



## Appendix A

### RF Test Data for BT (Conducted Measurement)

Product Name: K12

Test Model: K12

#### Environmental Conditions

Temperature:	23.8 ° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	<i>Nick Peng</i> Nick Peng
Supervised by:	<i>Joker.Hu</i> Joker Hu





## A.1 -20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.898	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.917	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.922	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.275	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.323	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.314	N/A	Pass





Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

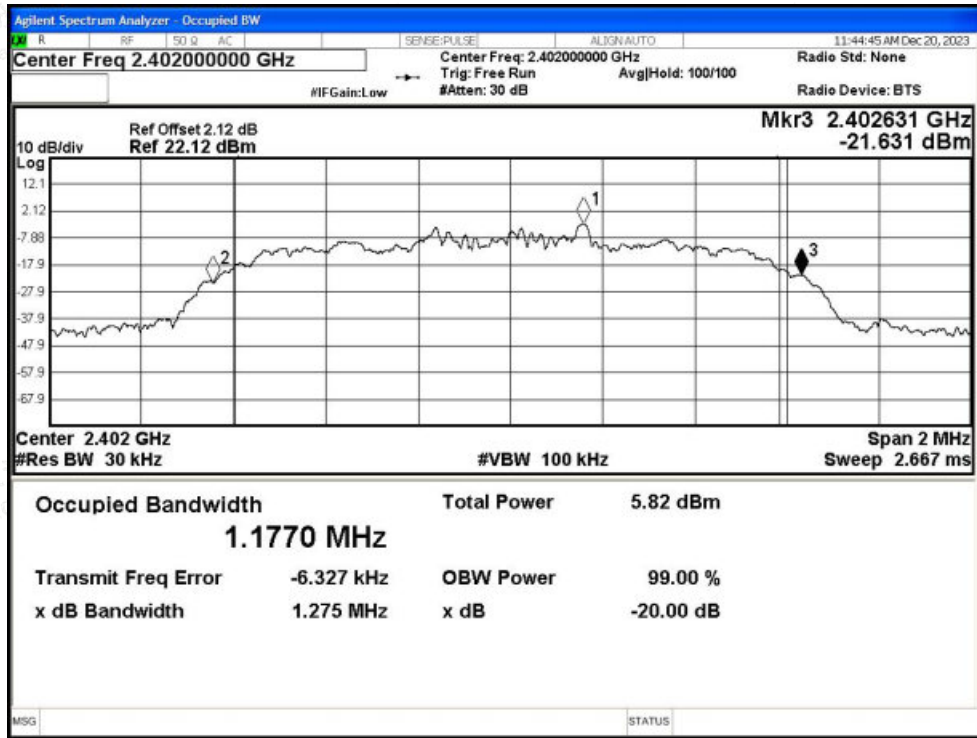




-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

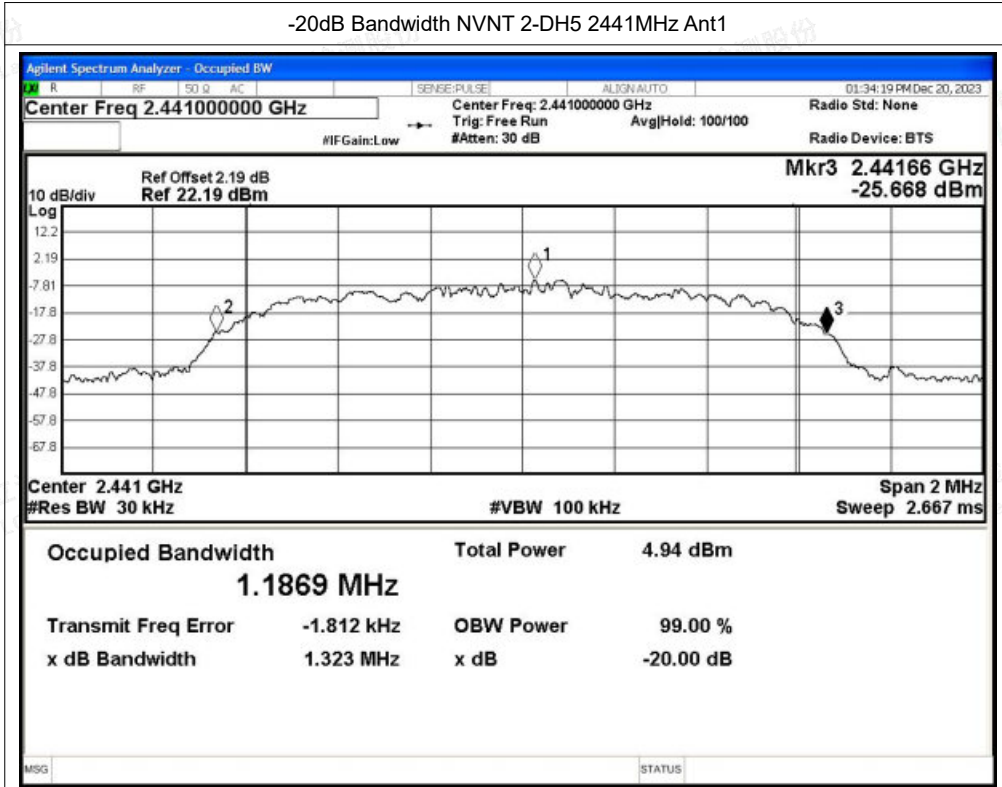


-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1

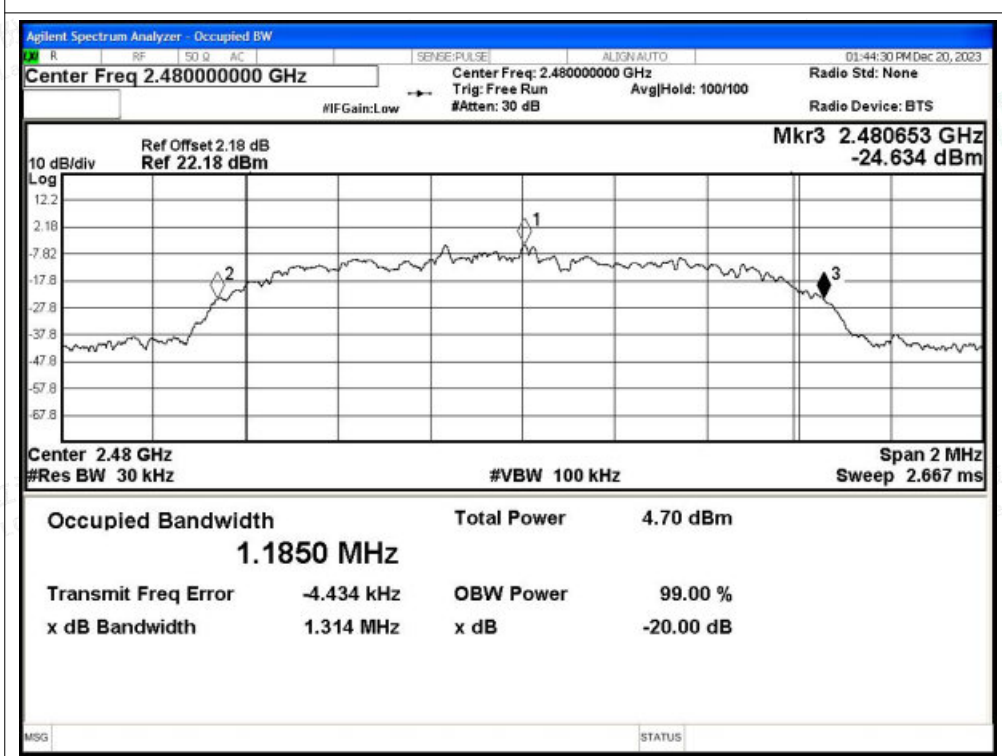




-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



-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	0.95	21	Pass
NVNT	1-DH5	2441	Ant1	0.49	21	Pass
NVNT	1-DH5	2480	Ant1	0.06	21	Pass
NVNT	2-DH5	2402	Ant1	0.96	21	Pass
NVNT	2-DH5	2441	Ant1	0.46	21	Pass
NVNT	2-DH5	2480	Ant1	0.09	21	Pass

