Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Diagnostic Tool

Test Model: Mini Scan Tool

Environmental Conditions

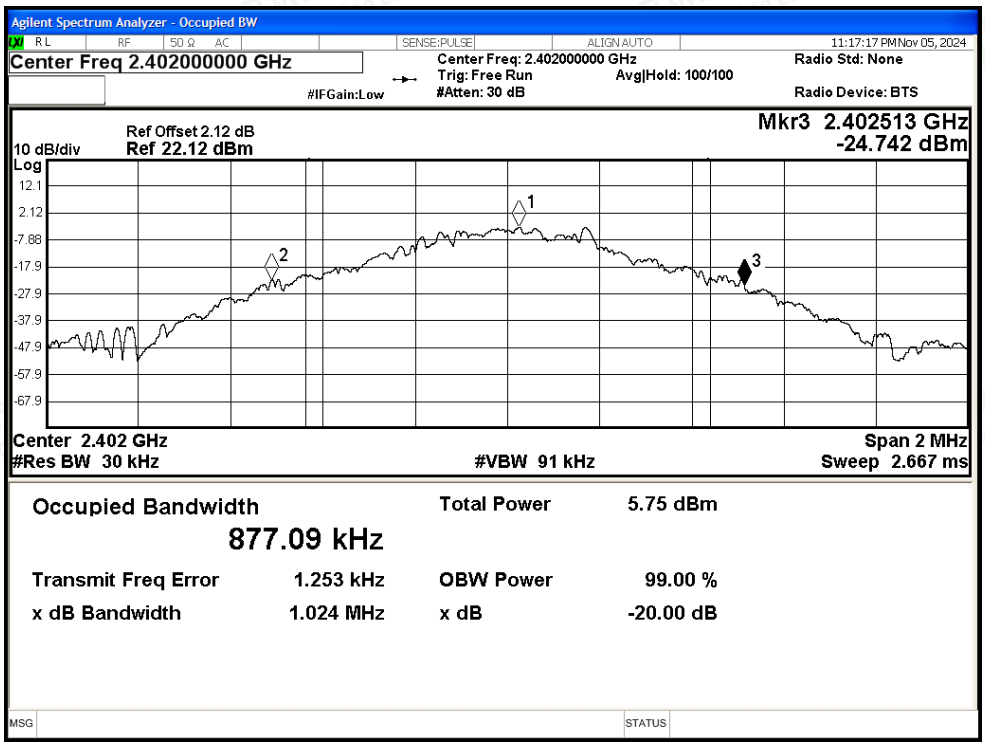
Temperature:	23.8° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Jerry Chu
Supervised by:	Nick Peng

A.1 -20dB Bandwidth

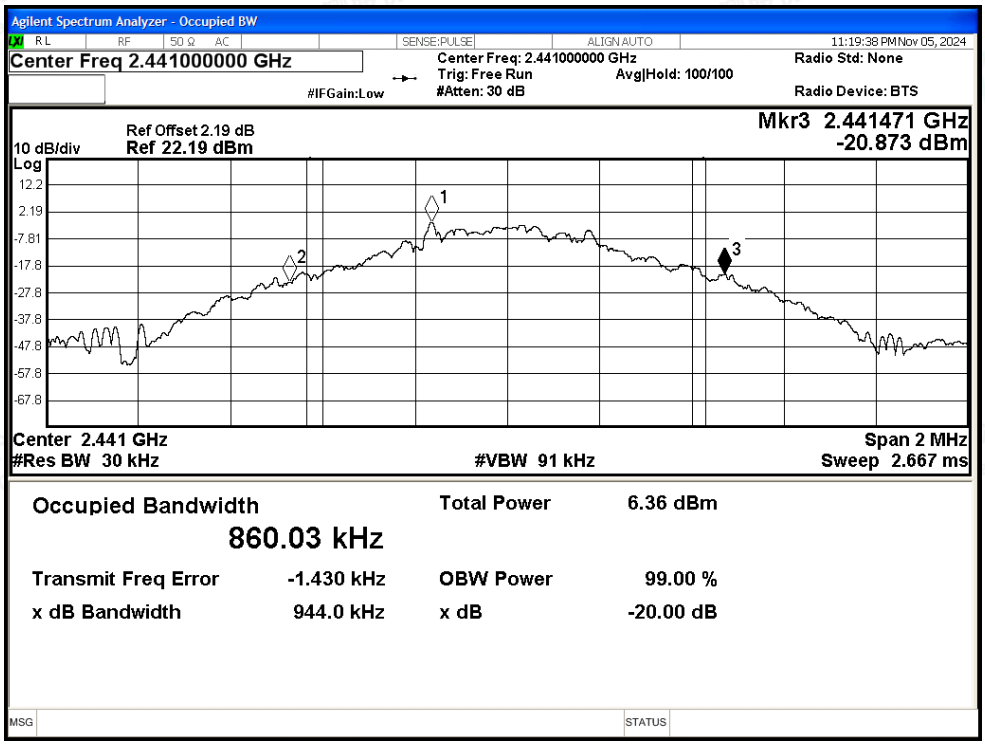
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	1.024	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.944	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.944	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.284	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.283	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.283	N/A	Pass
NVNT	3-DH5	2402	Ant1	1.3	N/A	Pass
NVNT	3-DH5	2441	Ant1	1.299	N/A	Pass
NVNT	3-DH5	2480	Ant1	1.284	N/A	Pass

Test Graphs

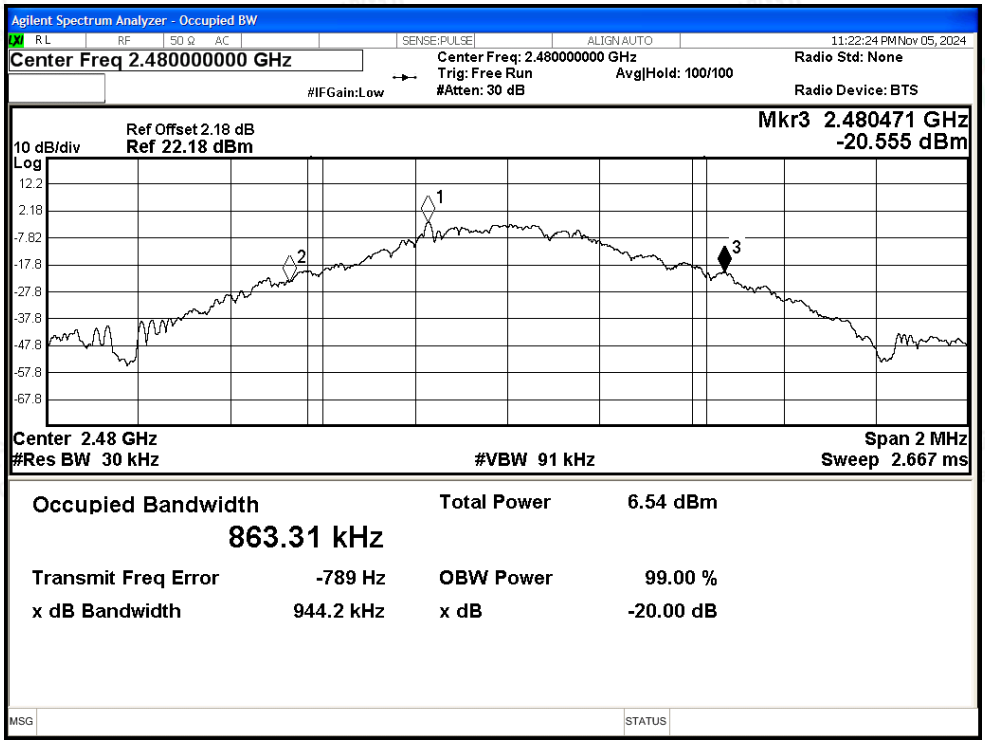
-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



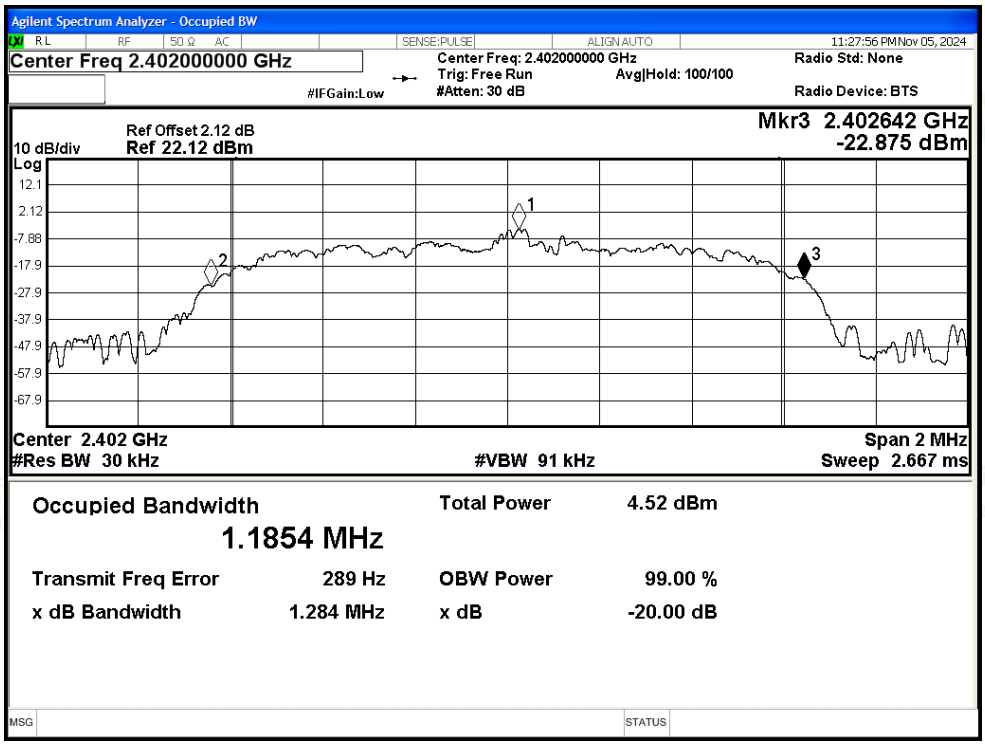
-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



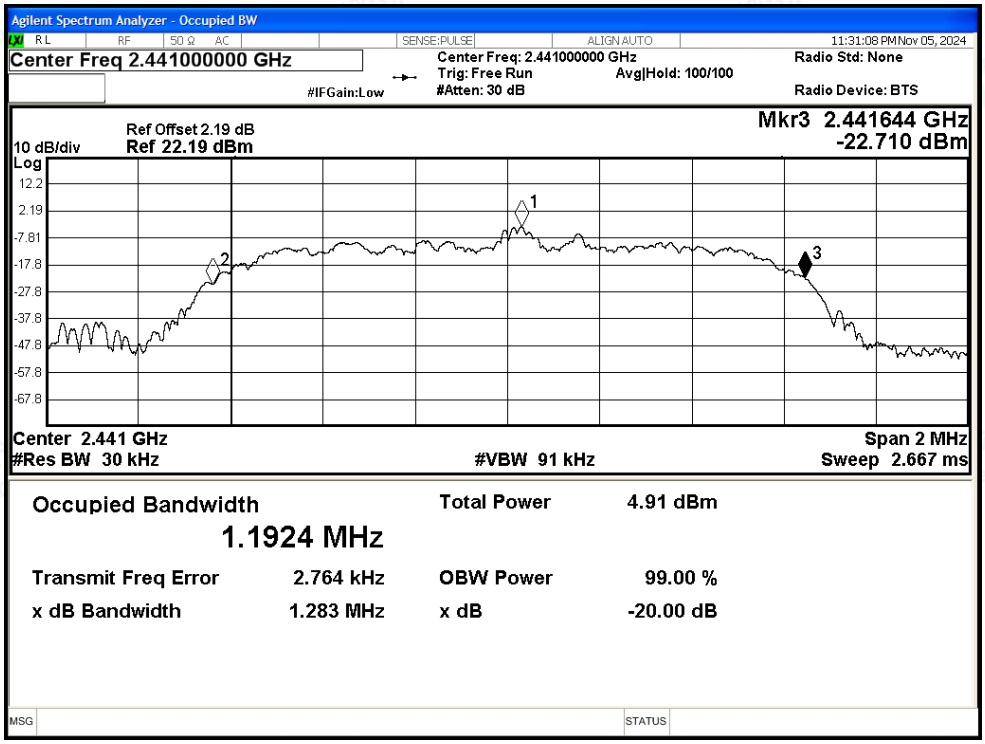
-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



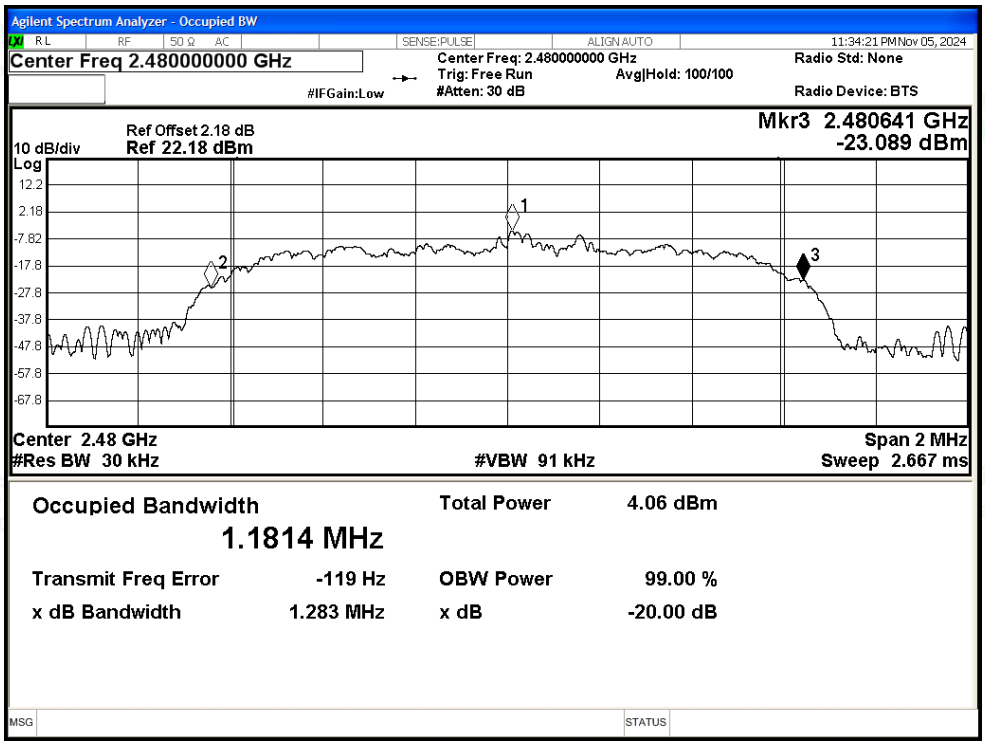
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



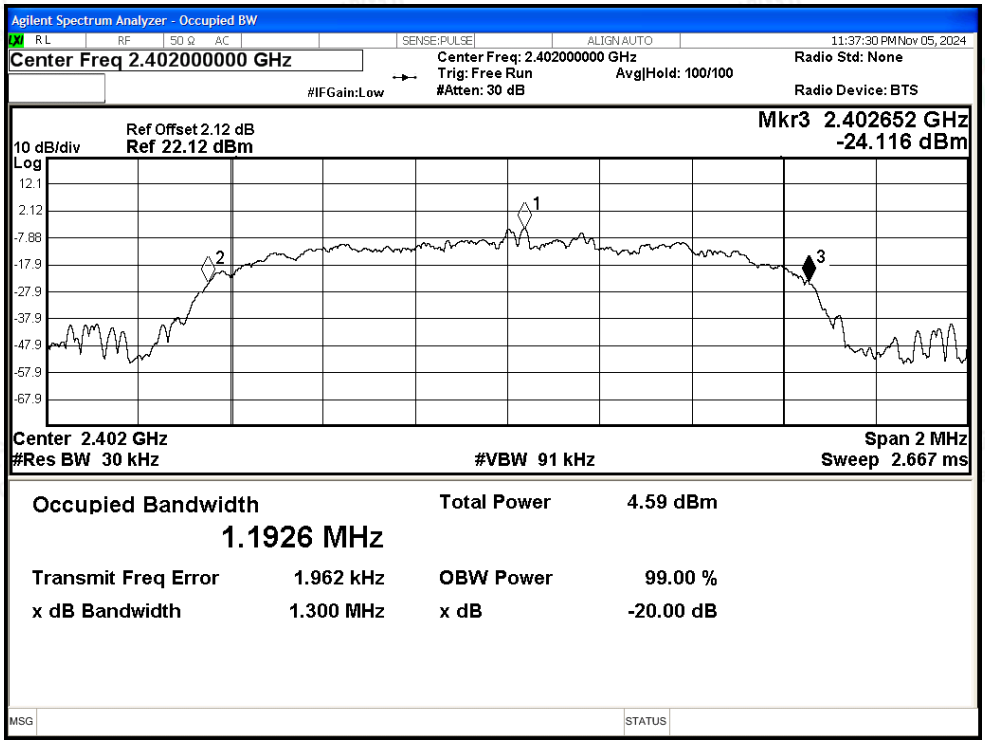
-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



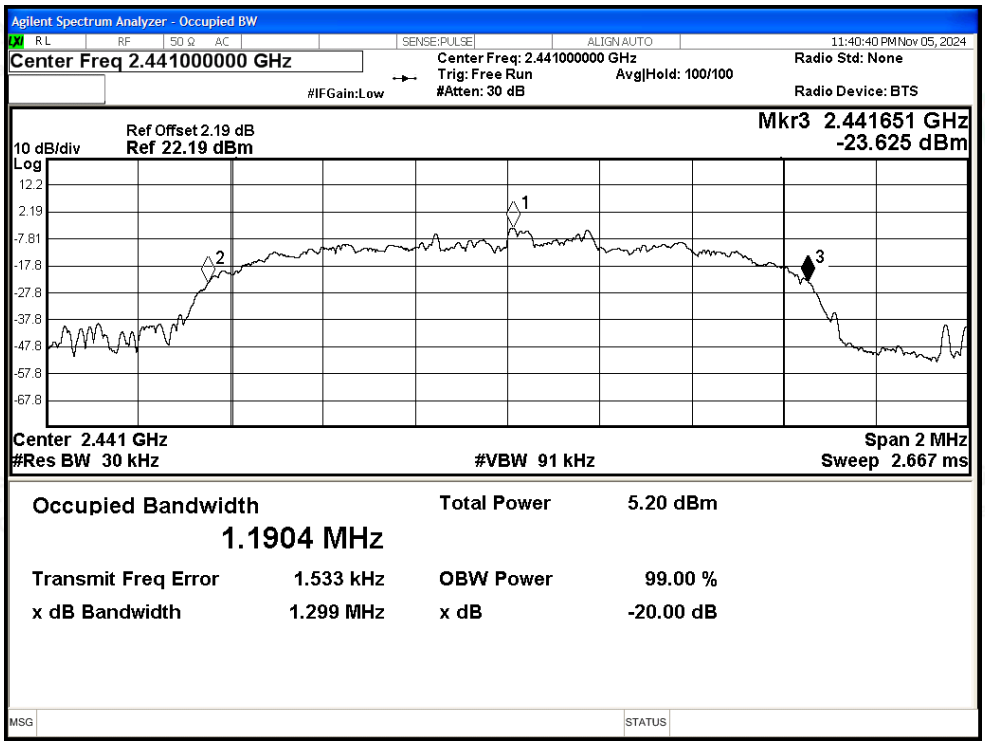
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1



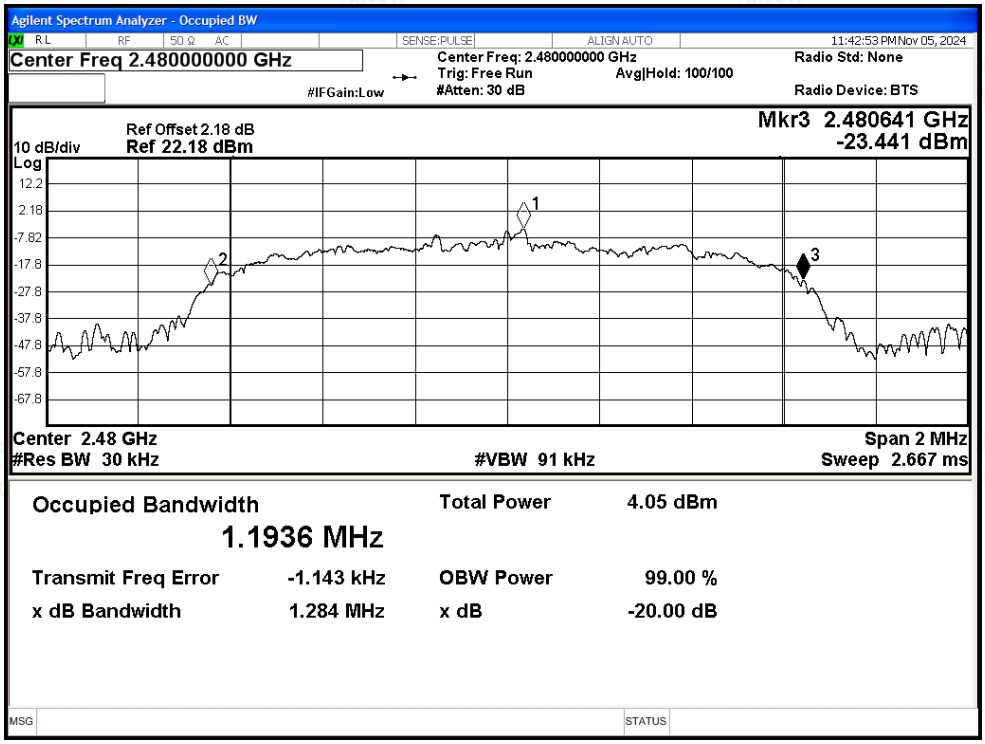
-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2480MHz Ant1

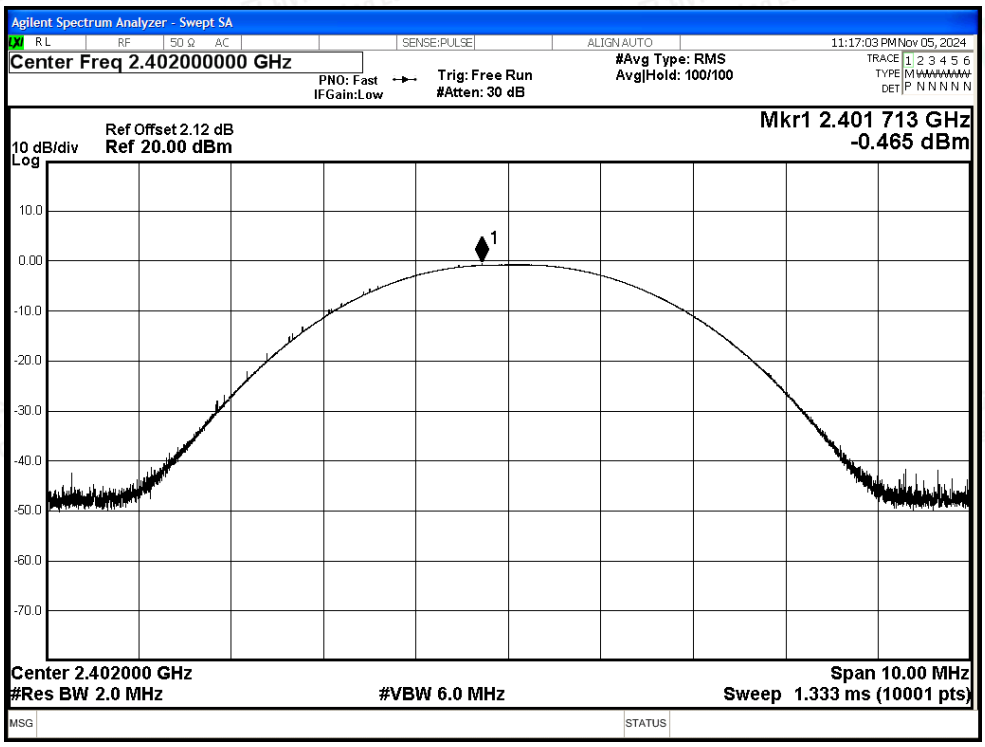


A.2 Maximum Peak Conducted Output Power

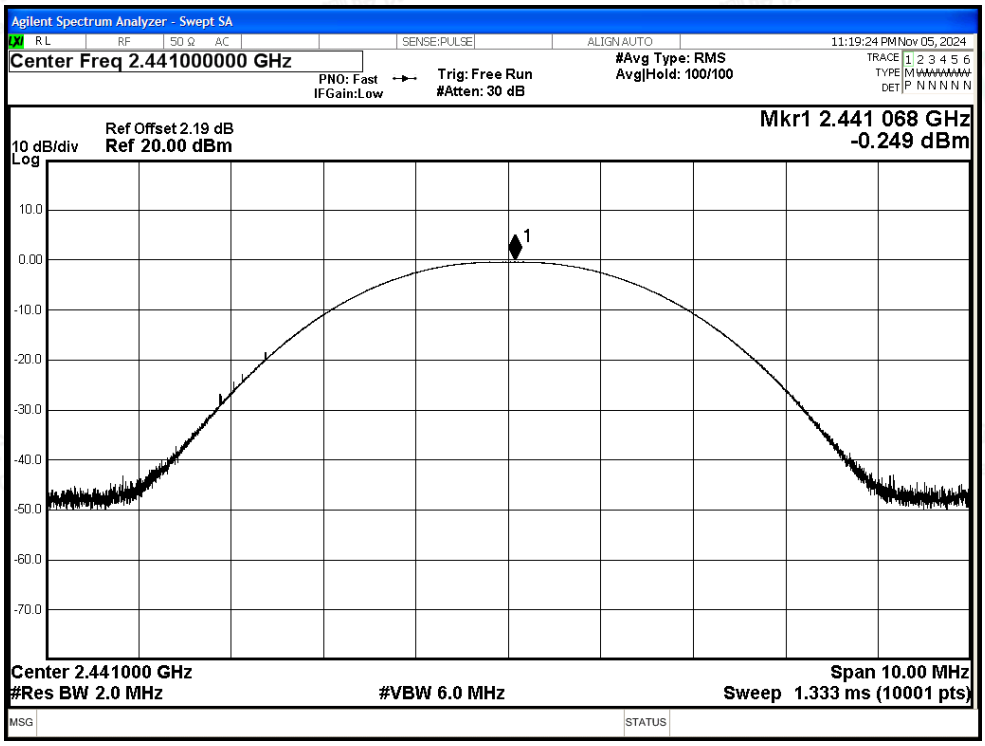
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	-0.47	21	Pass
NVNT	1-DH5	2441	Ant1	-0.25	21	Pass
NVNT	1-DH5	2480	Ant1	0.24	21	Pass
NVNT	2-DH5	2402	Ant1	0.11	21	Pass
NVNT	2-DH5	2441	Ant1	0.58	21	Pass
NVNT	2-DH5	2480	Ant1	-0.31	21	Pass
NVNT	3-DH5	2402	Ant1	0.57	21	Pass
NVNT	3-DH5	2441	Ant1	0.95	21	Pass
NVNT	3-DH5	2480	Ant1	0.06	21	Pass

