Appendix B

RF Test Data for 2.4G (Conducted Measurement)

Product Name: Tilta Gravity Motorized Lighting Control System (35KG) - Titanium Gray

Test Model: TLA-MCS-L35-TG

Environmental Conditions

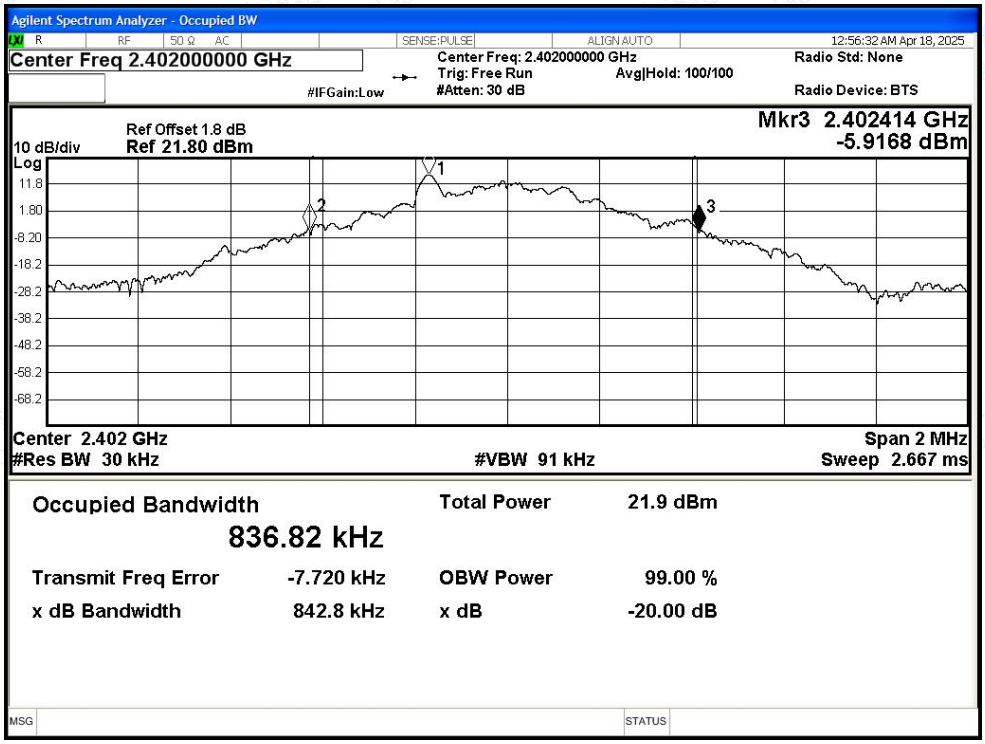
Temperature:	23.8°C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Andre Tan
Supervised by:	Nick Peng

B.1 -20dB Bandwidth

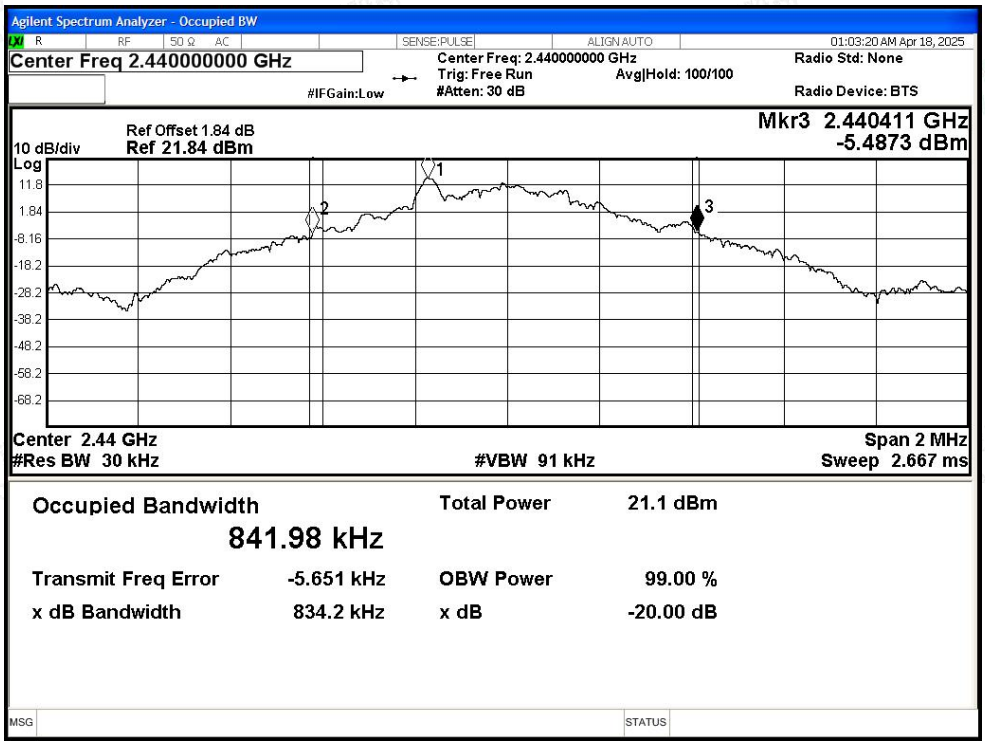
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	2.4G	2402	Ant1	0.843	N/A	Pass
NVNT	2.4G	2440	Ant1	0.834	N/A	Pass
NVNT	2.4G	2480	Ant1	0.836	N/A	Pass