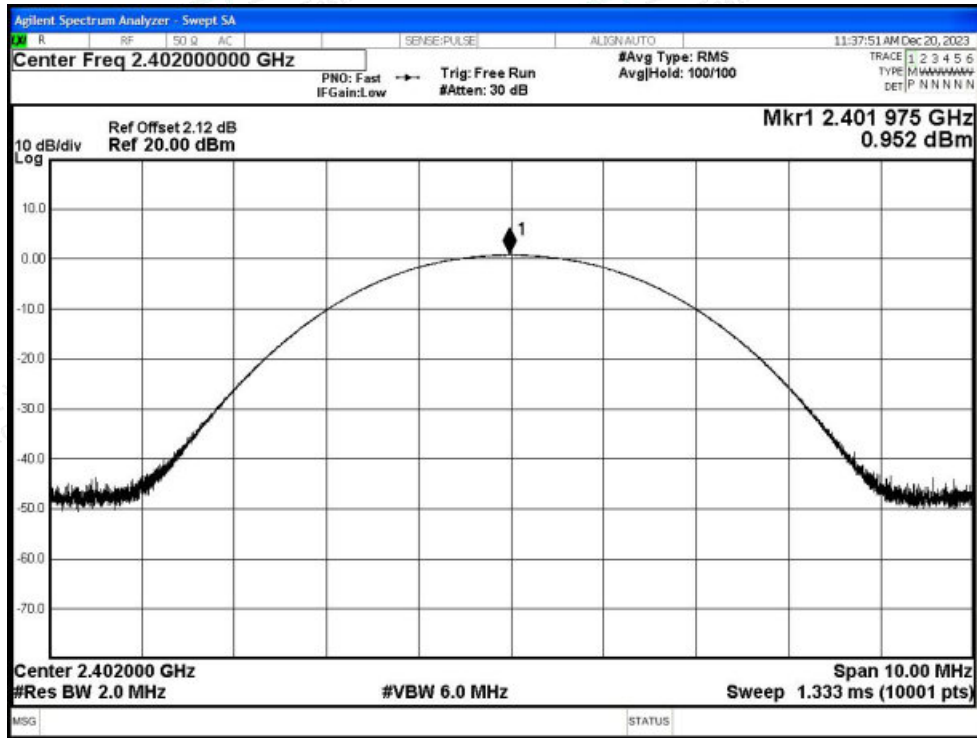




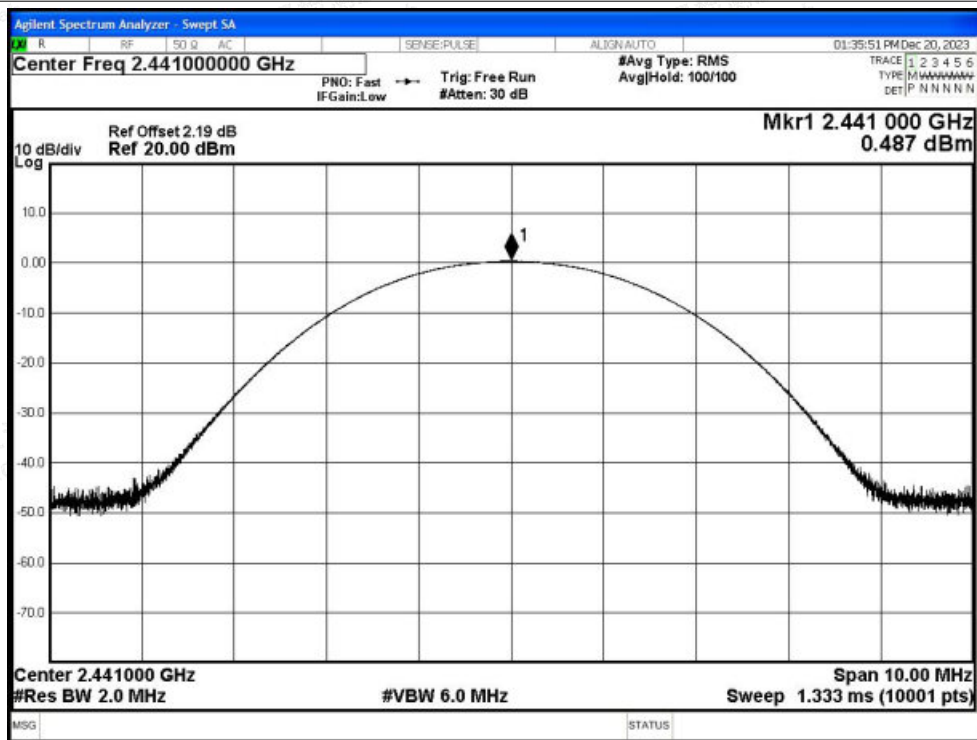


Test Graphs

Power NVNT 1-DH5 2402MHz Ant1

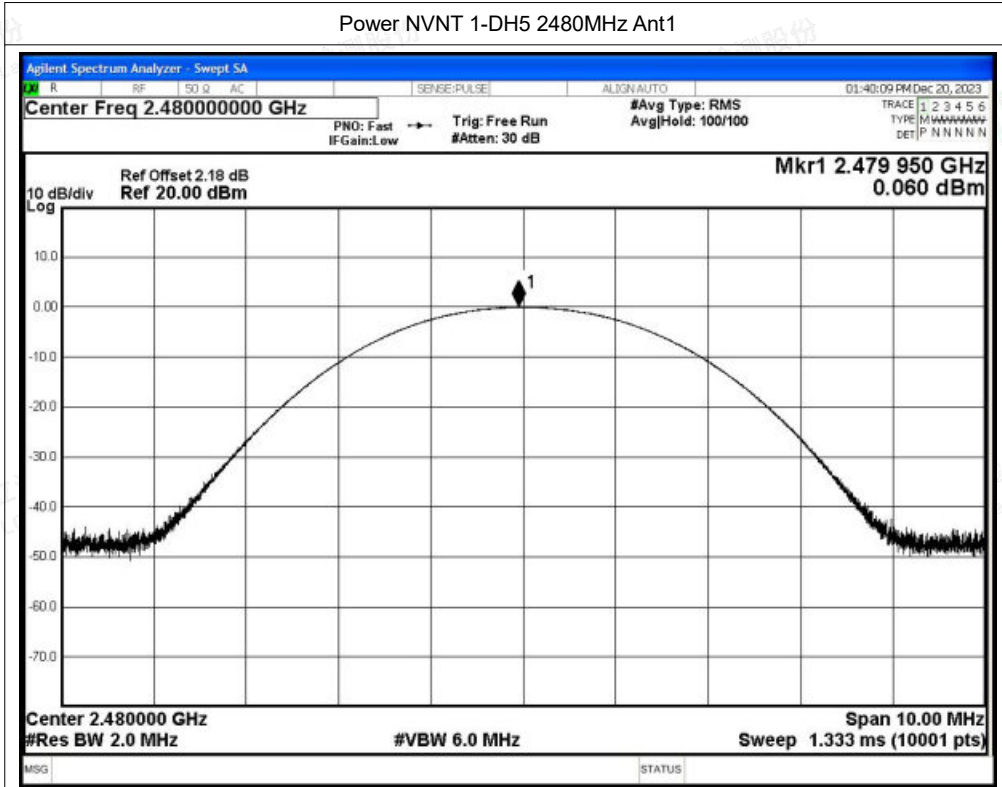


Power NVNT 1-DH5 2441MHz Ant1

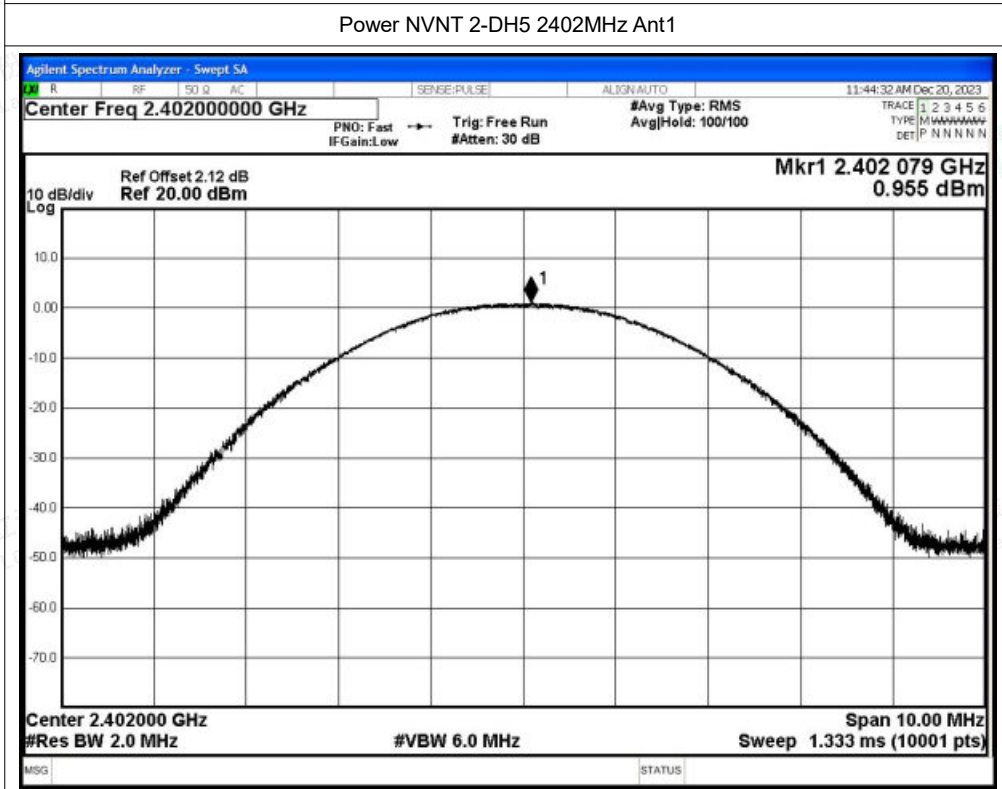




Power NVNT 1-DH5 2480MHz Ant1



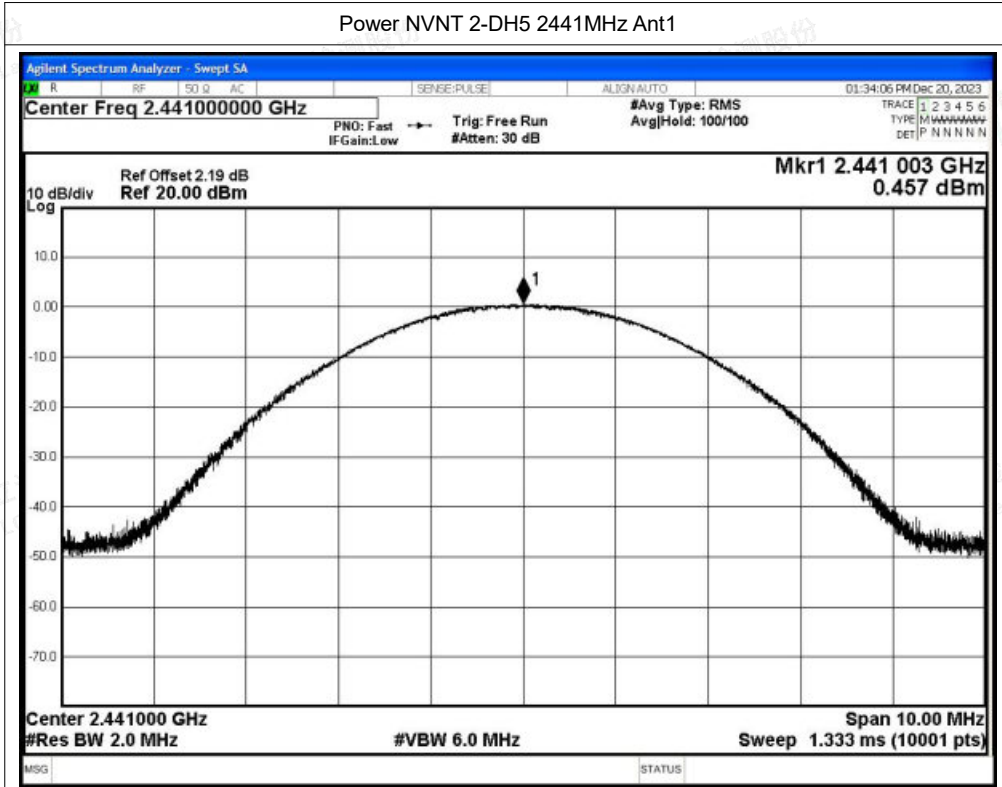
Power NVNT 2-DH5 2402MHz Ant1



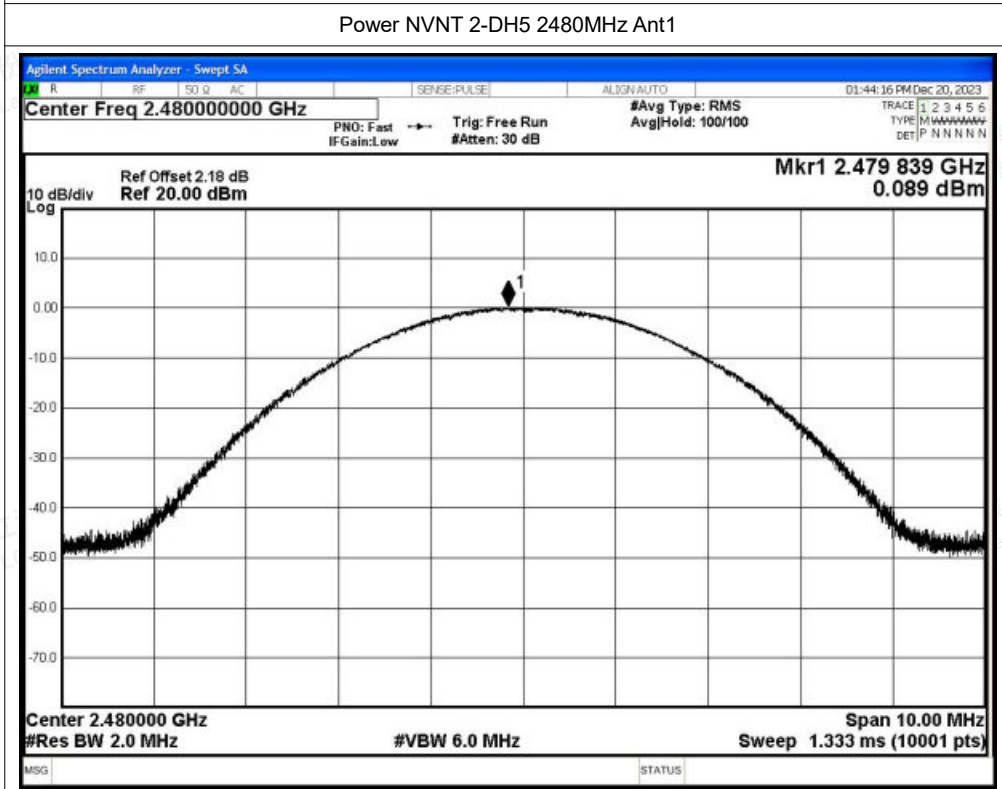




Power NVNT 2-DH5 2441MHz Ant1



Power NVNT 2-DH5 2480MHz Ant1





### A.3 Carrier Frequencies Separation

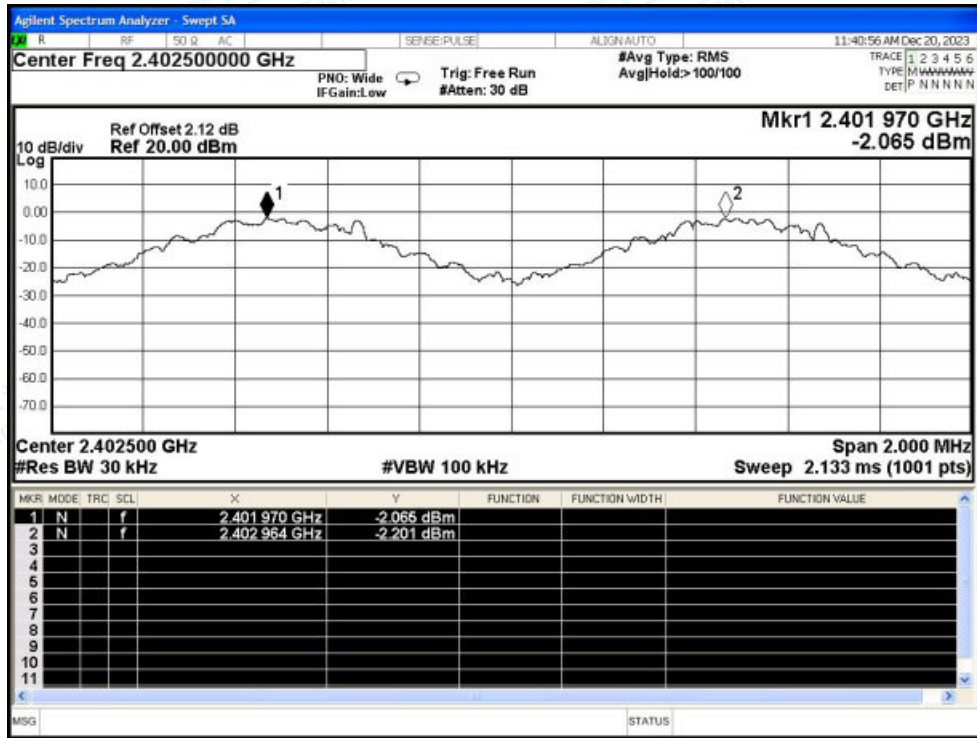
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2401.97	2402.964	0.994	0.615	Pass
NVNT	2-DH5	Ant1	2402.01	2403.16	1.15	0.882	Pass



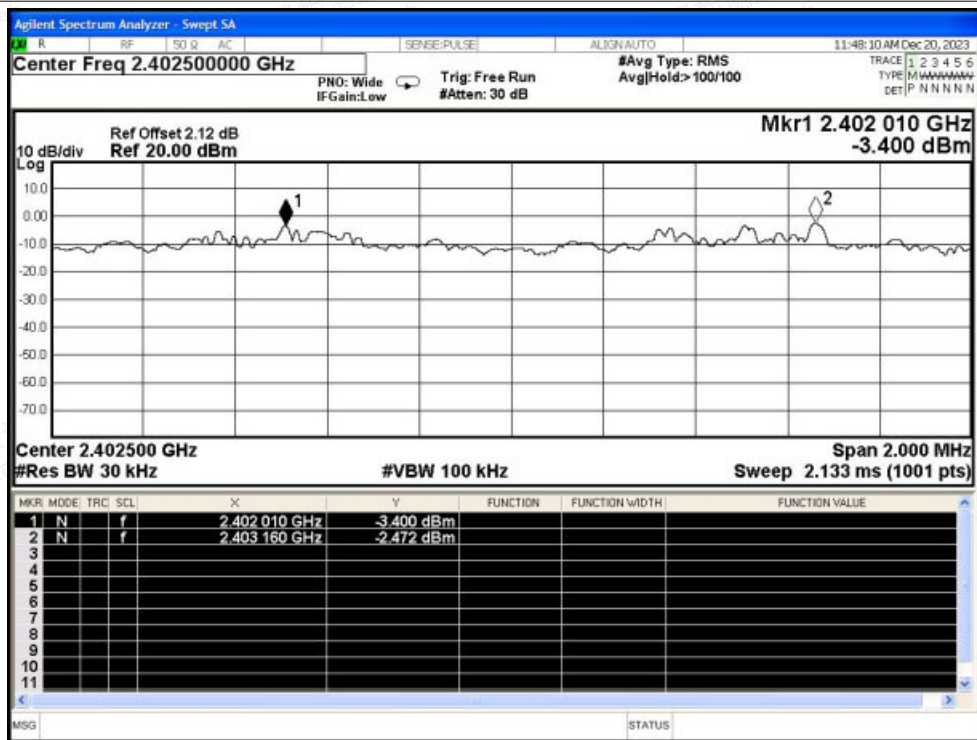


Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1





### A.4 Dwell Time

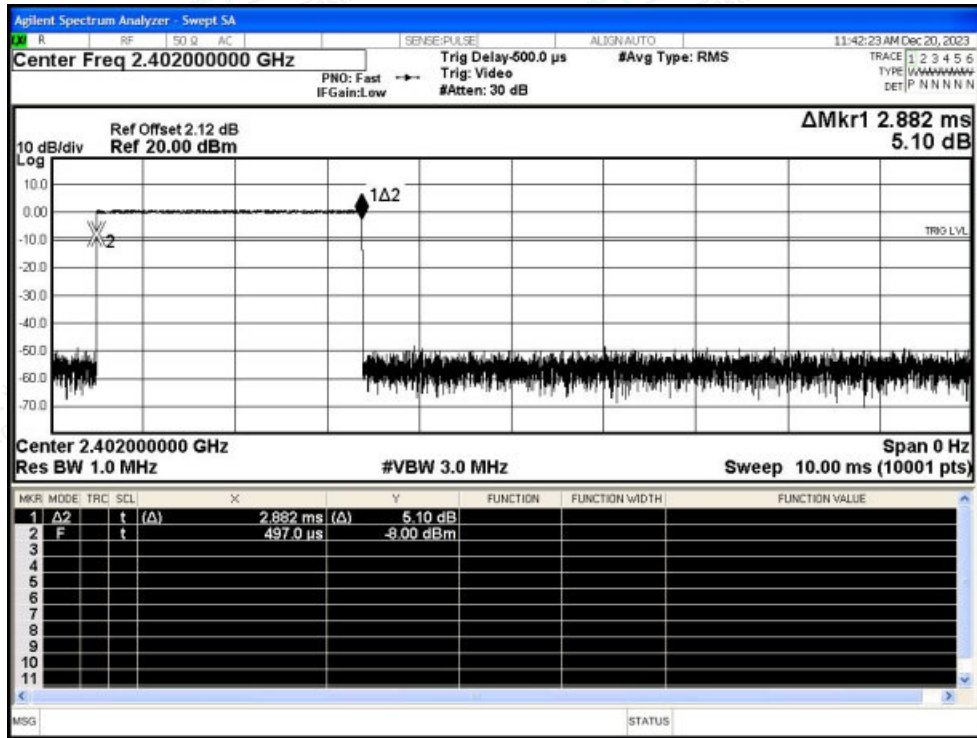
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.882	285.318	99	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.881	288.1	100	31600	400	Pass



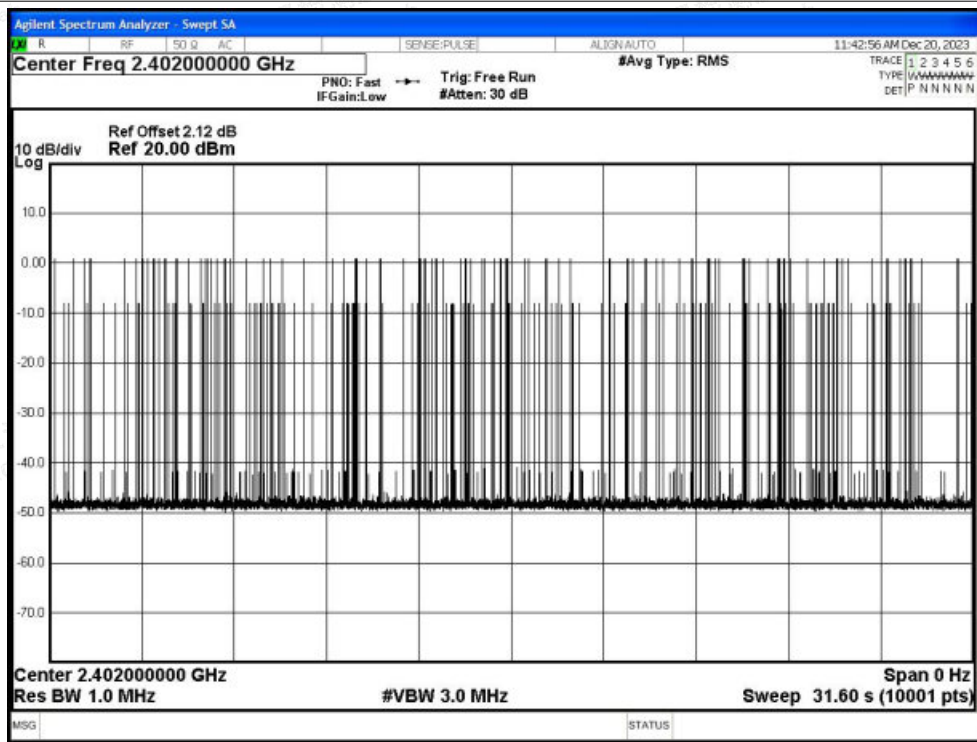


Test Graphs

Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



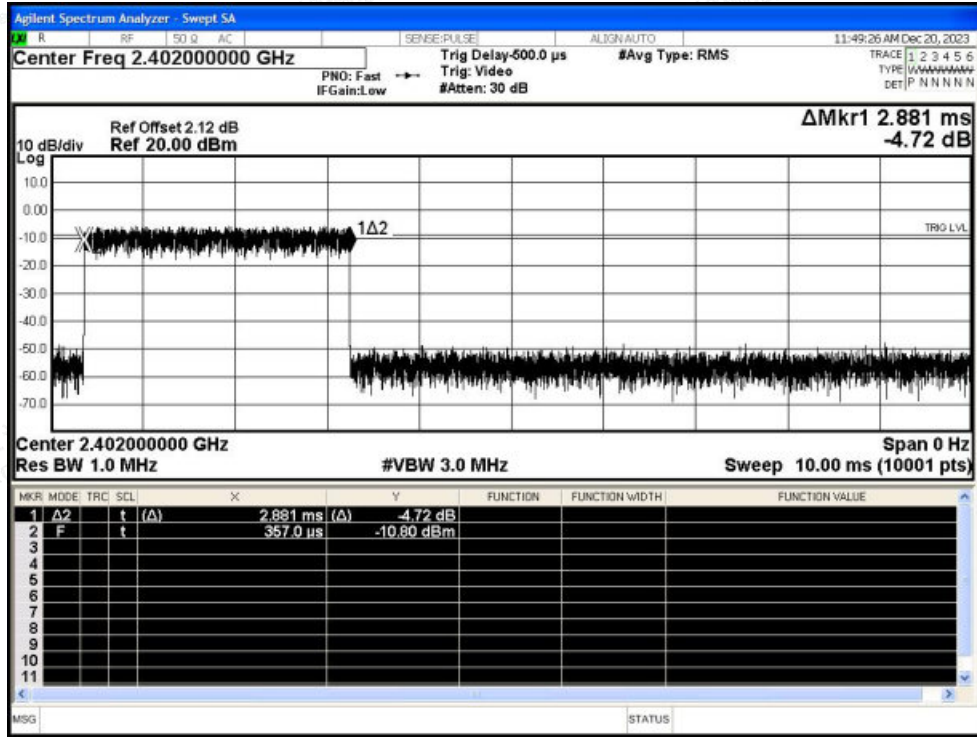
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



