REPORT FOR TEST DATA
FCC ID:2BENR-DH-315

Product	:	DH Series of intelligent switches
Model Name	:	DH-315
Brand	:	N/A
Report No.	:	NCT24001021E-4

Prepared for

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FCC_BLE (Part15.247) Test Data

1. -6dB Bandwidth

Condition	Antenna	Rate	Frequency (MHz)	-6dB BW(kHz)	limit(kHz)	Result
NVNT	ANT1	1Mbps	2402	508.10	500	Pass
NVNT	ANT1	1Mbps	2440.00	509.50	500	Pass
NVNT	ANT1	1Mbps	2480	507.62	500	Pass

-6dB_Bandwidth_NVNT_ANT1_1Mbps_2402

-6dB_Bandwidth_NVNT_ANT1_1Mbps_2440

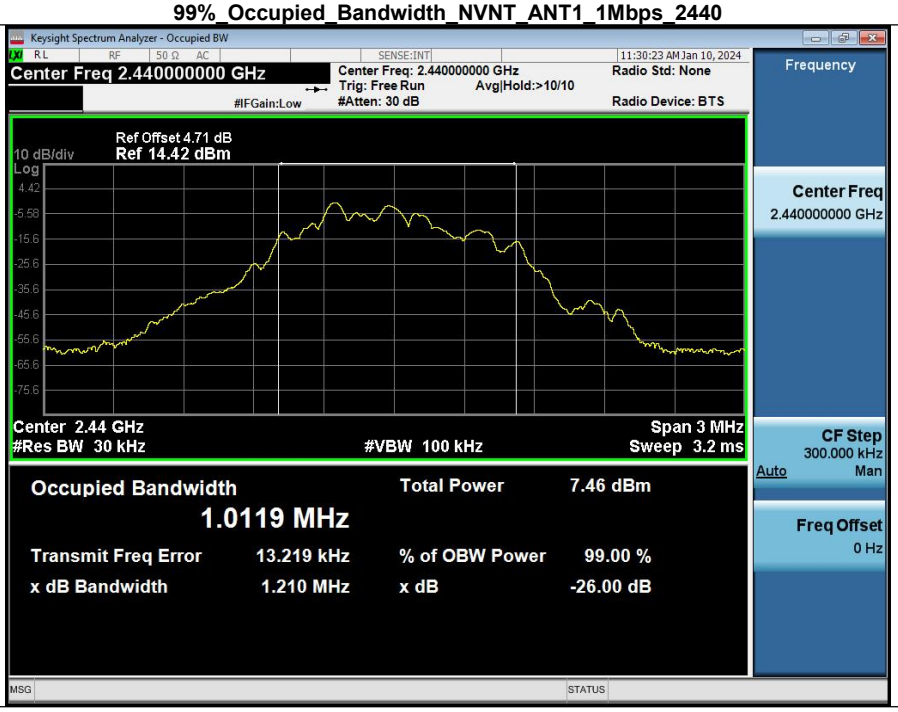
-6dB_Bandwidth_NVNT_ANT1_1Mbps_2480

2. 99% Occupied Bandwidth

Condition	Antenna	Rate	Frequency (MHz)	99%%BW(MHz)
NVNT	ANT1	1Mbps	2402	1.012
NVNT	ANT1	1Mbps	2440.00	1.012
NVNT	ANT1	1Mbps	2480	1.012

99%_Occupied_Bandwidth_NVNT_ANT1_1Mbps_2402

99%_Occupied_Bandwidth_NVNT_ANT1_1Mbps_2440



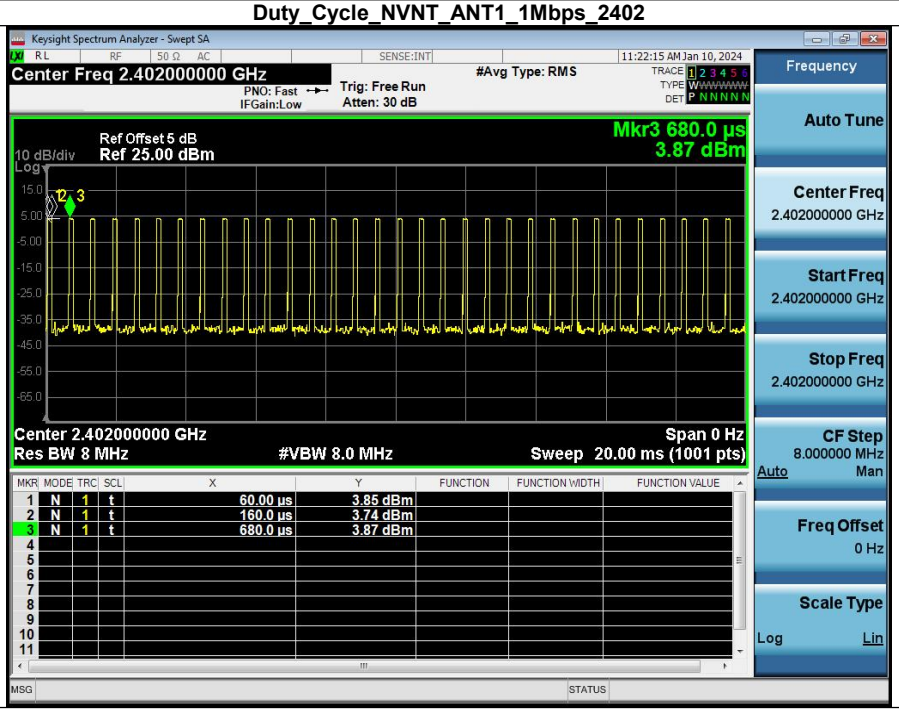
99%_Occupied_Bandwidth_NVNT_ANT1_1Mbps_2480


