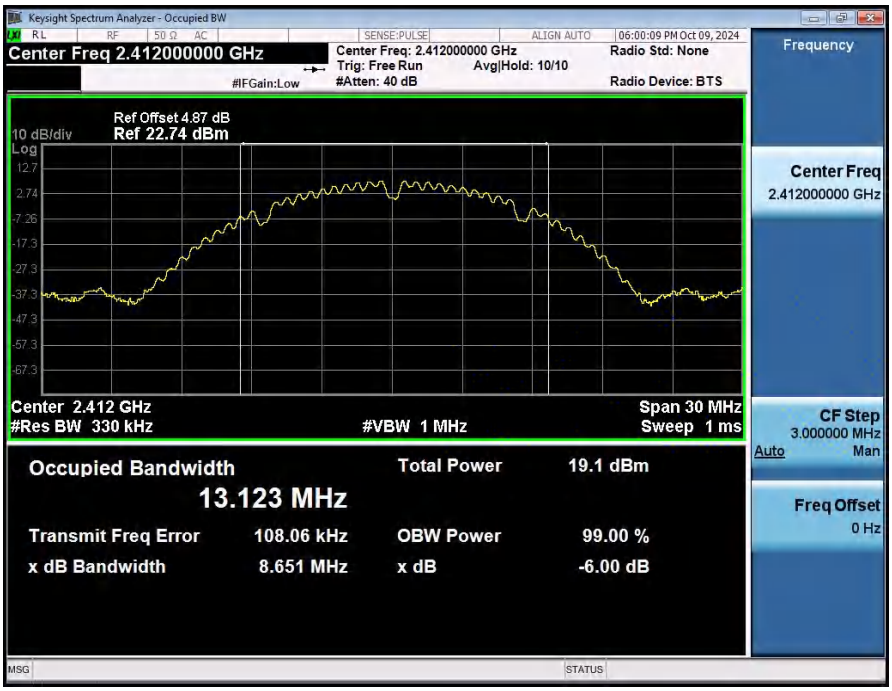
Appendix Test Data

Report No.:	1812C40093912503	Test Sample No.:	1-2-2
Start Test Date:	2024.10.9	Finish Test Date:	2024.11.22
Test Engineer:	Jokes Wang	Auditor:	Justin Feng
Temperature:	22.7℃	Relative Humidity:	52%
Pressure:	101kPa		

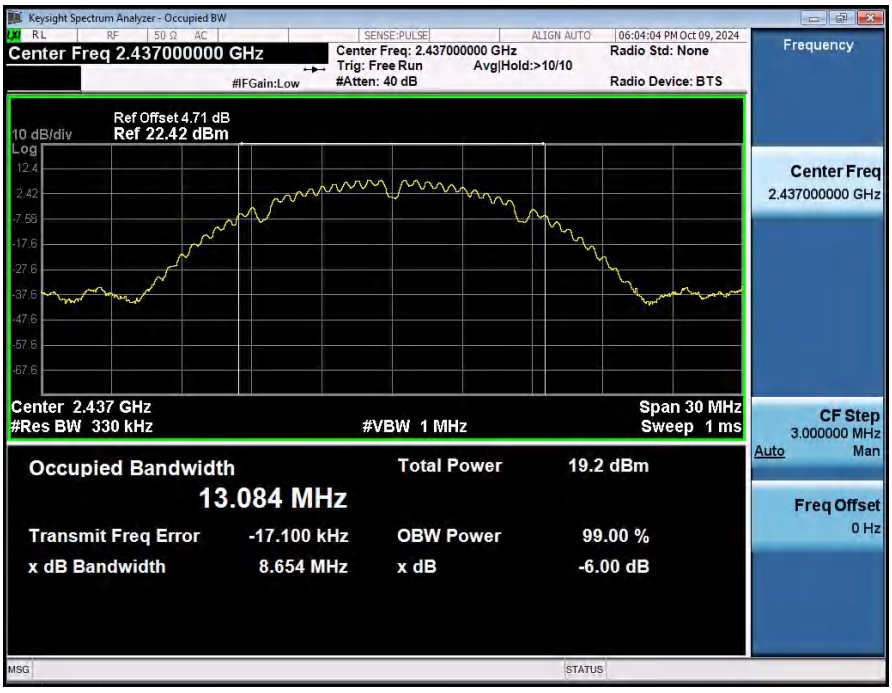
Appendix A: -6dB Bandwidth

Condition	Antenna	Modulation	Frequency (MHz)	-6dB BW(MHz)	limit(kHz)	Result
NVNT	ANT1	802.11b	2412.00	8.65	500	Pass
NVNT	ANT1	802.11b	2437.00	8.65	500	Pass
NVNT	ANT1	802.11b	2462.00	8.18	500	Pass
NVNT	ANT1	802.11g	2412.00	15.09	500	Pass
NVNT	ANT1	802.11g	2437.00	16.23	500	Pass
NVNT	ANT1	802.11g	2462.00	16.22	500	Pass
NVNT	ANT1	802.11n(HT20)	2412.00	15.99	500	Pass
NVNT	ANT1	802.11n(HT20)	2437.00	17.43	500	Pass
NVNT	ANT1	802.11n(HT20)	2462.00	17.33	500	Pass
NVNT	ANT1	802.11n(HT40)	2422.00	34.99	500	Pass
NVNT	ANT1	802.11n(HT40)	2437.00	35.73	500	Pass
NVNT	ANT1	802.11n(HT40)	2452.00	35.91	500	Pass

