



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	7.09	pass
11B	L	2412	Ant 2	7.10	pass
11B	M	2437	Ant 1	7.13	pass
11B	M	2437	Ant 2	7.11	pass
11B	H	2462	Ant 1	7.60	pass
11B	H	2462	Ant 2	7.11	pass
11G	L	2412	Ant 1	16.37	pass
11G	L	2412	Ant 2	16.36	pass
11G	M	2437	Ant 1	16.37	pass
11G	M	2437	Ant 2	16.41	pass
11G	H	2462	Ant 1	16.42	pass
11G	H	2462	Ant 2	16.40	pass
11N20	L	2412	Ant 1	17.59	pass
11N20	L	2412	Ant 2	16.70	pass
11N20	M	2437	Ant 1	17.63	pass
11N20	M	2437	Ant 2	17.64	pass
11N20	H	2462	Ant 1	17.65	pass
11N20	H	2462	Ant 2	17.63	pass
11N20m	L	2412	Ant 1	17.58	pass
11N20m	L	2412	Ant 2	17.60	pass
11N20m	M	2437	Ant 1	17.61	pass
11N20m	M	2437	Ant 2	17.66	pass
11N20m	H	2462	Ant 1	17.65	pass
11N20m	H	2462	Ant 2	17.65	pass
11G CDD	L	2412	Ant 1	16.39	pass
11G CDD	L	2412	Ant 2	16.37	pass
11G CDD	M	2437	Ant 1	16.40	pass
11G CDD	M	2437	Ant 2	16.41	pass

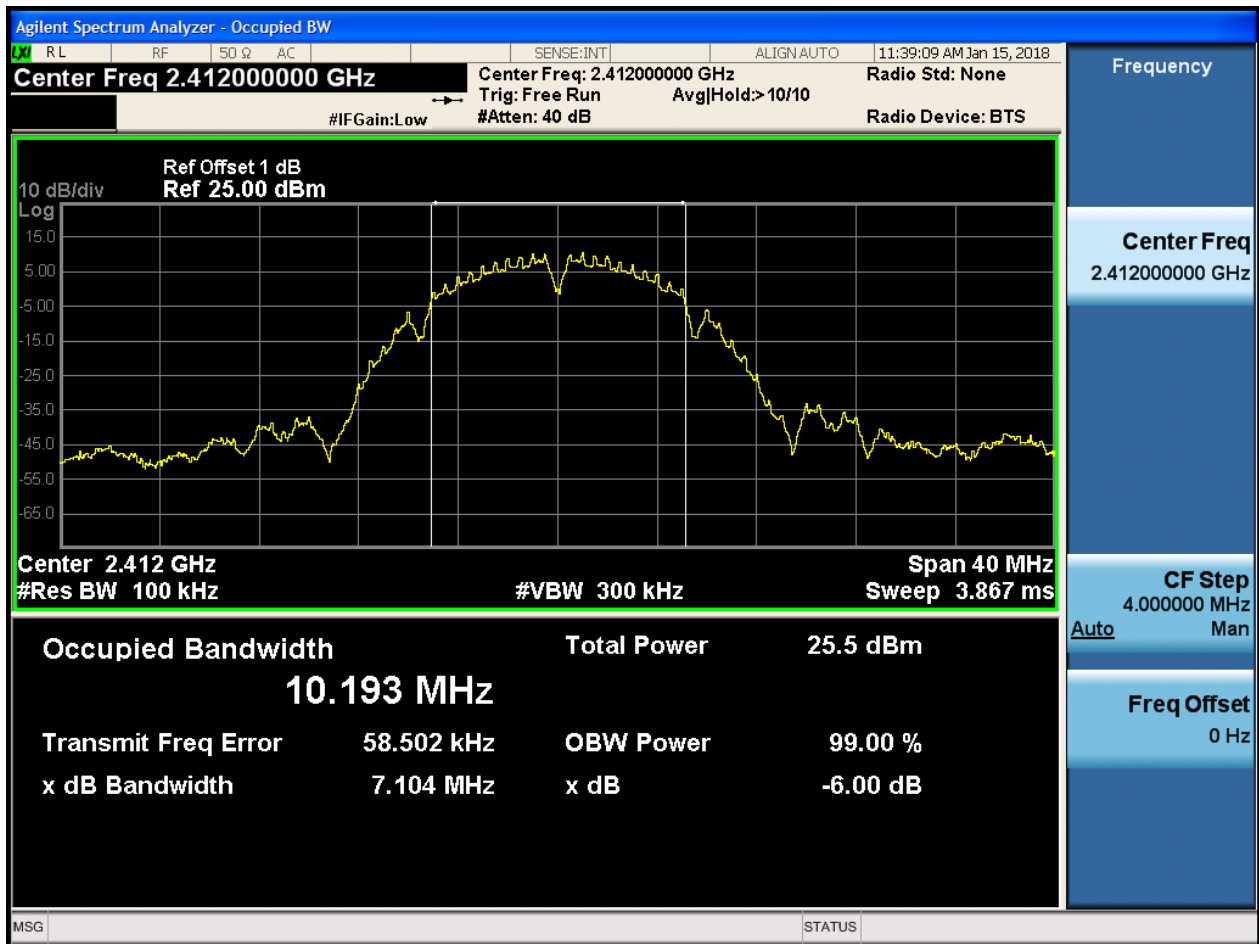


Test Mode	Test Channel	Frequency[MHz]	Ant	DTS6dBBW[MHz]	Verdict
11G CDD	H	2462	Ant 1	16.38	pass
11G CDD	H	2462	Ant 2	16.42	pass





2.2 11B_L@Ant 2





Agilent Spectrum Analyzer - Occupied BW

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 09:31:15 AM Jan 15, 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 100 kHz #VBW 300 kHz Sweep 3.867 ms

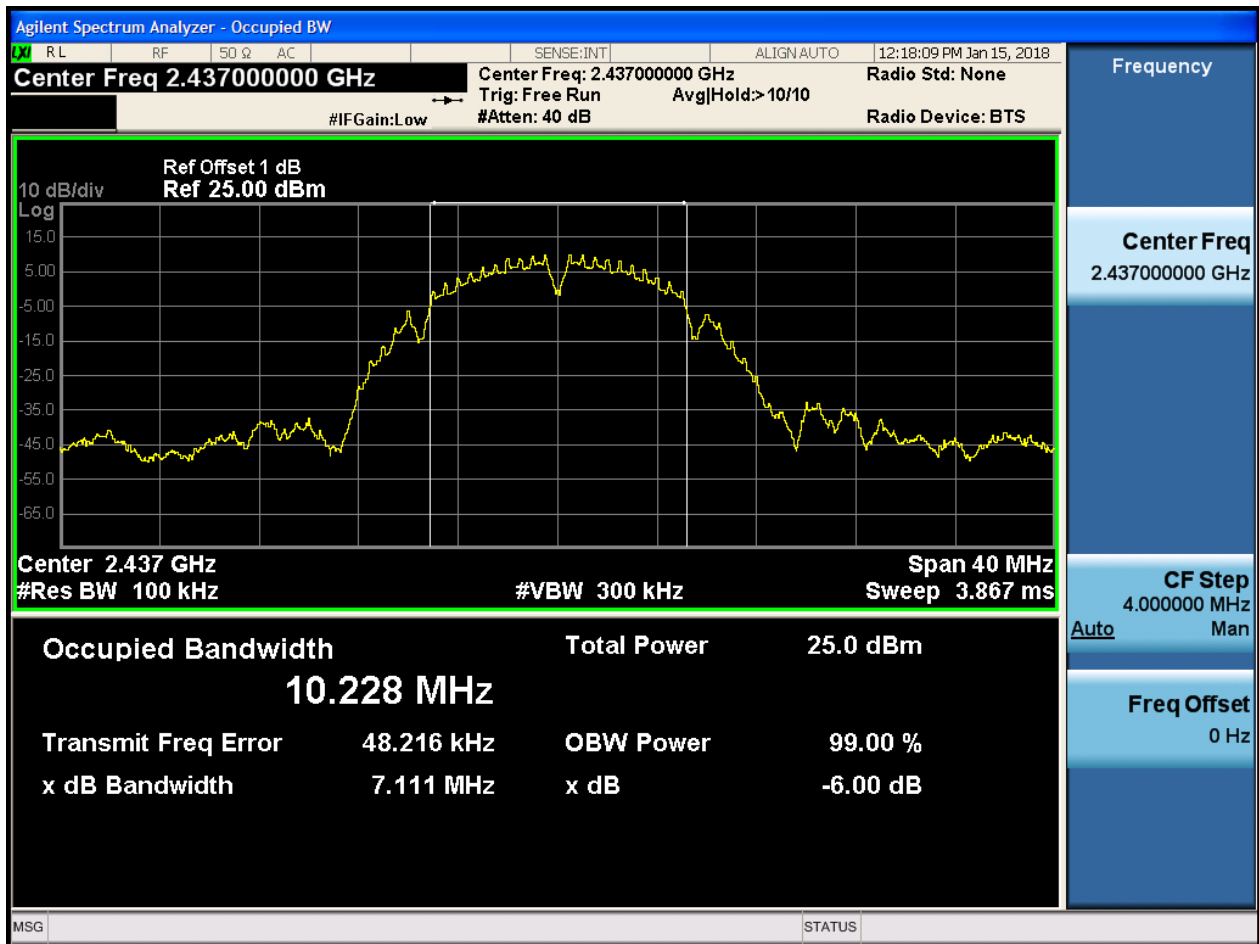
Occupied Bandwidth		Total Power	
10.146 MHz		25.7 dBm	
Transmit Freq Error	27.024 kHz	OBW Power	99.00 %
x dB Bandwidth	7.128 MHz	x dB	-6.00 dB

CF Step 4.000000 MHz
 Auto Man
 Freq Offset 0 Hz

MSG STATUS

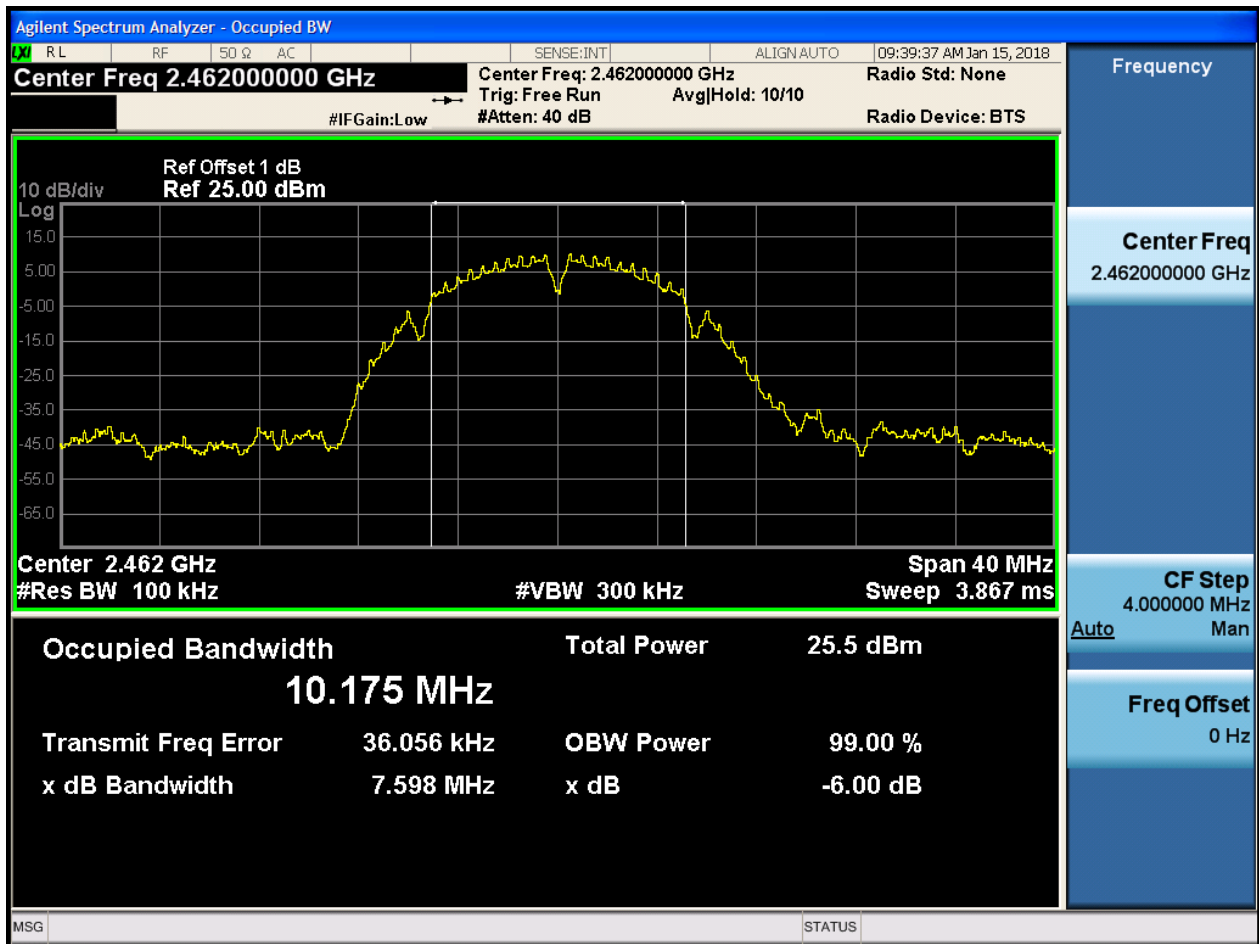


2.4 11B_M@Ant 2



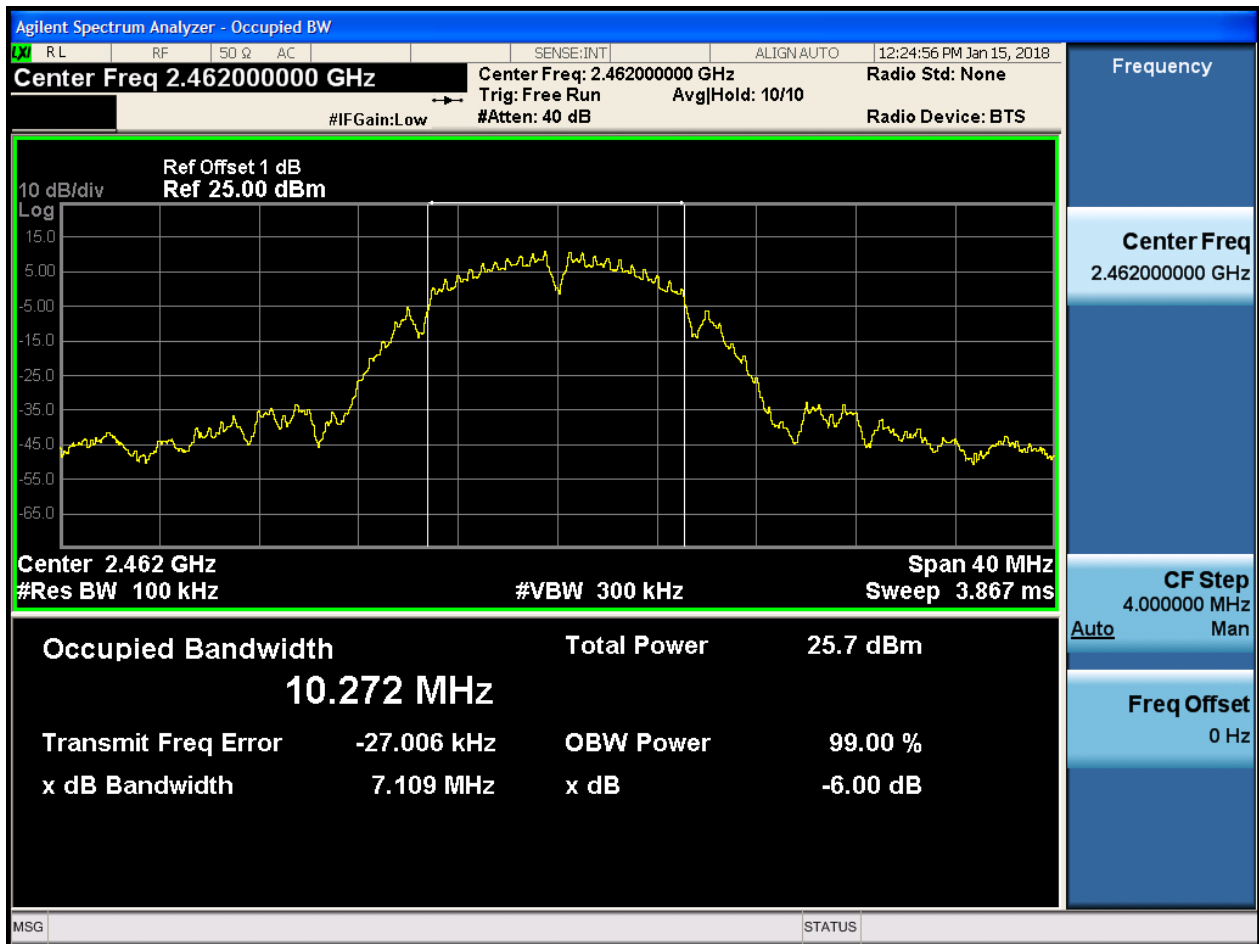


2.5 11B_H@Ant 1



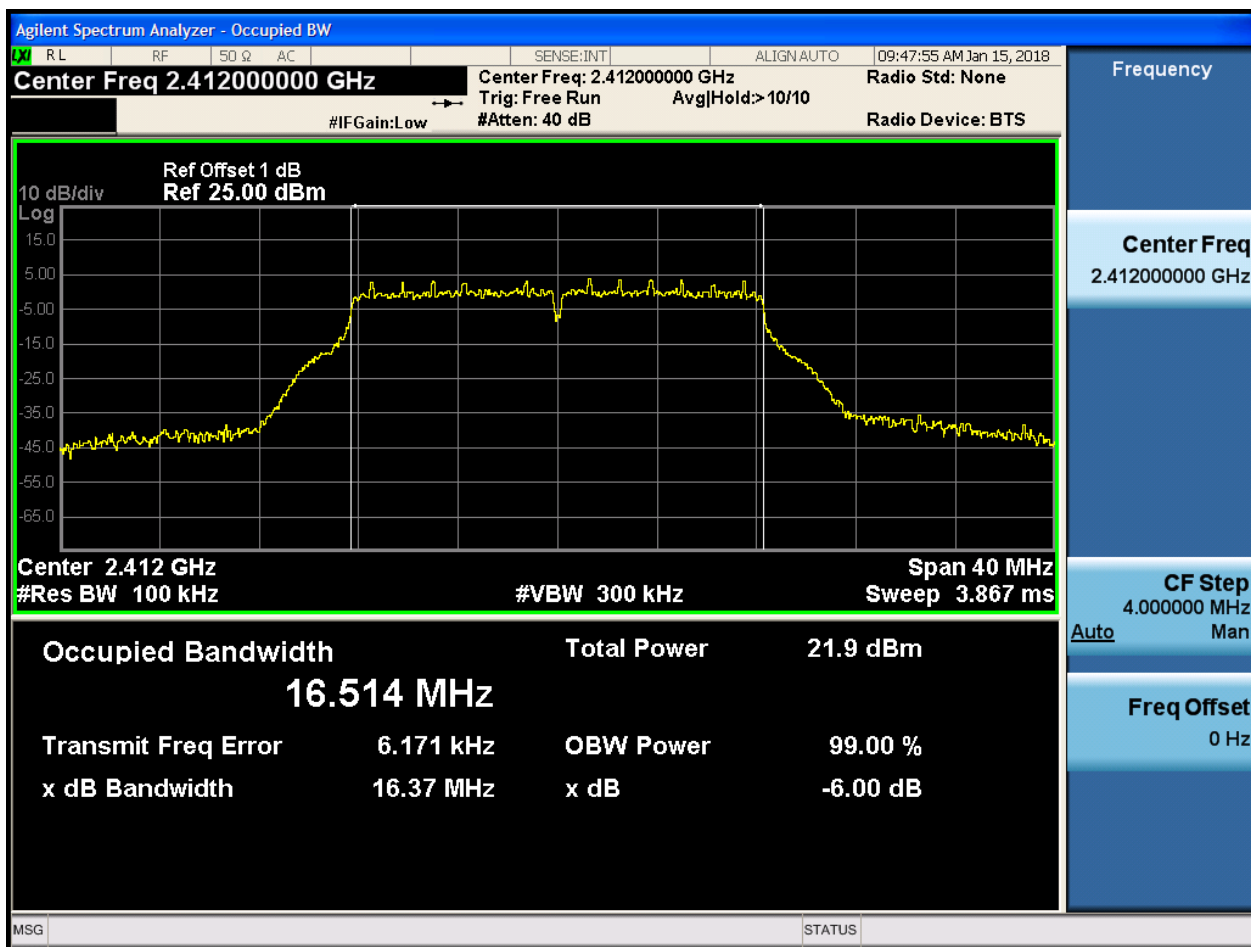


2.6 11B_H@Ant 2



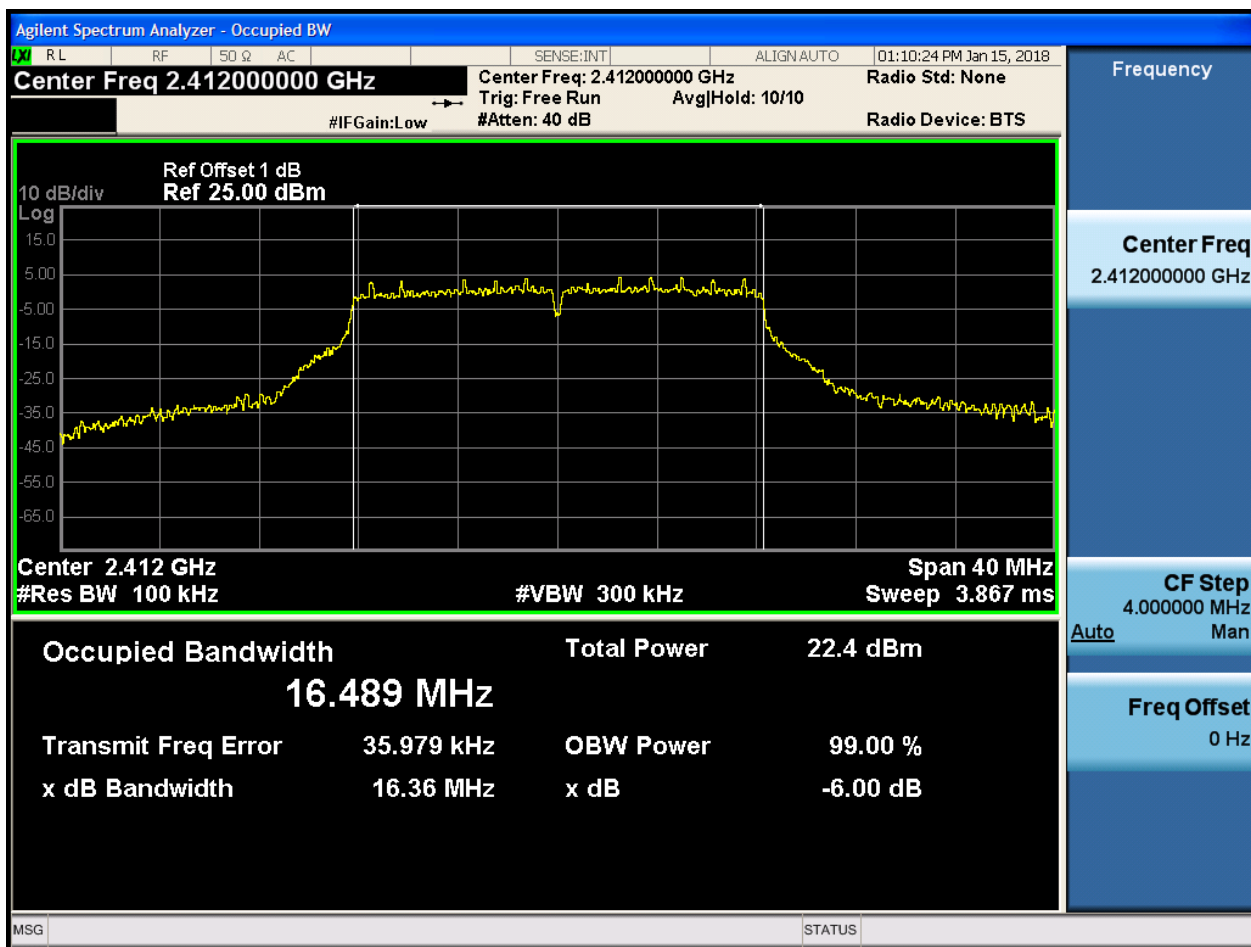


2.7 11G_L@Ant 1





2.8 11G_L@Ant 2





Agilent Spectrum Analyzer - Occupied BW

RL RF 50 Ω AC SENSE:INT ALIGN: AUTO 09:55:18 AM Jan 15, 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 100 kHz #VBW 300 kHz Sweep 3.867 ms

