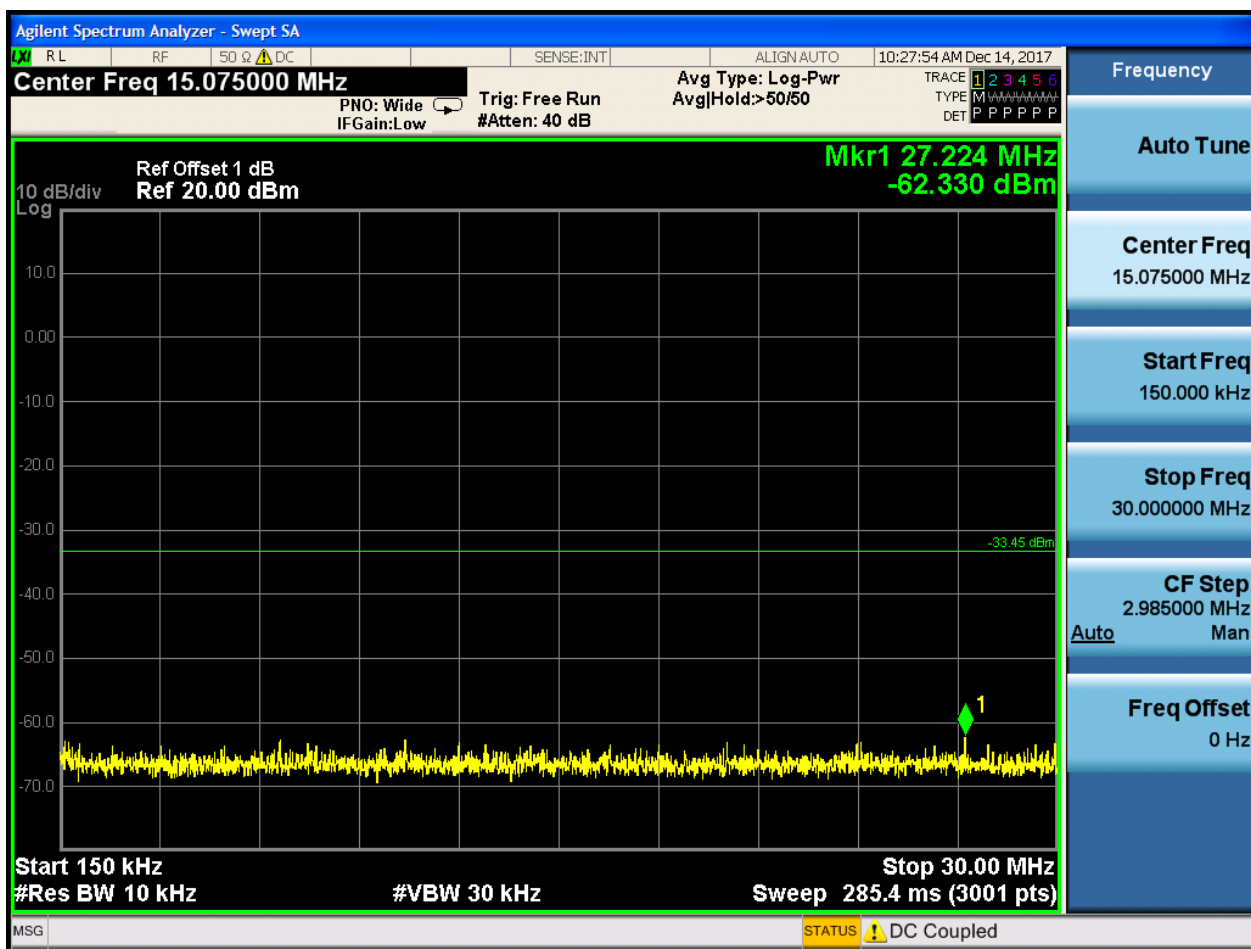
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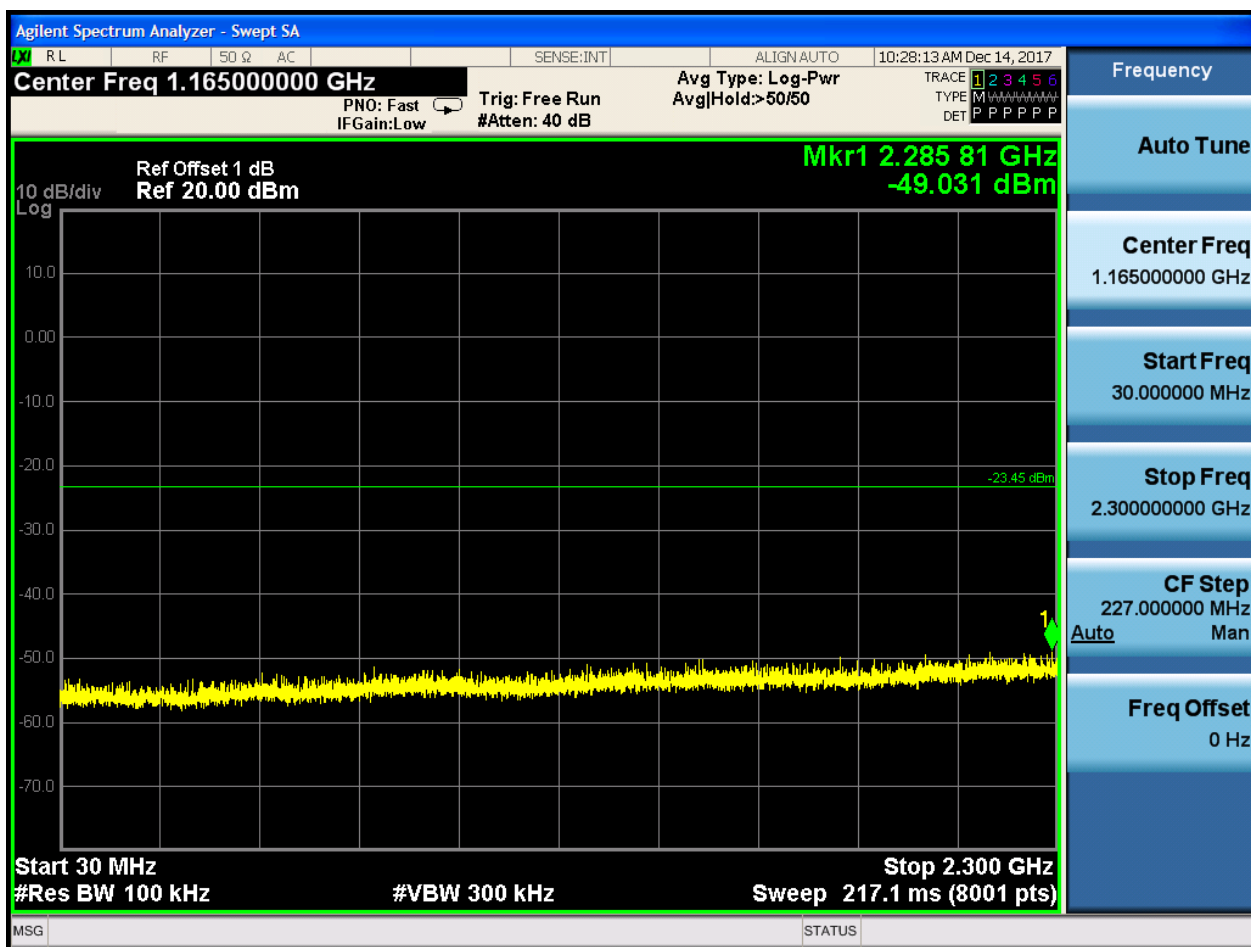