Test Graphs

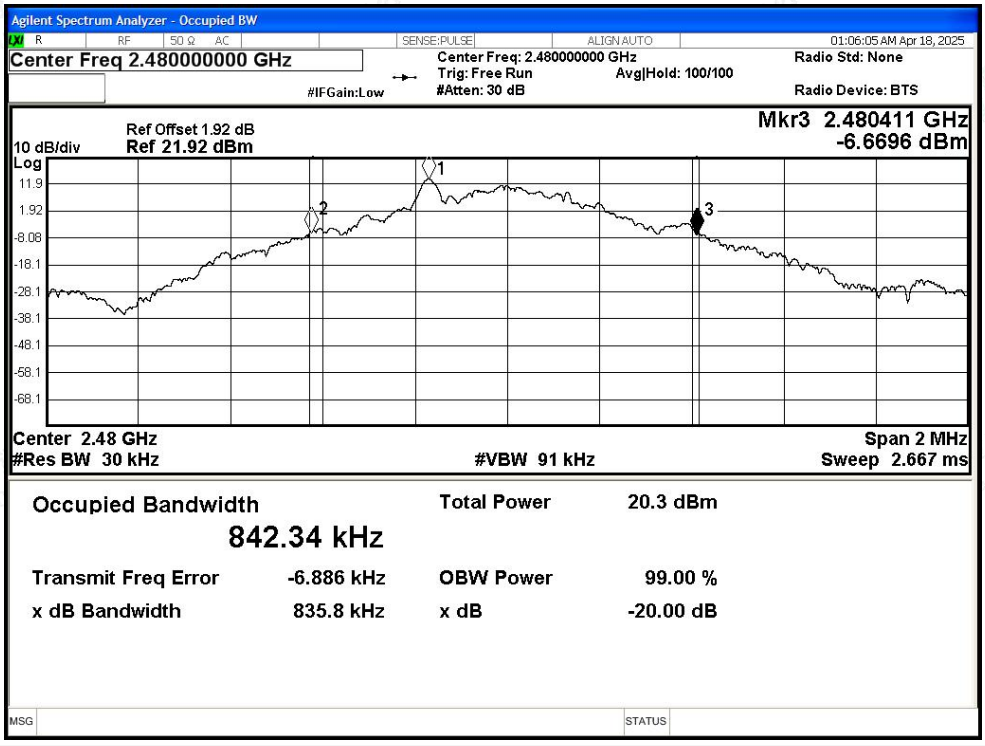
-20dB Bandwidth NVNT 2.4G 2402MHz Ant1



-20dB Bandwidth NVNT 2.4G 2440MHz Ant1



-20dB Bandwidth NVNT 2.4G 2480MHz Ant1

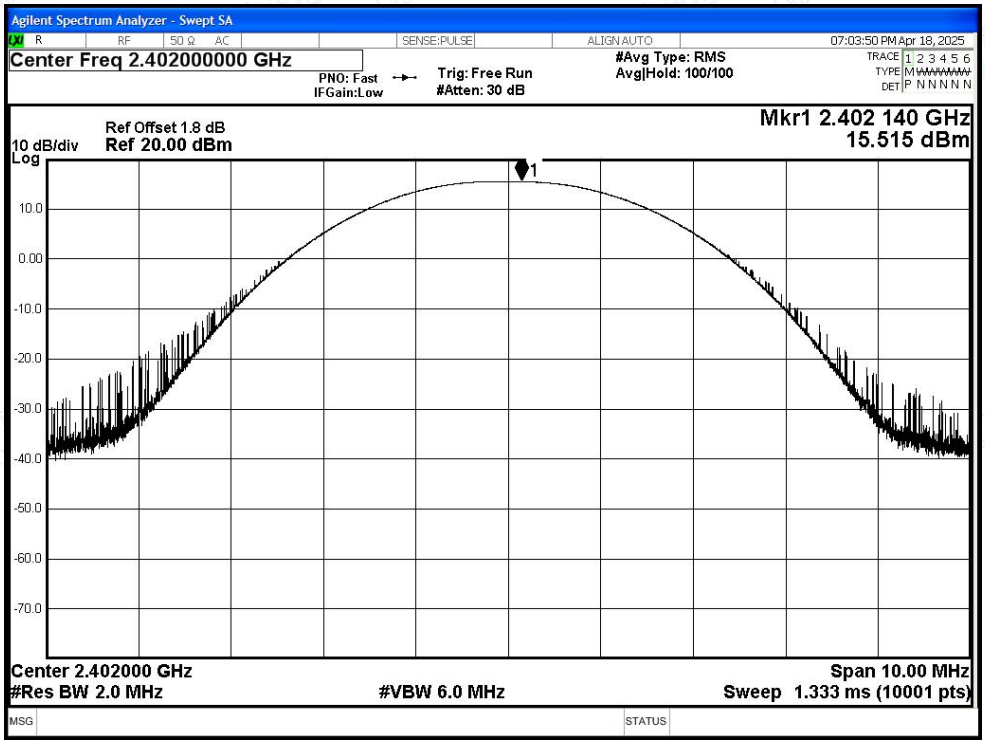


B.2 Maximum Peak Conducted Output Power

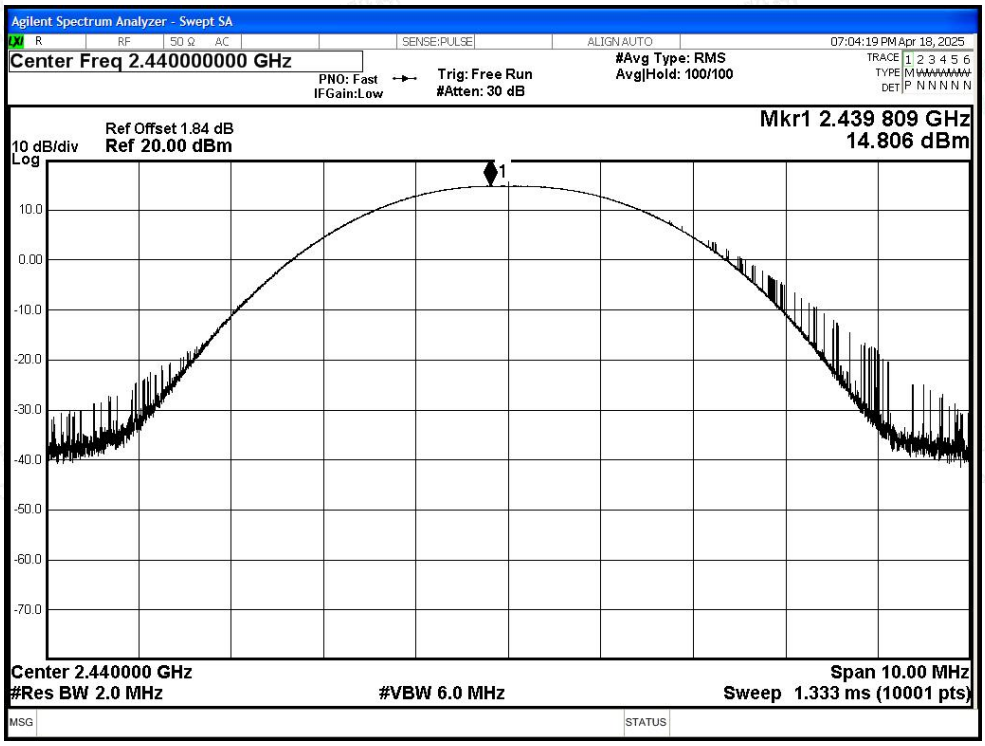
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	2.4G	2402	Ant1	15.52	21	Pass
NVNT	2.4G	2440	Ant1	14.81	21	Pass
NVNT	2.4G	2480	Ant1	14.03	21	Pass

Test Graphs

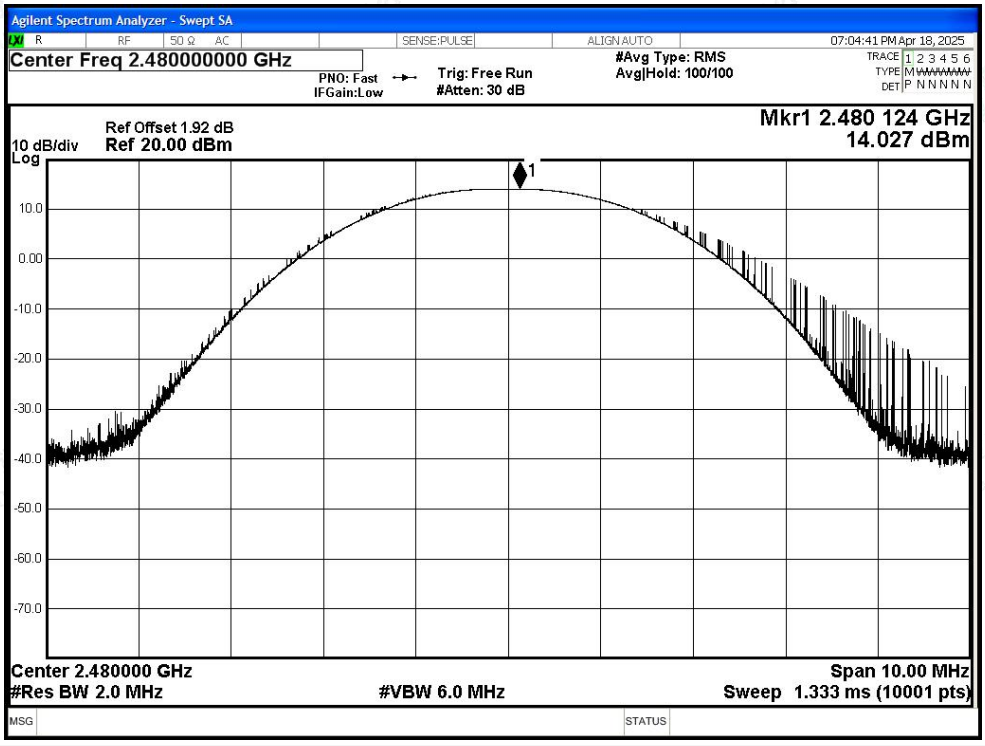
Power NVNT 2.4G 2402MHz Ant1



Power NVNT 2.4G 2440MHz Ant1



Power NVNT 2.4G 2480MHz Ant1

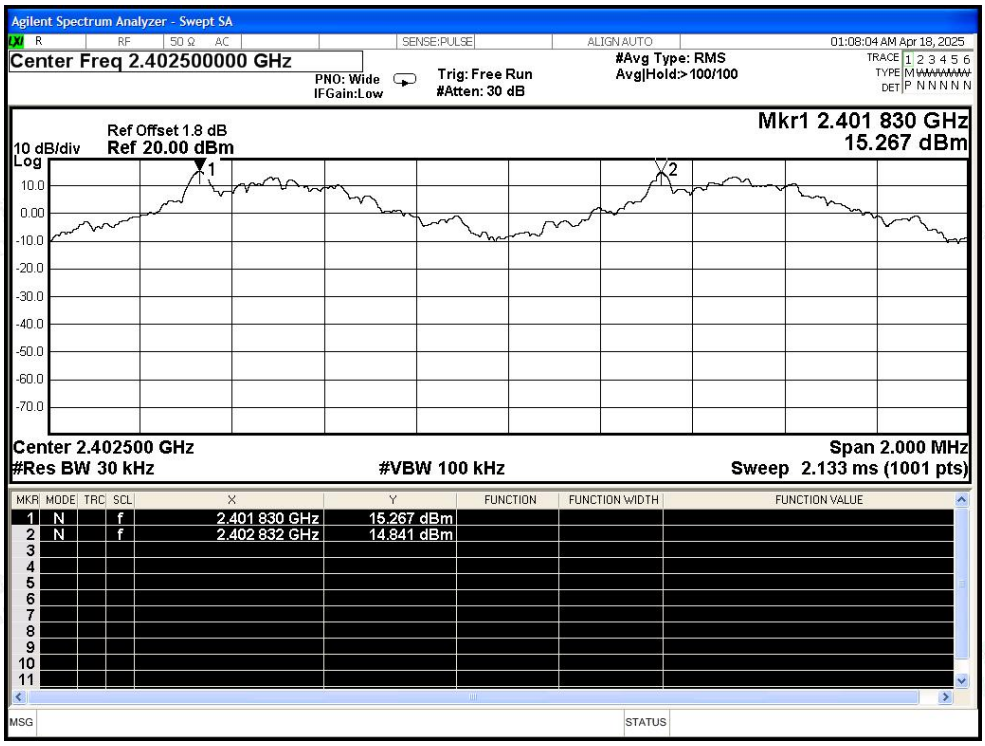


B.3 Carrier Frequencies Separation

Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	2.4G	Ant1	2401.83	2402.832	1.002	0.562	Pass