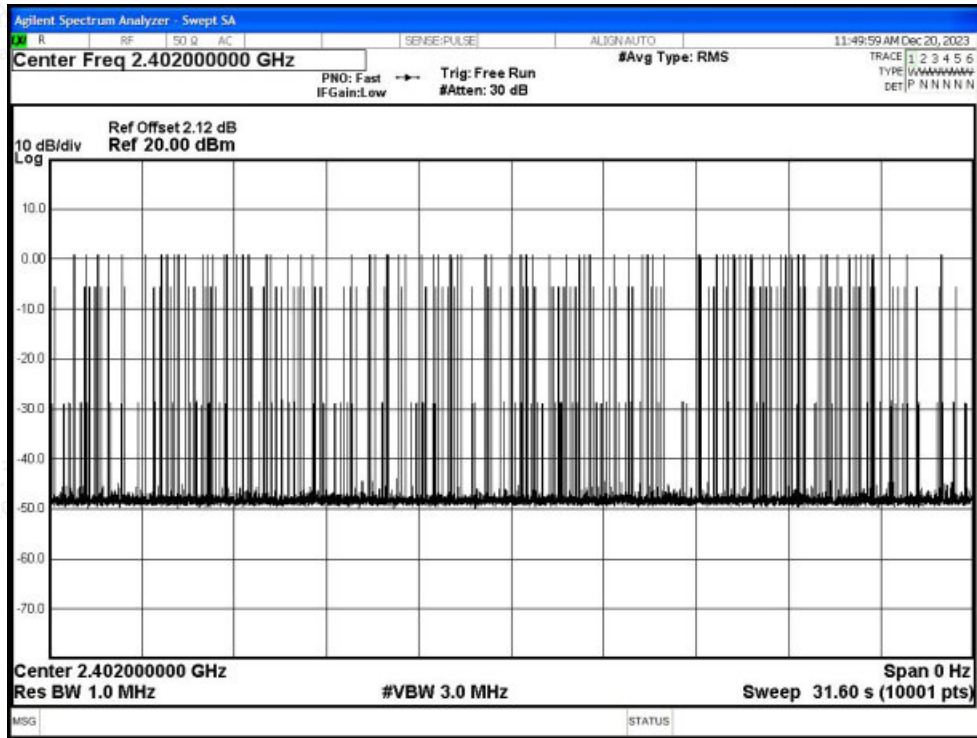




Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated







## A.5 Number of Hopping Channel

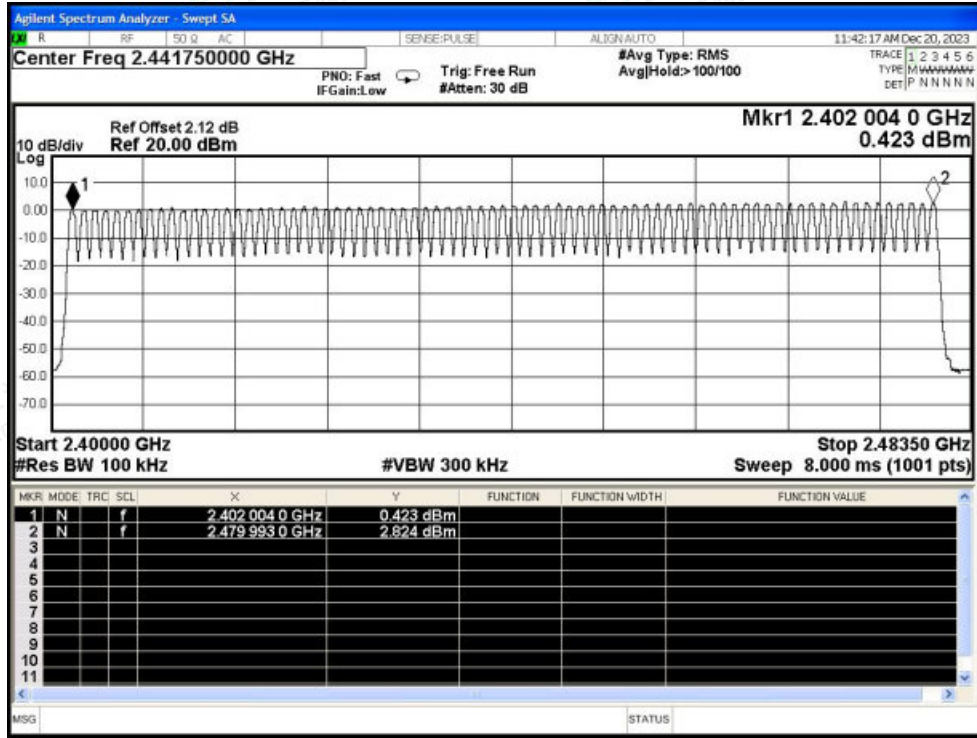
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass



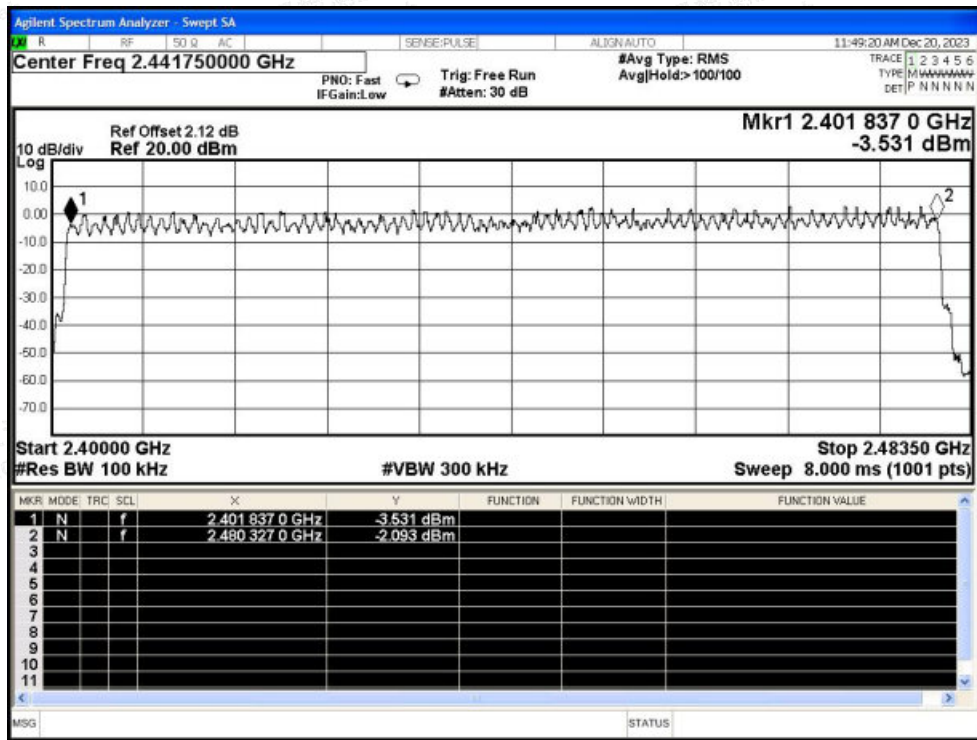


Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1





## A.6 Band Edge

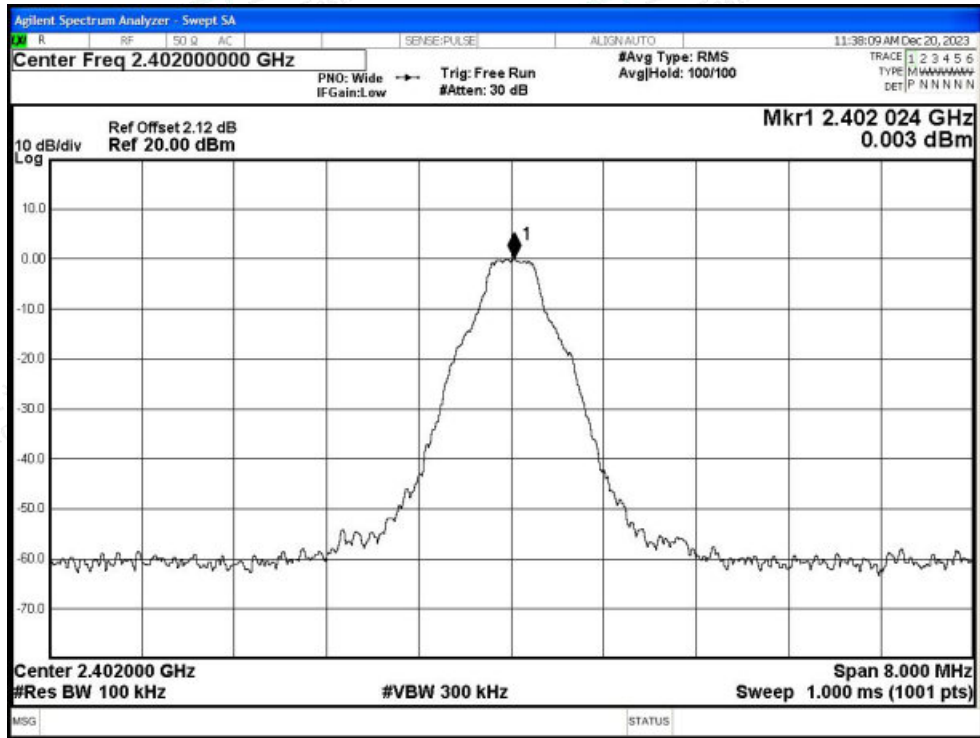
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-57.27	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-56.34	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-53.02	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-56.5	-20	Pass



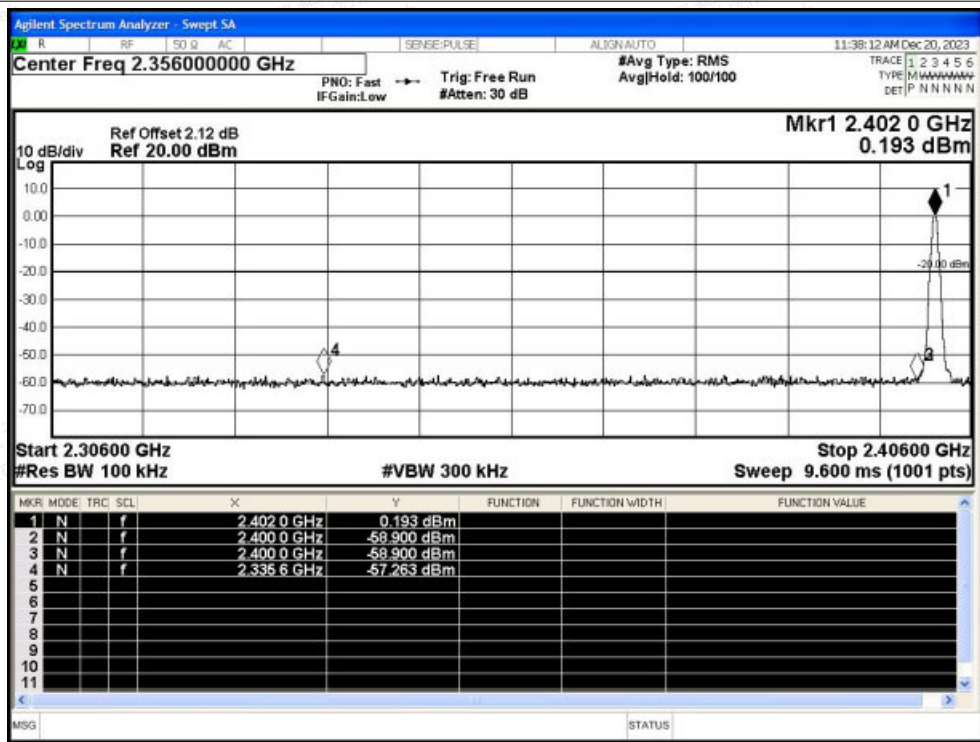


Test Graphs

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

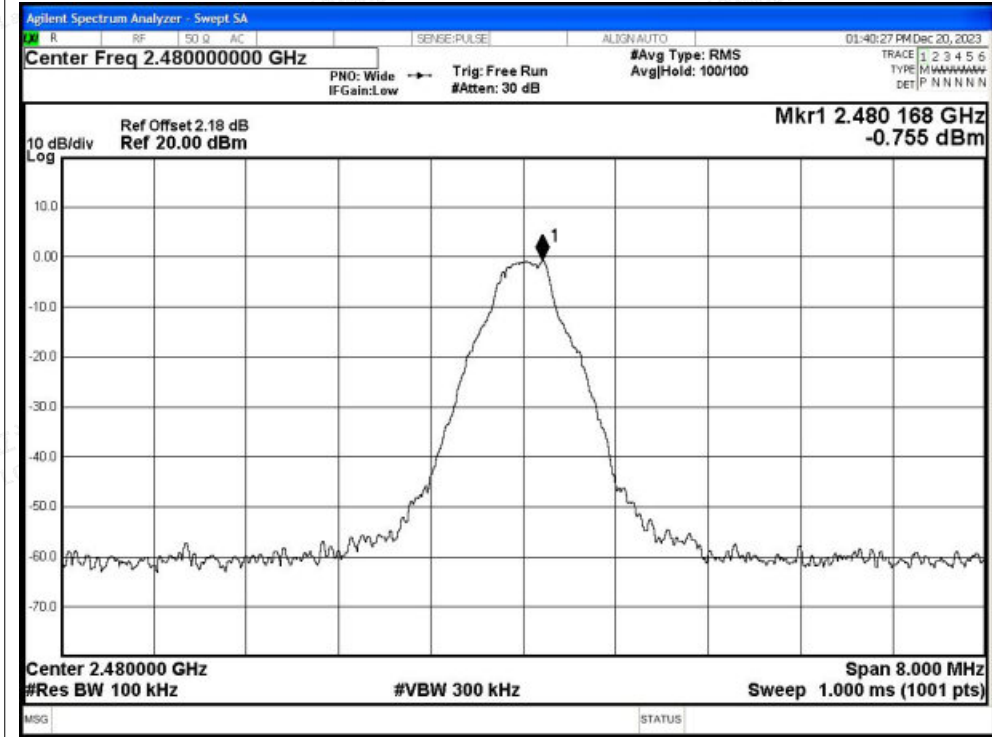


Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission

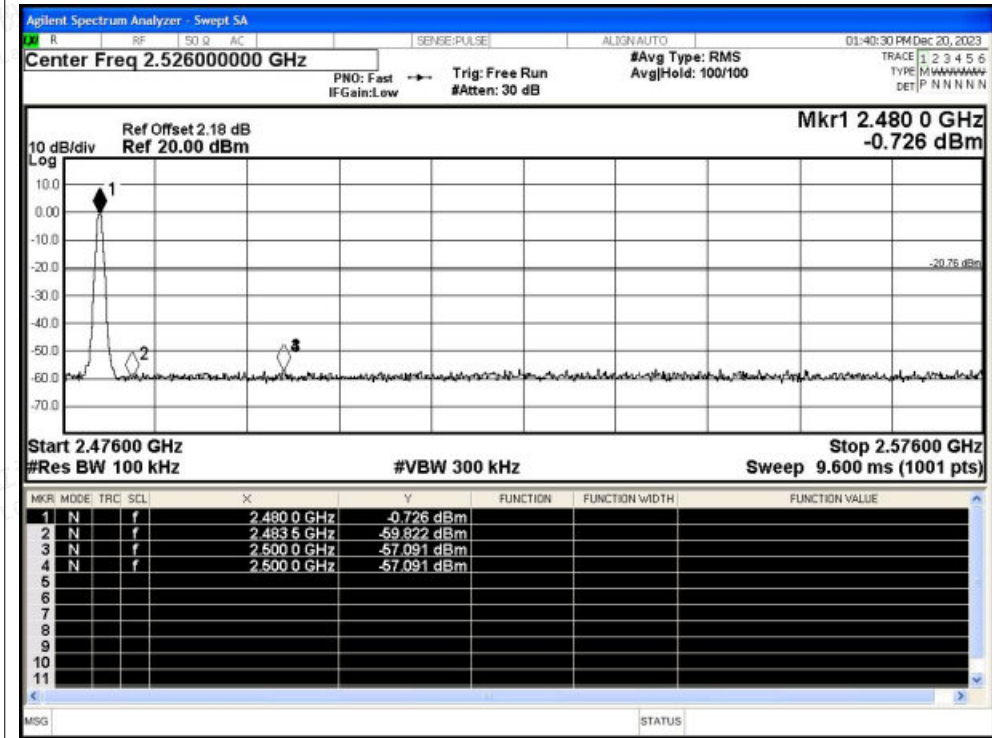




Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



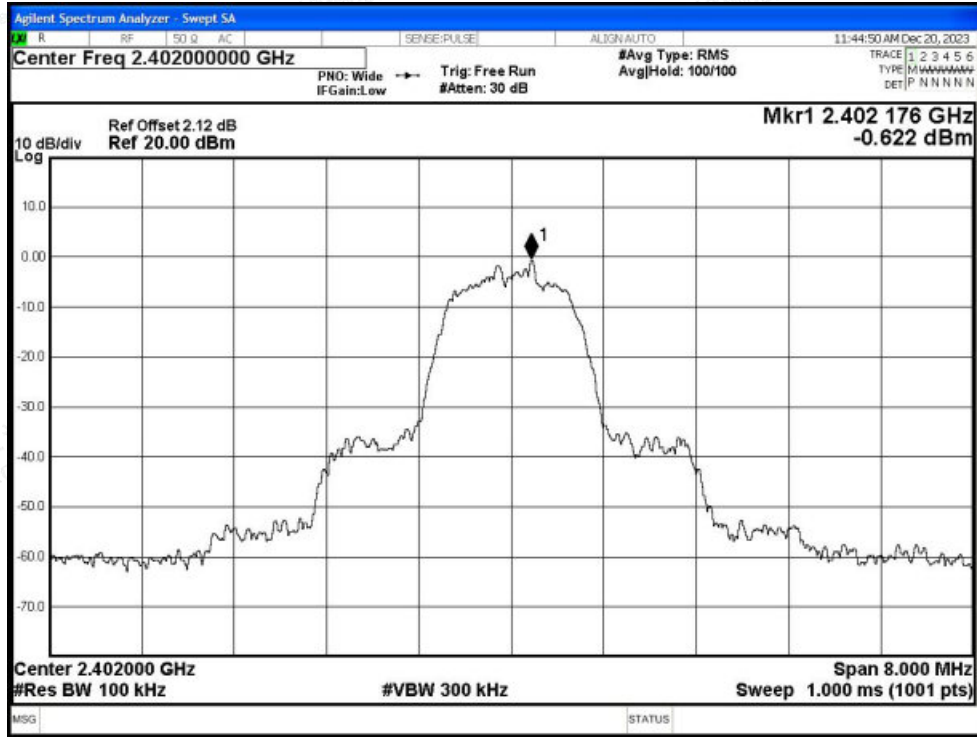
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