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω AC
SENSE:INT
11:34:06 AM Jan 10, 2024
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#IFGain:Low
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Frequency
Ref Offset 4.65 dB
10 dB/div
Ref 20.30 dBm
Log
10.3
0.300
-9.70
-19.7
-29.7
-39.7
-49.7
-59.7
-69.7
Center 2.48 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 3 MHz
Sweep 3.2 ms
Occupied Bandwidth
1.0125 MHz
Total Power
8.49 dBm
Transmit Freq Error
13.283 kHz
% of OBW Power
99.00 %
x dB Bandwidth
1.212 MHz
x dB
-26.00 dB
Center Freq
2.480000000 GHz
CF Step
300.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

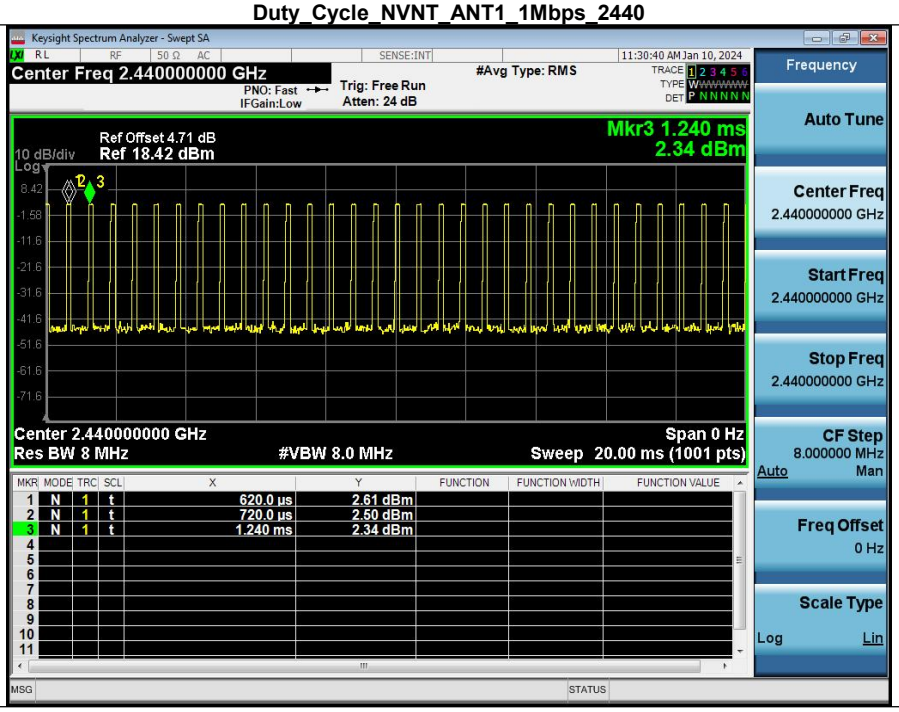
3. Duty Cycle

Condition	Antenna	Rate	Frequency (MHz)	Dutycycle(%)	Duty_factor
NVNT	ANT1	1Mbps	2402	16.13	7.92
NVNT	ANT1	1Mbps	2440.00	19.35	7.13
NVNT	ANT1	1Mbps	2480	16.13	7.92

