Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Helmet Bluetooth Headset

Test Model: A128

Environmental Conditions

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

A.1 -20dB Bandwidth

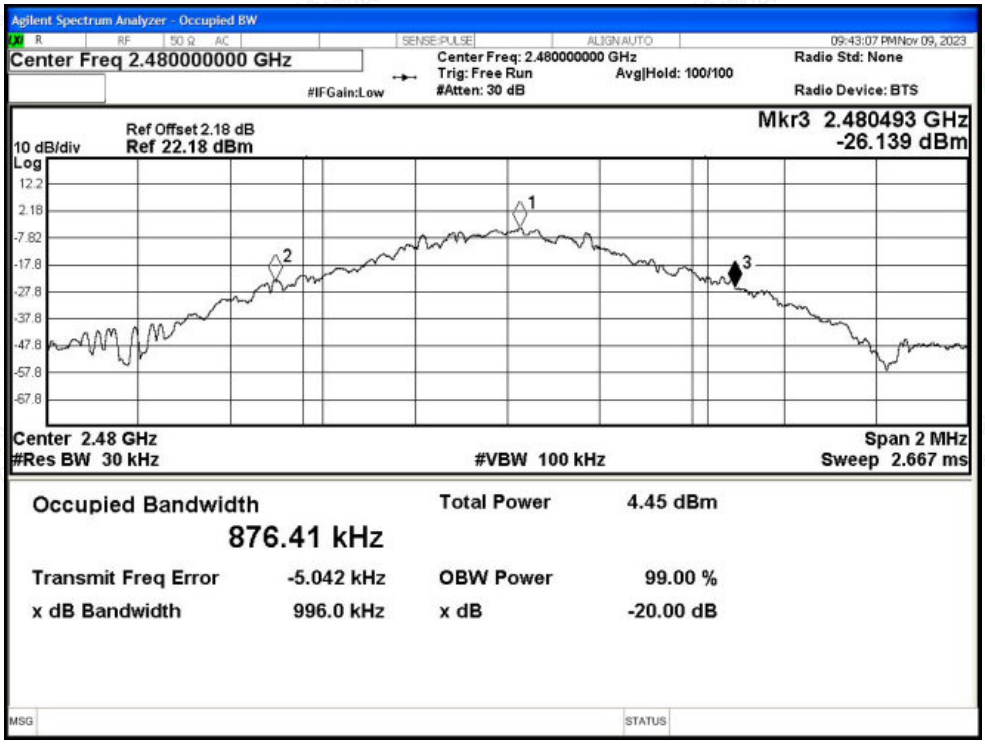
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	1.014	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.948	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.996	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.284	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.285	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.286	N/A	Pass

Test Graphs

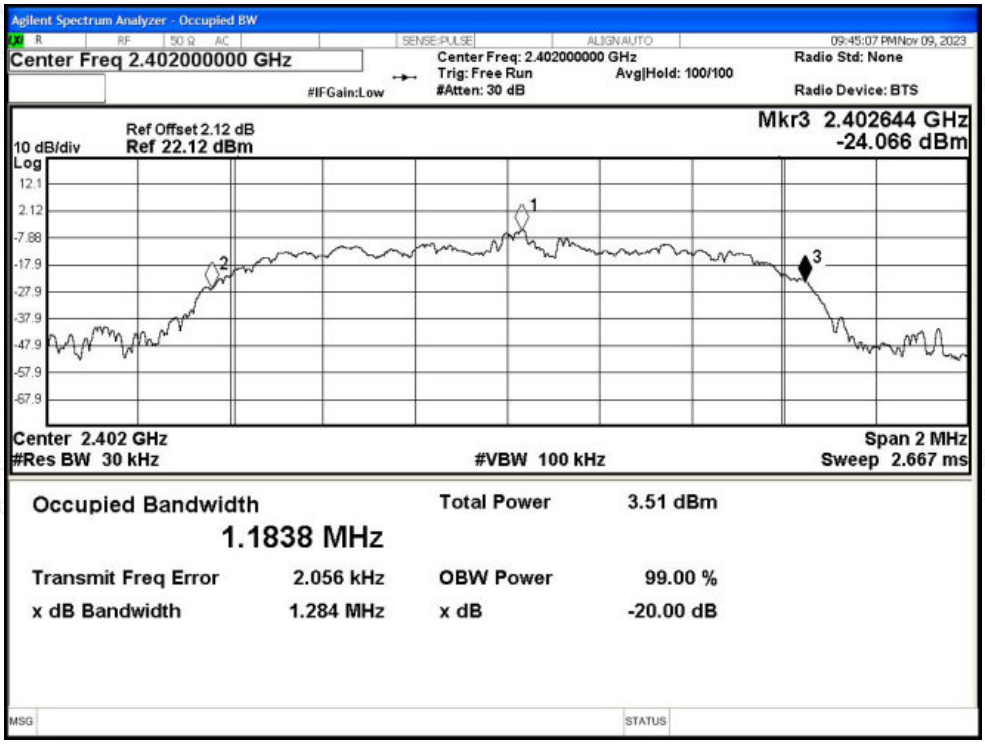
-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

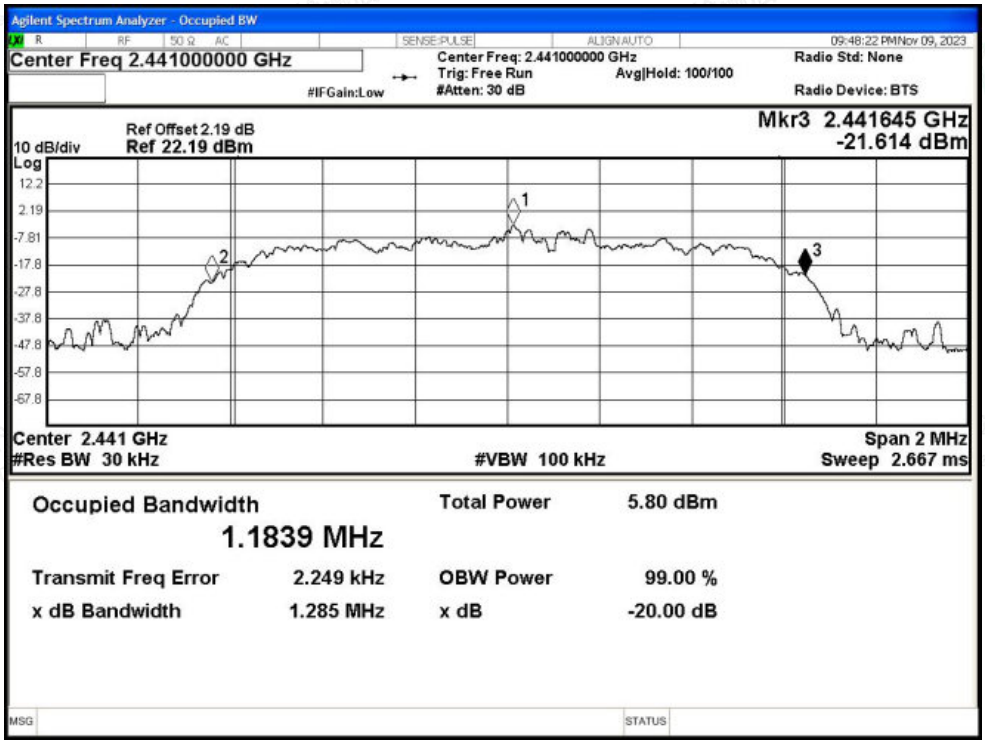
-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



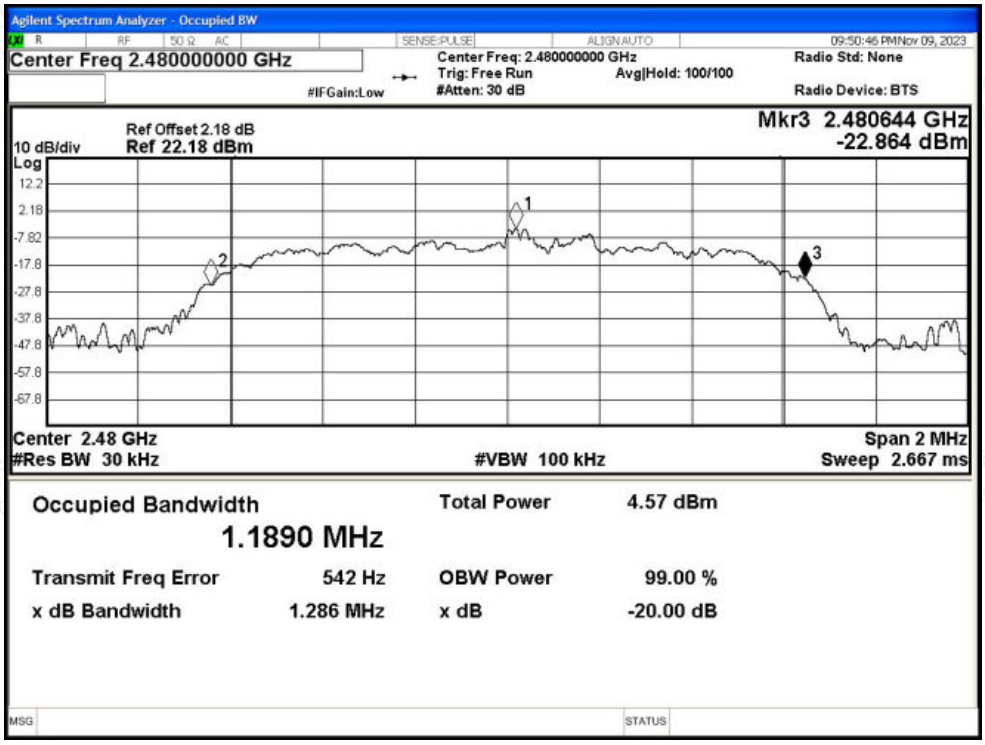
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

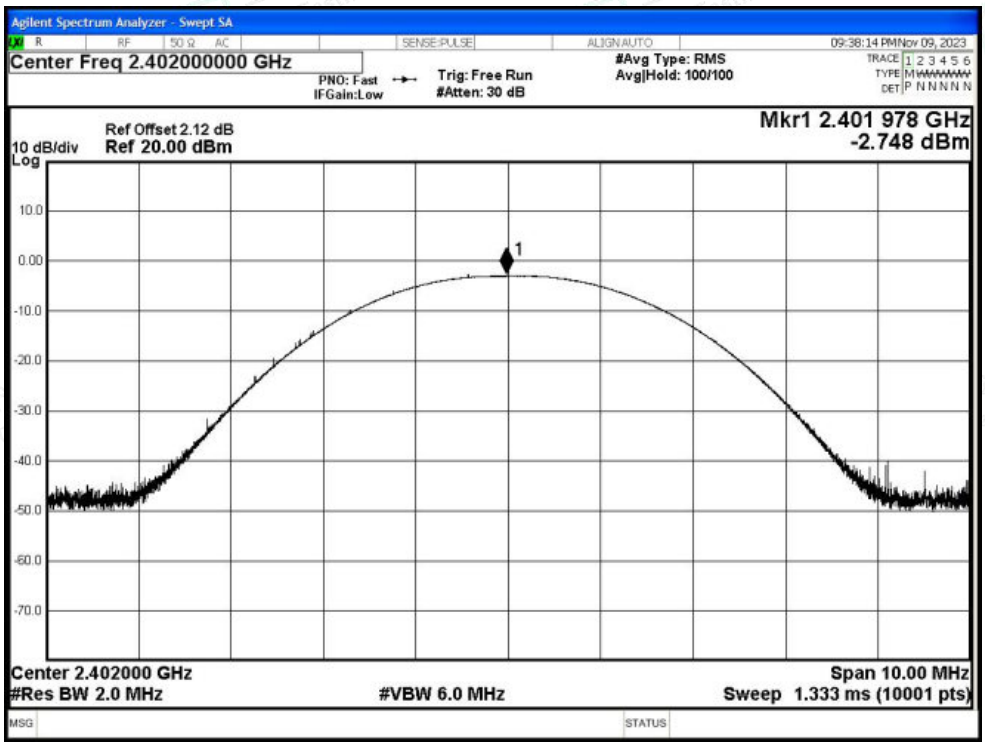


A.2 Maximum Conducted Output Power

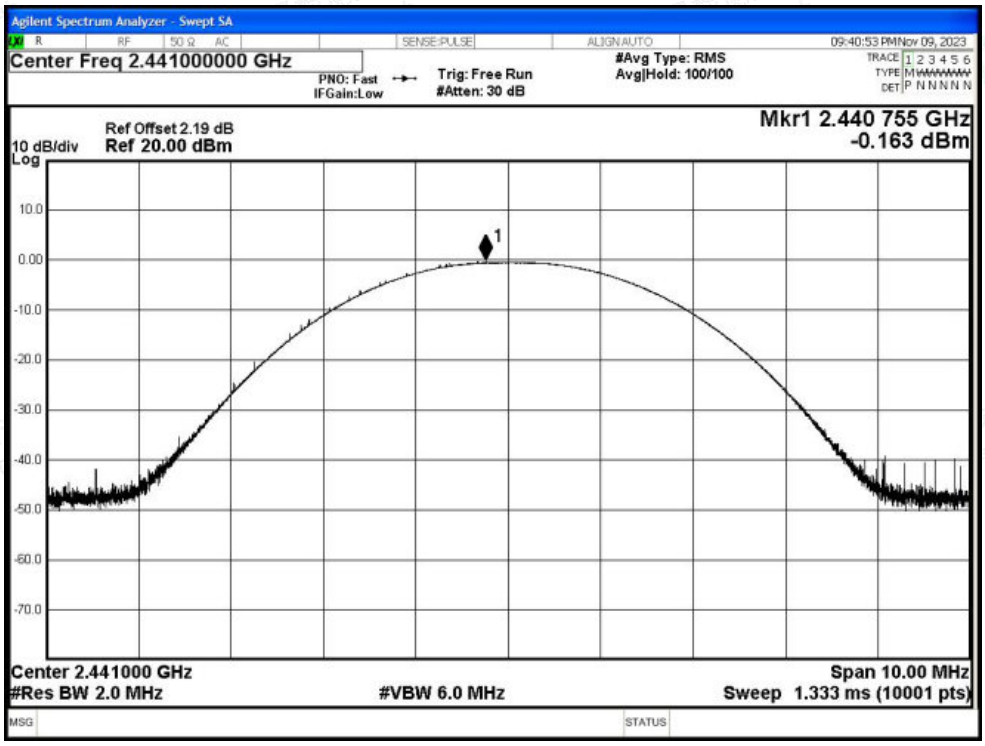
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	-2.75	21	Pass
NVNT	1-DH5	2441	Ant1	-0.16	21	Pass
NVNT	1-DH5	2480	Ant1	-1.83	21	Pass
NVNT	2-DH5	2402	Ant1	-0.86	21	Pass
NVNT	2-DH5	2441	Ant1	1.59	21	Pass
NVNT	2-DH5	2480	Ant1	0.2	21	Pass

