Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: BLUETOOTH SPEAKER WITH TWS EARBUDS 2-IN-1

Test Model: OS-1008

Environmental Conditions

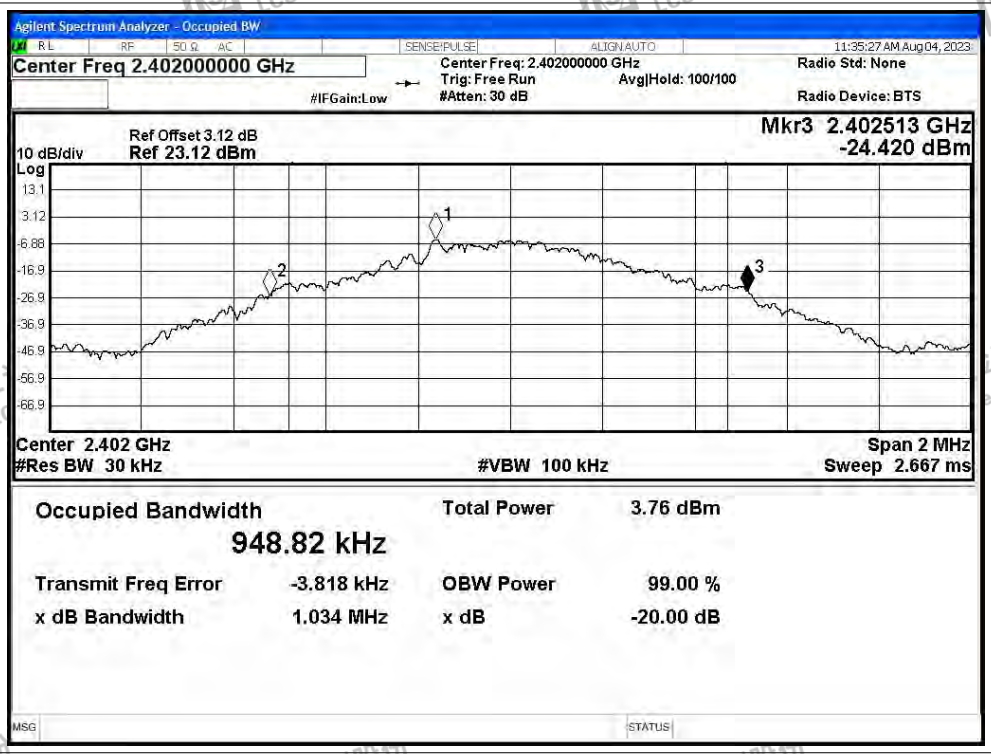
Temperature:	23.8° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Nick Peng
Supervised by:	Ling Zhu

A.1 -20dB Bandwidth

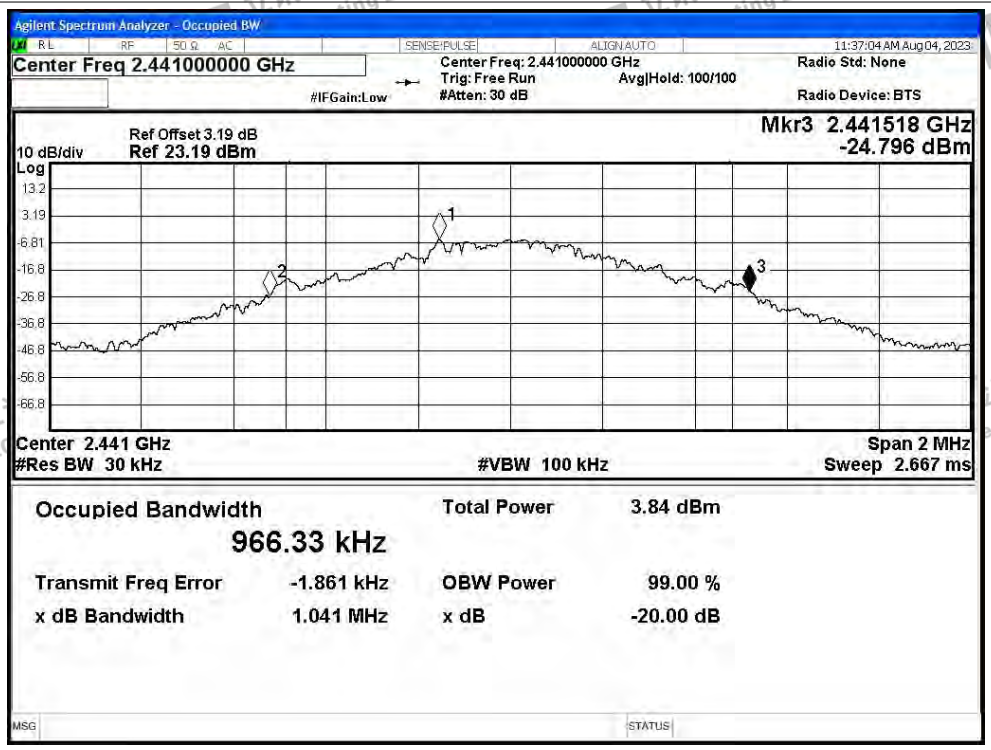
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	1.034	N/A	Pass
NVNT	1-DH5	2441	Ant1	1.041	N/A	Pass
NVNT	1-DH5	2480	Ant1	1.07	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.346	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.338	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.344	N/A	Pass

Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

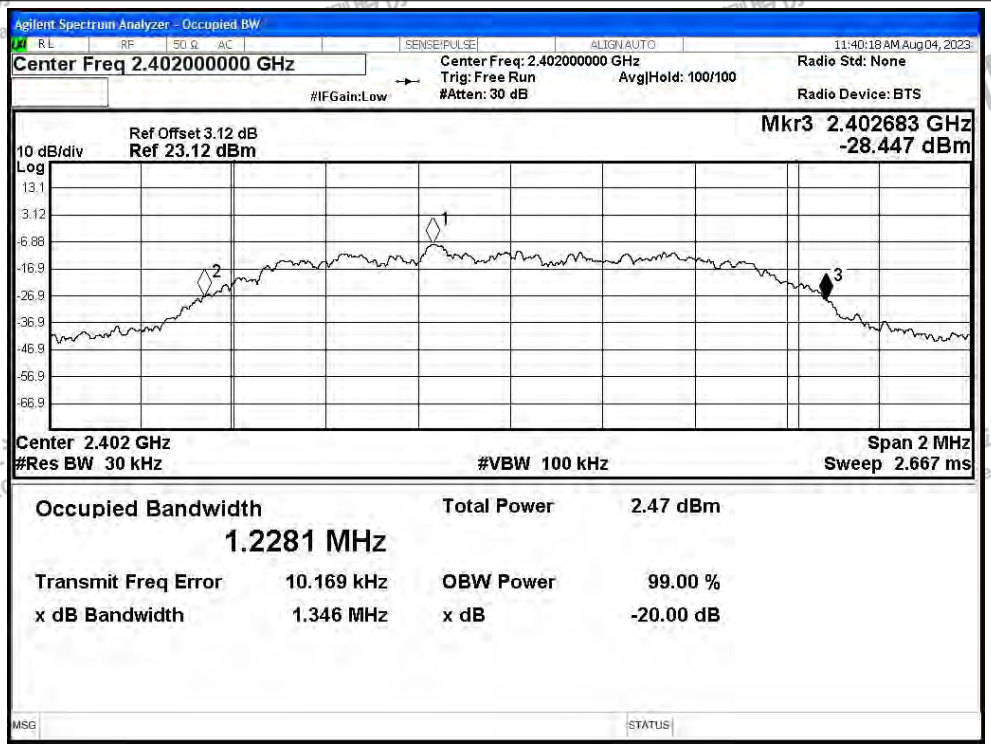


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

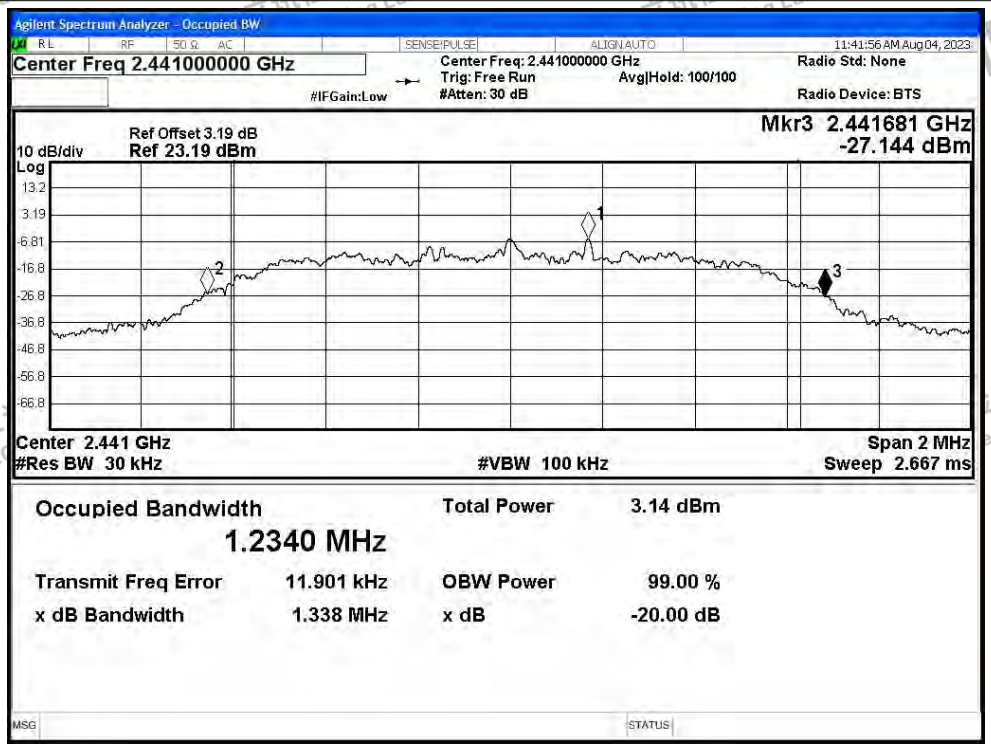


-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

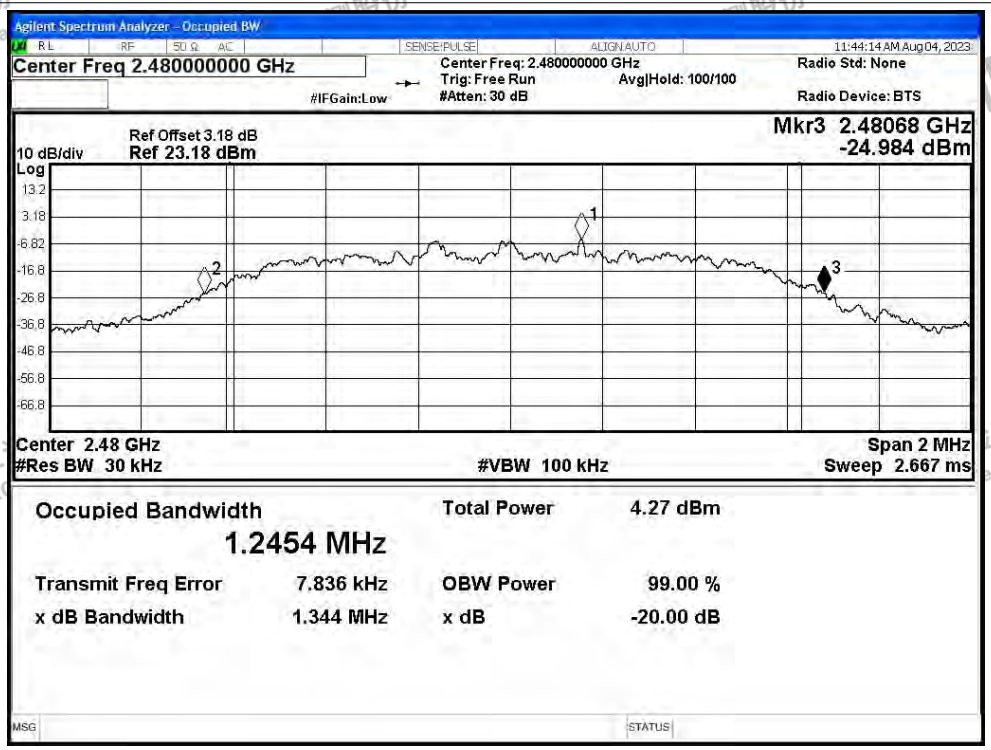
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

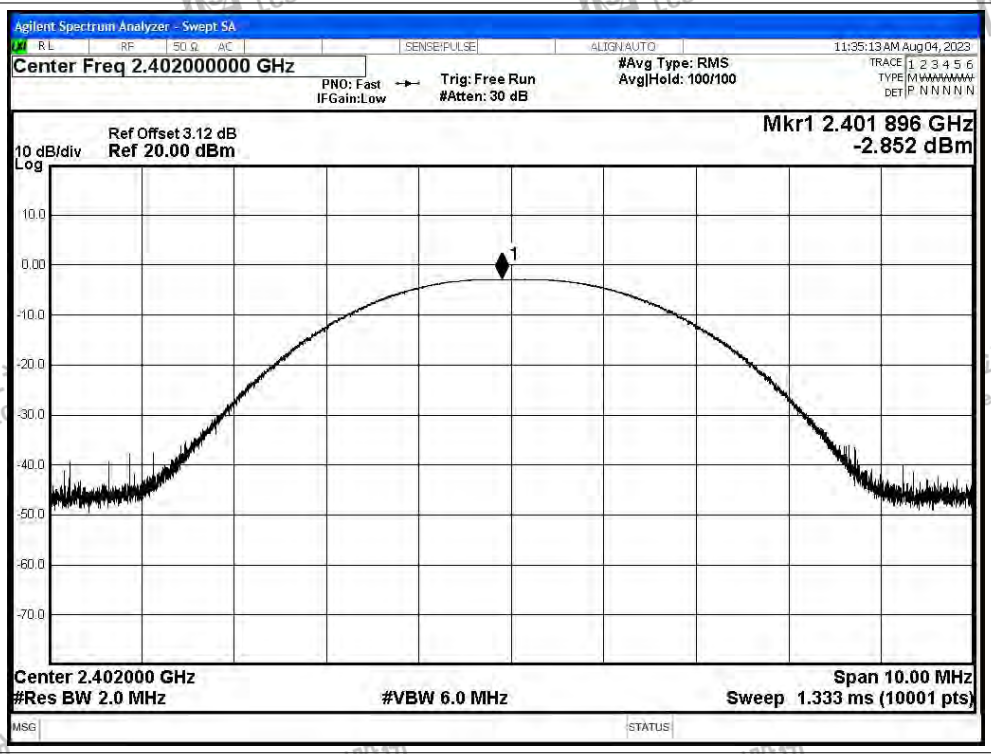


A.2 Maximum Conducted Output Power

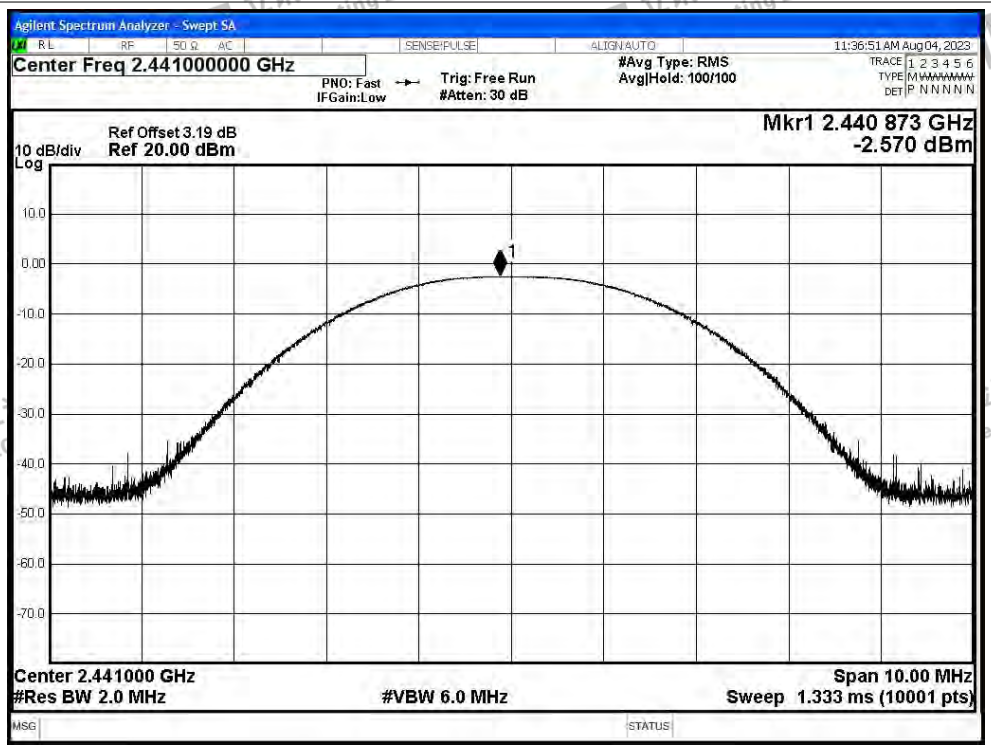
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	-2.85	21	Pass
NVNT	1-DH5	2441	Ant1	-2.57	21	Pass
NVNT	1-DH5	2480	Ant1	-1.59	21	Pass
NVNT	2-DH5	2402	Ant1	-1.99	21	Pass
NVNT	2-DH5	2441	Ant1	-1.64	21	Pass
NVNT	2-DH5	2480	Ant1	-0.7	21	Pass

