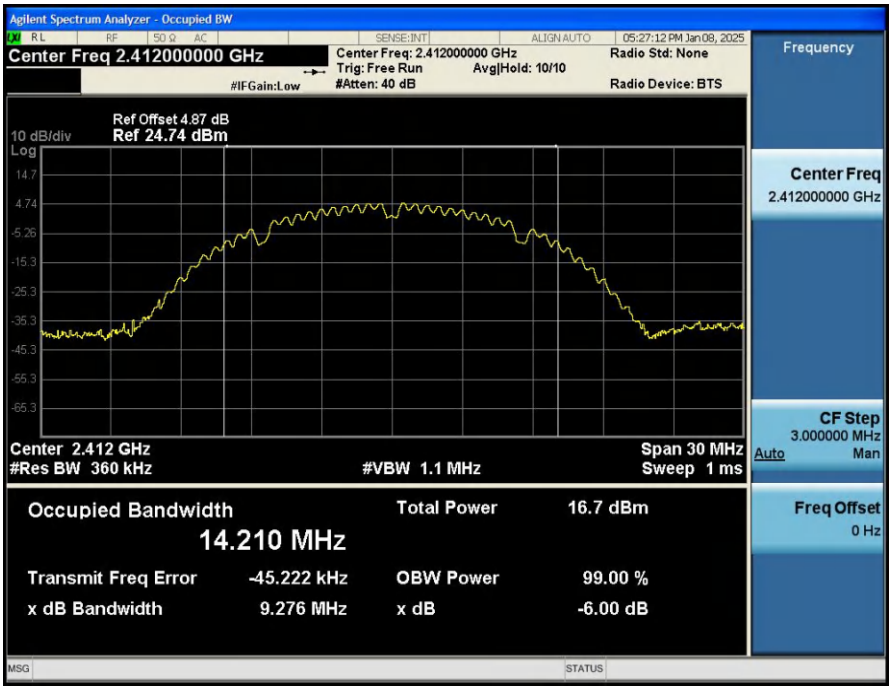
Appendix Test Data

Report No.:	1812C50000112502	Test Sample No.:	1-2-2
Start Test Date:	2025.1.6	Finish Test Date:	2025.1.8
Test Engineer:	Jokes Huang	Auditor:	Justin Feng
Temperature:	25.5℃	Relative Humidity:	47%
Pressure:	101kPa		

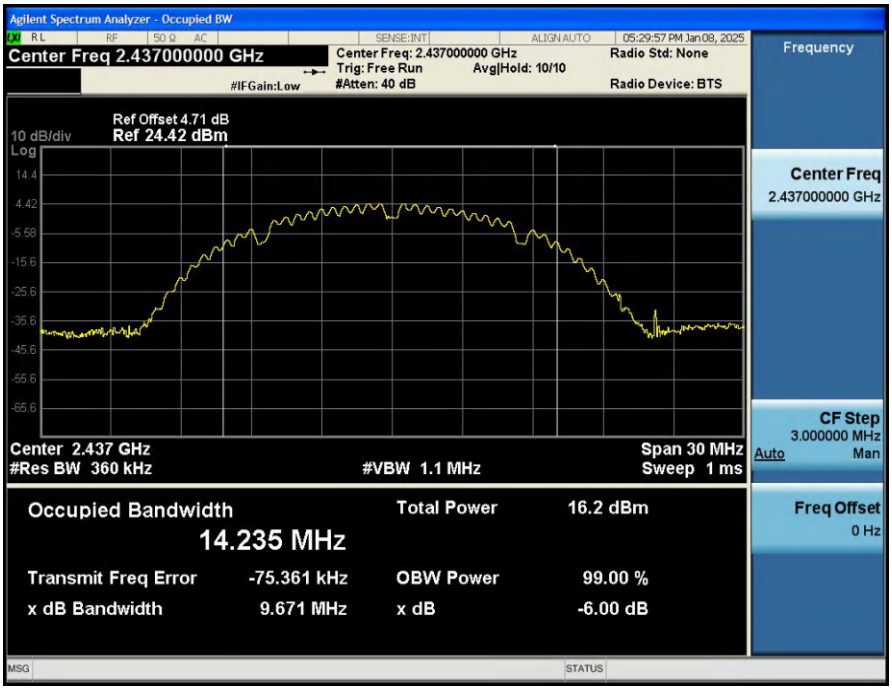
Appendix A: -6dB Bandwidth

Condition	Antenna	Modulation	Frequency (MHz)	-6dB BW(MHz)	limit(kHz)	Result
NVNT	ANT1	802.11b	2412.00	9.28	500	Pass
NVNT	ANT1	802.11b	2437.00	9.67	500	Pass
NVNT	ANT1	802.11b	2462.00	9.70	500	Pass
NVNT	ANT1	802.11g	2412.00	16.56	500	Pass
NVNT	ANT1	802.11g	2437.00	16.67	500	Pass
NVNT	ANT1	802.11g	2462.00	16.70	500	Pass
NVNT	ANT1	802.11n(HT20)	2412.00	18.00	500	Pass
NVNT	ANT1	802.11n(HT20)	2437.00	17.85	500	Pass
NVNT	ANT1	802.11n(HT20)	2462.00	17.90	500	Pass

