



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

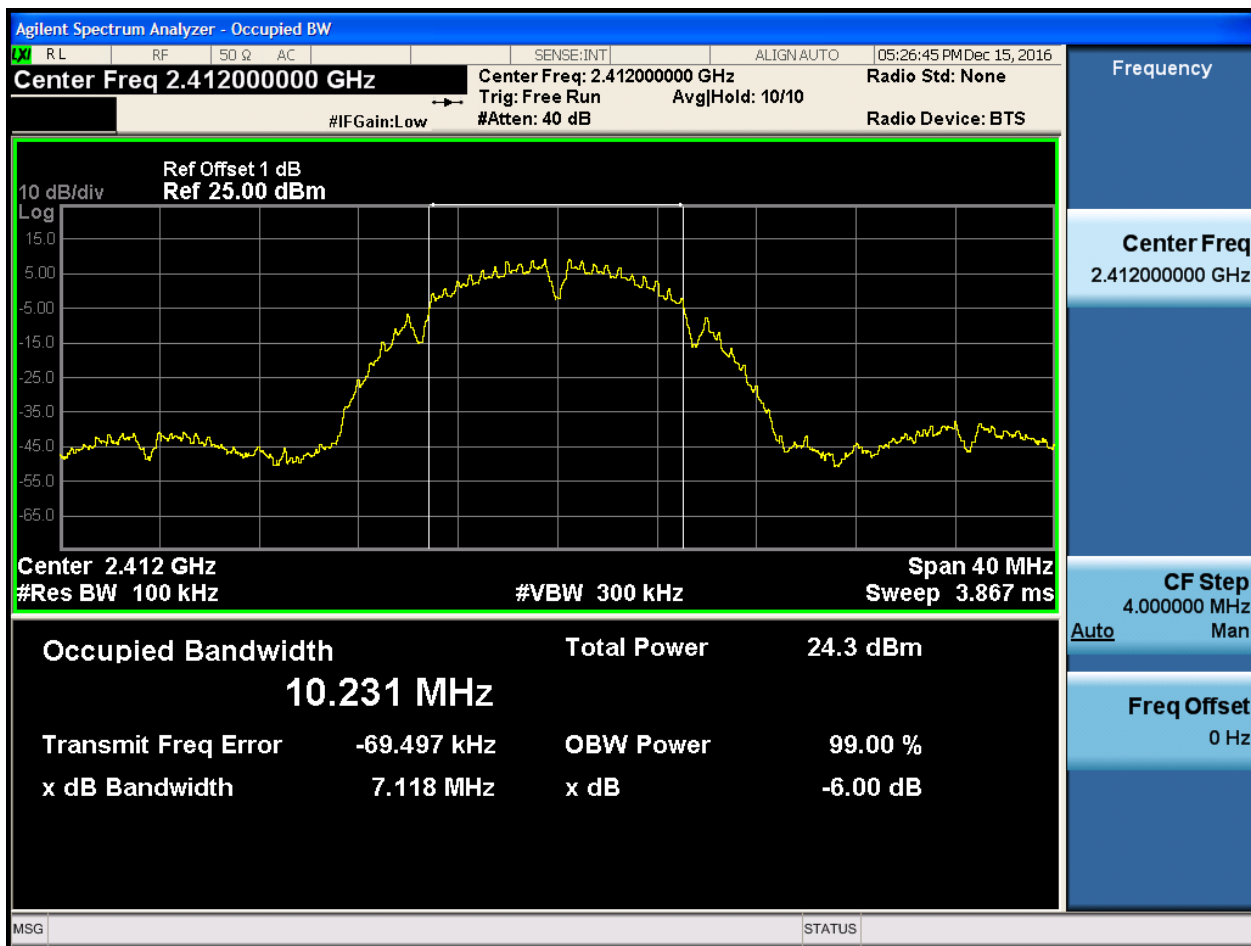
Test Mode	Test Channel	Frequency[MHz]	Ant	DTS6dBBW[MHz]	Verdict
11B	L	2412	Ant 1	7.12	pass
11B	L	2412	Ant 2	7.12	pass
11B	M	2437	Ant 1	7.08	pass
11B	M	2437	Ant 2	7.10	pass
11B	H	2462	Ant 1	7.08	pass
11B	H	2462	Ant 2	7.11	pass
11G	L	2412	Ant 1	16.39	pass
11G	L	2412	Ant 2	16.39	pass
11G	M	2437	Ant 1	16.34	pass
11G	M	2437	Ant 2	16.36	pass
11G	H	2462	Ant 1	16.34	pass
11G	H	2462	Ant 2	16.42	pass
11N20	L	2412	Ant 1	17.61	pass
11N20	L	2412	Ant 2	17.61	pass
11N20	M	2437	Ant 1	17.37	pass
11N20	M	2437	Ant 2	17.61	pass
11N20	H	2462	Ant 1	17.55	pass
11N20	H	2462	Ant 2	17.67	pass
11N20m	L	2412	Ant 1	17.62	pass
11N20m	L	2412	Ant 2	17.64	pass
11N20m	M	2437	Ant 1	17.59	pass
11N20m	M	2437	Ant 2	17.65	pass
11N20m	H	2462	Ant 1	17.28	pass
11N20m	H	2462	Ant 2	17.66	pass
11G CDD	L	2412	Ant 1	16.39	pass
11G CDD	L	2412	Ant 2	16.40	pass
11G CDD	M	2437	Ant 1	16.13	pass
11G CDD	M	2437	Ant 2	16.41	pass



Test Mode	Test Channel	Frequency[MHz]	Ant	DTS6dBBW[MHz]	Verdict
11G CDD	H	2462	Ant 1	16.34	pass
11G CDD	H	2462	Ant 2	16.42	pass

