Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: 4DS Tactile System

Test Model: 4DS101

Environmental Conditions

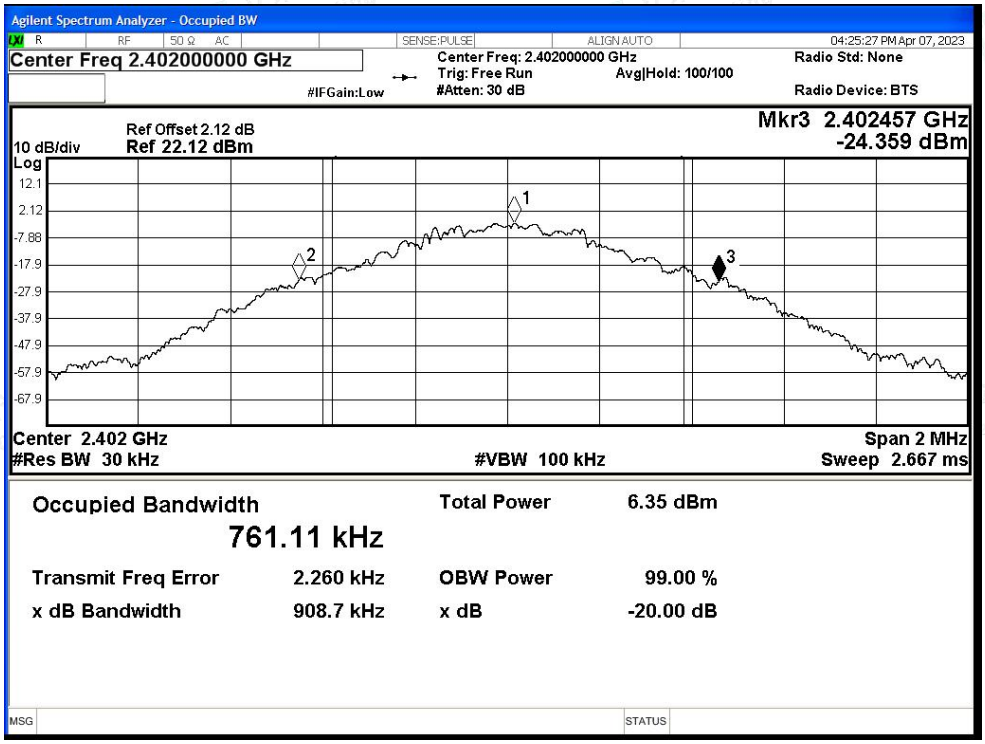
Temperature:	23.8 ° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Nick Peng
Supervised by:	Ling Zhu

A.1 -20dB Bandwidth

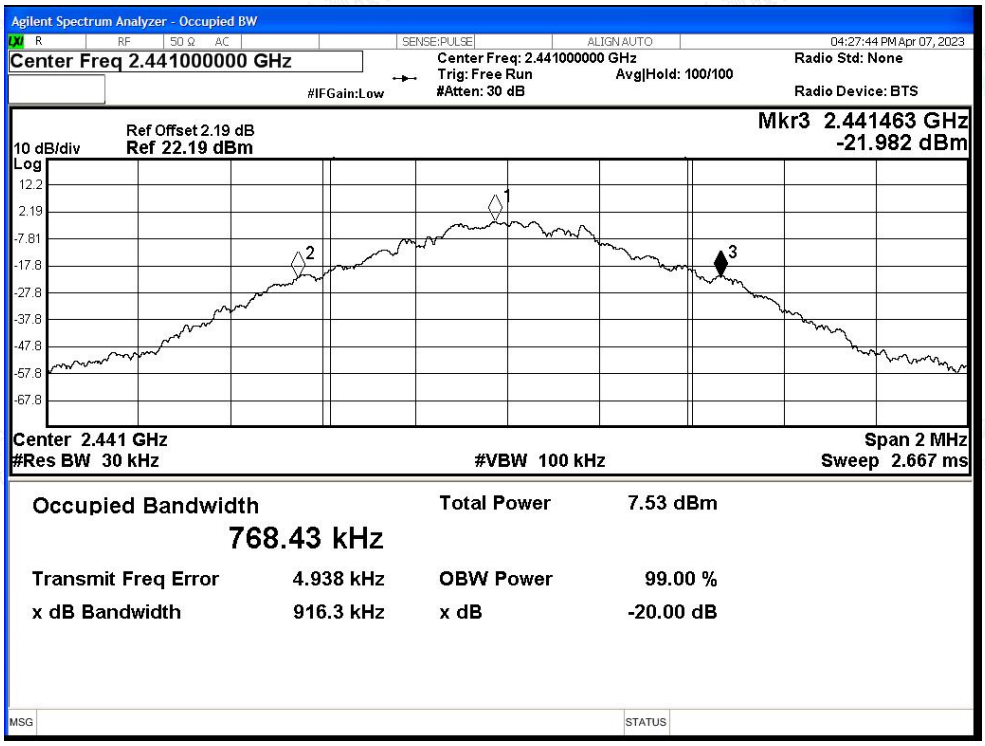
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.909	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.916	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.904	N/A	Pass

Test Graphs

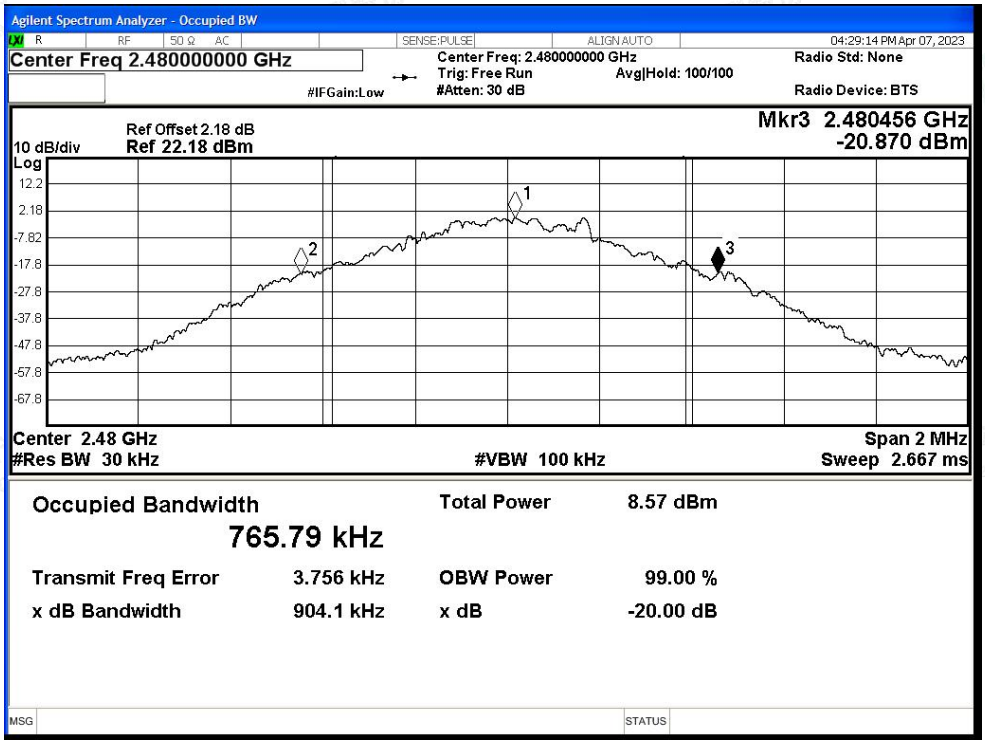
-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