Test Graphs

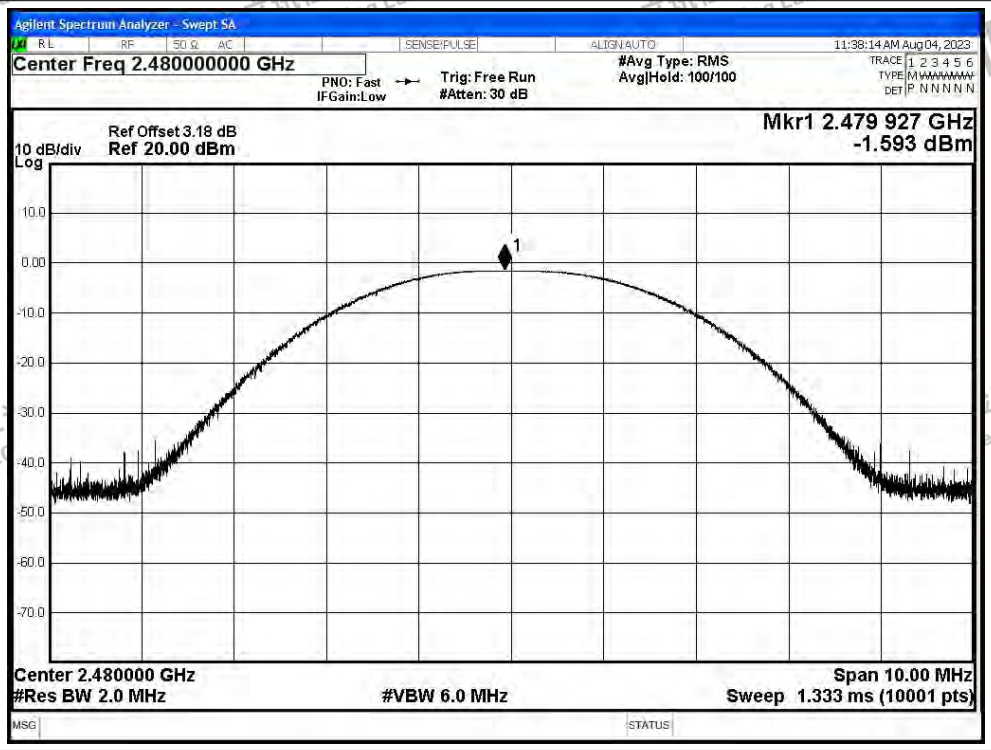
Power NVNT 1-DH5 2402MHz Ant1



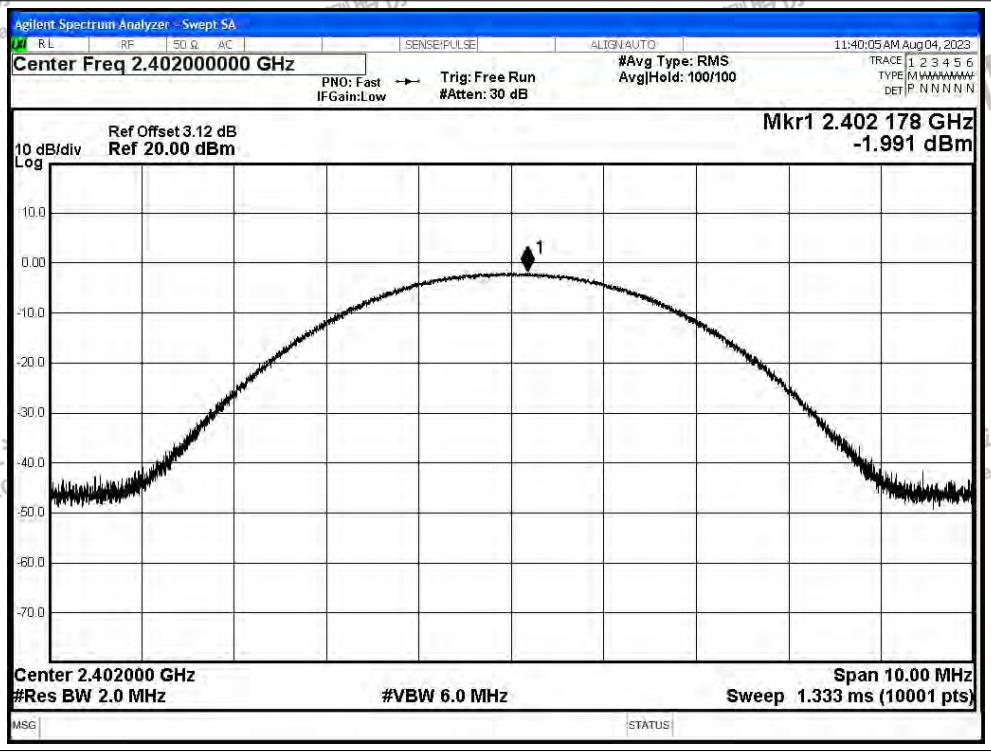
Power NVNT 1-DH5 2441MHz Ant1



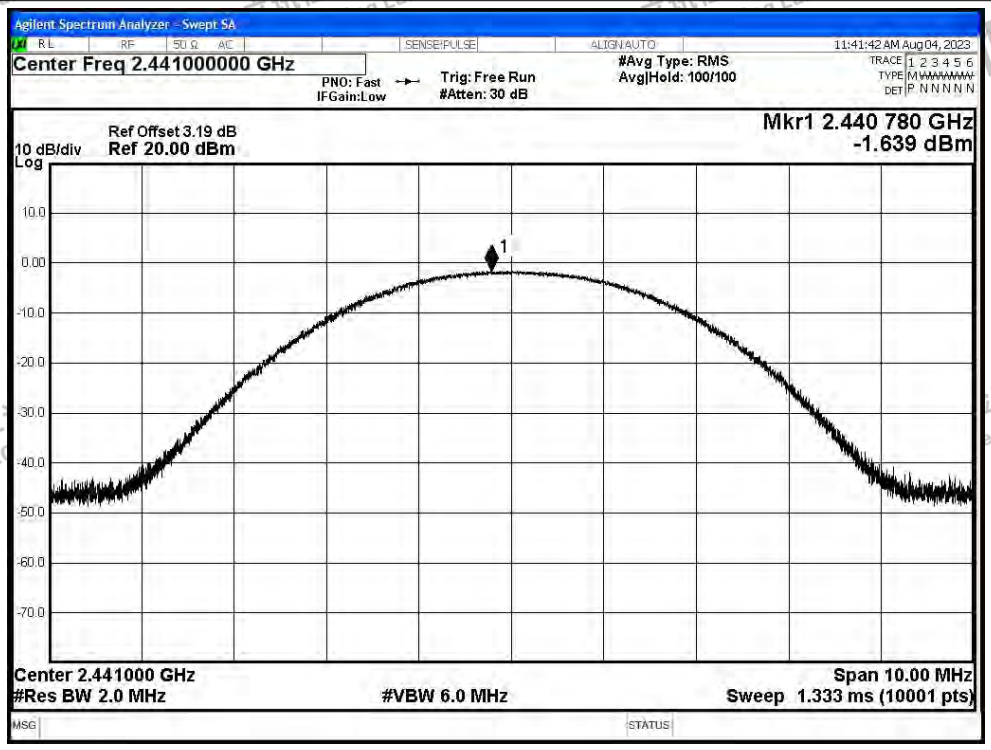
Power NVNT 1-DH5 2480MHz Ant1



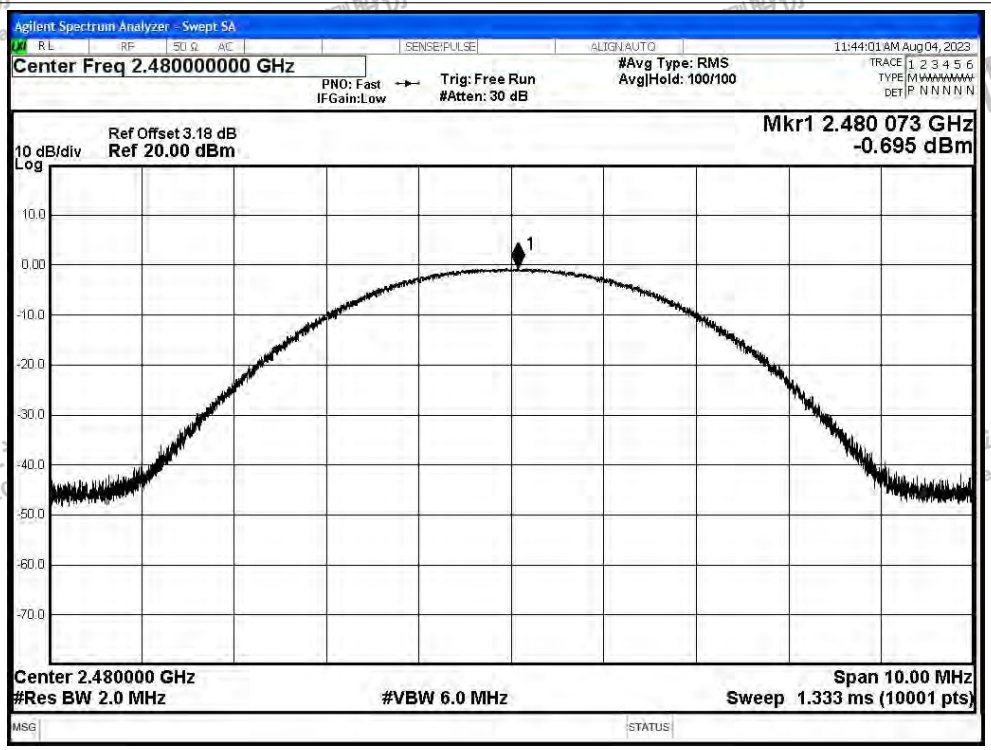
Power NVNT 2-DH5 2402MHz Ant1



Power NVNT 2-DH5 2441MHz Ant1



Power NVNT 2-DH5 2480MHz Ant1

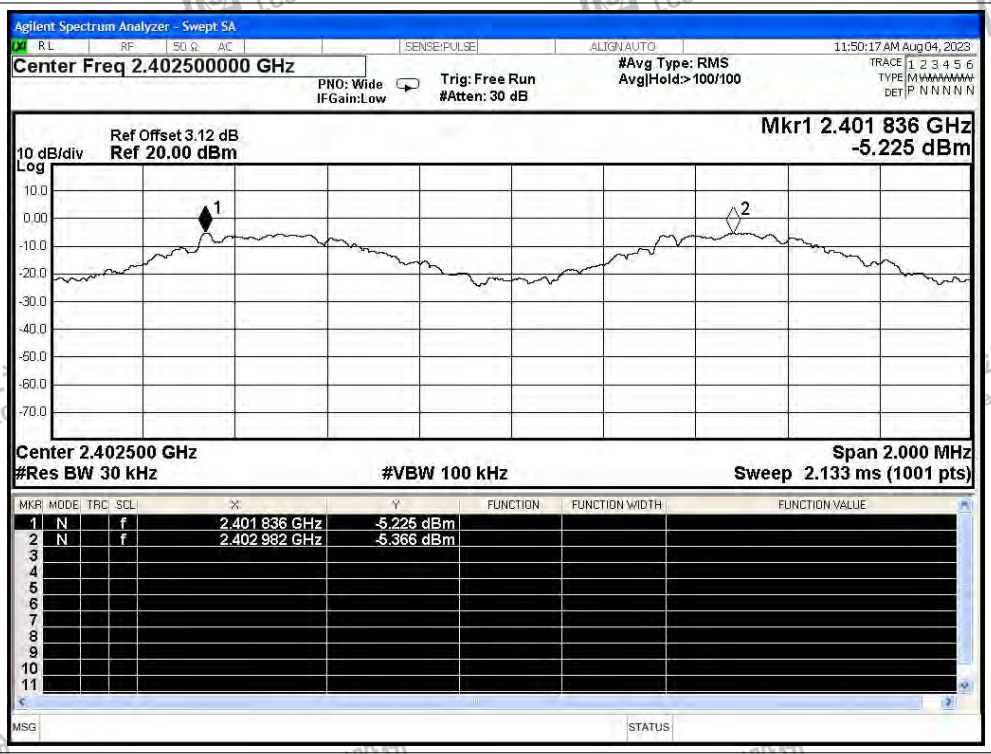


A.3 Carrier Frequencies Separation

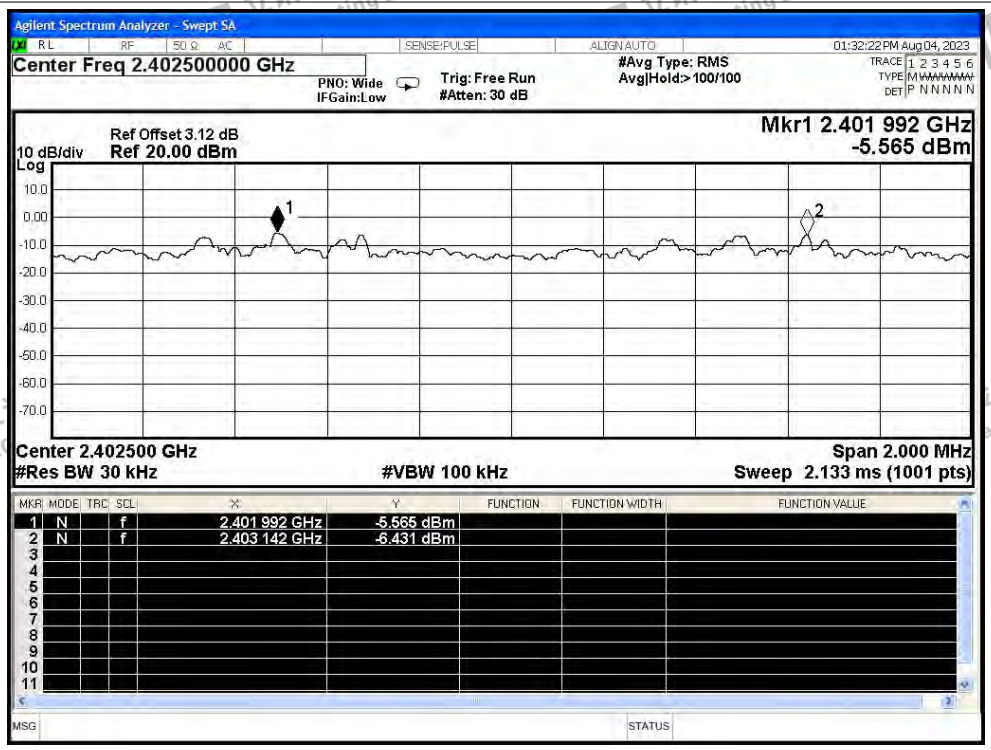
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2401.836	2402.982	1.146	0.713	Pass
NVNT	2-DH5	Ant1	2401.992	2403.142	1.15	0.897	Pass

Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1

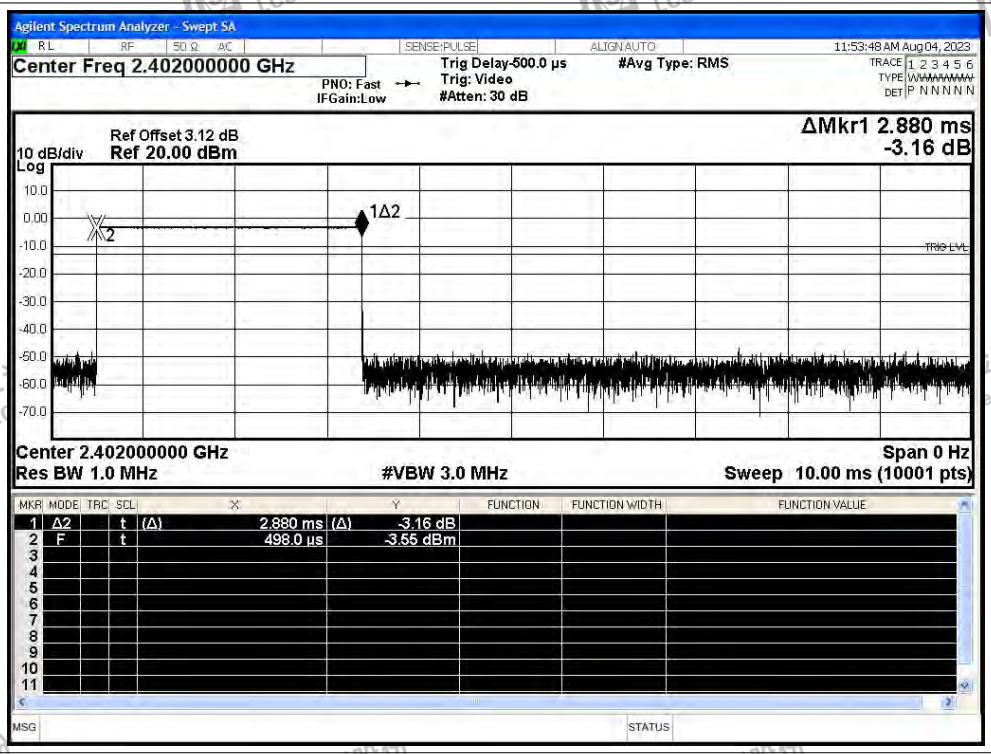


A.4 Dwell Time

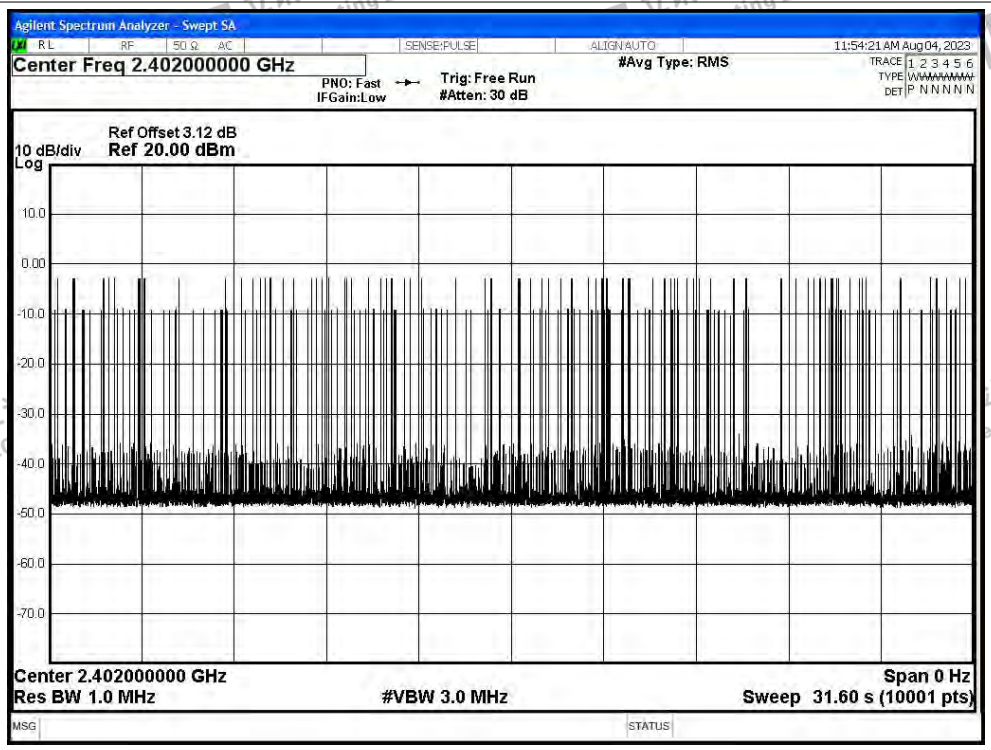
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.88	259.2	90	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.887	320.457	111	31600	400	Pass

Test Graphs

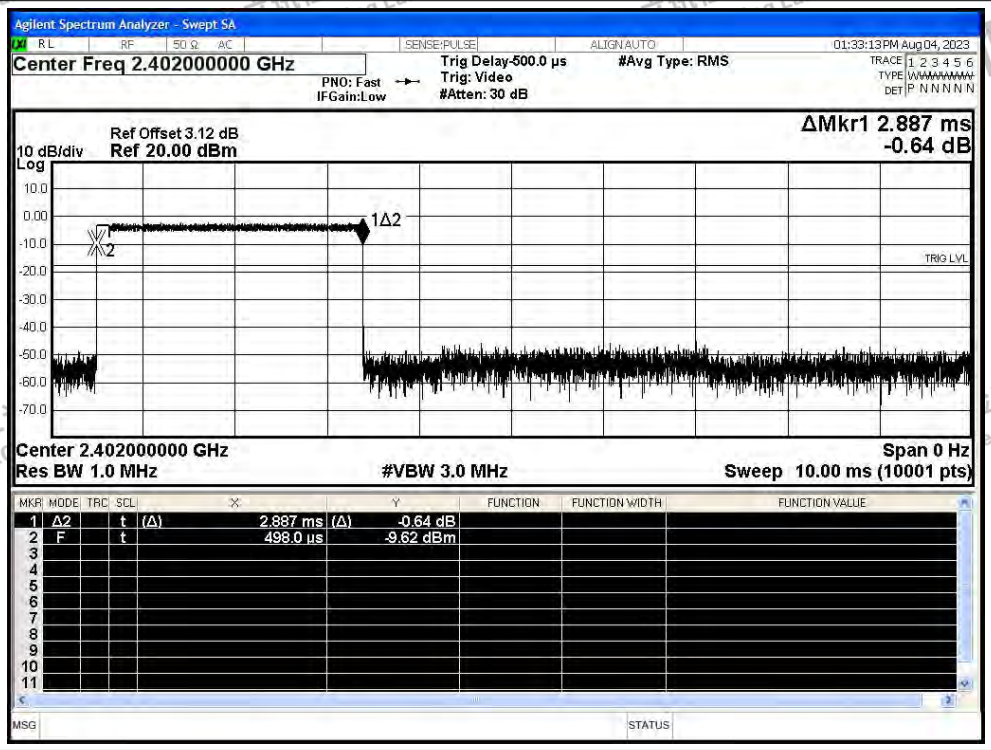
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



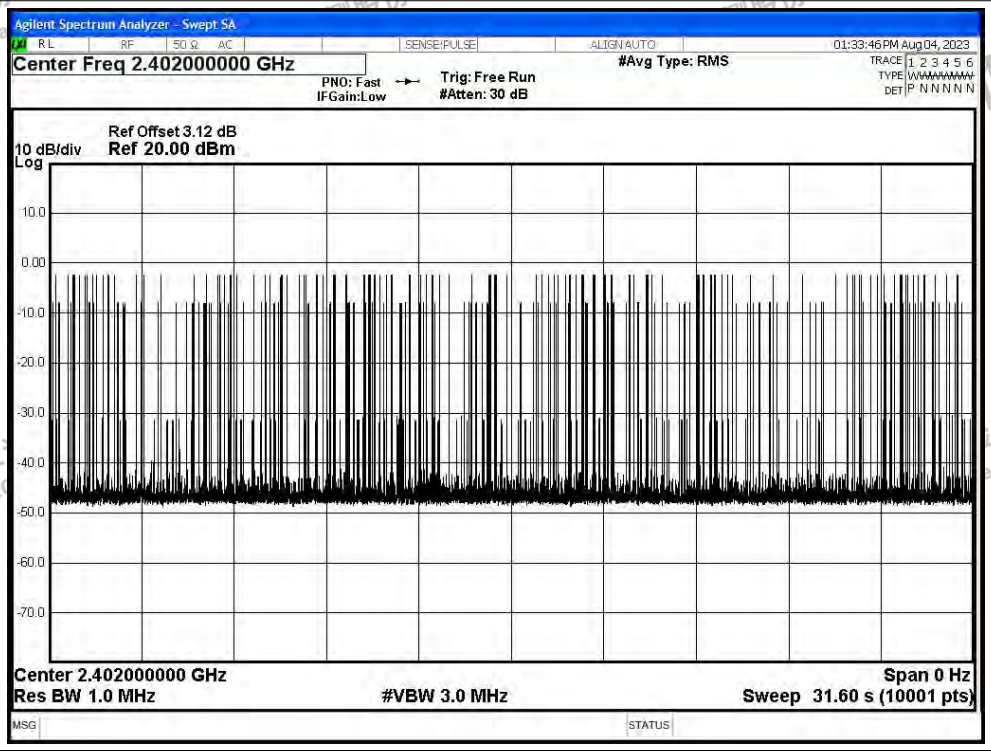
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated

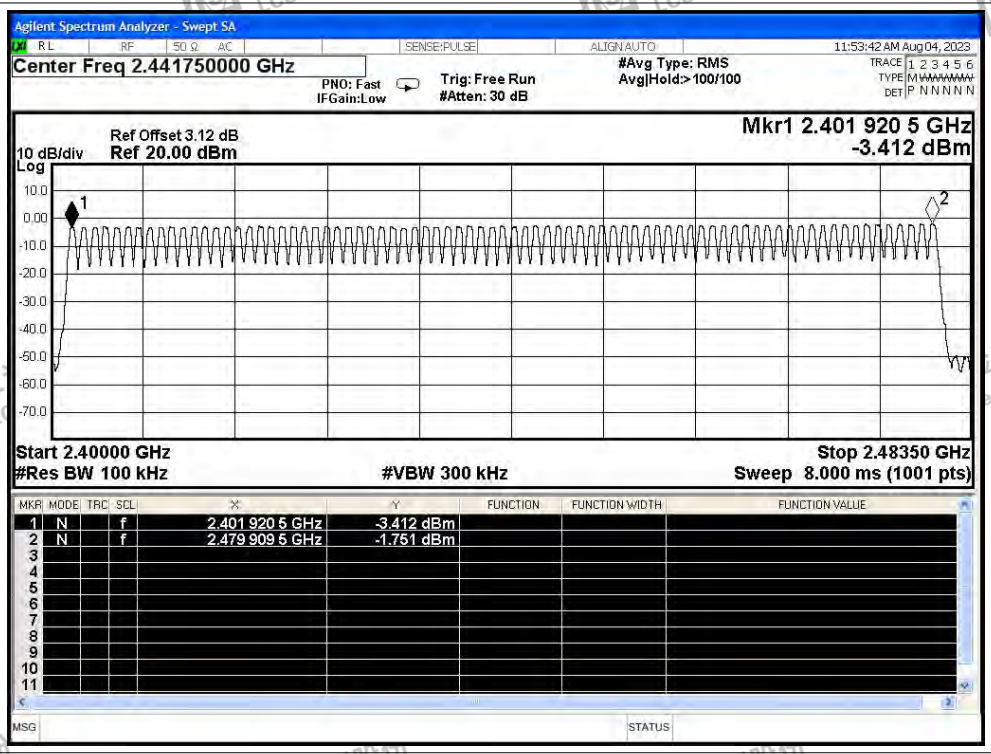


A.5 Number of Hopping Channel

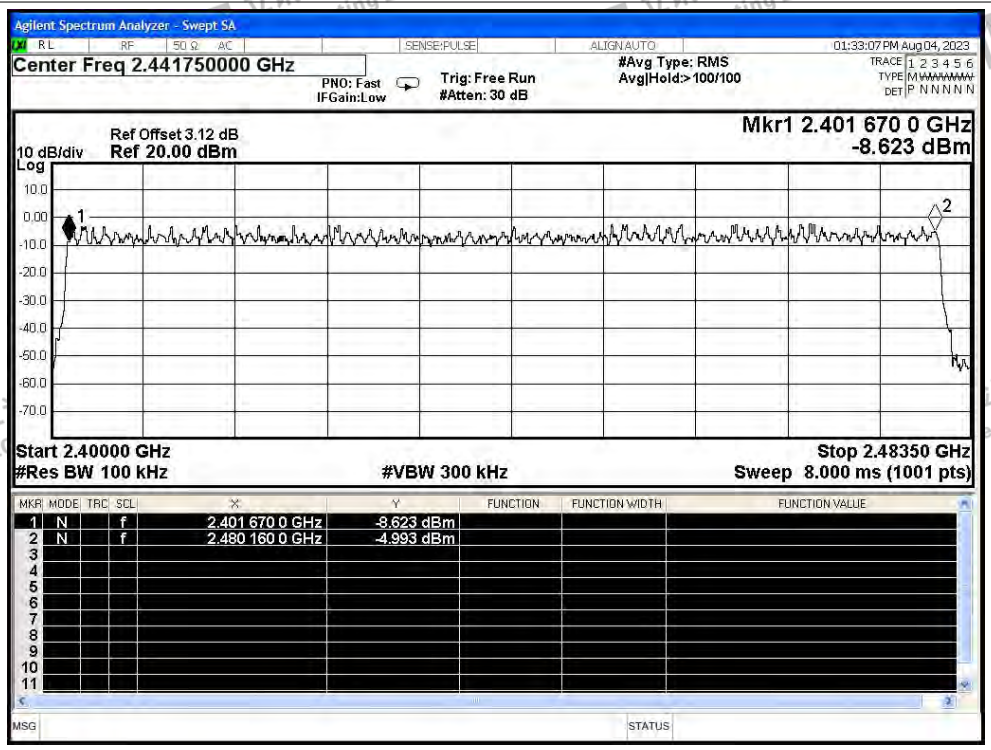
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass

Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1

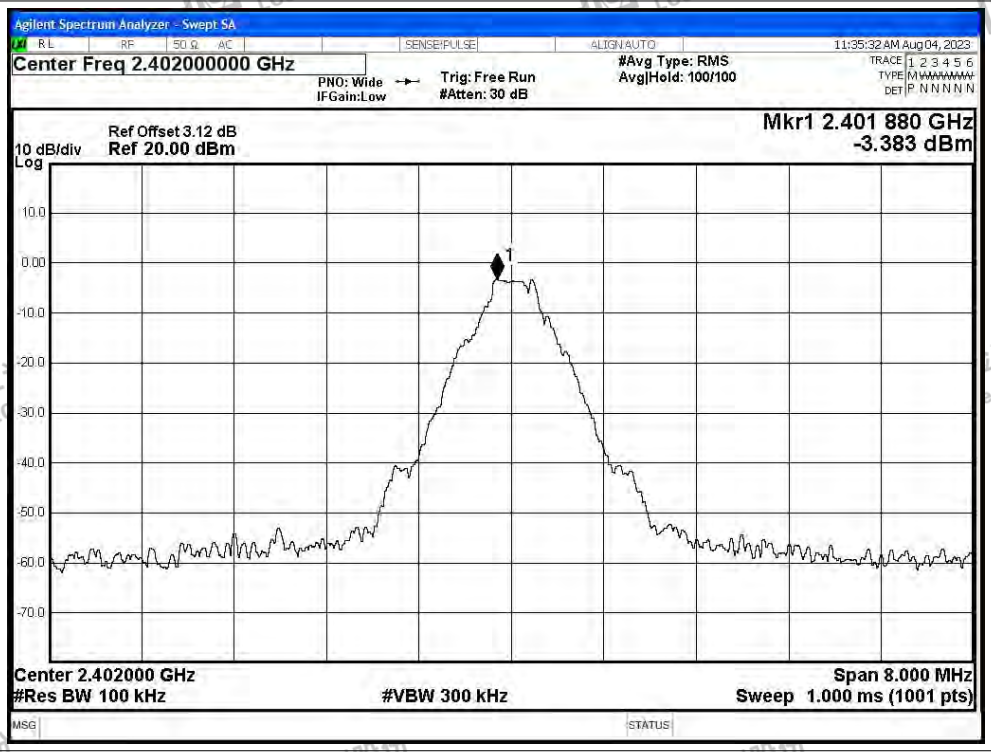


A.6 Band Edge

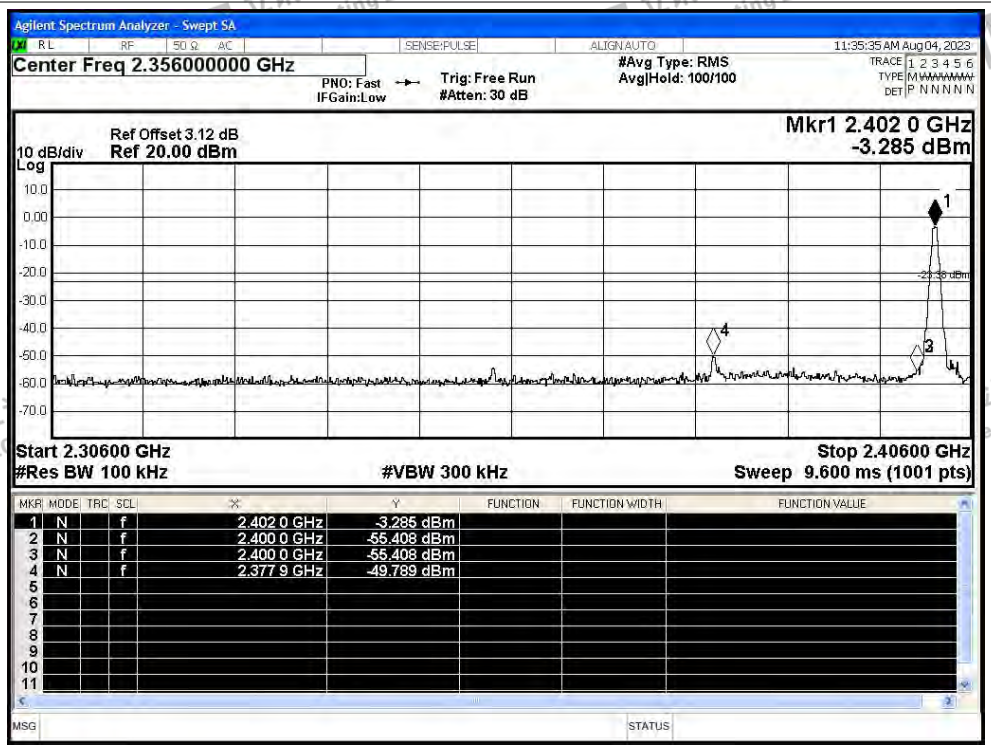
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-46.41	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-51.31	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-46.39	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-49.77	-20	Pass

