Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: TWS

Test Model: EARTOUS S1

Environmental Conditions

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

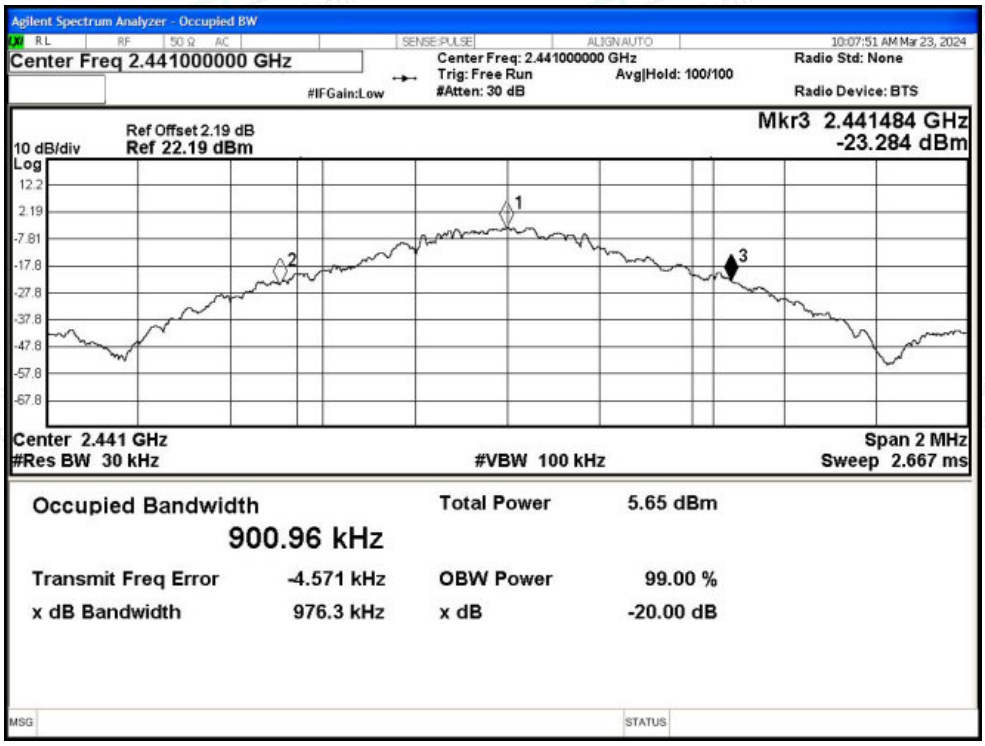
A.1 -20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	1.018	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.976	N/A	Pass
NVNT	1-DH5	2480	Ant1	1.023	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.281	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.284	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.279	N/A	Pass

Test Graphs

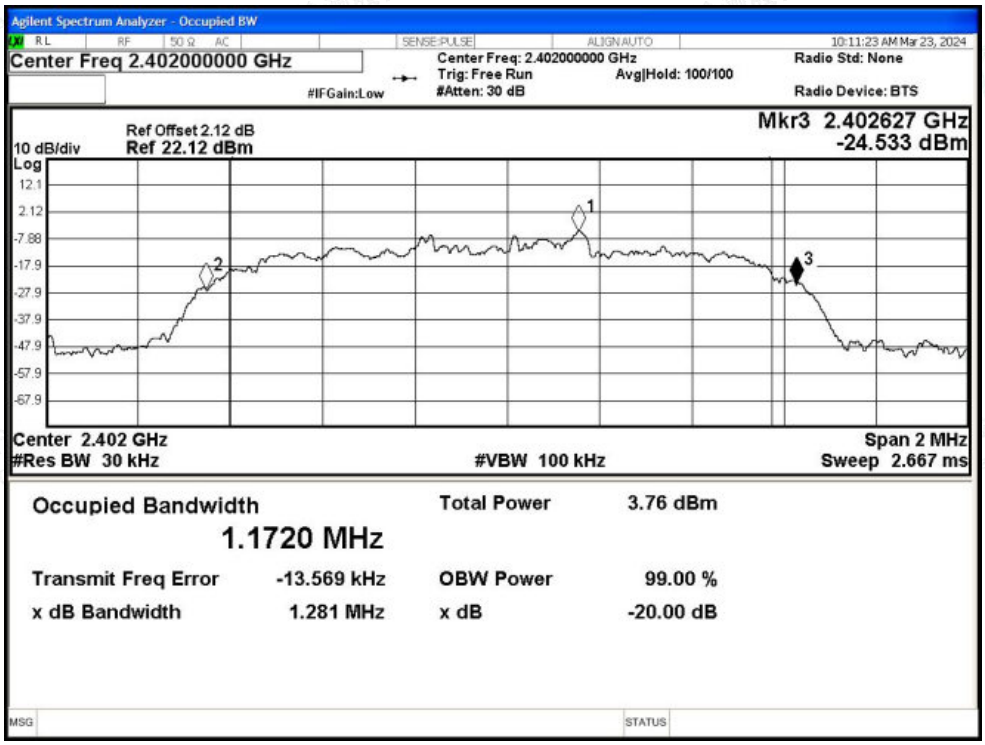
-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

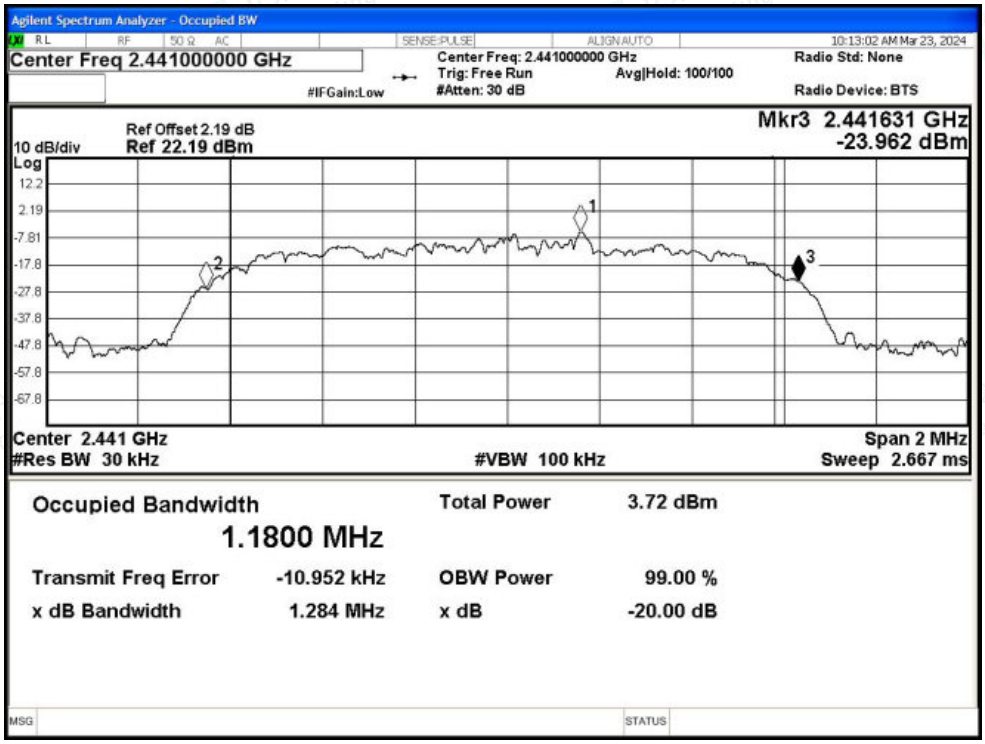


-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

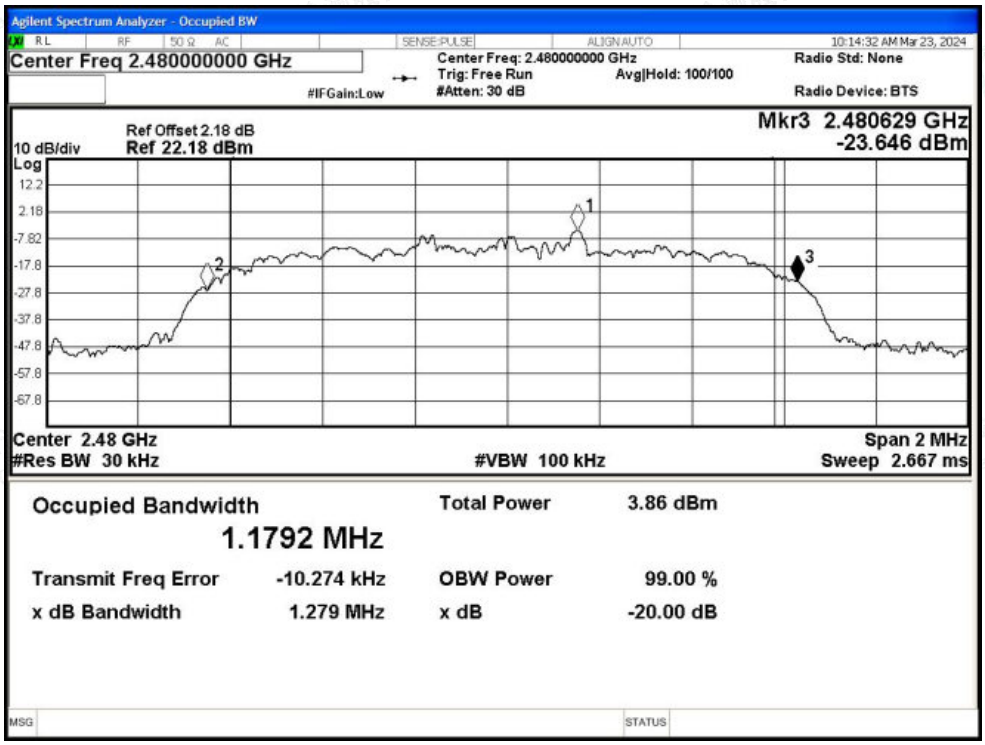
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

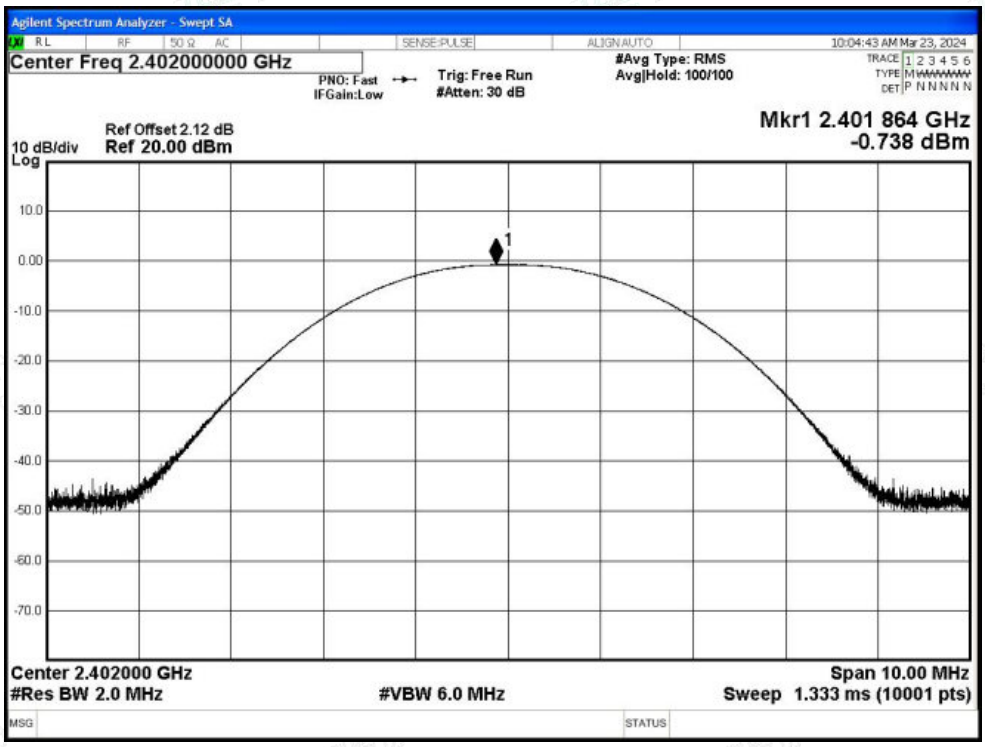


A.2 Maximum Conducted Output Power

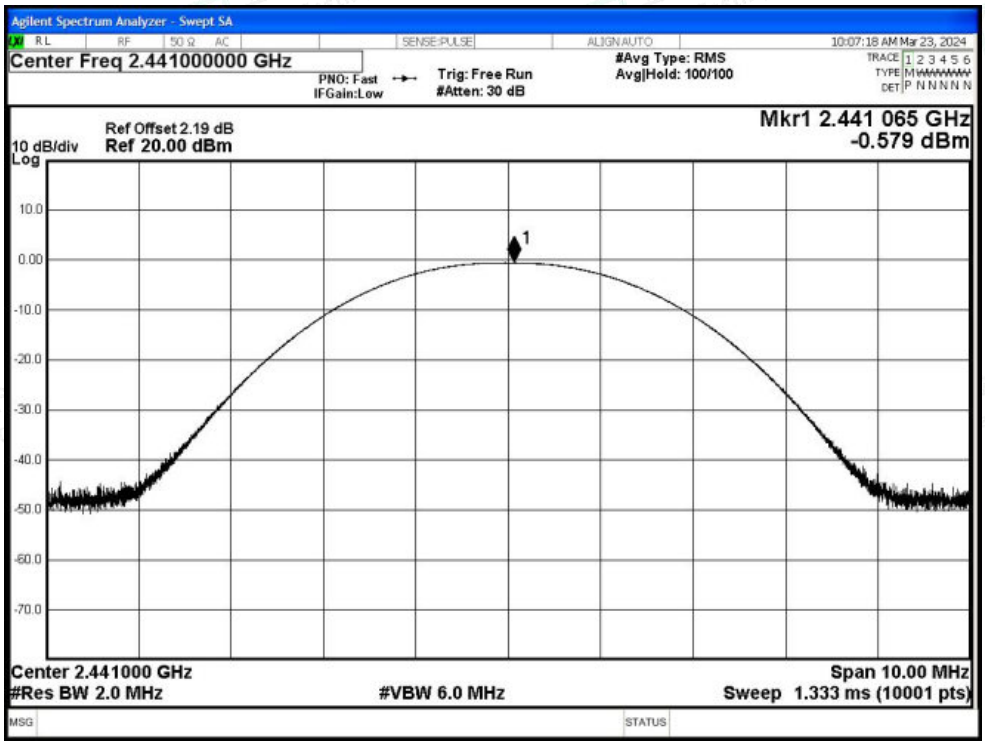
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	-0.74	21	Pass
NVNT	1-DH5	2441	Ant1	-0.58	21	Pass
NVNT	1-DH5	2480	Ant1	-0.53	21	Pass
NVNT	2-DH5	2402	Ant1	-1.05	21	Pass
NVNT	2-DH5	2441	Ant1	-0.82	21	Pass
NVNT	2-DH5	2480	Ant1	-0.74	21	Pass