Occupied Bandwidth		Total Power	
16.535 MHz		22.8 dBm	

Transmit Freq Error		OBW Power	
3.964 kHz		99.00 %	

x dB Bandwidth		x dB	
16.37 MHz		-6.00 dB	

Frequency

Center Freq
 2.437000000 GHz

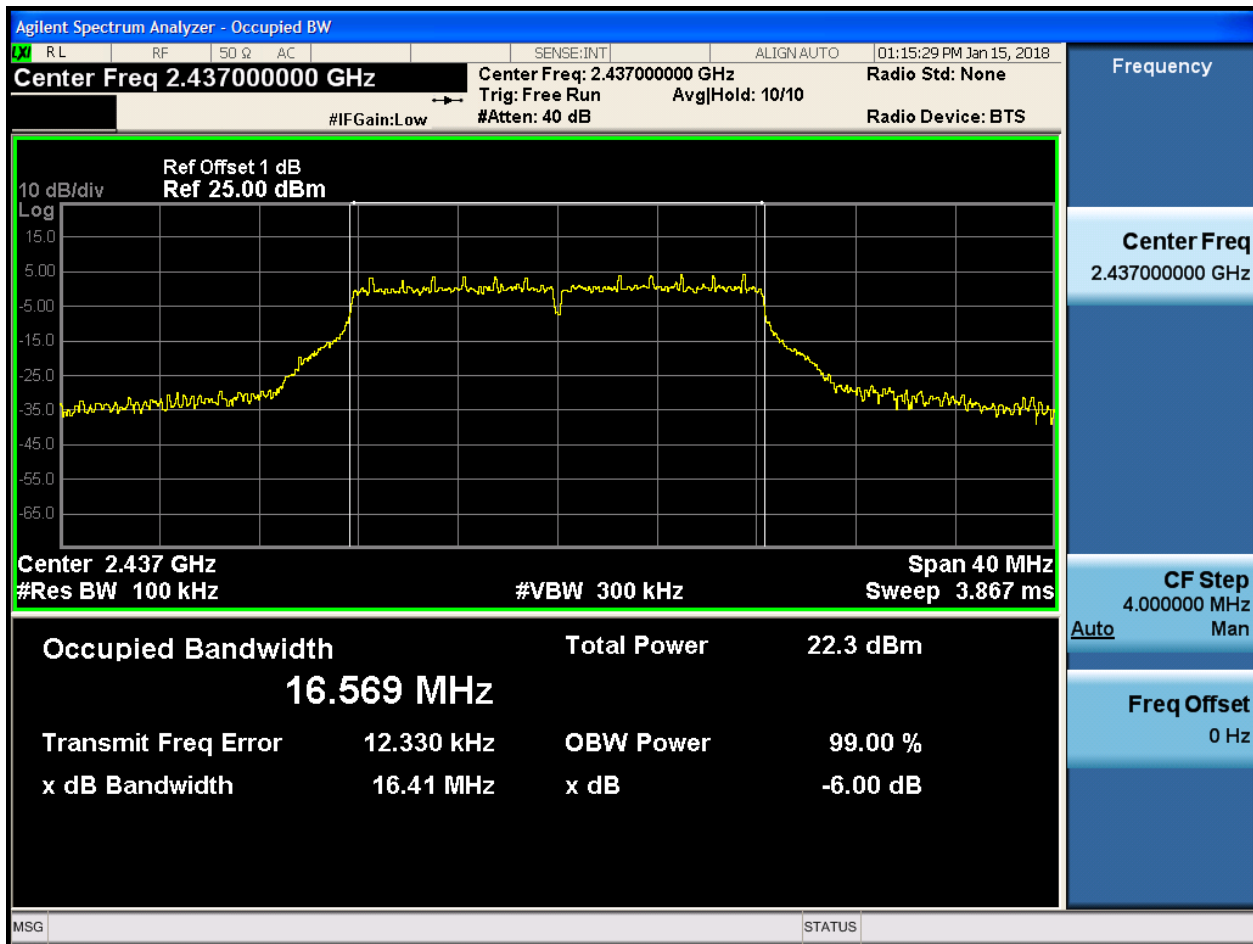
CF Step
 4.000000 MHz
 Auto Man

Freq Offset
 0 Hz

MSG STATUS

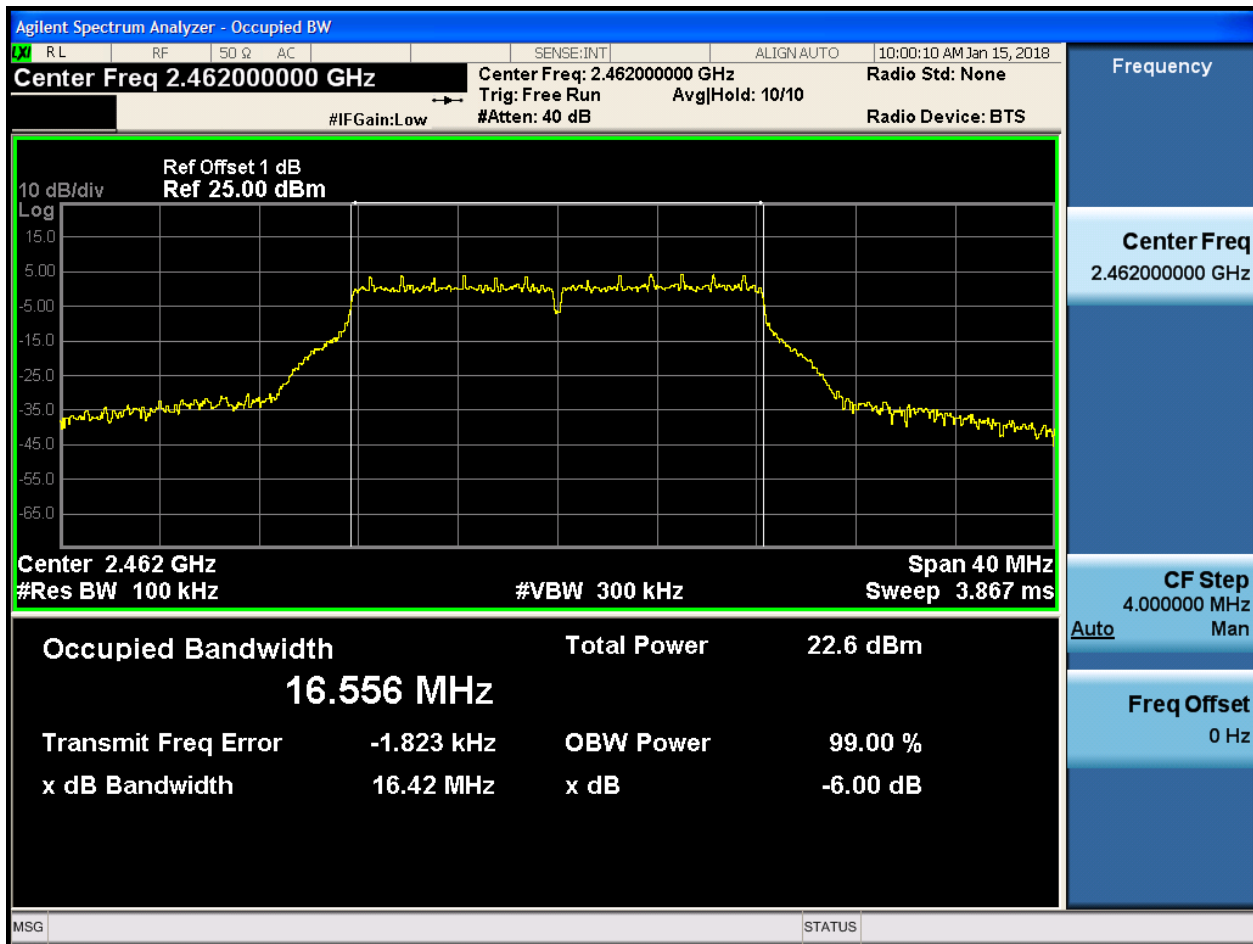


2.10 11G_M@Ant 2



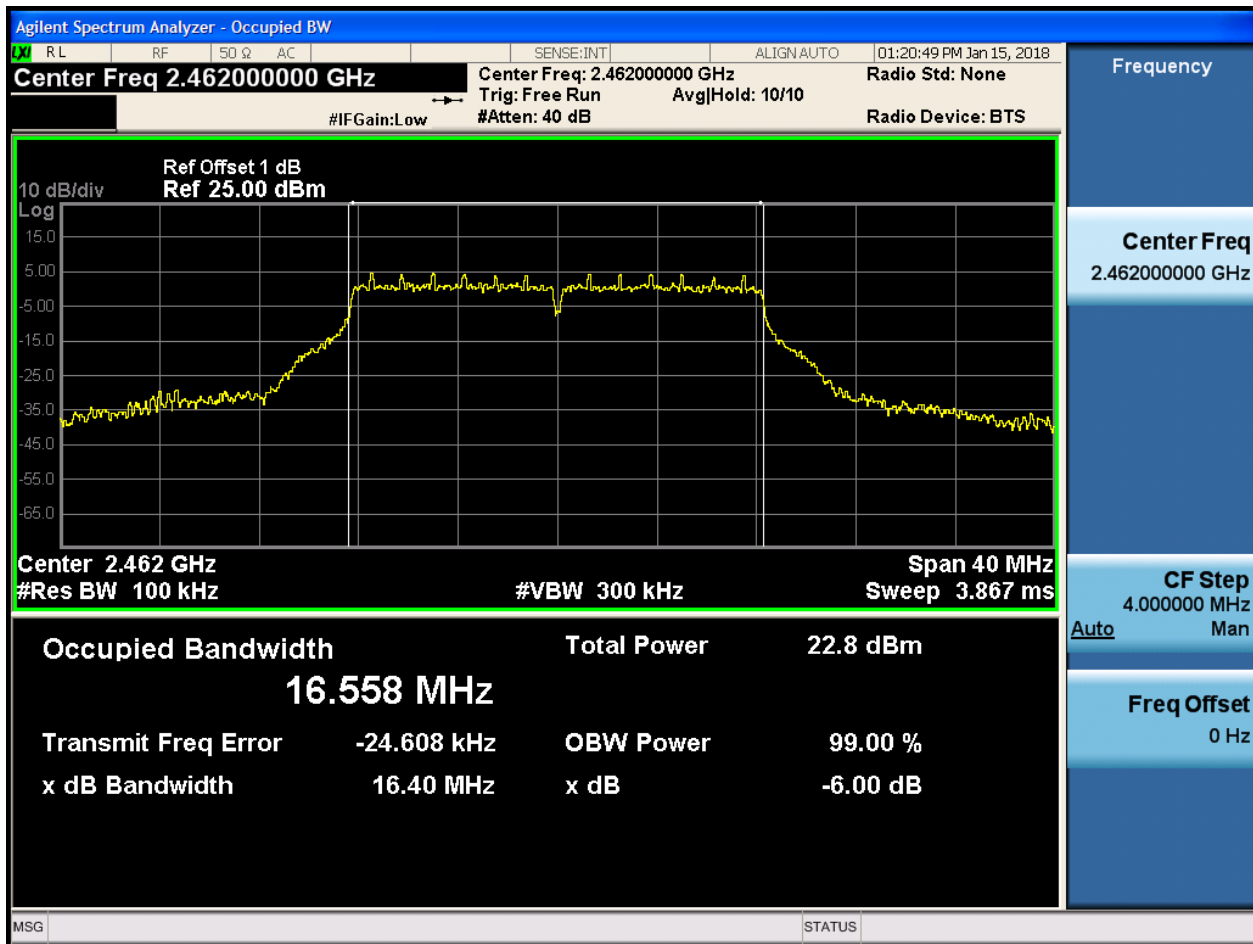


2.11 11G_H@Ant 1



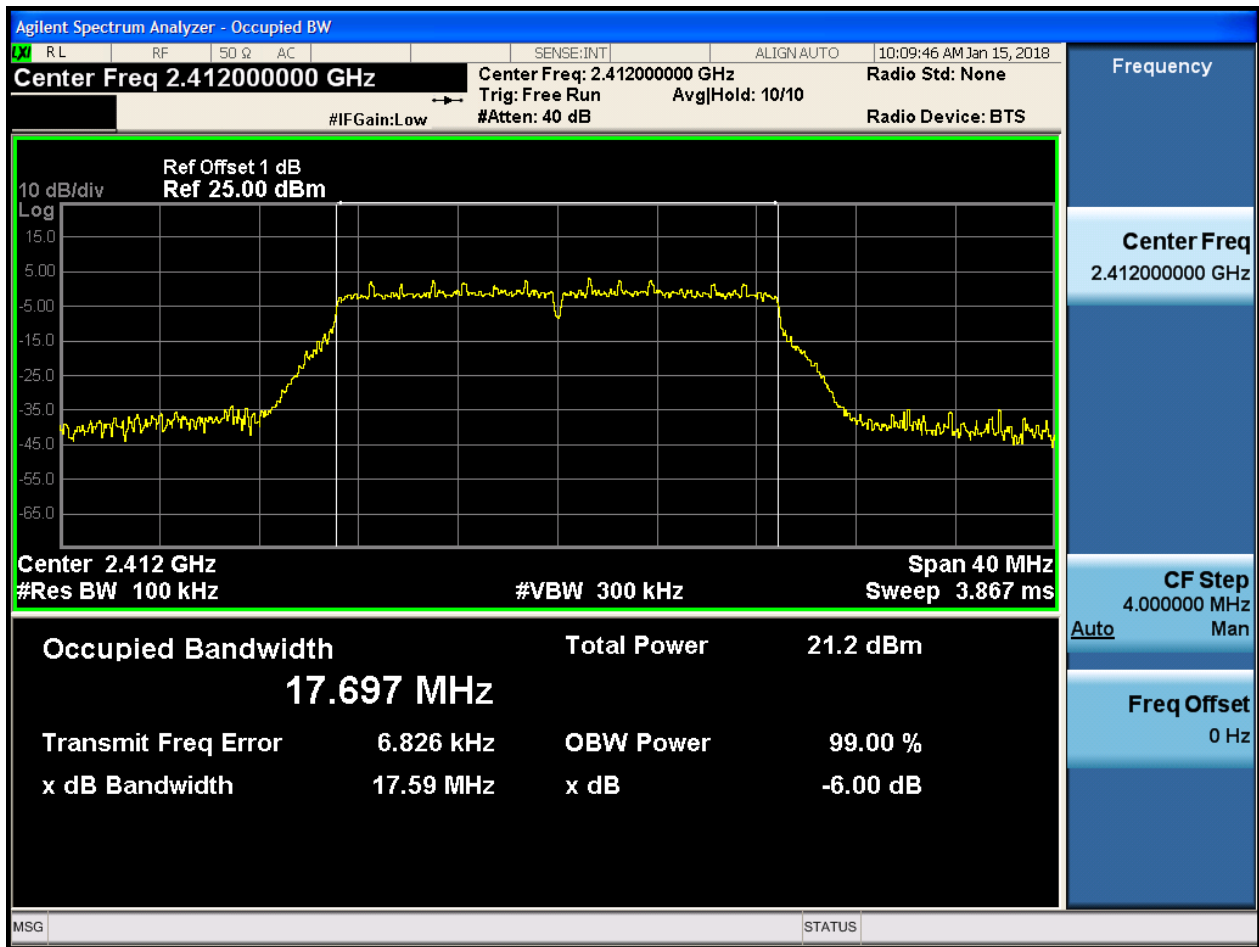


2.12 11G_H@Ant 2



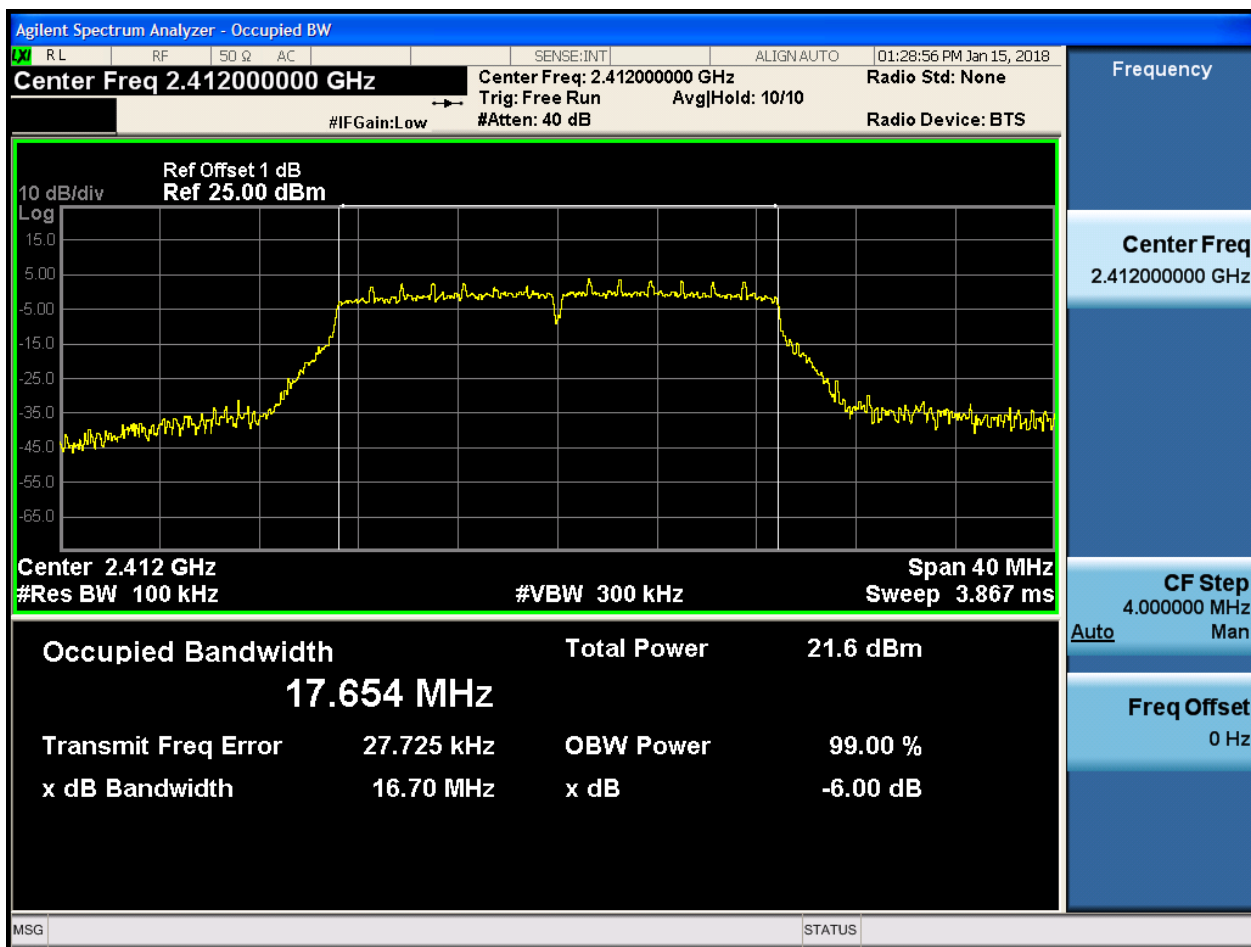


2.13 11N20_L@Ant 1



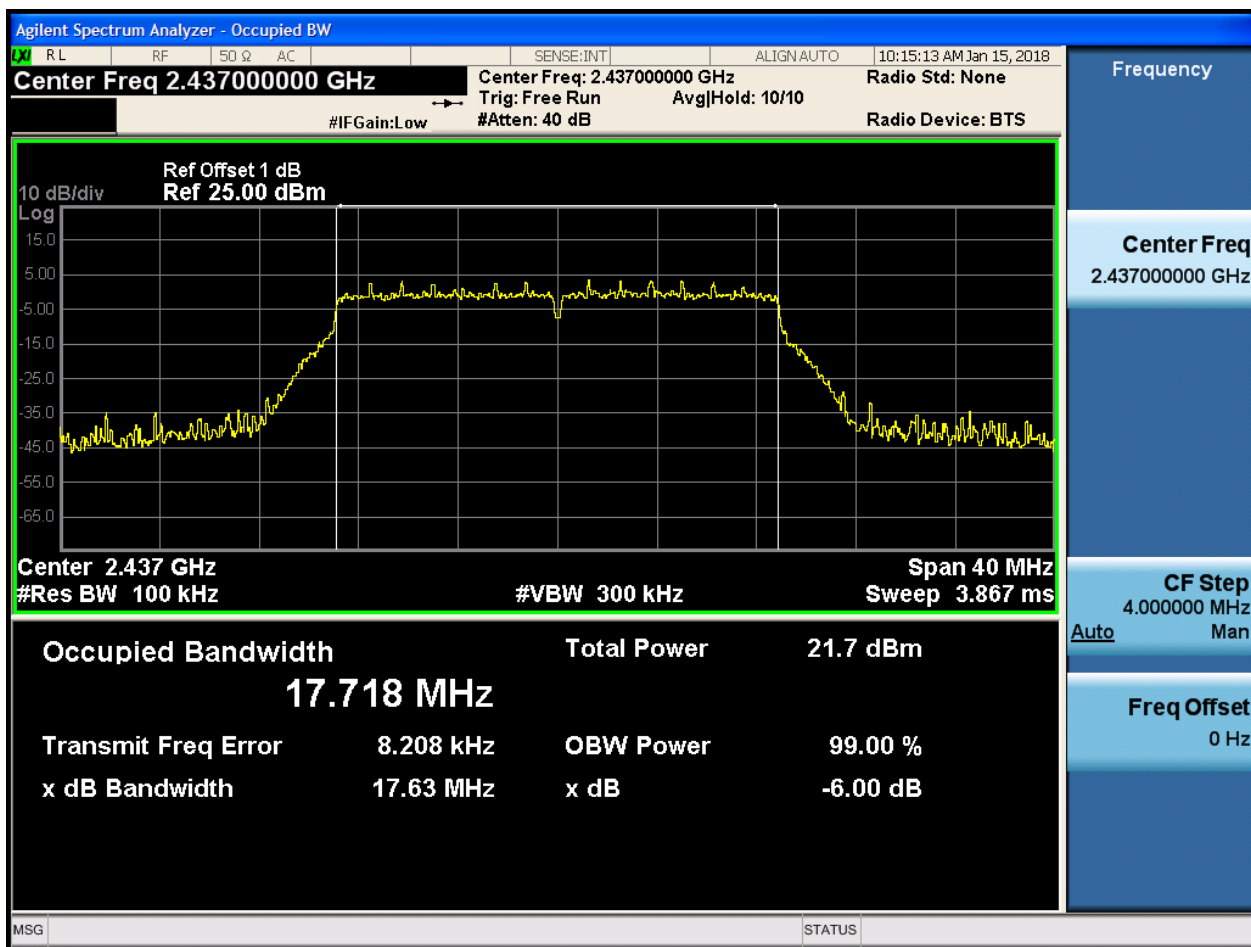


2.14 11N20_L@Ant 2



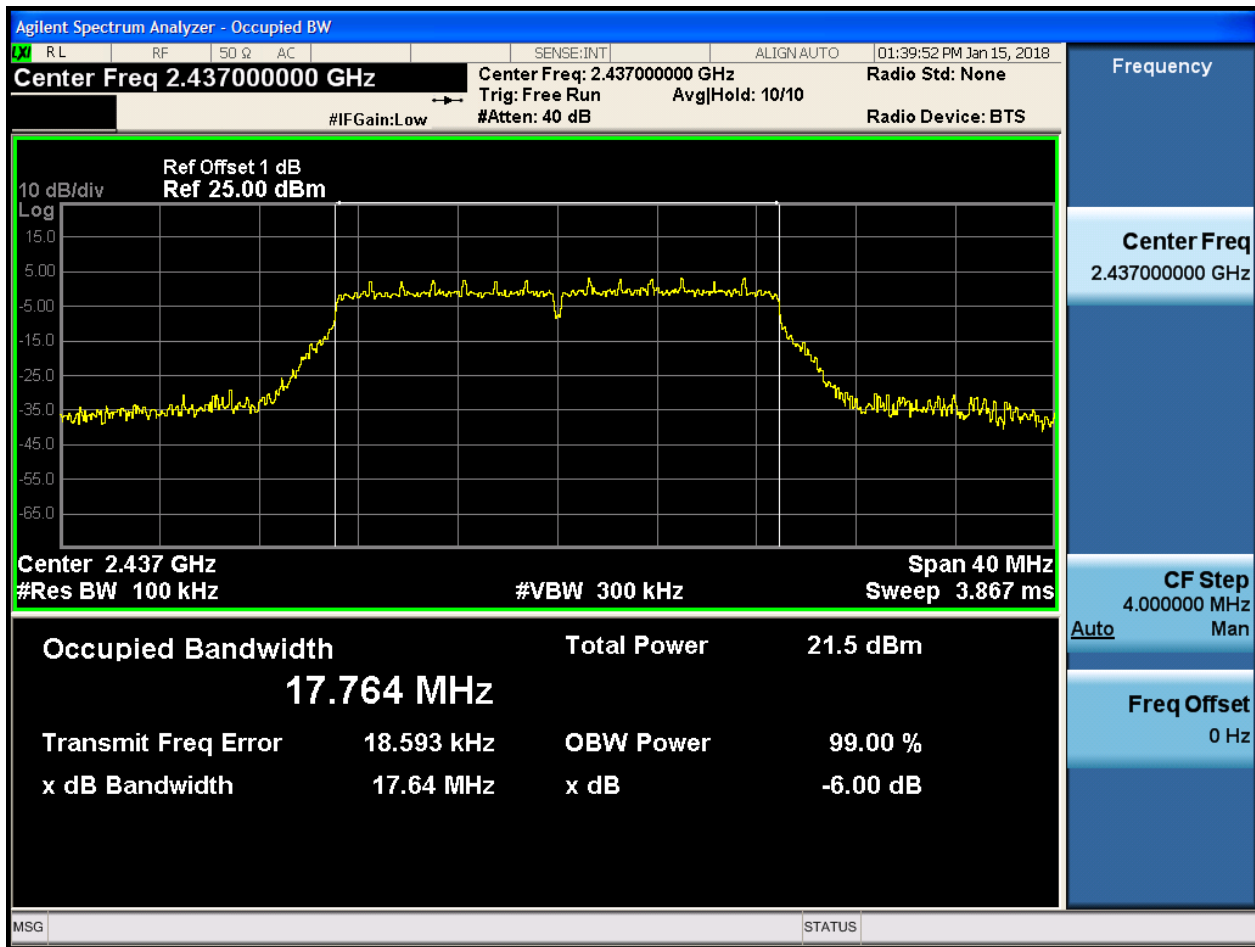


2.15 11N20_M@Ant 1



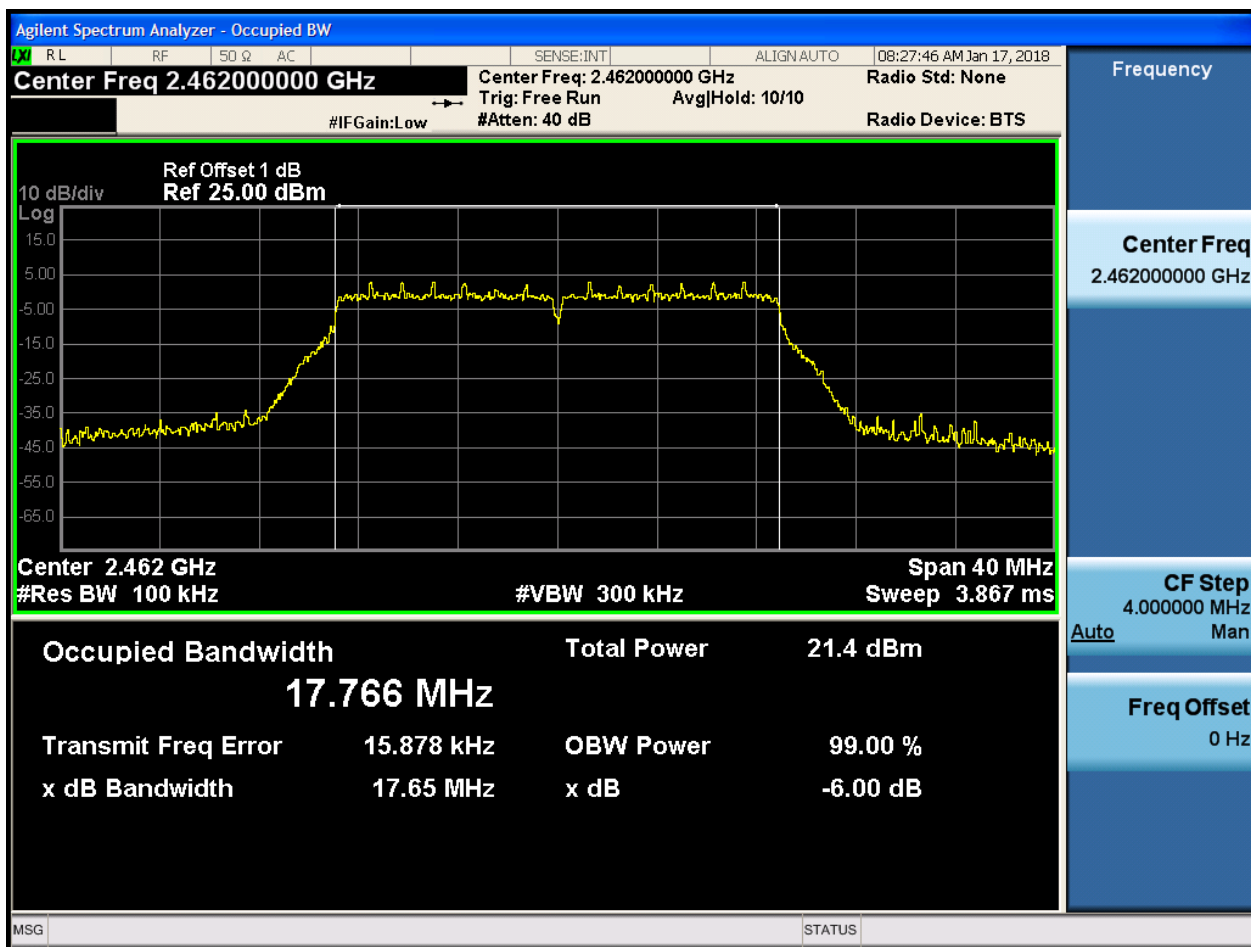


2.16 11N20_M@Ant 2



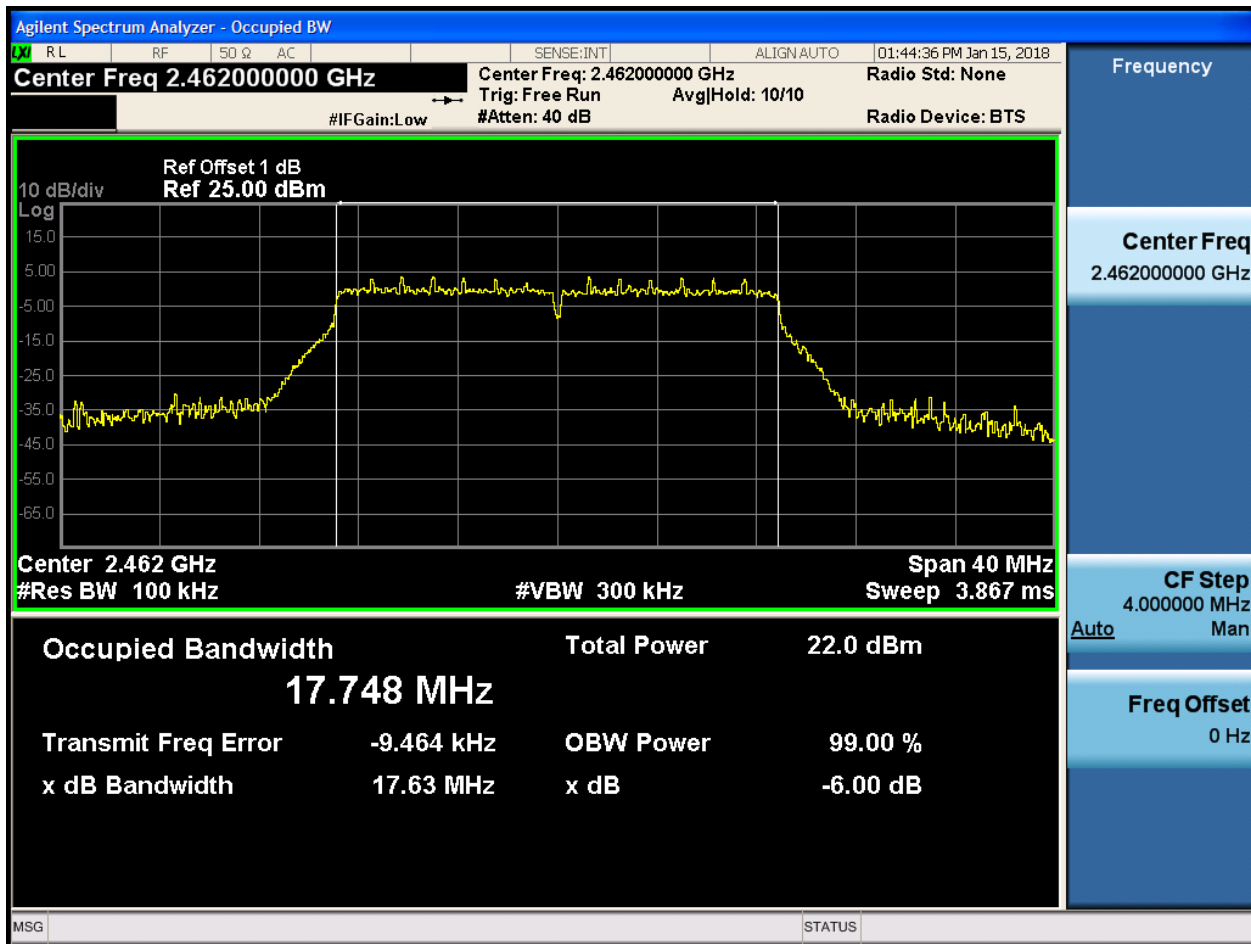


2.17 11N20_H@Ant 1



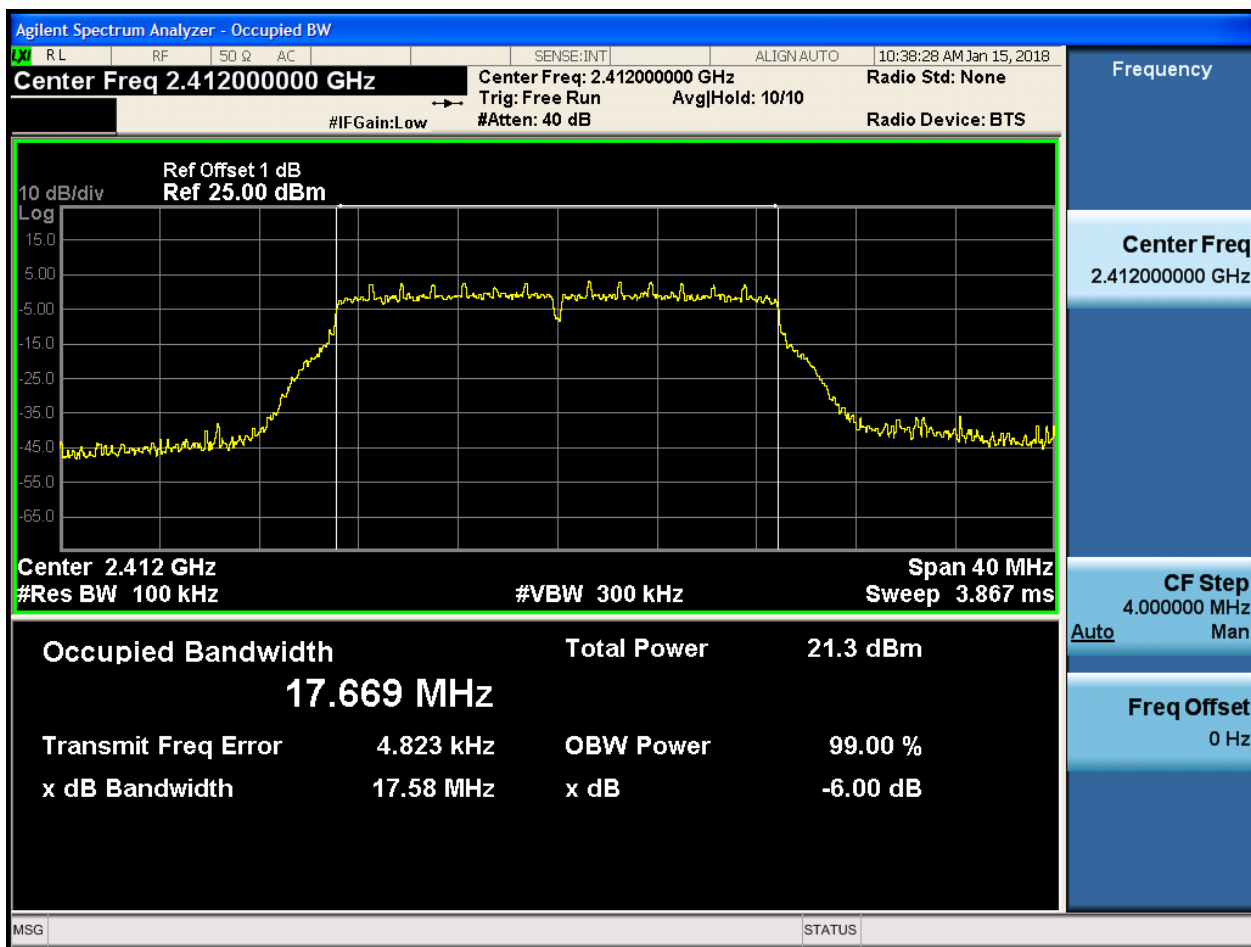


2.18 11N20_H@Ant 2