Test Graphs

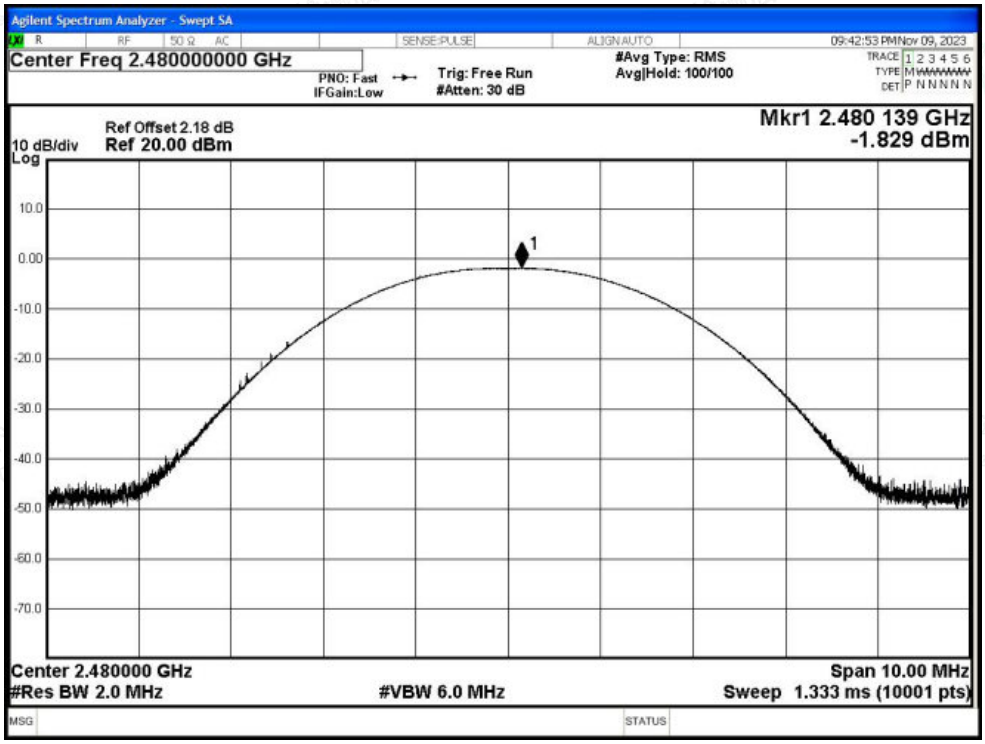
Power NVNT 1-DH5 2402MHz Ant1



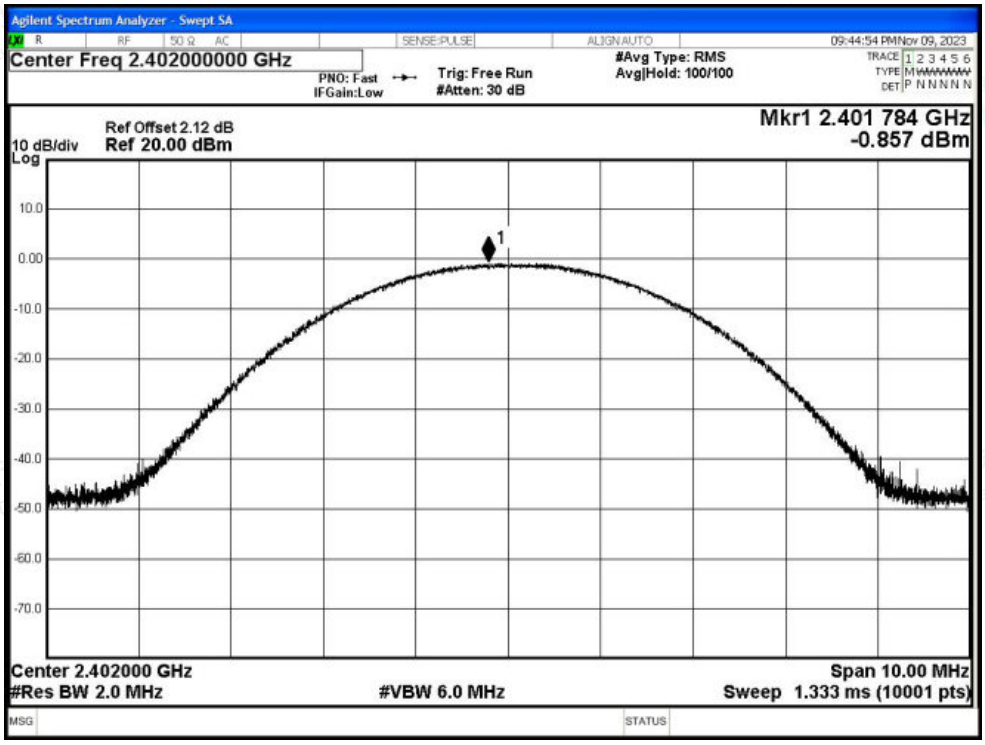
Power NVNT 1-DH5 2441MHz Ant1



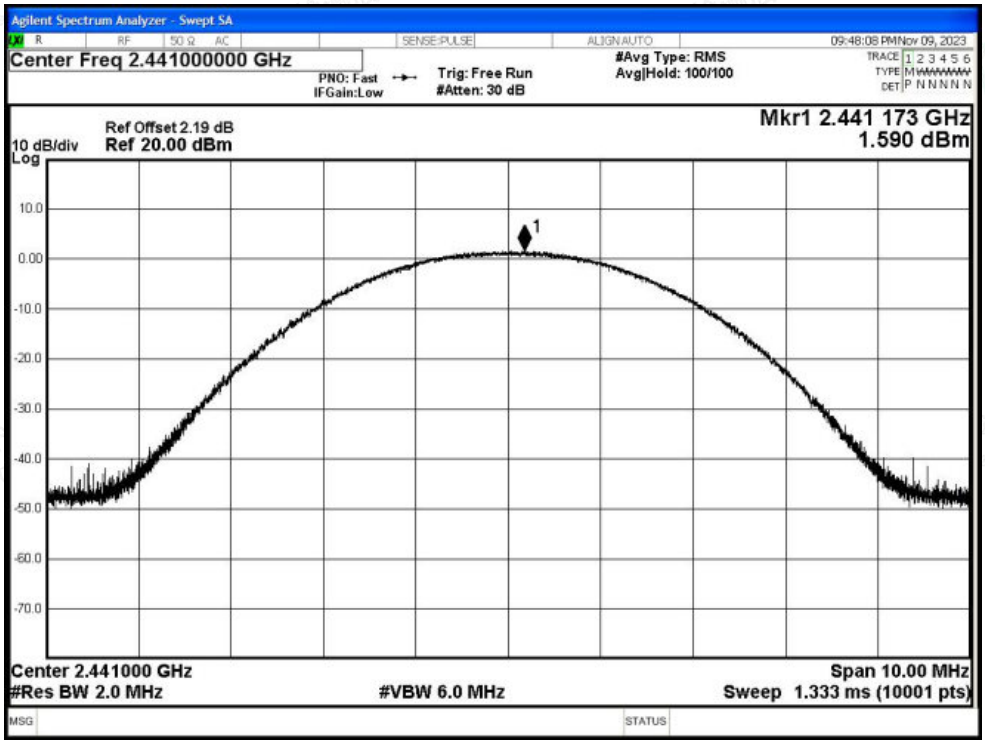
Power NVNT 1-DH5 2480MHz Ant1



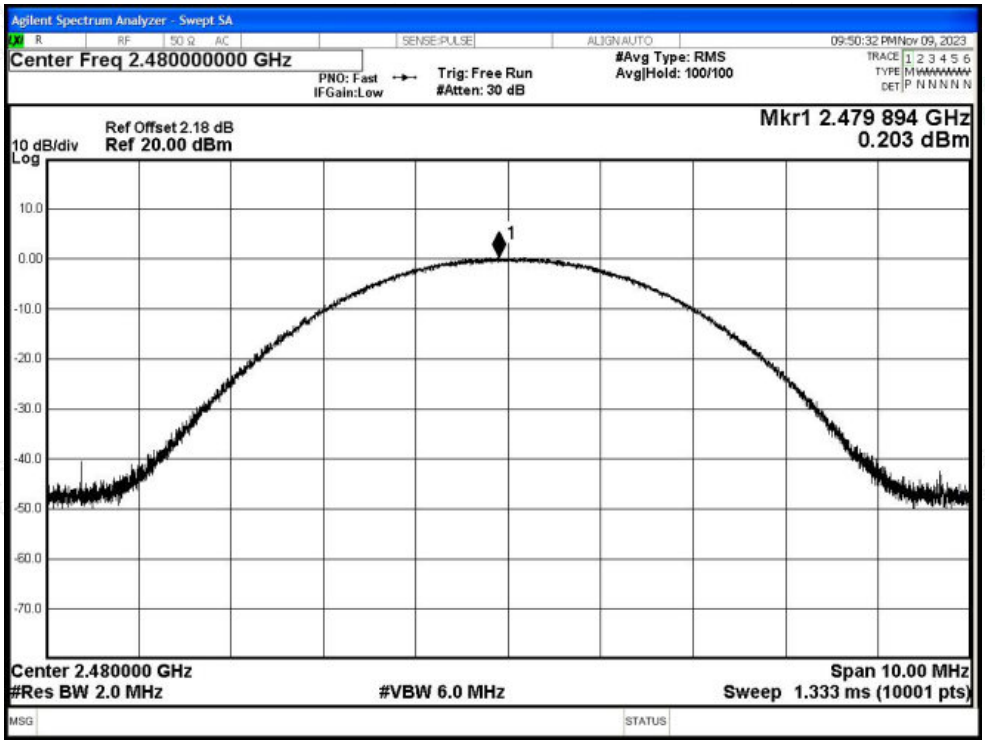
Power NVNT 2-DH5 2402MHz Ant1



Power NVNT 2-DH5 2441MHz Ant1



Power NVNT 2-DH5 2480MHz Ant1

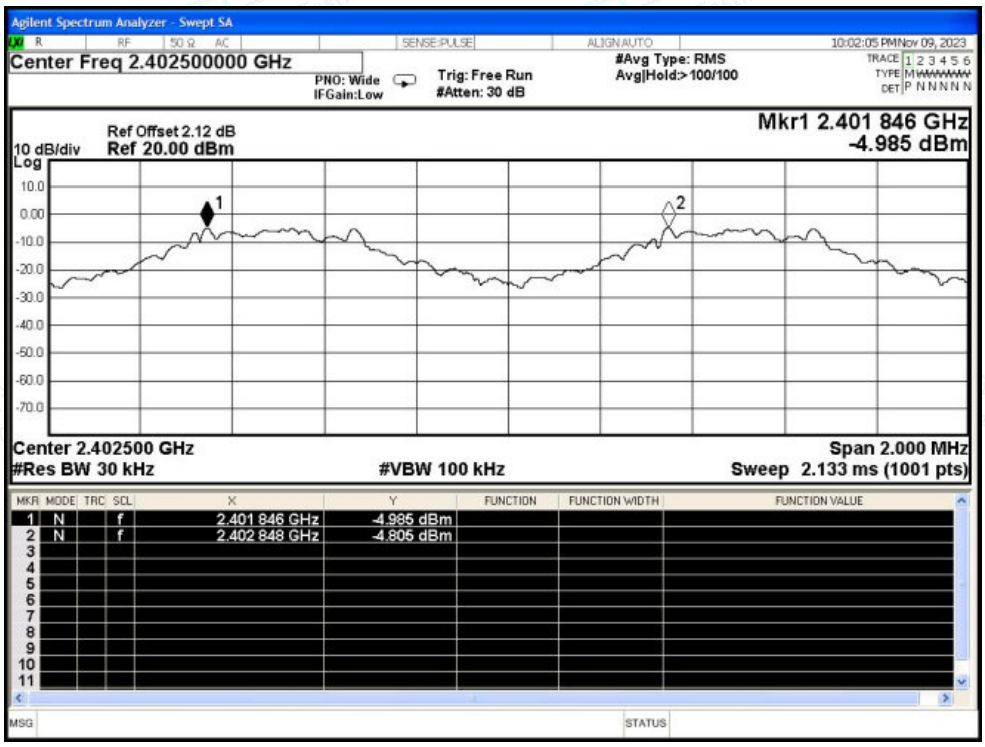


A.3 Carrier Frequencies Separation

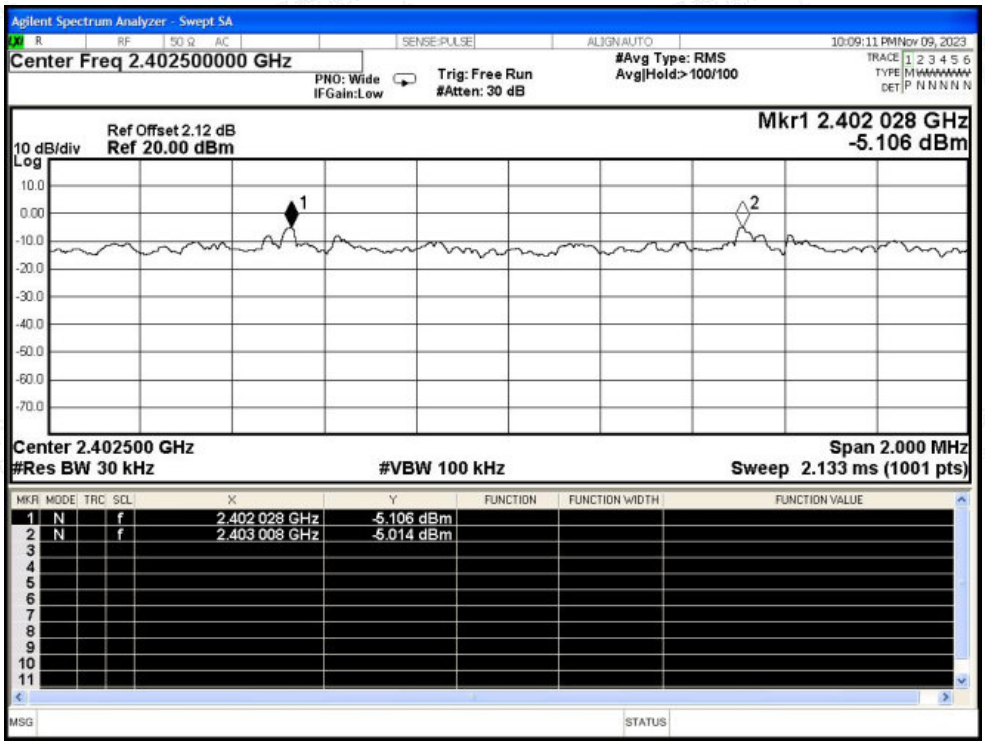
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2401.846	2402.848	1.002	0.676	Pass
NVNT	2-DH5	Ant1	2402.028	2403.008	0.98	0.856	Pass

Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1

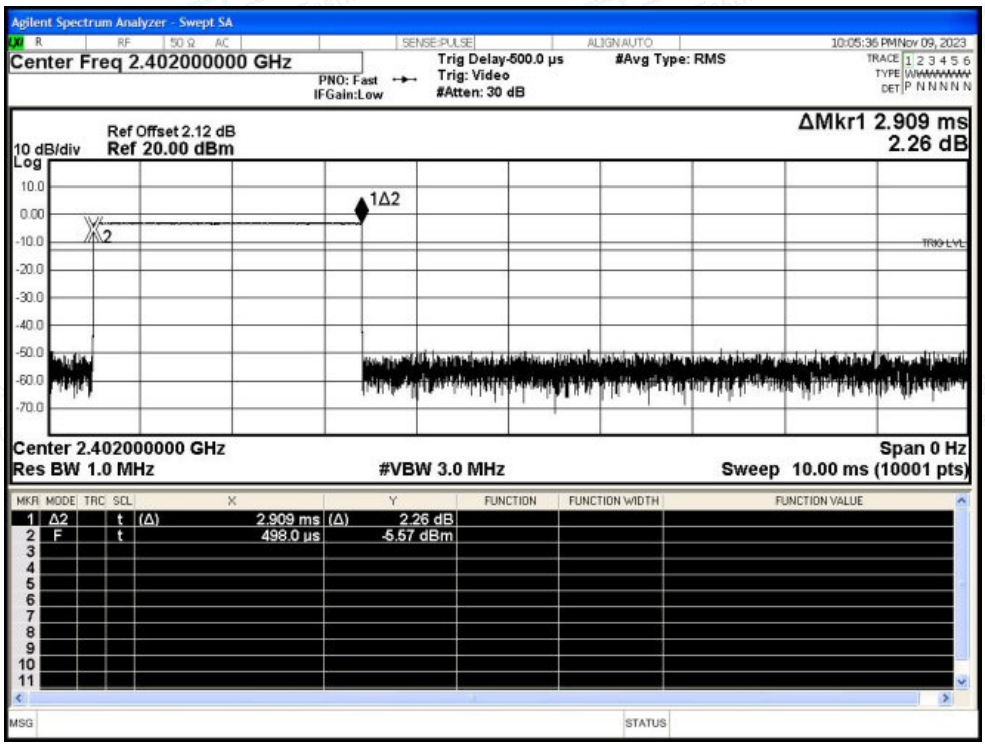


A.4 Dwell Time

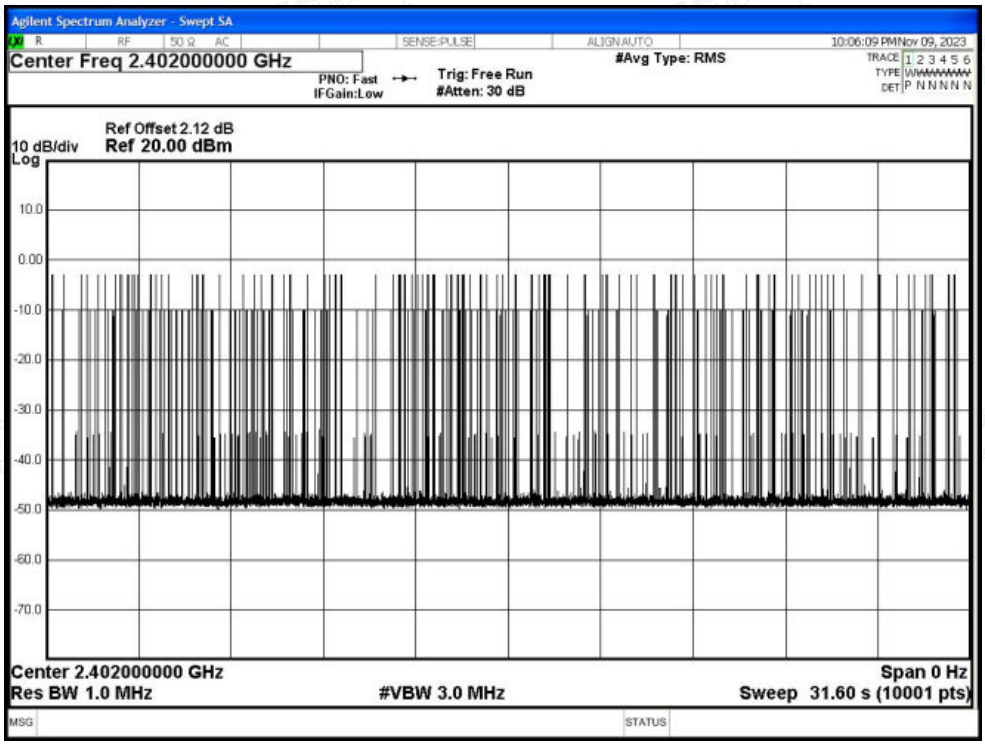
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.909	343.262	118	31600	400	Pass
NVNT	2-DH5	2402	Ant1	1.464	146.4	100	31600	400	Pass