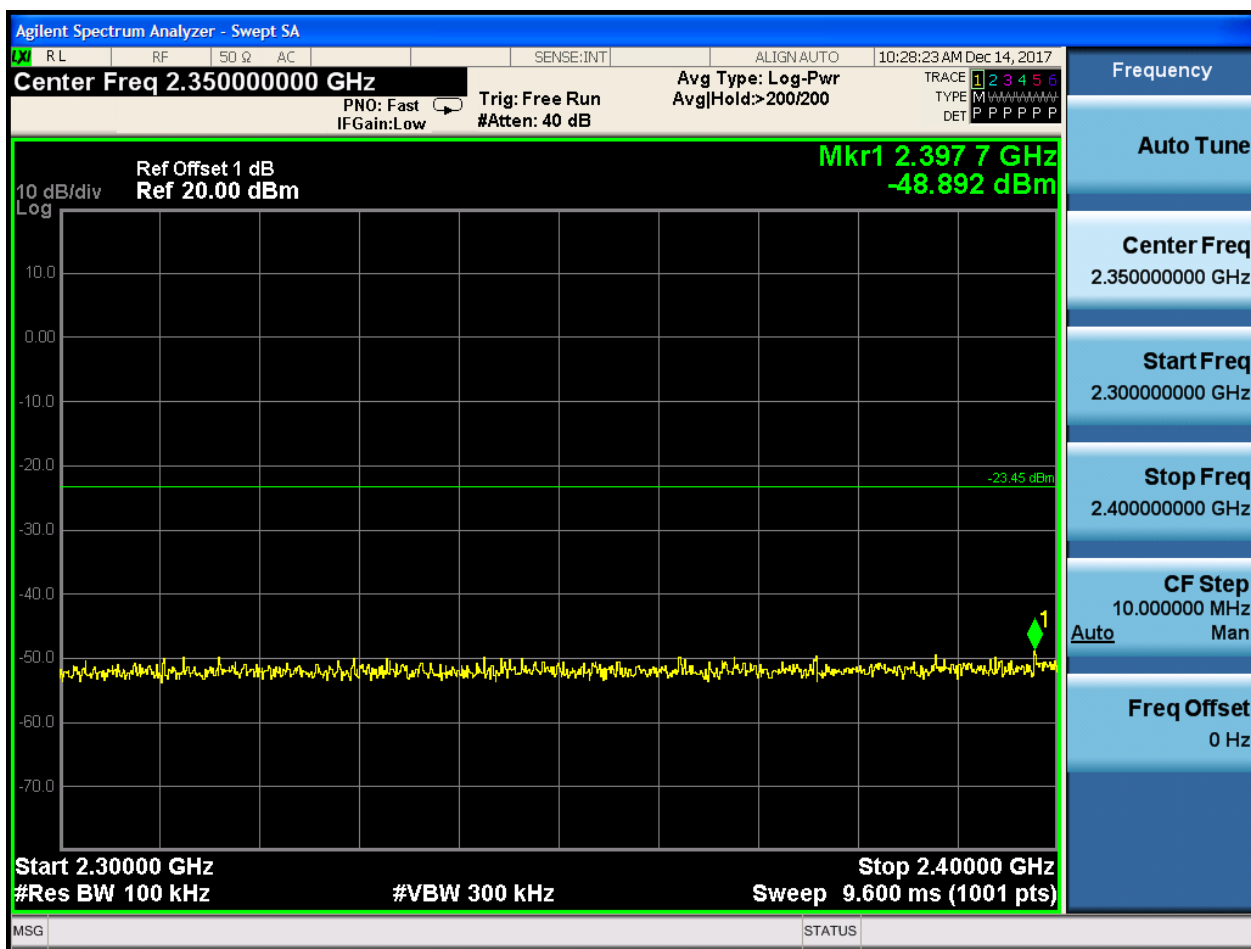


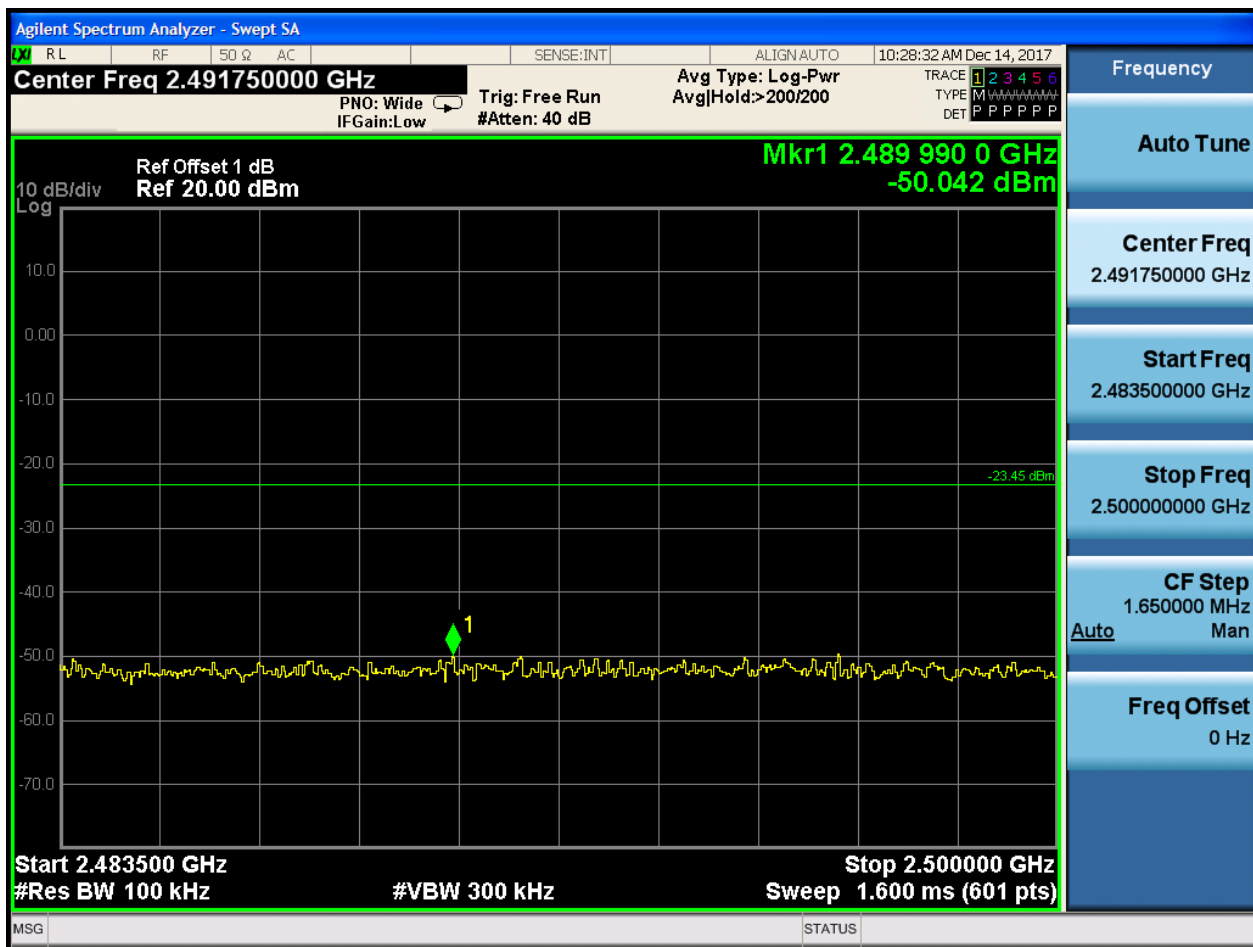
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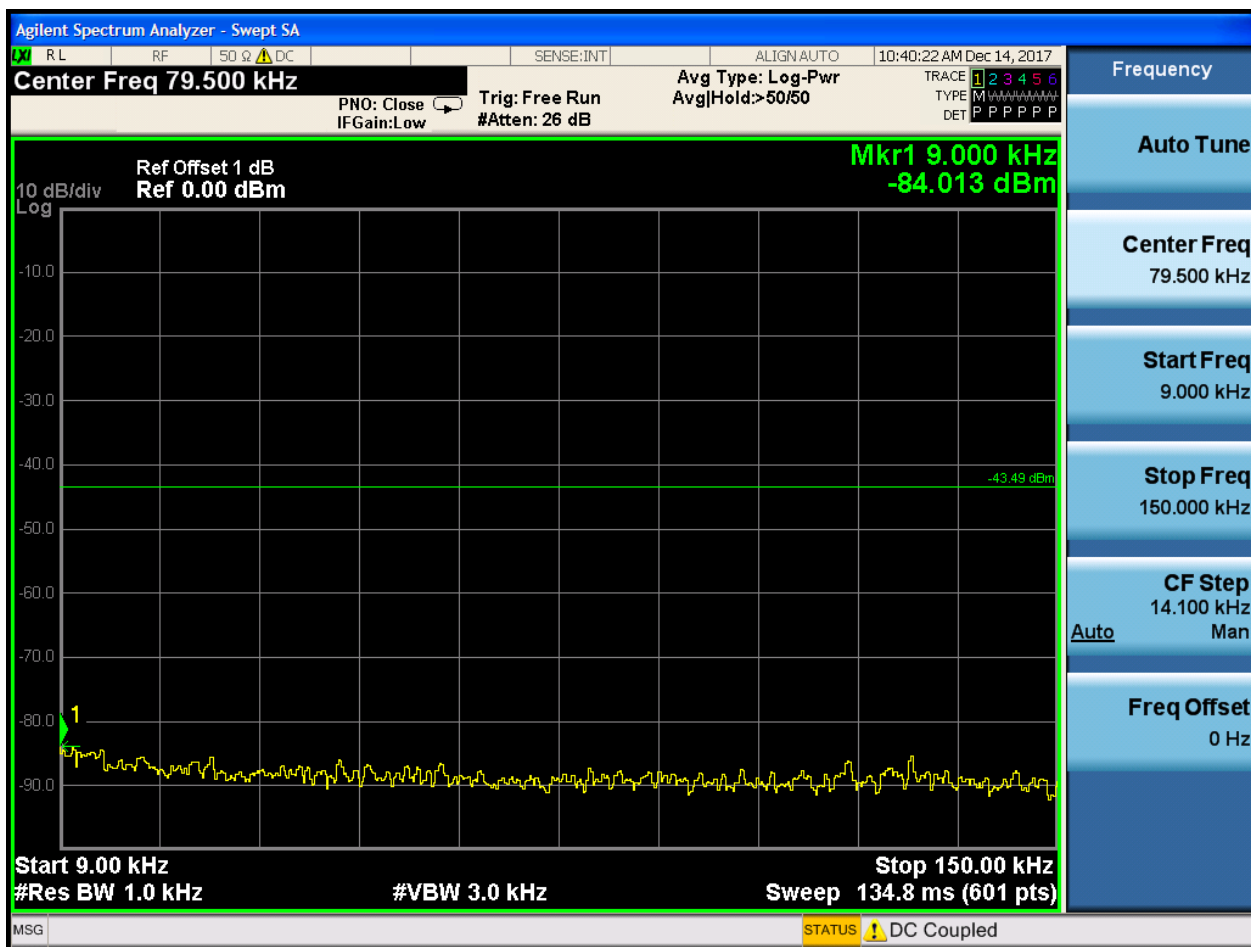