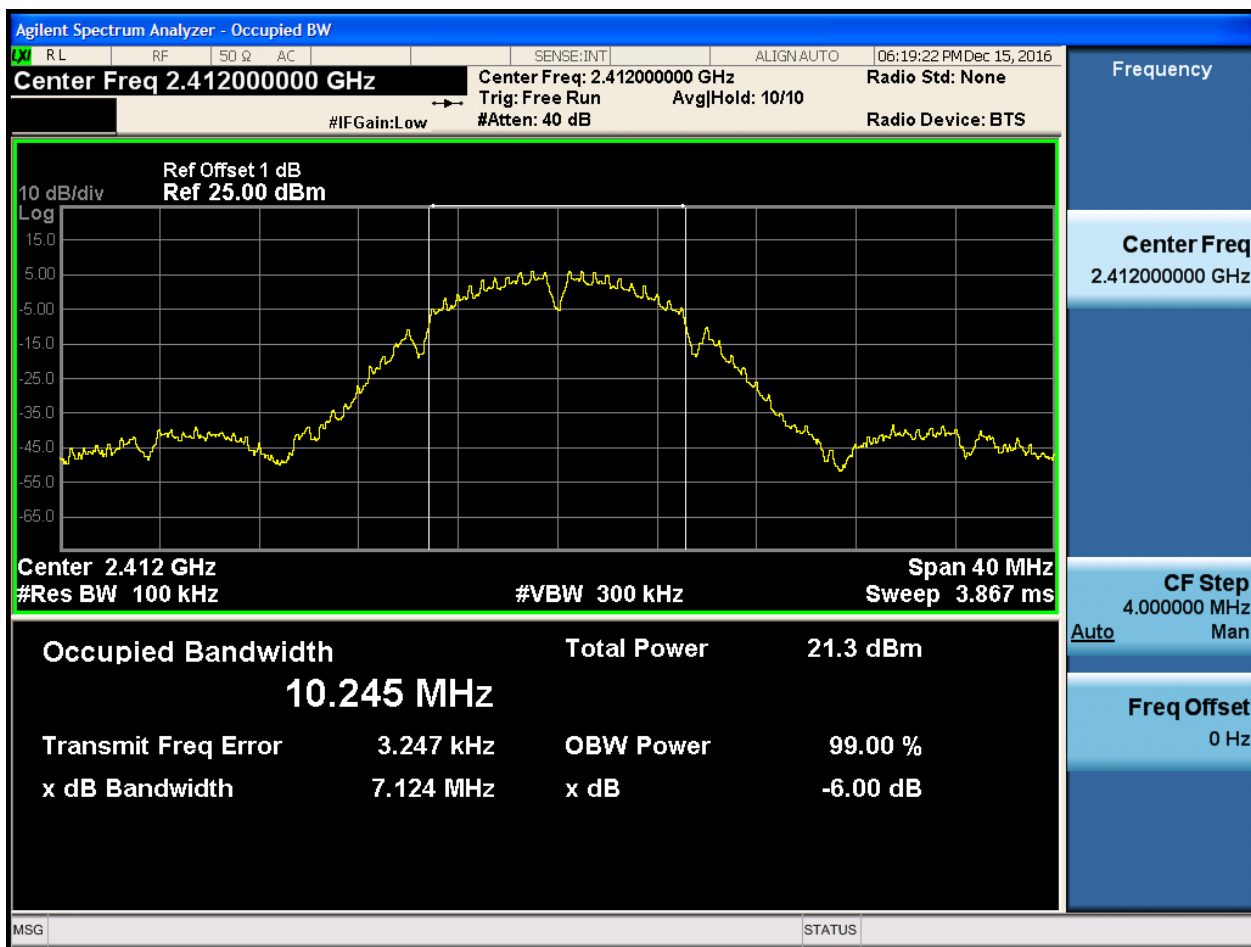
Part II - Test Plots

2.1 11B_L@Ant 1



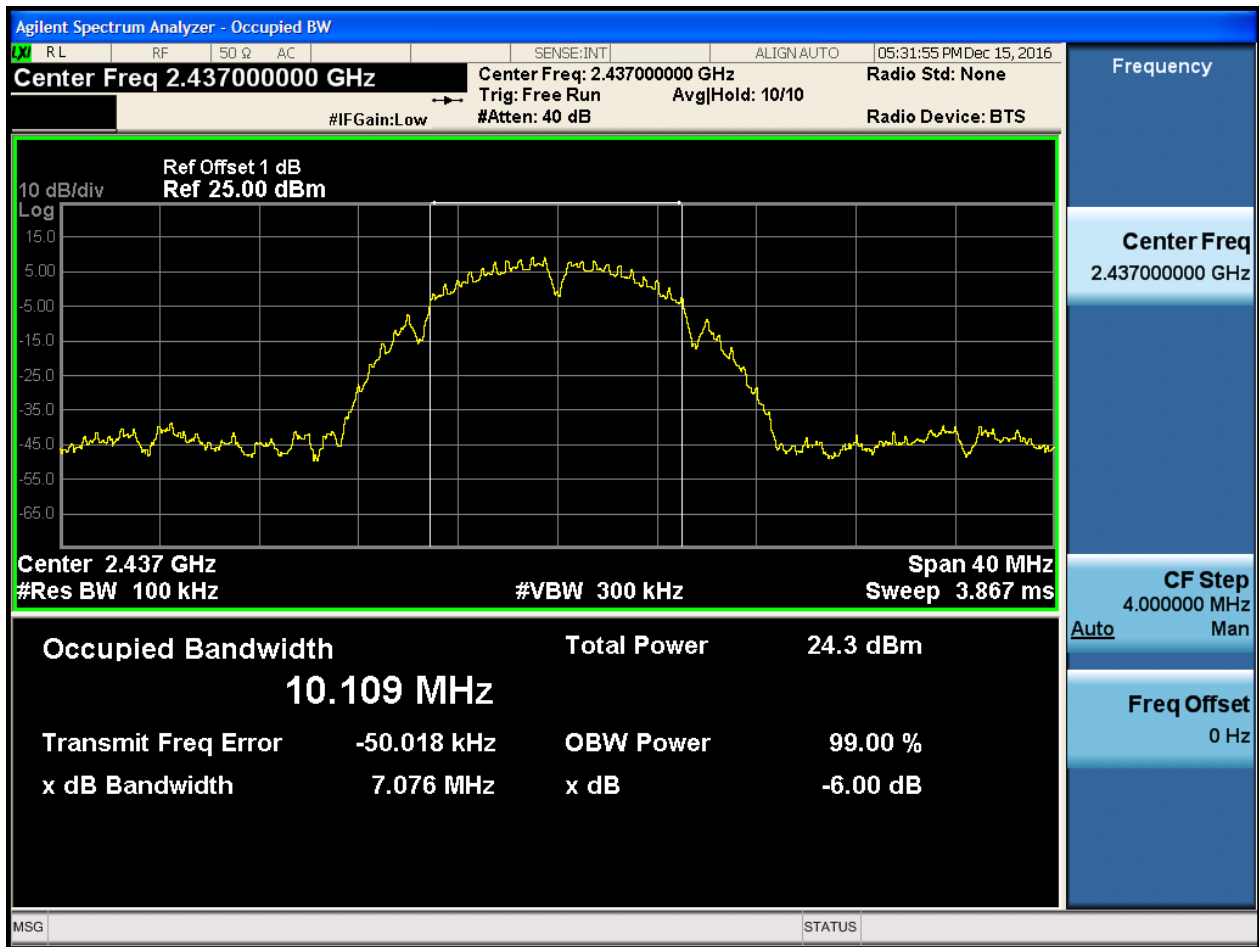


2.2 11B_L@Ant 2



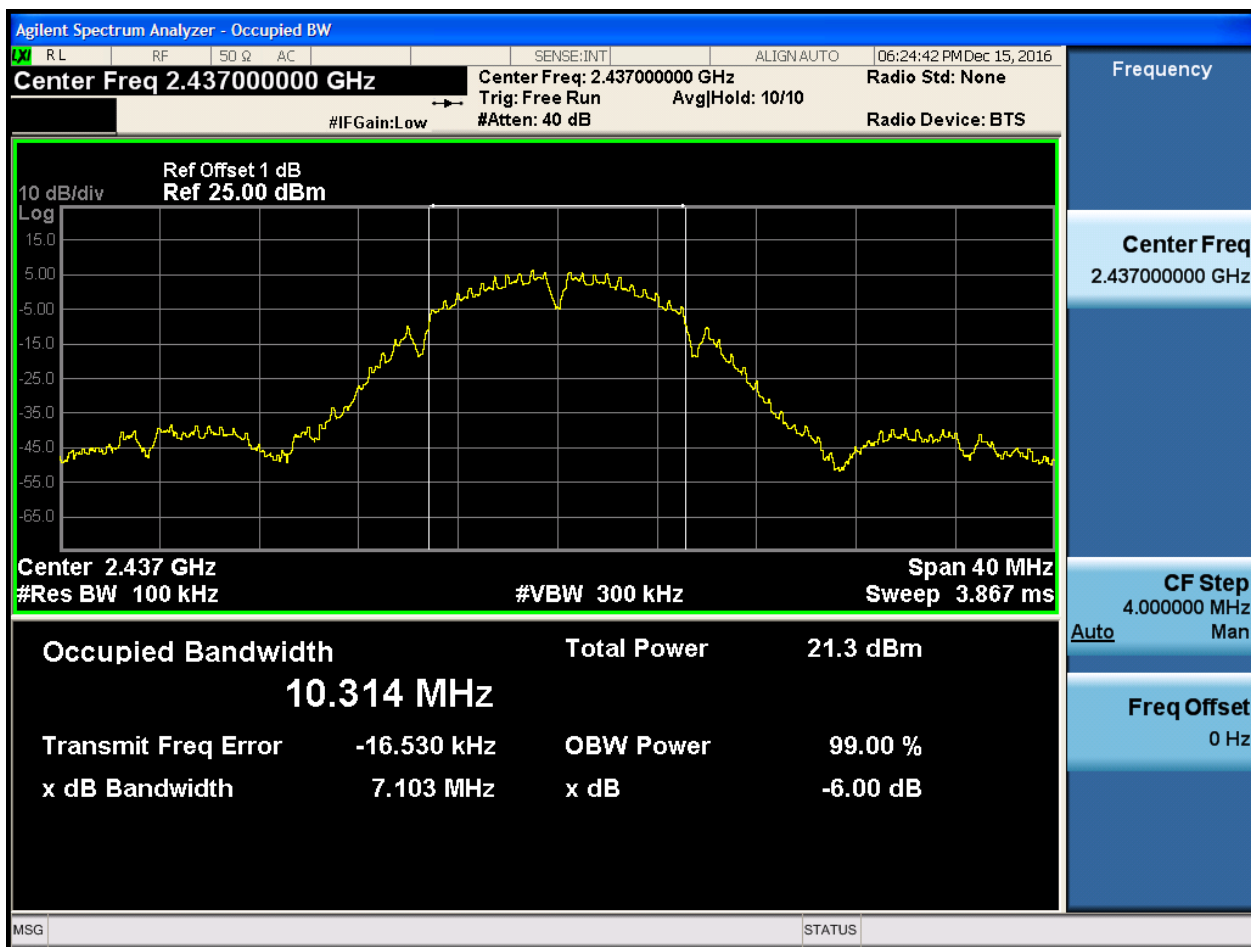


2.3 11B_M@Ant 1



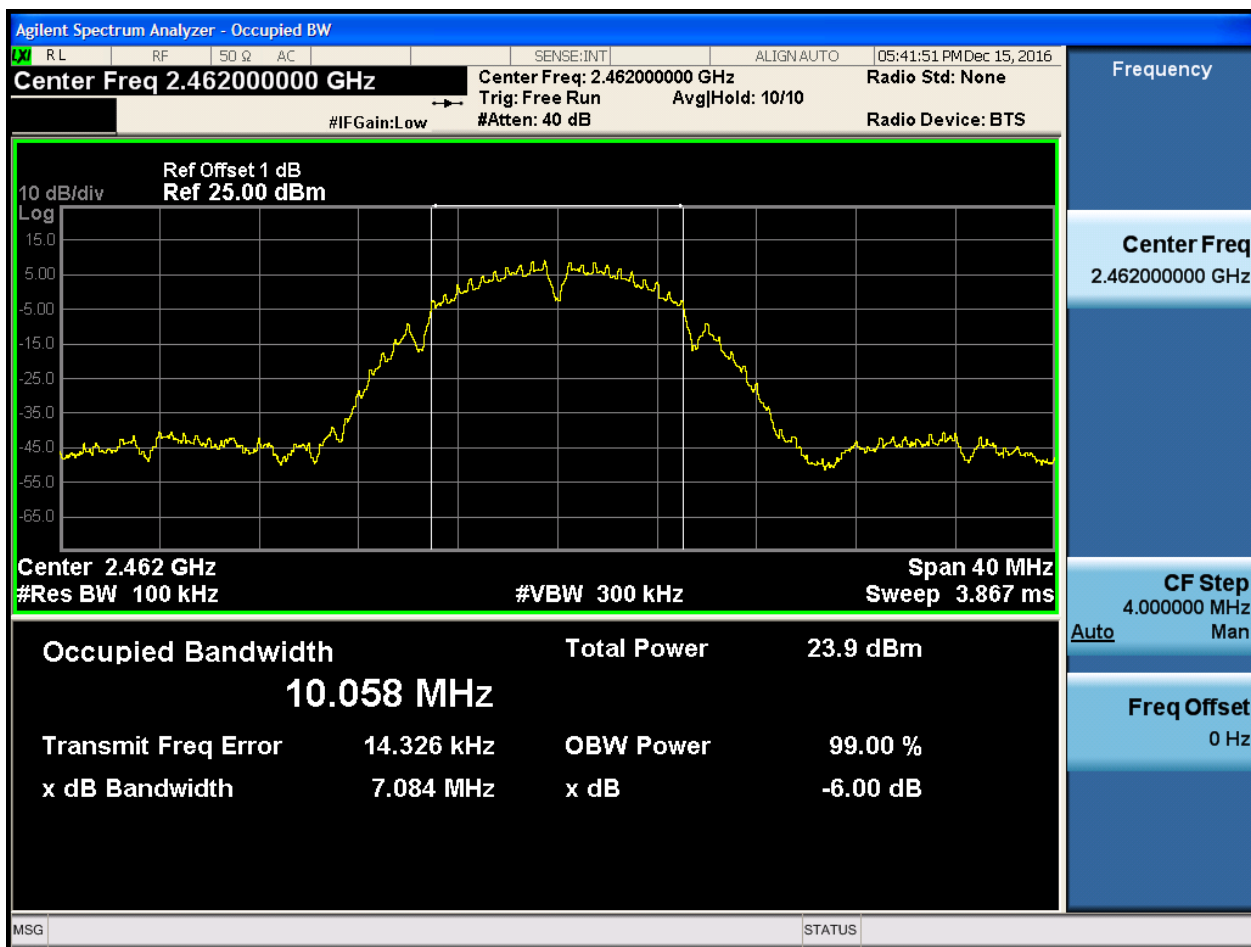


2.4 11B_M@Ant 2



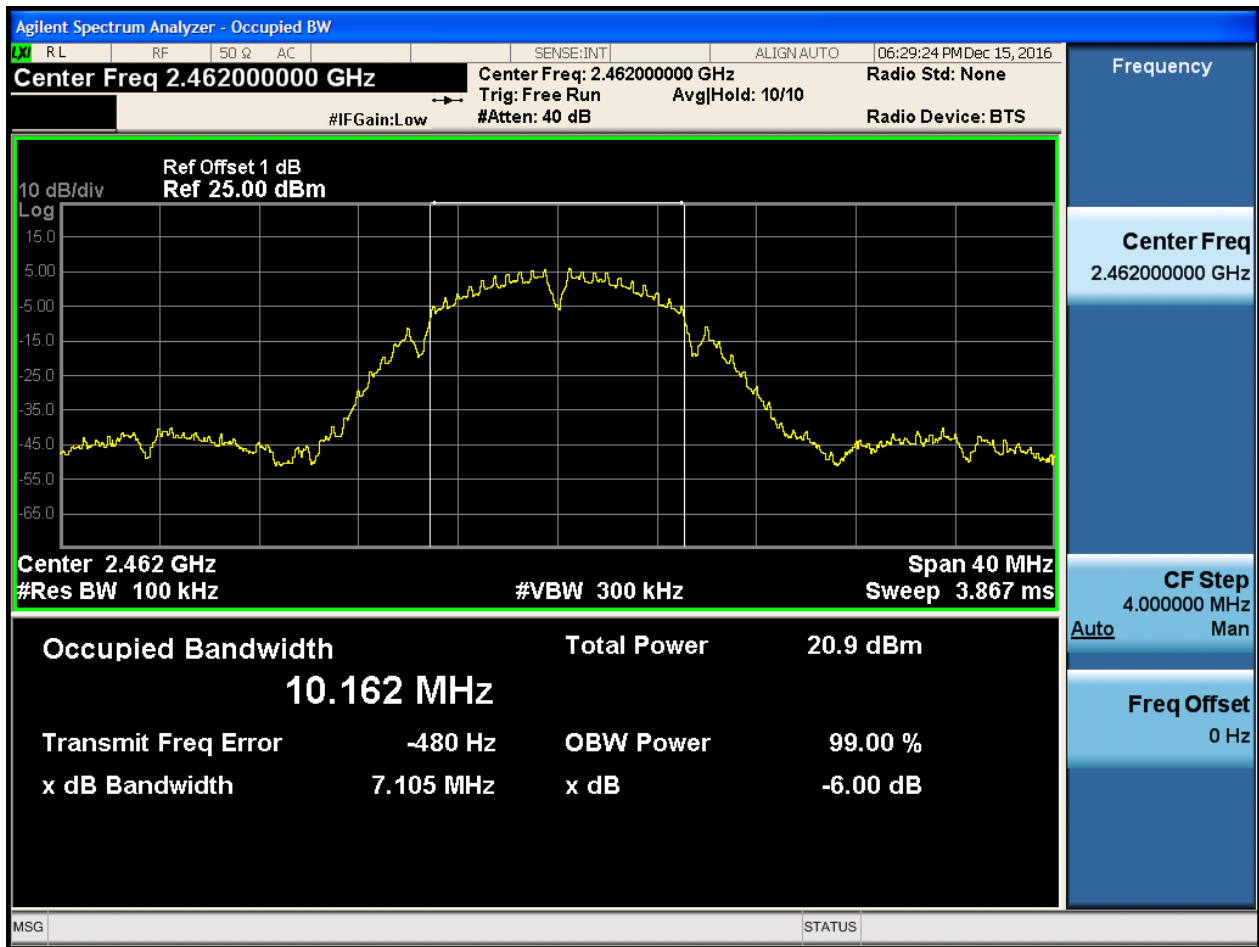


2.5 11B_H@Ant 1



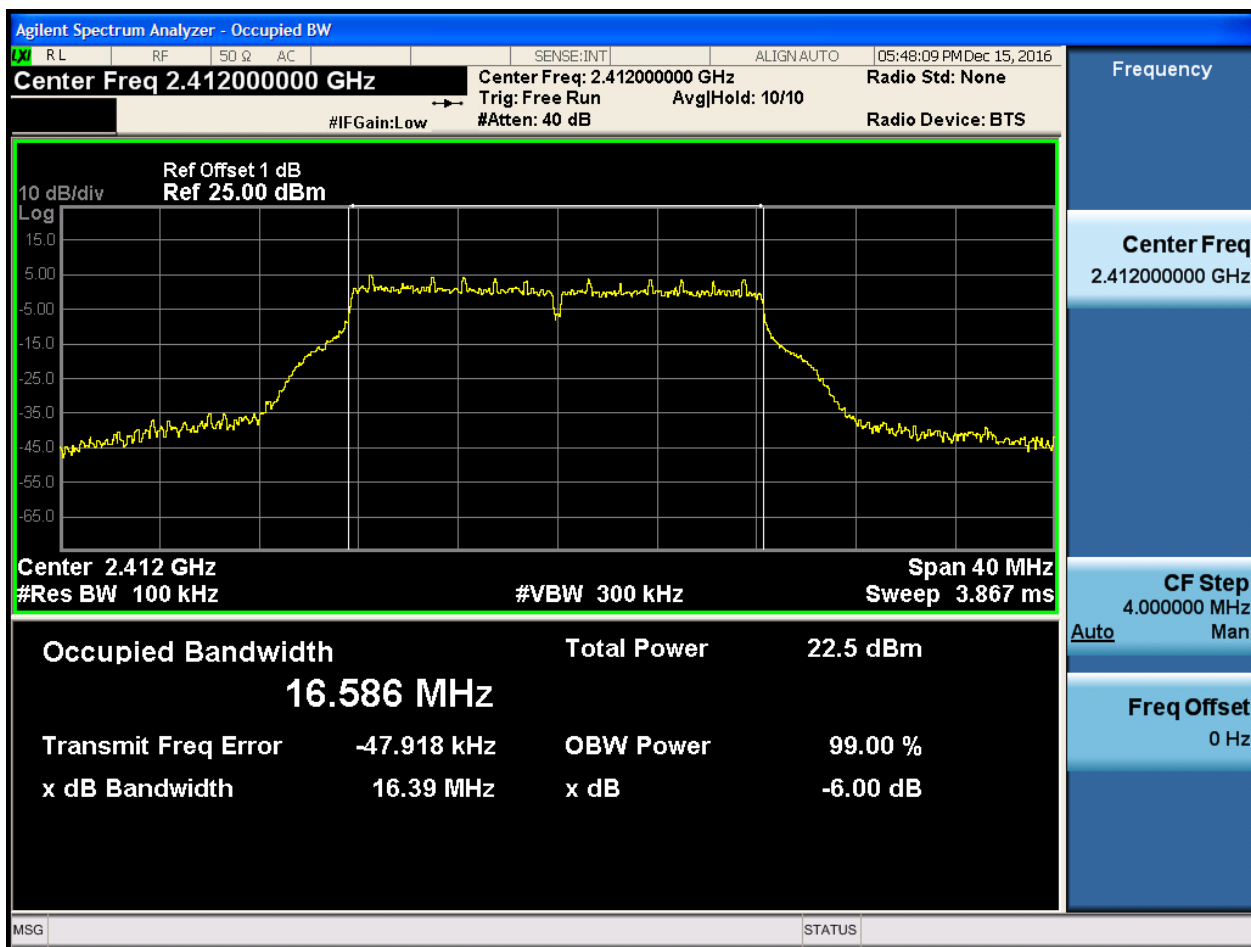


2.6 11B_H@Ant 2



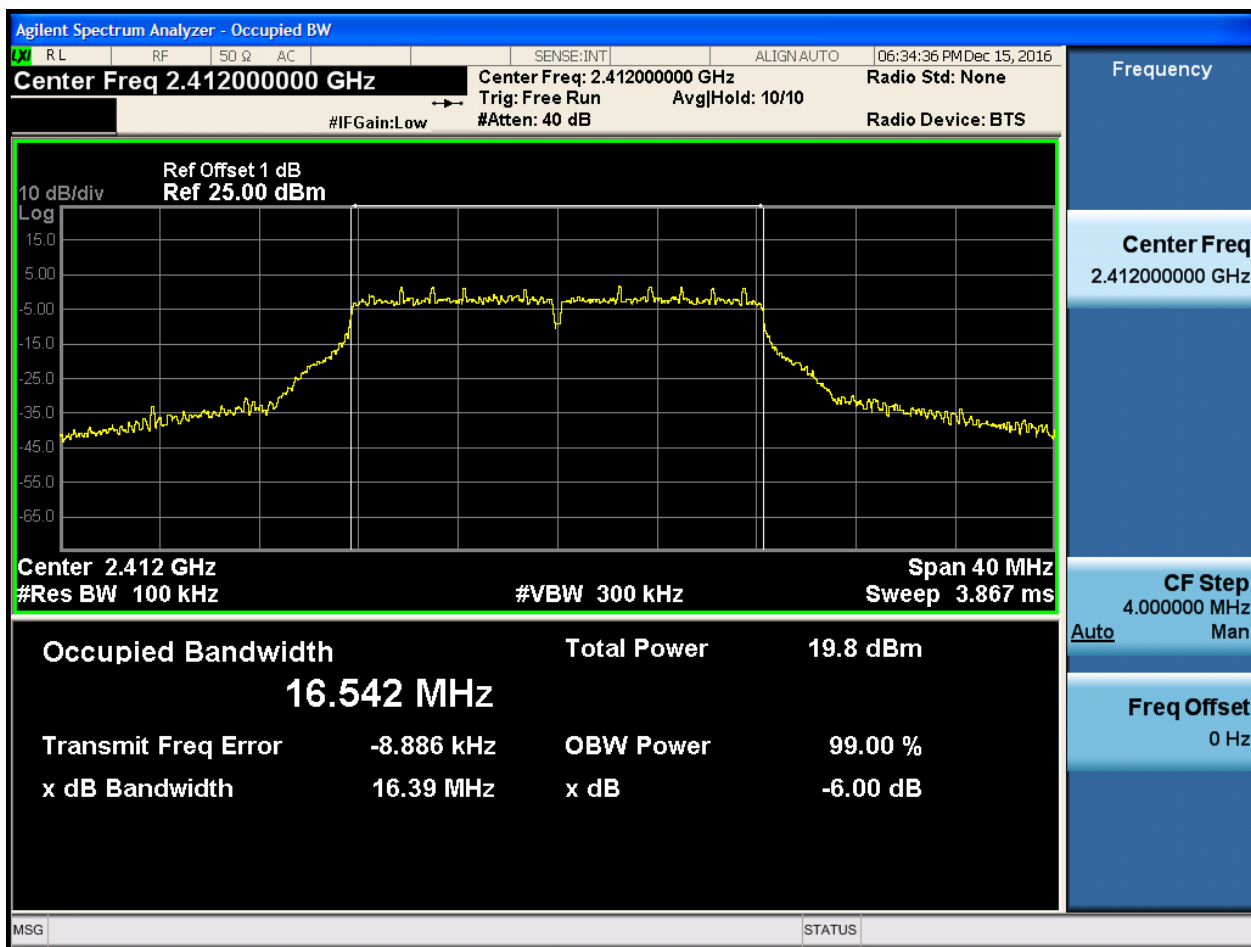


2.7 11G_L@Ant 1



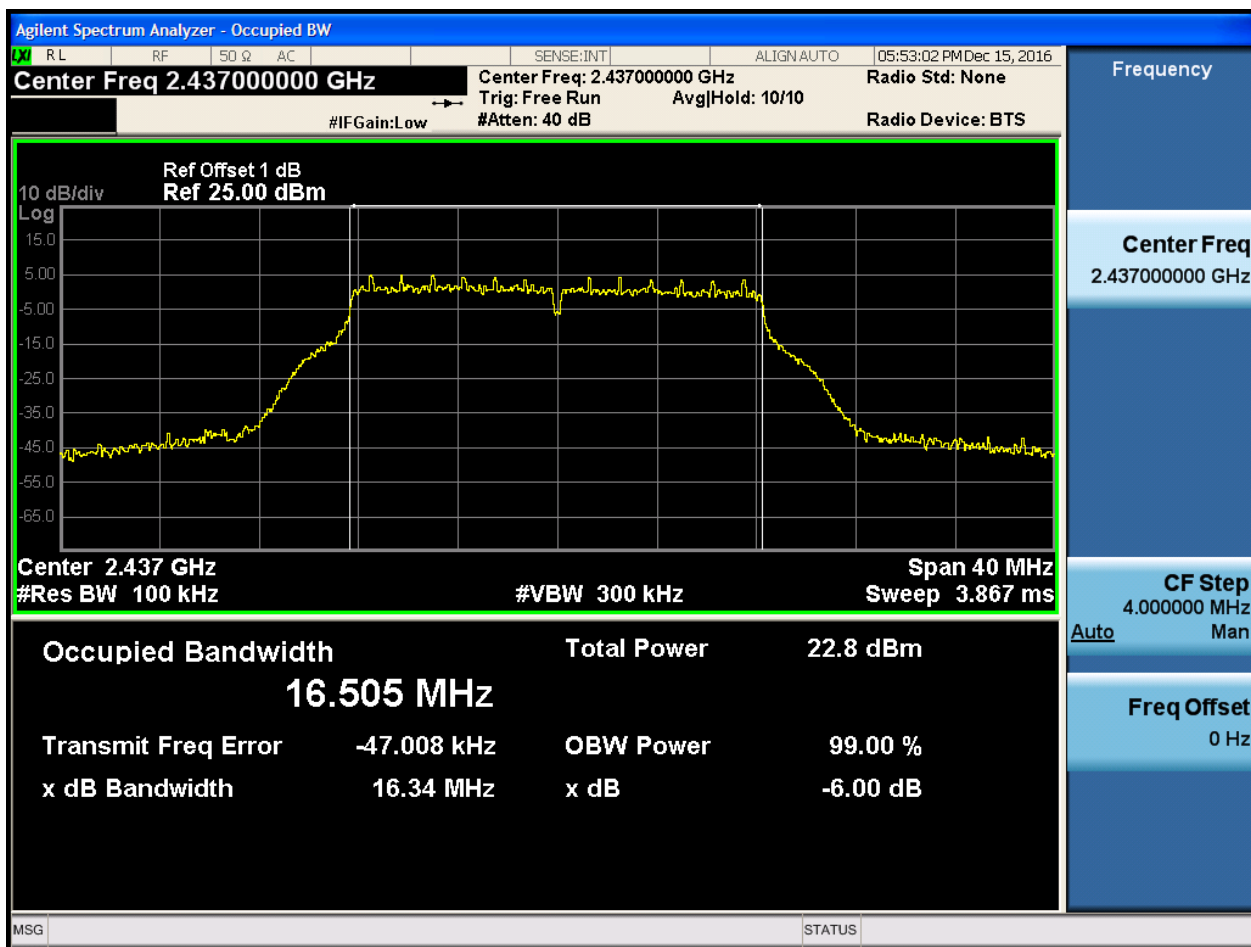


2.8 11G_L@Ant 2



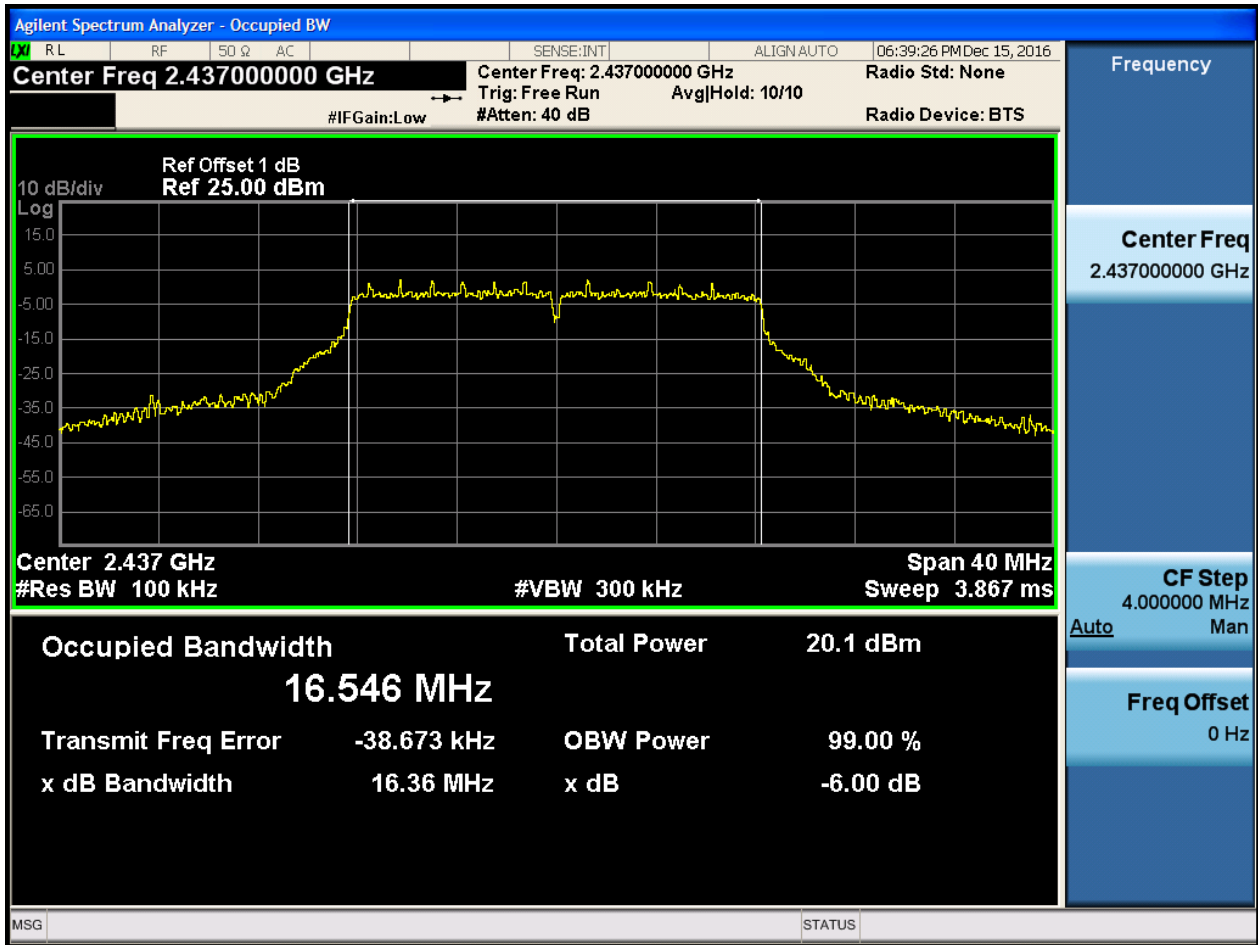


2.9 11G_M@Ant 1



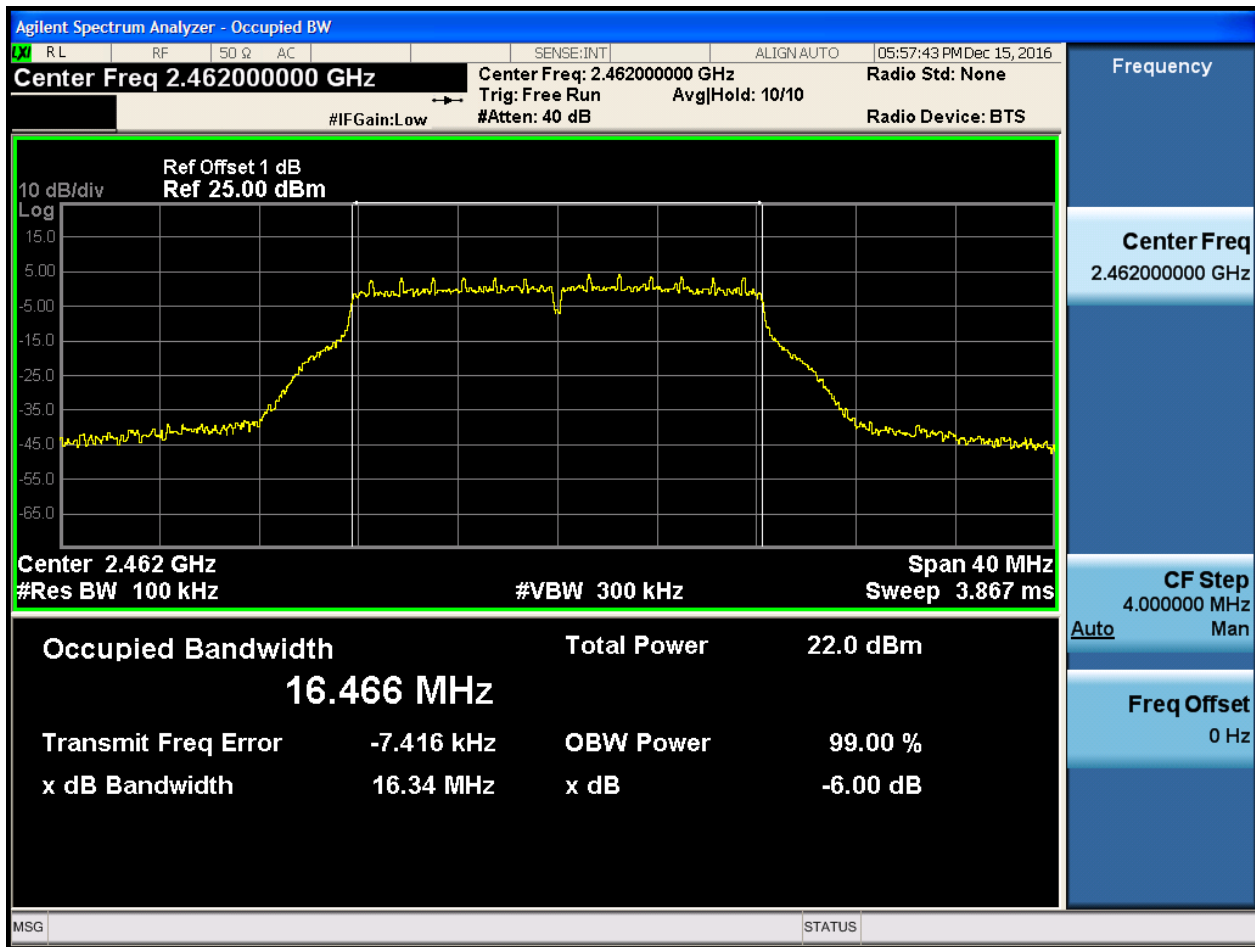


2.10 11G_M@Ant 2



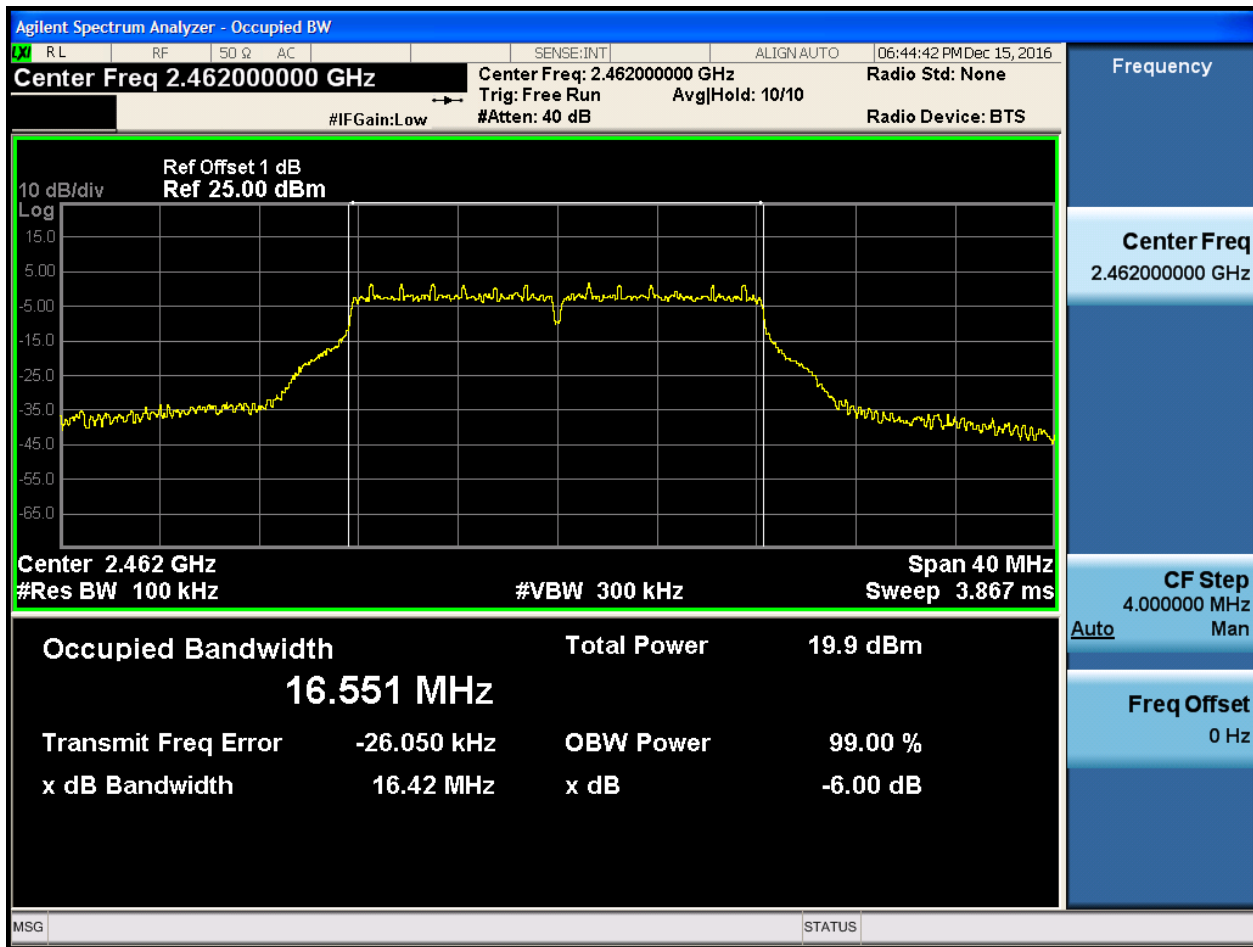


2.11 11G_H@Ant 1



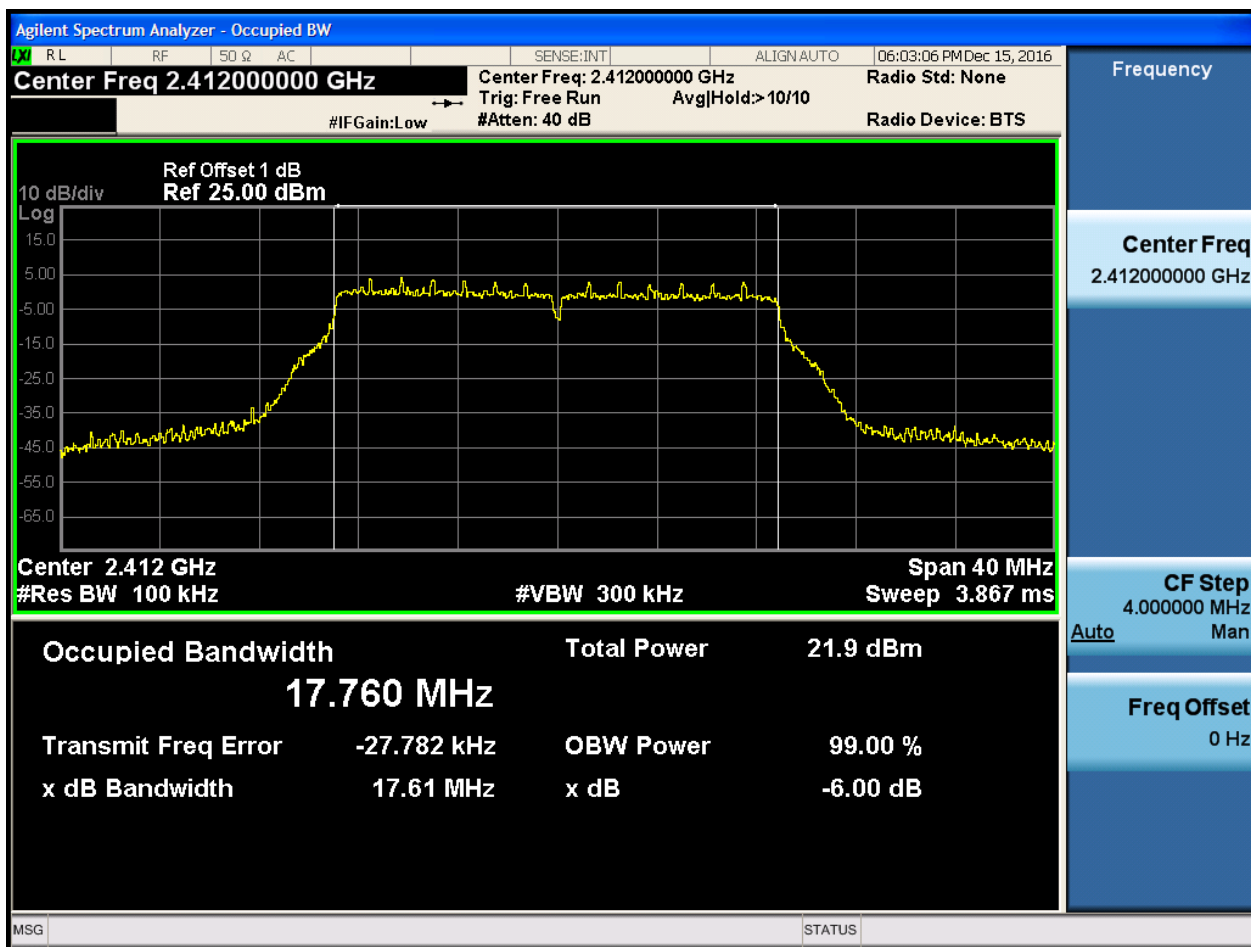


2.12 11G_H@Ant 2



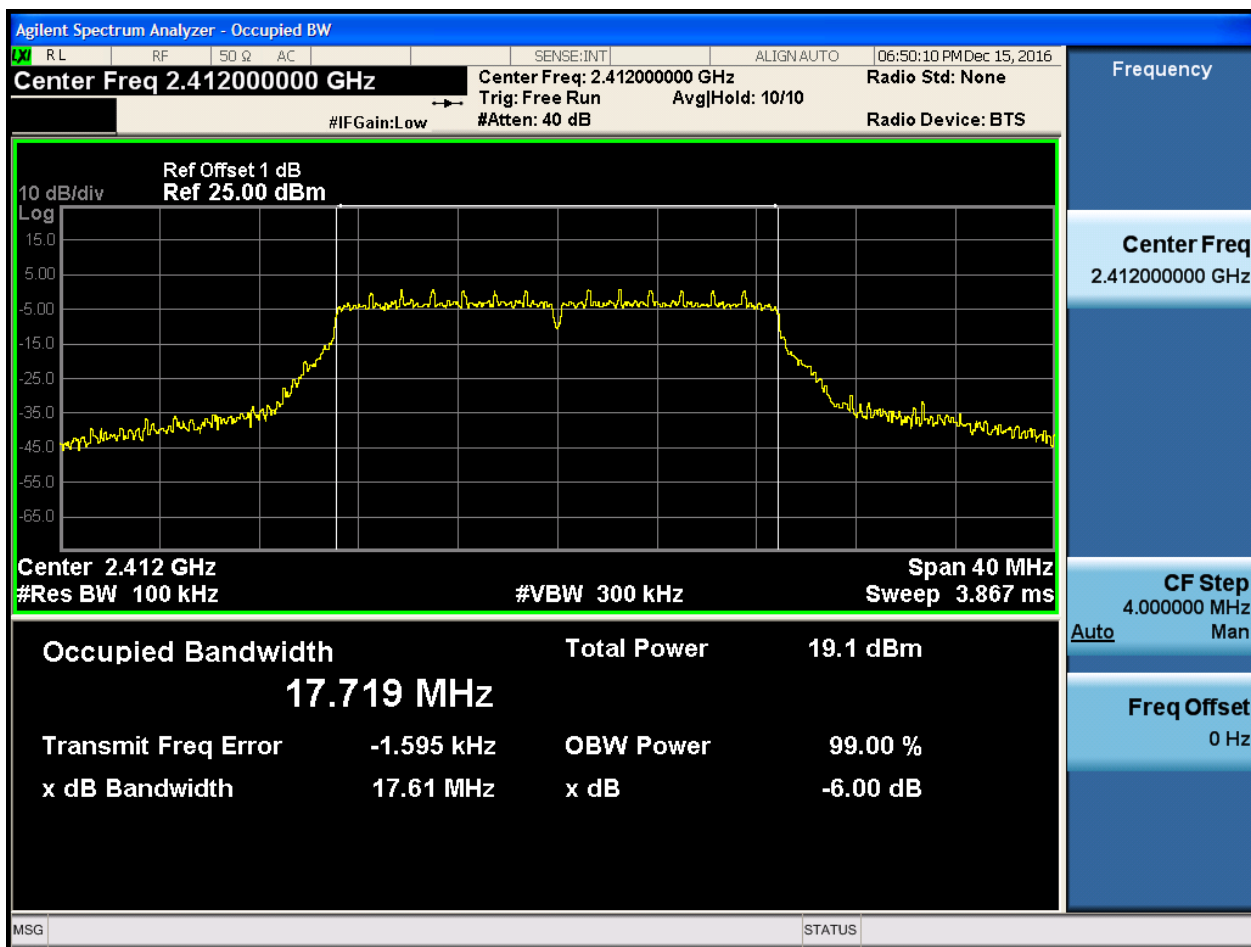


2.13 11N20_L@Ant 1



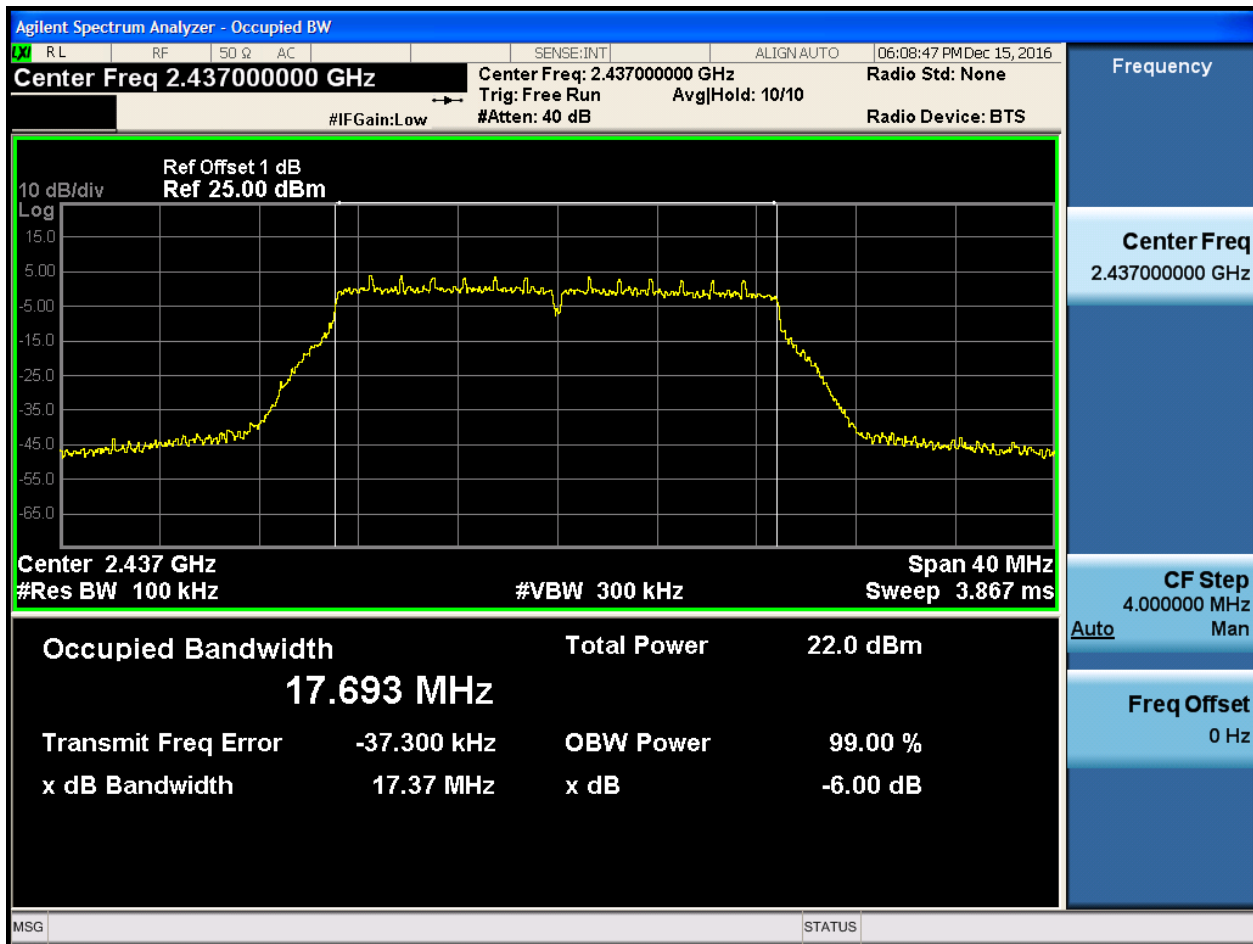


2.14 11N20_L@Ant 2



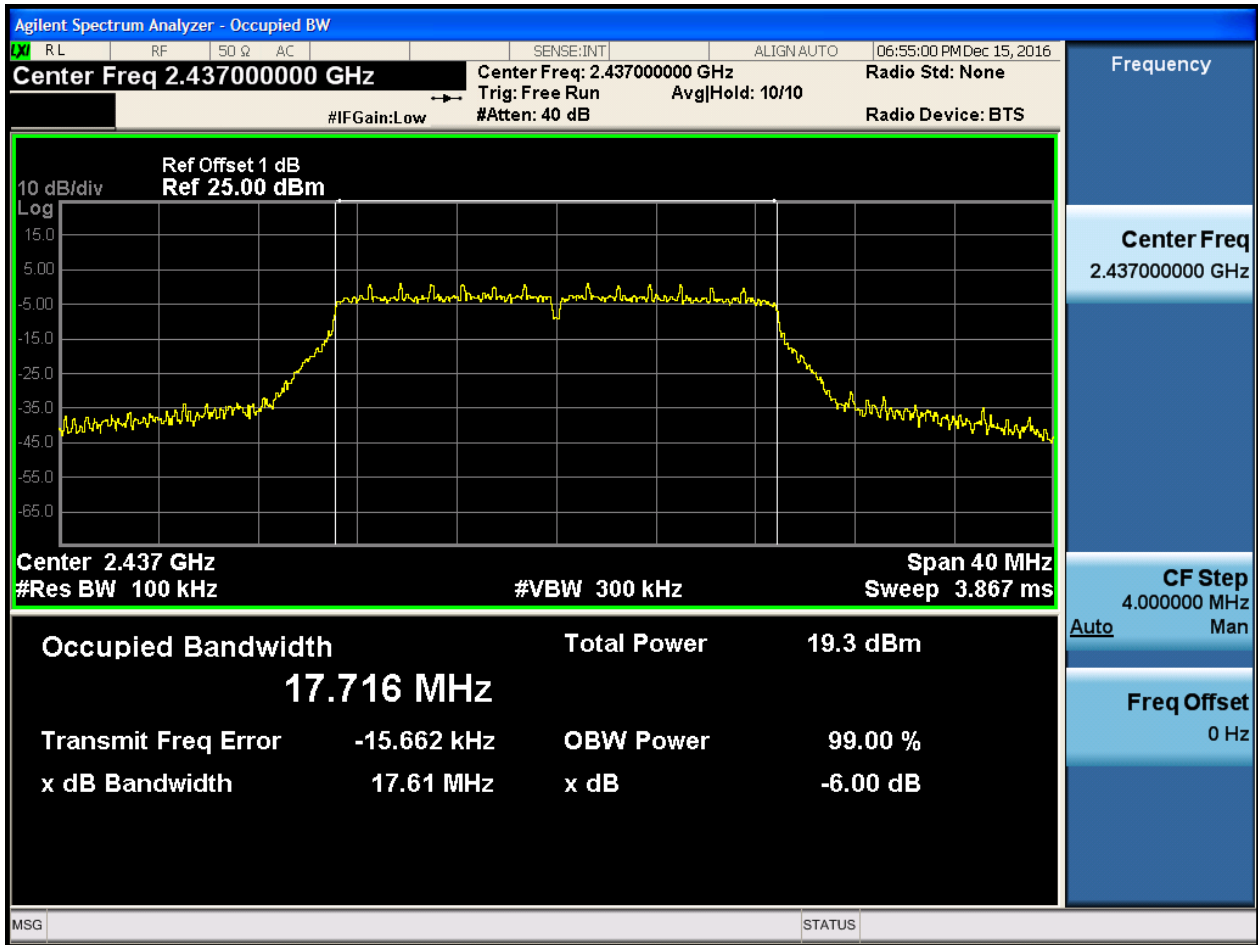


2.15 11N20_M@Ant 1



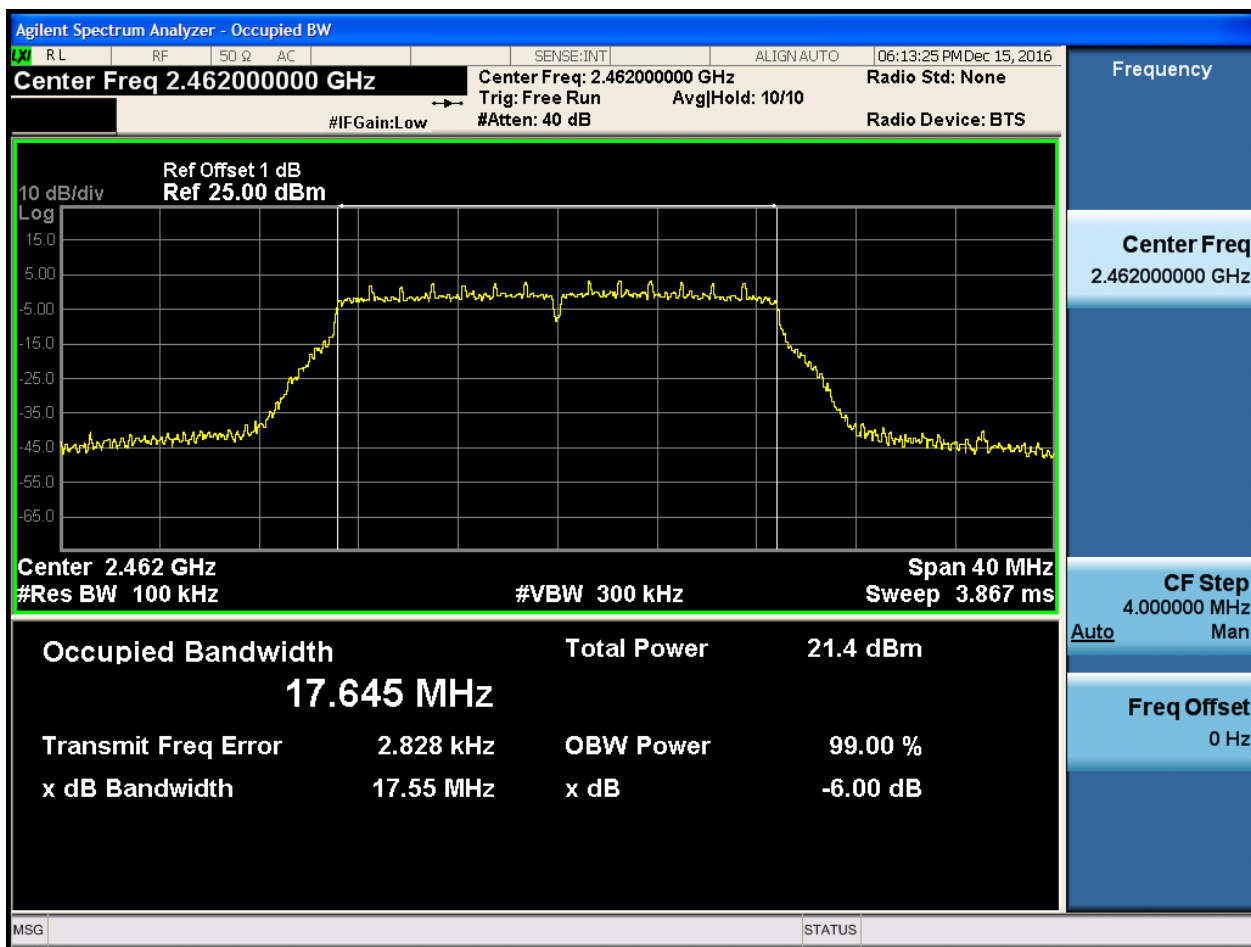


2.16 11N20_M@Ant 2



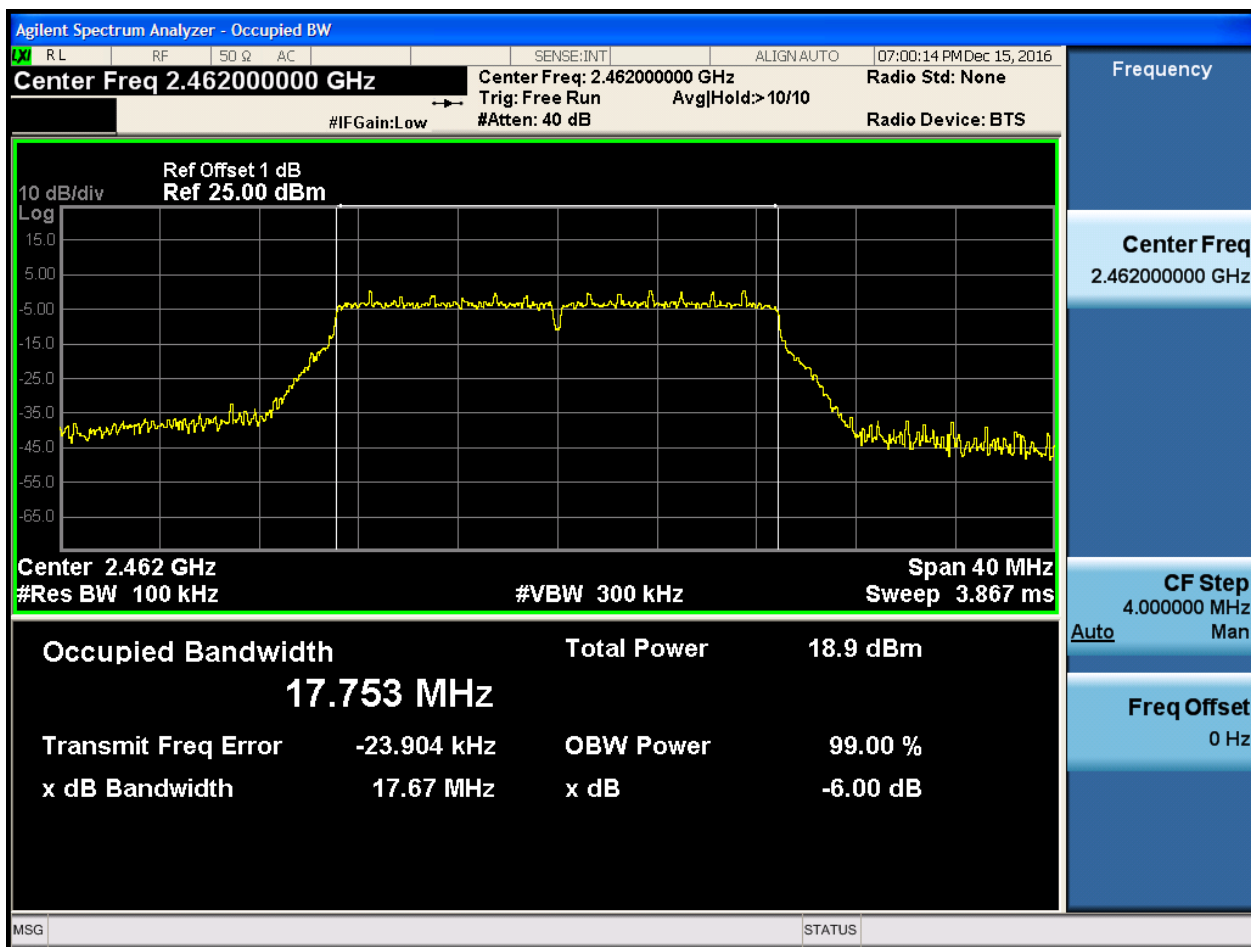


2.17 11N20_H@Ant 1



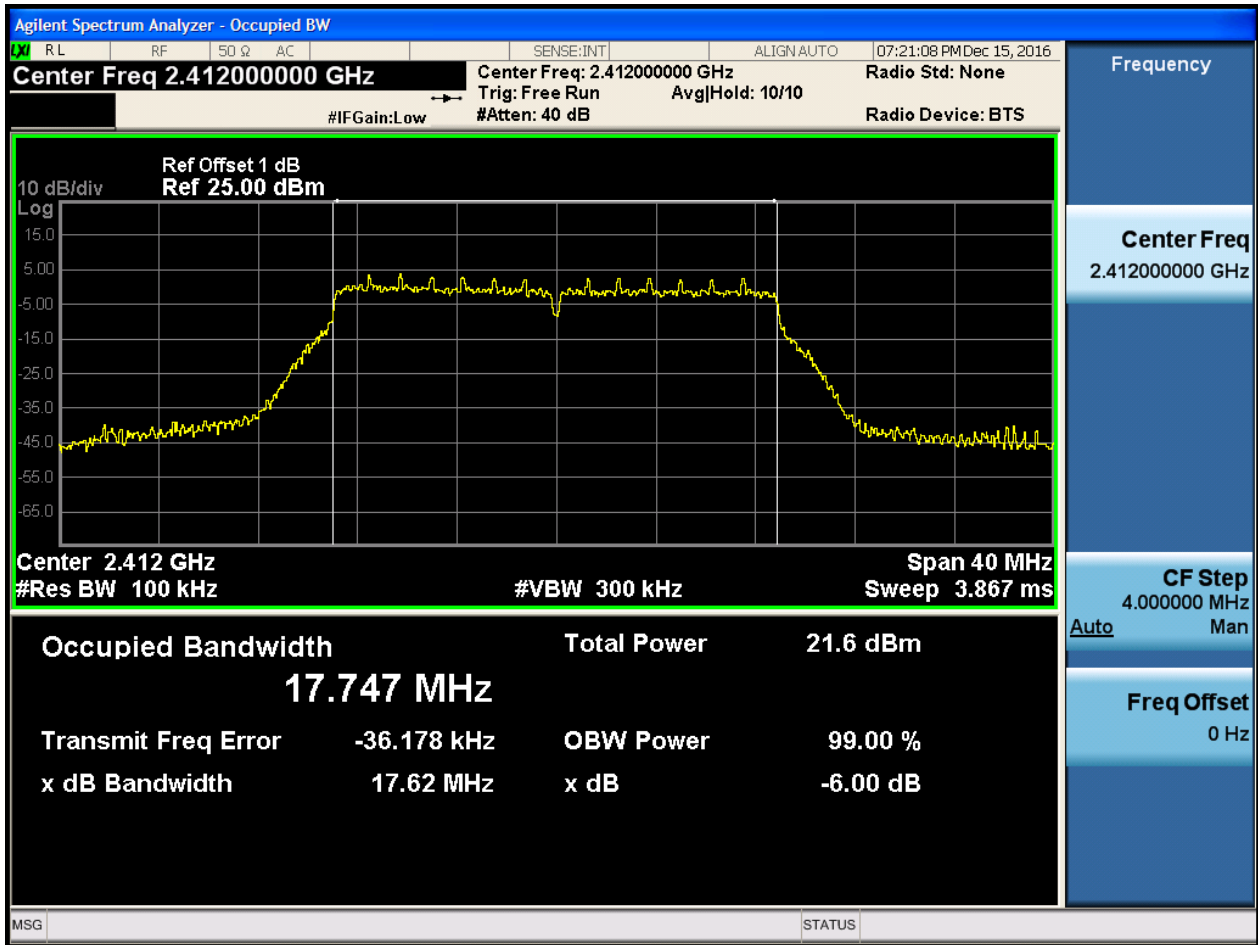


2.18 11N20_H@Ant 2



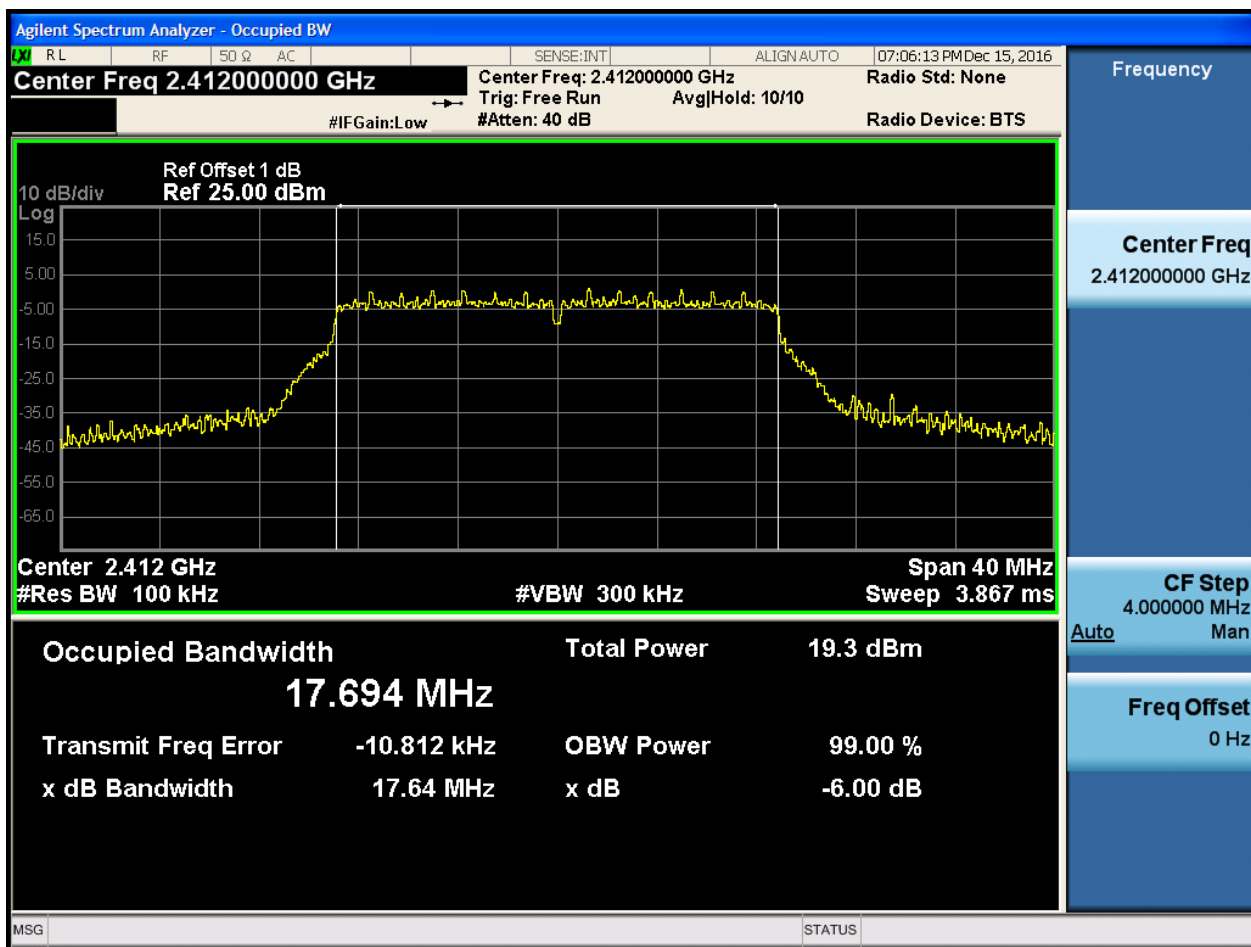


2.19 11N20m_L@Ant 1



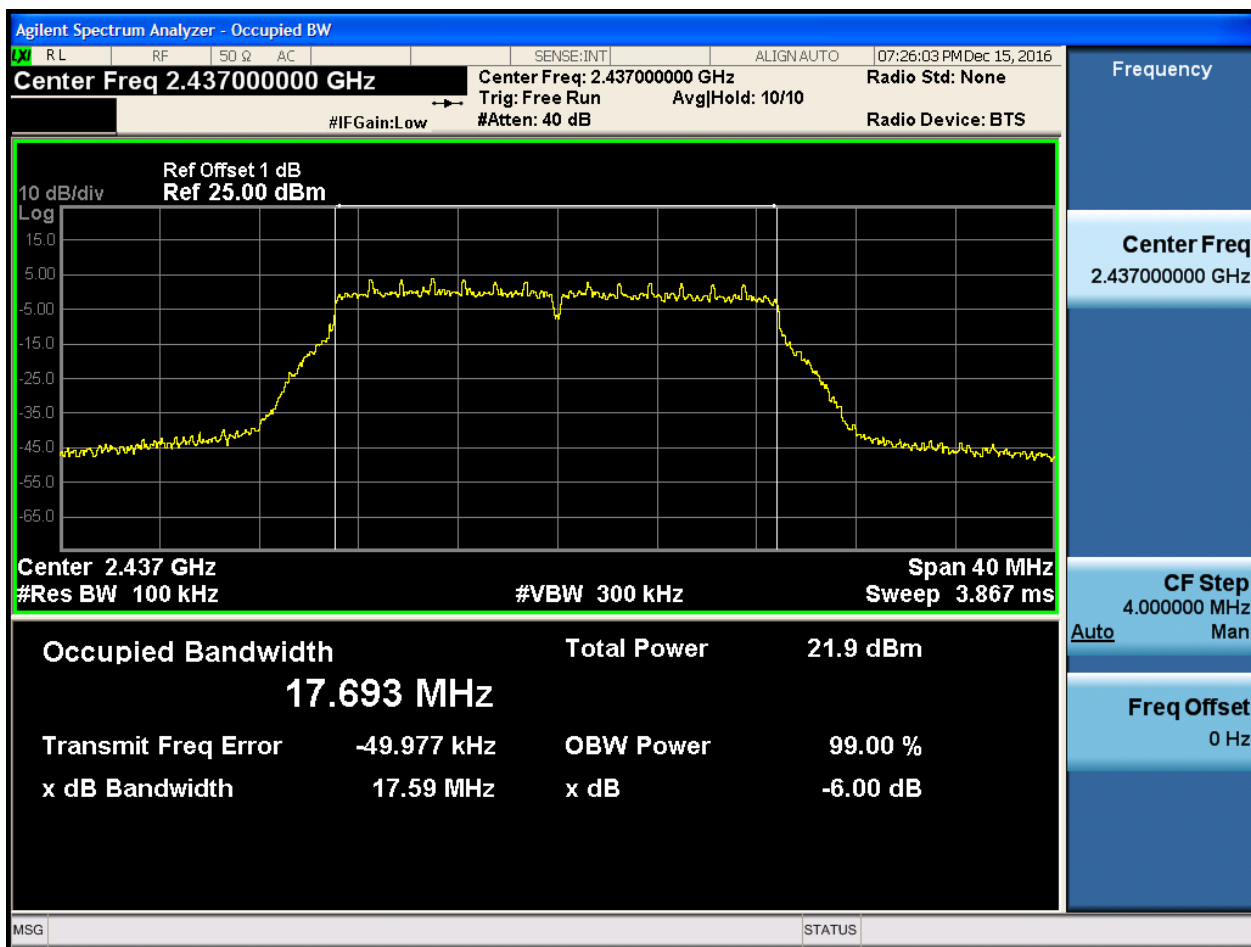


2.20 11N20m_L@Ant 2



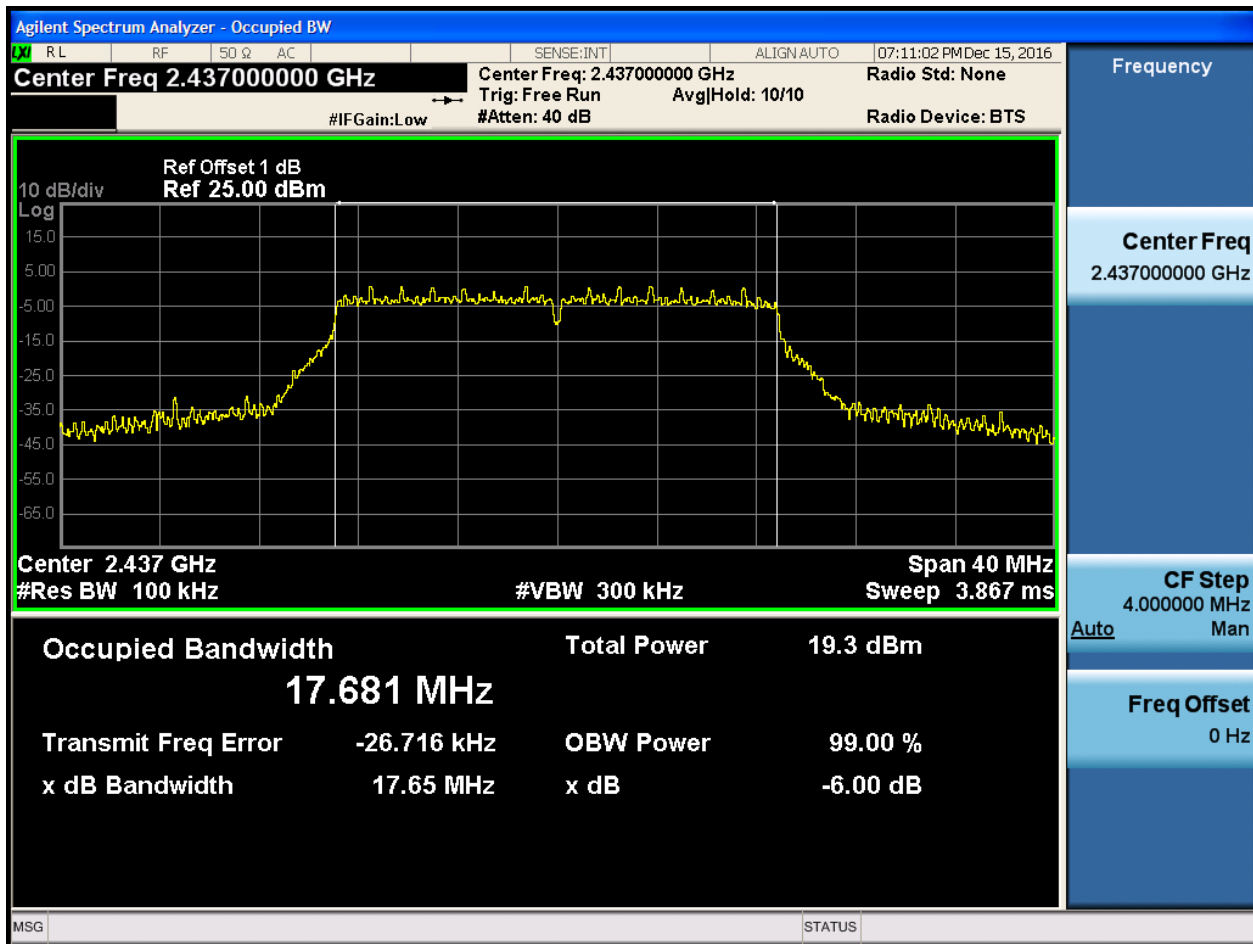


2.21 11N20m_M@Ant 1



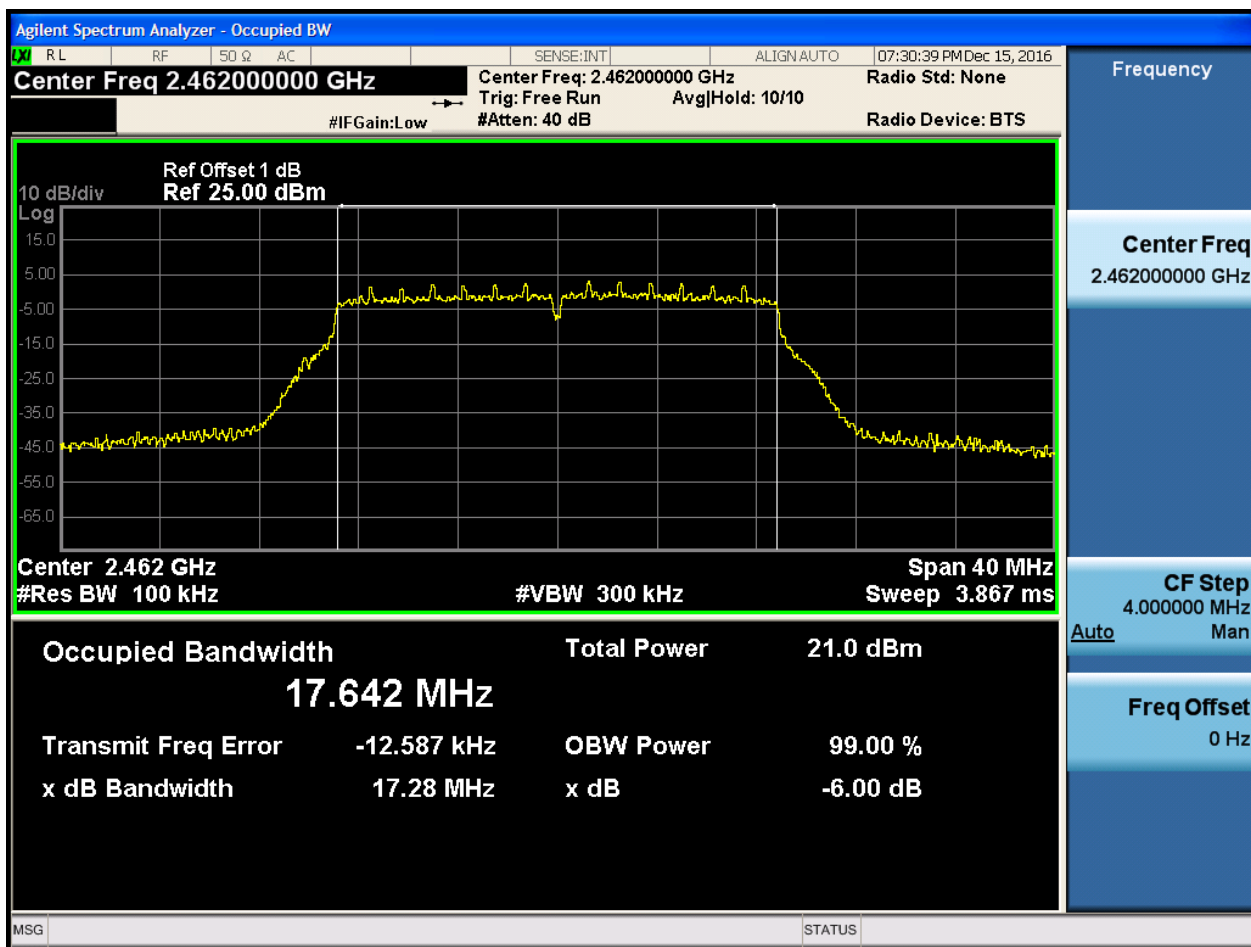


2.22 11N20m_M@Ant 2



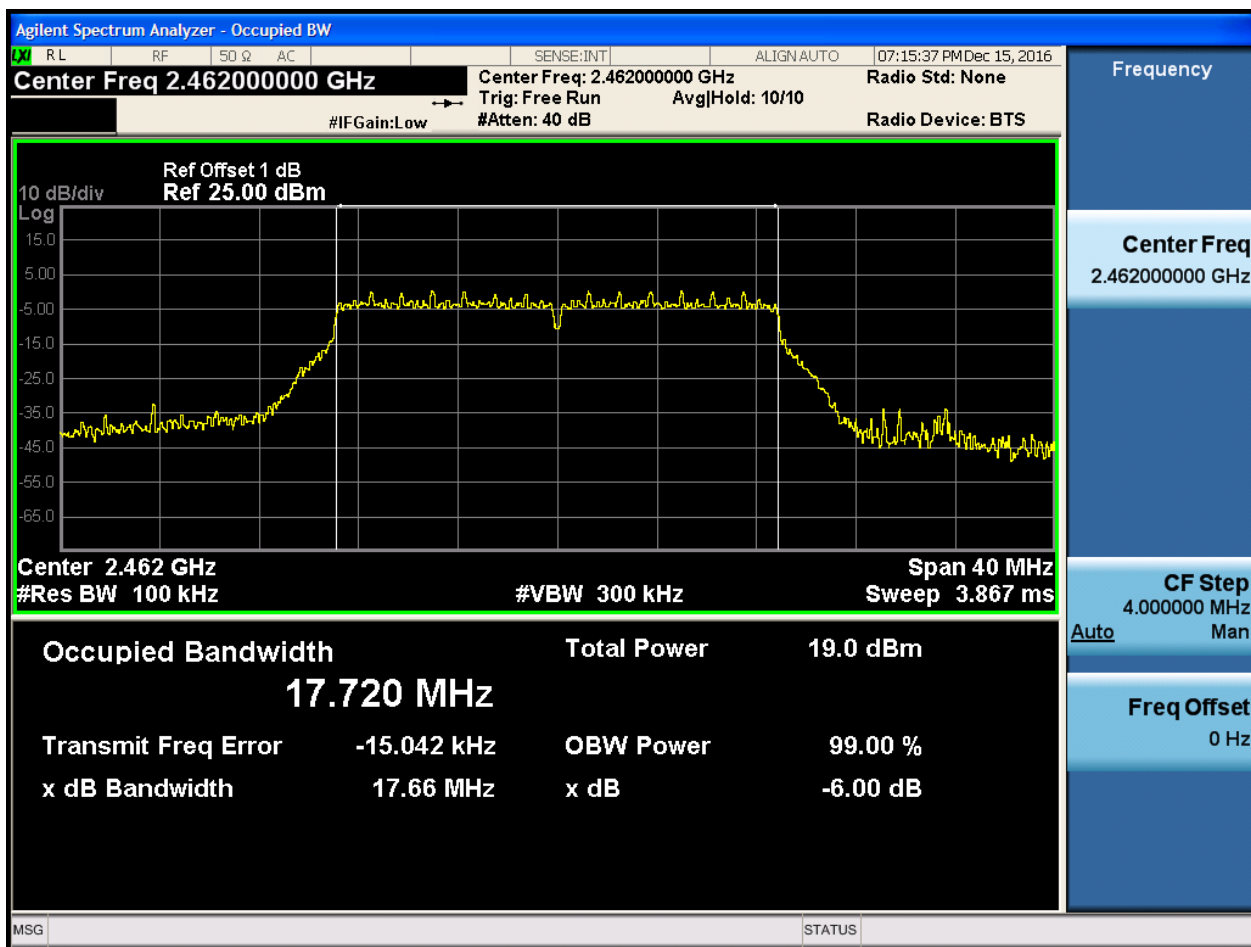


2.23 11N20m_H@Ant 1