Test Graphs

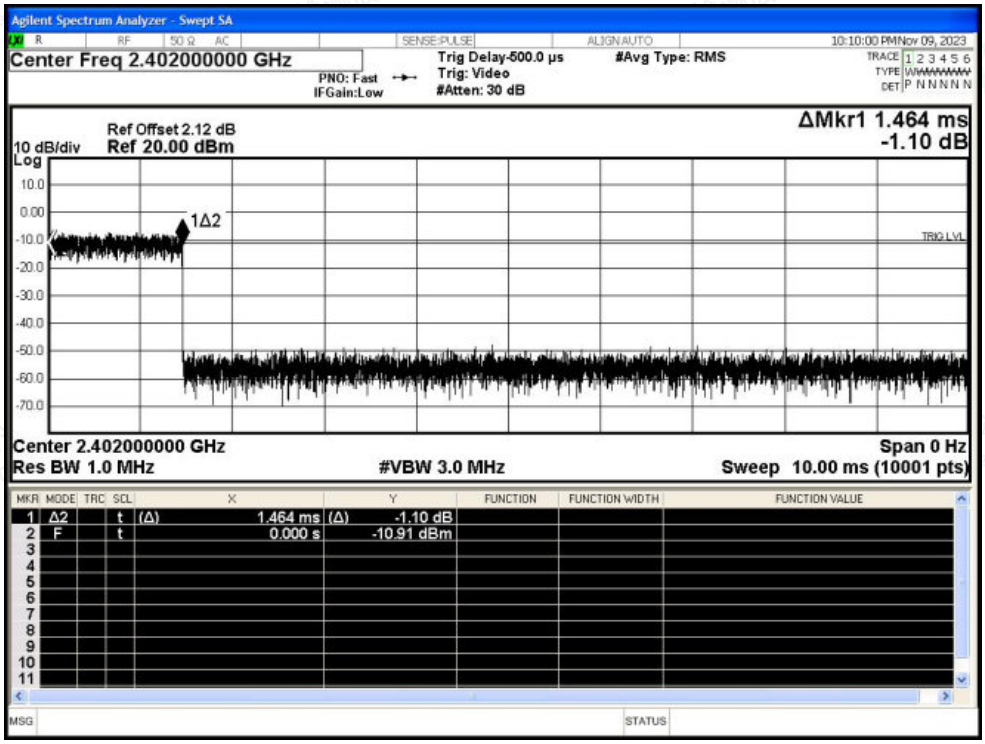
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



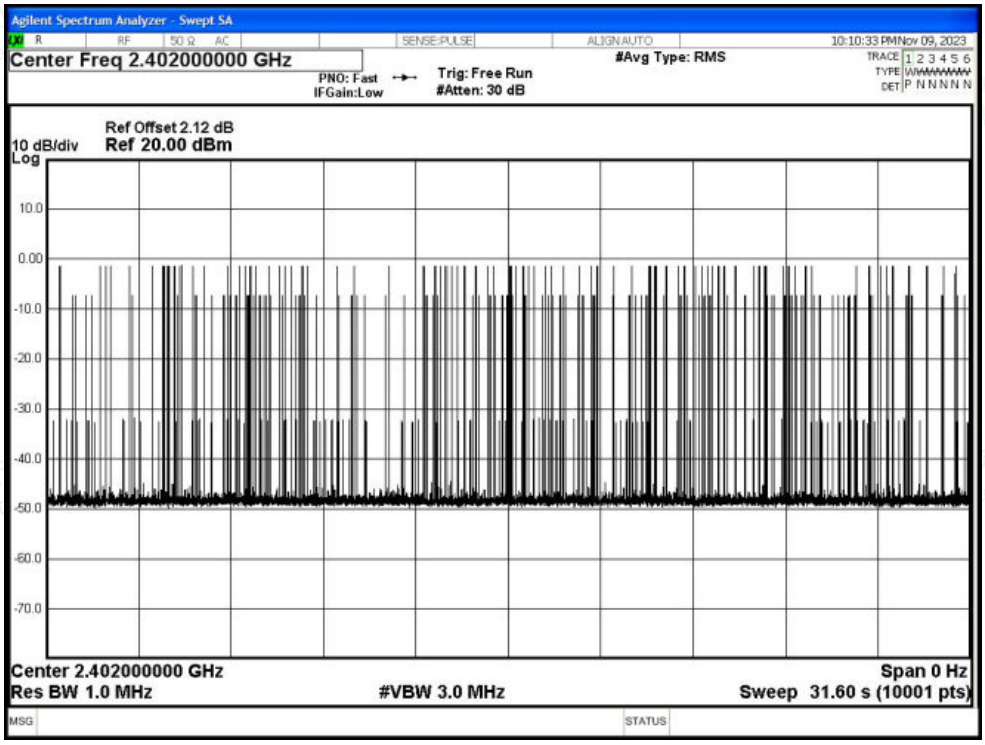
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated

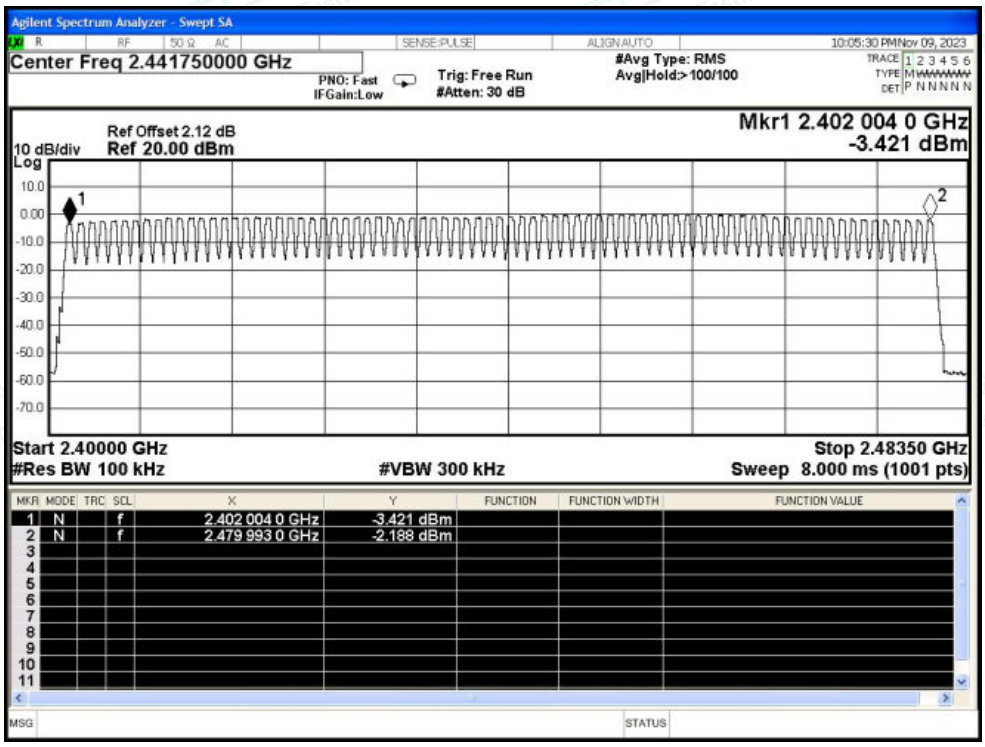


A.5 Number of Hopping Channel

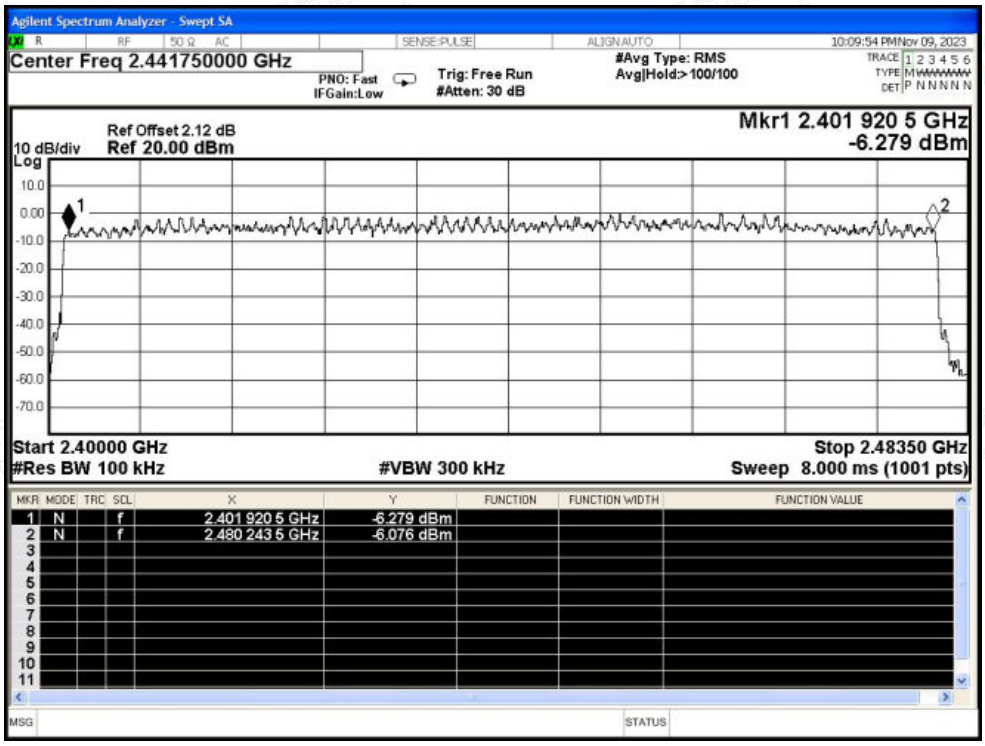
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass

Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1

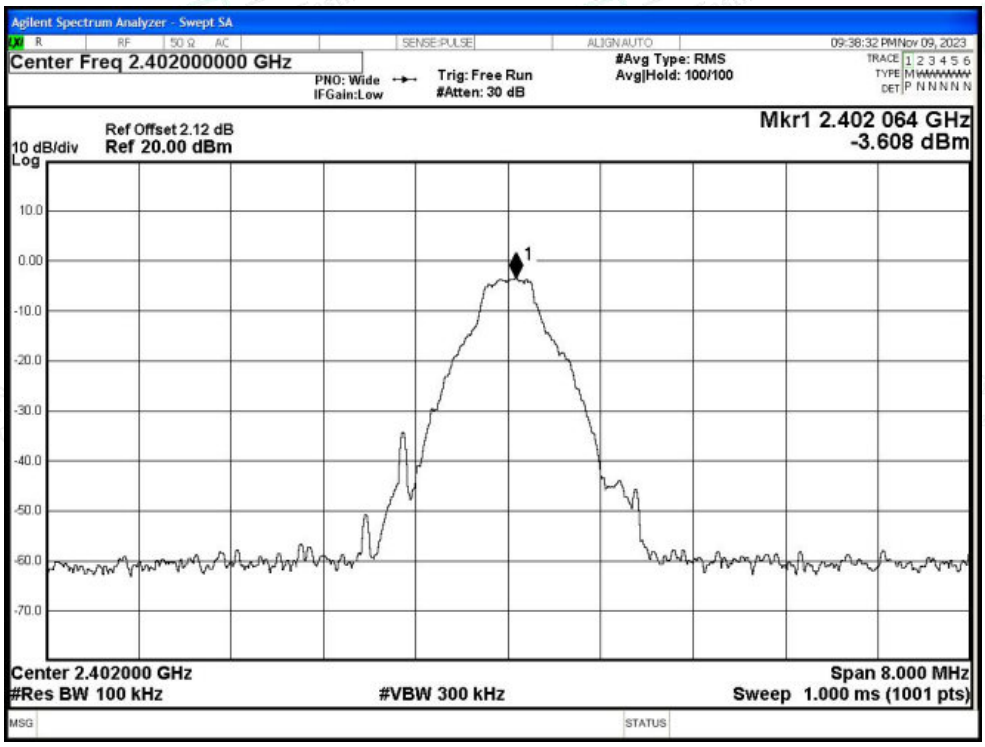


A.6 Band Edge

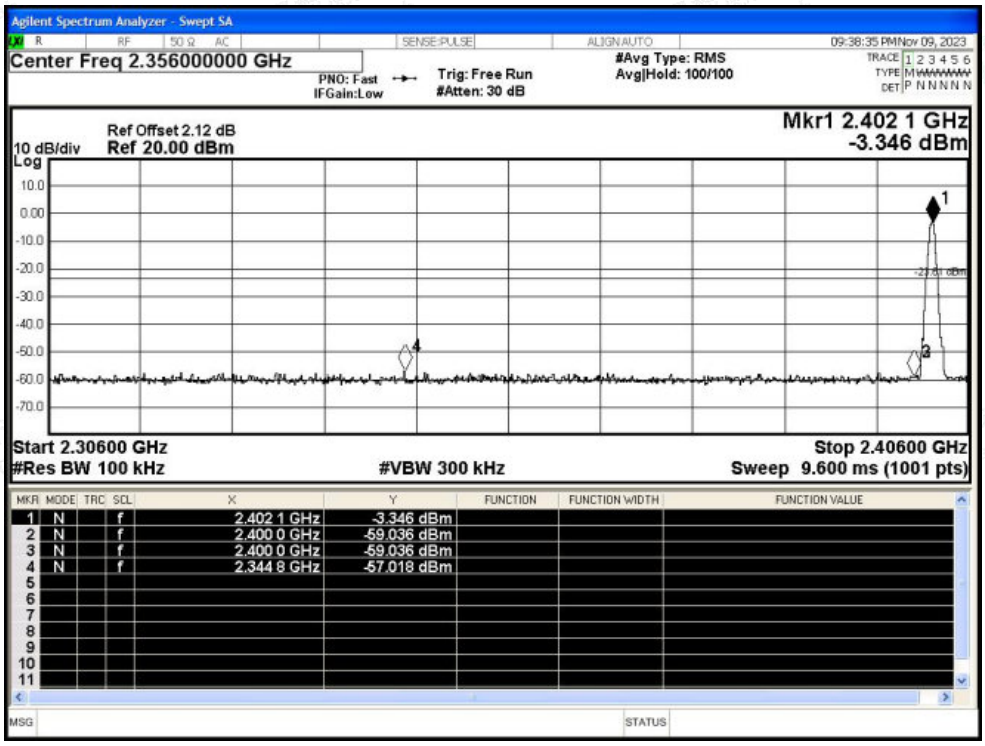
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-53.41	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-54.93	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-49.07	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-55.27	-20	Pass