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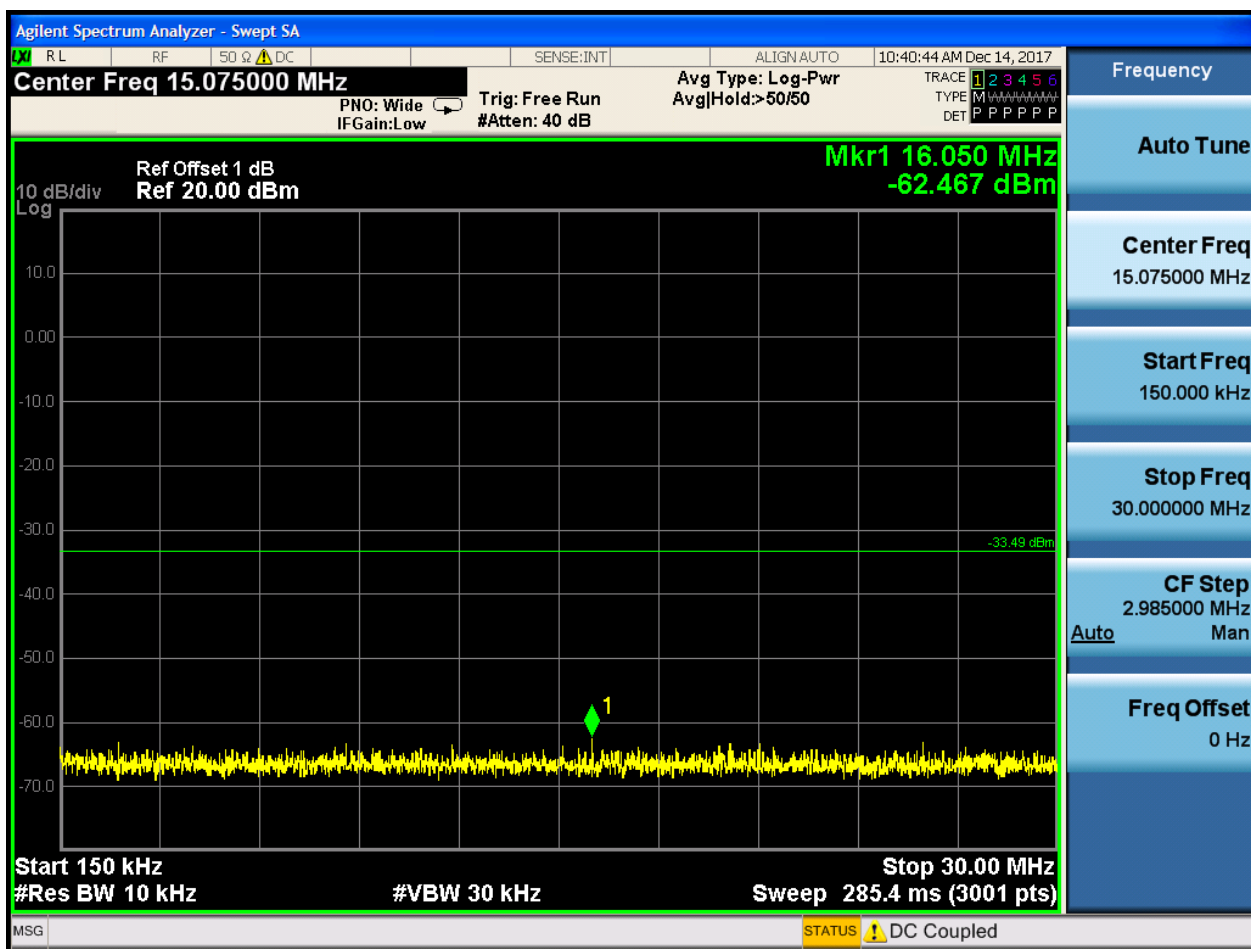
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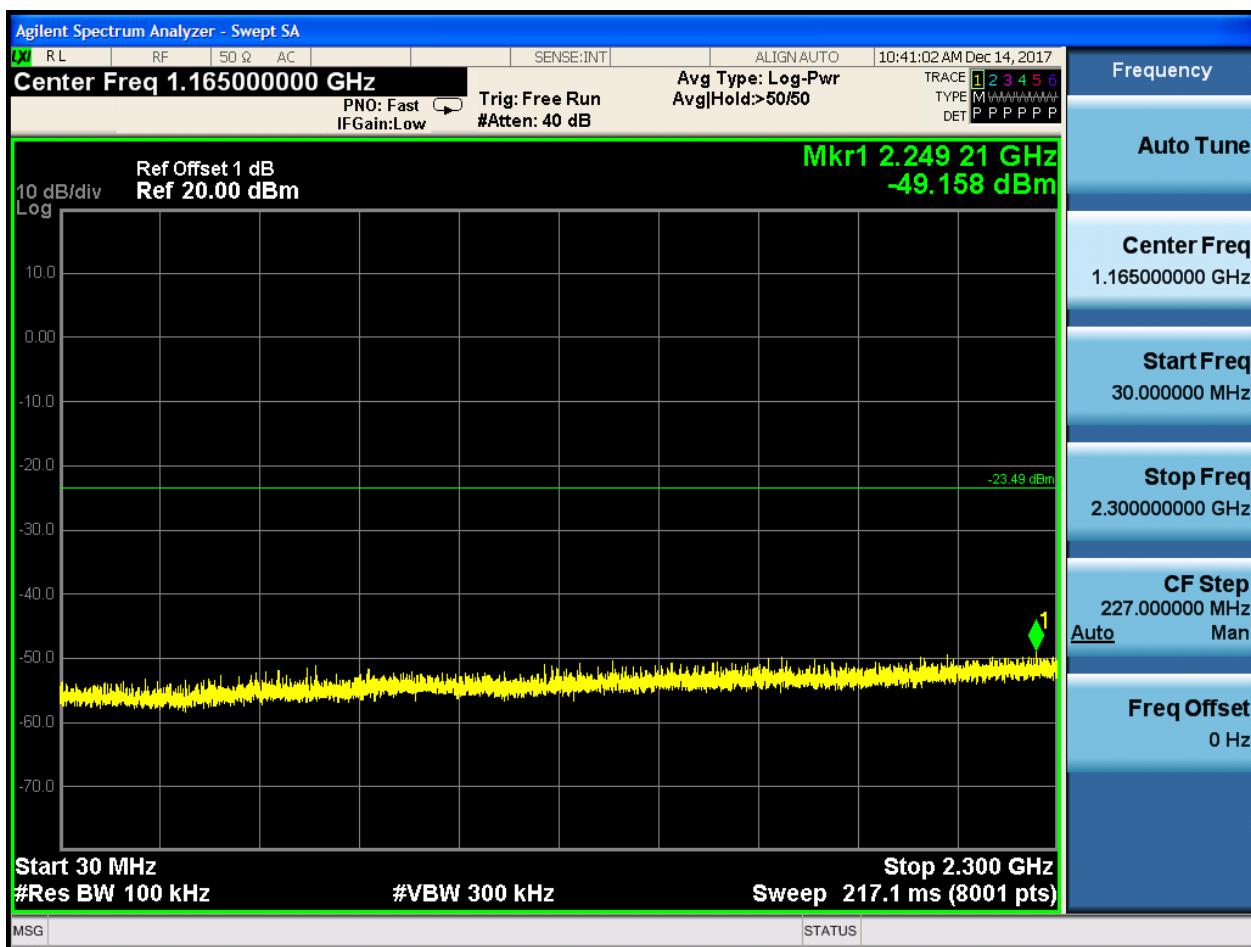