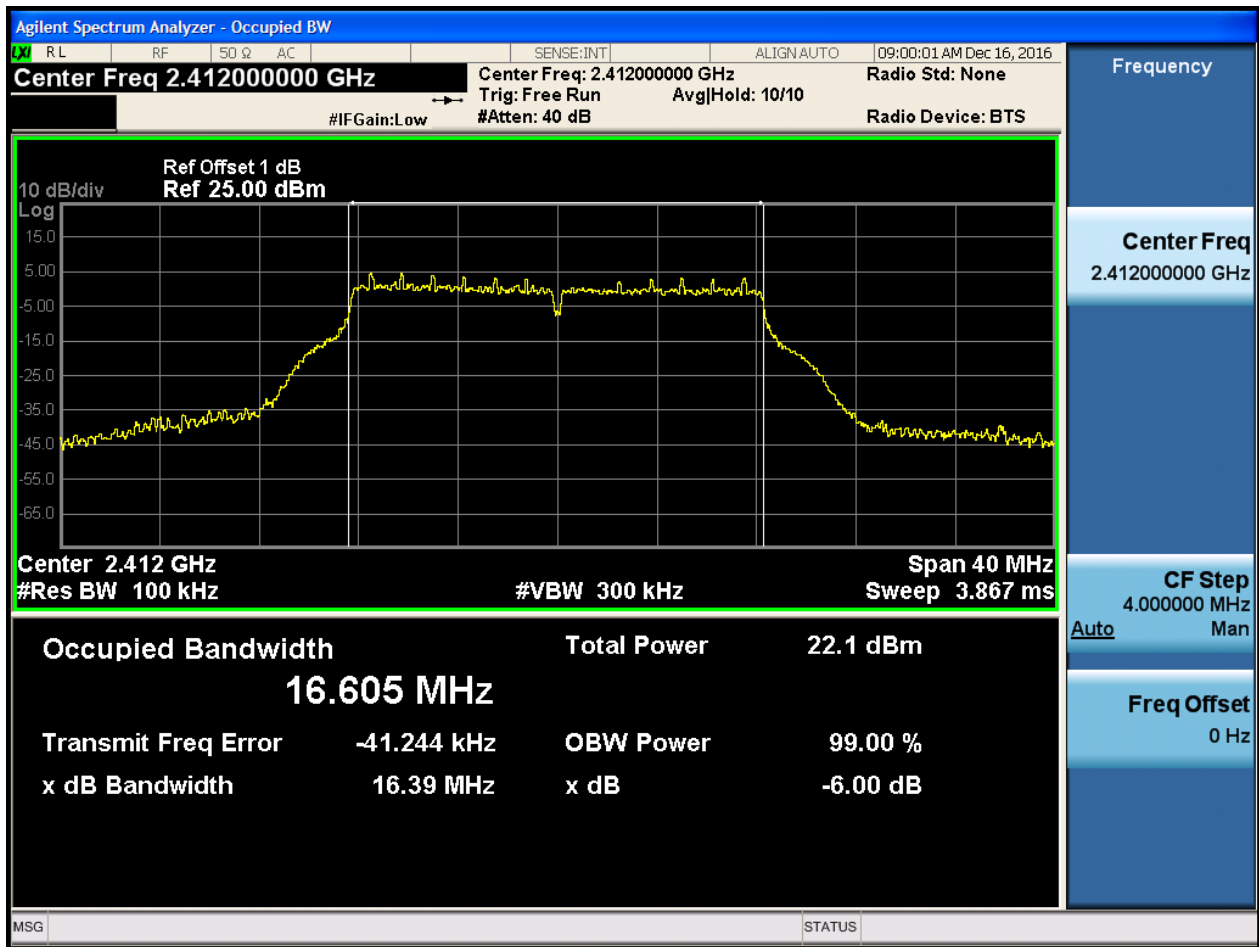


2.24 11N20m_H@Ant 2



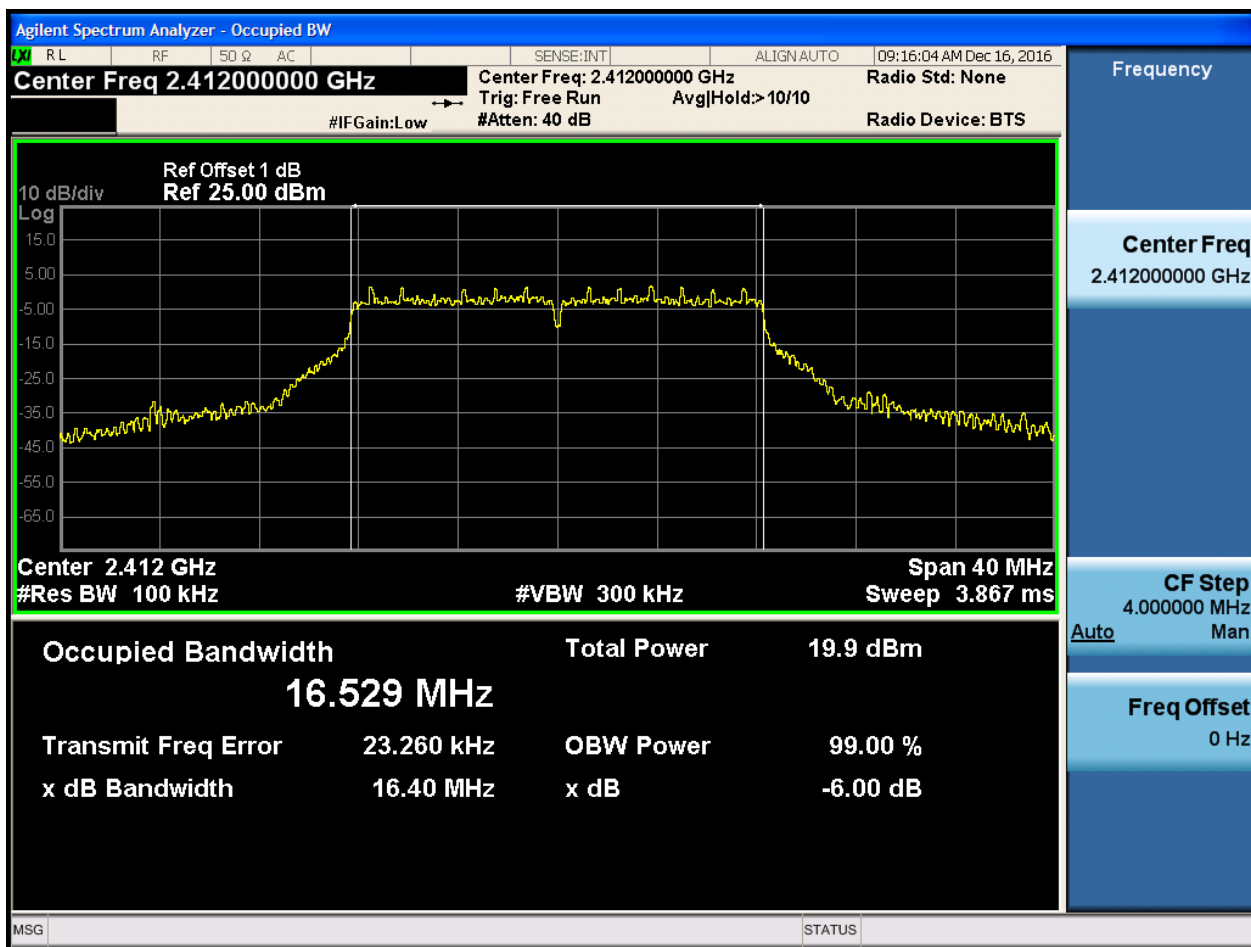


2.25 11G CDD_L@Ant 1



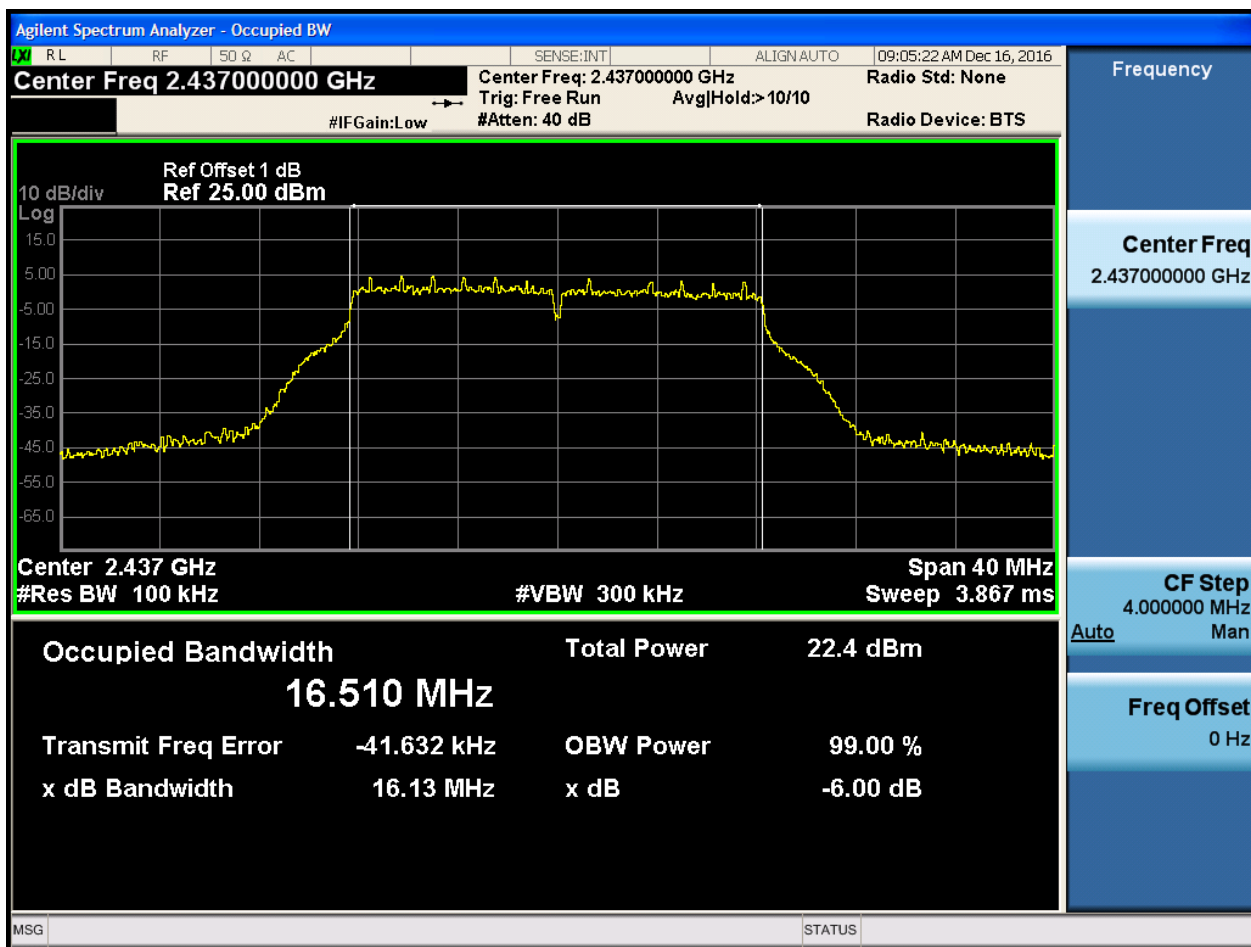


2.26 11G CDD_L@Ant 2



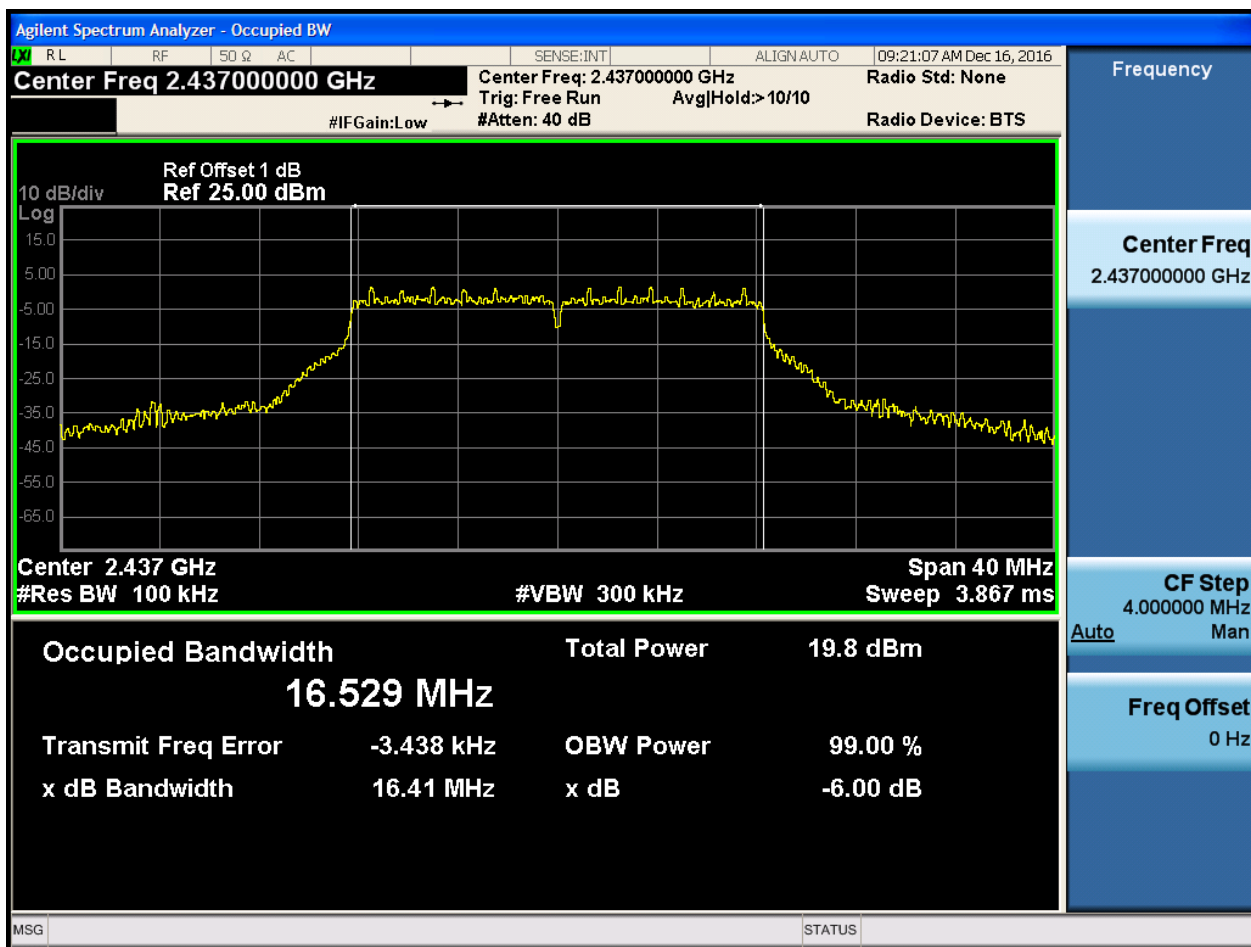


2.27 11G CDD _M@Ant 1



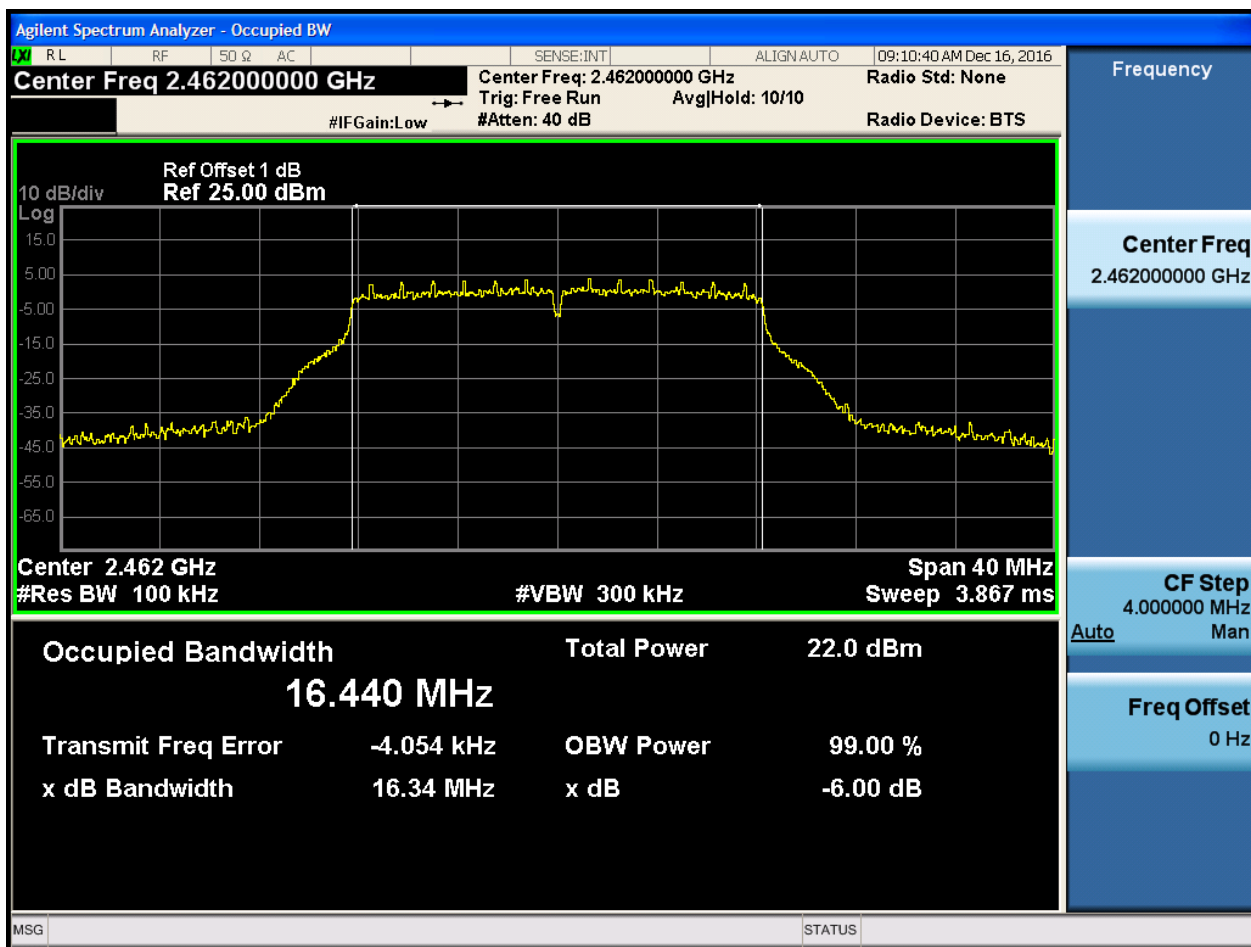


2.28 11G CDD_M@Ant 2



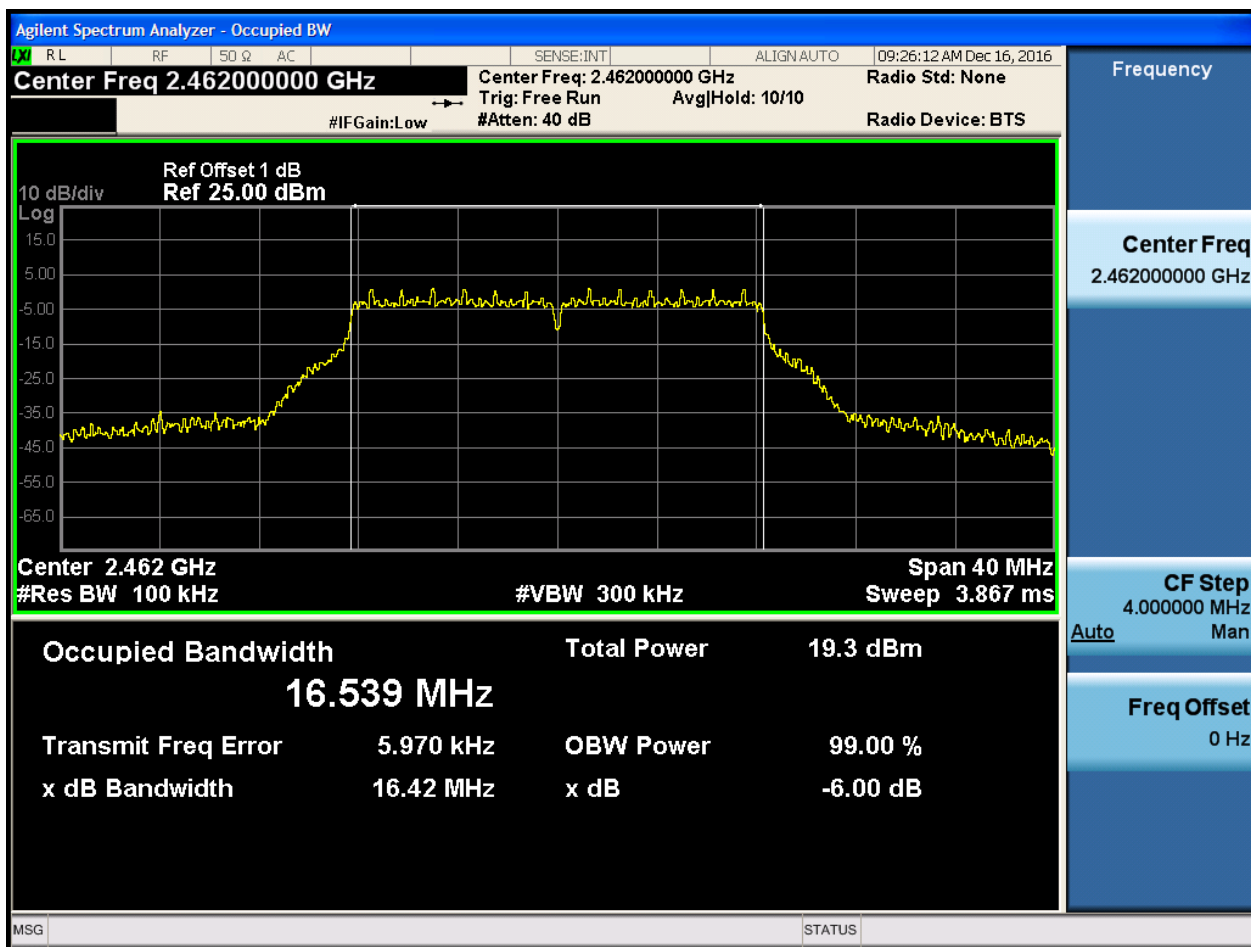


2.29 11G CDD_H@Ant 1





2.30 11G CDD_H@Ant 2



Appendix B: Occupied Bandwidth

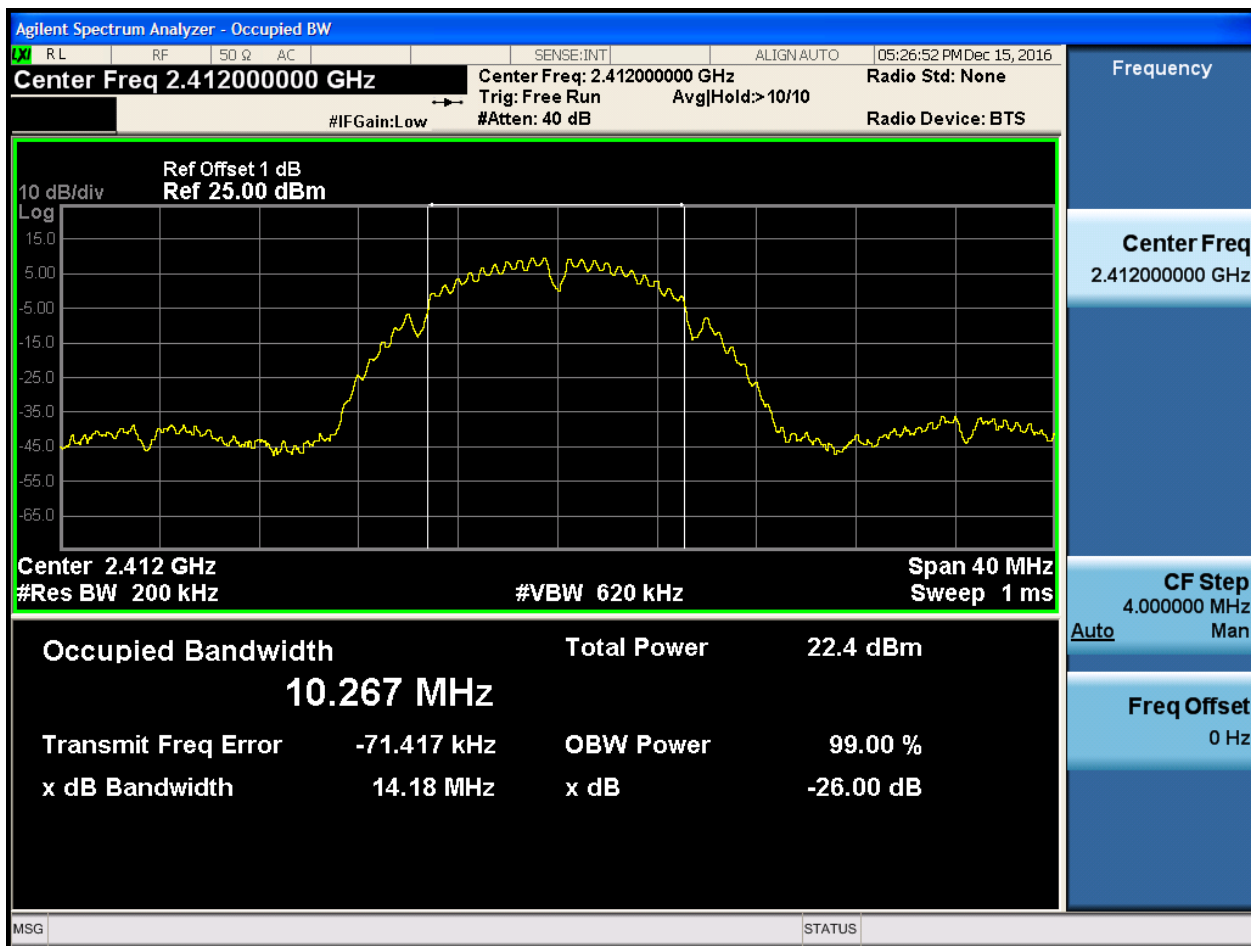
For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Occupied Bandwidth [MHz]	Verdict
11B	L	2412	Ant 1	10.27	pass
11B	L	2412	Ant 2	10.31	pass
11B	M	2437	Ant 1	10.14	pass
11B	M	2437	Ant 2	10.33	pass
11B	H	2462	Ant 1	10.11	pass
11B	H	2462	Ant 2	10.23	pass
11G	L	2412	Ant 1	16.83	pass
11G	L	2412	Ant 2	16.77	pass
11G	M	2437	Ant 1	16.70	pass
11G	M	2437	Ant 2	16.78	pass
11G	H	2462	Ant 1	16.64	pass
11G	H	2462	Ant 2	16.83	pass
11N20	L	2412	Ant 1	17.98	pass
11N20	L	2412	Ant 2	17.90	pass
11N20	M	2437	Ant 1	17.89	pass
11N20	M	2437	Ant 2	17.93	pass
11N20	H	2462	Ant 1	17.77	pass
11N20	H	2462	Ant 2	17.93	pass
11N20m	L	2412	Ant 1	17.96	pass
11N20m	L	2412	Ant 2	17.82	pass
11N20m	M	2437	Ant 1	17.85	pass
11N20m	M	2437	Ant 2	17.82	pass
11N20m	H	2462	Ant 1	17.79	pass
11N20m	H	2462	Ant 2	17.88	pass
11G CDD	L	2412	Ant 1	16.88	pass
11G CDD	L	2412	Ant 2	16.75	pass
11G CDD	M	2437	Ant 1	16.72	pass
11G CDD	M	2437	Ant 2	16.79	pass
11G CDD	H	2462	Ant 1	16.60	pass
11G CDD	H	2462	Ant 2	16.79	pass

