Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Air Conduction Earphones

Test Model: T18

Environmental Conditions

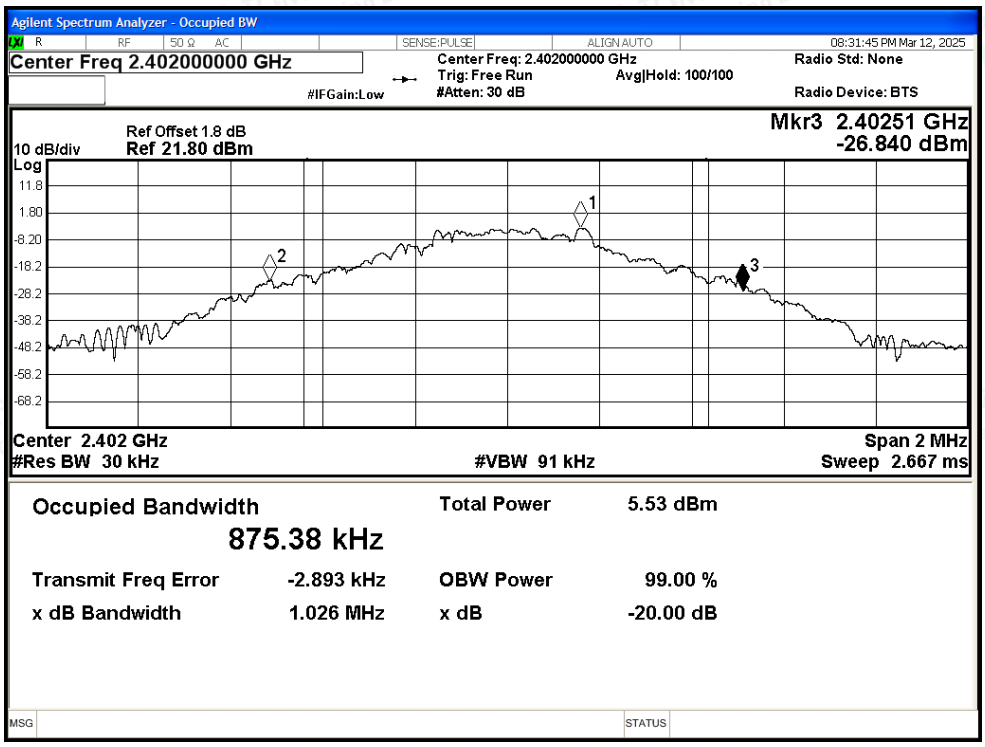
Temperature:	23.8° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Luo
Supervised by:	Nick Peng

A.1 -20dB Bandwidth

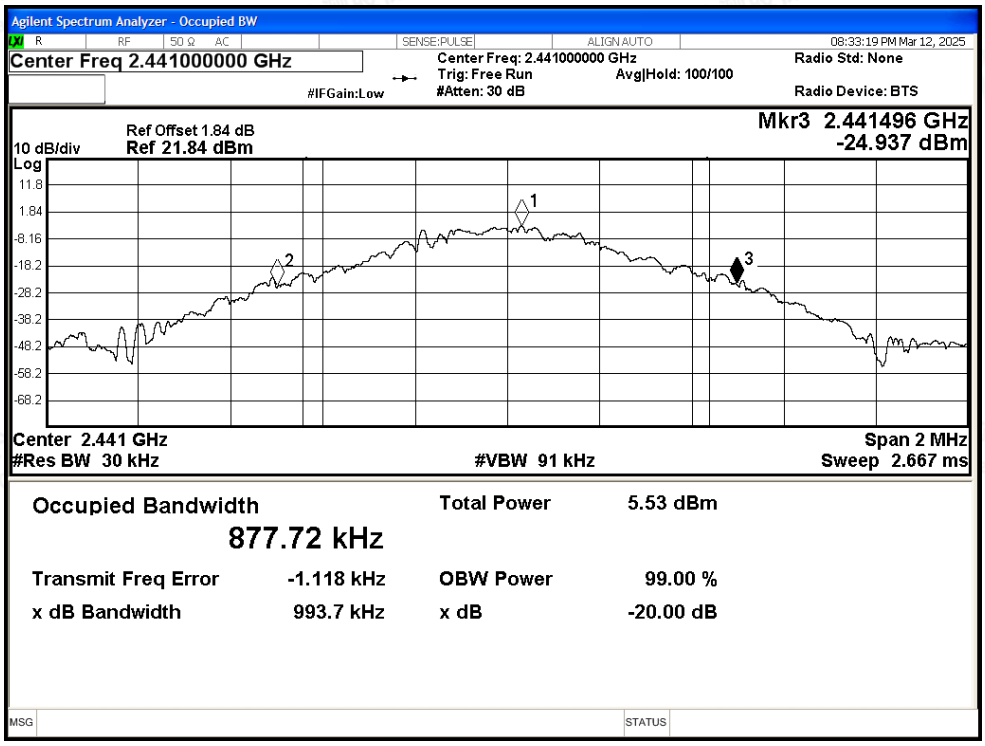
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	1.026	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.994	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.941	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.299	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.288	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.28	N/A	Pass
NVNT	3-DH5	2402	Ant1	1.295	N/A	Pass
NVNT	3-DH5	2441	Ant1	1.3	N/A	Pass
NVNT	3-DH5	2480	Ant1	1.295	N/A	Pass

Test Graphs

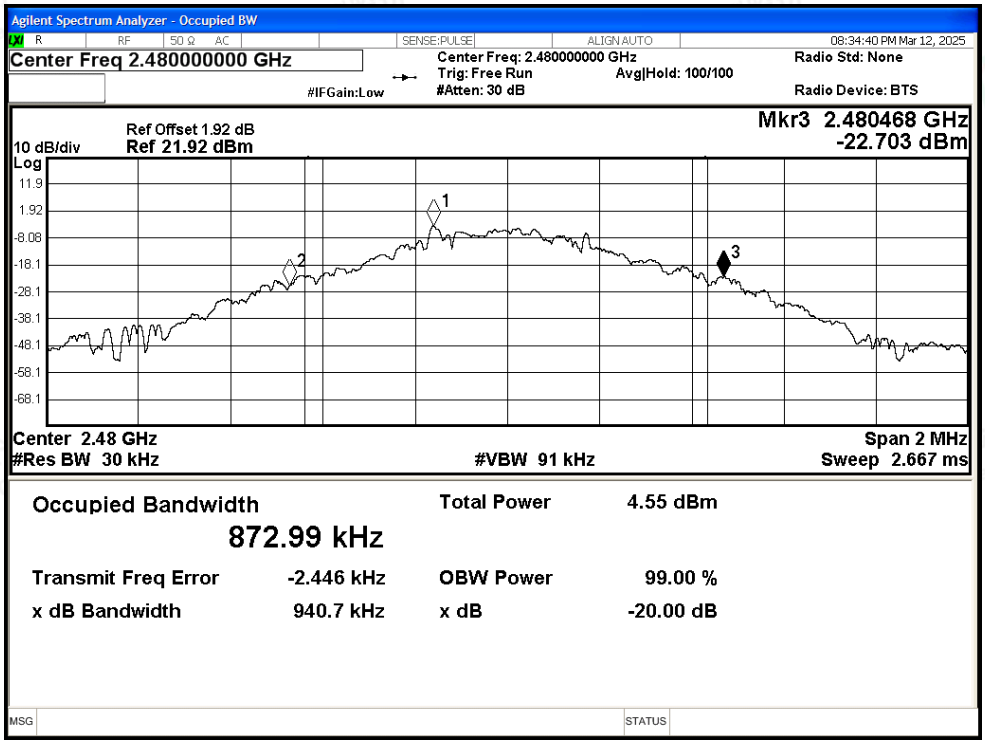
-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



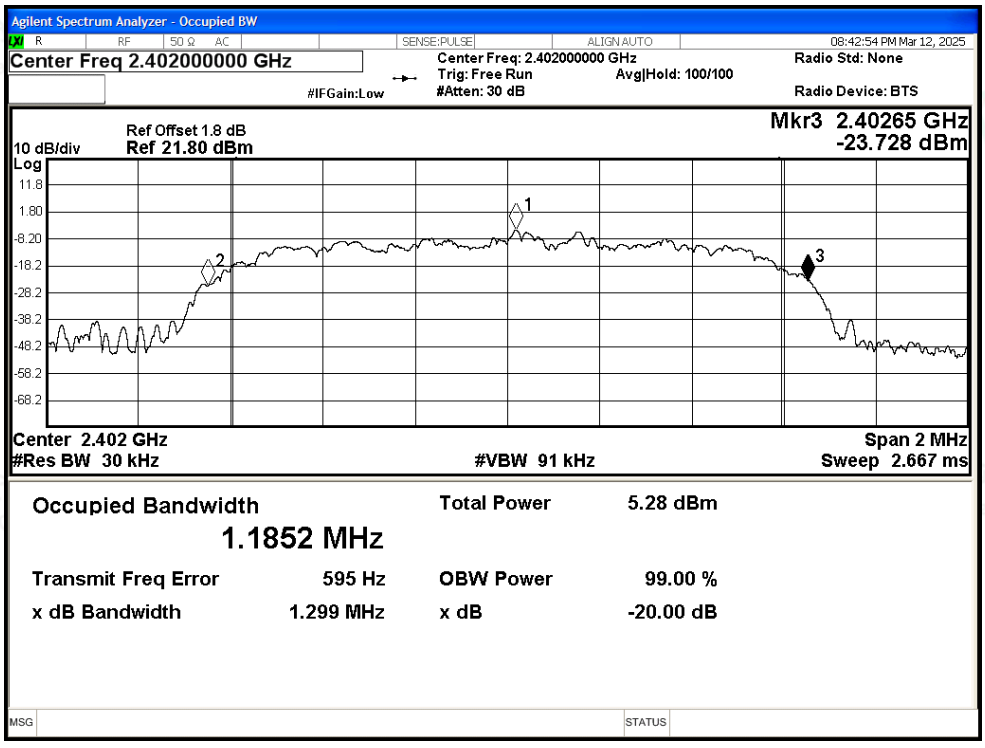
-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



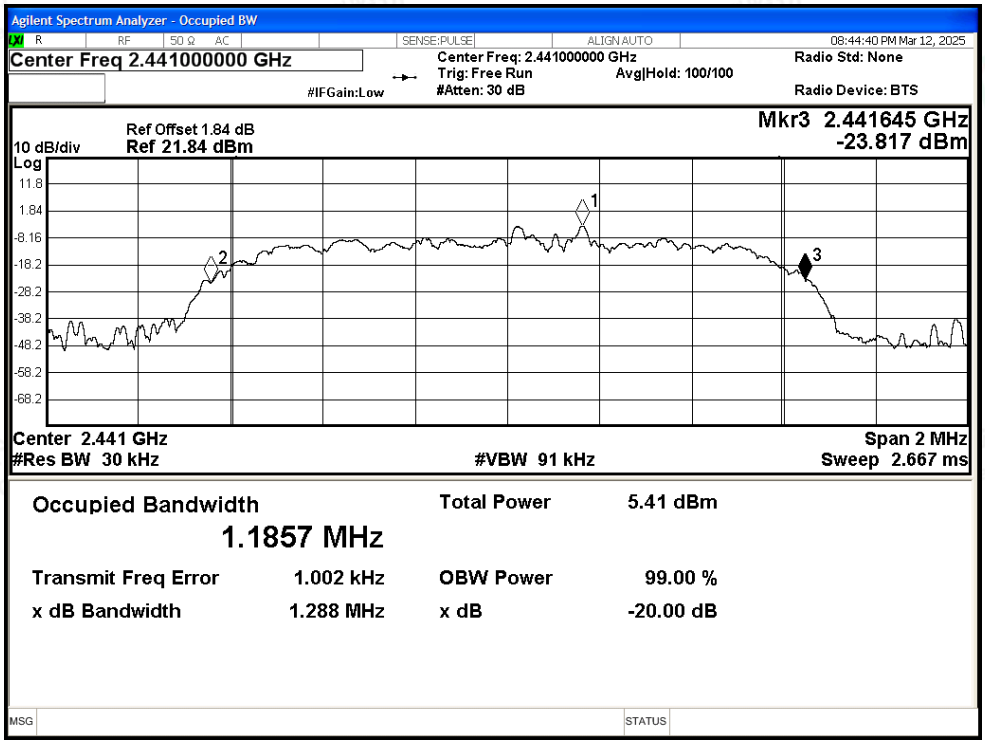
-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



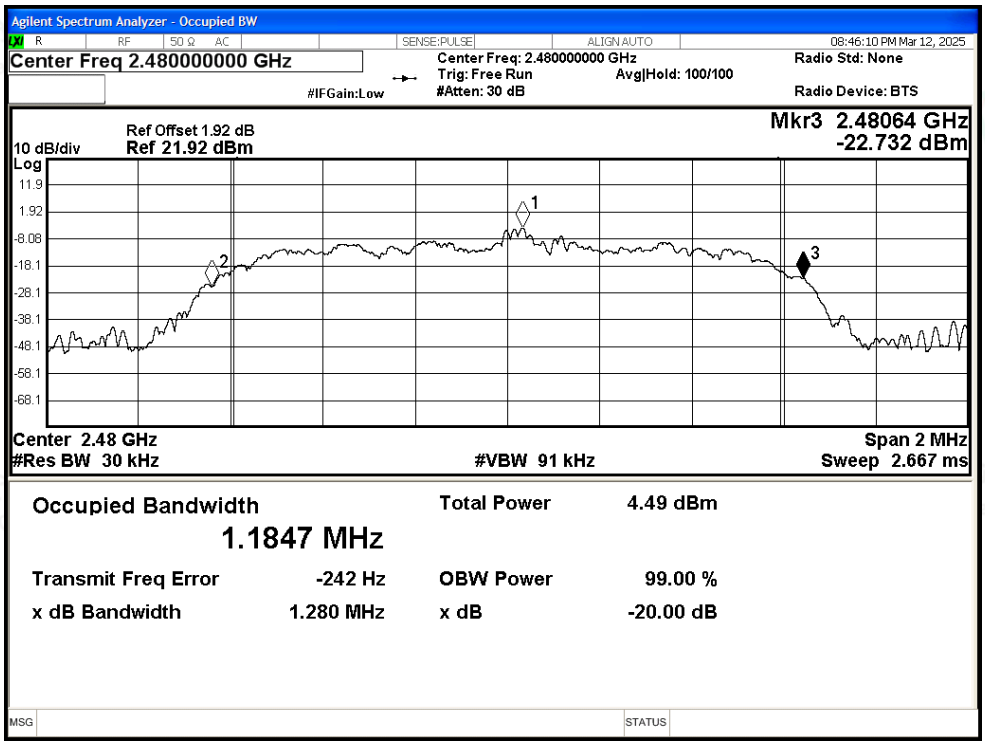
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



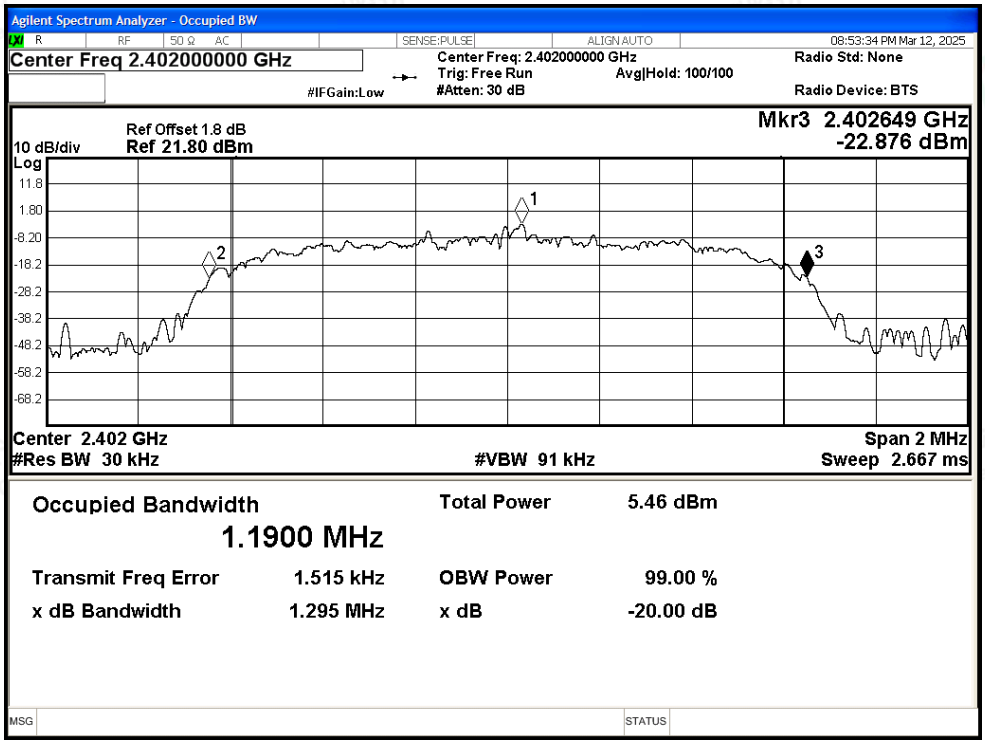
-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



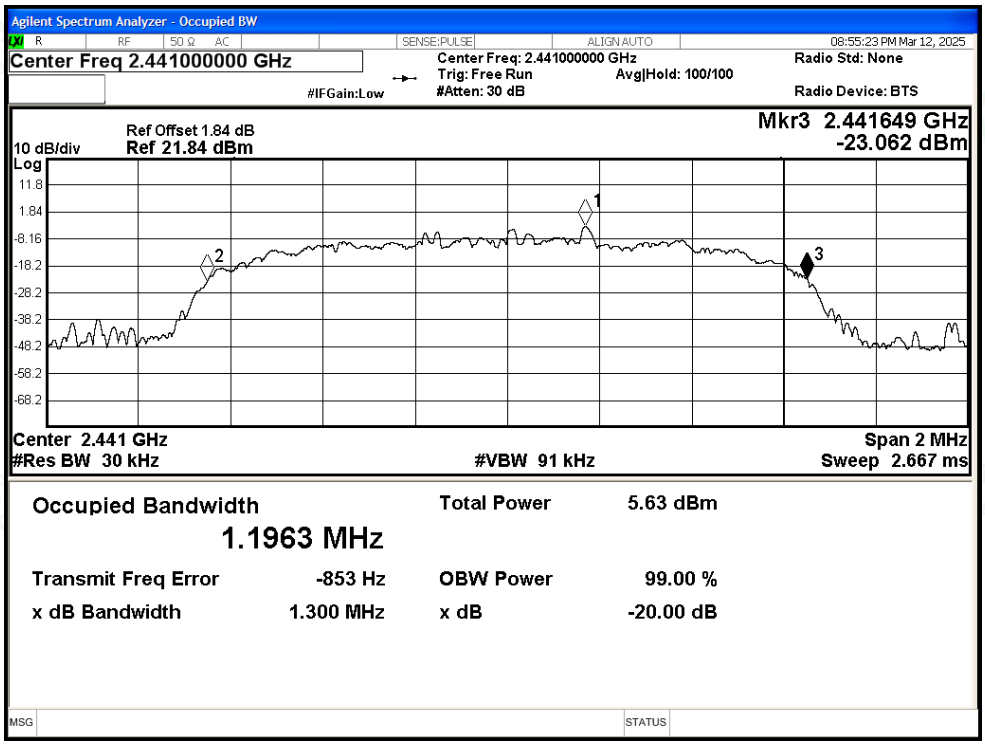
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1



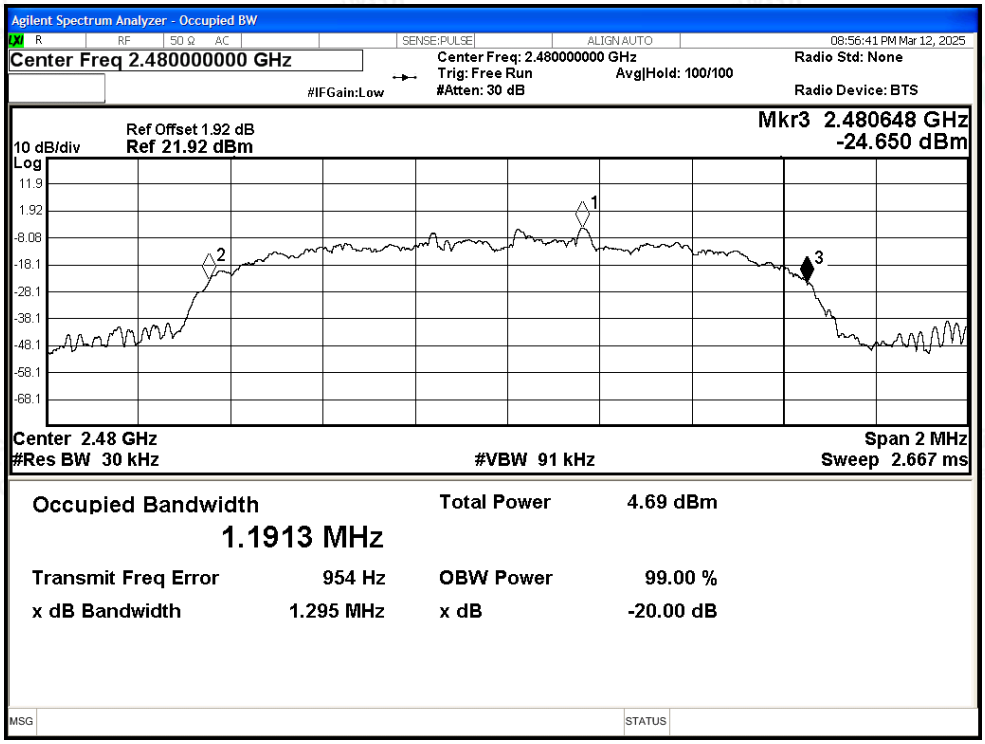
-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2480MHz Ant1

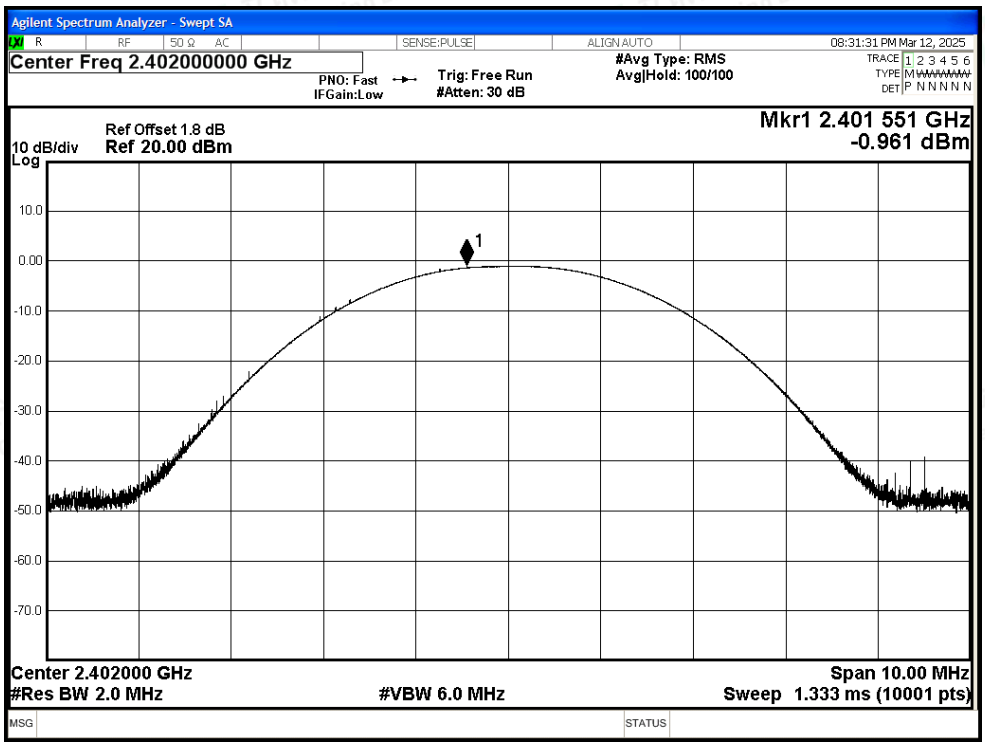


A.2 Maximum Peak Conducted Output Power

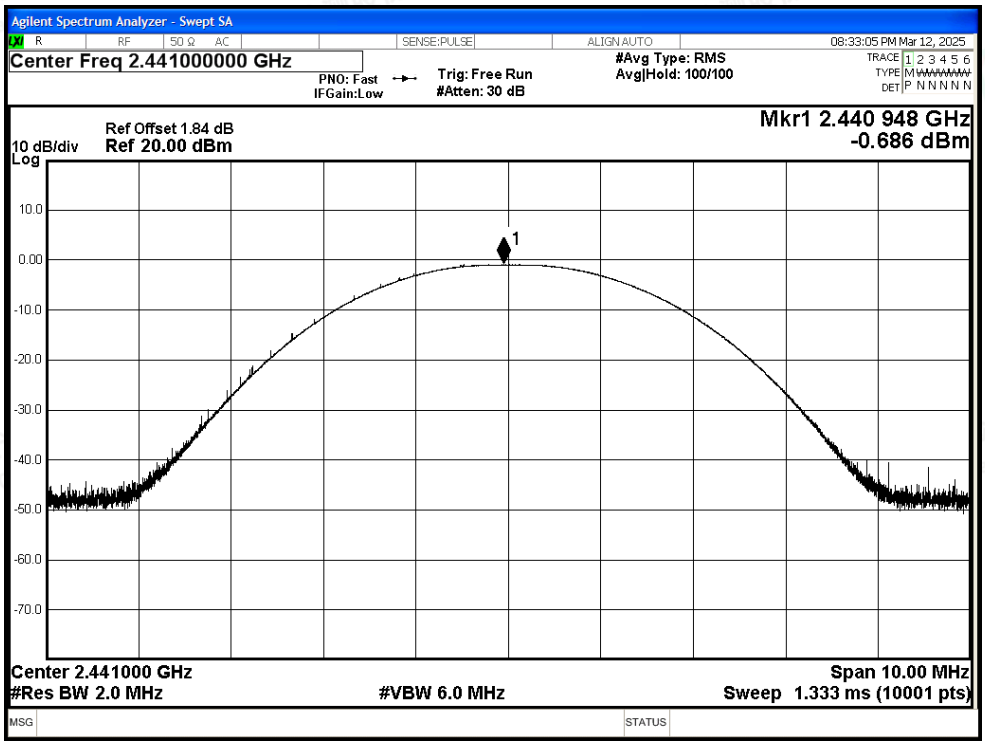
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	-0.96	21	Pass
NVNT	1-DH5	2441	Ant1	-0.69	21	Pass
NVNT	1-DH5	2480	Ant1	-1.75	21	Pass
NVNT	2-DH5	2402	Ant1	1.19	21	Pass
NVNT	2-DH5	2441	Ant1	1.33	21	Pass
NVNT	2-DH5	2480	Ant1	0.22	21	Pass
NVNT	3-DH5	2402	Ant1	1.52	21	Pass
NVNT	3-DH5	2441	Ant1	1.72	21	Pass
NVNT	3-DH5	2480	Ant1	0.60	21	Pass