Test Graphs

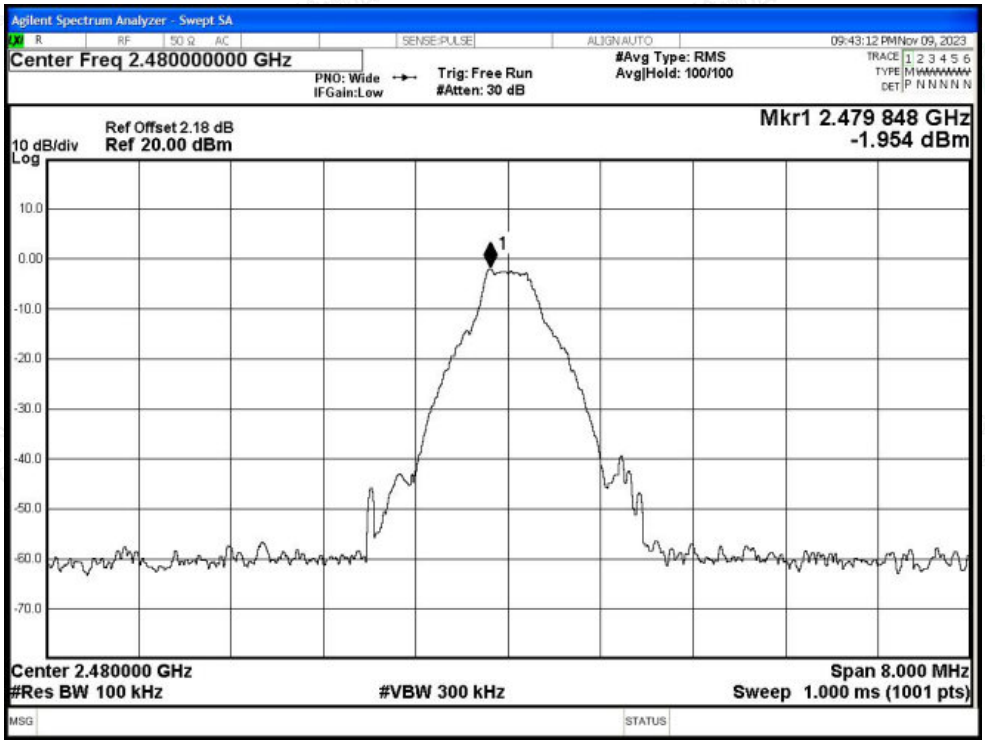
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



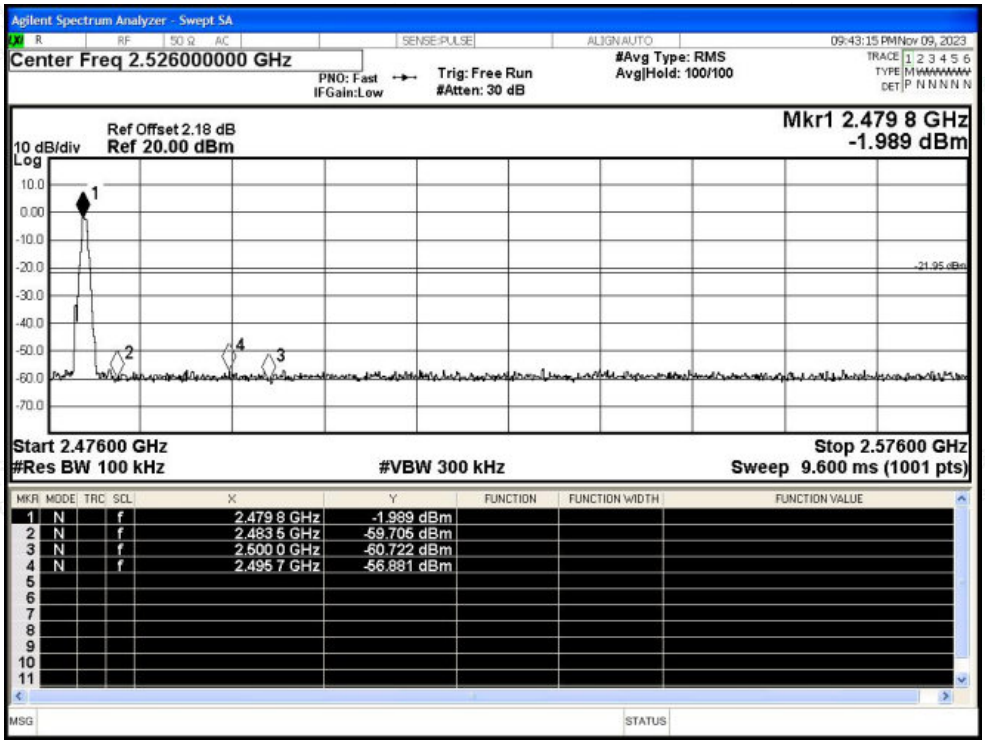
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



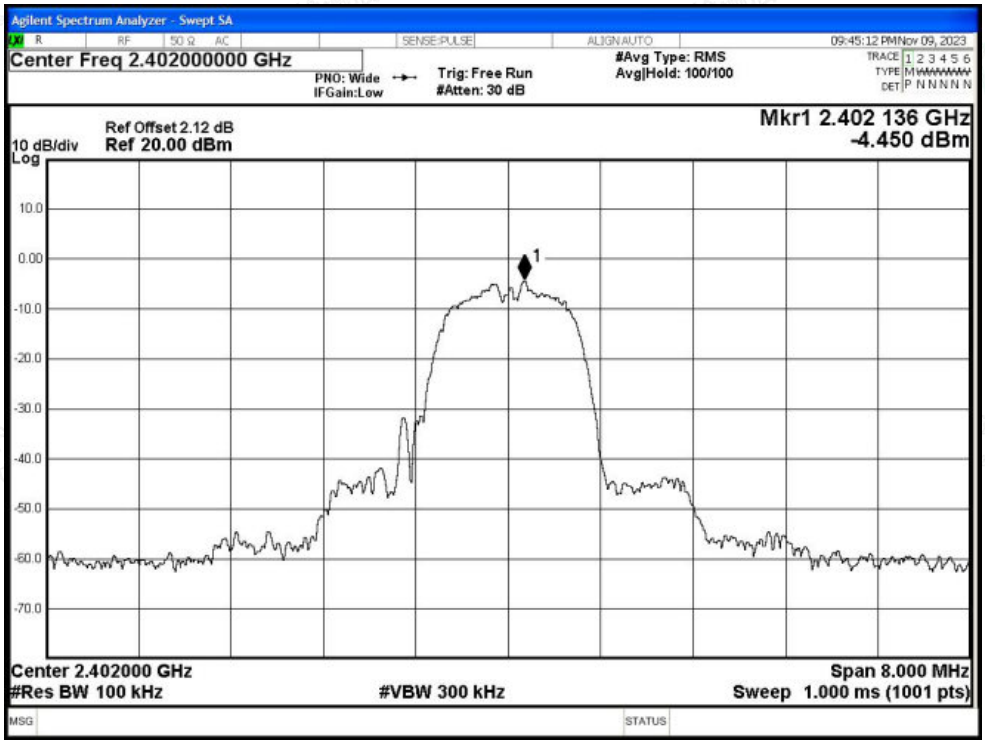
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



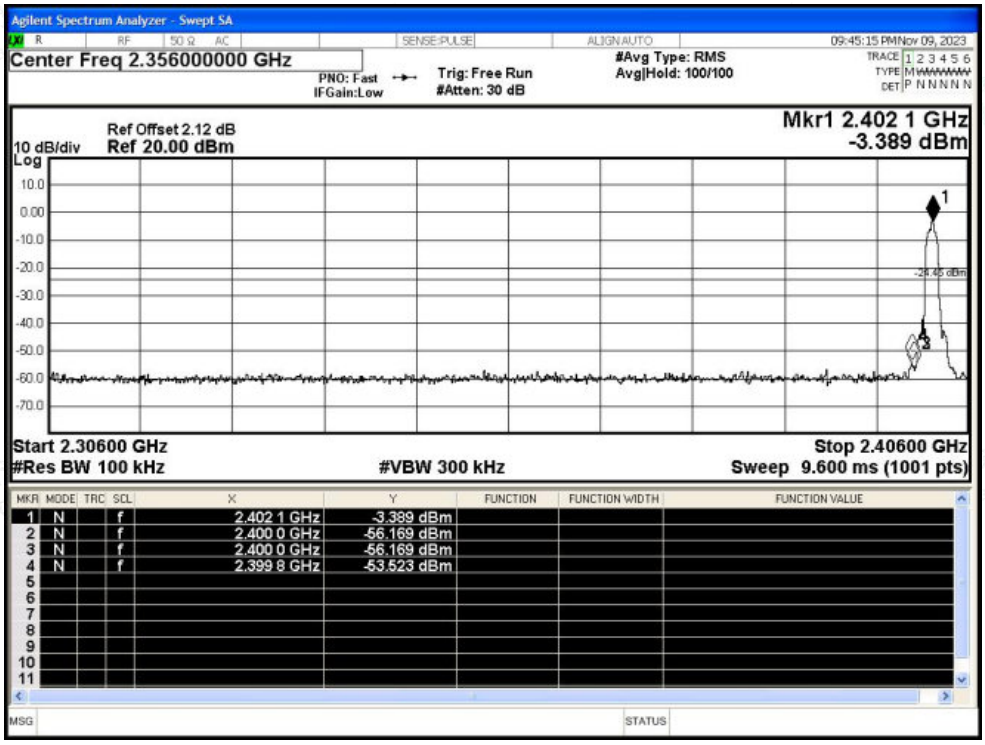
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



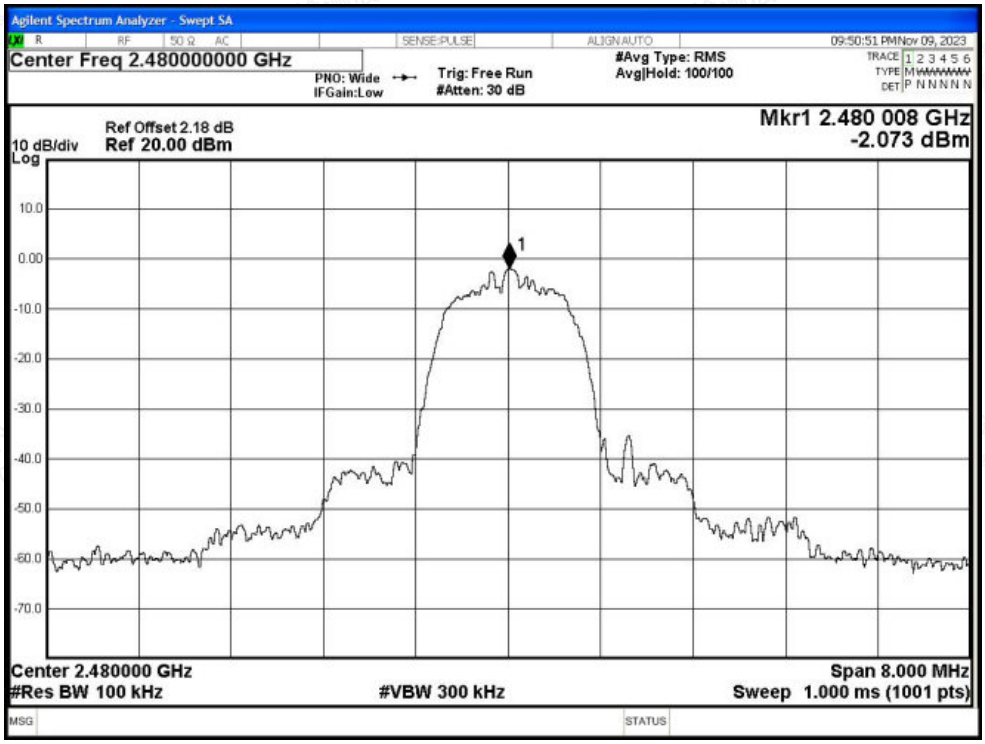
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



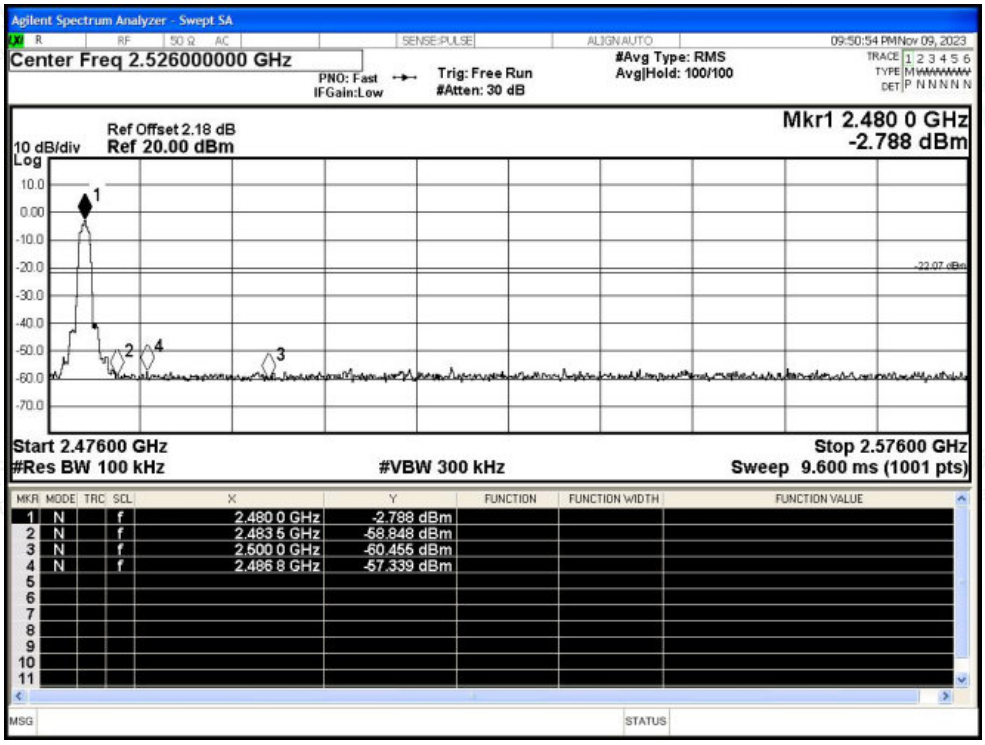
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission



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



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

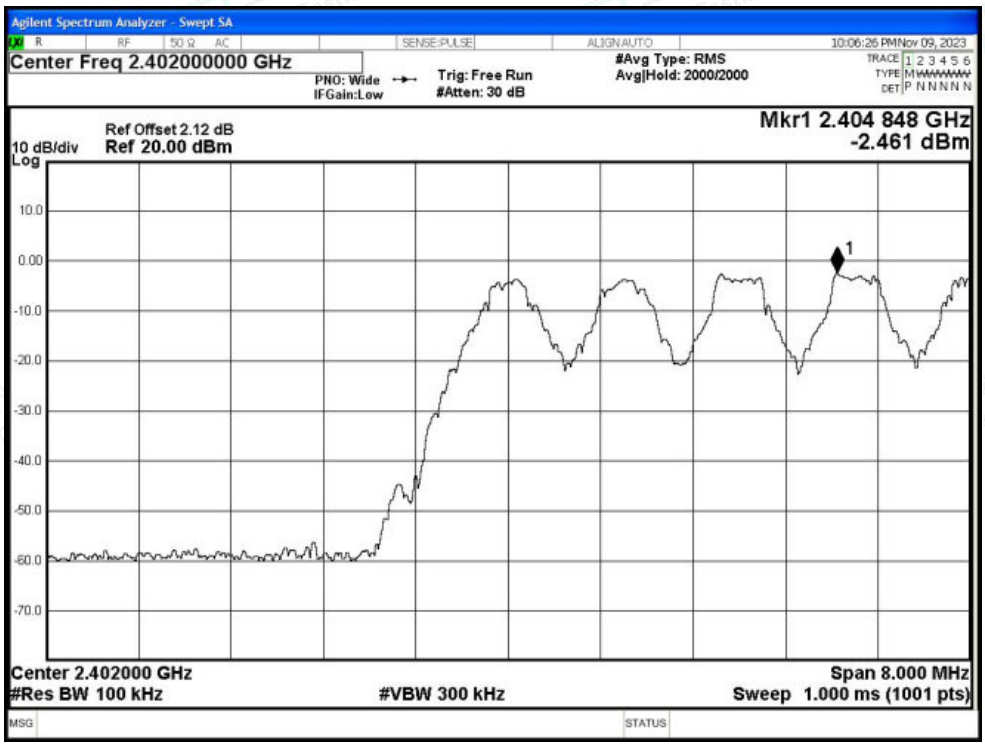


(Hopping)