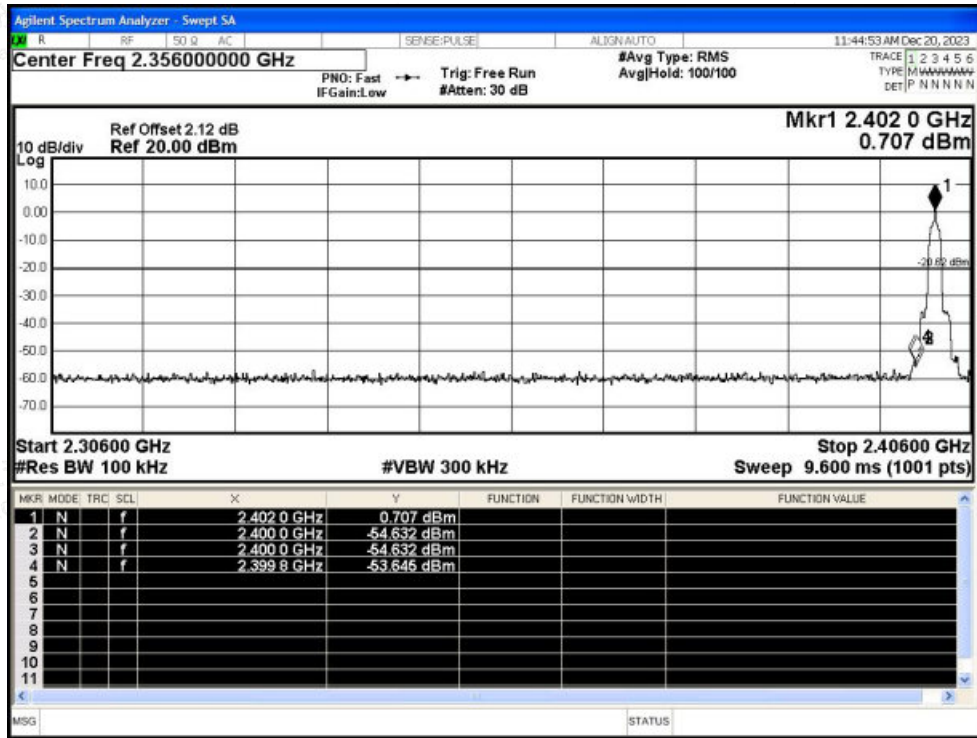




Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



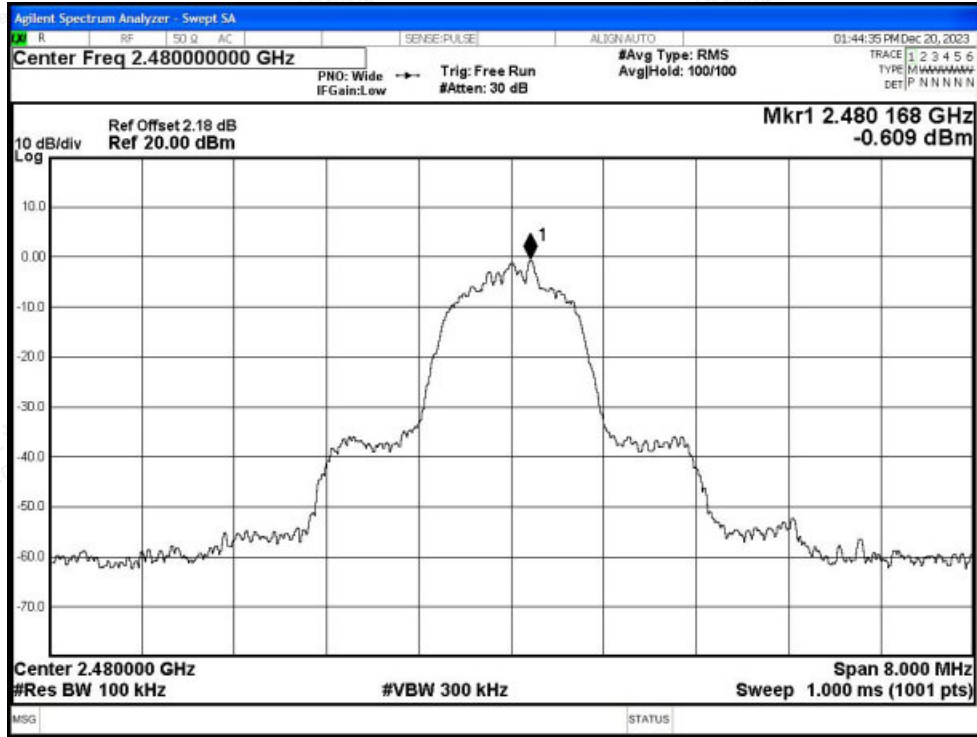
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission



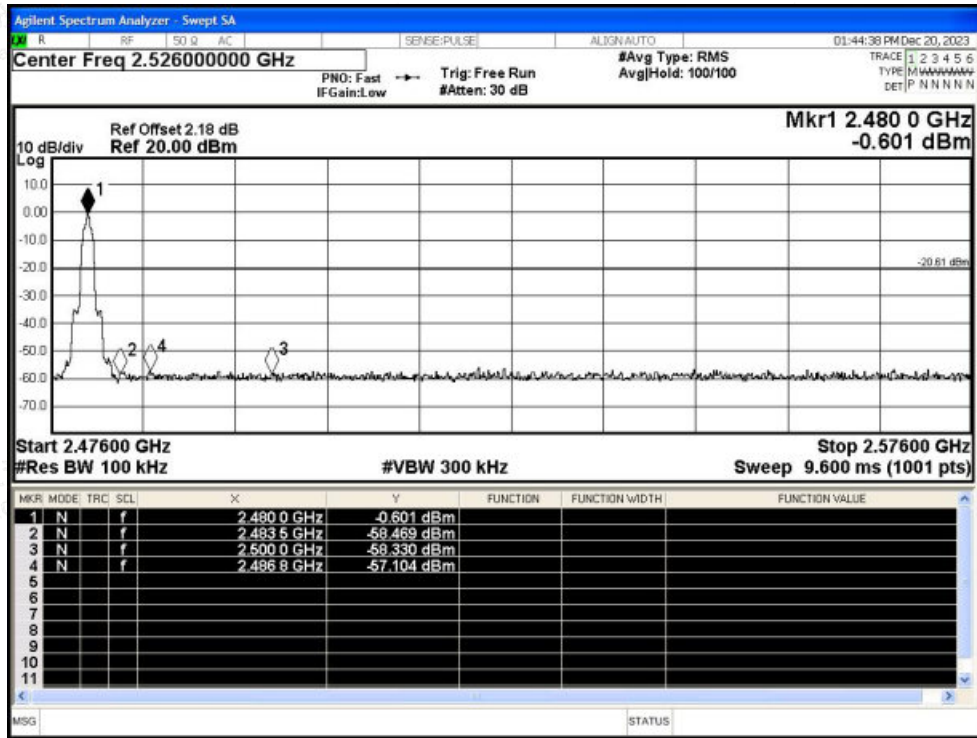




Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



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





### (Hopping)

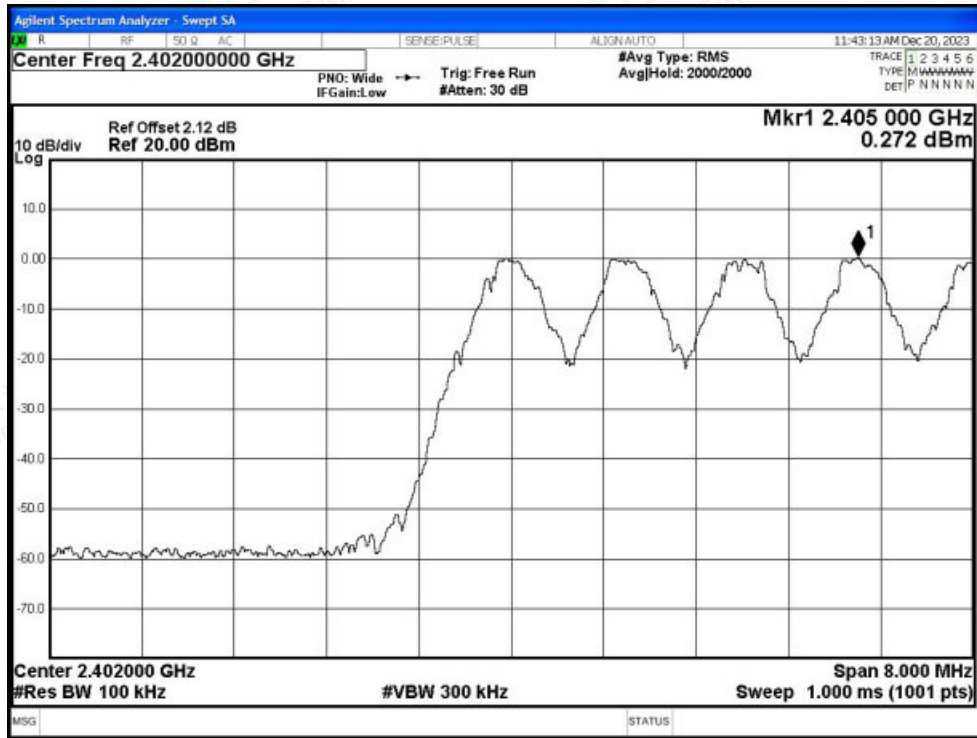
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-56.36	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-54.76	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-53.82	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-53.58	-20	Pass