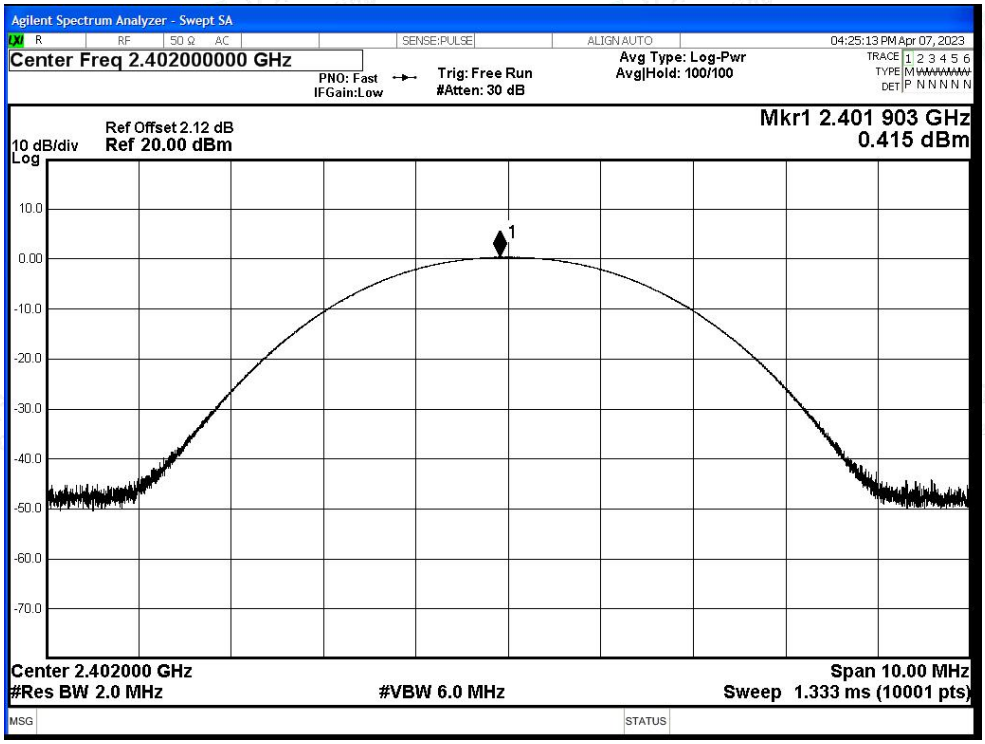


A.2 Maximum Conducted Output Power

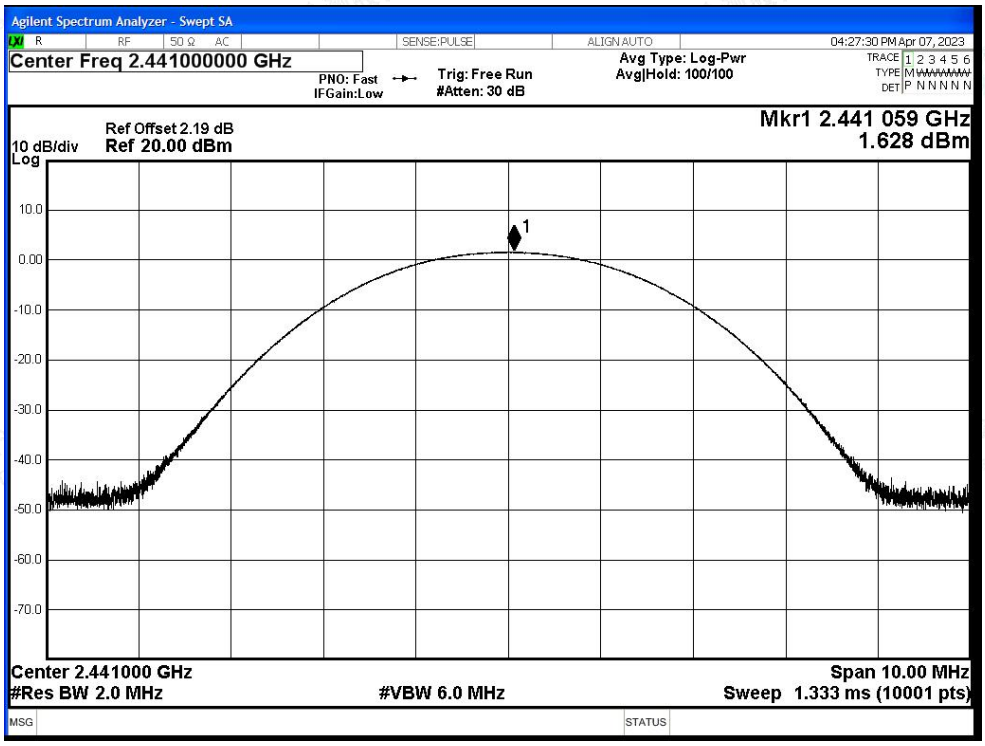
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	0.42	21	Pass
NVNT	1-DH5	2441	Ant1	1.63	21	Pass
NVNT	1-DH5	2480	Ant1	2.55	21	Pass

Test Graphs

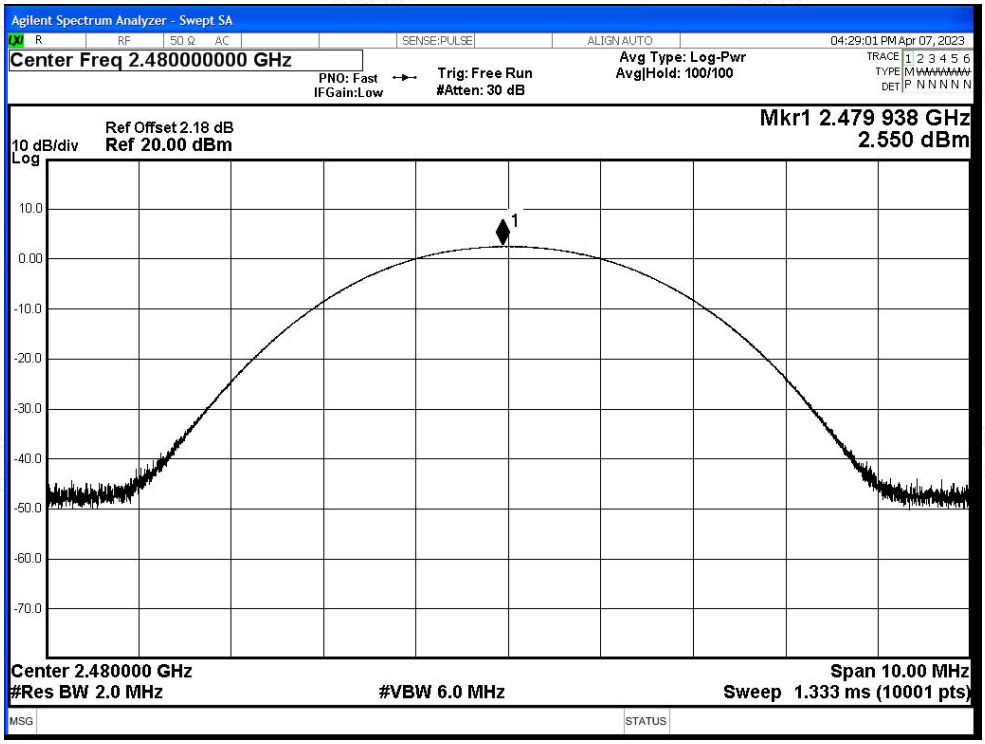
Power NVNT 1-DH5 2402MHz Ant1



Power NVNT 1-DH5 2441MHz Ant1



Power NVNT 1-DH5 2480MHz Ant1

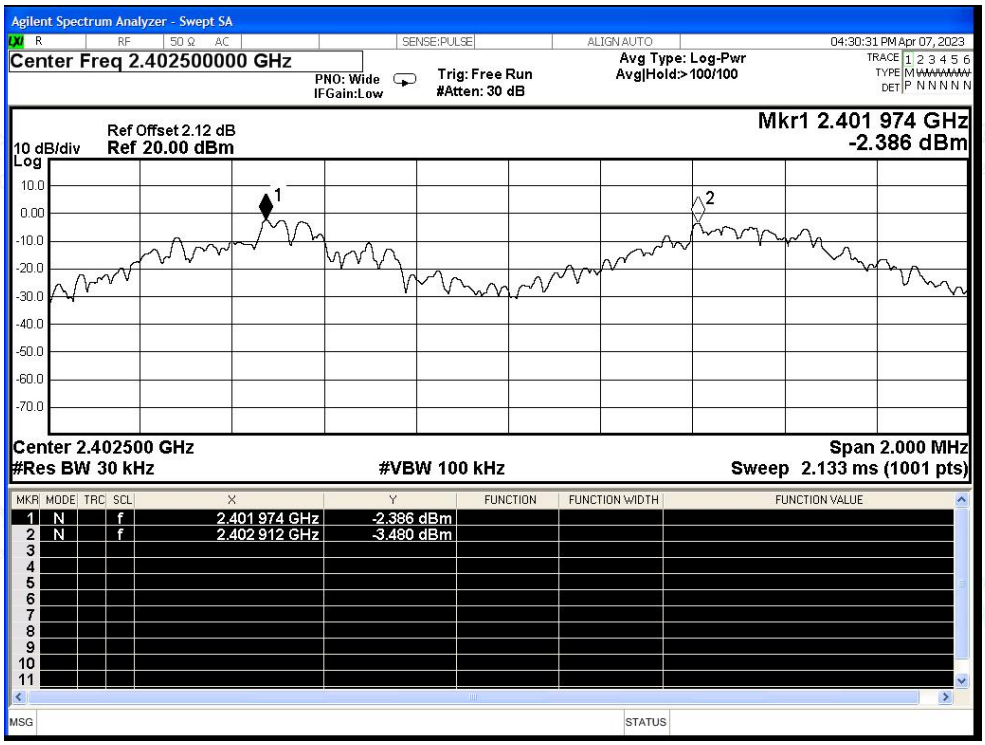


A.3 Carrier Frequencies Separation

Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2401.974	2402.912	0.938	0.611	Pass

Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1

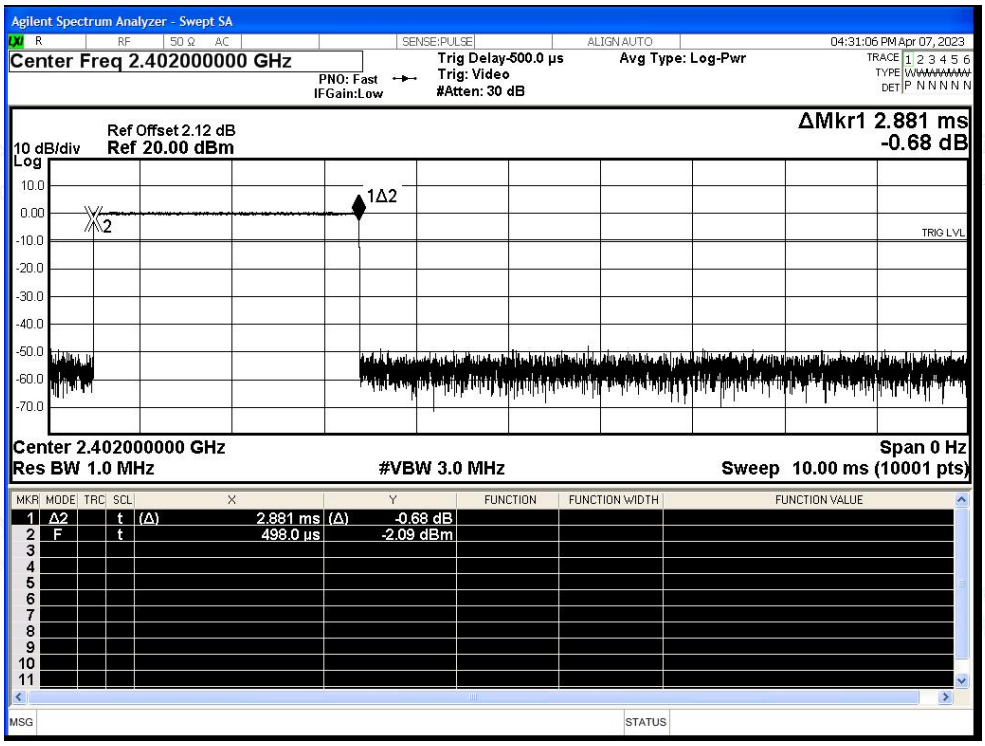


A.4 Dwell Time

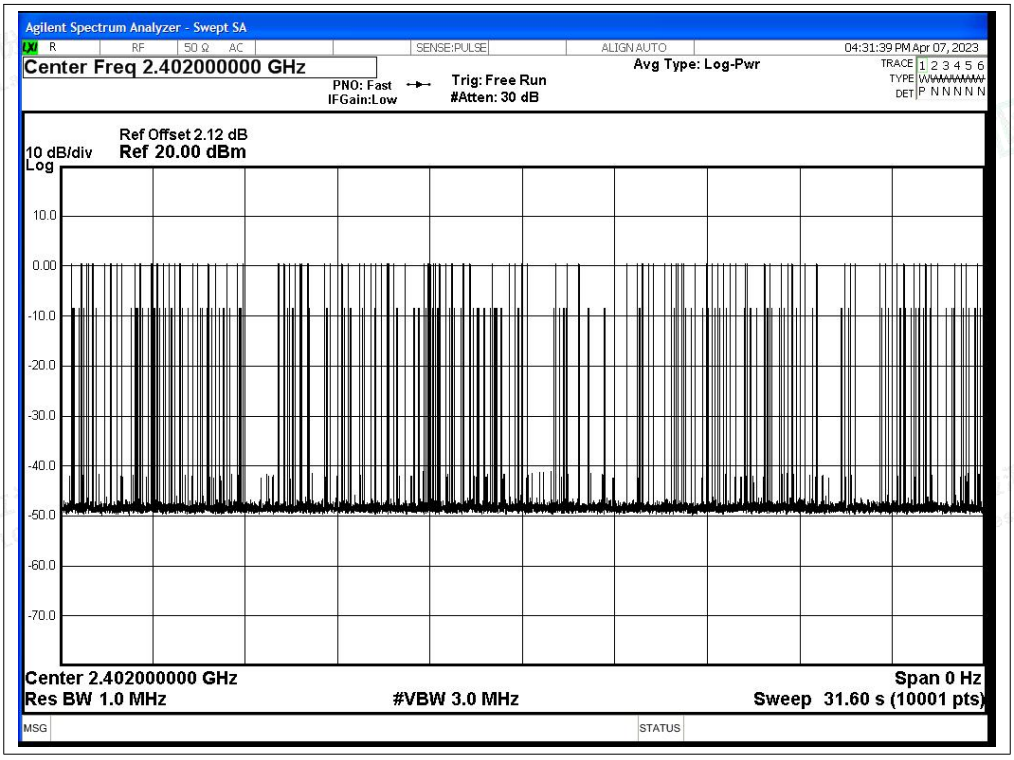
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.881	331.315	115	31600	400	Pass

Test Graphs

Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated

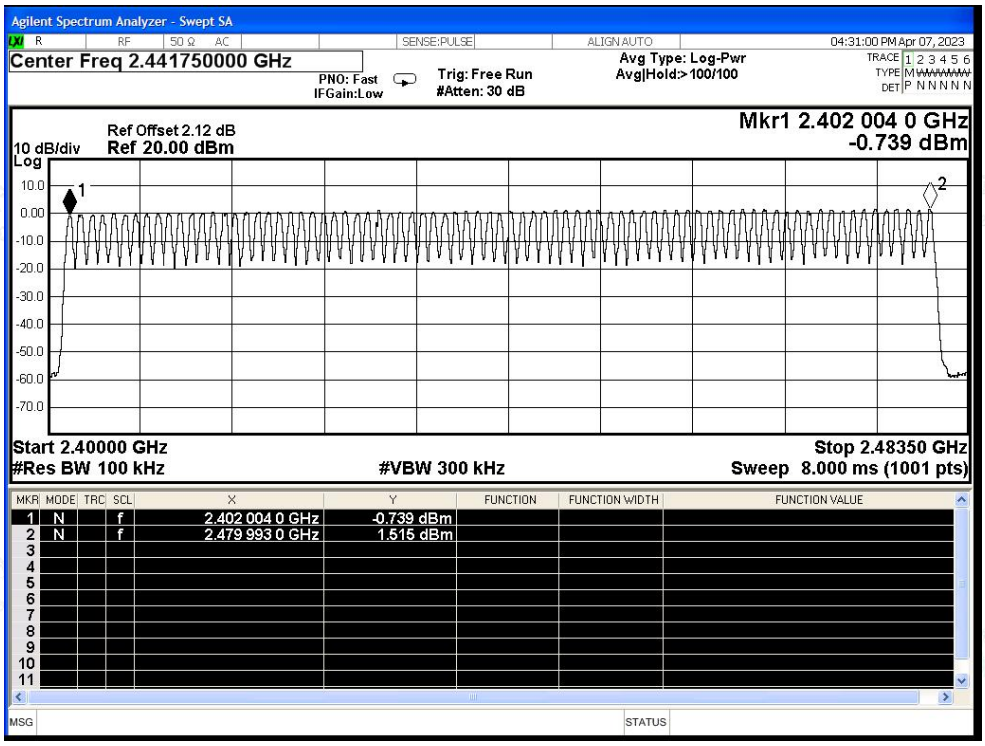

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.402000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
04:31:39 PM Apr 07, 2023
Ref Offset 2.12 dB
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.402000000 GHz
Span 0 Hz
Res BW 1.0 MHz
#VBW 3.0 MHz
Sweep 31.60 s (10001 pts)