Test Graphs

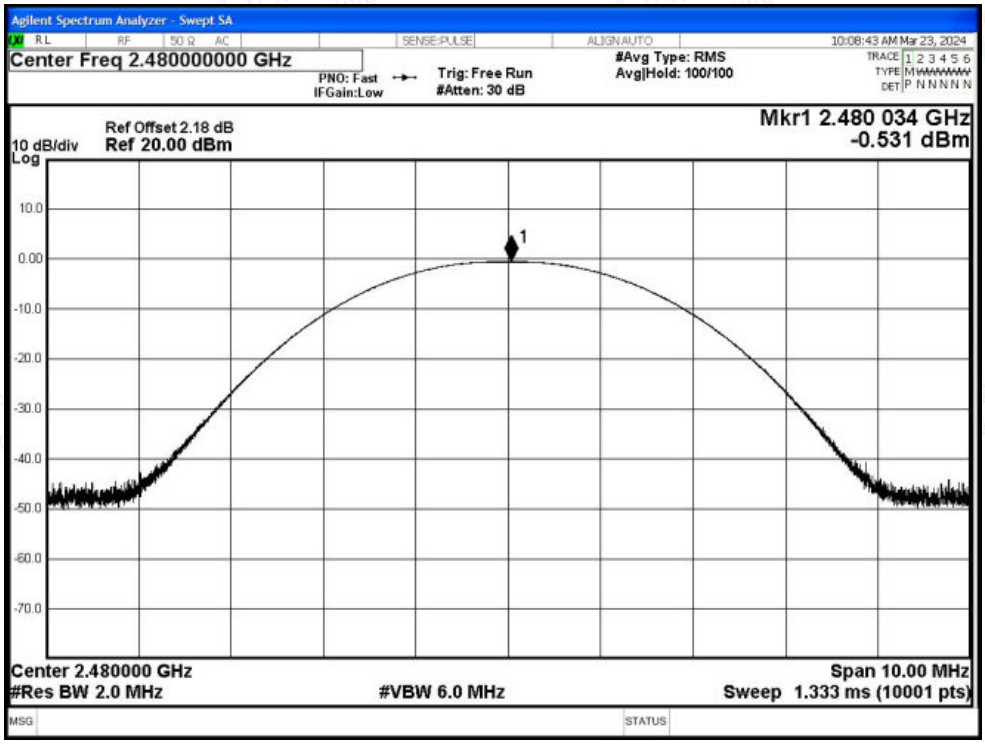
Power NVNT 1-DH5 2402MHz Ant1



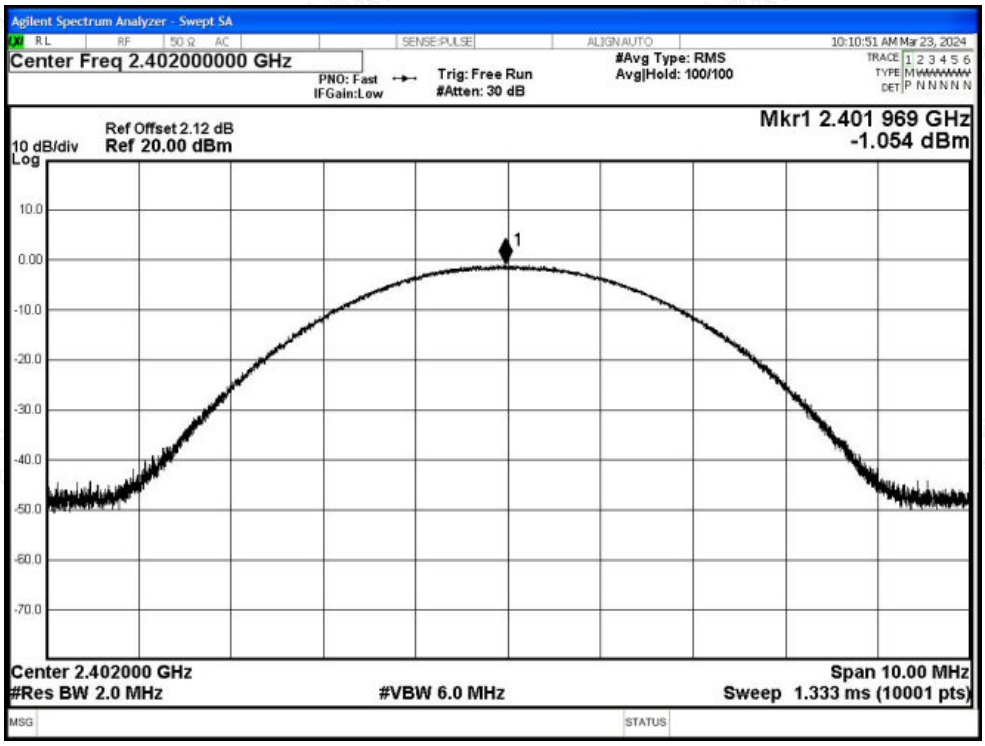
Power NVNT 1-DH5 2441MHz Ant1



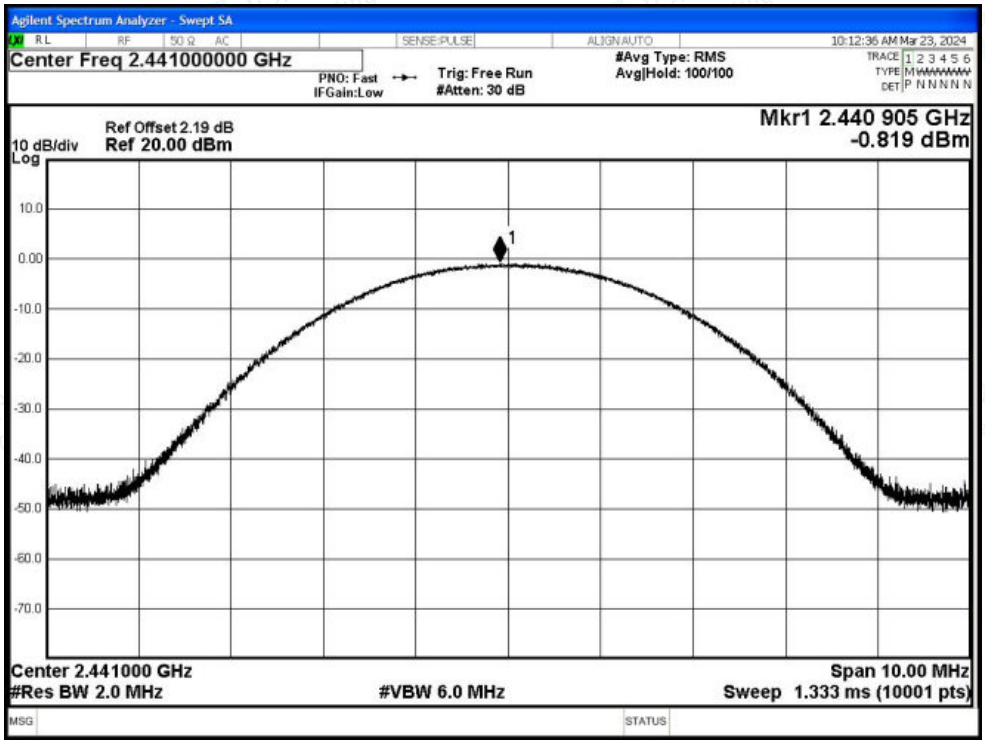
Power NVNT 1-DH5 2480MHz Ant1



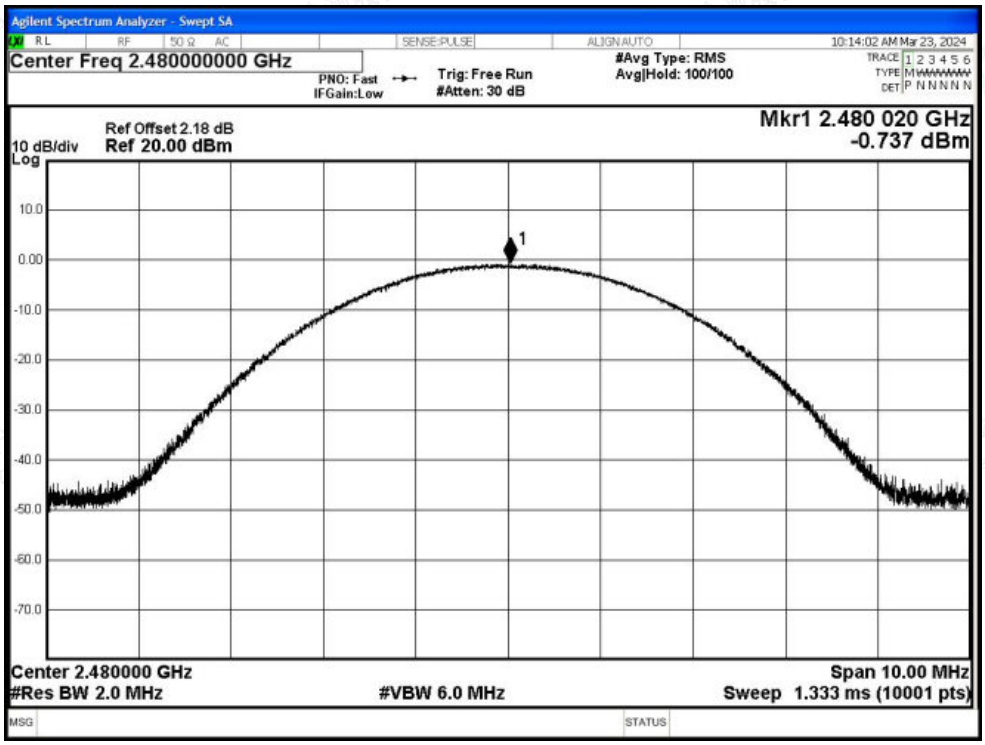
Power NVNT 2-DH5 2402MHz Ant1



Power NVNT 2-DH5 2441MHz Ant1



Power NVNT 2-DH5 2480MHz Ant1

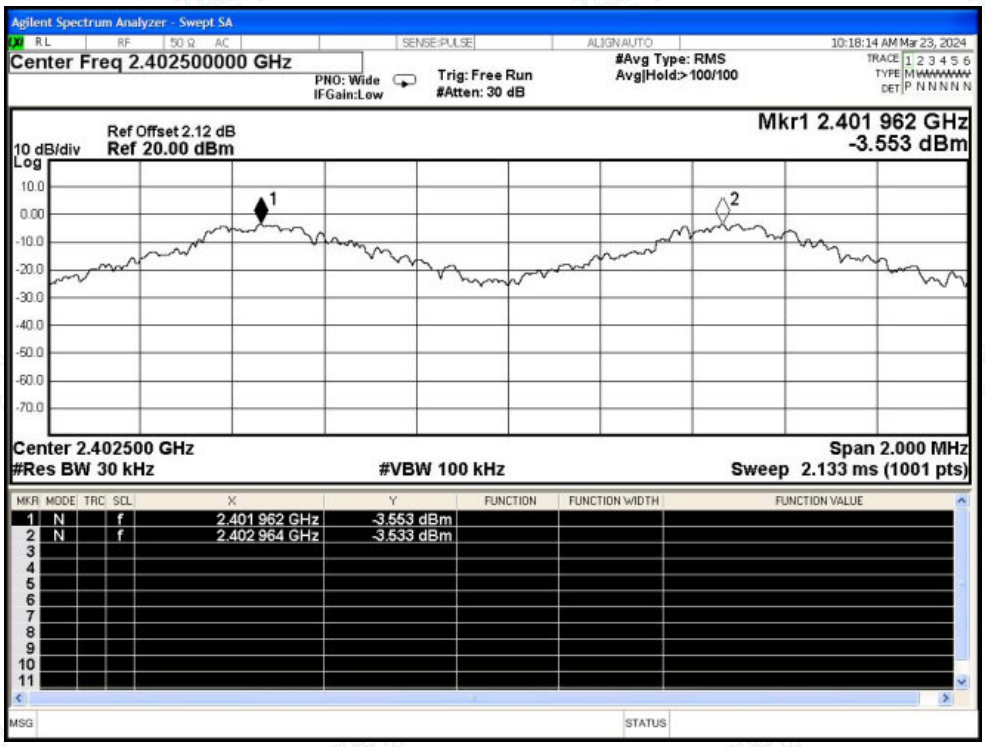


A.3 Carrier Frequencies Separation

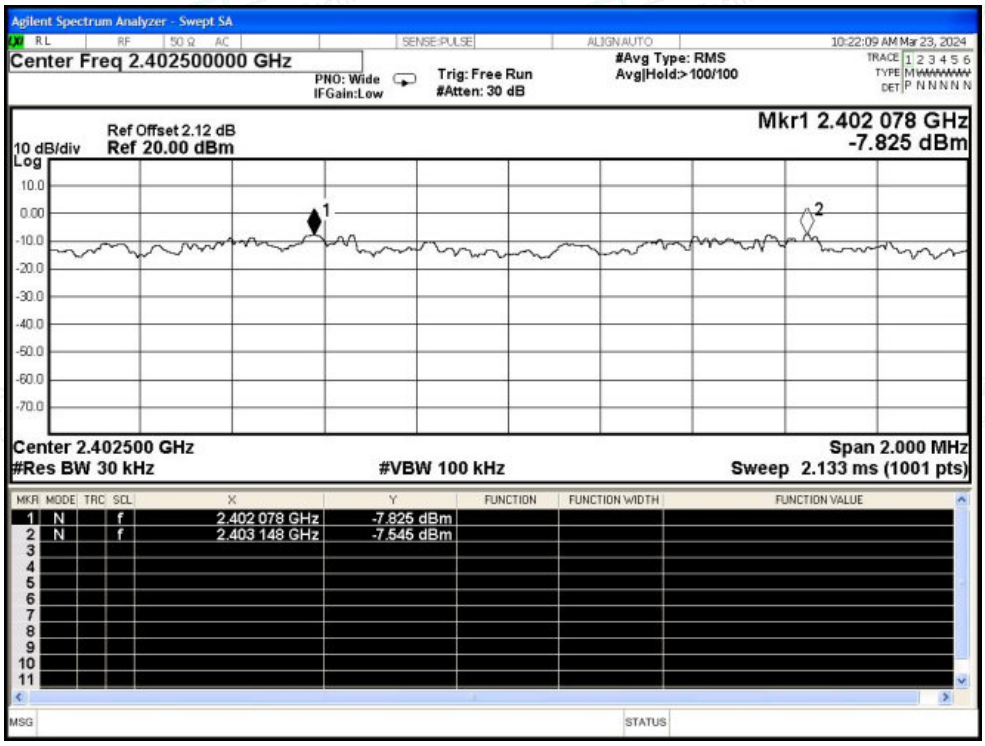
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2401.962	2402.964	1.002	0.682	Pass
NVNT	2-DH5	Ant1	2402.078	2403.148	1.07	0.856	Pass

Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1

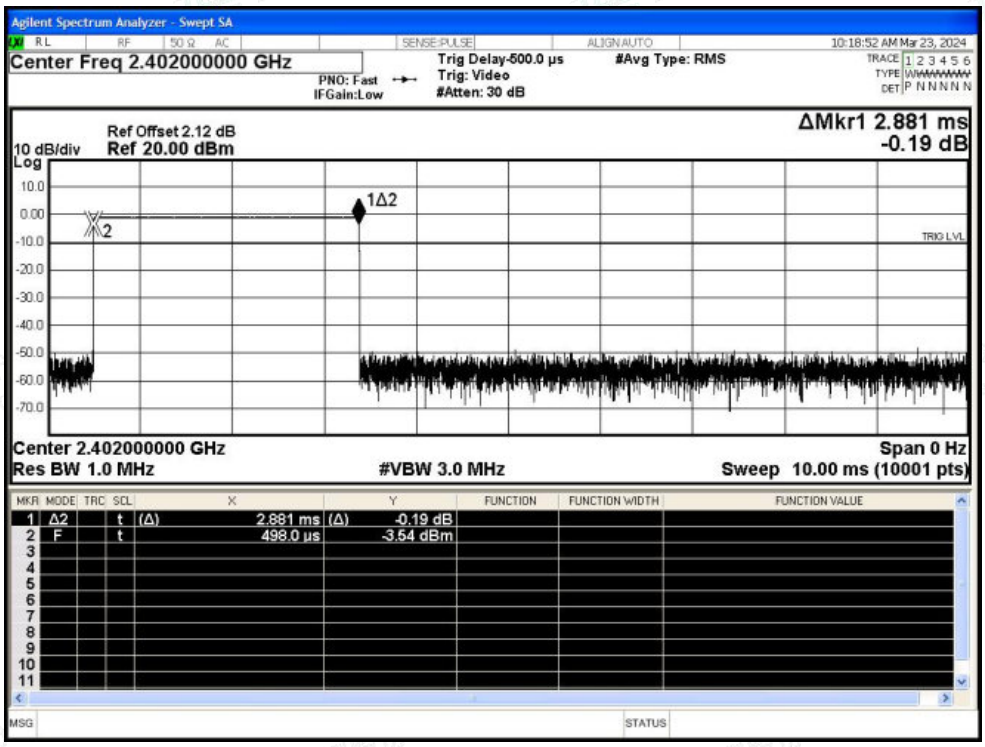


A.4 Dwell Time

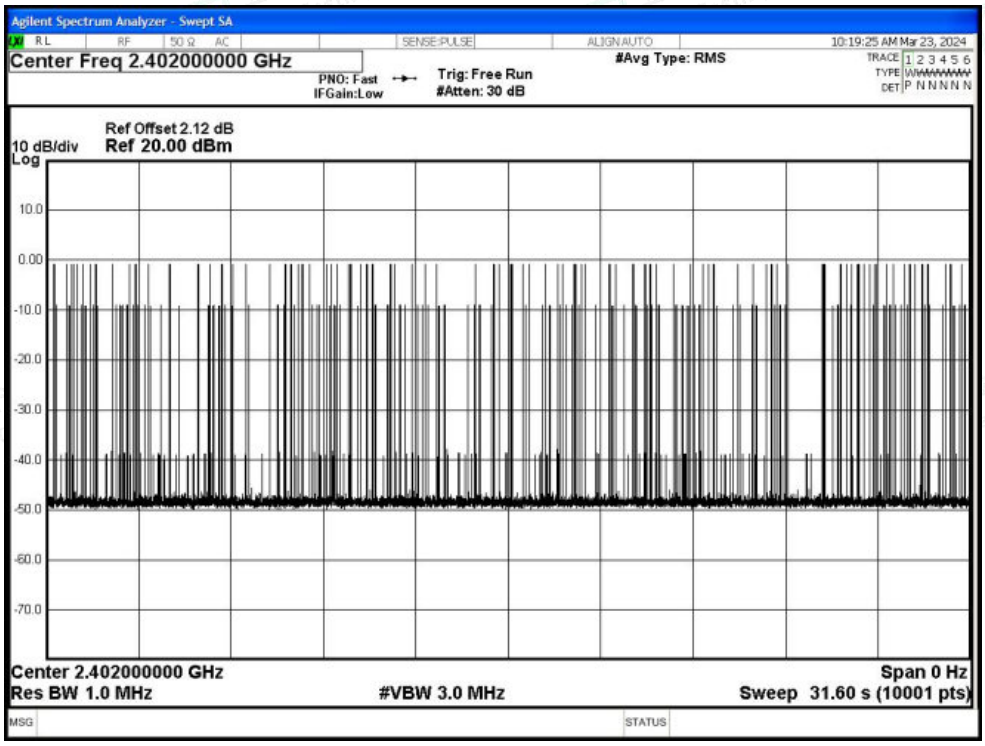
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.881	299.624	104	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.88	293.76	102	31600	400	Pass

Test Graphs

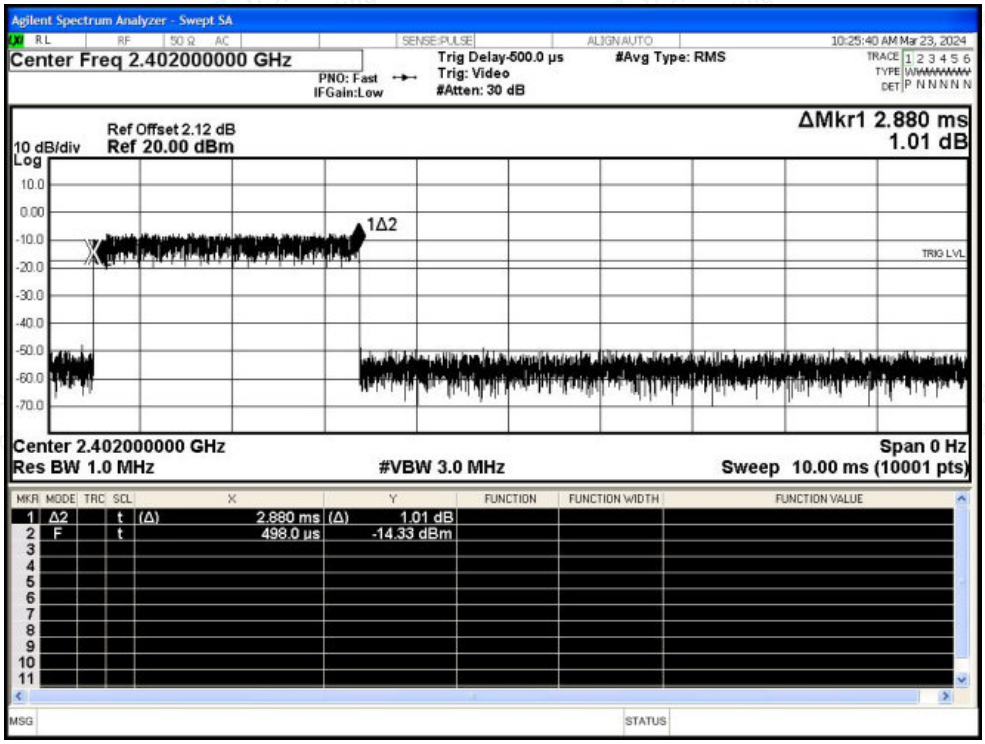
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