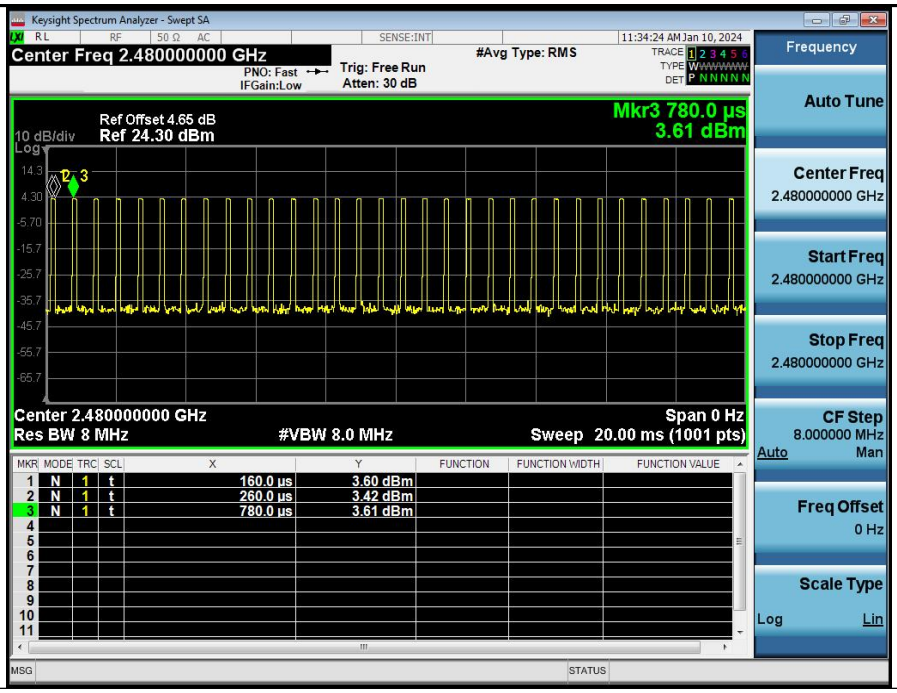
Duty_Cycle_NVNT_ANT1_1Mbps_2402



Duty_Cycle_NVNT_ANT1_1Mbps_2440



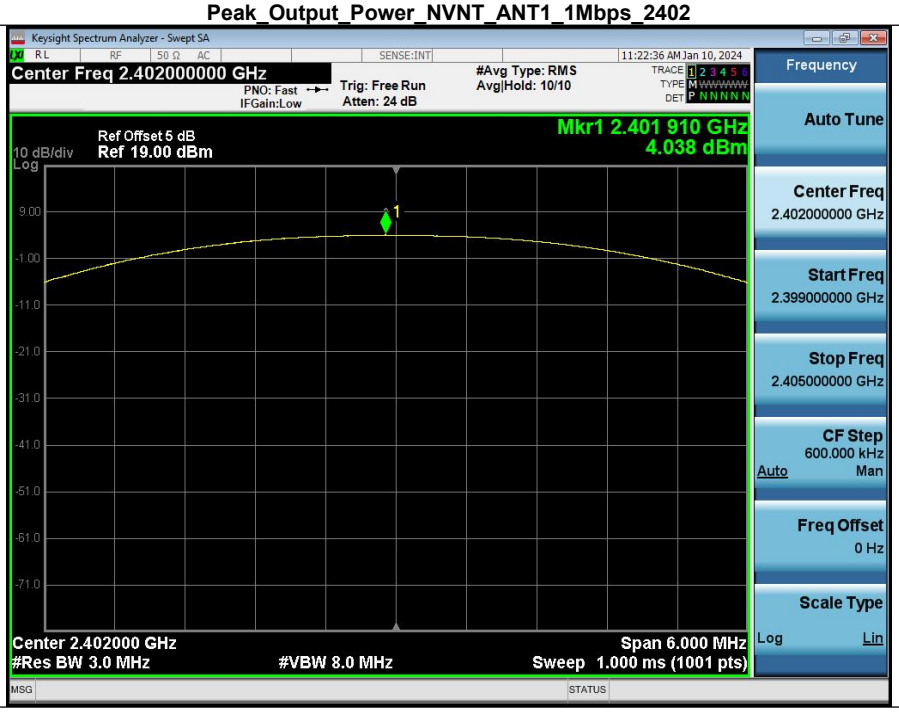
Duty_Cycle_NVNT_ANT1_1Mbps_2480


Keysight Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
#Avg Type: RMS
11:34:24 AM Jan 10, 2024
Ref Offset 4.65 dB
10 dB/div
Log
Ref 24.30 dBm
Mkr3 780.0 µs
3.61 dBm
Center 2.480000000 GHz
Res BW 8 MHz
#VBW 8.0 MHz
Span 0 Hz
Sweep 20.00 ms (1001 pts)
1 N 1 t 160.0 µs 3.60 dBm
2 N 1 t 260.0 µs 3.42 dBm
3 N 1 t 780.0 µs 3.61 dBm
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.480000000 GHz
Stop Freq
2.480000000 GHz
CF Step
8.000000 MHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin
MSG
STATUS

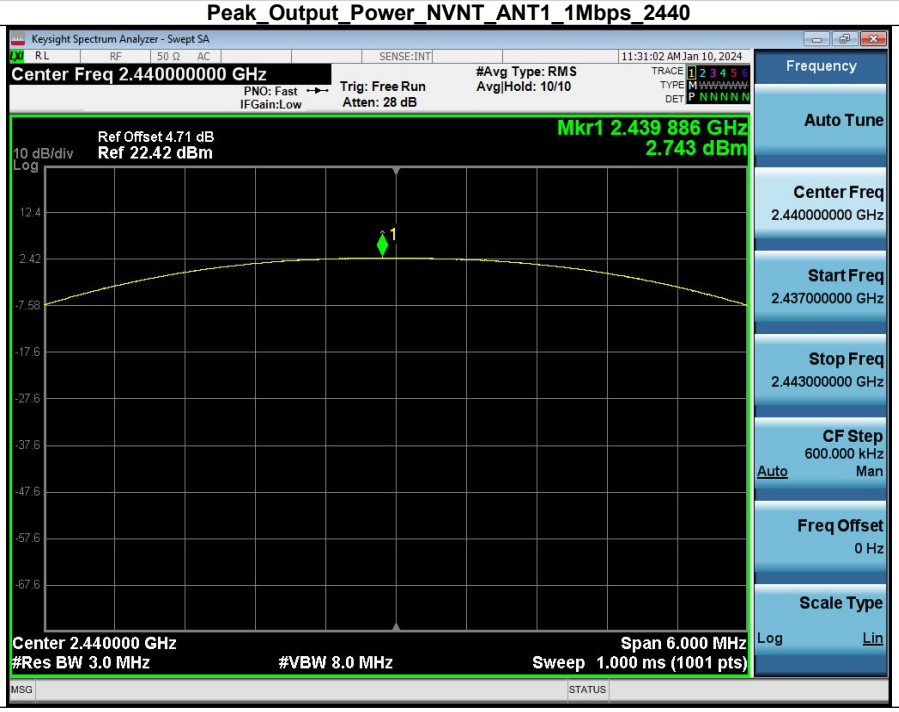
4. Peak Output Power

Condition	Antenna	Rate	Frequency (MHz)	Max. Conducted Power(dBm)	Max. Conducted Power(mW)	Limit(mW)	Result
NVNT	ANT1	1Mbps	2402	4.04	2.53	1000	Pass
NVNT	ANT1	1Mbps	2440.00	2.74	1.88	1000	Pass
NVNT	ANT1	1Mbps	2480	3.68	2.34	1000	Pass