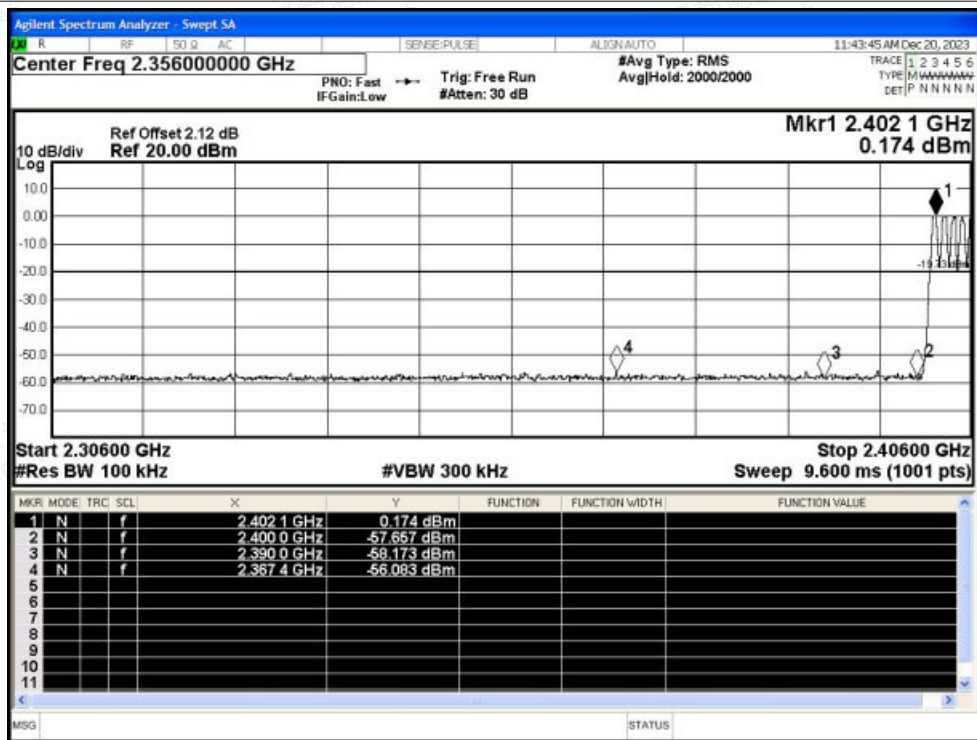


Test Graphs

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

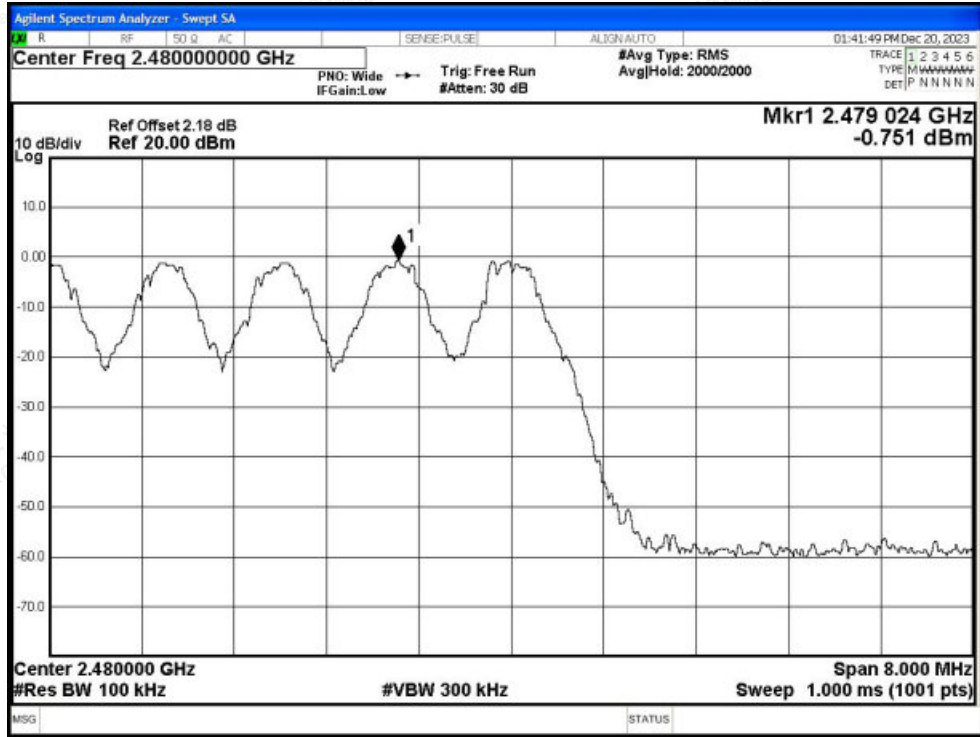


Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission

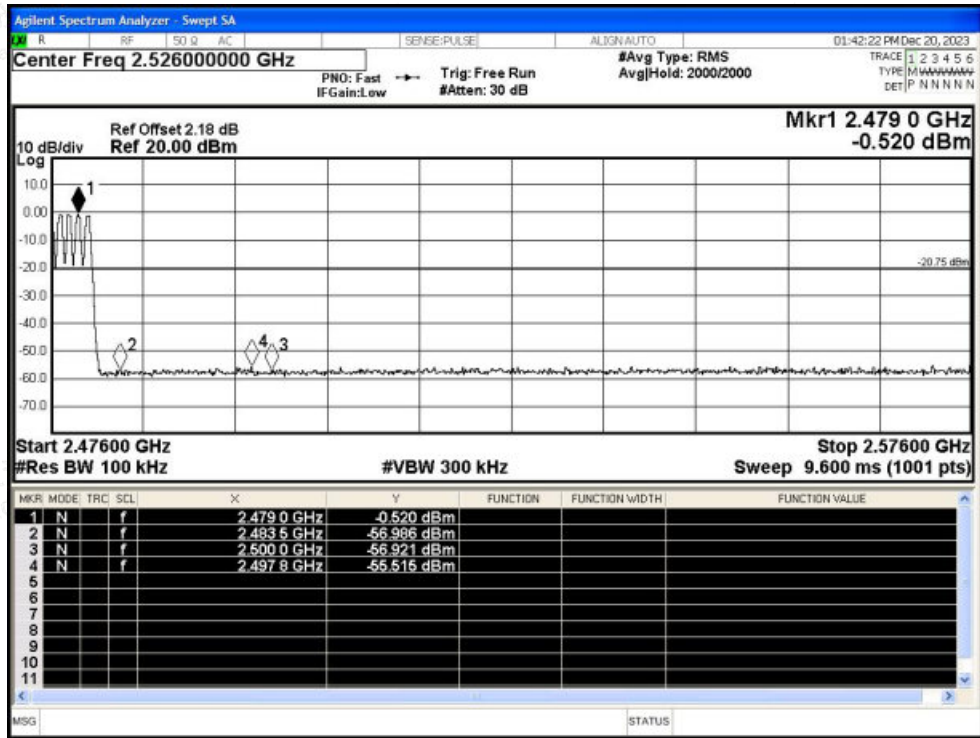




Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref

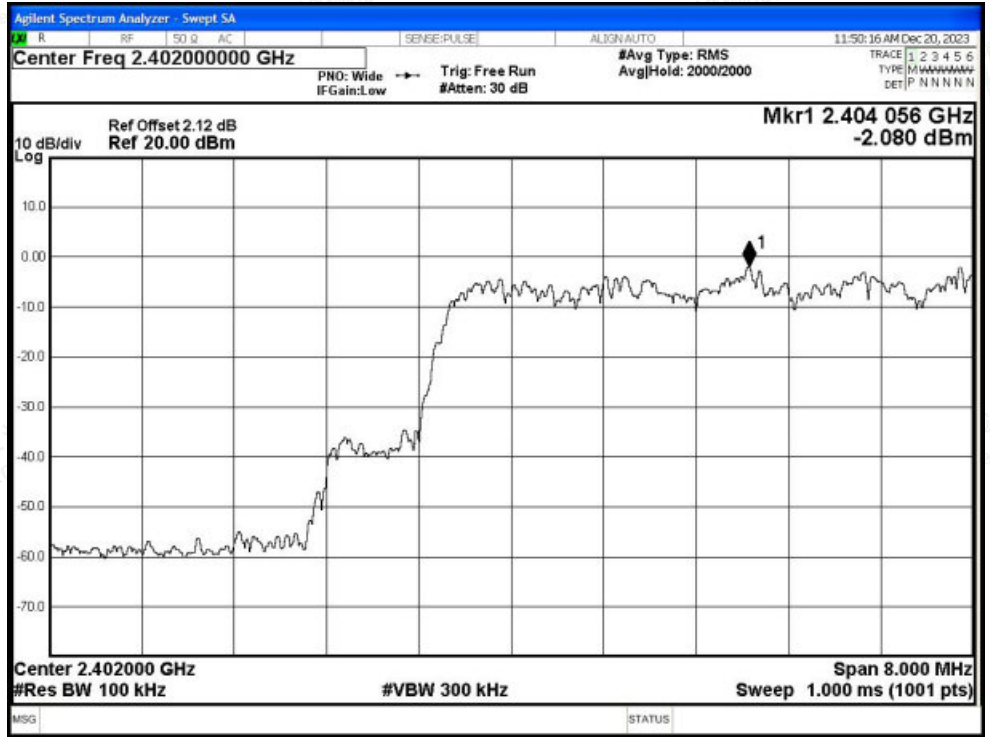


Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission

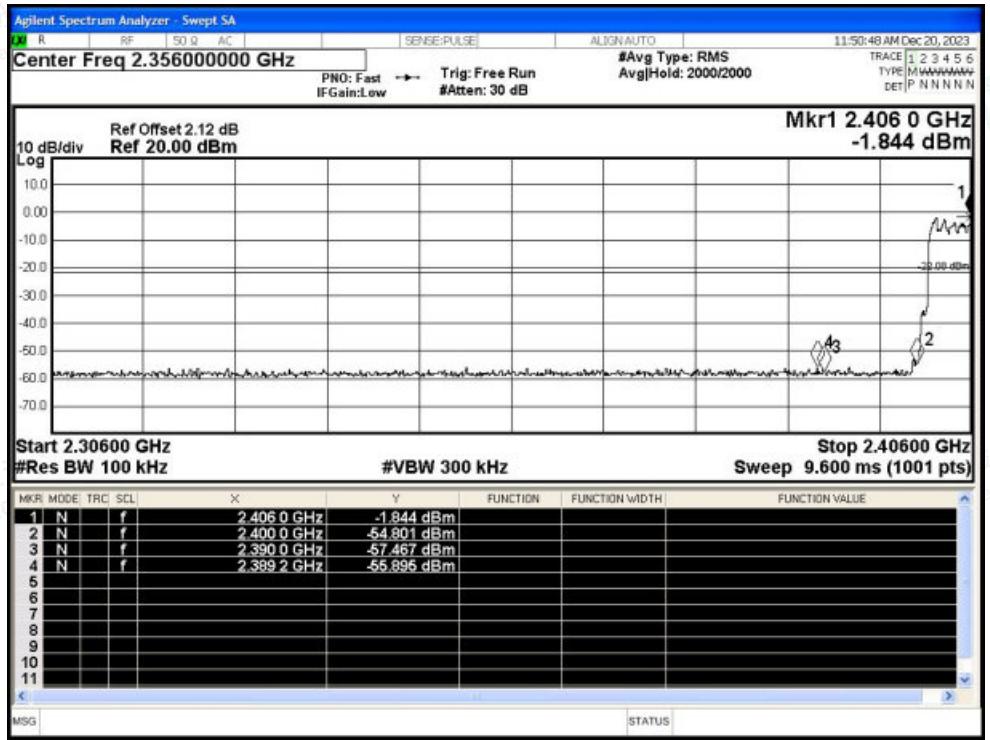




Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



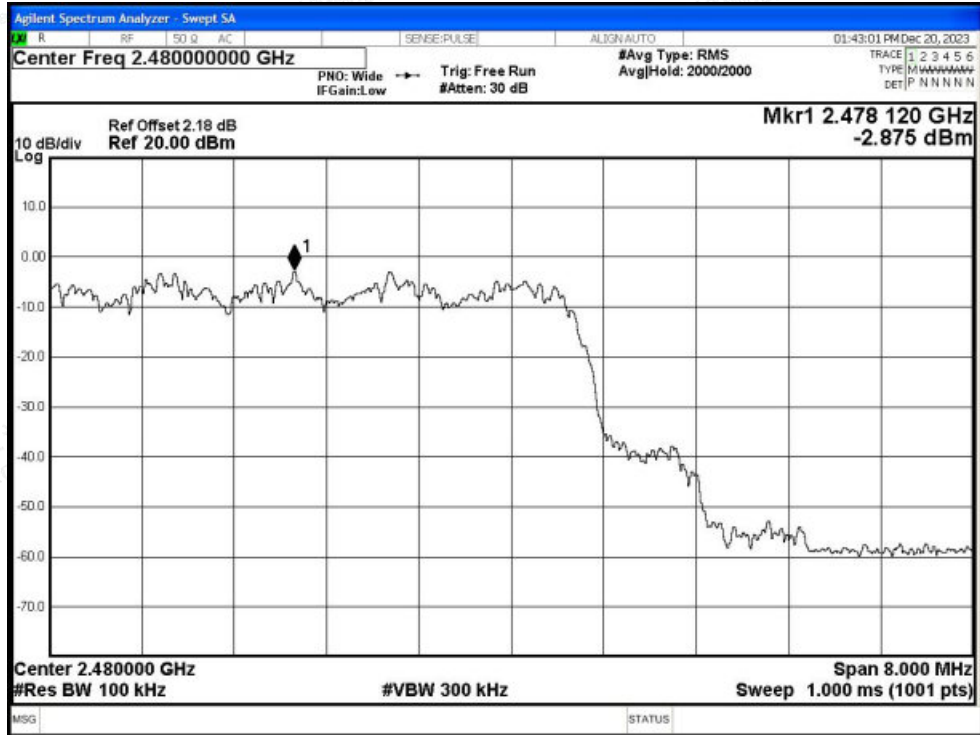
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission



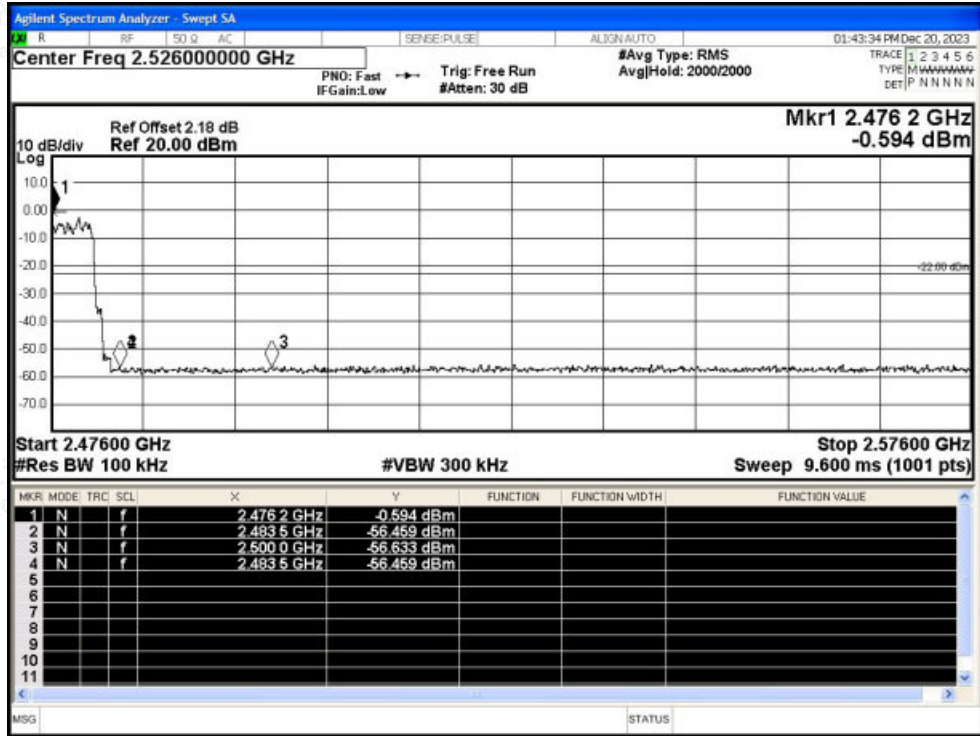




Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



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







## A.7 Conducted RF Spurious Emission

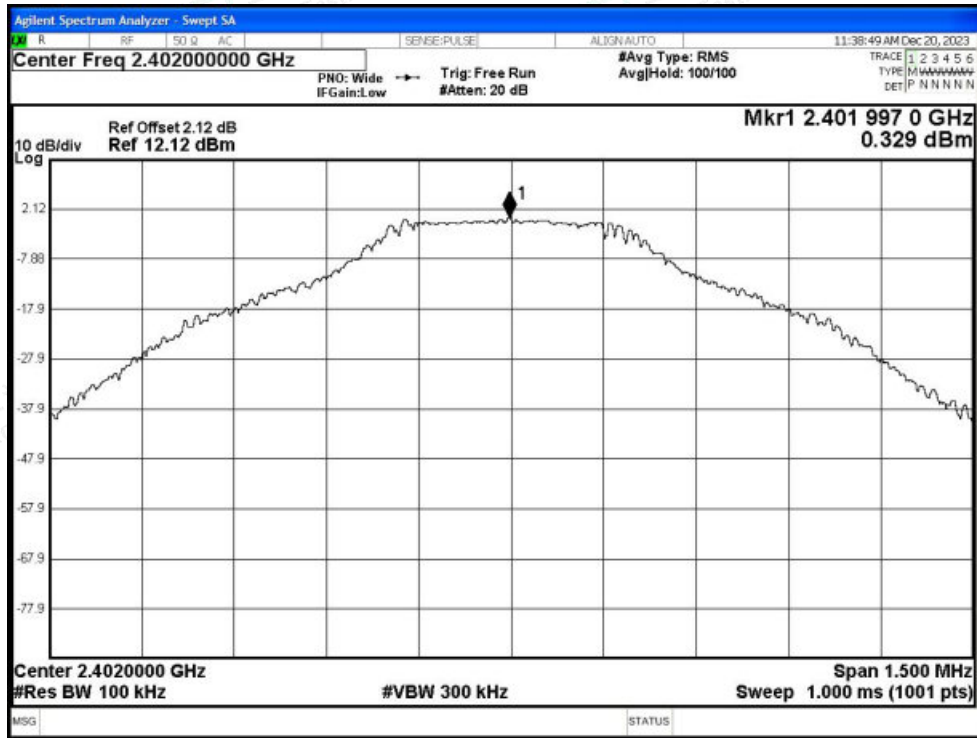
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-52.7	-20	Pass
NVNT	1-DH5	2441	Ant1	-55.21	-20	Pass
NVNT	1-DH5	2480	Ant1	-54.15	-20	Pass
NVNT	2-DH5	2402	Ant1	-55.51	-20	Pass
NVNT	2-DH5	2441	Ant1	-55.11	-20	Pass
NVNT	2-DH5	2480	Ant1	-54.73	-20	Pass