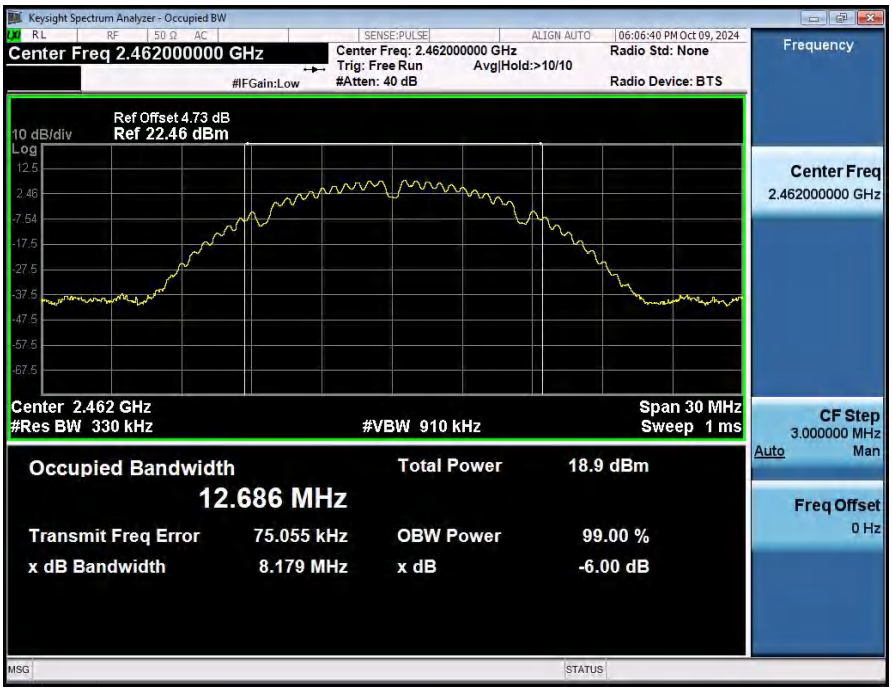
-6dB_Bandwidth_NVNT_ANT1_802_11b_2412



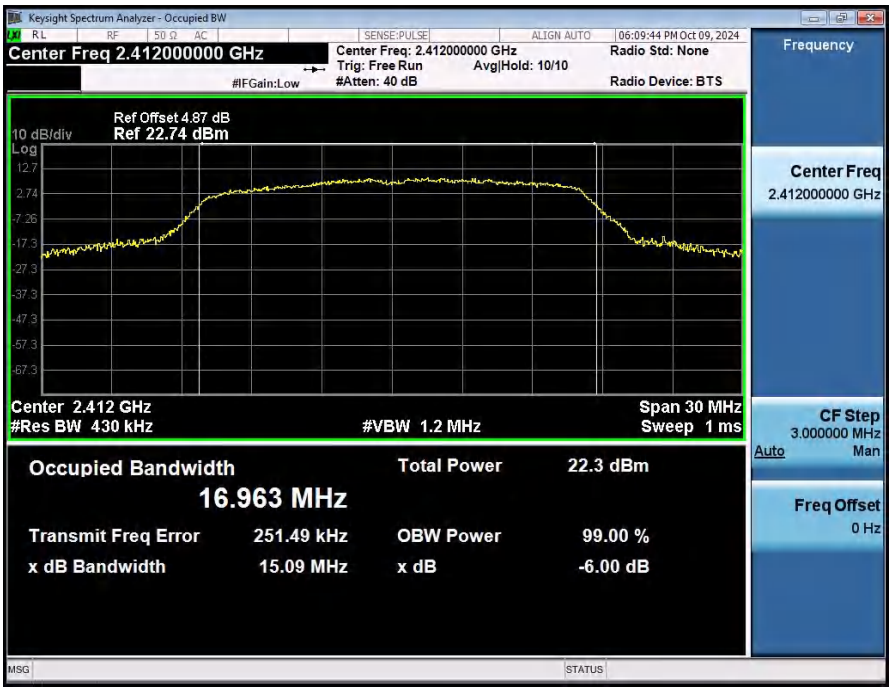
-6dB_Bandwidth_NVNT_ANT1_802_11b_2437



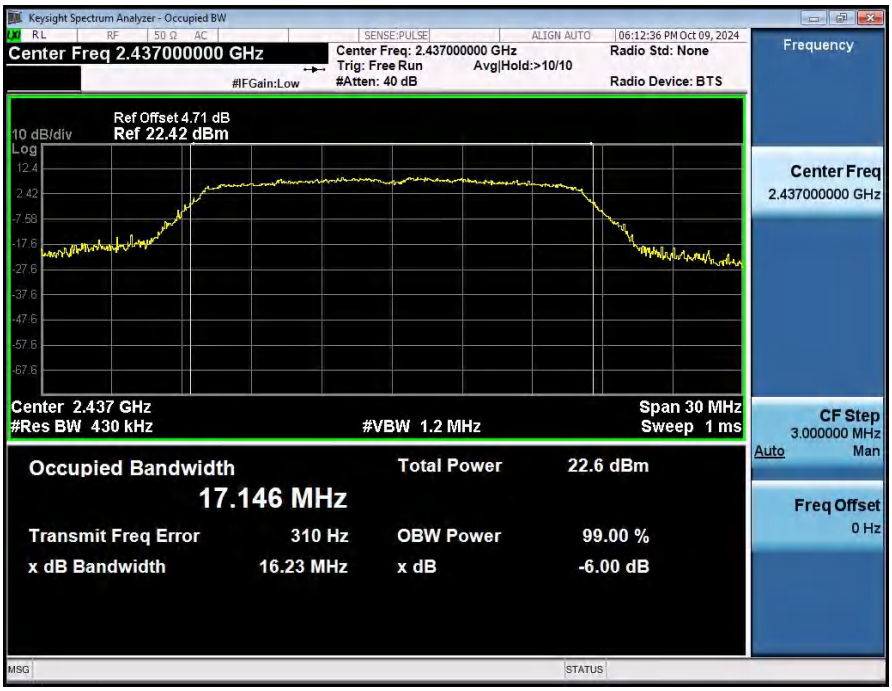
-6dB_Bandwidth_NVNT_ANT1_802_11b_2462



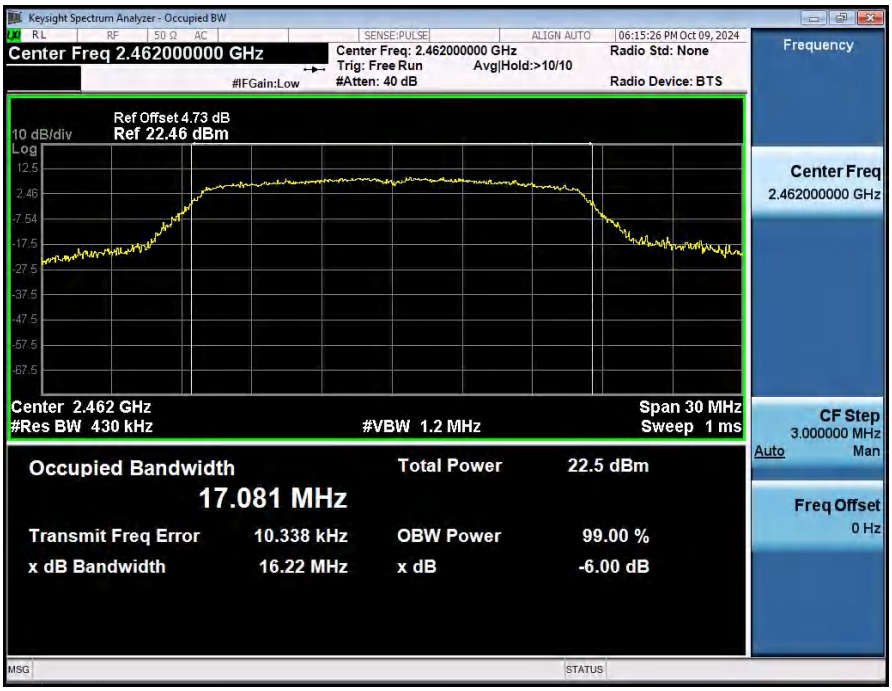
-6dB_Bandwidth_NVNT_ANT1_802_11g_2412



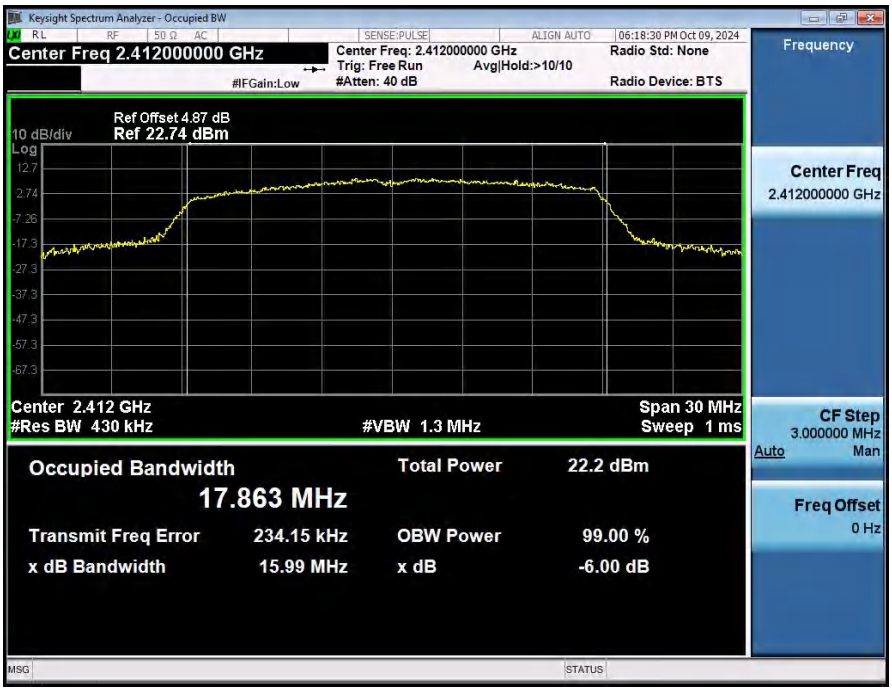
-6dB_Bandwidth_NVNT_ANT1_802_11g_2437



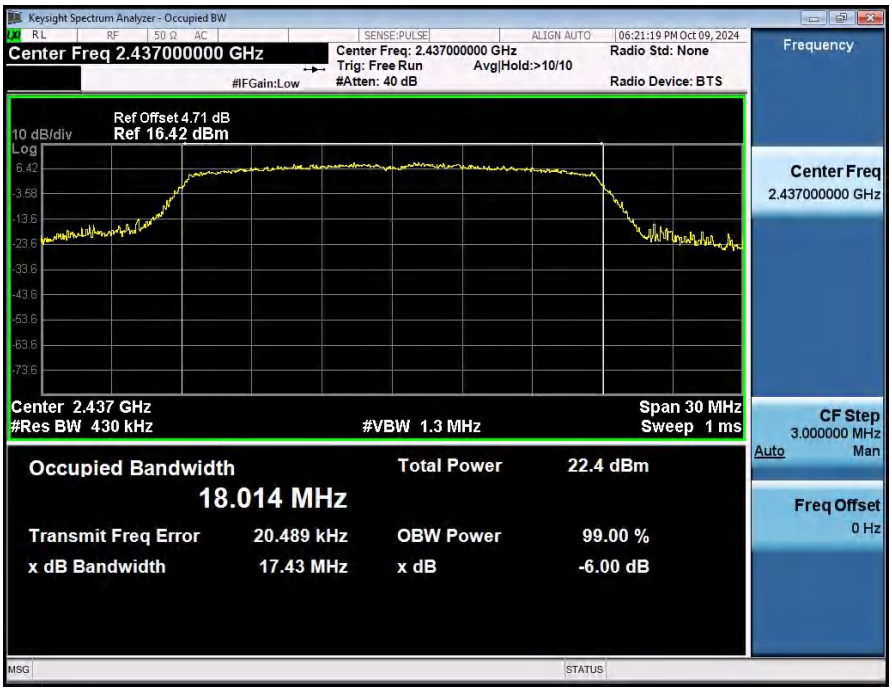
-6dB_Bandwidth_NVNT_ANT1_802_11g_2462



-6dB_Bandwidth_NVNT_ANT1_802_11n(HT20)_2412

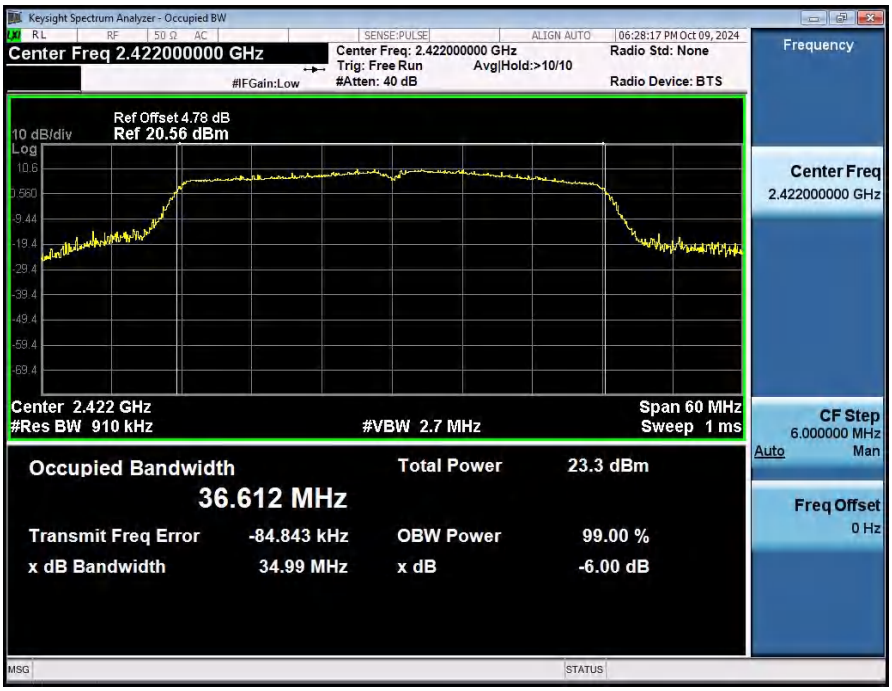


-6dB_Bandwidth_NVNT_ANT1_802_11n(HT20)_2437

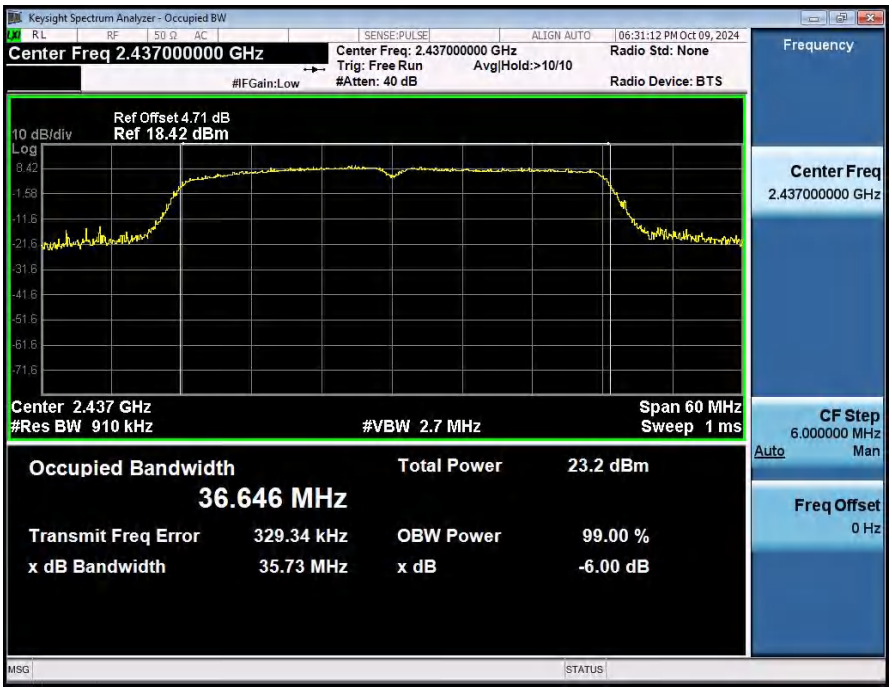


-6dB_Bandwidth_NVNT_ANT1_802_11n(HT20)_2462

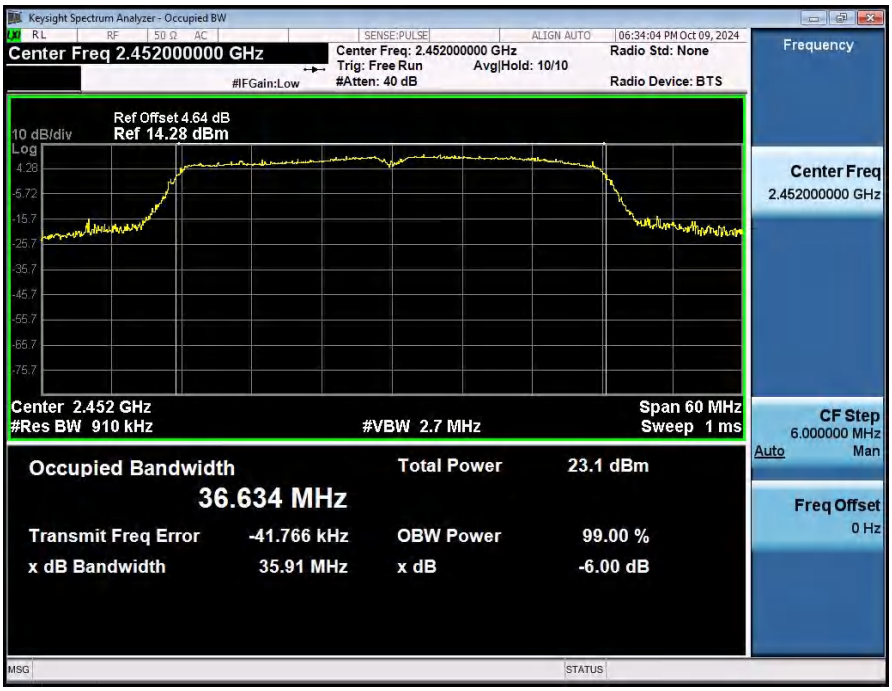
-6dB_Bandwidth_NVNT_ANT1_802_11n(HT40)_2422



-6dB_Bandwidth_NVNT_ANT1_802_11n(HT40)_2437



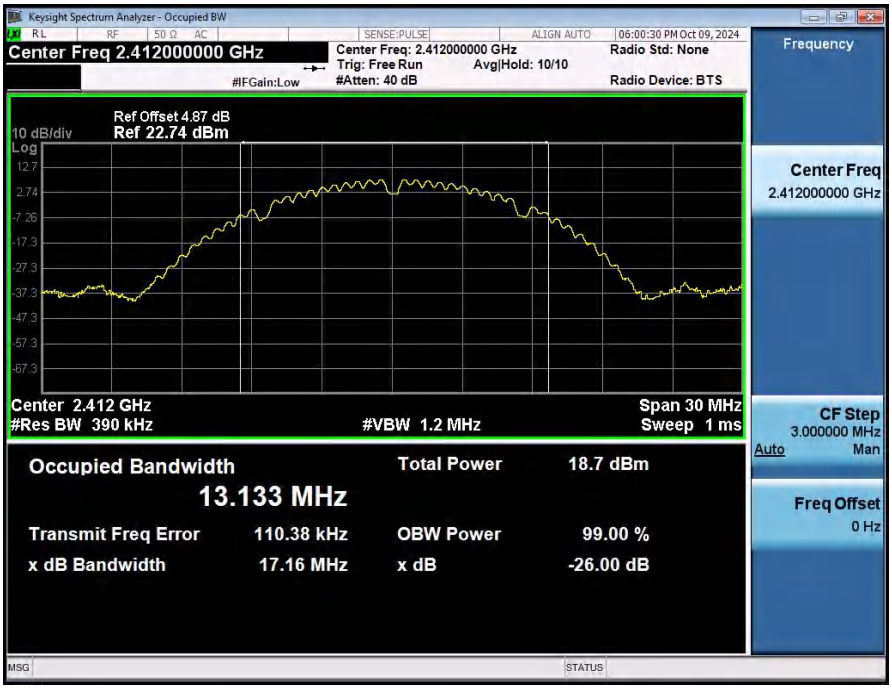
-6dB_Bandwidth_NVNT_ANT1_802_11n(HT40)_2452



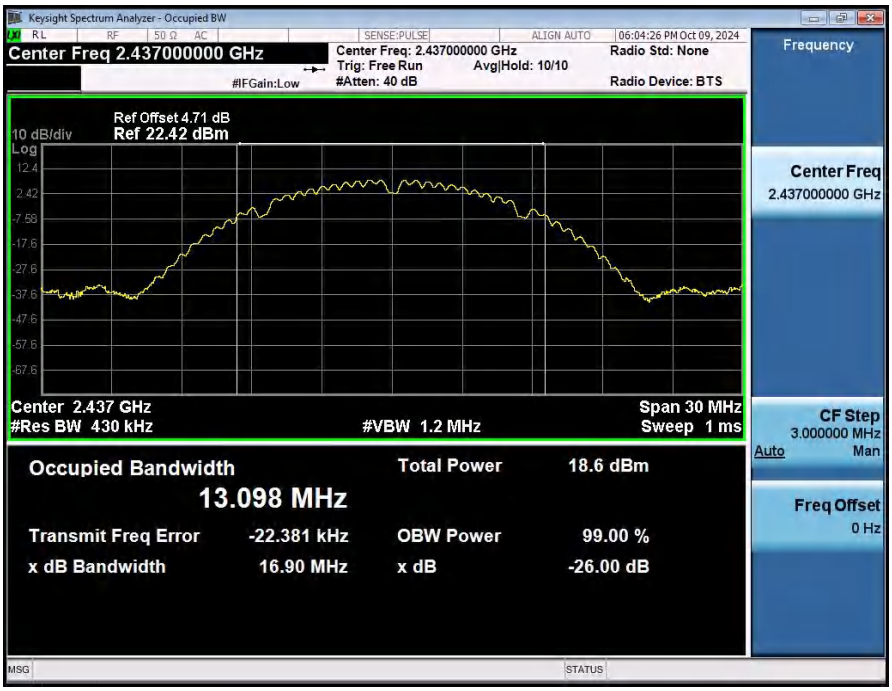
Appendix B: 99% Occupied Bandwidth

Condition	Antenna	Modulation	Frequency (MHz)	99%%BW(MHz)
NVNT	ANT1	802.11b	2412.00	13.133
NVNT	ANT1	802.11b	2437.00	13.098
NVNT	ANT1	802.11b	2462.00	12.684
NVNT	ANT1	802.11g	2412.00	17.233
NVNT	ANT1	802.11g	2437.00	17.416
NVNT	ANT1	802.11g	2462.00	17.314
NVNT	ANT1	802.11n(HT20)	2412.00	18.063
NVNT	ANT1	802.11n(HT20)	2437.00	18.335
NVNT	ANT1	802.11n(HT20)	2462.00	18.189
NVNT	ANT1	802.11n(HT40)	2422.00	36.675
NVNT	ANT1	802.11n(HT40)	2437.00	36.610
NVNT	ANT1	802.11n(HT40)	2452.00	36.625

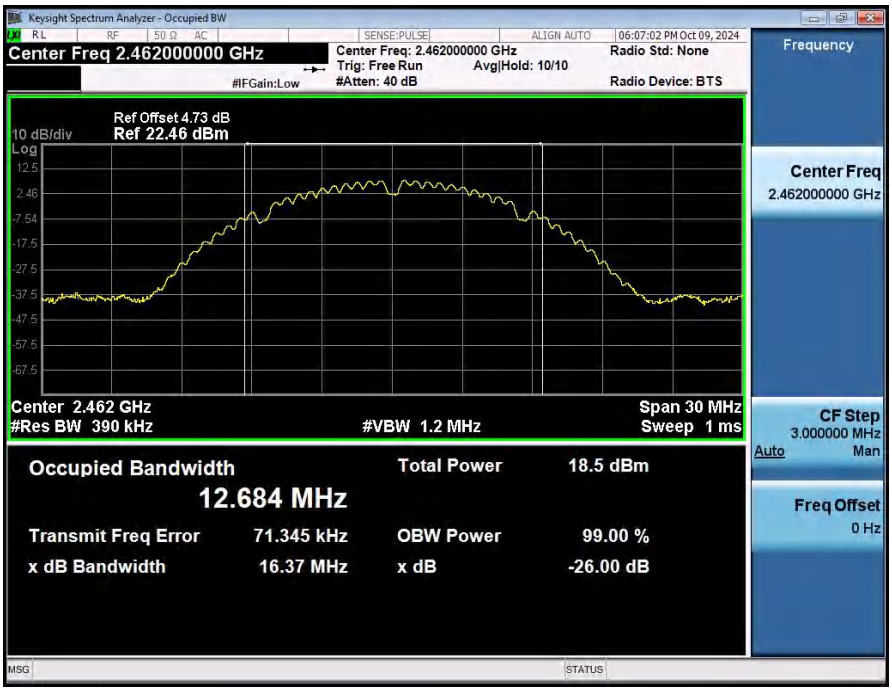
99%_Occupied_Bandwidth_NVNT_ANT1_802_11b_2412



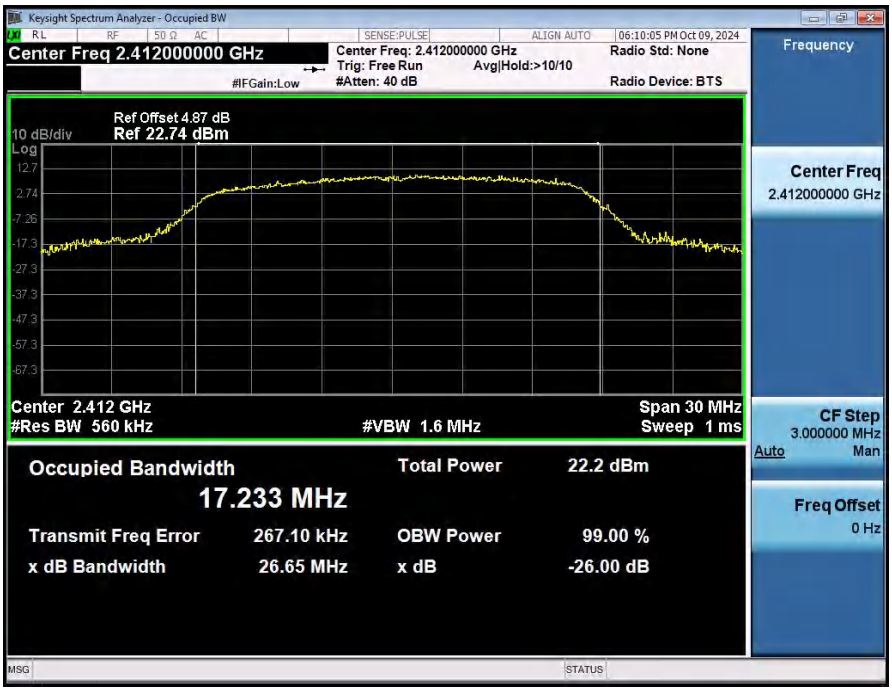
99%_Occupied_Bandwidth_NVNT_ANT1_802_11b_2437



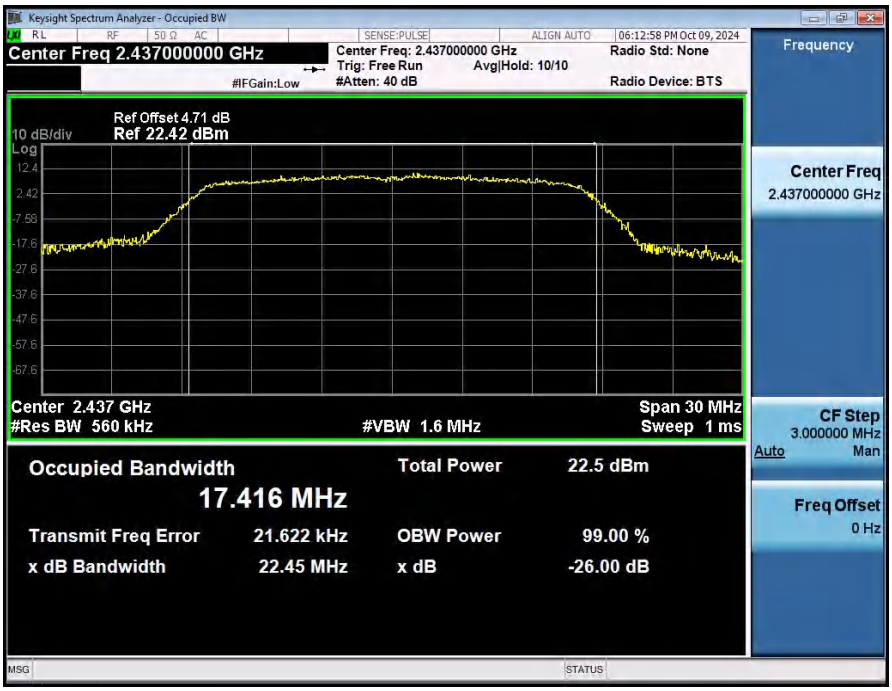
99%_Occupied_Bandwidth_NVNT_ANT1_802_11b_2462