Test Graphs

CFS NVNT 2.4G 2402MHz Ant1

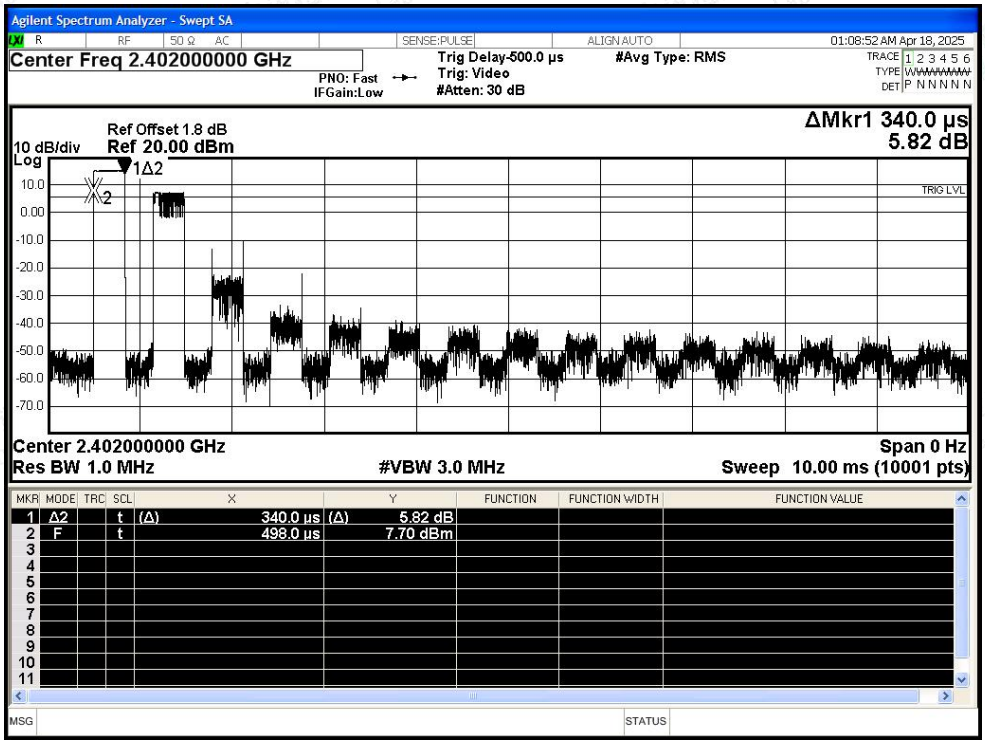


B.4 Dwell Time

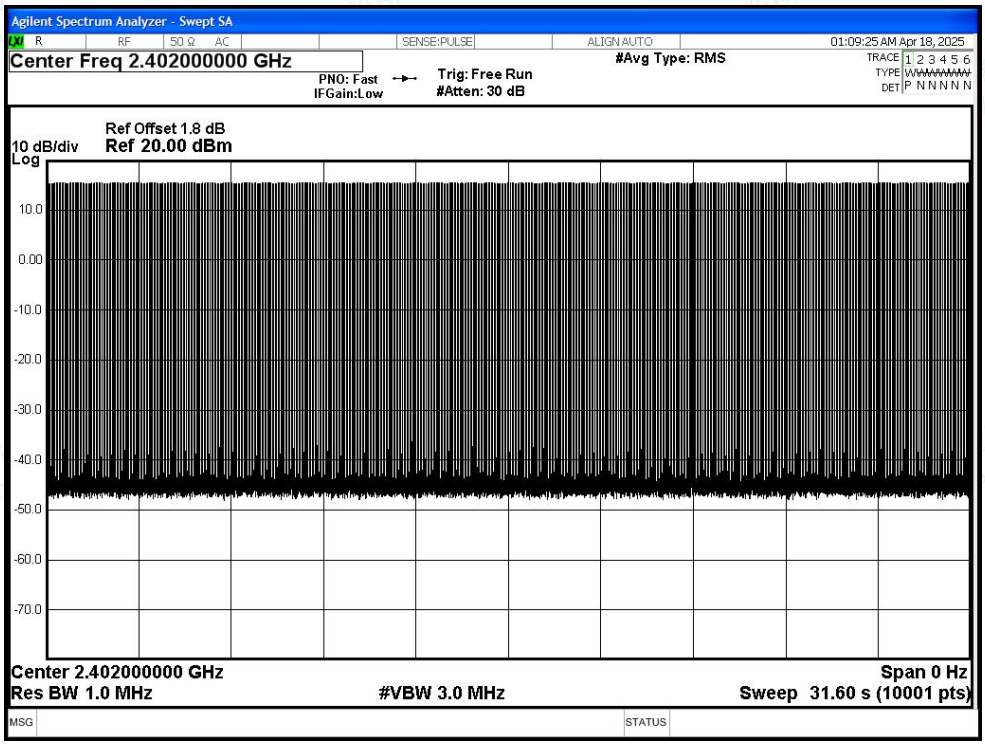
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	2.4G	2402	Ant1	0.34	170.34	501	31600	400	Pass

Test Graphs

Dwell NVNT 2.4G 2402MHz Ant1 One Burst



Dwell NVNT 2.4G 2402MHz Ant1 Accumulated

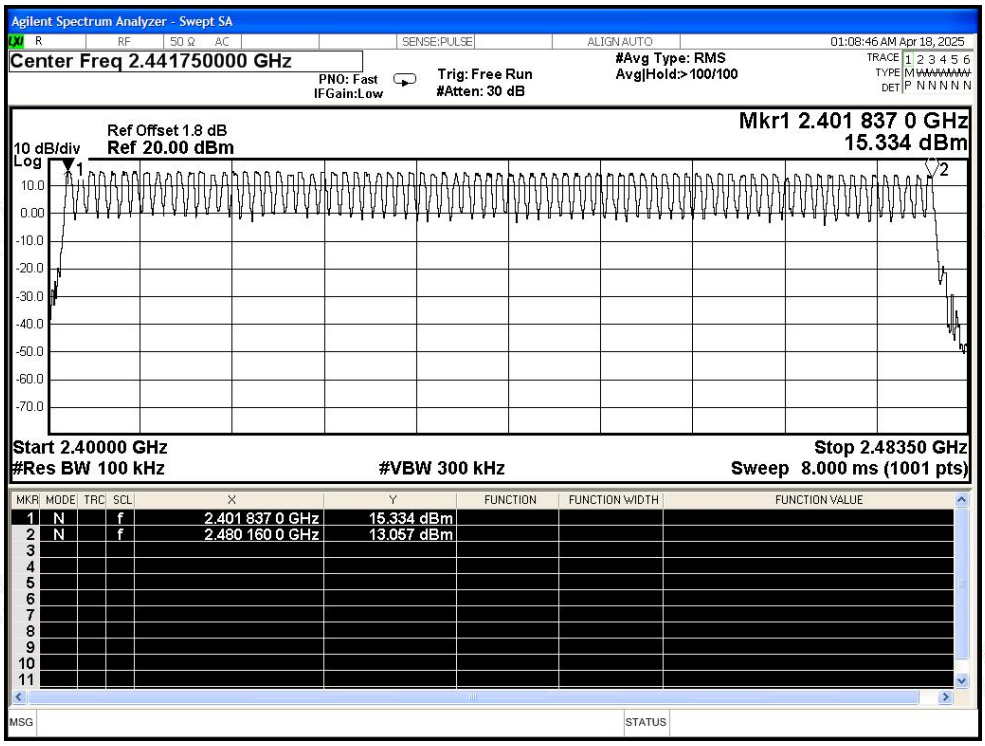


B.5 Number of Hopping Channel

Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	2.4G	Ant1	79	15	Pass

Test Graphs

Hopping No. NVNT 2.4G 2402MHz Ant1

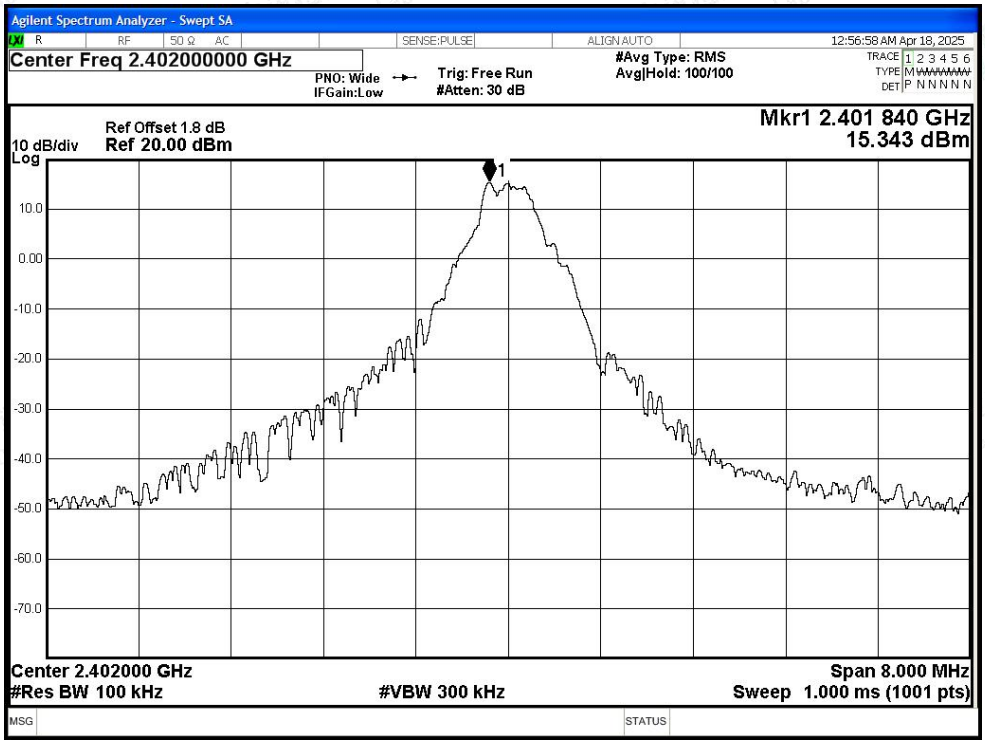


B.6 Band Edge

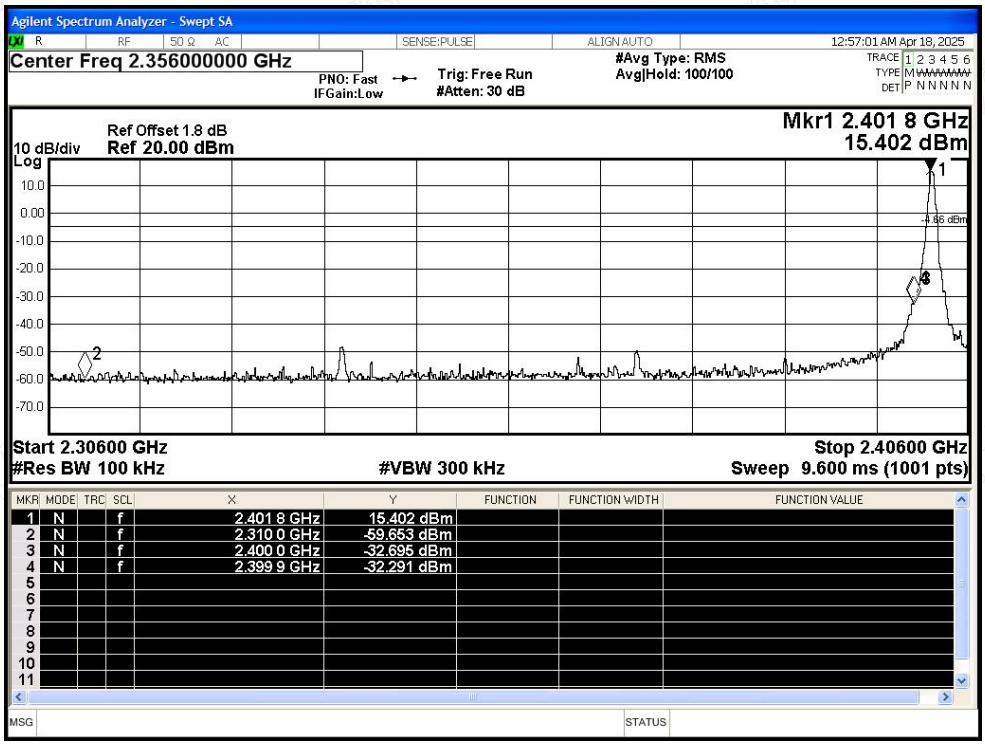
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	2.4G	2402	Ant1	No-Hopping	-47.63	-20	Pass
NVNT	2.4G	2480	Ant1	No-Hopping	-62.11	-20	Pass