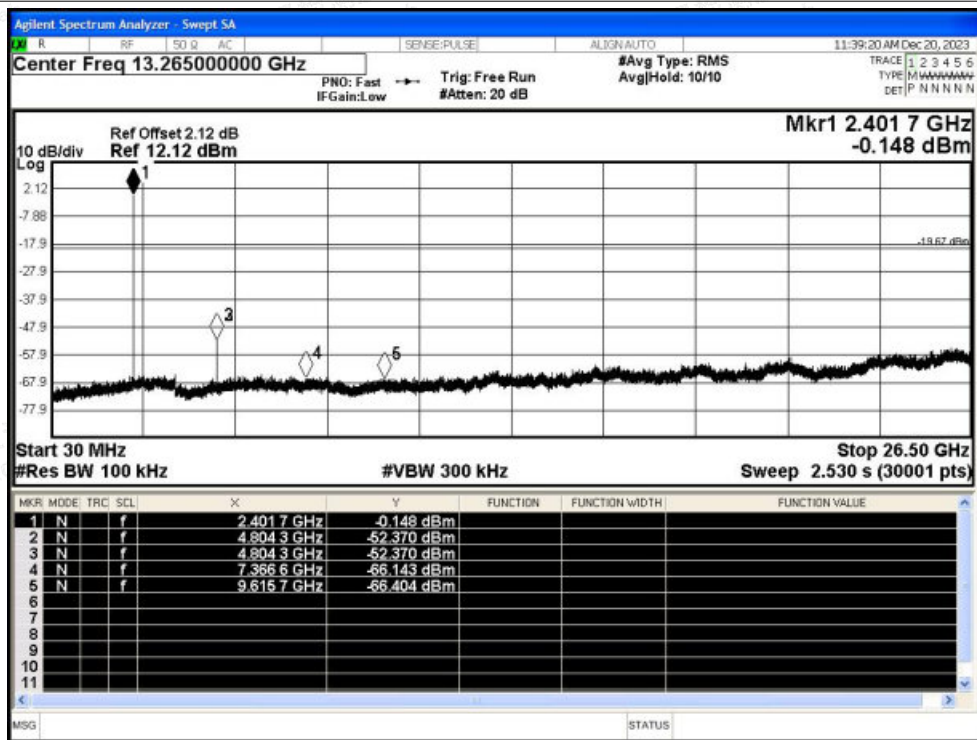


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref

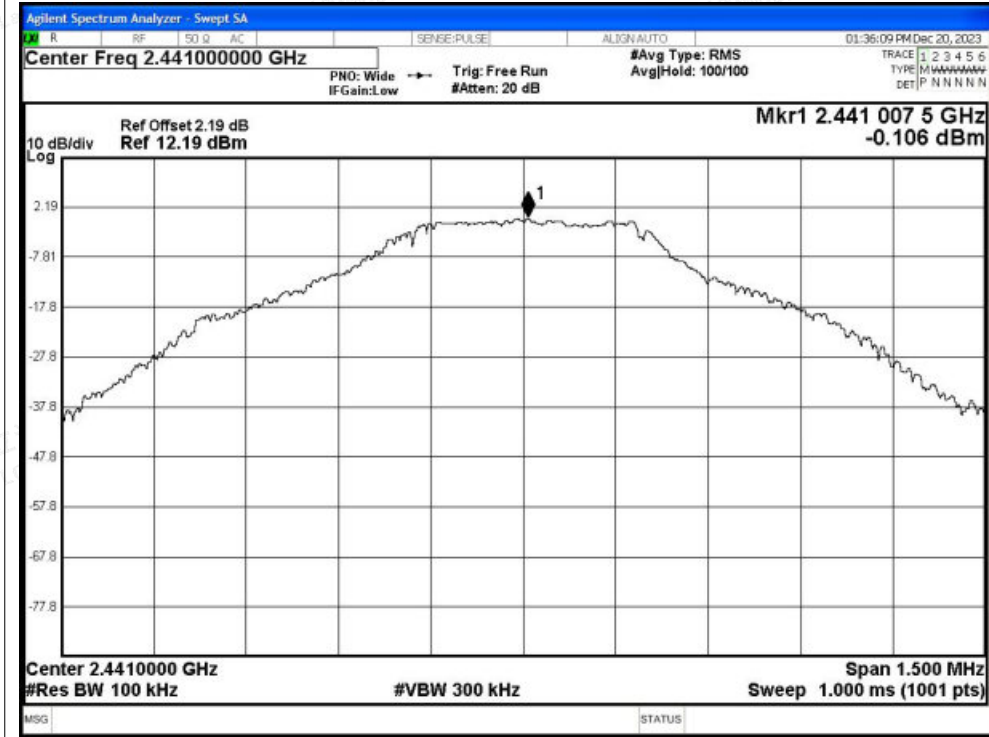


Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission

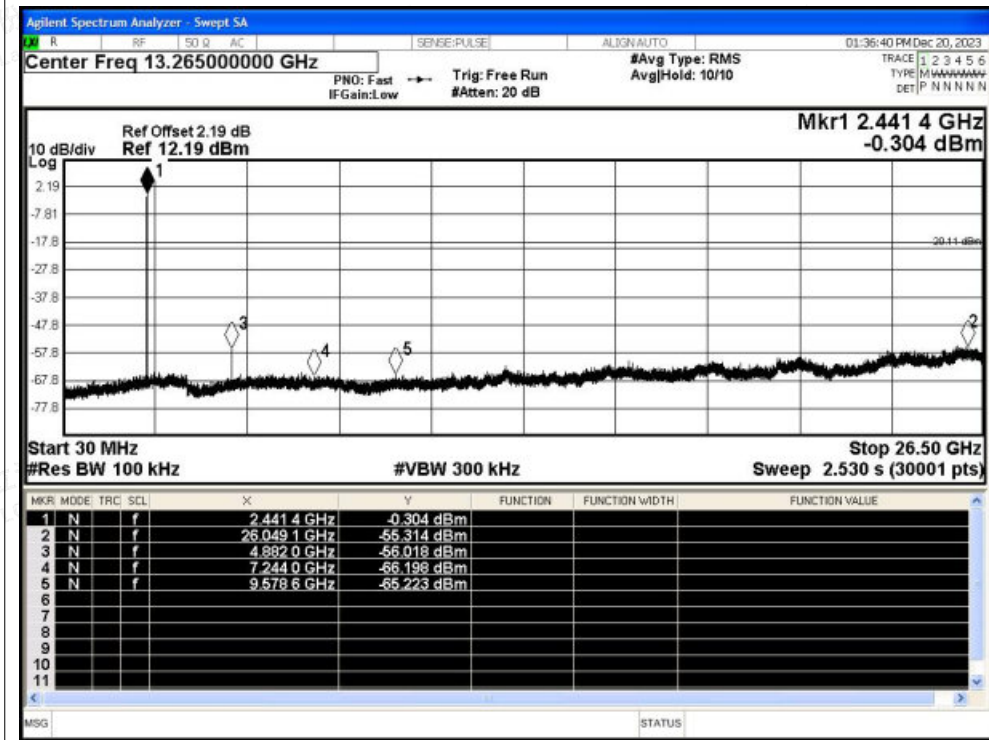




Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref

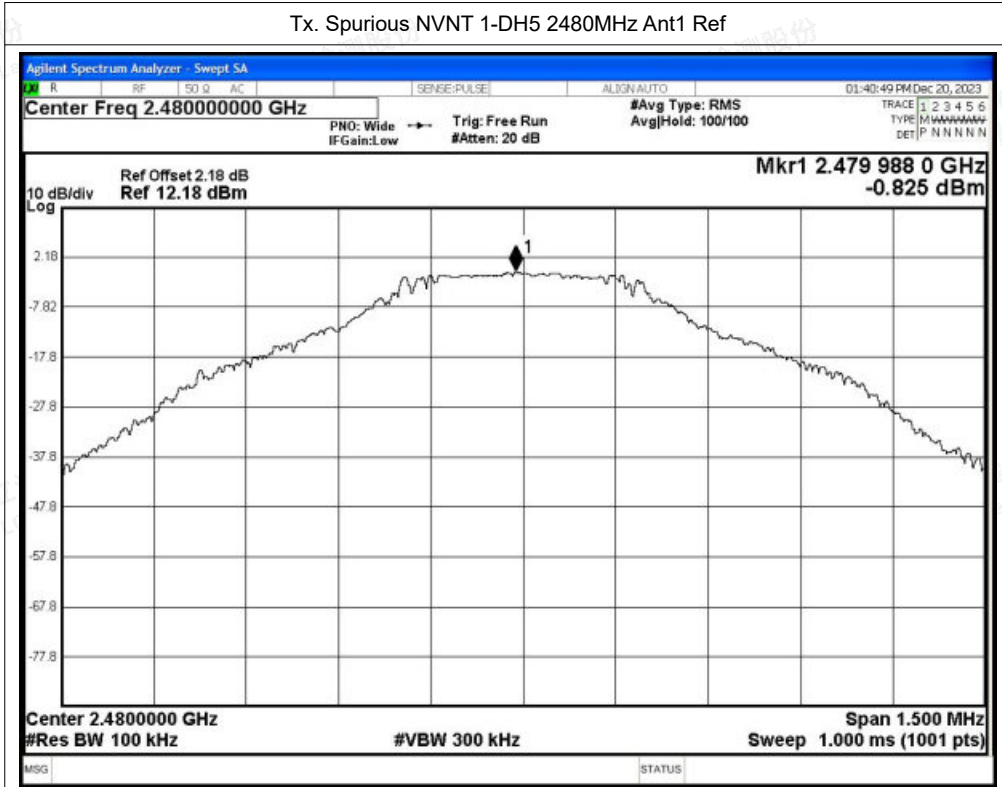


Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission

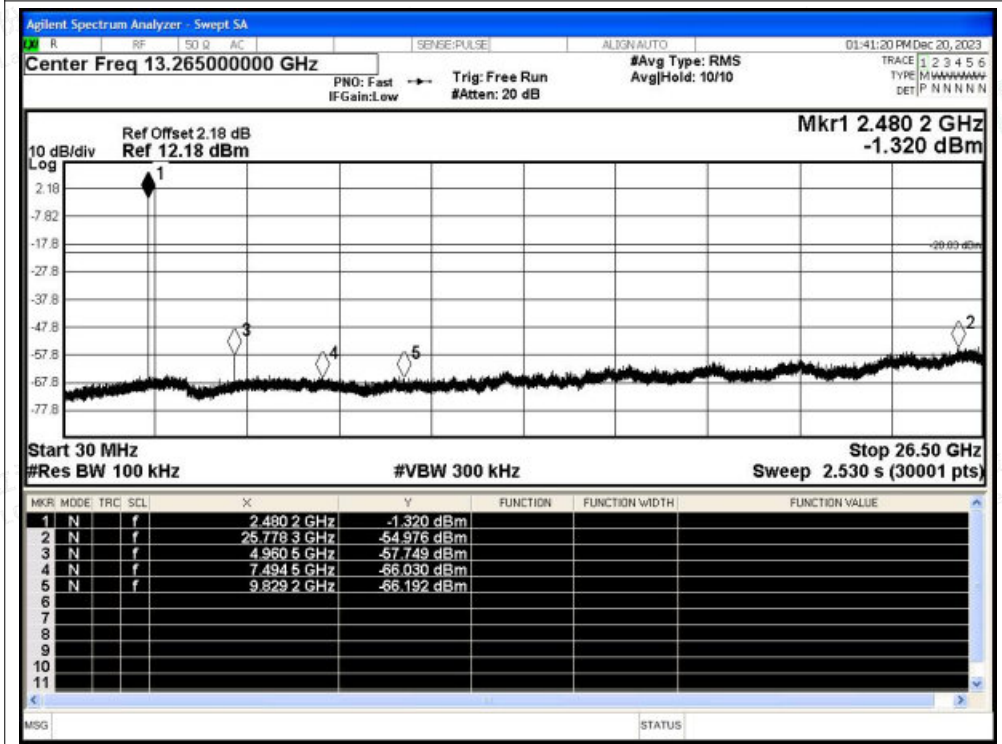




Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref

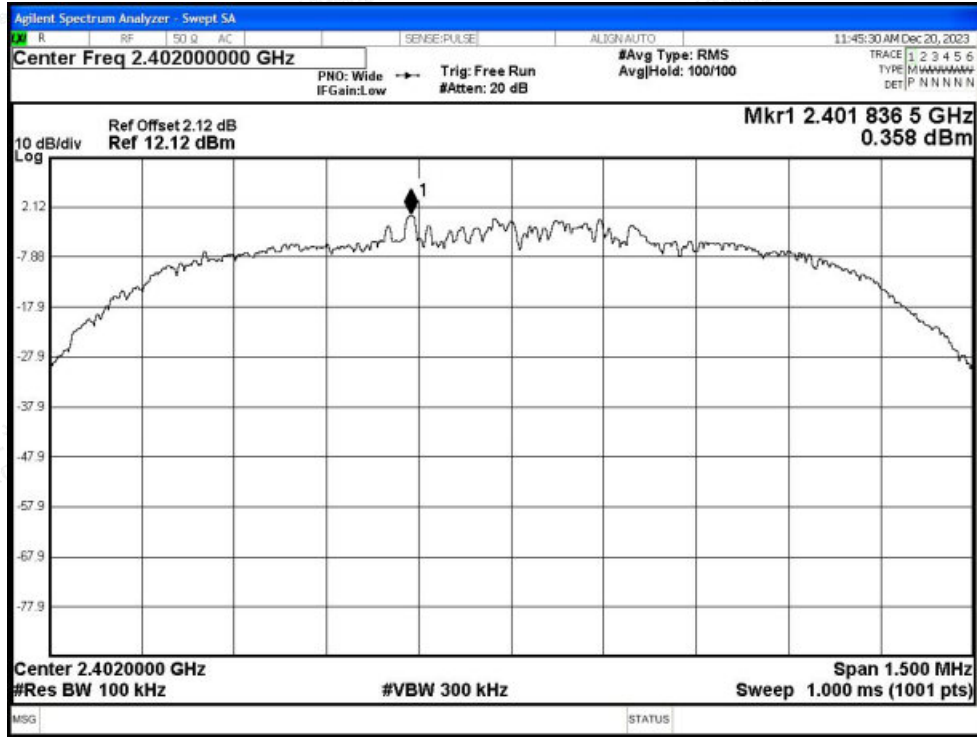


Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission

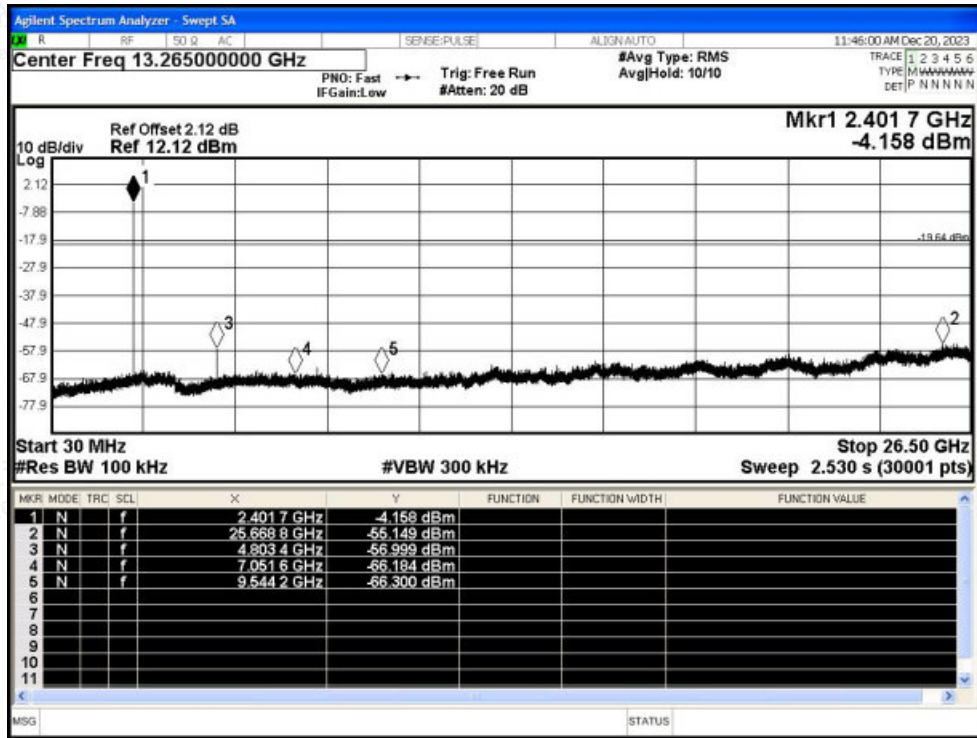




Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



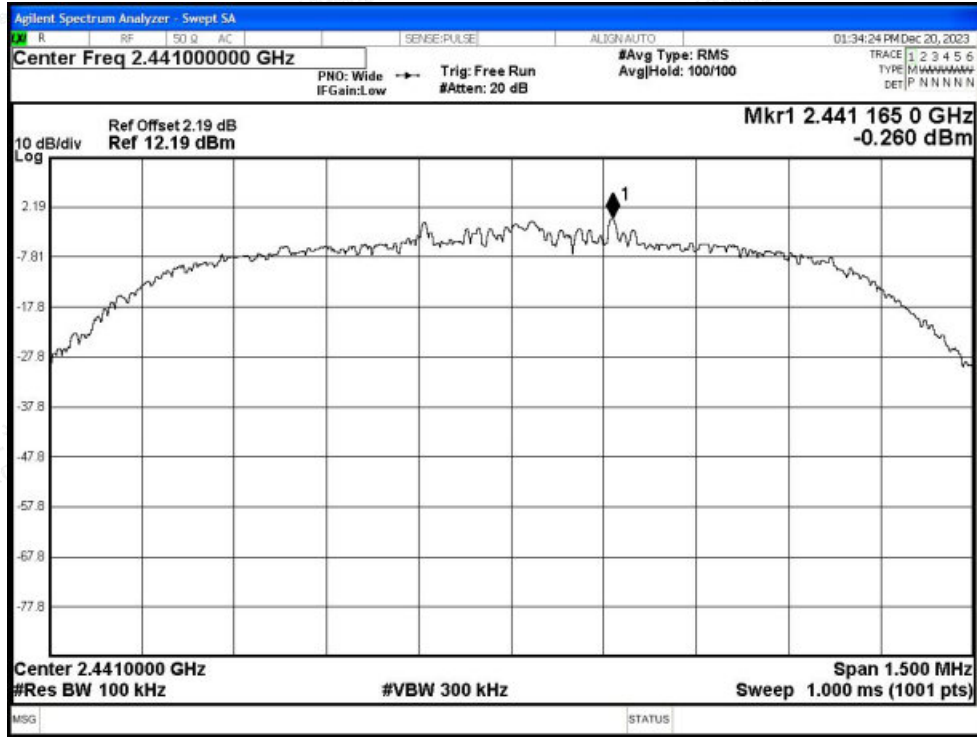
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



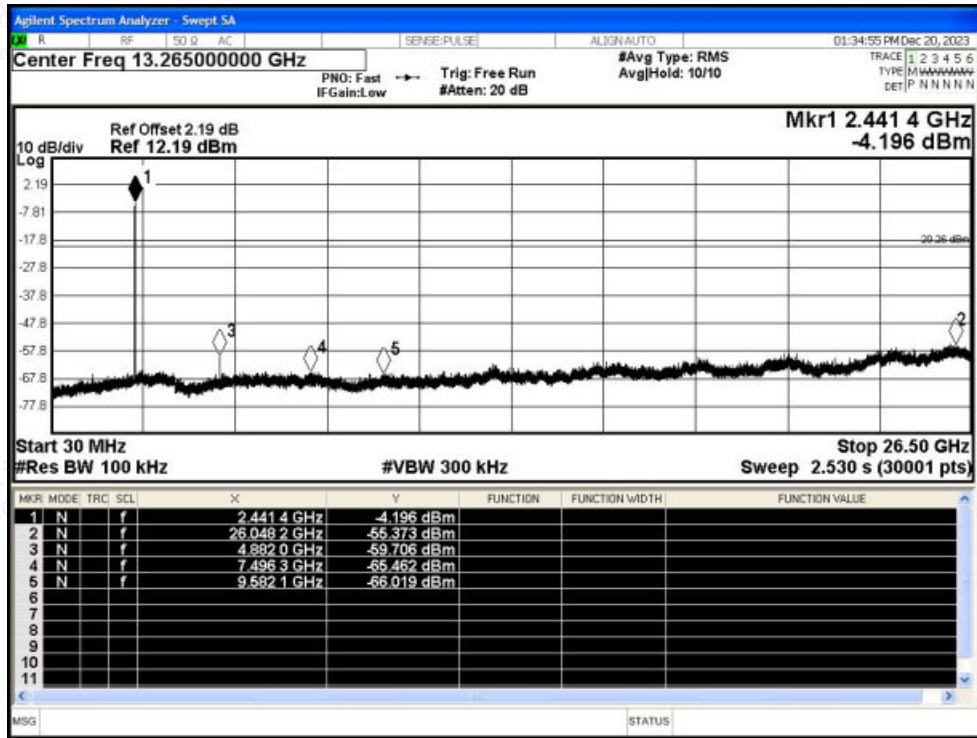




Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



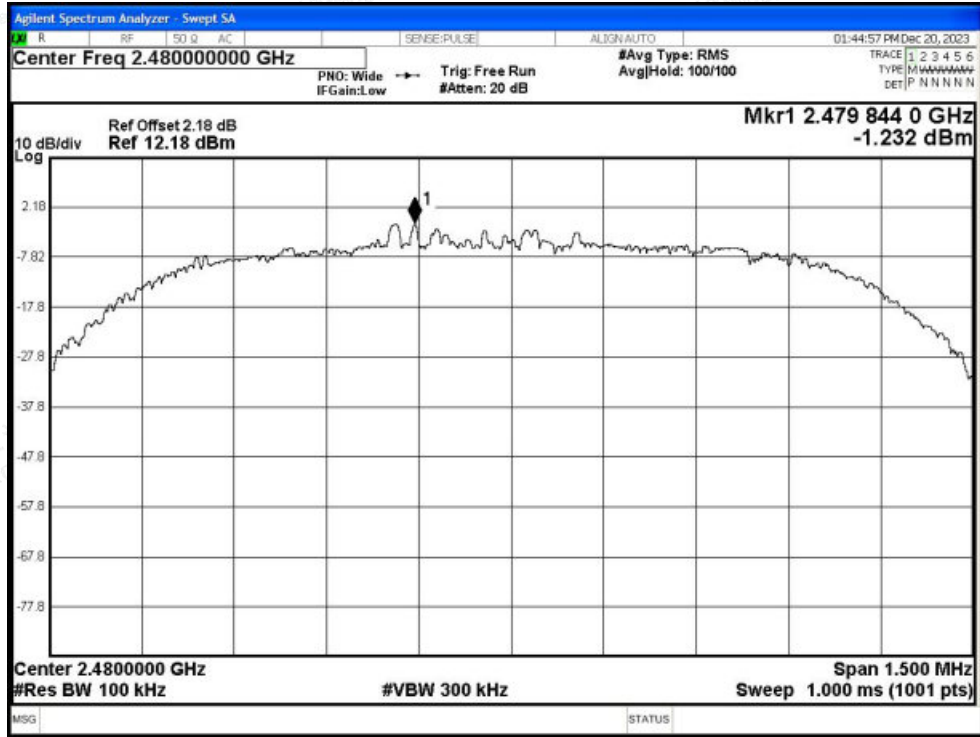
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