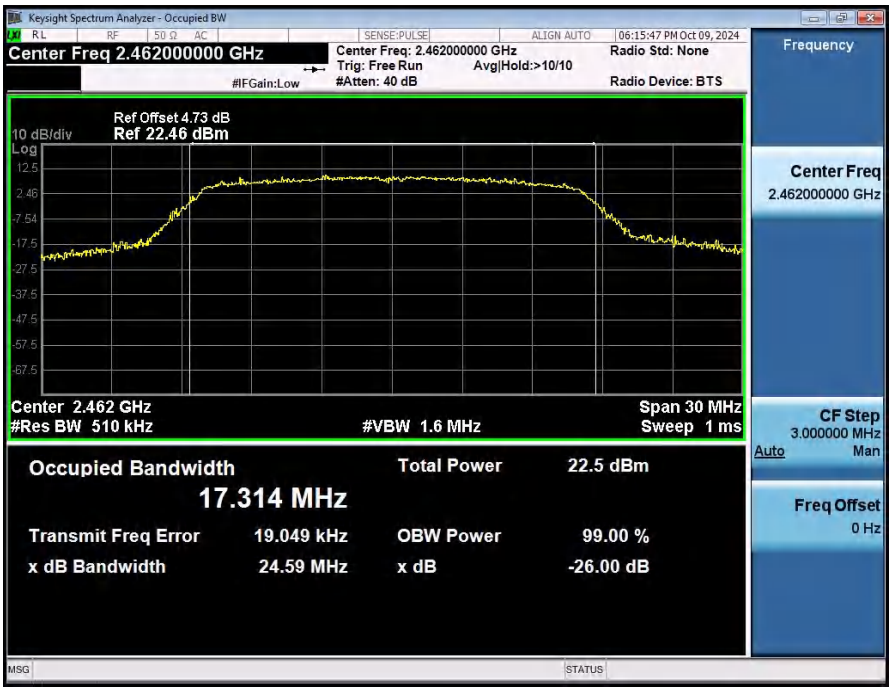
99%_Occupied_Bandwidth_NVNT_ANT1_802_11g_2412



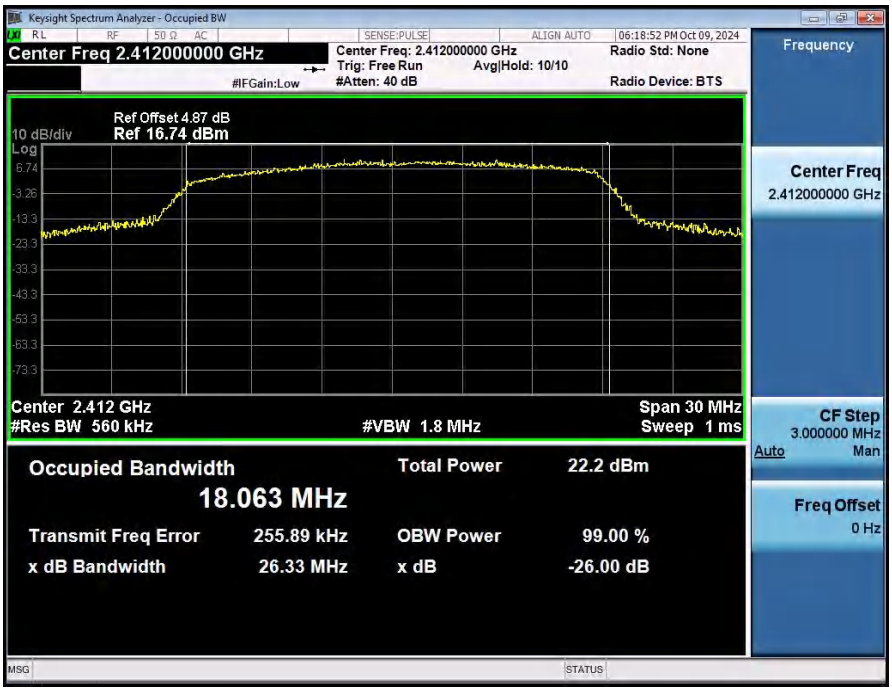
99%_Occupied_Bandwidth_NVNT_ANT1_802_11g_2437



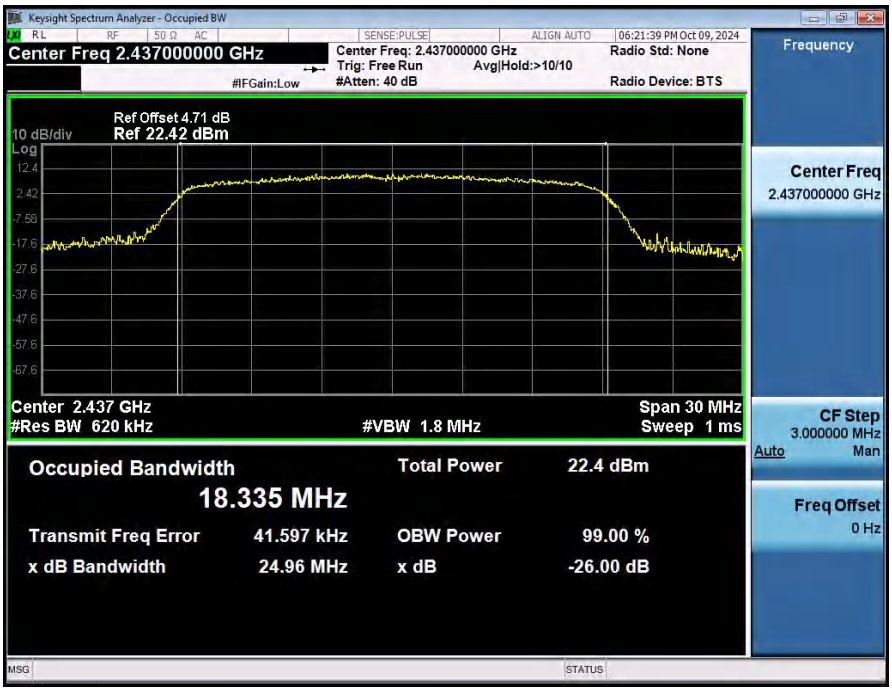
99%_Occupied_Bandwidth_NVNT_ANT1_802_11g_2462



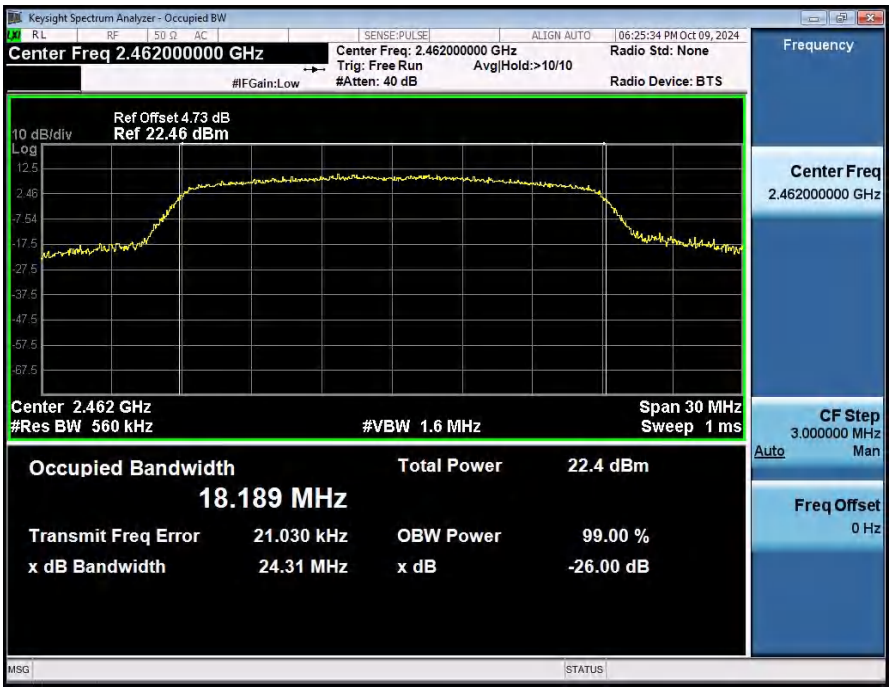
99%_Occupied_Bandwidth_NVNT_ANT1_802_11n(HT20)_2412



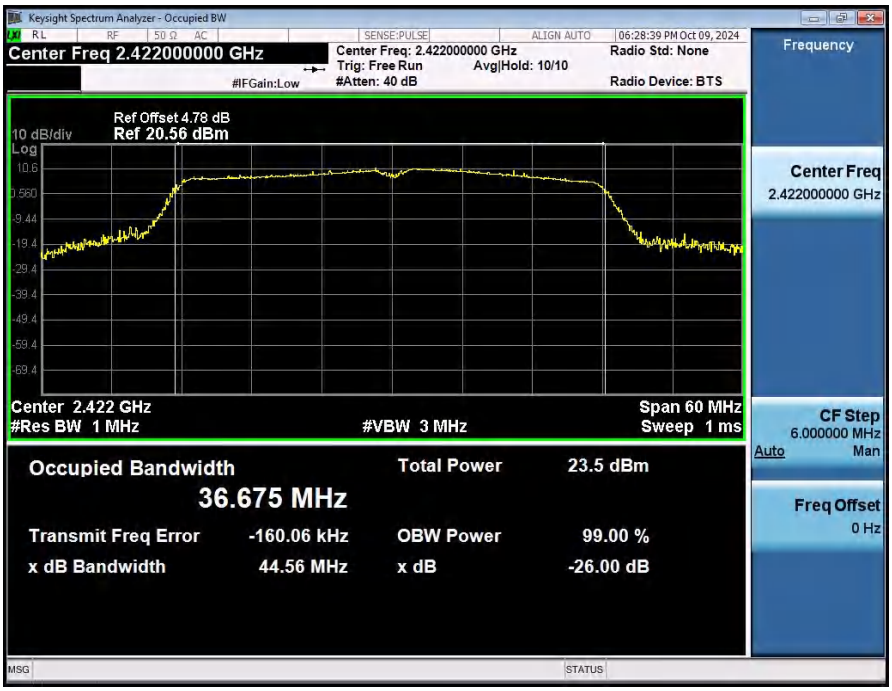
99%_Occupied_Bandwidth_NVNT_ANT1_802_11n(HT20)_2437



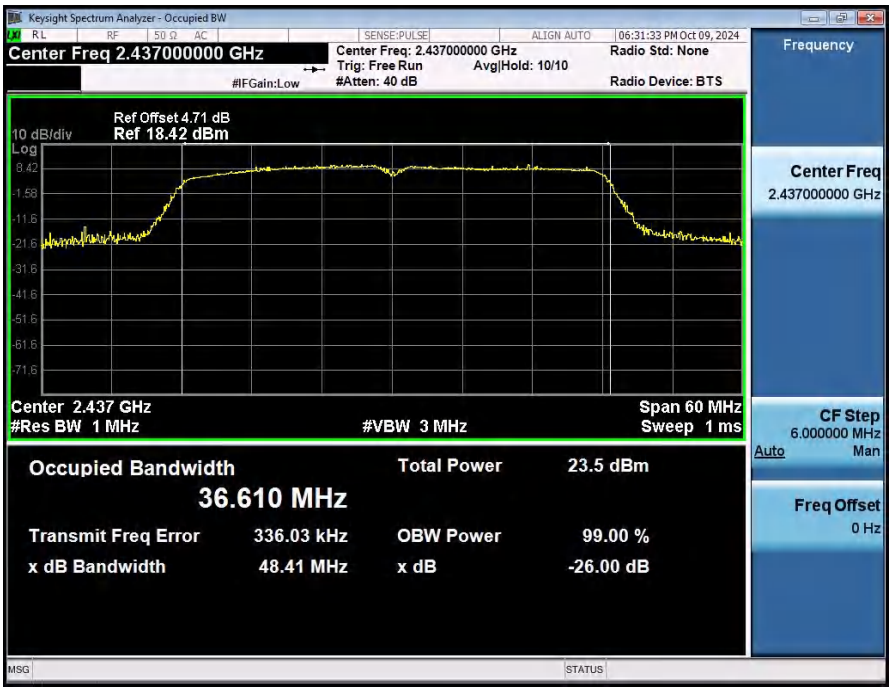
99%_Occupied_Bandwidth_NVNT_ANT1_802_11n(HT20)_2462



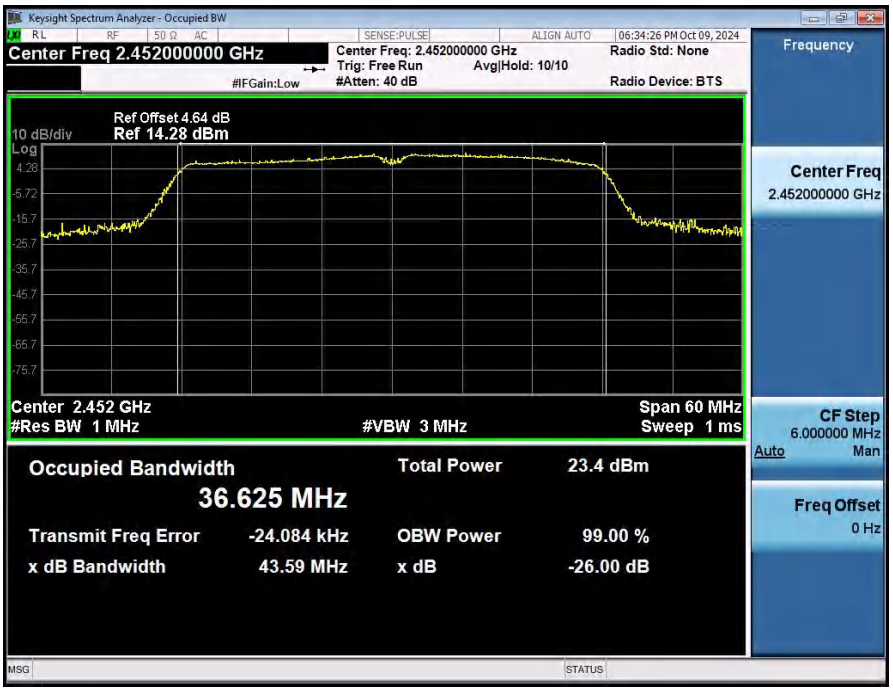
99%_Occupied_Bandwidth_NVNT_ANT1_802_11n(HT40)_2422



99%_Occupied_Bandwidth_NVNT_ANT1_802_11n(HT40)_2437



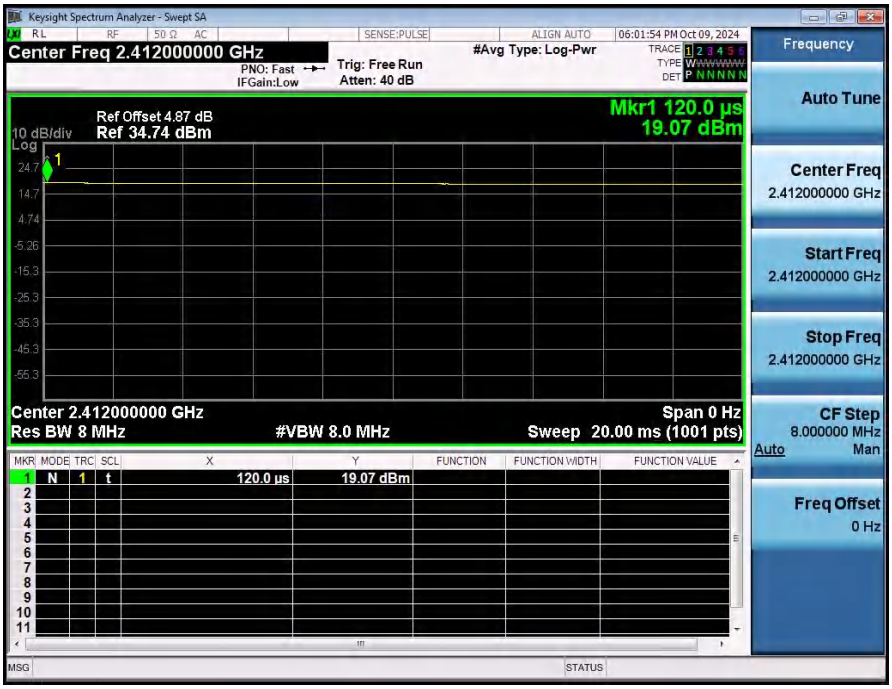
99%_Occupied_Bandwidth_NVNT_ANT1_802_11n(HT40)_2452


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω AC
SENSE:PULSE
ALIGN AUTO
06:34:26 PM Oct 09, 2024
Center Freq 2.452000000 GHz
Center Freq: 2.452000000 GHz
Trig: Free Run
Avg|Hold: 10/10
#IFGain:Low
#Atten: 40 dB
Radio Std: None
Radio Device: BTS
Frequency
Ref Offset 4.64 dB
10 dB/div
Ref 14.28 dBm
Log
4.28
-5.72
-15.7
-25.7
-35.7
-45.7
-55.7
-65.7
-75.7
Center Freq
2.452000000 GHz
Center 2.452 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 60 MHz
Sweep 1 ms
CF Step
6.000000 MHz
Auto
Man
Occupied Bandwidth
36.625 MHz
Total Power
23.4 dBm
Transmit Freq Error
-24.084 kHz
OBW Power
99.00 %
x dB Bandwidth
43.59 MHz
x dB
-26.00 dB
Freq Offset
0 Hz
MSG
STATUS