Test Graphs

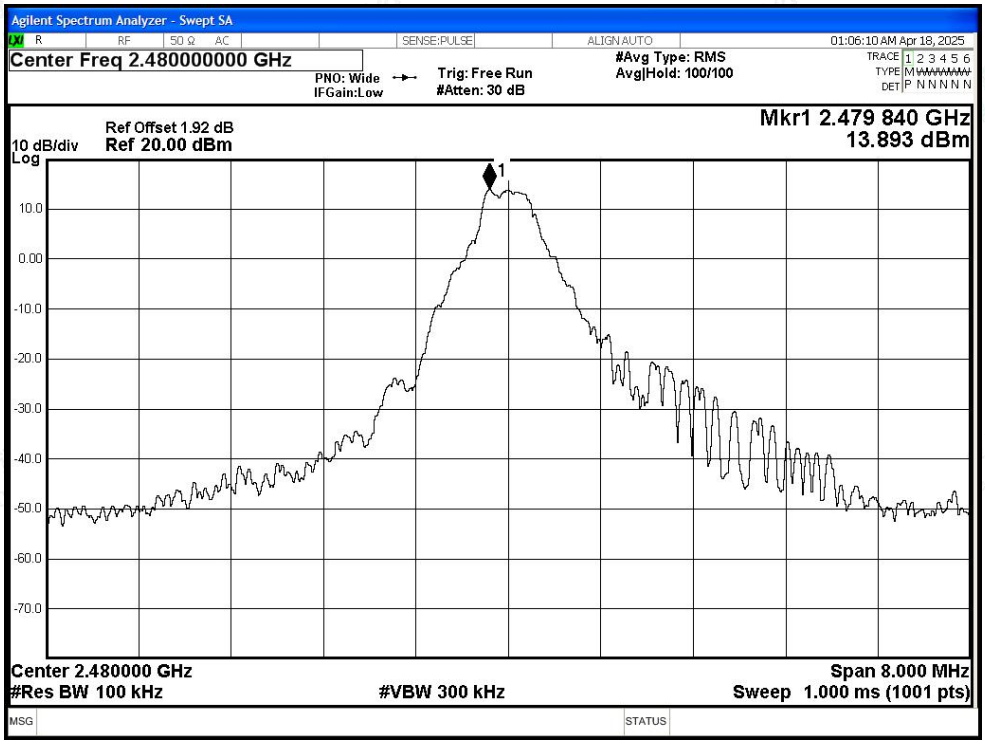
Band Edge NVNT 2.4G 2402MHz Ant1 No-Hopping Ref



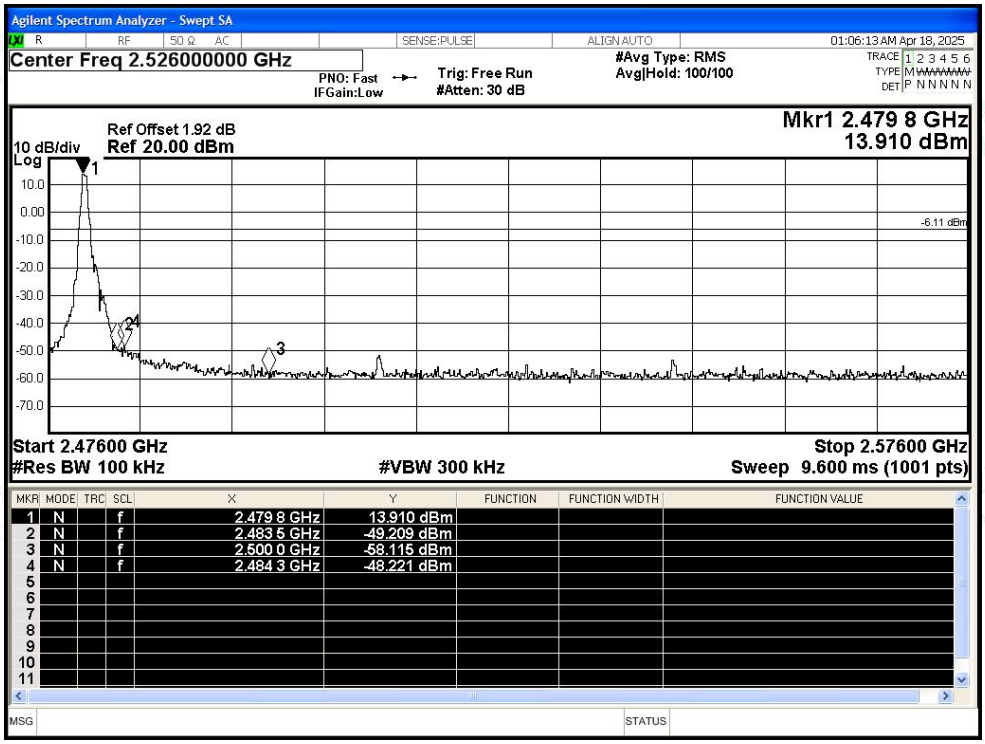
Band Edge NVNT 2.4G 2402MHz Ant1 No-Hopping Emission



Band Edge NVNT 2.4G 2480MHz Ant1 No-Hopping Ref



Band Edge NVNT 2.4G 2480MHz Ant1 No-Hopping Emission

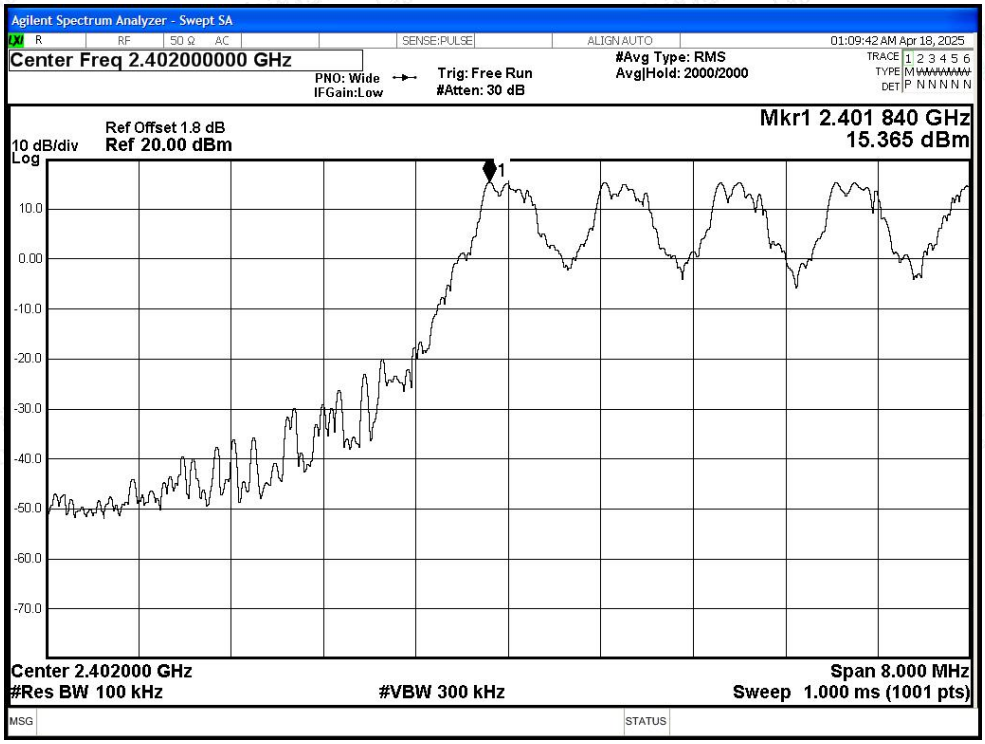


(Hopping)

