



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.

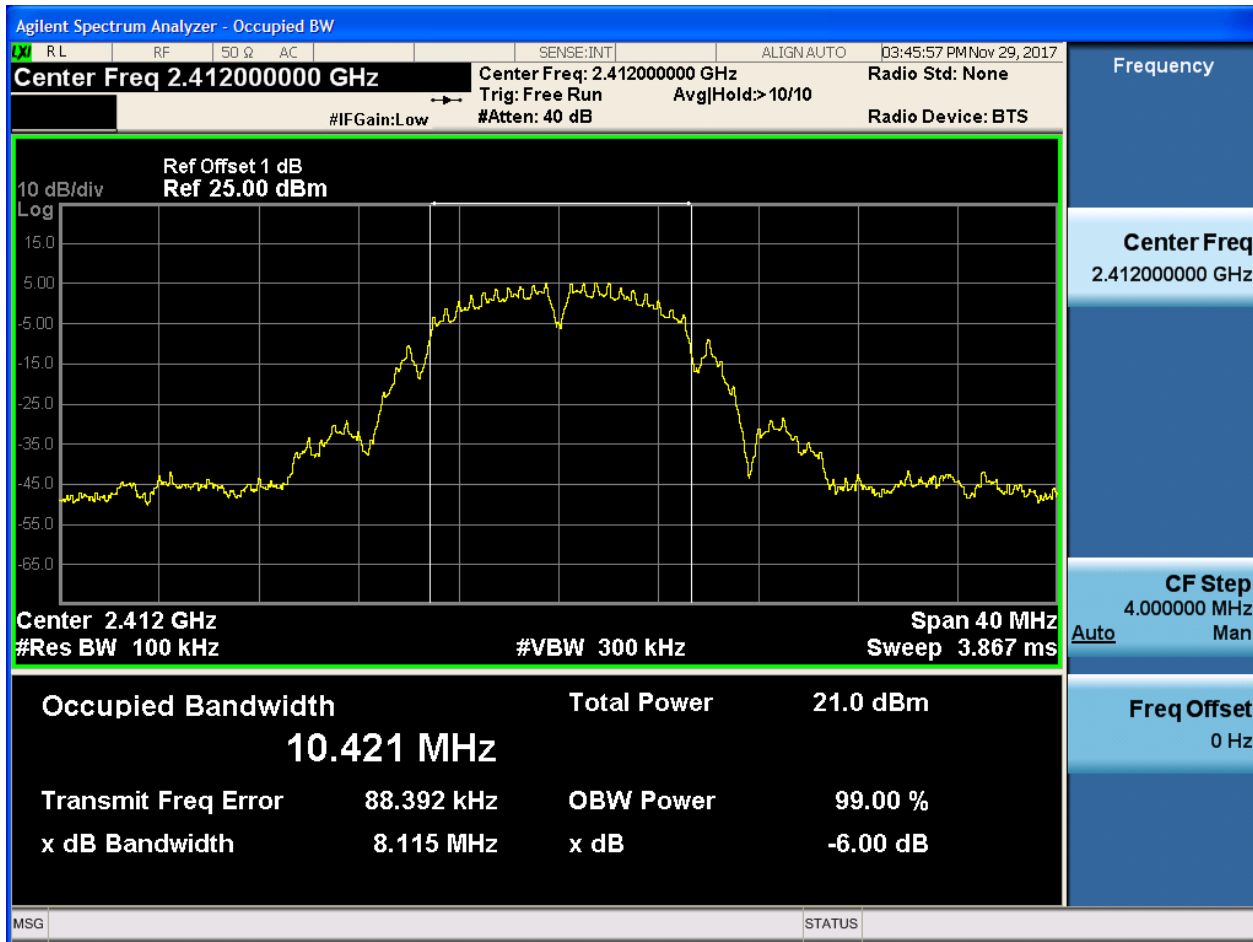
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	DTS6dBBW[MHz]	Verdict
11B	L	2412	Ant 1	8.12	pass
11B	M	2437	Ant 1	8.12	pass
11B	H	2462	Ant 1	8.13	pass
11G	L	2412	Ant 1	16.41	pass
11G	L	2417	Ant 1	16.35	pass
11G	M	2437	Ant 1	16.41	pass
11G	H	2457	Ant 1	16.39	pass
11G	H	2462	Ant 1	16.41	pass
11N20	L	2412	Ant 1	17.60	pass
11N20	L	2417	Ant 1	17.24	pass
11N20	M	2437	Ant 1	17.62	pass
11N20	H	2457	Ant 1	17.59	pass
11N20	H	2462	Ant 1	17.62	pass
11N40	L	2422	Ant 1	35.50	pass
11N40	M	2437	Ant 1	35.51	pass
11N40	H	2452	Ant 1	35.41	pass