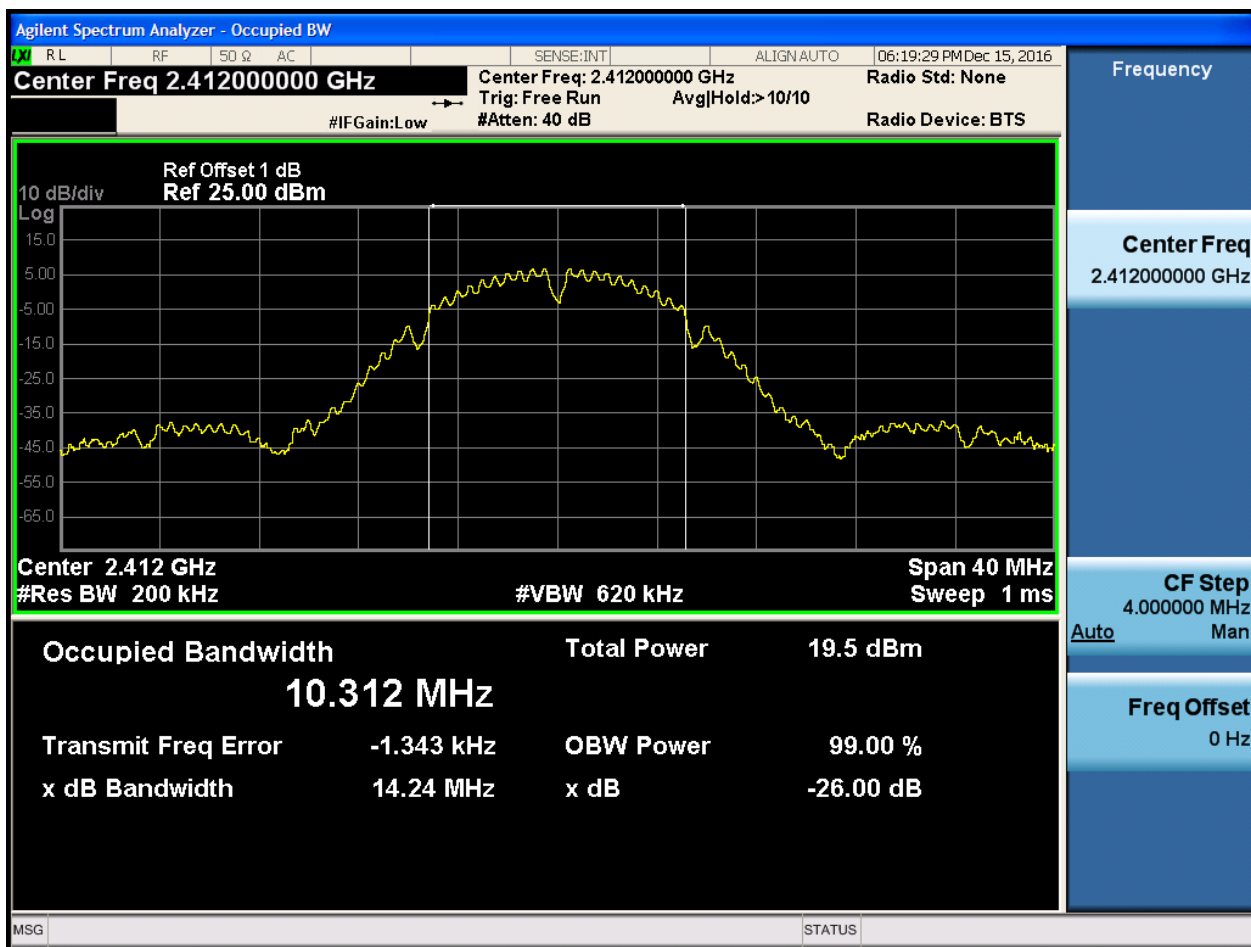
Part II - Test Plots

2.1 11B_L@Ant 1



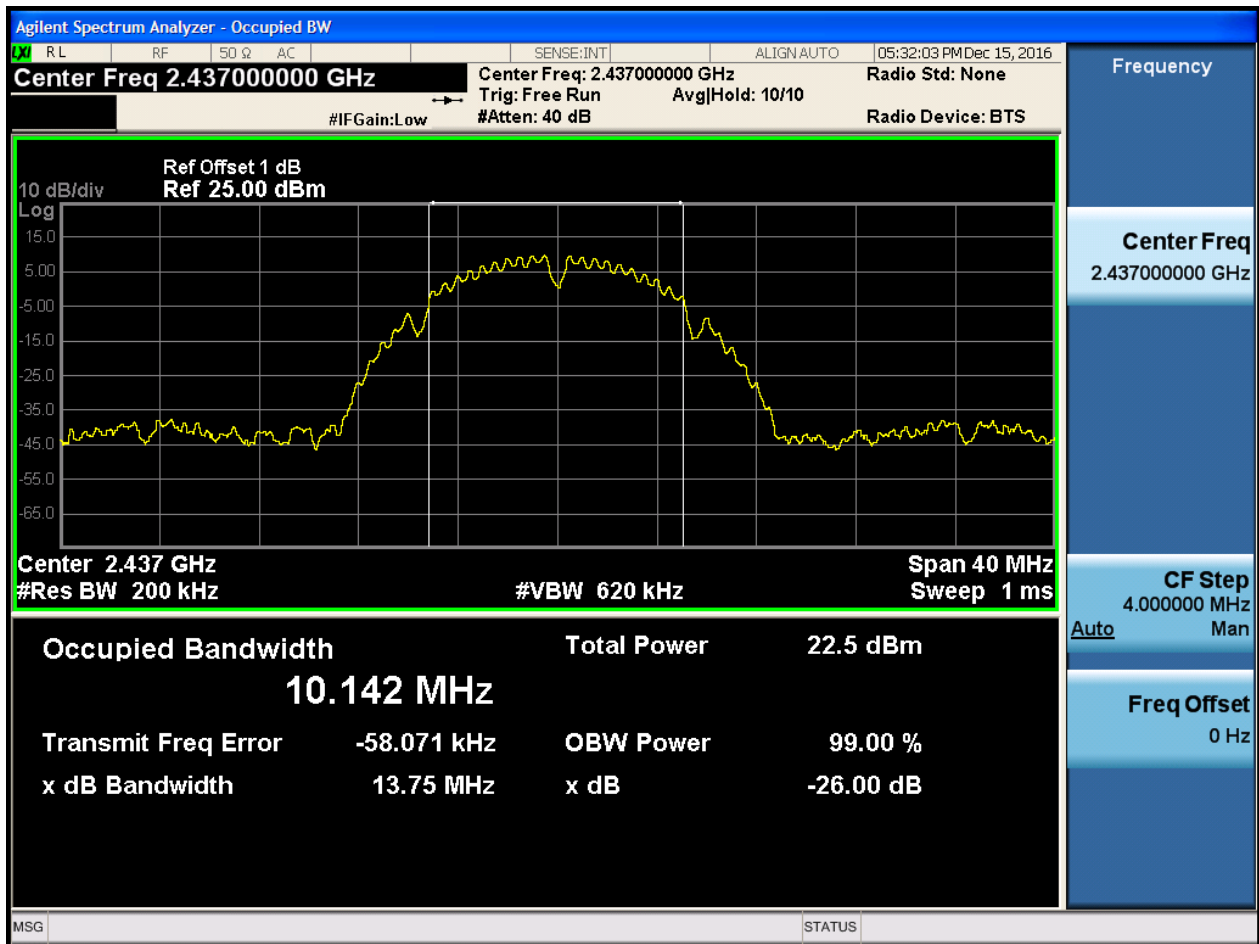


2.2 11B_L@Ant 2



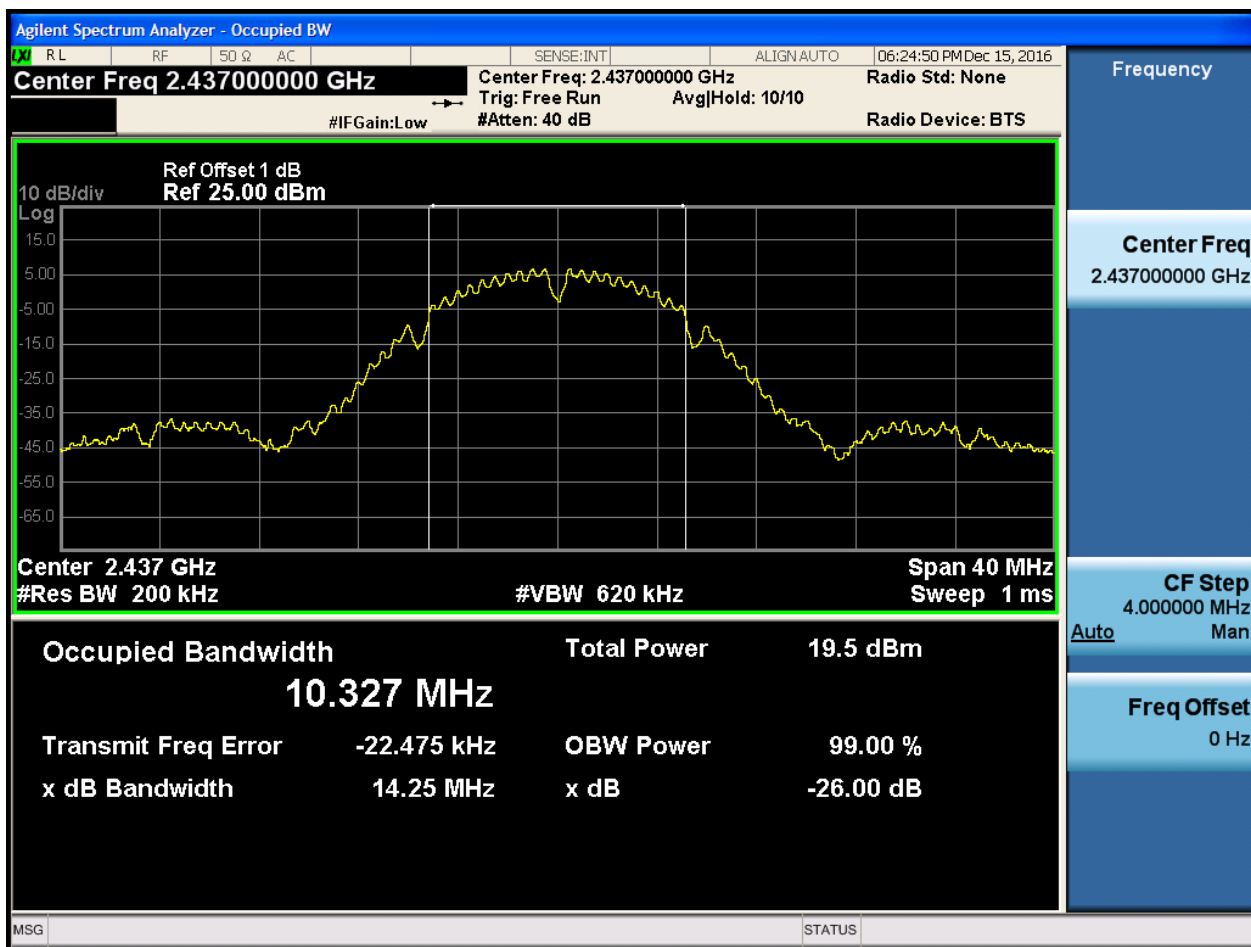


2.3 11B_M@Ant 1



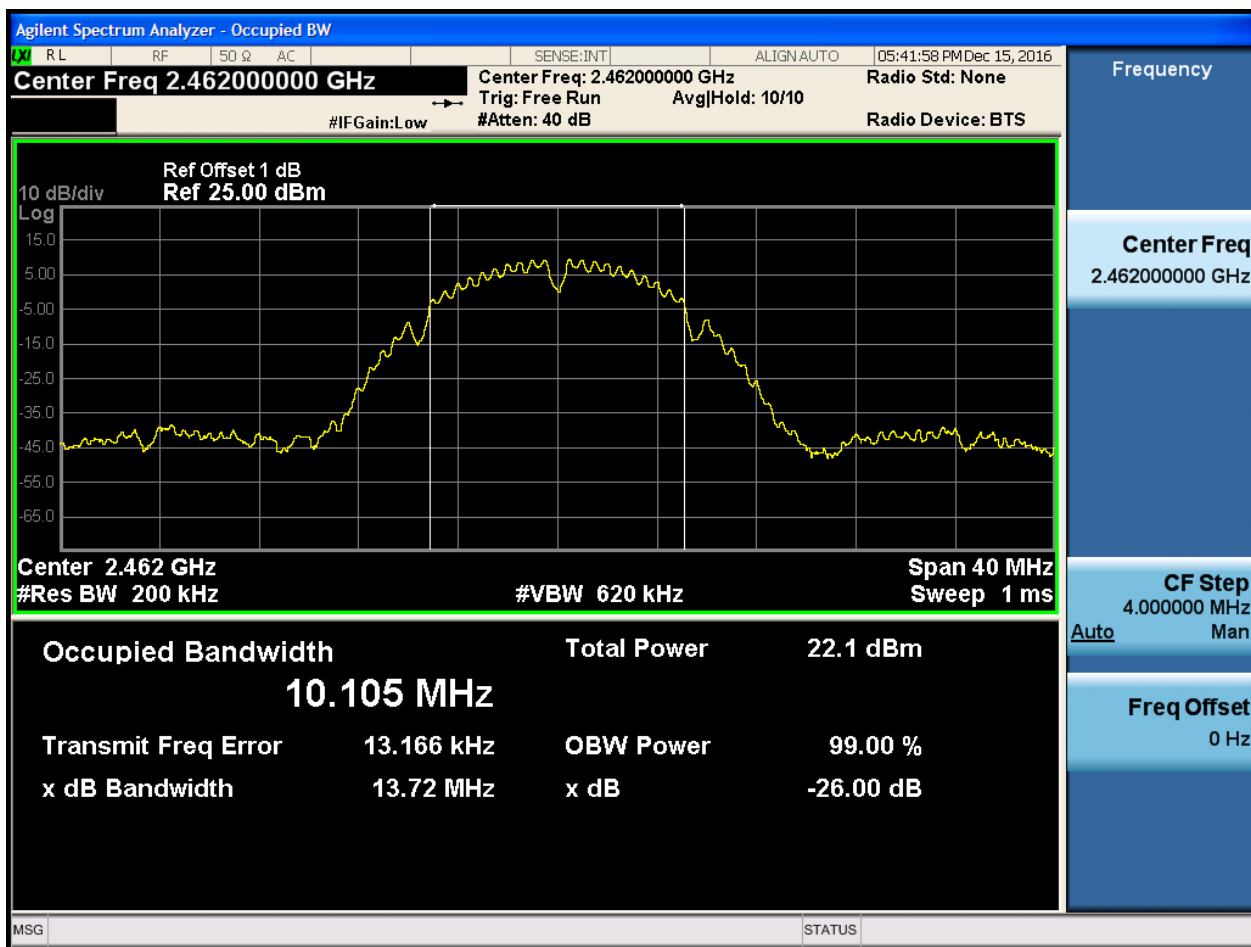


2.4 11B_M@Ant 2



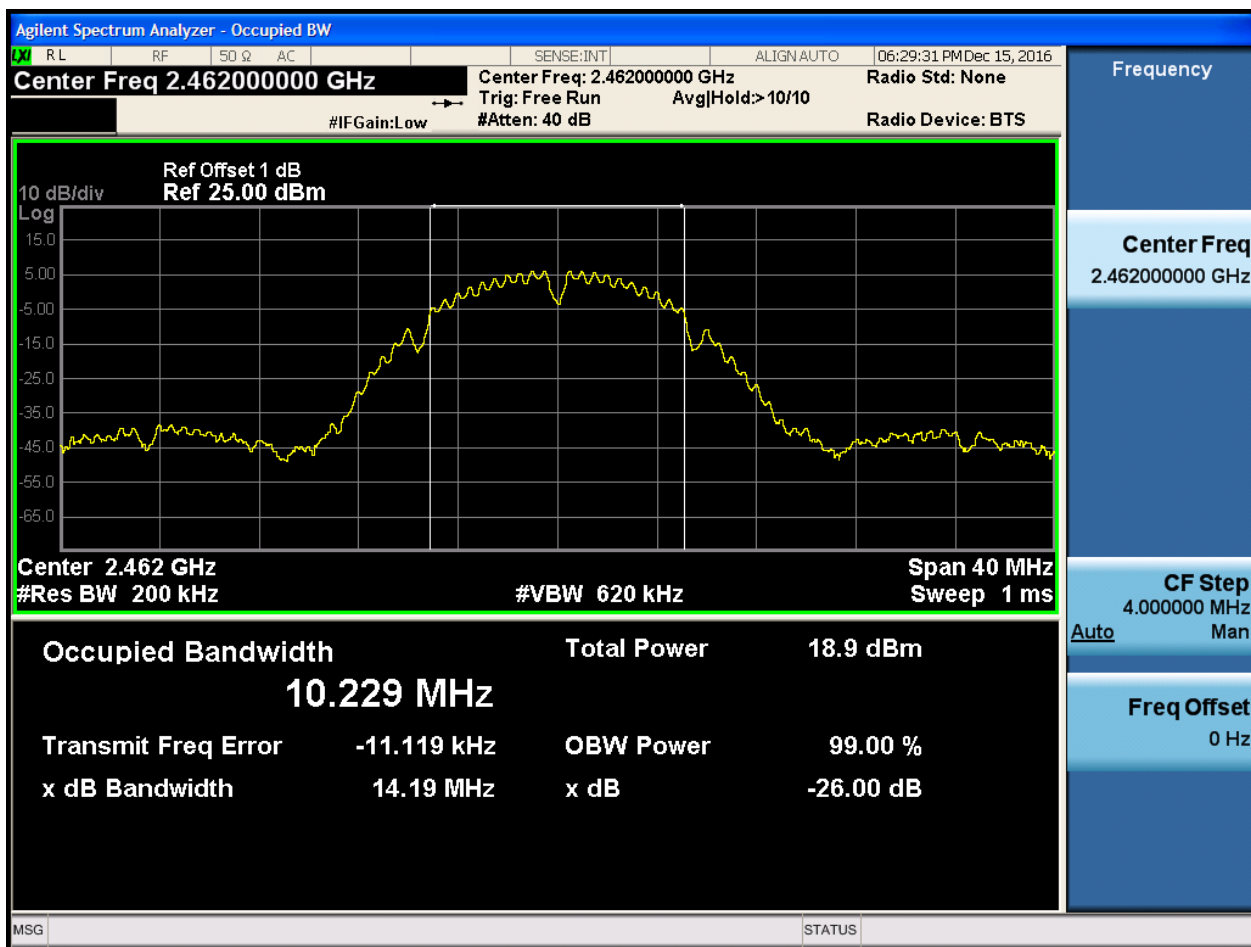


2.5 11B_H@Ant 1



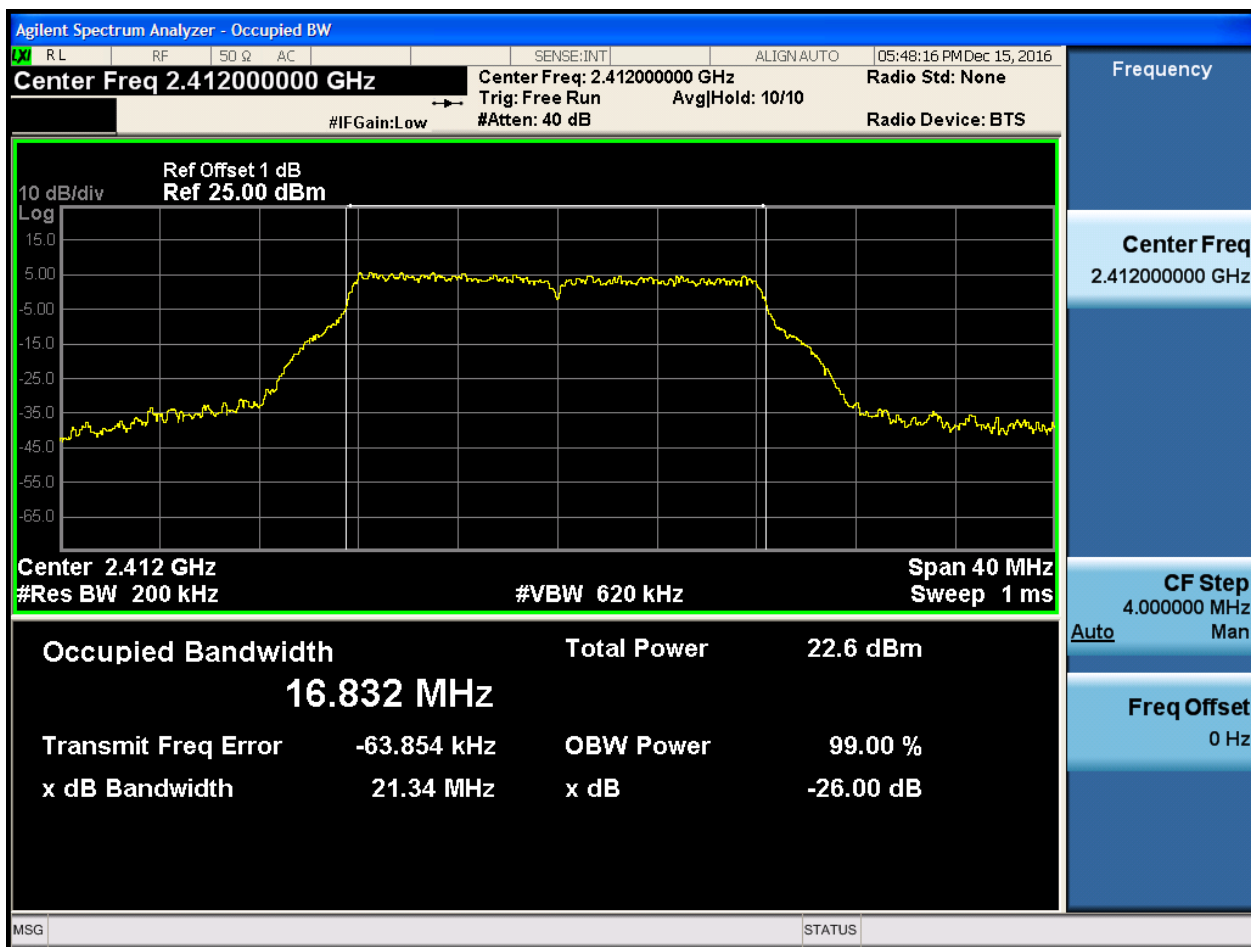


2.6 11B_H@Ant 2



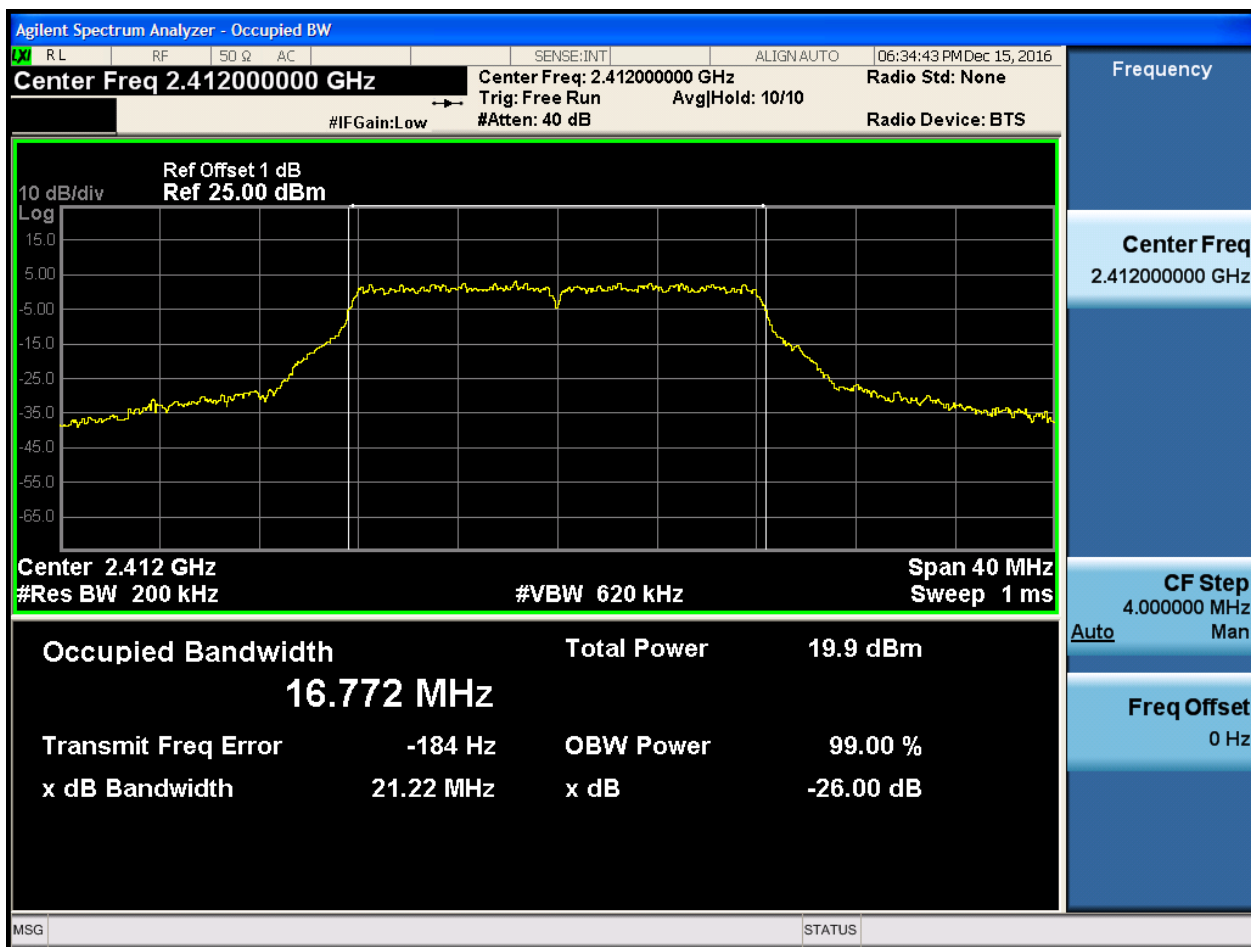


2.7 11G_L@Ant 1





2.8 11G_L@Ant 2





Agilent Spectrum Analyzer - Occupied BW

Center Freq 2.437000000 GHz

Center Freq: 2.437000000 GHz
Trig: Free Run
#Atten: 40 dB

Radio Std: None
Radio Device: BTS

IF Gain: Low

Ref Offset 1 dB
Ref 25.00 dBm

10 dB/div
Log

Center 2.437 GHz
#Res BW 200 kHz

Span 40 MHz
Sweep 1 ms

#VBW 620 kHz

Occupied Bandwidth		Total Power	
16.699 MHz		22.8 dBm	

Transmit Freq Error		OBW Power	
-76.340 kHz		99.00 %	

x dB Bandwidth		x dB	
21.12 MHz		-26.00 dB	

Frequency

Center Freq
2.437000000 GHz

CF Step
4.000000 MHz
Auto Man

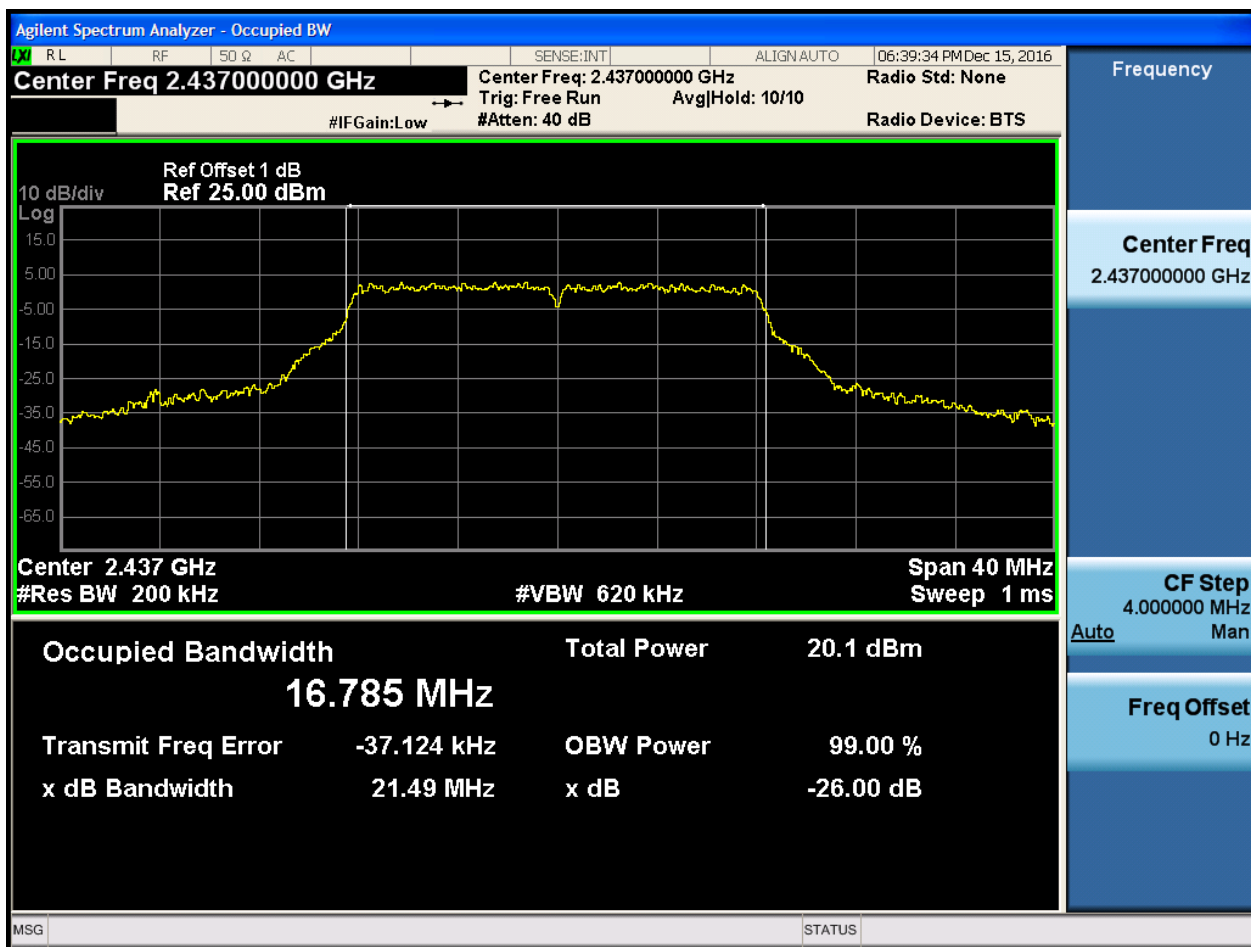
Freq Offset
0 Hz

MSG

STATUS

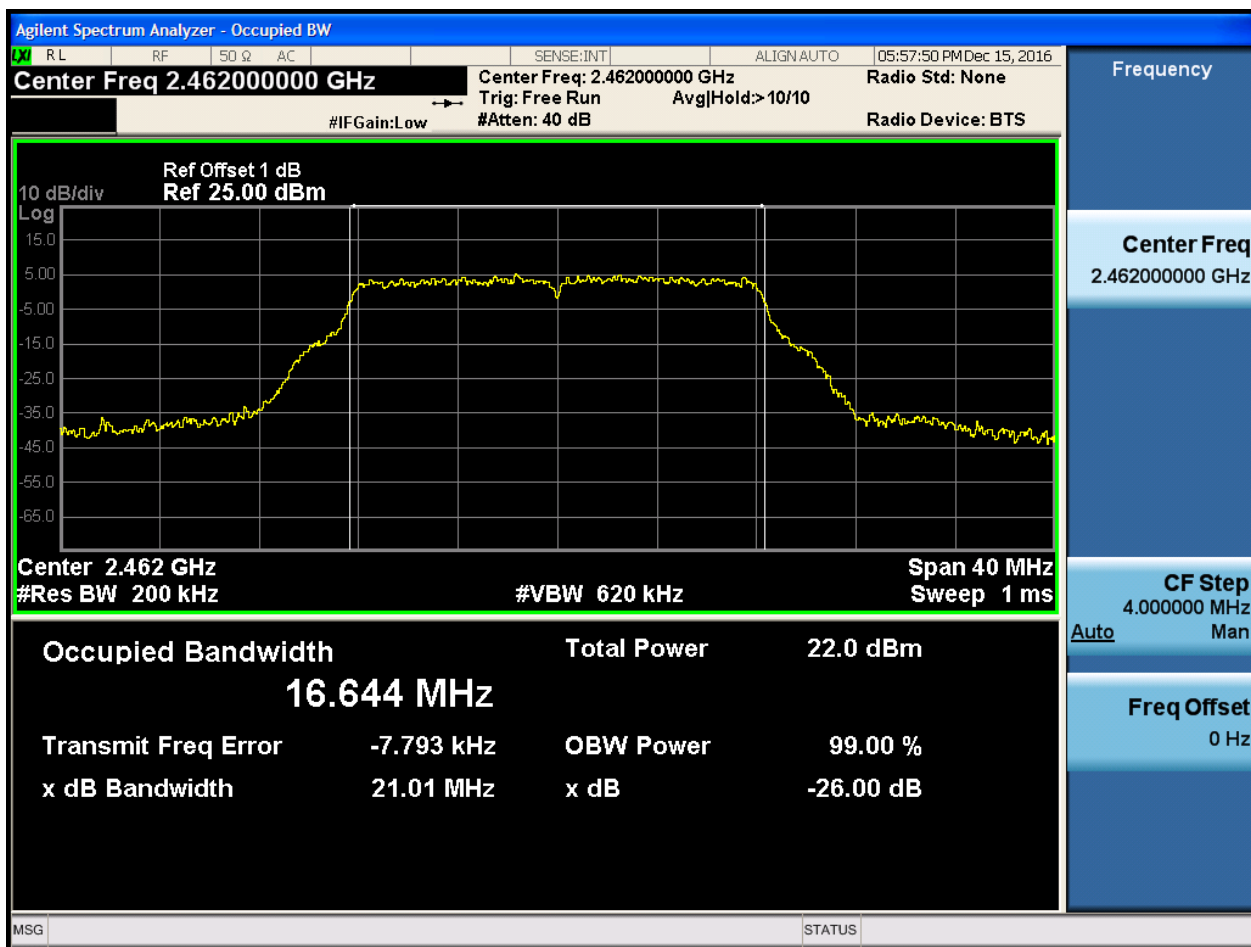


2.10 11G_M@Ant 2



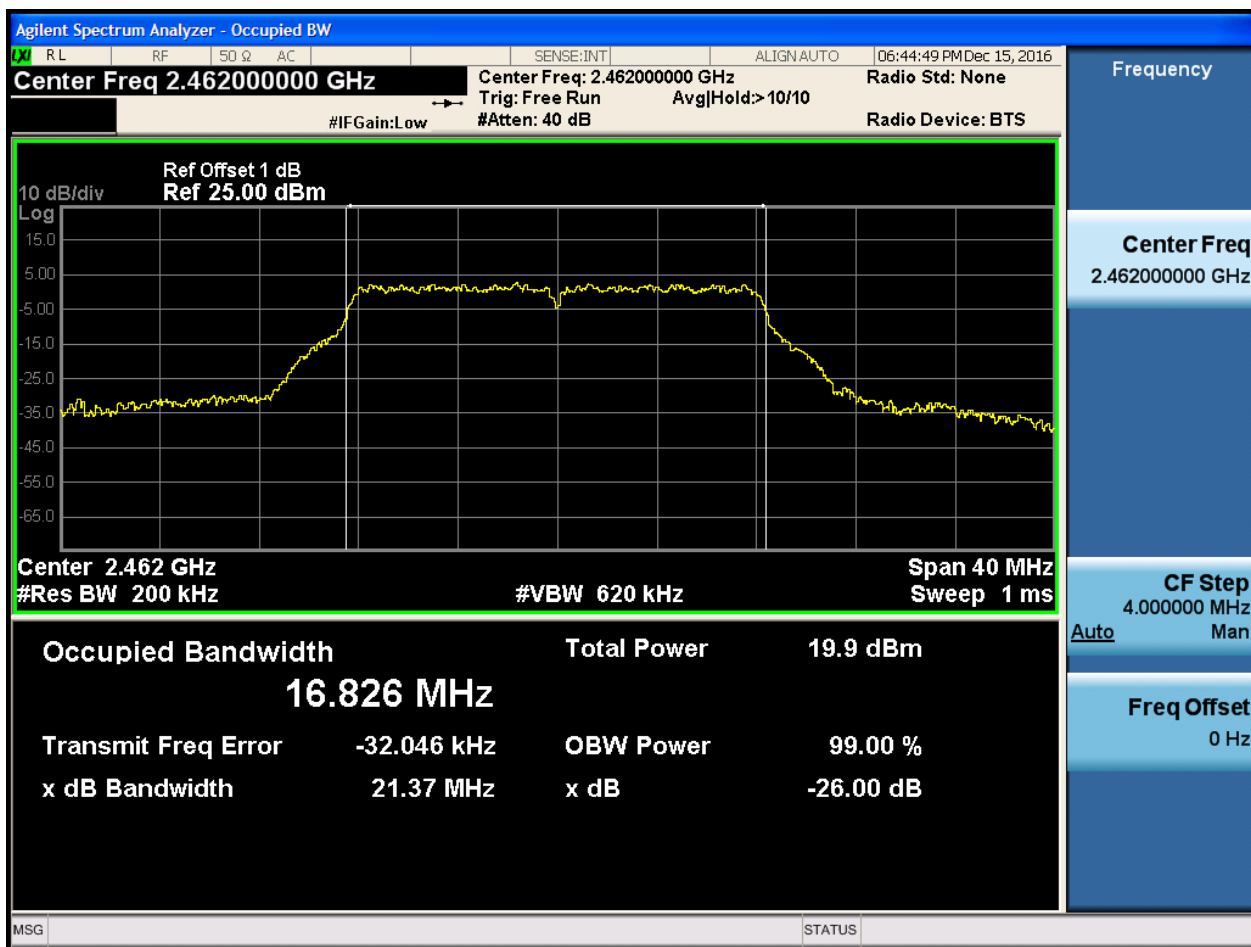


2.11 11G_H@Ant 1



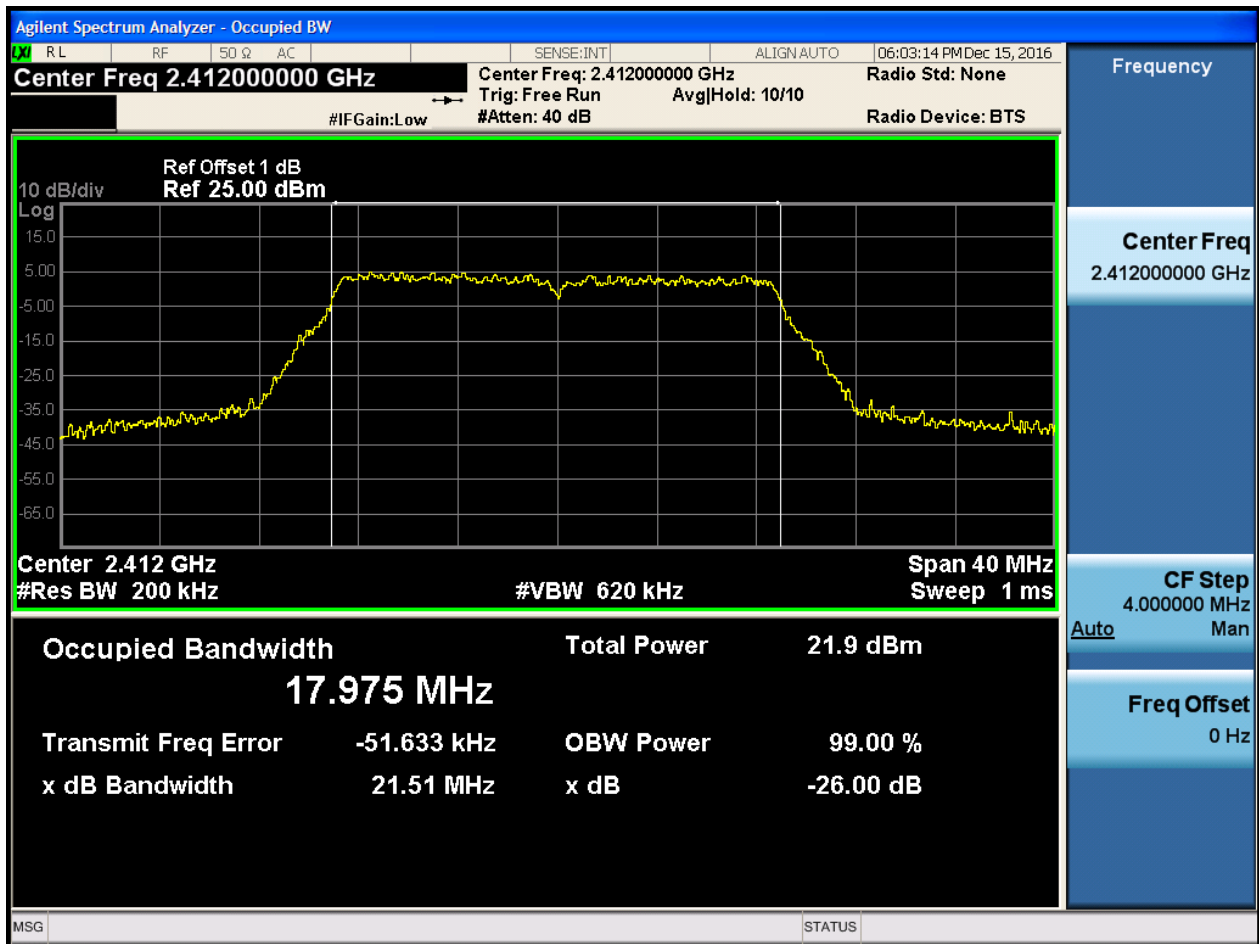


2.12 11G_H@Ant 2



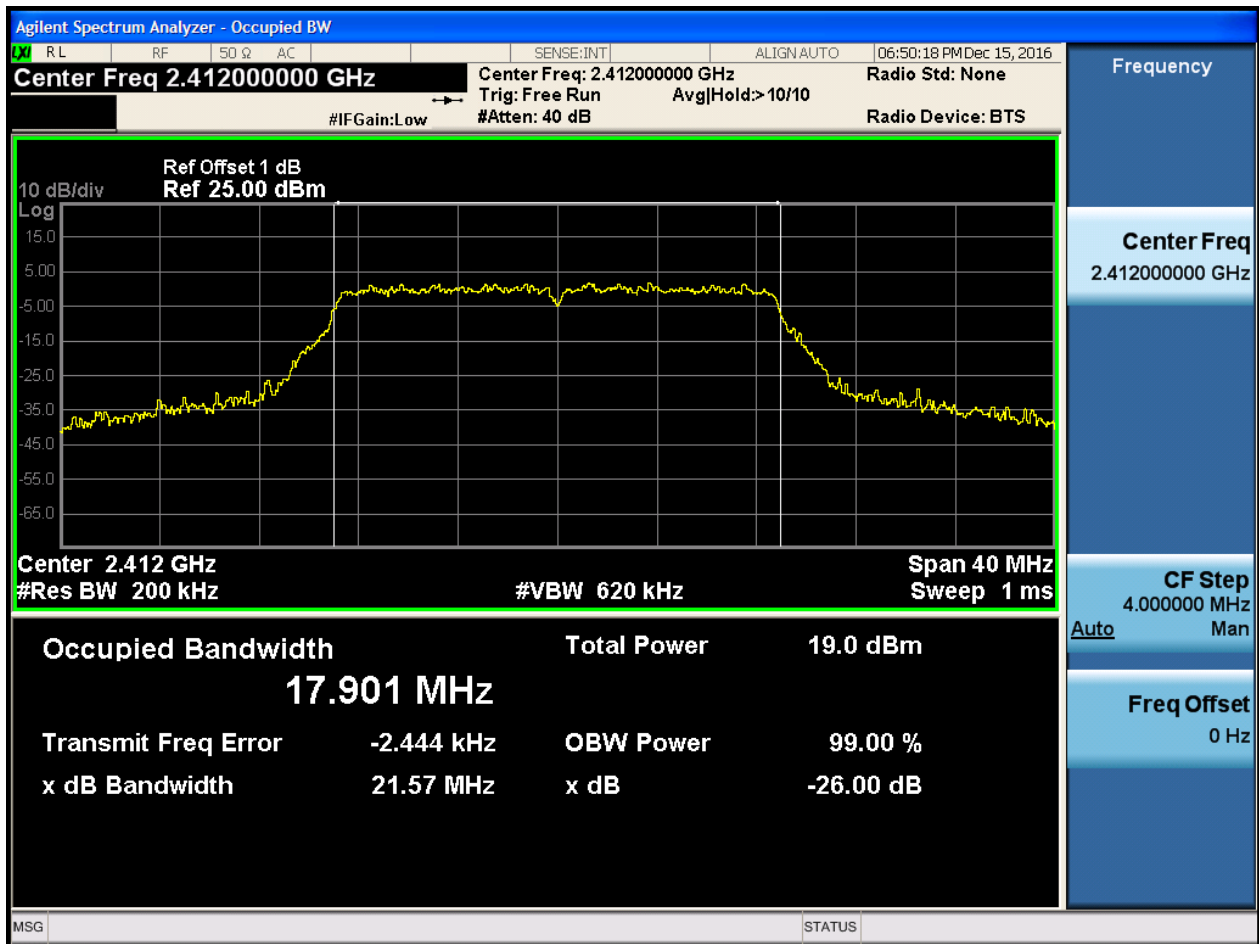


2.13 11N20_L@Ant 1



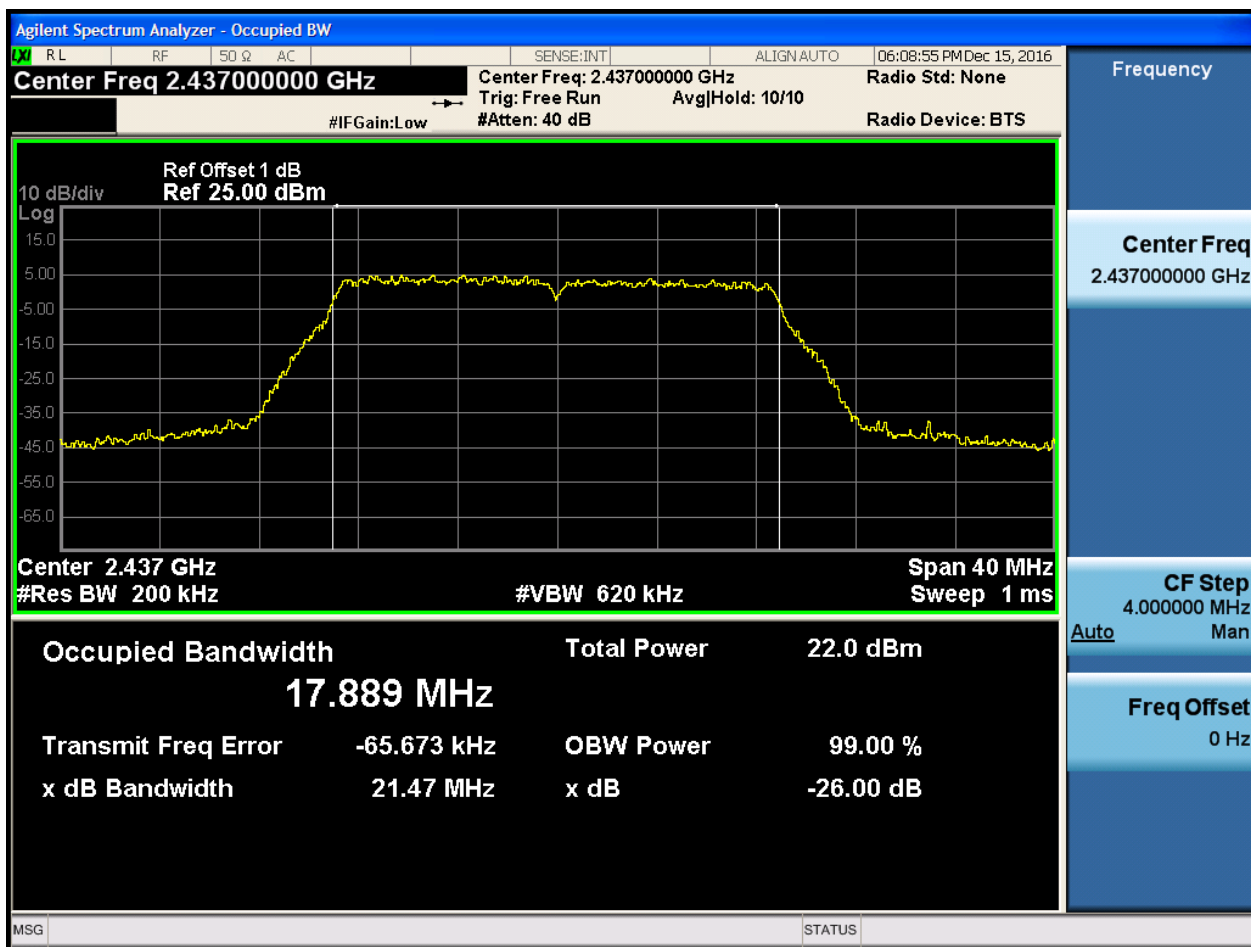


2.14 11N20_L@Ant 2



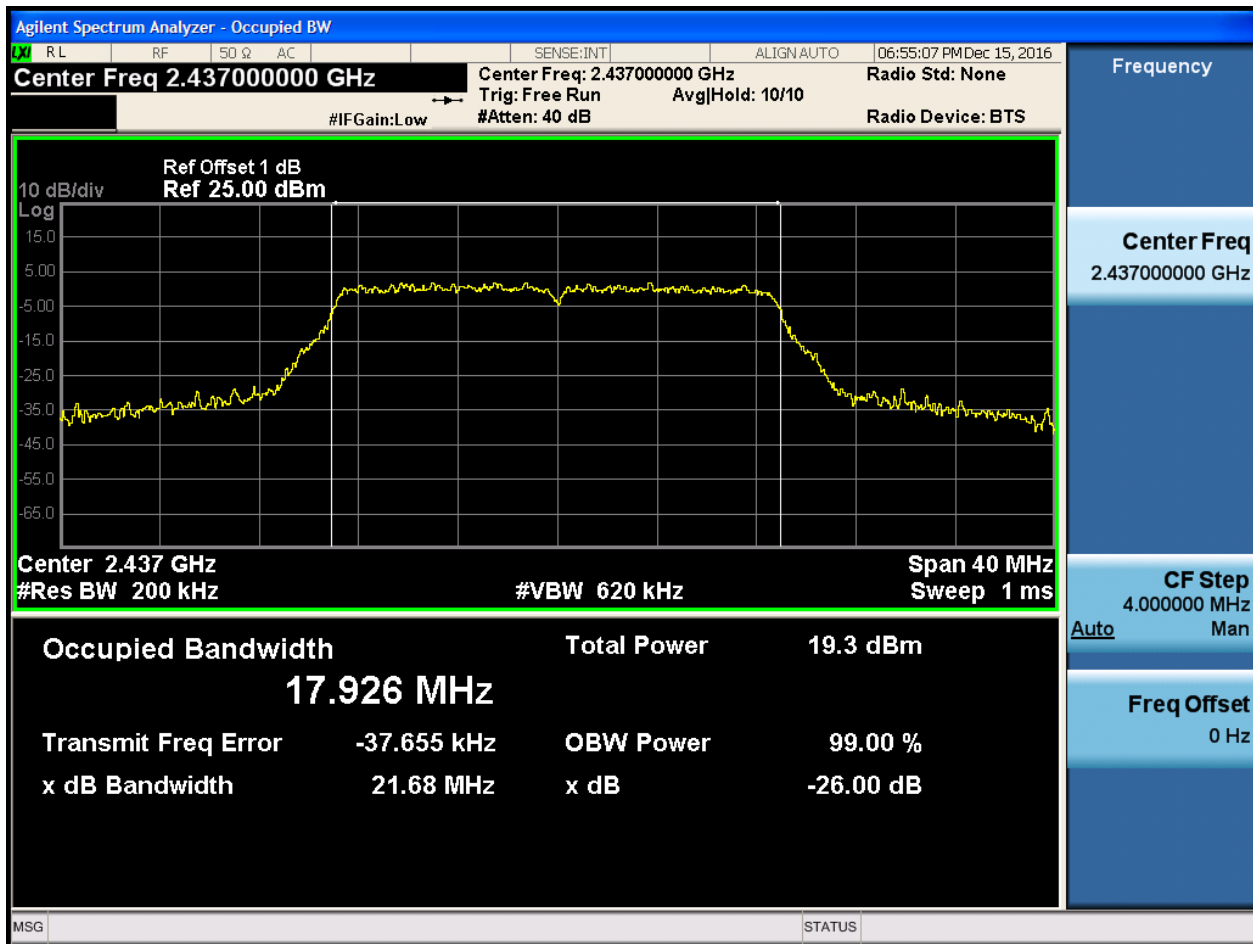


2.15 11N20_M@Ant 1



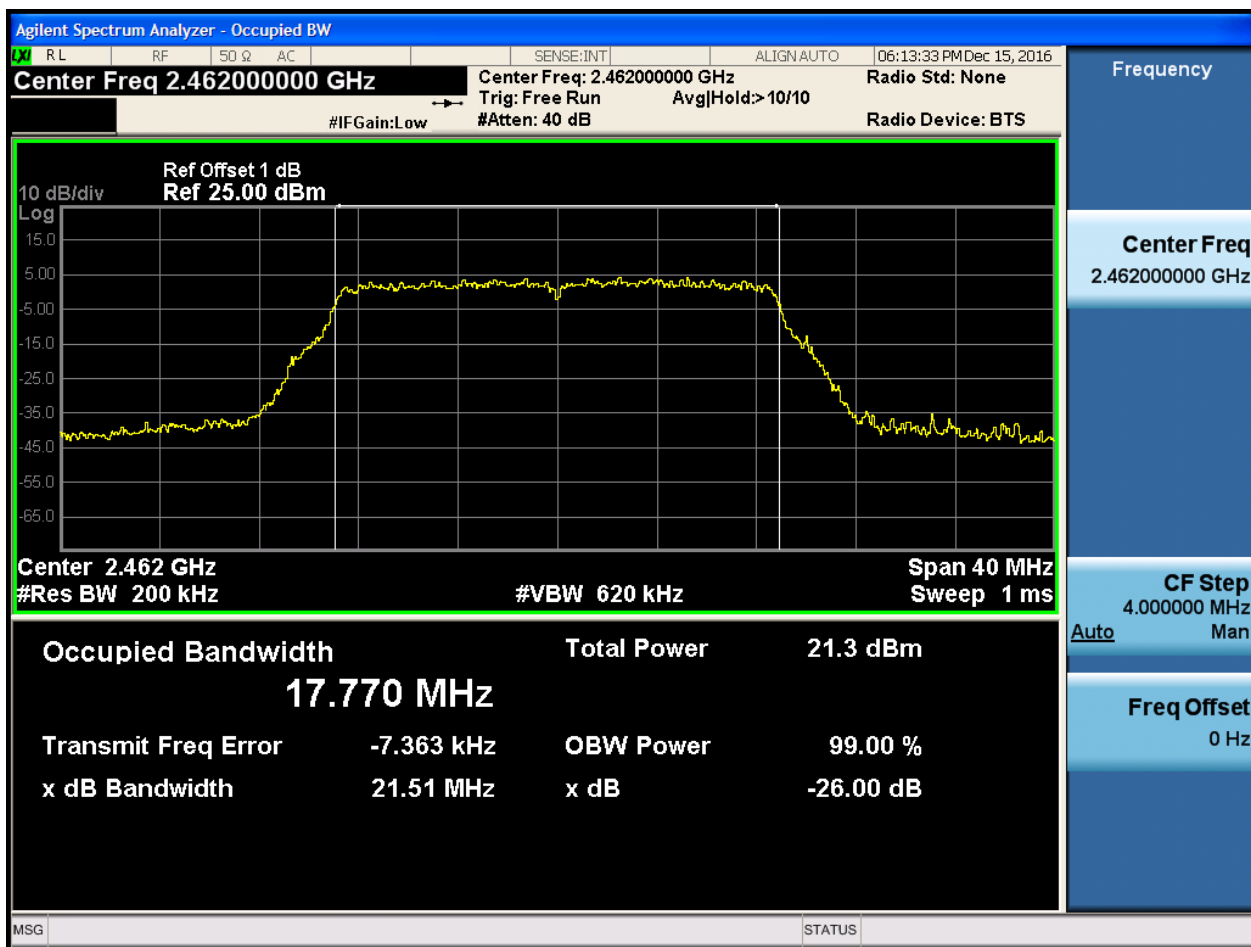


2.16 11N20_M@Ant 2



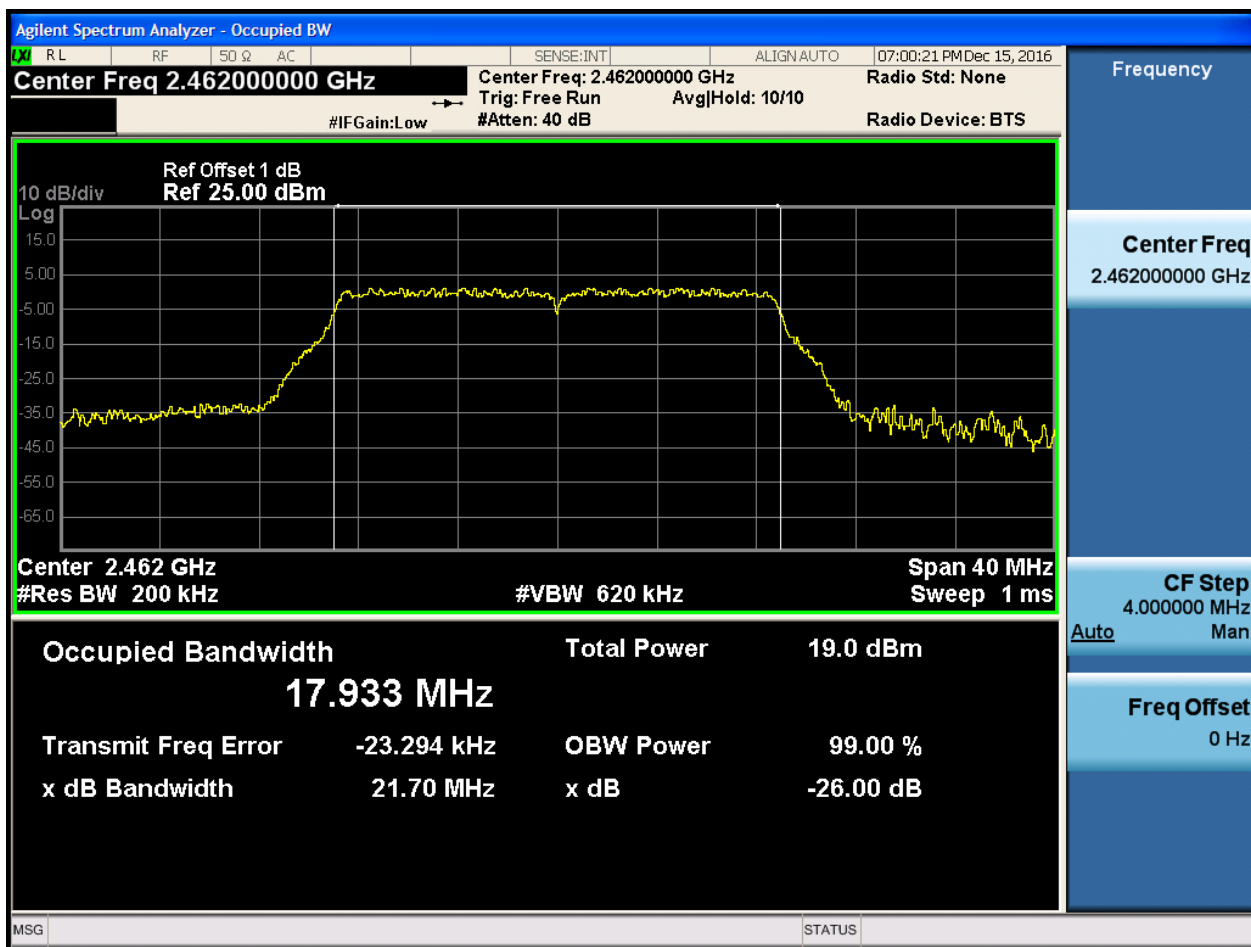


2.17 11N20_H@Ant 1



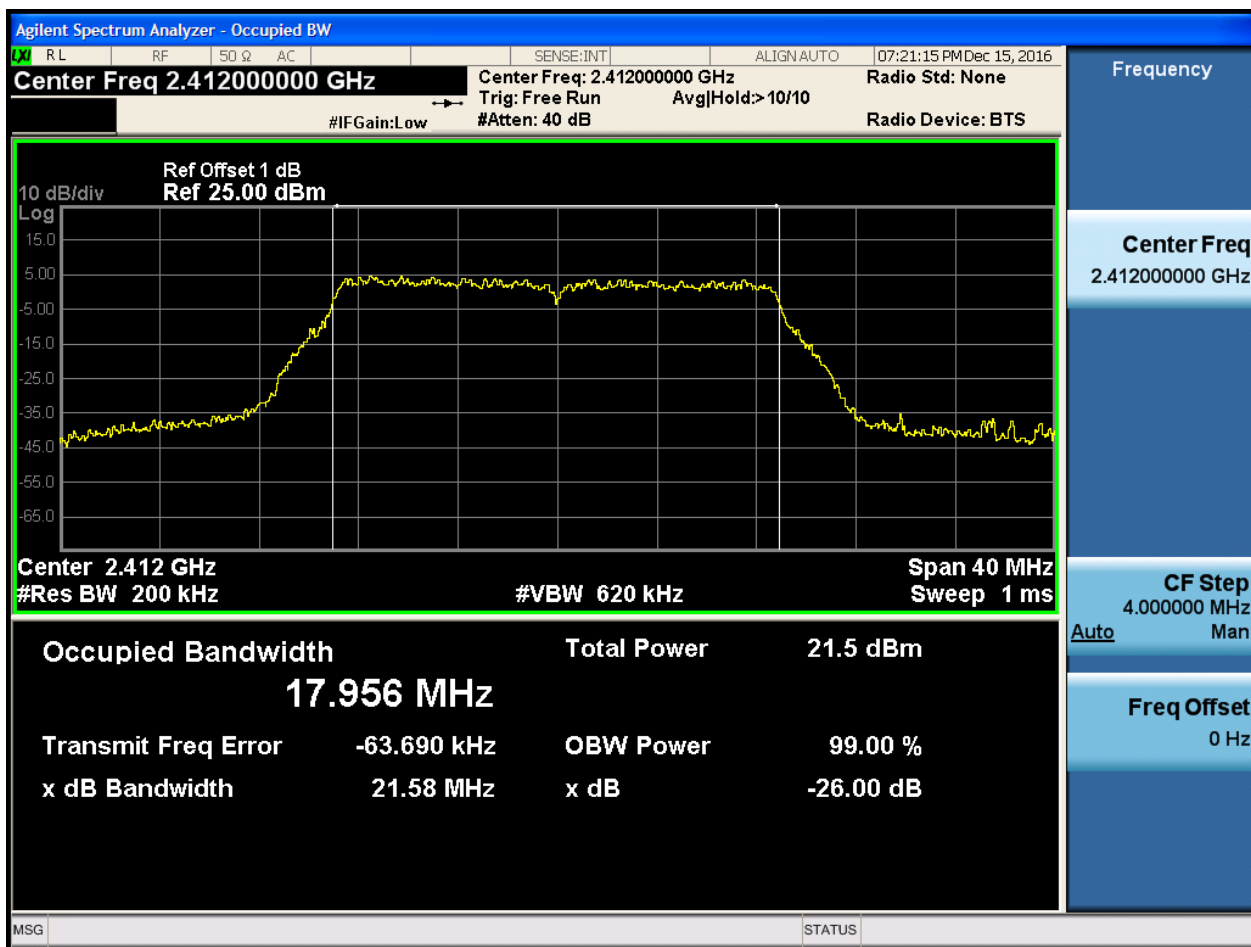


2.18 11N20_H@Ant 2



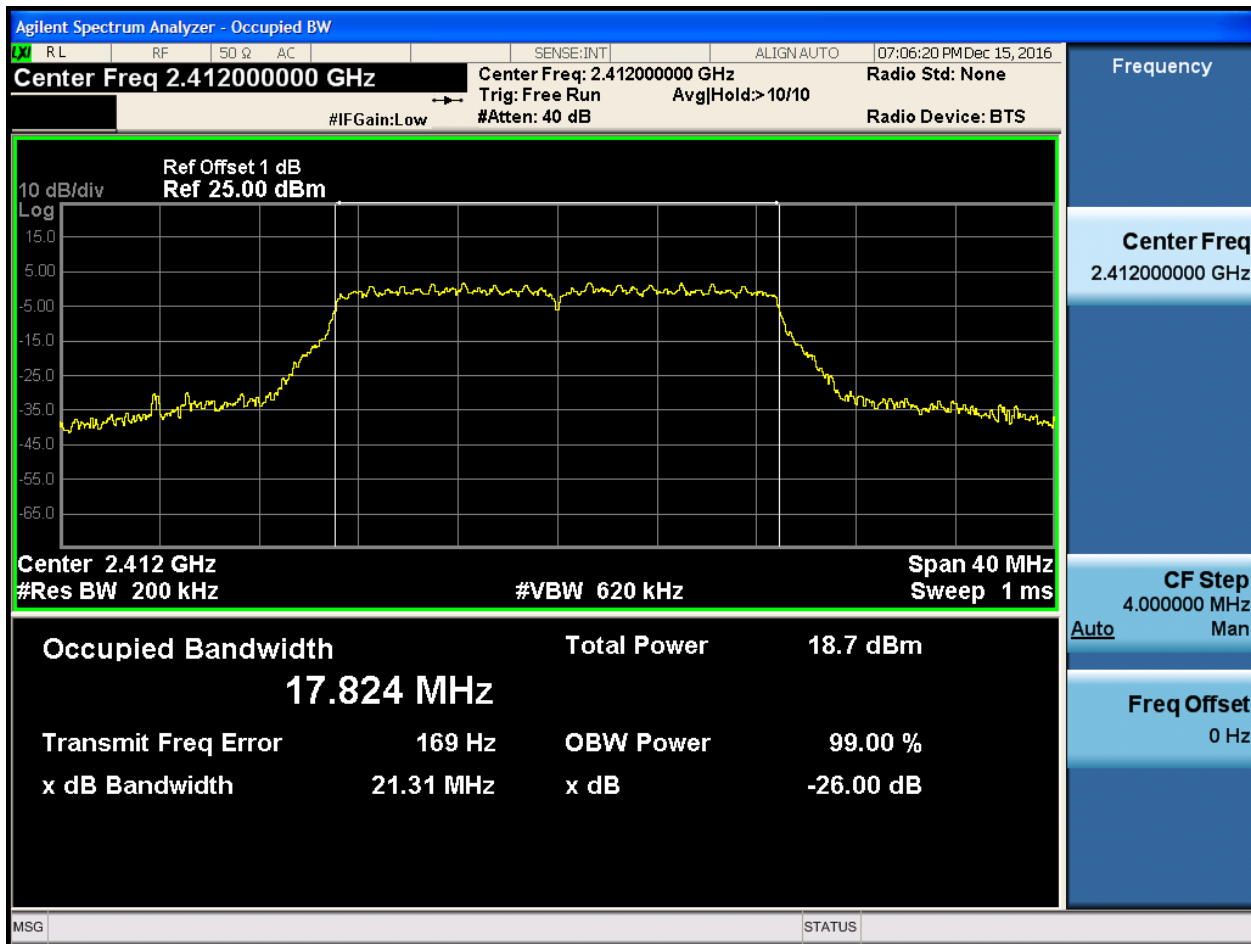


2.19 11N20m_L@Ant 1



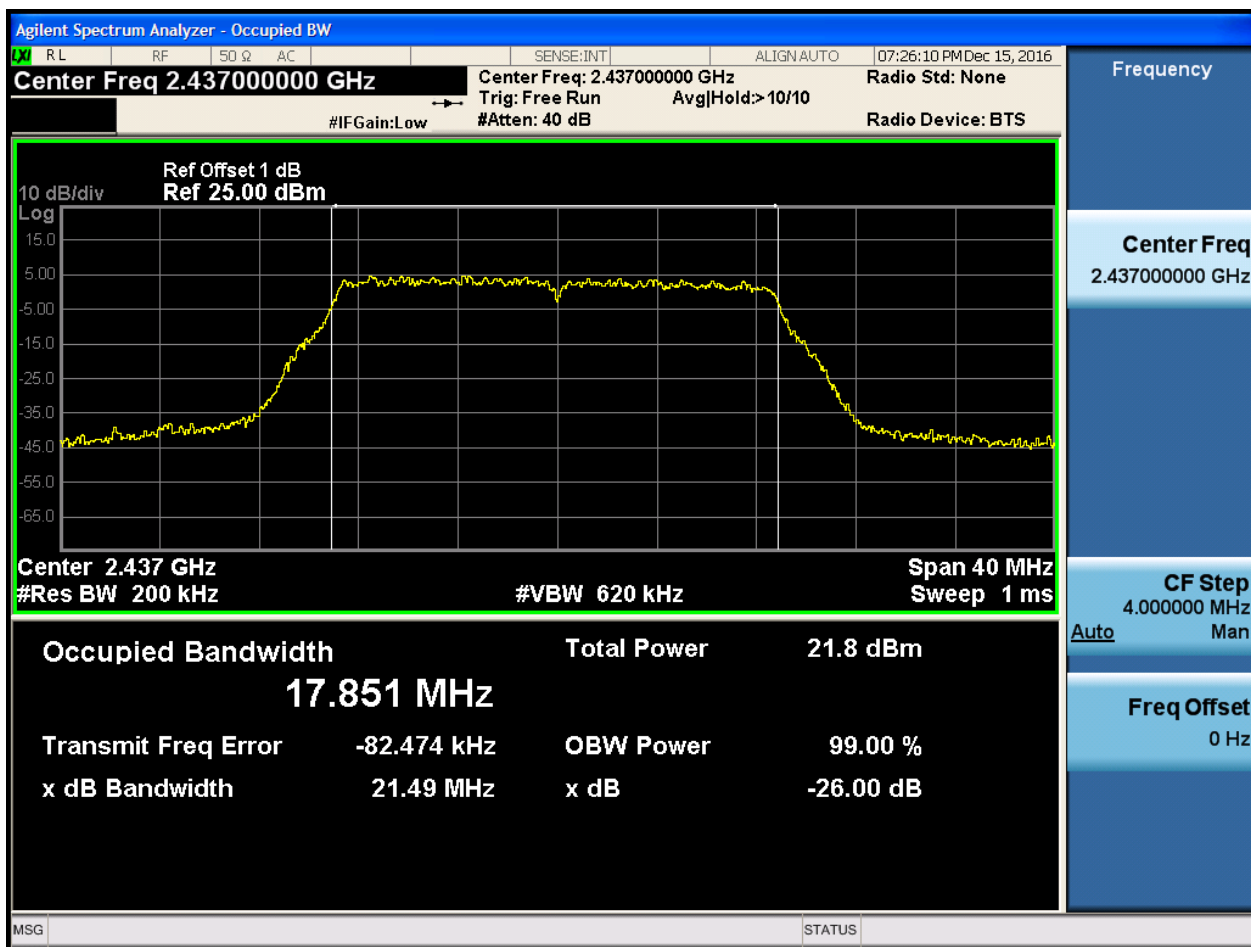


2.20 11N20m_L@Ant 2



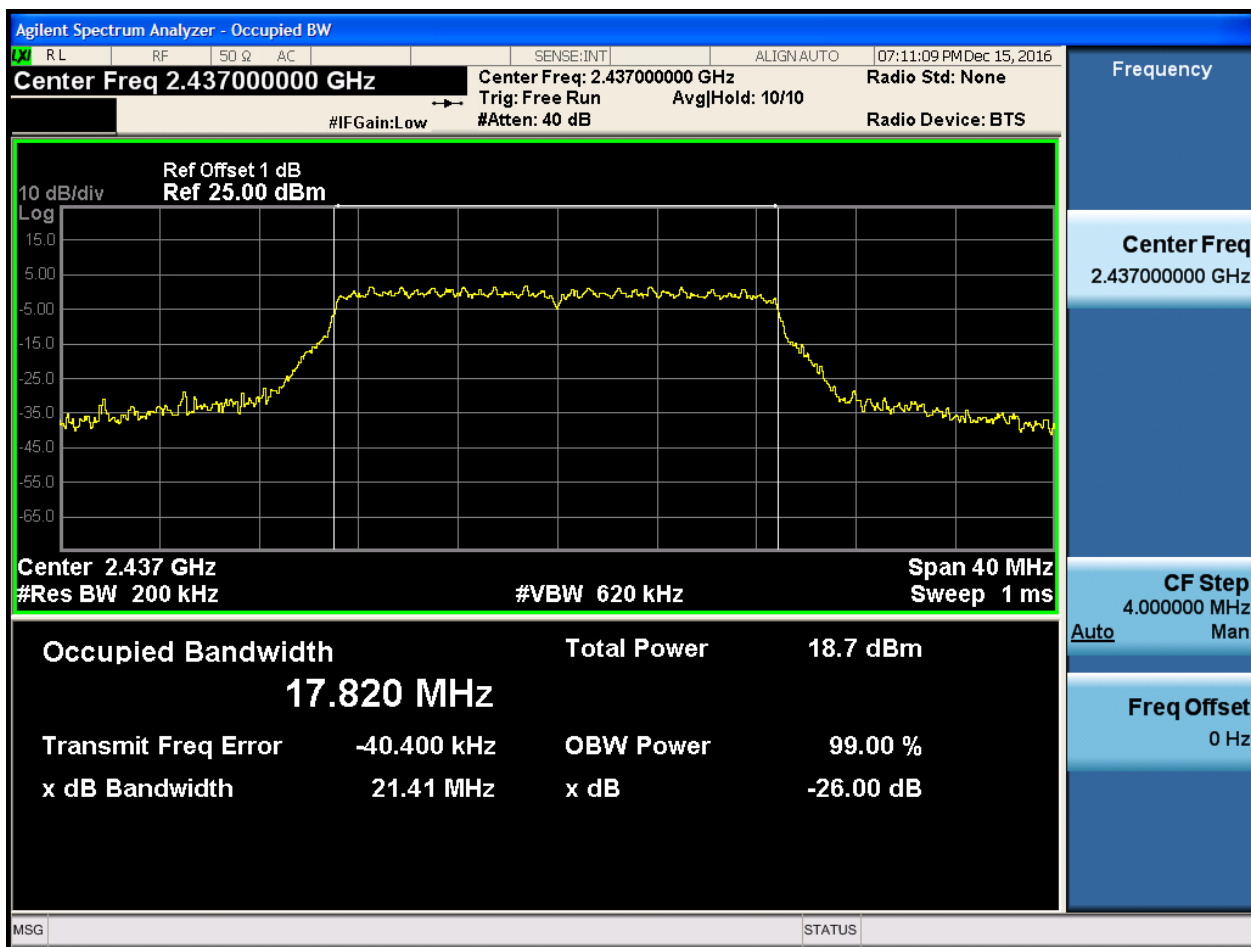


2.21 11N20m_M@Ant 1



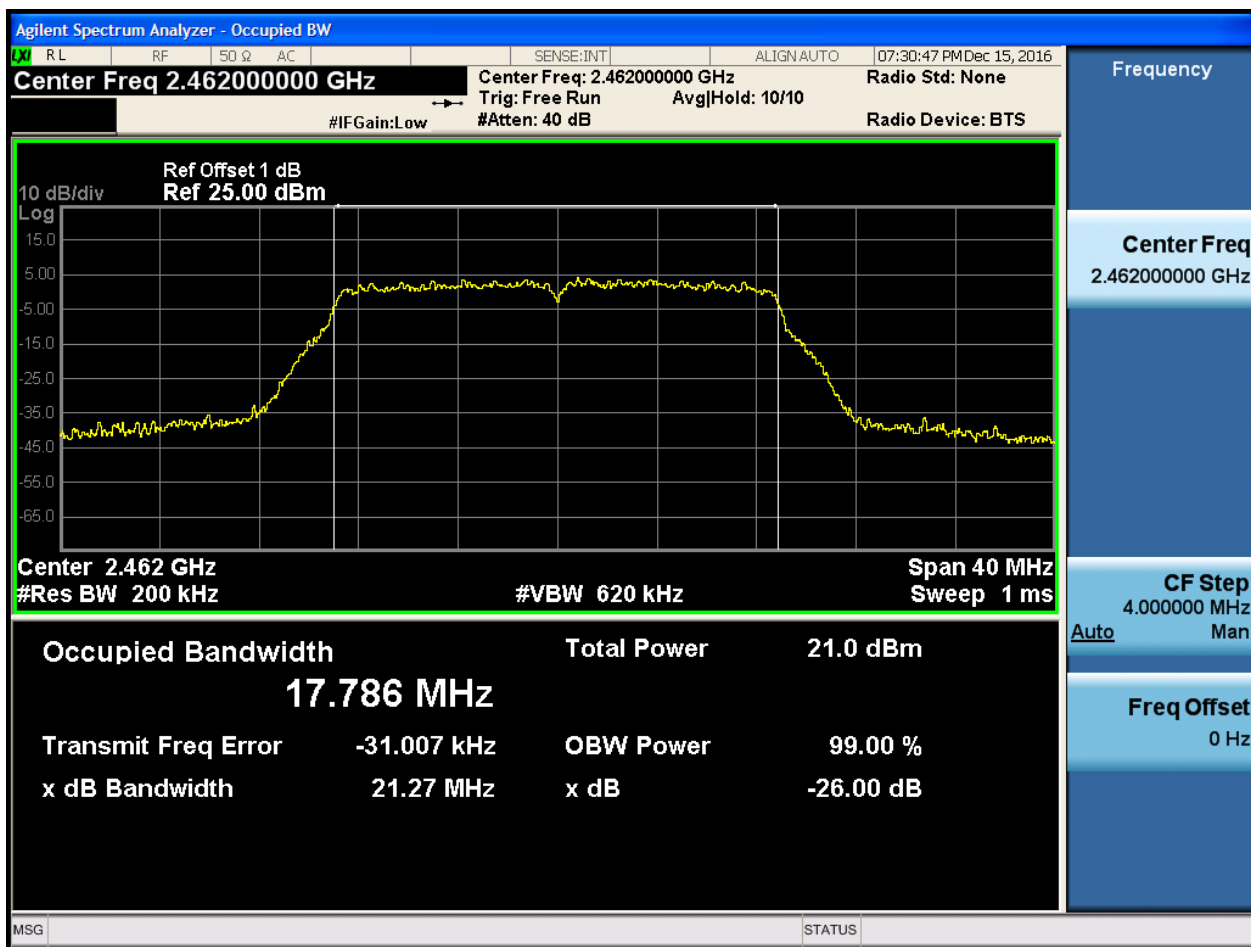


2.22 11N20m_M@Ant 2



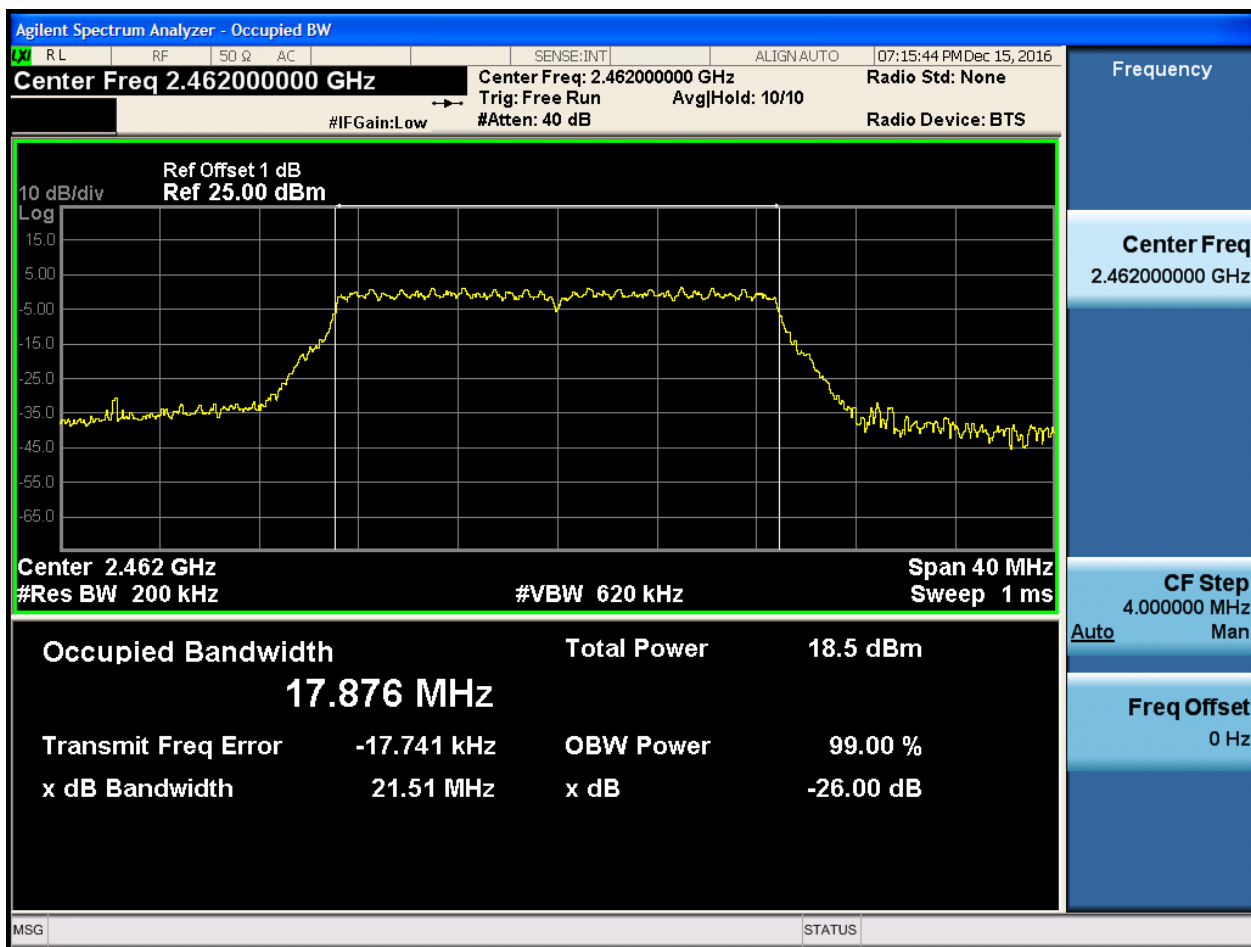


2.23 11N20m_H@Ant 1



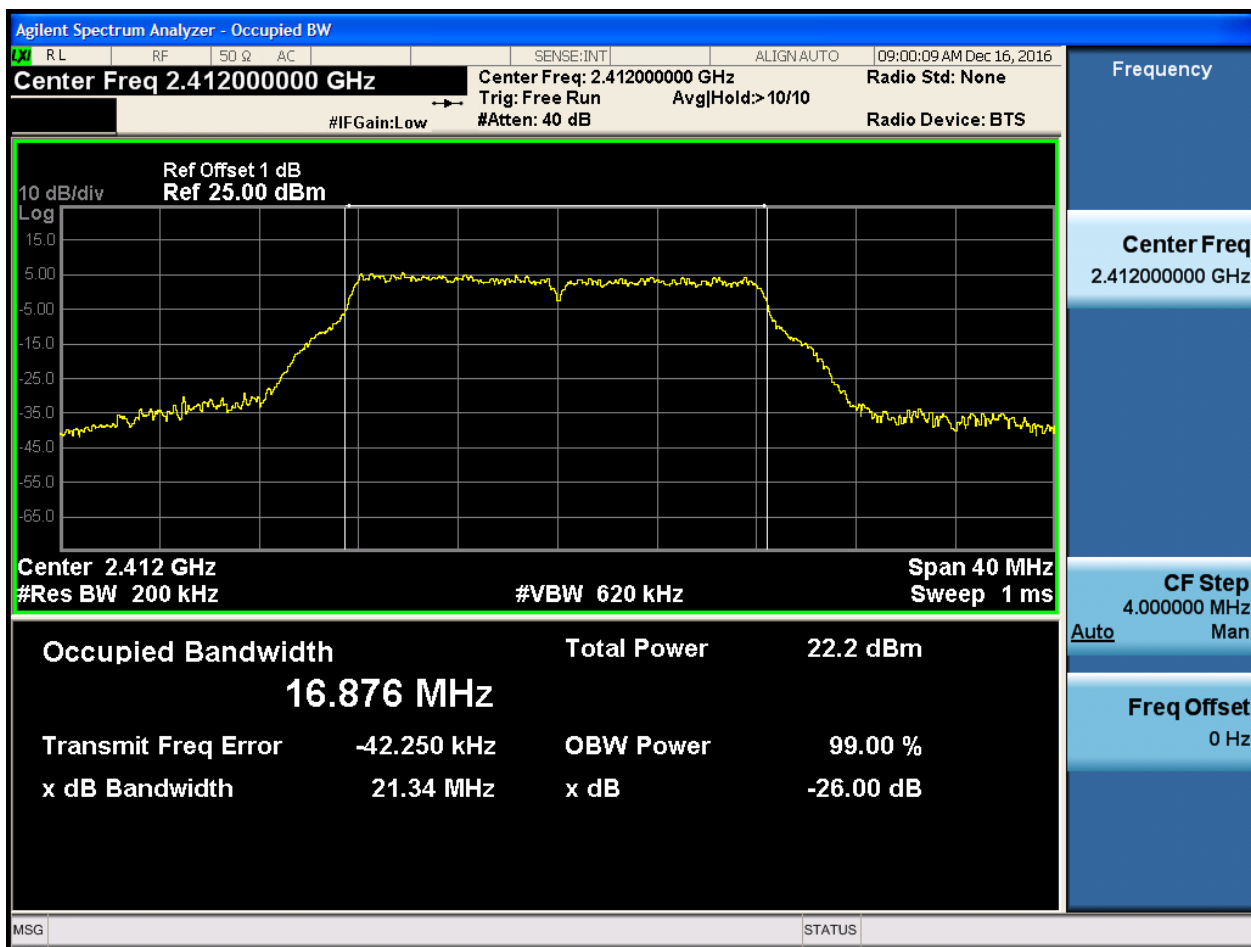


2.24 11N20m_H@Ant 2



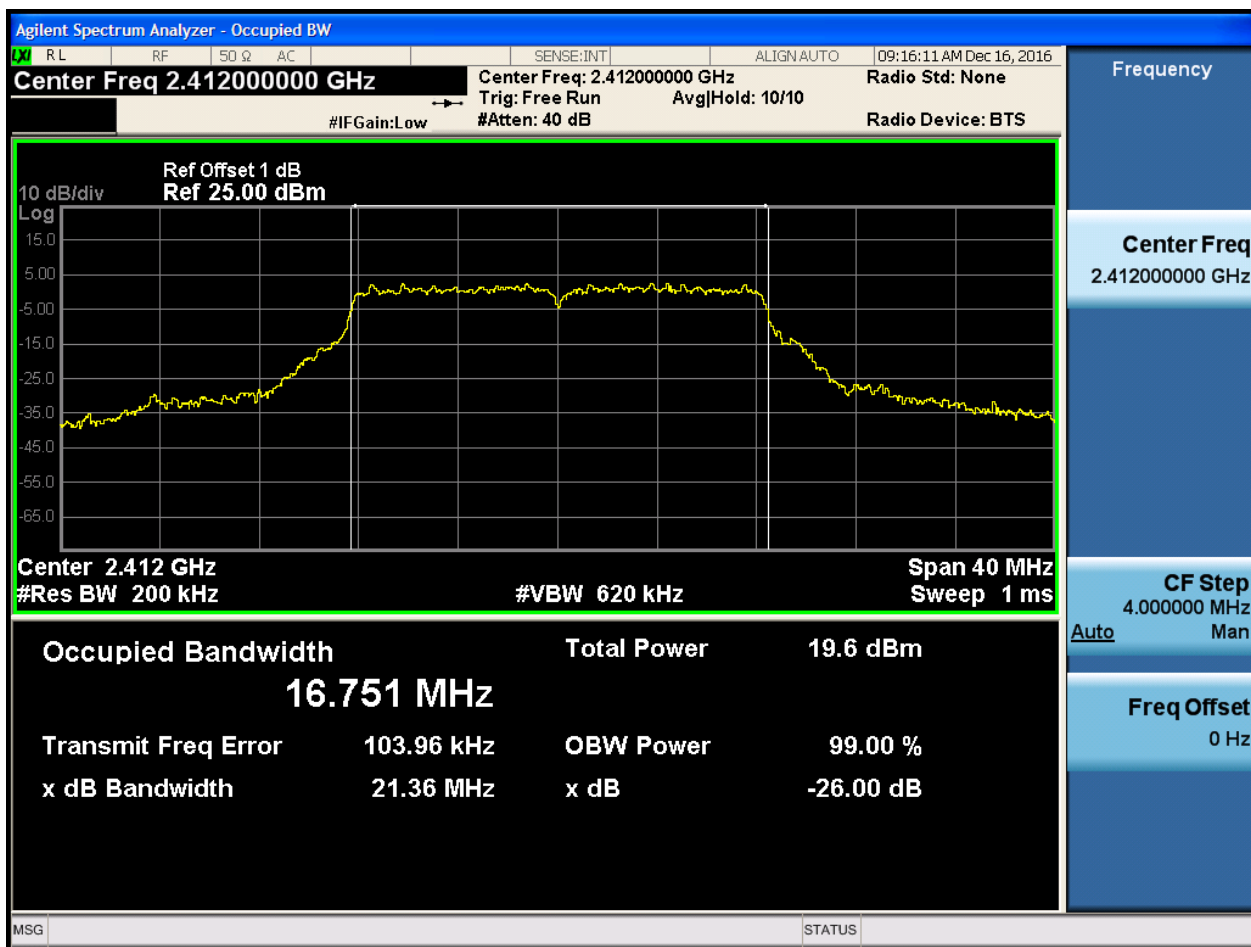


2.25 11G CDD_L@Ant 1



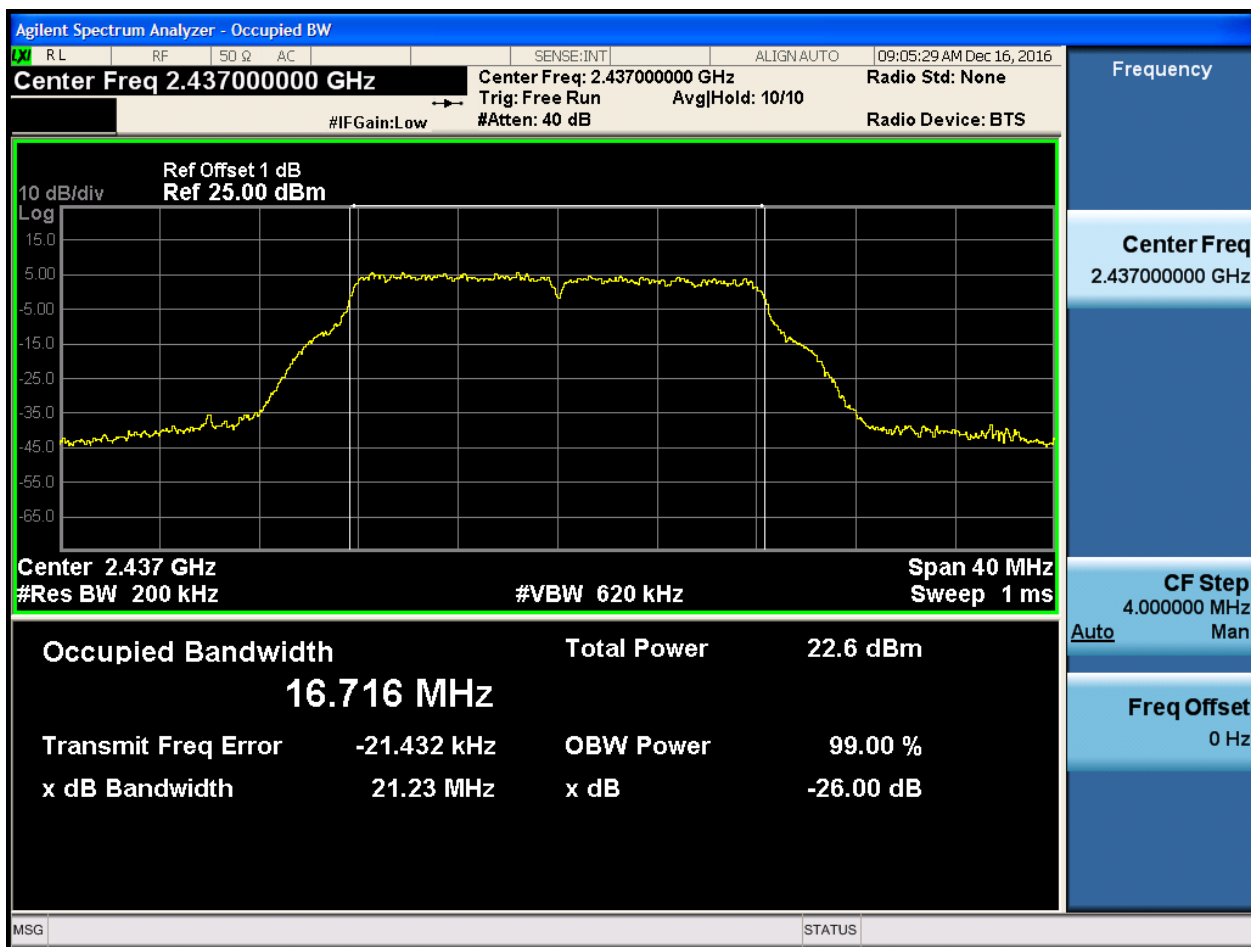


2.26 11G CDD_L@Ant 2



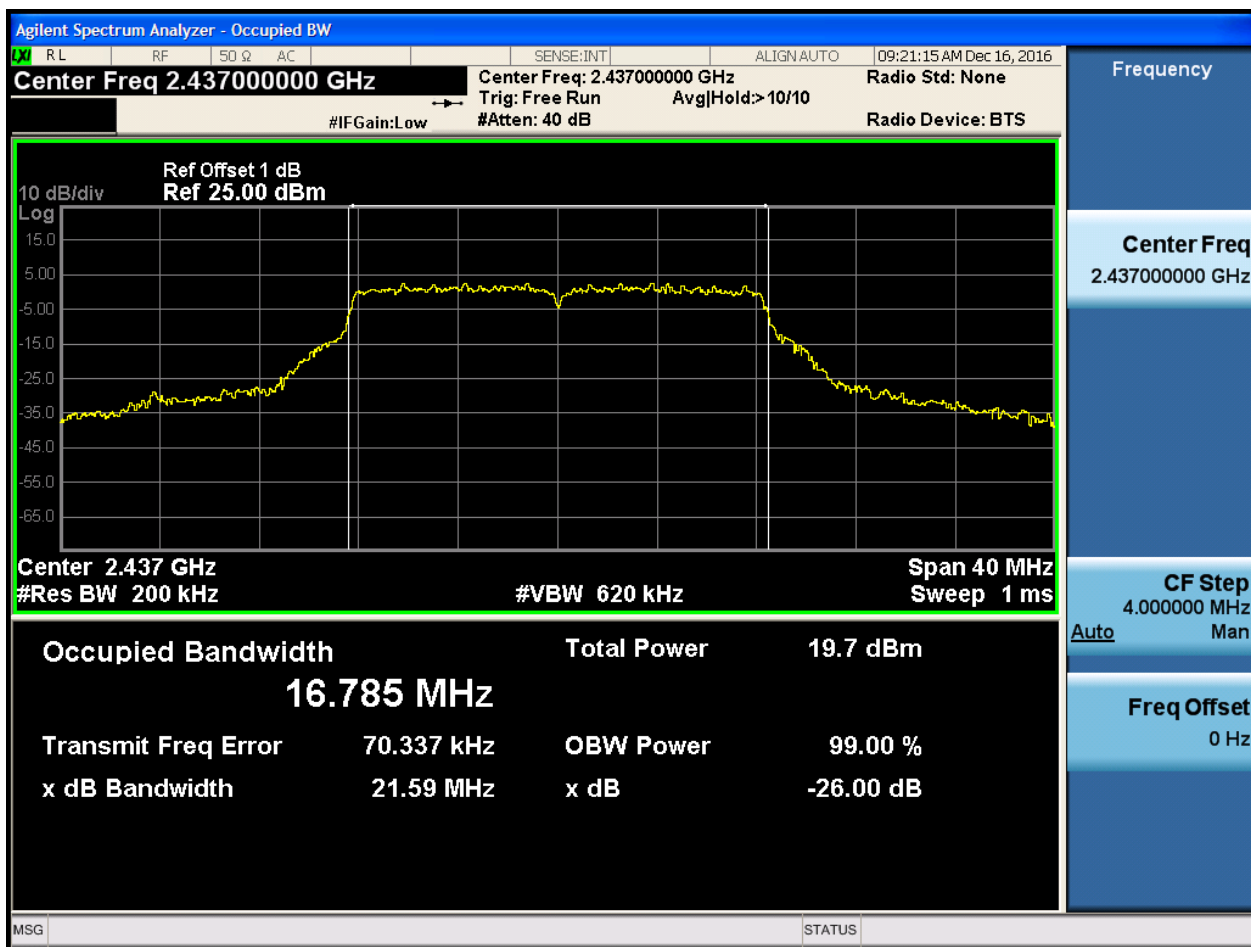


2.27 11G CDD_M@Ant 1