A.5 Number of Hopping Channel

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

Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1

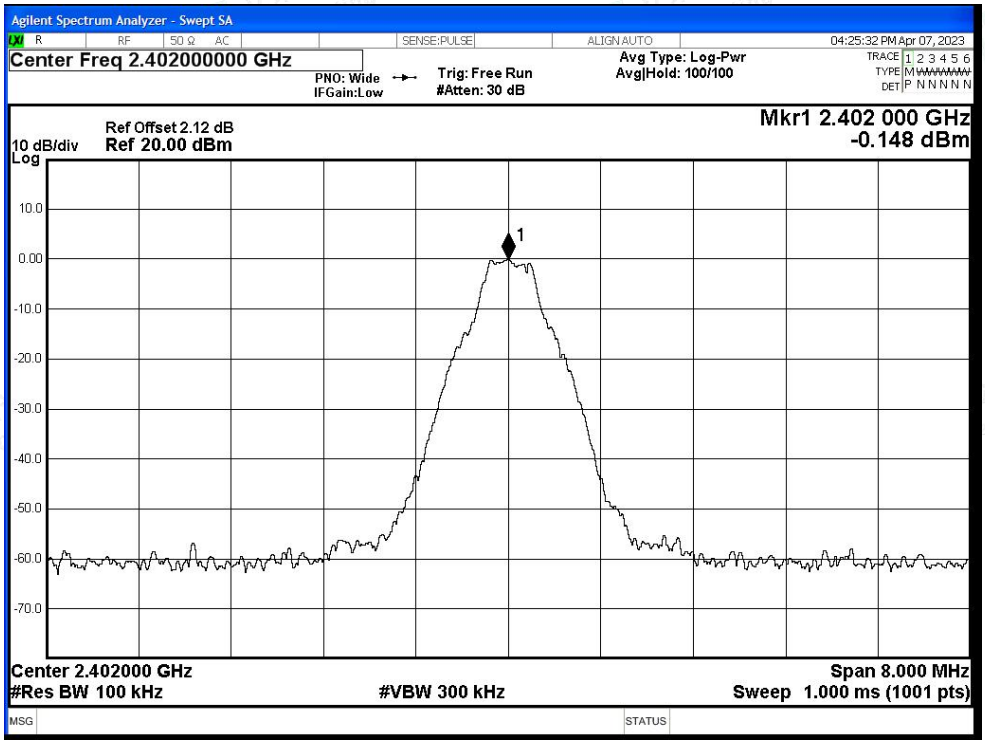


A.6 Band Edge

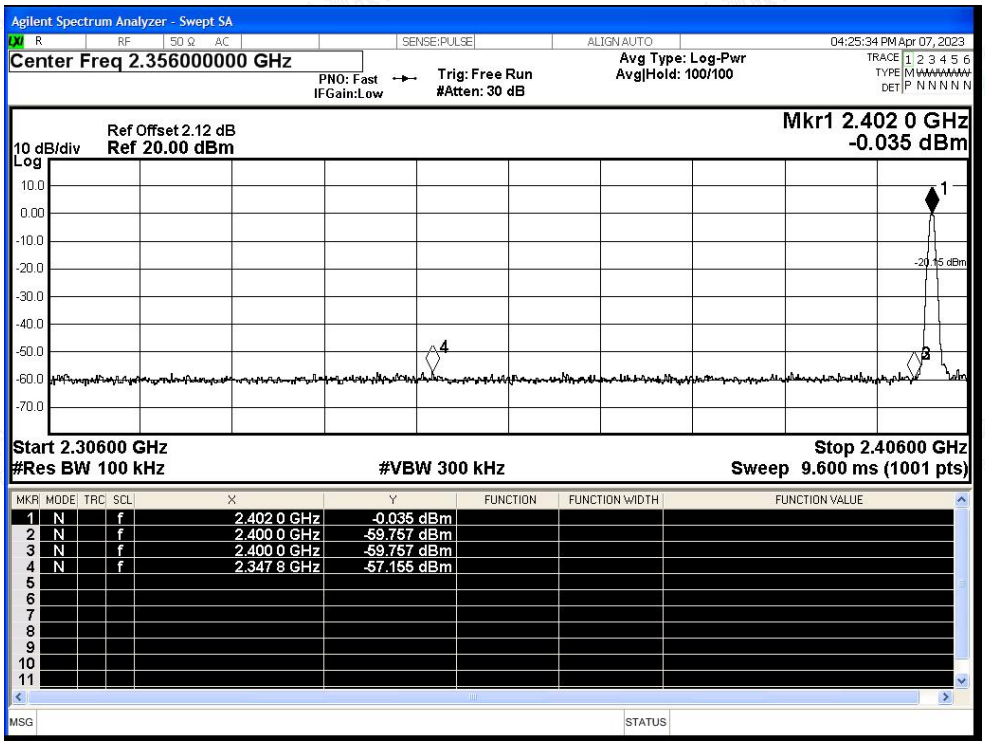
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-57.01	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-58.86	-20	Pass

Test Graphs

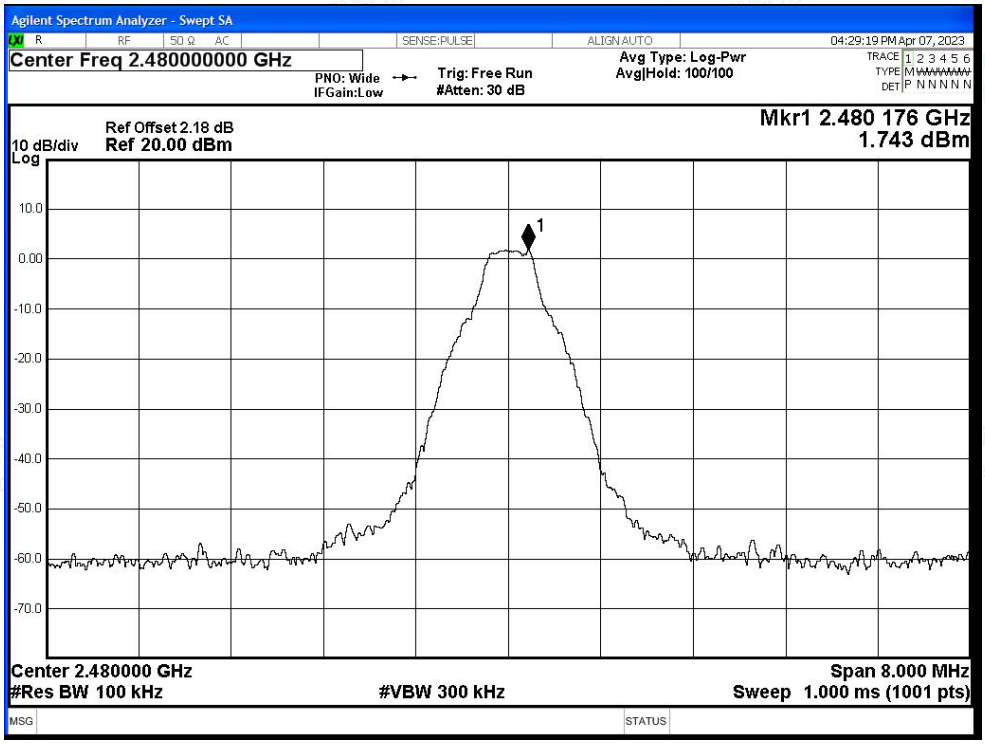
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



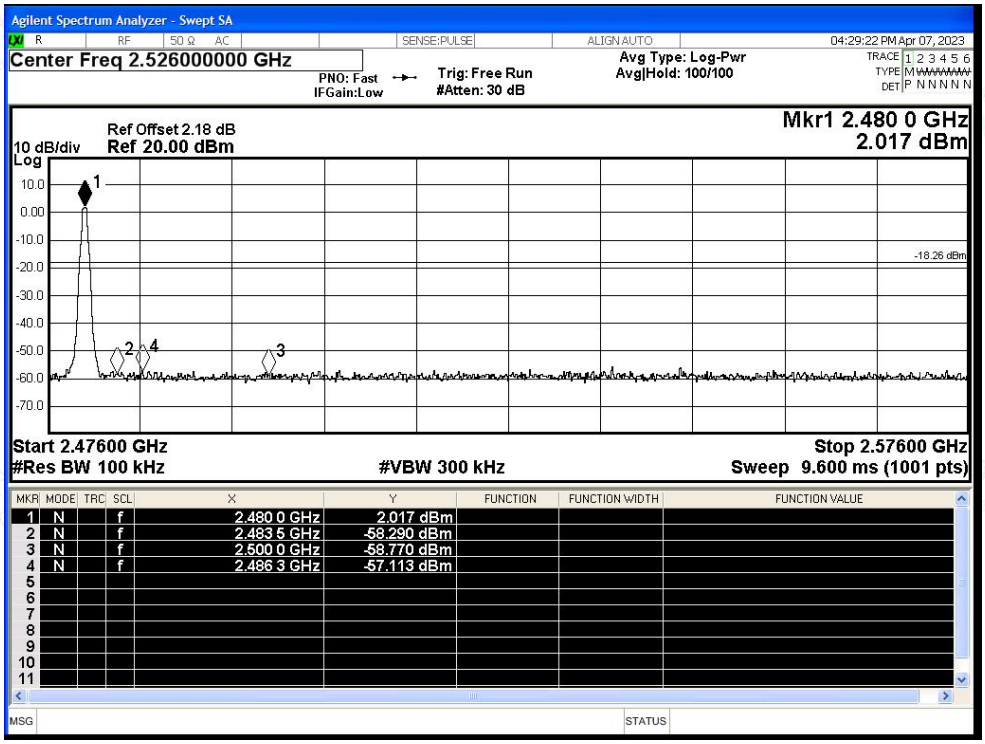
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