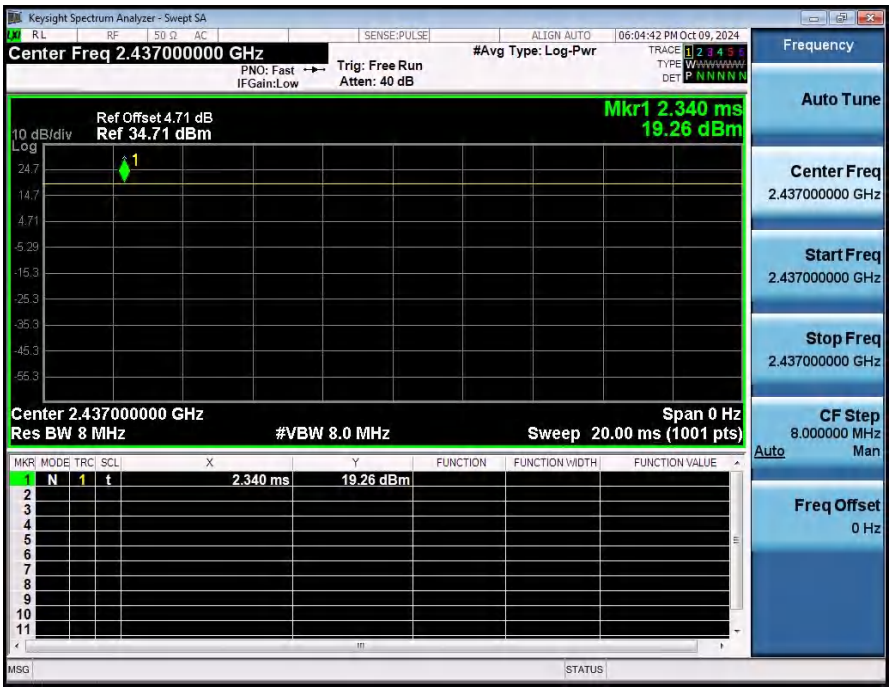
Appendix C: Duty Cycle

Condition	Antenna	Modulation	Frequency (MHz)	Duty cycle(%)	Duty factor(dB)
NVNT	ANT1	802.11b	2412.00	100	0.00
NVNT	ANT1	802.11b	2437.00	100	0.00
NVNT	ANT1	802.11b	2462.00	100	0.00
NVNT	ANT1	802.11g	2412.00	100	0.00
NVNT	ANT1	802.11g	2437.00	100	0.00
NVNT	ANT1	802.11g	2462.00	100	0.00
NVNT	ANT1	802.11n(HT20)	2412.00	100	0.00
NVNT	ANT1	802.11n(HT20)	2437.00	100	0.00
NVNT	ANT1	802.11n(HT20)	2462.00	100	0.00
NVNT	ANT1	802.11n(HT40)	2422.00	100	0.00
NVNT	ANT1	802.11n(HT40)	2437.00	100	0.00
NVNT	ANT1	802.11n(HT40)	2452.00	100	0.00