Test Graphs

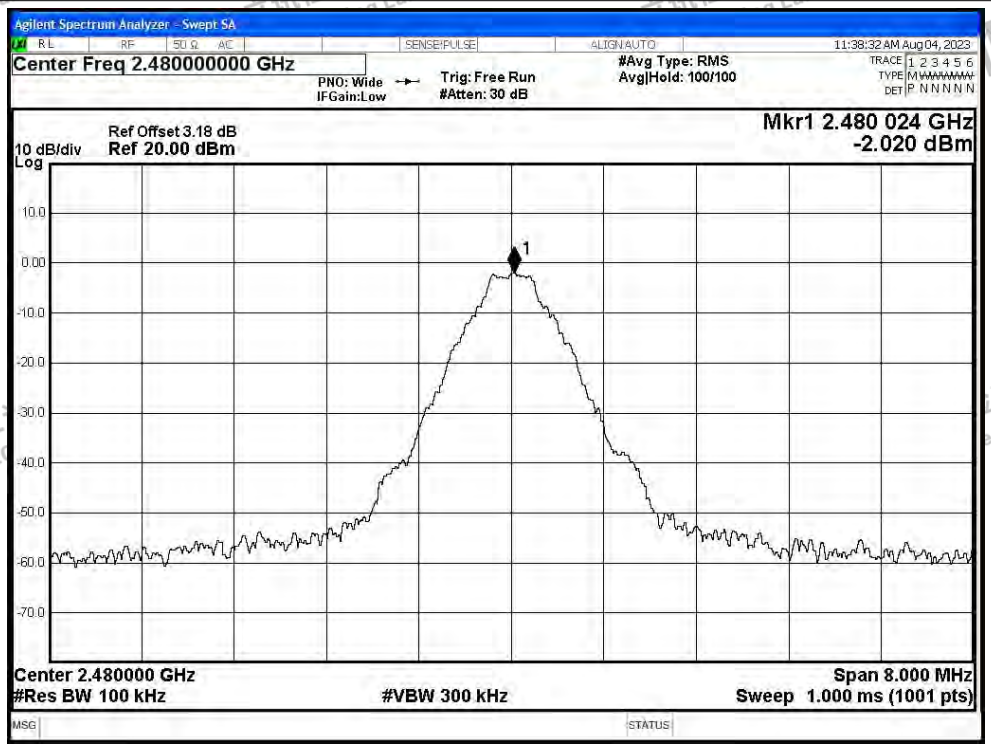
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



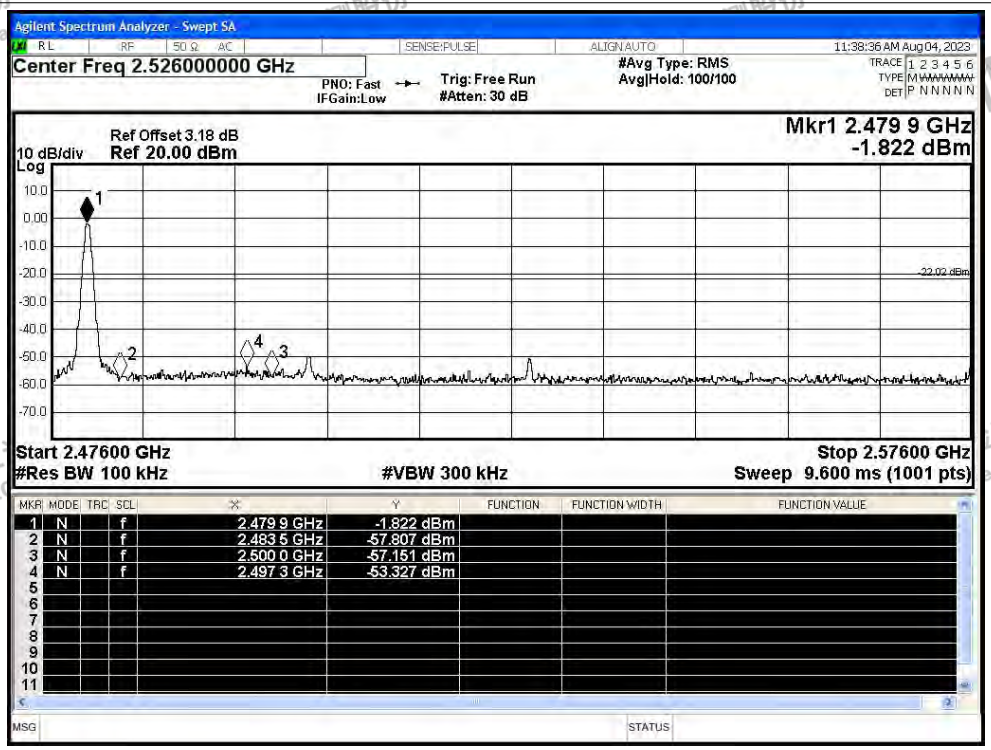
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



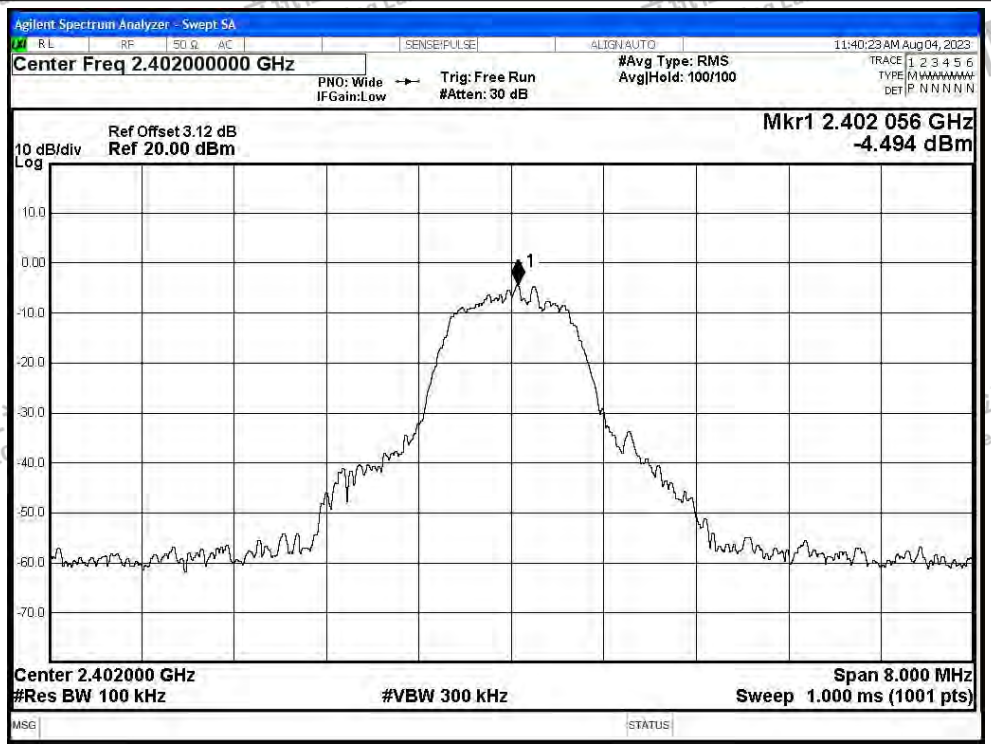
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



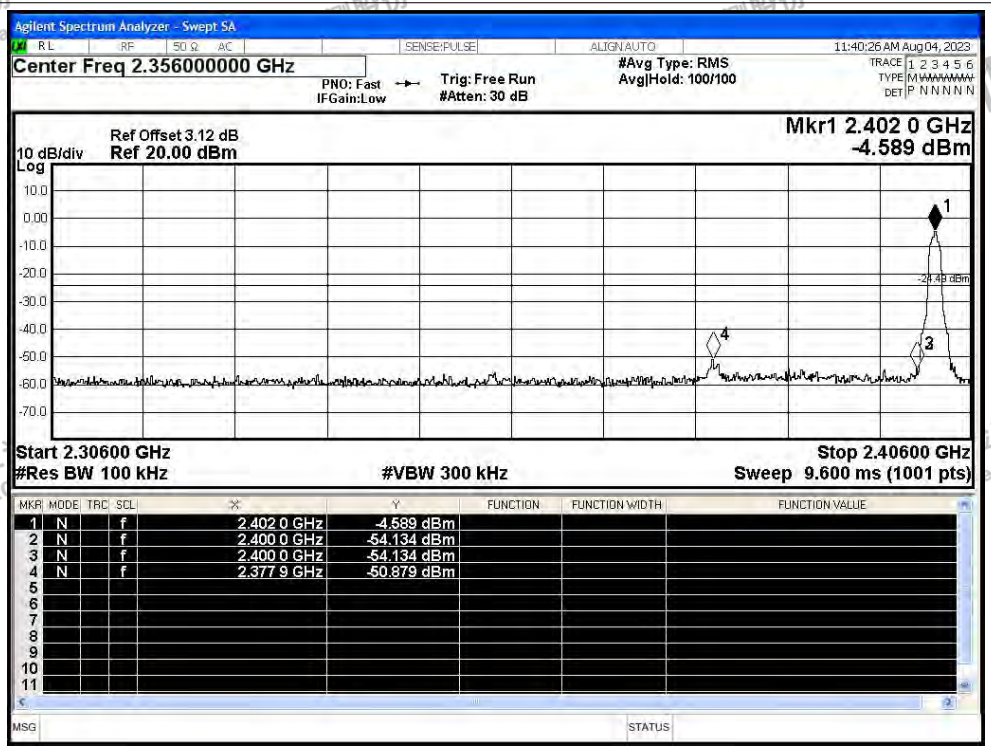
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



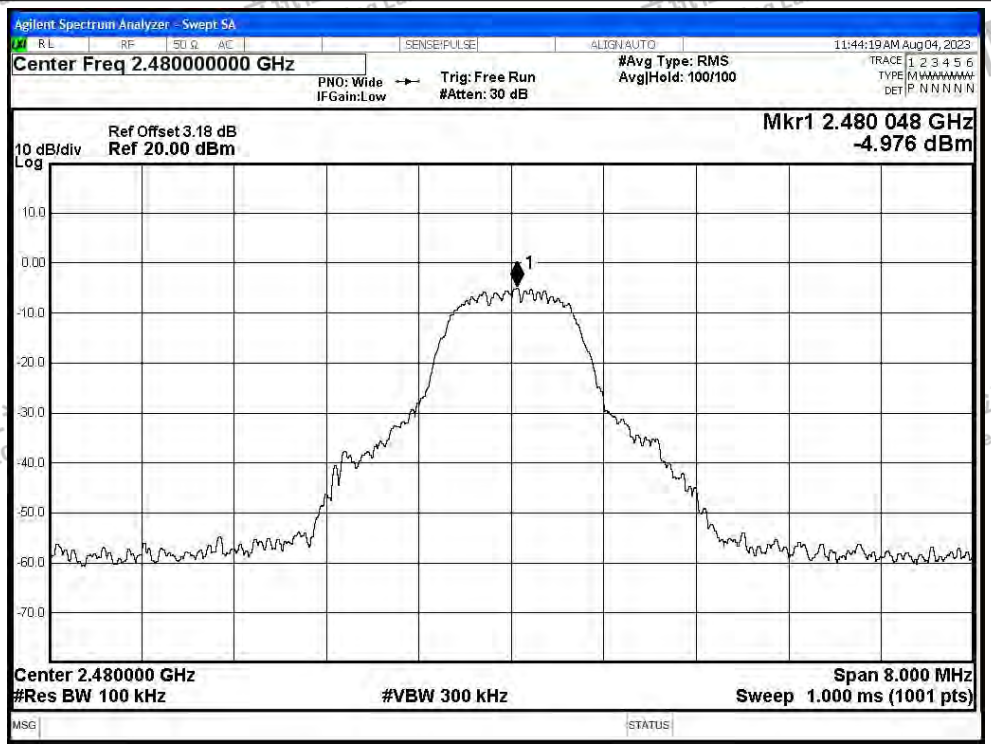
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



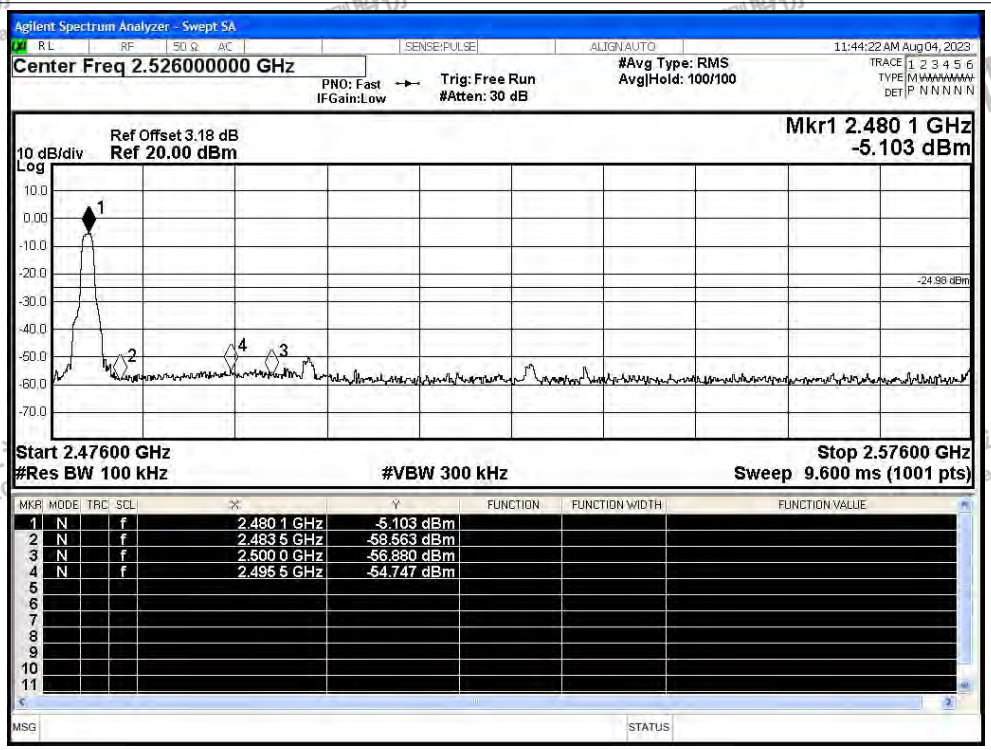
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission



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



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



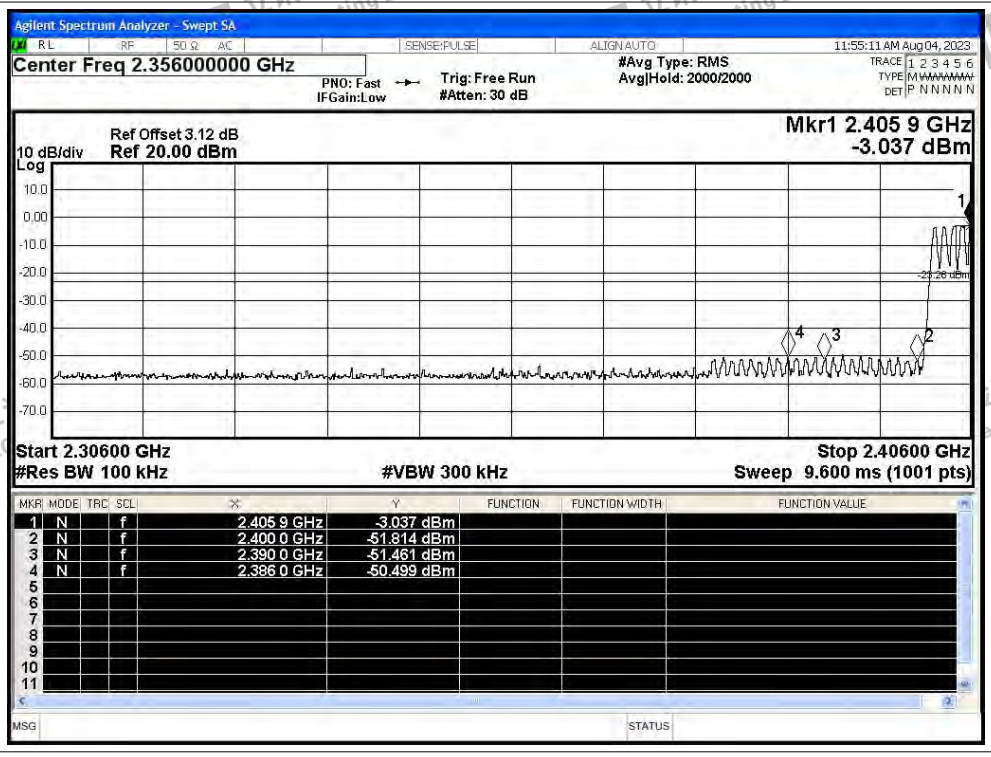
(Hopping)

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-47.24	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-46.43	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-48.16	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-46.42	-20	Pass

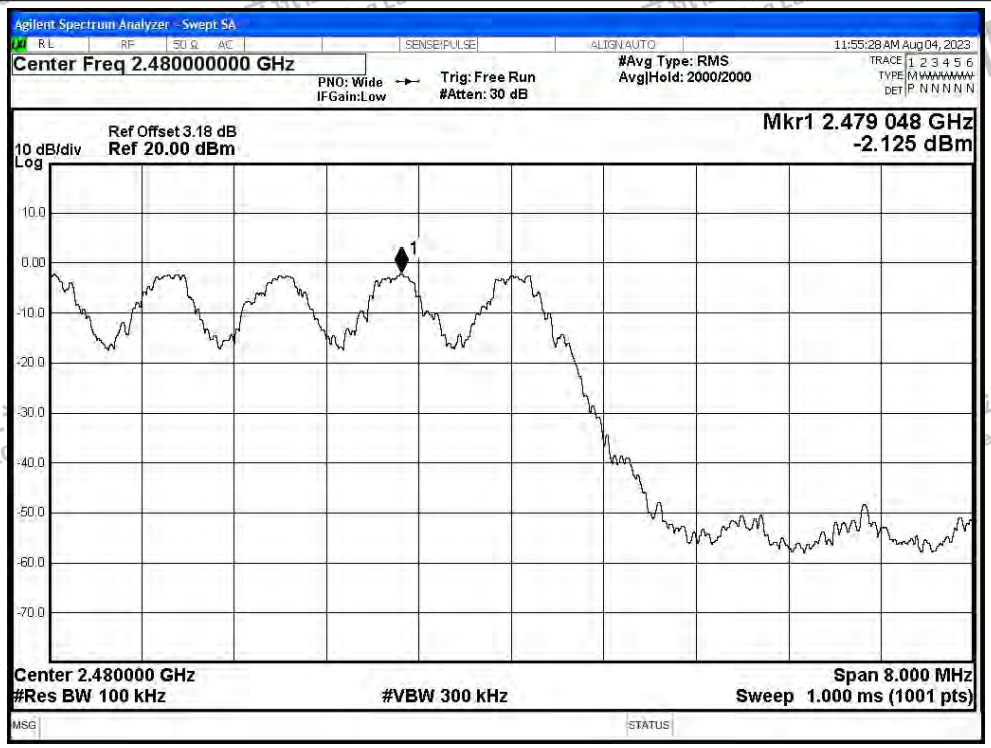
Test Graphs

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

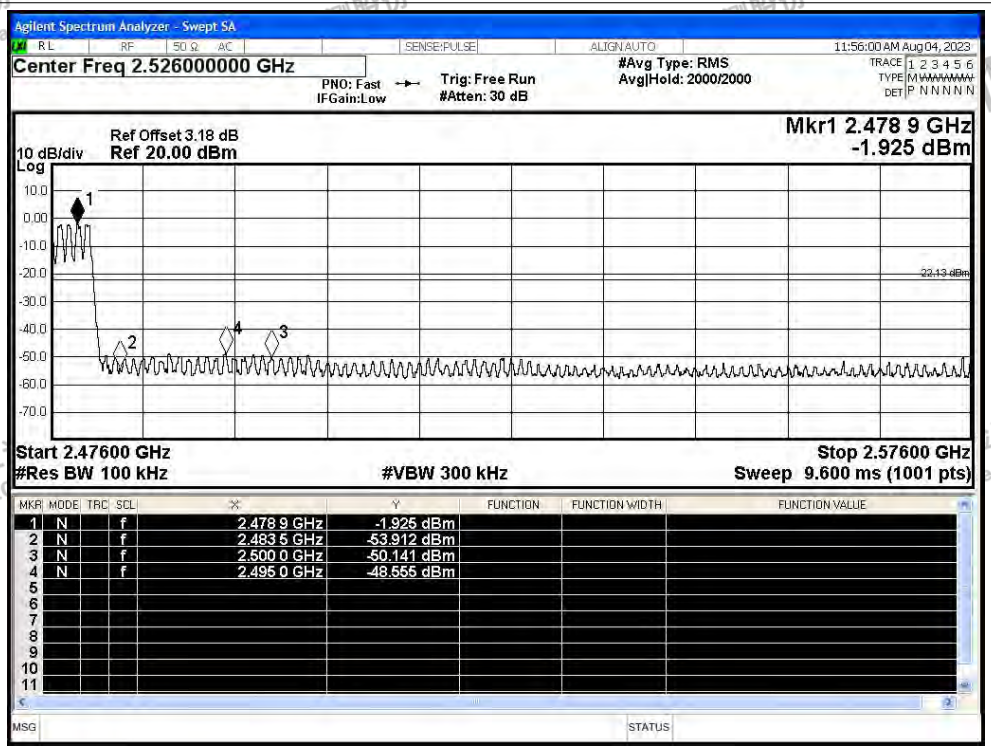
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



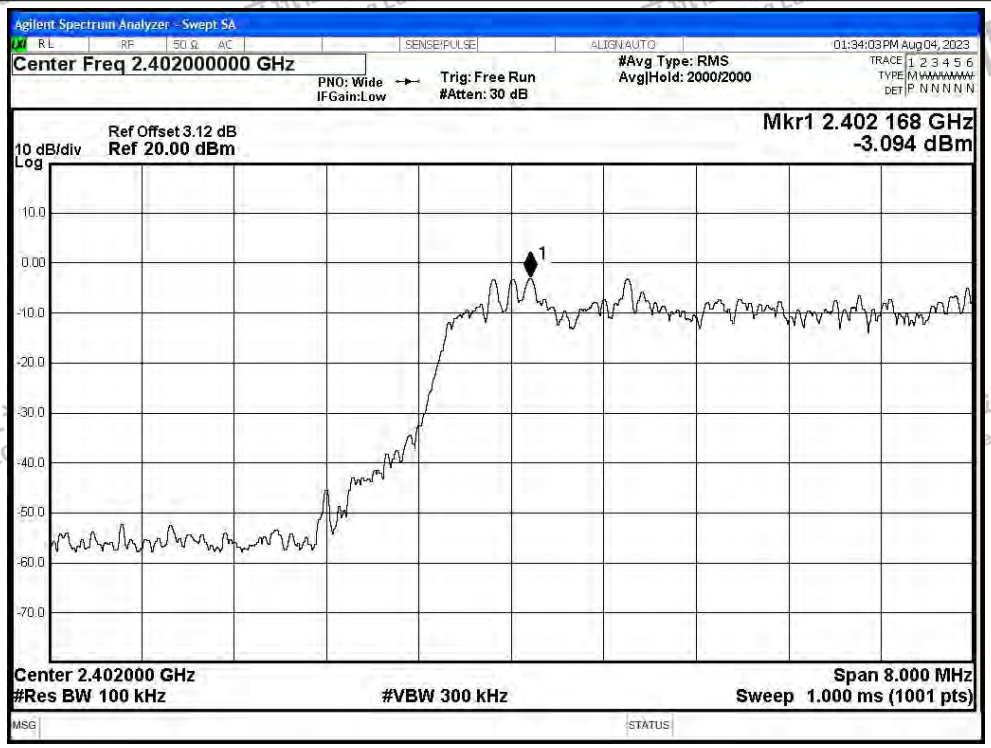
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



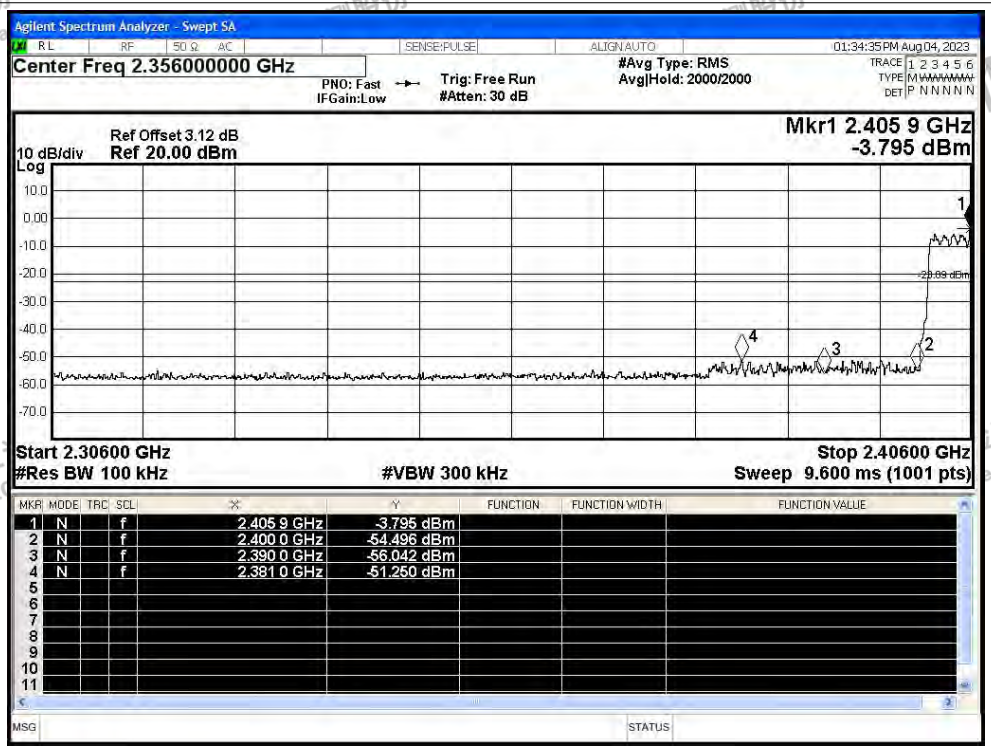
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission



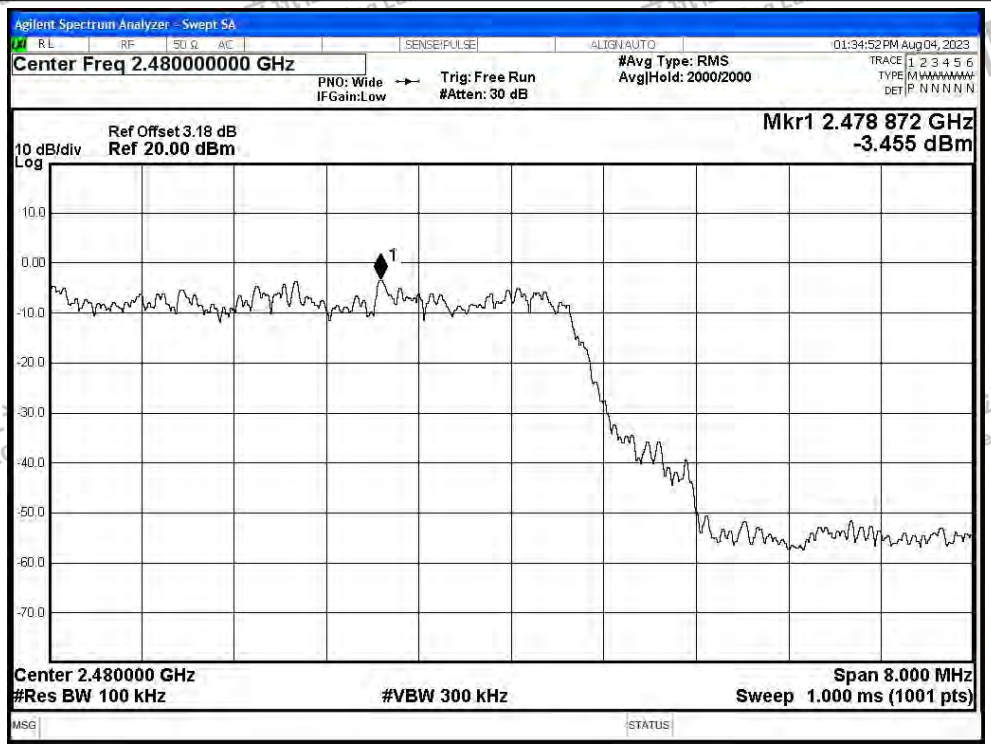
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



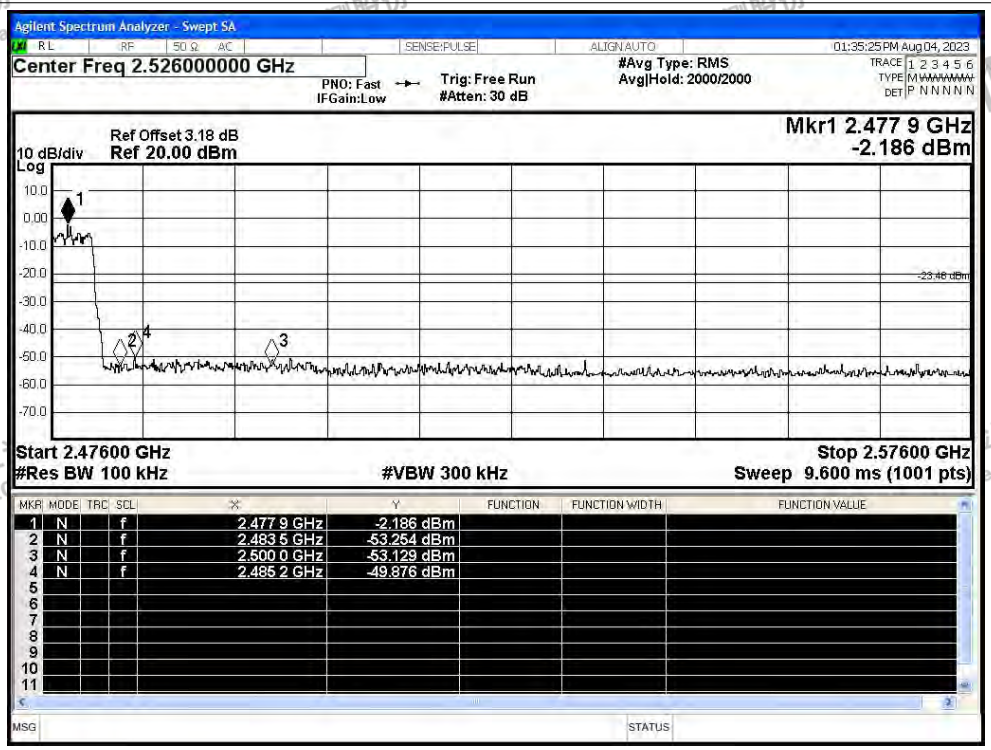
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission



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



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

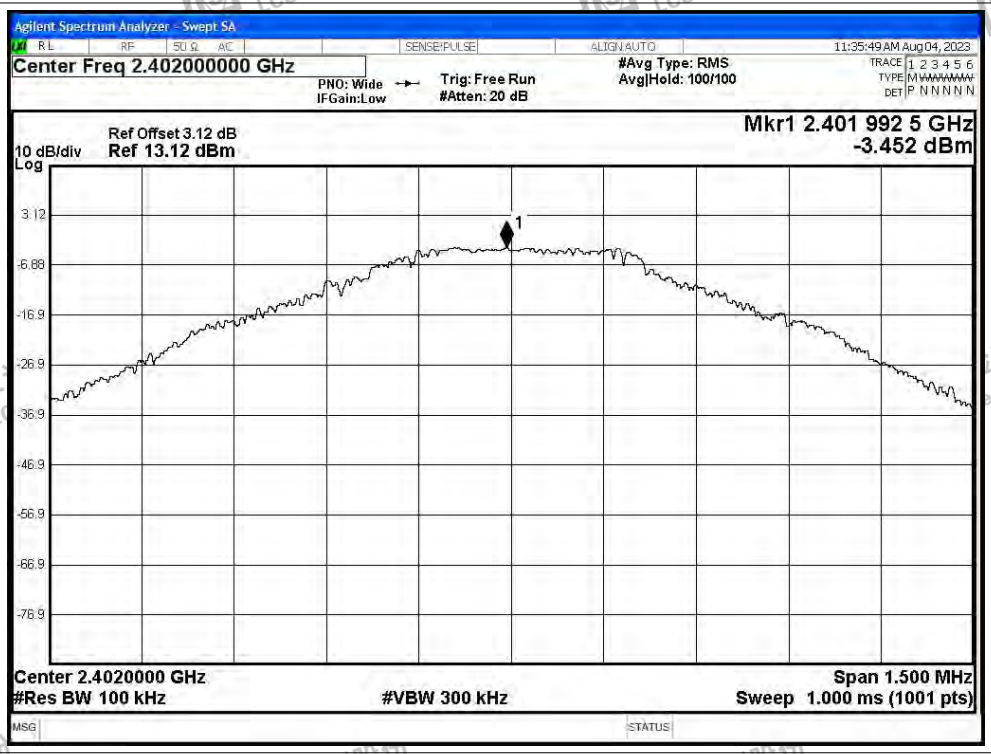


A.7 Conducted RF Spurious Emission

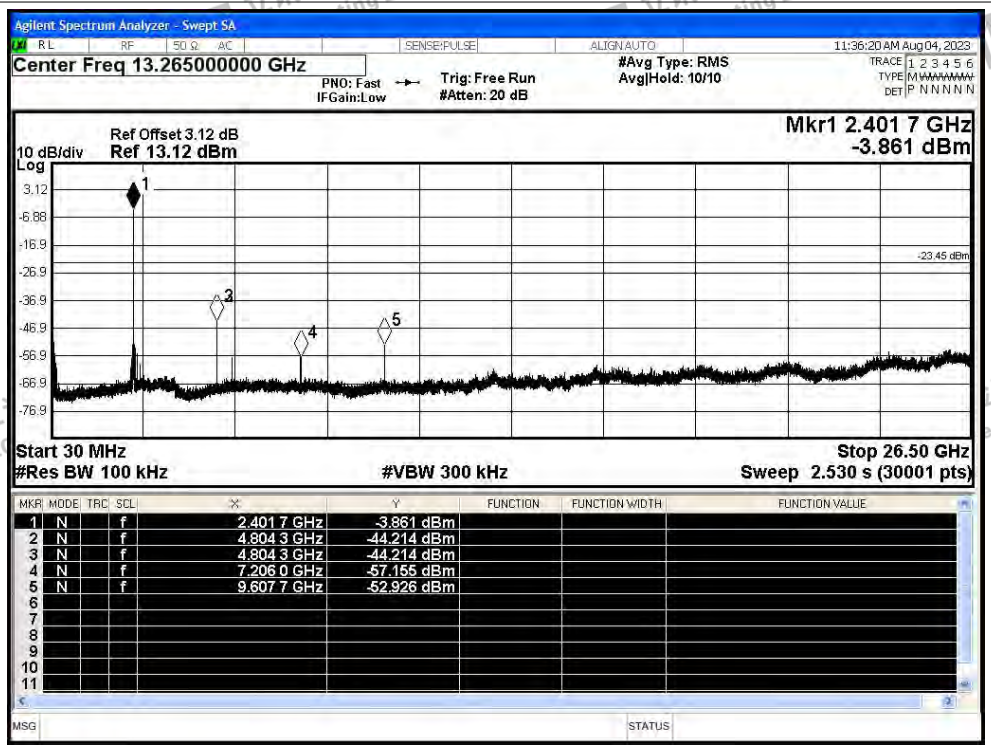
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-40.76	-20	Pass
NVNT	1-DH5	2441	Ant1	-38.58	-20	Pass
NVNT	1-DH5	2480	Ant1	-41.39	-20	Pass
NVNT	2-DH5	2402	Ant1	-41.34	-20	Pass
NVNT	2-DH5	2441	Ant1	-40.98	-20	Pass
NVNT	2-DH5	2480	Ant1	-41.77	-20	Pass

Test Graphs

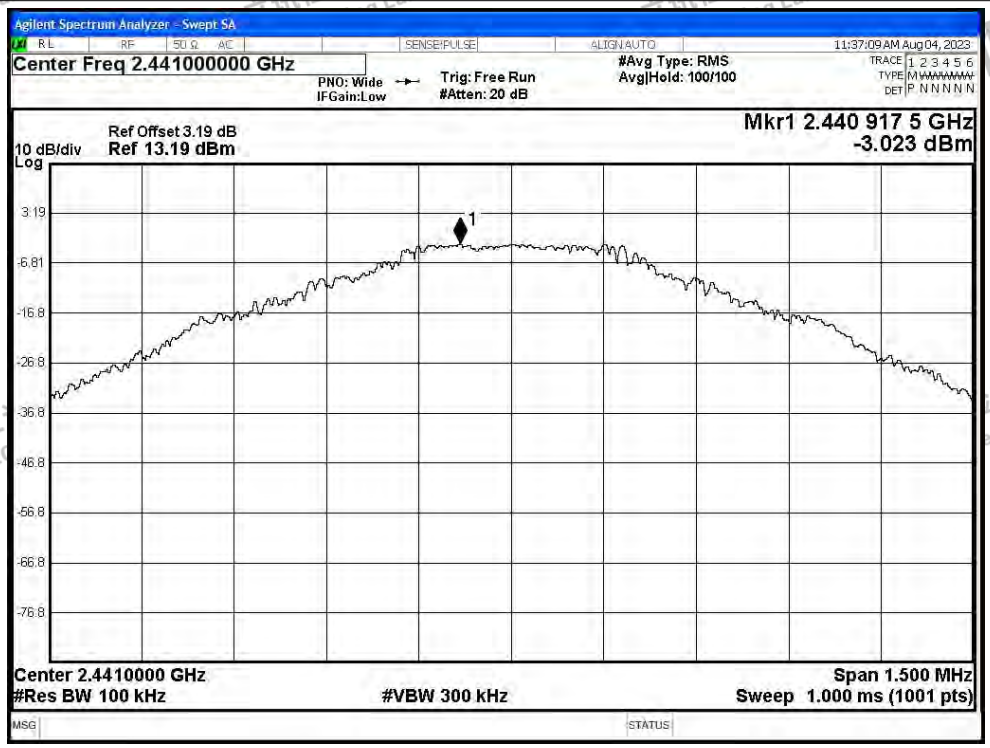
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



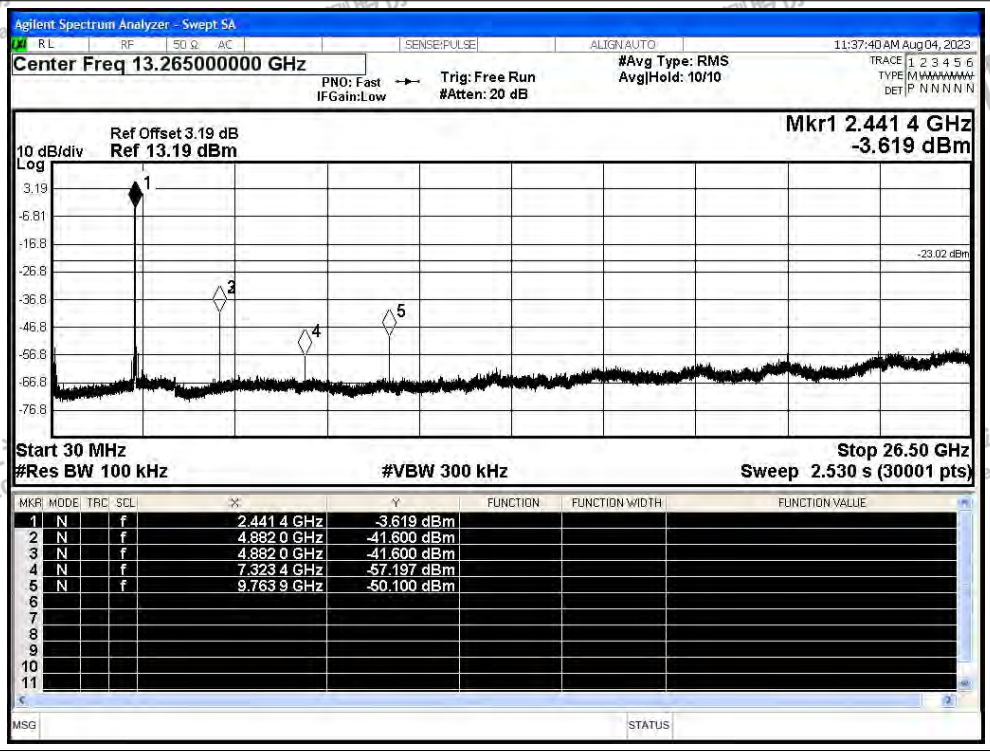
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



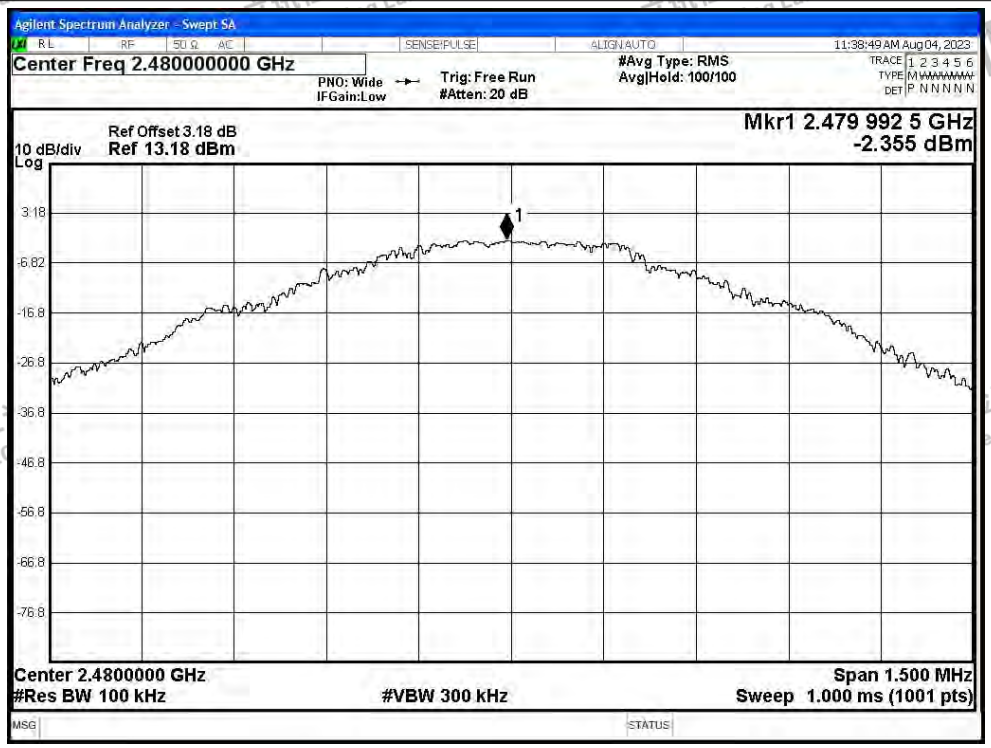
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



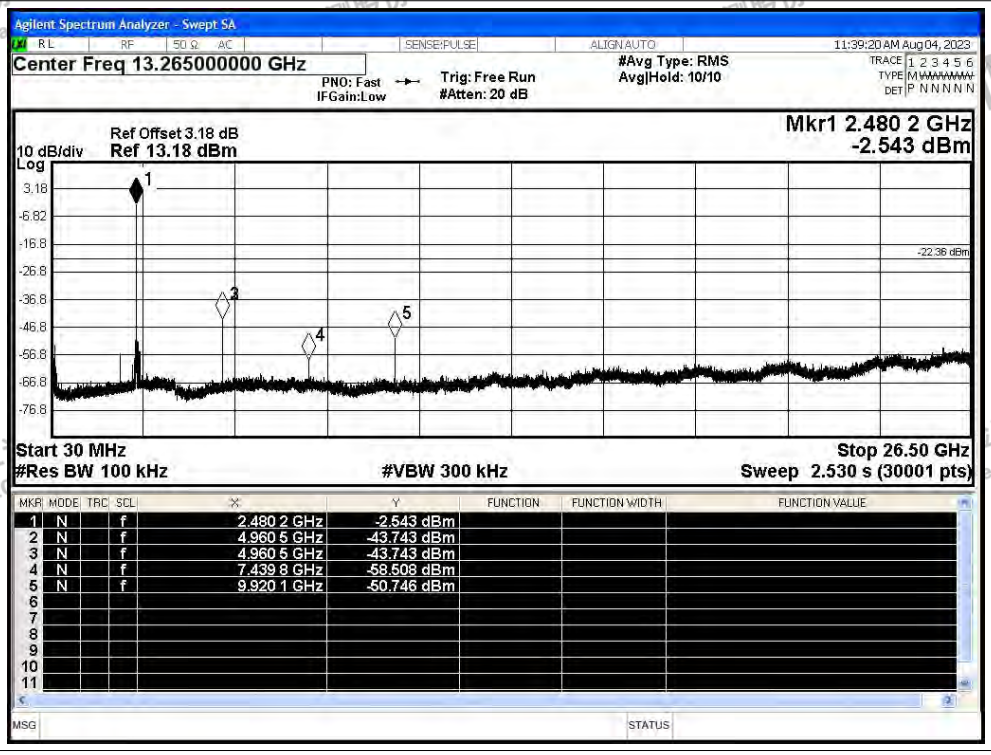
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



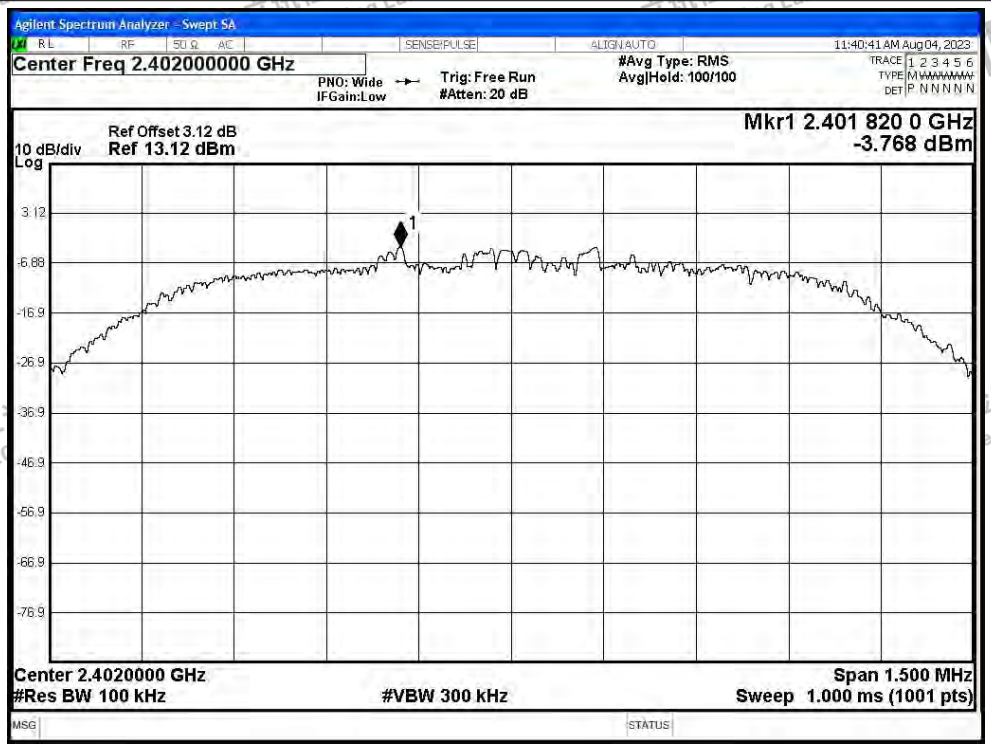
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