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



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

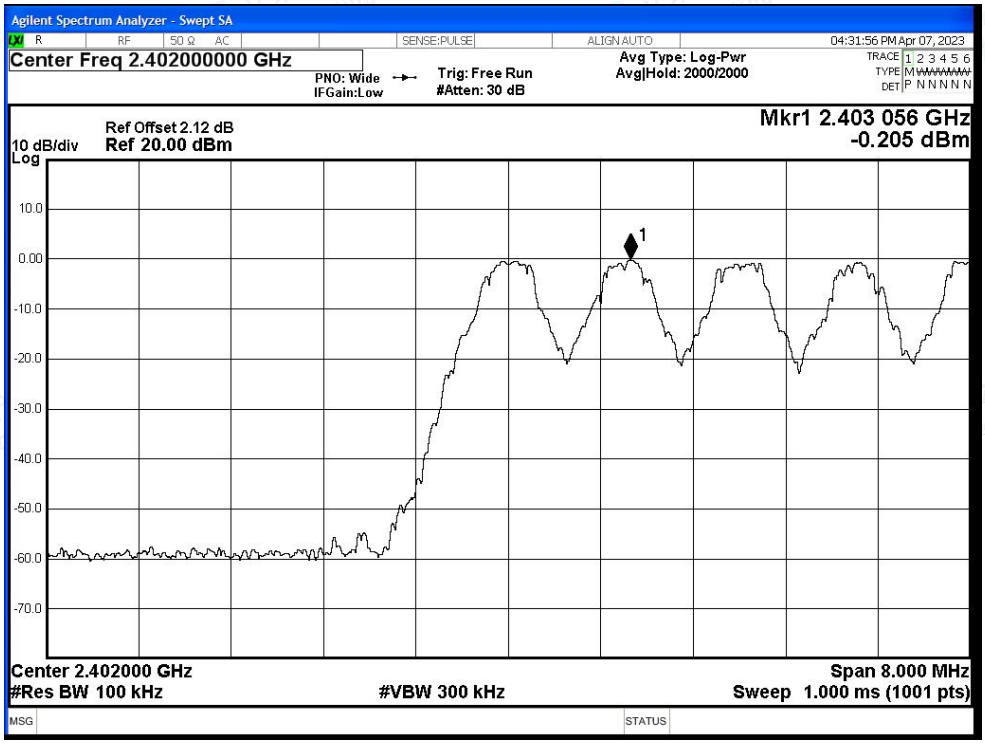


(Hopping)

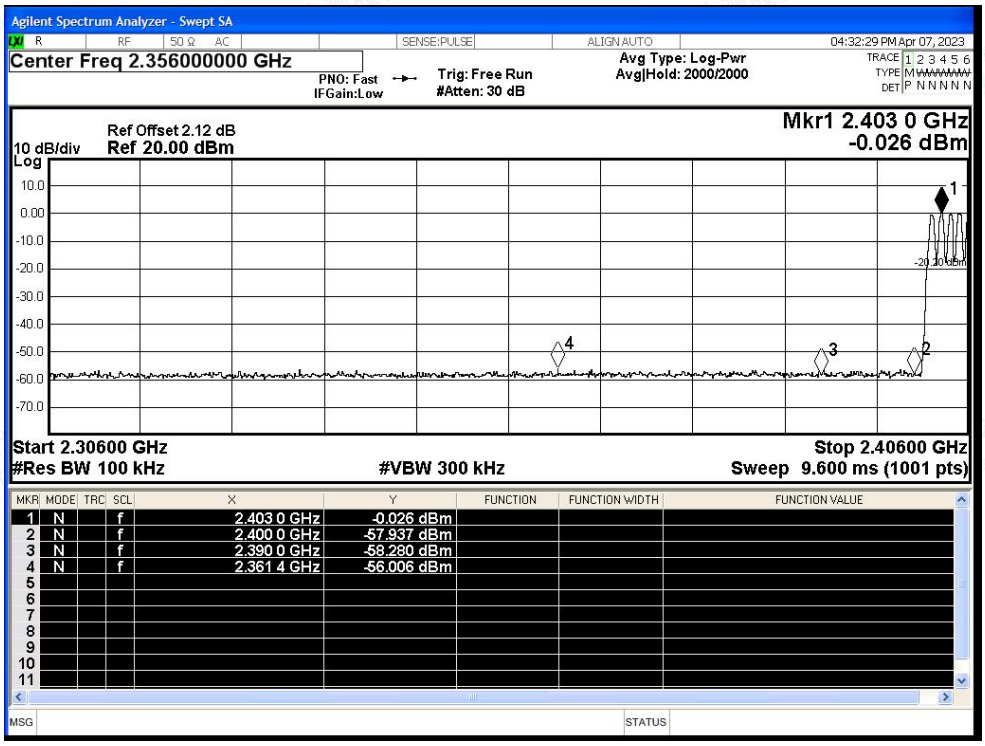
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-55.8	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-57.13	-20	Pass

Test Graphs

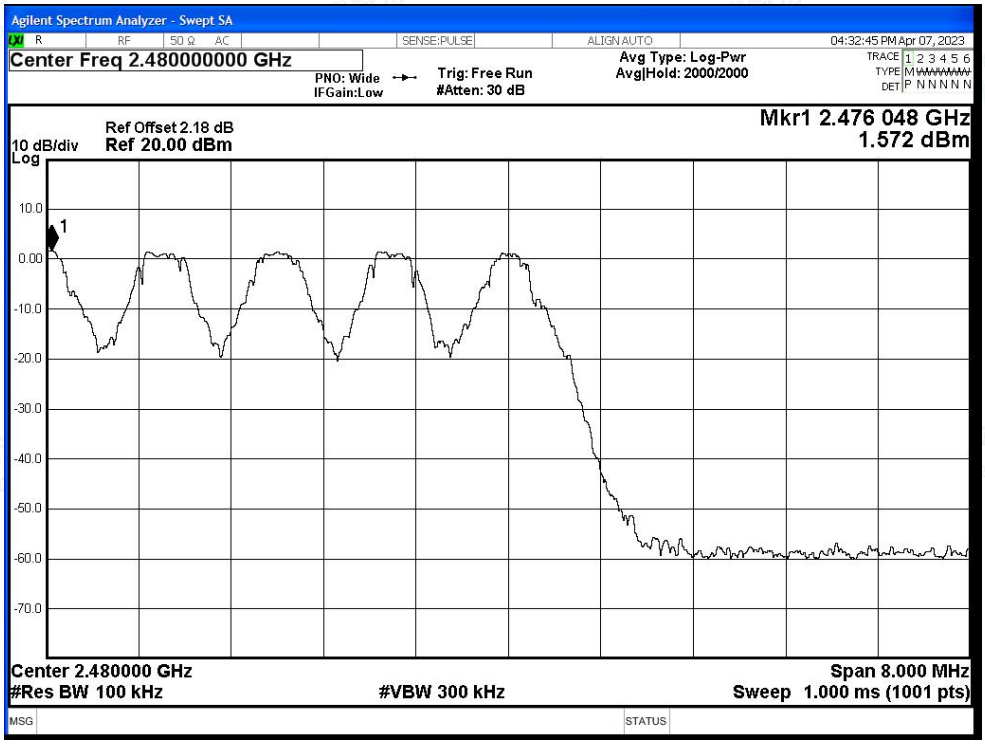
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