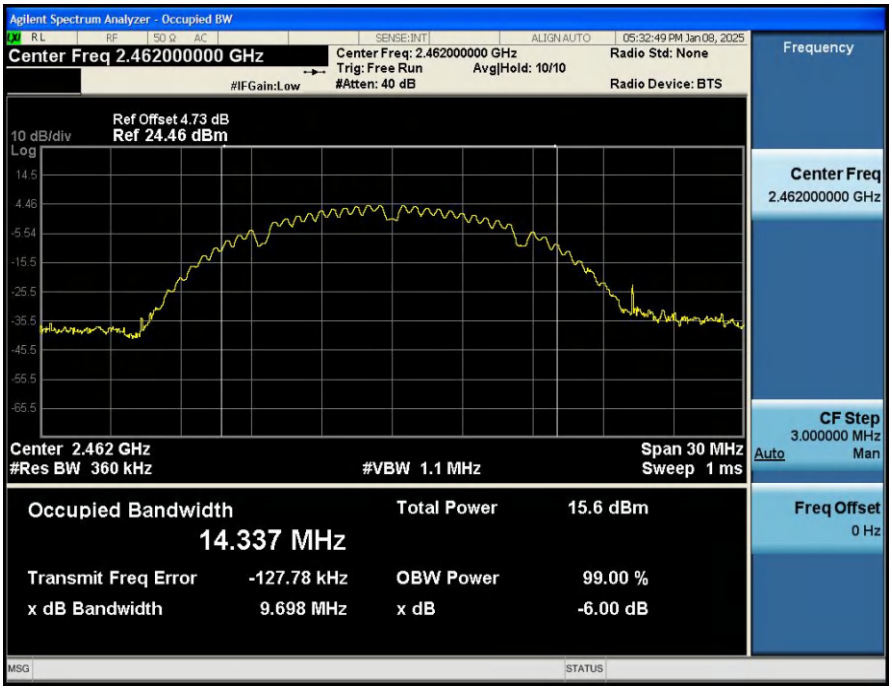
-6dB_Bandwidth_NVNT_ANT1_802_11b_2412



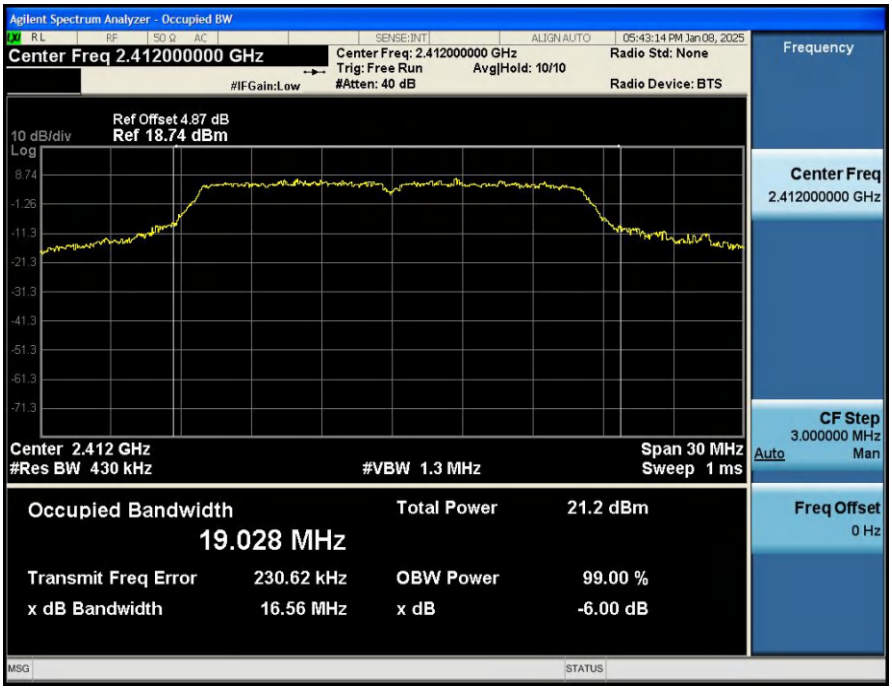
-6dB_Bandwidth_NVNT_ANT1_802_11b_2437



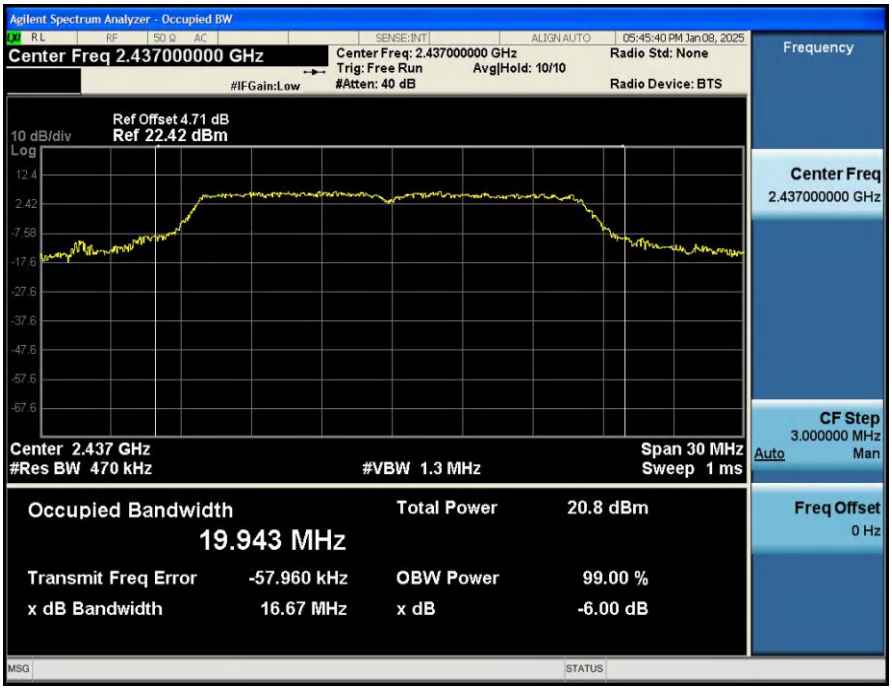
-6dB_Bandwidth_NVNT_ANT1_802_11b_2462



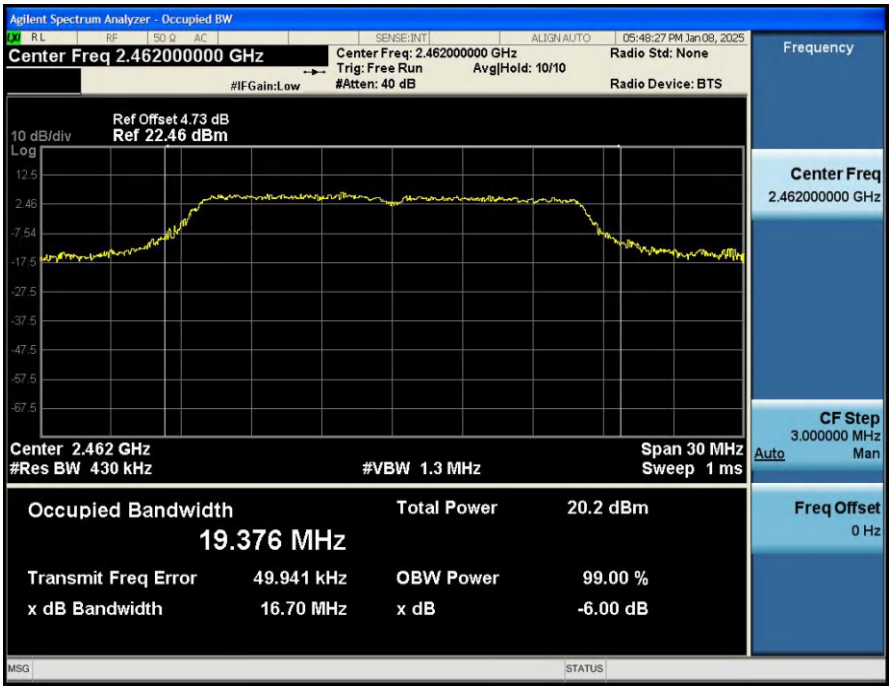
-6dB_Bandwidth_NVNT_ANT1_802_11g_2412



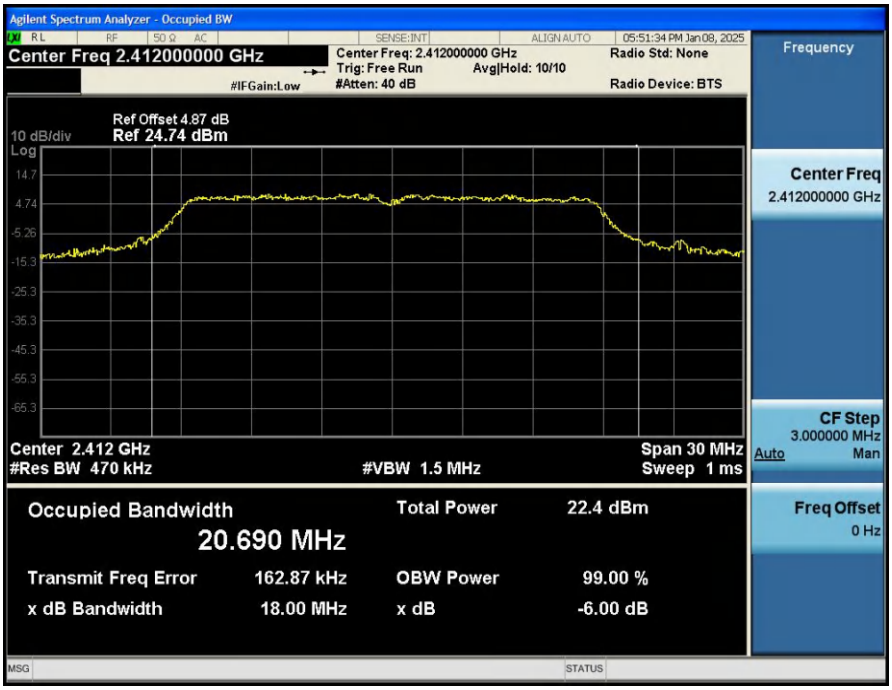
-6dB_Bandwidth_NVNT_ANT1_802_11g_2437



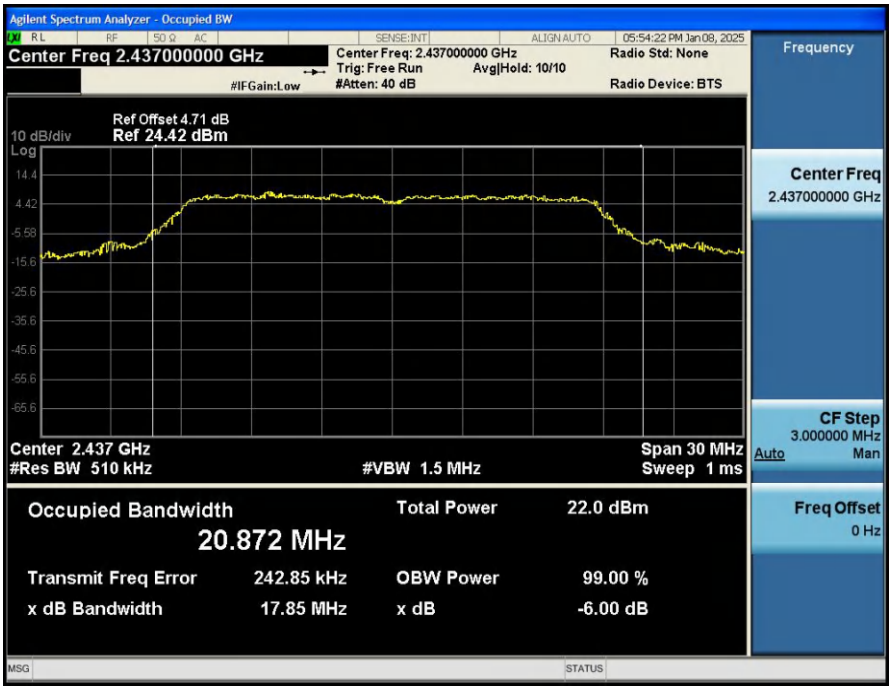
-6dB_Bandwidth_NVNT_ANT1_802_11g_2462



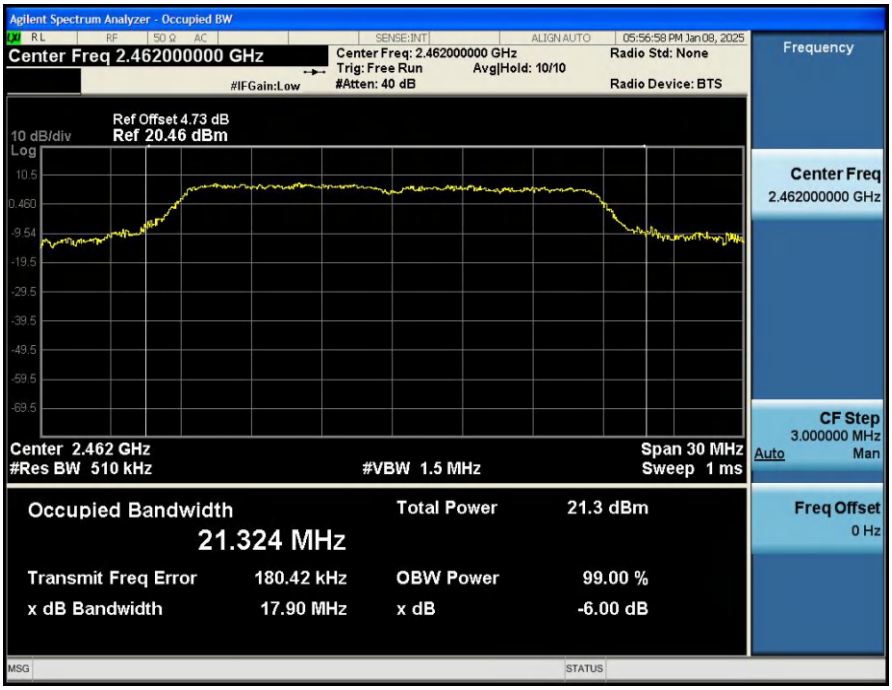
-6dB_Bandwidth_NVNT_ANT1_802_11n(HT20)_2412



-6dB_Bandwidth_NVNT_ANT1_802_11n(HT20)_2437



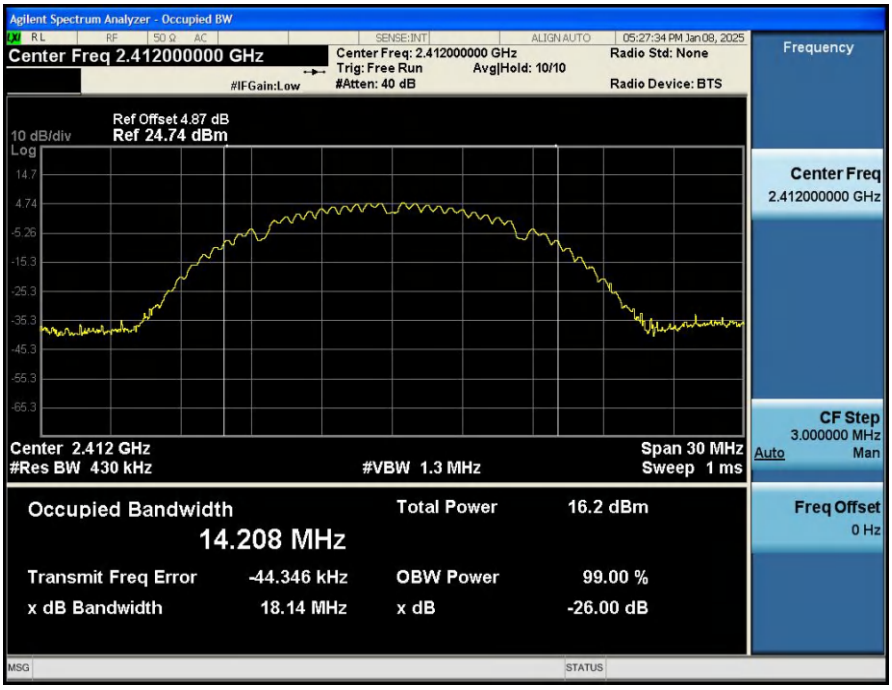
-6dB_Bandwidth_NVNT_ANT1_802_11n(HT20)_2462


Agilent Spectrum Analyzer - Occupied BW
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:56:58 PM Jan 08, 2025
Center Freq 2.462000000 GHz
Center Freq: 2.462000000 GHz
Trig: Free Run
Avg|Hold: 10/10
#IFGain:Low
#Atten: 40 dB
Radio Std: None
Radio Device: BTS
Frequency
Ref Offset 4.73 dB
10 dB/div
Ref 20.46 dBm
Log
10.5
0.460
-9.54
-19.5
-29.5
-39.5
-49.5
-59.5
-69.5
Center Freq
2.462000000 GHz
Center 2.462 GHz
#Res BW 510 kHz
#VBW 1.5 MHz
Span 30 MHz
Sweep 1 ms
CF Step
3.000000 MHz
Auto
Man
Occupied Bandwidth
21.324 MHz
Total Power
21.3 dBm
Freq Offset
0 Hz
Transmit Freq Error
180.42 kHz
OBW Power
99.00 %
x dB Bandwidth
17.90 MHz
x dB
-6.00 dB
MSG
STATUS

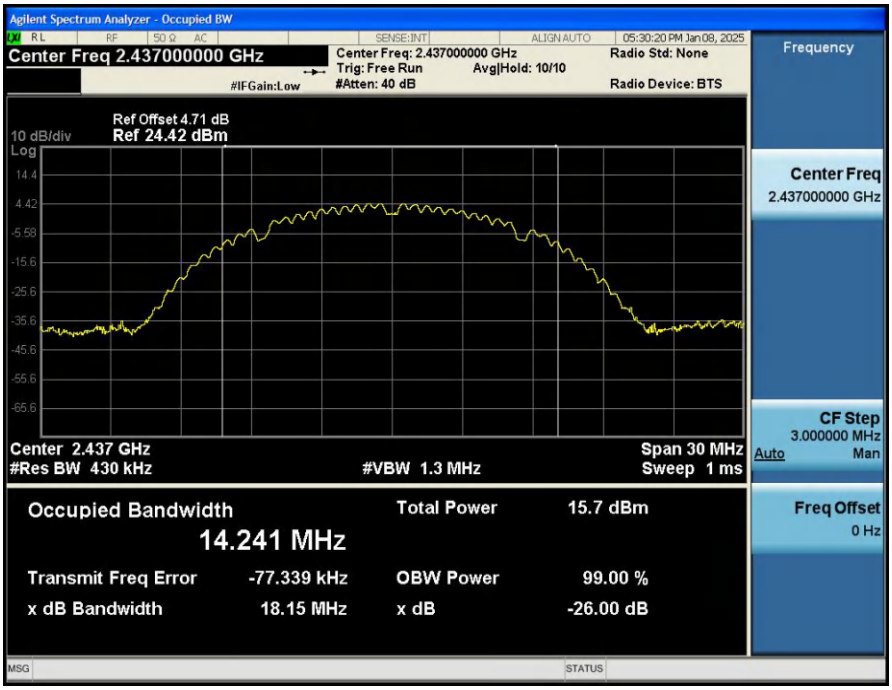
Appendix B: 99% Occupied Bandwidth

Condition	Antenna	Modulation	Frequency (MHz)	99%BW(MHz)
NVNT	ANT1	802.11b	2412.00	14.208
NVNT	ANT1	802.11b	2437.00	14.241
NVNT	ANT1	802.11b	2462.00	14.362
NVNT	ANT1	802.11g	2412.00	19.978
NVNT	ANT1	802.11g	2437.00	20.464
NVNT	ANT1	802.11g	2462.00	20.154
NVNT	ANT1	802.11n(HT20)	2412.00	20.884
NVNT	ANT1	802.11n(HT20)	2437.00	21.204
NVNT	ANT1	802.11n(HT20)	2462.00	21.614

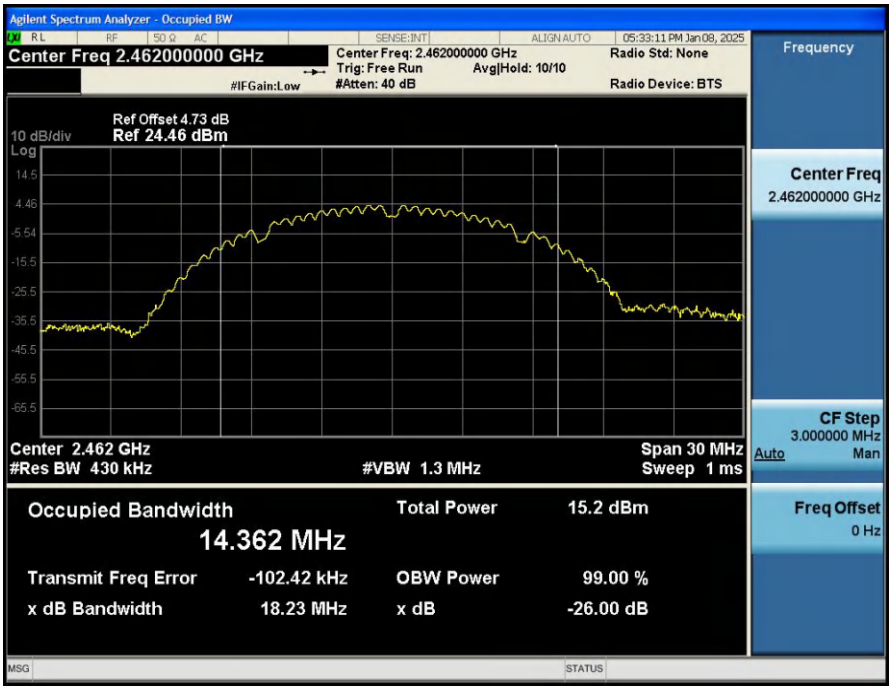
99%_Occupied_Bandwidth_NVNT_ANT1_802_11b_2412



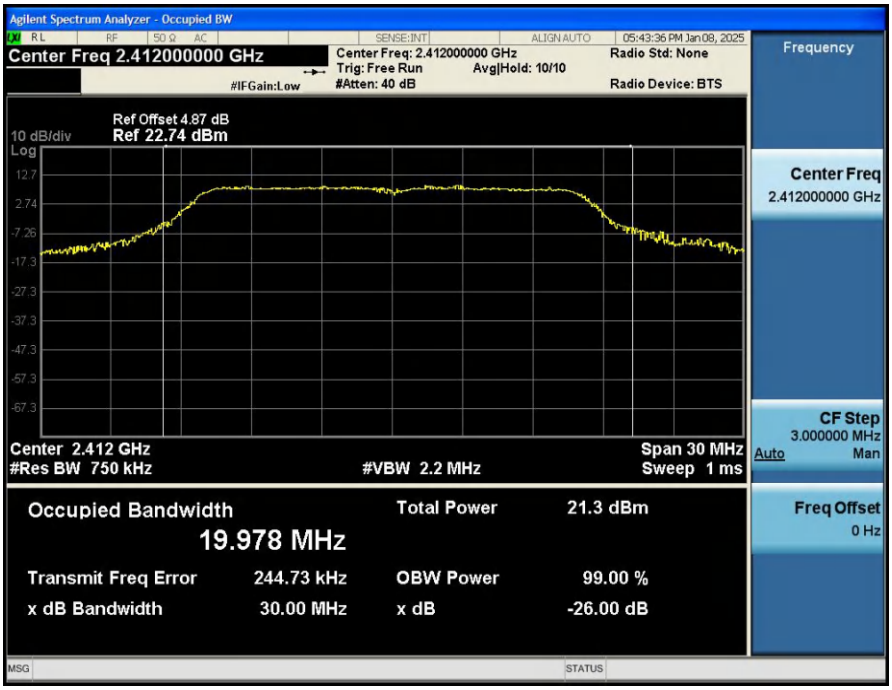
99%_Occupied_Bandwidth_NVNT_ANT1_802_11b_2437