Test Graphs

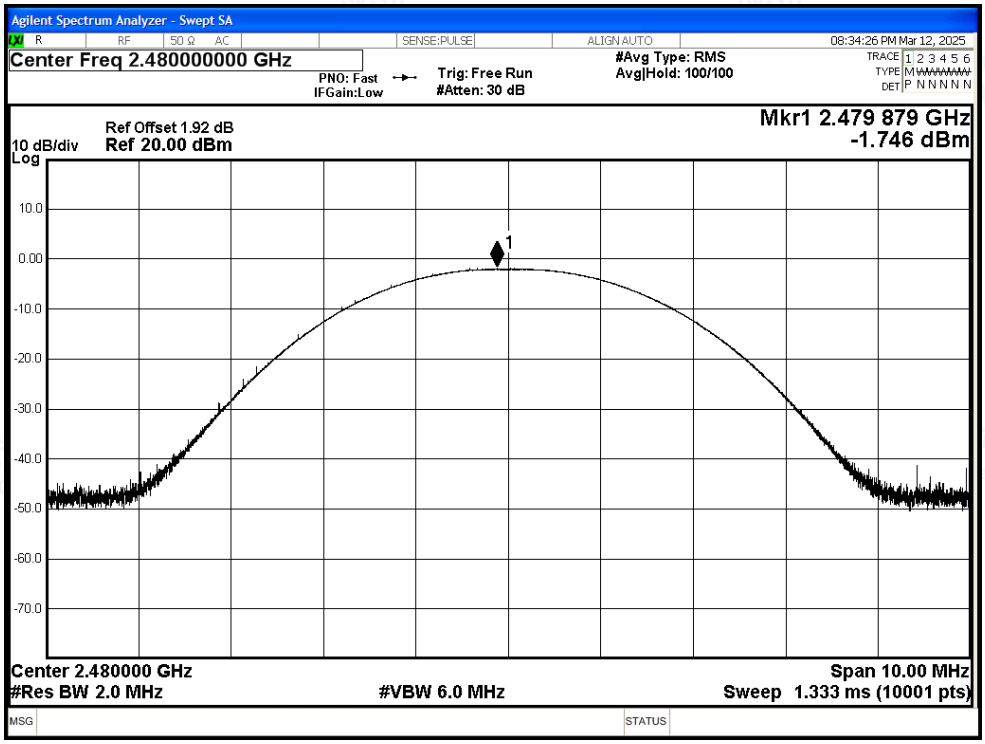
Power NVNT 1-DH5 2402MHz Ant1



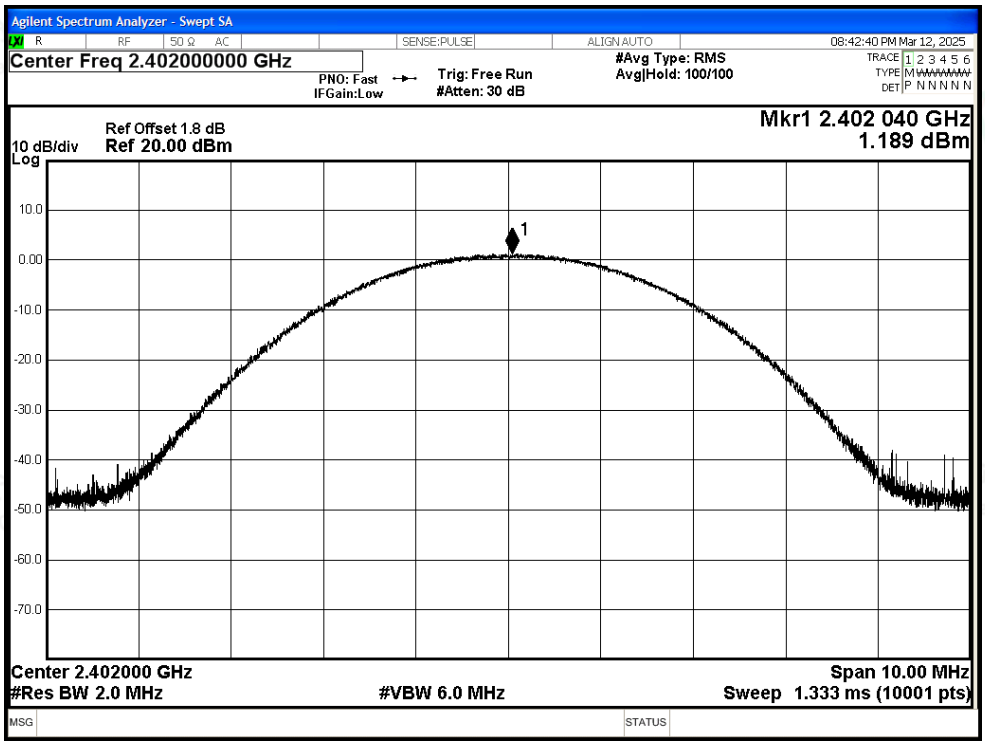
Power NVNT 1-DH5 2441MHz Ant1



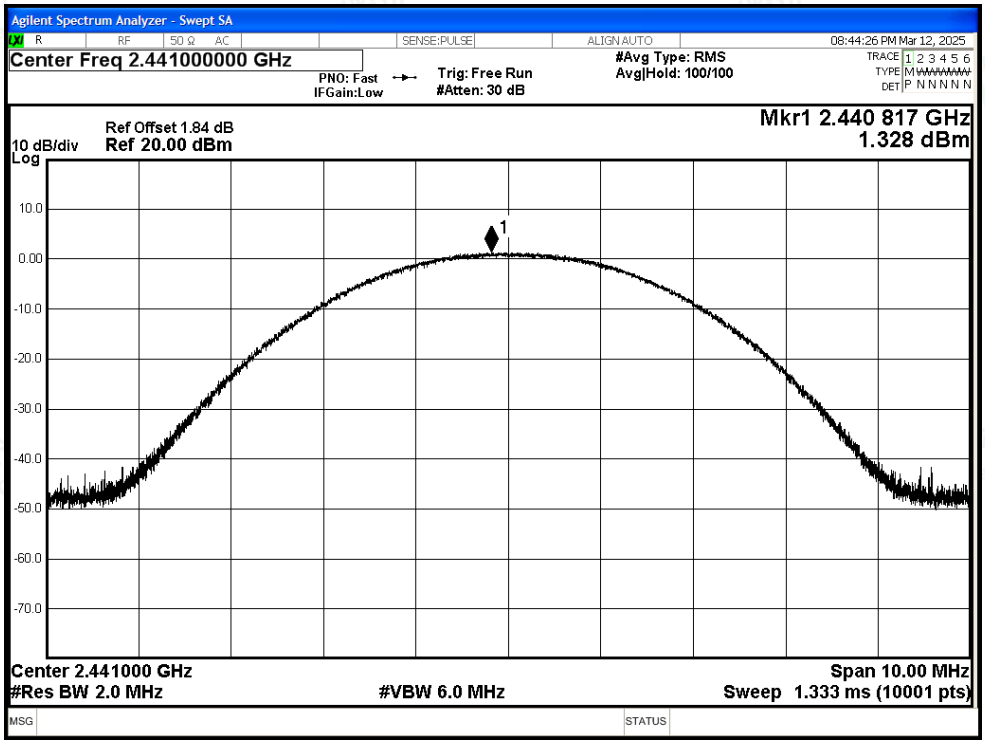
Power NVNT 1-DH5 2480MHz Ant1



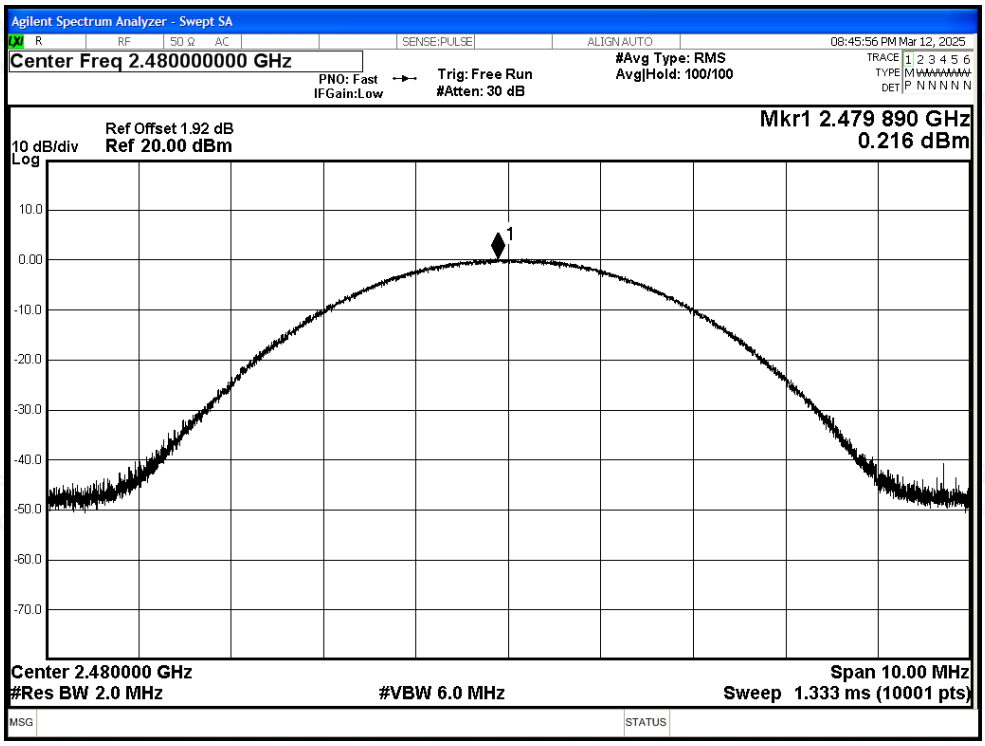
Power NVNT 2-DH5 2402MHz Ant1



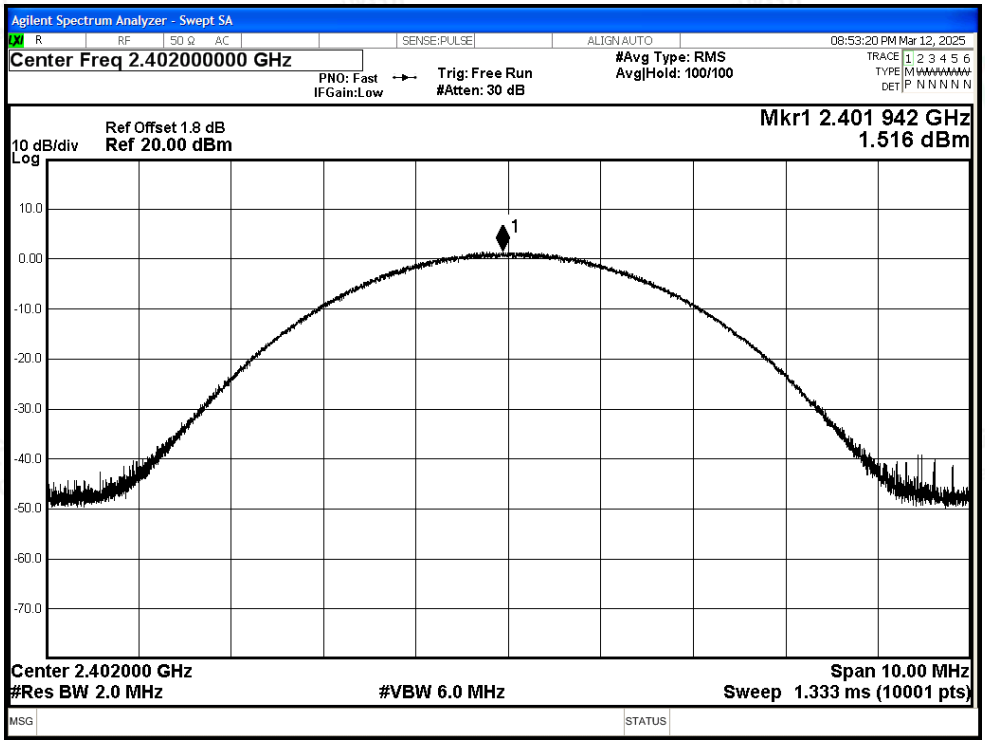
Power NVNT 2-DH5 2441MHz Ant1



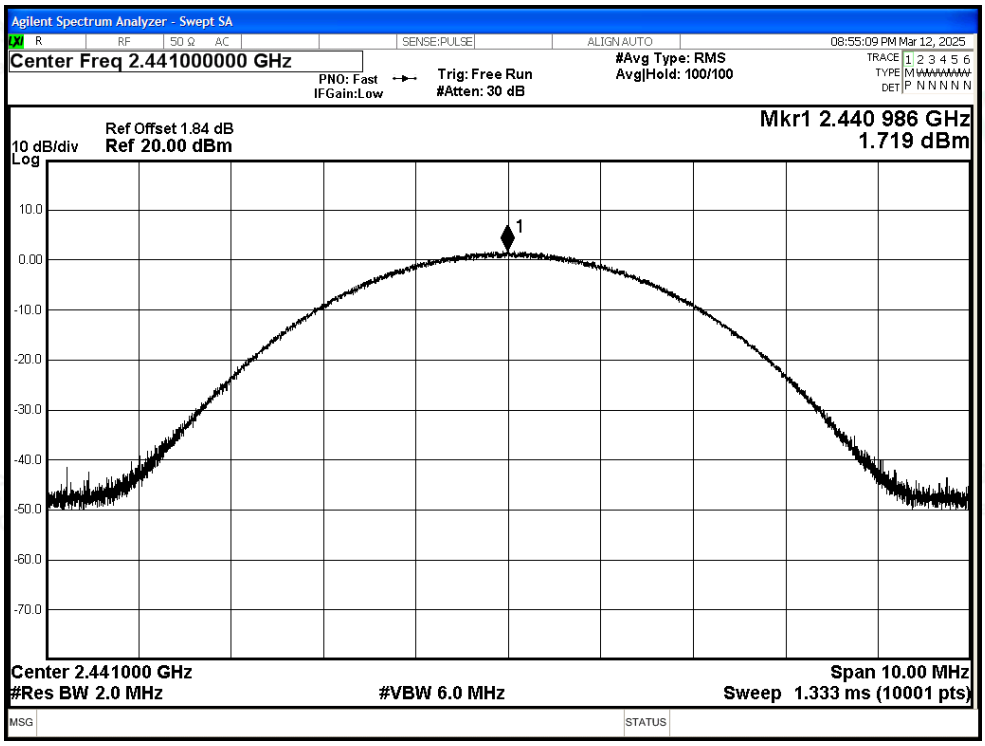
Power NVNT 2-DH5 2480MHz Ant1



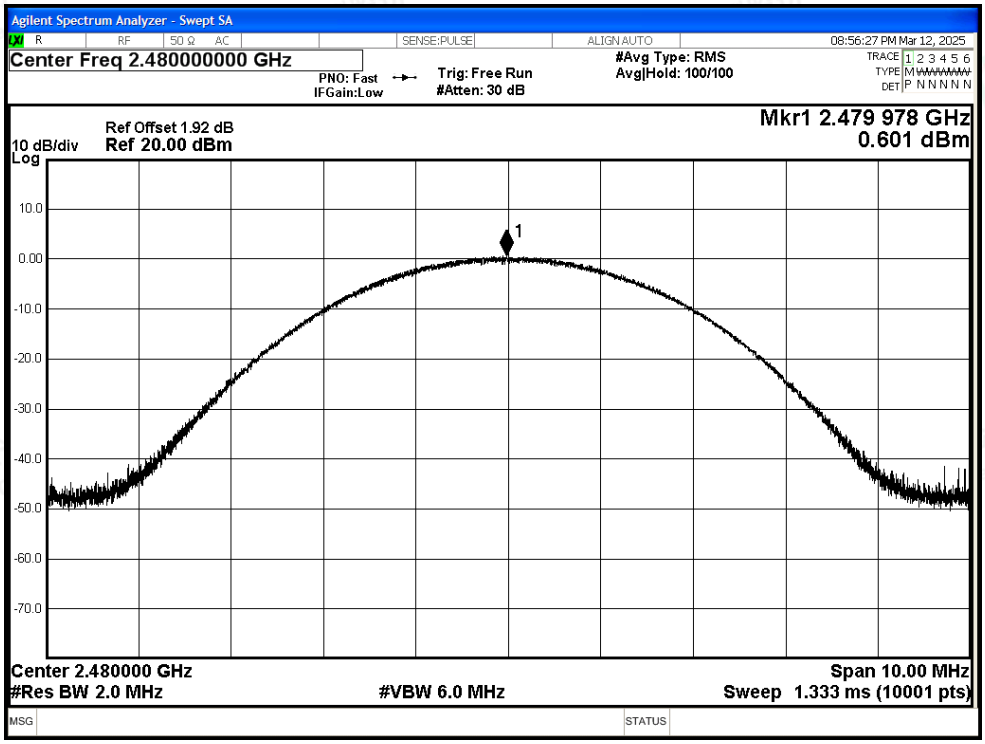
Power NVNT 3-DH5 2402MHz Ant1



Power NVNT 3-DH5 2441MHz Ant1



Power NVNT 3-DH5 2480MHz Ant1

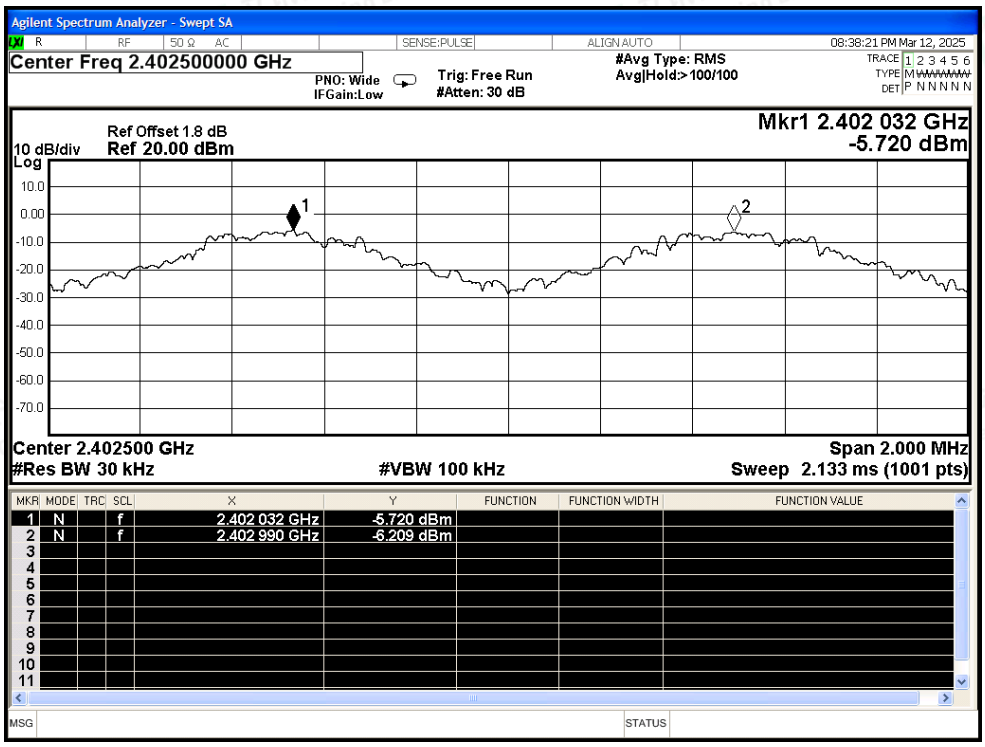


A.3 Carrier Frequencies Separation

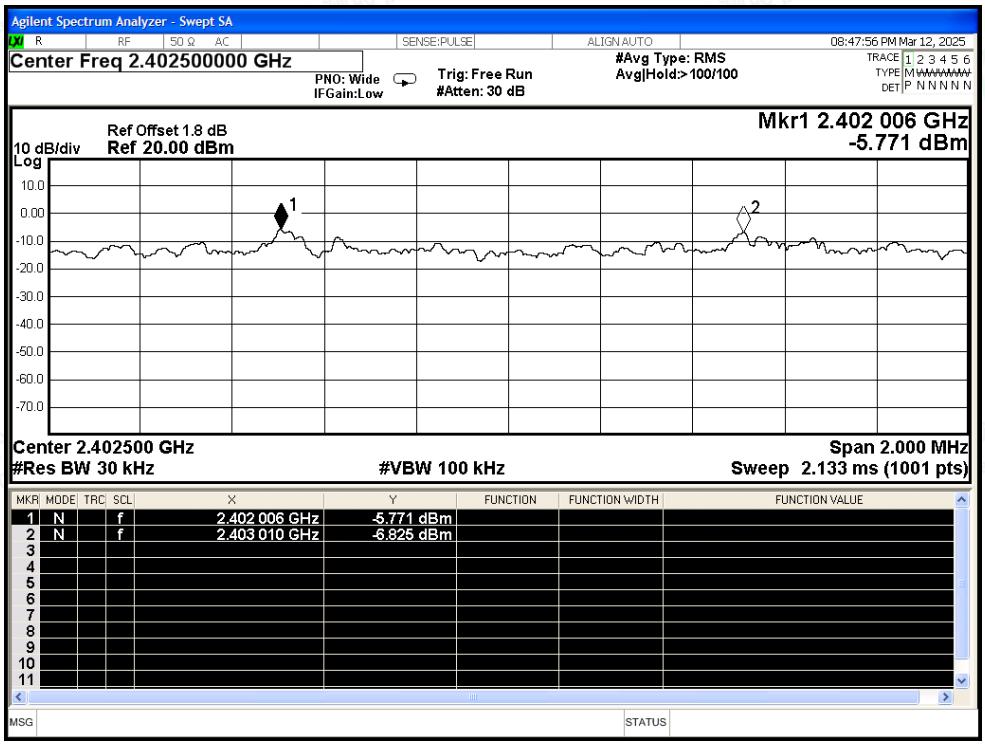
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2402.032	2402.99	0.958	0.684	Pass
NVNT	2-DH5	Ant1	2402.006	2403.01	1.004	0.866	Pass
NVNT	3-DH5	Ant1	2402.024	2403.172	1.148	0.867	Pass

Test Graphs

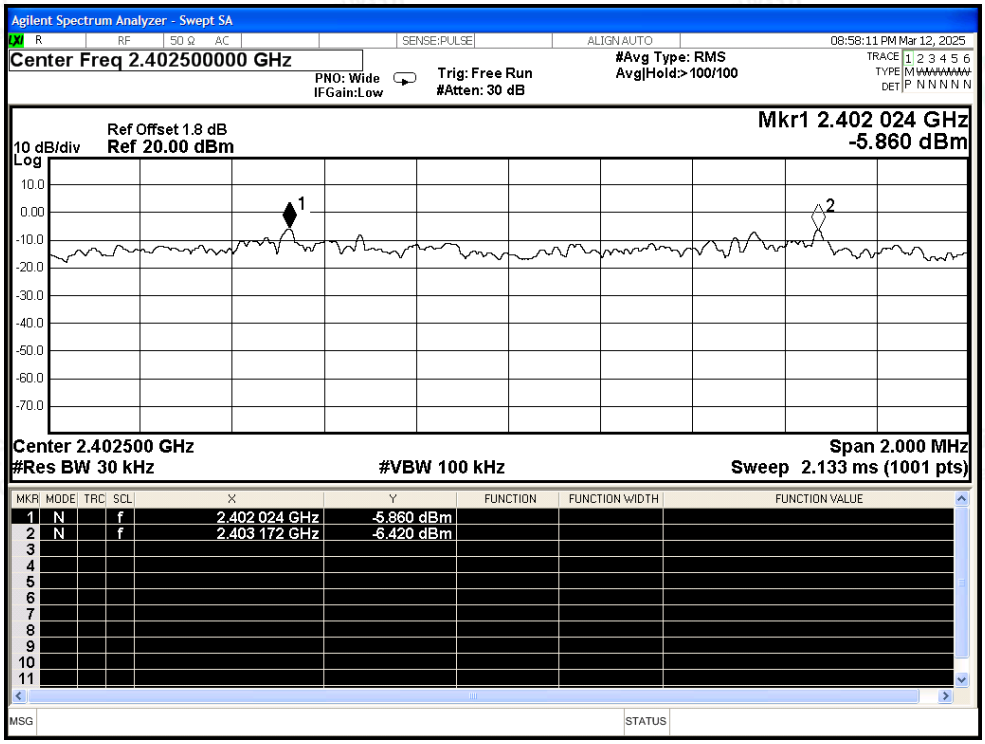
CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1



CFS NVNT 3-DH5 2402MHz Ant1

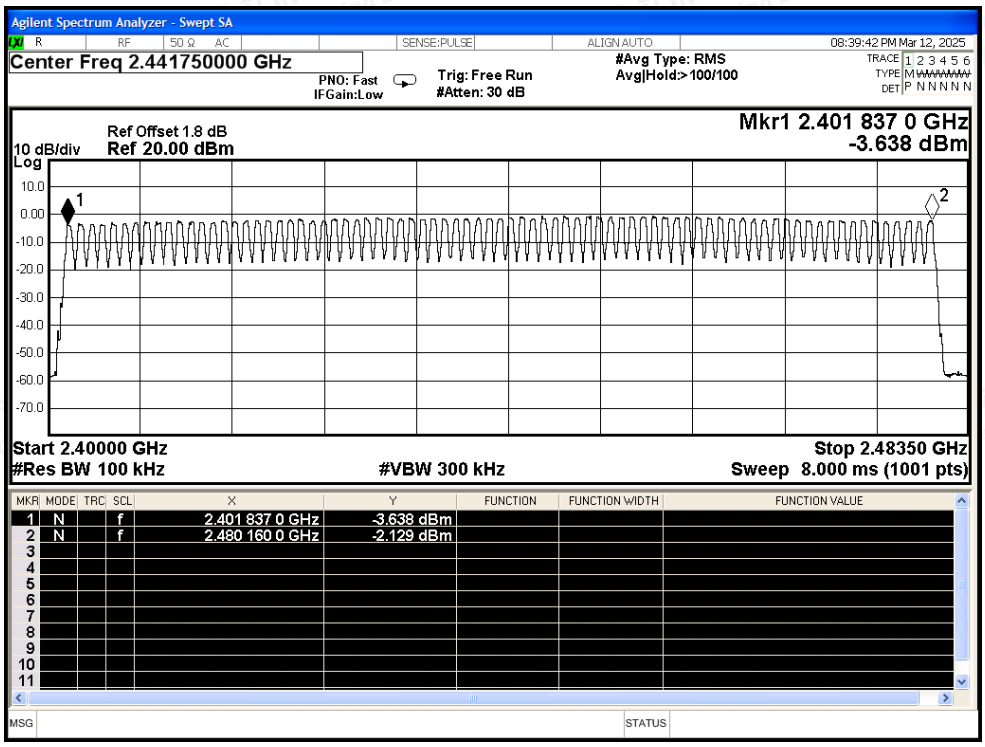


A.5 Number of Hopping Channel

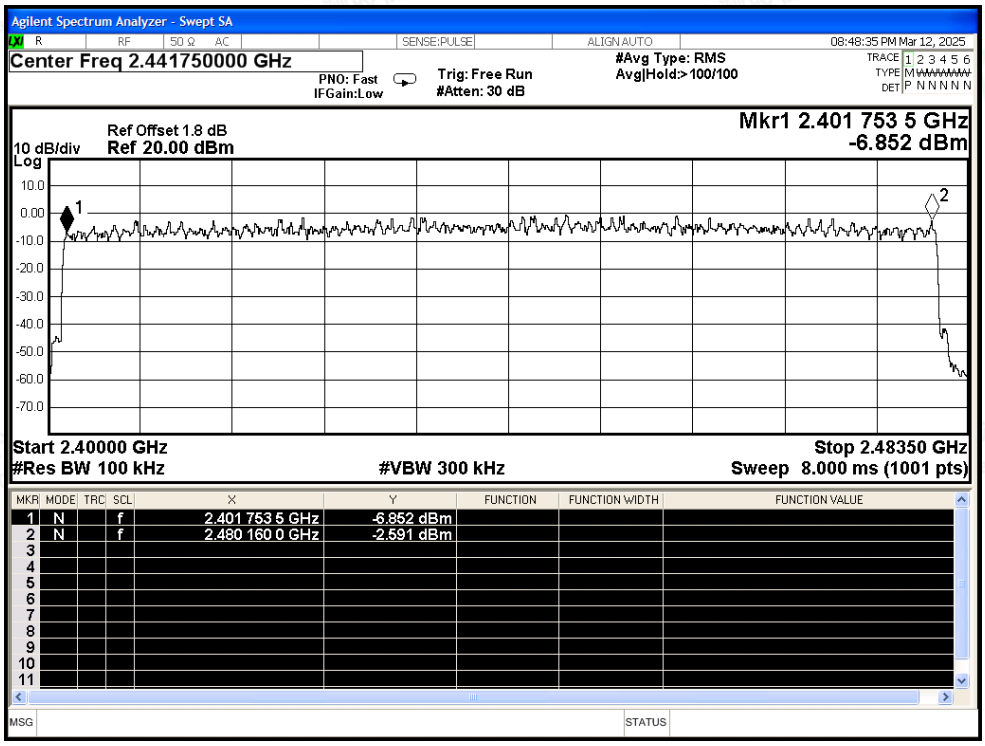
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass

Test Graphs

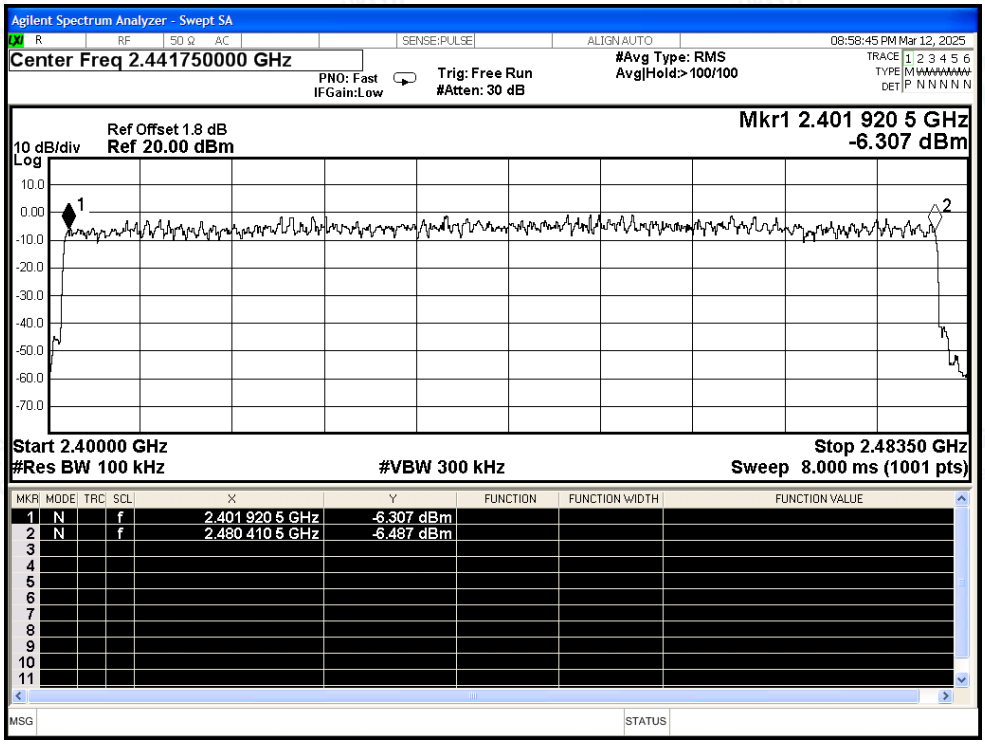
Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1



Hopping No. NVNT 3-DH5 2402MHz Ant1

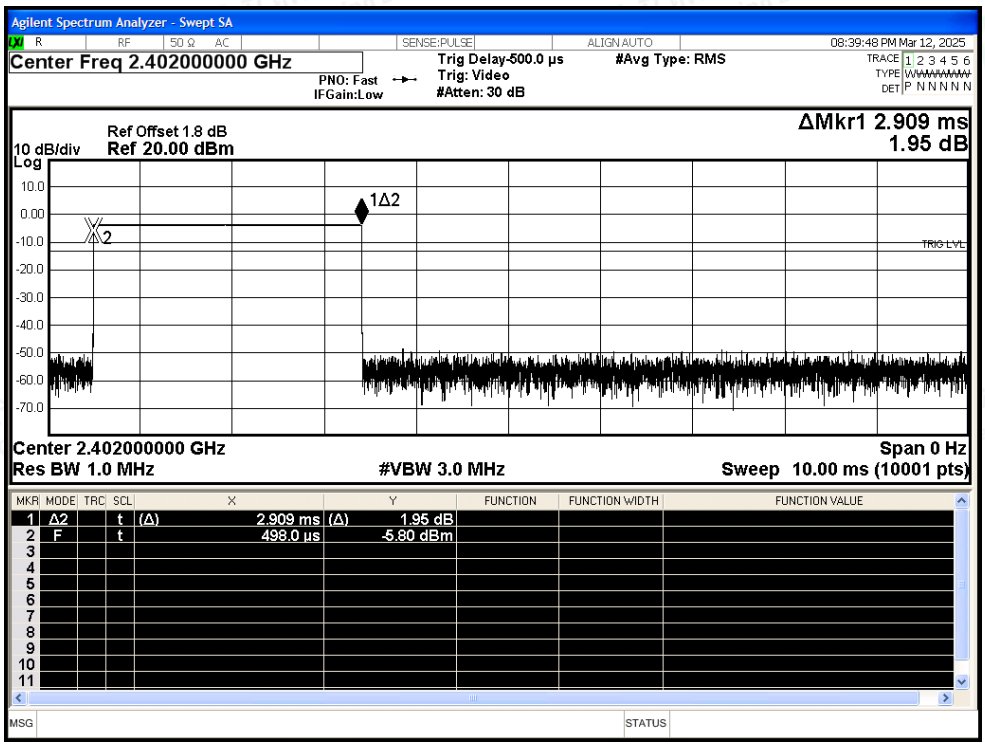


A.4 Dwell Time

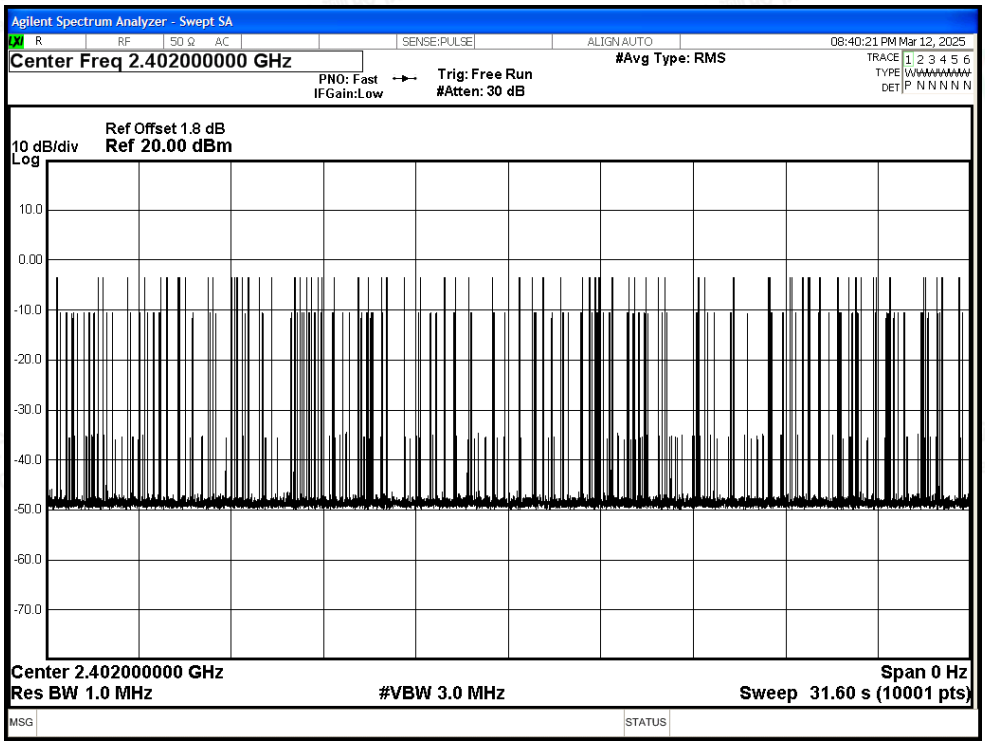
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.909	270.537	93	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.898	310.086	107	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.897	281.009	97	31600	400	Pass

Test Graphs

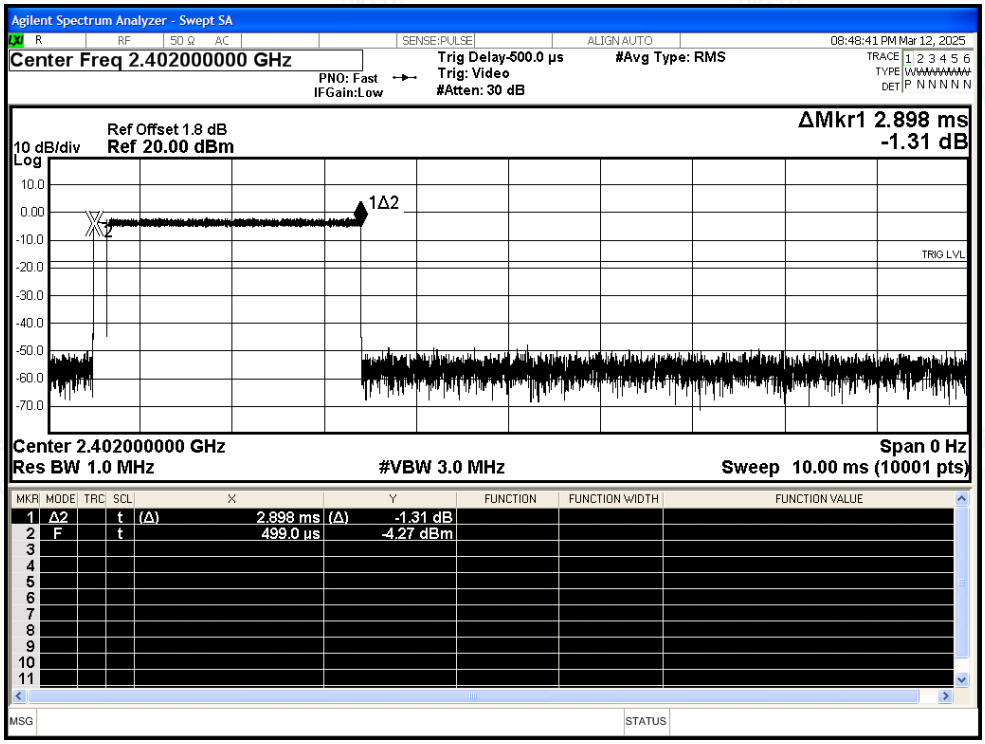
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



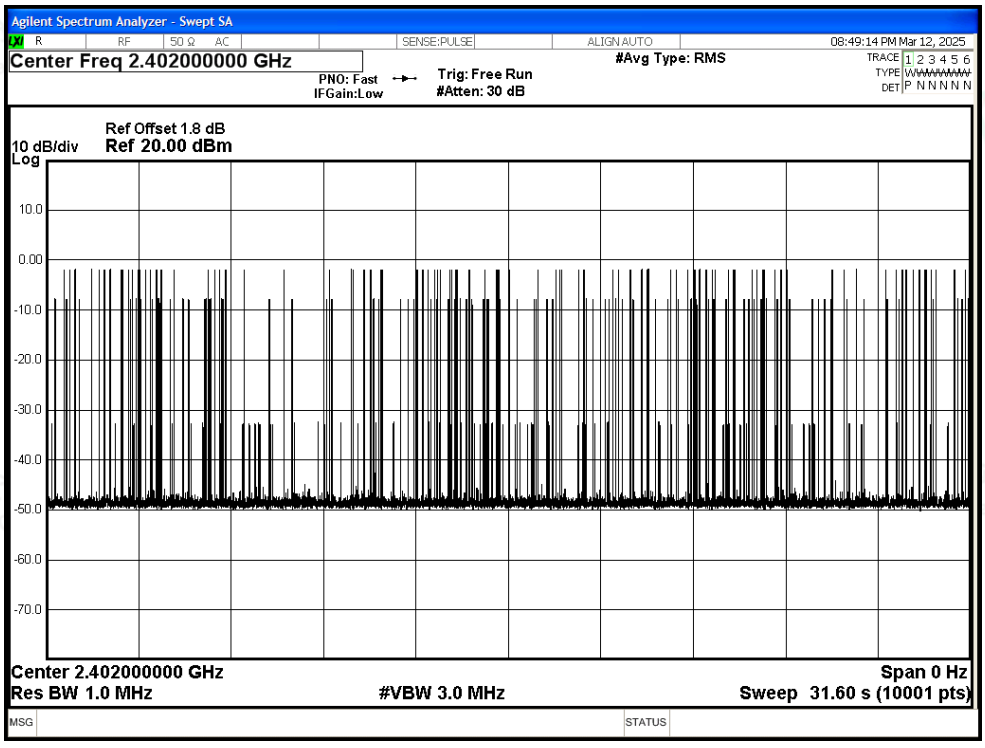
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



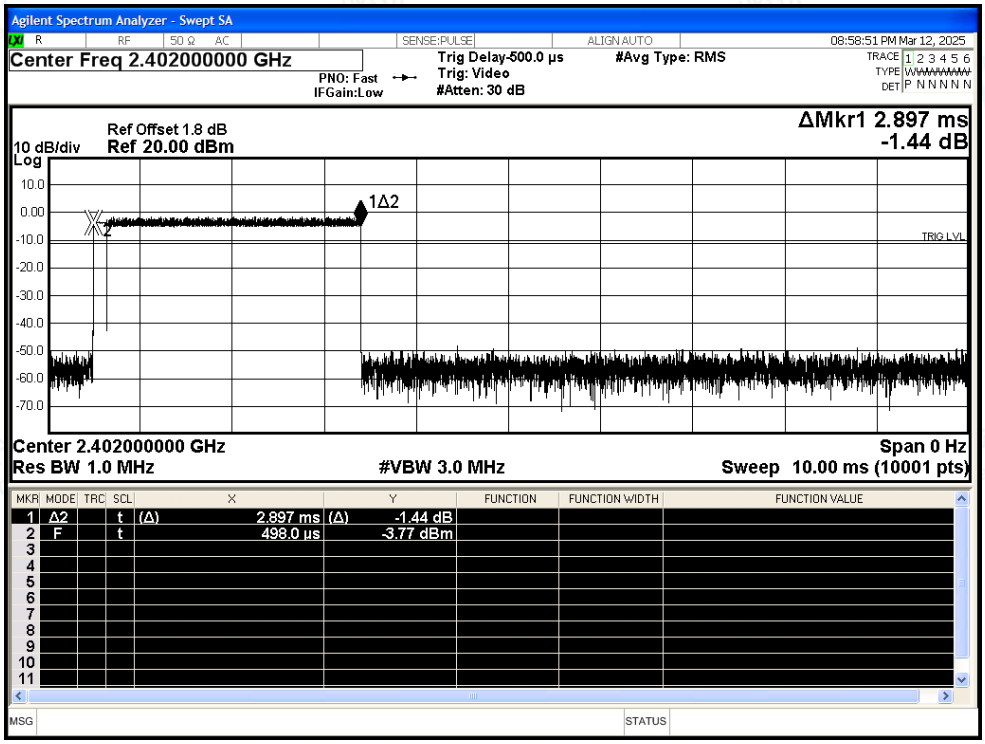
Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



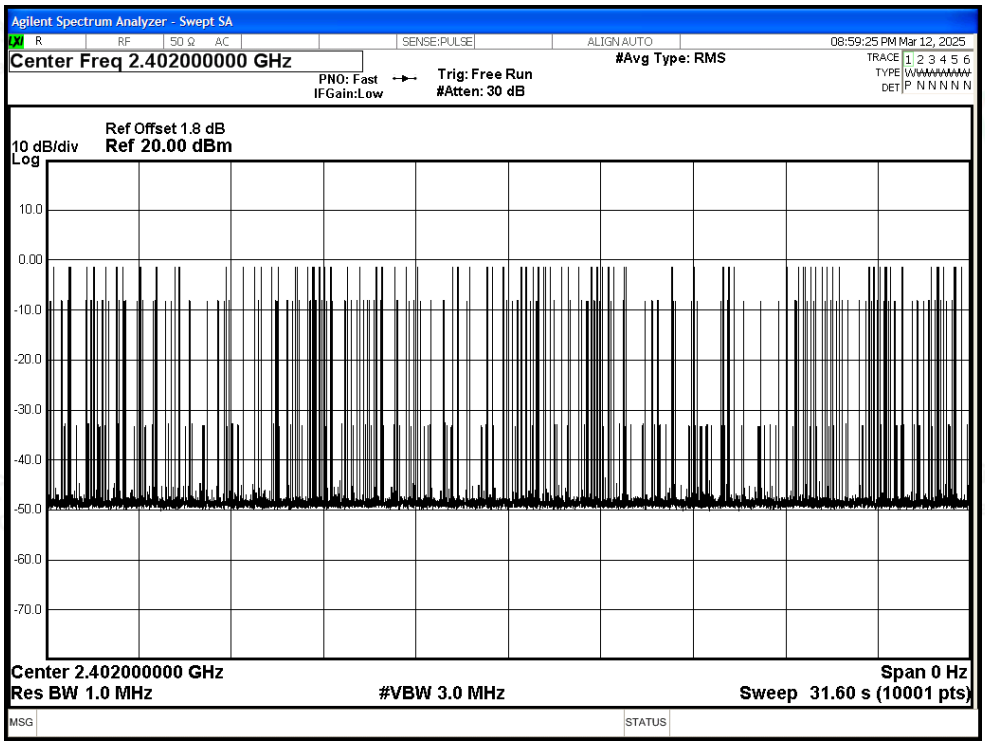
Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated



Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated

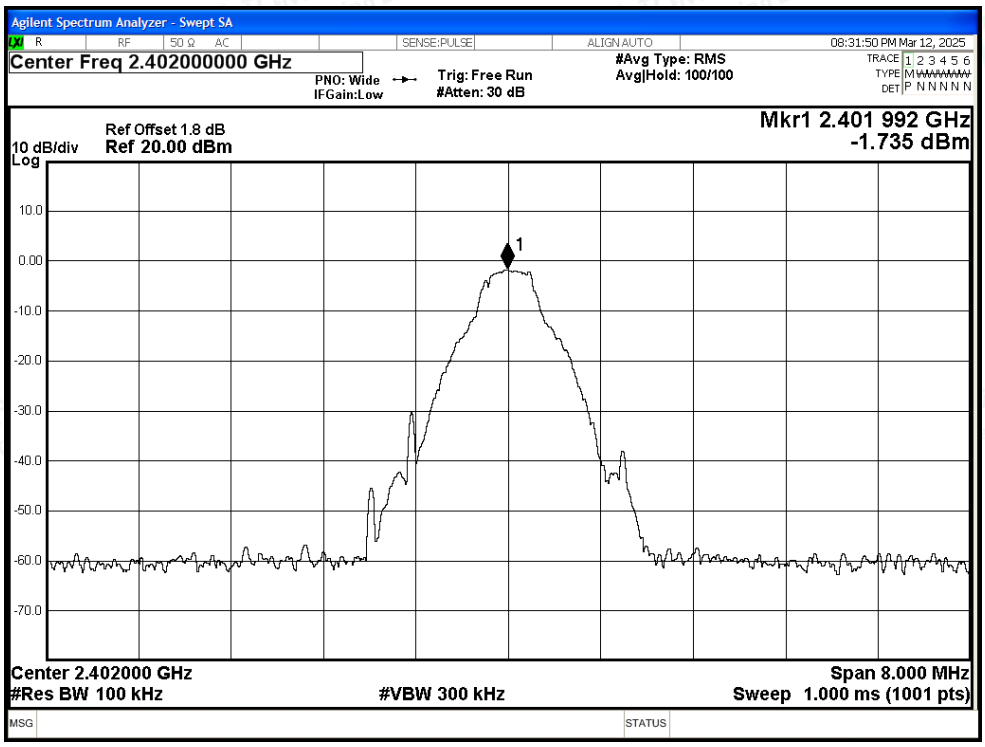


A.6 Band Edge

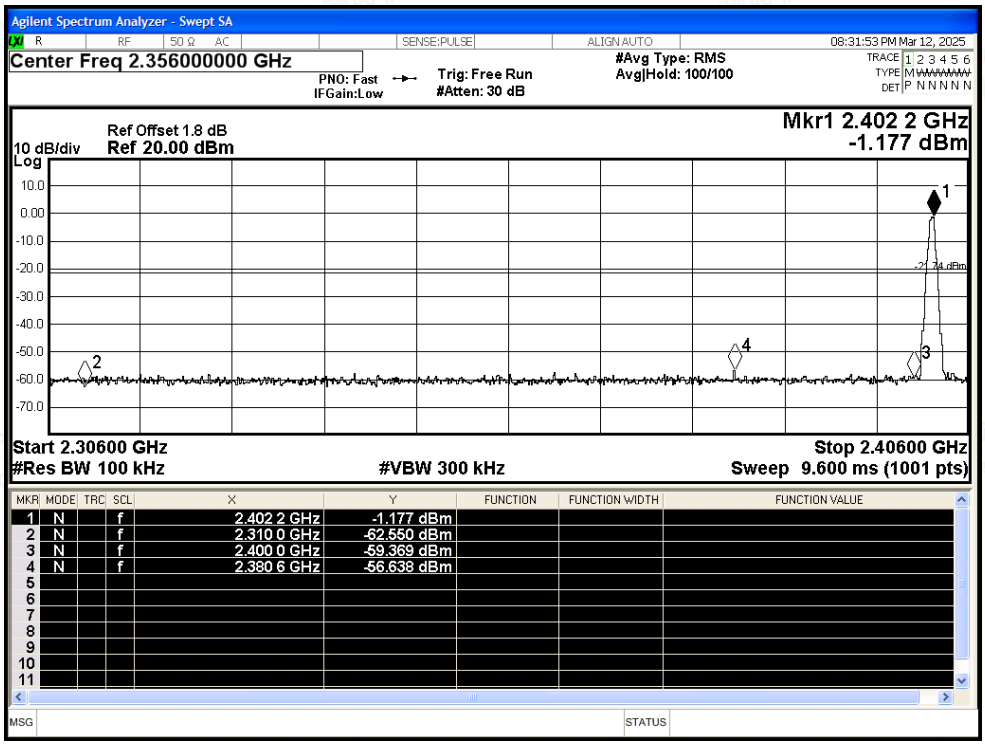
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-54.9	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-54.21	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-51.36	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-55.12	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-50.5	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-54.3	-20	Pass

Test Graphs

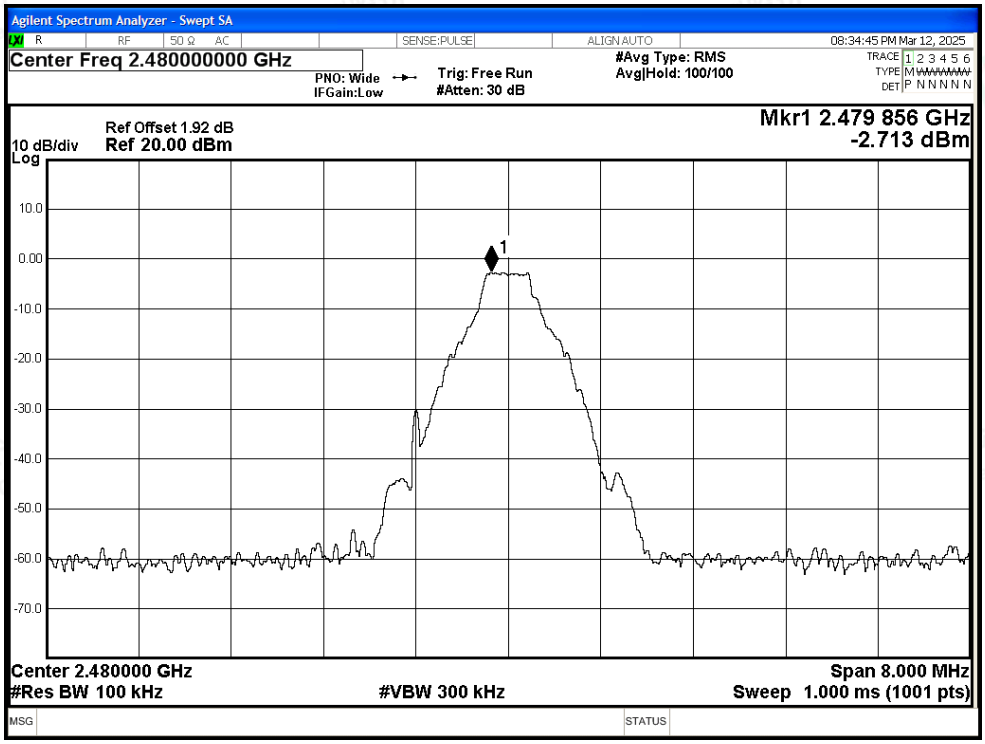
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



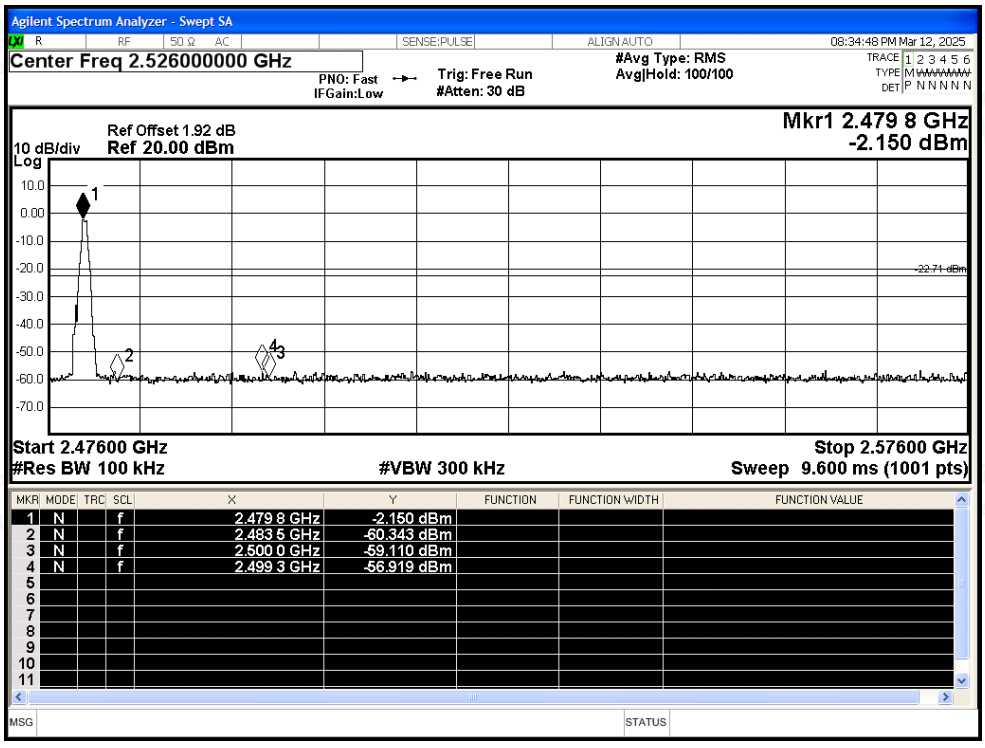
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



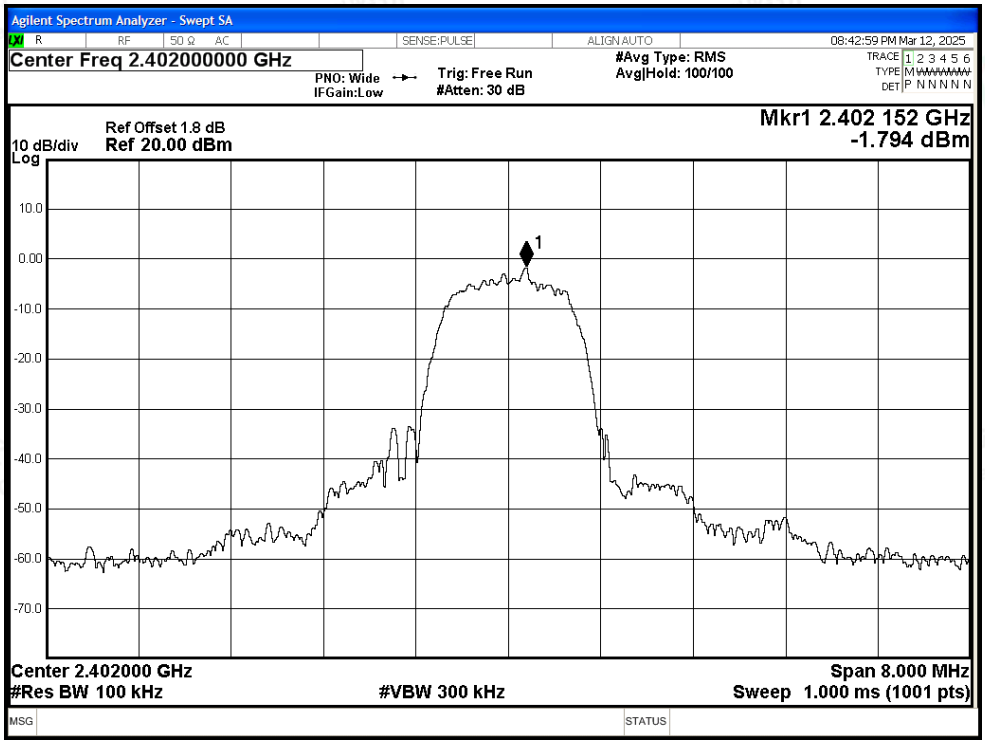
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



