Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: OWN Smart Wearable Footwear

Test Model: Footwear

Environmental Conditions

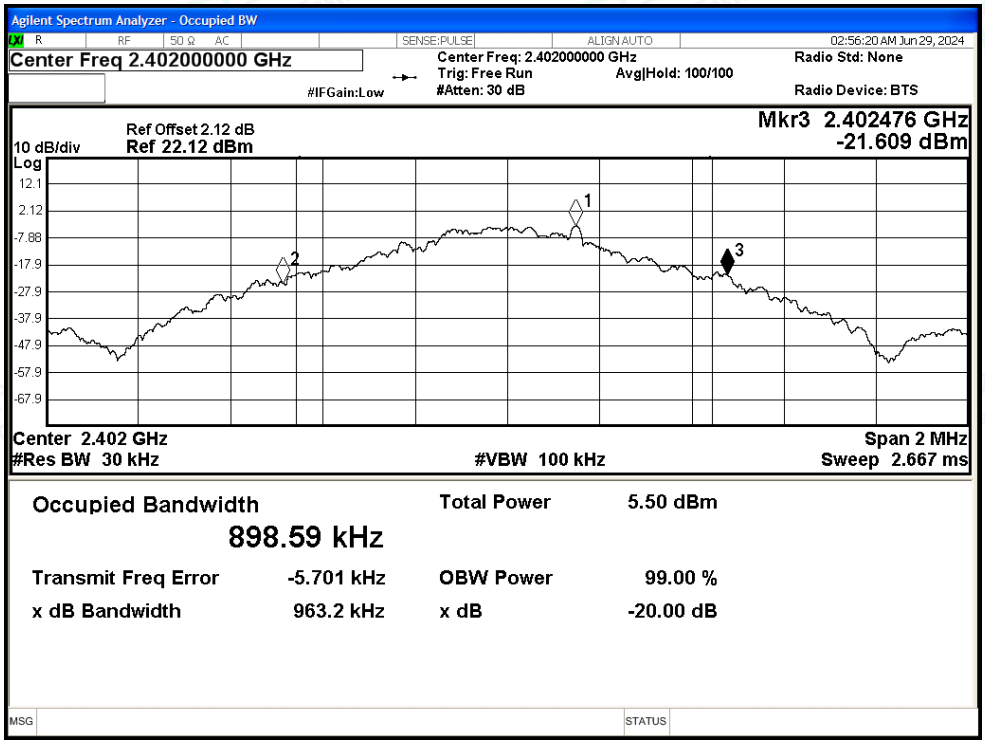
Temperature:	23.8° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Jerry Chu
Supervised by:	Nick Peng

A.1 -20dB Bandwidth

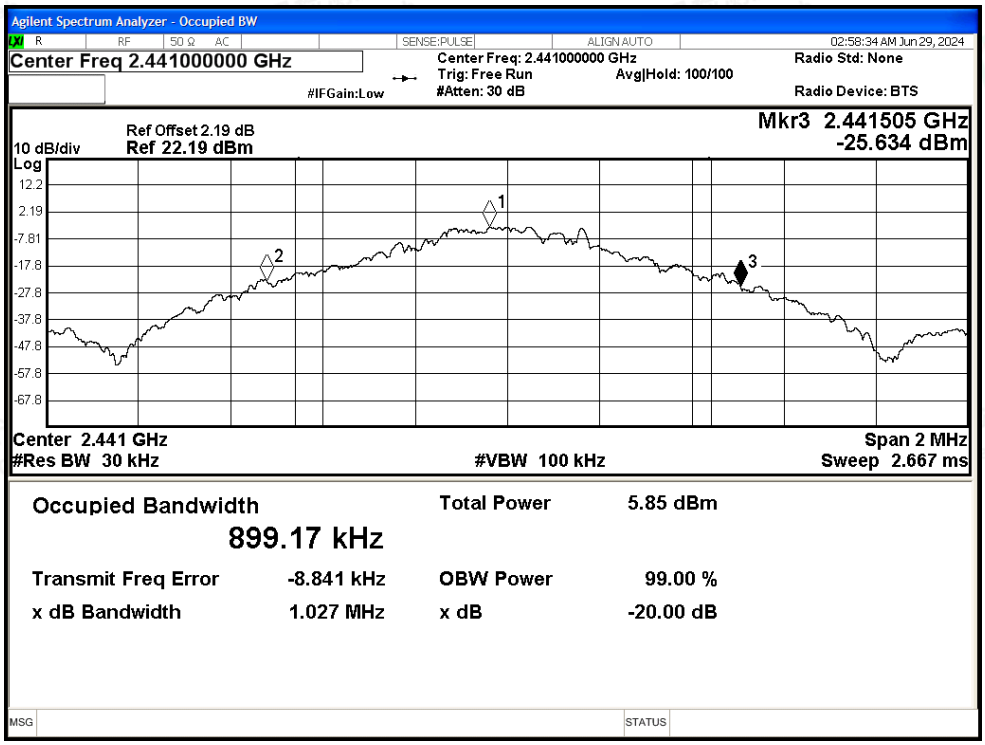
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.963	N/A	Pass
NVNT	1-DH5	2441	Ant1	1.027	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.974	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.313	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.309	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.324	N/A	Pass

Test Graphs

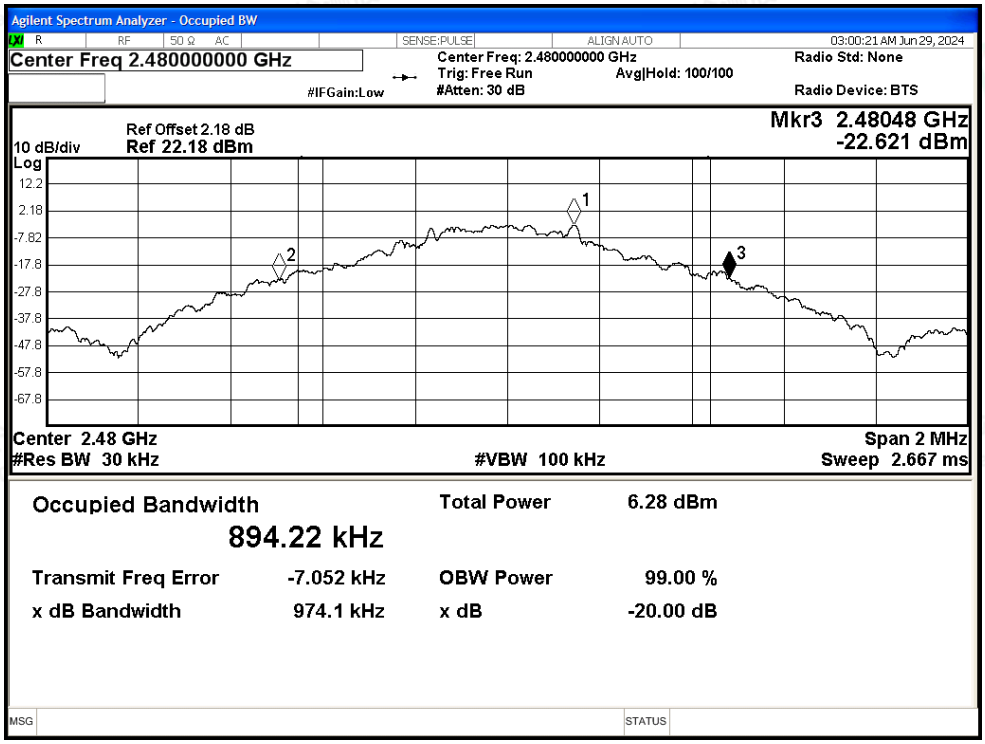
-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



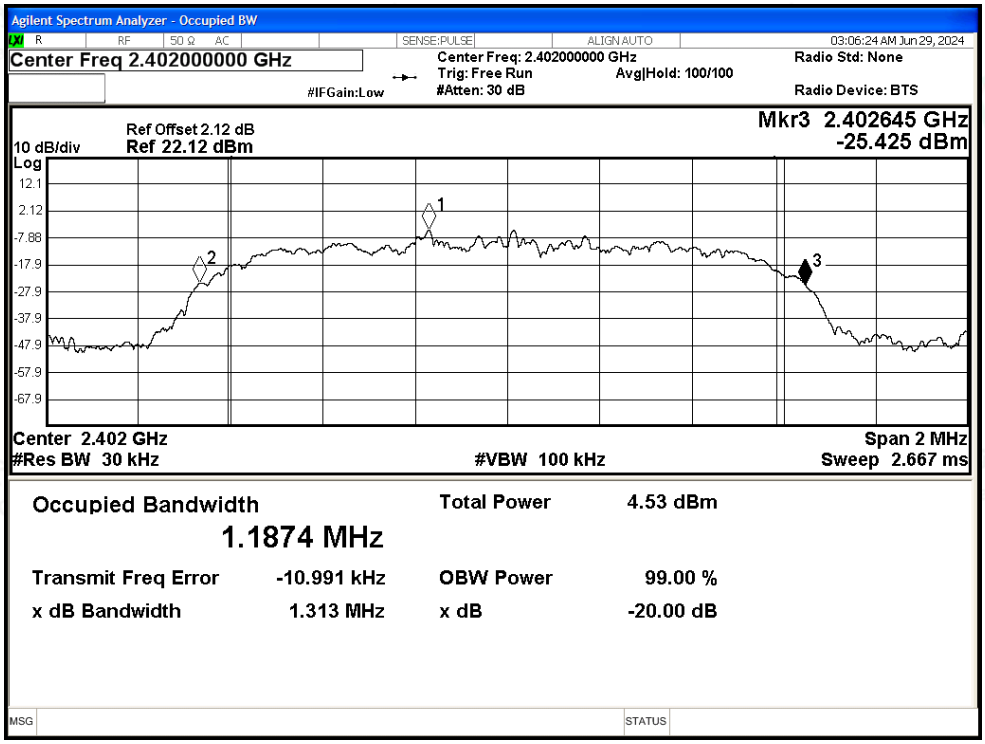
-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



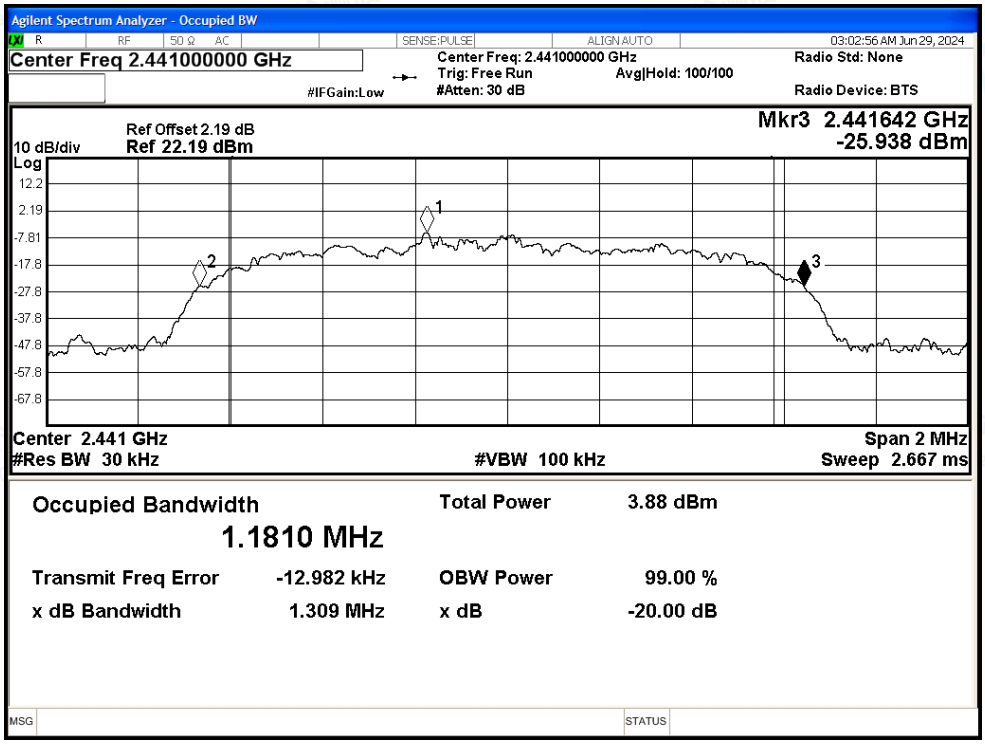
-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



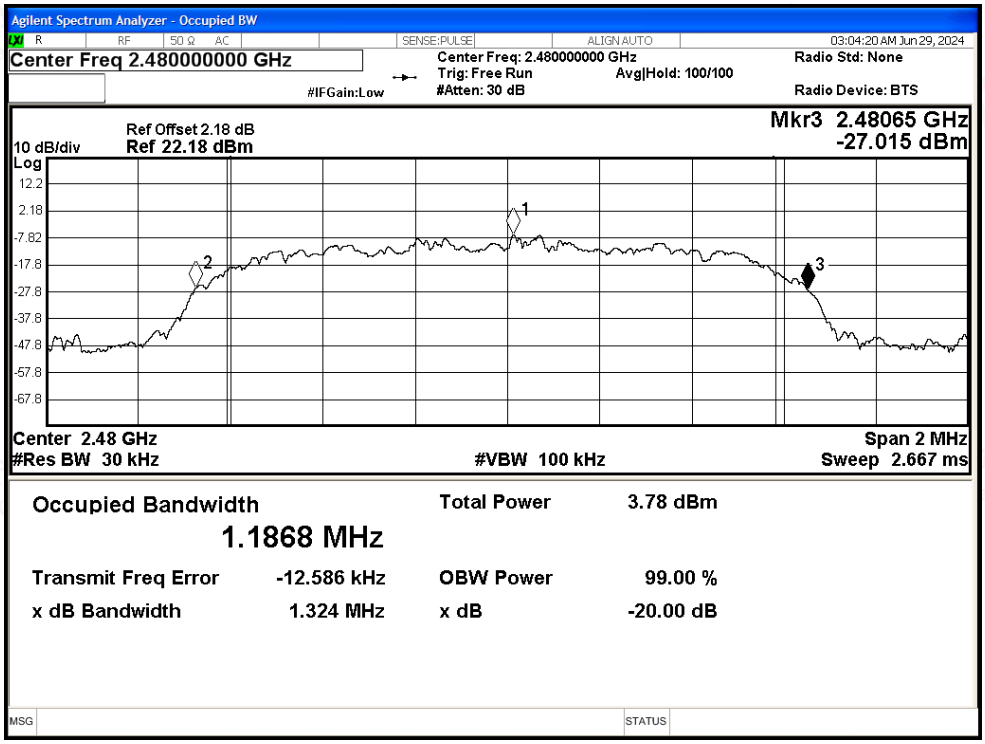
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

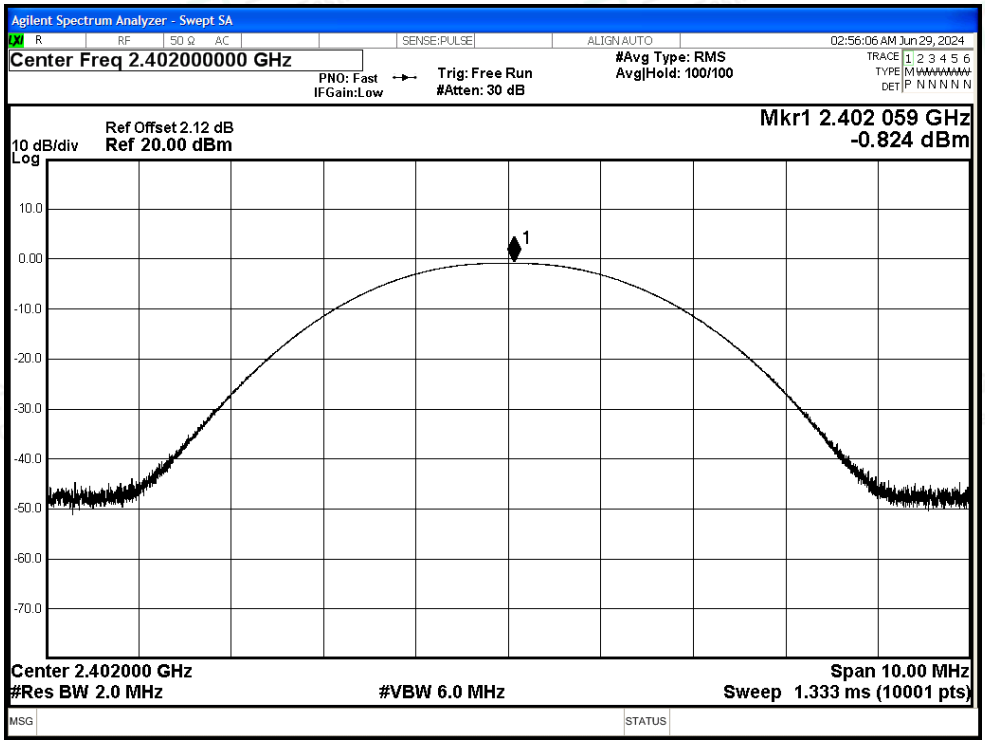


A.2 Maximum Peak Conducted Output Power

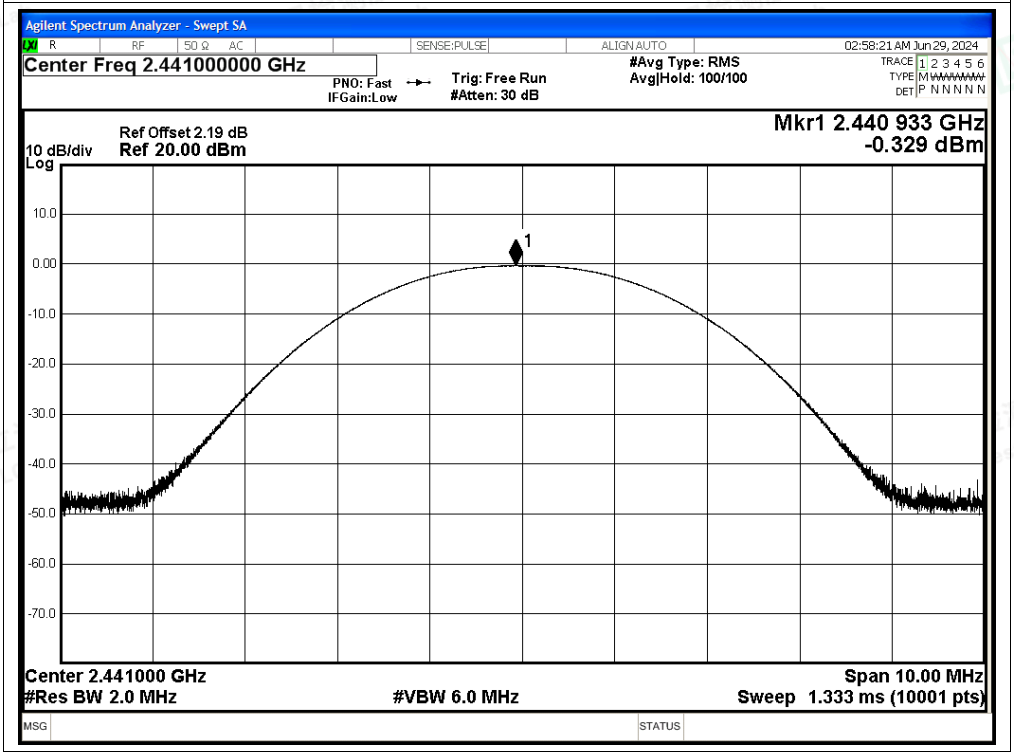
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	-0.82	21	Pass
NVNT	1-DH5	2441	Ant1	-0.33	21	Pass
NVNT	1-DH5	2480	Ant1	-0.11	21	Pass
NVNT	2-DH5	2402	Ant1	0.26	21	Pass
NVNT	2-DH5	2441	Ant1	-0.57	21	Pass
NVNT	2-DH5	2480	Ant1	-0.41	21	Pass