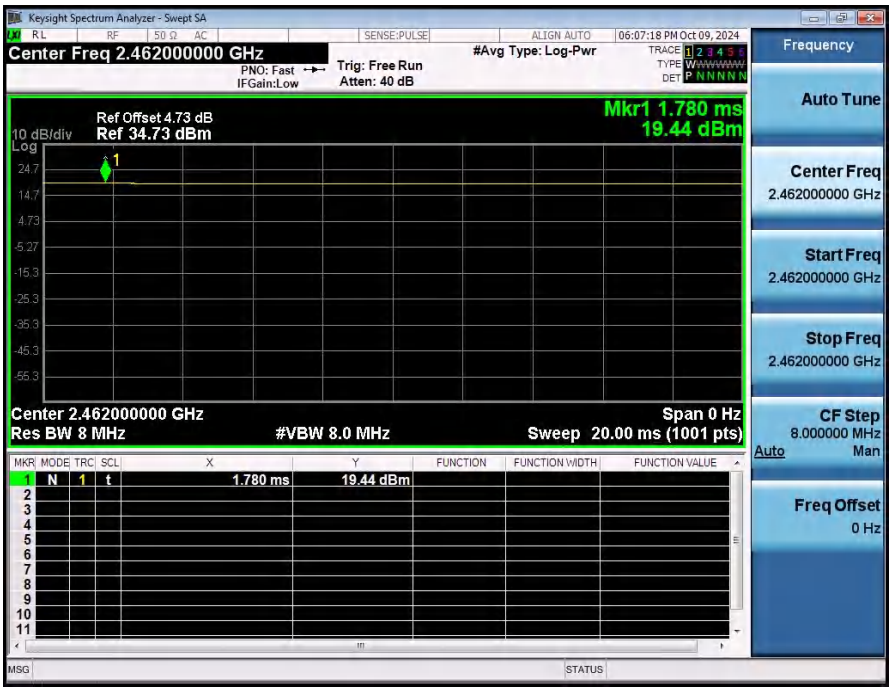
Duty_Cycle_NVNT_ANT1_802_11b_2412



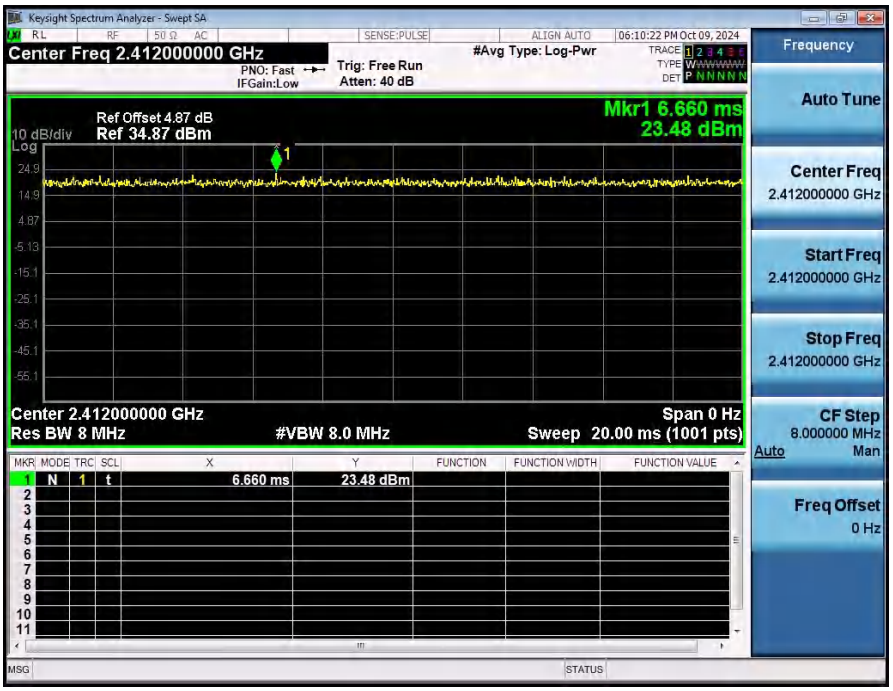
Duty_Cycle_NVNT_ANT1_802_11b_2437



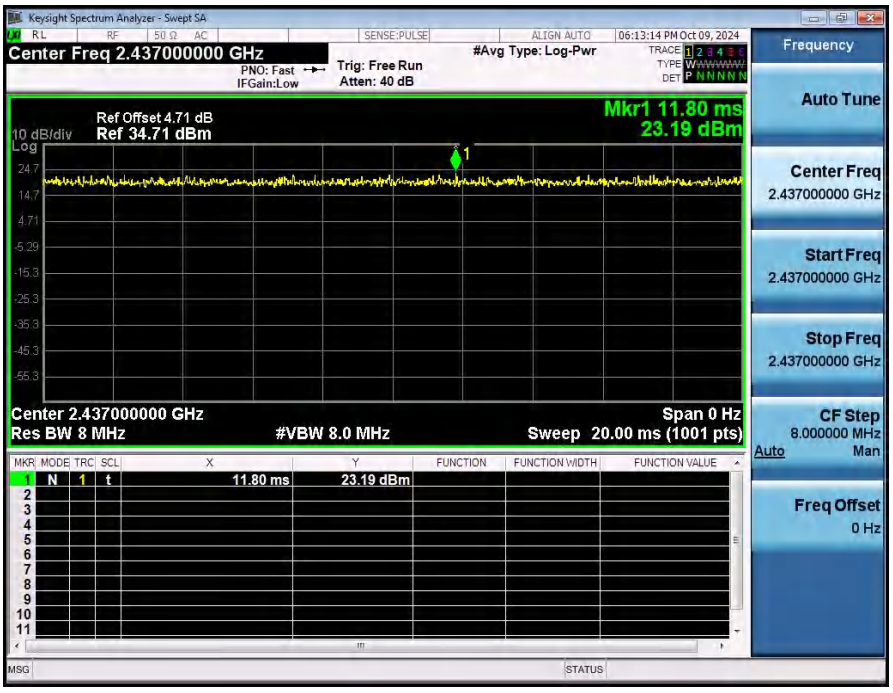
Duty_Cycle_NVNT_ANT1_802_11b_2462



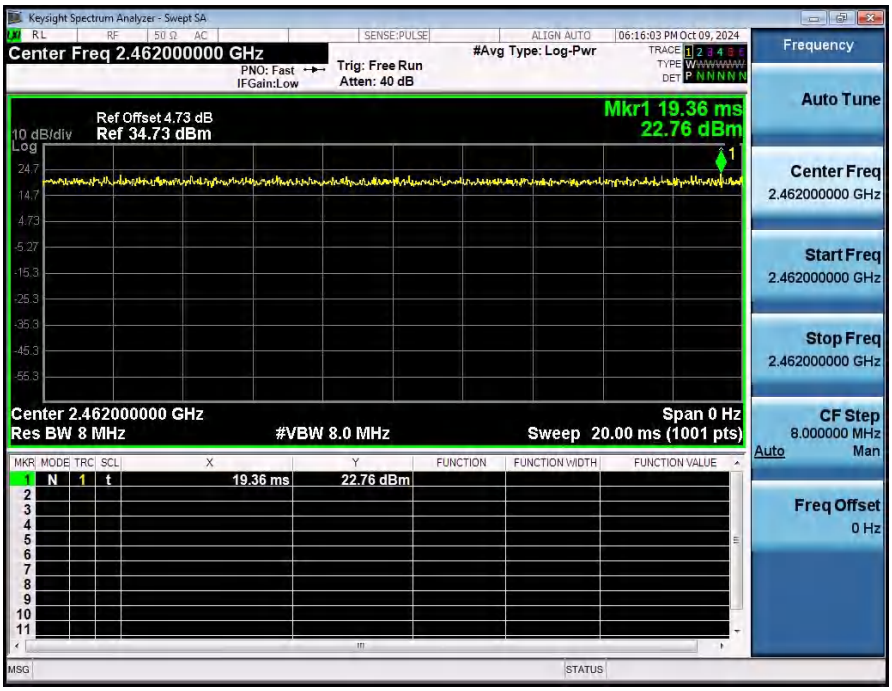
Duty_Cycle_NVNT_ANT1_802_11g_2412



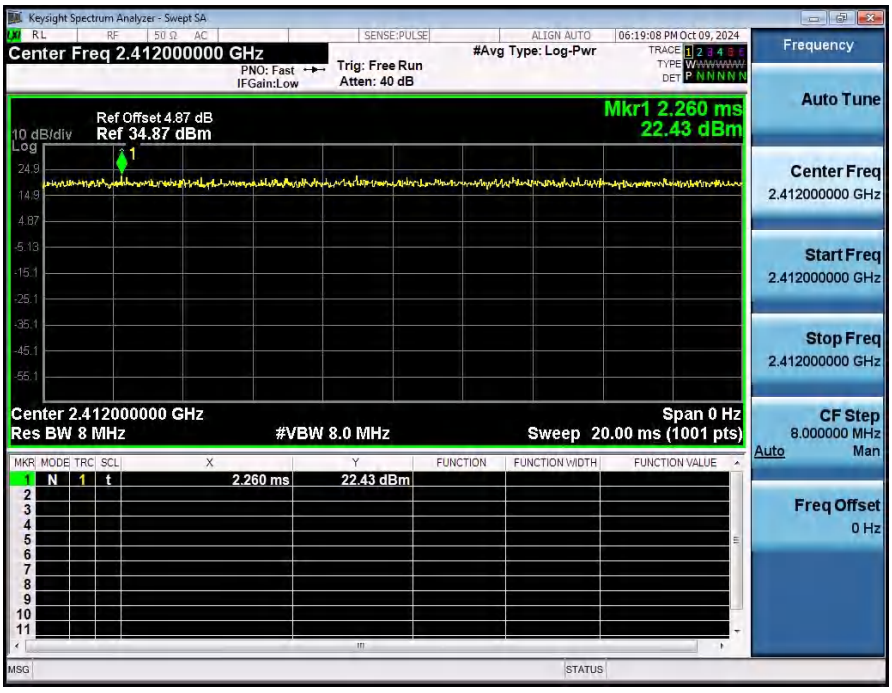
Duty_Cycle_NVNT_ANT1_802_11g_2437



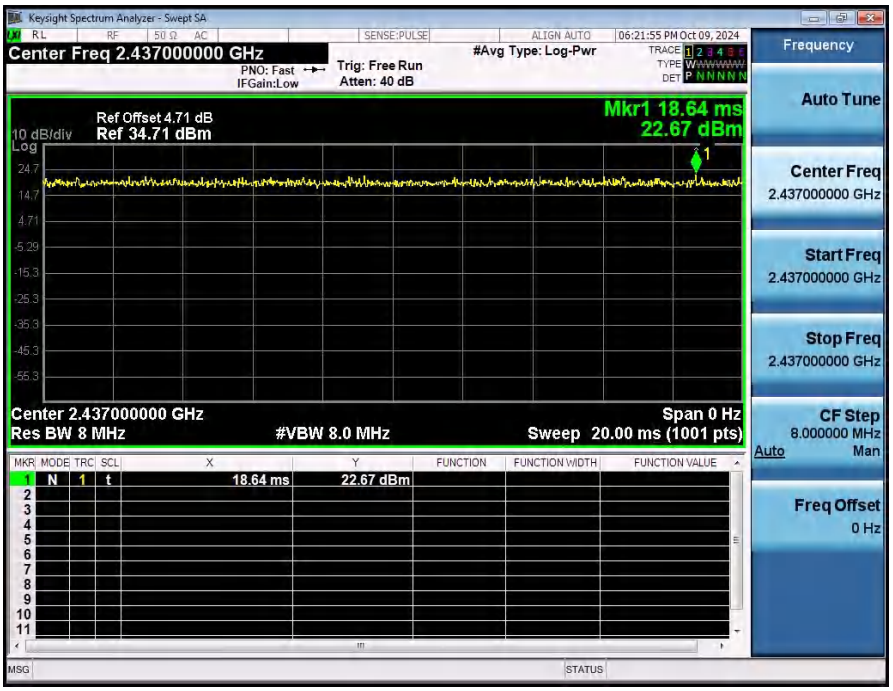
Duty_Cycle_NVNT_ANT1_802_11g_2462



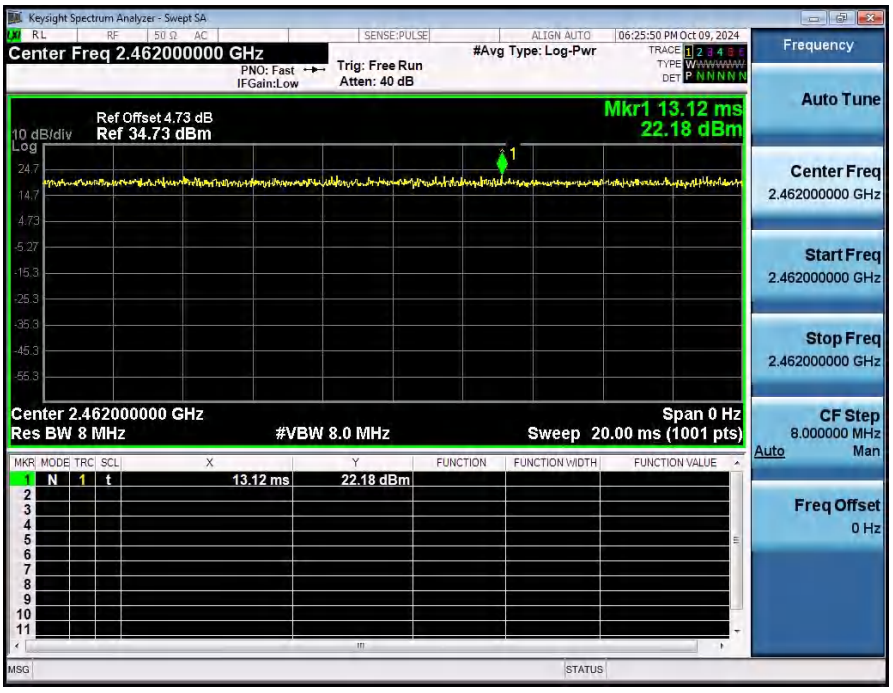
Duty_Cycle_NVNT_ANT1_802_11n(HT20)_2412



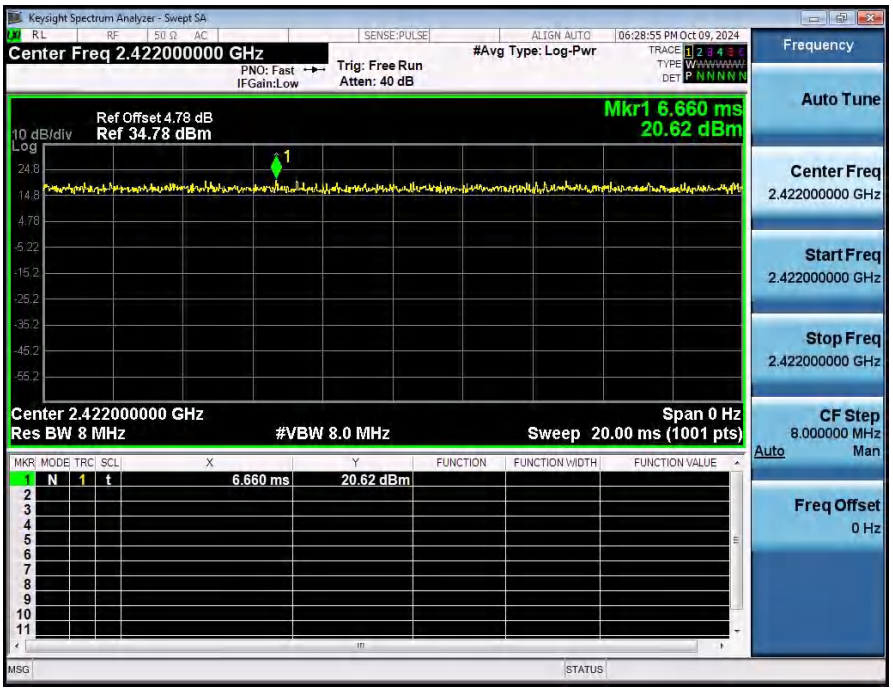
Duty_Cycle_NVNT_ANT1_802_11n(HT20)_2437



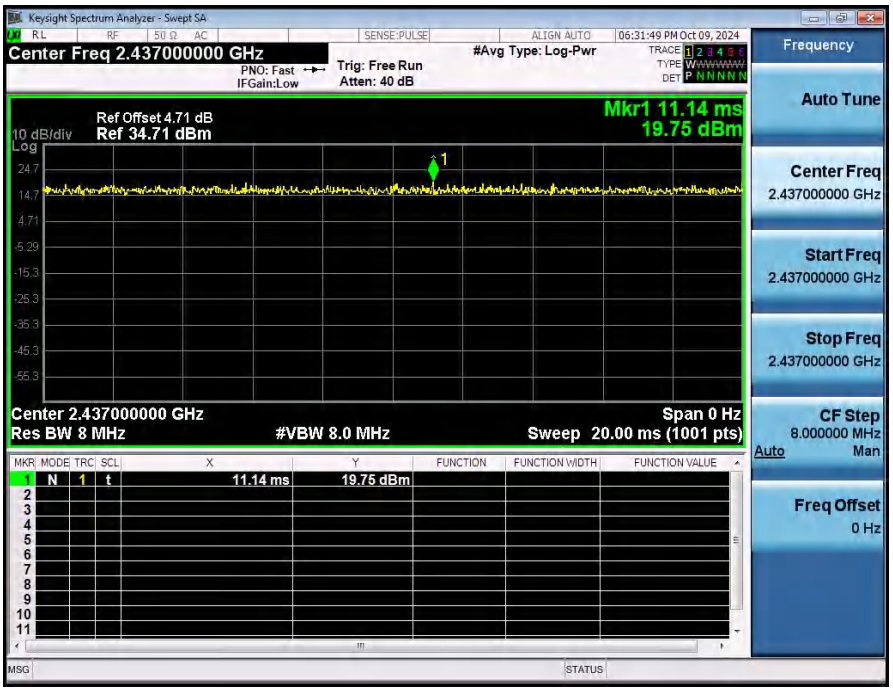
Duty_Cycle_NVNT_ANT1_802_11n(HT20)_2462



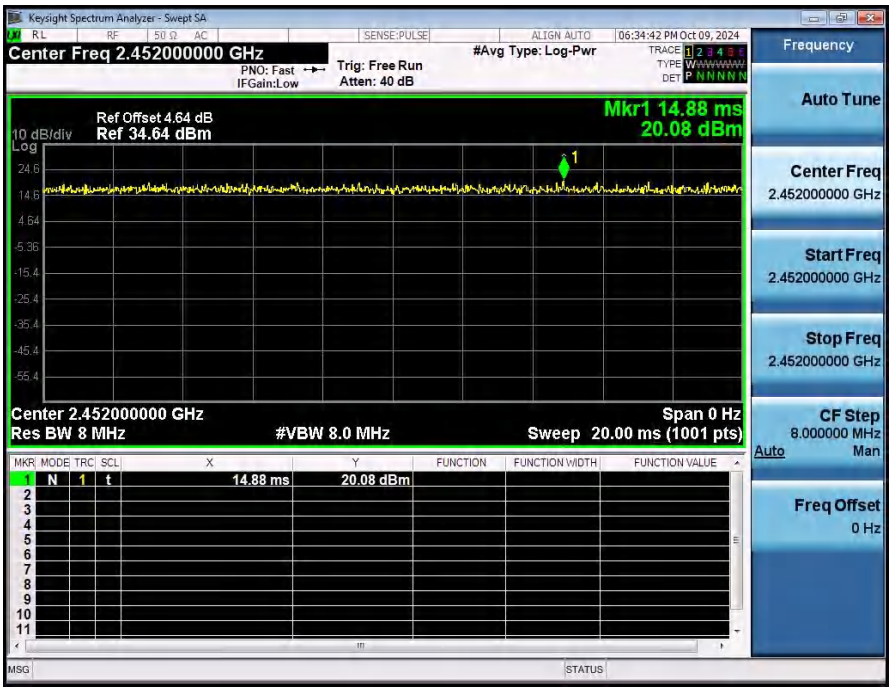
Duty_Cycle_NVNT_ANT1_802_11n(HT40)_2422



Duty_Cycle_NVNT_ANT1_802_11n(HT40)_2437



Duty_Cycle_NVNT_ANT1_802_11n(HT40)_2452


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:PULSE
ALIGN AUTO
06:34:42 PM Oct 09, 2024
Center Freq 2.452000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 40 dB
#Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE W W W W W
DET P N N N N N
Ref Offset 4.64 dB
10 dB/div Ref 34.64 dBm
Log
Mkr1 14.88 ms
20.08 dBm
24.6
14.6
4.64
-5.36
-15.4
-25.4
-35.4
-45.4
-55.4
Center 2.452000000 GHz
Res BW 8 MHz
#VBW 8.0 MHz
Span 0 Hz
Sweep 20.00 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 t 14.88 ms 20.08 dBm
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.452000000 GHz
Start Freq
2.452000000 GHz
Stop Freq
2.452000000 GHz
CF Step
8.000000 MHz
Auto
Man
Freq Offset
0 Hz

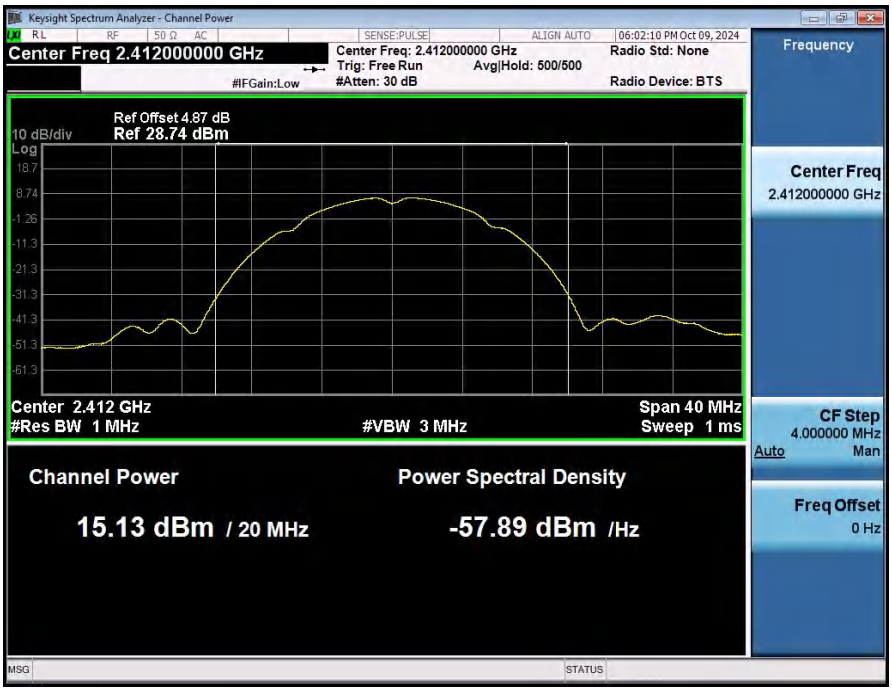
Appendix D: MAX. Output Power

Condition	Antenna	Modulation	Frequency (MHz)	Detector	Conducted Power(dBm)(RBW=1MHz)	Duty factor(dB)	Total Power(dBm)(RBW=1MHz)	Total Power(dBm)(RBW=430kHz)	limit(dBm)	Result
NVNT	ANT1	802.11b	2412.00	RMS	15.13	0.00	15.13	11.46	30	Pass
NVNT	ANT1	802.11b	2437.00	RMS	15.69	0.00	15.69	12.02	30	Pass
NVNT	ANT1	802.11b	2462.00	RMS	15.42	0.00	15.42	11.75	30	Pass
NVNT	ANT1	802.11g	2412.00	RMS	15.02	0.00	15.02	11.35	30	Pass
NVNT	ANT1	802.11g	2437.00	RMS	15.32	0.00	15.32	11.65	30	Pass
NVNT	ANT1	802.11g	2462.00	RMS	15.32	0.00	15.32	11.65	30	Pass
NVNT	ANT1	802.11n(HT20)	2412.00	RMS	14.88	0.00	14.88	11.21	30	Pass
NVNT	ANT1	802.11n(HT20)	2437.00	RMS	15.22	0.00	15.22	11.55	30	Pass
NVNT	ANT1	802.11n(HT20)	2462.00	RMS	15.19	0.00	15.19	11.52	30	Pass
NVNT	ANT1	802.11n(HT40)	2422.00	RMS	15.35	0.00	15.35	11.68	30	Pass
NVNT	ANT1	802.11n(HT40)	2437.00	RMS	15.39	0.00	15.39	11.72	30	Pass
NVNT	ANT1	802.11n(HT40)	2452.00	RMS	15.29	0.00	15.29	11.62	30	Pass

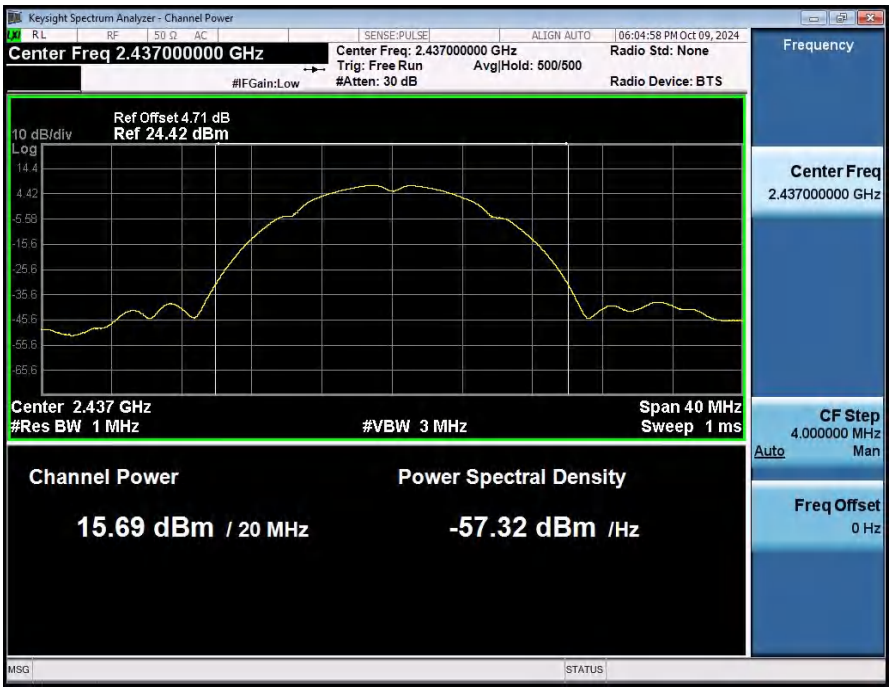
Note：1. The cable loss are compensated in the graph.

2. Total Power(dBm)(RBW=430kHz)=Total Power(dBm)(RBW=1MHz)+10*LOG10(430/1000)

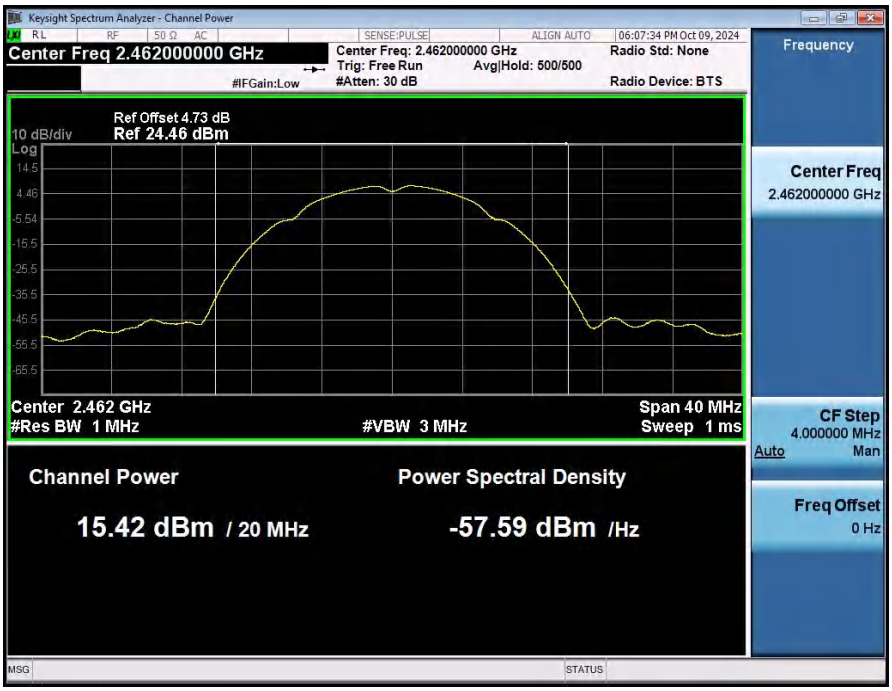
MAX__Output_Power_NVNT_ANT1_802_11b_2412



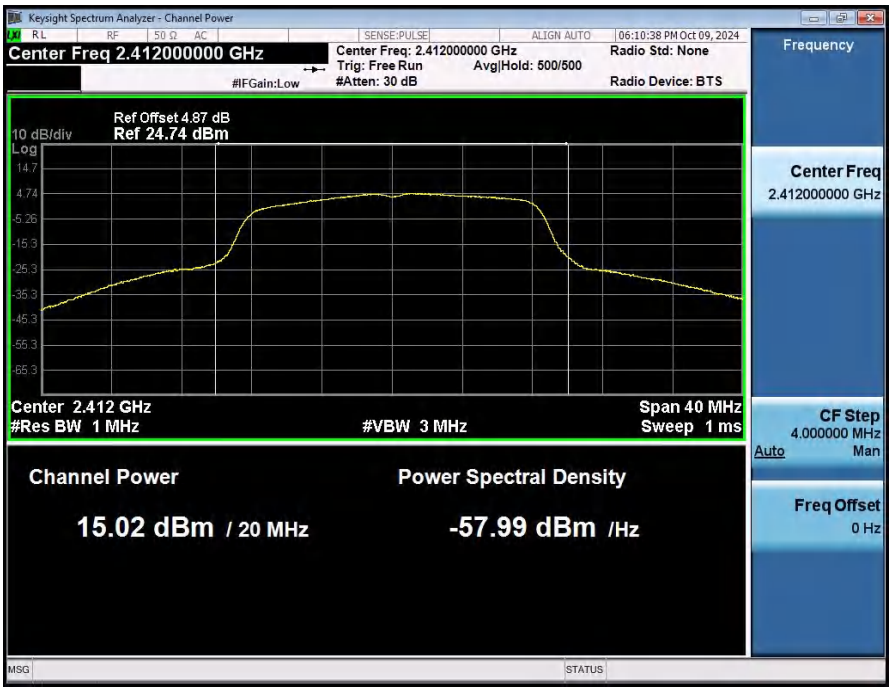
MAX__Output_Power_NVNT_ANT1_802_11b_2437