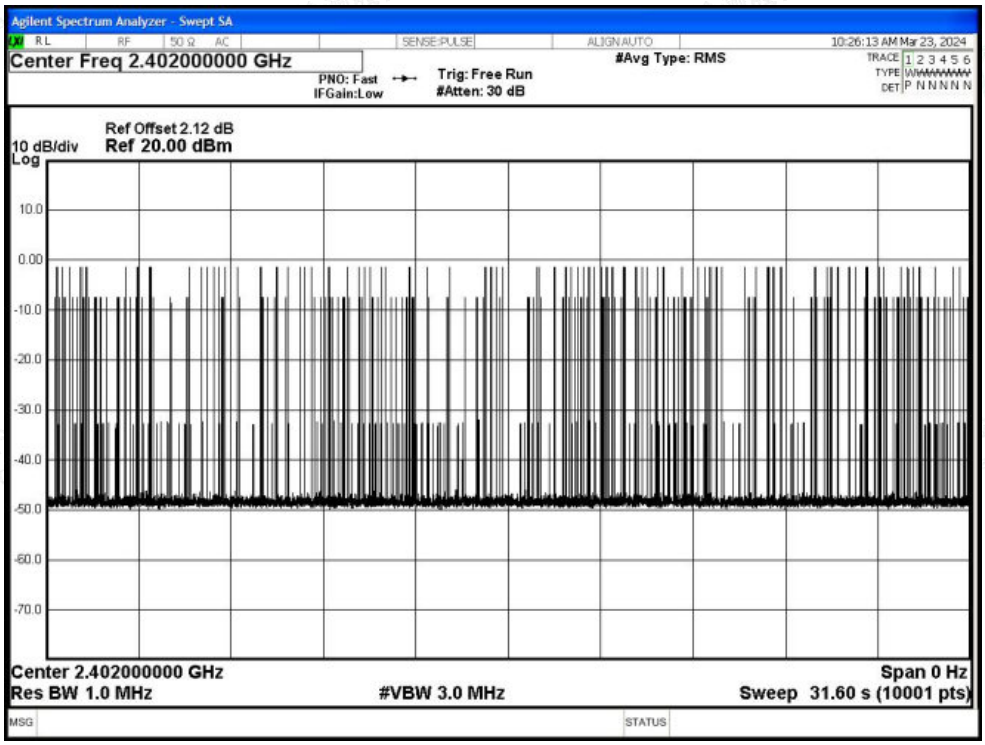
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated

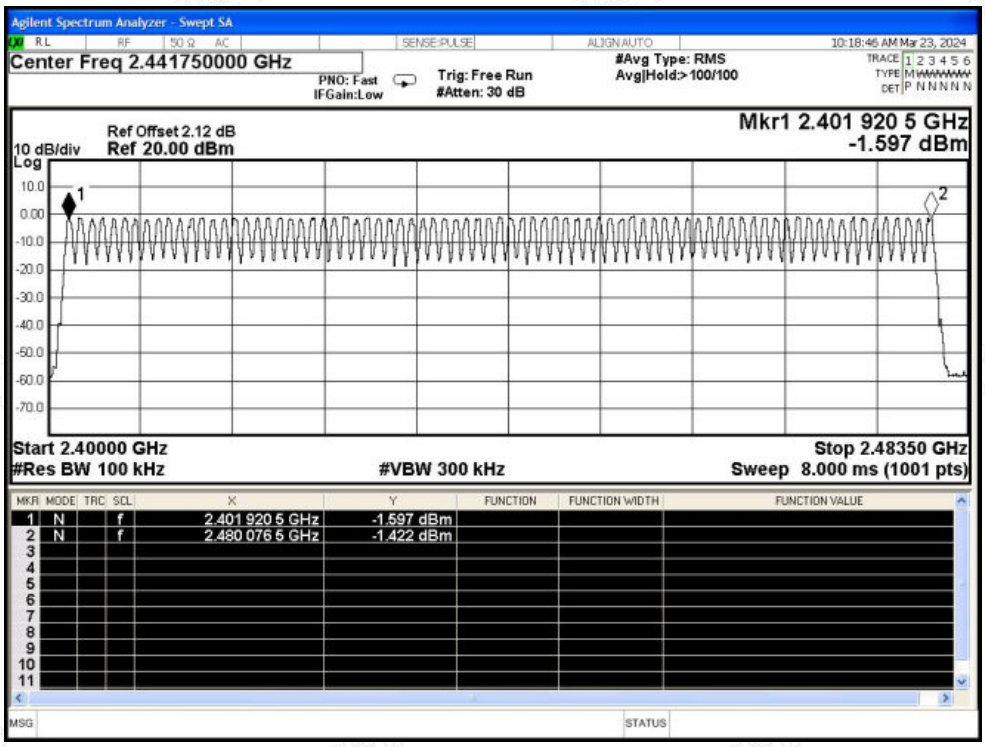


A.5 Number of Hopping Channel

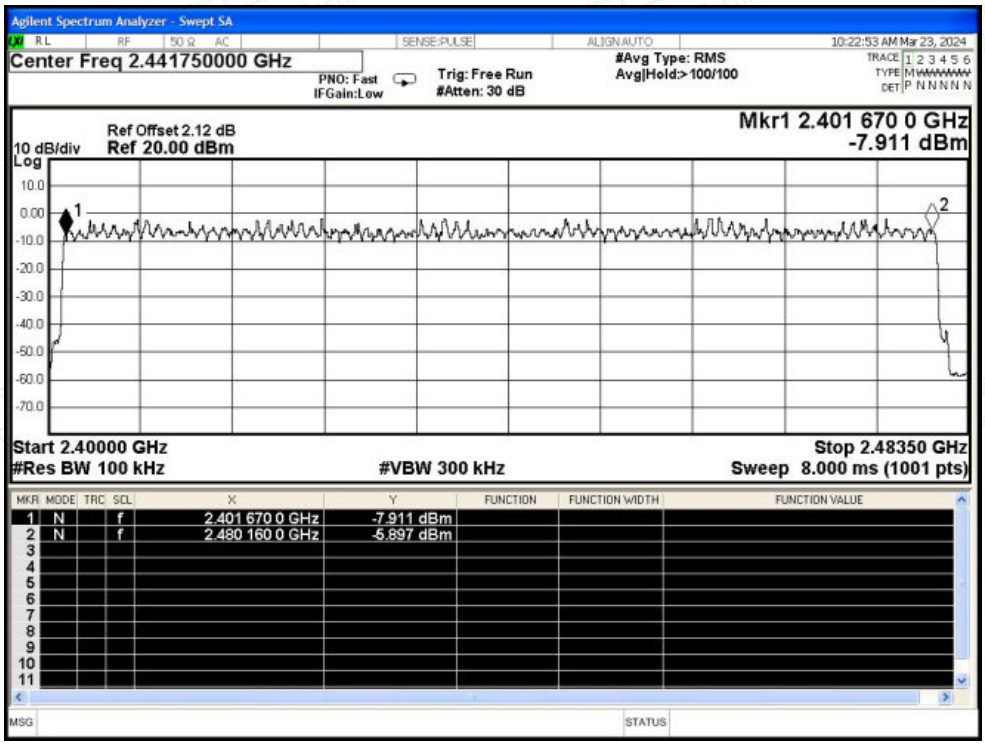
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass

Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1

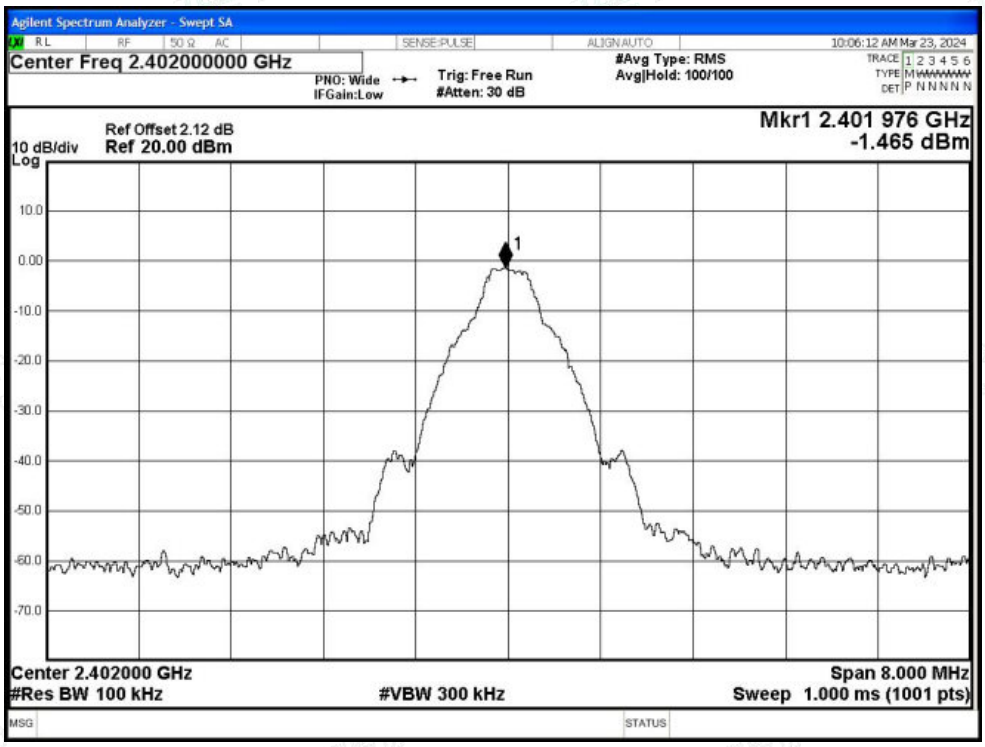


A.6 Band Edge

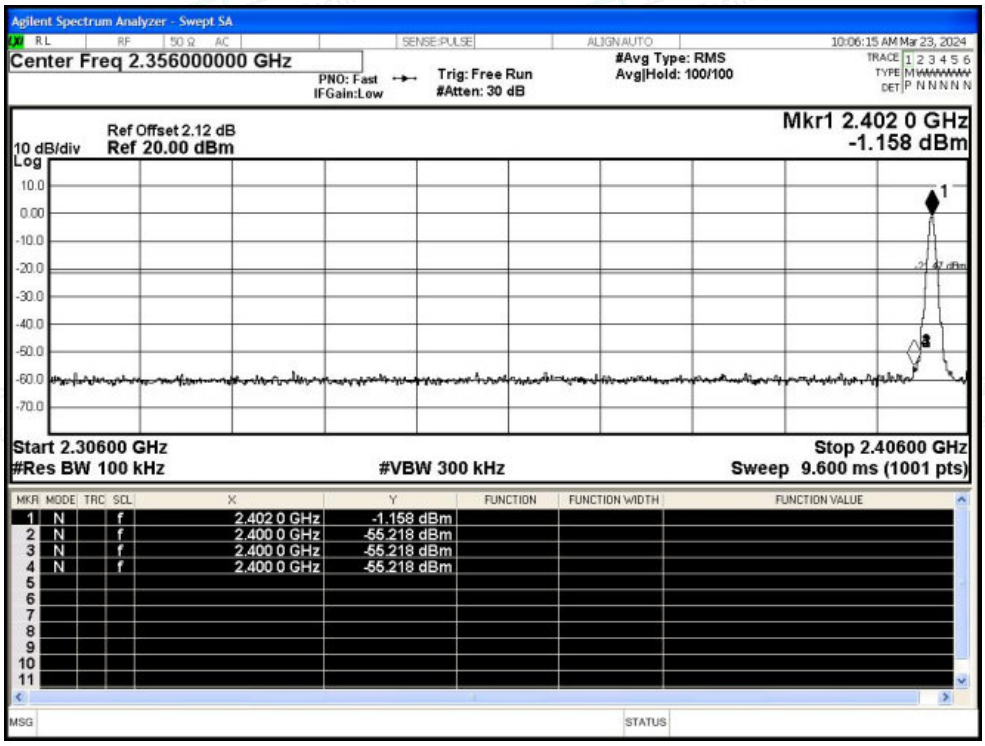
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-53.75	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-55.72	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-54.17	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-53.64	-20	Pass

Test Graphs

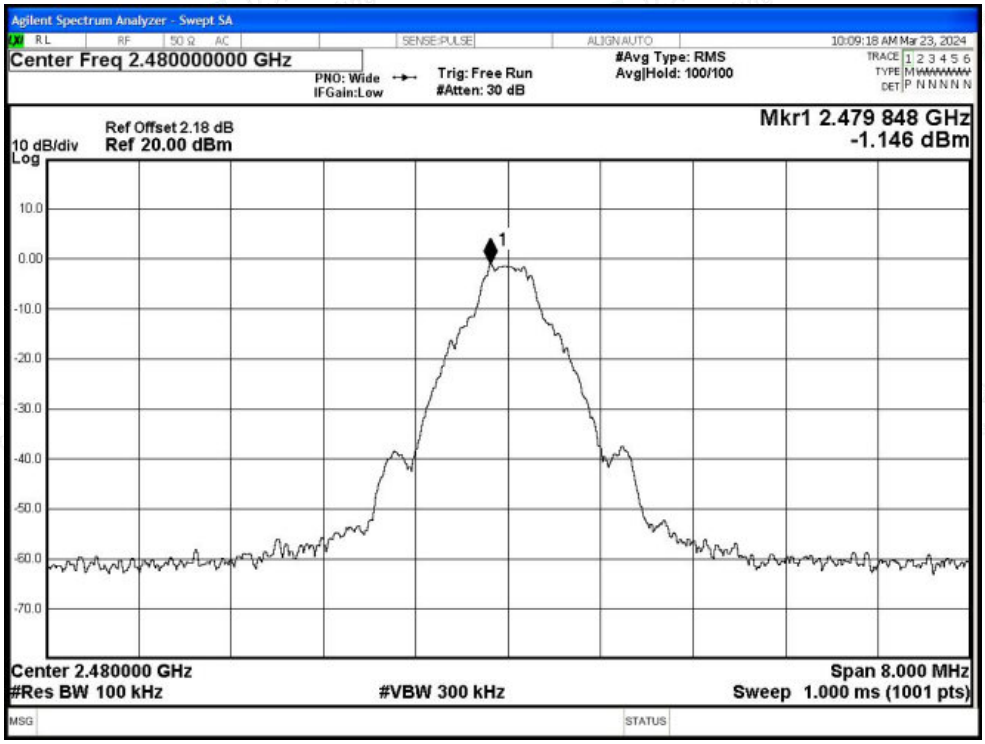
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



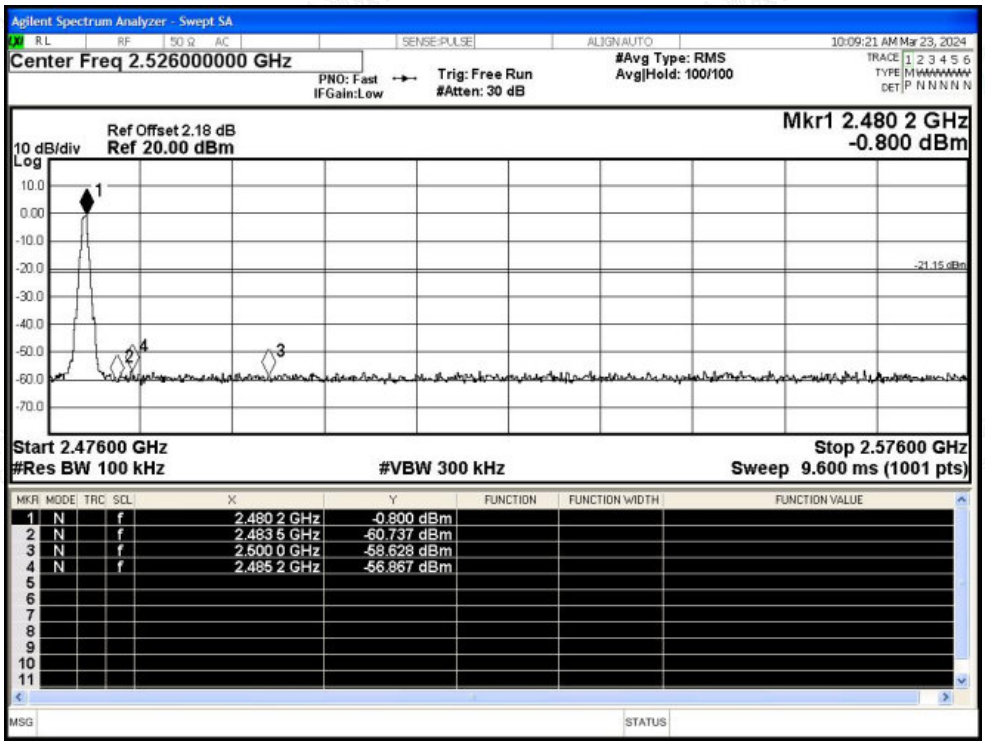
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