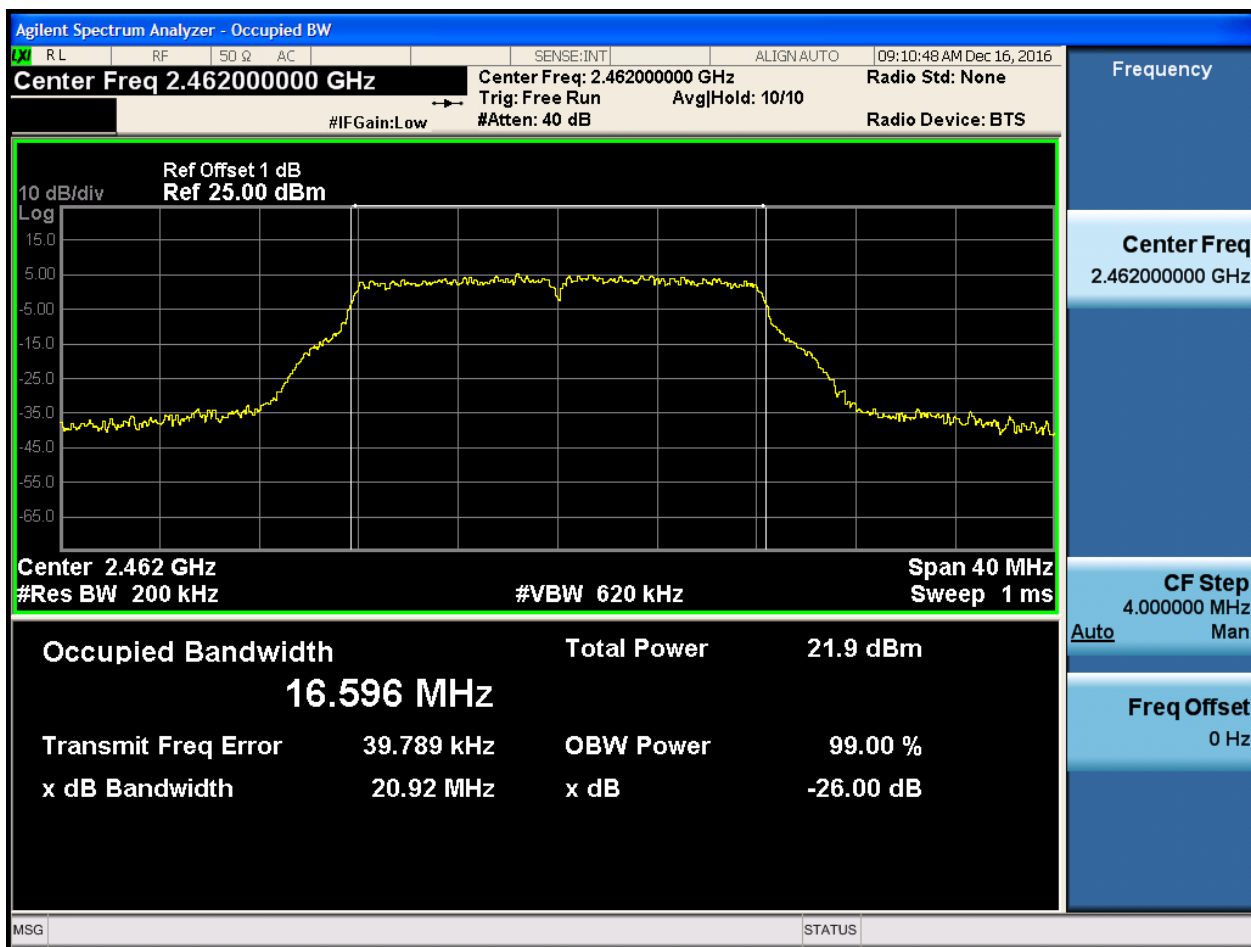


2.28 11G CDD_M@Ant 2



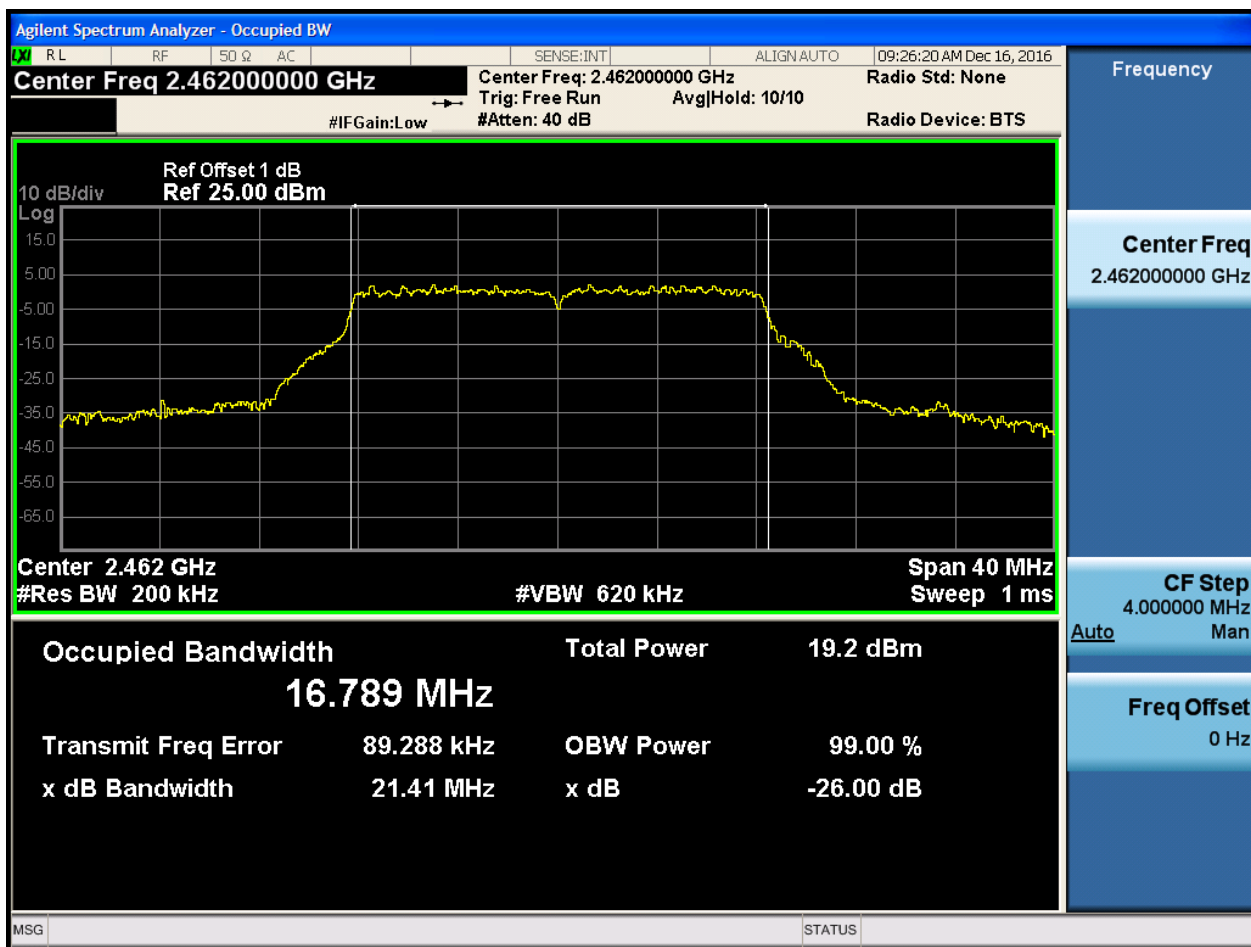


2.29 11G CDD_H@Ant 1





2.30 11G CDD_H@Ant 2



Appendix C: Duty Cycle

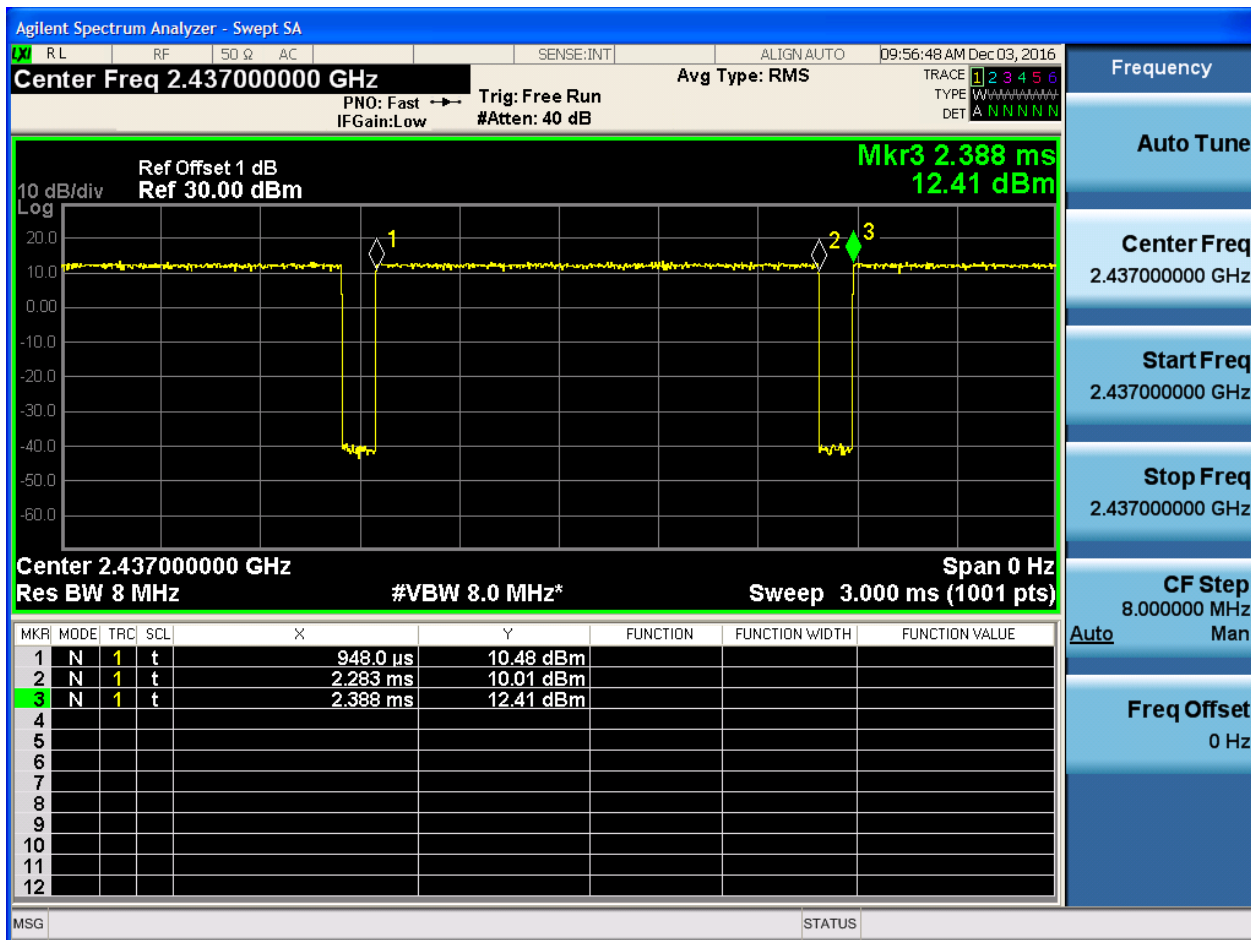
Part I - Test Results

Test Mode	TX Freq. [MHz]	Ant	Duty cycle [%]
11B	CH1,CH6,CH11	Ant 1	98.8
11B	CH1,CH6,CH11	Ant 2	98.7
11G	CH1,CH6,CH11	Ant 1	93.1
11G	CH1,CH6,CH11	Ant 2	93.1
11N20SISO	CH1,CH6,CH11	Ant 1	92.7
11N20SISO	CH1,CH6,CH11	Ant 2	92.7
11N20MIMO	CH1,CH6,CH11	Ant 1	86.9
11N20MIMO	CH1,CH6,CH11	Ant 2	86.9
11G CDD	CH1,CH6,CH11	Ant 1	92.9
11G CDD	CH1,CH6,CH11	Ant 2	93.0



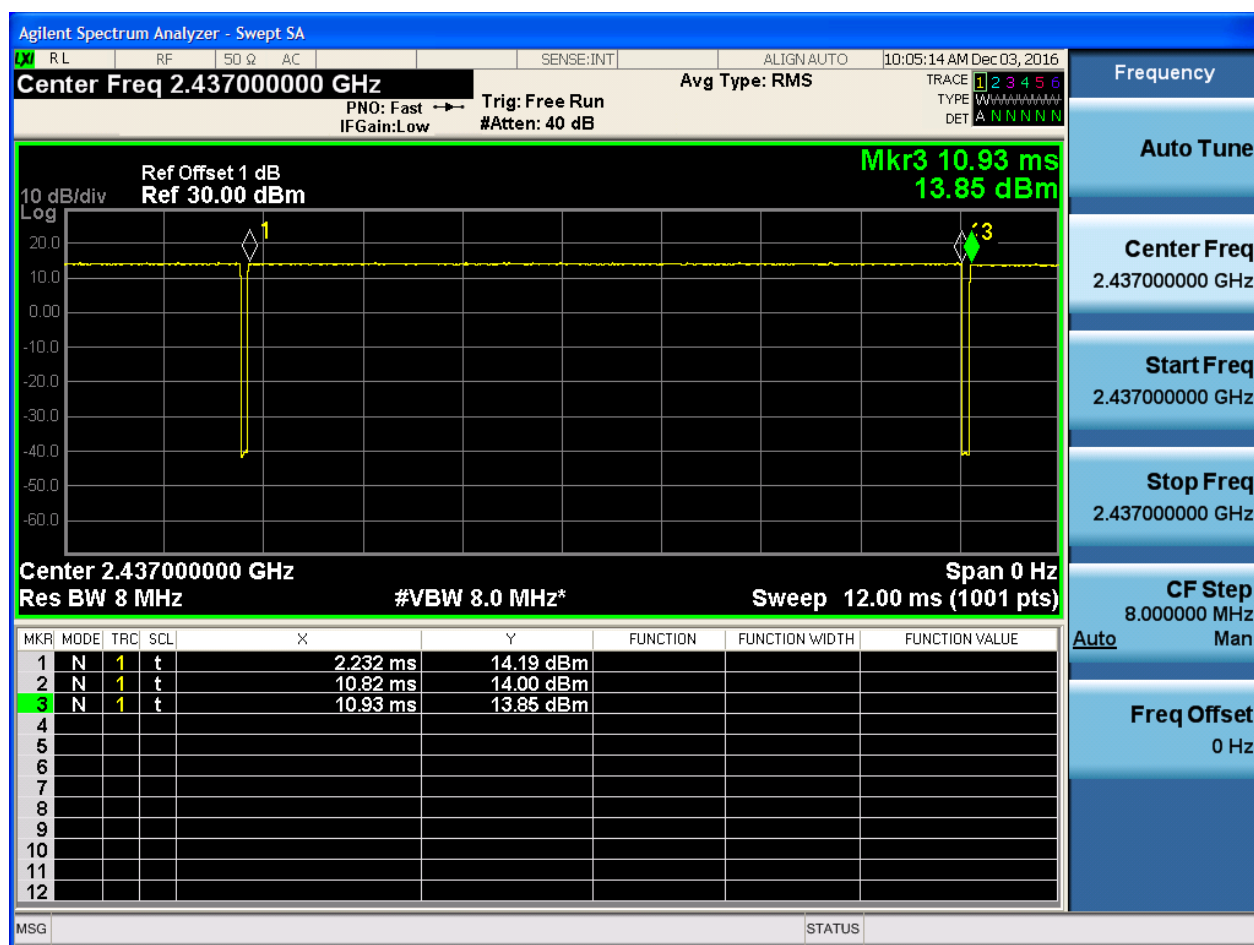
Part II - Test Plots

11B_ANT1



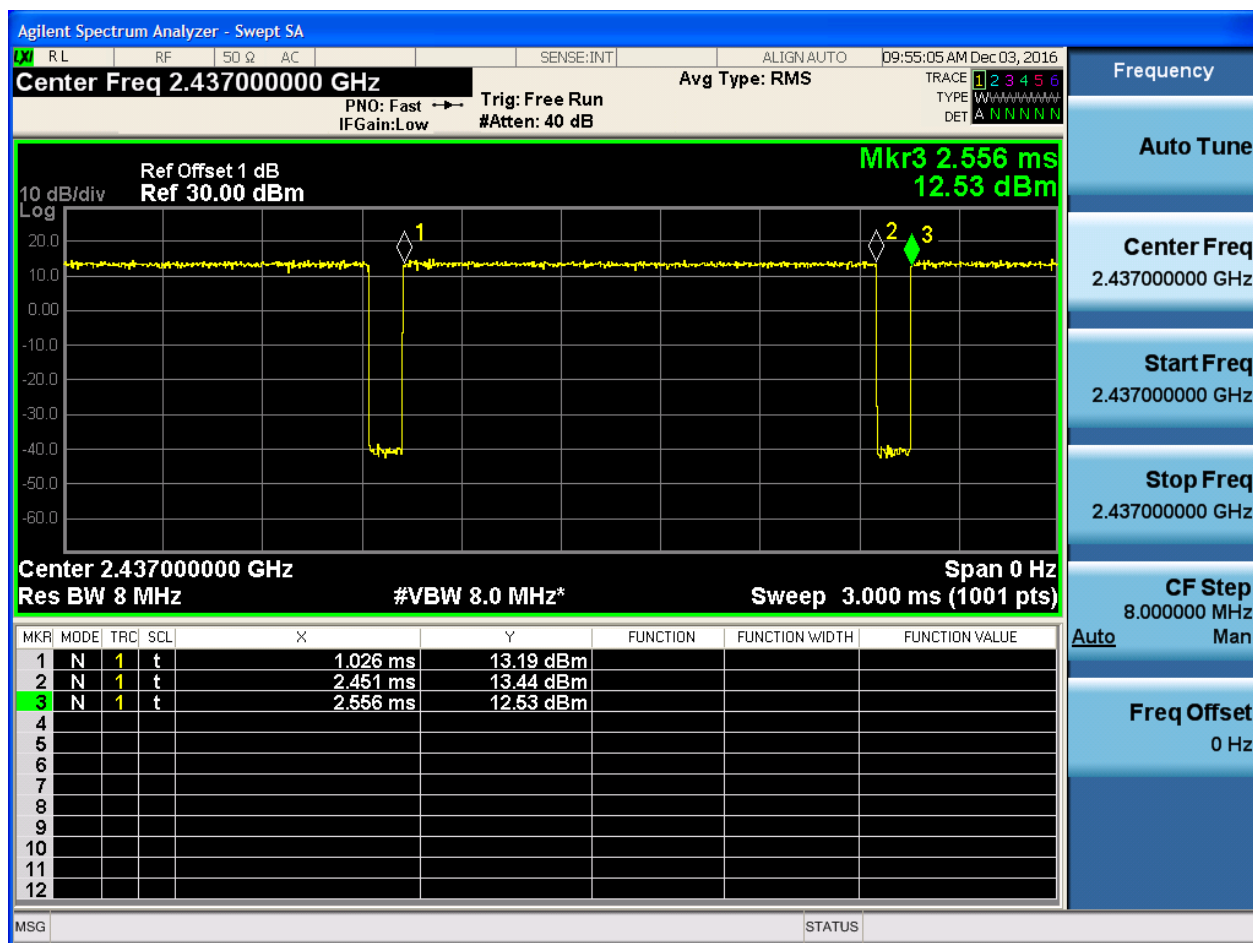


11B_ANT2



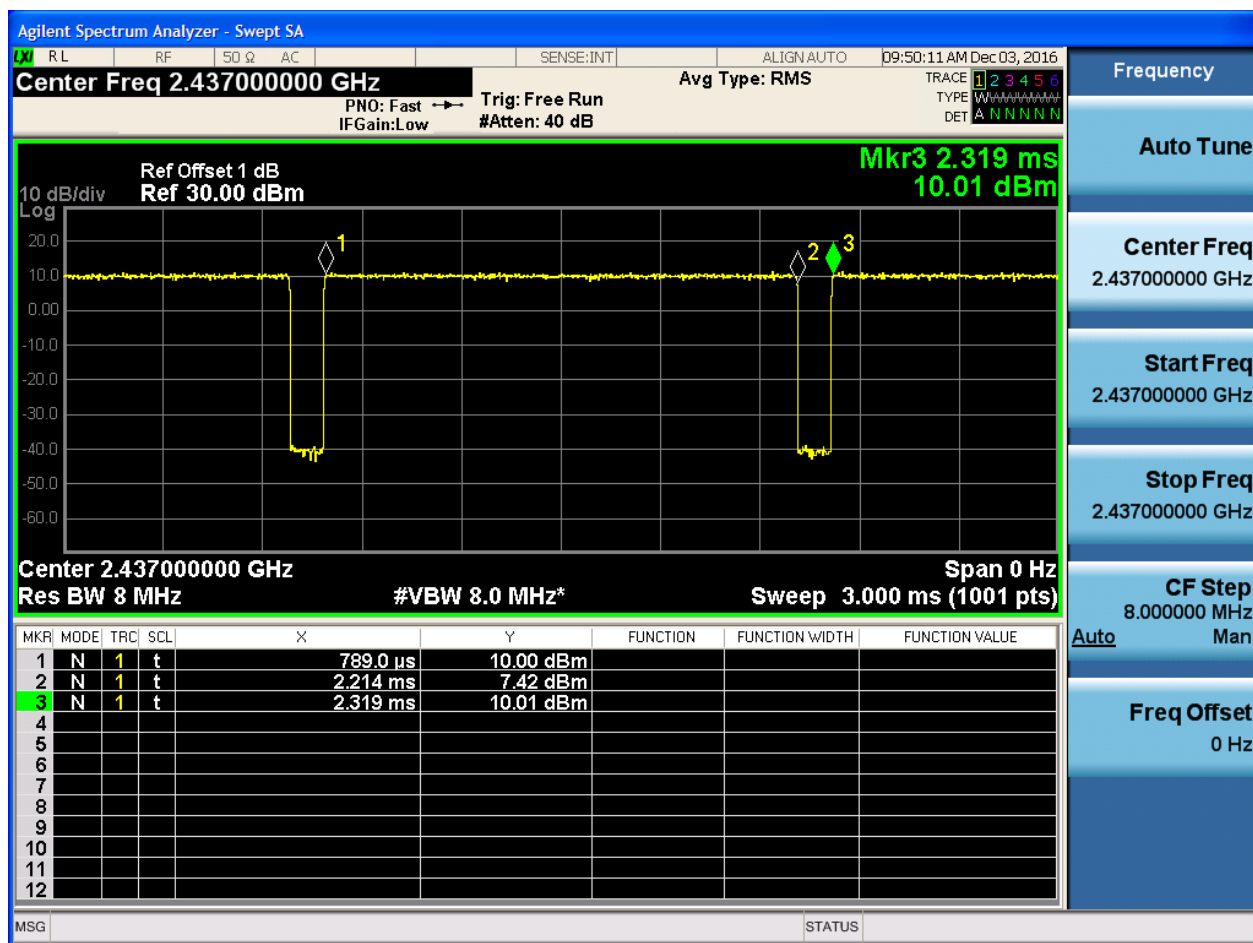


11G_ANT1



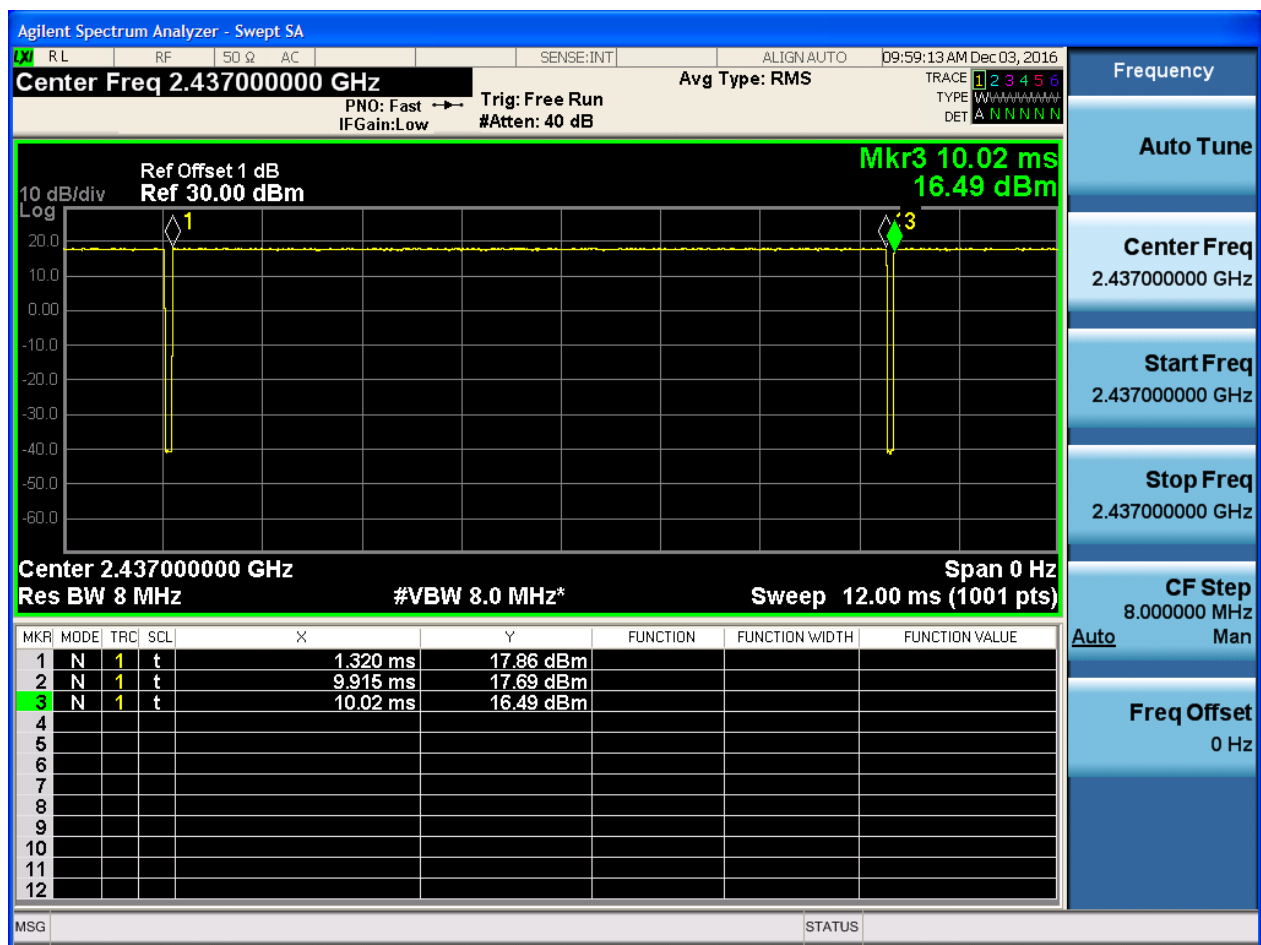


11G_ANT2



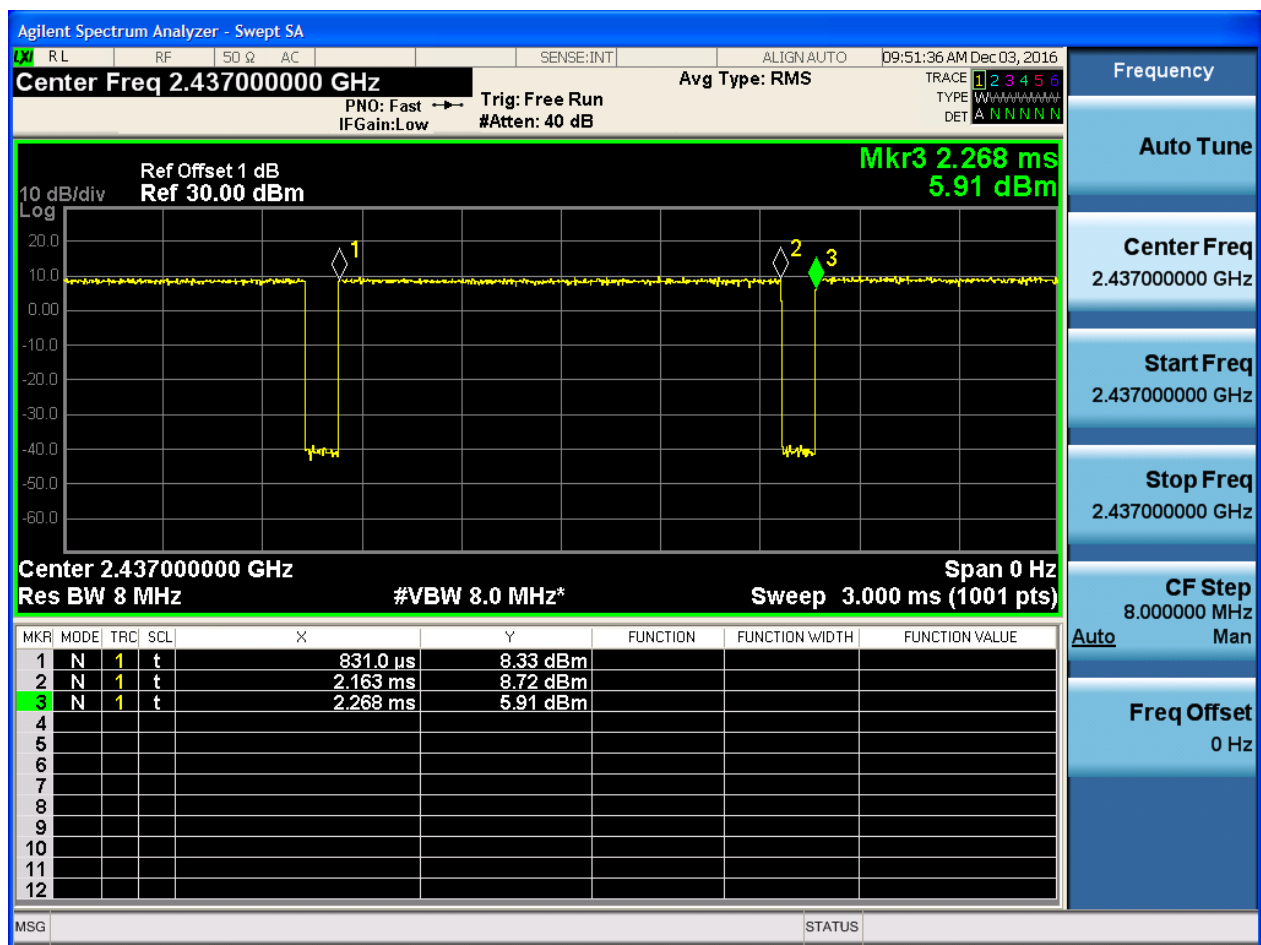


11N20SISO_ANT1



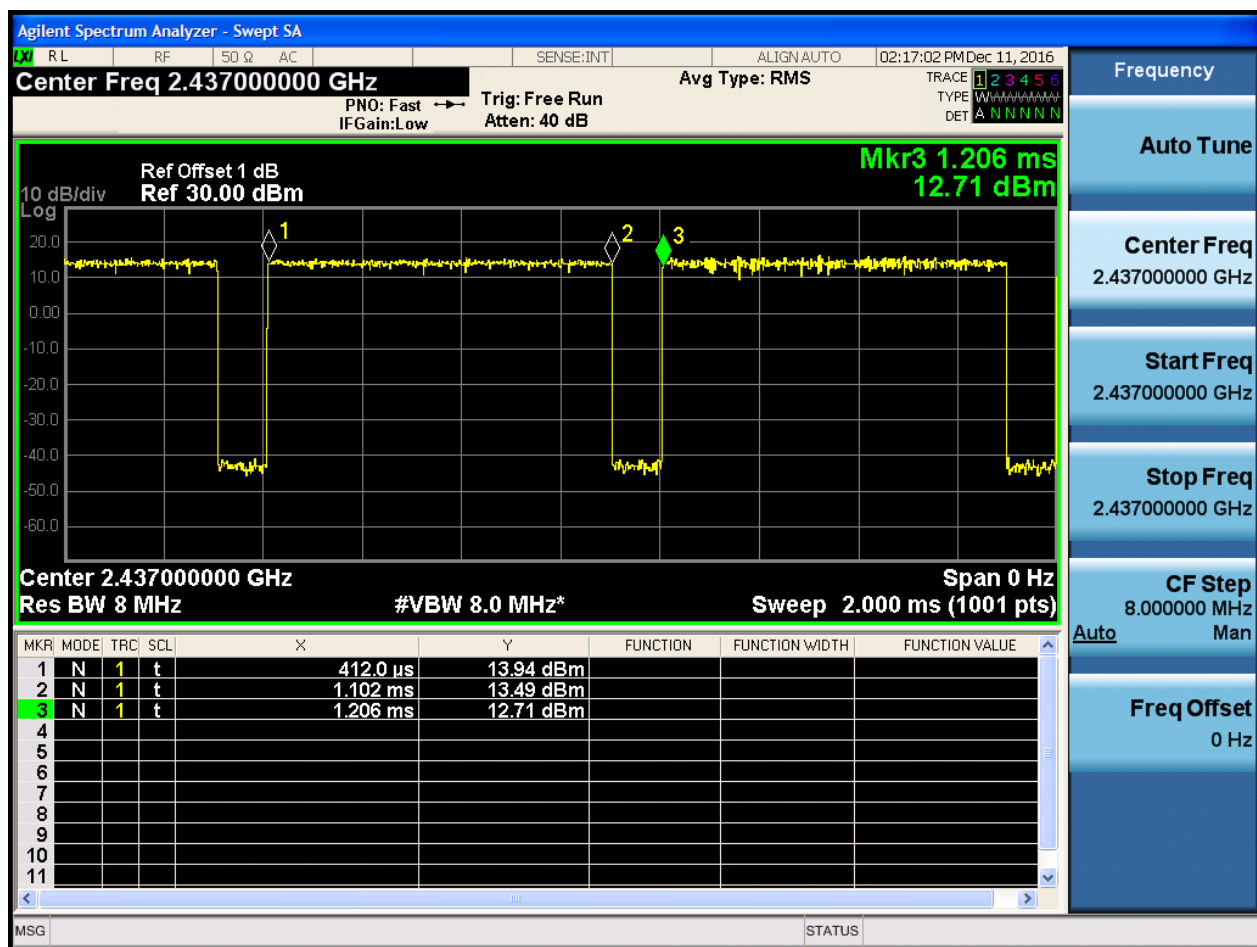


11N20SISO_ANT2



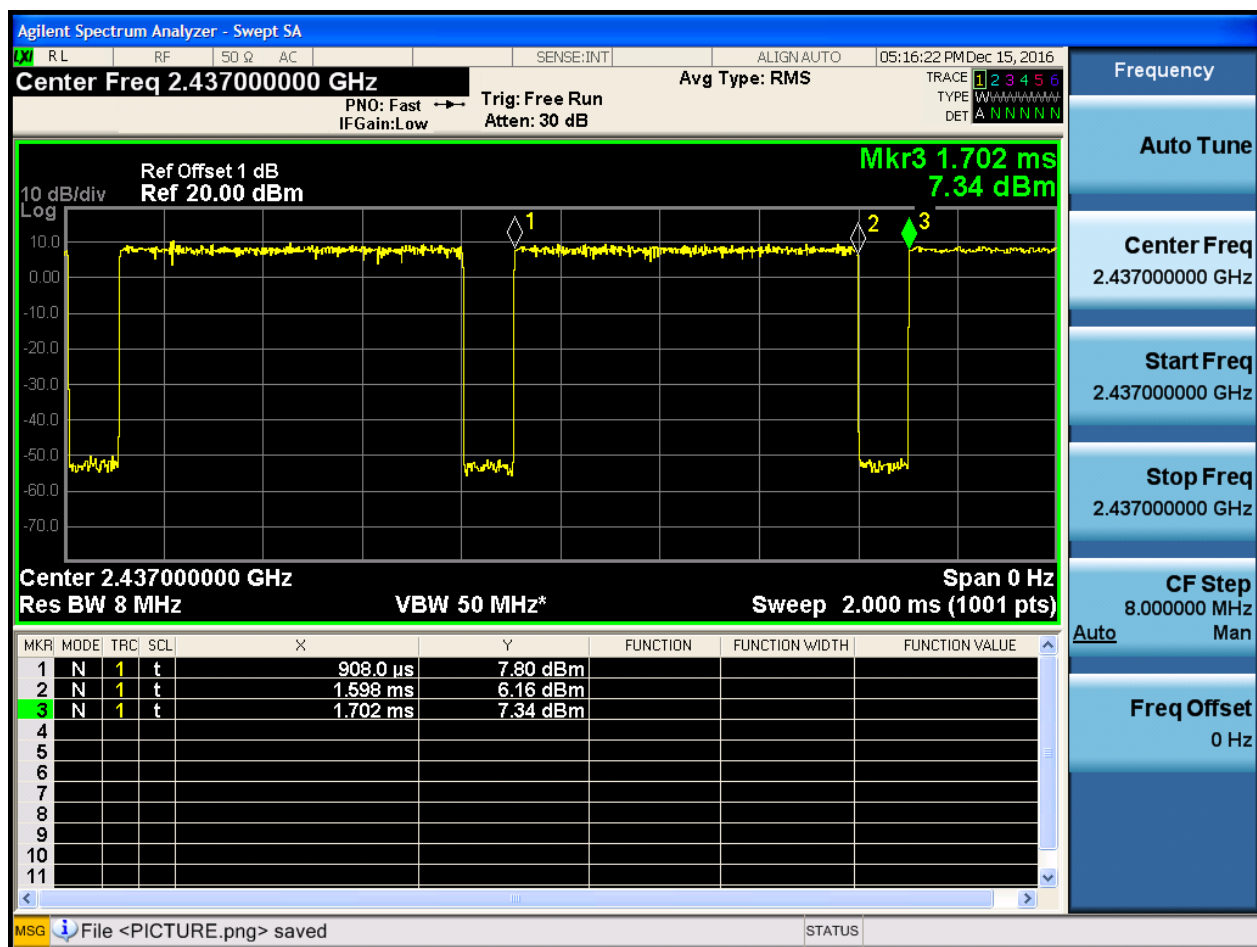


11N20MIMO_ANT1



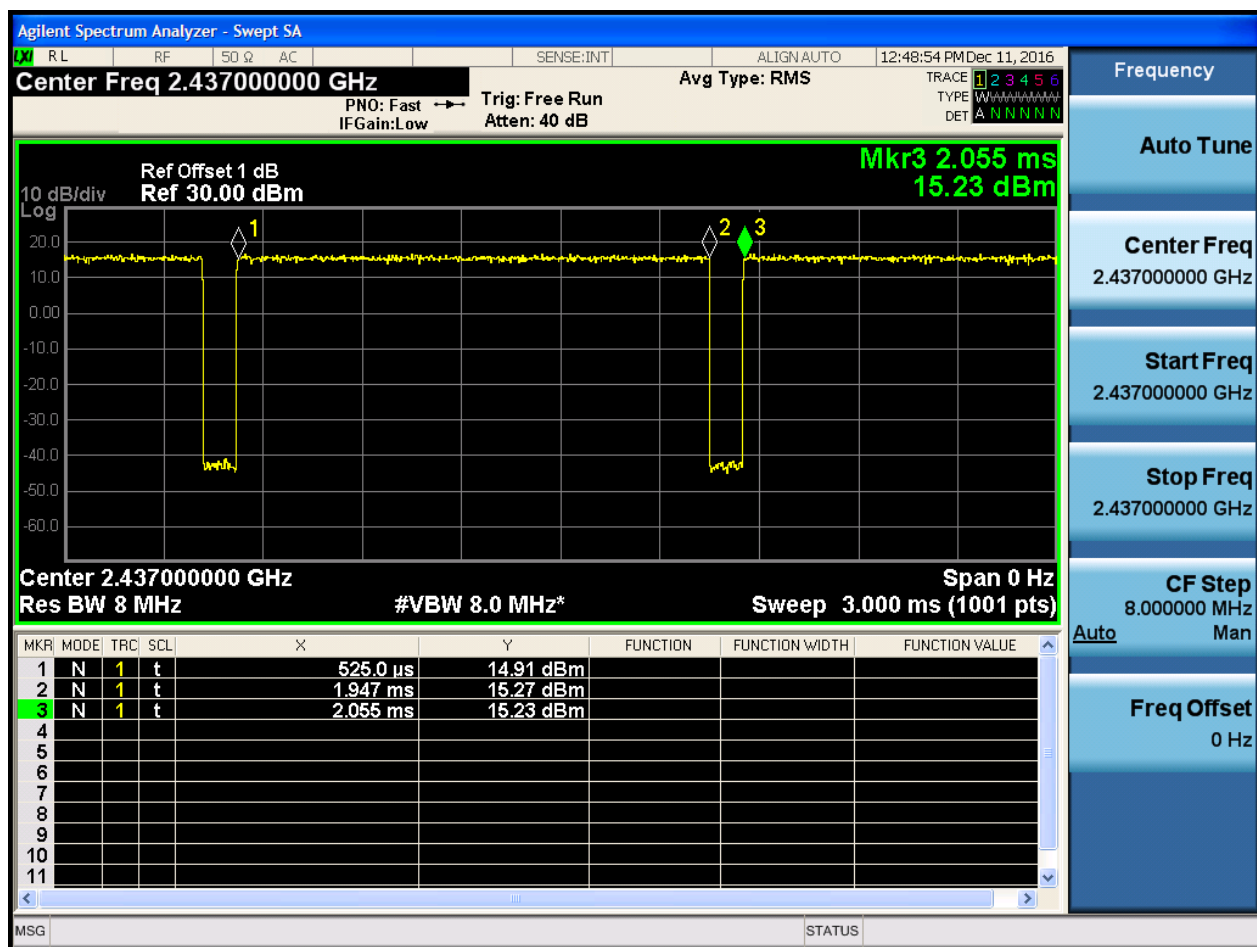


11N20MIMO_ANT2



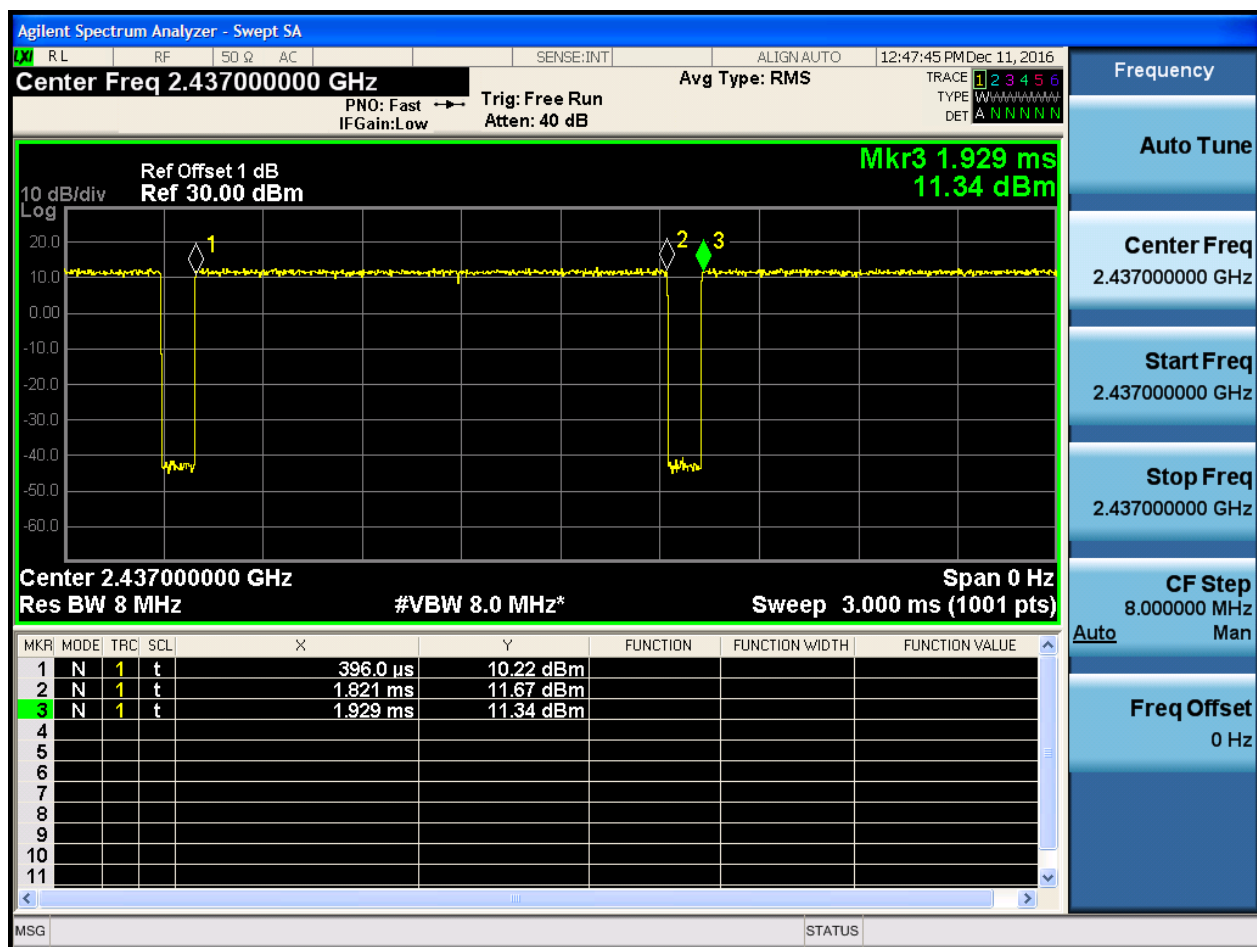


11G-CCD_ANT1





11G-CCD_ANT2



Appendix D: Maximum Conducted Average Output Power

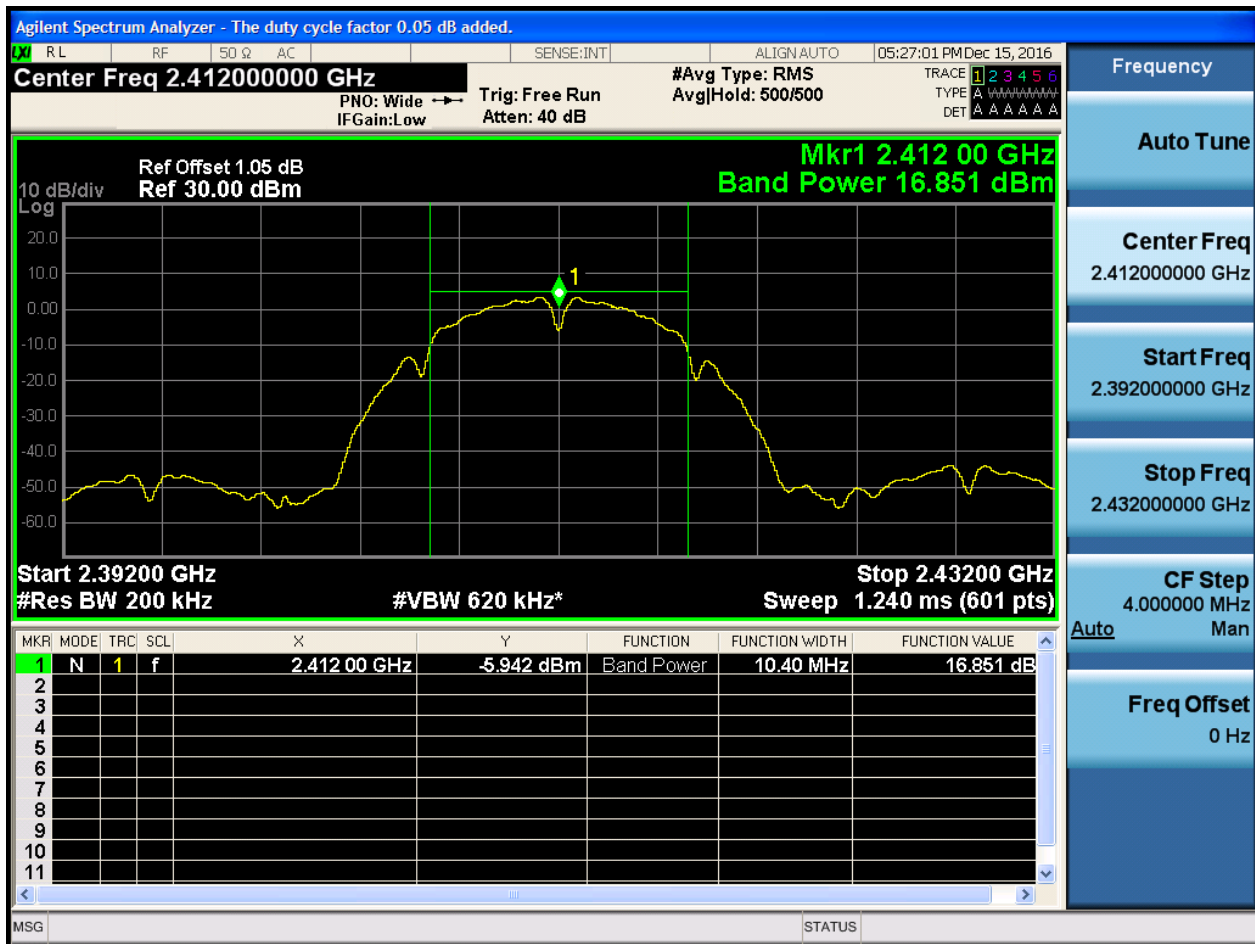
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Power[dBm]	Verdict
11B	L	2412	Ant 1	16.85	pass
11B	L	2412	Ant 2	13.87	pass
11B	M	2437	Ant 1	16.99	pass
11B	M	2437	Ant 2	13.96	pass
11B	H	2462	Ant 1	16.42	pass
11B	H	2462	Ant 2	13.41	pass
11G	L	2412	Ant 1	15.62	pass
11G	L	2412	Ant 2	12.94	pass
11G	M	2437	Ant 1	15.89	pass
11G	M	2437	Ant 2	13.18	pass
11G	H	2462	Ant 1	15.14	pass
11G	H	2462	Ant 2	12.99	pass
11N20	L	2412	Ant 1	14.85	pass
11N20	L	2412	Ant 2	11.96	pass
11N20	M	2437	Ant 1	14.96	pass
11N20	M	2437	Ant 2	12.23	pass
11N20	H	2462	Ant 1	14.24	pass
11N20	H	2462	Ant 2	11.95	pass
11N20m	L	2412	Ant 1	14.43	pass
11N20m	L	2412	Ant 2	11.88	pass
11N20m	M	2437	Ant 1	14.71	pass
11N20m	M	2437	Ant 2	11.94	pass
11N20m	H	2462	Ant 1	14.01	pass
11N20m	H	2462	Ant 2	11.63	pass
11G CDD	L	2412	Ant 1	15.36	pass
11G CDD	L	2412	Ant 2	12.85	pass
11G CDD	M	2437	Ant 1	15.67	pass
11G CDD	M	2437	Ant 2	12.99	pass
11G CDD	H	2462	Ant 1	15.01	pass
11G CDD	H	2462	Ant 2	12.50	pass