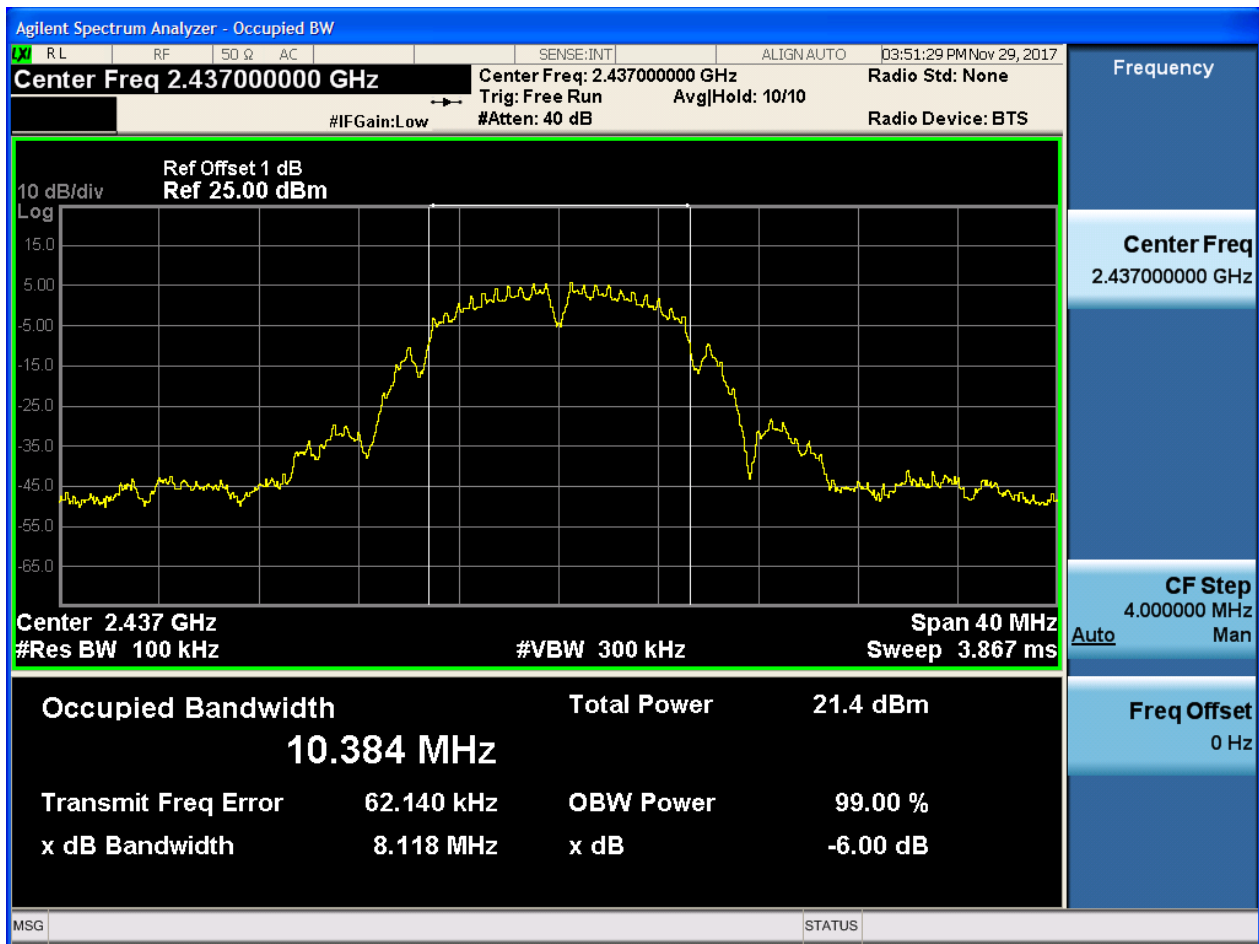
Part II - Test Plots

2.1 11B_L@Ant 1



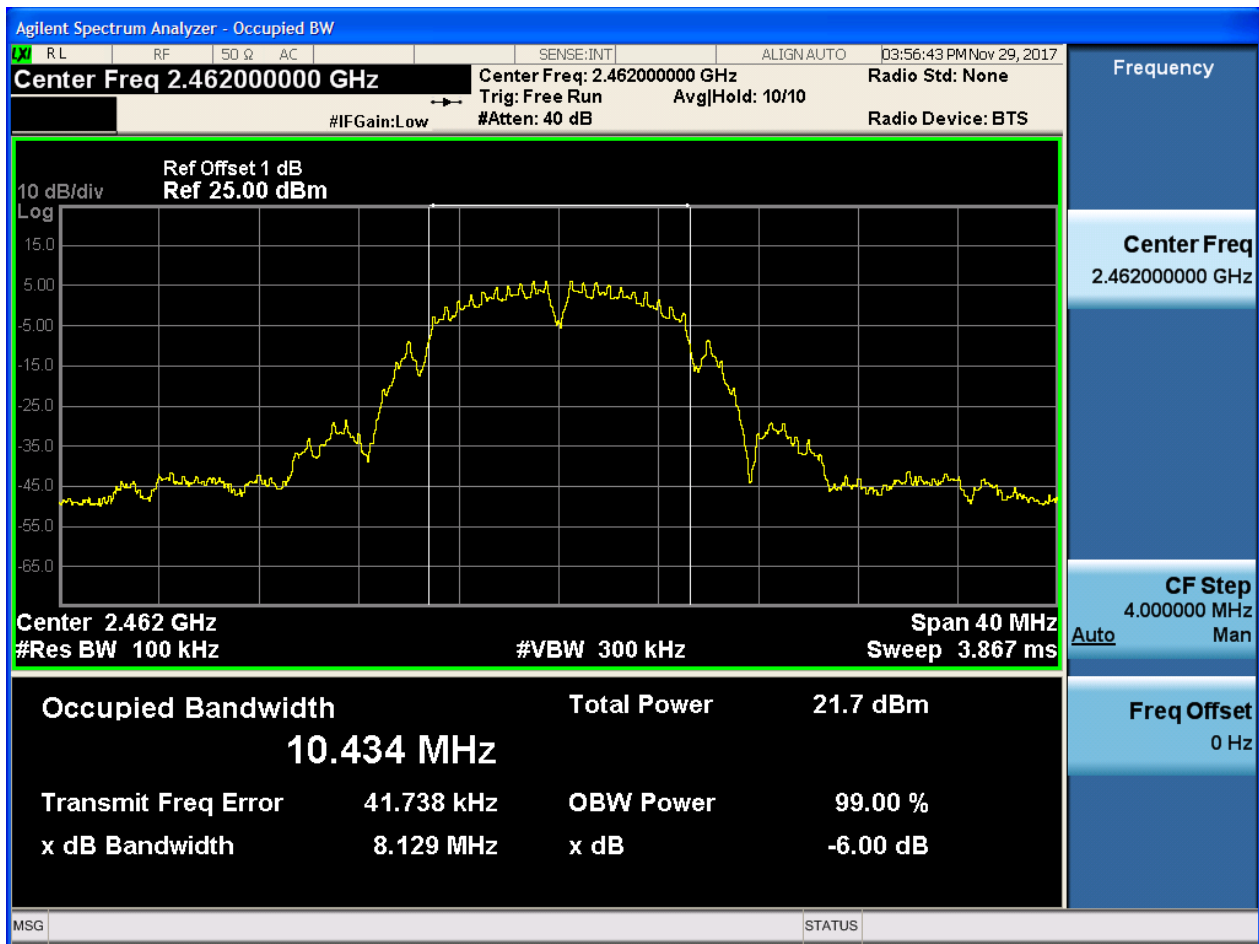


2.2 11B_M@Ant 1



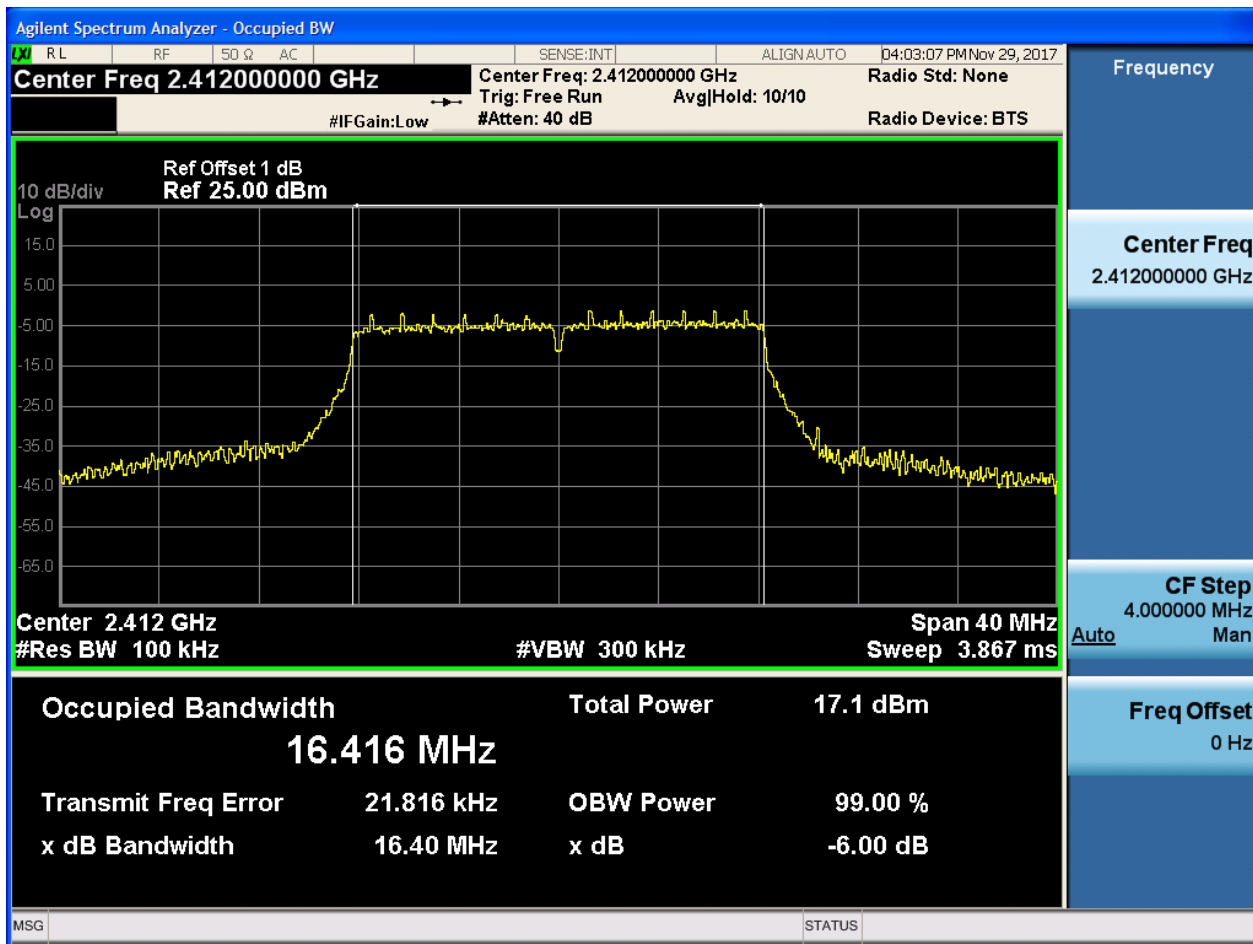


2.3 11B_H@Ant 1



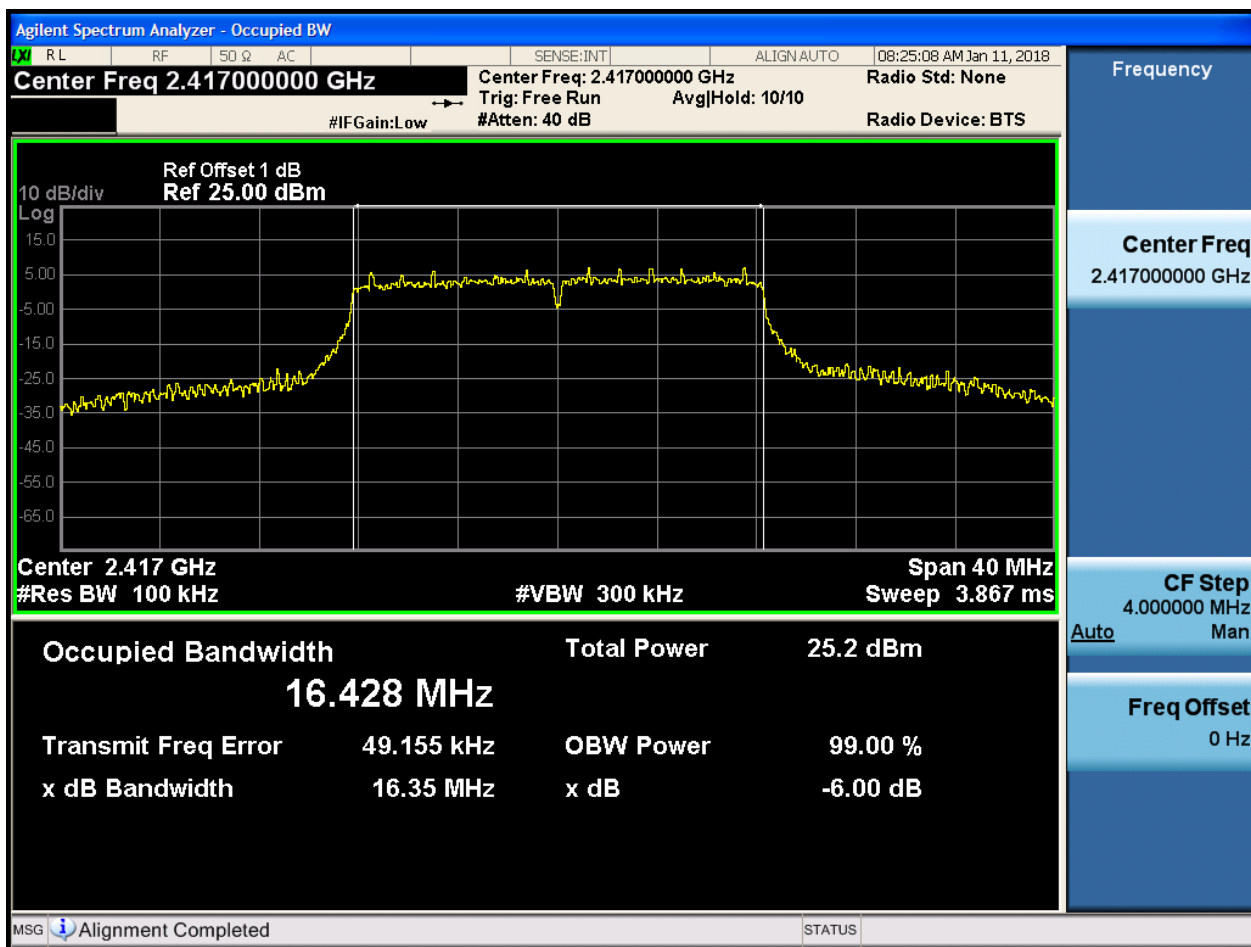


2.4 11G_L_2412@Ant 1



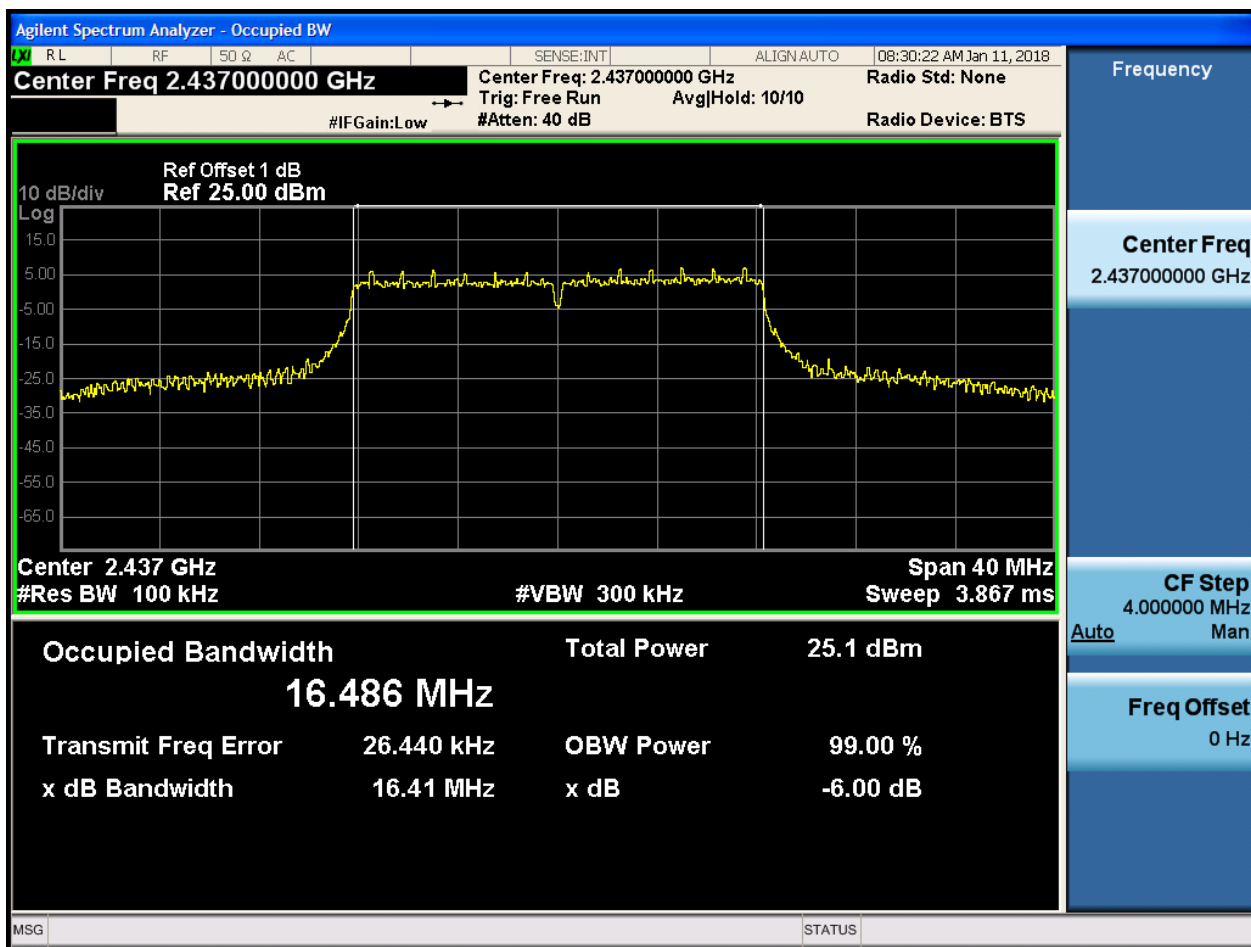


2.5 11G_L_2417@Ant 1



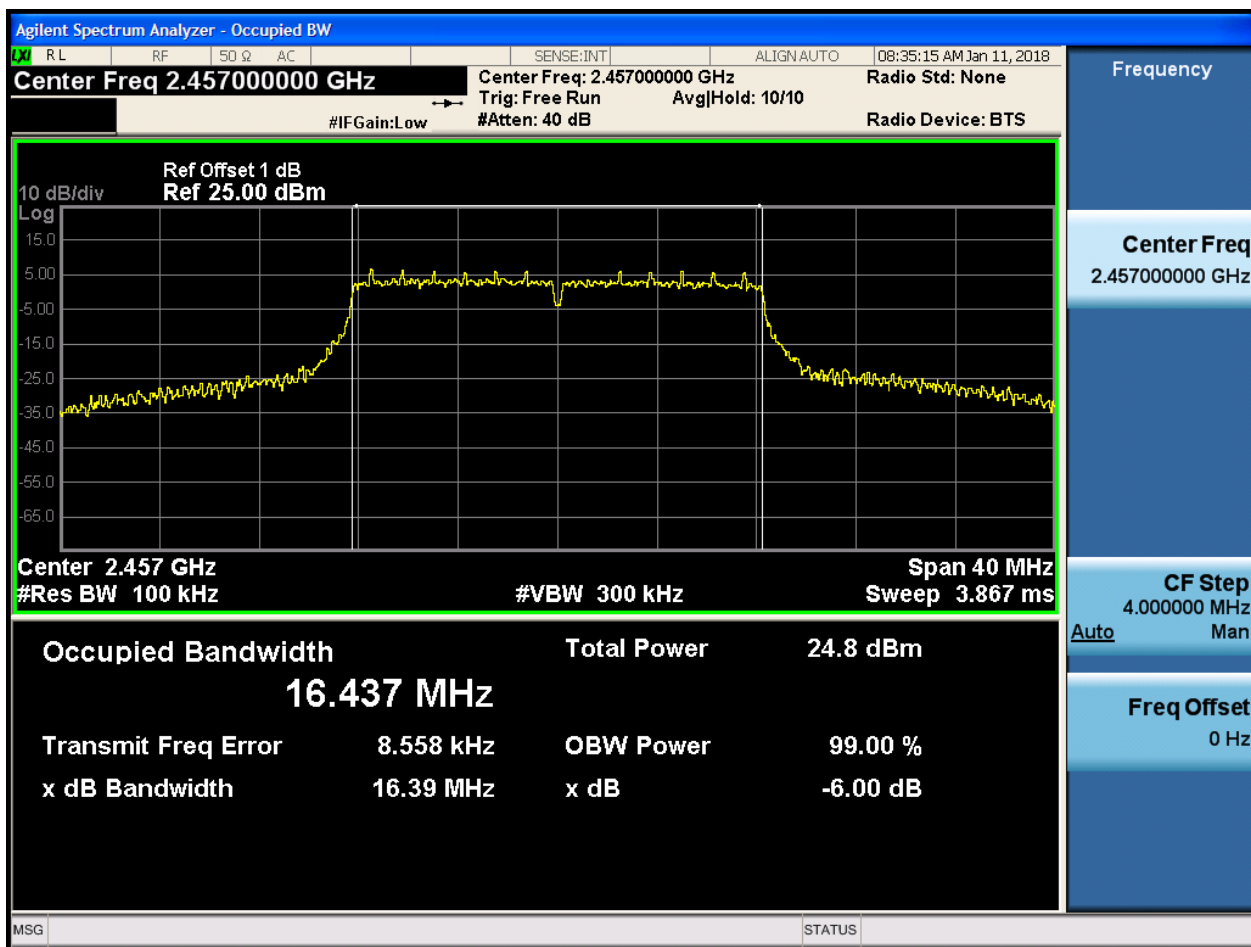


2.6 11G_M_2437@Ant 1



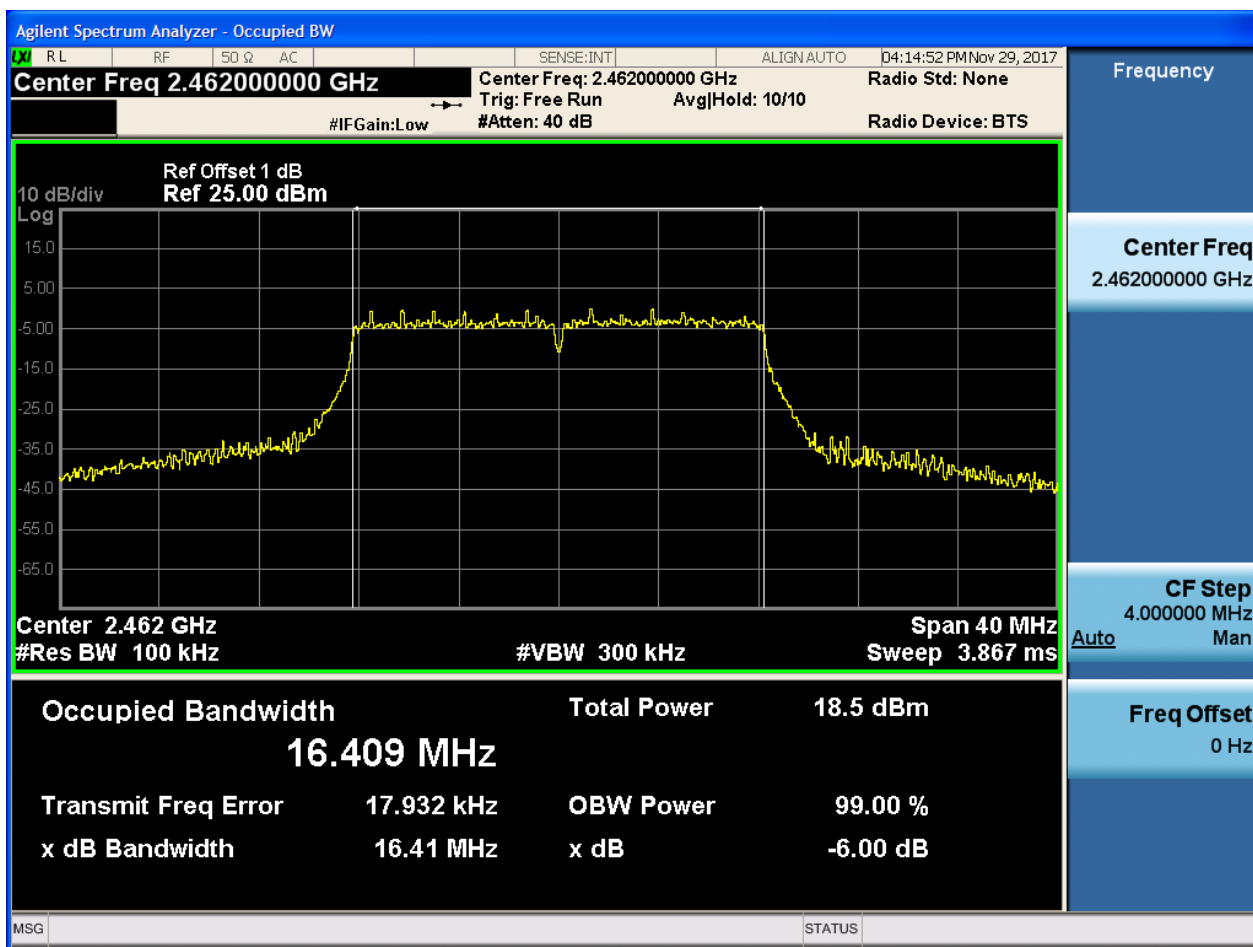


2.7 11G_H_2457@Ant 1



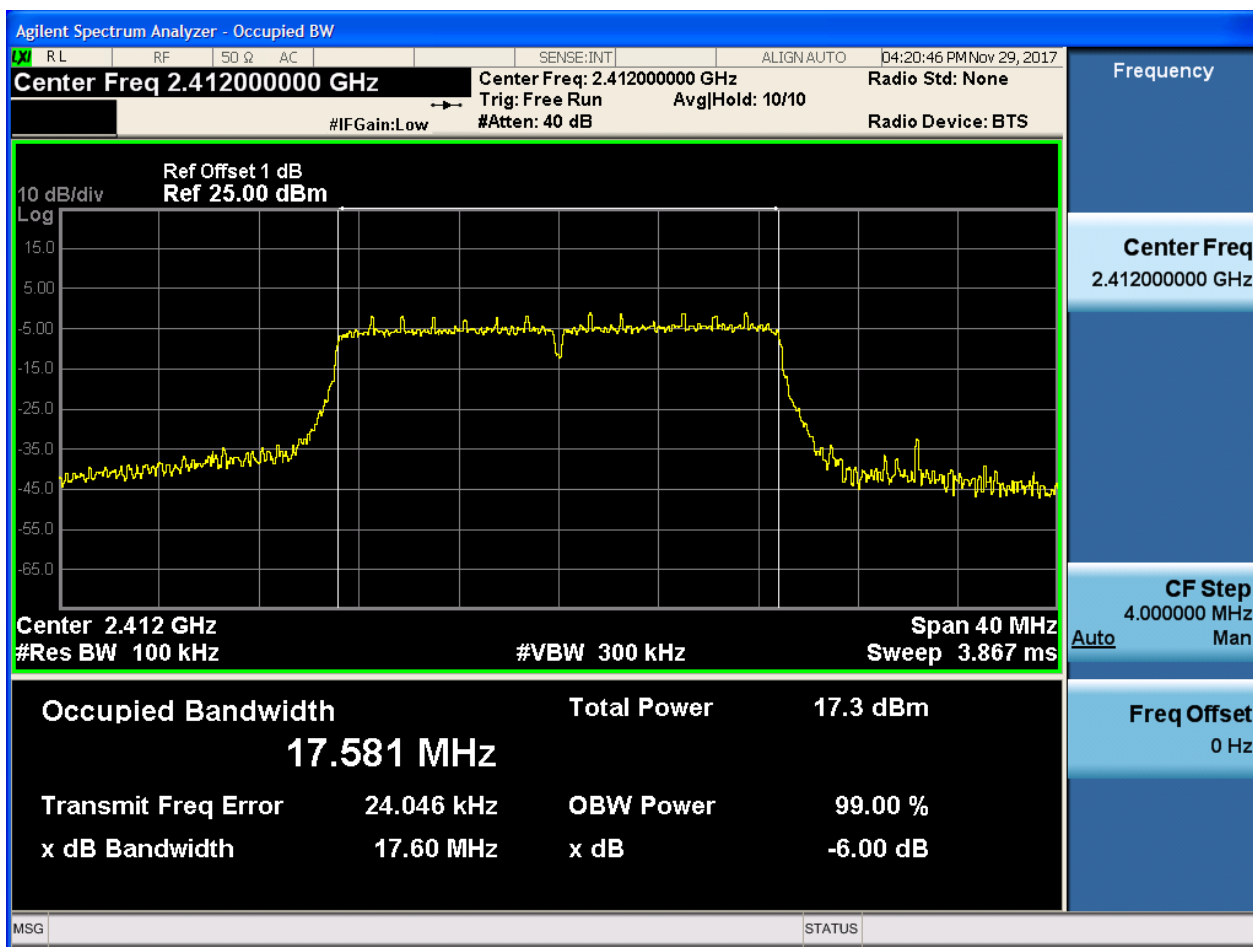


2.8 11G_H_2462@Ant 1



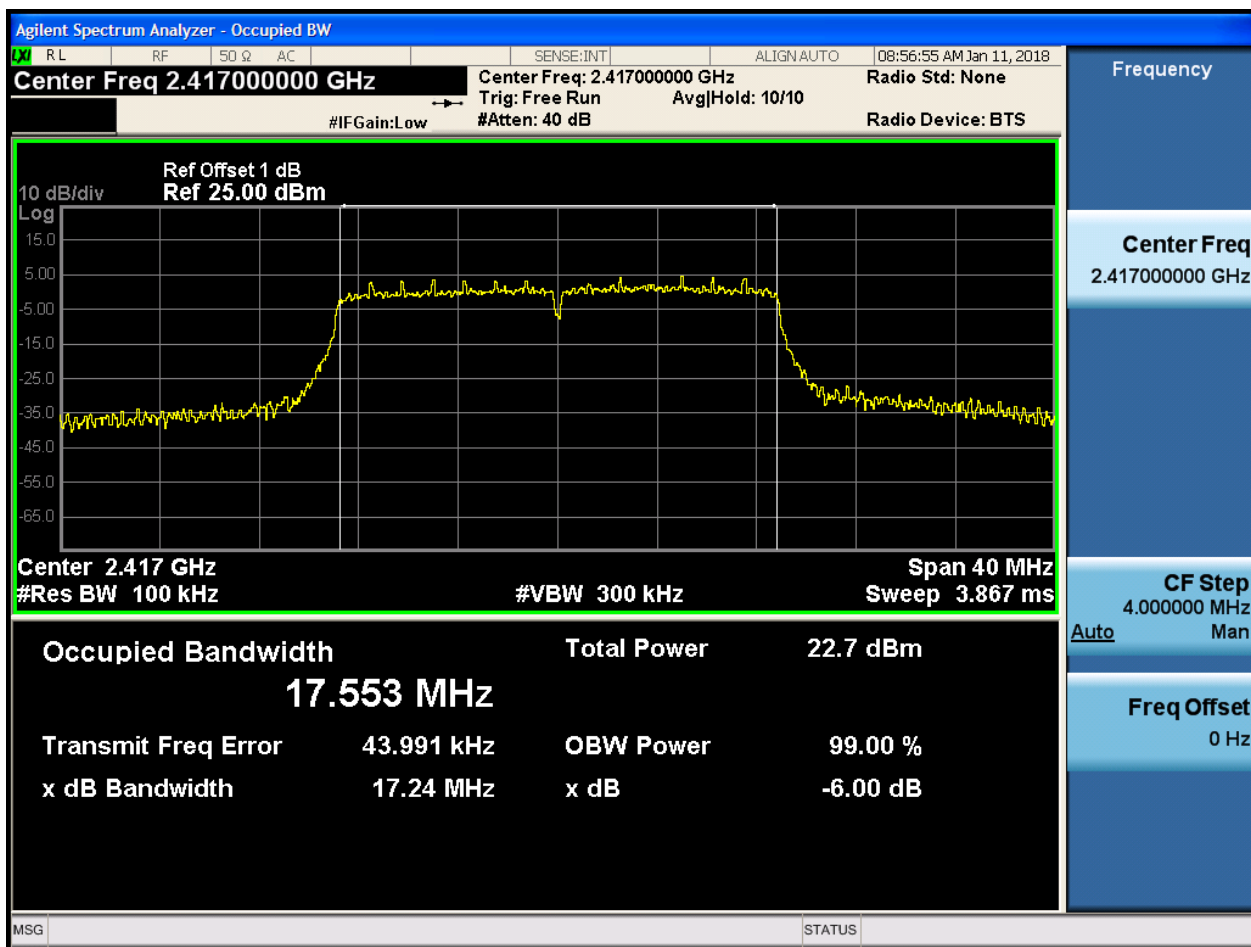


2.9 11N20_L_2412@Ant 1



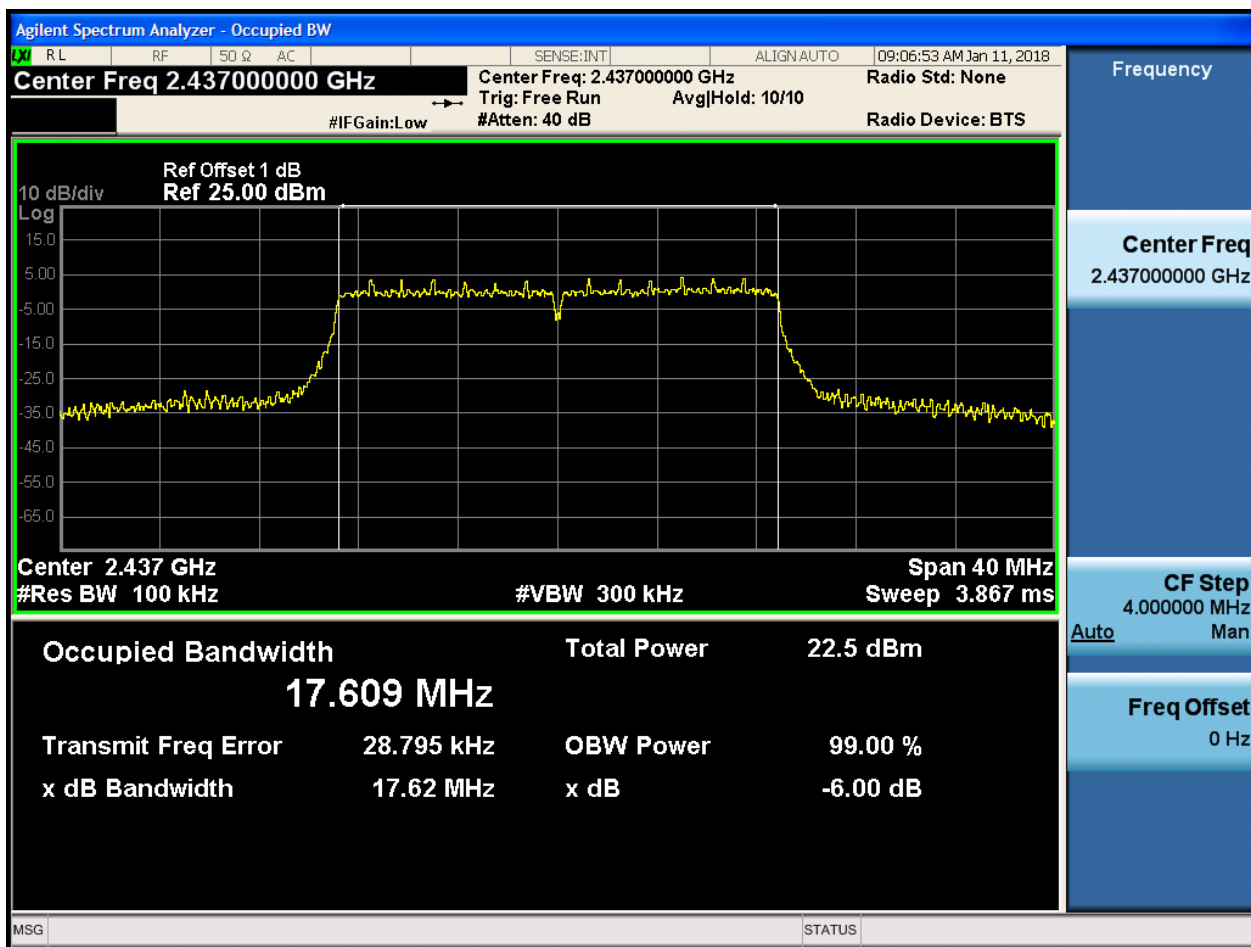


2.10 11N20_L_2417@Ant 1



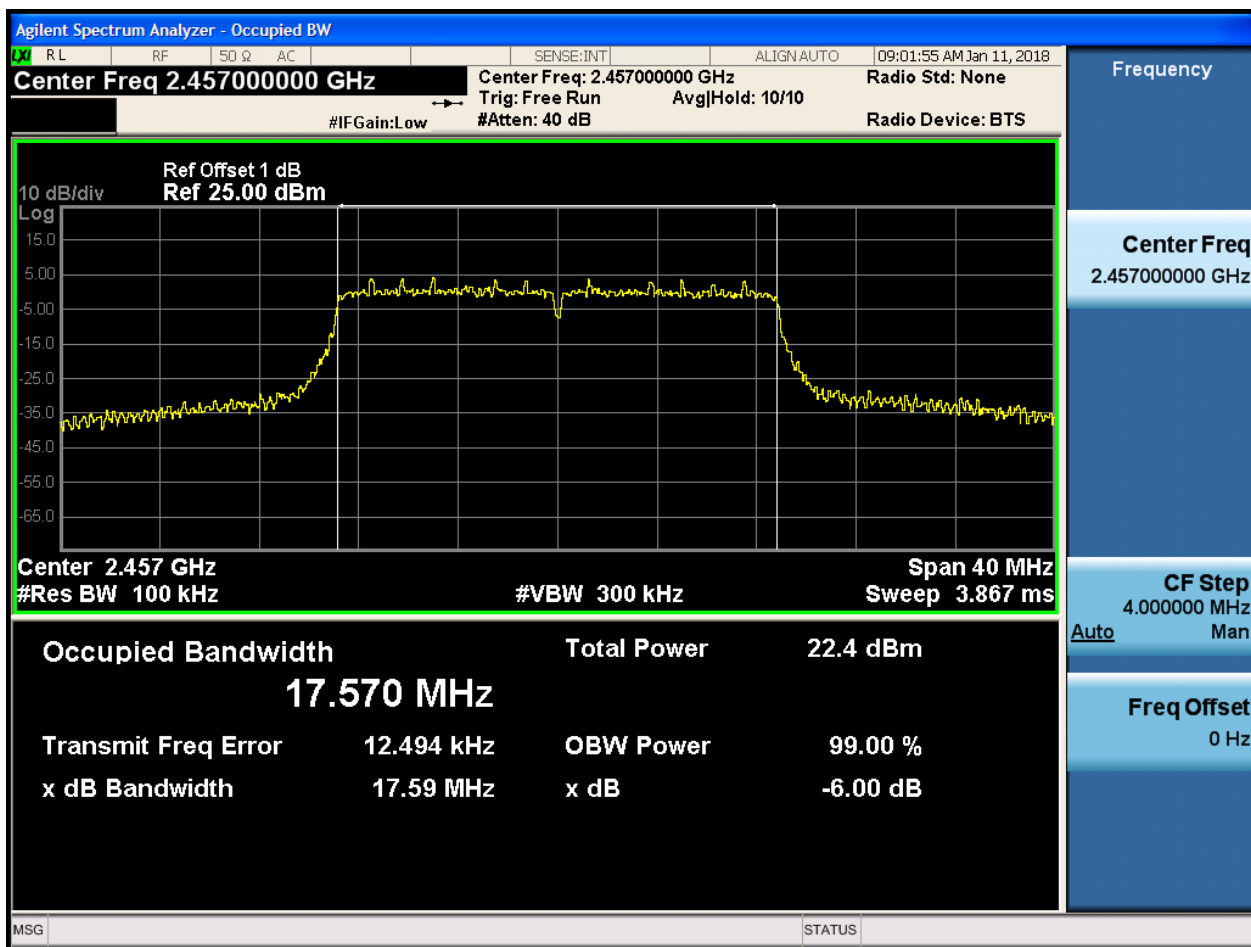


2.11 11N20_M_2437@Ant 1



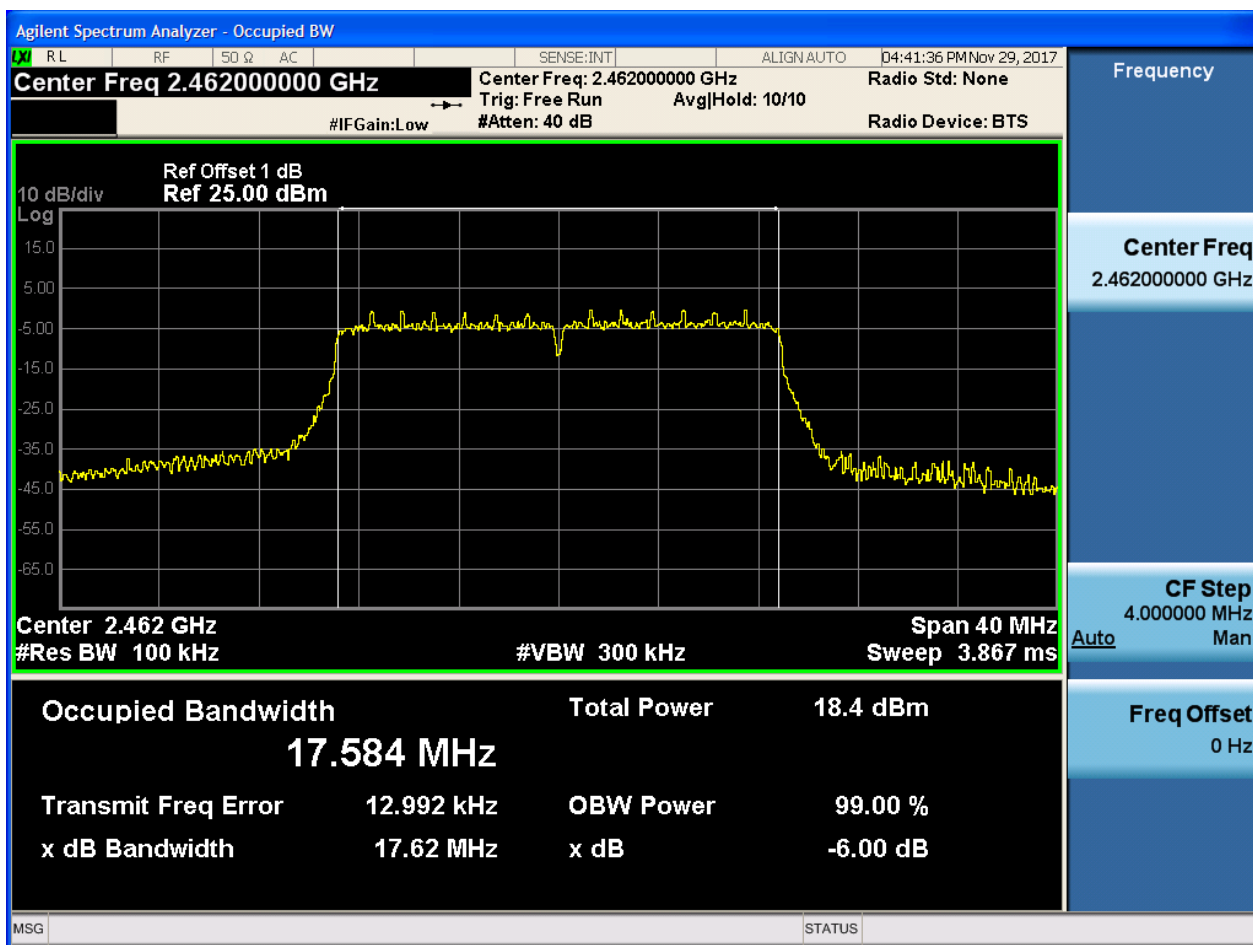


2.12 11N20_H_2457@Ant 1



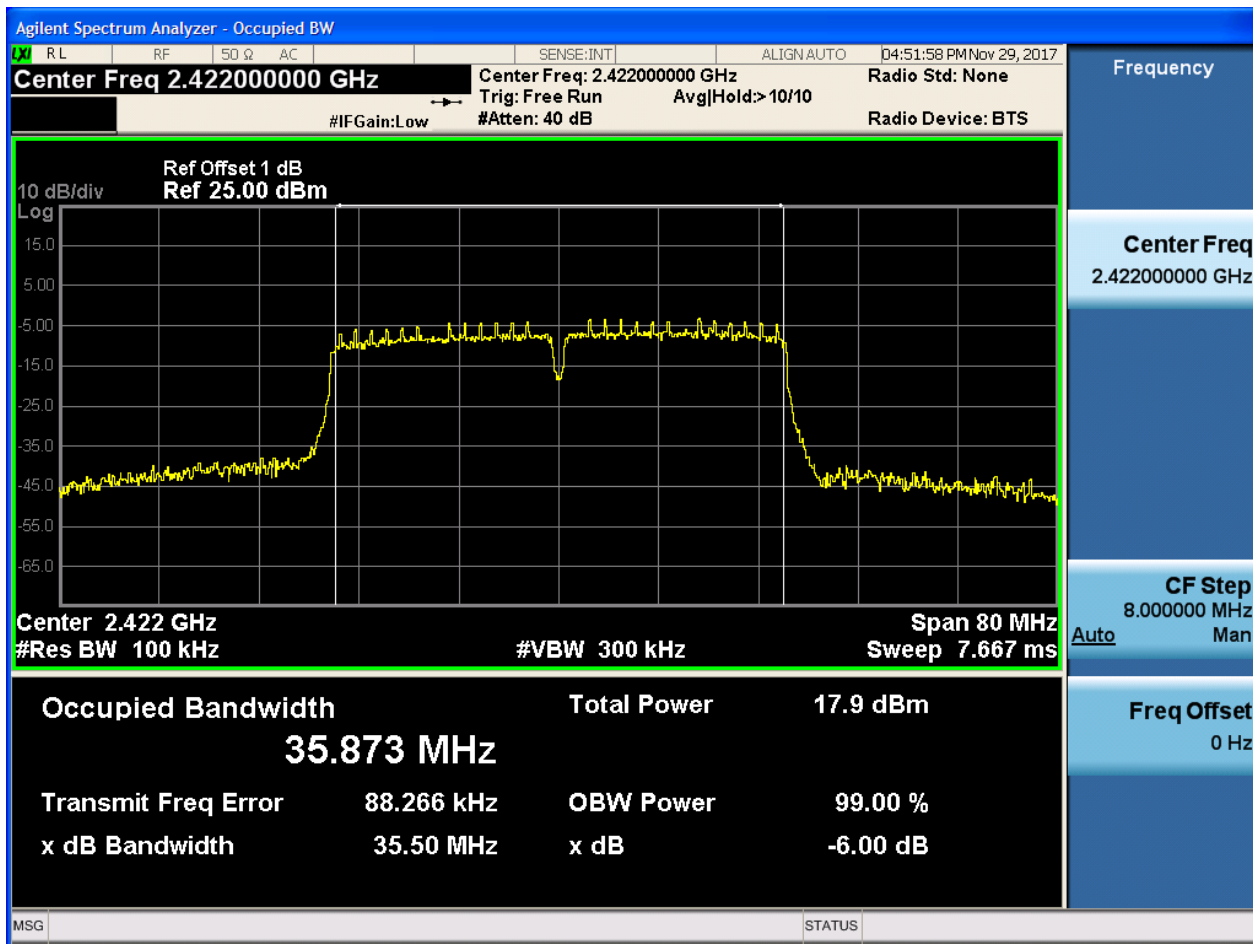


2.13 11N20_H_2462@Ant 1



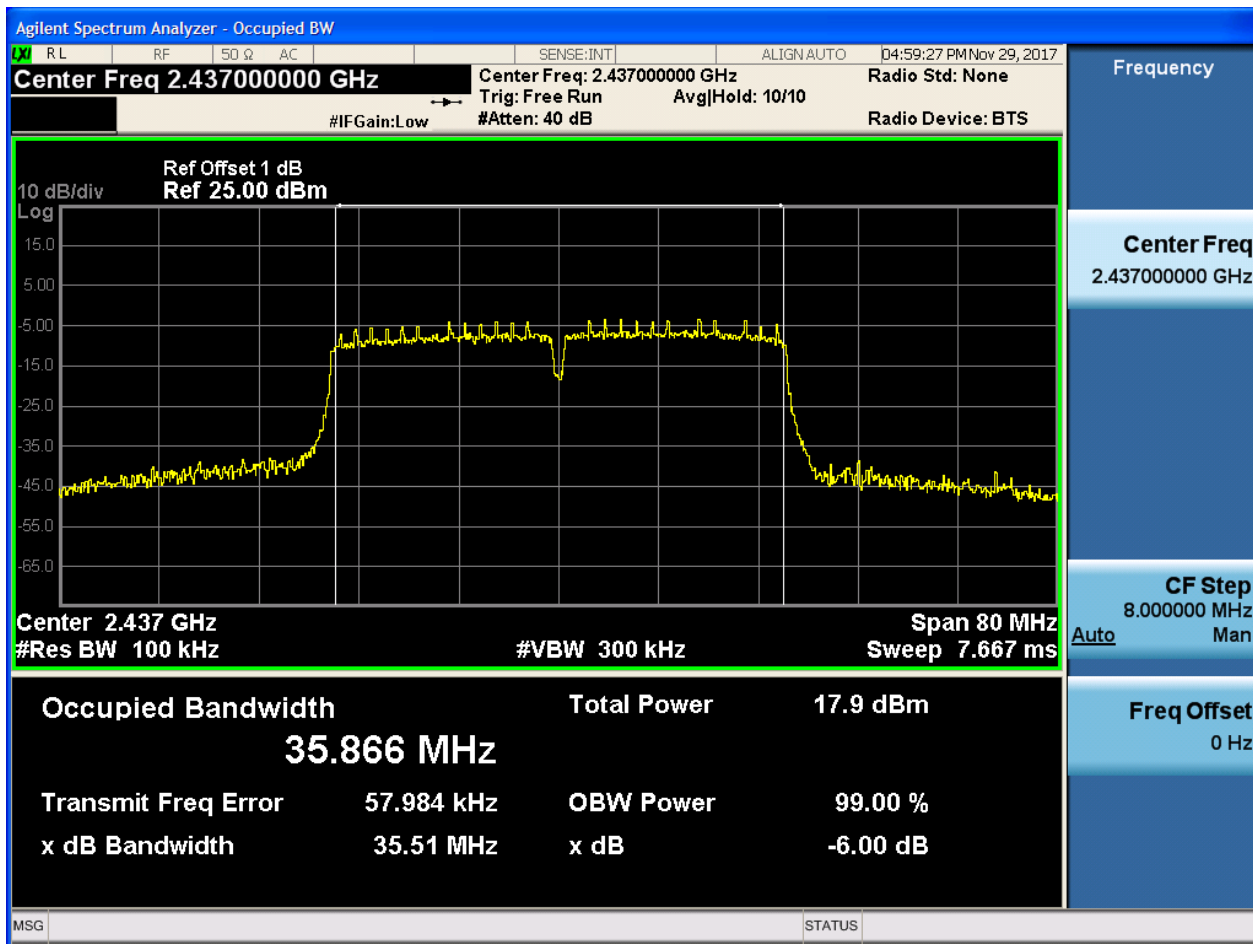


2.14 11N40_L@Ant 1



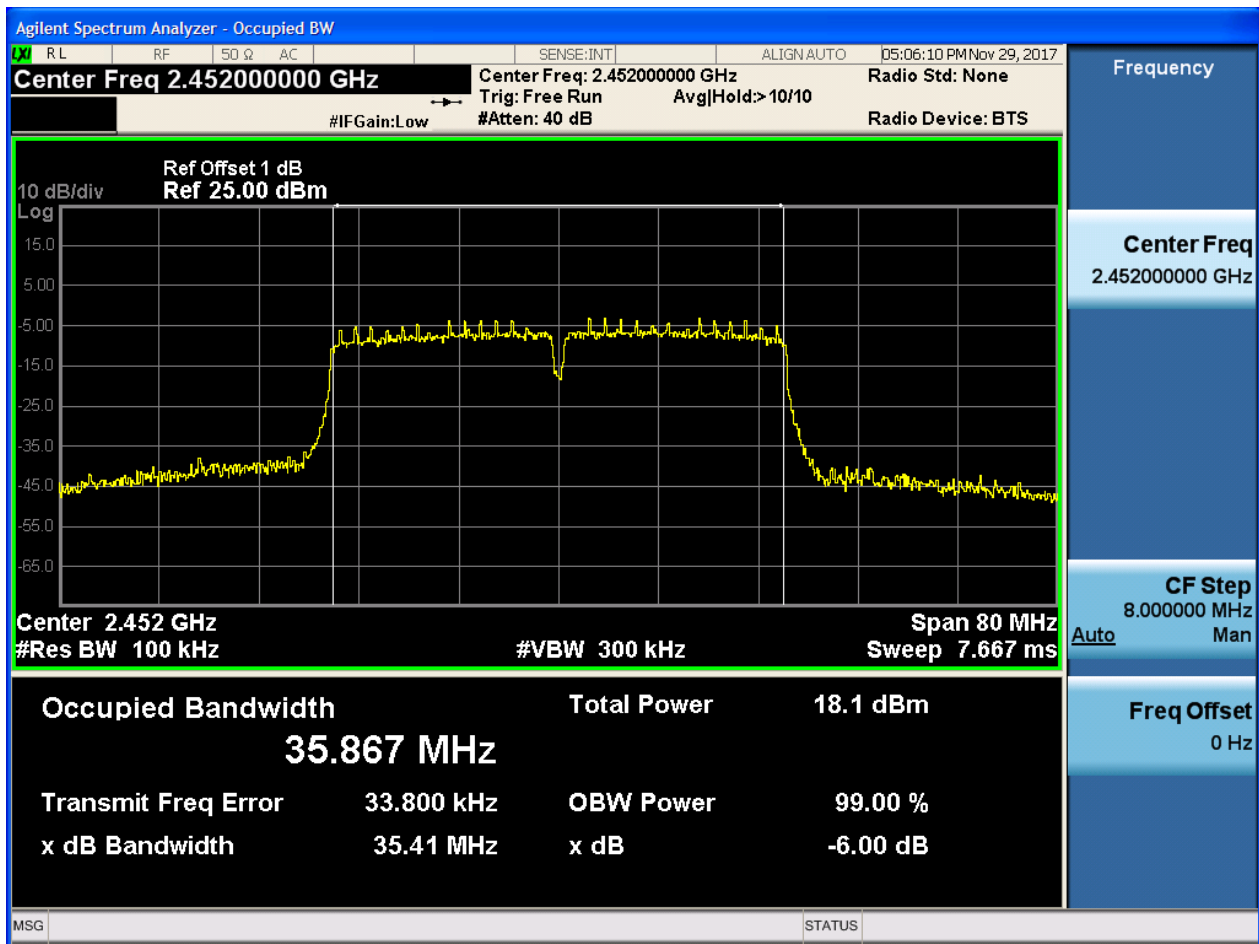


2.15 11N40_M@Ant 1





2.16 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.

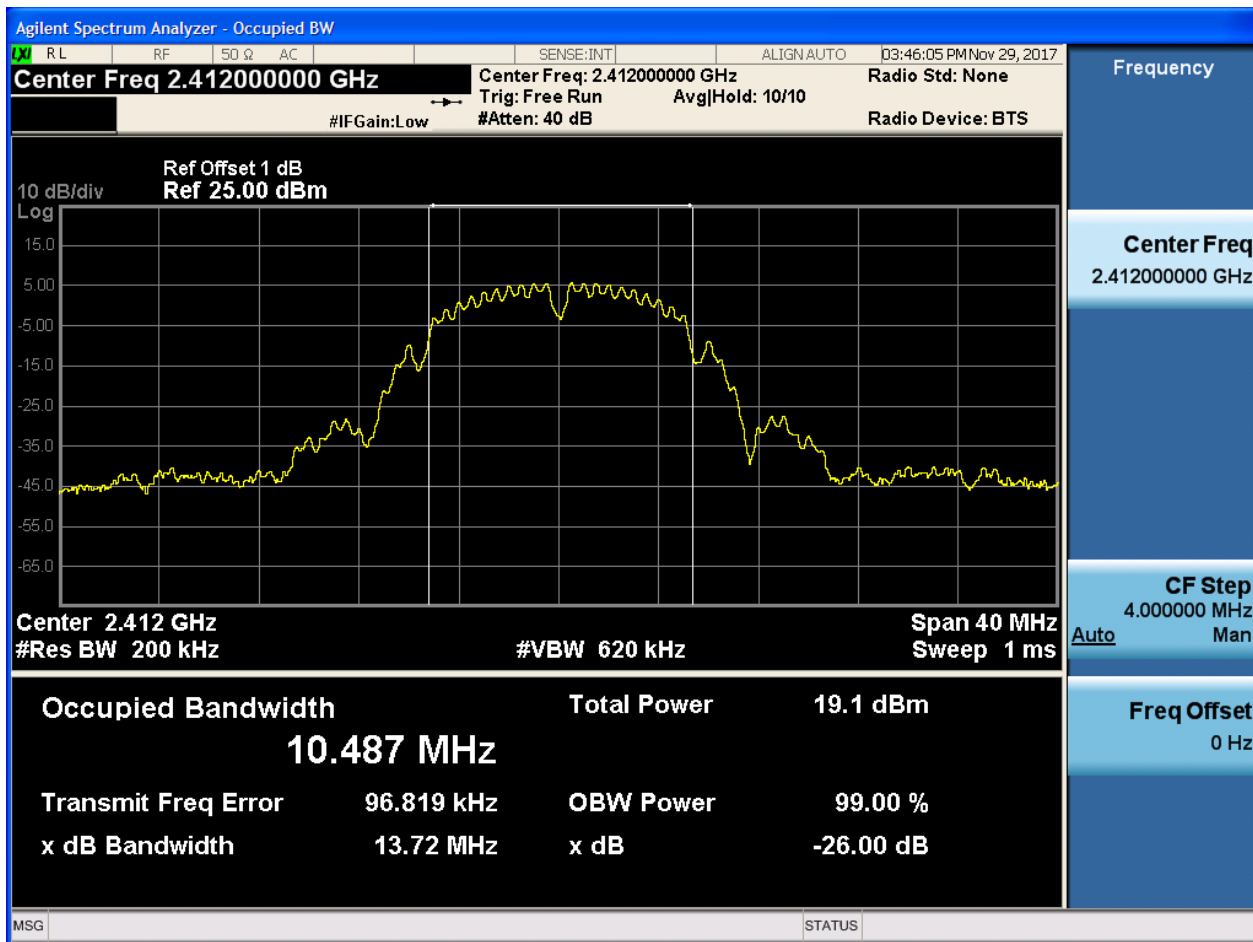
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Occupied Bandwidth [MHz]	Verdict
11B	L	2412	Ant 1	10.49	pass
11B	M	2437	Ant 1	10.48	pass
11B	H	2462	Ant 1	10.49	pass
11G	L	2412	Ant 1	16.52	pass
11G	L	2417	Ant 1	16.53	pass
11G	M	2437	Ant 1	16.63	pass
11G	H	2457	Ant 1	16.53	pass
11G	H	2462	Ant 1	16.51	pass
11N20	L	2412	Ant 1	17.61	pass
11N20	L	2417	Ant 1	17.57	pass
11N20	M	2437	Ant 1	17.64	pass
11N20	H	2457	Ant 1	17.61	pass
11N20	H	2462	Ant 1	17.60	pass
11N40	L	2422	Ant 1	35.93	pass
11N40	M	2437	Ant 1	35.90	pass
11N40	H	2452	Ant 1	35.91	pass