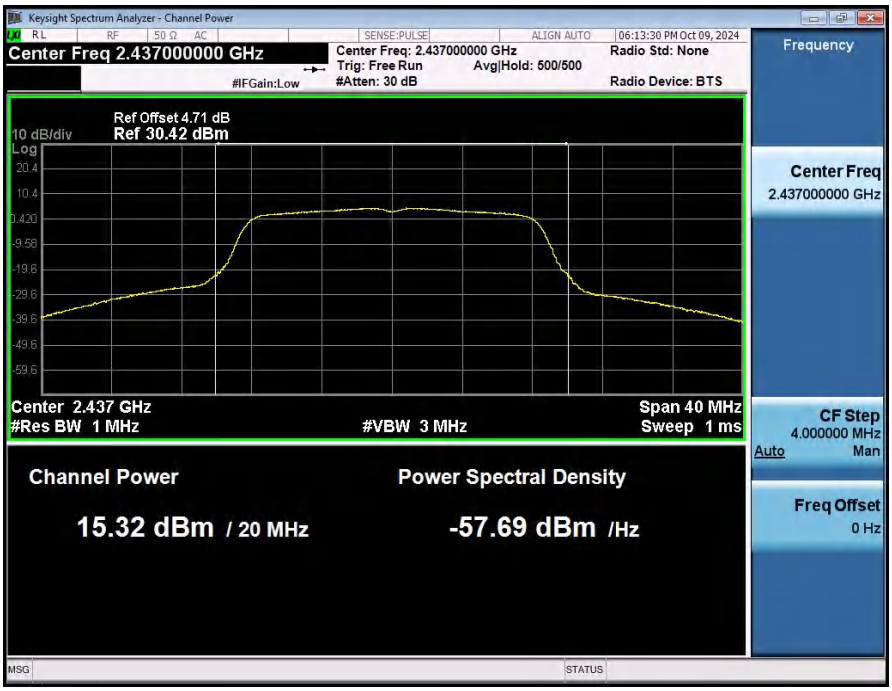
MAX__Output_Power_NVNT_ANT1_802_11b_2462



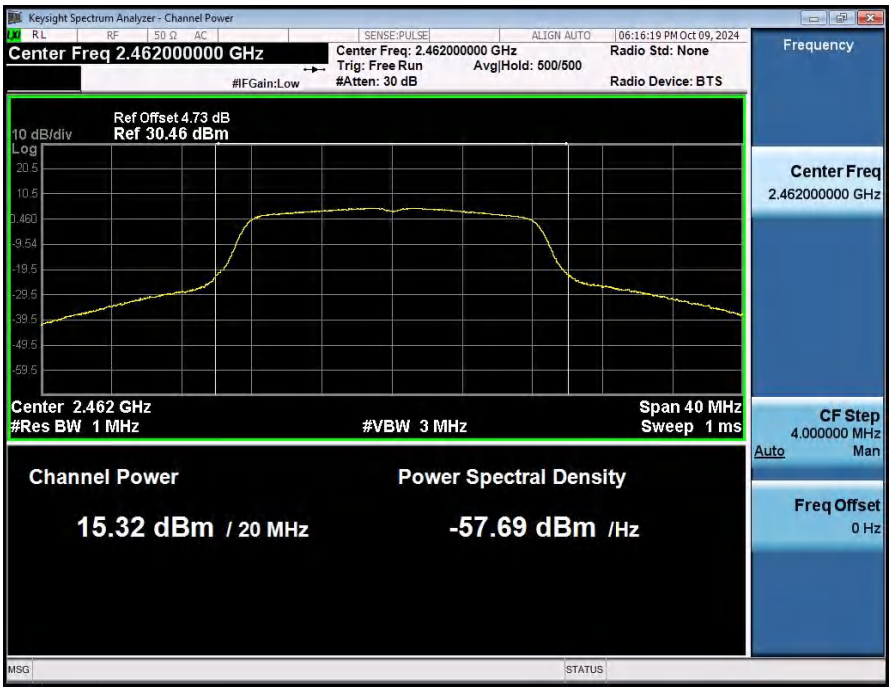
MAX__Output_Power_NVNT_ANT1_802_11g_2412



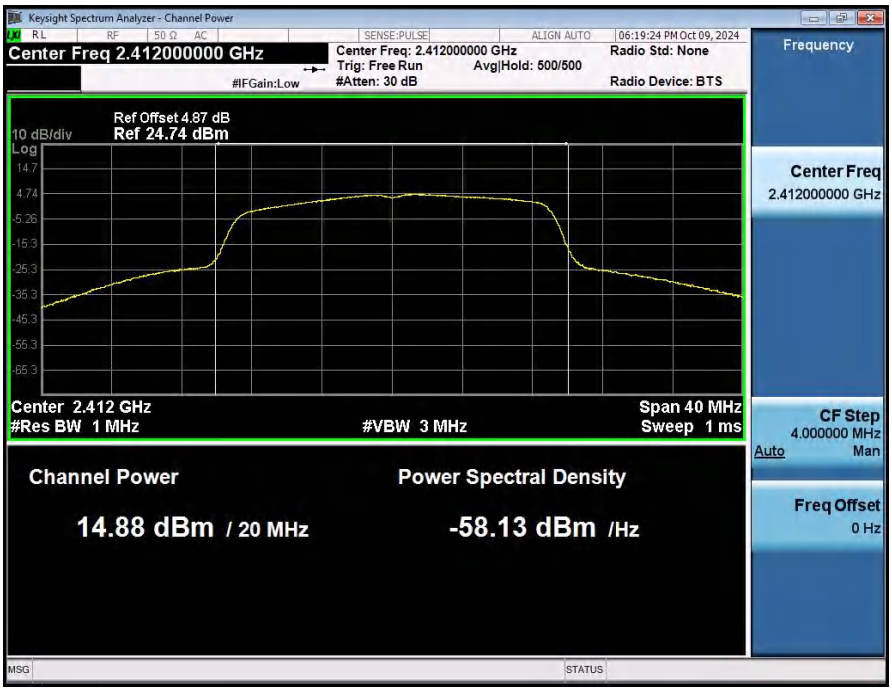
MAX__Output_Power_NVNT_ANT1_802_11g_2437



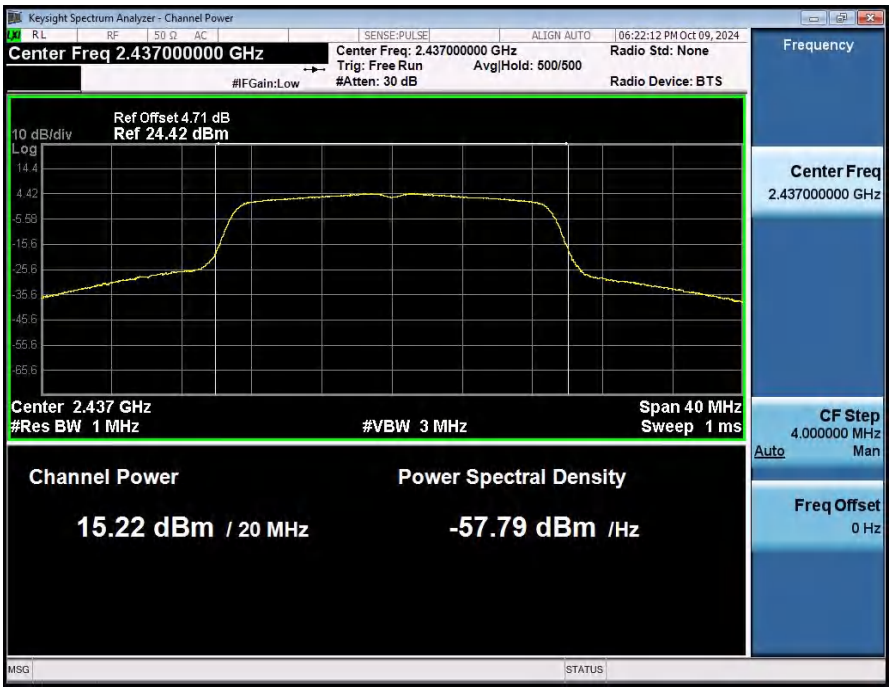
MAX__Output_Power_NVNT_ANT1_802_11g_2462



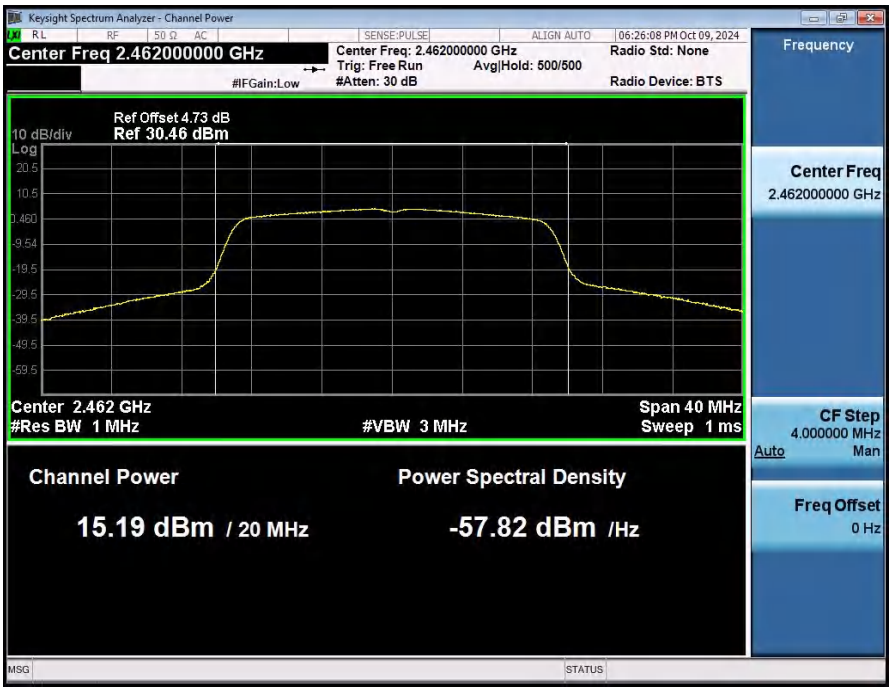
MAX__Output_Power_NVNT_ANT1_802_11n(HT20)_2412



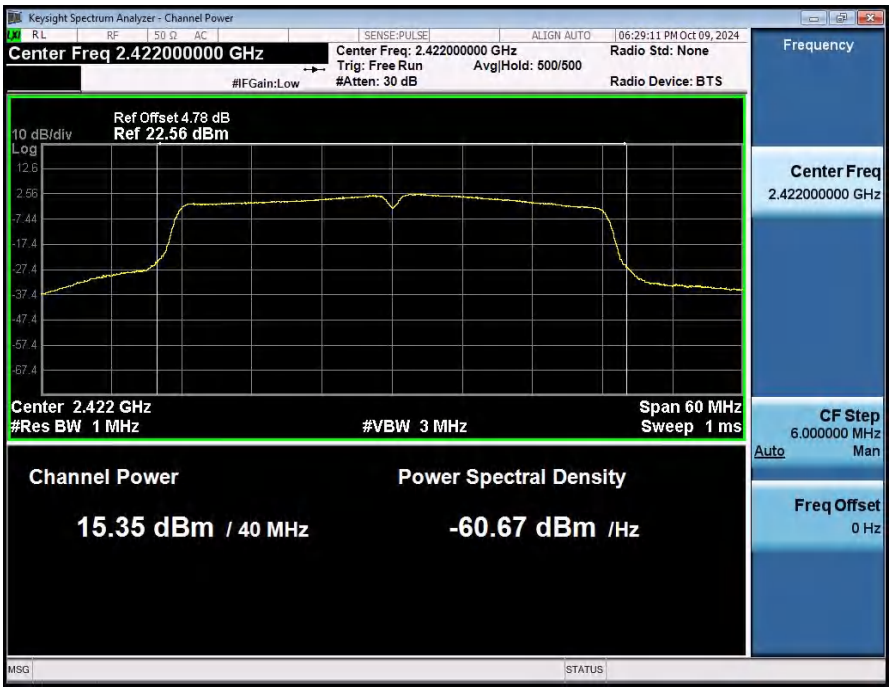
MAX__Output_Power_NVNT_ANT1_802_11n(HT20)_2437



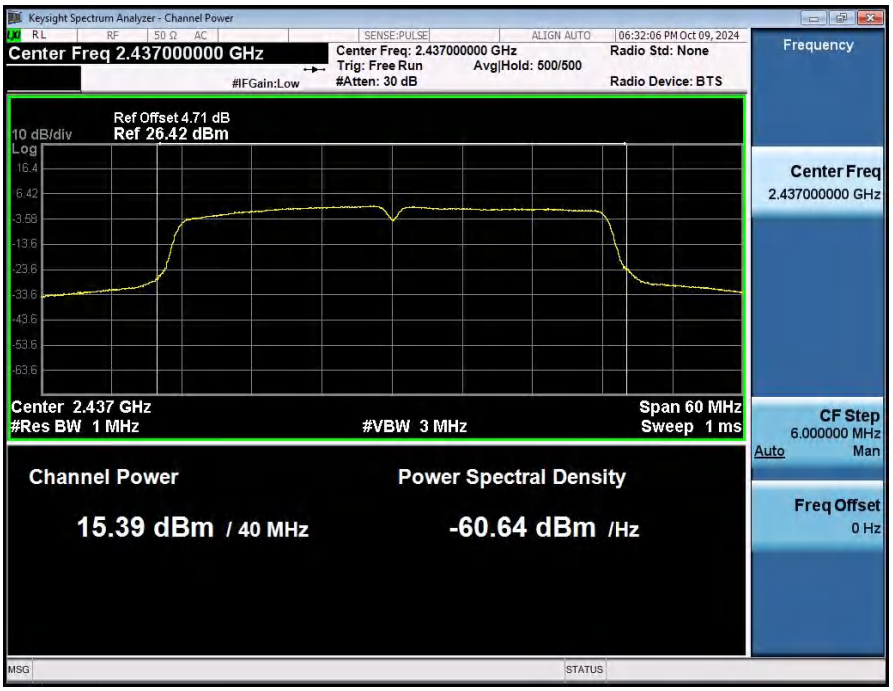
MAX__Output_Power_NVNT_ANT1_802_11n(HT20)_2462



MAX__Output_Power_NVNT_ANT1_802_11n(HT40)_2422



MAX__Output_Power_NVNT_ANT1_802_11n(HT40)_2437



MAX__Output_Power_NVNT_ANT1_802_11n(HT40)_2452

Appendix E: Power Spectral Density

Condition	Antenna	Modulation	Frequency (MHz)	PSD(dBm/30kHz)	Duty factor(dB)	RB factor(dB)	PSD(dBm/3kHz)	limit(dBm/3kHz)	Result
NVNT	ANT1	802.11b	2412.00	3.60	N/A	-10.00	-6.40	8	Pass
NVNT	ANT1	802.11b	2437.00	4.18	N/A	-10.00	-5.82	8	Pass
NVNT	ANT1	802.11b	2462.00	3.41	N/A	-10.00	-6.59	8	Pass
NVNT	ANT1	802.11g	2412.00	0.08	N/A	-10.00	-9.92	8	Pass
NVNT	ANT1	802.11g	2437.00	0.43	N/A	-10.00	-9.57	8	Pass
NVNT	ANT1	802.11g	2462.00	0.16	N/A	-10.00	-9.84	8	Pass
NVNT	ANT1	802.11n(HT20)	2412.00	-0.43	N/A	-10.00	-10.43	8	Pass
NVNT	ANT1	802.11n(HT20)	2437.00	-0.10	N/A	-10.00	-10.10	8	Pass
NVNT	ANT1	802.11n(HT20)	2462.00	0.57	N/A	-10.00	-9.43	8	Pass
NVNT	ANT1	802.11n(HT40)	2422.00	-2.42	N/A	-10.00	-12.42	8	Pass
NVNT	ANT1	802.11n(HT40)	2437.00	-3.17	N/A	-10.00	-13.17	8	Pass
NVNT	ANT1	802.11n(HT40)	2452.00	-2.47	N/A	-10.00	-12.47	8	Pass

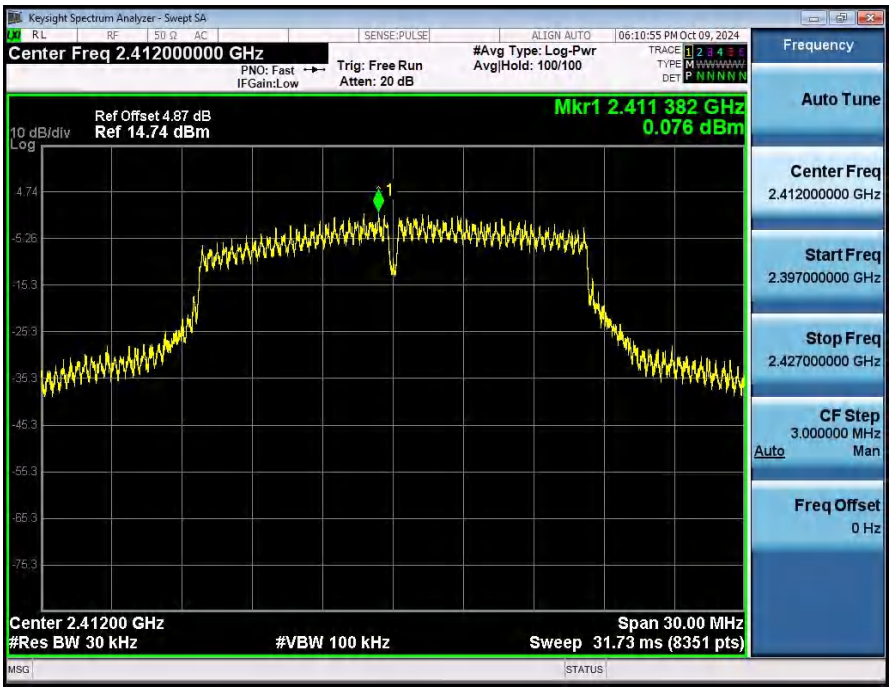
Note：The cable loss are compensated in the graph.

Power_Spectral_Density_NVNT_ANT1_802_11b_2412

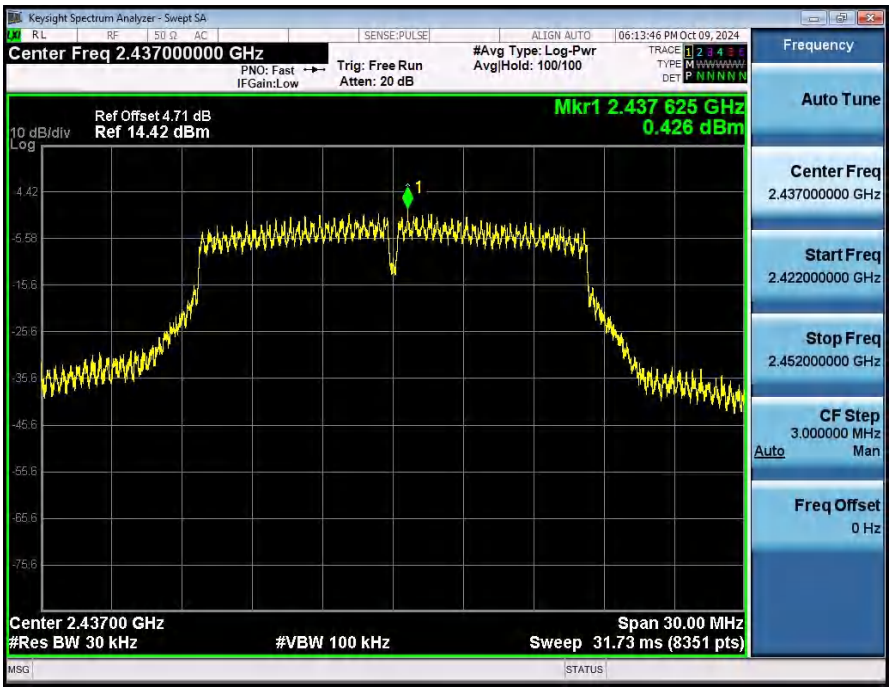
Power_Spectral_Density_NVNT_ANT1_802_11b_2437

Power_Spectral_Density_NVNT_ANT1_802_11b_2462

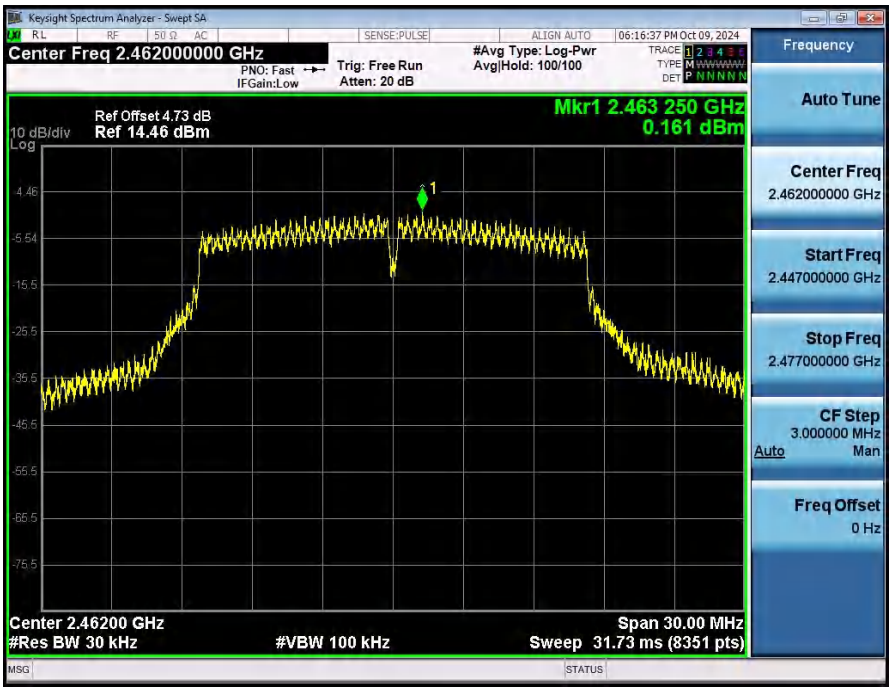
Power_Spectral_Density_NVNT_ANT1_802_11g_2412



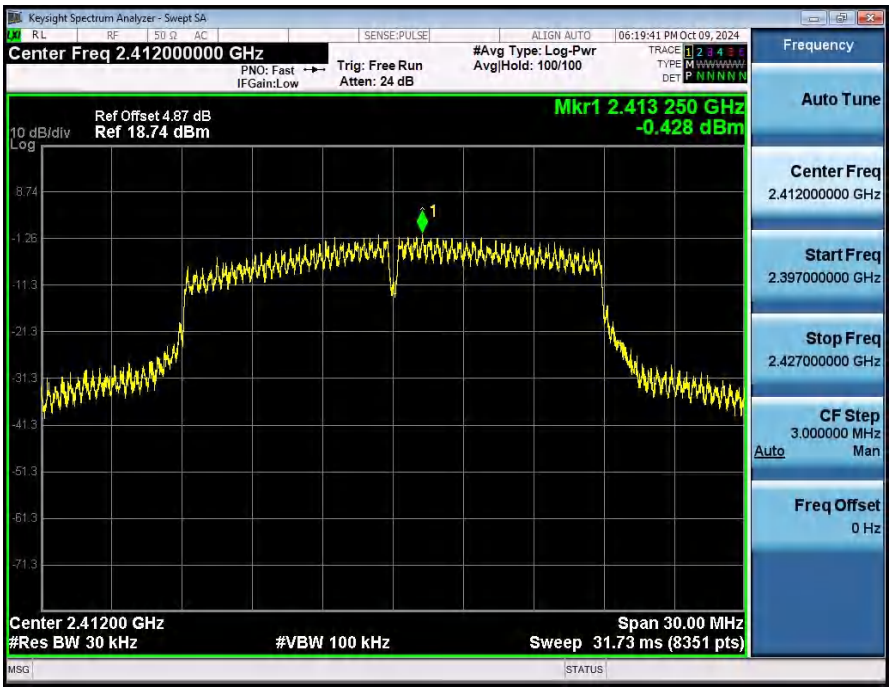
Power_Spectral_Density_NVNT_ANT1_802_11g_2437



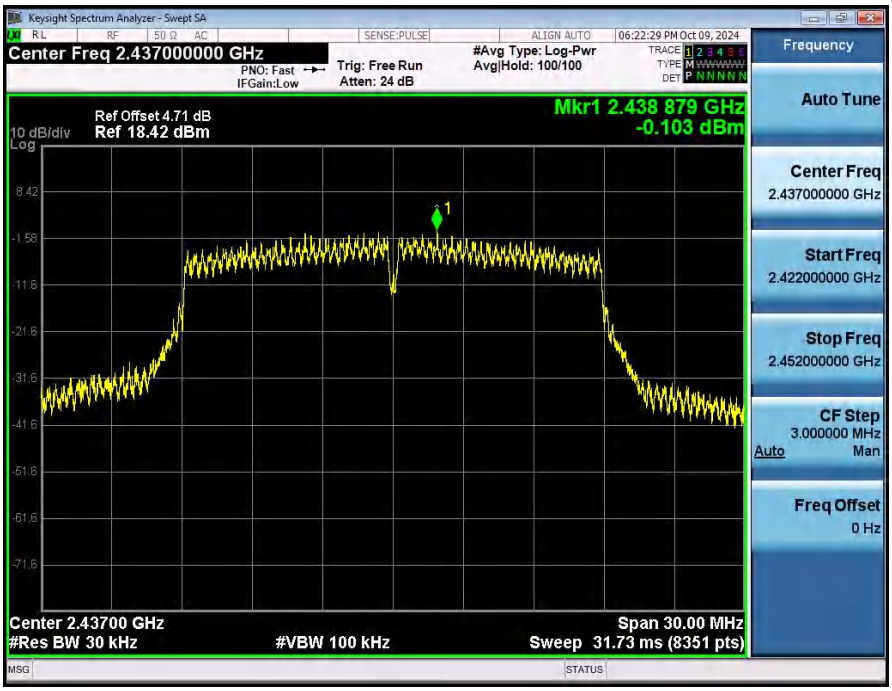
Power_Spectral_Density_NVNT_ANT1_802_11g_2462



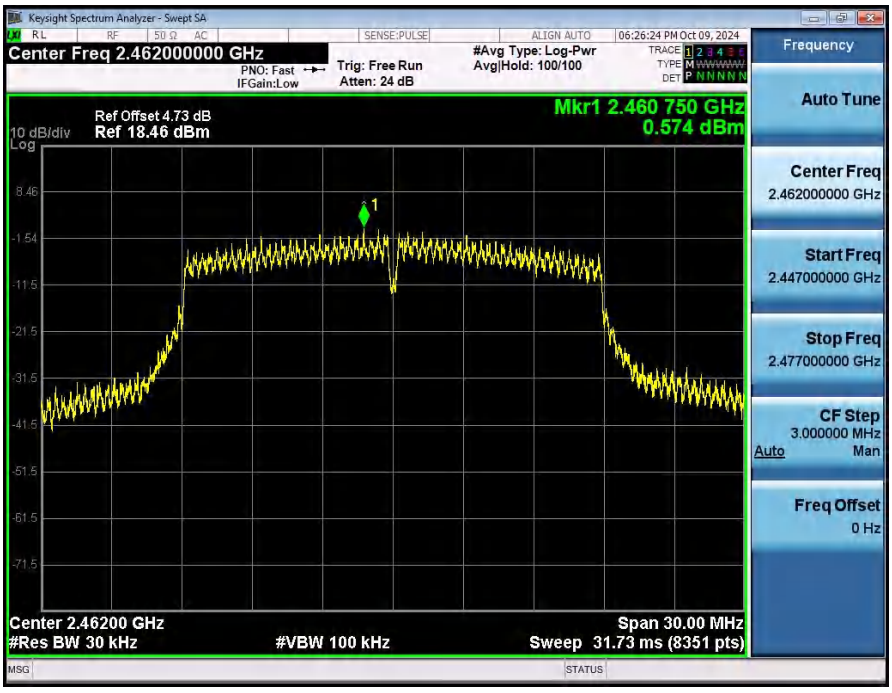
Power_Spectral_Density_NVNT_ANT1_802_11n(HT20)_2412



Power_Spectral_Density_NVNT_ANT1_802_11n(HT20)_2437

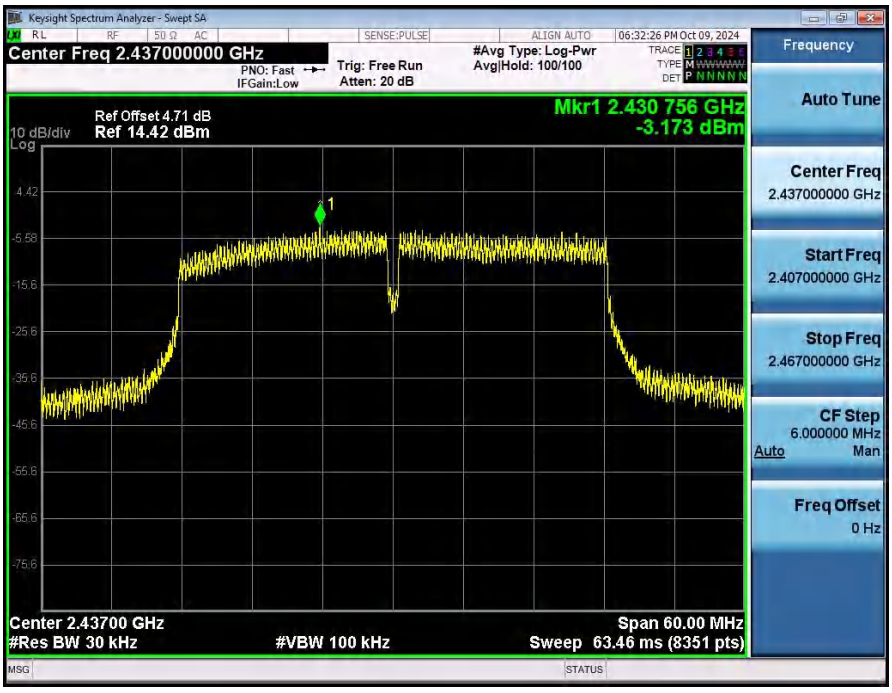


Power_Spectral_Density_NVNT_ANT1_802_11n(HT20)_2462



Power_Spectral_Density_NVNT_ANT1_802_11n(HT40)_2422

Power_Spectral_Density_NVNT_ANT1_802_11n(HT40)_2437



Power_Spectral_Density_NVNT_ANT1_802_11n(HT40)_2452


Keysight Spectrum Analyzer - Swept SA
Center Freq 2.452000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 22 dB
#Avg Type: Log-Pwr
Avg|Hold: 100/100
06:35:18 PM Oct 09, 2024
Ref Offset 4.64 dB
10 dB/div
Log
Ref 16.28 dBm
Mkr1 2.453 875 GHz
-2.471 dBm
6.28
-3.72
-13.7
-23.7
-33.7
-43.7
-53.7
-63.7
-73.7
Center 2.45200 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 60.00 MHz
Sweep 63.46 ms (8351 pts)
Frequency
Auto Tune
Center Freq
2.452000000 GHz
Start Freq
2.422000000 GHz
Stop Freq
2.482000000 GHz
CF Step
6.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

Appendix F: Bandedge

Condition	Antenna	Modulation	TX_Frequency (MHz)	Max. Mark_frequency(MHz)	Spurious level(dBm)	limit(dBm)	Result
NVNT	ANT1	802.11b	2412.00	2398.480	-47.338	-22.603	Pass
NVNT	ANT1	802.11b	2462.00	2485.984	-54.478	-22.214	Pass
NVNT	ANT1	802.11g	2412.00	2399.488	-33.830	-27.045	Pass
NVNT	ANT1	802.11g	2462.00	2484.832	-40.668	-27.615	Pass
NVNT	ANT1	802.11n(HT20)	2412.00	2397.472	-34.963	-27.790	Pass
NVNT	ANT1	802.11n(HT20)	2462.00	2484.832	-44.110	-28.665	Pass
NVNT	ANT1	802.11n(HT40)	2422.00	2399.760	-34.129	-30.537	Pass
NVNT	ANT1	802.11n(HT40)	2452.00	2484.020	-32.964	-31.730	Pass

1_Reference_Level_NVNT_ANT1_802_11b_2412

2_Bandedge_NVNT_ANT1_802_11b_2412

1_Reference_Level_NVNT_ANT1_802_11b_2462

2_Bandedge_NVNT_ANT1_802_11b_2462

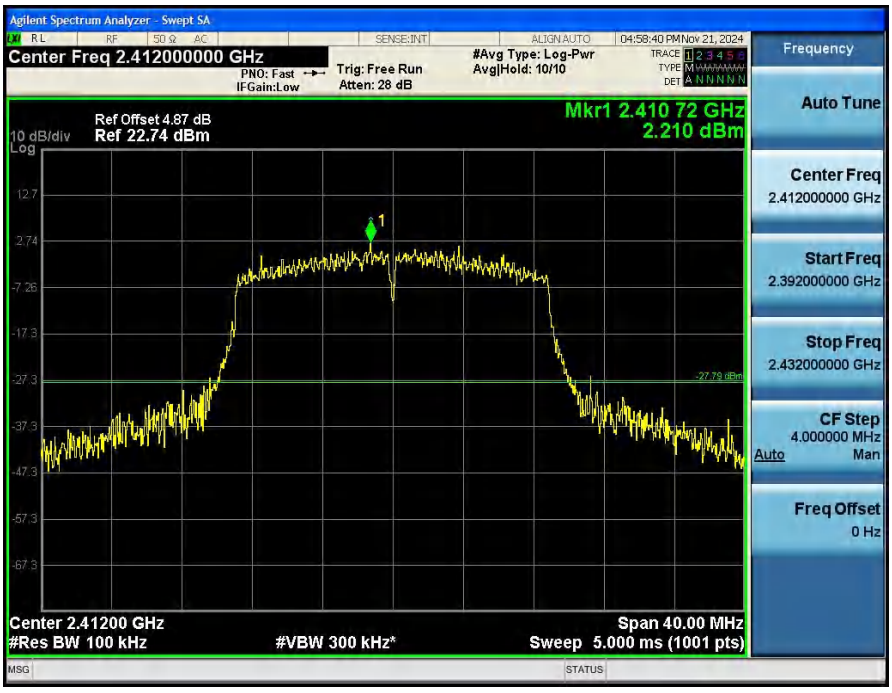
1_Reference_Level_NVNT_ANT1_802_11g_2412

2_Bandedge_NVNT_ANT1_802_11g_2412

1_Reference_Level_NVNT_ANT1_802_11g_2462

2_Bandedge_NVNT_ANT1_802_11g_2462

1_Reference_Level_NVNT_ANT1_802_11n(HT20)_2412



2_Bandedge_NVNT_ANT1_802_11n(HT20)_2412

1_Reference_Level_NVNT_ANT1_802_11n(HT20)_2462

2_Bandedge_NVNT_ANT1_802_11n(HT20)_2462

1_Reference_Level_NVNT_ANT1_802_11n(HT40)_2422

2_Bandedge_NVNT_ANT1_802_11n(HT40)_2422

1_Reference_Level_NVNT_ANT1_802_11n(HT40)_2452

2_Bandedge_NVNT_ANT1_802_11n(HT40)_2452


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.466000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
#Avg Type: Log-Pwr
Avg|Hold: 10/10
05:12:31 PM Nov 21, 2024
Ref Offset 4.64 dB
10 dB/div
Ref 13.64 dBm
Log
Mkr3 2.484 020 GHz
-32.964 dBm
Start 2.43200 GHz
#Res BW 100 kHz
#VBW 300 kHz*
Stop 2.50000 GHz
Sweep 8.400 ms (1001 pts)
1 N 1 f 2.449 408 GHz 1.105 dBm
2 N 1 f 2.483 500 GHz -40.927 dBm
3 N 1 f 2.484 020 GHz -32.964 dBm
Frequency
Auto Tune
Center Freq
2.466000000 GHz
Start Freq
2.432000000 GHz
Stop Freq
2.500000000 GHz
CF Step
6.800000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

Appendix G: Spurious Emission

Condition	Antenna	Modulation	TX_Frequency (MHz)	Max. Mark_frequency(MHz)	Spurious level(dBm)	limit(dBm)	Result
NVNT	ANT1	802.11b	2412.00	24850.180	-59.750	-23.446	Pass
NVNT	ANT1	802.11b	2437.00	24870.156	-60.118	-22.117	Pass
NVNT	ANT1	802.11b	2462.00	24852.677	-55.893	-22.570	Pass
NVNT	ANT1	802.11g	2412.00	24810.228	-64.355	-28.075	Pass
NVNT	ANT1	802.11g	2437.00	24727.827	-56.370	-27.400	Pass
NVNT	ANT1	802.11g	2462.00	24847.683	-62.131	-27.237	Pass
NVNT	ANT1	802.11n(HT20)	2412.00	24817.719	-64.193	-28.256	Pass
NVNT	ANT1	802.11n(HT20)	2437.00	24850.180	-60.272	-28.188	Pass
NVNT	ANT1	802.11n(HT20)	2462.00	24795.246	-62.156	-28.751	Pass
NVNT	ANT1	802.11n(HT40)	2422.00	24827.707	-60.033	-27.513	Pass
NVNT	ANT1	802.11n(HT40)	2437.00	24825.210	-68.459	-30.651	Pass
NVNT	ANT1	802.11n(HT40)	2452.00	24852.677	-65.063	-31.297	Pass

1_Reference_Level_NVNT_ANT1_802_11b_2412

2_Spurious_Emission_NVNT_ANT1_802_11b_2412

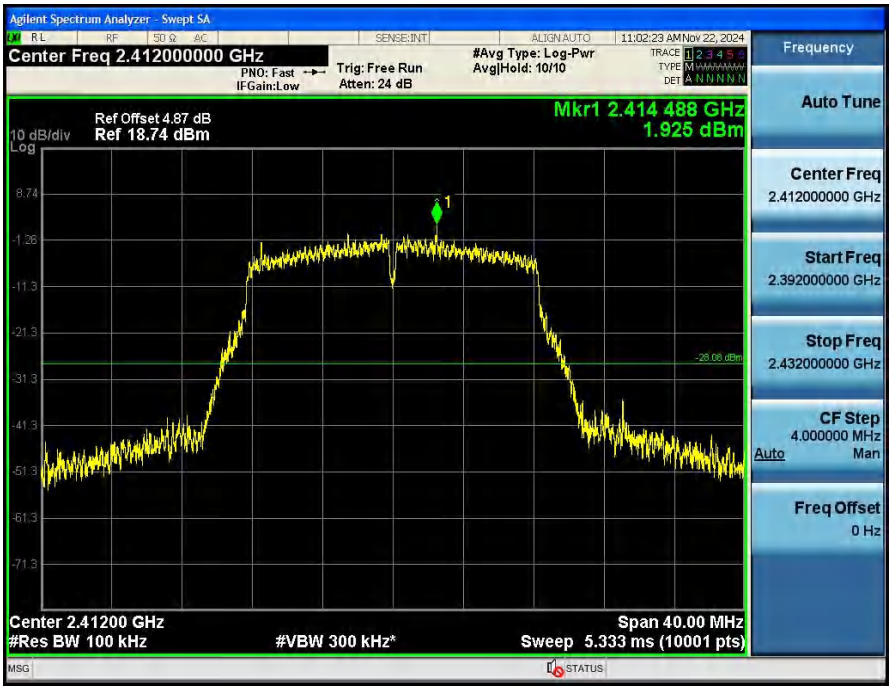
1_Reference_Level_NVNT_ANT1_802_11b_2437

2_Spurious_Emission_NVNT_ANT1_802_11b_2437

1_Reference_Level_NVNT_ANT1_802_11b_2462

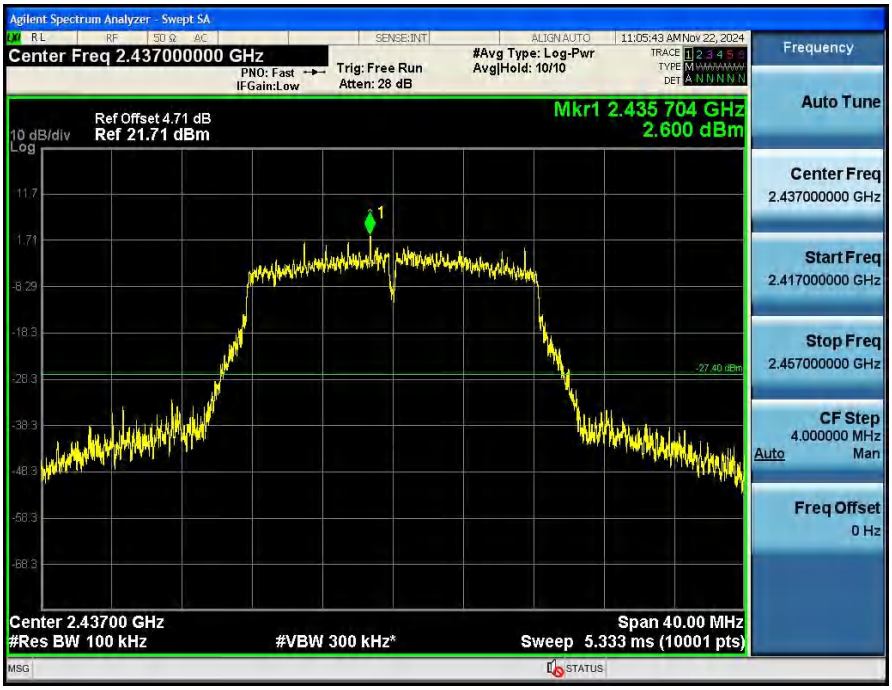
2_Spurious_Emission_NVNT_ANT1_802_11b_2462

1_Reference_Level_NVNT_ANT1_802_11g_2412



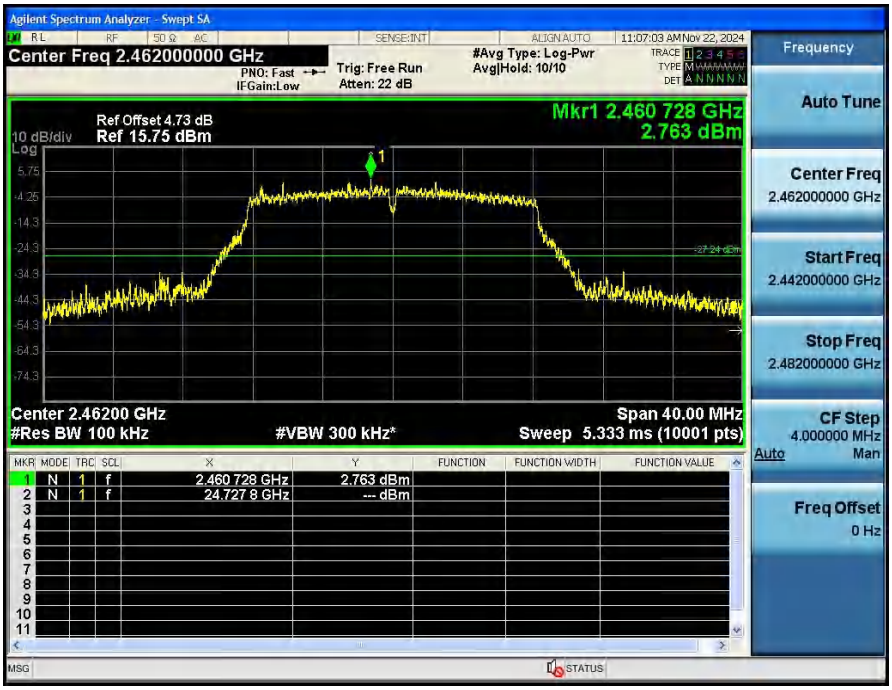
2_Spurious_Emission_NVNT_ANT1_802_11g_2412

1_Reference_Level_NVNT_ANT1_802_11g_2437



2_Spurious_Emission_NVNT_ANT1_802_11g_2437

1_Reference_Level_NVNT_ANT1_802_11g_2462

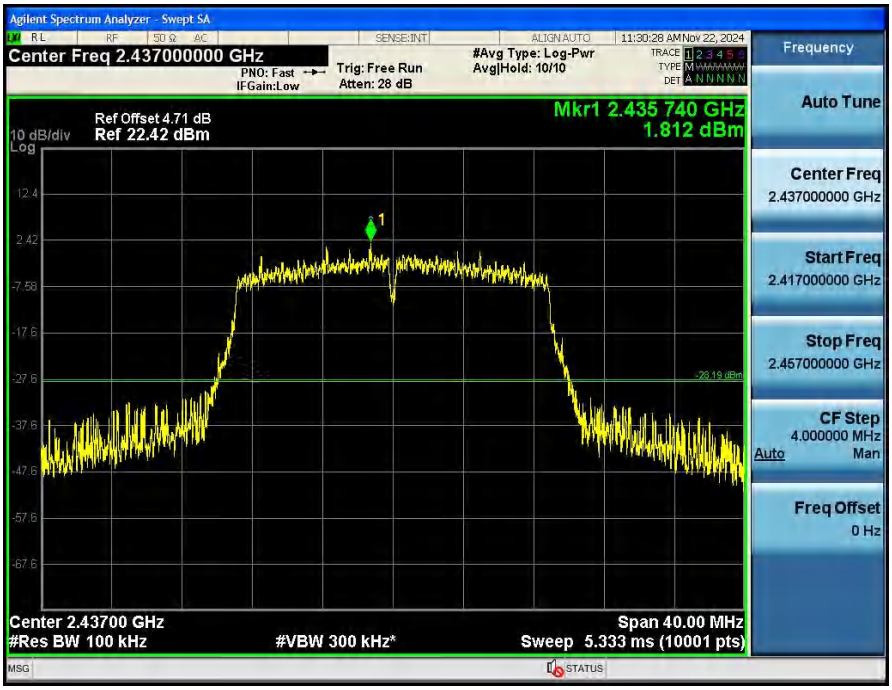


2_Spurious_Emission_NVNT_ANT1_802_11g_2462

1_Reference_Level_NVNT_ANT1_802_11n(HT20)_2412

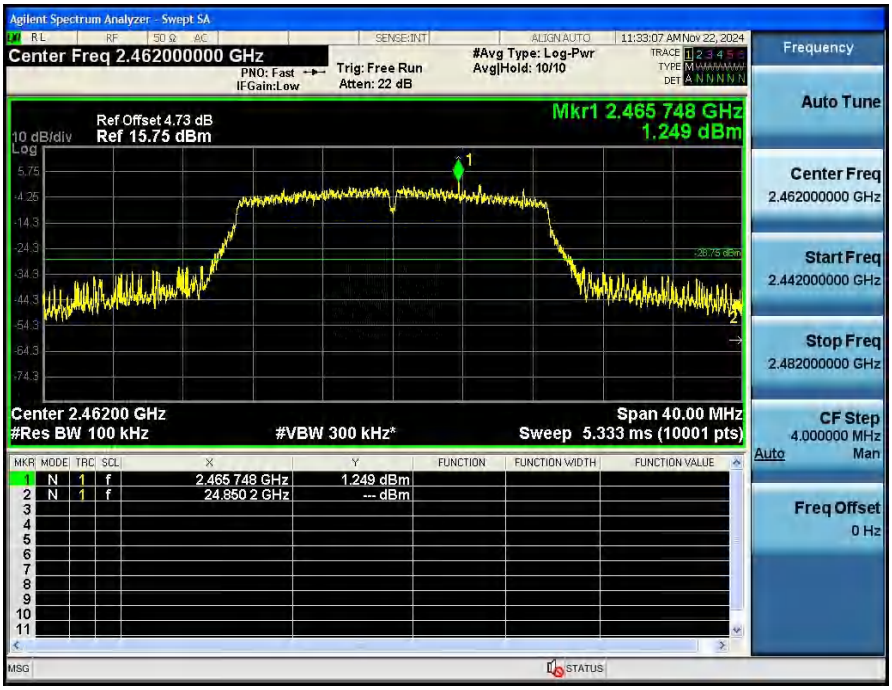
2_Spurious_Emission_NVNT_ANT1_802_11n(HT20)_2412

1_Reference_Level_NVNT_ANT1_802_11n(HT20)_2437



2_Spurious_Emission_NVNT_ANT1_802_11n(HT20)_2437

1_Reference_Level_NVNT_ANT1_802_11n(HT20)_2462

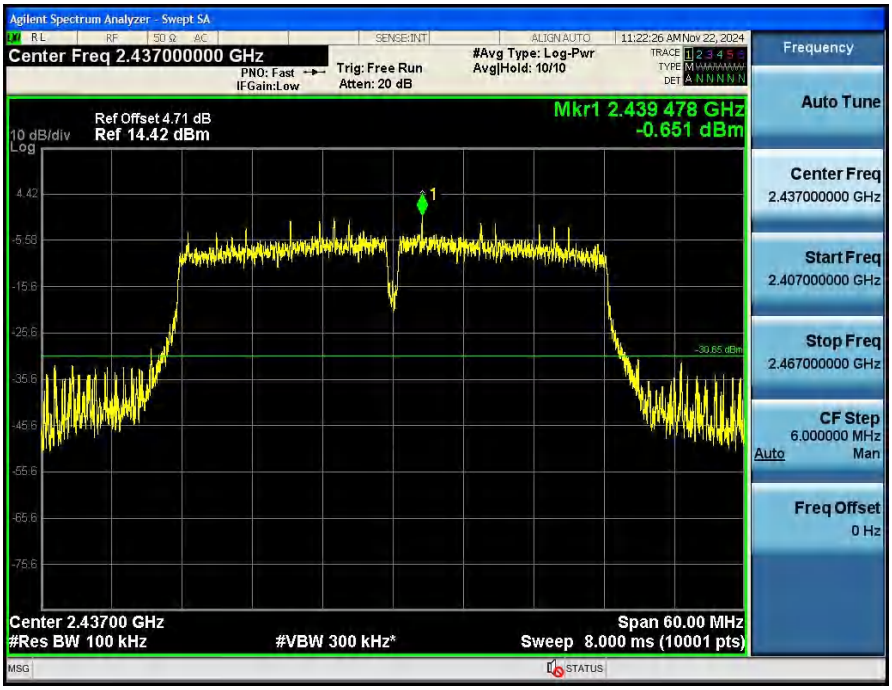


2_Spurious_Emission_NVNT_ANT1_802_11n(HT20)_2462

1_Reference_Level_NVNT_ANT1_802_11n(HT40)_2422

2_Spurious_Emission_NVNT_ANT1_802_11n(HT40)_2422

1_Reference_Level_NVNT_ANT1_802_11n(HT40)_2437



2_Spurious_Emission_NVNT_ANT1_802_11n(HT40)_2437

1_Reference_Level_NVNT_ANT1_802_11n(HT40)_2452

2_Spurious_Emission_NVNT_ANT1_802_11n(HT40)_2452


Agilent Spectrum Analyzer - Swept SA
Center Freq 12.515000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
#Avg Type: Log-Pwr
Avg|Hold: 10/10
11:29:05 AM Nov 22, 2024
Ref Offset 4.64 dB
10 dB/div
Log
Ref 13.64 dBm
Mkr2 24.852 7 GHz
-65.063 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz*
Stop 25.00 GHz
Sweep 3.081 s (10001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.454 6 GHz -12.890 dBm
2 N 1 f 24.852 7 GHz -65.063 dBm
Frequency
Auto Tune
Center Freq
12.515000000 GHz
Start Freq
30.000000 MHz
Stop Freq
25.000000000 GHz
CF Step
2.497000000 GHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

---END---