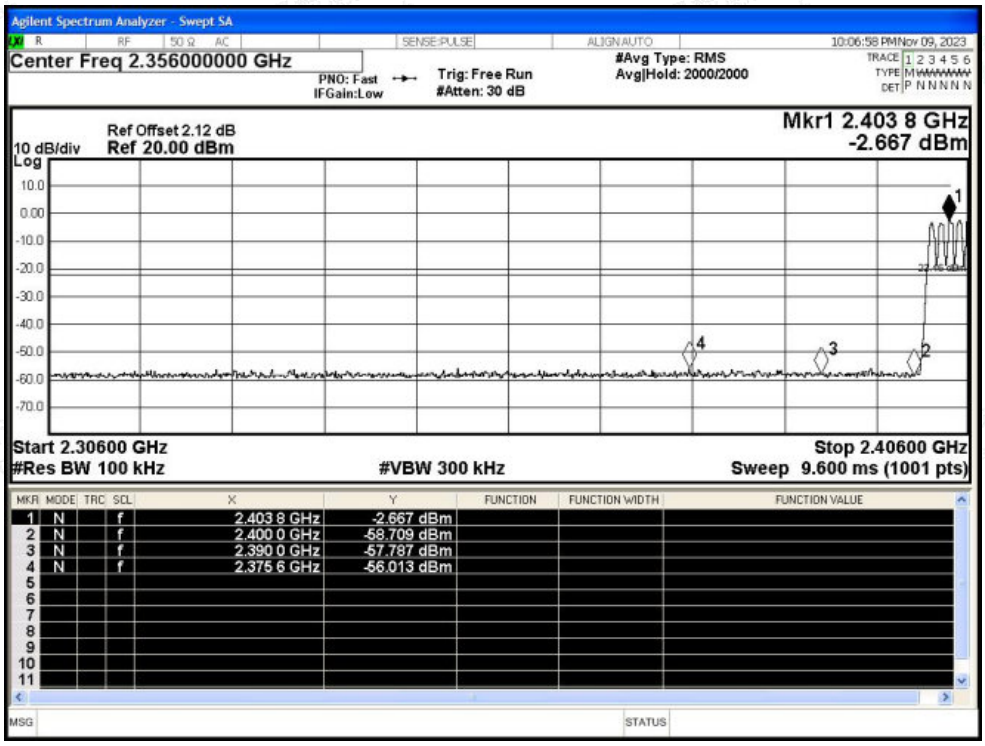
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-53.55	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-54.26	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-52.96	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-54	-20	Pass

Test Graphs

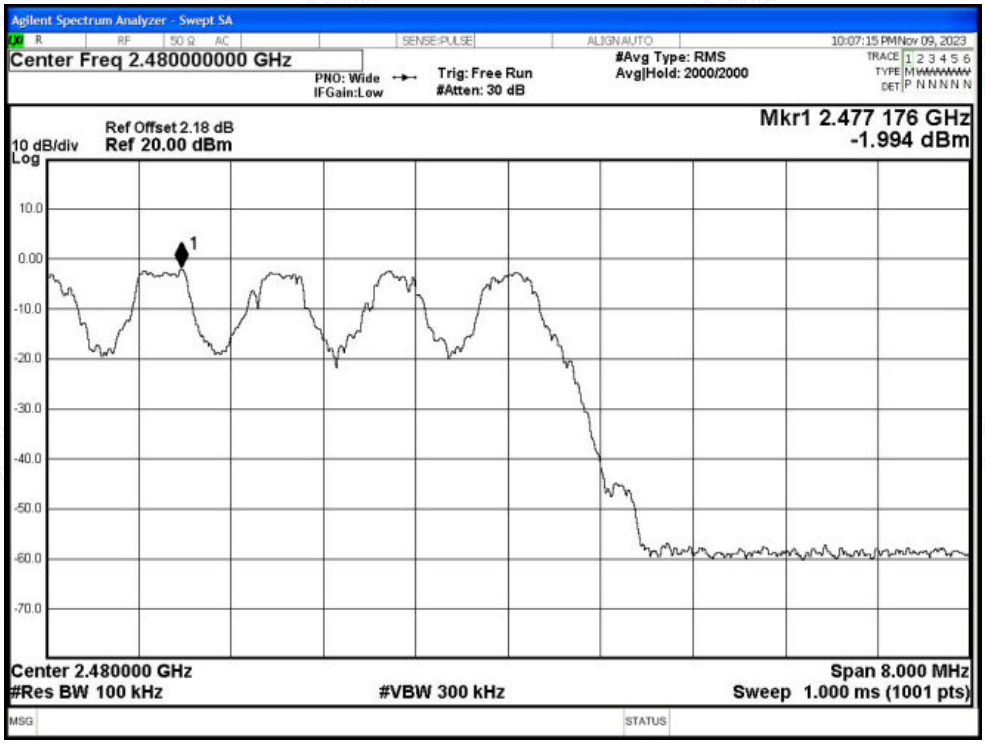
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



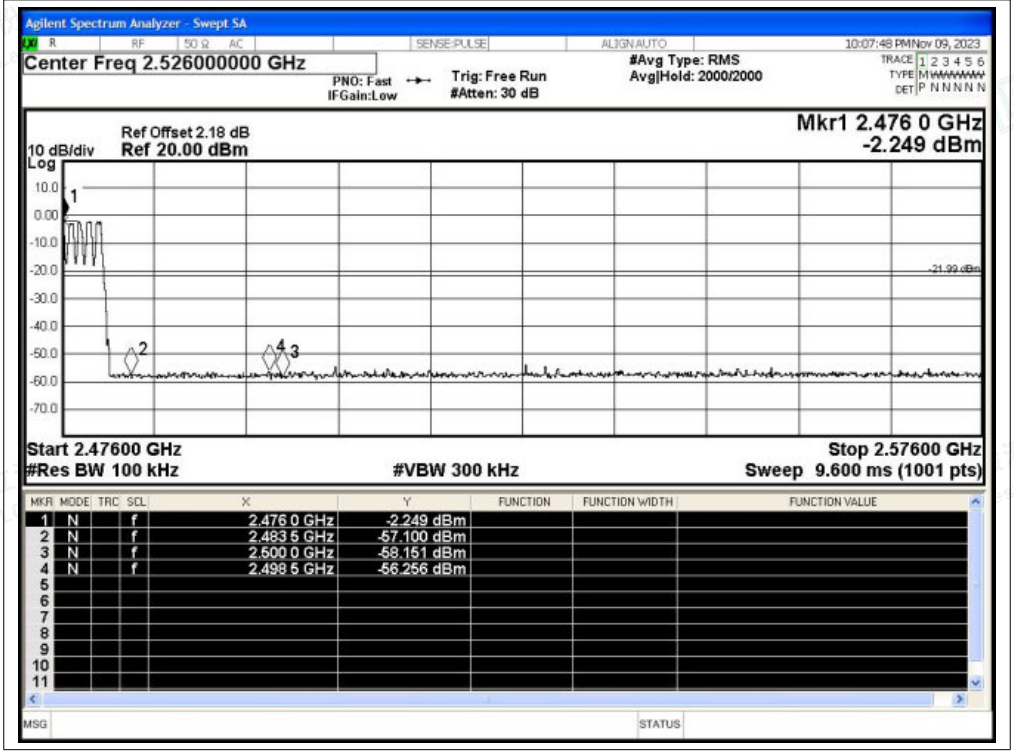
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



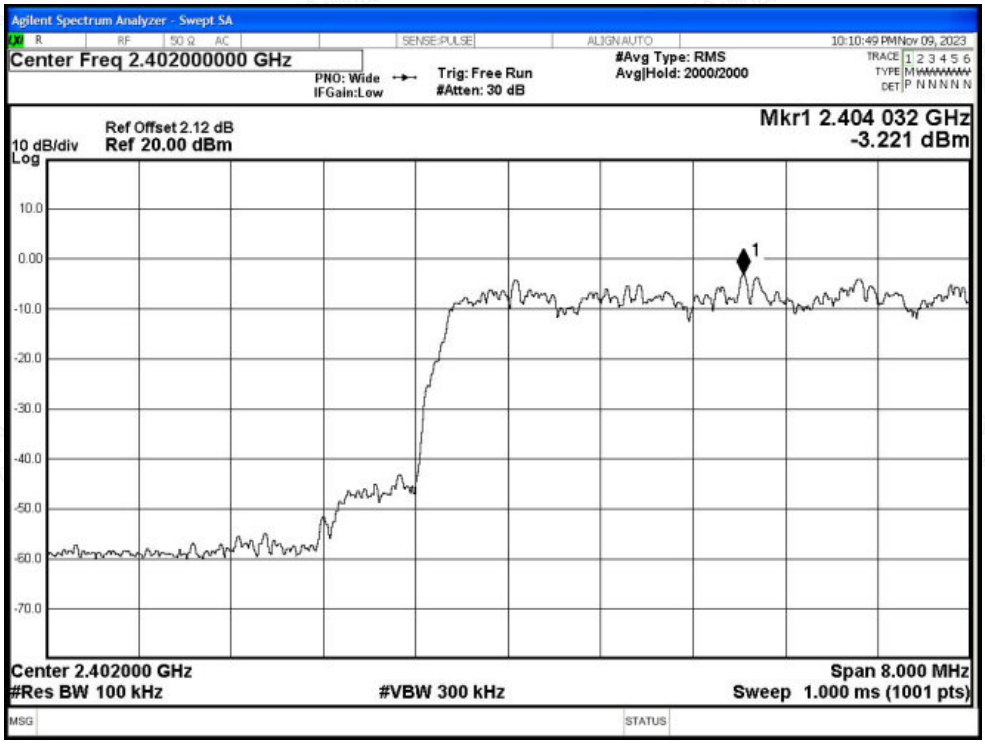
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



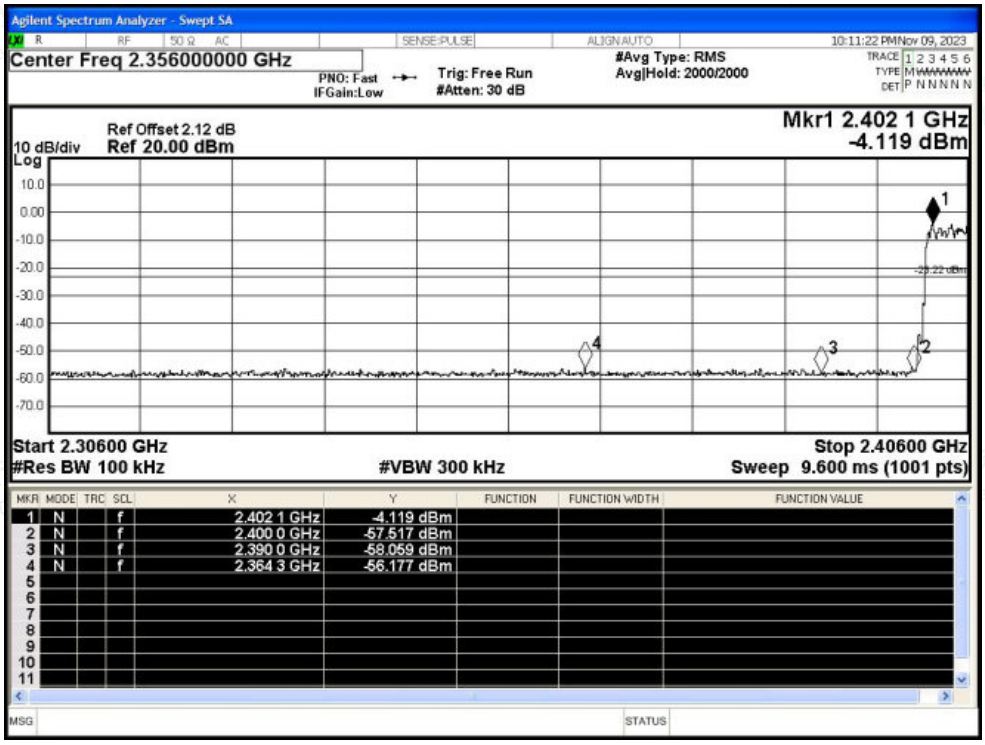
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission



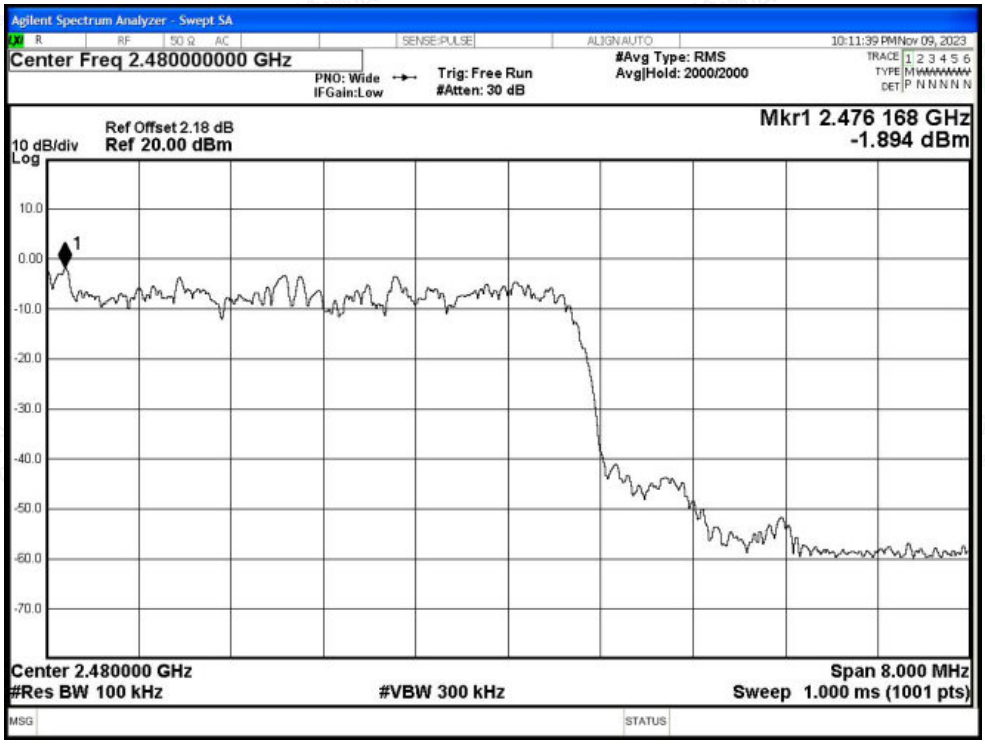
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



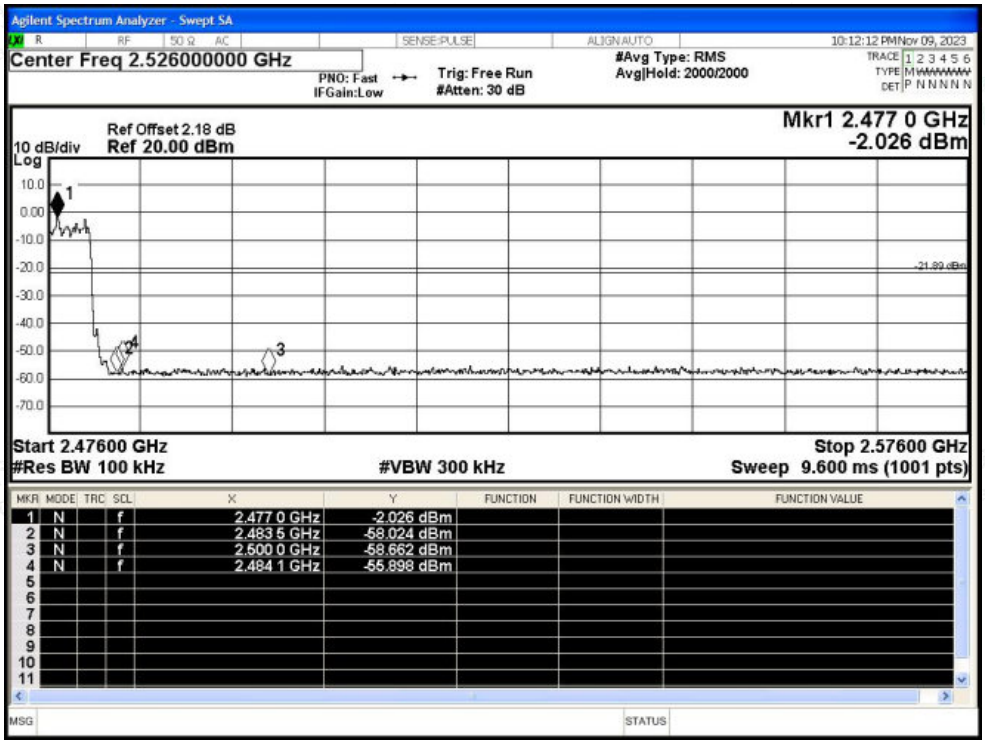
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission



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



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

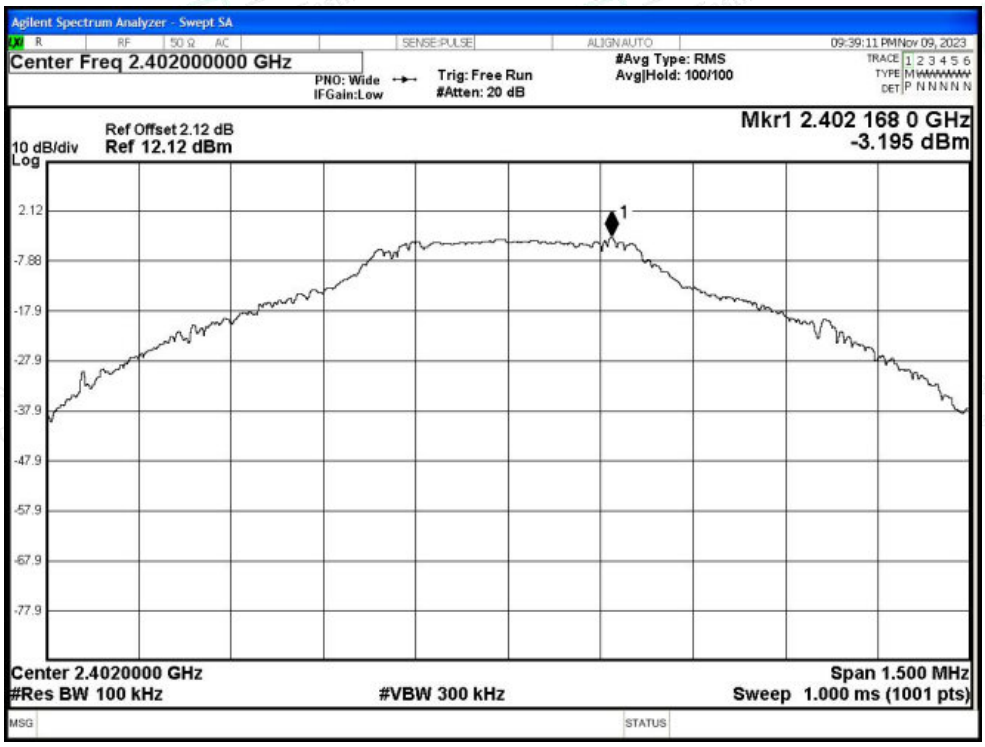


A.7 Conducted RF Spurious Emission

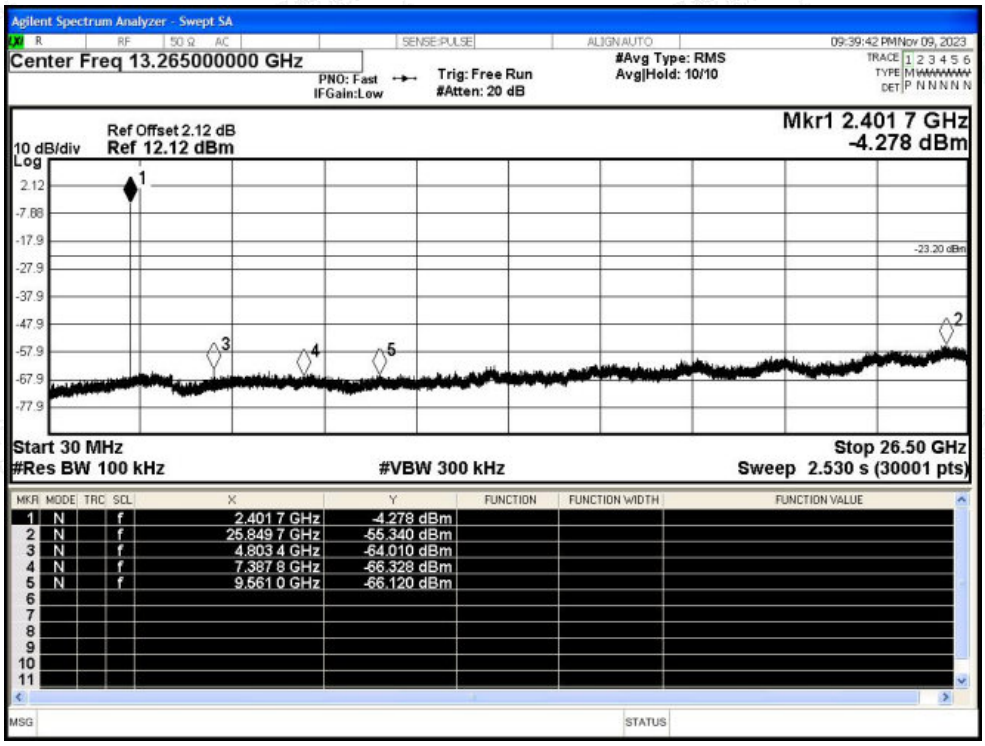
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-52.15	-20	Pass
NVNT	1-DH5	2441	Ant1	-54.59	-20	Pass
NVNT	1-DH5	2480	Ant1	-54.08	-20	Pass
NVNT	2-DH5	2402	Ant1	-52.34	-20	Pass
NVNT	2-DH5	2441	Ant1	-54.47	-20	Pass
NVNT	2-DH5	2480	Ant1	-52.72	-20	Pass

Test Graphs

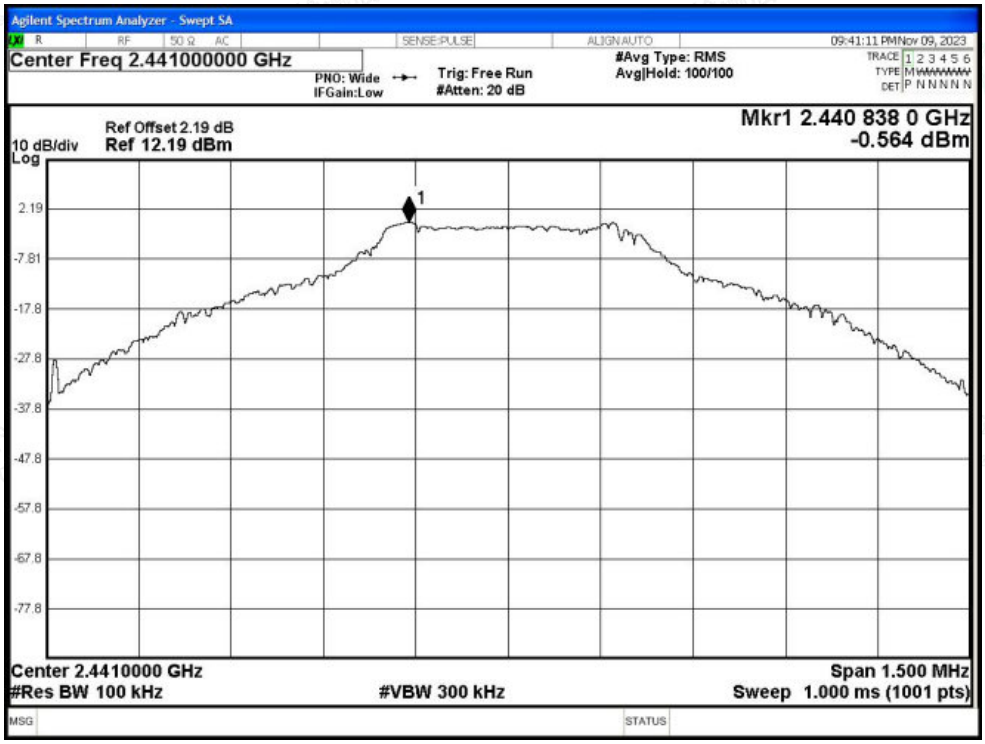
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



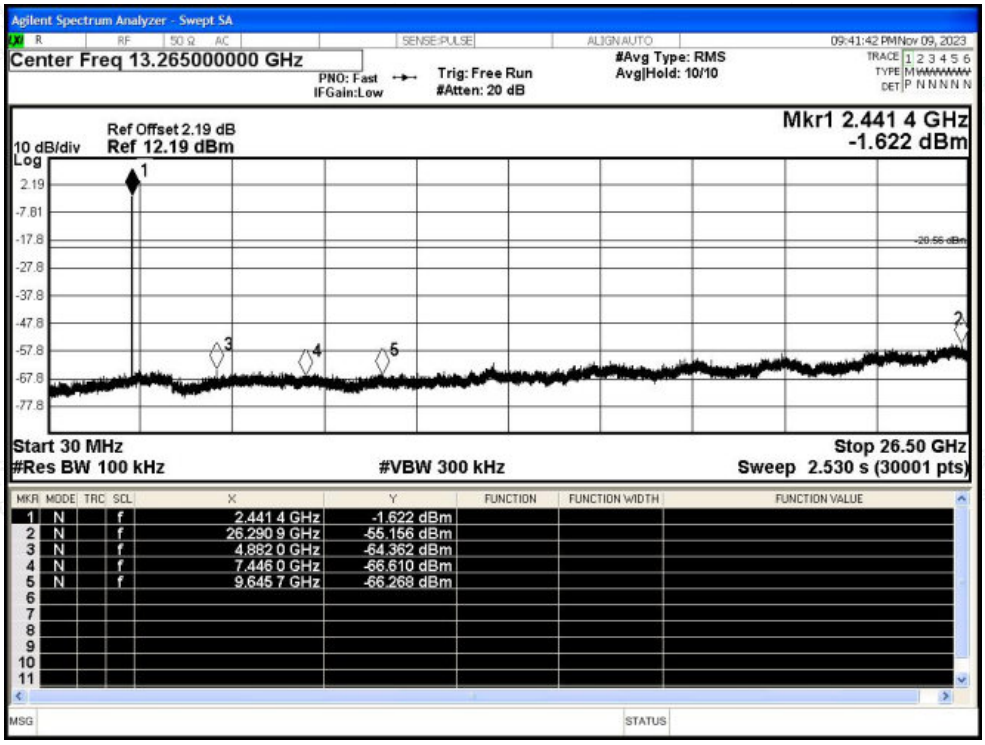
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



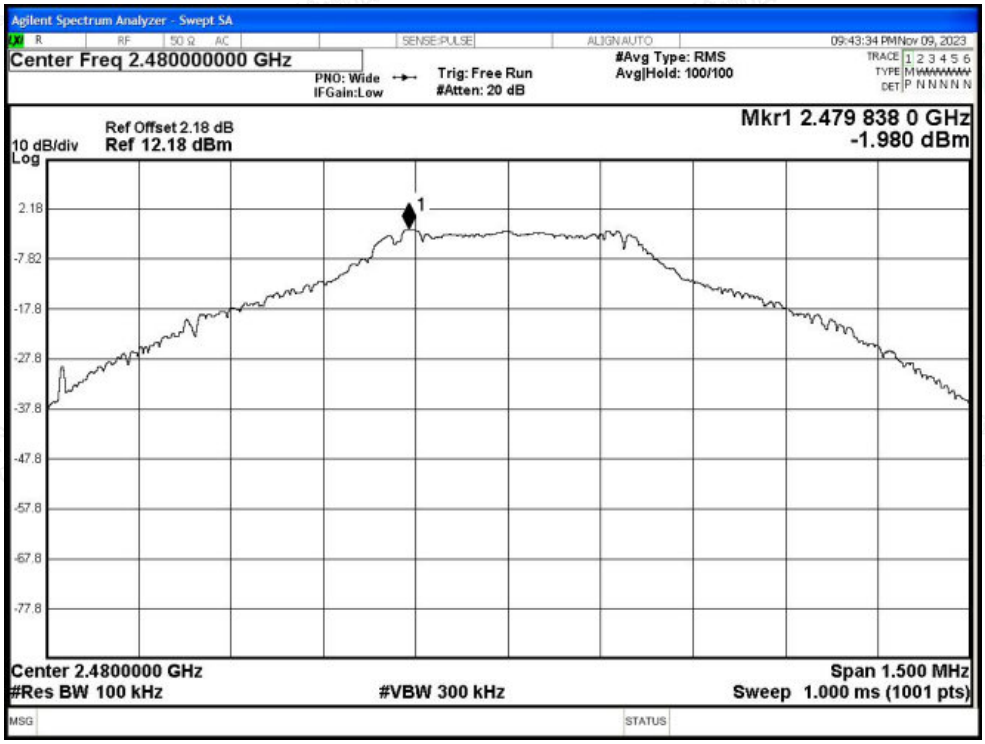
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



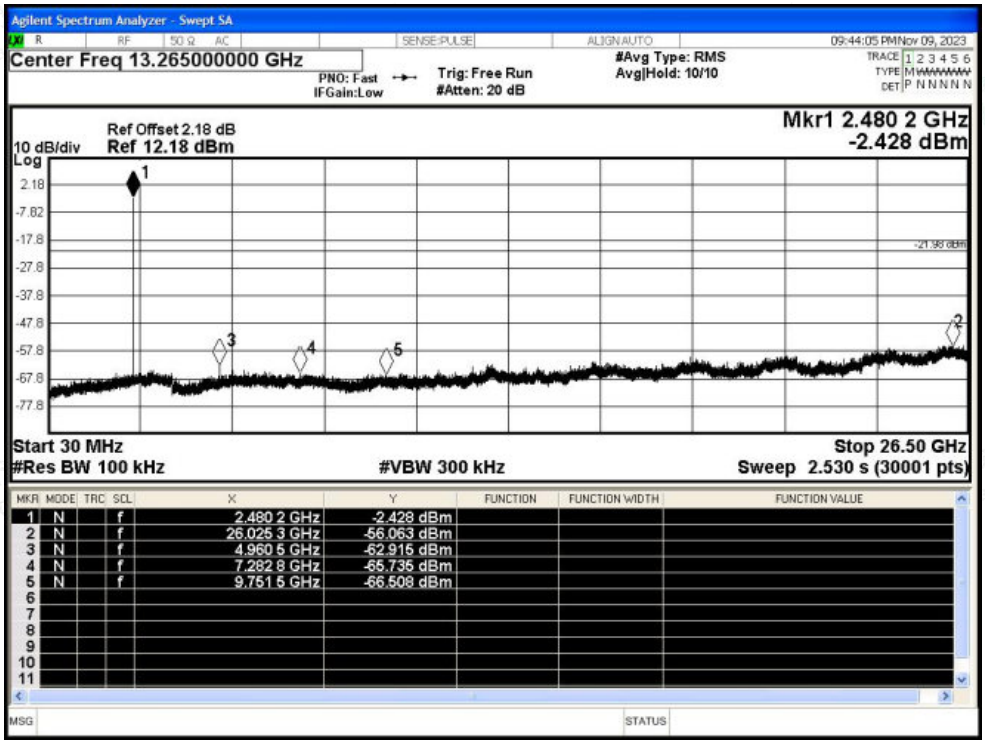
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



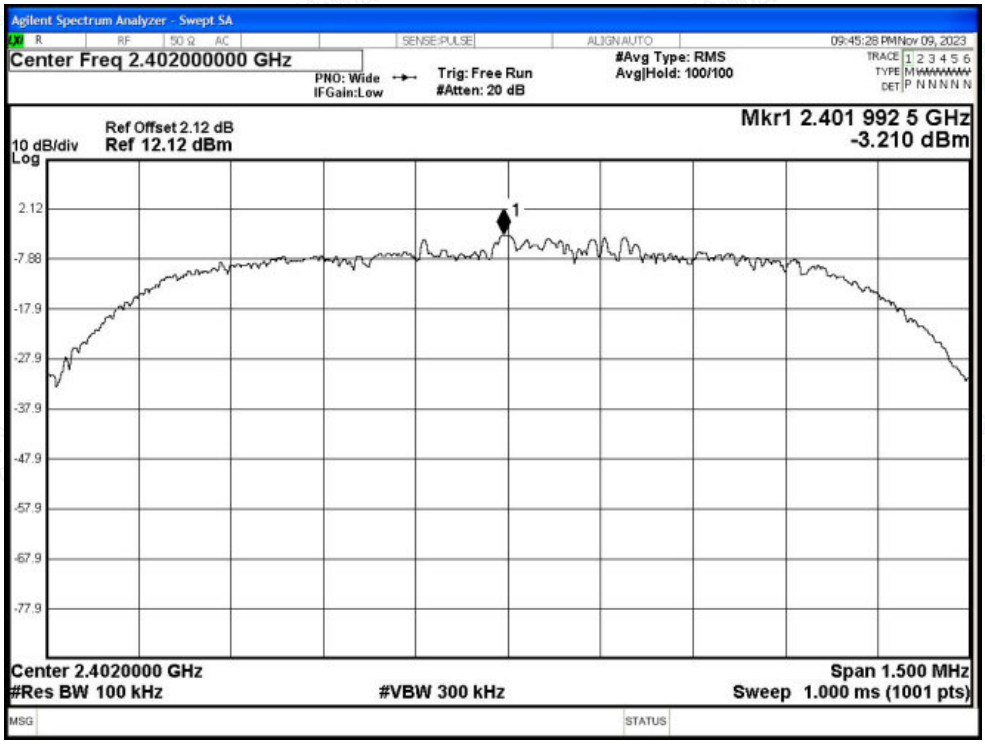
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



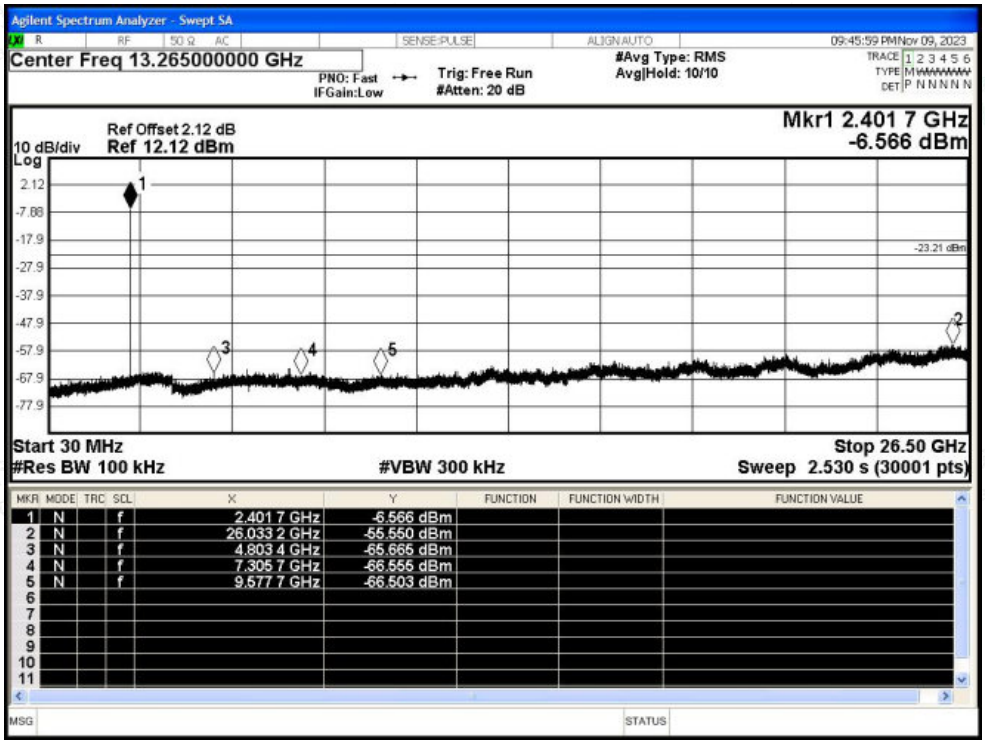
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



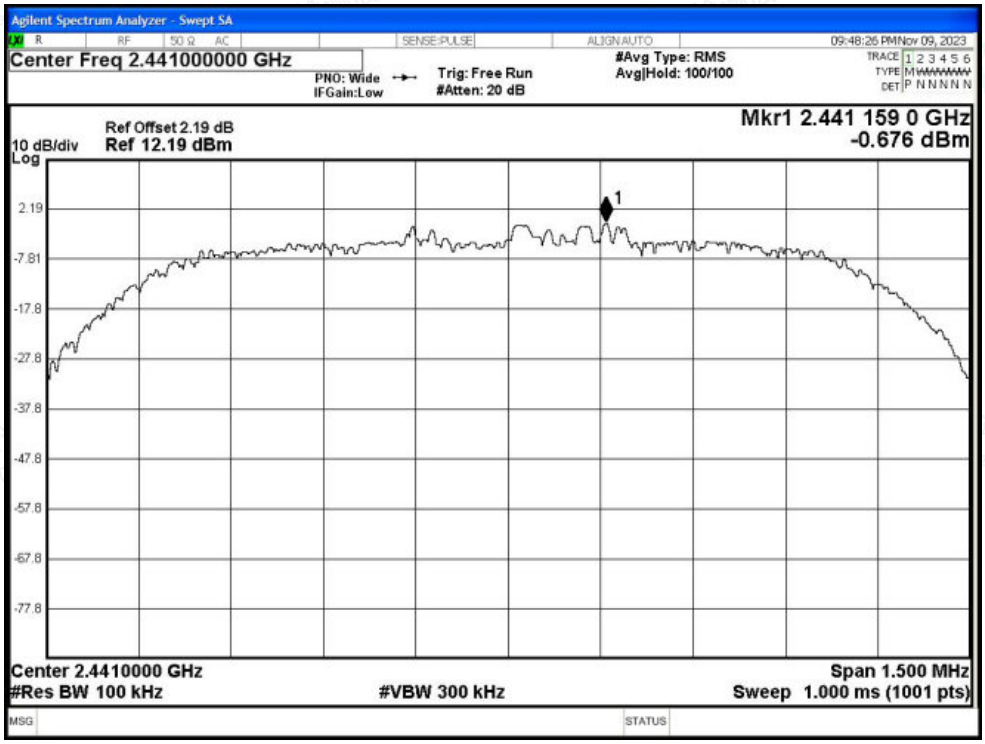
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



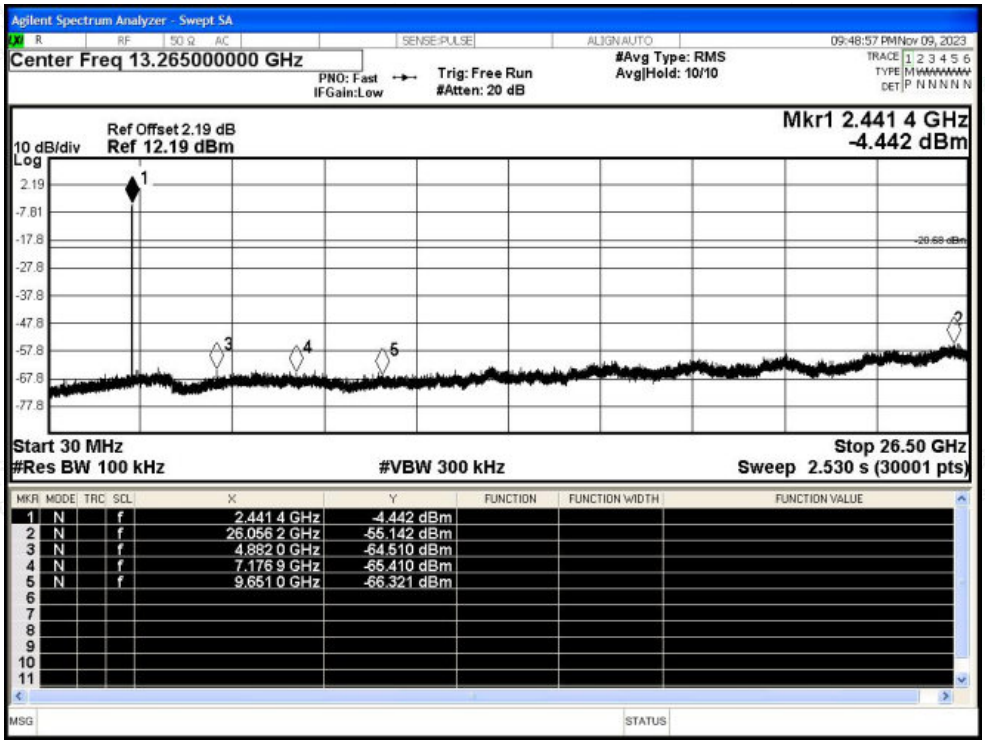
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



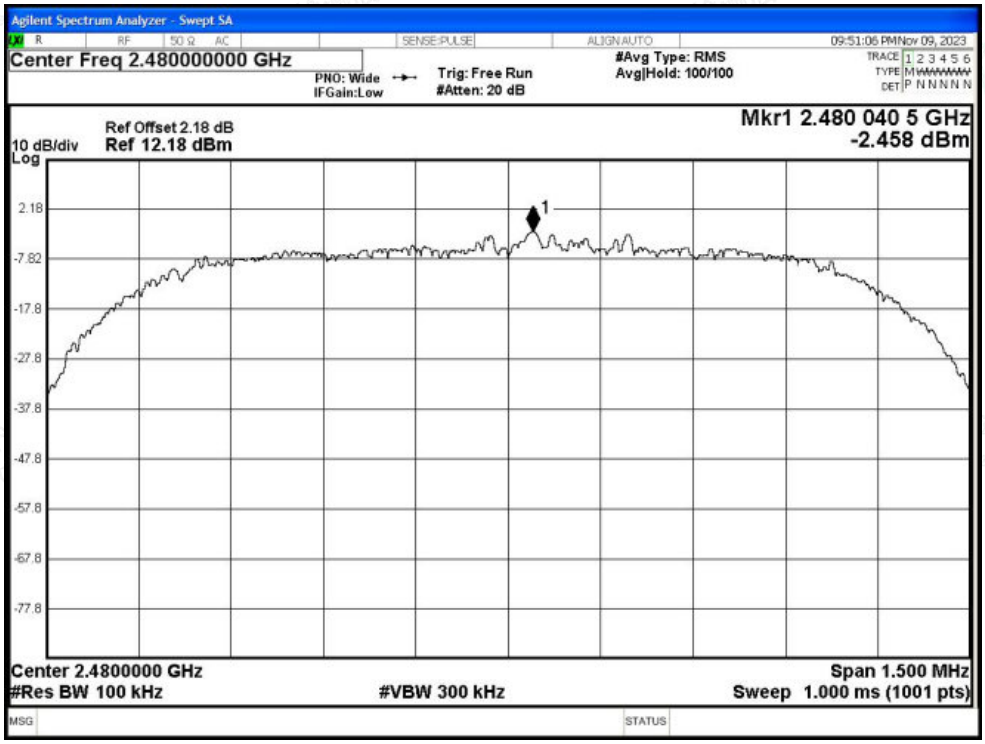
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



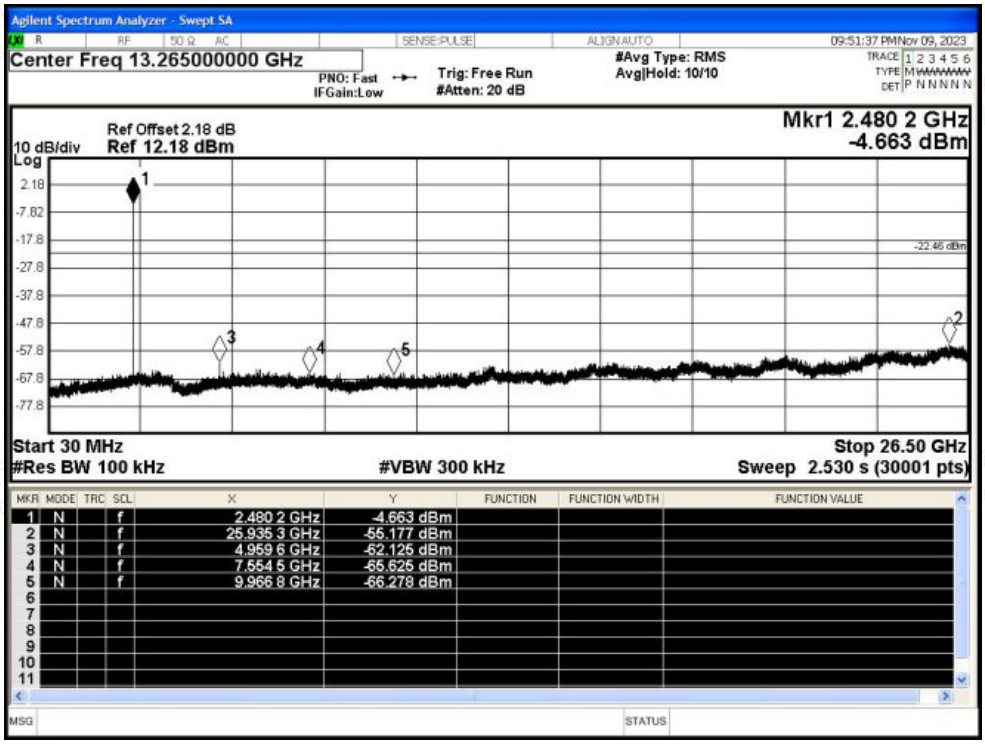
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission

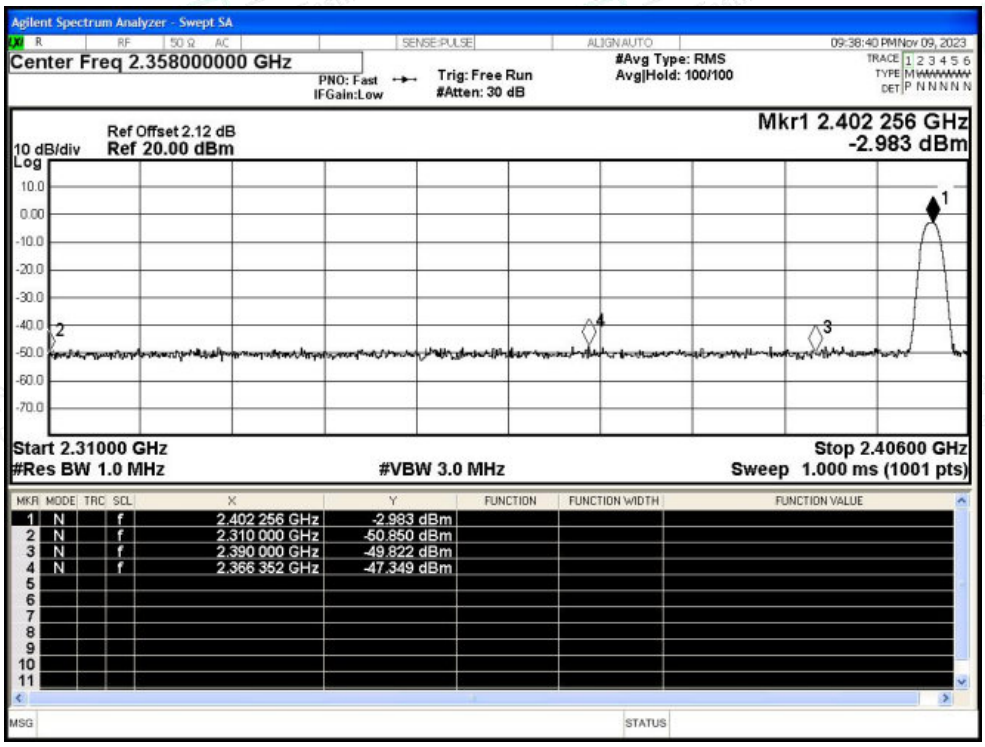


A.8 Restrict Band

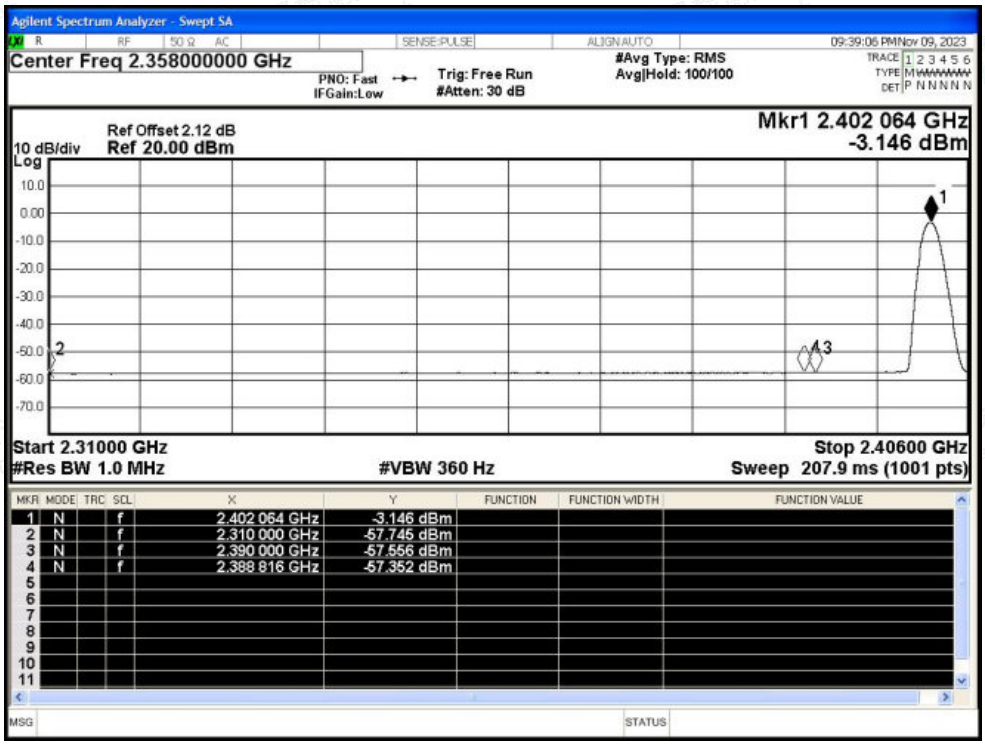
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-50.85	4.34	48.75	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-57.75	4.34	41.85	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2366.352	-47.35	4.34	52.25	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2388.816	-57.35	4.34	42.25	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-49.82	4.34	49.78	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-57.56	4.34	42.04	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-48.95	4.34	50.65	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-56.16	4.34	43.44	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2497.072	-46.8	4.34	52.80	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.512	-56.16	4.34	43.44	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-49.59	4.34	50.01	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-57.12	4.34	42.48	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-50.54	4.34	49.06	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-57.67	4.34	41.93	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2316.72	-47.01	4.34	52.59	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2380.176	-57.31	4.34	42.29	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-49.8	4.34	49.80	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-57.42	4.34	42.18	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-49.45	4.34	50.15	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-55.19	4.34	44.41	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2486.152	-46.03	4.34	53.57	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.512	-55.19	4.34	44.41	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-49.86	4.34	49.74	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-57.14	4.34	42.46	Average	54	Pass