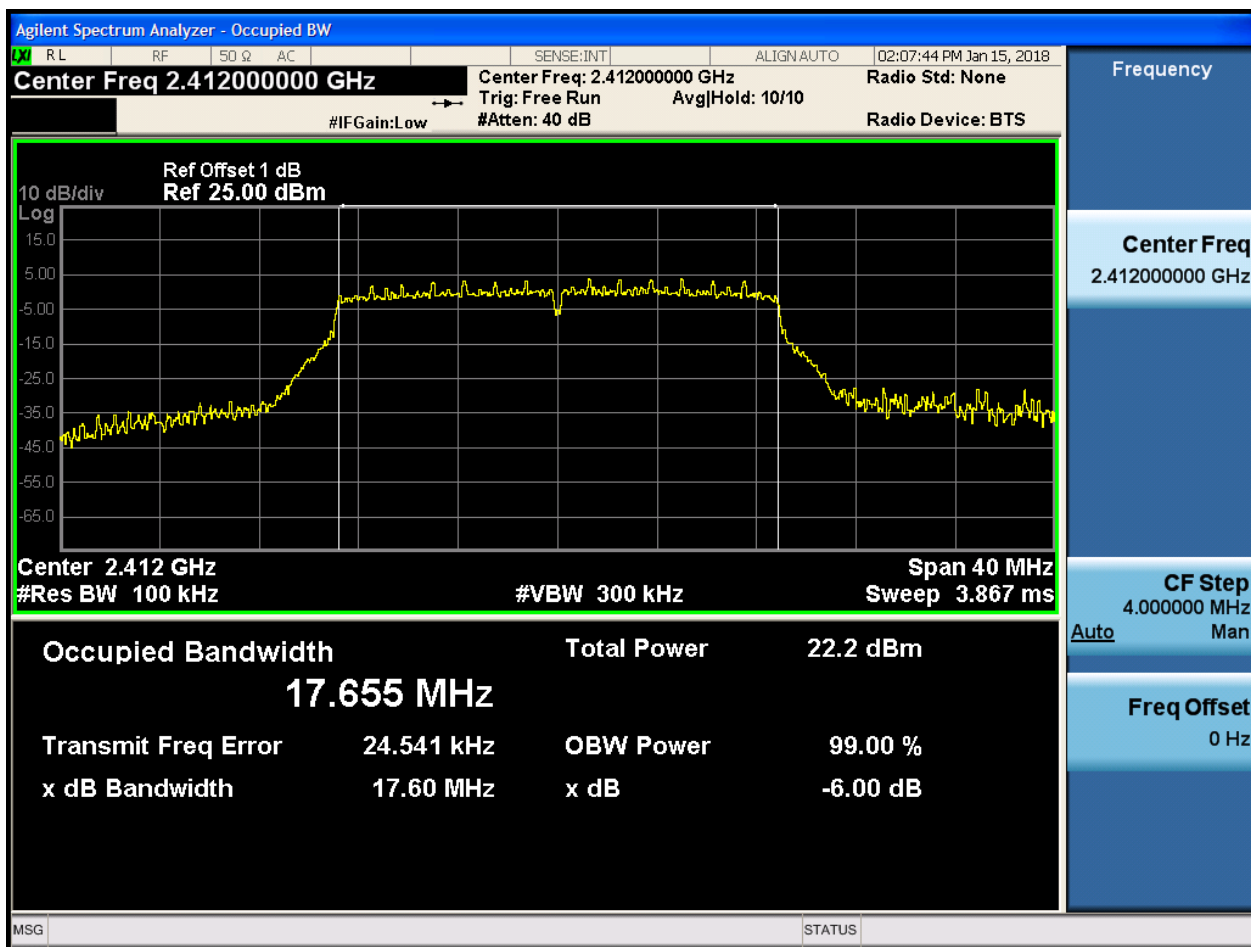


2.19 11N20m_L@Ant 1



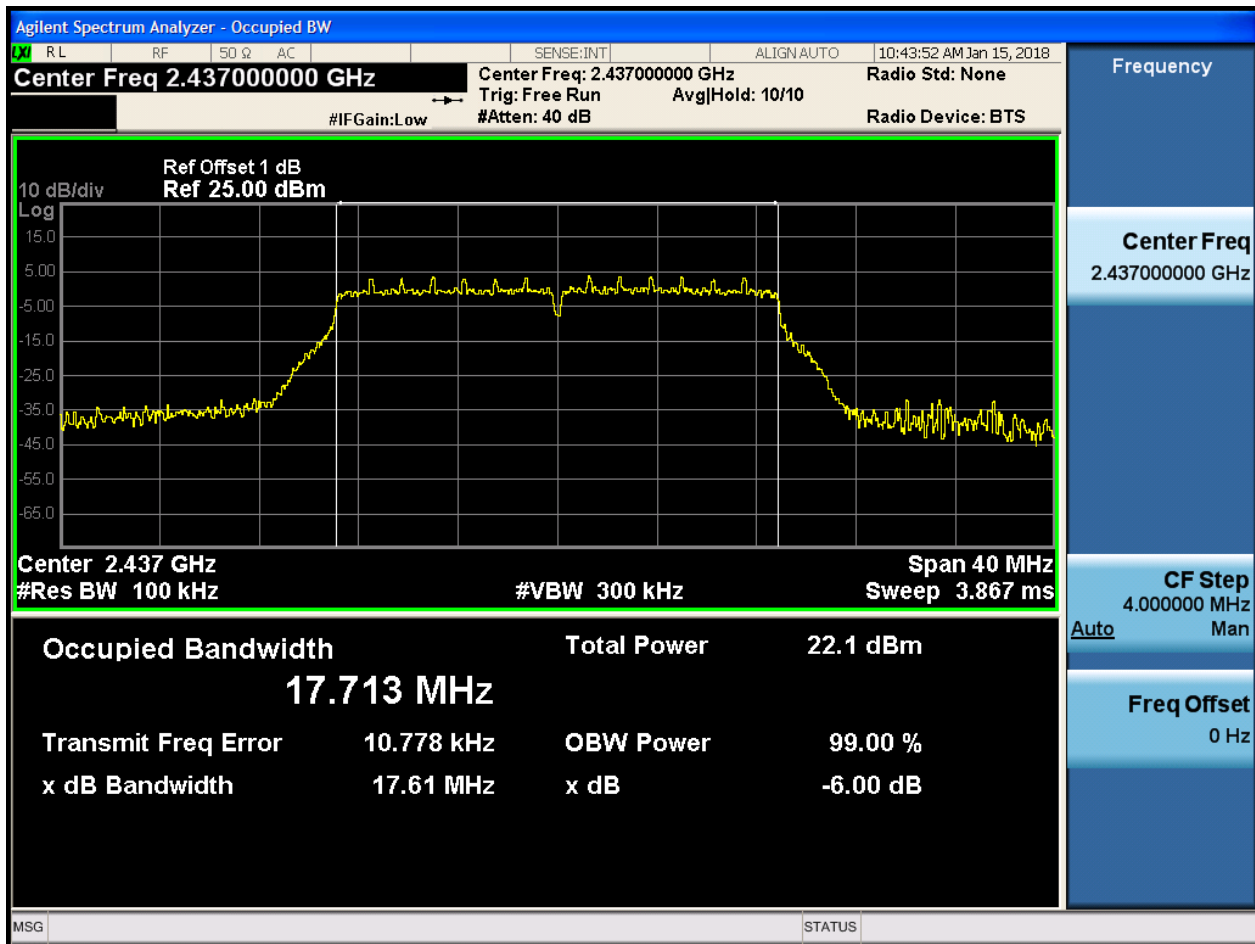


2.20 11N20m_L@Ant 2



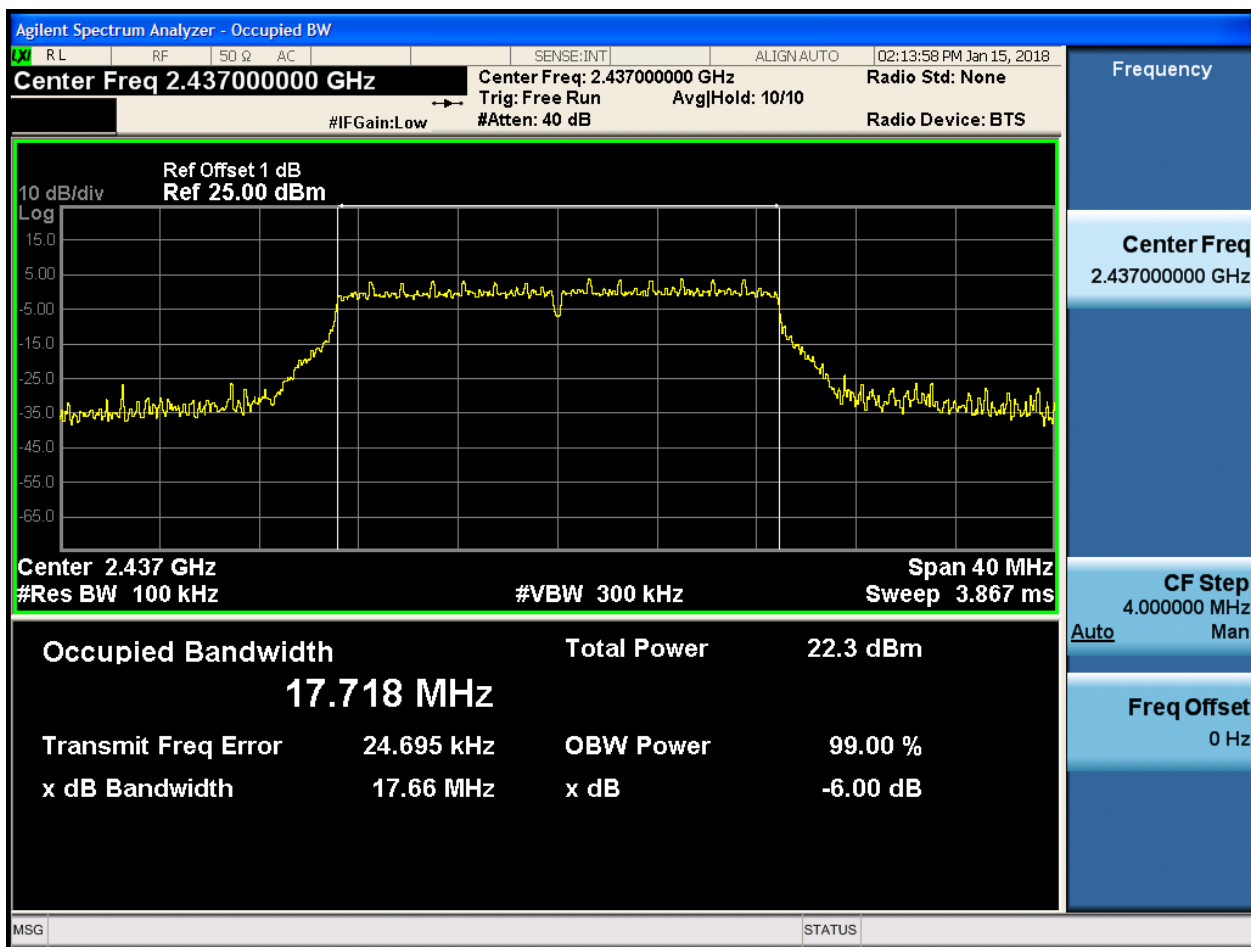


2.21 11N20m_M@Ant 1



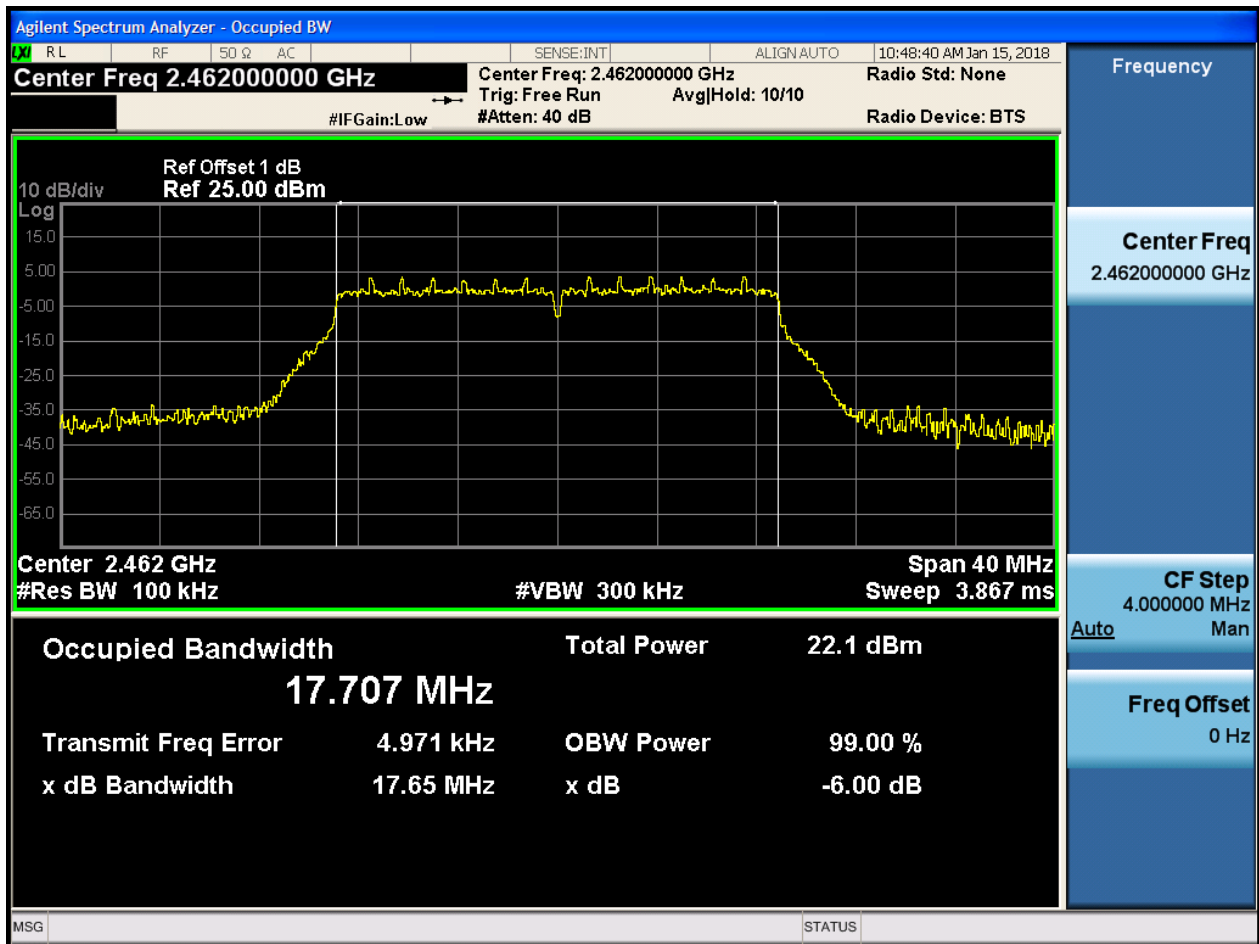


2.22 11N20m_M@Ant 2



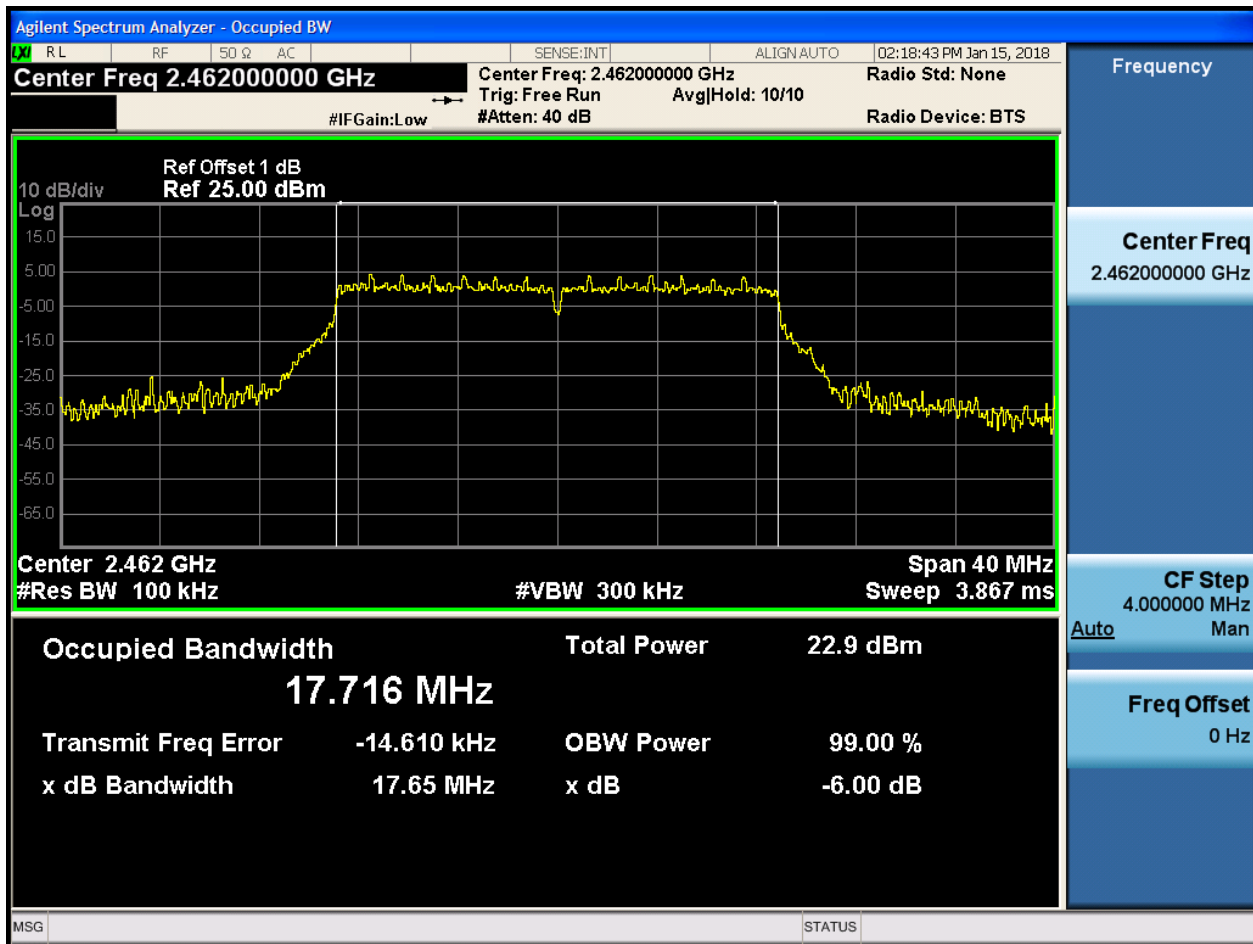


2.23 11N20m_H@Ant 1



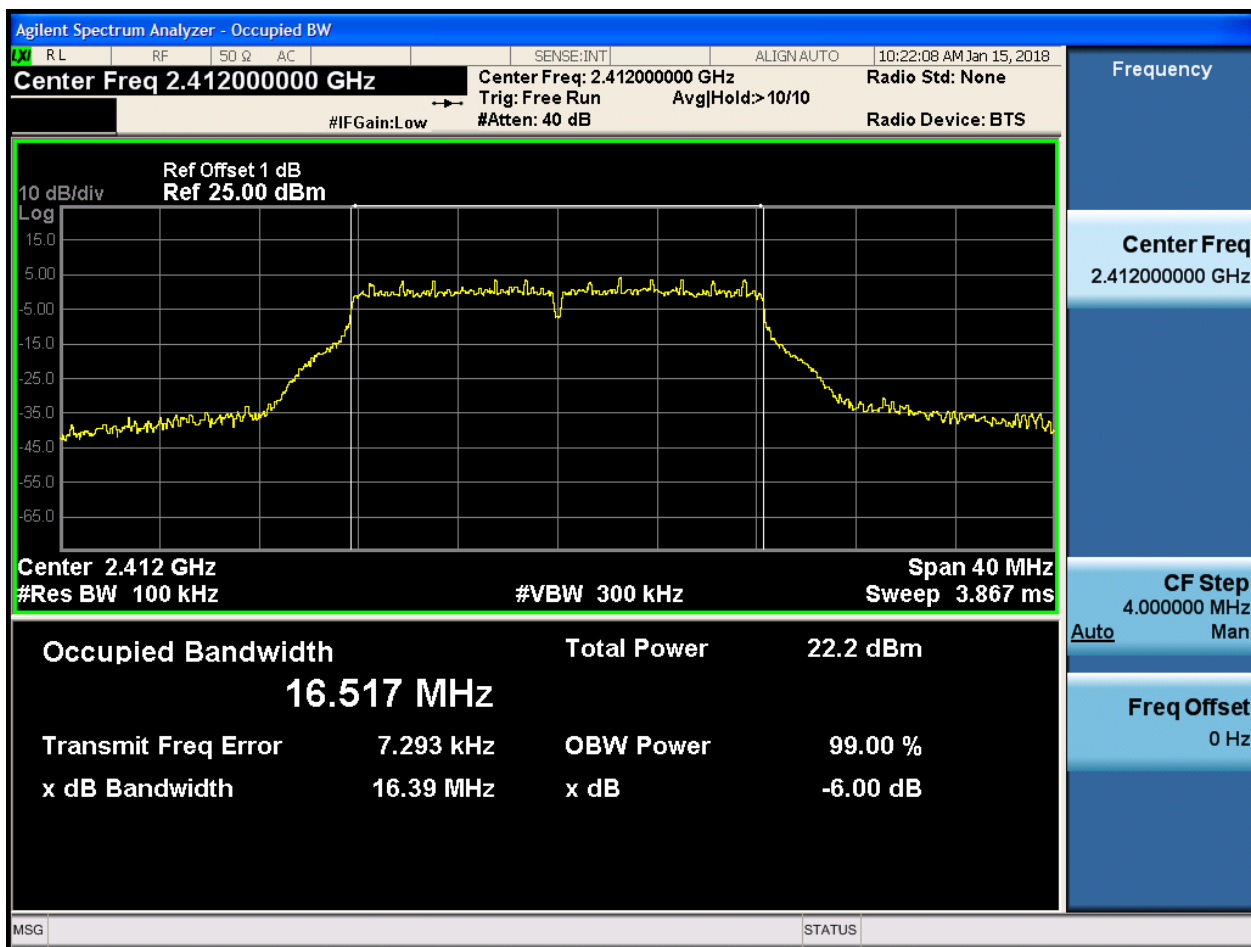


2.24 11N20m_H@Ant 2



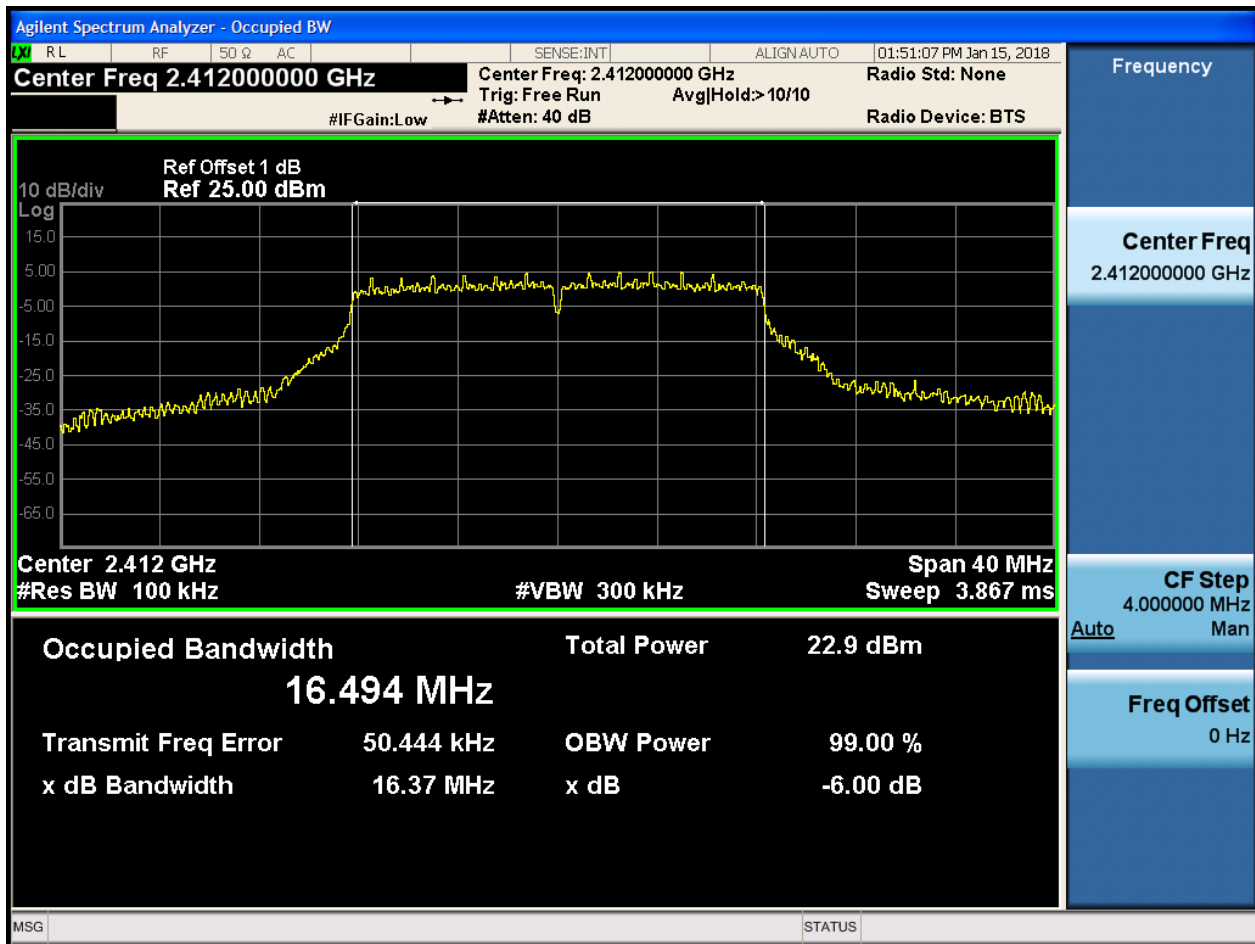


2.25 11G_CDD L@Ant 1



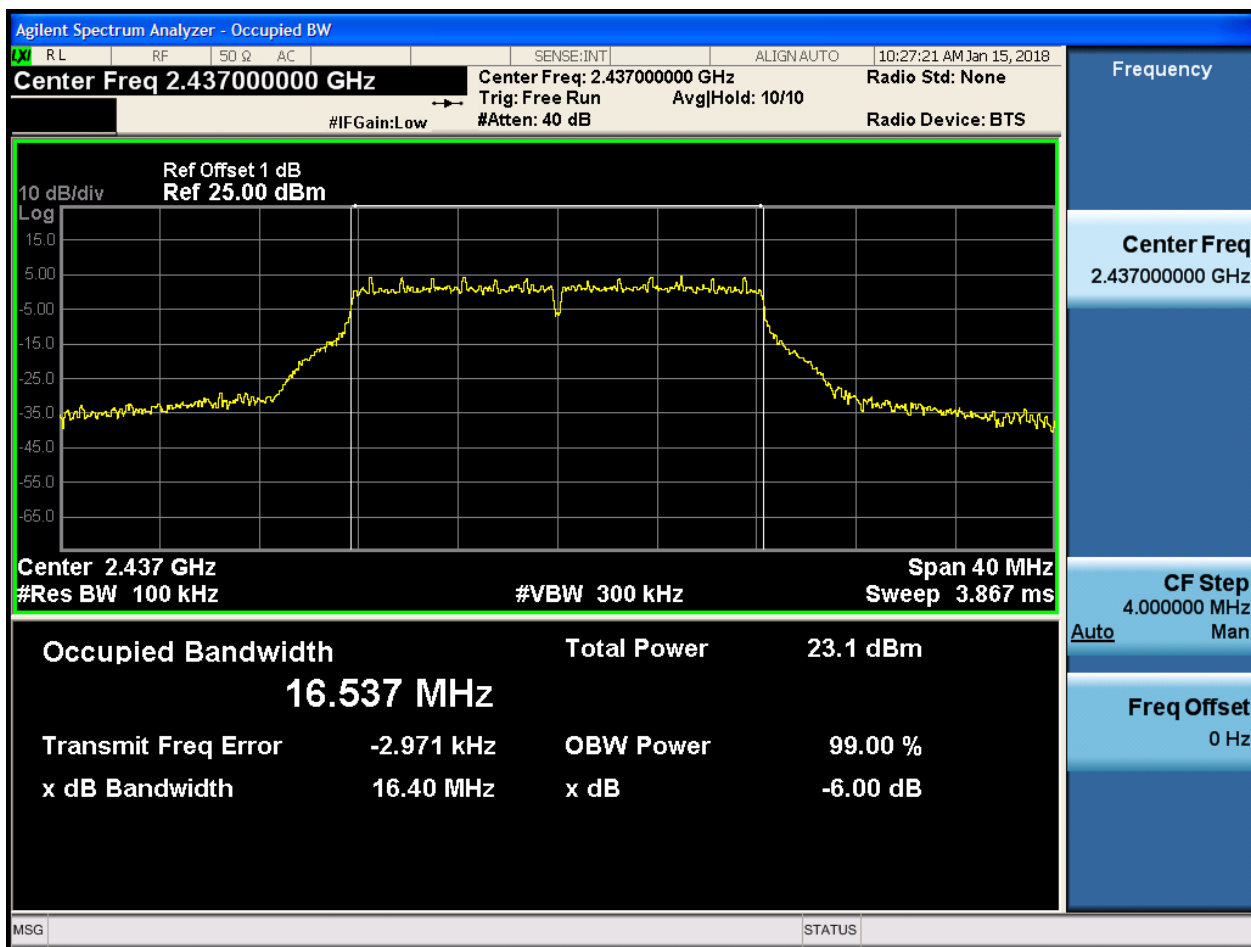


2.26 11G CDD L@Ant 2



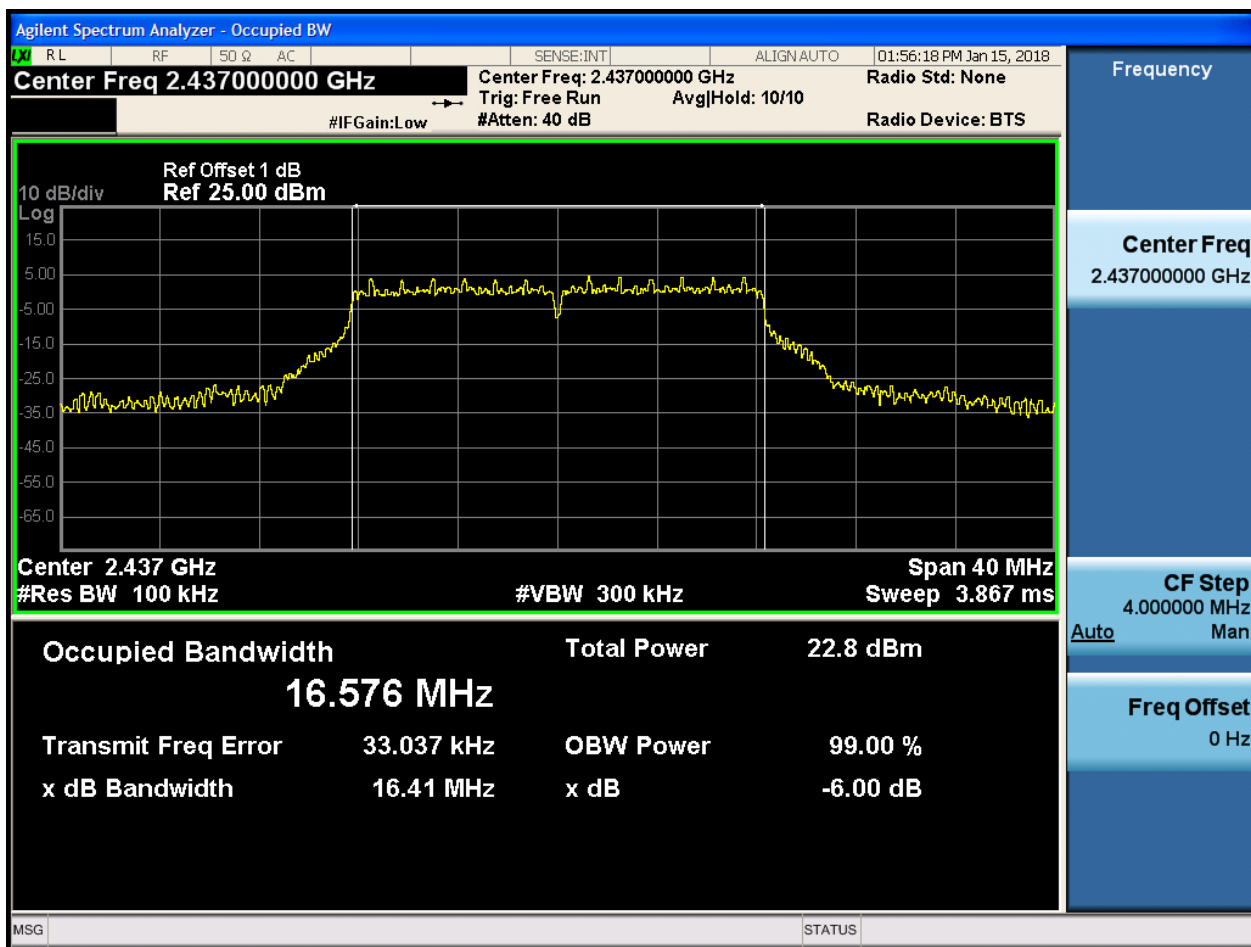


2.27 11G CDD M@Ant 1



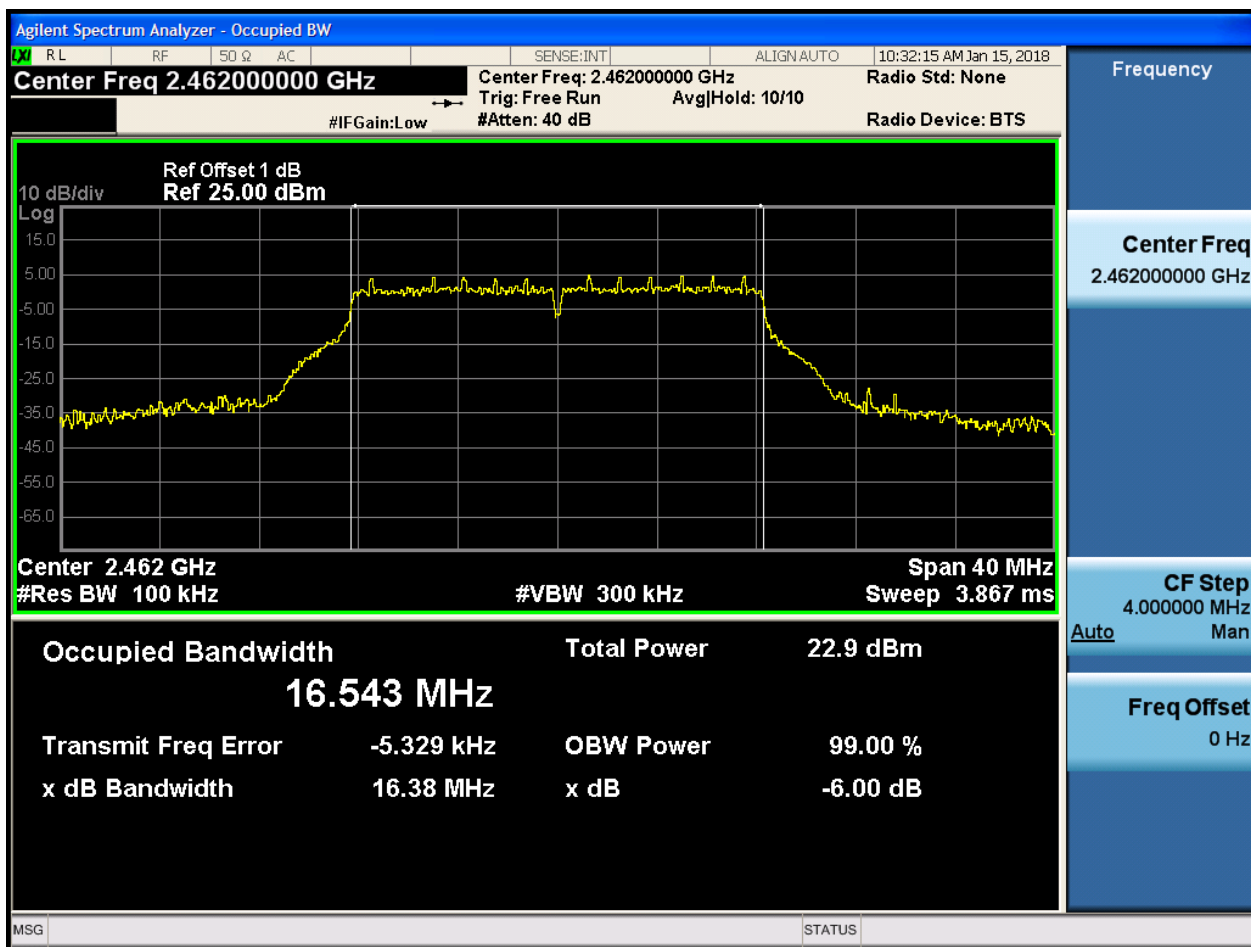


2.28 11G CDD M@Ant 2

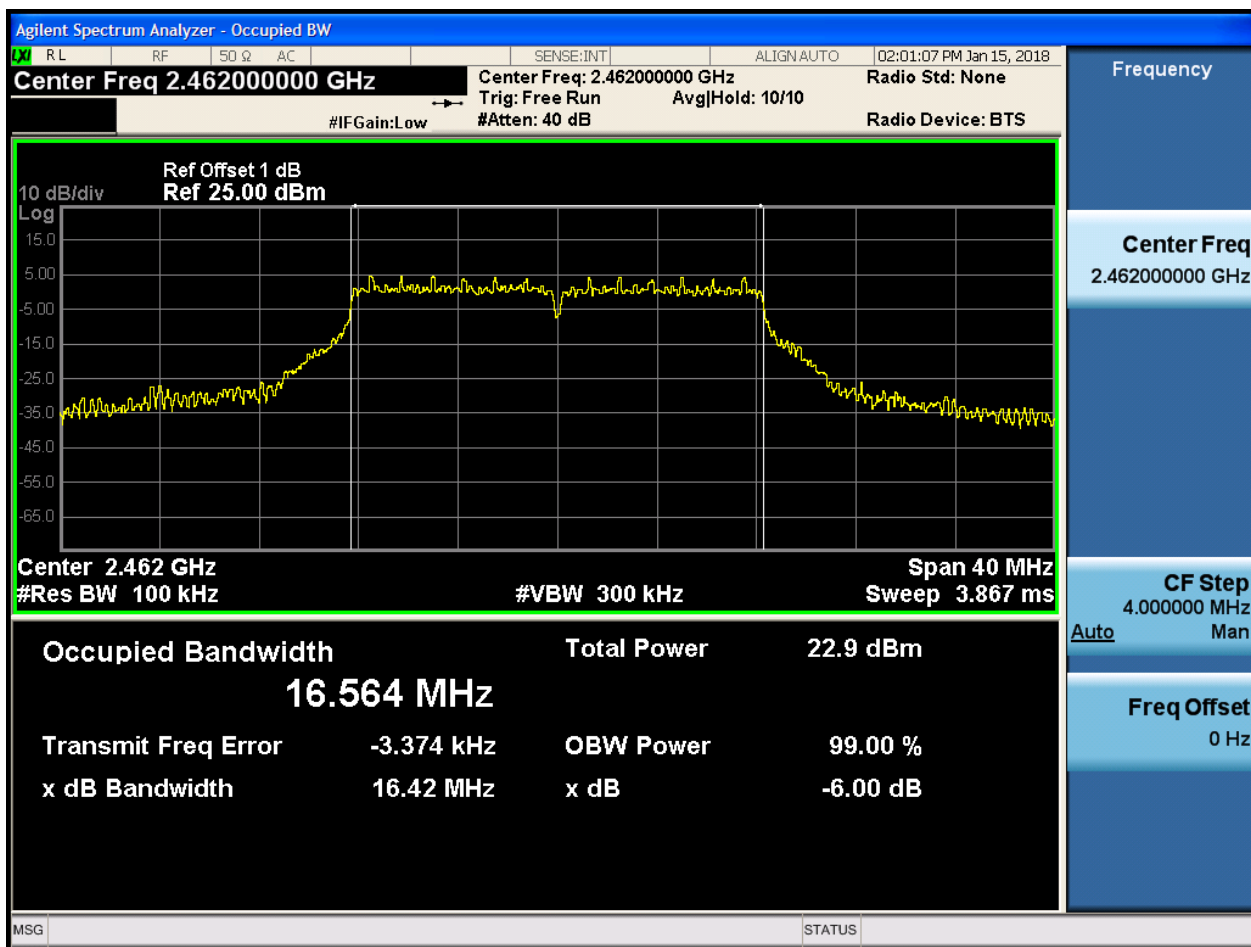




2.29 11G CDD H@Ant 1



2.30 11G CDD H@Ant 2



Appendix B: Occupied Bandwidth

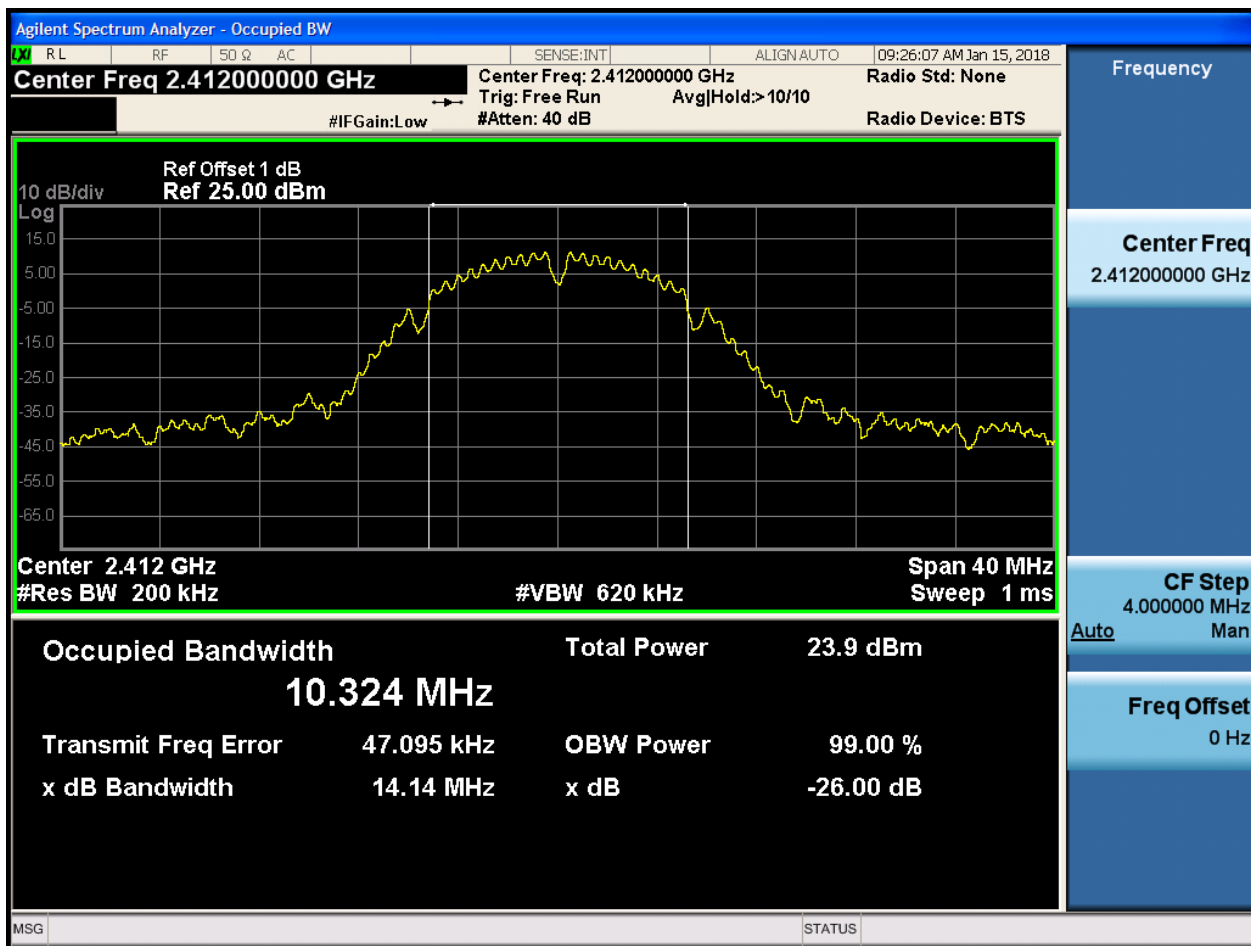
For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Occupied Bandwidth [MHz]	Verdict
