Appendix A

RF Test Data for BT(Conducted Measurement)

Product Name: Smoke Alarm

Test Model: XS0B-iR

Environmental Conditions

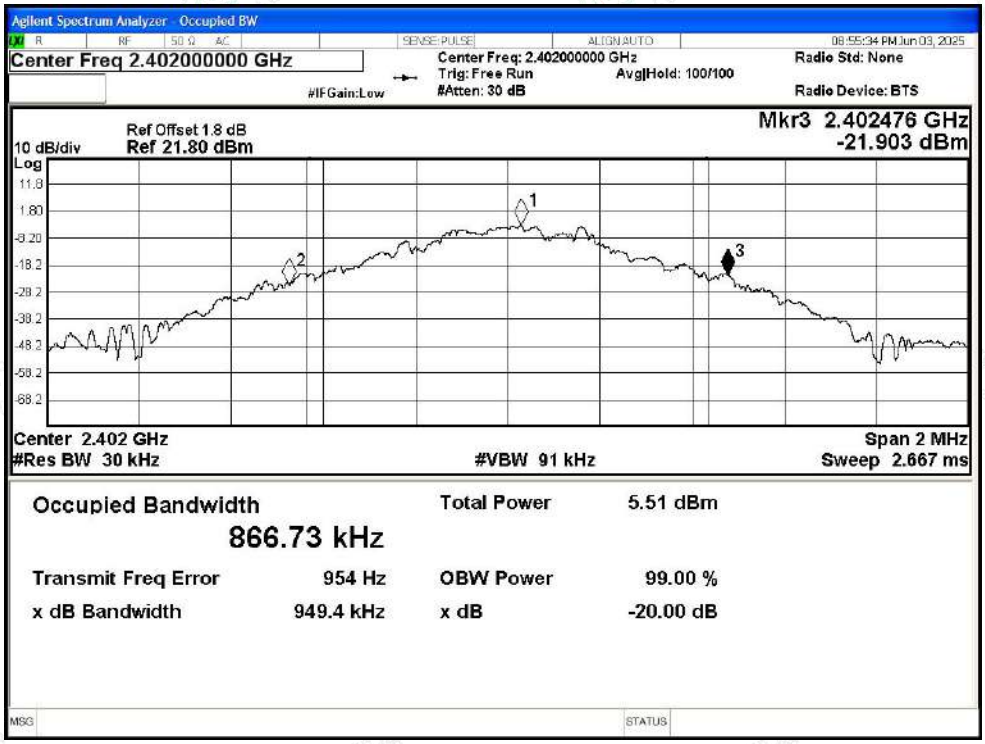
Temperature:	24.1° C
Relative Humidity:	52.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Can Kun
Supervised by:	Nick Peng

A.1 -20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.949	N/A	Pass
NVNT	1-DH5	2441	Ant1	1.026	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.971	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.325	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.284	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.287	N/A	Pass
NVNT	3-DH5	2402	Ant1	1.297	N/A	Pass
NVNT	3-DH5	2441	Ant1	1.297	N/A	Pass
NVNT	3-DH5	2480	Ant1	1.309	N/A	Pass

Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

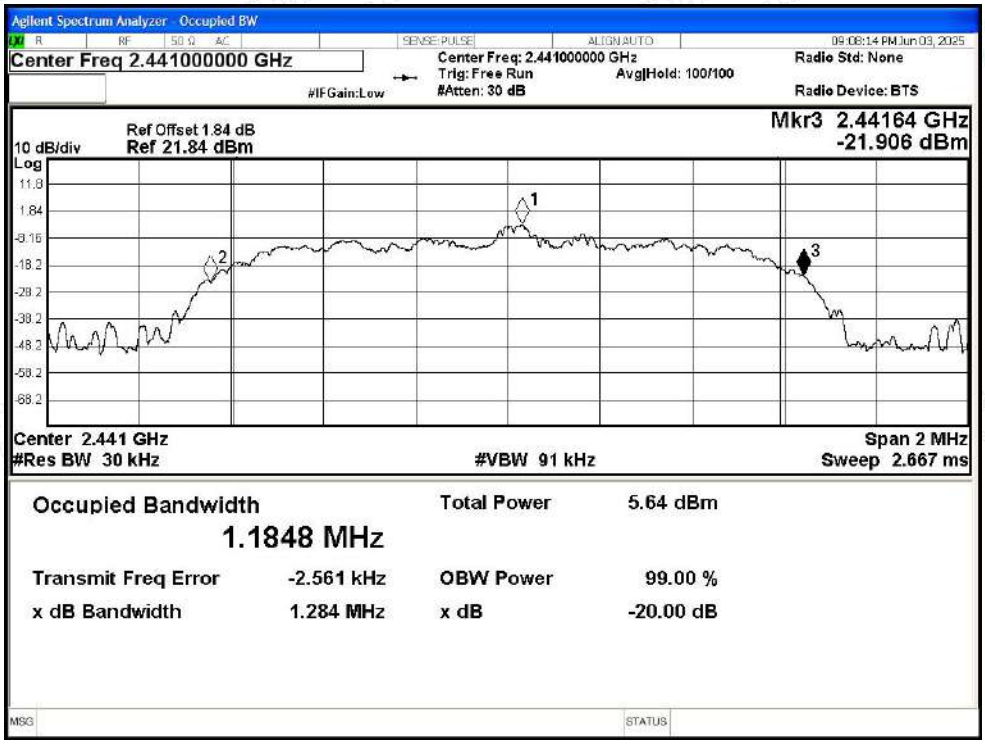


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

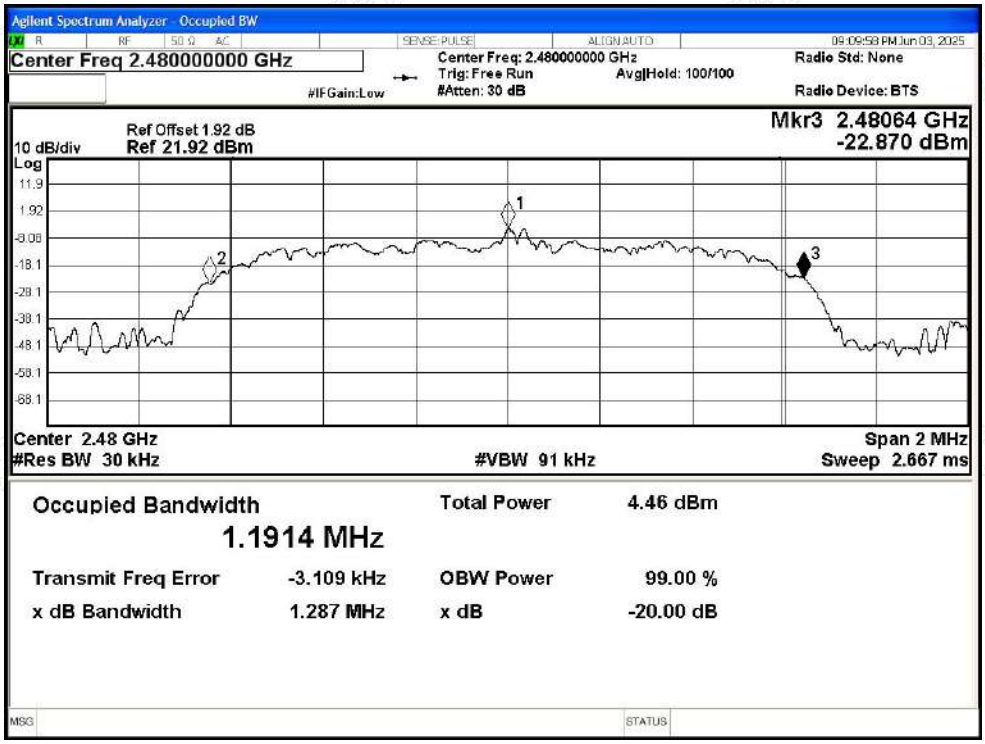
-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1

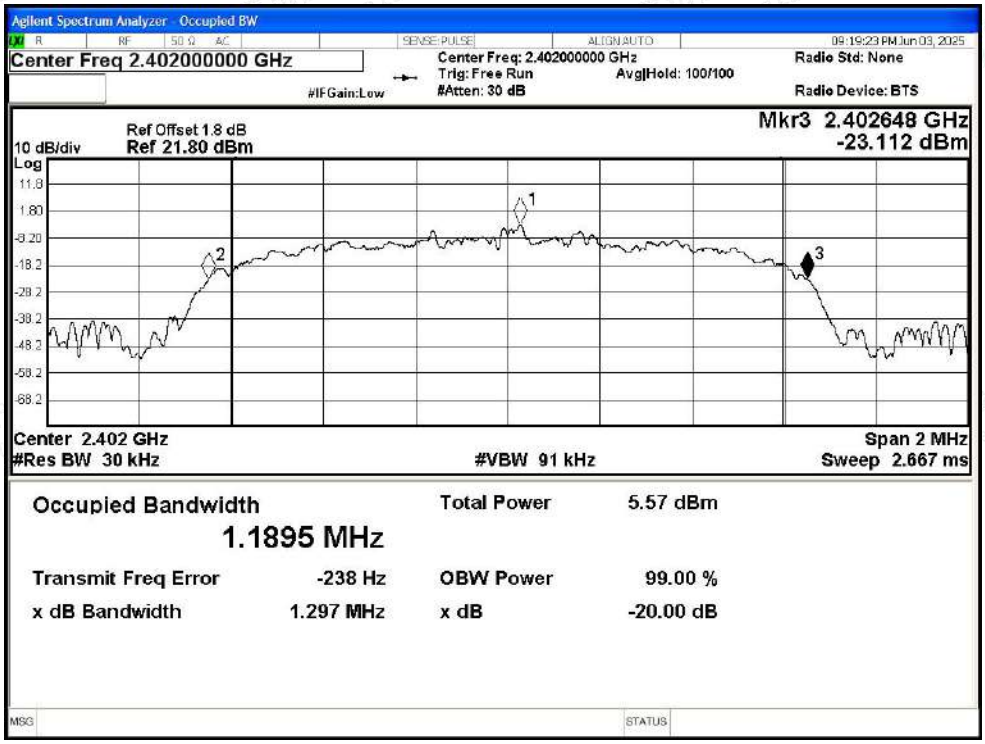
-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



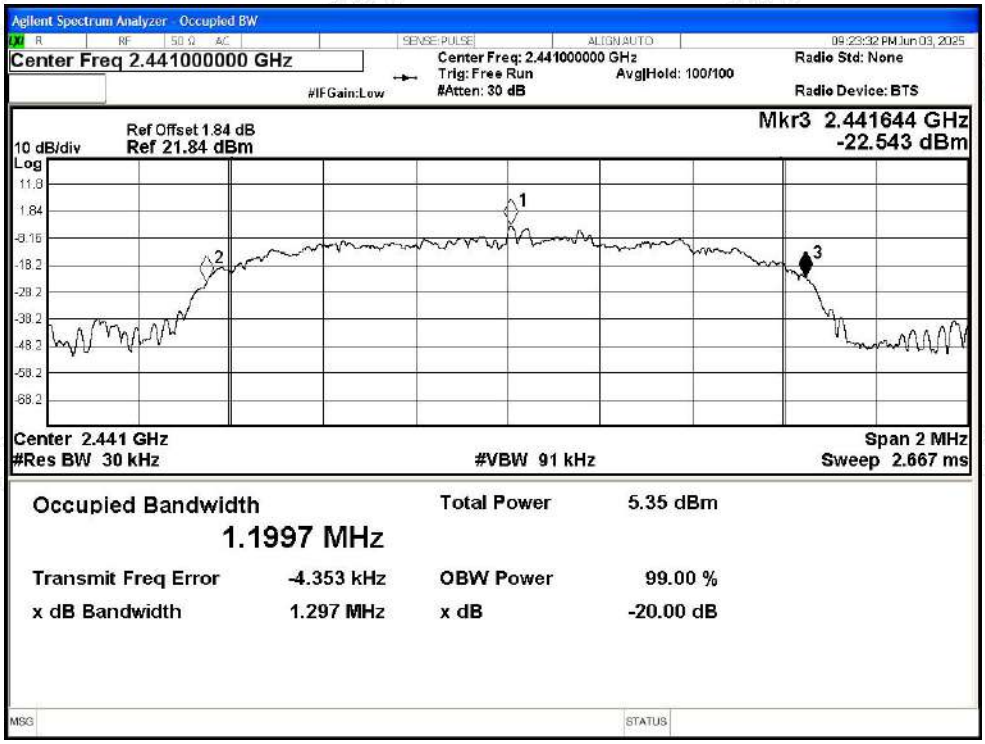
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1



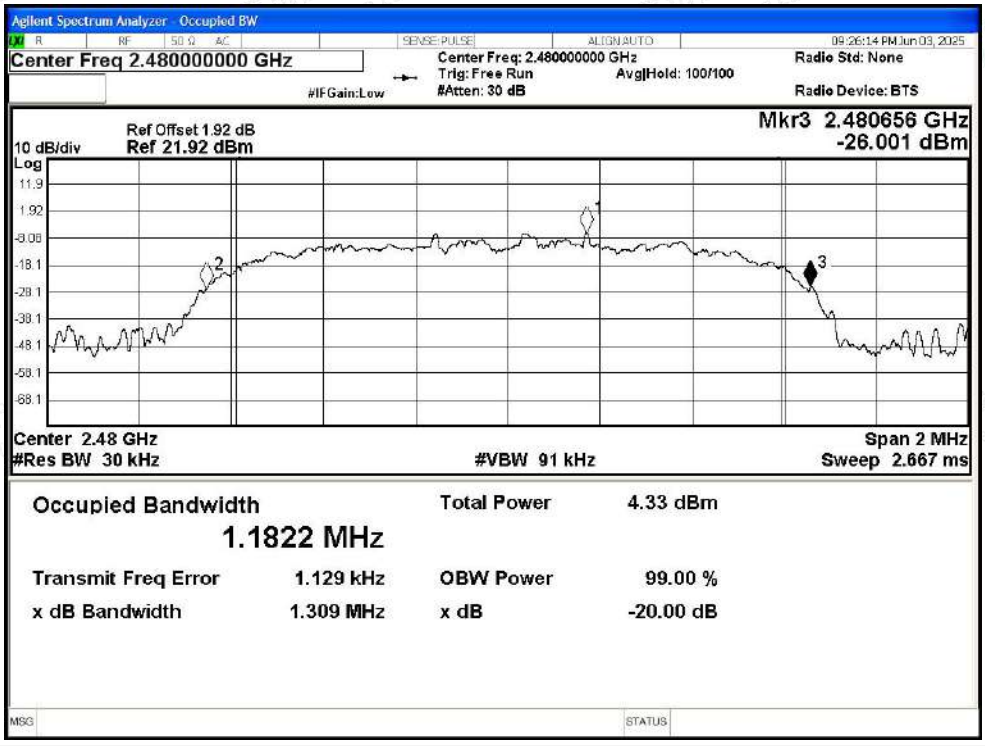
-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2480MHz Ant1

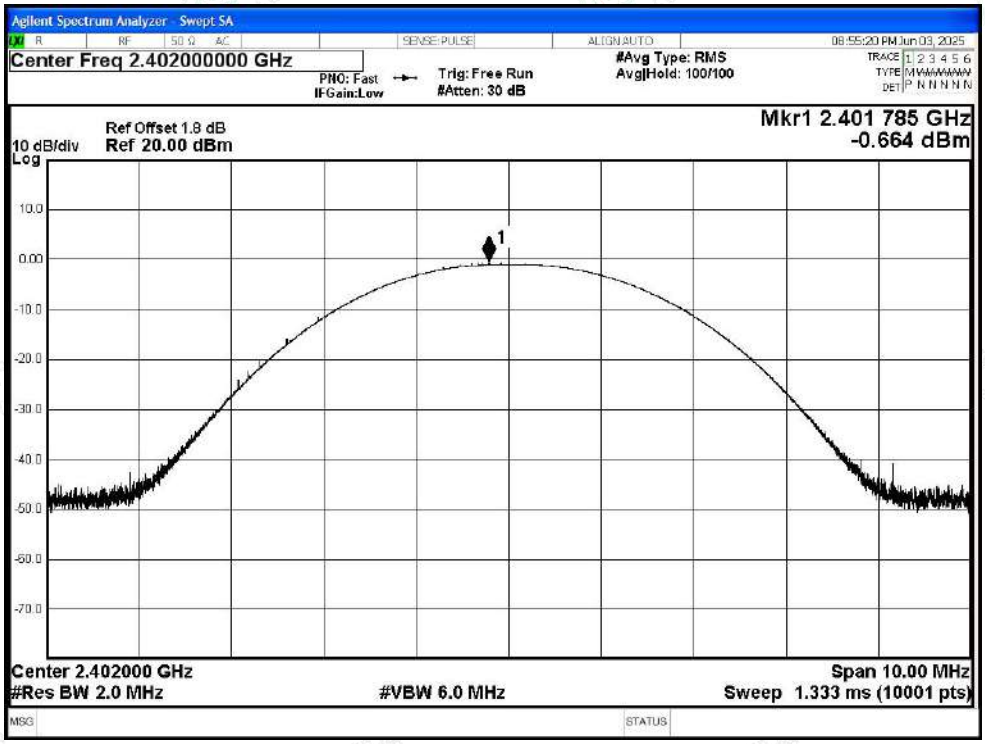


A.2 Maximum Peak Conducted Output Power

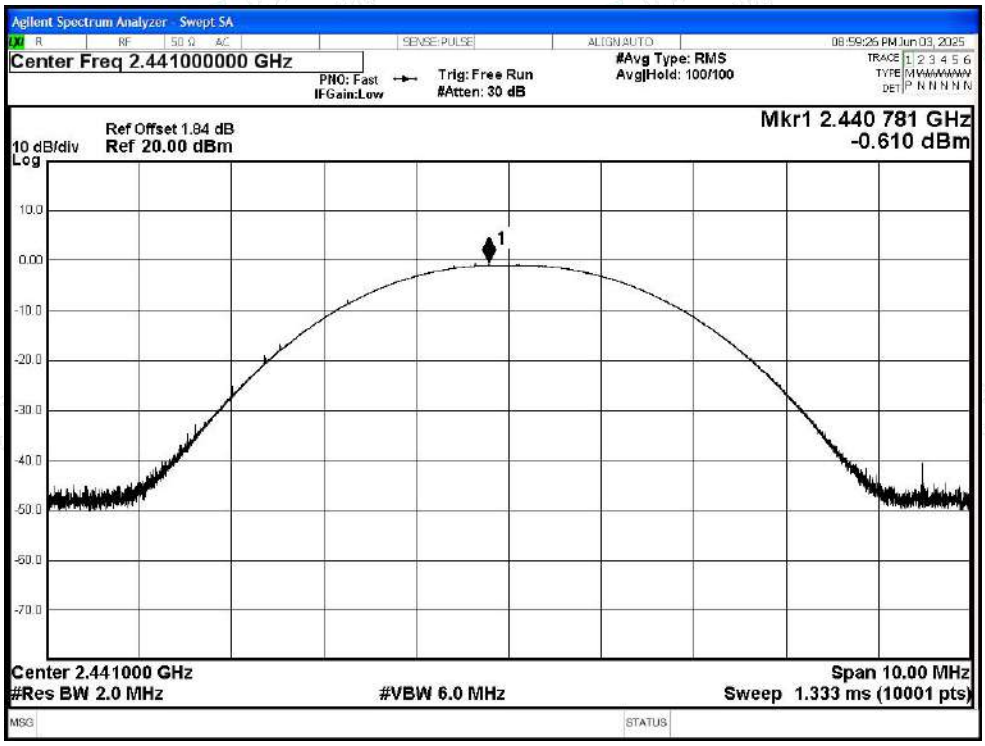
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	-0.66	21	Pass
NVNT	1-DH5	2441	Ant1	-0.61	21	Pass
NVNT	1-DH5	2480	Ant1	-1.37	21	Pass
NVNT	2-DH5	2402	Ant1	0.99	21	Pass
NVNT	2-DH5	2441	Ant1	1.08	21	Pass
NVNT	2-DH5	2480	Ant1	0.34	21	Pass
NVNT	3-DH5	2402	Ant1	1.4	21	Pass
NVNT	3-DH5	2441	Ant1	1.48	21	Pass
NVNT	3-DH5	2480	Ant1	0.68	21	Pass