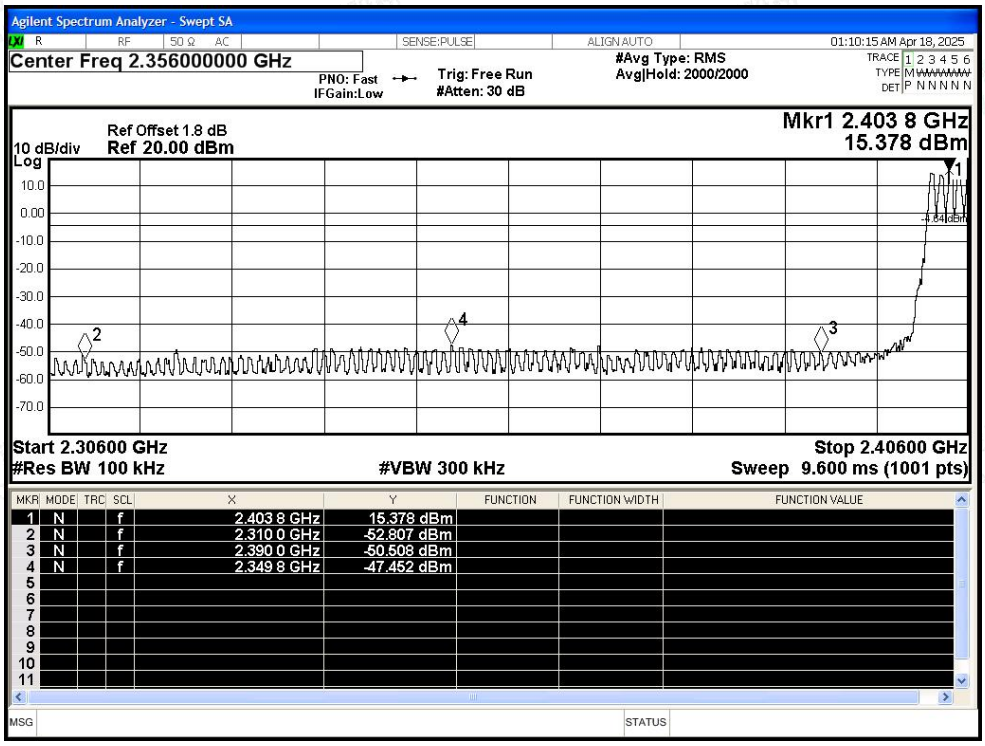
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	2.4G	2402	Ant1	Hopping	-62.82	-20	Pass
NVNT	2.4G	2480	Ant1	Hopping	-63.61	-20	Pass

Test Graphs

Band Edge(Hopping) NVNT 2.4G 2402MHz Ant1 Hopping Ref

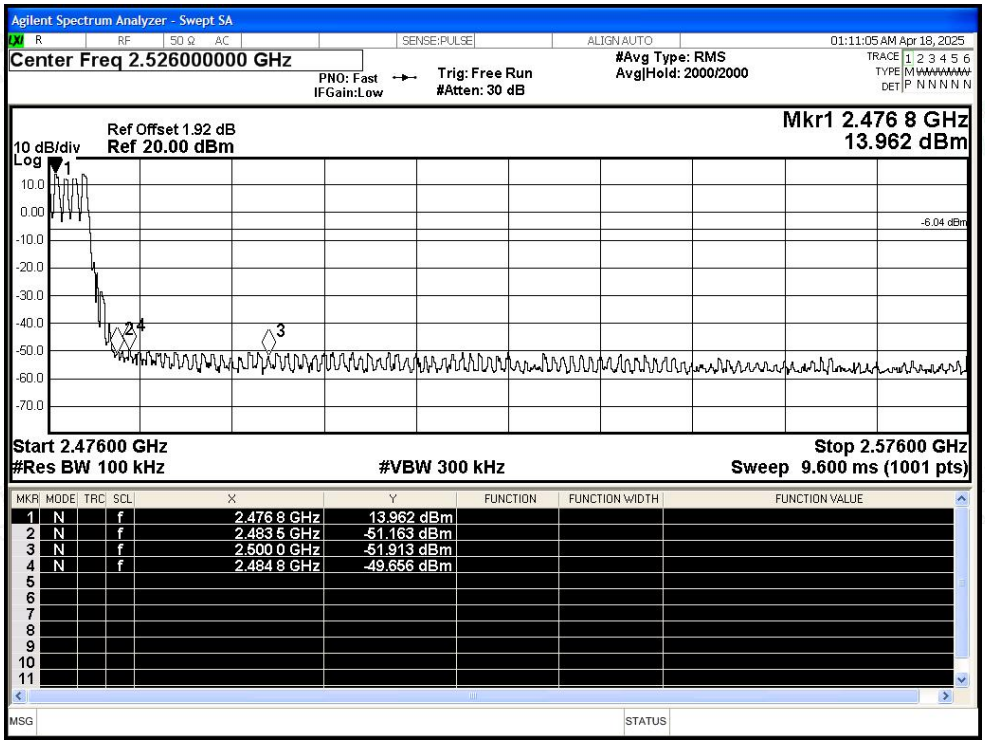


Band Edge(Hopping) NVNT 2.4G 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 2.4G 2480MHz Ant1 Hopping Ref

Band Edge(Hopping) NVNT 2.4G 2480MHz Ant1 Hopping Emission

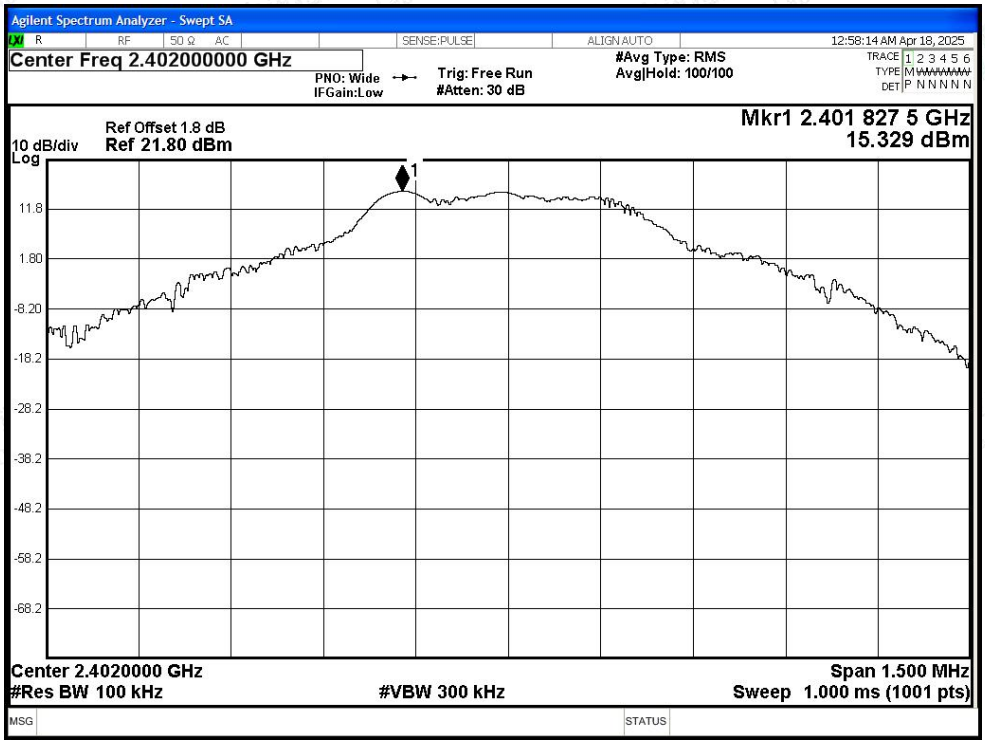


B.7 Conducted RF Spurious Emission

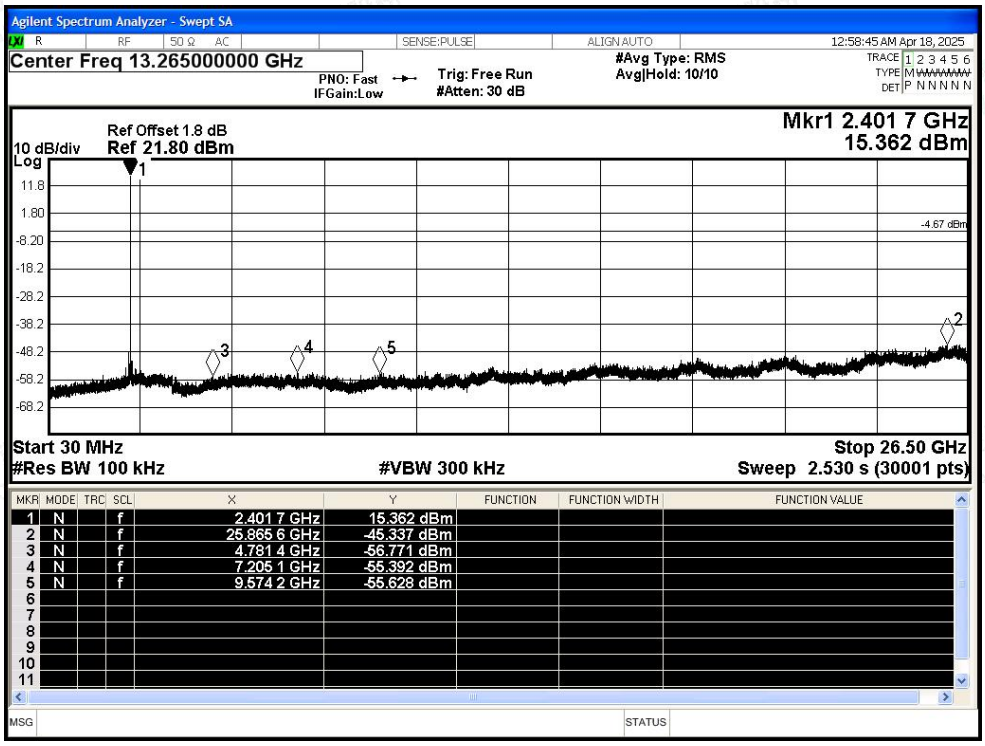
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	2.4G	2402	Ant1	-60.67	-20	Pass
NVNT	2.4G	2440	Ant1	-59.92	-20	Pass
NVNT	2.4G	2480	Ant1	-59.28	-20	Pass

Test Graphs

Tx. Spurious NVNT 2.4G 2402MHz Ant1 Ref

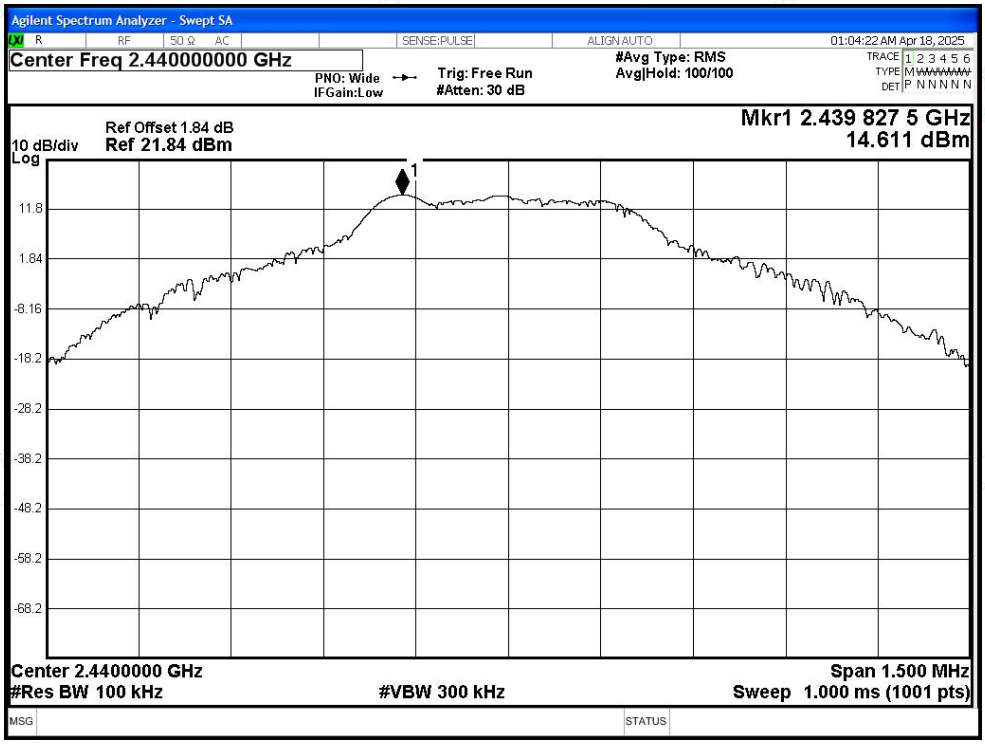


Tx. Spurious NVNT 2.4G 2402MHz Ant1 Emission

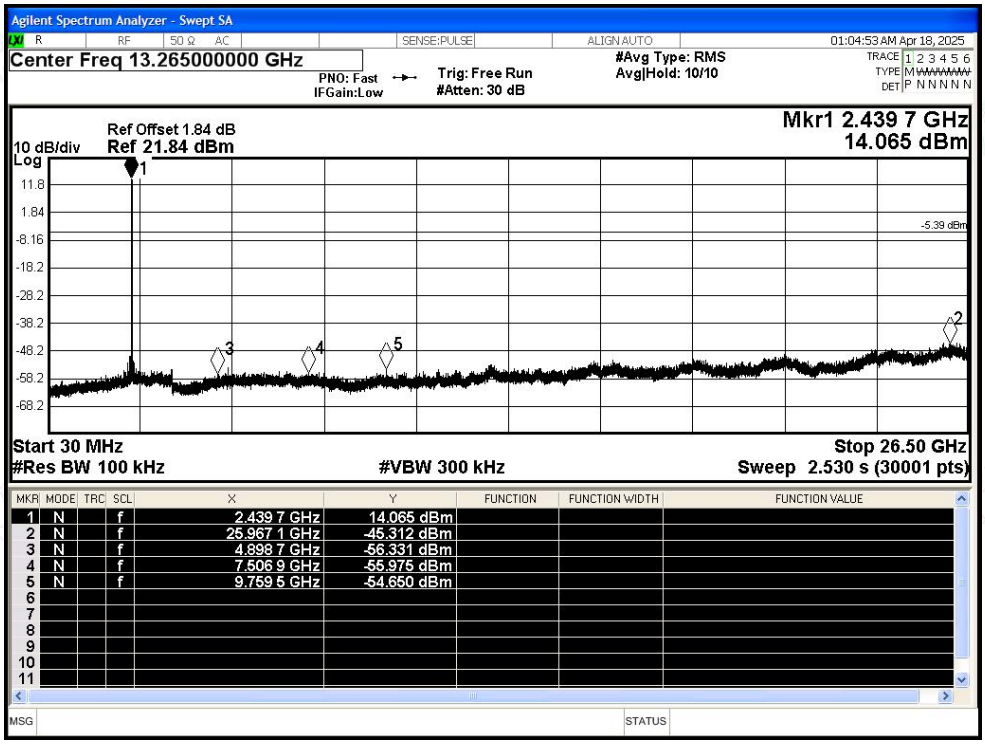


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N		f	2.401 7 GHz	15.362 dBm			
2	N		f	25.865 6 GHz	-45.337 dBm			
3	N		f	4.781 4 GHz	-56.771 dBm			
4	N		f	7.205 1 GHz	-55.392 dBm			
5	N		f	9.574 2 GHz	-55.628 dBm			
6								
7								
8								
9								
10								
11								

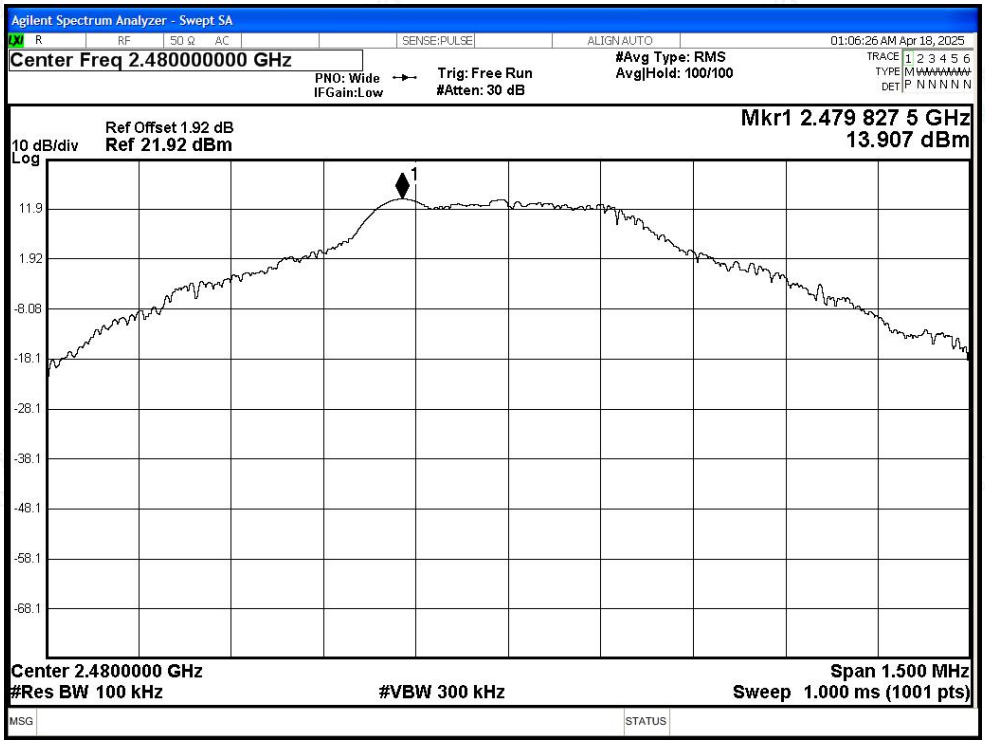
Tx. Spurious NVNT 2.4G 2440MHz Ant1 Ref



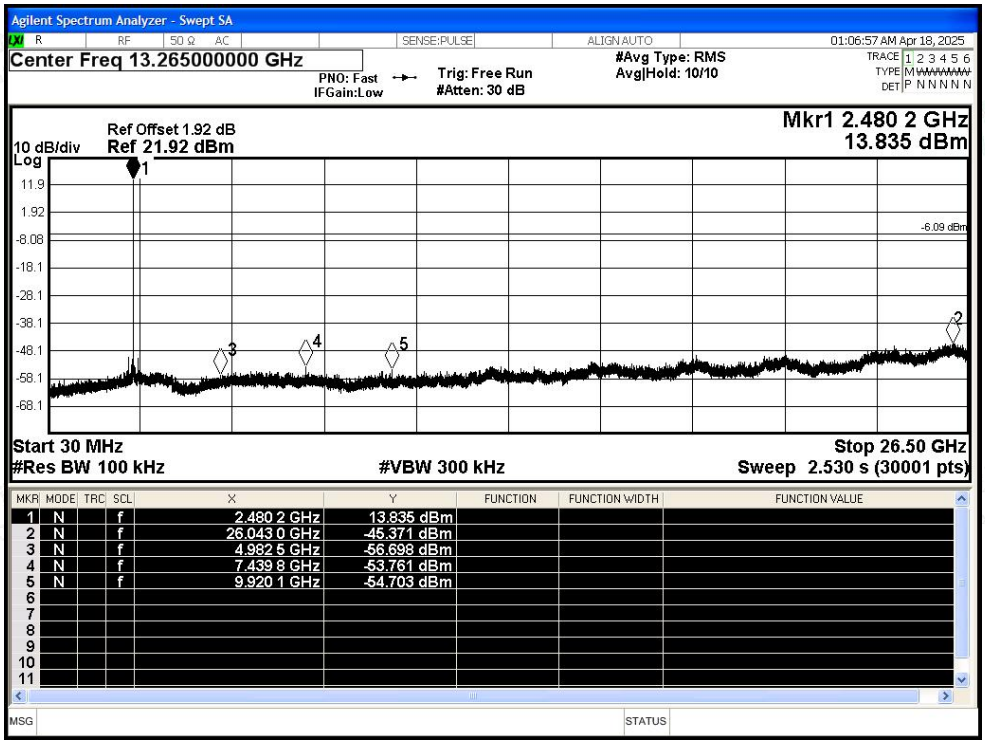
Tx. Spurious NVNT 2.4G 2440MHz Ant1 Emission



Tx. Spurious NVNT 2.4G 2480MHz Ant1 Ref



Tx. Spurious NVNT 2.4G 2480MHz Ant1 Emission

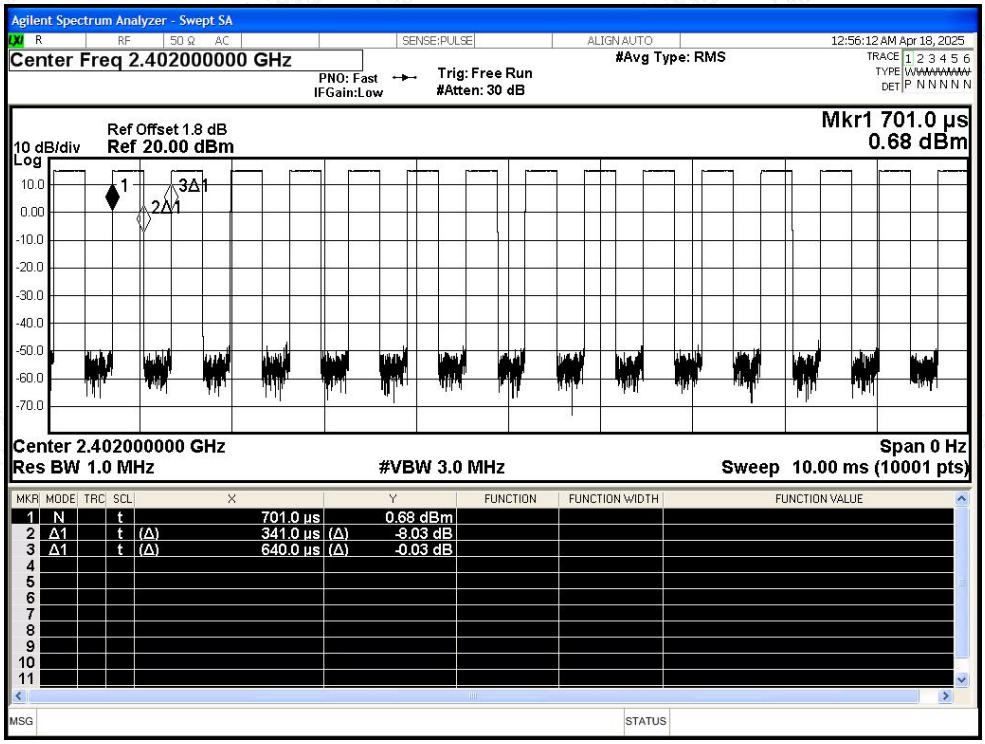


B.8 Duty Cycle

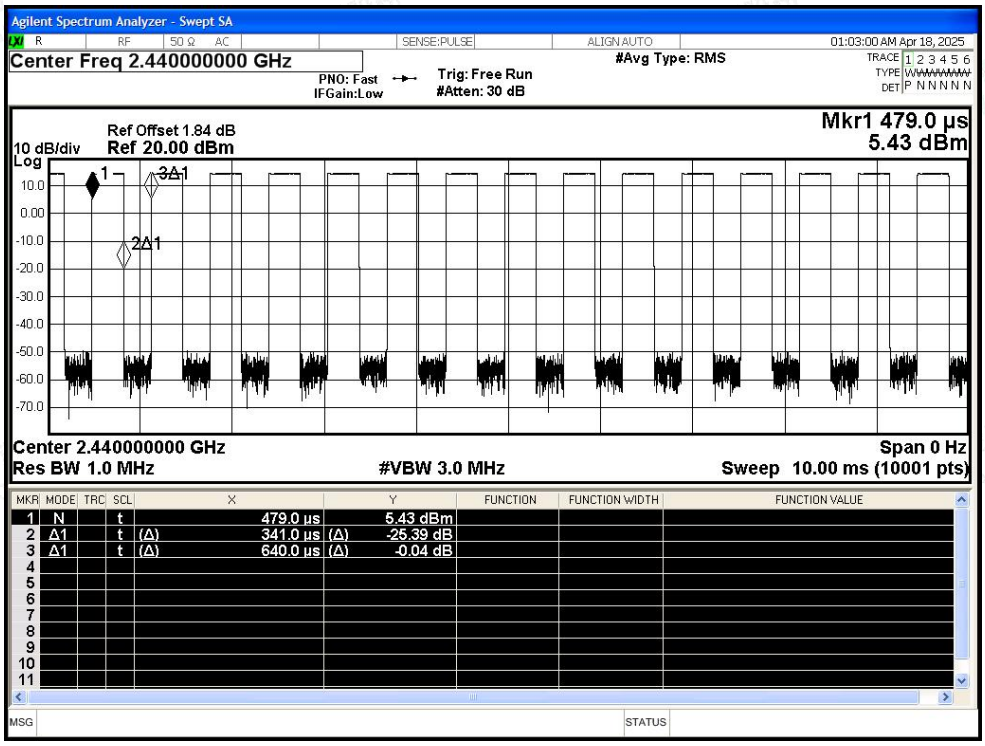
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	2.4G	2402	Ant1	53.28	2.73	2.93
NVNT	2.4G	2440	Ant1	53.28	2.73	2.93
NVNT	2.4G	2480	Ant1	53.13	2.75	2.94