Test Graphs

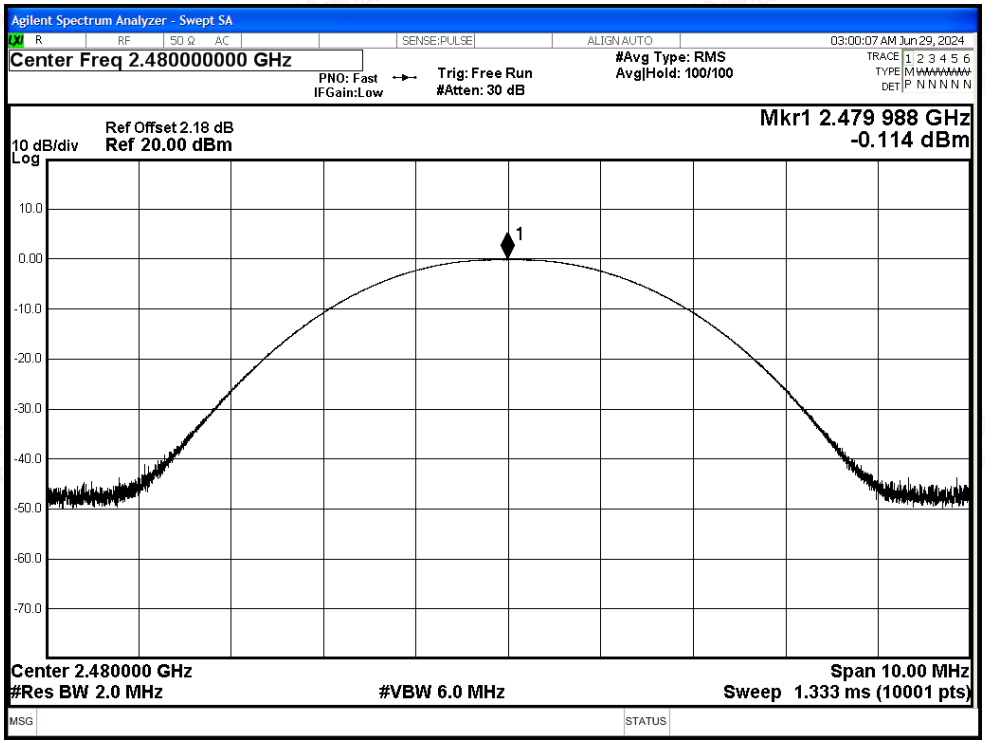
Power NVNT 1-DH5 2402MHz Ant1



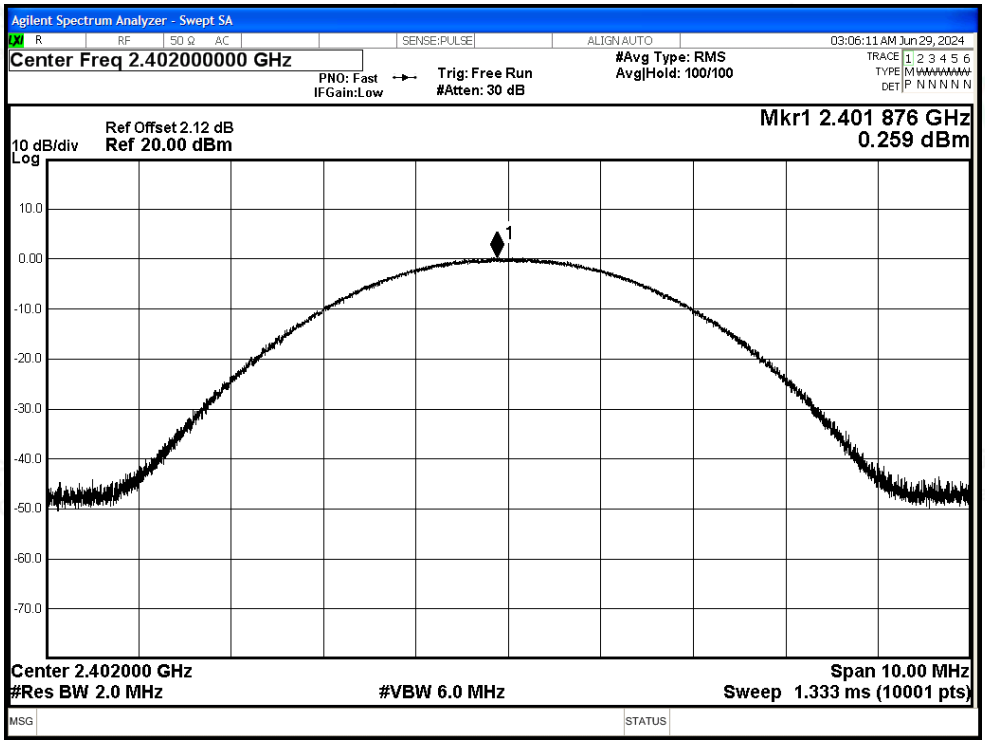
Power NVNT 1-DH5 2441MHz Ant1



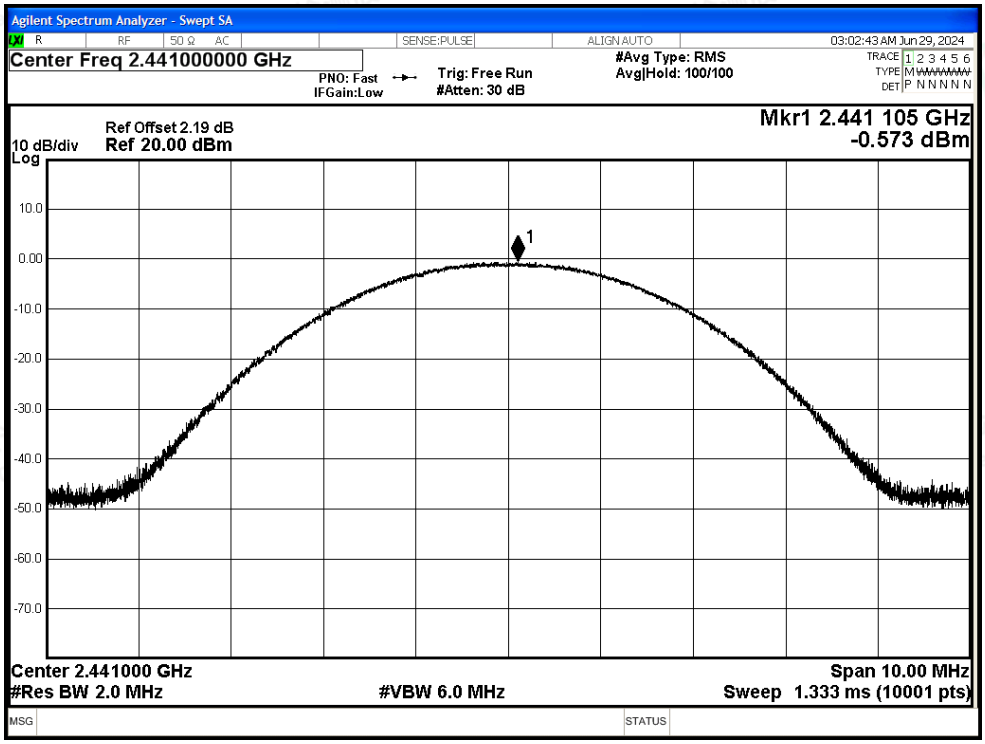
Power NVNT 1-DH5 2480MHz Ant1



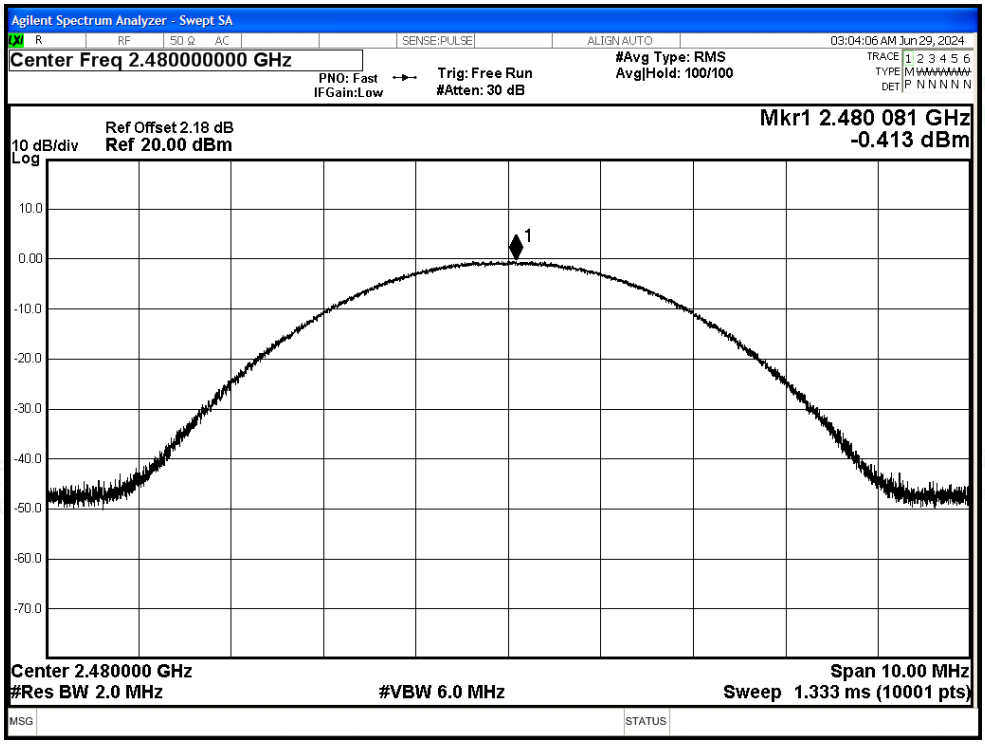
Power NVNT 2-DH5 2402MHz Ant1



Power NVNT 2-DH5 2441MHz Ant1



Power NVNT 2-DH5 2480MHz Ant1

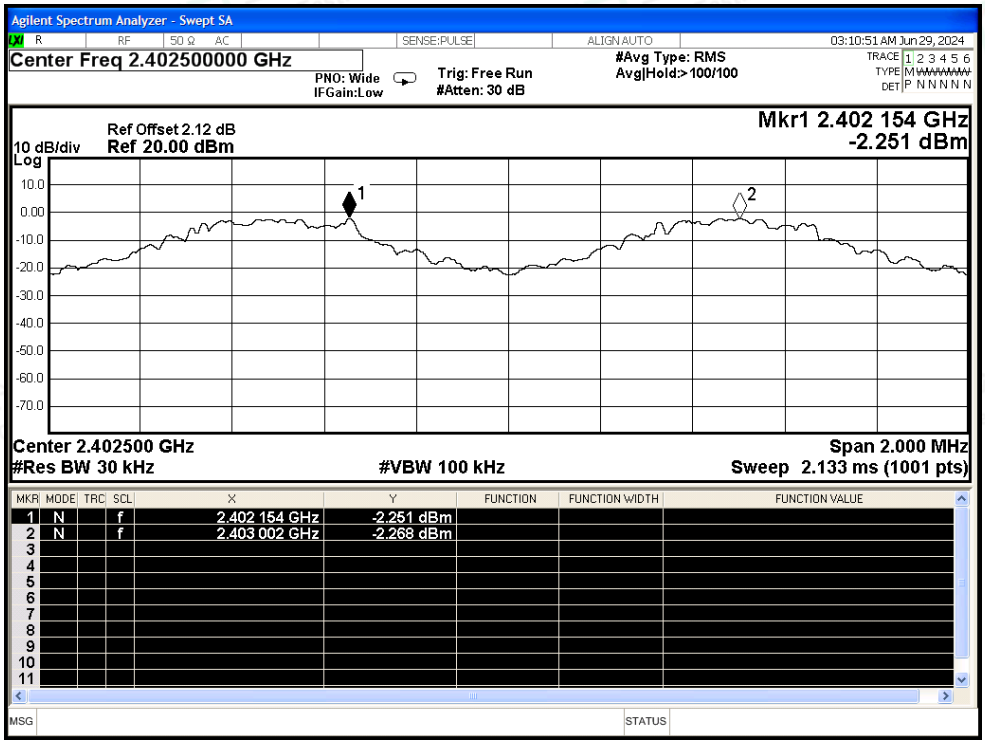


A.3 Carrier Frequencies Separation

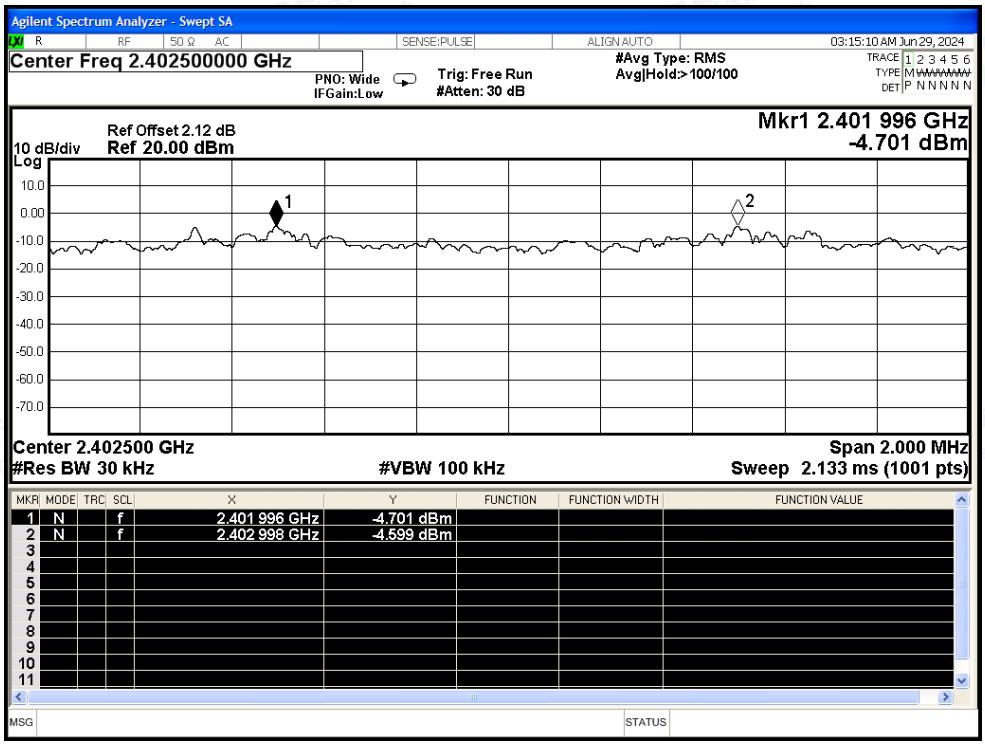
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2402.154	2403.002	0.848	0.685	Pass
NVNT	2-DH5	Ant1	2401.996	2402.998	1.002	0.883	Pass

Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1

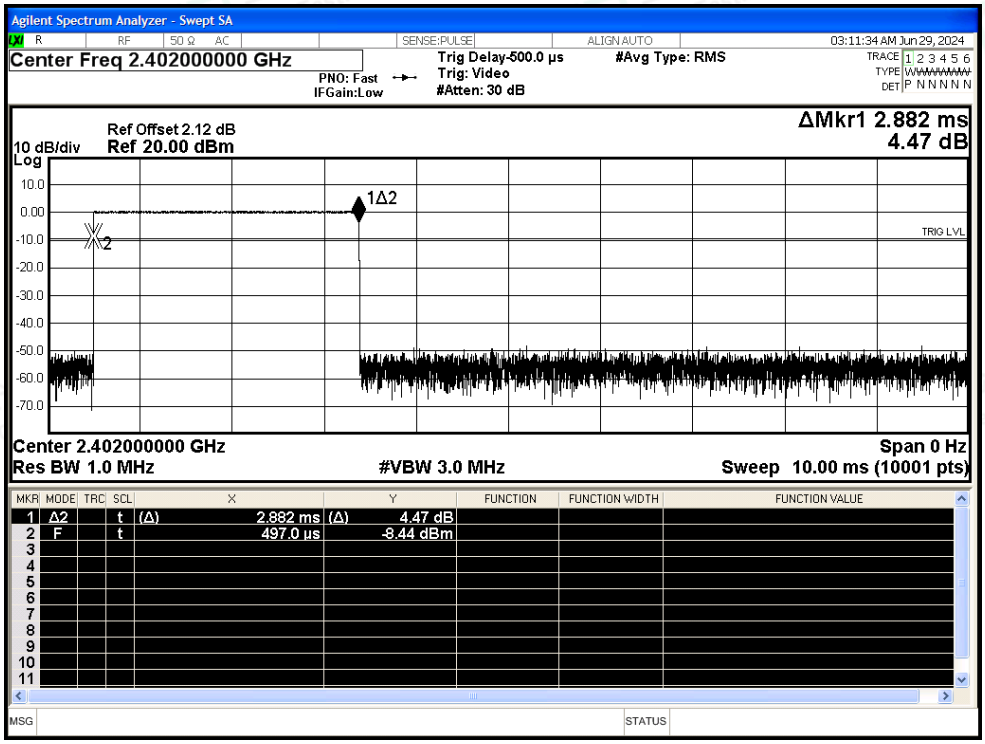


A.4 Dwell Time

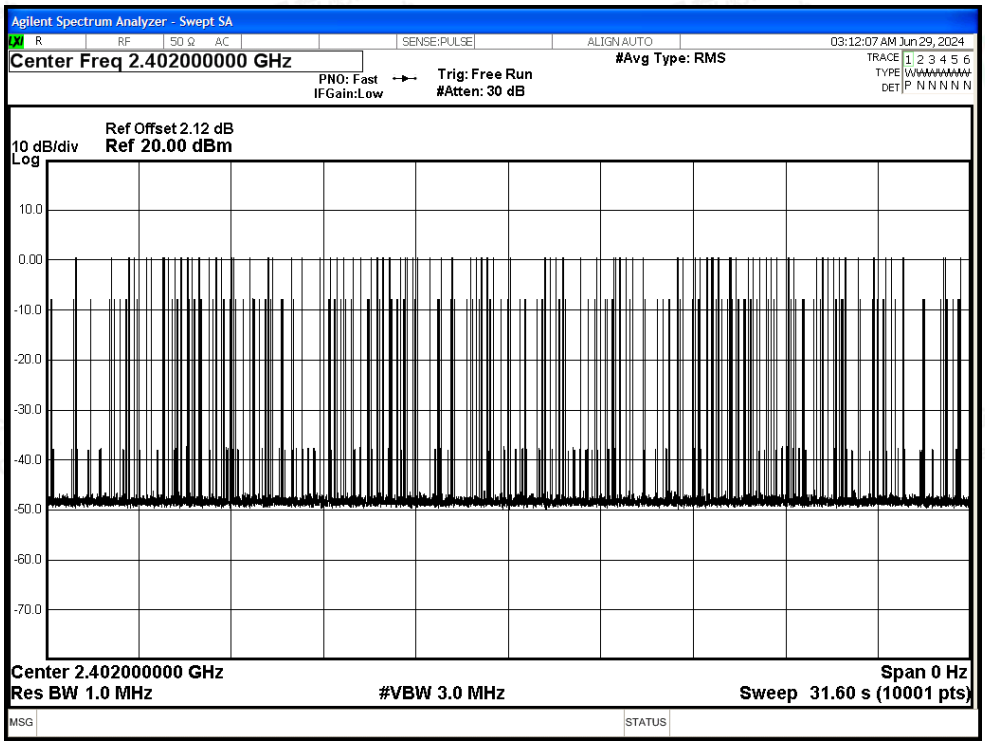
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.882	299.728	104	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.885	276.96	96	31600	400	Pass

