

Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Portable Speaker

Test Model: Sonic Boom

Environmental Conditions

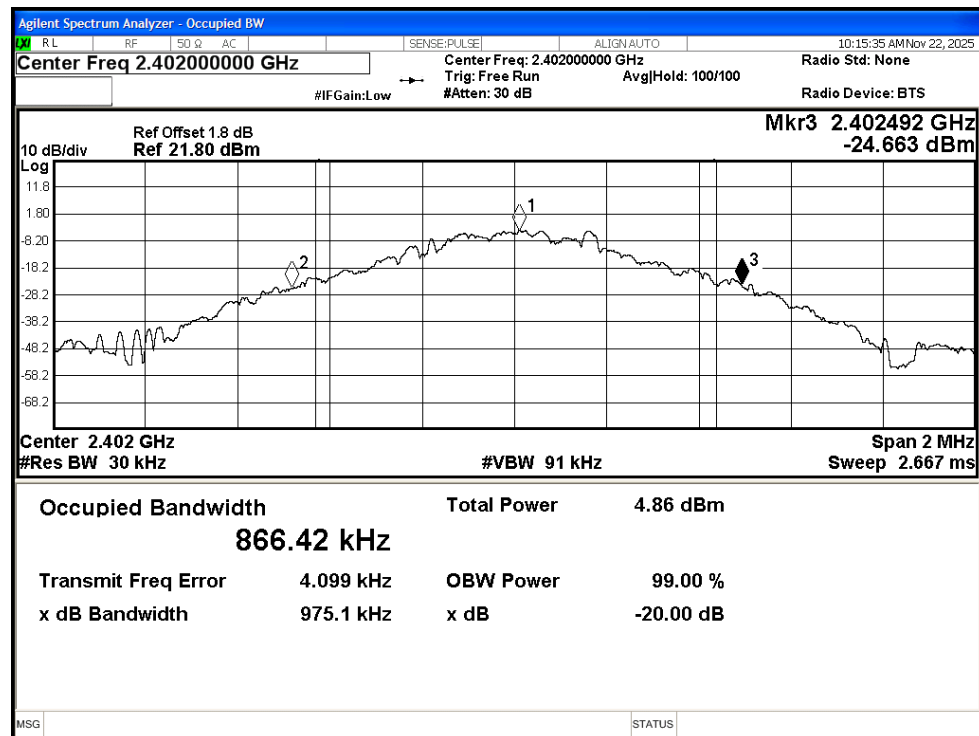
Temperature:	24.1°C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Yan Chen
Supervised by:	Fengliu Tang

A.1 -20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.975	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.958	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.948	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.286	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.284	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.311	N/A	Pass
NVNT	3-DH5	2402	Ant1	1.285	N/A	Pass
NVNT	3-DH5	2441	Ant1	1.288	N/A	Pass
NVNT	3-DH5	2480	Ant1	1.312	N/A	Pass

Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



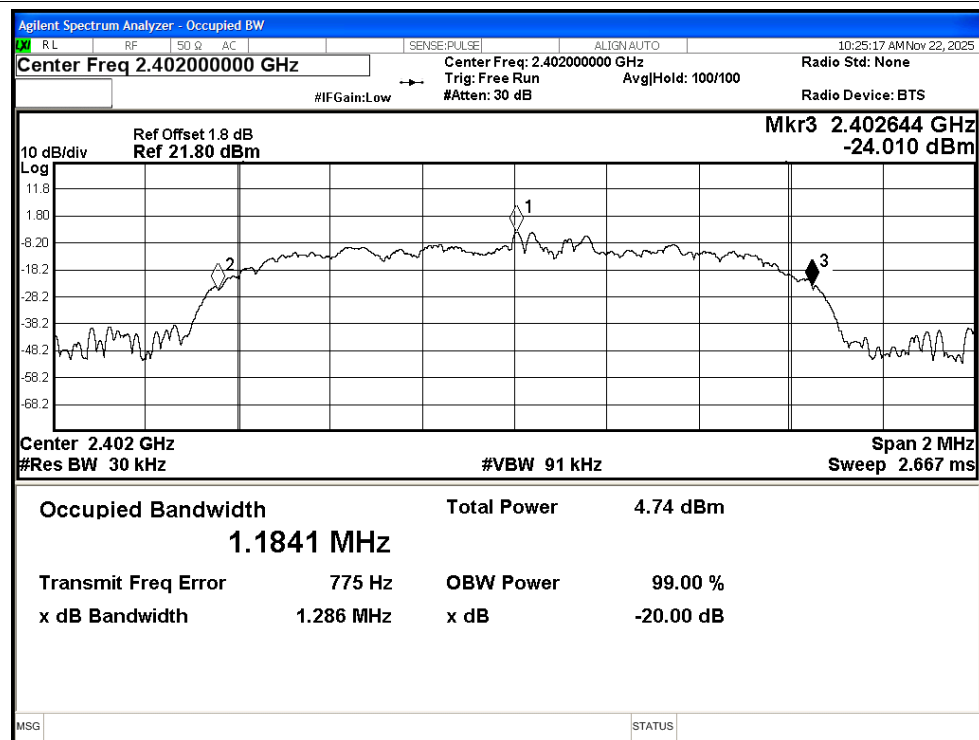
-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



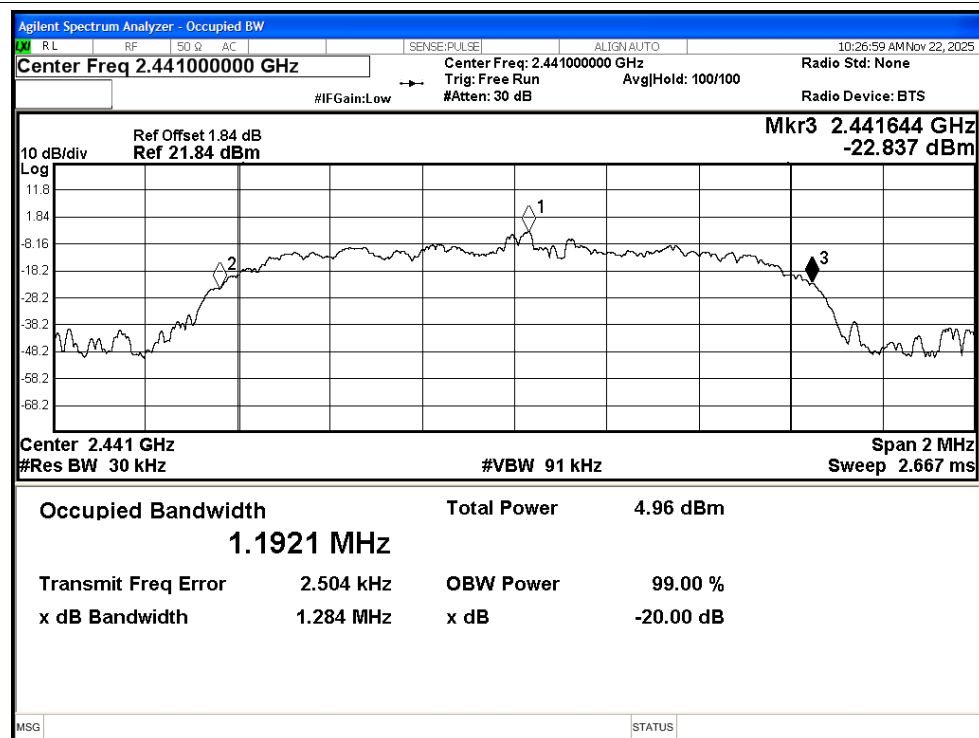
-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



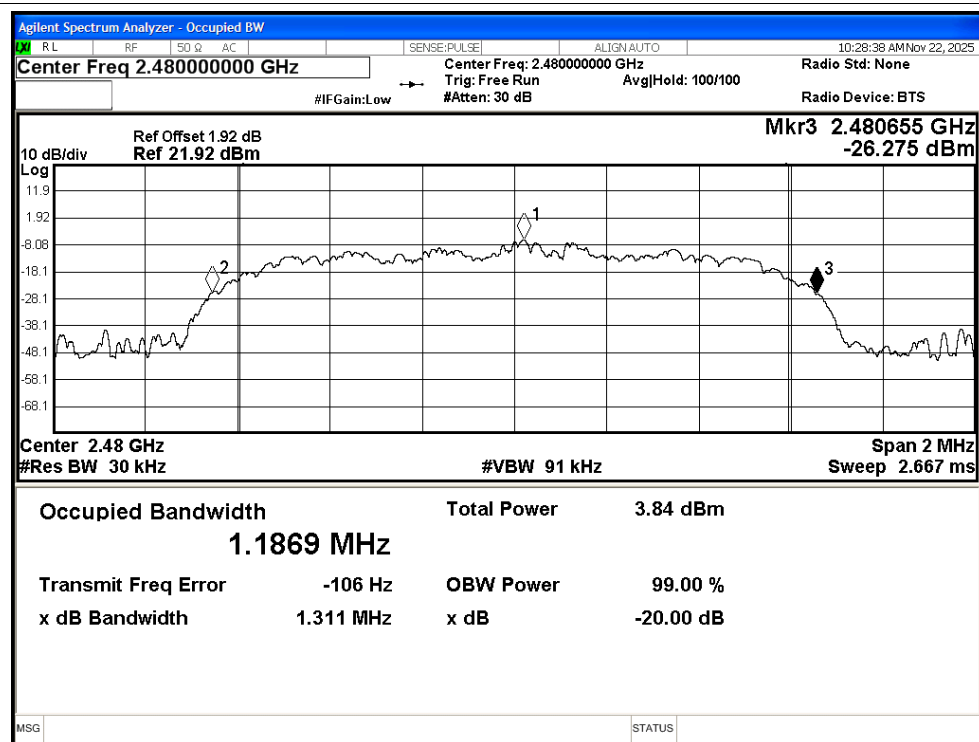
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



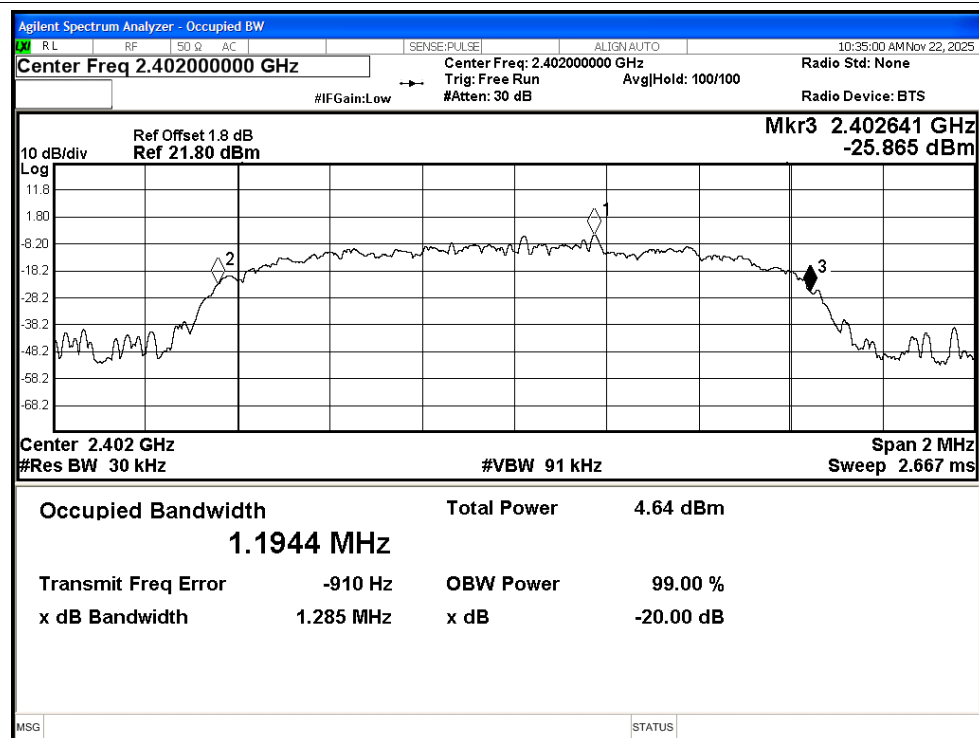
-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



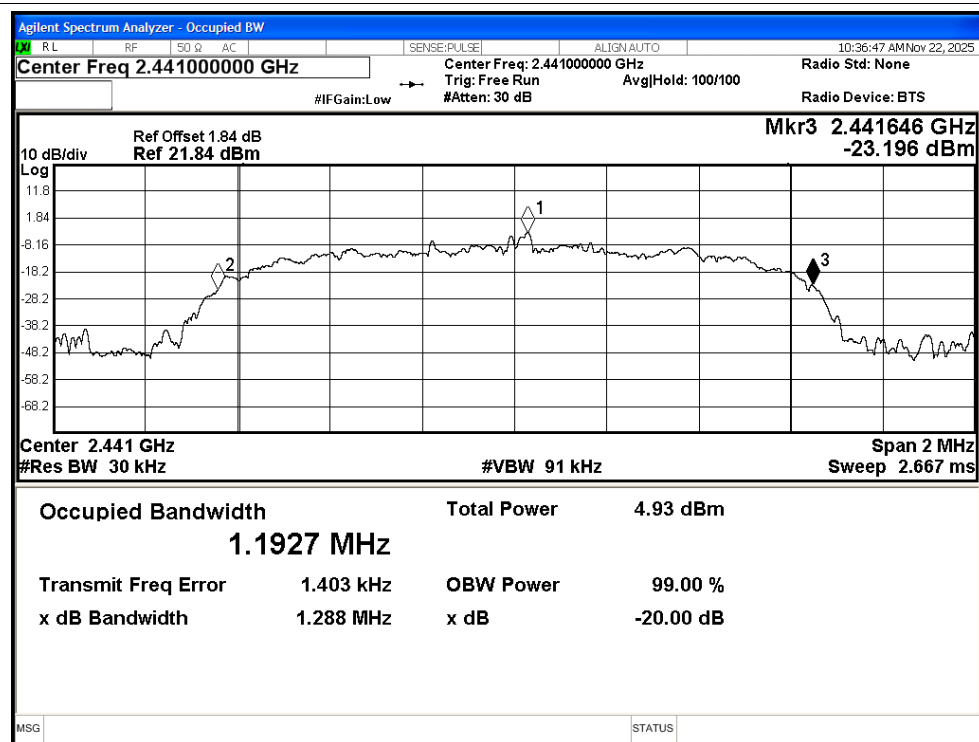
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

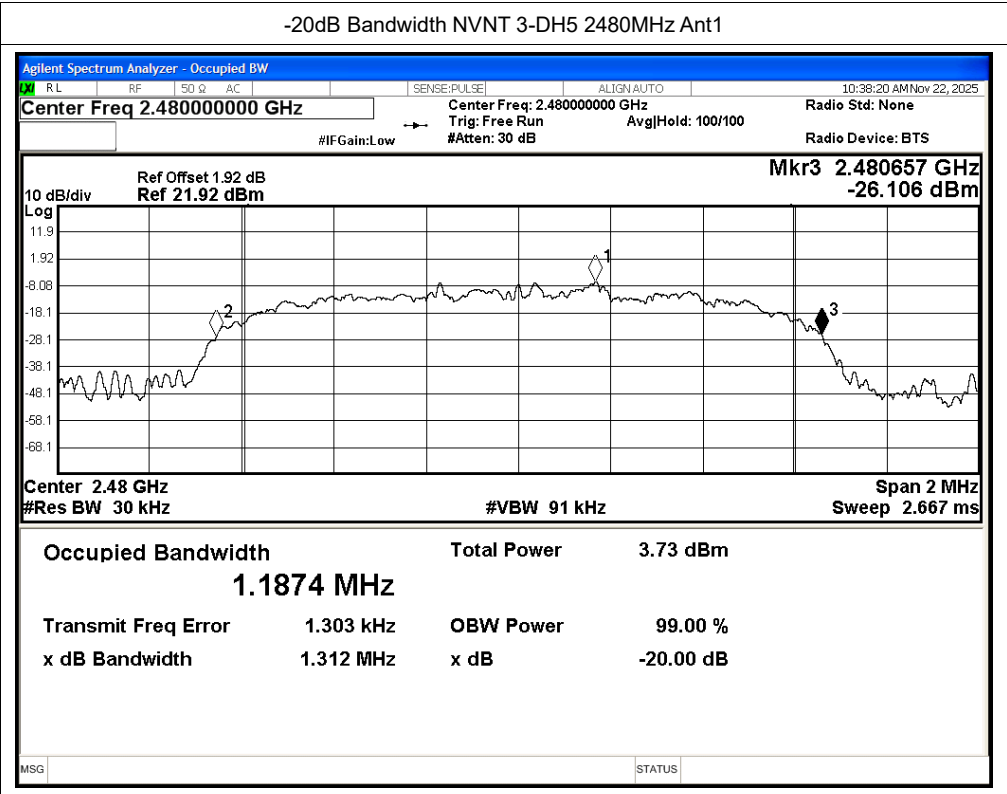


-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



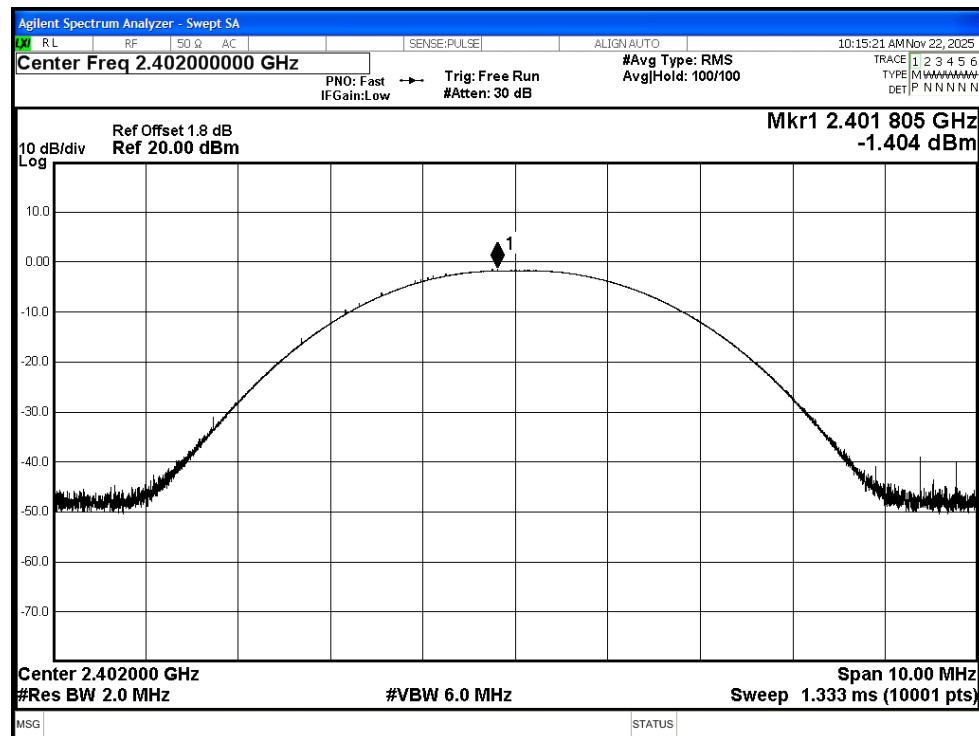


A.2 Maximum Peak Conducted Output Power

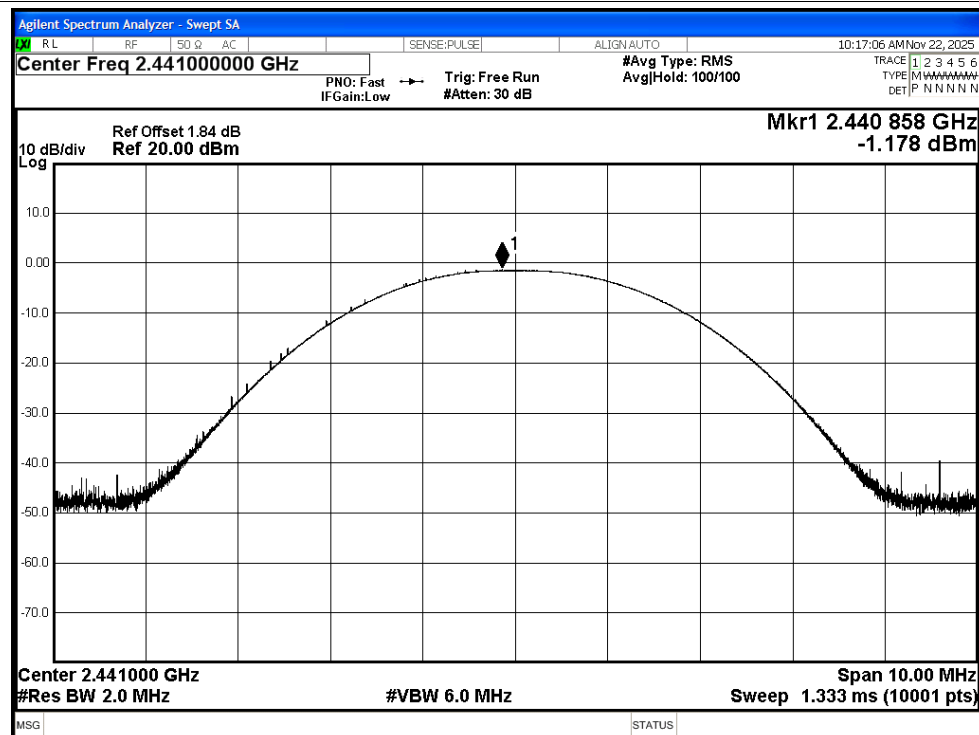
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	-1.4	21	Pass
NVNT	1-DH5	2441	Ant1	-1.18	21	Pass
NVNT	1-DH5	2480	Ant1	-2.06	21	Pass
NVNT	2-DH5	2402	Ant1	0.44	21	Pass
NVNT	2-DH5	2441	Ant1	0.74	21	Pass
NVNT	2-DH5	2480	Ant1	-0.21	21	Pass
NVNT	3-DH5	2402	Ant1	0.8	21	Pass
NVNT	3-DH5	2441	Ant1	1.11	21	Pass
NVNT	3-DH5	2480	Ant1	0.07	21	Pass

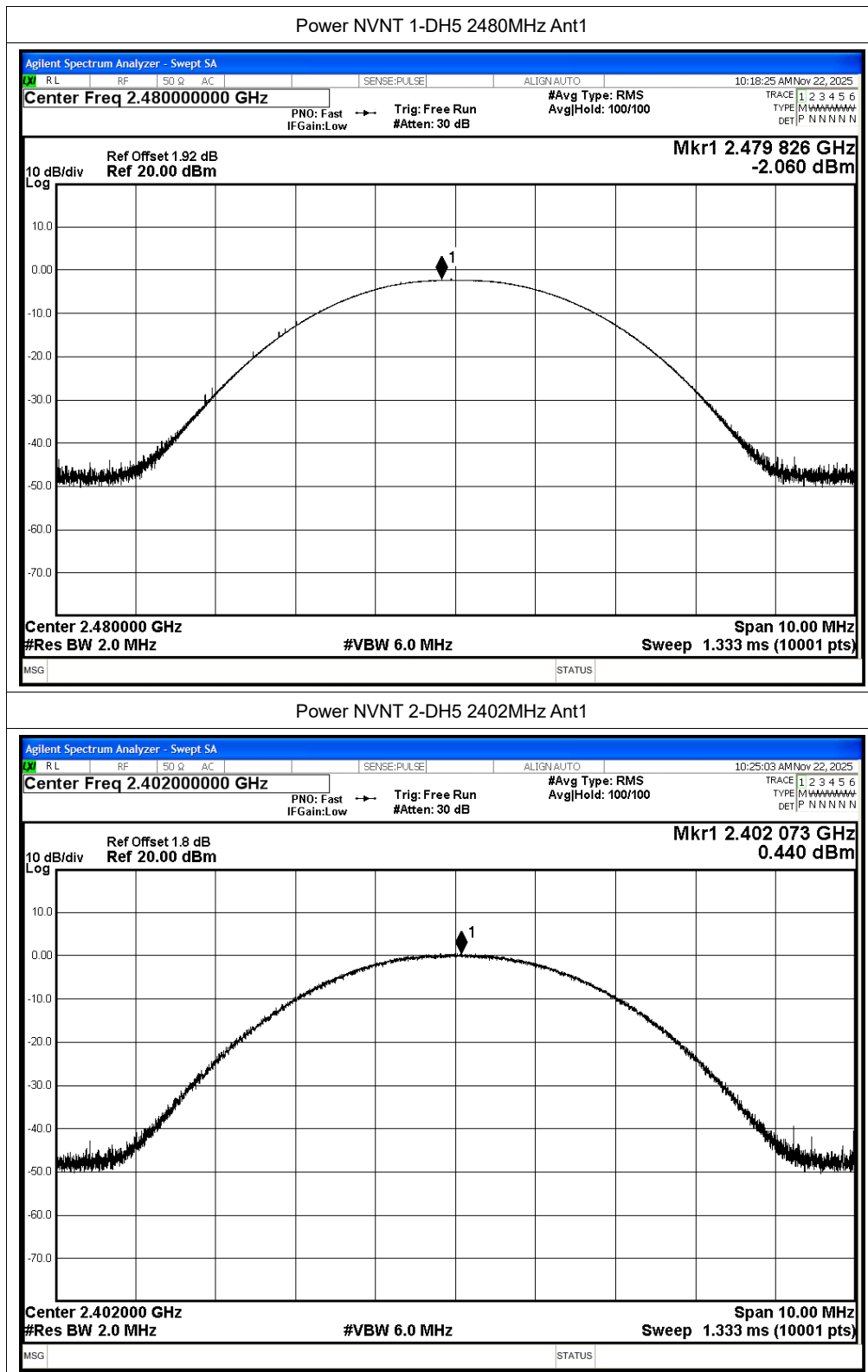
Test Graphs

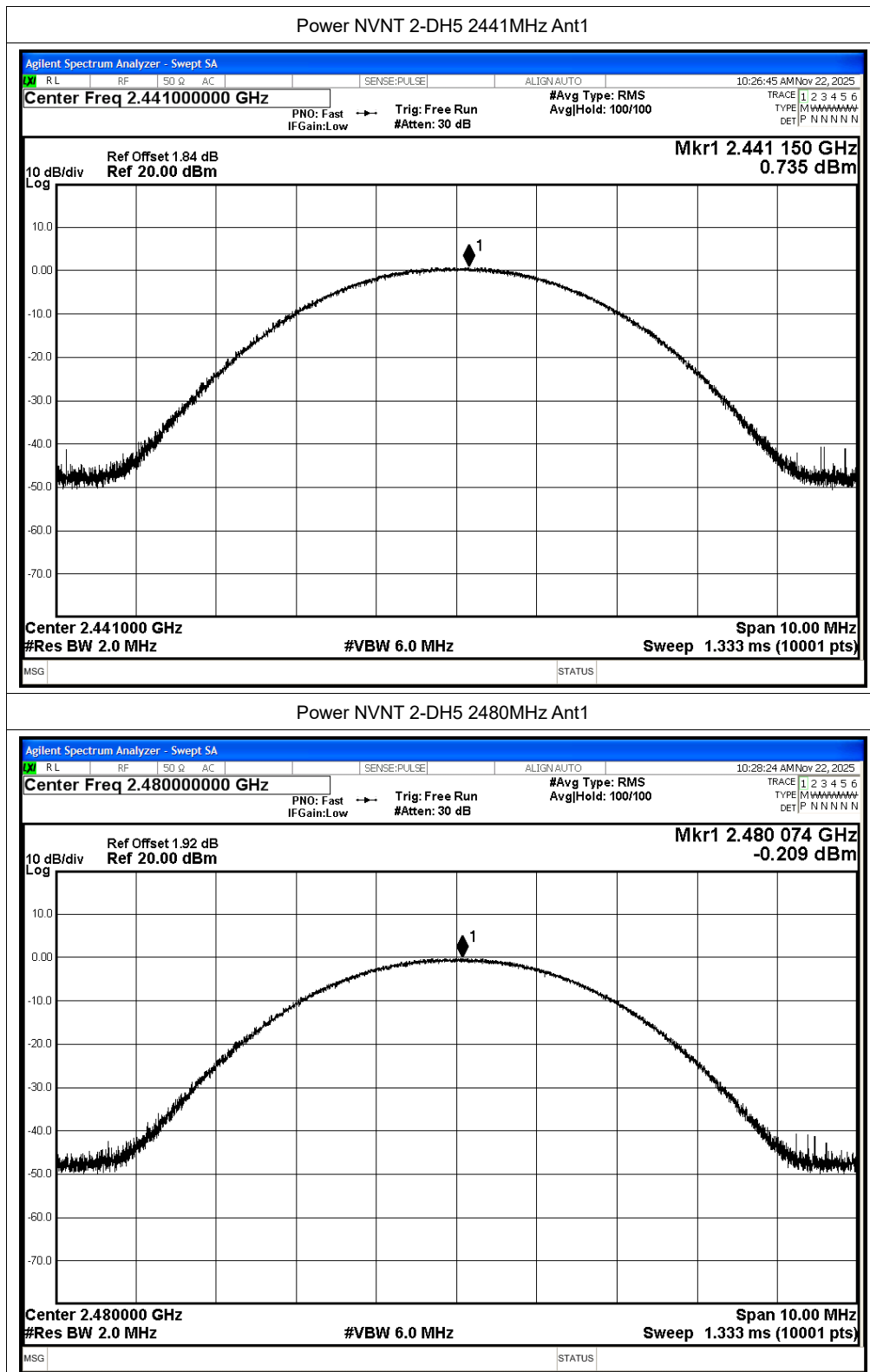
Power NVNT 1-DH5 2402MHz Ant1

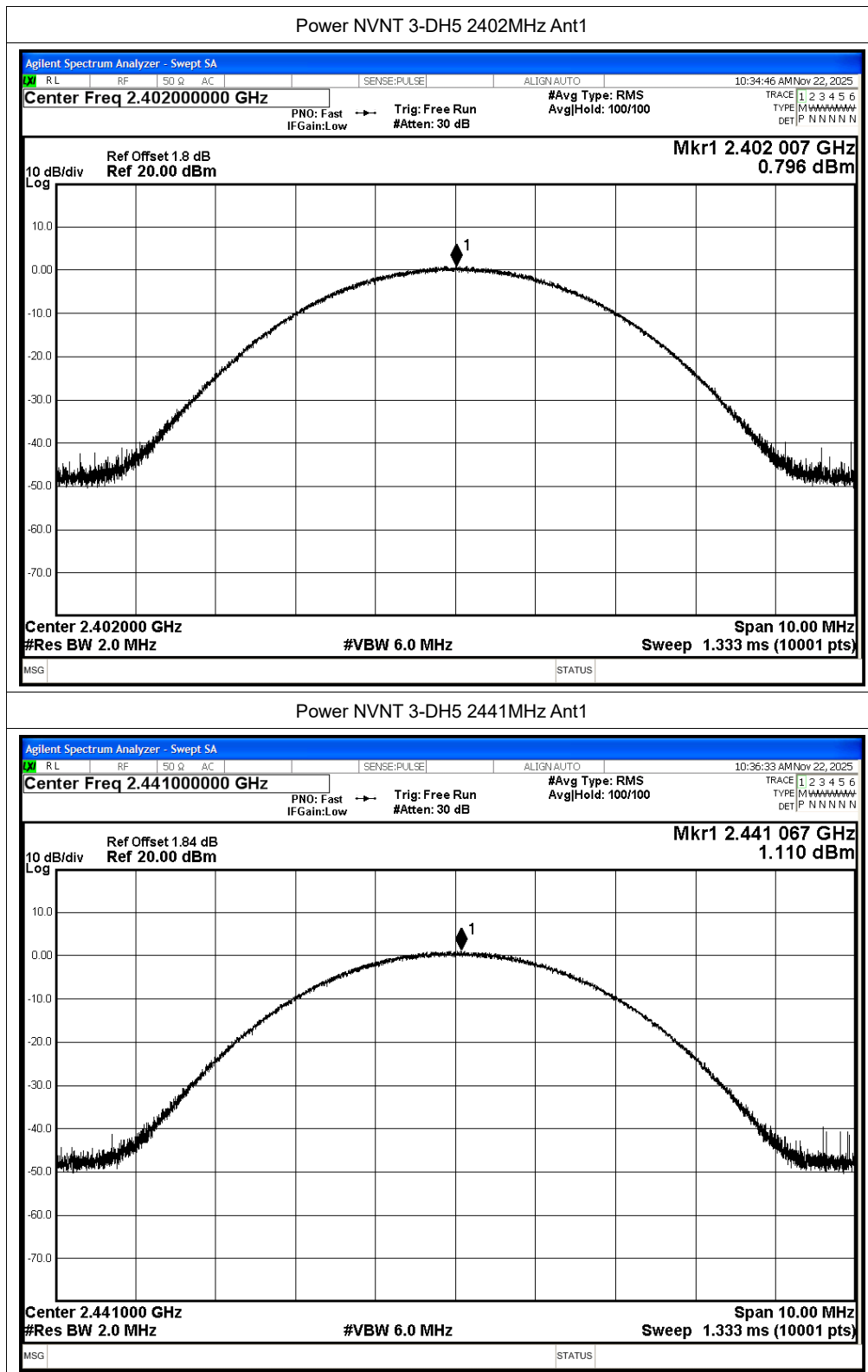


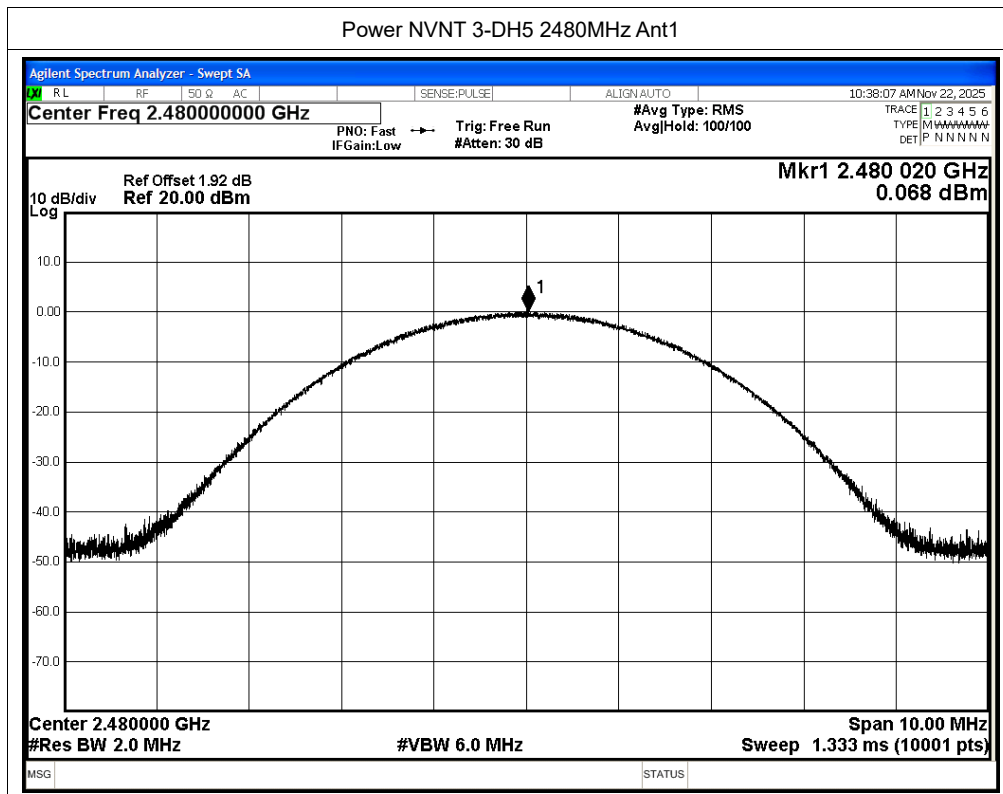
Power NVNT 1-DH5 2441MHz Ant1









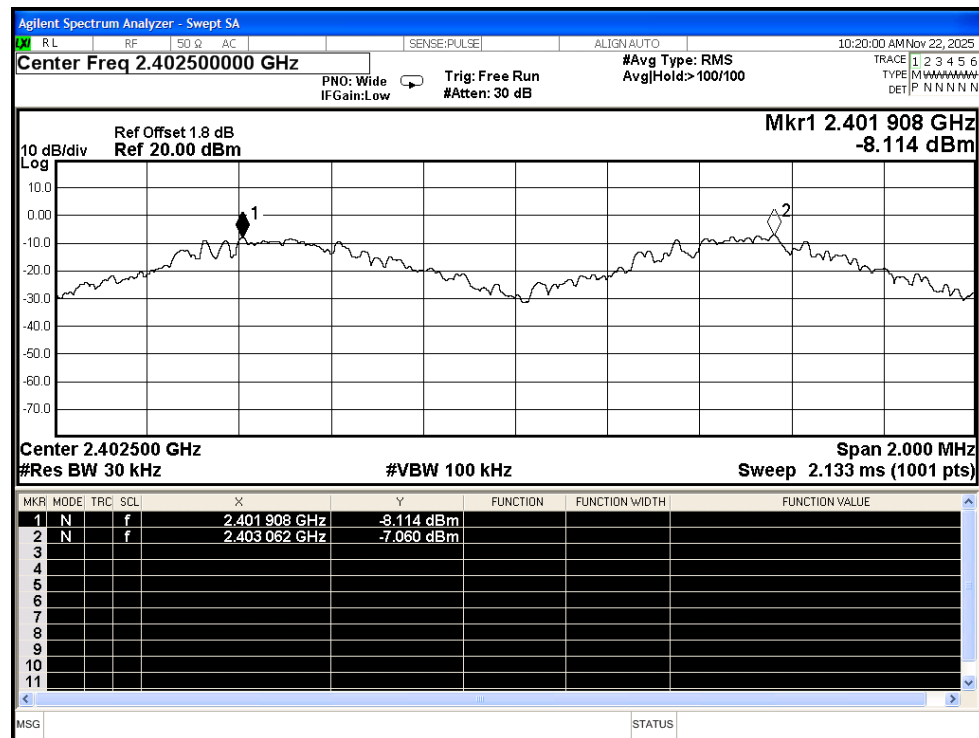


A.3 Carrier Frequencies Separation

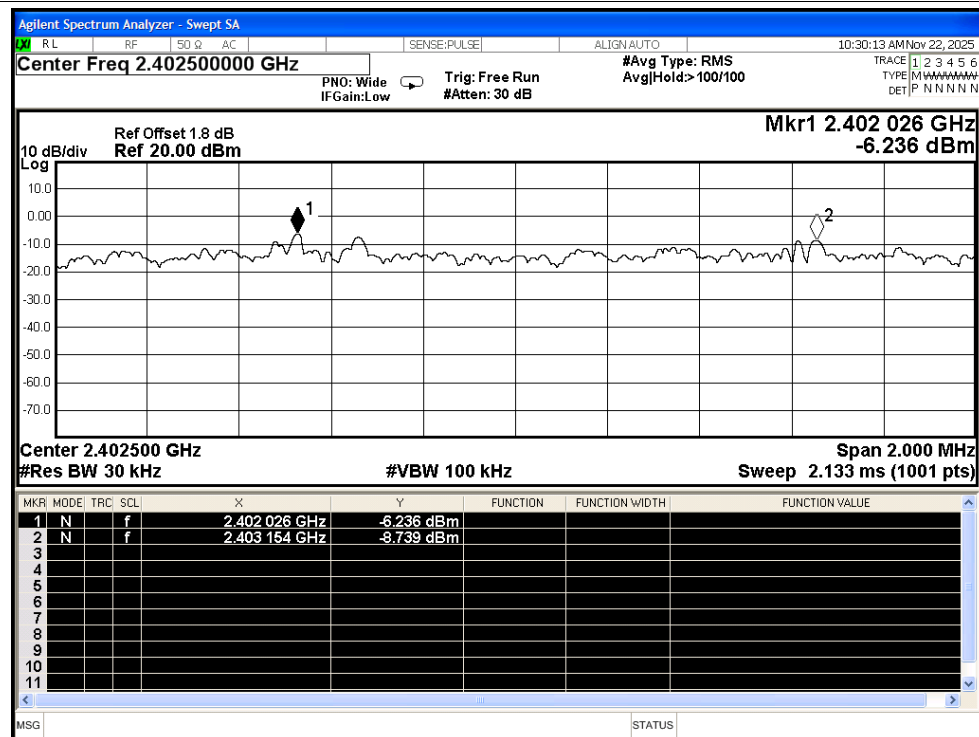
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2401.908	2403.062	1.154	0.650	Pass
NVNT	2-DH5	Ant1	2402.026	2403.154	1.128	0.874	Pass
NVNT	3-DH5	Ant1	2402.02	2403.03	1.01	0.875	Pass

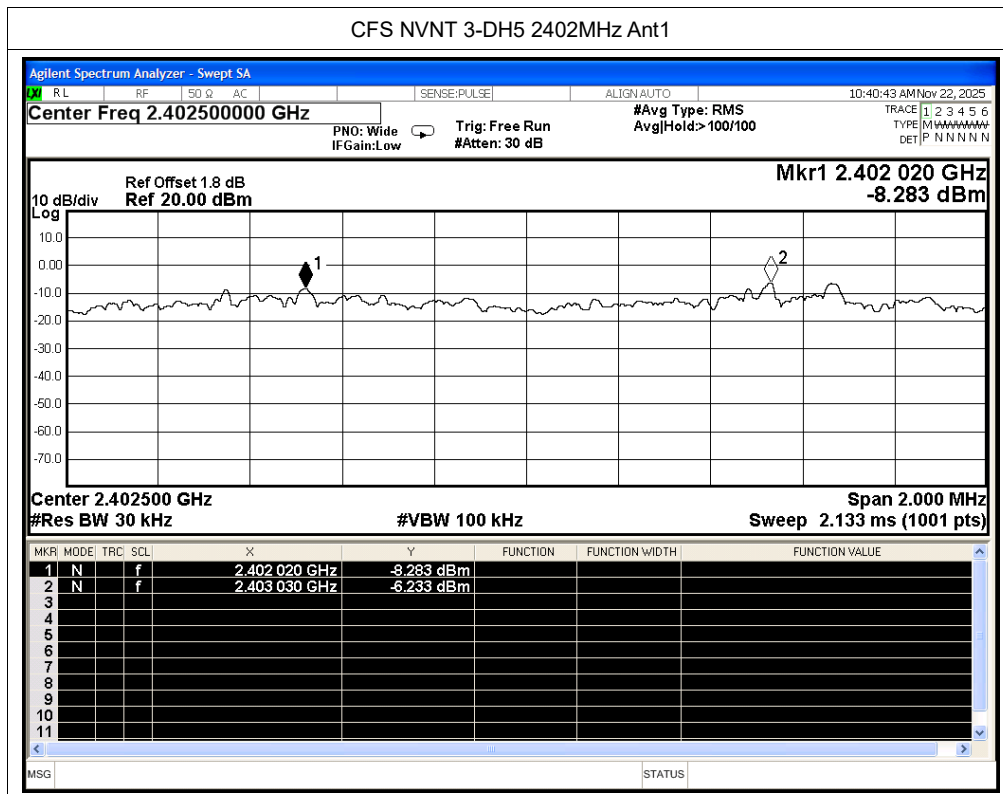
Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1



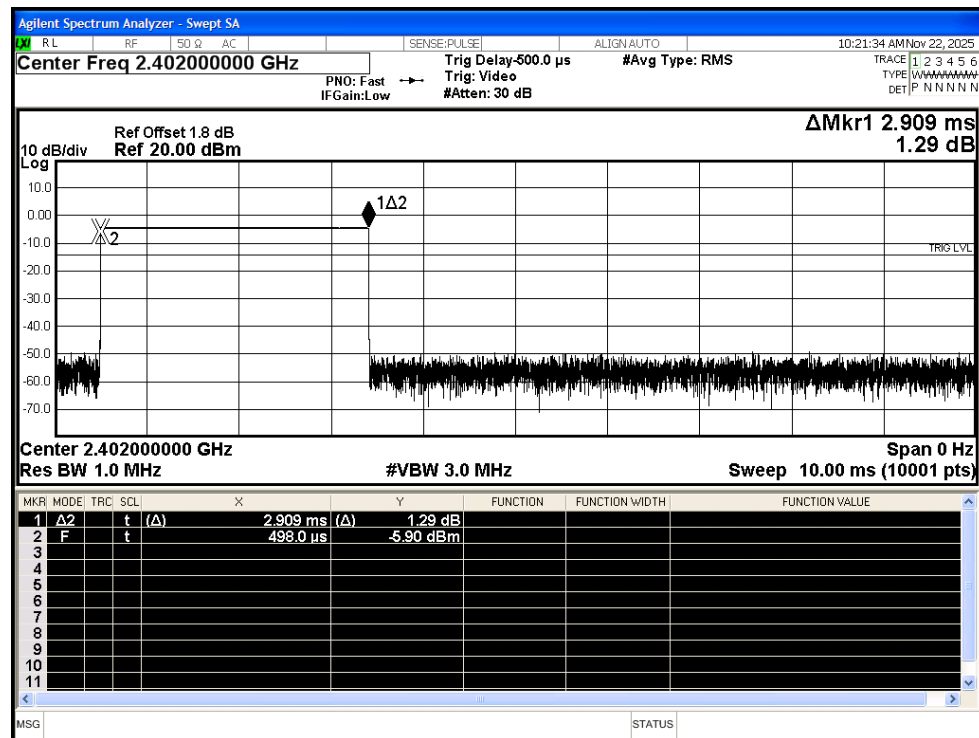


A.4 Dwell Time

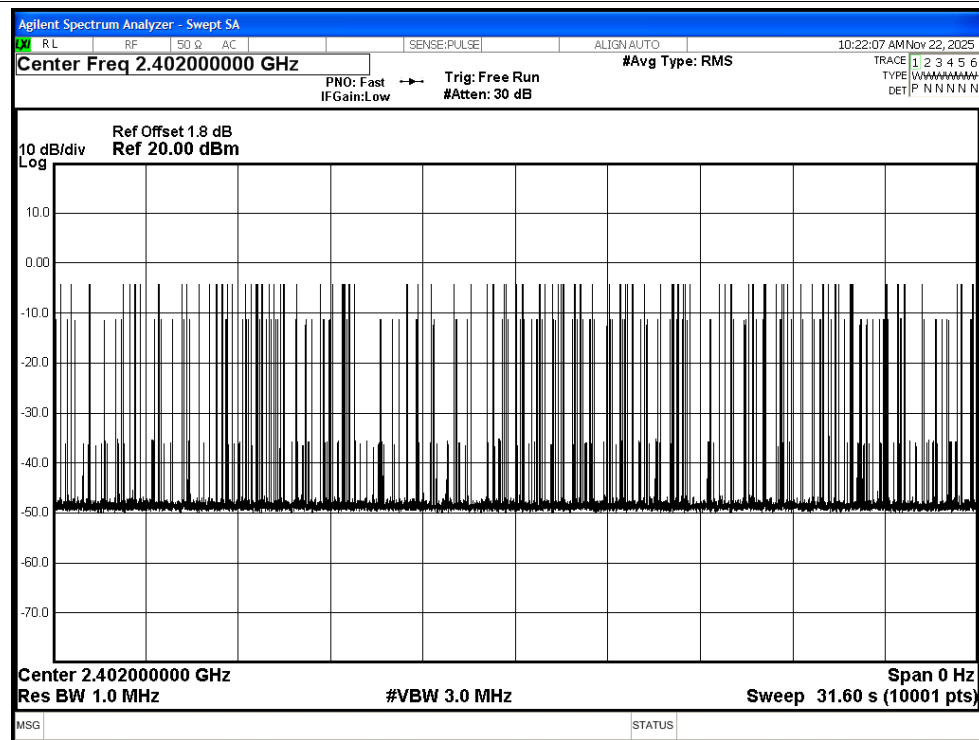
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.909	299.627	103	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.898	289.8	100	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.897	283.906	98	31600	400	Pass

Test Graphs

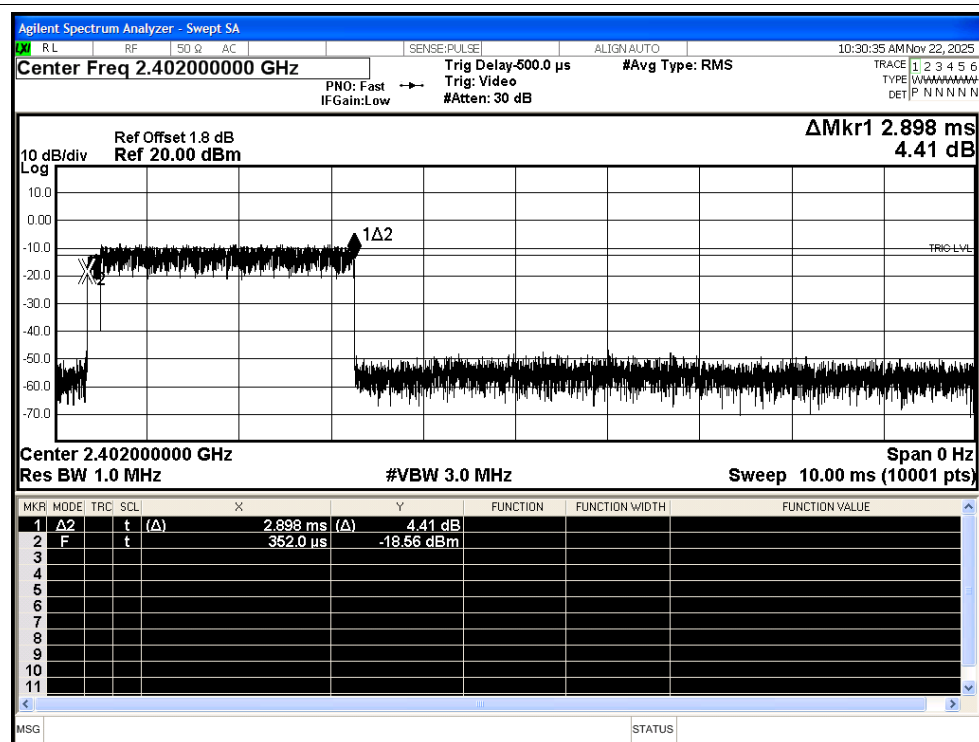
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



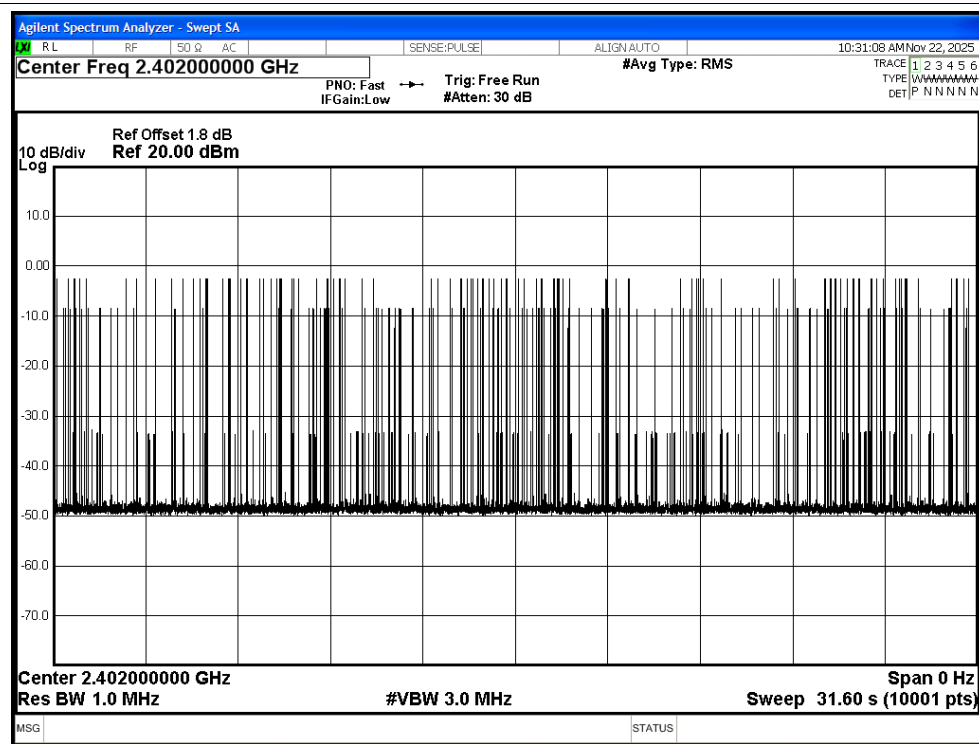
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



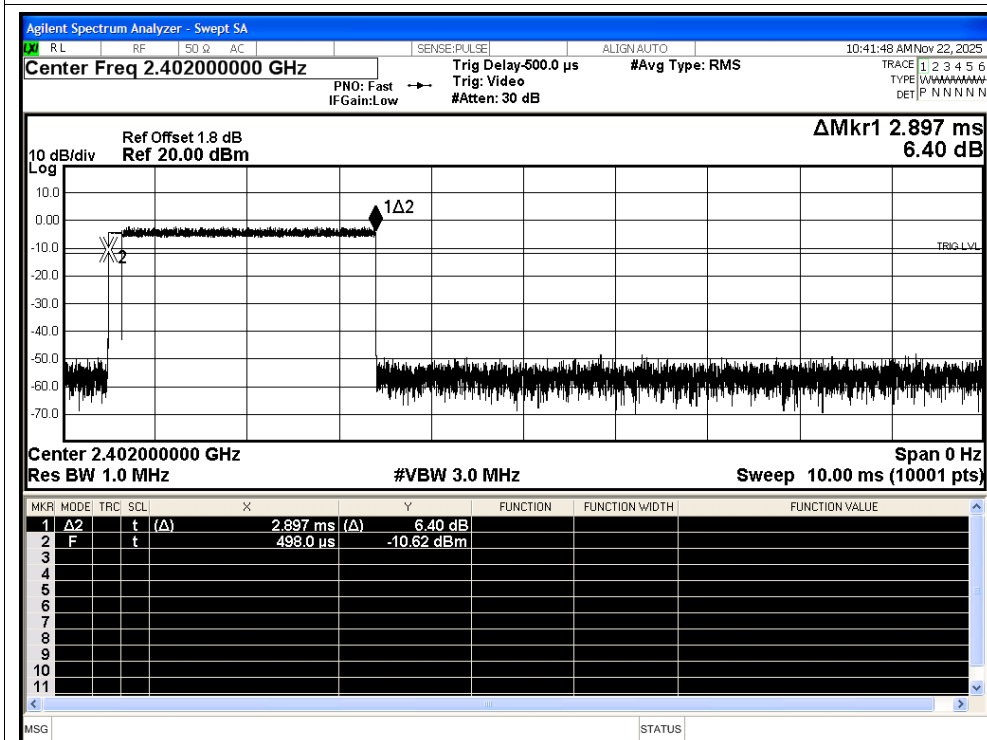
Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



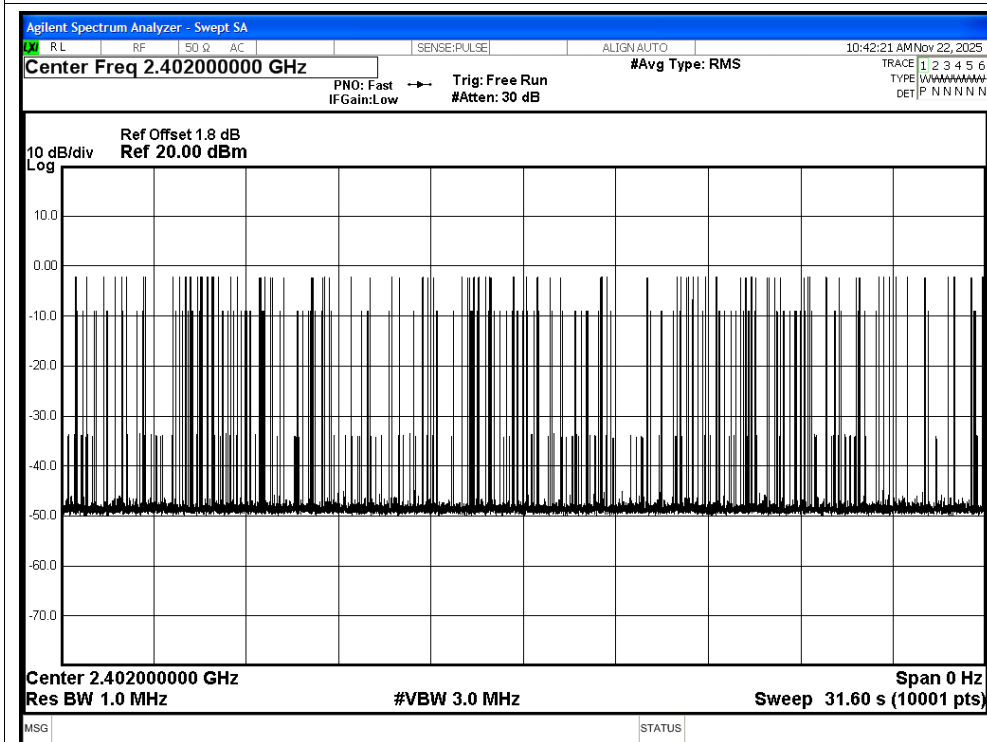
Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated



Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated

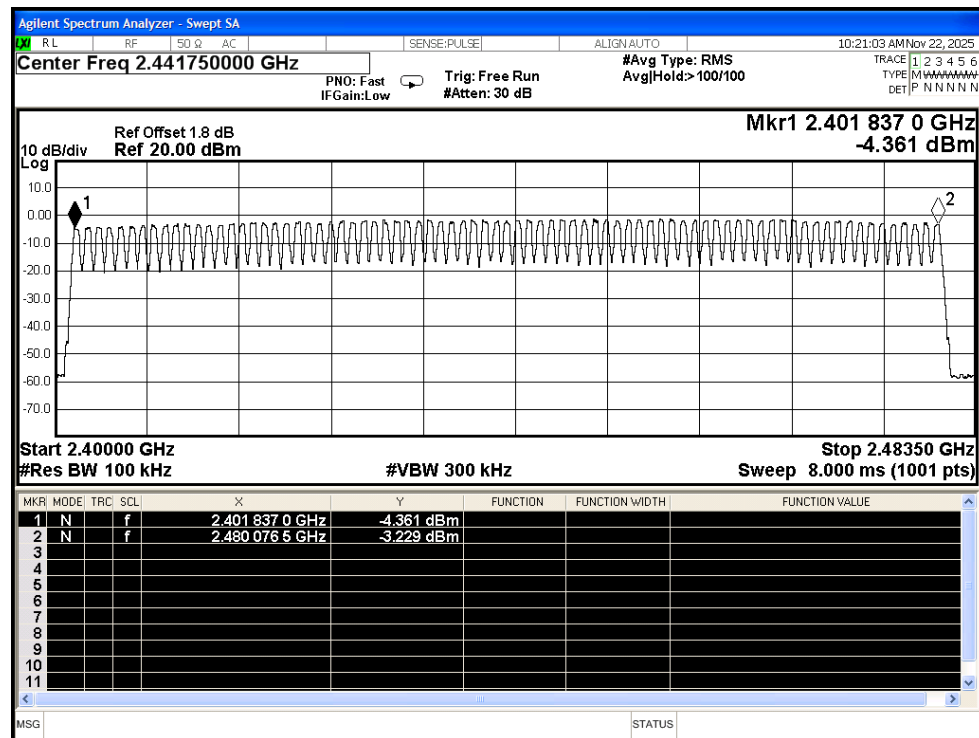


A.5 Number of Hopping Channel

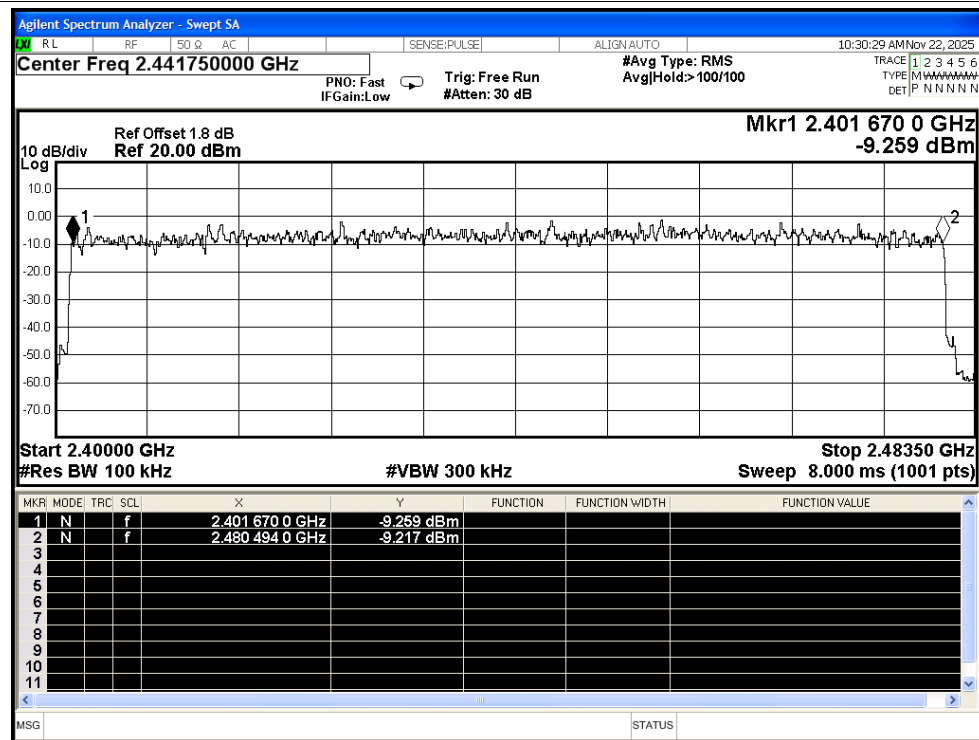
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass

Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1

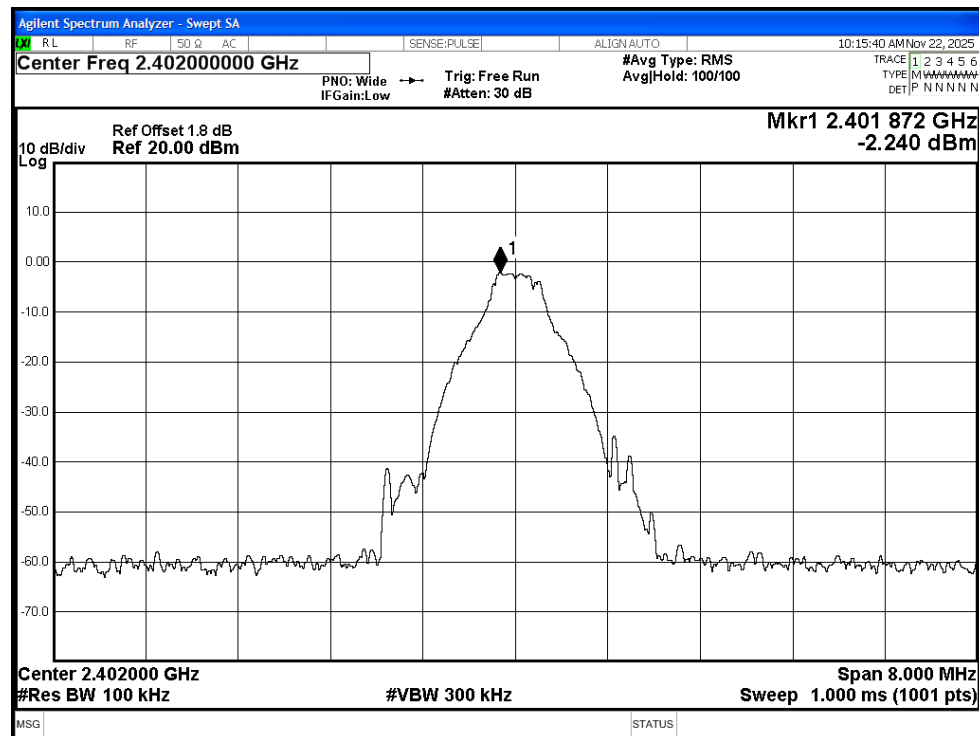


A.6 Band Edge

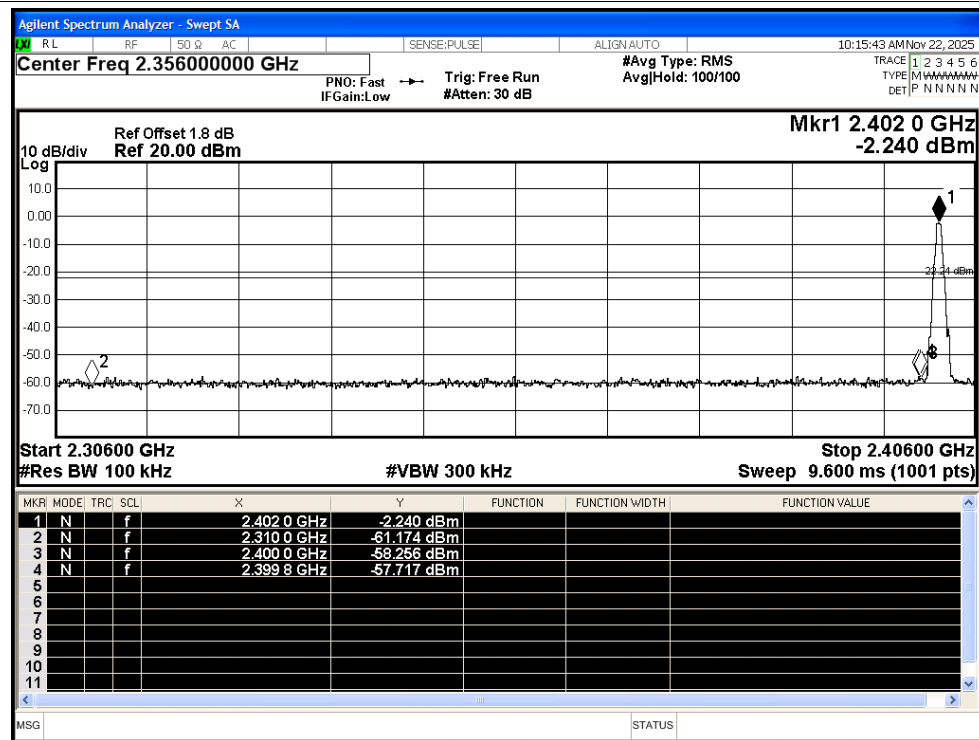
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-55.48	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-54.5	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-50.11	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-55.01	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-49.23	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-54.68	-20	Pass

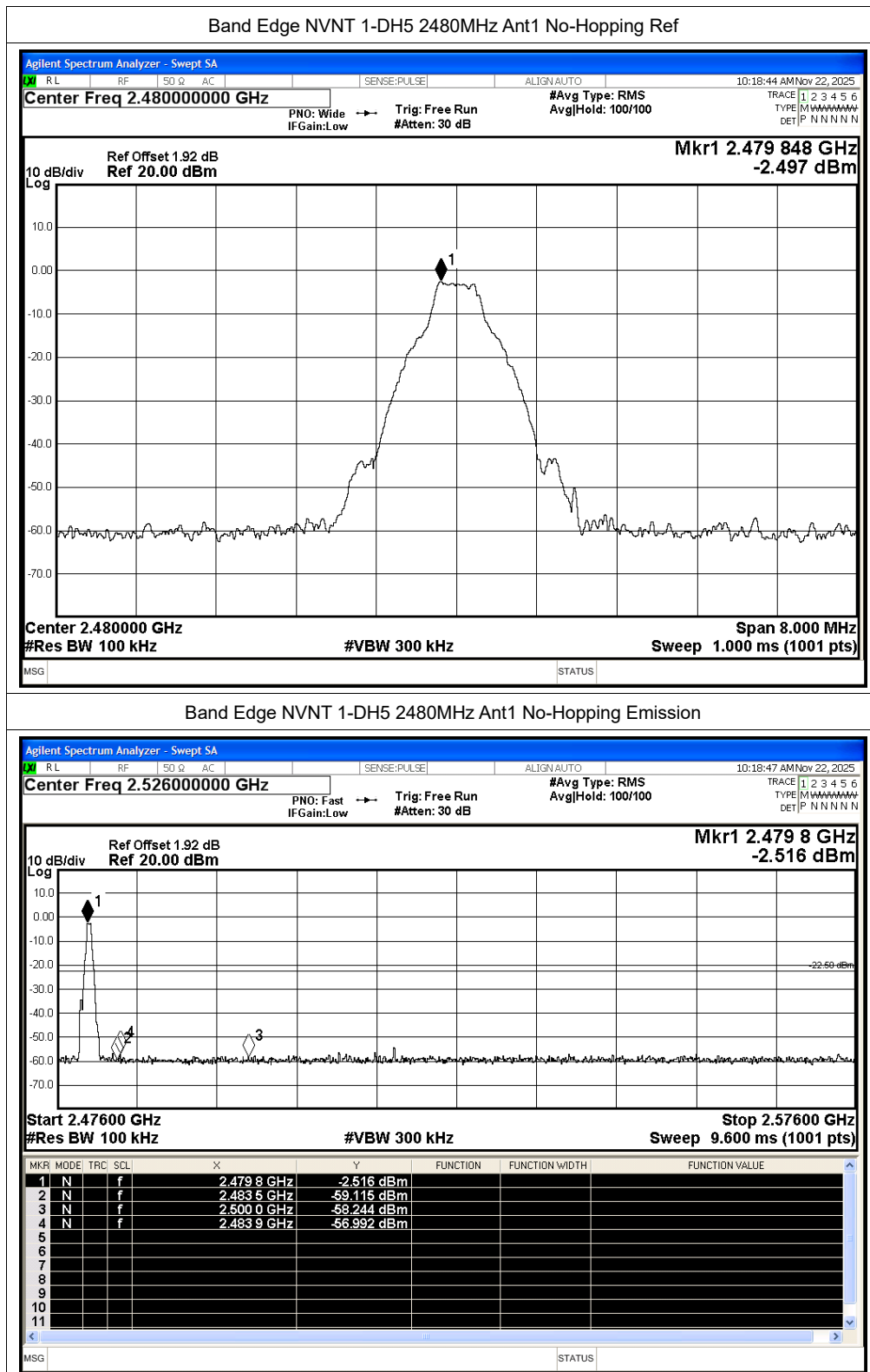
Test Graphs

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

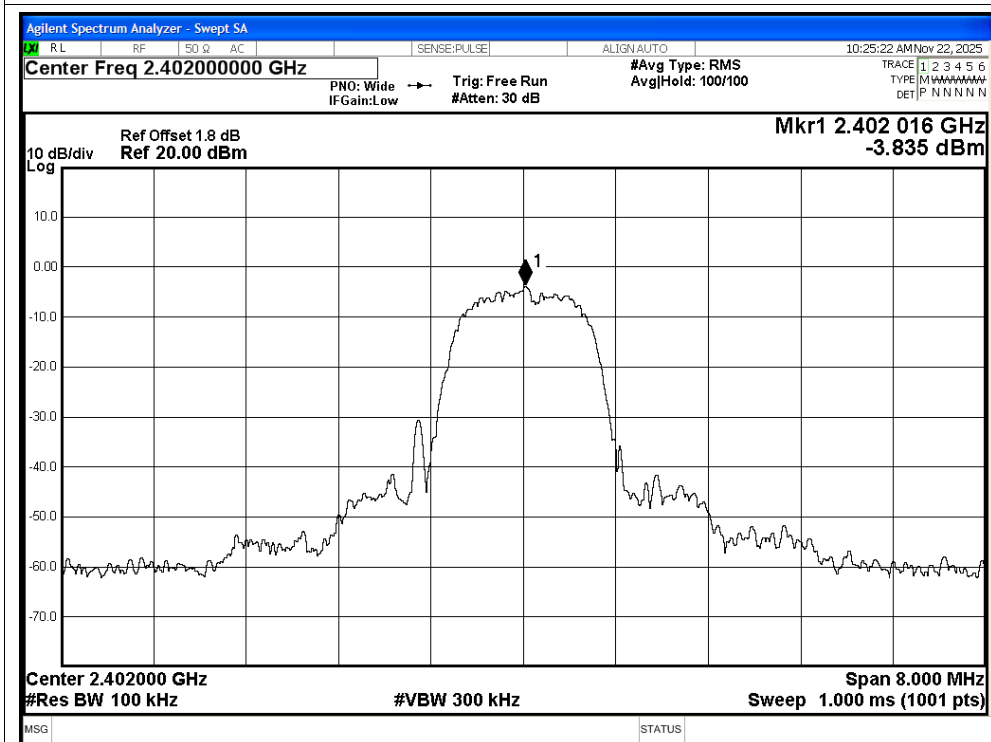


Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission

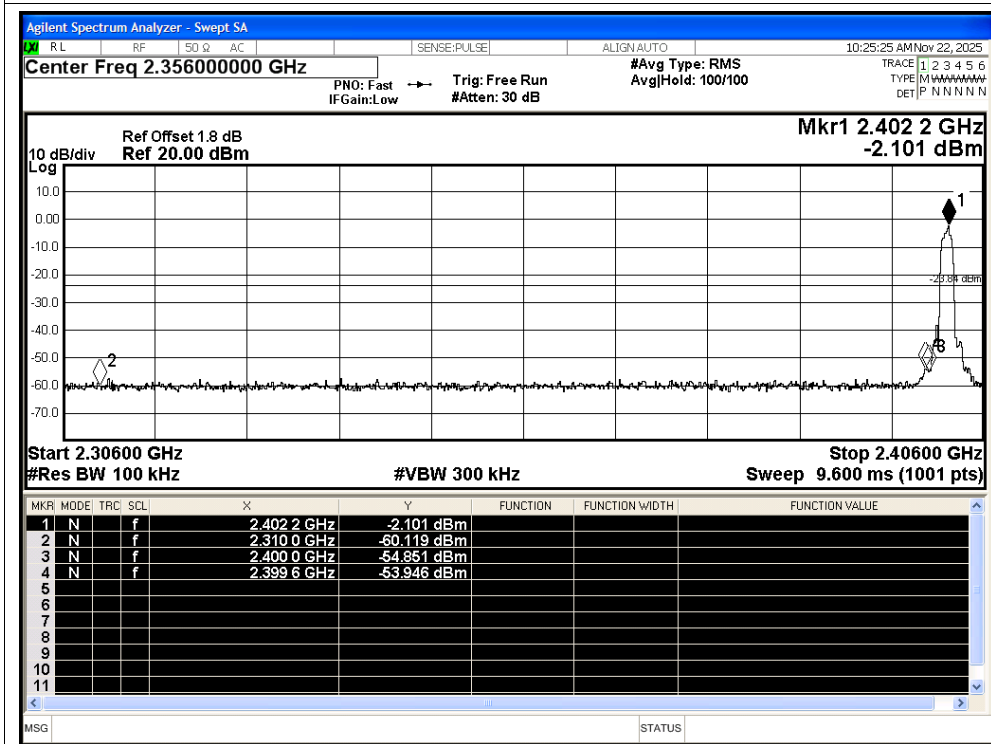


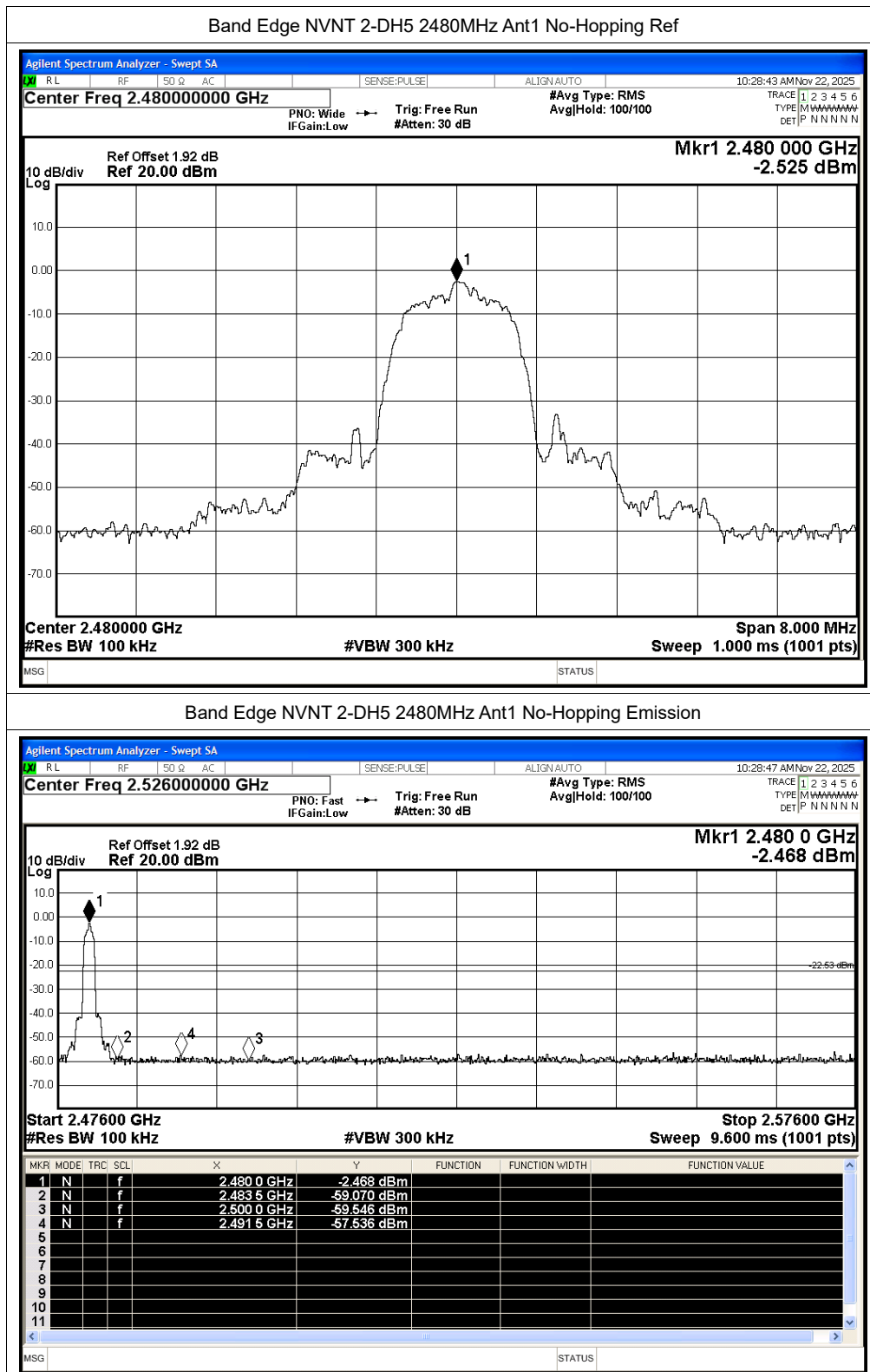


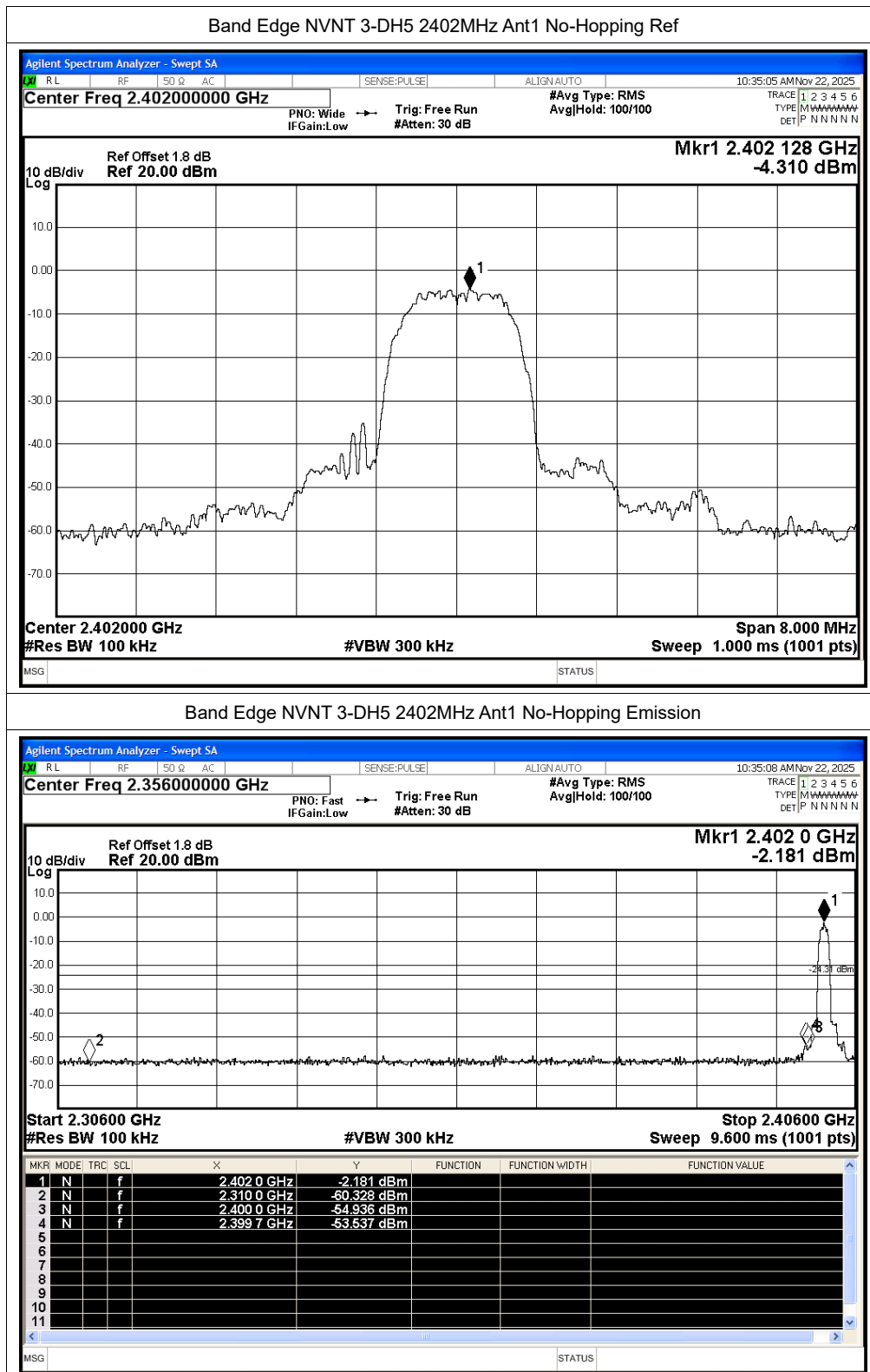
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref

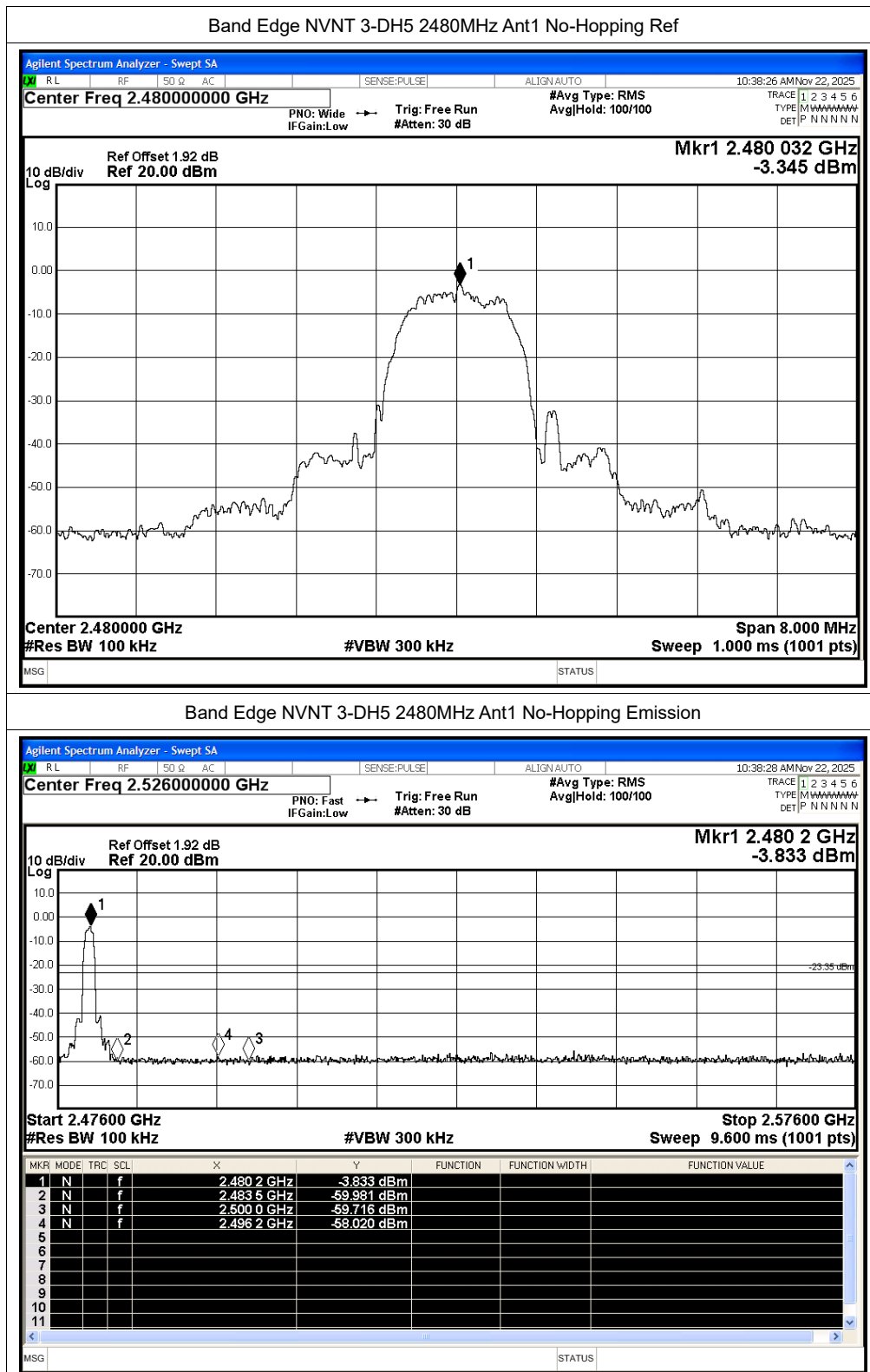


Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission







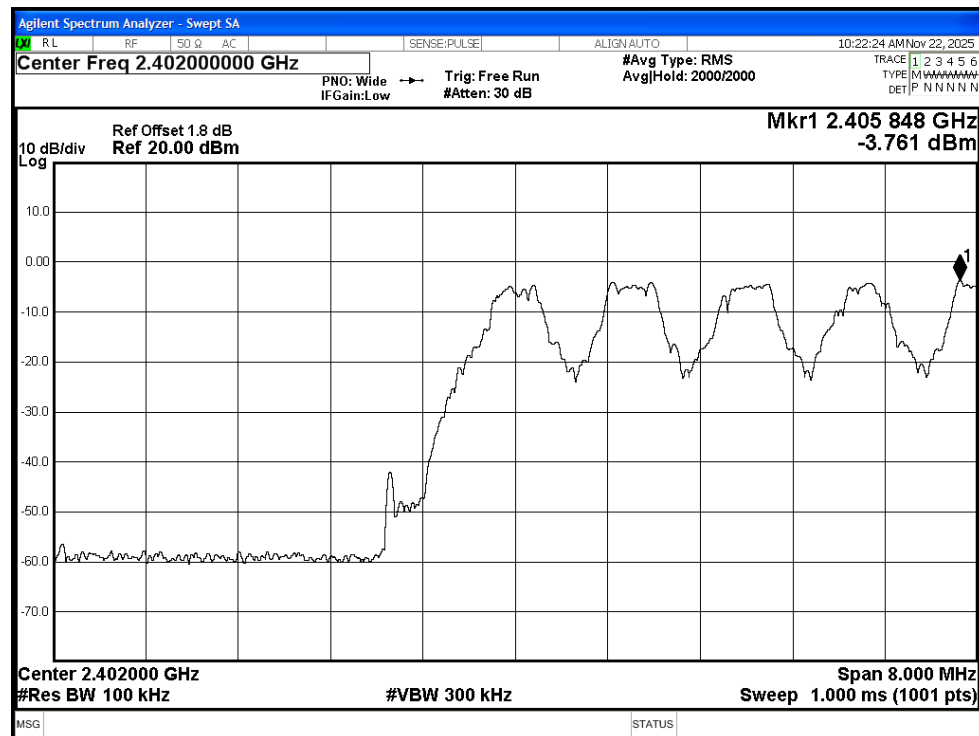


(Hopping)

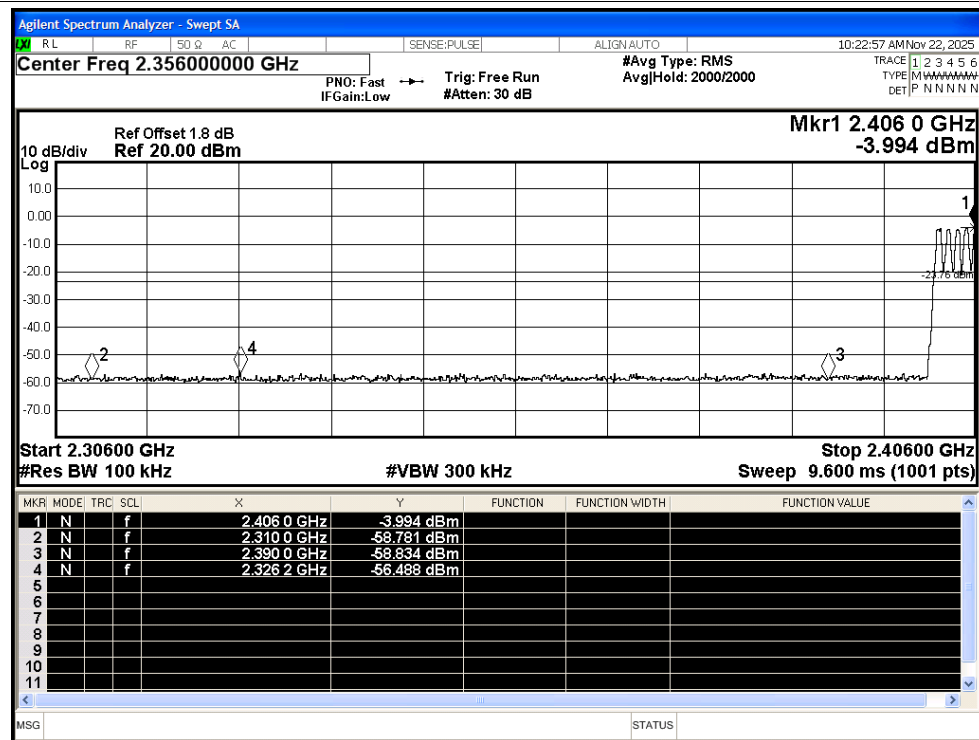
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-52.73	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-53.59	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-51.51	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-53.46	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-51.13	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-51.93	-20	Pass

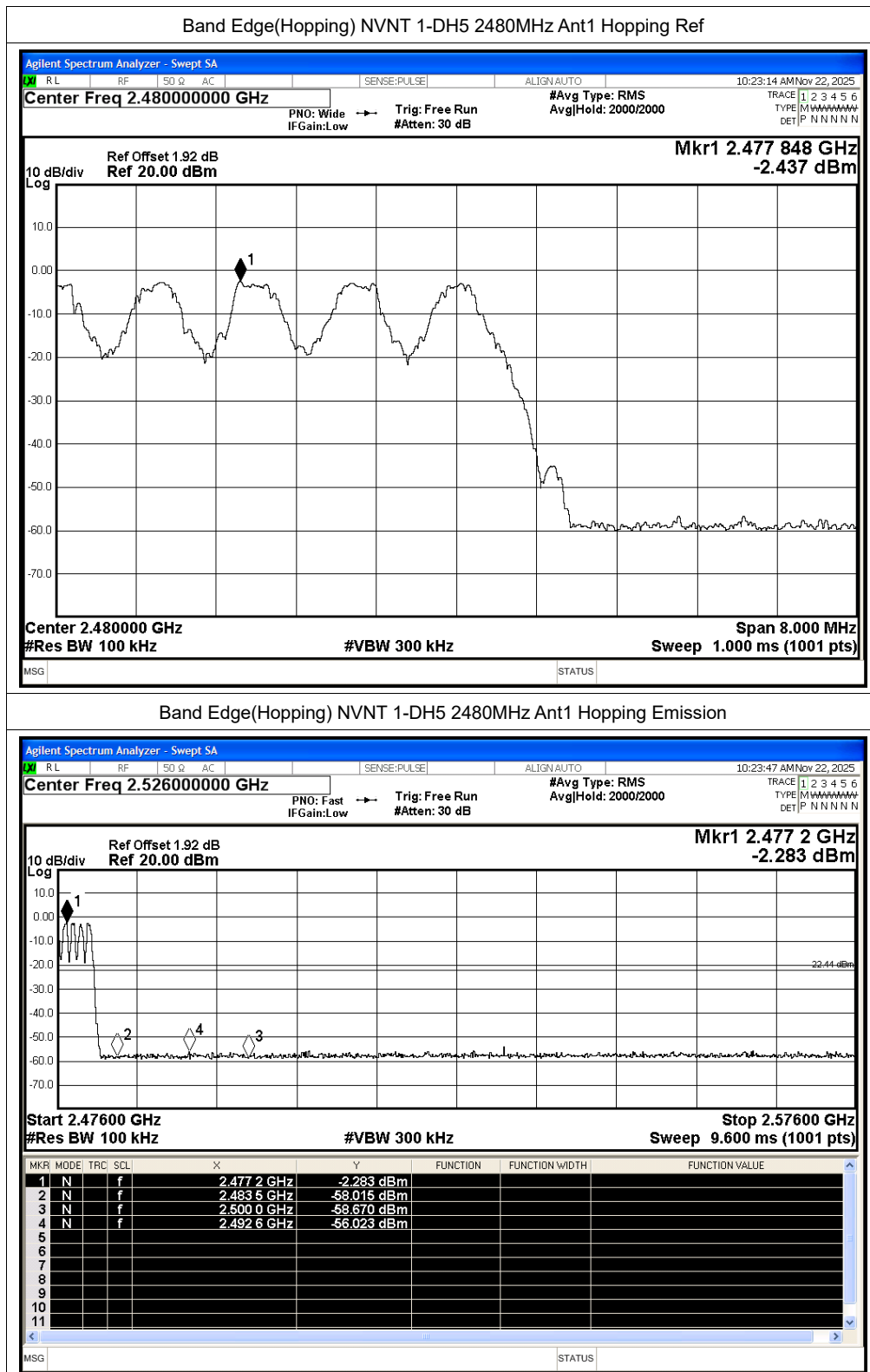
Test Graphs

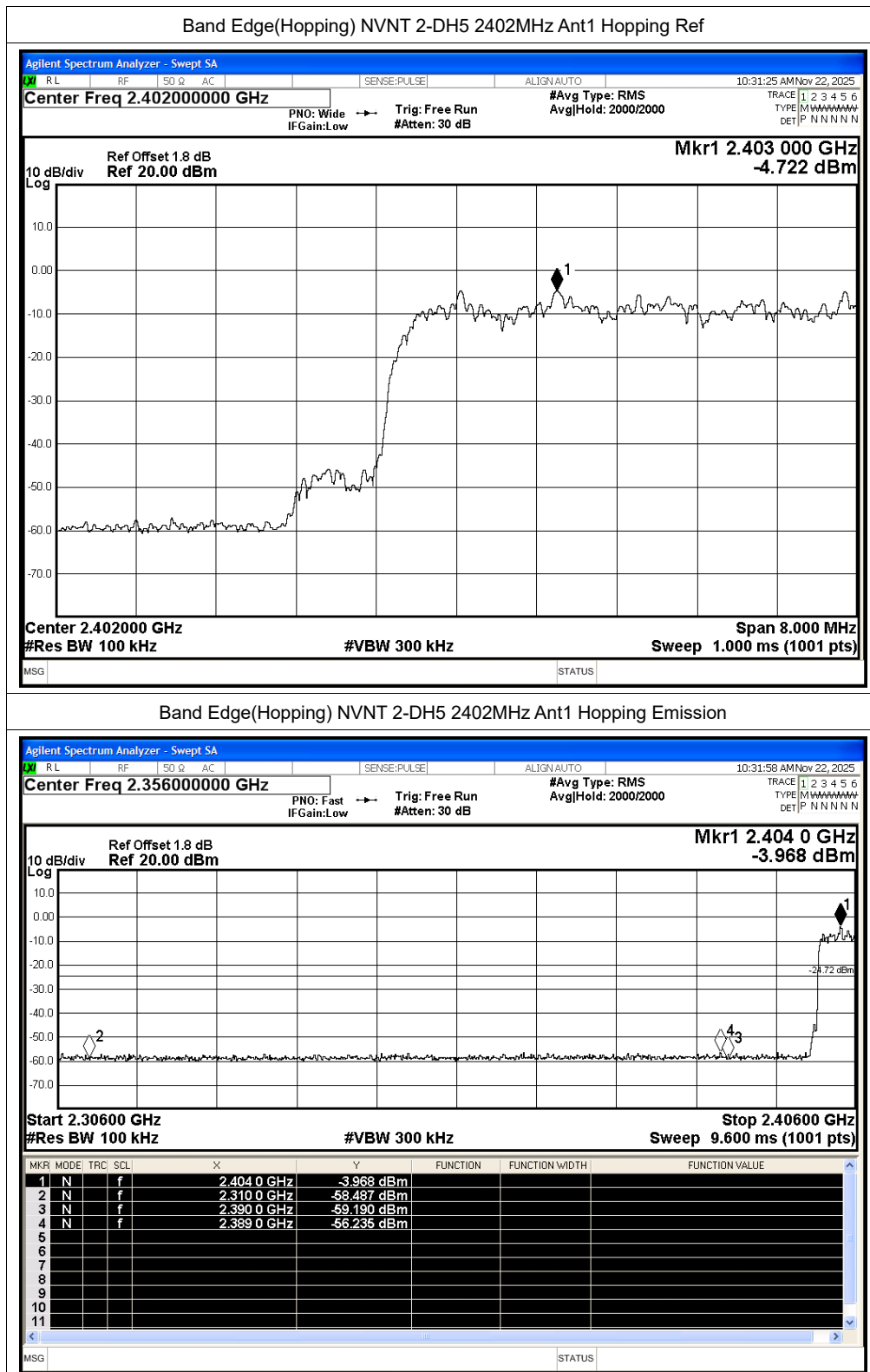
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref

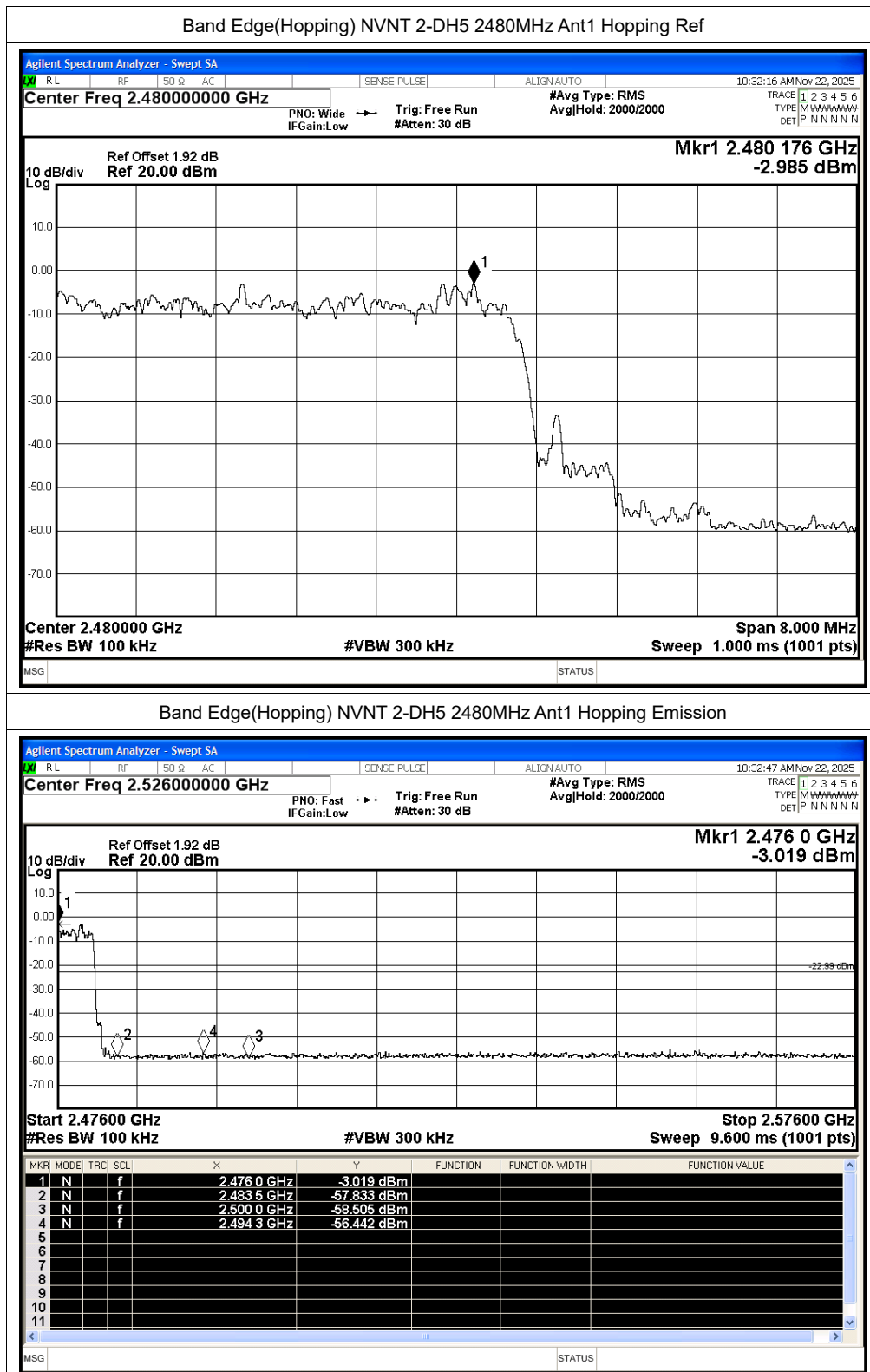


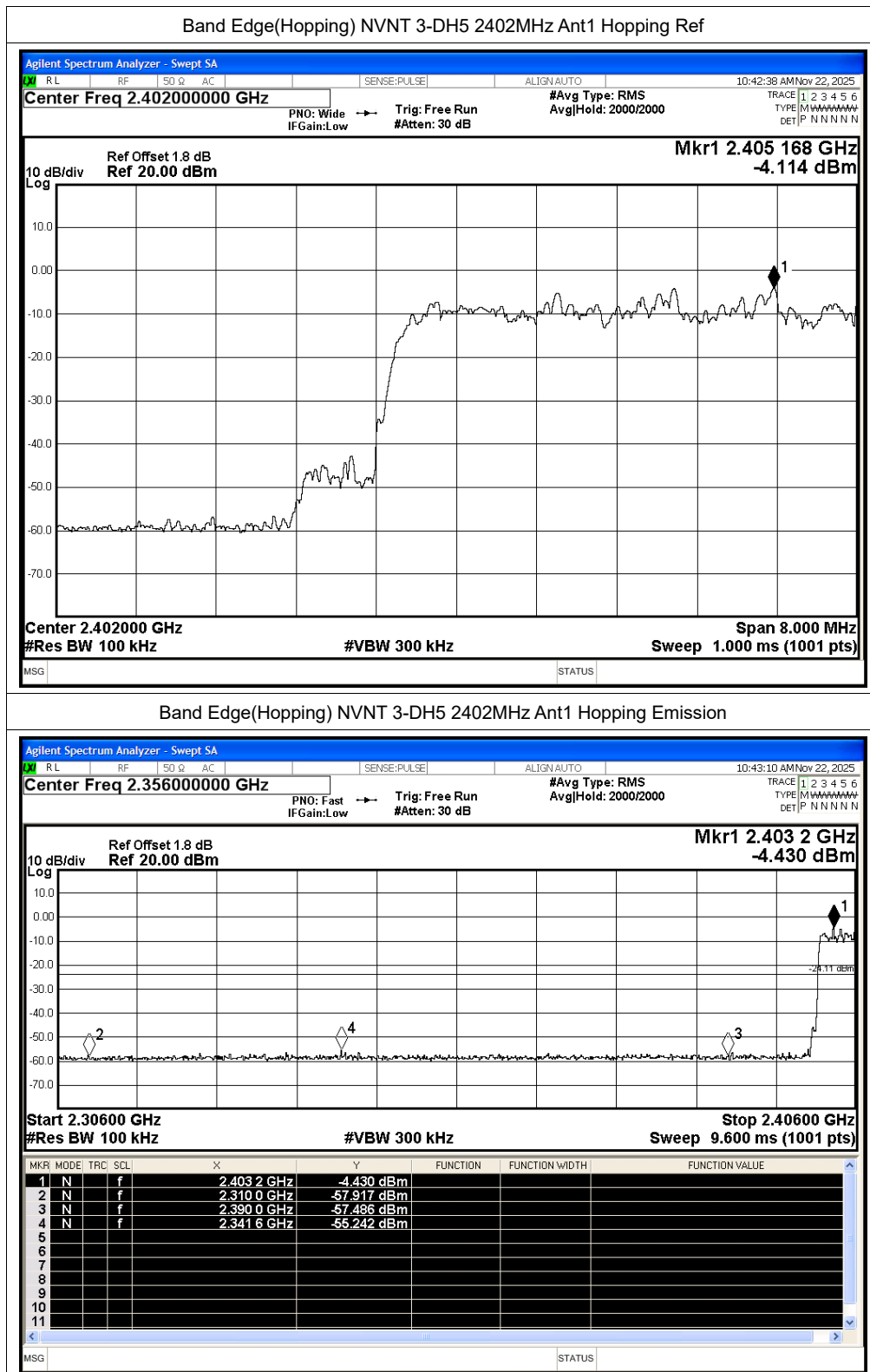
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission

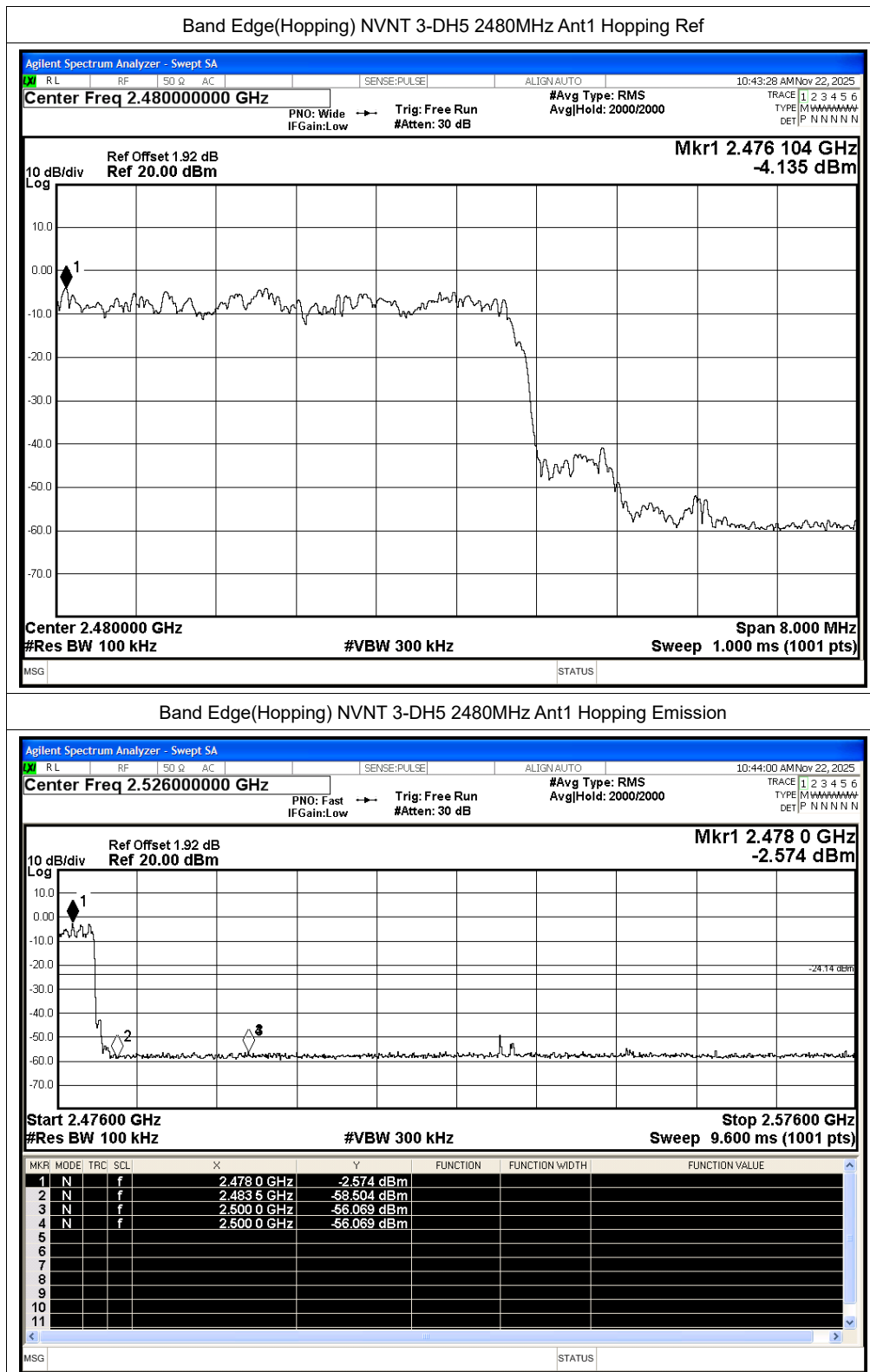










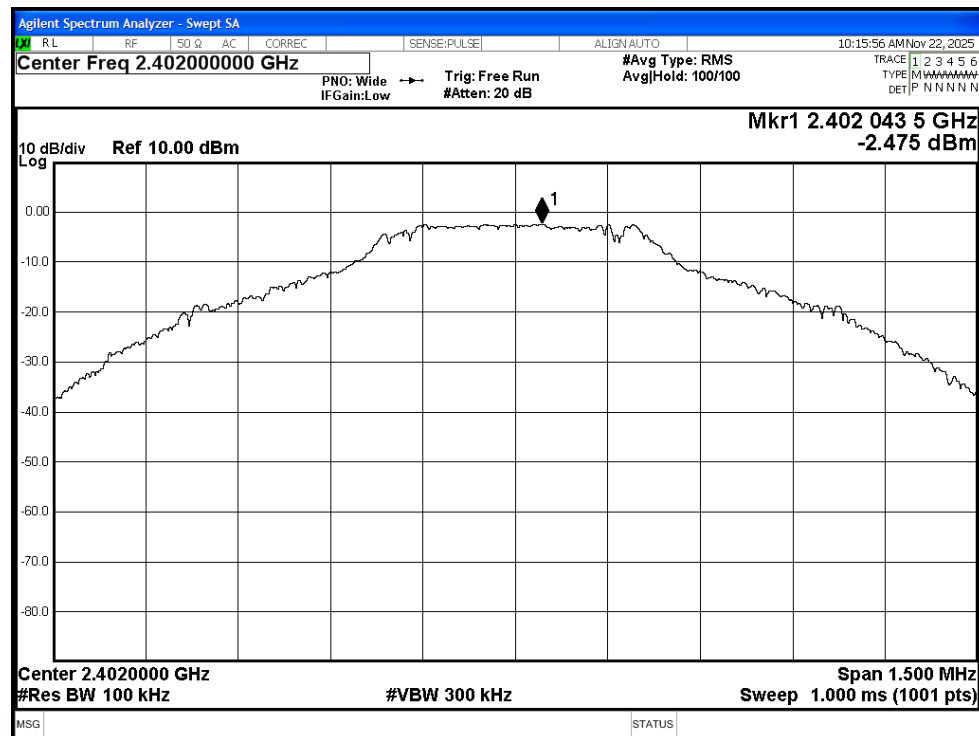


A.7 Conducted RF Spurious Emission

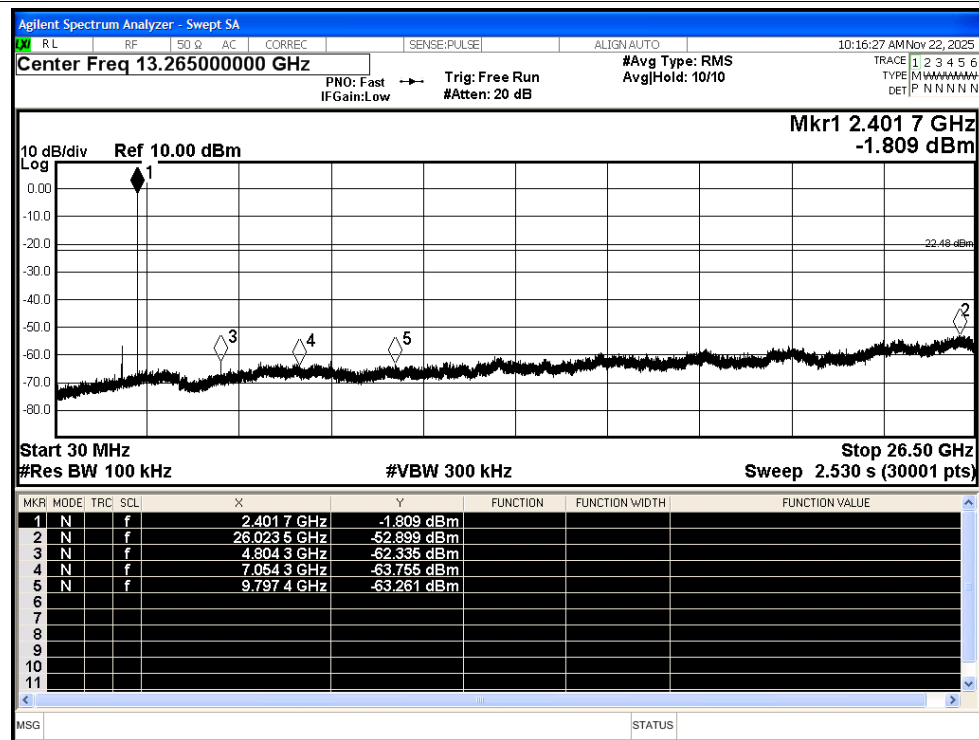
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-50.42	-20	Pass
NVNT	1-DH5	2441	Ant1	-51.21	-20	Pass
NVNT	1-DH5	2480	Ant1	-50.12	-20	Pass
NVNT	2-DH5	2402	Ant1	-50.44	-20	Pass
NVNT	2-DH5	2441	Ant1	-51.14	-20	Pass
NVNT	2-DH5	2480	Ant1	-49.67	-20	Pass
NVNT	3-DH5	2402	Ant1	-51.17	-20	Pass
NVNT	3-DH5	2441	Ant1	-50.6	-20	Pass
NVNT	3-DH5	2480	Ant1	-48.77	-20	Pass

Test Graphs

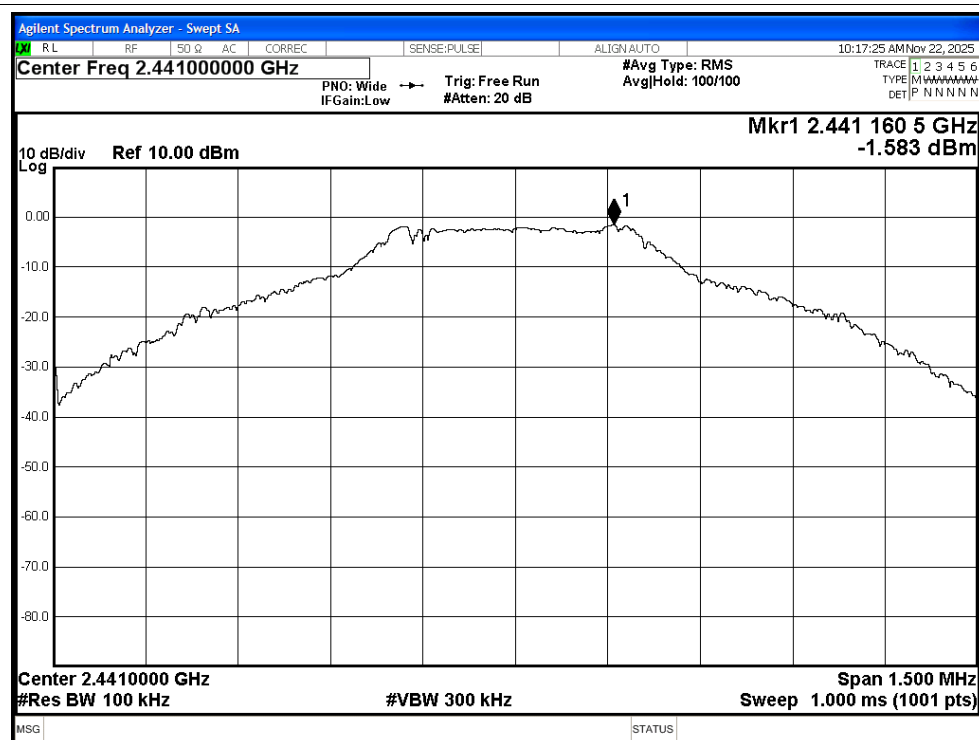
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



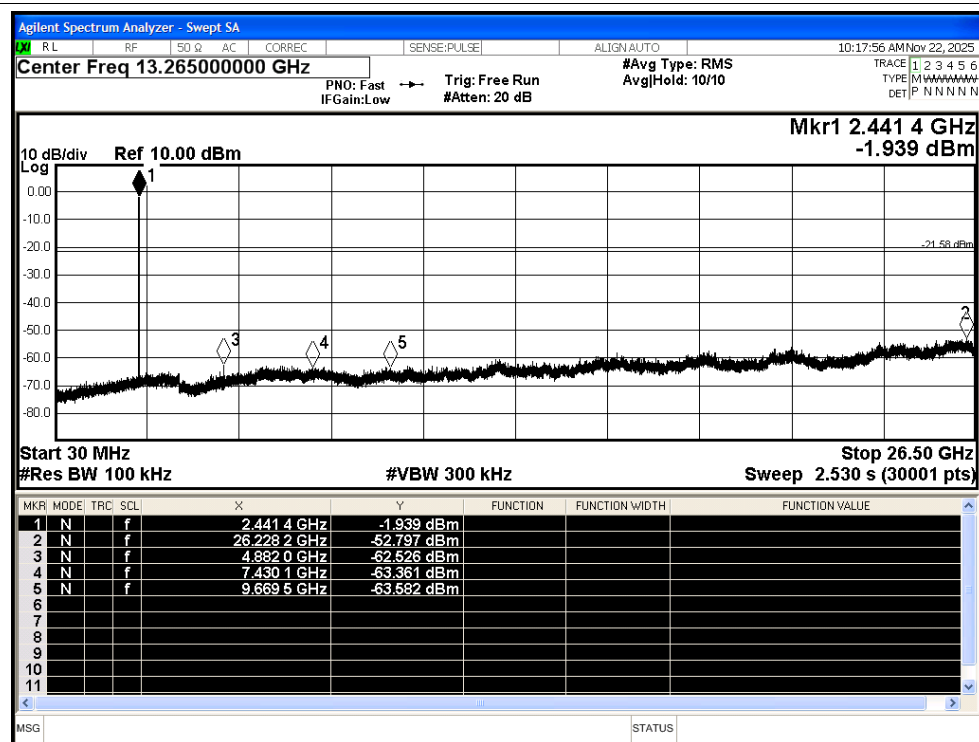
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



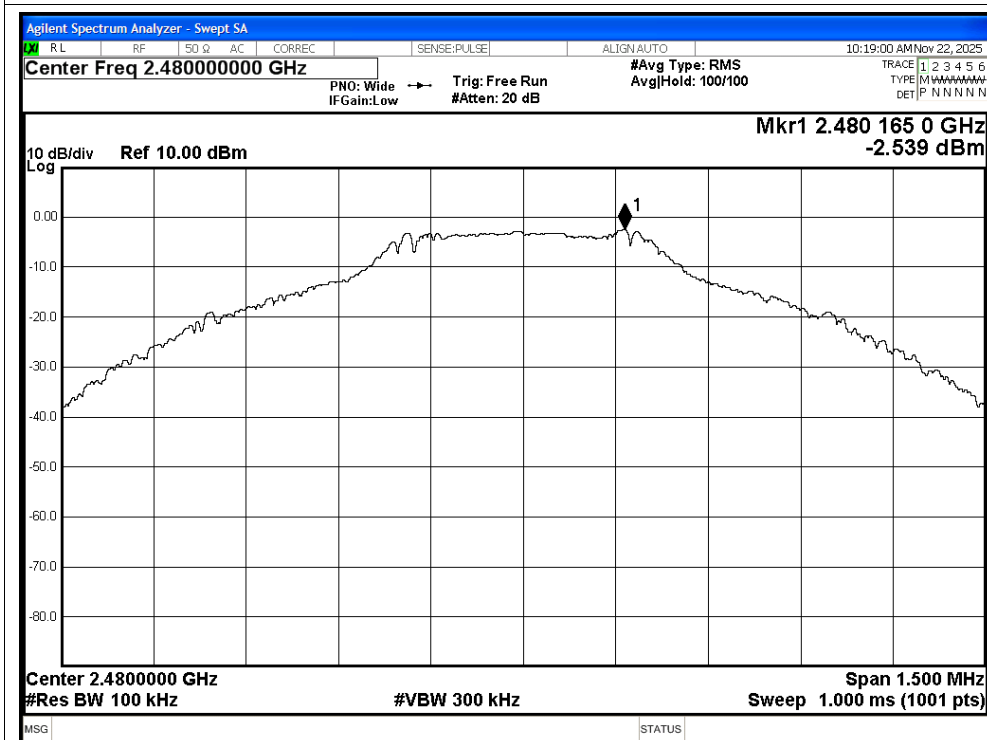
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



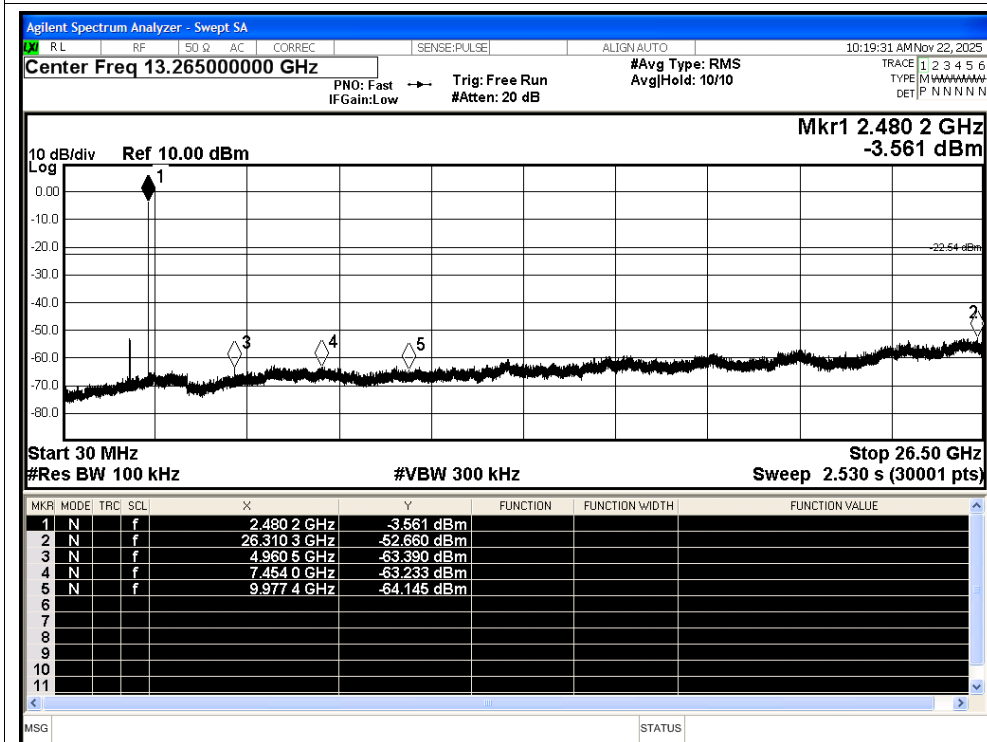
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



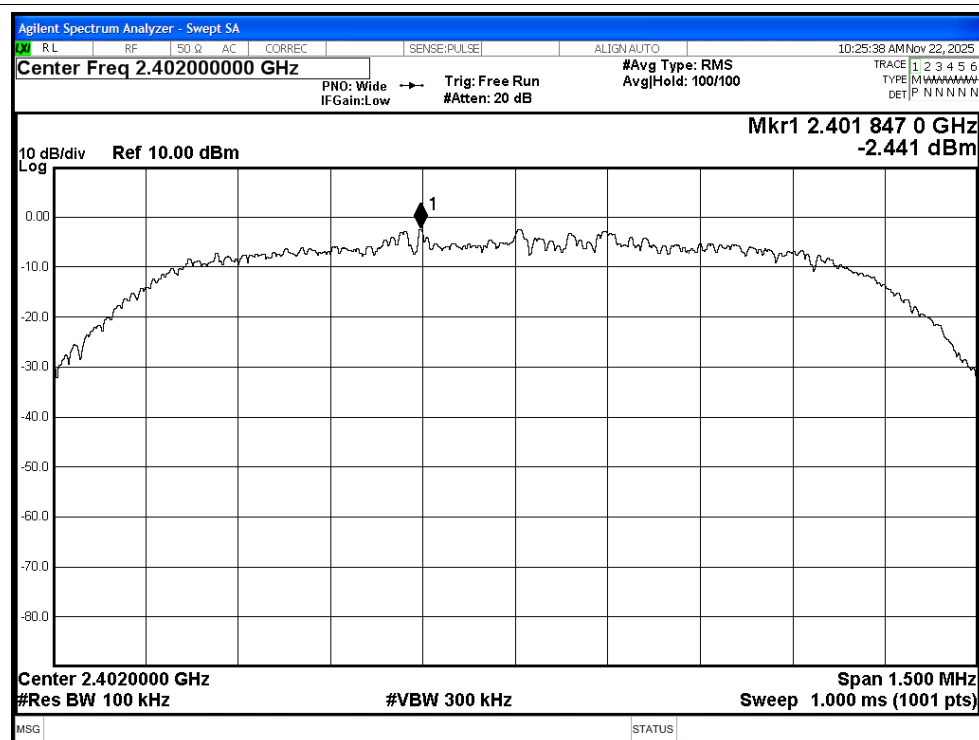
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



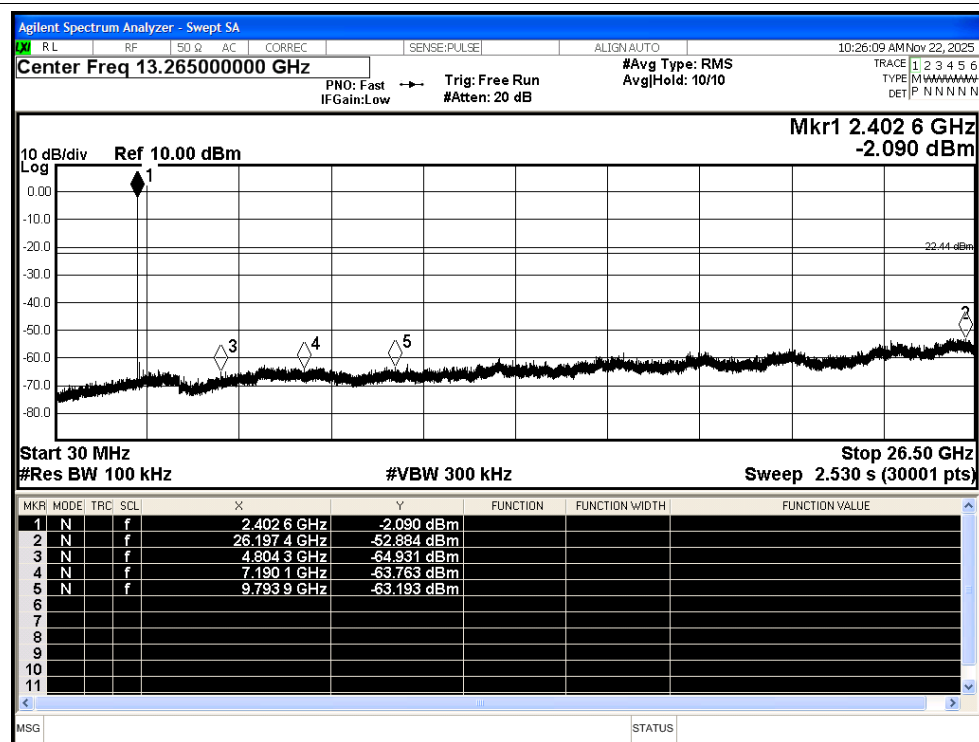
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



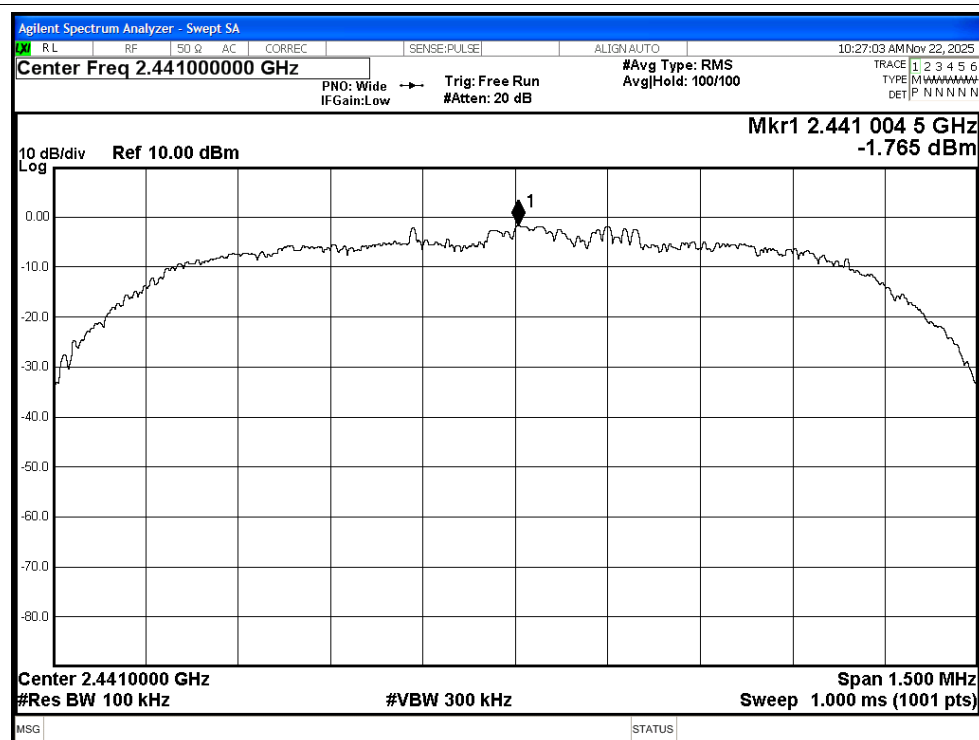
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



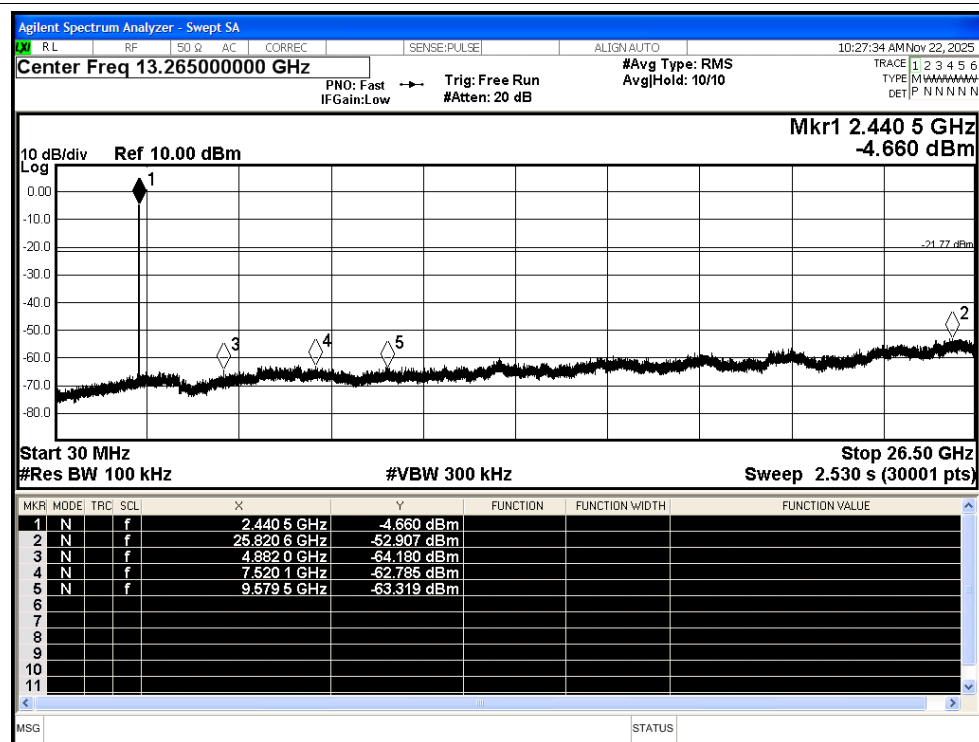
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



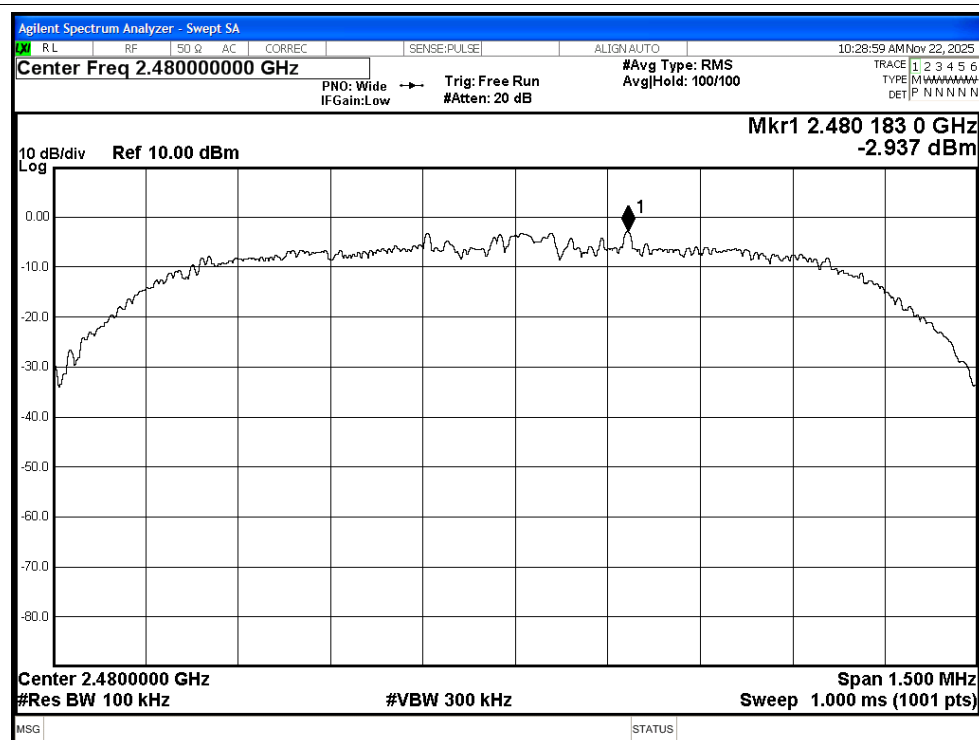
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



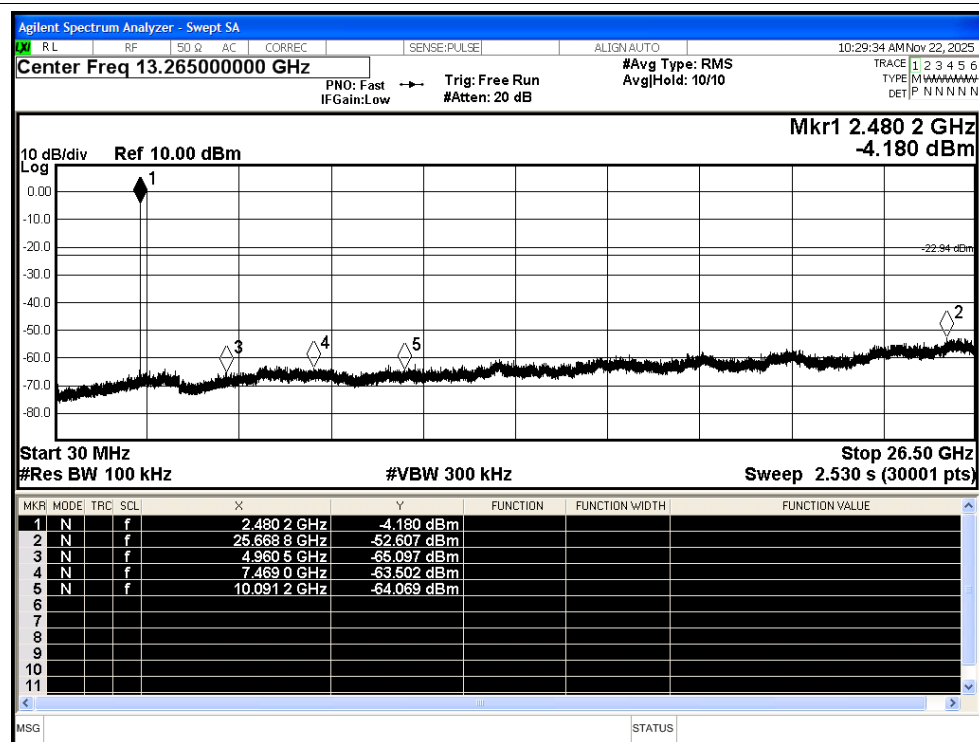
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



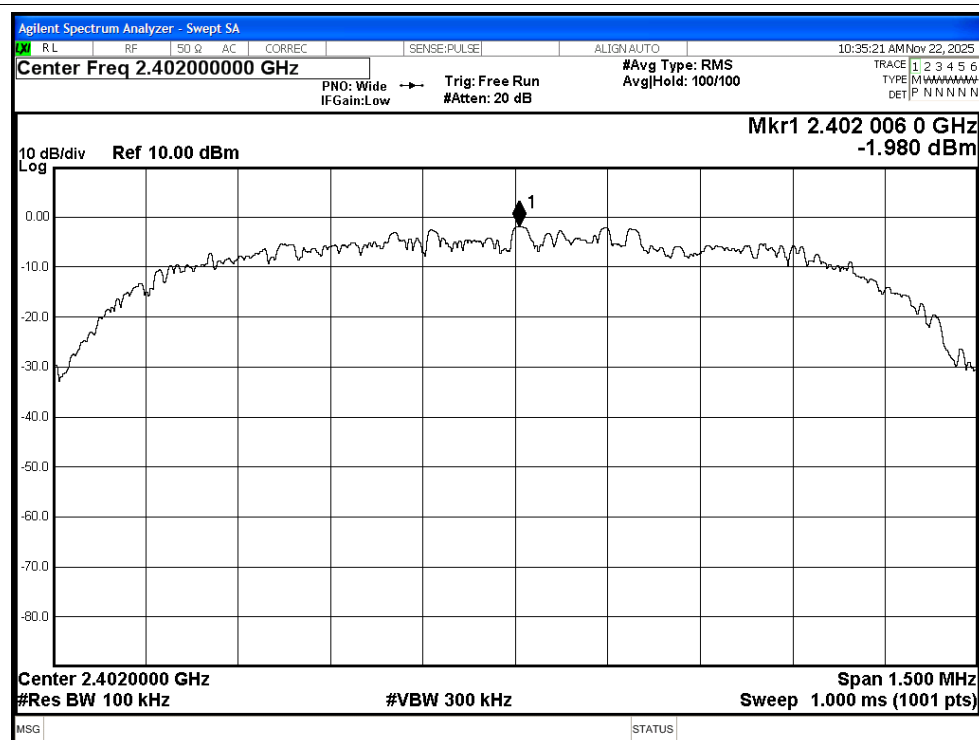
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



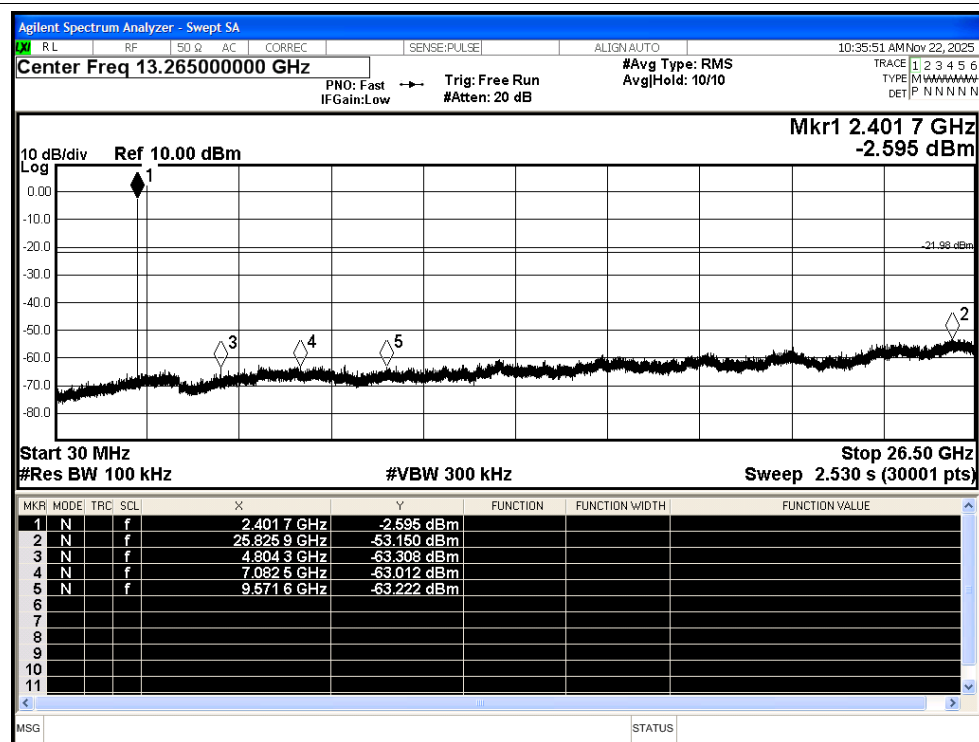
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission



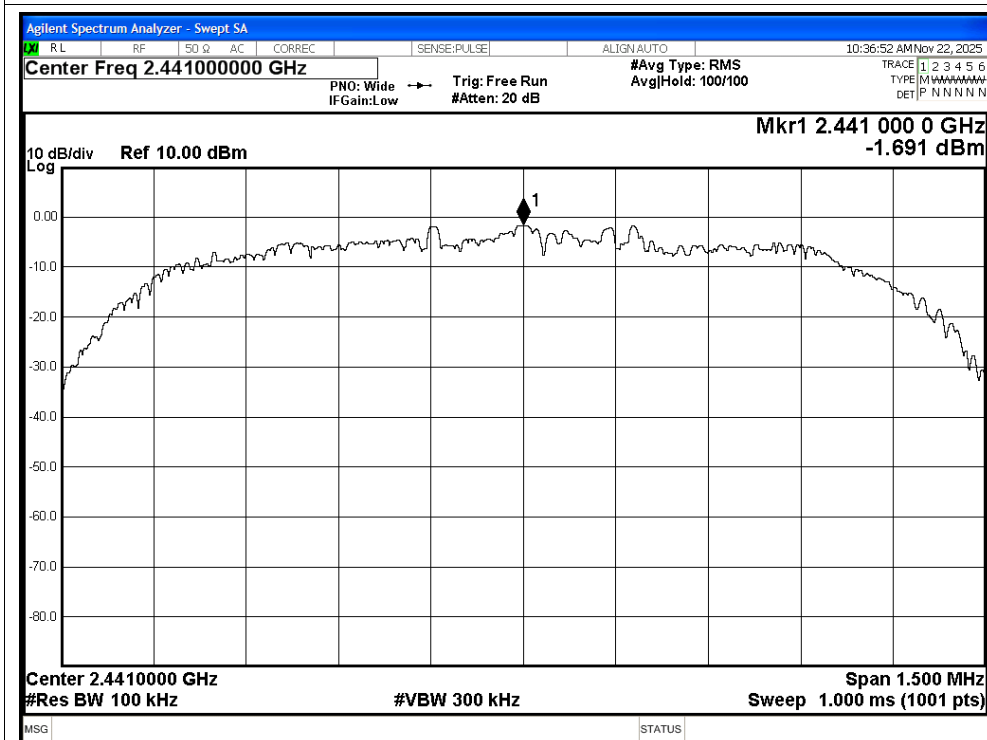
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref



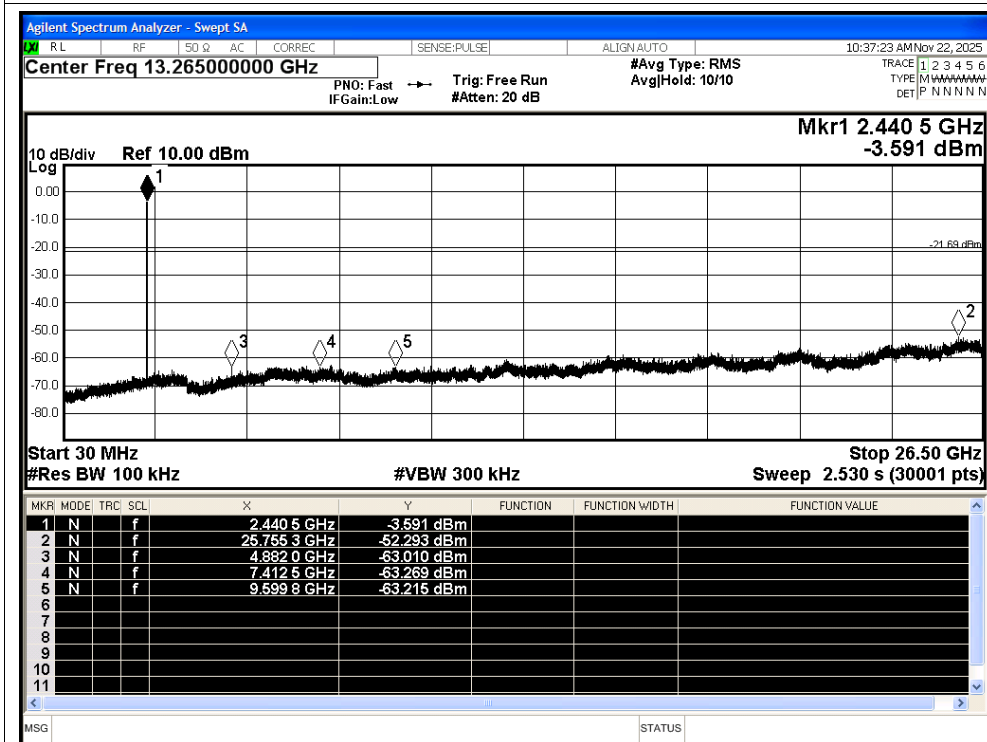
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission



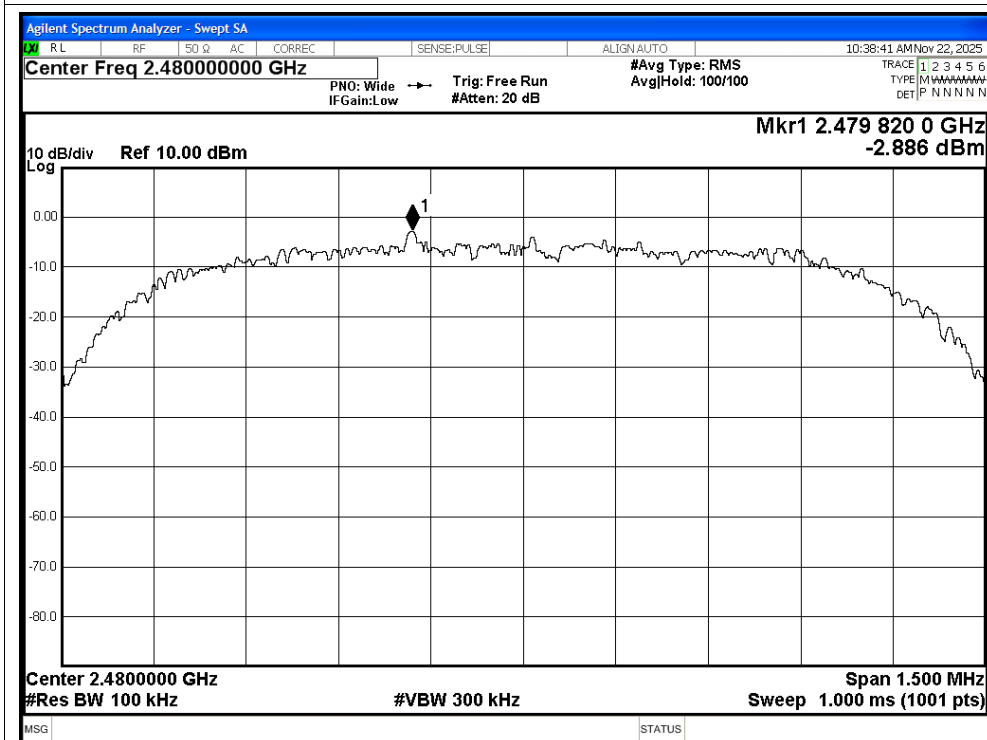
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



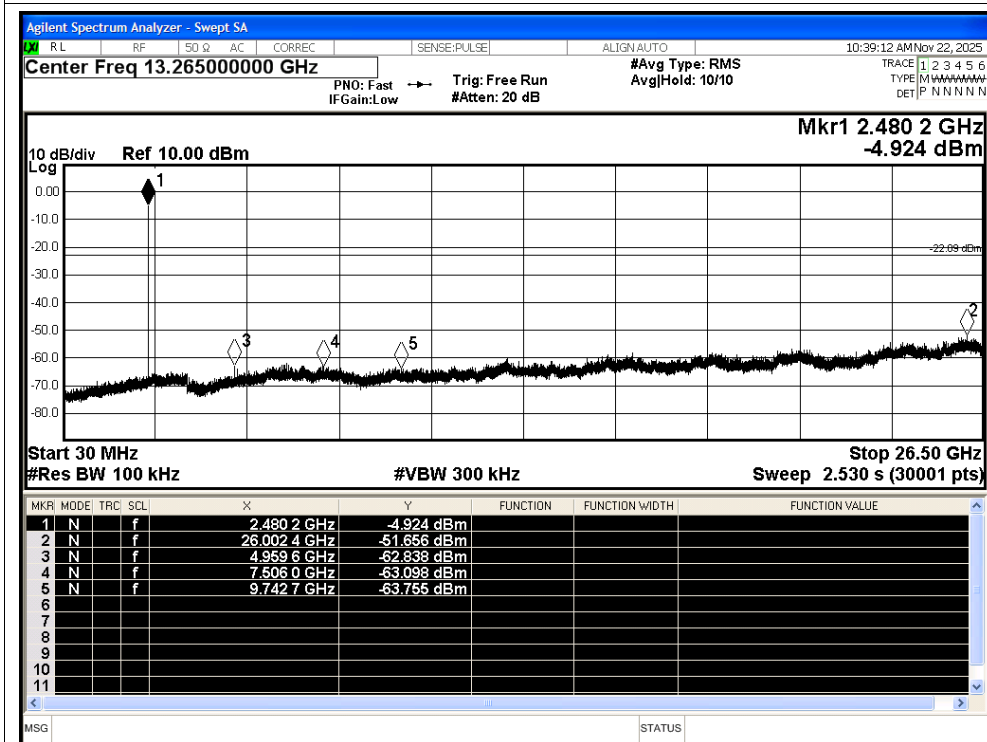
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission

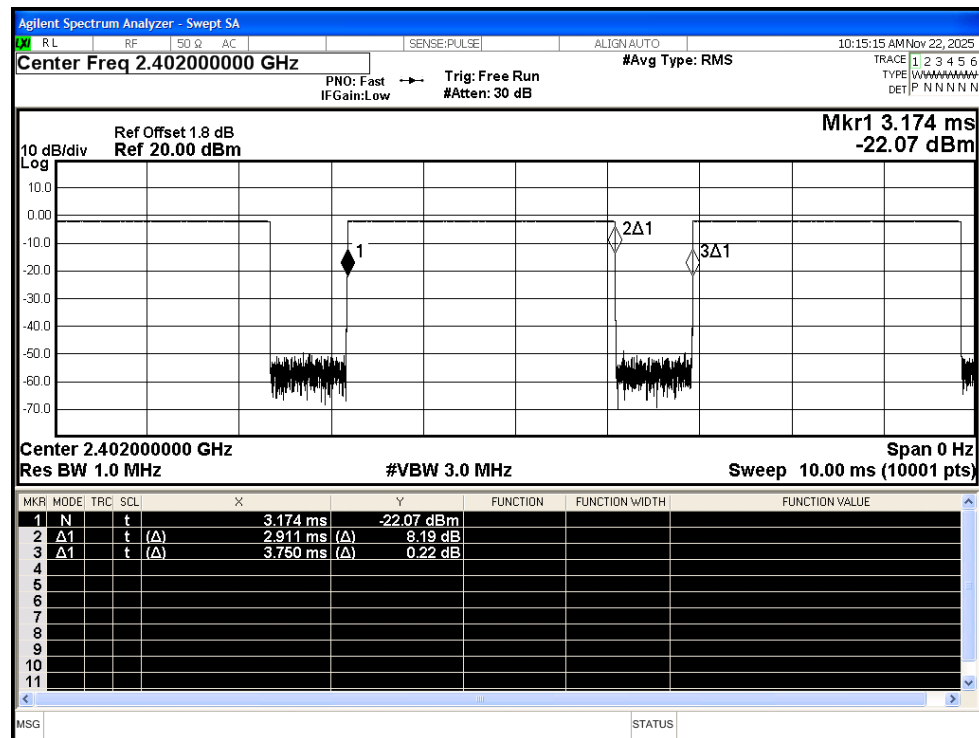


A.8 Duty Cycle

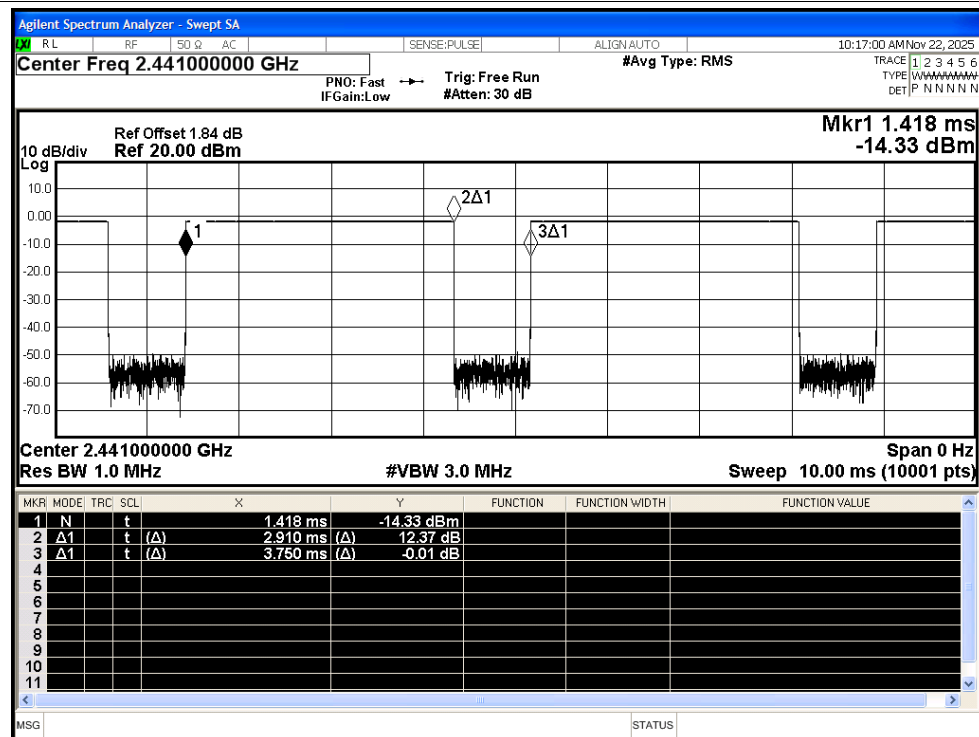
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	77.63	1.1	0.34
NVNT	1-DH5	2441	Ant1	77.6	1.1	0.34
NVNT	1-DH5	2480	Ant1	77.6	1.1	0.34
NVNT	2-DH5	2402	Ant1	77.28	1.12	0.35
NVNT	2-DH5	2441	Ant1	77.28	1.12	0.35
NVNT	2-DH5	2480	Ant1	77.28	1.12	0.35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

Test Graphs

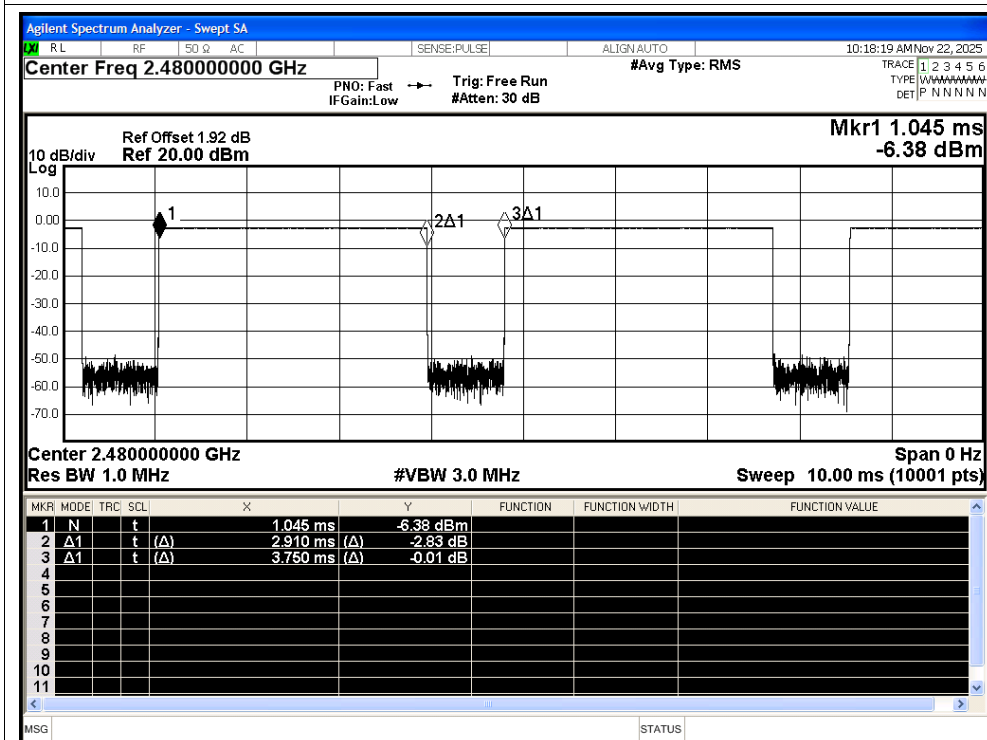
Duty Cycle NVNT 1-DH5 2402MHz Ant1



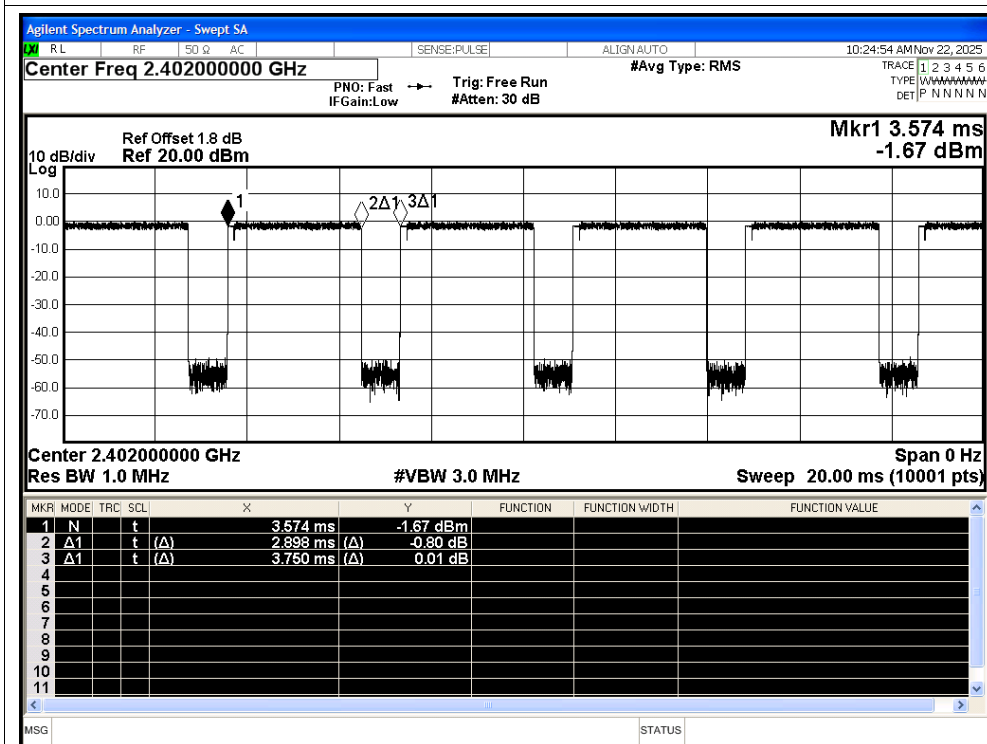
Duty Cycle NVNT 1-DH5 2441MHz Ant1



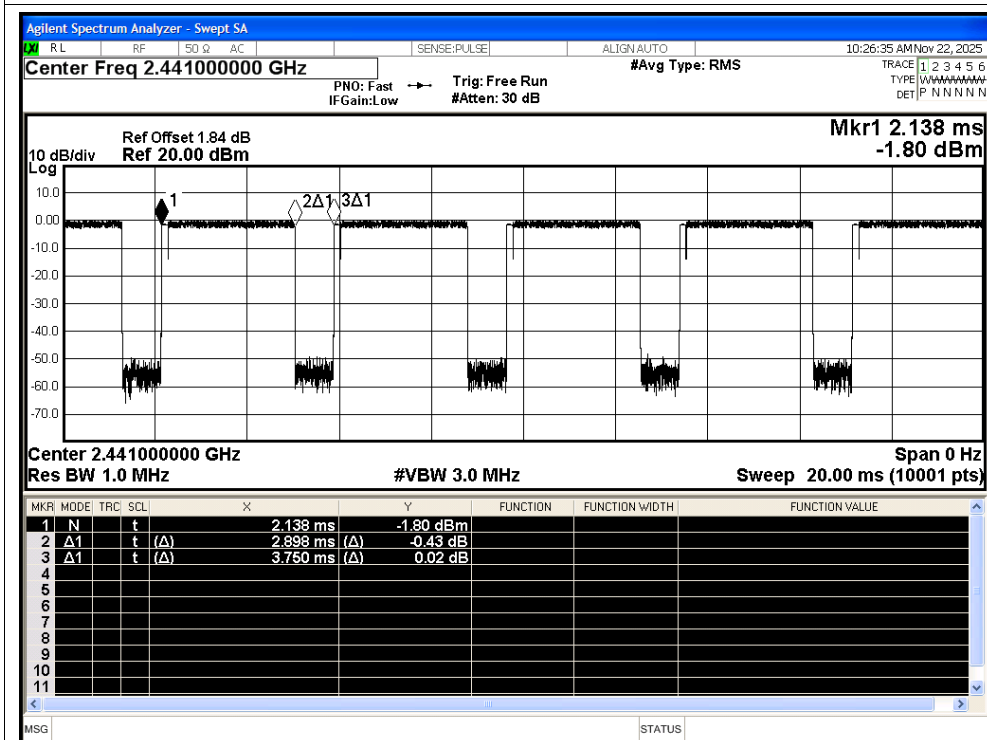
Duty Cycle NVNT 1-DH5 2480MHz Ant1



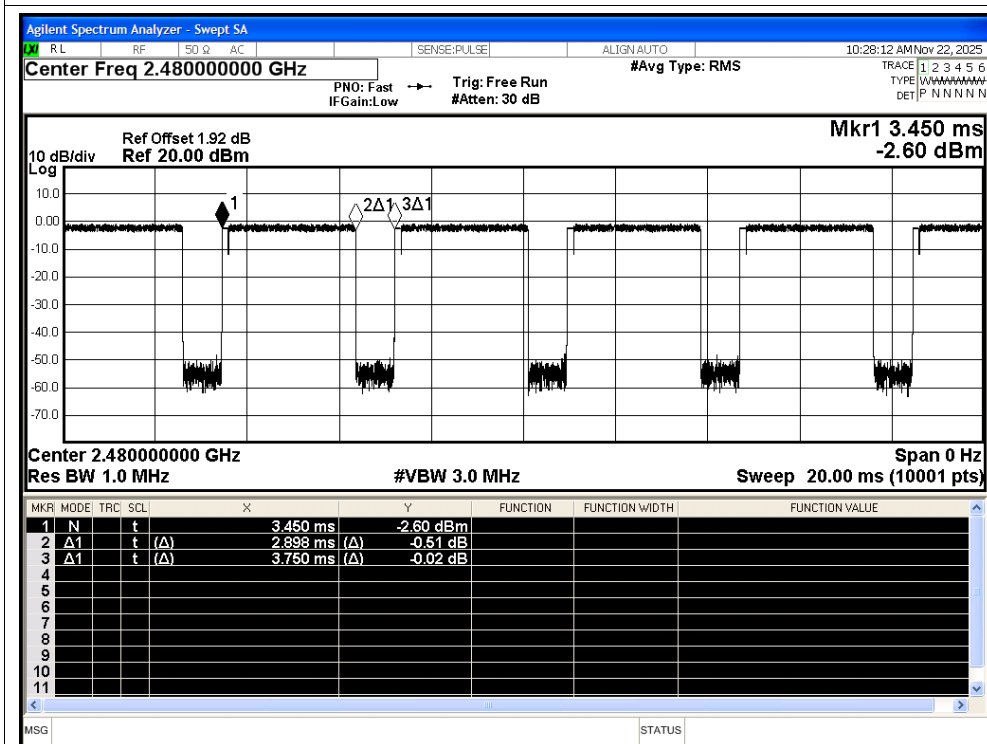
Duty Cycle NVNT 2-DH5 2402MHz Ant1



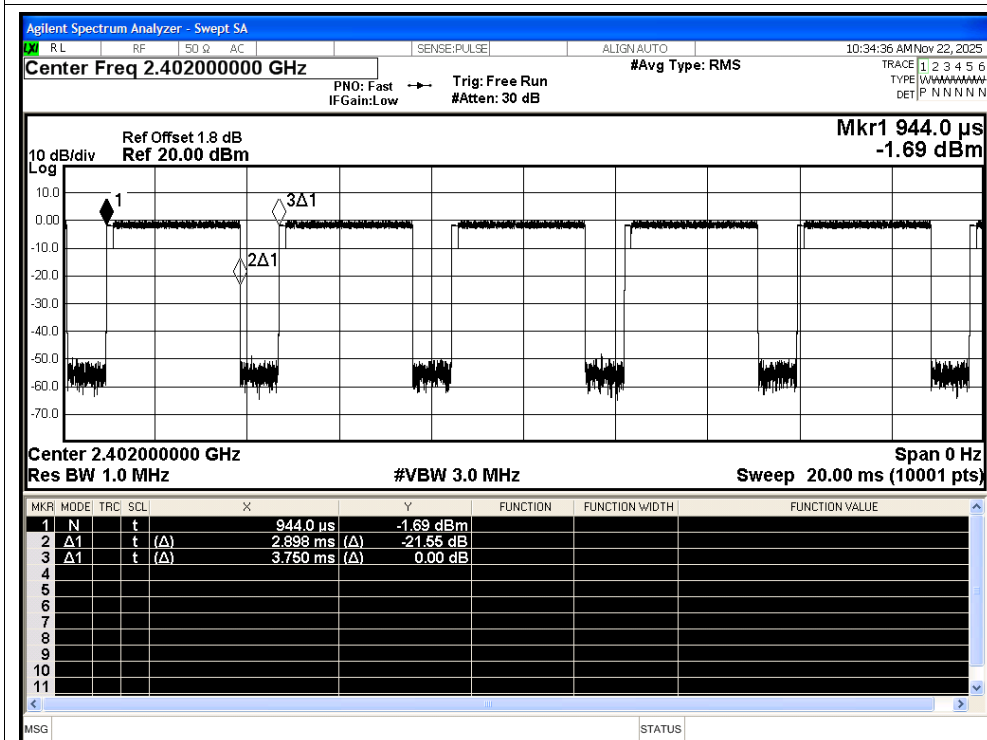
Duty Cycle NVNT 2-DH5 2441MHz Ant1



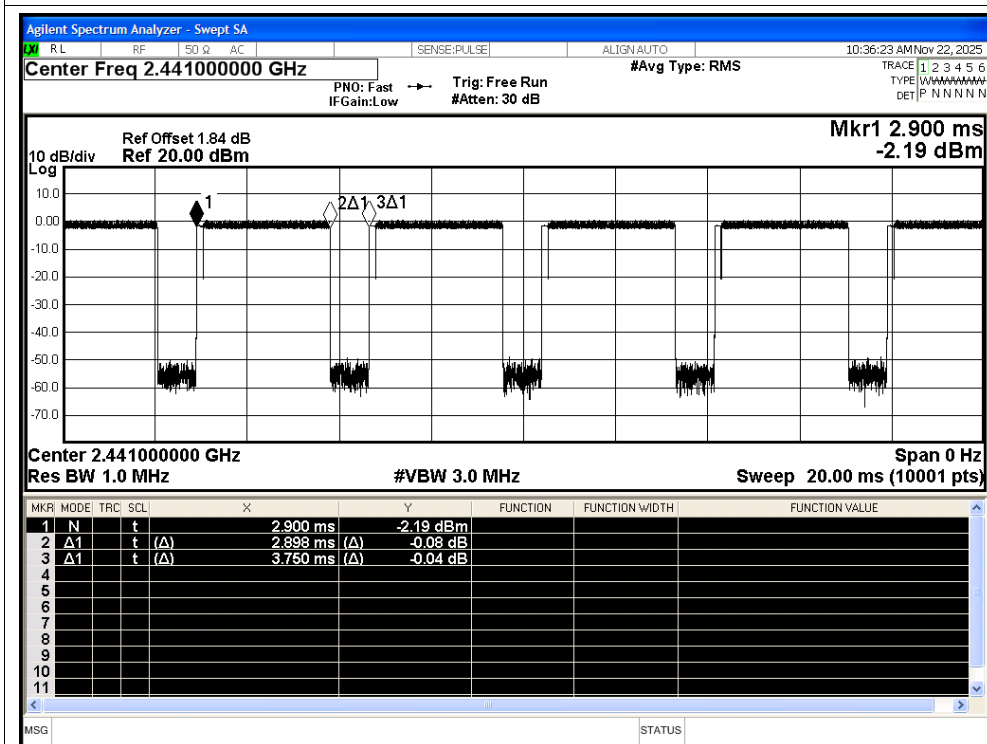
Duty Cycle NVNT 2-DH5 2480MHz Ant1

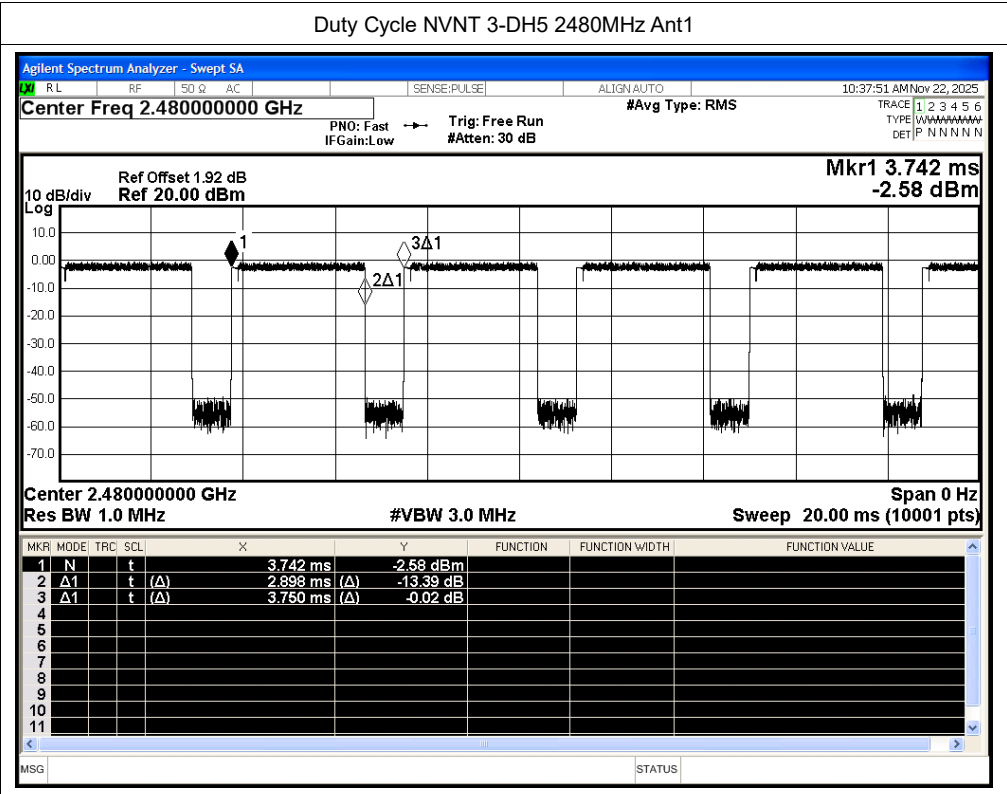


Duty Cycle NVNT 3-DH5 2402MHz Ant1



Duty Cycle NVNT 3-DH5 2441MHz Ant1



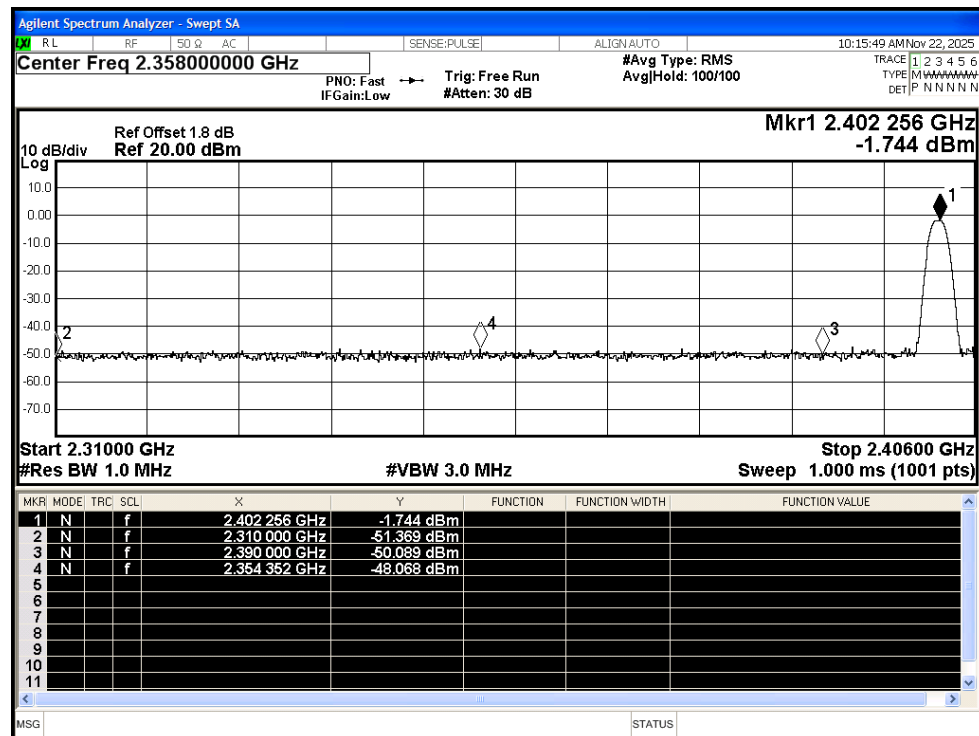


A.9 Restrict Band

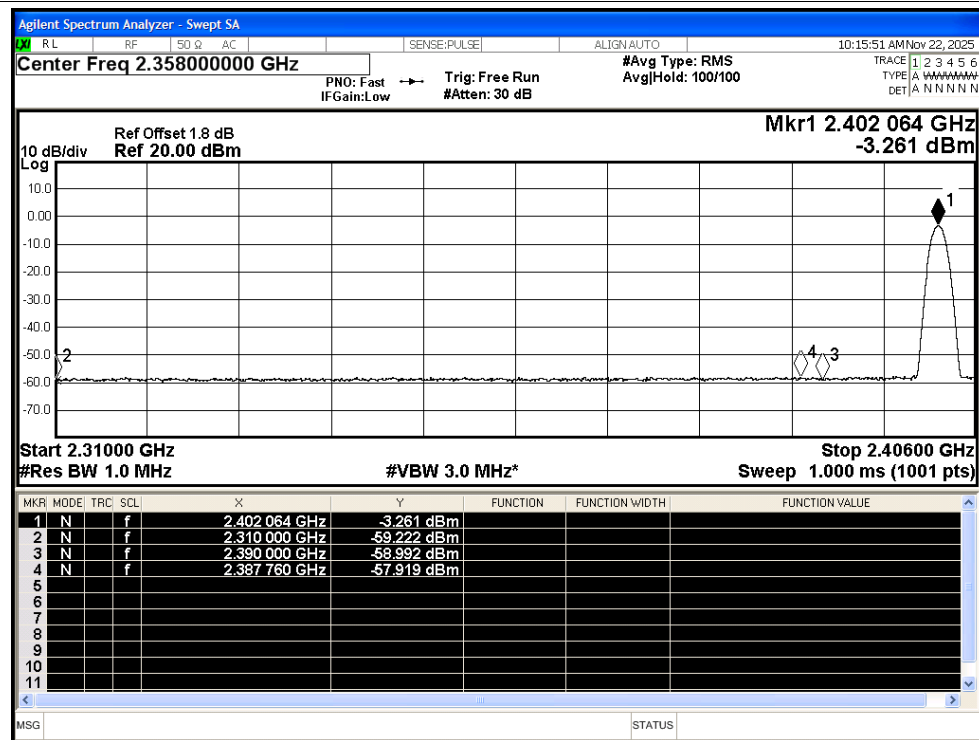
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-51.37	2	-	45.89	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-59.22	2	1.1	39.14	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2354.352	-48.07	2	-	49.19	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2387.76	-57.92	2	1.1	40.44	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-50.09	2	-	47.17	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-58.99	2	1.1	39.37	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-50.09	2	-	47.17	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-58.1	2	1.1	40.26	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2487.28	-47.22	2	-	50.04	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2491.936	-57.32	2	1.1	41.04	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-49.93	2	-	47.33	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-58.47	2	1.1	39.89	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-50.28	2	-	46.98	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-59.21	2	1.12	39.17	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2381.424	-48.18	2	-	49.08	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2376.624	-57.91	2	1.12	40.47	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-49.86	2	-	47.4	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-58.49	2	1.12	39.89	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-49.49	2	-	47.77	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-57.89	2	1.12	40.49	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2485.144	-46.69	2	-	50.57	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2496.616	-57.24	2	1.12	41.14	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-50.98	2	-	46.28	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-58.09	2	1.12	40.29	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-51.65	2	-	45.61	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-58.63	2	1.12	39.75	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2384.88	-48.01	2	-	49.25	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2358.864	-57.83	2	1.12	40.55	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-51.15	2	-	46.11	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-58.53	2	1.12	39.85	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-49.02	2	-	48.24	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-57.79	2	1.12	40.59	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2485.792	-46.31	2	-	50.95	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2491.24	-57.19	2	1.12	41.19	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-49.99	2	-	47.27	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-58.23	2	1.12	40.15	Average	54	Pass

Test Graphs

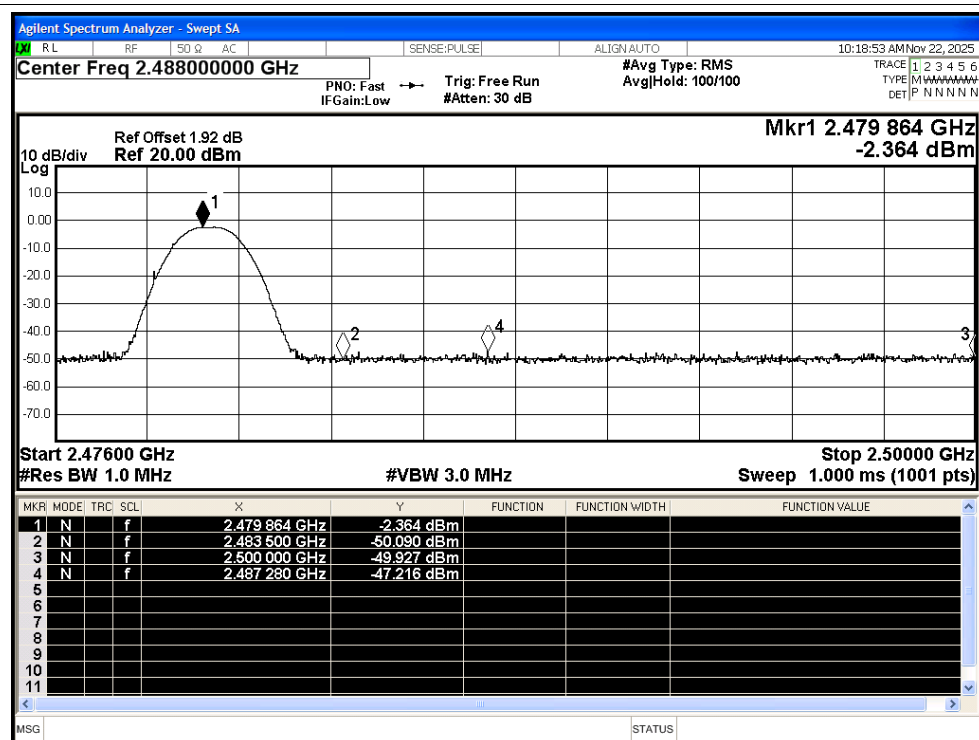
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak



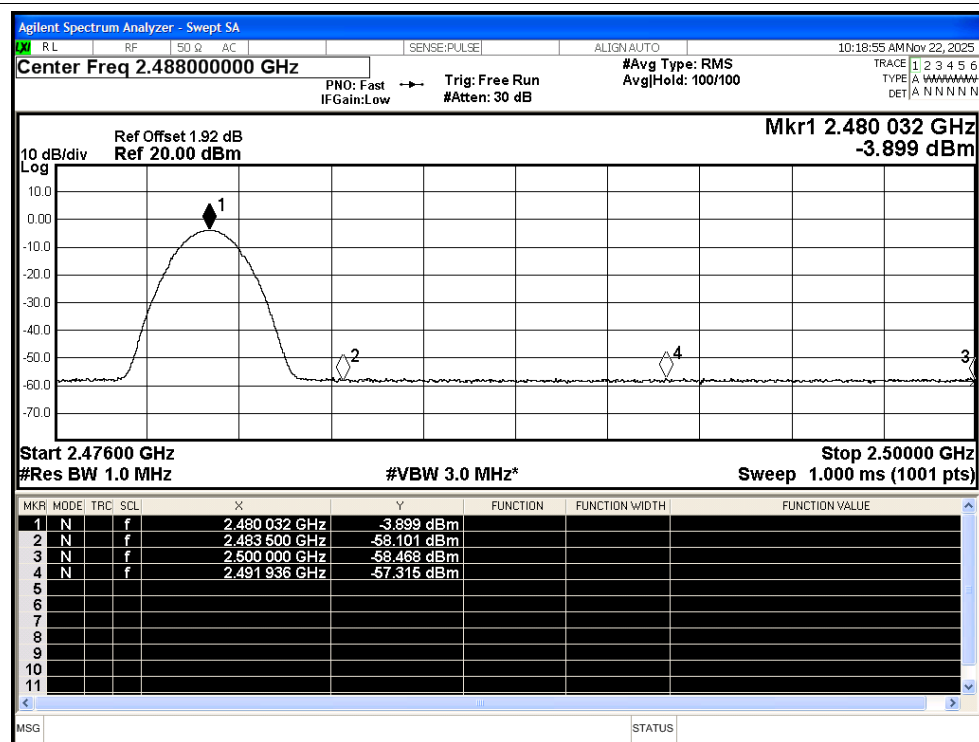
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average

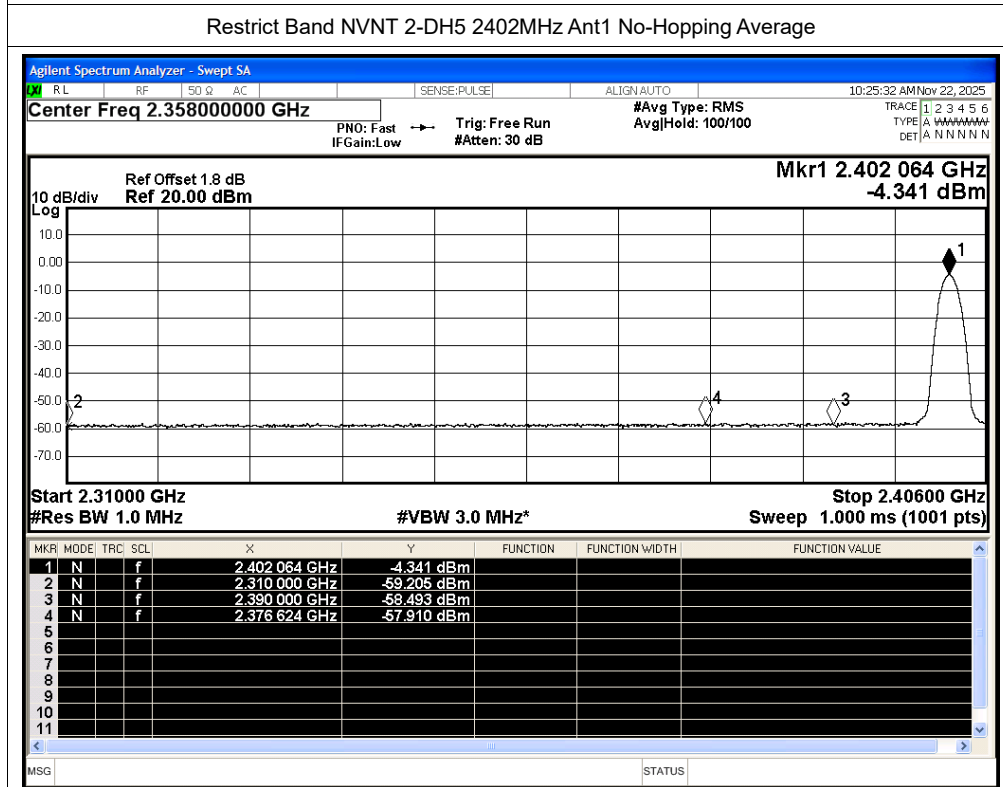
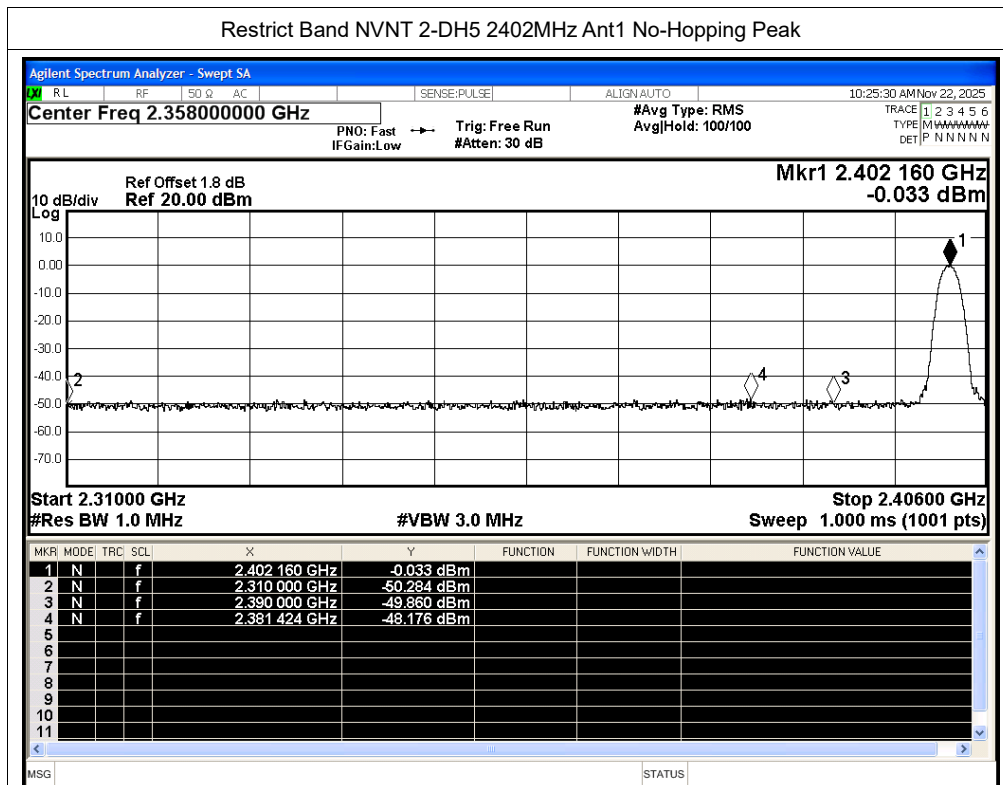


Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak

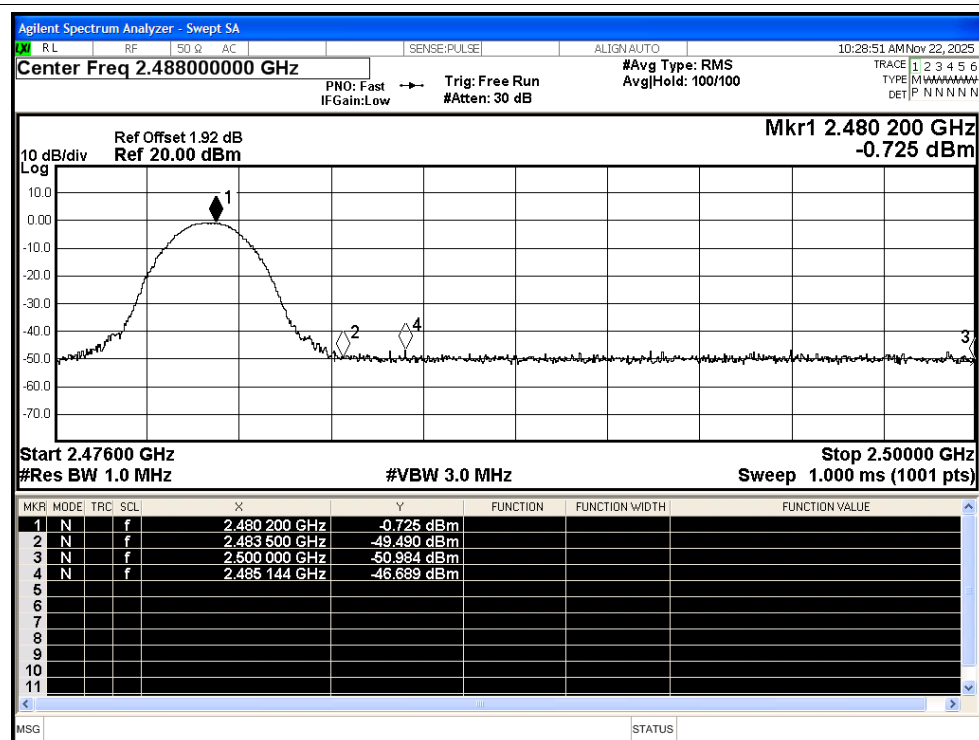


Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average





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



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