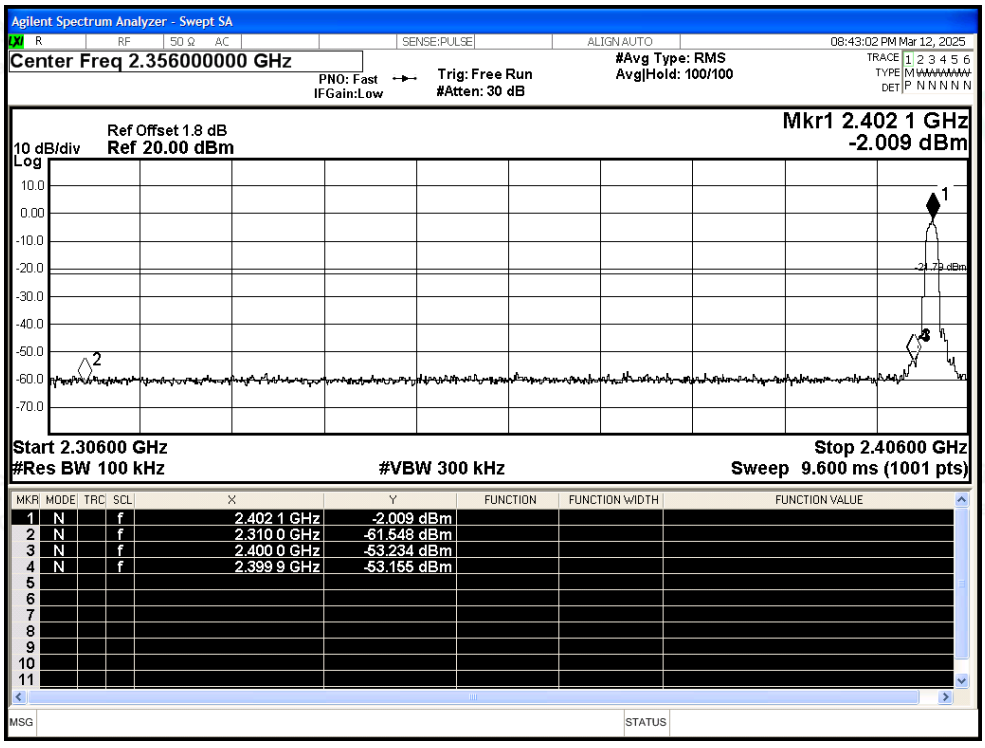
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



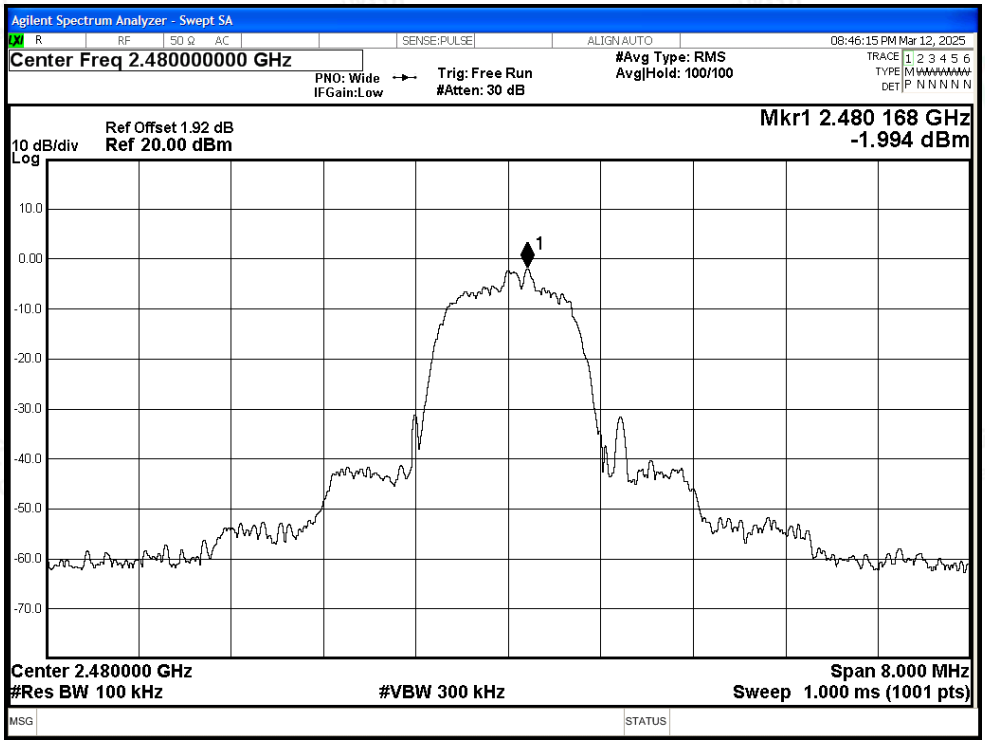
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



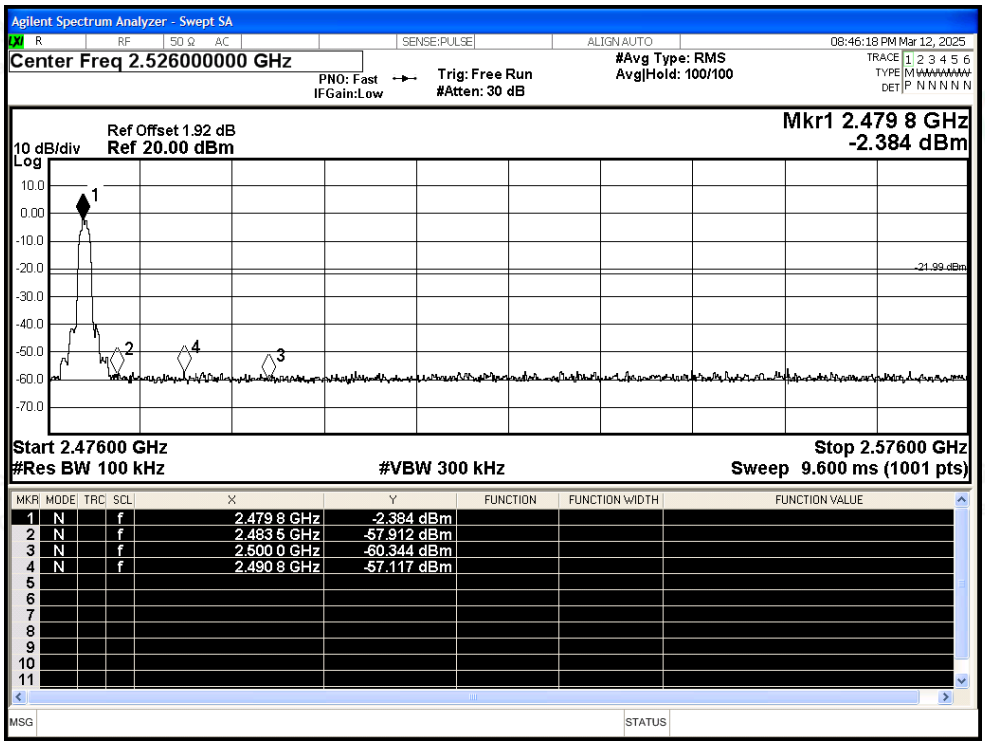
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission



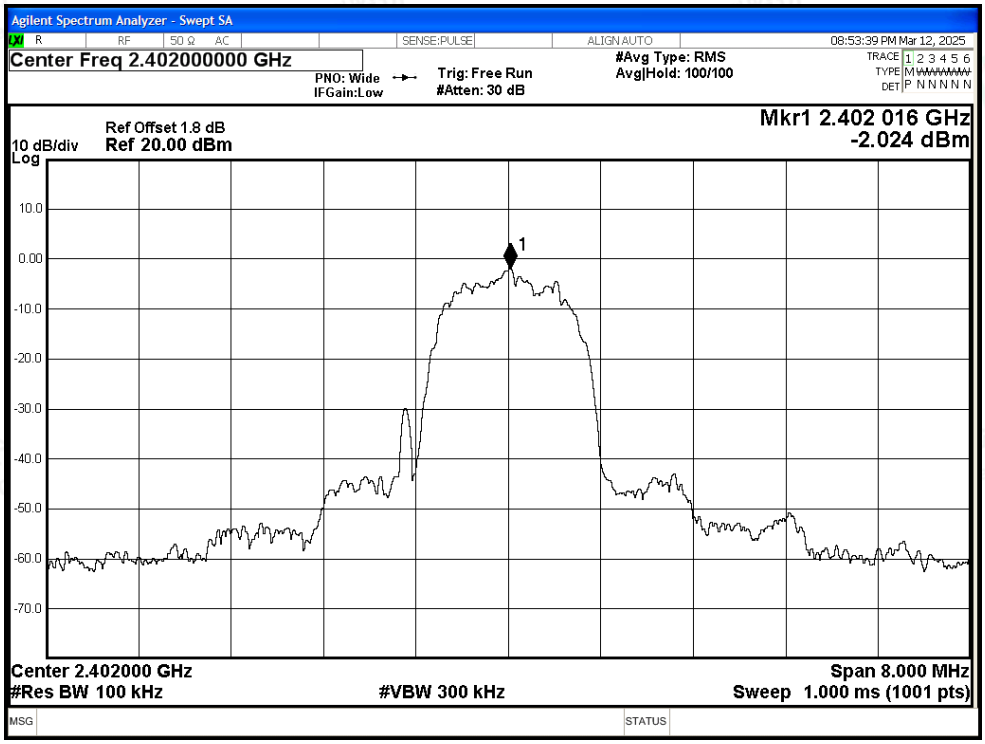
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



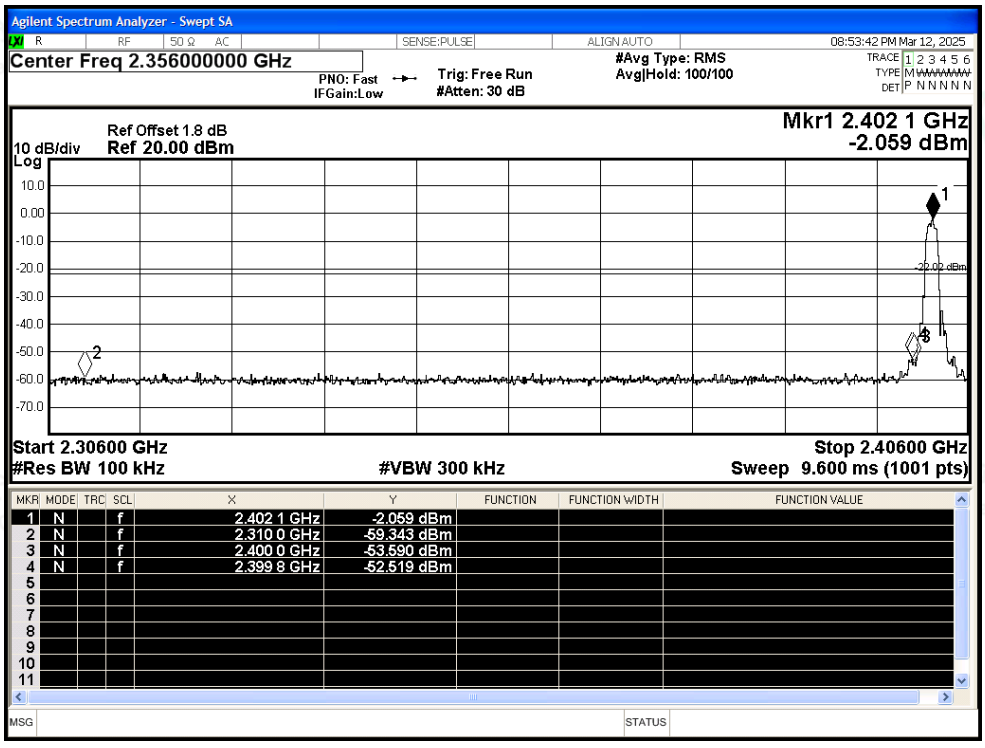
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission



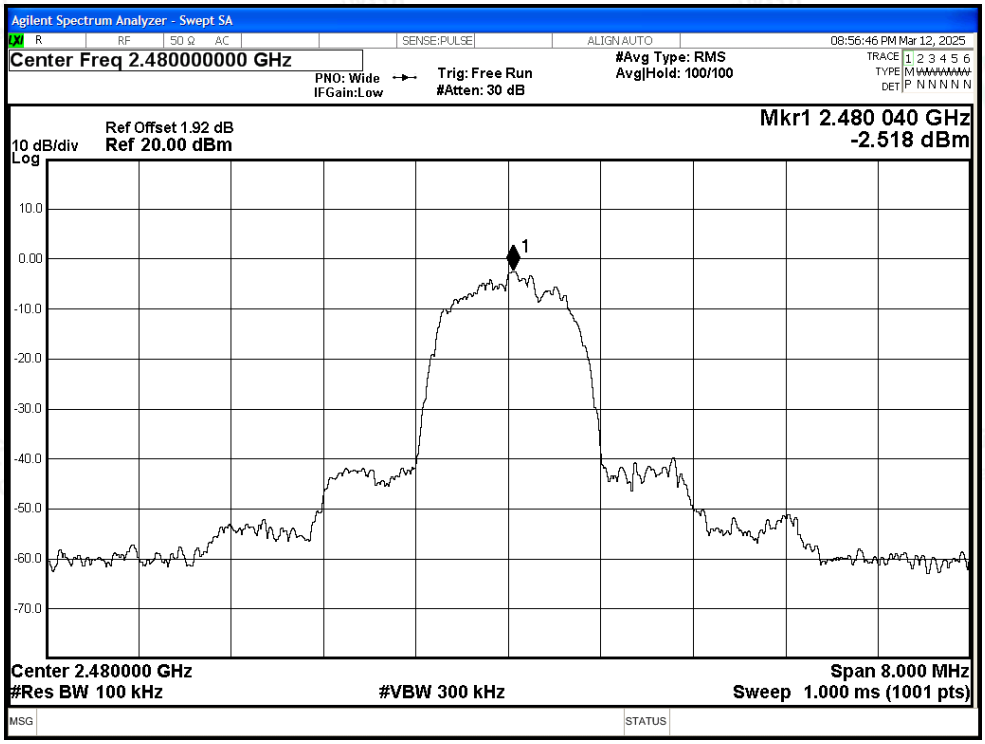
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref



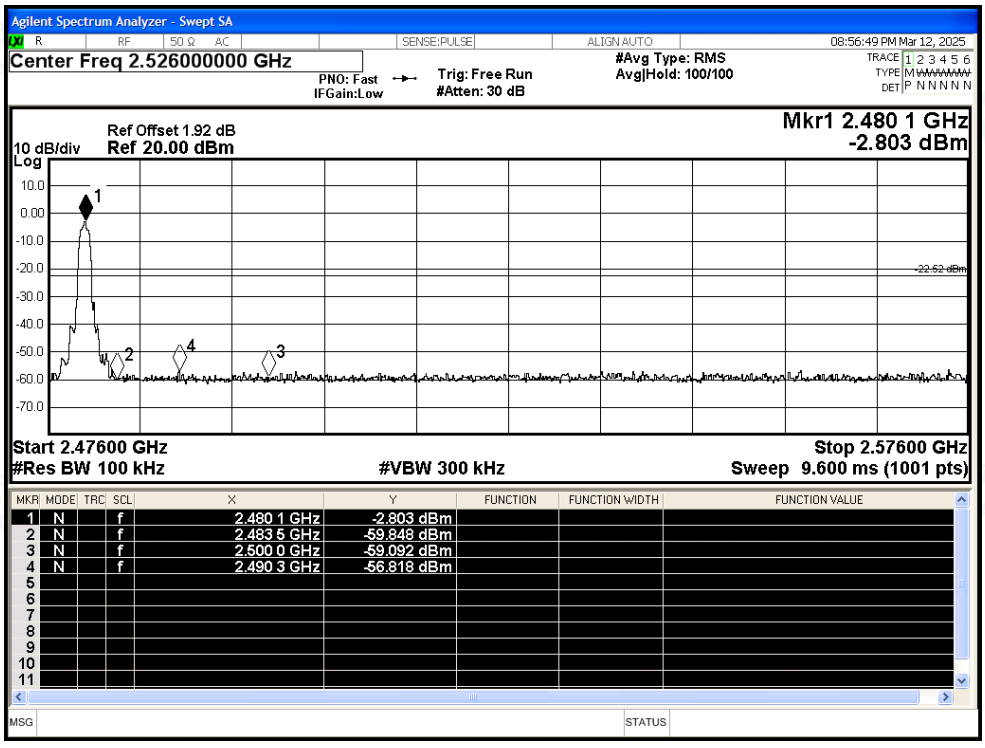
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission



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



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

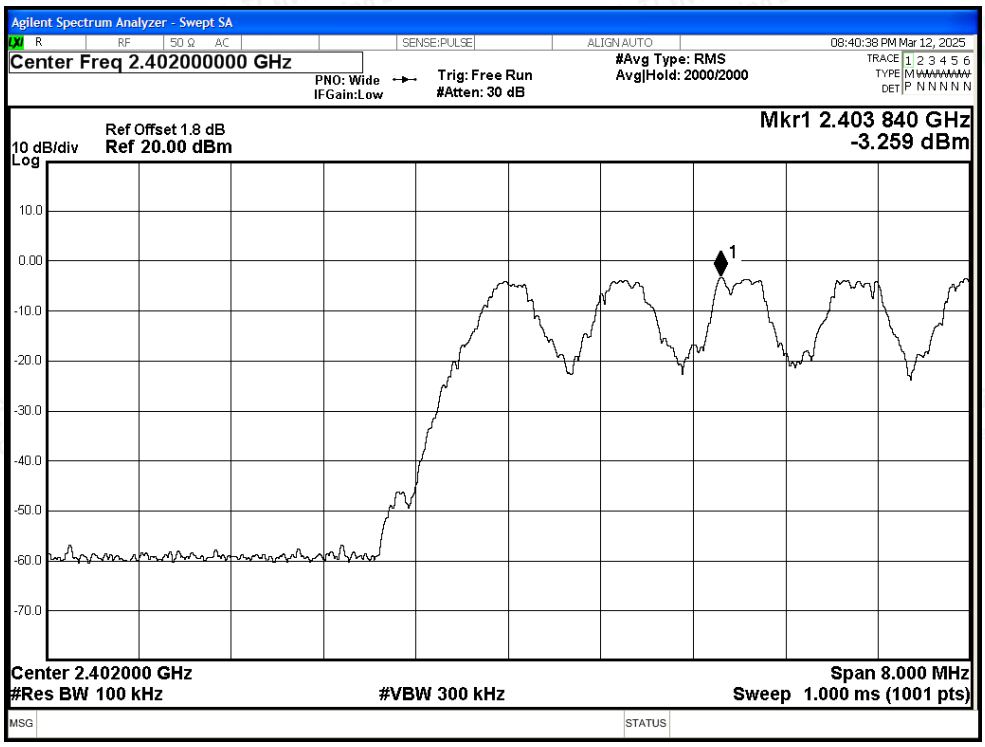


(Hopping)

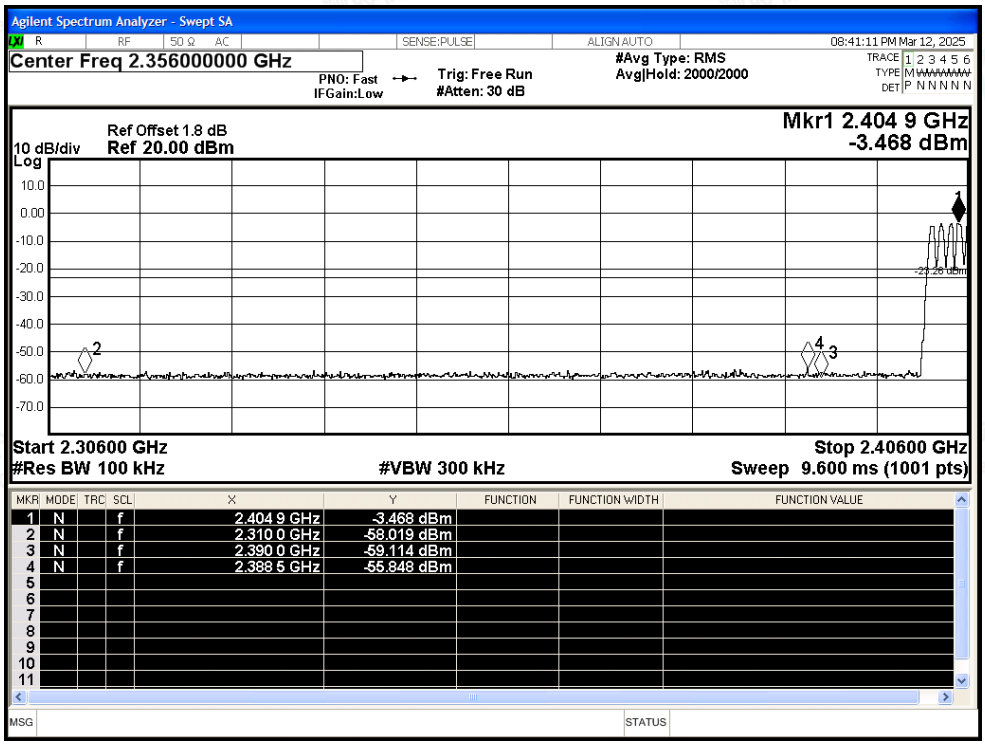
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-52.59	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-53.79	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-52.79	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-53.46	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-52.23	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-54.67	-20	Pass

Test Graphs

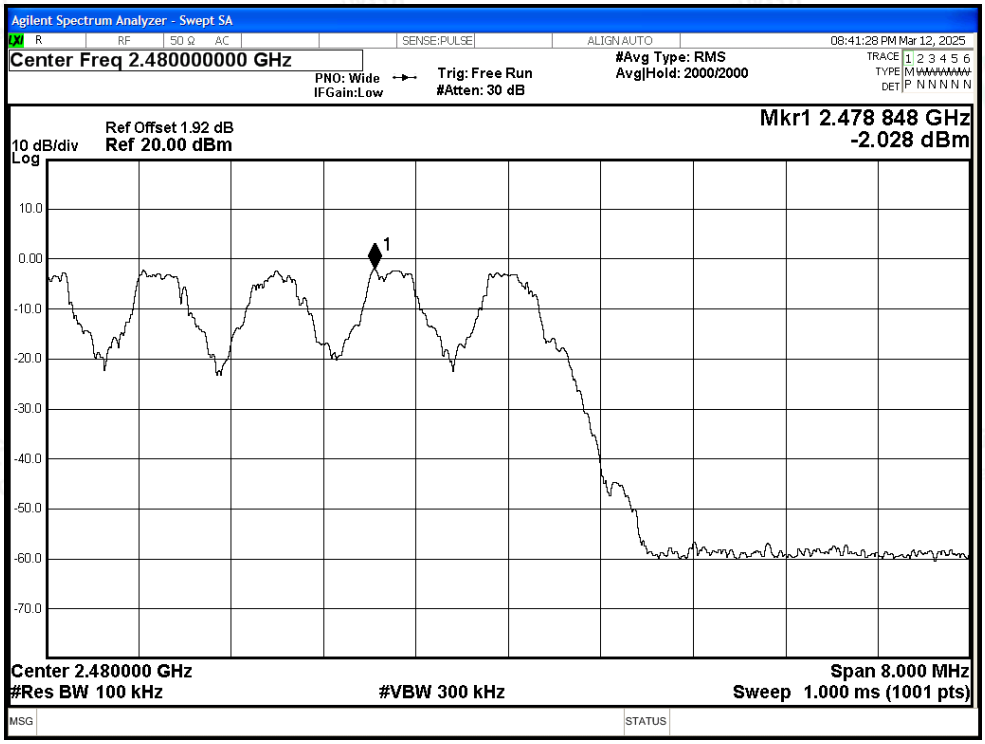
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



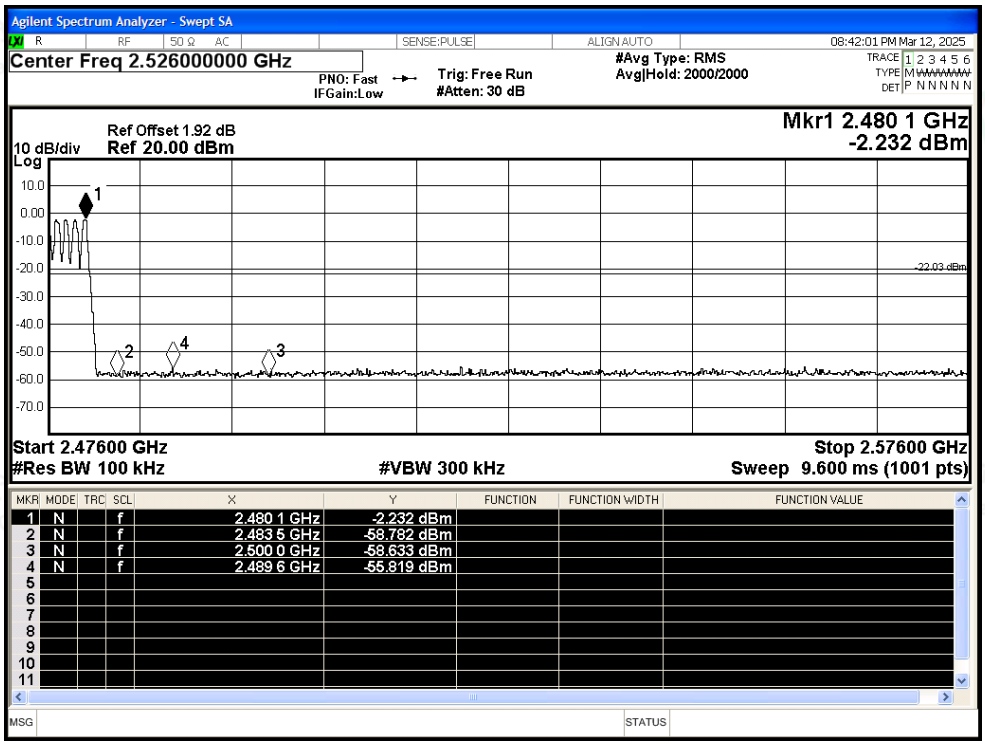
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



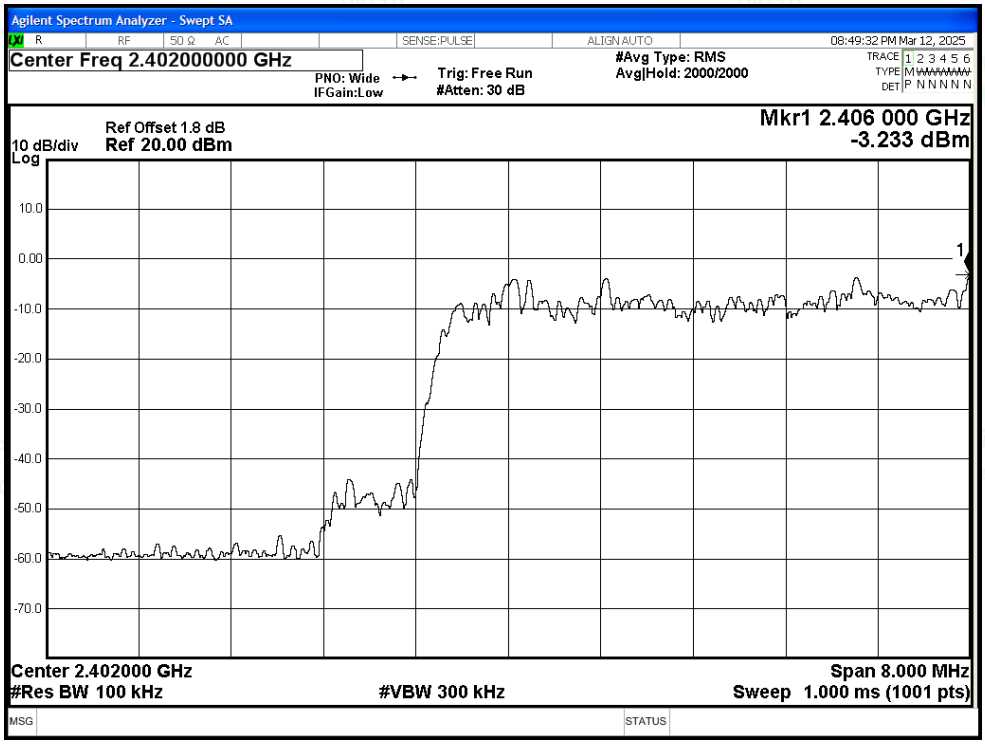
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



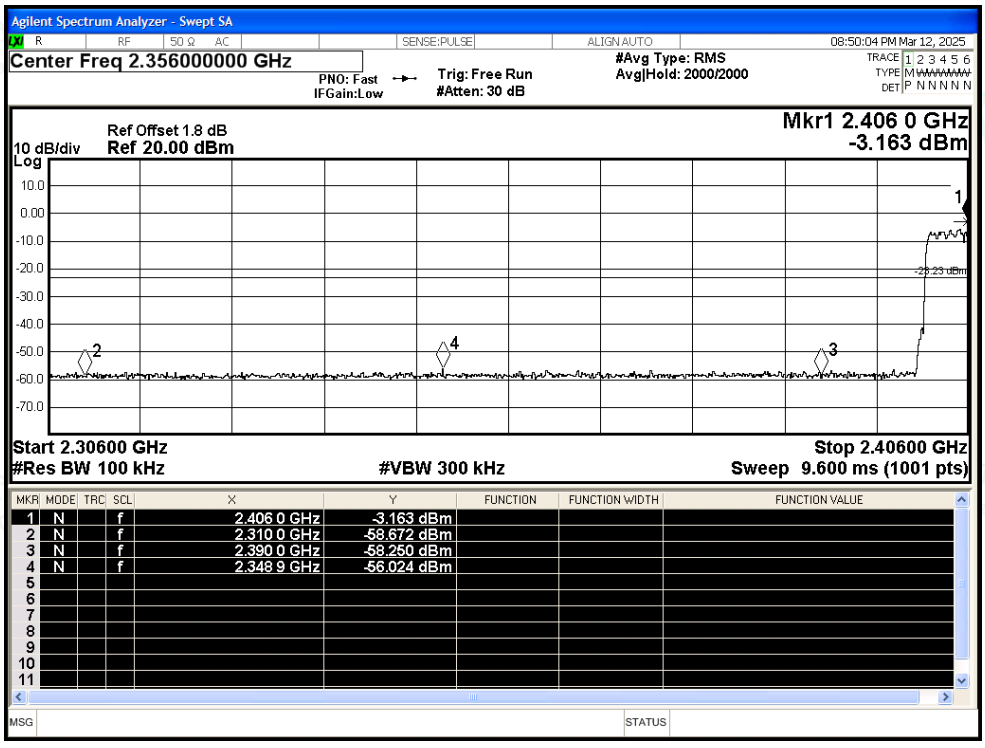
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission



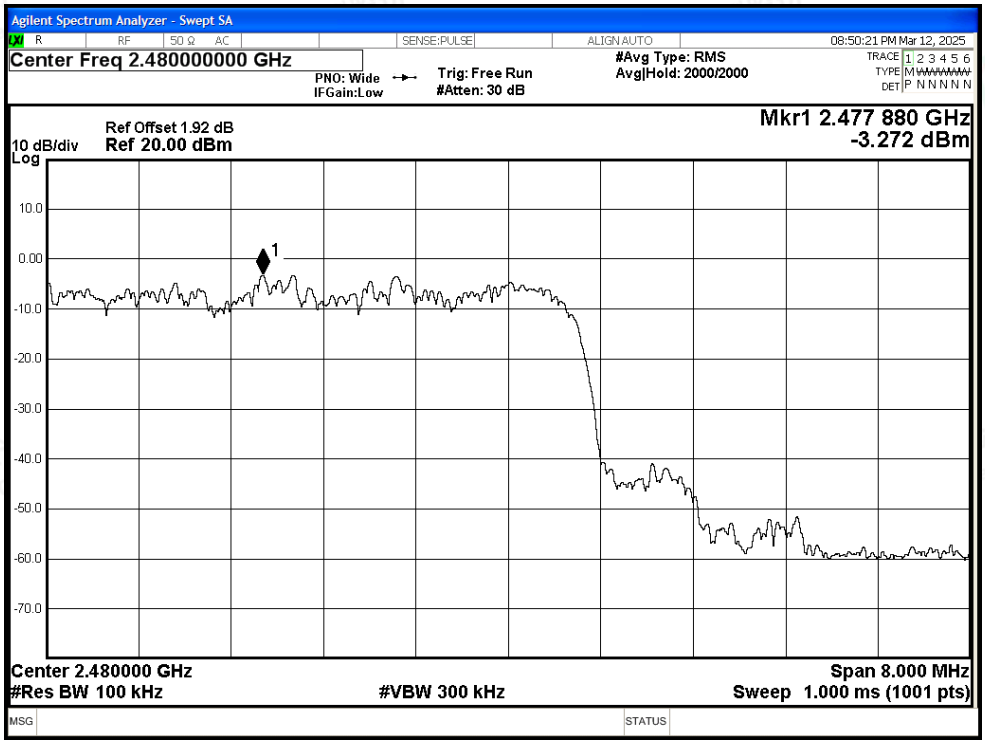
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



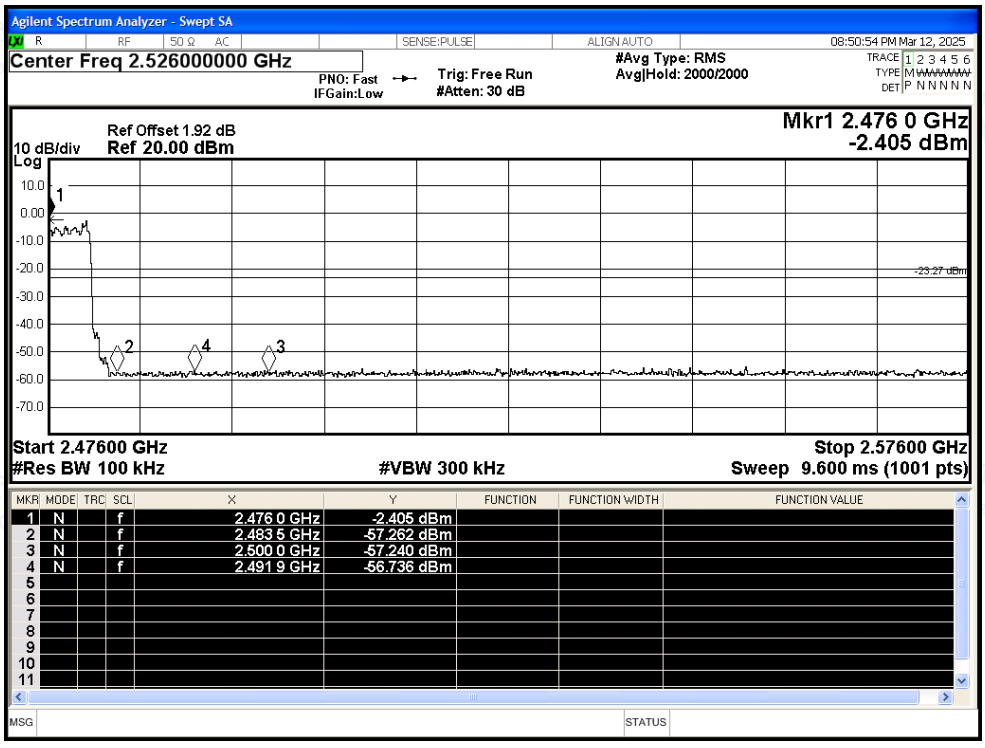
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission



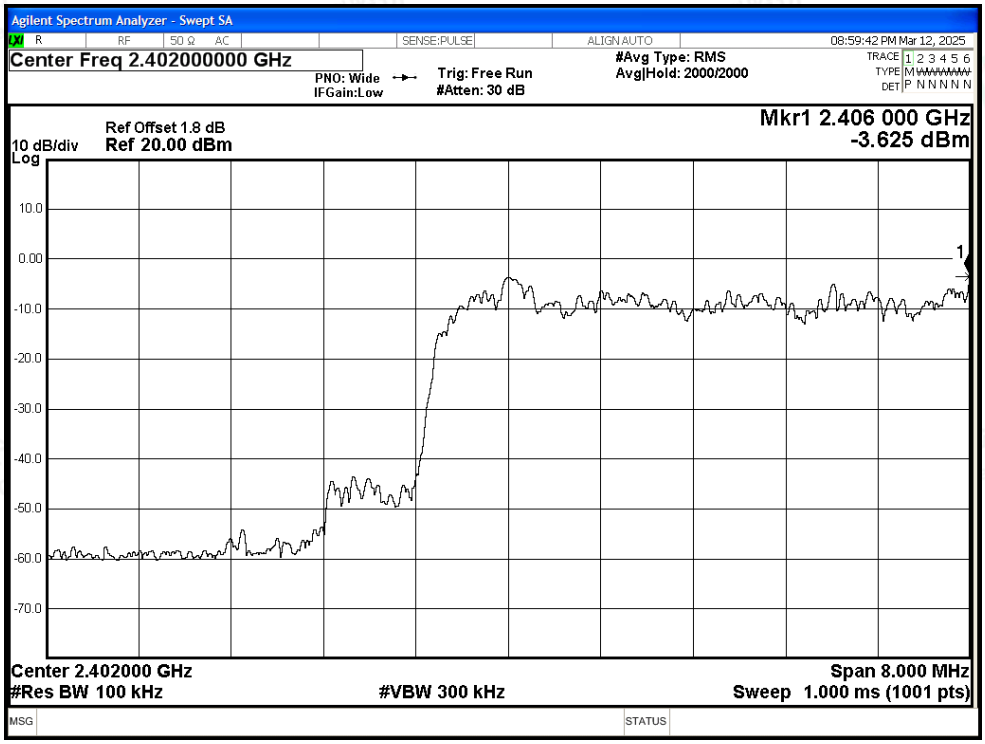
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



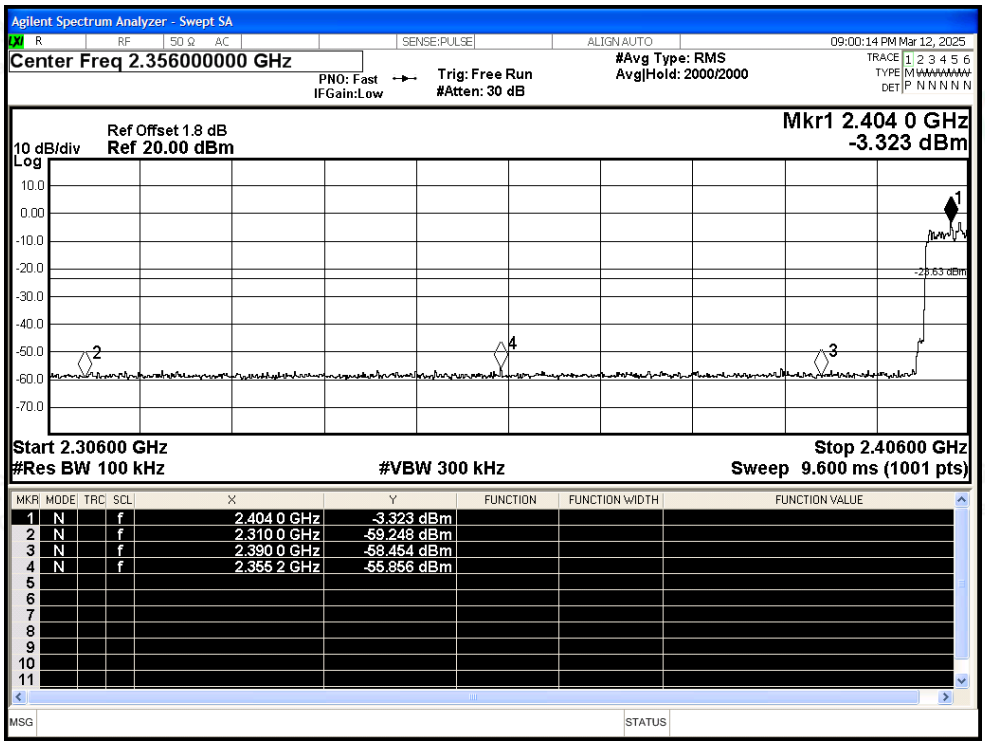
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission



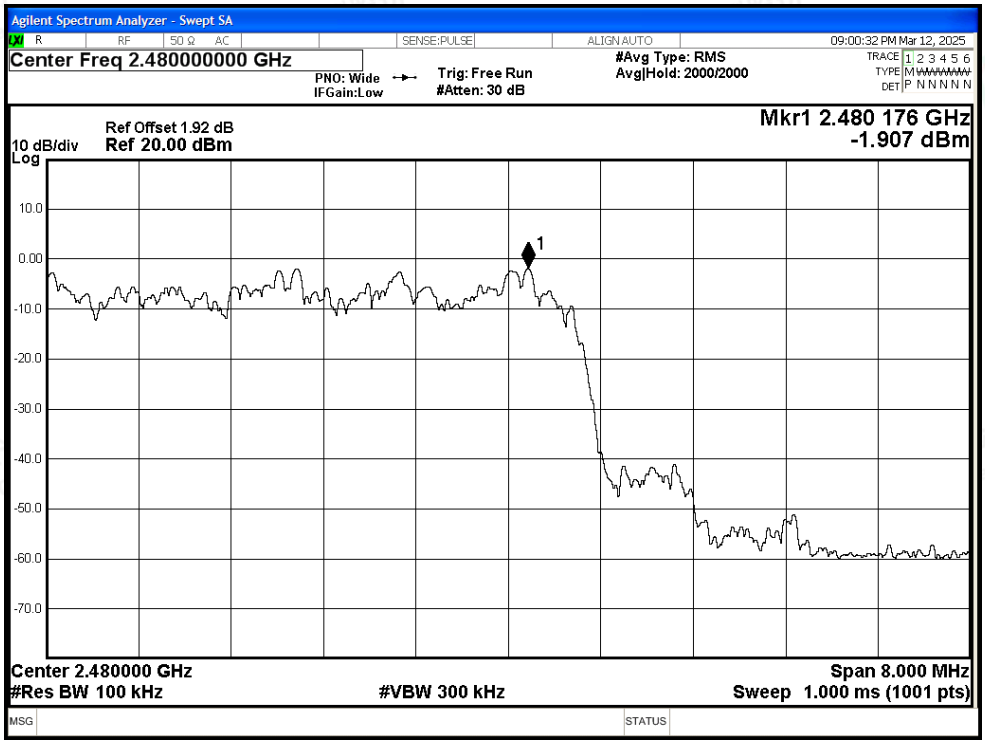
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref



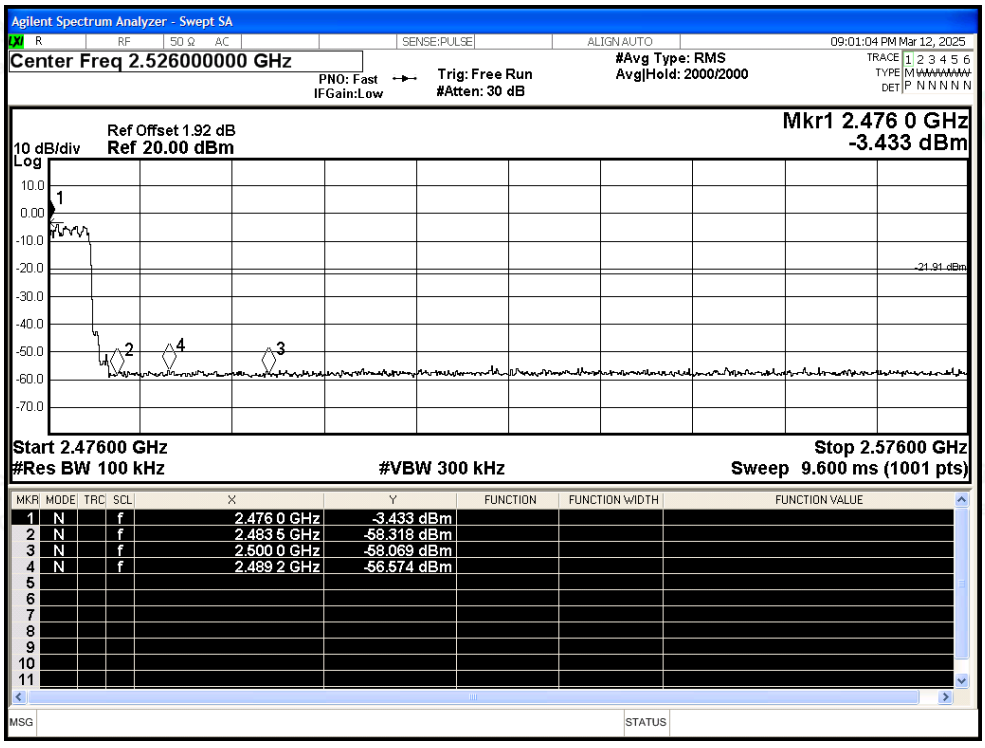
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Emission



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



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

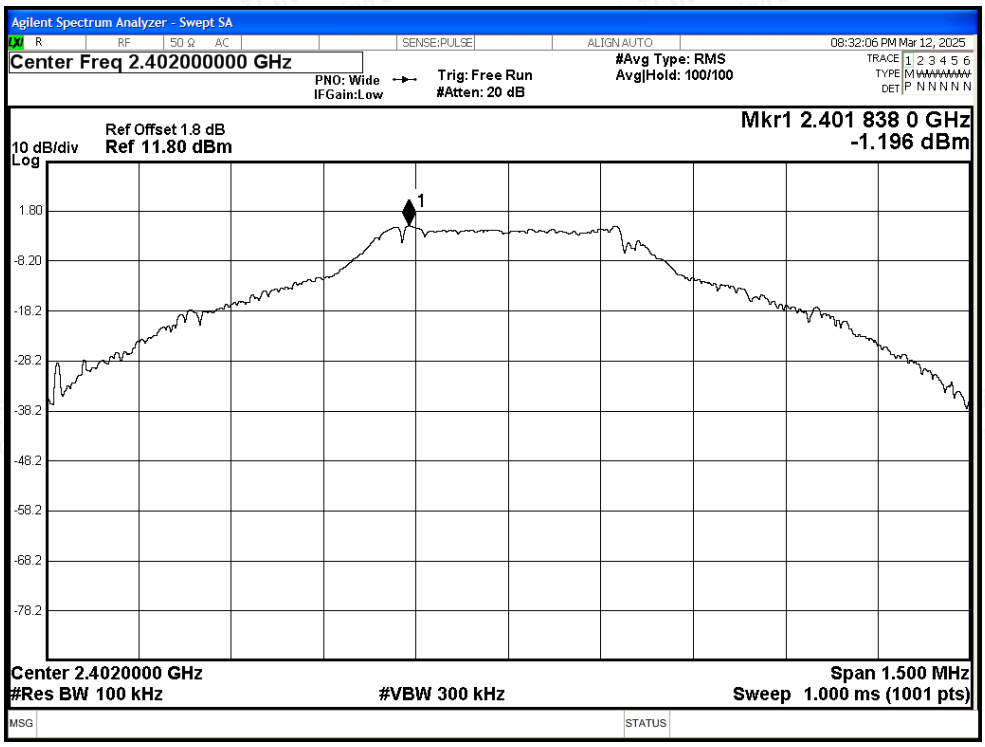


A.7 Conducted RF Spurious Emission

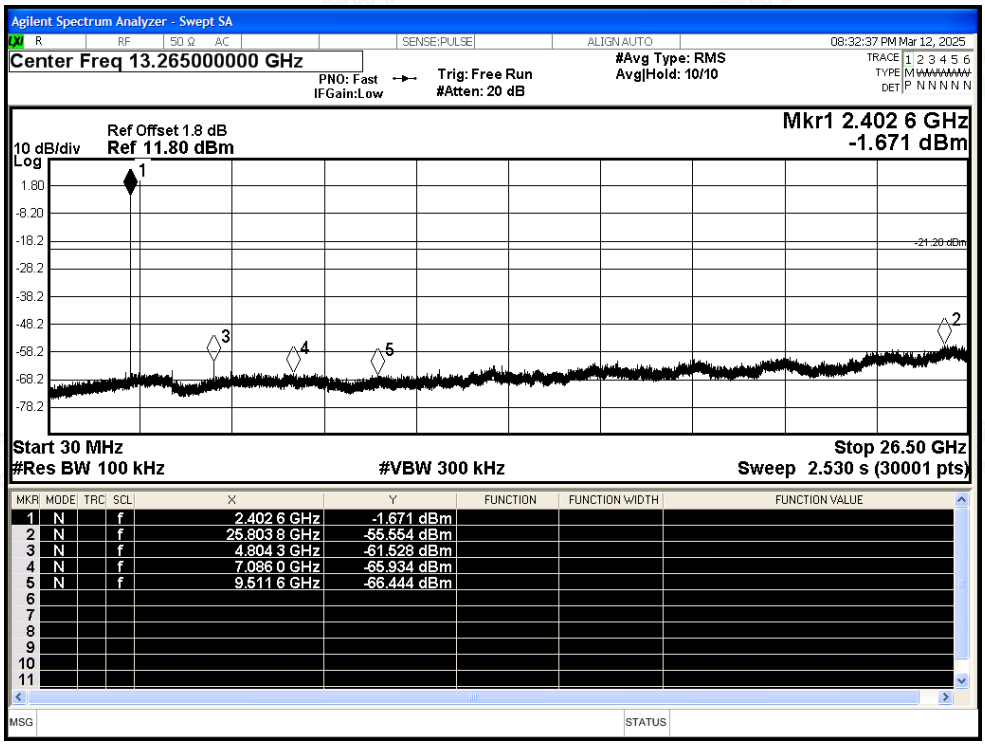
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-54.36	-20	Pass
NVNT	1-DH5	2441	Ant1	-54.22	-20	Pass
NVNT	1-DH5	2480	Ant1	-52.4	-20	Pass
NVNT	2-DH5	2402	Ant1	-54.44	-20	Pass
NVNT	2-DH5	2441	Ant1	-54.58	-20	Pass
NVNT	2-DH5	2480	Ant1	-53.37	-20	Pass
NVNT	3-DH5	2402	Ant1	-54.21	-20	Pass
NVNT	3-DH5	2441	Ant1	-54.36	-20	Pass
NVNT	3-DH5	2480	Ant1	-52.41	-20	Pass

Test Graphs

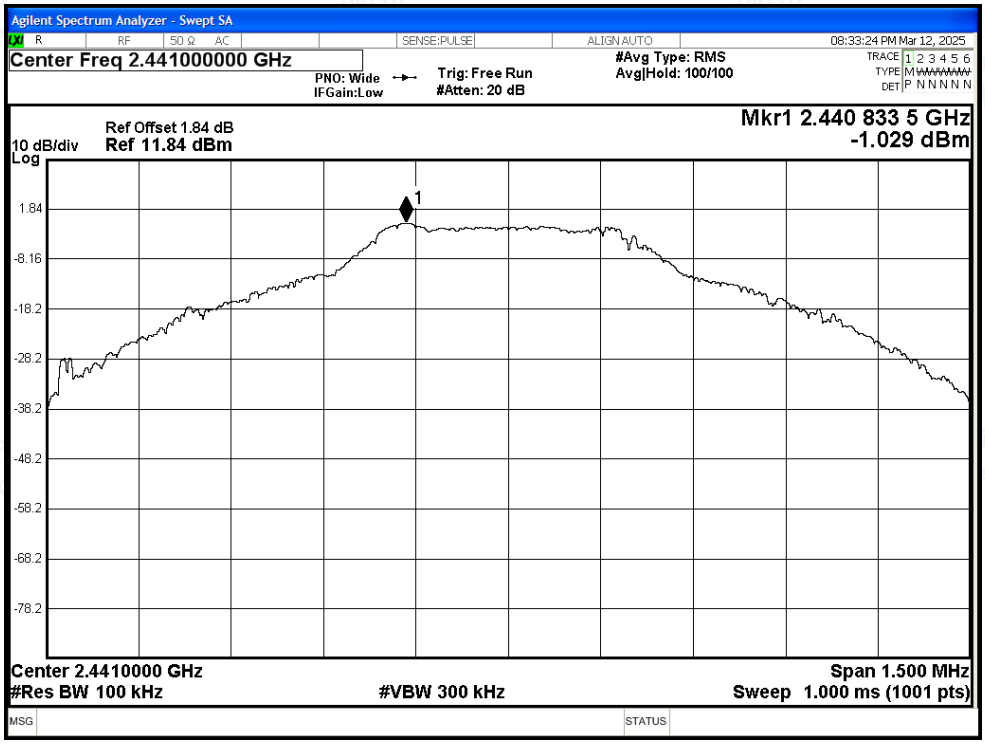
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



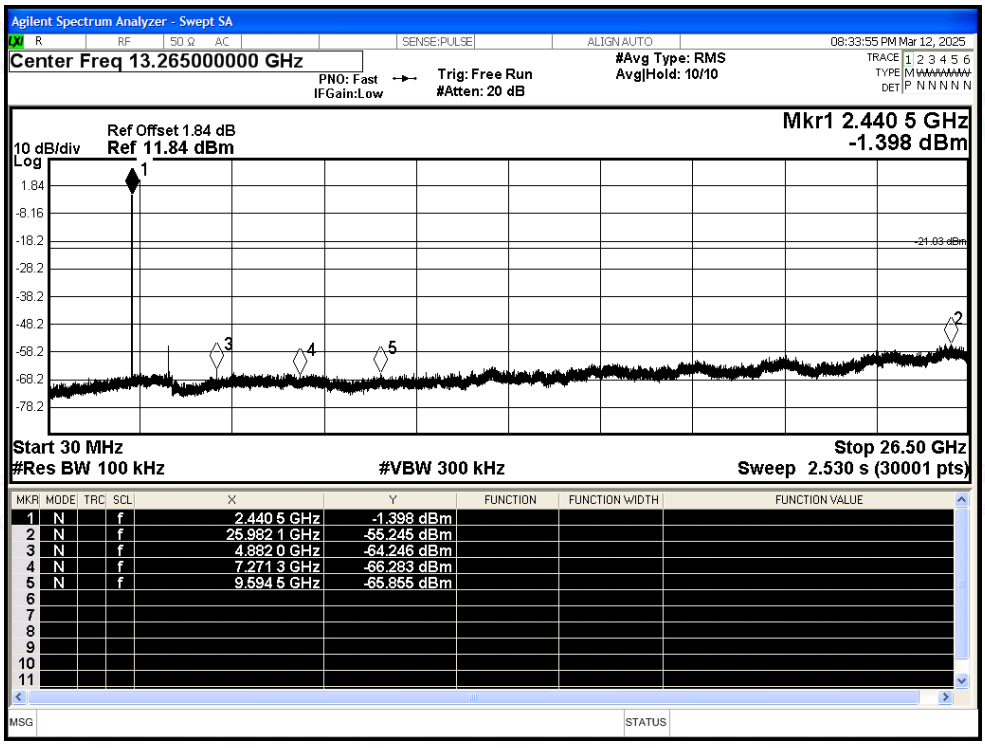
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



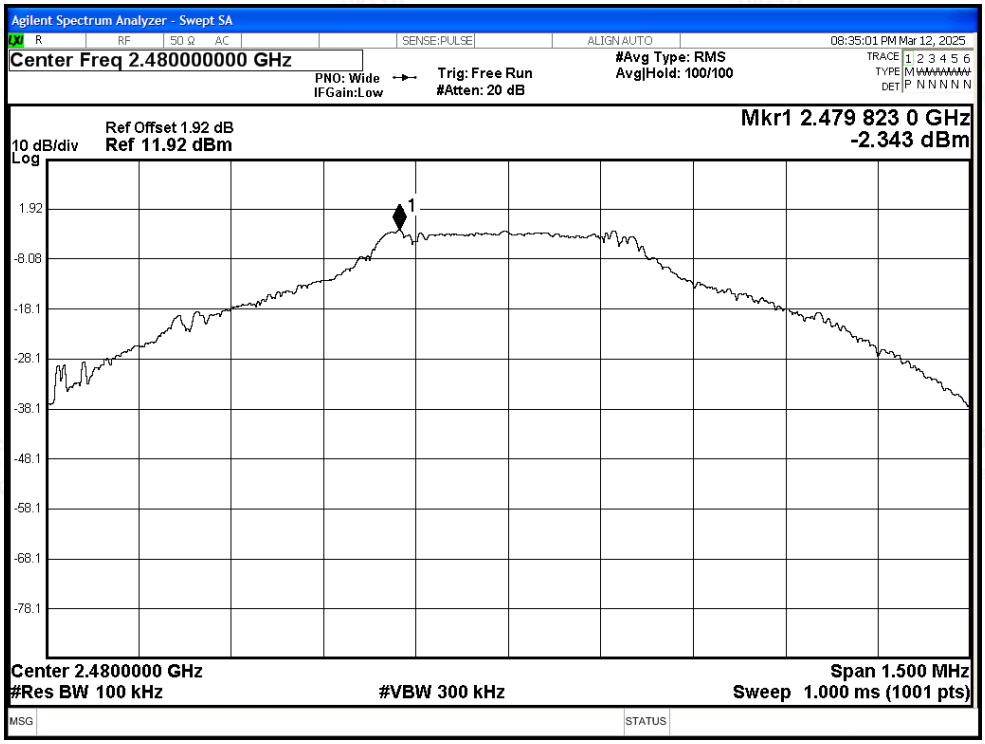
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



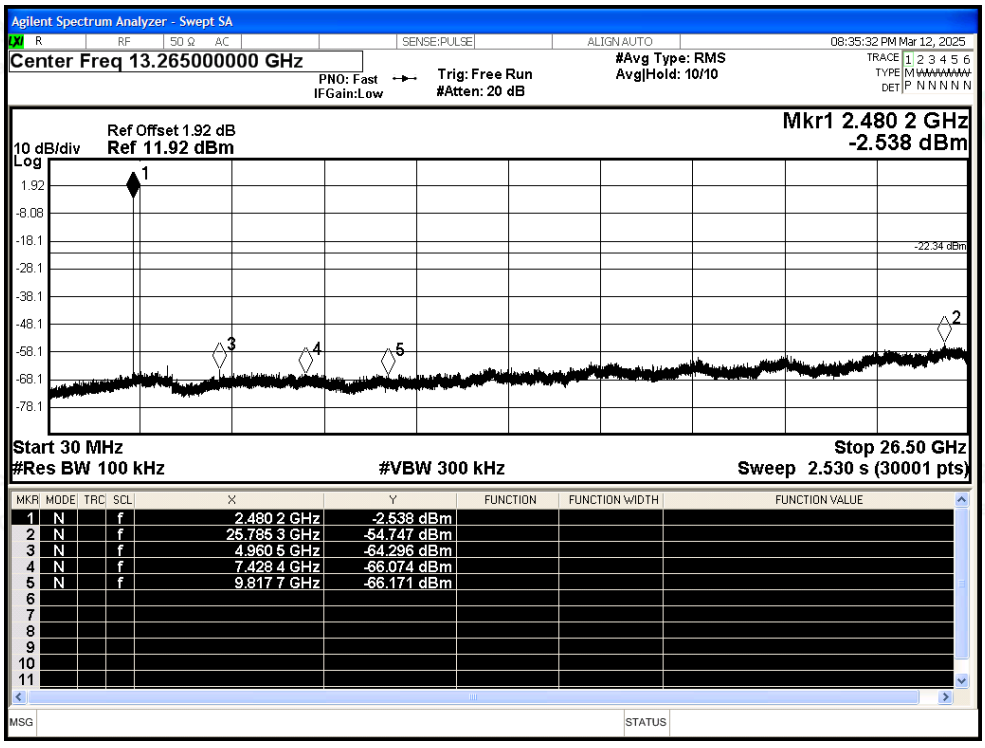
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



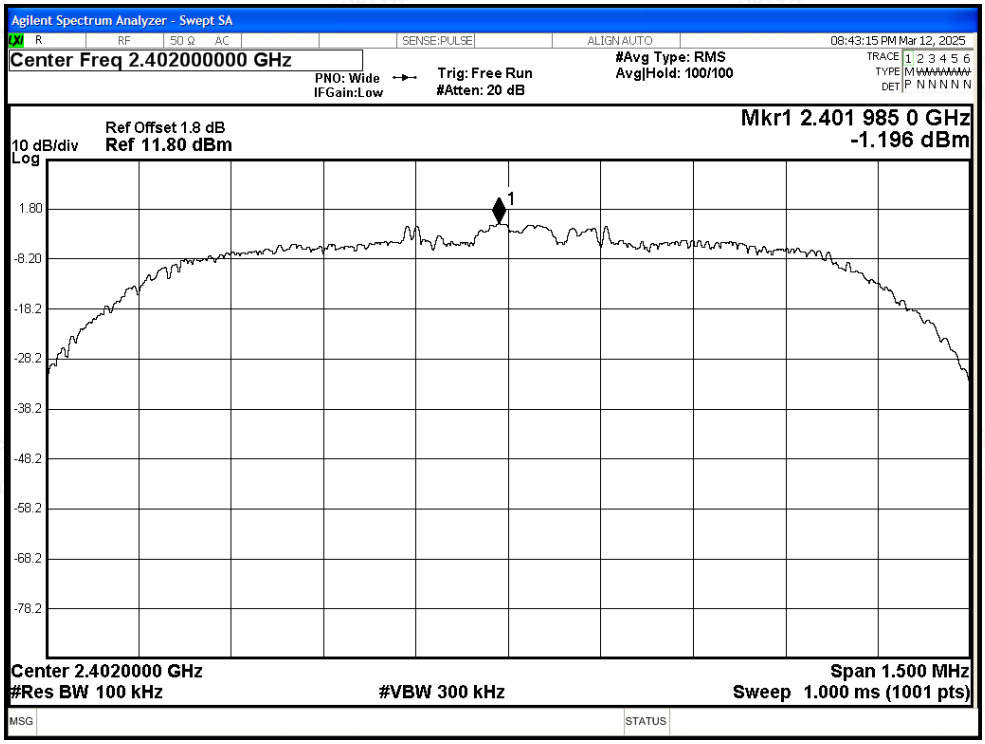
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



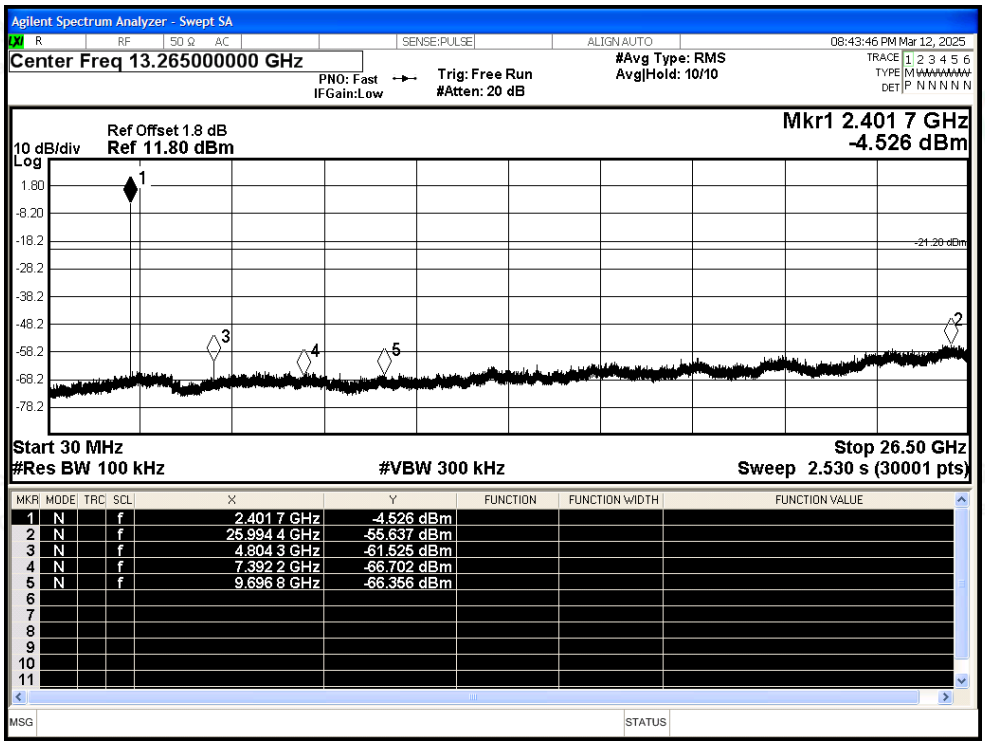
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



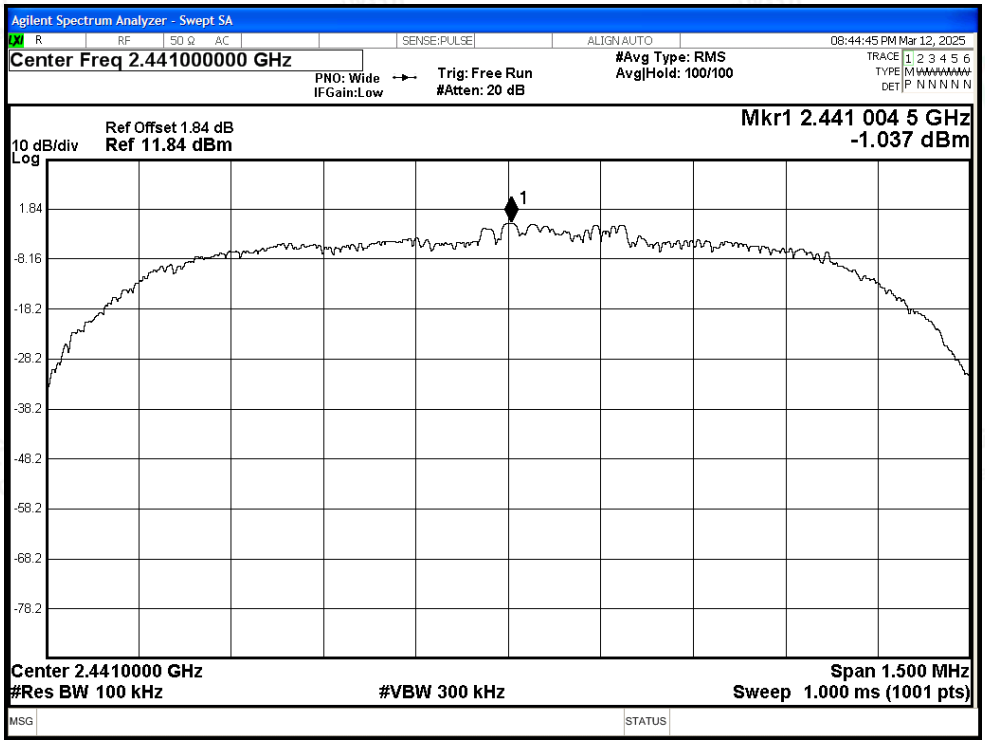
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



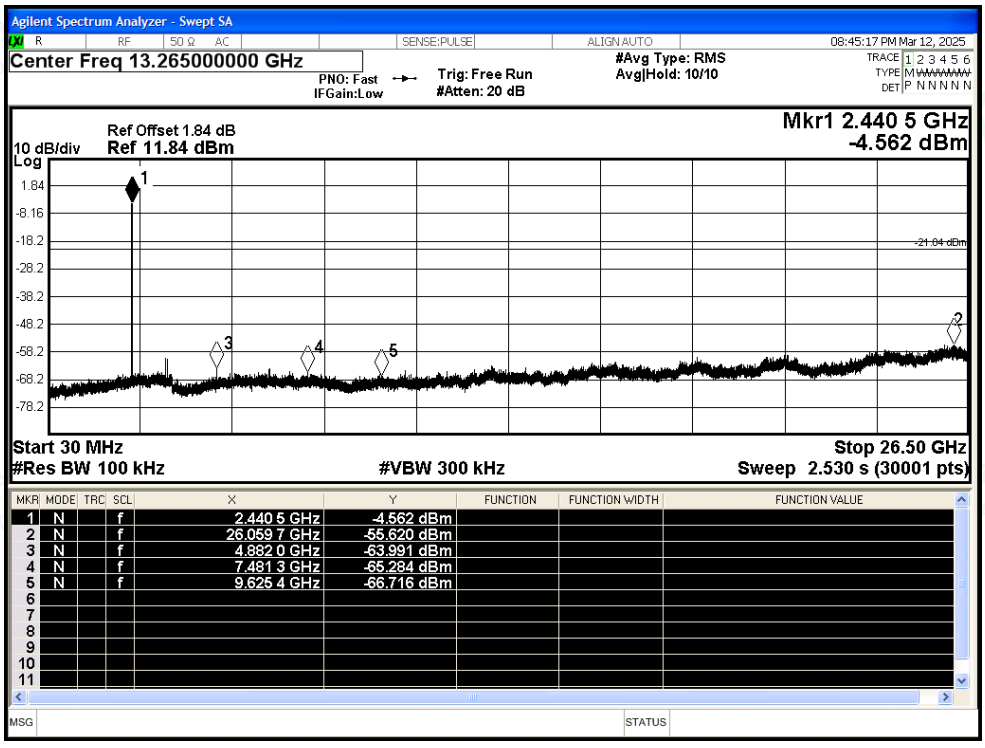
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



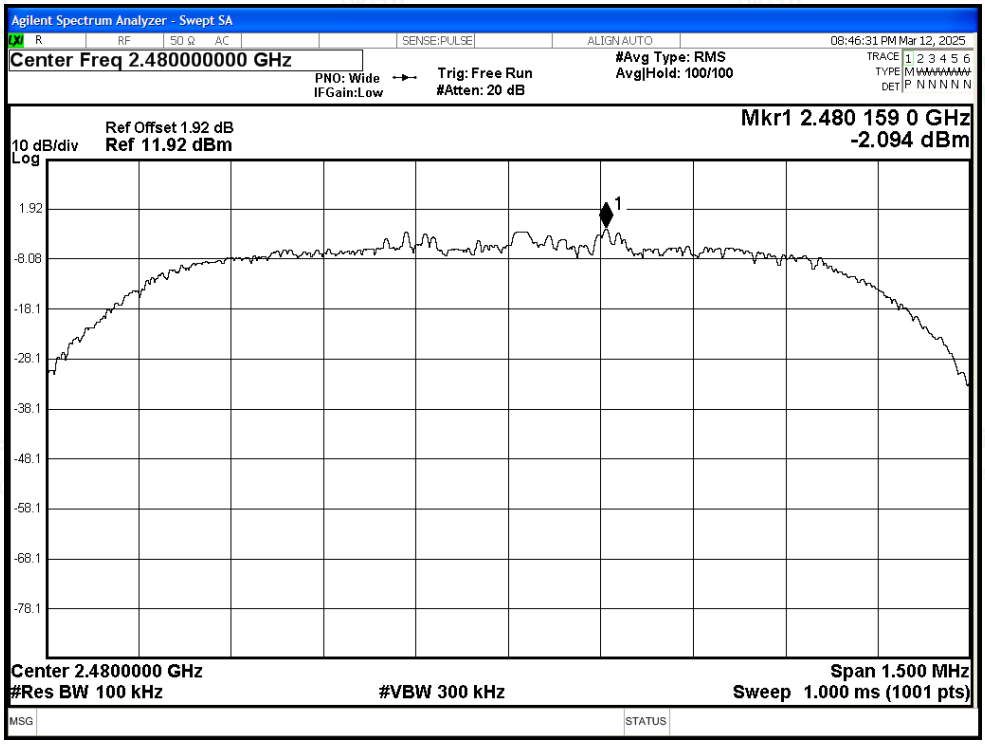
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



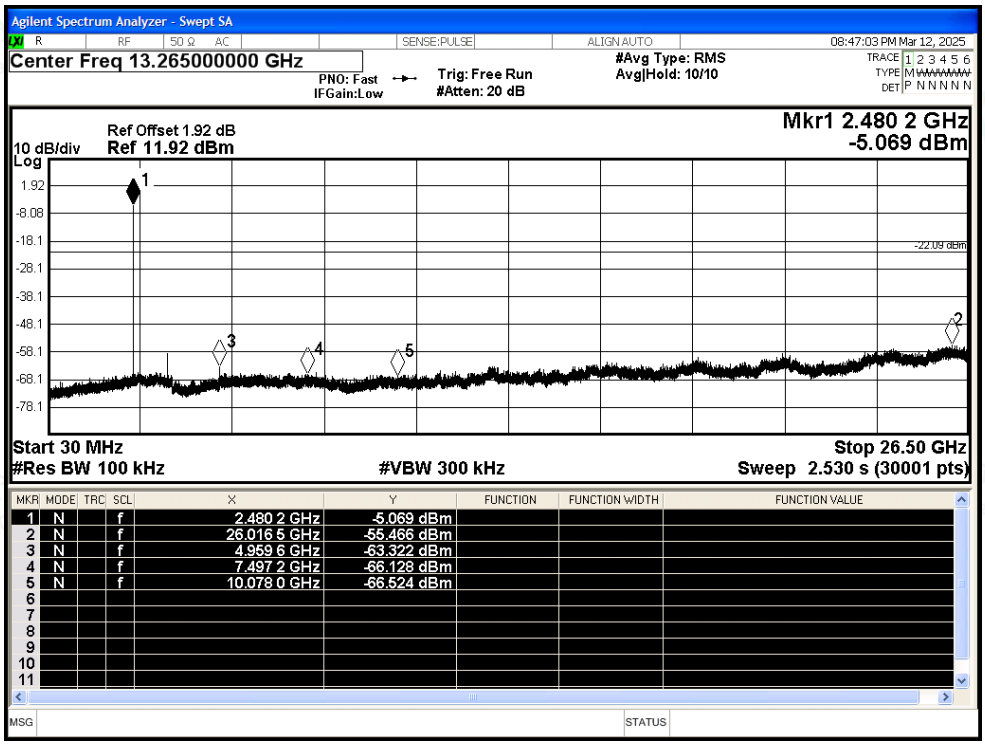
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



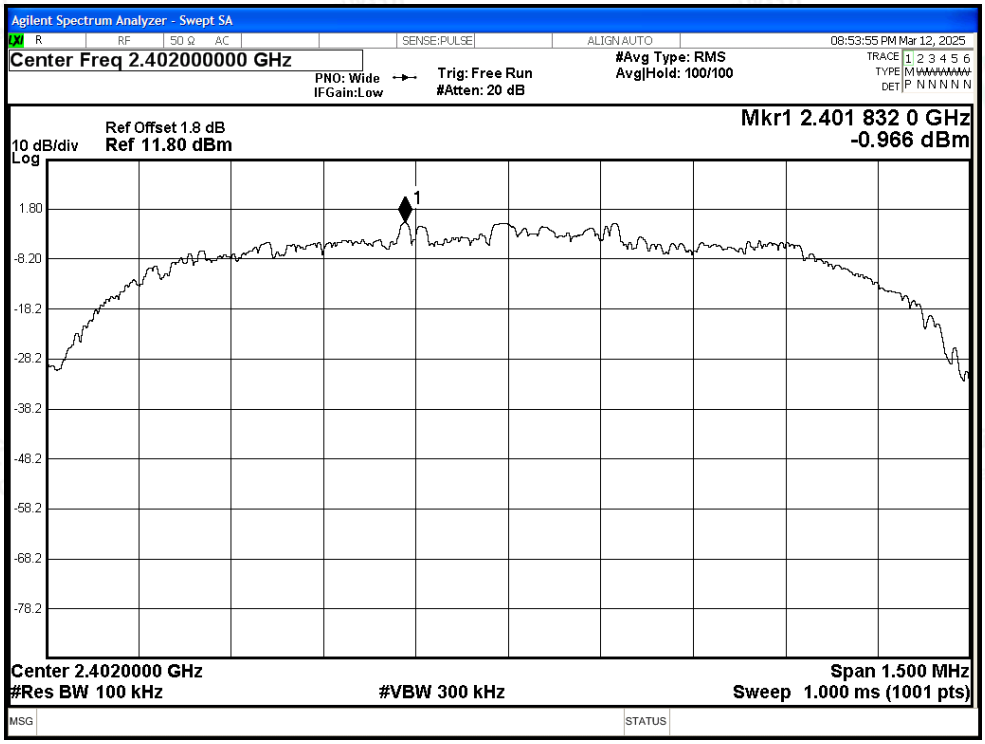
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



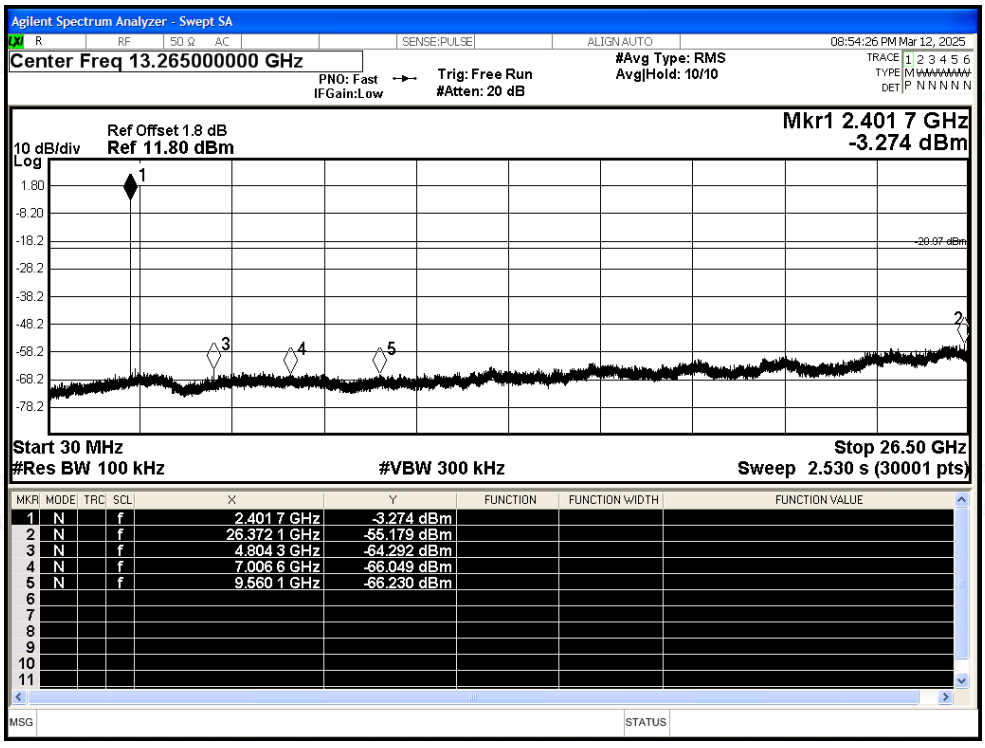
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref

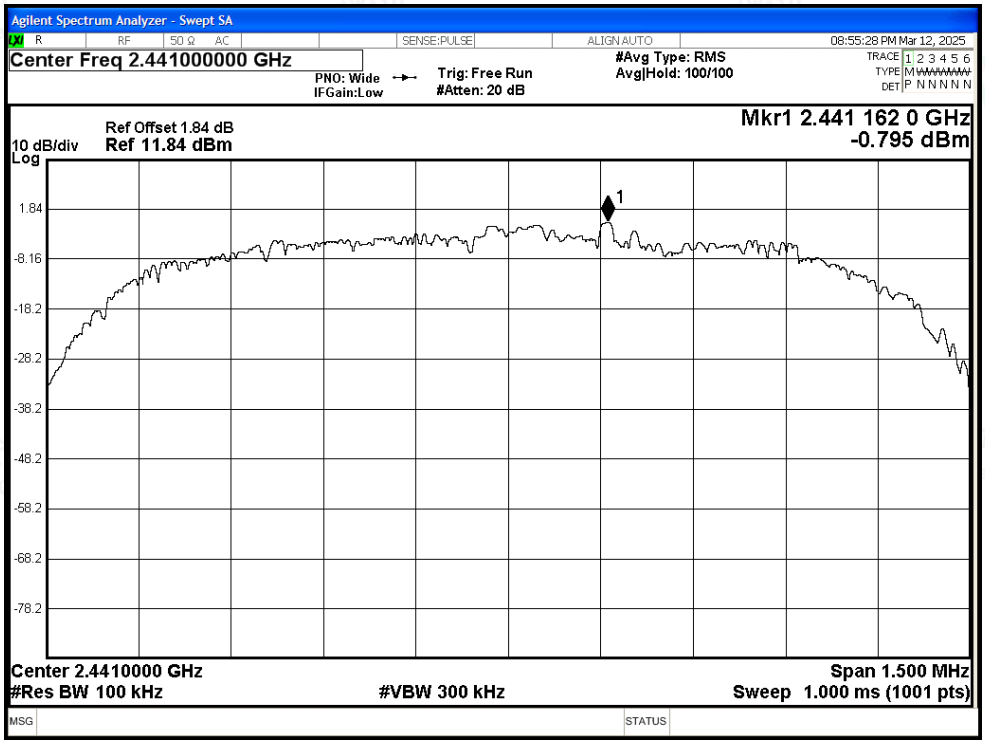


Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission

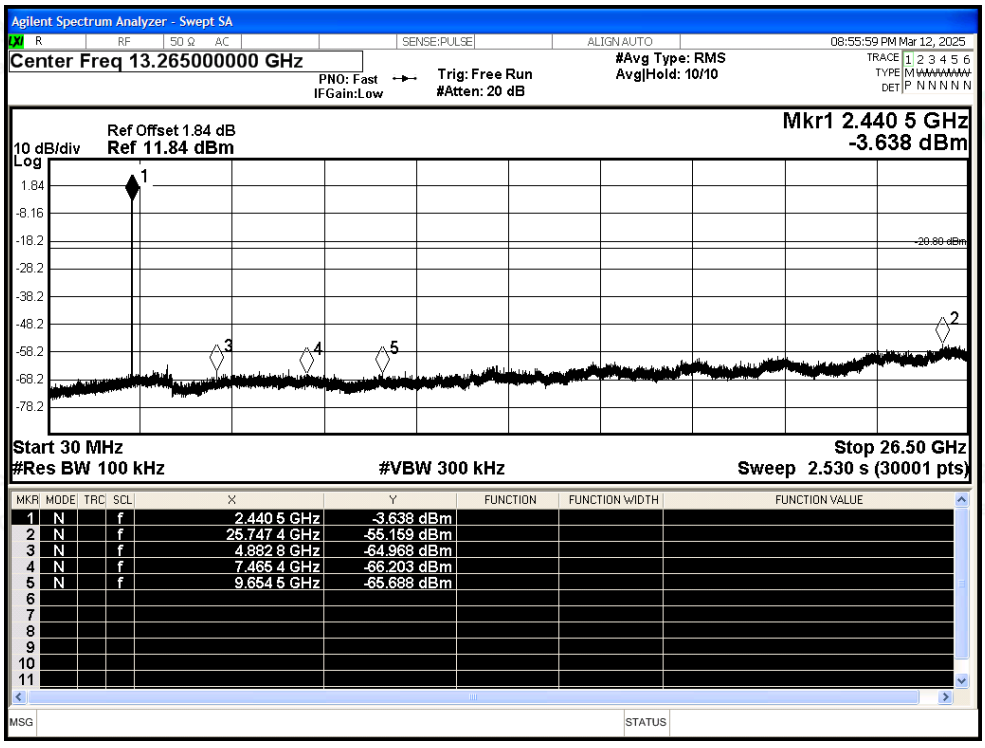


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N		f	2.401 7 GHz	-3.274 dBm			
2	N		f	26.372 1 GHz	-55.179 dBm			
3	N		f	4.804 3 GHz	-64.292 dBm			
4	N		f	7.006 6 GHz	-66.049 dBm			
5	N		f	9.560 1 GHz	-66.230 dBm			
6								
7								
8								
9								
10								
11								

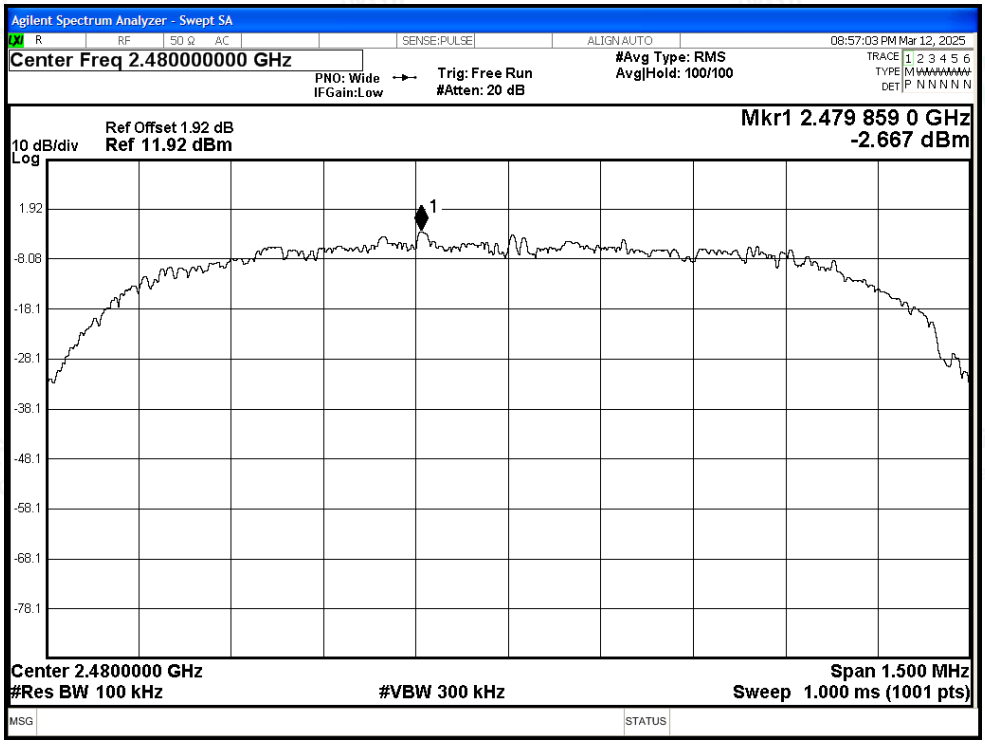
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



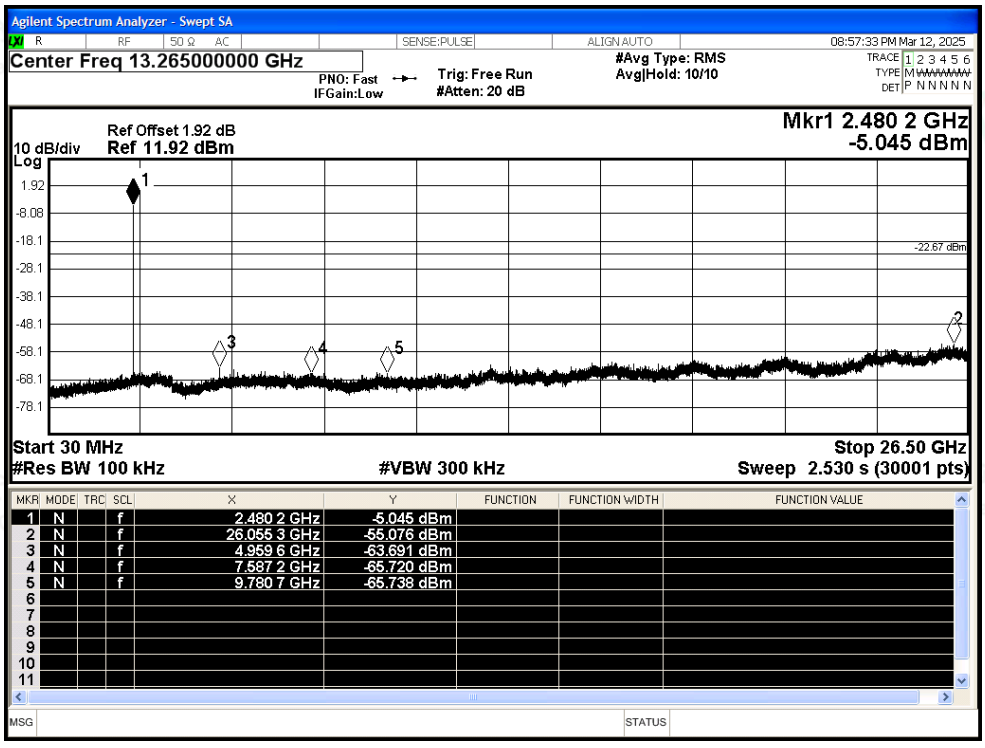
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission

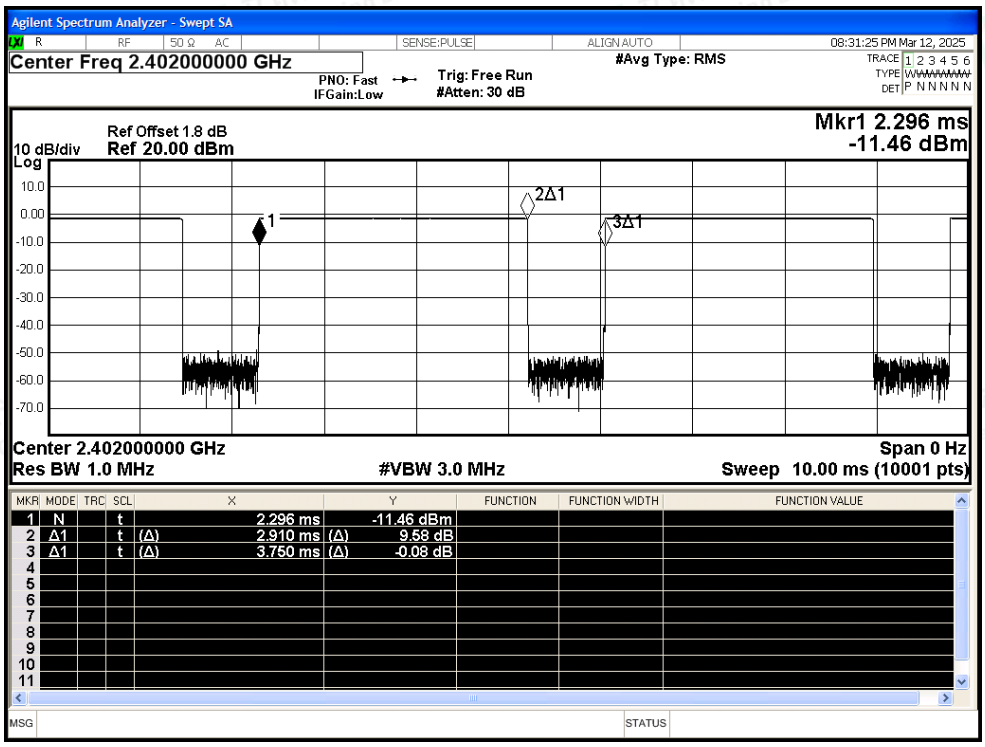


A.8 Duty Cycle

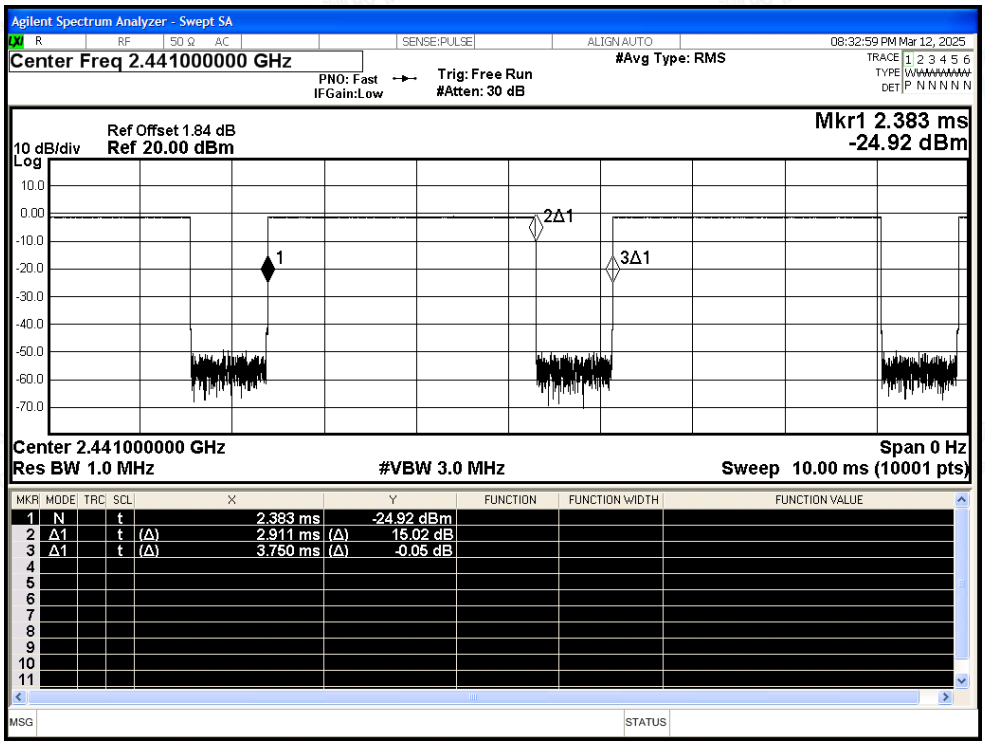
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	77.6	1.1	0.34
NVNT	1-DH5	2441	Ant1	77.63	1.1	0.34
NVNT	1-DH5	2480	Ant1	77.6	1.1	0.34
NVNT	2-DH5	2402	Ant1	77.28	1.12	0.35
NVNT	2-DH5	2441	Ant1	77.33	1.12	0.34
NVNT	2-DH5	2480	Ant1	77.28	1.12	0.35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

Test Graphs

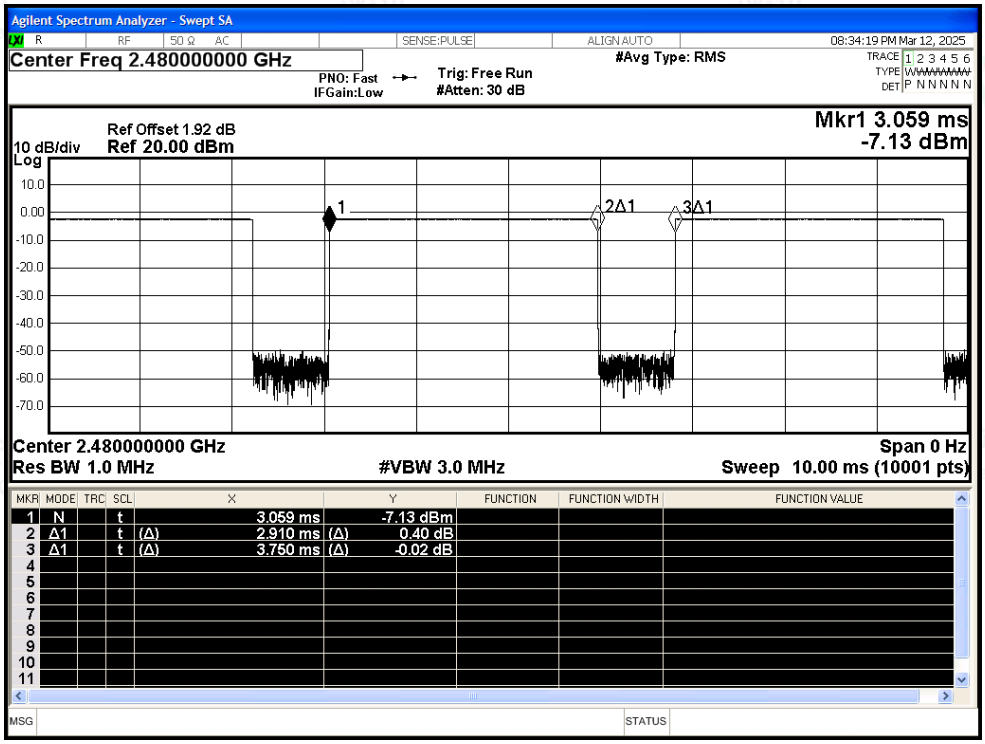
Duty Cycle NVNT 1-DH5 2402MHz Ant1



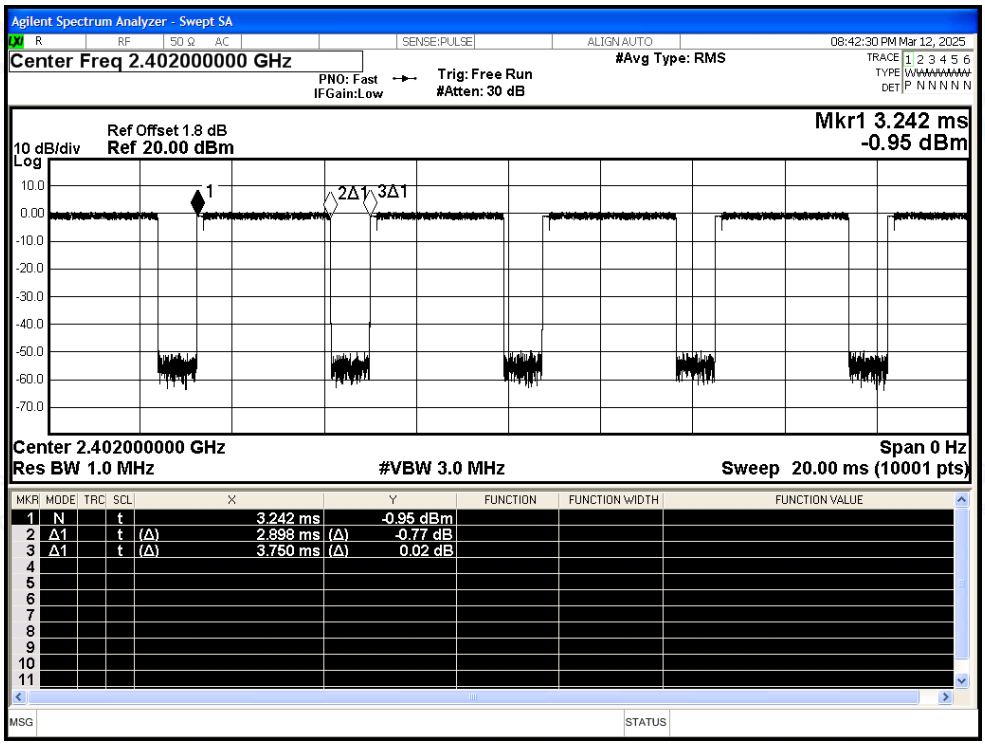
Duty Cycle NVNT 1-DH5 2441MHz Ant1



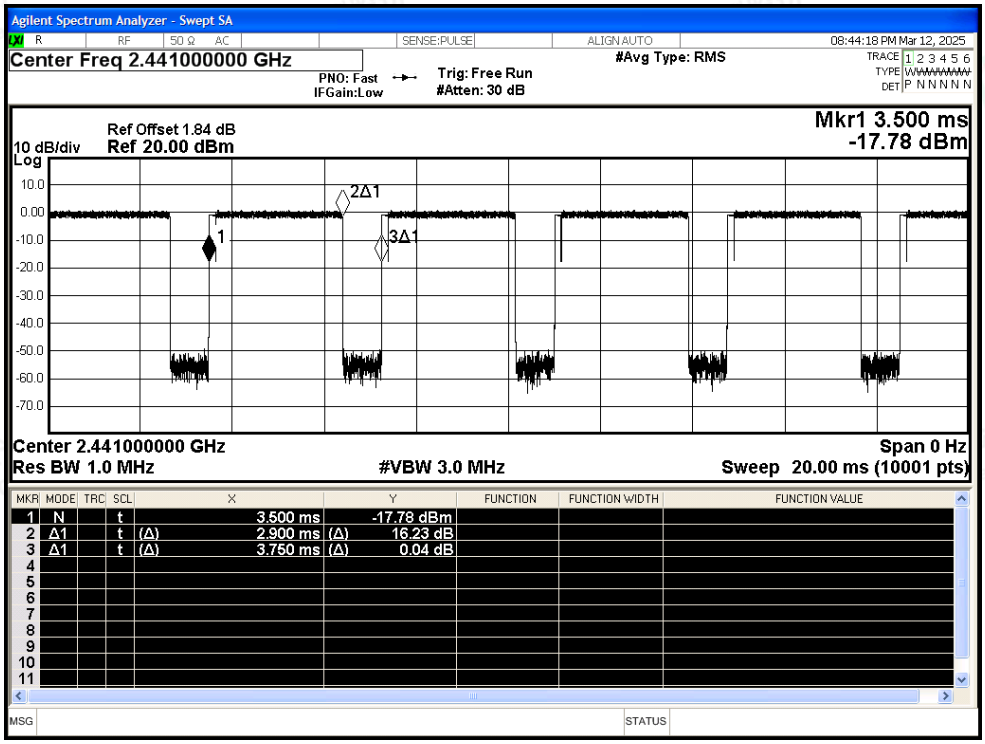
Duty Cycle NVNT 1-DH5 2480MHz Ant1



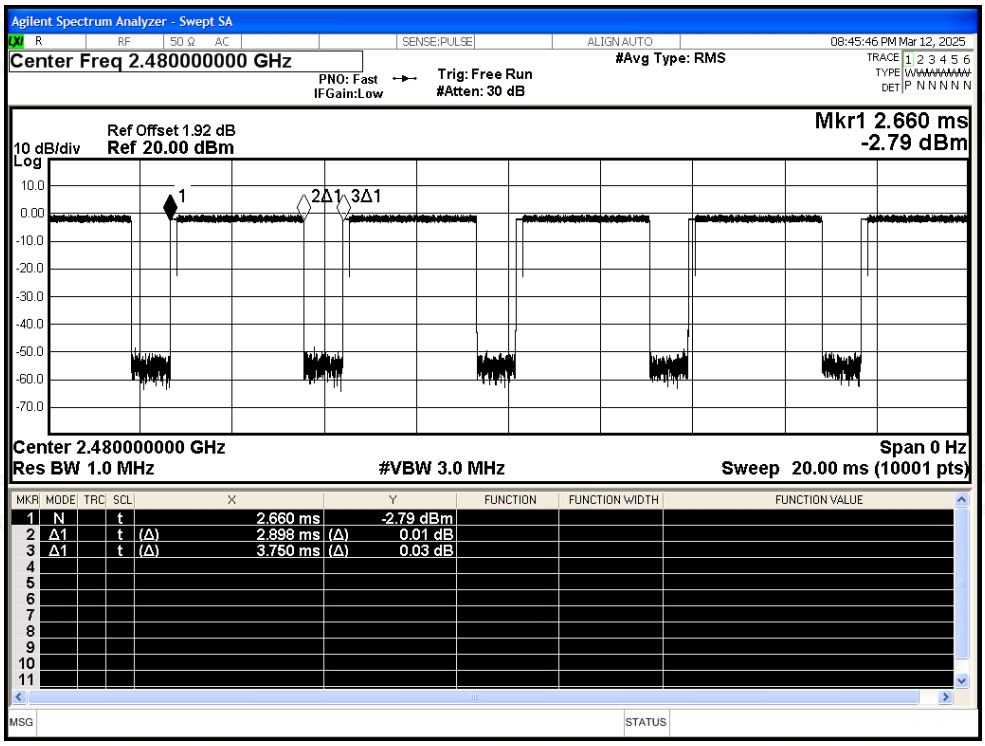
Duty Cycle NVNT 2-DH5 2402MHz Ant1



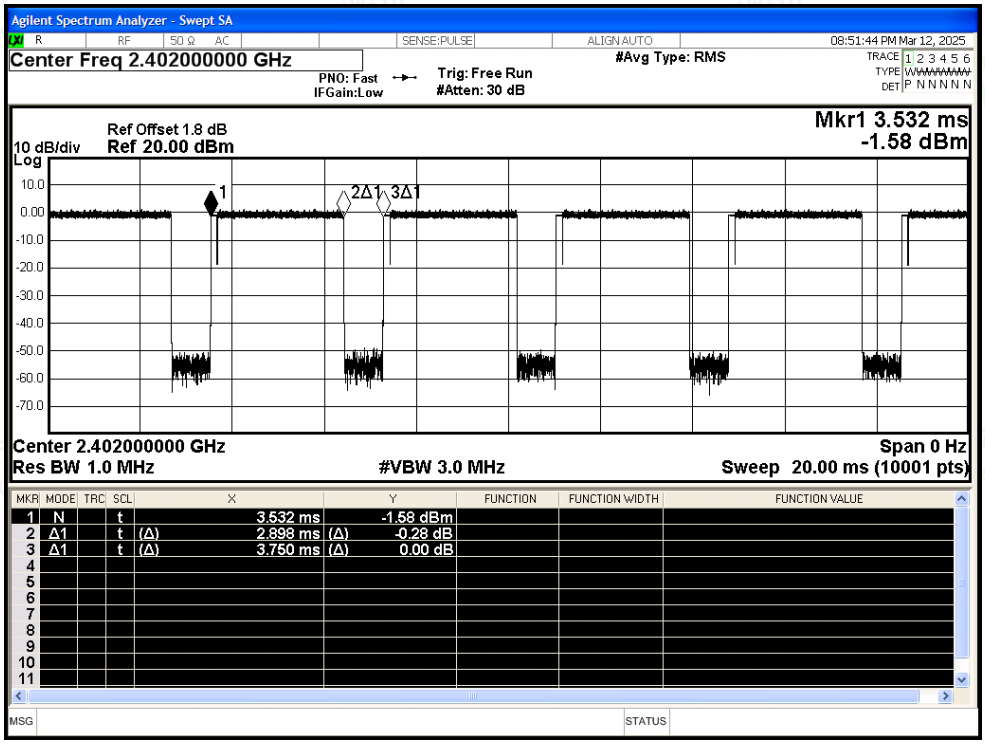
Duty Cycle NVNT 2-DH5 2441MHz Ant1



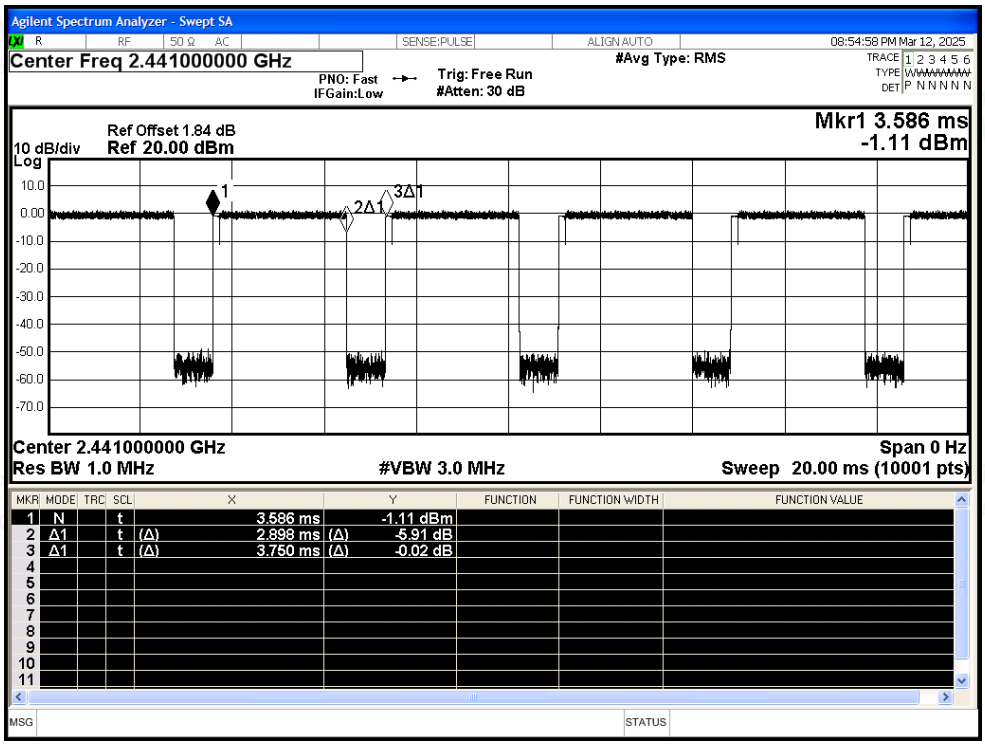
Duty Cycle NVNT 2-DH5 2480MHz Ant1



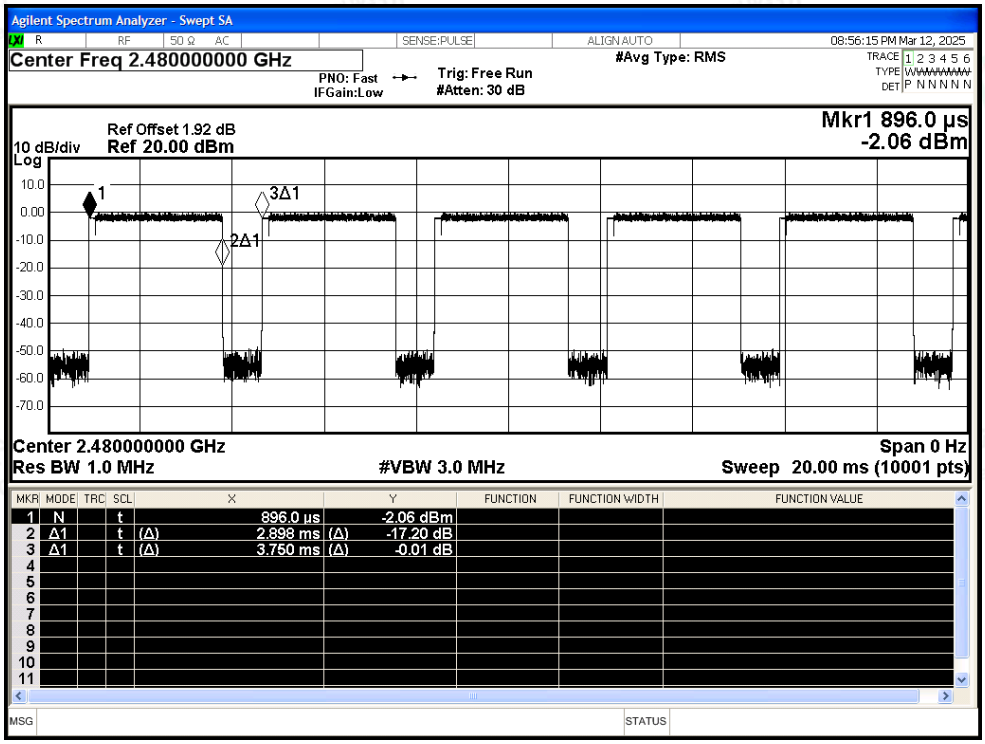
Duty Cycle NVNT 3-DH5 2402MHz Ant1



Duty Cycle NVNT 3-DH5 2441MHz Ant1



Duty Cycle NVNT 3-DH5 2480MHz Ant1

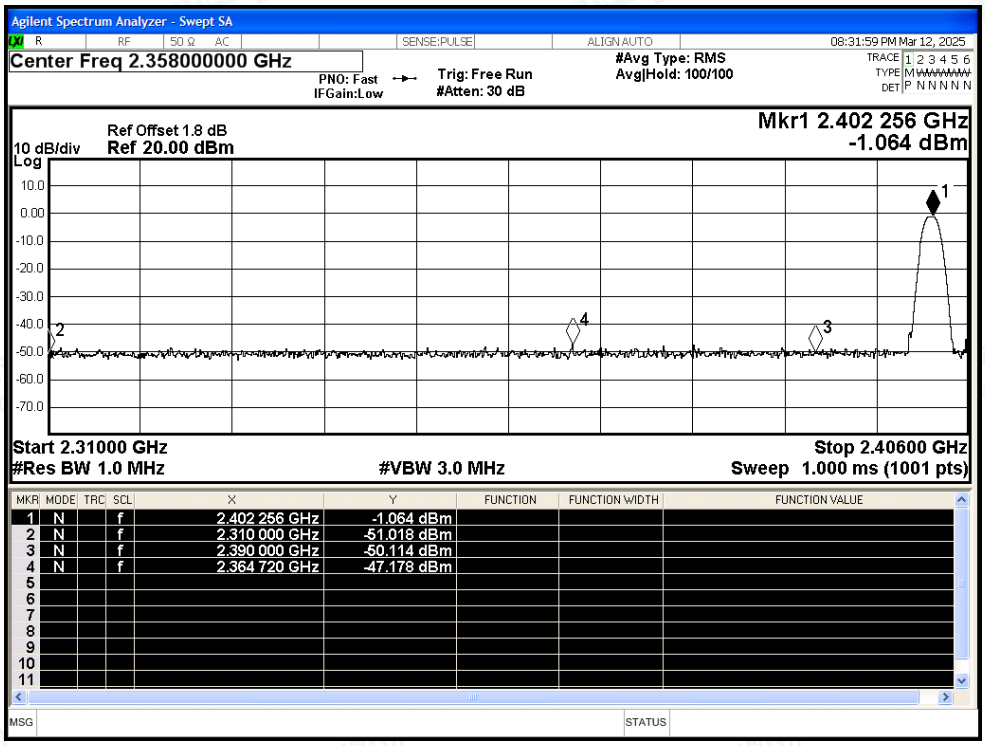


A.9 Restrict Band

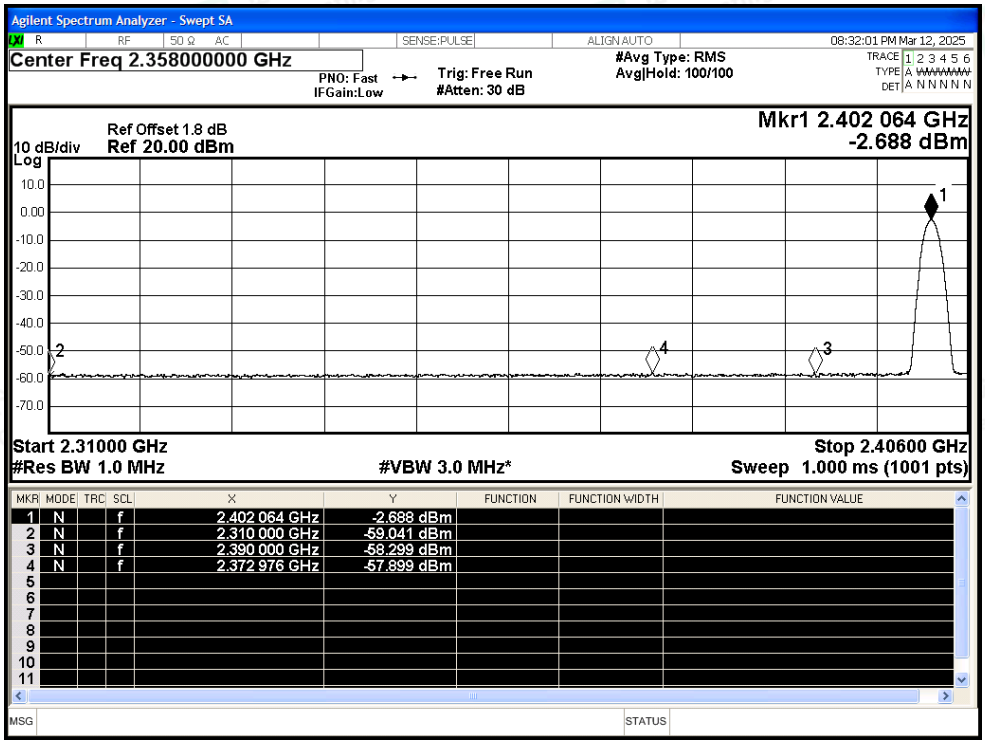
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-51.02	2.78	-	47.02	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-59.04	2.78	1.1	40.1	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2364.72	-47.18	2.78	-	50.86	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2372.976	-57.9	2.78	1.1	41.24	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-50.11	2.78	-	47.93	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-58.3	2.78	1.1	40.84	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-50.4	2.78	-	47.64	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-58.28	2.78	1.1	40.86	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2485.528	-45.36	2.78	-	52.68	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2490.376	-57.24	2.78	1.1	41.9	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-50.38	2.78	-	47.66	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-58.06	2.78	1.1	41.08	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-49.72	2.78	-	48.32	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-58.95	2.78	1.12	40.21	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2329.008	-47.57	2.78	-	50.47	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2365.392	-57.59	2.78	1.12	41.57	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-50.97	2.78	-	47.07	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-58.49	2.78	1.12	40.67	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-50.09	2.78	-	47.95	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-57.89	2.78	1.12	41.27	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.536	-47.33	2.78	-	50.71	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.824	-57.2	2.78	1.12	41.96	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-50.92	2.78	-	47.12	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-58.24	2.78	1.12	40.92	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-51.25	2.78	-	46.79	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-59.23	2.78	1.12	39.93	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2356.176	-47.72	2.78	-	50.32	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2357.616	-57.9	2.78	1.12	41.26	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-50.95	2.78	-	47.09	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-58.53	2.78	1.12	40.63	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-50.13	2.78	-	47.91	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-57.48	2.78	1.12	41.68	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2498.512	-47.65	2.78	-	50.39	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2484.928	-57.42	2.78	1.12	41.74	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-50.36	2.78	-	47.68	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-58.33	2.78	1.12	40.83	Average	54	Pass

Test Graphs

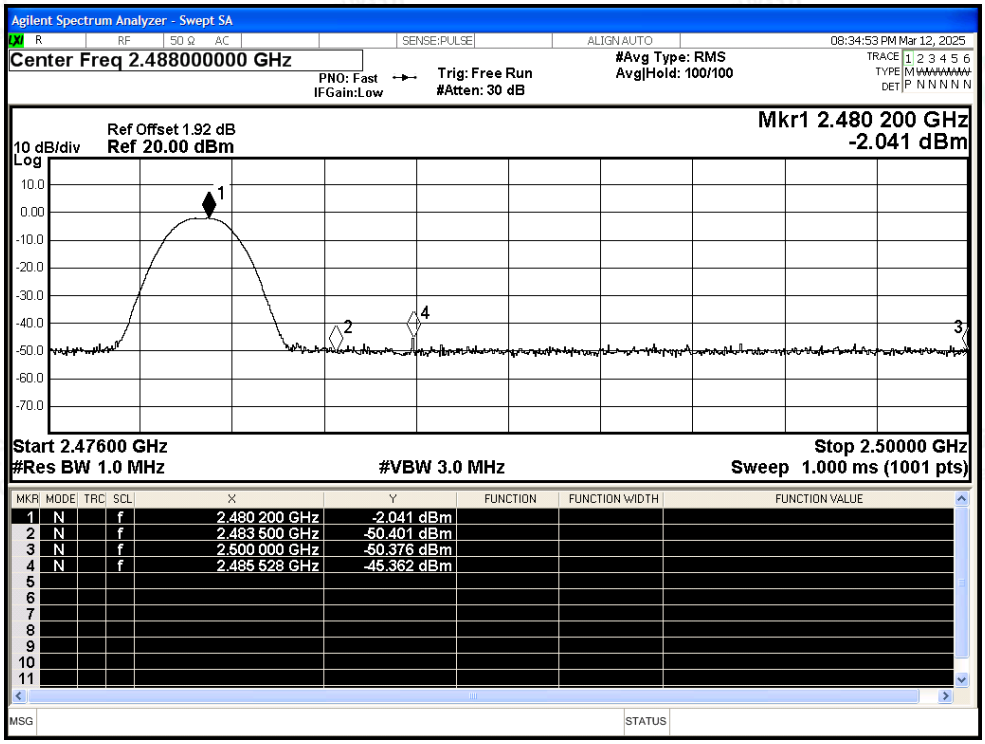
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak



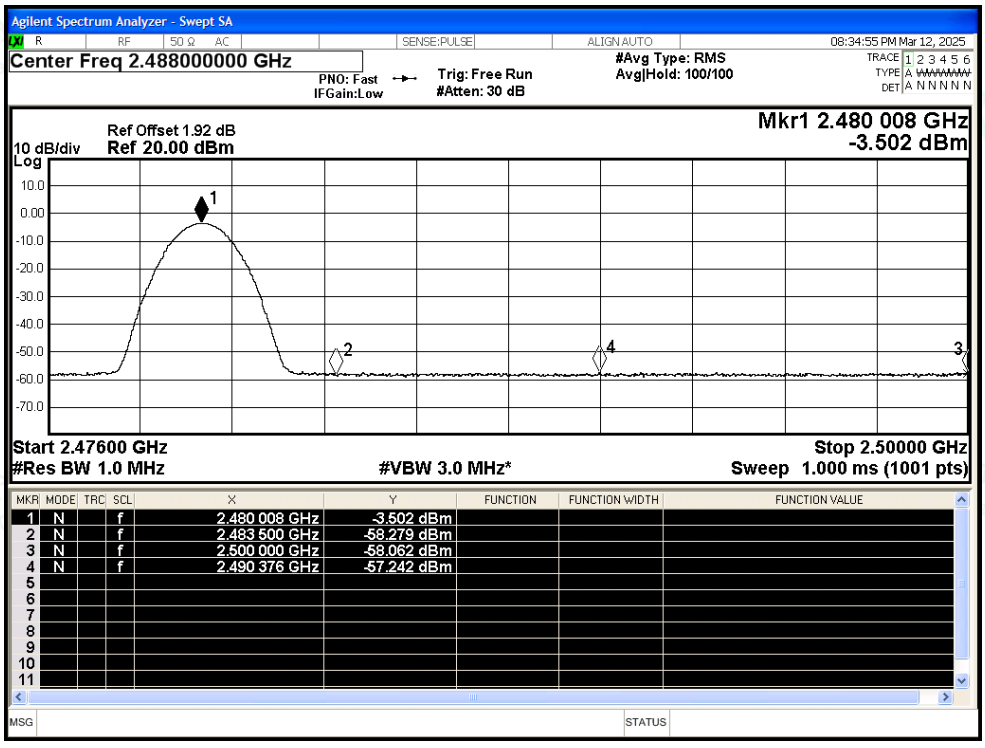
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average



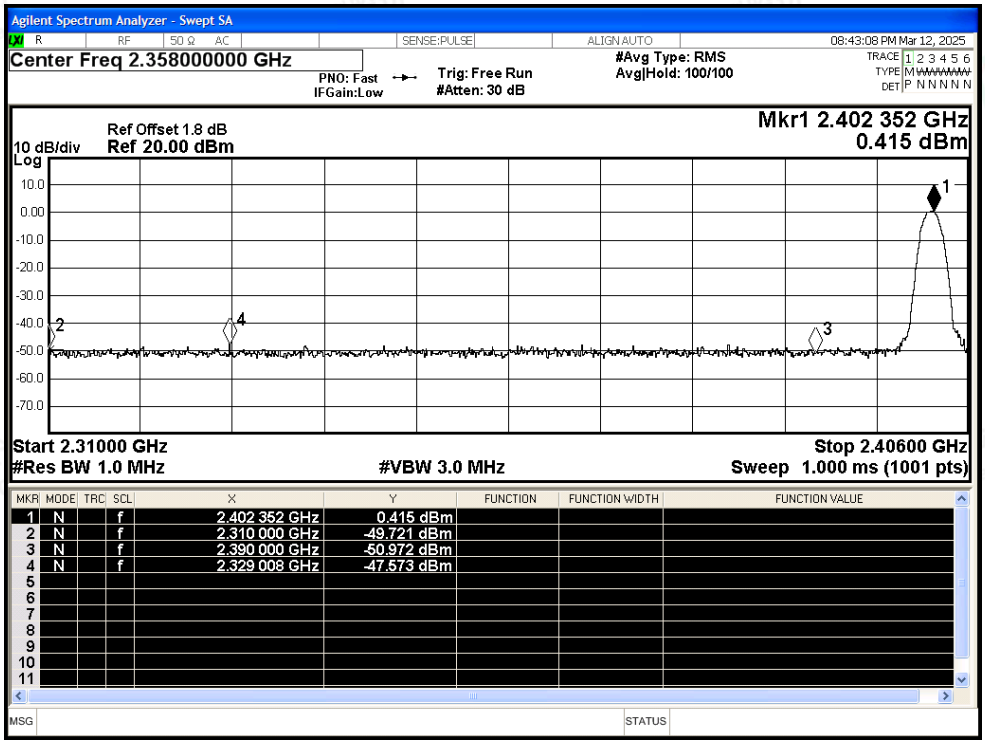
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak



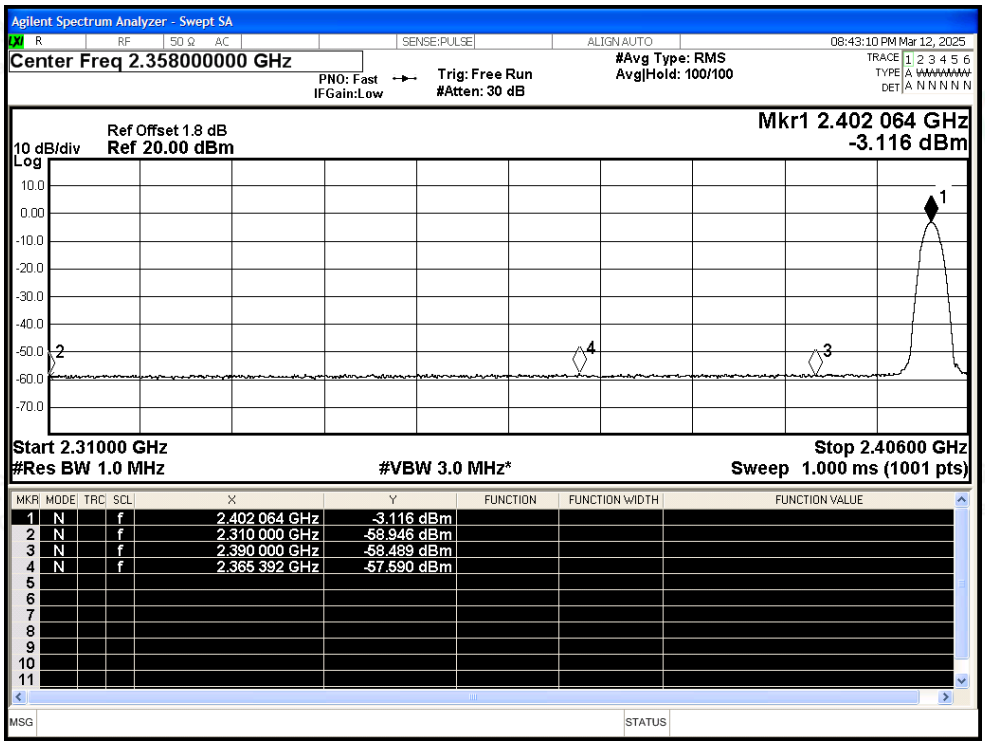
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average



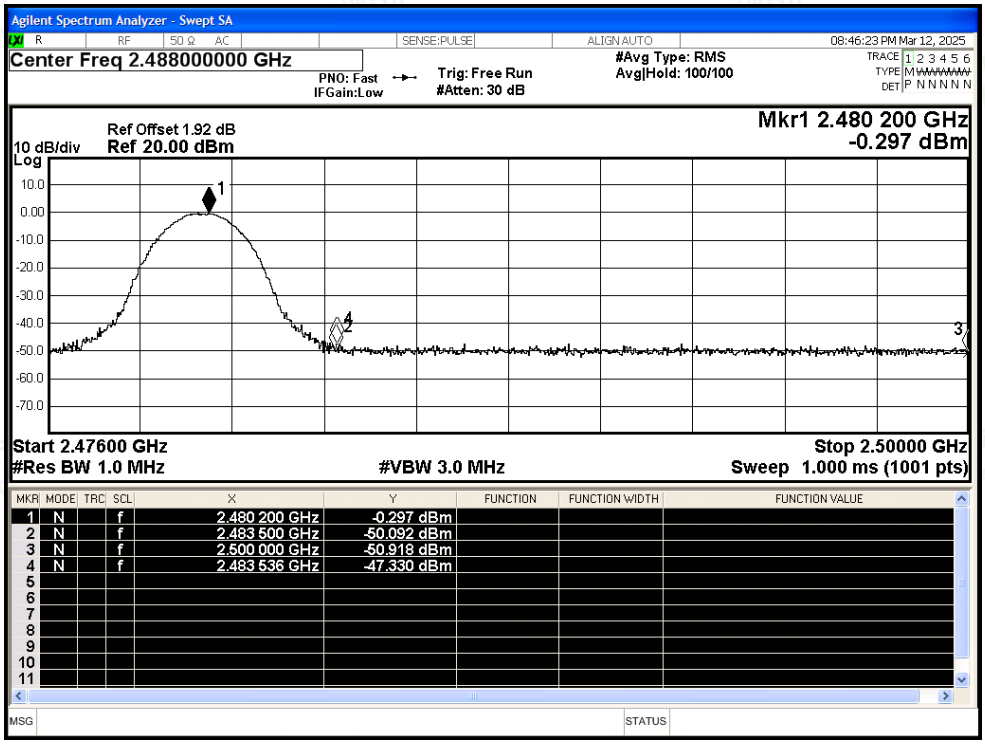
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak



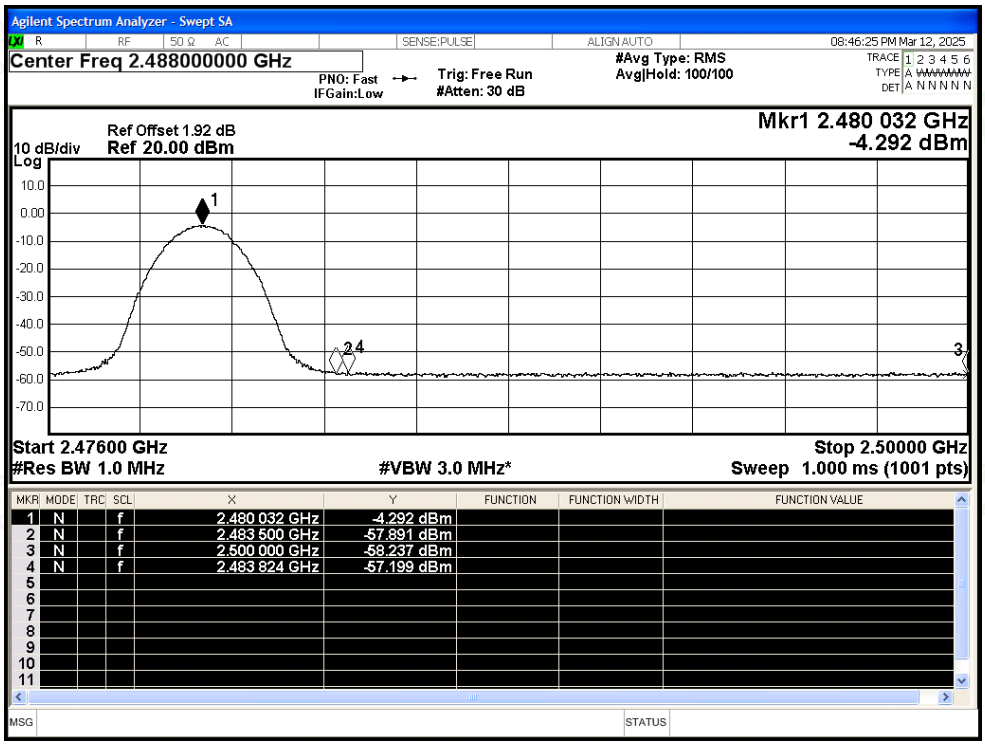
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average



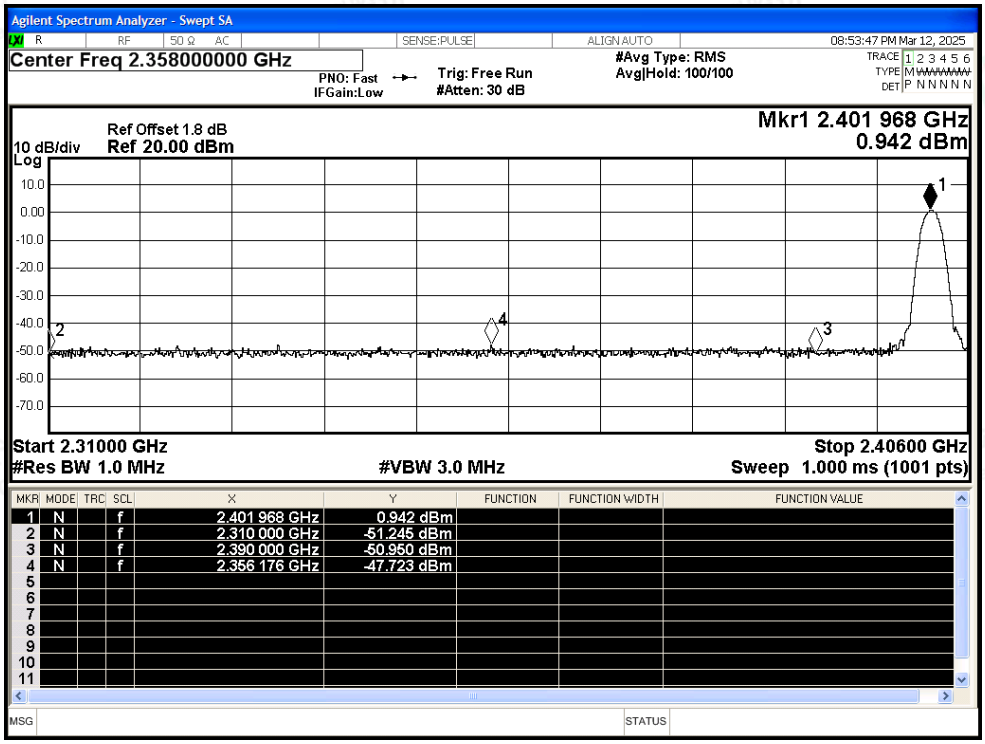
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Peak



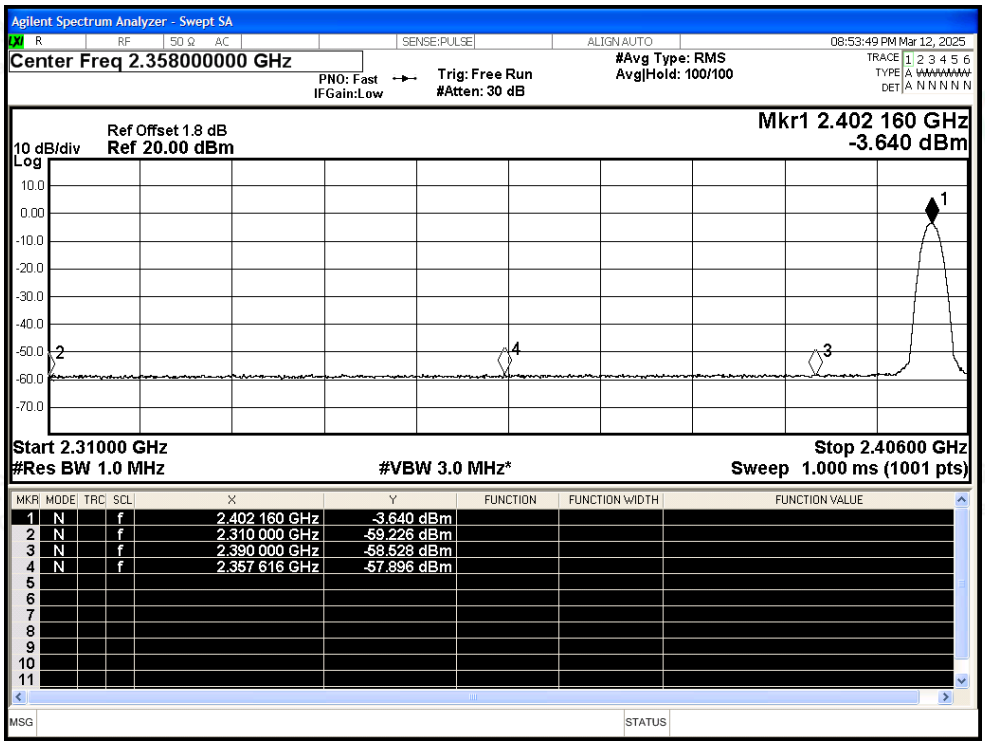
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Average



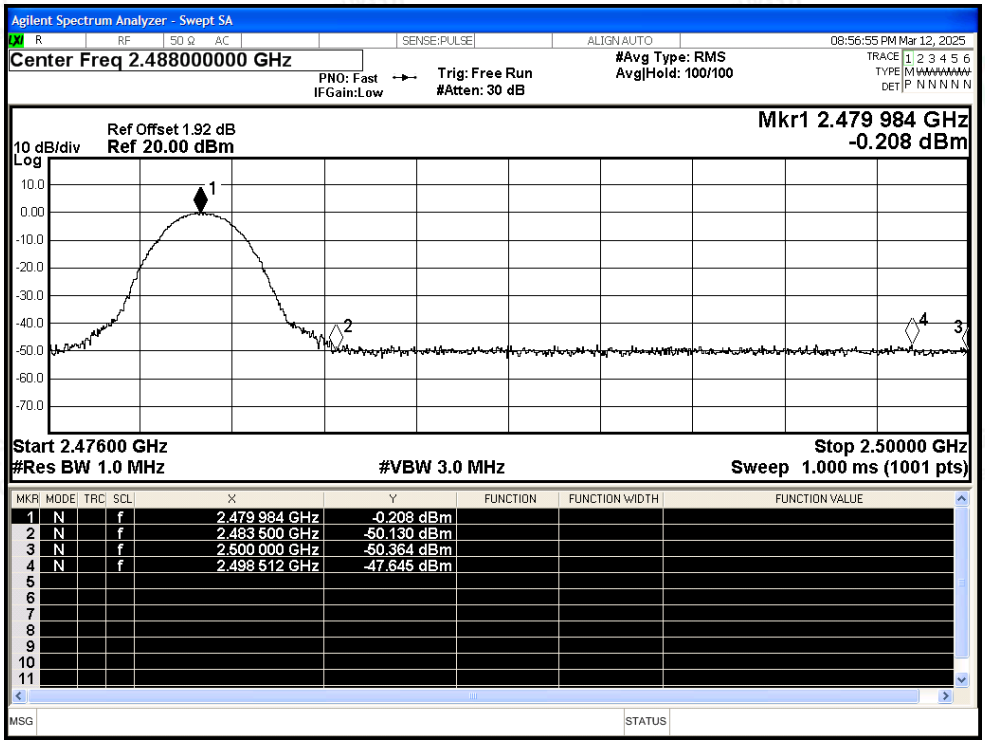
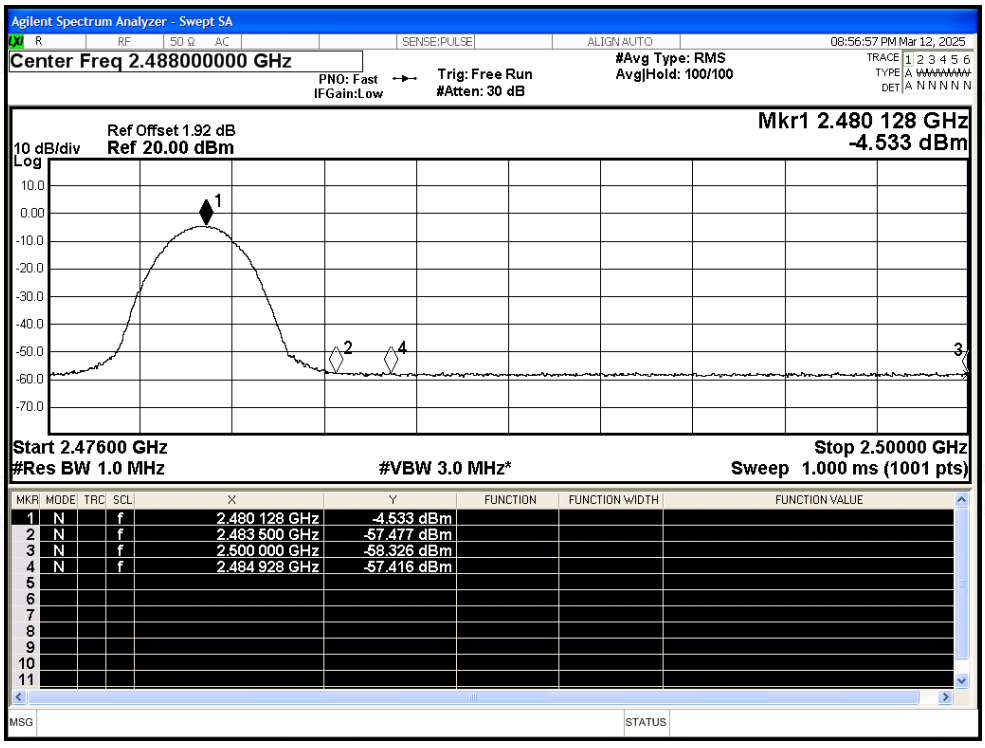
Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Peak



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