11B	L	2412	Ant 1	10.32	pass
11B	L	2412	Ant 2	10.26	pass
11B	M	2437	Ant 1	10.20	pass
11B	M	2437	Ant 2	10.33	pass
11B	H	2462	Ant 1	10.23	pass
11B	H	2462	Ant 2	10.33	pass
11G	L	2412	Ant 1	16.71	pass
11G	L	2412	Ant 2	16.70	pass
11G	M	2437	Ant 1	16.79	pass
11G	M	2437	Ant 2	16.82	pass
11G	H	2462	Ant 1	16.79	pass
11G	H	2462	Ant 2	16.84	pass
11N20	L	2412	Ant 1	17.85	pass
11N20	L	2412	Ant 2	17.80	pass
11N20	M	2437	Ant 1	17.90	pass
11N20	M	2437	Ant 2	17.92	pass
11N20	H	2462	Ant 1	17.94	pass
11N20	H	2462	Ant 2	17.93	pass
11N20m	L	2412	Ant 1	17.84	pass
11N20m	L	2412	Ant 2	17.79	pass
11N20m	M	2437	Ant 1	17.91	pass
11N20m	M	2437	Ant 2	17.88	pass
11N20m	H	2462	Ant 1	17.92	pass
11N20m	H	2462	Ant 2	17.91	pass
11G CDD	L	2412	Ant 1	16.75	pass
11G CDD	L	2412	Ant 2	16.75	pass
11G CDD	M	2437	Ant 1	16.78	pass
11G CDD	M	2437	Ant 2	16.93	pass
11G CDD	H	2462	Ant 1	16.81	pass
11G CDD	H	2462	Ant 2	16.87	pass