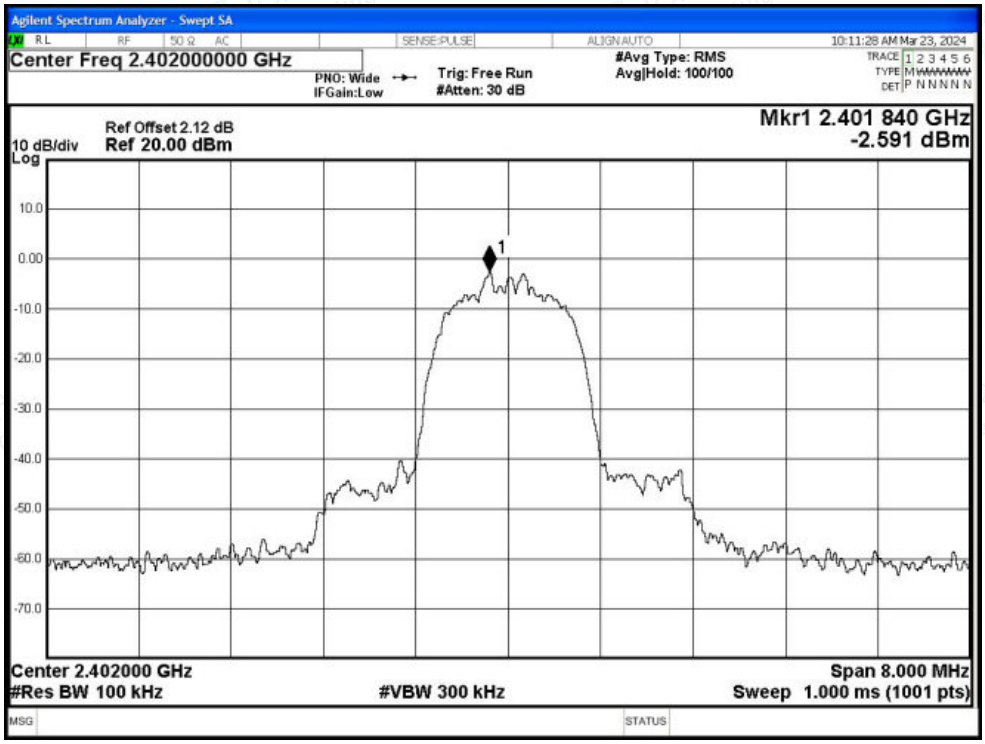
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



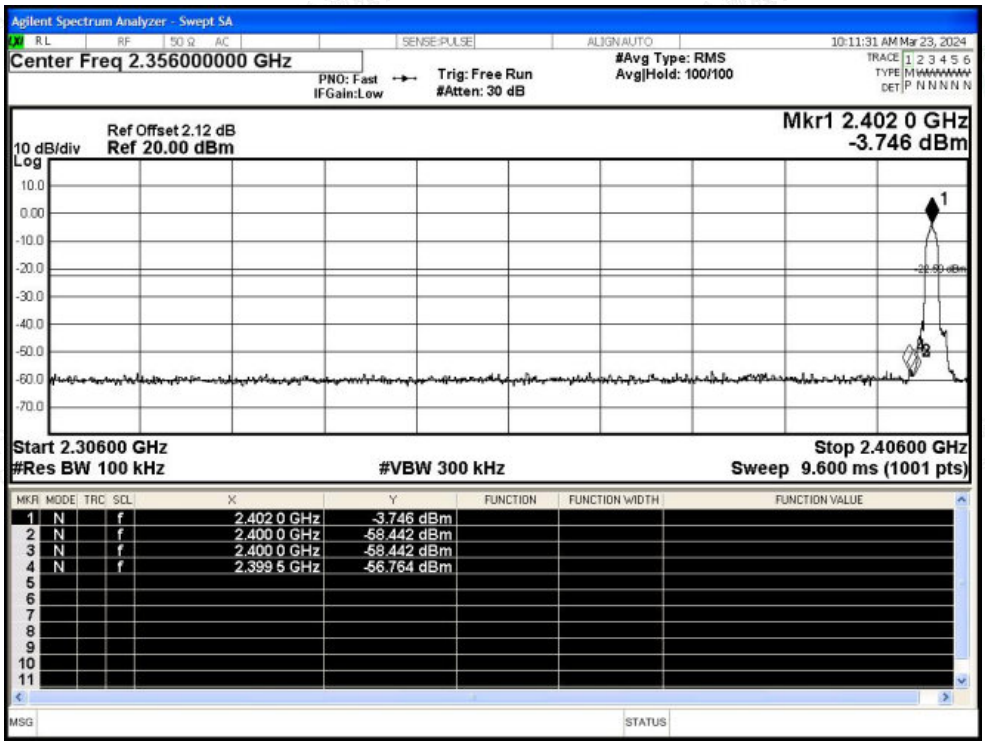
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



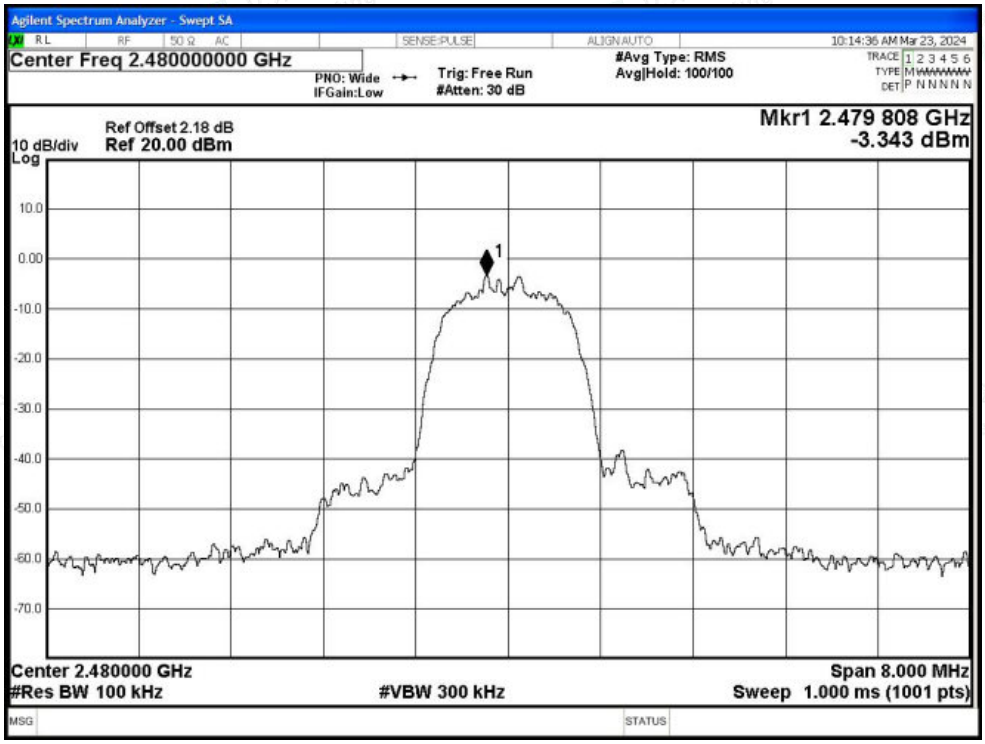
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



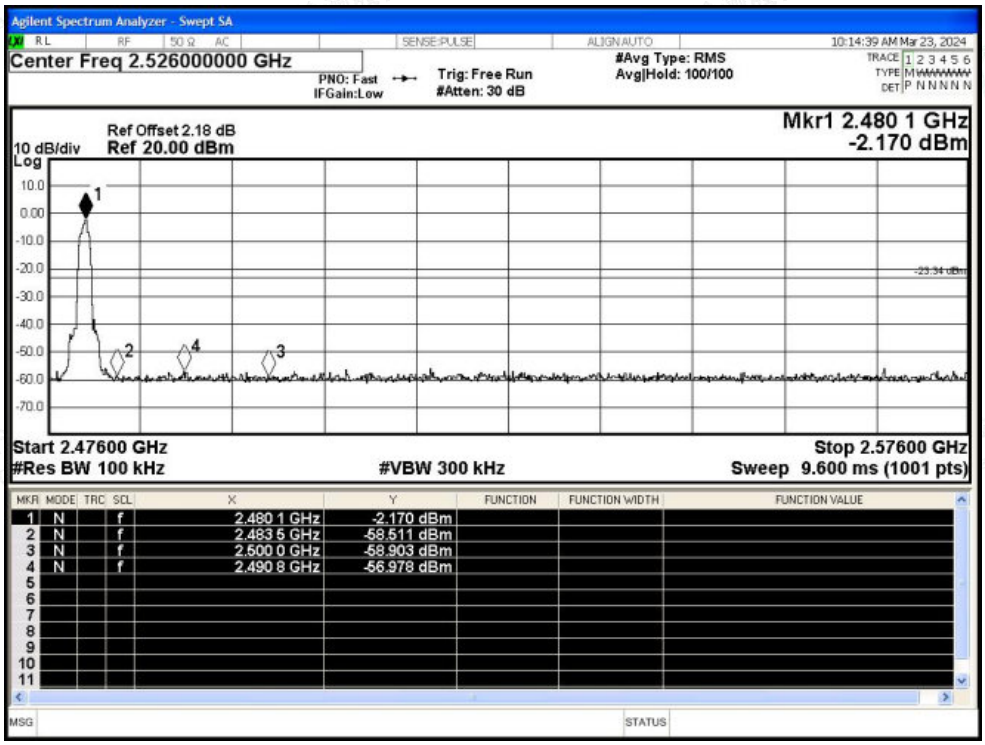
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission



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



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

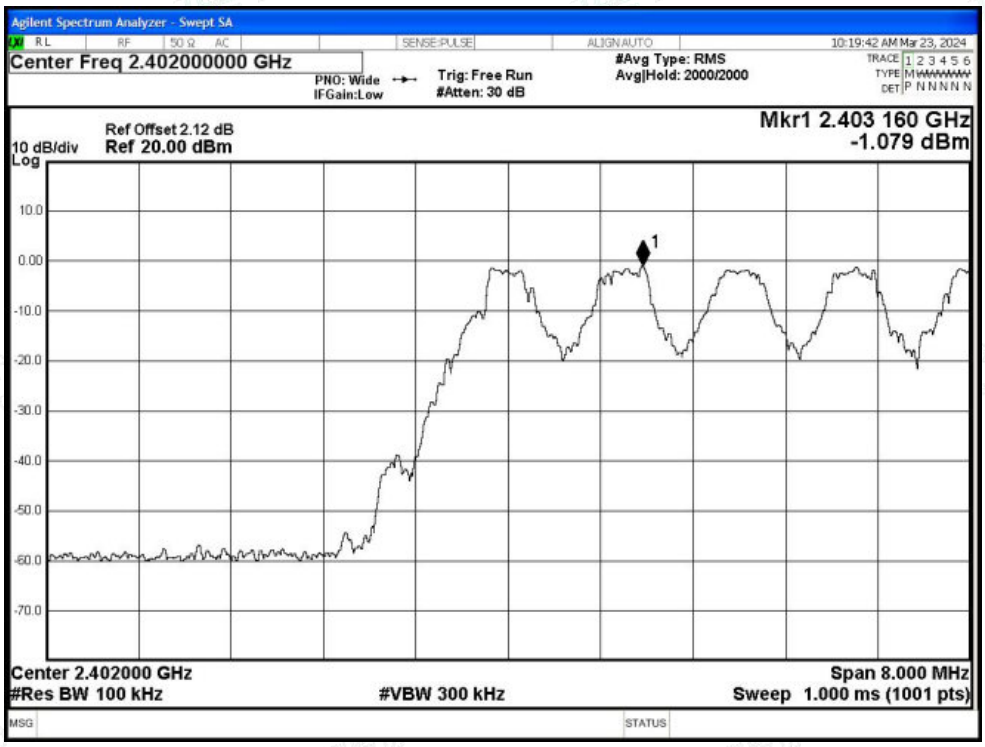


(Hopping)

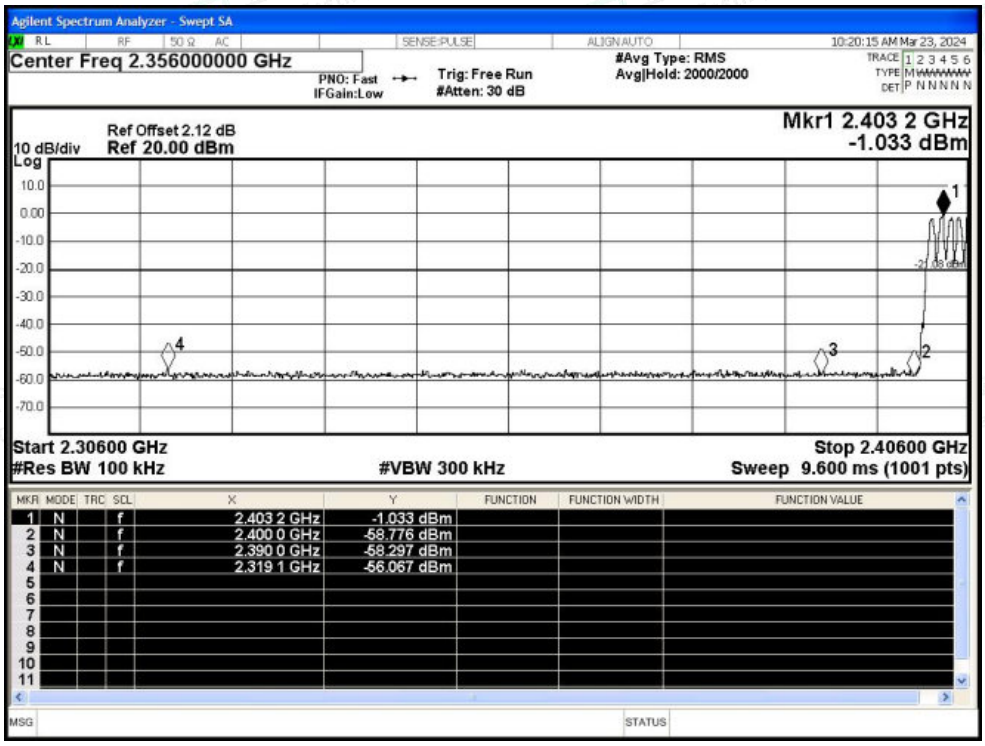
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-54.99	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-53.37	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-53.44	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-53.18	-20	Pass

Test Graphs

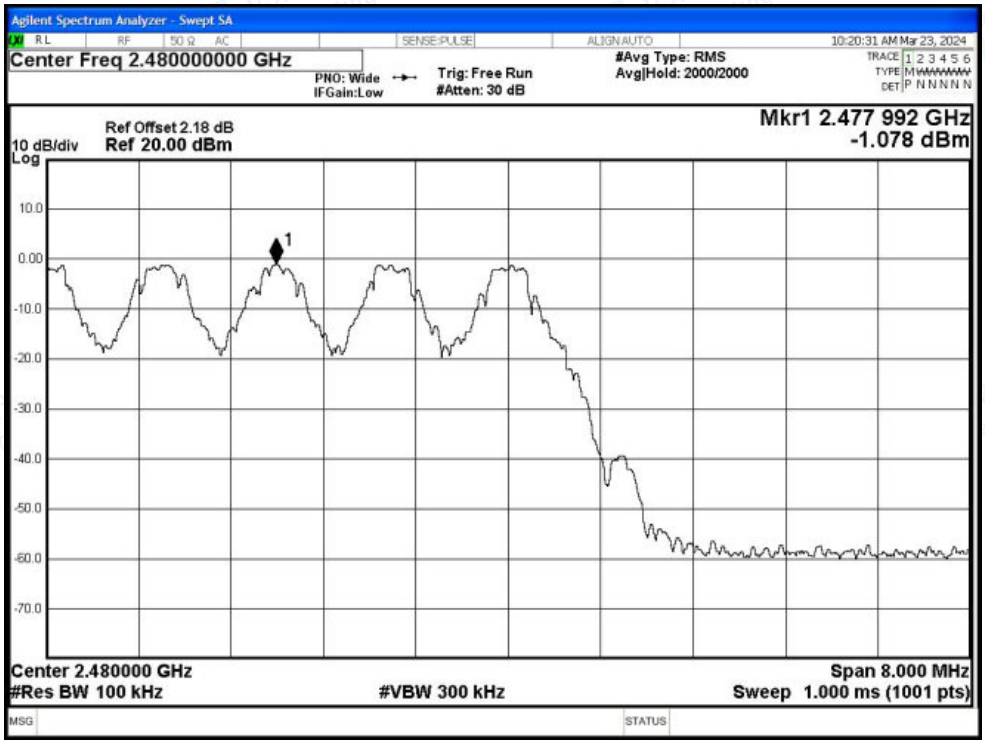
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



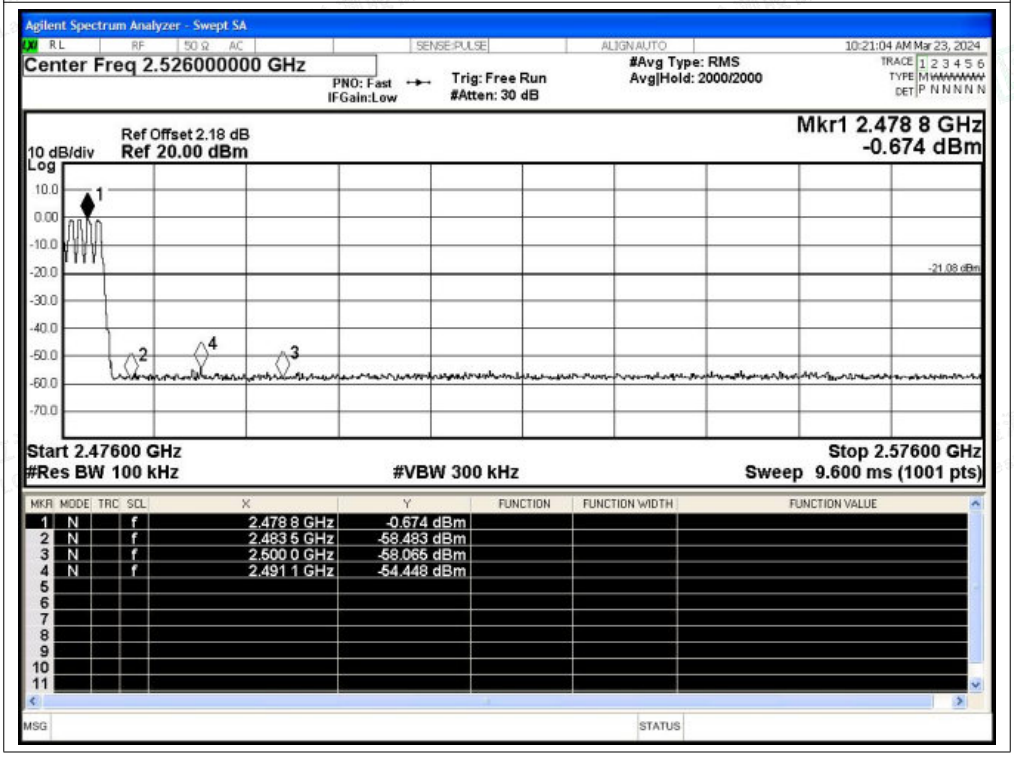
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