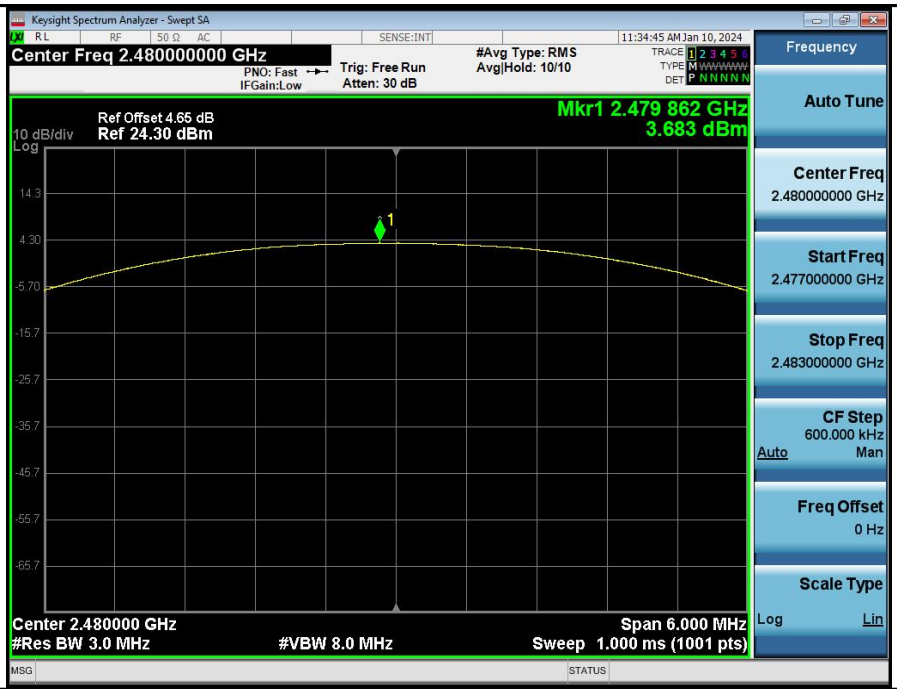
Peak_Output_Power_NVNT_ANT1_1Mbps_2402



Peak_Output_Power_NVNT_ANT1_1Mbps_2440



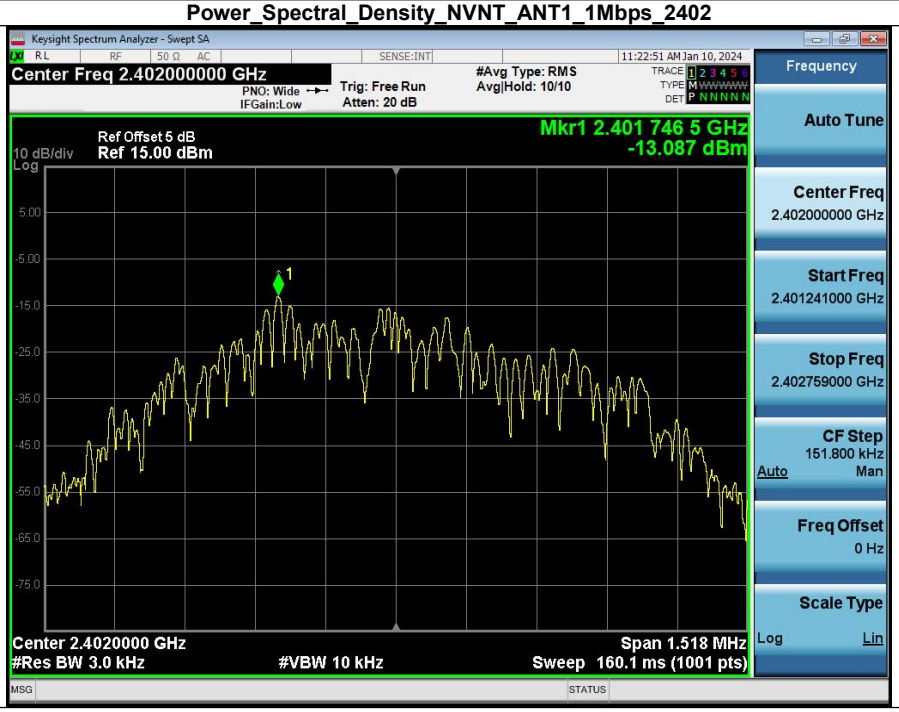
Peak_Output_Power_NVNT_ANT1_1Mbps_2480


Keysight Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 10/10
11:34:45 AM Jan 10, 2024
Ref Offset 4.65 dB
10 dB/div
Log
Ref 24.30 dBm
Mkr1 2.479 862 GHz
3.683 dBm
14.3
4.30
-5.70
-15.7
-25.7
-35.7
-45.7
-55.7
-65.7
Center 2.480000 GHz
#Res BW 3.0 MHz
#VBW 8.0 MHz
Span 6.000 MHz
Sweep 1.000 ms (1001 pts)
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.477000000 GHz
Stop Freq
2.483000000 GHz
CF Step
600.000 kHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin
MSG
STATUS