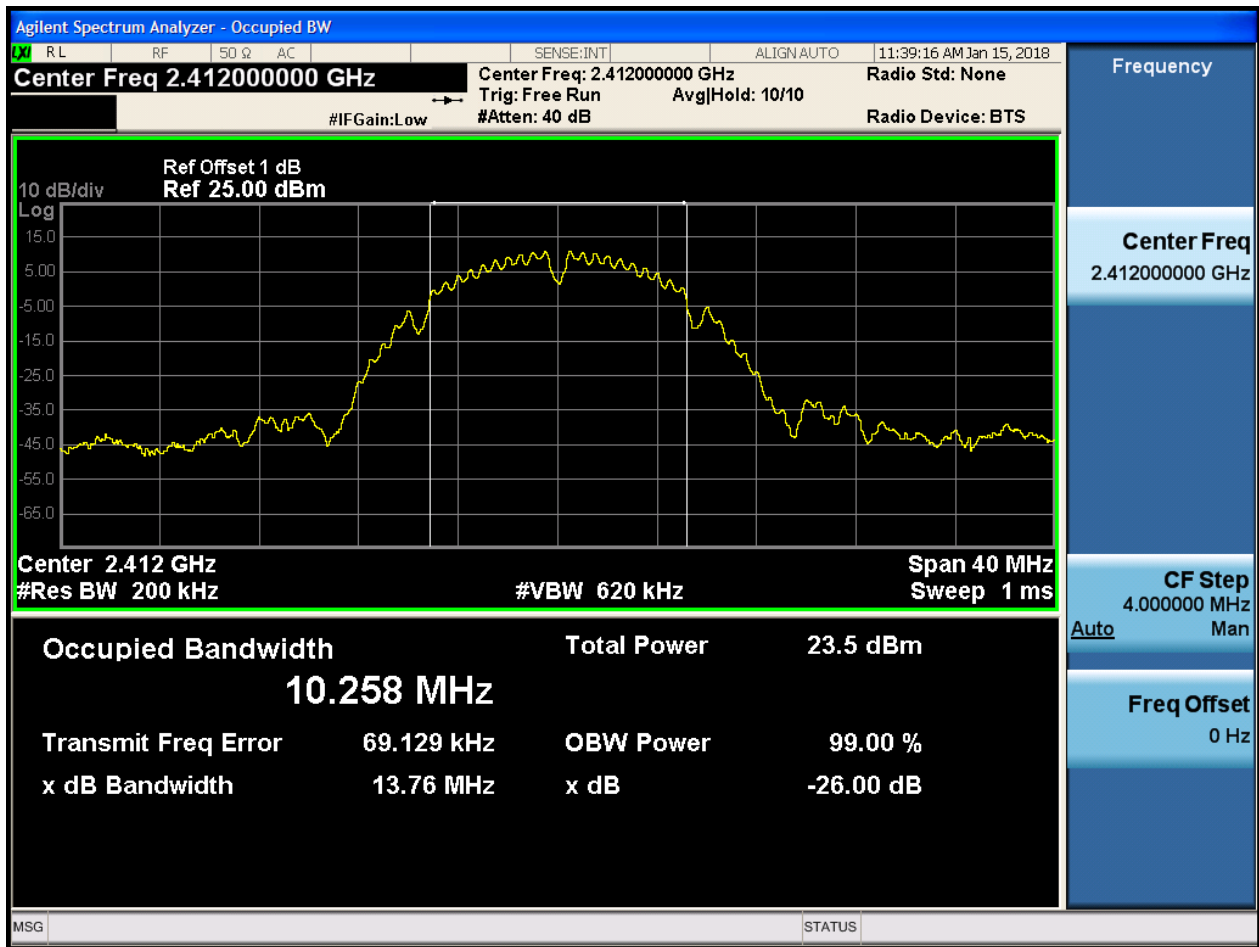
Part II - Test Plots

2.1 11B_L@Ant 1



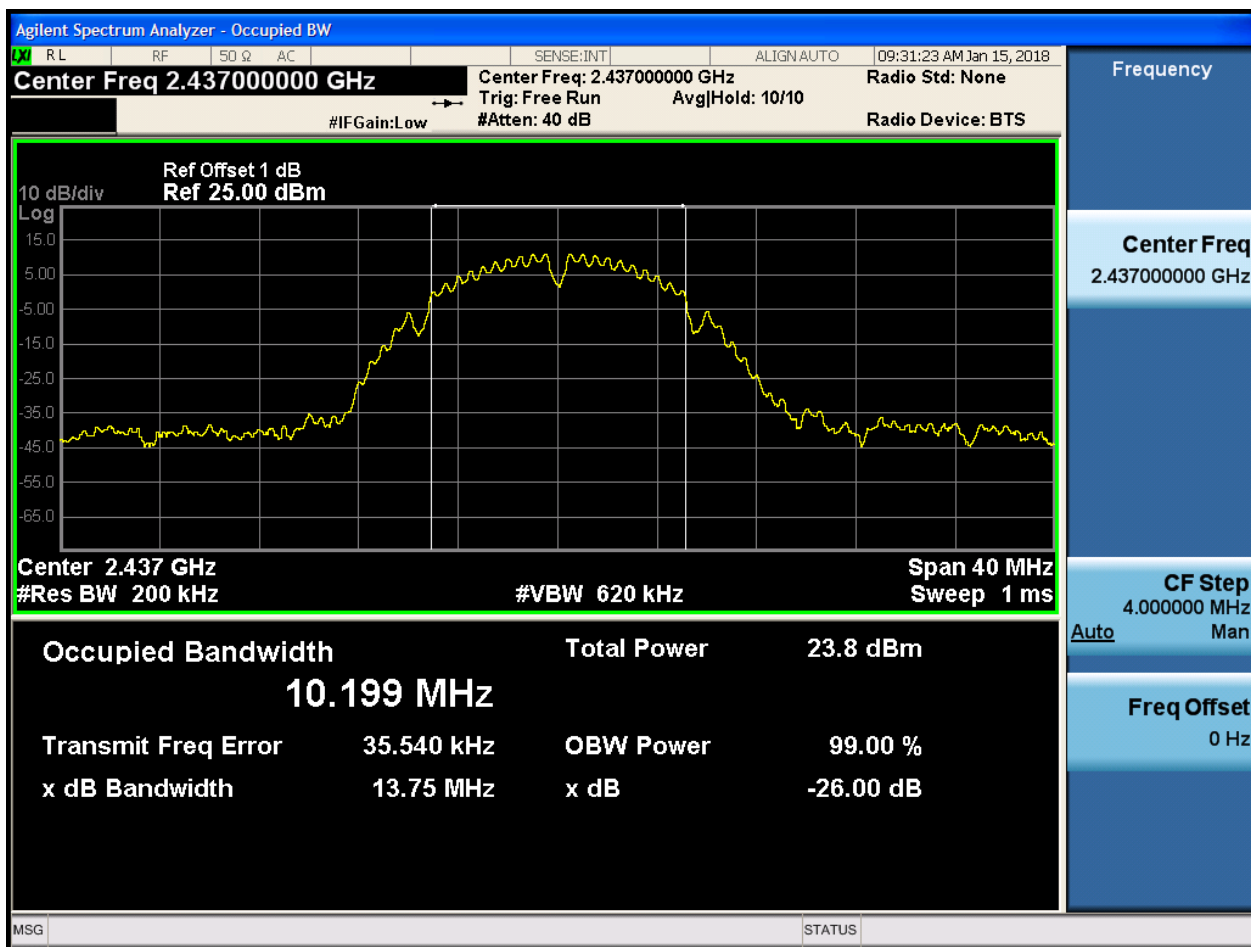


2.2 11B_L@Ant 2



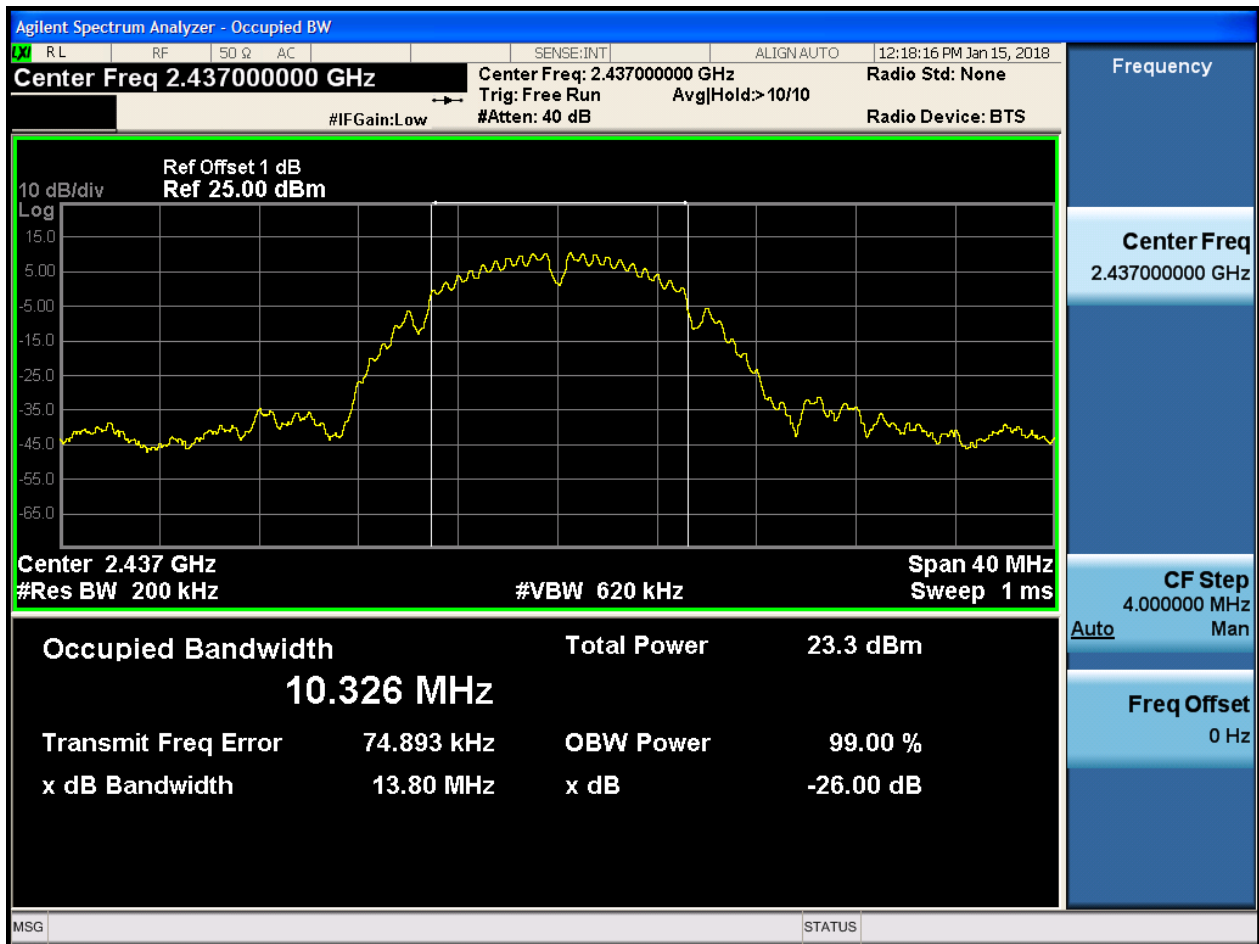


2.3 11B_M@Ant 1



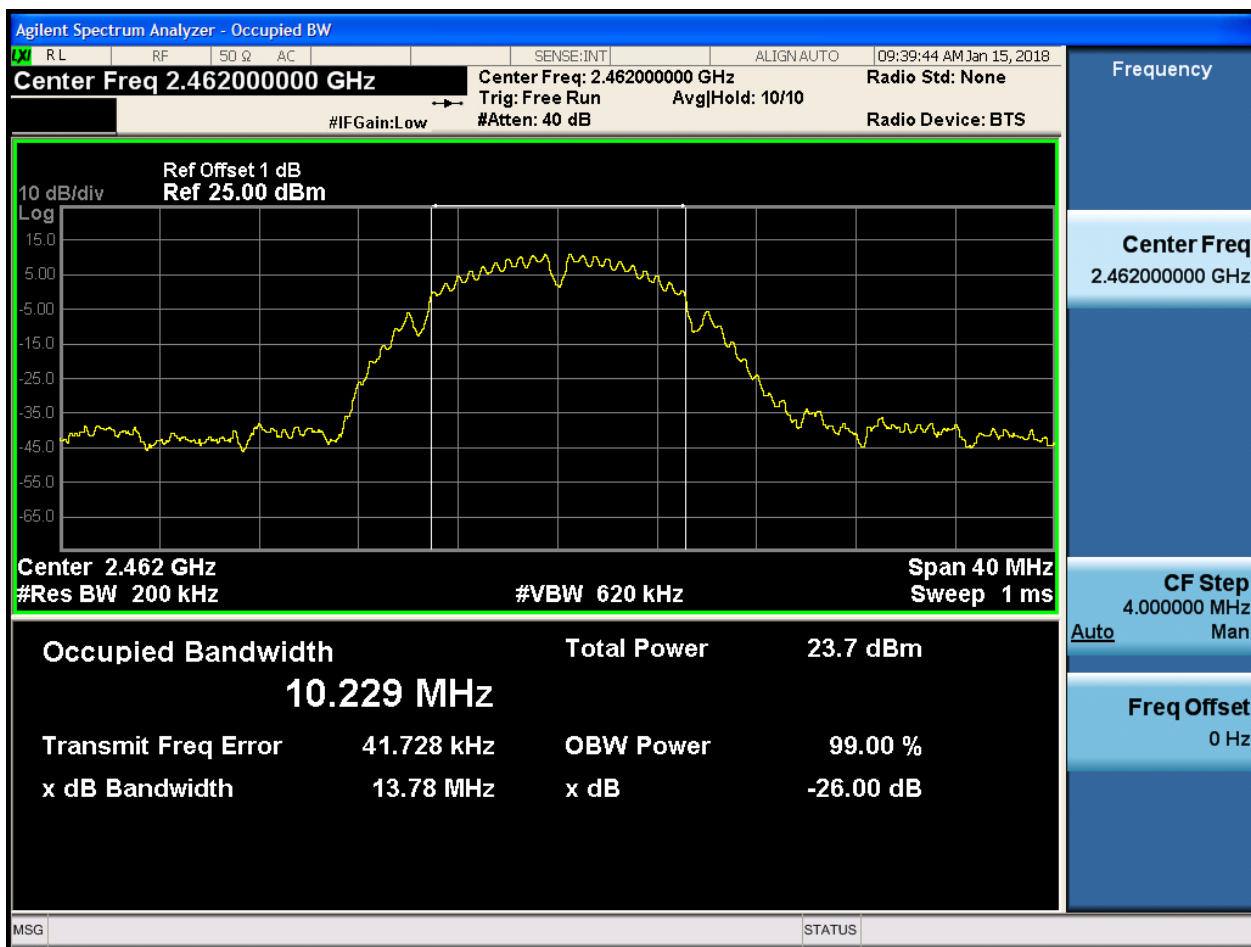


2.4 11B_M@Ant 2



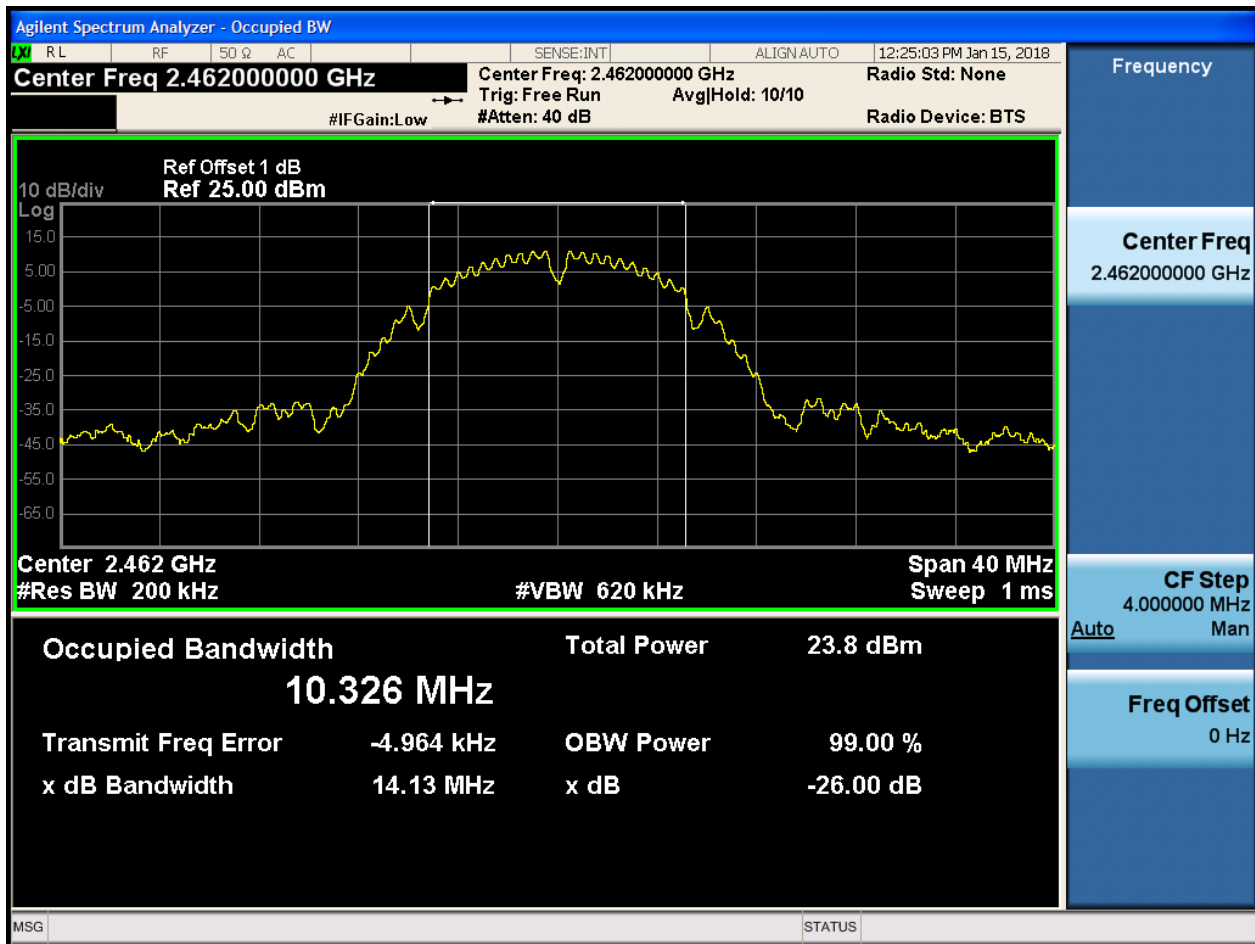


2.5 11B_H@Ant 1



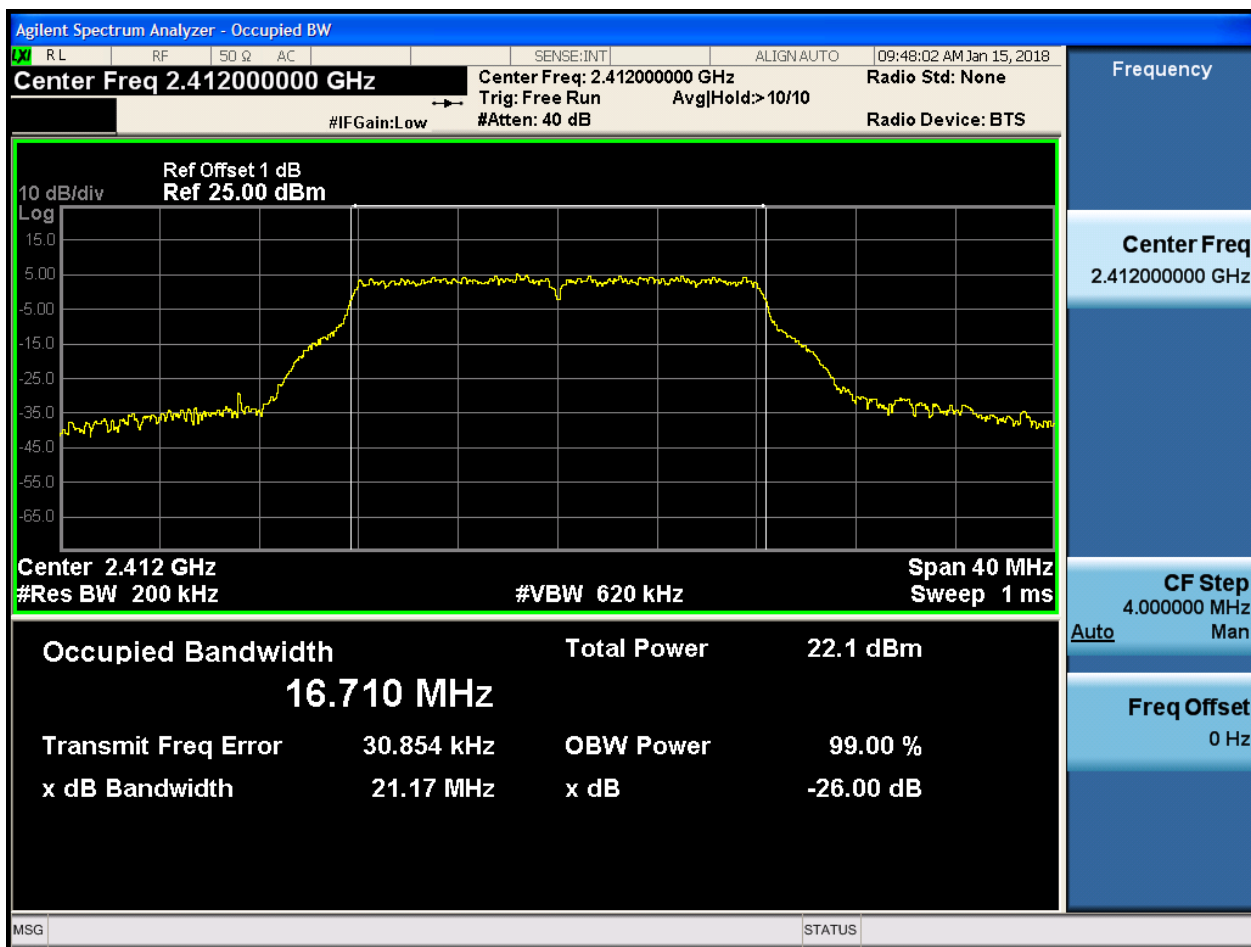


2.6 11B_H@Ant 2



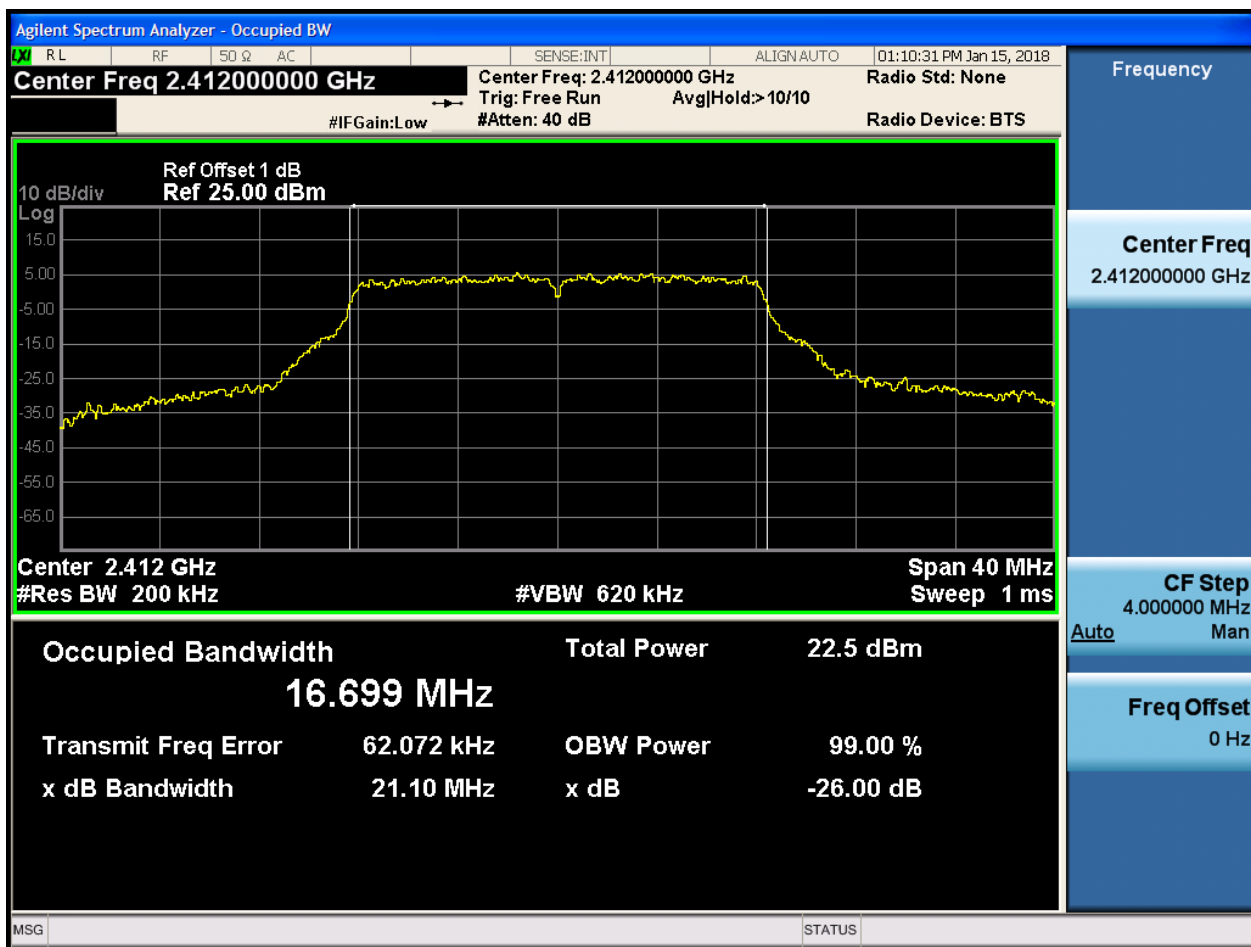


2.7 11G_L@Ant 1



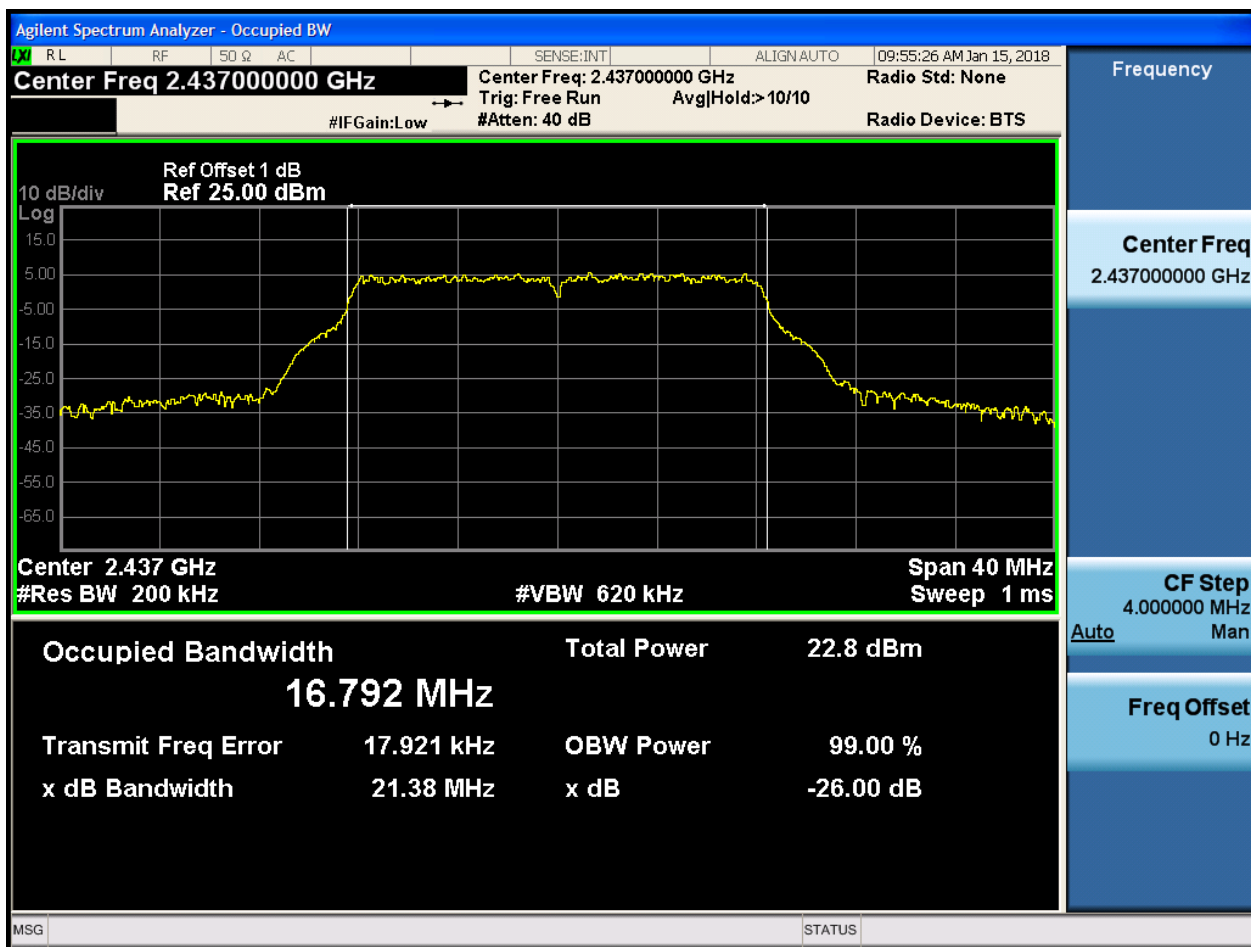


2.8 11G_L@Ant 2



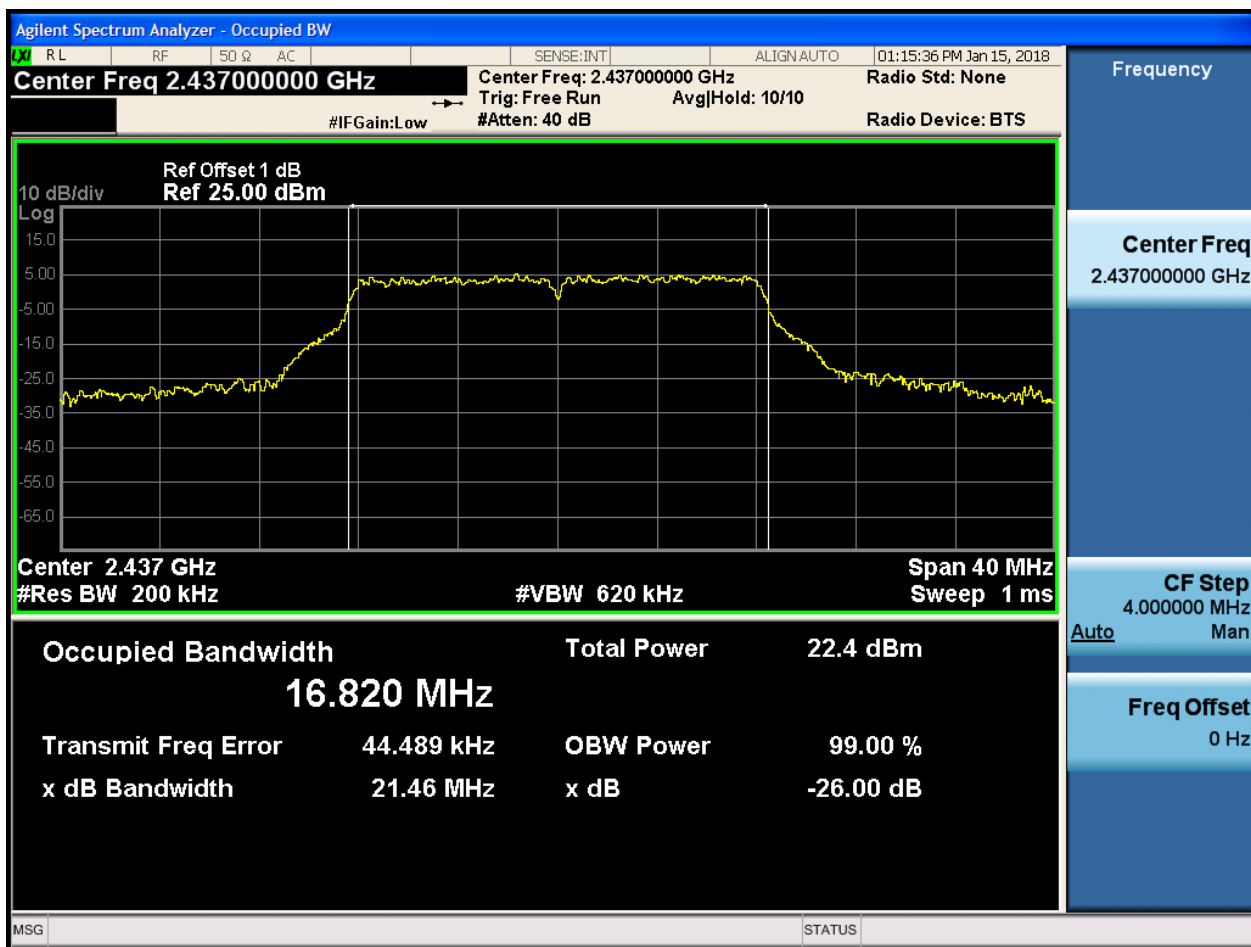


2.9 11G_M@Ant 1



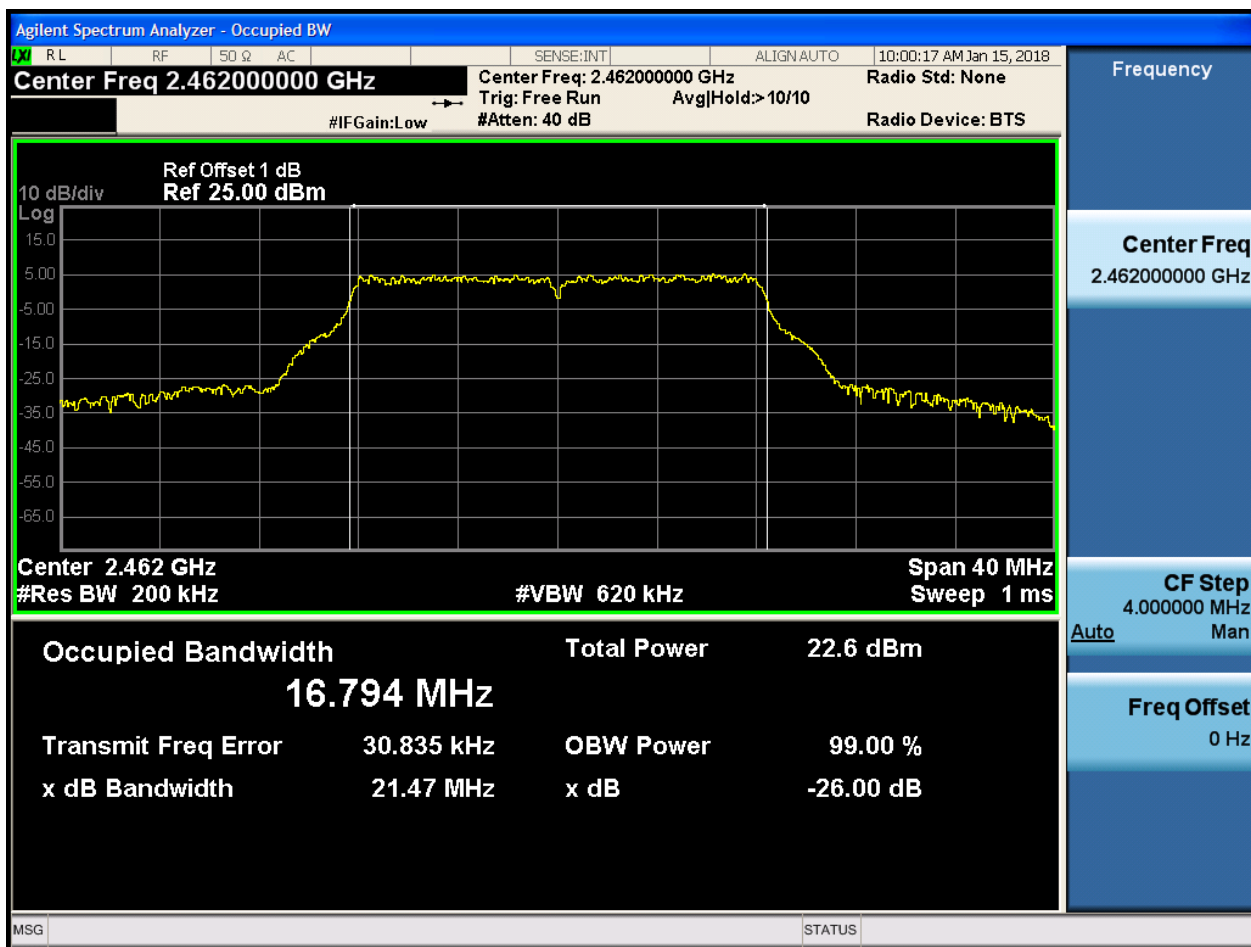


2.10 11G_M@Ant 2



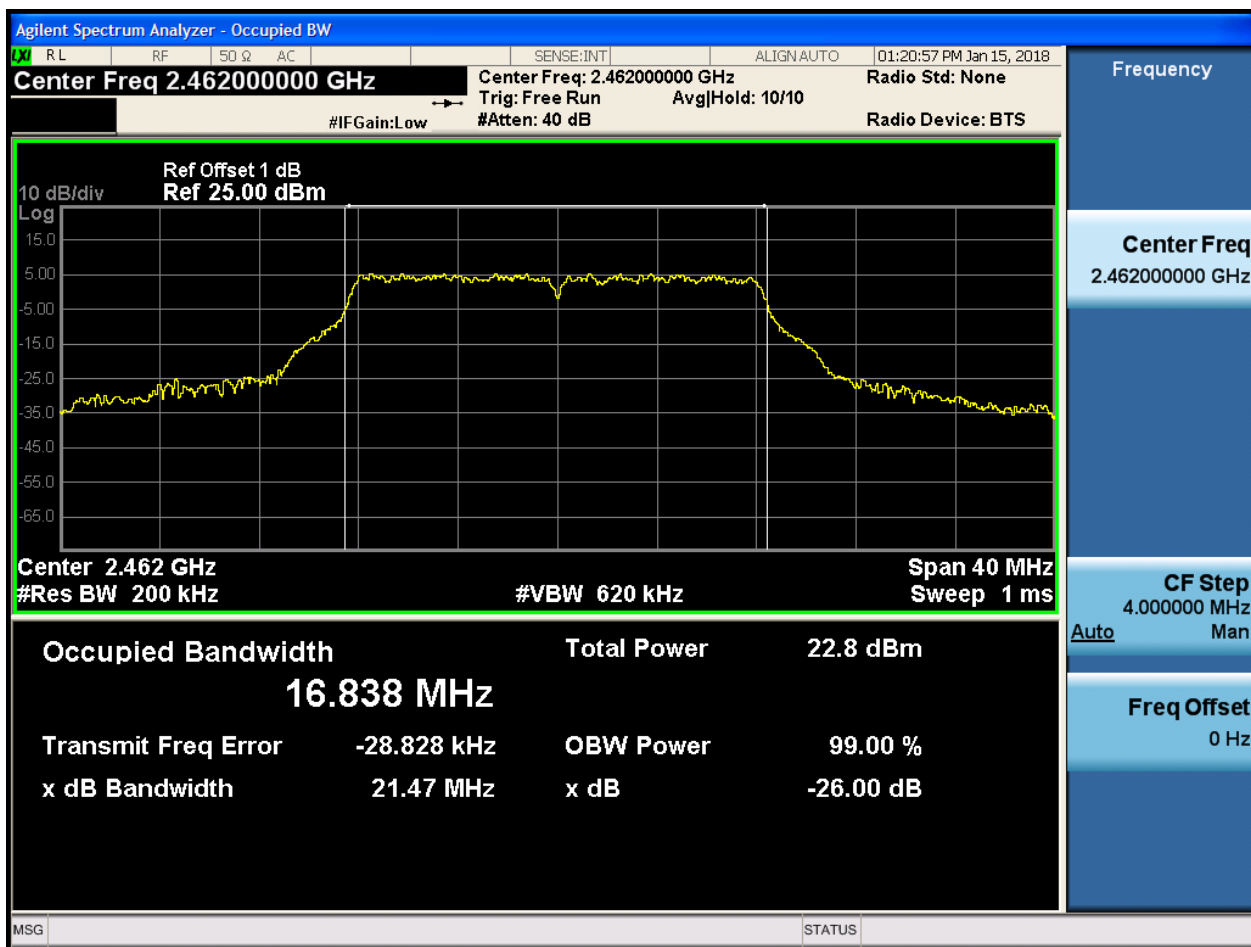


2.11 11G_H@Ant 1



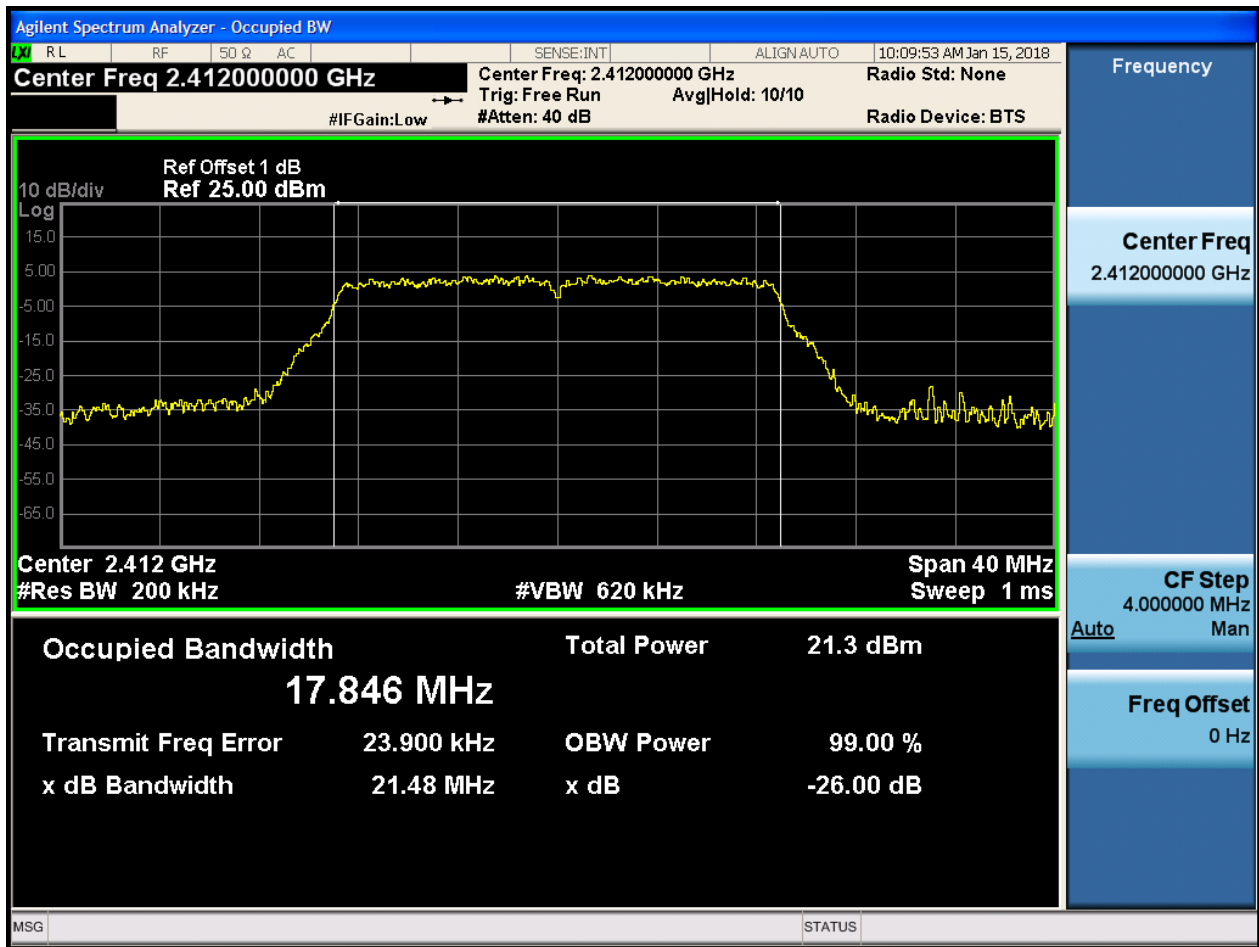