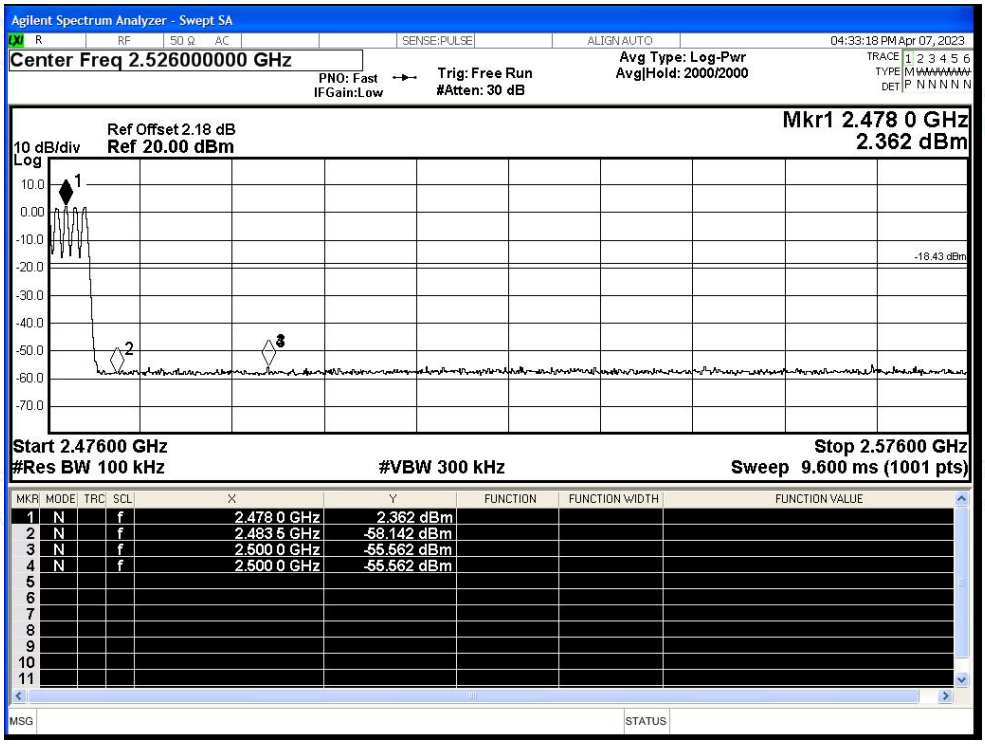
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



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



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

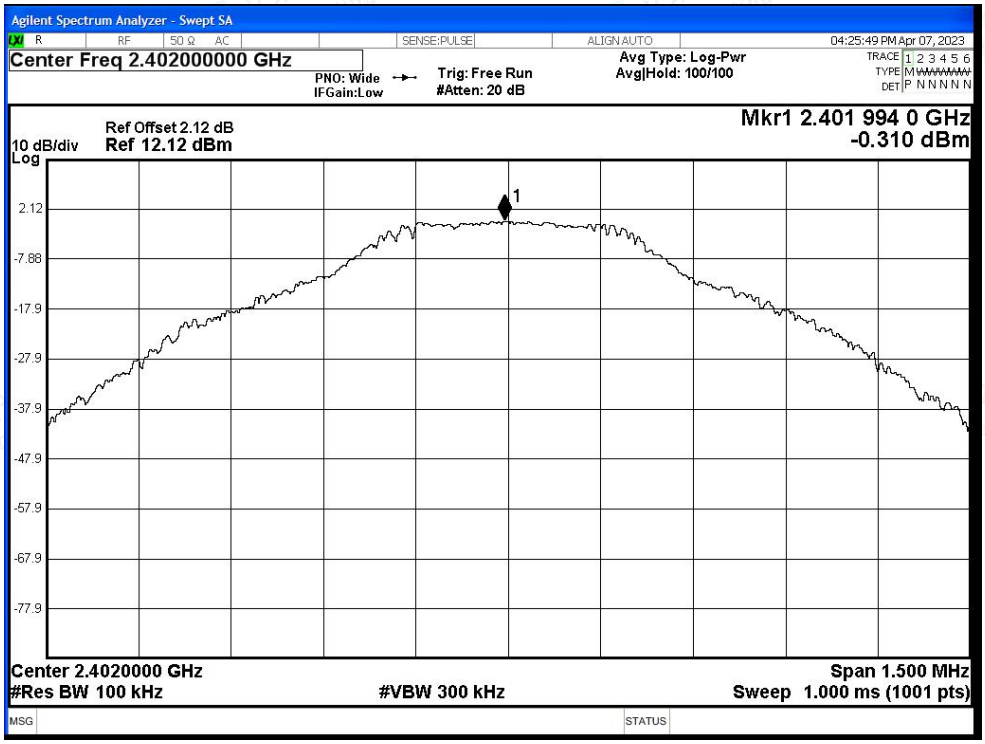


A.7 Conducted RF Spurious Emission

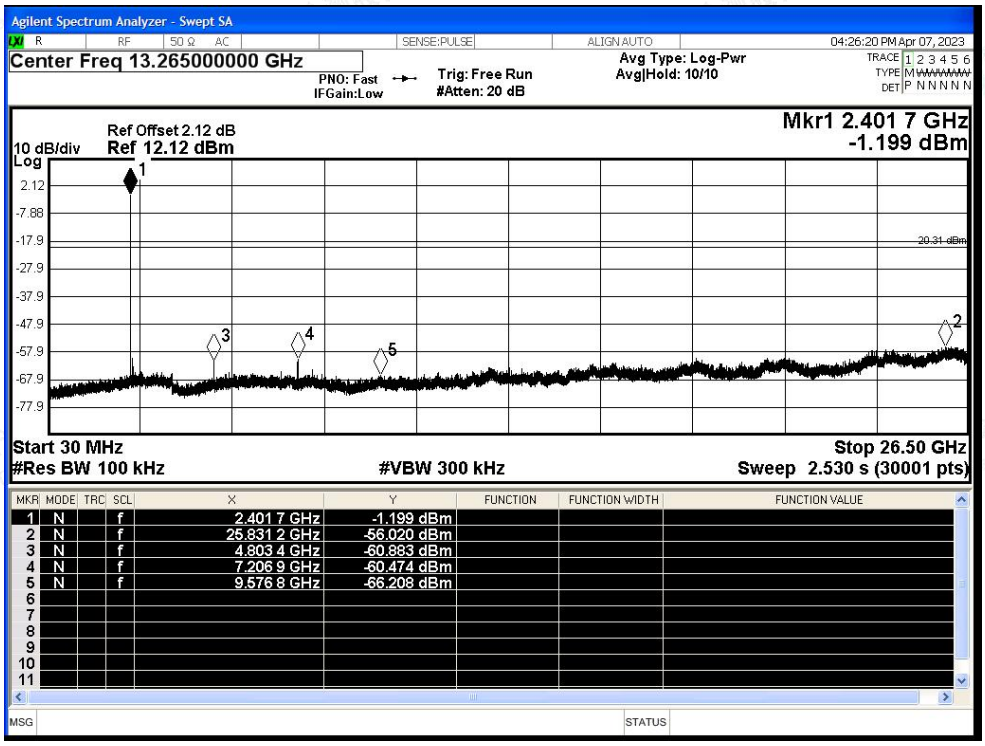
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-55.71	-20	Pass
NVNT	1-DH5	2441	Ant1	-56.02	-20	Pass
NVNT	1-DH5	2480	Ant1	-57.82	-20	Pass

Test Graphs

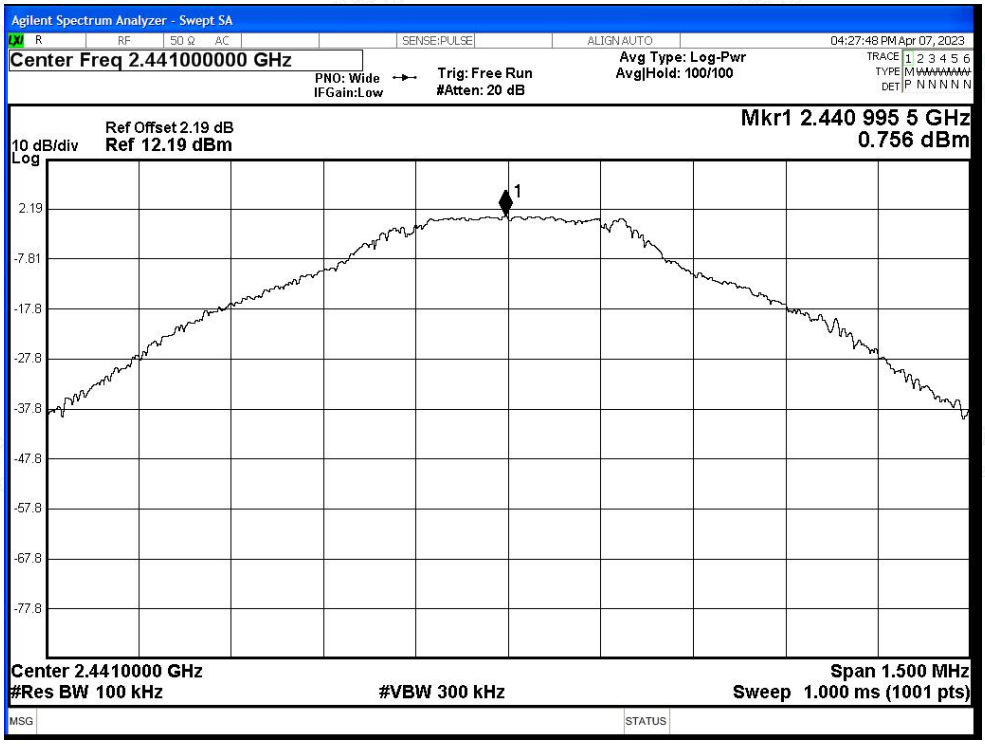
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