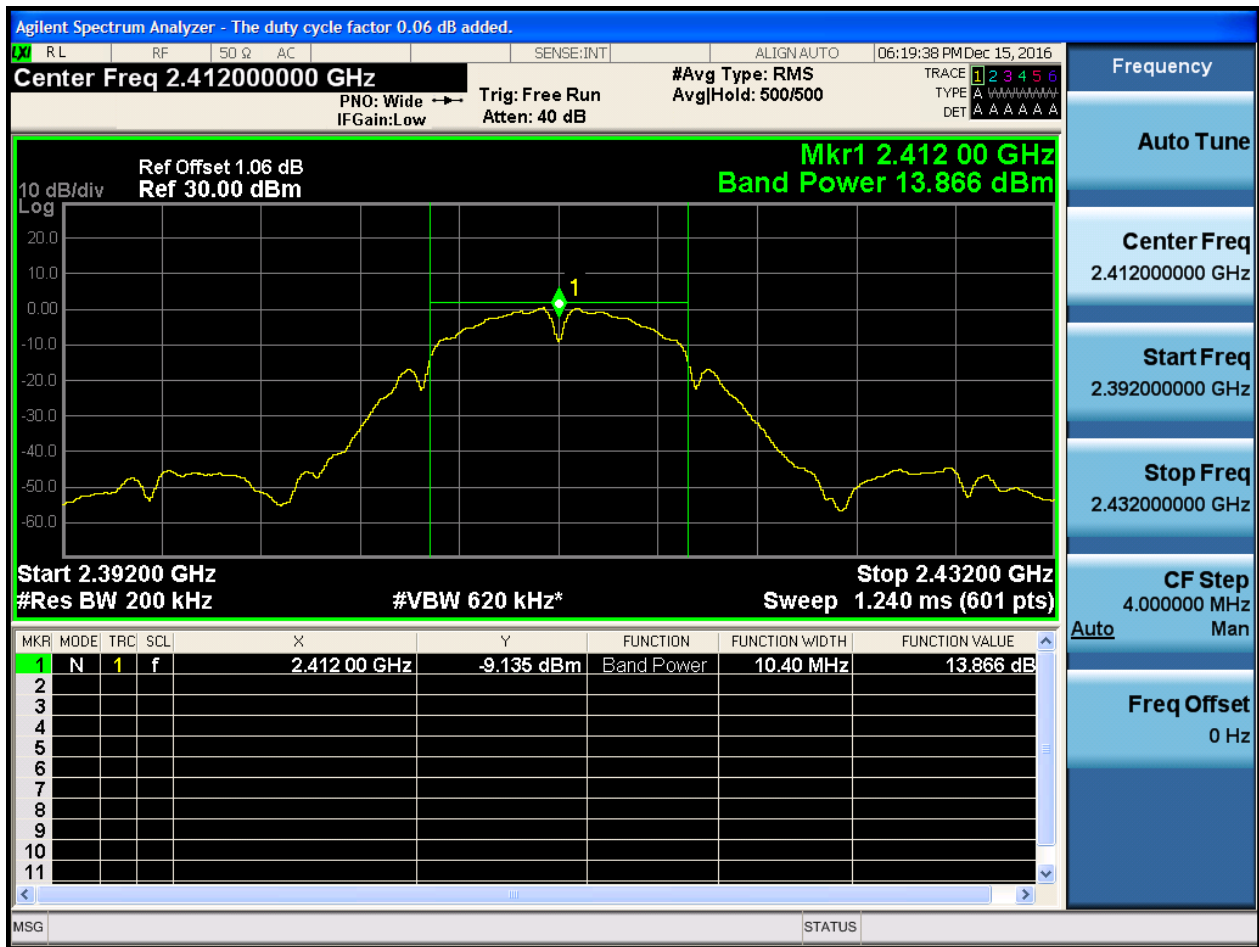
Part II - Test Plots

2.1 11B_L@Ant 1



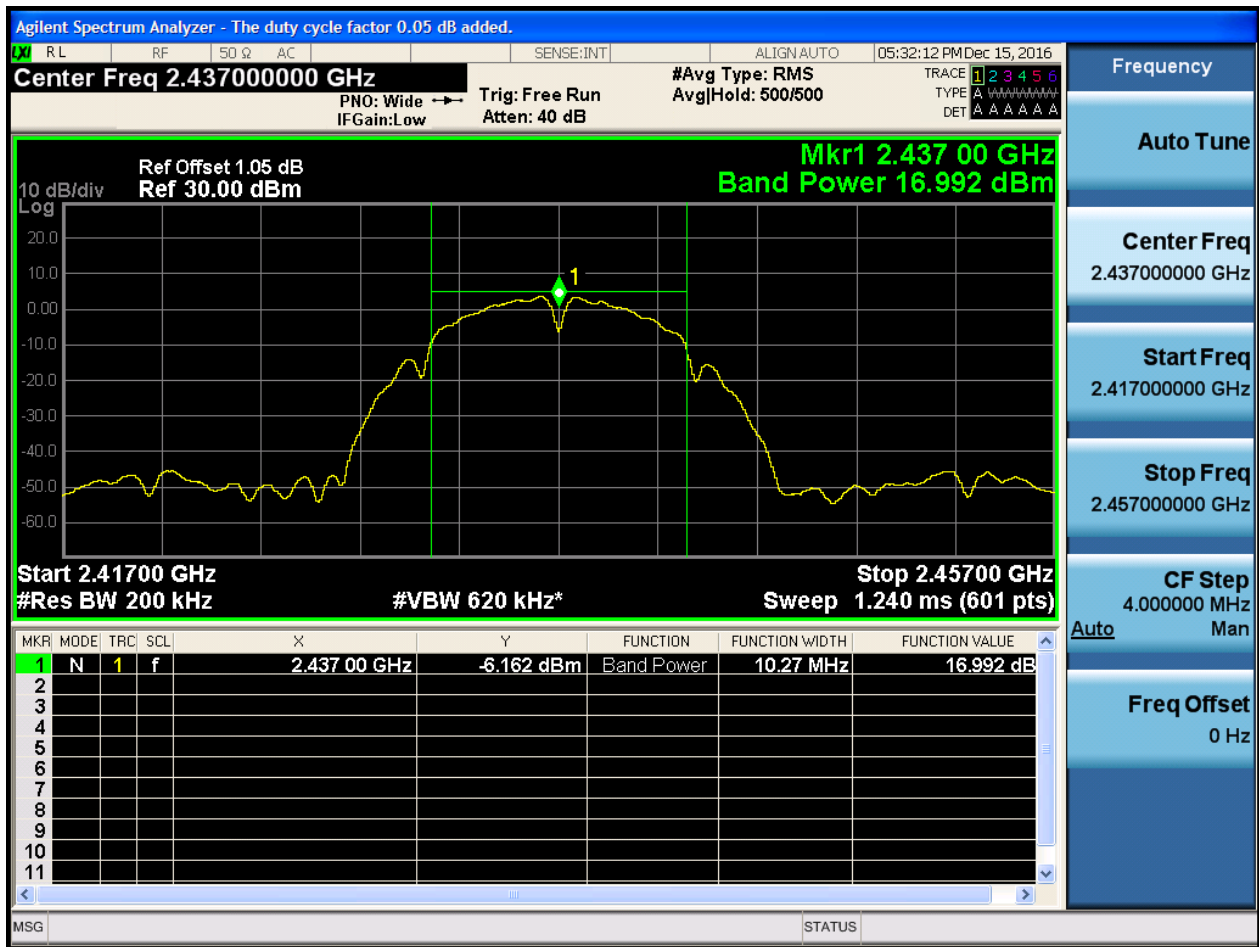


2.2 11B_L@Ant 2



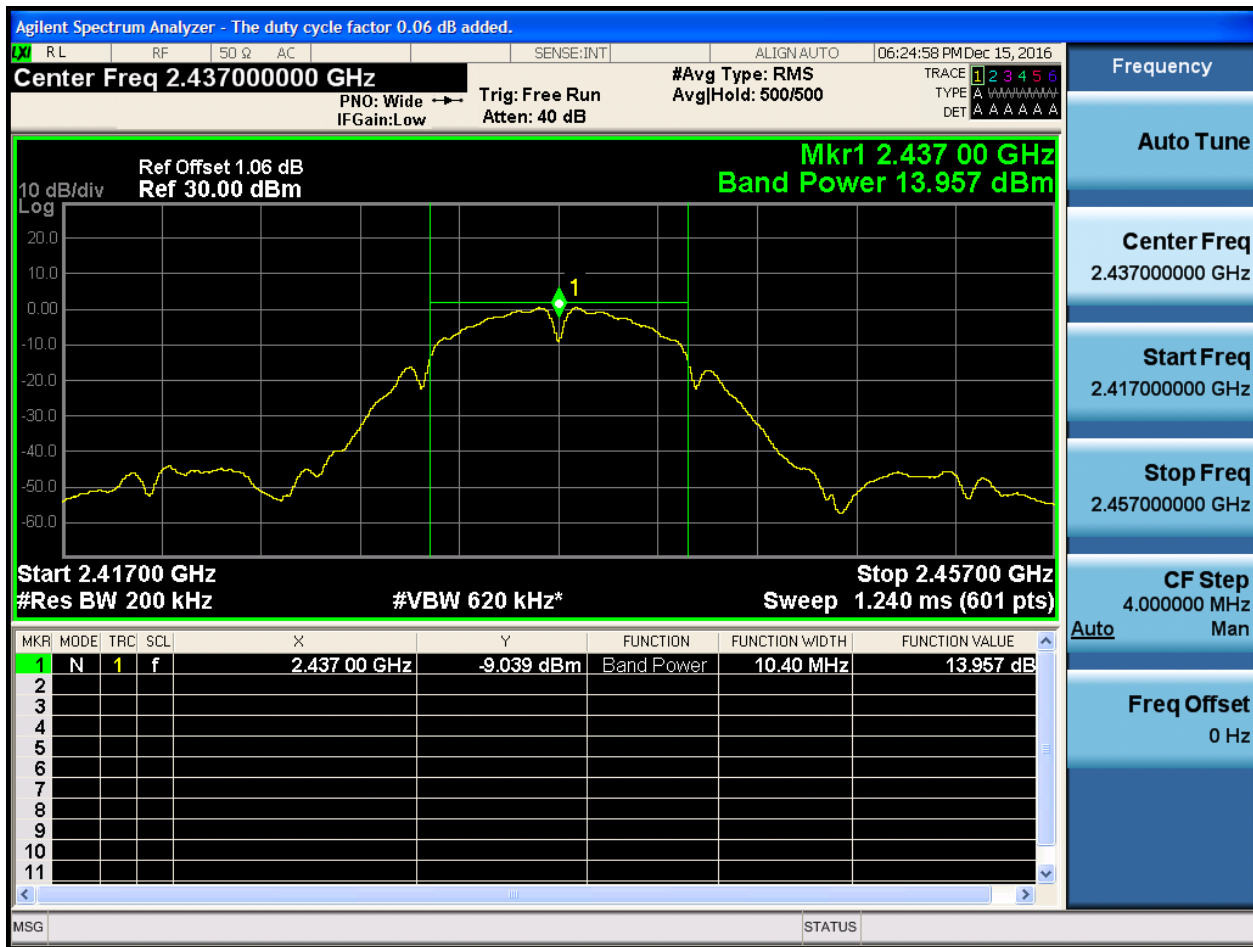


2.3 11B_M@Ant 1



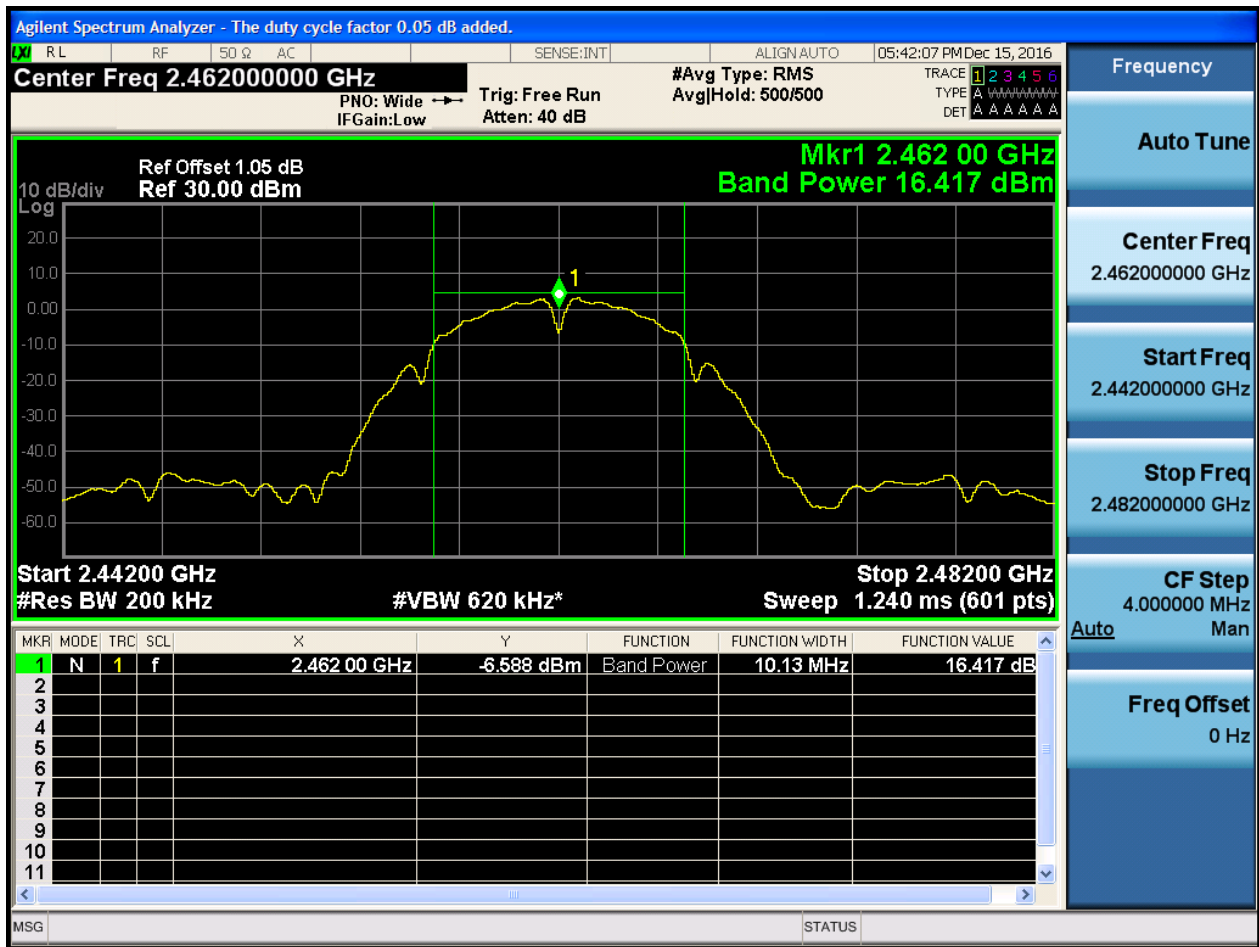


2.4 11B_M@Ant 2



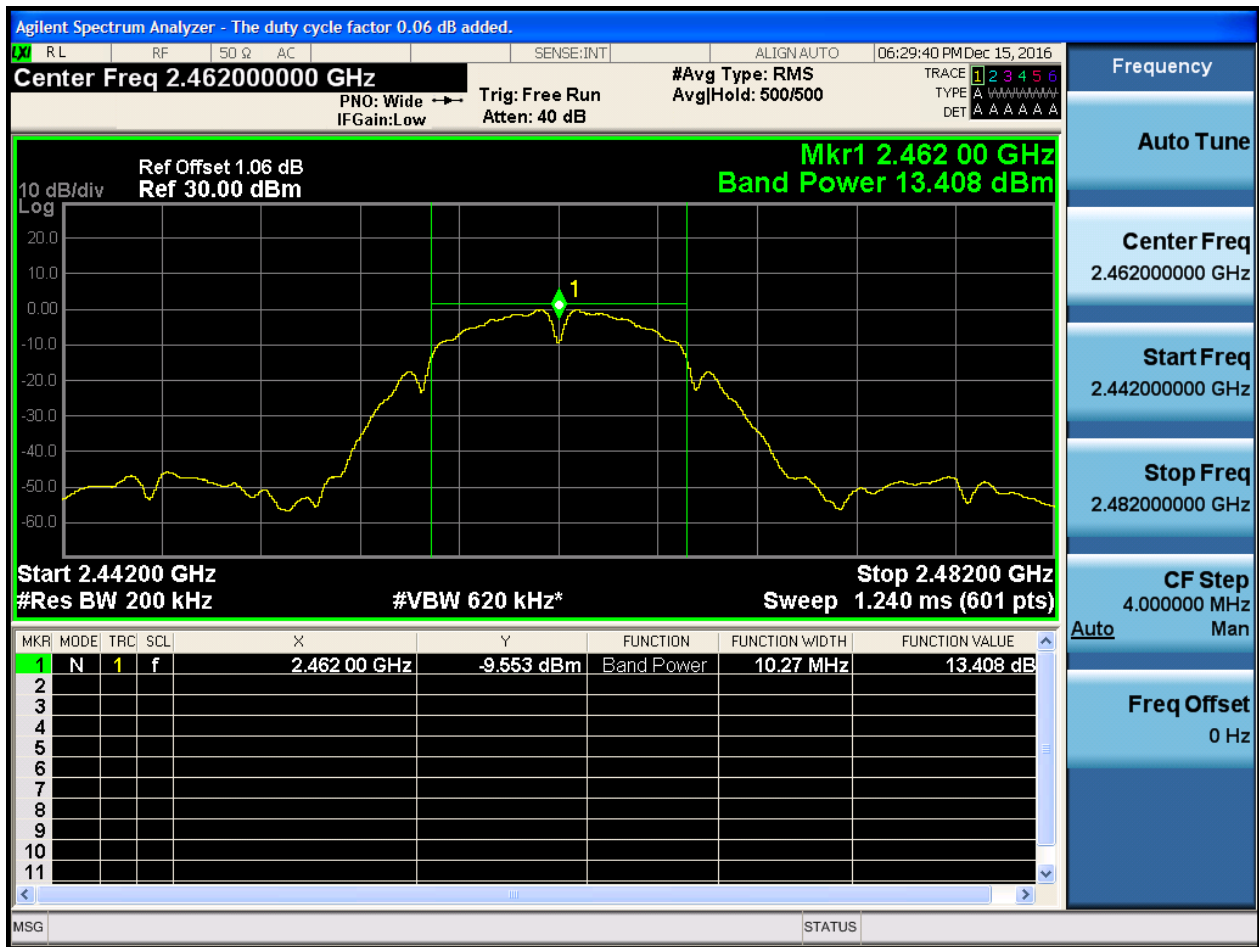


2.5 11B_H@Ant 1



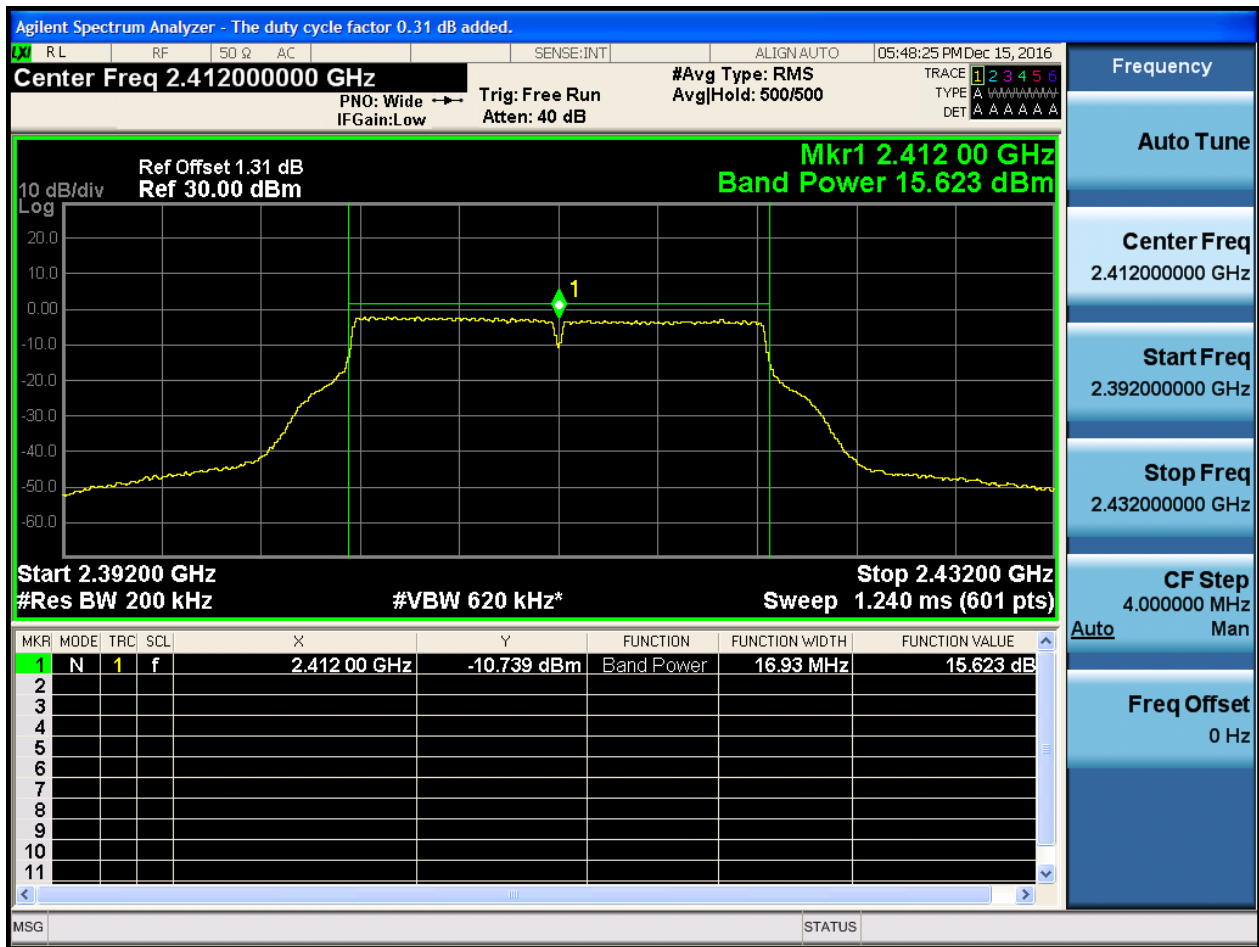


2.6 11B_H@Ant 2



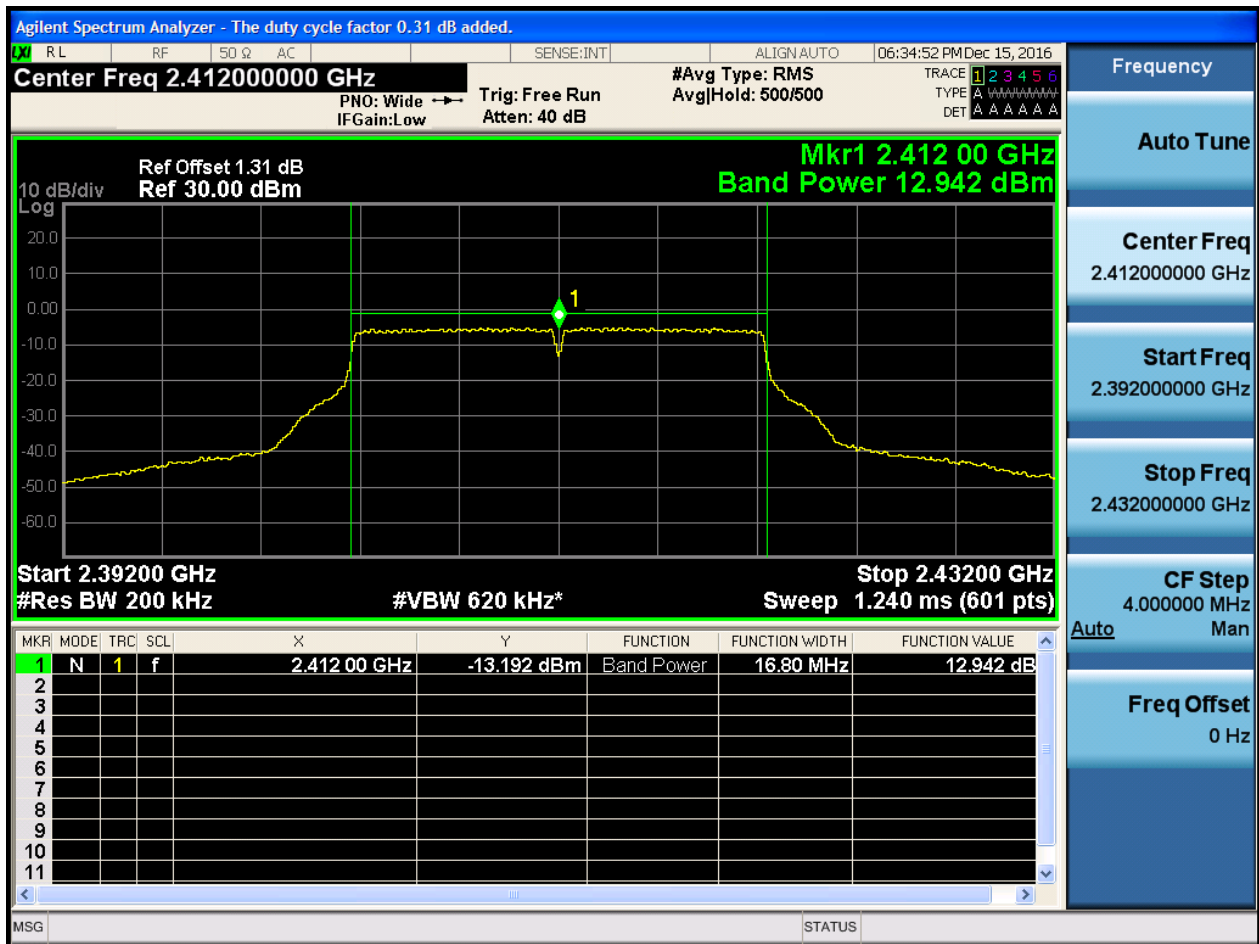


2.7 11G_L@Ant 1



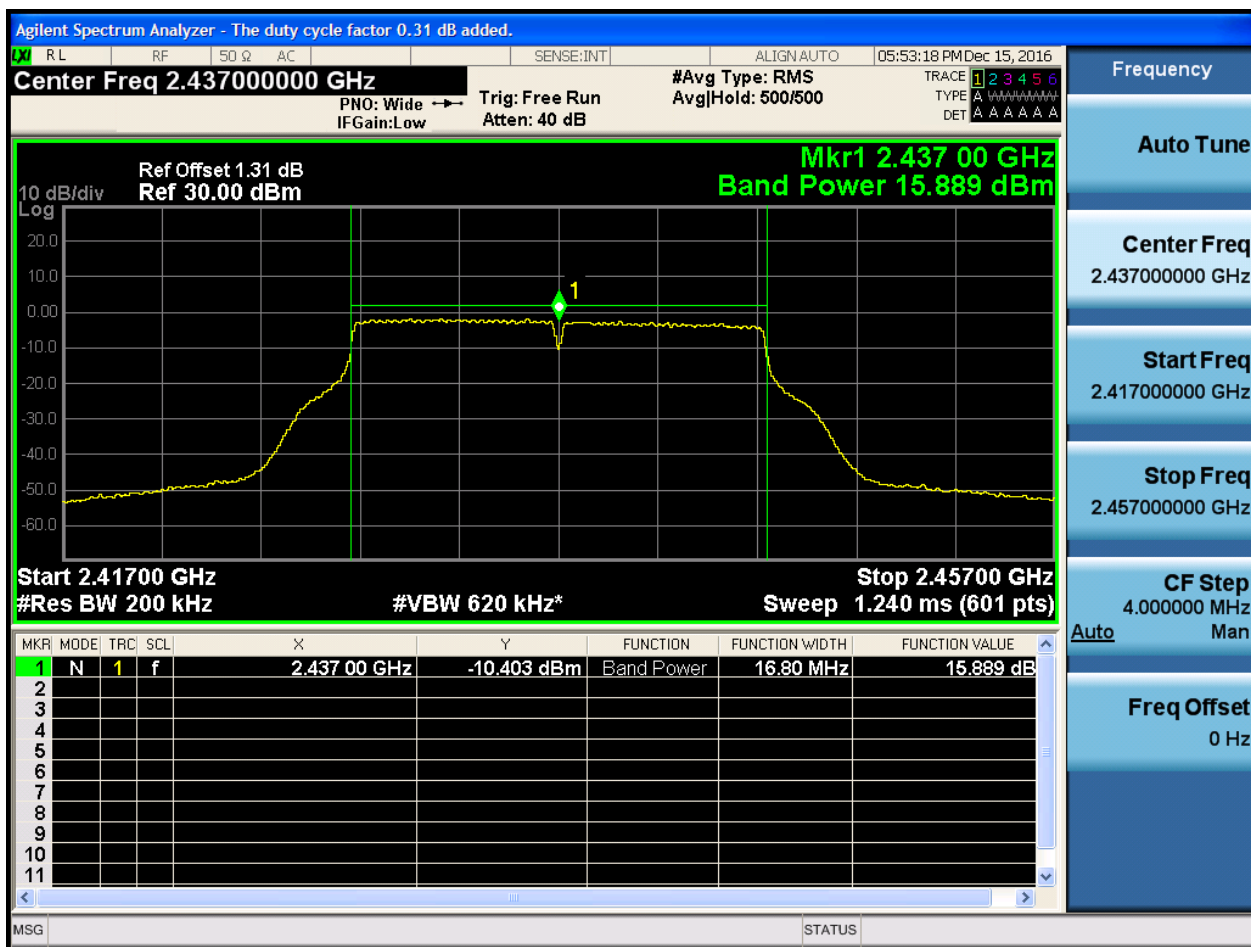


2.8 11G_L@Ant 2





2.9 11G_M@Ant 1





Agilent Spectrum Analyzer - The duty cycle factor 0.31 dB added.

Center Freq 2.437000000 GHz

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

Ref Offset 1.31 dB
Ref 30.00 dBm

Mkr1 2.437 00 GHz
Band Power 13.177 dBm

Start 2.41700 GHz
#Res BW 200 kHz

Stop 2.45700 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	2.437 00 GHz	-12.901 dBm	Band Power	16.80 MHz	13.177 dB
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

Frequency

Auto Tune

Center Freq
2.437000000 GHz

Start Freq
2.417000000 GHz

Stop Freq
2.457000000 GHz

CF Step
4.000000 MHz

Auto

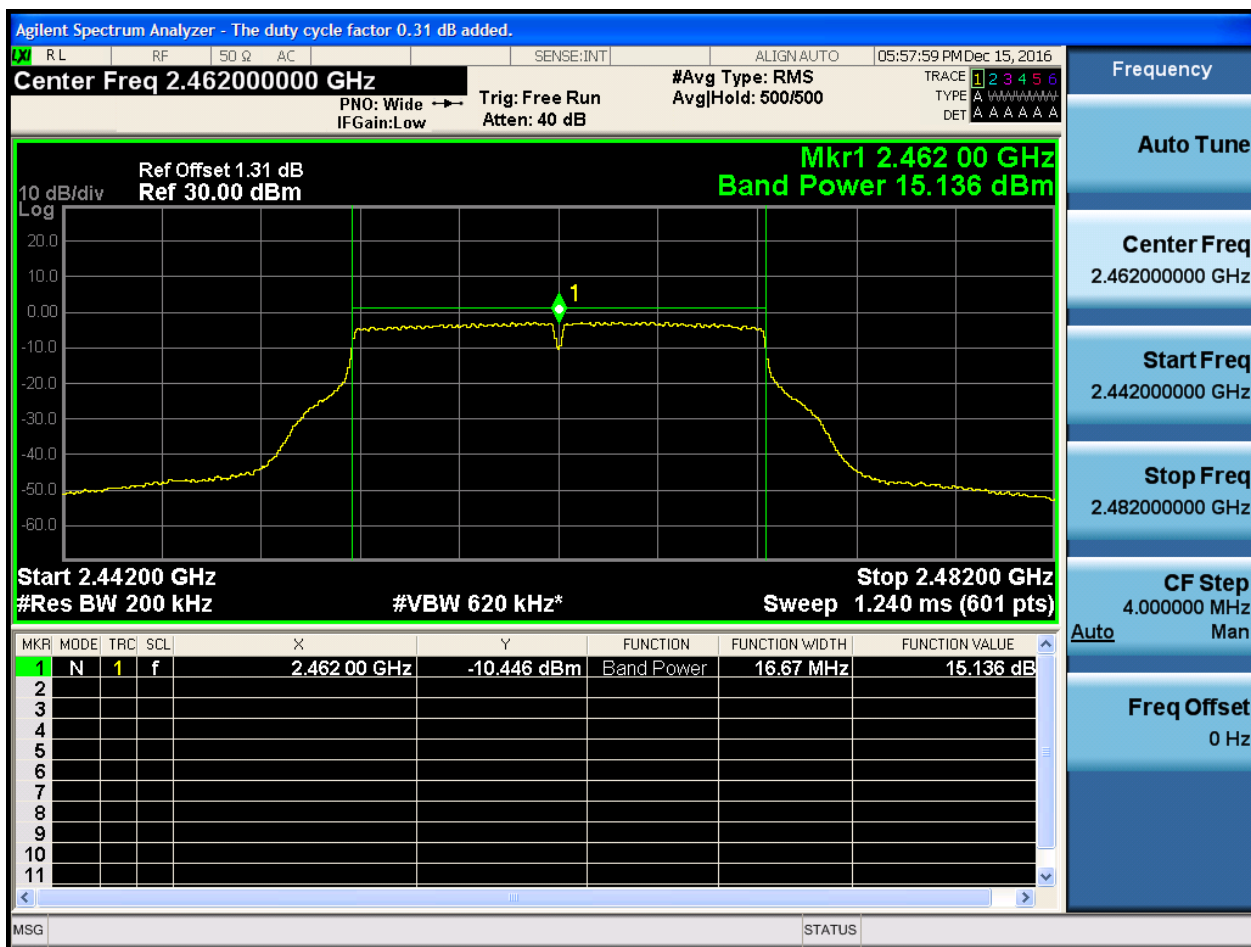
Freq Offset
0 Hz

MSG

STATUS

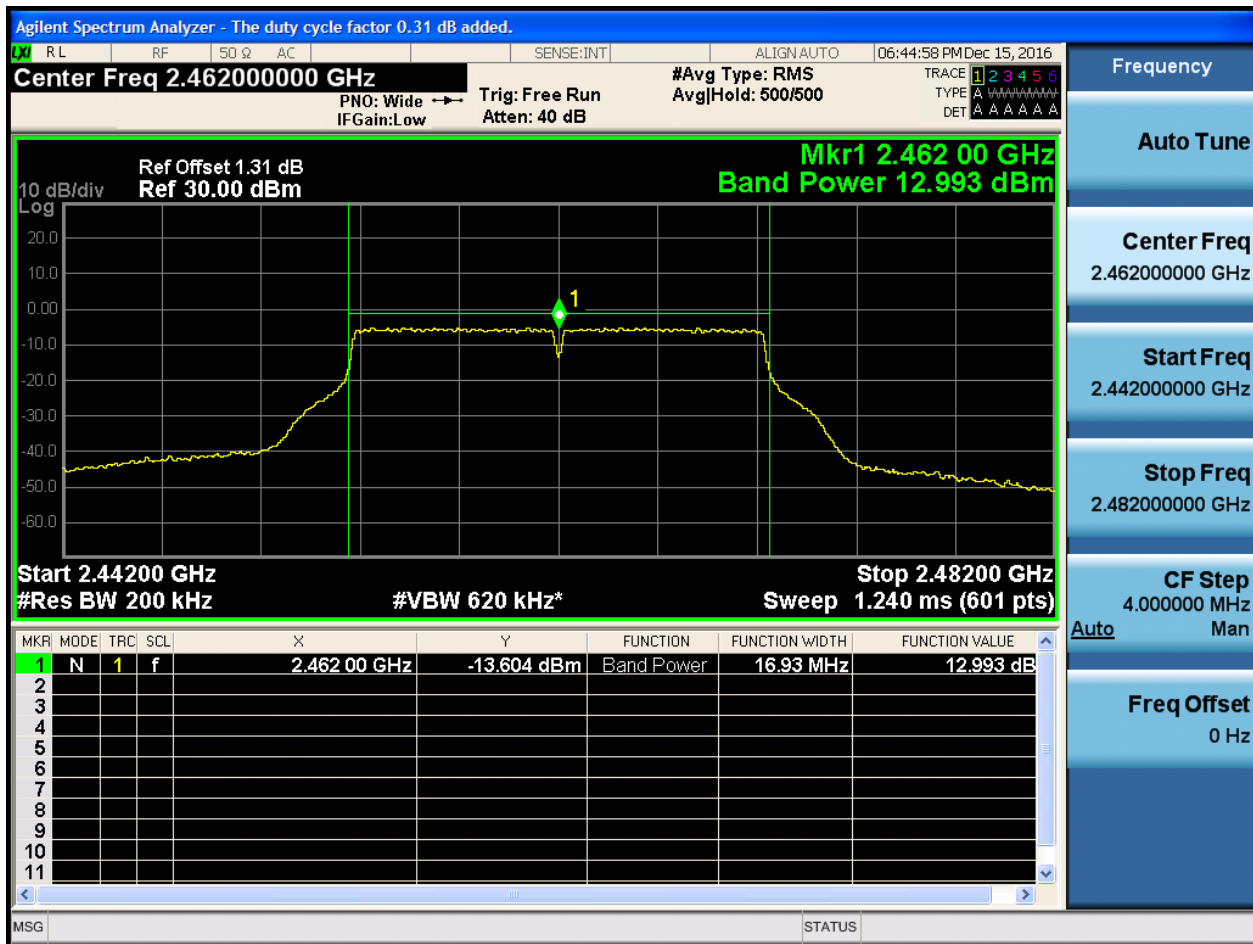


2.11 11G_H@Ant 1



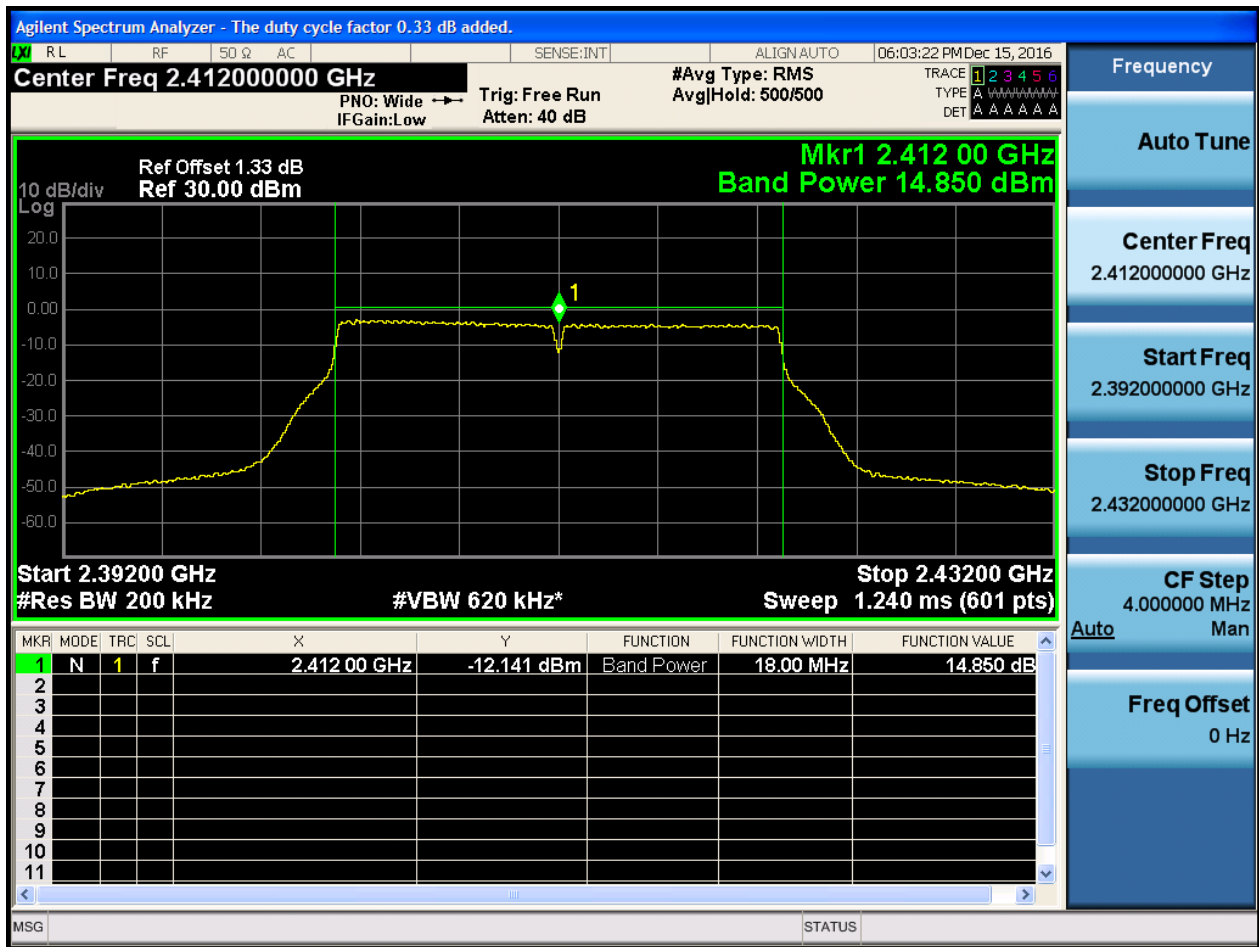


2.12 11G_H@Ant 2



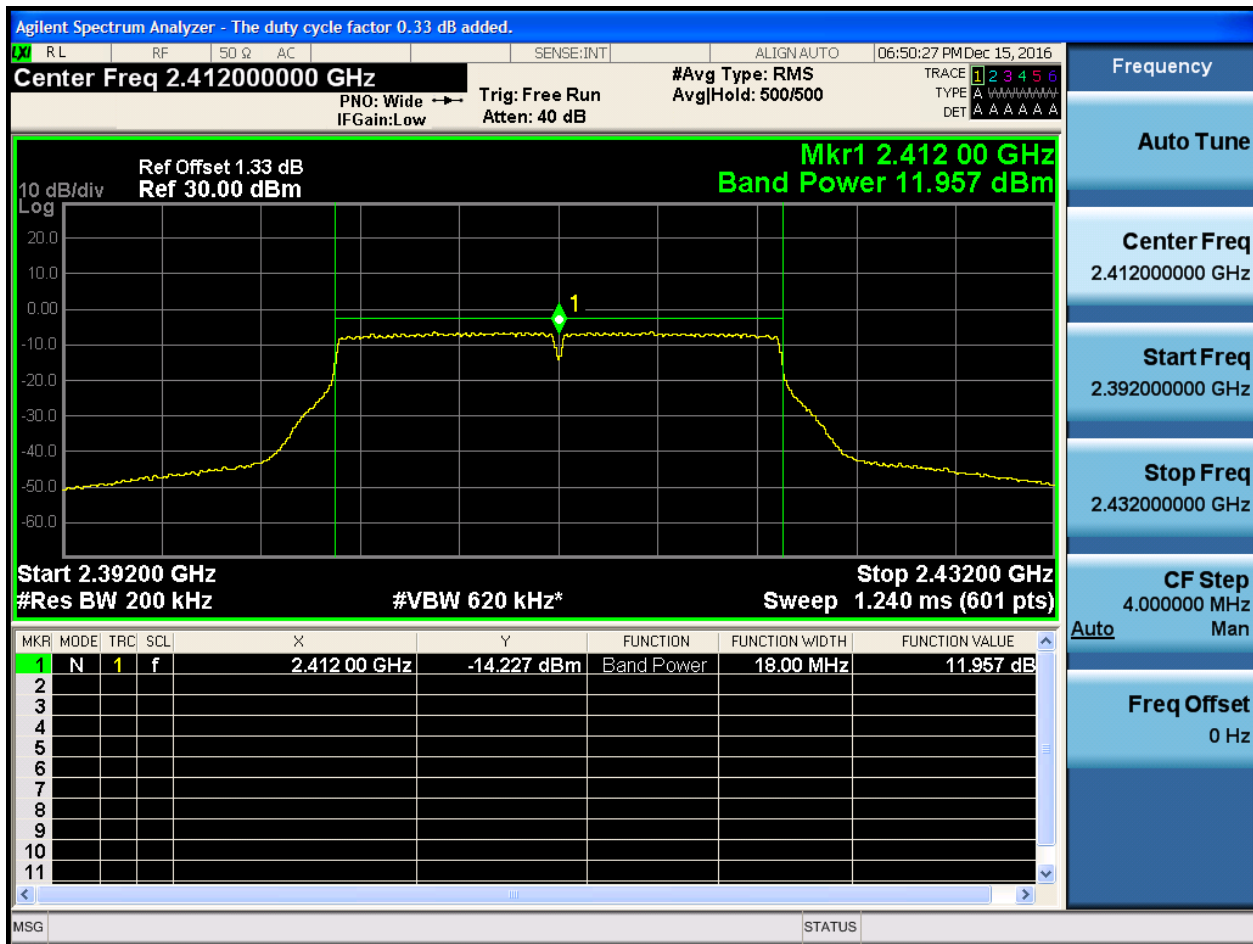


2.13 11N20_L@Ant 1



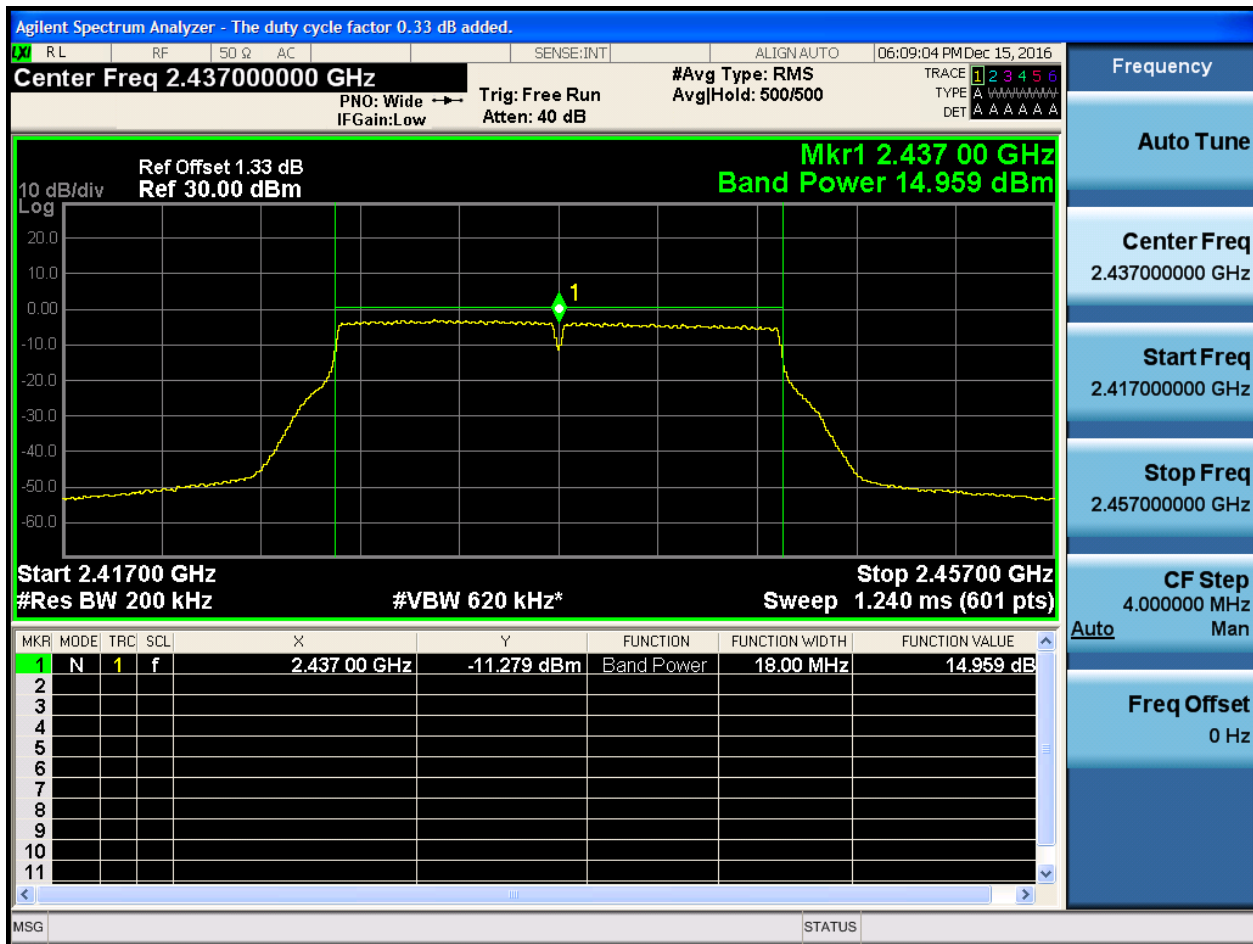


2.14 11N20_L@Ant 2





2.15 11N20_M@Ant 1





Agilent Spectrum Analyzer - The duty cycle factor 0.33 dB added.

Center Freq 2.437000000 GHz

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

Ref Offset 1.33 dB
Ref 30.00 dBm

Mkr1 2.437 00 GHz
Band Power 12.233 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	-14.112 dBm	Band Power	18.00 MHz	12.233 dB
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

Frequency

Auto Tune

Center Freq
2.437000000 GHz

Start Freq
2.417000000 GHz

Stop Freq
2.457000000 GHz

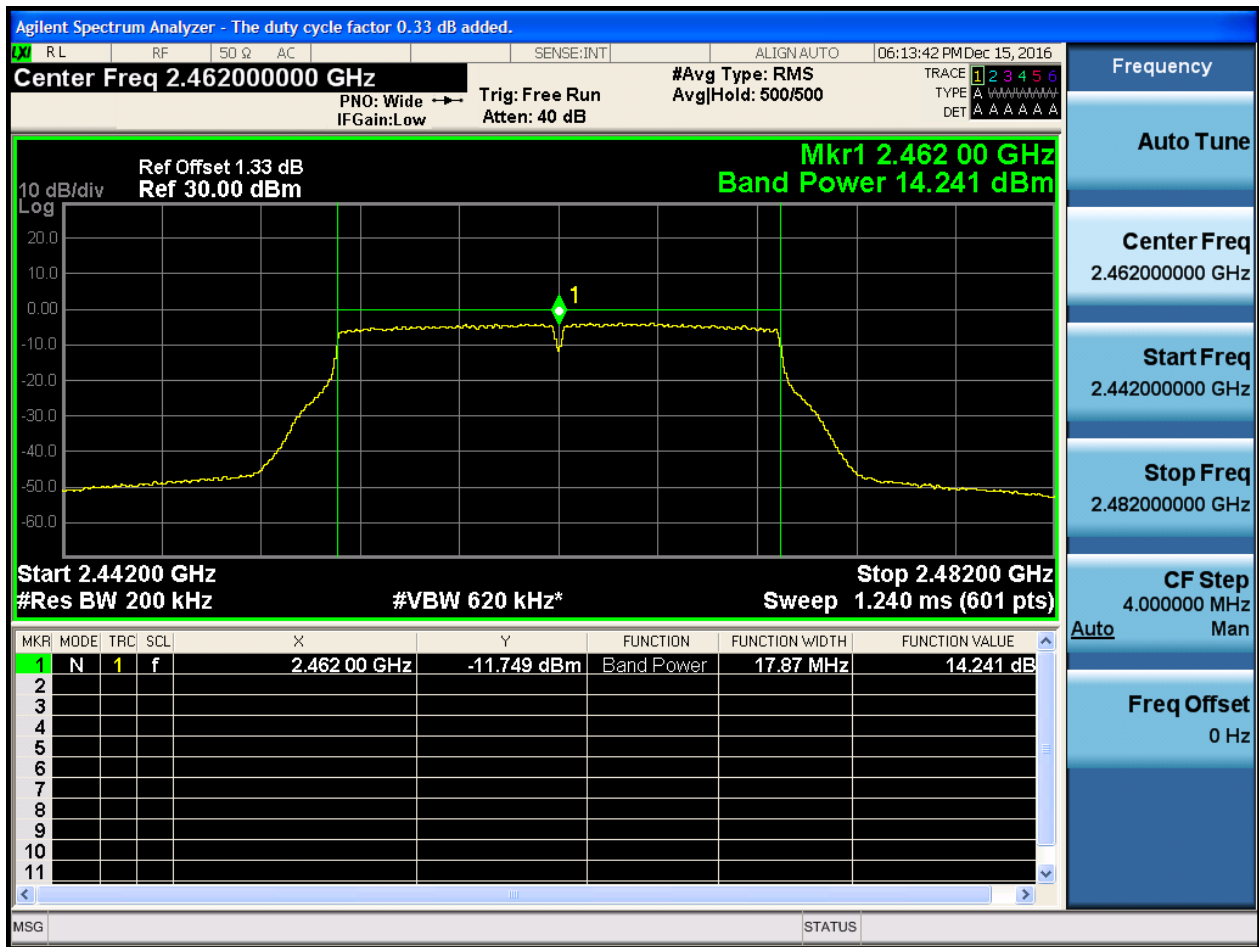
CF Step
4.000000 MHz

Auto

Freq Offset
0 Hz

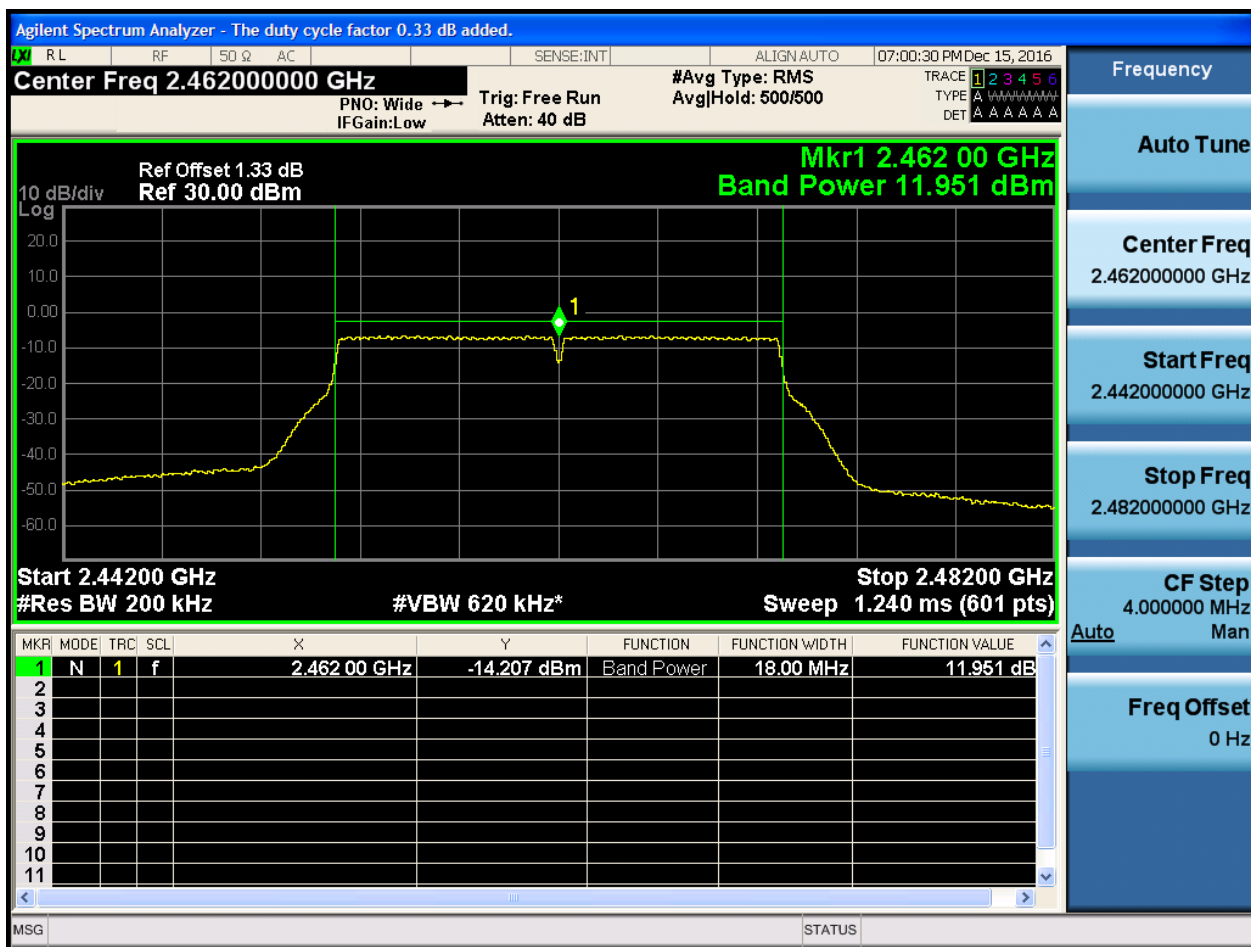


2.17 11N20_H@Ant 1



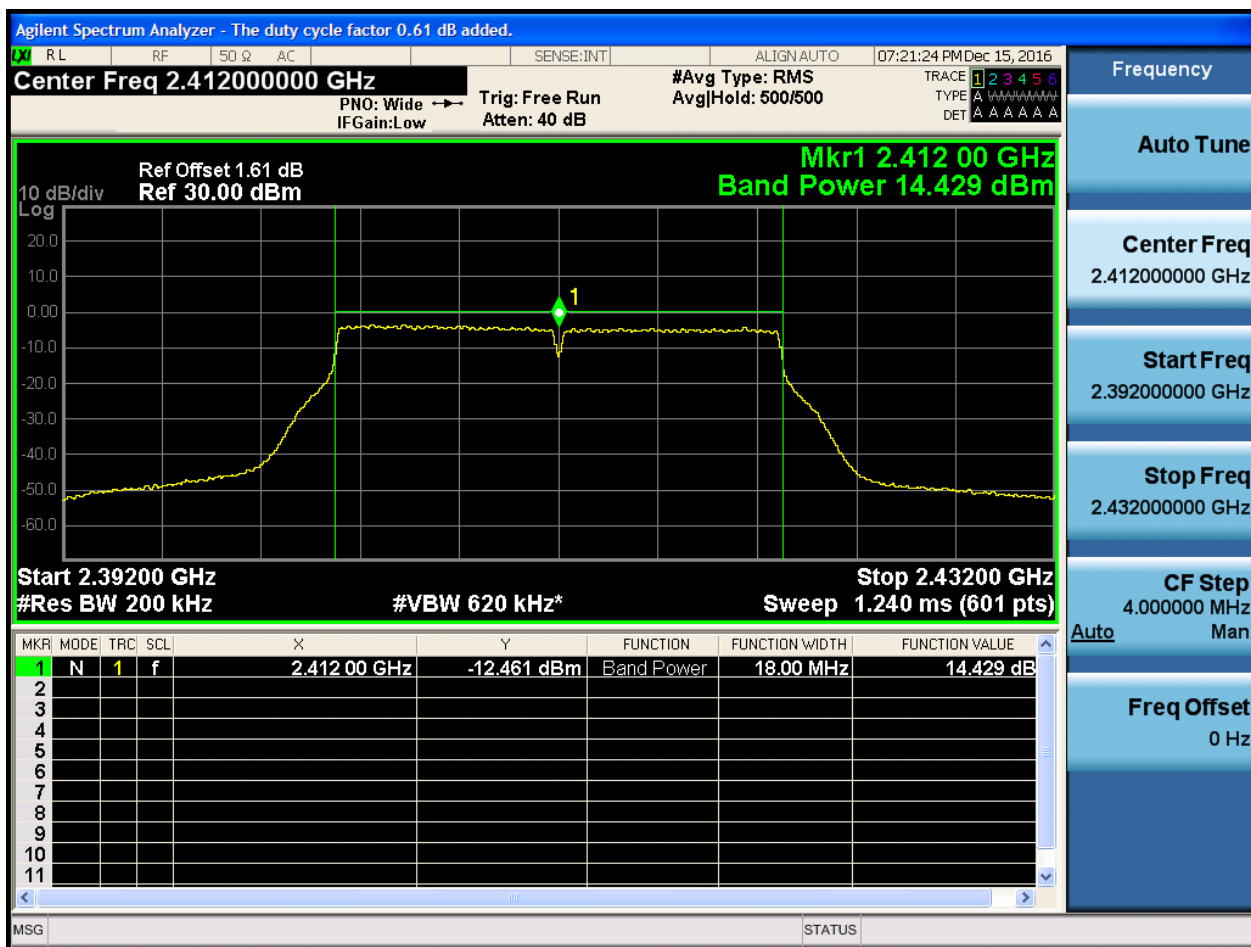


2.18 11N20_H@Ant 2





2.19 11N20m_L@Ant 1





Agilent Spectrum Analyzer - The duty cycle factor 0.61 dB added.