Test Graphs

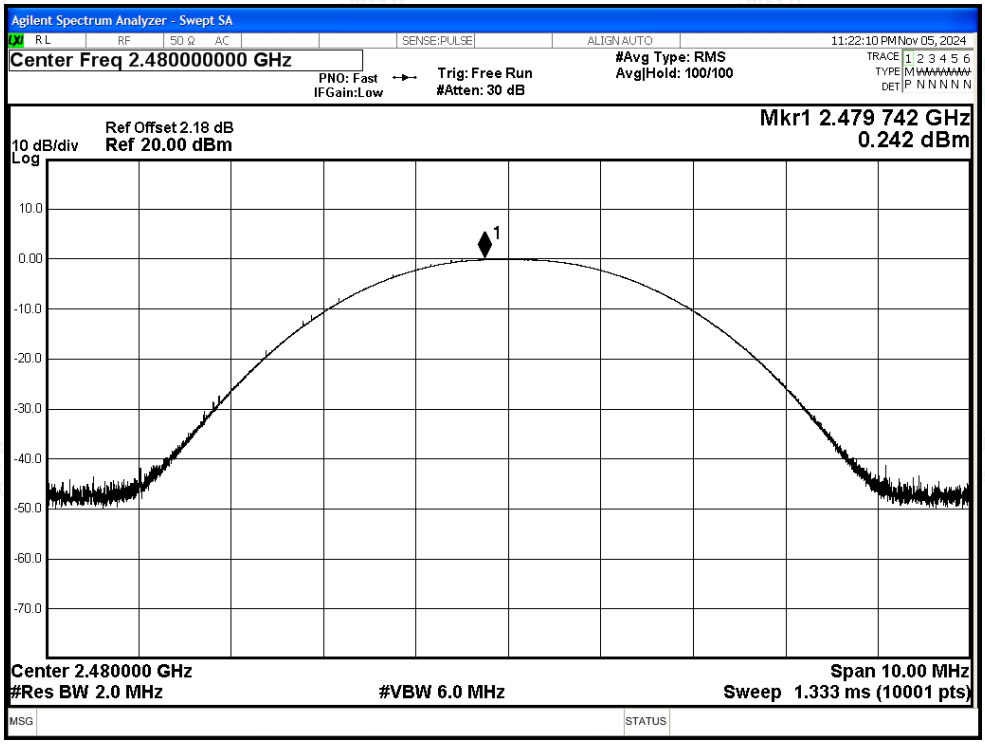
Power NVNT 1-DH5 2402MHz Ant1



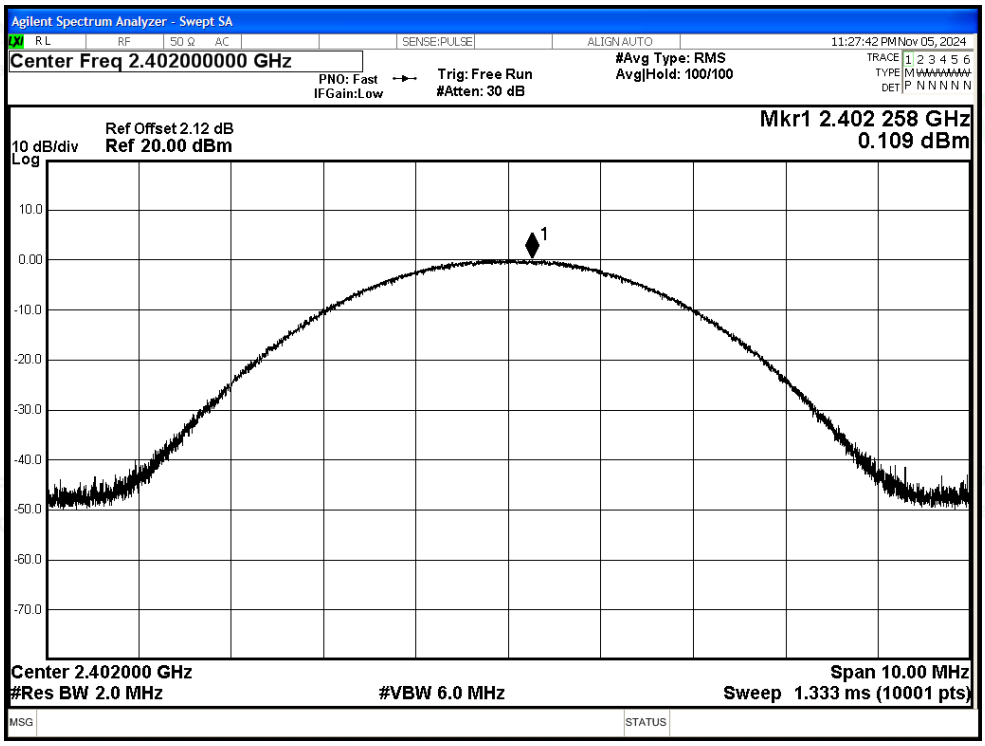
Power NVNT 1-DH5 2441MHz Ant1



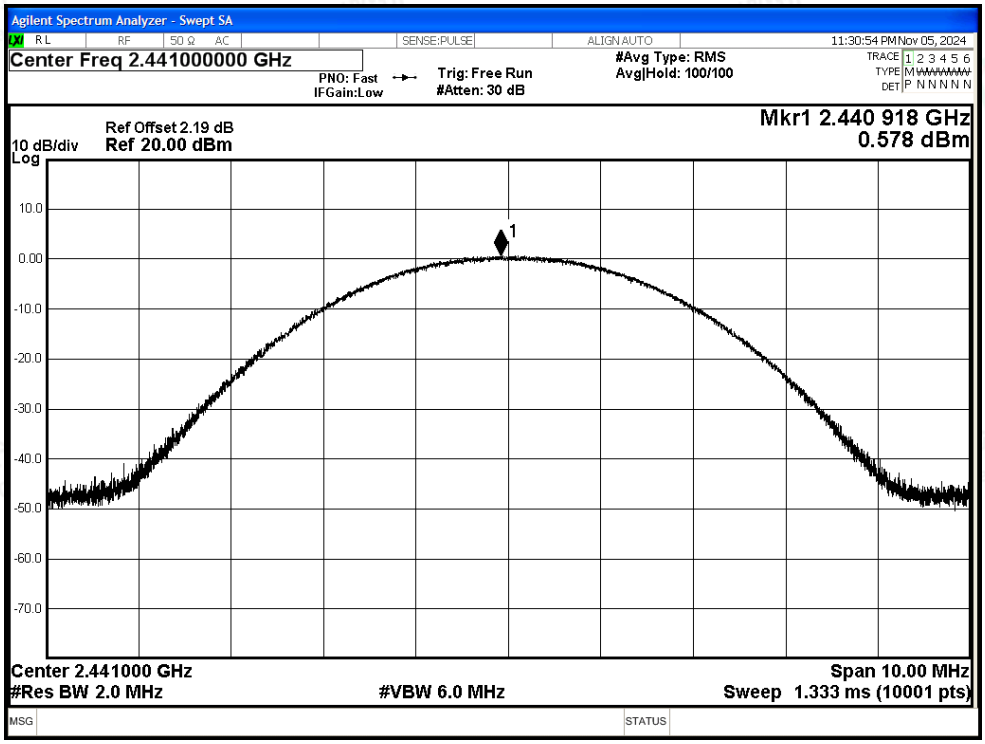
Power NVNT 1-DH5 2480MHz Ant1



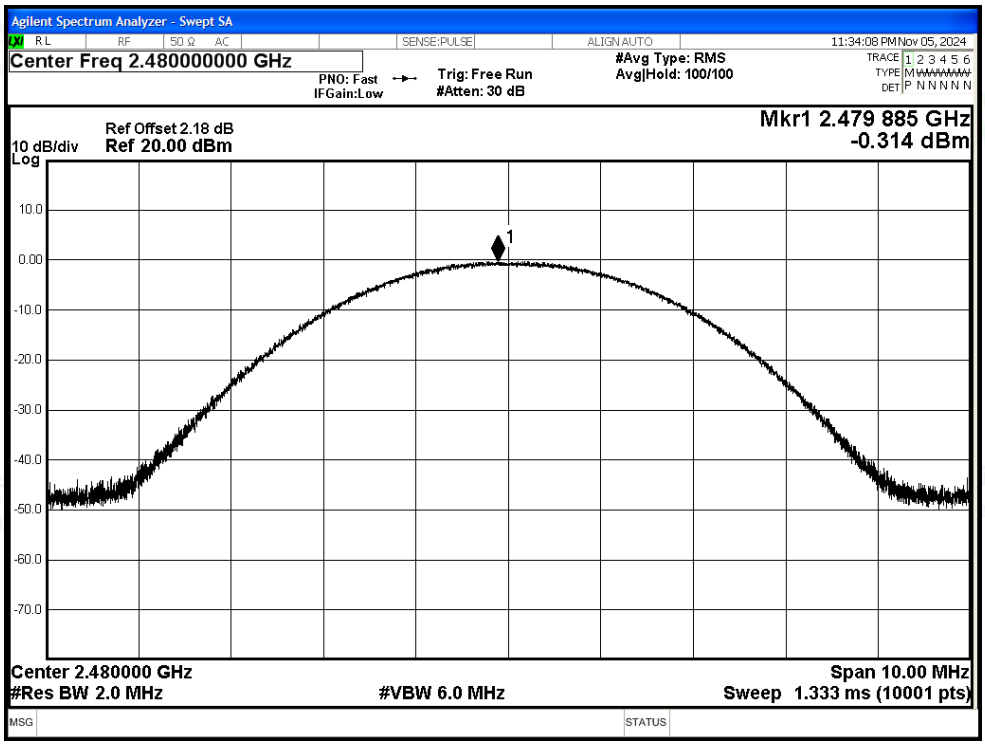
Power NVNT 2-DH5 2402MHz Ant1



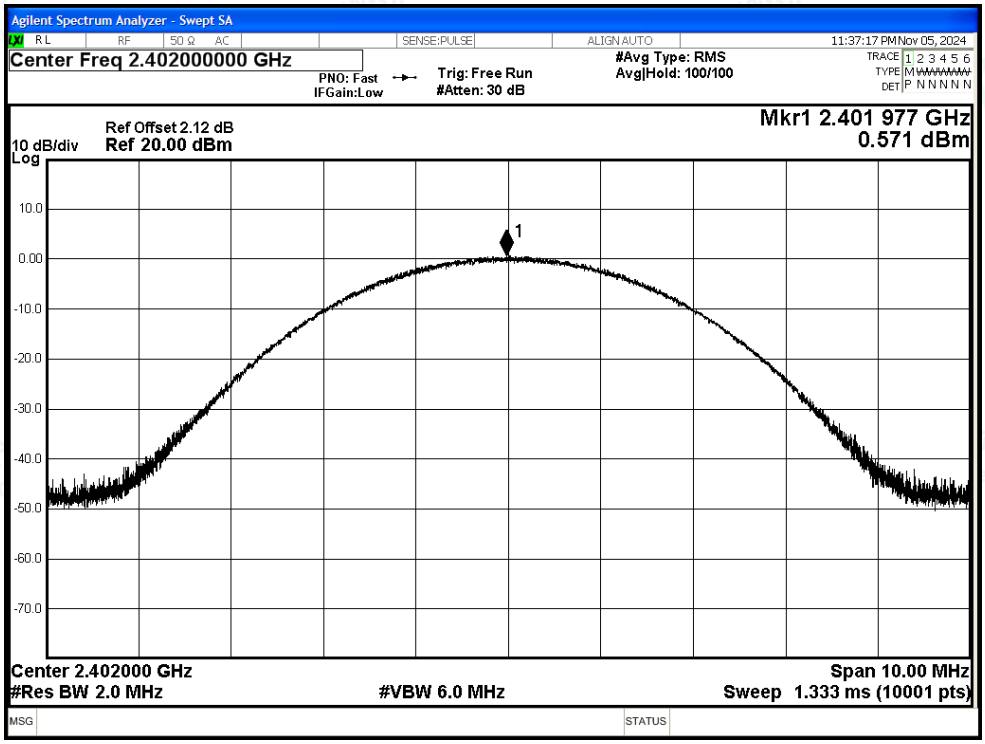
Power NVNT 2-DH5 2441MHz Ant1



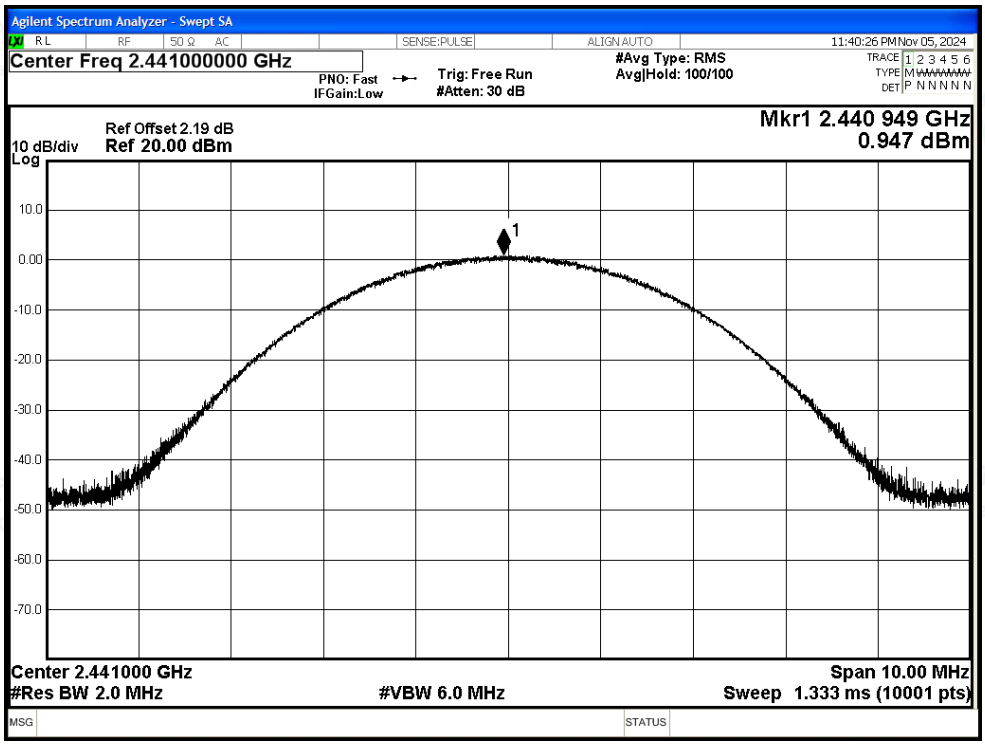
Power NVNT 2-DH5 2480MHz Ant1



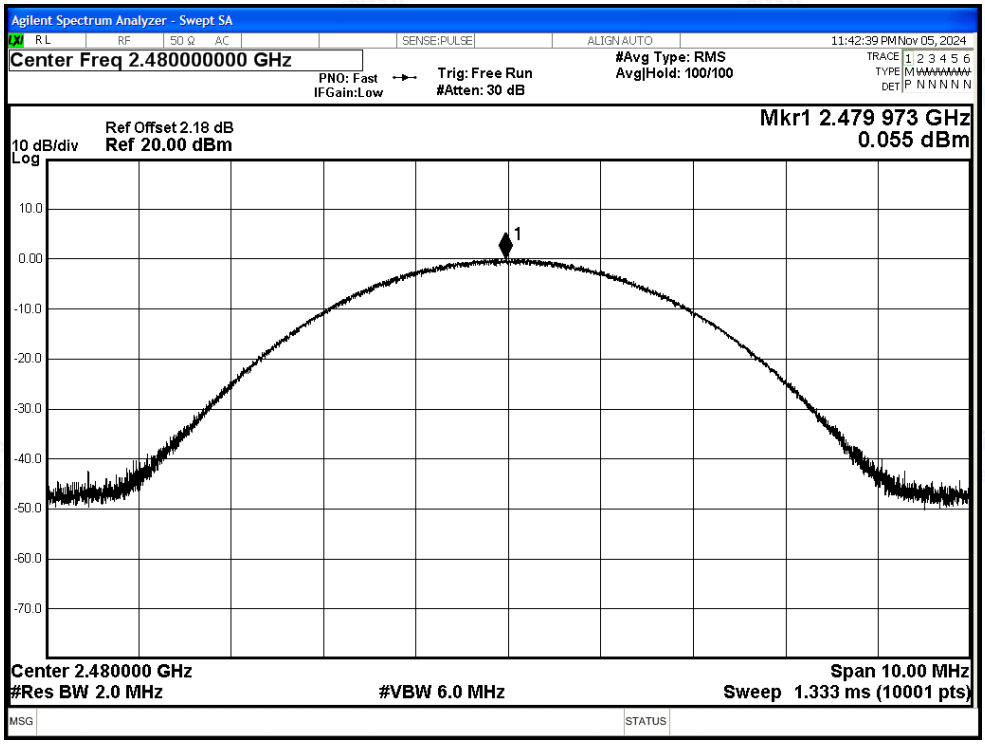
Power NVNT 3-DH5 2402MHz Ant1



Power NVNT 3-DH5 2441MHz Ant1



Power NVNT 3-DH5 2480MHz Ant1

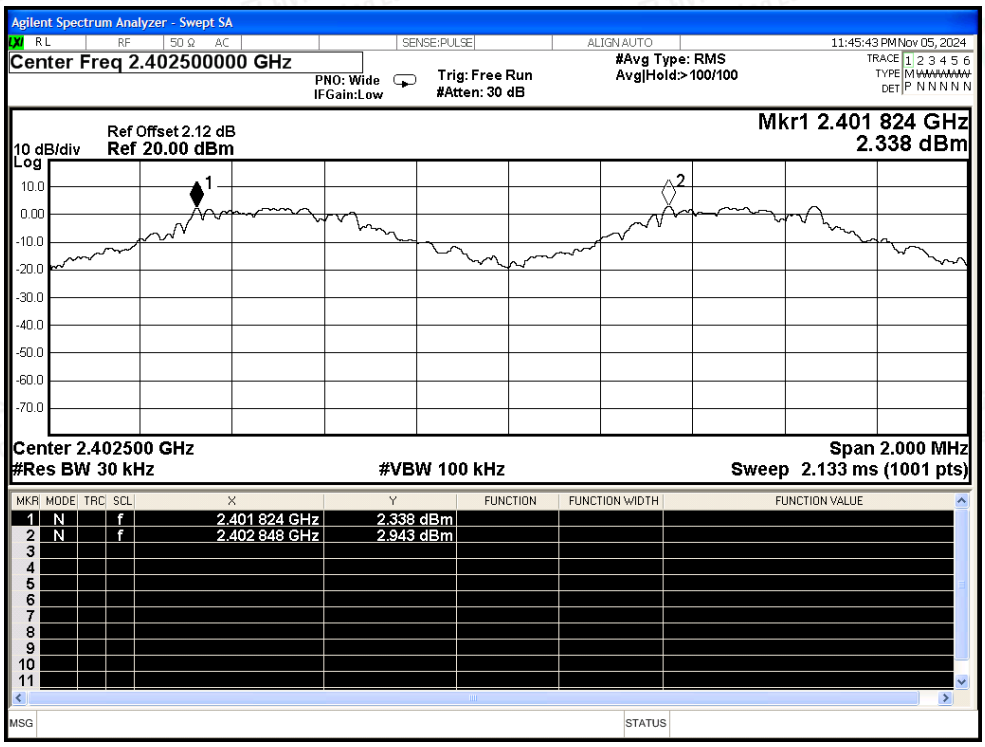


A.3 Carrier Frequencies Separation

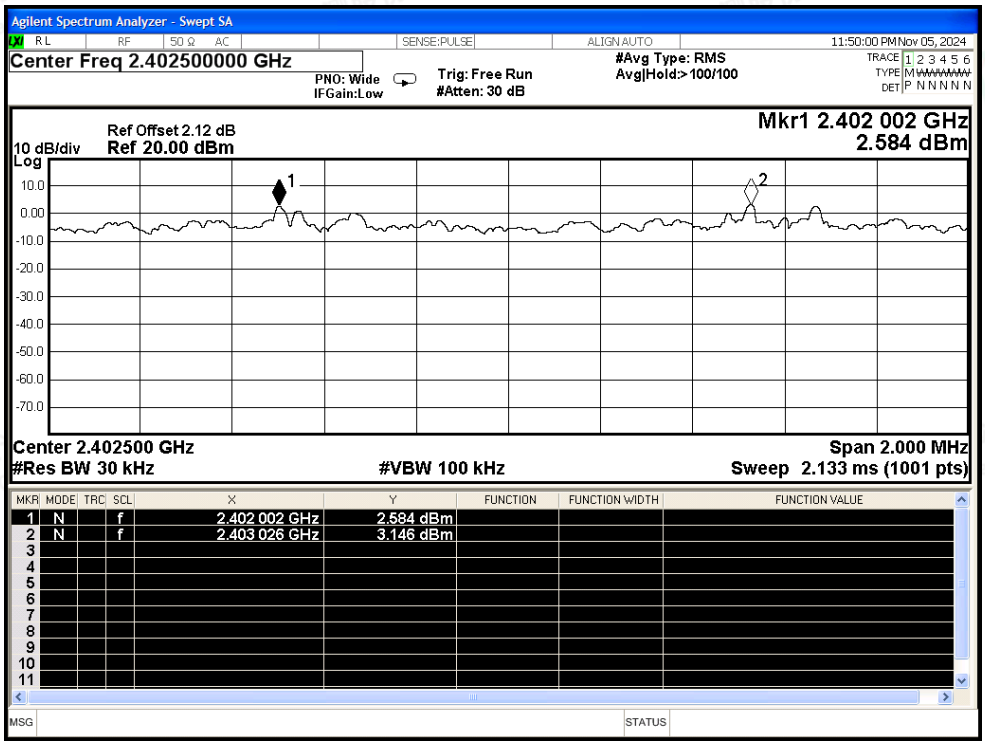
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2401.824	2402.848	1.024	0.683	Pass
NVNT	2-DH5	Ant1	2402.002	2403.026	1.024	0.856	Pass
NVNT	3-DH5	Ant1	2402.034	2403.002	0.968	0.867	Pass

Test Graphs

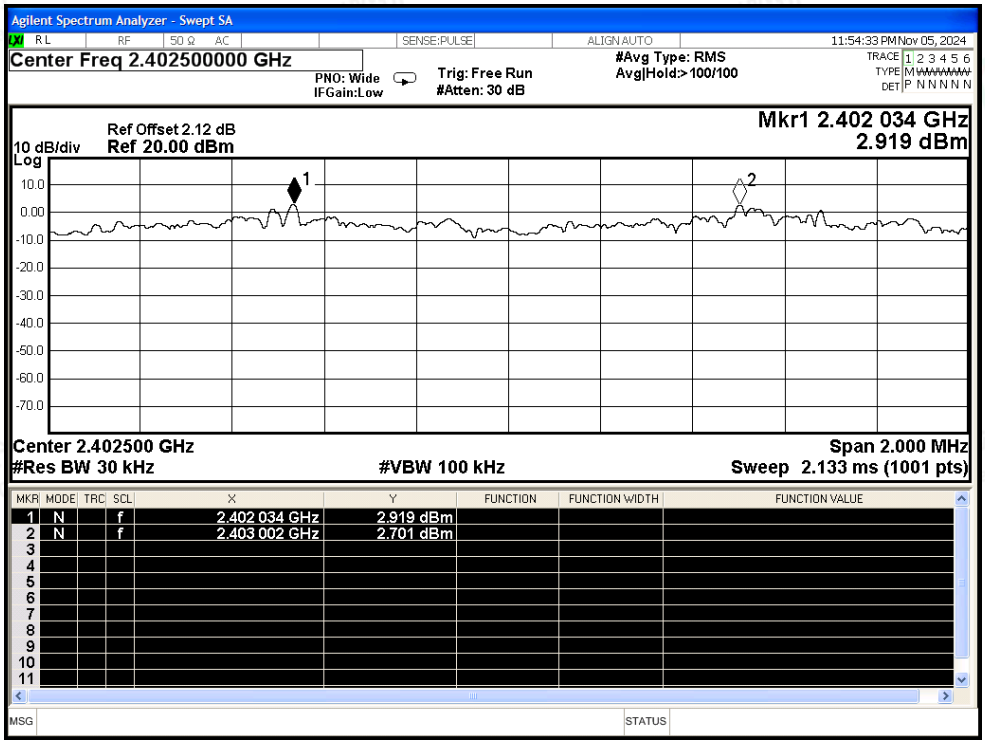
CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1



CFS NVNT 3-DH5 2402MHz Ant1

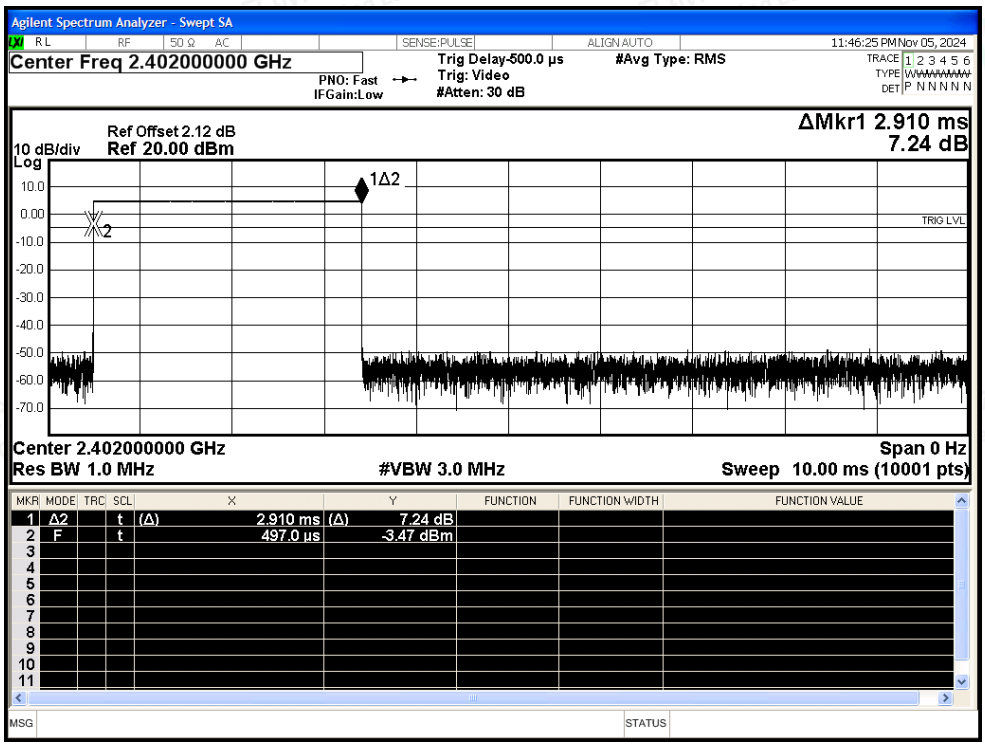


A.4 Dwell Time

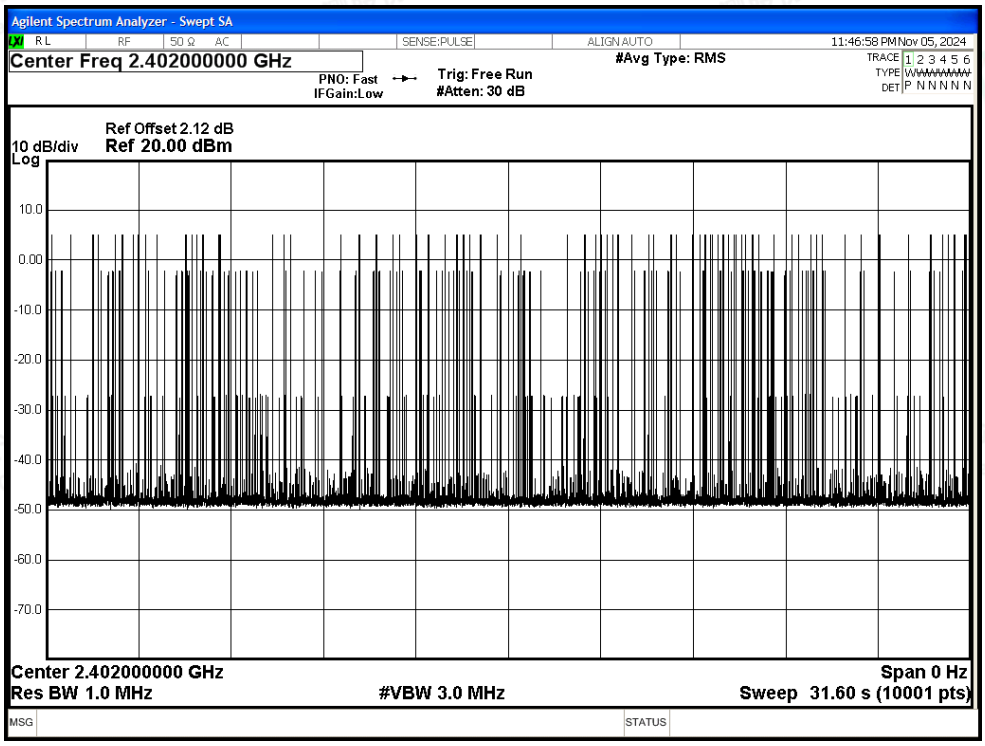
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.91	256.08	88	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.898	295.596	102	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.897	307.082	106	31600	400	Pass