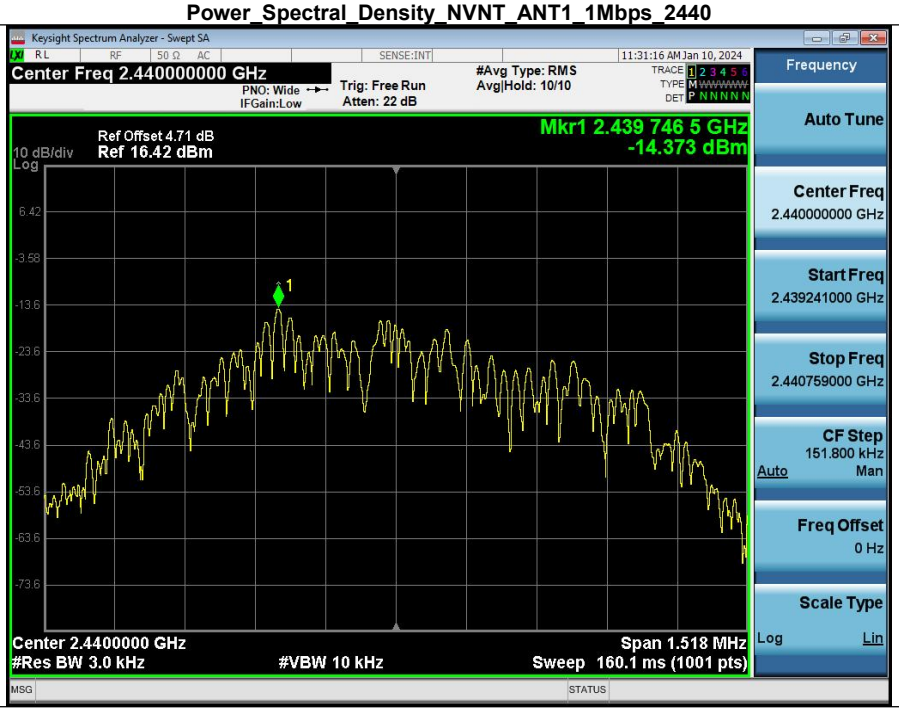
5. Power Spectral Density

Condition	Antenna	Rate	Frequency (MHz)	Power Spectral Density(dBm)	Limit(dBm/3kHz)	Result
NVNT	ANT1	1Mbps	2402	-13.09	8	Pass
NVNT	ANT1	1Mbps	2440.00	-14.37	8	Pass
NVNT	ANT1	1Mbps	2480	-13.33	8	Pass

Power_Spectral_Density_NVNT_ANT1_1Mbps_2402



Power_Spectral_Density_NVNT_ANT1_1Mbps_2440



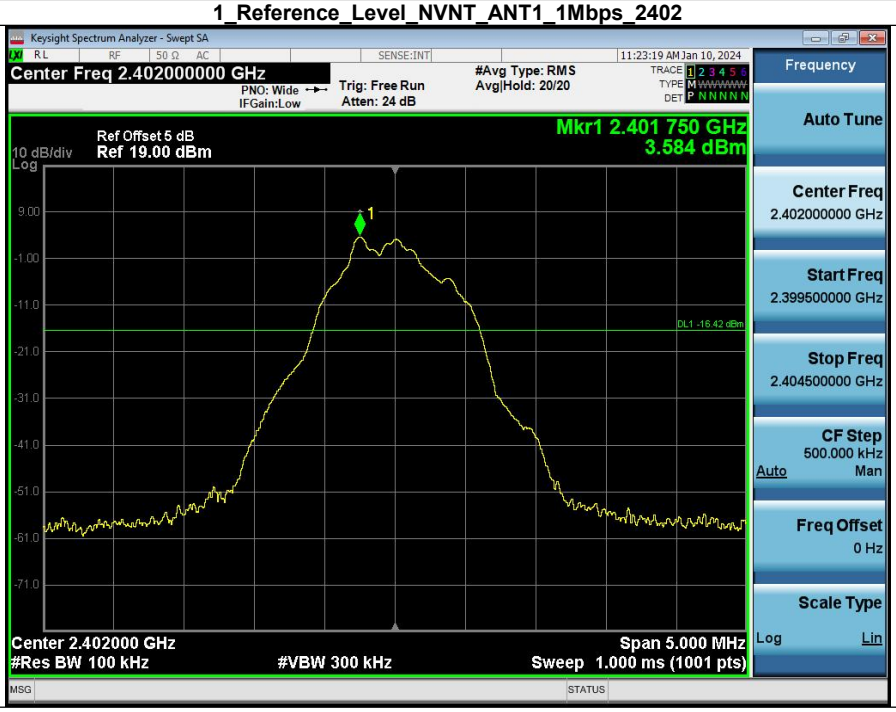
Power_Spectral_Density_NVNT_ANT1_1Mbps_2480


Keysight Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 26 dB
#Avg Type: RMS
Avg|Hold: 10/10
11:35:00 AM Jan 10, 2024
Ref Offset 4.65 dB
10 dB/div
Log
Ref 20.30 dBm
Mkr1 2.479 746 5 GHz
-13.330 dBm
10.3
0.300
-9.70
-19.7
-29.7
-39.7
-49.7
-59.7
-69.7
Center 2.4800000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 1.518 MHz
Sweep 160.1 ms (1001 pts)
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.479241000 GHz
Stop Freq
2.480759000 GHz
CF Step
151.800 kHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin
MSG
STATUS