Center Freq 2.41200000 GHz

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

Ref Offset 1.61 dB
Ref 30.00 dBm

Mkr1 2.412 00 GHz
Band Power 11.883 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	-14.633 dBm	Band Power	17.87 MHz	11.883 dB
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

Frequency

Auto Tune

Center Freq
2.41200000 GHz

Start Freq
2.39200000 GHz

Stop Freq
2.43200000 GHz

CF Step
4.000000 MHz

Auto

Freq Offset
0 Hz



Agilent Spectrum Analyzer - The duty cycle factor 0.61 dB added.

Center Freq 2.437000000 GHz

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

Ref Offset 1.61 dB
Ref 30.00 dBm

Mkr1 2.437 00 GHz
Band Power 14.706 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	-11.864 dBm	Band Power	17.87 MHz	14.706 dB
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

Frequency

Auto Tune

Center Freq
2.437000000 GHz

Start Freq
2.417000000 GHz

Stop Freq
2.457000000 GHz

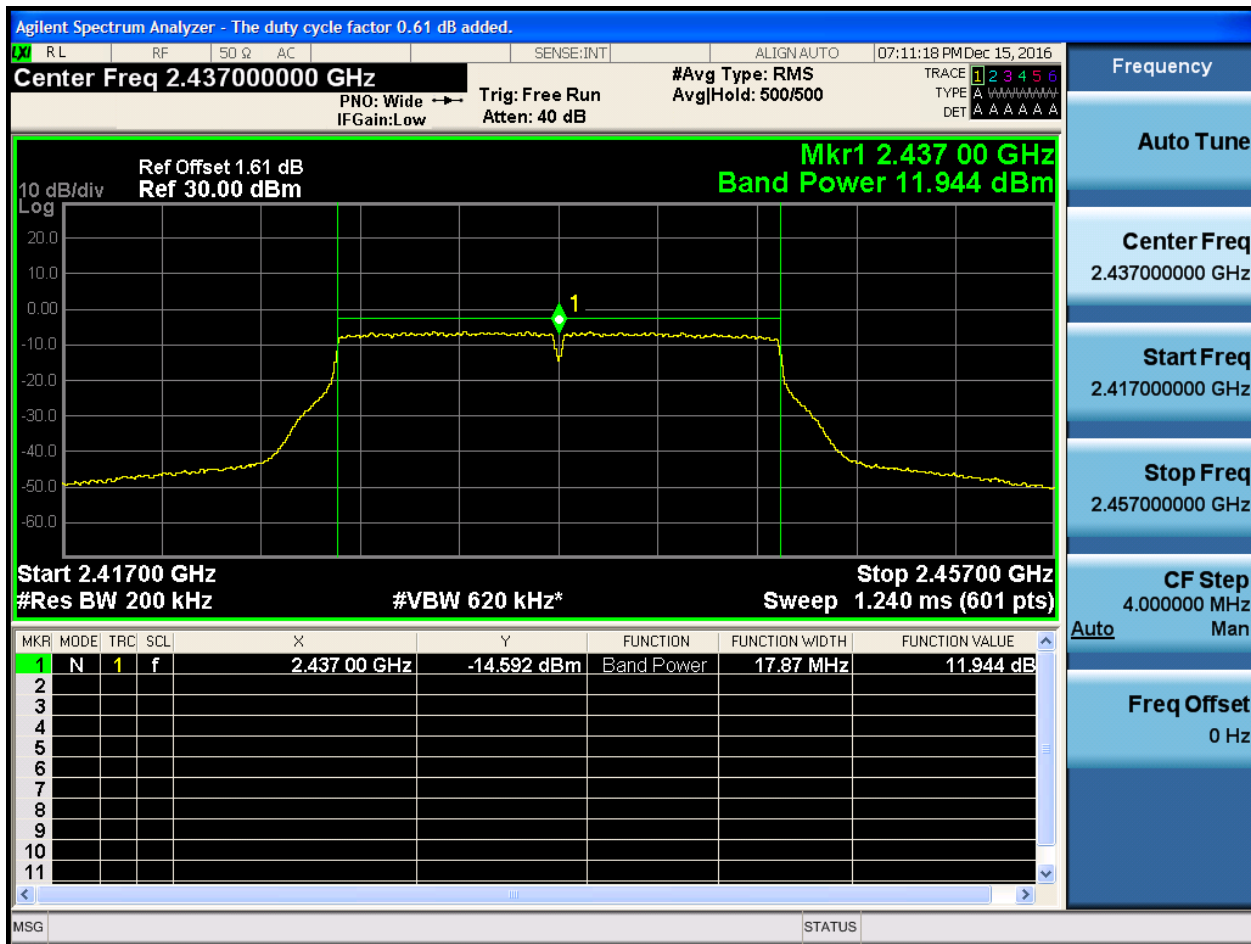
CF Step
4.000000 MHz

Auto

Freq Offset
0 Hz

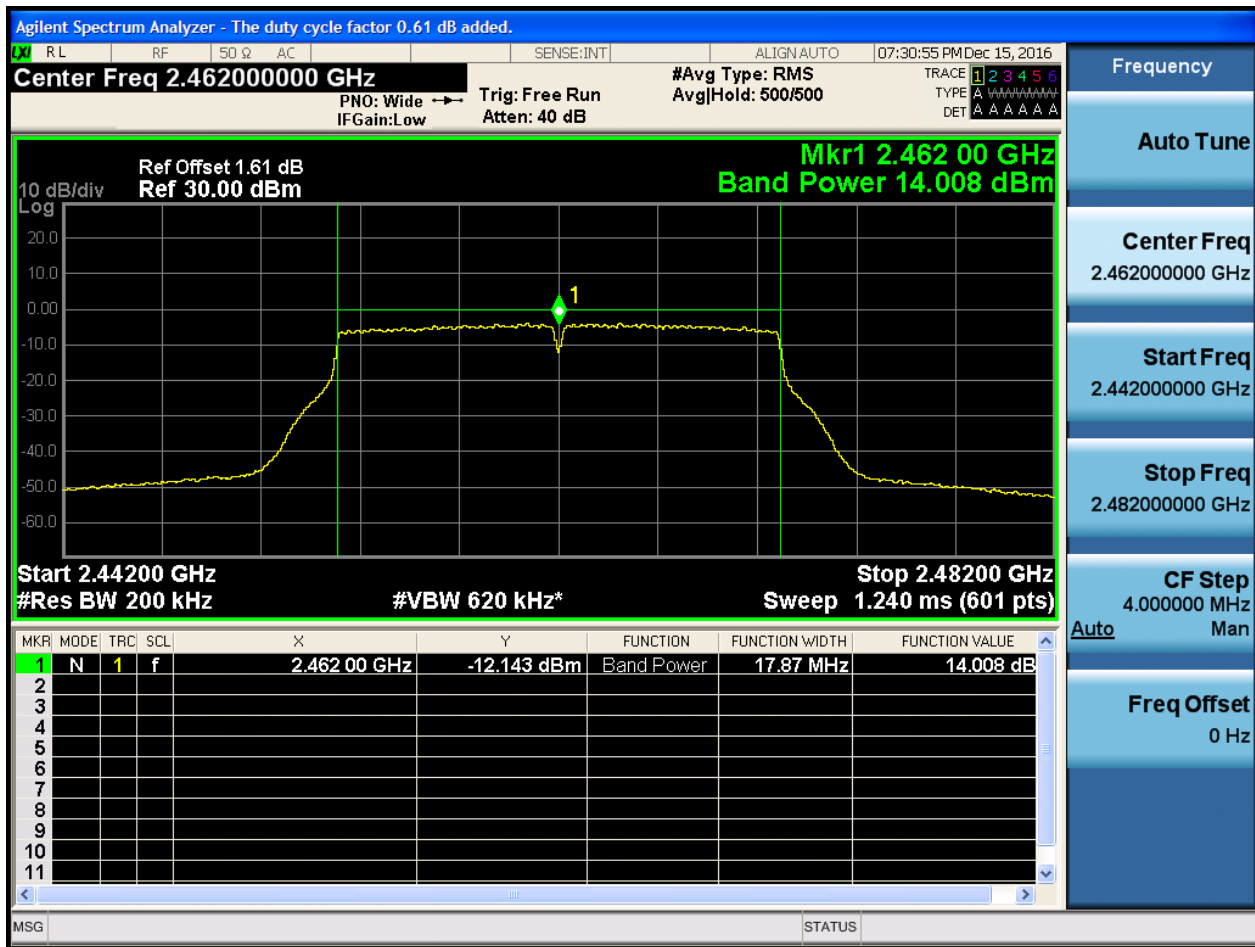


2.22 11N20m_M@Ant 2



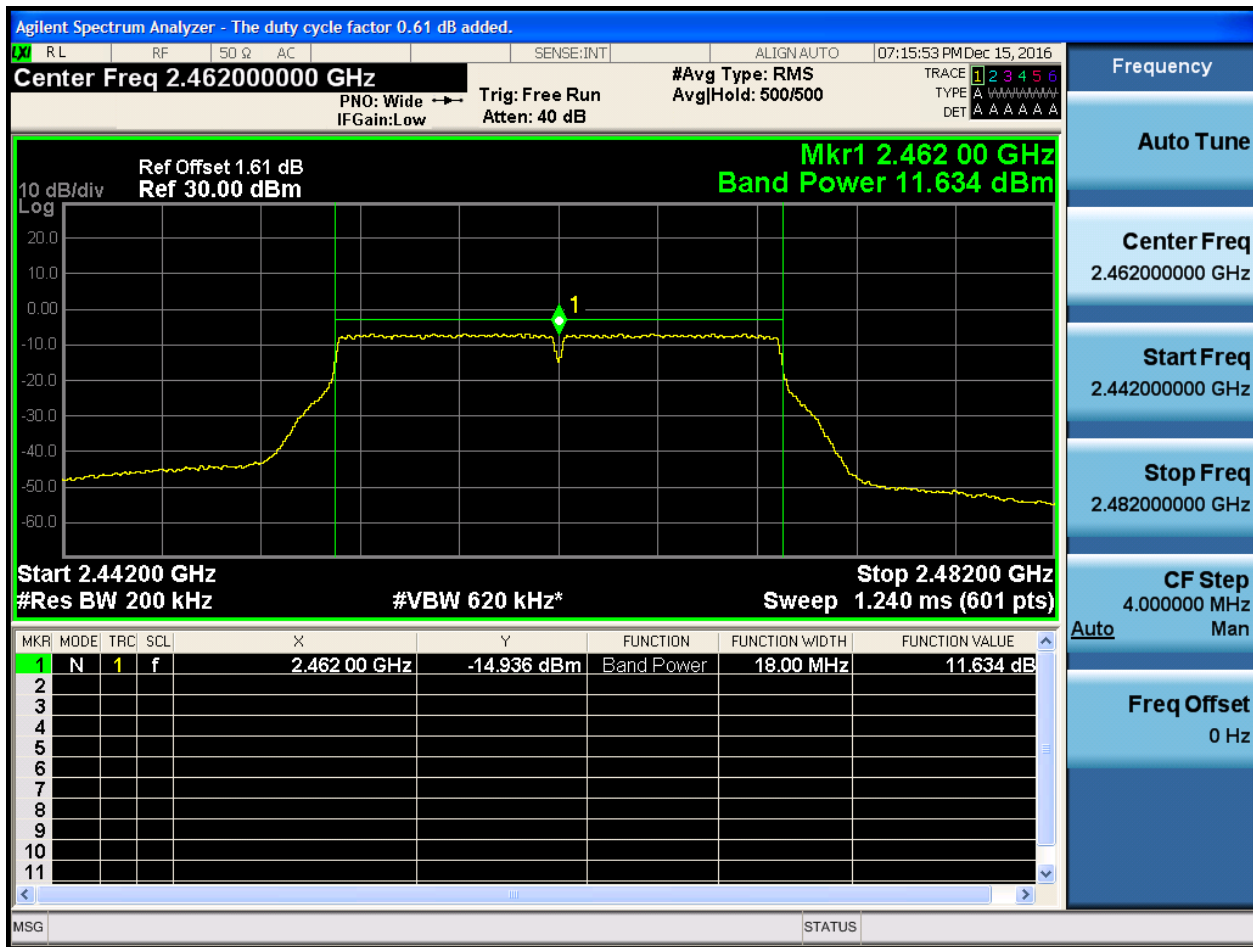


2.23 11N20m_H@Ant 1



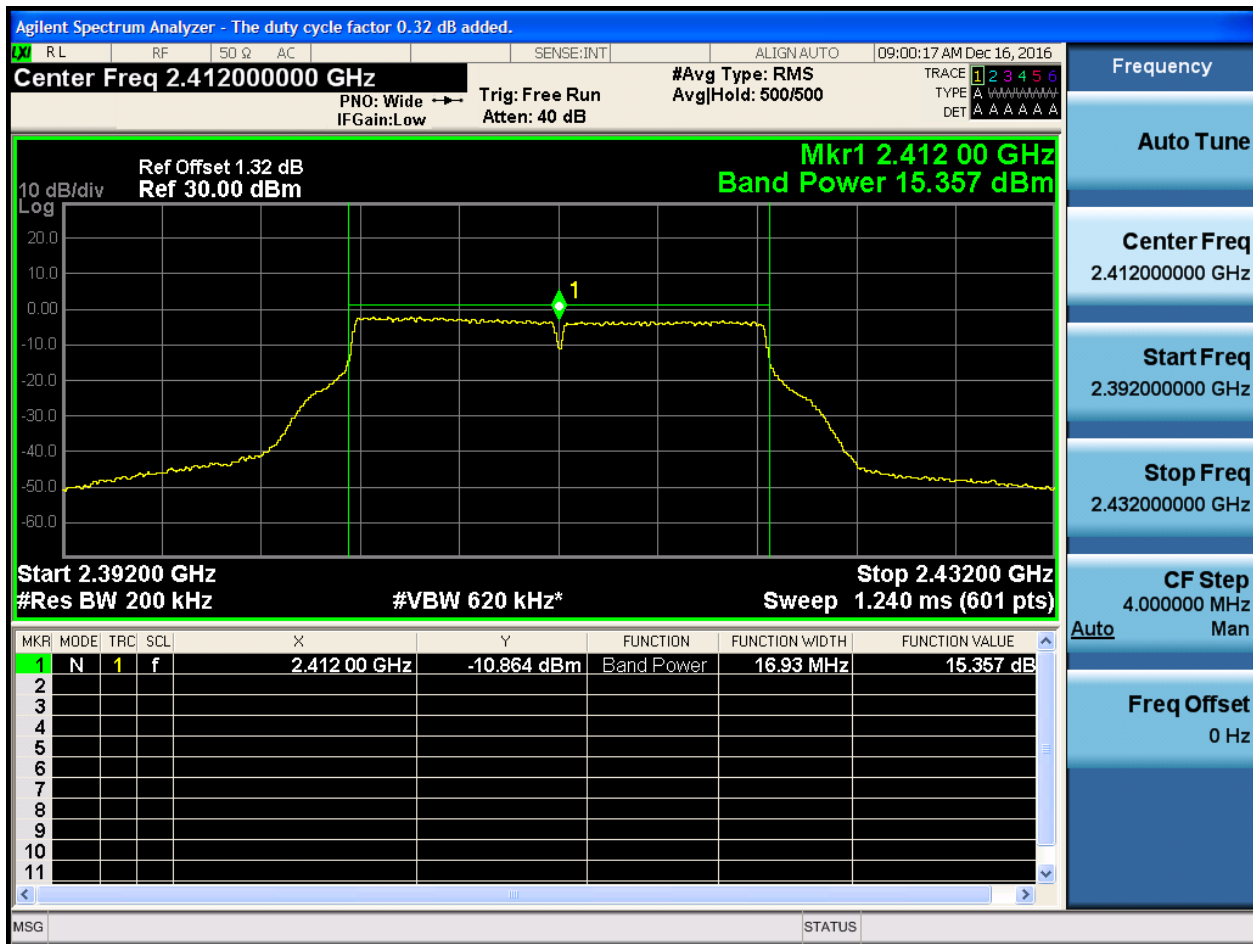


2.24 11N20m_H@Ant 2



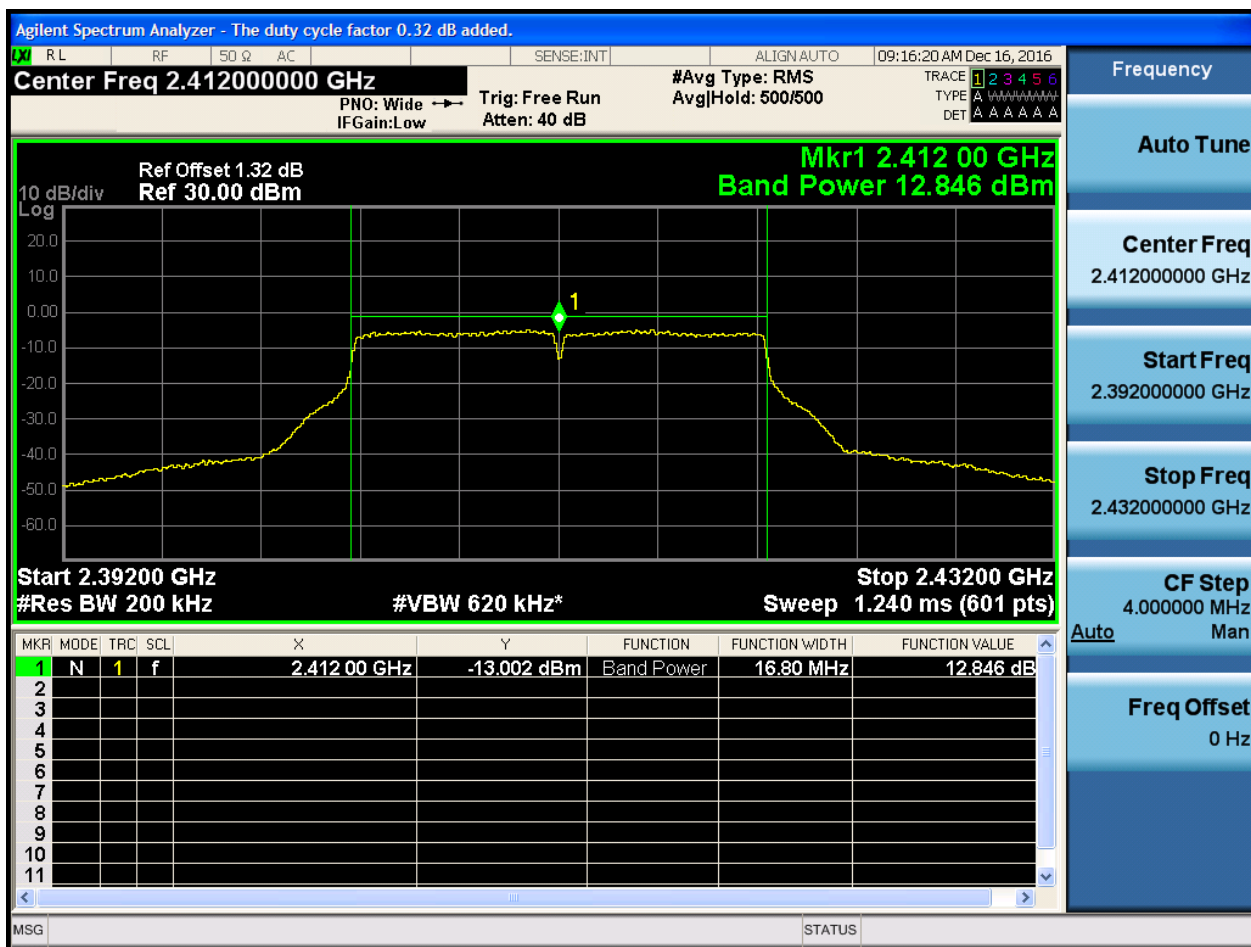


2.25 11G CDD_L@Ant 1



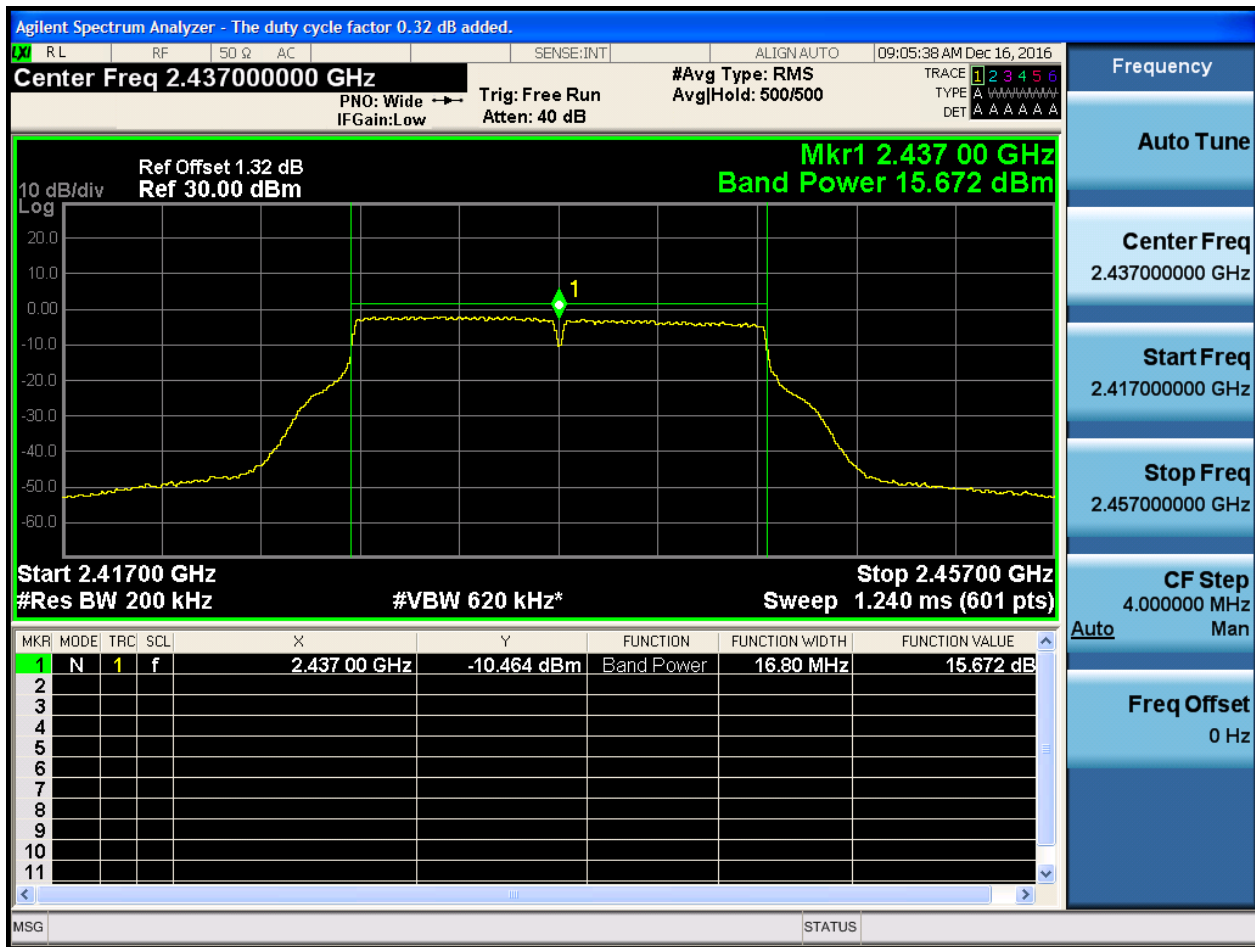


2.26 11G CDD_L@Ant 2





2.27 11G CDD_M@Ant 1





Agilent Spectrum Analyzer - The duty cycle factor 0.32 dB added.

Center Freq 2.437000000 GHz

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

Ref Offset 1.32 dB
Ref 30.00 dBm

Mkr1 2.437 00 GHz
Band Power 12.992 dBm

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.437 00 GHz	-12.787 dBm	Band Power	16.80 MHz	12.992 dB
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

Start 2.41700 GHz
#Res BW 200 kHz

Stop 2.45700 GHz
Sweep 1.240 ms (601 pts)

#VBW 620 kHz*

Frequency

Auto Tune

Center Freq
2.437000000 GHz

Start Freq
2.417000000 GHz

Stop Freq
2.457000000 GHz

CF Step
4.000000 MHz
Man

Auto

Freq Offset
0 Hz

MSG

STATUS



Agilent Spectrum Analyzer - The duty cycle factor 0.32 dB added.

Center Freq 2.46200000 GHz

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

Ref Offset 1.32 dB
Ref 30.00 dBm

Mkr1 2.462 00 GHz
Band Power 15.010 dBm

Start 2.44200 GHz
#Res BW 200 kHz

Stop 2.48200 GHz
Sweep 1.240 ms (601 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.462 00 GHz	-10.353 dBm	Band Power	16.67 MHz	15.010 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

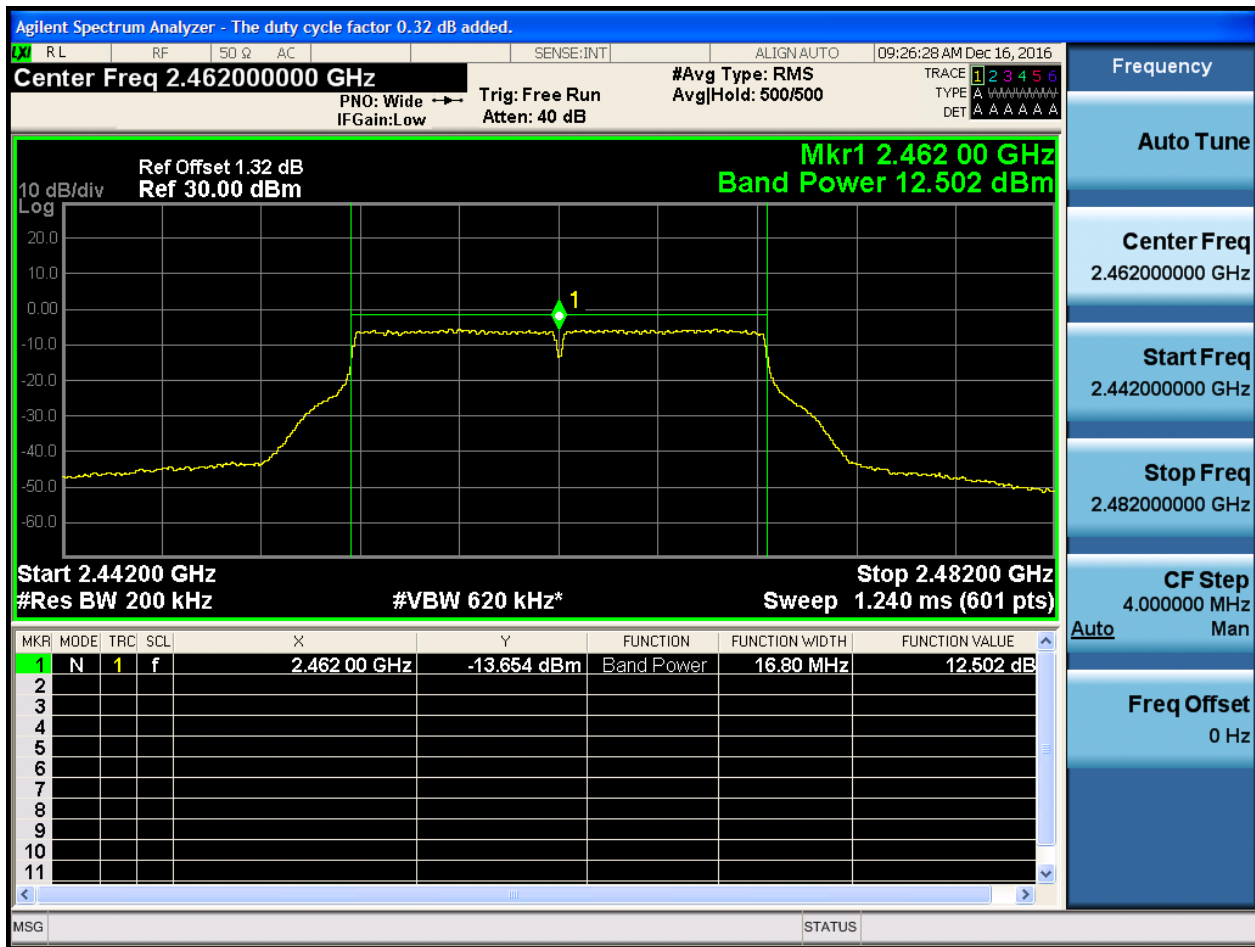
CF Step
4.000000 MHz

Auto

Freq Offset
0 Hz



2.30 11G CDD_H@Ant 2



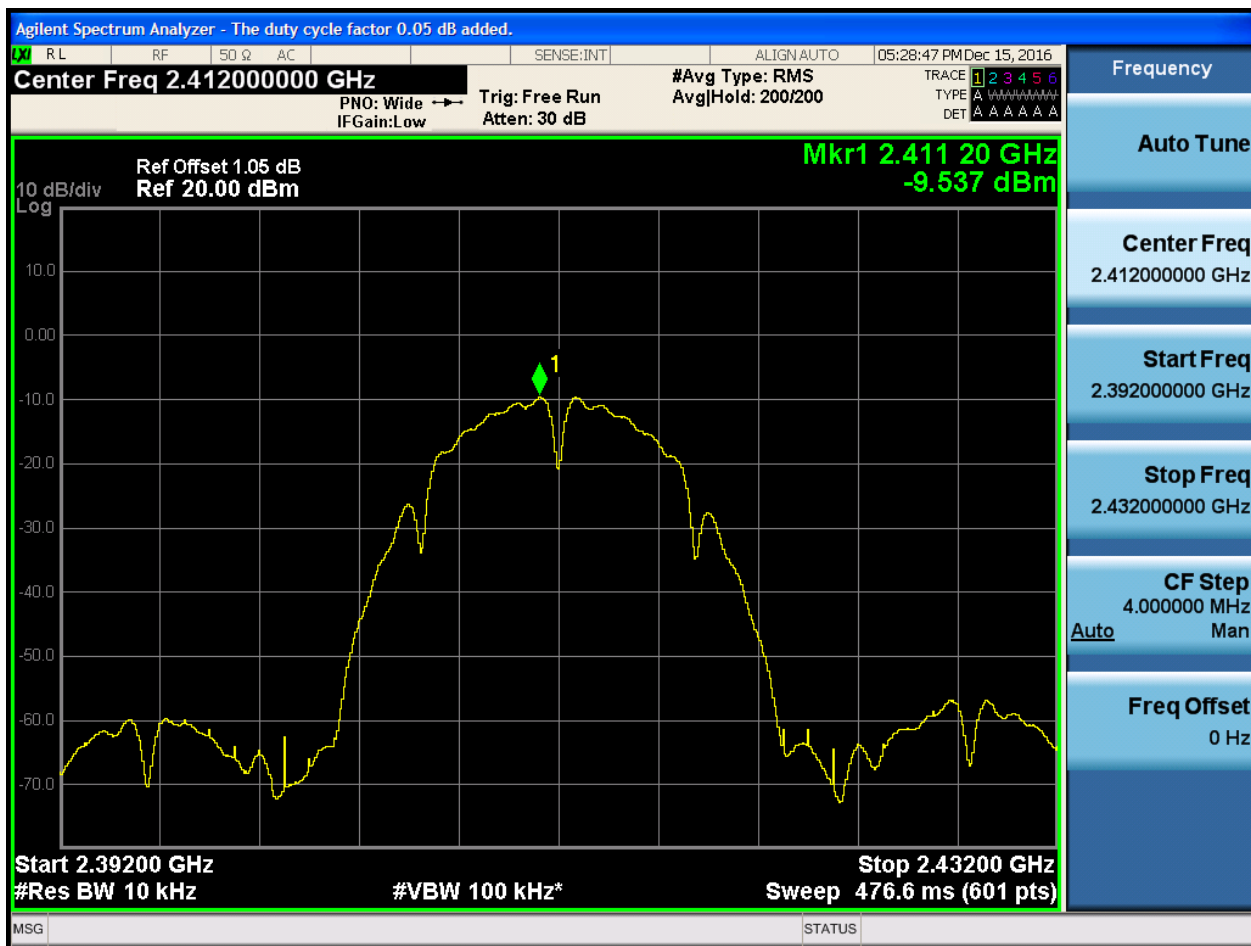
Appendix E: Maximum Power Spectral Density Level

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	PD[MHz]	Verdict
11B	L	2412	Ant 1	-9.54	pass
11B	L	2412	Ant 2	-12.43	pass
11B	M	2437	Ant 1	-9.34	pass
11B	M	2437	Ant 2	-12.32	pass
11B	H	2462	Ant 1	-9.70	pass
11B	H	2462	Ant 2	-12.70	pass
11G	L	2412	Ant 1	-13.49	pass
11G	L	2412	Ant 2	-16.24	pass
11G	M	2437	Ant 1	-12.80	pass
11G	M	2437	Ant 2	-15.92	pass
11G	H	2462	Ant 1	-14.15	pass
11G	H	2462	Ant 2	-16.52	pass
11N20	L	2412	Ant 1	-14.90	pass
11N20	L	2412	Ant 2	-18.25	pass
11N20	M	2437	Ant 1	-14.94	pass
11N20	M	2437	Ant 2	-17.89	pass
11N20	H	2462	Ant 1	-15.45	pass
11N20	H	2462	Ant 2	-18.44	pass
11N20m	L	2412	Ant 1	-15.04	pass
11N20m	L	2412	Ant 2	-17.92	pass
11N20m	M	2437	Ant 1	-14.82	pass
11N20m	M	2437	Ant 2	-17.56	pass
11N20m	H	2462	Ant 1	-15.67	pass
11N20m	H	2462	Ant 2	-18.01	pass
11G CDD	L	2412	Ant 1	-13.88	pass
11G CDD	L	2412	Ant 2	-16.26	pass
11G CDD	M	2437	Ant 1	-12.95	pass
11G CDD	M	2437	Ant 2	-15.99	pass
11G CDD	H	2462	Ant 1	-14.06	pass
11G CDD	H	2462	Ant 2	-16.73	pass