Test Graphs

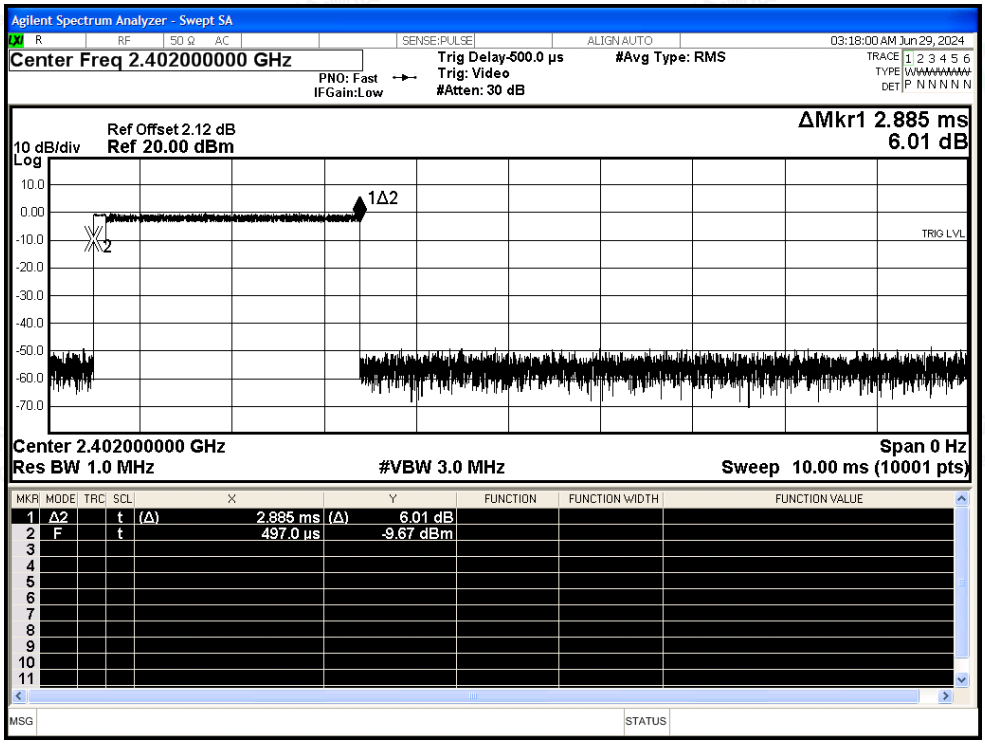
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



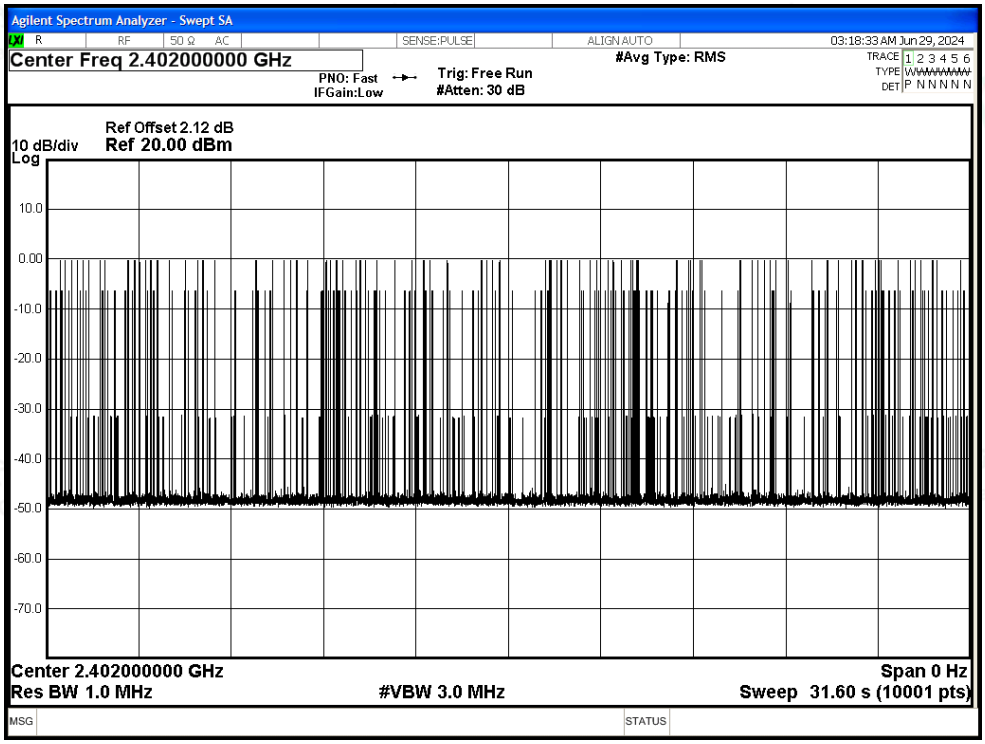
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated

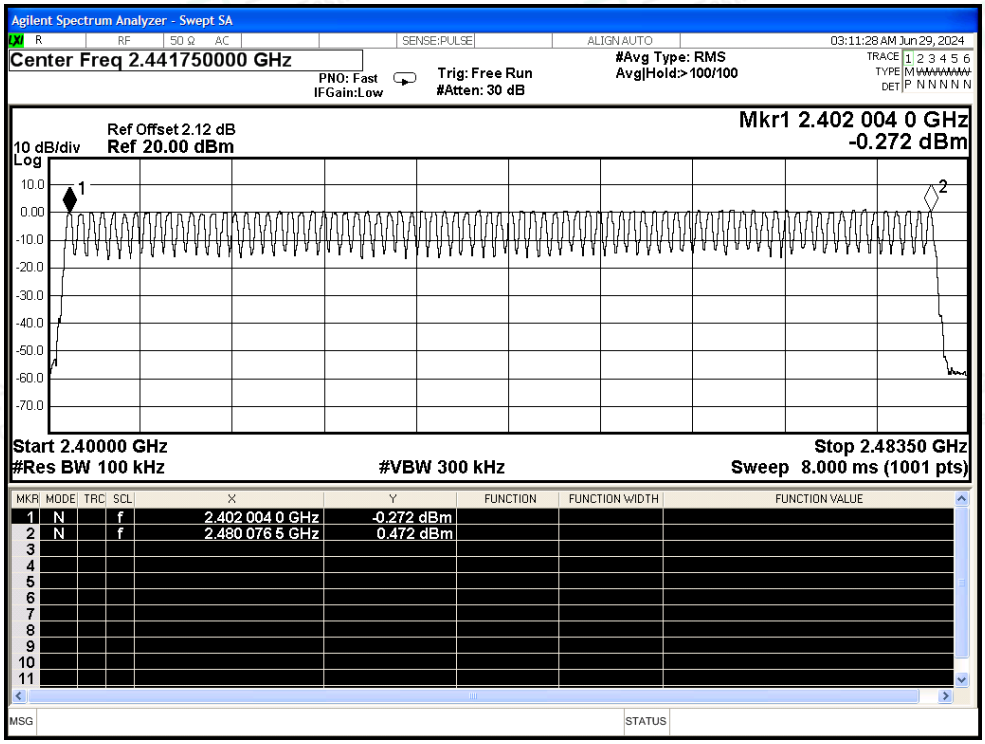


A.5 Number of Hopping Channel

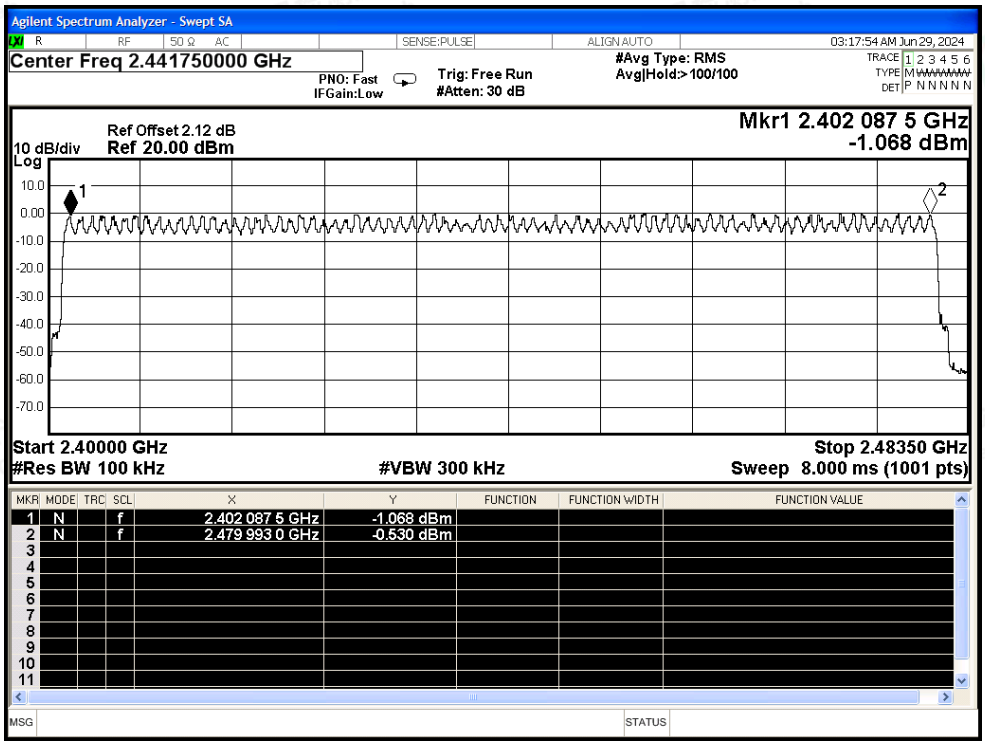
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass

Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1

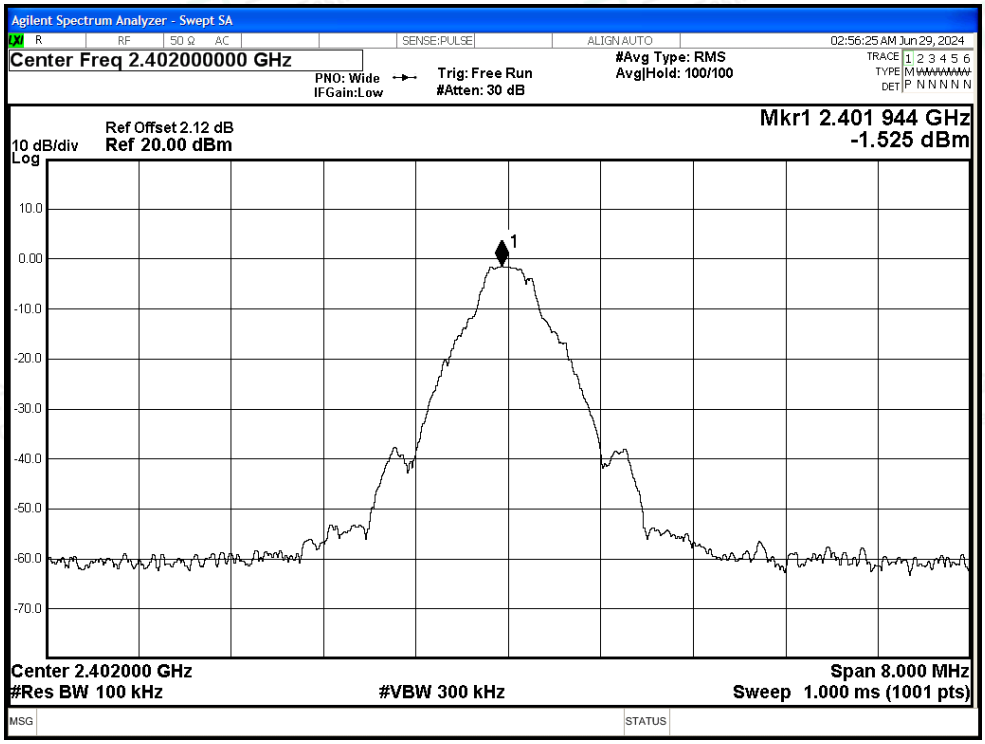


A.6 Band Edge

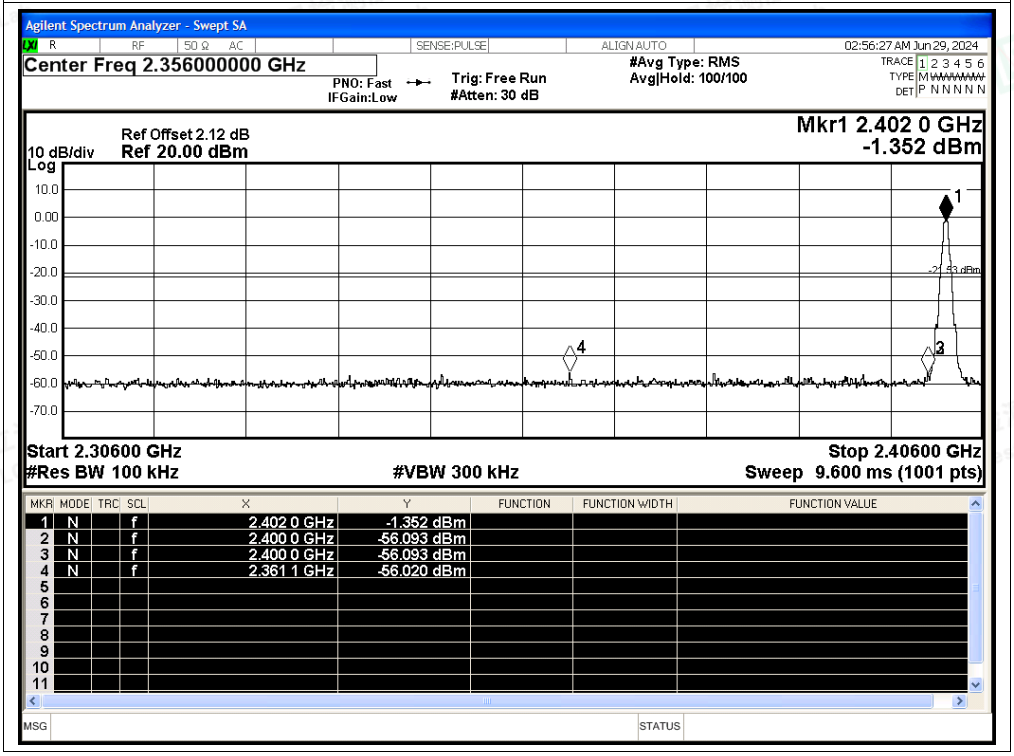
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-54.5	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-56.4	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-54.48	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-54.74	-20	Pass

Test Graphs

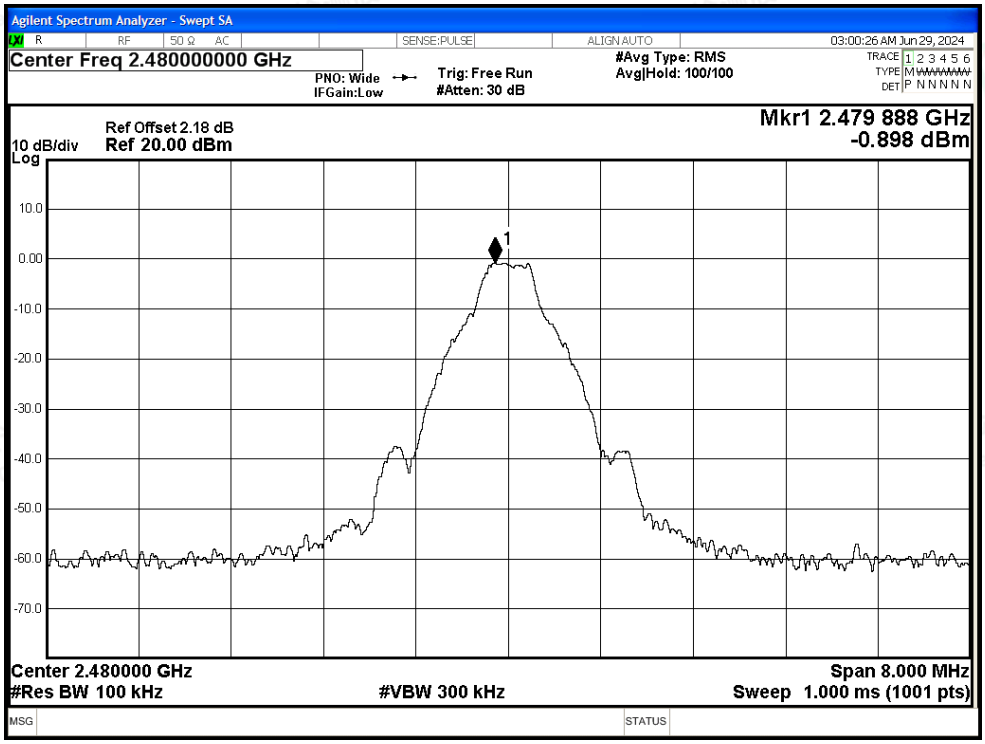
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