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

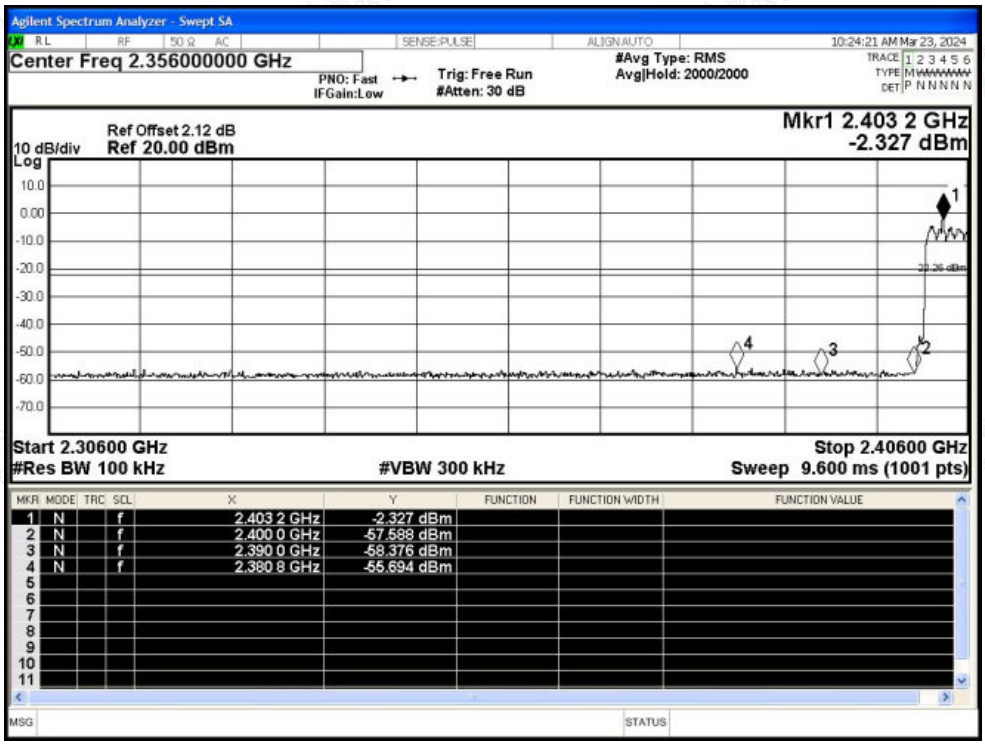


Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission

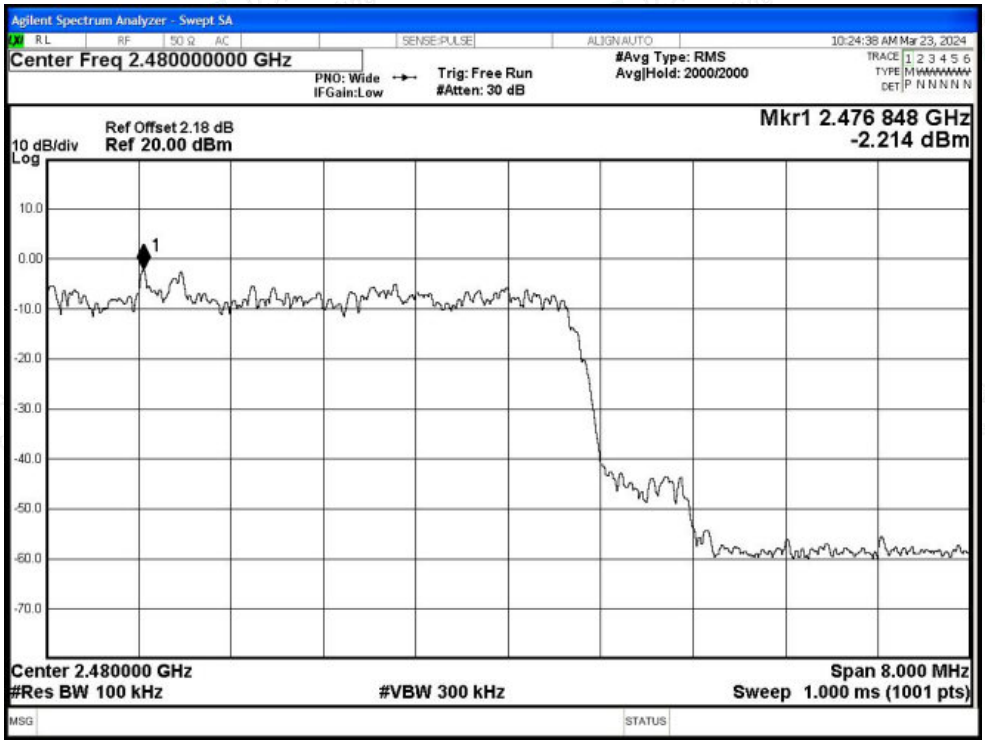


Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref

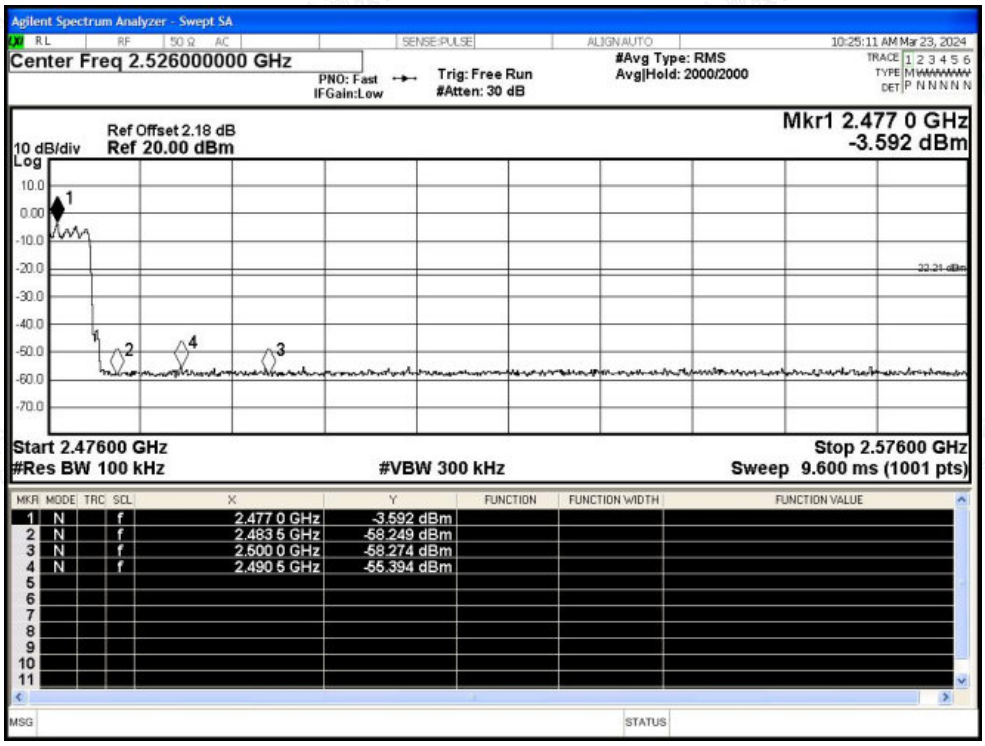
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission



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



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

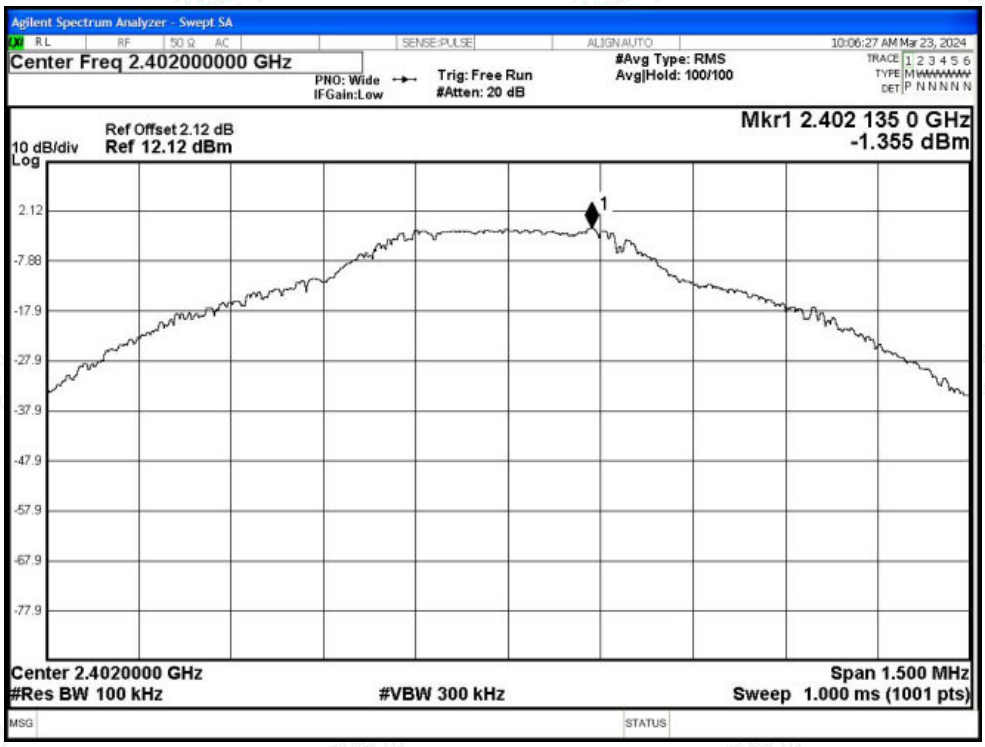


A.7 Conducted RF Spurious Emission

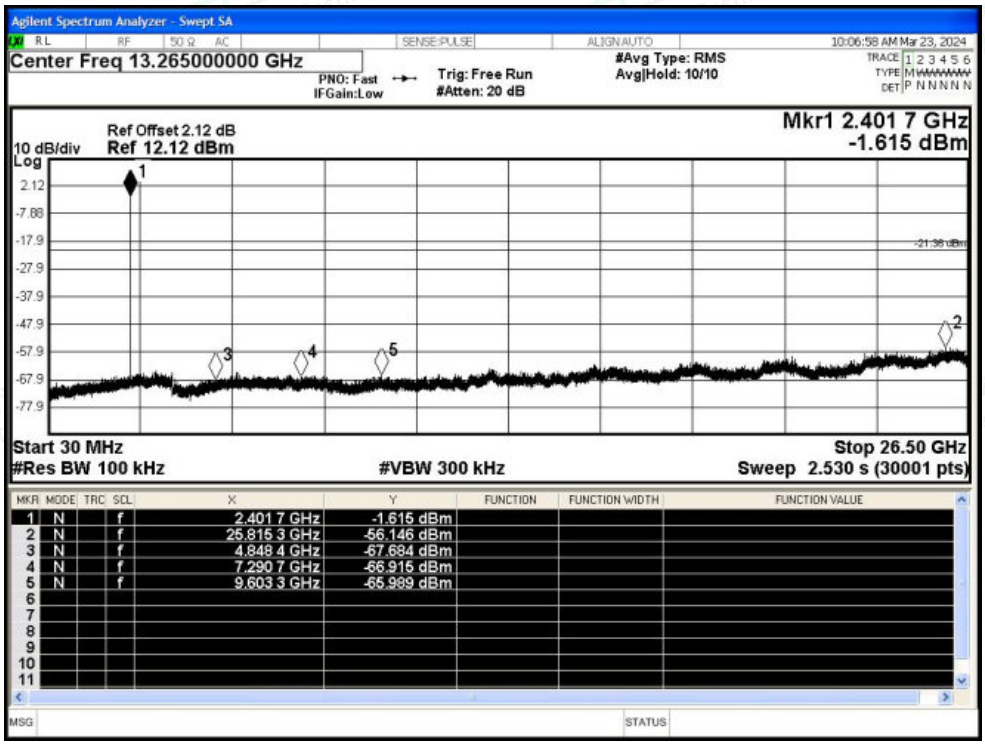
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-54.79	-20	Pass
NVNT	1-DH5	2441	Ant1	-54.42	-20	Pass
NVNT	1-DH5	2480	Ant1	-55.89	-20	Pass
NVNT	2-DH5	2402	Ant1	-52.89	-20	Pass
NVNT	2-DH5	2441	Ant1	-53.98	-20	Pass
NVNT	2-DH5	2480	Ant1	-53.56	-20	Pass

Test Graphs

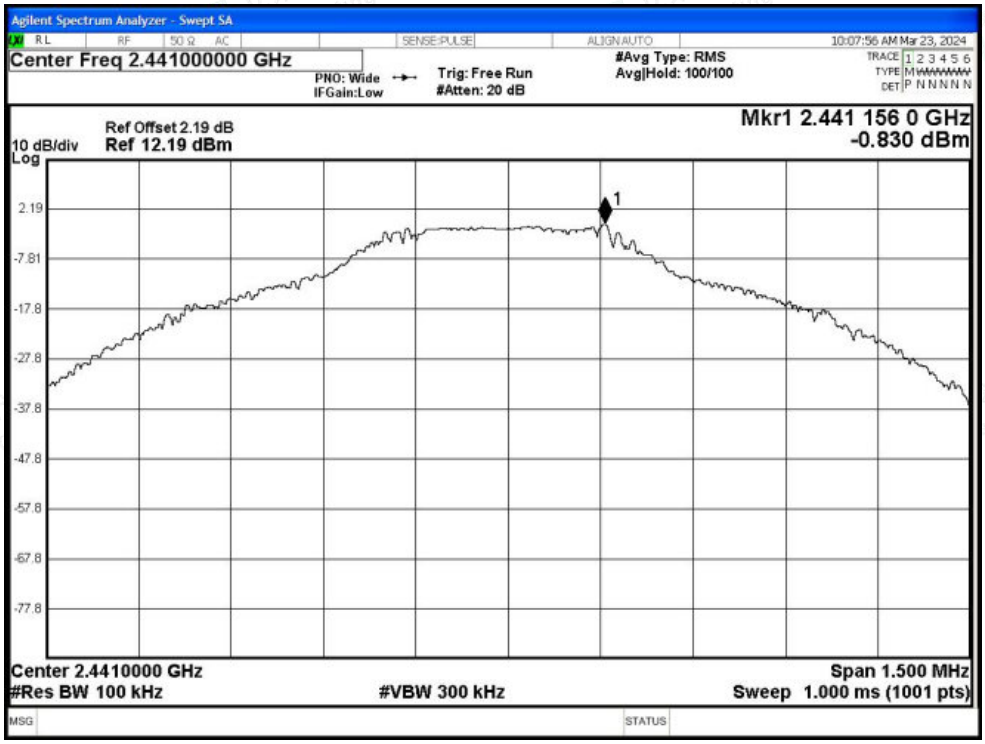
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



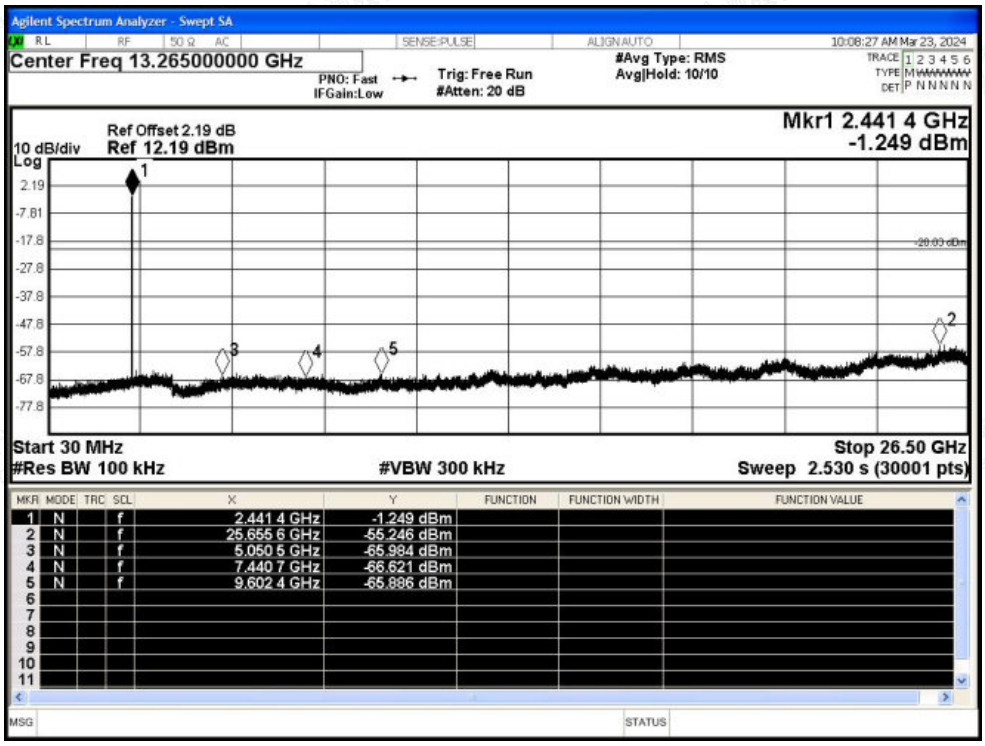
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