Test Graphs

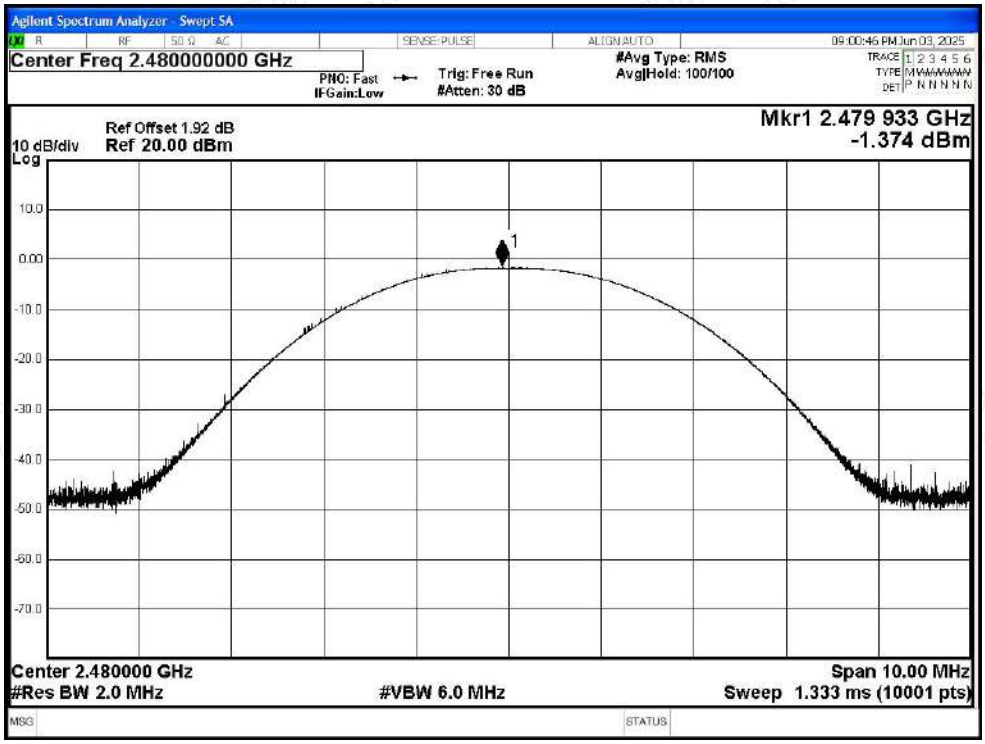
Power NVNT 1-DH5 2402MHz Ant1



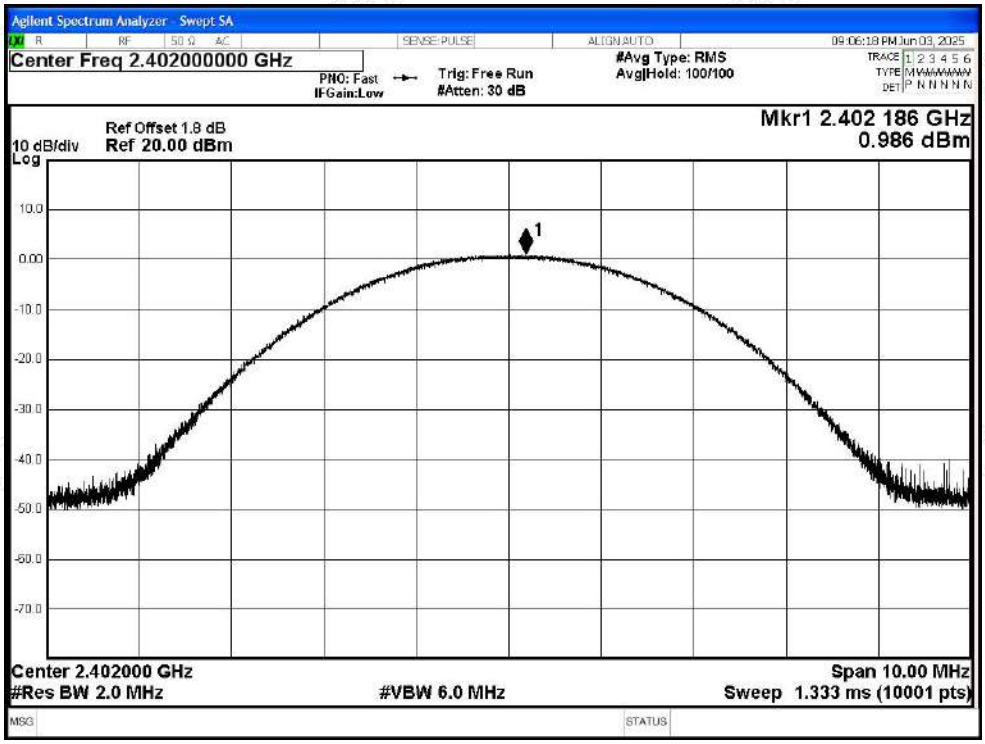
Power NVNT 1-DH5 2441MHz Ant1



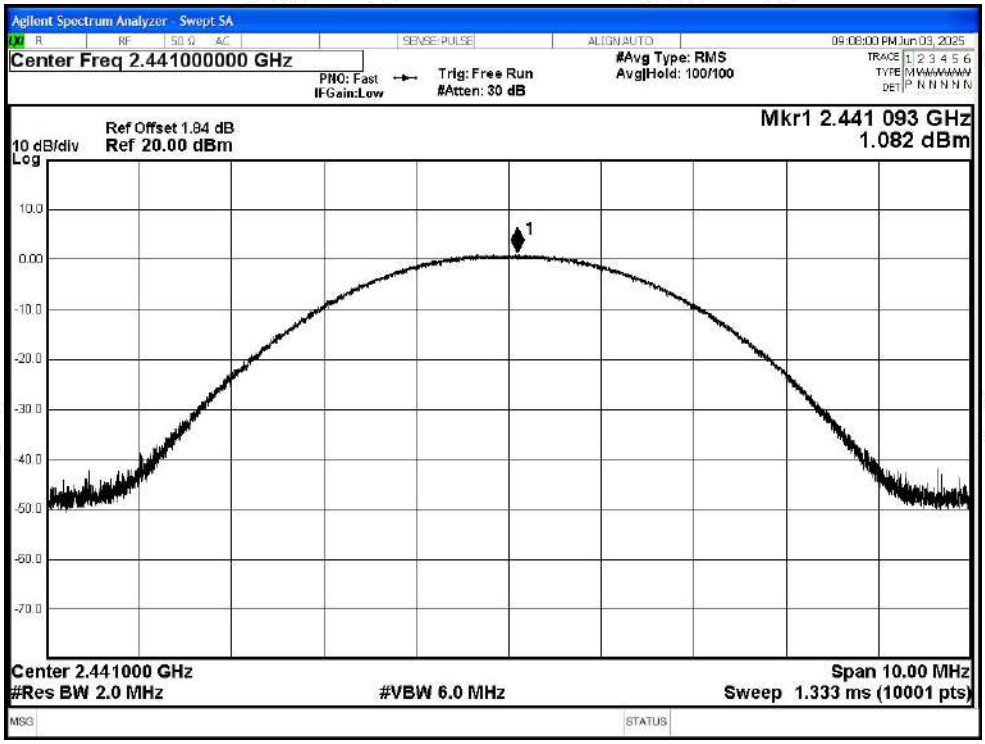
Power NVNT 1-DH5 2480MHz Ant1



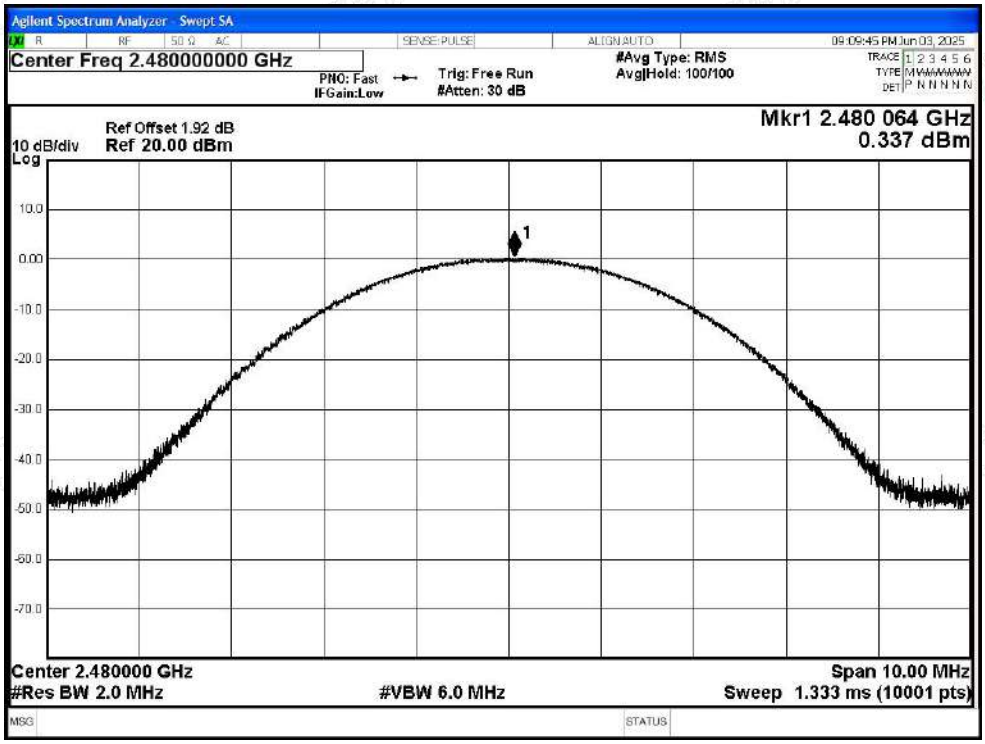
Power NVNT 2-DH5 2402MHz Ant1



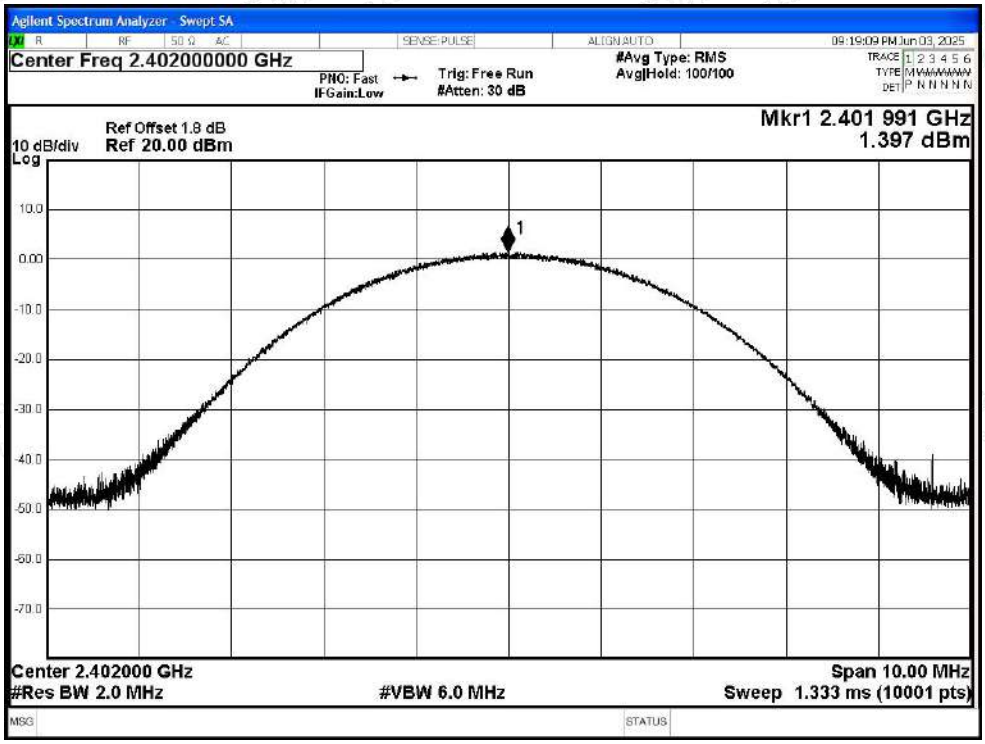
Power NVNT 2-DH5 2441MHz Ant1



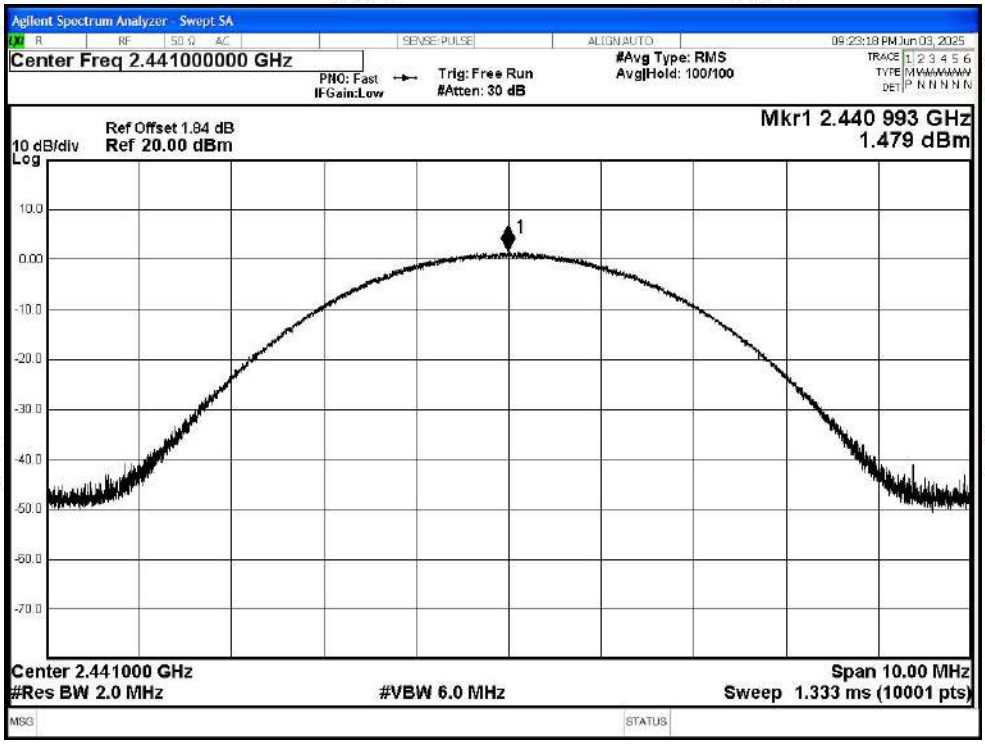
Power NVNT 2-DH5 2480MHz Ant1



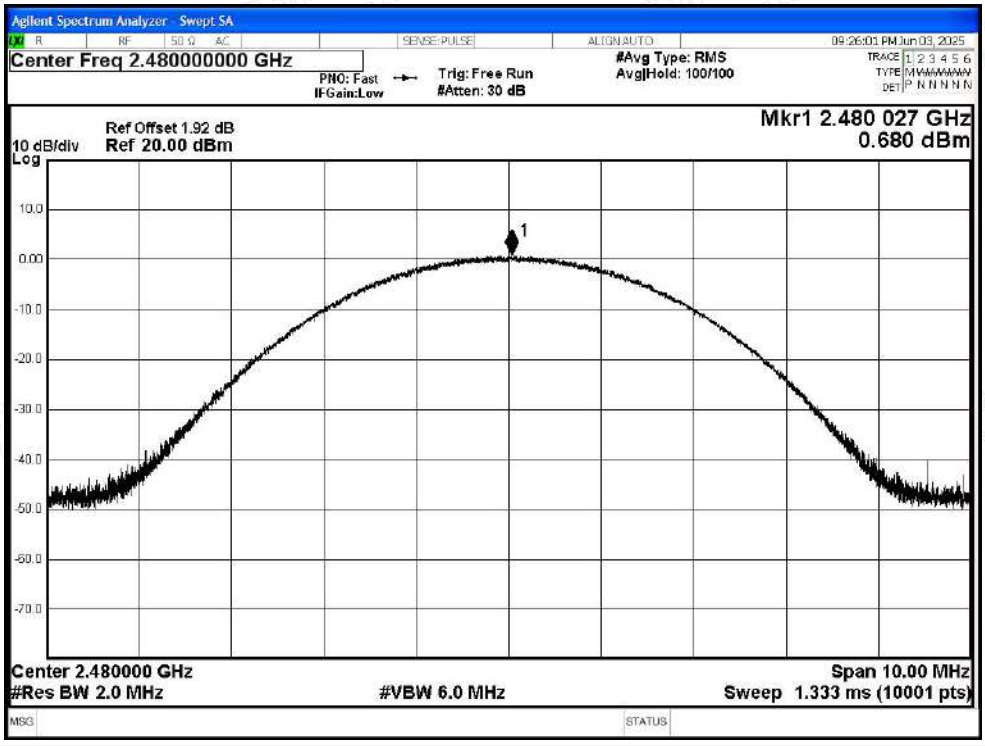
Power NVNT 3-DH5 2402MHz Ant1



Power NVNT 3-DH5 2441MHz Ant1



Power NVNT 3-DH5 2480MHz Ant1

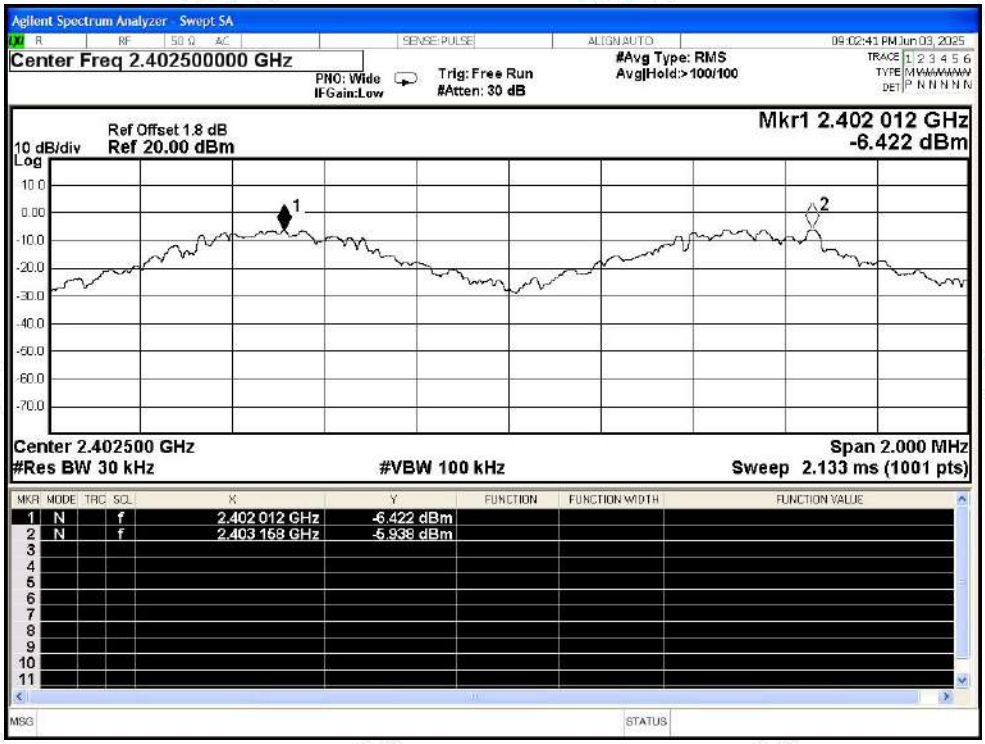


A.3 Carrier Frequencies Separation

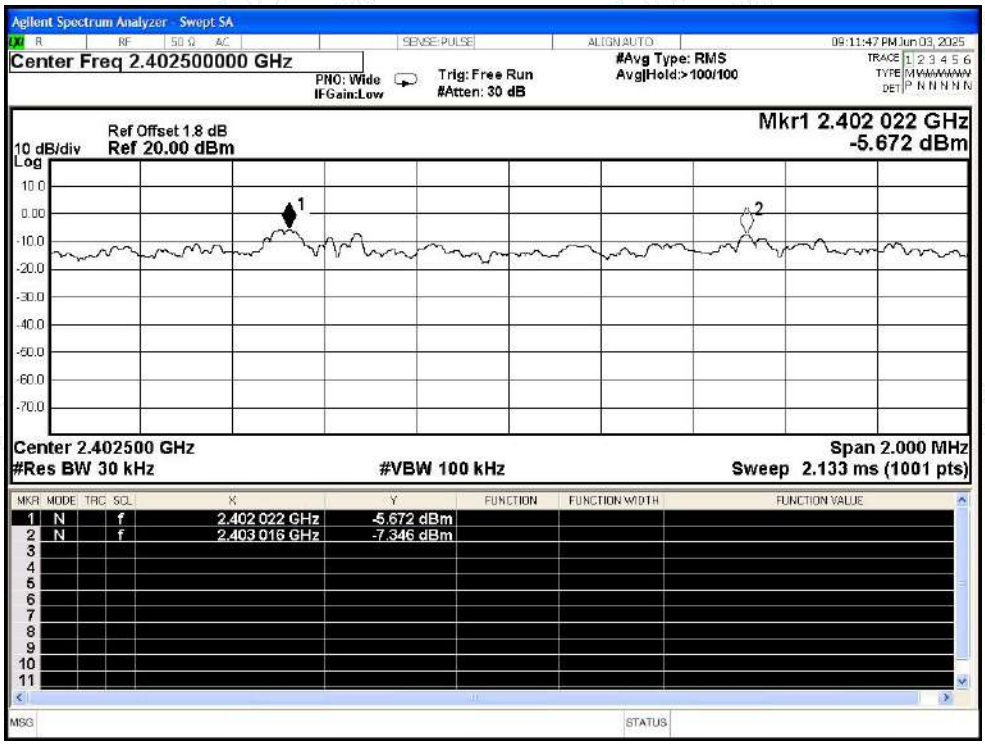
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2402.012	2403.158	1.146	0.684	Pass
NVNT	2-DH5	Ant1	2402.022	2403.016	0.994	0.883	Pass
NVNT	3-DH5	Ant1	2402.022	2403.01	0.988	0.873	Pass

Test Graphs

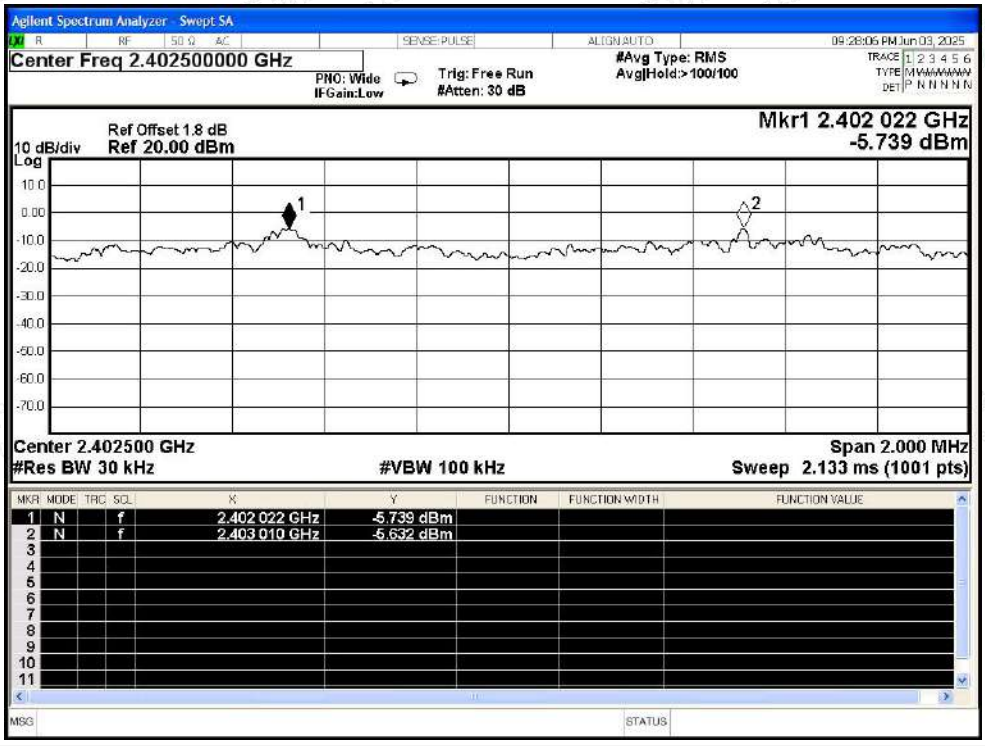
CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1



CFS NVNT 3-DH5 2402MHz Ant1

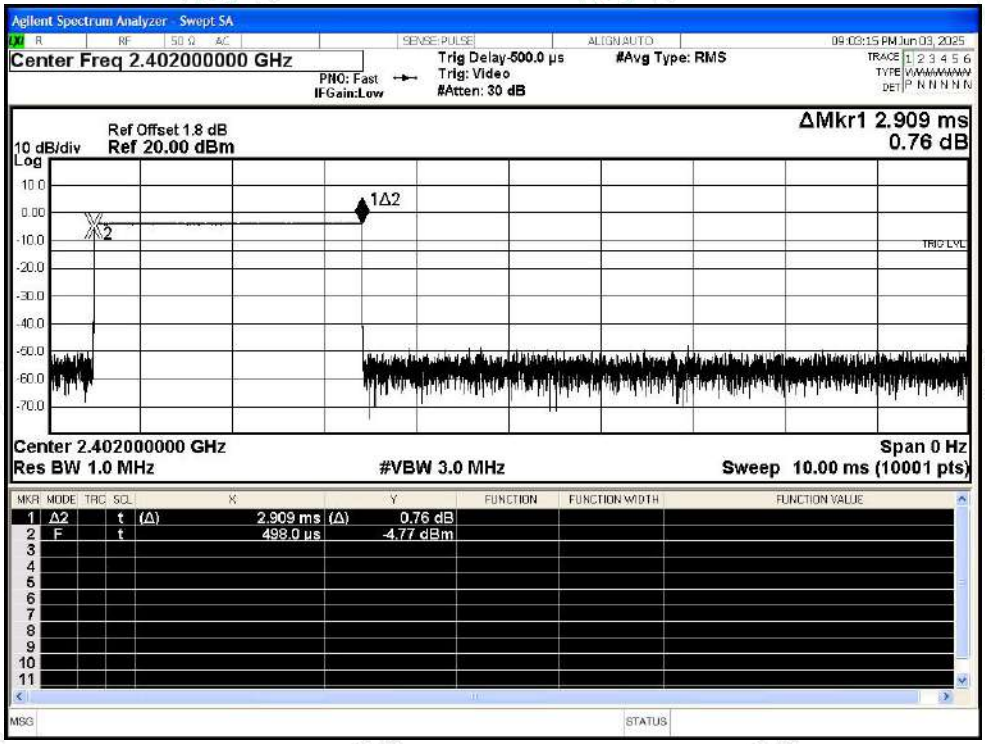


A.4 Dwell Time

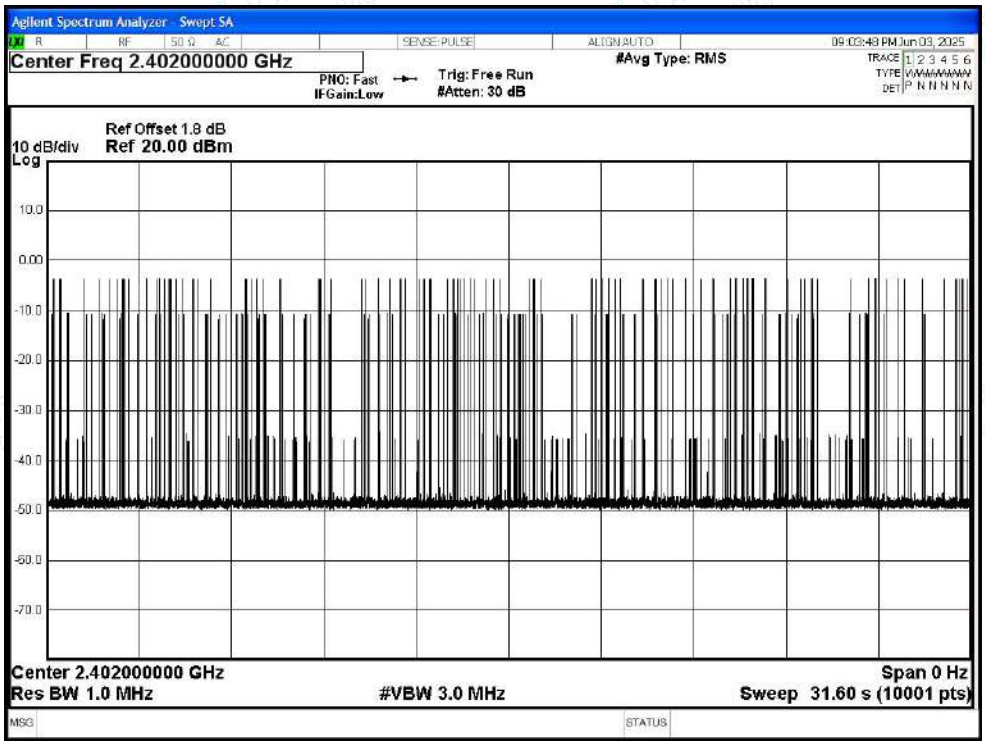
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.909	311.263	107	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.899	284.102	98	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.897	295.494	102	31600	400	Pass

Test Graphs

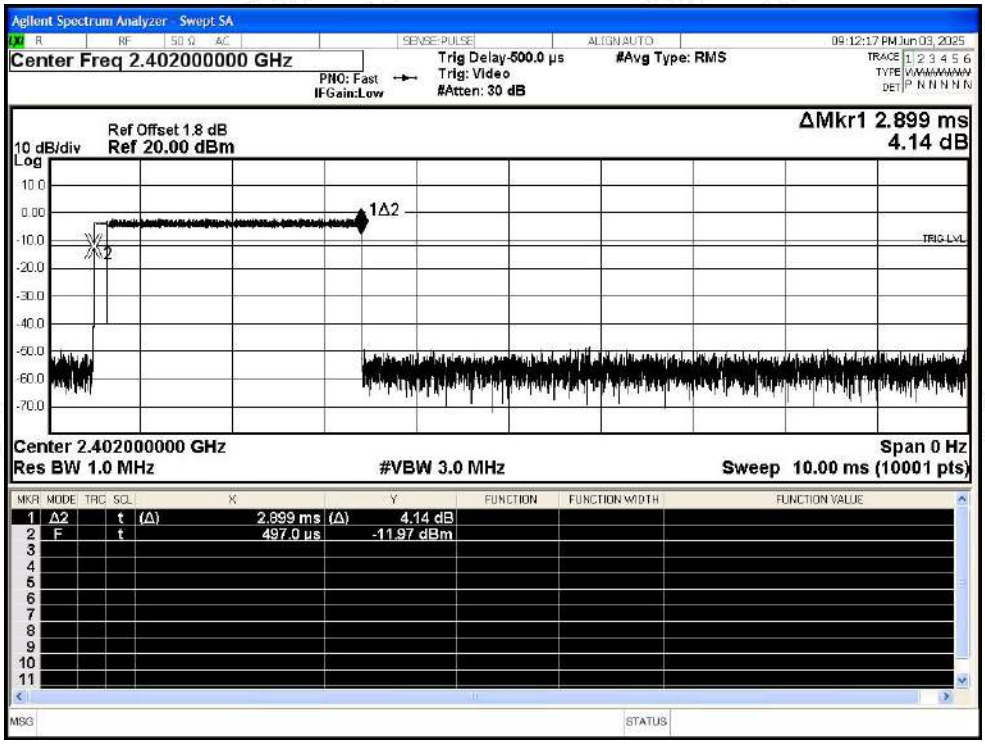
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



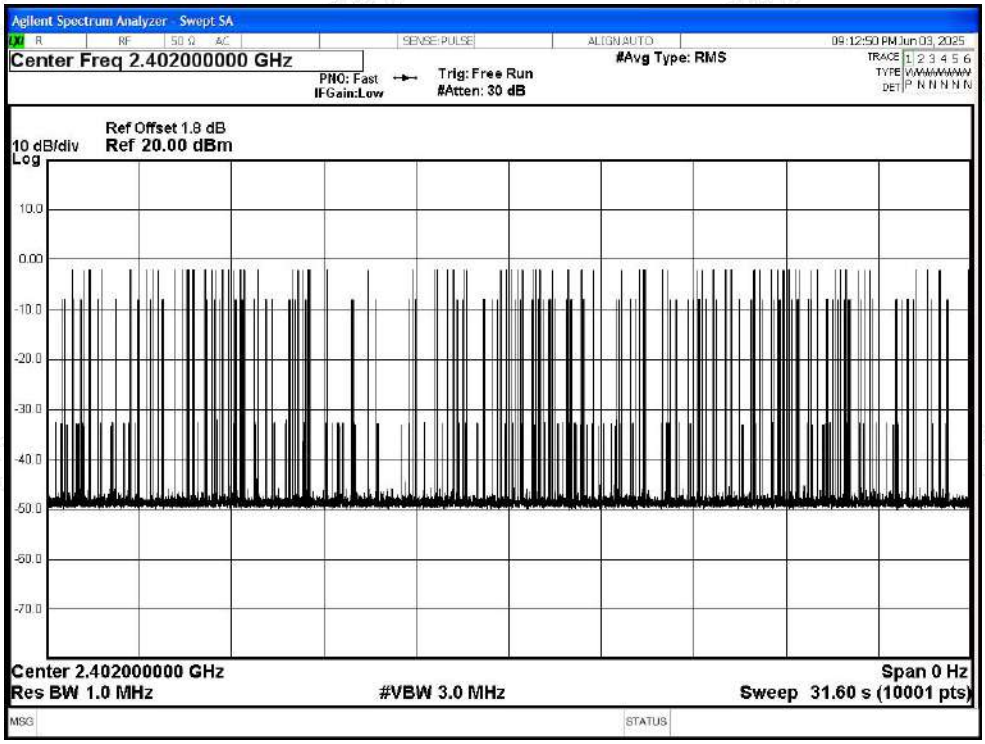
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



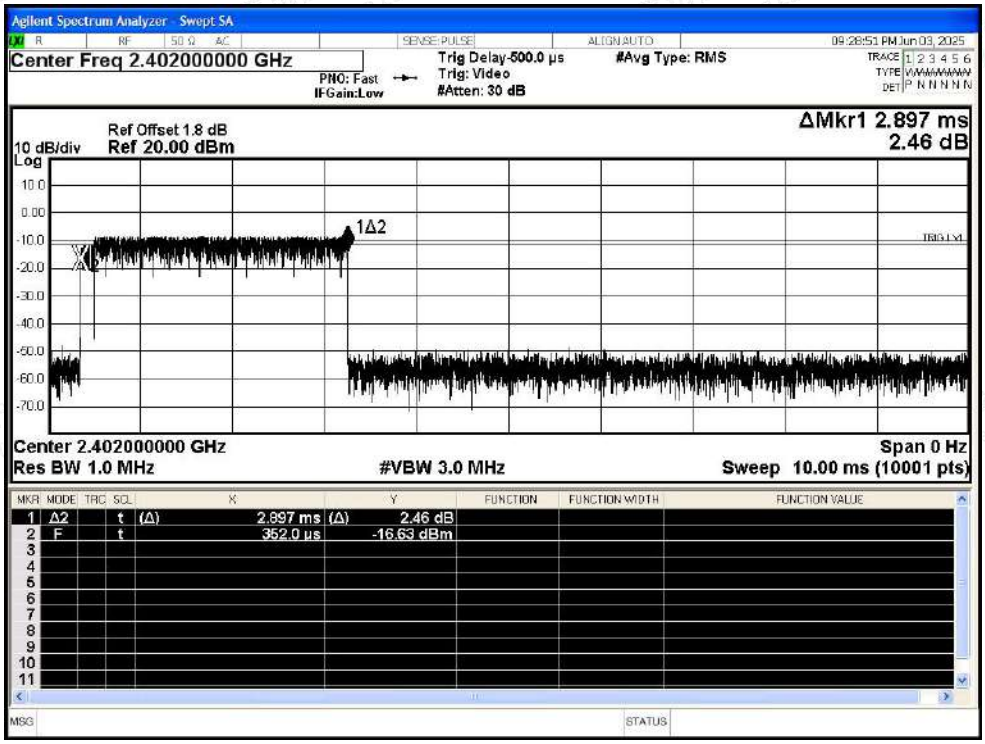
Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



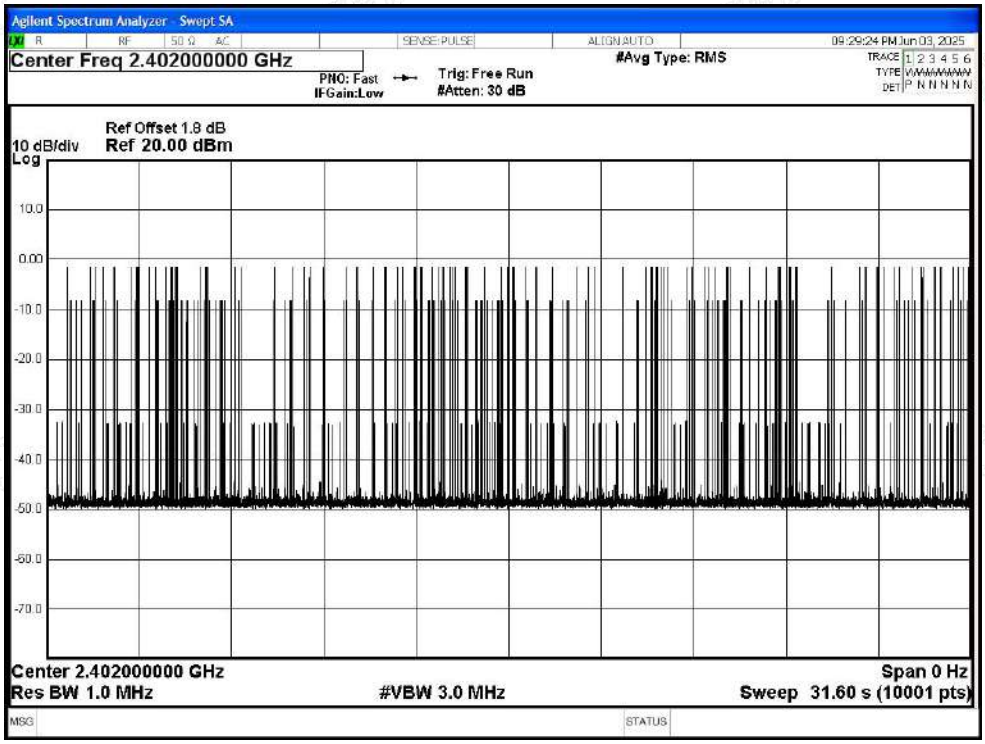
Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated



Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated

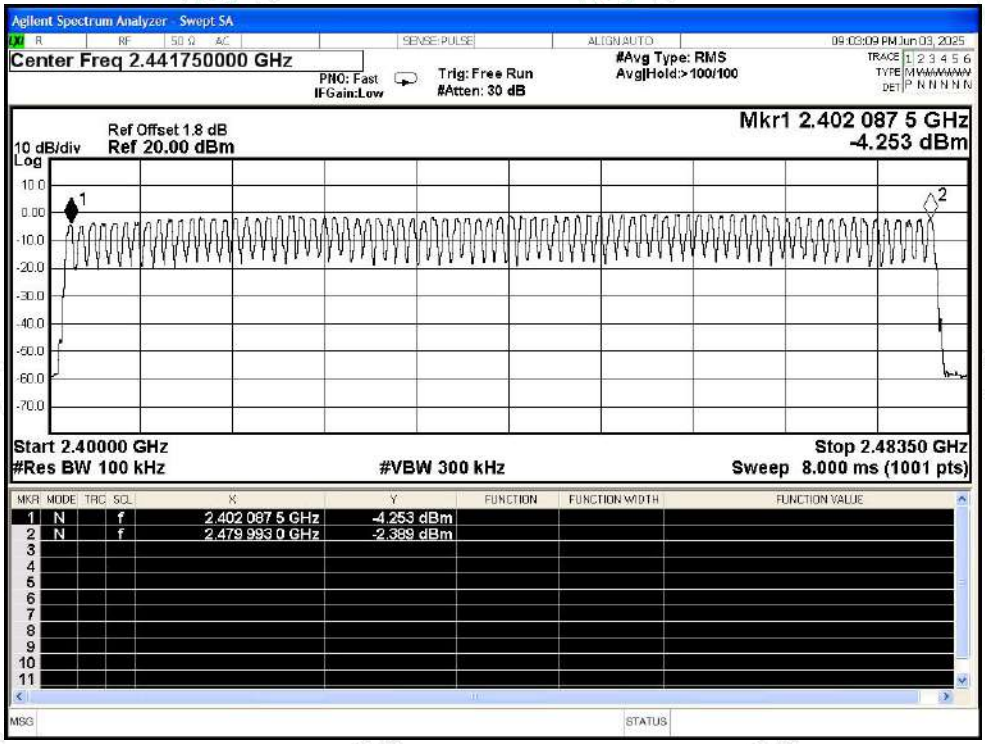


A.5 Number of Hopping Channel

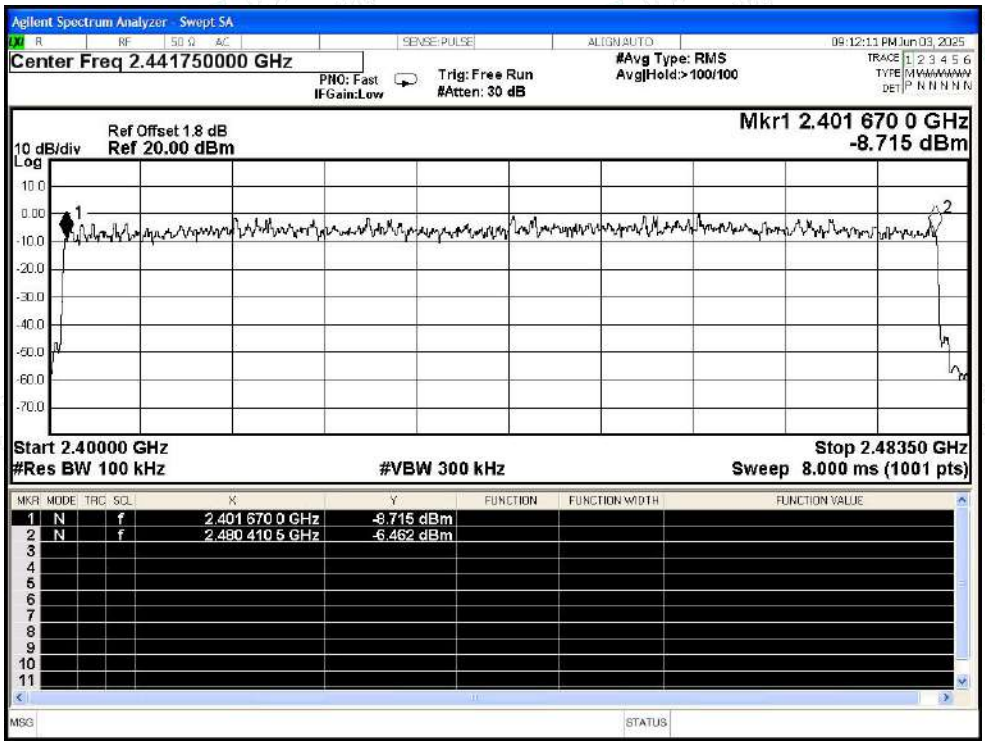
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass

Test Graphs

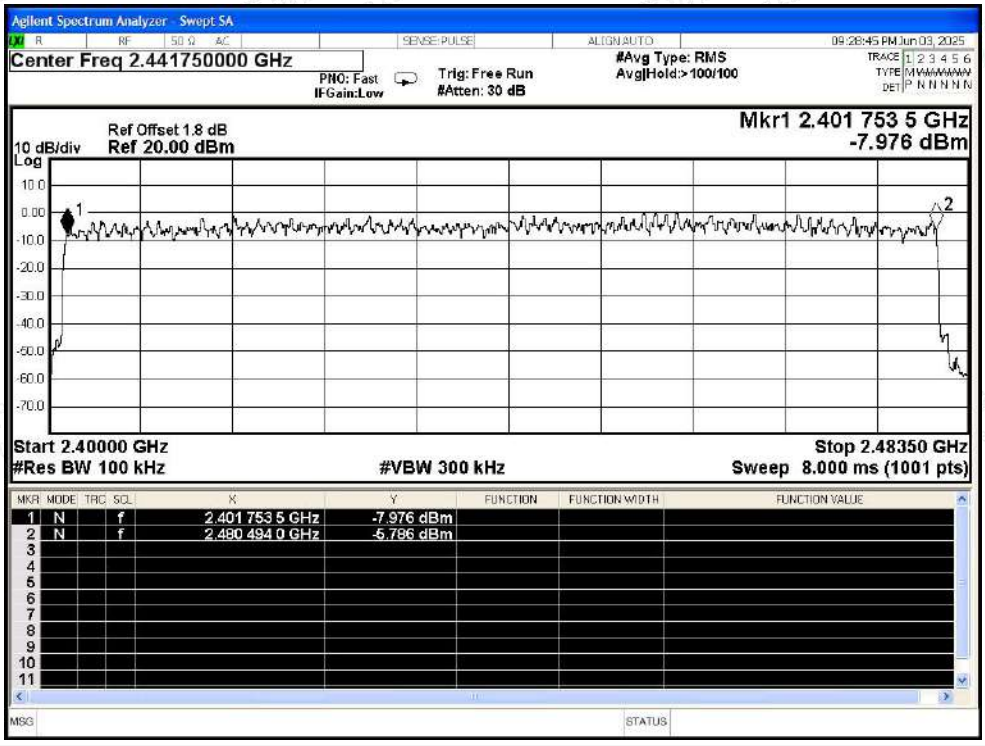
Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1



Hopping No. NVNT 3-DH5 2402MHz Ant1

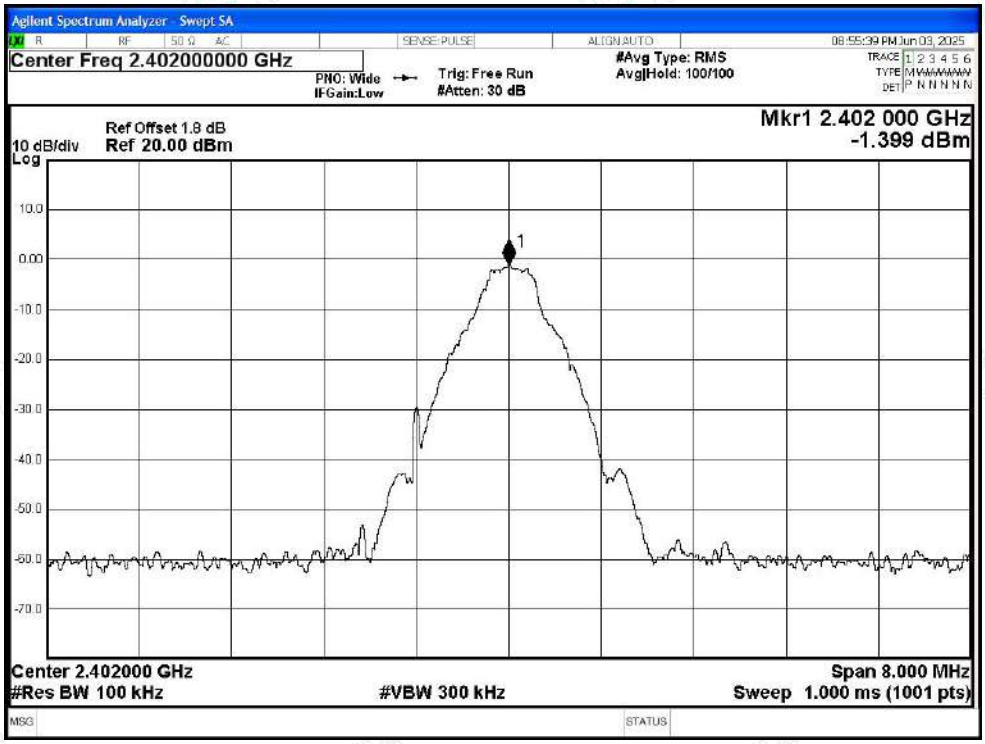


A.6 Band Edge

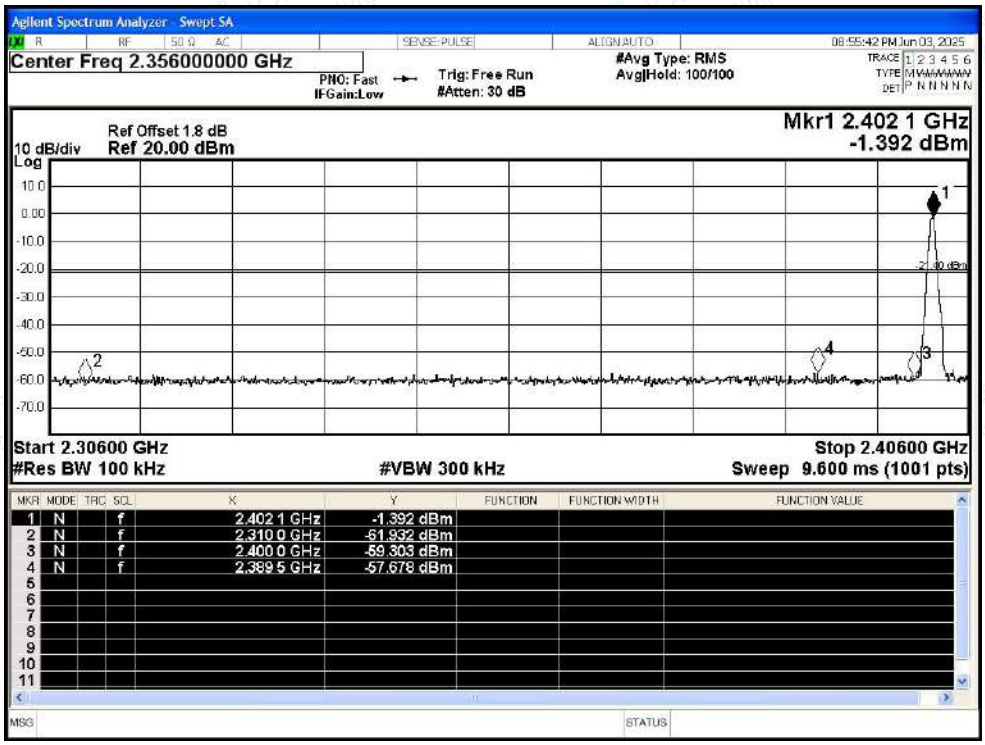
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-56.28	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-54.32	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-52.64	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-55.19	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-50.87	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-53.45	-20	Pass

Test Graphs

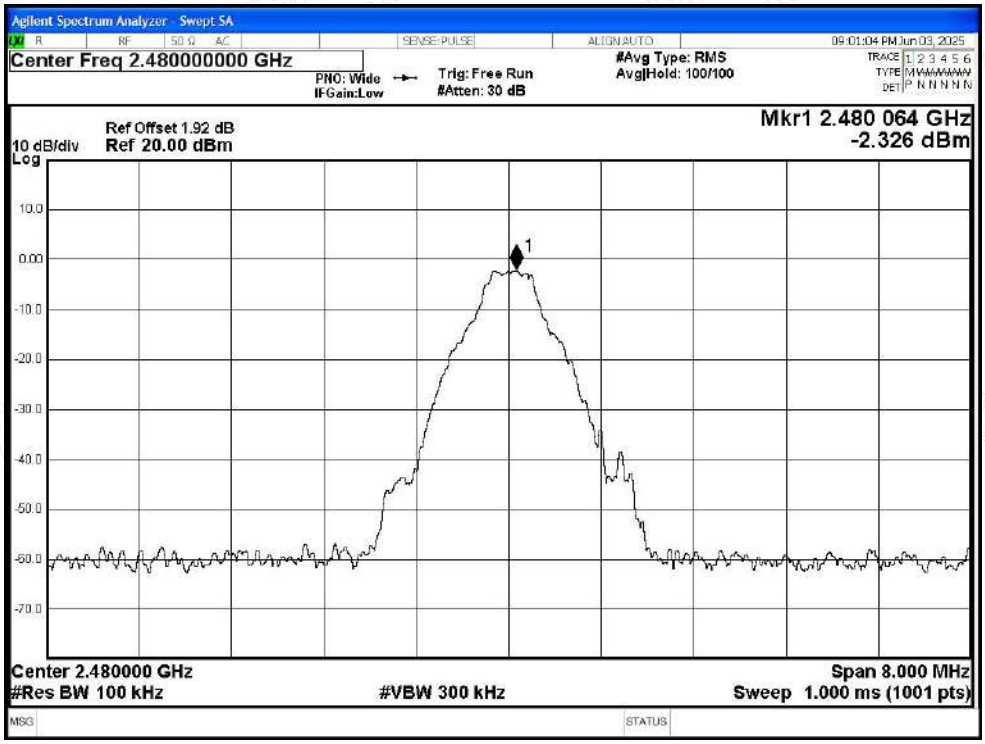
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



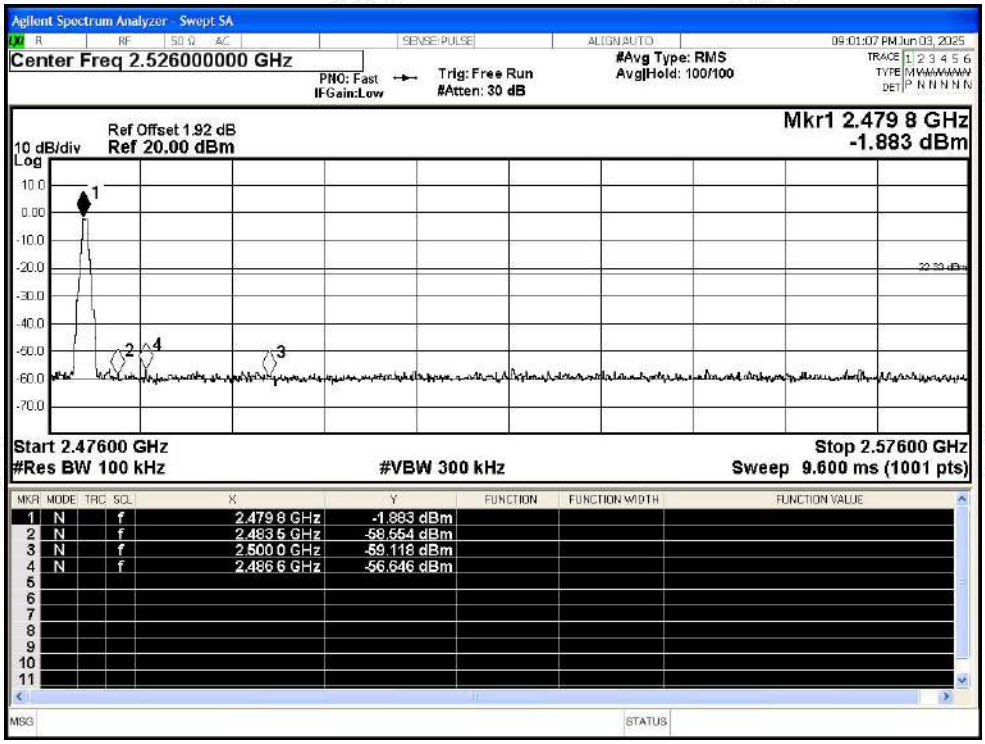
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



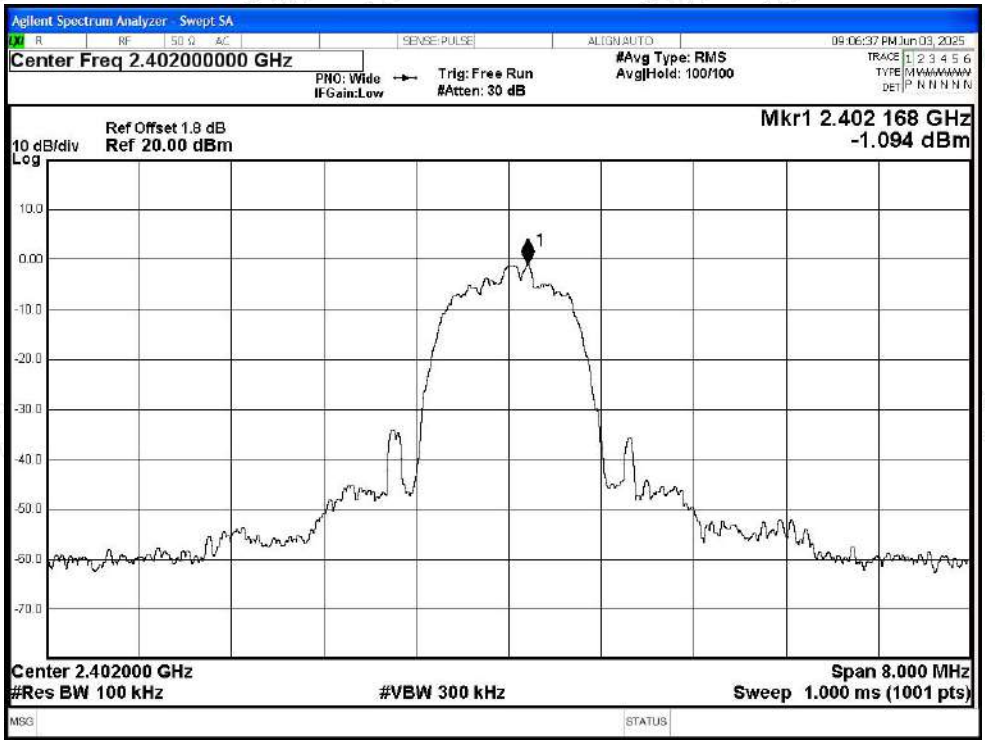
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



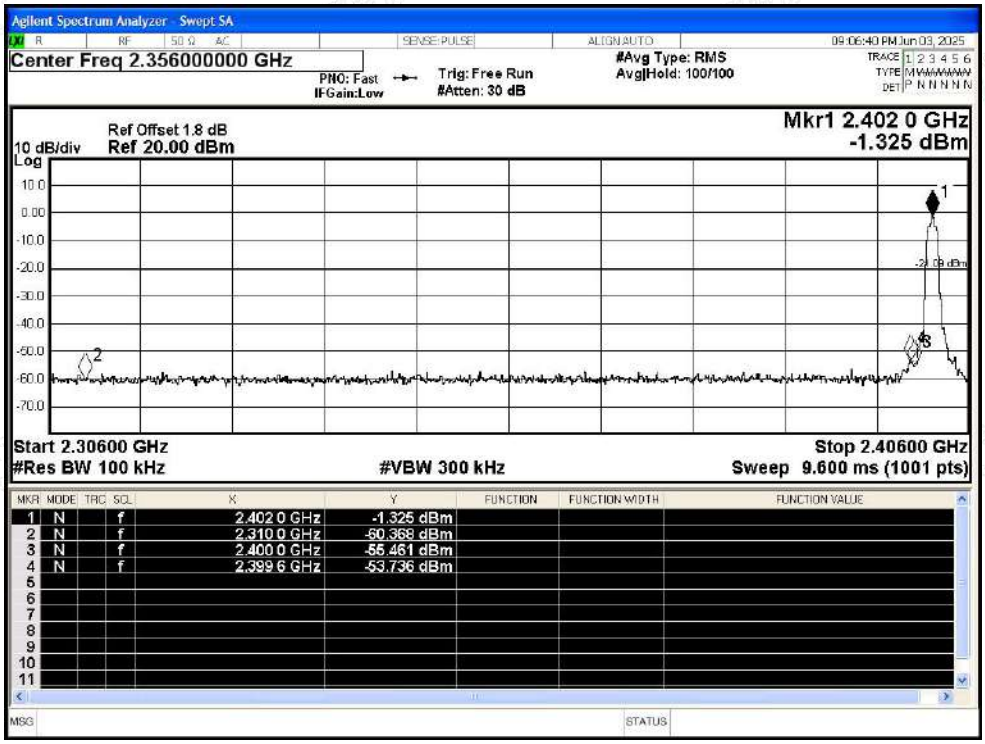
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



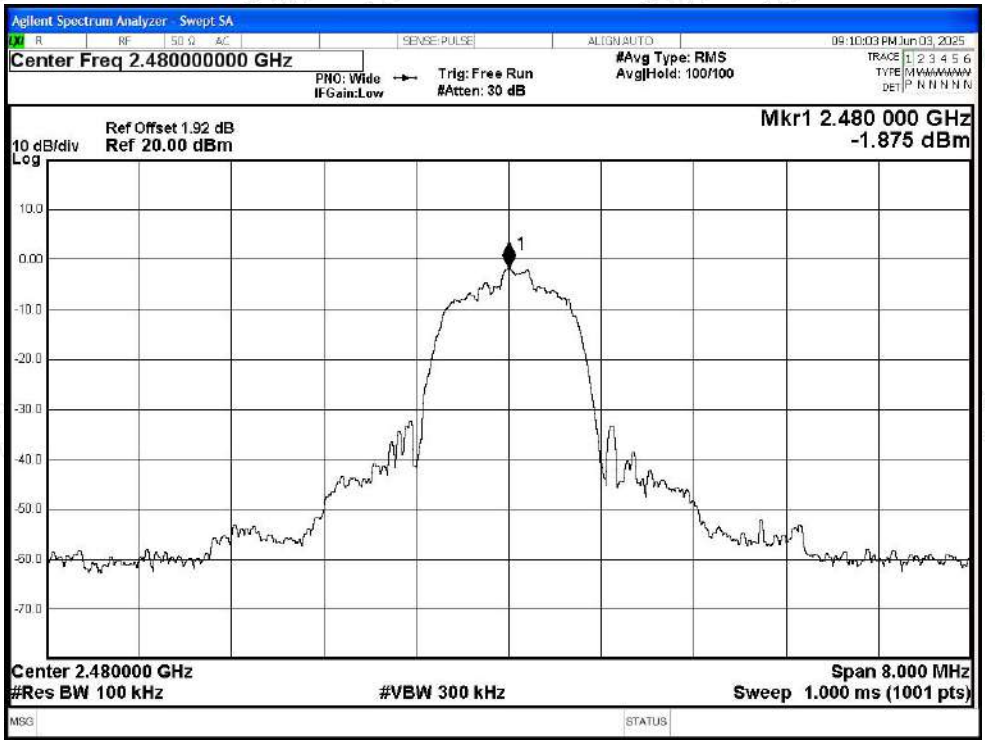
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



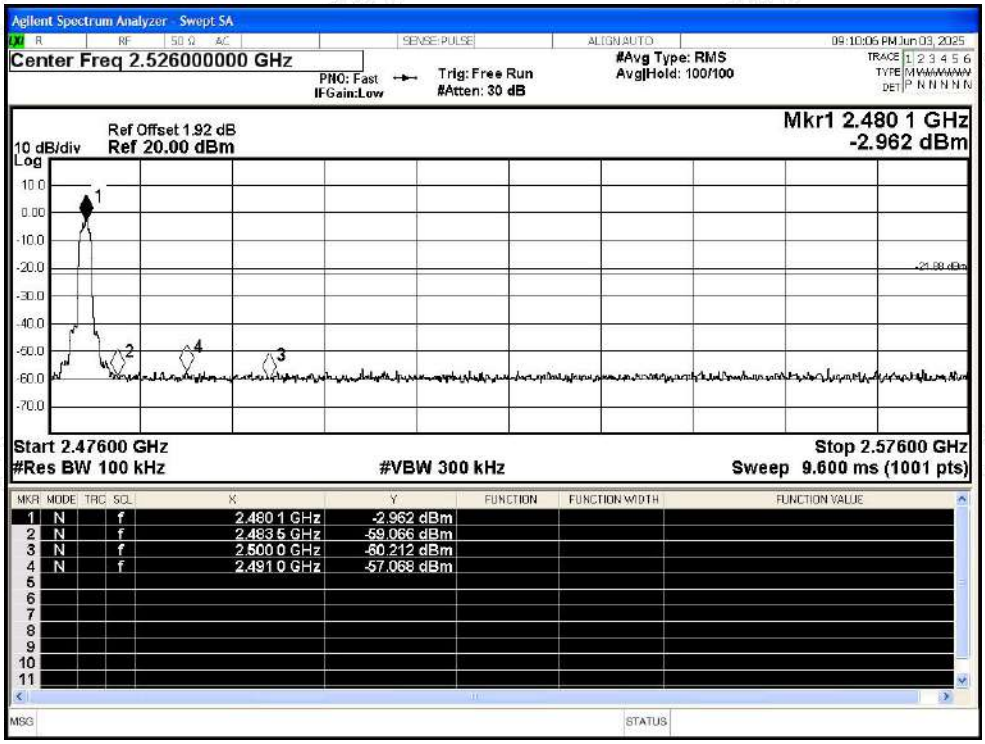
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission



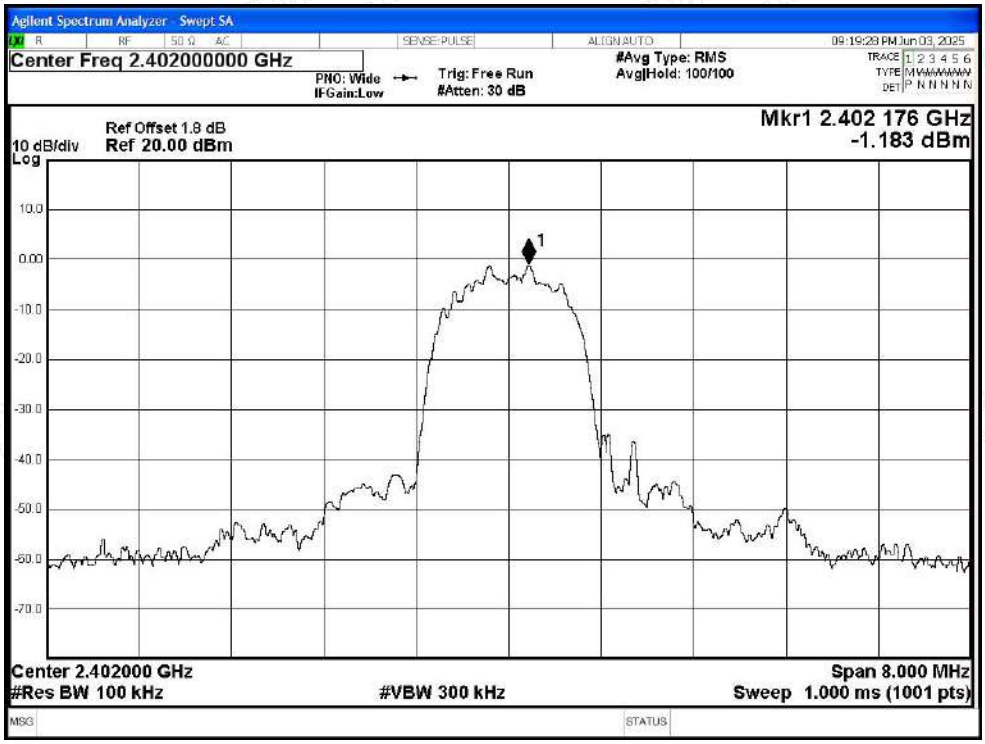
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



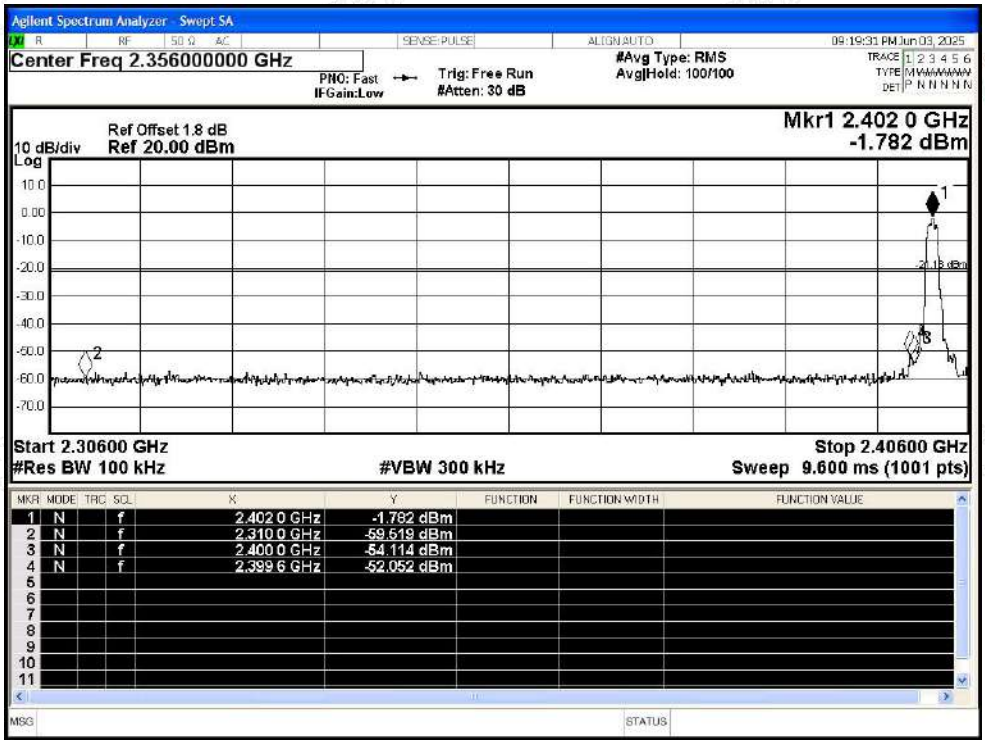
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission



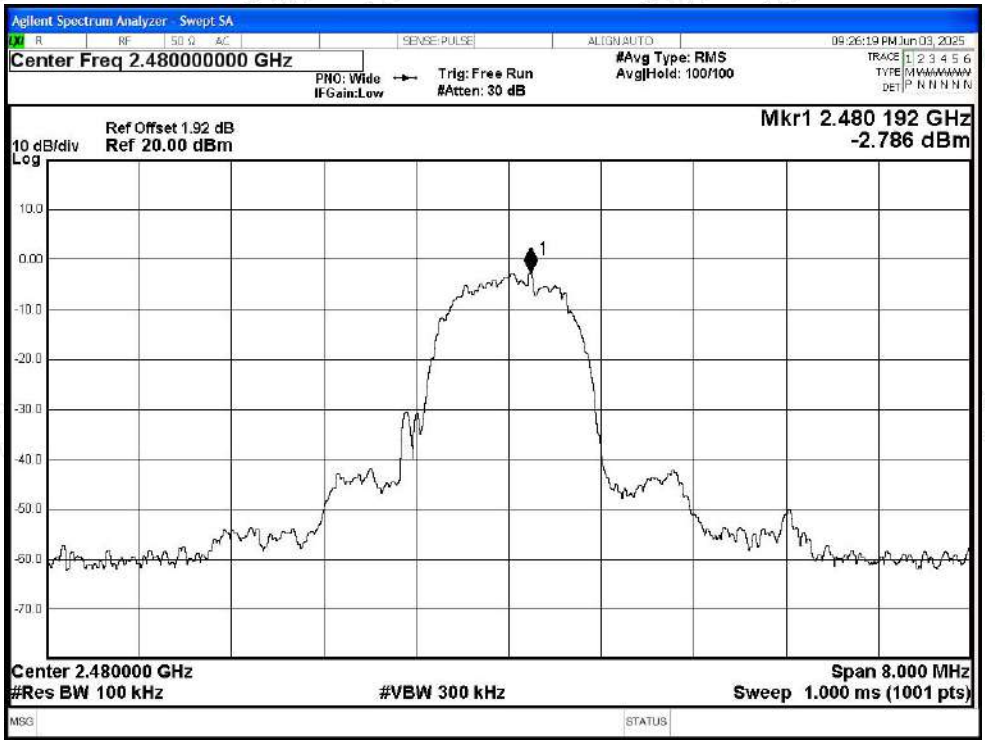
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref



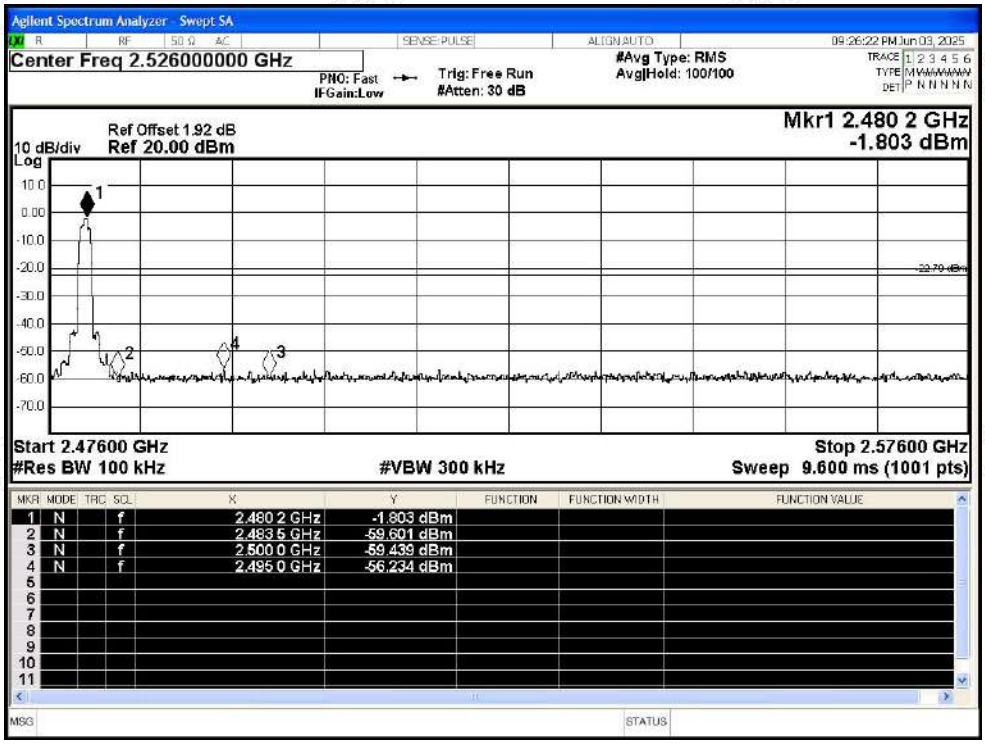
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission



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



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

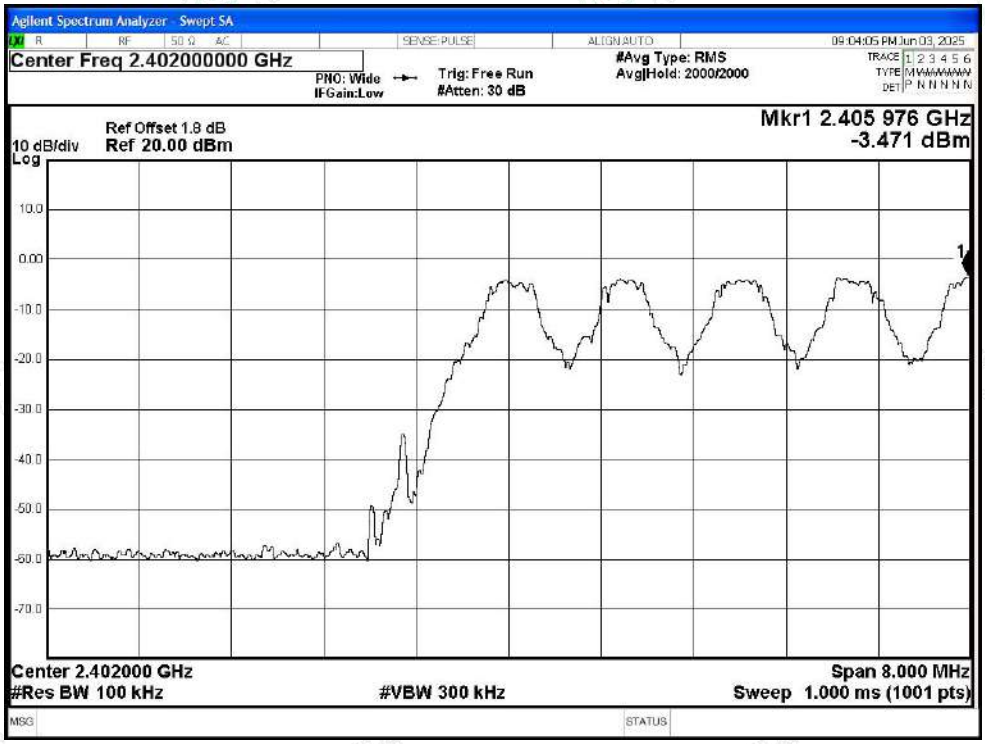


(Hopping)

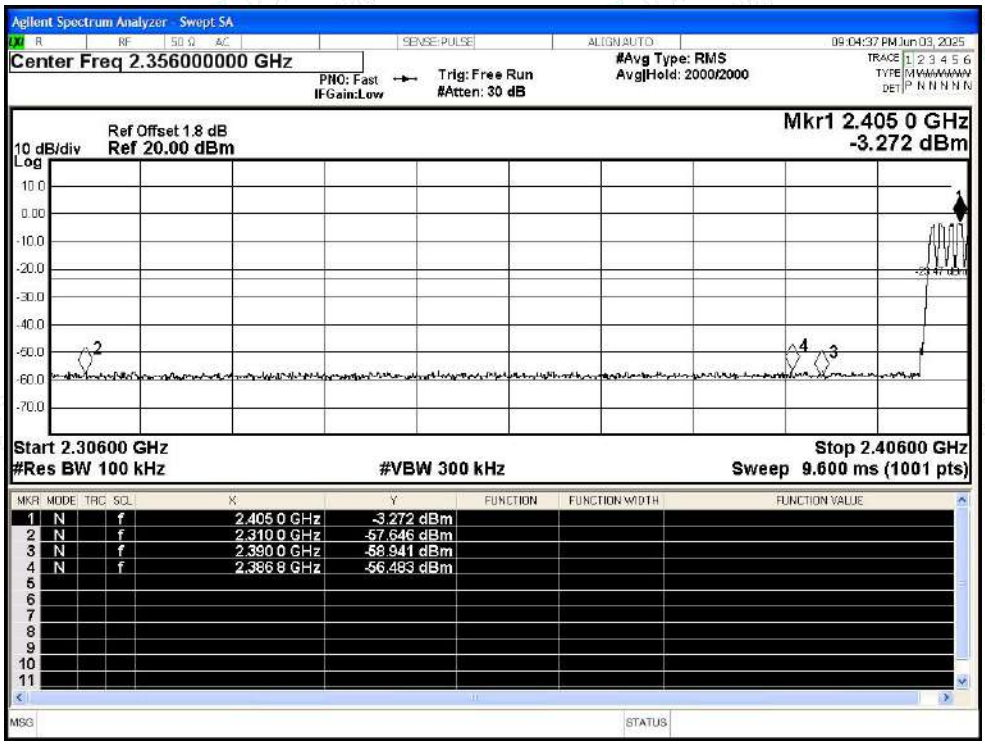
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-53.01	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-52.56	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-51.35	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-53.38	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-52.3	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-54.55	-20	Pass

Test Graphs

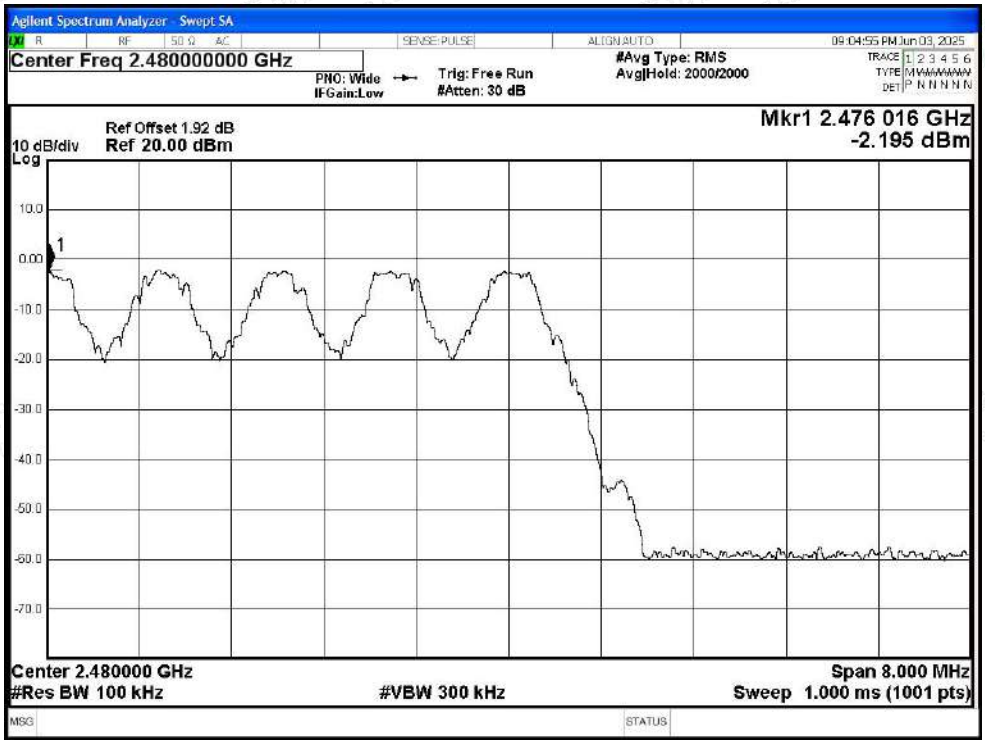
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



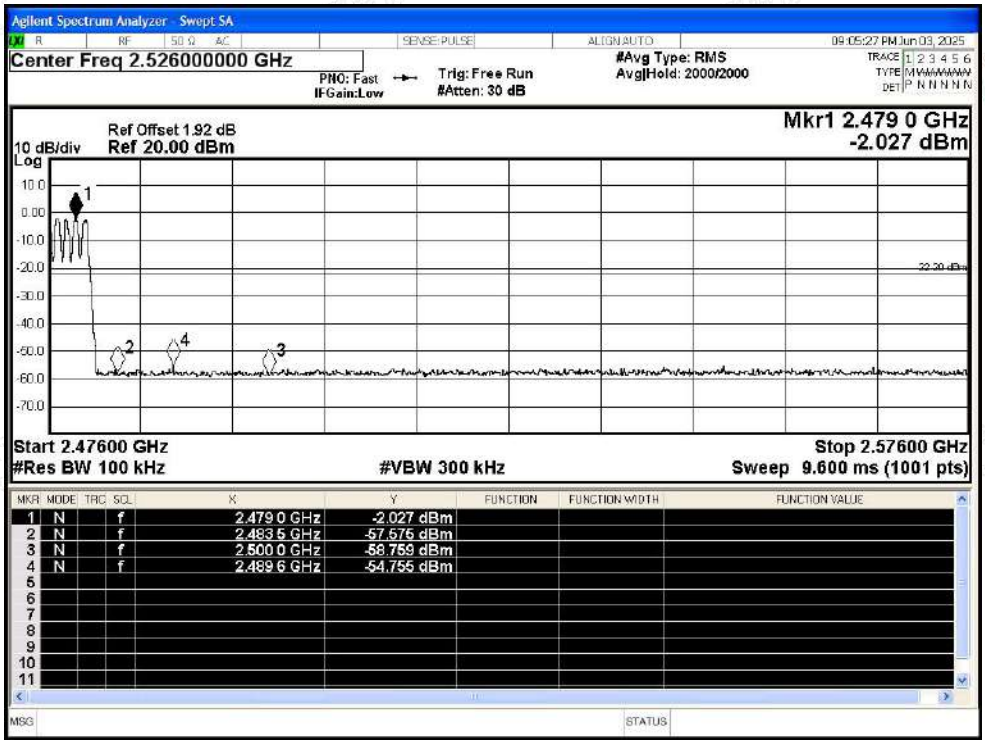
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



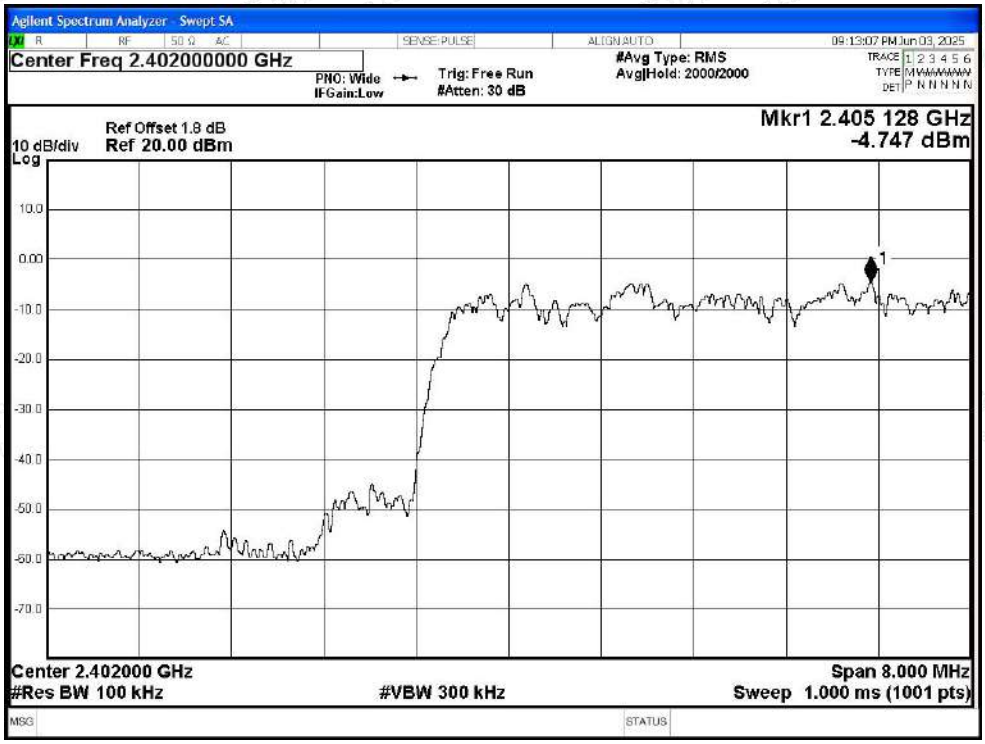
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



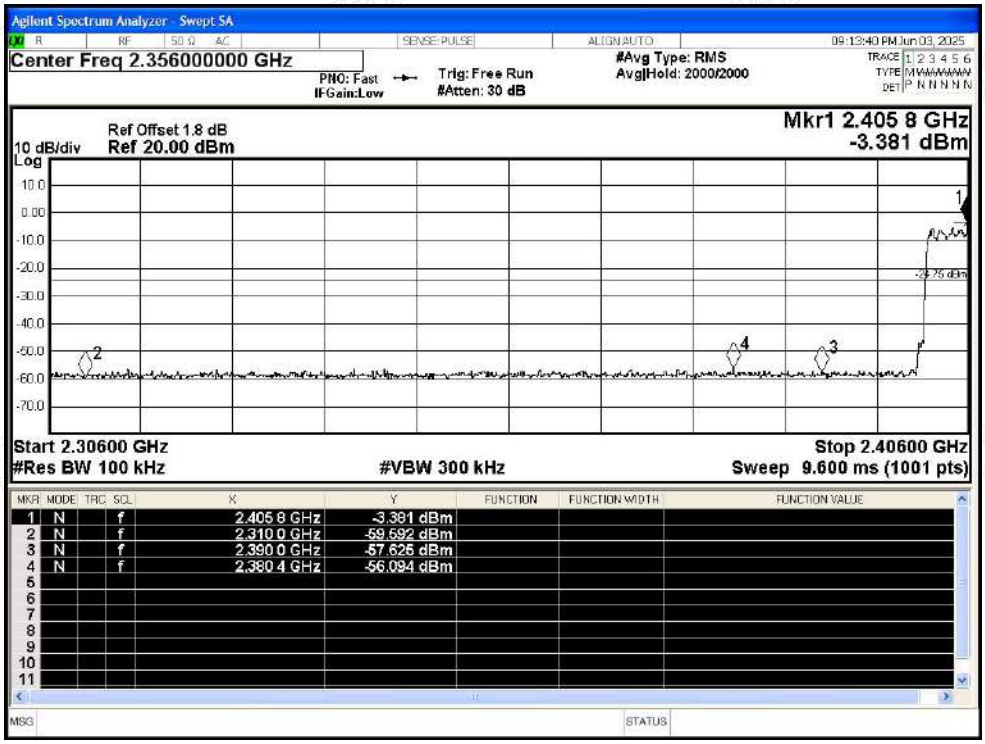
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission



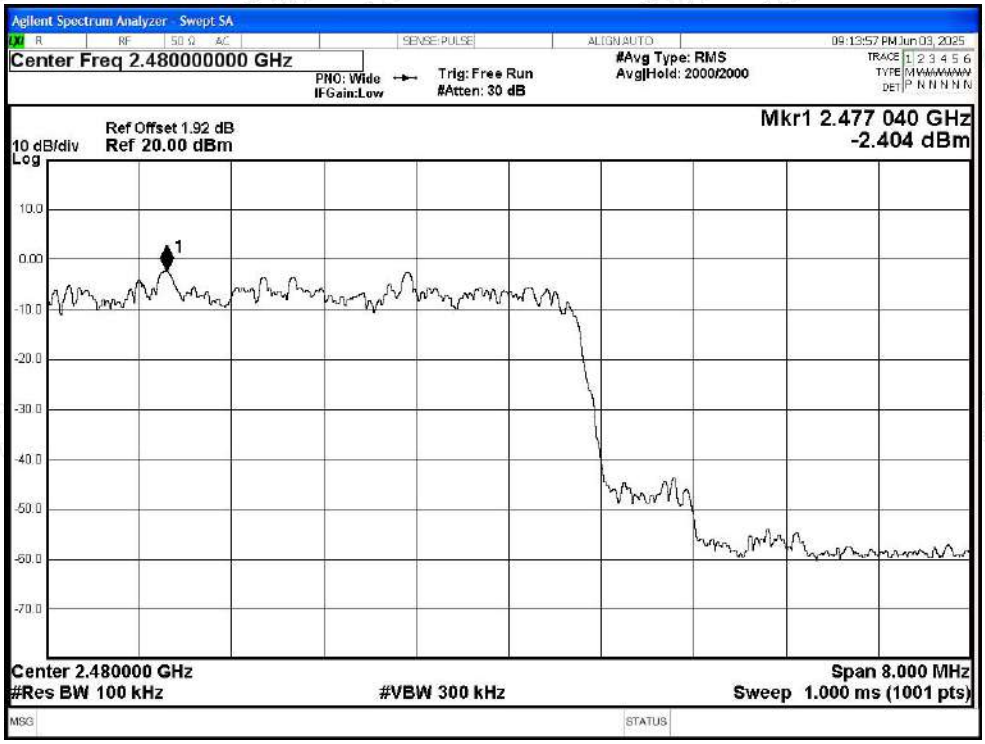
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



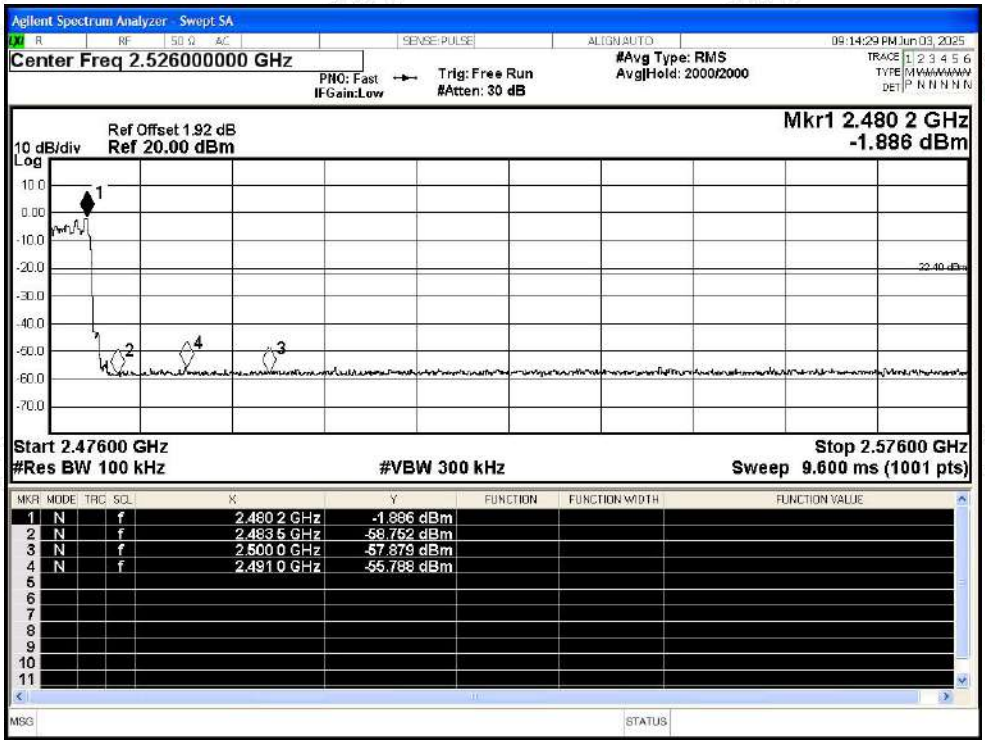
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission



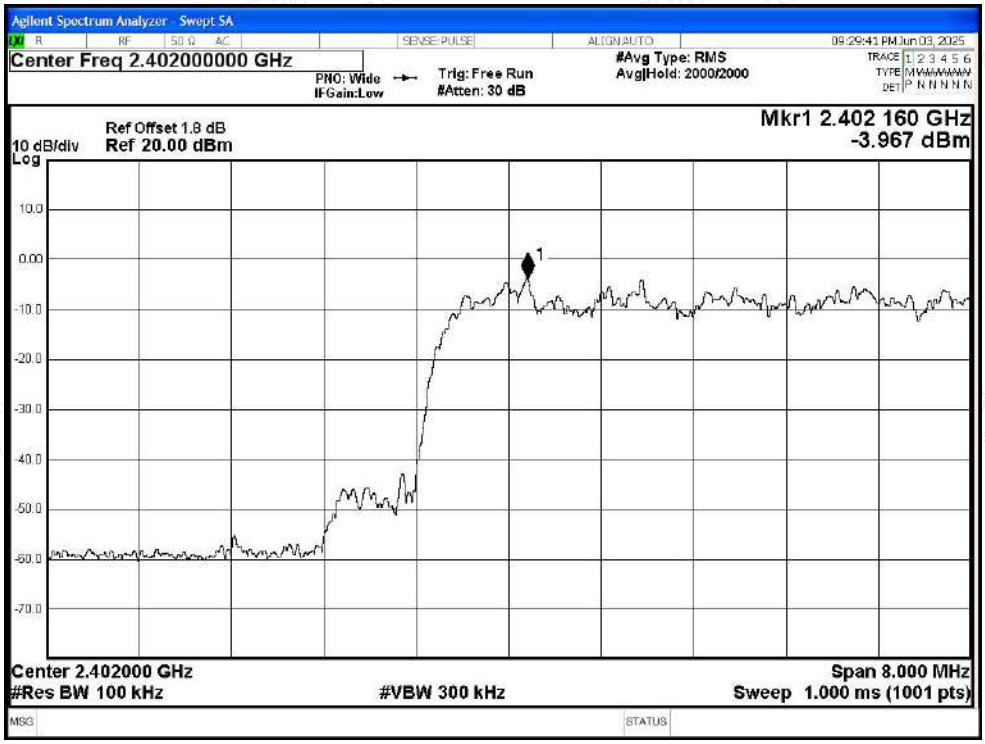
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



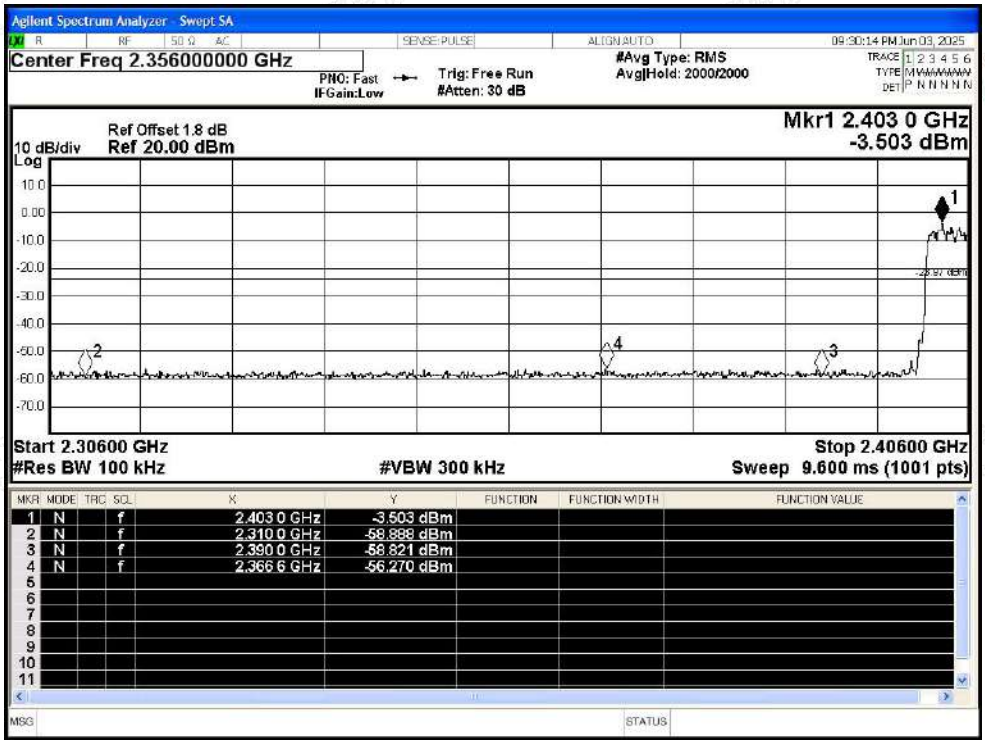
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission



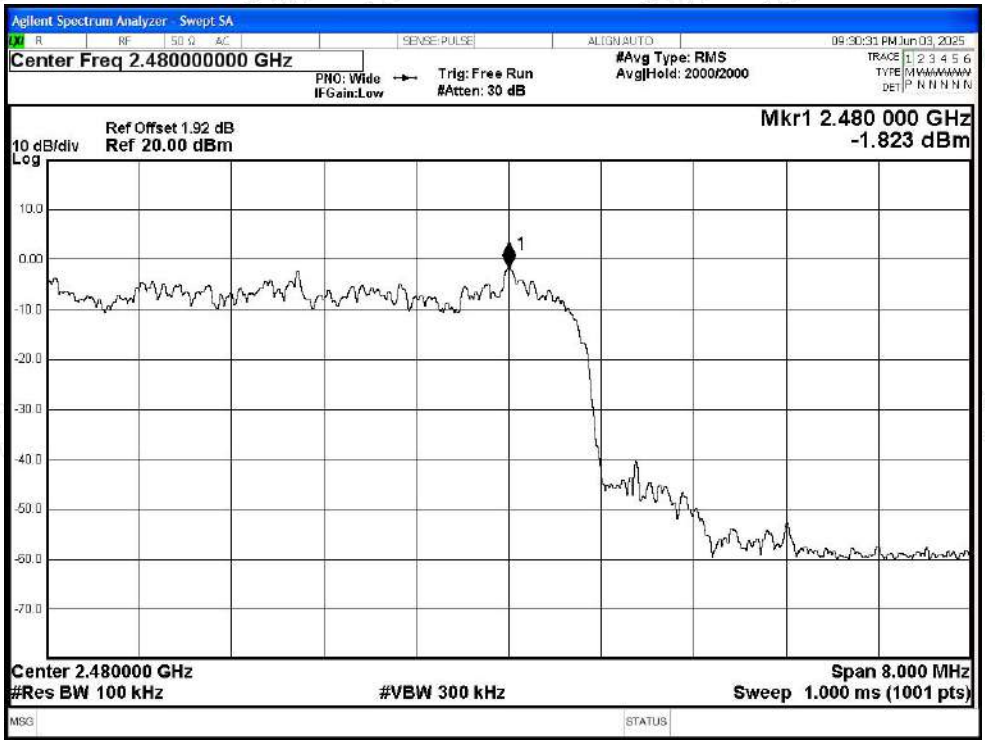
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref



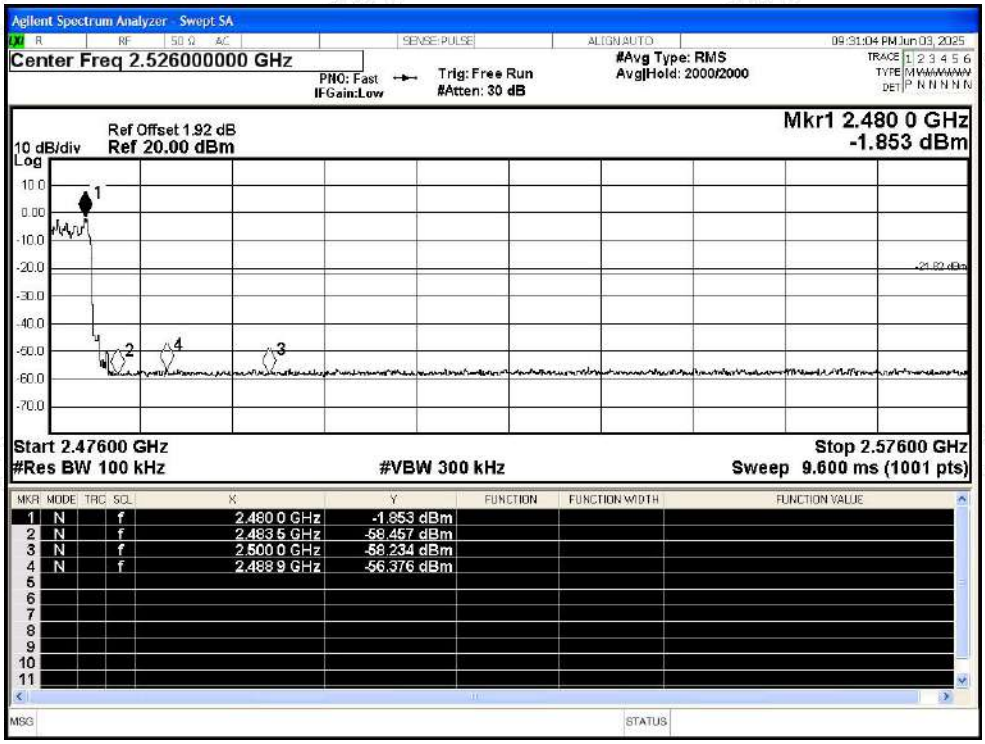
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Emission



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



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

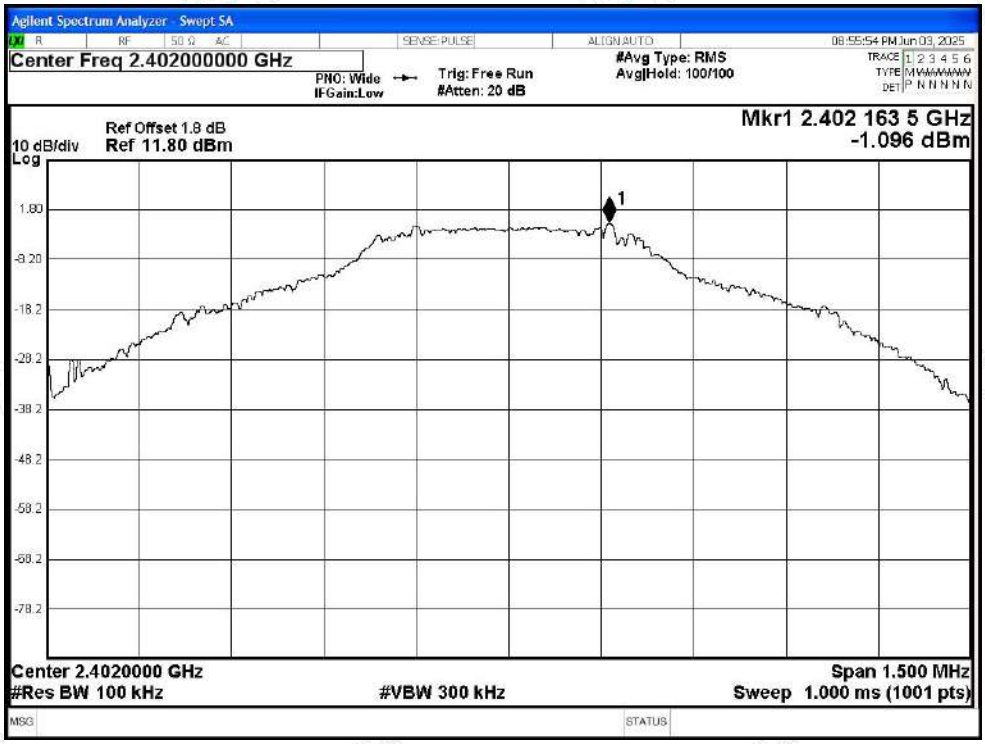


A.7 Conducted RF Spurious Emission

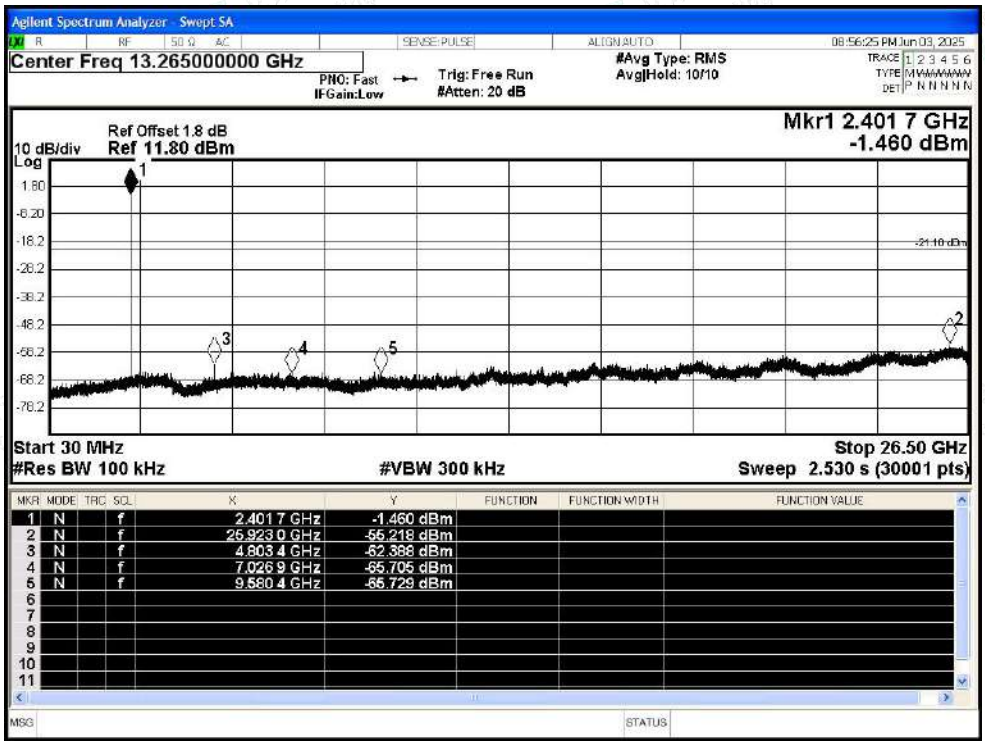
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-54.12	-20	Pass
NVNT	1-DH5	2441	Ant1	-54.1	-20	Pass
NVNT	1-DH5	2480	Ant1	-54.05	-20	Pass
NVNT	2-DH5	2402	Ant1	-52.68	-20	Pass
NVNT	2-DH5	2441	Ant1	-54.04	-20	Pass
NVNT	2-DH5	2480	Ant1	-53.8	-20	Pass
NVNT	3-DH5	2402	Ant1	-52.98	-20	Pass
NVNT	3-DH5	2441	Ant1	-53.57	-20	Pass
NVNT	3-DH5	2480	Ant1	-53.74	-20	Pass

Test Graphs

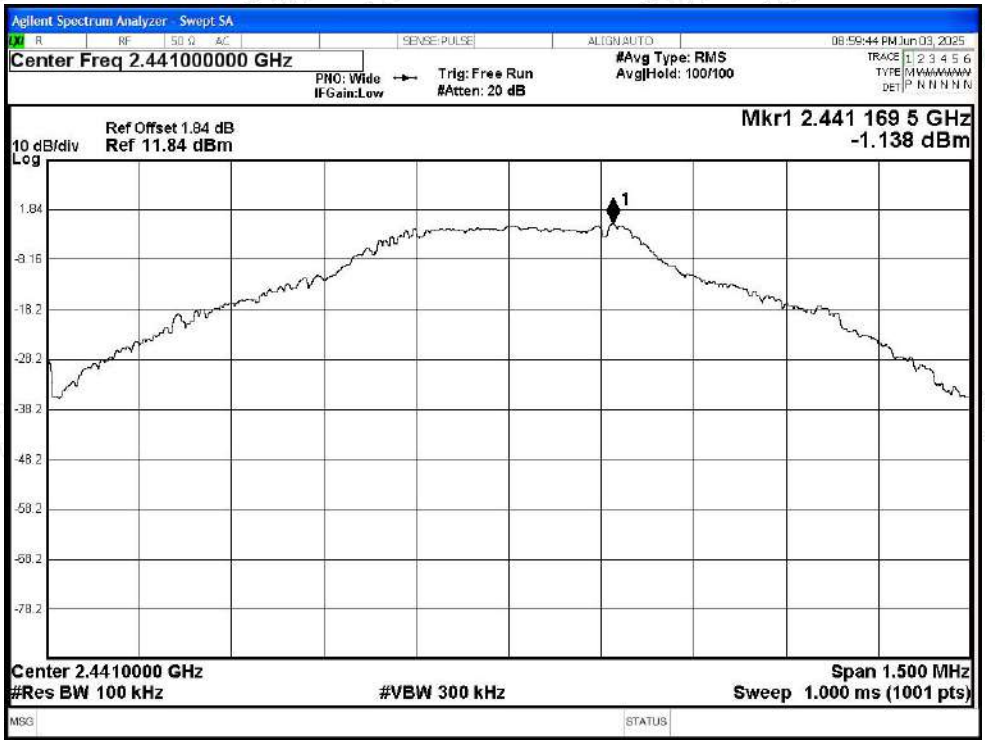
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



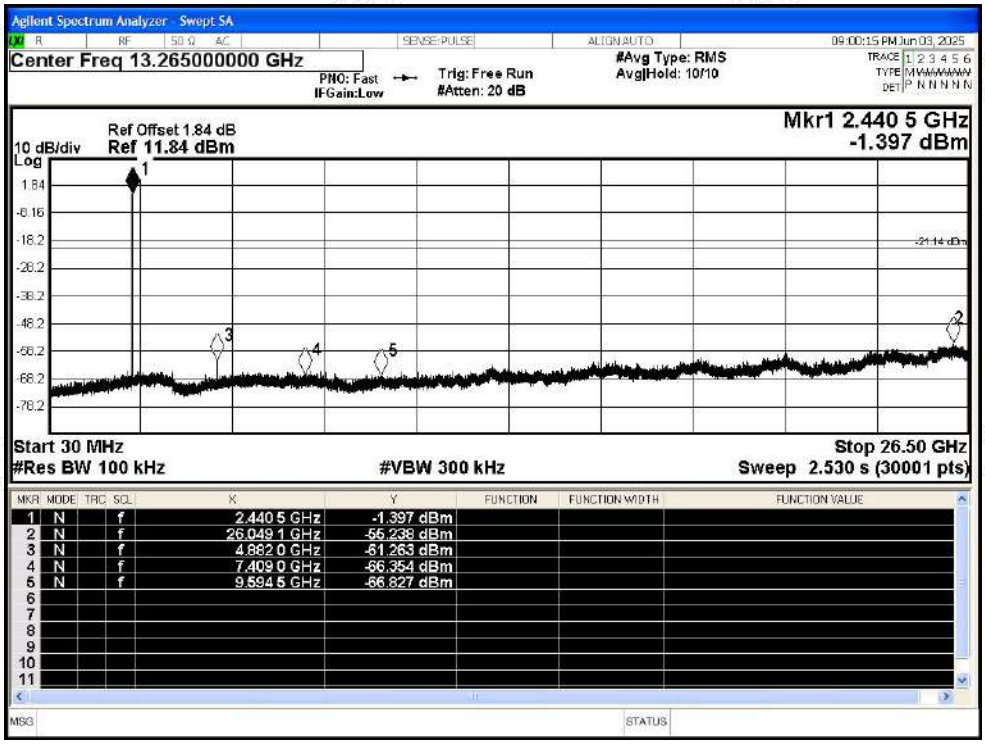
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



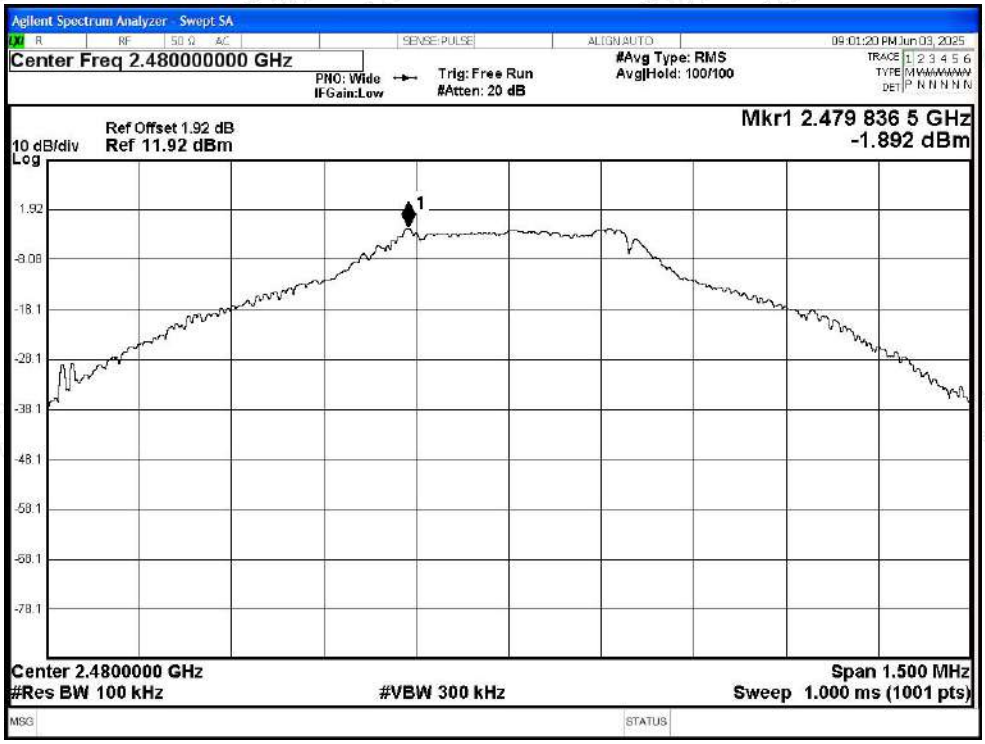
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



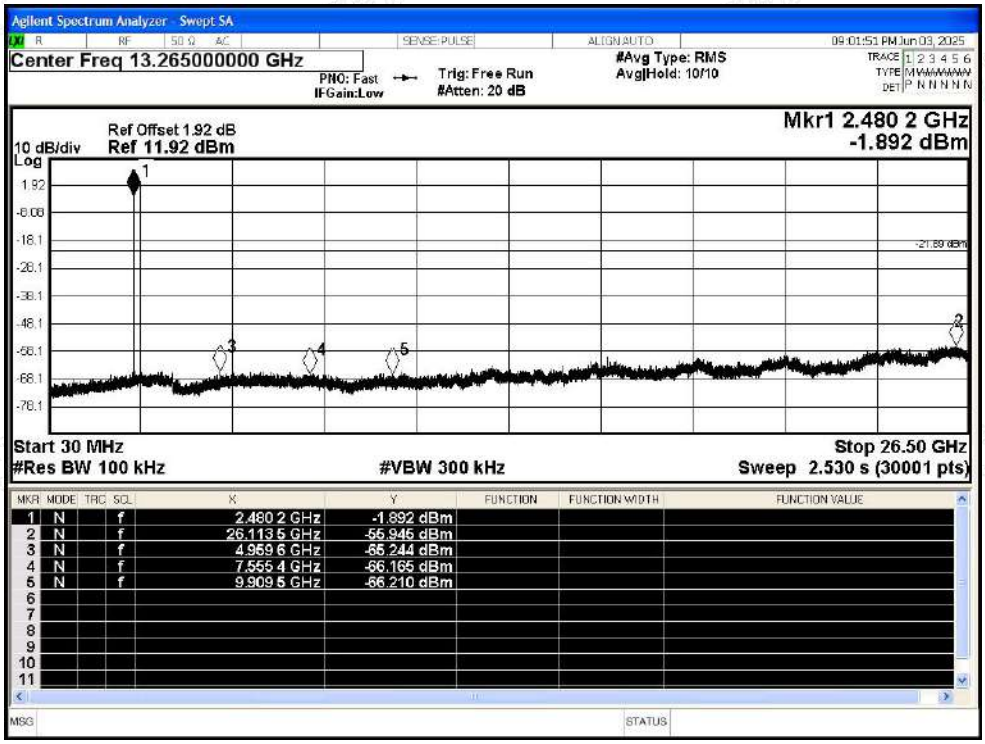
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



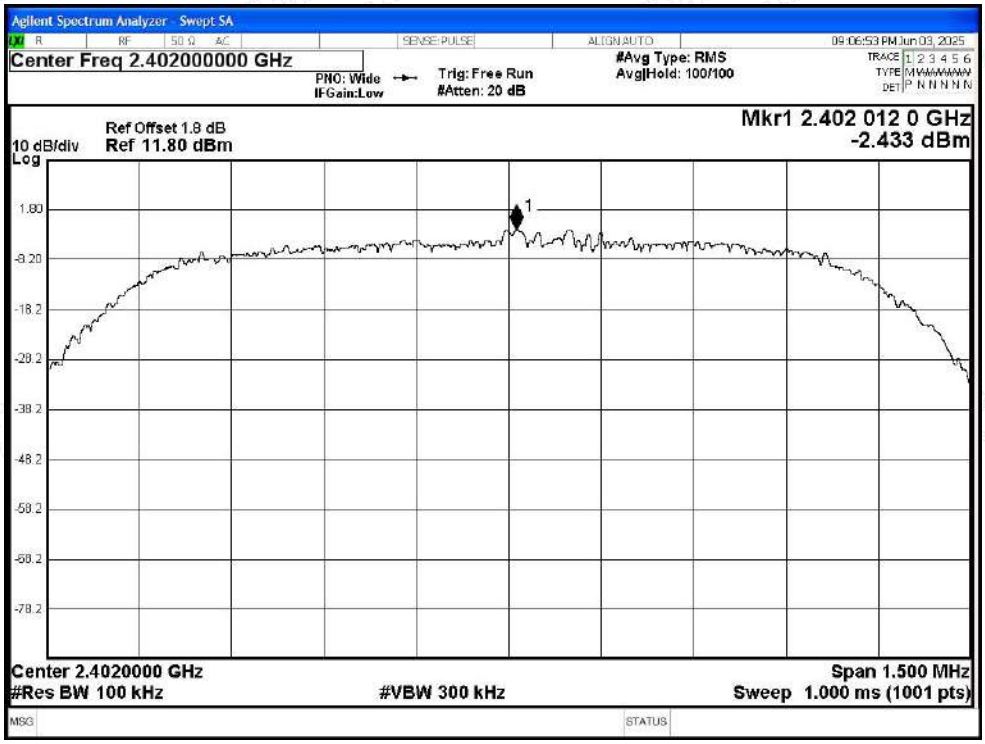
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



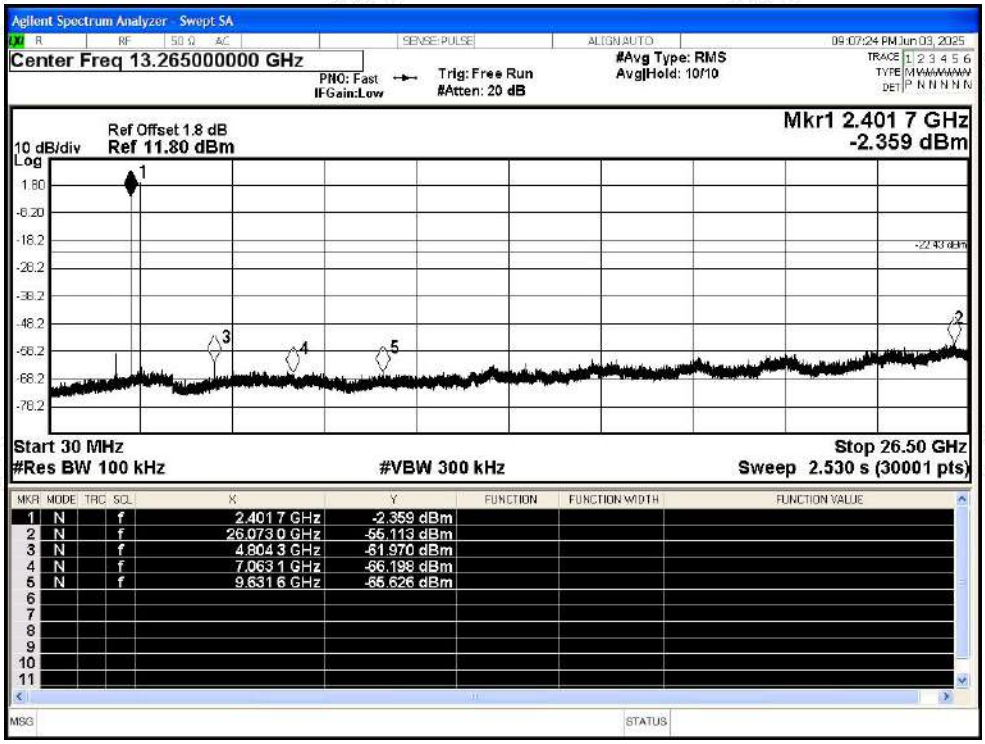
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



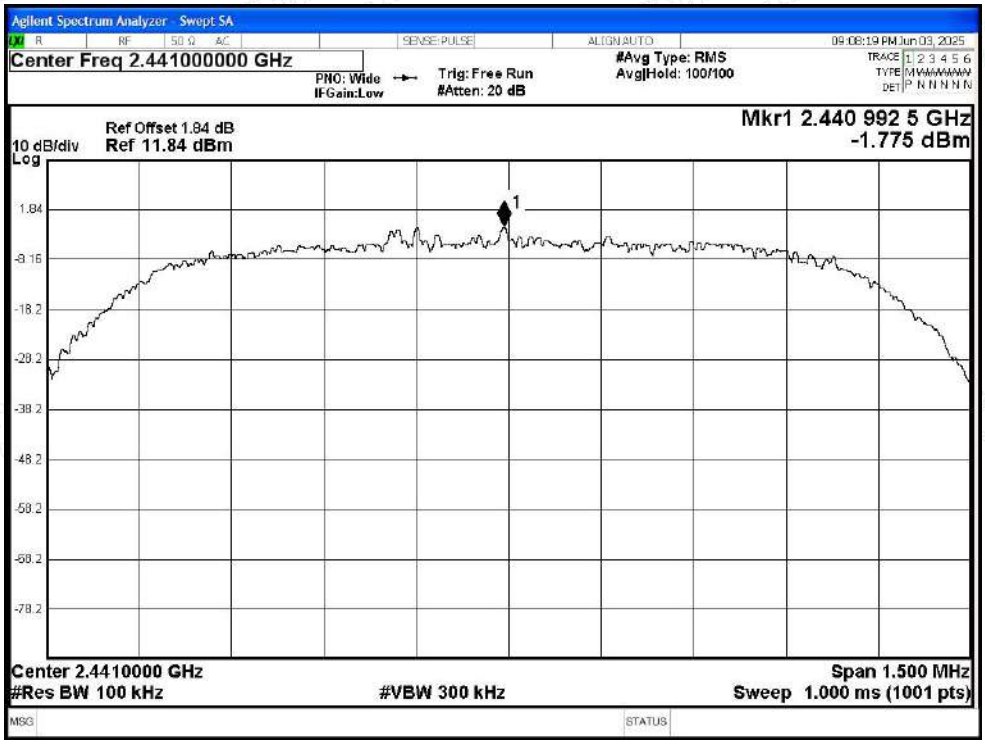
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



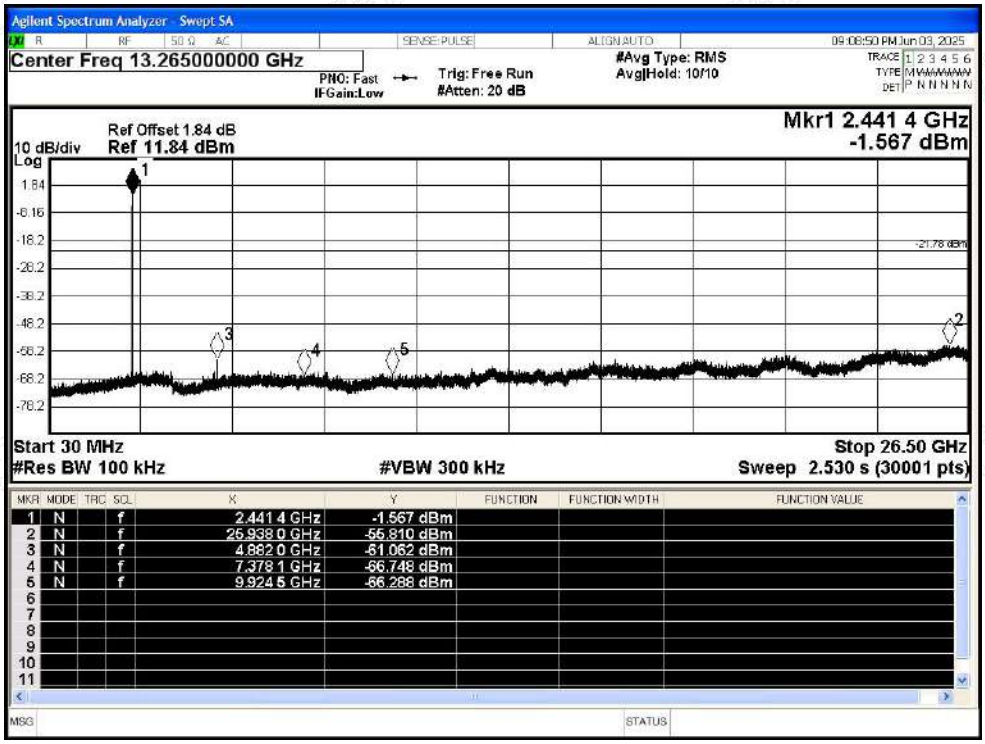
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



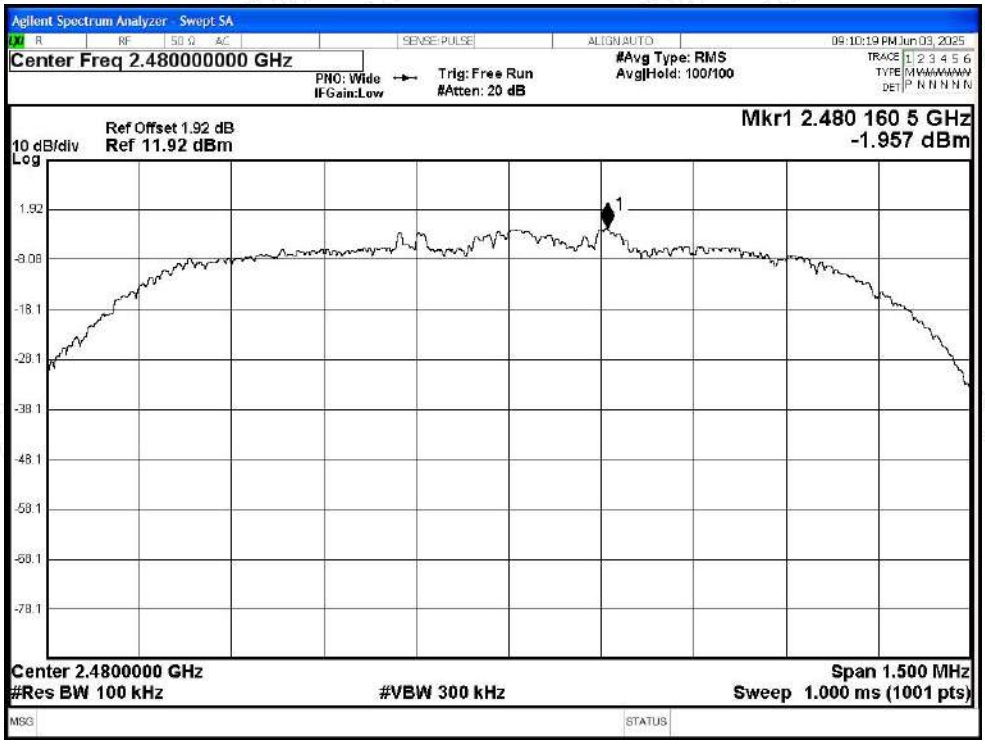
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



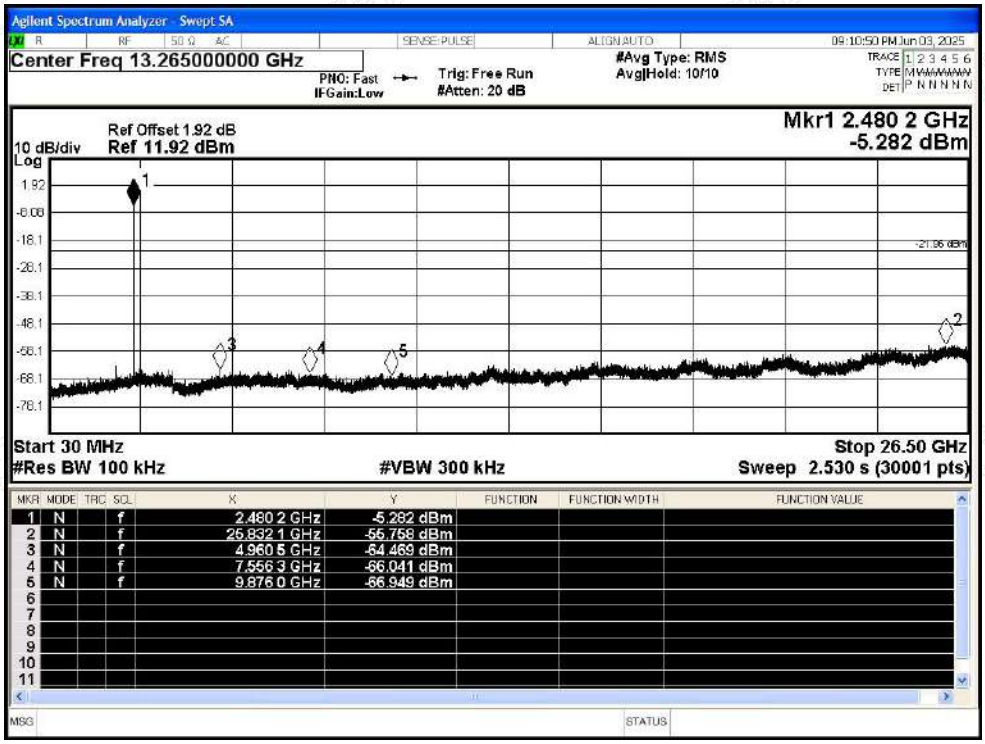
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



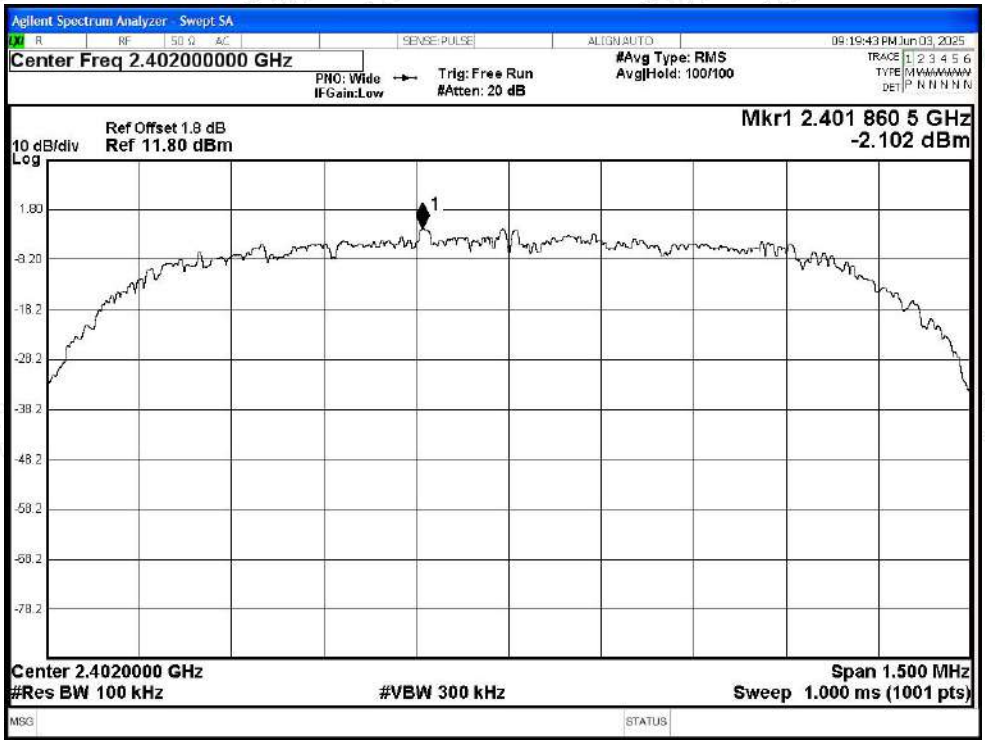
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



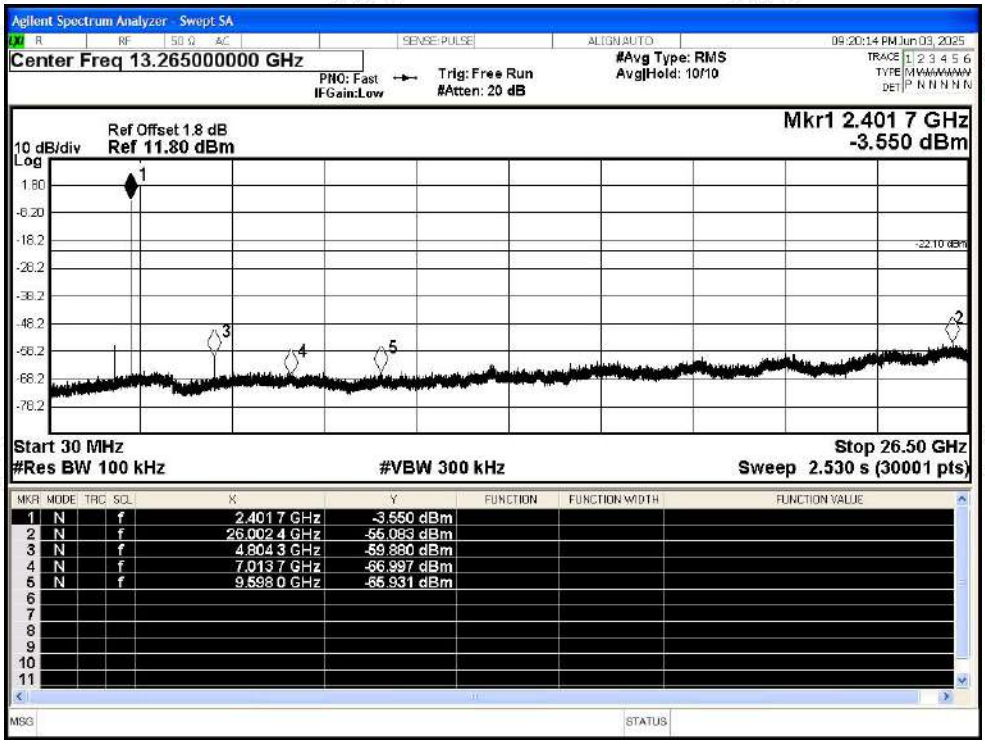
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission



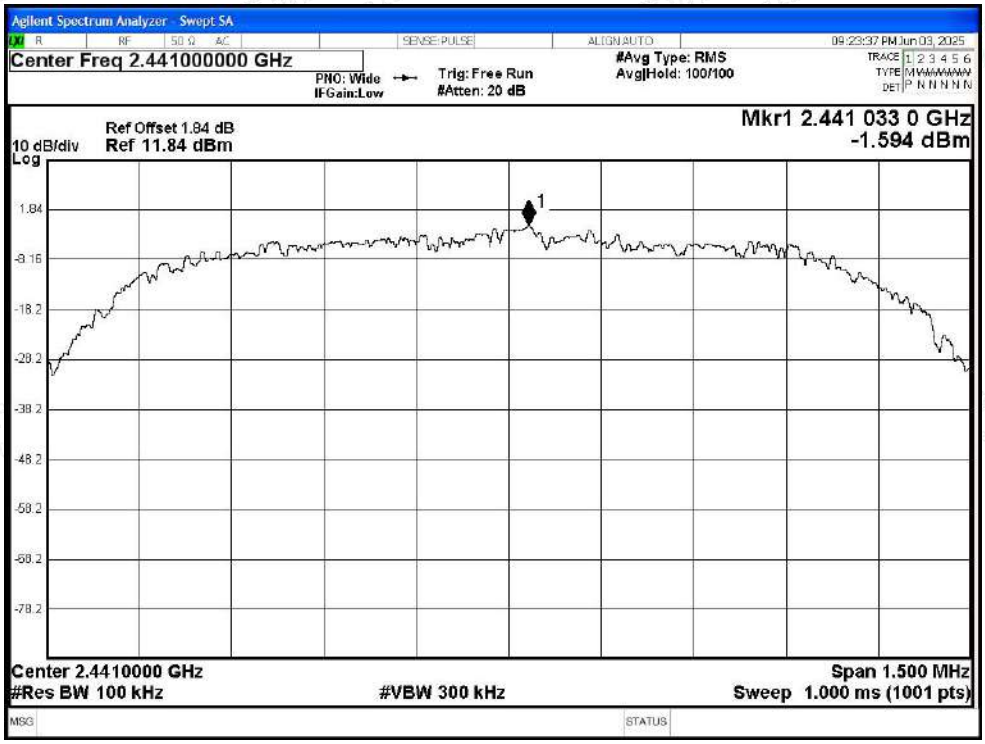
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref



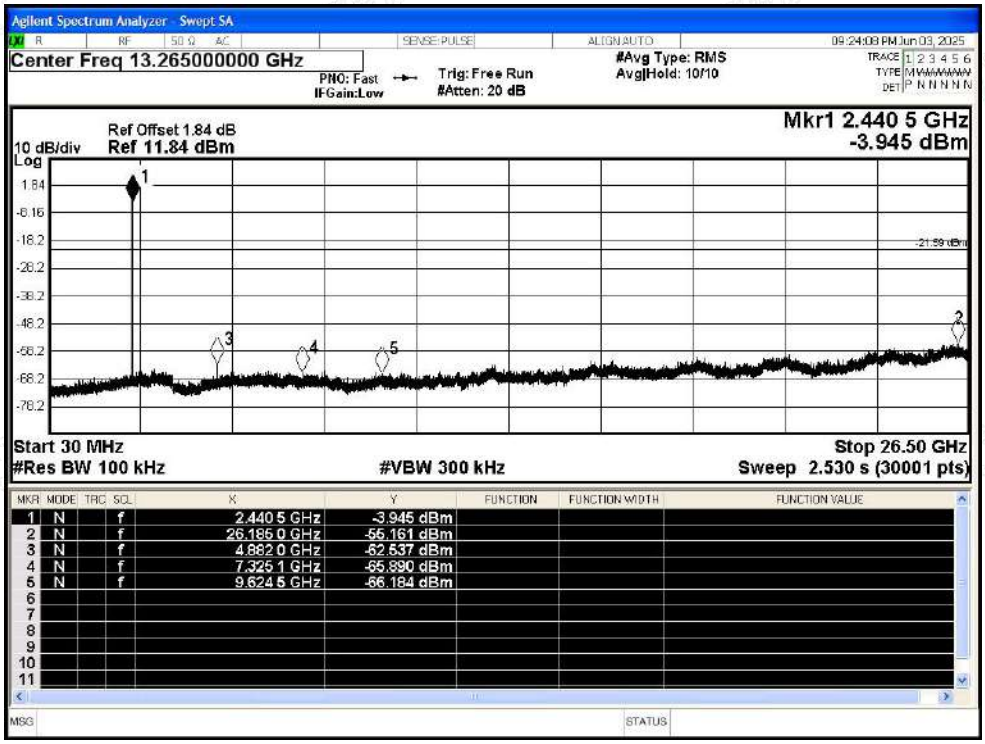
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission



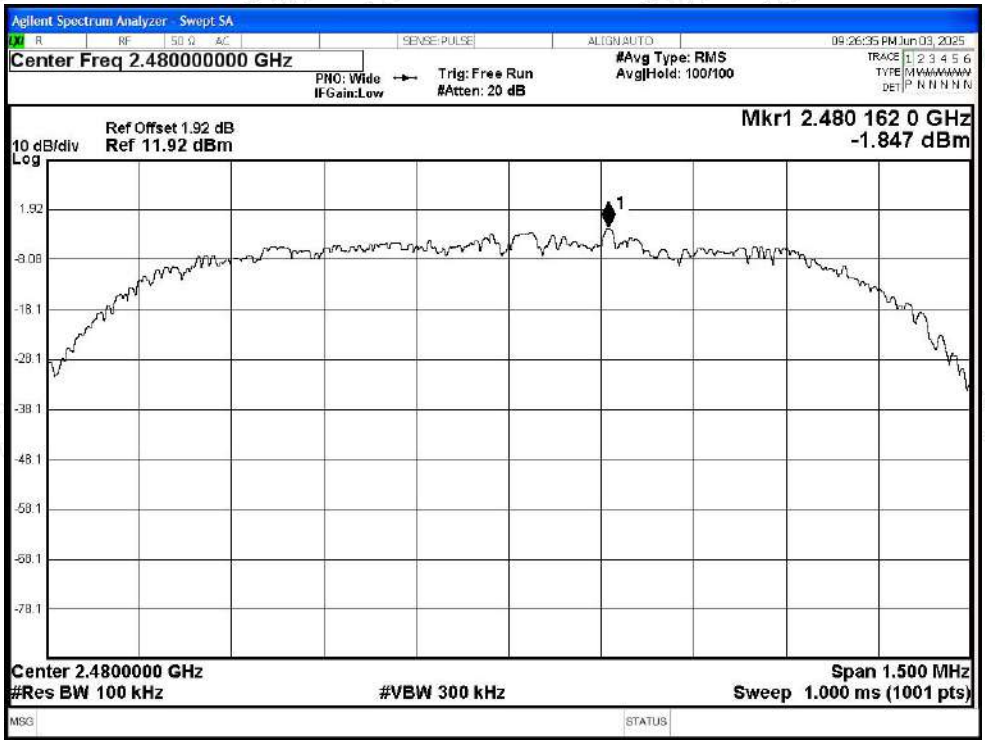
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



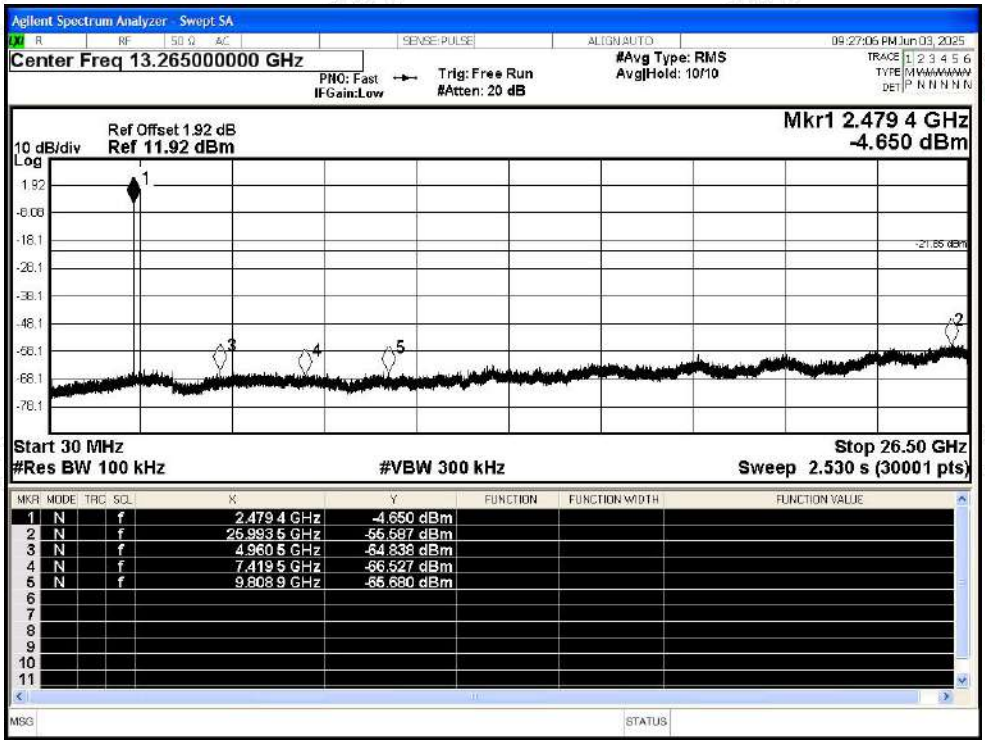
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission

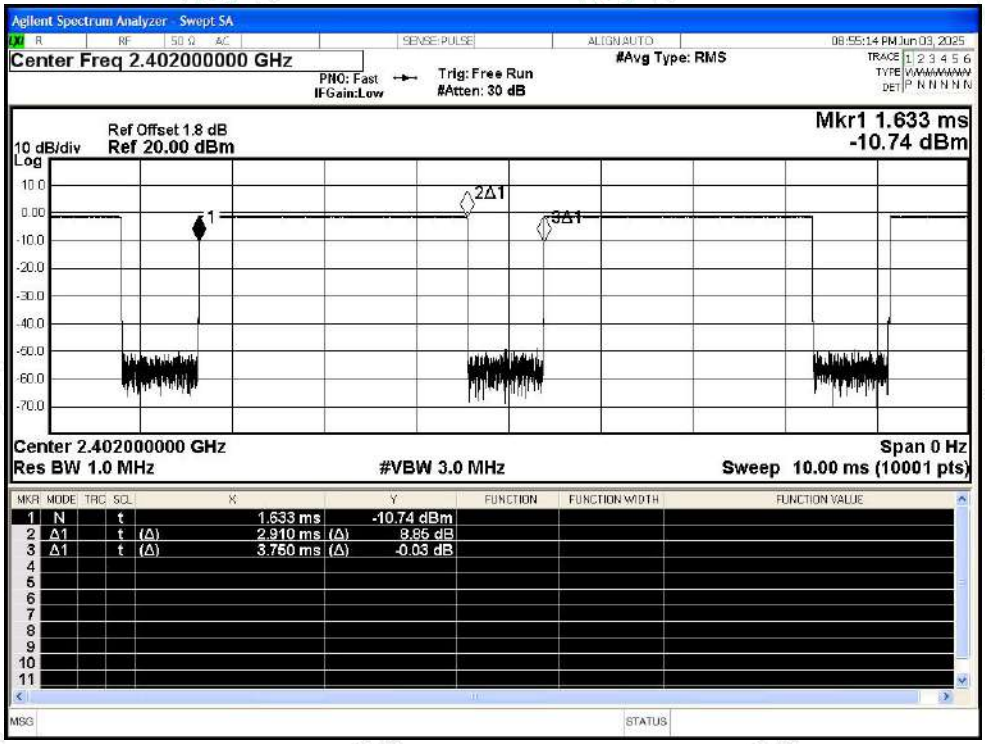


A.8 Duty Cycle

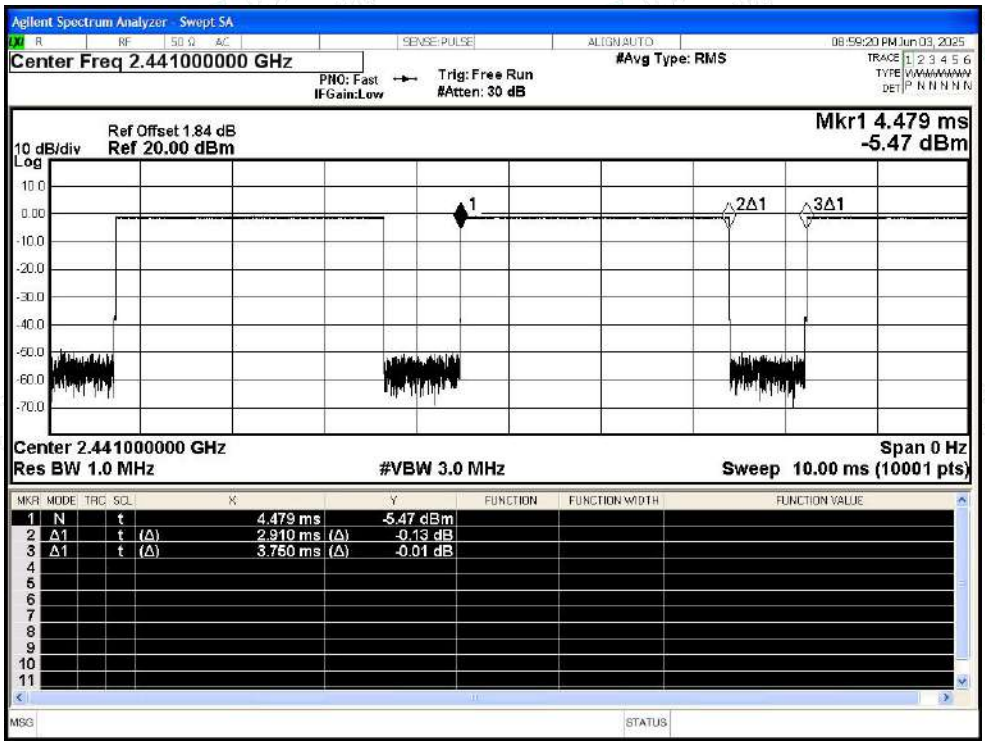
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	77.6	1.1	0.34
NVNT	1-DH5	2441	Ant1	77.6	1.1	0.34
NVNT	1-DH5	2480	Ant1	77.6	1.1	0.34
NVNT	2-DH5	2402	Ant1	77.33	1.12	0.34
NVNT	2-DH5	2441	Ant1	77.33	1.12	0.34
NVNT	2-DH5	2480	Ant1	77.28	1.12	0.35
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	77.28	1.12	0.35

Test Graphs

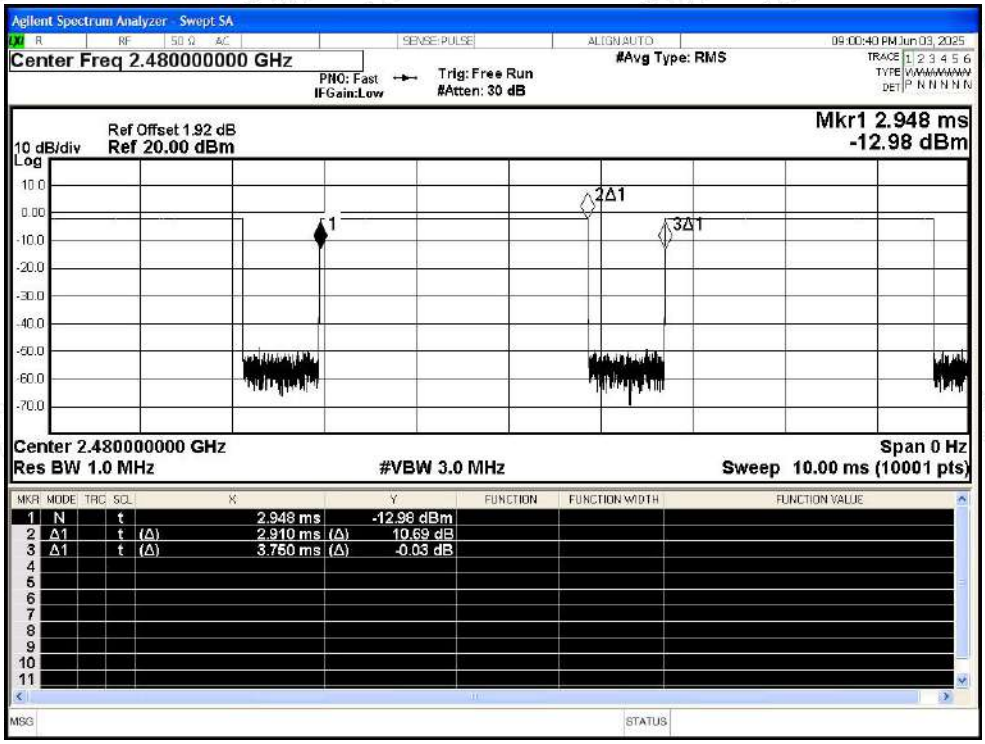
Duty Cycle NVNT 1-DH5 2402MHz Ant1



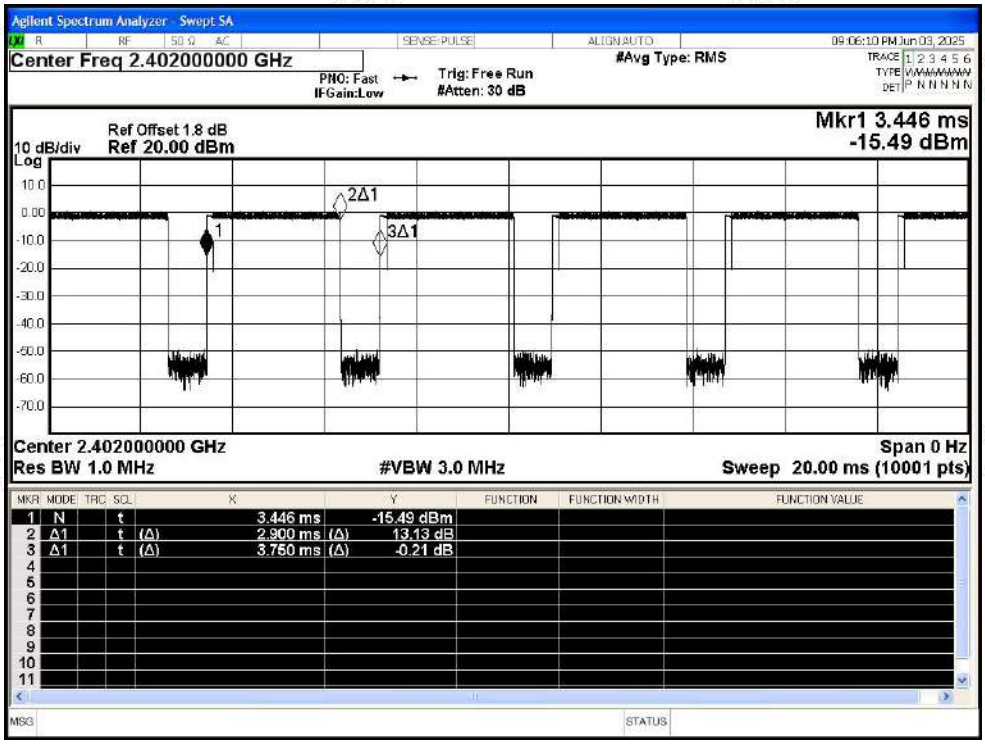
Duty Cycle NVNT 1-DH5 2441MHz Ant1



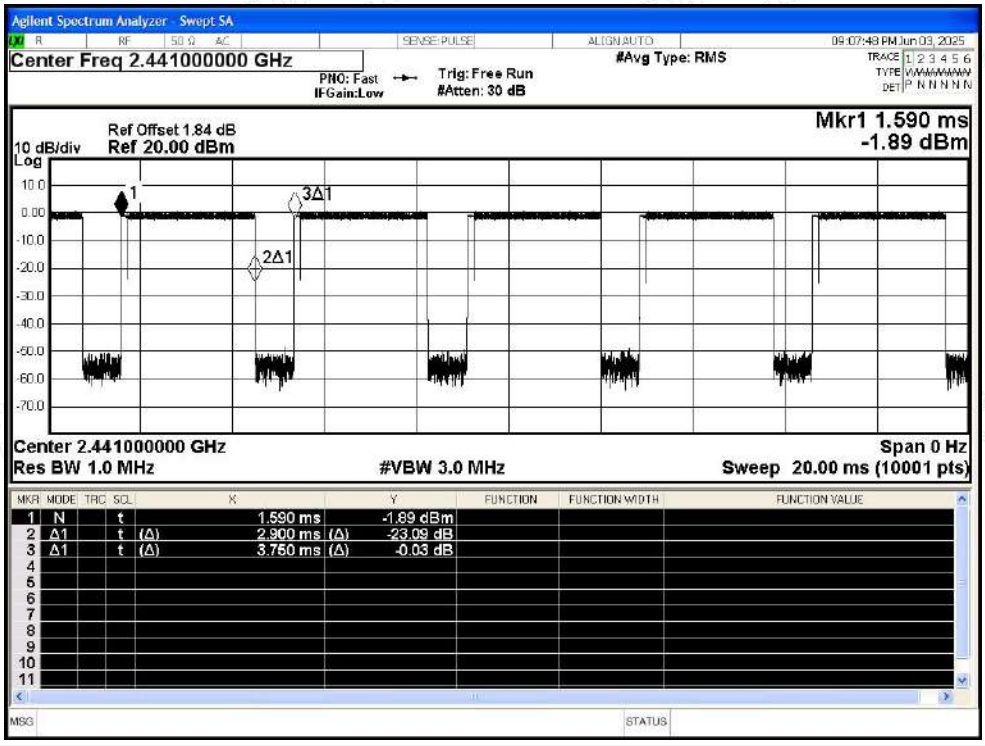
Duty Cycle NVNT 1-DH5 2480MHz Ant1



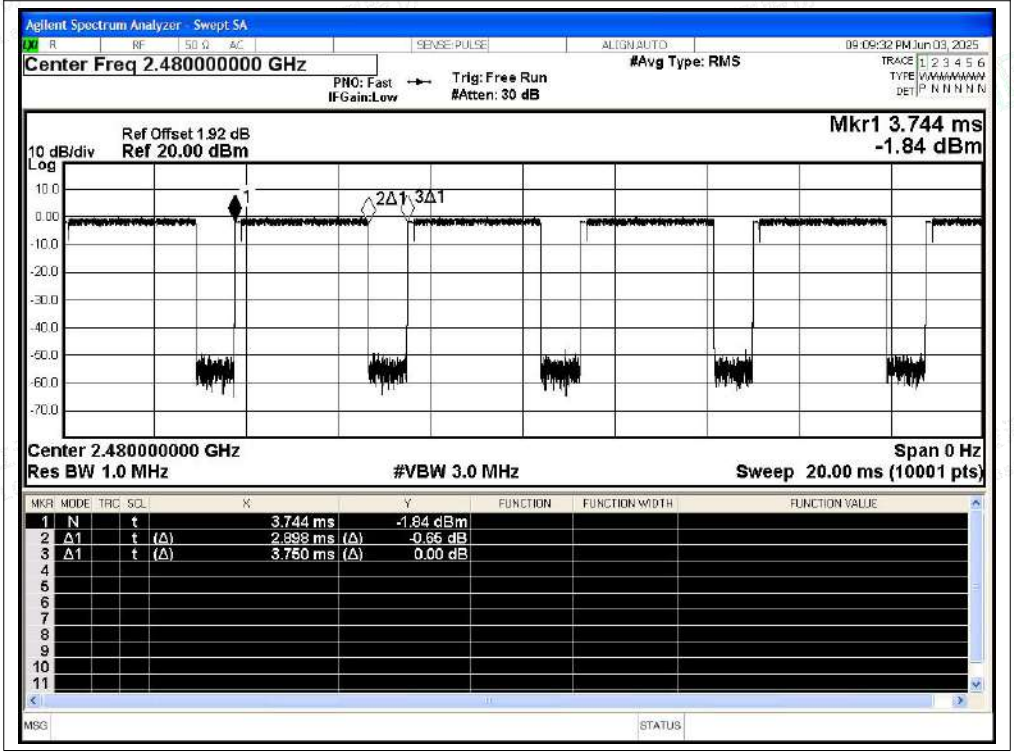
Duty Cycle NVNT 2-DH5 2402MHz Ant1



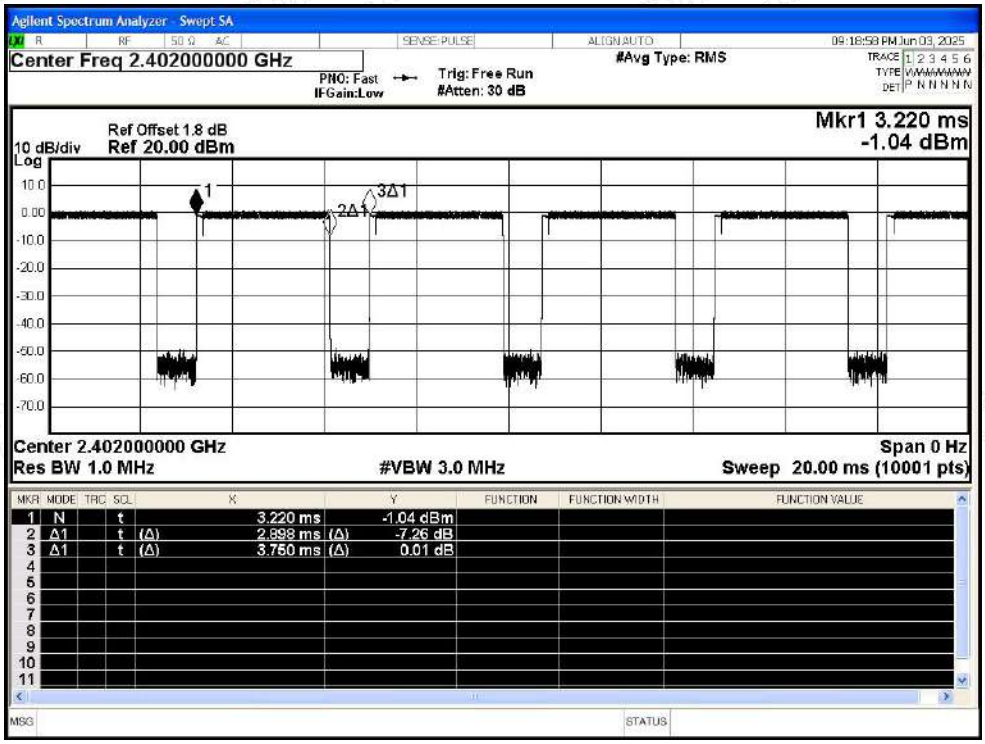
Duty Cycle NVNT 2-DH5 2441MHz Ant1



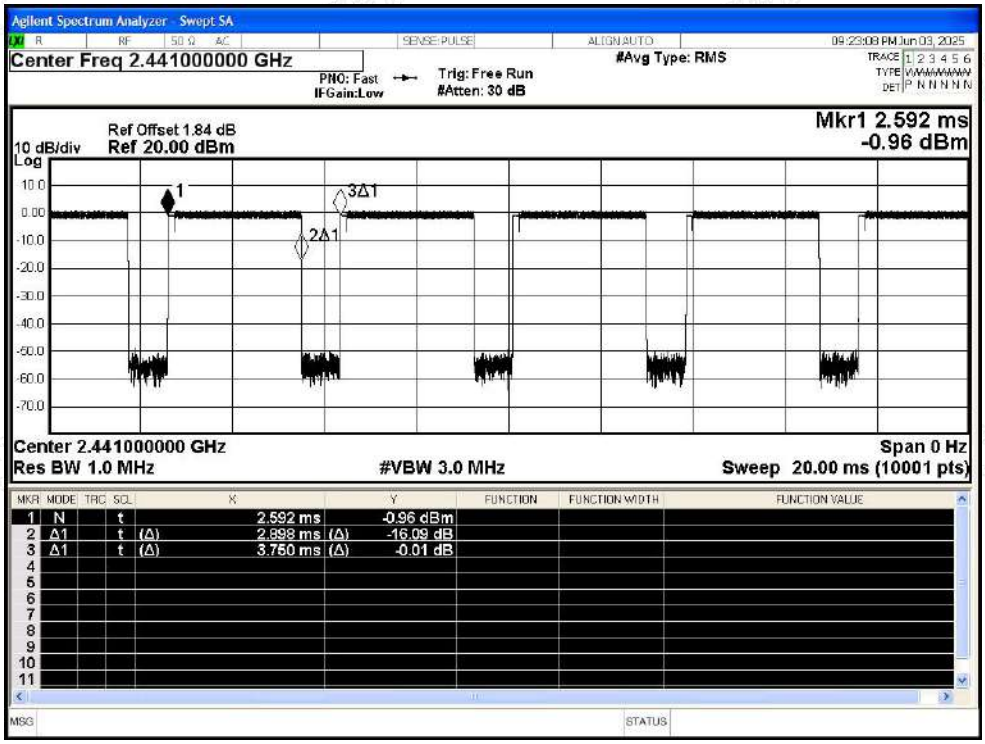
Duty Cycle NVNT 2-DH5 2480MHz Ant1



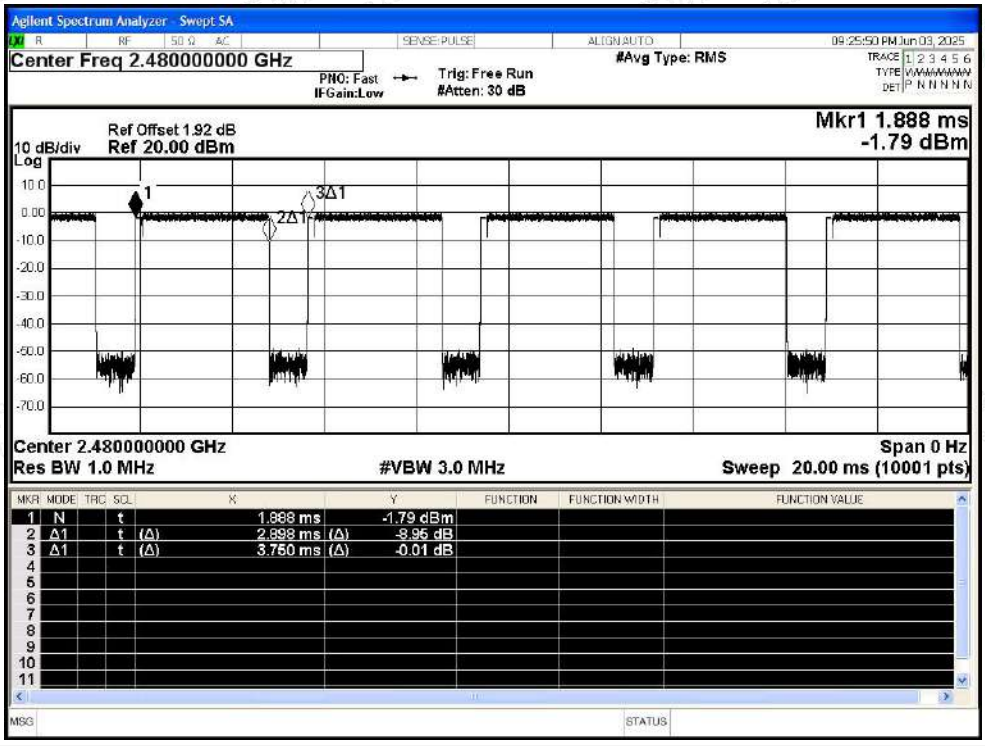
Duty Cycle NVNT 3-DH5 2402MHz Ant1



Duty Cycle NVNT 3-DH5 2441MHz Ant1



Duty Cycle NVNT 3-DH5 2480MHz Ant1

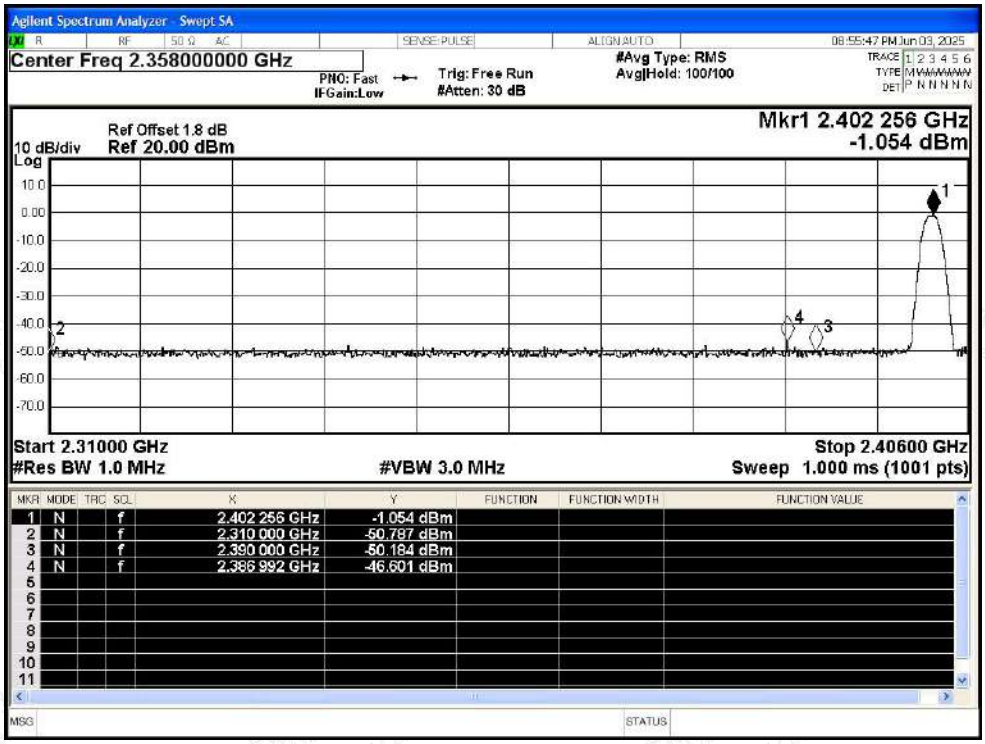


A.9 Restrict Band

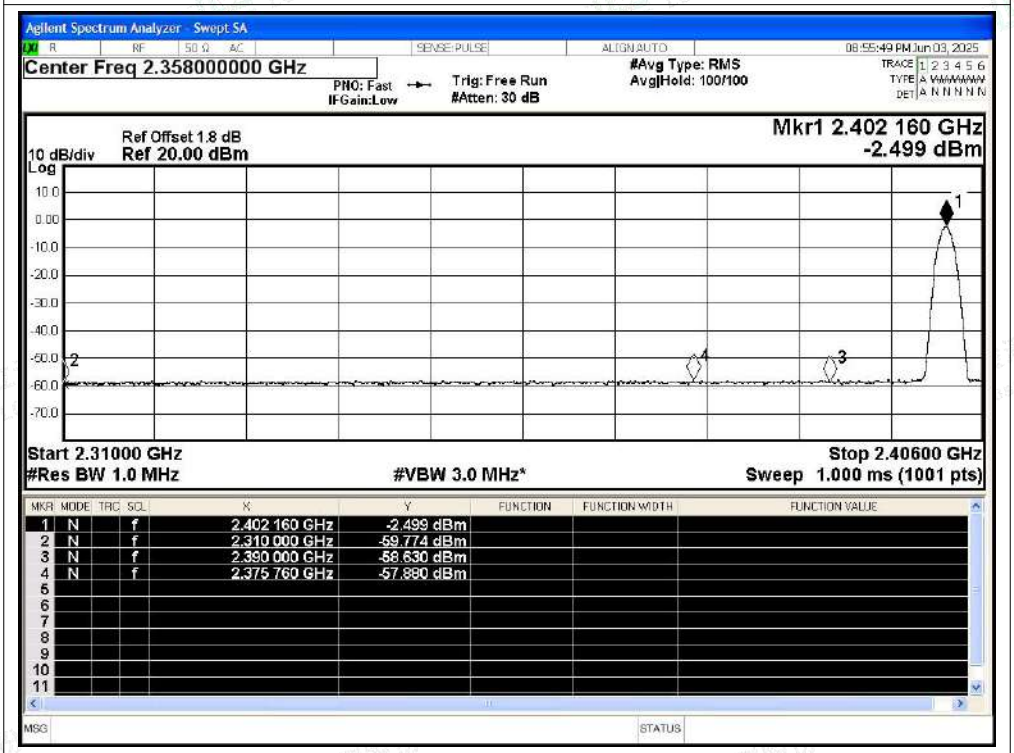
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-50.79	3.42	-	47.89	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-59.77	3.42	1.1	40.01	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2386.992	-46.6	3.42	-	52.08	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2375.76	-57.88	3.42	1.1	41.90	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-50.18	3.42	-	48.50	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-58.63	3.42	1.1	41.15	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-48.74	3.42	-	49.94	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-57.73	3.42	1.1	42.05	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.992	-45.89	3.42	-	52.79	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2496.232	-57.24	3.42	1.1	42.54	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-48.67	3.42	-	50.01	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-58.32	3.42	1.1	41.46	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-49.53	3.42	-	49.15	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-58.97	3.42	1.12	40.83	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2340.336	-47.51	3.42	-	51.17	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2386.32	-57.9	3.42	1.12	41.90	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-50.02	3.42	-	48.66	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-58.58	3.42	1.12	41.22	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-50.62	3.42	-	48.06	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-58	3.42	1.12	41.80	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2494.216	-46.86	3.42	-	51.82	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2499.136	-57.29	3.42	1.12	42.51	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-49.66	3.42	-	49.02	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-58.7	3.42	1.12	41.10	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-50.97	3.42	-	47.71	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-59	3.42	1.12	40.80	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2389.68	-47.68	3.42	-	51.00	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2338.896	-57.88	3.42	1.12	41.92	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-51.15	3.42	-	47.53	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-58.29	3.42	1.12	41.51	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-49.76	3.42	-	48.92	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-57.49	3.42	1.12	42.31	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2489.056	-46.81	3.42	-	51.87	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2498.2	-57.28	3.42	1.12	42.52	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-50.28	3.42	-	48.40	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-58.43	3.42	1.12	41.37	Average	54	Pass

Test Graphs

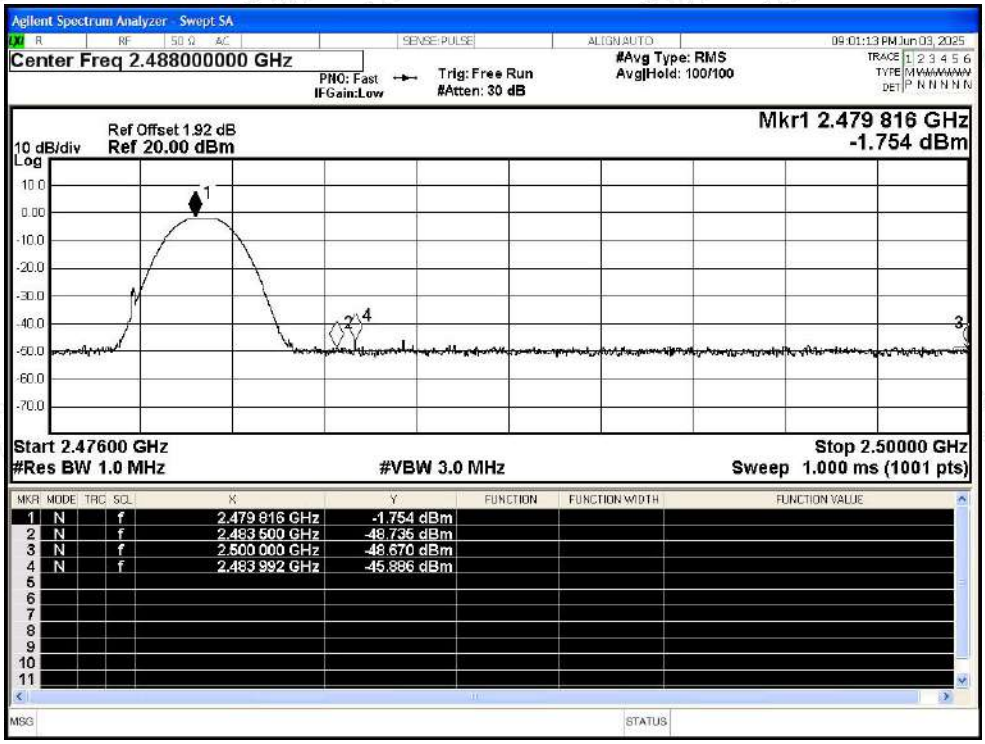
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak



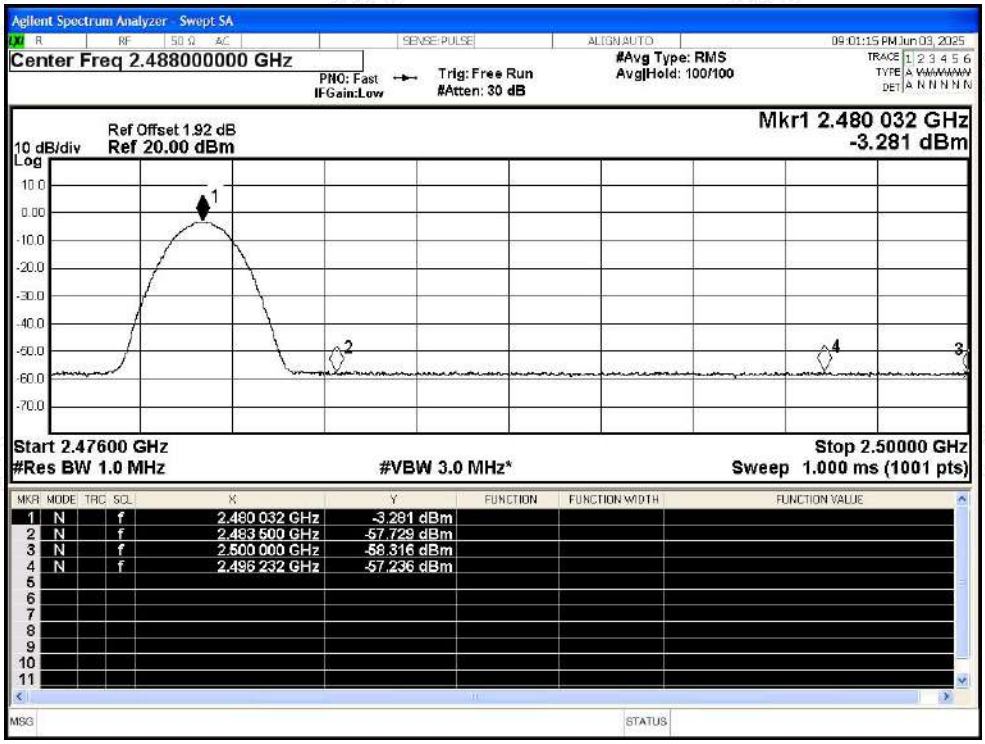
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average



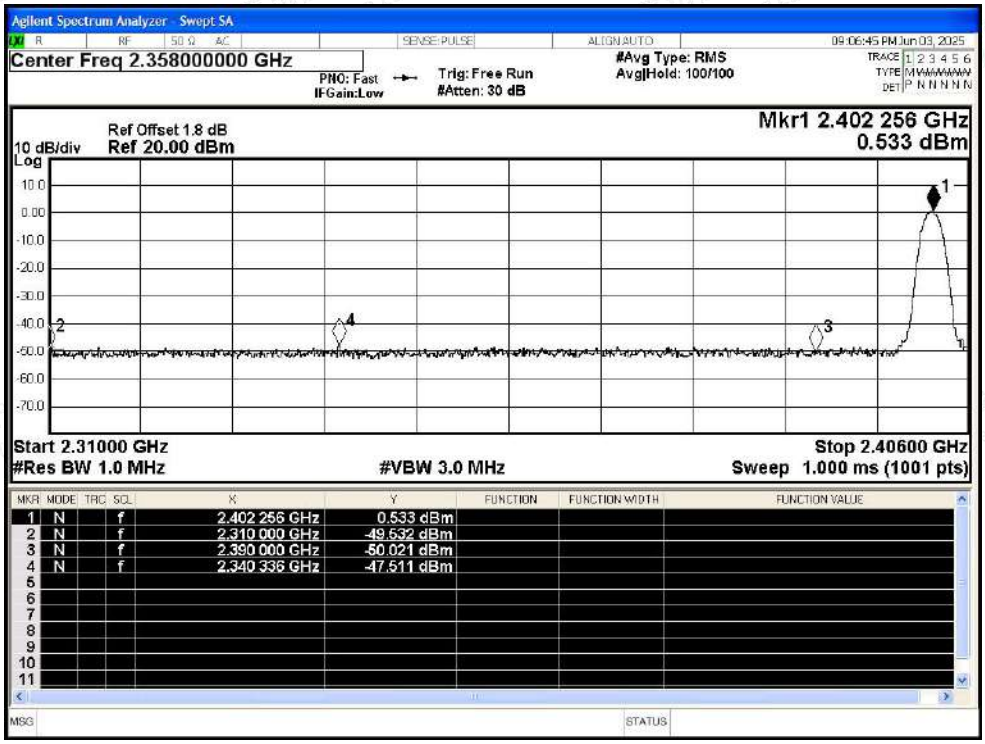
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak



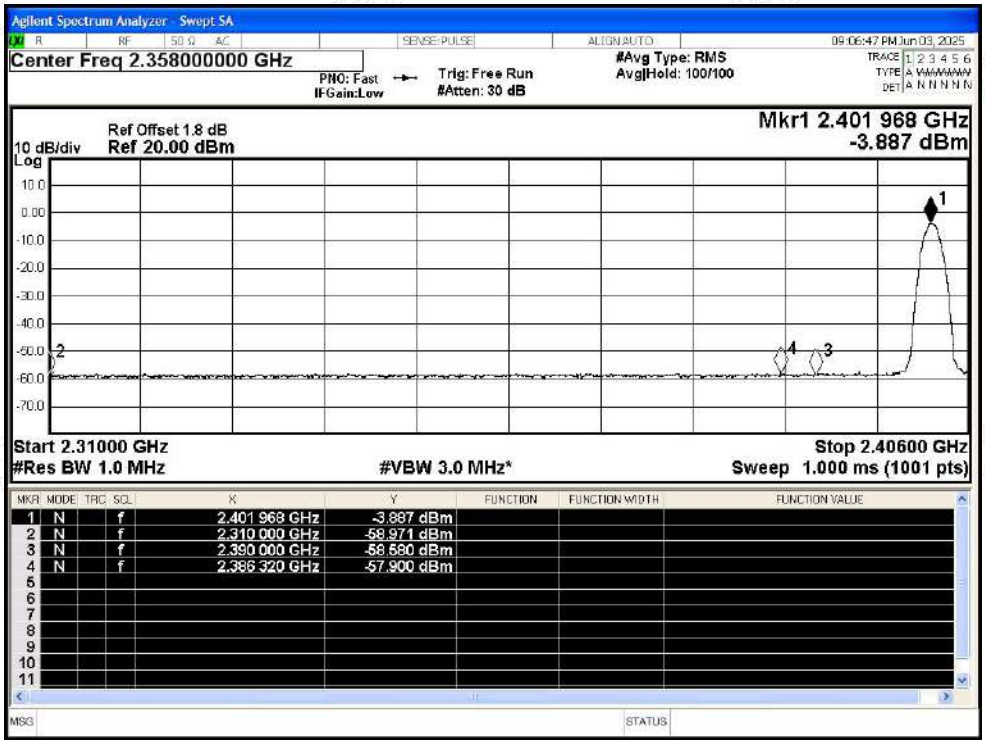
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average



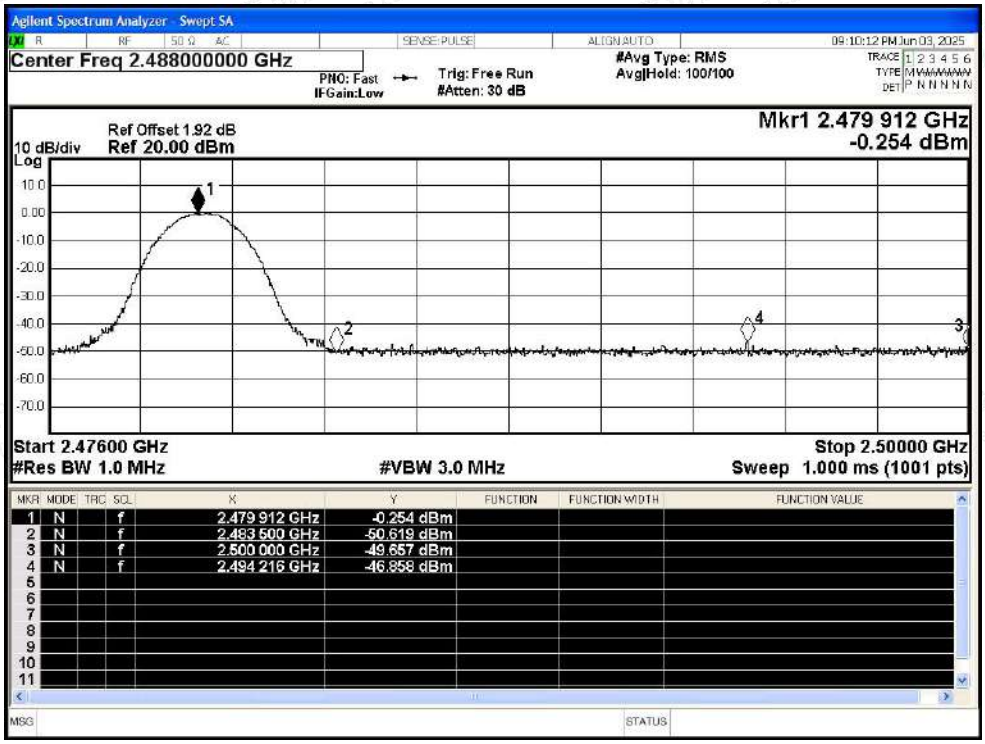
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak



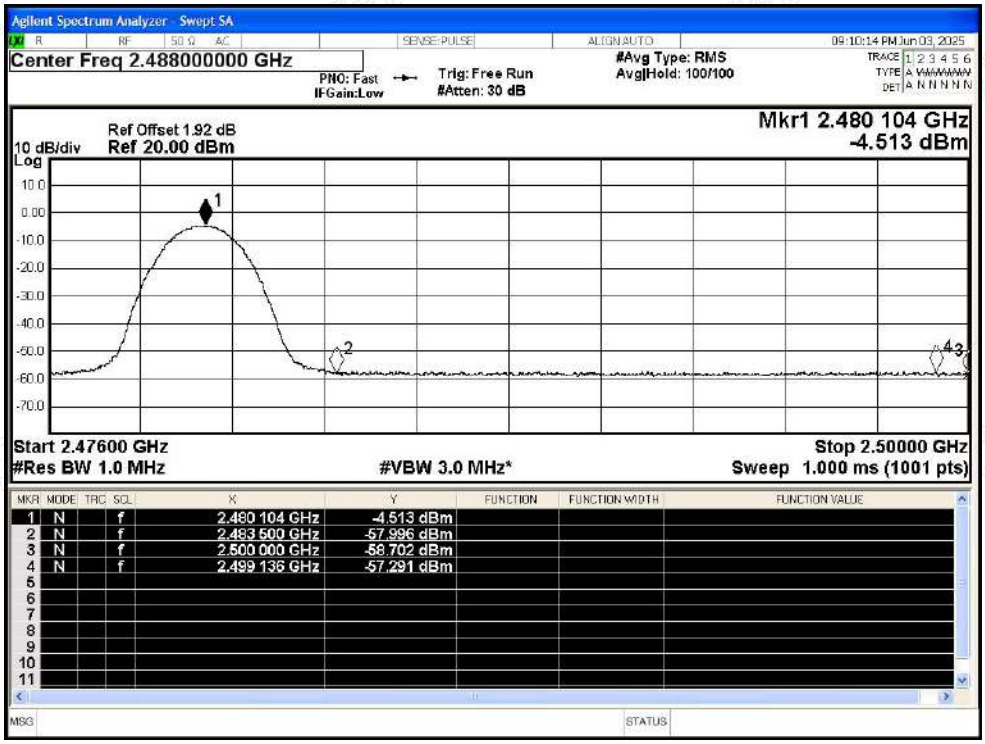
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average



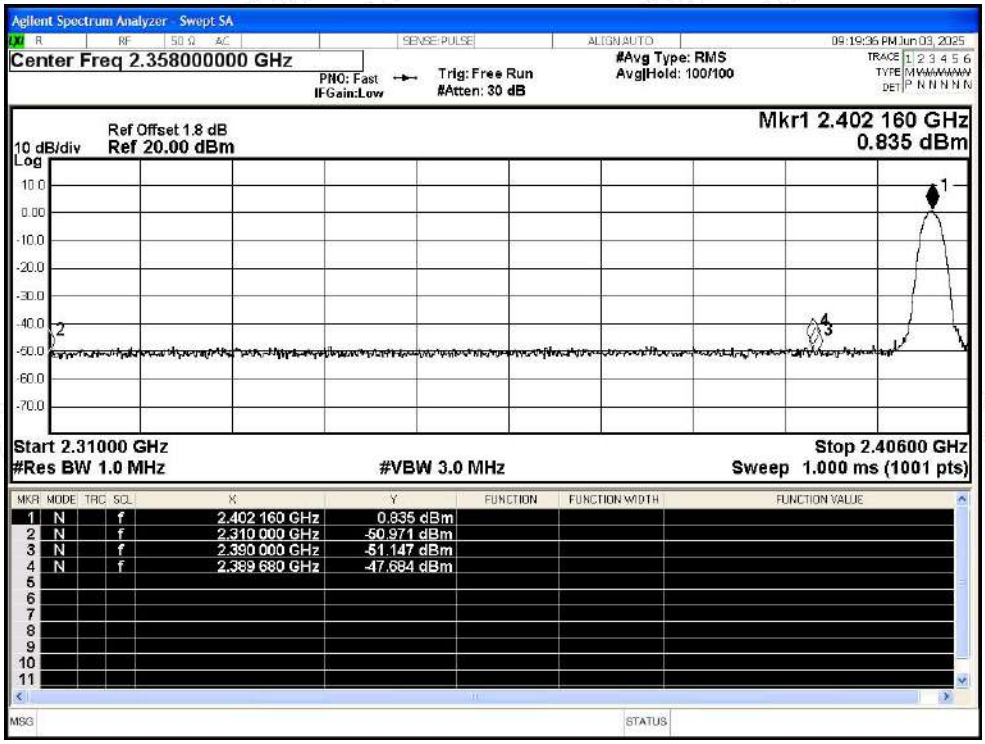
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Peak



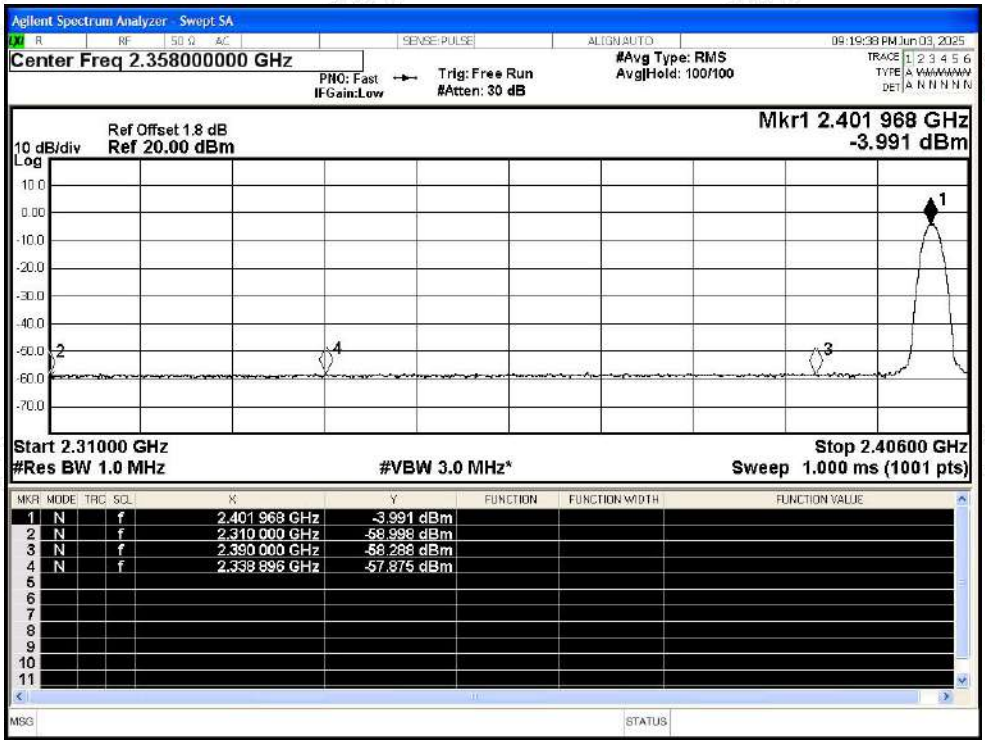
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Average



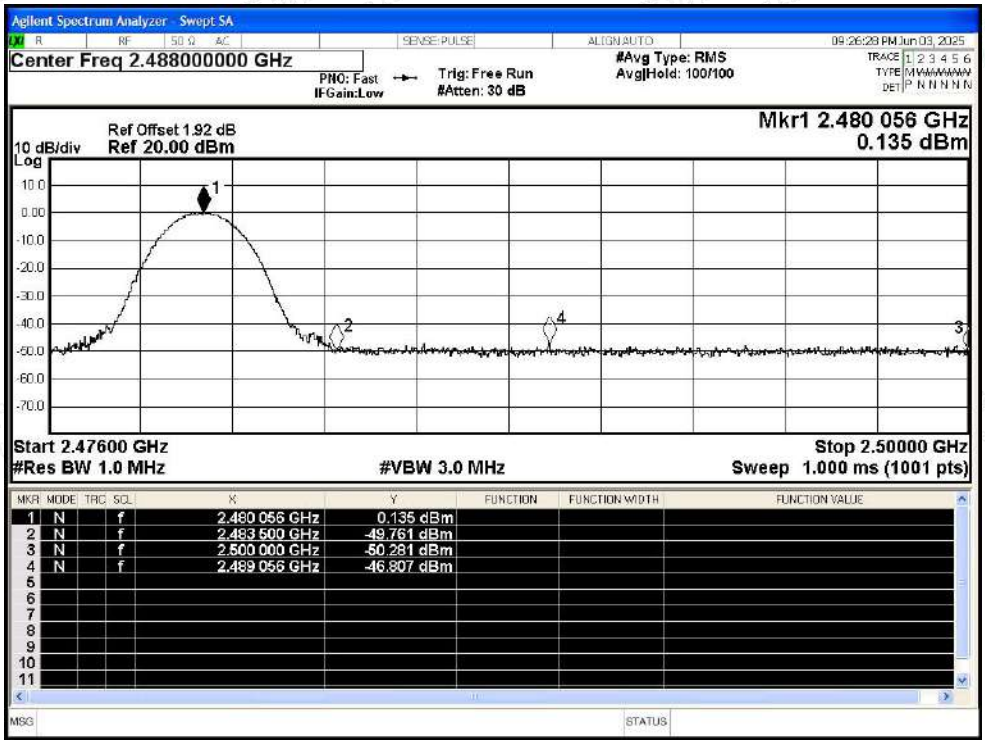
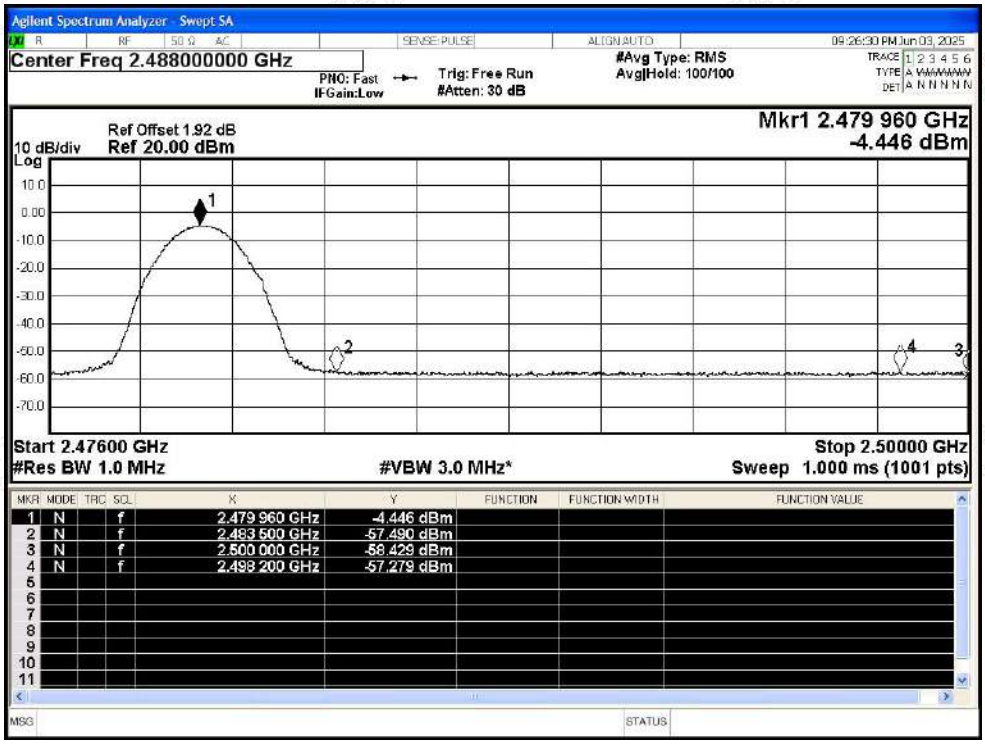
Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Peak



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