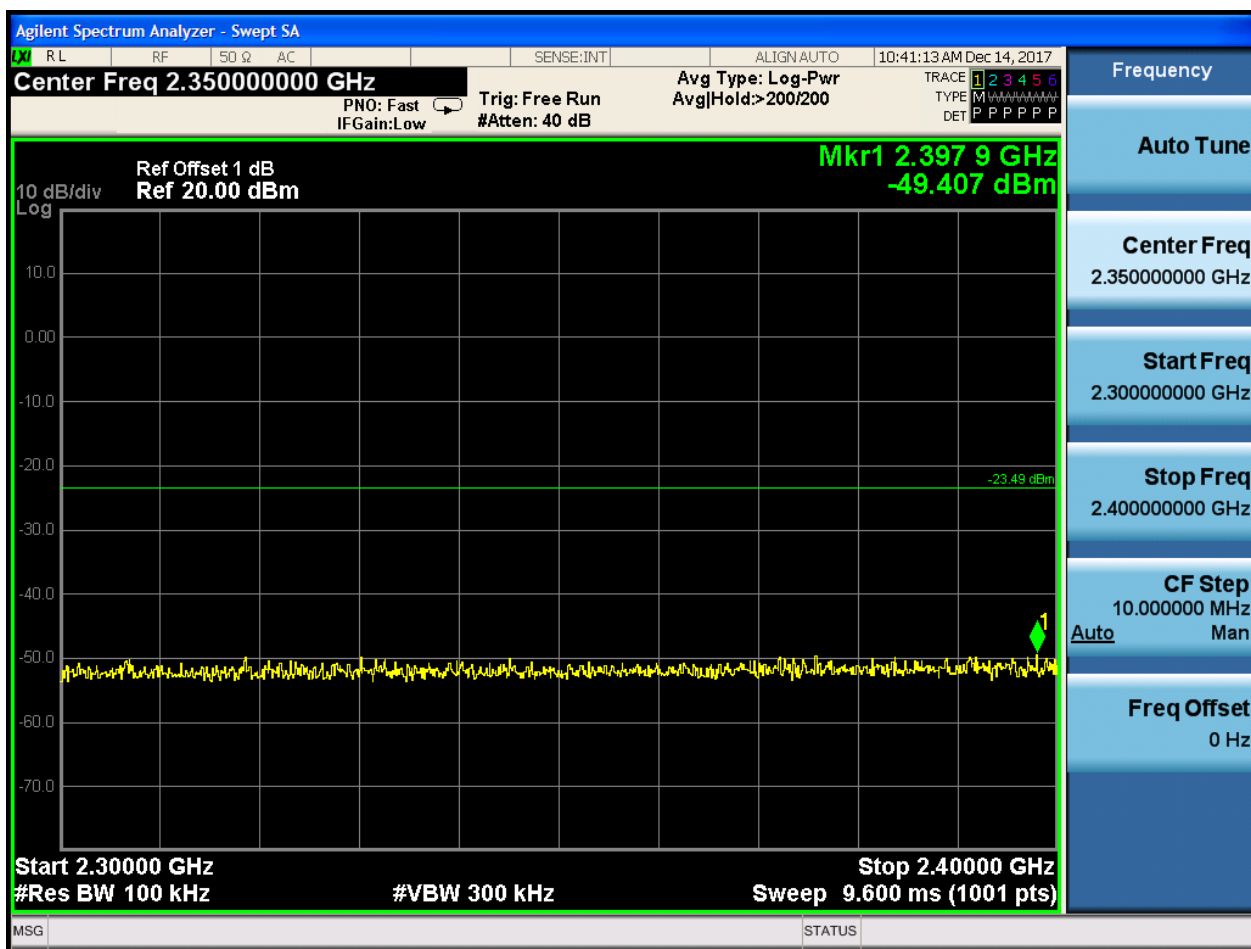


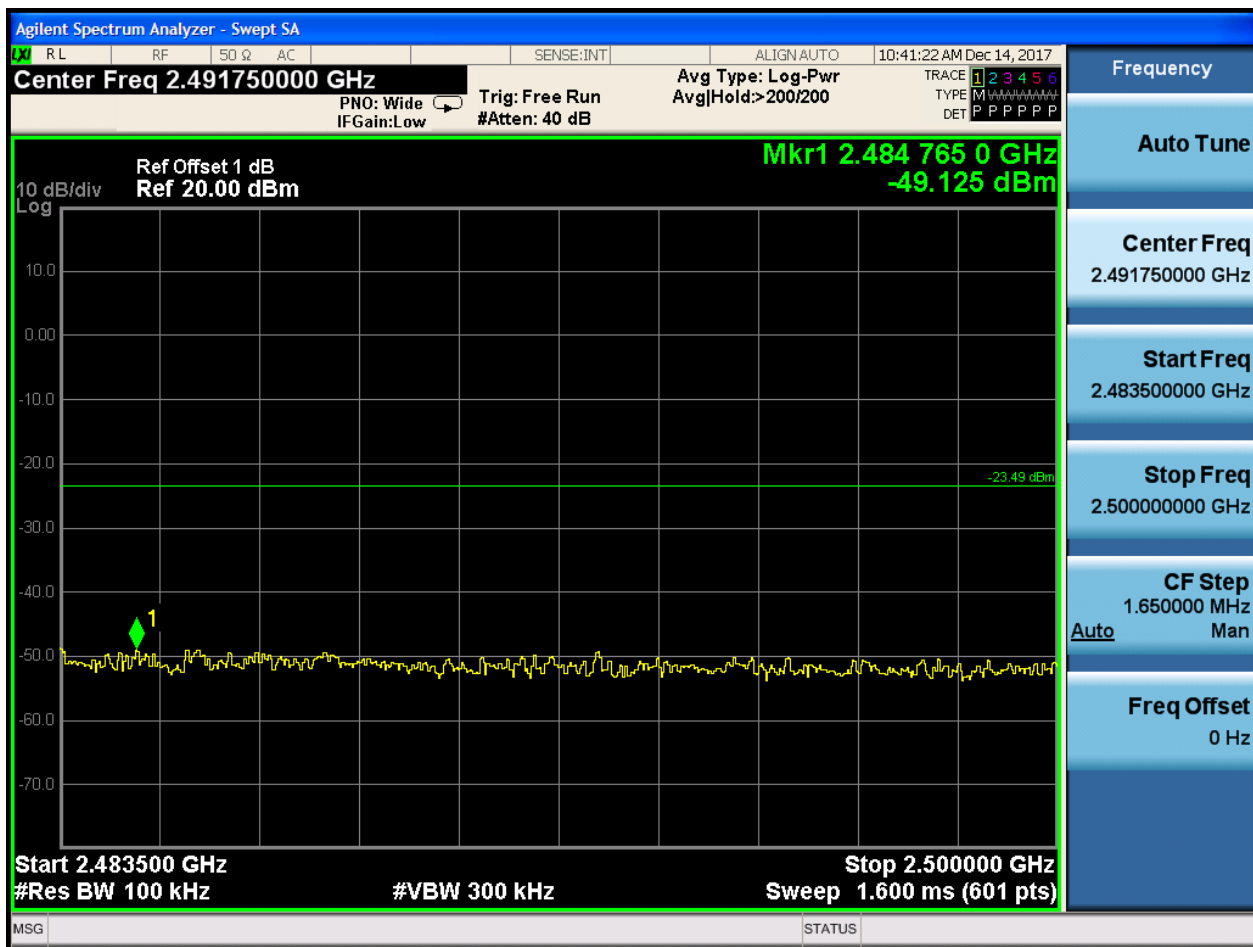
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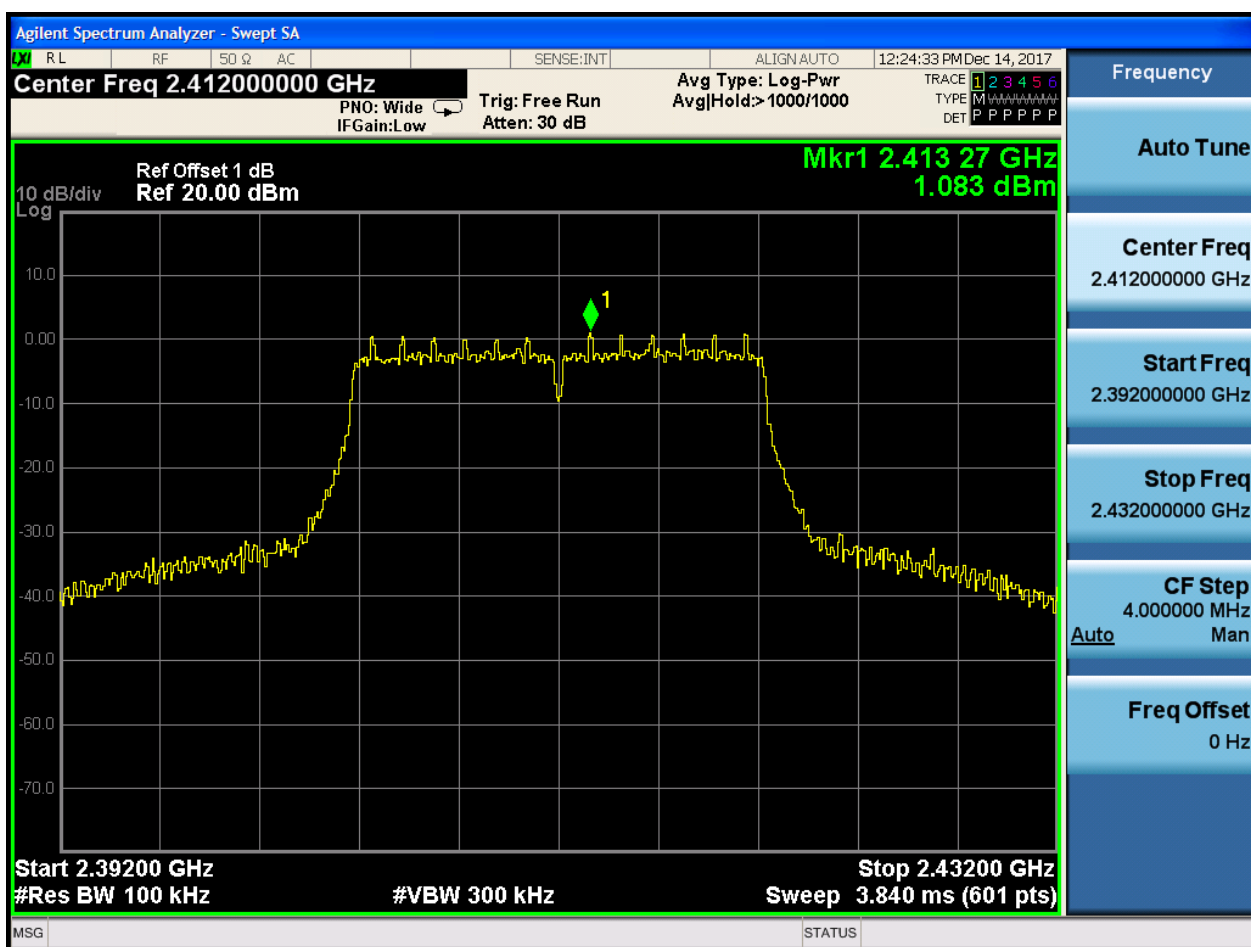