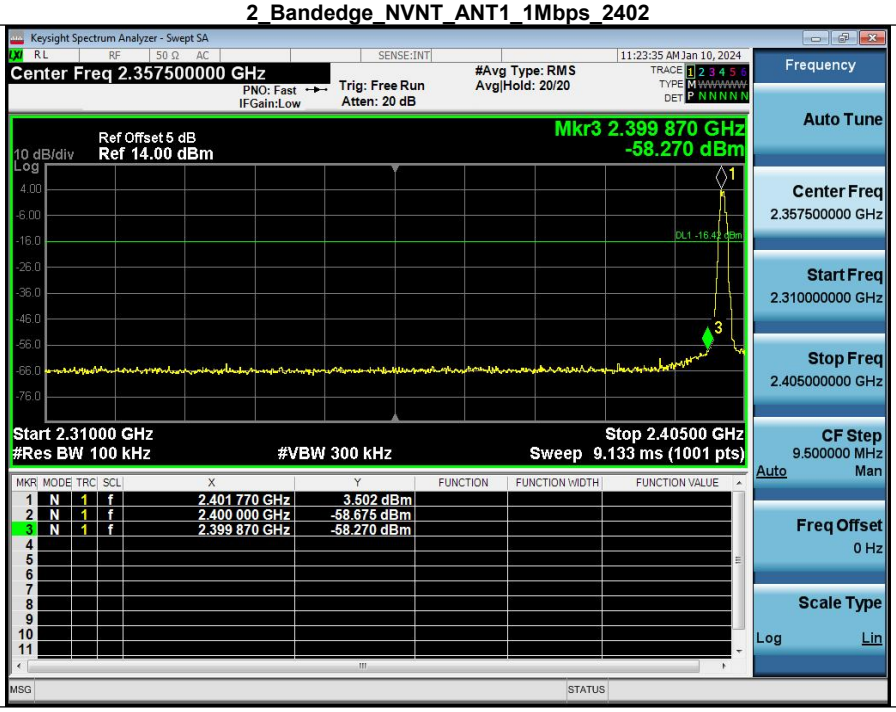
6. Bandedge

Condition	Antenna	Rate	TX_Frequency (MHz)	Max. Mark Frequency (MHz)	Spurious level(dBm)	limit(dBm)	Result
NVNT	ANT1	1Mbps	2402	2399.870	-58.270	-16.416	Pass
NVNT	ANT1	1Mbps	2480	2483.750	-59.502	-16.704	Pass