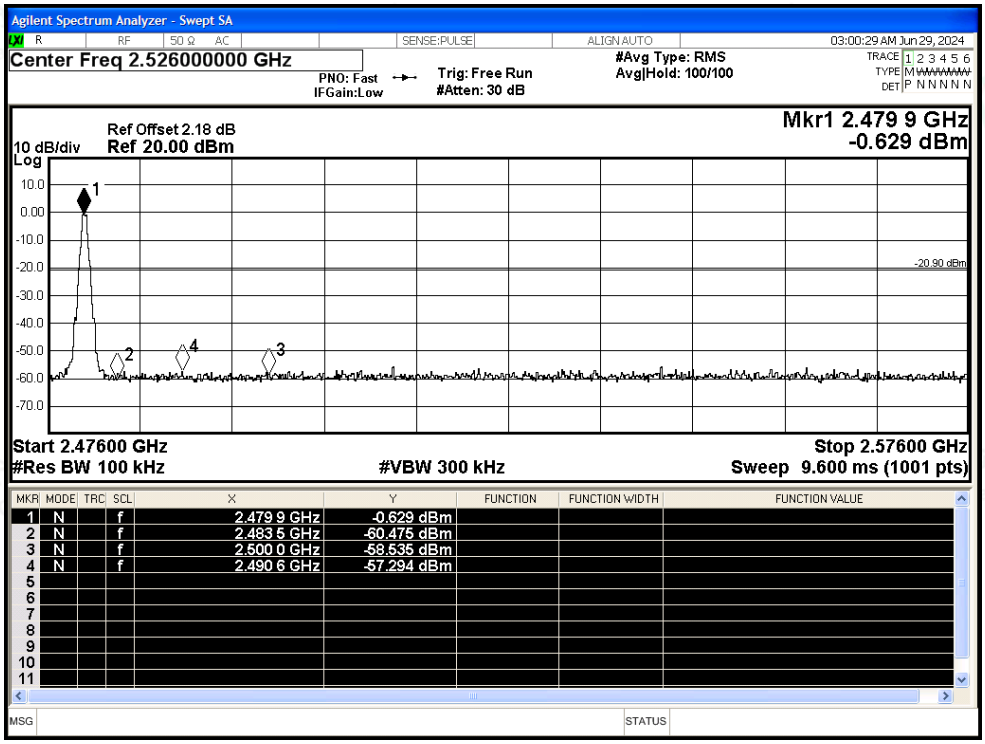
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



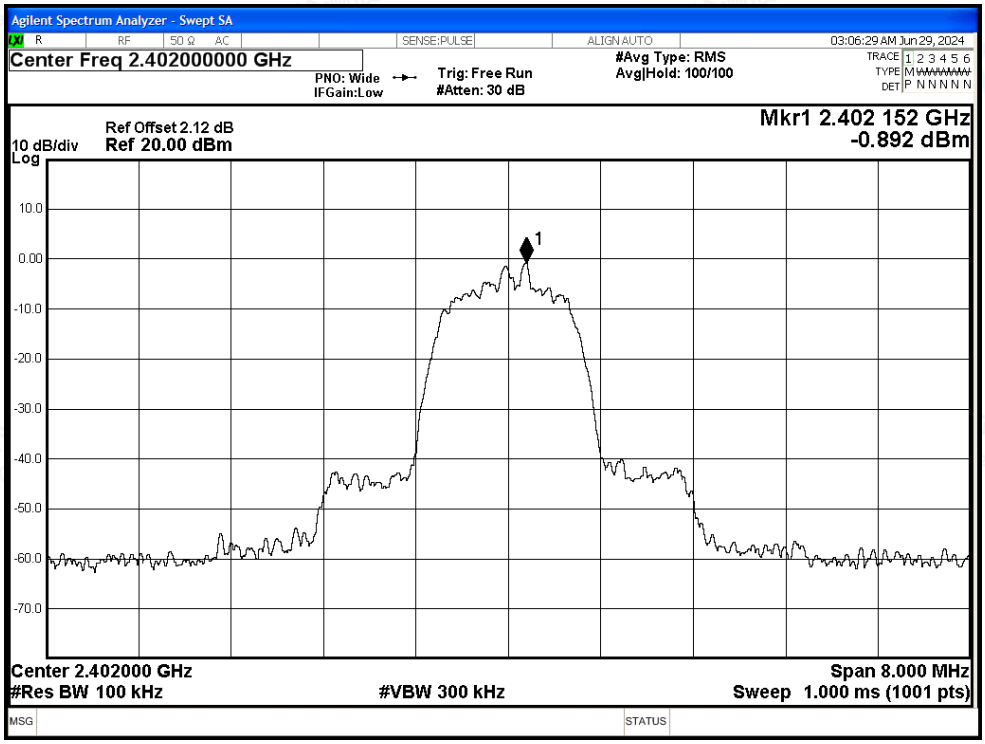
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



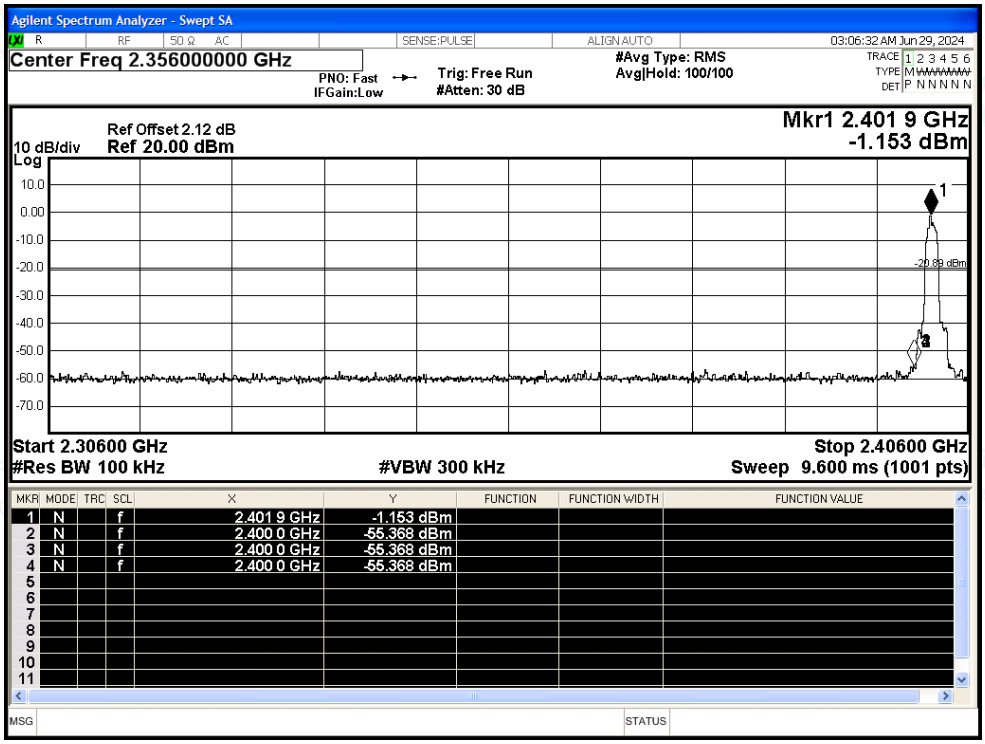
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



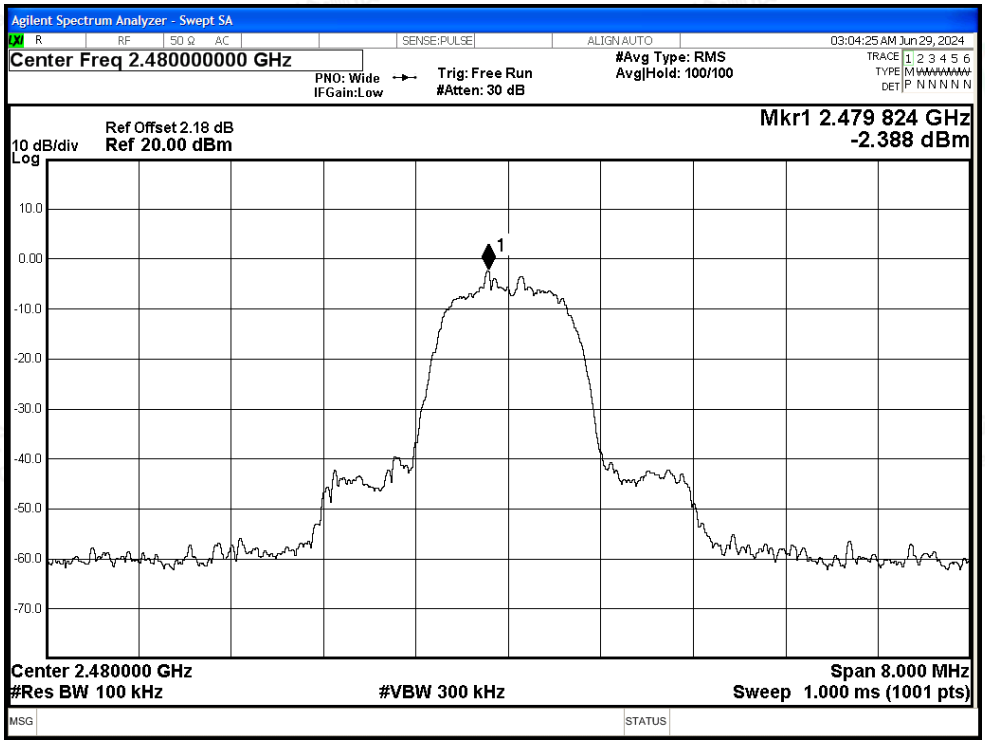
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



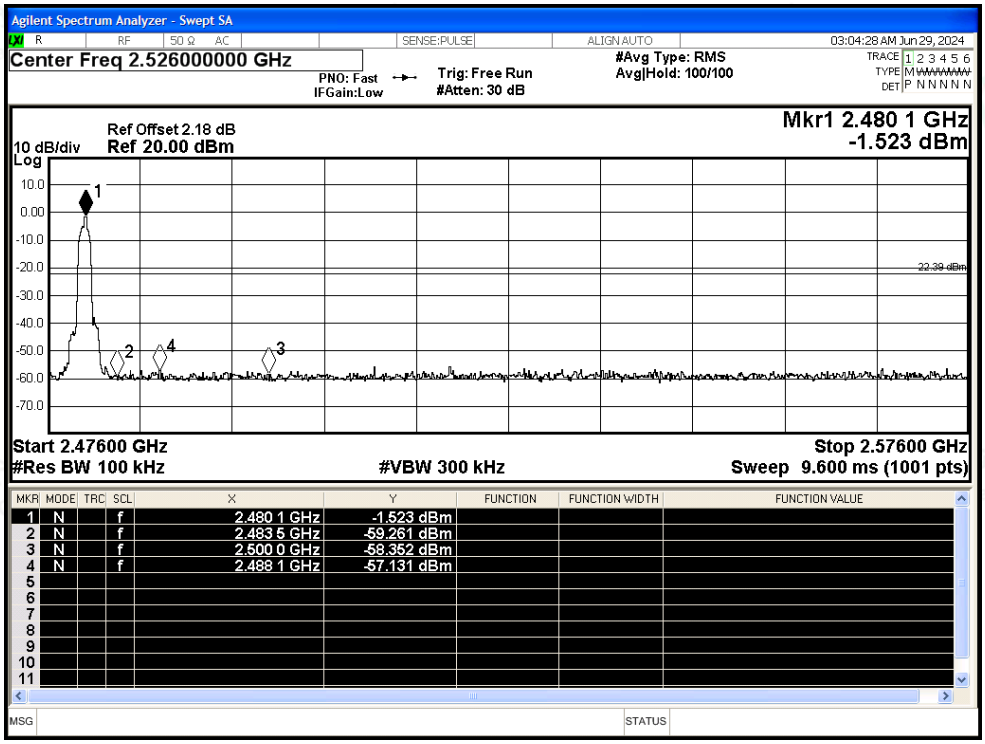
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission



Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission

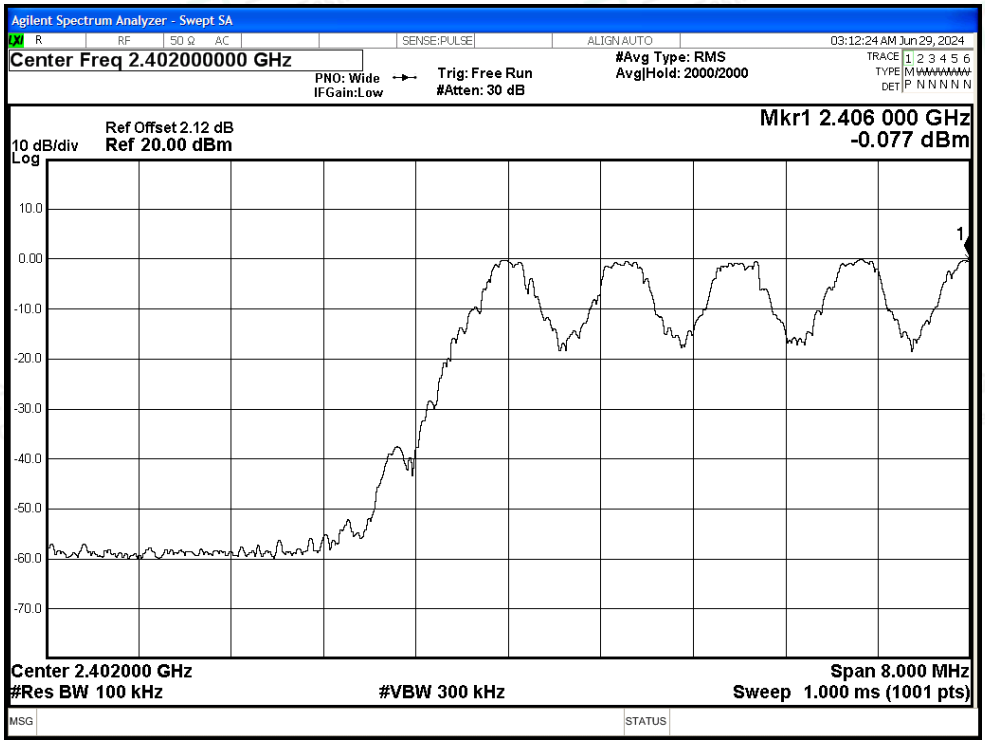


(Hopping)

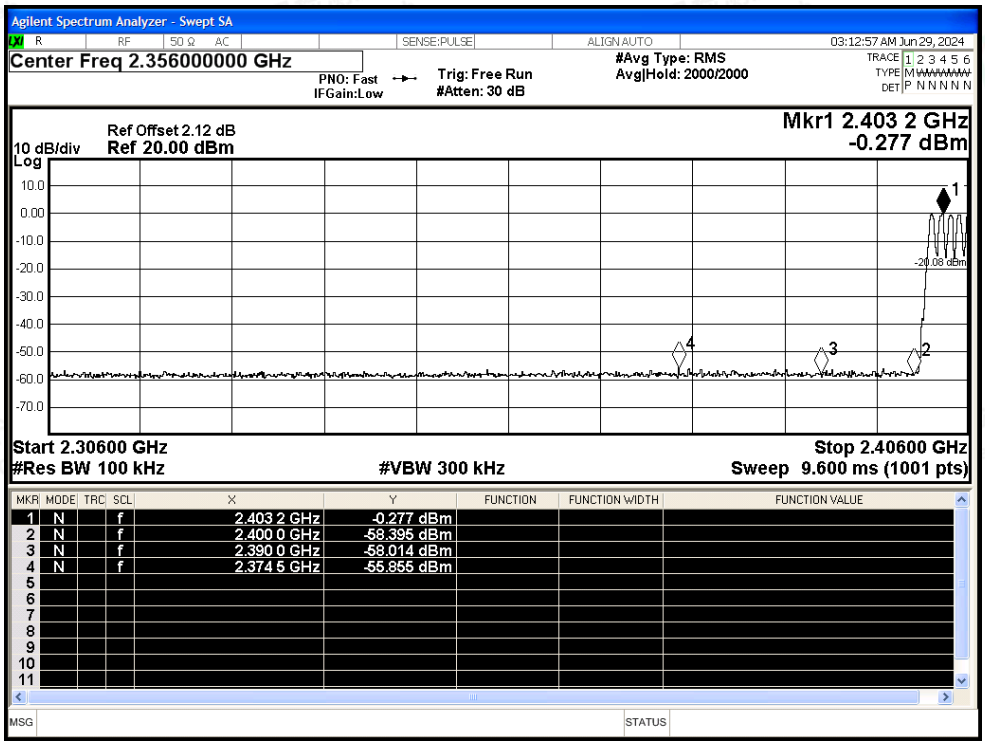
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-55.78	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-56.74	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-53.47	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-54.03	-20	Pass

Test Graphs

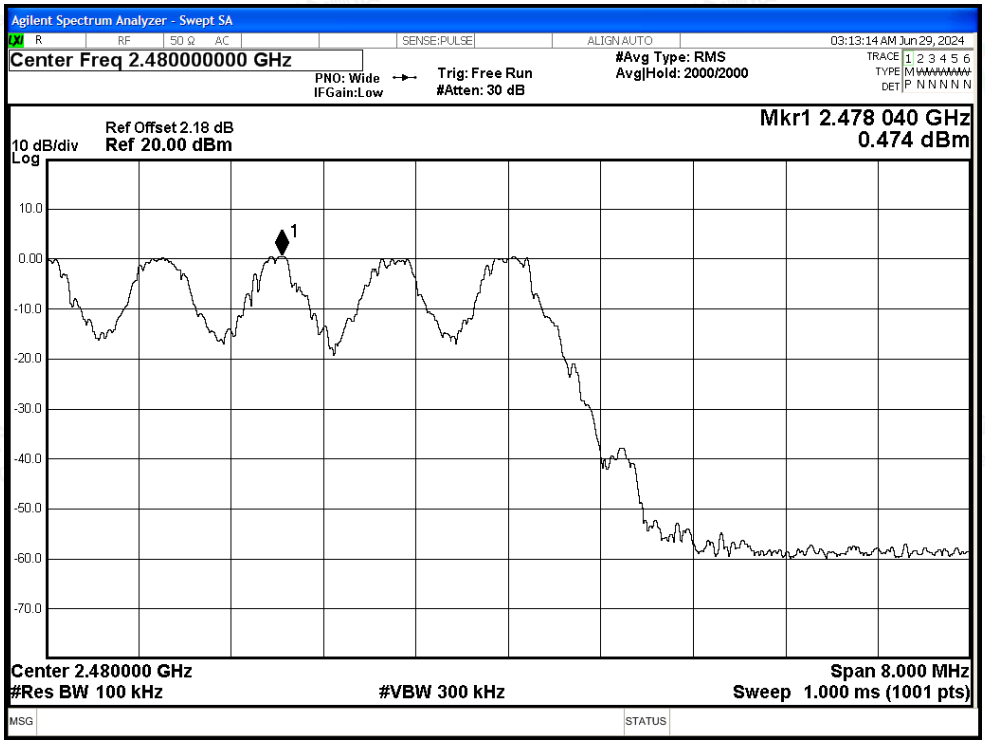
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