2.12 11G_H@Ant 2



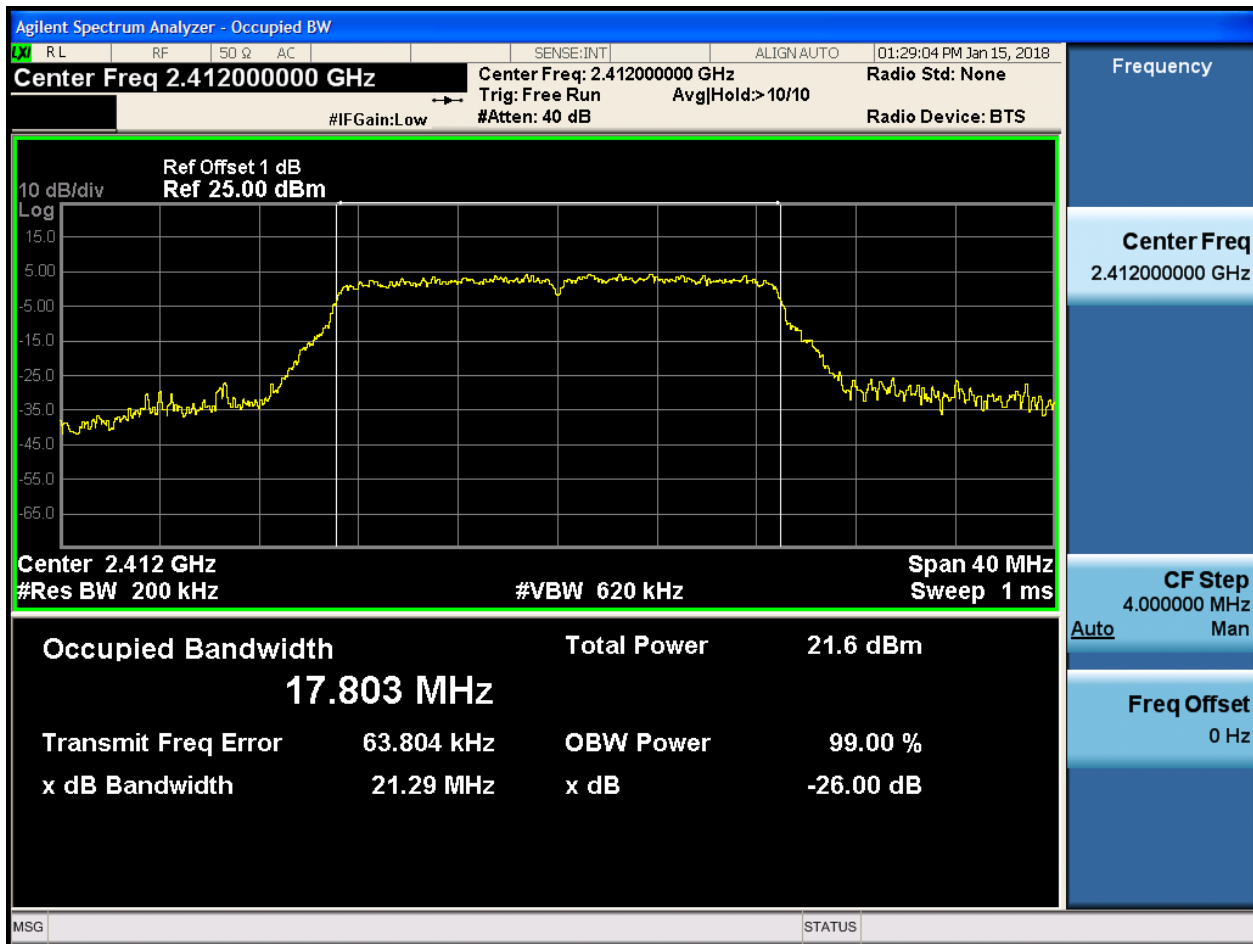


2.13 11N20_L@Ant 1



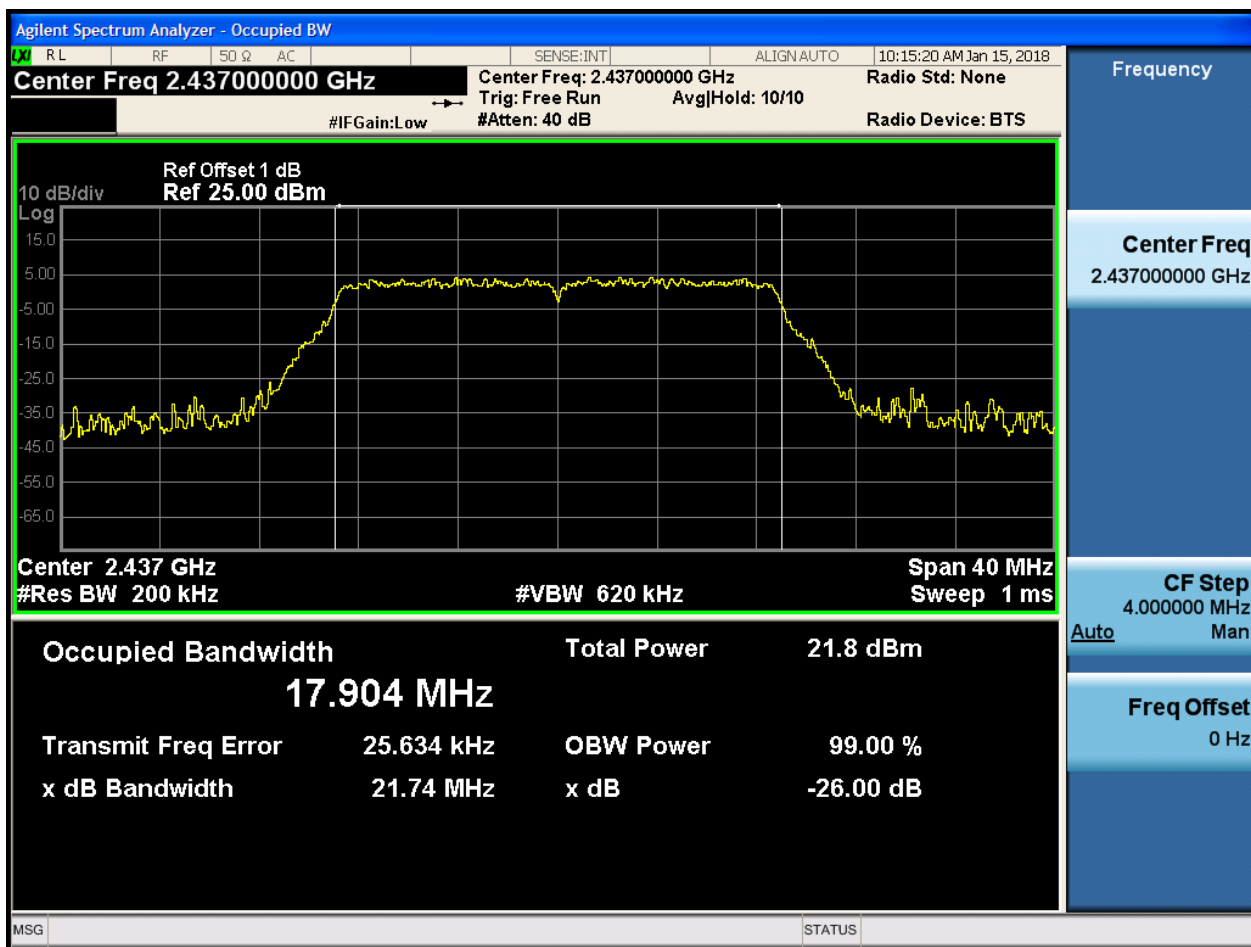


2.14 11N20_L@Ant 2



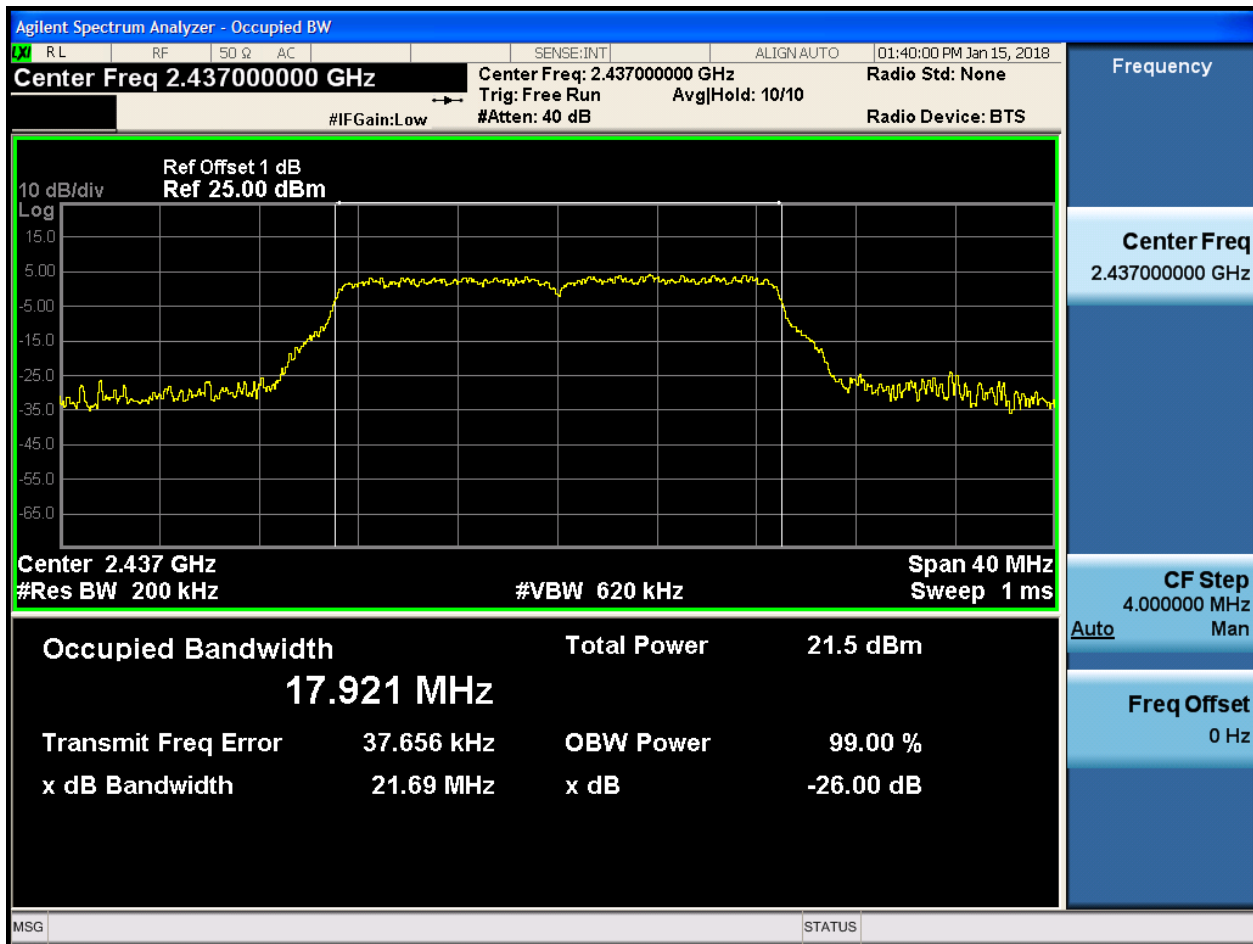


2.15 11N20_M@Ant 1



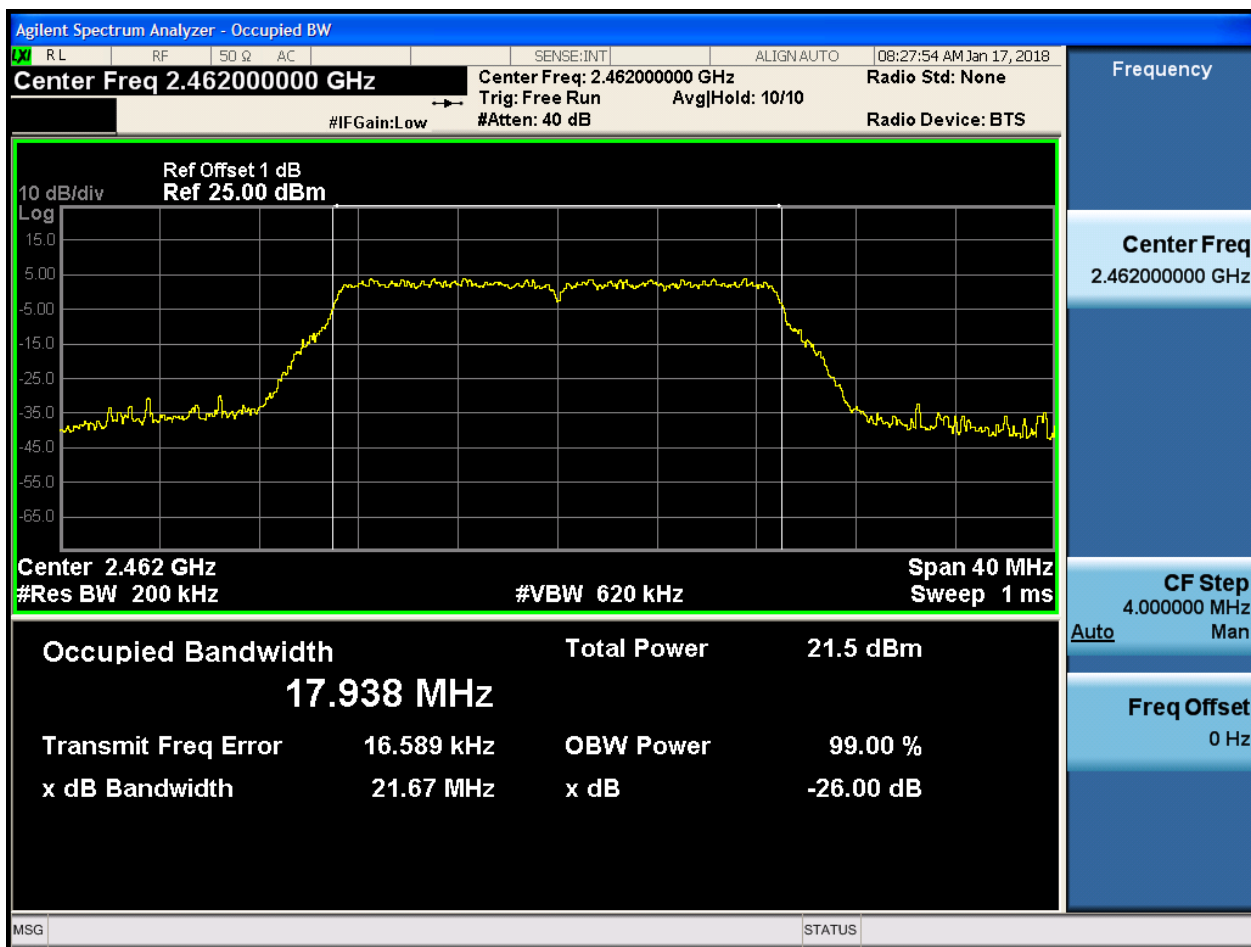


2.16 11N20_M@Ant 2





2.17 11N20_H@Ant 1





Agilent Spectrum Analyzer - Occupied BW

RL RF 50 Ω AC SENSE:INT ALIGN: AUTO 01:44:44 PM Jan 15, 2018

Center Freq 2.462000000 GHz Center Freq: 2.462000000 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 2.462 GHz Span 40 MHz
#Res BW 200 kHz #VBW 620 kHz Sweep 1 ms

Occupied Bandwidth		Total Power	
17.928 MHz		22.1 dBm	
Transmit Freq Error	-12.825 kHz	OBW Power	99.00 %
x dB Bandwidth	21.72 MHz	x dB	-26.00 dB