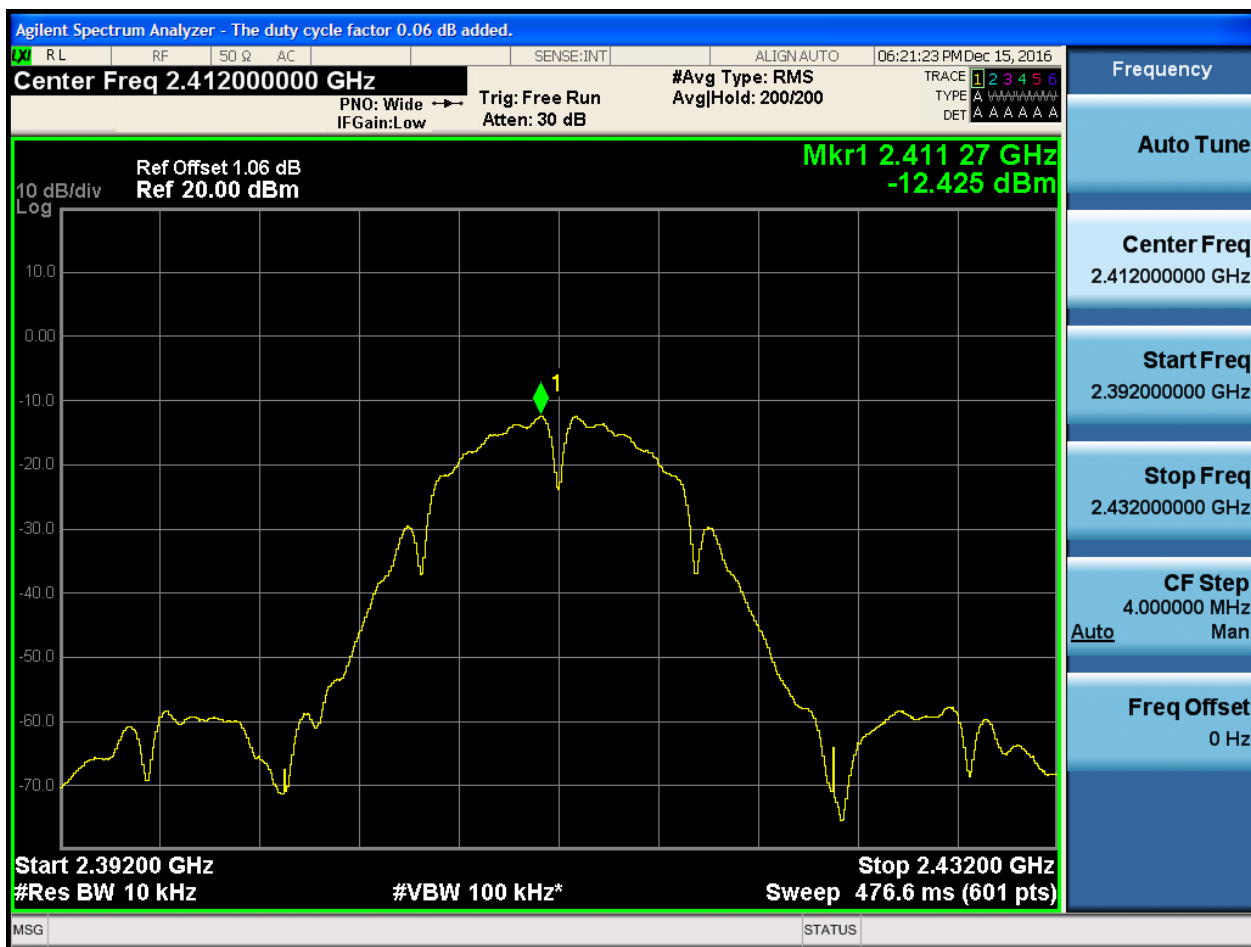
Part II - Test Plots

2.1 11B_L@Ant 1



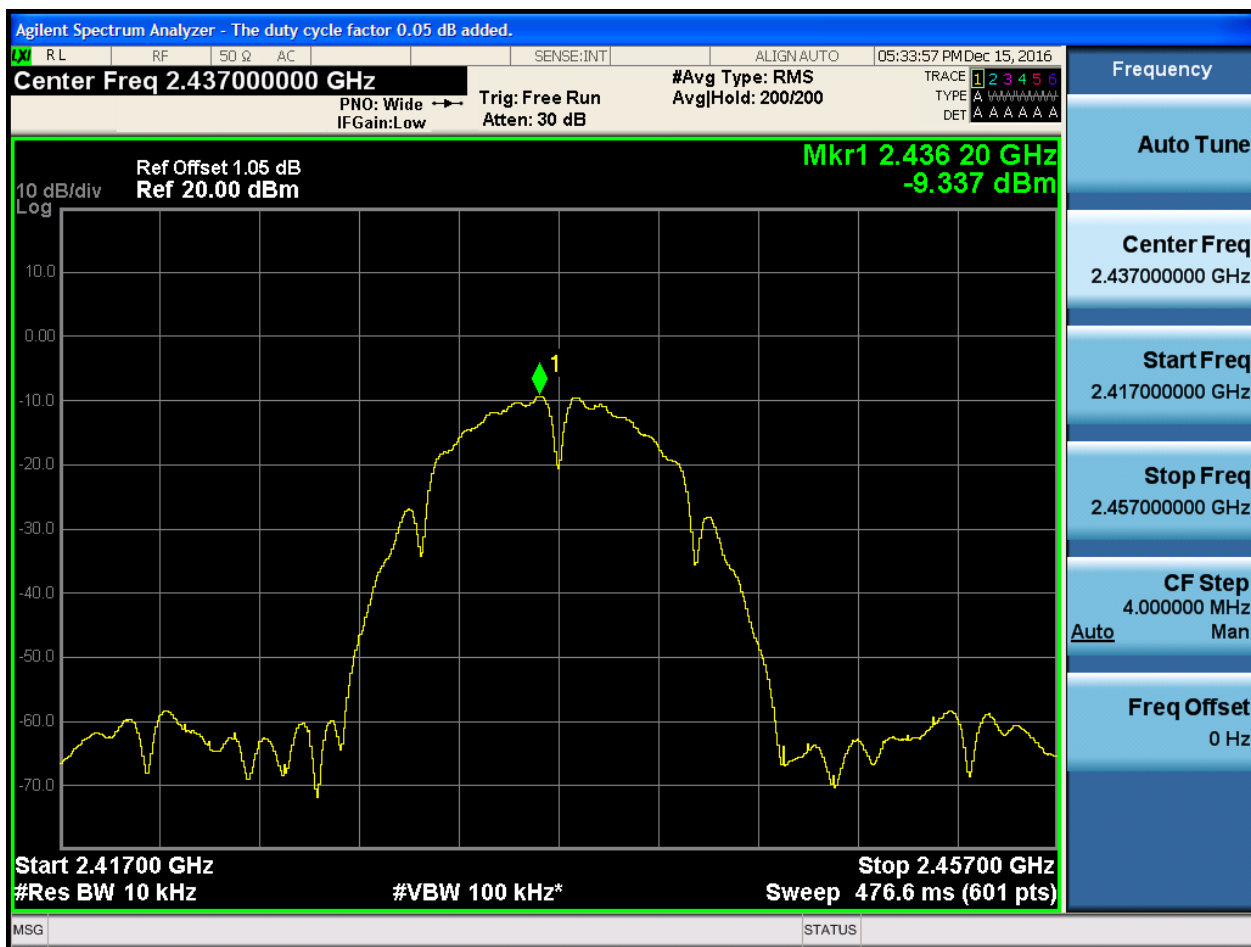


2.2 11B_L@Ant 2





2.3 11B_M@Ant 1



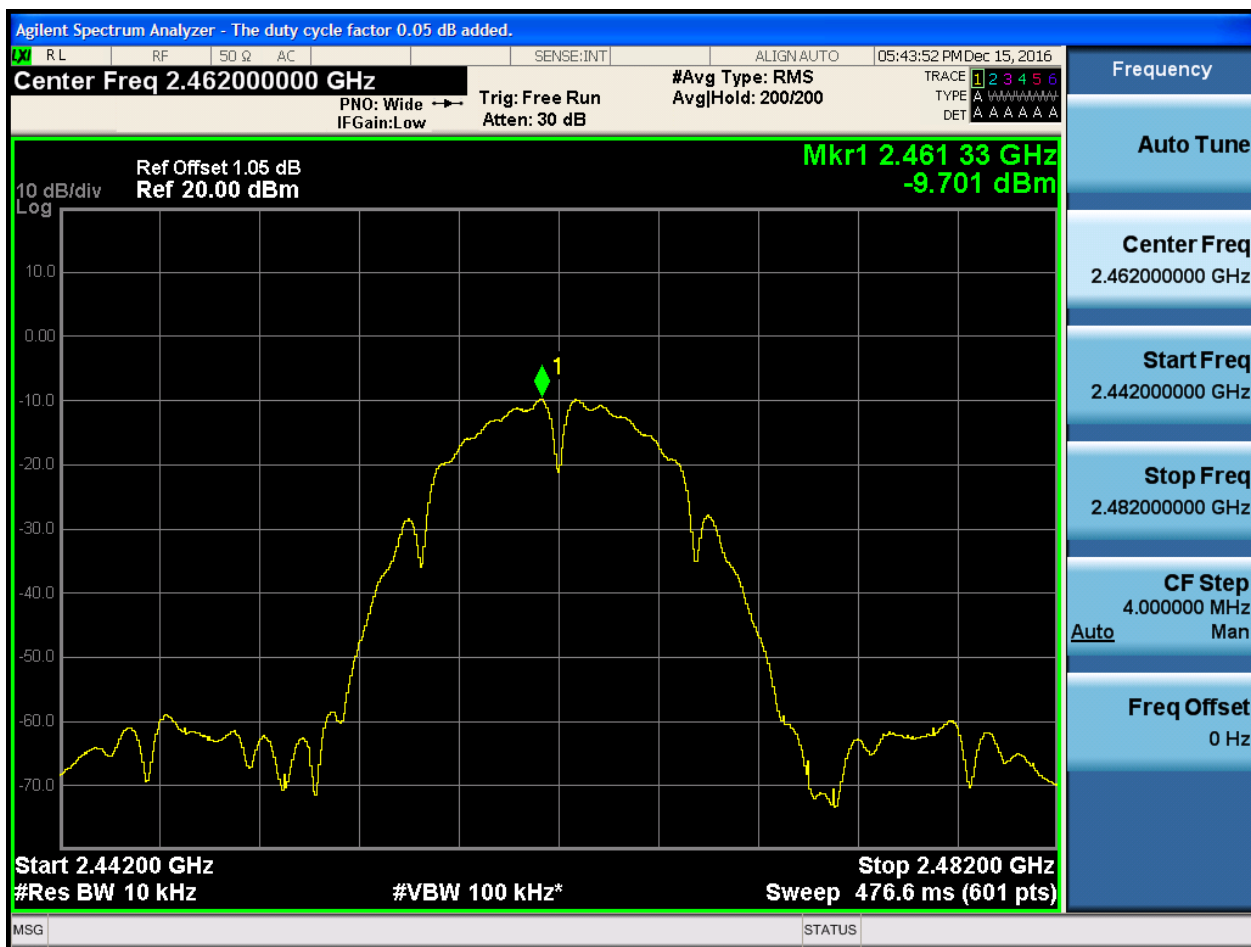


2.4 11B_M@Ant 2





2.5 11B_H@Ant 1



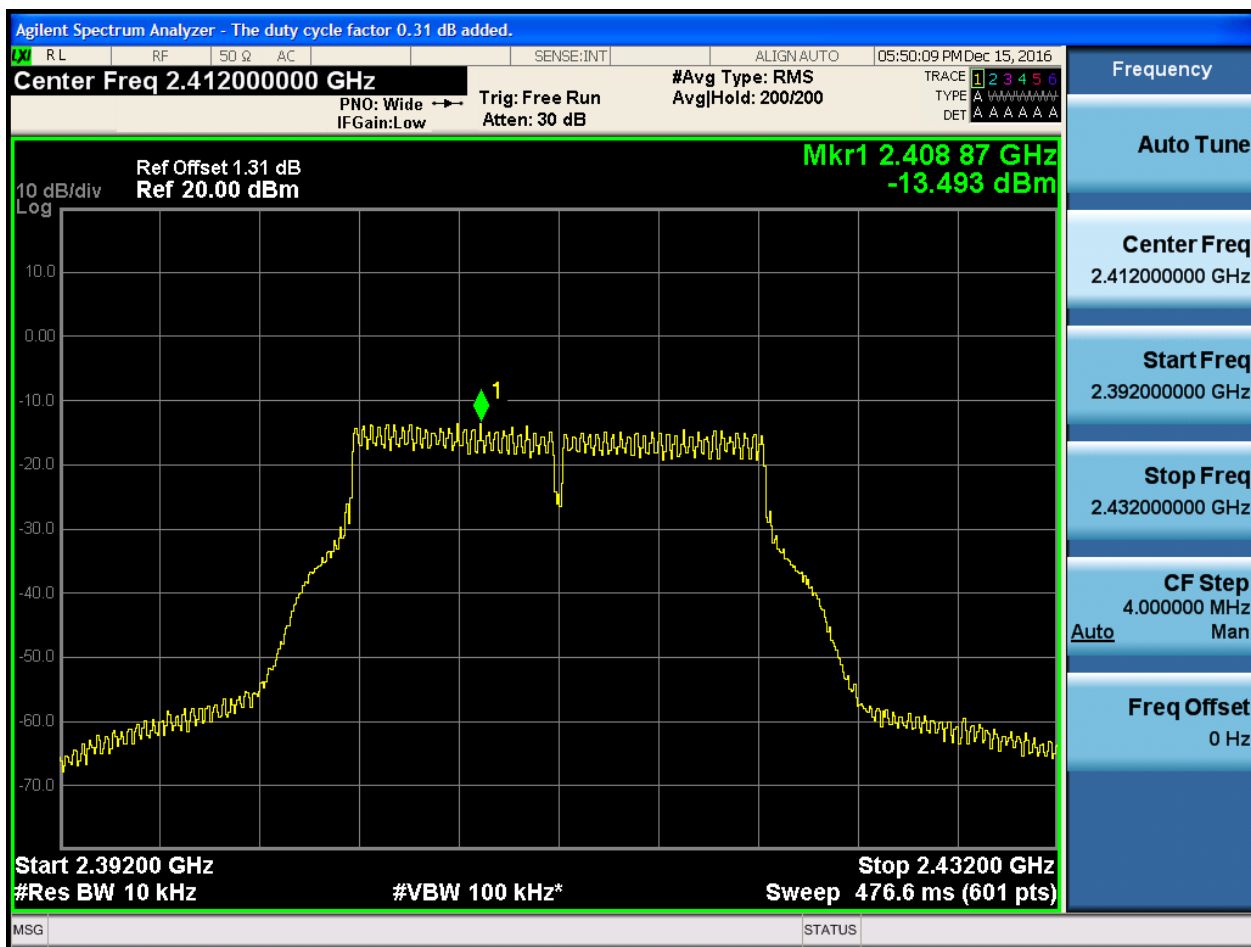


2.6 11B_H@Ant 2



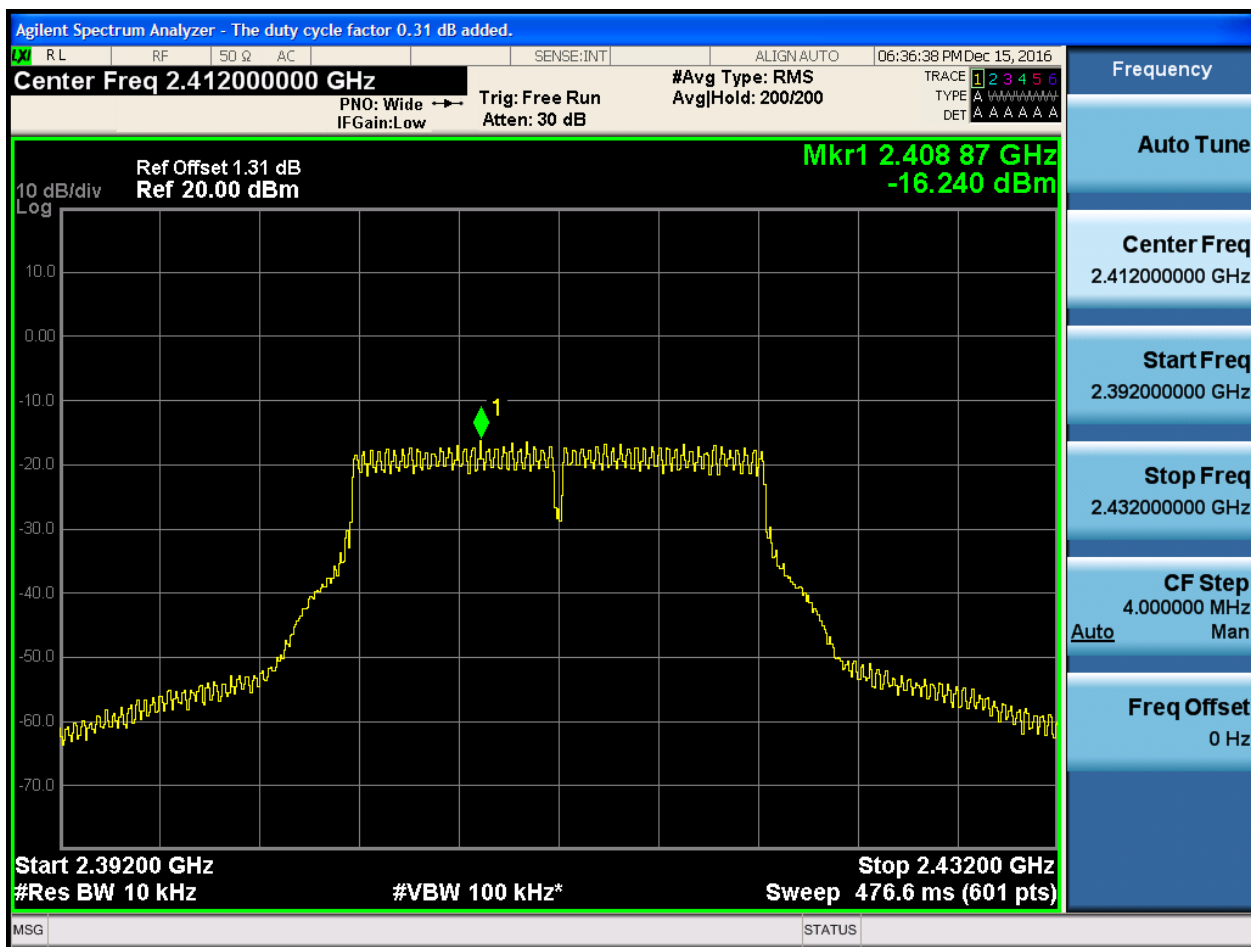


2.7 11G_L@Ant 1



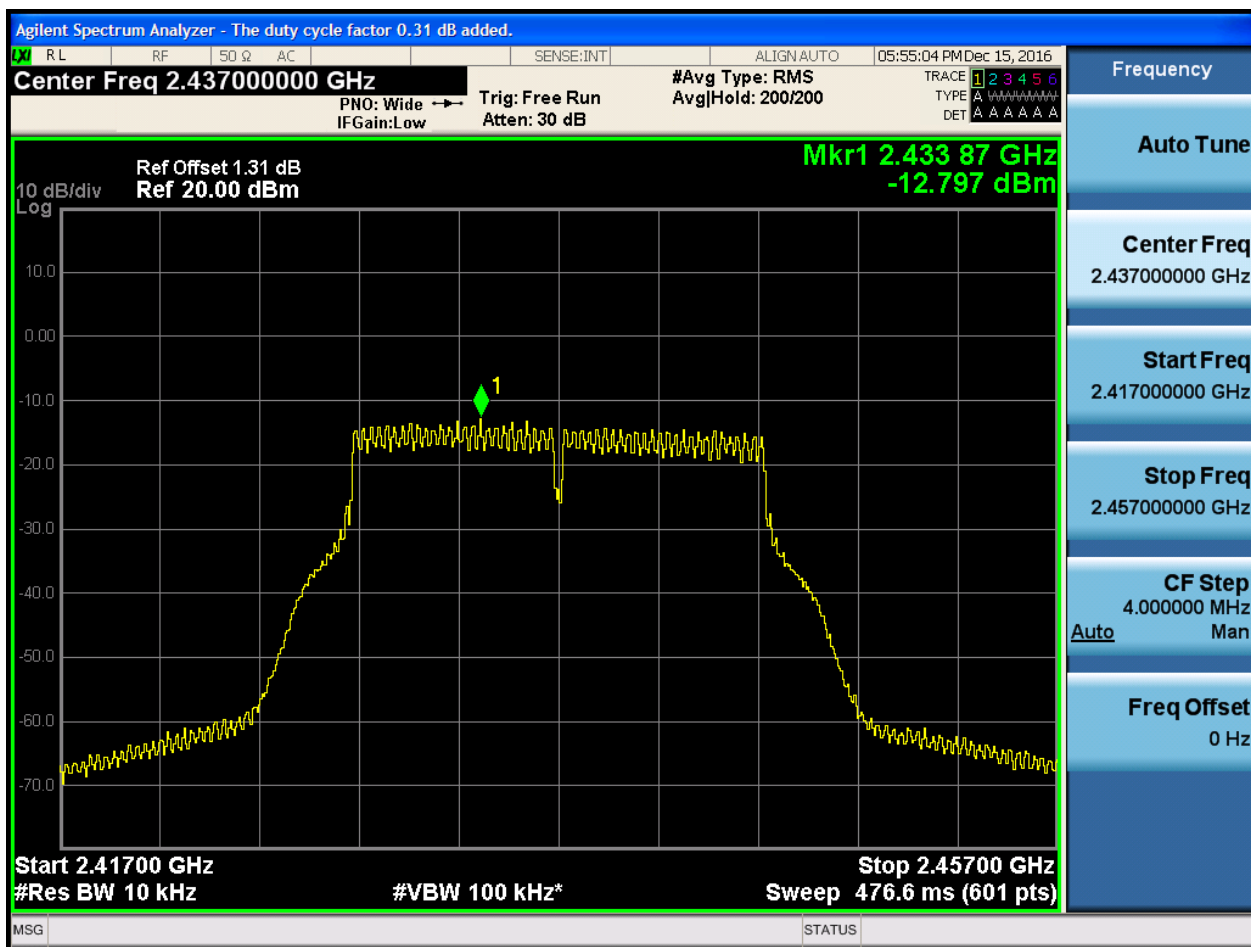


2.8 11G_L@Ant 2



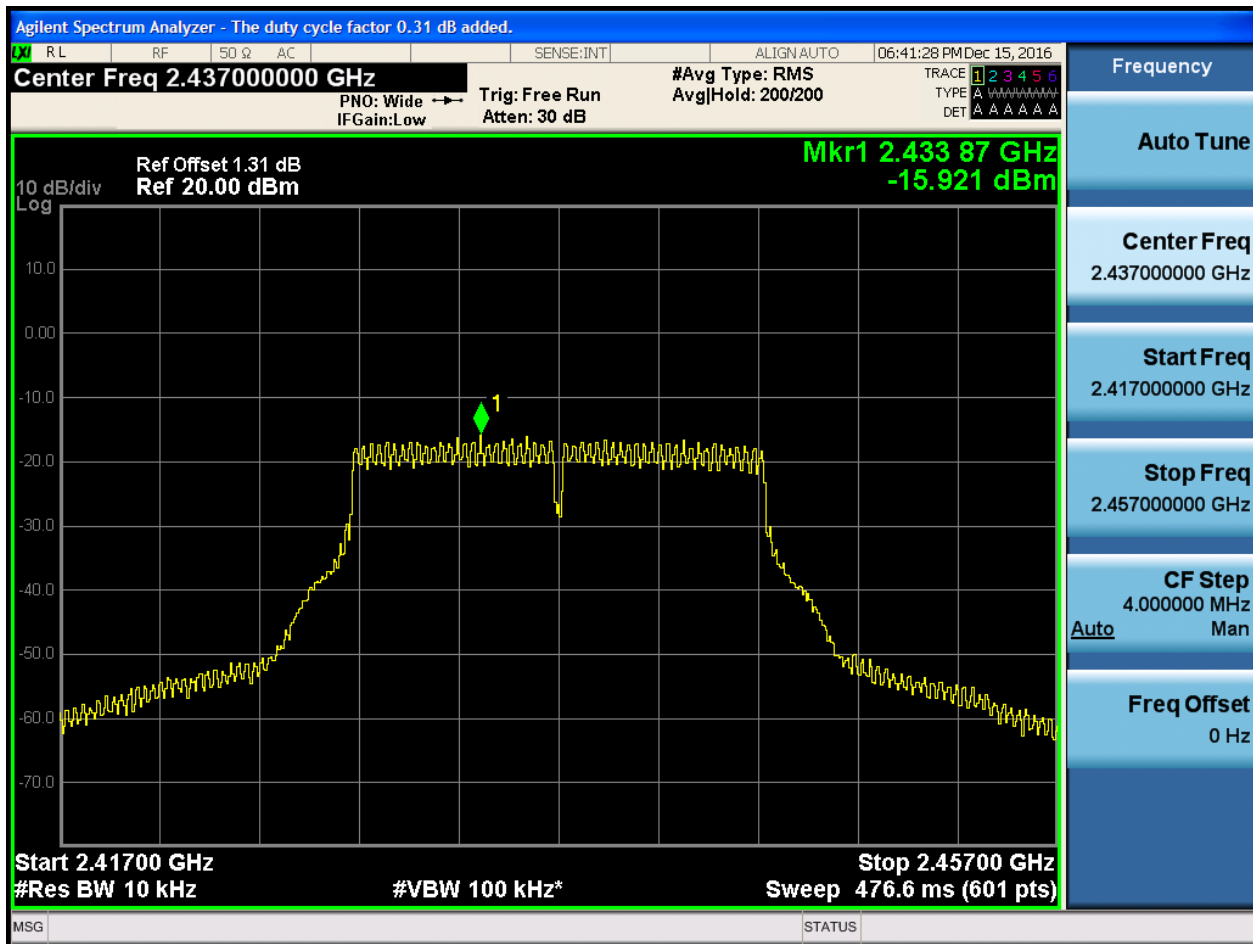


2.9 11G_M@Ant 1



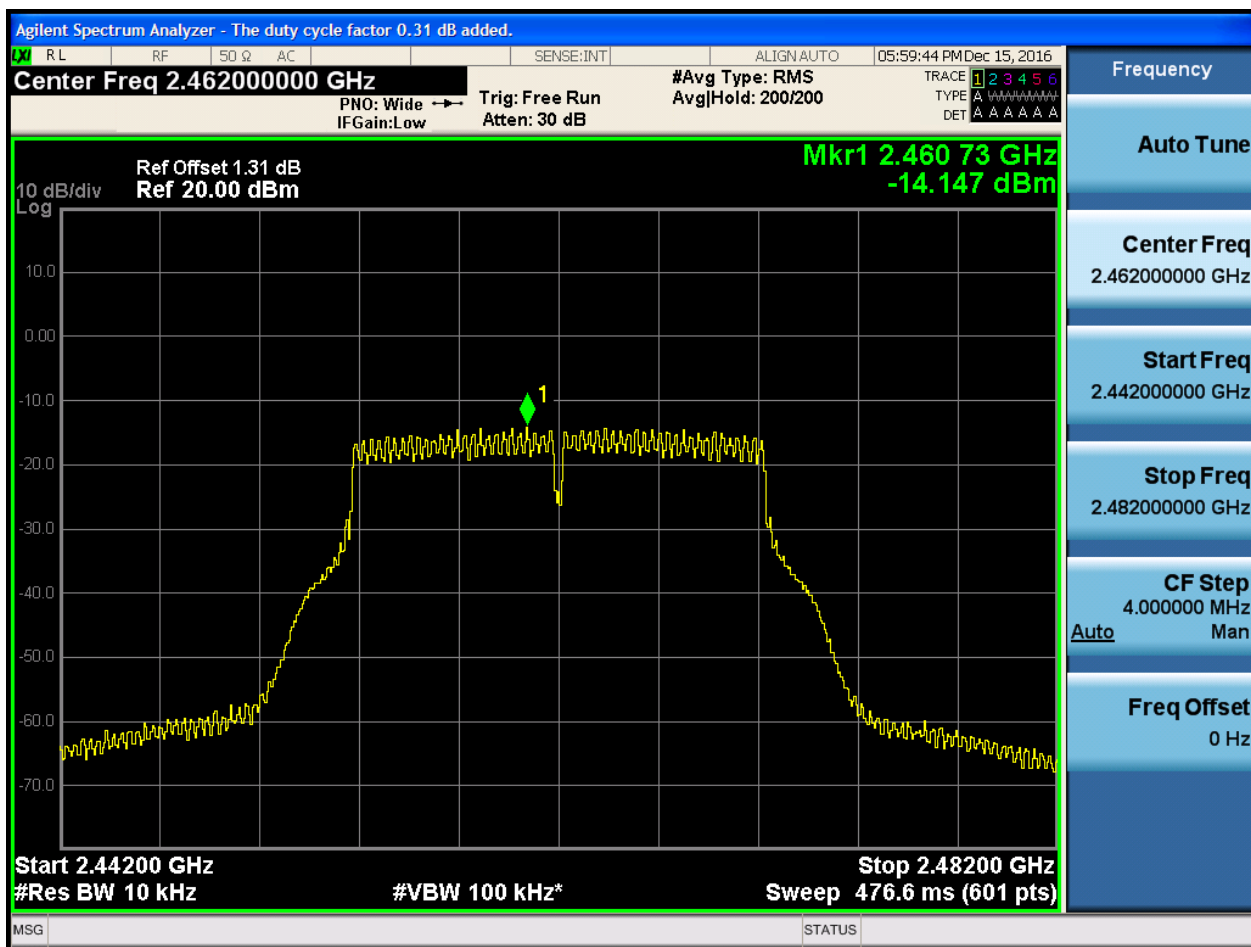


2.10 11G_M@Ant 2



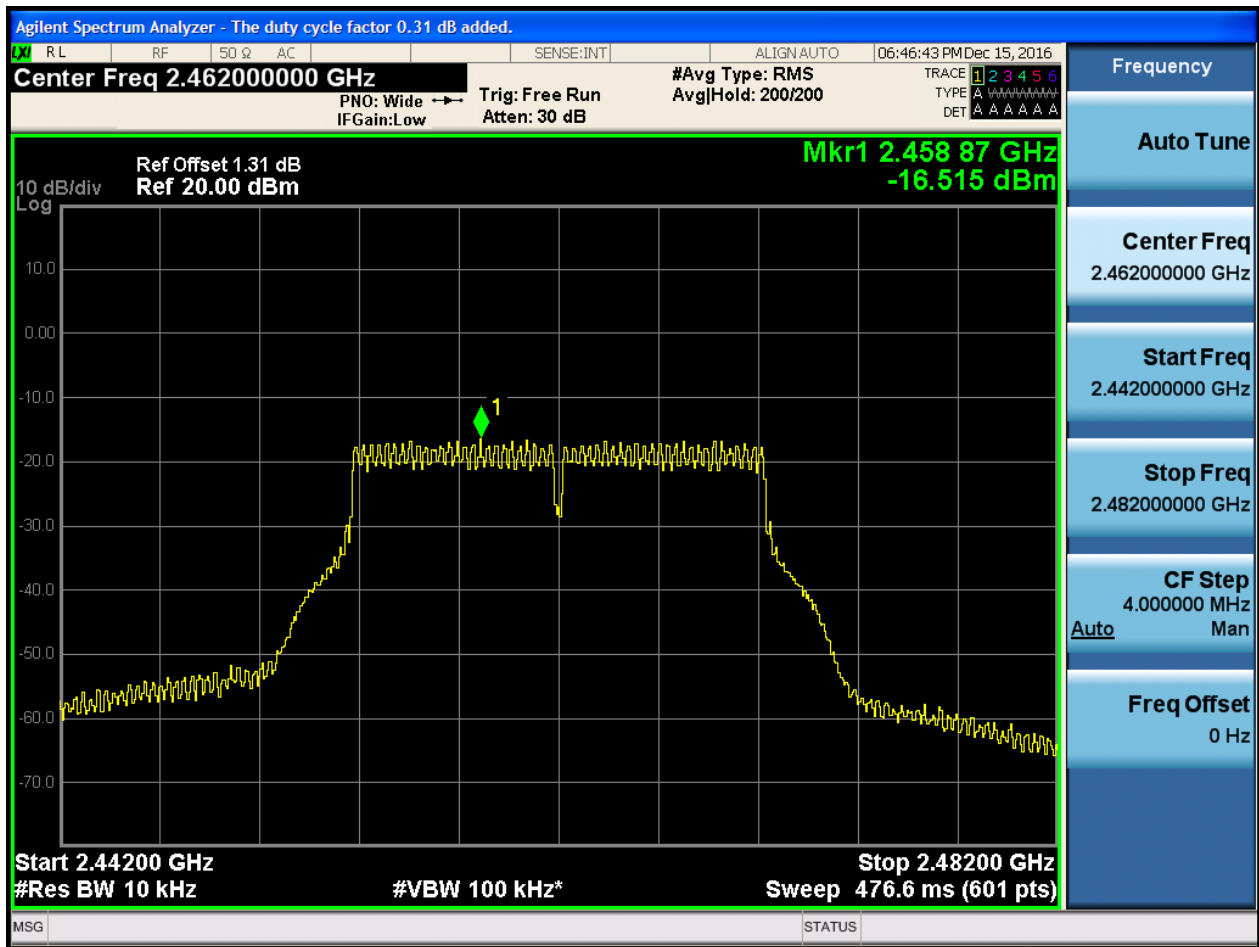


2.11 11G_H@Ant 1



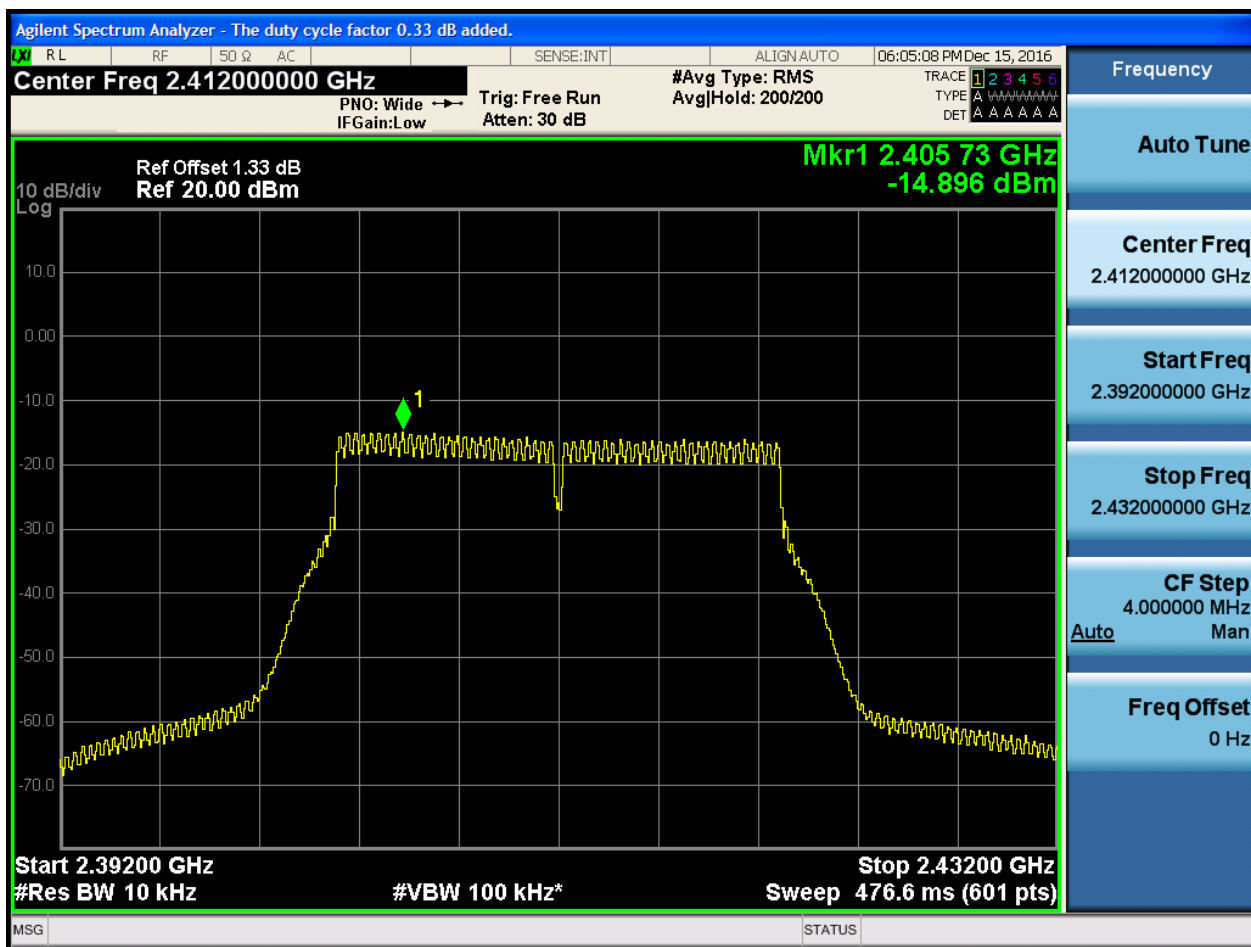


2.12 11G_H@Ant 2



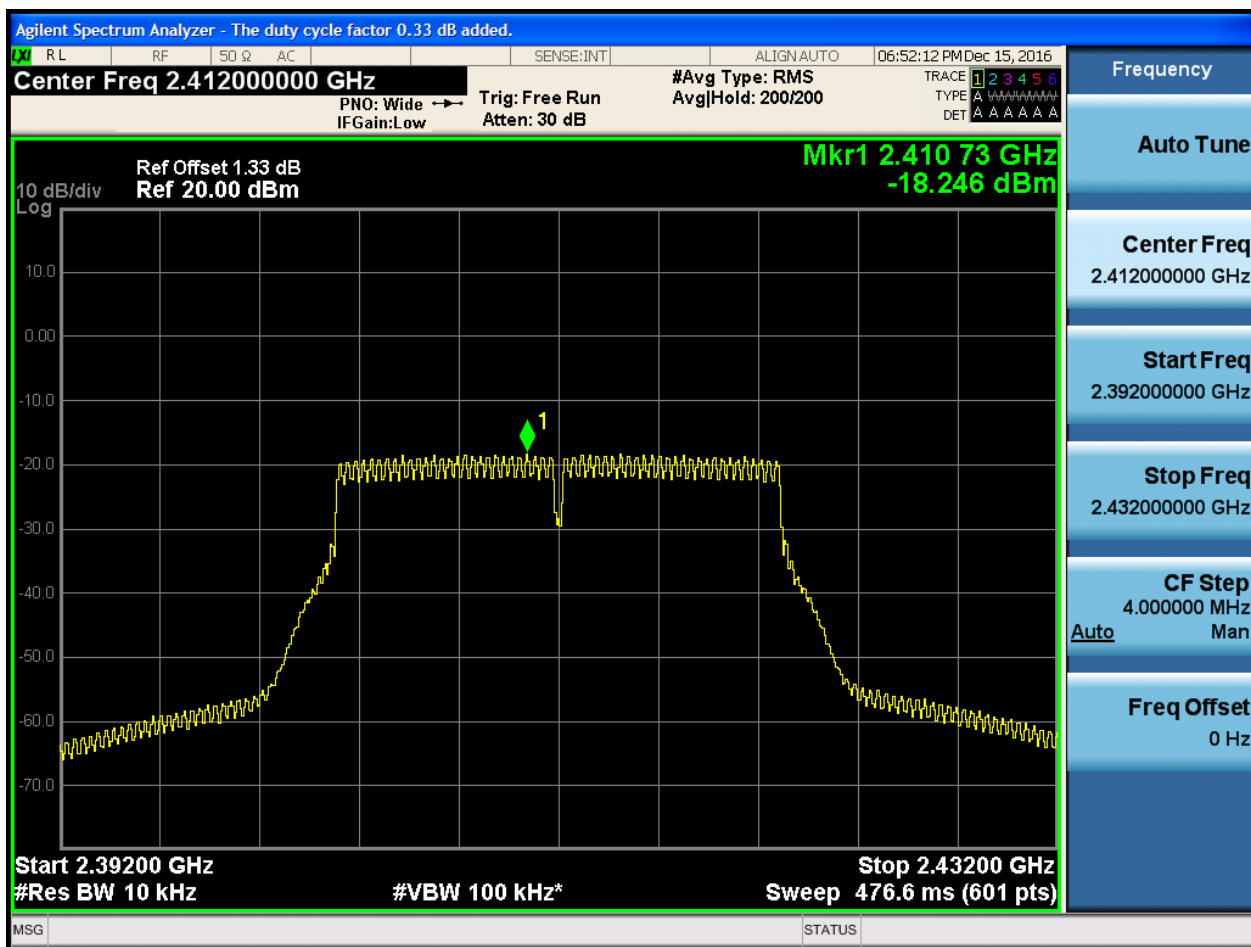


2.13 11N20_L@Ant 1



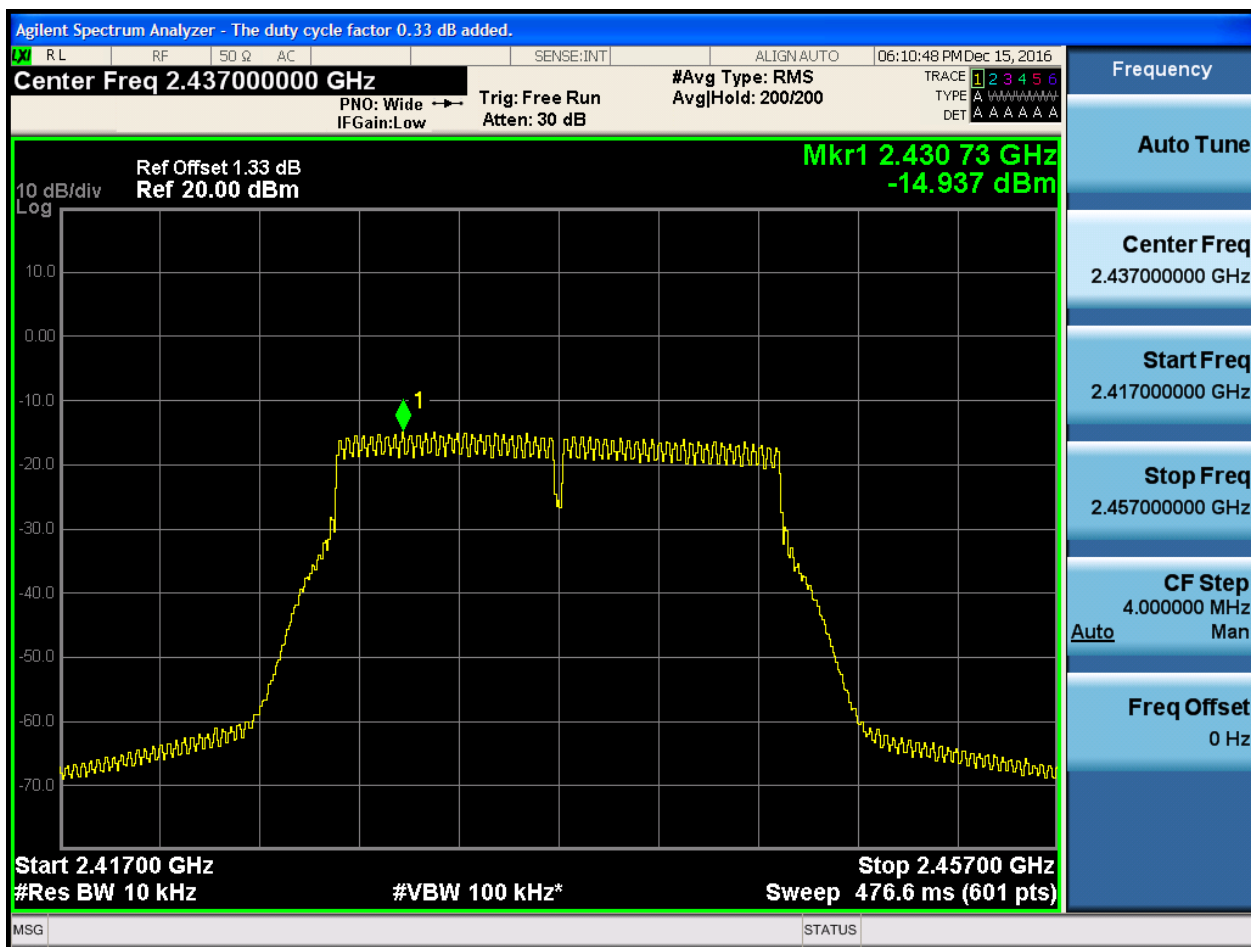


2.14 11N20_L@Ant 2



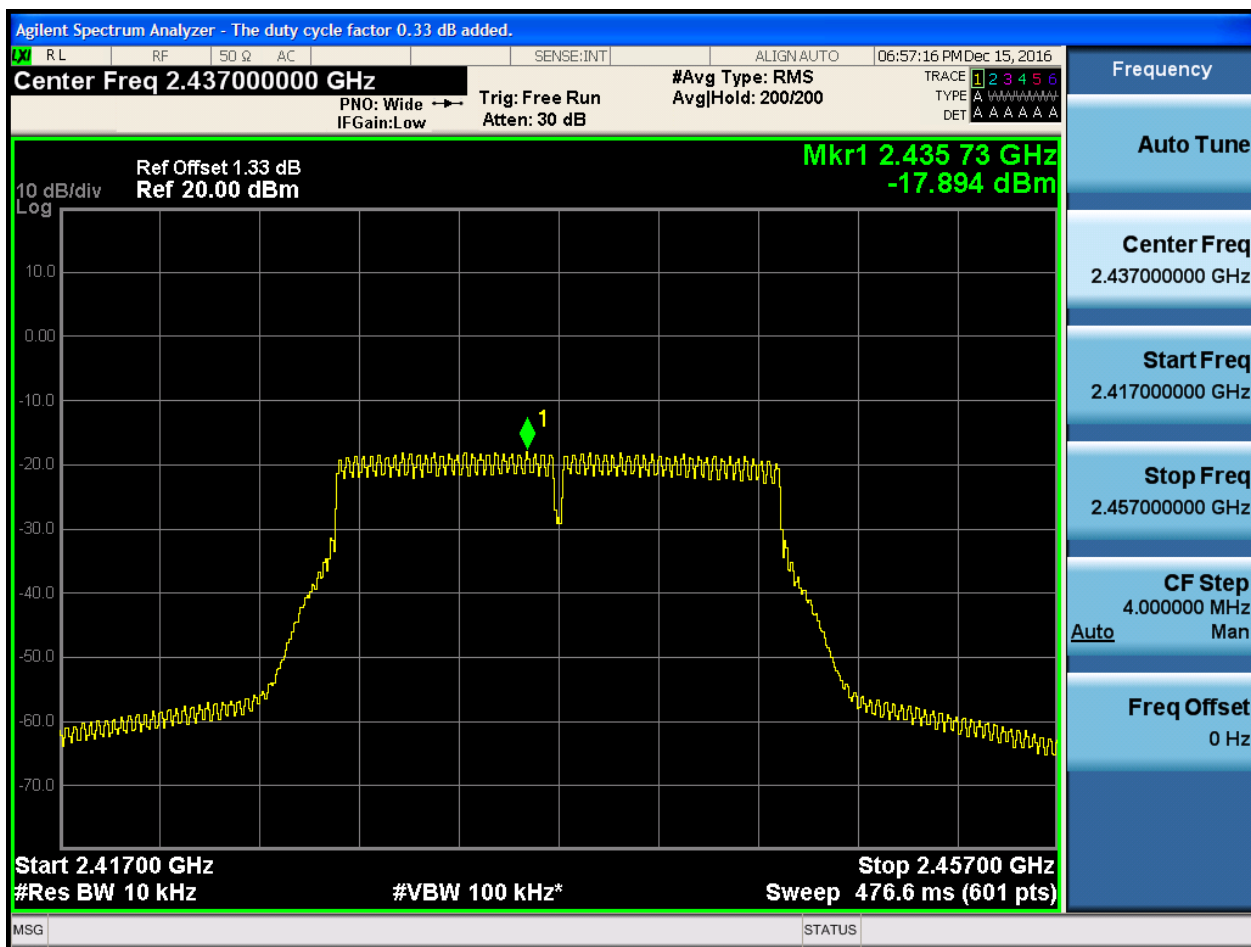


2.15 11N20_M@Ant 1



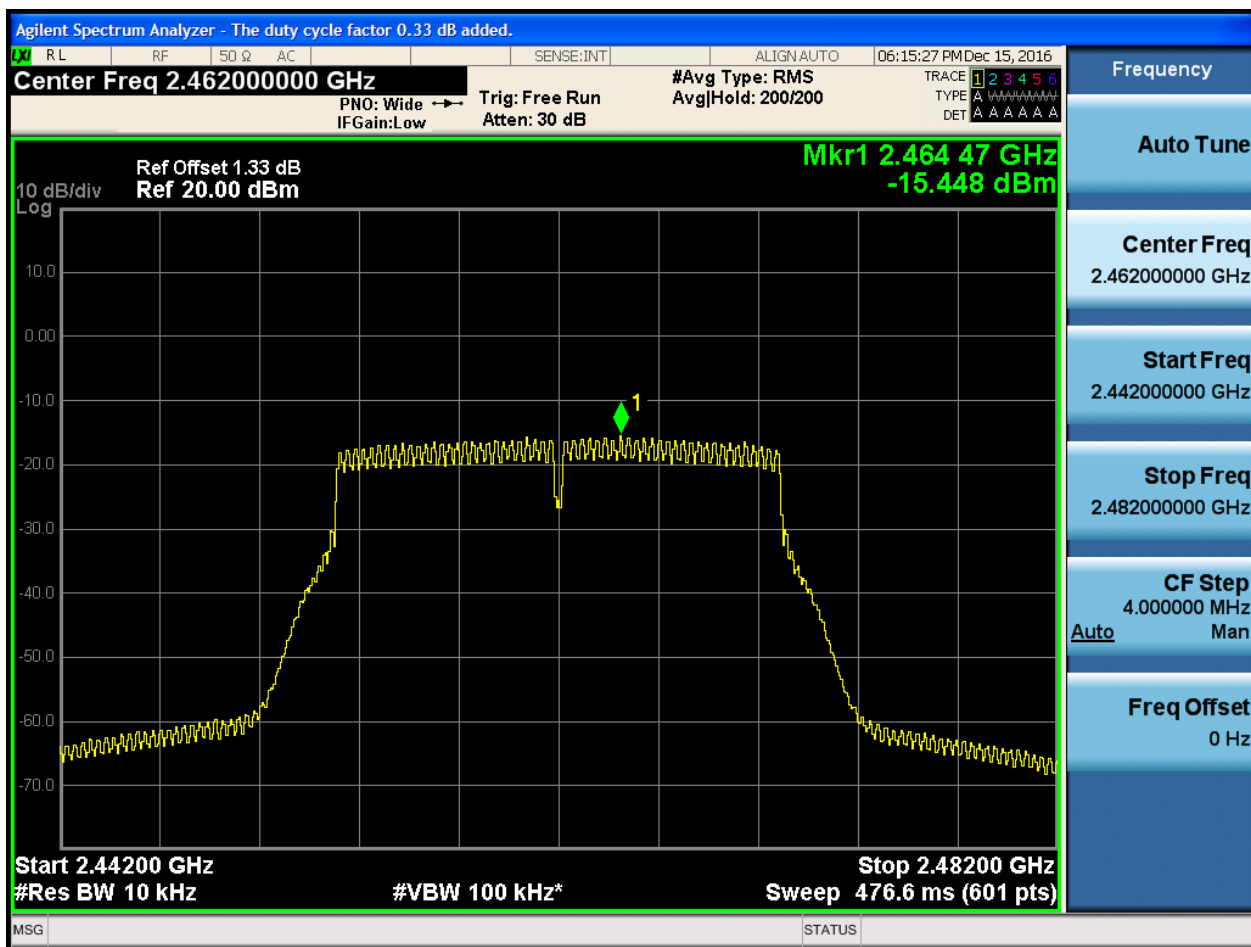


2.16 11N20_M@Ant 2



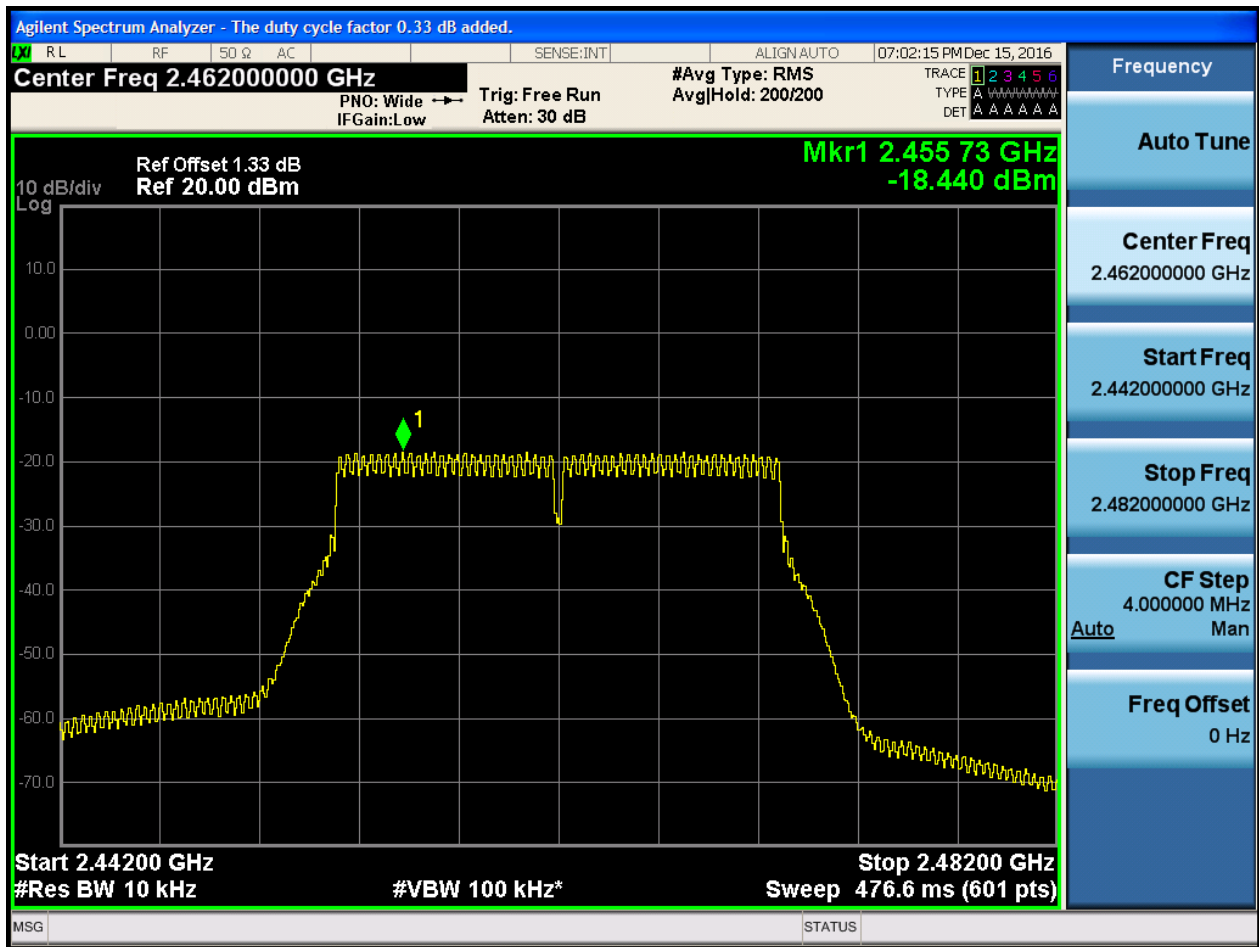


2.17 11N20_H@Ant 1



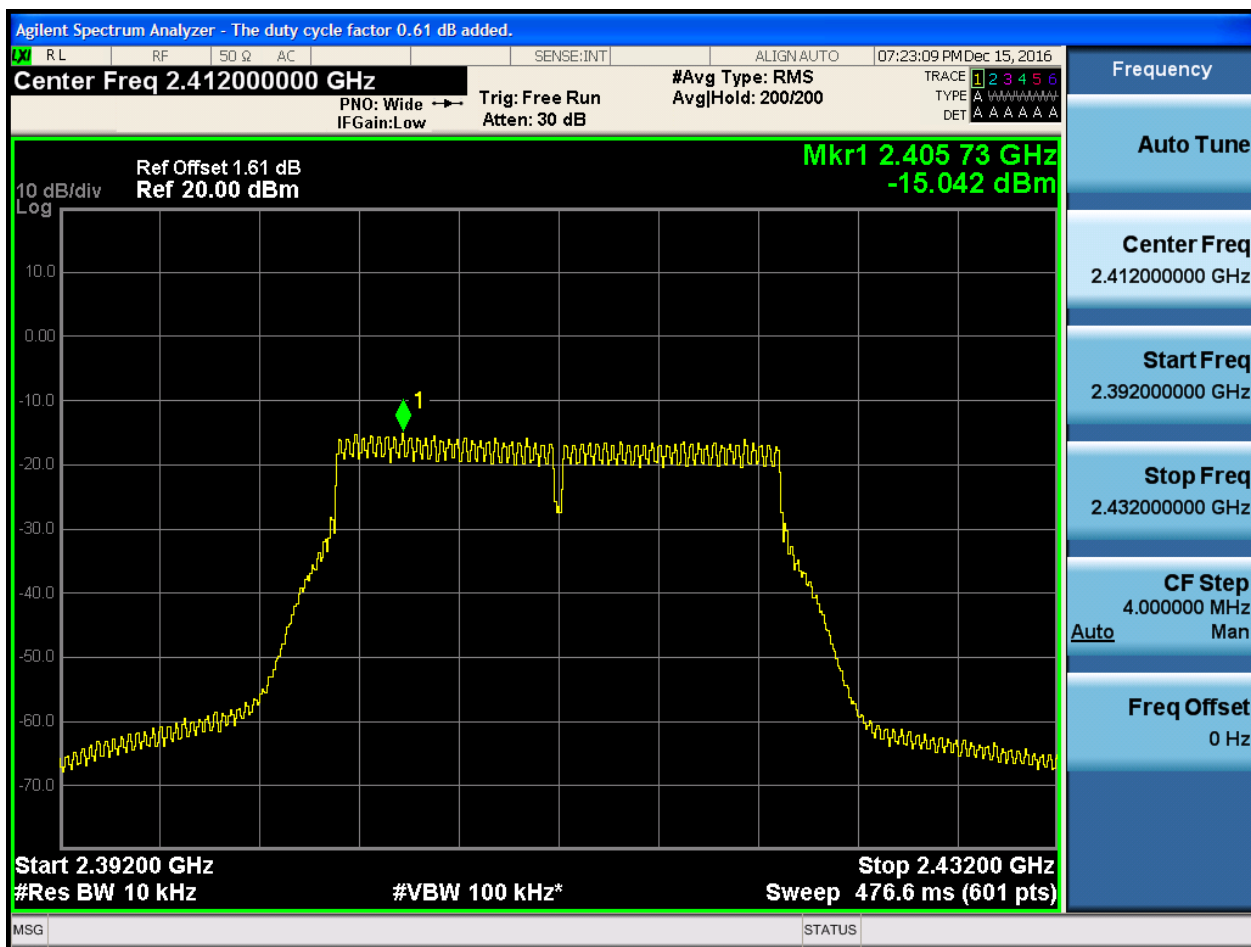


2.18 11N20_H@Ant 2



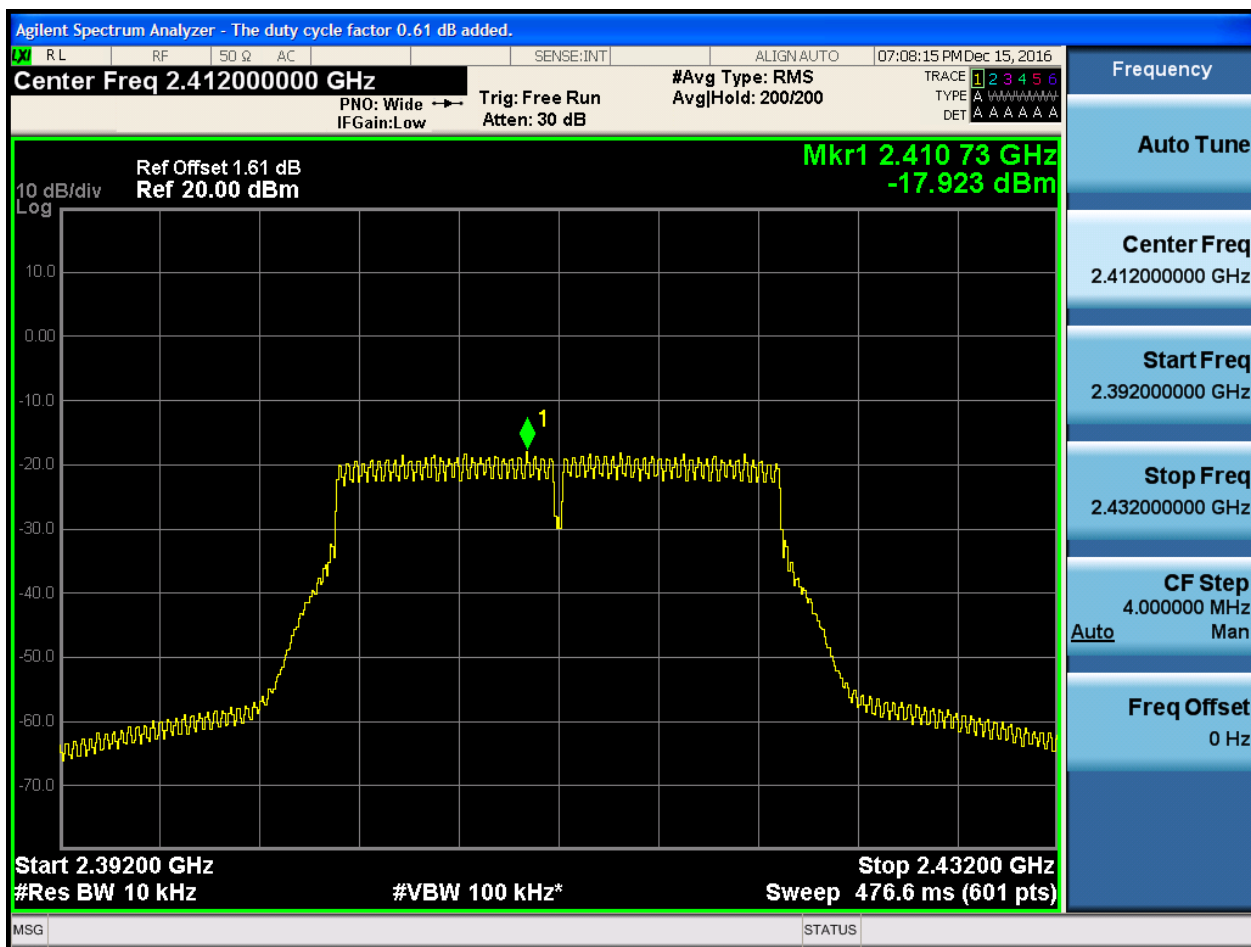


2.19 11N20m_L@Ant 1



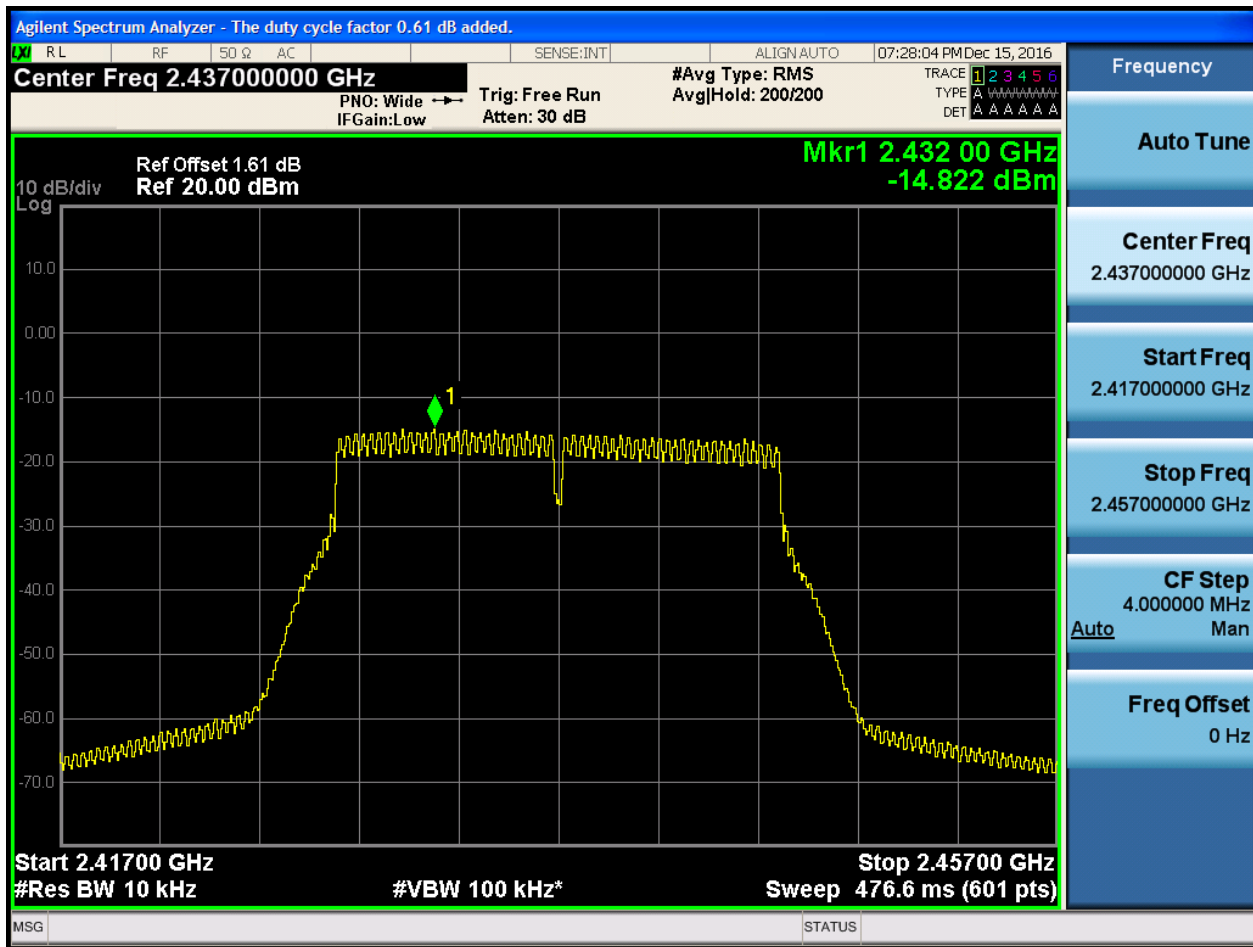


2.20 11N20m_L@Ant 2



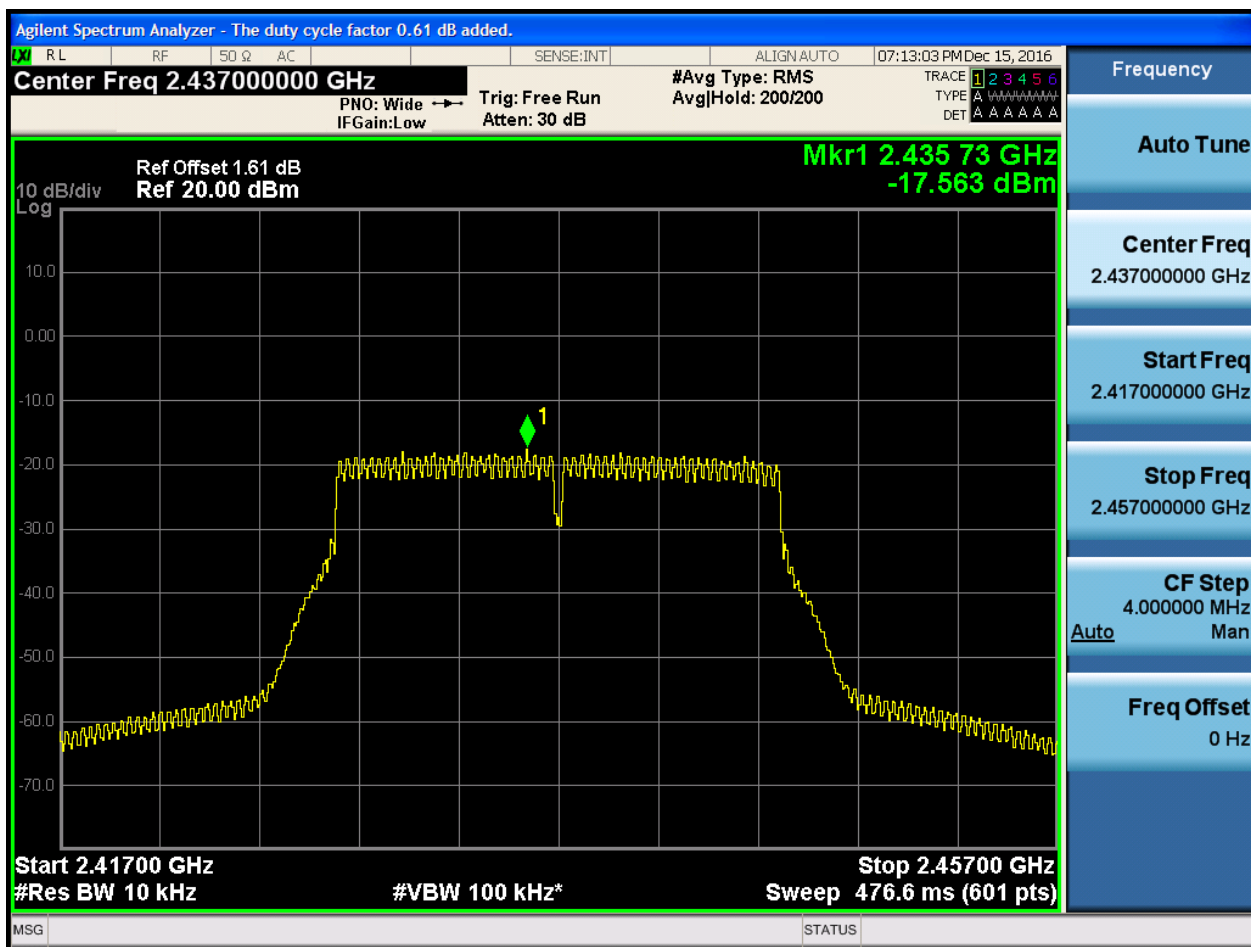


2.21 11N20m_M@Ant 1





2.22 11N20m_M@Ant 2





2.23 11N20m_H@Ant 1