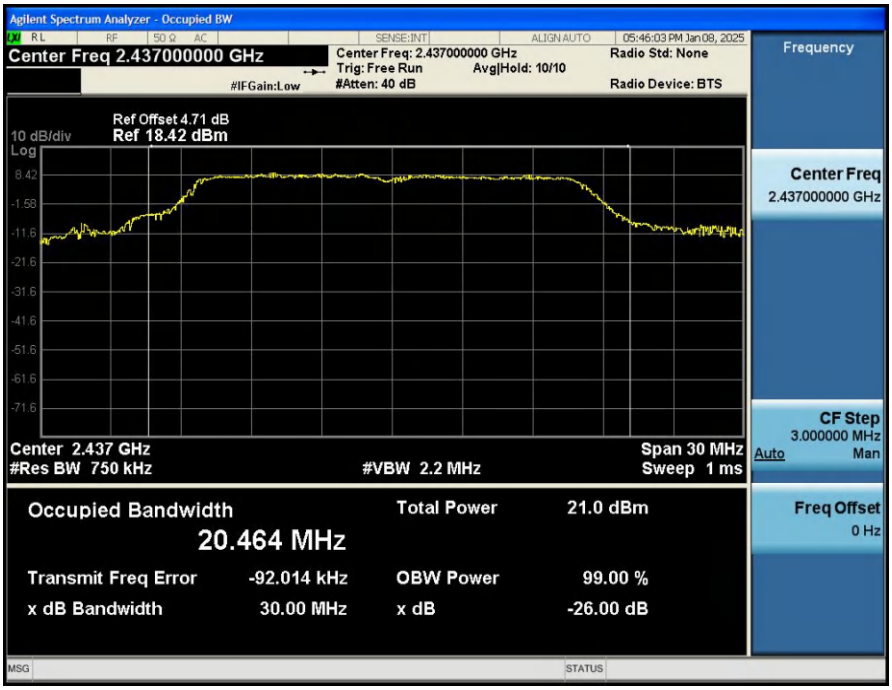
99%_Occupied_Bandwidth_NVNT_ANT1_802_11b_2462



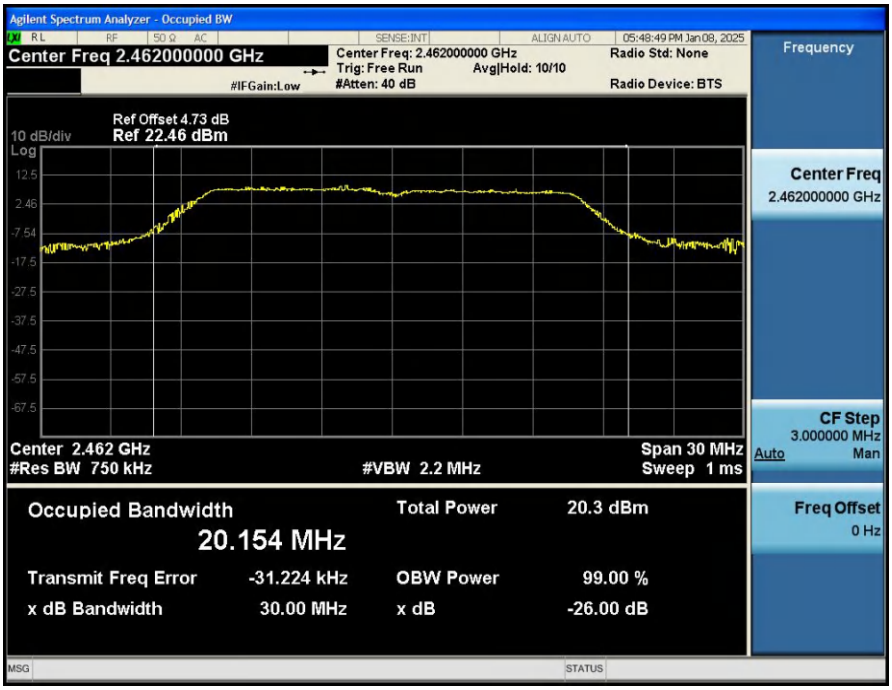
99%_Occupied_Bandwidth_NVNT_ANT1_802_11g_2412



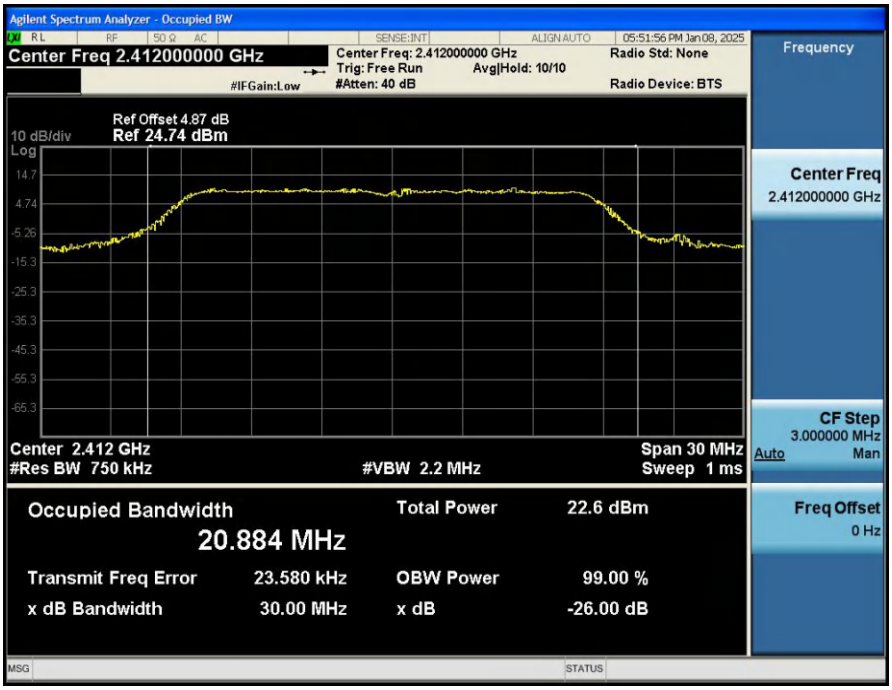
99%_Occupied_Bandwidth_NVNT_ANT1_802_11g_2437



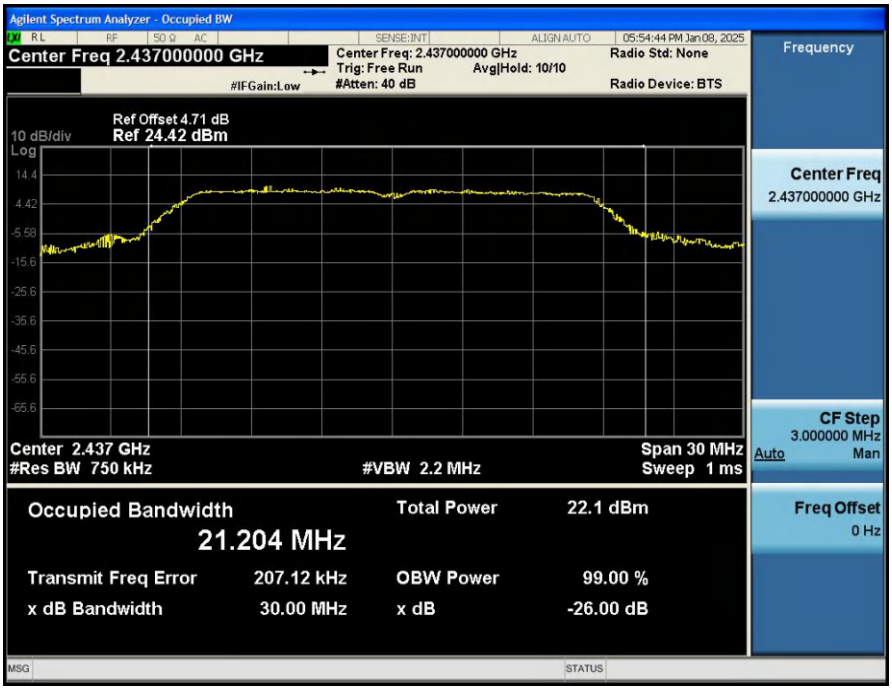
99%_Occupied_Bandwidth_NVNT_ANT1_802_11g_2462



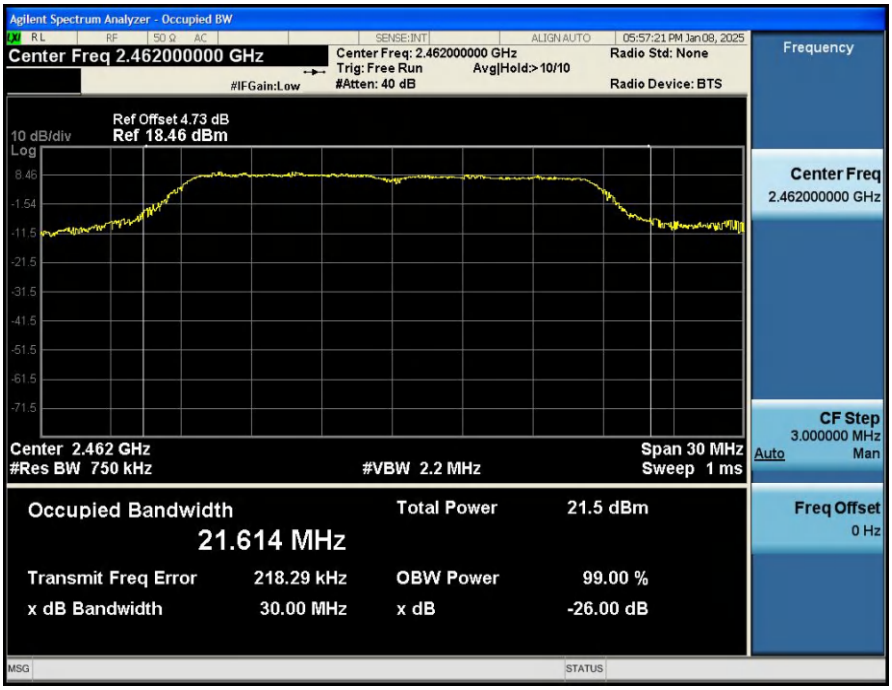
99%_Occupied_Bandwidth_NVNT_ANT1_802_11n(HT20)_2412



99%_Occupied_Bandwidth_NVNT_ANT1_802_11n(HT20)_2437



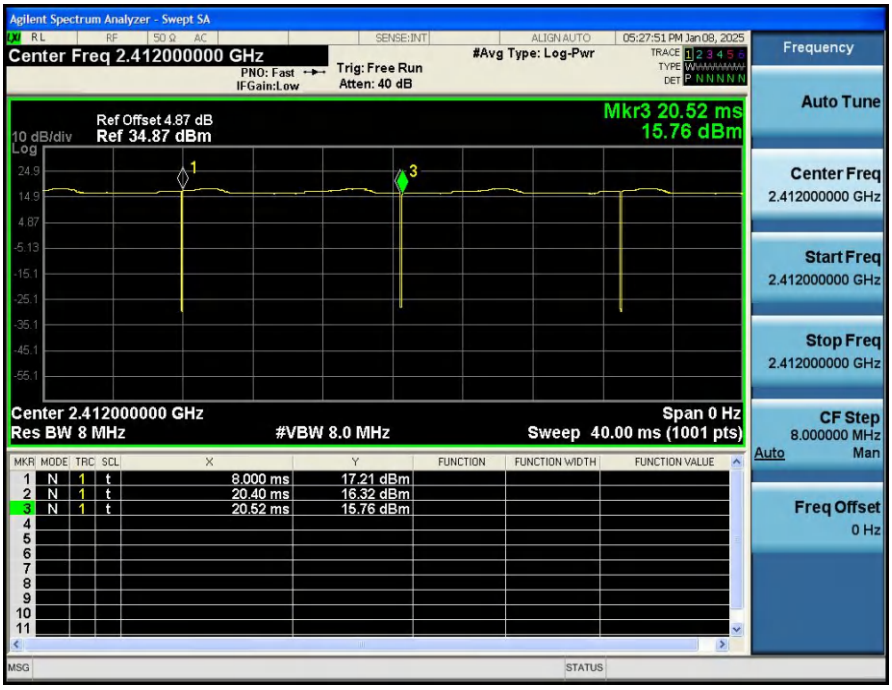
99%_Occupied_Bandwidth_NVNT_ANT1_802_11n(HT20)_2462



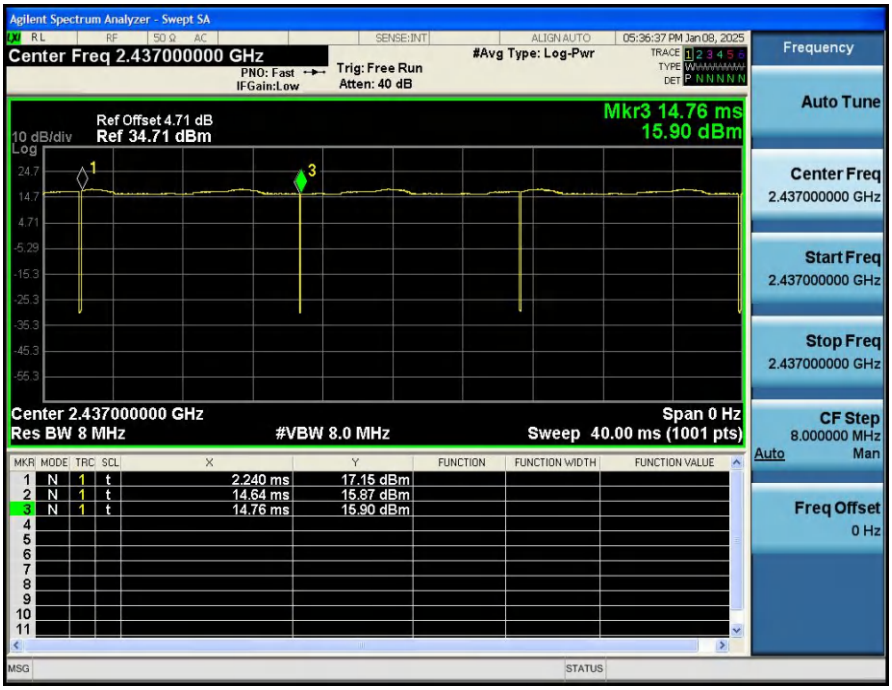
Appendix C: Duty Cycle

Condition	Antenna	Modulation	Frequency (MHz)	Duty cycle(%)	Duty factor(dB)
NVNT	ANT1	802.11b	2412.00	99.36	0.00
NVNT	ANT1	802.11b	2437.00	99.36	0.00
NVNT	ANT1	802.11b	2462.00	99.36	0.00
NVNT	ANT1	802.11g	2412.00	95.45	0.20
NVNT	ANT1	802.11g	2437.00	95.45	0.20
NVNT	ANT1	802.11g	2462.00	94.55	0.24
NVNT	ANT1	802.11n(HT20)	2412.00	95.10	0.22
NVNT	ANT1	802.11n(HT20)	2437.00	94.17	0.26
NVNT	ANT1	802.11n(HT20)	2462.00	95.10	0.22