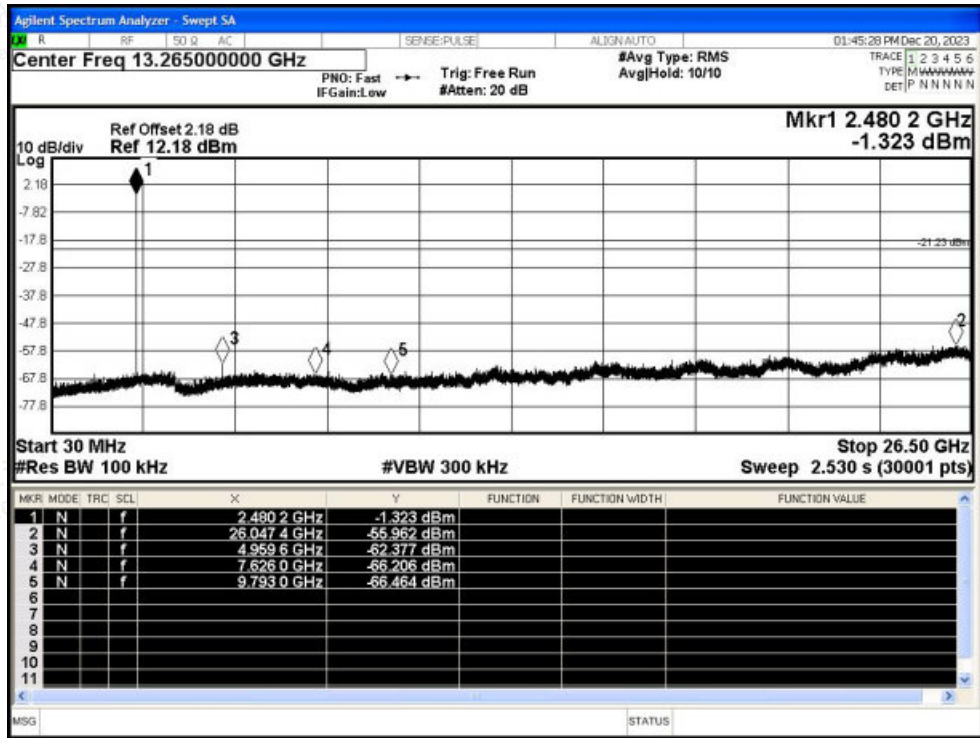




Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission





## A.8 Duty Cycle

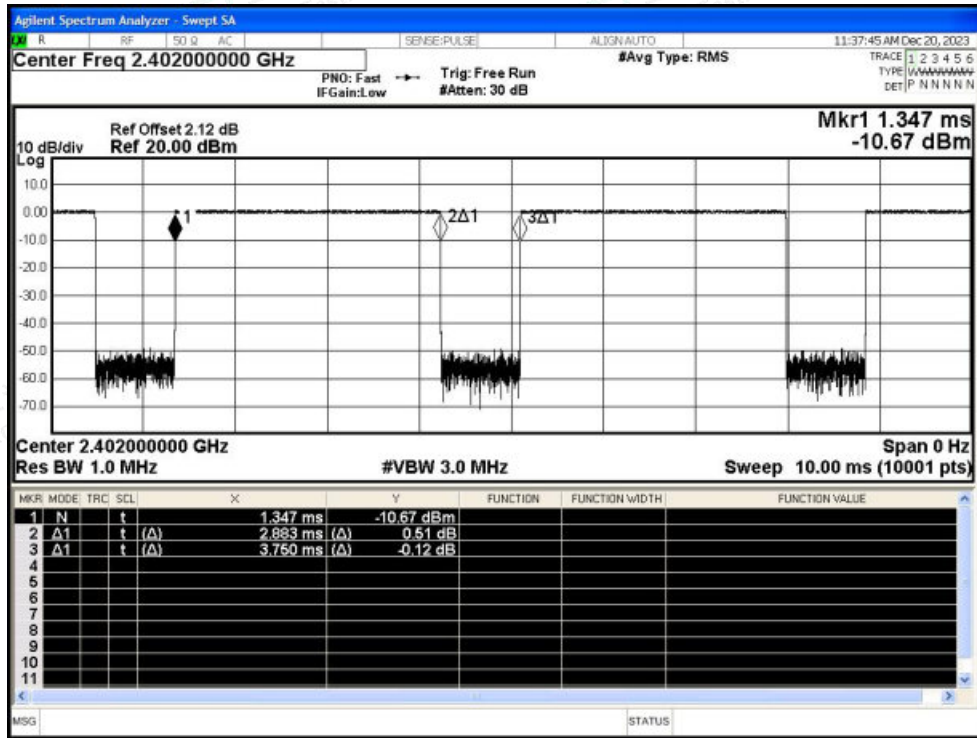
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	76.88	1.14	0.35
NVNT	1-DH5	2441	Ant1	76.91	1.14	0.35
NVNT	1-DH5	2480	Ant1	76.88	1.14	0.35
NVNT	2-DH5	2402	Ant1	76.96	1.14	0.35
NVNT	2-DH5	2441	Ant1	76.99	1.14	0.35
NVNT	2-DH5	2480	Ant1	76.96	1.14	0.35