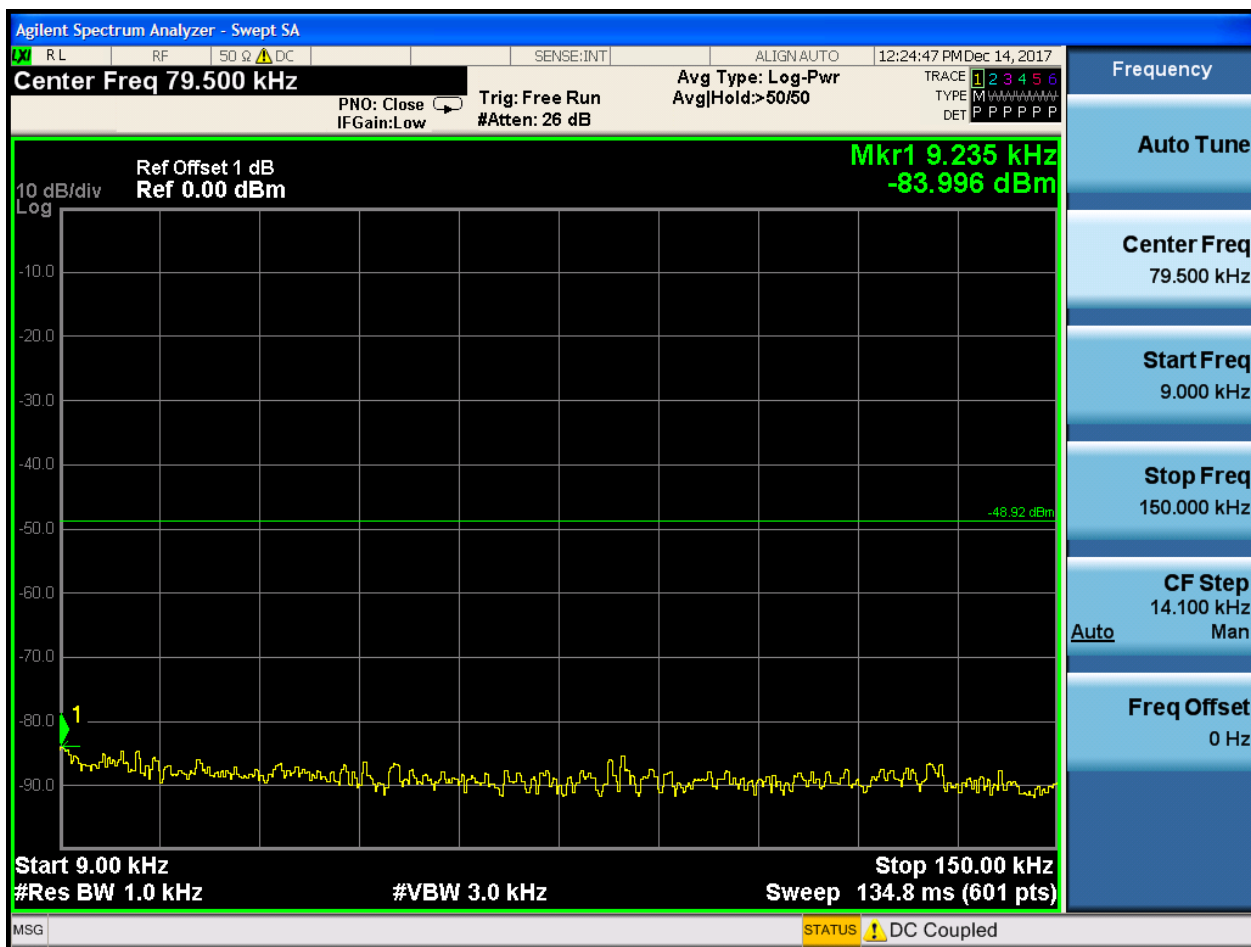
2.4 11G_L_2412@Ant 1

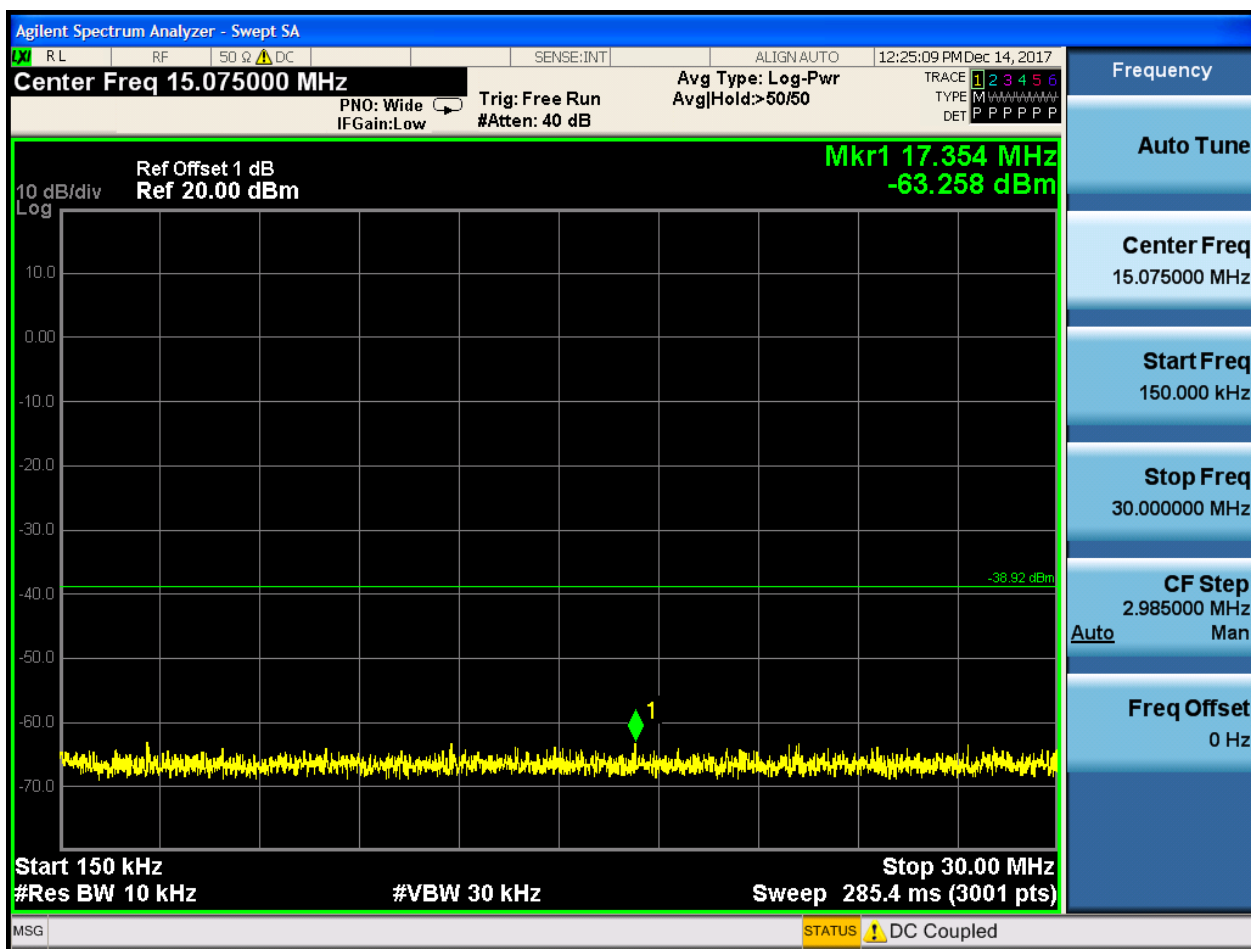
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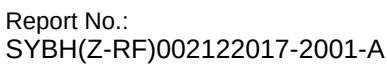