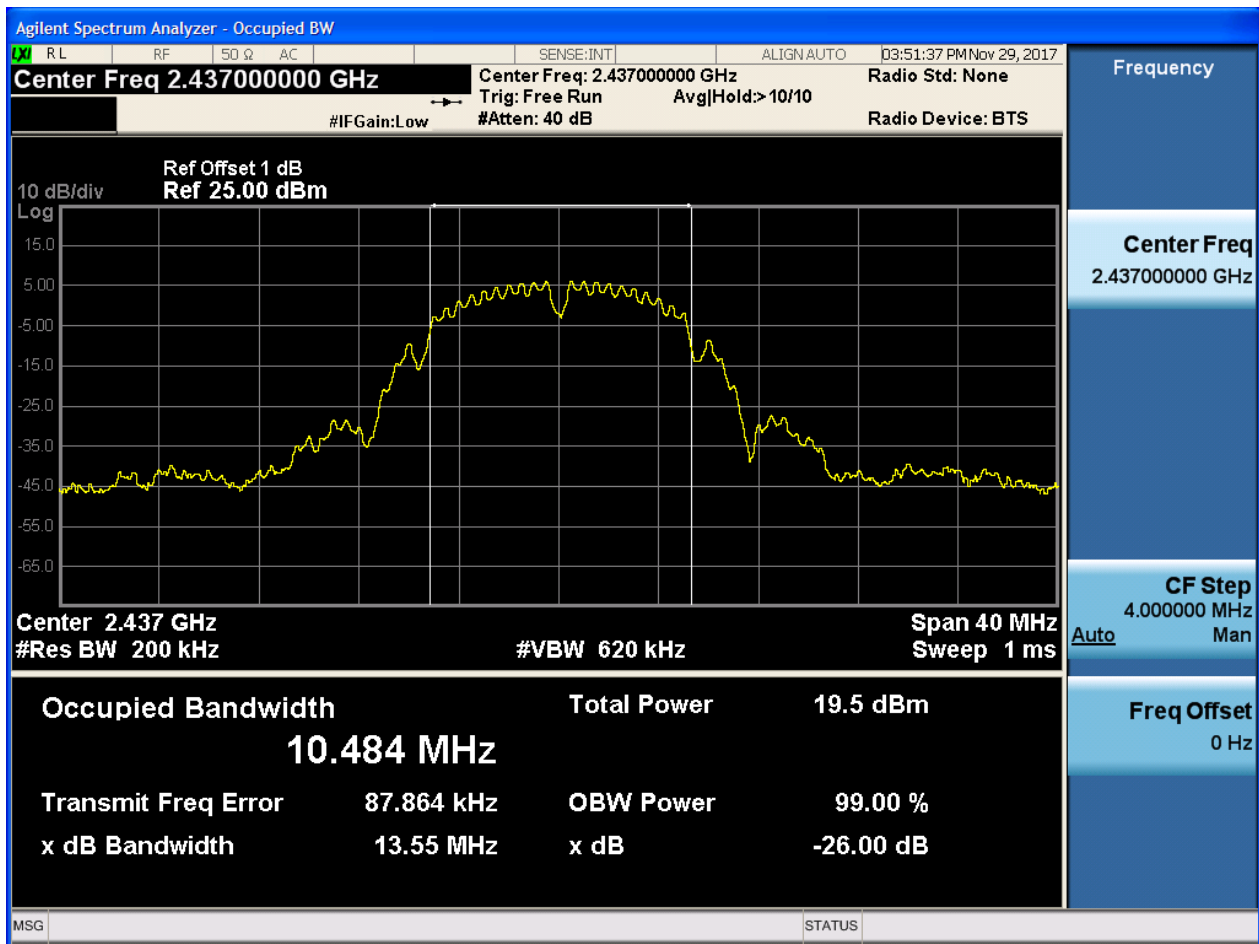
Part II - Test Plots

2.1 11B_L@Ant 1



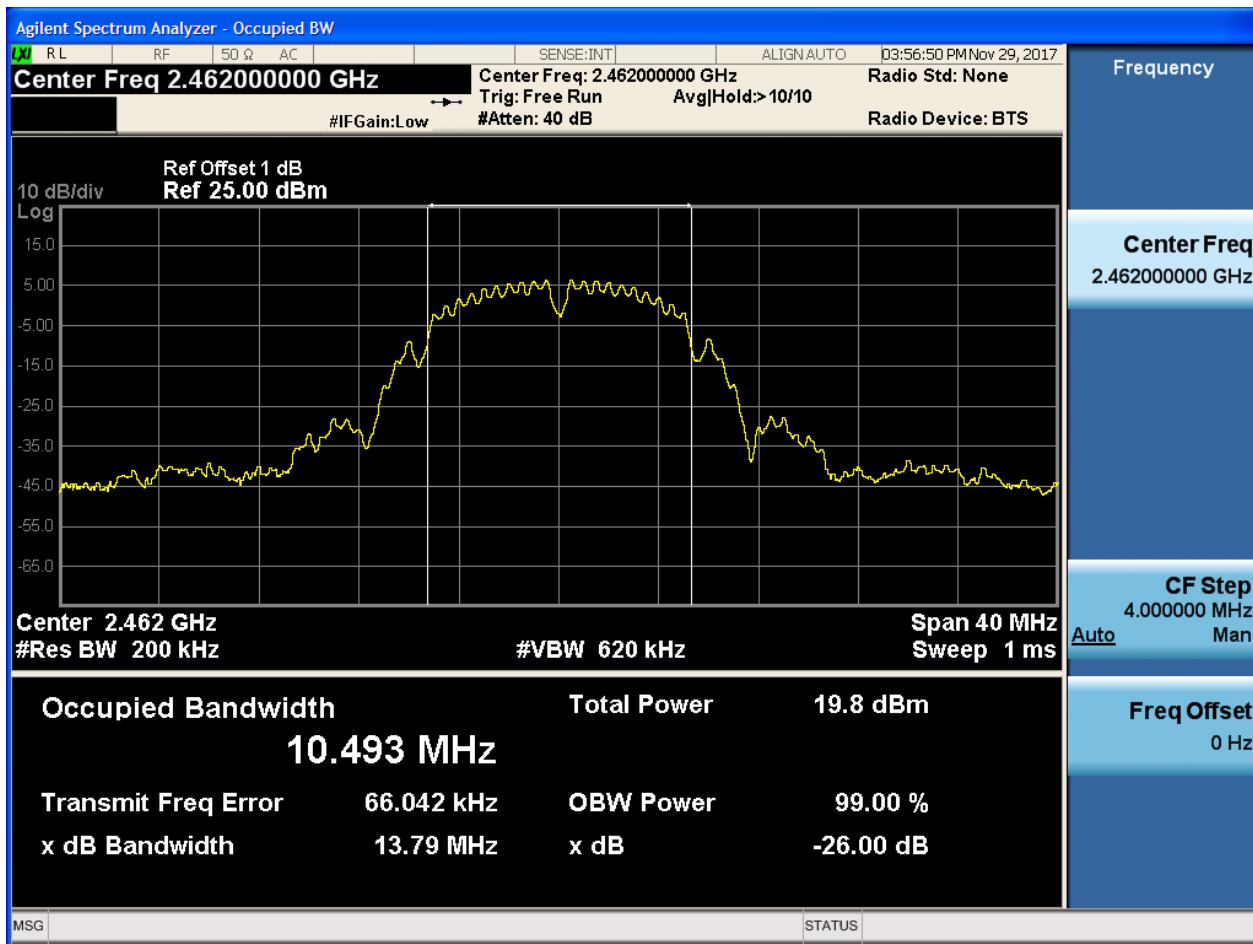


2.2 11B_M@Ant 1



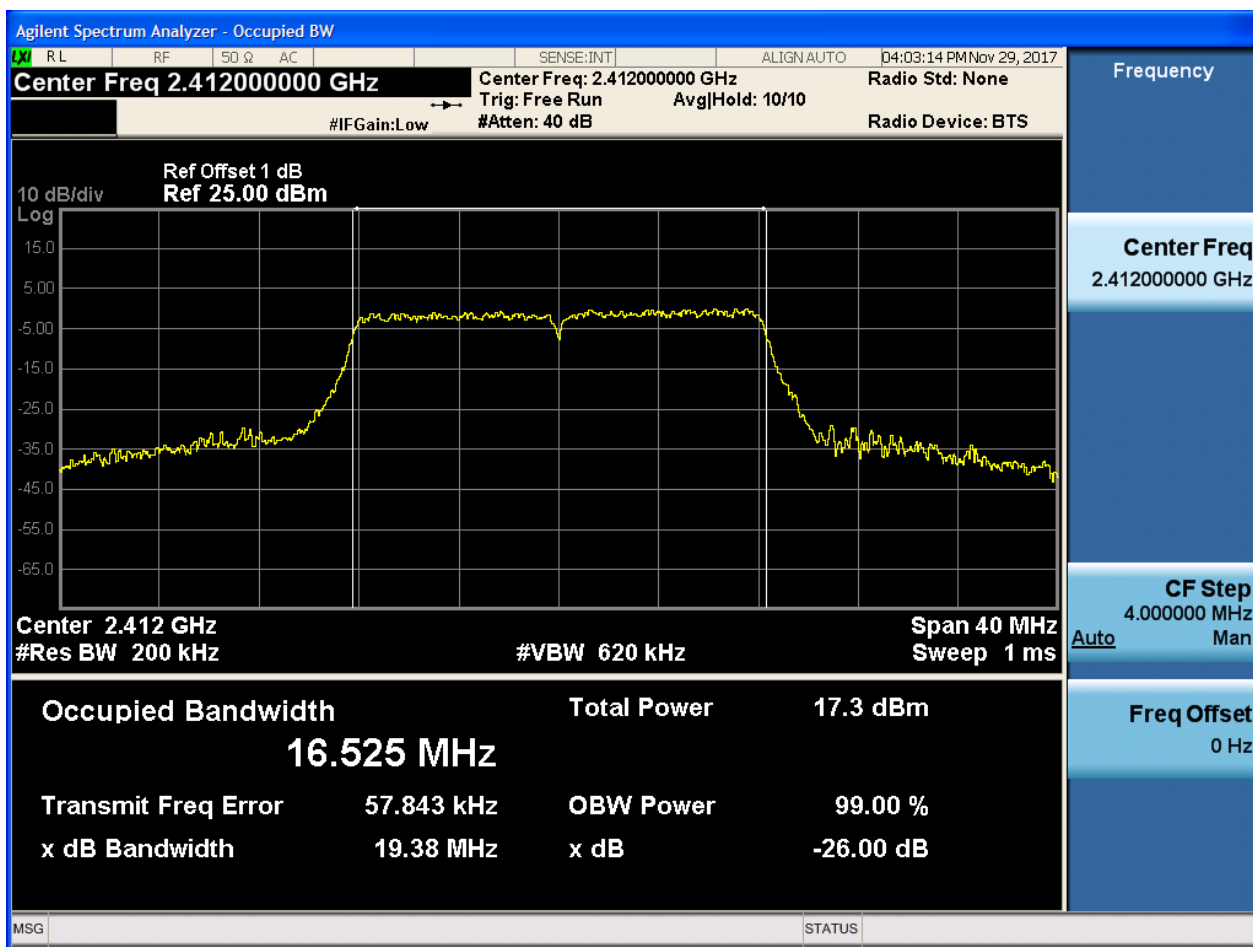


2.3 11B_H@Ant 1



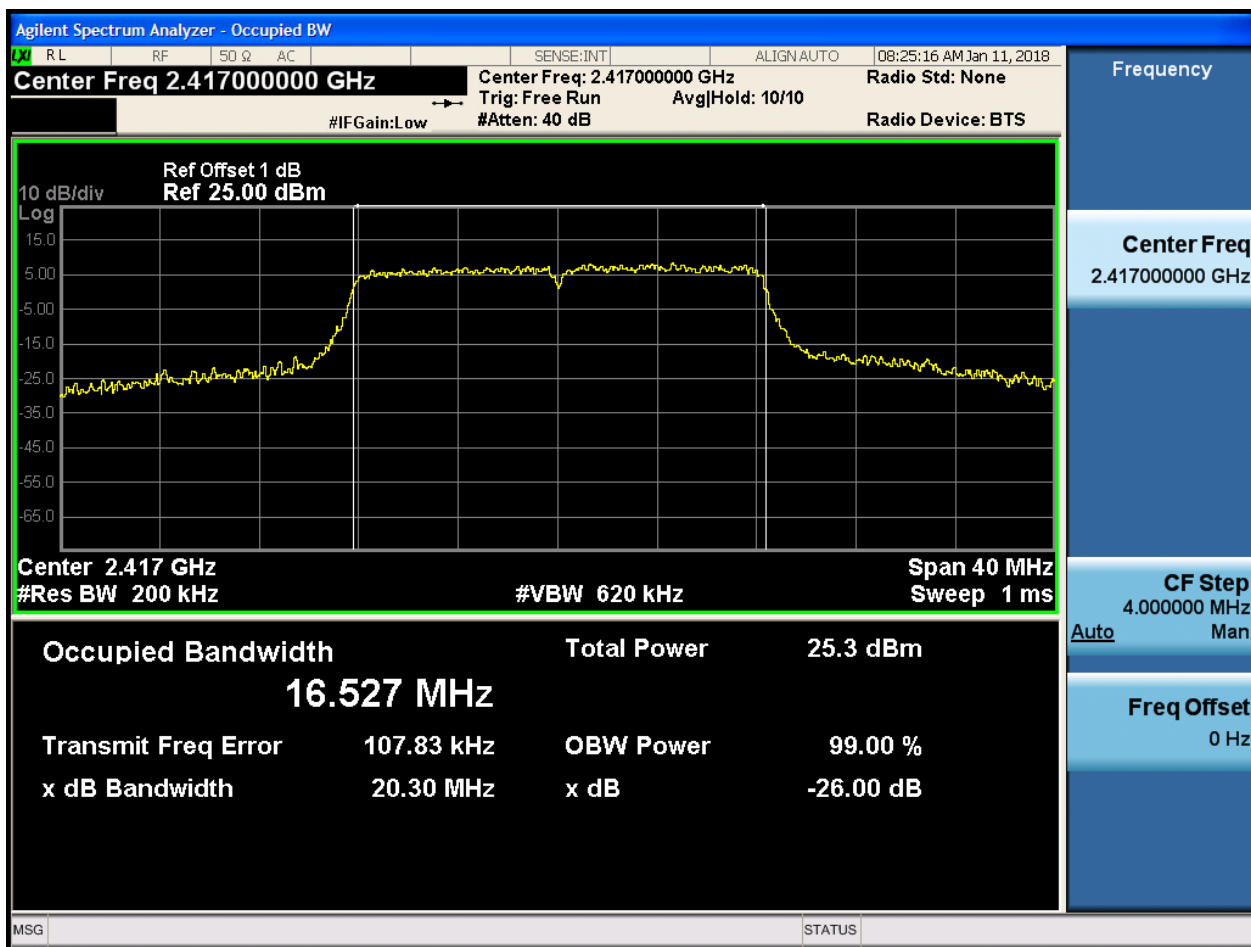


2.4 11G_L_2412@Ant 1



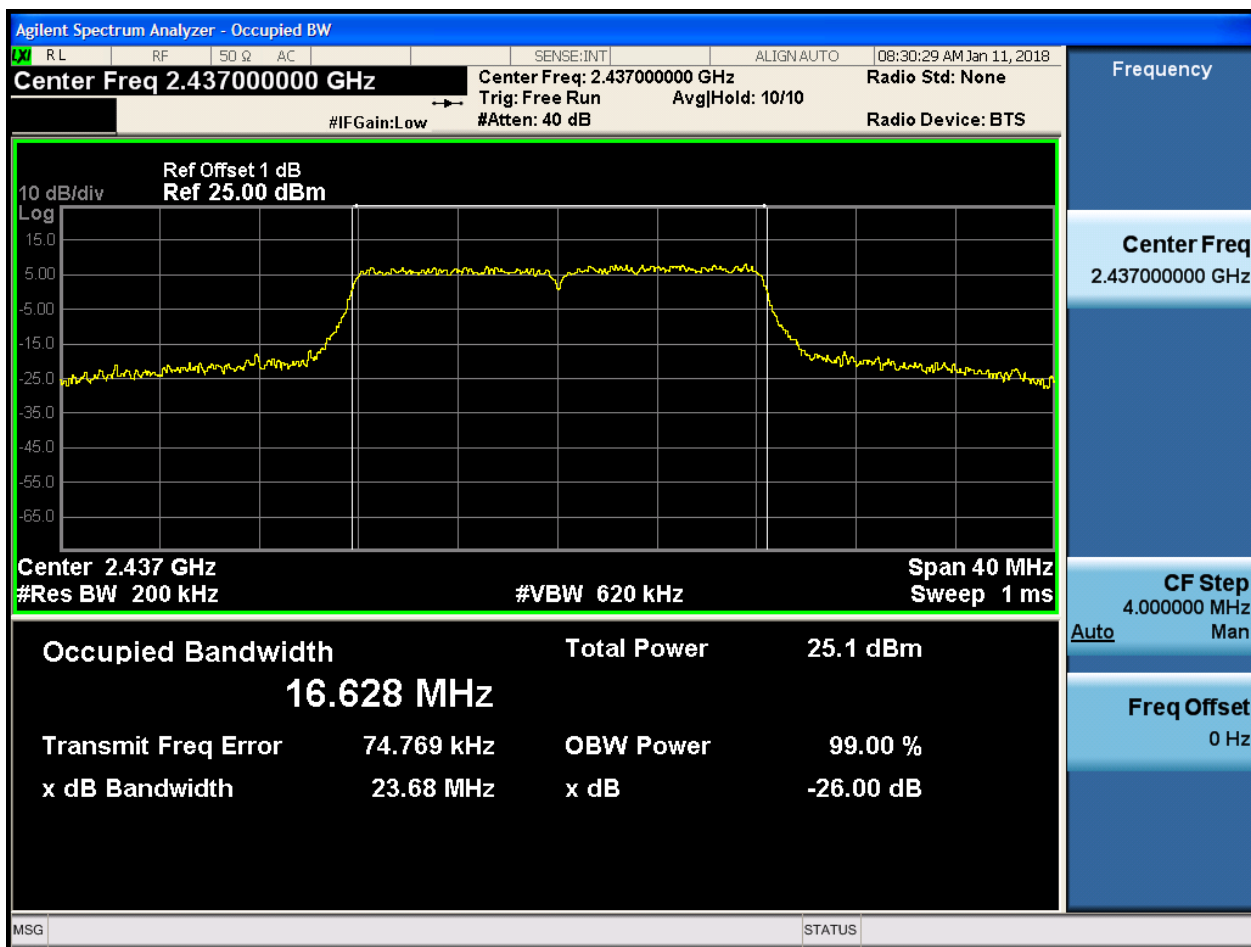


2.5 11G_L_2417@Ant 1



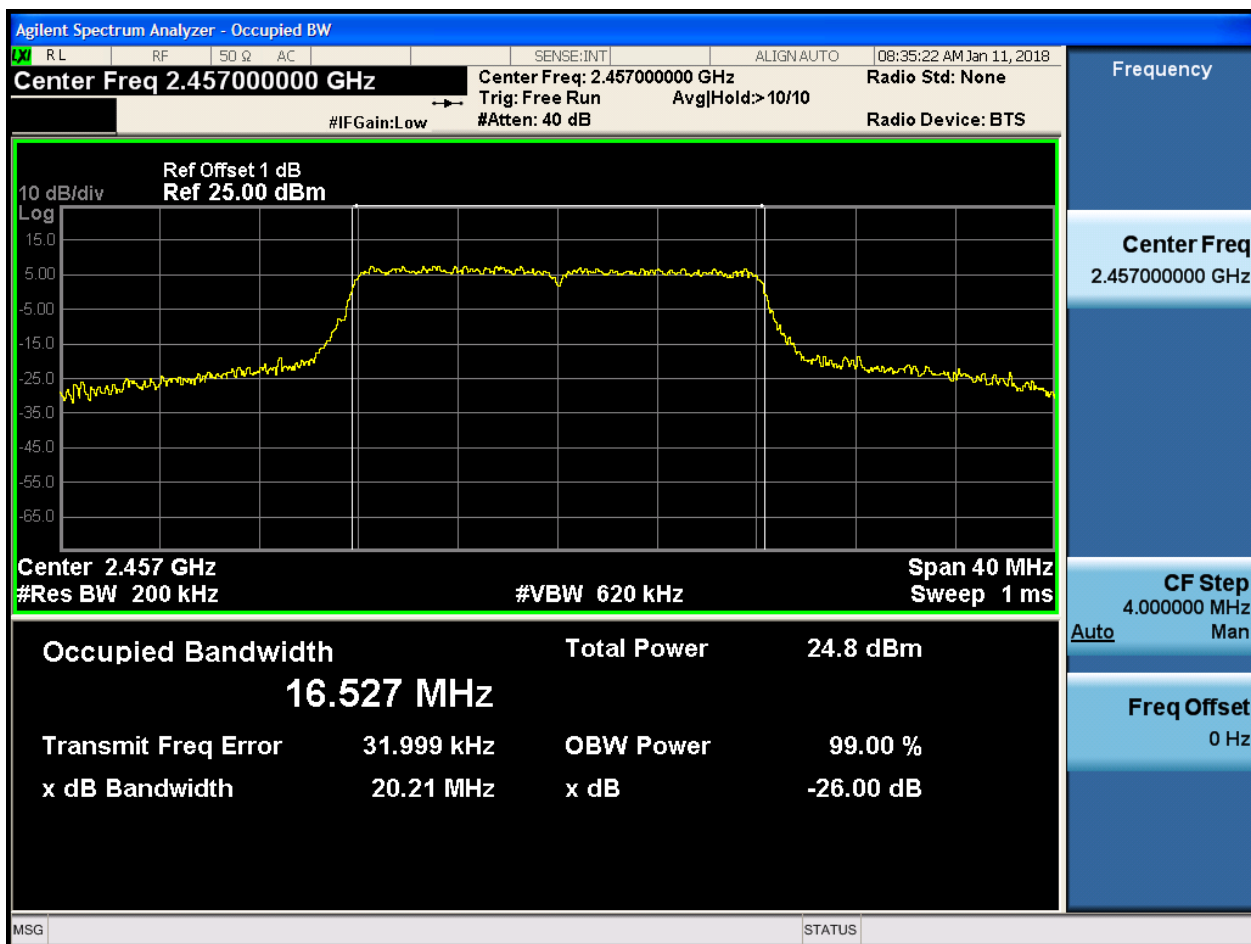


2.6 11G_M_2437@Ant 1



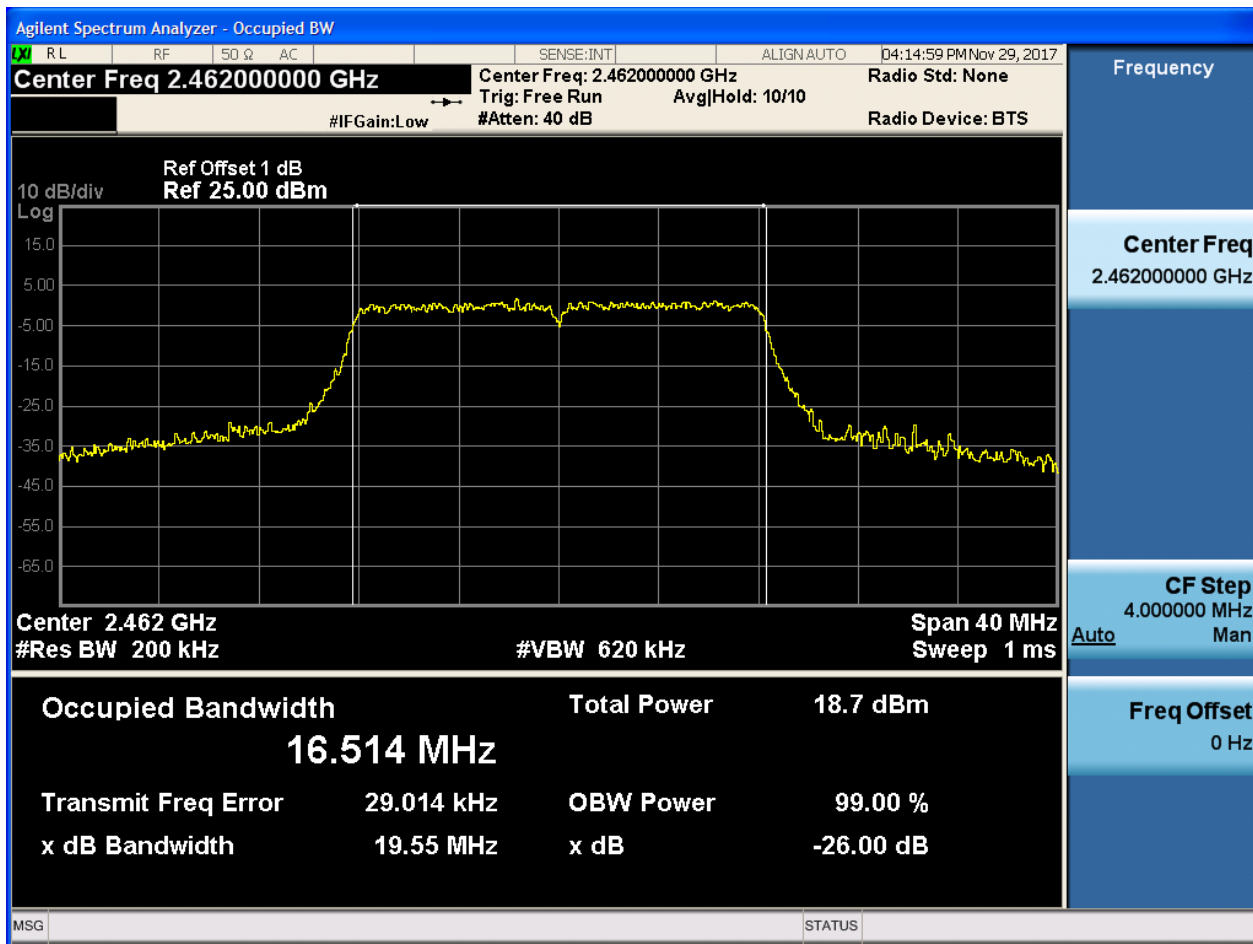


2.7 11G_H_2457@Ant 1



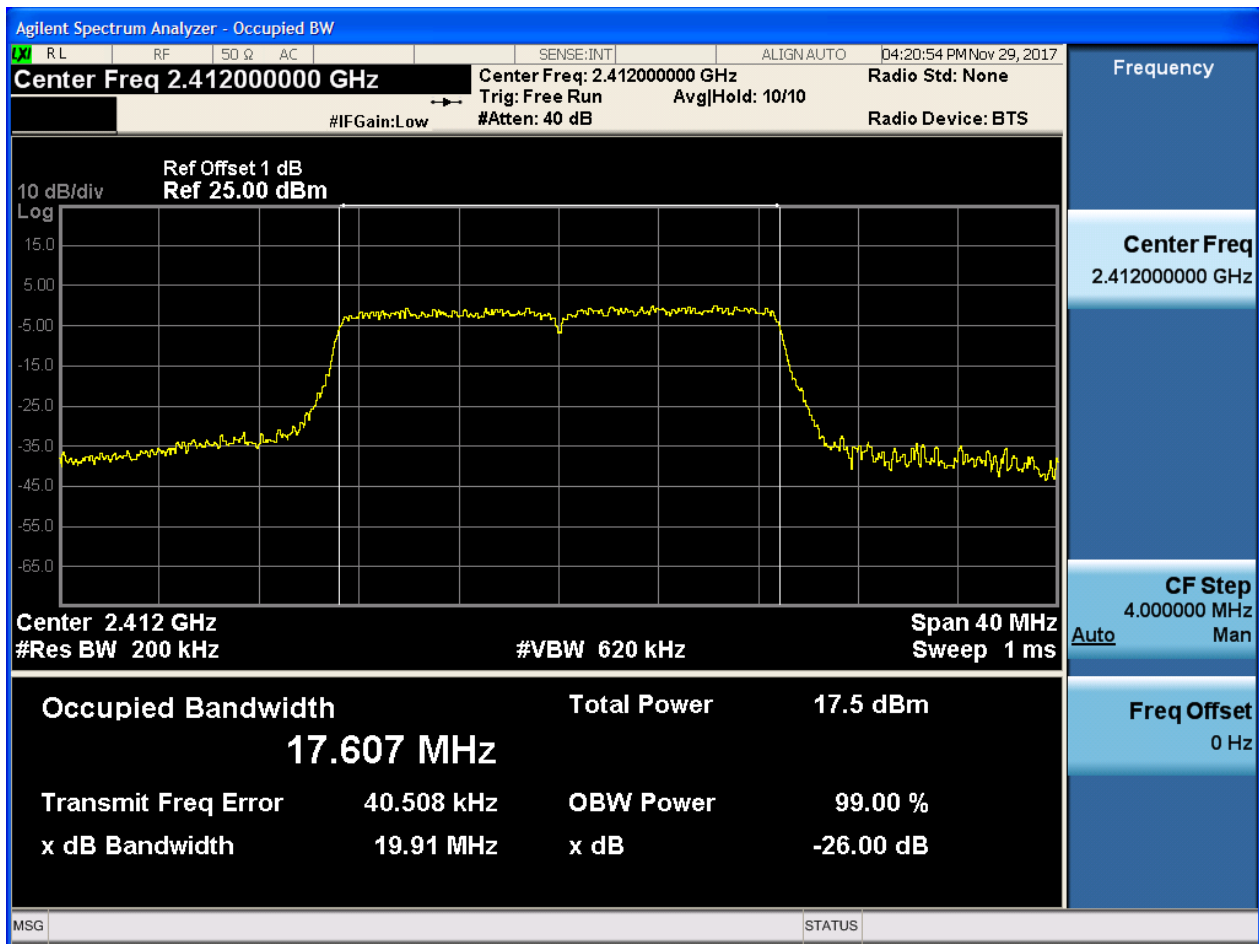


2.8 11G_H_2462@Ant 1



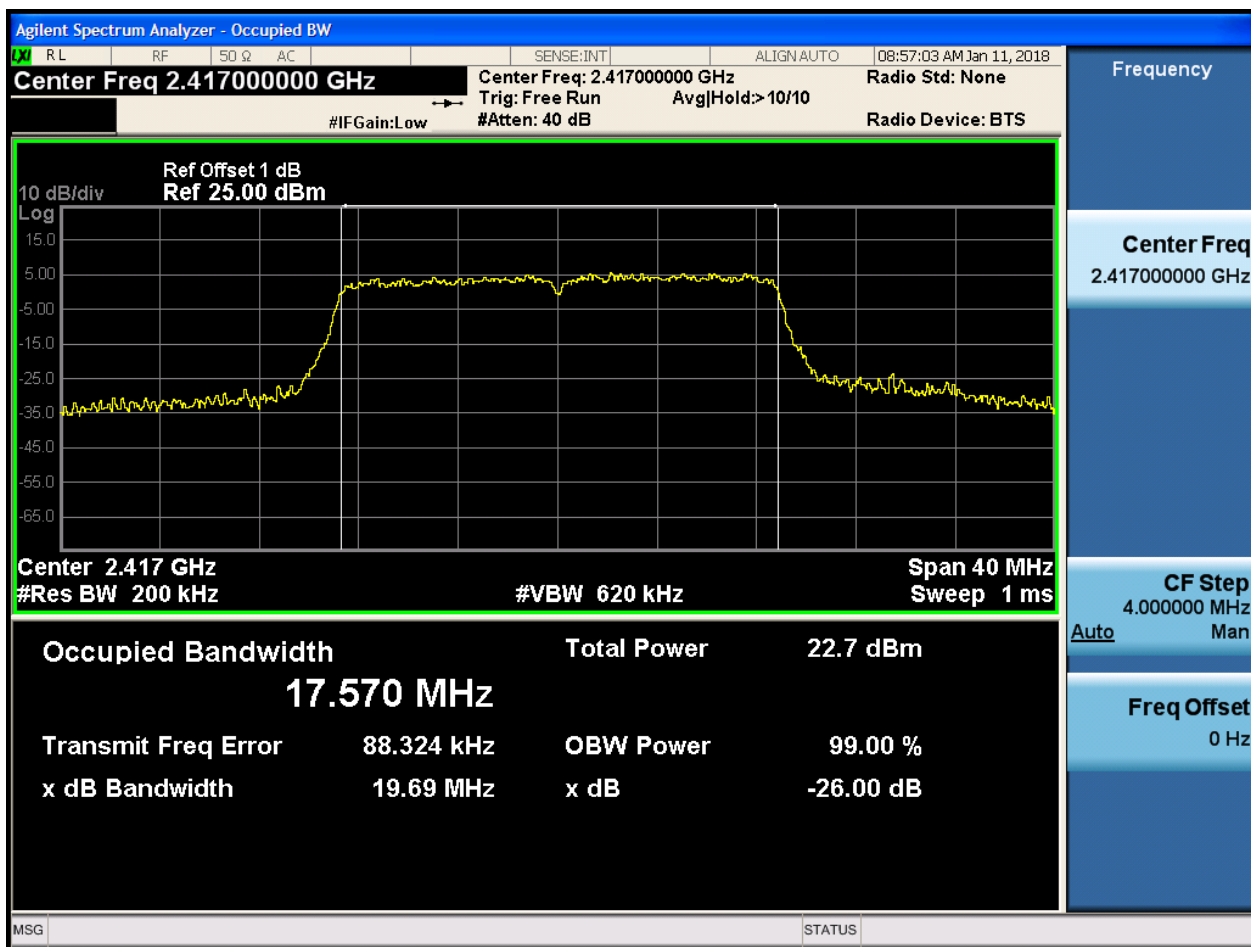


2.9 11N20_L_2412@Ant 1





2.10 11N20_L_2417@Ant 1





Agilent Spectrum Analyzer - Occupied BW

RL RF 50 Ω AC SENSE:INT ALIGN:AUTO 09:07:01 AM Jan 11, 2018

Center Freq 2.437000000 GHz Center Freq: 2.437000000 GHz Radio Std: None
 Trig: Free Run Avg/Hold: > 10/10
 #IFGain: Low #Atten: 40 dB Radio Device: BTS

Ref Offset 1 dB
 Ref 25.00 dBm

10 dB/div
 Log

Center 2.437 GHz Span 40 MHz
 #Res BW 200 kHz #VBW 620 kHz Sweep 1 ms

Occupied Bandwidth		Total Power	
17.643 MHz		22.5 dBm	
Transmit Freq Error	60.452 kHz	OBW Power	99.00 %
x dB Bandwidth	19.93 MHz	x dB	-26.00 dB

Frequency

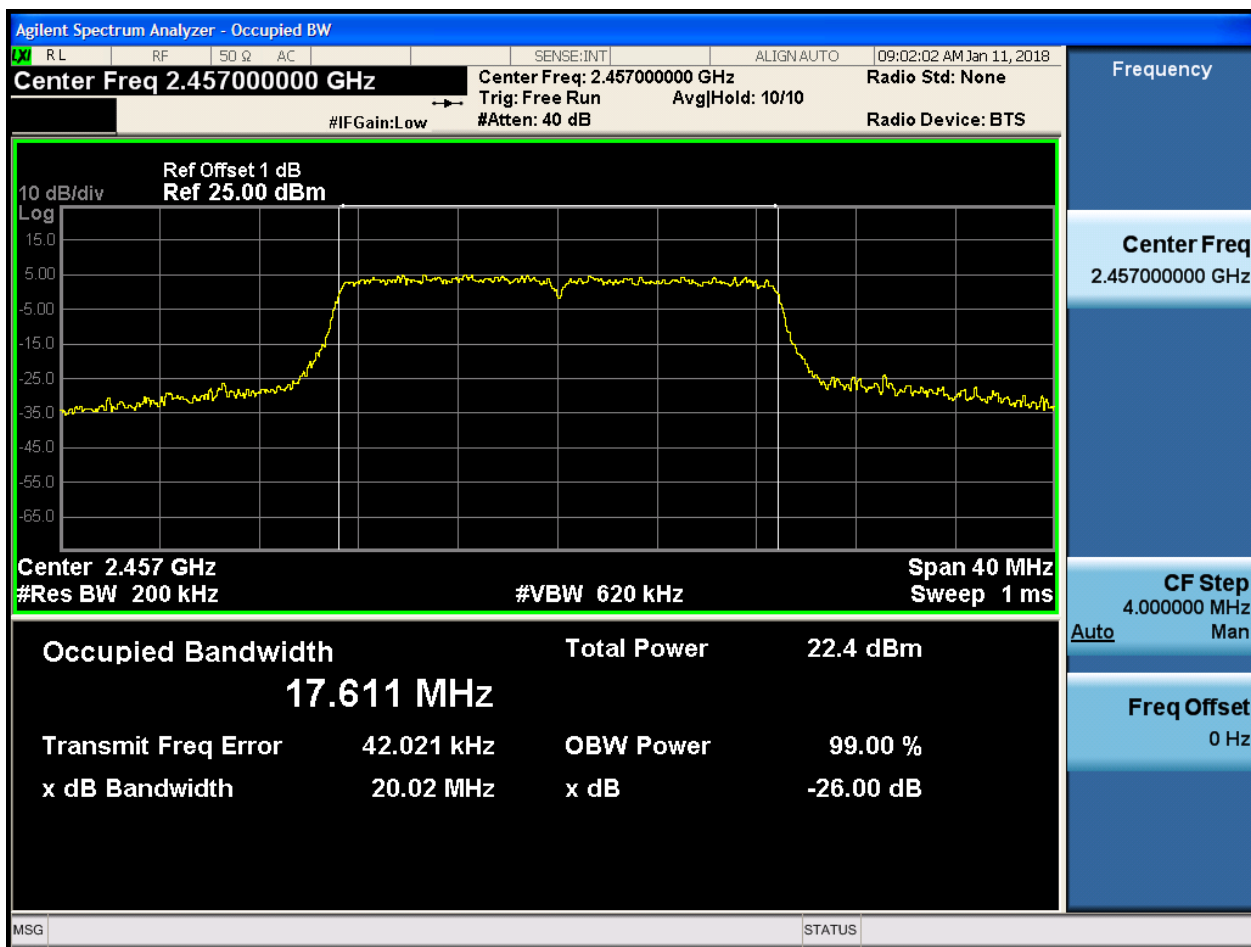
Center Freq
 2.437000000 GHz

CF Step
 4.000000 MHz
 Auto Man

Freq Offset
 0 Hz

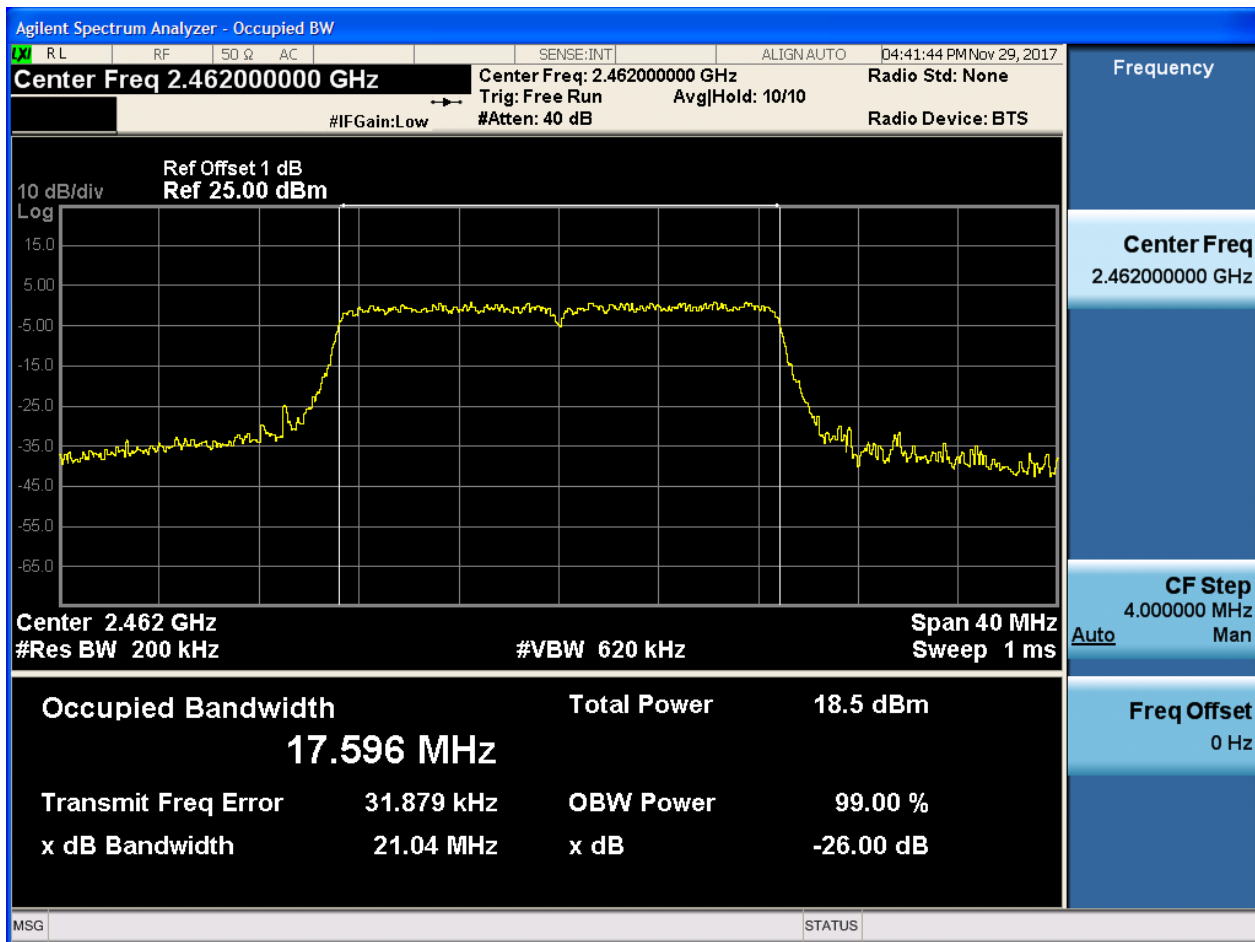
MSG STATUS

2.12 11N20_H_2457@Ant 1



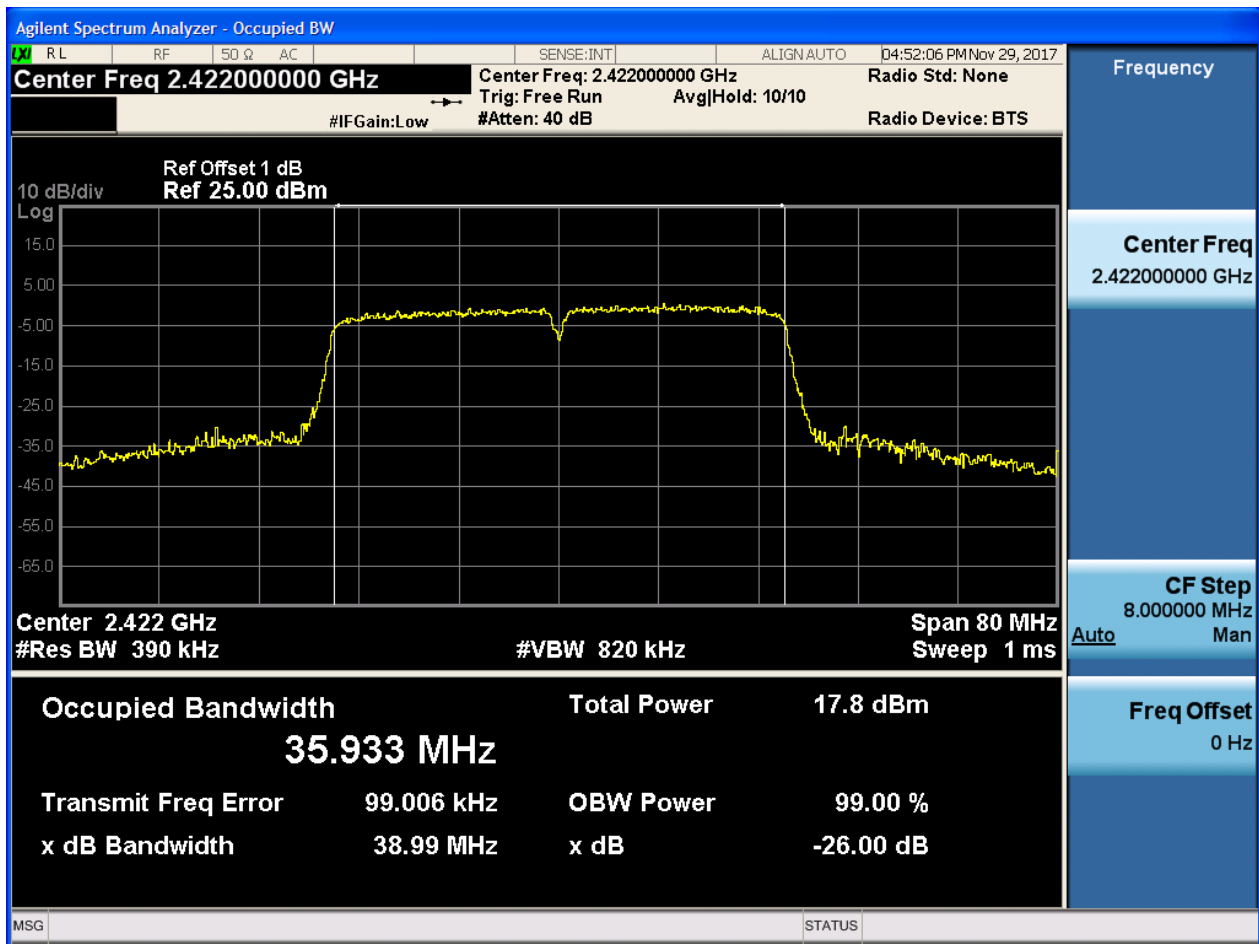


2.13 11N20_H_2462@Ant 1



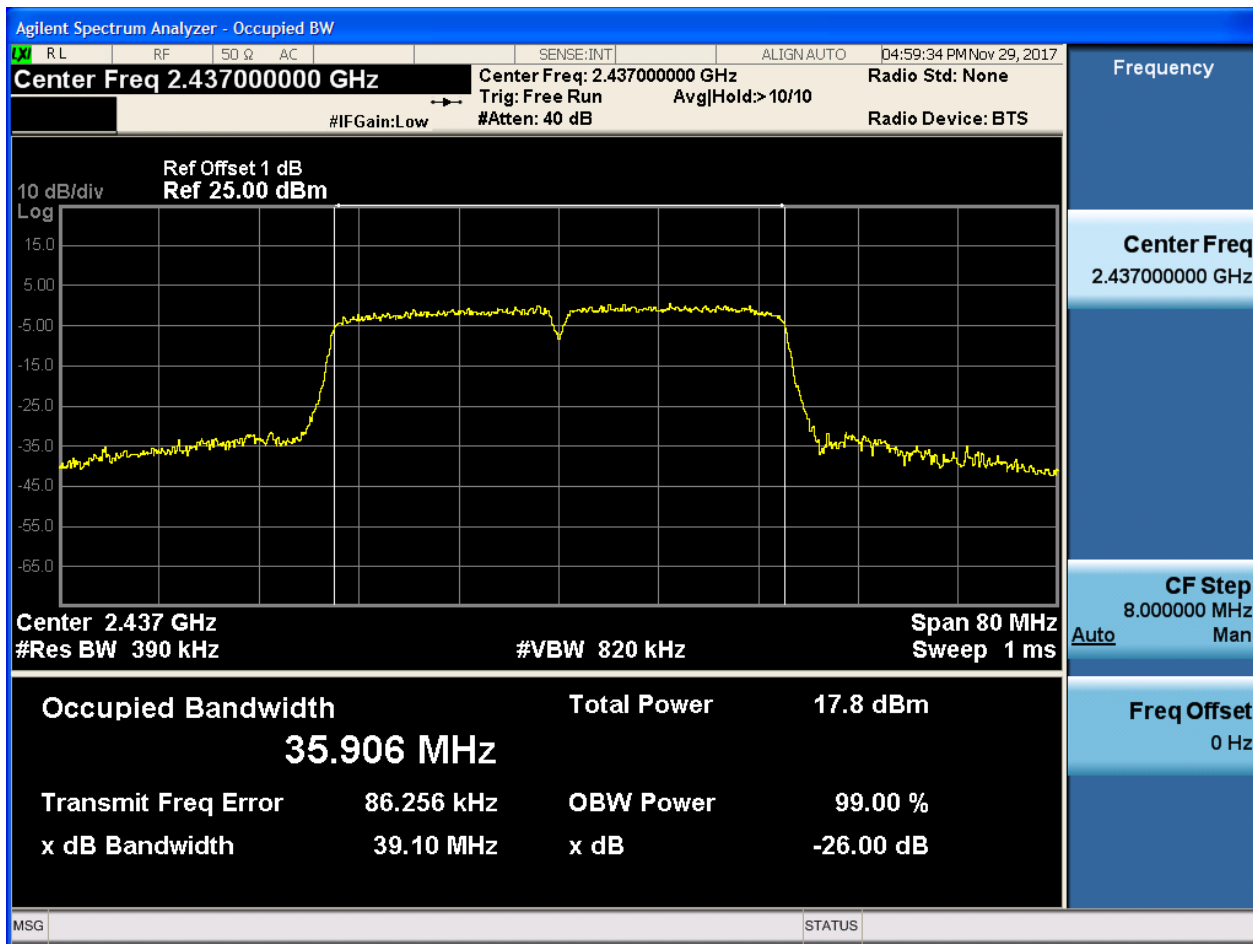


2.14 11N40_L@Ant 1



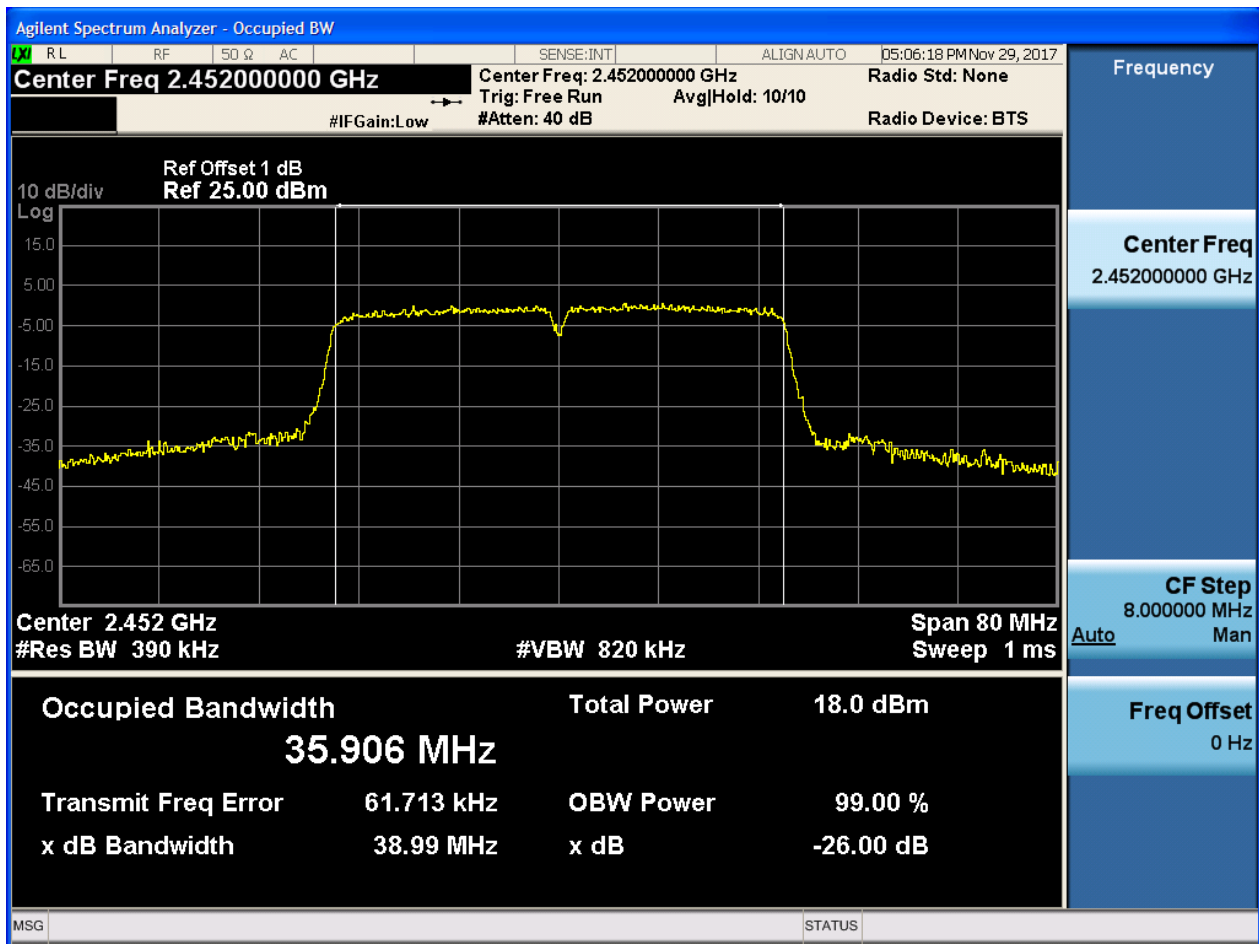


2.15 11N40_M@Ant 1





2.16 11N40_H@Ant 1



Appendix C: Duty Cycle

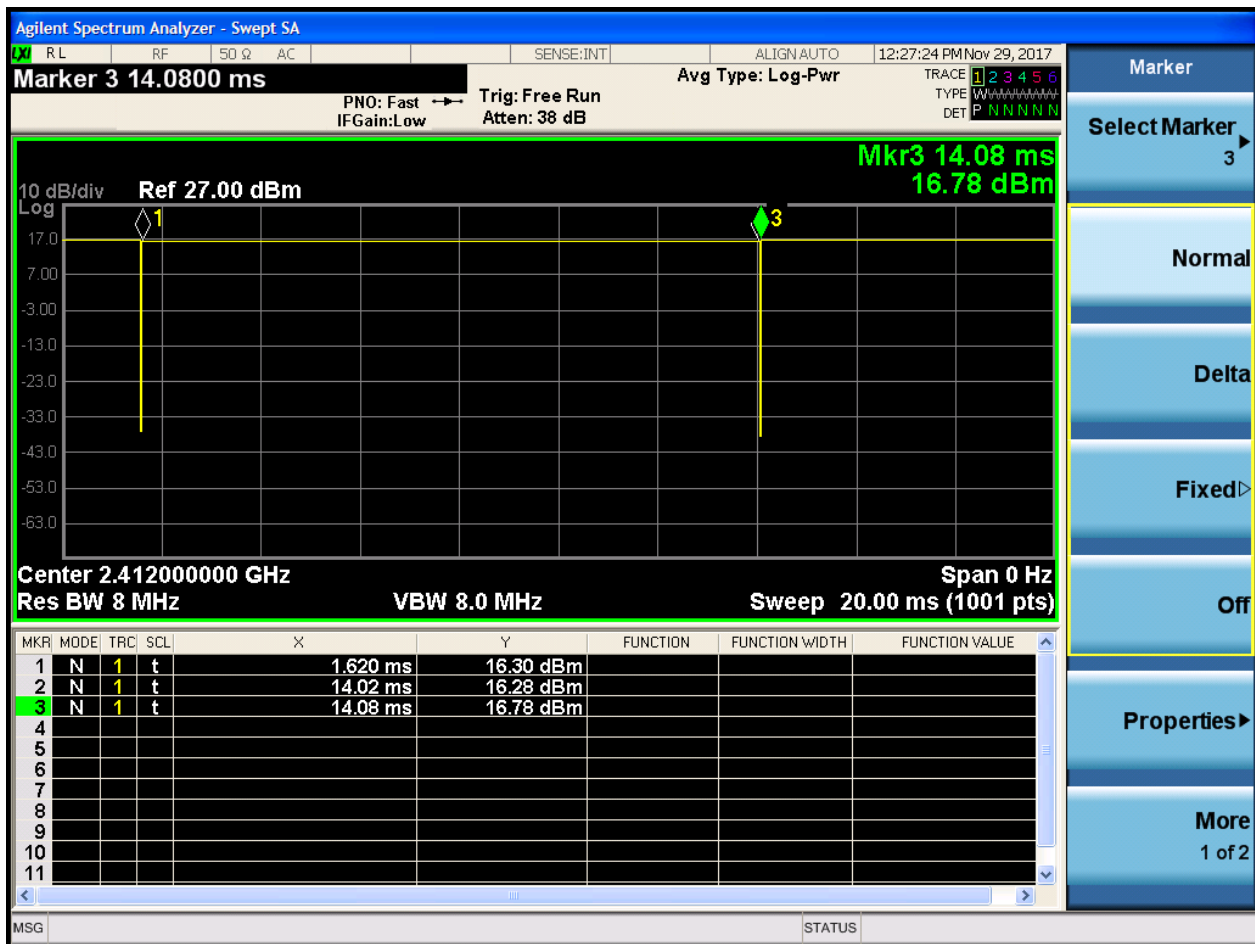
Part I - Test Results

Test Mode	TX Freq. [MHz]	Duty cycle [%]
11B	Ant 1: CH1,CH6,CH11	99.5
11G	Ant 1: CH1, CH2,CH6, CH10,CH11	97.6
11N_20M_SISO	Ant 1: CH1, CH2,CH6, CH10,CH11	97.5
11N_40M_SISO	Ant 1: CH3,CH6,CH9	95