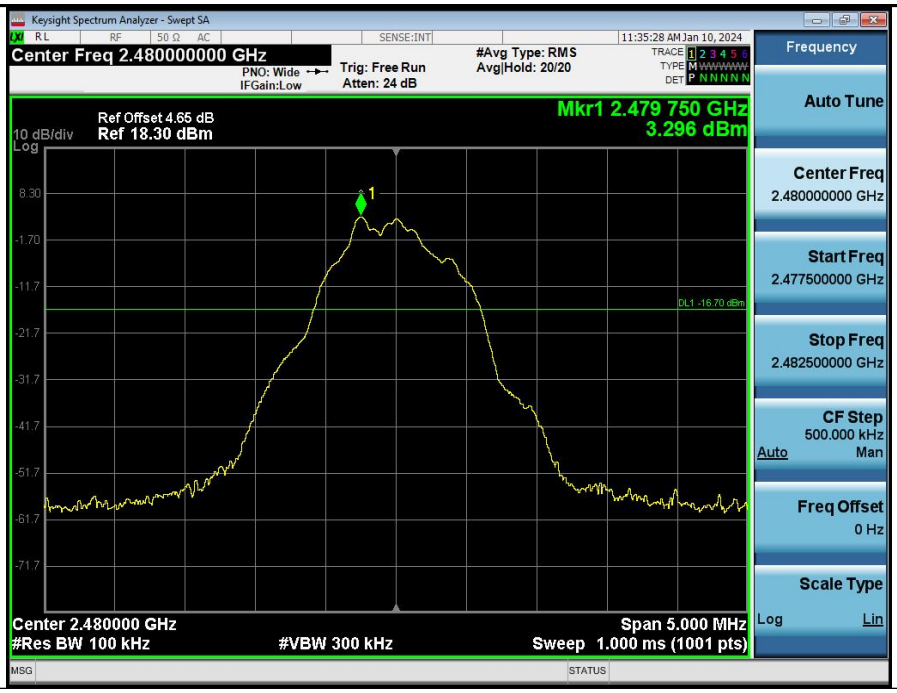
1_Reference_Level_NVNT_ANT1_1Mbps_2402



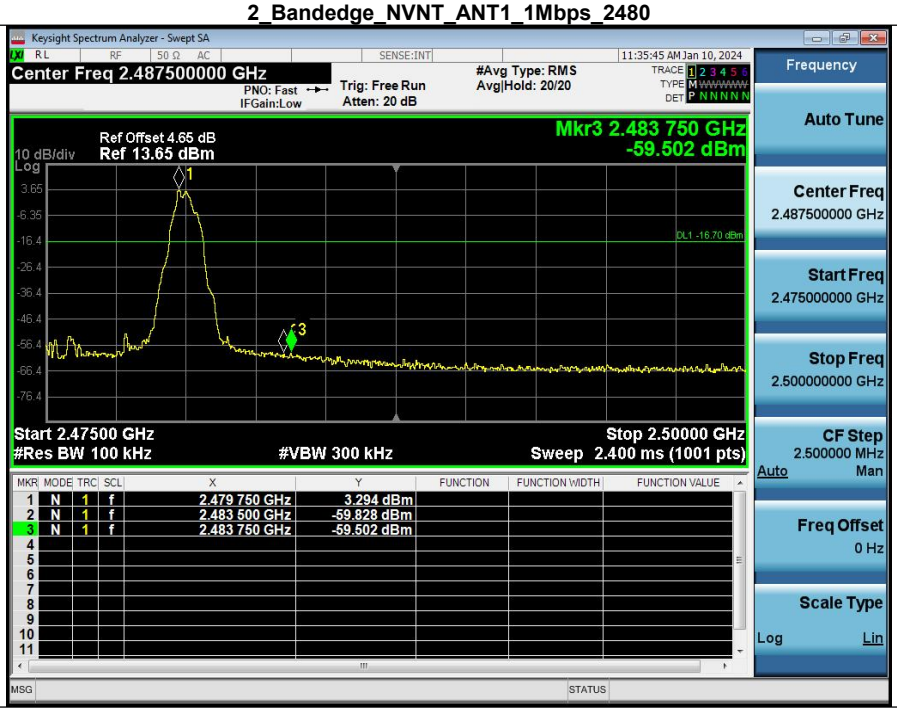
2_Bandedge_NVNT_ANT1_1Mbps_2402



1_Reference_Level_NVNT_ANT1_1Mbps_2480



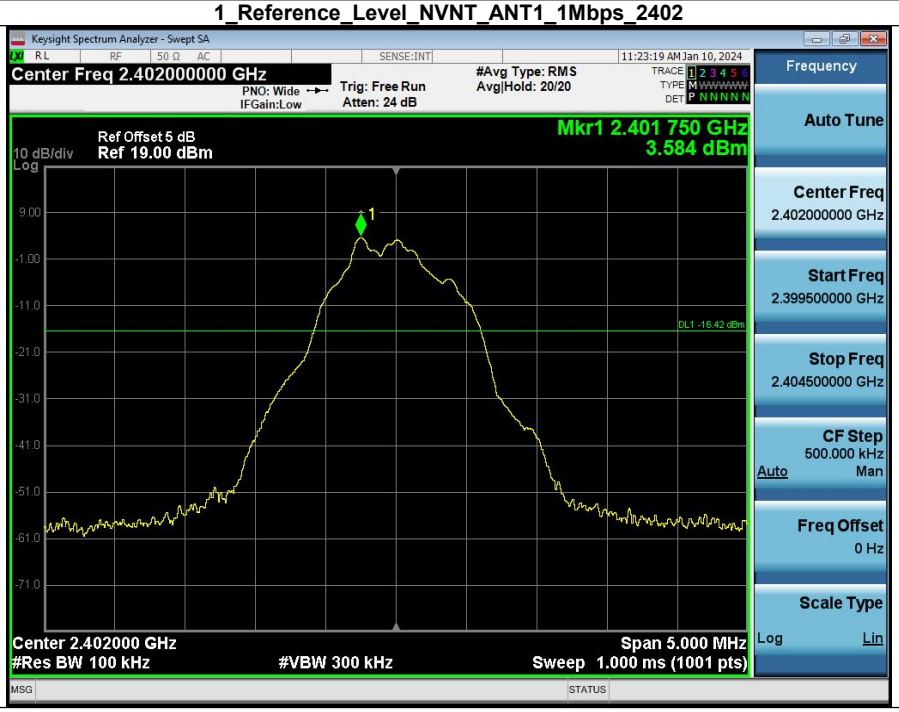
2_Bandedge_NVNT_ANT1_1Mbps_2480



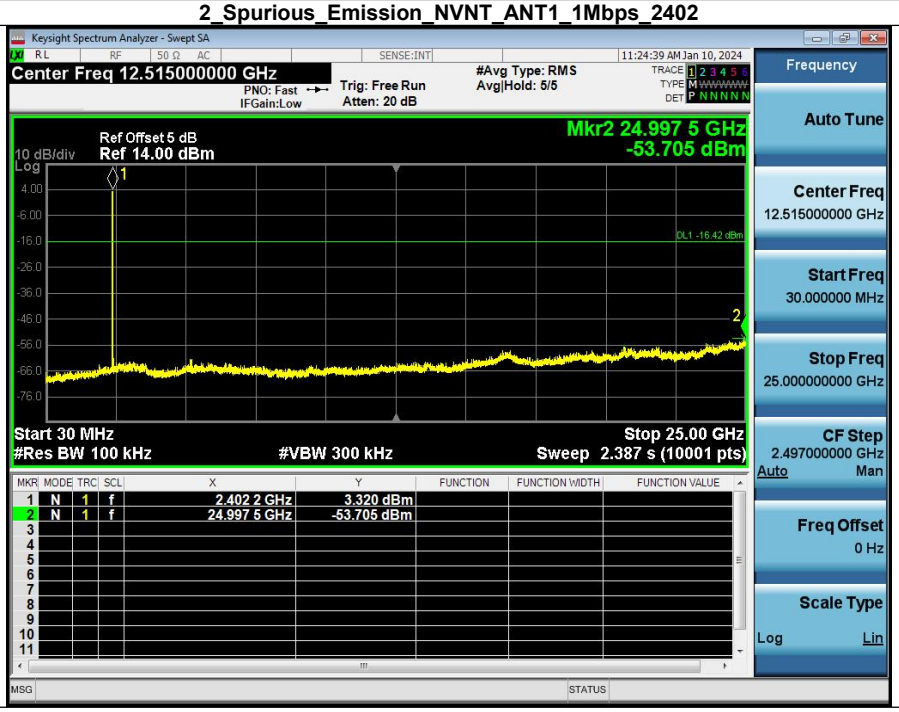
7. Spurious Emission

Condition	Antenna	Rate	TX_Frequency(MHz)	Spurious MAX.Value(dBm)	Limit	Result
NVNT	ANT1	1Mbps	2402	-53.705	-16.416	Pass
NVNT	ANT1	1Mbps	2440.00	-49.620	-17.726	Pass
NVNT	ANT1	1Mbps	2480	-53.351	-16.704	Pass