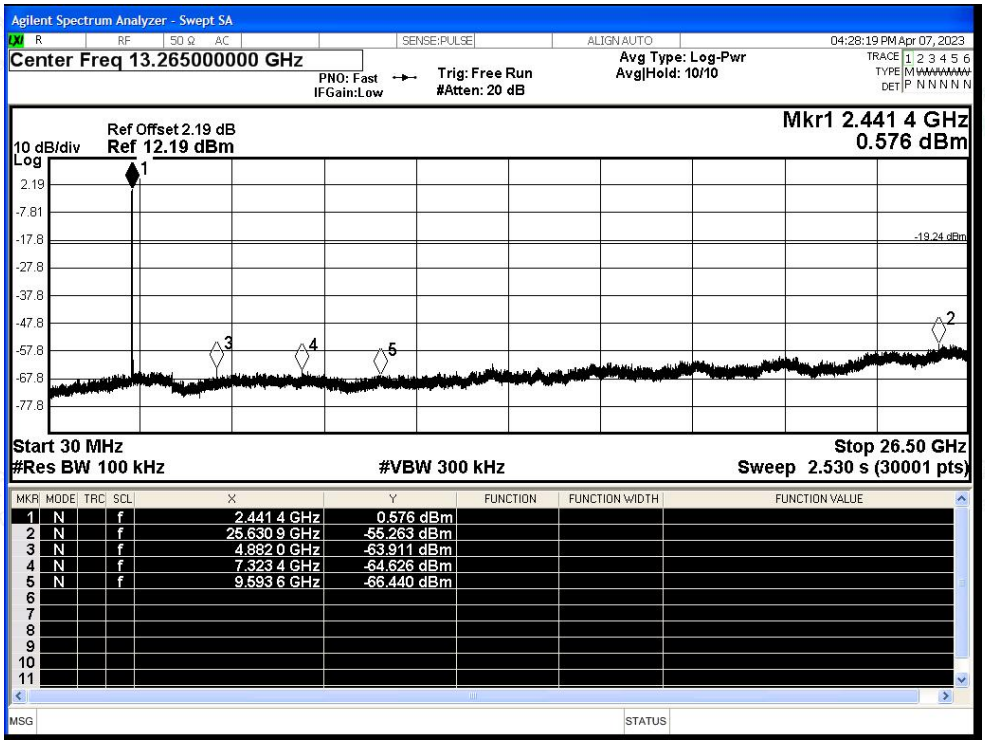
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



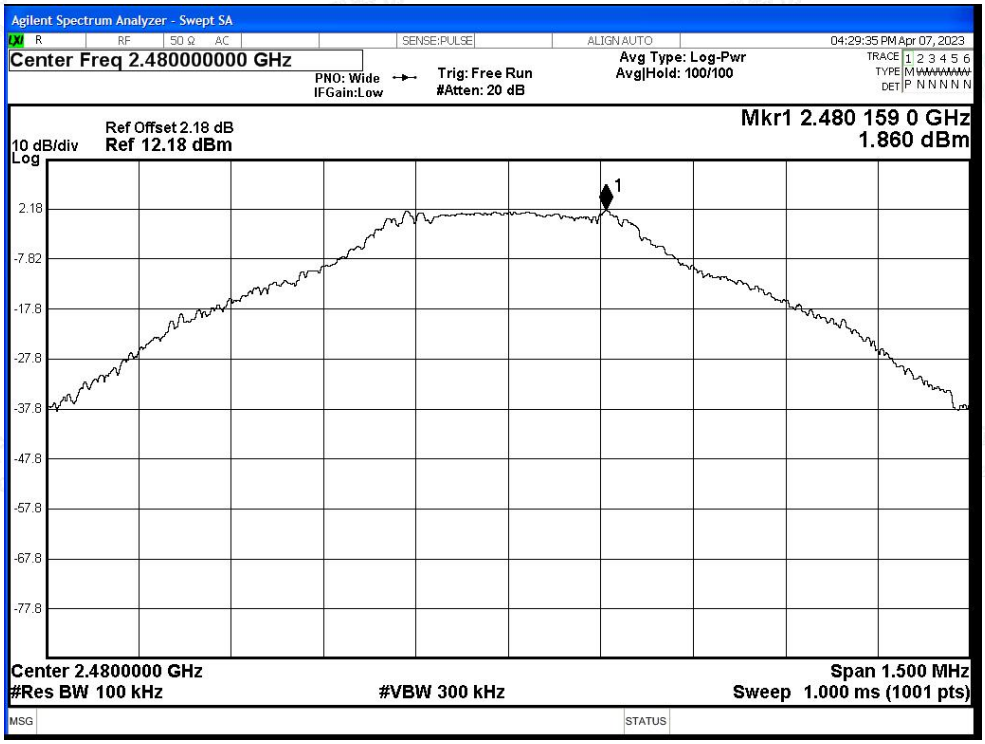
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



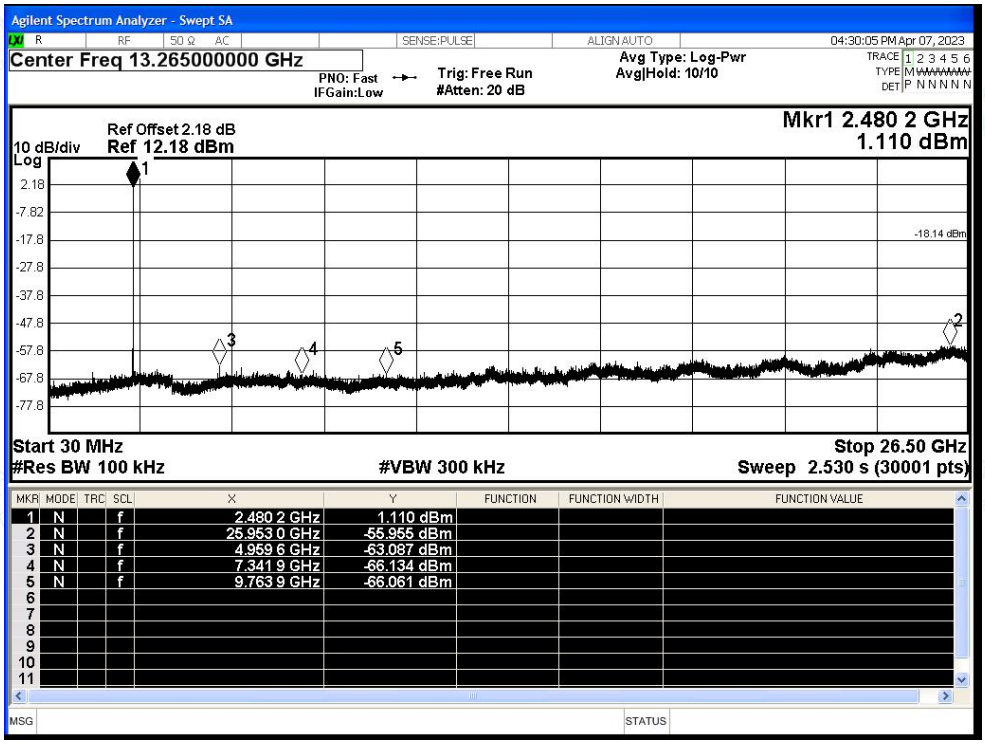
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission

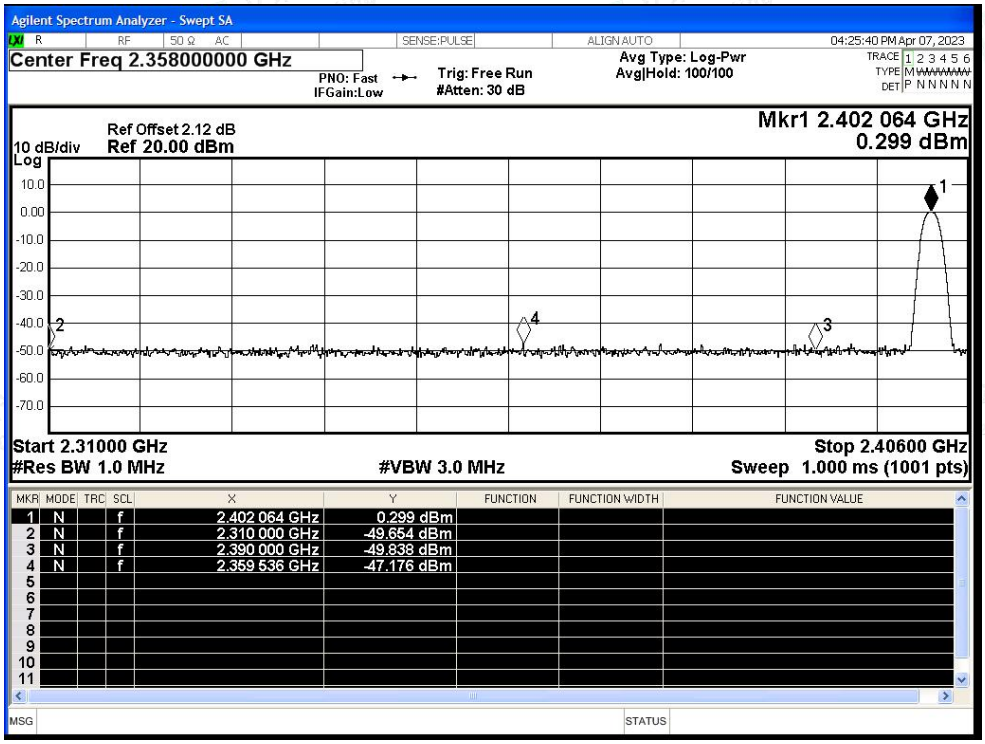


A.8 Restrict Band

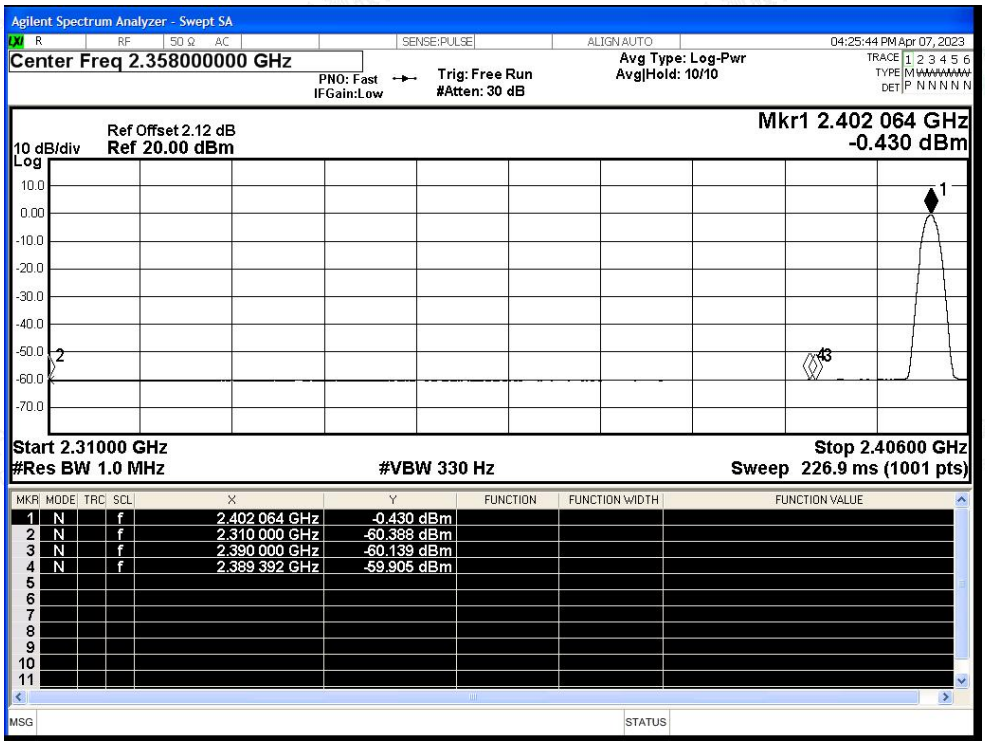
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-49.65	2	47.61	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-60.39	2	36.87	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2359.536	-47.18	2	50.08	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2389.392	-59.91	2	37.35	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-49.84	2	47.42	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-60.14	2	37.12	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-49.37	2	47.89	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-59.53	2	37.73	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2486.608	-47.03	2	50.23	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2484.232	-59.43	2	37.83	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-49.5	2	47.76	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-59.73	2	37.53	Average	54	Pass

Test Graphs

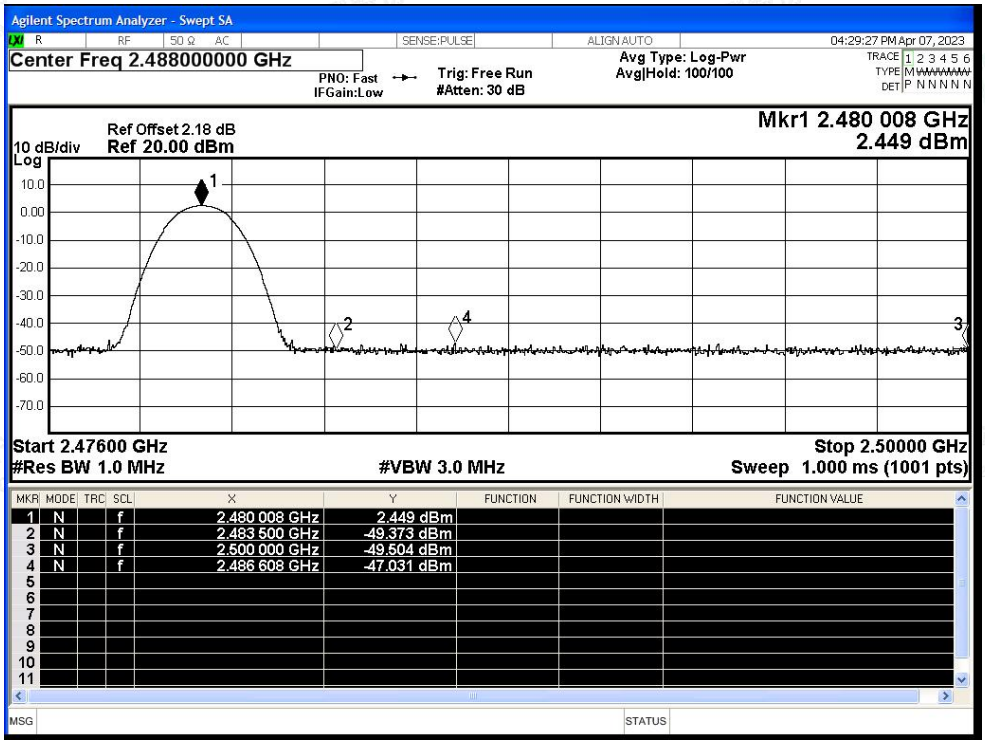
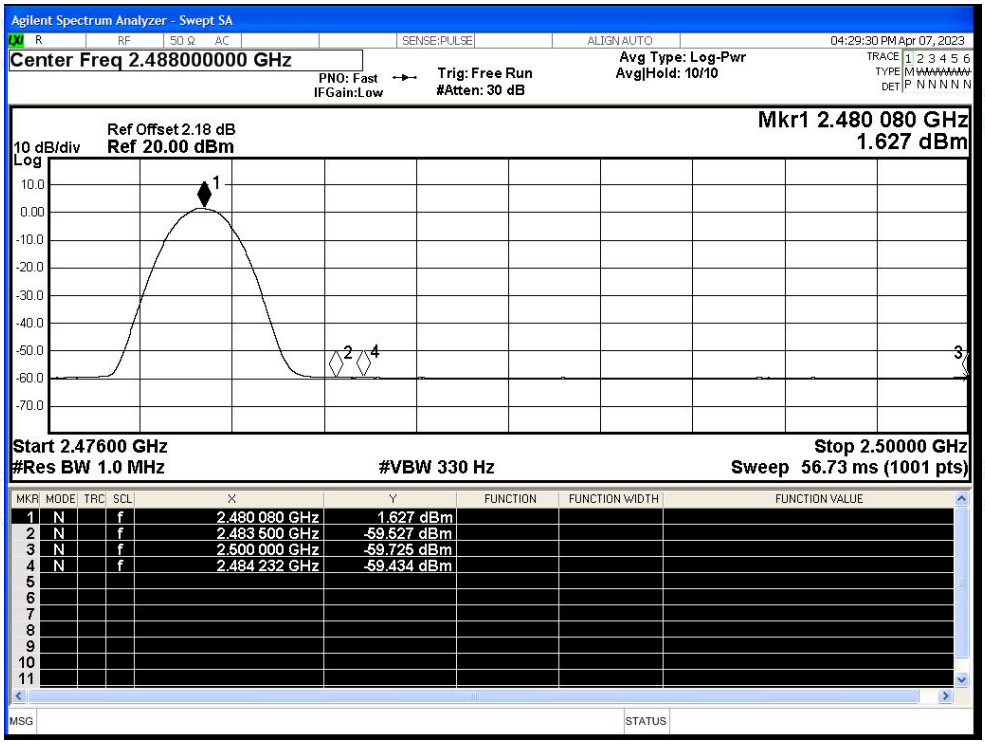
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak



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