MSG STATUS

Frequency

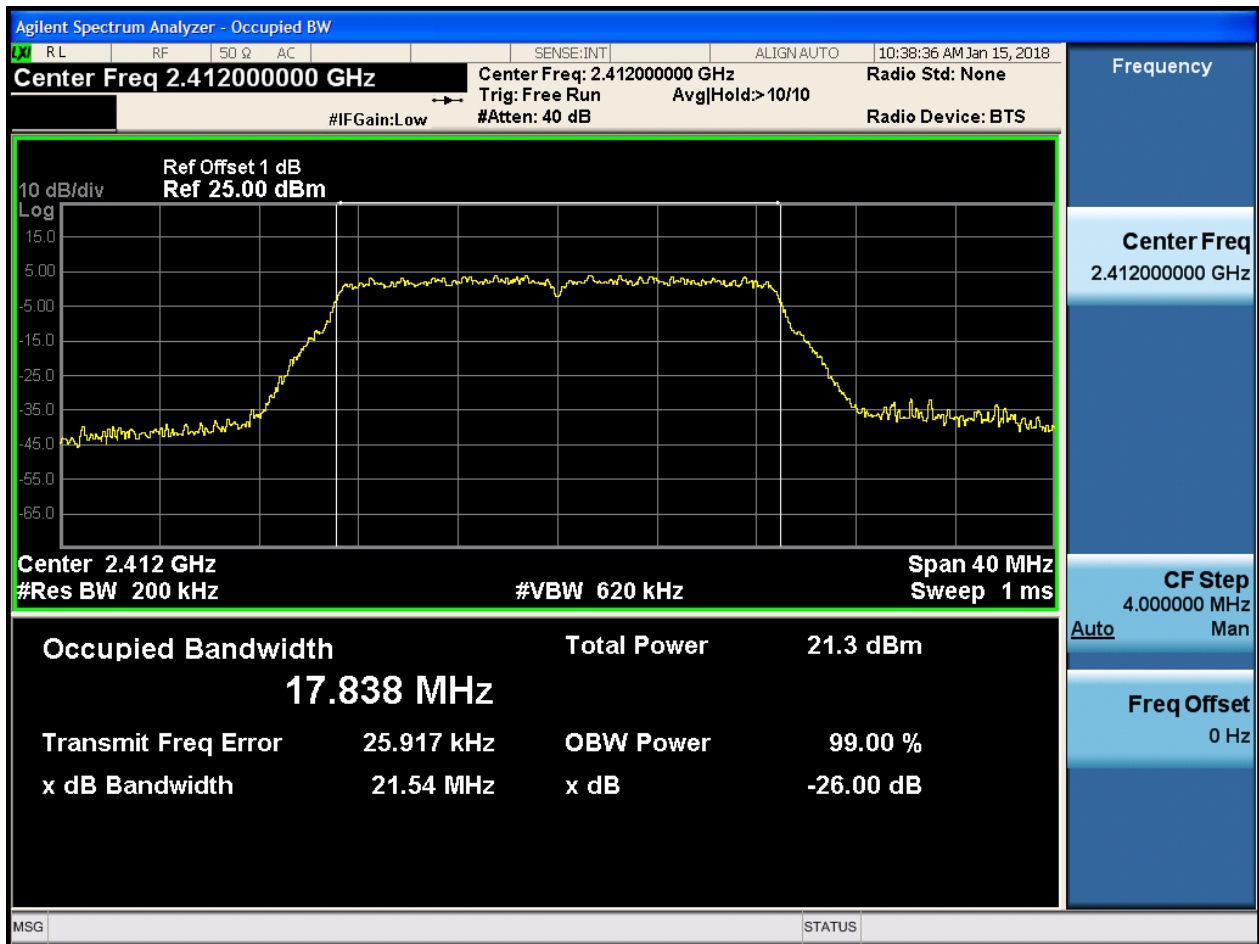
Center Freq
2.462000000 GHz

CF Step
4.000000 MHz
Auto Man

Freq Offset
0 Hz

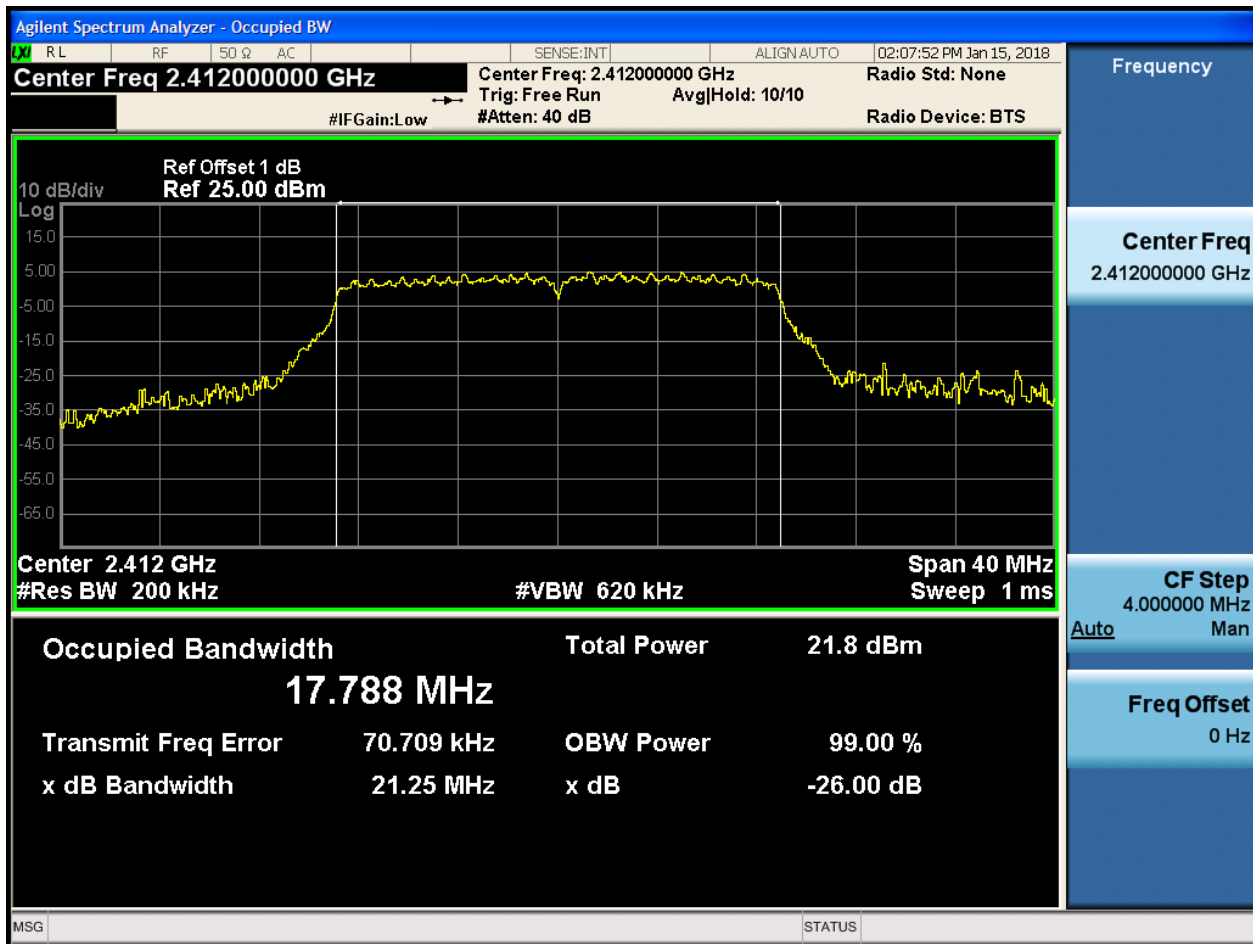


2.19 11N20m_L@Ant 1



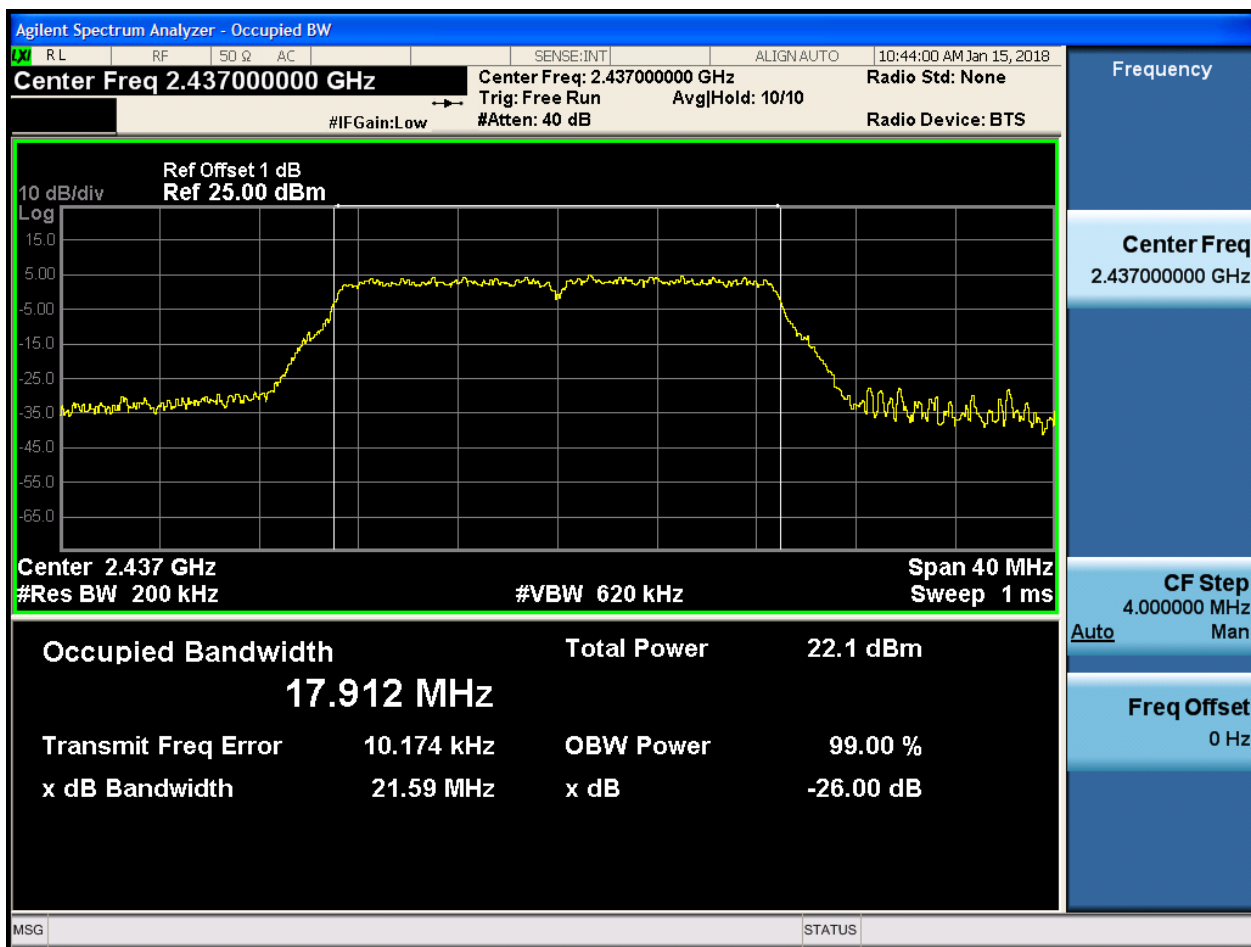


2.20 11N20m_L@Ant 2



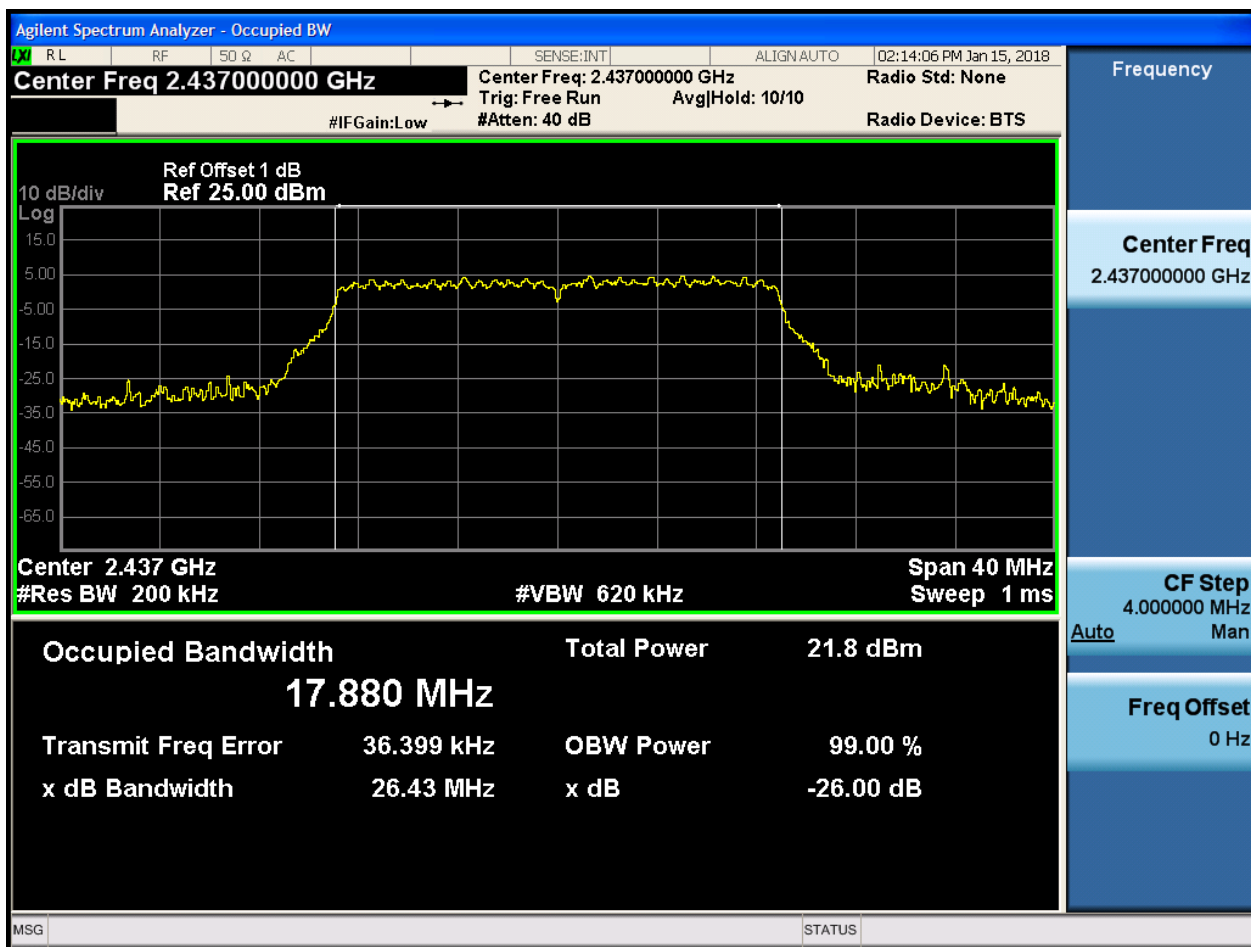


2.21 11N20m_M@Ant 1



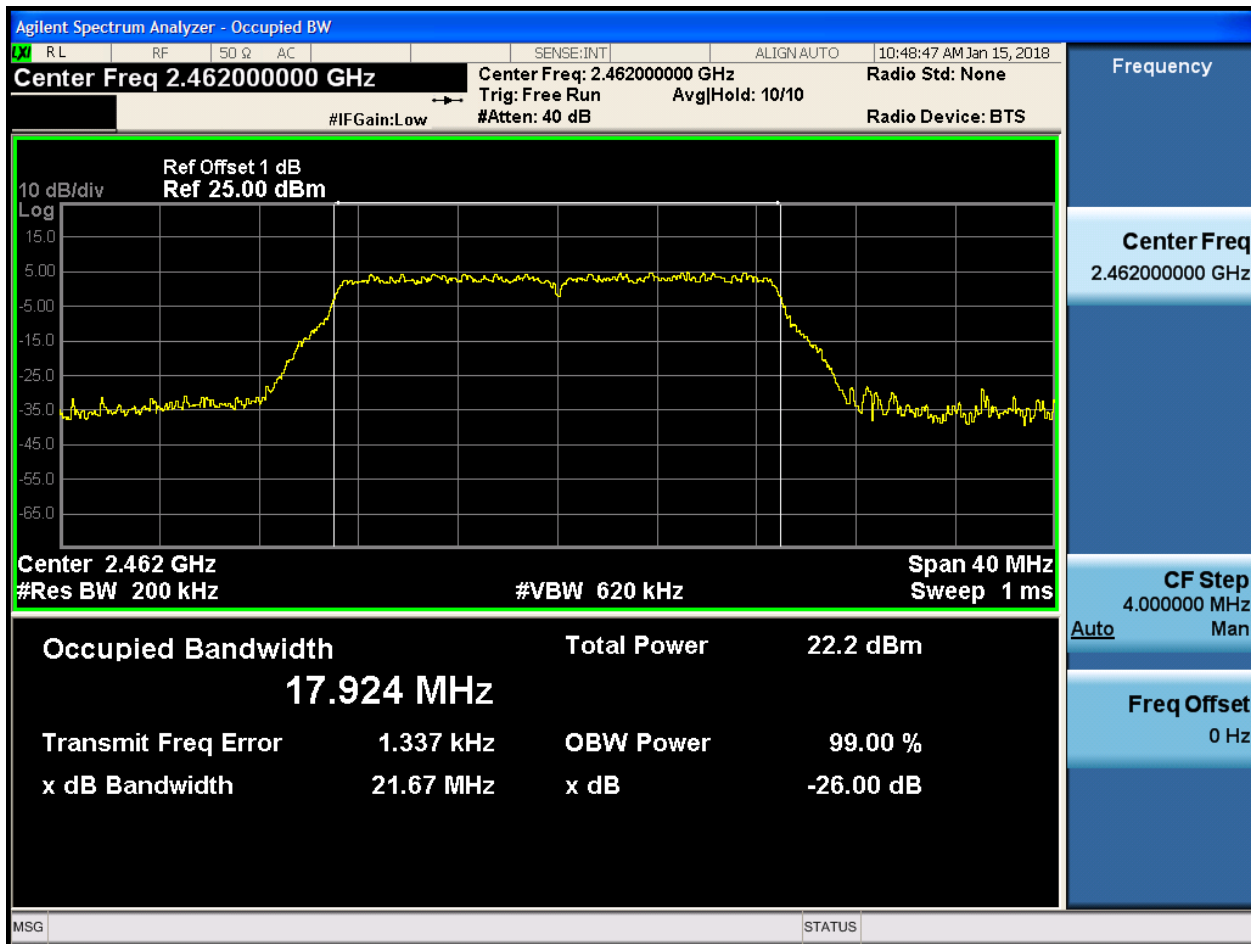


2.22 11N20m_M@Ant 2



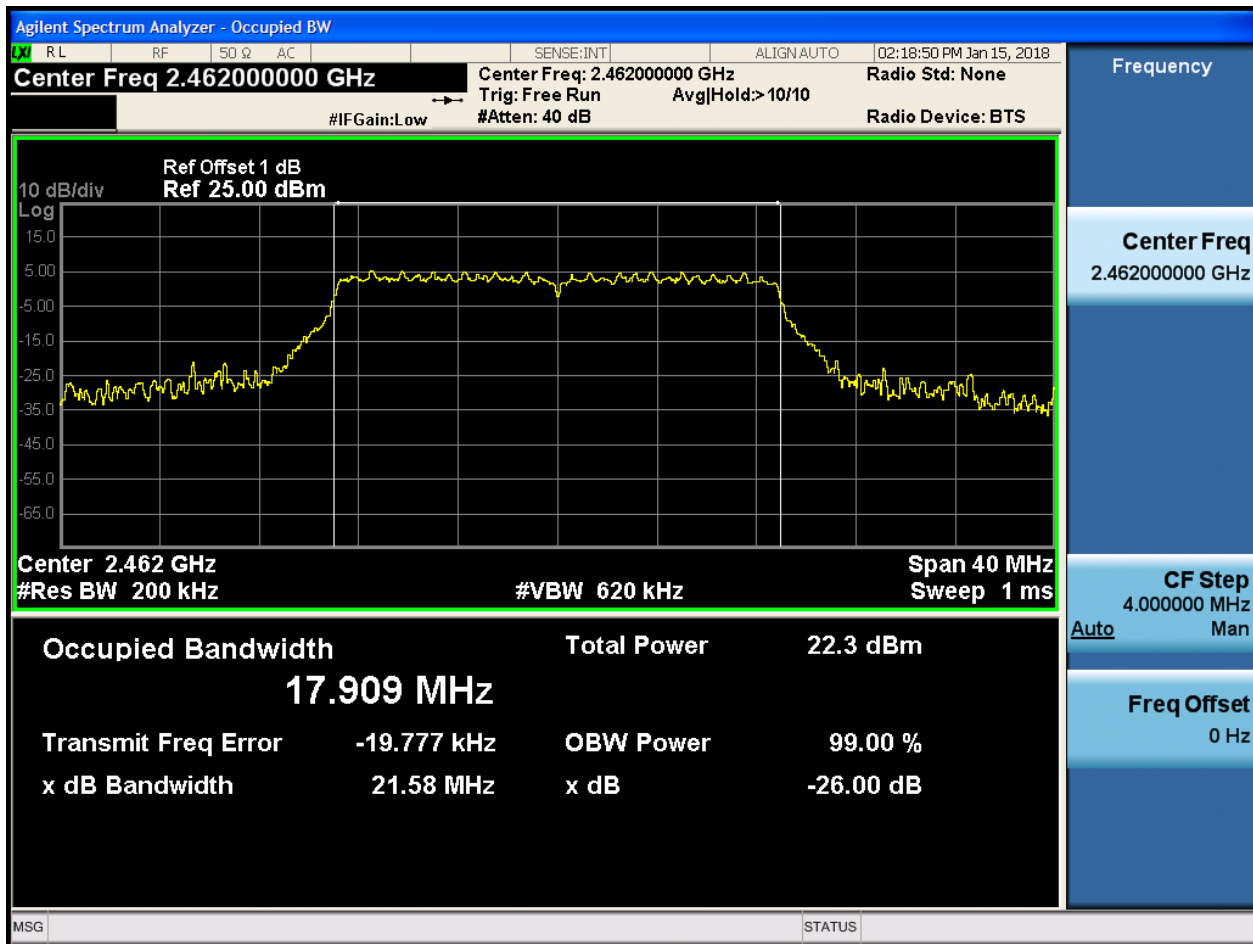


2.23 11N20m_H@Ant 1



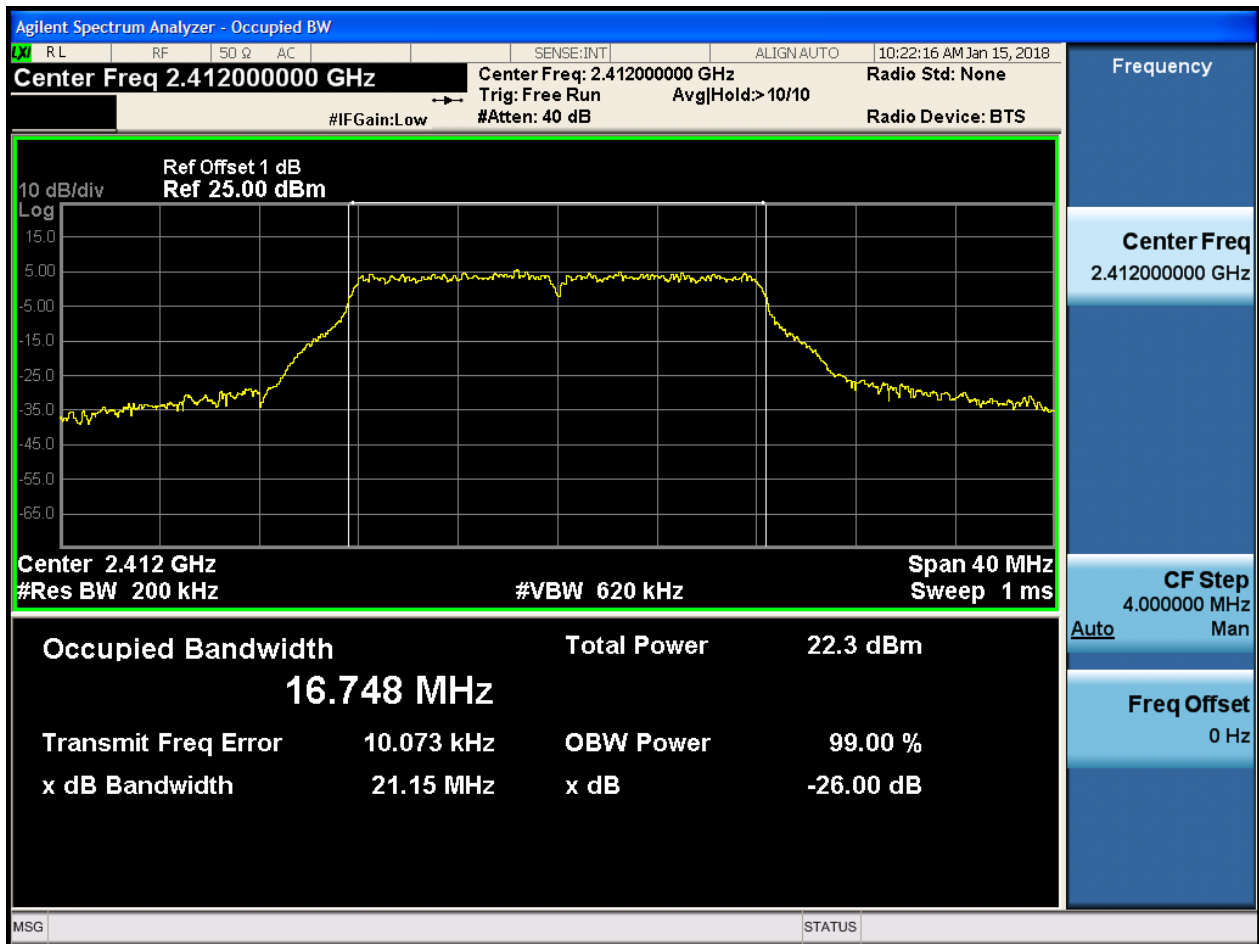


2.24 11N20m_H@Ant 2



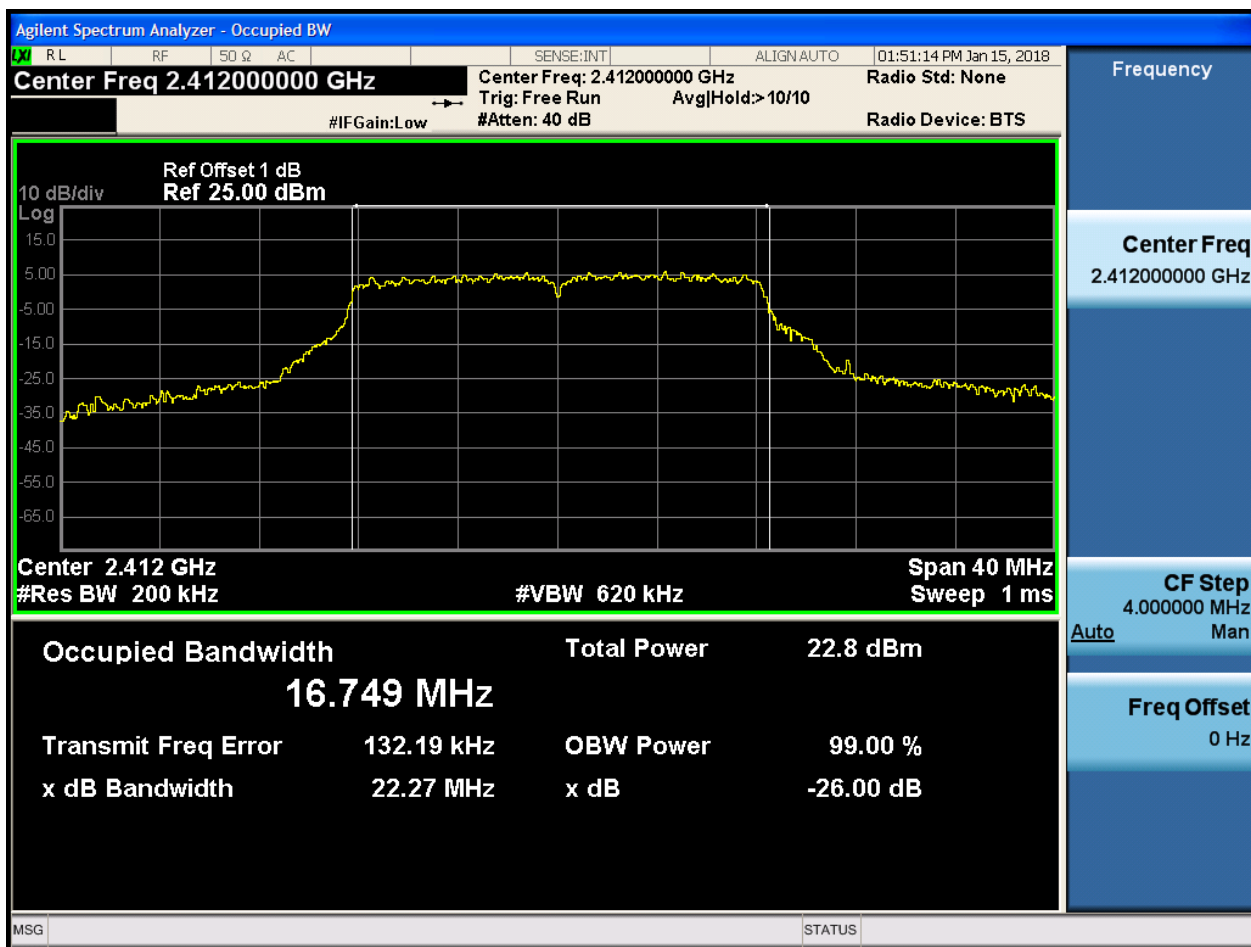


2.25 11G CDD_L@Ant 1



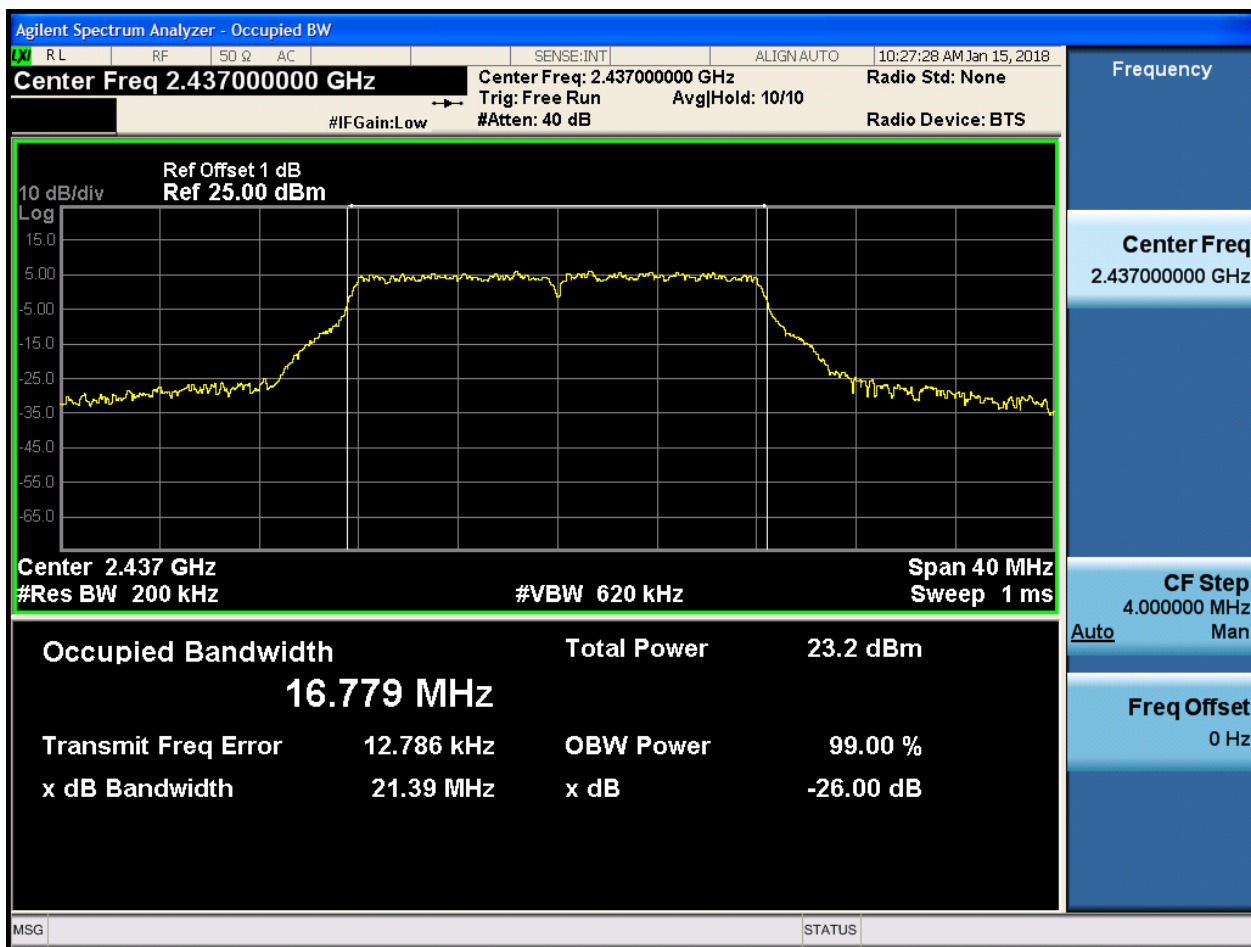


2.26 11G CDD_L@Ant 2



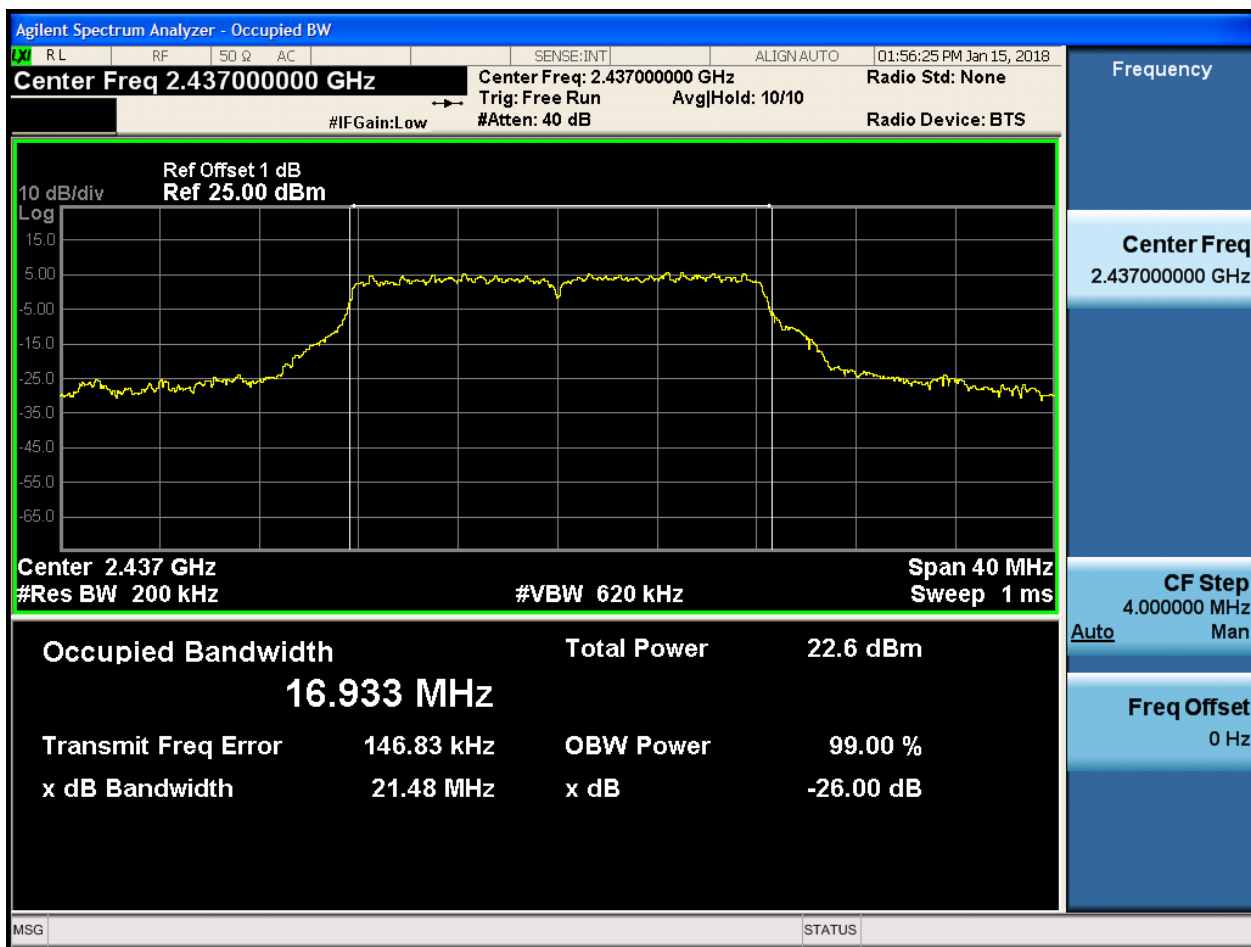


2.27 11G CDD_M@Ant 1



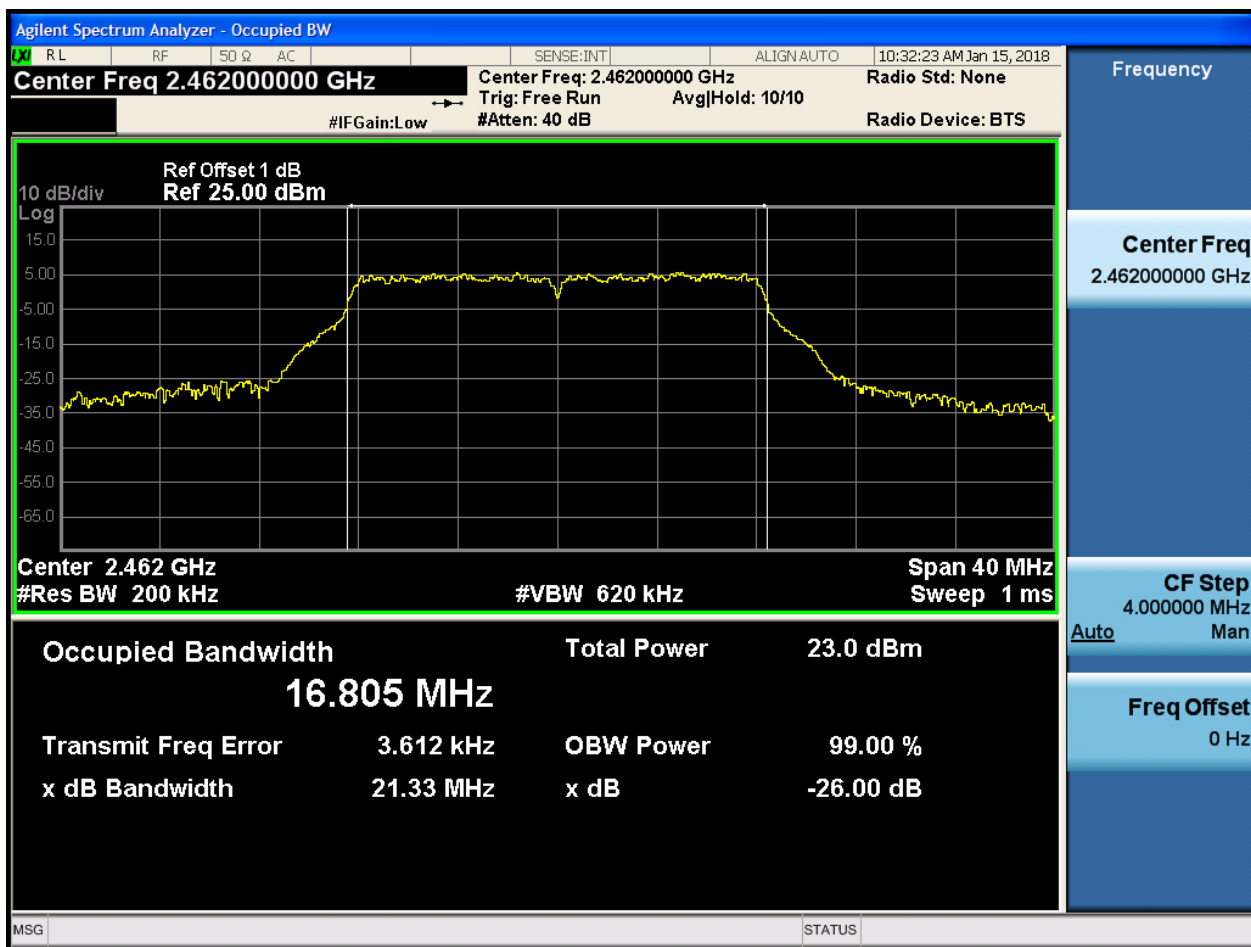


2.28 11G CDD_M@Ant 2



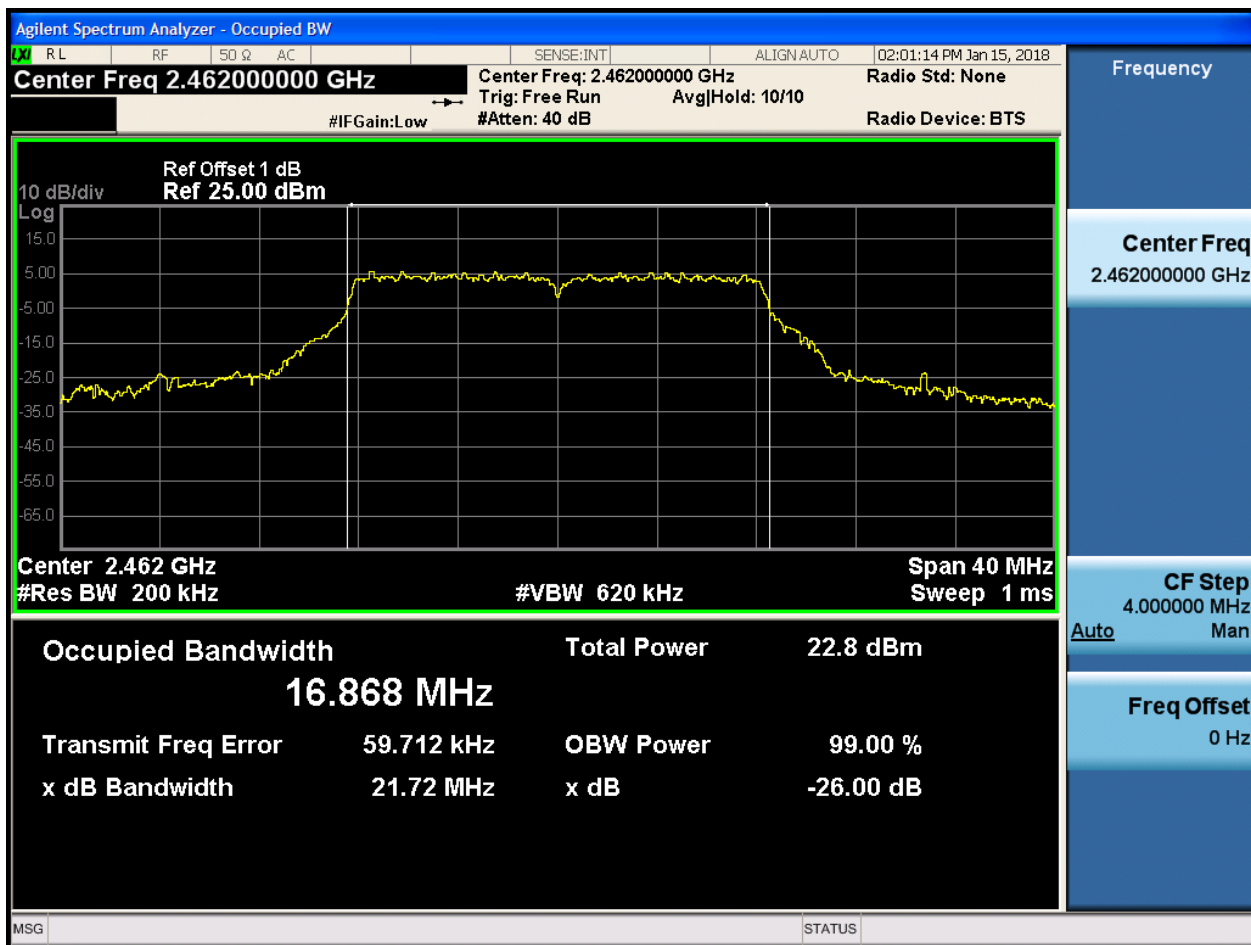


2.29 11G CDD_H@Ant 1





2.30 11G CDD_H@Ant 2



Appendix C: Duty Cycle

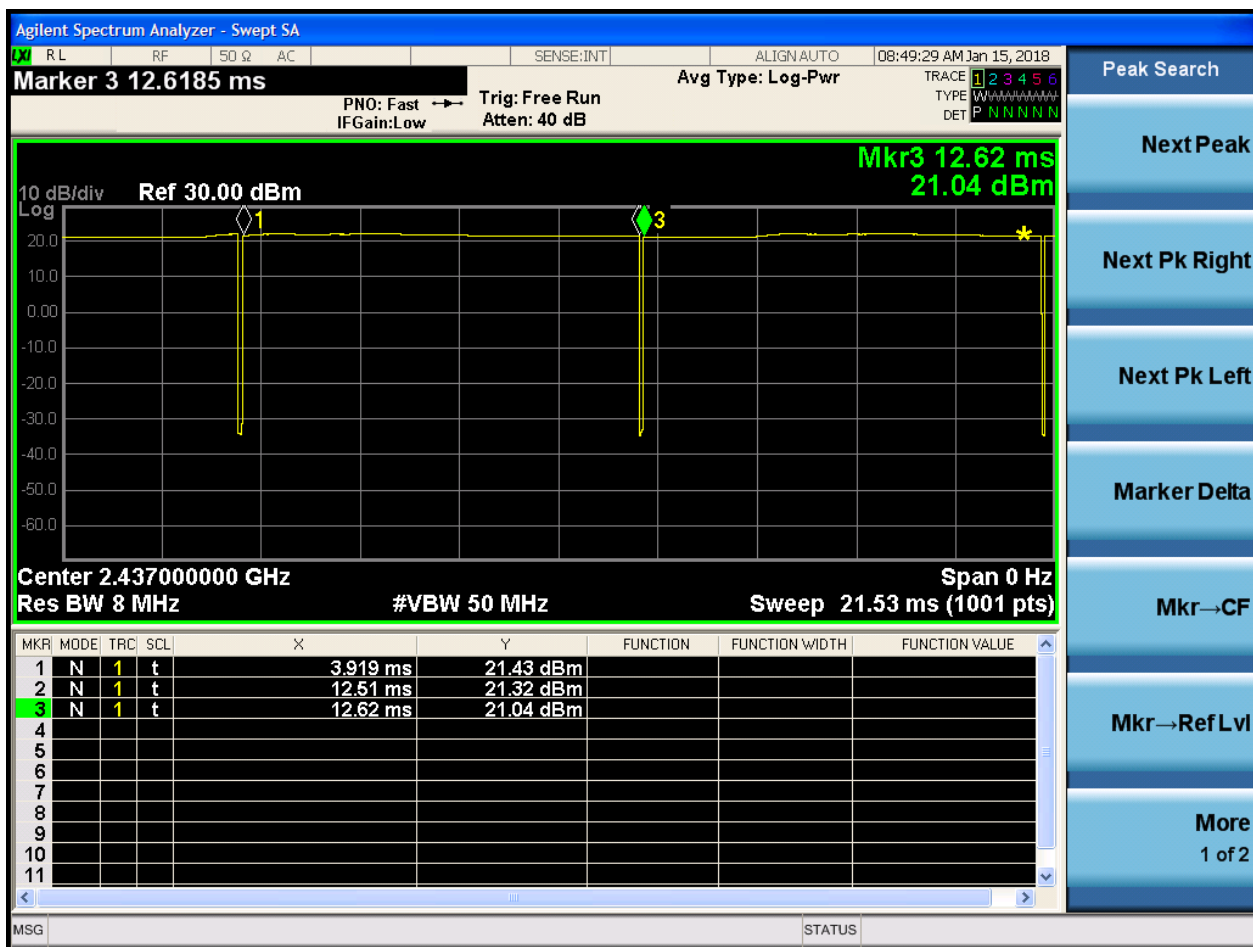
Part I - Test Results

Test Mode	TX Freq. [MHz]	Ant	Duty cycle [%]
11B	CH1,CH6,CH11	Ant 1	99
11B	CH1,CH6,CH11	Ant 2	99
11G	CH1,CH6,CH11	Ant 1	94
11G	CH1,CH6,CH11	Ant 2	94
11N20SISO	CH1,CH6,CH11	Ant 1	93
11N20SISO	CH1,CH6,CH11	Ant 2	92
11N20MIMO	CH1,CH6,CH11	Ant 1	87
11N20MIMO	CH1,CH6,CH11	Ant 2	87
11G_CDD	CH1,CH6,CH11	Ant 1	94
11G_CDD	CH1,CH6,CH11	Ant 2	94