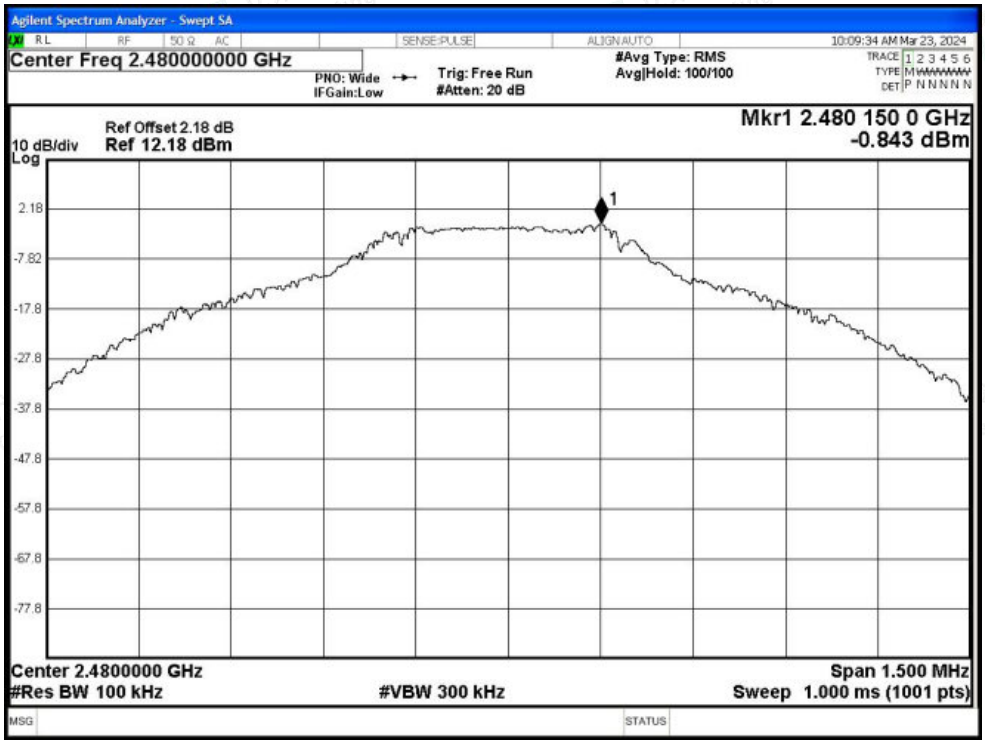
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



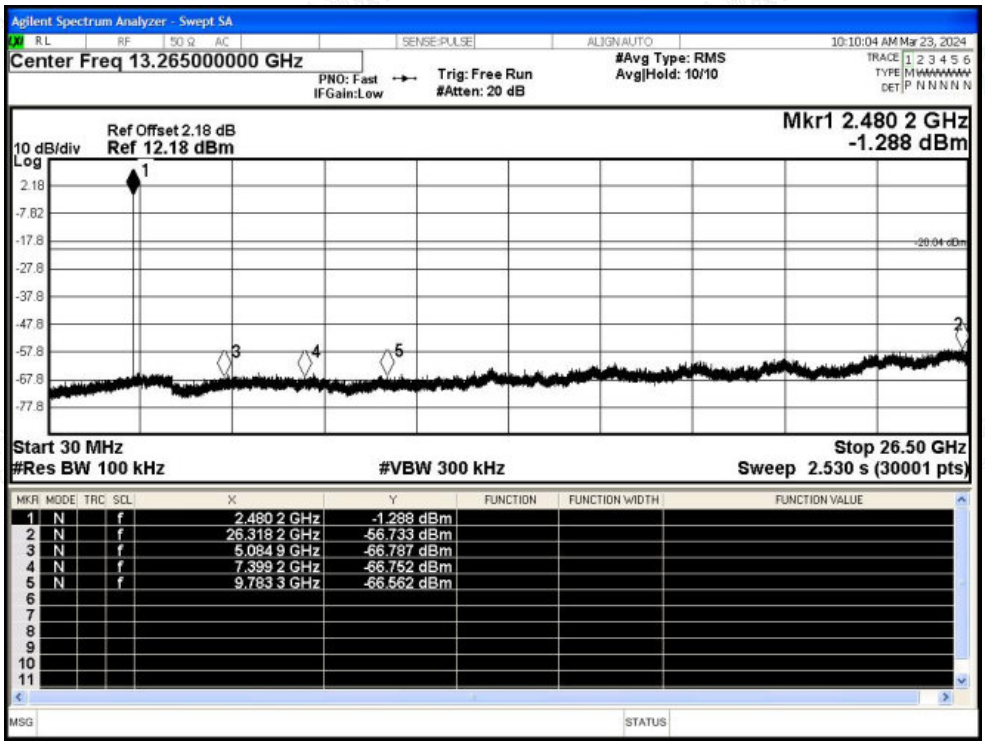
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



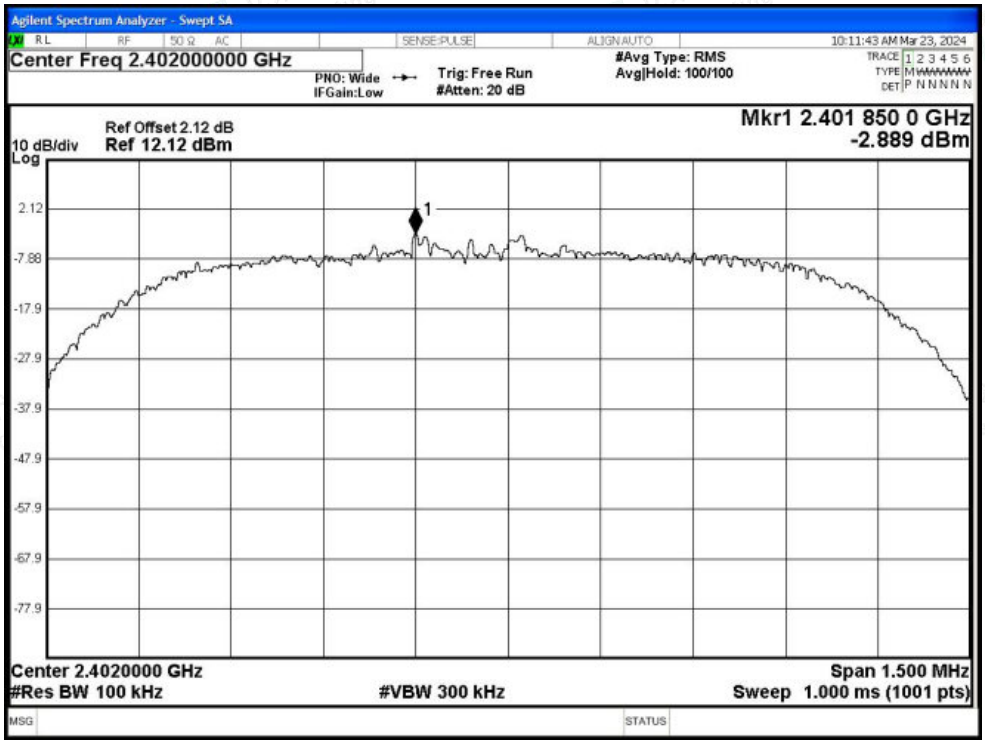
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



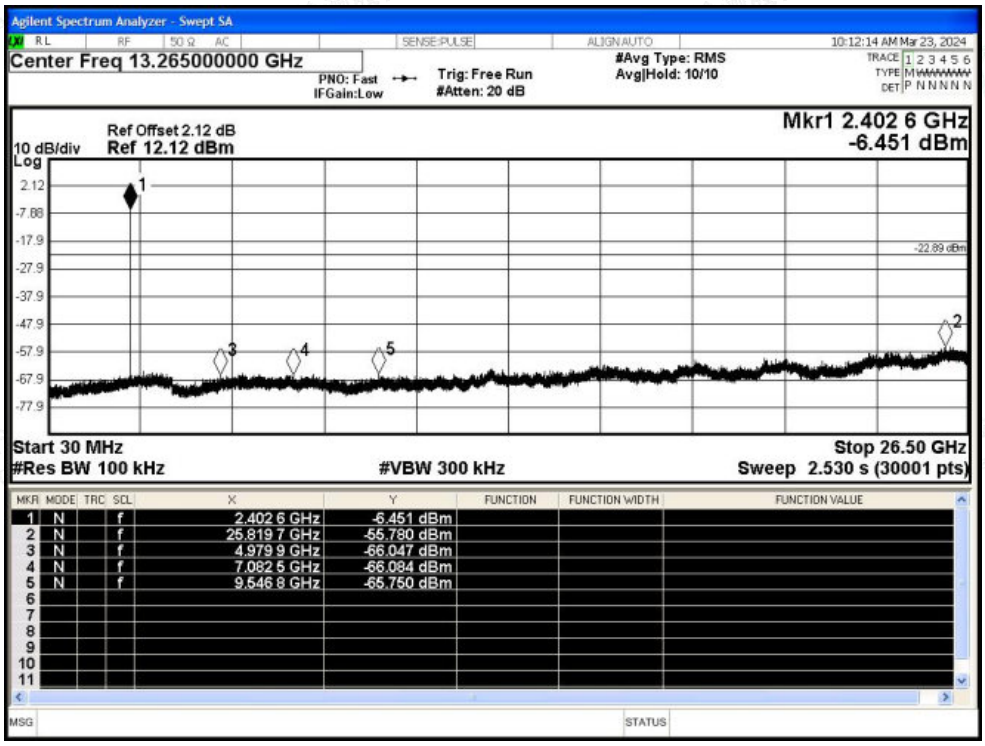
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



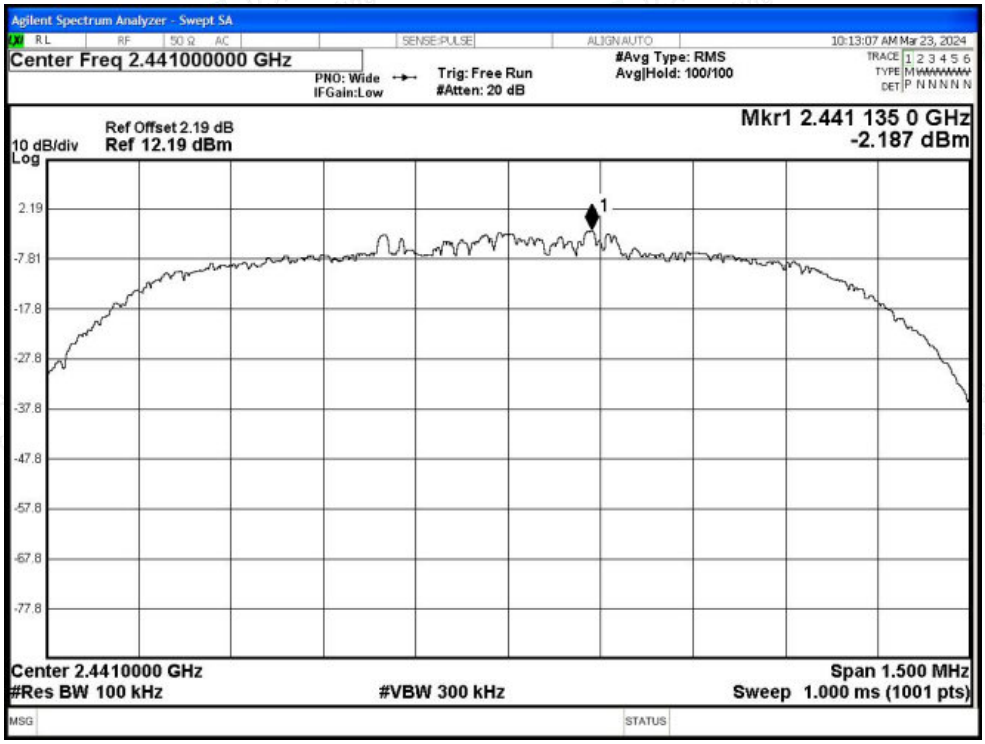
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



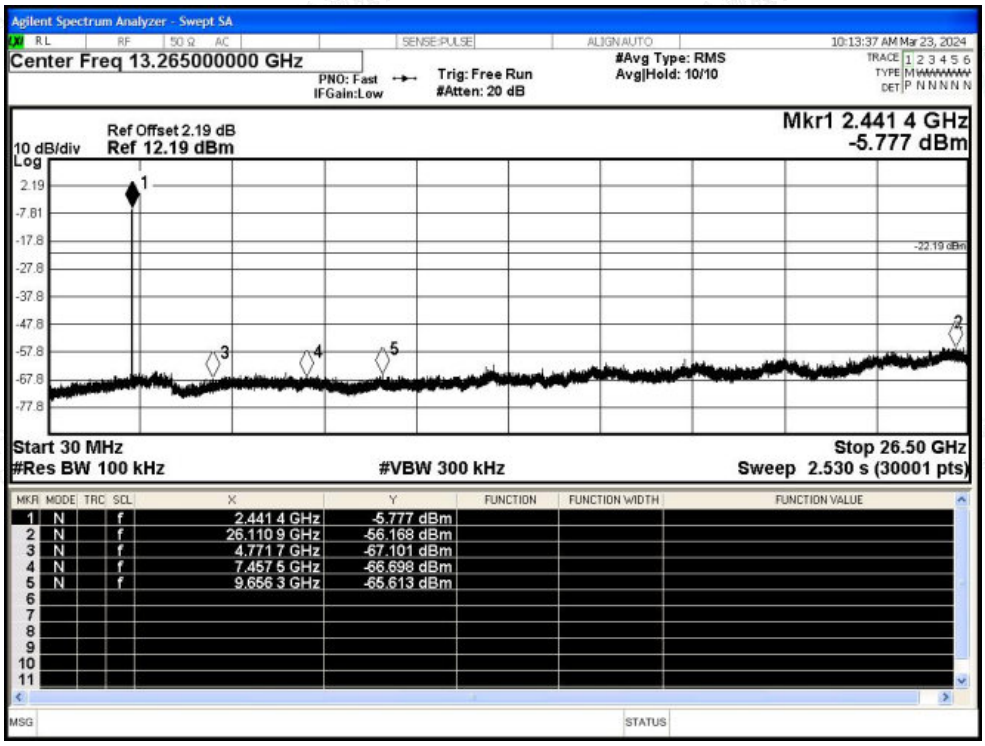
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



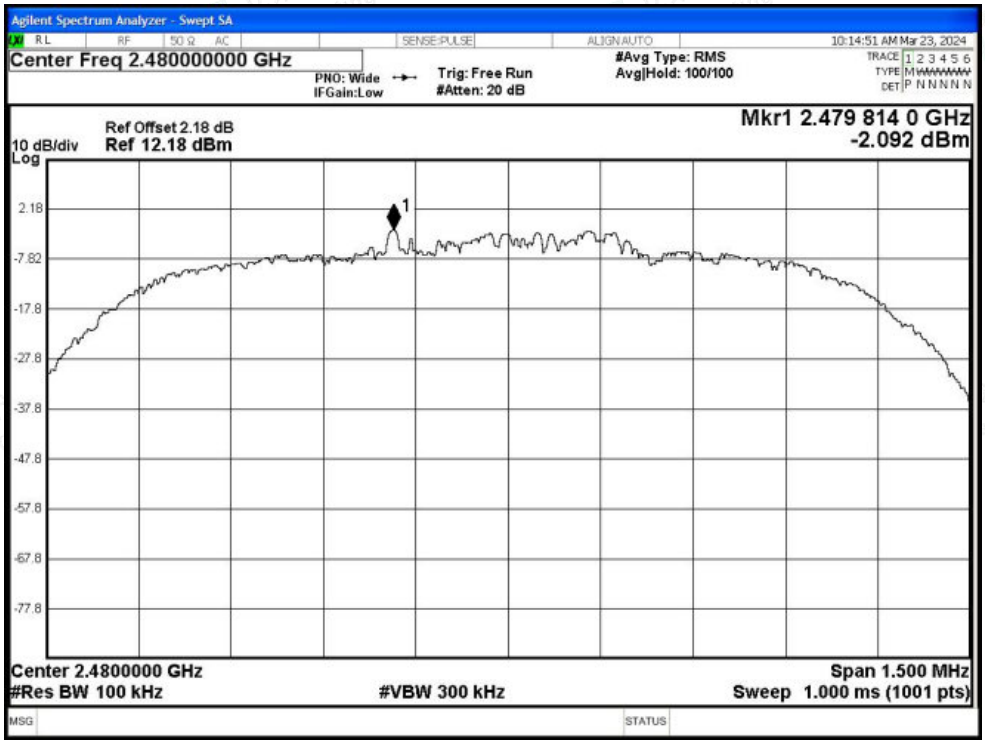
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



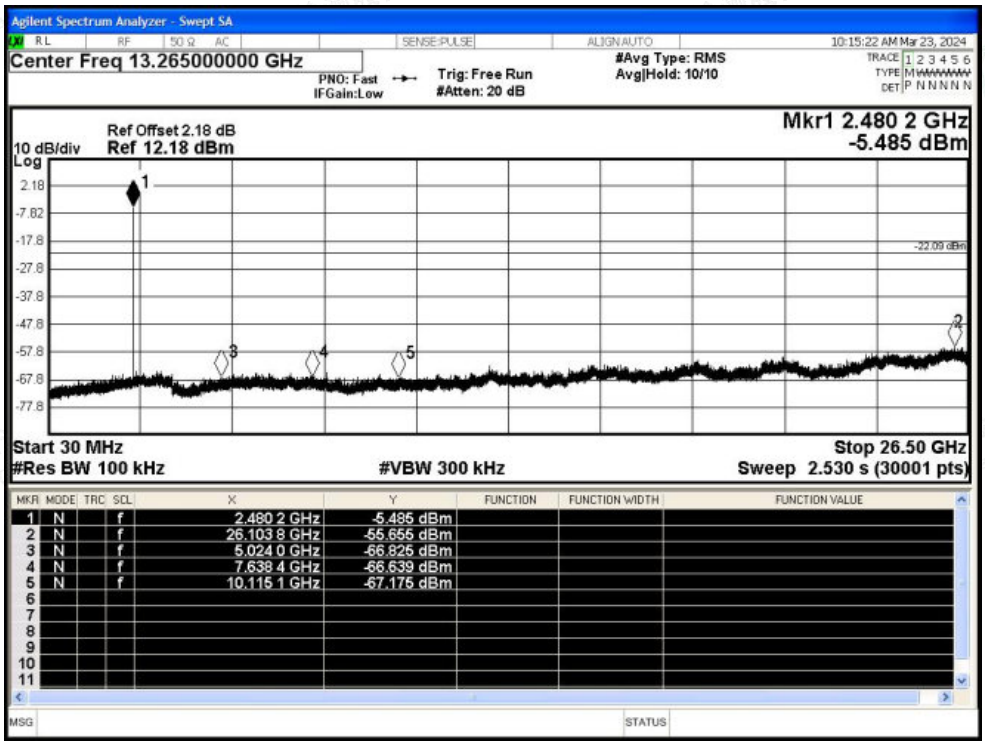
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission

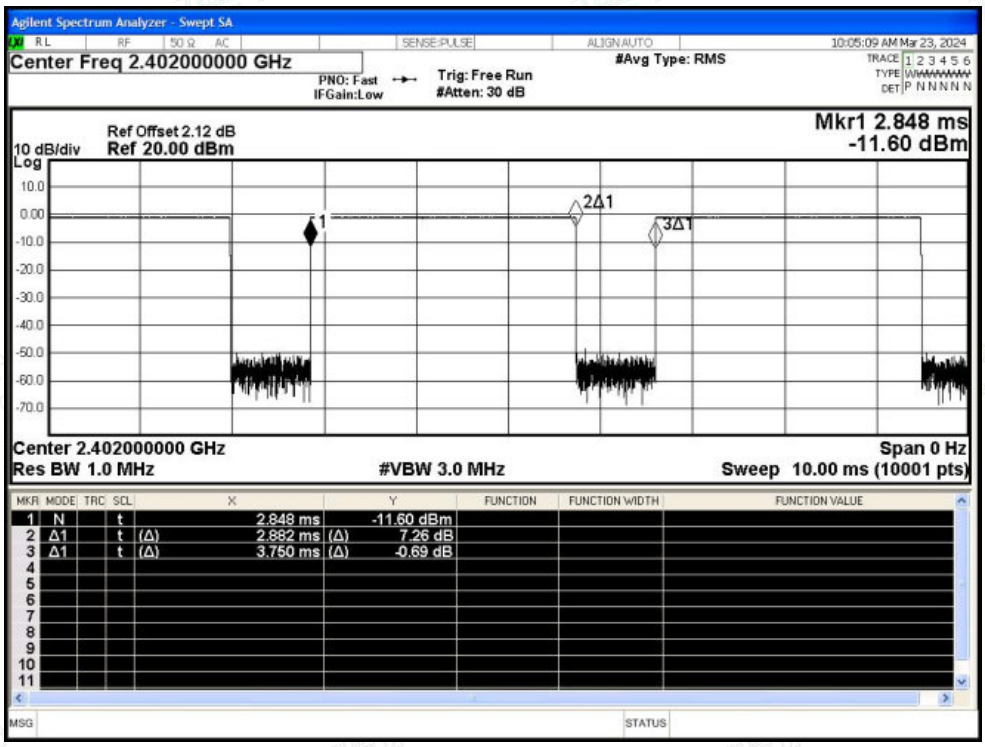


A.8 Duty Cycle

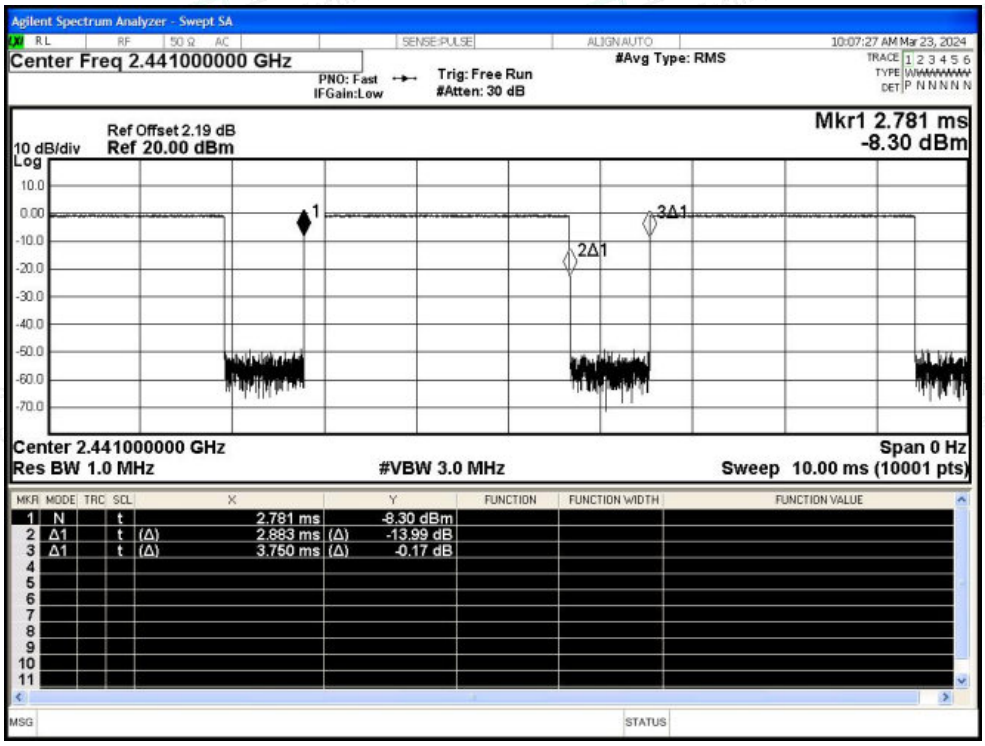
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	76.85	1.14	0.35
NVNT	1-DH5	2441	Ant1	76.88	1.14	0.35
NVNT	1-DH5	2480	Ant1	76.88	1.14	0.35
NVNT	2-DH5	2402	Ant1	76.99	1.14	0.35
NVNT	2-DH5	2441	Ant1	76.99	1.14	0.35
NVNT	2-DH5	2480	Ant1	76.97	1.14	0.35