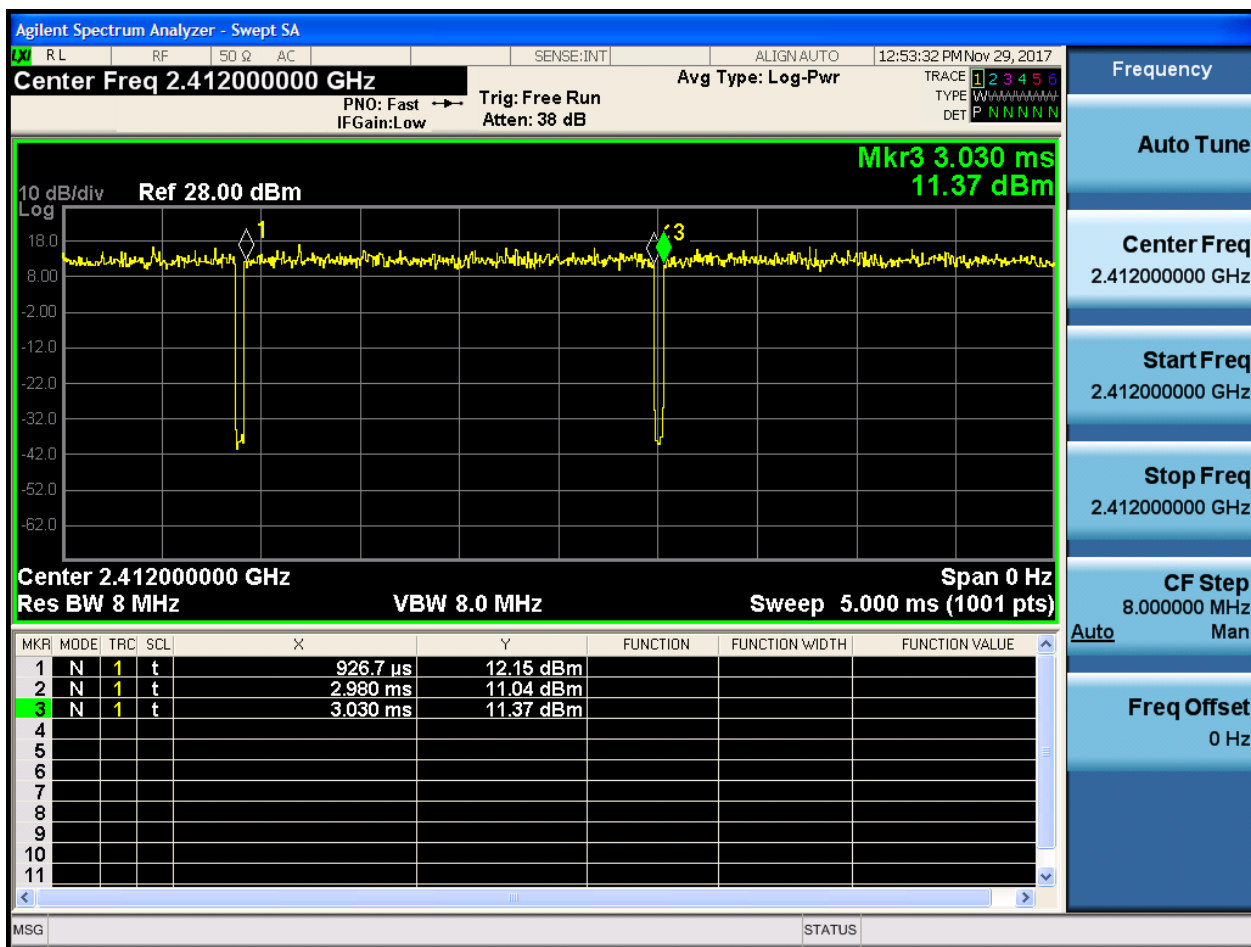
Part II - Test Plots

2.1 11B



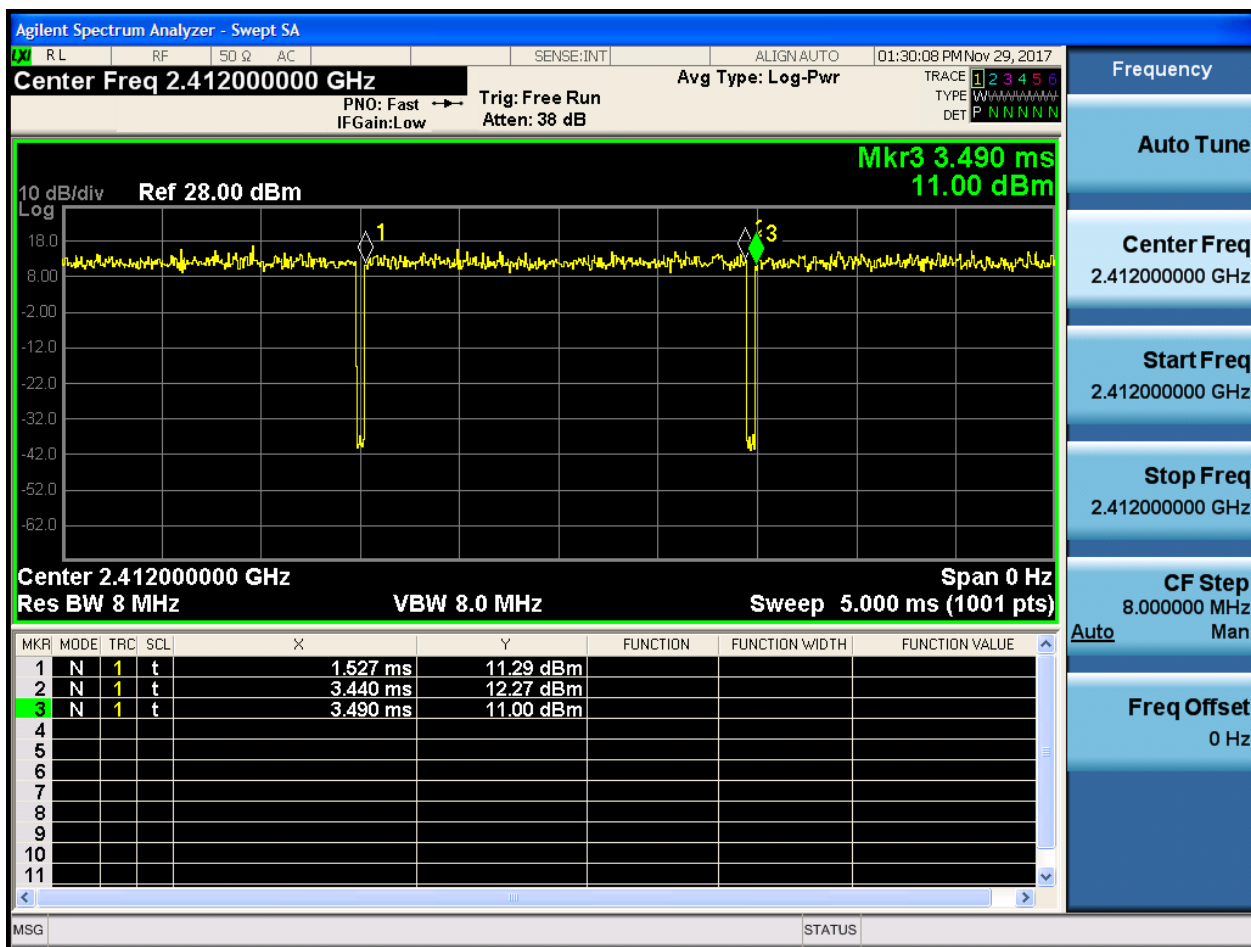


2.2 11G



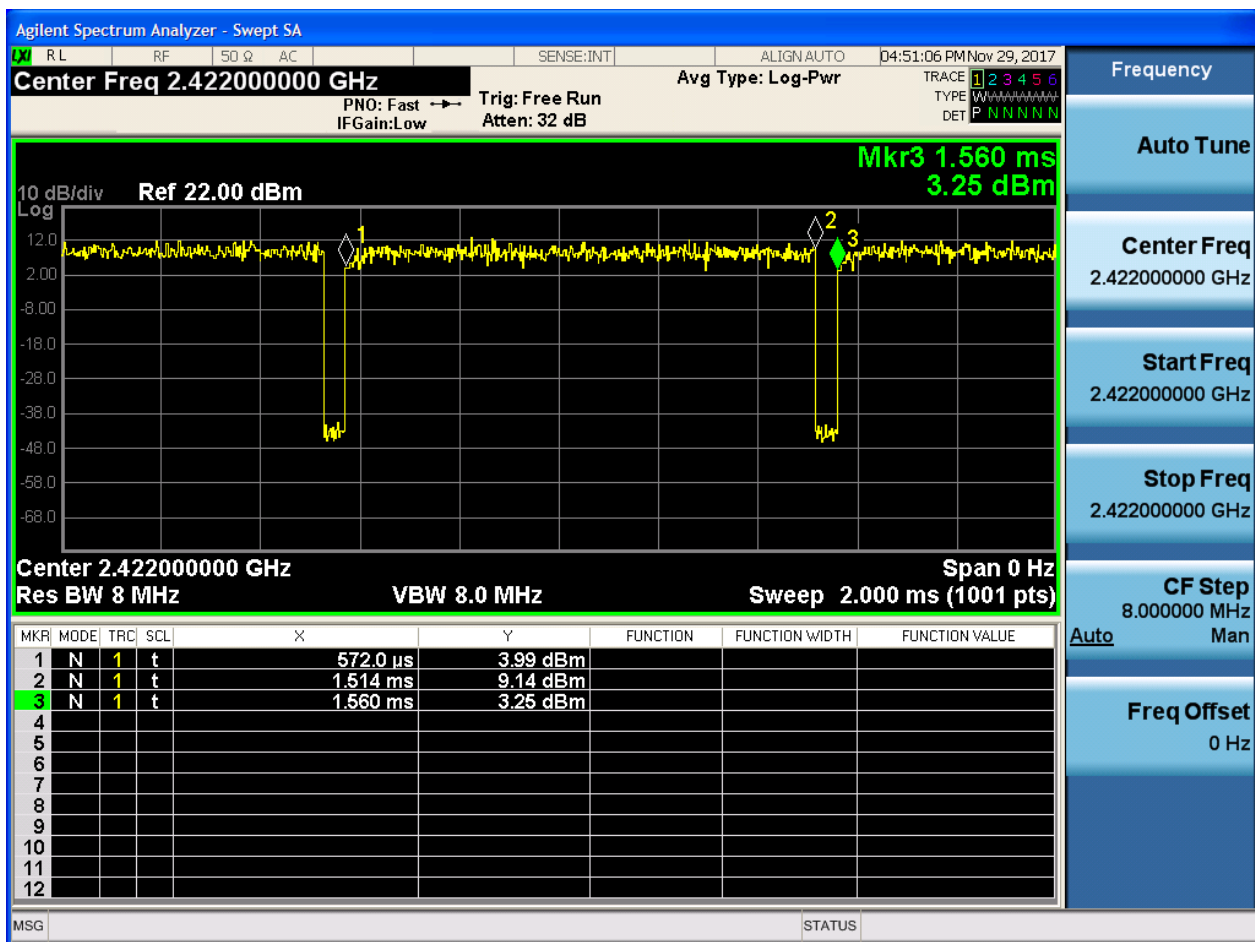


2.3 11N20





2.4 11N40



Appendix D: Maximum Conducted Average Output Power

Part I - Test Results

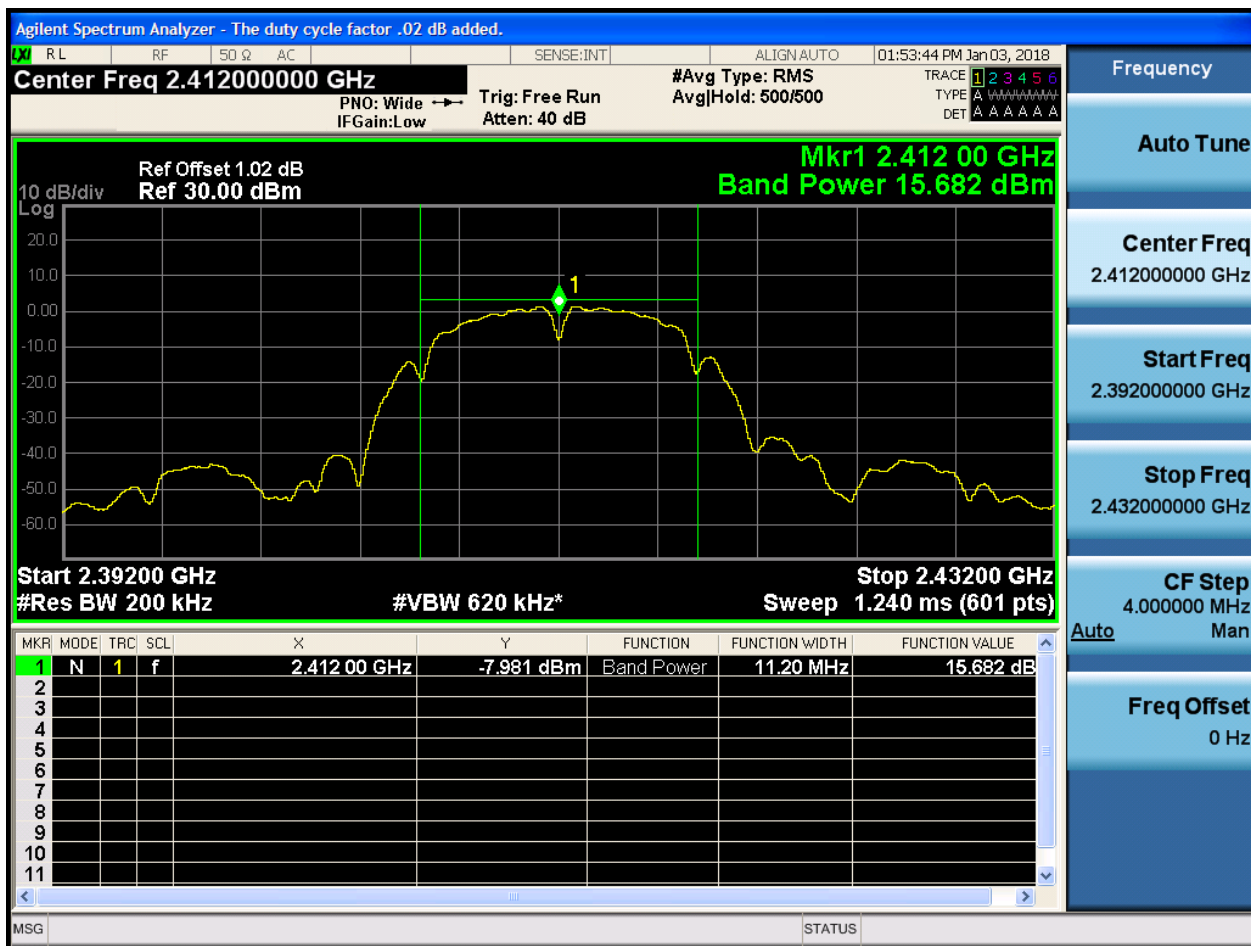
Test Mode	Test Channel	Frequency[MHz]	Ant	Duty Cycle [%]	Power[dBm]	Verdict
11B	L	2412	Ant 1	99.5	15.68	pass
11B	M	2437	Ant 1	99.5	15.27	pass
11B	H	2462	Ant 1	99.5	15.70	pass
11G	L	2412	Ant 1	97.6	12.18	pass
11G	L	2417	Ant 1	97.6	18.19	pass
11G	M	2437	Ant 1	97.6	18.11	pass
11G	H	2457	Ant 1	97.6	17.77	pass
11G	H	2462	Ant 1	97.6	12.43	pass
11N20	L	2412	Ant 1	97.5	10.97	pass
11N20	L	2417	Ant 1	97.5	15.65	pass
11N20	M	2437	Ant 1	97.5	15.43	pass
11N20	H	2457	Ant 1	97.5	15.32	pass
11N20	H	2462	Ant 1	97.5	11.29	pass
11N40	L	2422	Ant 1	95	7.66	pass
11N40	M	2437	Ant 1	95	9.06	pass



Test Mode	Test Channel	Frequency[MHz]	Ant	Duty Cycle [%]	Power[dBm]	Verdict
11N40	H	2452	Ant 1	95	9.85	pass

Part II - Test Plots

2.1 11B_L@Ant 1





Agilent Spectrum Analyzer - The duty cycle factor .02 dB added.

Center Freq 2.43700000 GHz

#Avg Type: RMS
Avg/Hold: 500/500

Ref Offset 1.02 dB
Ref 30.00 dBm

Mkr1 2.437 00 GHz
Band Power 15.270 dBm

Start 2.41700 GHz
#Res BW 200 kHz

Stop 2.45700 GHz
Sweep 1.240 ms (601 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.437 00 GHz	-8.075 dBm	Band Power	11.60 MHz	15.270 dB
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

Frequency

Auto Tune

Center Freq
2.43700000 GHz

Start Freq
2.41700000 GHz

Stop Freq
2.45700000 GHz

CF Step
4.000000 MHz
Man

Freq Offset
0 Hz

MSG

STATUS



Agilent Spectrum Analyzer - The duty cycle factor .02 dB added.

Center Freq 2.46200000 GHz

#Avg Type: RMS
Avg/Hold: 500/500

Ref Offset 1.02 dB
Ref 30.00 dBm

Mkr1 2.462 00 GHz
Band Power 15.696 dBm

Start 2.44200 GHz
#Res BW 200 kHz

Stop 2.48200 GHz
Sweep 1.240 ms (601 pts)

#VBW 620 kHz*

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.462 00 GHz	-7.864 dBm	Band Power	11.60 MHz	15.696 dB
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

Frequency

Auto Tune

Center Freq
2.46200000 GHz

Start Freq
2.44200000 GHz

Stop Freq
2.48200000 GHz

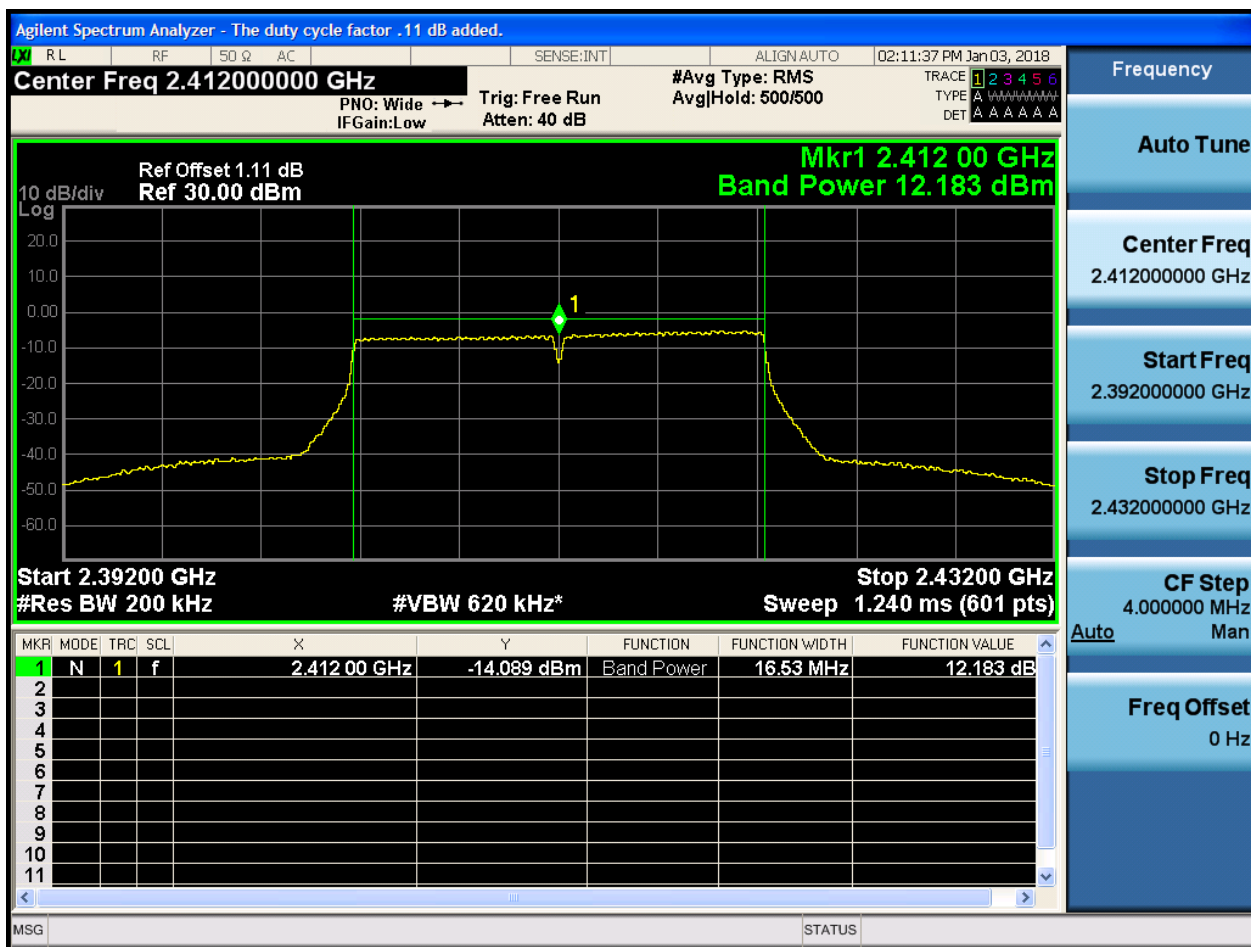
CF Step
4.000000 MHz

Auto

Freq Offset
0 Hz

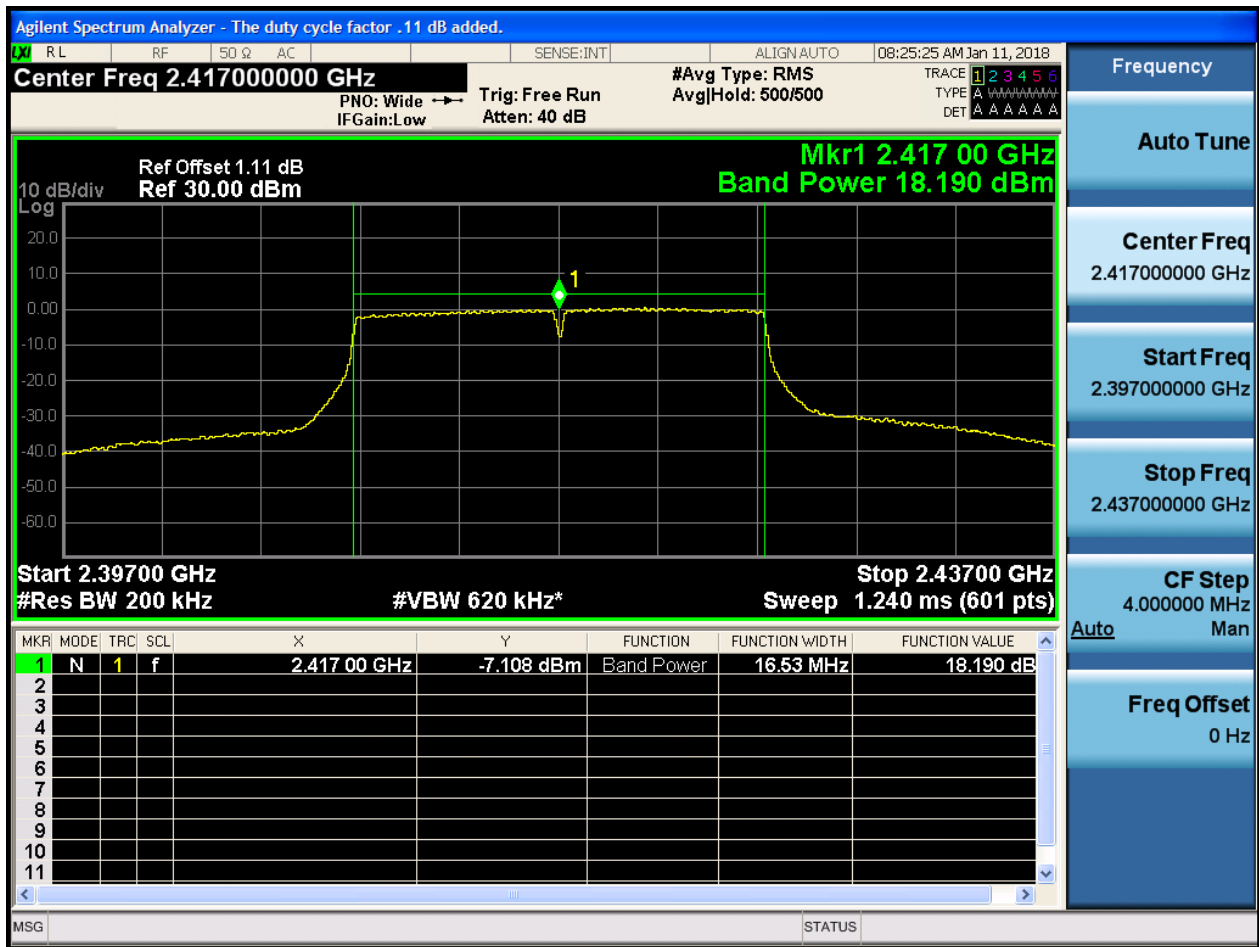


2.4 11G_L_2412@Ant 1





2.5 11G_L_2417@Ant 1





Agilent Spectrum Analyzer - The duty cycle factor .11 dB added.

Center Freq 2.43700000 GHz

#Avg Type: RMS
Avg|Hold: 500/500

Ref Offset 1.11 dB
Ref 30.00 dBm

Mkr1 2.437 00 GHz
Band Power 18.106 dBm

Start 2.41700 GHz
#Res BW 200 kHz

Stop 2.45700 GHz
Sweep 1.240 ms (601 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.437 00 GHz	-7.763 dBm	Band Power	16.67 MHz	18.106 dB
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

Frequency

Auto Tune

Center Freq
2.43700000 GHz

Start Freq
2.41700000 GHz

Stop Freq
2.45700000 GHz

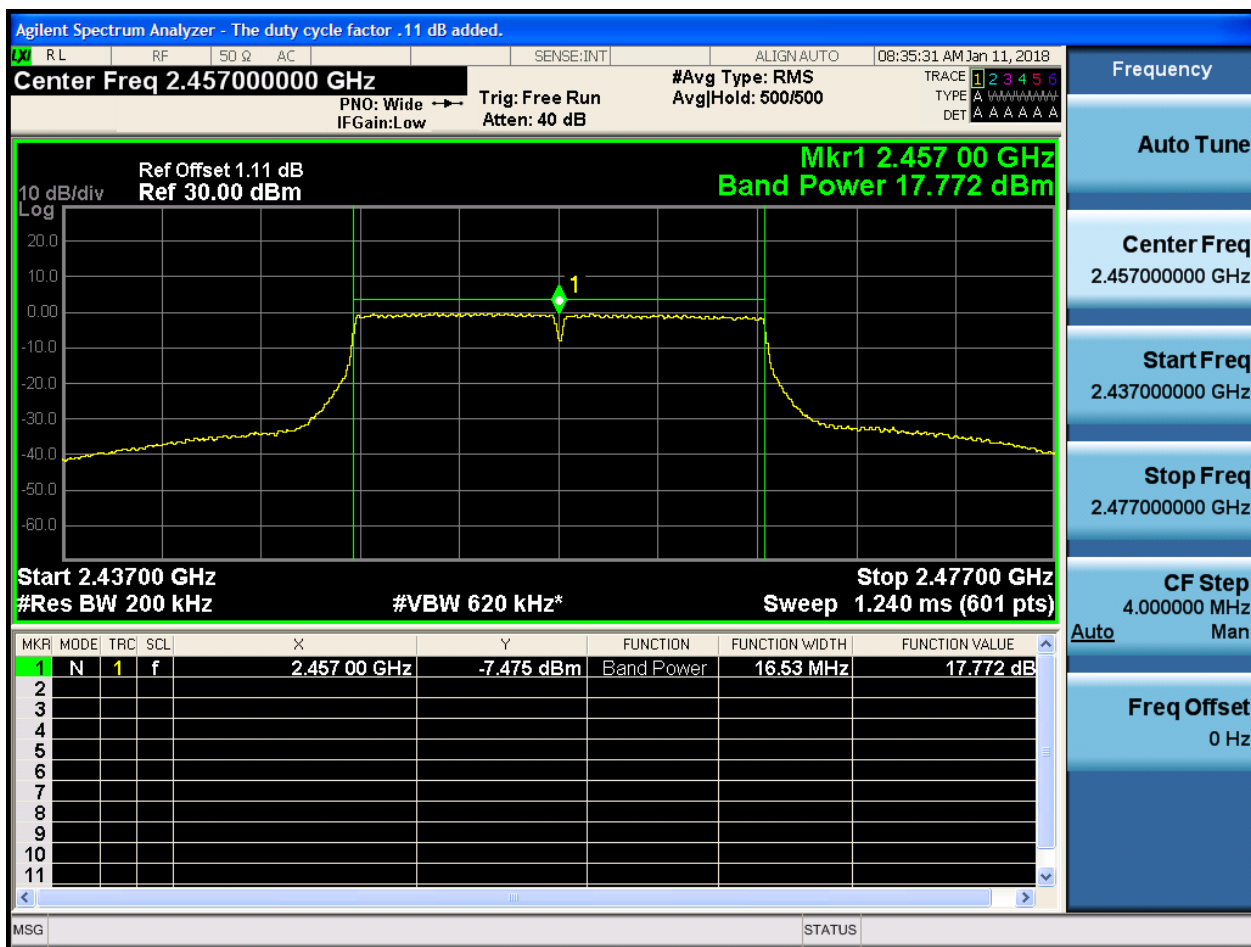
CF Step
4.000000 MHz

Auto

Freq Offset
0 Hz



2.7 11G_H_2457@Ant 1





Agilent Spectrum Analyzer - The duty cycle factor .11 dB added.

Center Freq 2.46200000 GHz

#Avg Type: RMS
Avg/Hold: 500/500

Ref Offset 1.11 dB
Ref 30.00 dBm

Mkr1 2.462 00 GHz
Band Power 12.430 dBm

Start 2.44200 GHz
#Res BW 200 kHz

Stop 2.48200 GHz
Sweep 1.240 ms (601 pts)

#VBW 620 kHz*

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.462 00 GHz	-13.487 dBm	Band Power	16.53 MHz	12.430 dB
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

Frequency

Auto Tune

Center Freq
2.46200000 GHz

Start Freq
2.44200000 GHz

Stop Freq
2.48200000 GHz

CF Step
4.000000 MHz

Auto

Freq Offset
0 Hz



Agilent Spectrum Analyzer - The duty cycle factor .11 dB added.

Center Freq 2.41200000 GHz

#Avg Type: RMS
AvgHold: 500/500

TRIGGER: PNO: Wide → Trig: Free Run
IFGain: Low Atten: 40 dB

02:15:29 PM Jan 03, 2018

TRACE 1 2 3 4 5 6
TYPE A W W W W W W W W
DET A A A A A A

Ref Offset 1.11 dB
Ref 30.00 dBm

Mkr1 2.412 00 GHz
Band Power 10.968 dBm

Start 2.39200 GHz
#Res BW 200 kHz

Stop 2.43200 GHz
Sweep 1.240 ms (601 pts)

#VBW 620 kHz*

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.412 00 GHz	-15.573 dBm	Band Power	17.73 MHz	10.968 dB
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

MSG STATUS

Frequency

Auto Tune

Center Freq
2.41200000 GHz

Start Freq
2.392000000 GHz

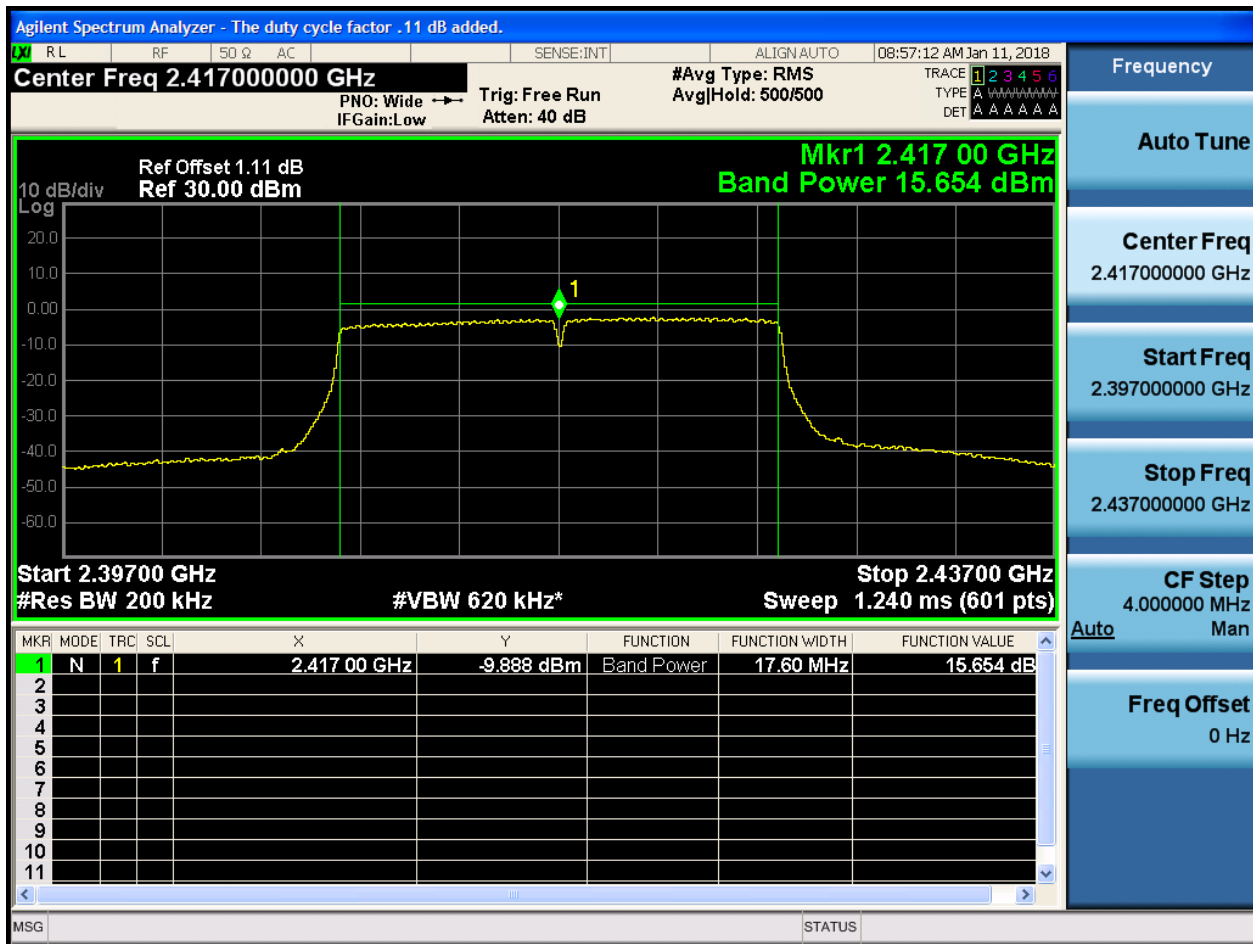
Stop Freq
2.432000000 GHz

CF Step
4.000000 MHz
Auto Man

Freq Offset
0 Hz

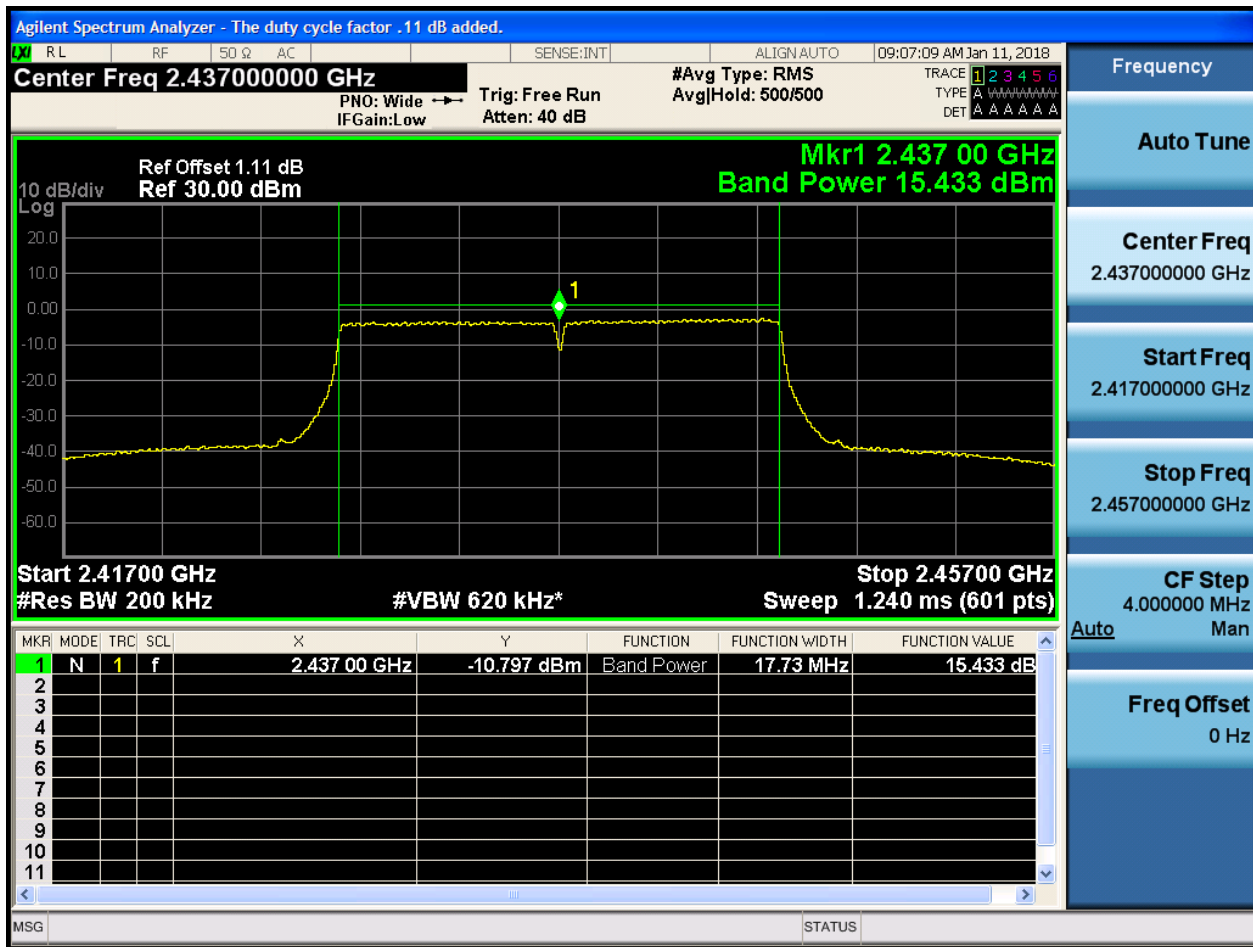


2.10 11N20_L_2417@Ant 1





2.11 11N20_M_2437@Ant 1





Agilent Spectrum Analyzer - The duty cycle factor .11 dB added.