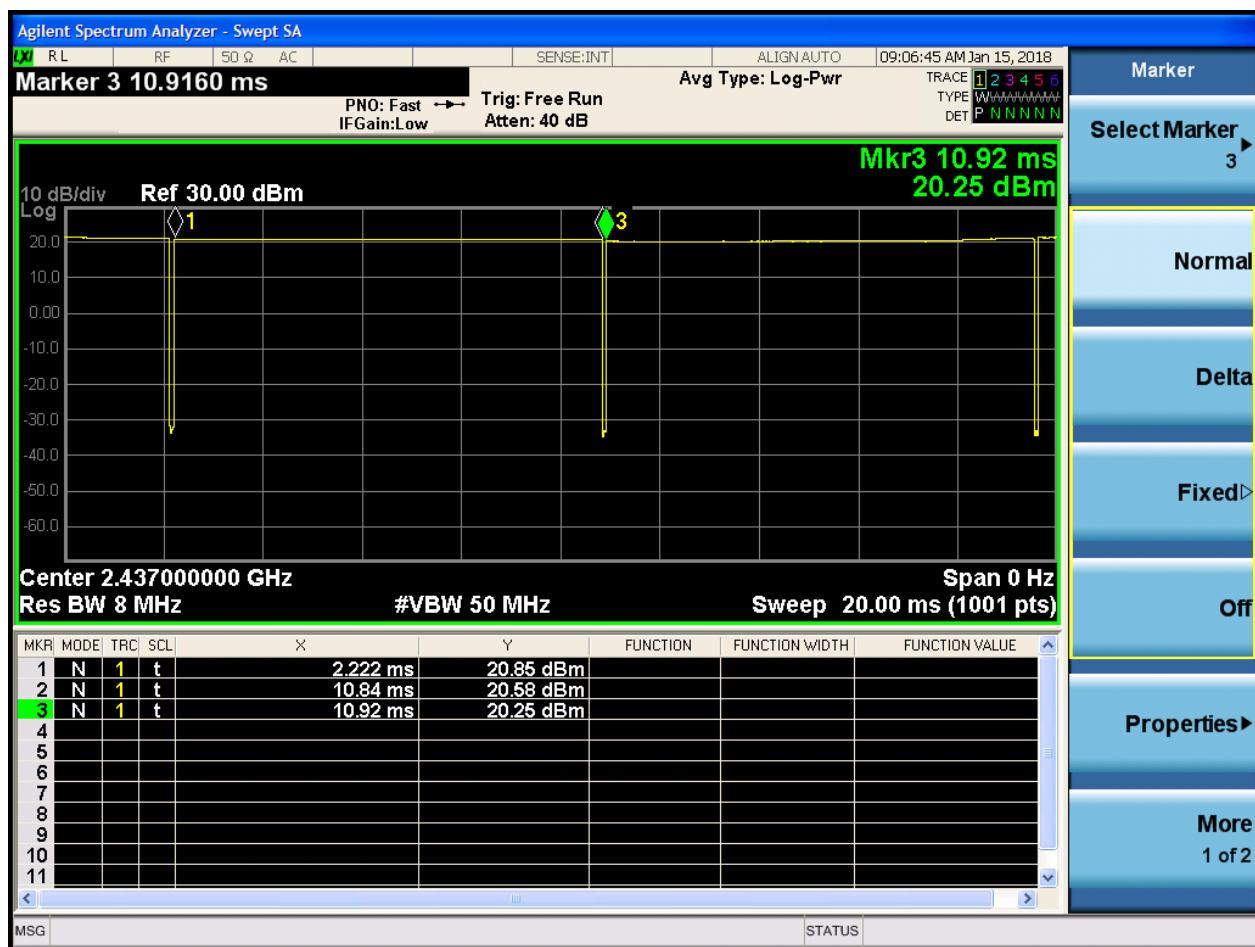


Part II - Test Plots

11B_ANT1

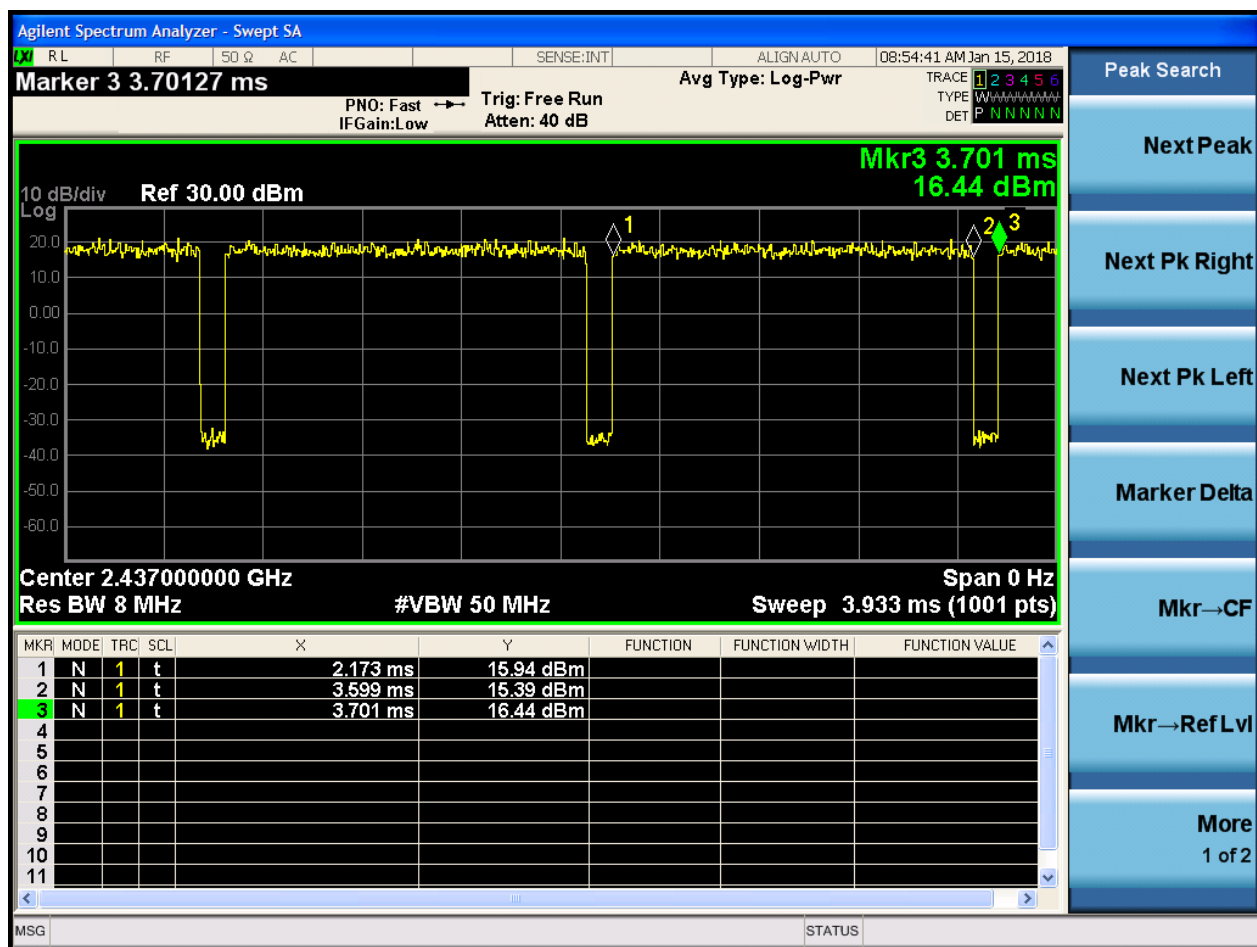


11B_ANT2



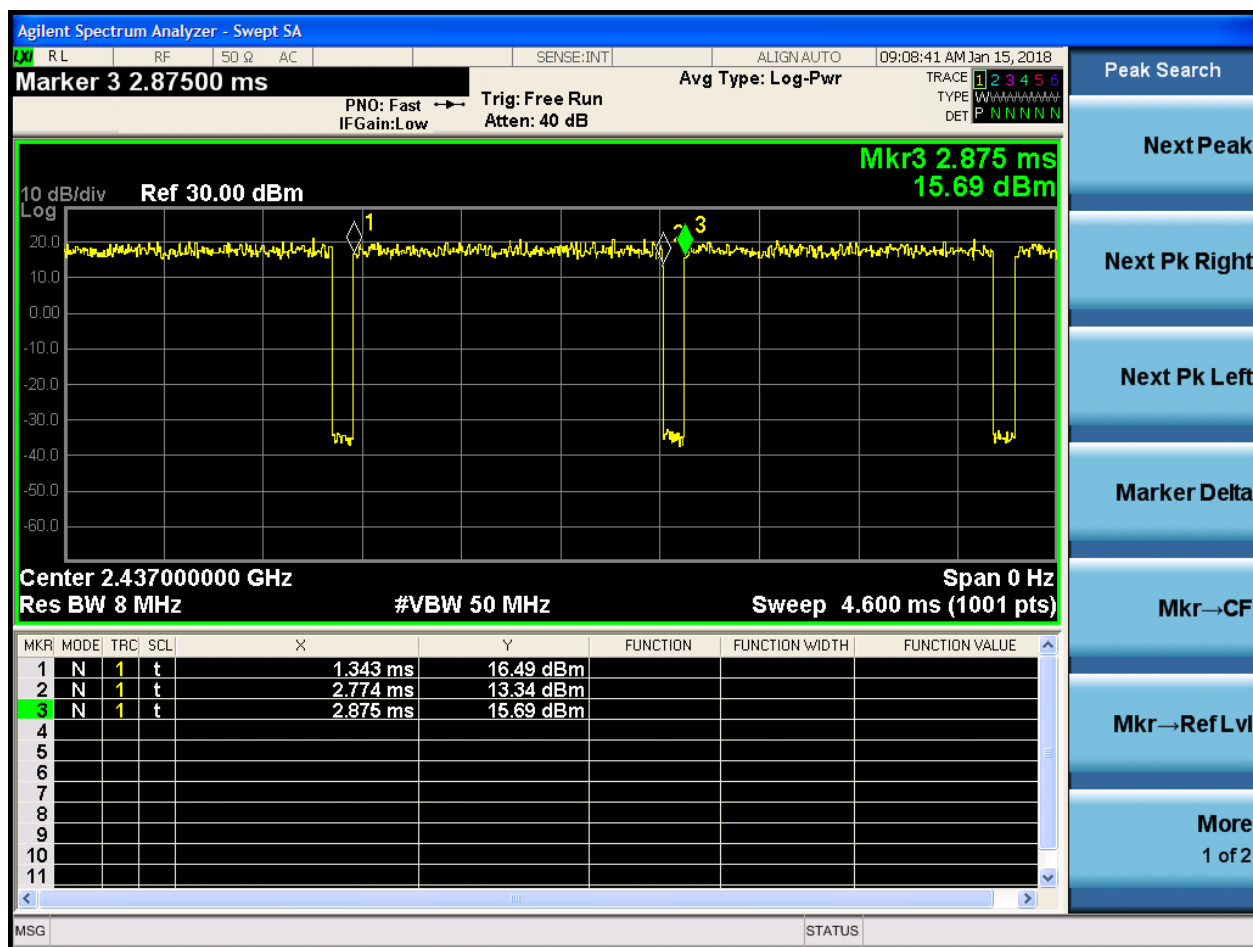


11G_ANT1



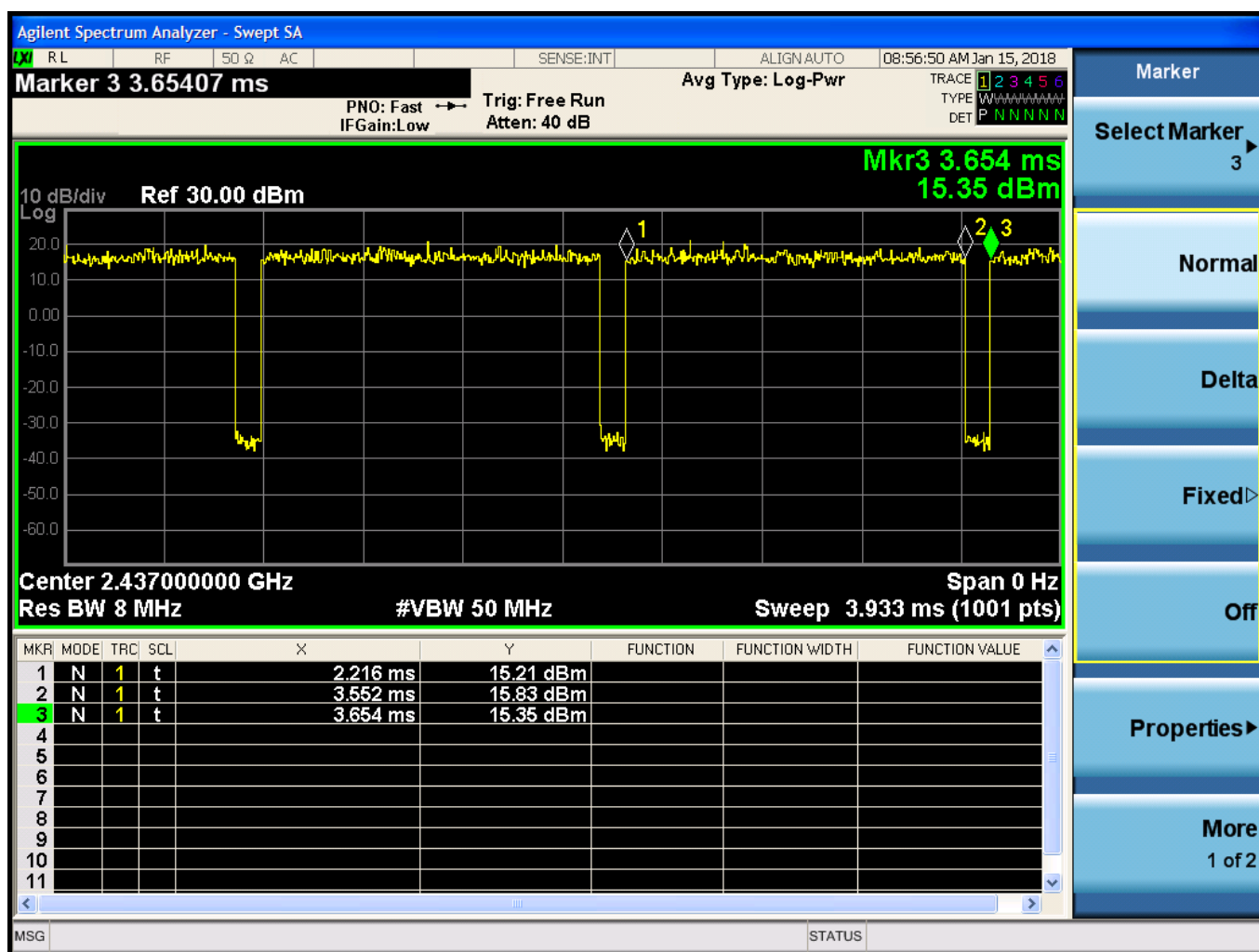


11G_ANT2



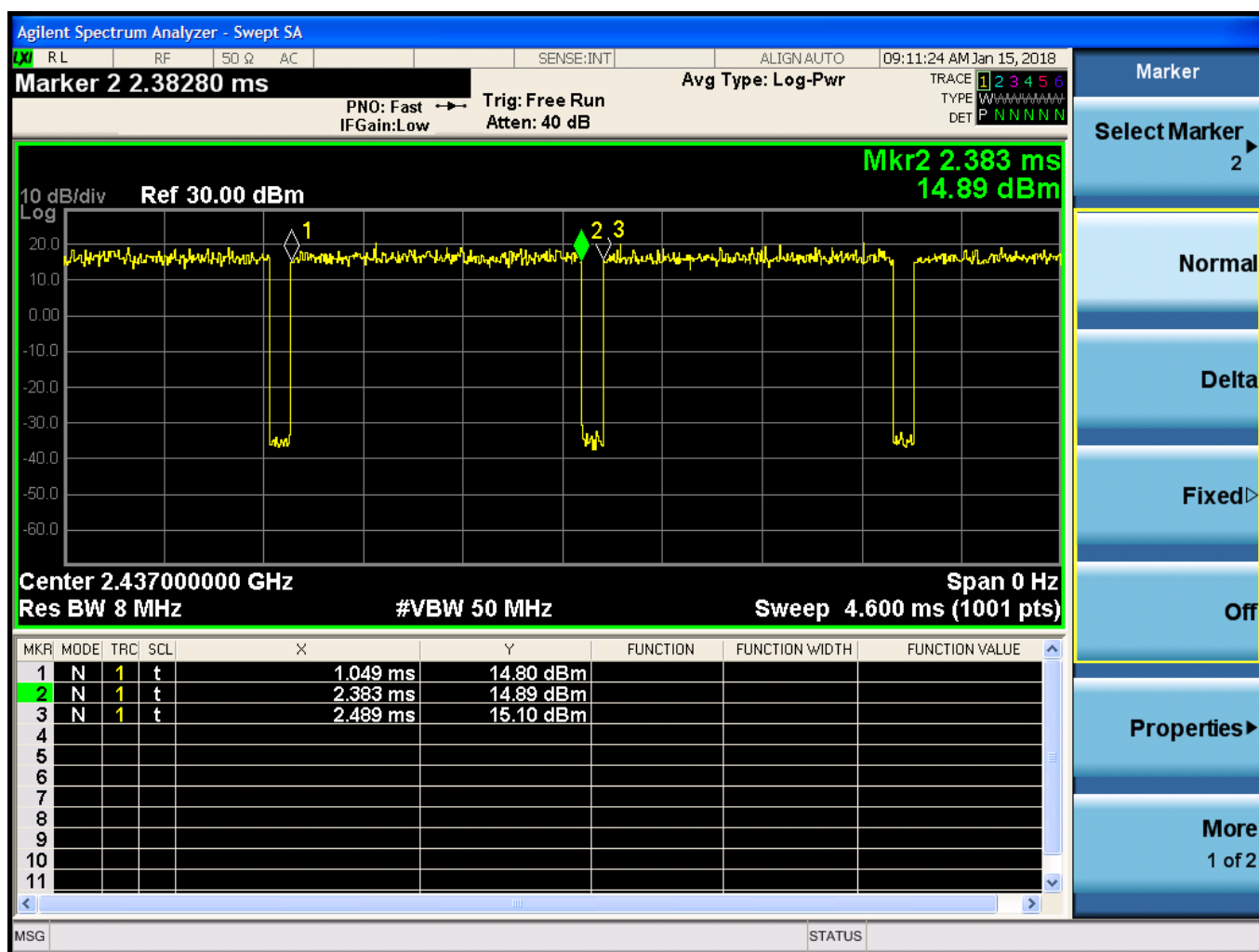


11N20SISO_ANT1



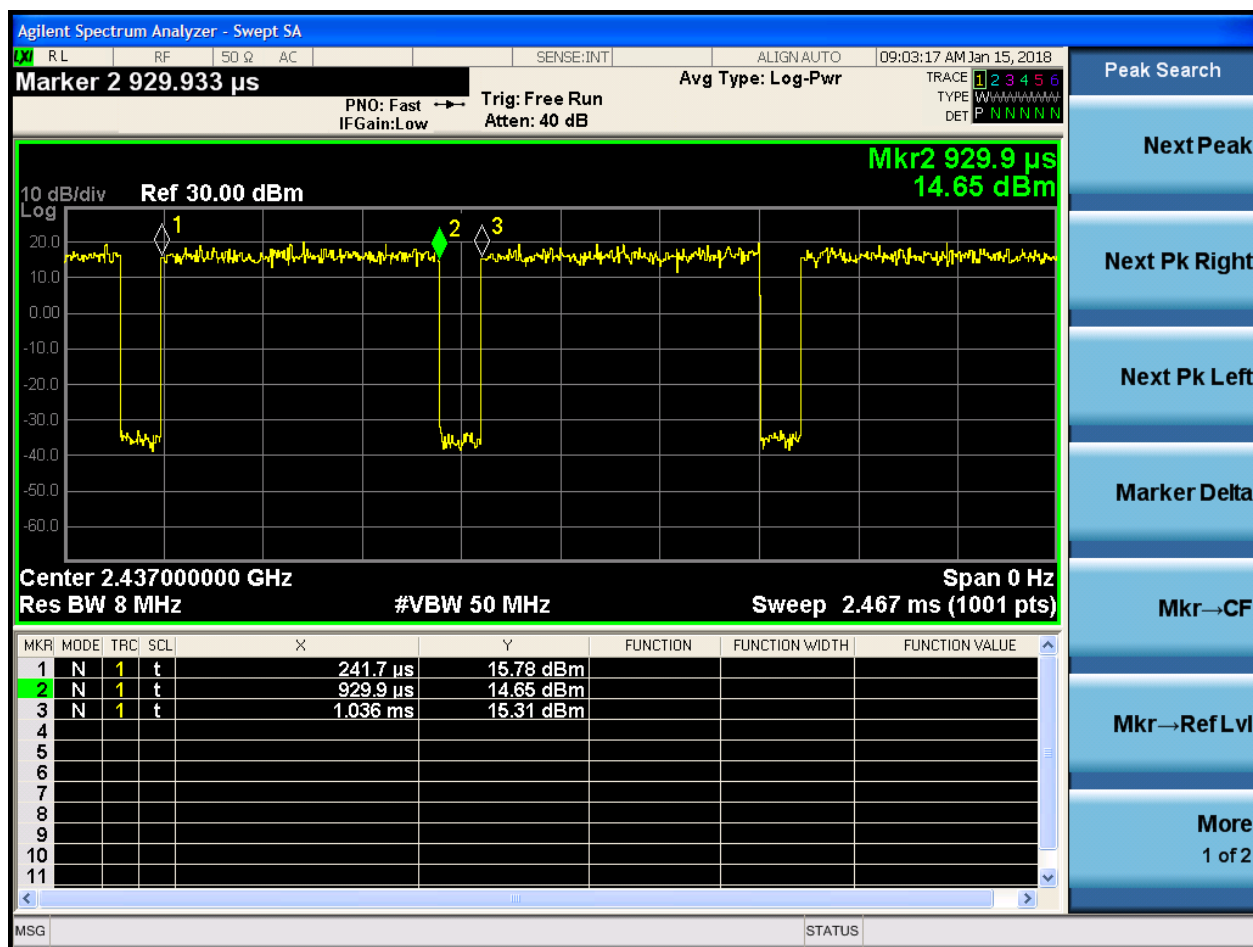


11N20SISO_ANT2



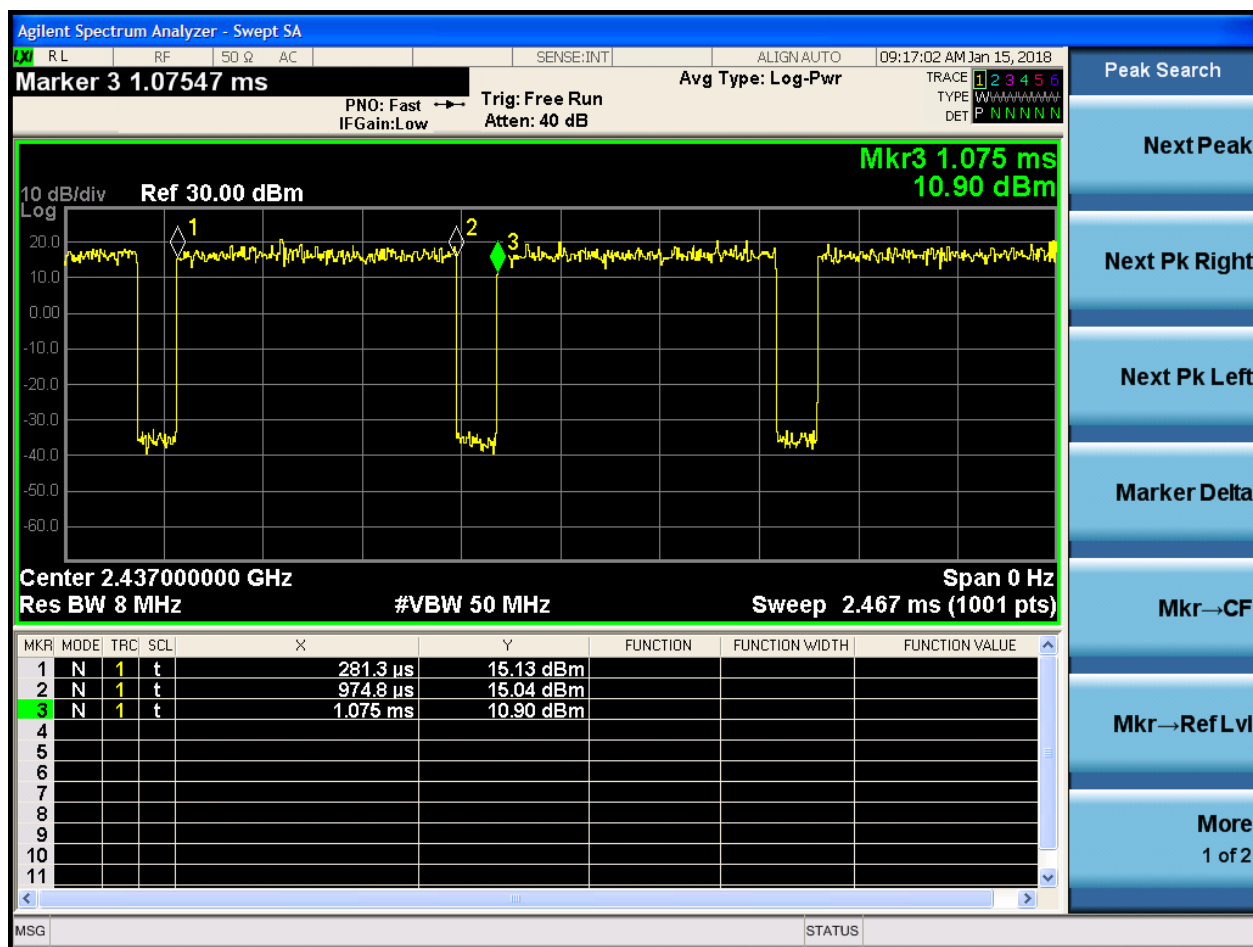


11N20MIMO_ANT1



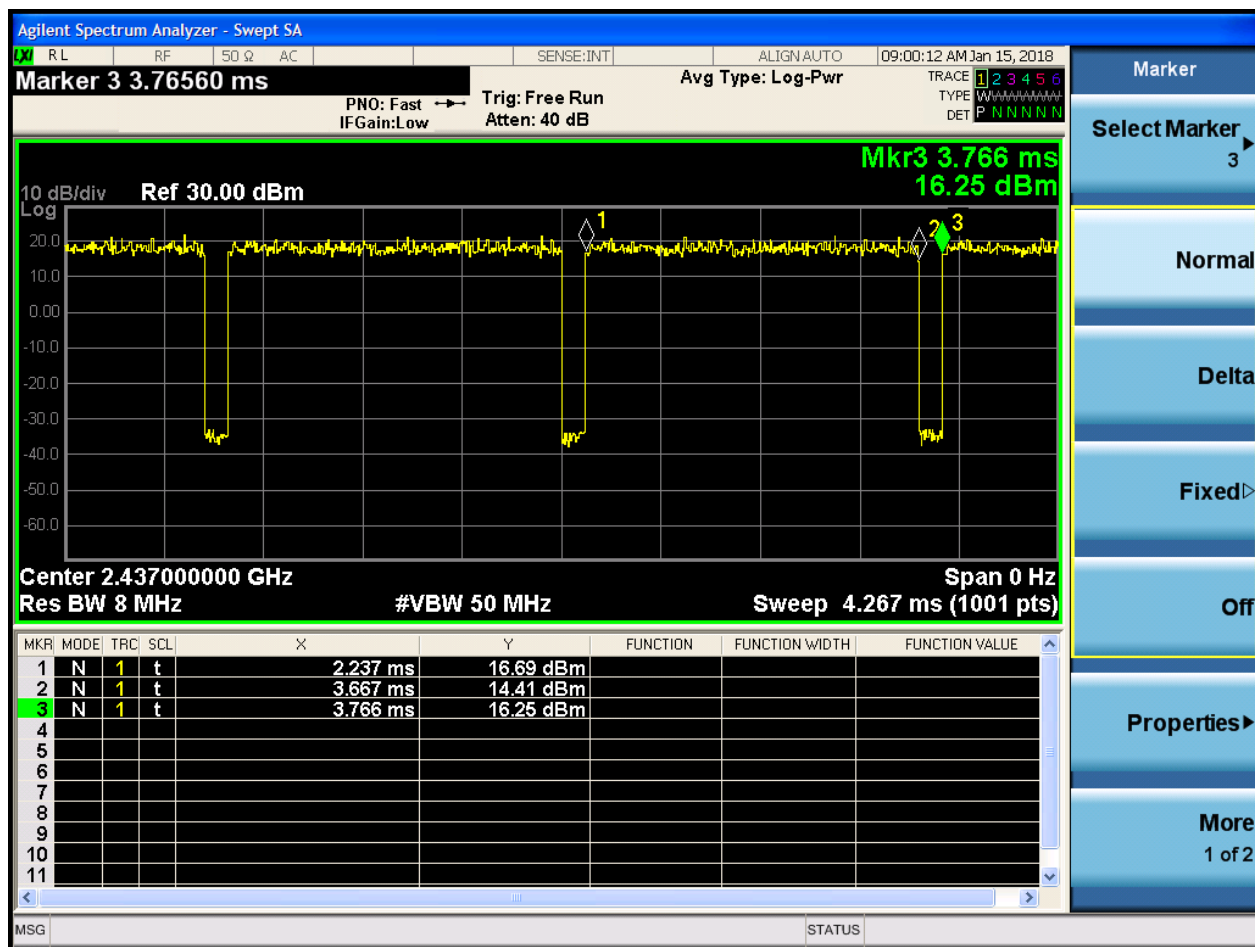


11N20MIMO_ANT2



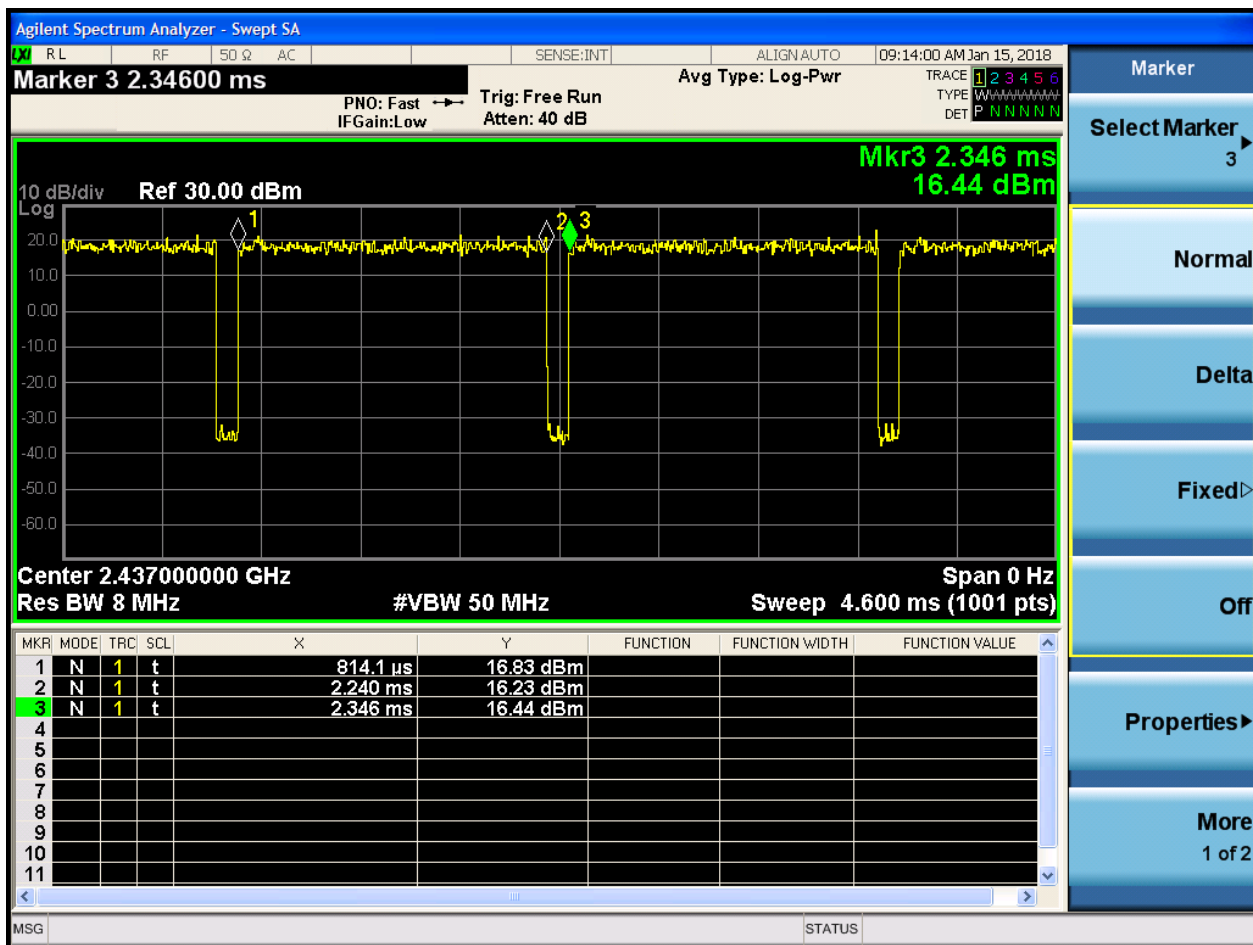


11G_CDD_ANT1





11G_CDD_ANT2



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	18.40	pass
11B	L	2412	Ant 2	99	18.00	pass
11B	M	2437	Ant 1	99	18.32	pass
11B	M	2437	Ant 2	99	17.77	pass
11B	H	2462	Ant 1	99	18.21	pass
11B	H	2462	Ant 2	99	18.29	pass
11G	L	2412	Ant 1	94	15.10	pass
11G	L	2412	Ant 2	94	15.53	pass
11G	M	2437	Ant 1	94	15.85	pass
11G	M	2437	Ant 2	94	15.41	pass
11G	H	2462	Ant 1	94	15.59	pass
11G	H	2462	Ant 2	94	15.77	pass
11N20	L	2412	Ant 1	93	14.10	pass
11N20	L	2412	Ant 2	92	14.47	pass
11N20	M	2437	Ant 1	93	14.59	pass

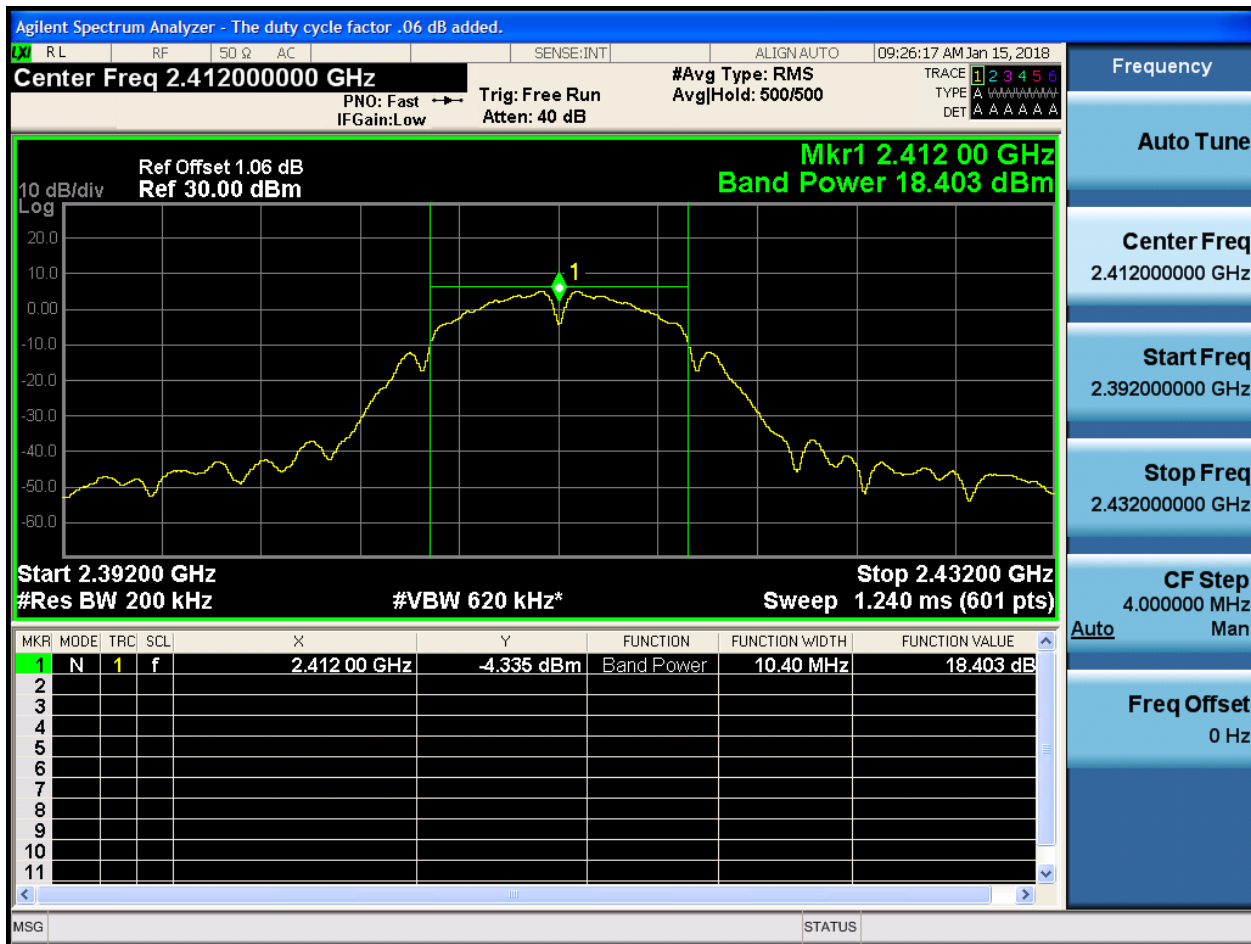
Test Mode	Test Channel	Frequency[MHz]	Ant	Duty Cycle [%]	Power[dBm]	Verdict
11N20	M	2437	Ant 2	92	14.43	Pass
11N20	H	2462	Ant 1	93	14.32	pass
11N20	H	2462	Ant 2	92	14.95	pass
11N20m	L	2412	Ant 1	87	14.14	pass
11N20m	L	2412	Ant 2	87	14.93	pass
11N20m	L	2412	SUM	87	17.56	pass
11N20m	M	2437	Ant 1	87	15.00	pass
11N20m	M	2437	Ant 2	87	14.95	pass
11N20m	M	2437	SUM	87	17.99	pass
11N20m	H	2462	Ant 1	87	15.01	pass
11N20m	H	2462	Ant 2	87	15.42	pass
11N20m	H	2462	SUM	87	18.23	pass
11G CDD	L	2412	Ant 1	94	15.29	pass
11G CDD	L	2412	Ant 2	94	15.97	pass
11G CDD	L	2412	SUM	94	18.65	pass
11G CDD	M	2437	Ant 1	94	16.15	pass
11G CDD	M	2437	Ant 2	94	15.79	pass

Test Mode	Test Channel	Frequency[MHz]	Ant	Duty Cycle [%]	Power[dBm]	Verdict
11G CDD	M	2437	SUM	94	18.98	pass
11G CDD	H	2462	Ant 1	94	16.06	pass
11G CDD	H	2462	Ant 2	94	15.97	pass
11G CDD	H	2462	SUM	94	19.03	pass



Part II - Test Plots

2.1 11B_L@Ant 1





2.2 11B_L@Ant 2