Test Graphs

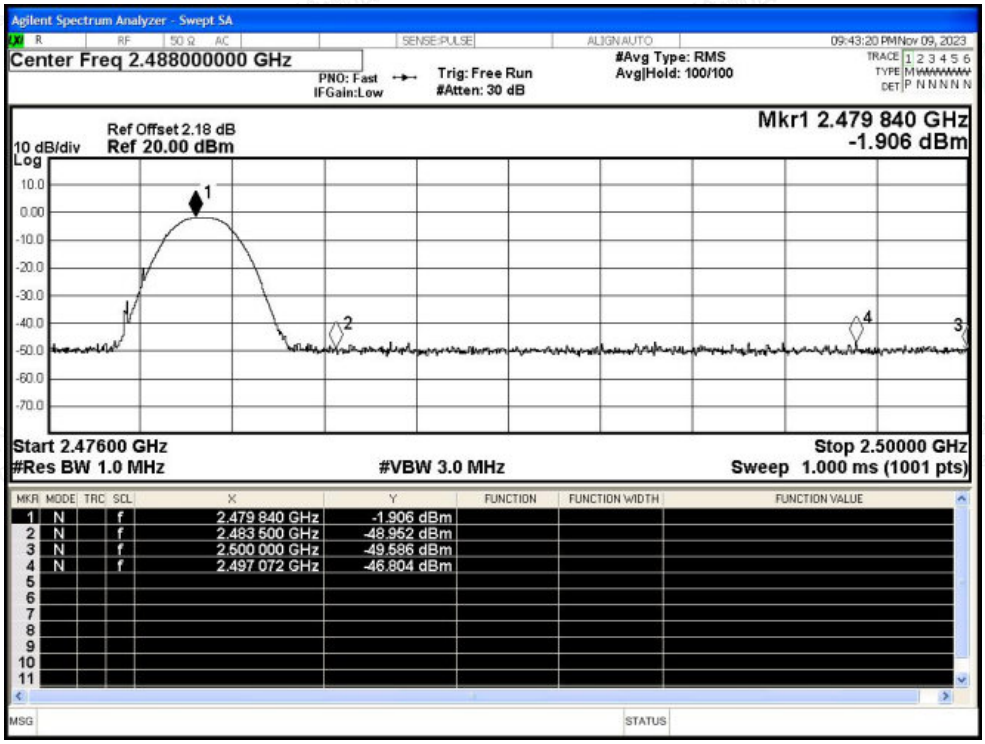
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak



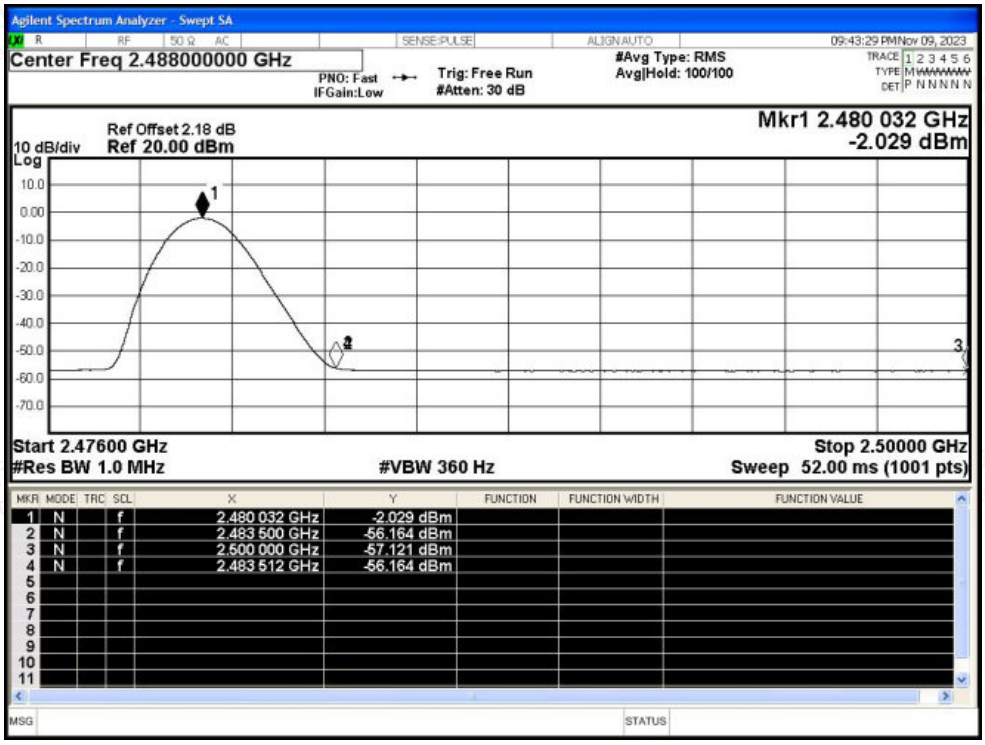
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average



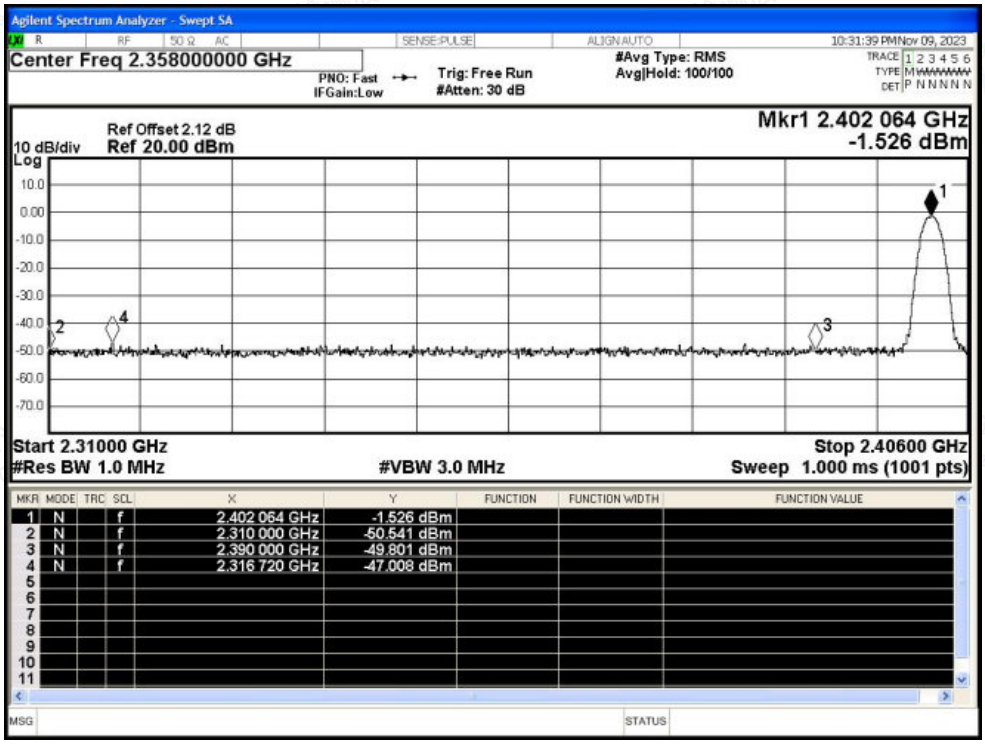
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak



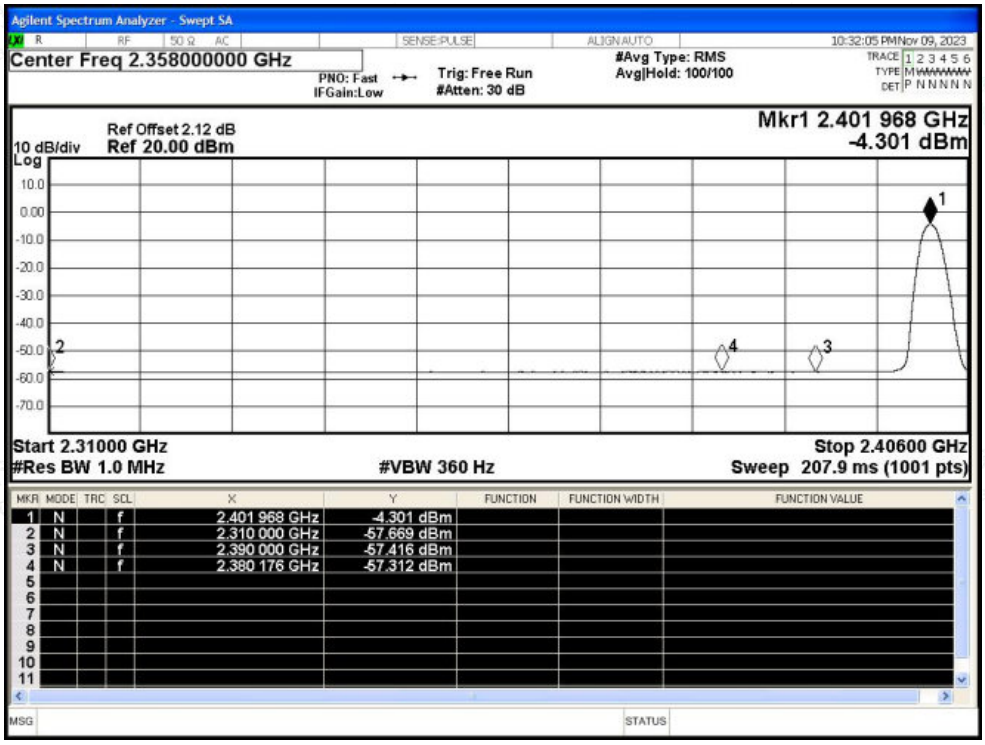
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average



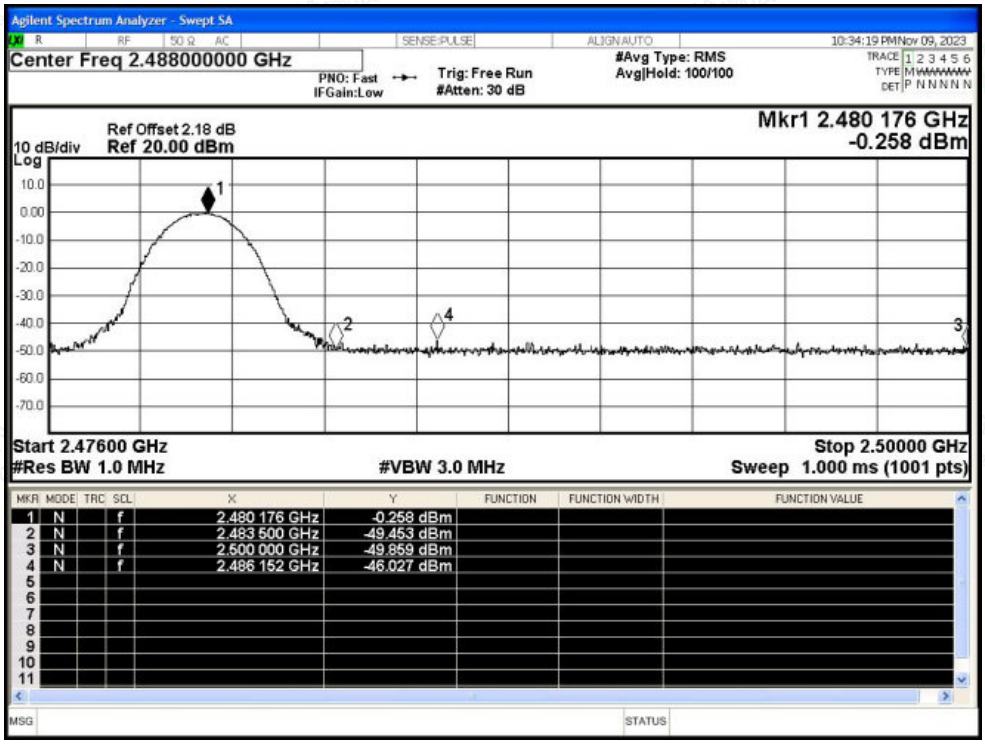
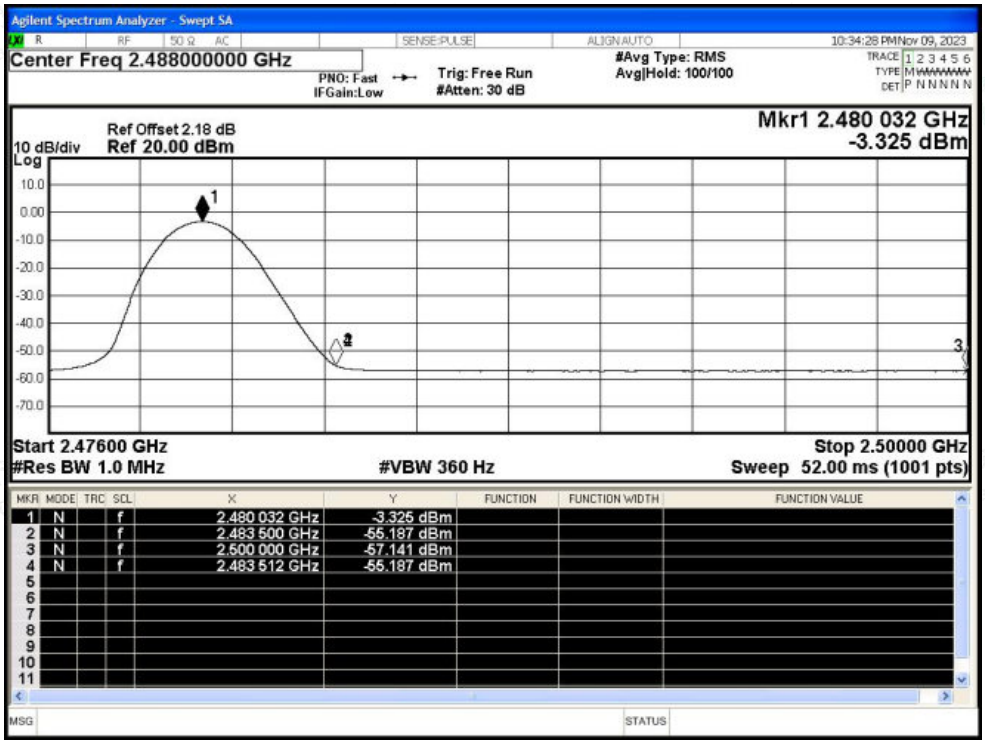
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak



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