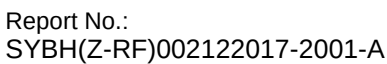


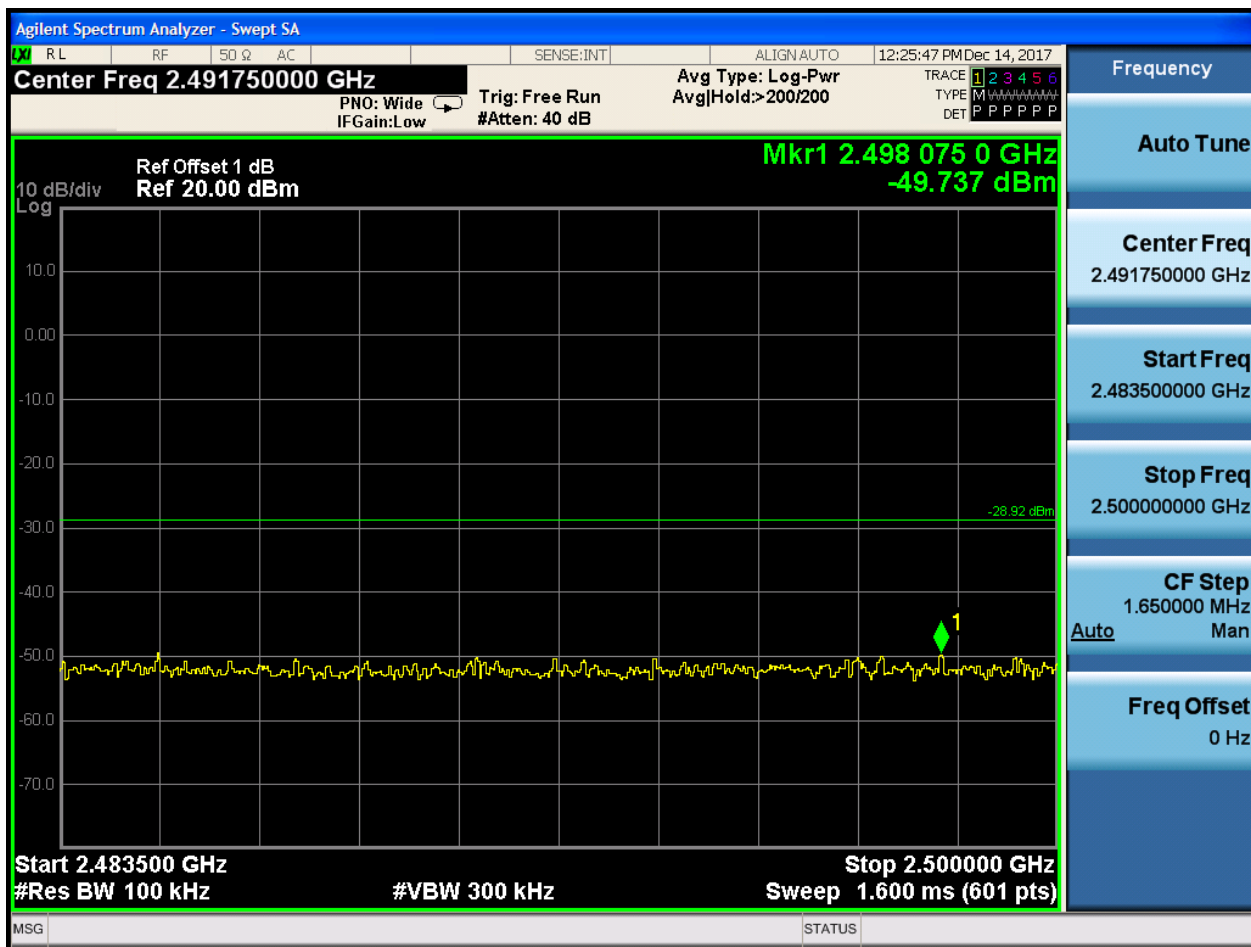
Puw:









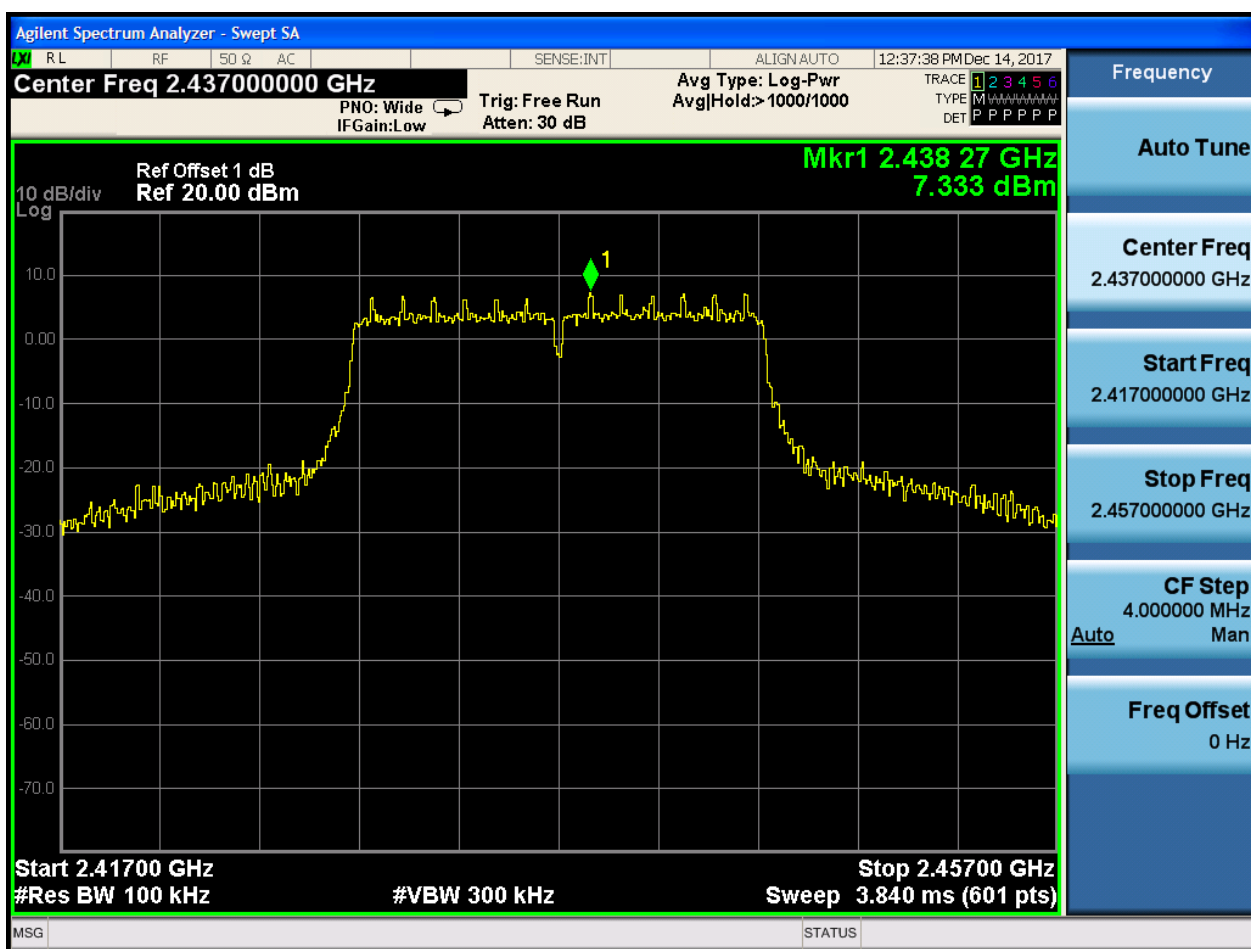






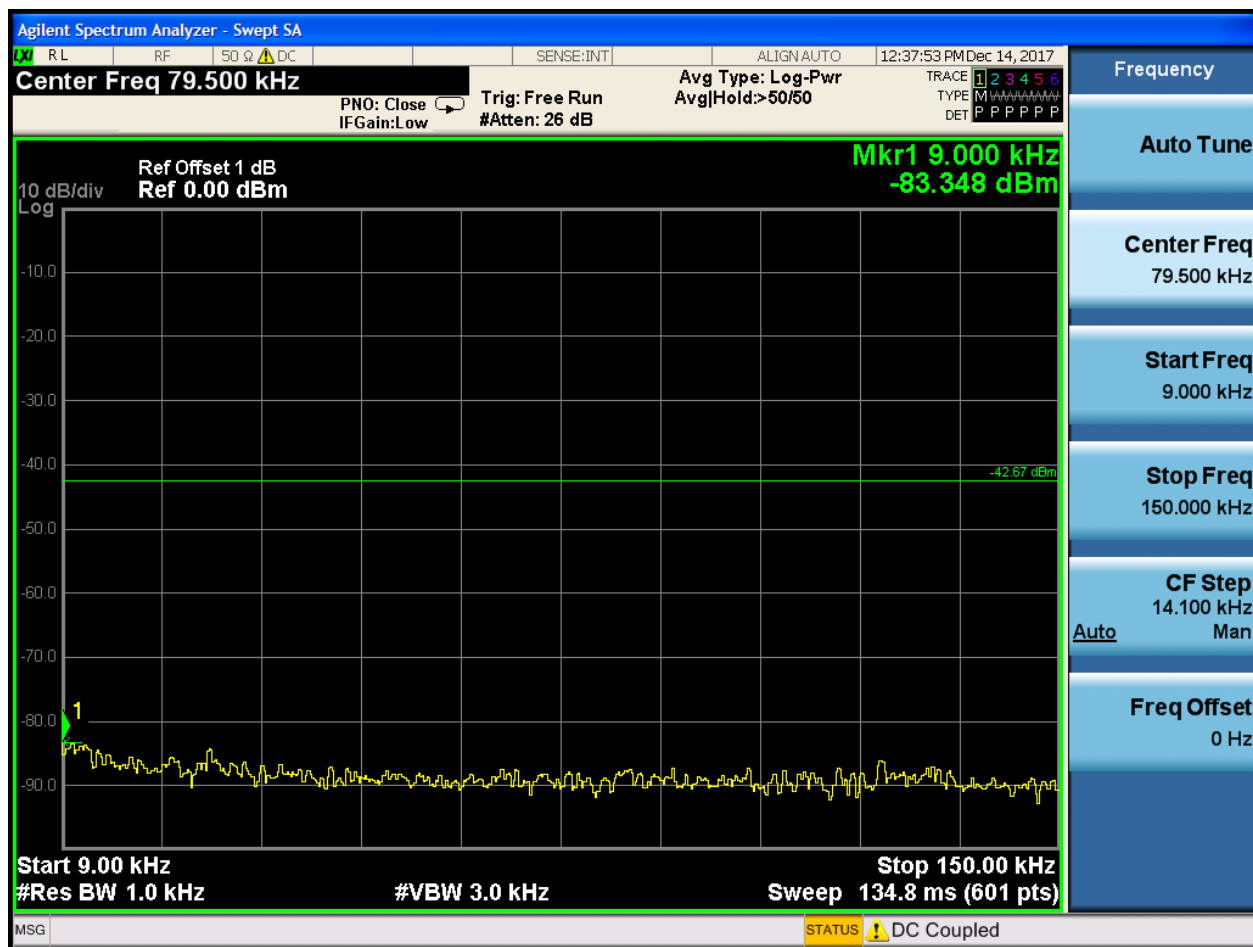
2.5 11G_M-2437@Ant 1

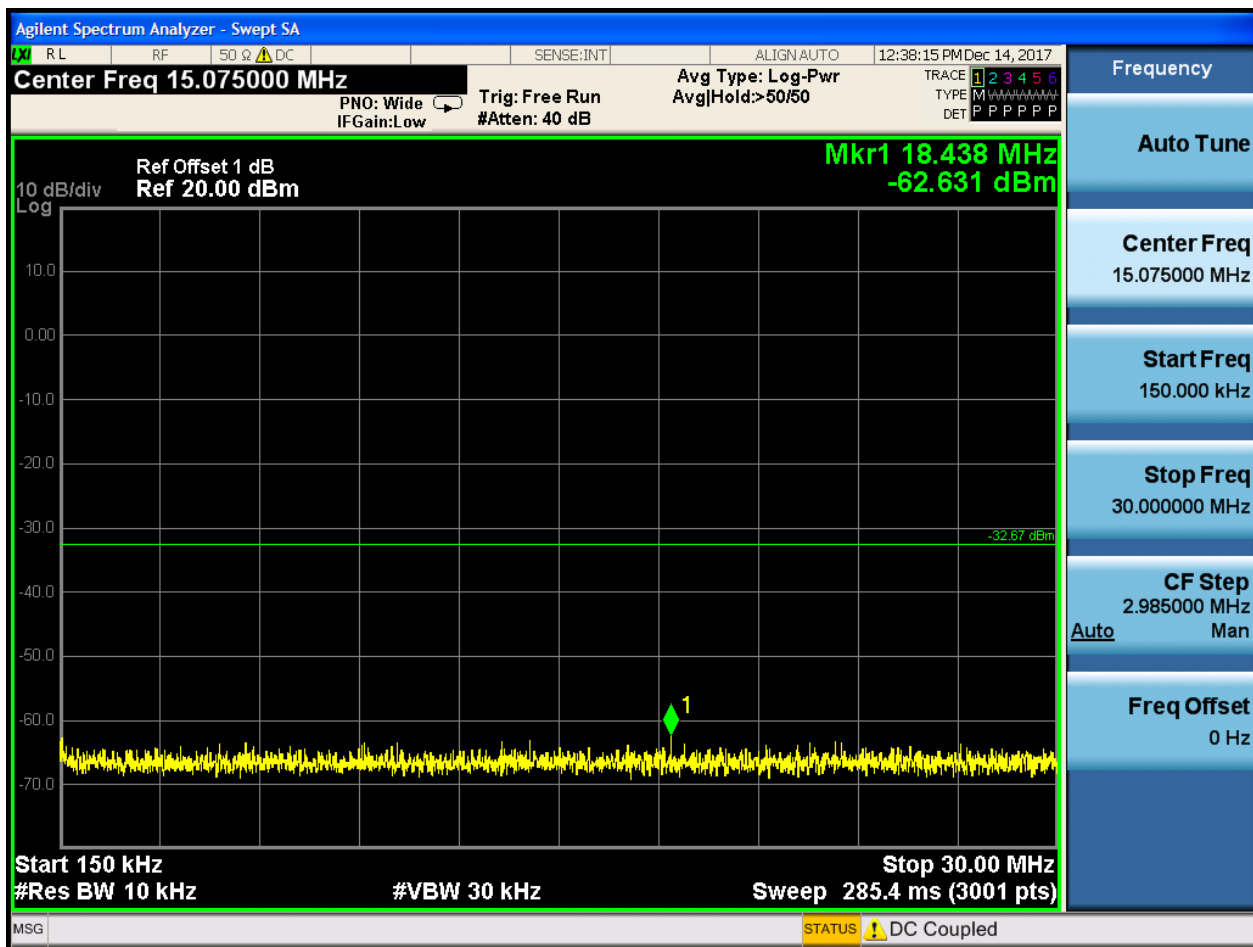
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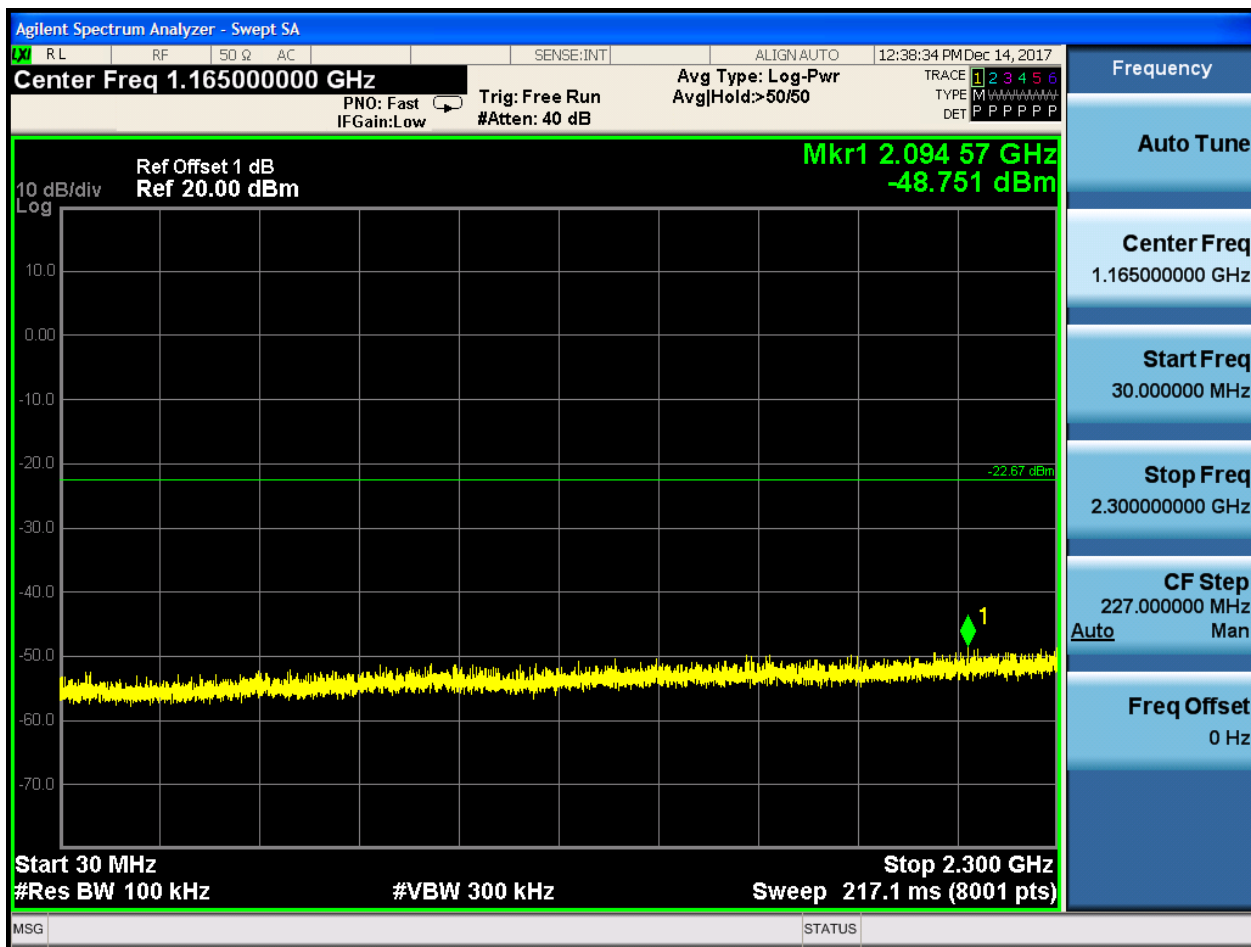