Test Graphs

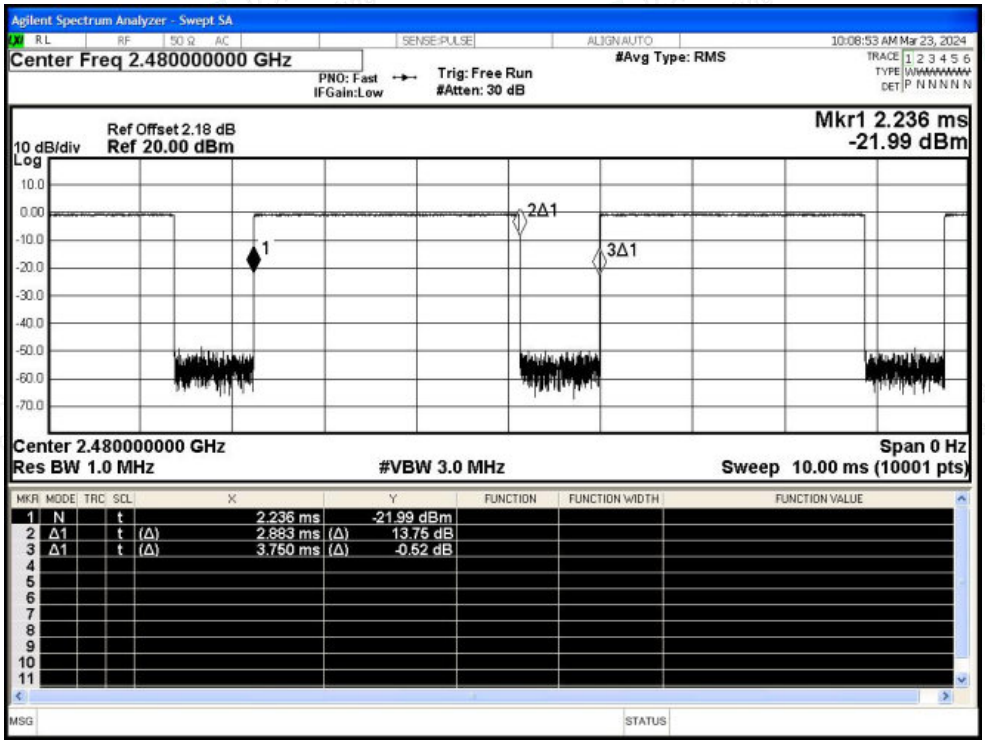
Duty Cycle NVNT 1-DH5 2402MHz Ant1



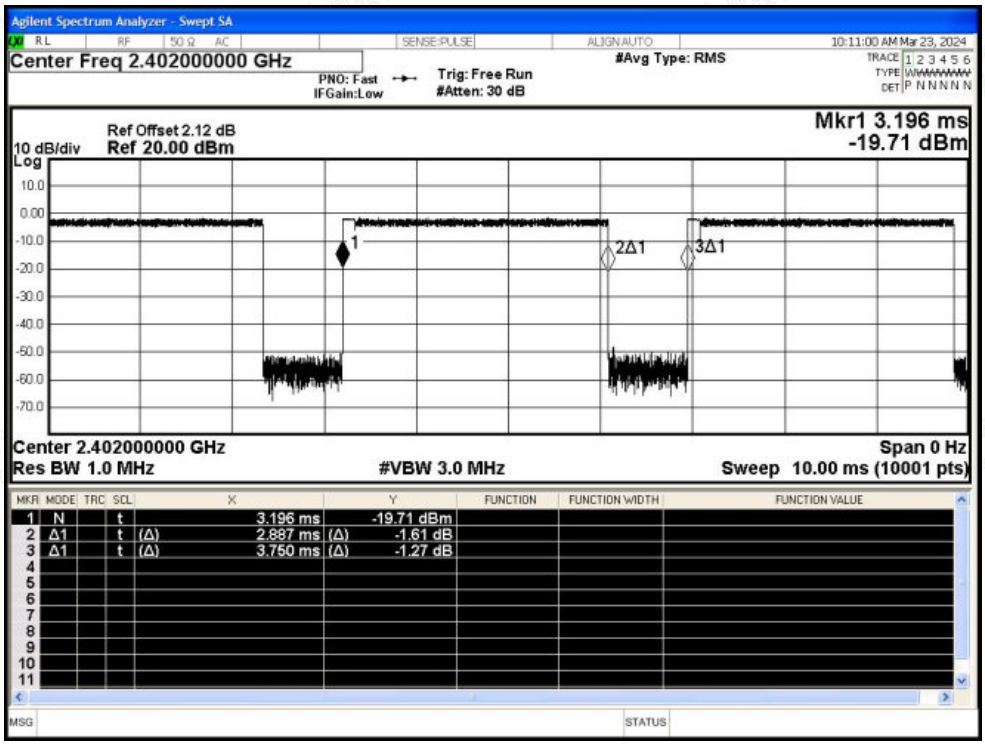
Duty Cycle NVNT 1-DH5 2441MHz Ant1



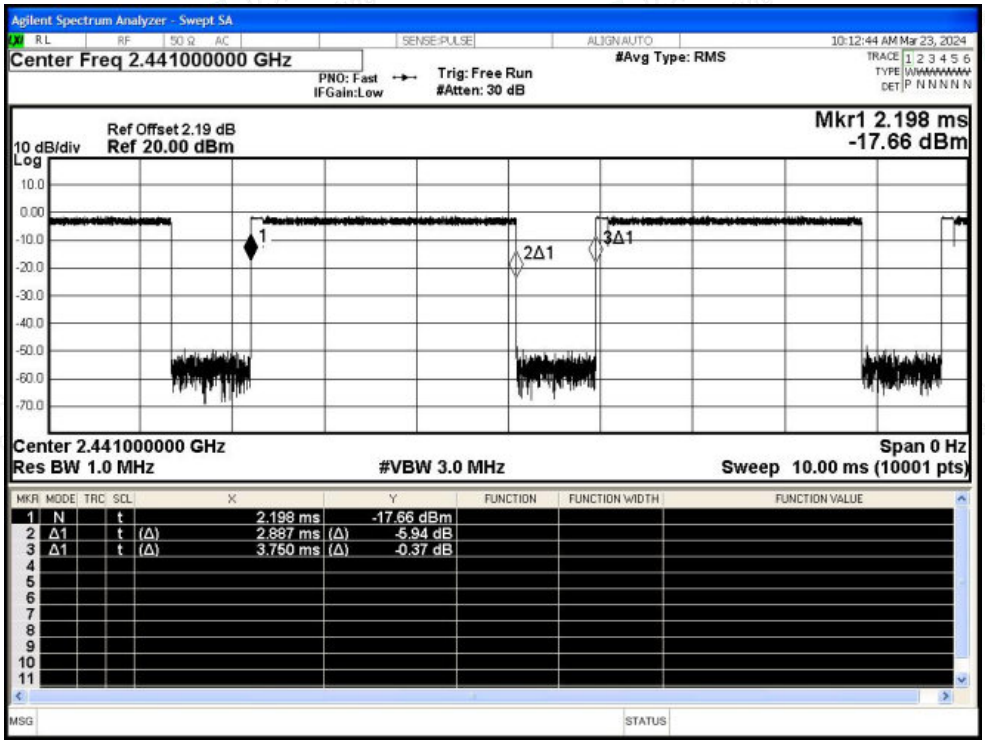
Duty Cycle NVNT 1-DH5 2480MHz Ant1



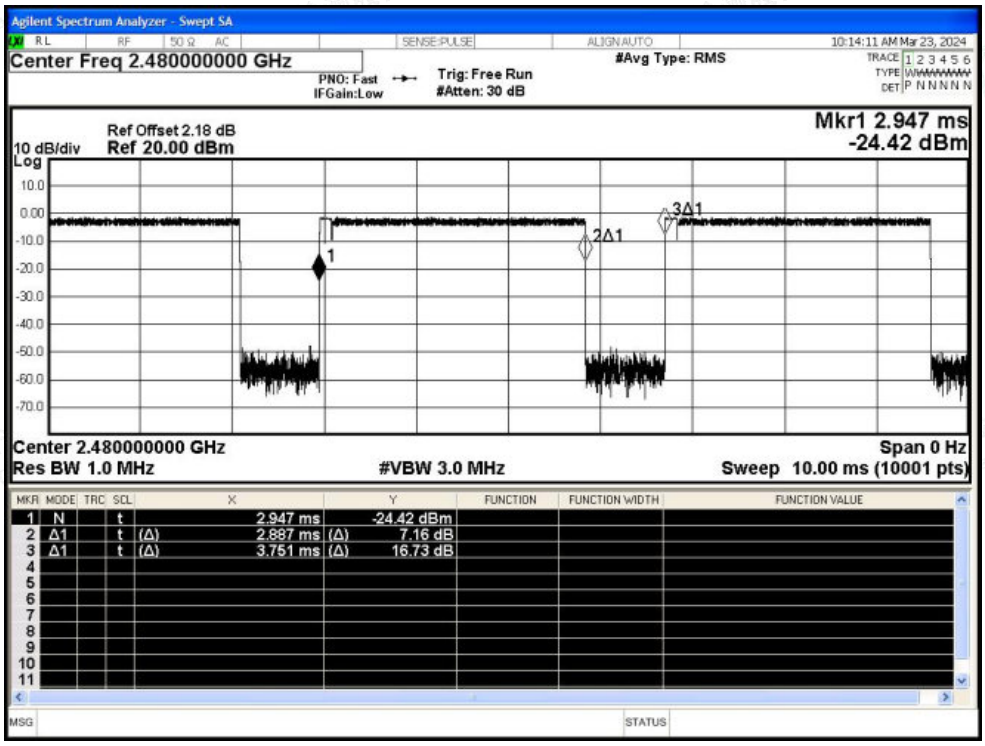
Duty Cycle NVNT 2-DH5 2402MHz Ant1



Duty Cycle NVNT 2-DH5 2441MHz Ant1



Duty Cycle NVNT 2-DH5 2480MHz Ant1

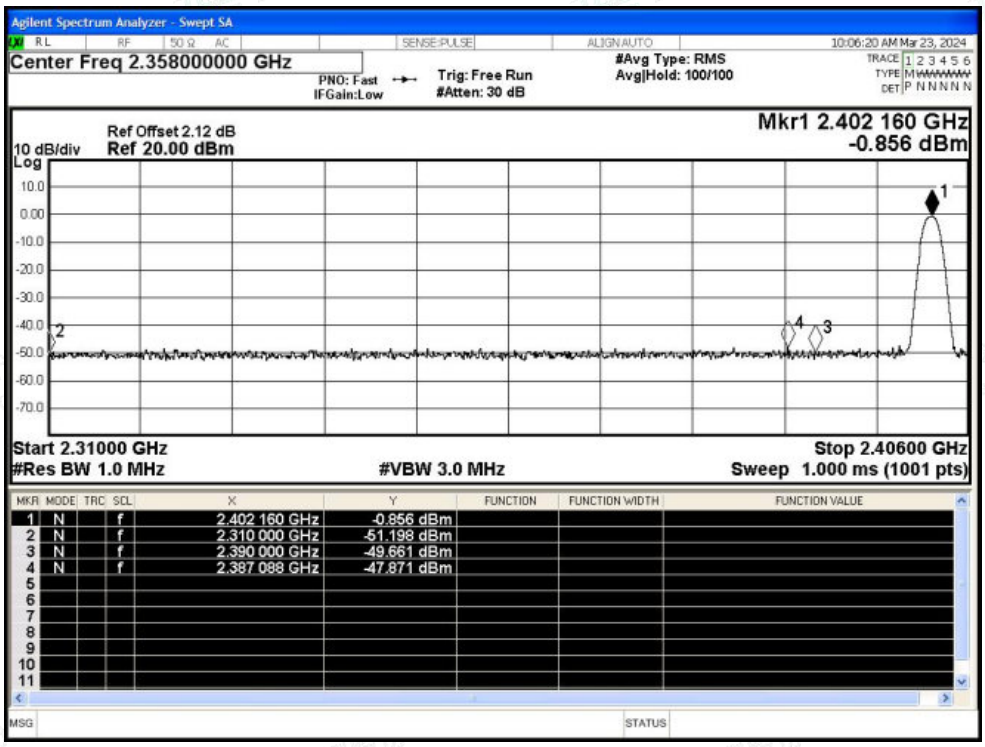


A.9 Restrict Band

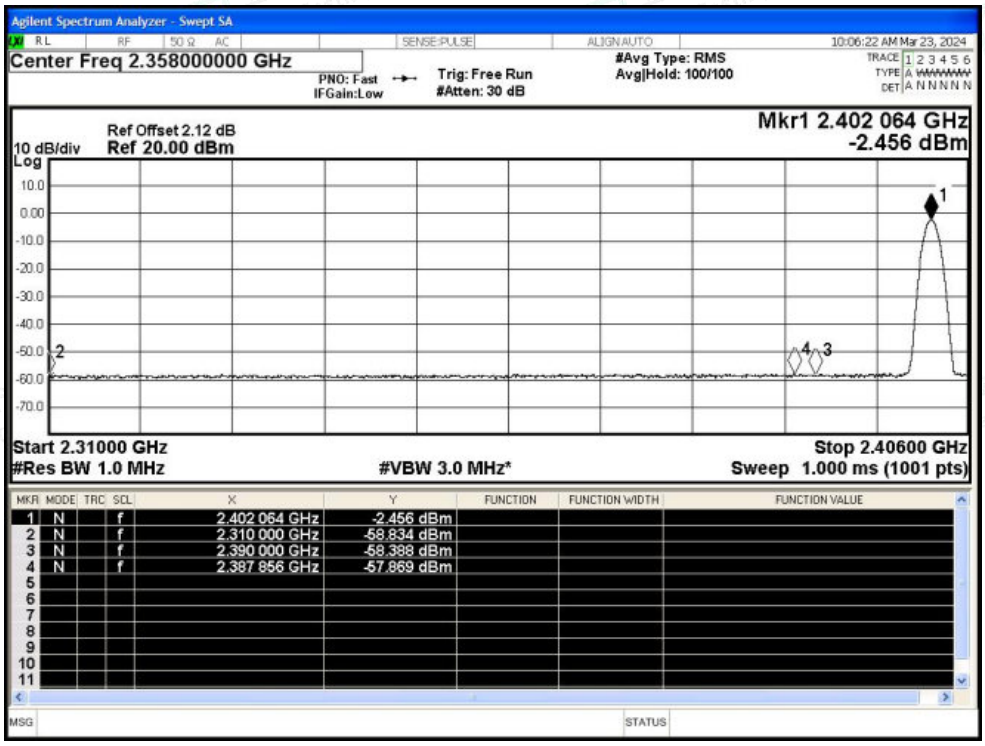
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-51.2	2	-	46.06	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-58.83	2	1.14	39.57	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2387.088	-47.87	2	-	49.39	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2387.856	-57.87	2	1.14	40.53	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-49.66	2	-	47.6	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-58.39	2	1.14	40.01	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-50.62	2	-	46.64	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-58.42	2	1.14	39.98	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2499.16	-47.42	2	-	49.84	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2494.048	-57.16	2	1.14	41.24	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-49.6	2	-	47.66	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-58.61	2	1.14	39.79	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-51.82	2	-	45.44	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-59.2	2	1.14	39.2	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2323.152	-47.11	2	-	50.15	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2320.368	-57.86	2	1.14	40.54	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-50.92	2	-	46.34	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-58.1	2	1.14	40.3	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-49.18	2	-	48.08	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-57.72	2	1.14	40.68	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2491.216	-47.35	2	-	49.91	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2486.008	-57.08	2	1.14	41.32	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-49.73	2	-	47.53	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-58.08	2	1.14	40.32	Average	54	Pass

Test Graphs

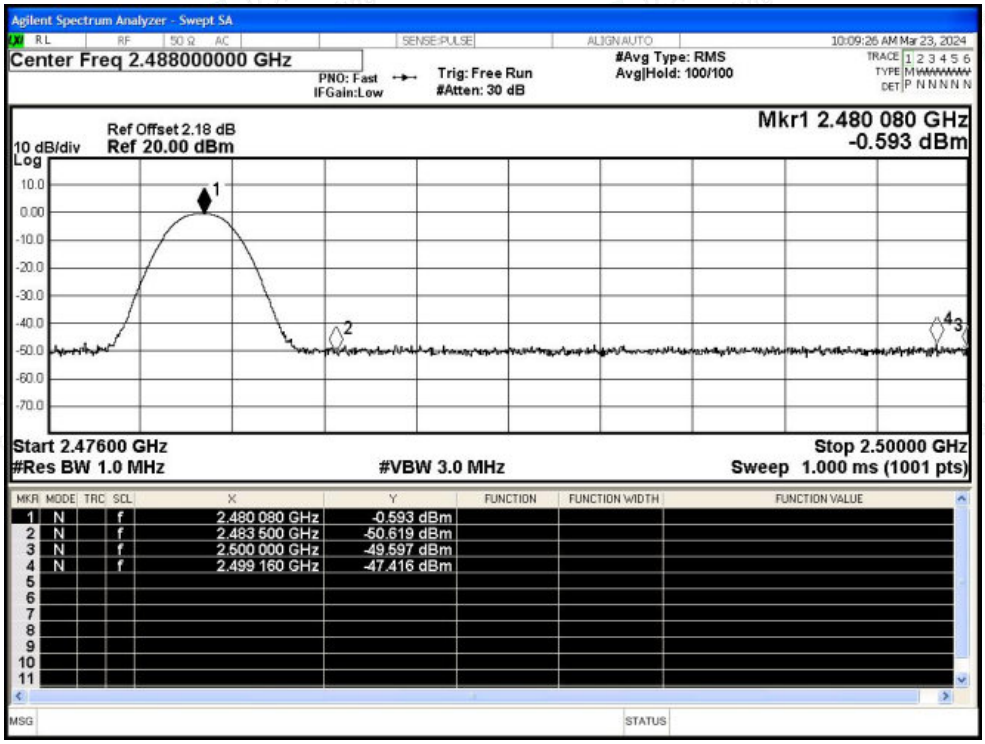
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak



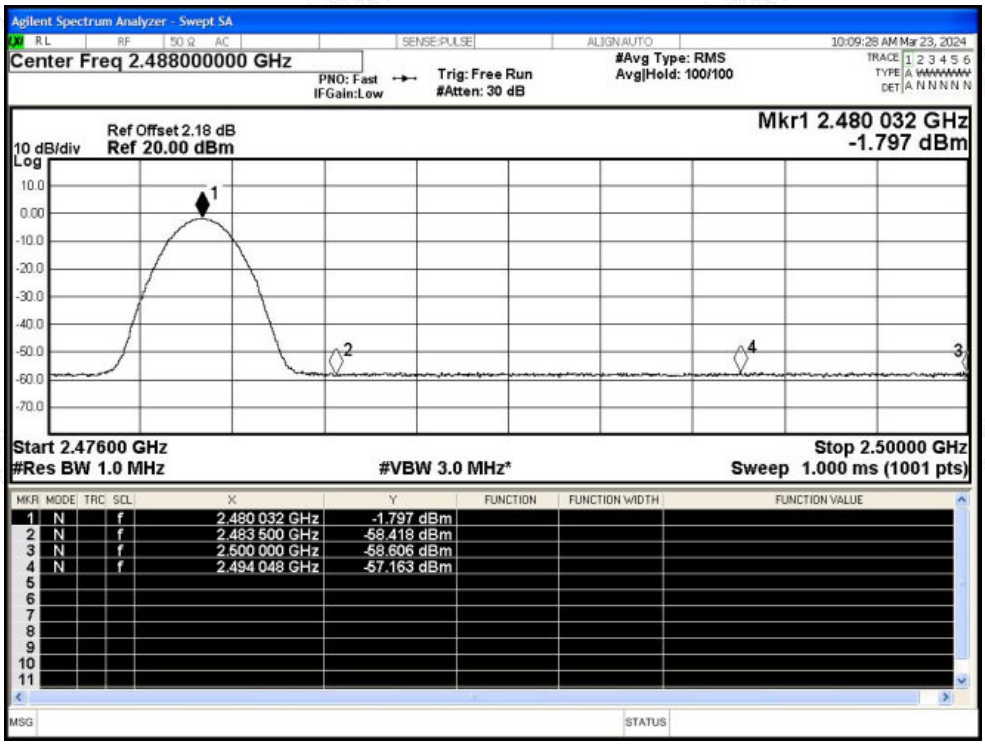
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average



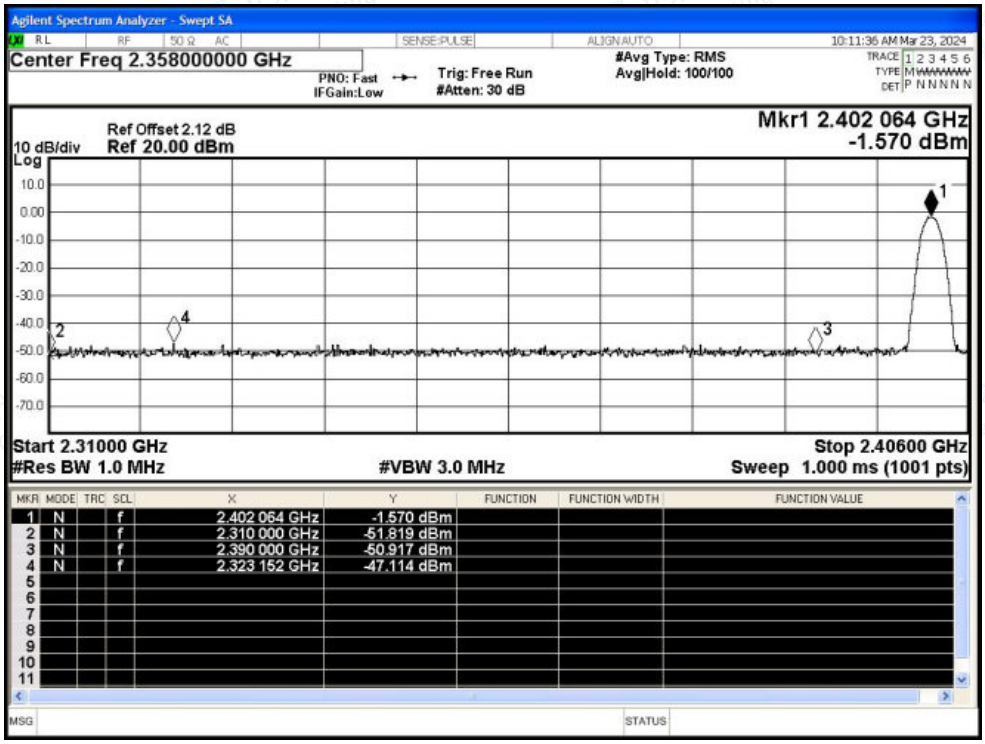
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak



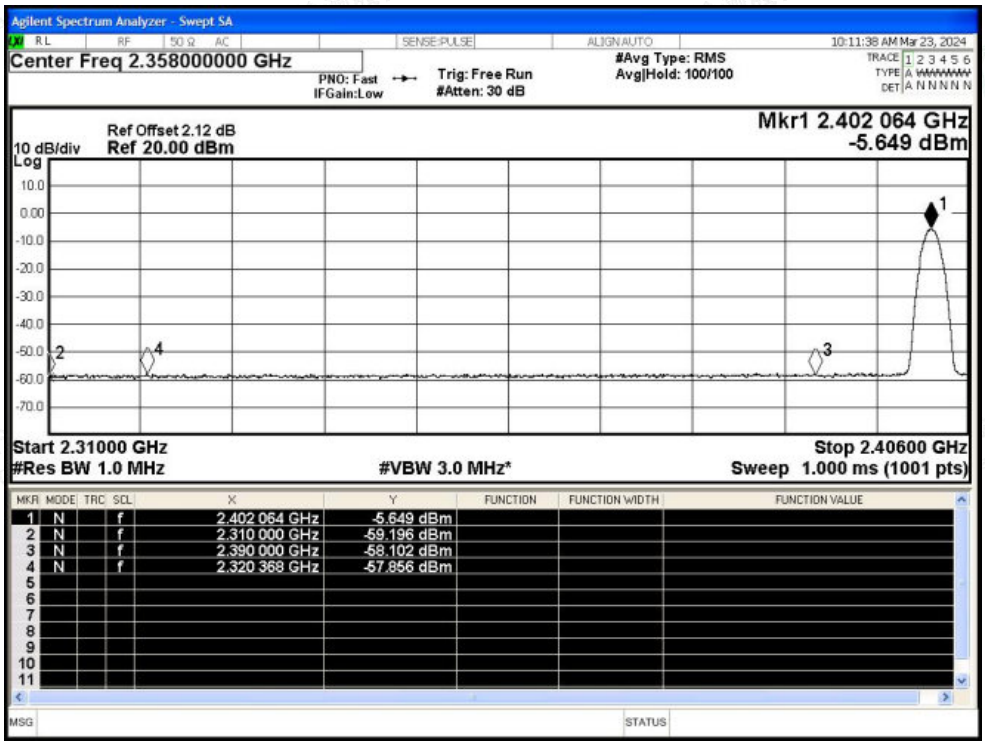
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average



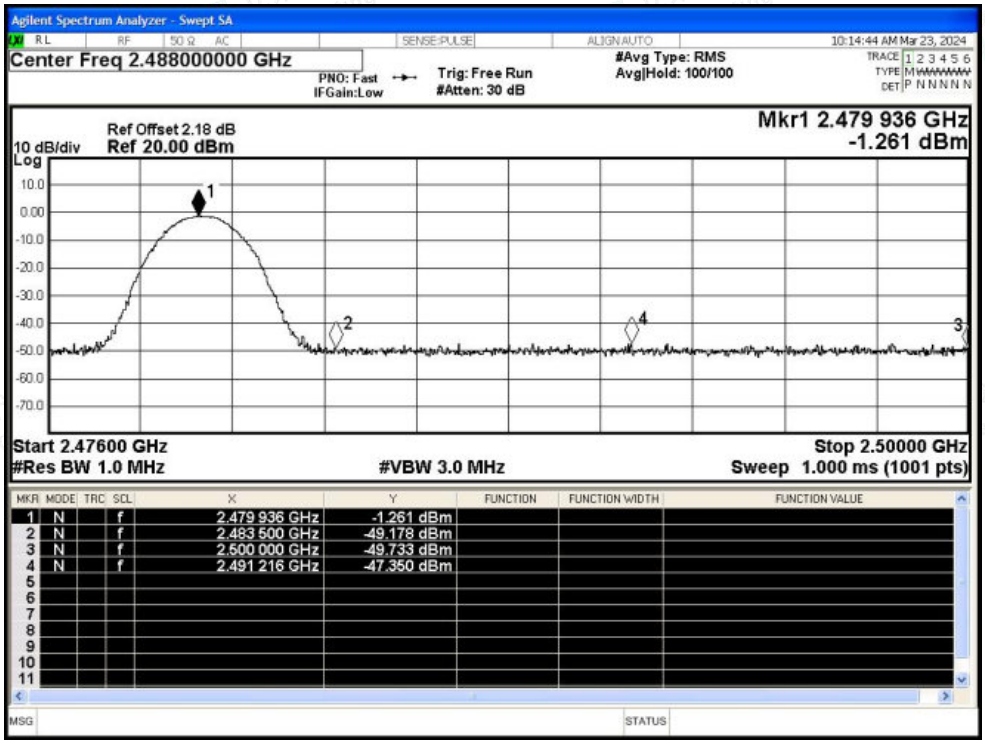
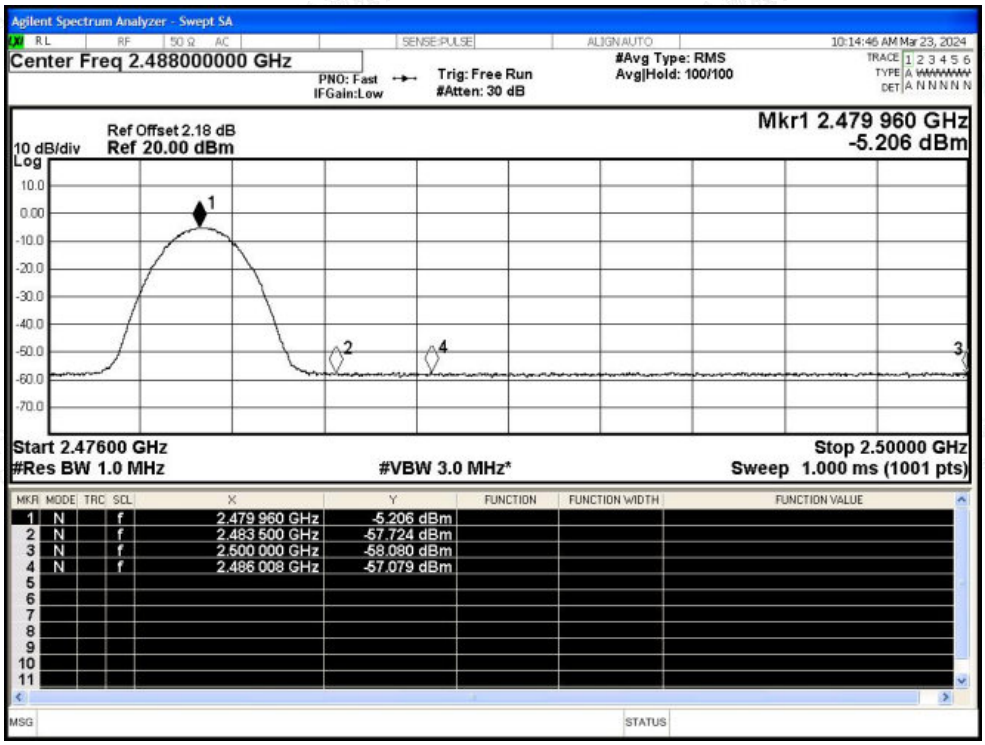
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak



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