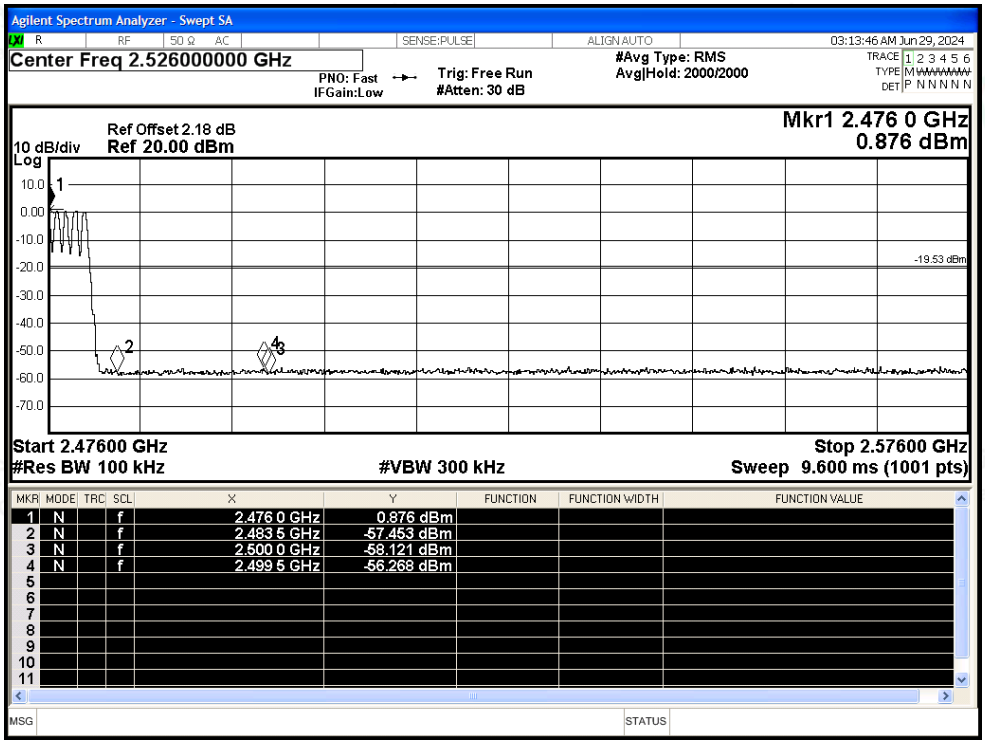
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



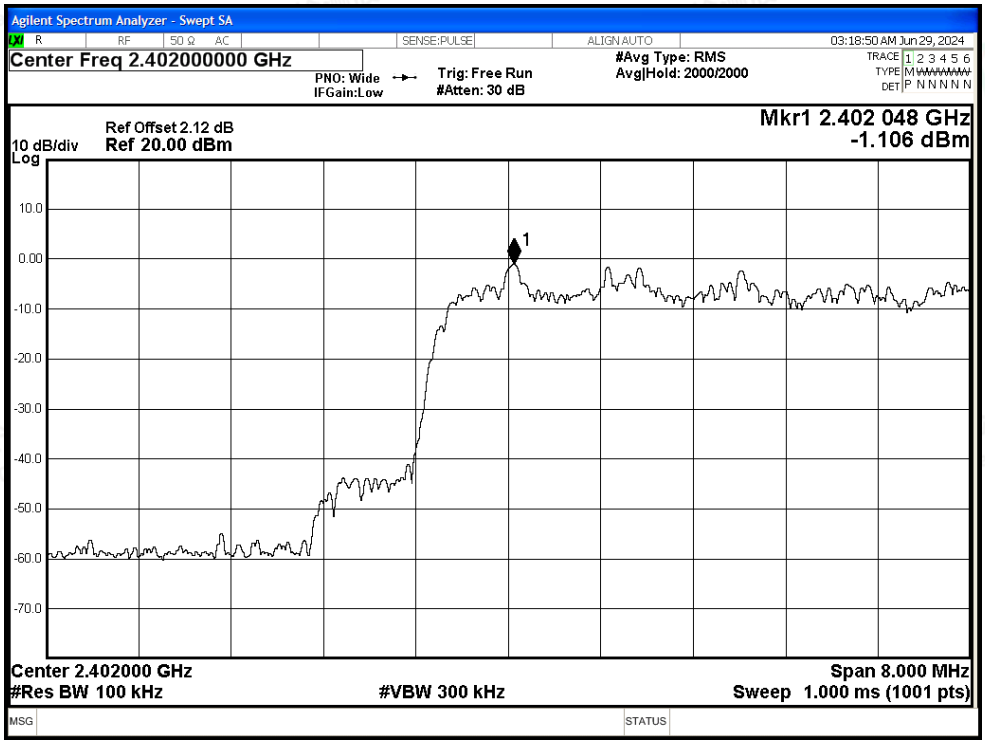
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



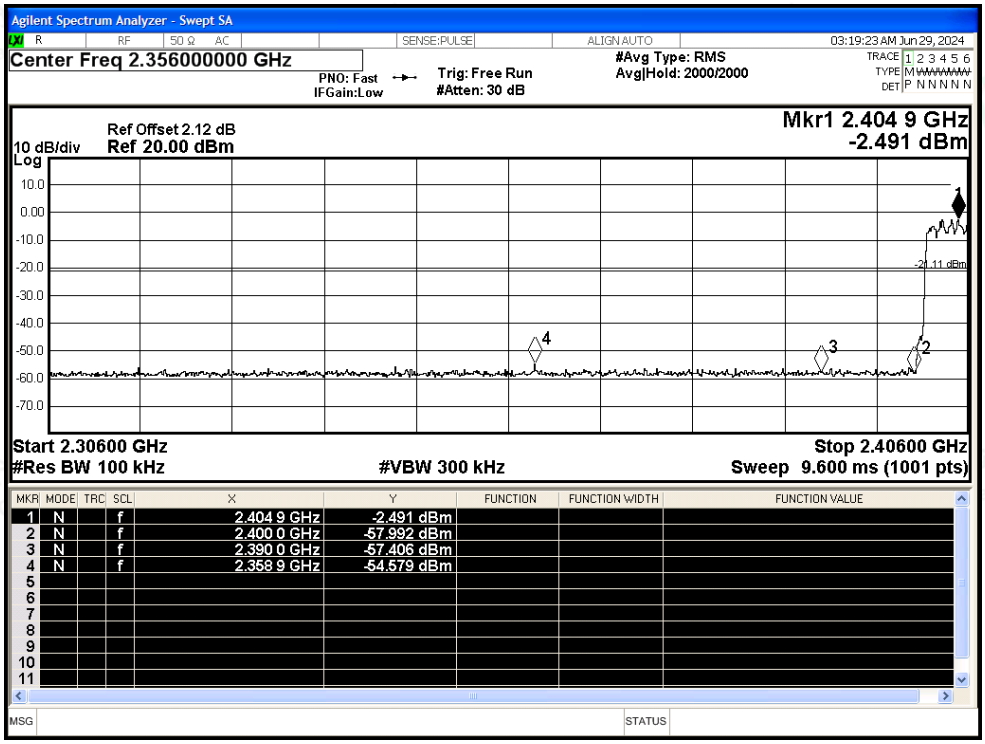
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission



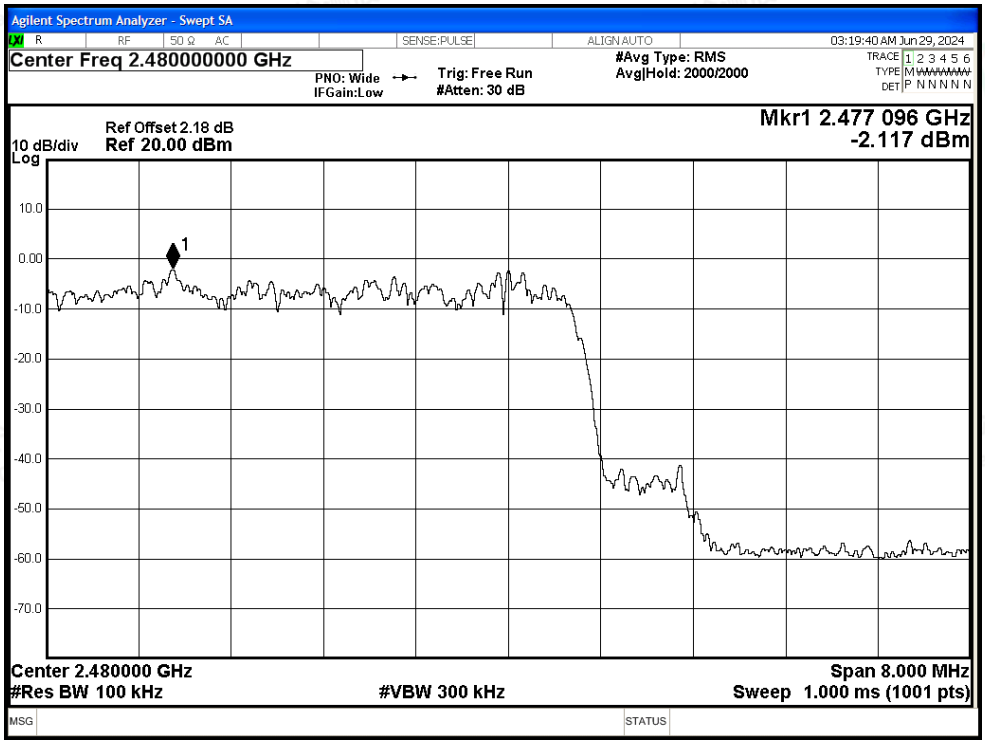
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



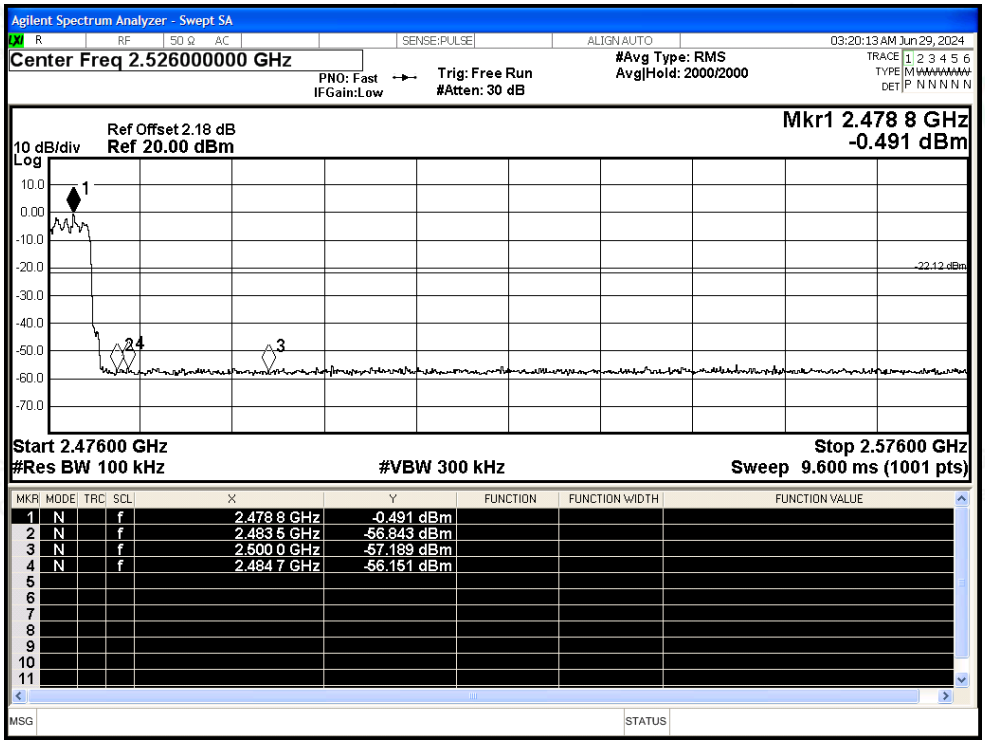
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission

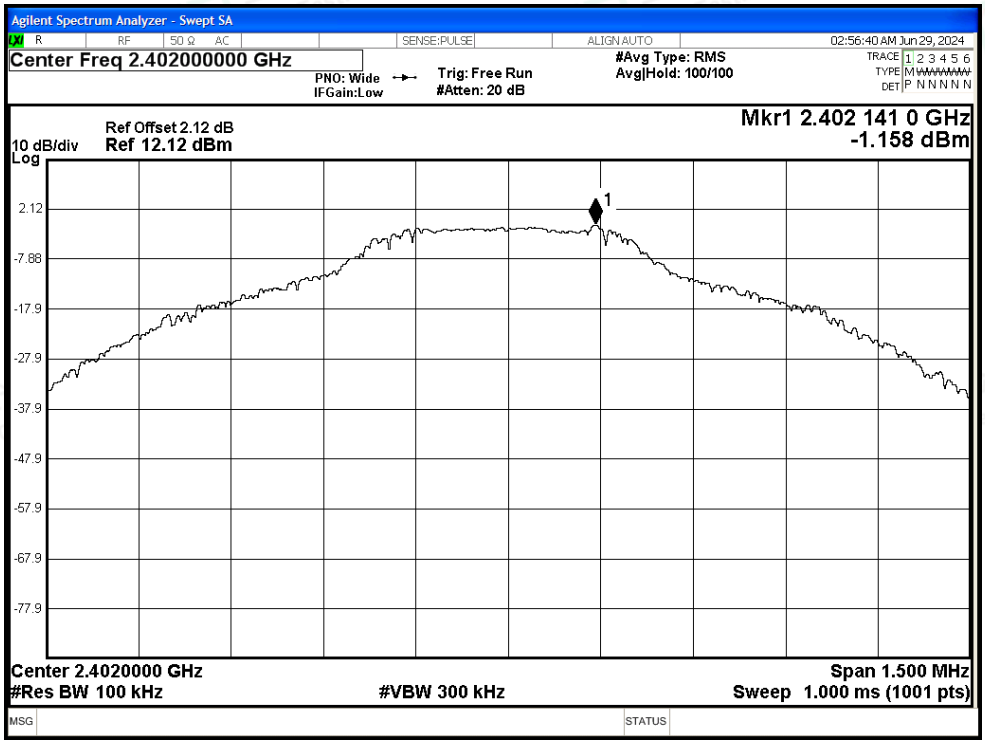


A.7 Conducted RF Spurious Emission

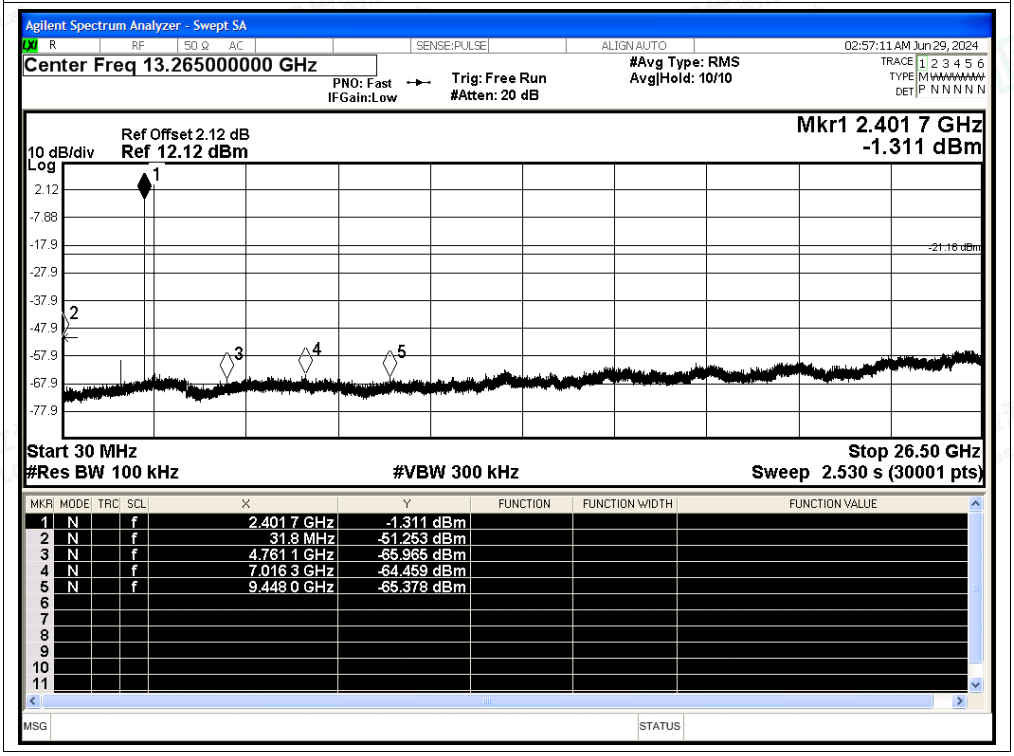
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-50.1	-20	Pass
NVNT	1-DH5	2441	Ant1	-50.63	-20	Pass
NVNT	1-DH5	2480	Ant1	-50.18	-20	Pass
NVNT	2-DH5	2402	Ant1	-50.45	-20	Pass
NVNT	2-DH5	2441	Ant1	-49.02	-20	Pass
NVNT	2-DH5	2480	Ant1	-49.16	-20	Pass

Test Graphs

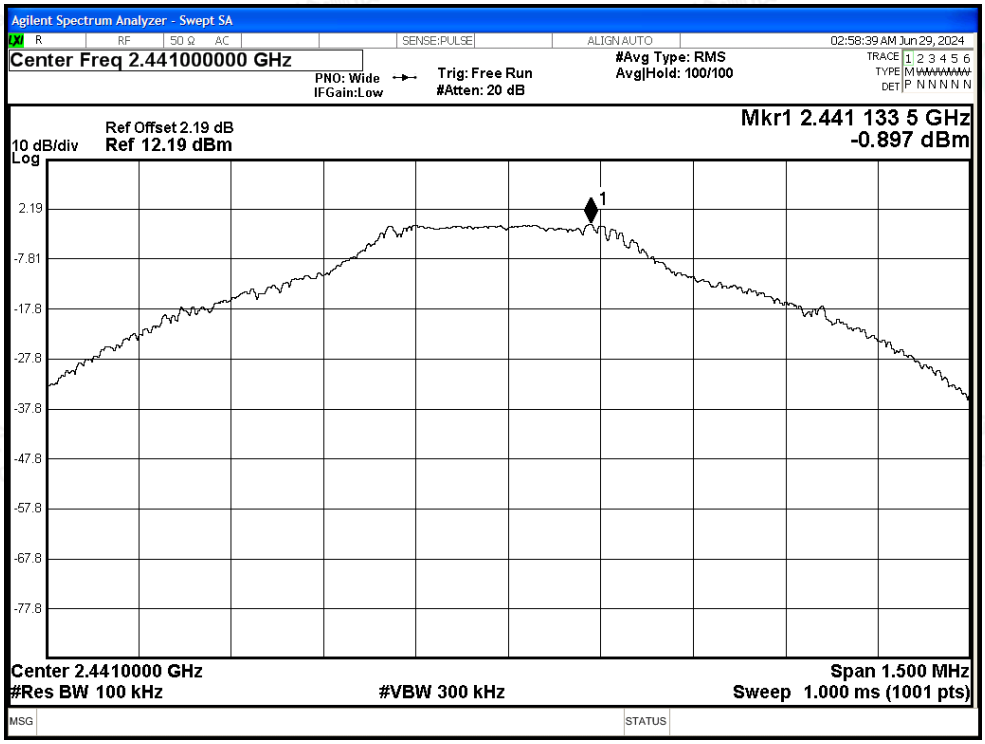
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



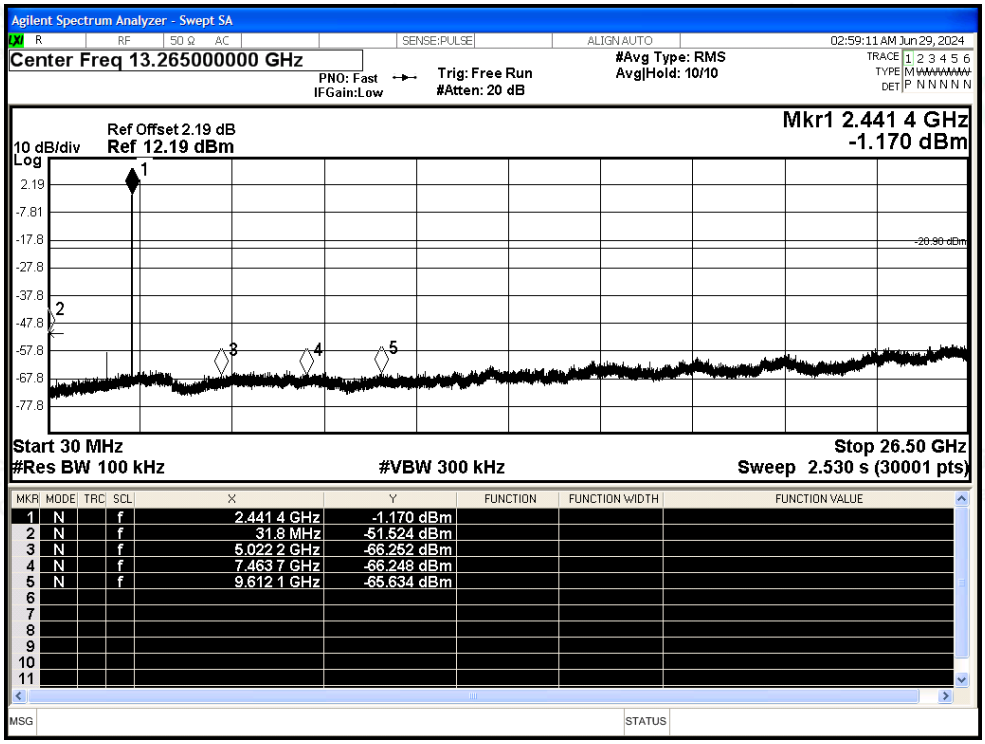
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref

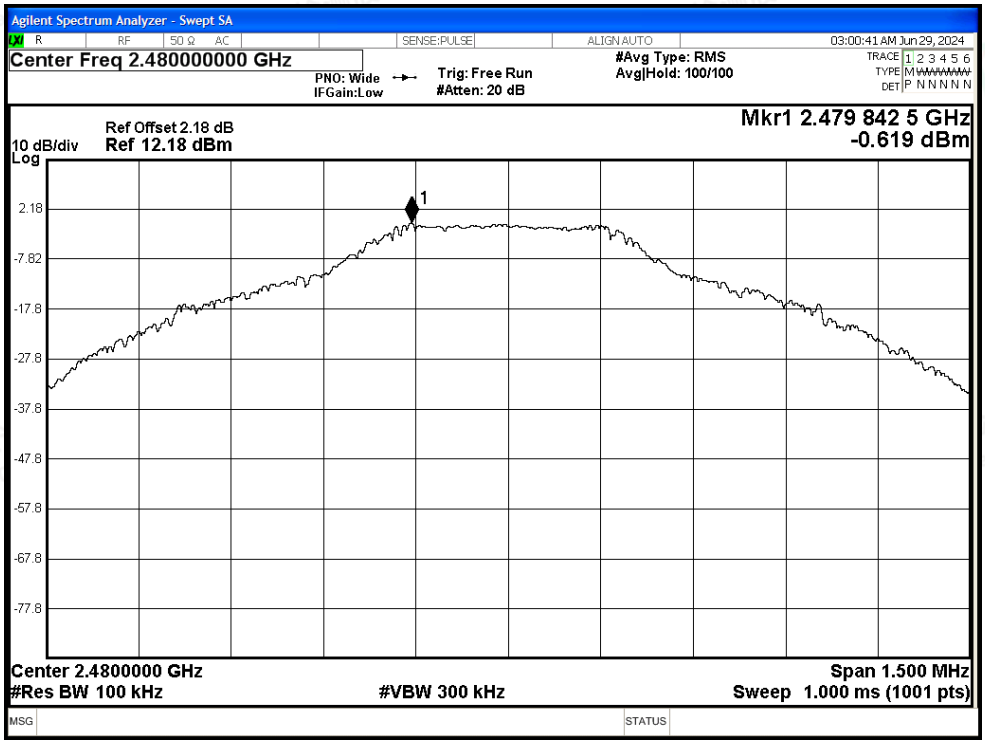


Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission

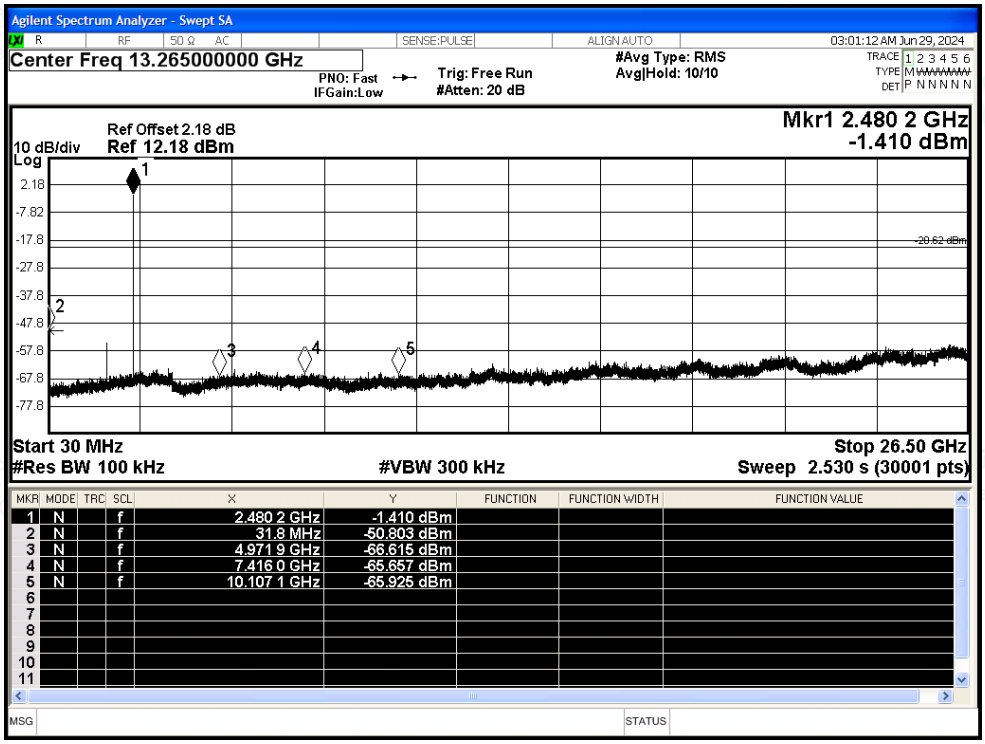


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N		f	2.441 4 GHz	-1.170 dBm			
2	N		f	31.8 MHz	-51.524 dBm			
3	N		f	5.022 2 GHz	-66.252 dBm			
4	N		f	7.463 7 GHz	-66.248 dBm			
5	N		f	9.612 1 GHz	-65.634 dBm			
6								
7								
8								
9								
10								
11								

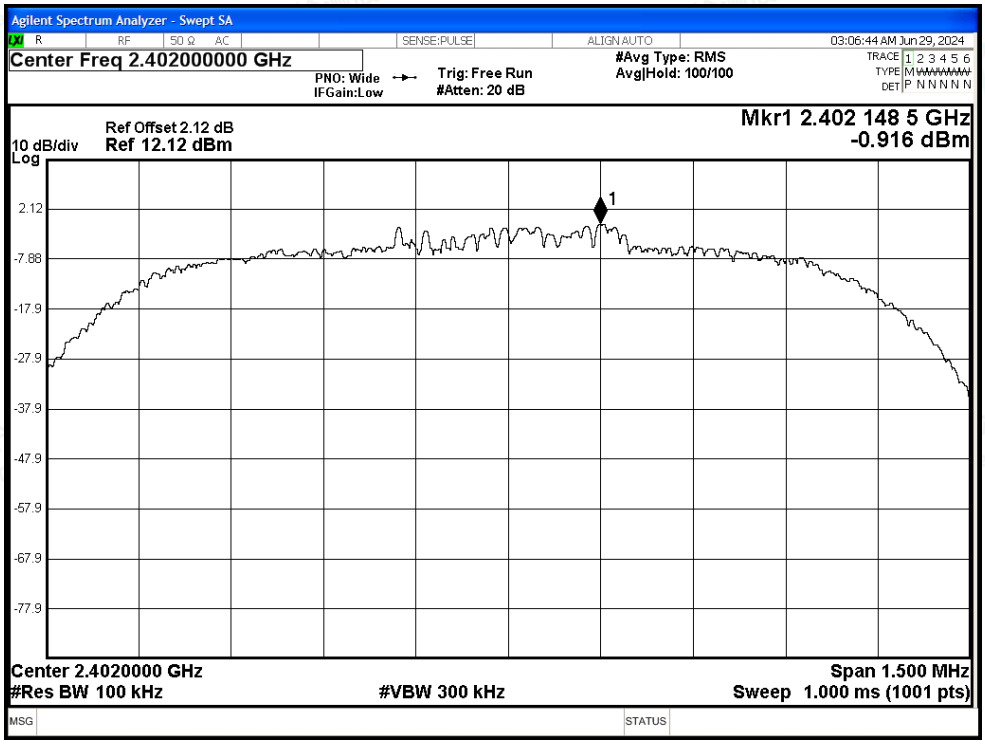
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



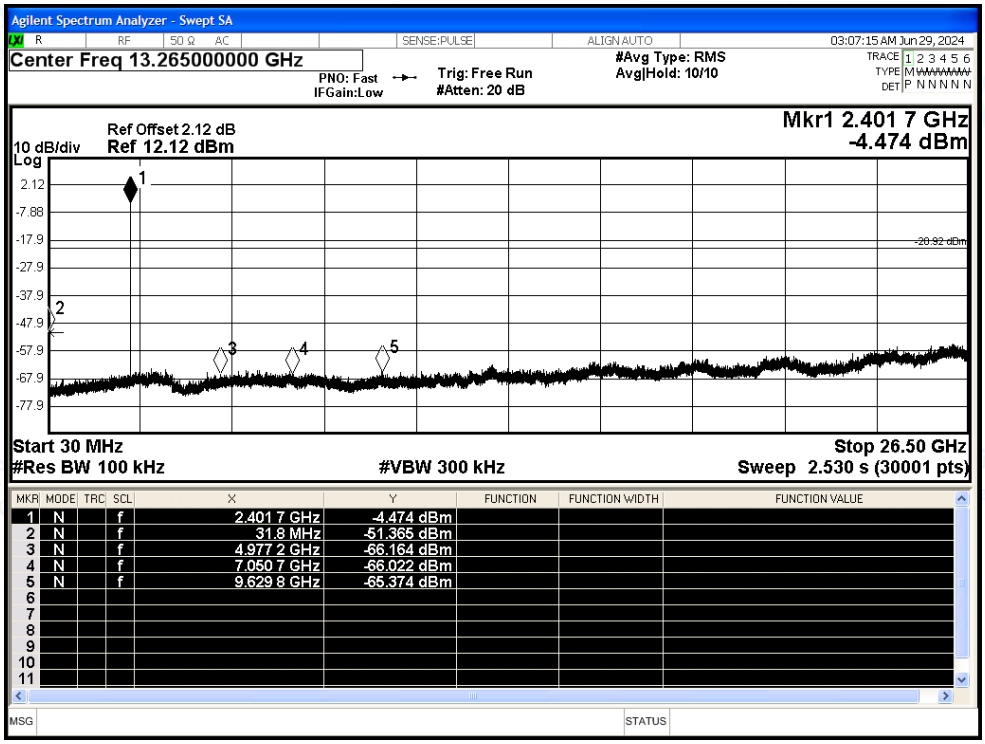
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



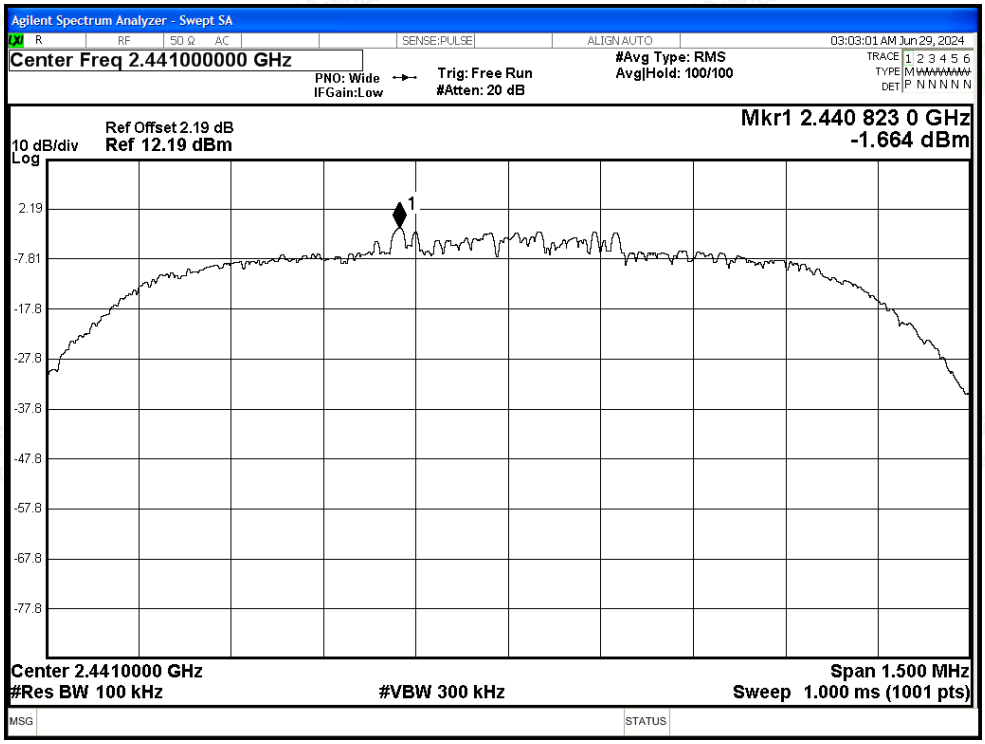
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



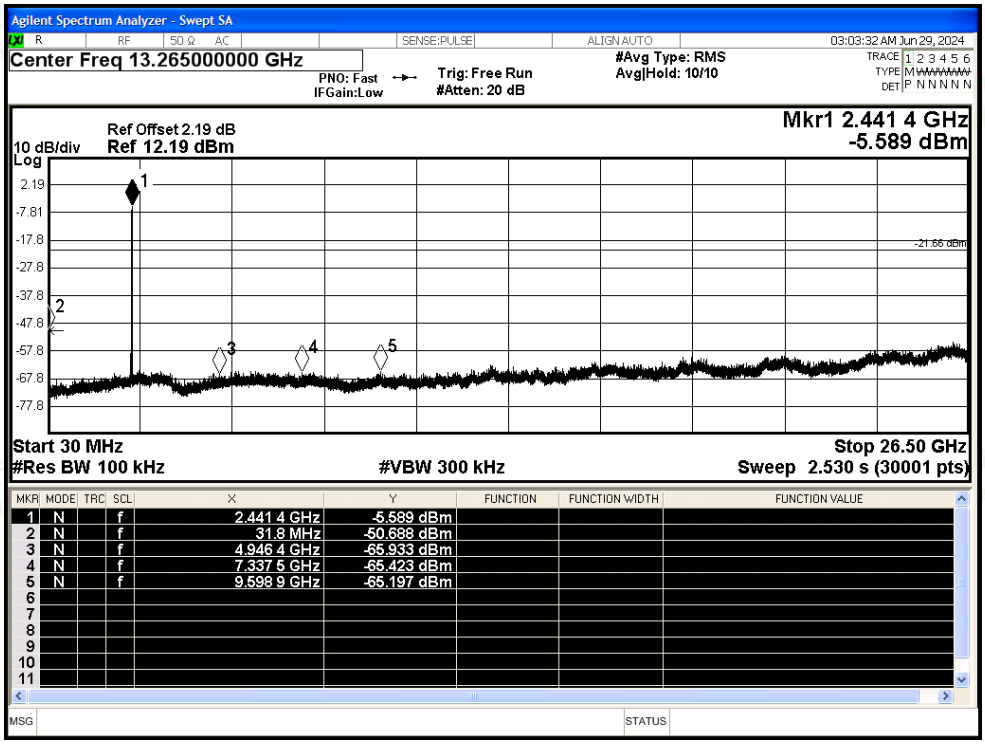
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



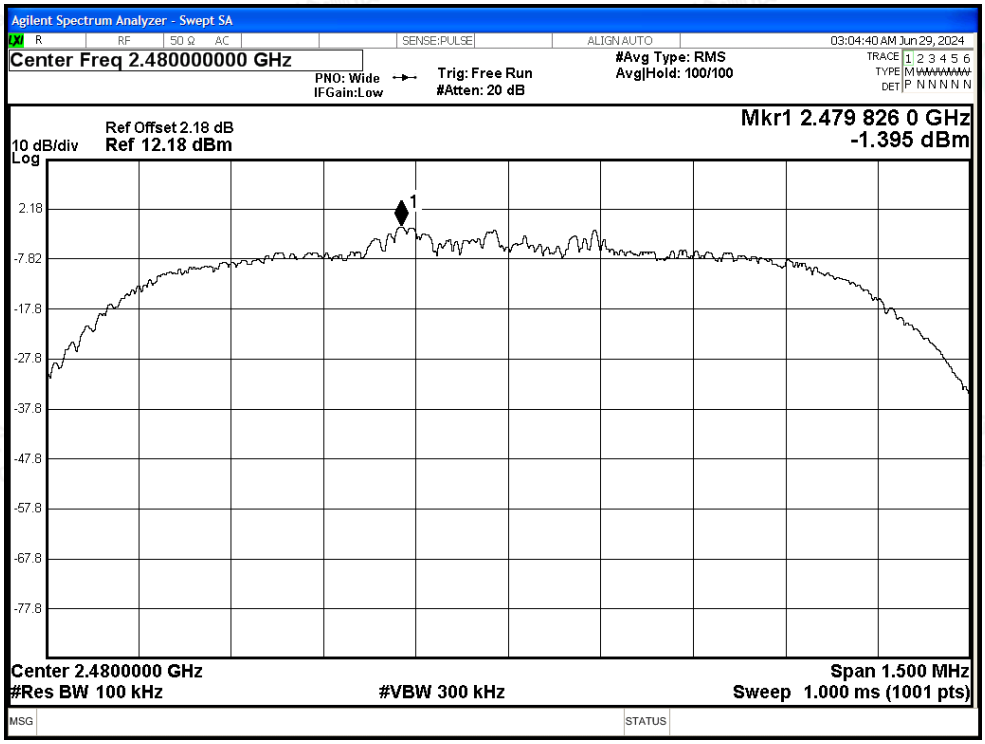
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



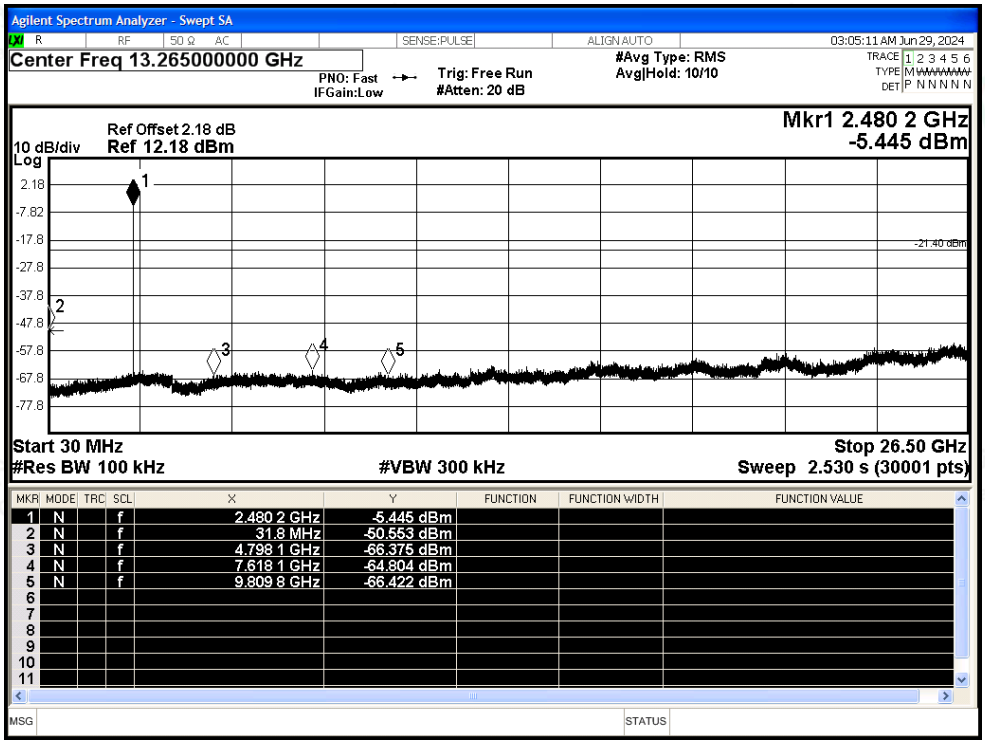
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission

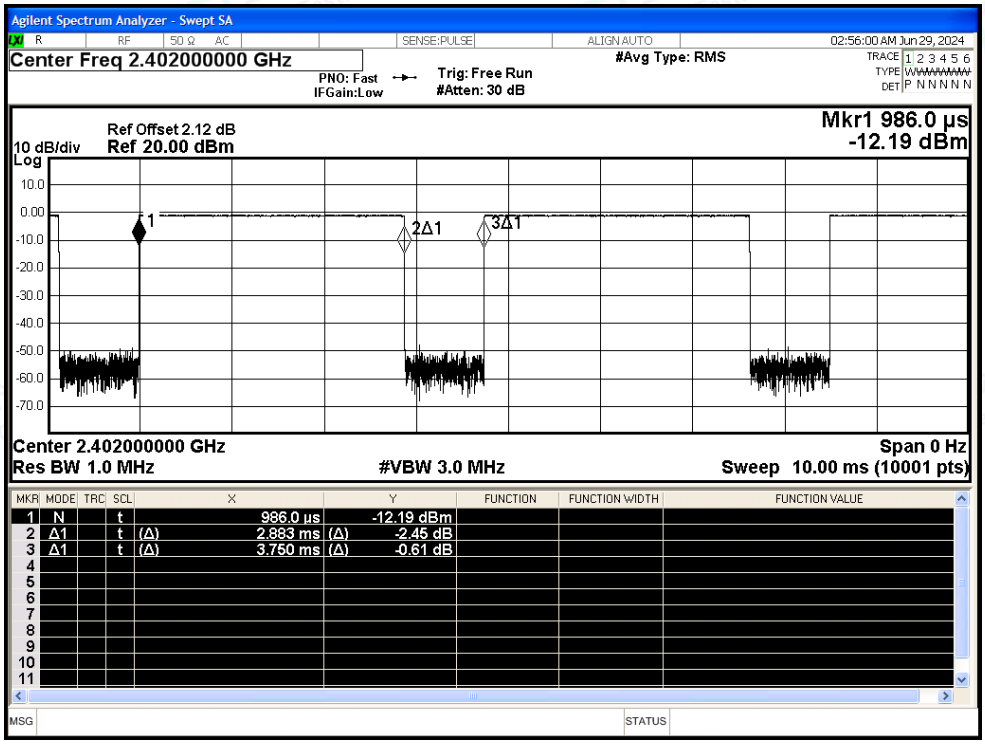


A.8 Duty Cycle

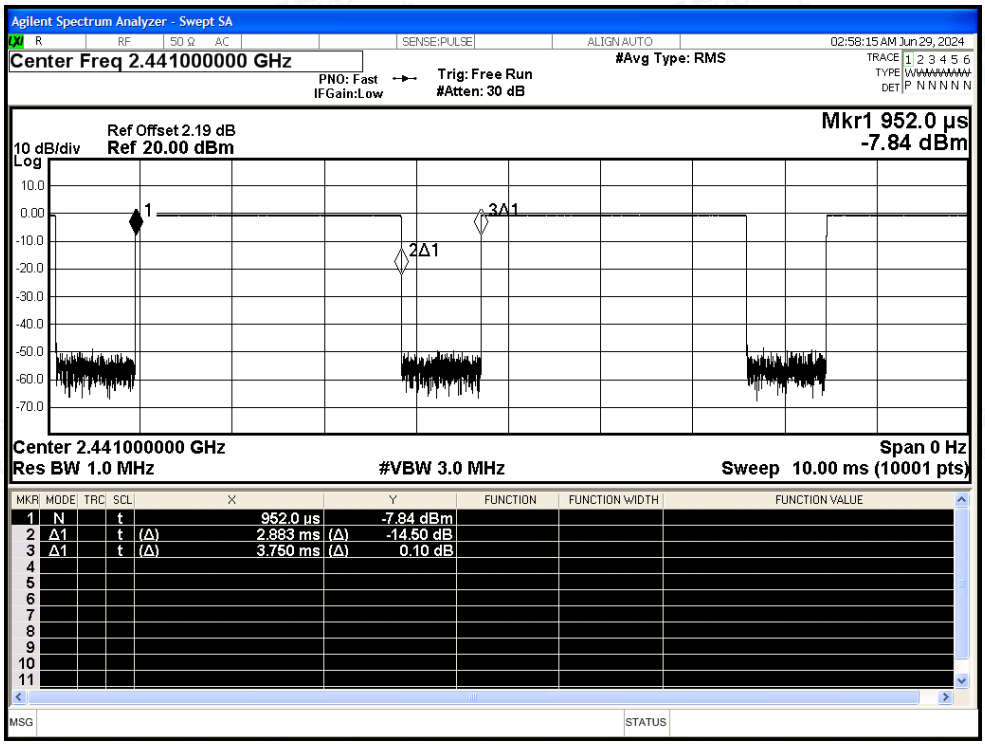
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	76.88	1.14	0.35
NVNT	1-DH5	2441	Ant1	76.88	1.14	0.35
NVNT	1-DH5	2480	Ant1	76.85	1.14	0.35
NVNT	2-DH5	2402	Ant1	76.96	1.14	0.35
NVNT	2-DH5	2441	Ant1	76.96	1.14	0.35
NVNT	2-DH5	2480	Ant1	76.96	1.14	0.35

Test Graphs

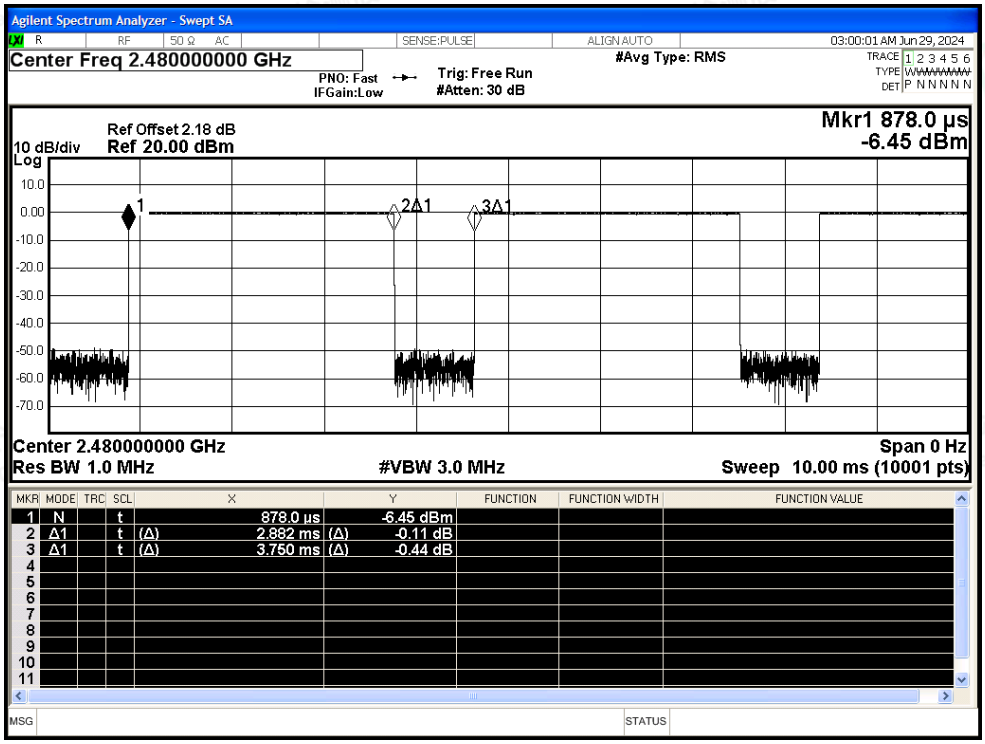
Duty Cycle NVNT 1-DH5 2402MHz Ant1



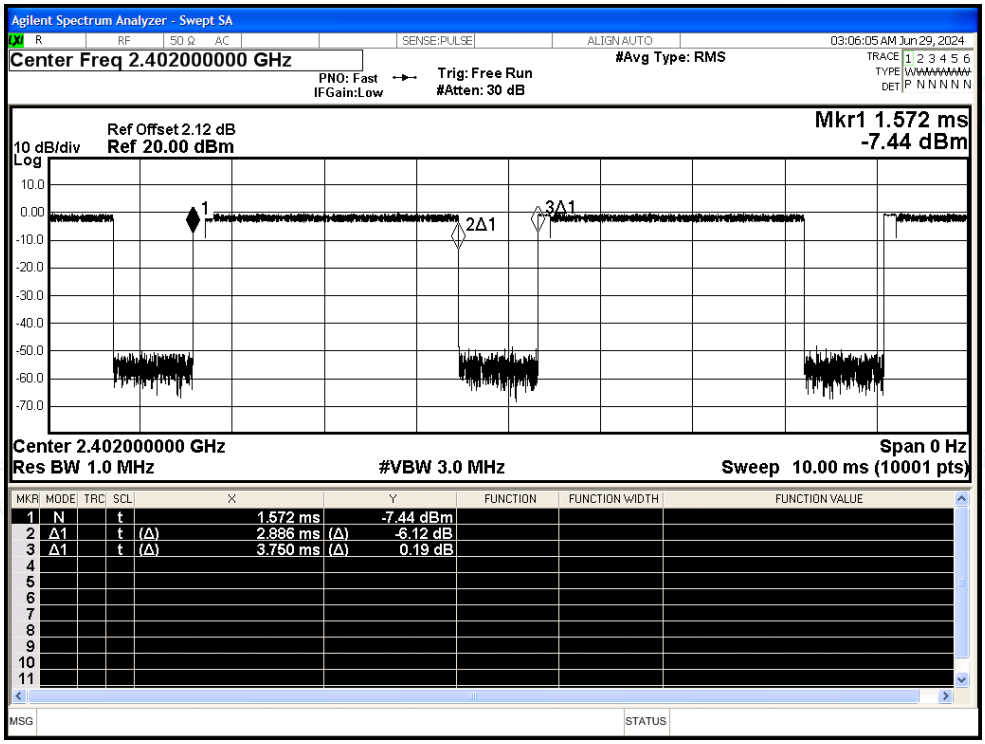
Duty Cycle NVNT 1-DH5 2441MHz Ant1



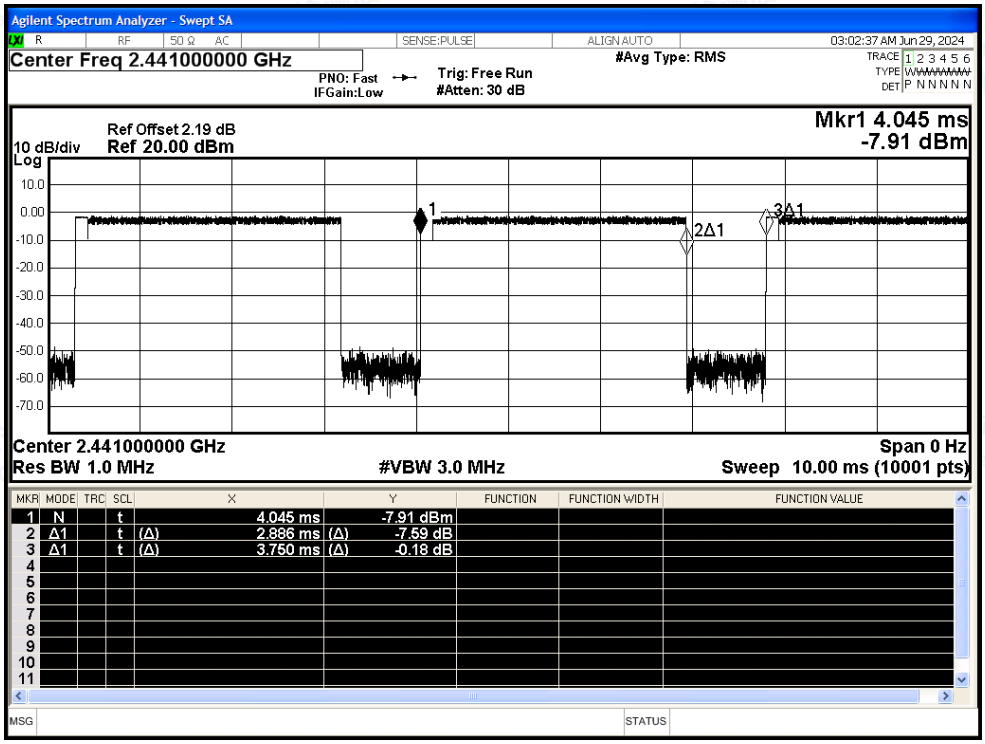
Duty Cycle NVNT 1-DH5 2480MHz Ant1



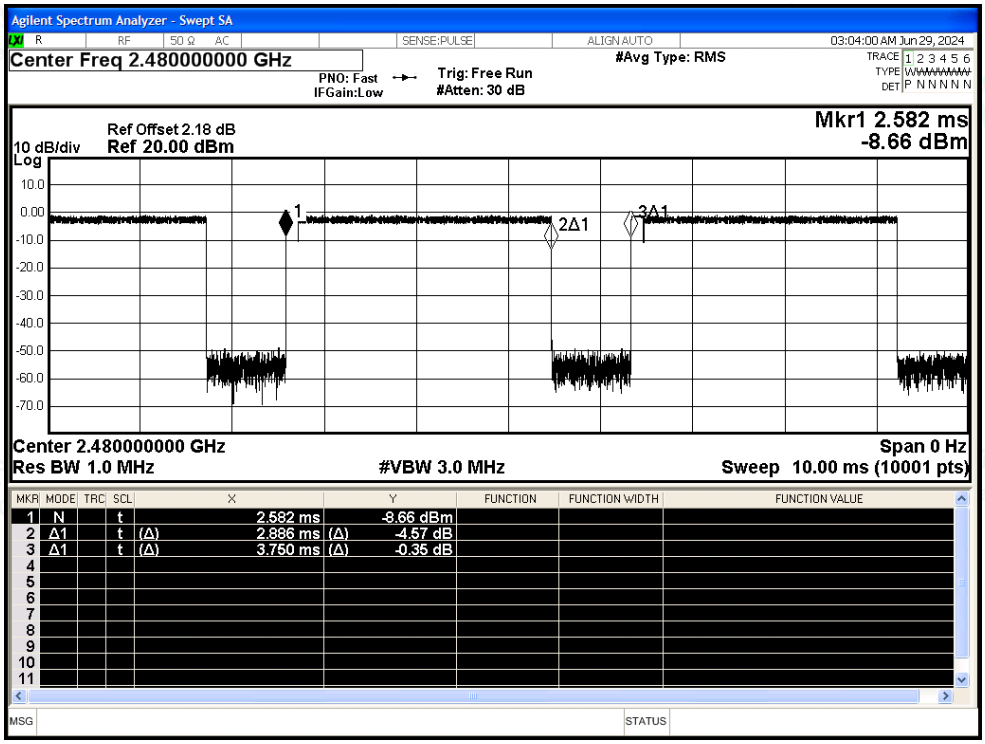
Duty Cycle NVNT 2-DH5 2402MHz Ant1



Duty Cycle NVNT 2-DH5 2441MHz Ant1



Duty Cycle NVNT 2-DH5 2480MHz Ant1

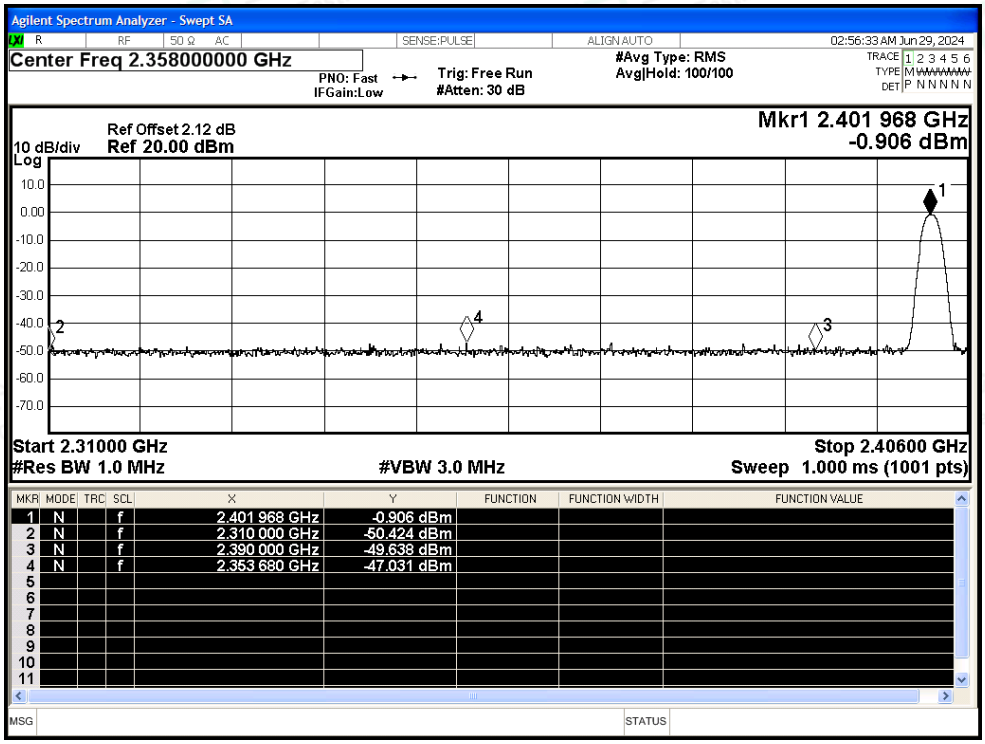


A.9 Restrict Band

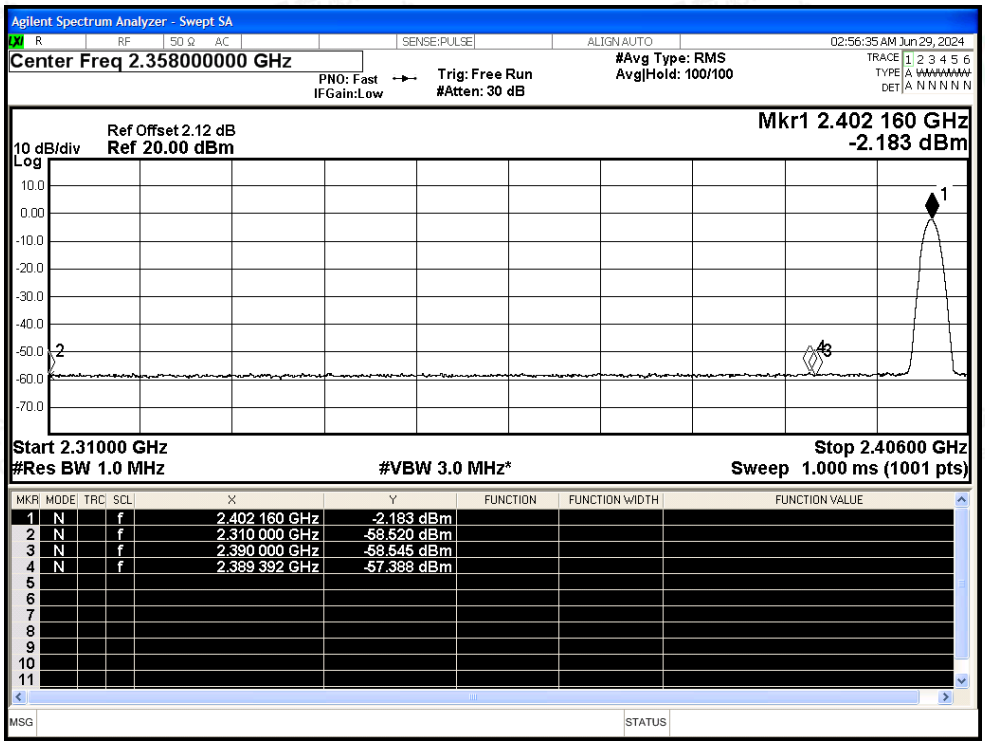
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-50.42	2.41	-	47.25	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-58.52	2.41	1.14	40.29	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2353.68	-47.03	2.41	-	50.64	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2389.392	-57.39	2.41	1.14	41.42	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-49.64	2.41	-	48.03	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-58.55	2.41	1.14	40.26	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-50.39	2.41	-	47.28	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-57.3	2.41	1.14	41.51	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2489.656	-47.05	2.41	-	50.62	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2493.04	-57.22	2.41	1.14	41.59	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-51.09	2.41	-	46.58	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-58.04	2.41	1.14	40.77	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-50.78	2.41	-	46.89	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-58.8	2.41	1.14	40.01	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2360.112	-47.28	2.41	-	50.39	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2363.376	-57.5	2.41	1.14	41.31	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-49.8	2.41	-	47.87	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-58.32	2.41	1.14	40.49	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-49.35	2.41	-	48.32	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-58.02	2.41	1.14	40.79	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2493.616	-46.97	2.41	-	50.7	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2485.336	-57.07	2.41	1.14	41.74	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-50.57	2.41	-	47.1	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-57.81	2.41	1.14	41	Average	54	Pass

Test Graphs

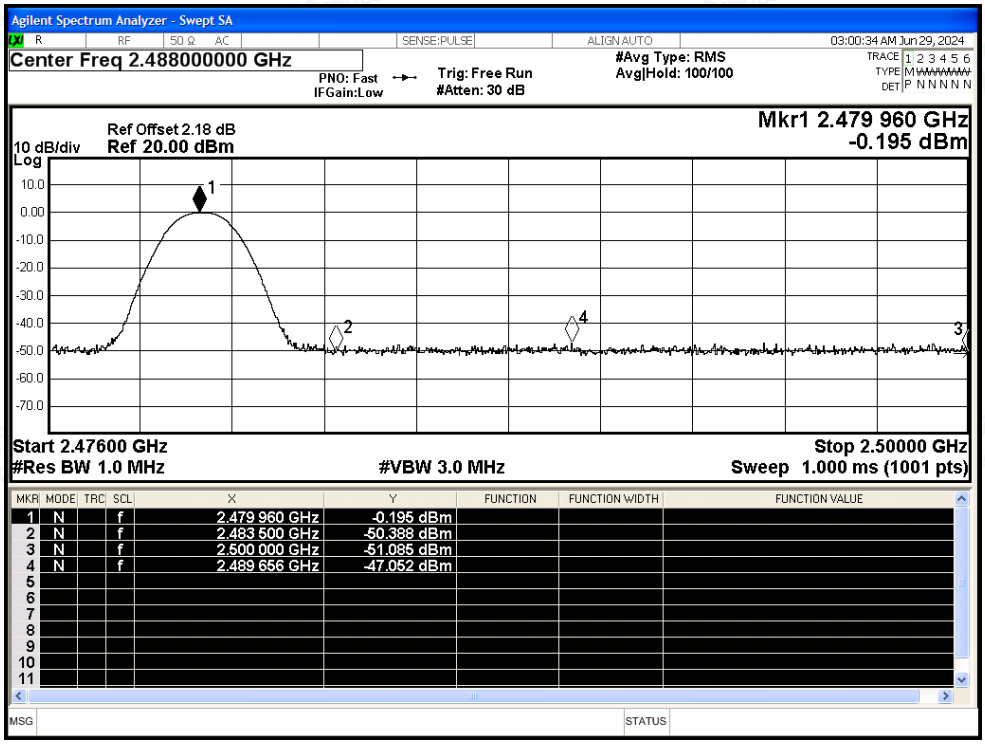
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak



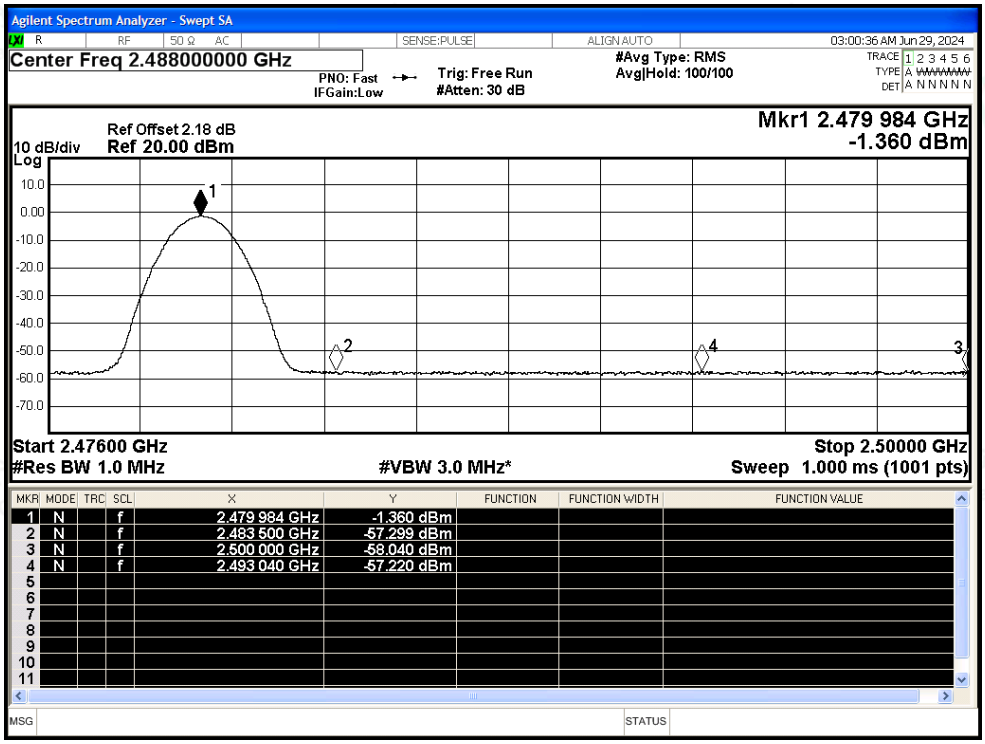
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average



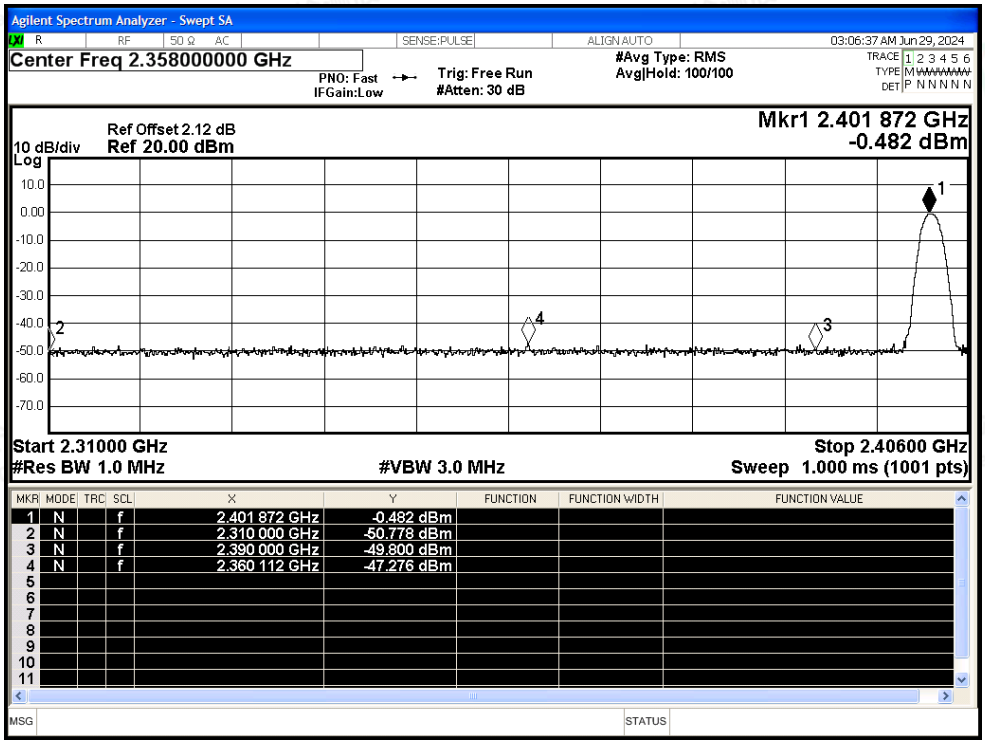
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak



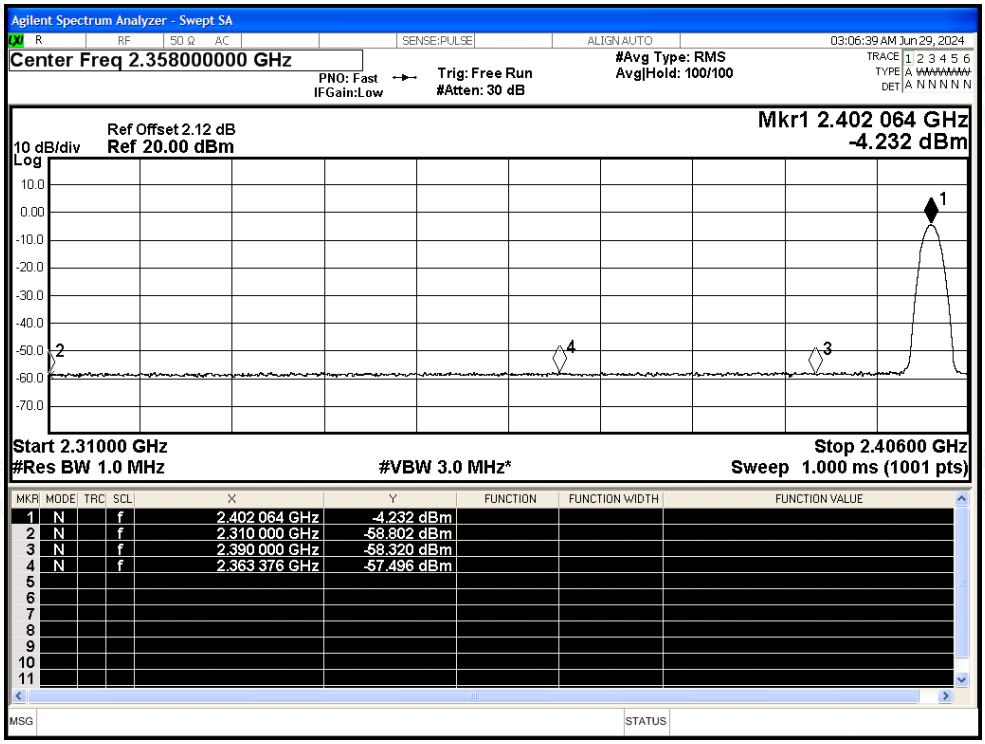
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average



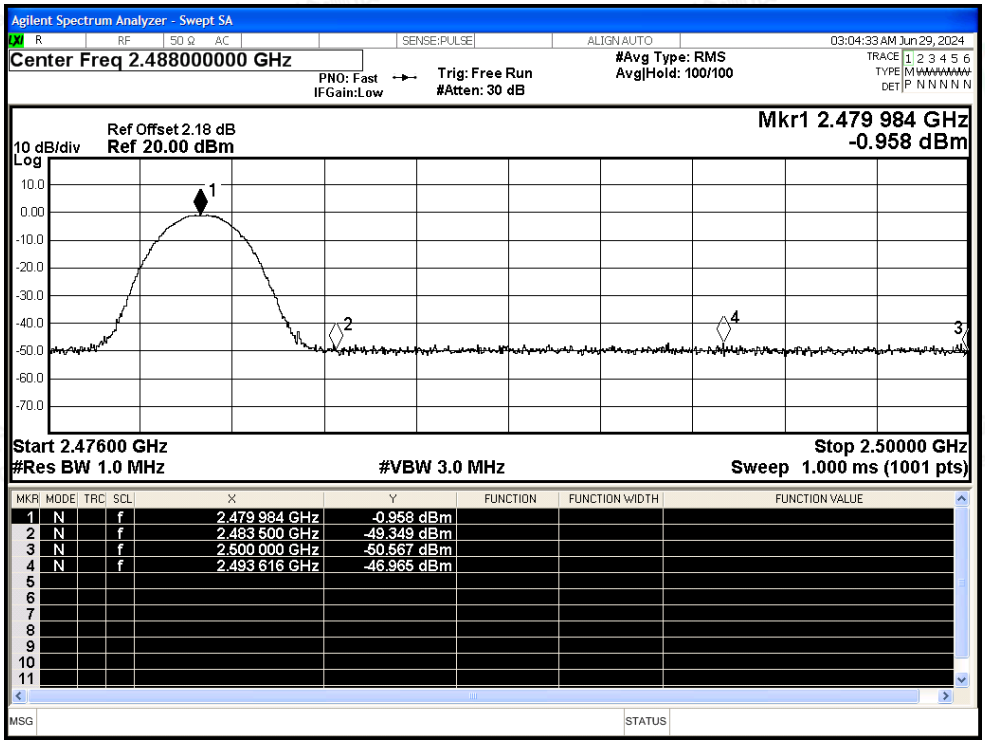
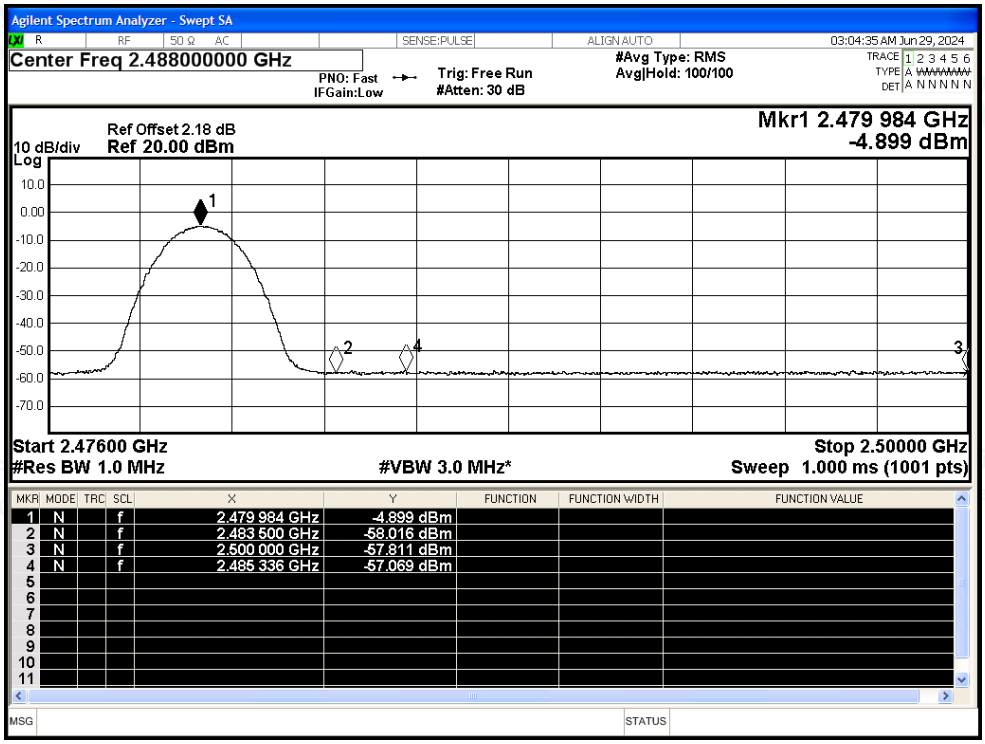
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak



Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average



Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Peak



Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Average