Test Graphs

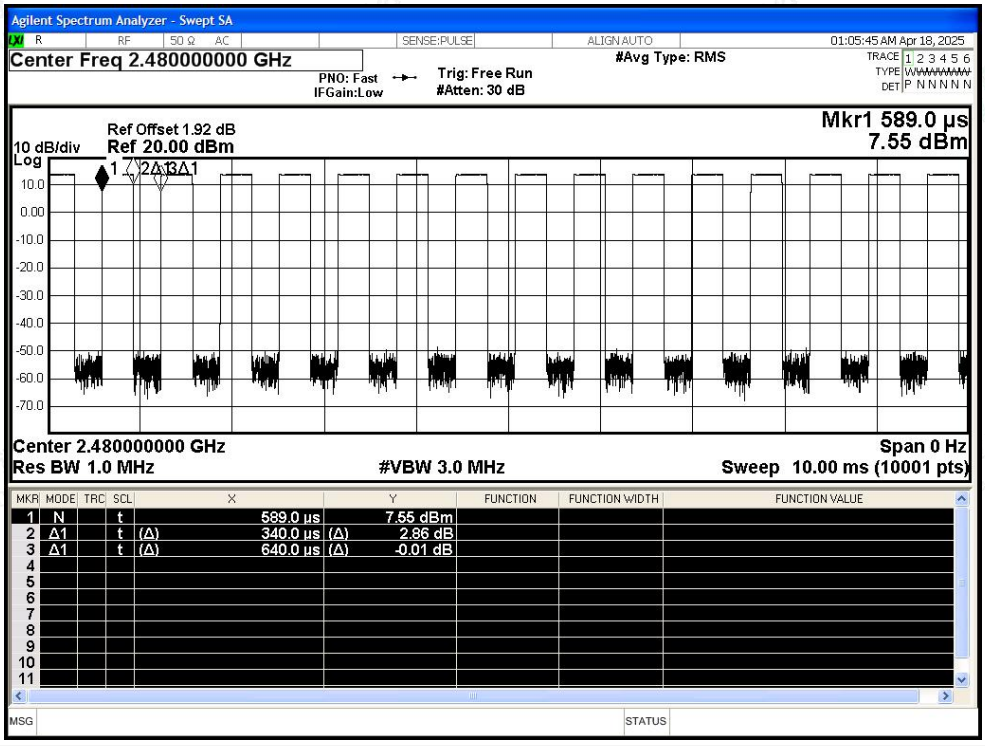
Duty Cycle NVNT 2.4G 2402MHz Ant1



Duty Cycle NVNT 2.4G 2440MHz Ant1



Duty Cycle NVNT 2.4G 2480MHz Ant1

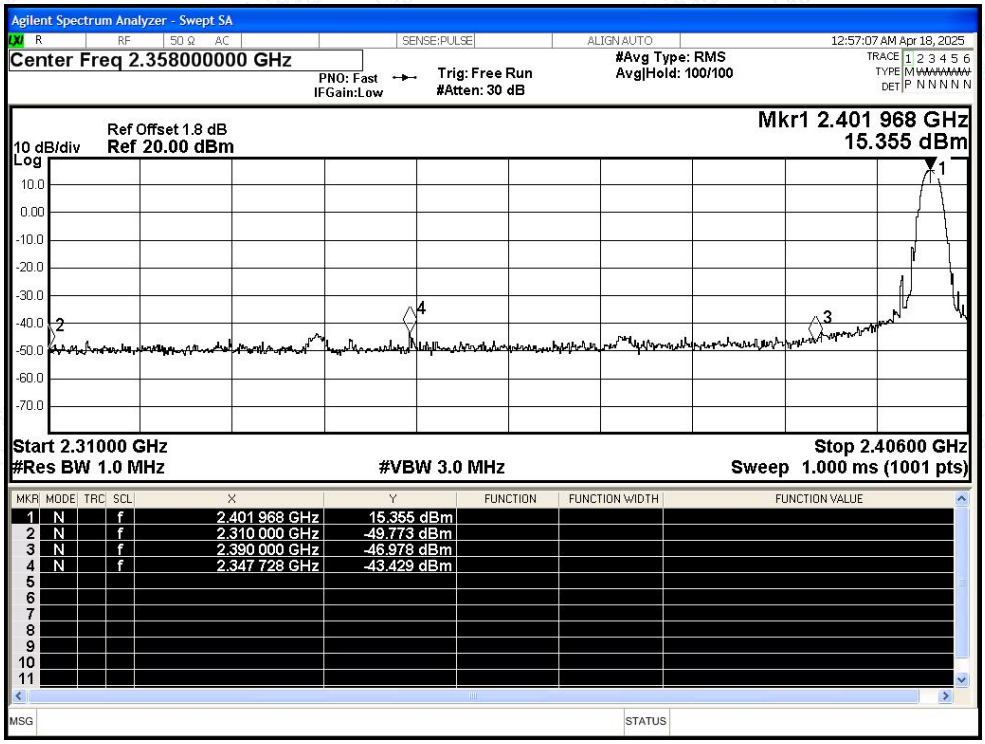


B.9 Restrict Band

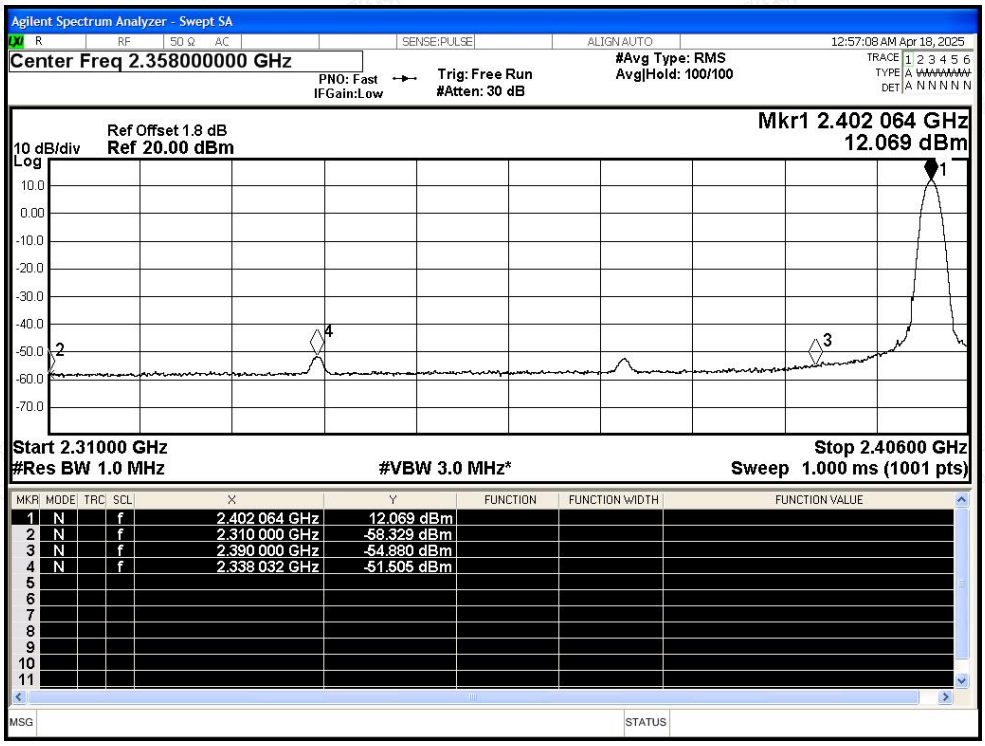
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	2.4G	2402	Ant1	No-Hopping	2310	-49.77	4.3	-	49.79	Peak	74	Pass
NVNT	2.4G	2402	Ant1	No-Hopping	2310	-58.33	4.3	2.73	43.96	Average	54	Pass
NVNT	2.4G	2402	Ant1	No-Hopping	2347.728	-43.43	4.3	-	56.13	Peak	74	Pass
NVNT	2.4G	2402	Ant1	No-Hopping	2338.032	-51.51	4.3	2.73	50.78	Average	54	Pass
NVNT	2.4G	2402	Ant1	No-Hopping	2390	-46.98	4.3	-	52.58	Peak	74	Pass
NVNT	2.4G	2402	Ant1	No-Hopping	2390	-54.88	4.3	2.73	47.41	Average	54	Pass
NVNT	2.4G	2480	Ant1	No-Hopping	2483.5	-29.72	4.3	-	69.84	Peak	74	Pass
NVNT	2.4G	2480	Ant1	No-Hopping	2483.5	-50.79	4.3	2.75	51.52	Average	54	Pass
NVNT	2.4G	2480	Ant1	No-Hopping	2483.512	-29.72	4.3	-	69.84	Peak	74	Pass
NVNT	2.4G	2480	Ant1	No-Hopping	2483.632	-49.17	4.3	2.75	53.14	Average	54	Pass
NVNT	2.4G	2480	Ant1	No-Hopping	2500	-49.74	4.3	-	49.82	Peak	74	Pass
NVNT	2.4G	2480	Ant1	No-Hopping	2500	-56.69	4.3	2.75	45.62	Average	54	Pass

Test Graphs

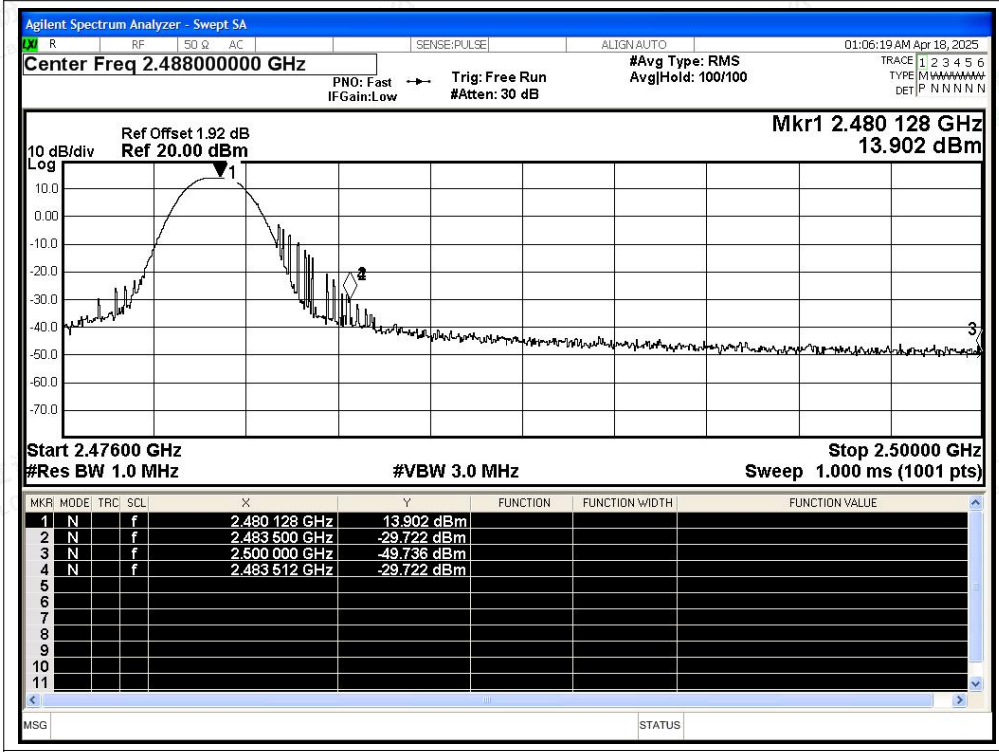
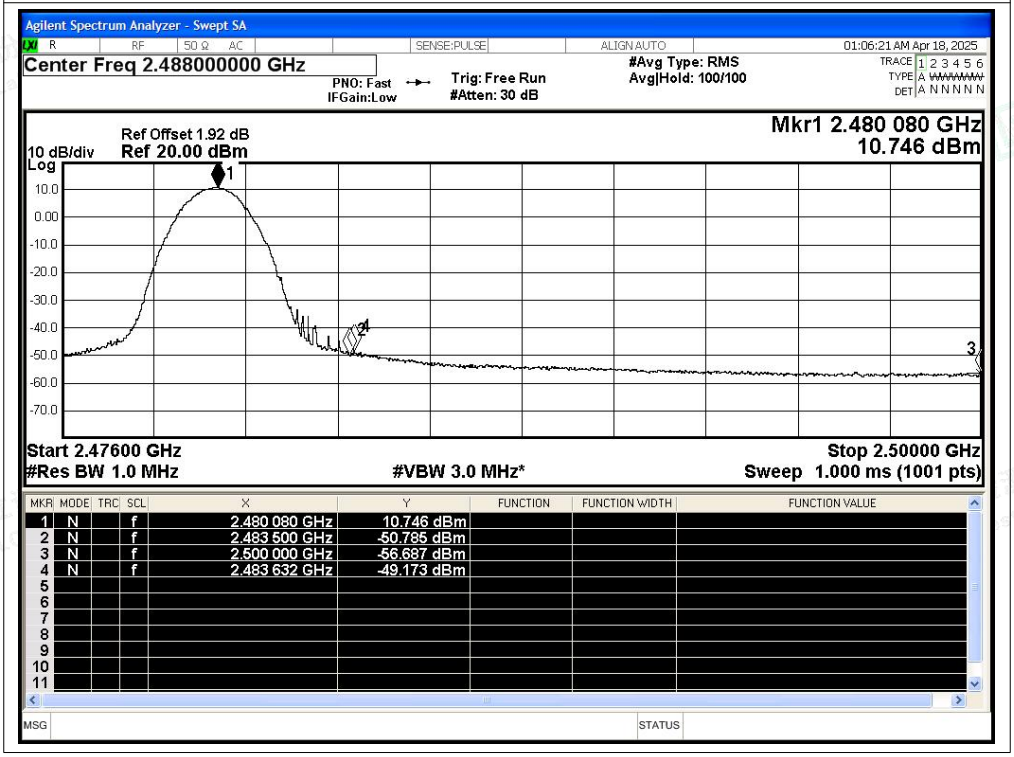
Restrict Band NVNT 2.4G 2402MHz Ant1 No-Hopping Peak



Restrict Band NVNT 2.4G 2402MHz Ant1 No-Hopping Average



Restrict Band NVNT 2.4G 2480MHz Ant1 No-Hopping Peak



Restrict Band NVNT 2.4G 2480MHz Ant1 No-Hopping Average