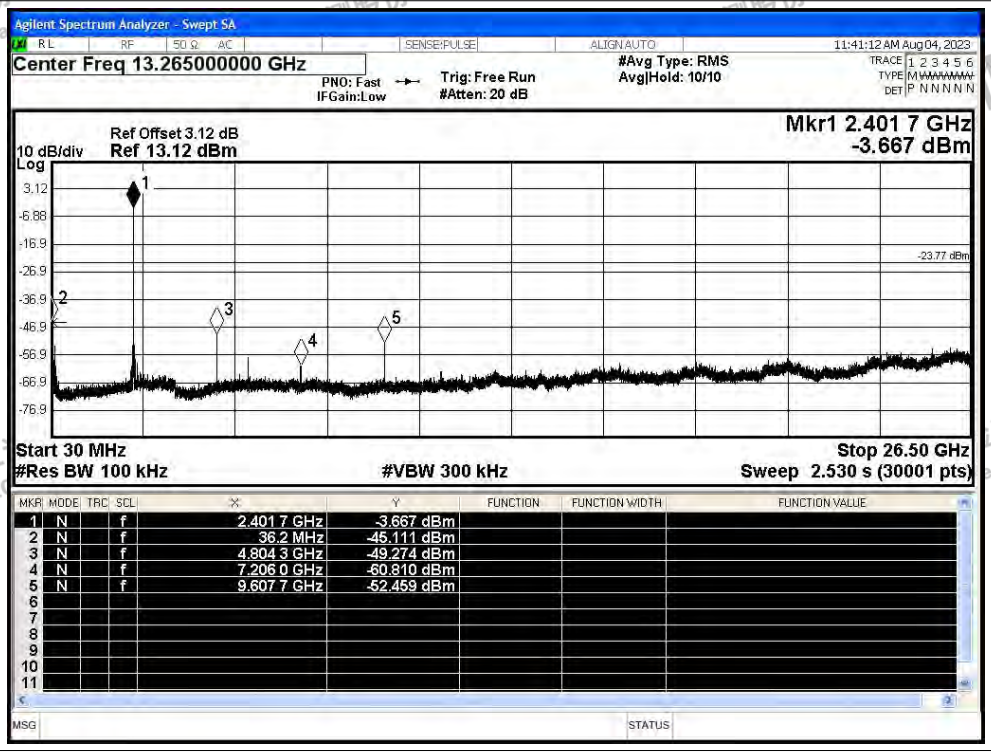
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



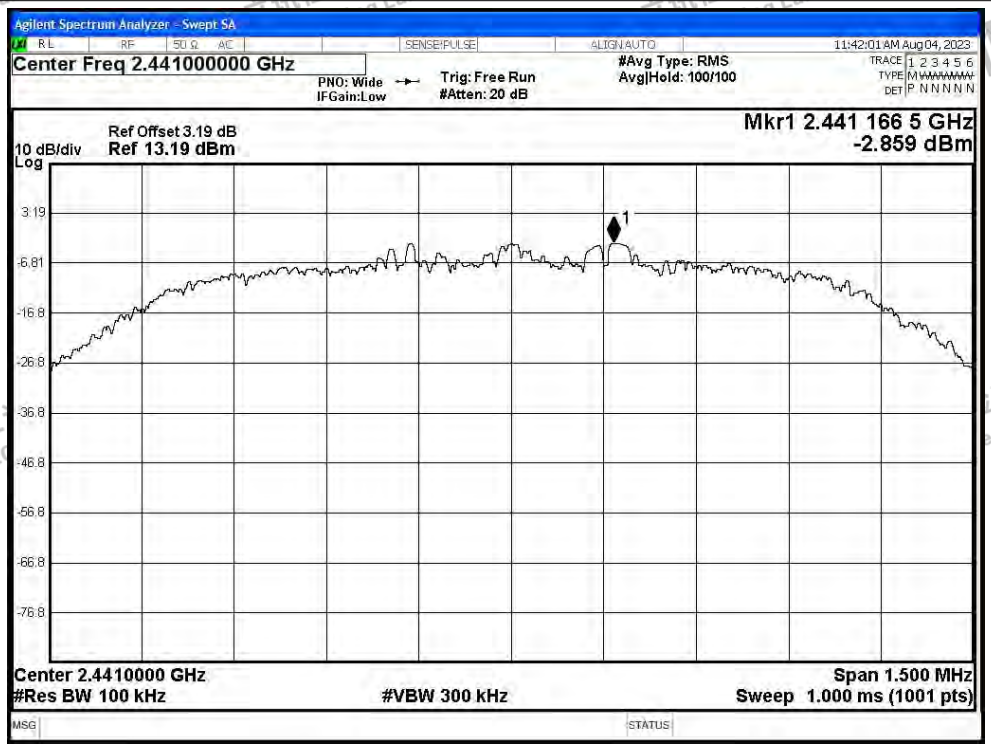
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



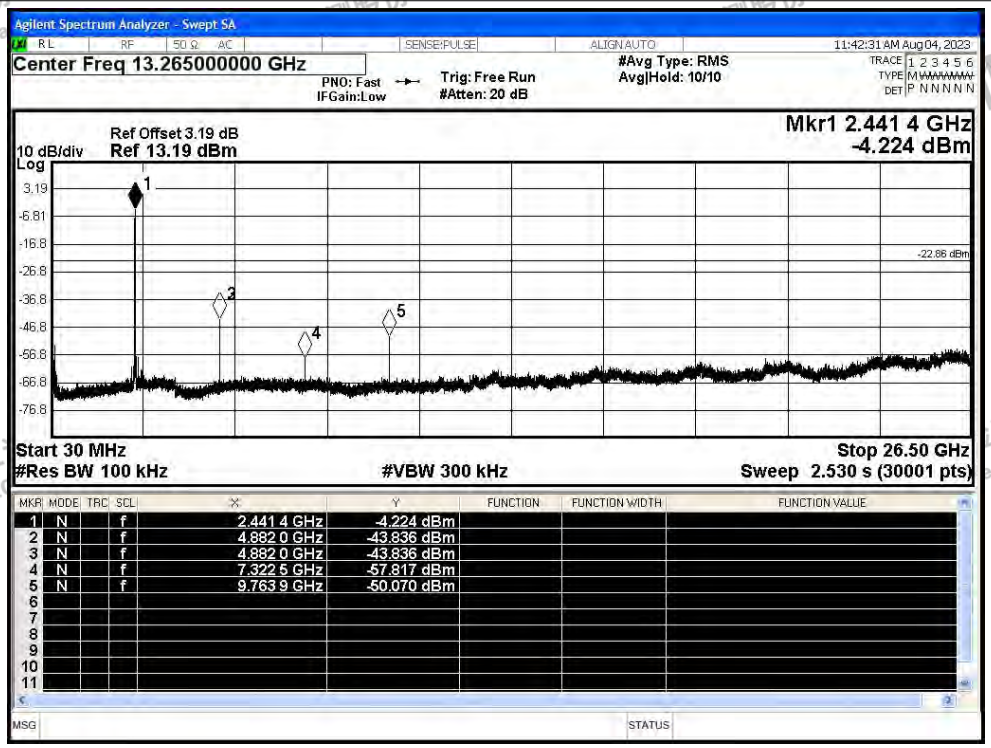
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



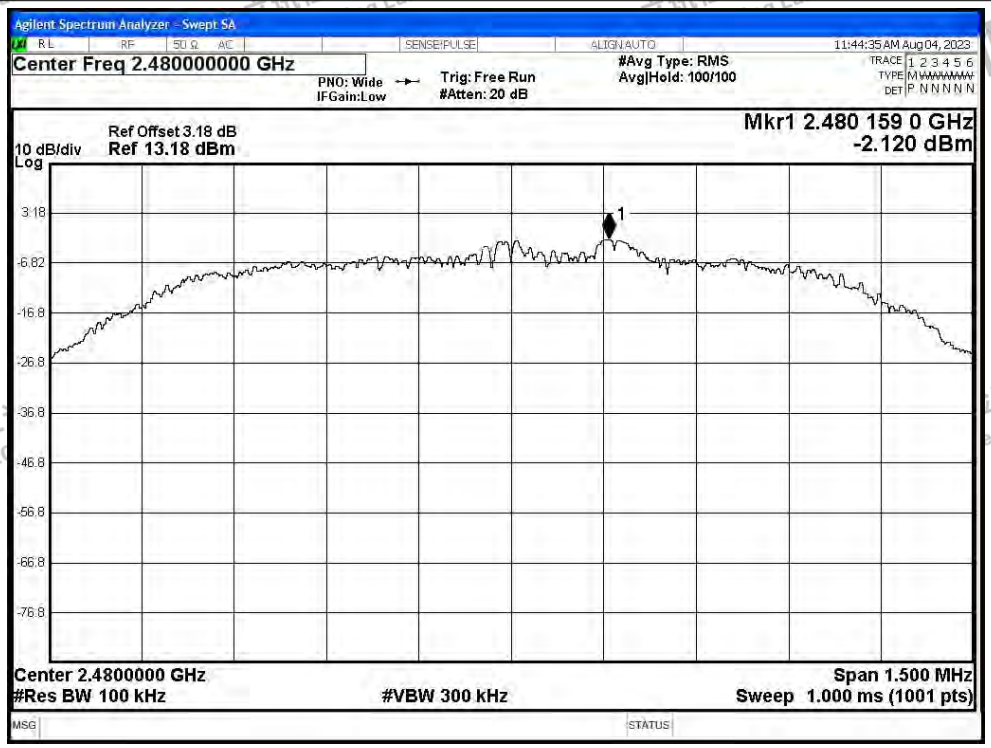
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



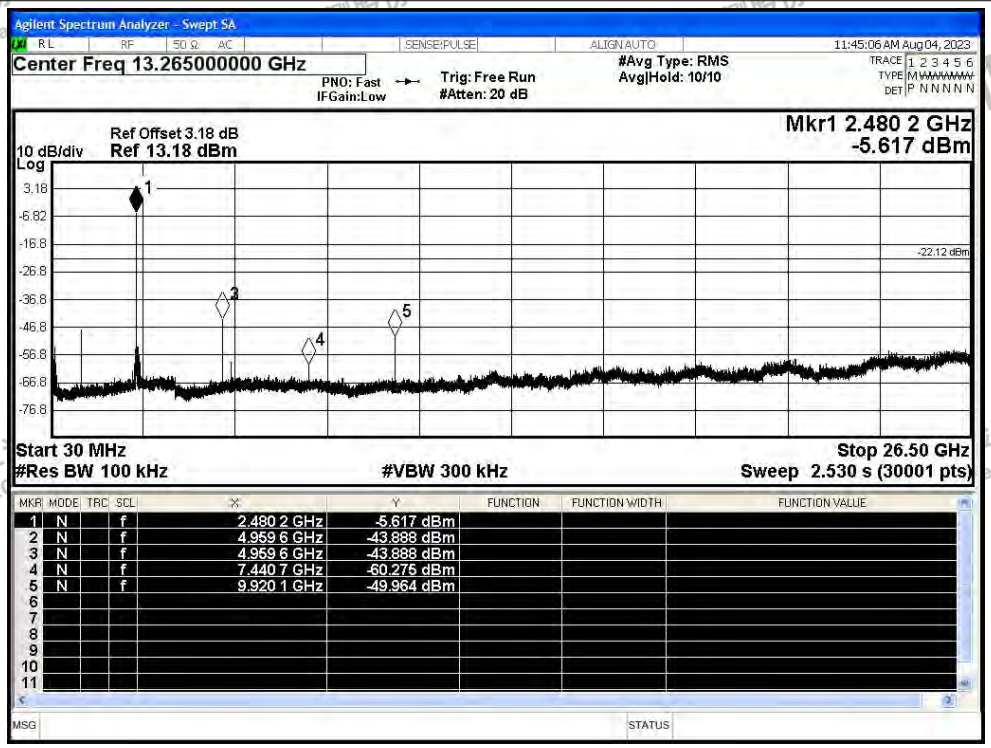
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission

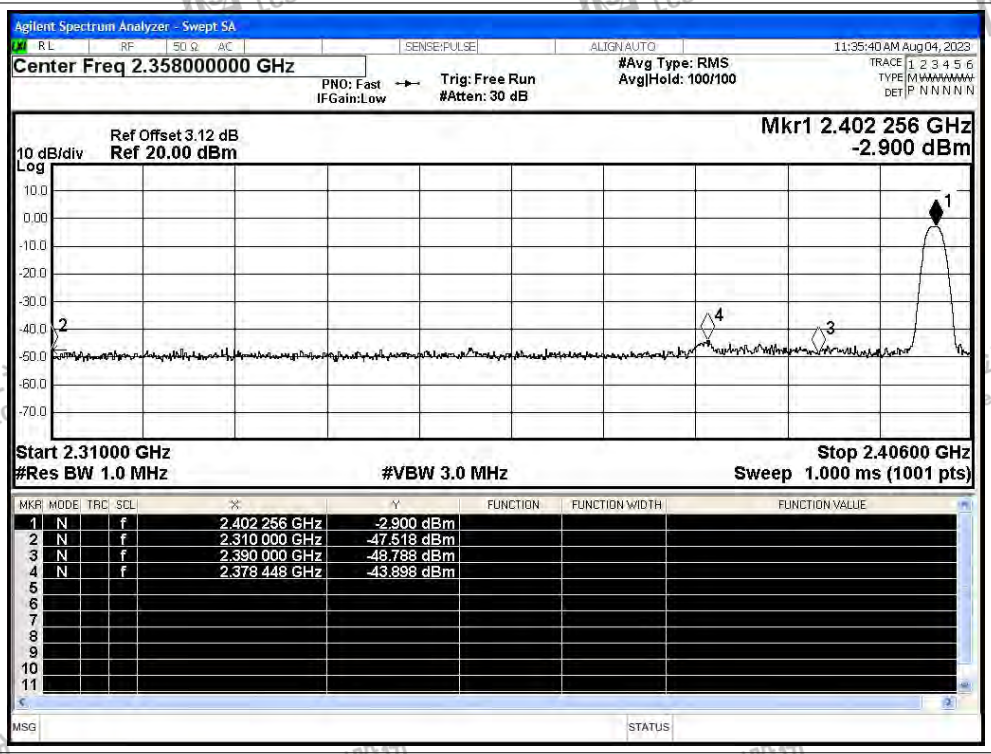


A.8 Restrict Band

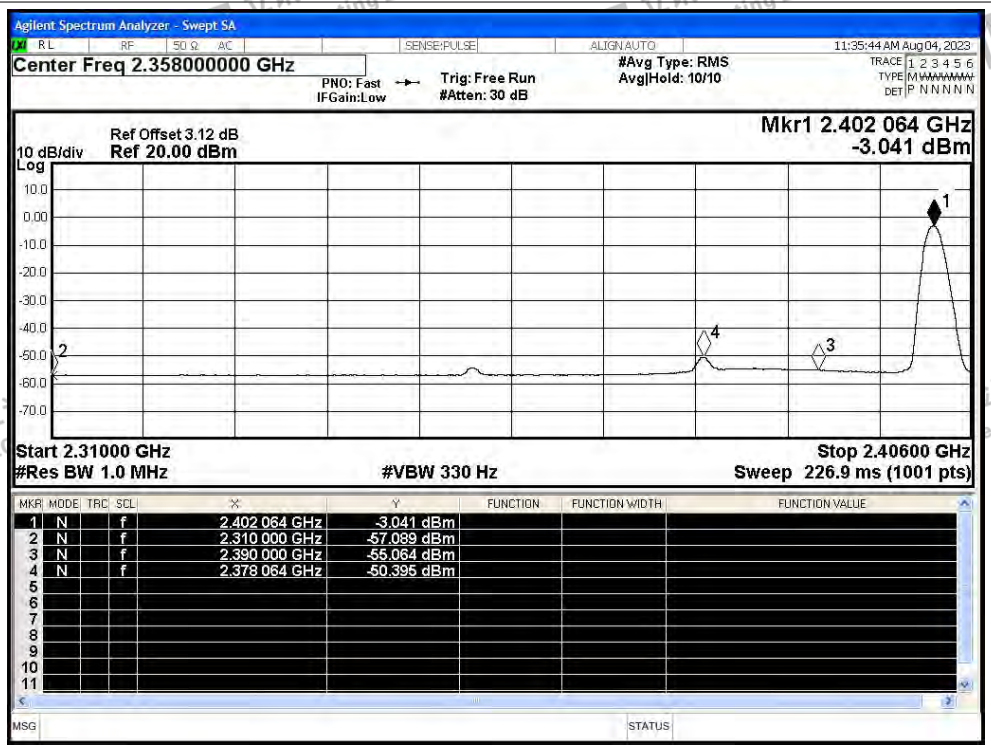
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-47.52	2	49.74	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-57.09	2	40.17	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2378.448	-43.9	2	53.36	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2378.064	-50.4	2	46.86	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-48.79	2	48.47	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-55.06	2	42.2	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-47.9	2	49.36	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-54.16	2	43.1	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2496.64	-44.02	2	53.24	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2498.224	-53.68	2	43.58	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-45.95	2	51.31	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-53.86	2	43.4	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-48.78	2	48.48	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-57.06	2	40.2	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2378.64	-44.09	2	53.17	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2377.968	-51.67	2	45.59	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-47.44	2	49.82	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-55.04	2	42.22	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-48.04	2	49.22	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-54	2	43.26	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2492.08	-44.08	2	53.18	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2499.904	-53.67	2	43.59	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-47.71	2	49.55	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-53.73	2	43.53	Average	54	Pass