Center Freq 2.457000000 GHz

#Avg Type: RMS
Avg|Hold: 500/500

Ref Offset 1.11 dB
Ref 30.00 dBm

Mkr1 2.457 00 GHz
Band Power 15.316 dBm

Start 2.43700 GHz
#Res BW 200 kHz

Stop 2.47700 GHz
Sweep 1.240 ms (601 pts)

#VBW 620 kHz*

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.457 00 GHz	-10.402 dBm	Band Power	17.73 MHz	15.316 dB
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

Frequency

Auto Tune

Center Freq
2.457000000 GHz

Start Freq
2.437000000 GHz

Stop Freq
2.477000000 GHz

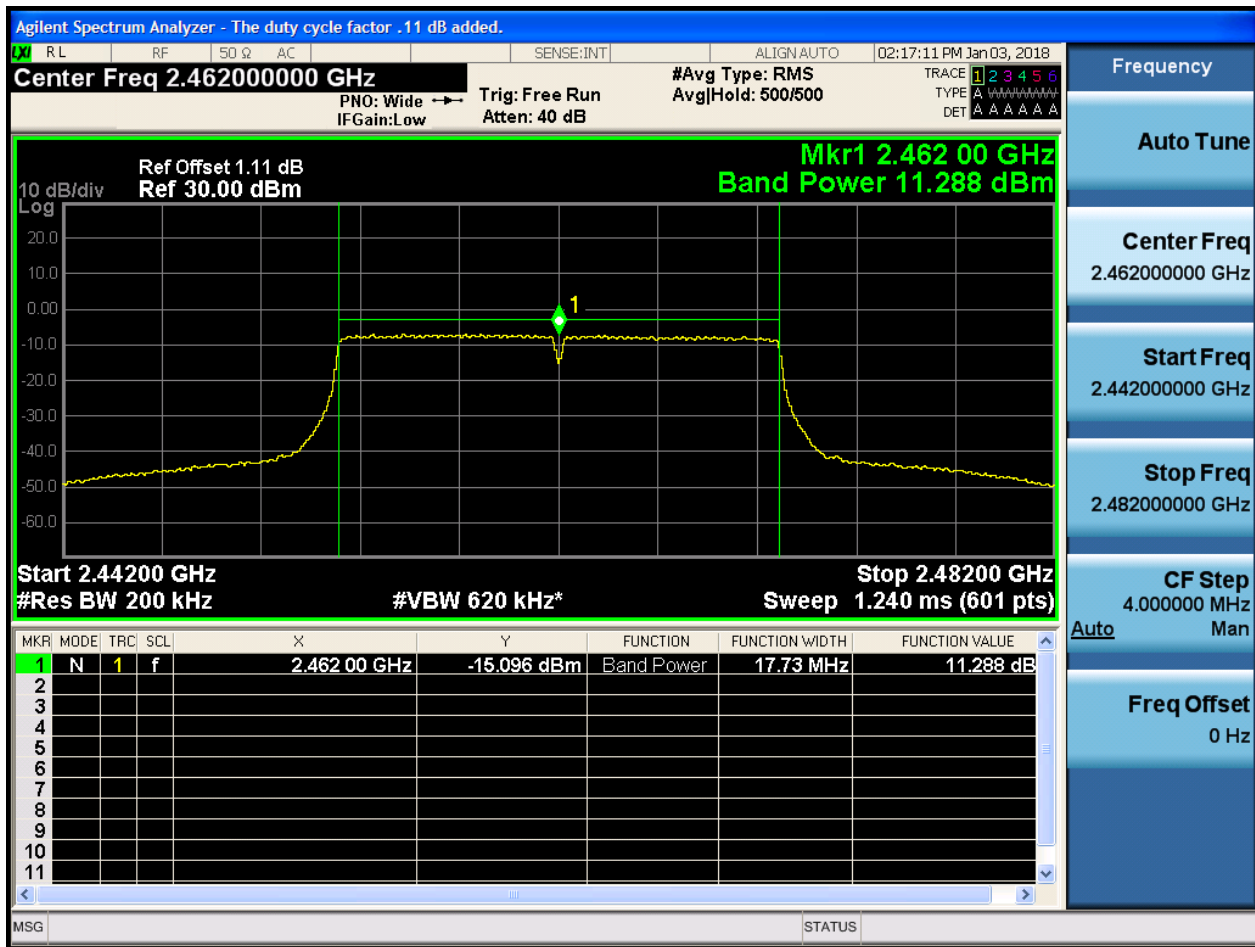
CF Step
4.000000 MHz

Auto

Freq Offset
0 Hz

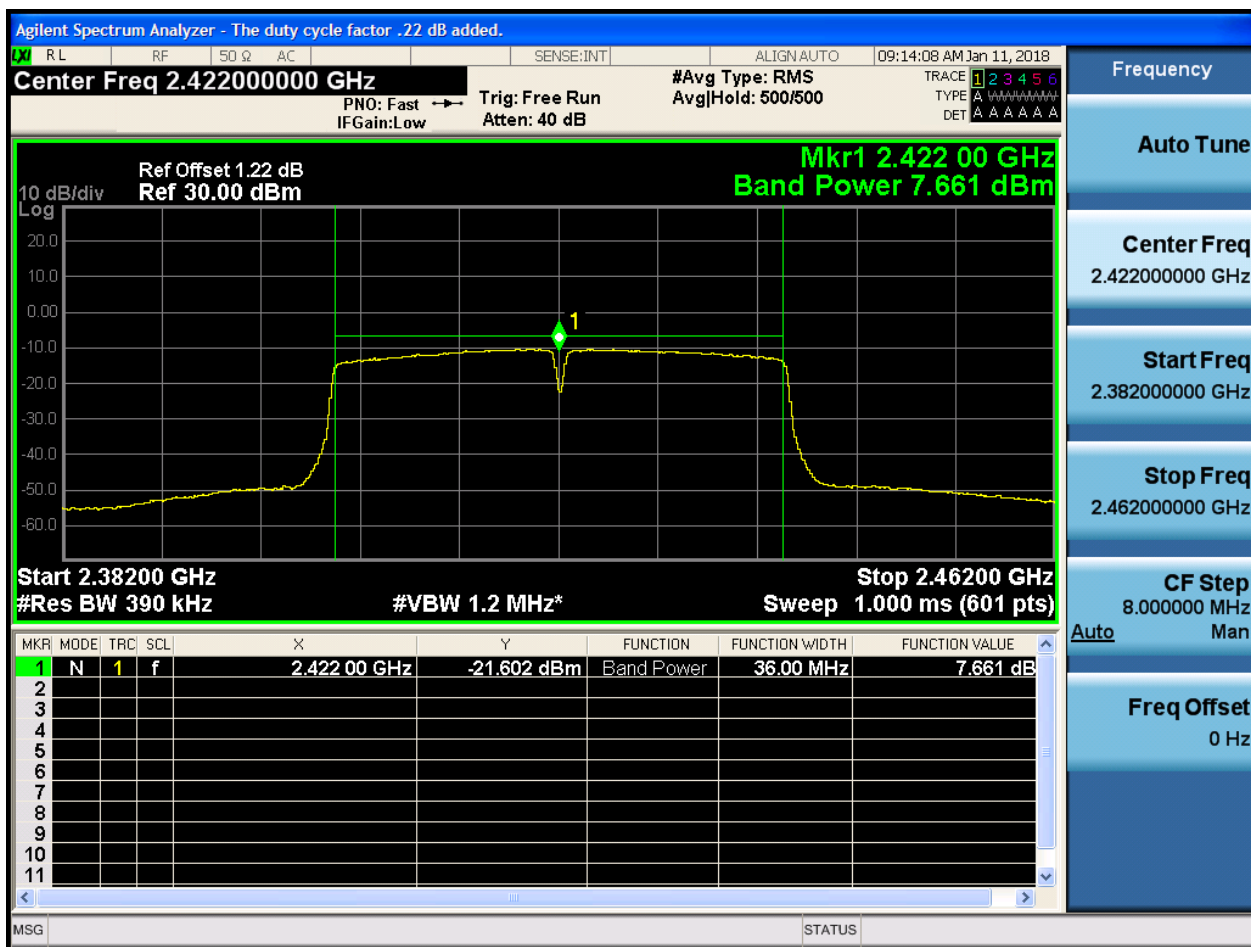


2.13 11N20_H_2462@Ant 1



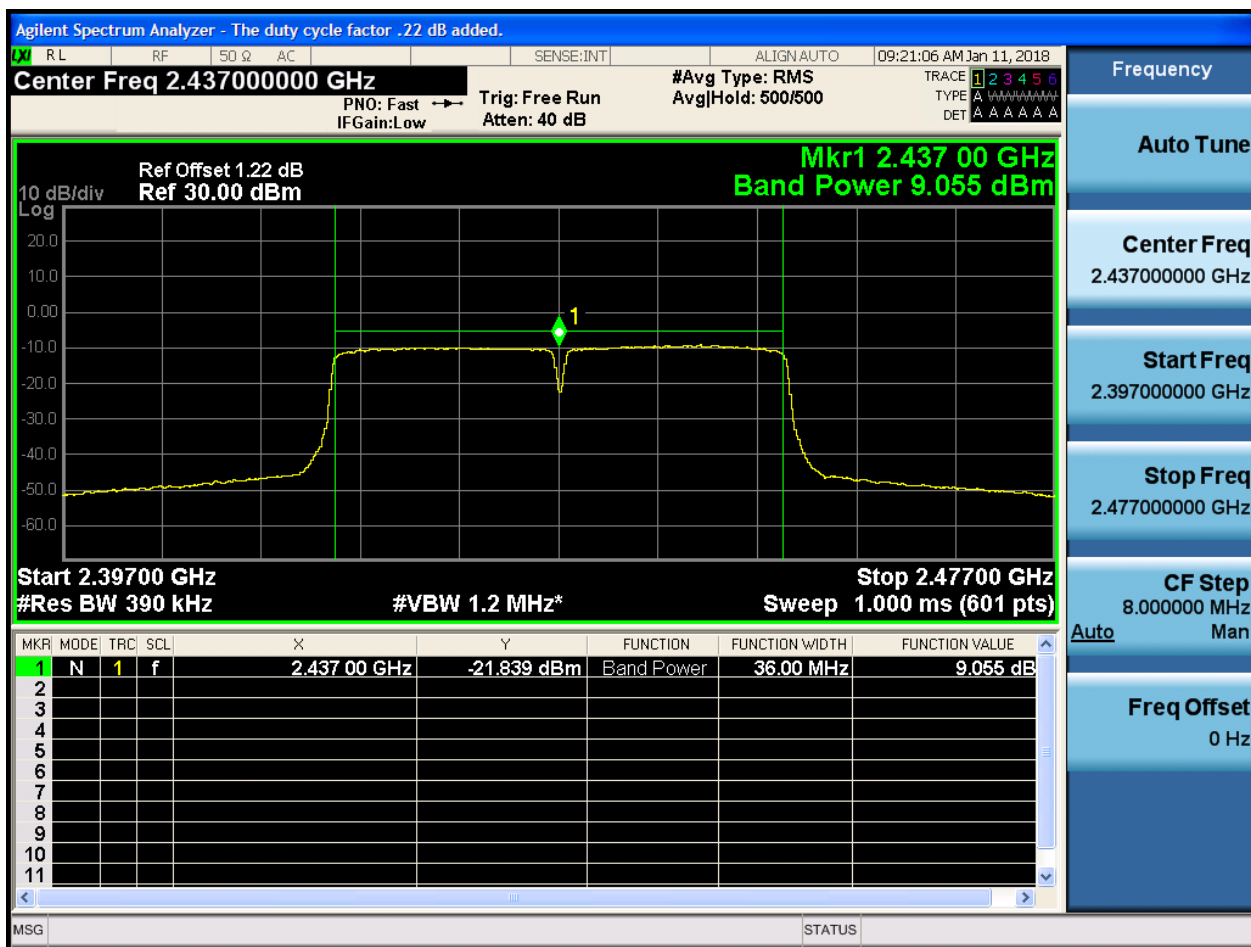


2.14 11N40_L@Ant 1



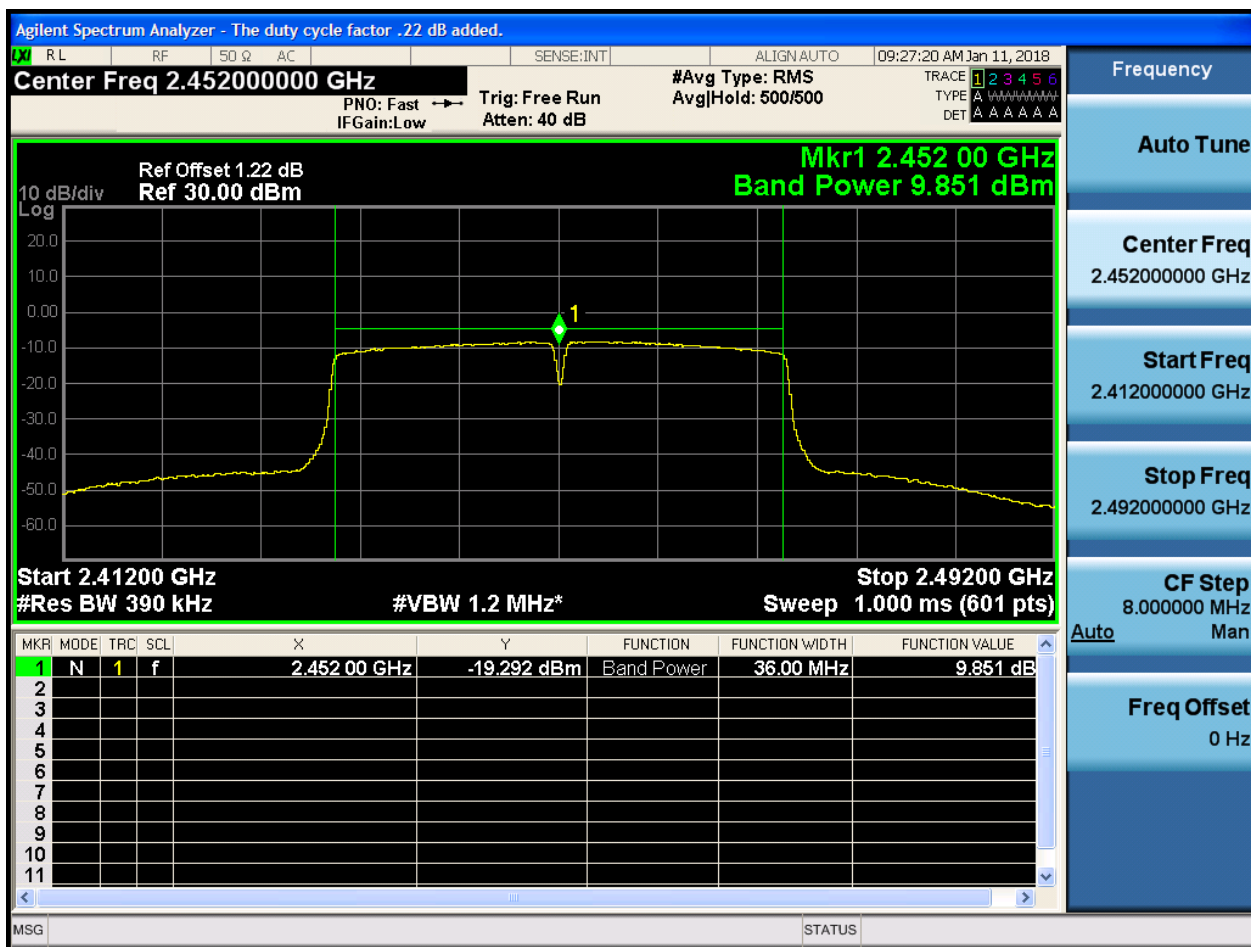


2.15 11N40_M@Ant 1





2.16 11N40_H@Ant 1



Appendix E: Maximum Power Spectral Density Level

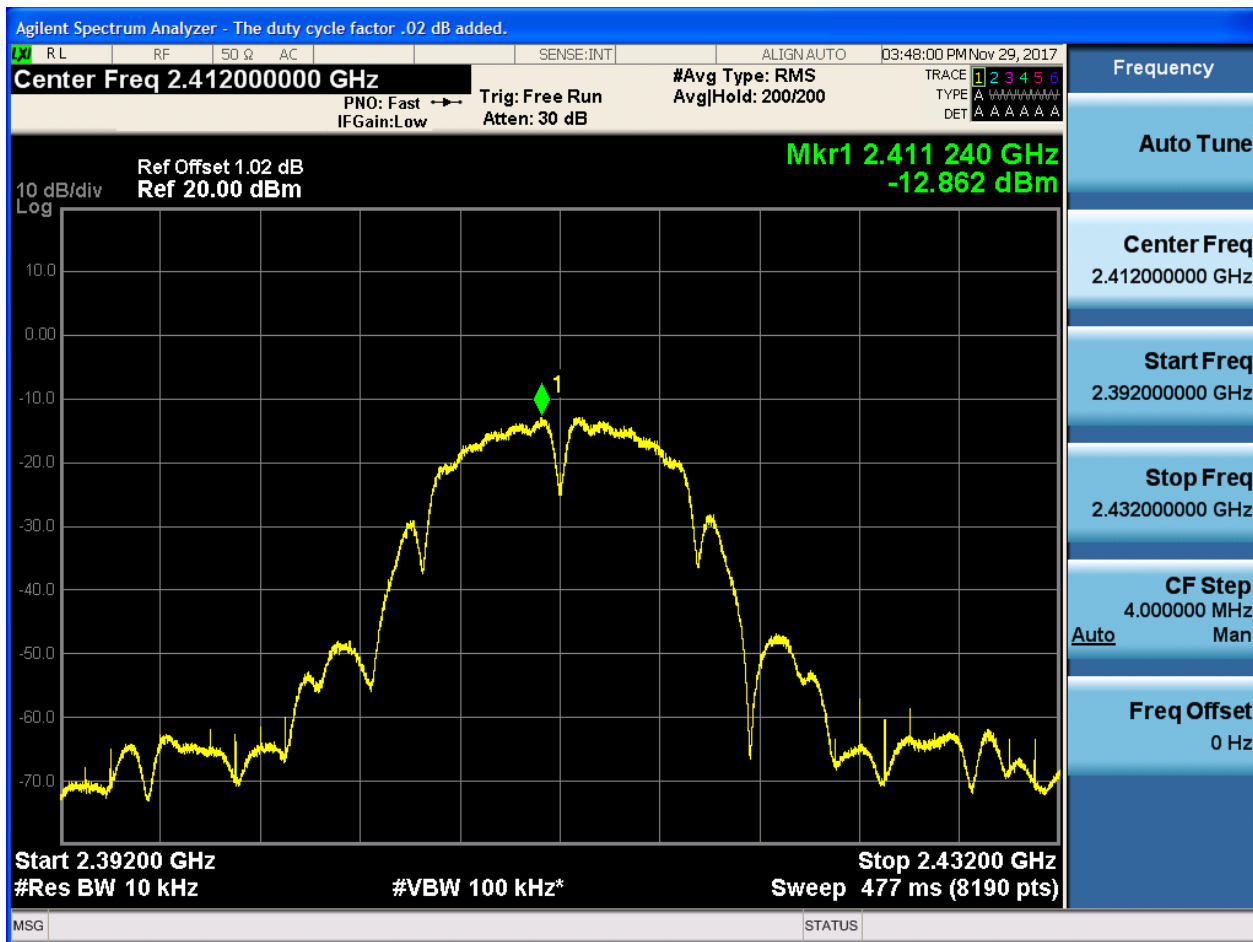
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Duty Cycle [%]	PSD[dBm/10 kHz]	Verdict
11B	L	2412	Ant 1	99	-12.86	pass
11B	M	2437	Ant 1	99	-12.06	pass
11B	H	2462	Ant 1	99	-11.70	pass
11G	L	2412	Ant 1	97	-18.90	pass
11G	L	2417	Ant 1	97	-10.37	pass
11G	M	2437	Ant 1	97	-10.64	pass
11G	H	2457	Ant 1	97	-11.69	pass
11G	H	2462	Ant 1	97	-17.69	pass
11N20	L	2412	Ant 1	97	-19.46	pass
11N20	L	2417	Ant 1	97	-13.55	pass
11N20	M	2437	Ant 1	97	-13.57	pass
11N20	H	2457	Ant 1	97	-14.4	pass
11N20	H	2462	Ant 1	97	-17.98	pass
11N40	L	2422	Ant 1	95	-21.05	pass
11N40	M	2437	Ant 1	95	-21.27	pass

Test Mode	Test Channel	Frequency[MHz]	Ant	Duty Cycle [%]	PSD[dBm/10 kHz]	Verdict
11N40	H	2452	Ant 1	95	-21.08	pass

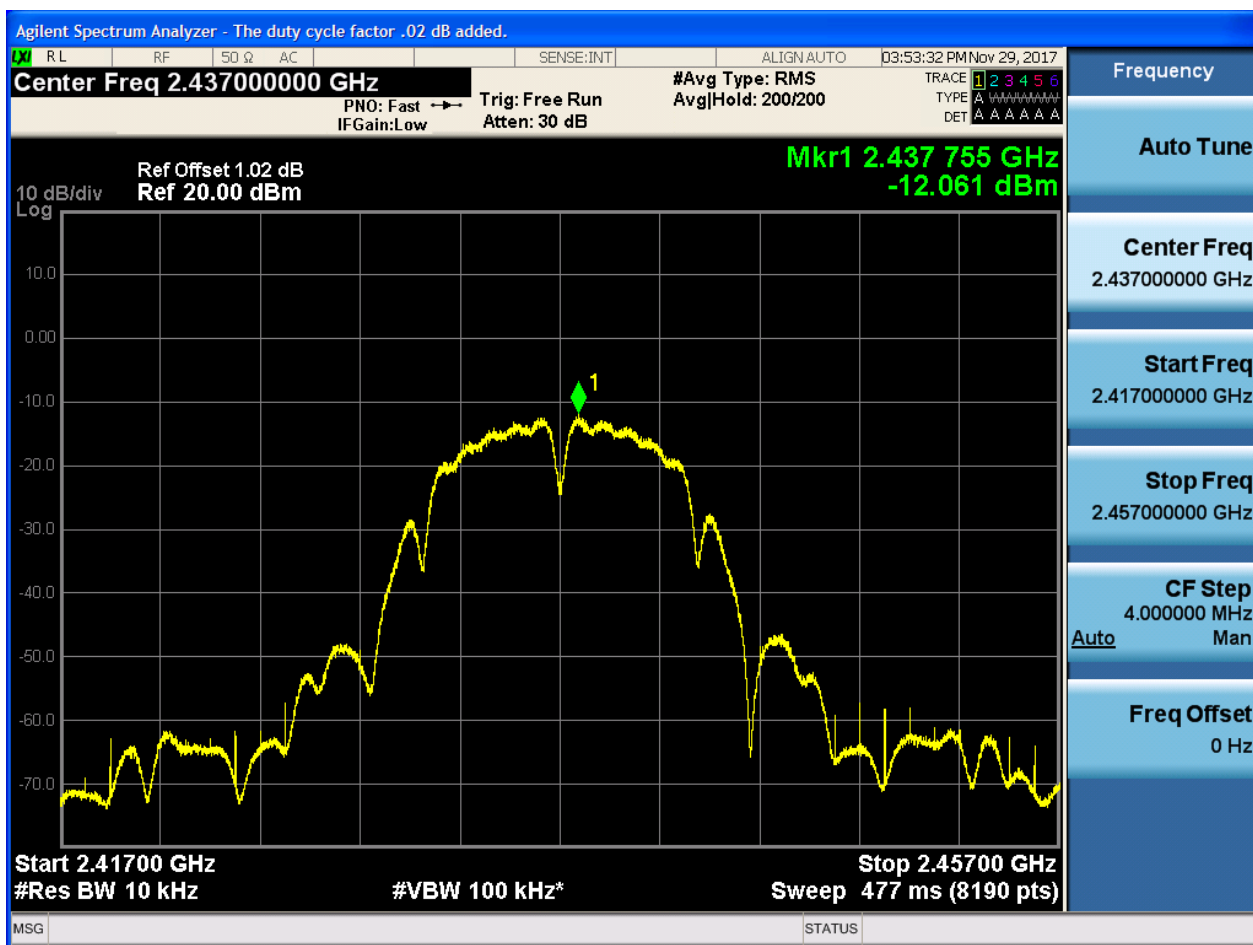
Part II - Test Plots

2.1 11B_L@Ant 1





2.2 11B_M@Ant 1



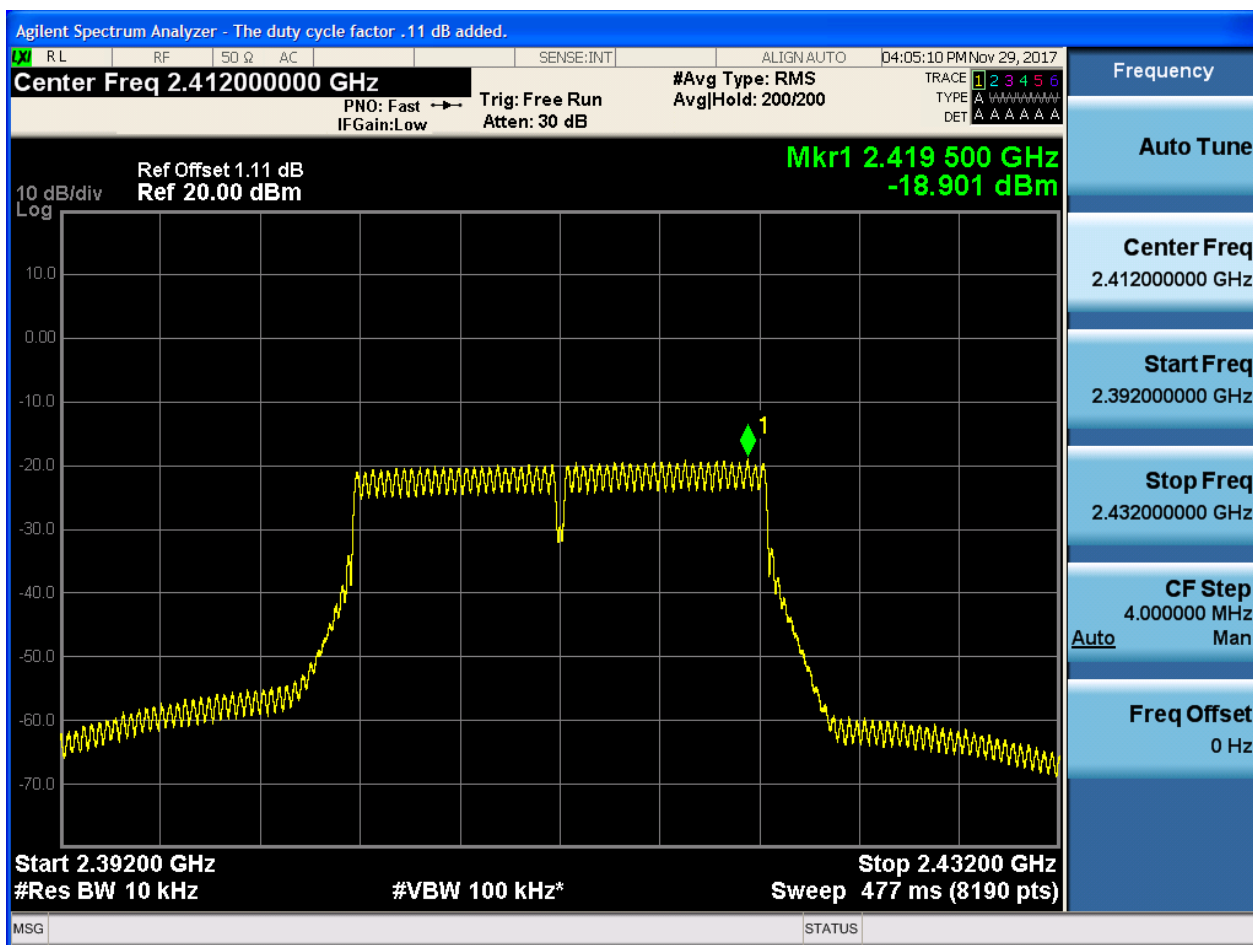


2.3 11B_H@Ant 1

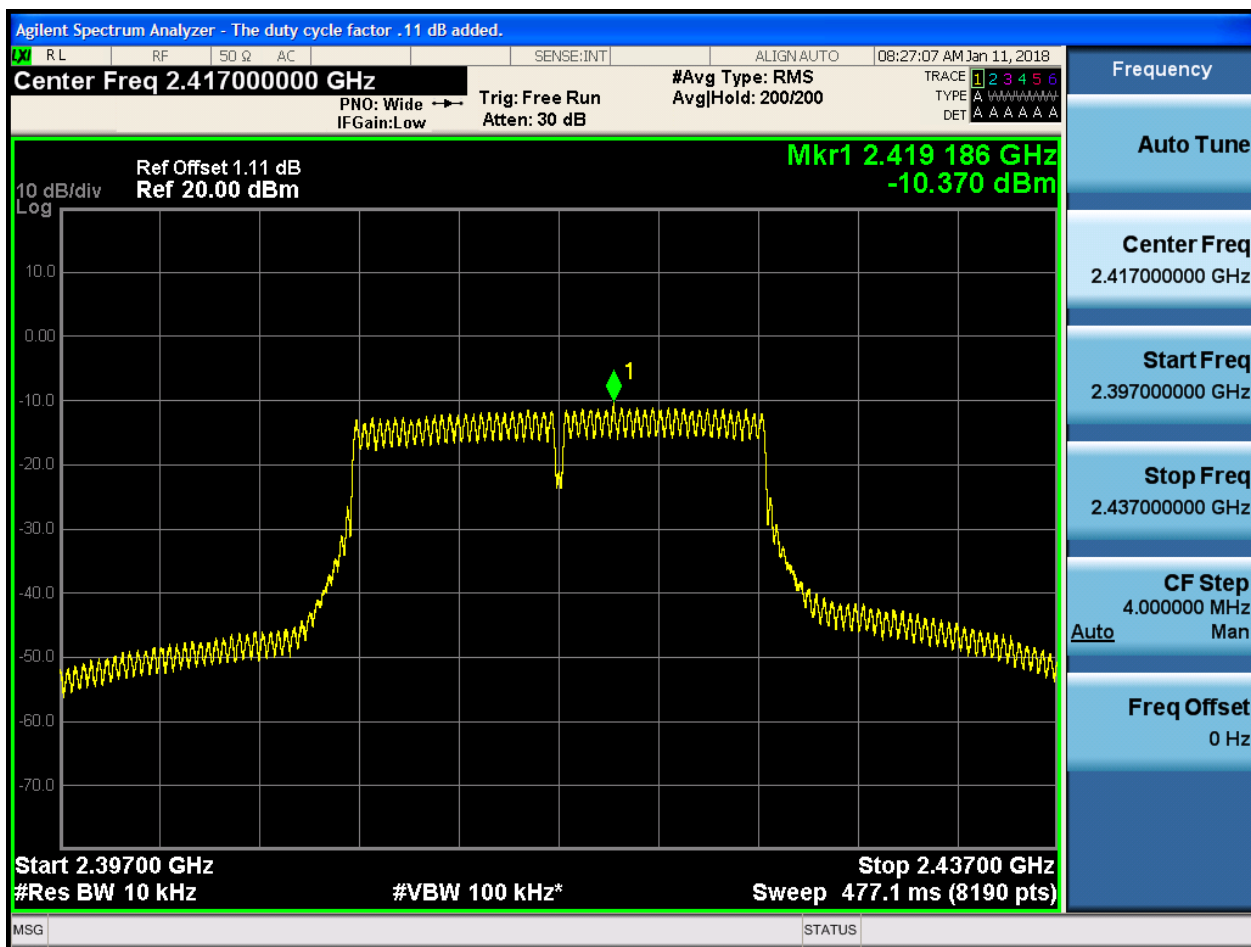




2.4 11G_L_2412@Ant 1

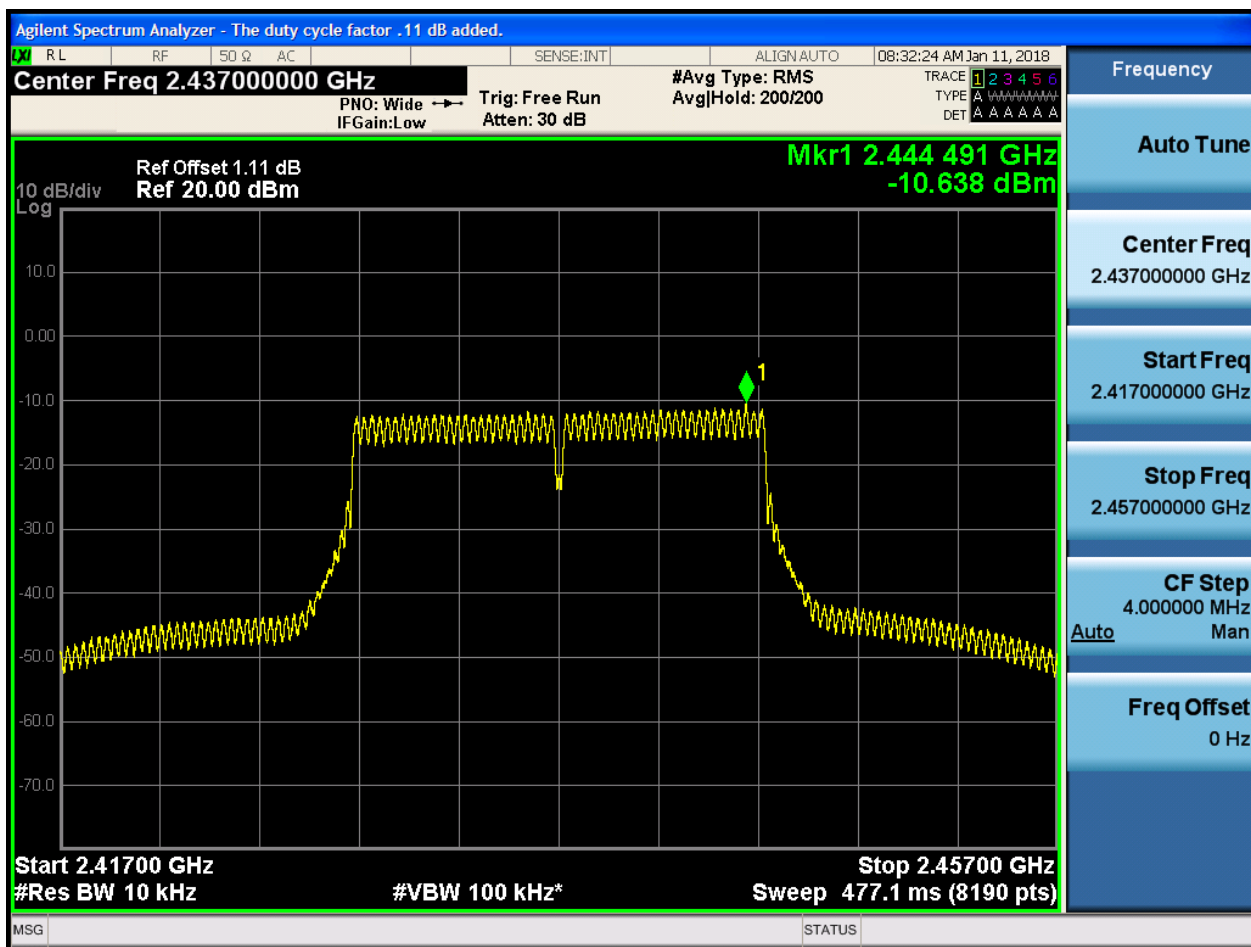


2.5 11G_L_2417@Ant 1



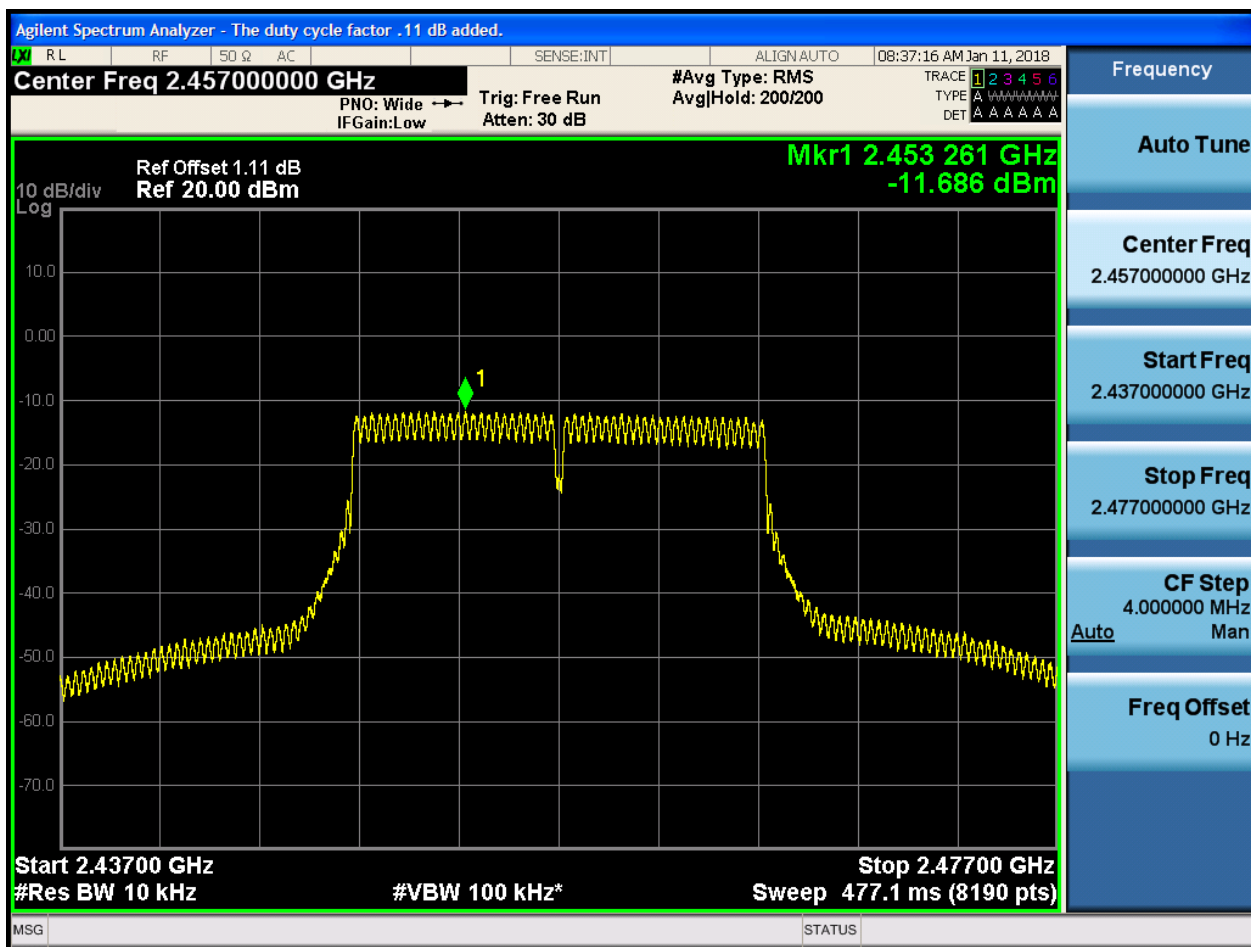


2.6 11G_M_2437@Ant 1



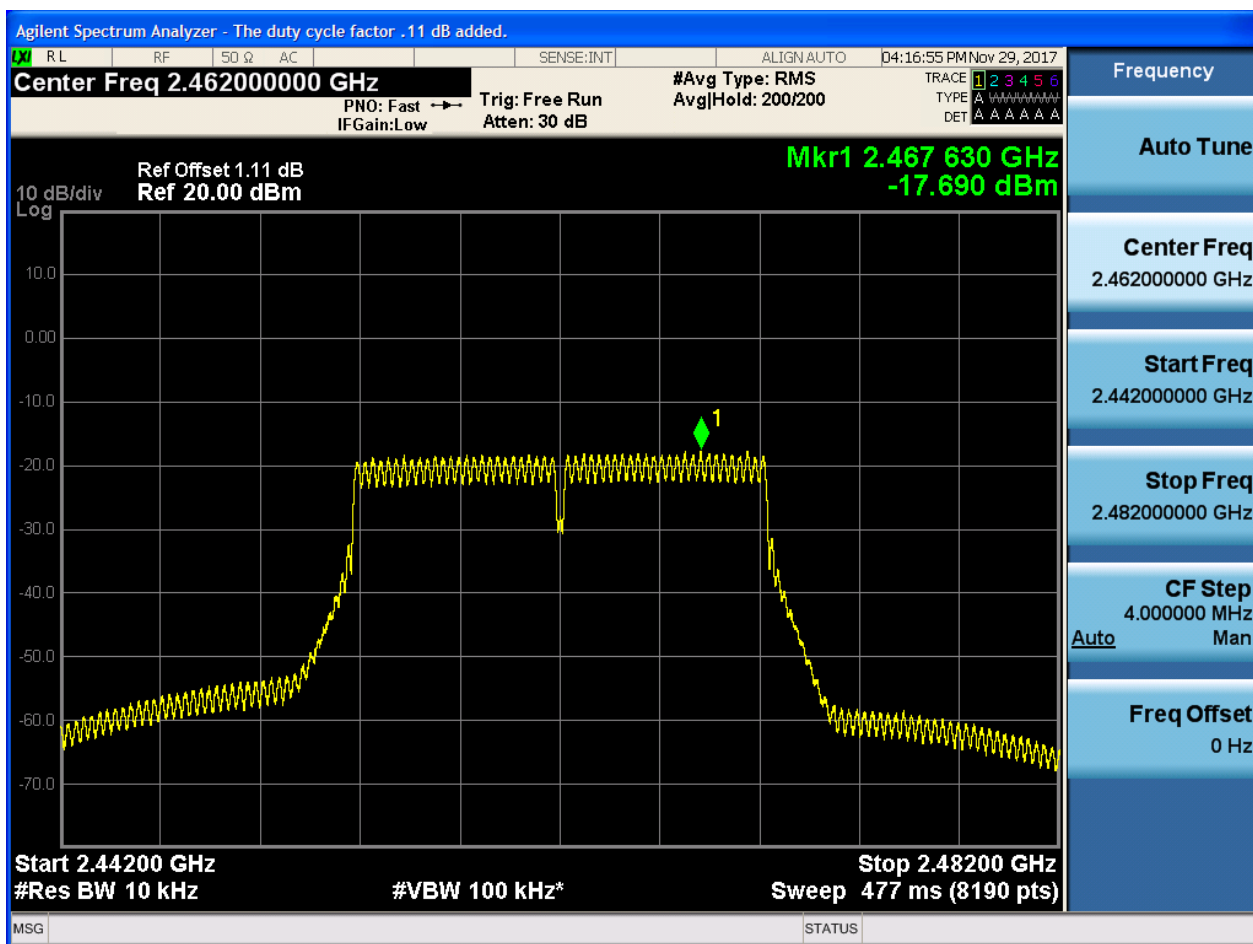


2.7 11G_H_2457@Ant 1





2.8 11G_H_2462@Ant 1





Agilent Spectrum Analyzer - The duty cycle factor .11 dB added.