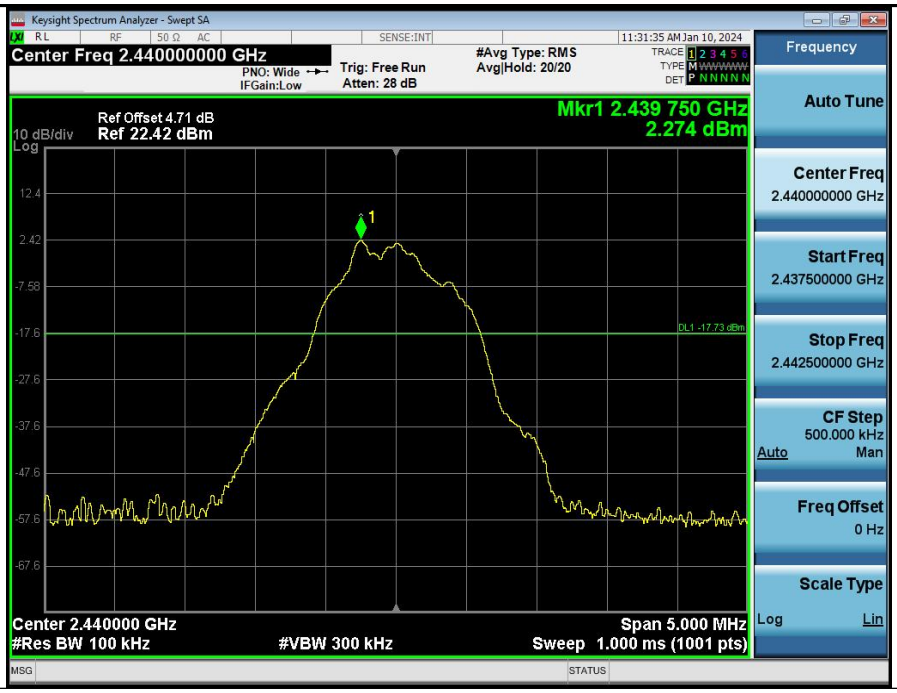
1_Reference_Level_NVNT_ANT1_1Mbps_2402



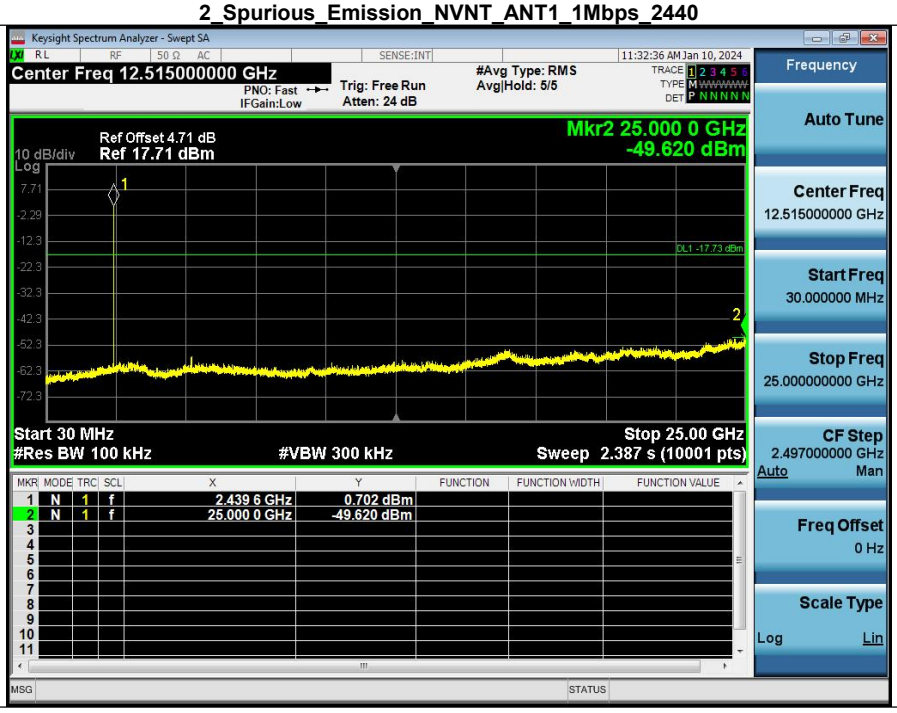
2_Spurious_Emission_NVNT_ANT1_1Mbps_2402



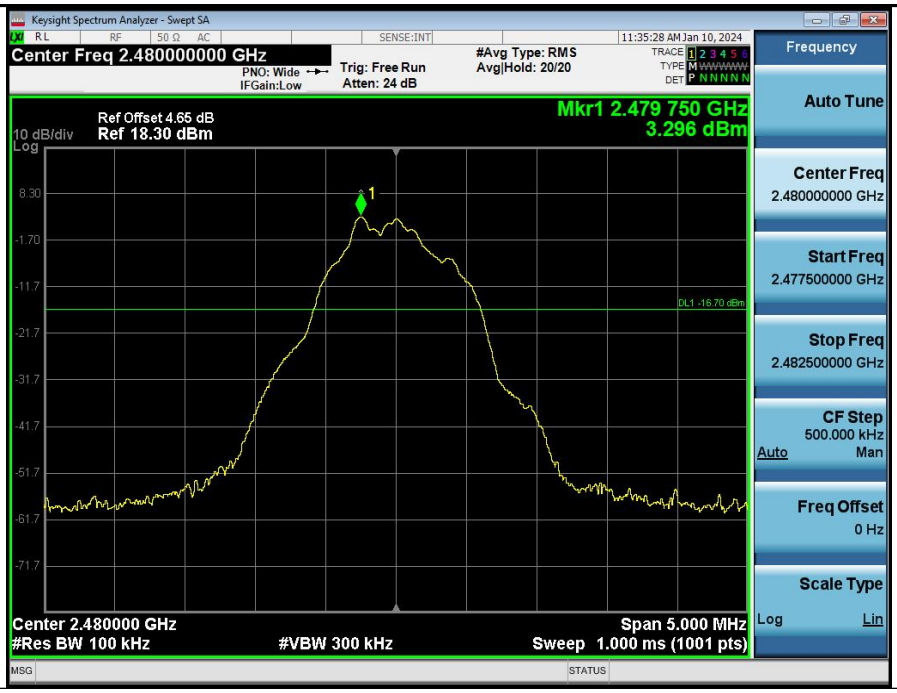
1_Reference_Level_NVNT_ANT1_1Mbps_2440



2_Spurious_Emission_NVNT_ANT1_1Mbps_2440



1_Reference_Level_NVNT_ANT1_1Mbps_2480



2_Spurious_Emission_NVNT_ANT1_1Mbps_2480