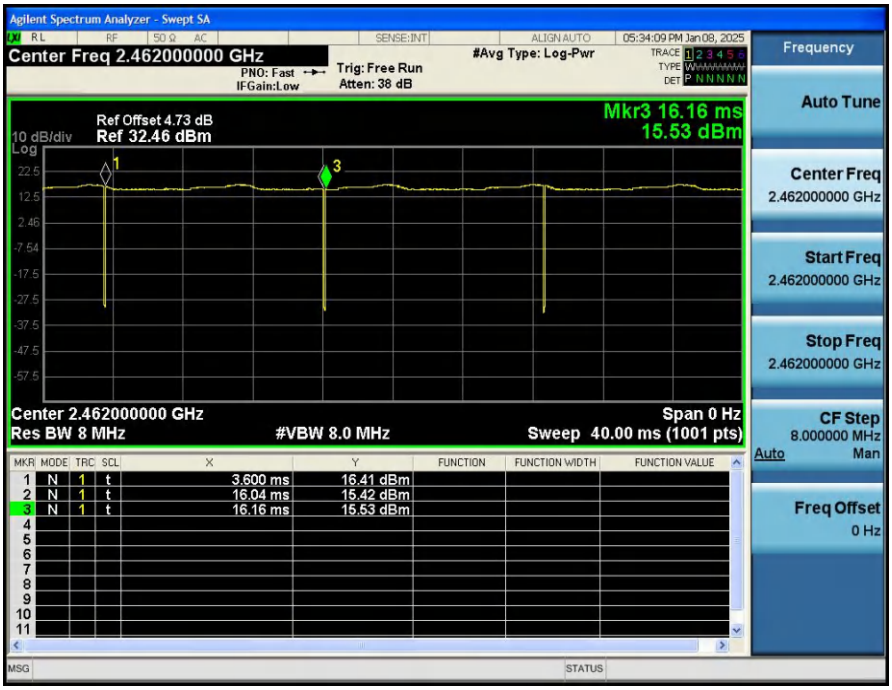
Duty_Cycle_NVNT_ANT1_802_11b_2412



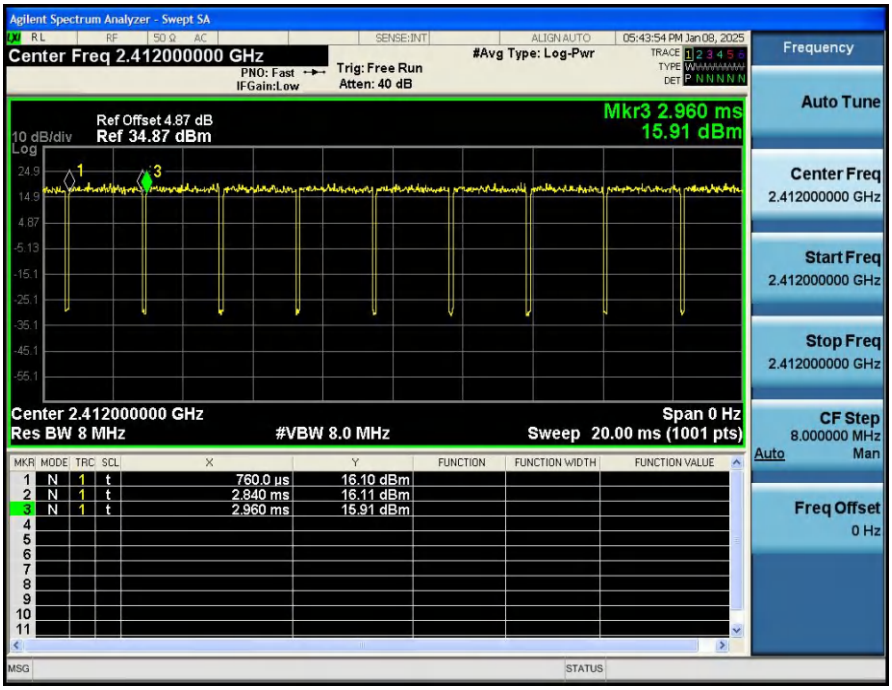
Duty_Cycle_NVNT_ANT1_802_11b_2437



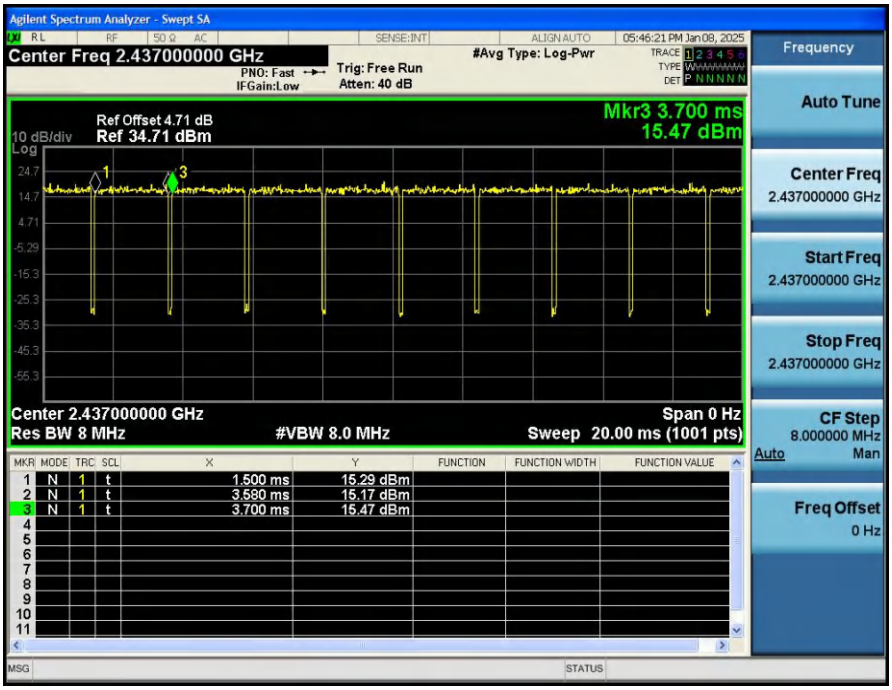
Duty_Cycle_NVNT_ANT1_802_11b_2462



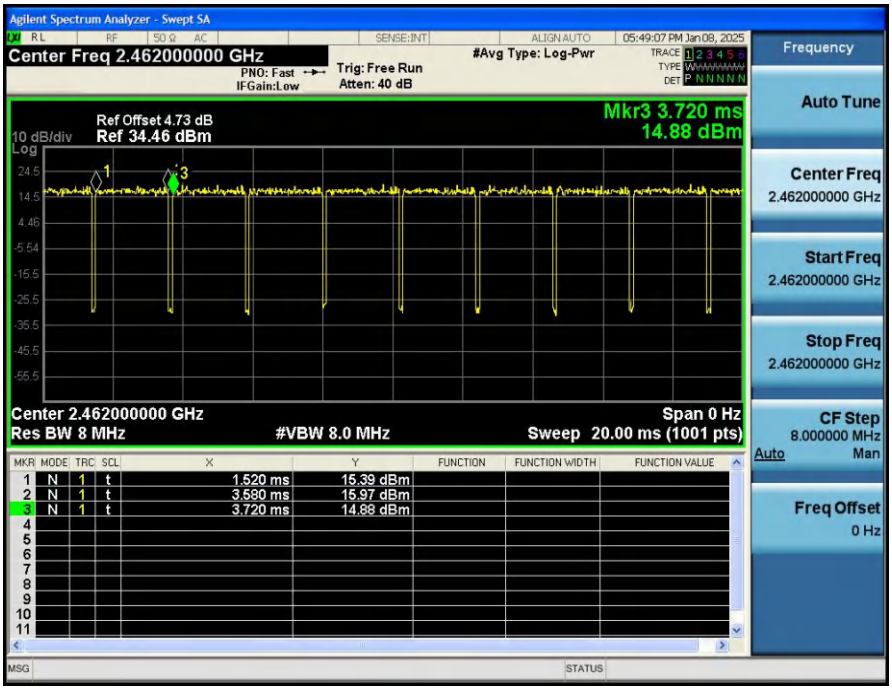
Duty_Cycle_NVNT_ANT1_802_11g_2412



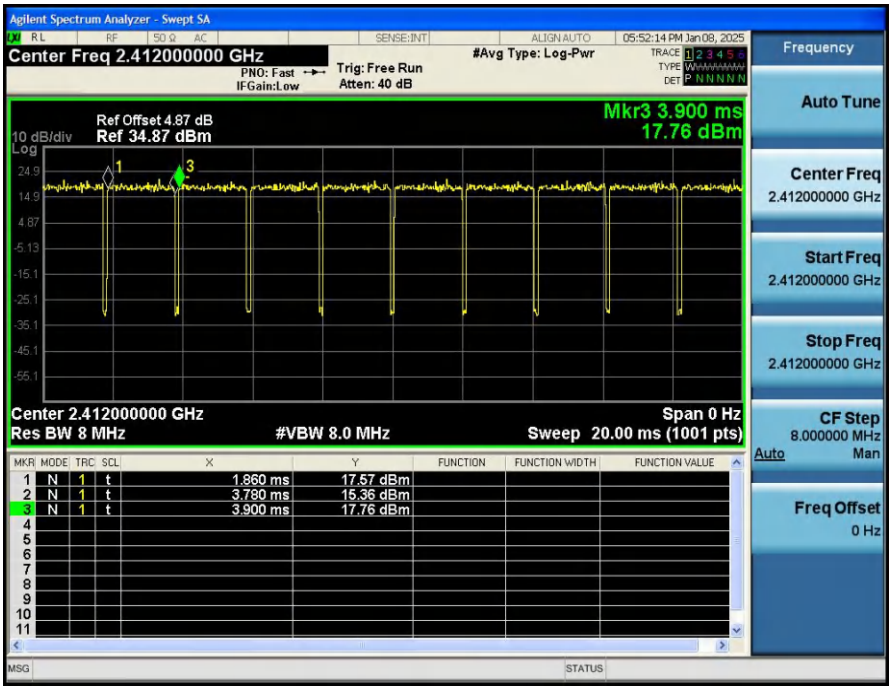
Duty_Cycle_NVNT_ANT1_802_11g_2437



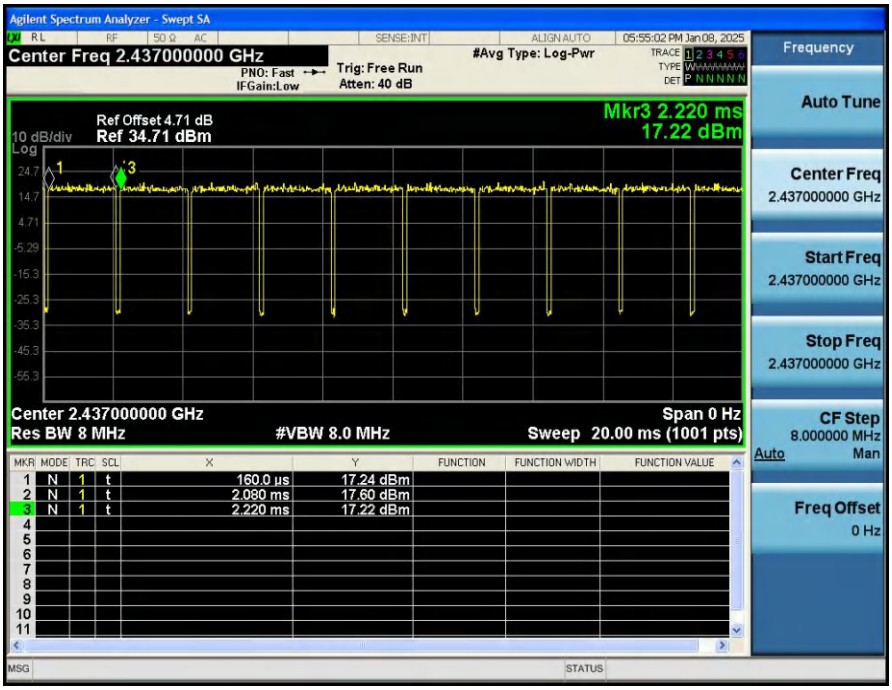
Duty_Cycle_NVNT_ANT1_802_11g_2462



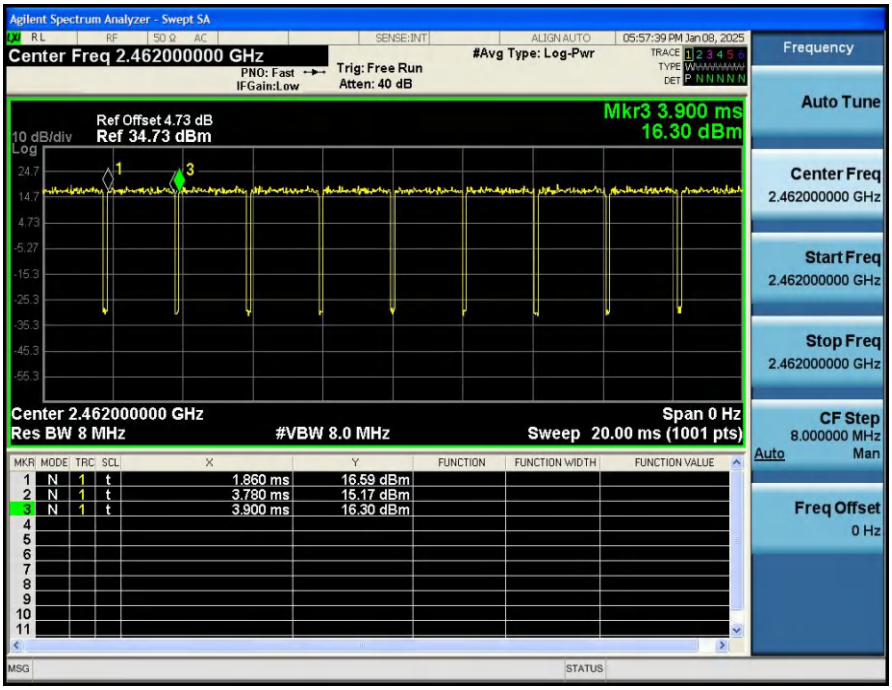
Duty_Cycle_NVNT_ANT1_802_11n(HT20)_2412



Duty_Cycle_NVNT_ANT1_802_11n(HT20)_2437



Duty_Cycle_NVNT_ANT1_802_11n(HT20)_2462

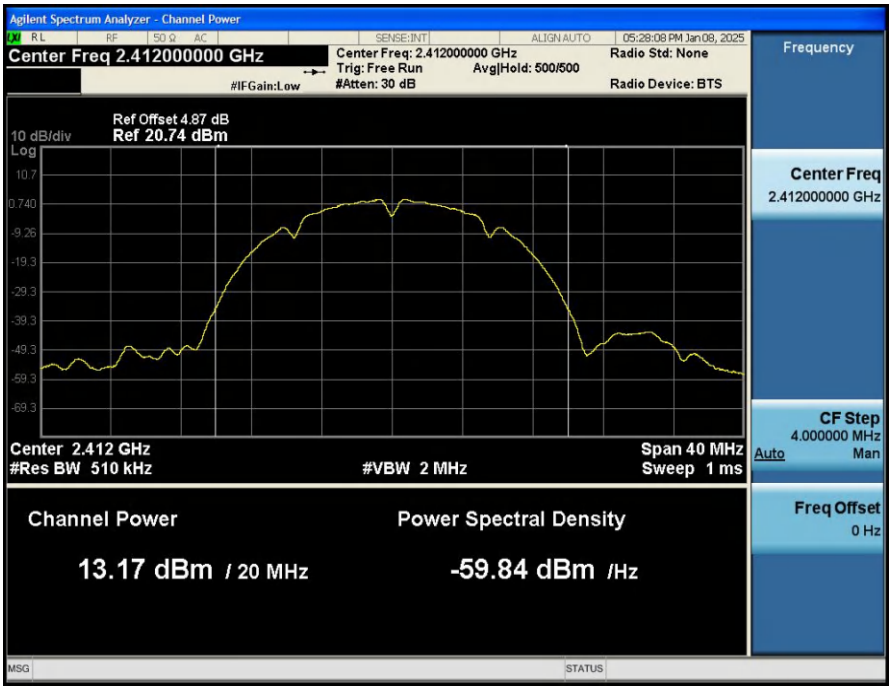


Appendix D: MAX. Output Power

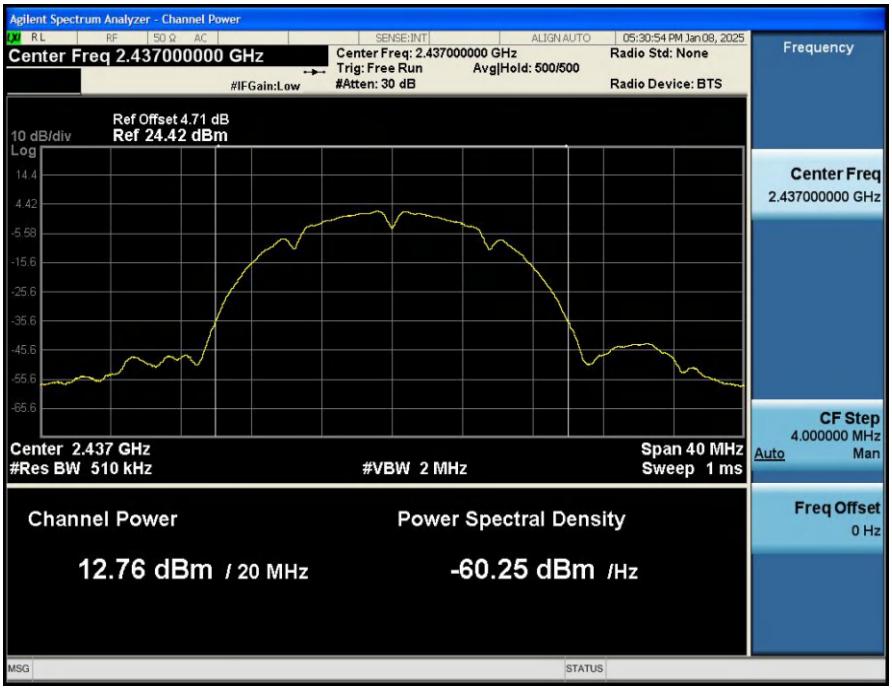
Condition	Antenna	Modulation	Frequency (MHz)	Detector	Conducted Power (dBm)	Duty factor (dB)	Total Power (dBm)	Limit (dBm)	Result
NVNT	ANT1	802.11b	2412.00	RMS	13.17	0.00	13.17	30	Pass
NVNT	ANT1	802.11b	2437.00	RMS	12.76	0.00	12.76	30	Pass
NVNT	ANT1	802.11b	2462.00	RMS	12.20	0.00	12.20	30	Pass
NVNT	ANT1	802.11g	2412.00	RMS	13.97	0.20	14.17	30	Pass
NVNT	ANT1	802.11g	2437.00	RMS	13.50	0.20	13.70	30	Pass
NVNT	ANT1	802.11g	2462.00	RMS	12.96	0.24	13.20	30	Pass
NVNT	ANT1	802.11n(HT20)	2412.00	RMS	15.12	0.22	**15.34**	30	Pass
NVNT	ANT1	802.11n(HT20)	2437.00	RMS	14.62	0.26	14.88	30	Pass
NVNT	ANT1	802.11n(HT20)	2462.00	RMS	14.04	0.22	14.26	30	Pass

Note：The cable loss are compensated in the graph.

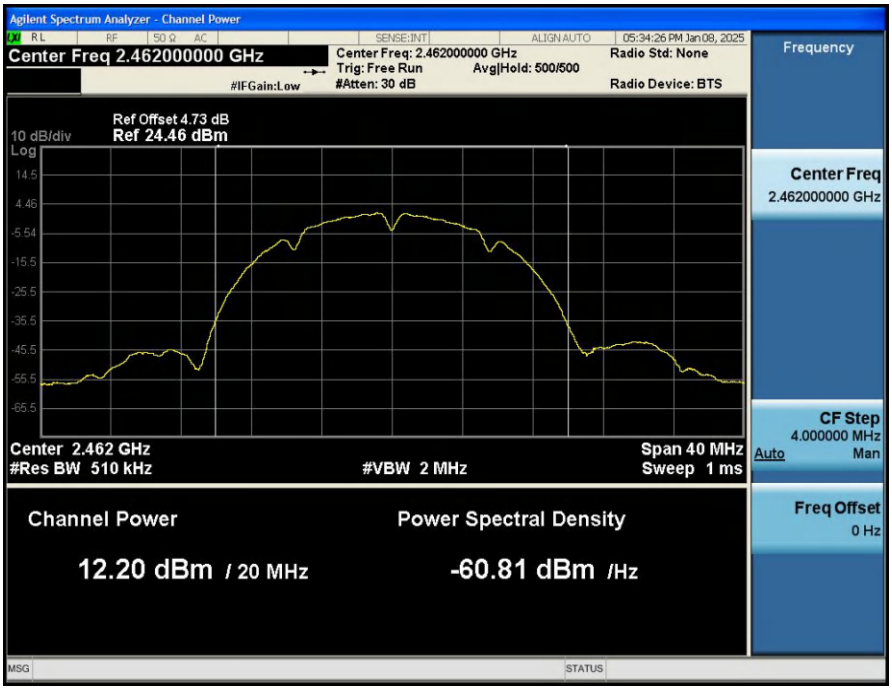
MAX__Output_Power_NVNT_ANT1_802_11b_2412



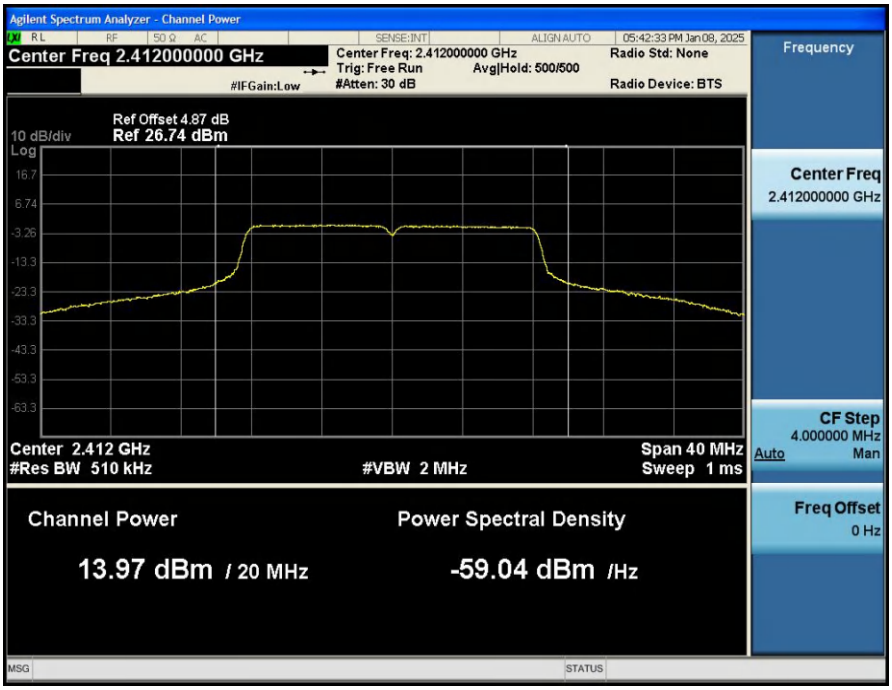
MAX__Output_Power_NVNT_ANT1_802_11b_2437



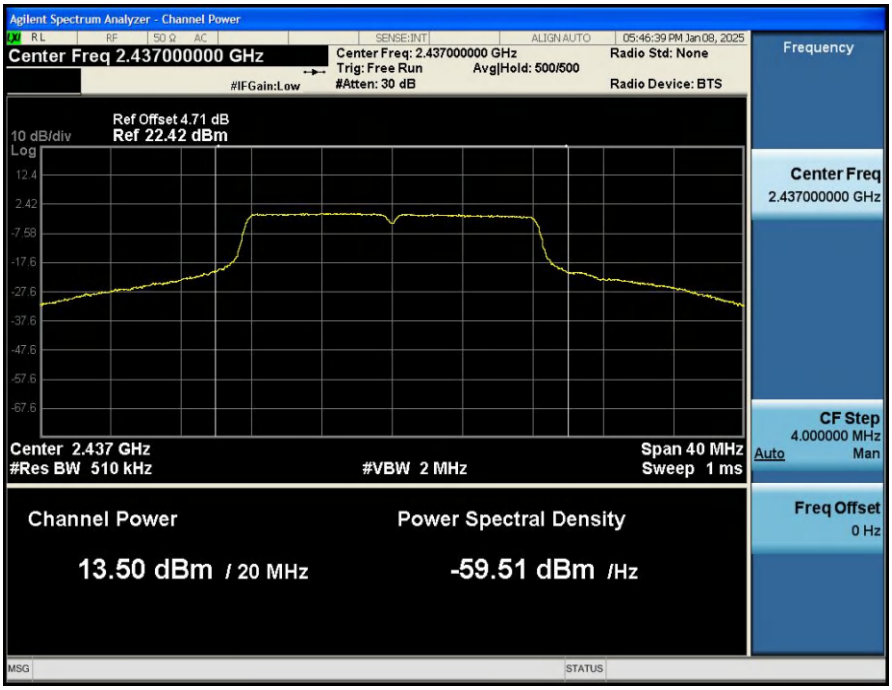
MAX__Output_Power_NVNT_ANT1_802_11b_2462



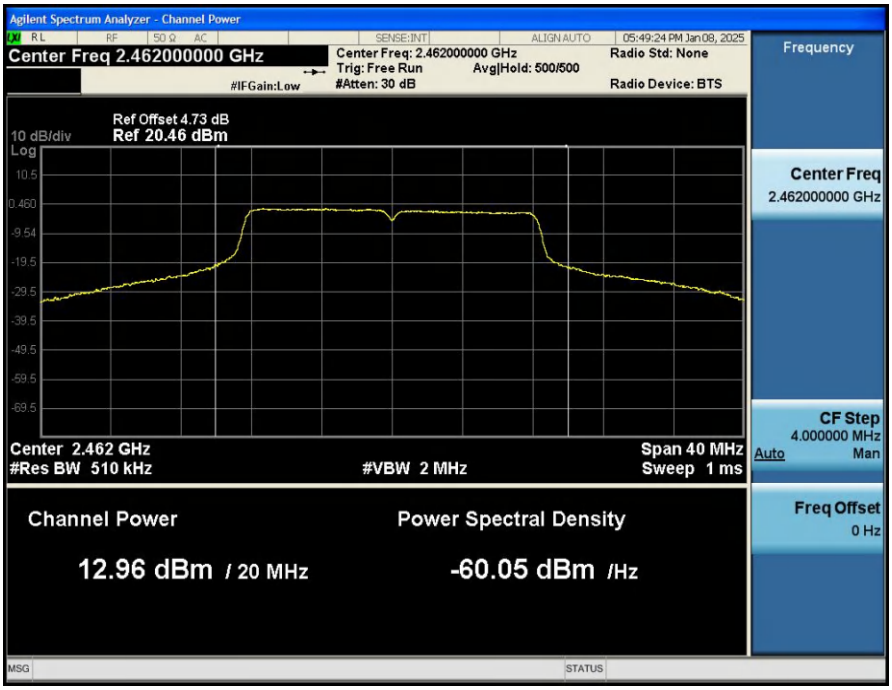
MAX__Output_Power_NVNT_ANT1_802_11g_2412



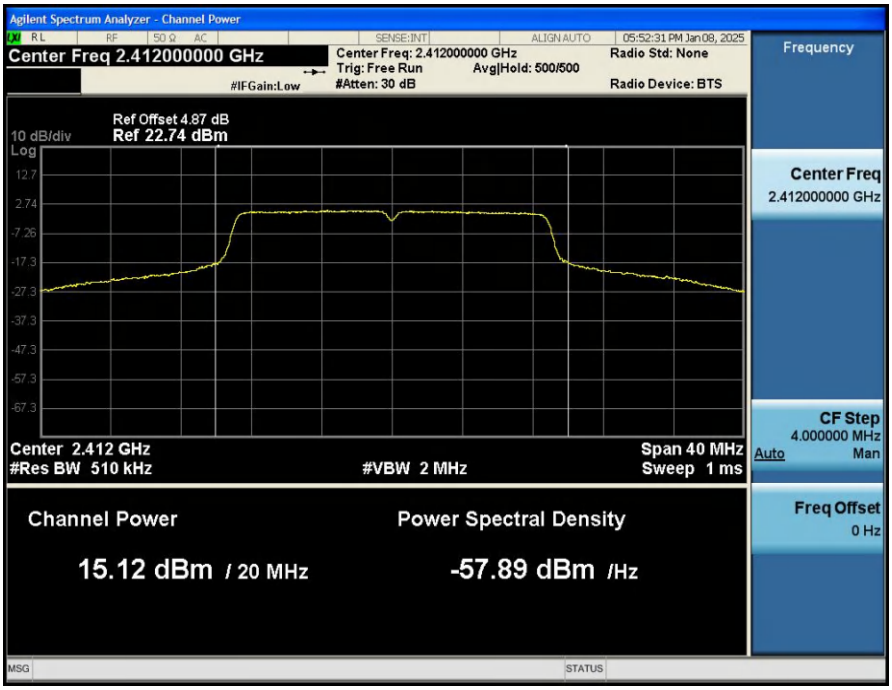
MAX__Output_Power_NVNT_ANT1_802_11g_2437



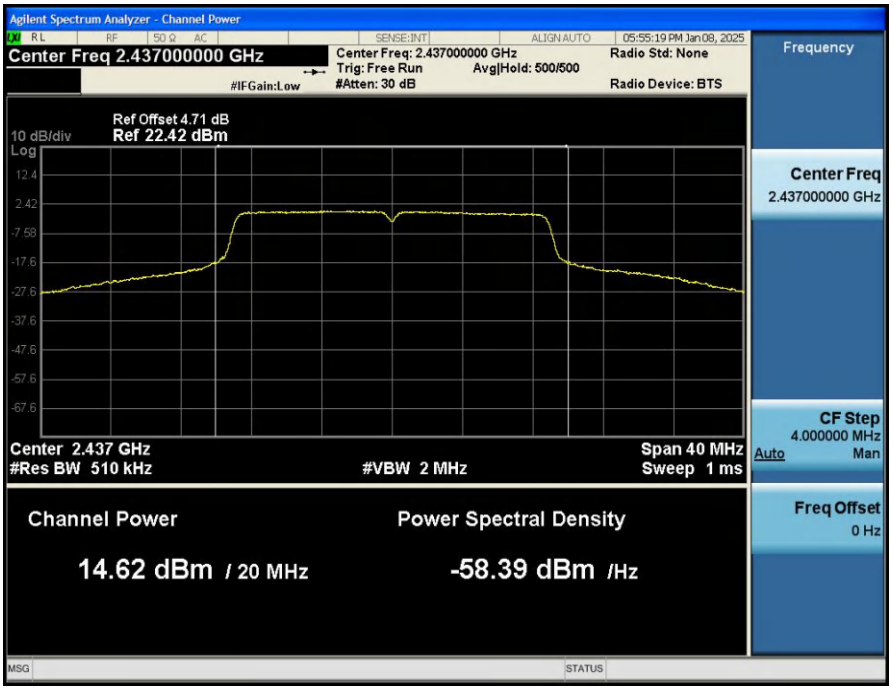
MAX__Output_Power_NVNT_ANT1_802_11g_2462



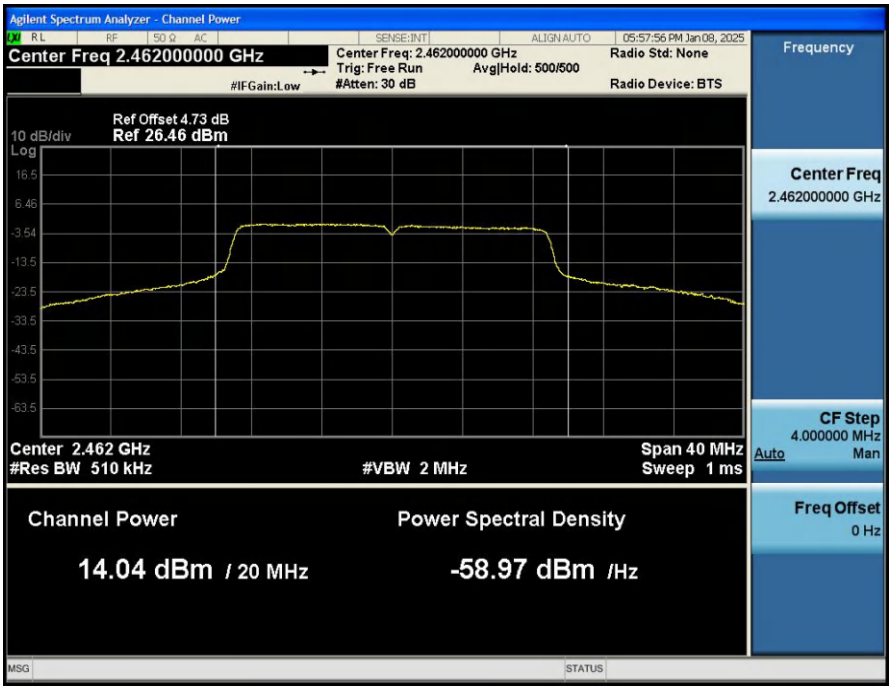
MAX__Output_Power_NVNT_ANT1_802_11n(HT20)_2412



MAX__Output_Power_NVNT_ANT1_802_11n(HT20)_2437



MAX__Output_Power_NVNT_ANT1_802_11n(HT20)_2462



Appendix E: Power Spectral Density

Condition	Antenna	Modulation	Frequency (MHz)	SA_PSD (dBm/30kHz)	Duty factor (dB)	RB factor (dB)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
NVNT	ANT1	802.11b	2412.00	-0.10	0.00	-10.00	-10.10	8	Pass
NVNT	ANT1	802.11b	2437.00	-0.65	0.00	-10.00	-10.65	8	Pass
NVNT	ANT1	802.11b	2462.00	0.47	0.00	-10.00	-9.53	8	Pass
NVNT	ANT1	802.11g	2412.00	-1.47	0.20	-10.00	-11.27	8	Pass
NVNT	ANT1	802.11g	2437.00	-1.87	0.20	-10.00	-11.67	8	Pass
NVNT	ANT1	802.11g	2462.00	-2.63	0.24	-10.00	-12.39	8	Pass
NVNT	ANT1	802.11n(HT20)	2412.00	-0.97	0.22	-10.00	-10.75	8	Pass
NVNT	ANT1	802.11n(HT20)	2437.00	-1.47	0.26	-10.00	-11.21	8	Pass
NVNT	ANT1	802.11n(HT20)	2462.00	-1.77	0.22	-10.00	-11.55	8	Pass

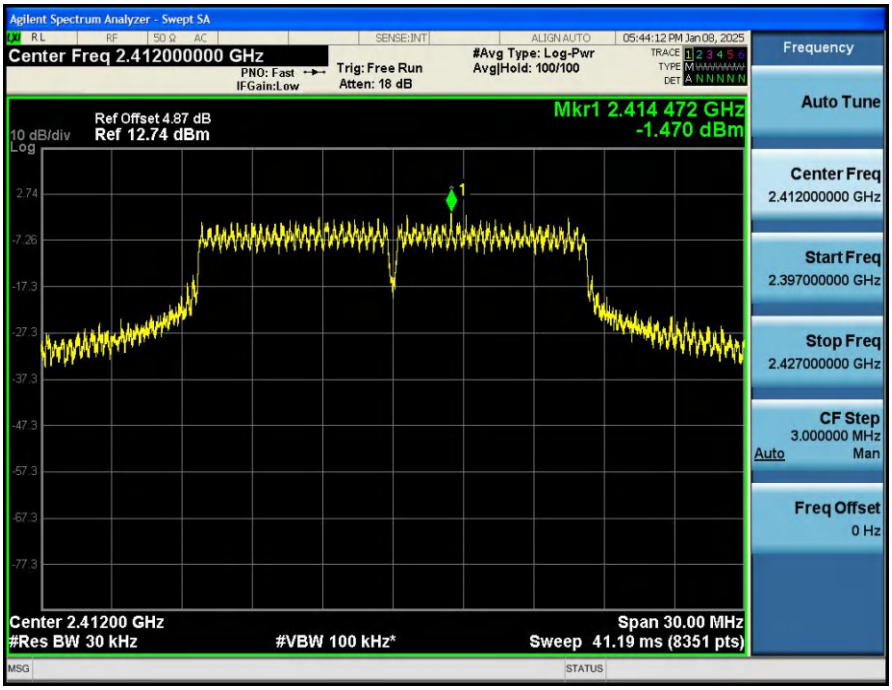
Note：The cable loss are compensated in the graph.

Power_Spectral_Density_NVNT_ANT1_802_11b_2412

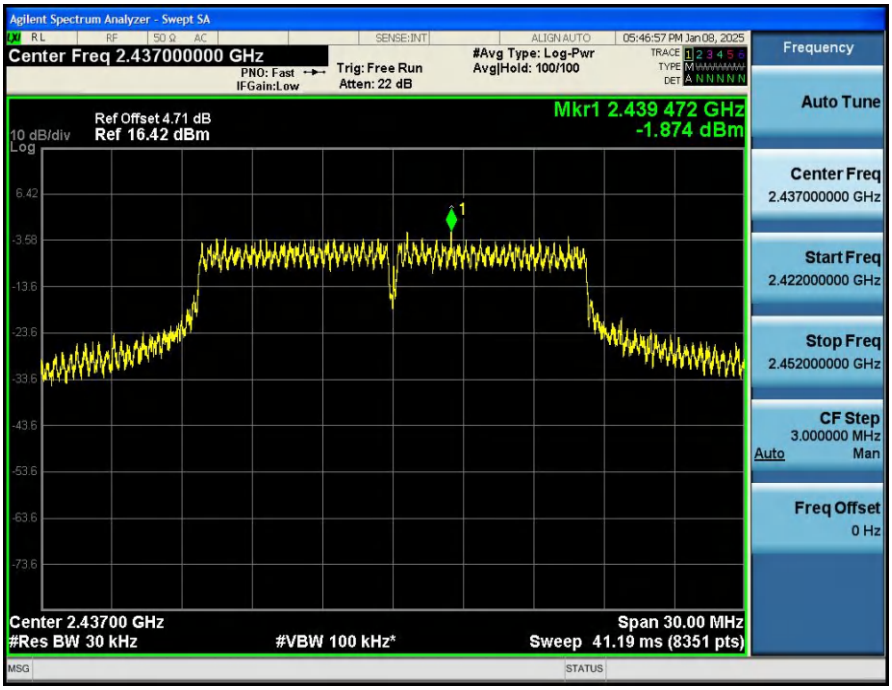
Power_Spectral_Density_NVNT_ANT1_802_11b_2437

Power_Spectral_Density_NVNT_ANT1_802_11b_2462

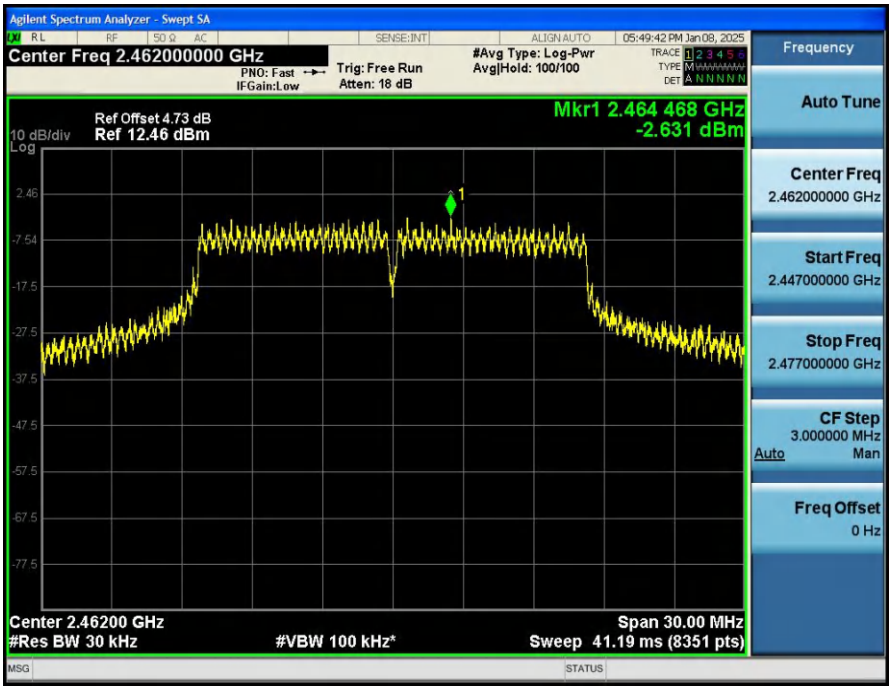
Power_Spectral_Density_NVNT_ANT1_802_11g_2412



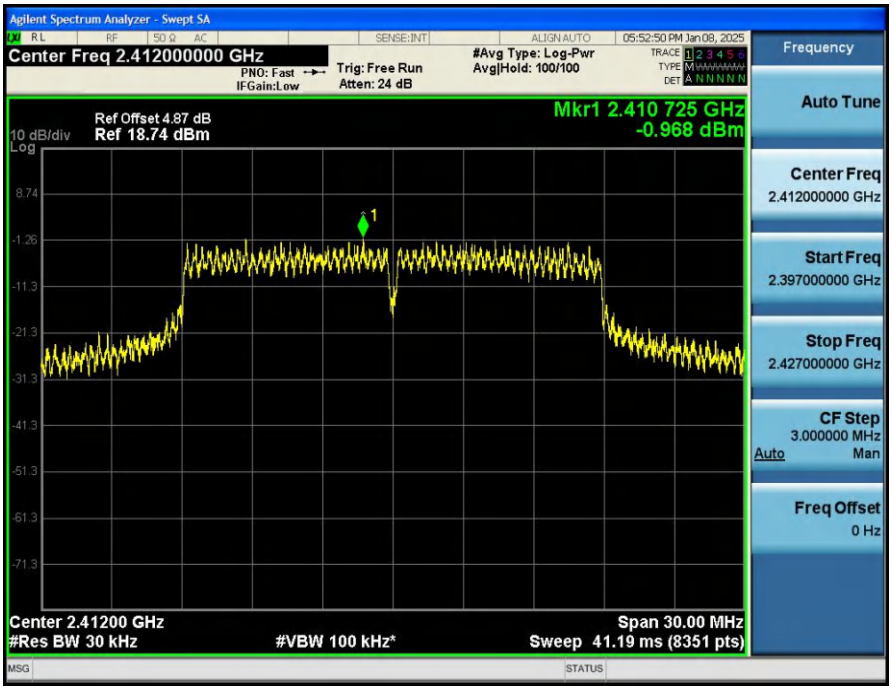
Power_Spectral_Density_NVNT_ANT1_802_11g_2437



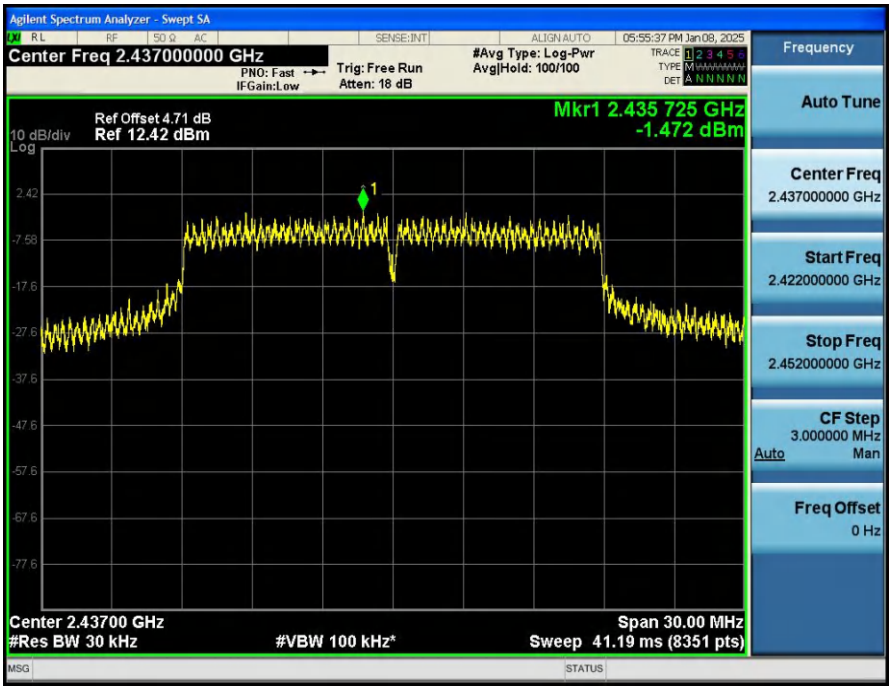
Power_Spectral_Density_NVNT_ANT1_802_11g_2462



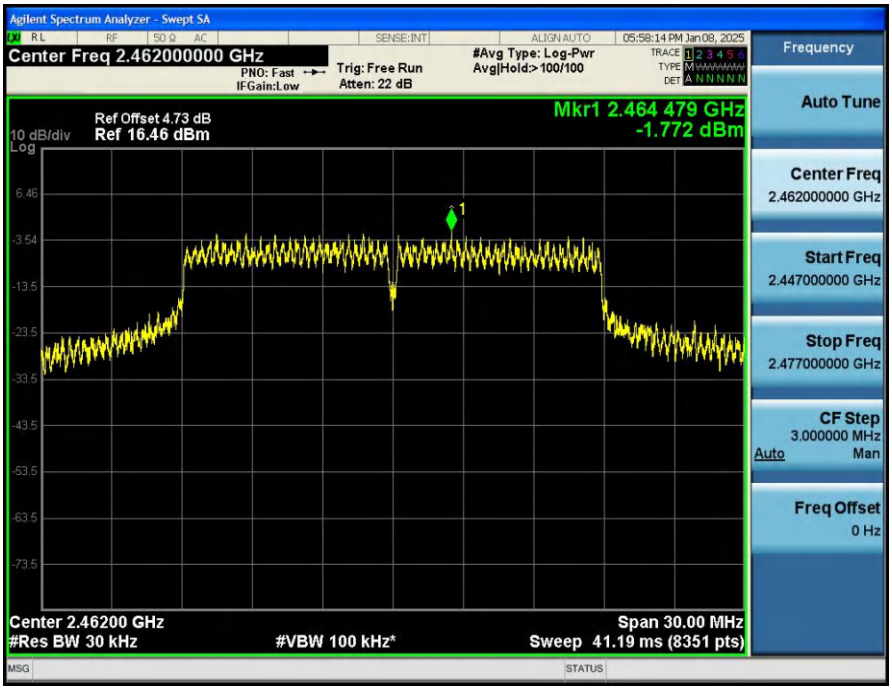
Power_Spectral_Density_NVNT_ANT1_802_11n(HT20)_2412



Power_Spectral_Density_NVNT_ANT1_802_11n(HT20)_2437



Power_Spectral_Density_NVNT_ANT1_802_11n(HT20)_2462



Appendix F: Bandedge

Condition	Antenna	Modulation	TX_Frequency (MHz)	Max. Mark_freq (MHz)	Ref_level (dBm)	Spurious level(dBm)	limit(dBm)	Result
NVNT	ANT1	802.11b	2412.00	2397.024	5.065	-45.097	-24.935	Pass
NVNT	ANT1	802.11b	2462.00	2486.512	3.785	-53.873	-26.215	Pass
NVNT	ANT1	802.11g	2412.00	2398.816	1.653	-32.071	-28.347	Pass
NVNT	ANT1	802.11g	2462.00	2483.536	2.313	-30.551	-27.687	Pass
NVNT	ANT1	802.11n(HT20)	2412.00	2398.592	2.351	-34.495	-27.649	Pass
NVNT	ANT1	802.11n(HT20)	2462.00	2483.536	1.735	-29.789	-28.265	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

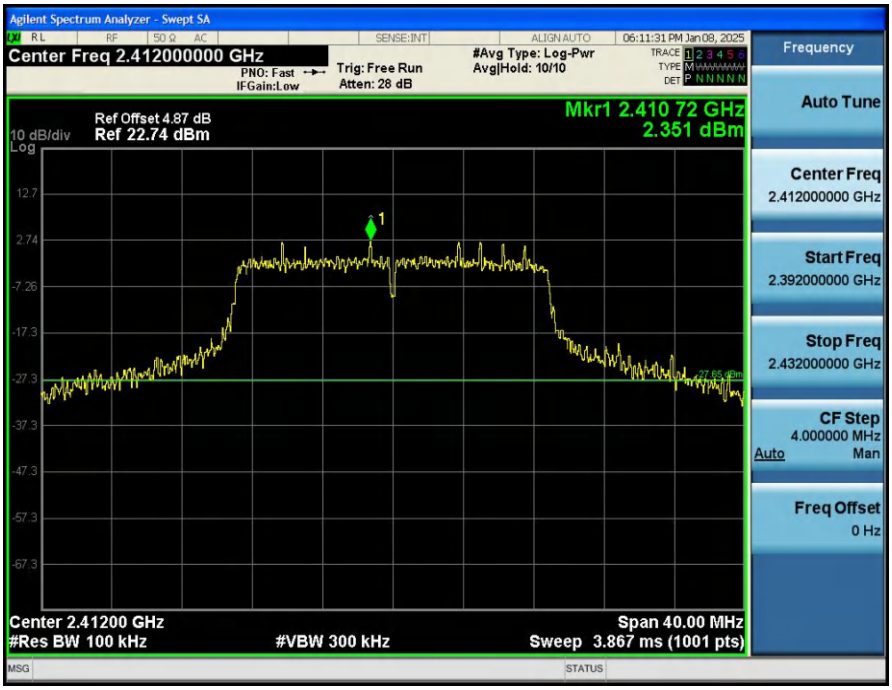
1_Reference_Level_NVNT_ANT1_802_11g_2412

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

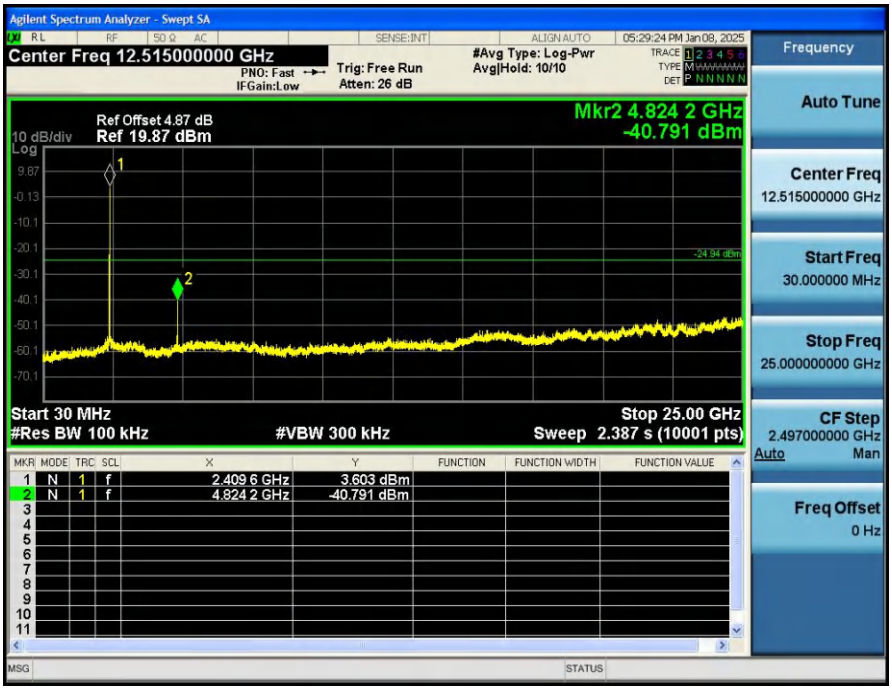

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.476000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 24 dB
#Avg Type: Log-Pwr
Avg|Hold: 10/10
06:01:12 PM Jan 08, 2025
Ref Offset 4.73 dB
10 dB/div
Ref 17.73 dBm
Log
Mkr3 2.483 536 GHz
-29.789 dBm
Start 2.45200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.50000 GHz
Sweep 4.600 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.463 232 GHz 1.868 dBm
2 N 1 f 2.483 500 GHz -32.271 dBm
3 N 1 f 2.483 536 GHz -29.789 dBm
Frequency
Auto Tune
Center Freq
2.476000000 GHz
Start Freq
2.452000000 GHz
Stop Freq
2.500000000 GHz
CF Step
4.800000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

Appendix G: Spurious Emission

Condition	Antenna	Modulation	TX_Frequency (MHz)	Max. Mark_freq (MHz)	Ref_level (dBm)	Spurious level(dBm)	limit(dBm)	Result
NVNT	ANT1	802.11b	2412.00	4824.240	5.065	-40.791	-24.935	Pass
NVNT	ANT1	802.11b	2437.00	2611.898	4.469	-39.289	-25.531	Pass
NVNT	ANT1	802.11b	2462.00	4924.120	3.785	-43.710	-26.215	Pass
NVNT	ANT1	802.11g	2412.00	24136.038	2.998	-44.862	-27.002	Pass
NVNT	ANT1	802.11g	2437.00	24885.138	2.442	-49.597	-27.558	Pass
NVNT	ANT1	802.11g	2462.00	24972.533	2.313	-45.097	-27.687	Pass
NVNT	ANT1	802.11n(HT20)	2412.00	4824.240	4.399	-46.858	-25.601	Pass
NVNT	ANT1	802.11n(HT20)	2437.00	2522.006	3.238	-46.446	-26.762	Pass
NVNT	ANT1	802.11n(HT20)	2462.00	24820.216	3.007	-44.253	-26.993	Pass

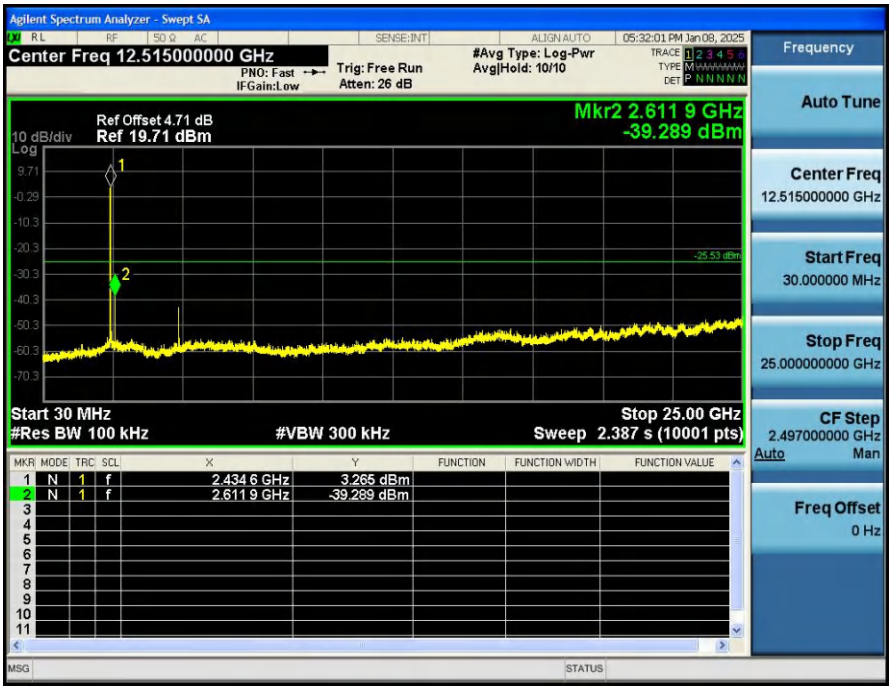
1_Reference_Level_NVNT_ANT1_802_11b_2412

2_Spurious_Emission_NVNT_ANT1_802_11b_2412



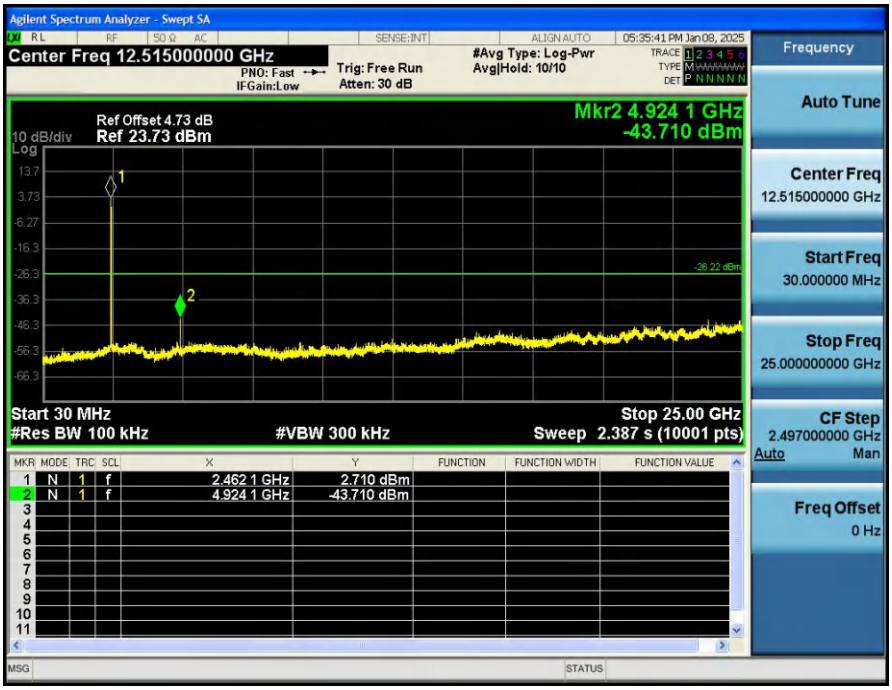
1_Reference_Level_NVNT_ANT1_802_11b_2437

2_Spurious_Emission_NVNT_ANT1_802_11b_2437

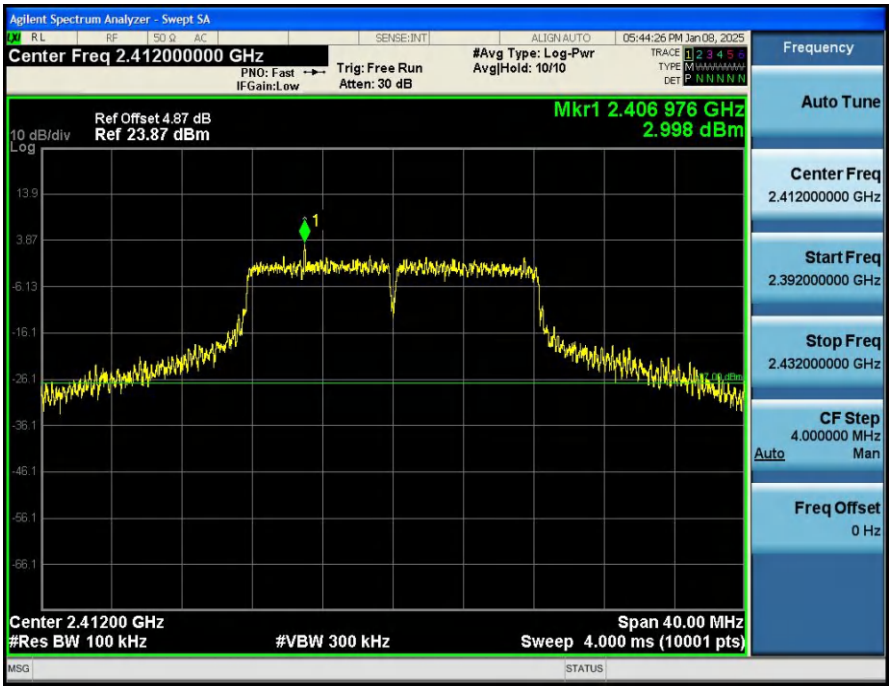


1_Reference_Level_NVNT_ANT1_802_11b_2462

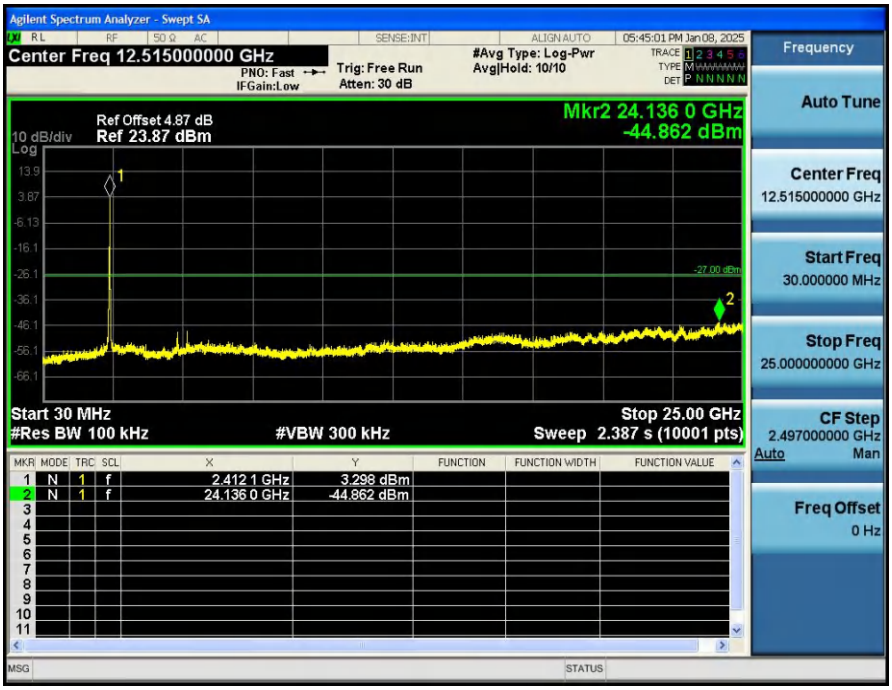
2_Spurious_Emission_NVNT_ANT1_802_11b_2462



1_Reference_Level_NVNT_ANT1_802_11g_2412

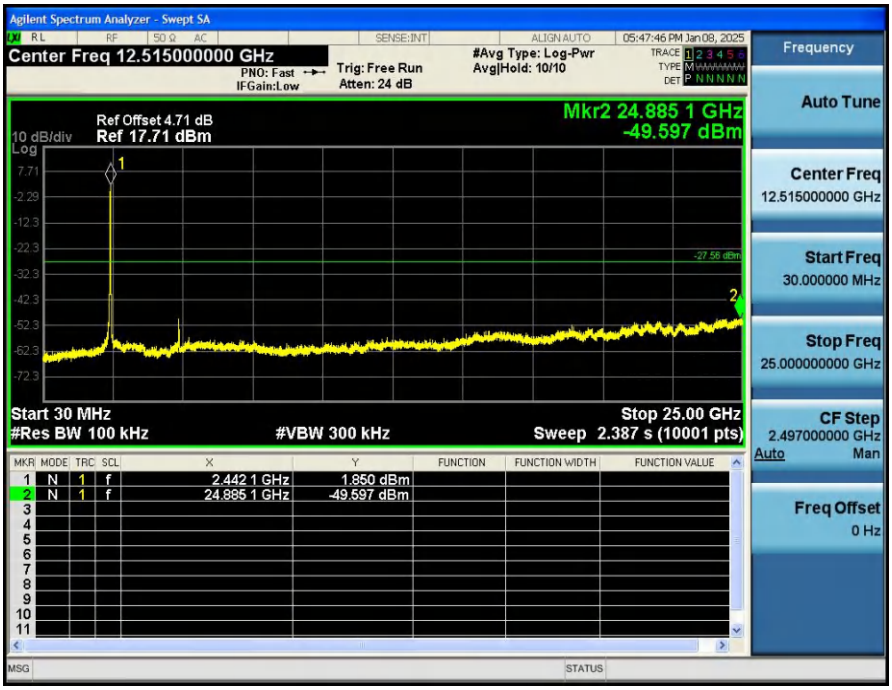


2_Spurious_Emission_NVNT_ANT1_802_11g_2412



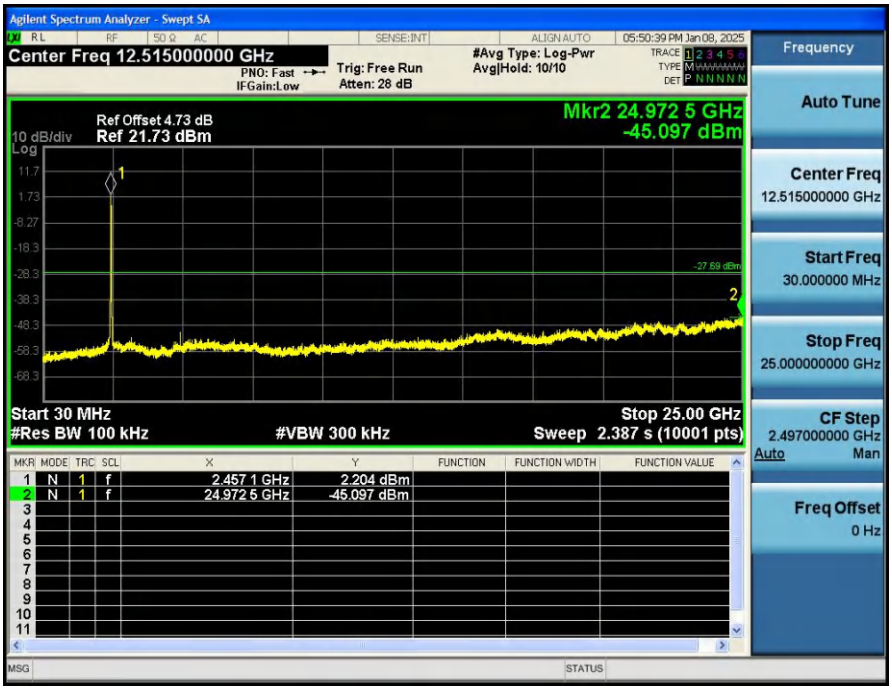
1_Reference_Level_NVNT_ANT1_802_11g_2437

2_Spurious_Emission_NVNT_ANT1_802_11g_2437



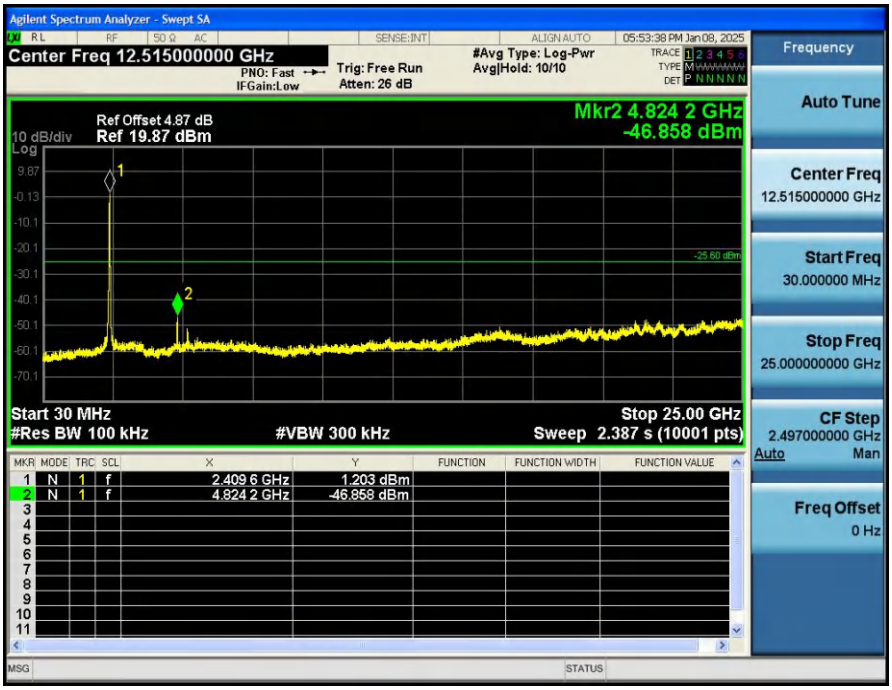
1_Reference_Level_NVNT_ANT1_802_11g_2462

2_Spurious_Emission_NVNT_ANT1_802_11g_2462



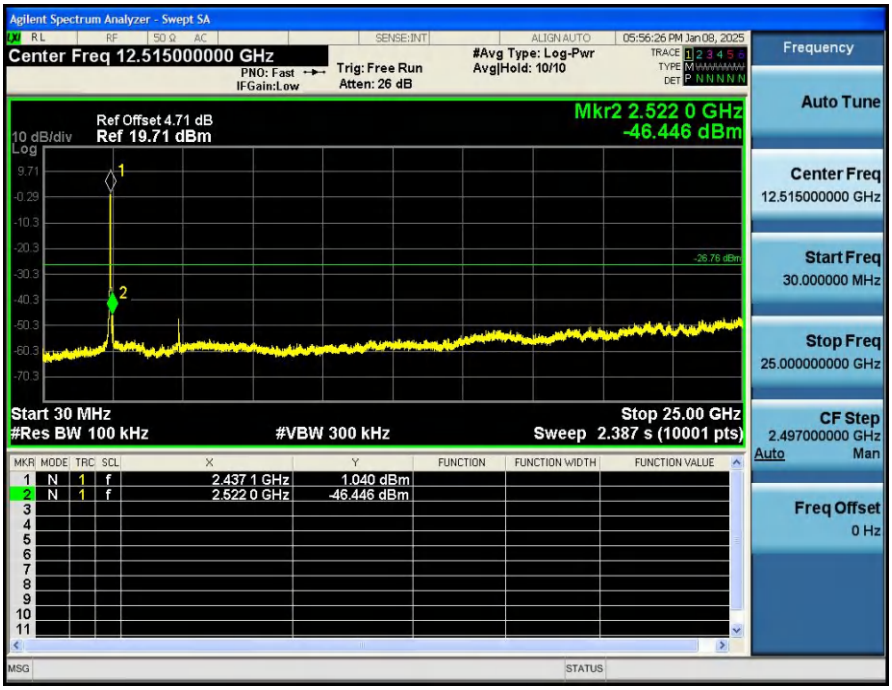
1_Reference_Level_NVNT_ANT1_802_11n(HT20)_2412

2_Spurious_Emission_NVNT_ANT1_802_11n(HT20)_2412



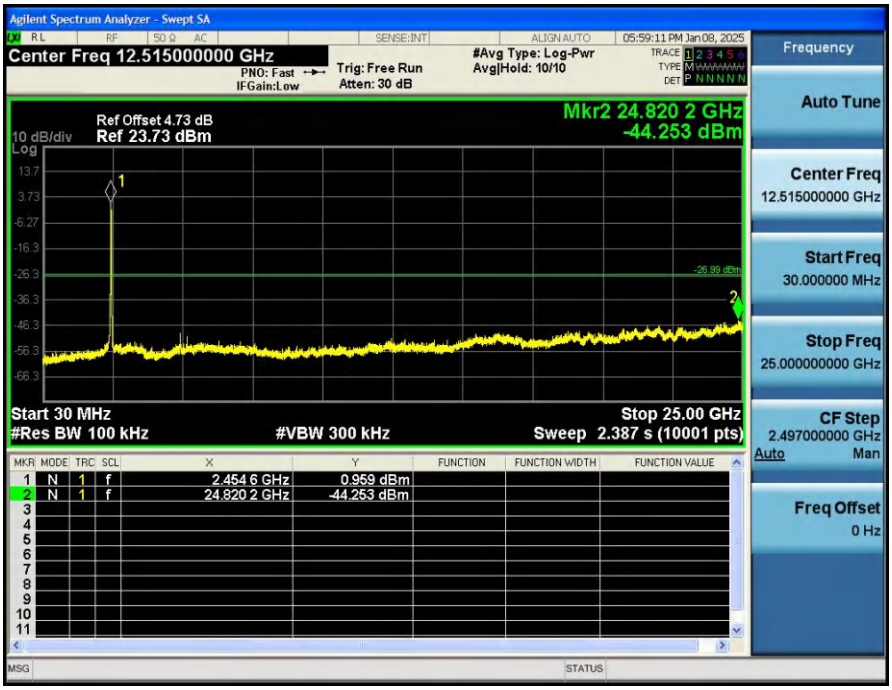
1_Reference_Level_NVNT_ANT1_802_11n(HT20)_2437

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


Agilent Spectrum Analyzer - Swept SA
Center Freq 12.515000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
#Avg Type: Log-Pwr
Avg|Hold: 10/10
05:59:11 PM Jan 08, 2025
Ref Offset 4.73 dB
10 dB/div
Log
Ref 23.73 dBm
Mkr2 24.820 2 GHz
-44.253 dBm
-26.99 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.387 s (10001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.454 6 GHz 0.959 dBm
2 N 1 f 24.820 2 GHz -44.253 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---