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 10:33:39 AM Nov 30, 2017

Center Freq 2.412000000 GHz #Avg Type: RMS Avg/Hold: 200/200

PNO: Wide → Trig: Free Run IFGain:Low Atten: 30 dB

TRACE 1 2 3 4 5 6
TYPE A W W W W W W W W
DET A A A A A A

Ref Offset 1.11 dB
Ref 20.00 dBm

Mkr1 2.419 500 GHz
-19.459 dBm

10 dB/div
Log

Start 2.39200 GHz #Res BW 10 kHz #VBW 100 kHz* Stop 2.43200 GHz Sweep 477.1 ms (8190 pts)

MSG STATUS

Frequency

Auto Tune

Center Freq
2.412000000 GHz

Start Freq
2.392000000 GHz

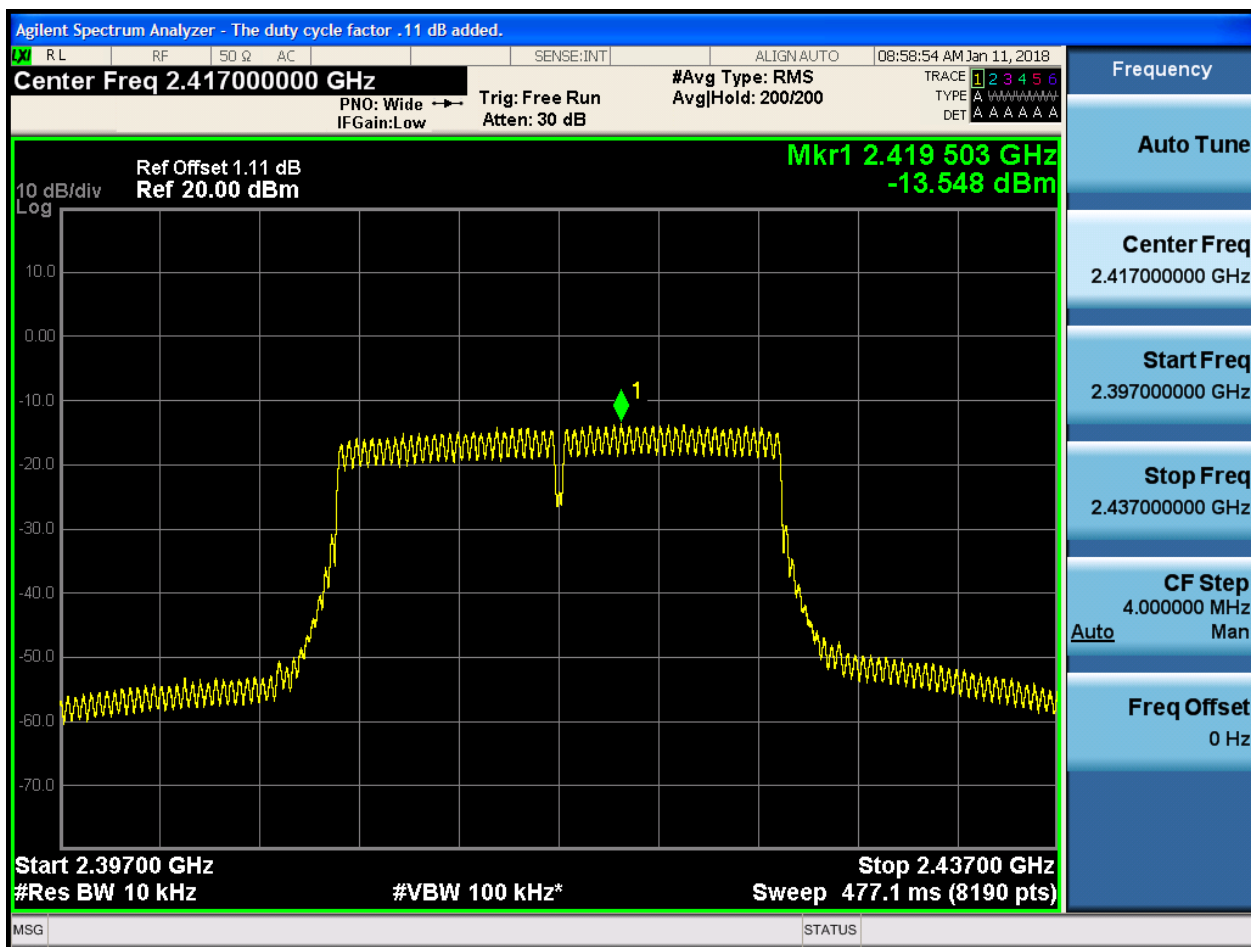
Stop Freq
2.432000000 GHz

CF Step
4.000000 MHz
Auto Man

Freq Offset
0 Hz

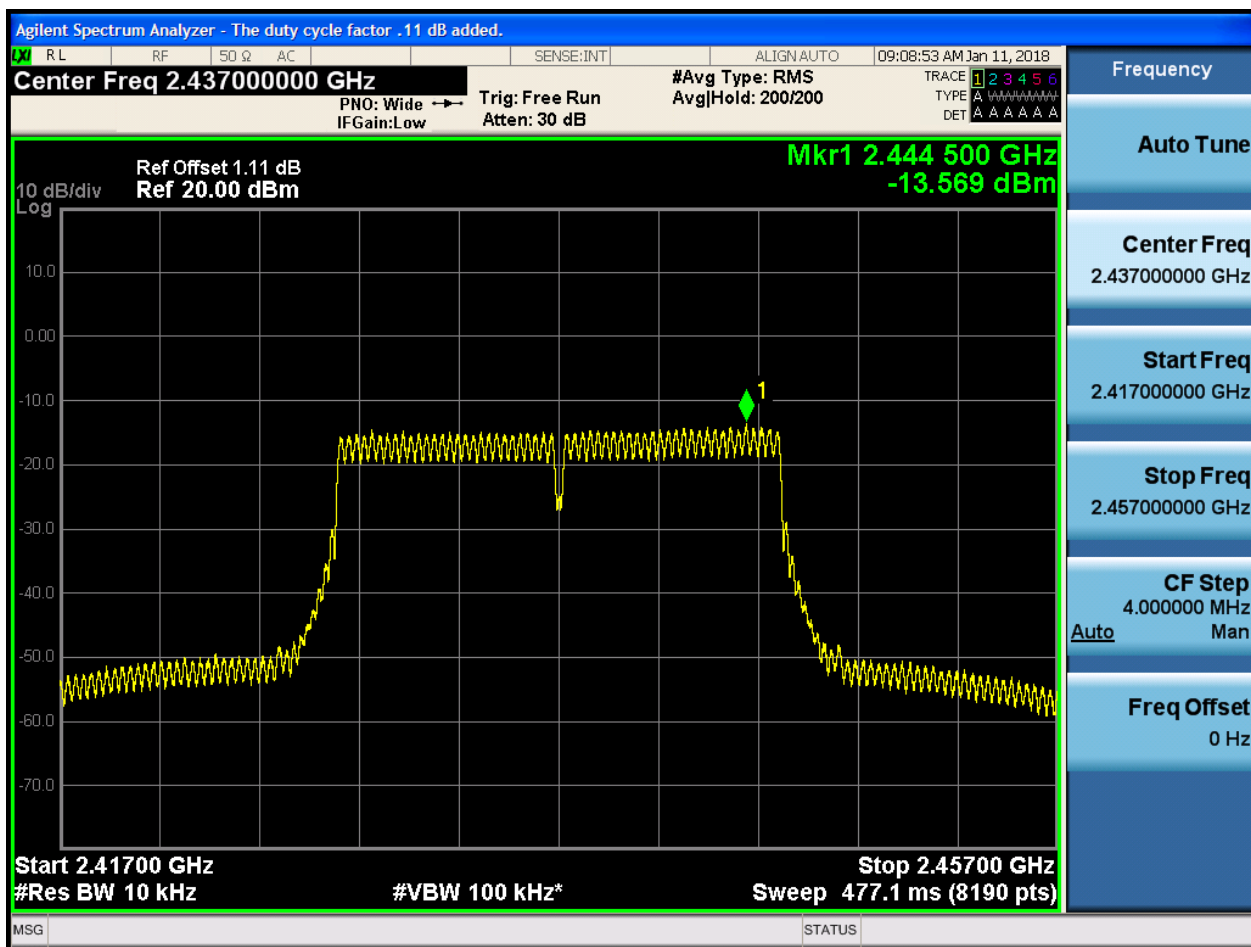


2.10 11N20_L_2417@Ant 1



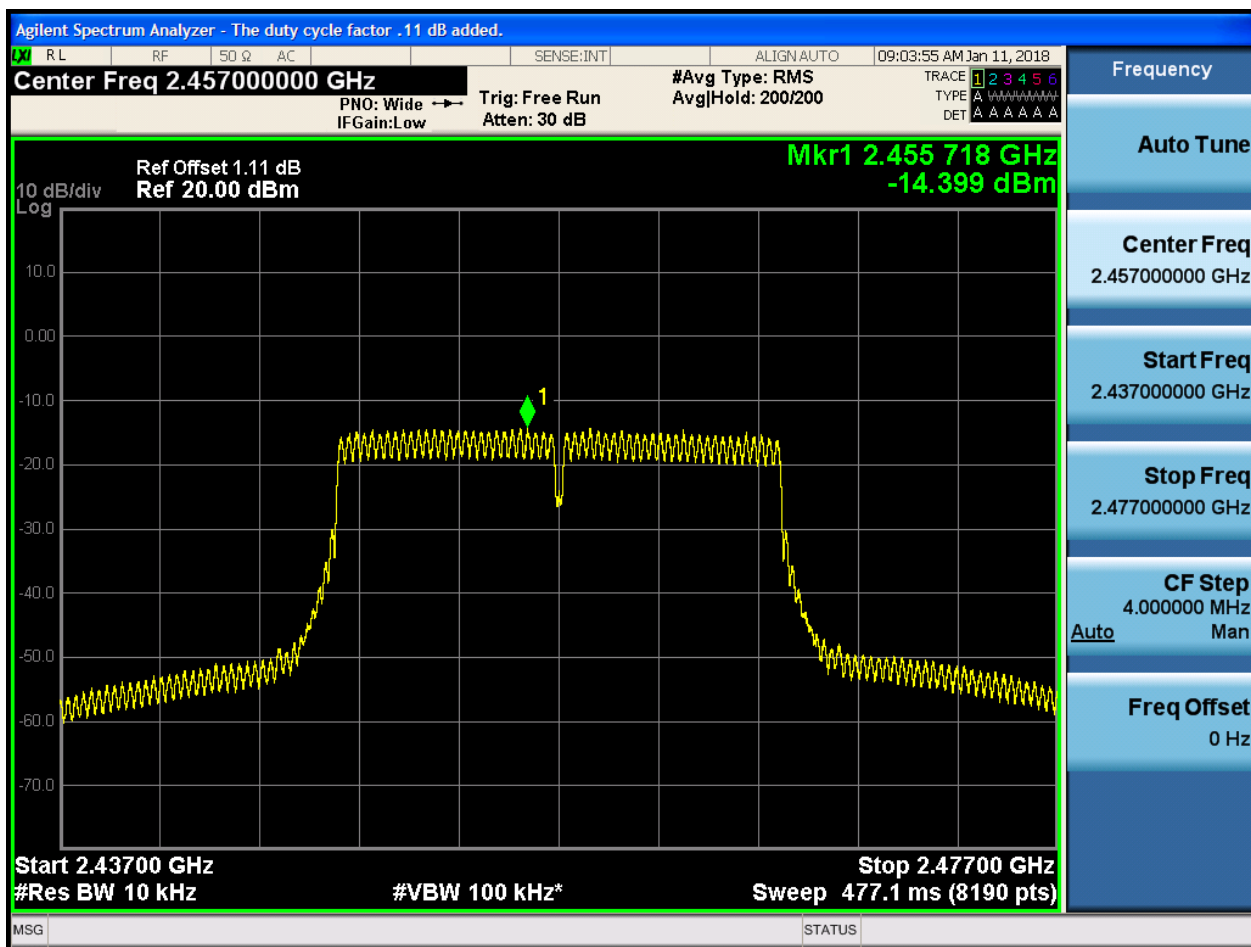


2.11 11N20_M_2437@Ant 1



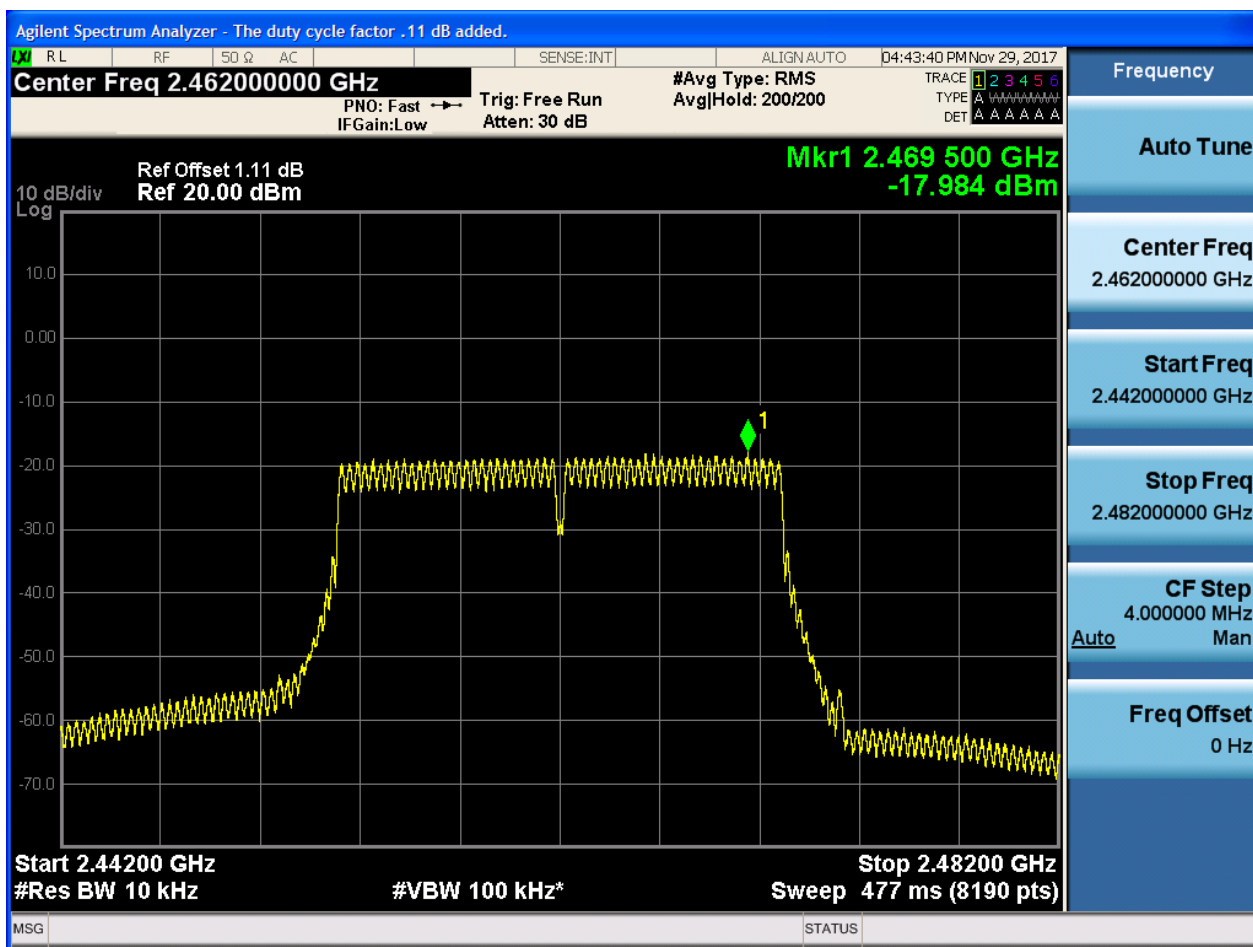


2.12 11N20_H_2457@Ant 1



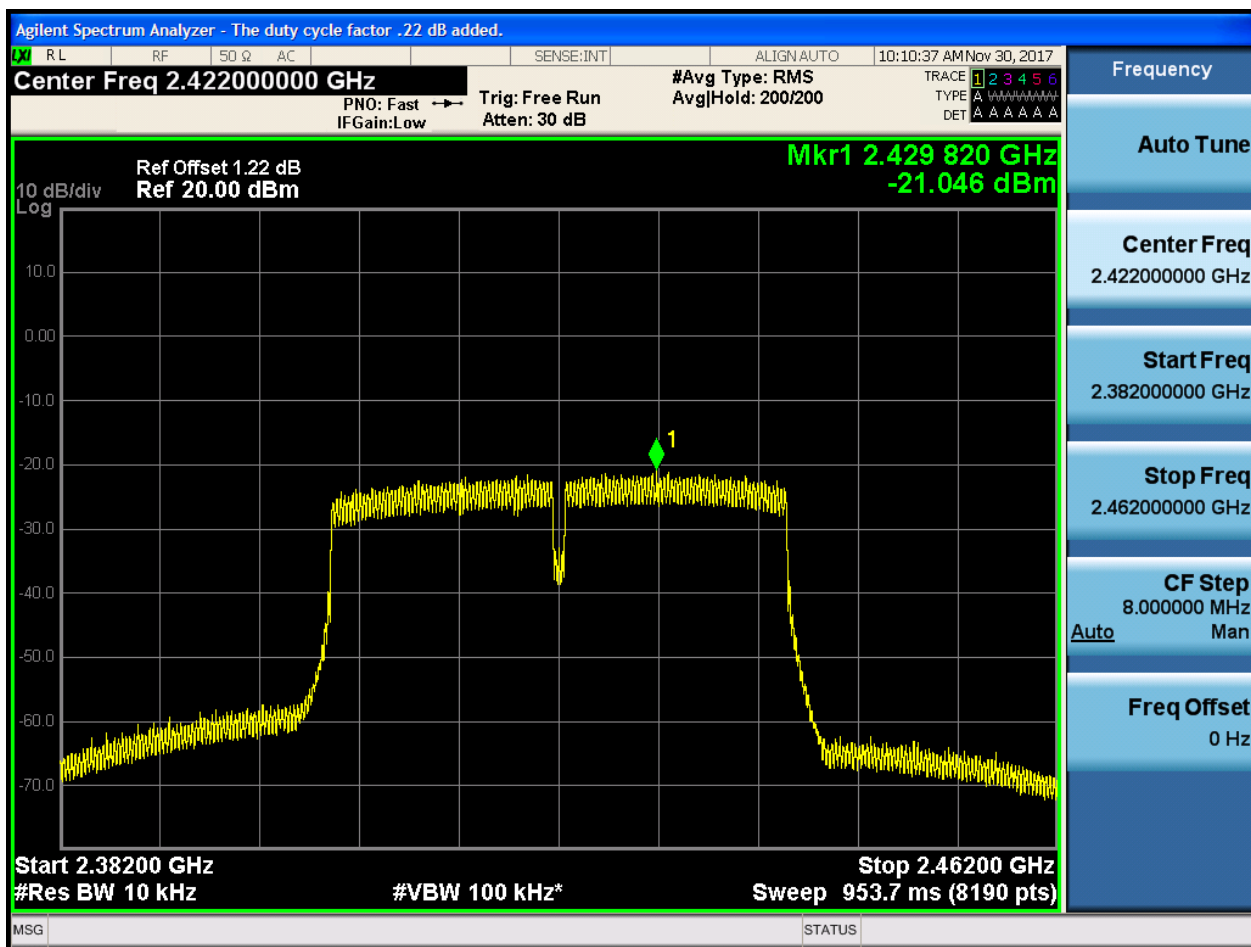


2.13 11N20_H_2462@Ant 1



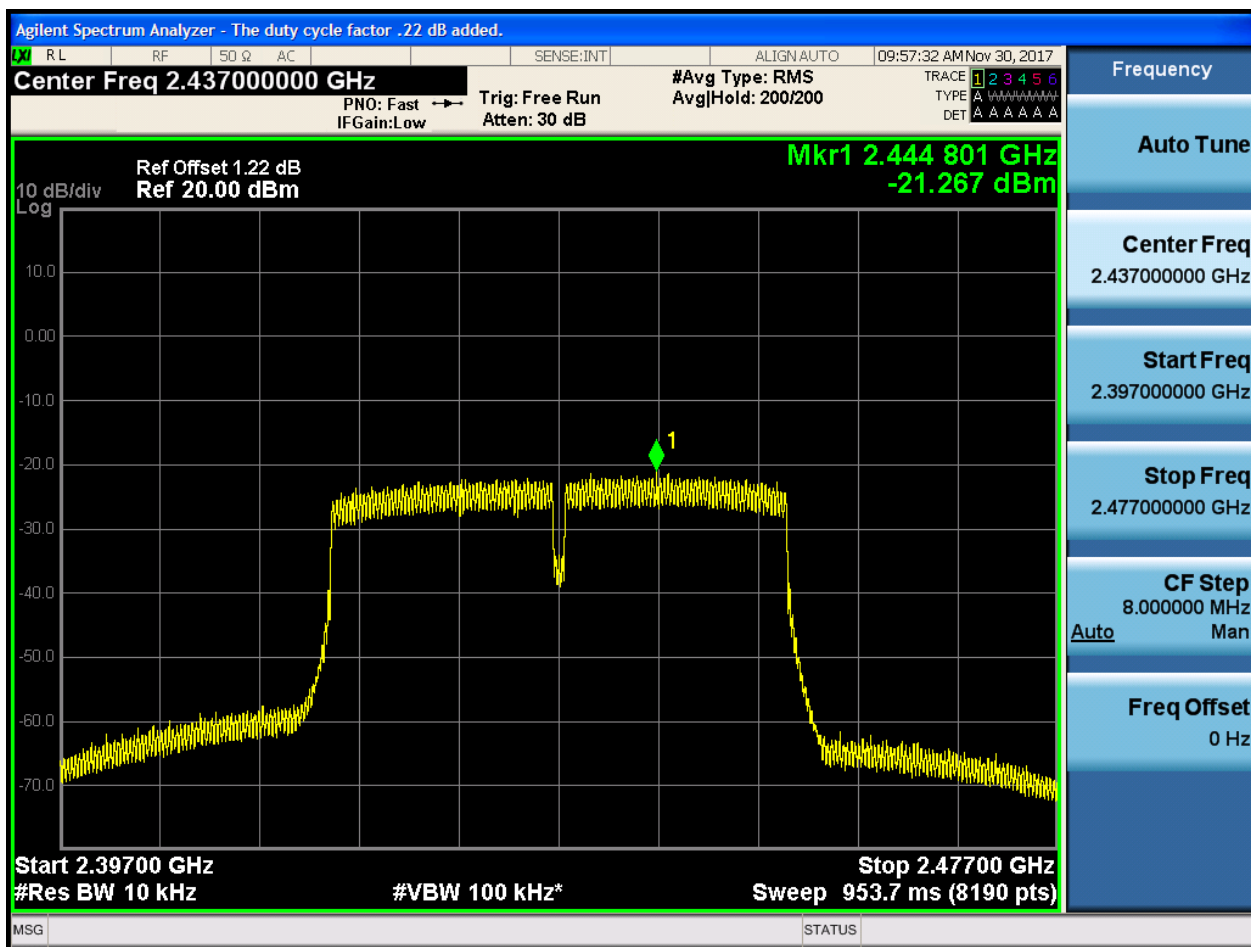


2.14 11N40_L@Ant 1



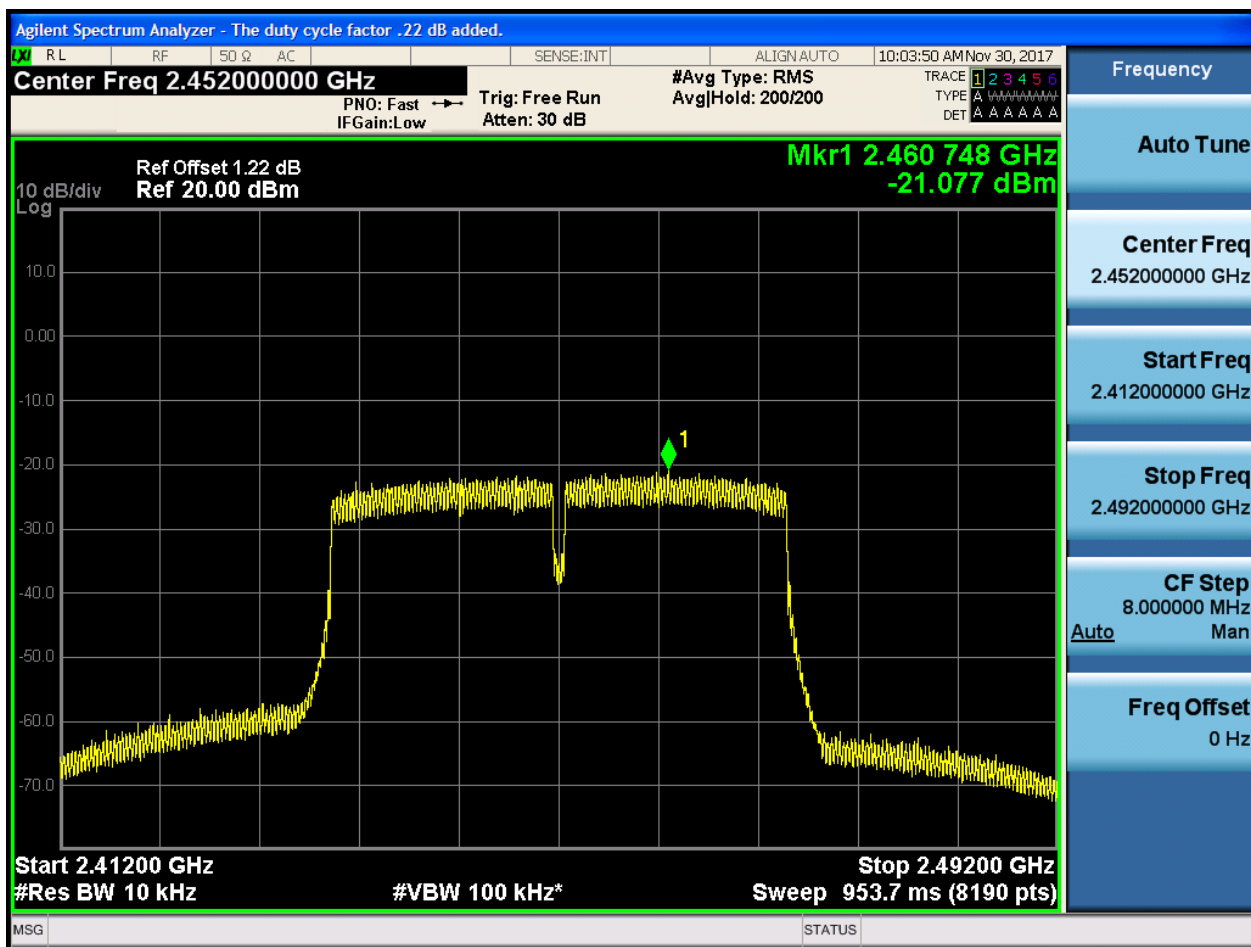


2.15 11N40_M@Ant 1





2.16 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	-42.72	pass
11B	H	2462	Ant 1	6.48	-45.82	pass
11G	L	2412	Ant 1	0.62	-37.15	pass
11G	L	2417	Ant 1	7.98	-27.95	pass
11G	H	2457	Ant 1	8.14	-42.7	pass
11G	H	2462	Ant 1	0.82	-42.41	pass
11N20	L	2412	Ant 1	-0.26	-35.50	pass
11N20	L	2417	Ant 1	5.18	-35.45	pass
11N20	H	2457	Ant 1	5.30	-44.73	pass
11N20	H	2462	Ant 1	-0.53	-45.00	pass
11N40	L	2422	Ant 1	-3.24	-41.31	pass
11N40	H	2452	Ant 1	-2.75	-43.36	pass



Part II - Test Plots

2.1 11B_L@Ant 1



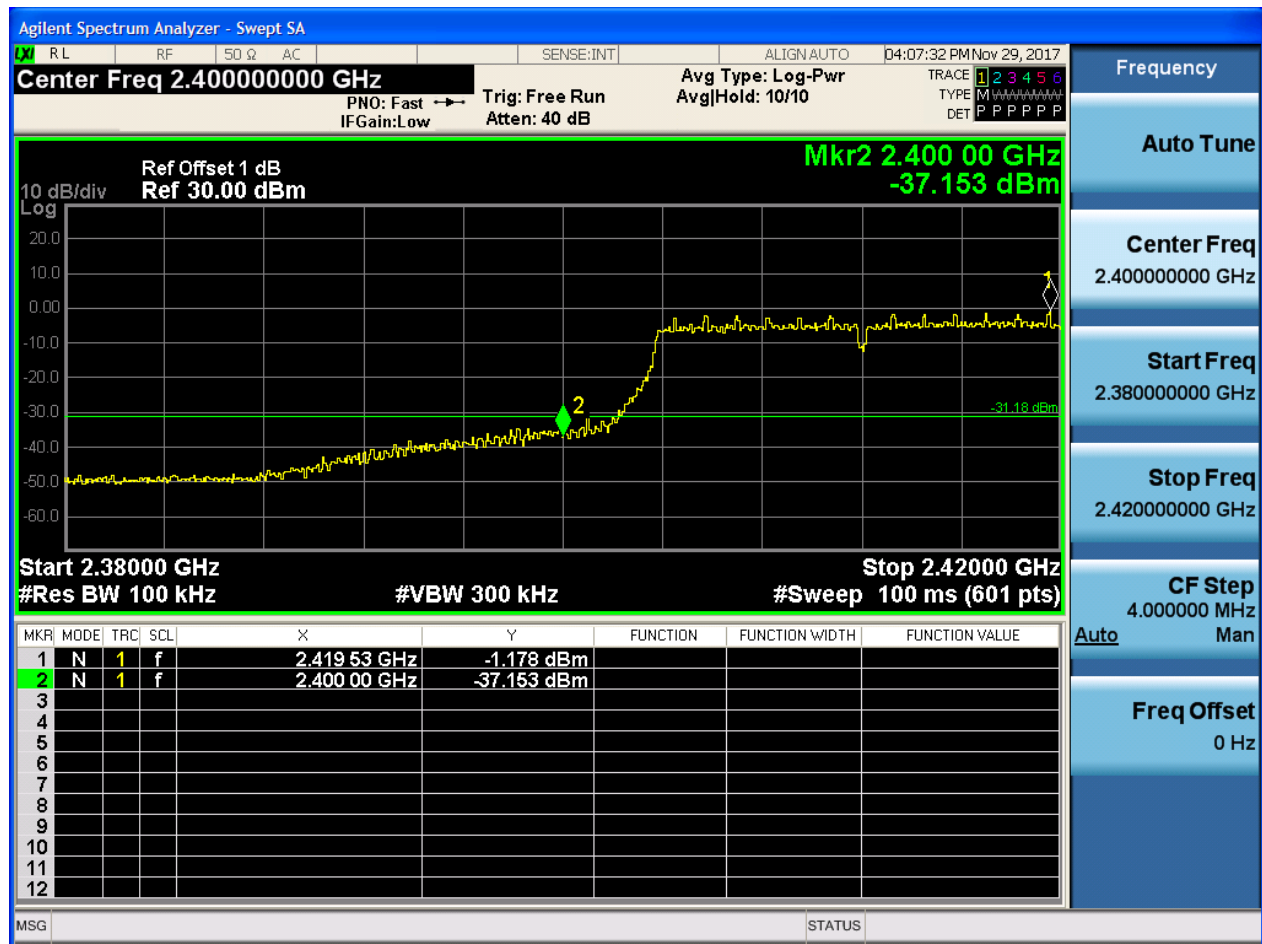


2.2 11B_H@Ant 1

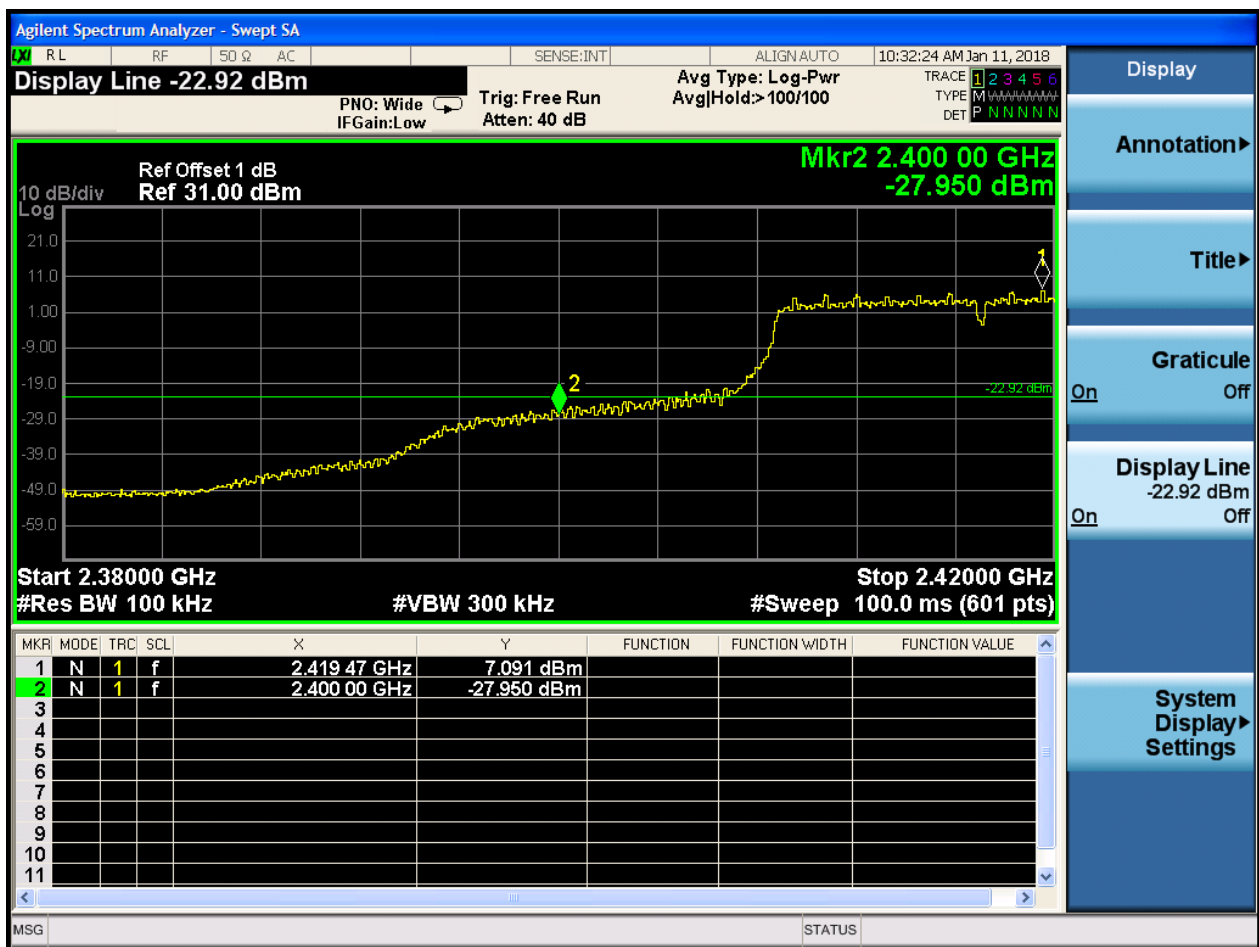




2.3 11G_L_2412@Ant 1



2.4 11G_L_2417@Ant 1



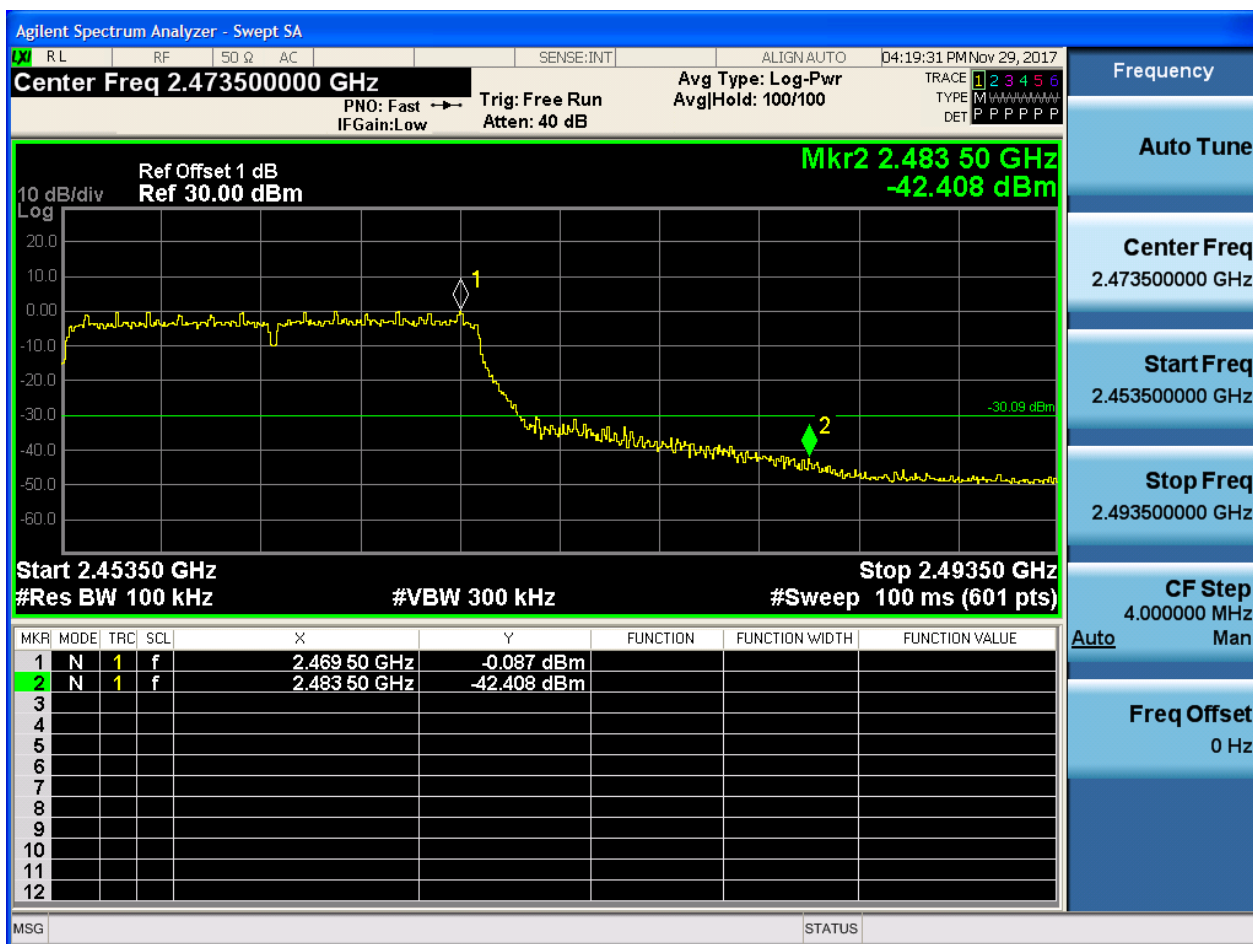


2.5 11G_H_2457@Ant 1



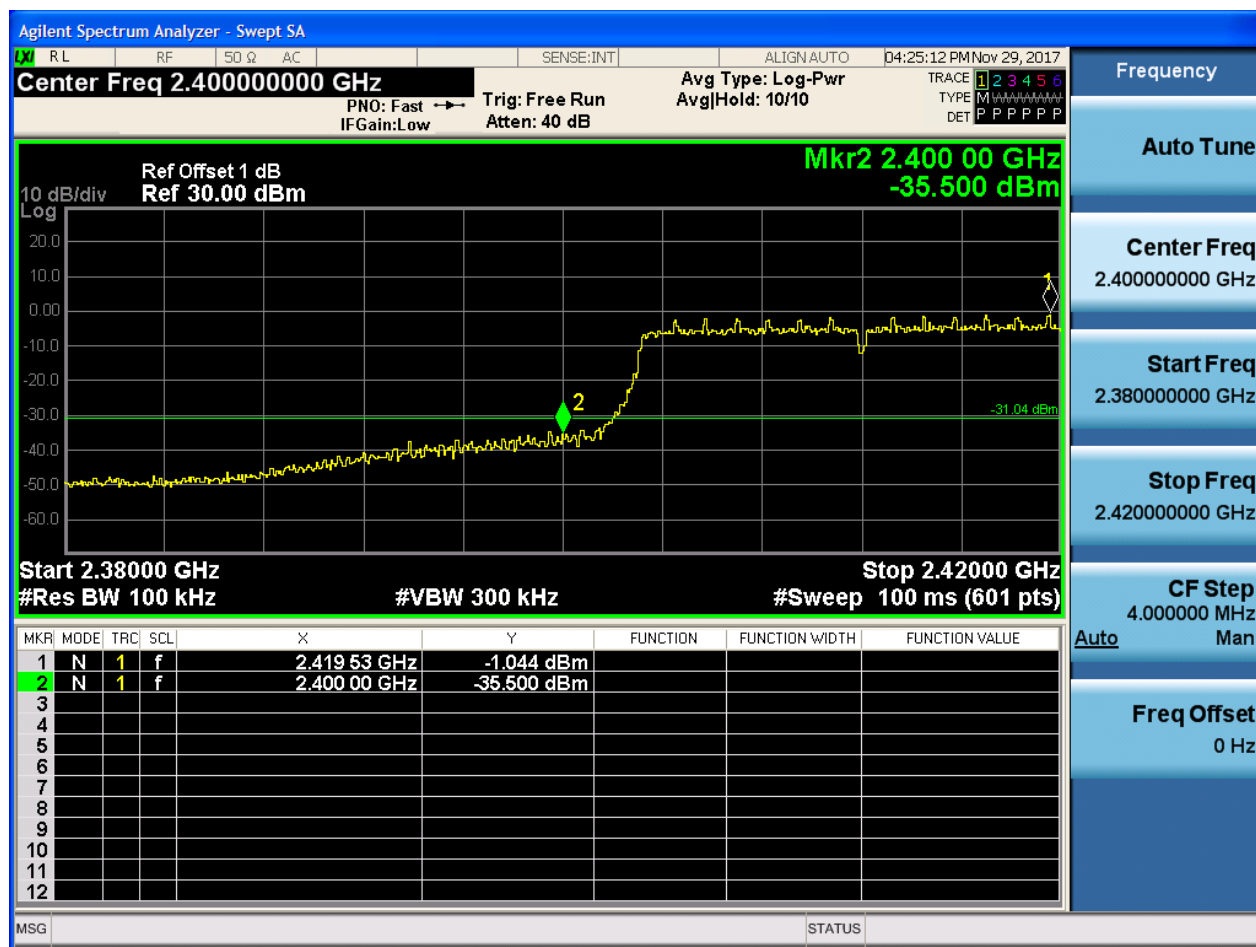


2.6 11G_H_2462@Ant 1





2.7 11N20_L_2412@Ant 1





Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 10:36:15 AM Jan 11, 2018

Display Line -25.58 dBm

PNO: Wide Trig: Free Run
IFGain:Low Atten: 40 dB

Avg Type: Log-Pwr
AvgHold>100/100

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

Ref Offset 1 dB
Ref 31.00 dBm

Mkr2 2.400 00 GHz
-35.448 dBm

10 dB/div
Log

Start 2.38000 GHz Stop 2.42000 GHz
#Res BW 100 kHz #VBW 300 kHz #Sweep 100.0 ms (601 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.419 47 GHz	4.422 dBm			
2	N	1	f	2.400 00 GHz	-35.448 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								

MSG STATUS

Display
Annotation
Title
Graticule
On Off
Display Line
-25.58 dBm
On Off
System
Display
Settings



Agilent Spectrum Analyzer - Swept SA

Center Freq 2.473500000 GHz

Ref Offset 1 dB
Ref 30.00 dBm

Mkr2 2.483 50 GHz
-44.730 dBm

Start 2.45350 GHz
#Res BW 100 kHz

Stop 2.49350 GHz
#Sweep 100.0 ms (601 pts)

#VBW 300 kHz

Trig: Free Run
Atten: 40 dB

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

10 dB/div
Log

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.455 77 GHz	3.553 dBm			
2	N	1	f	2.483 50 GHz	-44.730 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								

MSG

STATUS

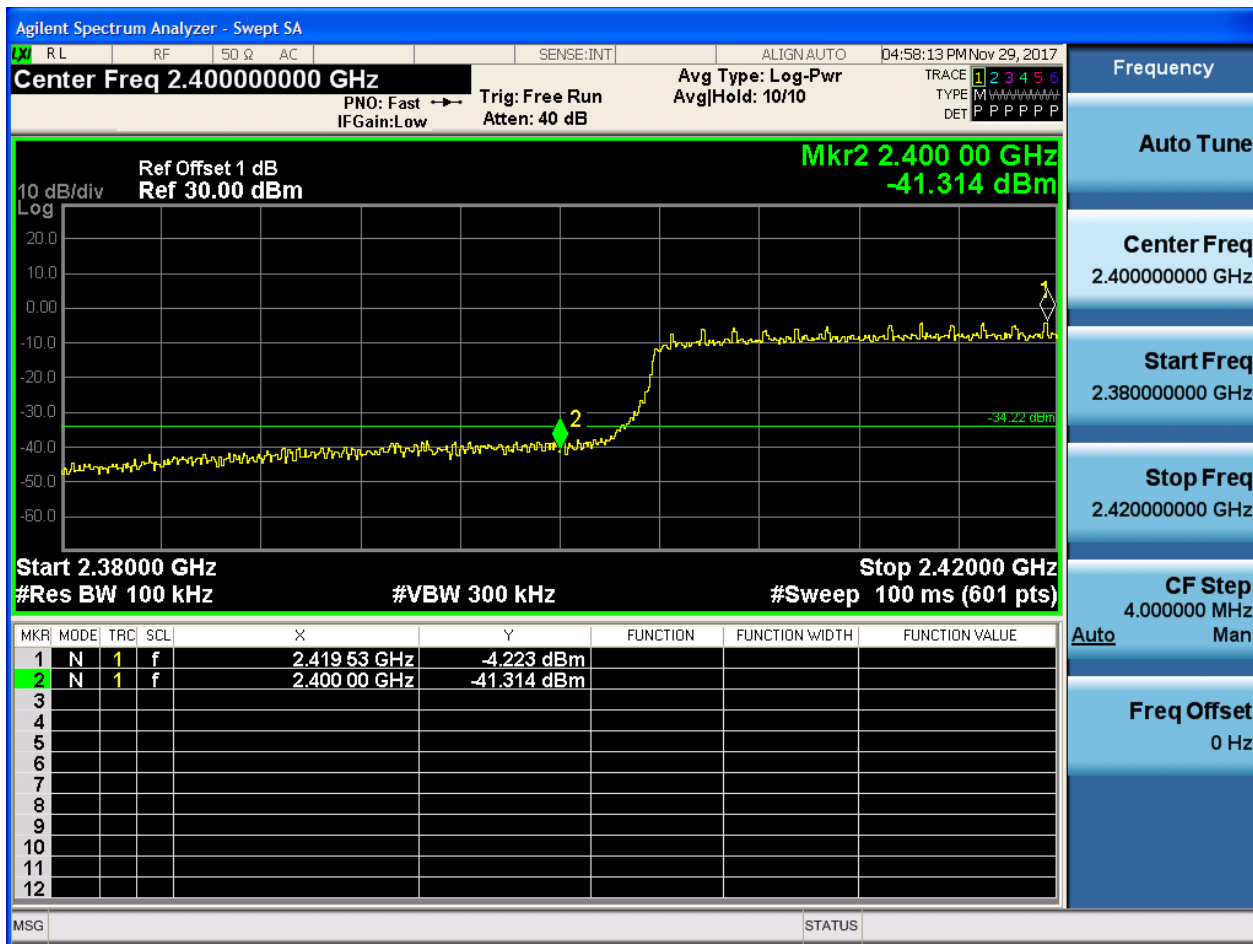


2.10 11N20_H_2462@Ant 1



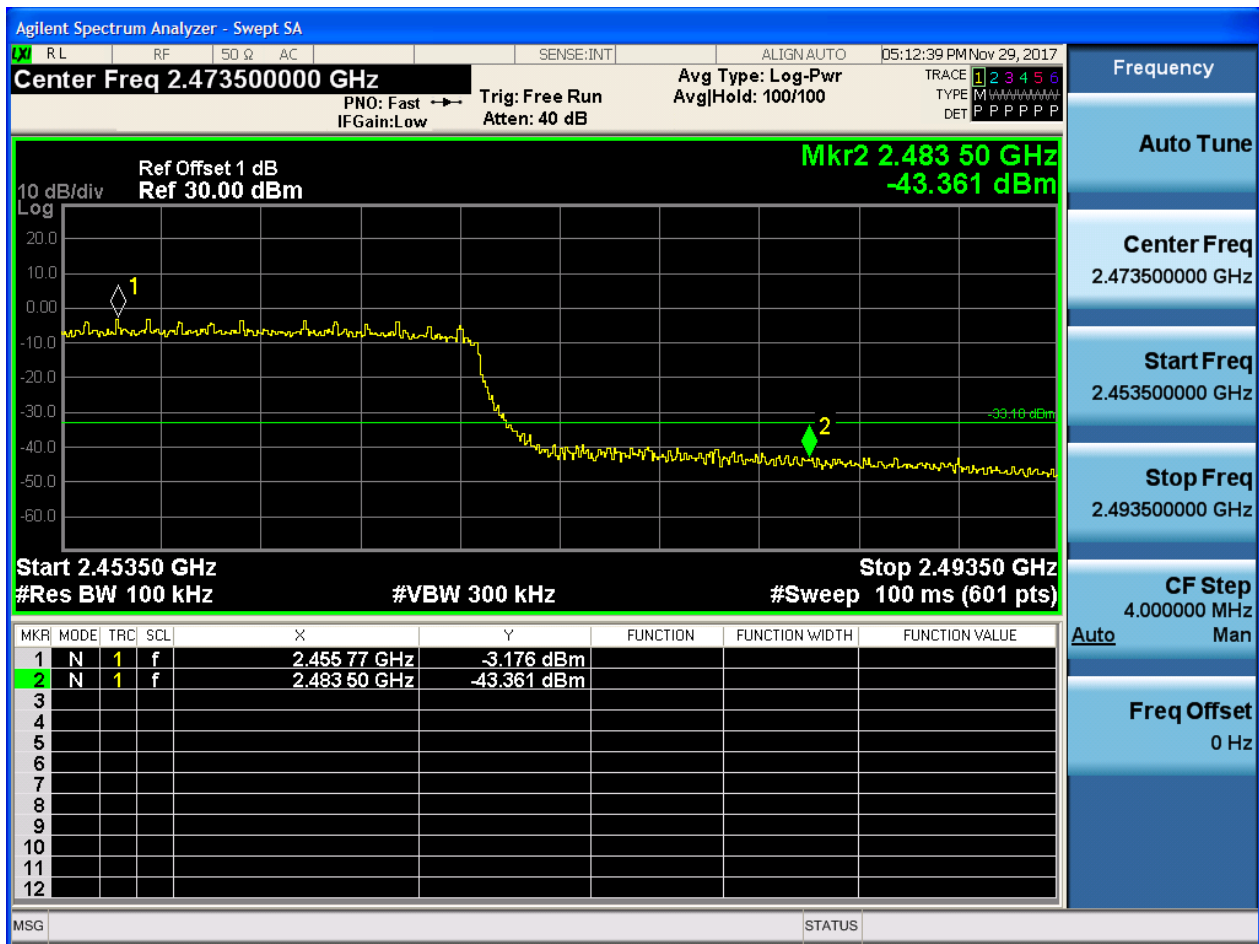


2.11 11N40_L@Ant 1





2.12 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]
11B	L	2412	Ant 1	5.23	<limit
11B	M	2437	Ant 1	5.87	<limit
11B	H	2462	Ant 1	6.18	<limit
11G	L	2412	Ant 1	-1	<limit
11G	L	2417	Ant 1	7.33	<limit
11G	M	2437	Ant 1	7.17	<limit
11G	H	2457	Ant 1	6.62	<limit
11G	H	2462	Ant 1	0.02	<limit
11N20	L	2412	Ant 1	-0.96	<limit
11N20	L	2417	Ant 1	4.5	<limit
11N20	M	2437	Ant 1	4.22	<limit
11N20	H	2457	Ant 1	4.13	<limit
11N20	H	2462	Ant 1	0.11	<limit
11N40	L	2422	Ant 1	-2.58	<limit
11N40	M	2437	Ant 1	-3.03	<limit
11N40	H	2452	Ant 1	-2.89	<limit



Part II - Test Plots

2.1 11B_L@Ant 1

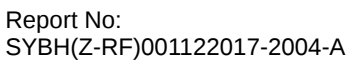
Pref:

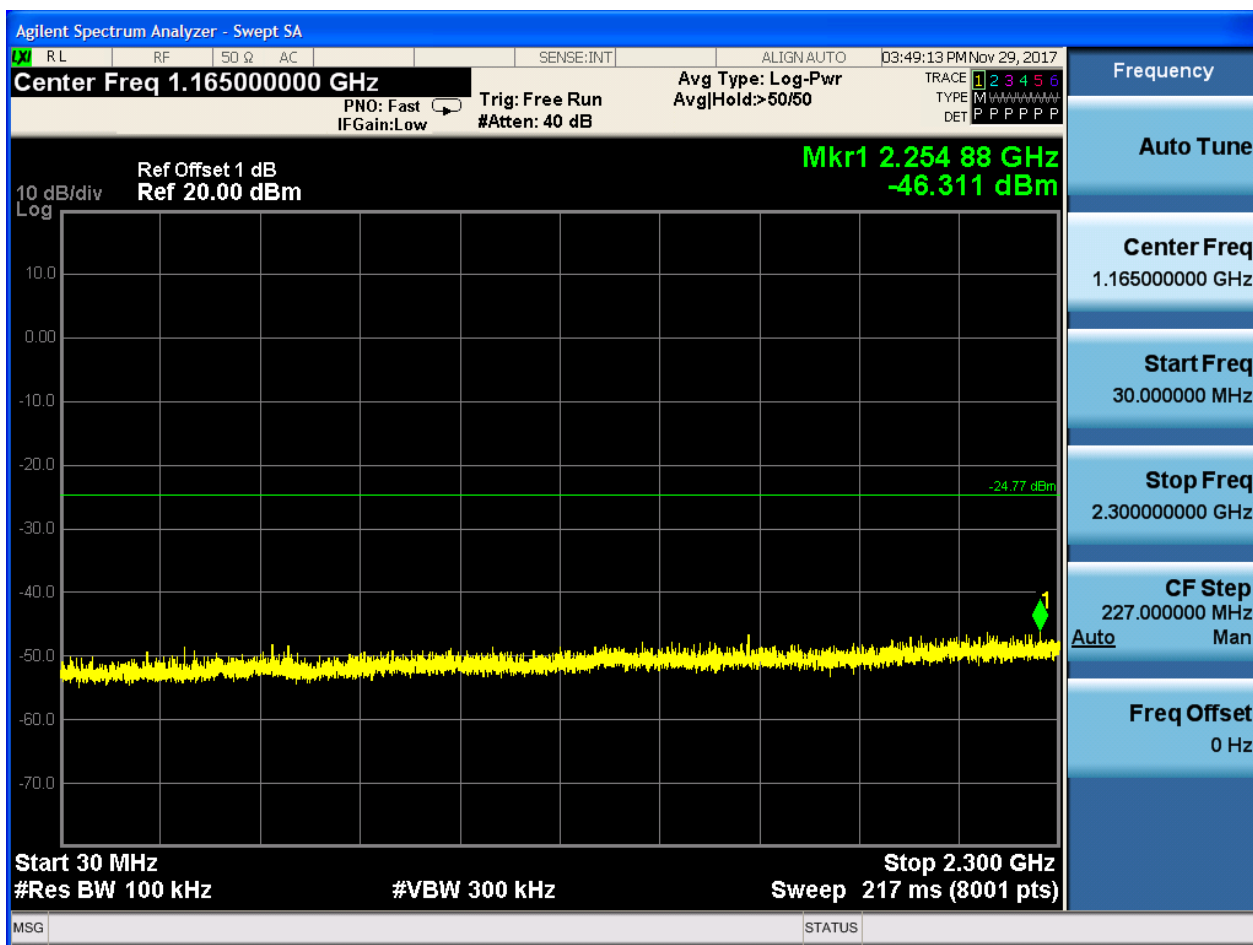


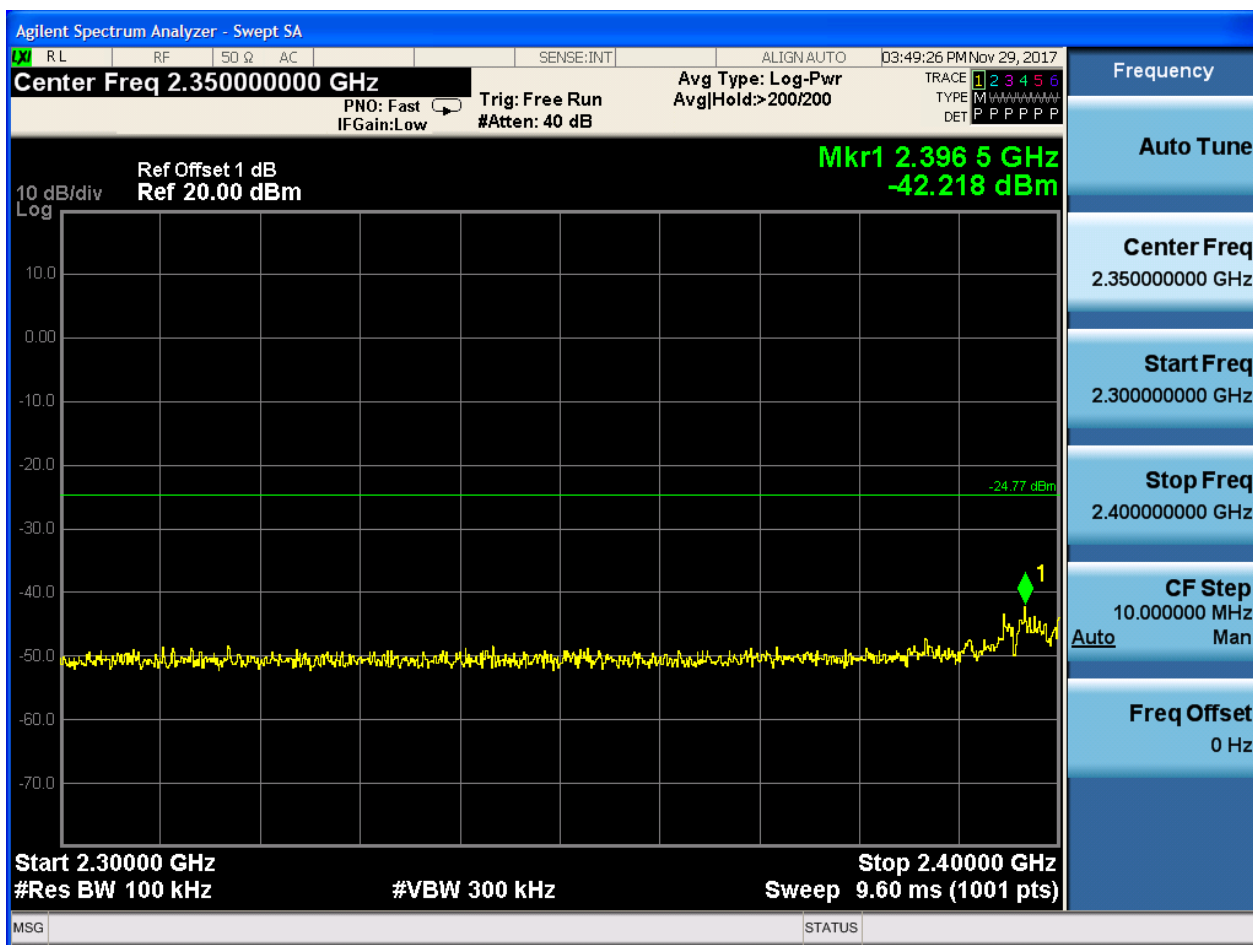


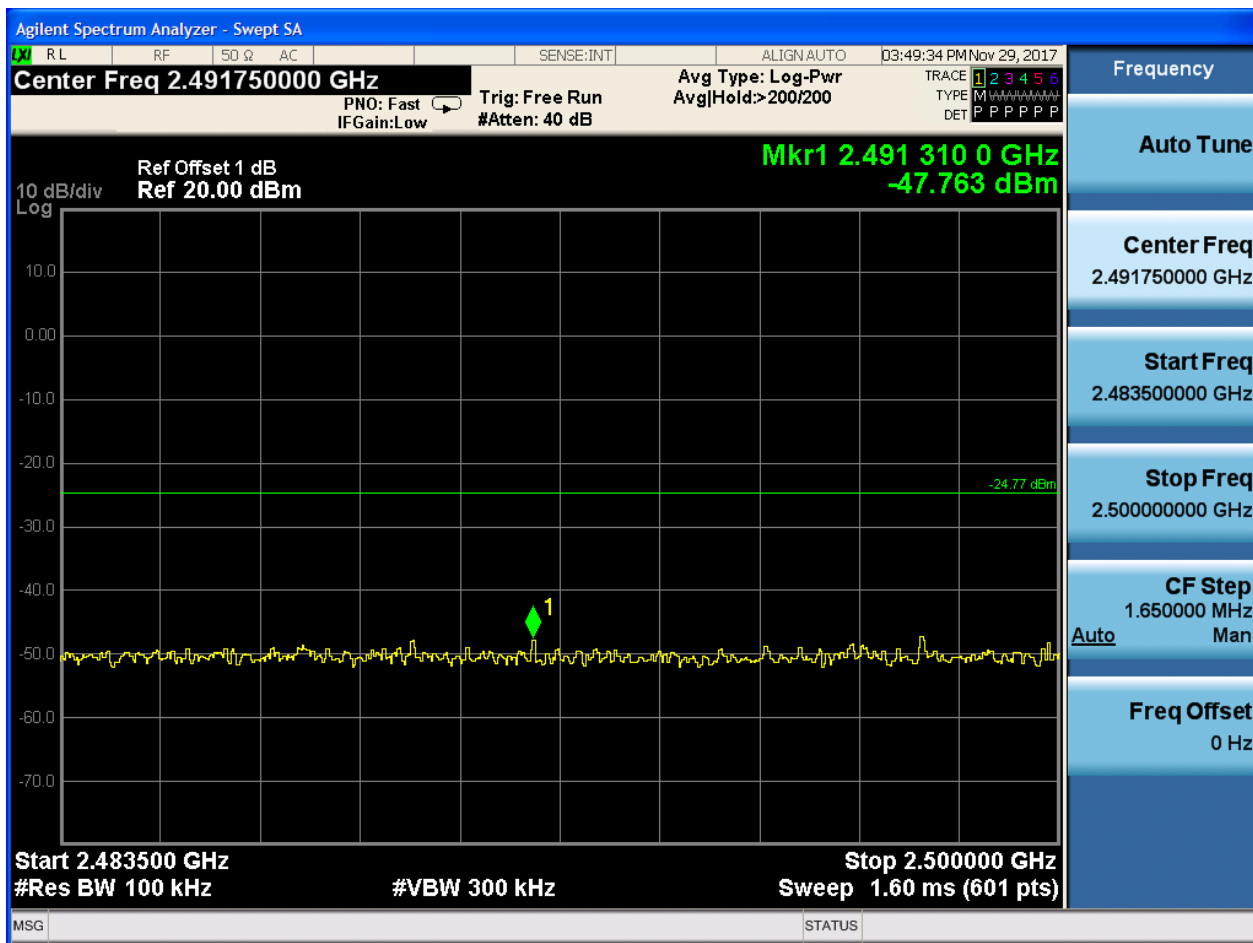
Puw:

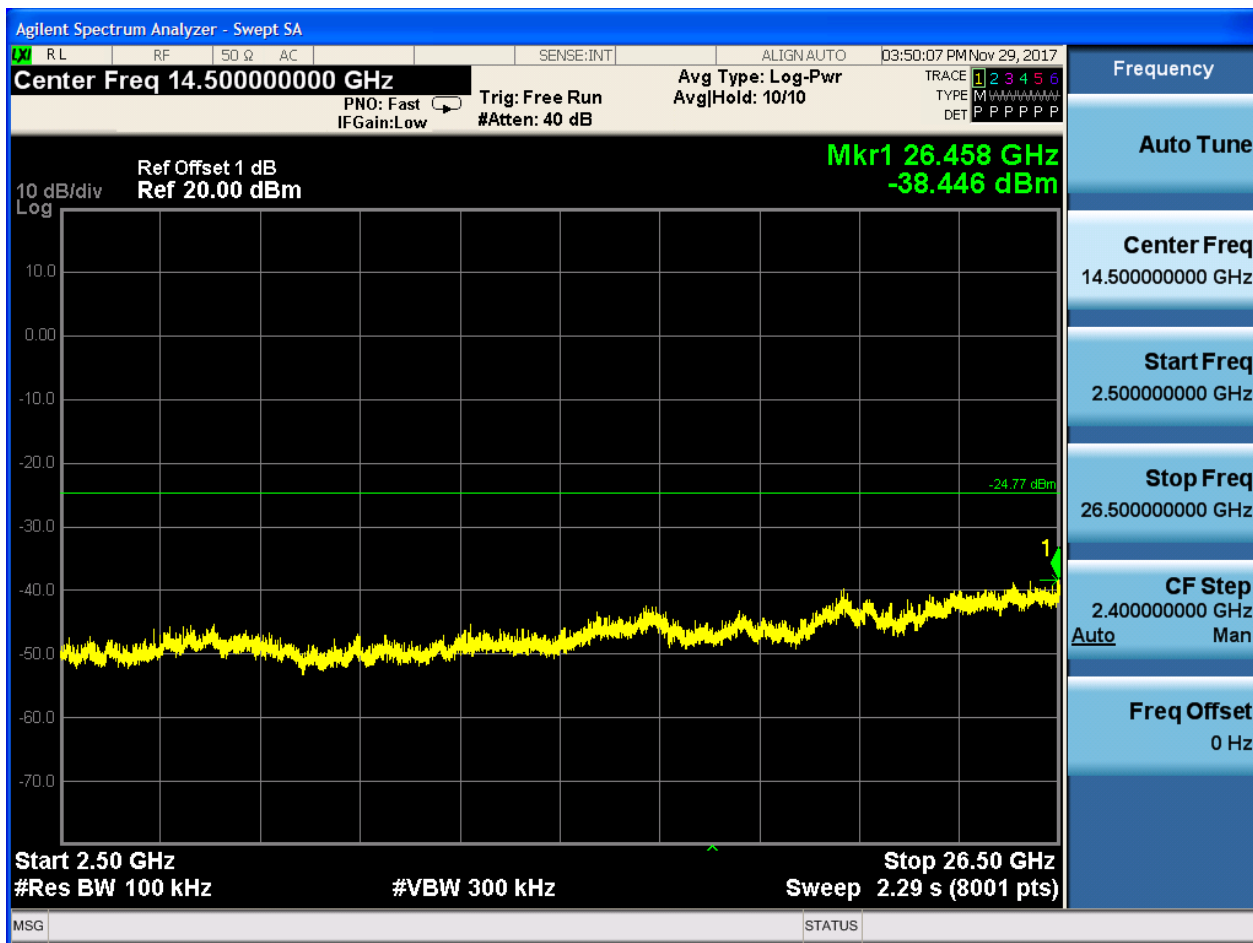








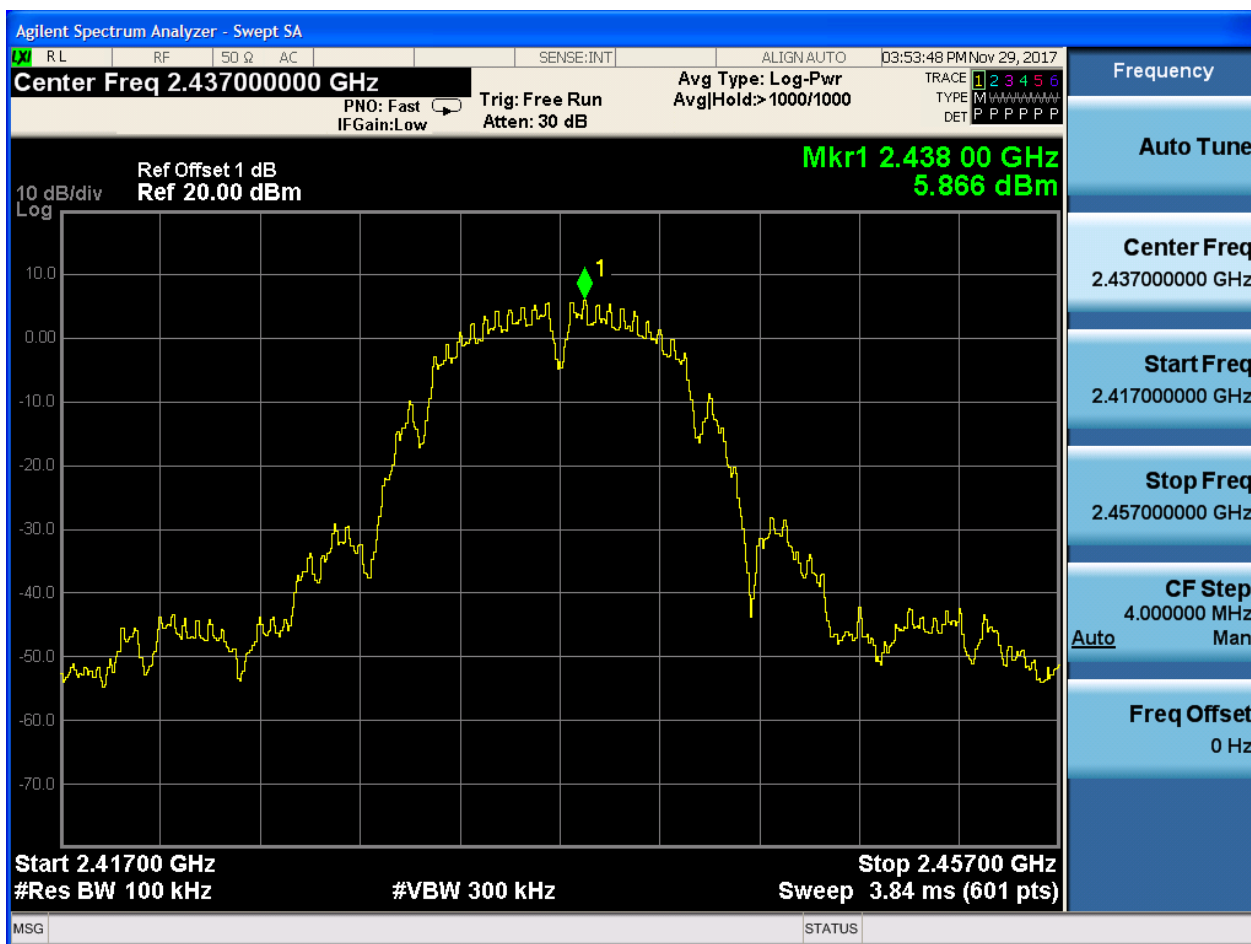






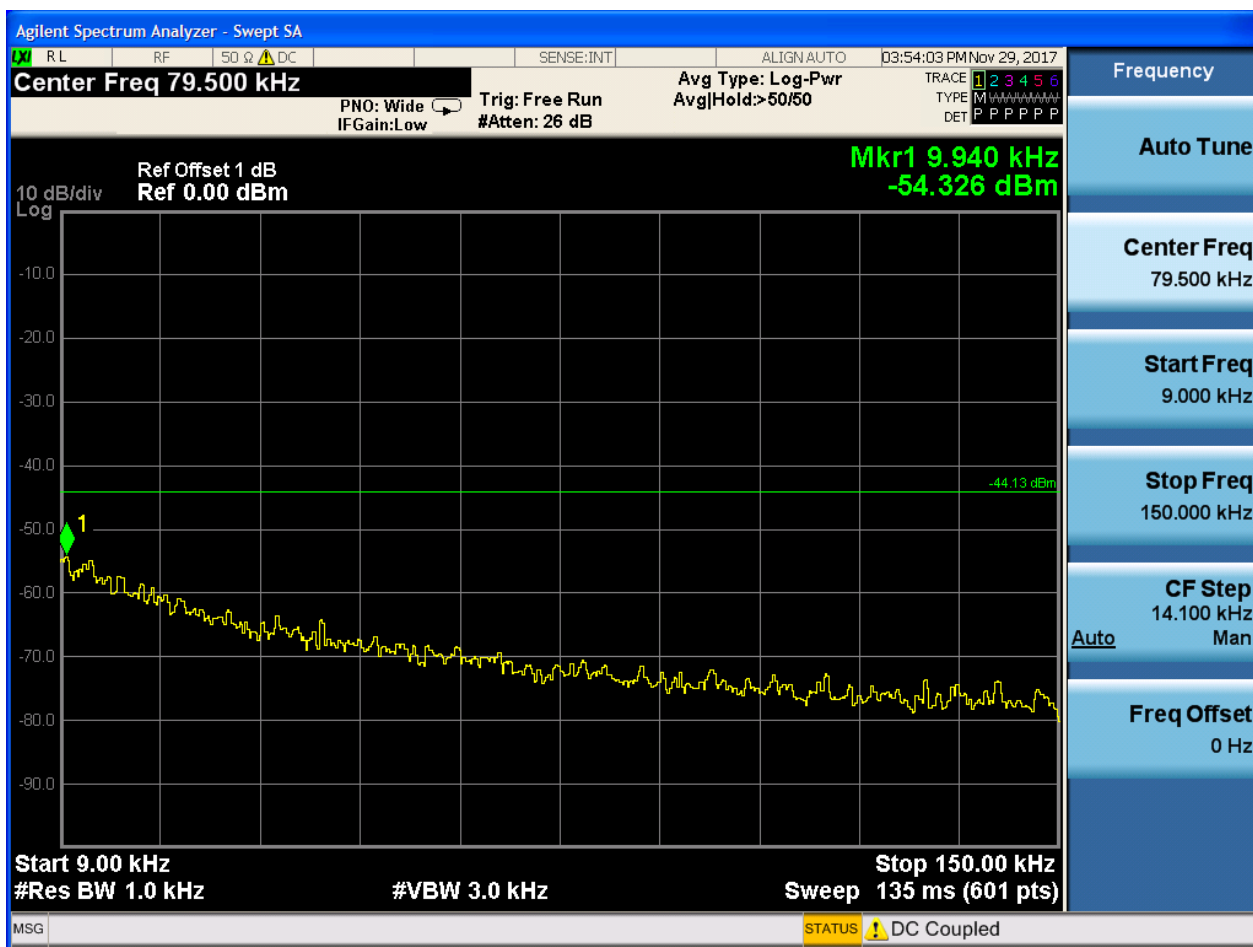
2.2 11B_M@Ant 1

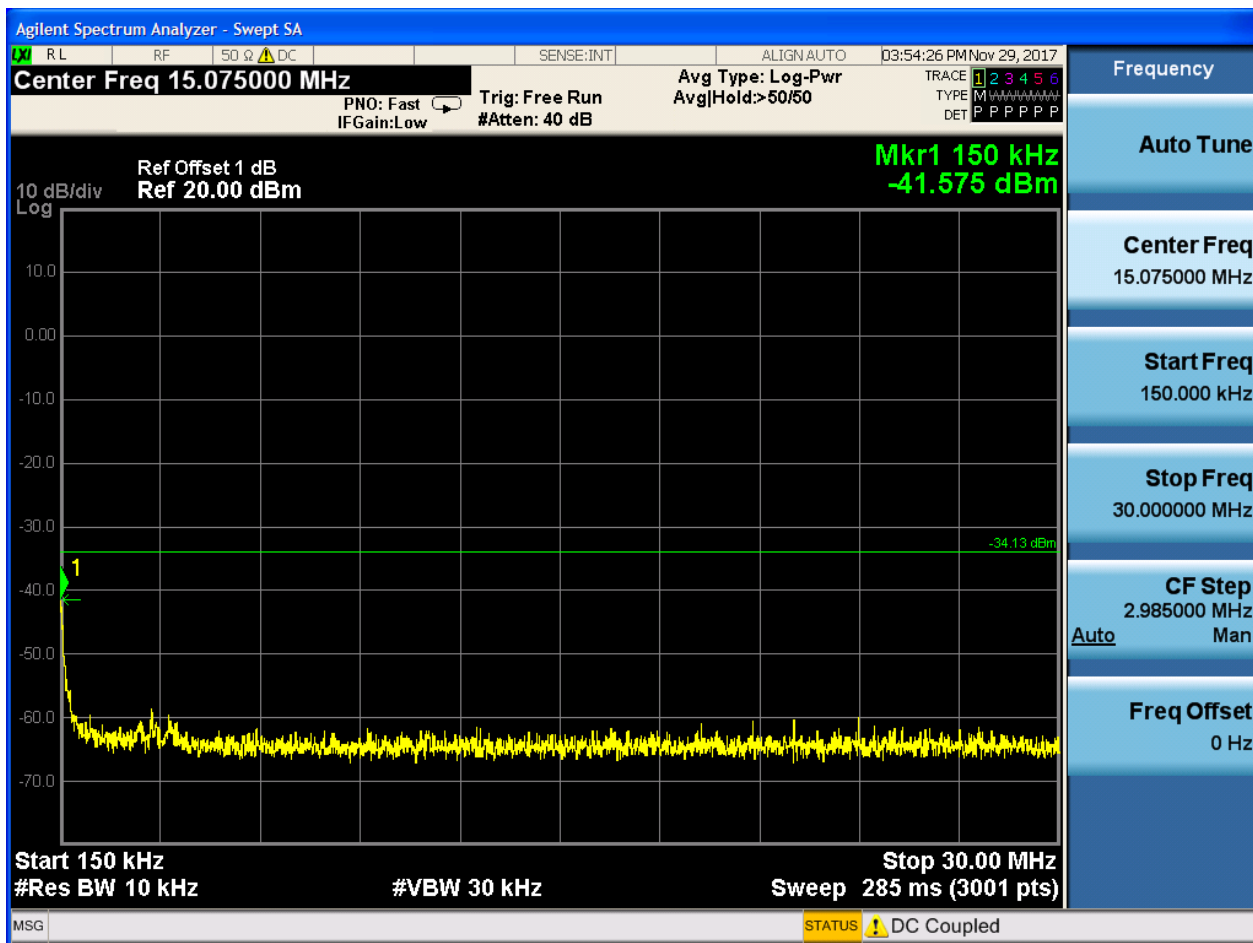
Pref:

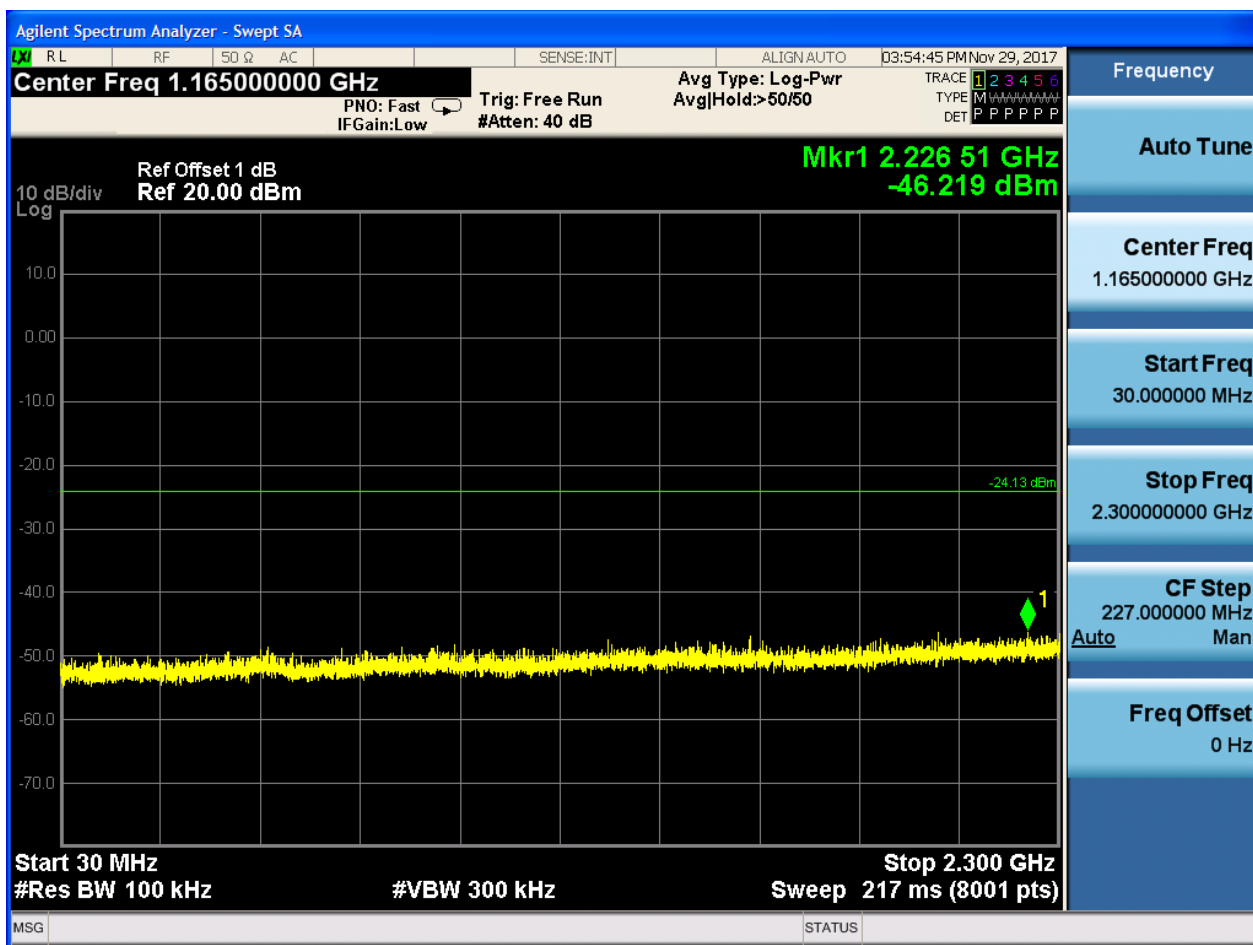


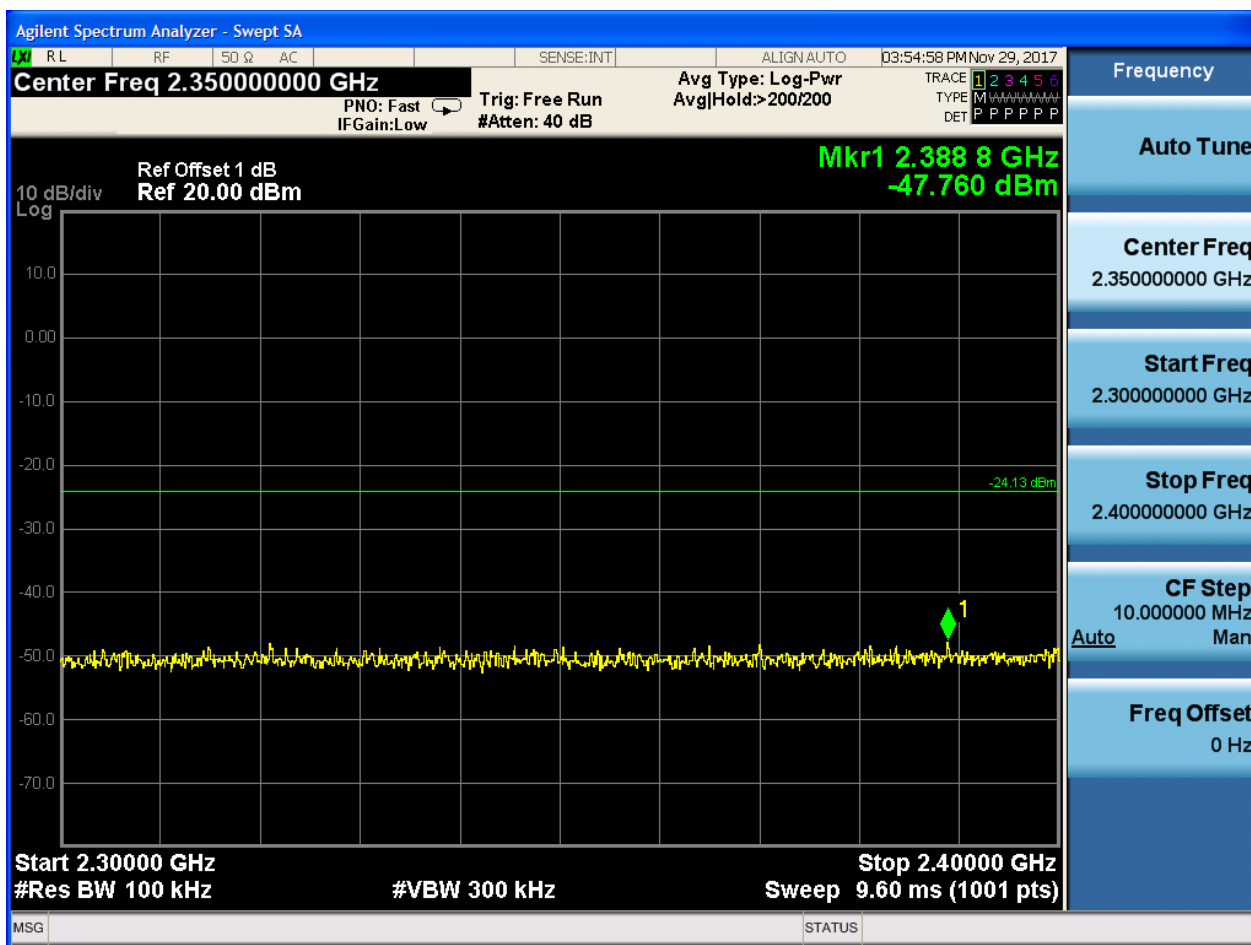


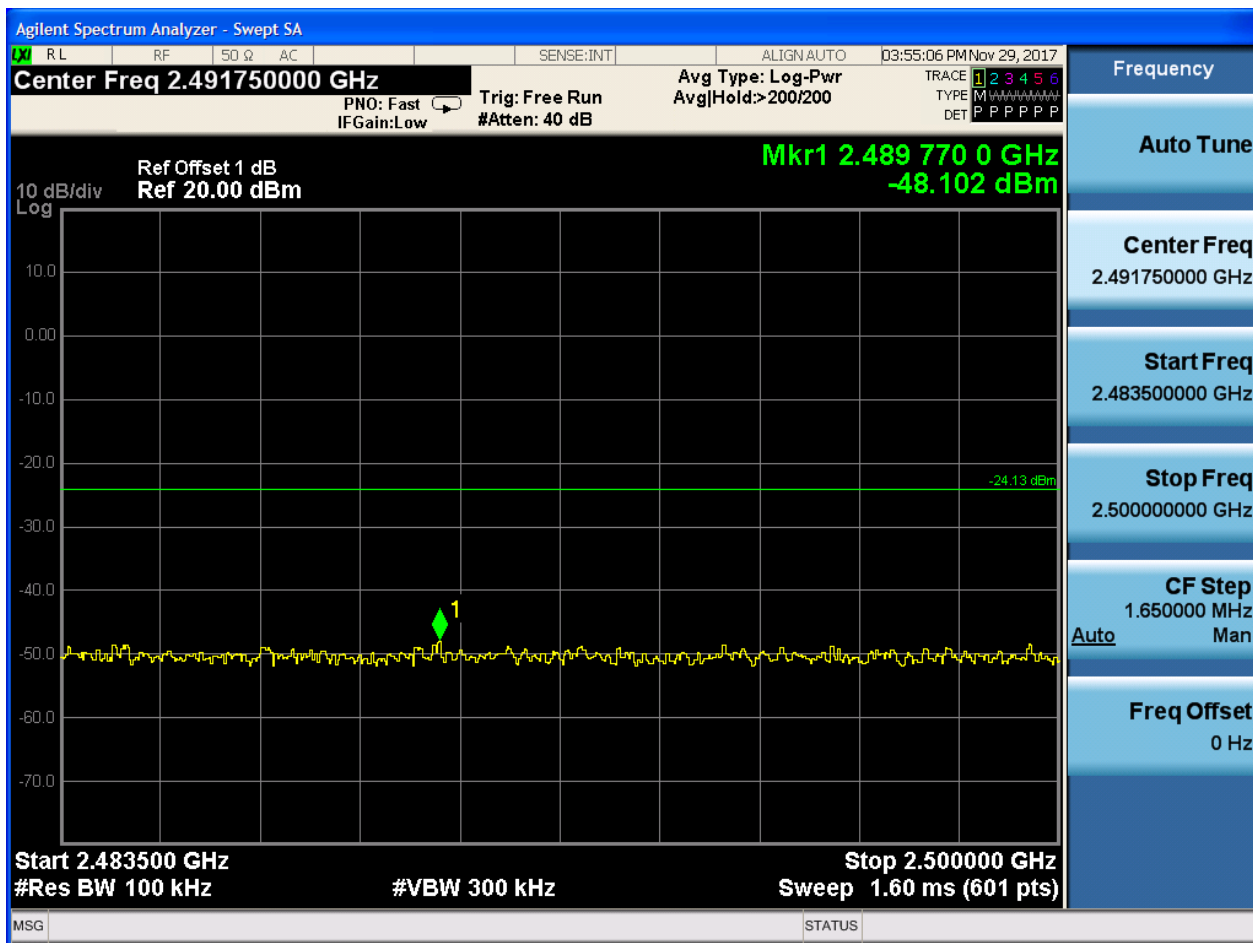
Puw:















2.3 11B_H@Ant 1

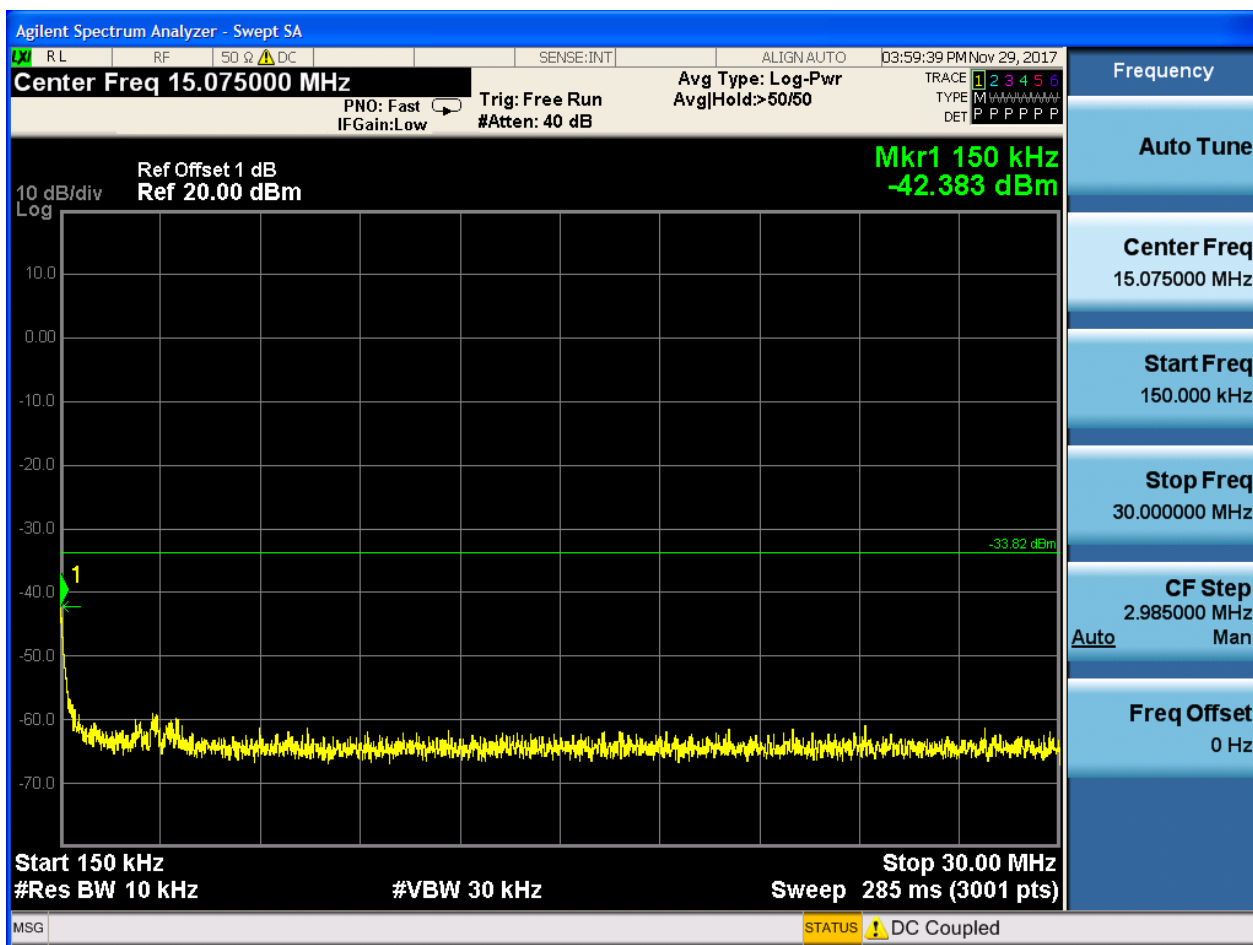
Pref:

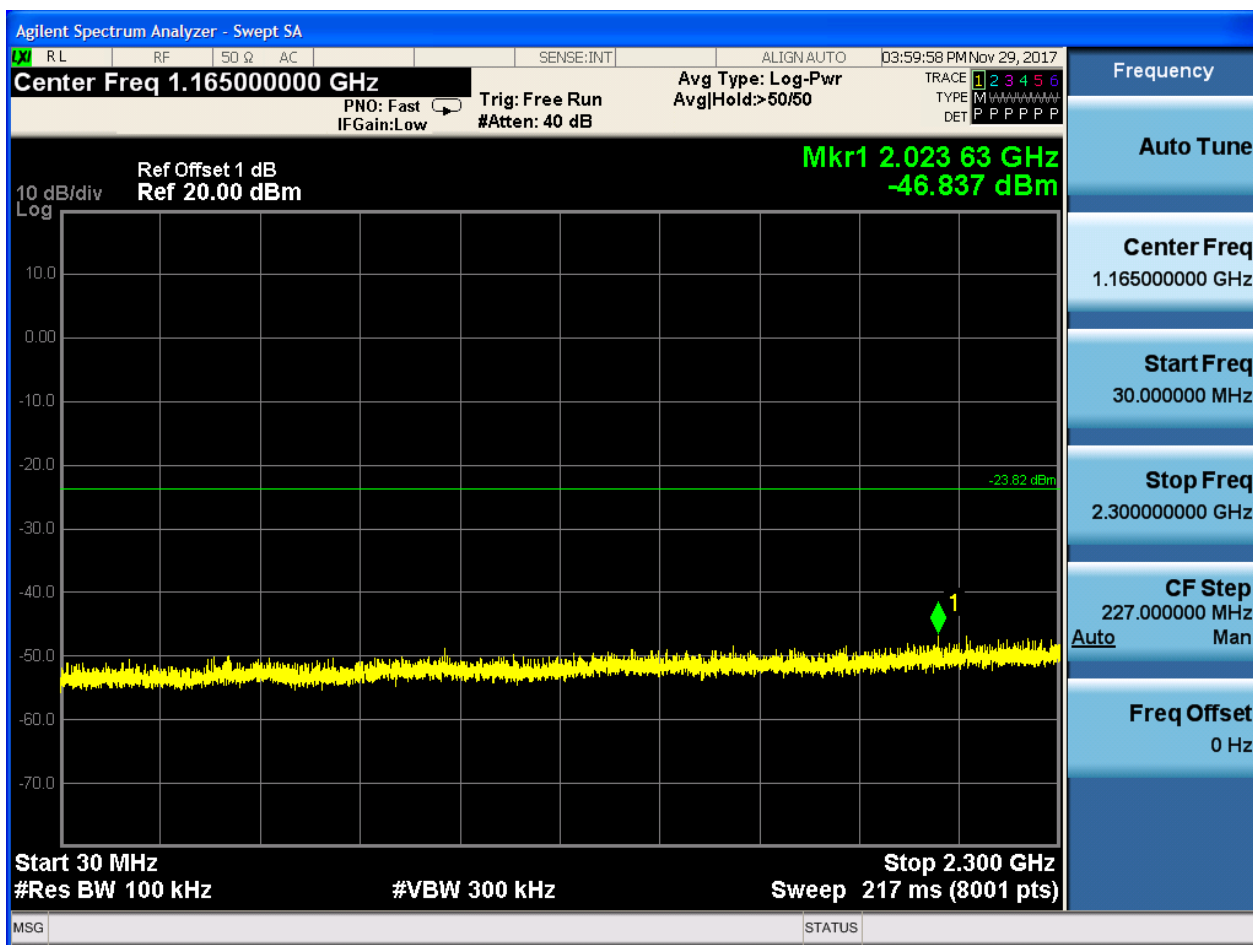


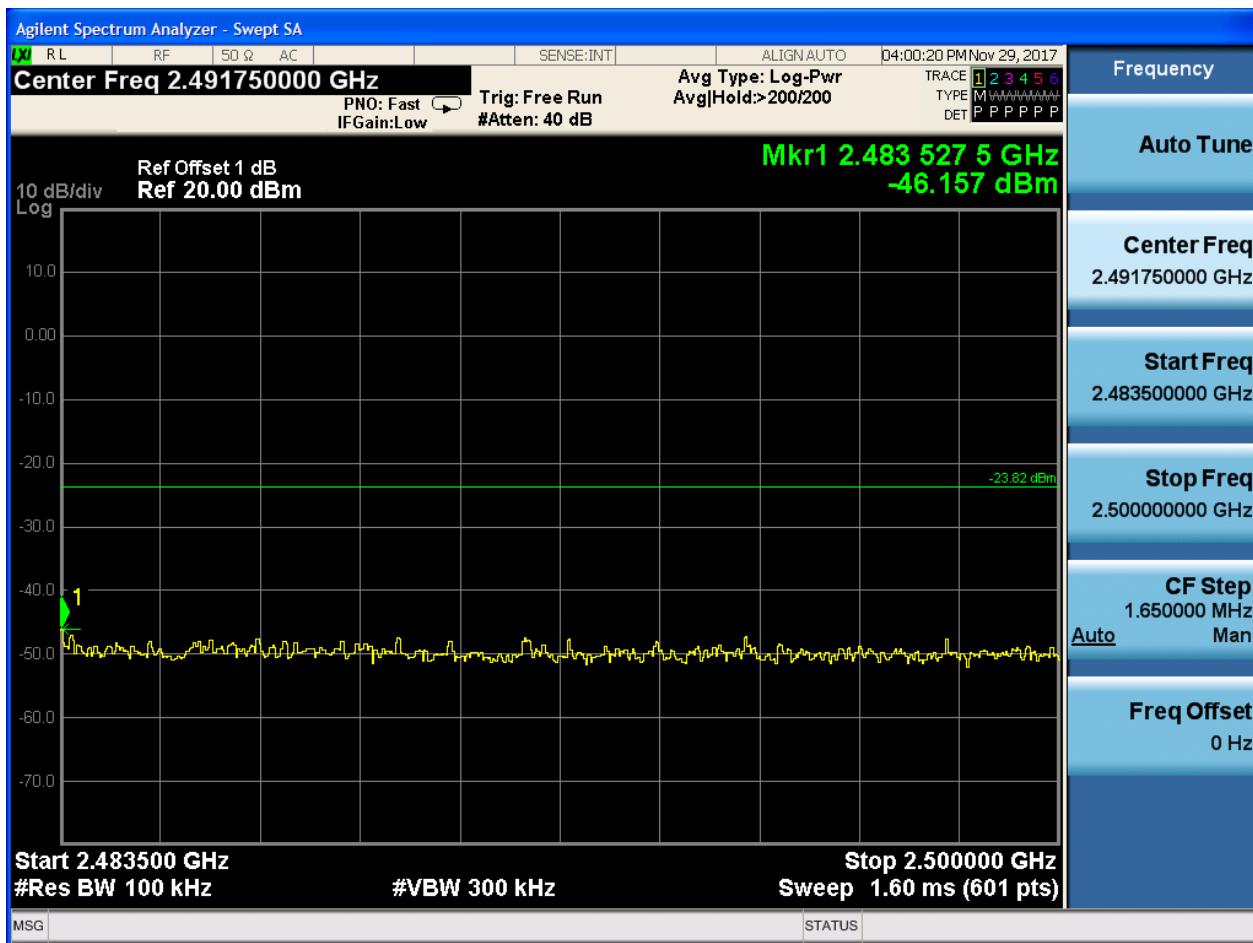


Puw:







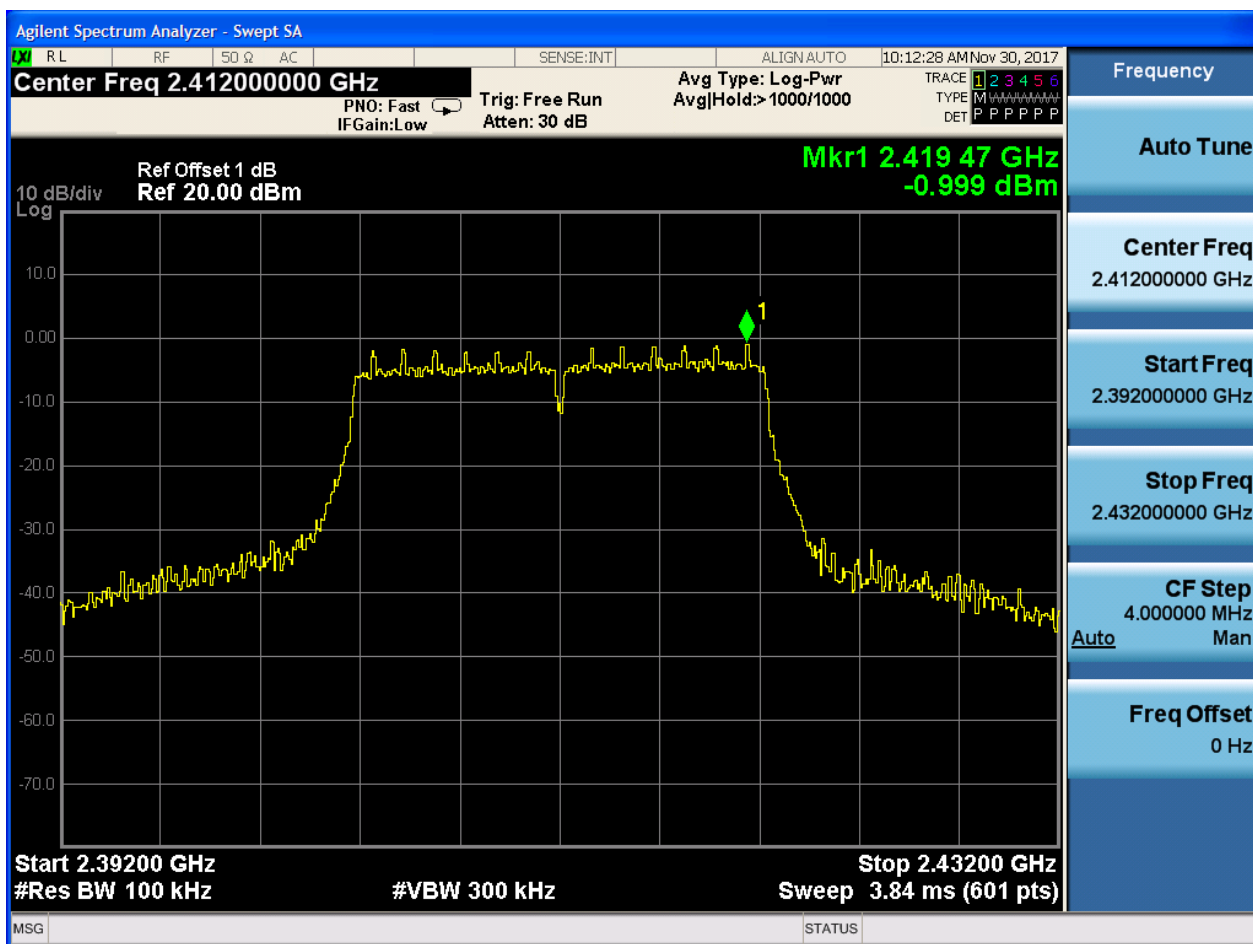






2.4 11G_L_2412@Ant 1

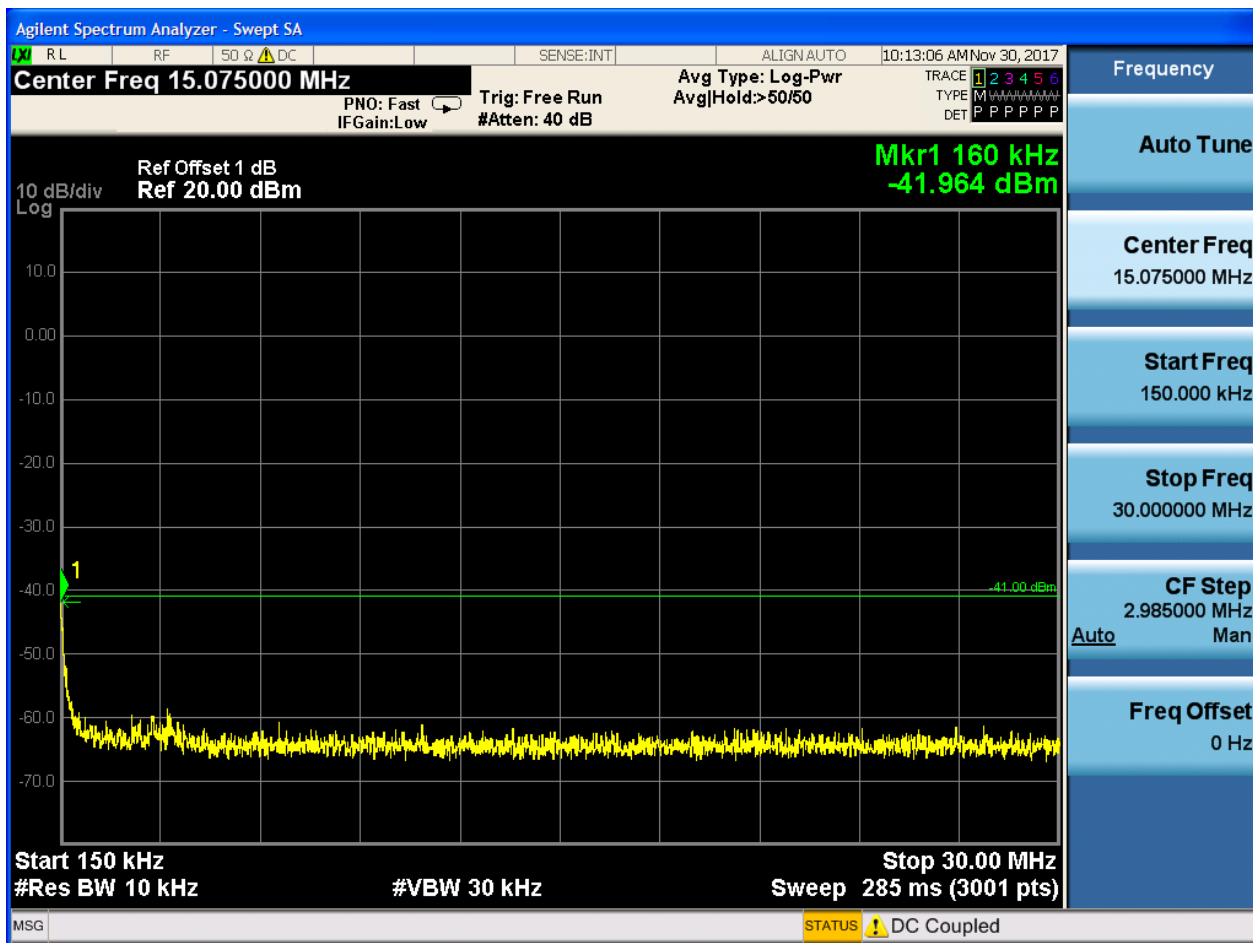
Pref:

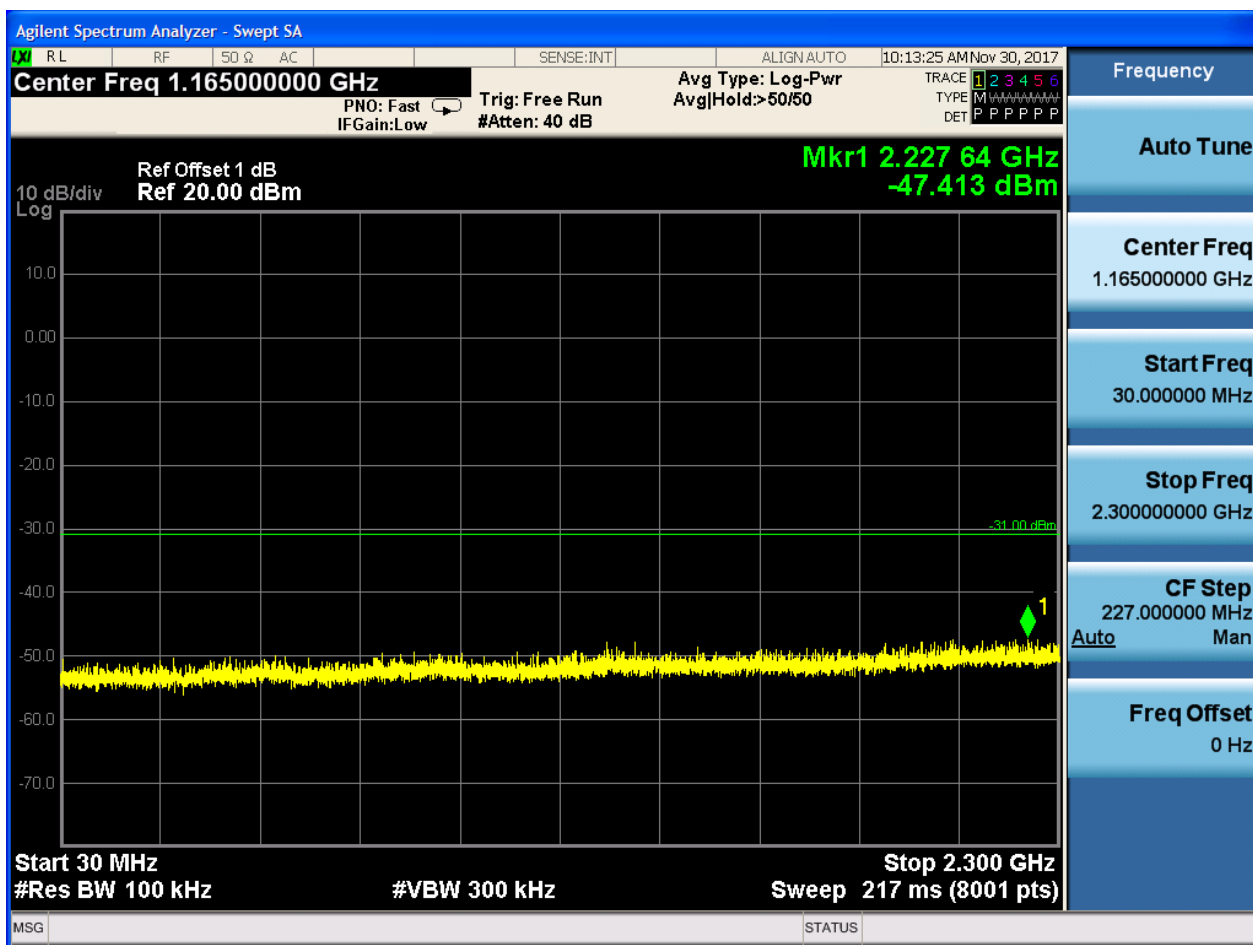


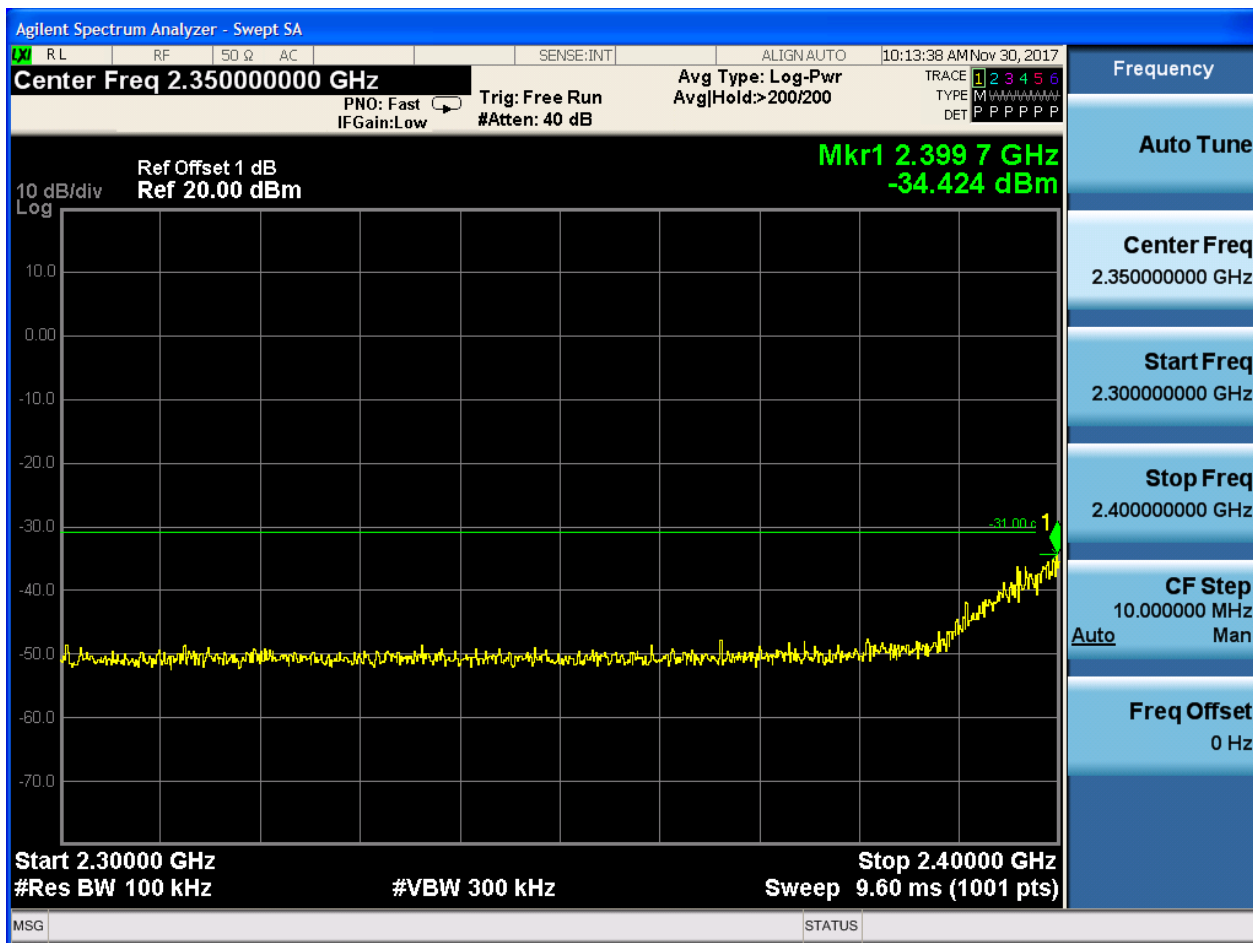


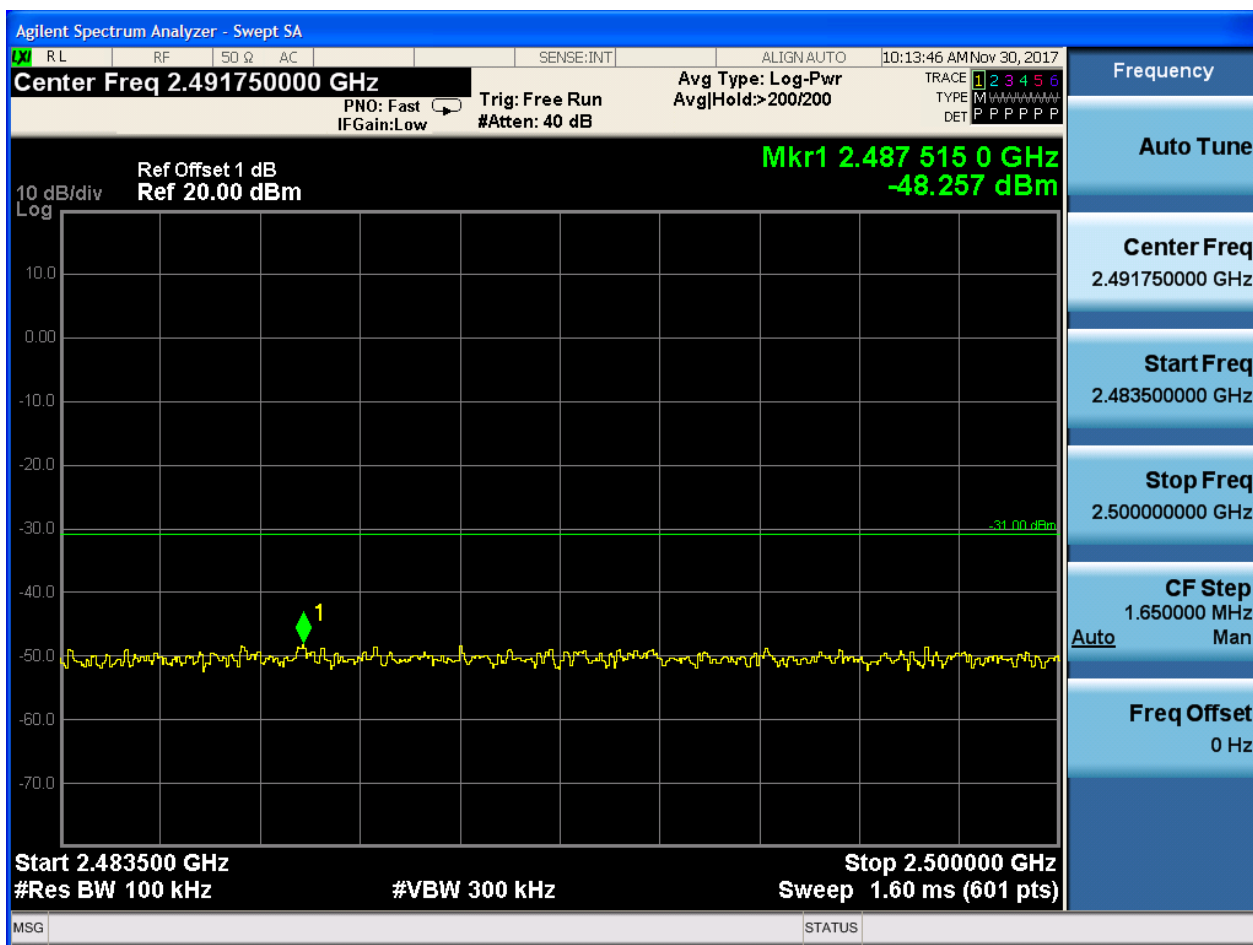
Puw:

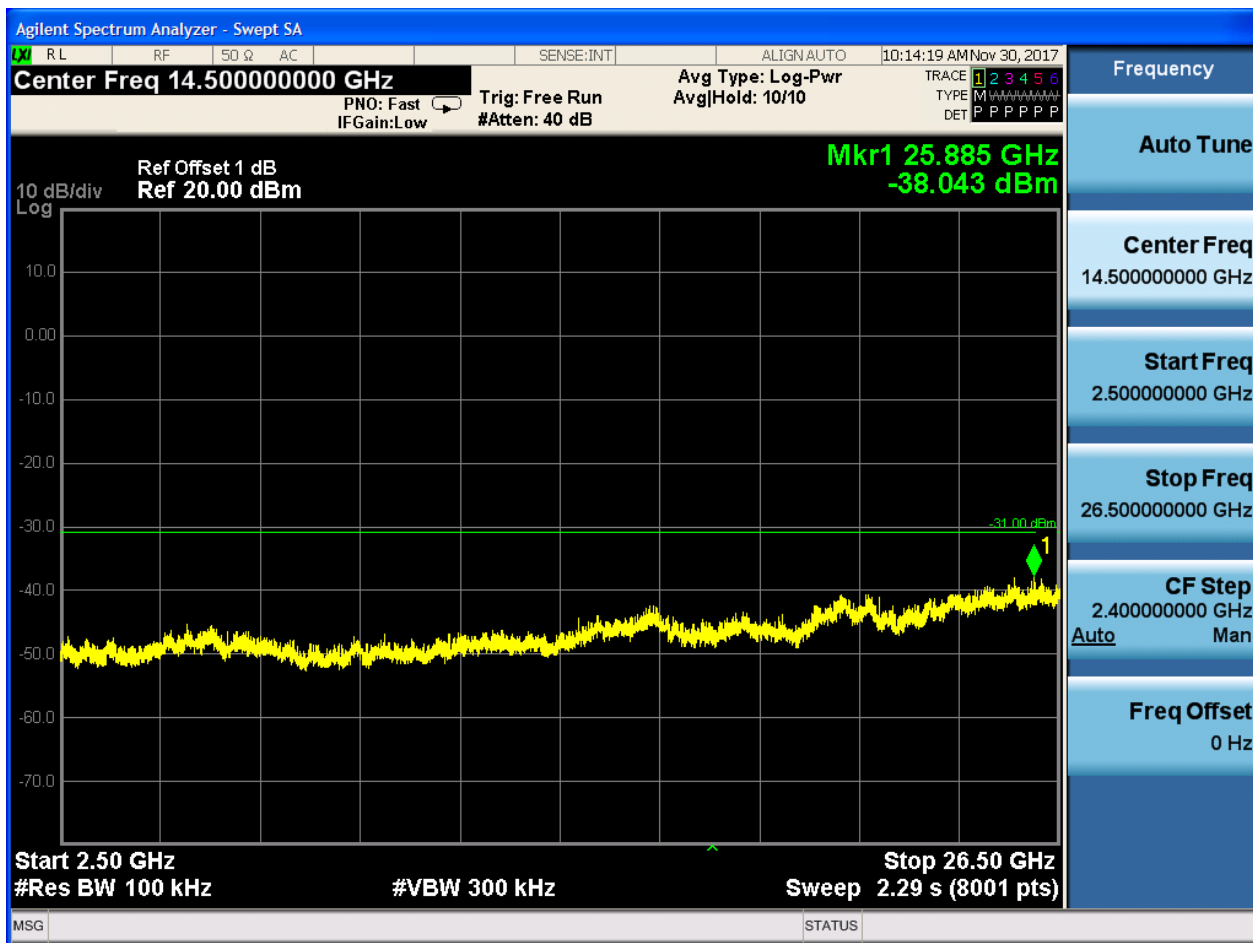








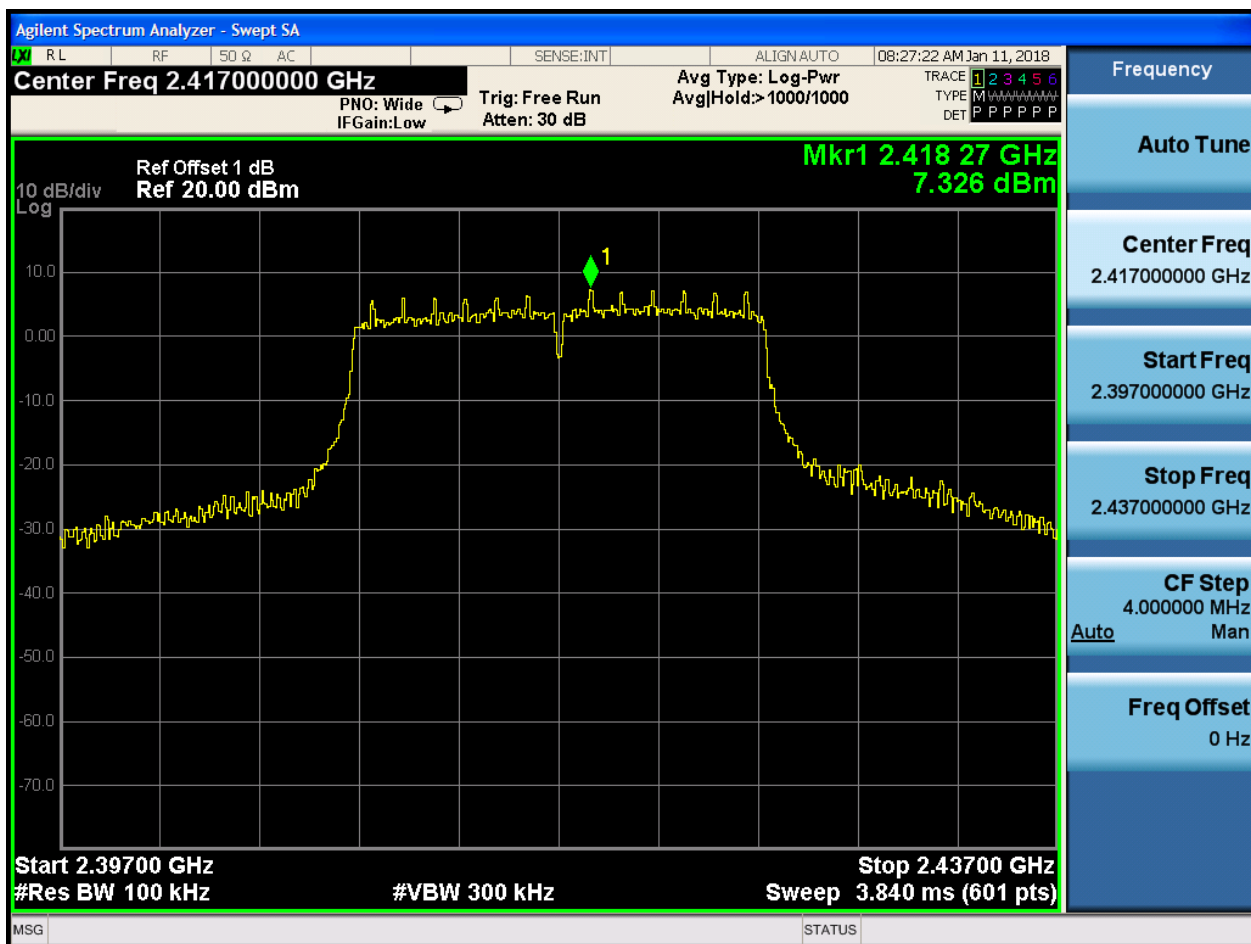






2.5 11G_L_2417@Ant 1

Pref:





Puw:

