

Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Helmet Bluetooth Headset

Test Model: F2

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	0.95	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.94	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.964	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.284	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.285	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.286	N/A	Pass
NVNT	3-DH5	2402	Ant1	1.31	N/A	Pass
NVNT	3-DH5	2441	Ant1	1.293	N/A	Pass
NVNT	3-DH5	2480	Ant1	1.287	N/A	Pass

Test Graphs

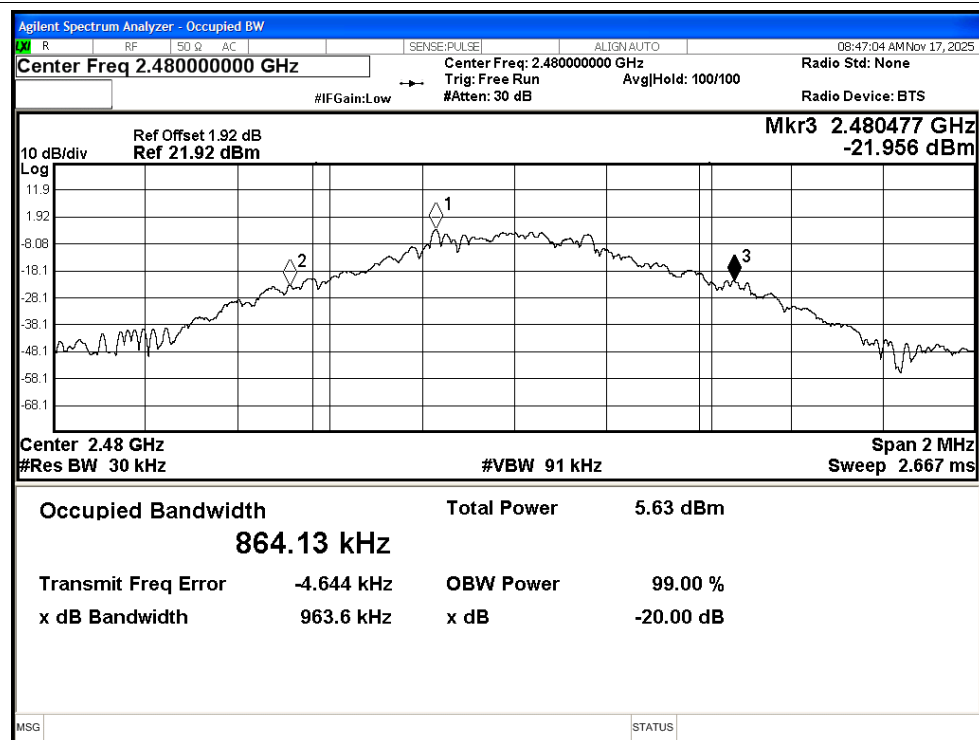
-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



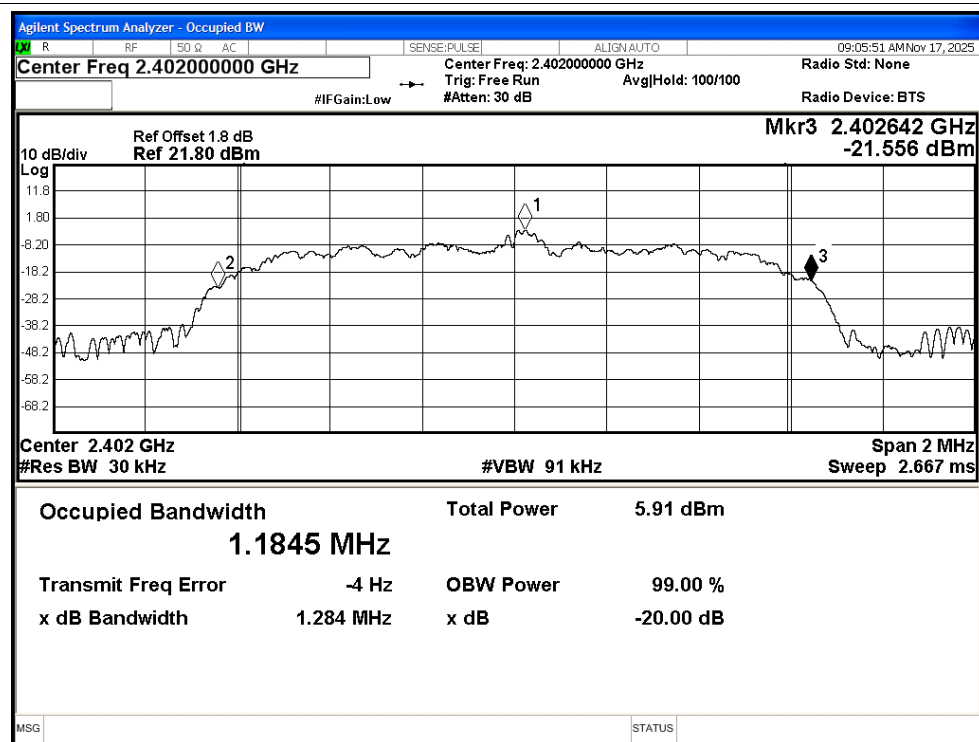
-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



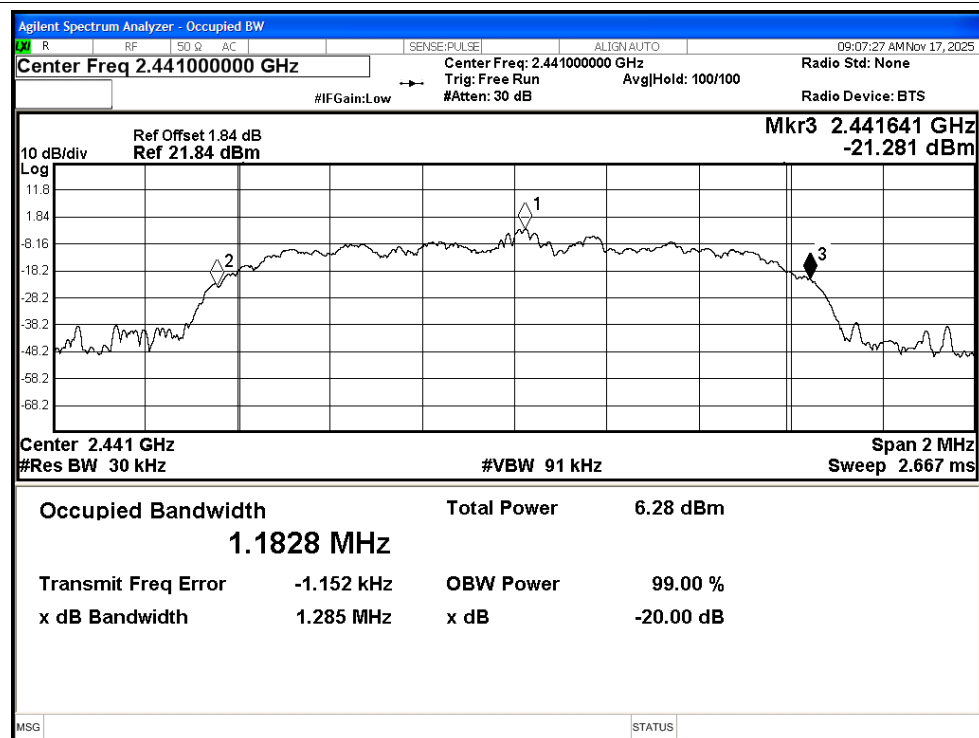
-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



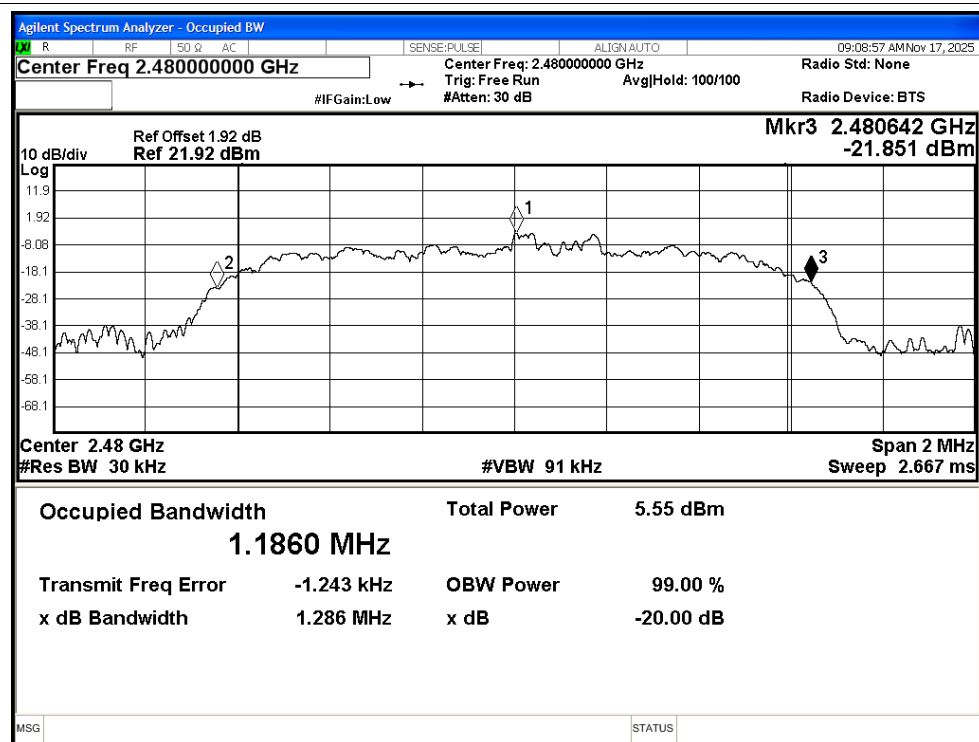
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



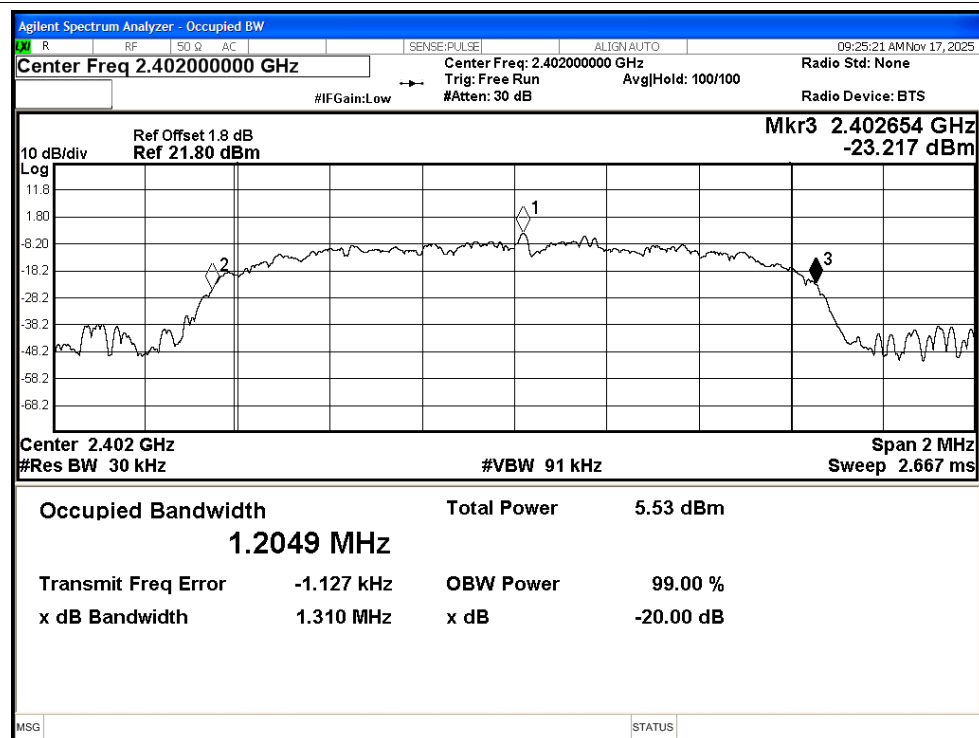
-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



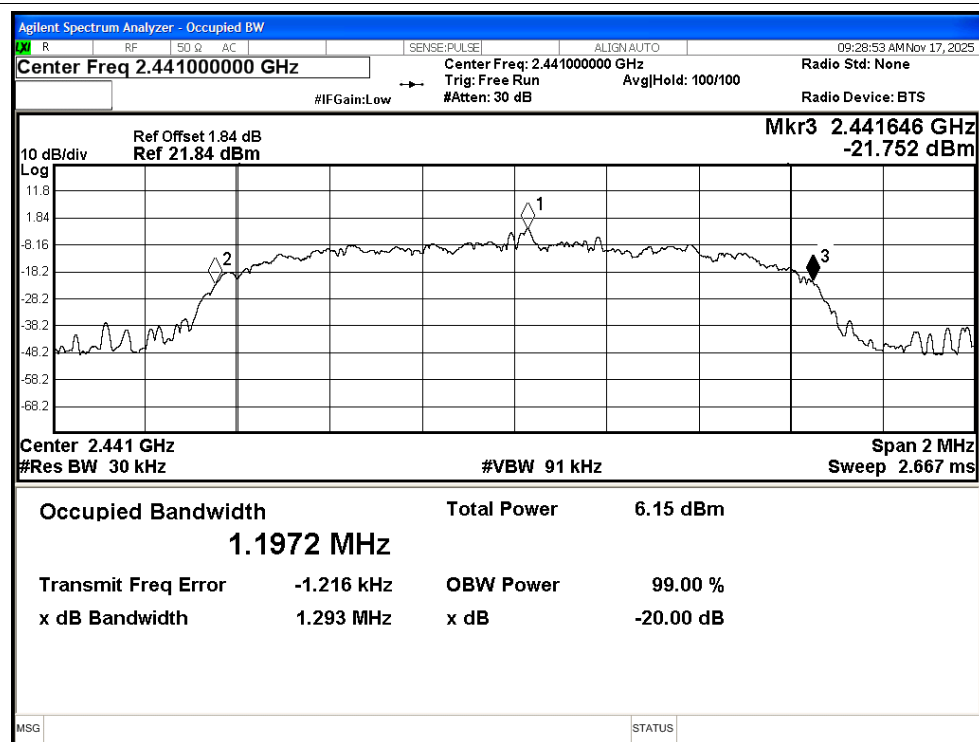
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

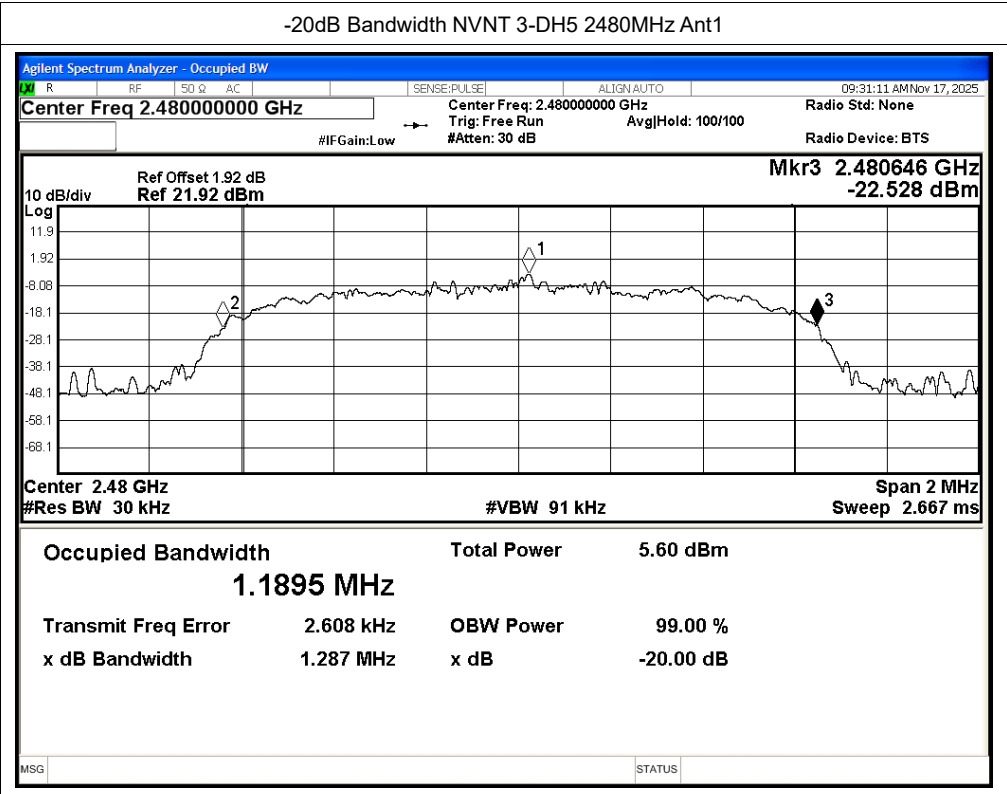


-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



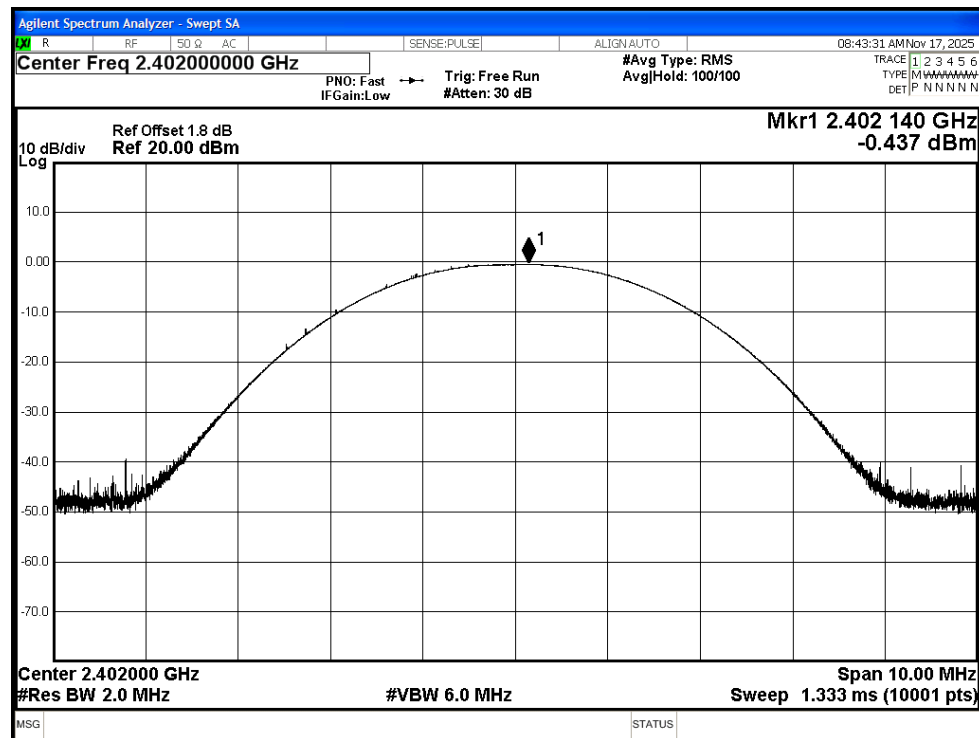


A.2 Maximum Peak Conducted Output Power

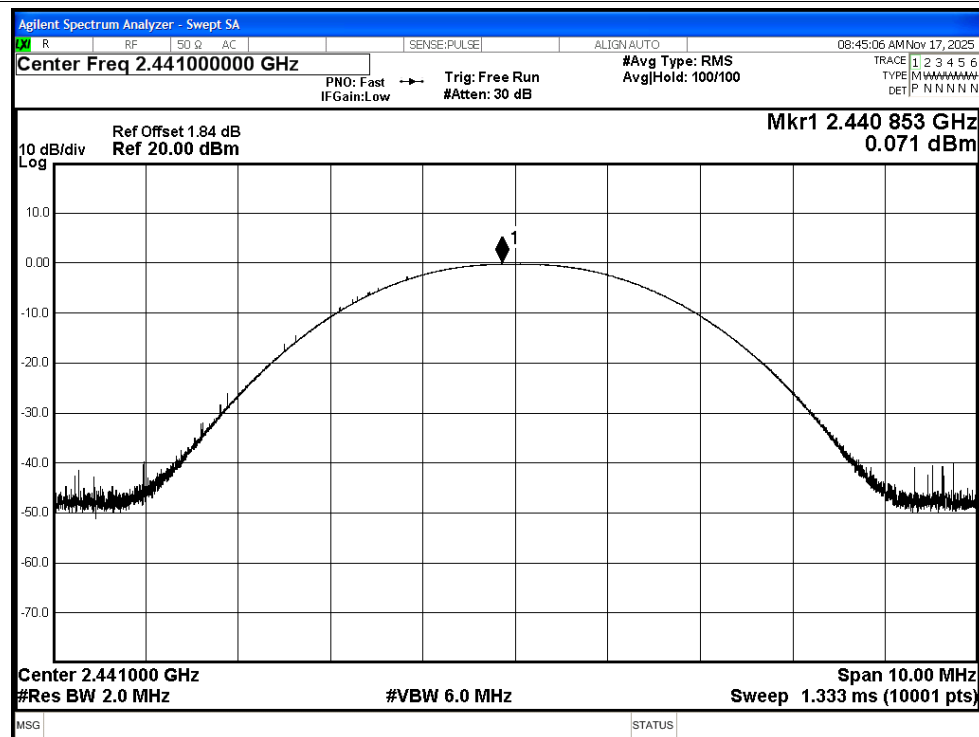
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	-0.44	21	Pass
NVNT	1-DH5	2441	Ant1	0.07	21	Pass
NVNT	1-DH5	2480	Ant1	-0.74	21	Pass
NVNT	2-DH5	2402	Ant1	1.59	21	Pass
NVNT	2-DH5	2441	Ant1	1.89	21	Pass
NVNT	2-DH5	2480	Ant1	1.12	21	Pass
NVNT	3-DH5	2402	Ant1	2.06	21	Pass
NVNT	3-DH5	2441	Ant1	2.42	21	Pass
NVNT	3-DH5	2480	Ant1	1.59	21	Pass

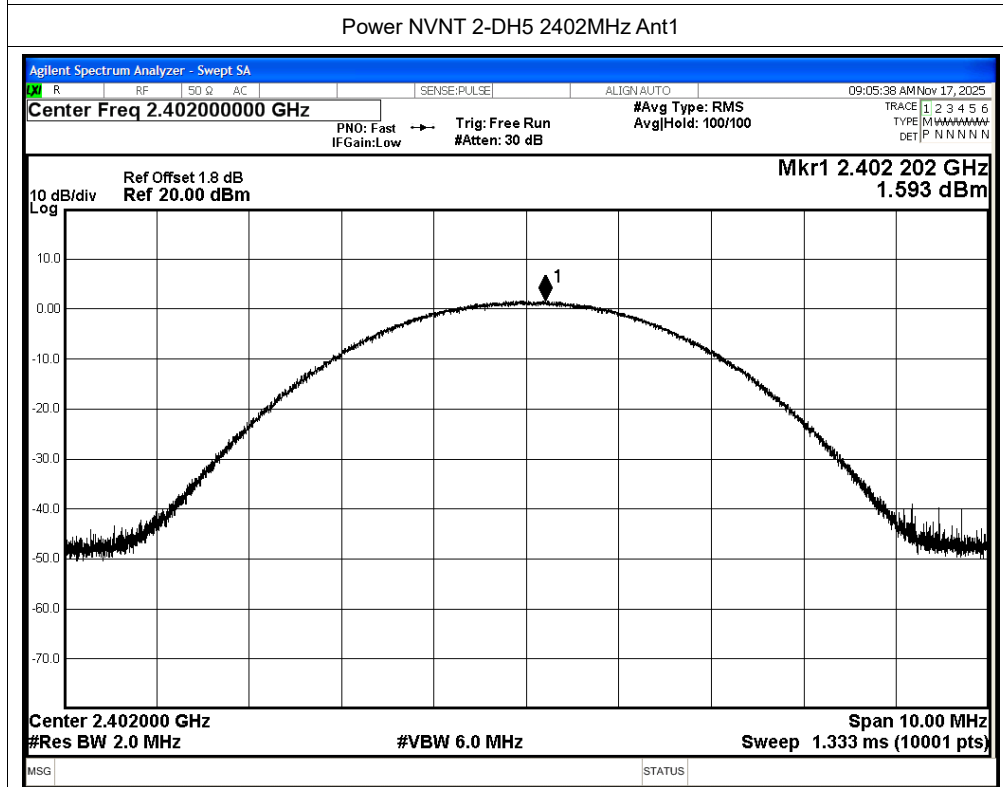
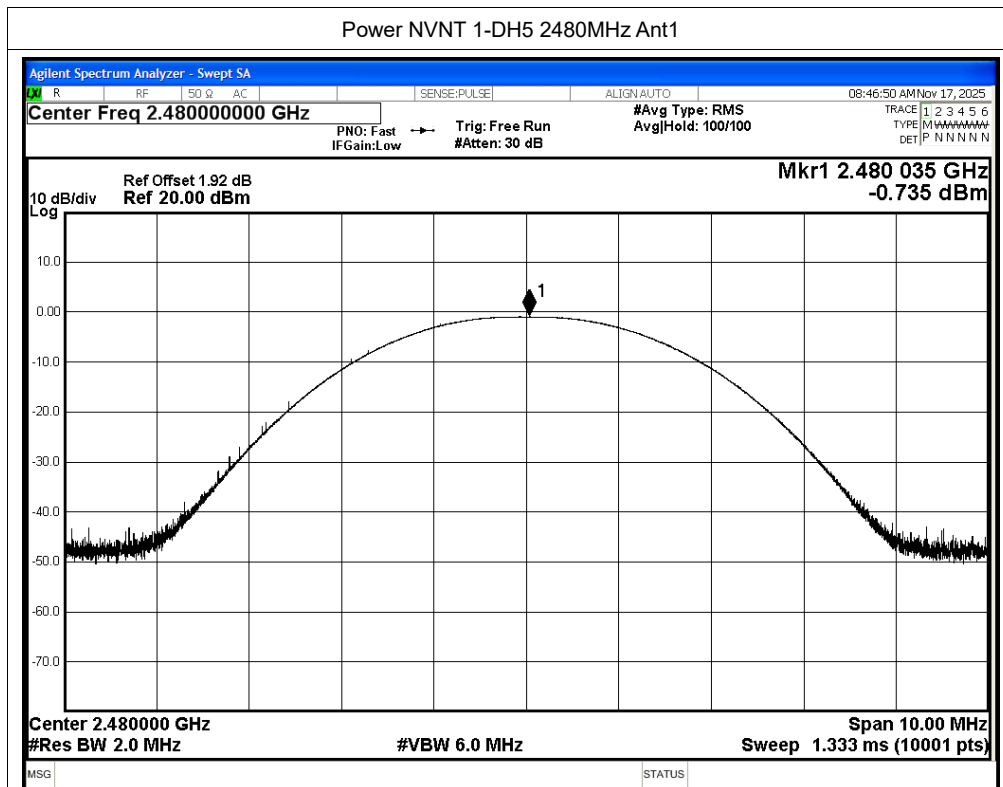
Test Graphs

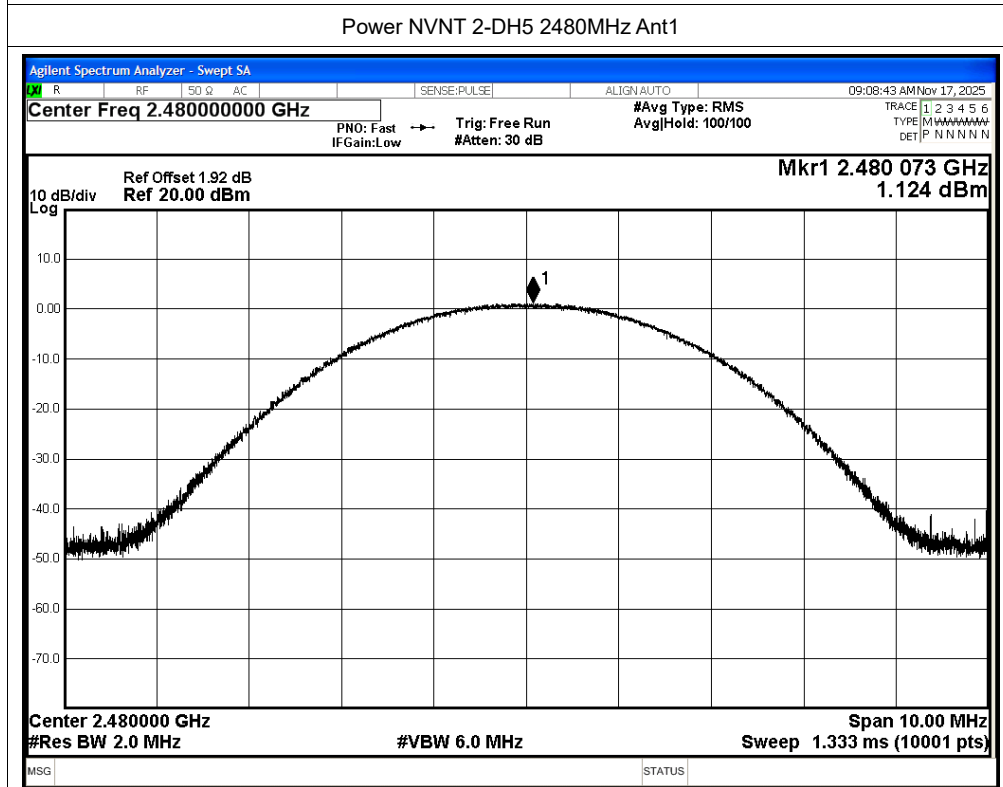
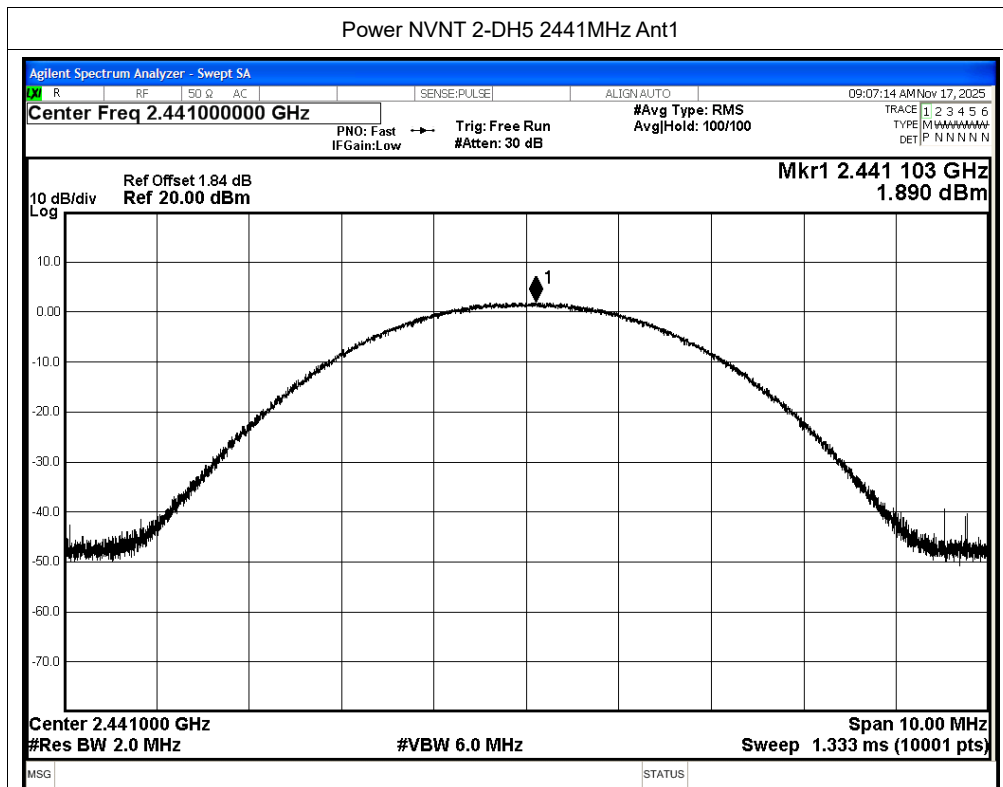
Power NVNT 1-DH5 2402MHz Ant1

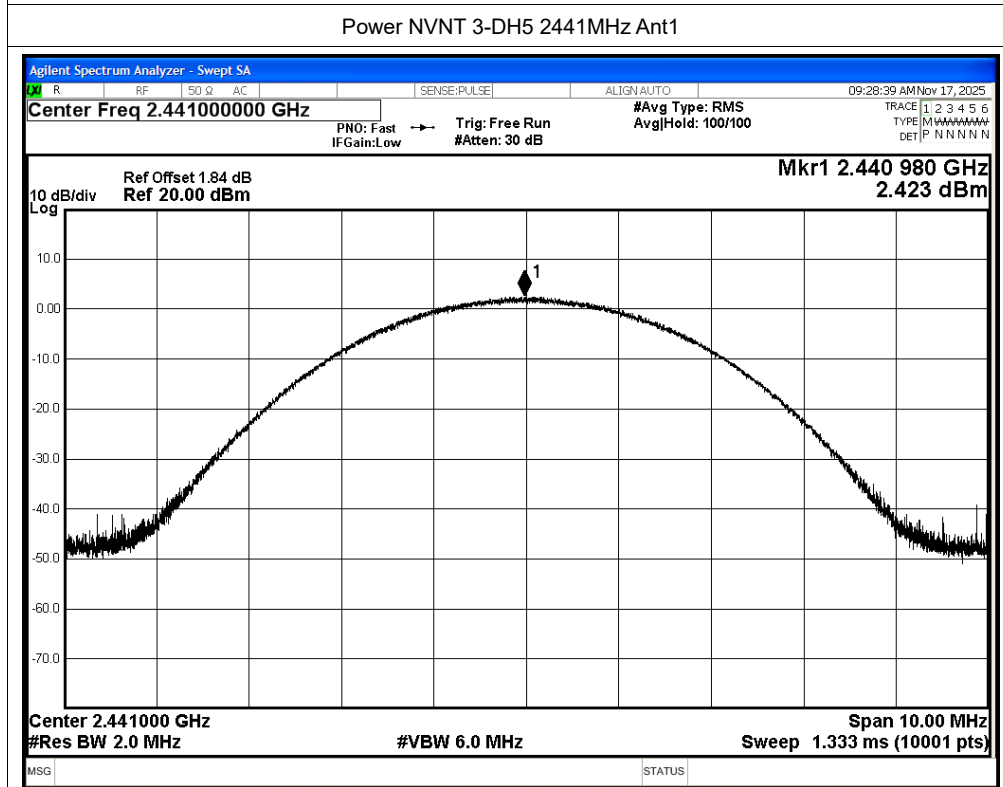
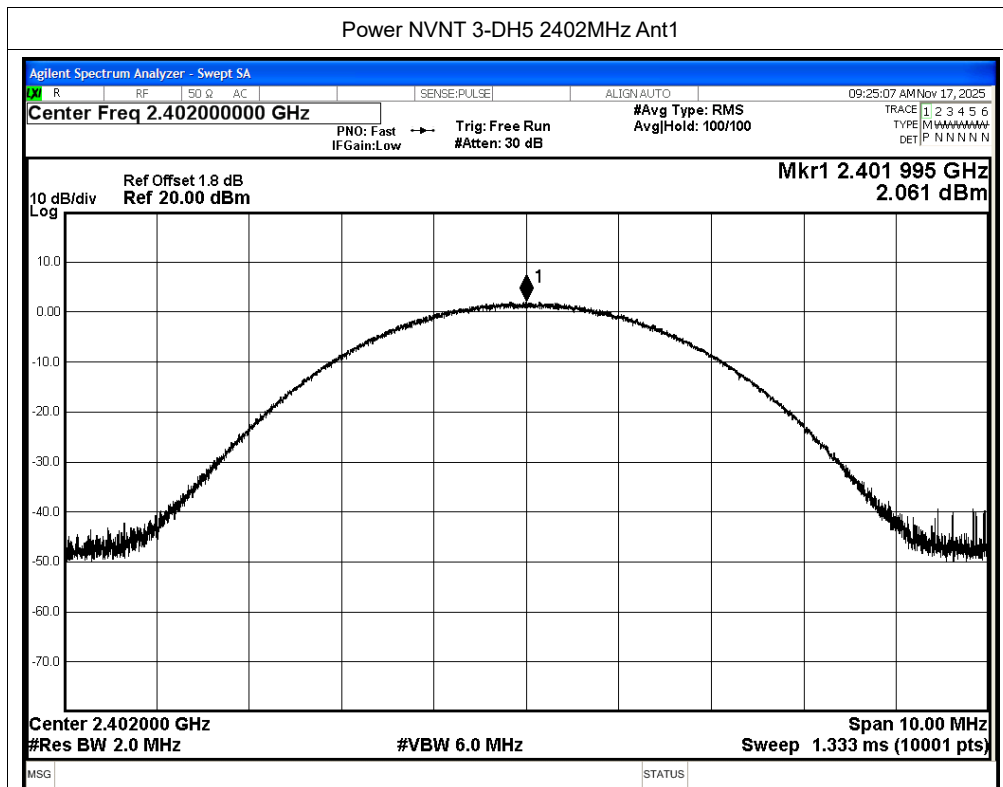


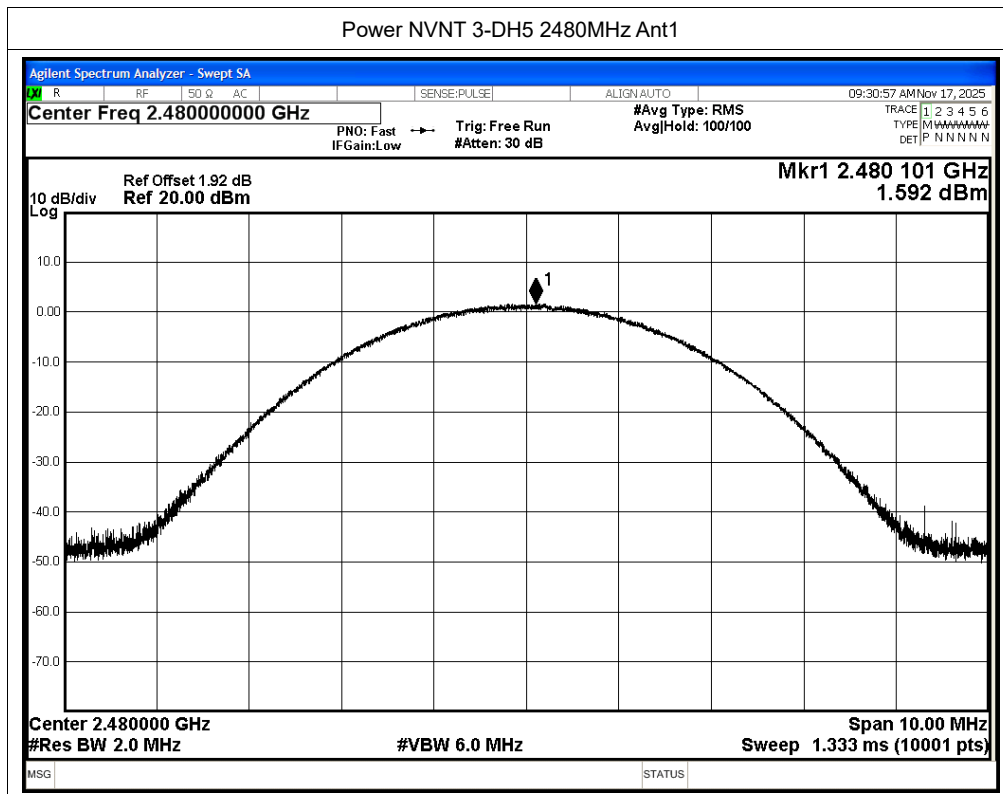
Power NVNT 1-DH5 2441MHz Ant1









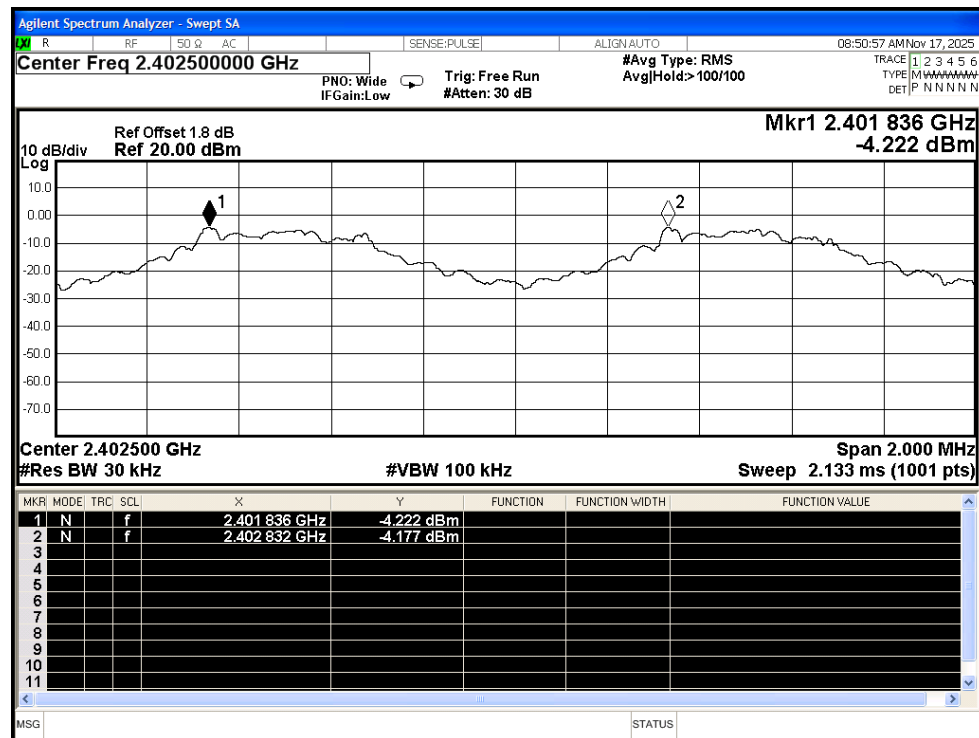


A.3 Carrier Frequencies Separation

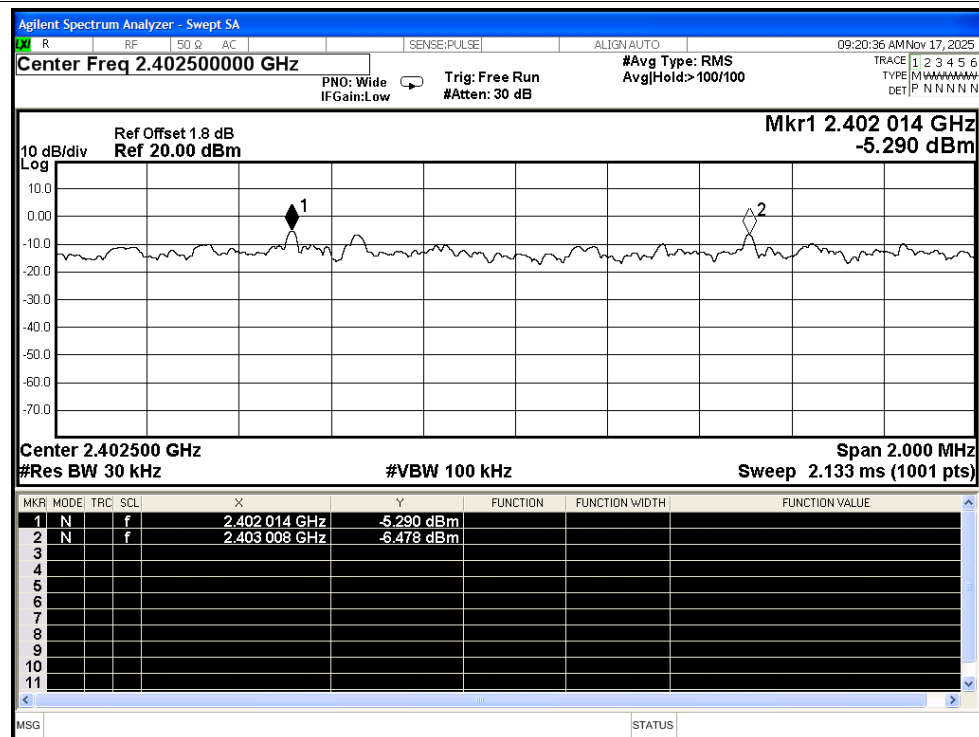
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2401.836	2402.832	0.996	0.643	Pass
NVNT	2-DH5	Ant1	2402.014	2403.008	0.994	0.857	Pass
NVNT	3-DH5	Ant1	2401.916	2403.016	1.1	0.873	Pass

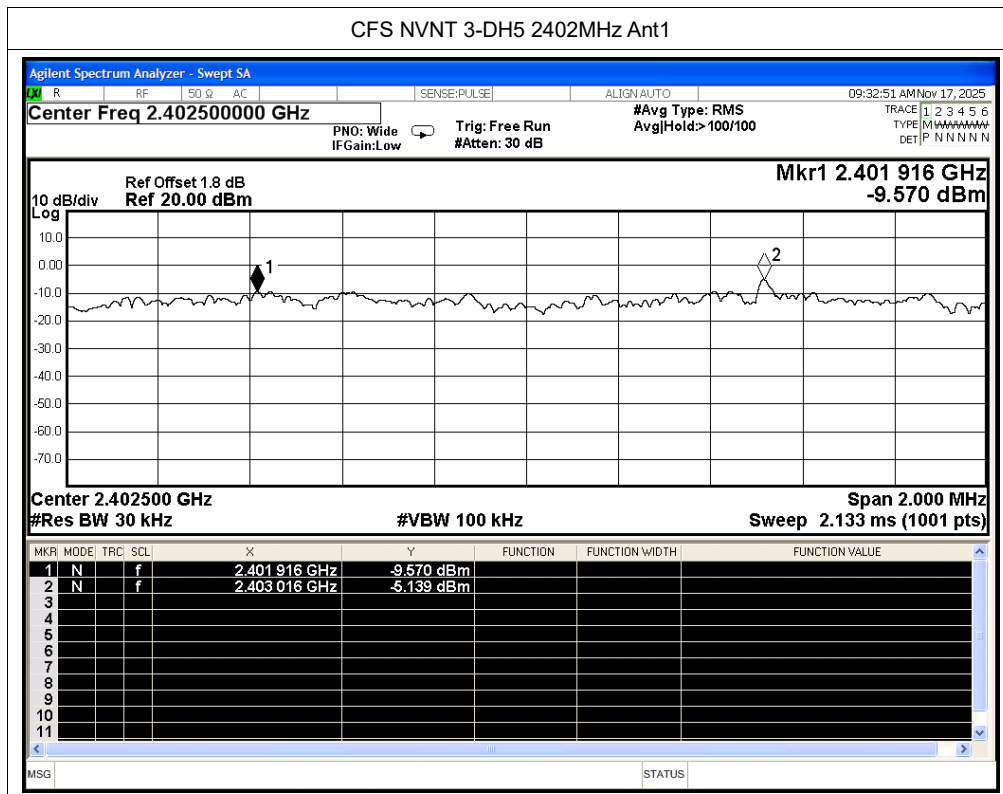
Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1



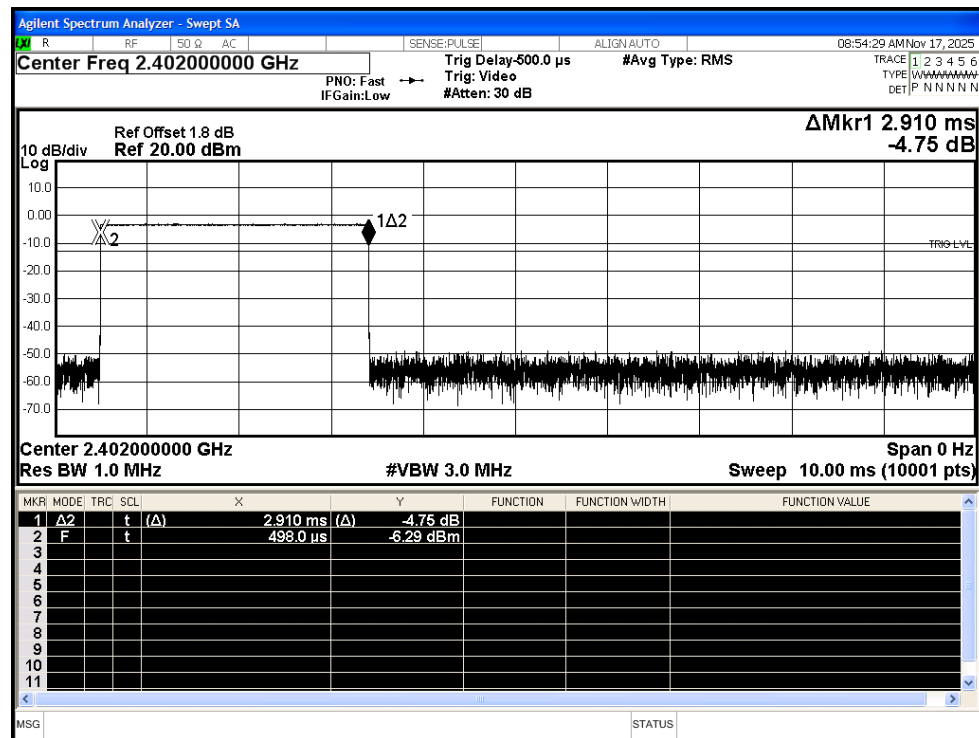


A.4 Dwell Time

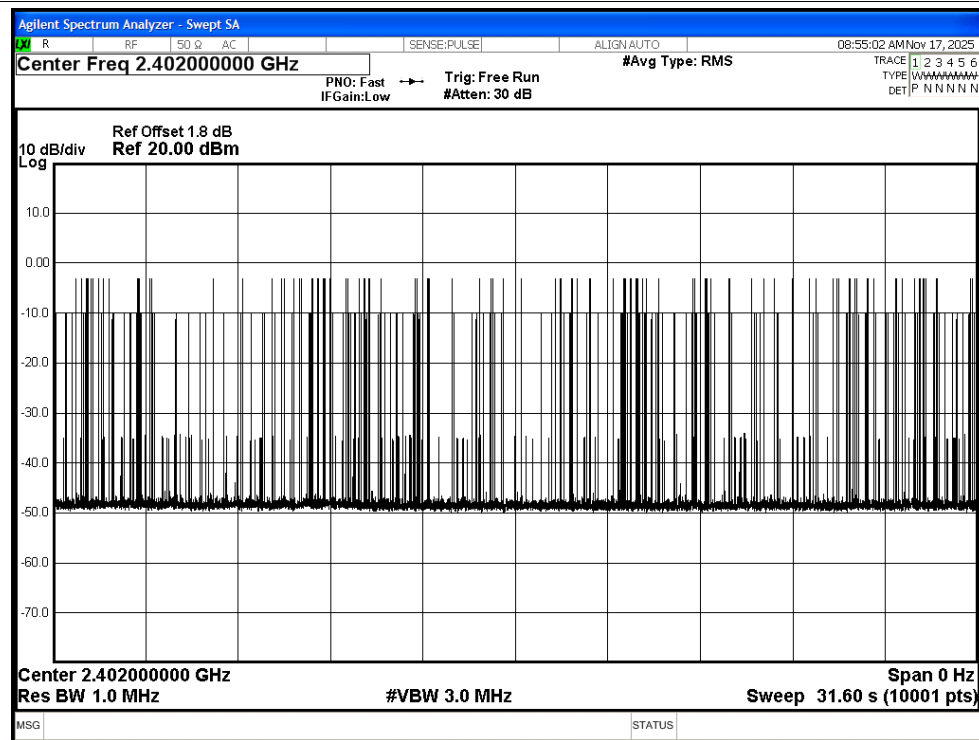
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.91	282.27	97	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.898	318.78	110	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.897	278.112	96	31600	400	Pass

Test Graphs

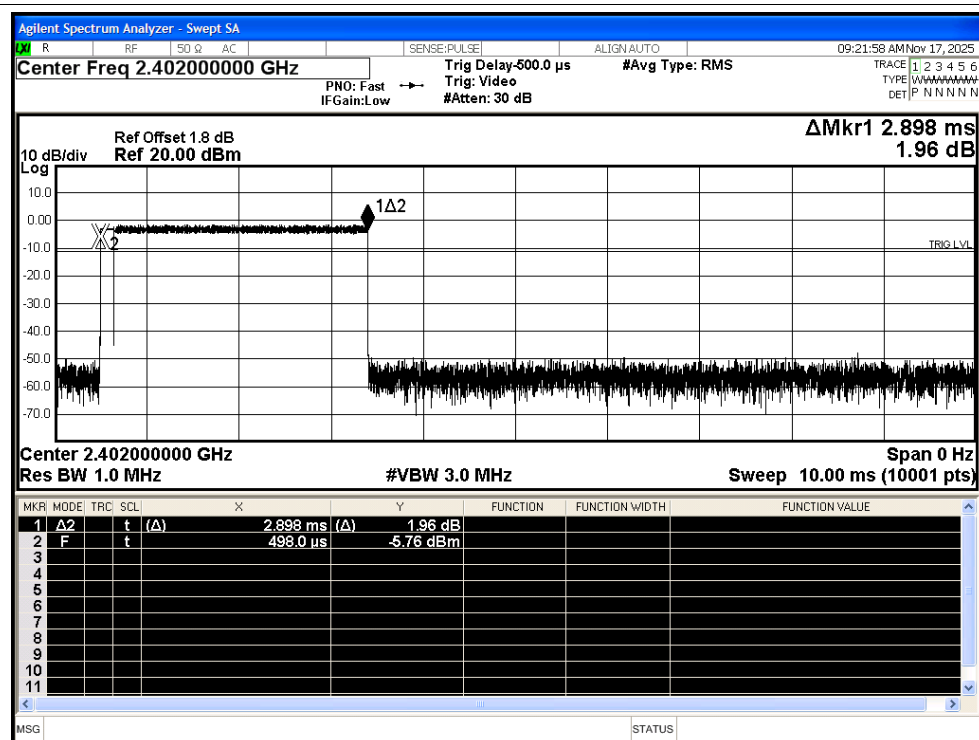
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



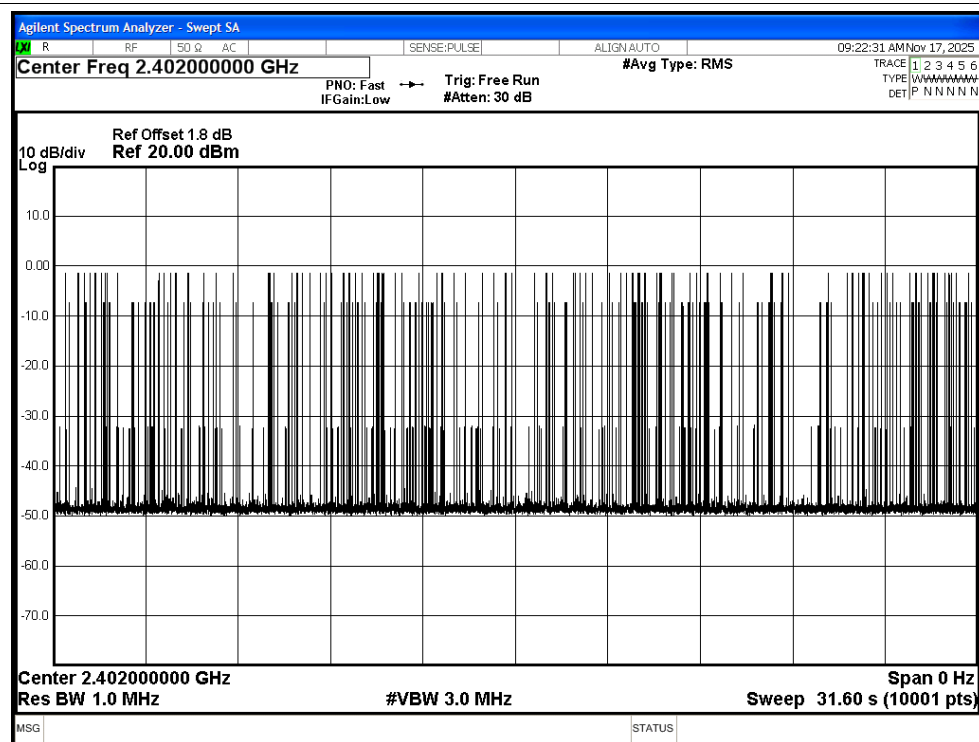
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



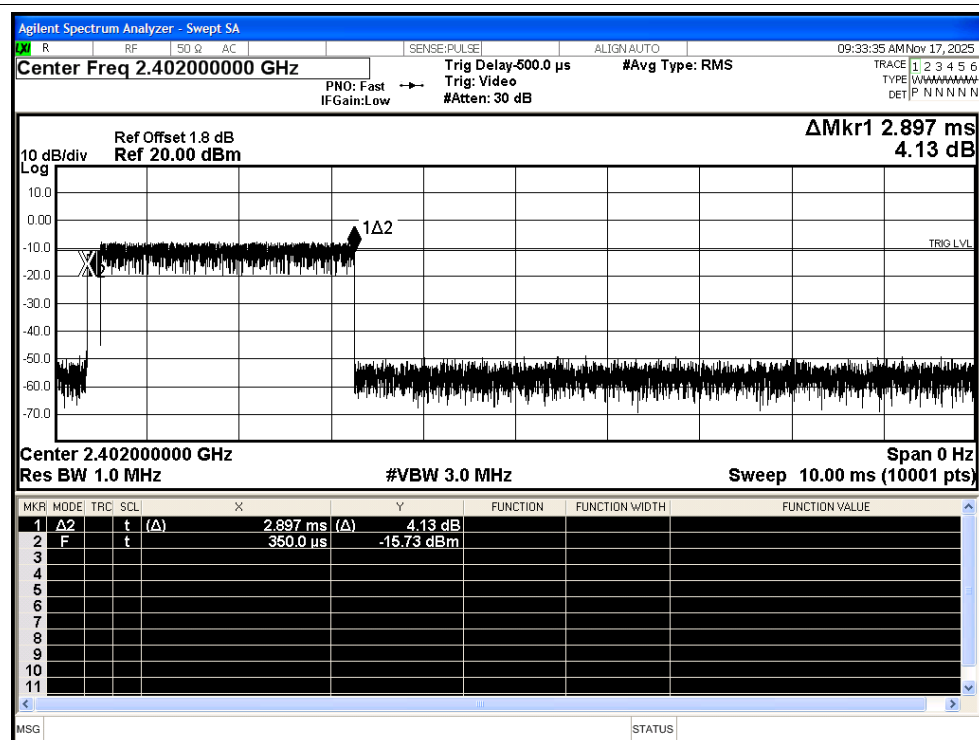
Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



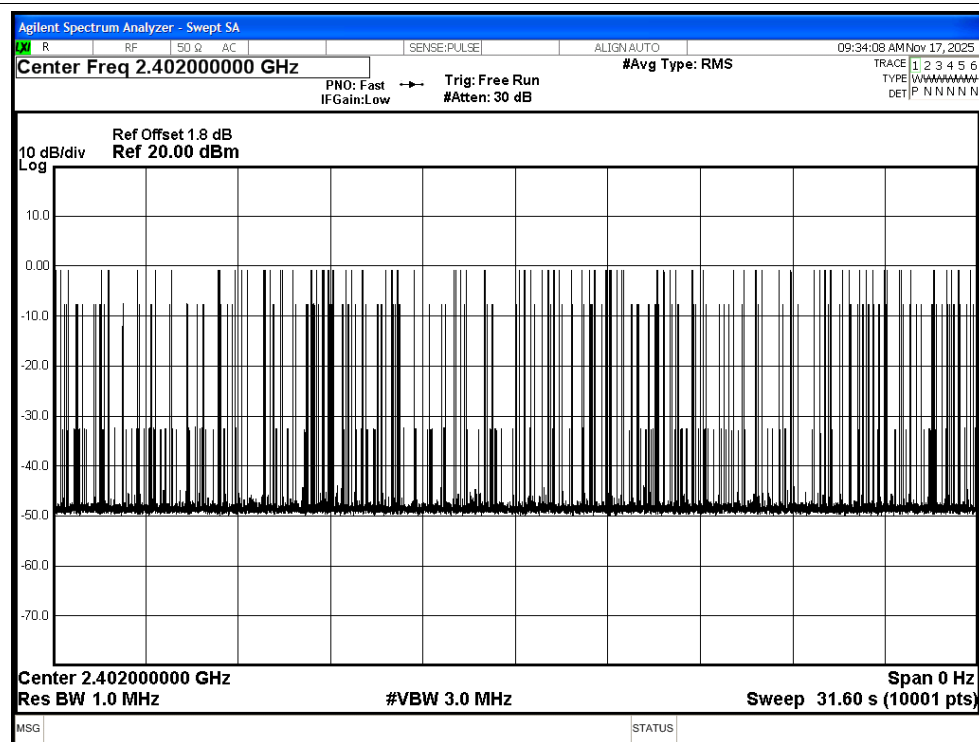
Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated



Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated

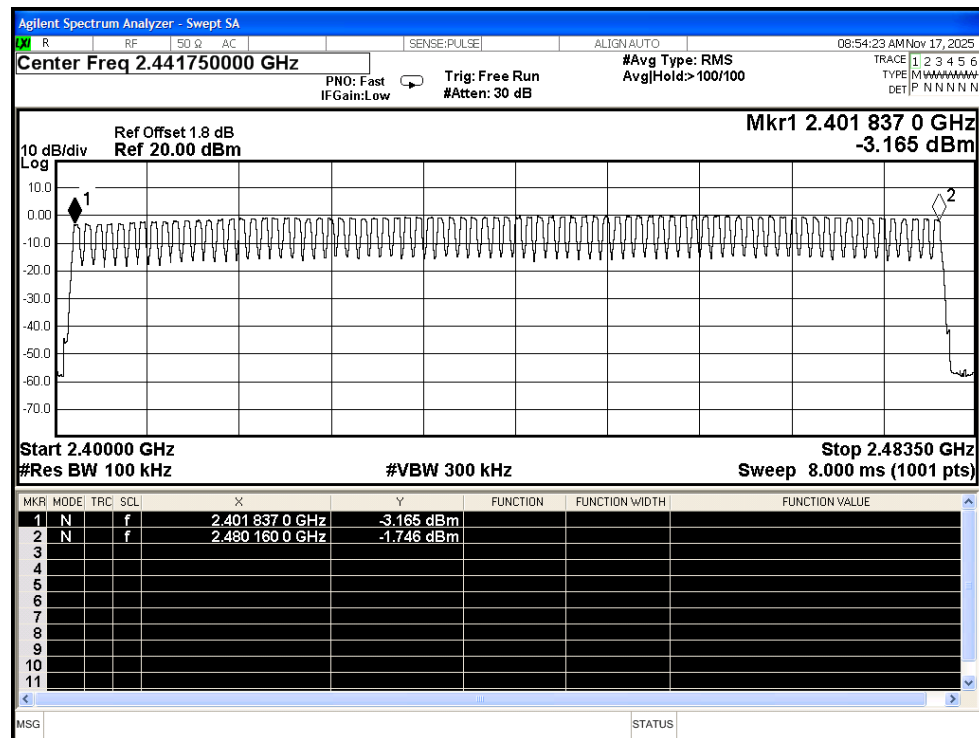


A.5 Number of Hopping Channel

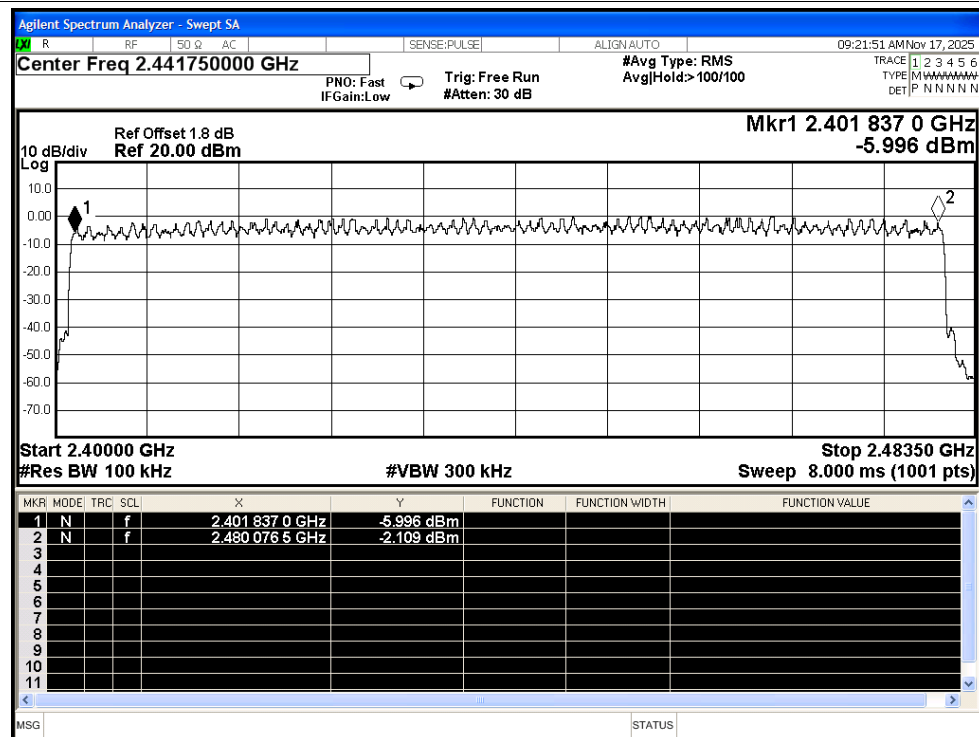
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass

Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1

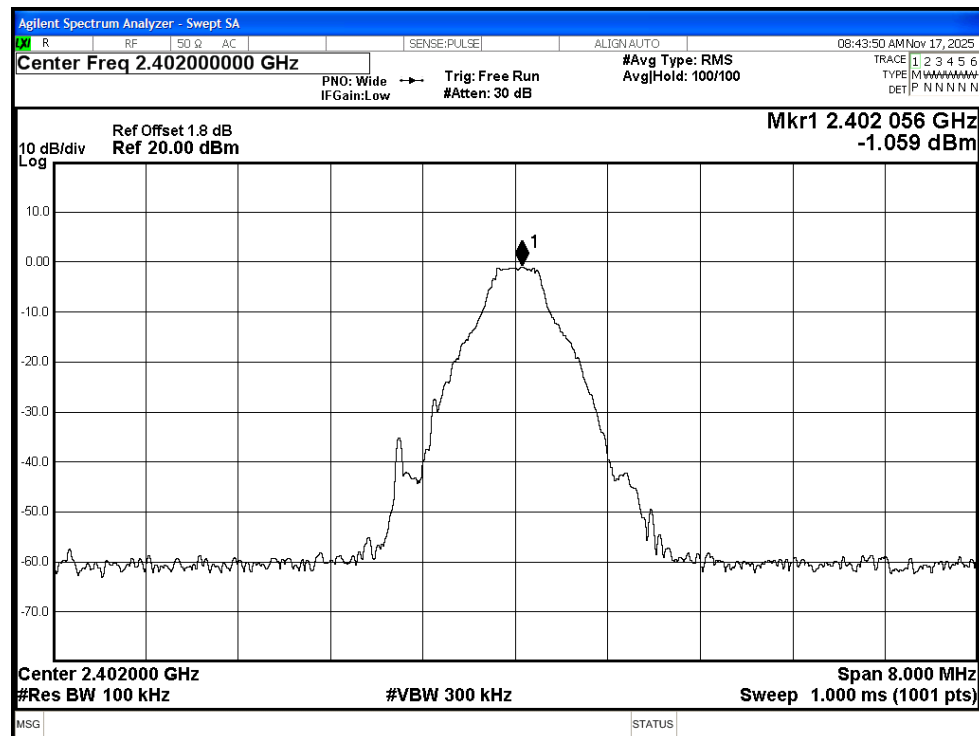


A.6 Band Edge

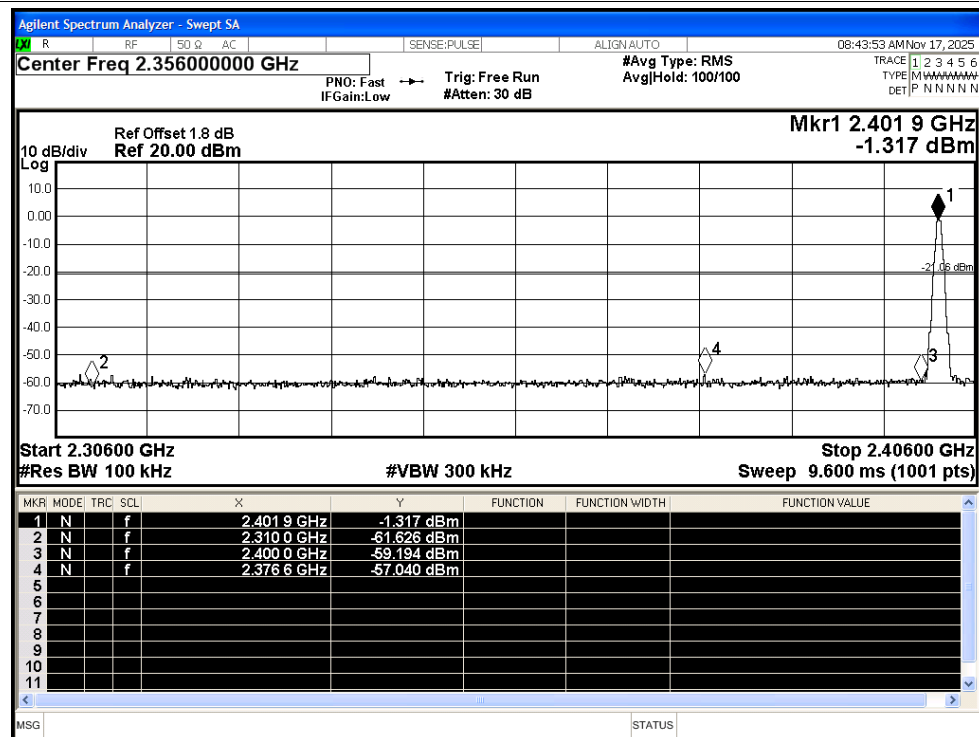
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-55.98	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-54.85	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-50.65	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-55.74	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-51.76	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-54.17	-20	Pass

Test Graphs

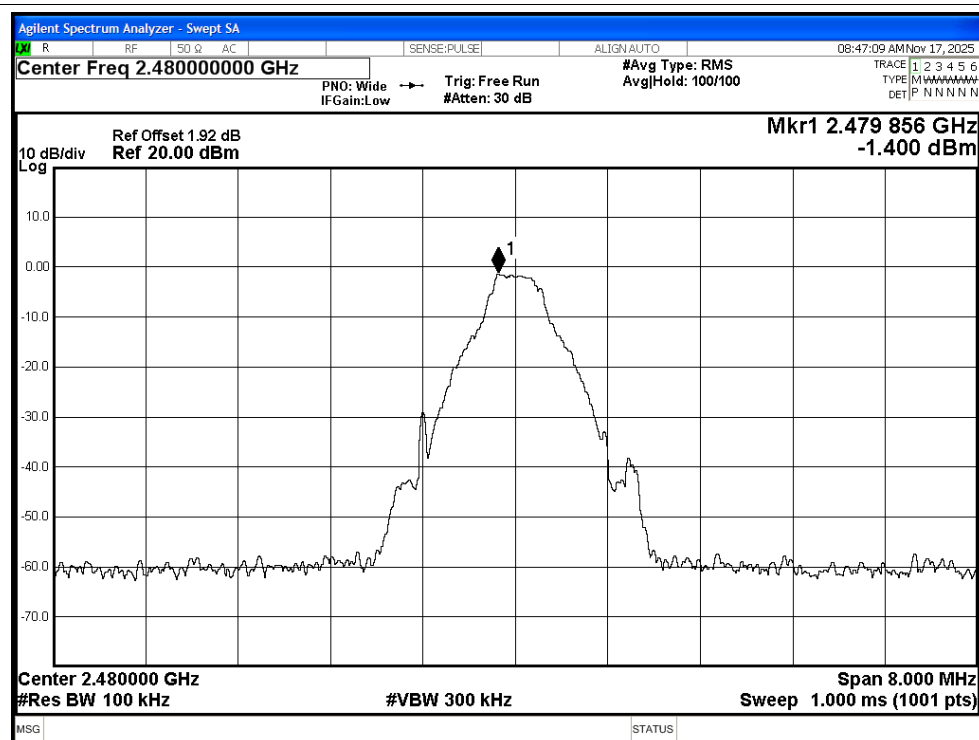
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



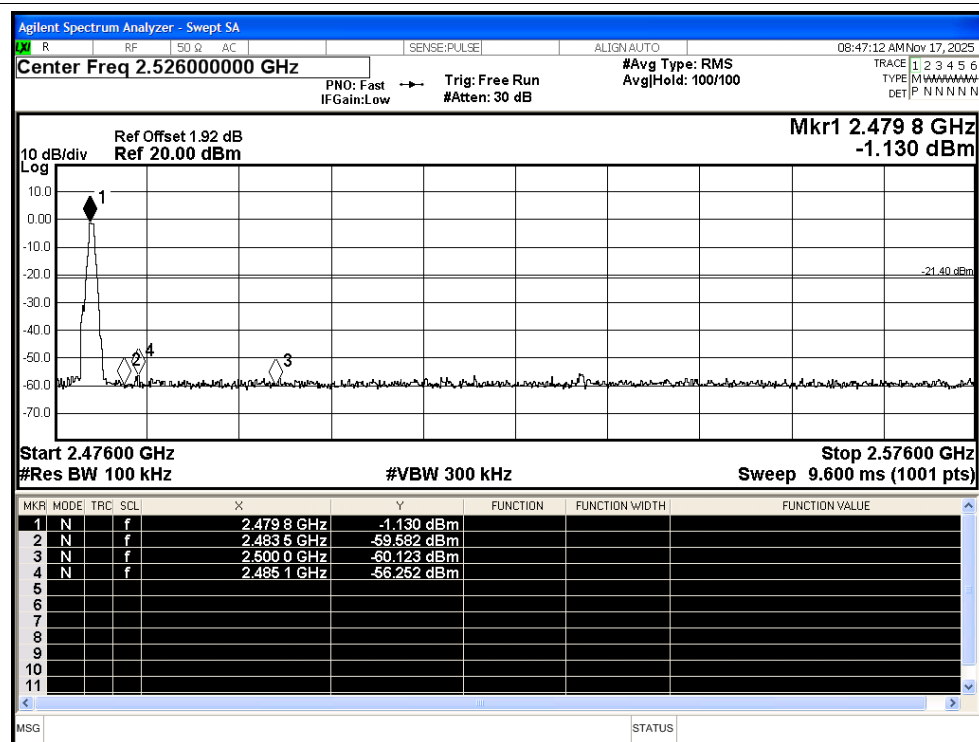
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



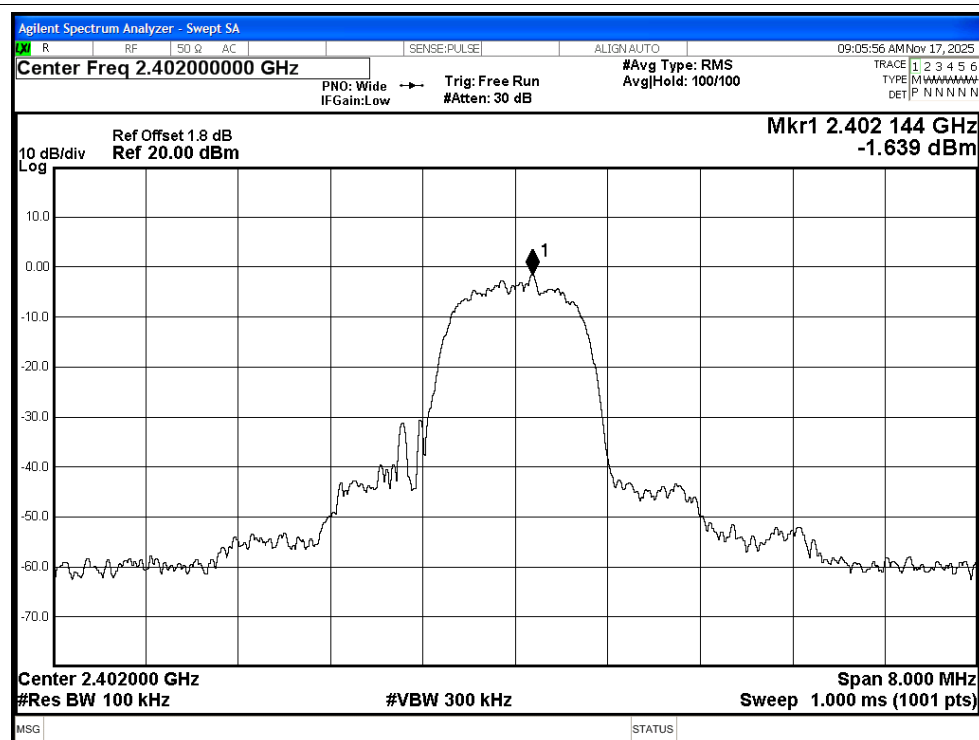
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



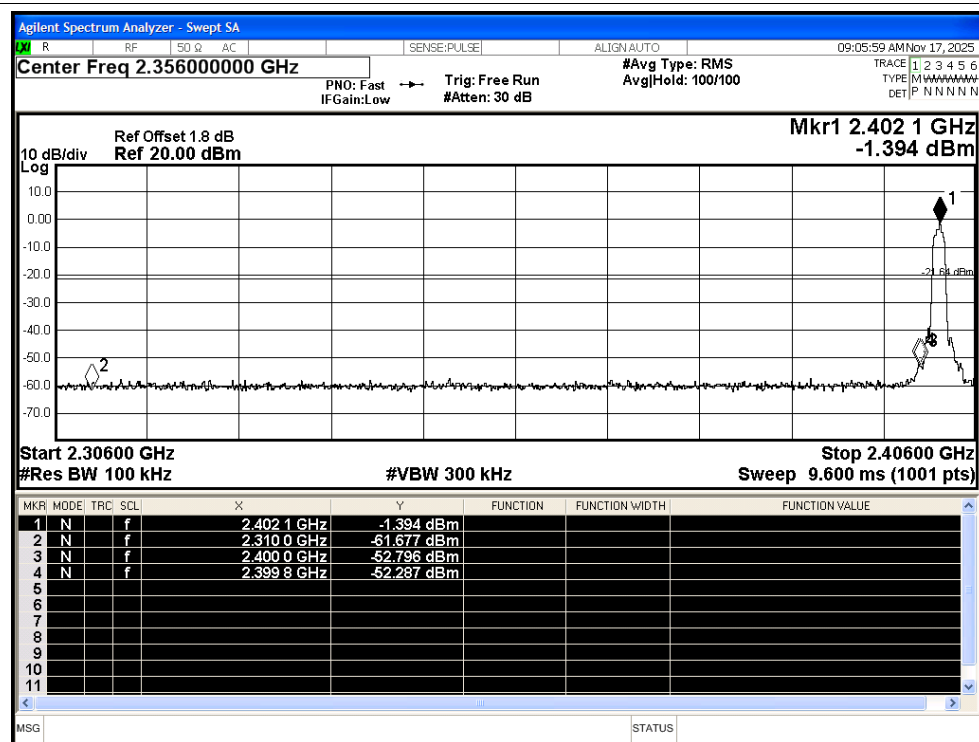
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission

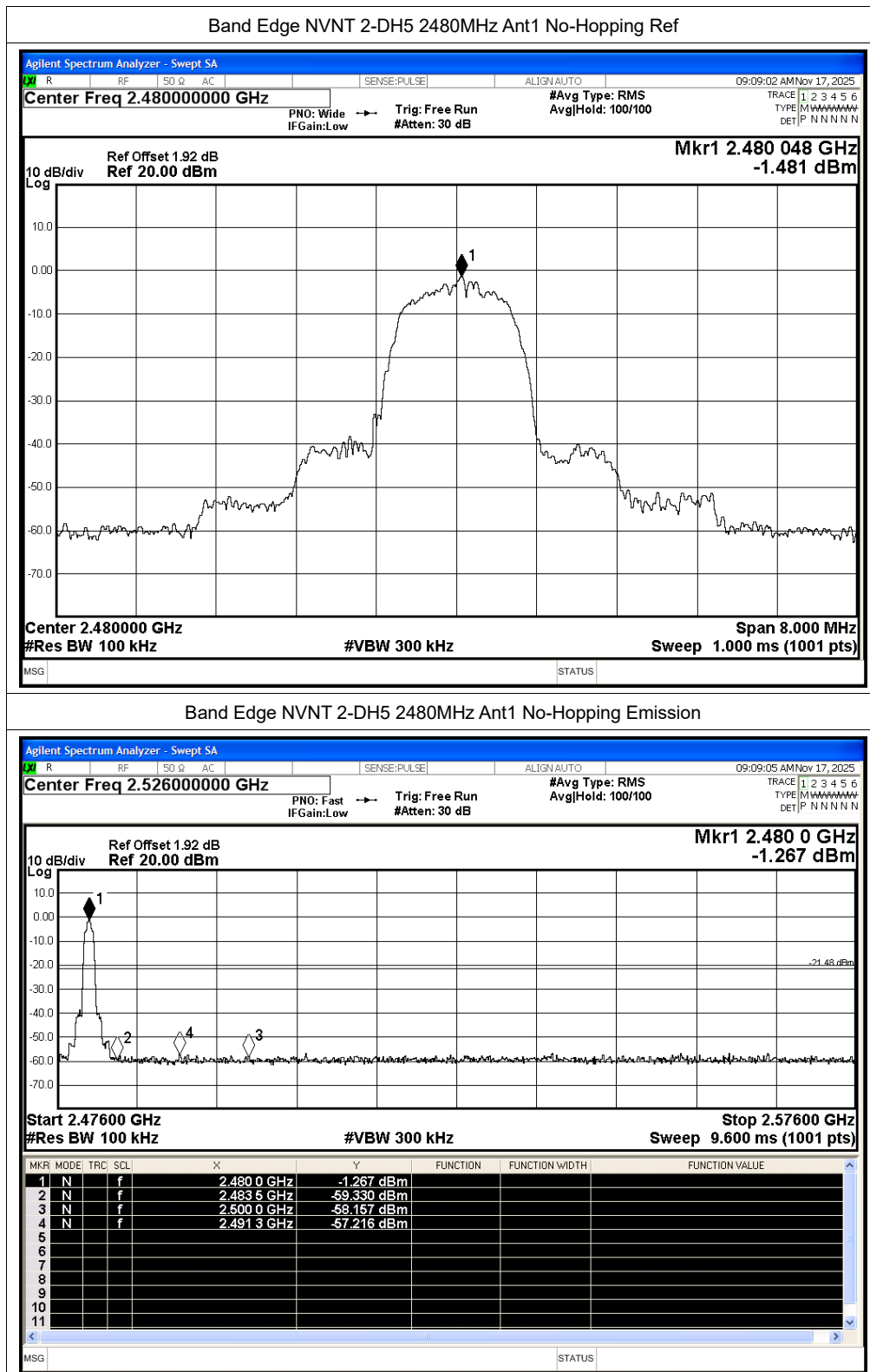


Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref

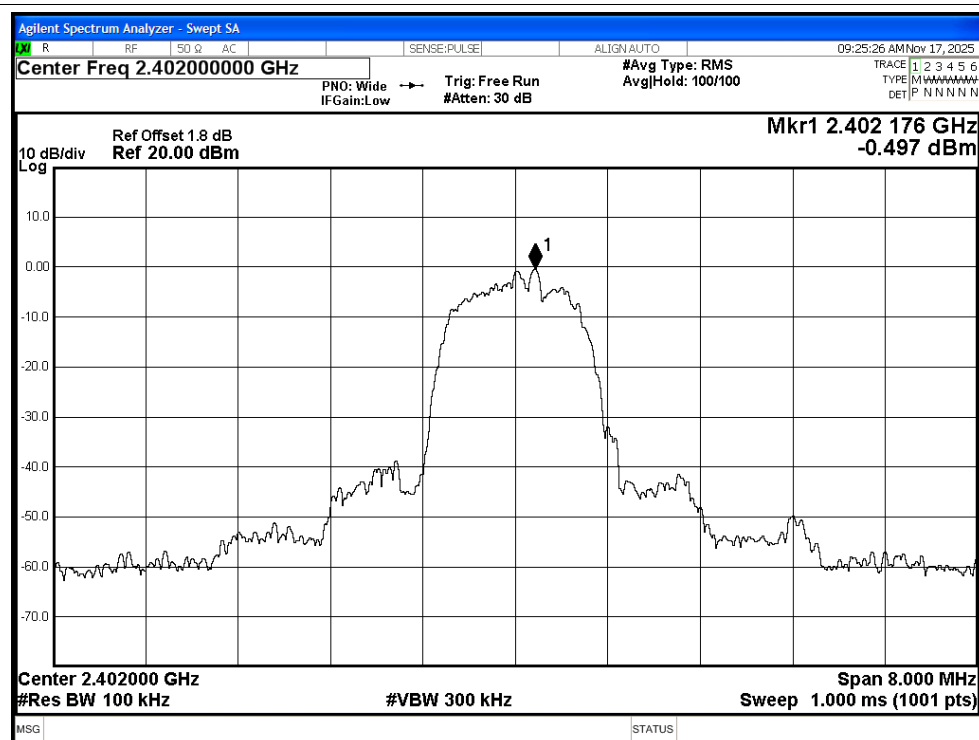


Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission

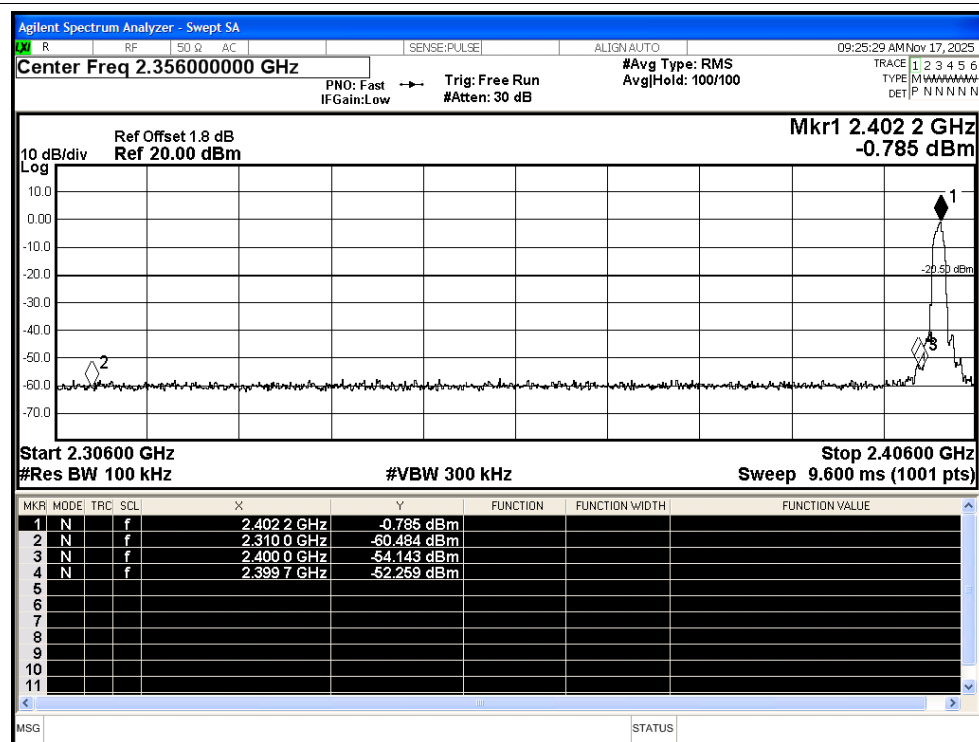




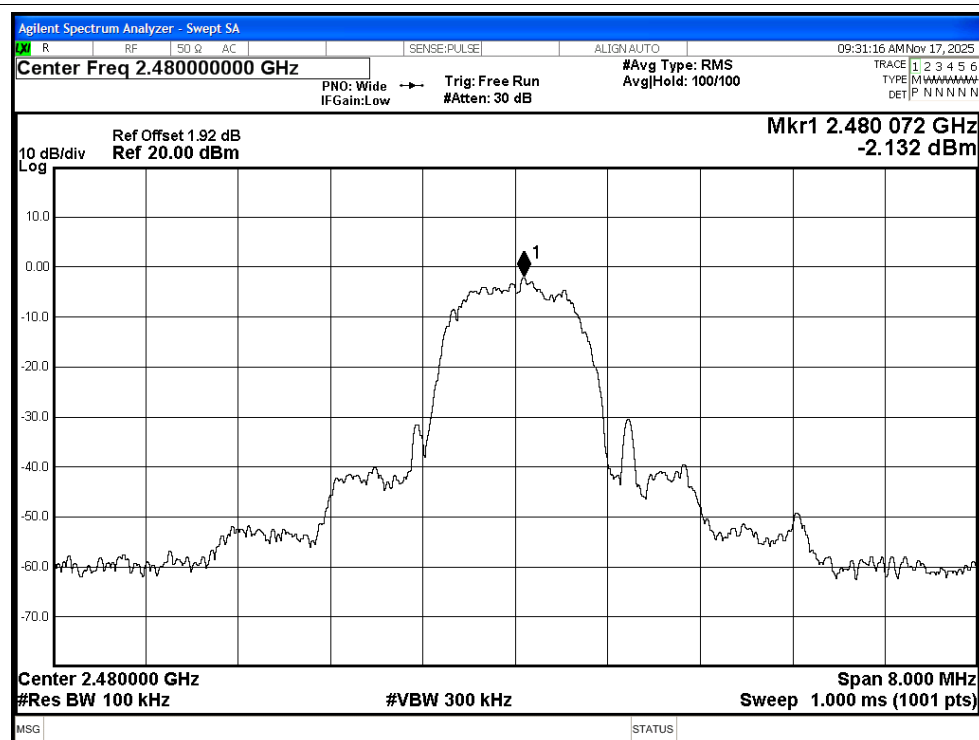
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref



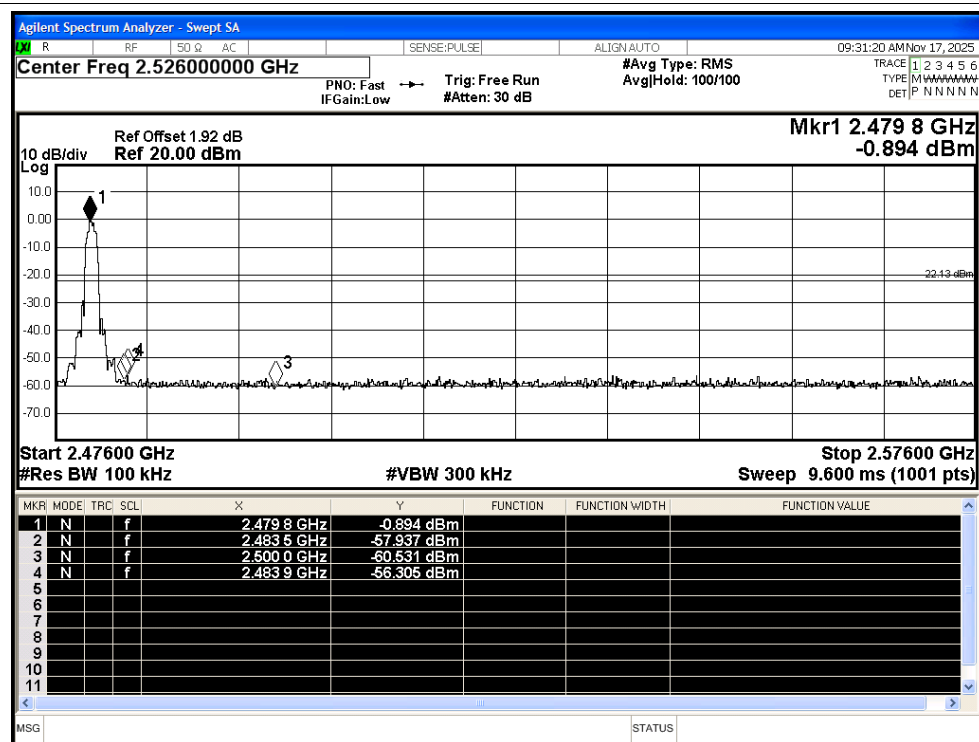
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission



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



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

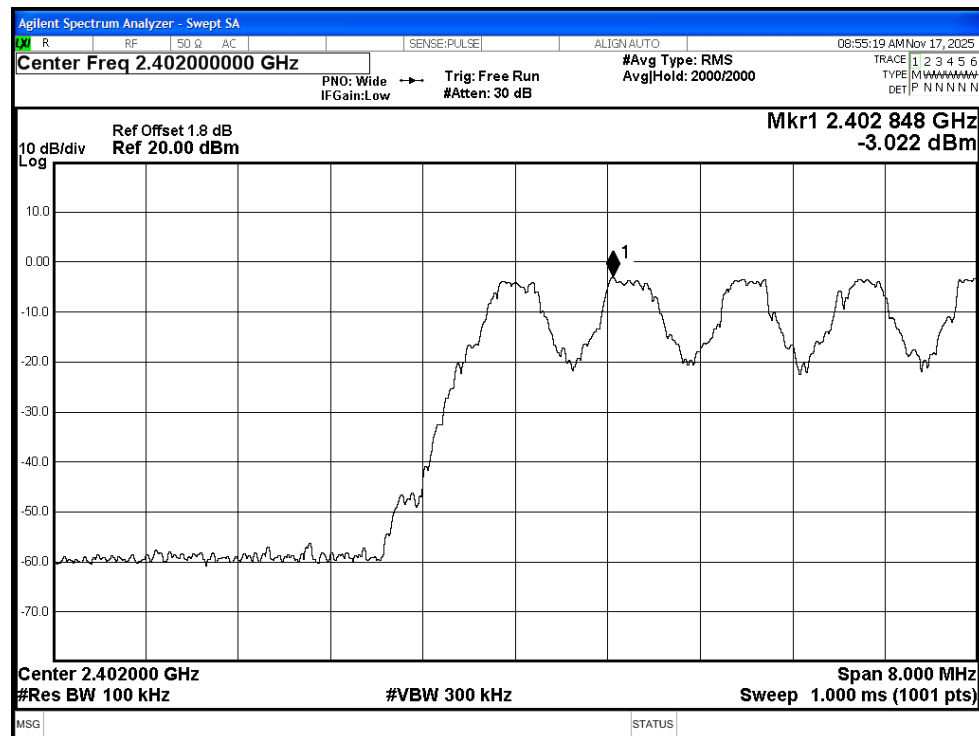


(Hopping)

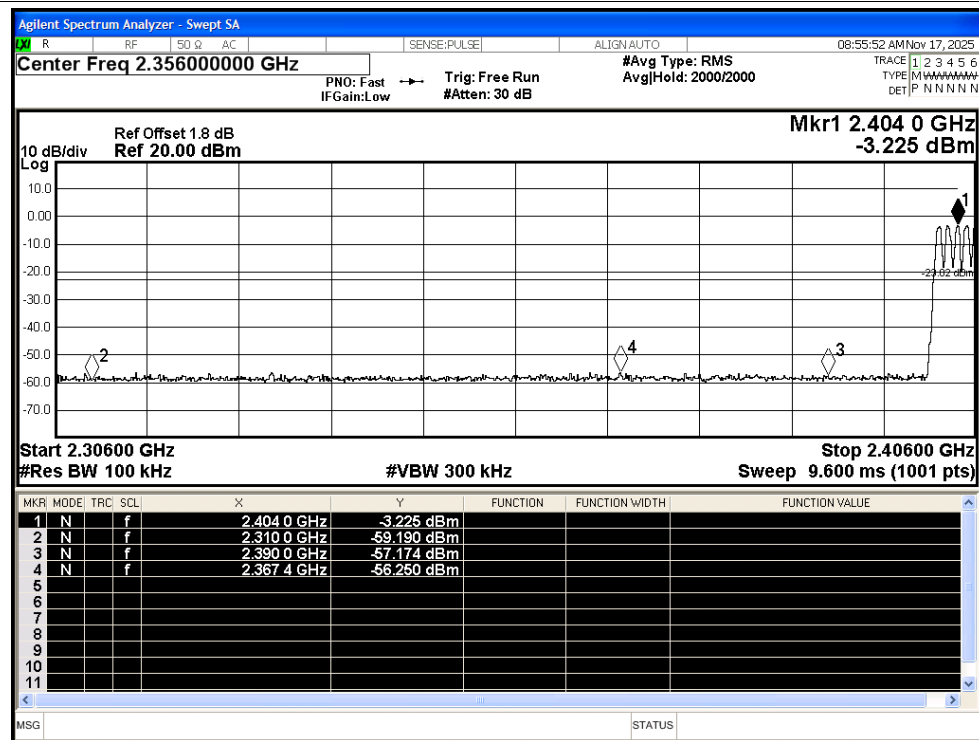
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-53.23	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-55.52	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-52.59	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-54.3	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-52.64	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-54.21	-20	Pass

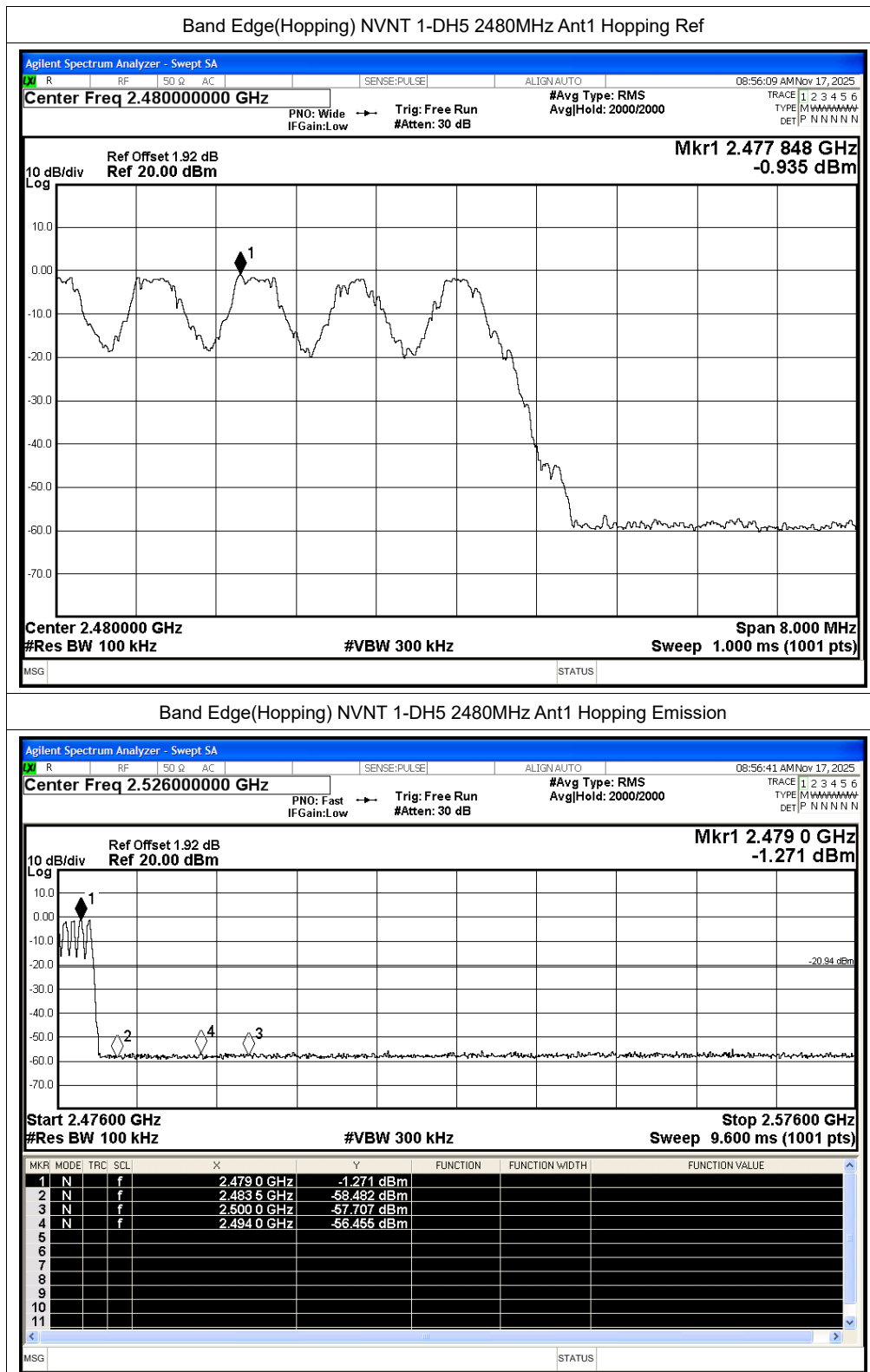
Test Graphs

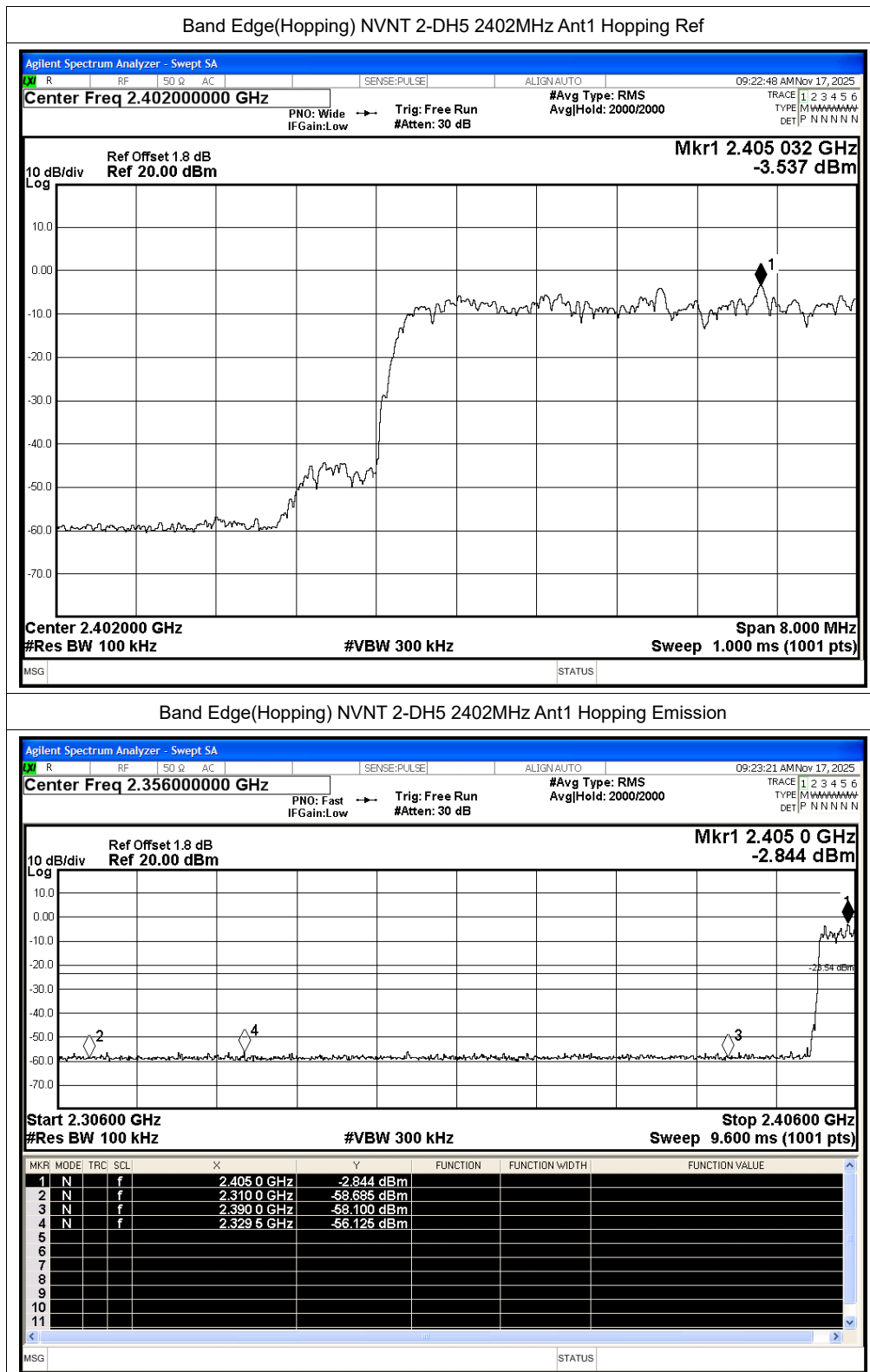
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref

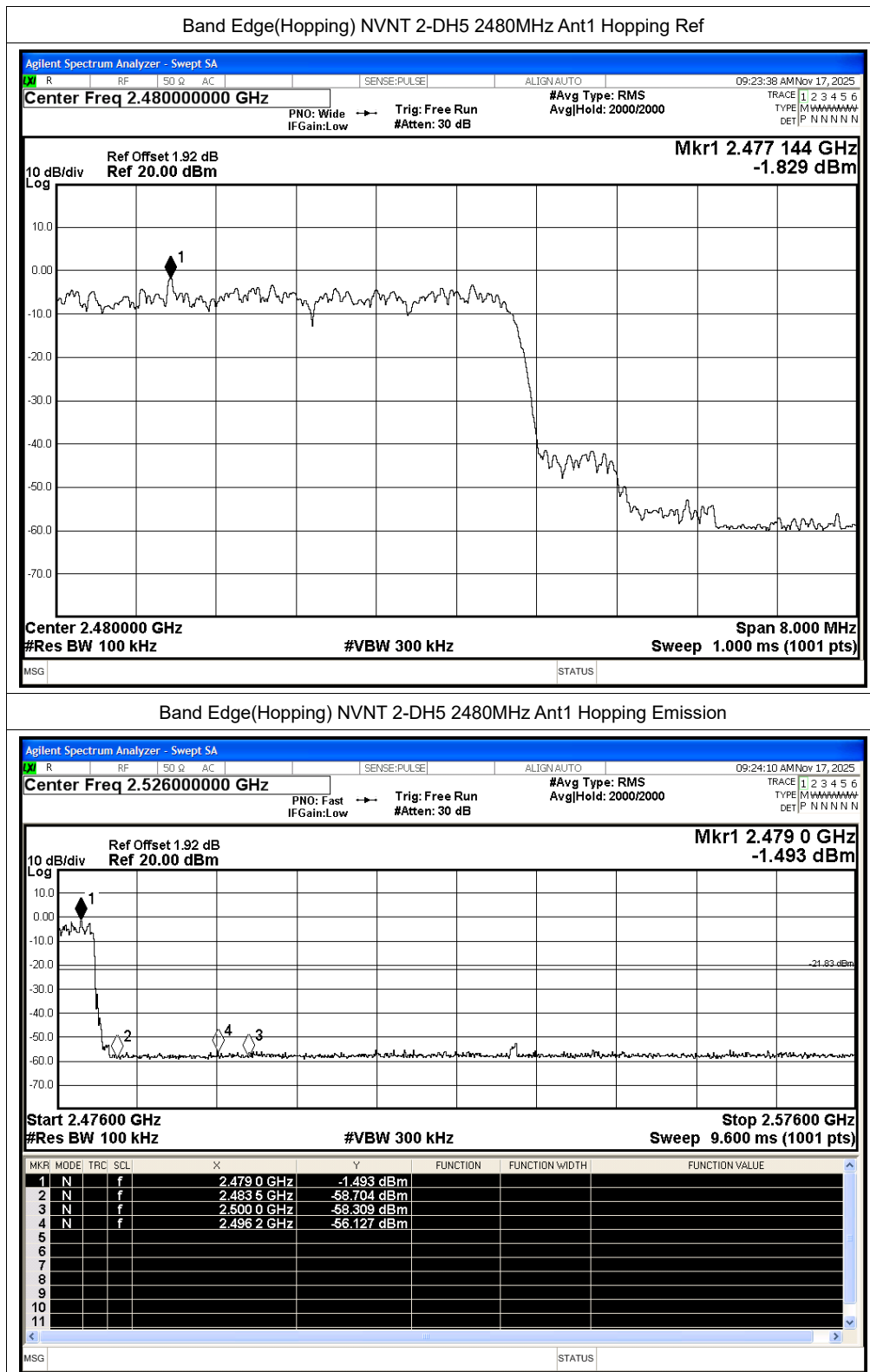


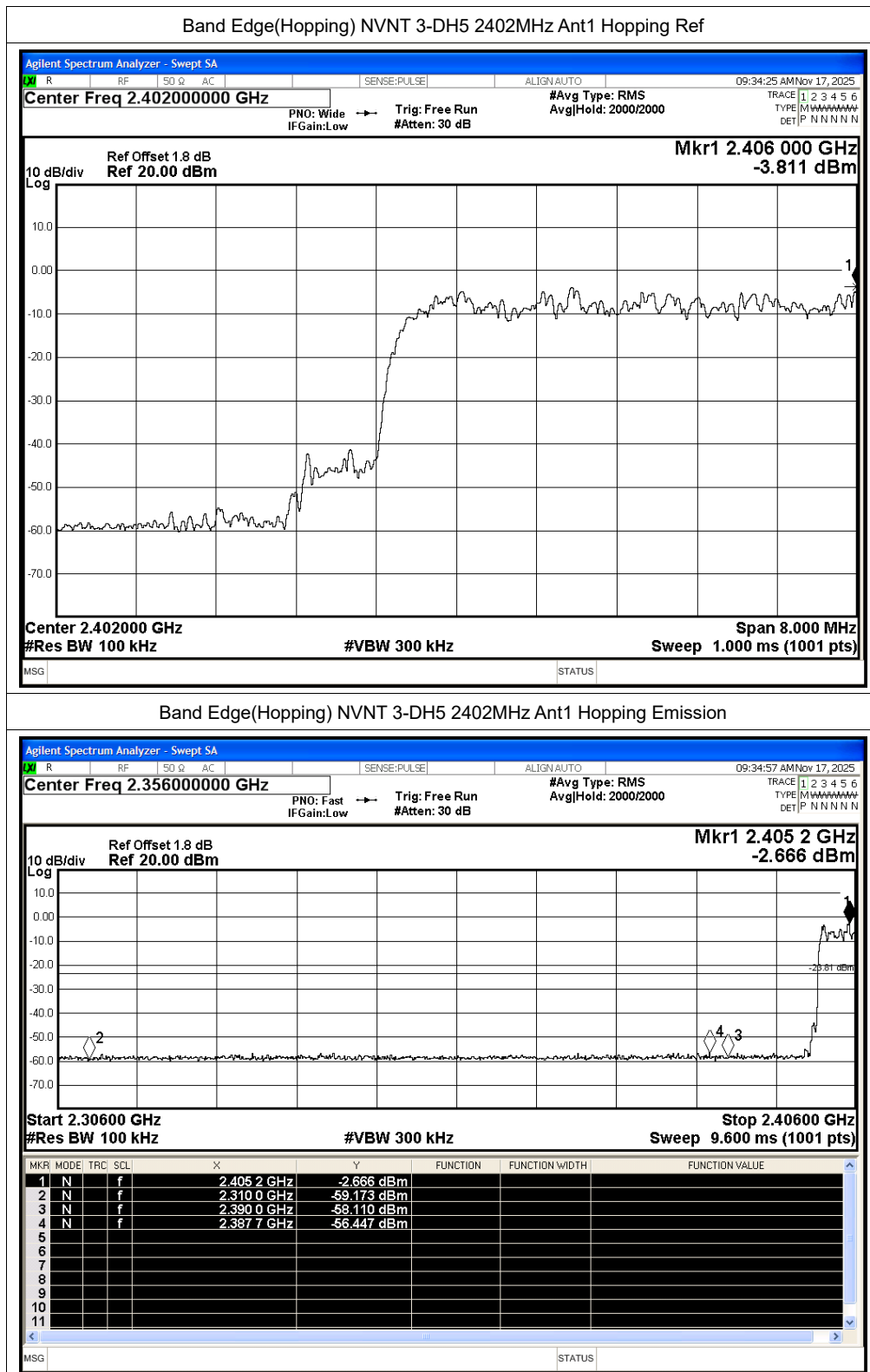
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission

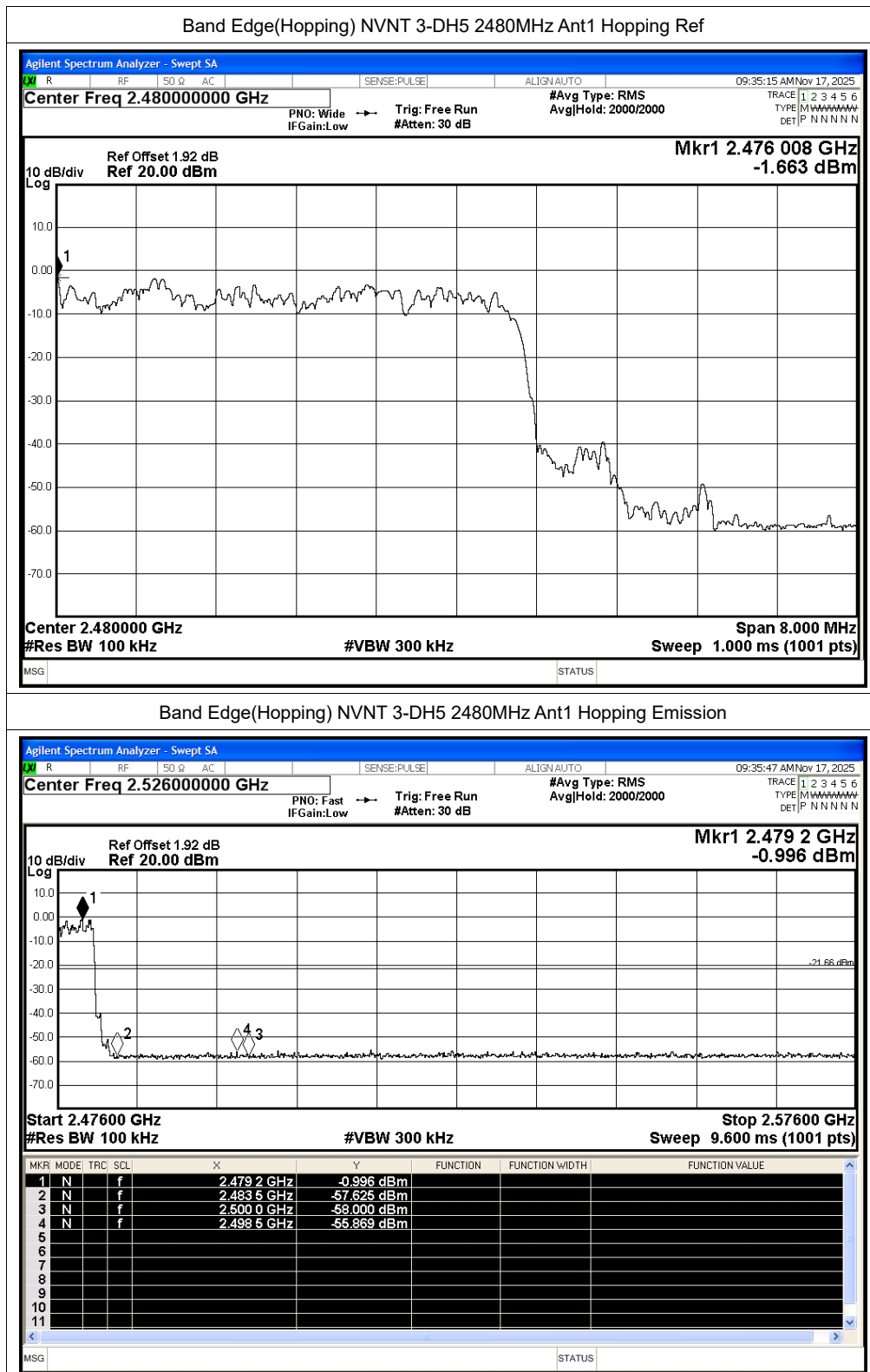










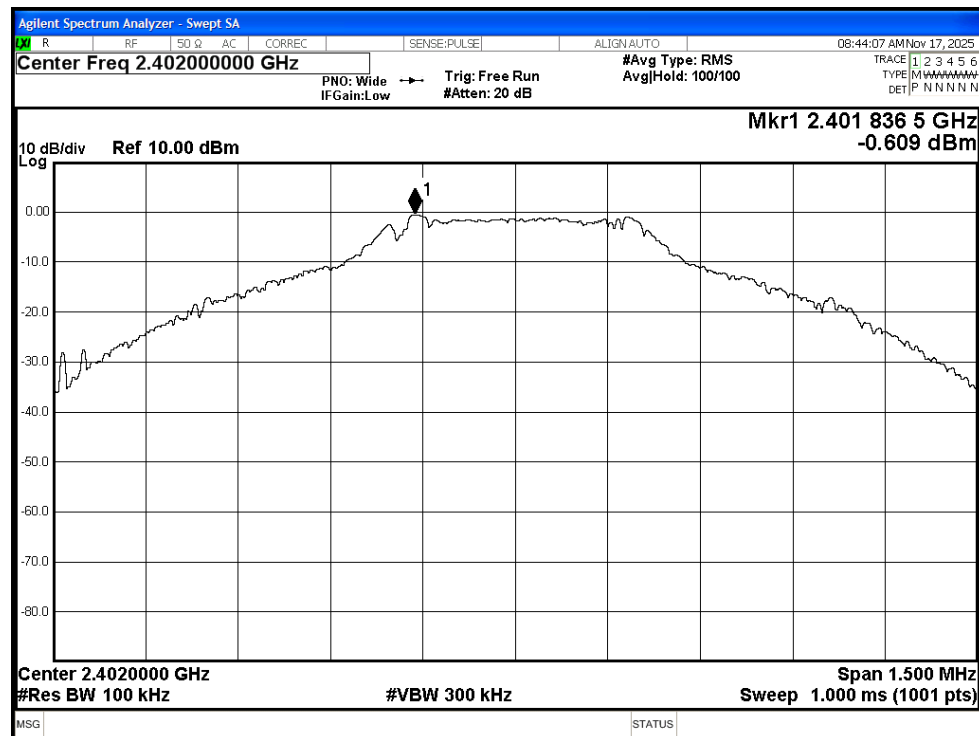


A.7 Conducted RF Spurious Emission

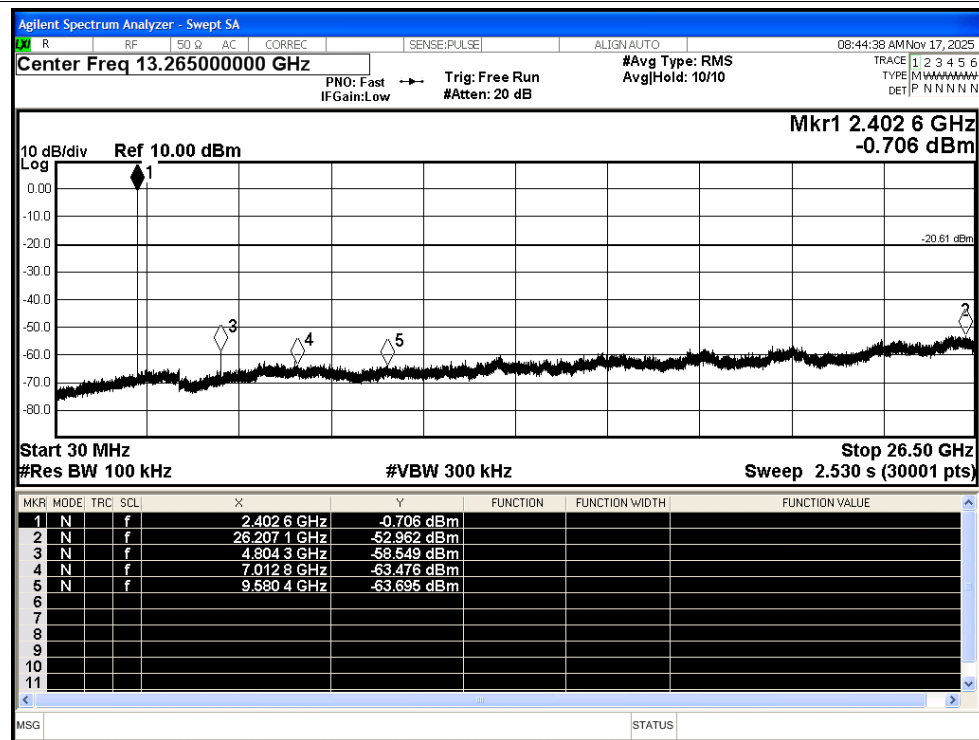
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-52.35	-20	Pass
NVNT	1-DH5	2441	Ant1	-51.92	-20	Pass
NVNT	1-DH5	2480	Ant1	-51.49	-20	Pass
NVNT	2-DH5	2402	Ant1	-52.18	-20	Pass
NVNT	2-DH5	2441	Ant1	-51.74	-20	Pass
NVNT	2-DH5	2480	Ant1	-50.59	-20	Pass
NVNT	3-DH5	2402	Ant1	-46.94	-20	Pass
NVNT	3-DH5	2441	Ant1	-52.41	-20	Pass
NVNT	3-DH5	2480	Ant1	-51.93	-20	Pass

Test Graphs

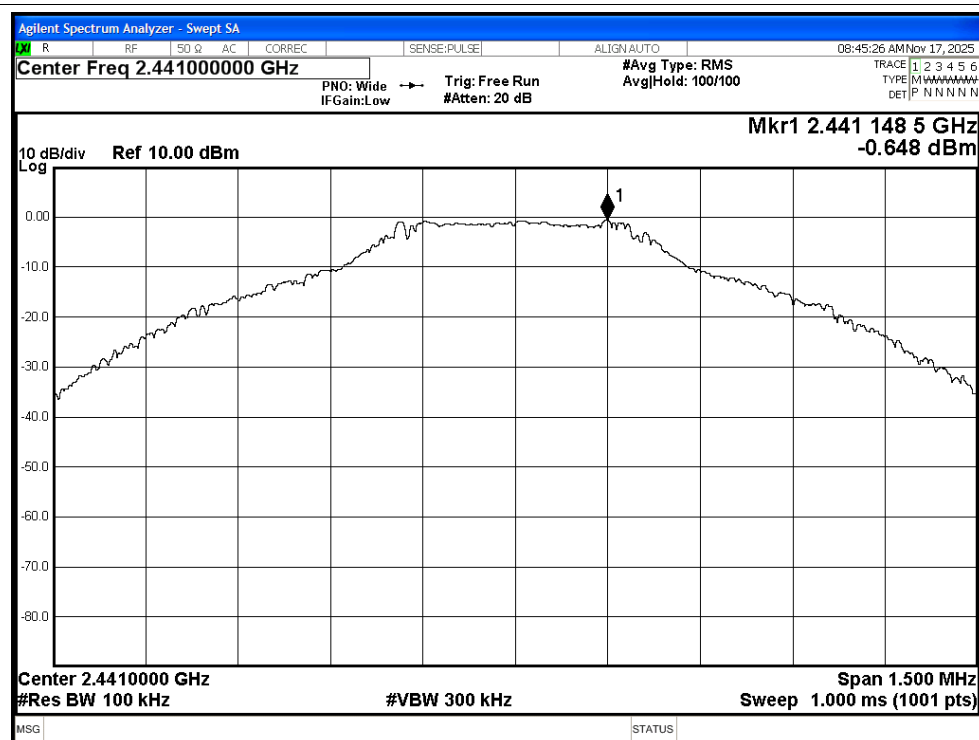
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



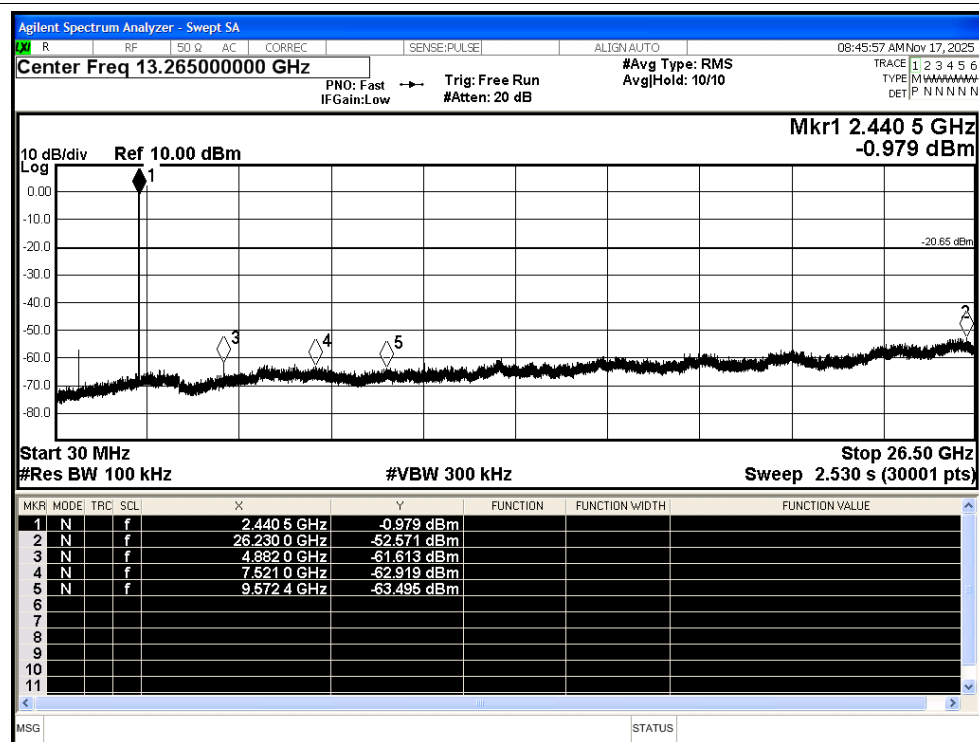
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



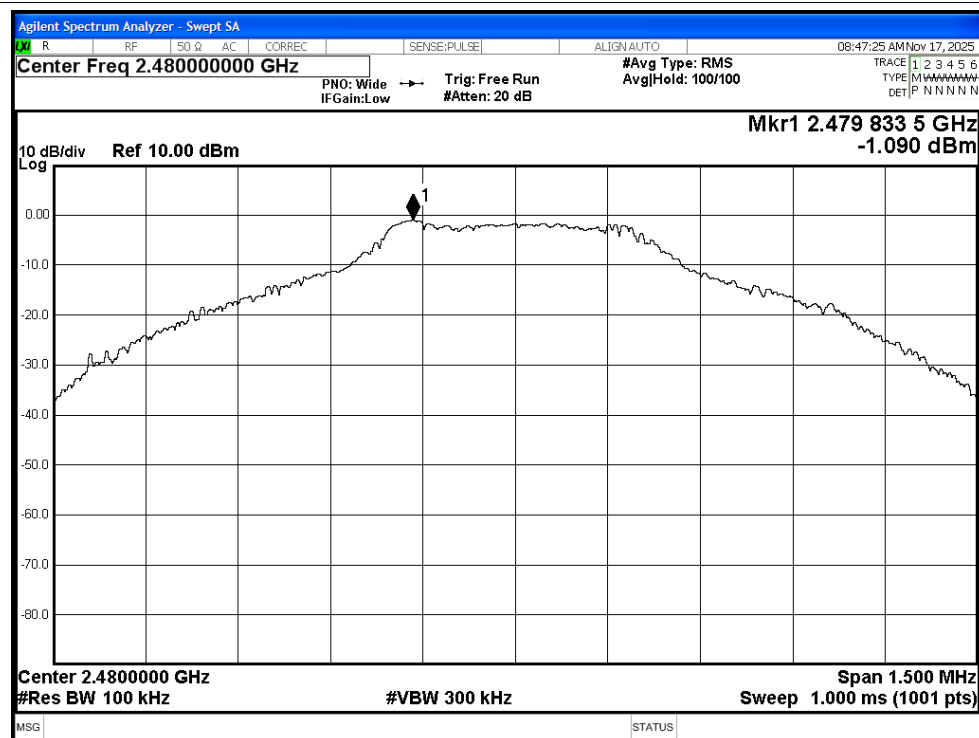
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



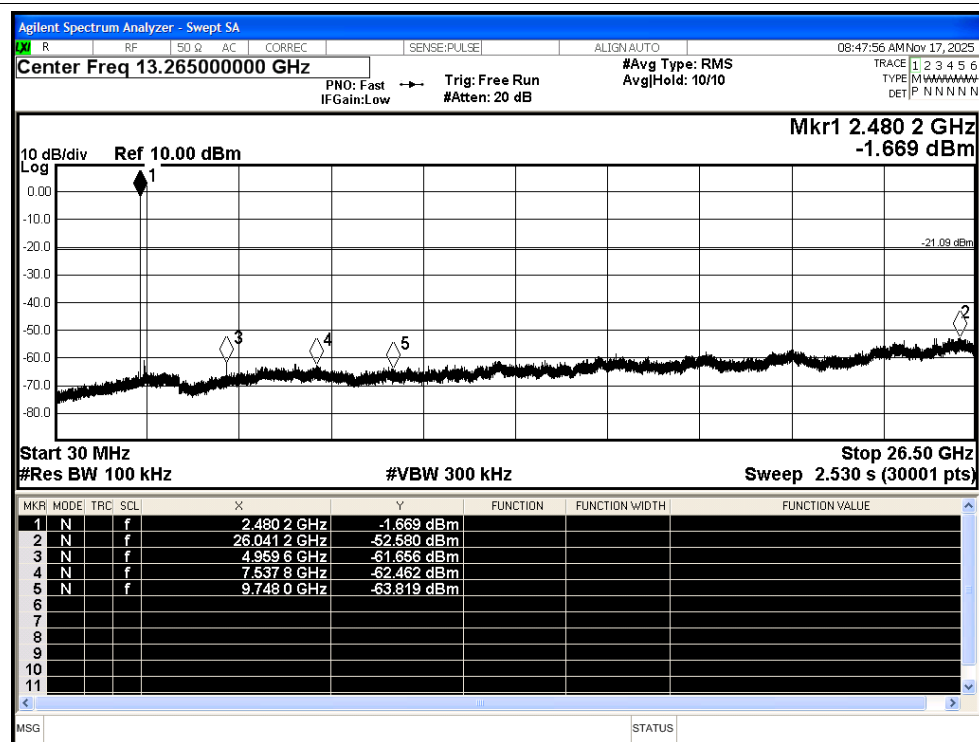
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



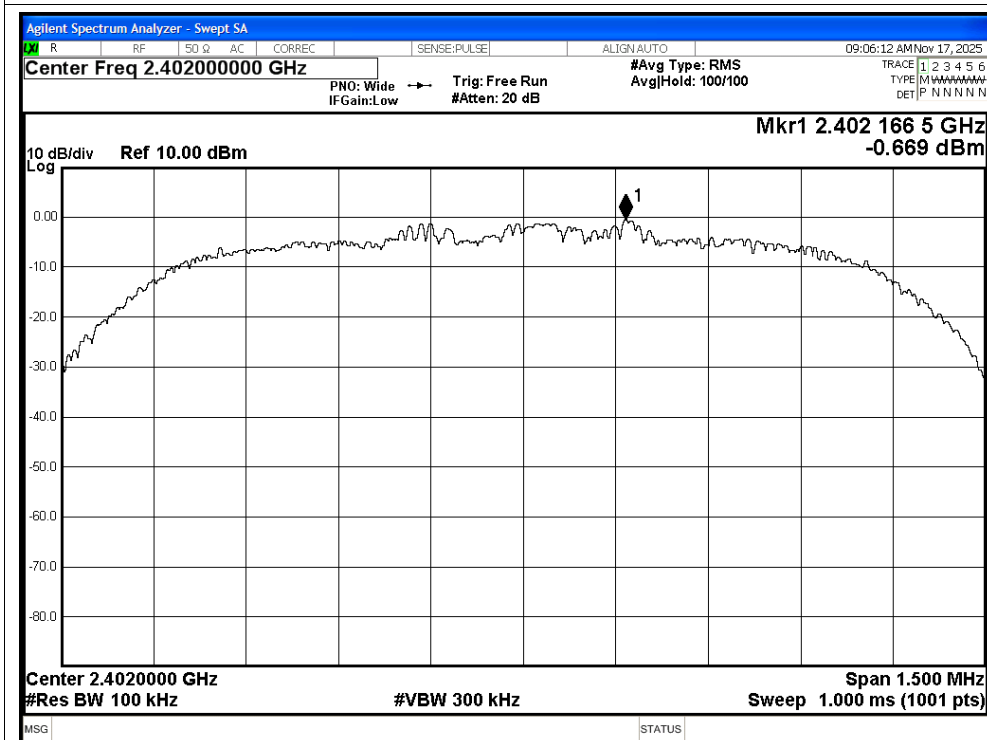
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



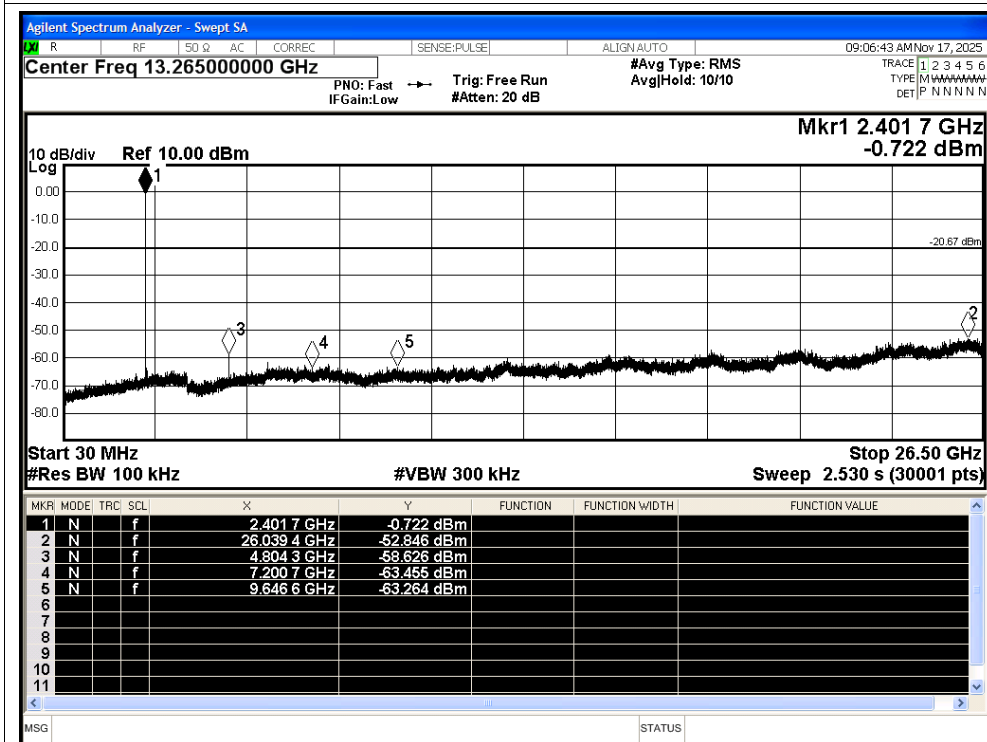
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



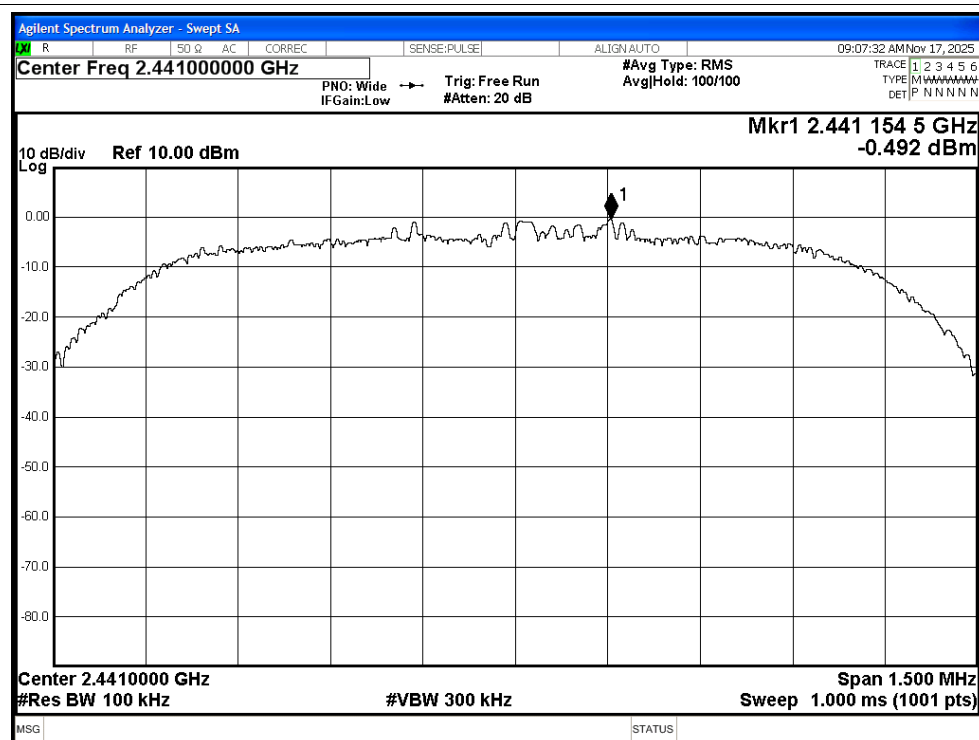
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



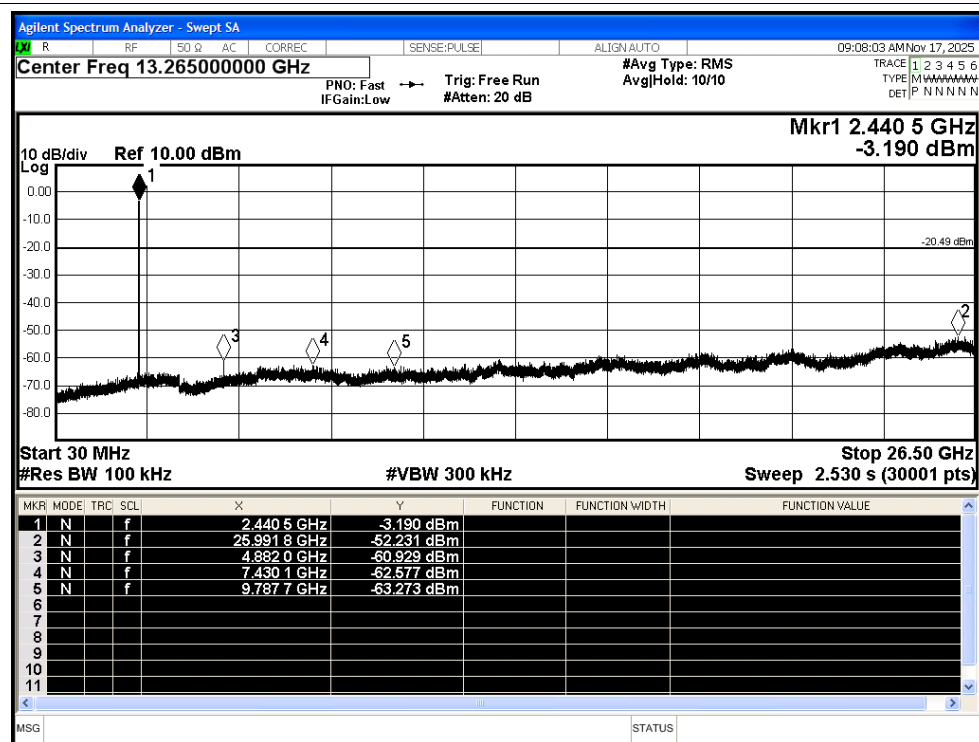
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



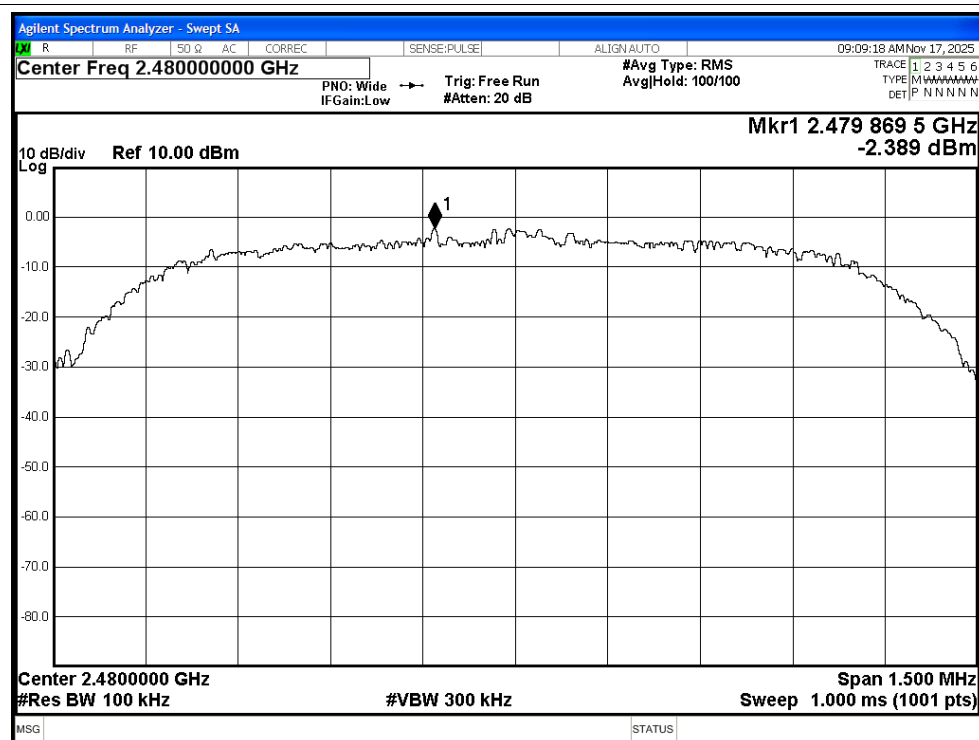
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



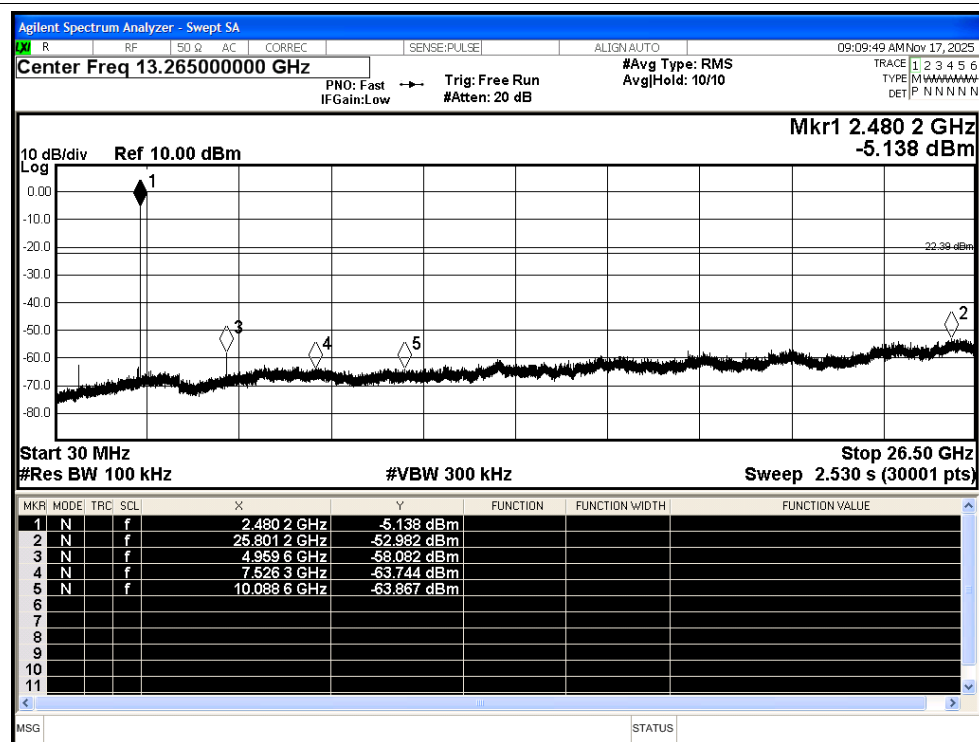
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



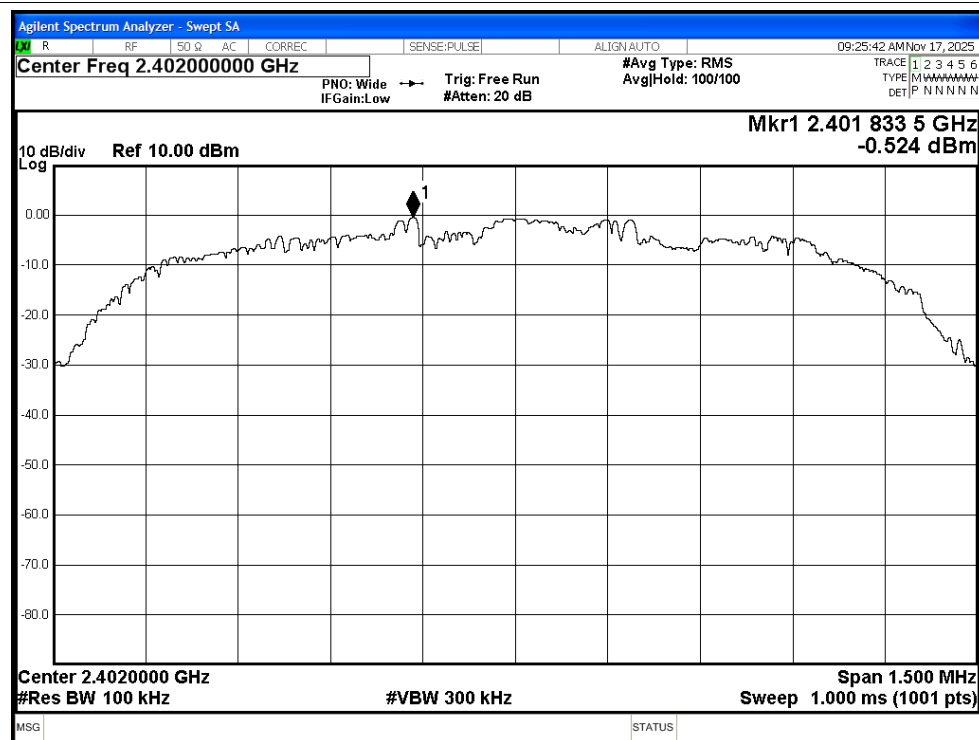
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



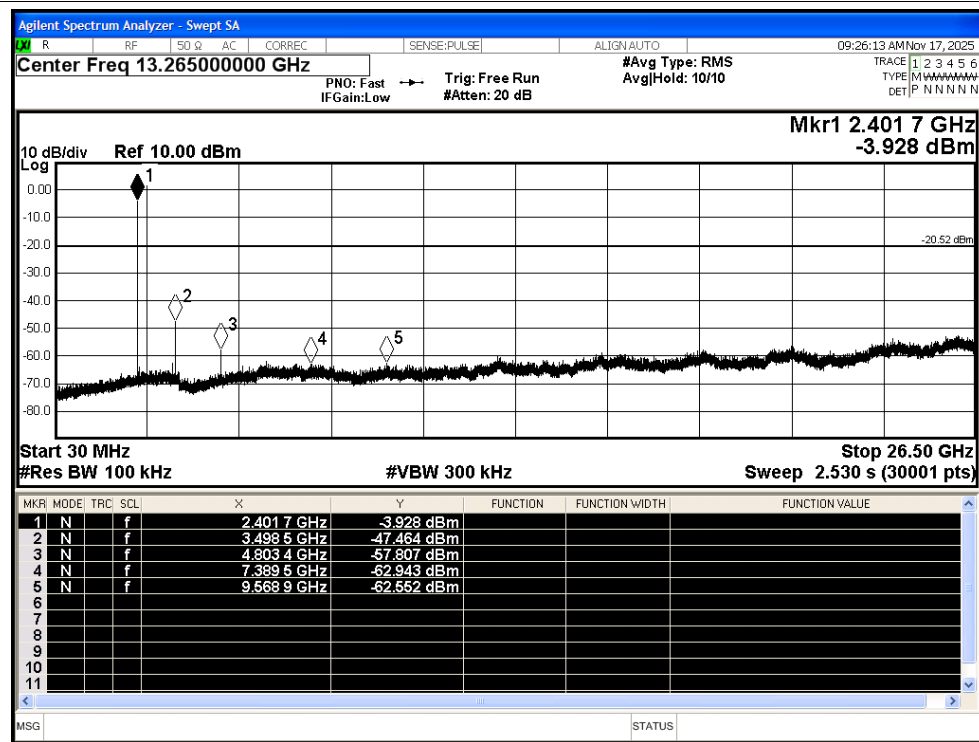
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission



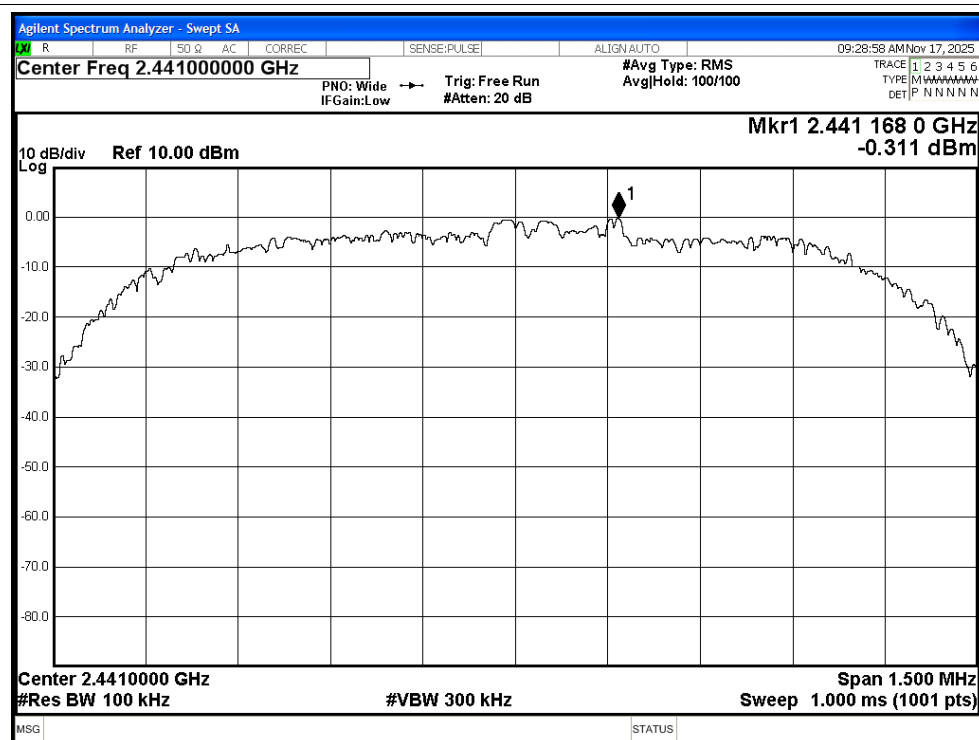
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref



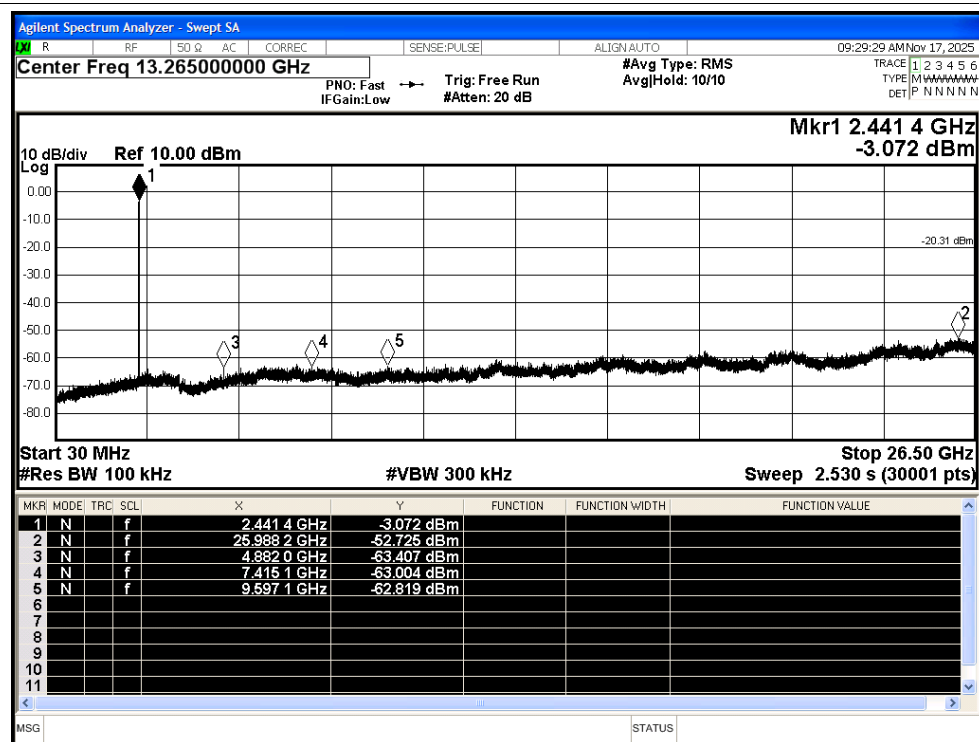
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission



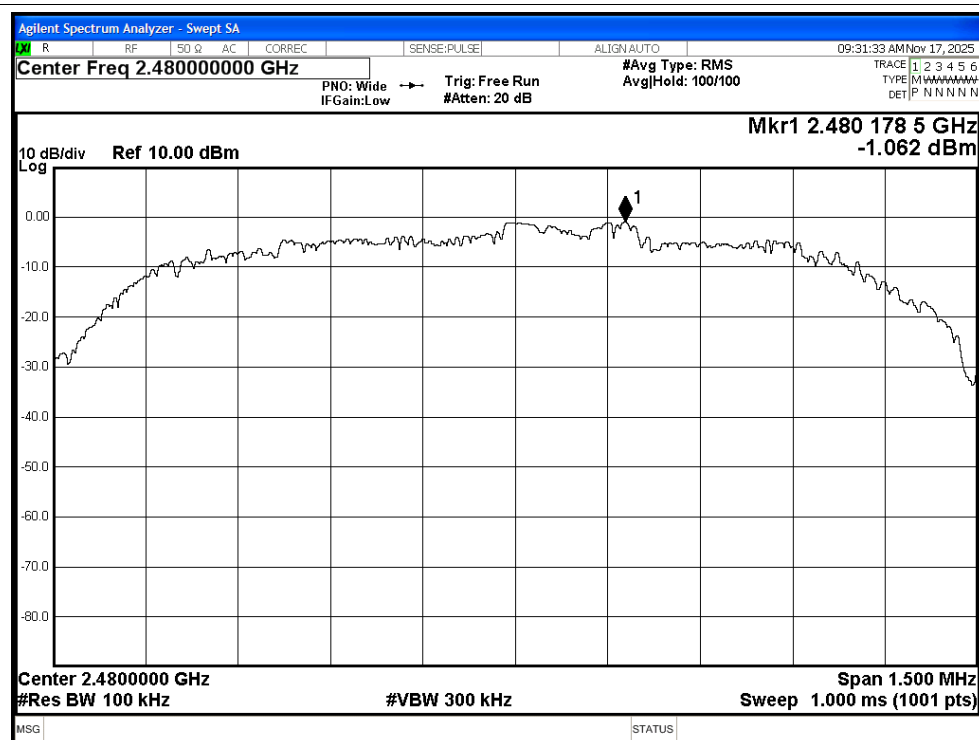
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



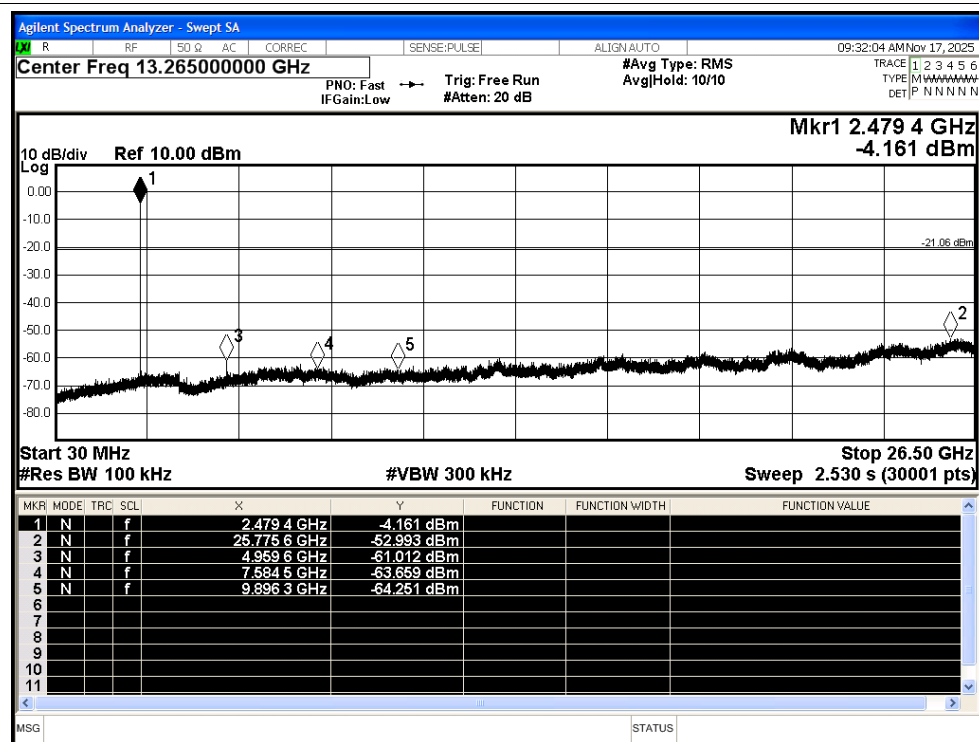
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission

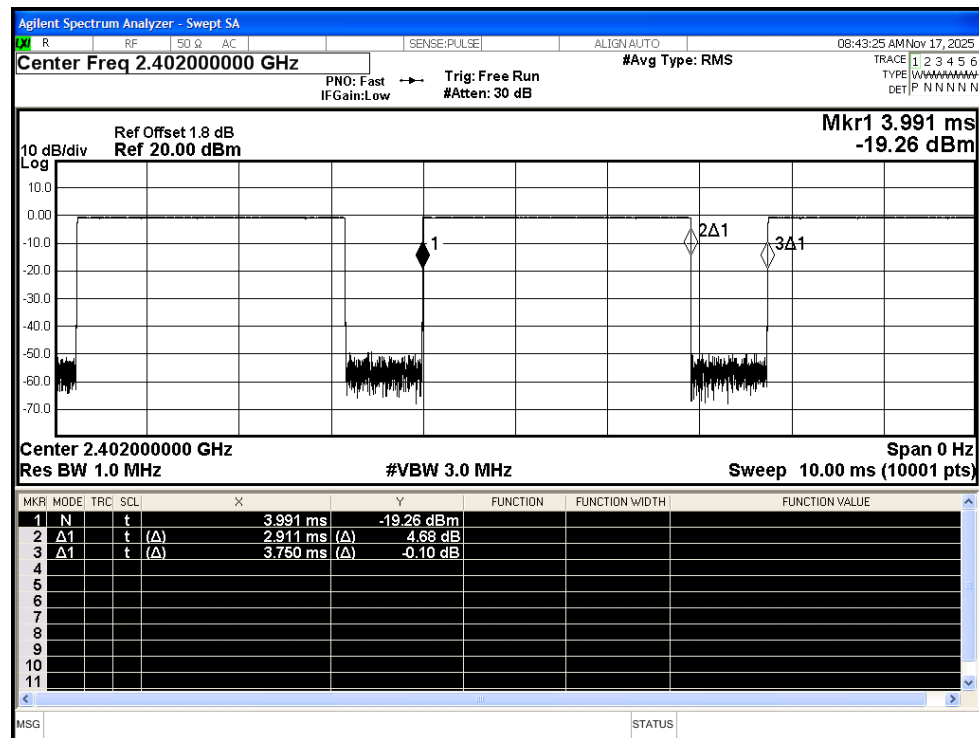


A.8 Duty Cycle

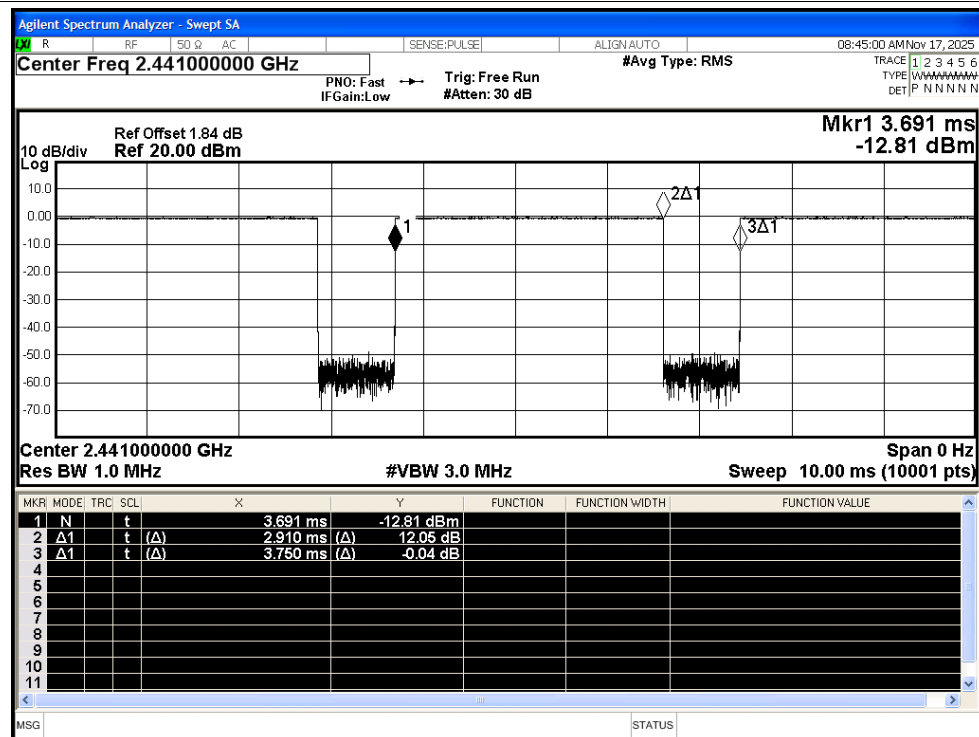
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	77.63	1.1	0.34
NVNT	1-DH5	2441	Ant1	77.6	1.1	0.34
NVNT	1-DH5	2480	Ant1	77.63	1.1	0.34
NVNT	2-DH5	2402	Ant1	77.28	1.12	0.35
NVNT	2-DH5	2441	Ant1	77.33	1.12	0.34
NVNT	2-DH5	2480	Ant1	77.28	1.12	0.35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

Test Graphs

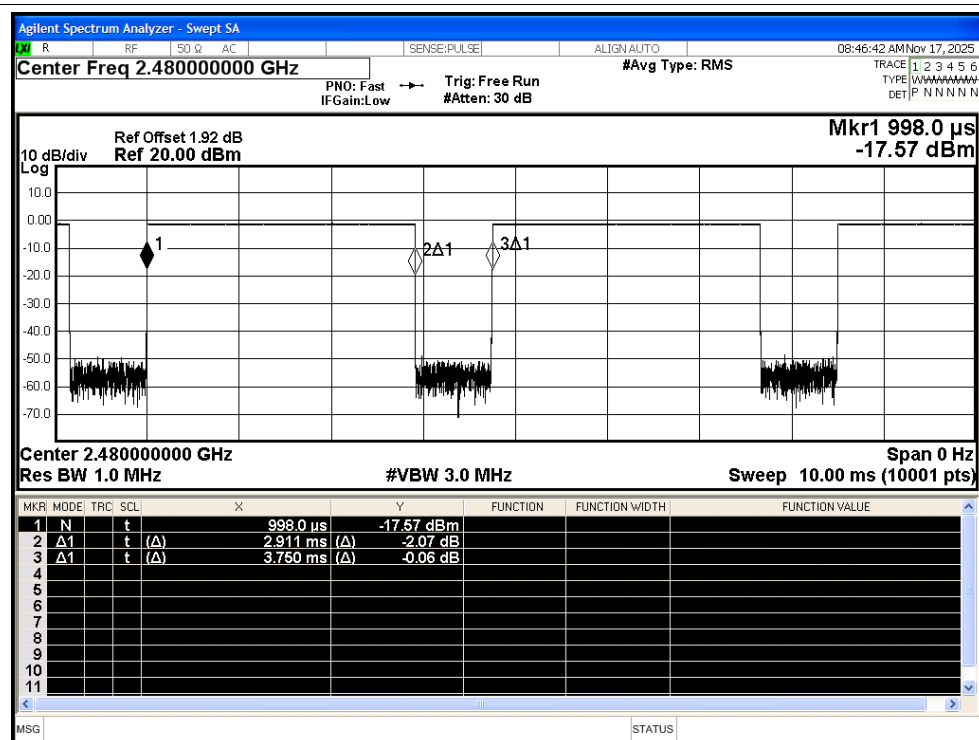
Duty Cycle NVNT 1-DH5 2402MHz Ant1



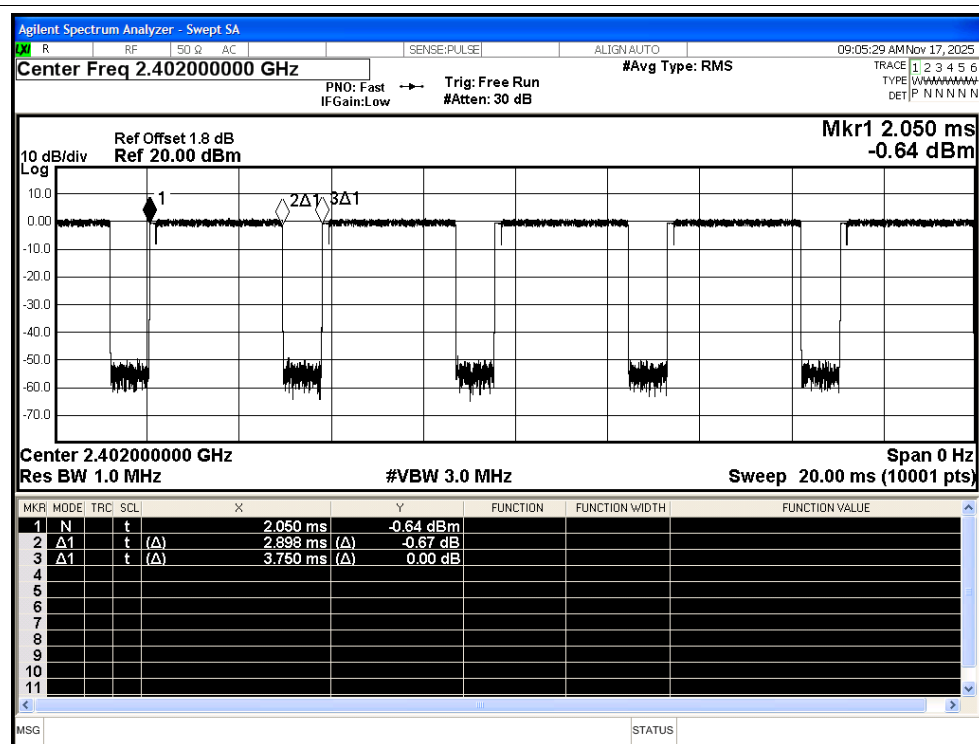
Duty Cycle NVNT 1-DH5 2441MHz Ant1



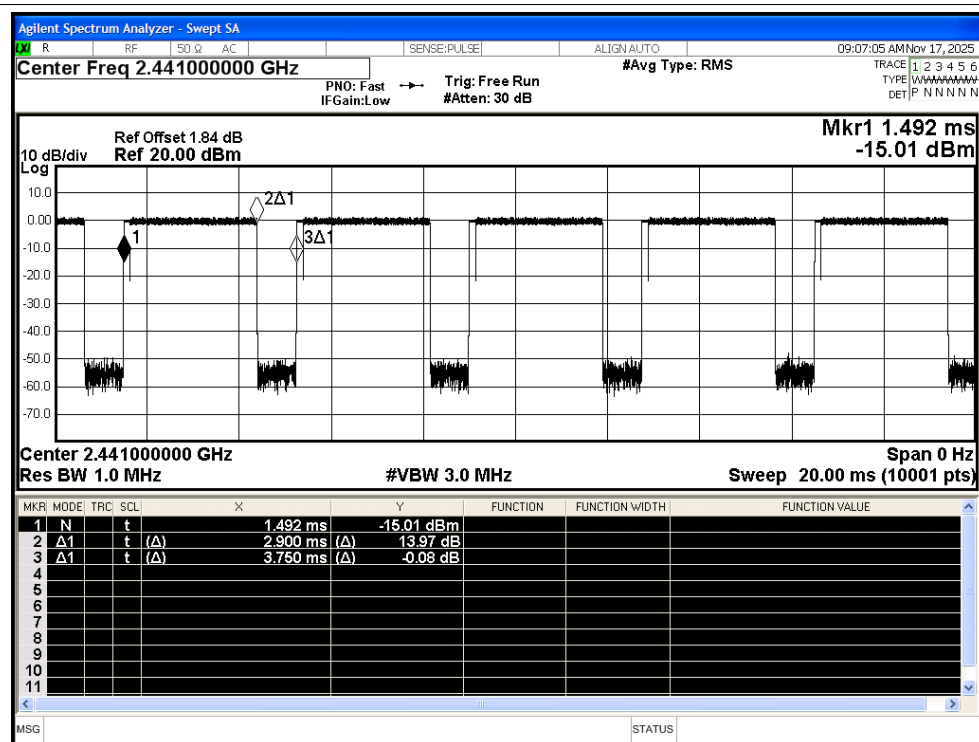
Duty Cycle NVNT 1-DH5 2480MHz Ant1



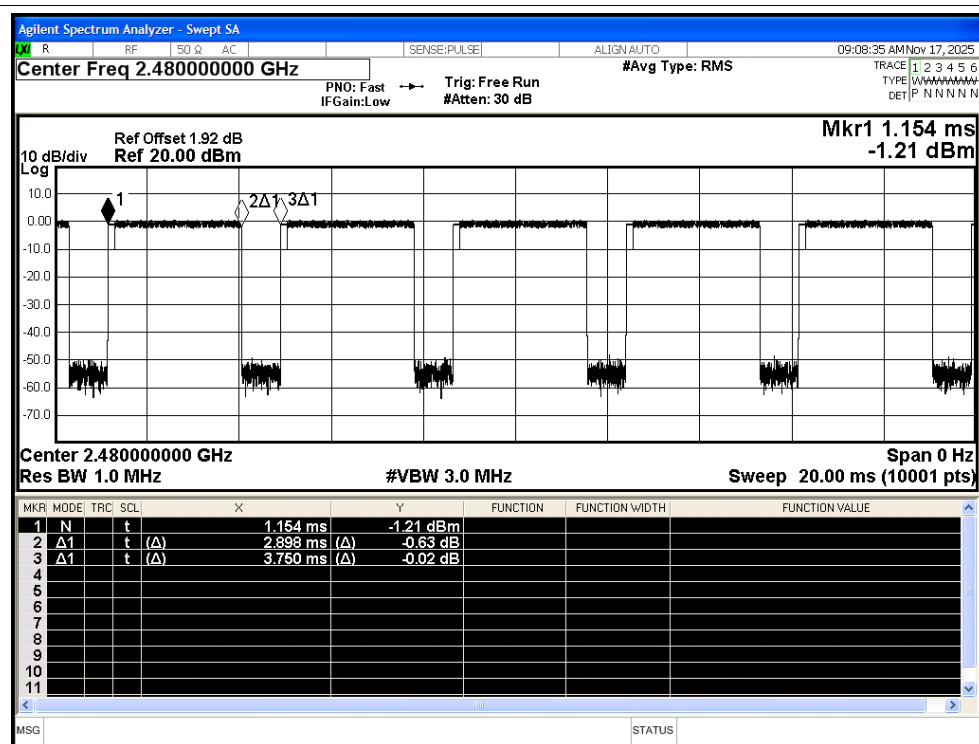
Duty Cycle NVNT 2-DH5 2402MHz Ant1



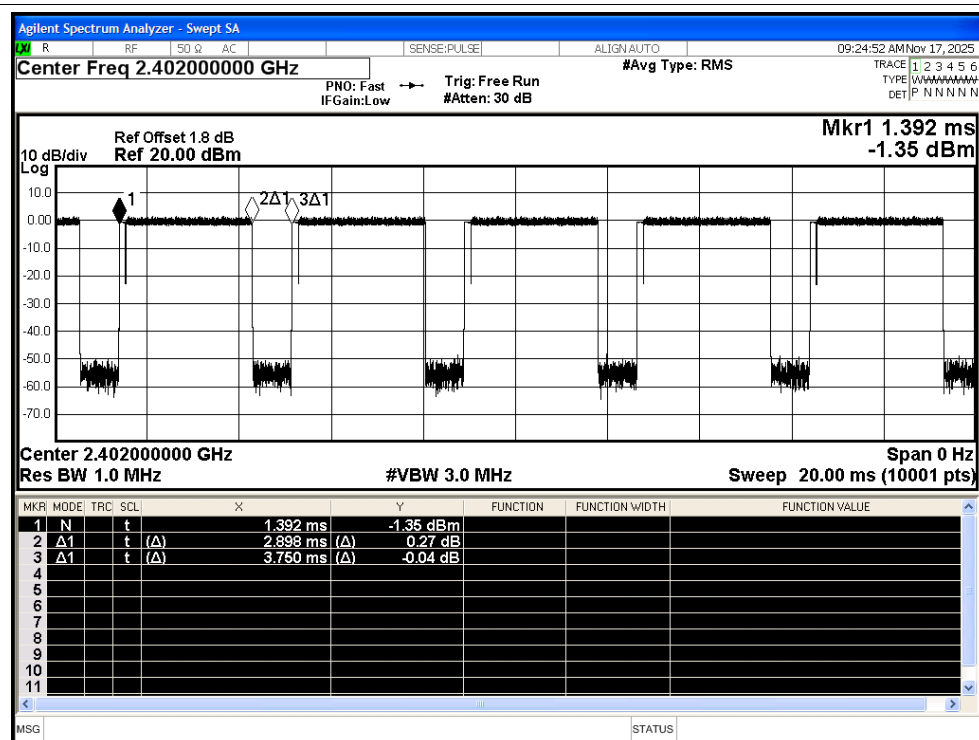
Duty Cycle NVNT 2-DH5 2441MHz Ant1



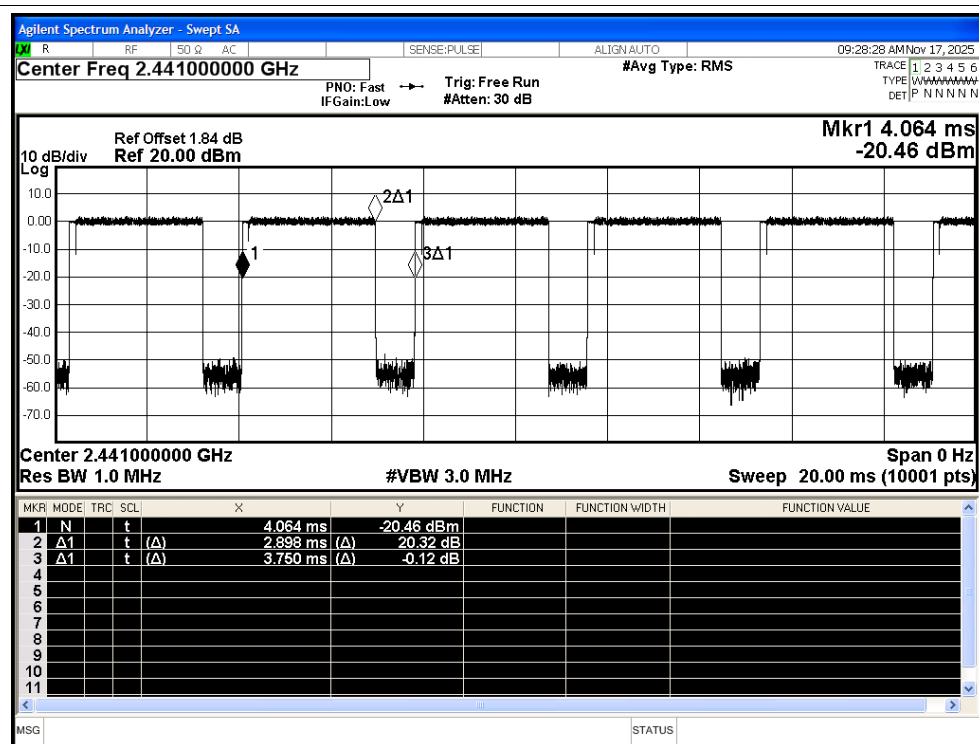
Duty Cycle NVNT 2-DH5 2480MHz Ant1

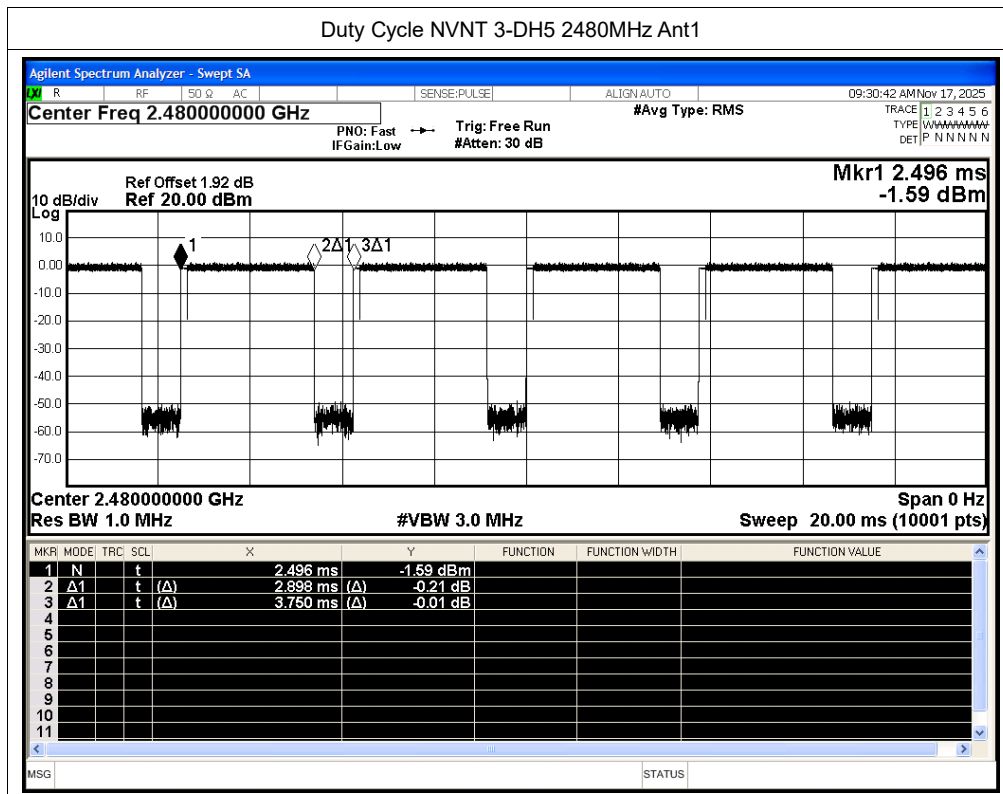


Duty Cycle NVNT 3-DH5 2402MHz Ant1



Duty Cycle NVNT 3-DH5 2441MHz Ant1



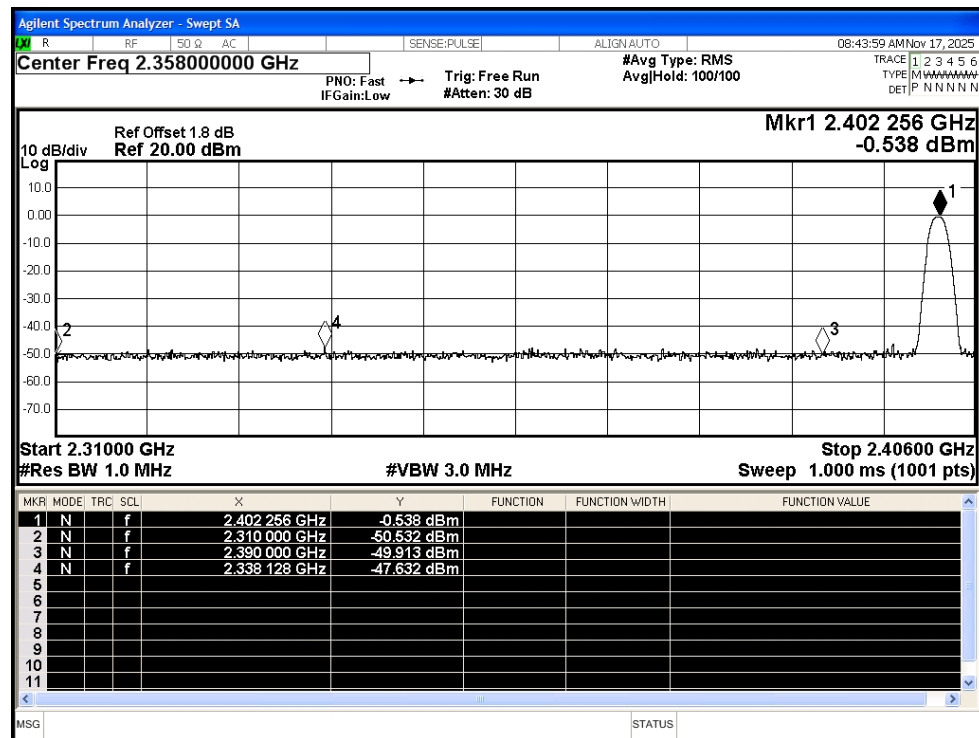


A.9 Restrict Band

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	-50.53	2.7	-	47.43	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-59.12	2.7	1.1	39.94	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2338.128	-47.63	2.7	-	50.33	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2382.096	-57.93	2.7	1.1	41.13	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-49.91	2.7	-	48.05	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-59.32	2.7	1.1	39.74	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-49.77	2.7	-	48.19	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-58.01	2.7	1.1	41.05	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2490.208	-47.01	2.7	-	50.95	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2494.696	-57.14	2.7	1.1	41.92	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-49.53	2.7	-	48.43	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-57.75	2.7	1.1	41.31	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-52.11	2.7	-	45.85	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-58.9	2.7	1.12	40.18	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2359.248	-47.67	2.7	-	50.29	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2382.48	-57.86	2.7	1.12	41.22	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-51.45	2.7	-	46.51	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-58.63	2.7	1.12	40.45	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-49.42	2.7	-	48.54	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-58.02	2.7	1.12	41.06	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2490.256	-46.92	2.7	-	51.04	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.56	-57.02	2.7	1.12	42.06	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-49.97	2.7	-	47.99	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-57.72	2.7	1.12	41.36	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-50.68	2.7	-	47.28	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-58.8	2.7	1.12	40.28	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2380.464	-46.99	2.7	-	50.97	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2341.008	-57.87	2.7	1.12	41.21	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-51.22	2.7	-	46.74	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-58.38	2.7	1.12	40.70	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-47.49	2.7	-	50.47	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-57.51	2.7	1.12	41.57	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2497.072	-46.75	2.7	-	51.21	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2493.016	-57.18	2.7	1.12	41.90	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-49.33	2.7	-	48.63	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-58.44	2.7	1.12	40.64	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