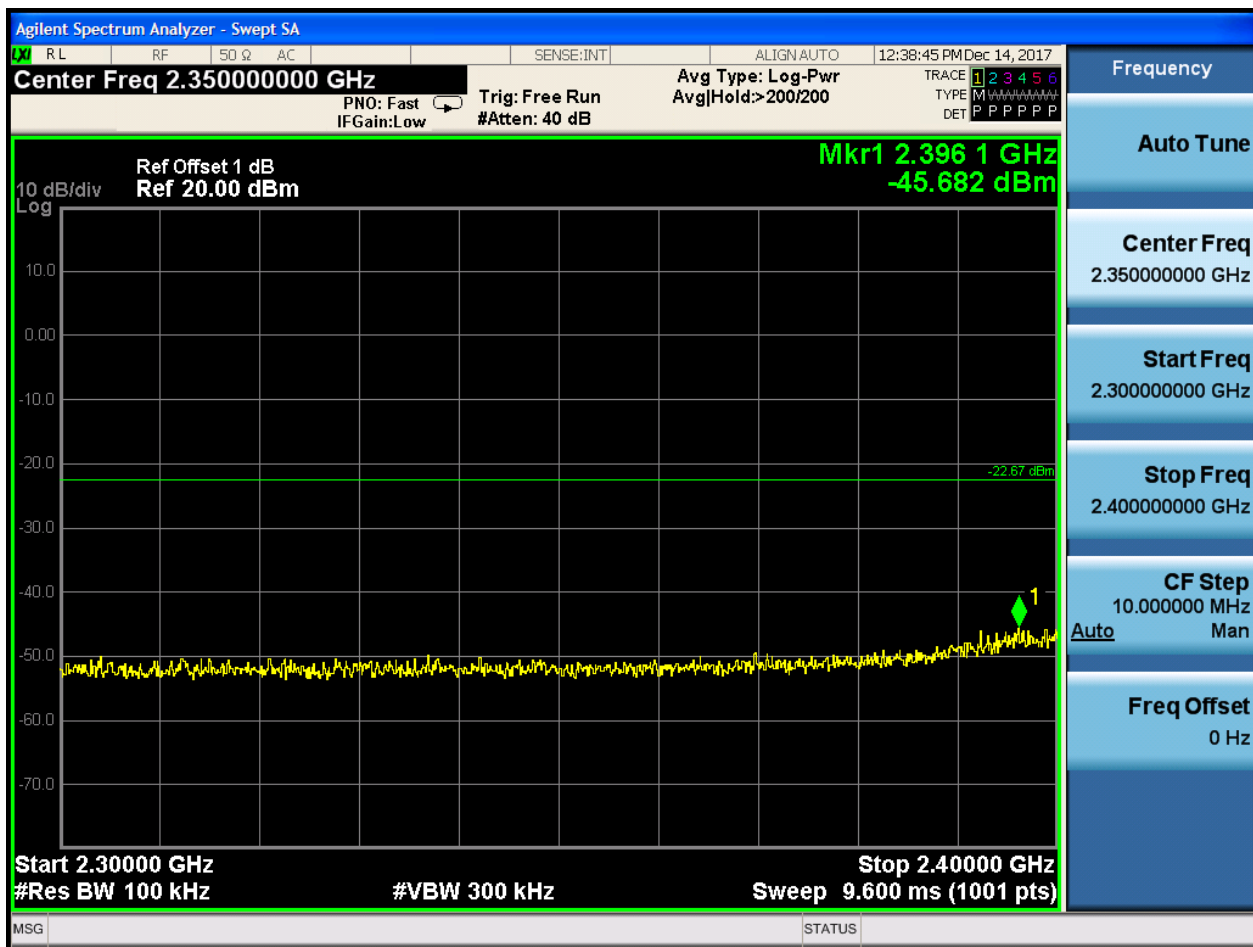


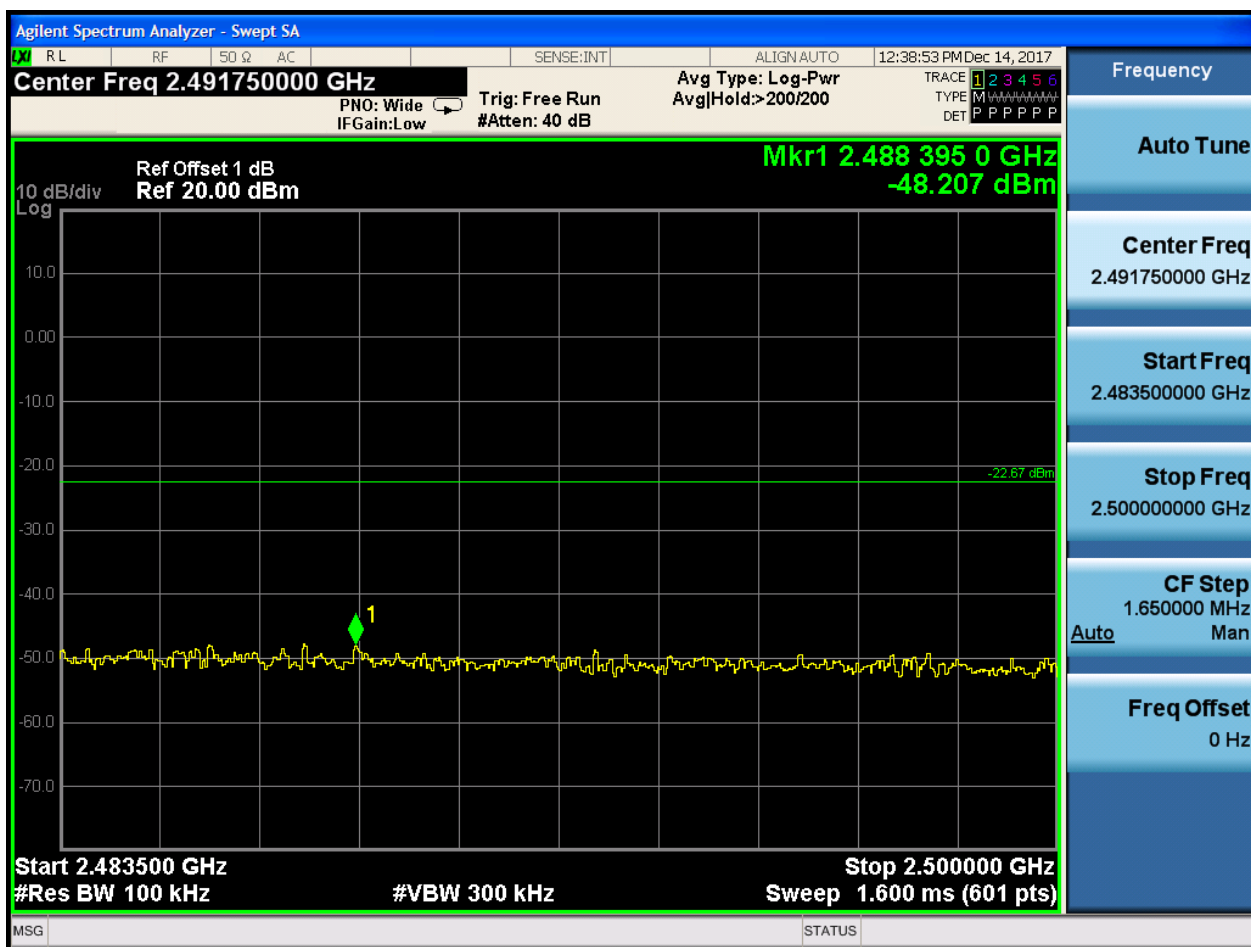
Puw:









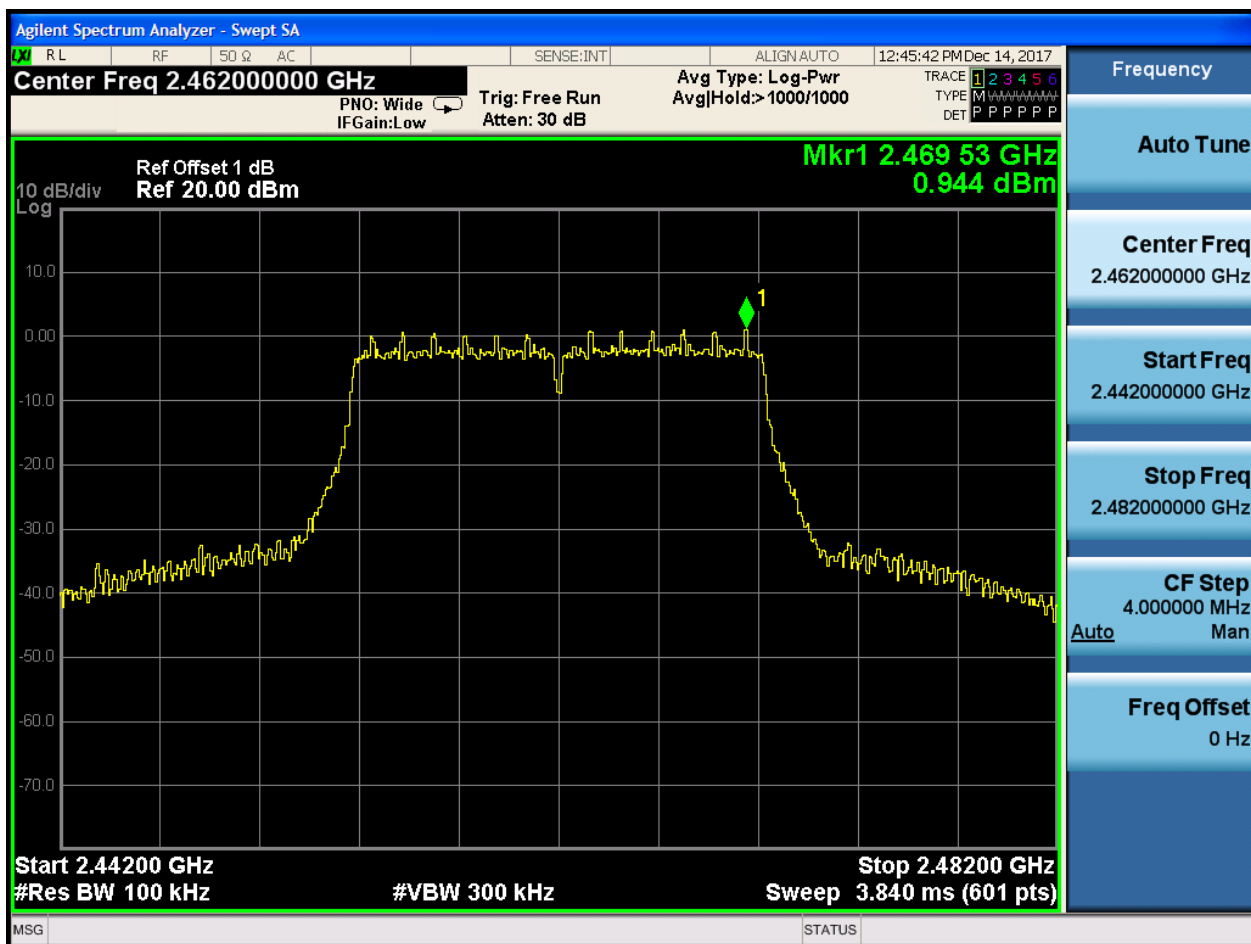






2.6 11G_H_2462@Ant 1

Pref:





Puw:

