

Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: WIRELESS SPEAKER

Test Model: ZEALOT-S32Pro

Environmental Conditions

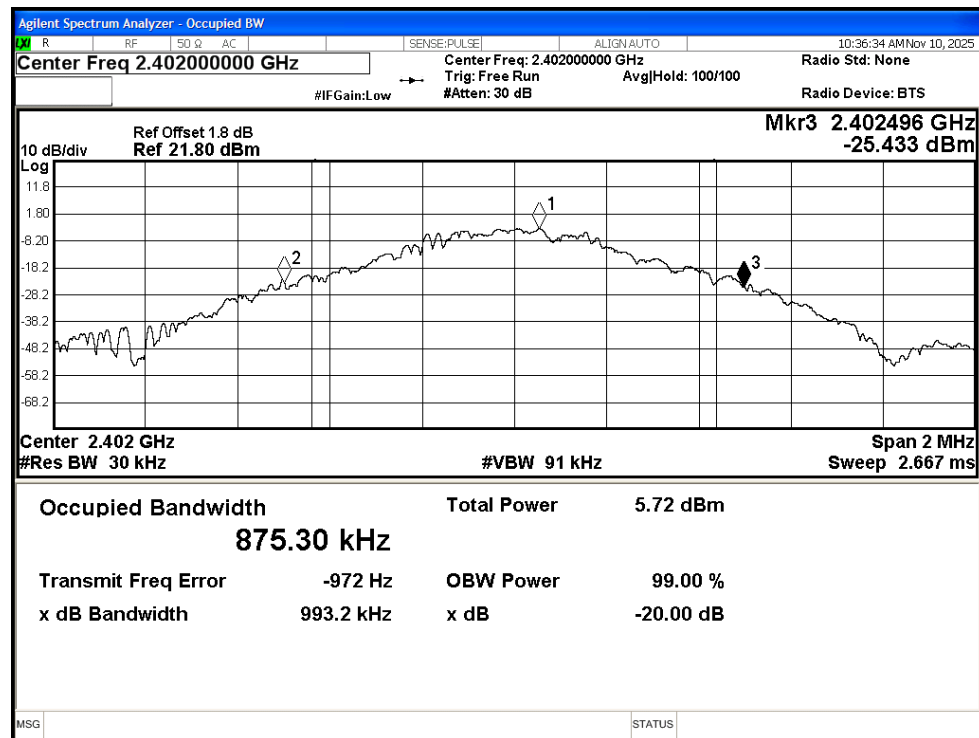
Temperature:	23.8°C
Relative Humidity:	52.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Suichao Lai
Supervised by:	Yan Chen

A.1 -20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.993	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.958	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.952	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.328	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.282	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.288	N/A	Pass
NVNT	3-DH5	2402	Ant1	1.293	N/A	Pass
NVNT	3-DH5	2441	Ant1	1.301	N/A	Pass
NVNT	3-DH5	2480	Ant1	1.274	N/A	Pass

Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



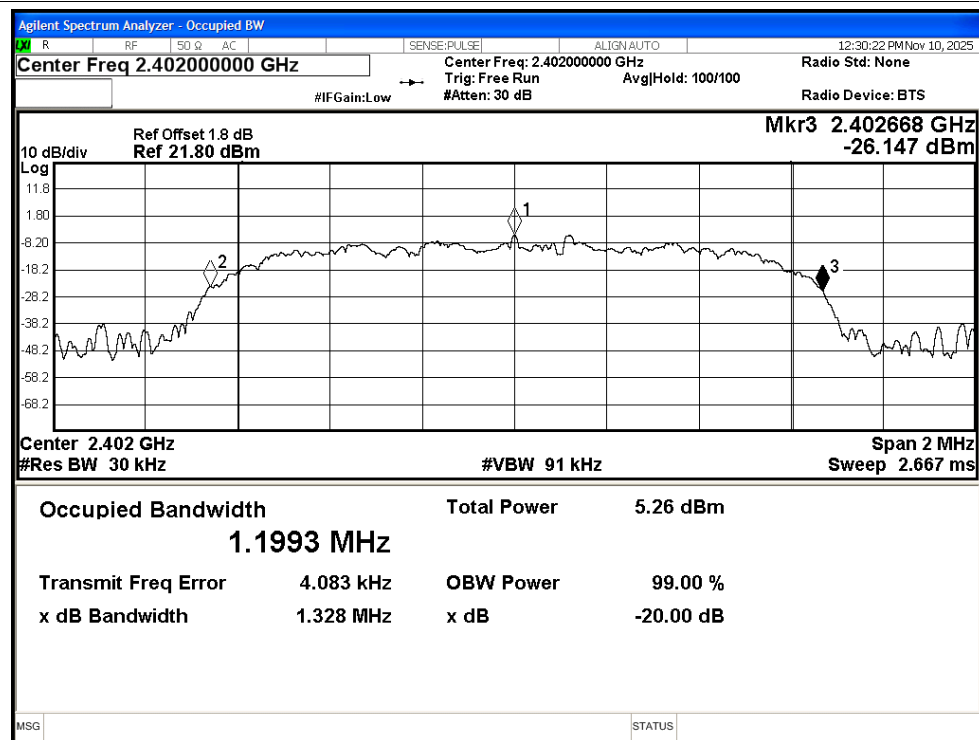
-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



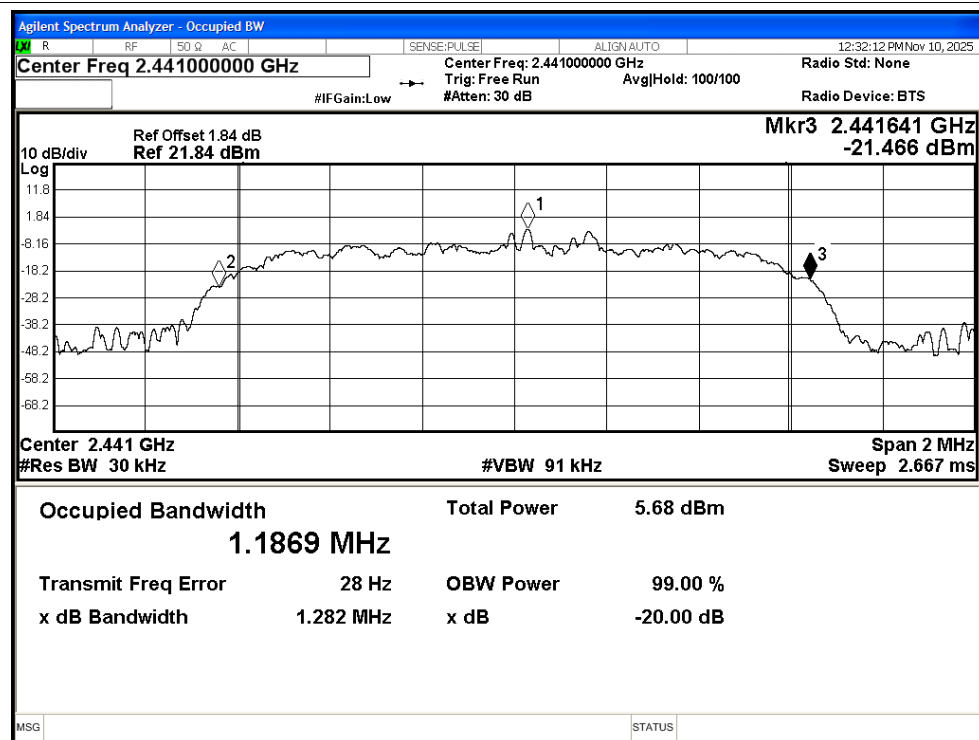
-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



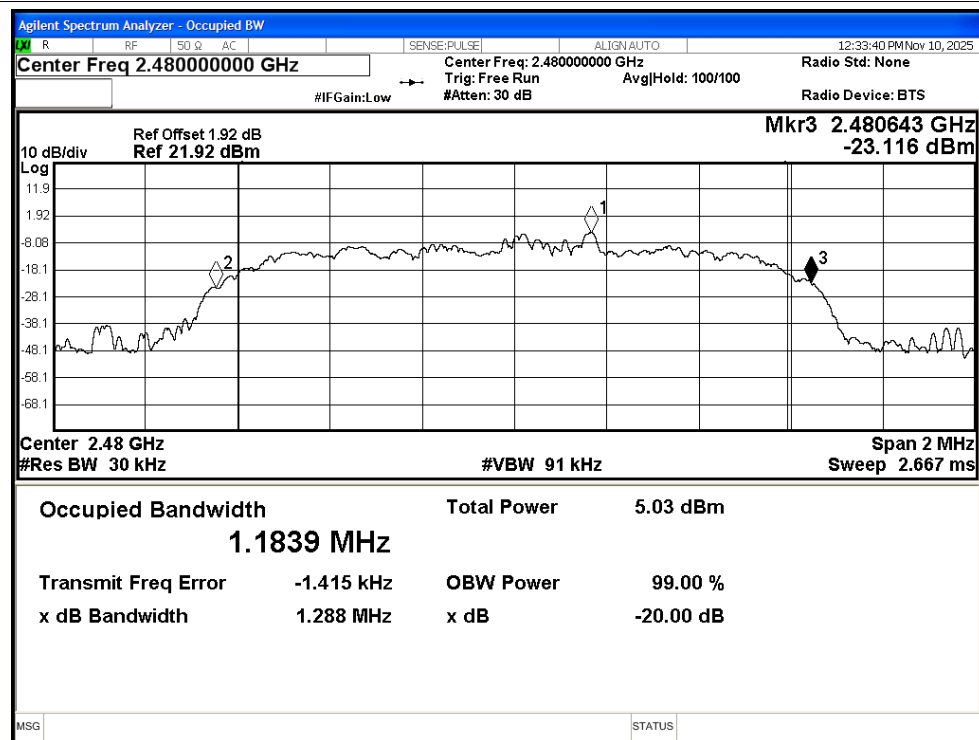
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



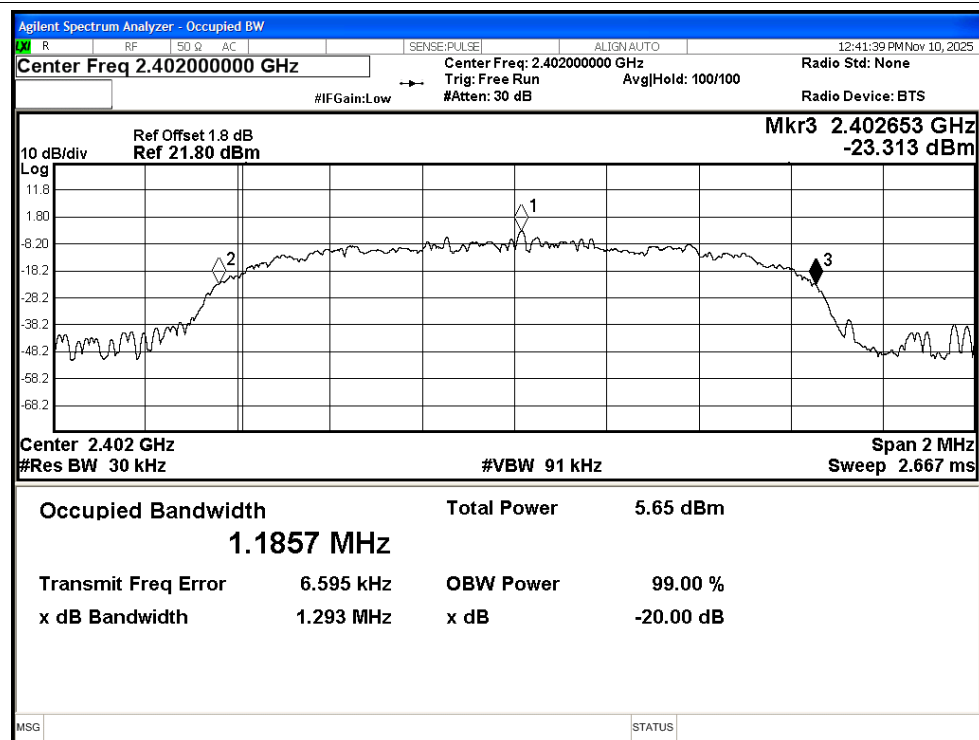
-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



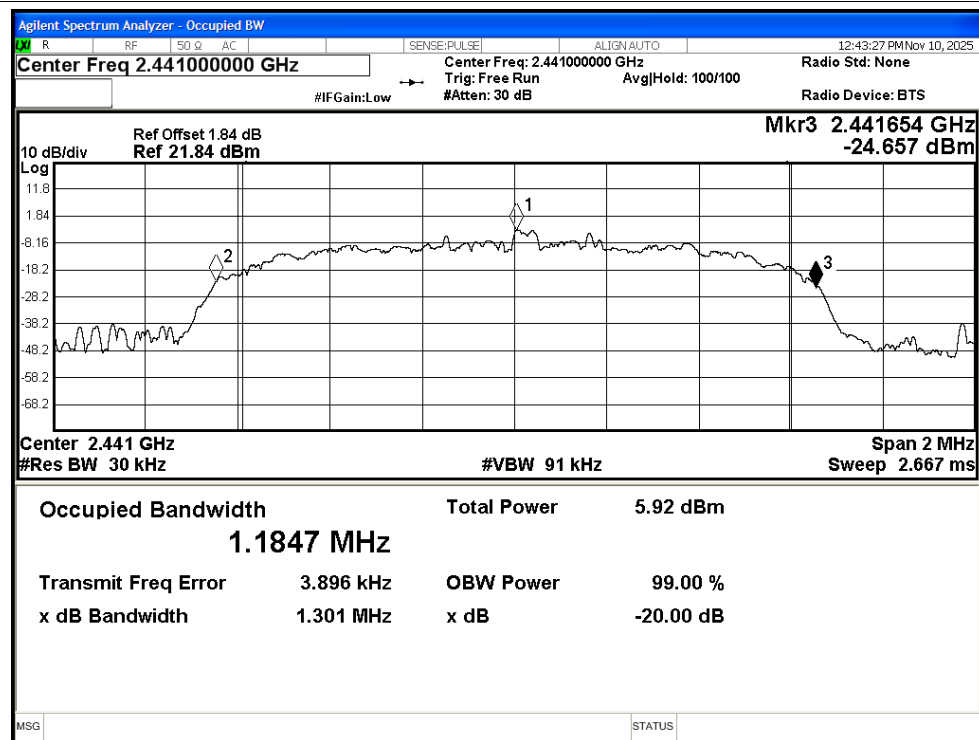
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

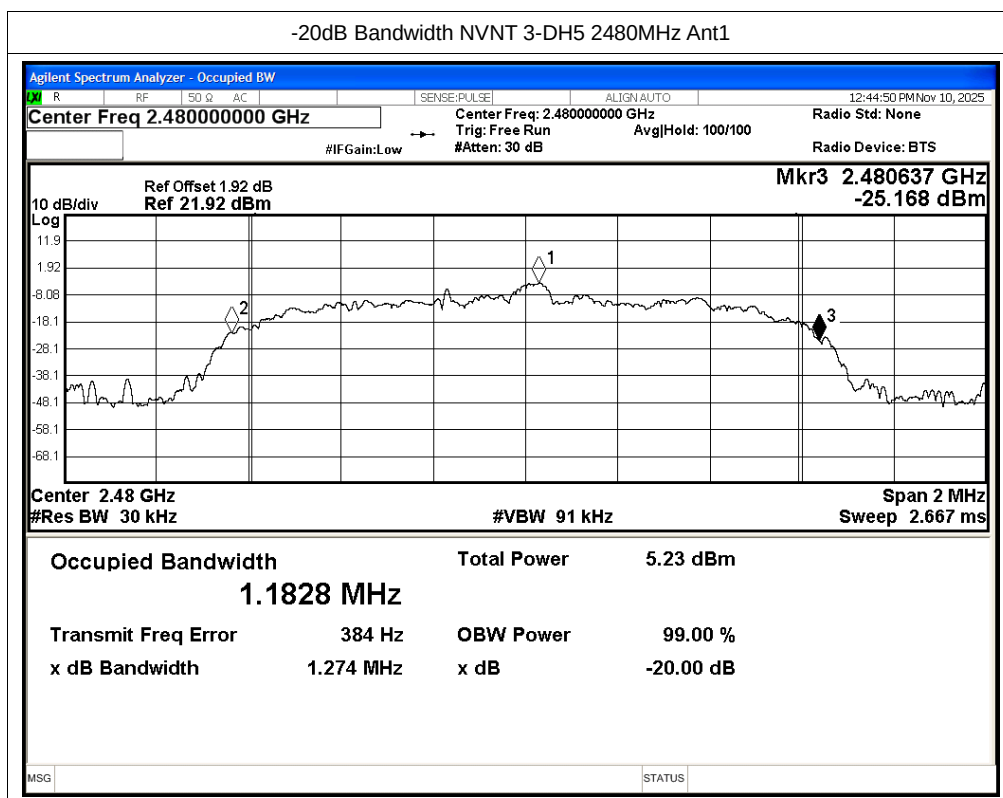


-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



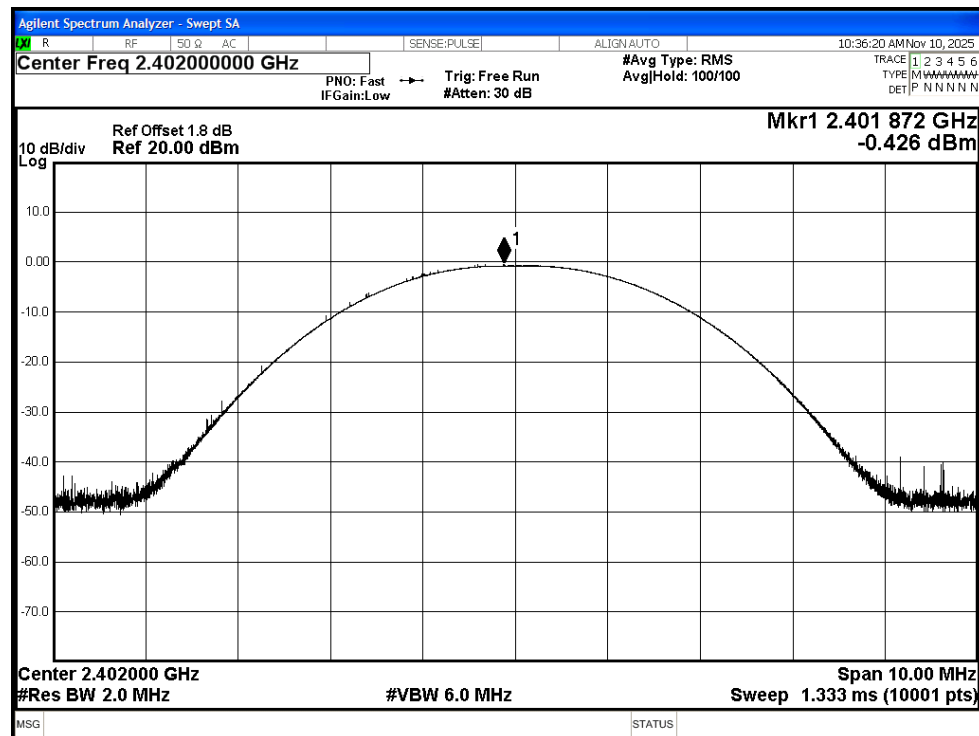


A.2 Maximum Peak Conducted Output Power

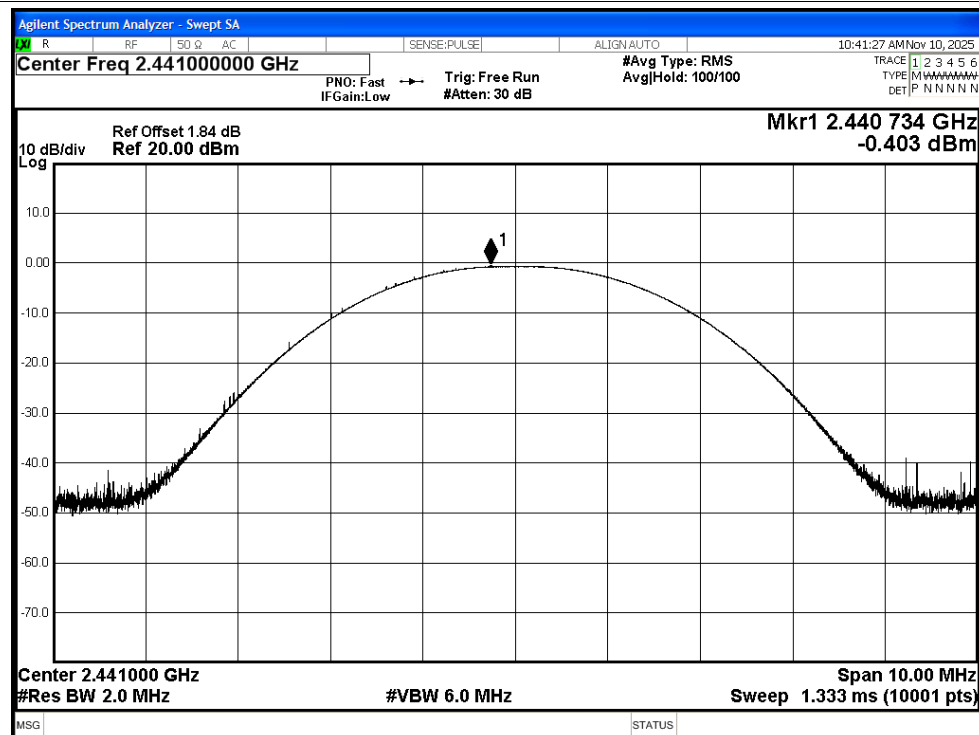
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	-0.43	21	Pass
NVNT	1-DH5	2441	Ant1	-0.4	21	Pass
NVNT	1-DH5	2480	Ant1	1.31	21	Pass
NVNT	2-DH5	2402	Ant1	1.48	21	Pass
NVNT	2-DH5	2441	Ant1	1.5	21	Pass
NVNT	2-DH5	2480	Ant1	0.71	21	Pass
NVNT	3-DH5	2402	Ant1	1.88	21	Pass
NVNT	3-DH5	2441	Ant1	1.88	21	Pass
NVNT	3-DH5	2480	Ant1	1.05	21	Pass

Test Graphs

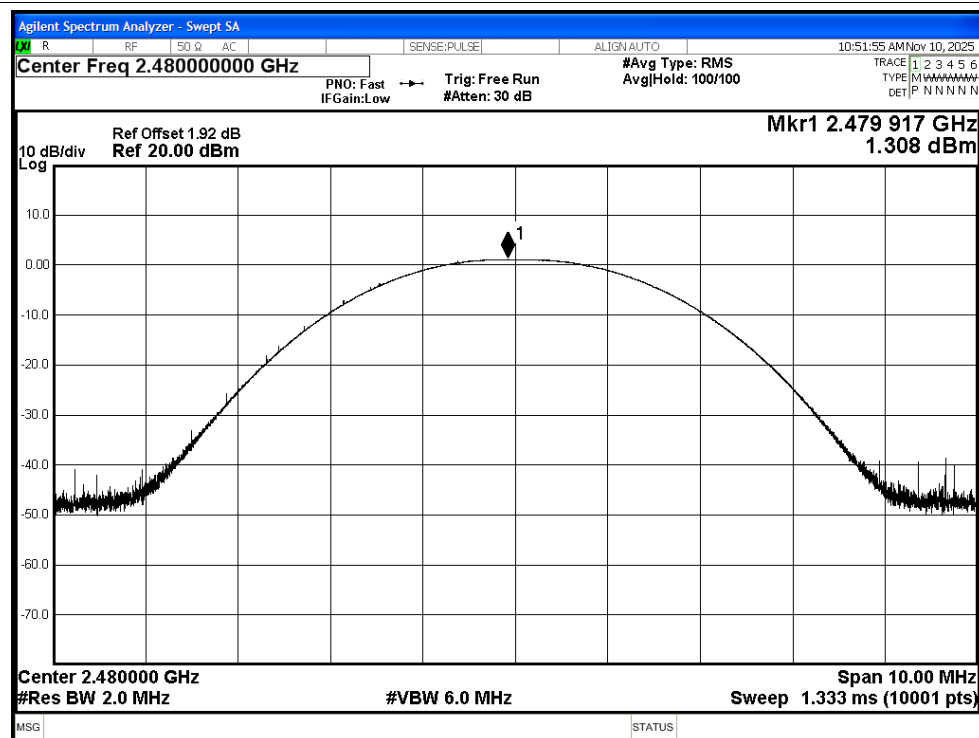
Power NVNT 1-DH5 2402MHz Ant1



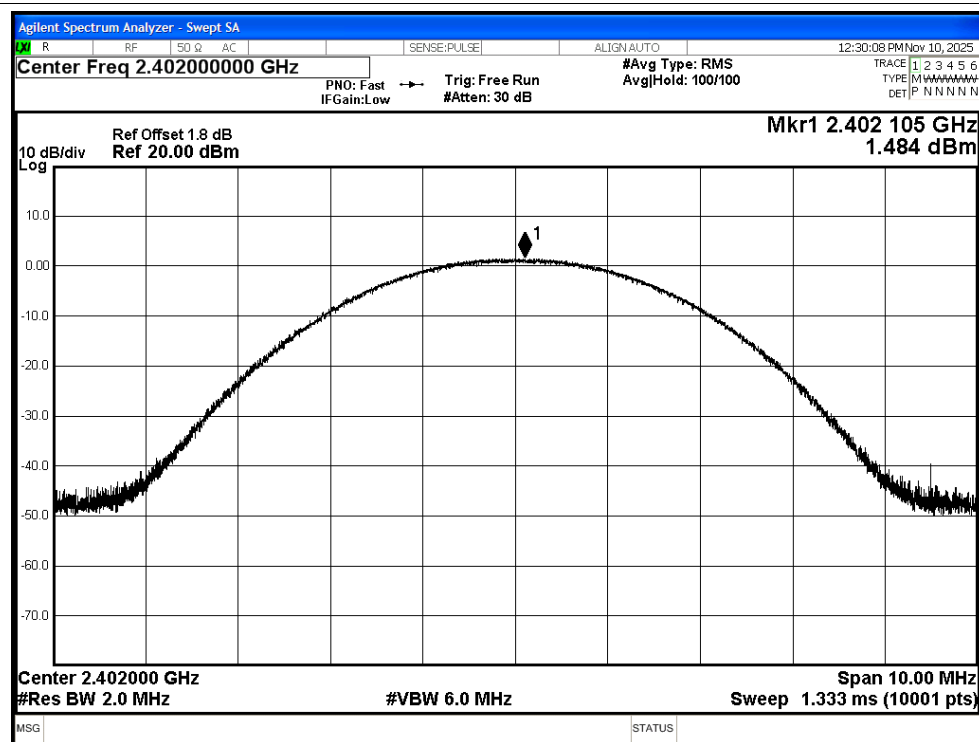
Power NVNT 1-DH5 2441MHz Ant1



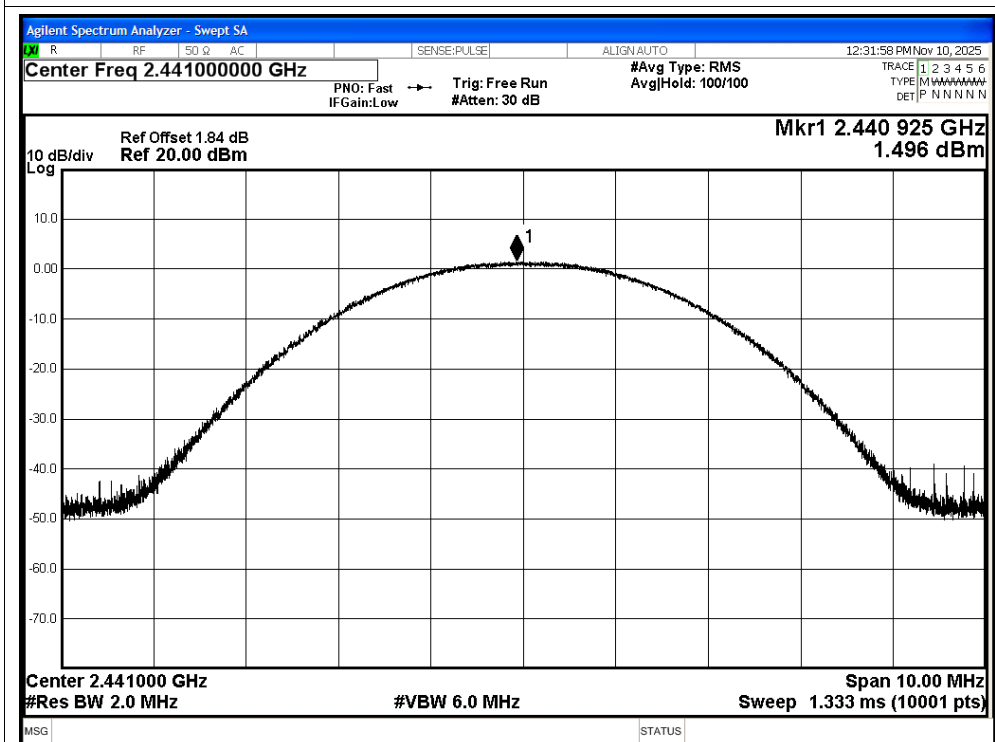
Power NVNT 1-DH5 2480MHz Ant1



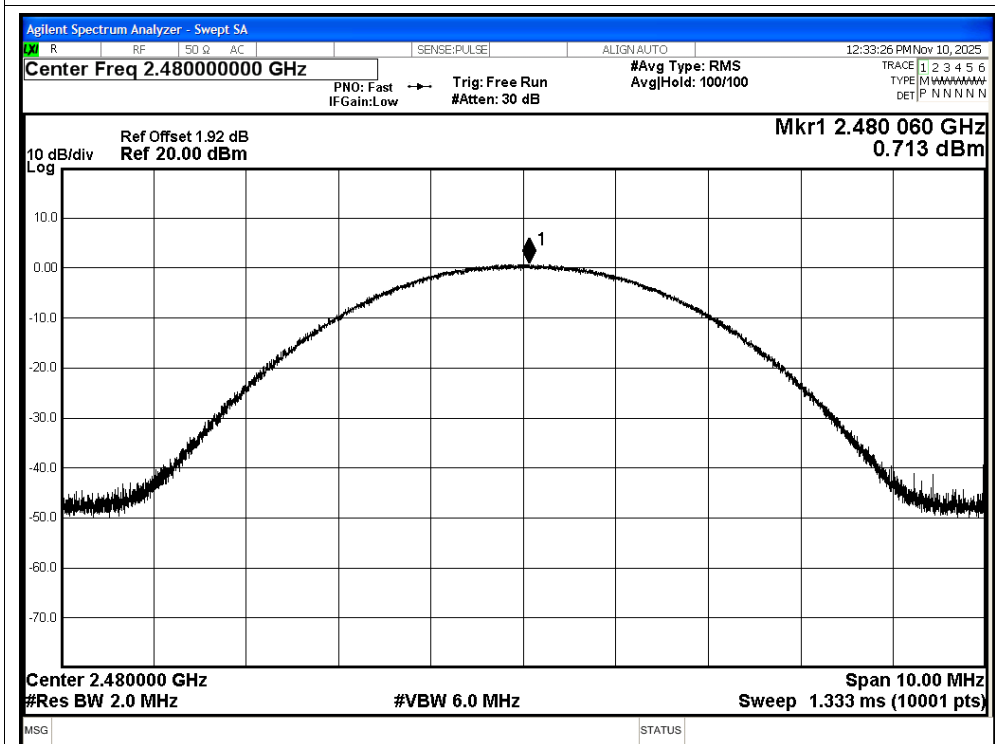
Power NVNT 2-DH5 2402MHz Ant1



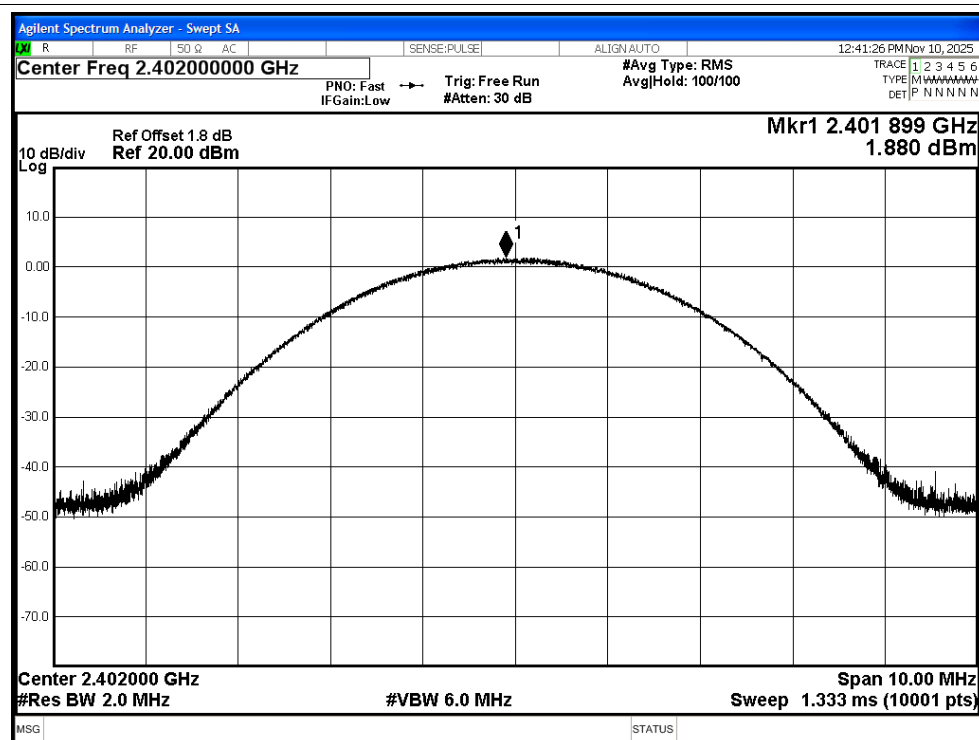
Power NVNT 2-DH5 2441MHz Ant1



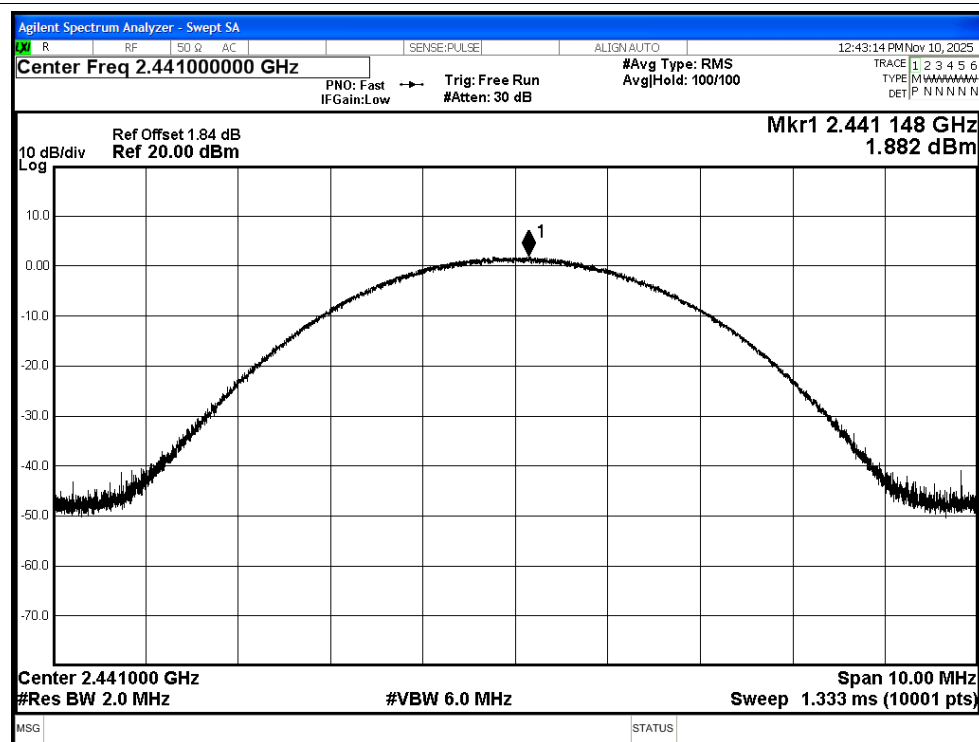
Power NVNT 2-DH5 2480MHz Ant1

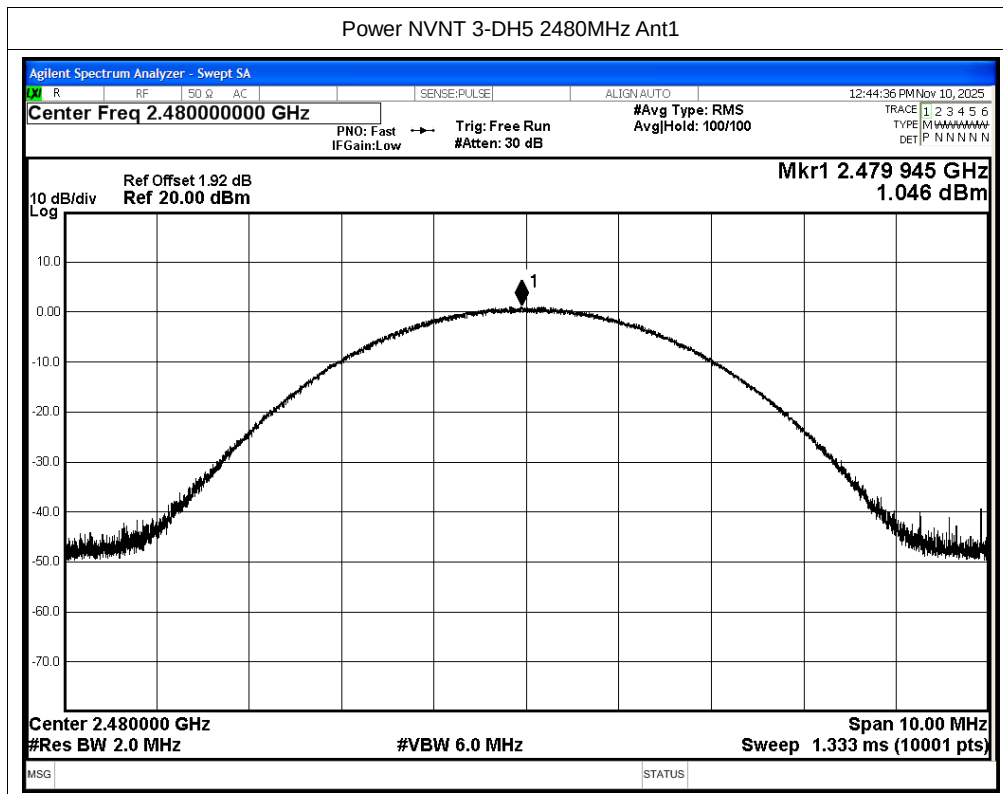


Power NVNT 3-DH5 2402MHz Ant1



Power NVNT 3-DH5 2441MHz Ant1



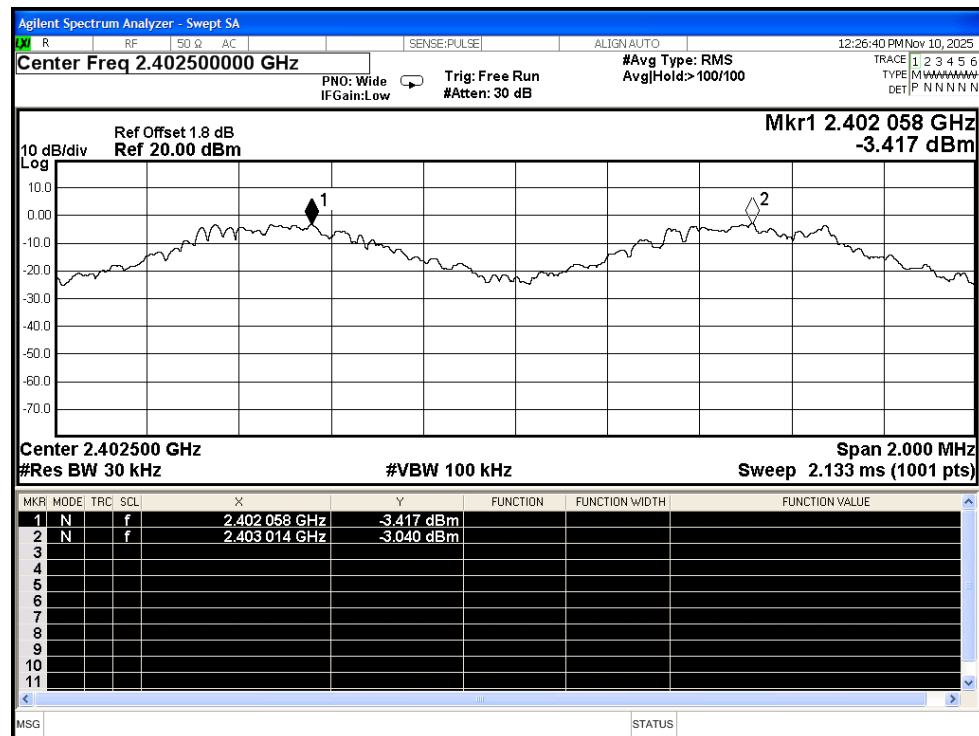


A.3 Carrier Frequencies Separation

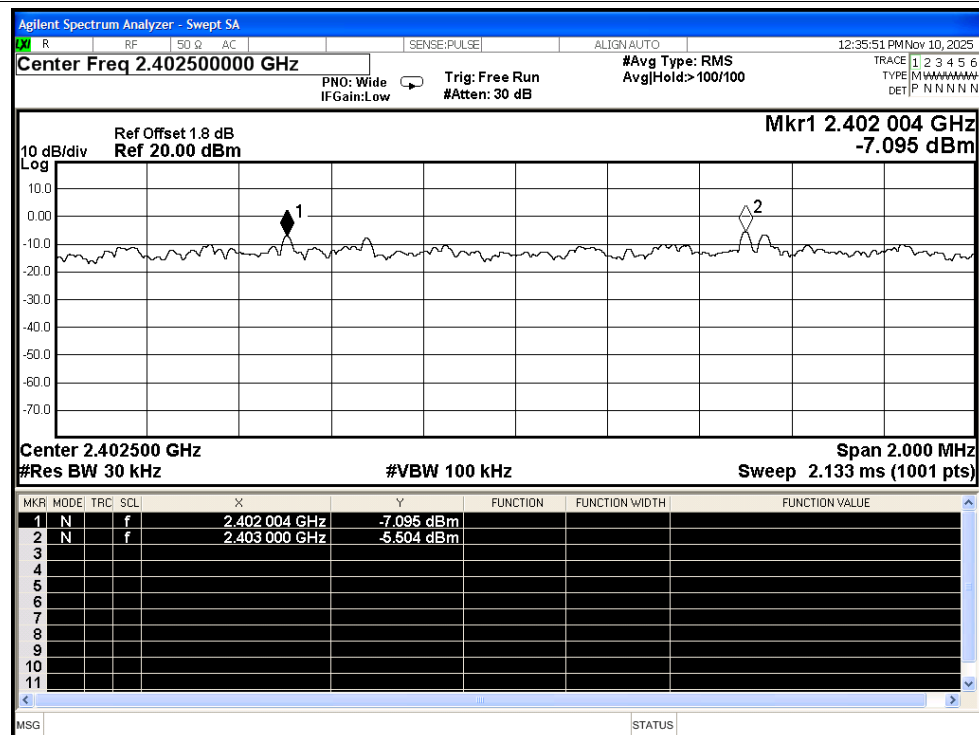
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2402.058	2403.014	0.956	0.662	Pass
NVNT	2-DH5	Ant1	2402.004	2403	0.996	0.885	Pass
NVNT	3-DH5	Ant1	2402.014	2403.01	0.996	0.867	Pass

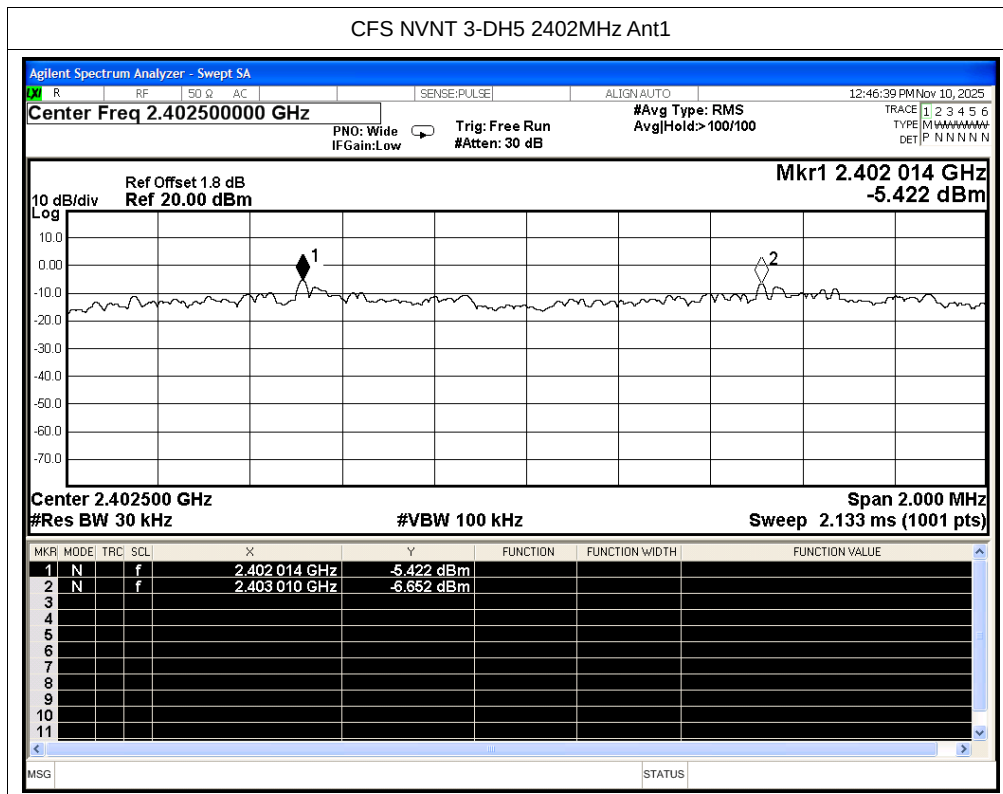
Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1



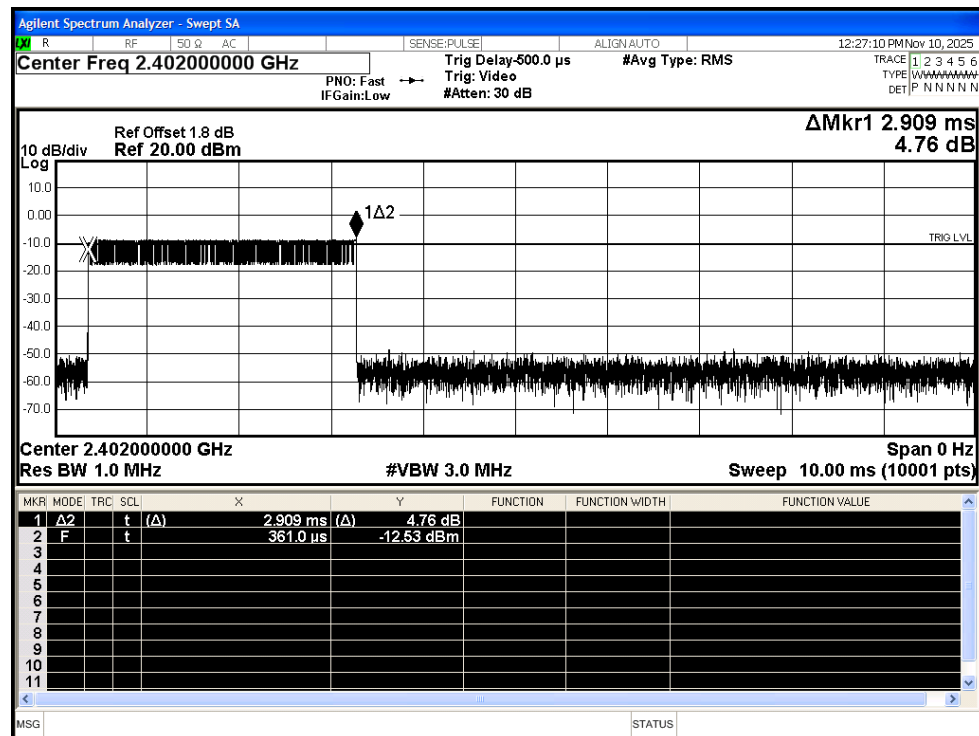


A.4 Dwell Time

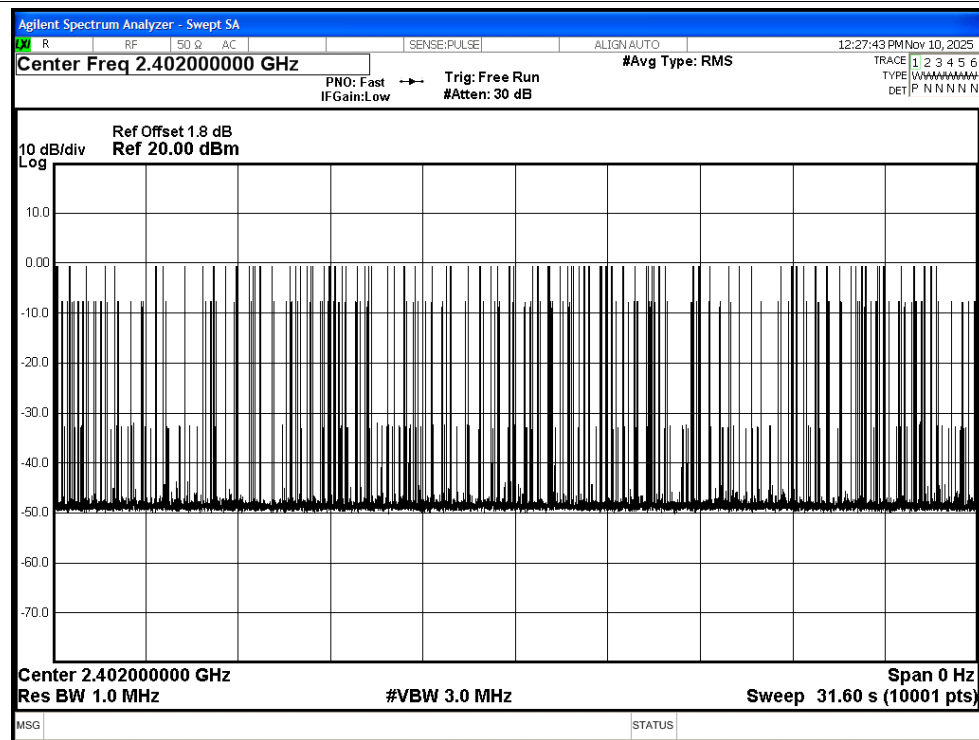
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.909	319.99	110	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.899	336.284	116	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.897	286.803	99	31600	400	Pass

Test Graphs

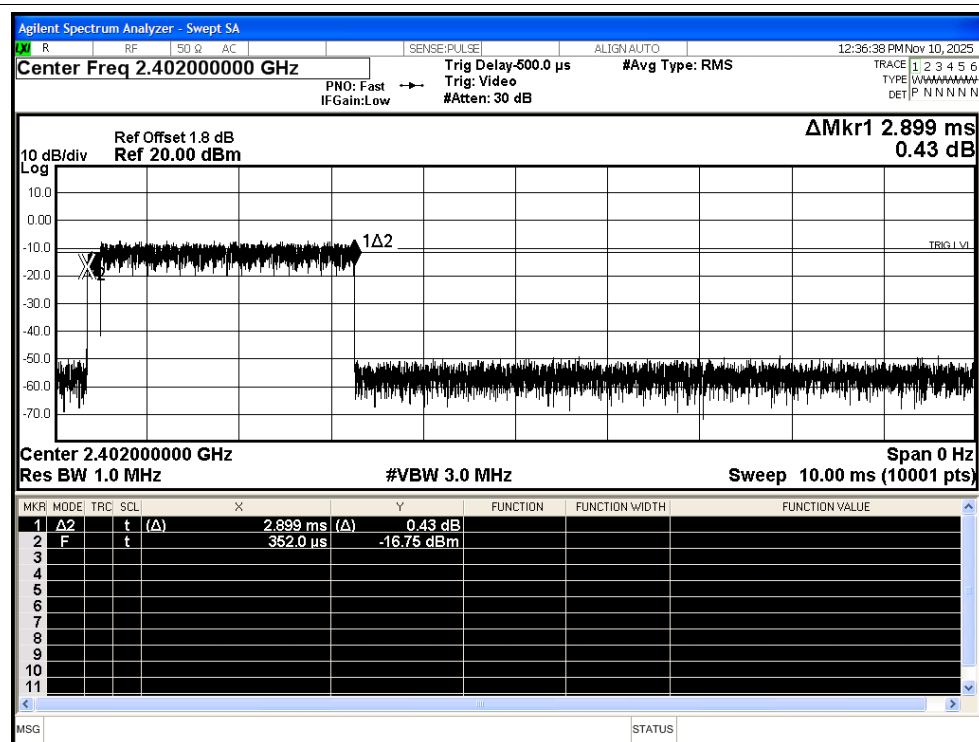
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



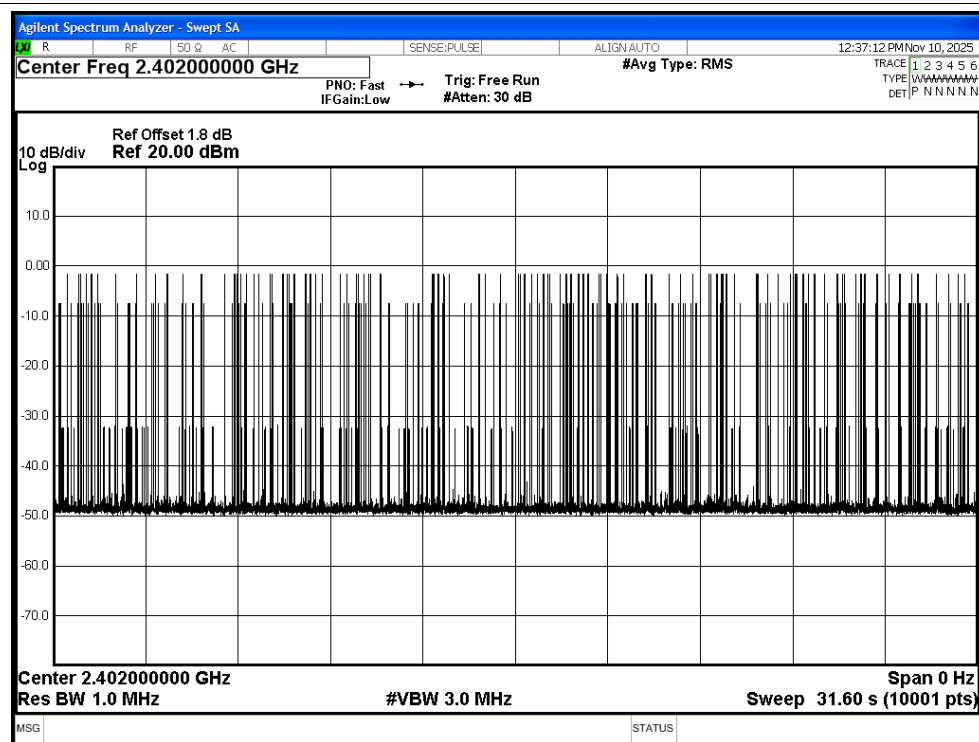
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



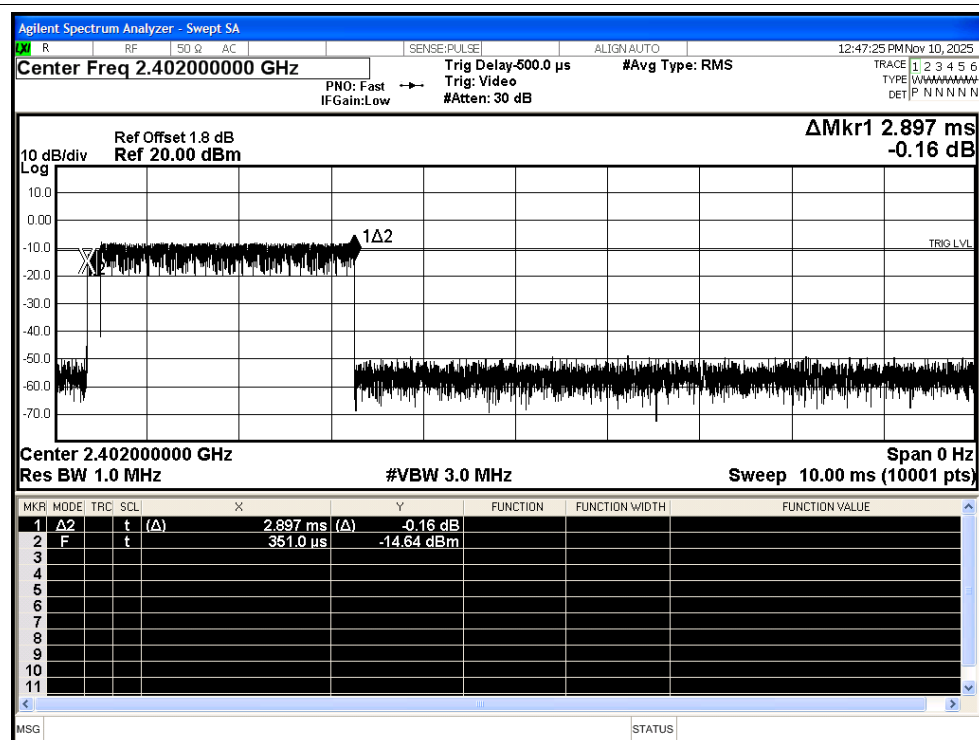
Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



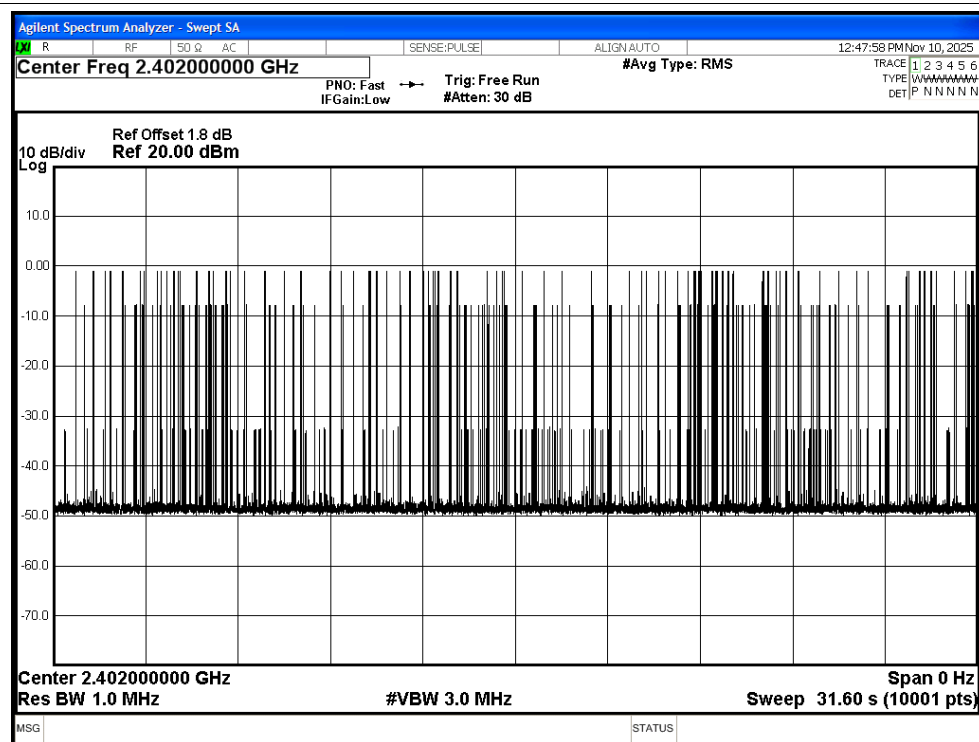
Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated



Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated

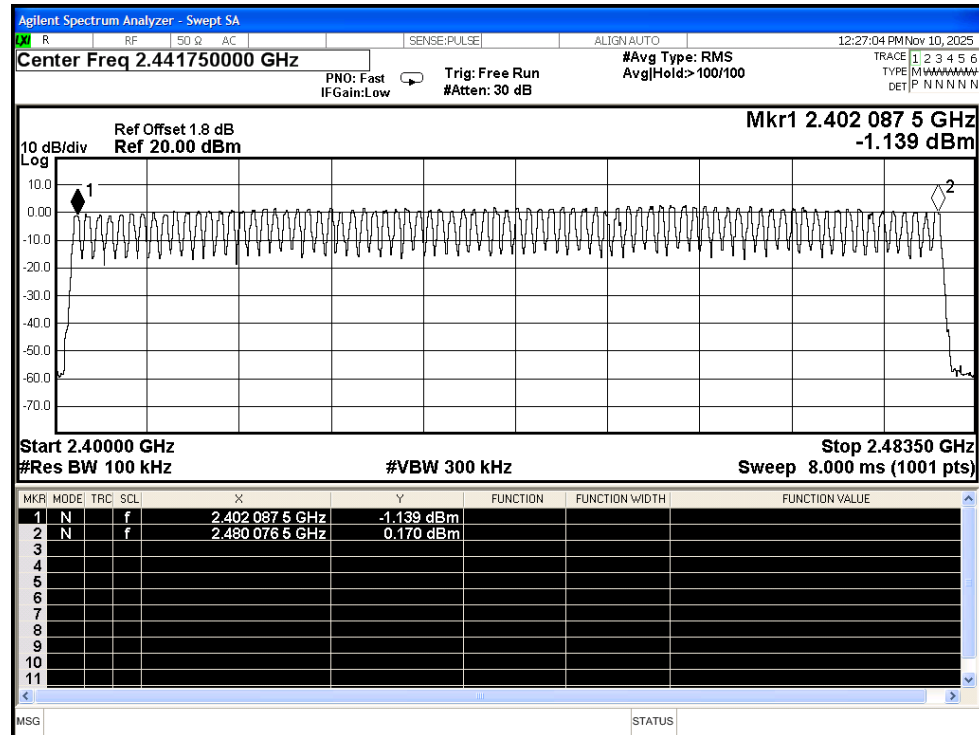


A.5 Number of Hopping Channel

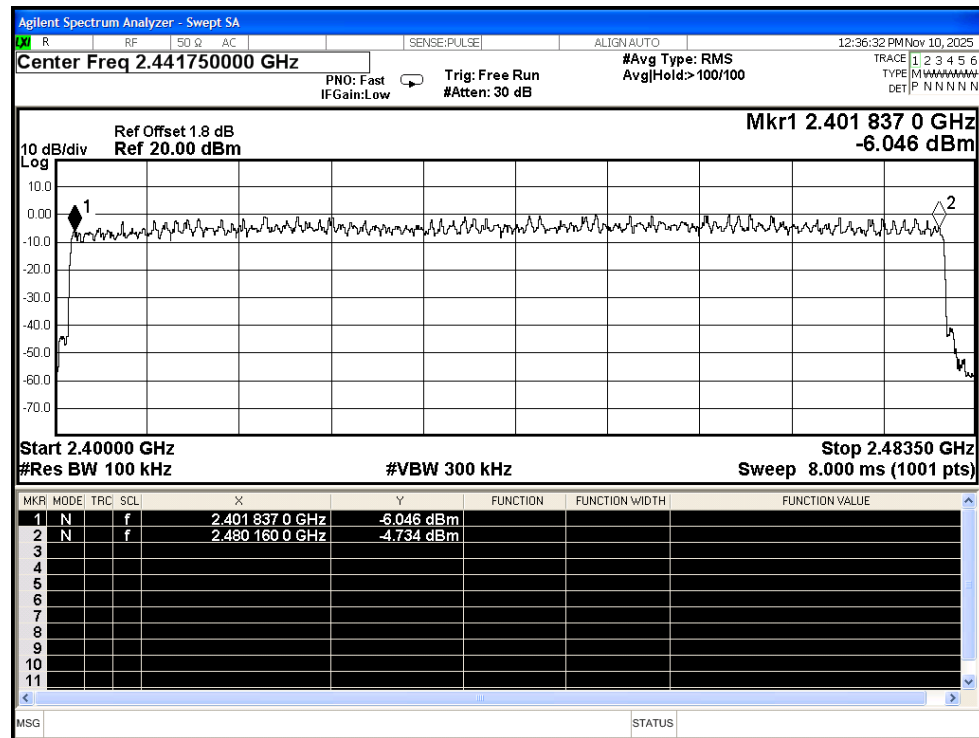
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass

Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1

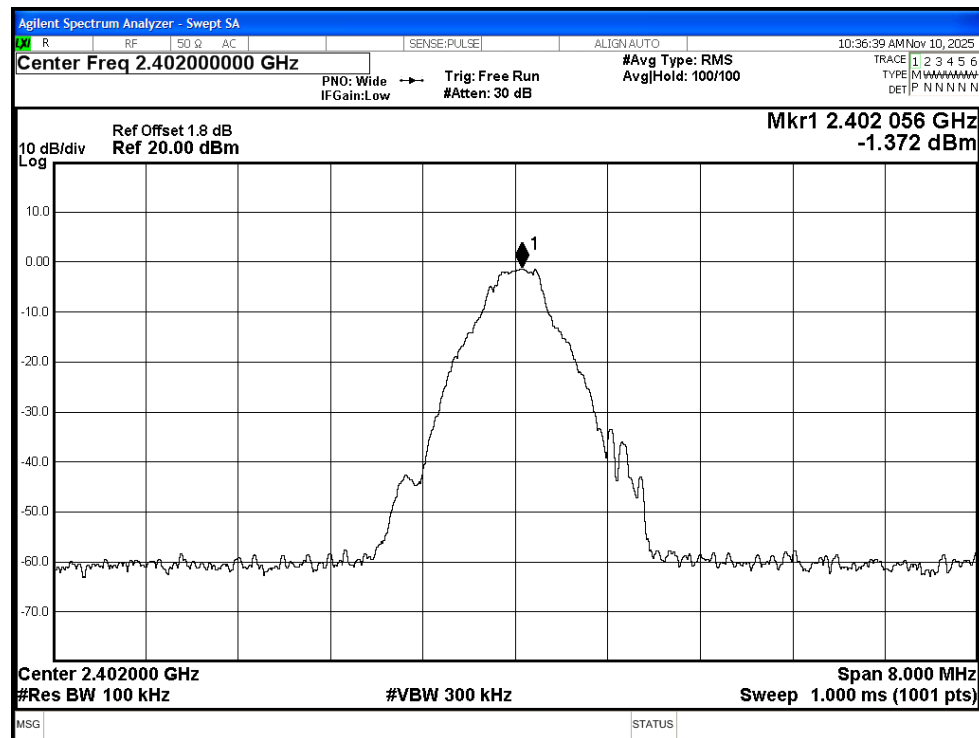


A.6 Band Edge

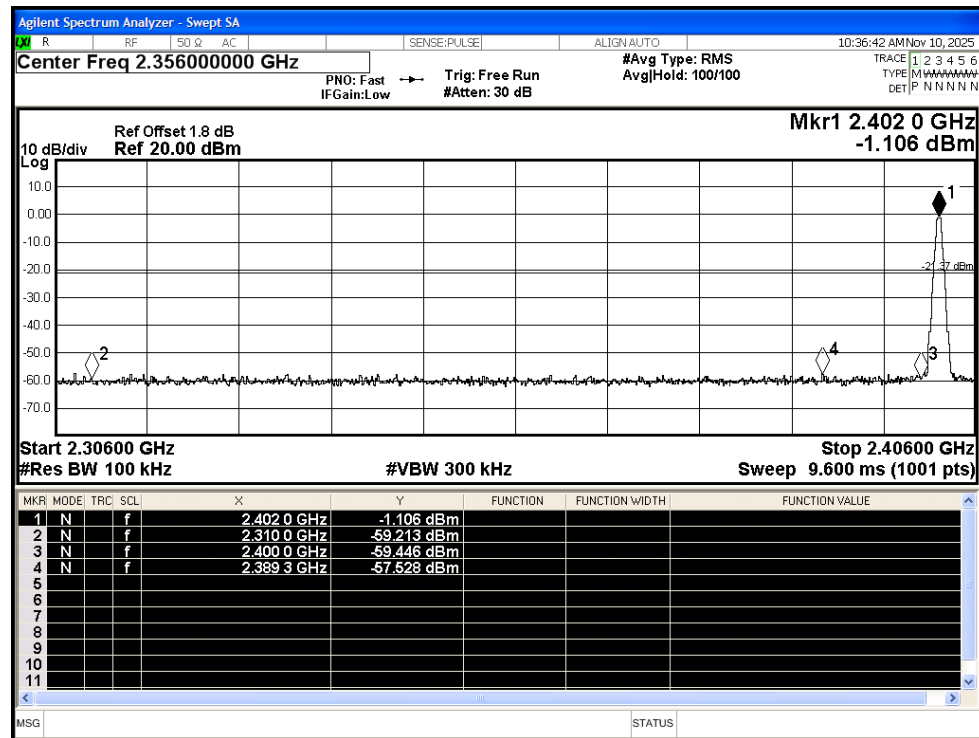
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-56.16	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-56.89	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-50.29	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-55.24	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-51.23	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-54.96	-20	Pass

Test Graphs

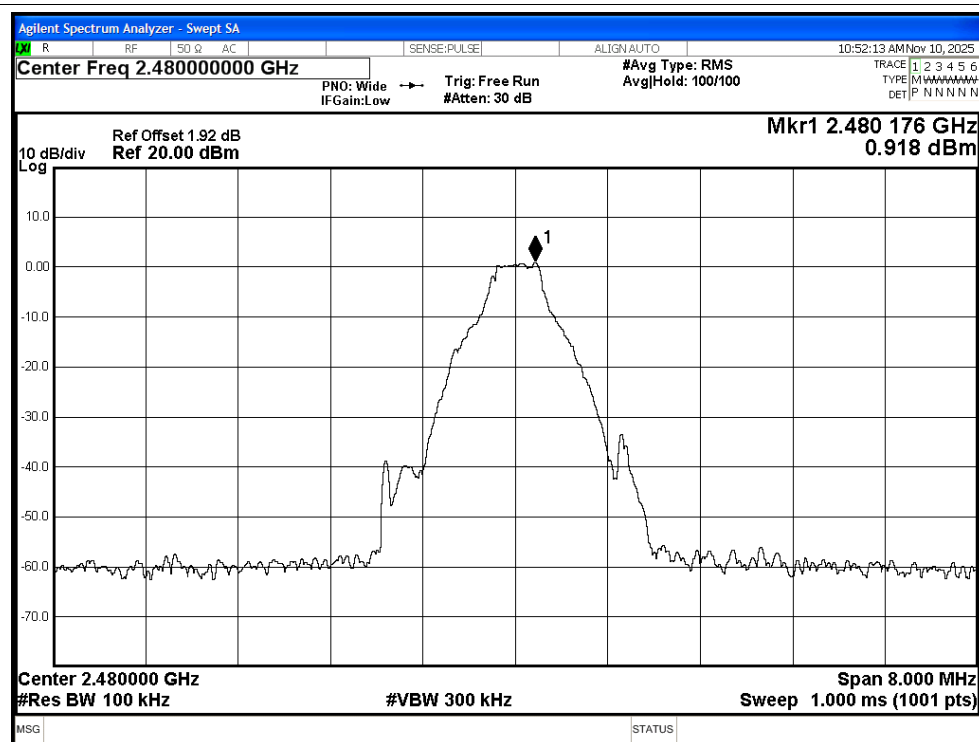
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



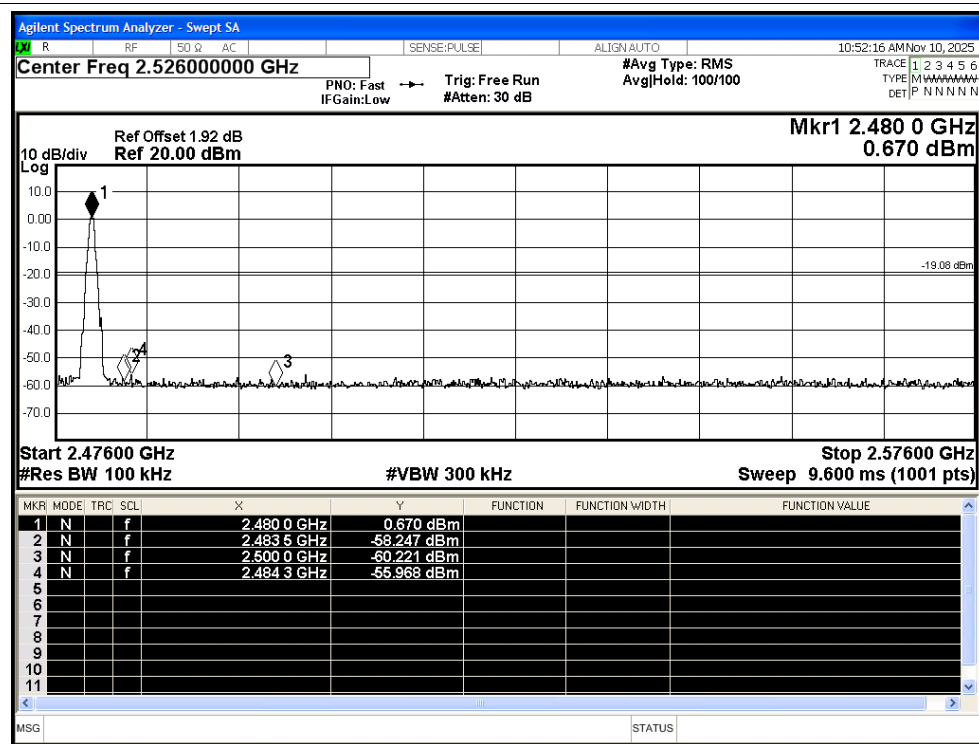
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



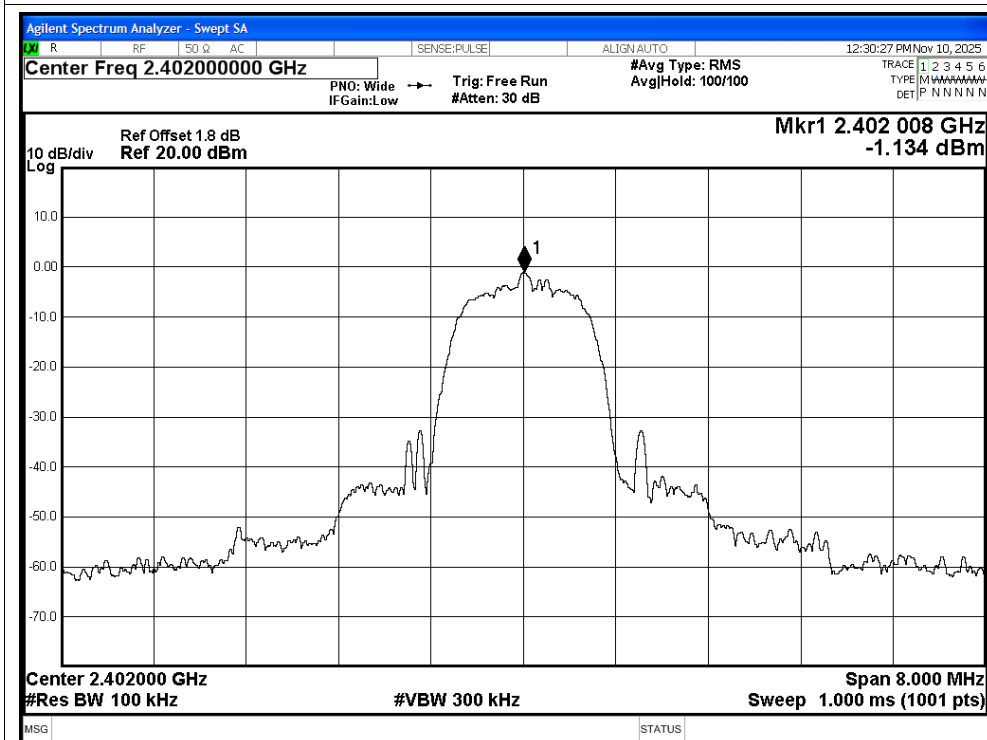
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



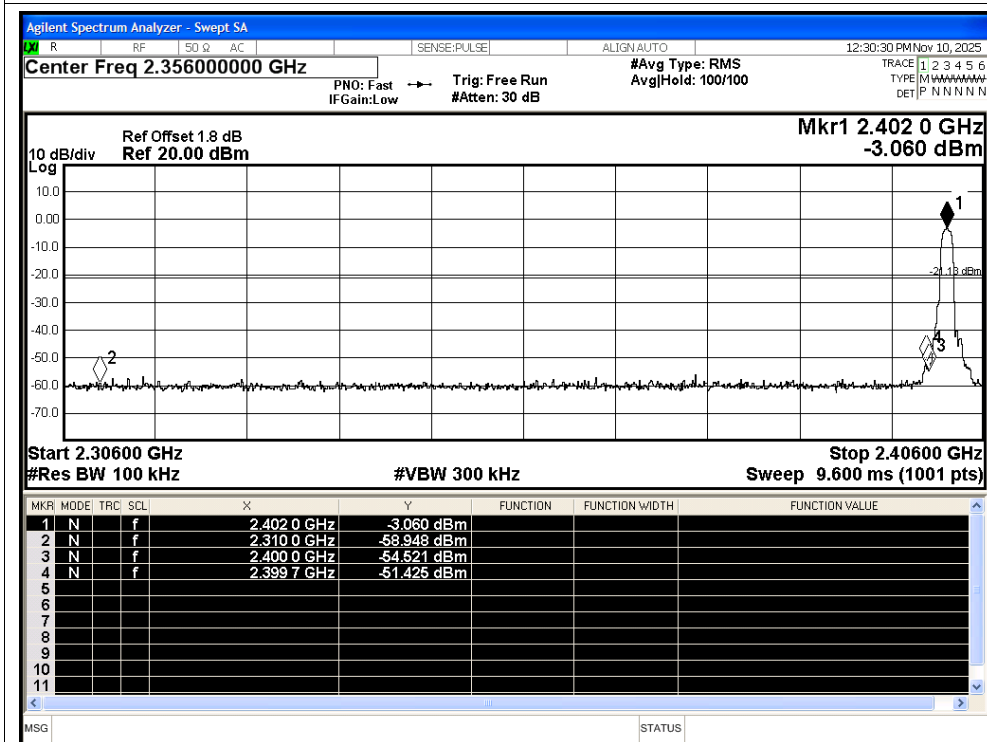
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



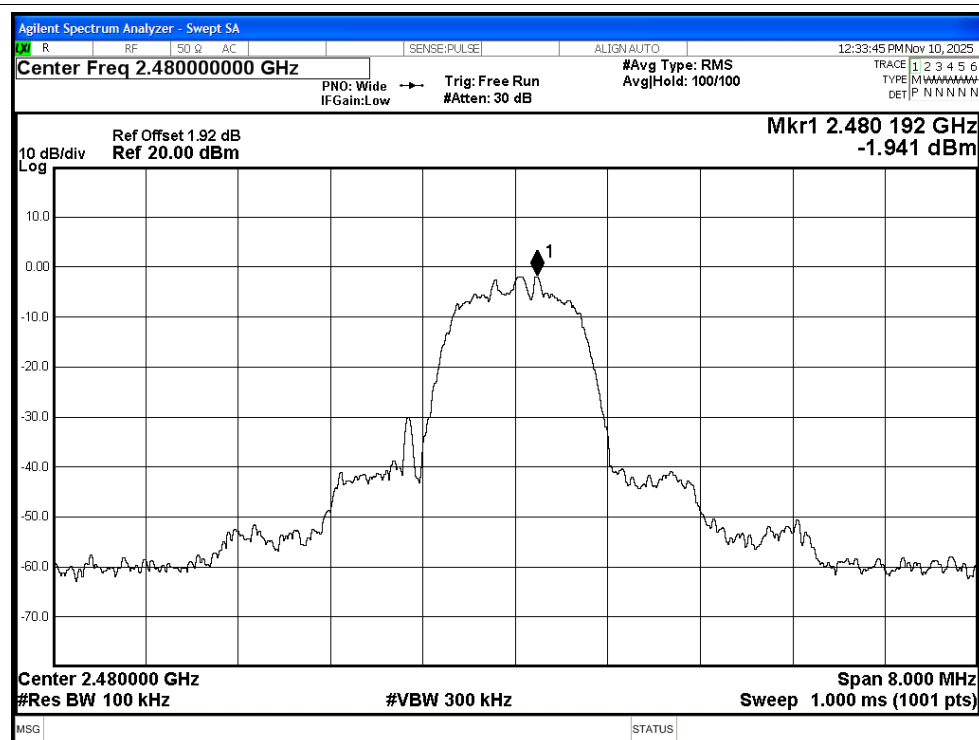
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



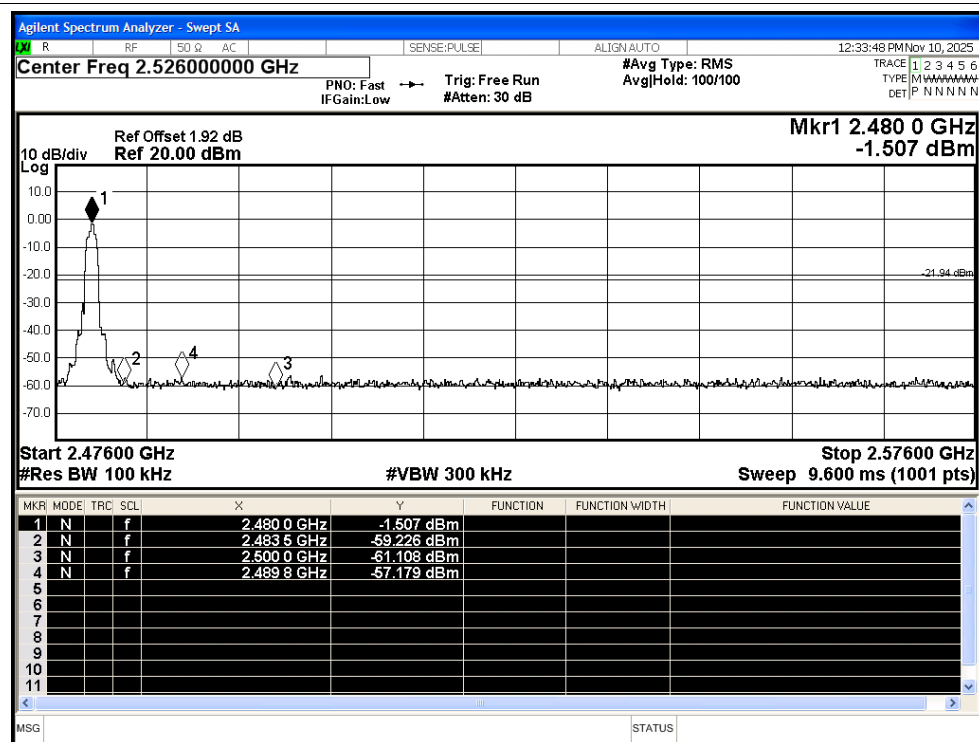
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission



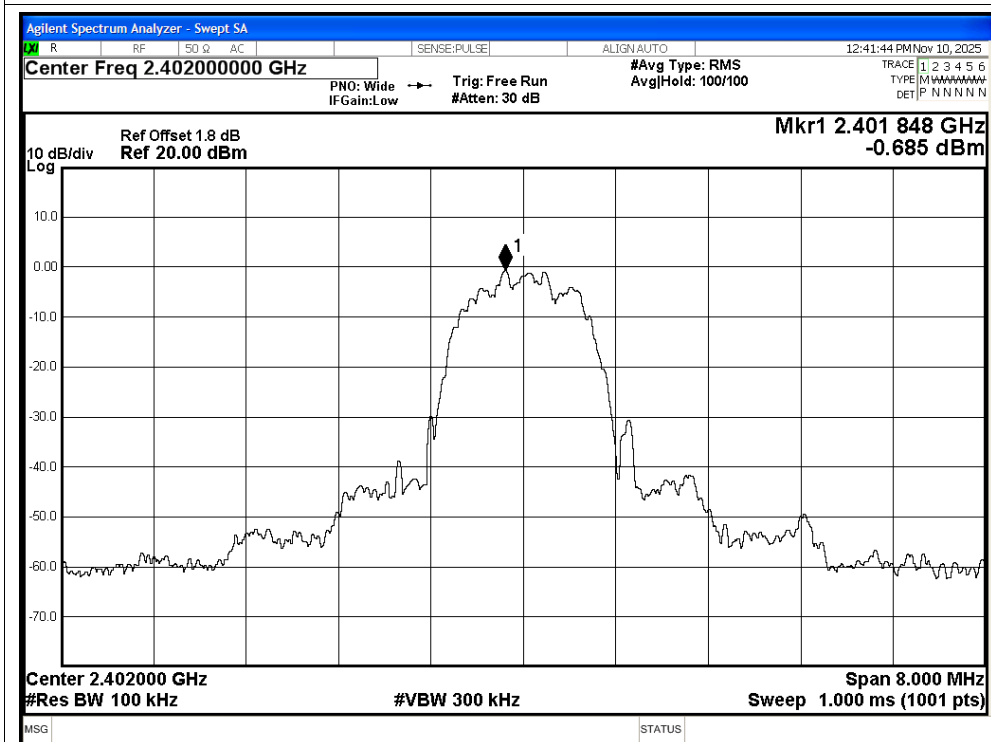
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



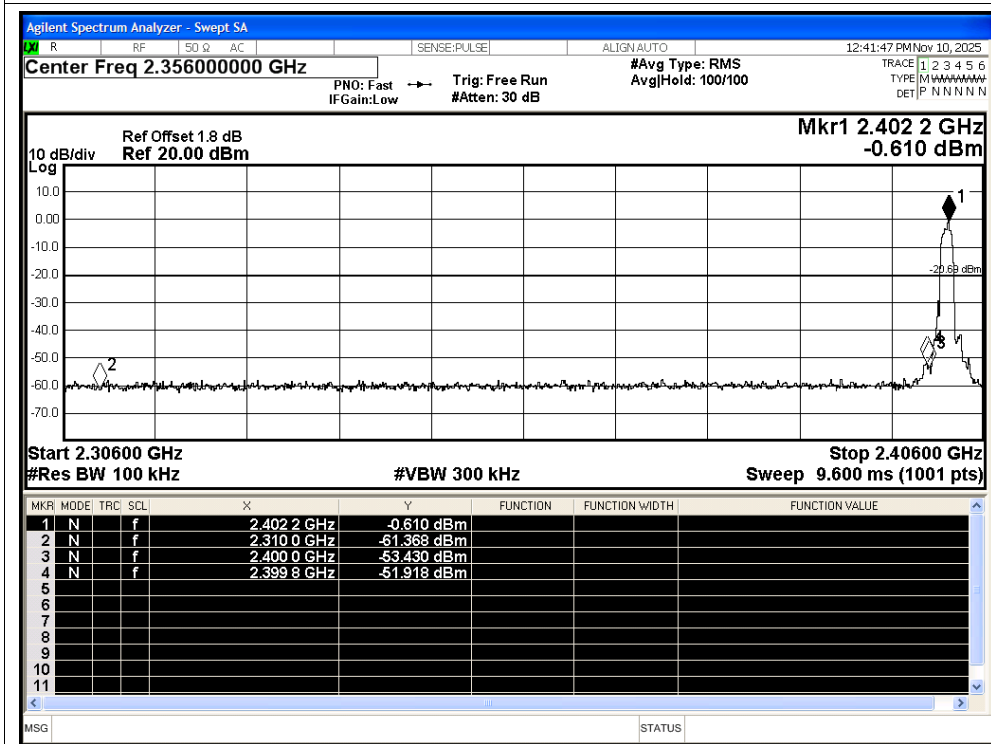
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission



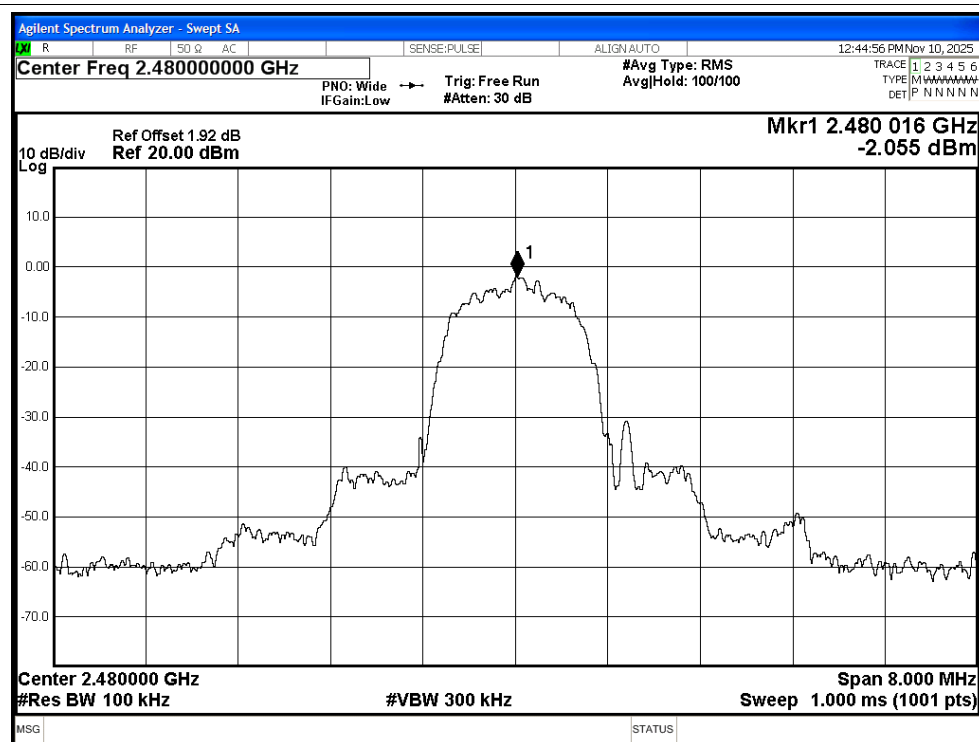
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref



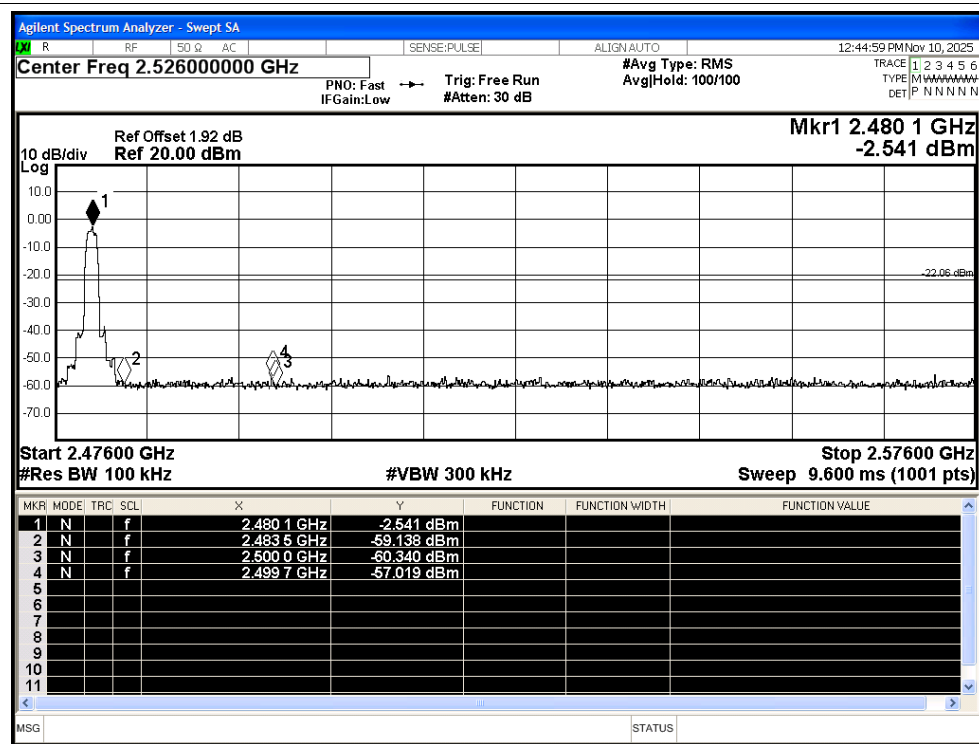
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission



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



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

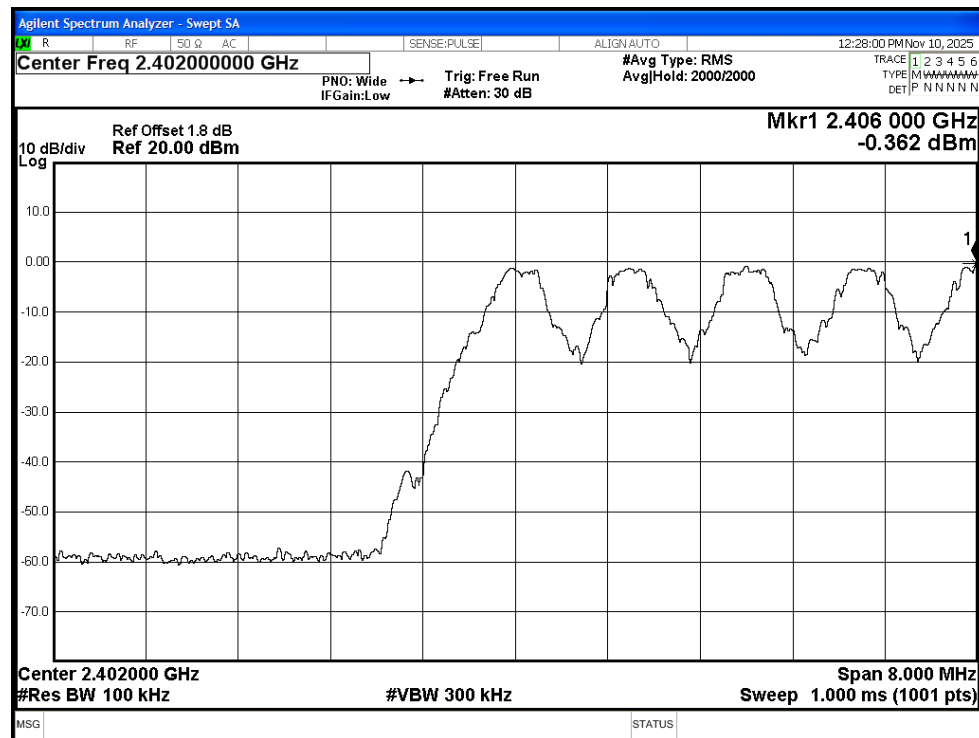


(Hopping)

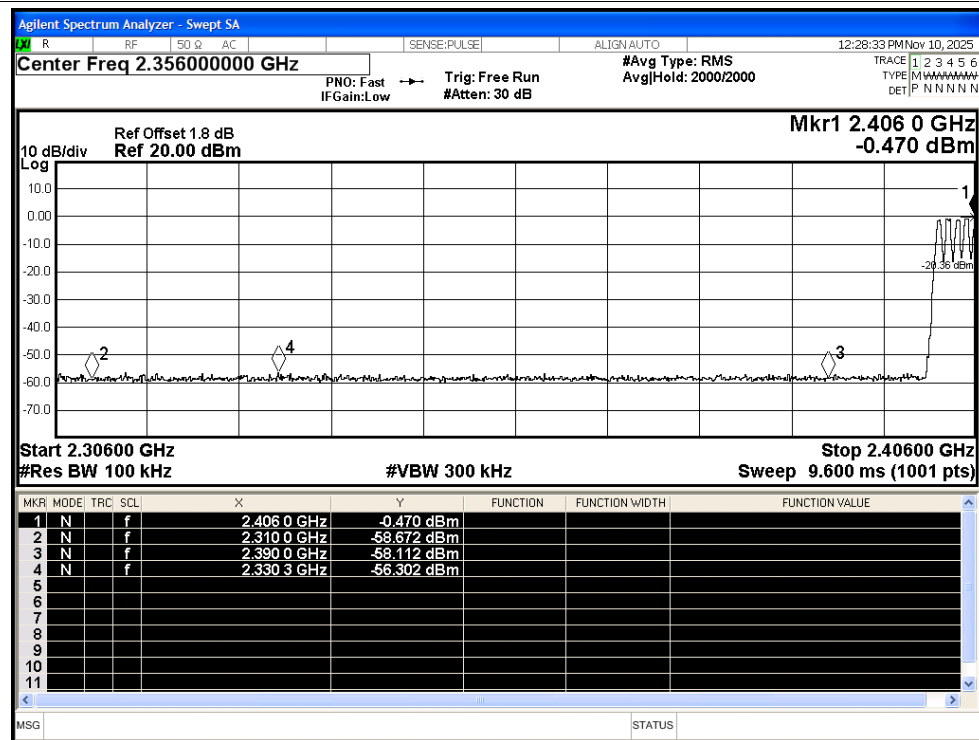
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-55.94	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-57.01	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-53	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-53.43	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-53.68	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-53.14	-20	Pass

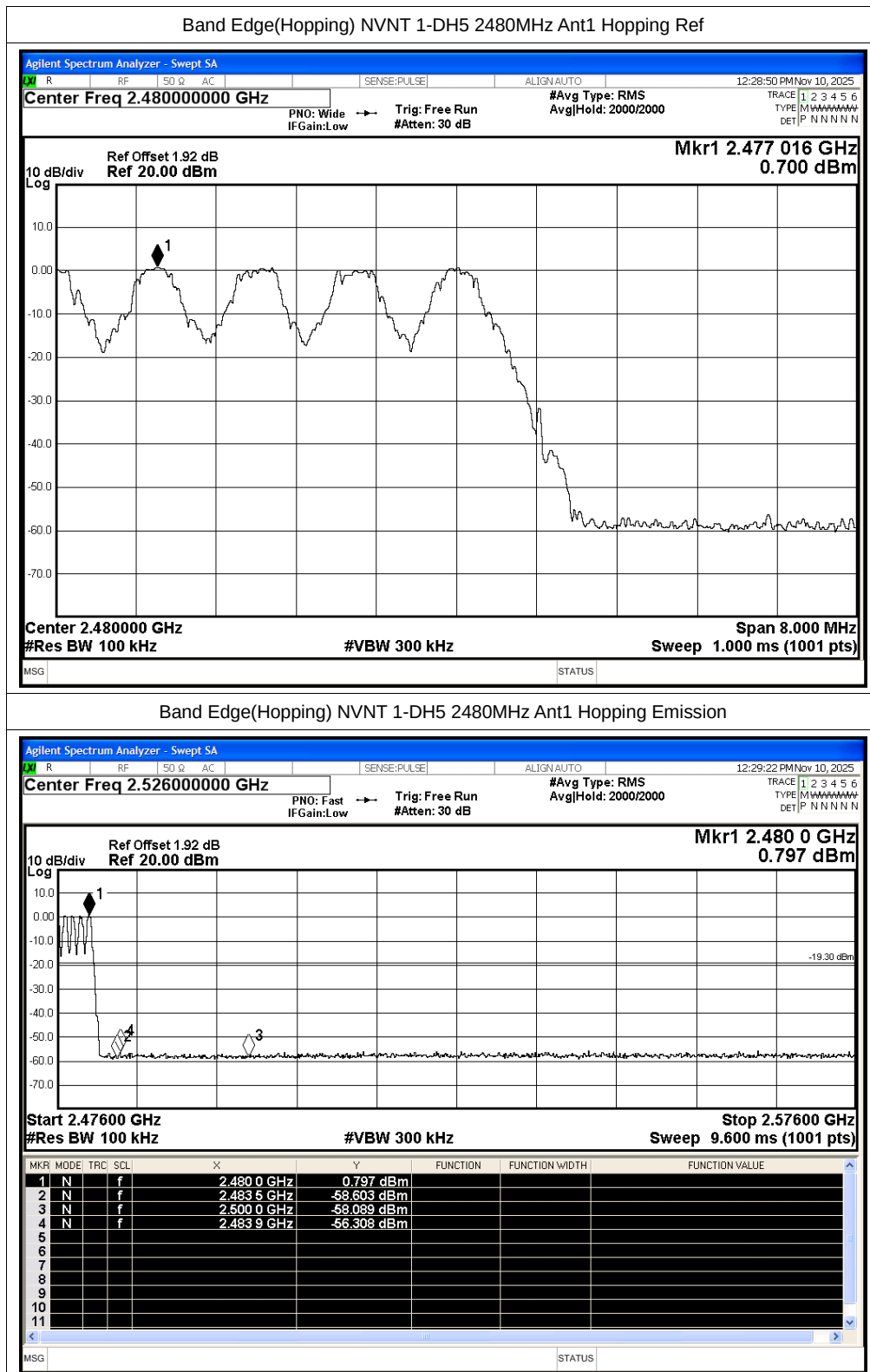
Test Graphs

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



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

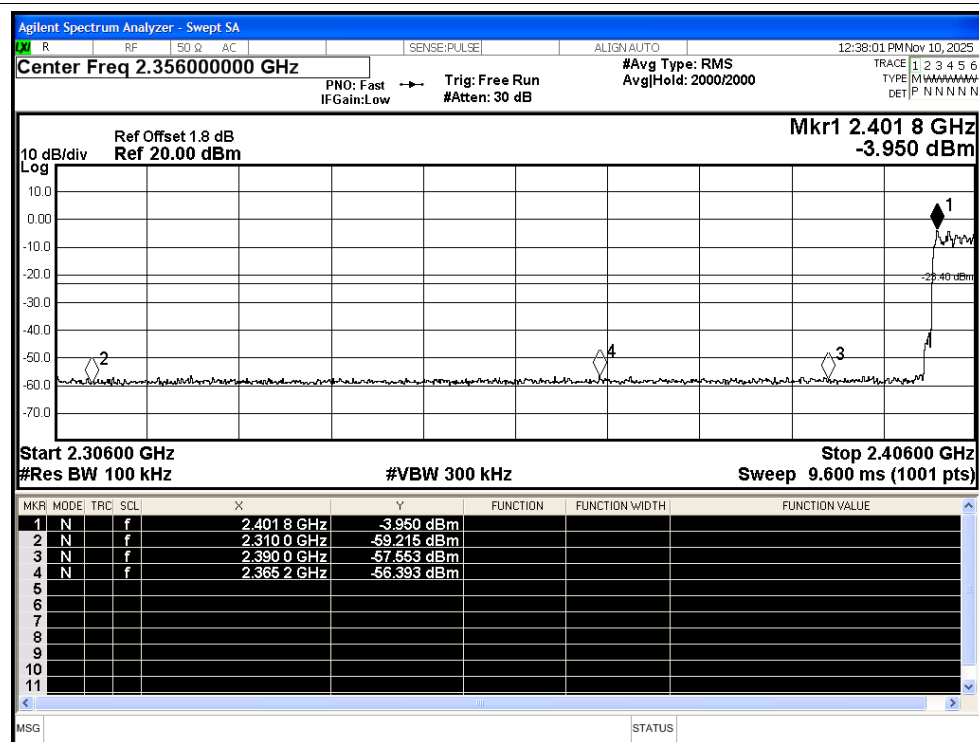




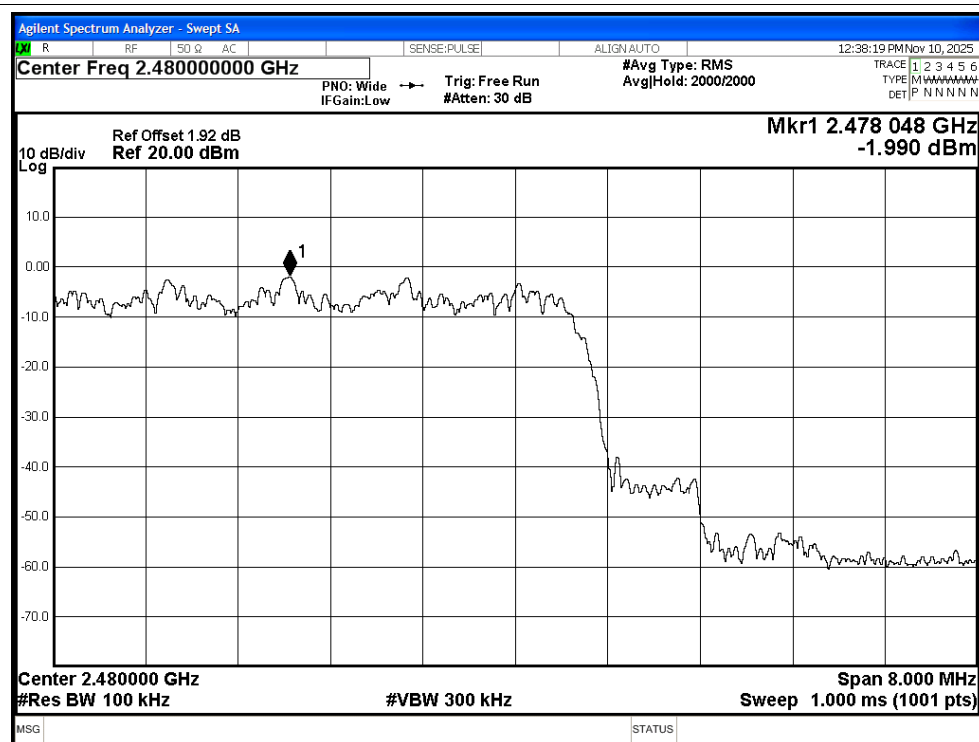
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



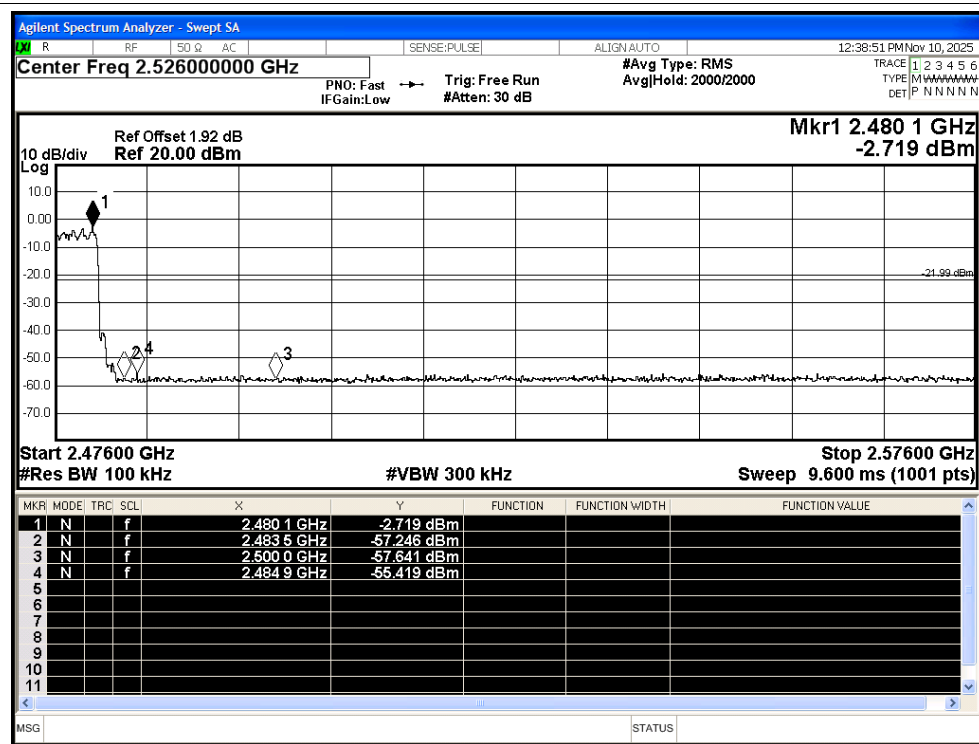
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission

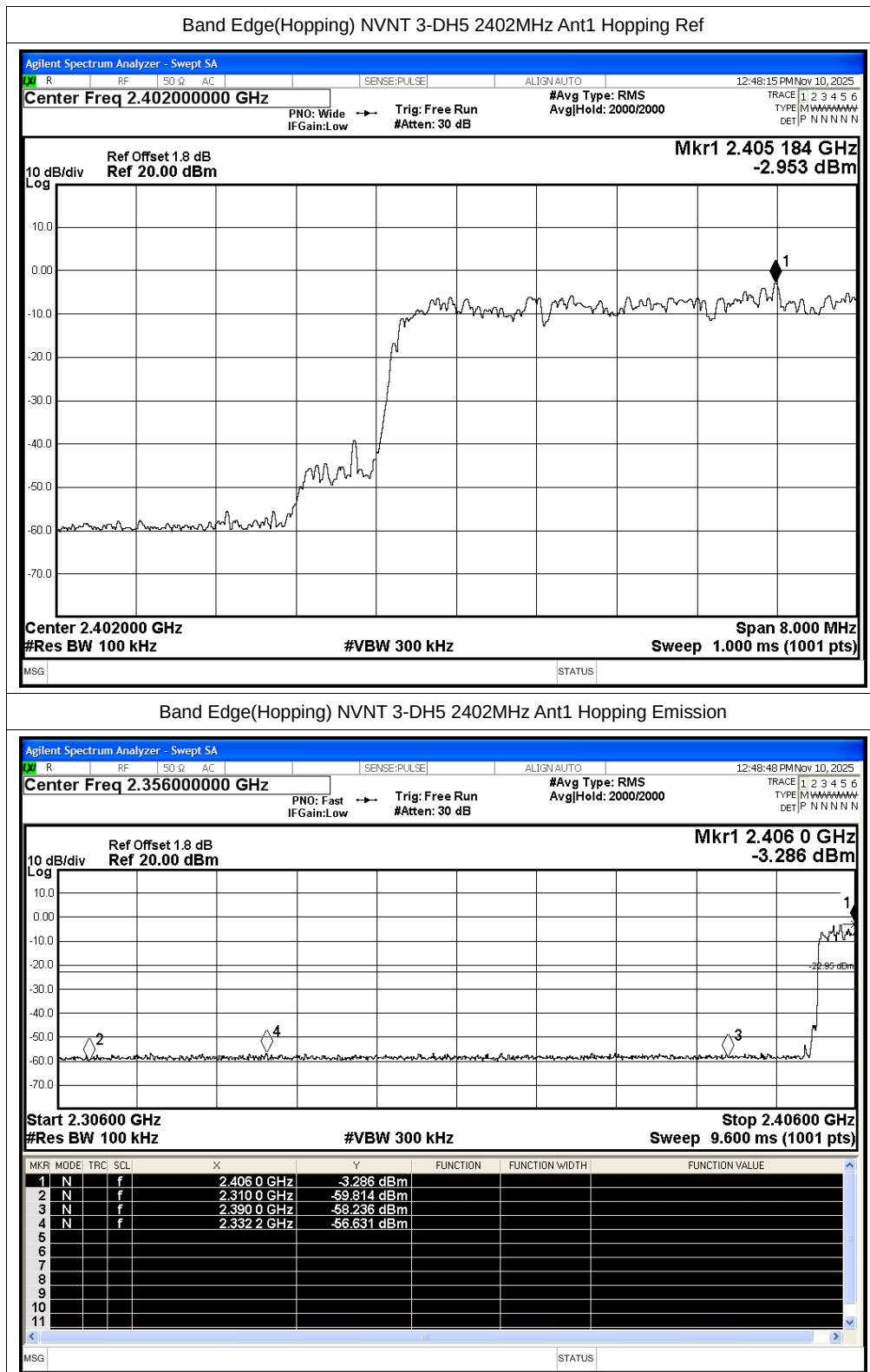


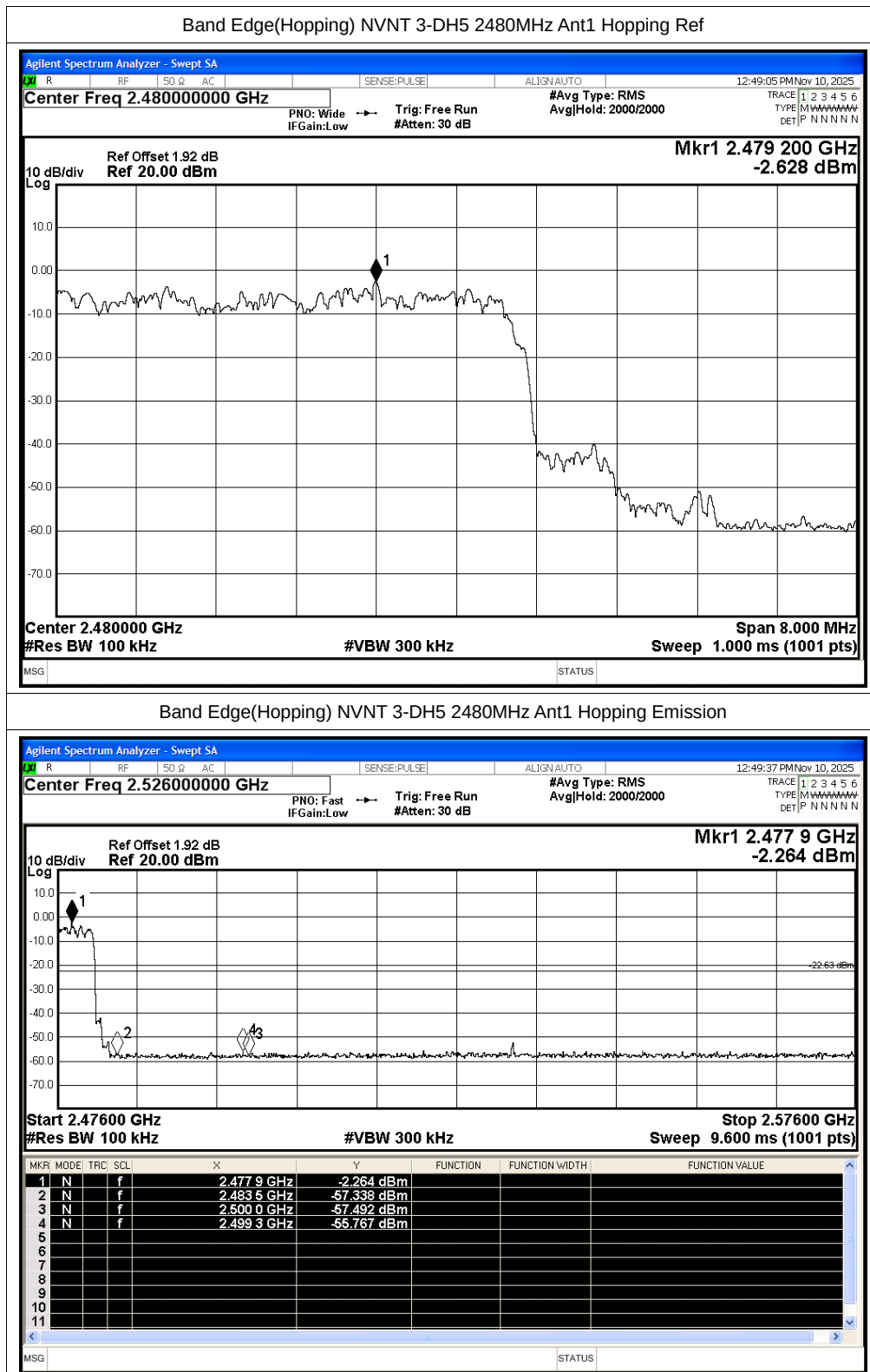
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



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





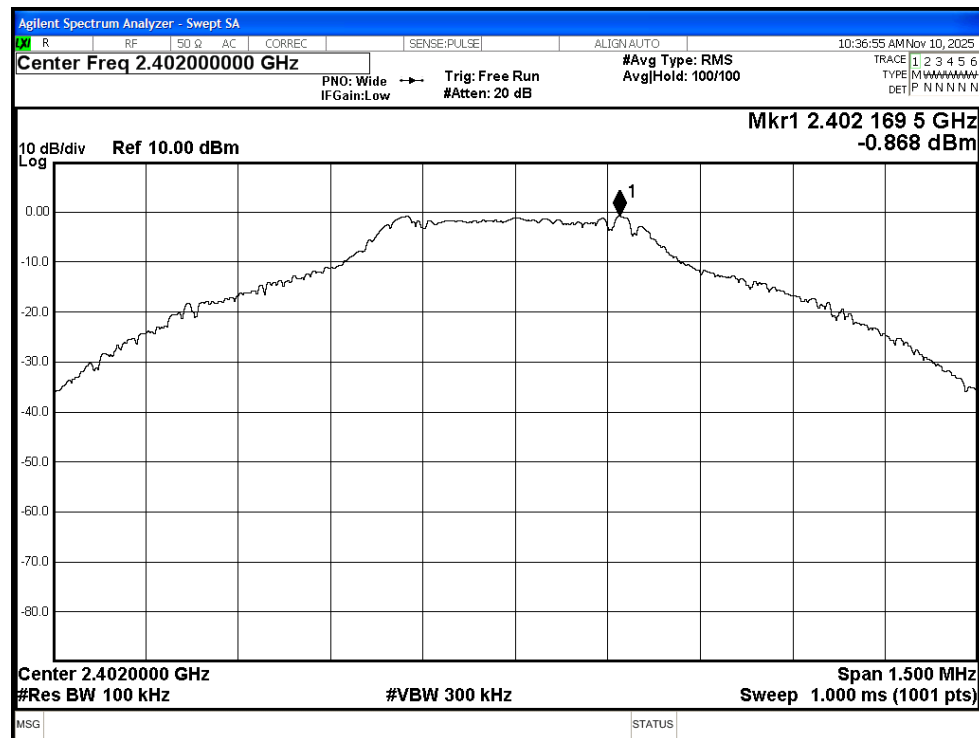


A.7 Conducted RF Spurious Emission

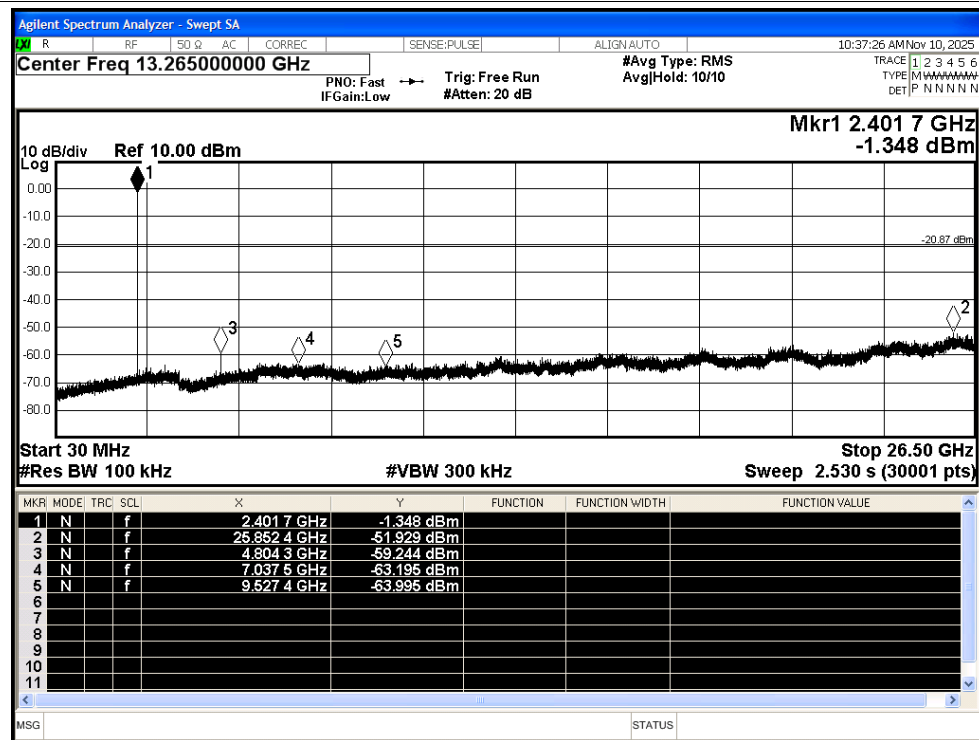
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-51.06	-20	Pass
NVNT	1-DH5	2441	Ant1	-52.22	-20	Pass
NVNT	1-DH5	2480	Ant1	-52.86	-20	Pass
NVNT	2-DH5	2402	Ant1	-51.86	-20	Pass
NVNT	2-DH5	2441	Ant1	-50.53	-20	Pass
NVNT	2-DH5	2480	Ant1	-51.15	-20	Pass
NVNT	3-DH5	2402	Ant1	-52.46	-20	Pass
NVNT	3-DH5	2441	Ant1	-51.52	-20	Pass
NVNT	3-DH5	2480	Ant1	-50.95	-20	Pass

Test Graphs

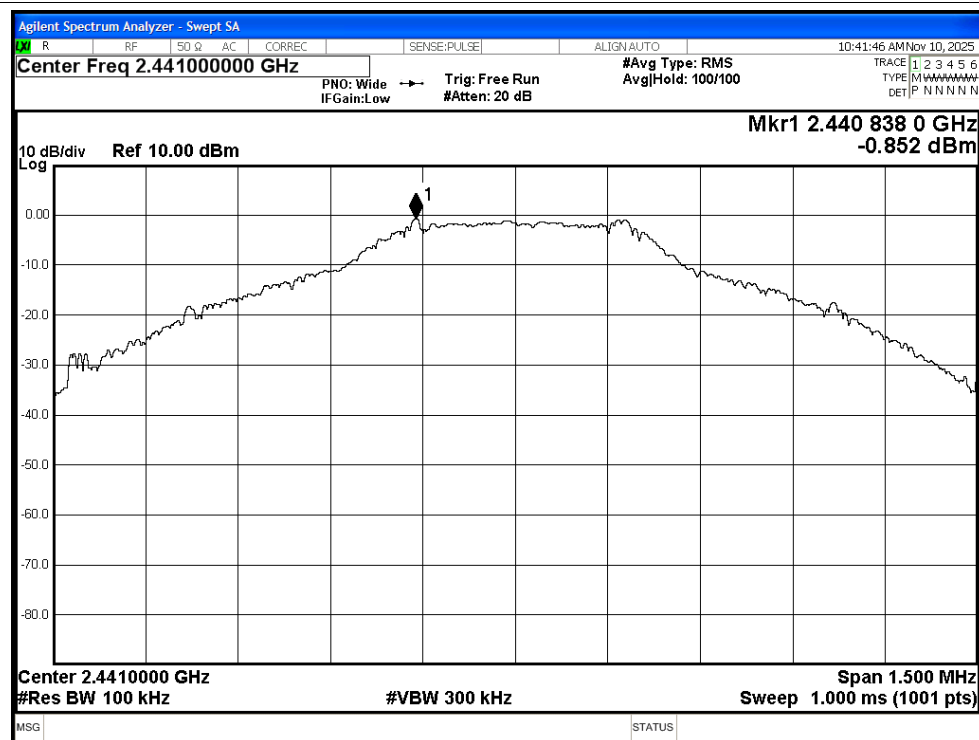
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



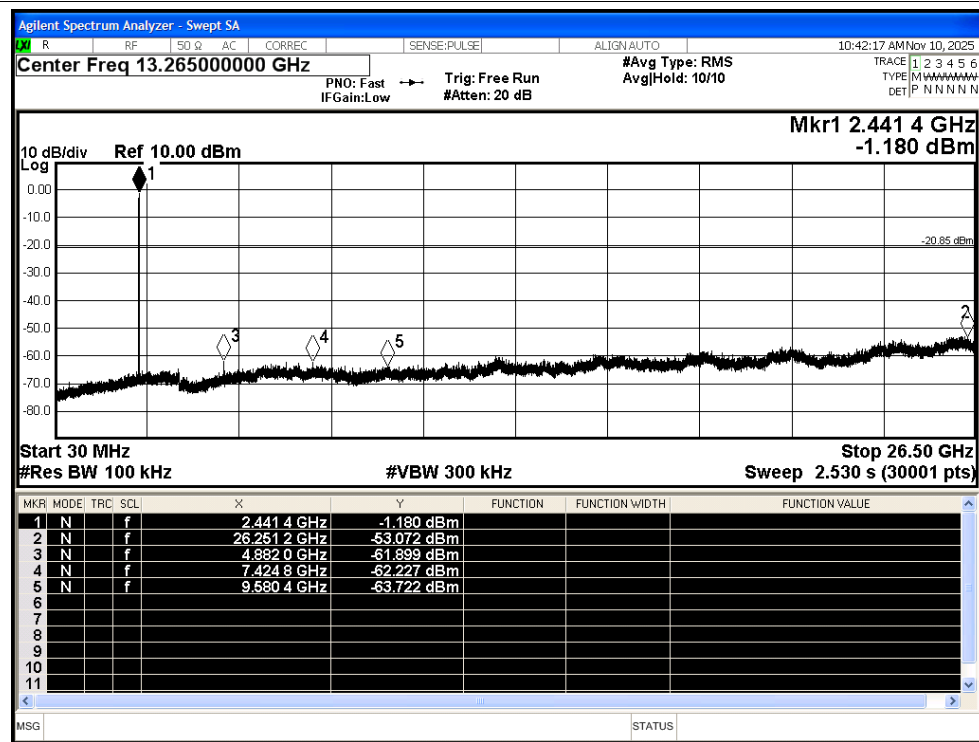
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



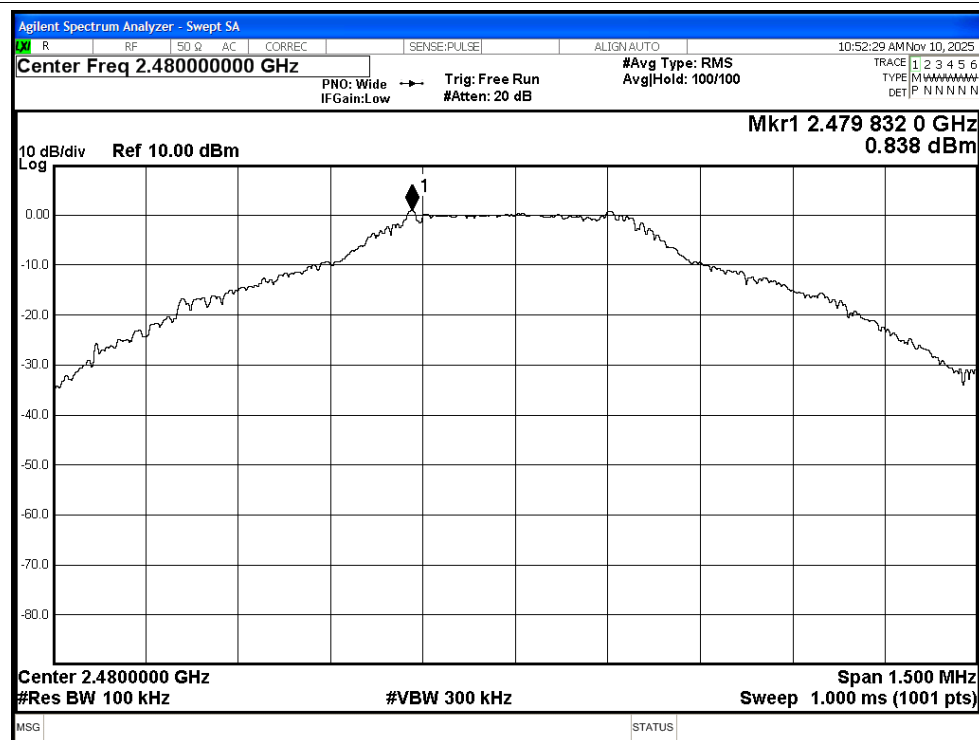
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



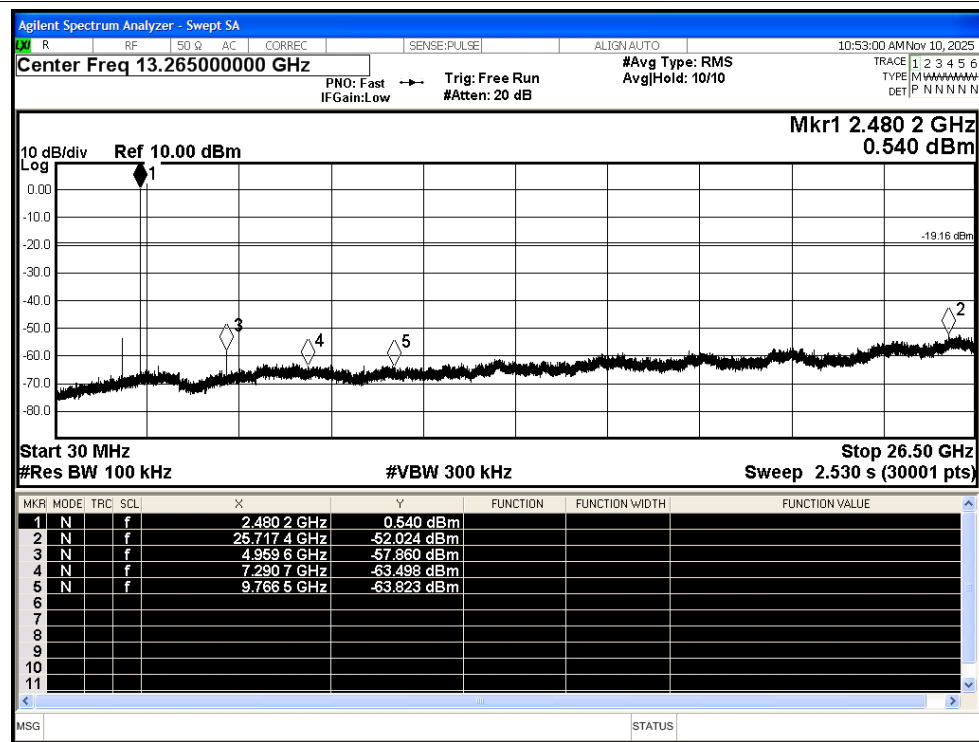
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



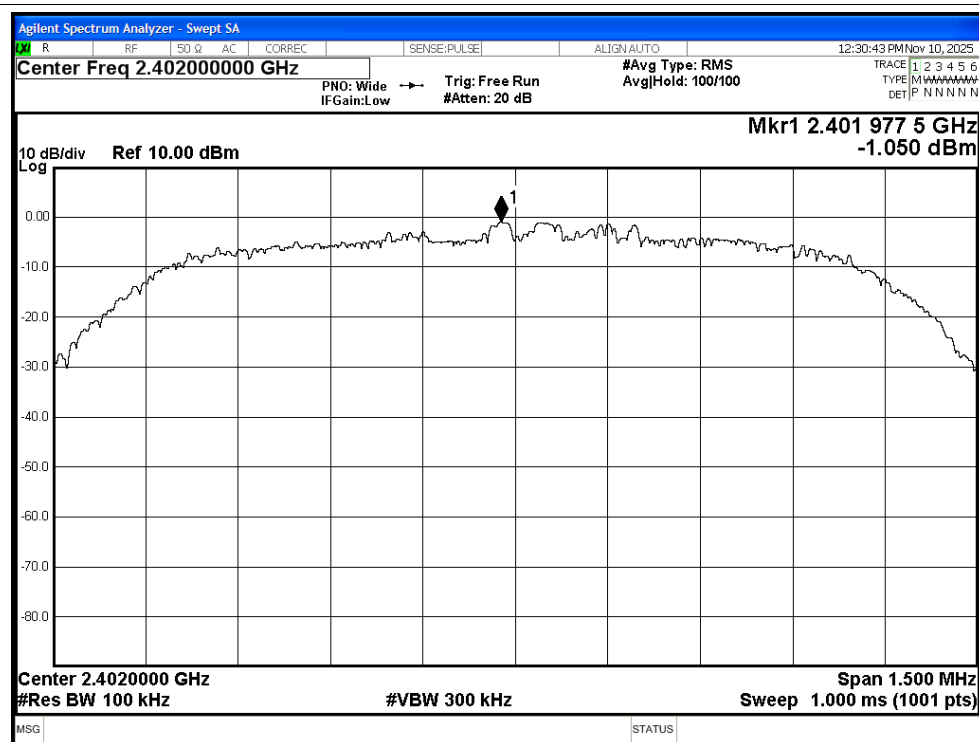
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



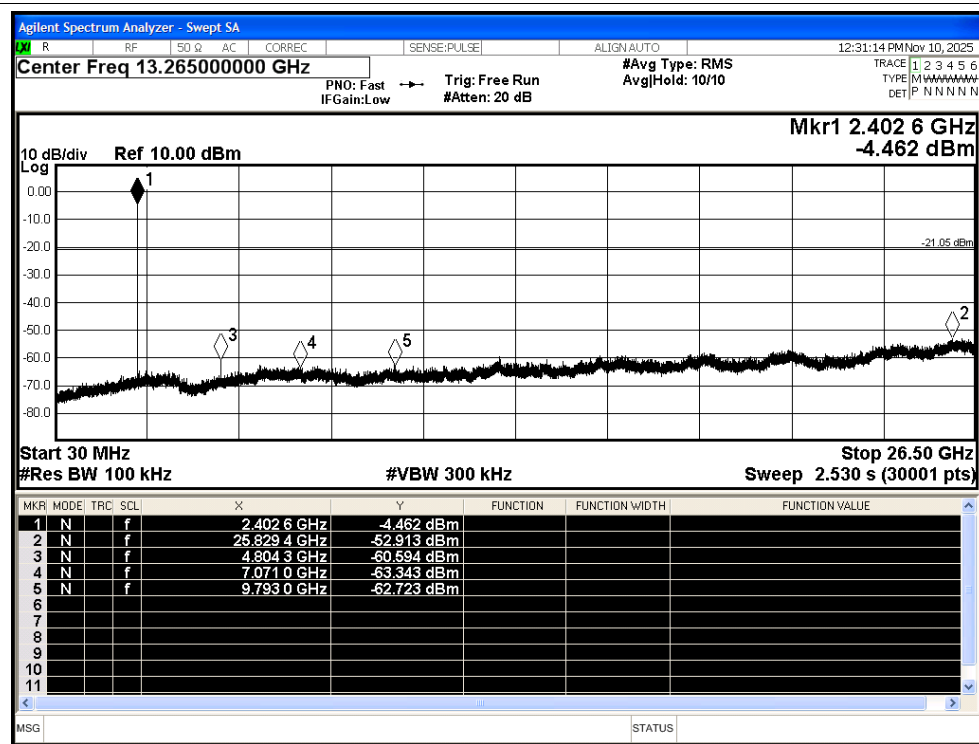
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



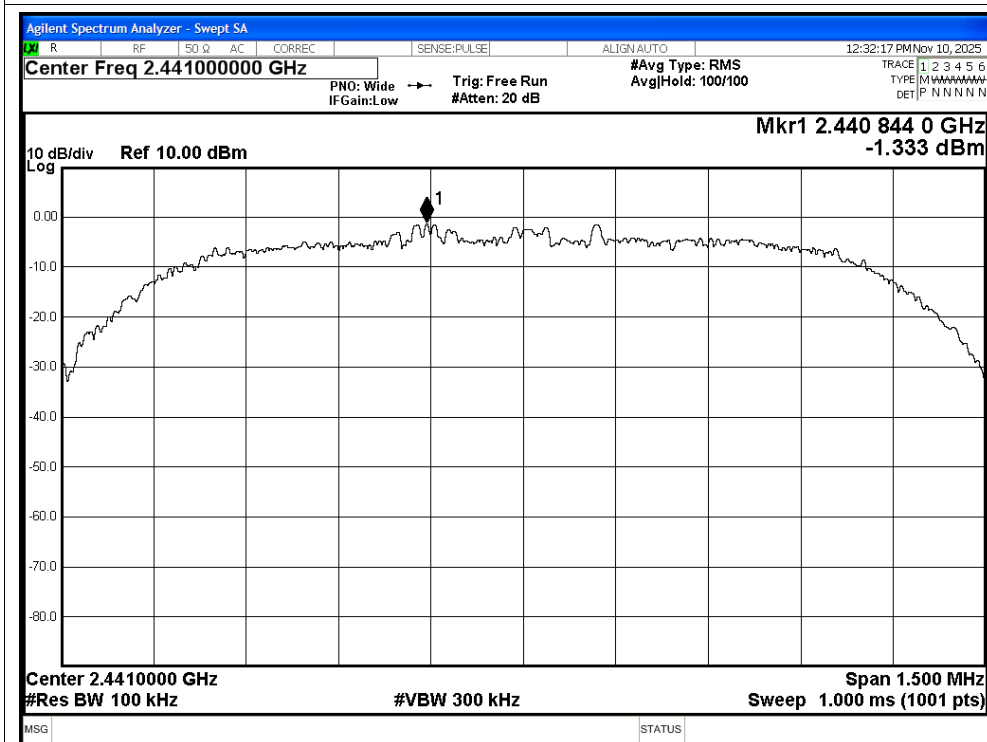
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



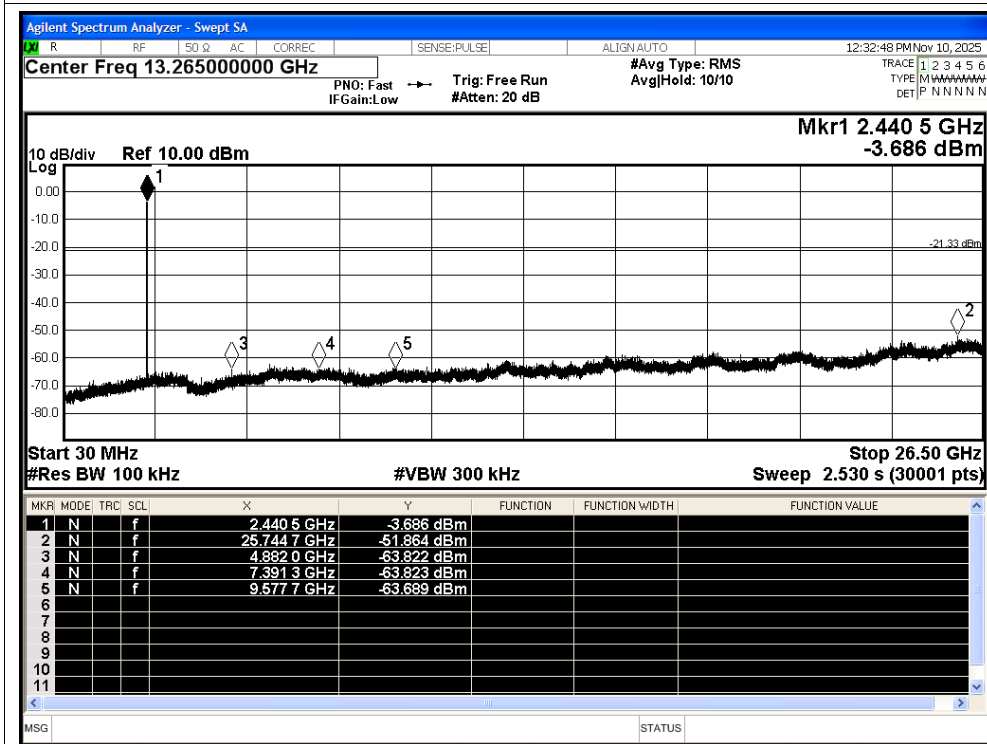
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



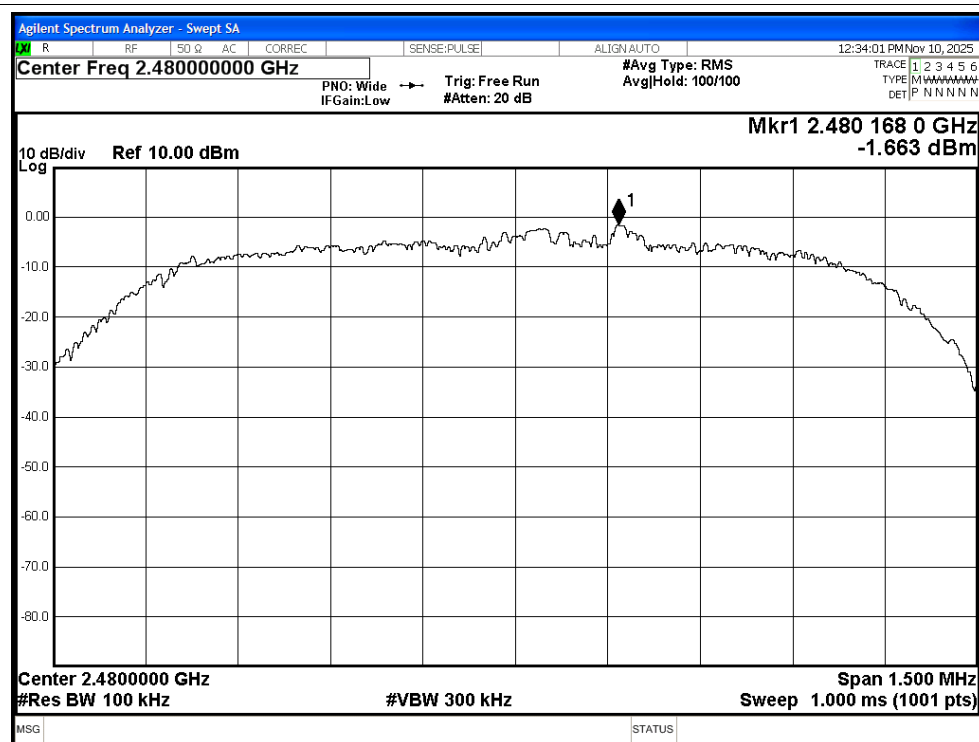
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



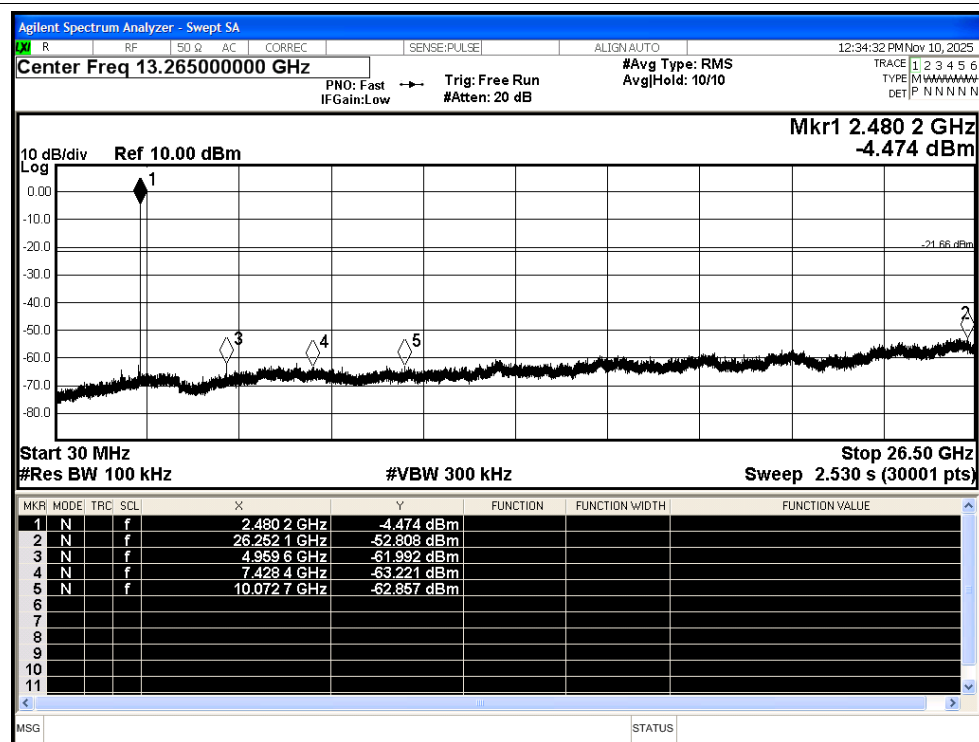
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



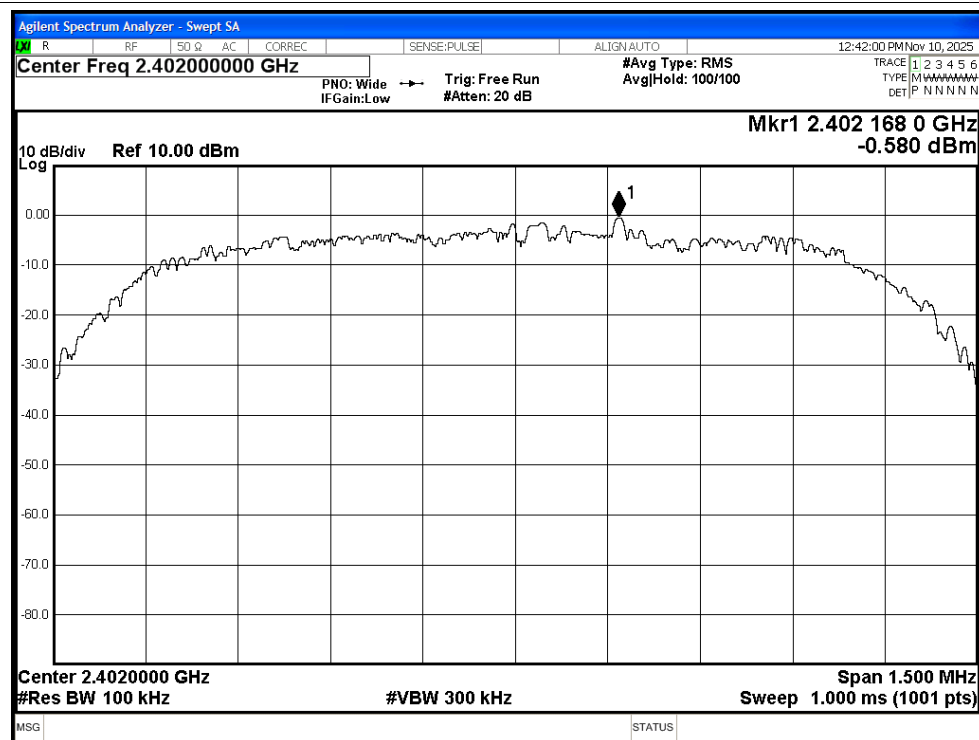
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



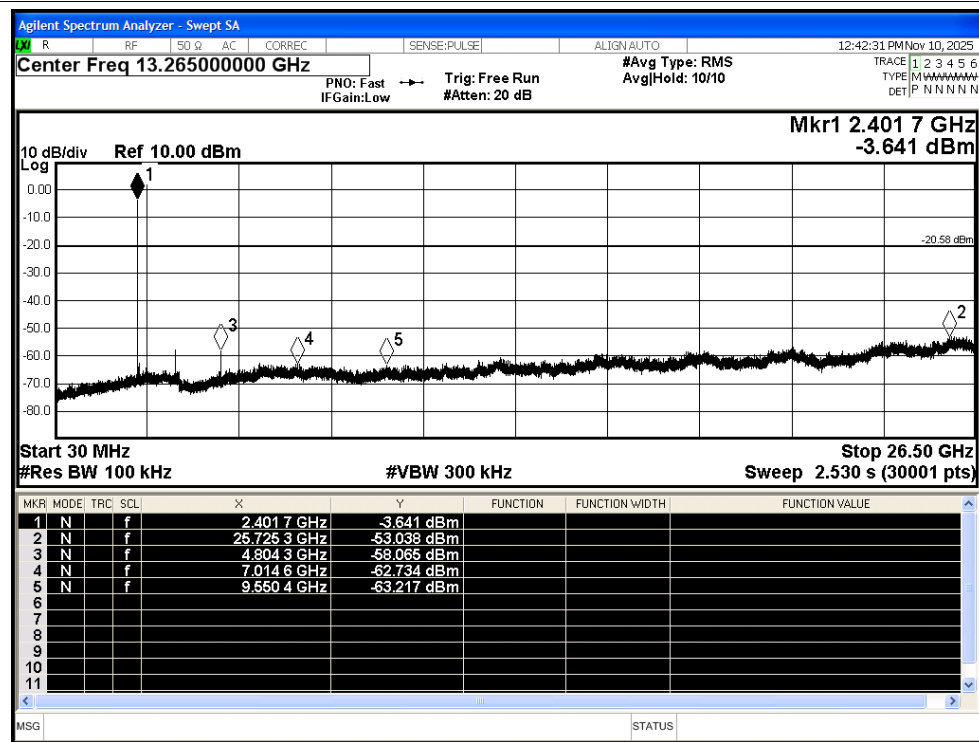
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission



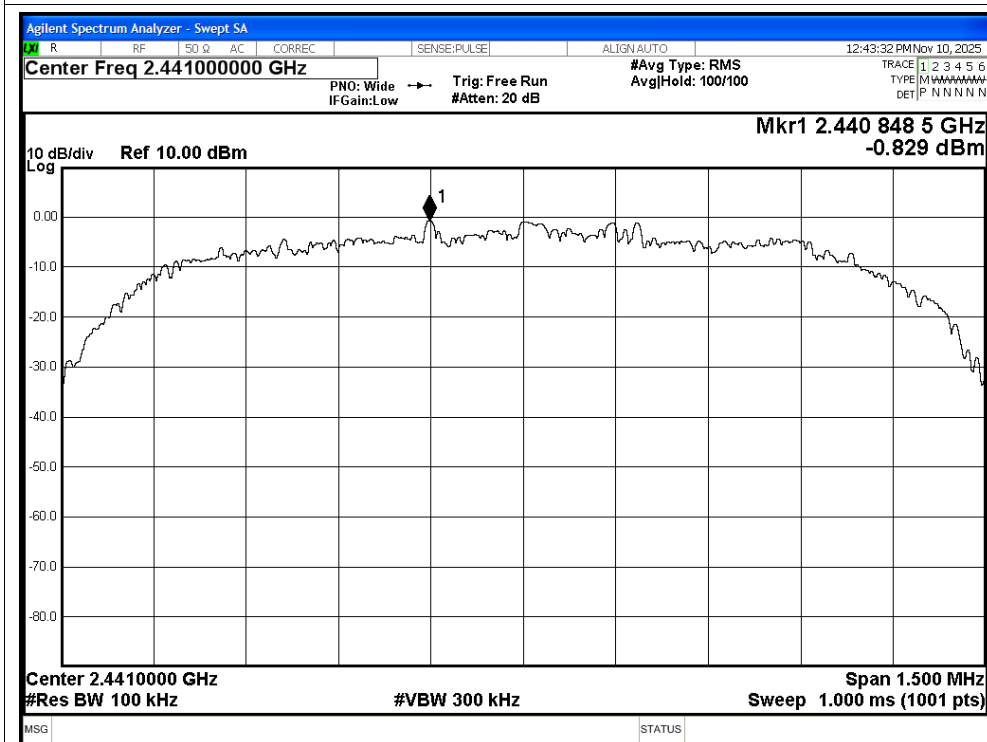
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref



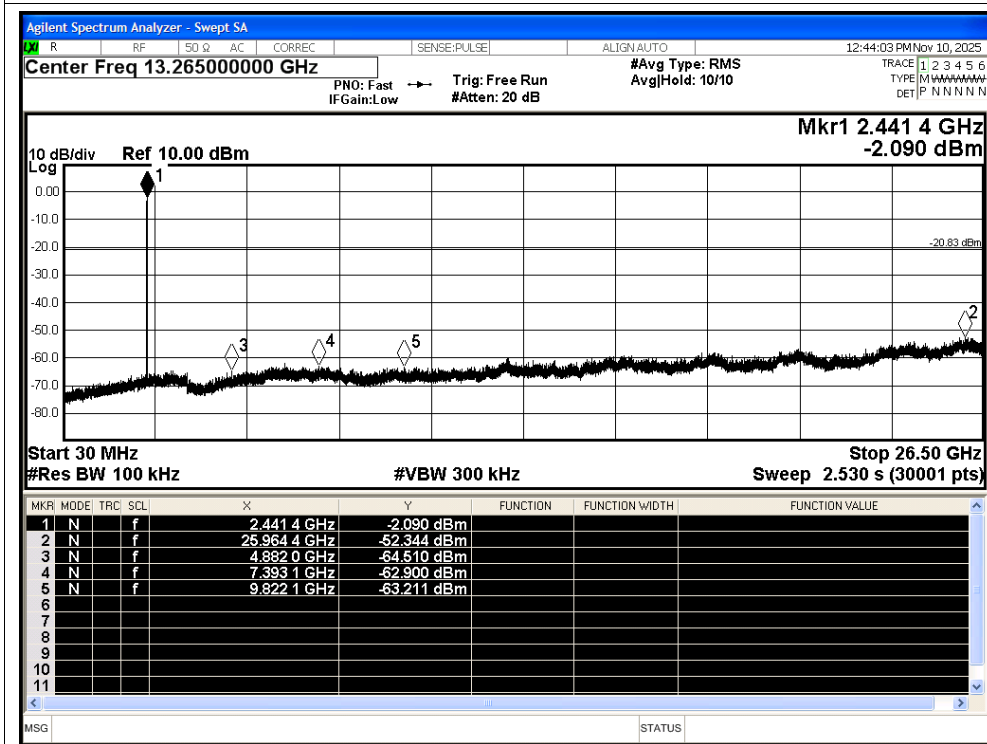
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission



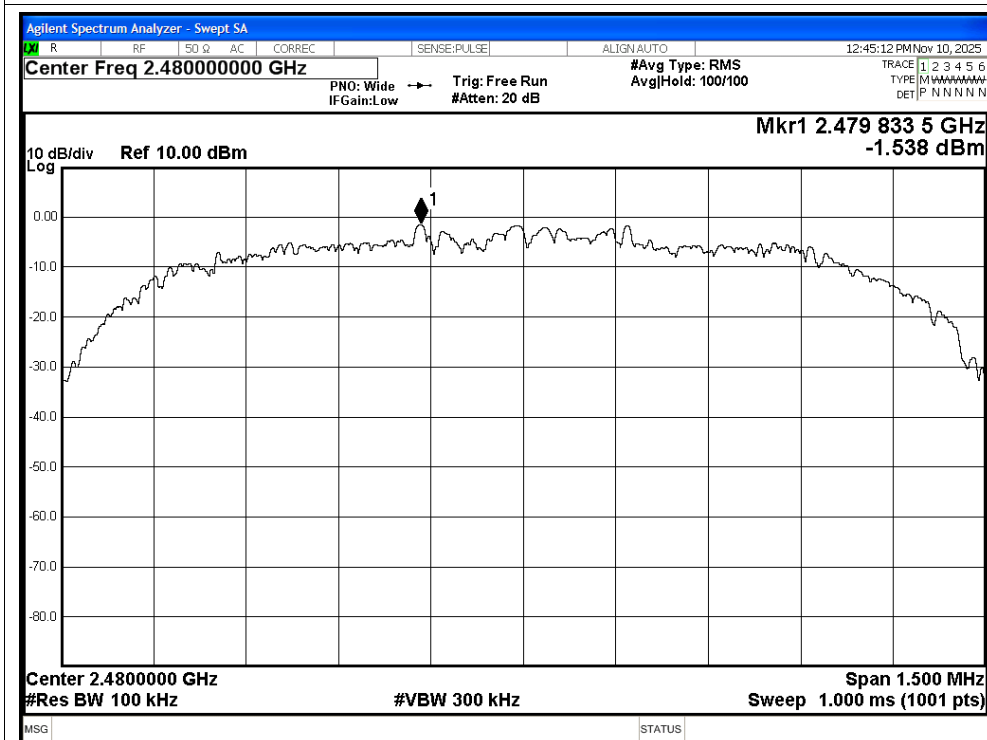
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



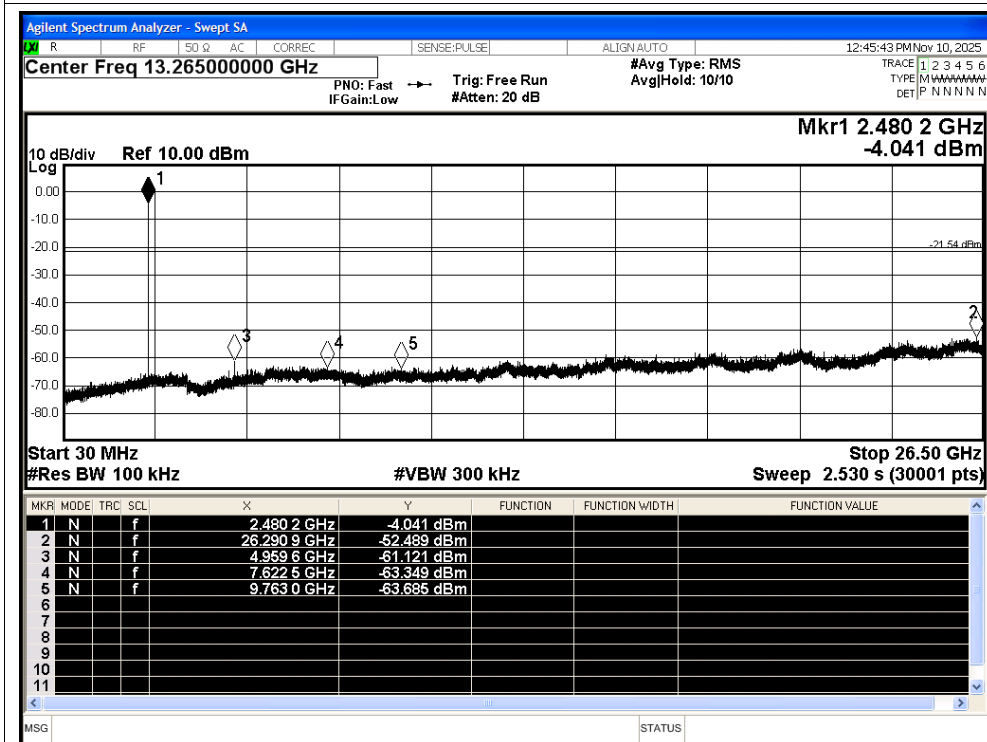
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission

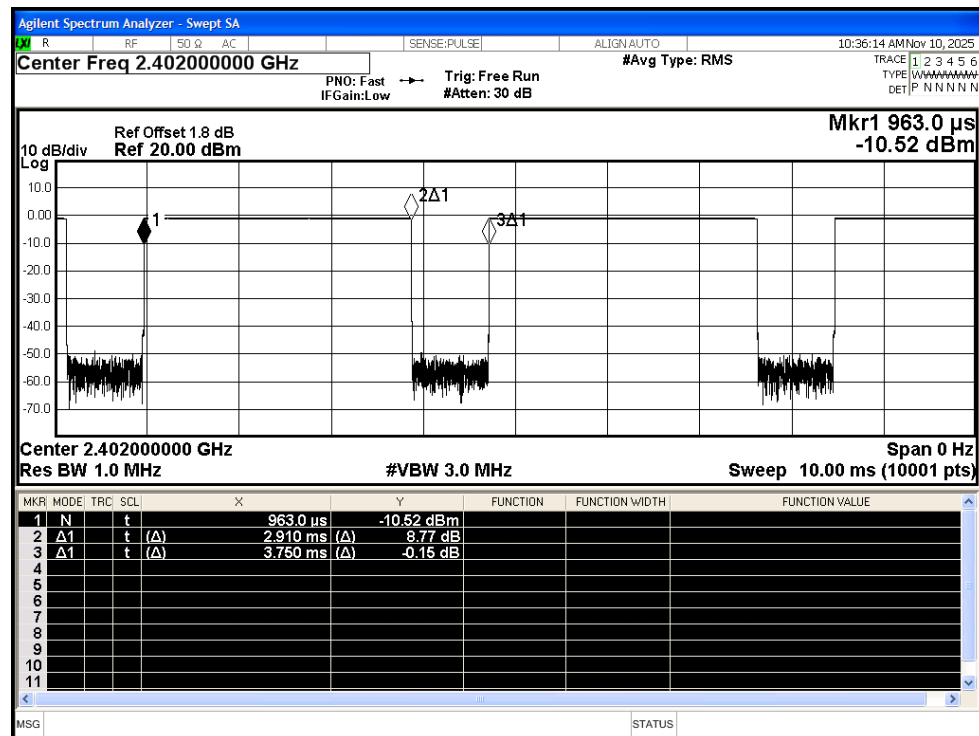


A.8 Duty Cycle

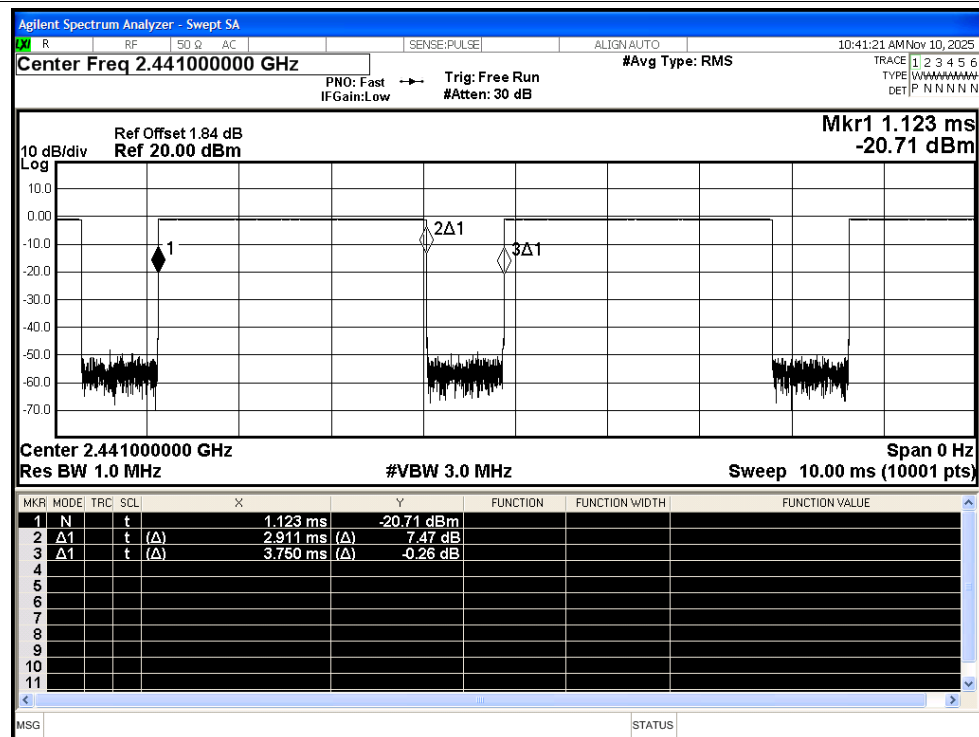
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	77.6	1.1	0.34
NVNT	1-DH5	2441	Ant1	77.63	1.1	0.34
NVNT	1-DH5	2480	Ant1	77.6	1.1	0.34
NVNT	2-DH5	2402	Ant1	77.28	1.12	0.35
NVNT	2-DH5	2441	Ant1	77.33	1.12	0.34
NVNT	2-DH5	2480	Ant1	77.28	1.12	0.35
NVNT	3-DH5	2402	Ant1	77.28	1.12	0.35
NVNT	3-DH5	2441	Ant1	77.23	1.12	0.35
NVNT	3-DH5	2480	Ant1	77.28	1.12	0.35

Test Graphs

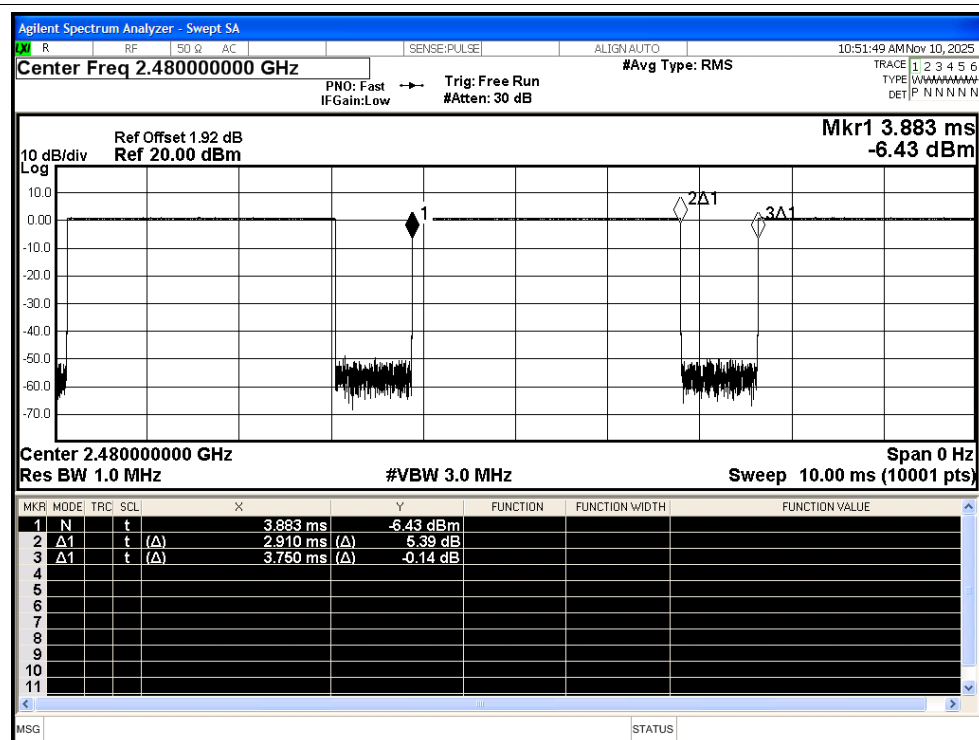
Duty Cycle NVNT 1-DH5 2402MHz Ant1



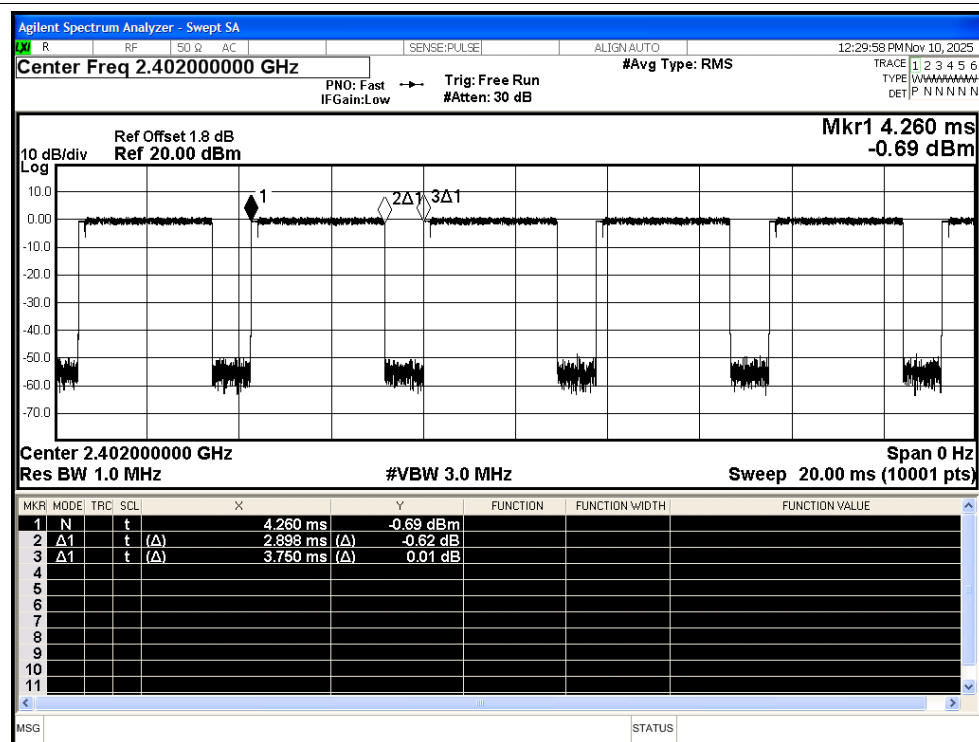
Duty Cycle NVNT 1-DH5 2441MHz Ant1



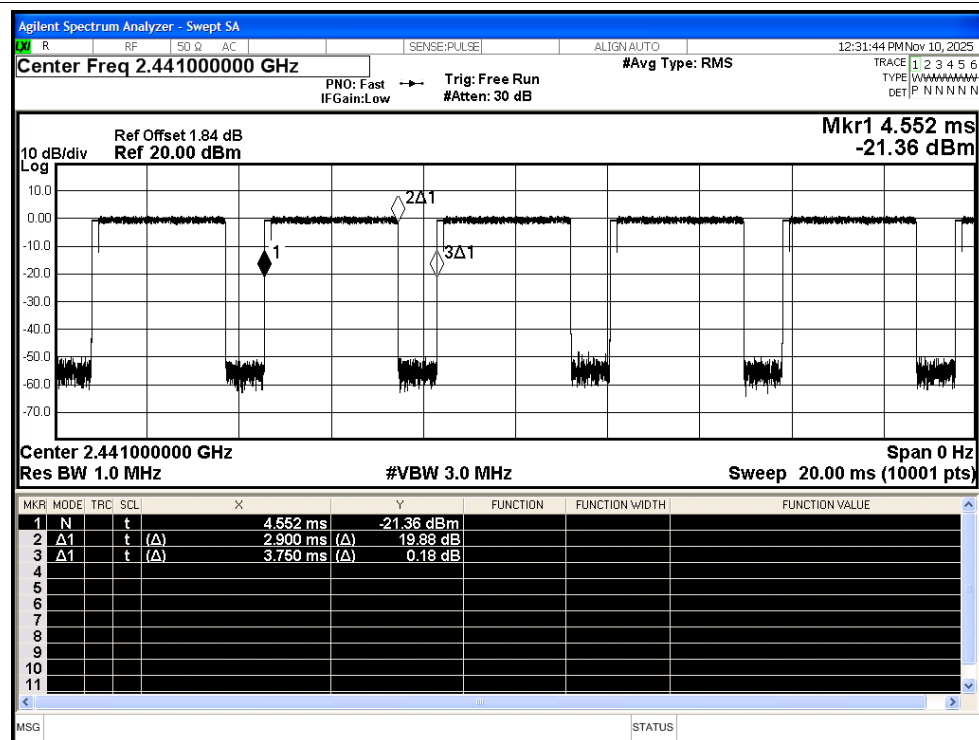
Duty Cycle NVNT 1-DH5 2480MHz Ant1



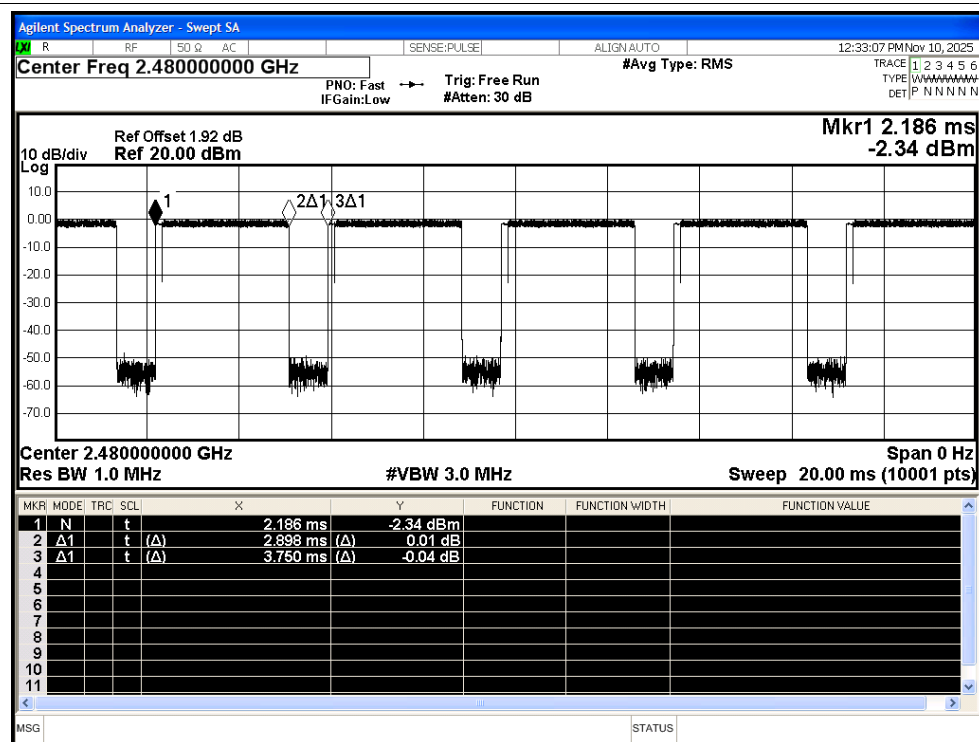
Duty Cycle NVNT 2-DH5 2402MHz Ant1



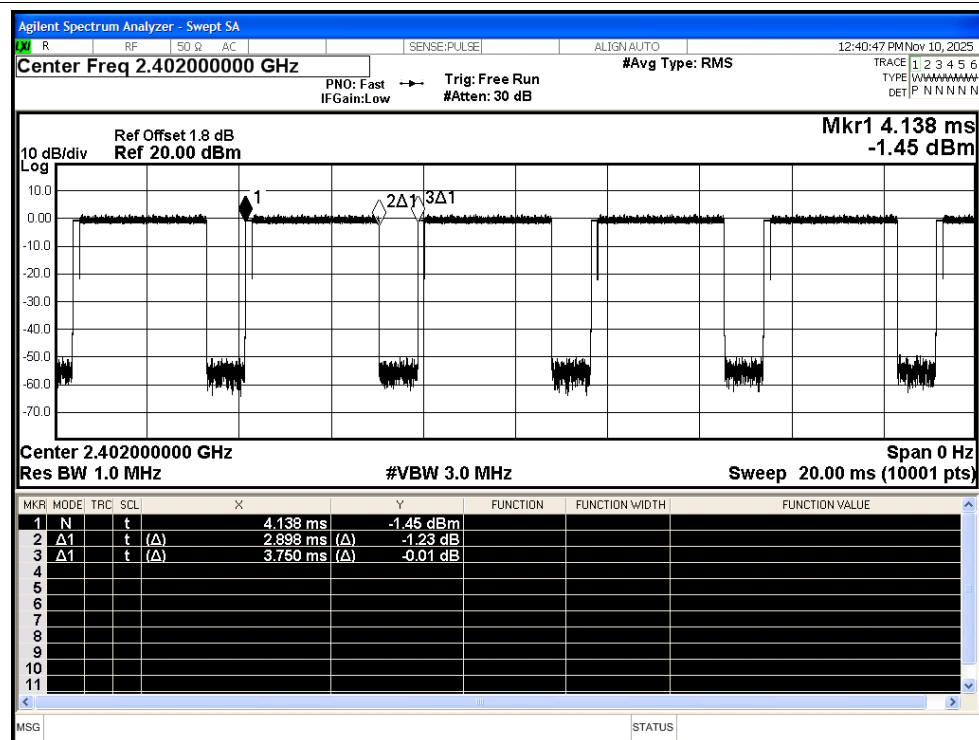
Duty Cycle NVNT 2-DH5 2441MHz Ant1



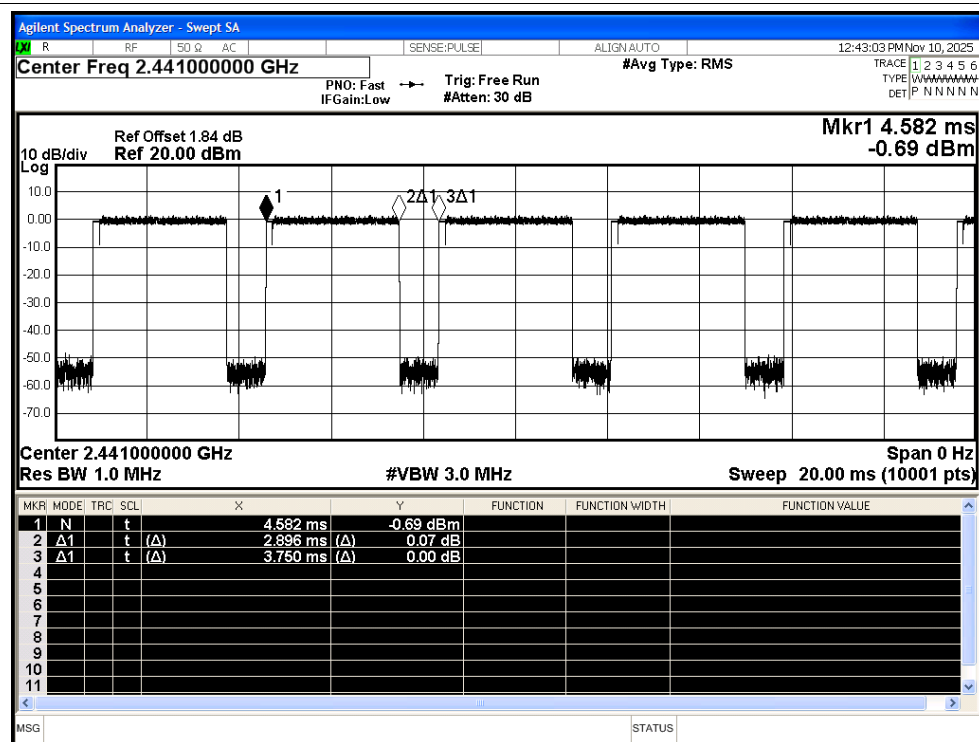
Duty Cycle NVNT 2-DH5 2480MHz Ant1

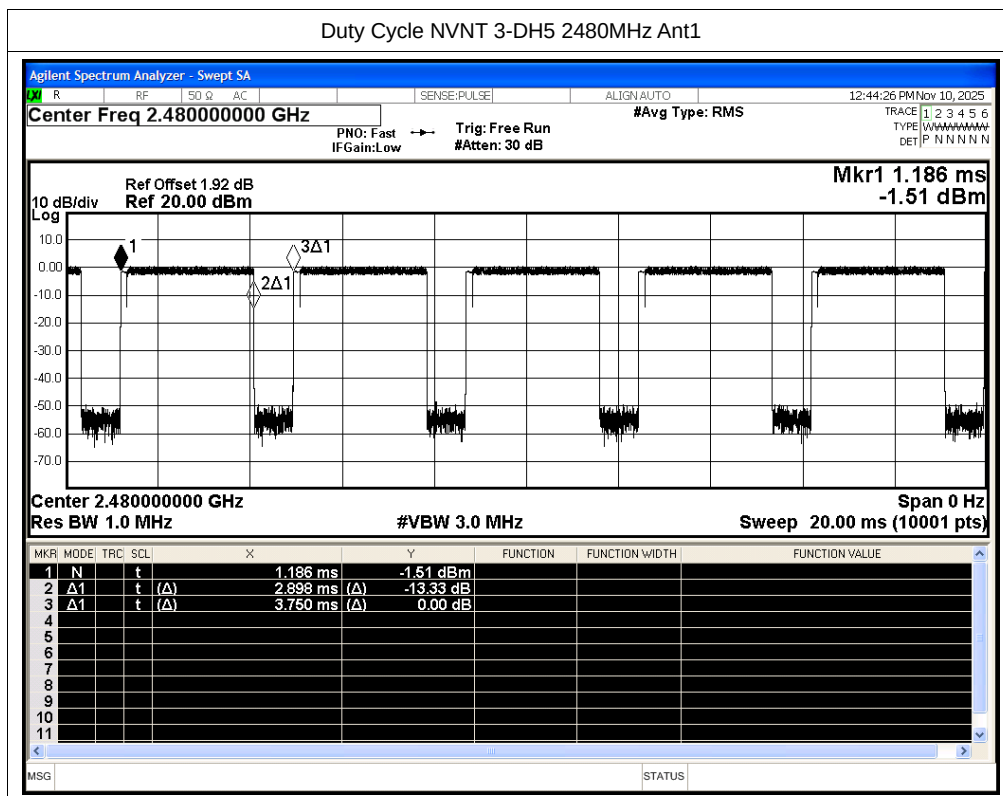


Duty Cycle NVNT 3-DH5 2402MHz Ant1



Duty Cycle NVNT 3-DH5 2441MHz Ant1



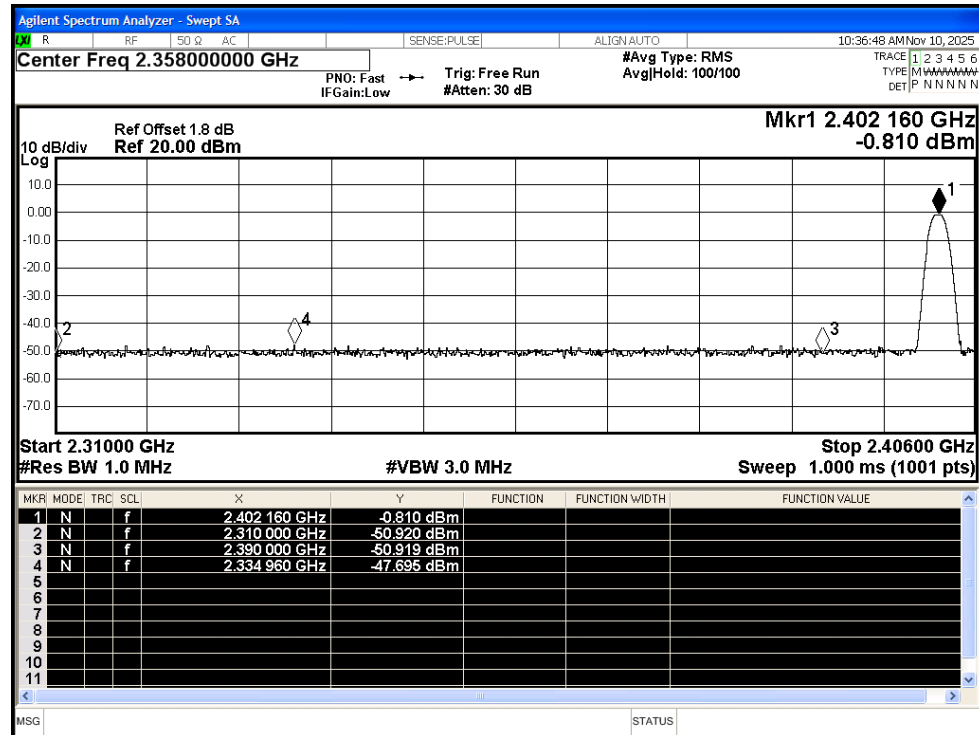


A.9 Restrict Band

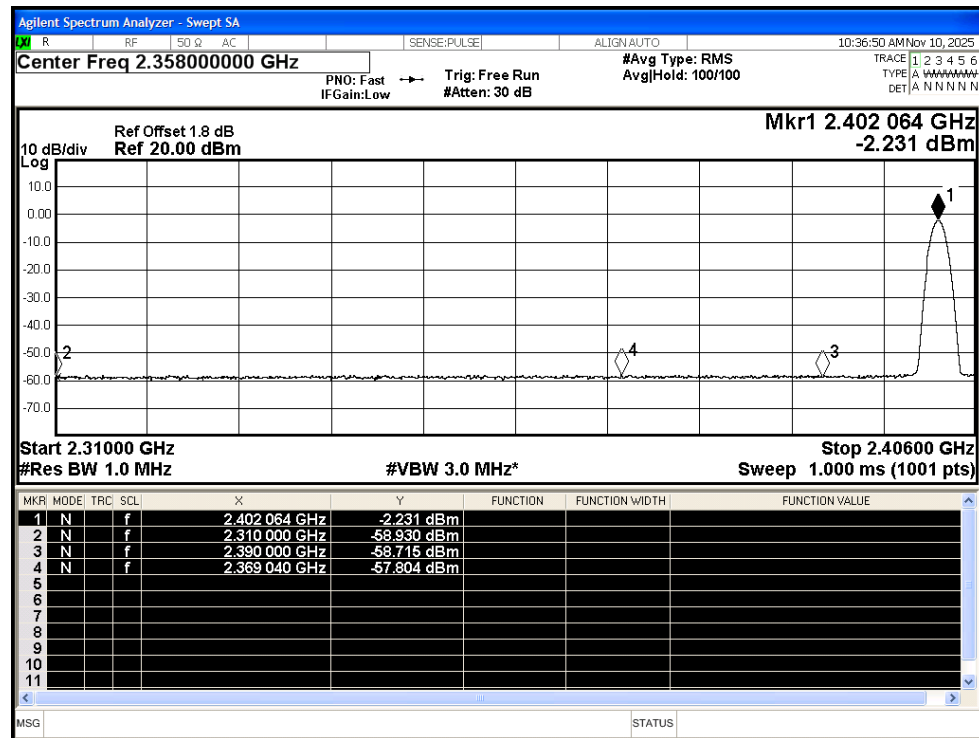
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBUV/m)	Detector	Limit (dBUV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-50.92	2	-	46.34	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-58.93	2	1.1	39.43	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2334.96	-47.7	2	-	49.56	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2369.04	-57.8	2	1.1	40.56	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-50.92	2	-	46.34	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-58.72	2	1.1	39.64	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-49.62	2	-	47.64	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-57.77	2	1.1	40.59	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2487.688	-45.2	2	-	52.06	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2487.784	-57.07	2	1.1	41.29	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-50.64	2	-	46.62	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-58.57	2	1.1	39.79	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-51.64	2	-	45.62	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-59.05	2	1.12	39.33	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2337.456	-48.01	2	-	49.25	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2343.696	-57.79	2	1.12	40.59	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-51.83	2	-	45.43	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-58.53	2	1.12	39.85	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-50.53	2	-	46.73	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-57.13	2	1.12	41.25	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2493.112	-45.99	2	-	51.27	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2484.784	-57.05	2	1.12	41.33	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-51.31	2	-	45.95	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-58.5	2	1.12	39.88	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-51.95	2	-	45.31	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-58.74	2	1.12	39.64	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2333.136	-47.82	2	-	49.44	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2350.128	-57.69	2	1.12	40.69	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-49.93	2	-	47.33	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-58.76	2	1.12	39.62	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-48.23	2	-	49.03	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-57.3	2	1.12	41.08	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2484.856	-46.04	2	-	51.22	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2486.608	-57.28	2	1.12	41.1	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-51.47	2	-	45.79	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-58.53	2	1.12	39.85	Average	54	Pass

Test Graphs

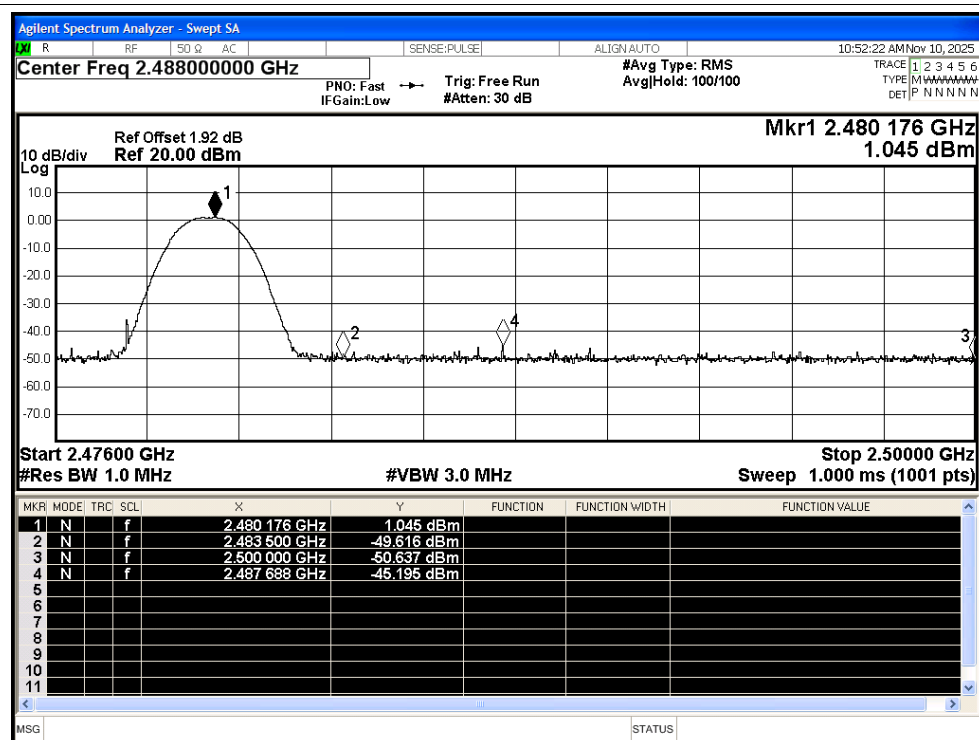
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak



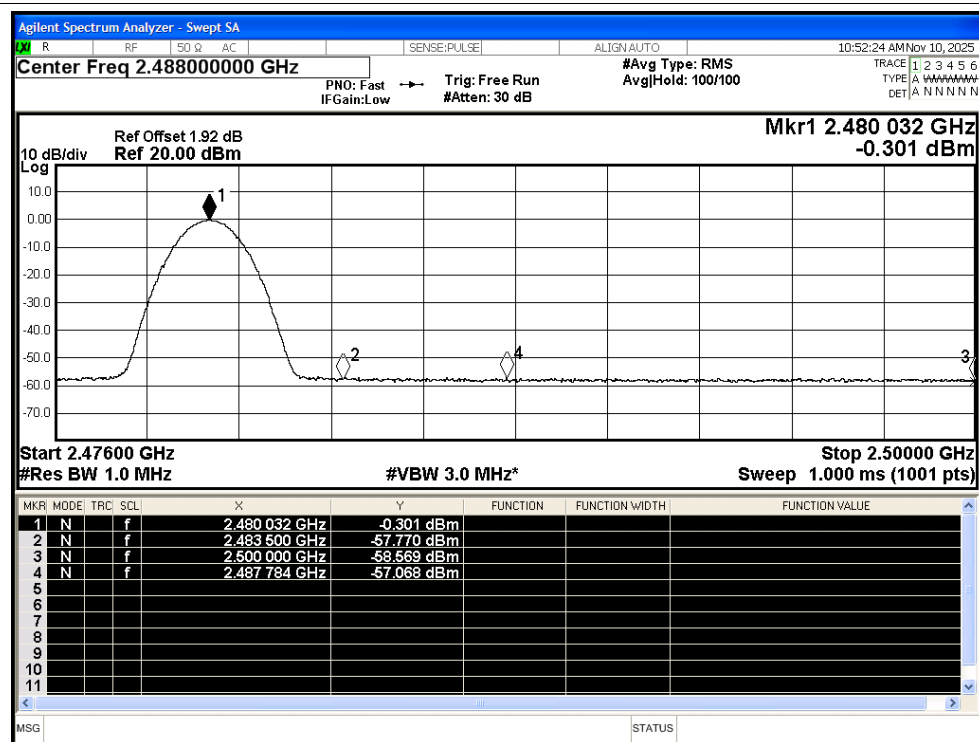
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average



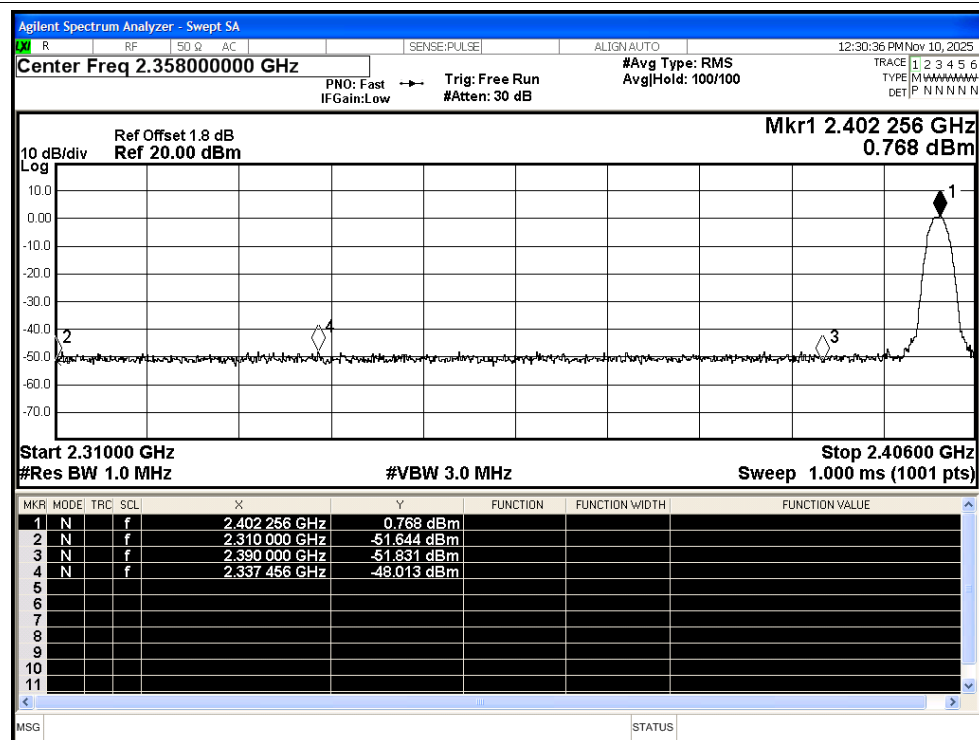
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak



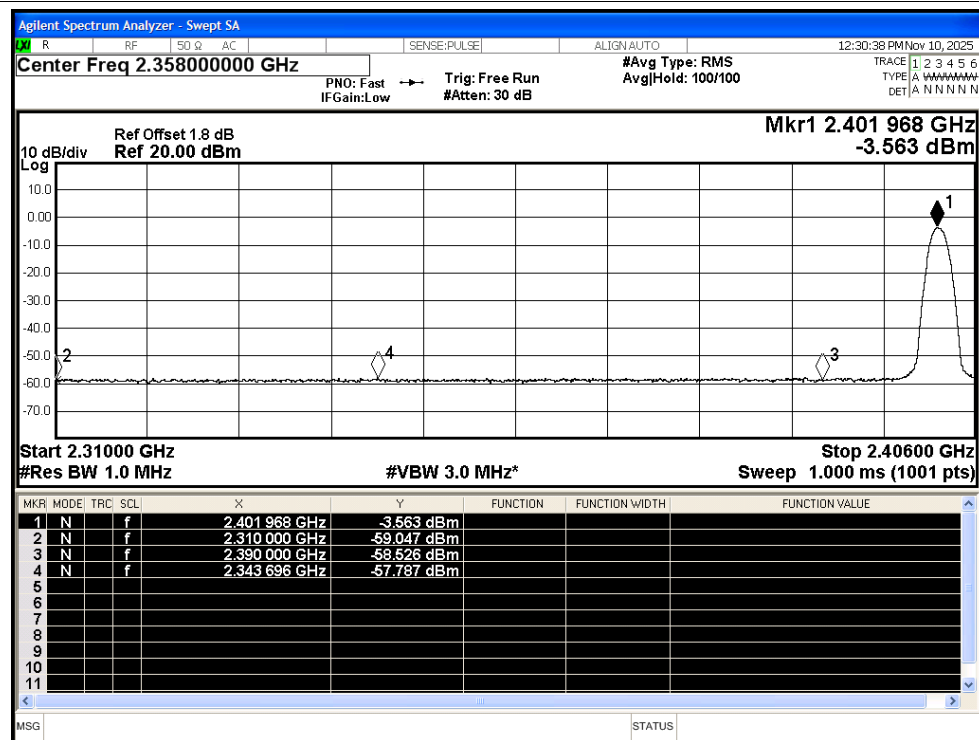
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average



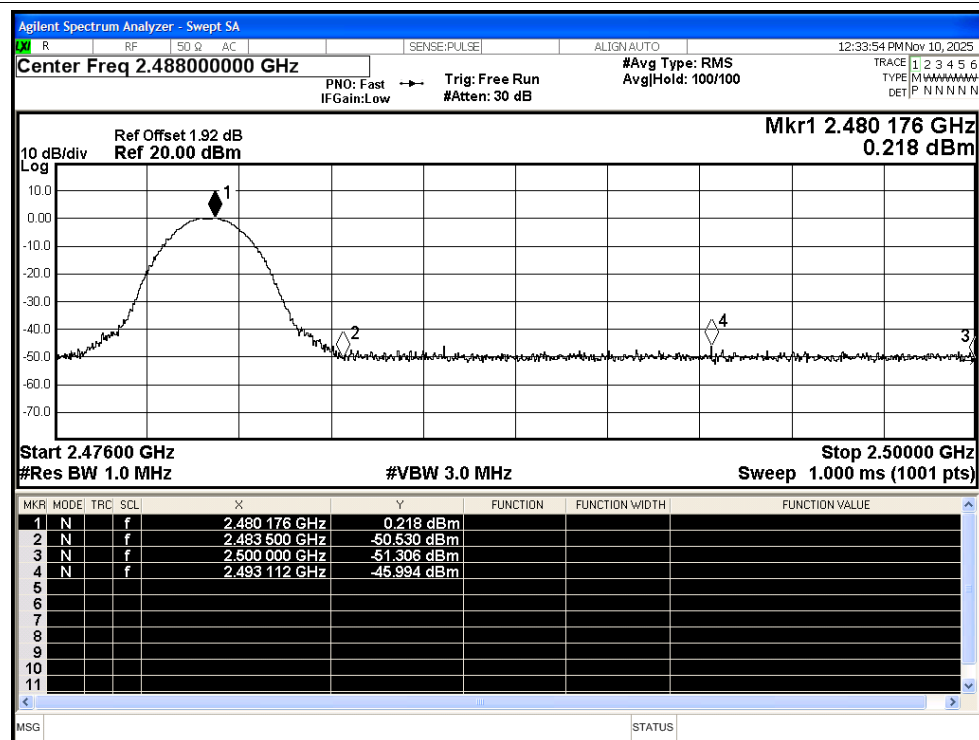
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak



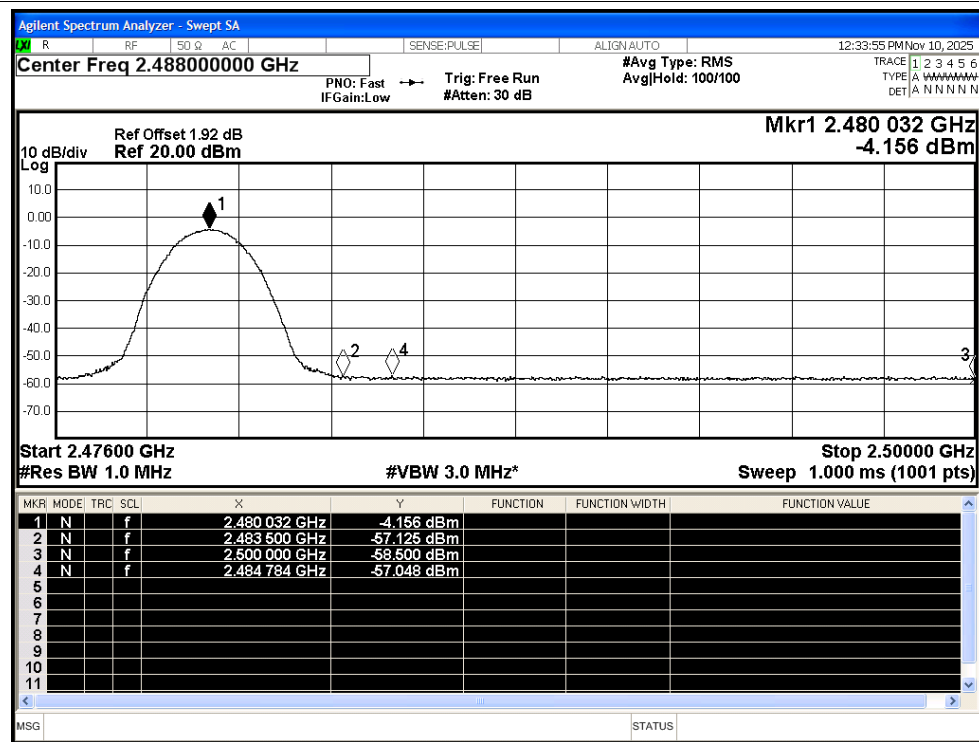
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average



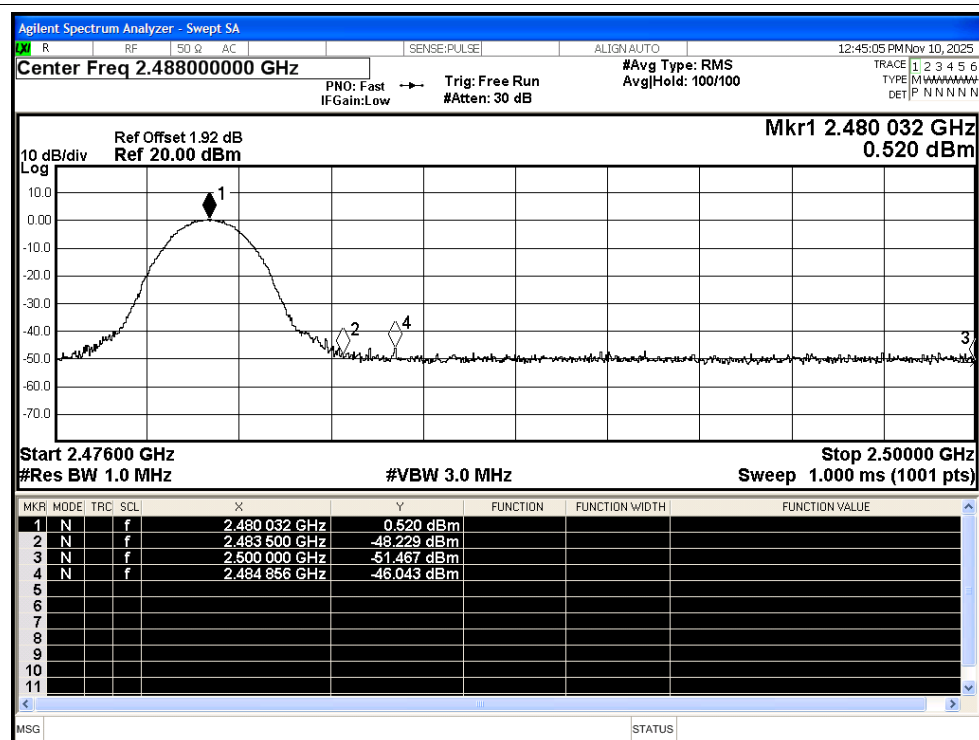
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Peak



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



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



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