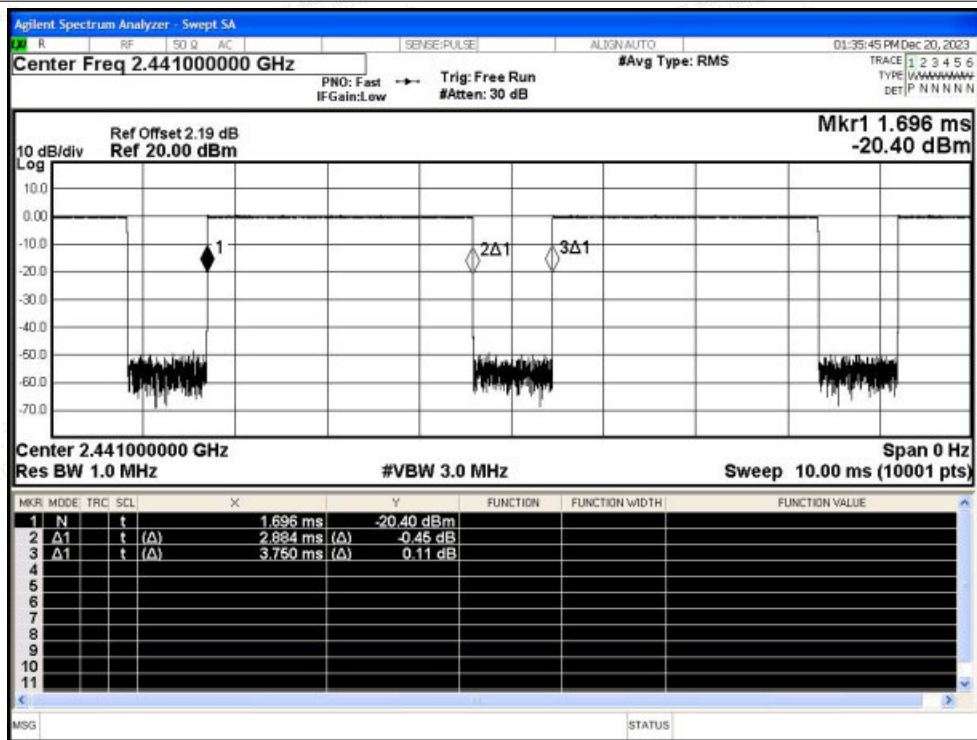


Test Graphs

Duty Cycle NVNT 1-DH5 2402MHz Ant1

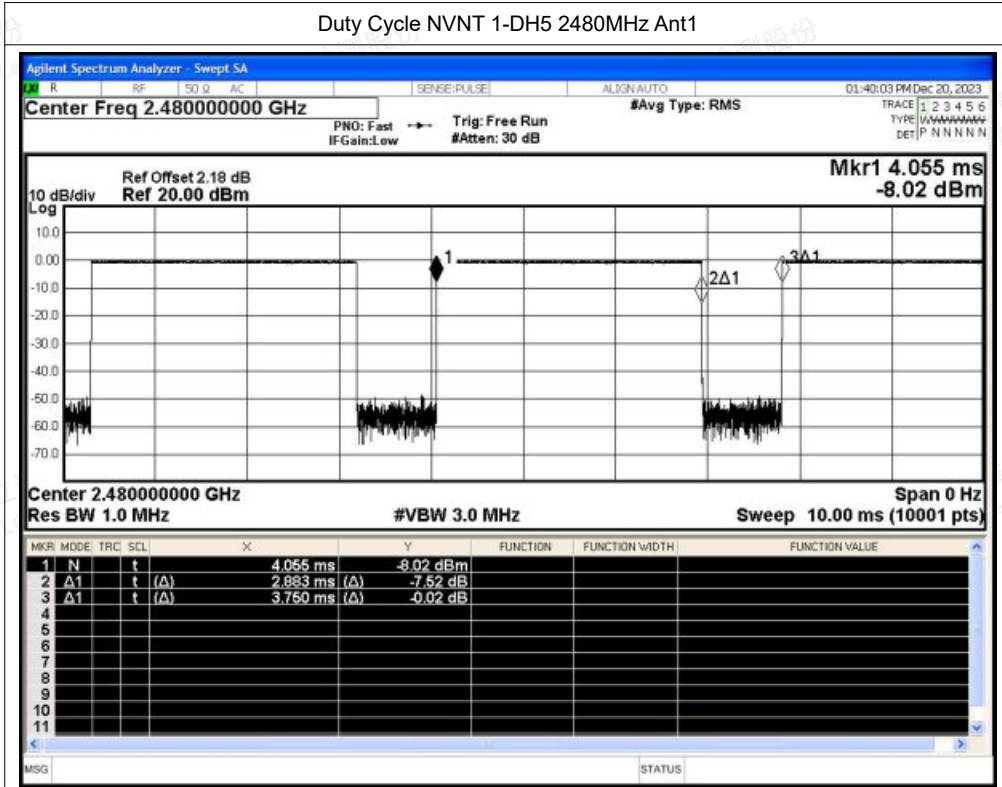


Duty Cycle NVNT 1-DH5 2441MHz Ant1

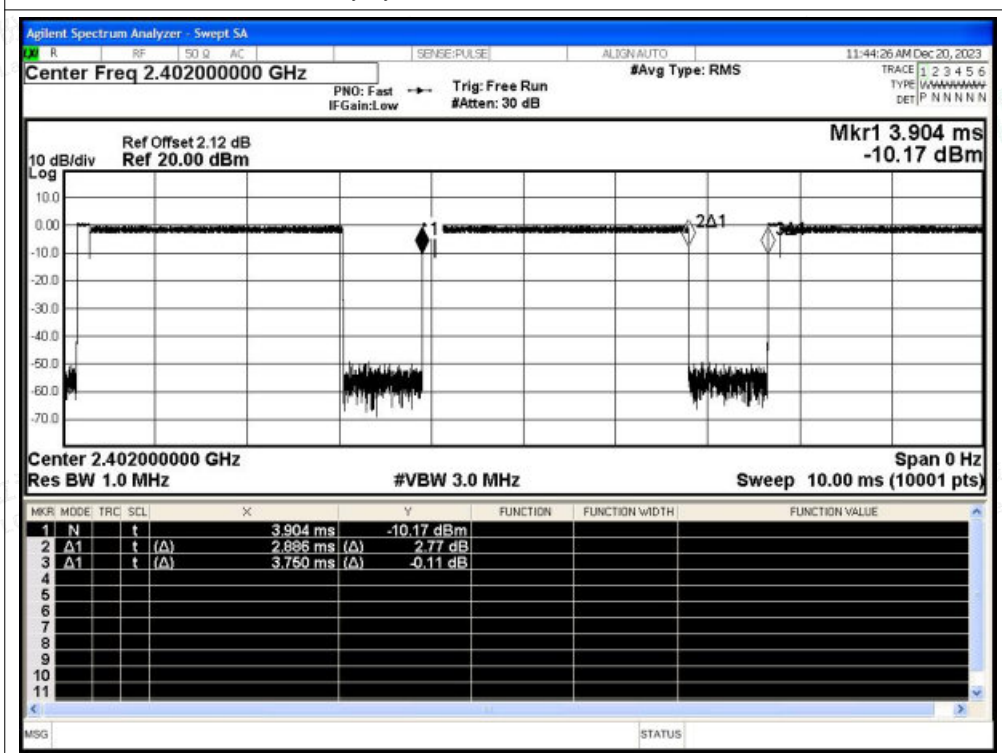




Duty Cycle NVNT 1-DH5 2480MHz Ant1

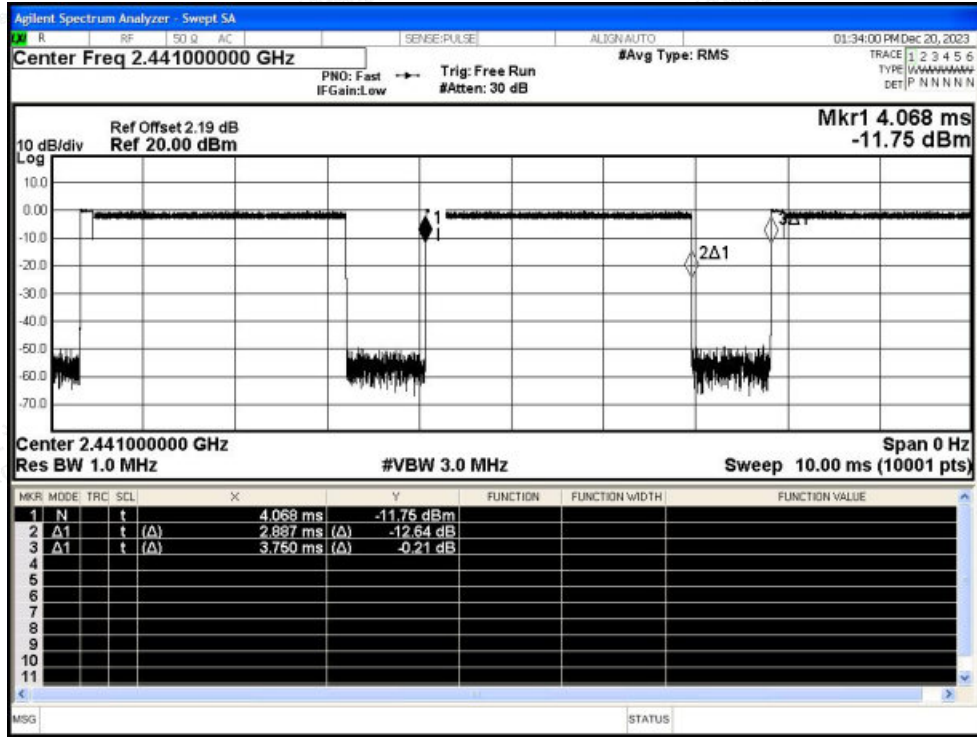


Duty Cycle NVNT 2-DH5 2402MHz Ant1

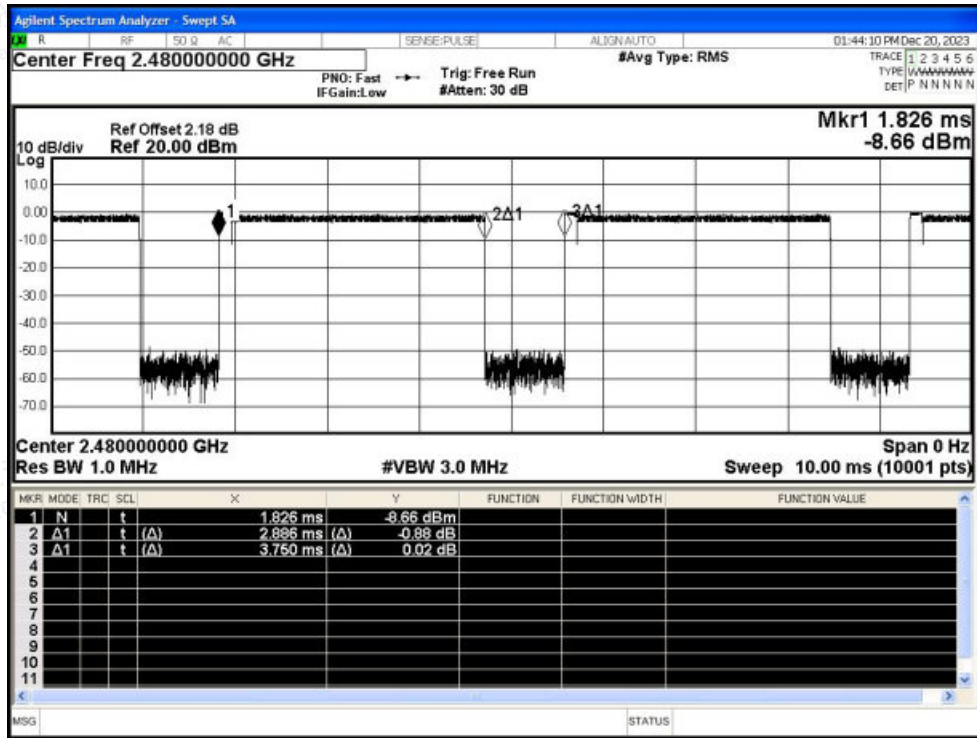




Duty Cycle NVNT 2-DH5 2441MHz Ant1



Duty Cycle NVNT 2-DH5 2480MHz Ant1







### A.9 Restrict Band

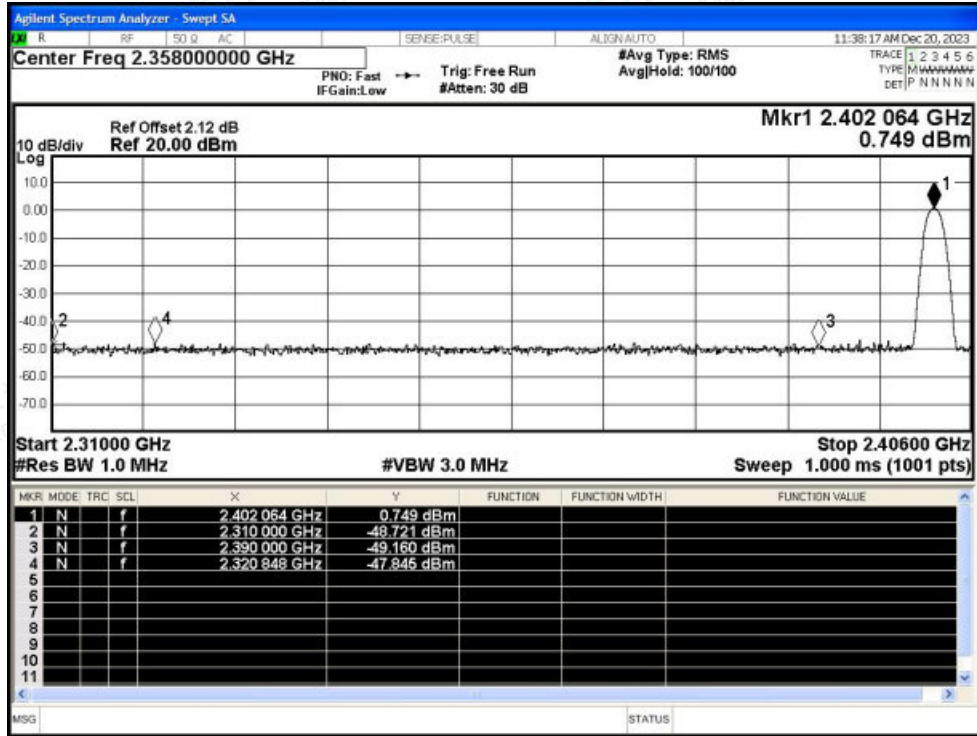
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-48.72	2.7	49.24	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-57.78	2.7	40.18	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2320.848	-47.85	2.7	50.11	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2385.552	-57.27	2.7	40.69	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-49.16	2.7	48.80	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-57.31	2.7	40.65	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-50.67	2.7	47.29	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-56.1	2.7	41.86	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2488.528	-46.91	2.7	51.05	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.512	-56.1	2.7	41.86	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-48.86	2.7	49.10	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-57.08	2.7	40.88	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-51.19	2.7	46.77	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-57.73	2.7	40.23	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2353.2	-46.93	2.7	51.03	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2387.76	-57.27	2.7	40.69	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-50.58	2.7	47.38	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-57.32	2.7	40.64	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-49.04	2.7	48.92	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-55.31	2.7	42.65	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2485.096	-47.03	2.7	50.93	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.512	-55.31	2.7	42.65	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-48.8	2.7	49.16	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-57.06	2.7	40.90	Average	54	Pass



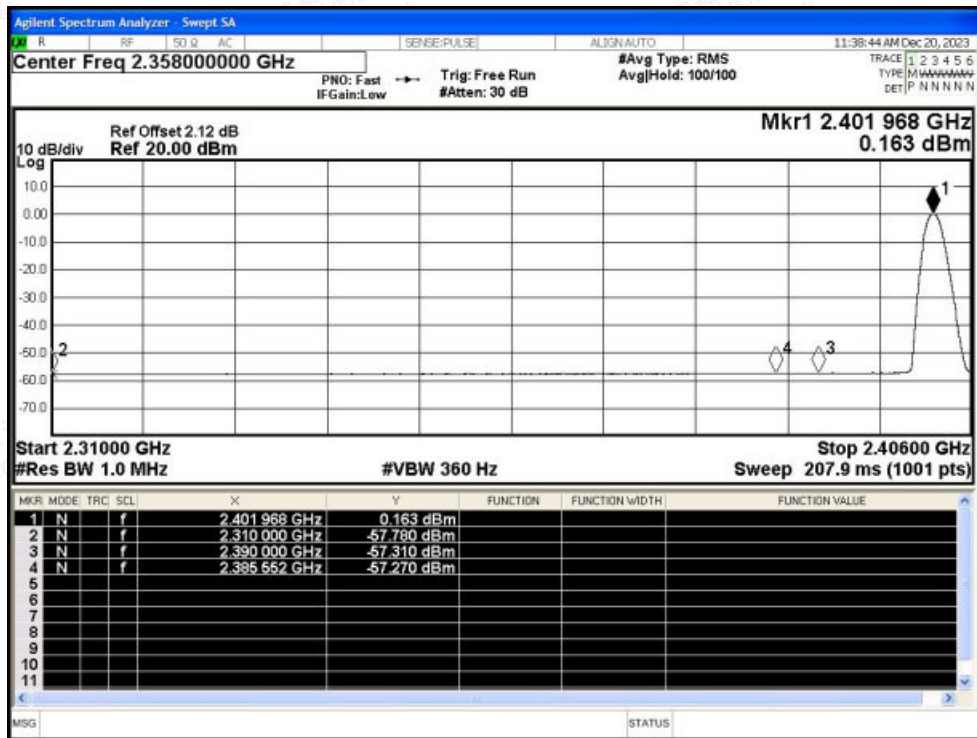


Test Graphs

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

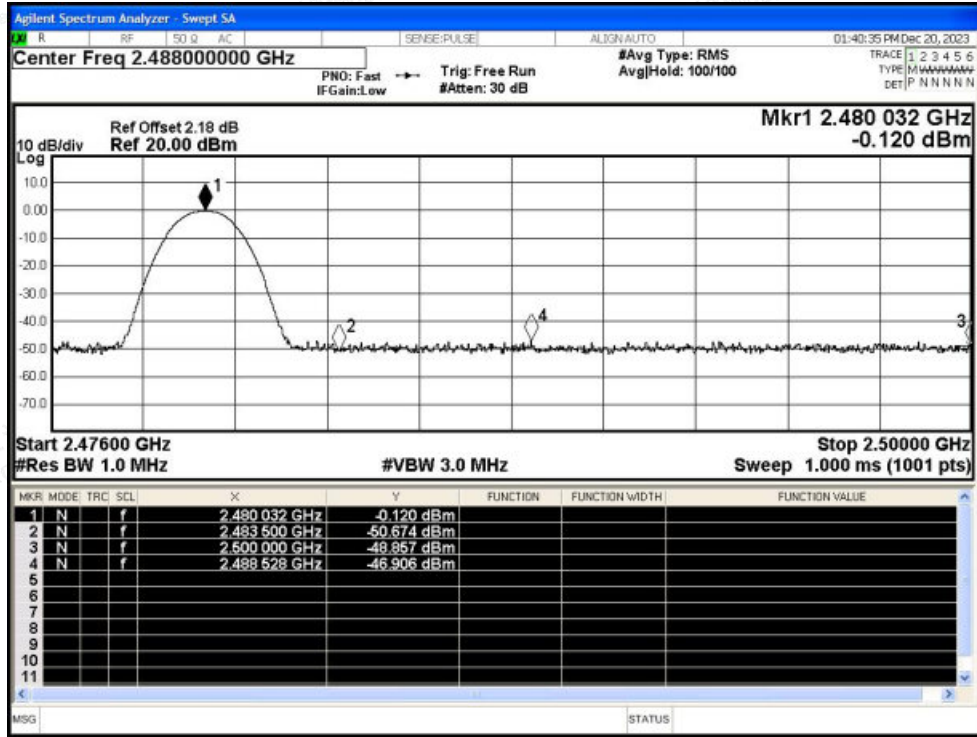


Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average

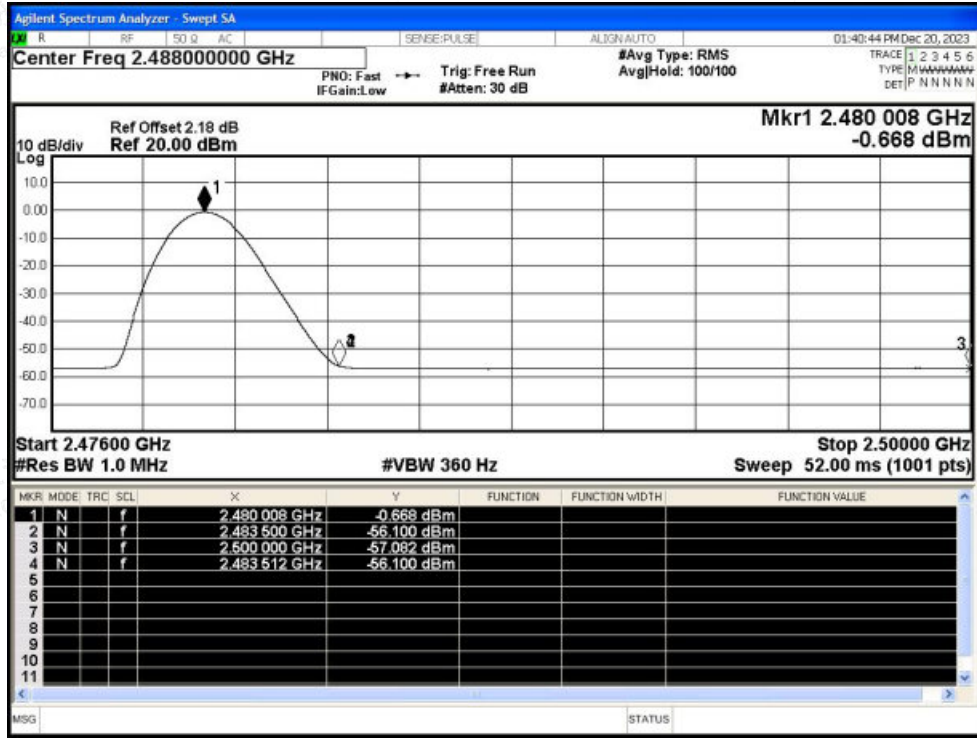




Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak

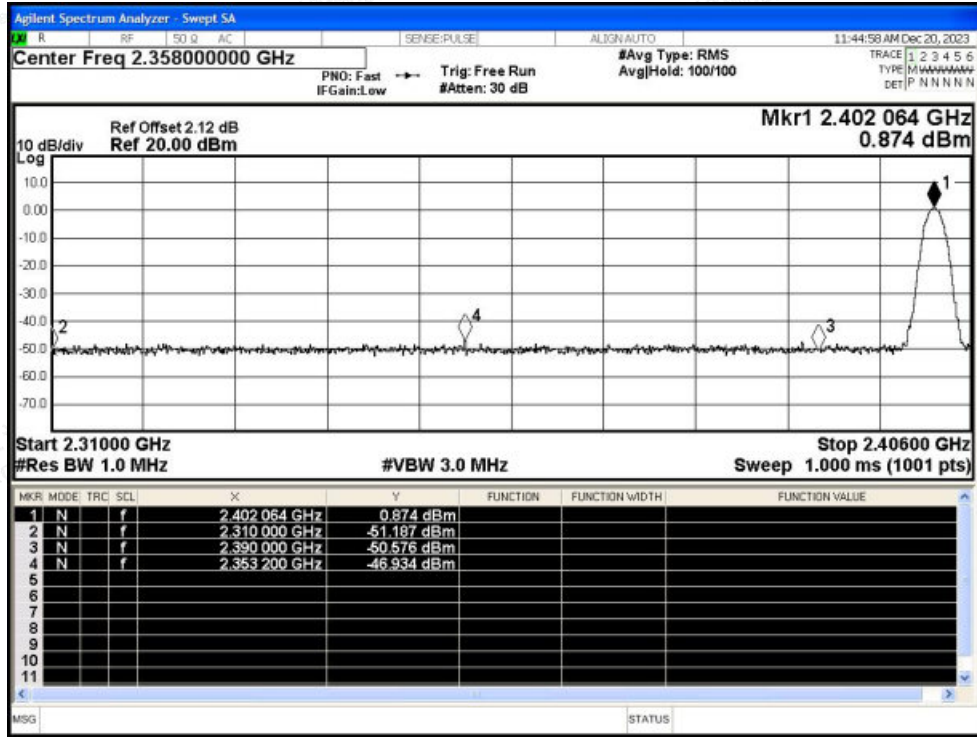


Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average

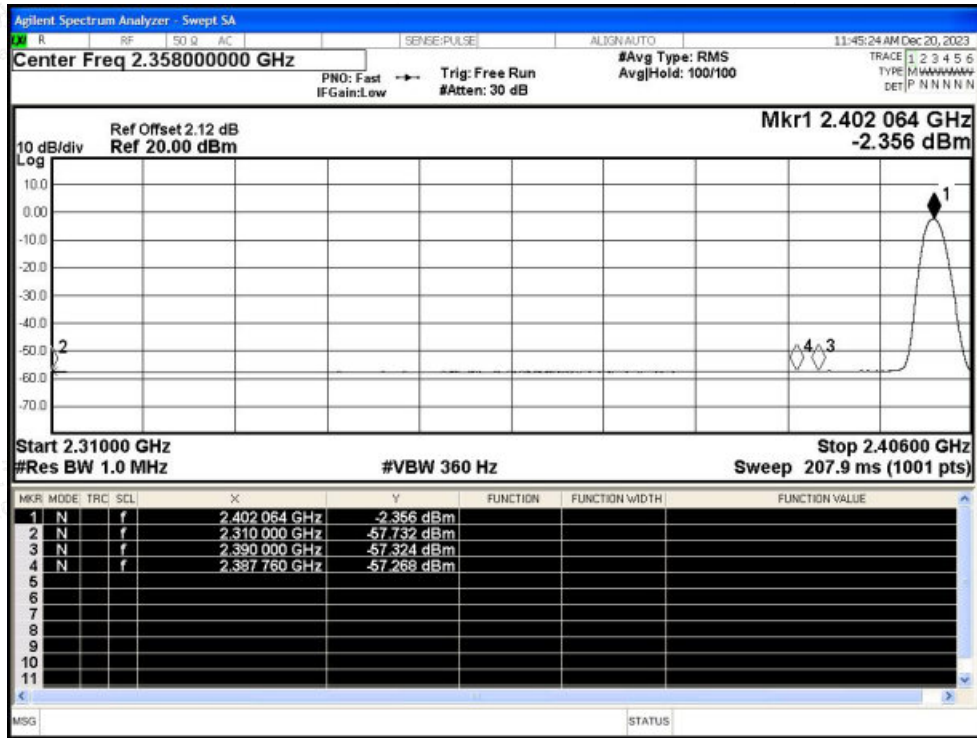




Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak



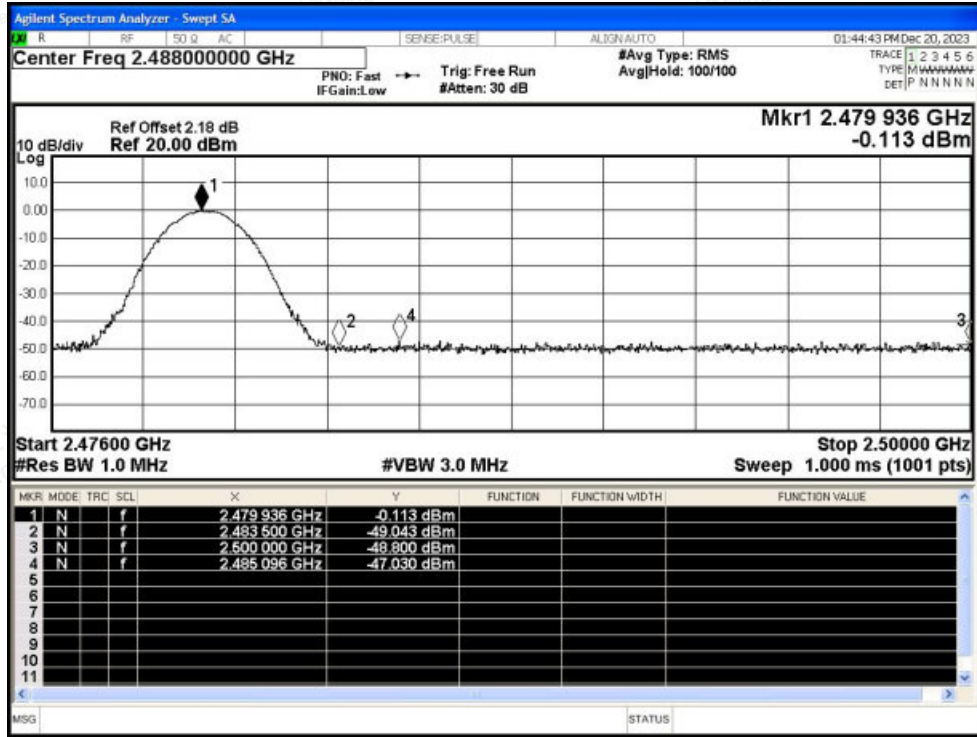
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average







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



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