Test Graphs

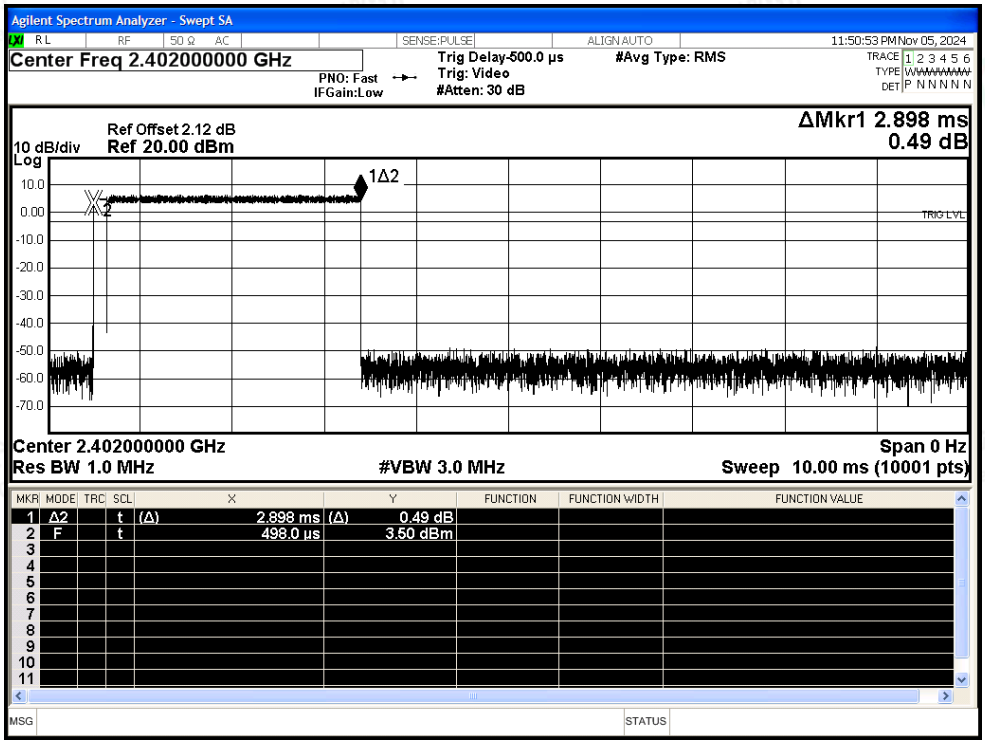
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



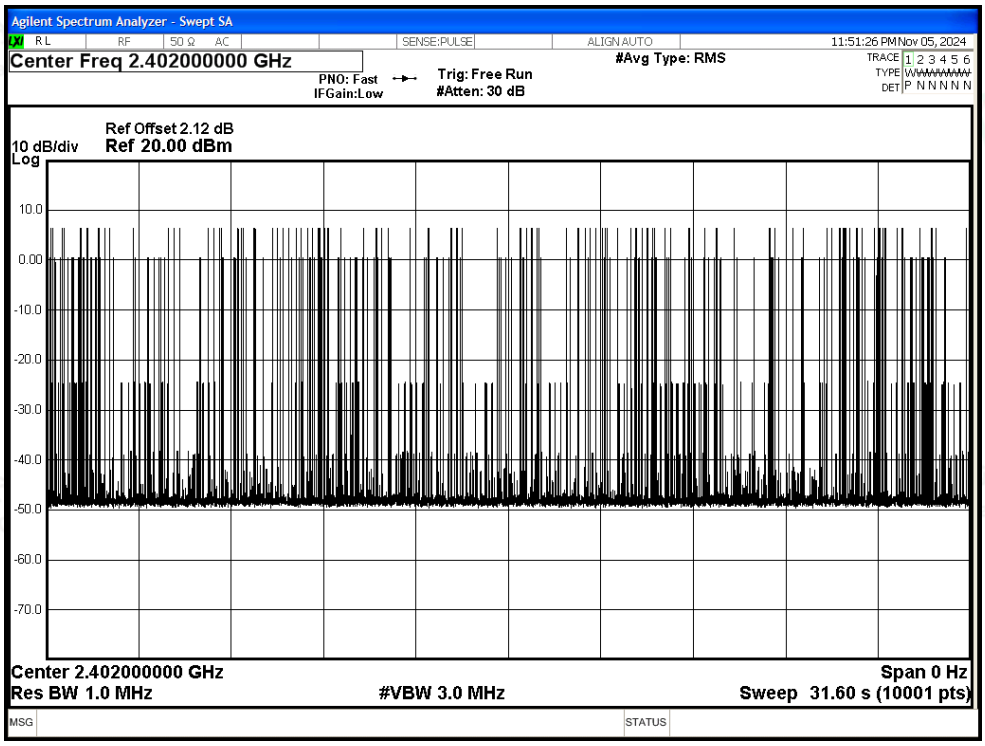
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



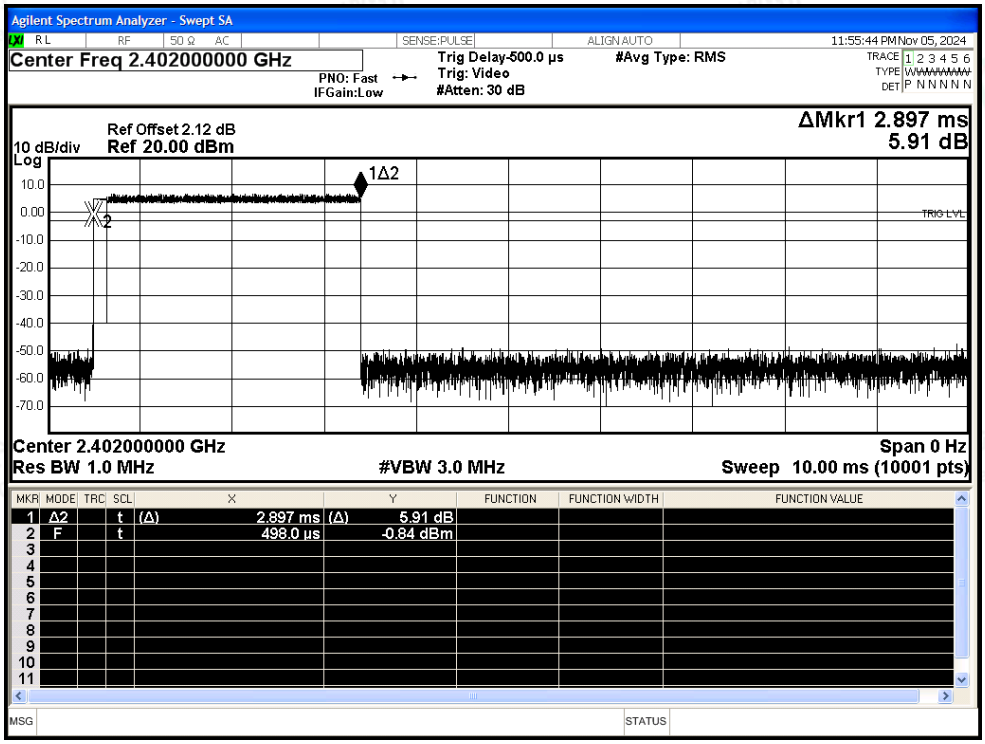
Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



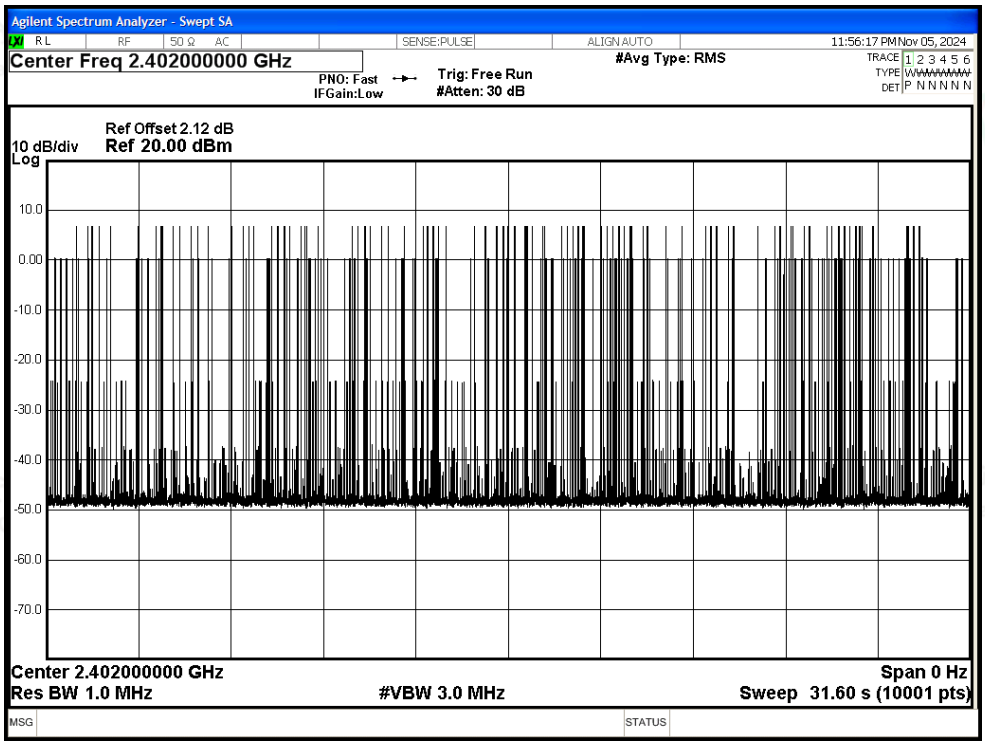
Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated



Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated

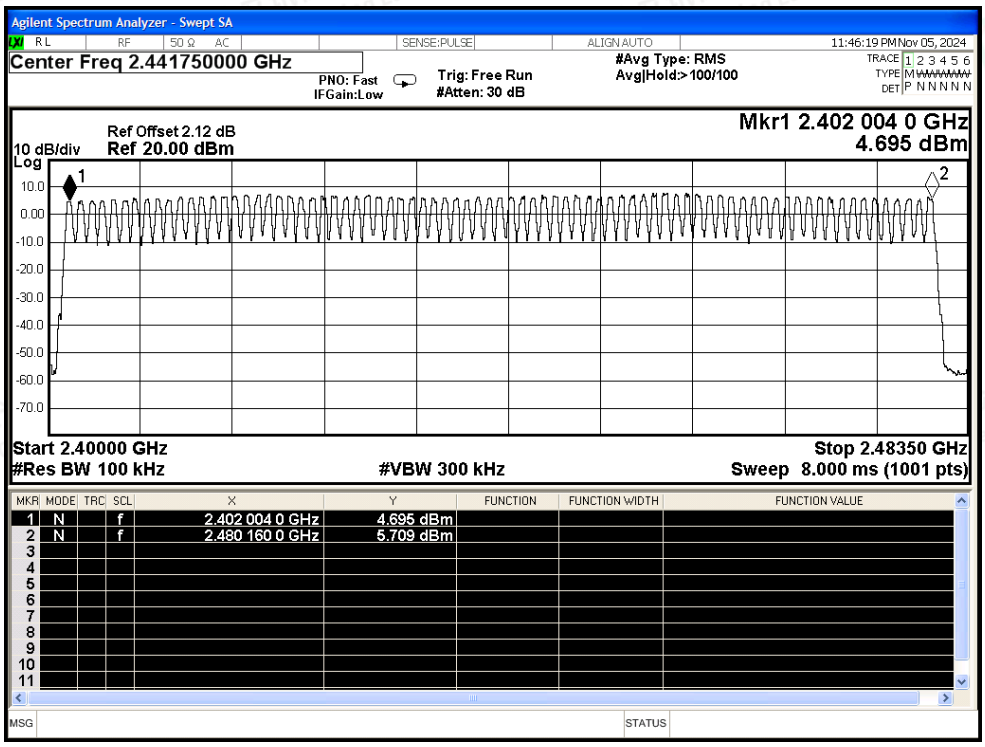


A.5 Number of Hopping Channel

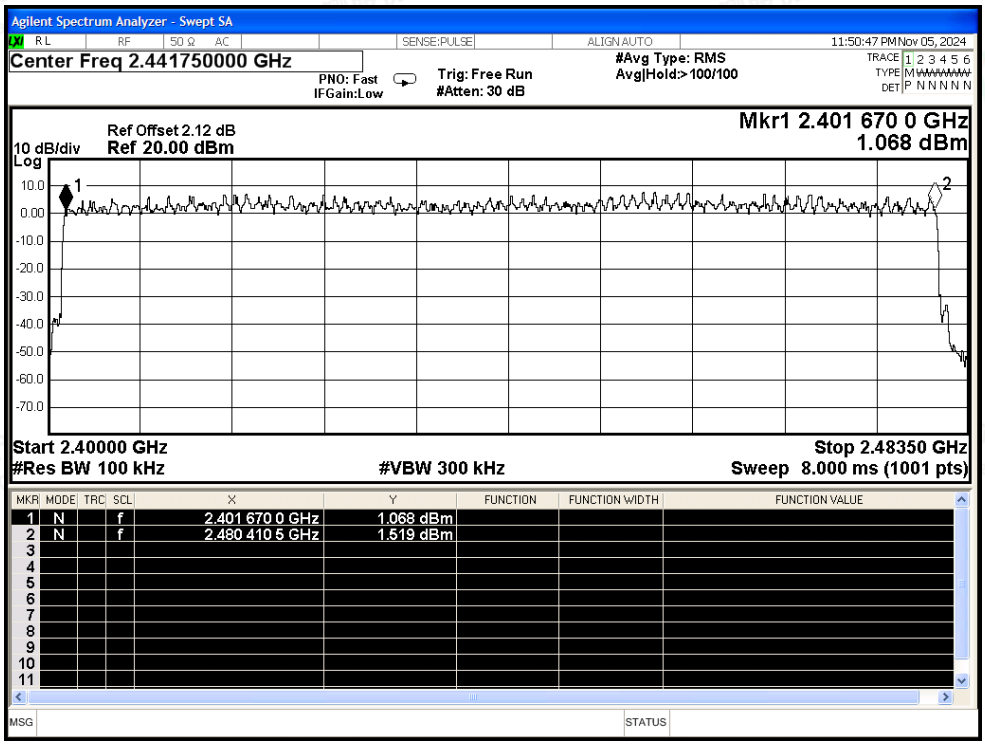
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass

Test Graphs

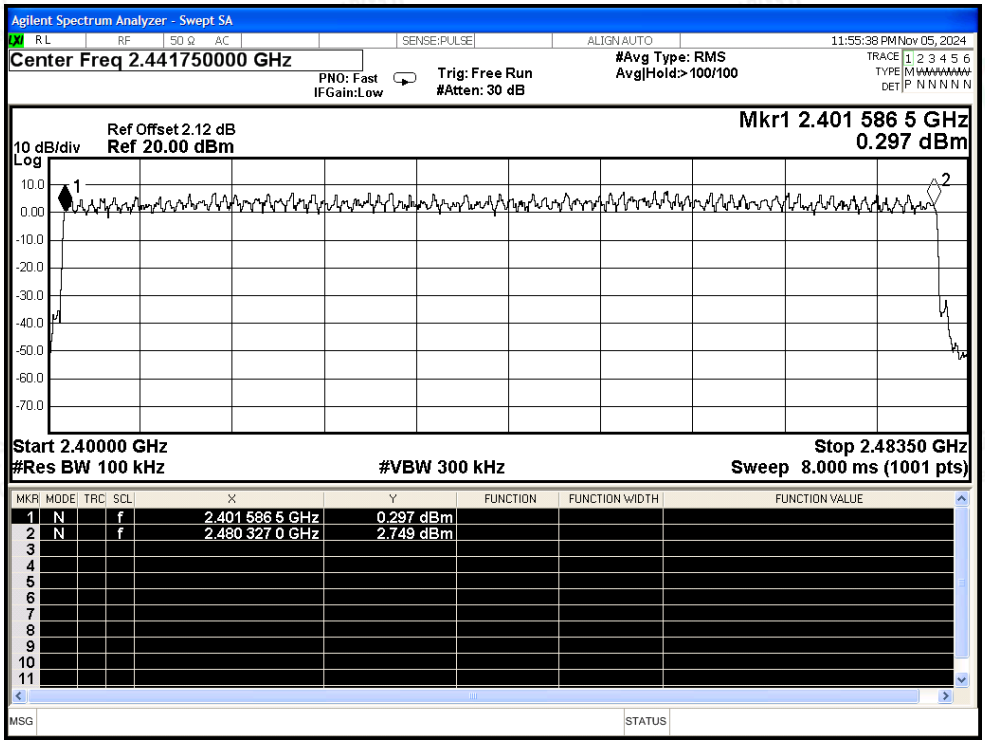
Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1



Hopping No. NVNT 3-DH5 2402MHz Ant1

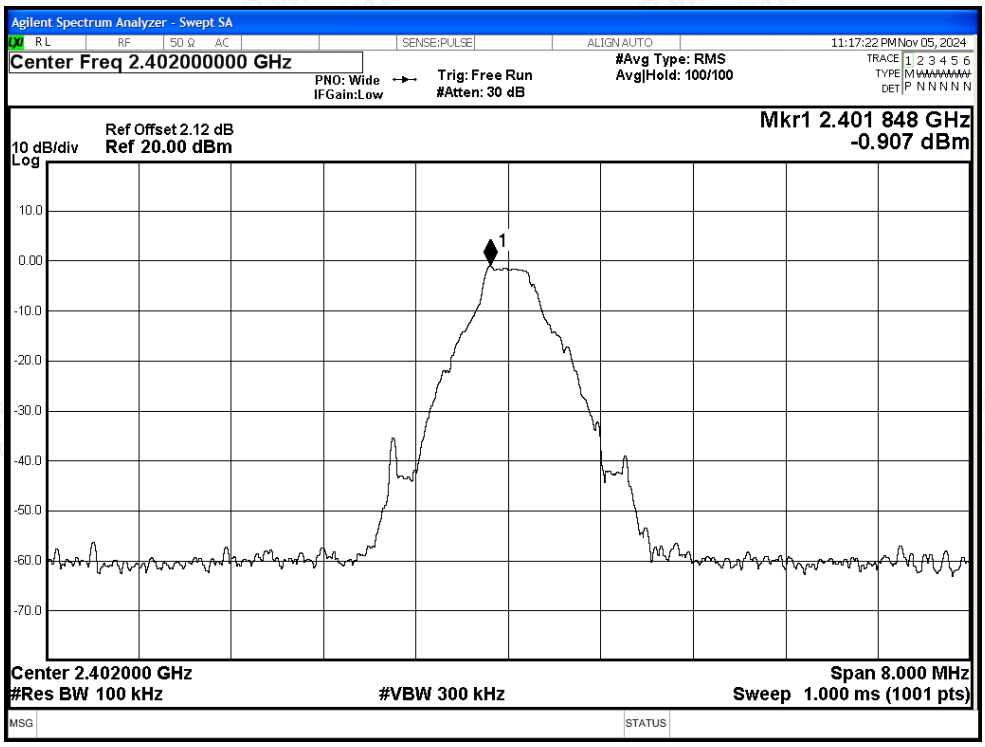


A.6 Band Edge

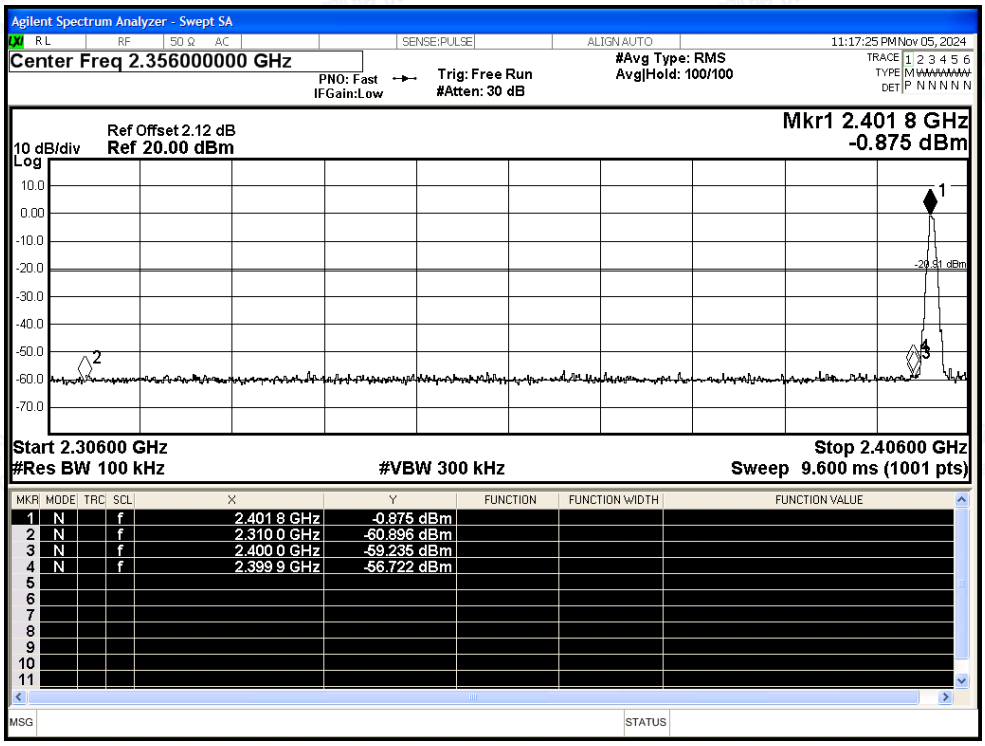
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-55.82	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-55.97	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-50.15	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-54.15	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-51.52	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-53.55	-20	Pass

Test Graphs

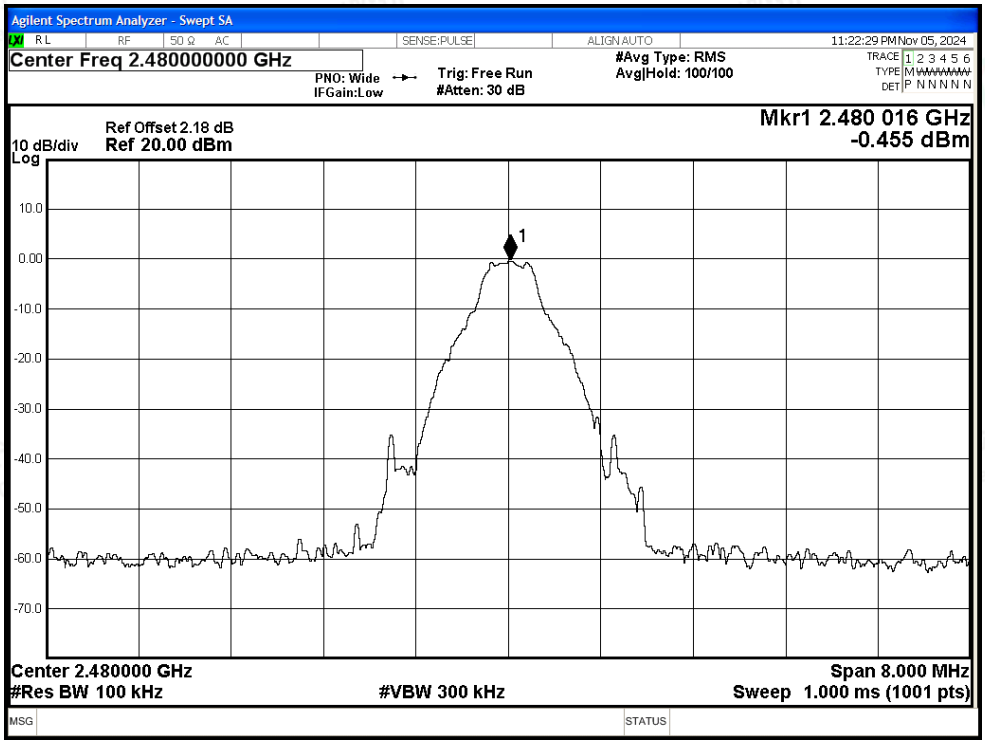
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



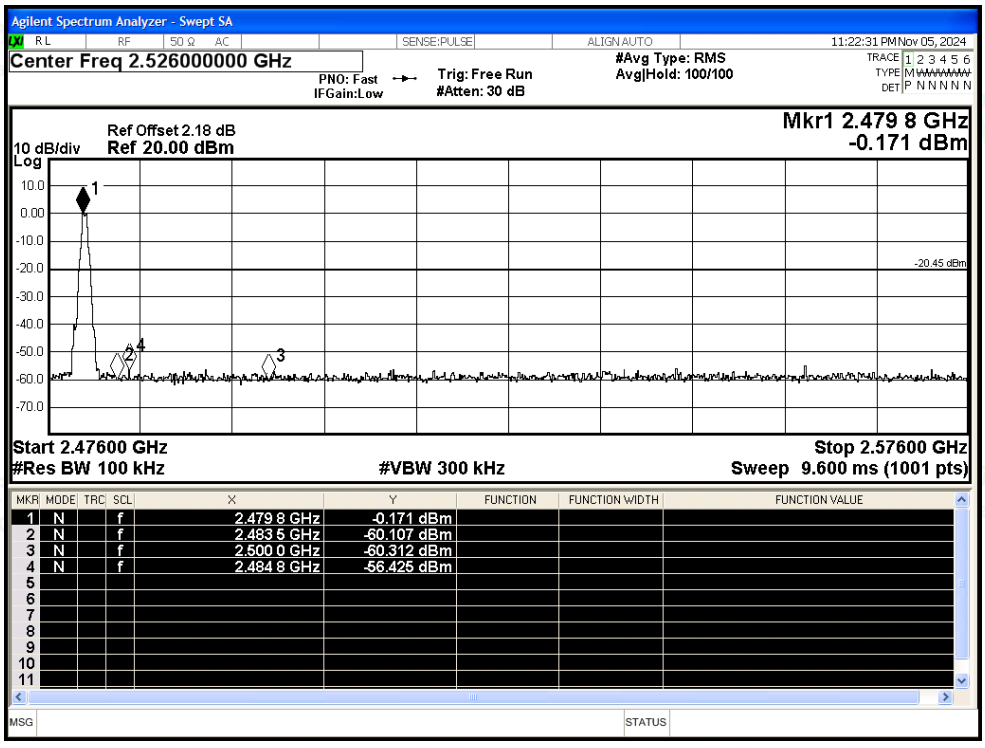
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



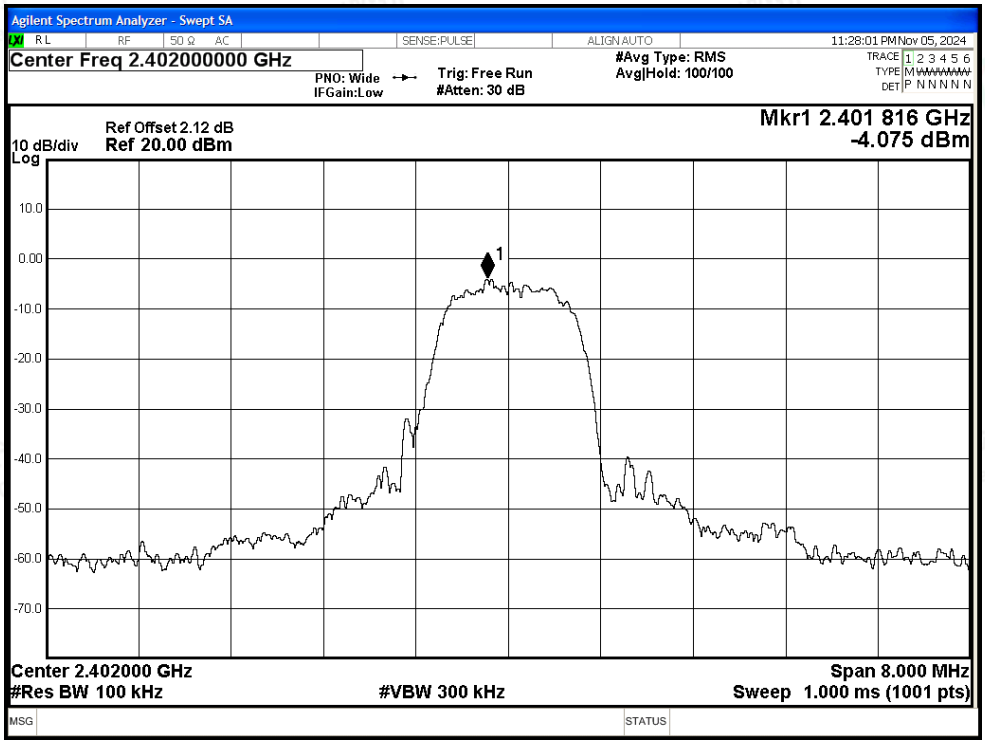
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



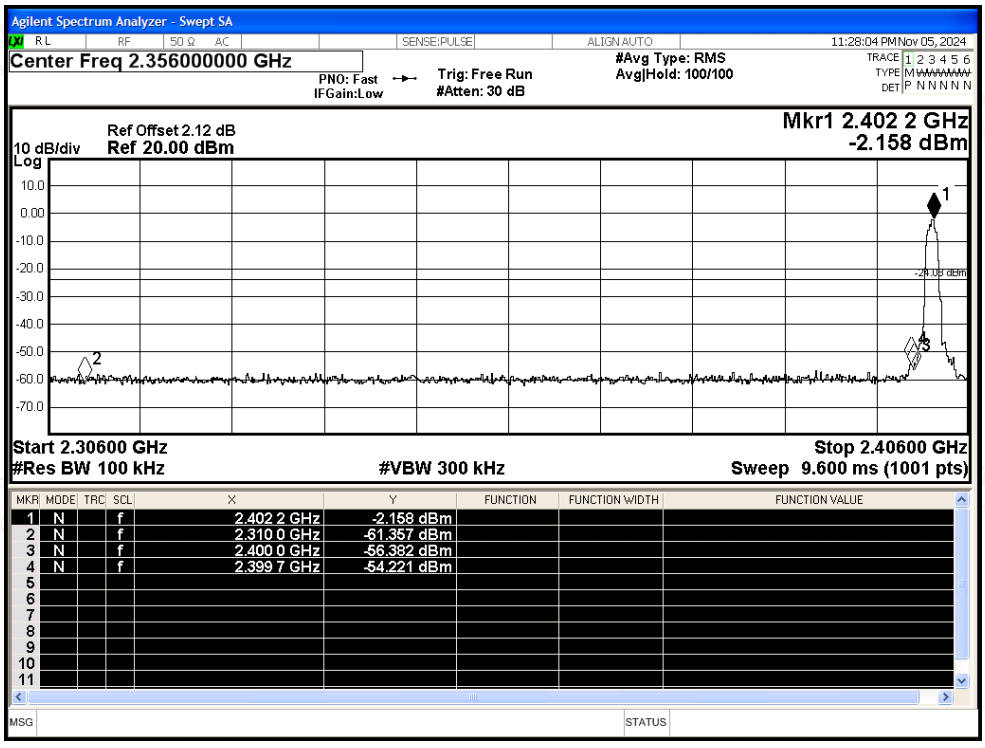
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



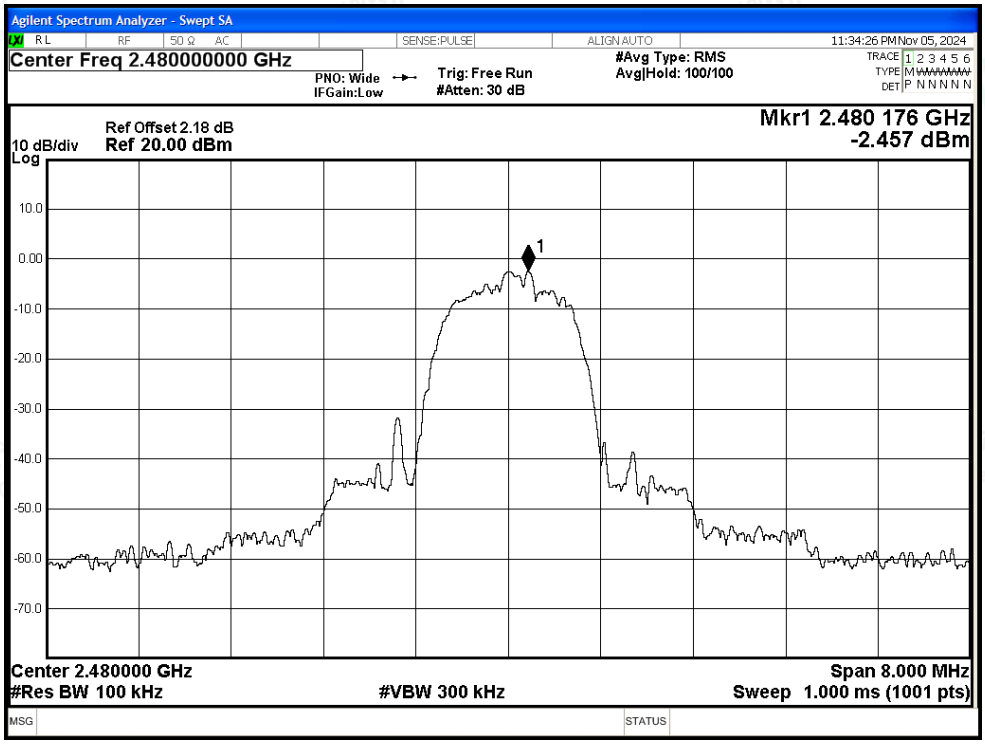
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



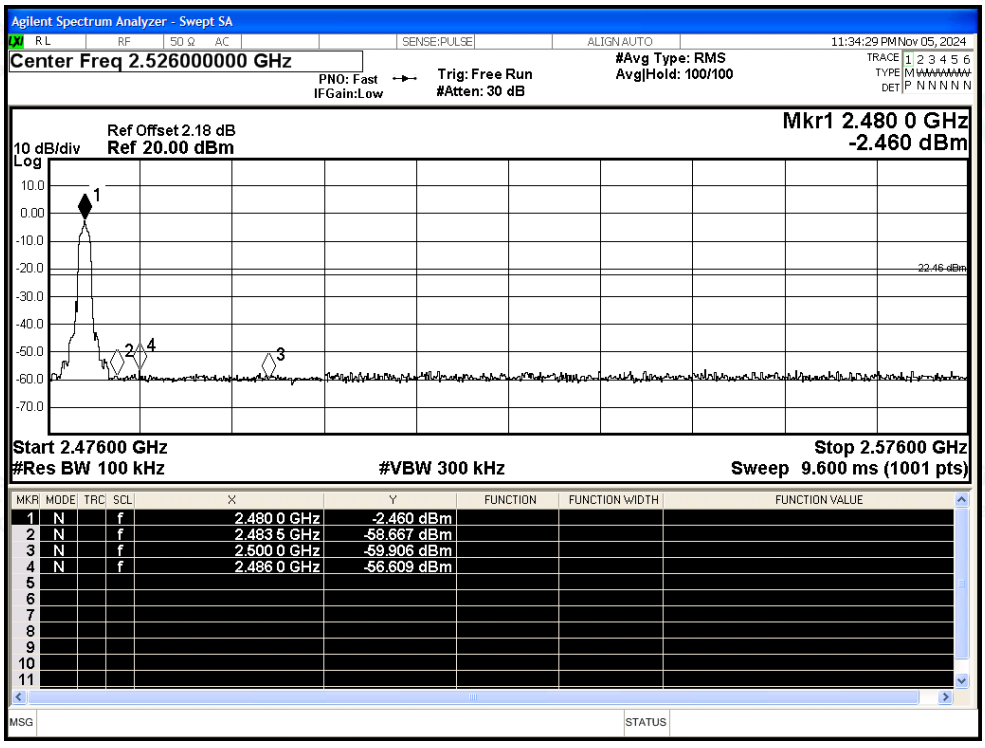
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission



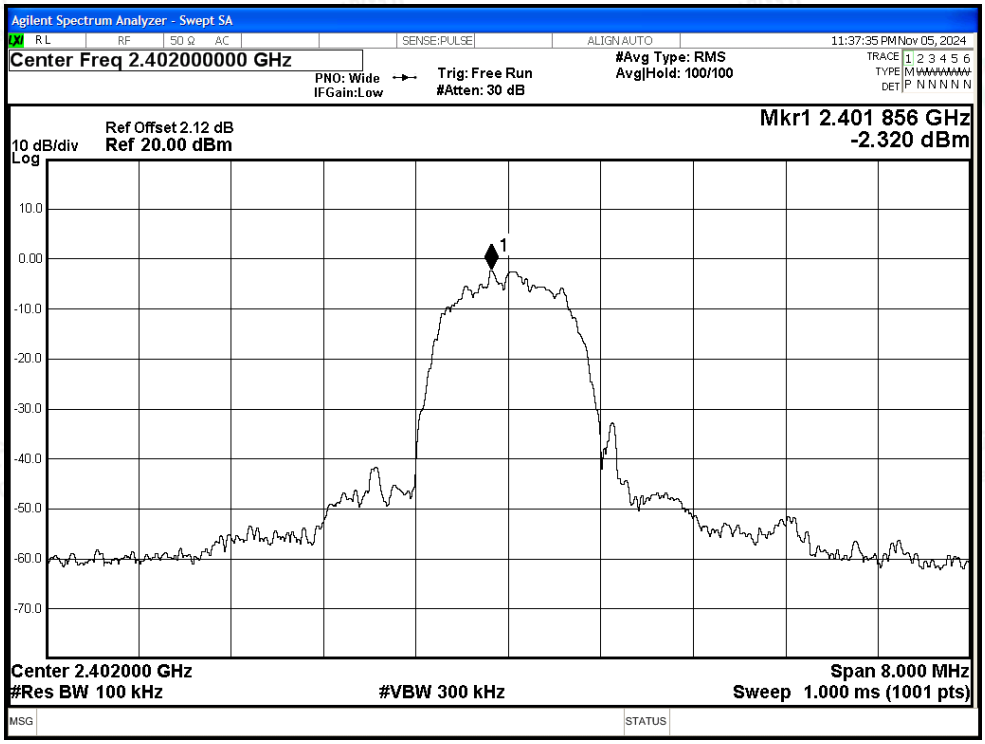
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



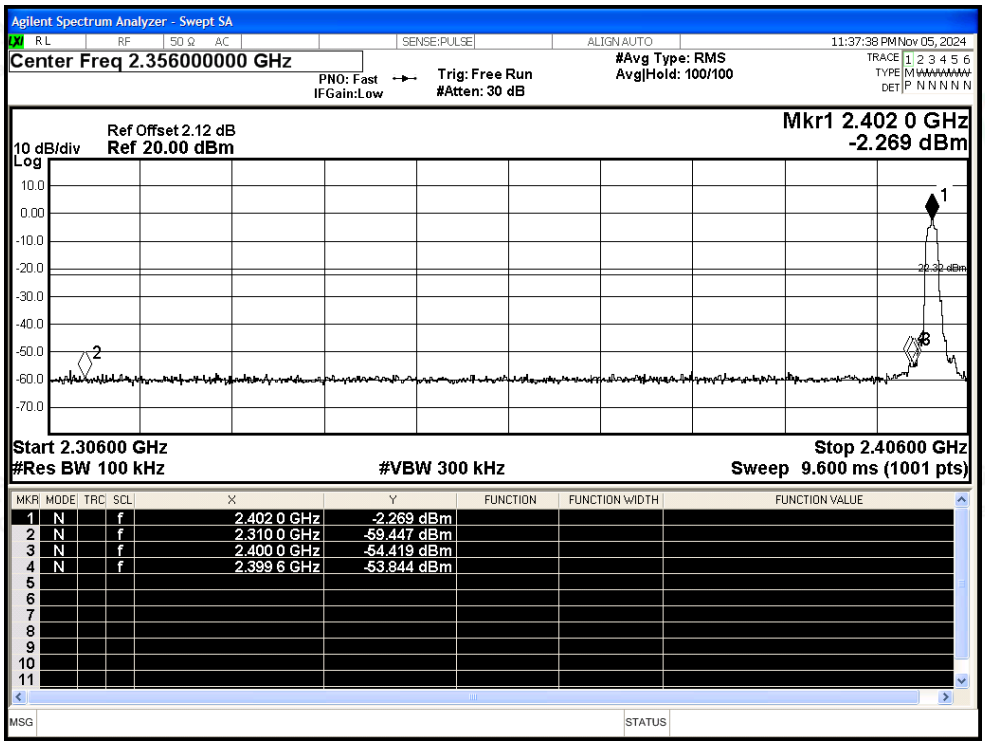
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission



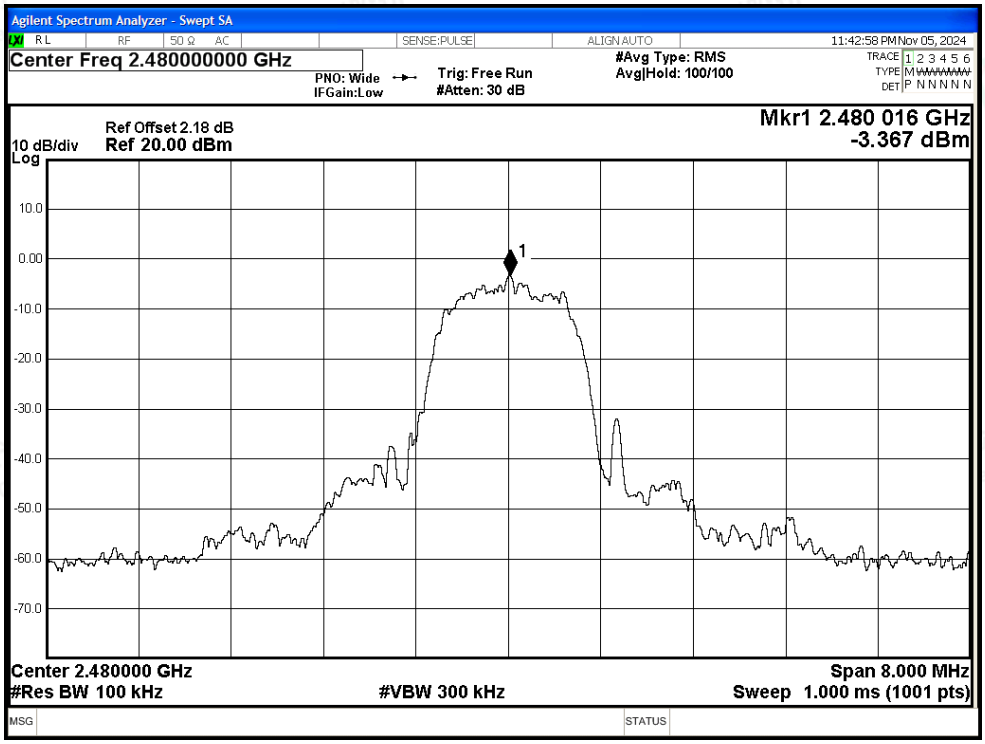
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref



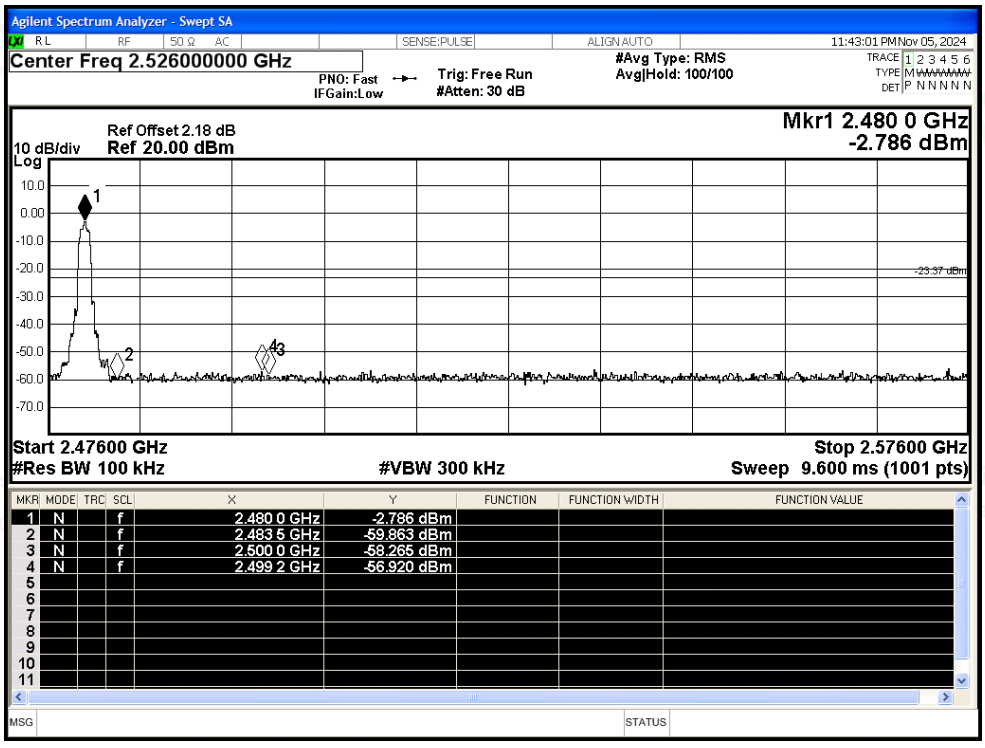
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission



Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Ref



Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Emission

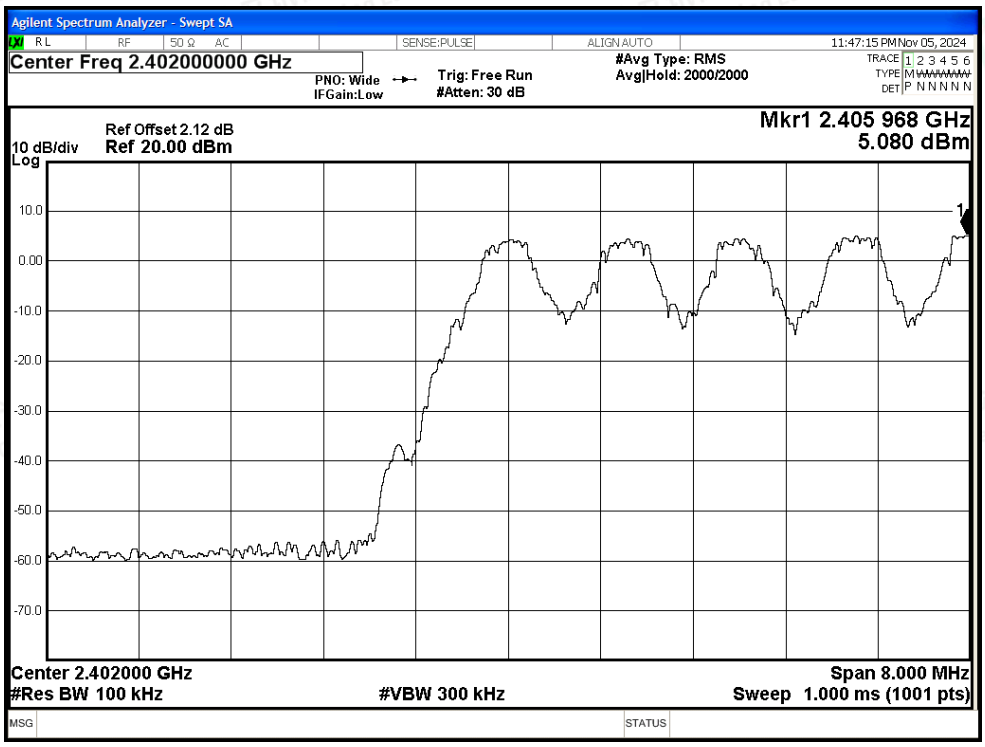


(Hopping)

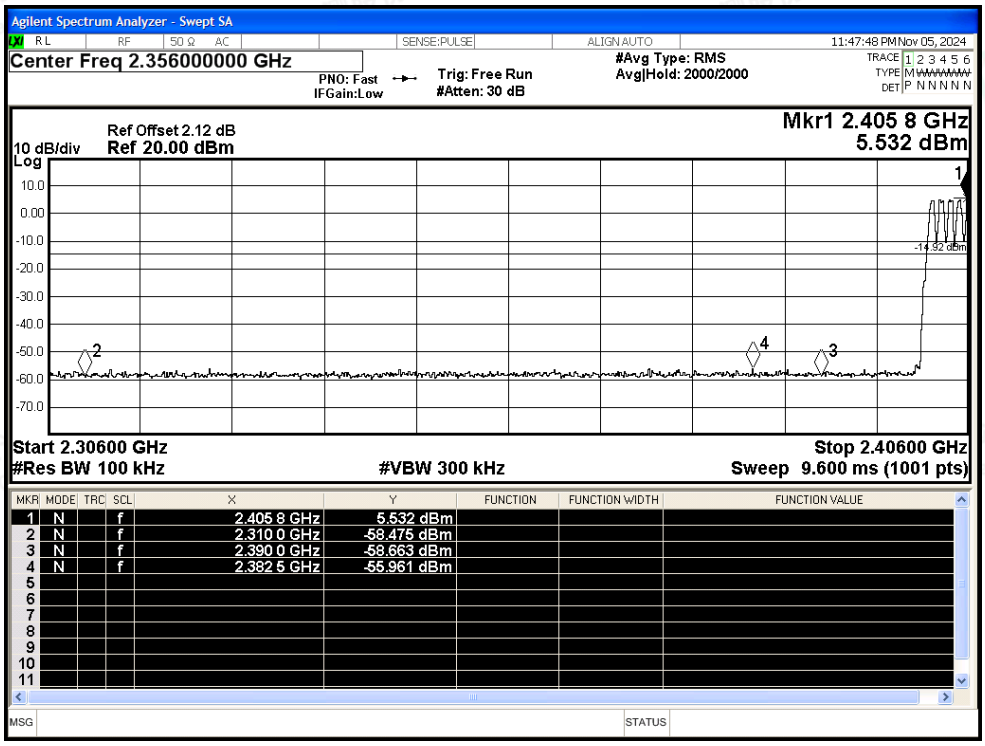
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-61.04	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-62.4	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-59.96	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-59.08	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-60.84	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-57.5	-20	Pass

Test Graphs

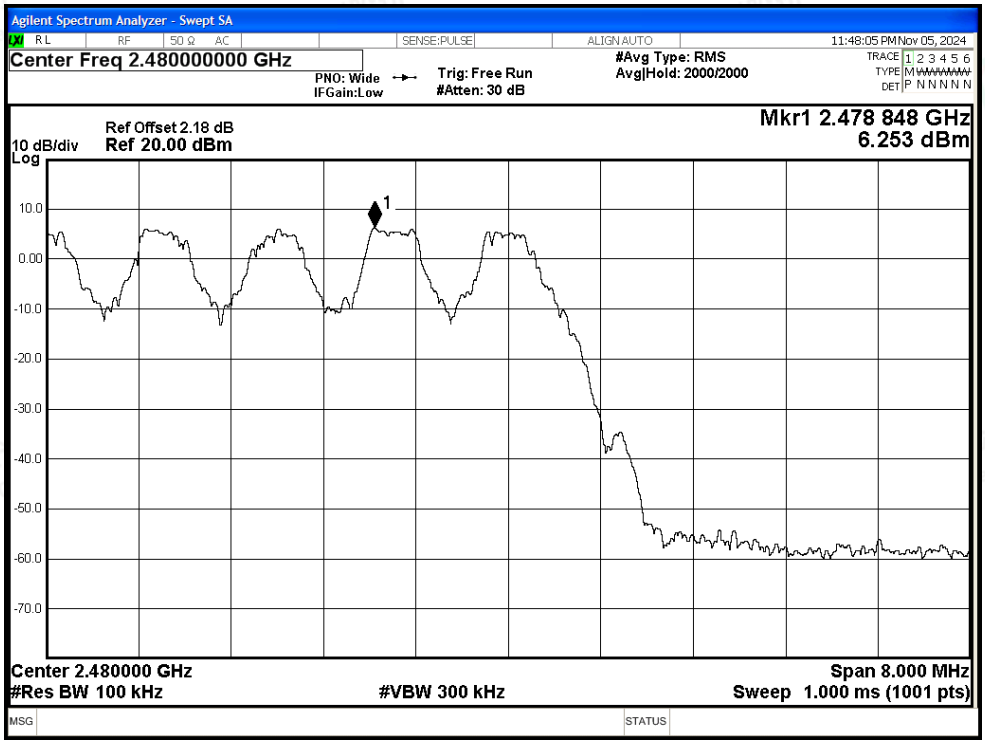
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



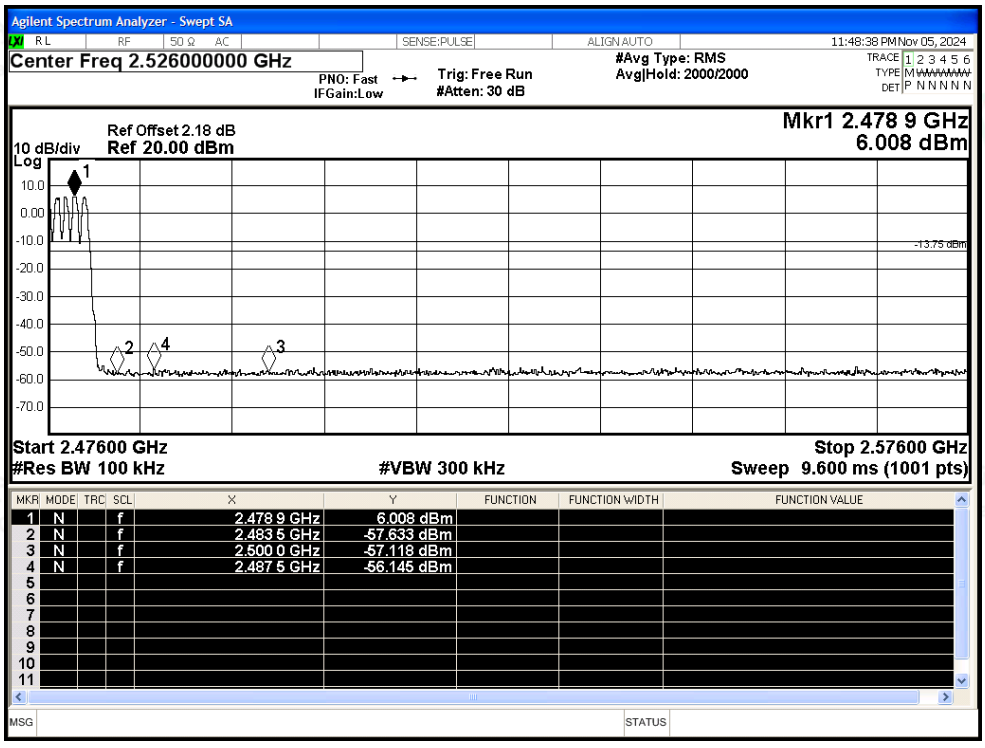
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



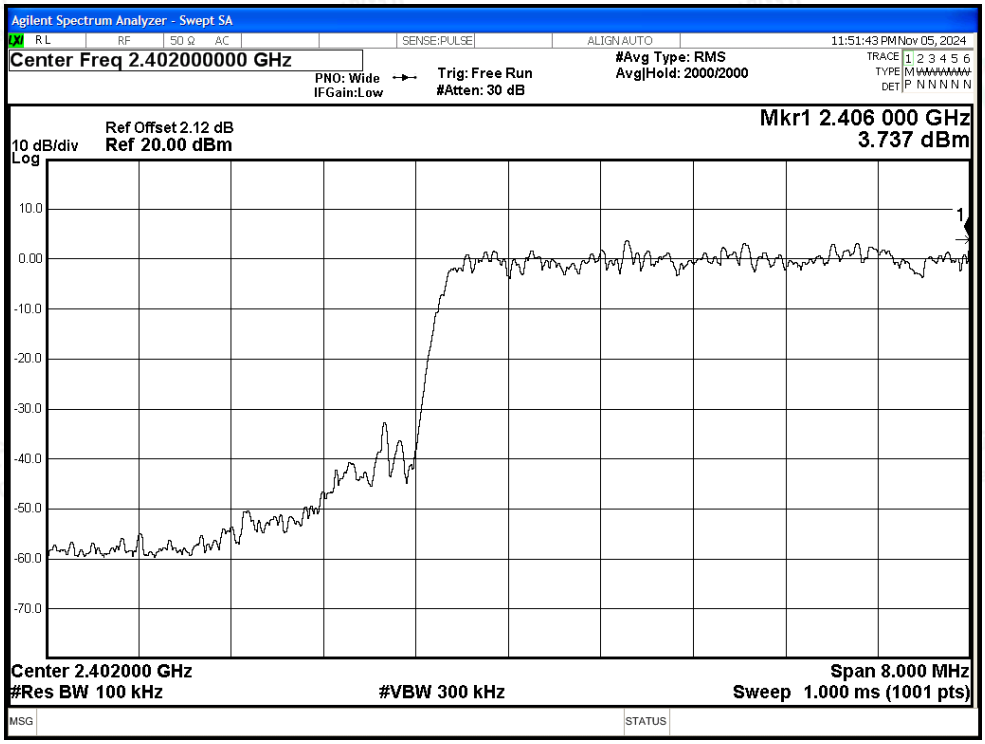
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



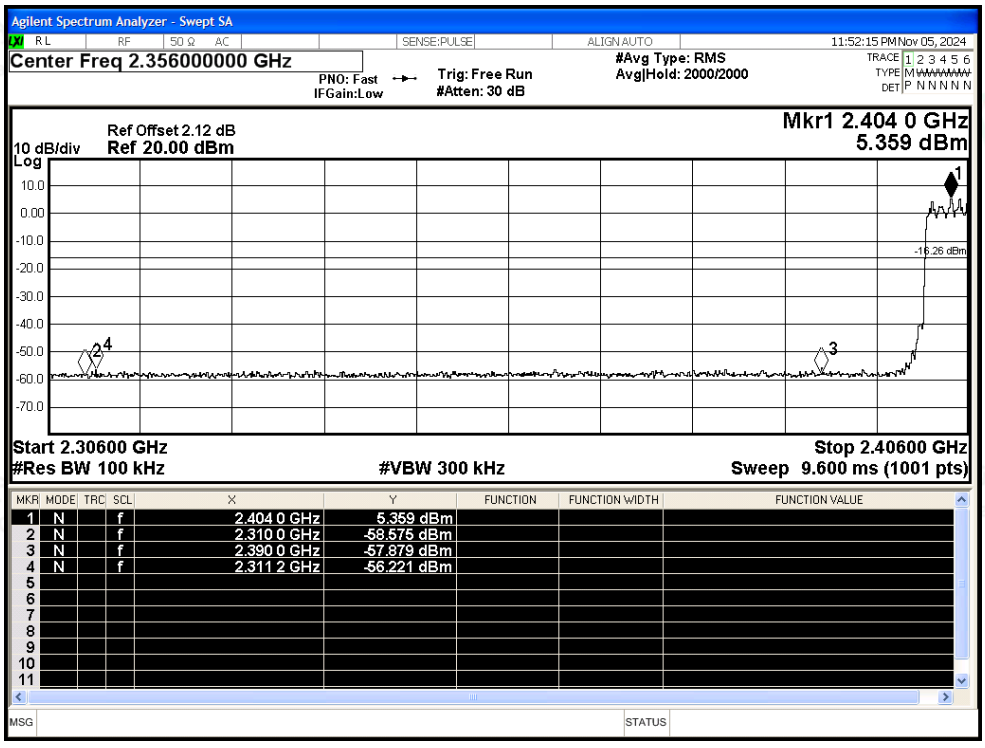
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission



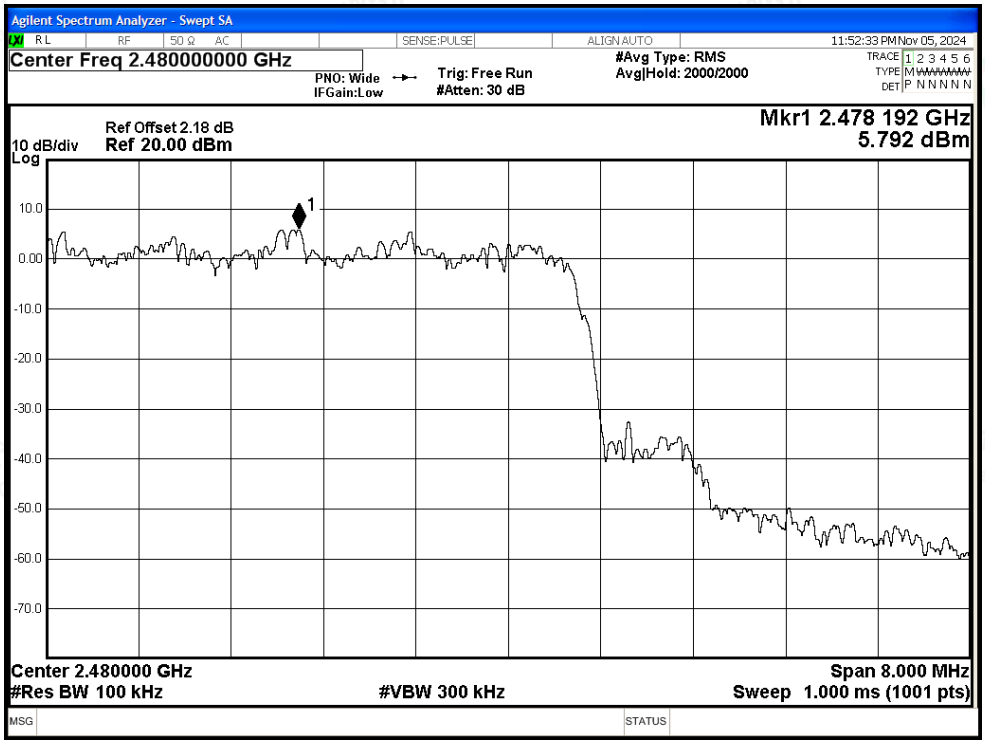
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



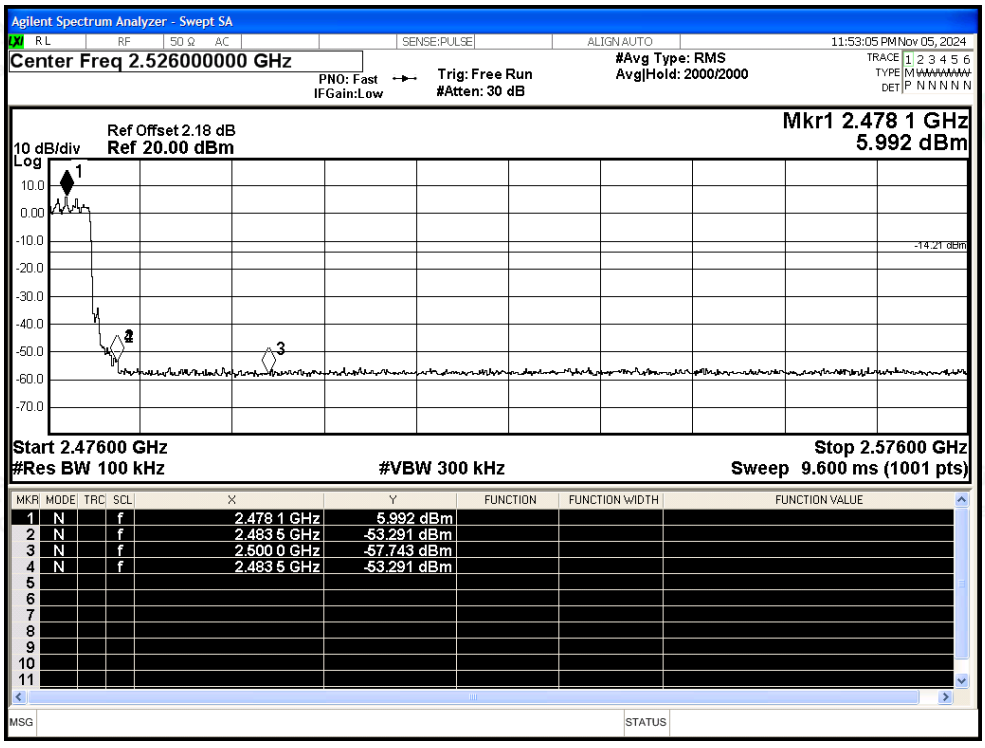
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission



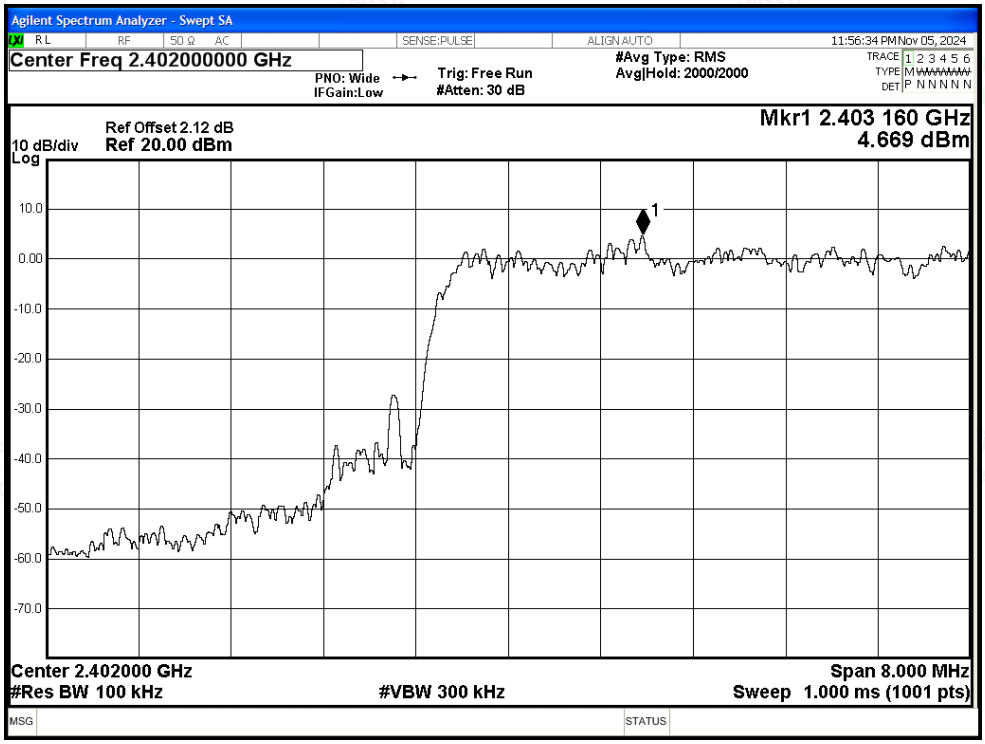
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



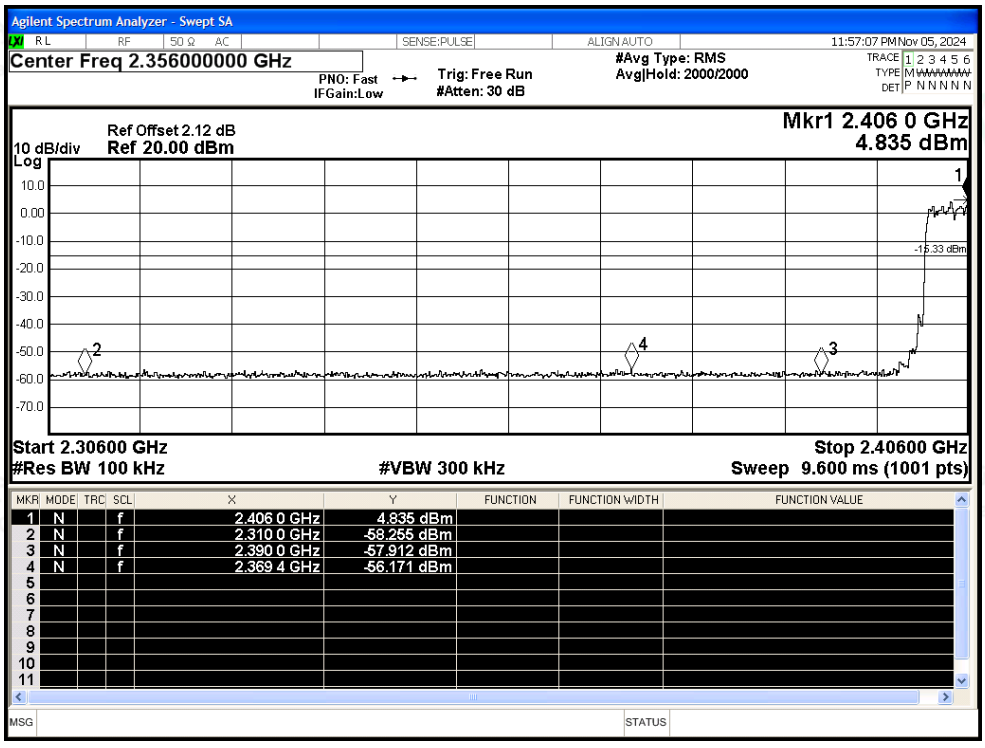
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission



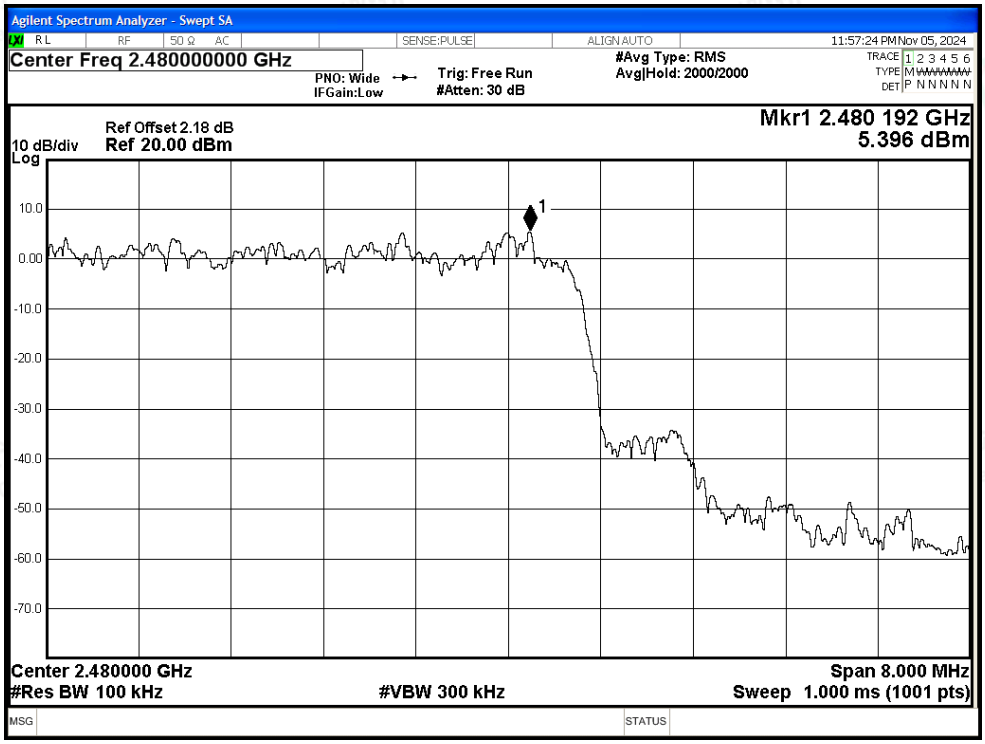
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref



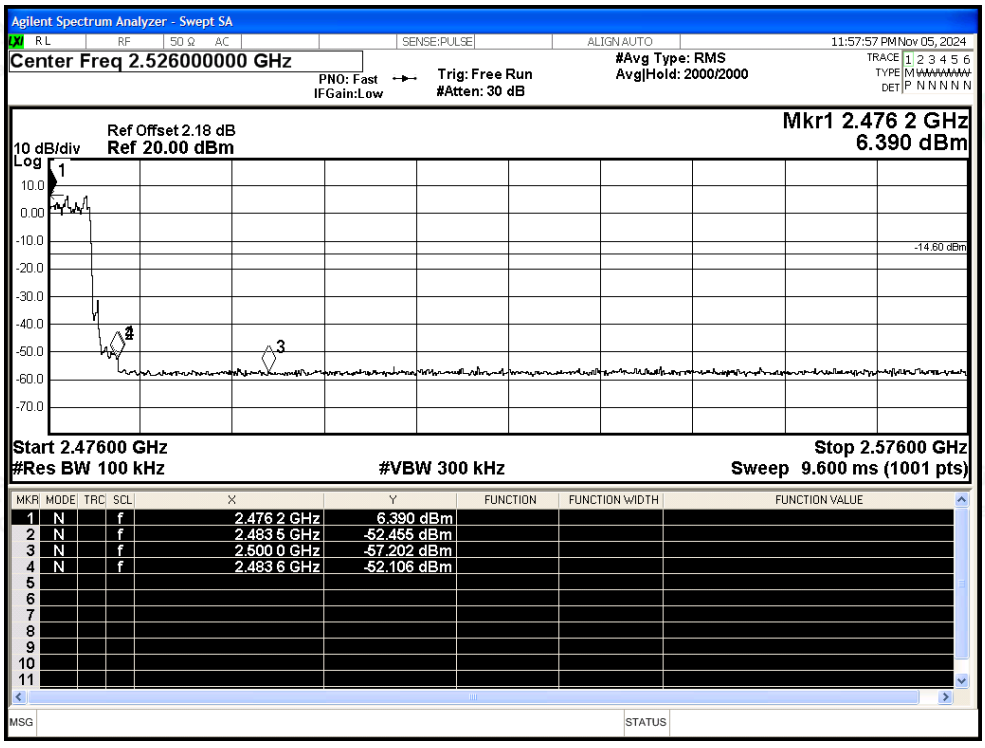
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Emission

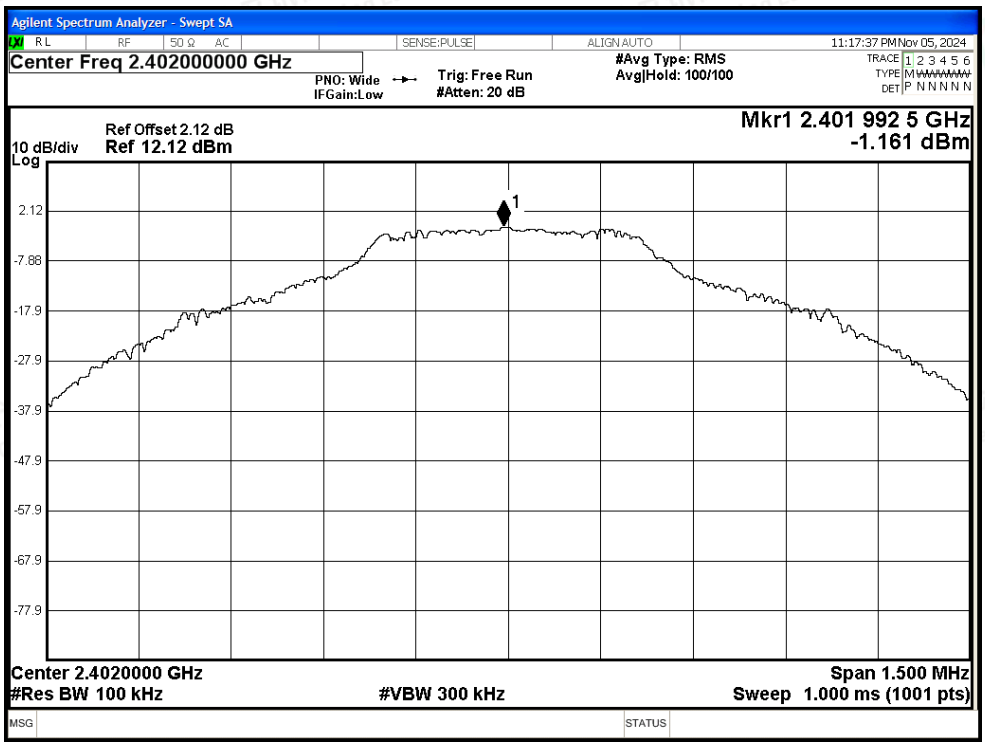


A.7 Conducted RF Spurious Emission

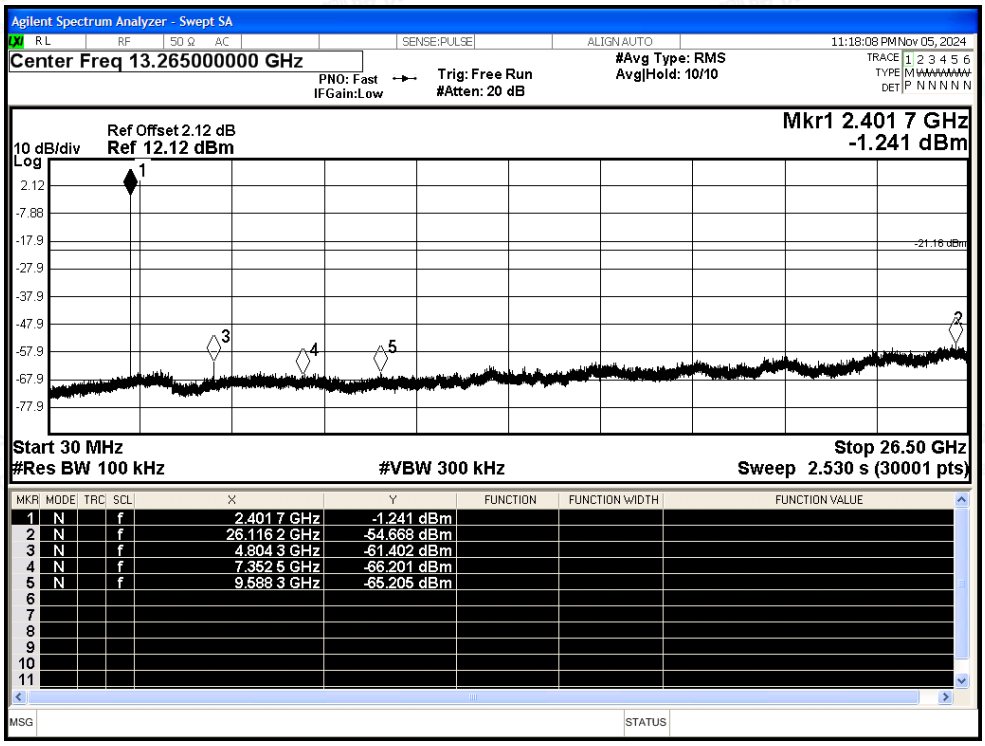
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-53.51	-20	Pass
NVNT	1-DH5	2441	Ant1	-54.35	-20	Pass
NVNT	1-DH5	2480	Ant1	-55.82	-20	Pass
NVNT	2-DH5	2402	Ant1	-53.59	-20	Pass
NVNT	2-DH5	2441	Ant1	-53.64	-20	Pass
NVNT	2-DH5	2480	Ant1	-51.45	-20	Pass
NVNT	3-DH5	2402	Ant1	-53.07	-20	Pass
NVNT	3-DH5	2441	Ant1	-54.03	-20	Pass
NVNT	3-DH5	2480	Ant1	-52.95	-20	Pass

Test Graphs

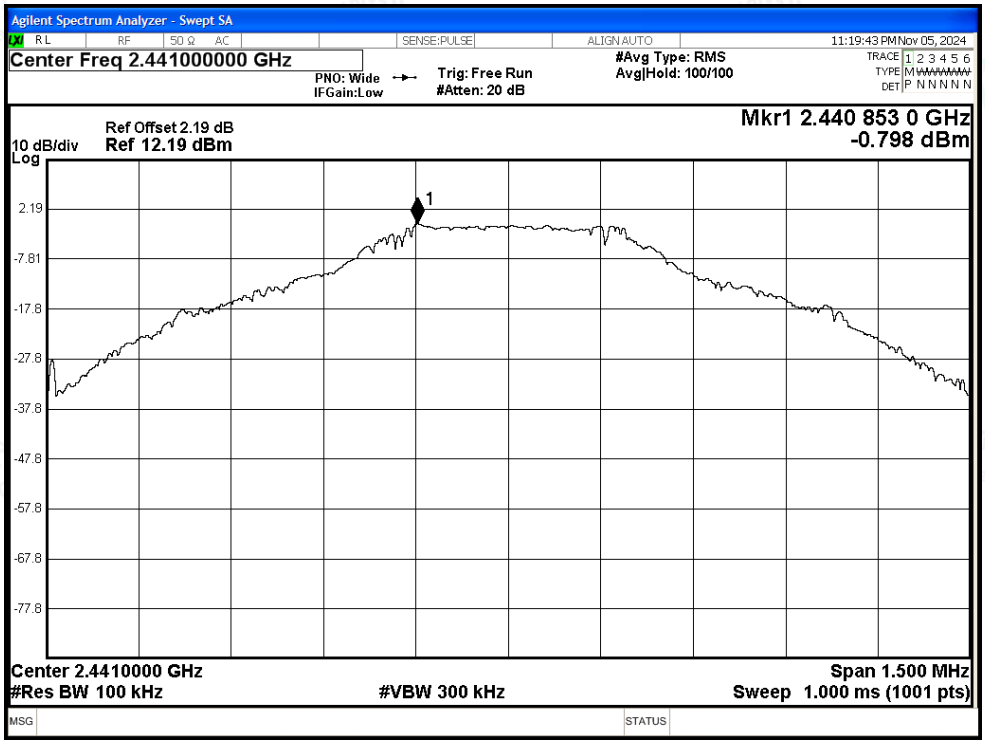
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



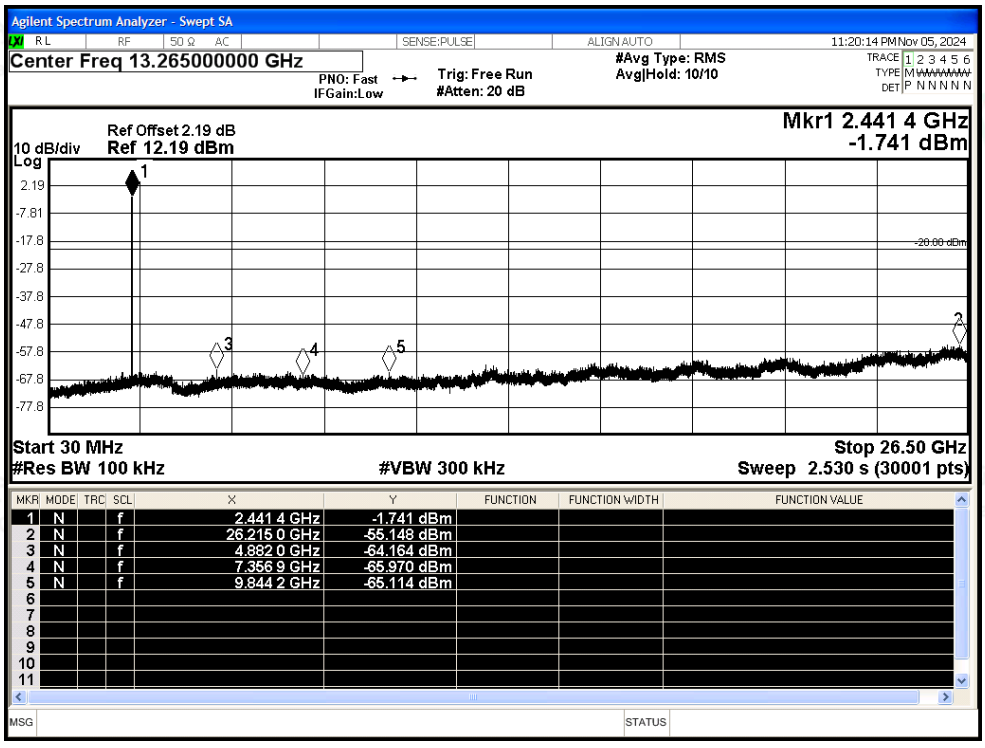
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



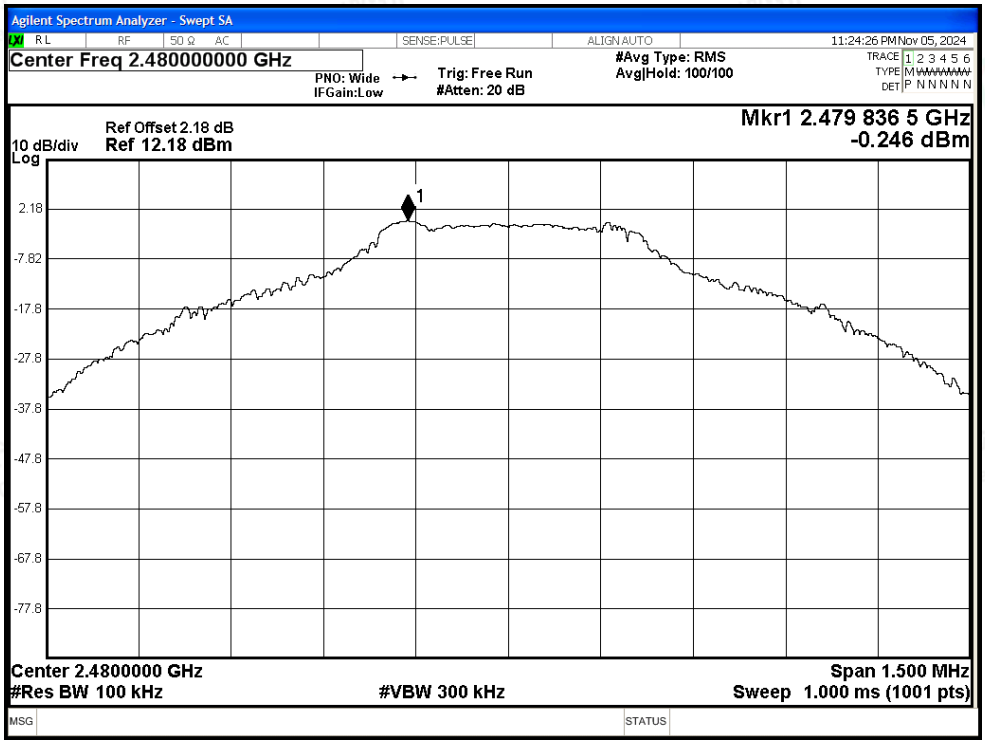
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



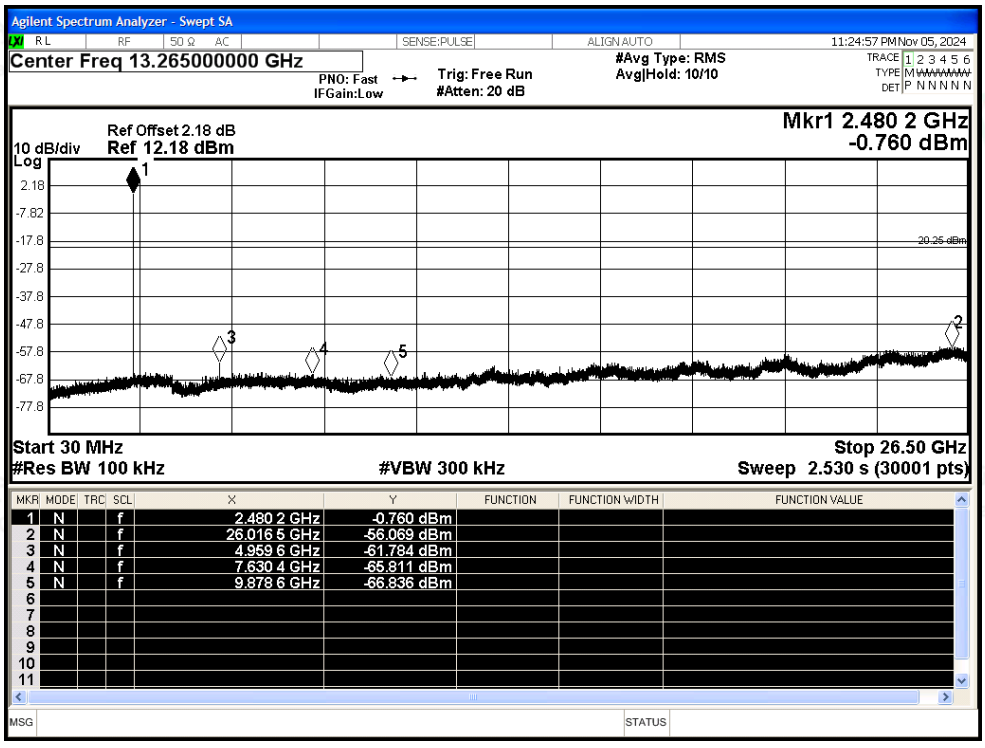
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



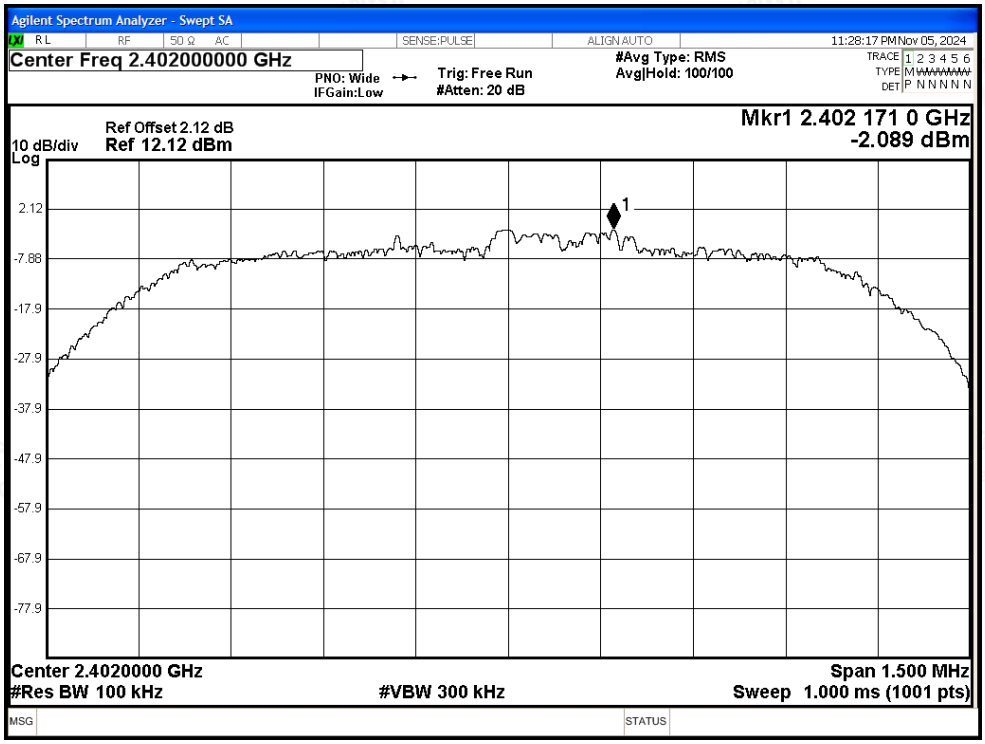
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



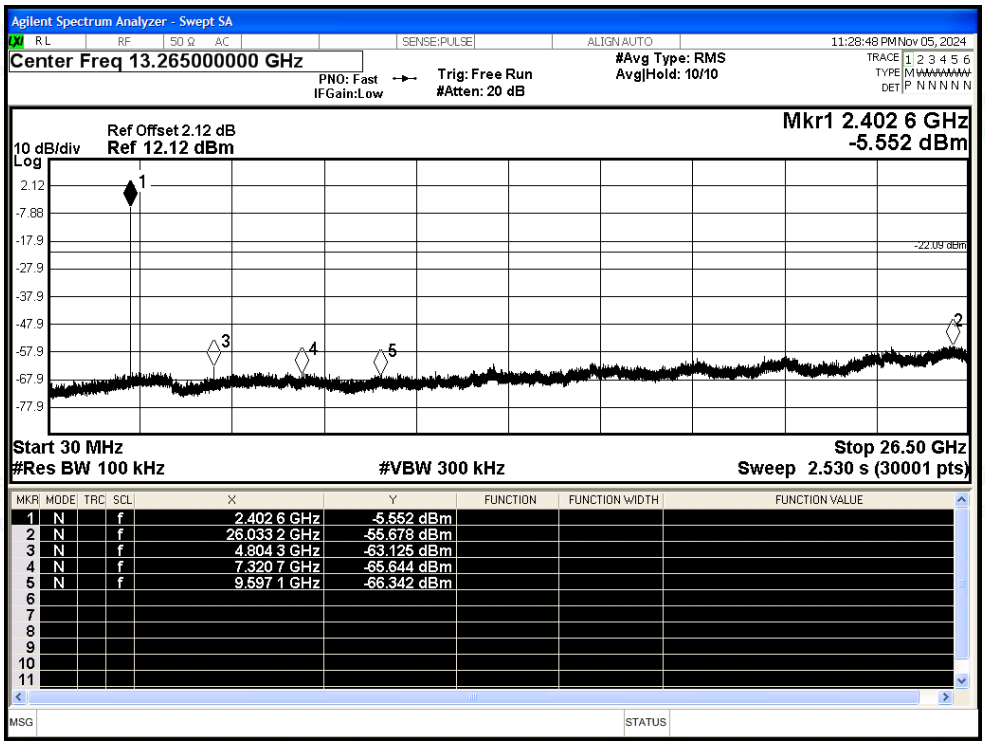
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



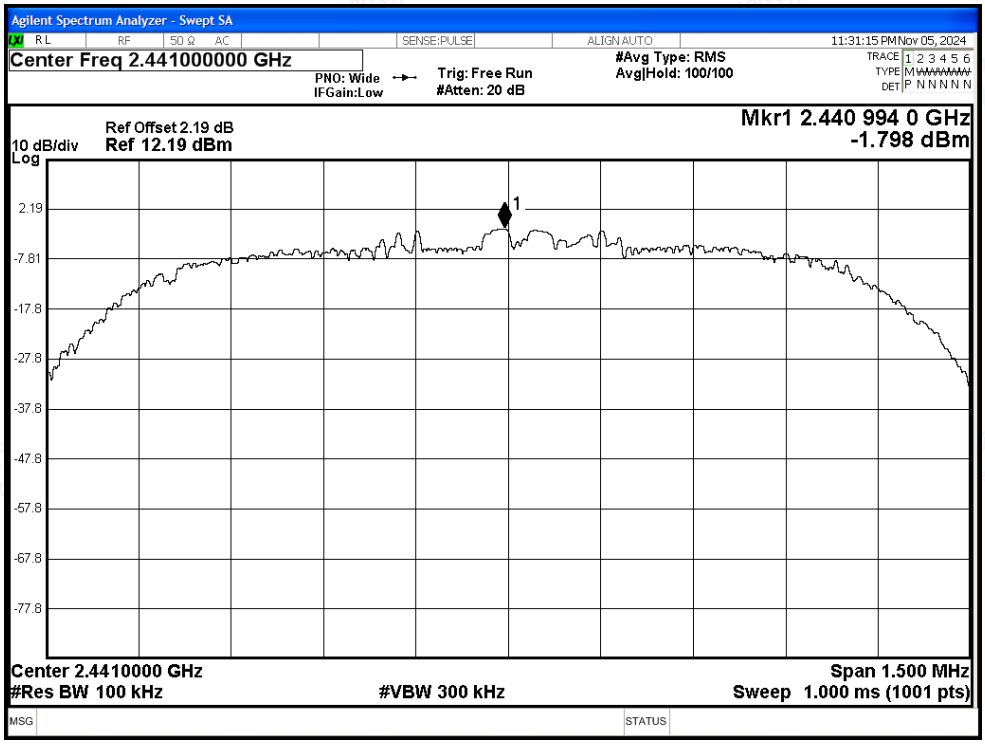
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



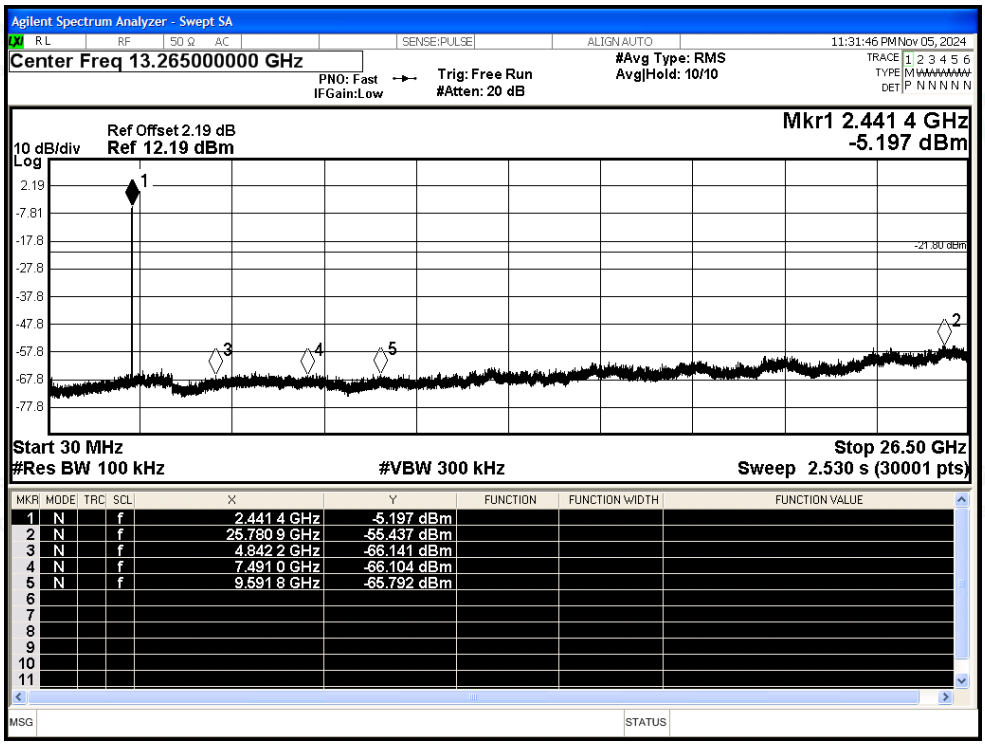
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



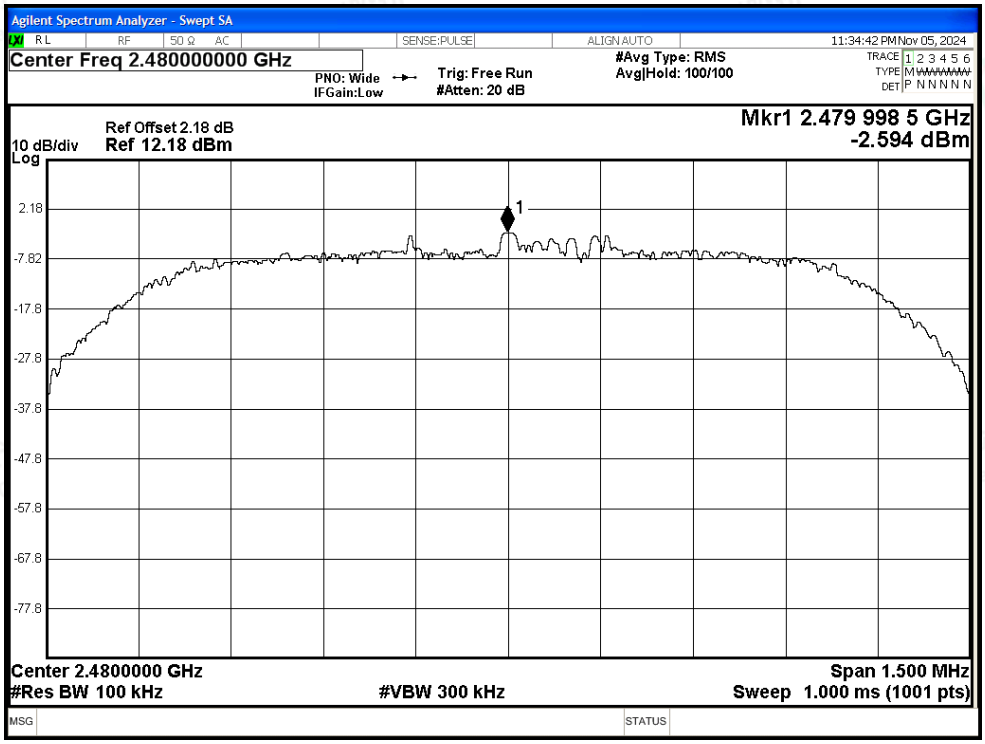
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



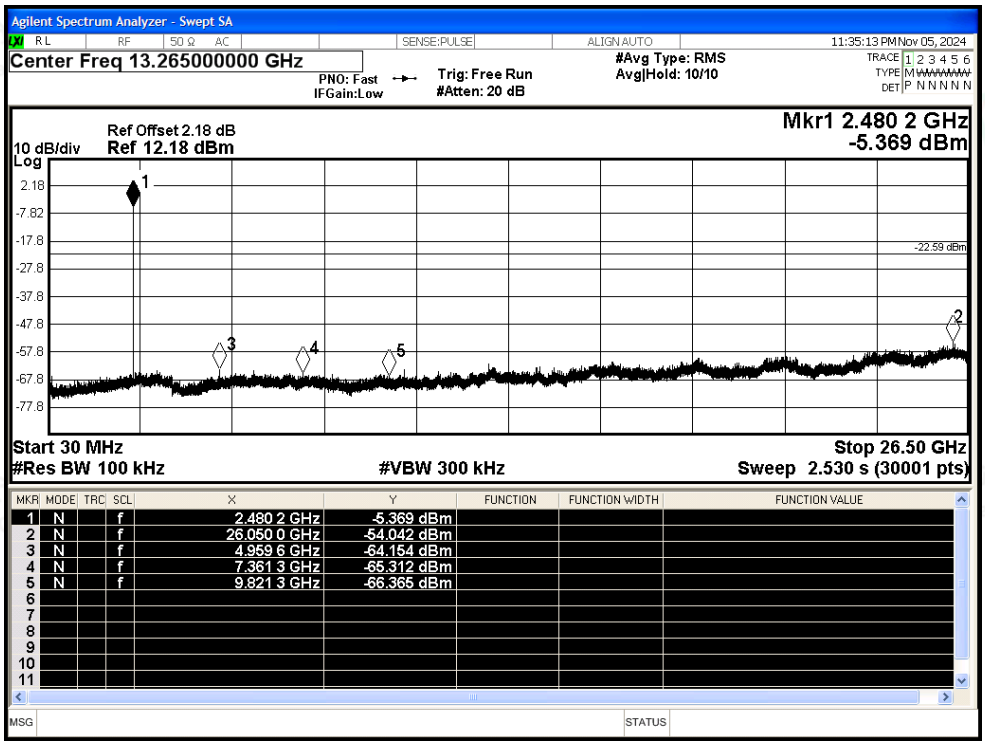
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



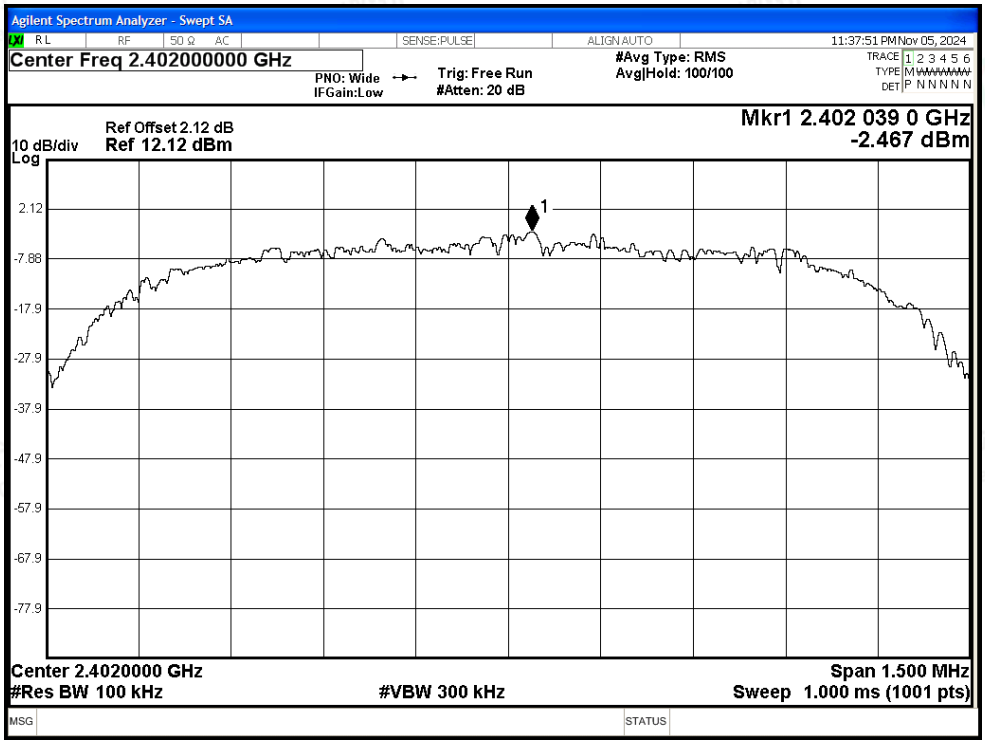
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



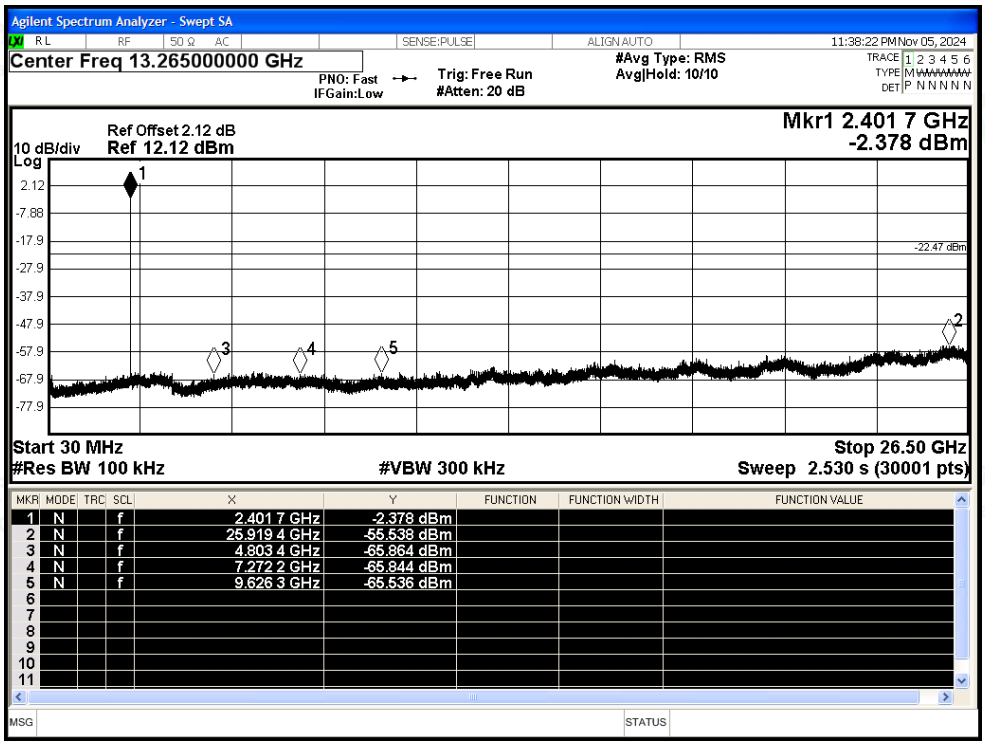
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission



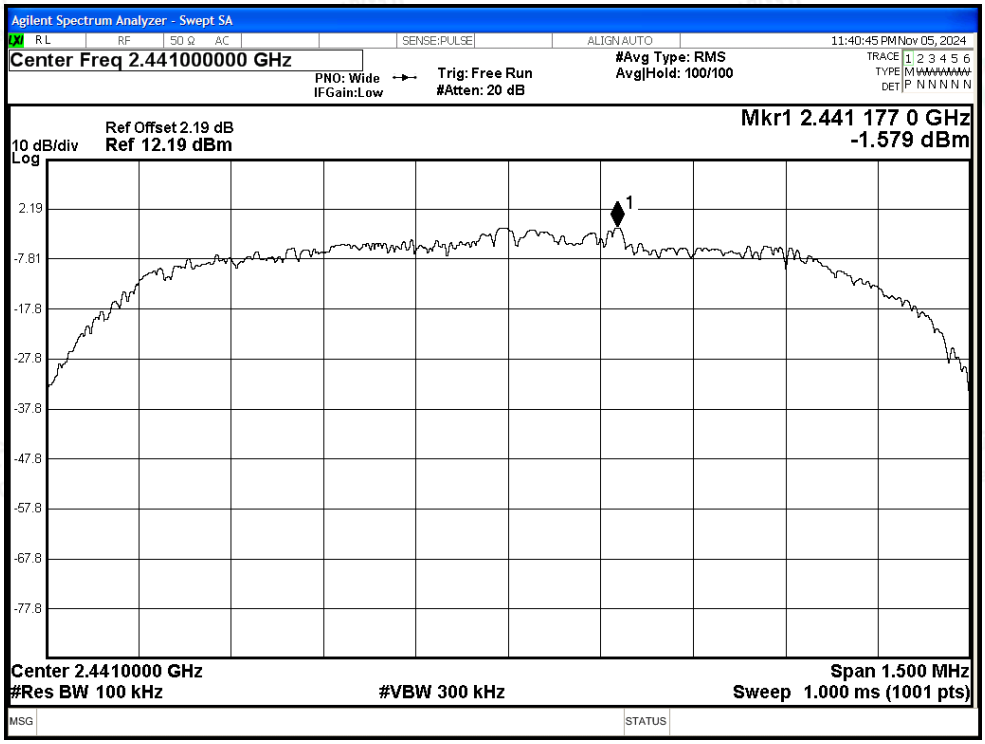
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref



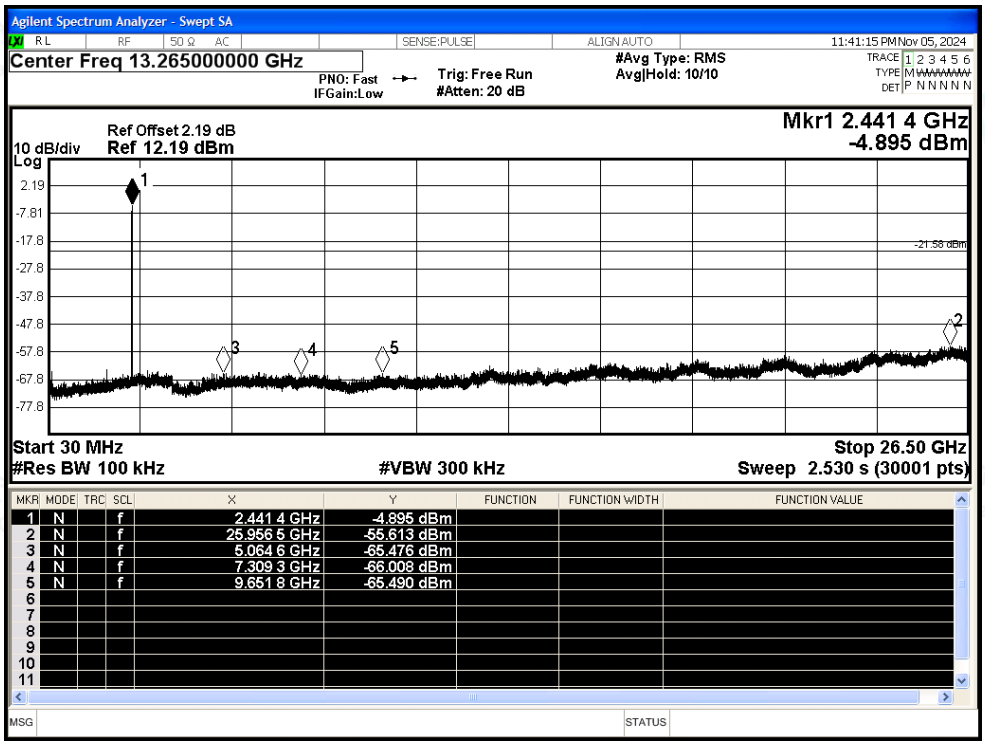
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission



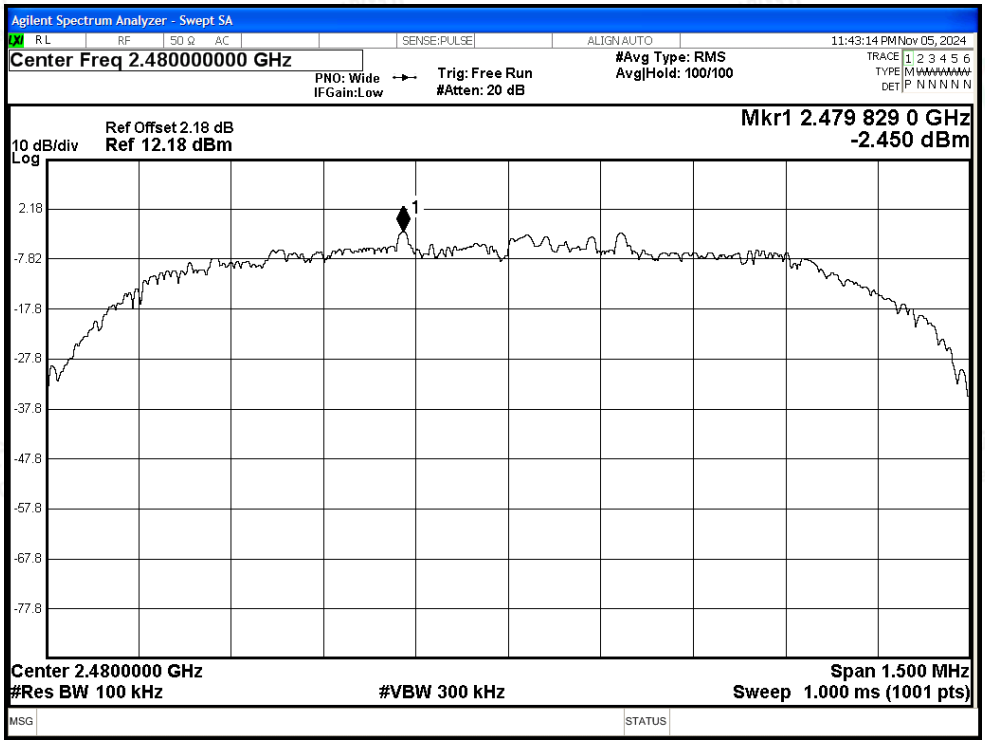
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



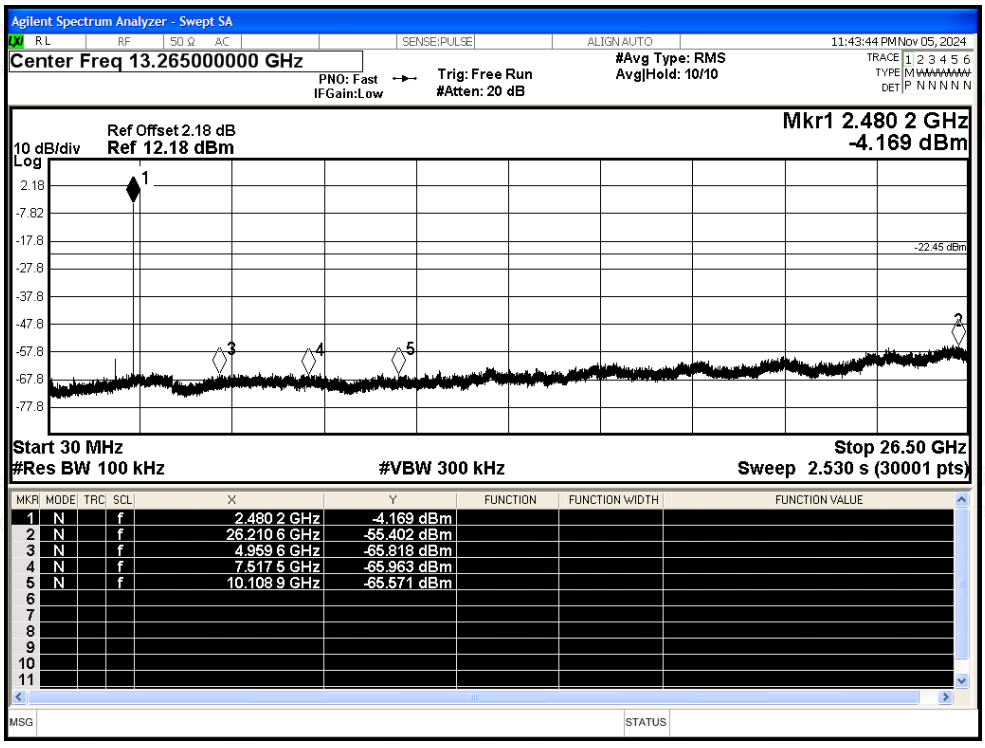
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission

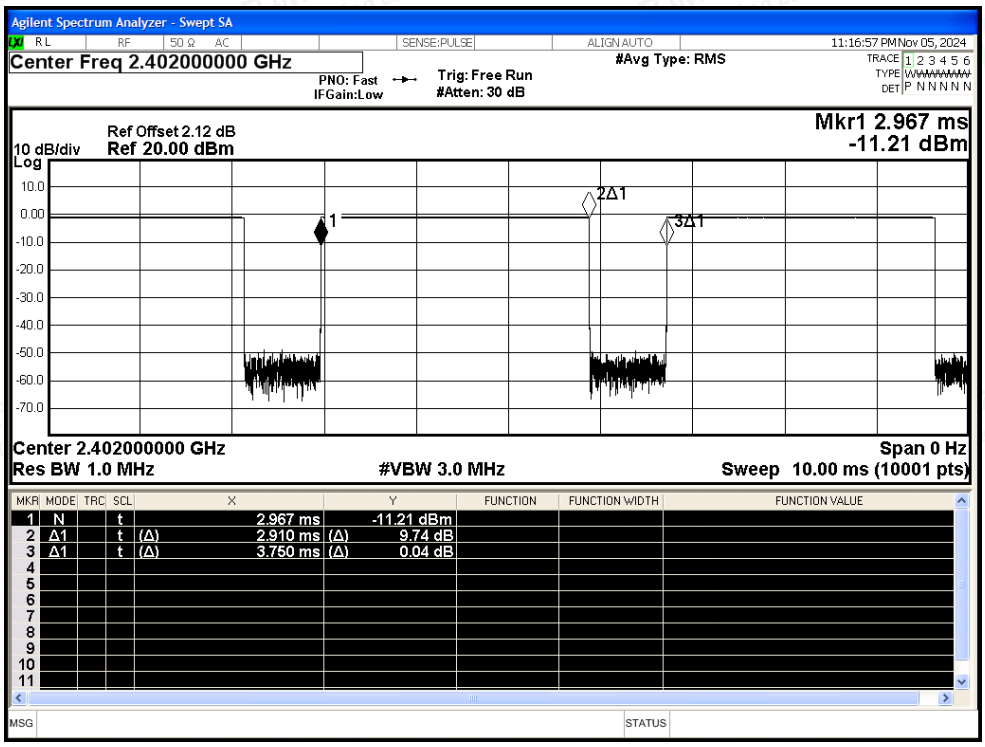


A.8 Duty Cycle

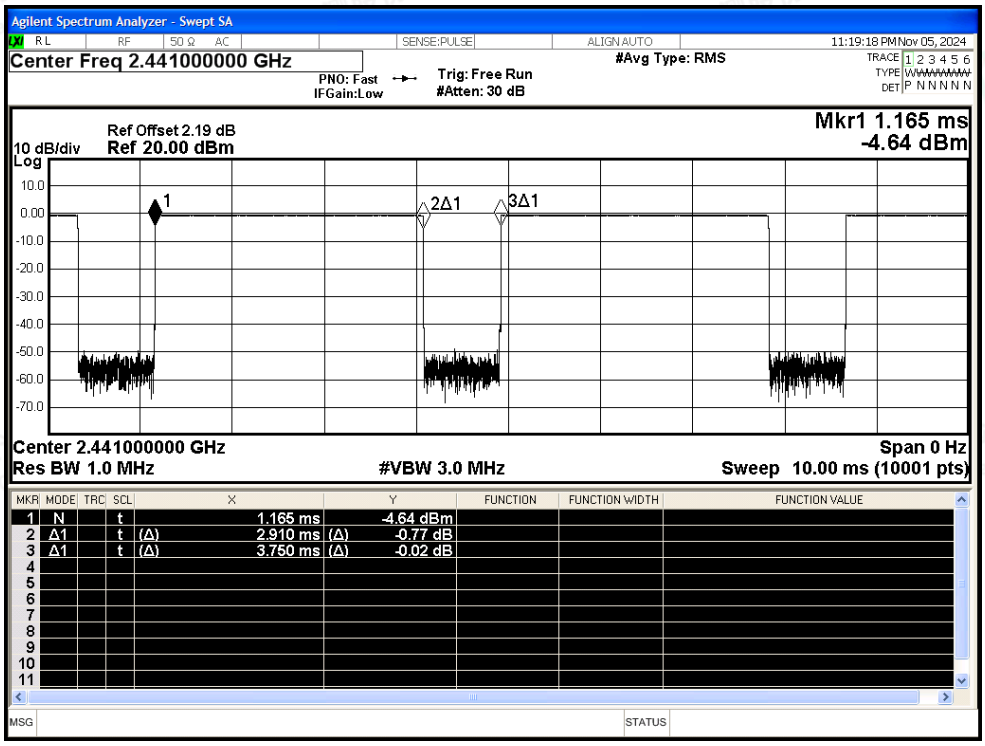
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	77.6	1.1	0.34
NVNT	1-DH5	2441	Ant1	77.6	1.1	0.34
NVNT	1-DH5	2480	Ant1	77.6	1.1	0.34
NVNT	2-DH5	2402	Ant1	77.28	1.12	0.35
NVNT	2-DH5	2441	Ant1	77.28	1.12	0.35
NVNT	2-DH5	2480	Ant1	77.28	1.12	0.35
NVNT	3-DH5	2402	Ant1	77.28	1.12	0.35
NVNT	3-DH5	2441	Ant1	77.28	1.12	0.35
NVNT	3-DH5	2480	Ant1	77.23	1.12	0.35

Test Graphs

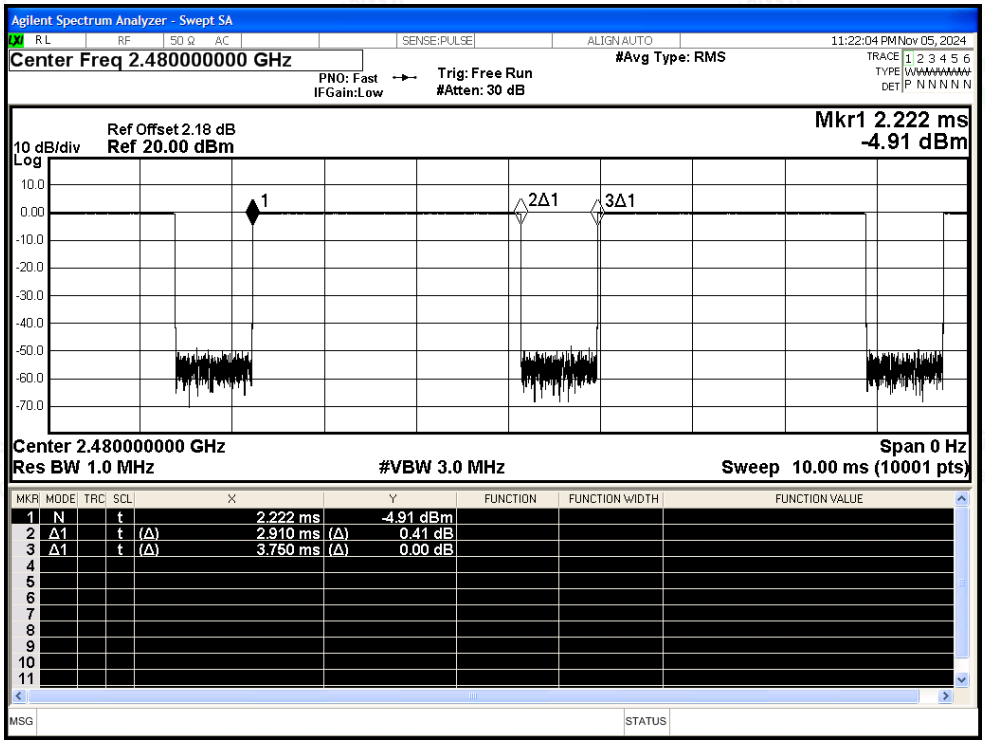
Duty Cycle NVNT 1-DH5 2402MHz Ant1



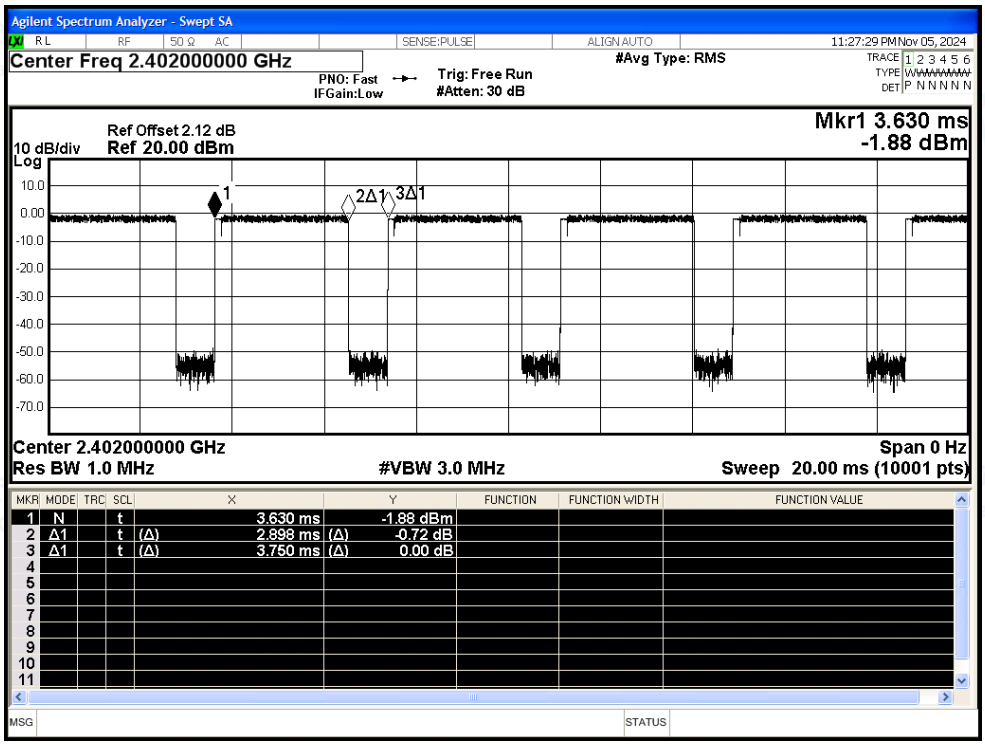
Duty Cycle NVNT 1-DH5 2441MHz Ant1



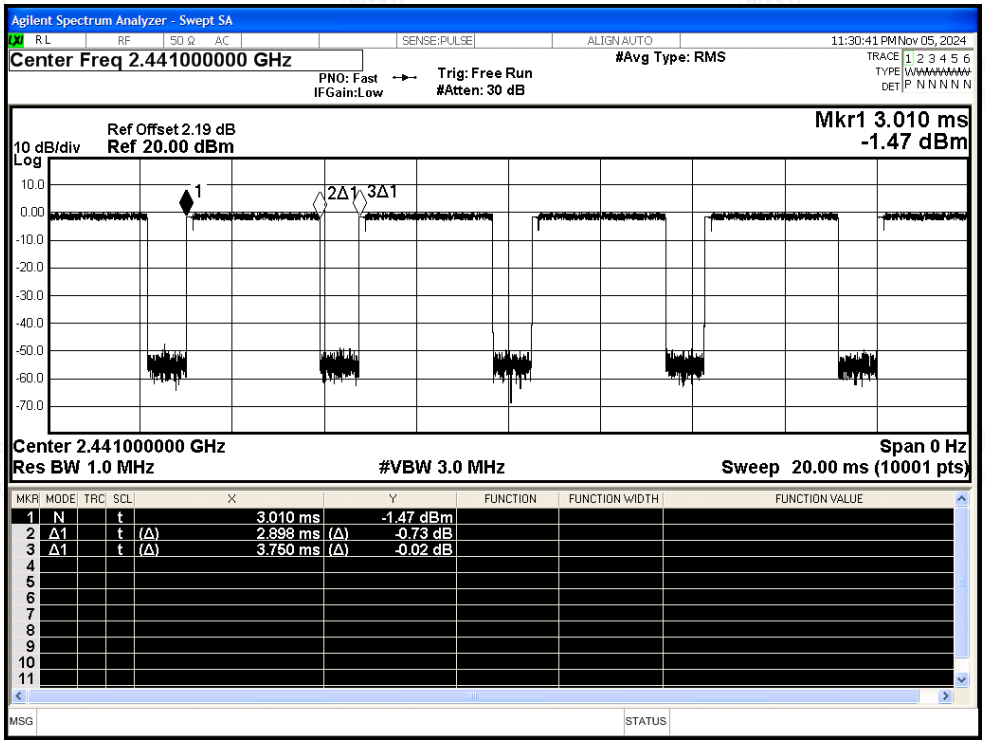
Duty Cycle NVNT 1-DH5 2480MHz Ant1



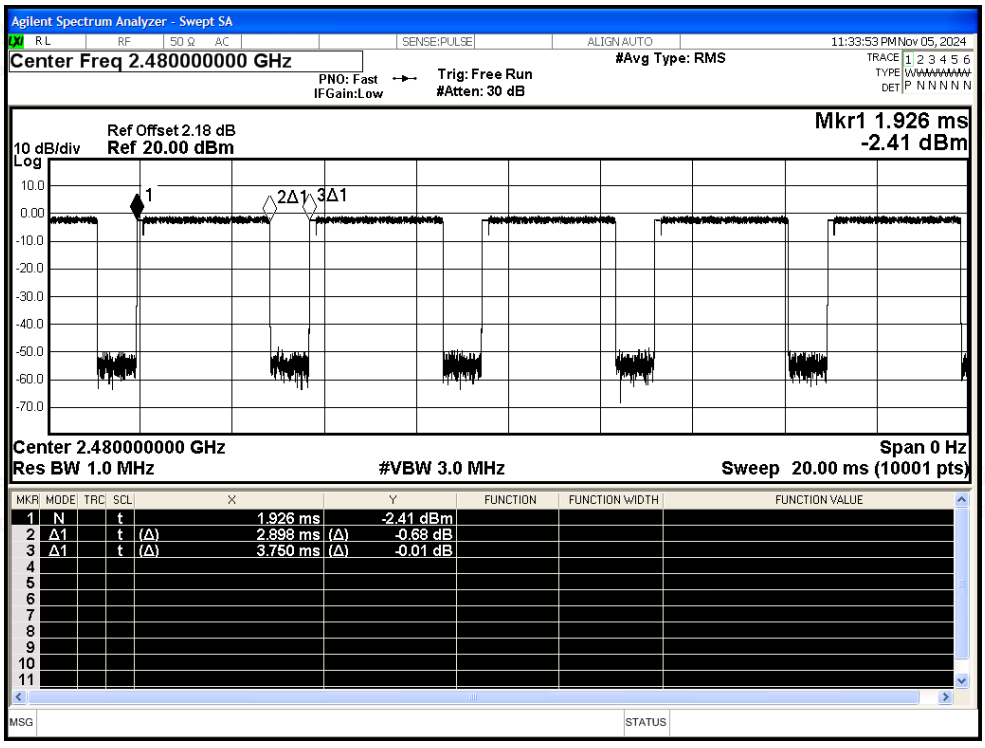
Duty Cycle NVNT 2-DH5 2402MHz Ant1



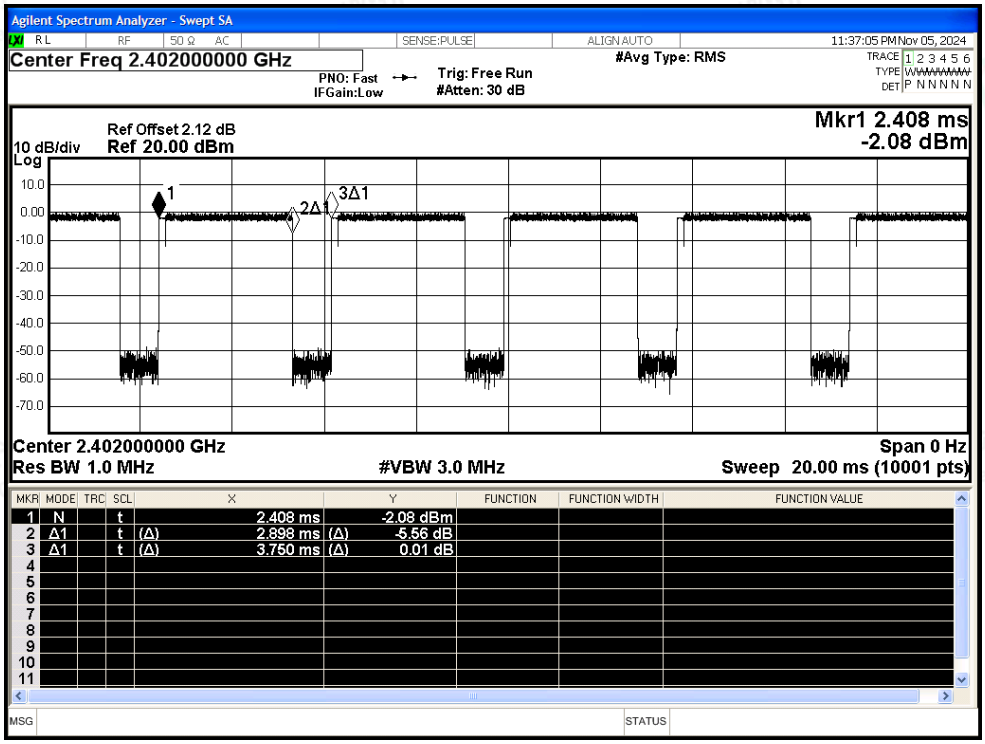
Duty Cycle NVNT 2-DH5 2441MHz Ant1



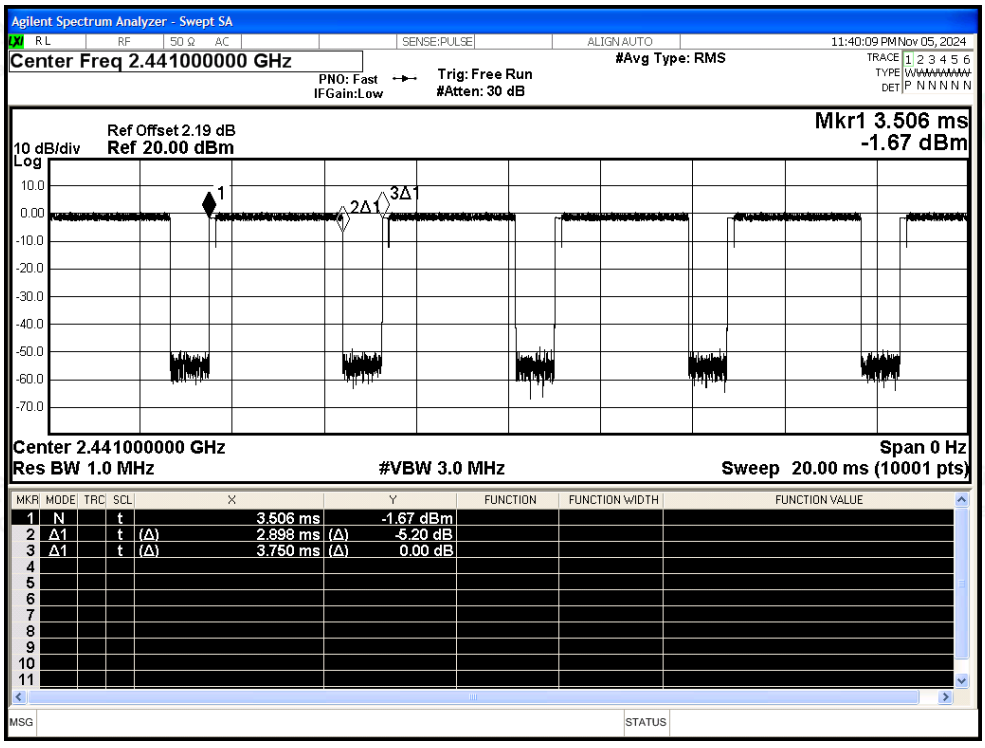
Duty Cycle NVNT 2-DH5 2480MHz Ant1



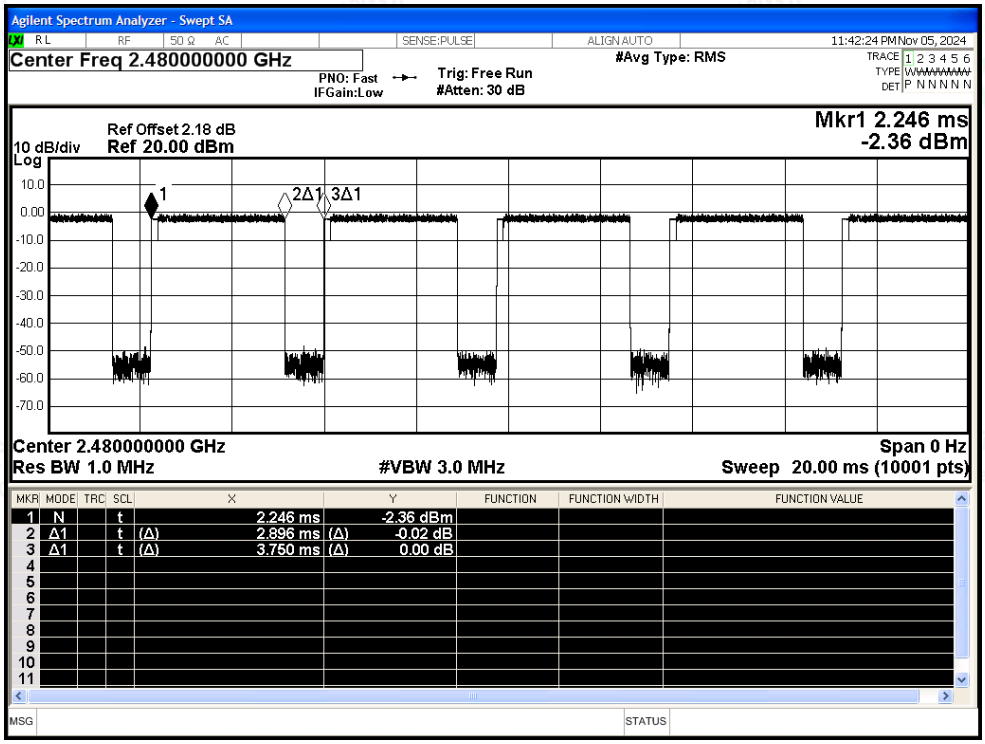
Duty Cycle NVNT 3-DH5 2402MHz Ant1



Duty Cycle NVNT 3-DH5 2441MHz Ant1



Duty Cycle NVNT 3-DH5 2480MHz Ant1

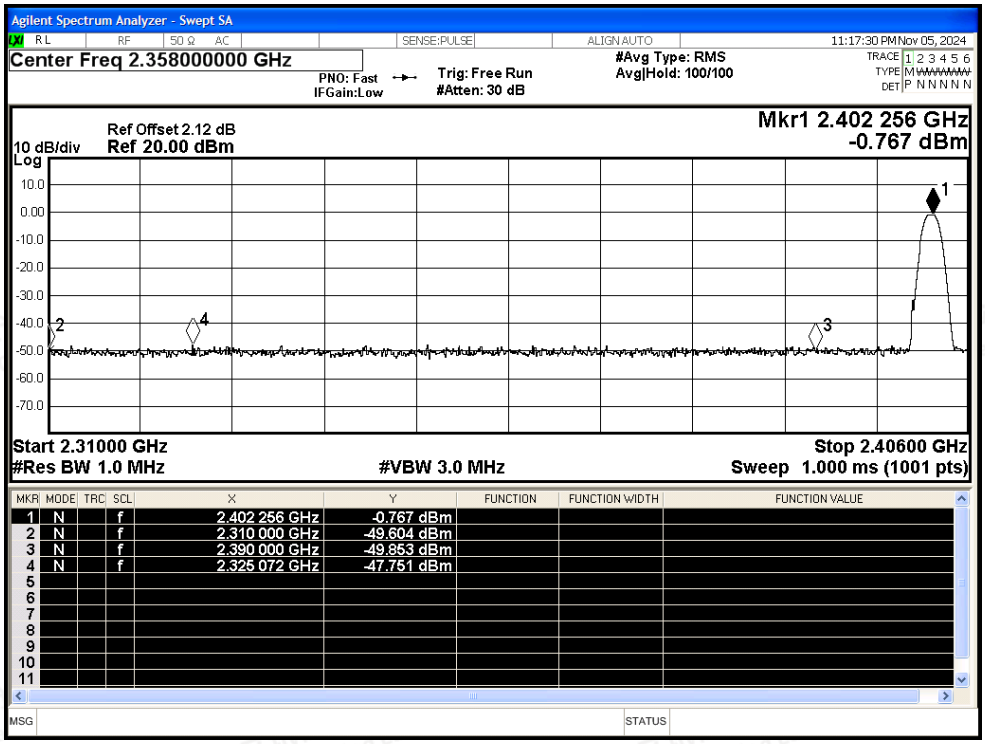


A.7 Restrict Band

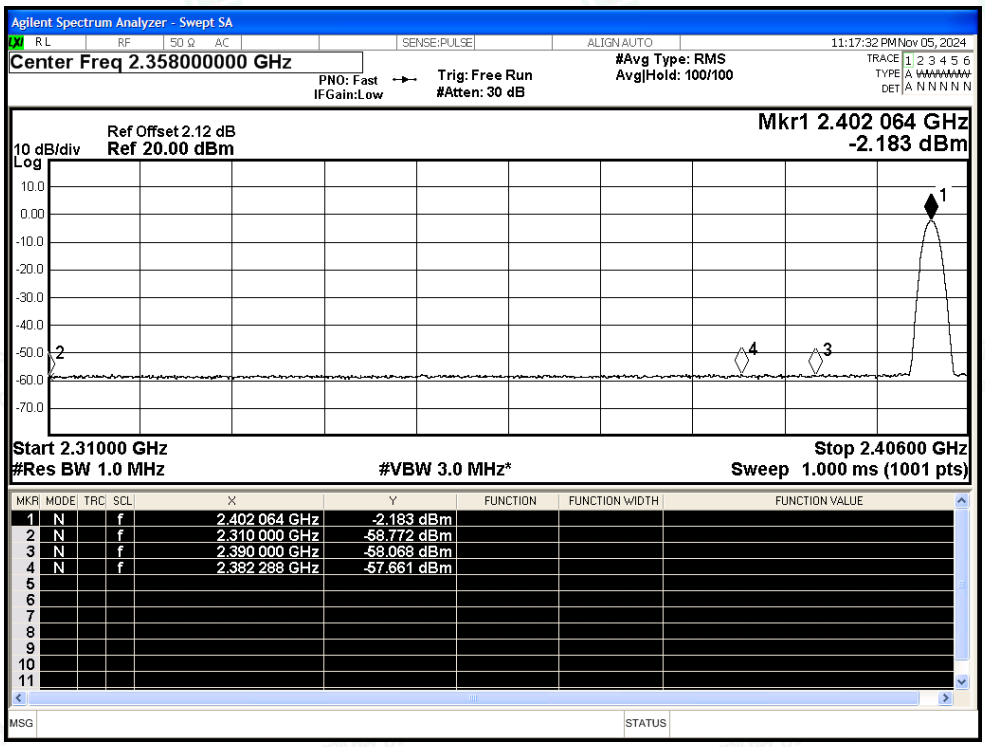
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-49.6	2	-	47.66	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-58.77	2	1.1	39.59	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2325.072	-47.75	2	-	49.51	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2382.288	-57.66	2	1.1	40.7	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-49.85	2	-	47.41	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-58.07	2	1.1	40.29	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-49.41	2	-	47.85	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-58.23	2	1.1	40.13	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.728	-46.84	2	-	50.42	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2494.912	-56.99	2	1.1	41.37	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-50.46	2	-	46.8	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-57.9	2	1.1	40.46	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-50.48	2	-	46.78	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-58.43	2	1.12	39.95	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2345.232	-47.62	2	-	49.64	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2375.28	-57.55	2	1.12	40.83	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-51.04	2	-	46.22	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-58.61	2	1.12	39.77	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-48.78	2	-	48.48	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-56.92	2	1.12	41.46	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2484.208	-47.05	2	-	50.21	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.512	-56.92	2	1.12	41.46	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-50.4	2	-	46.86	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-58.52	2	1.12	39.86	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-49.74	2	-	47.52	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-58.79	2	1.12	39.59	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2349.36	-47.25	2	-	50.01	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2379.984	-57.56	2	1.12	40.82	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-50.75	2	-	46.51	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-58.44	2	1.12	39.94	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-49.89	2	-	47.37	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-57.44	2	1.12	40.94	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2495.824	-46.36	2	-	50.9	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.752	-57.14	2	1.12	41.24	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-51.56	2	-	45.7	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-58.28	2	1.12	40.1	Average	54	Pass

Test Graphs

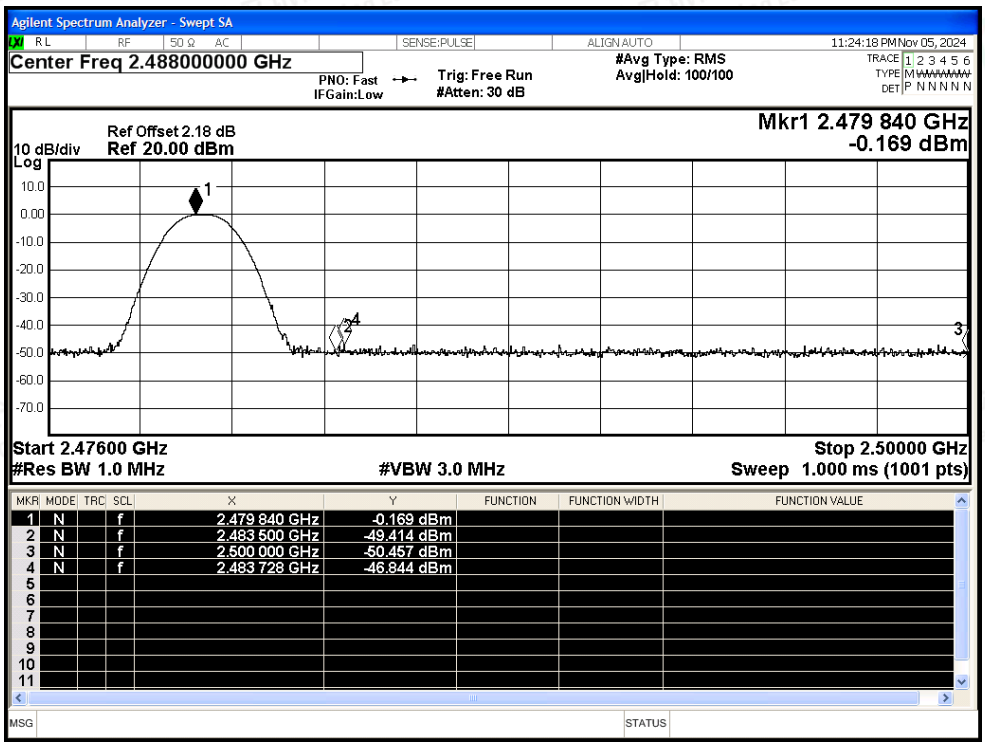
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak



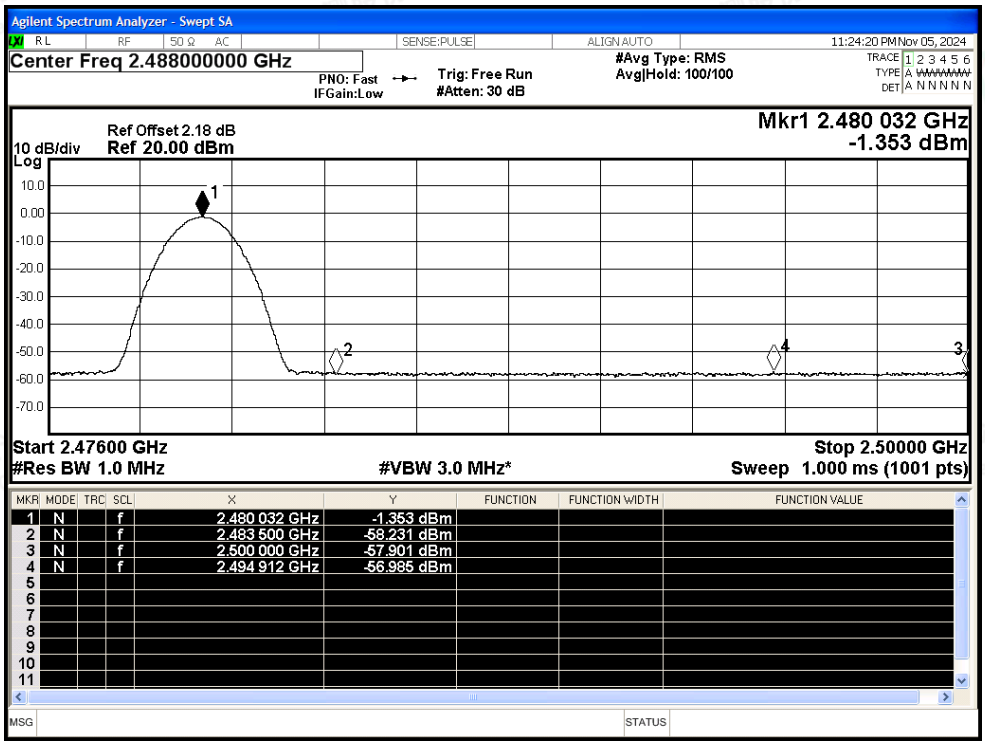
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average



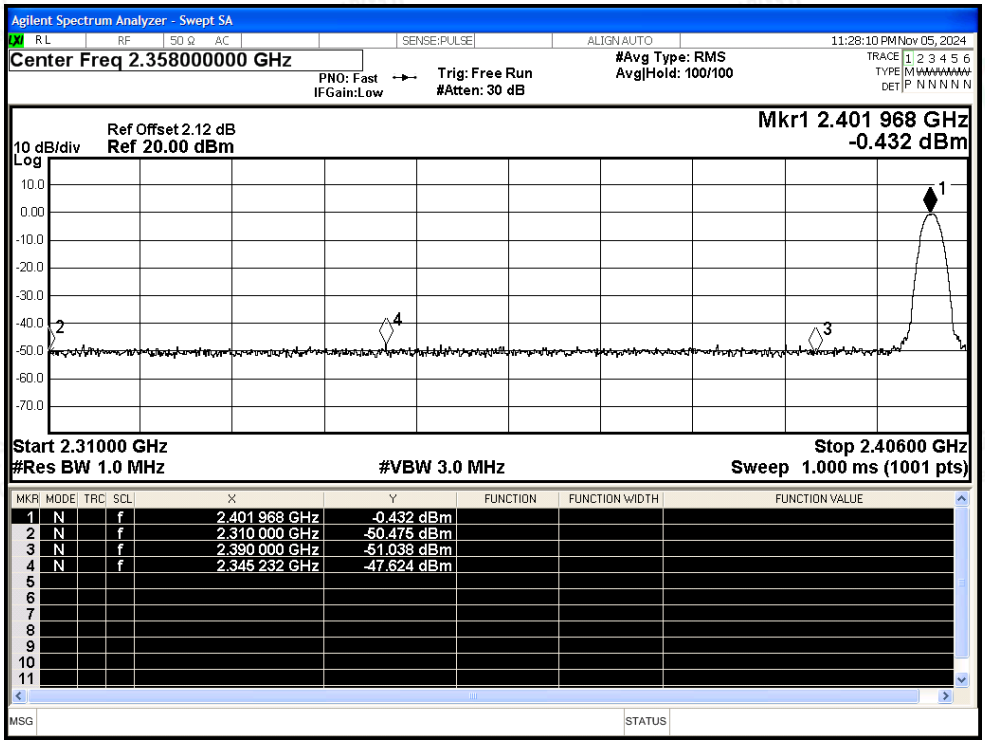
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak



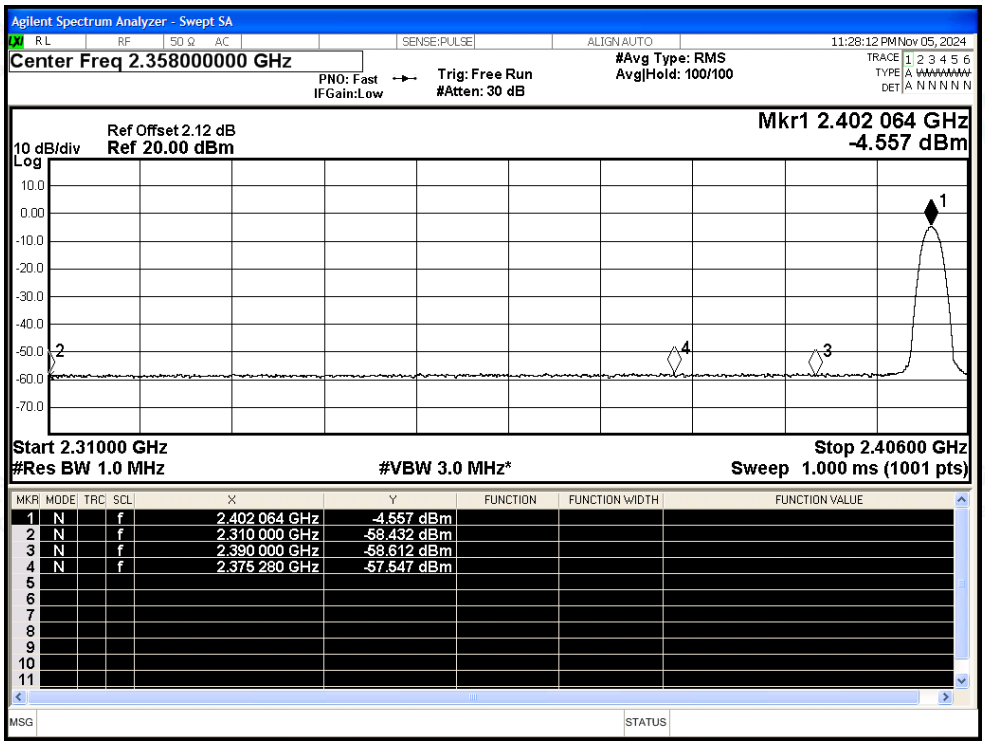
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average



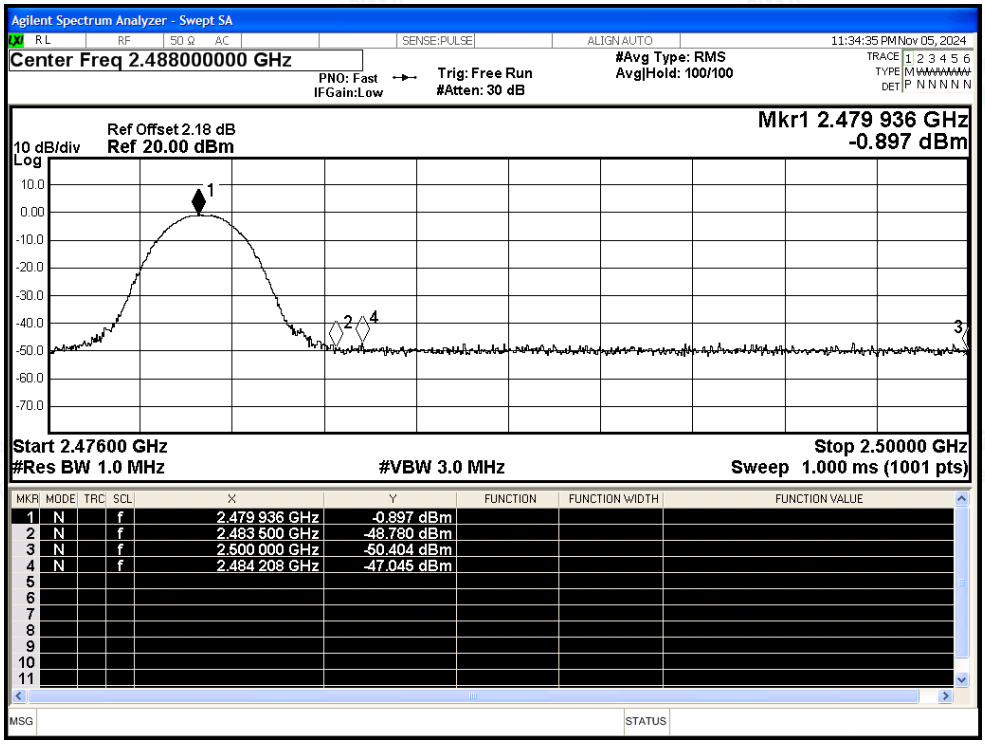
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak



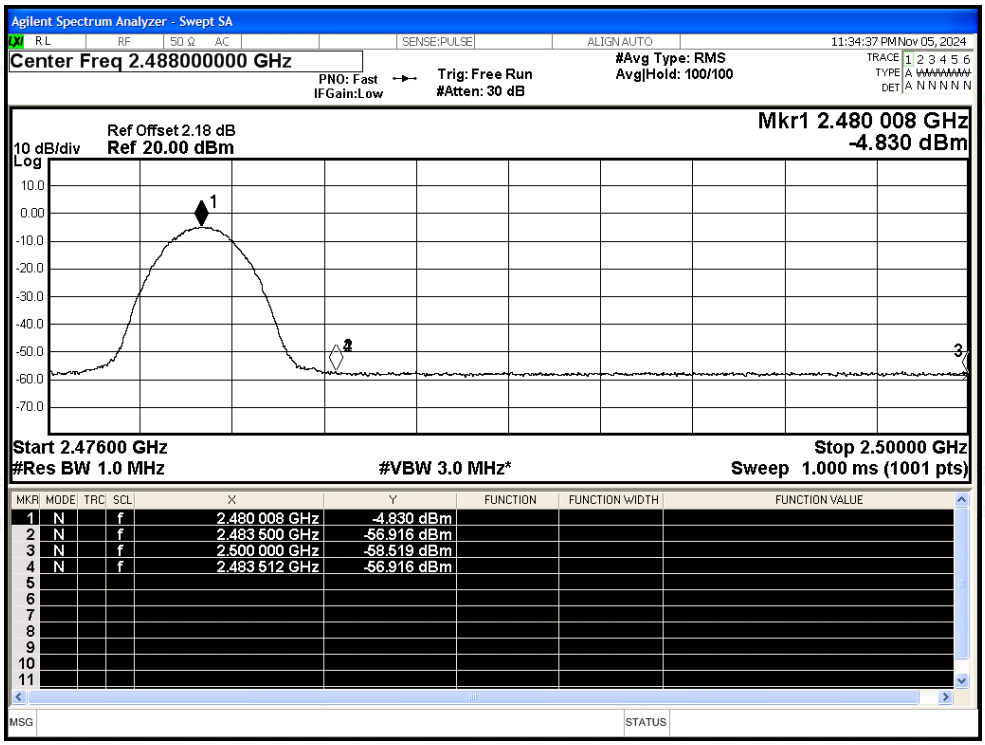
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average



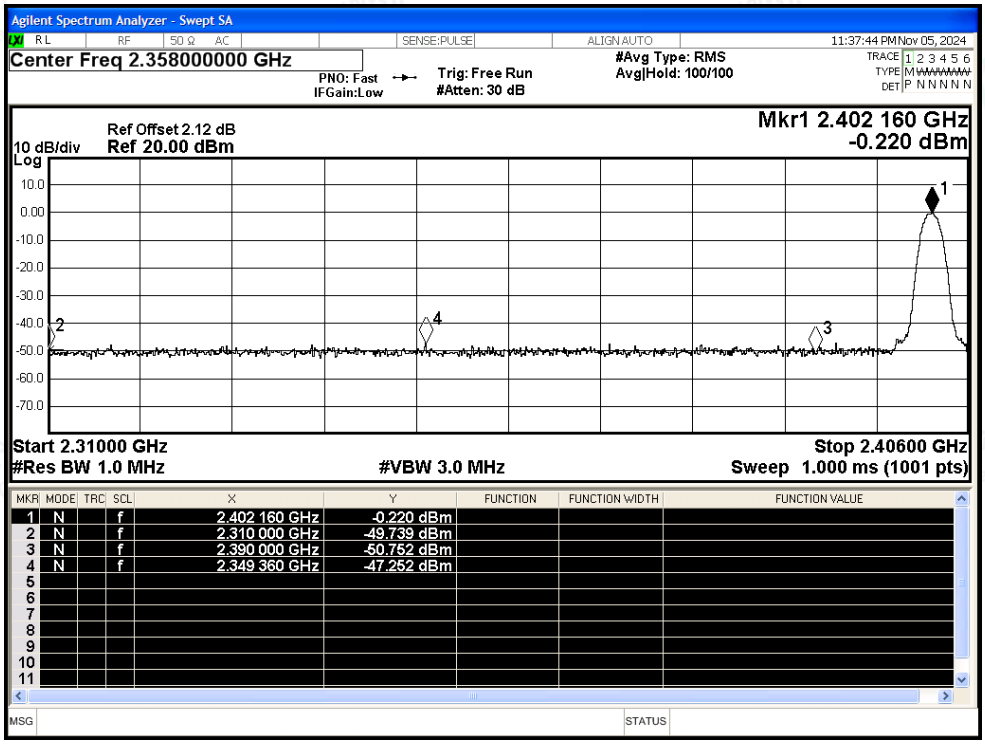
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Peak



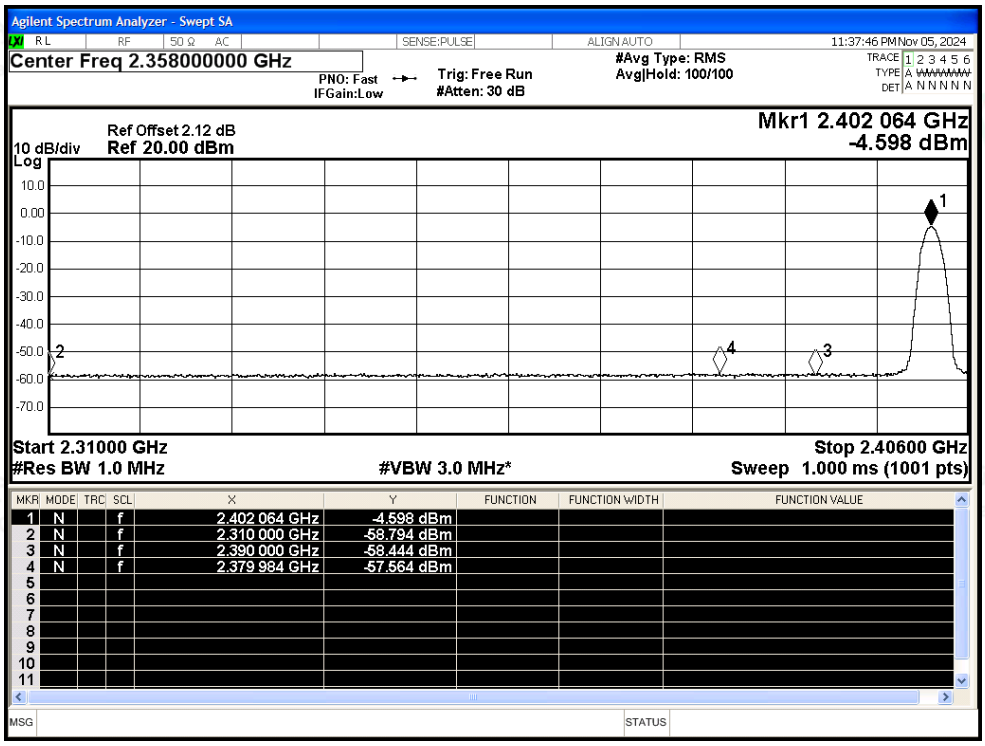
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Average



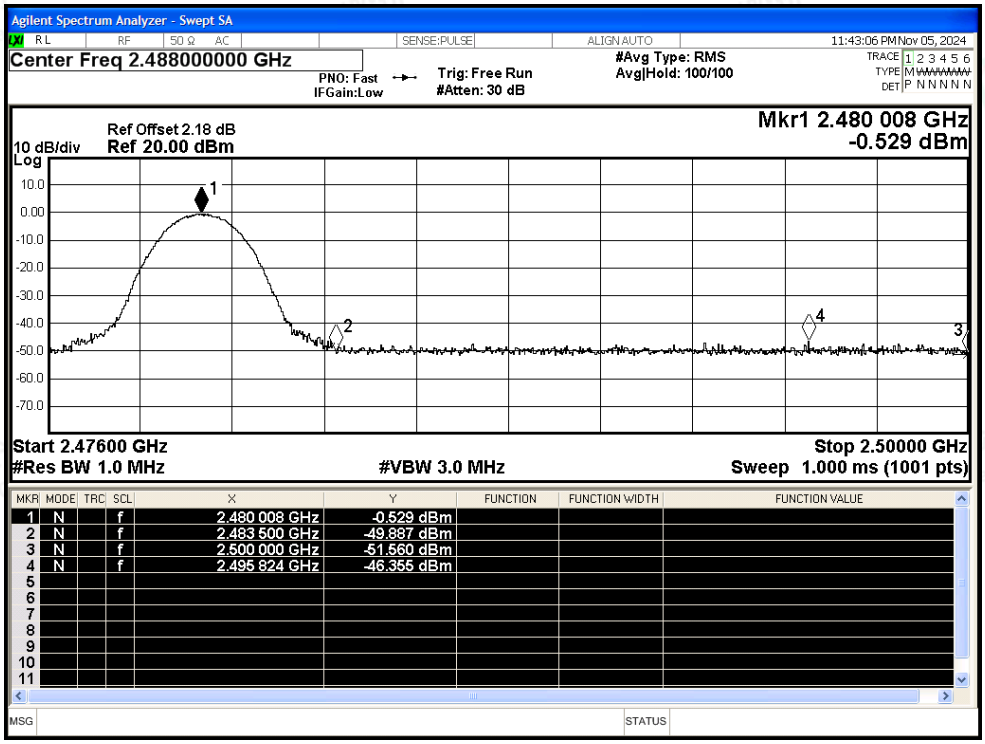
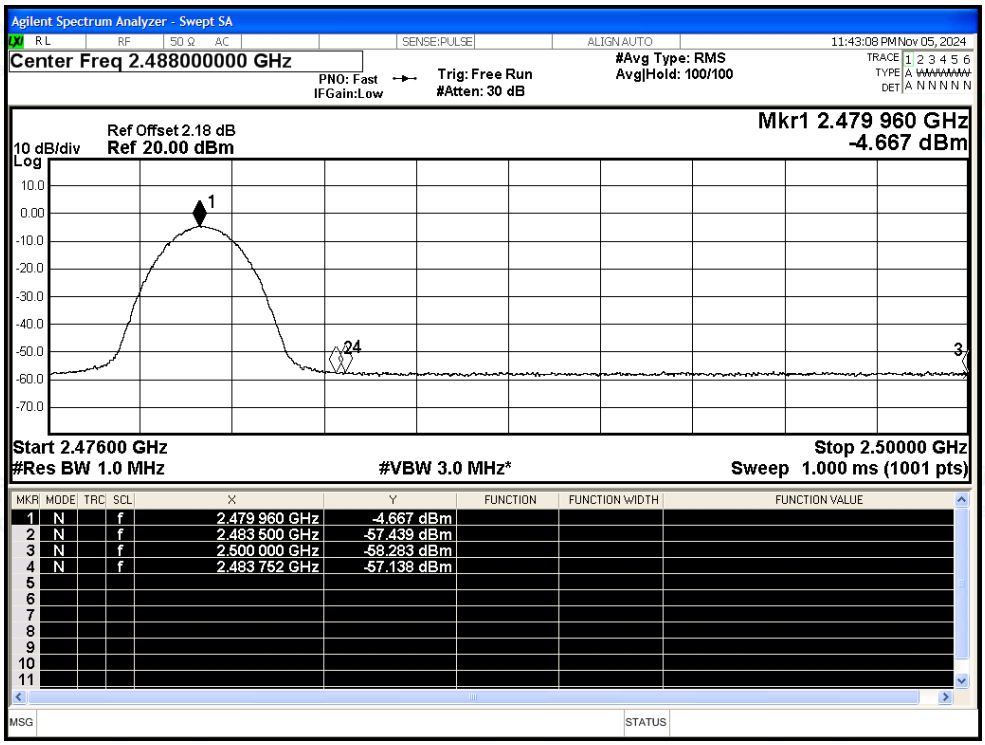
Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Peak



Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Average



Restrict Band NVNT 3-DH5 2480MHz Ant1 No-Hopping Peak



Restrict Band NVNT 3-DH5 2480MHz Ant1 No-Hopping Average