Test Graphs

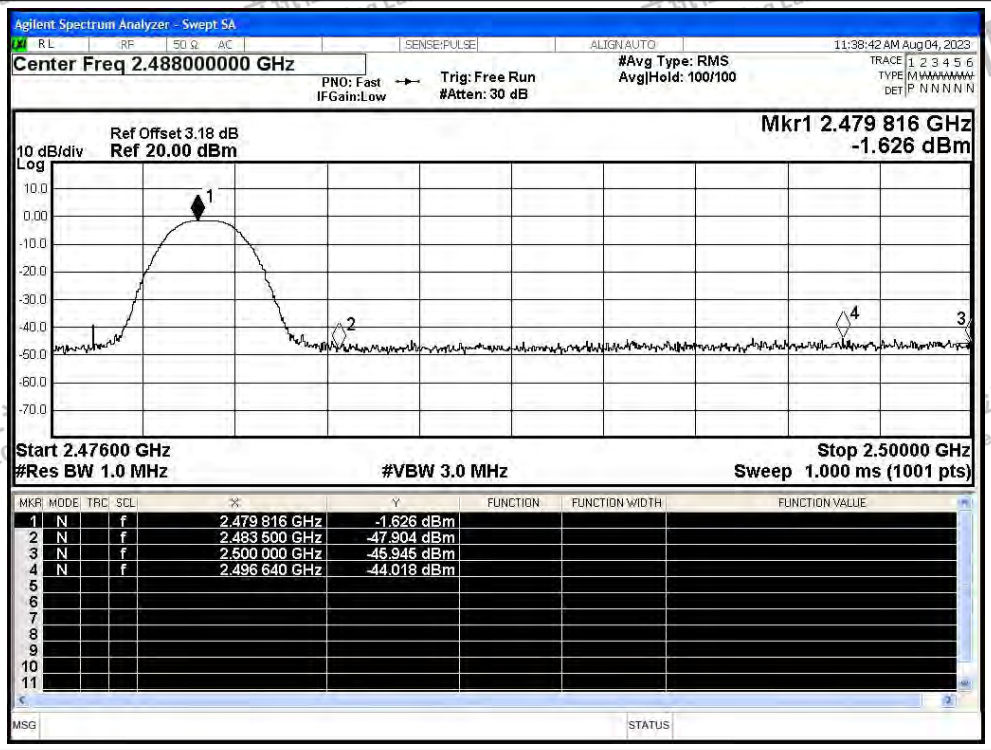
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak



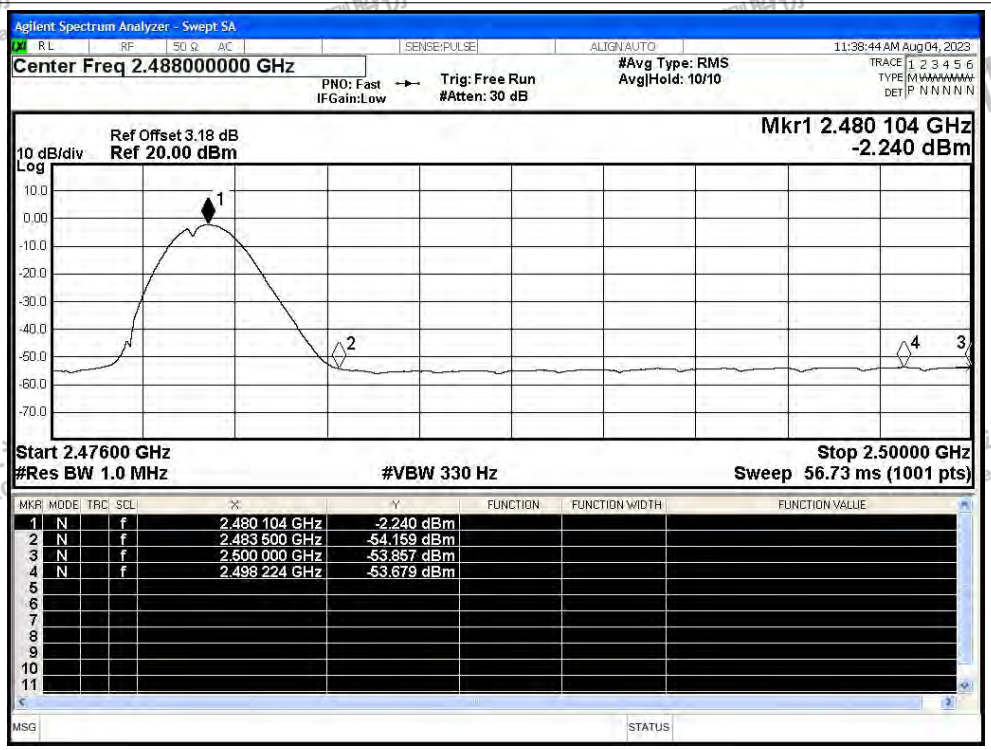
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average



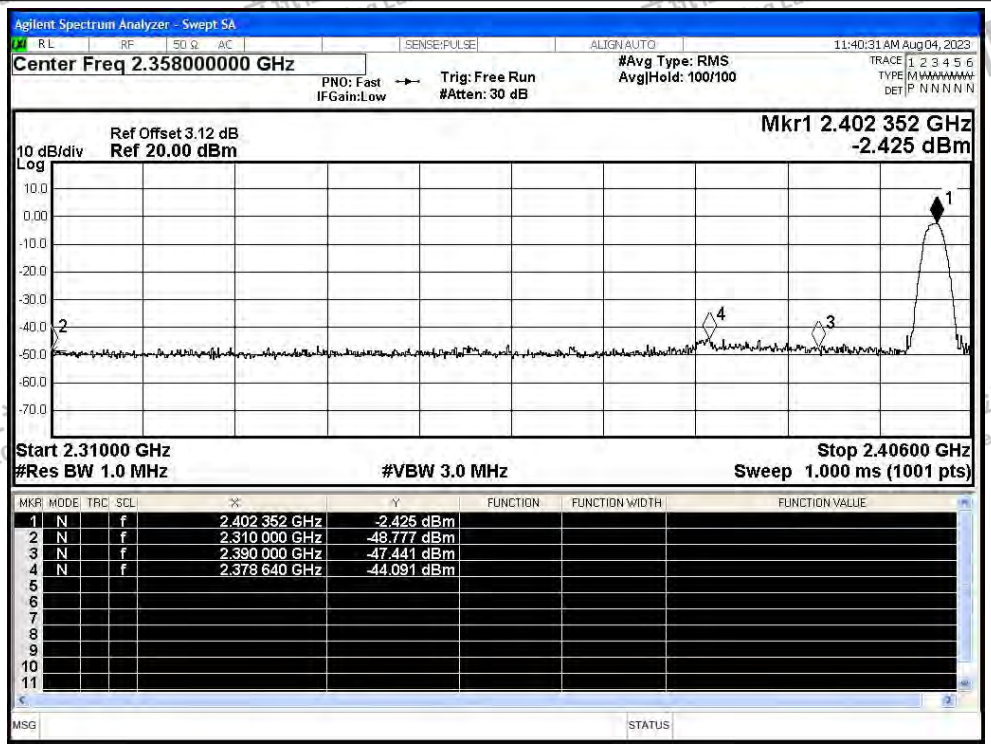
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak



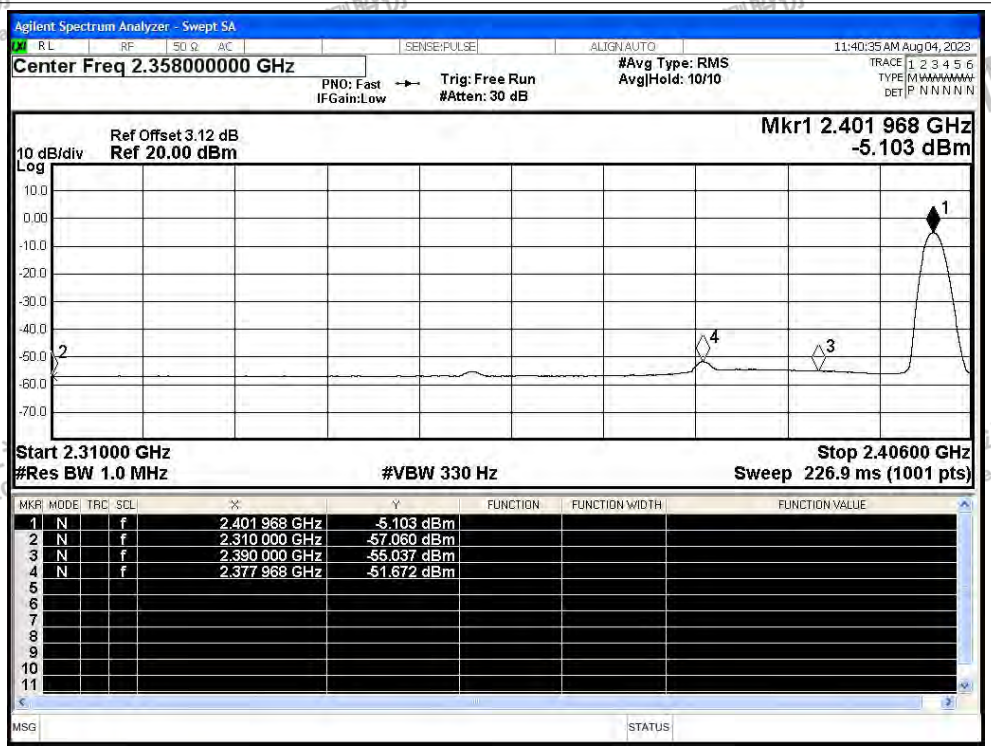
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average



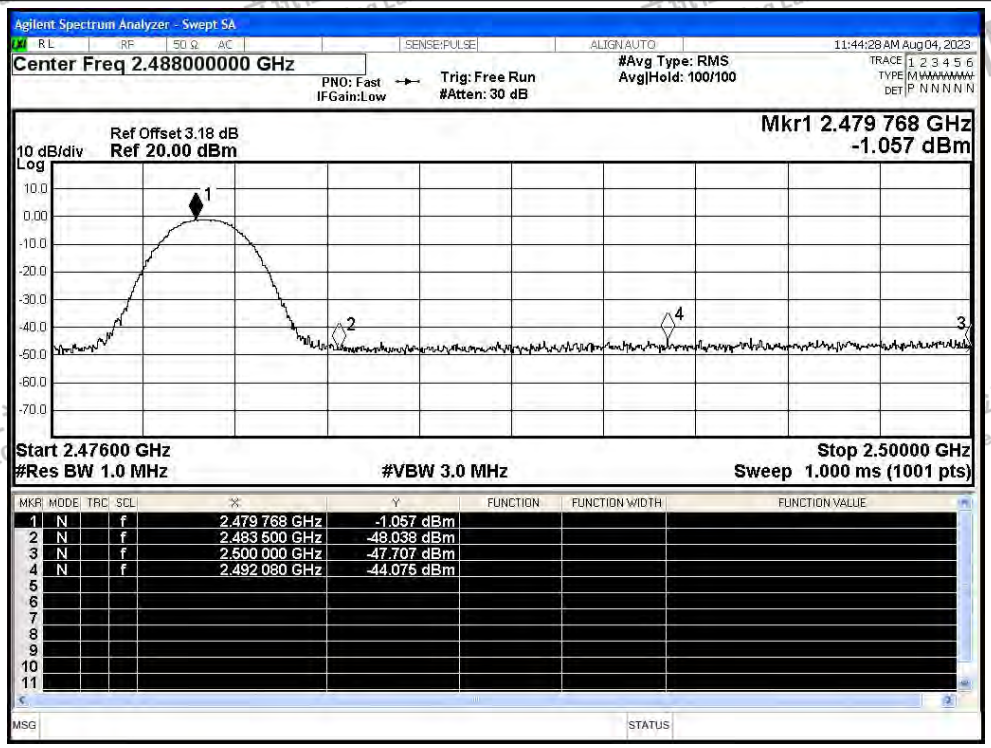
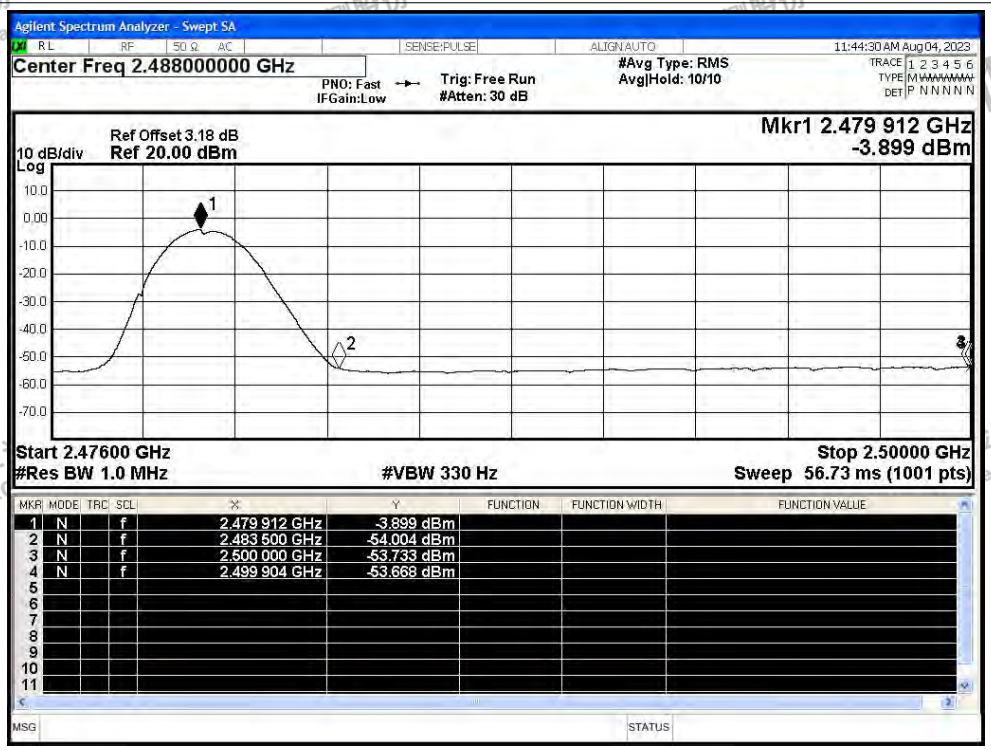
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak



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