Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Smart POS

Test Model: WIZARPOS Q3

Environmental Conditions

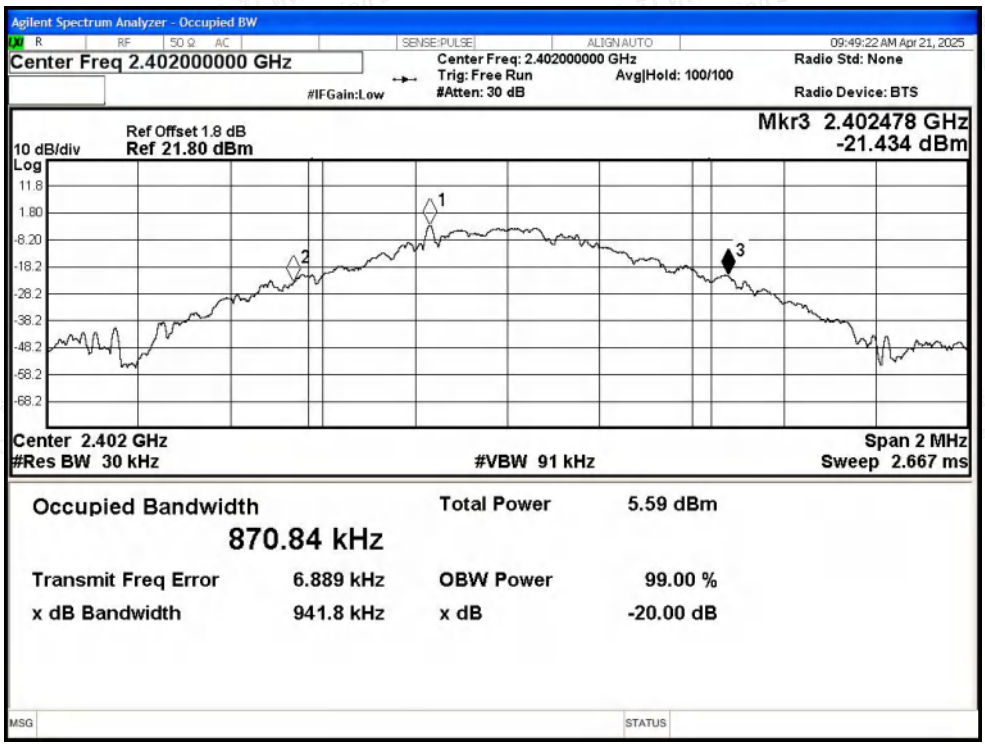
Temperature:	23.9°C
Relative Humidity:	53.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Paddi Chen
Supervised by:	Nick Peng

A.1 -20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.942	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.961	N/A	Pass
NVNT	1-DH5	2480	Ant1	1.013	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.285	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.286	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.286	N/A	Pass
NVNT	3-DH5	2402	Ant1	1.286	N/A	Pass
NVNT	3-DH5	2441	Ant1	1.284	N/A	Pass
NVNT	3-DH5	2480	Ant1	1.298	N/A	Pass

Test Graphs

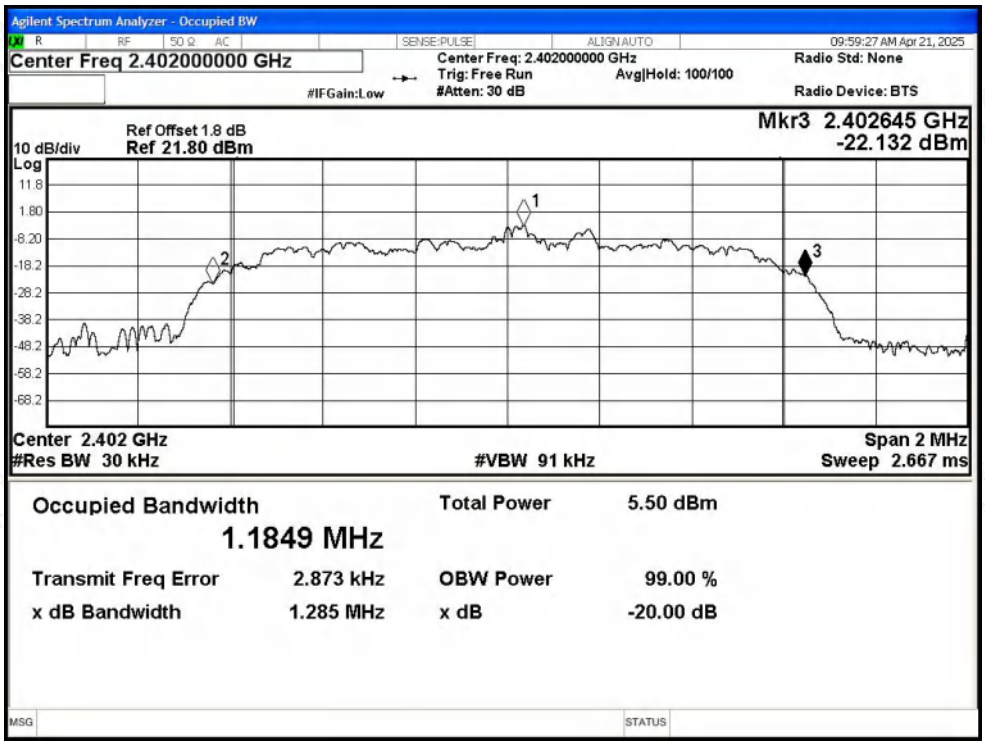
-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



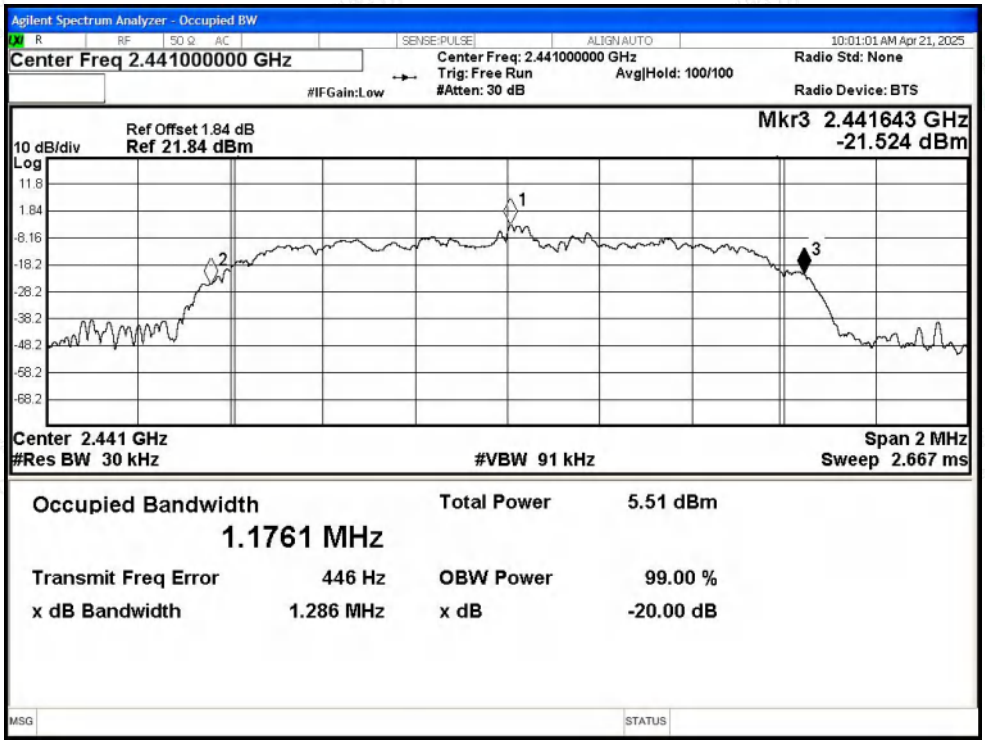
-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

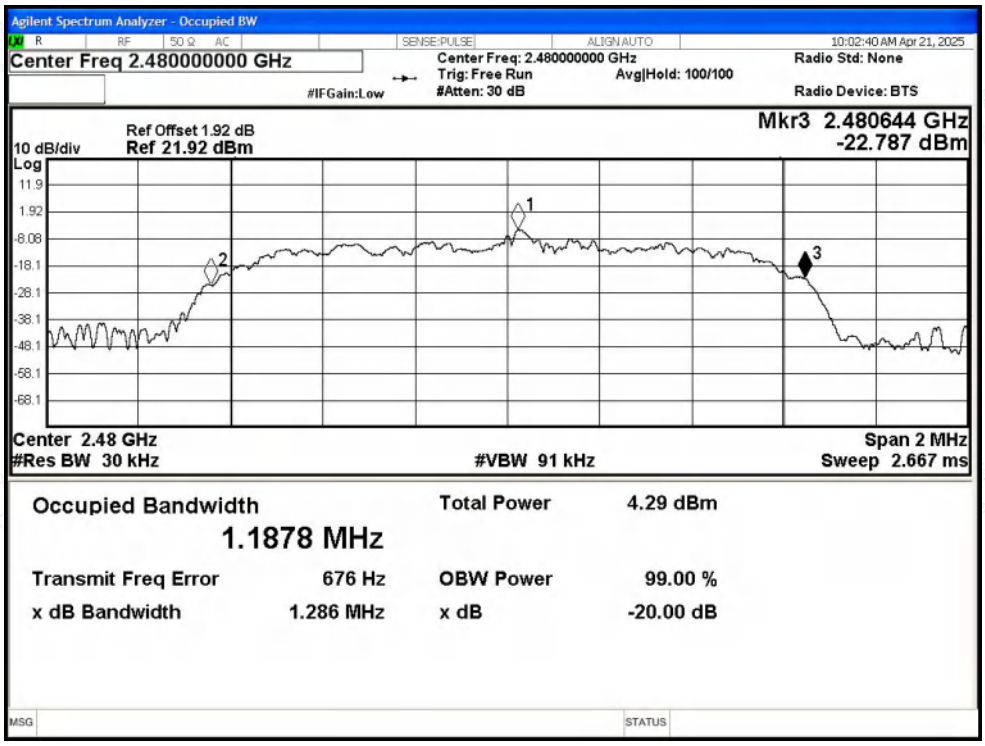
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



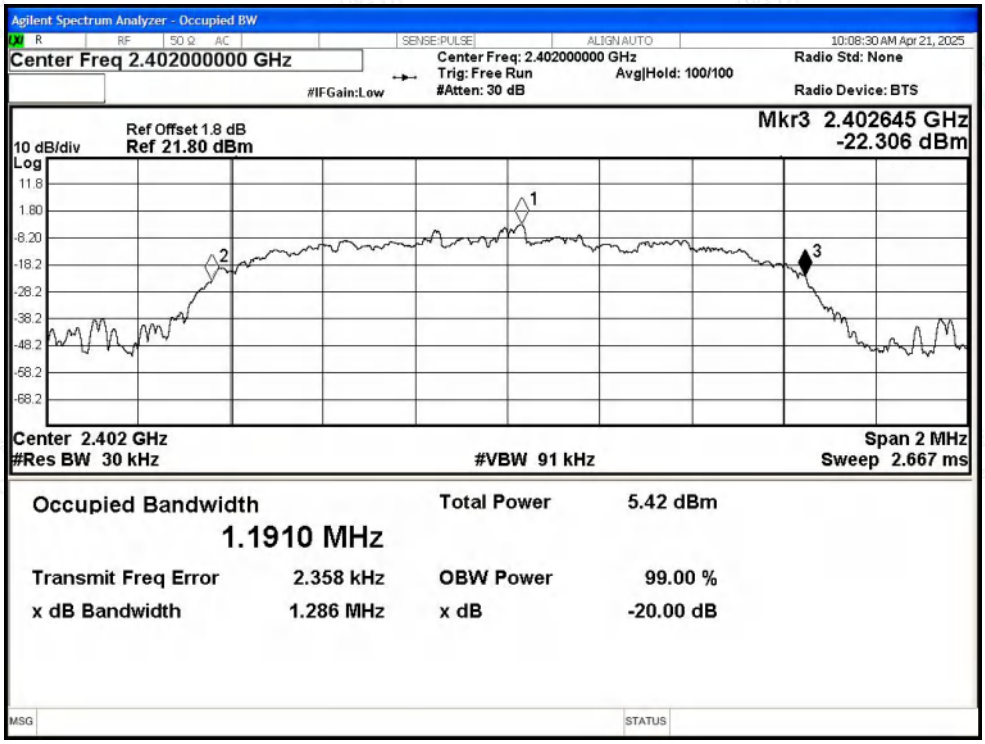
-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



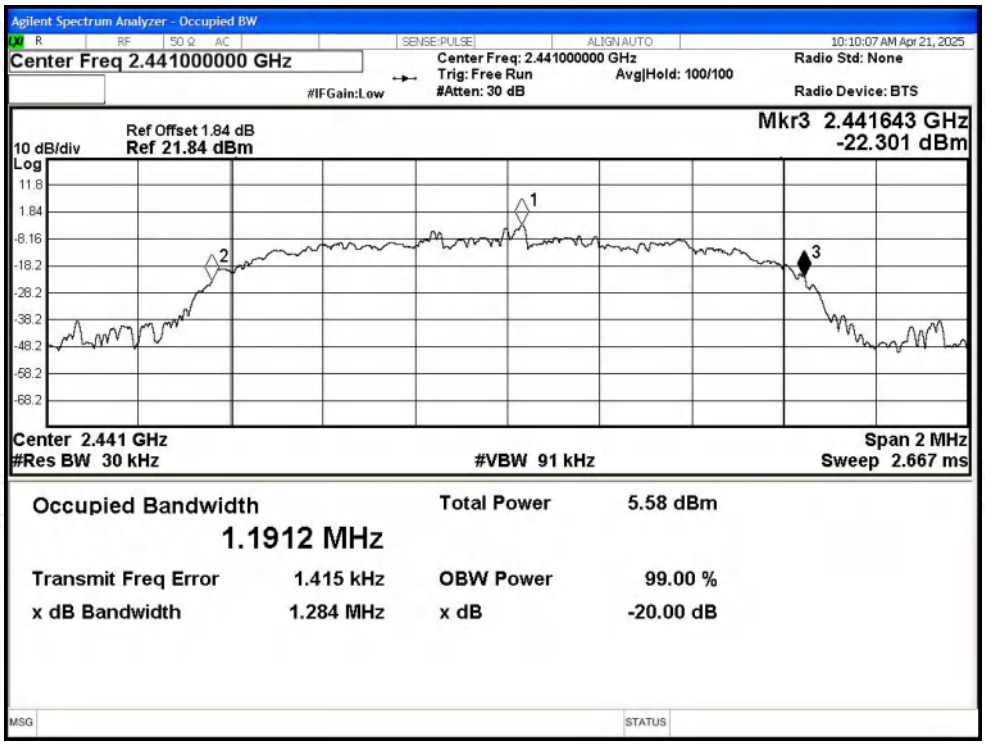
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1



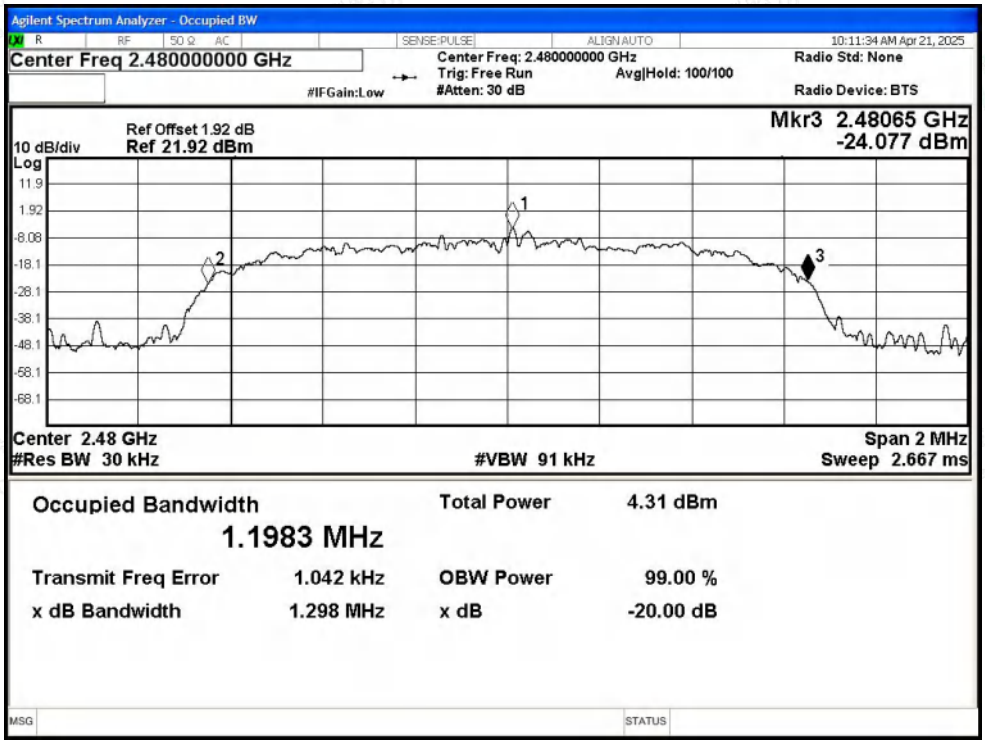
-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2480MHz Ant1

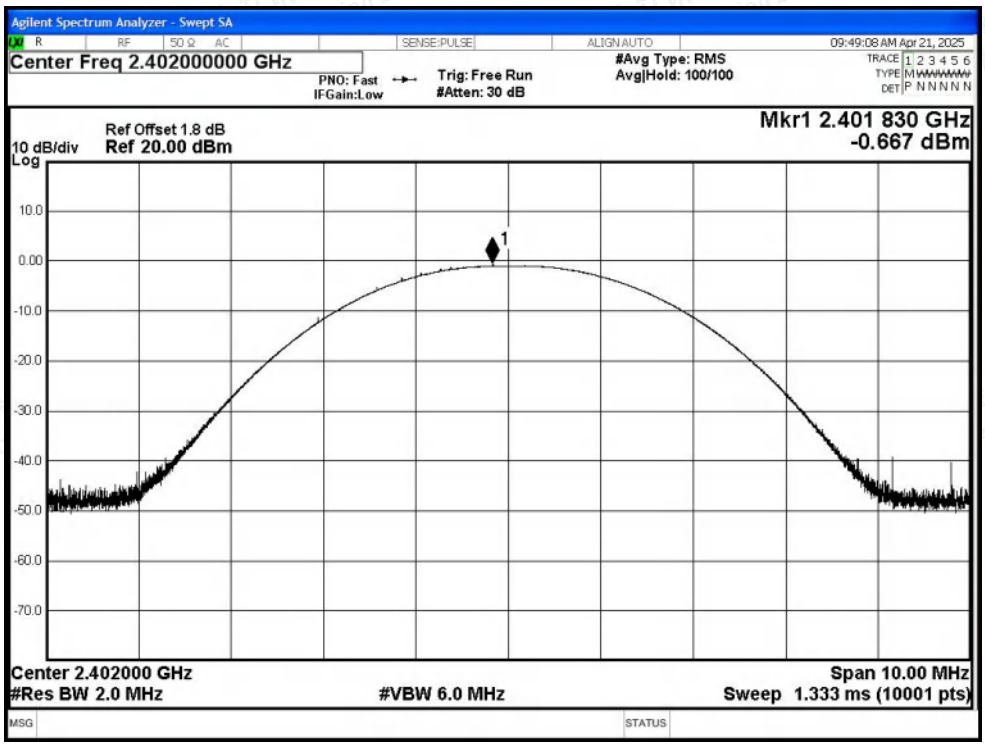


A.2 Maximum Peak Conducted Output Power

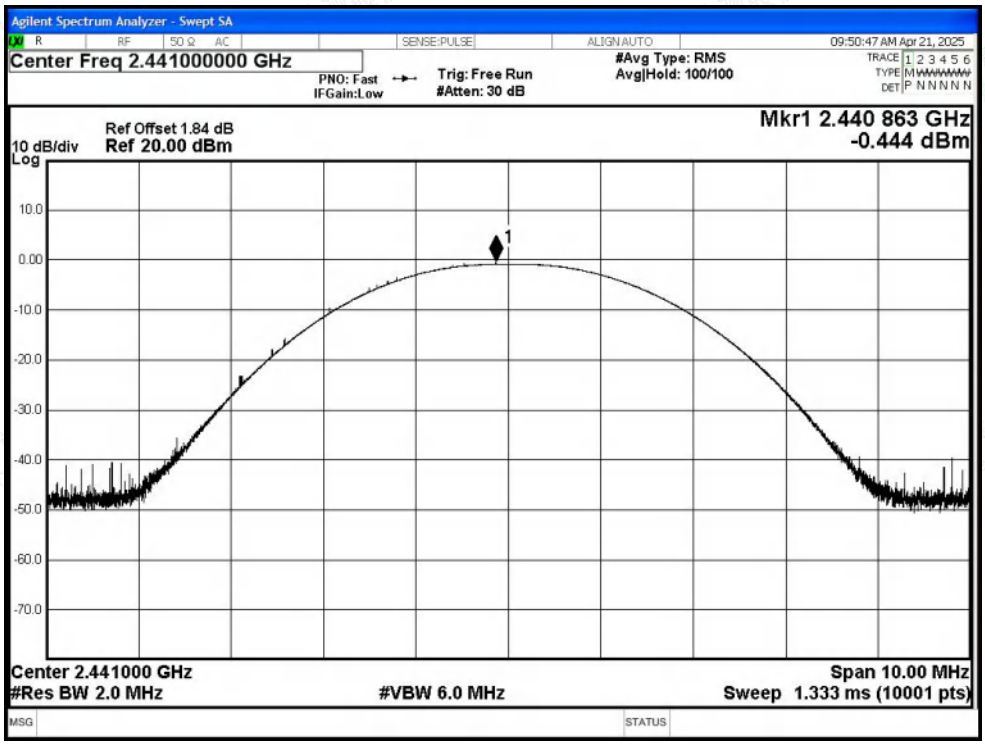
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	-0.67	21	Pass
NVNT	1-DH5	2441	Ant1	-0.44	21	Pass
NVNT	1-DH5	2480	Ant1	-1.60	21	Pass
NVNT	2-DH5	2402	Ant1	1.09	21	Pass
NVNT	2-DH5	2441	Ant1	1.25	21	Pass
NVNT	2-DH5	2480	Ant1	0.11	21	Pass
NVNT	3-DH5	2402	Ant1	1.46	21	Pass
NVNT	3-DH5	2441	Ant1	1.69	21	Pass
NVNT	3-DH5	2480	Ant1	0.51	21	Pass

Test Graphs

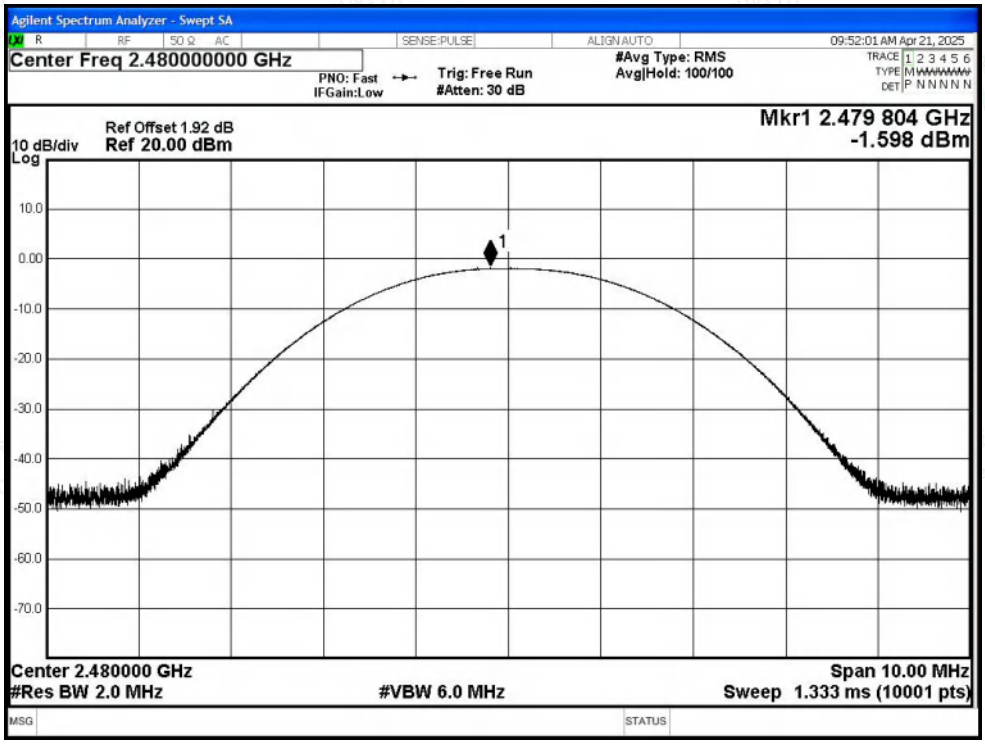
Power NVNT 1-DH5 2402MHz Ant1



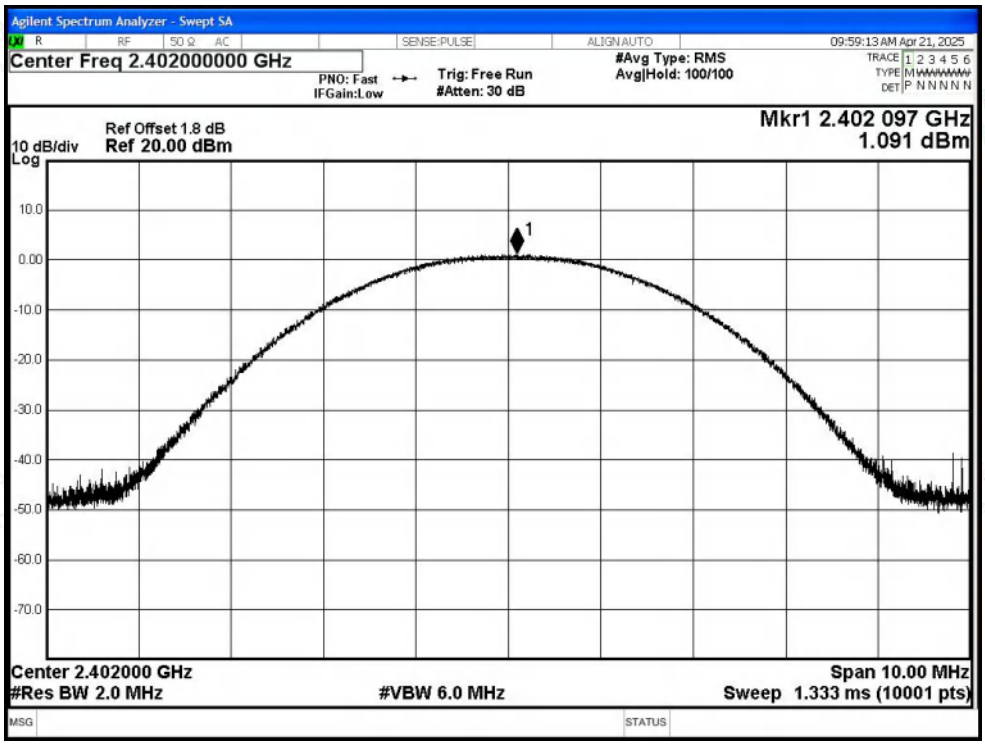
Power NVNT 1-DH5 2441MHz Ant1



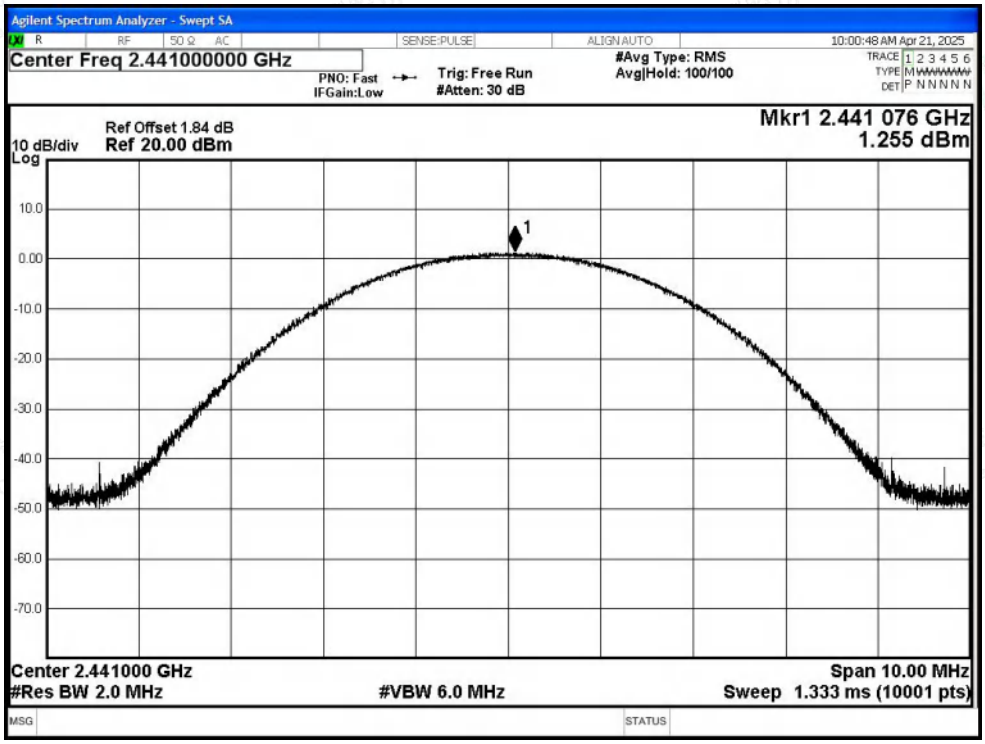
Power NVNT 1-DH5 2480MHz Ant1



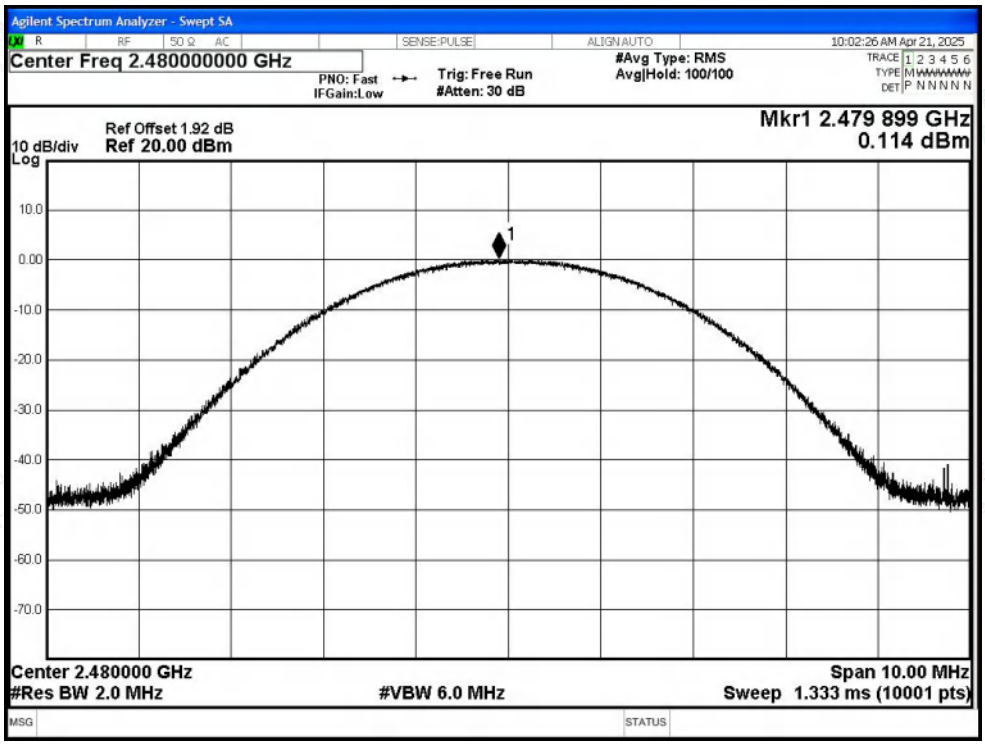
Power NVNT 2-DH5 2402MHz Ant1



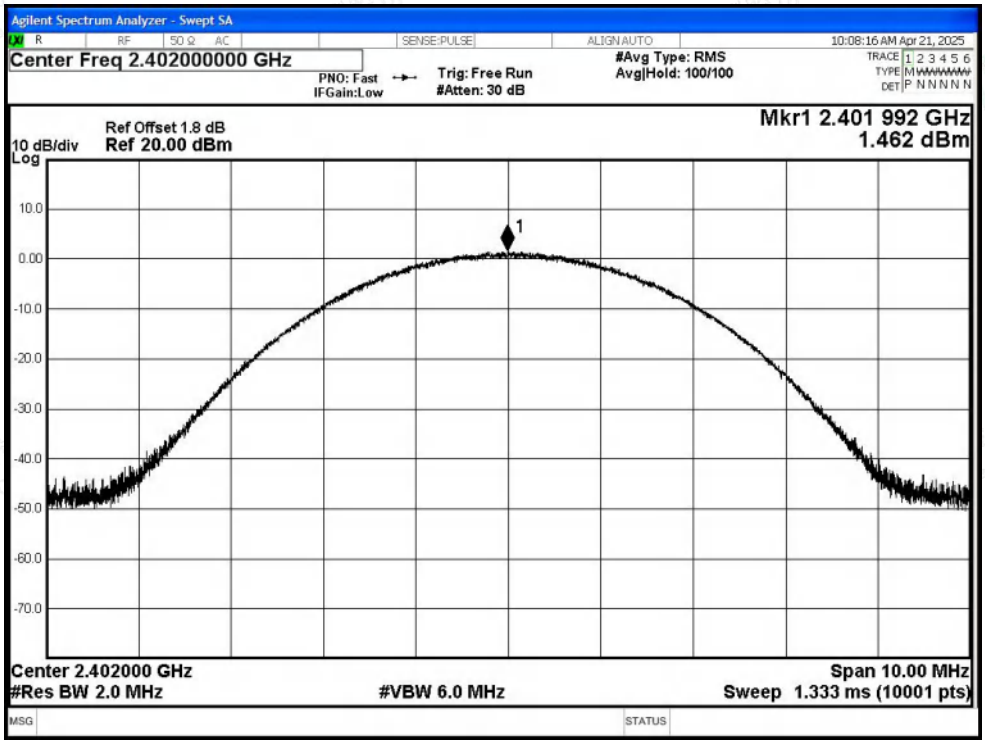
Power NVNT 2-DH5 2441MHz Ant1



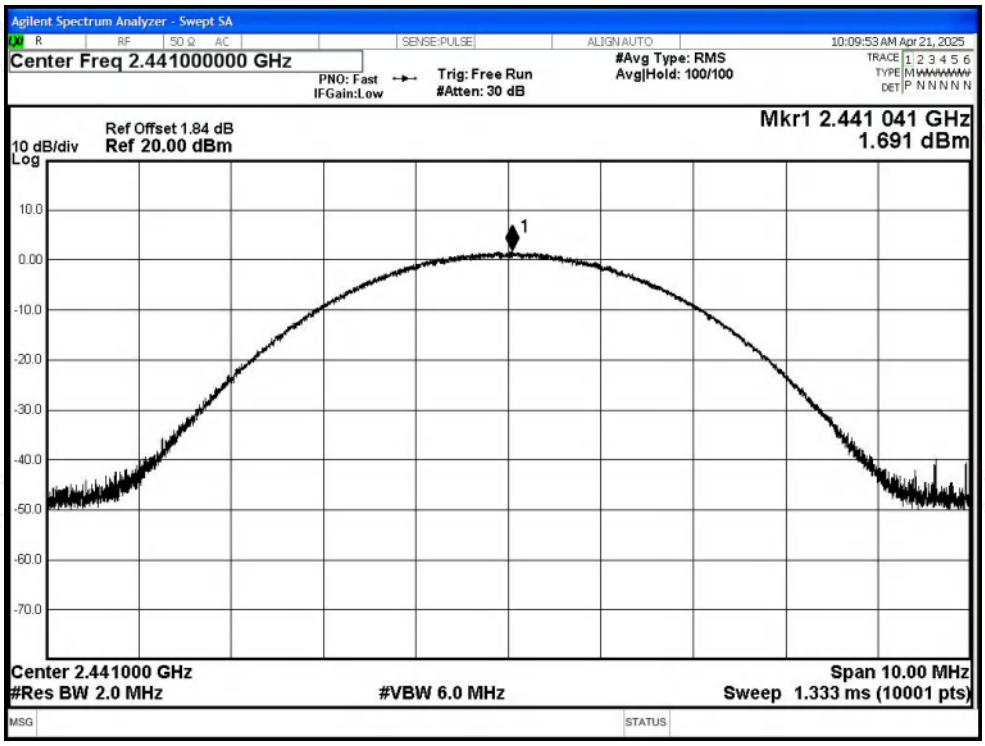
Power NVNT 2-DH5 2480MHz Ant1



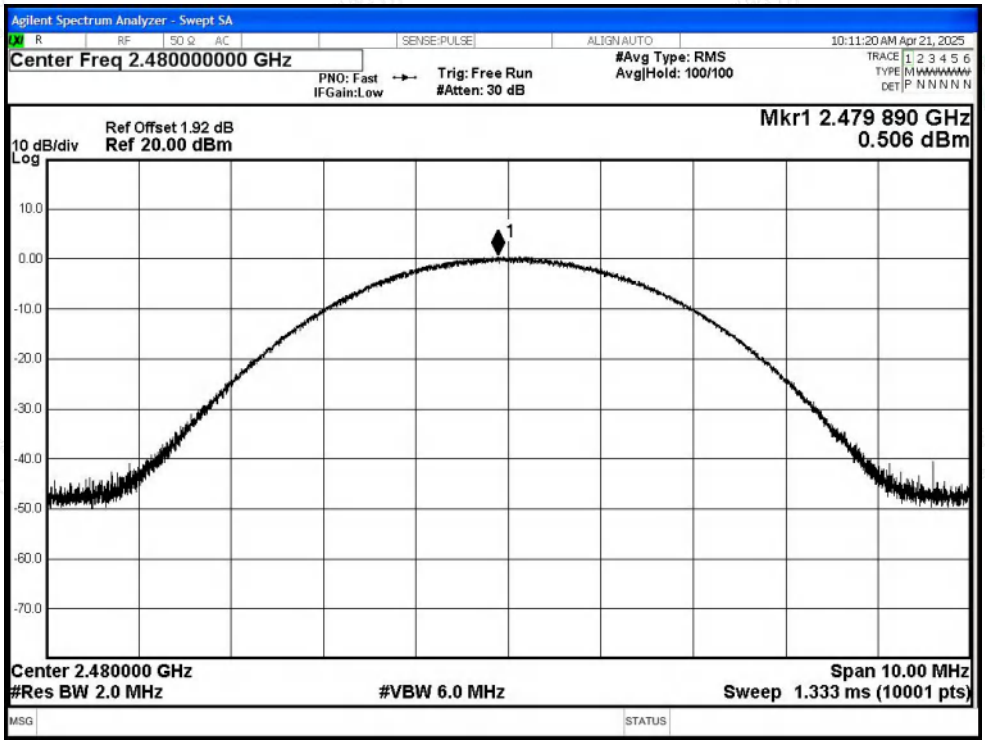
Power NVNT 3-DH5 2402MHz Ant1



Power NVNT 3-DH5 2441MHz Ant1



Power NVNT 3-DH5 2480MHz Ant1

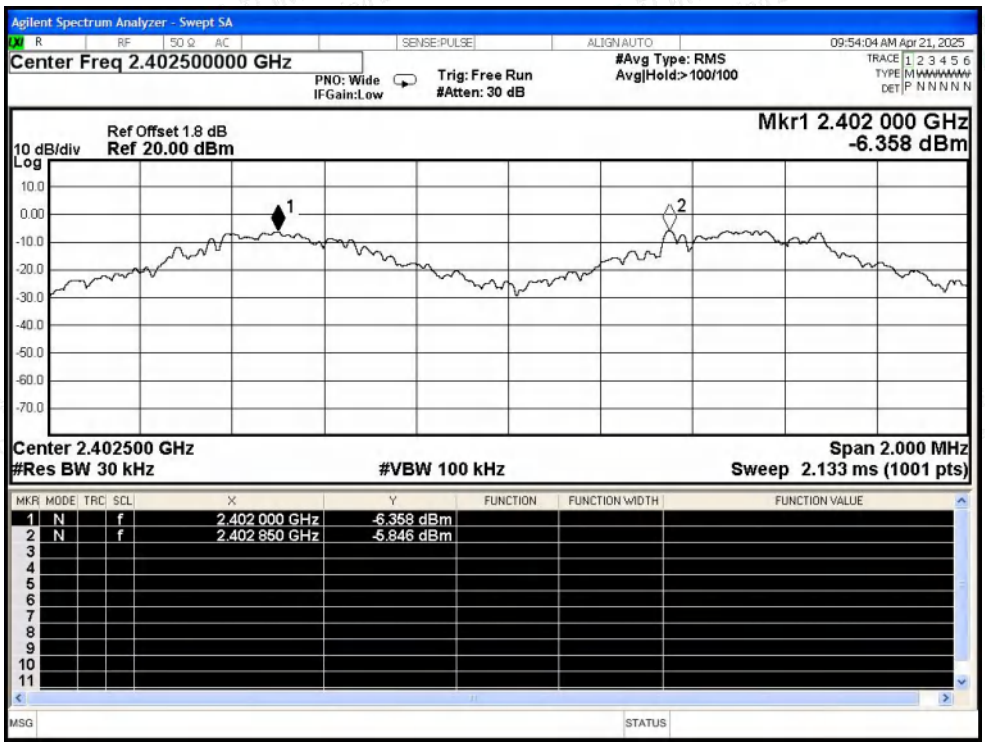


A.3 Carrier Frequencies Separation

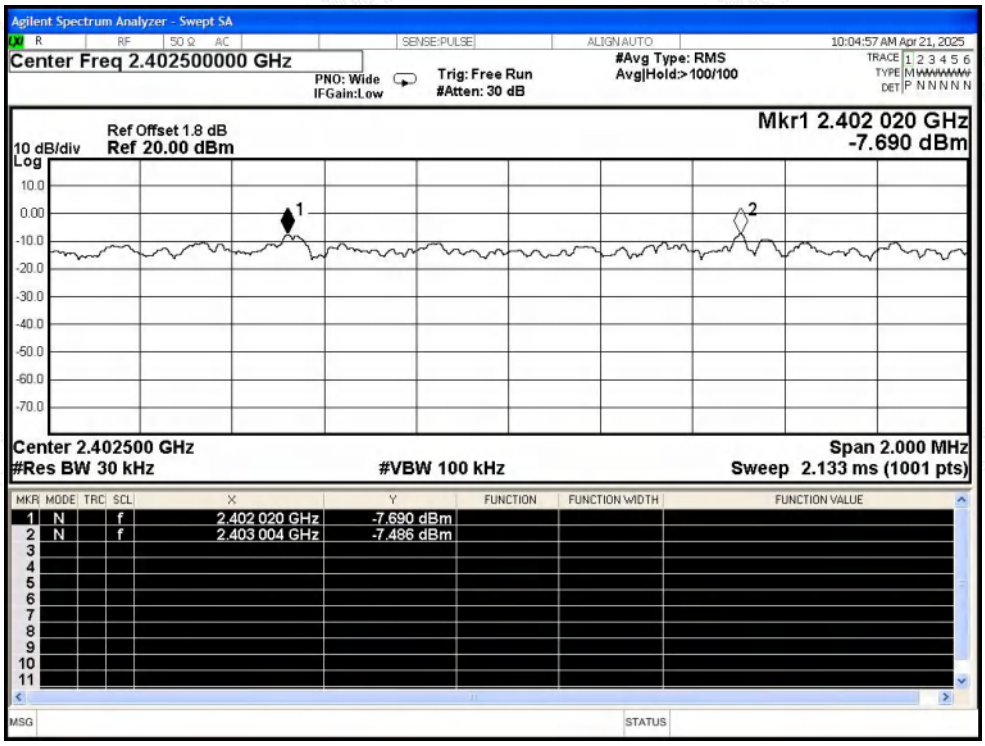
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2402	2402.85	0.85	0.675	Pass
NVNT	2-DH5	Ant1	2402.02	2403.004	0.984	0.857	Pass
NVNT	3-DH5	Ant1	2402.106	2403.03	0.924	0.865	Pass

Test Graphs

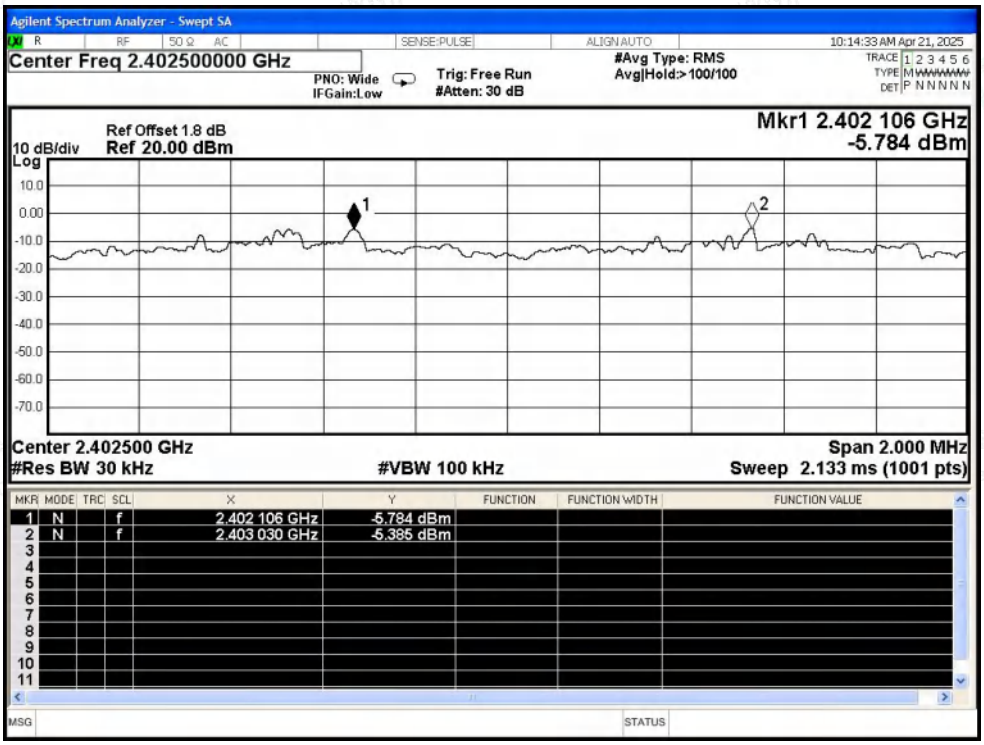
CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1



CFS NVNT 3-DH5 2402MHz Ant1

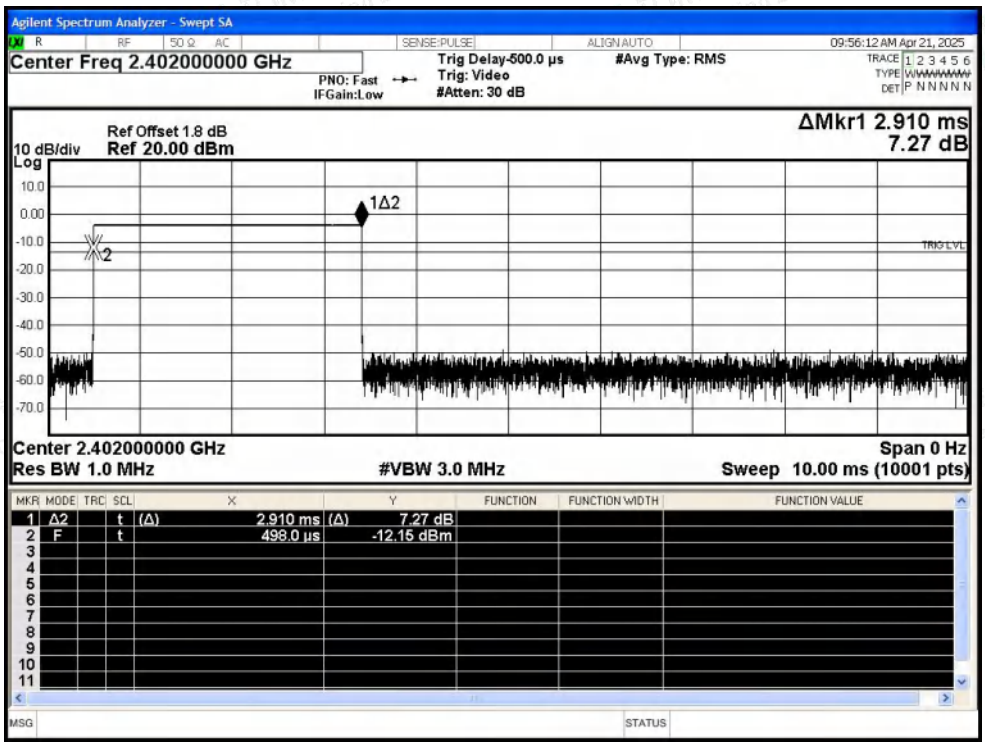


A.4 Dwell Time

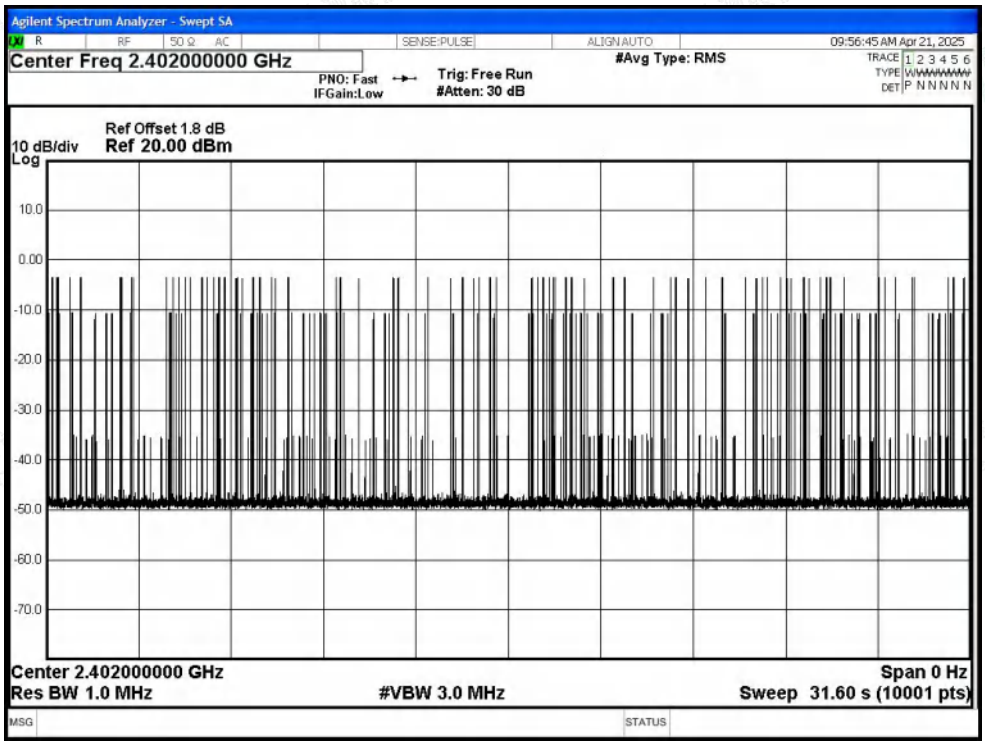
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.91	285.18	98	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.898	321.678	111	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.897	281.009	97	31600	400	Pass

Test Graphs

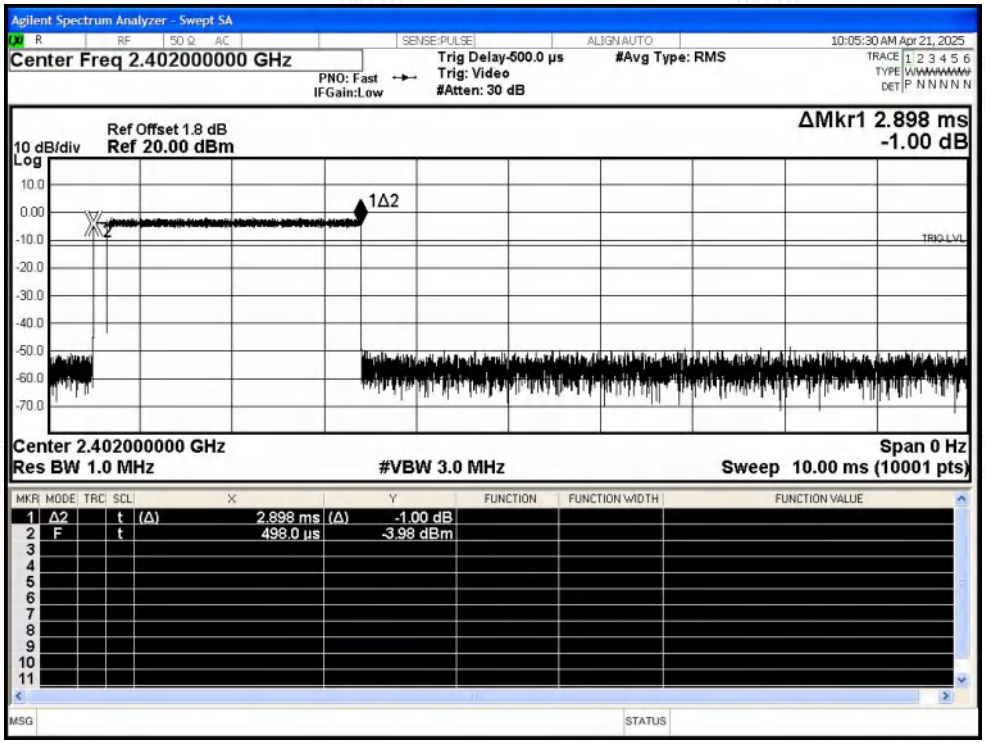
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



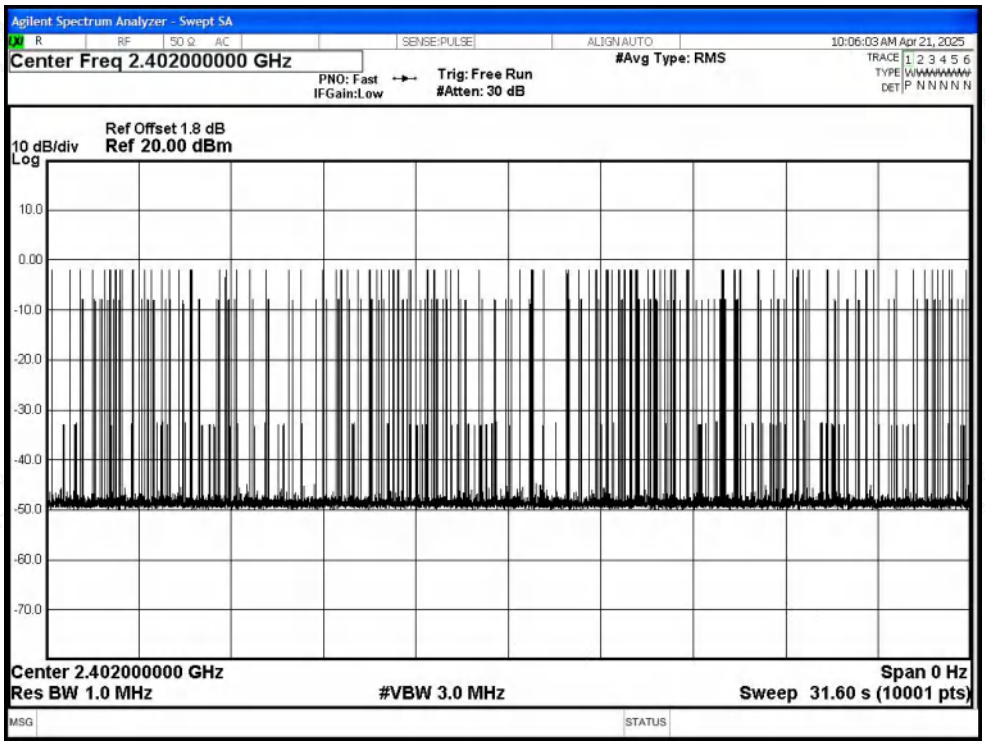
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



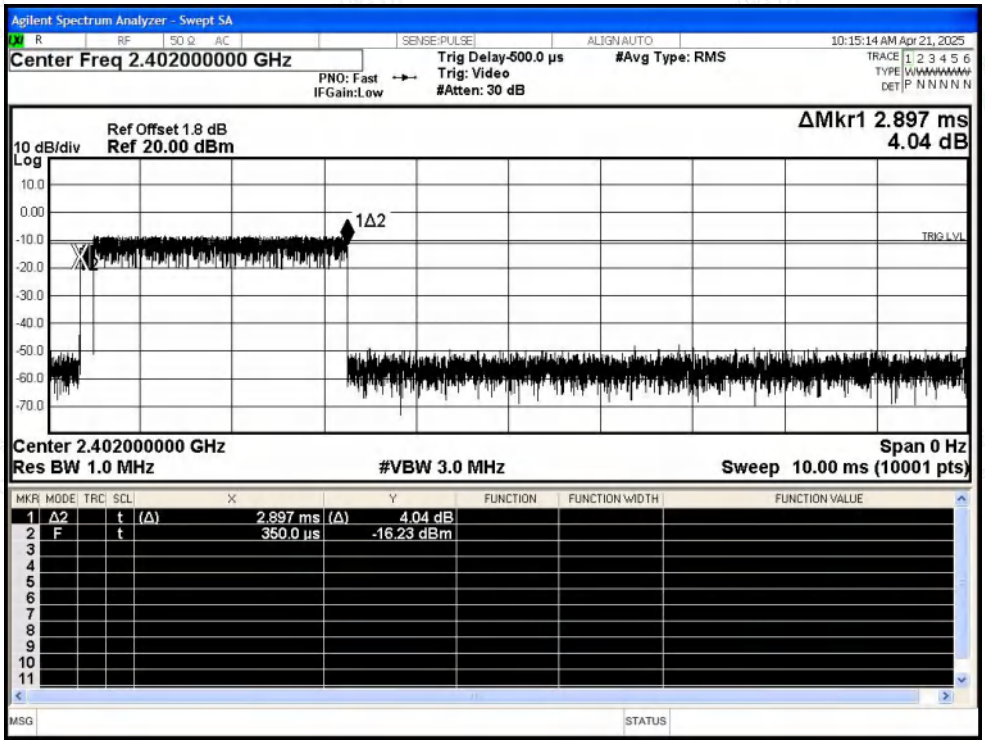
Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



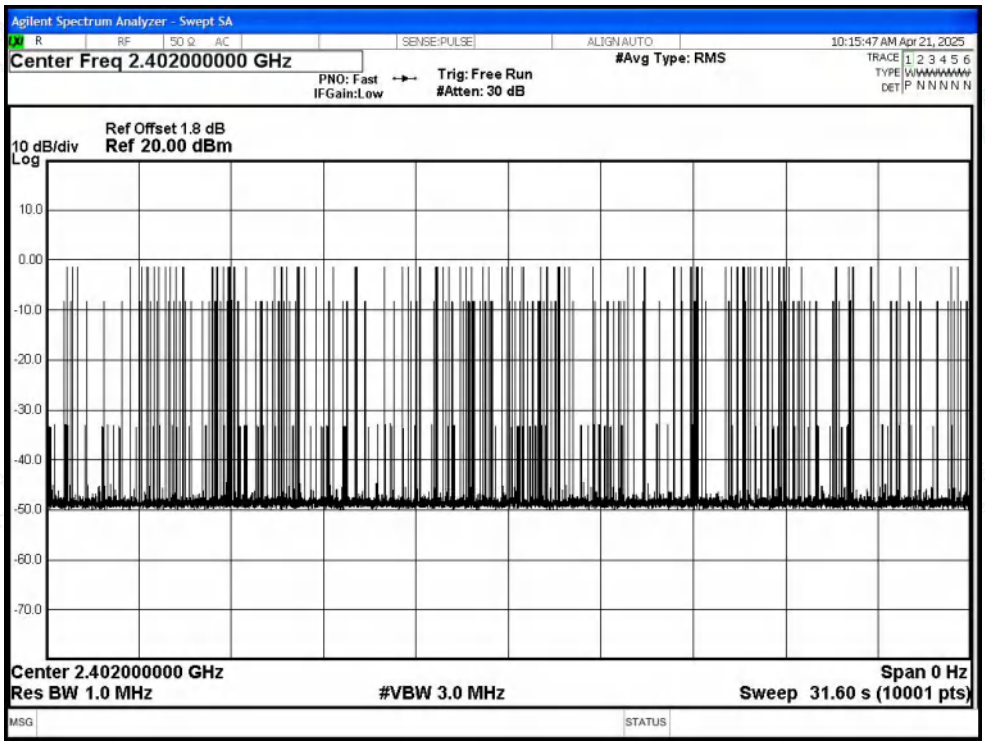
Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated



Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated

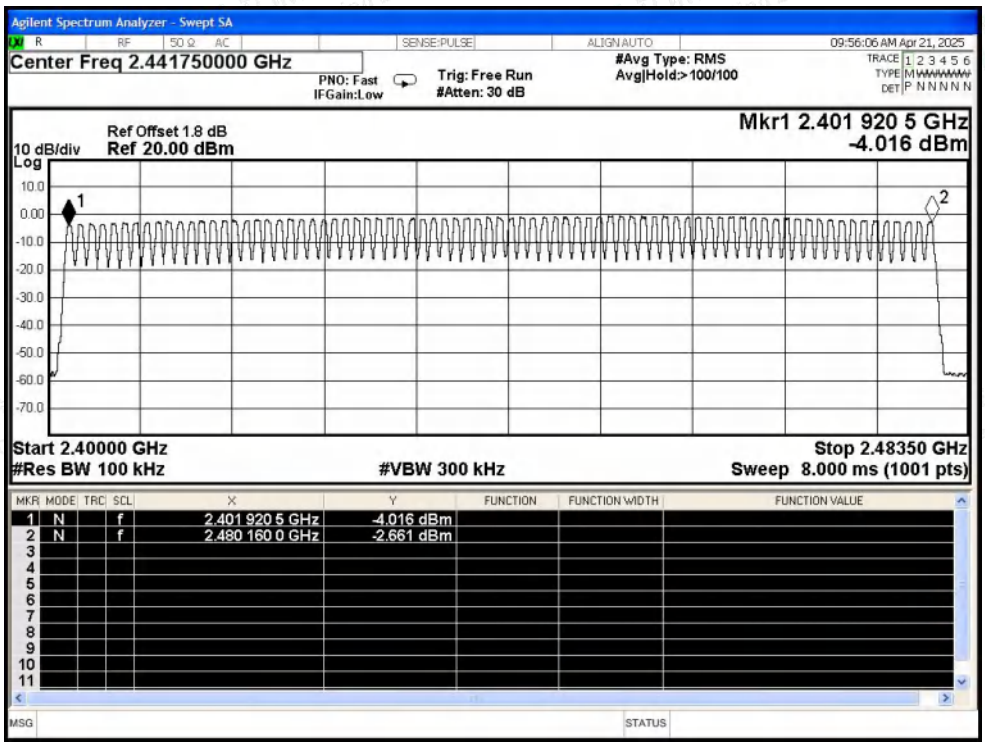


A.5 Number of Hopping Channel

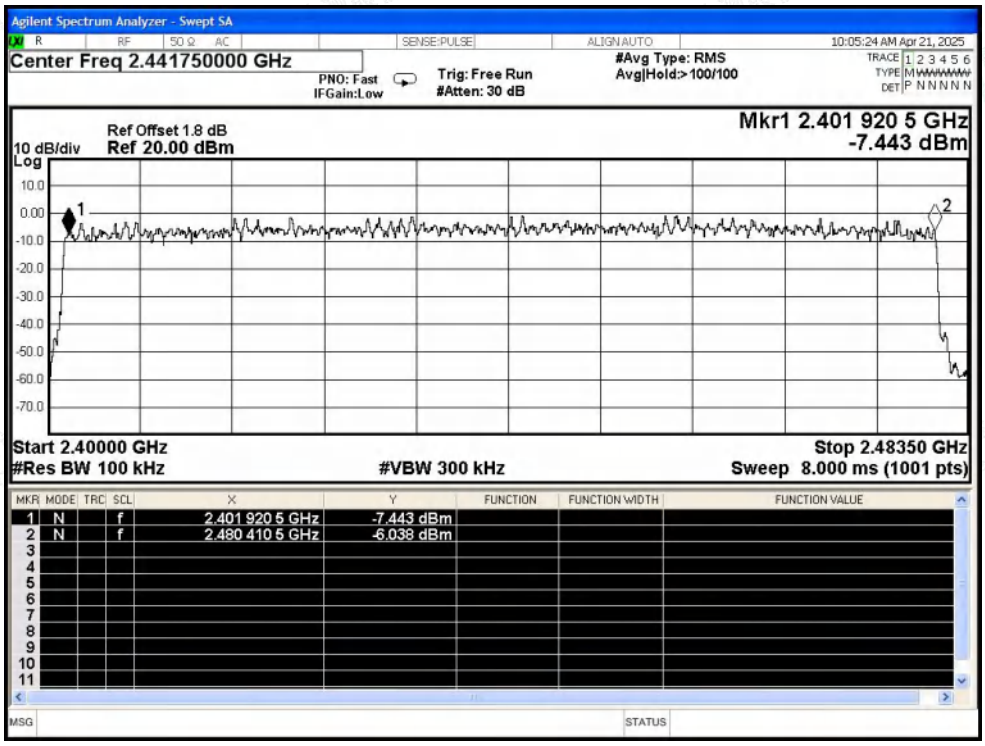
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass

Test Graphs

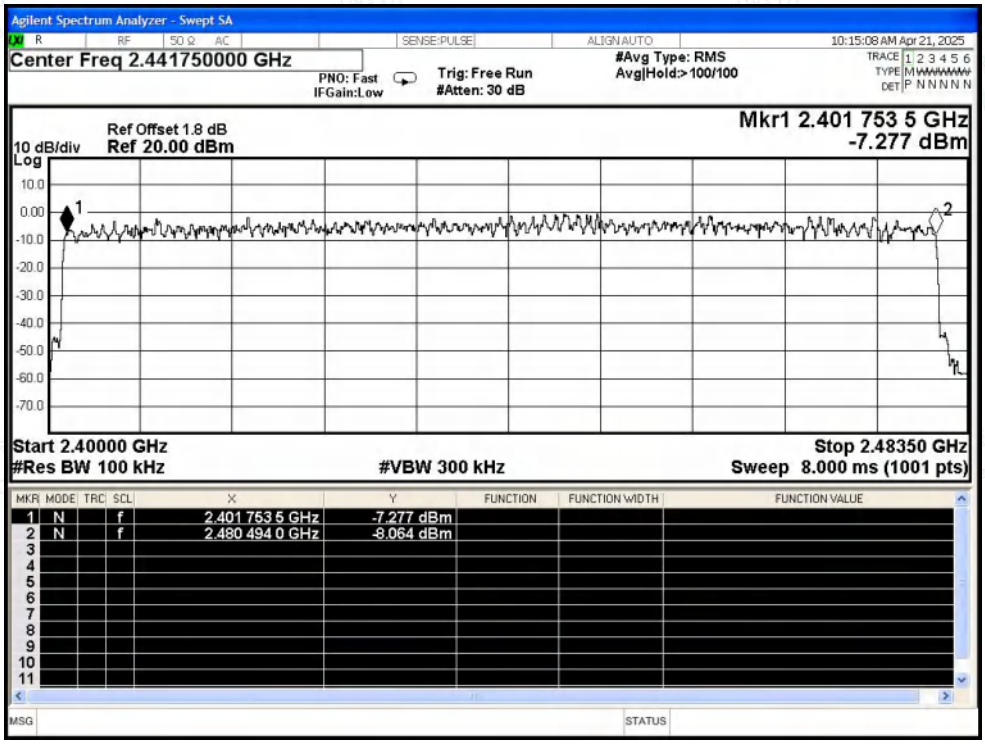
Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1



Hopping No. NVNT 3-DH5 2402MHz Ant1

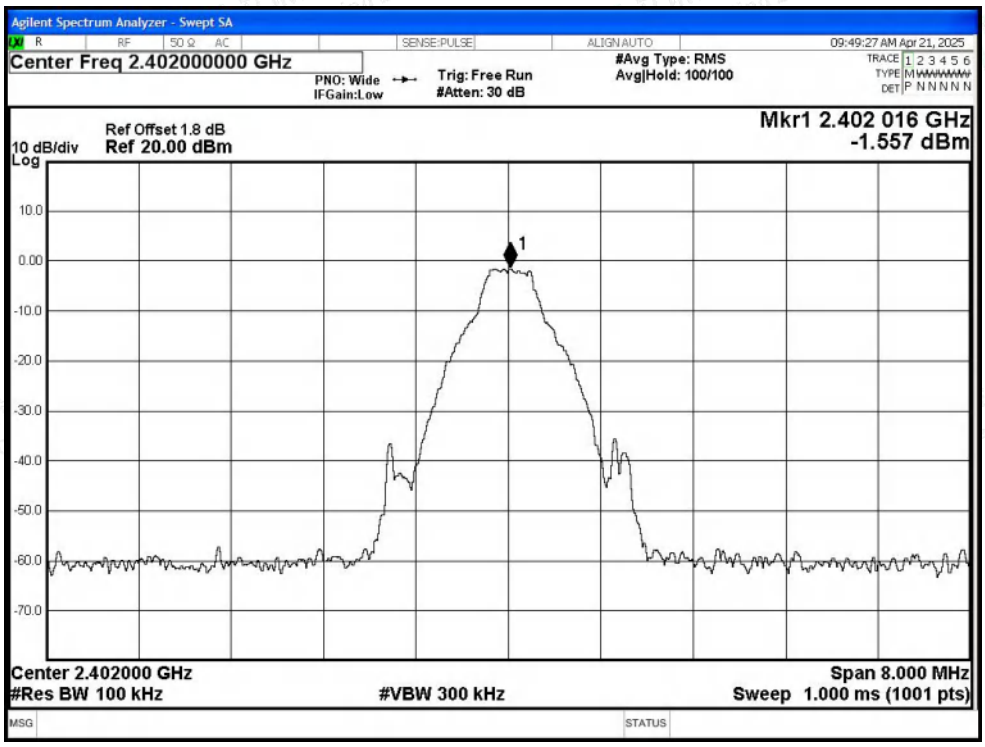


A.6 Band Edge

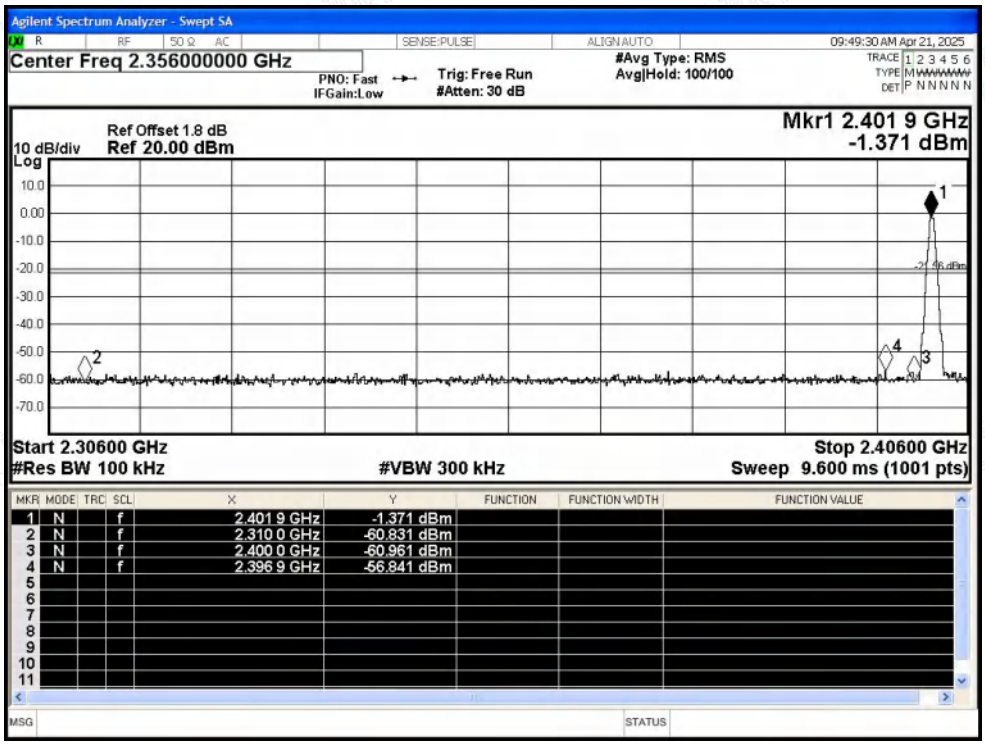
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-55.28	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-54.65	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-51.72	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-54.45	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-50.81	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-55.28	-20	Pass

Test Graphs

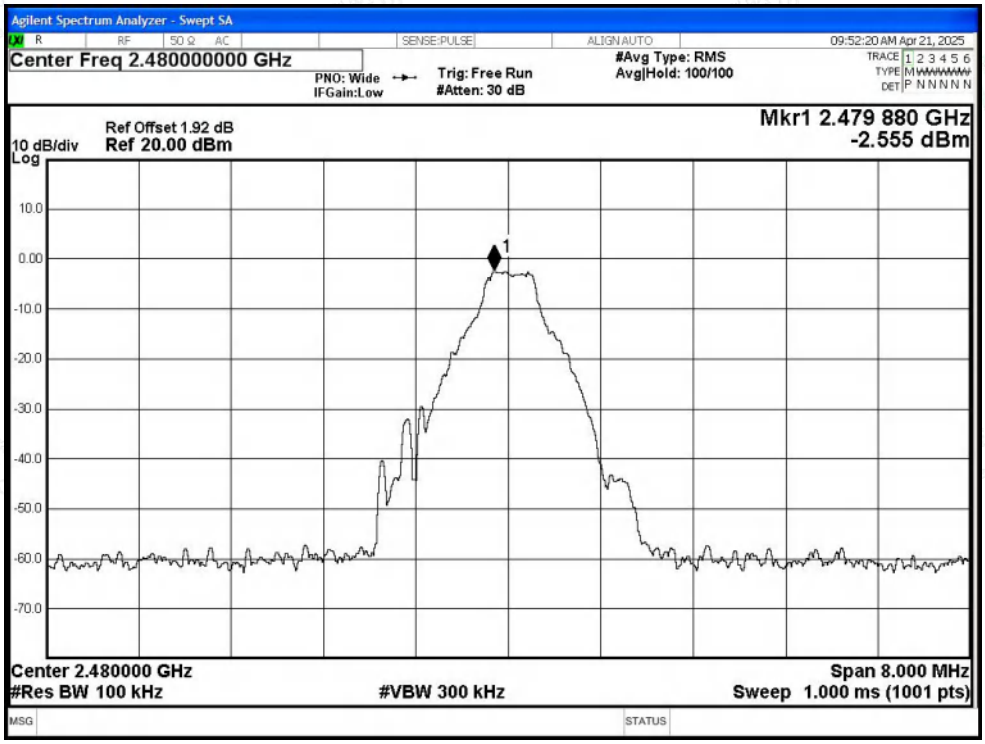
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



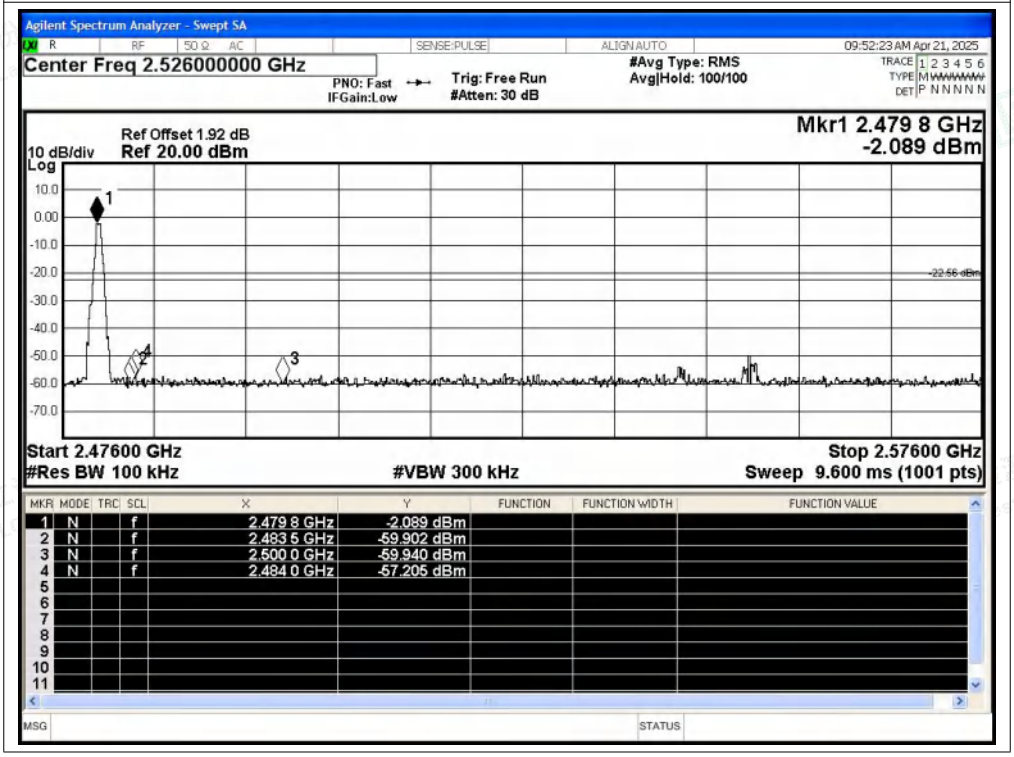
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



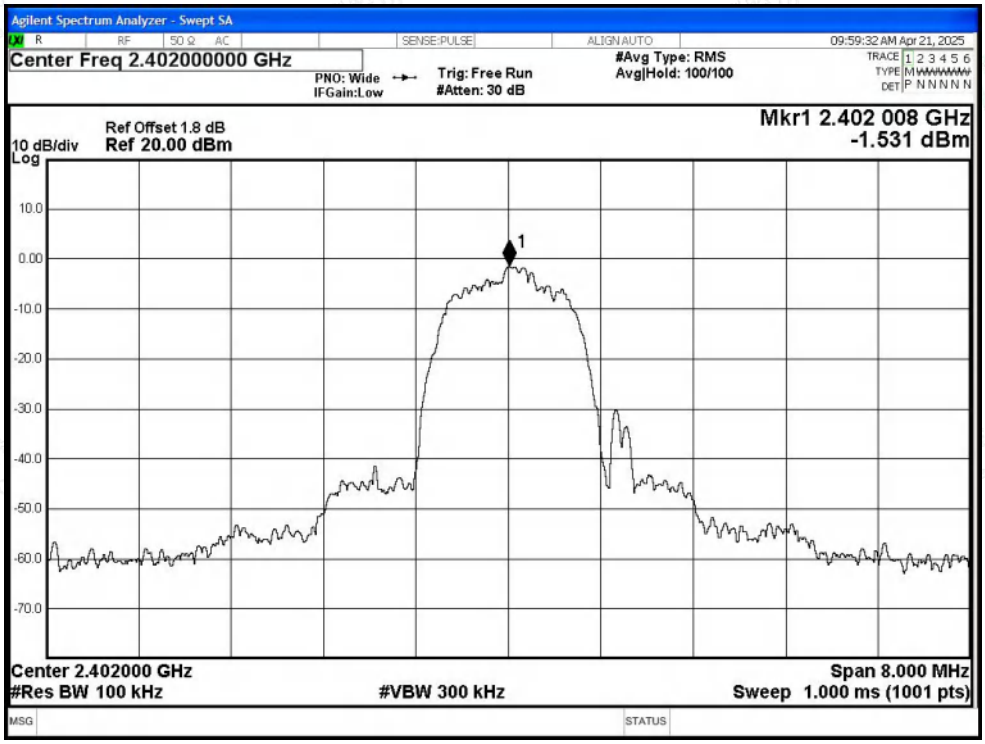
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



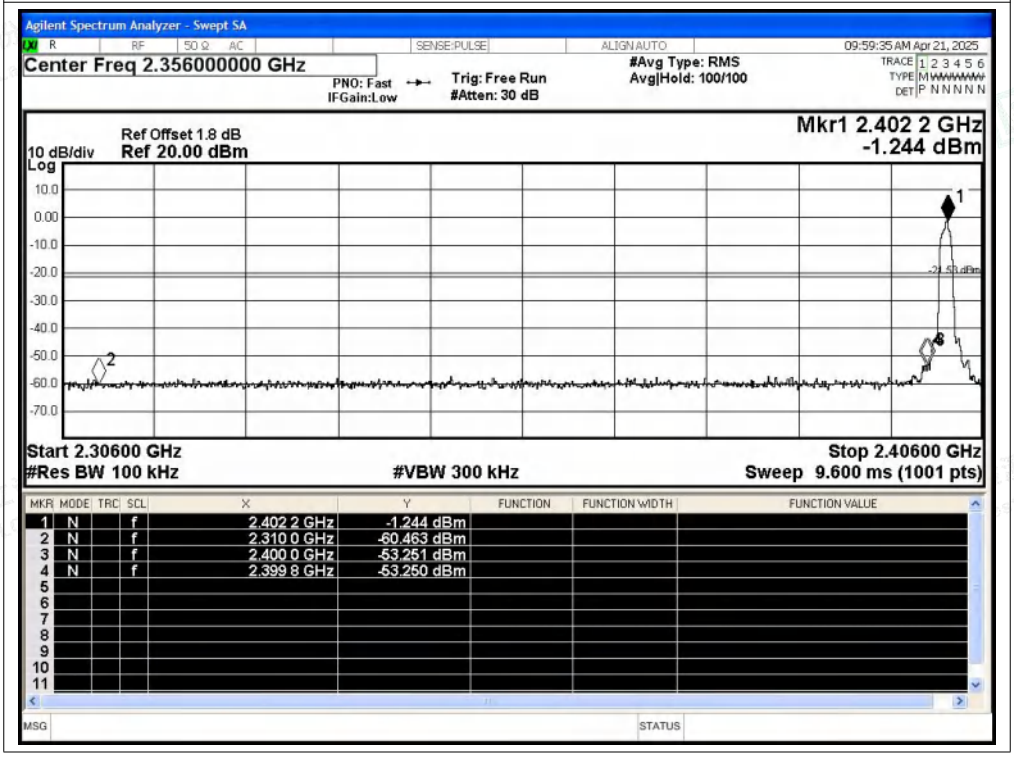
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



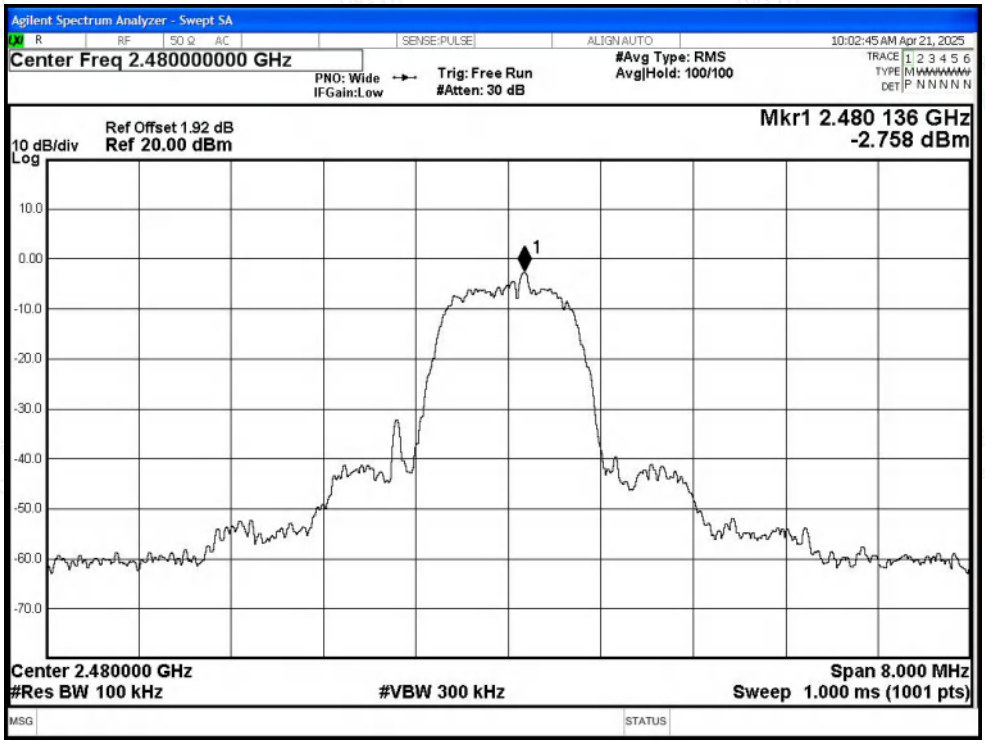
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



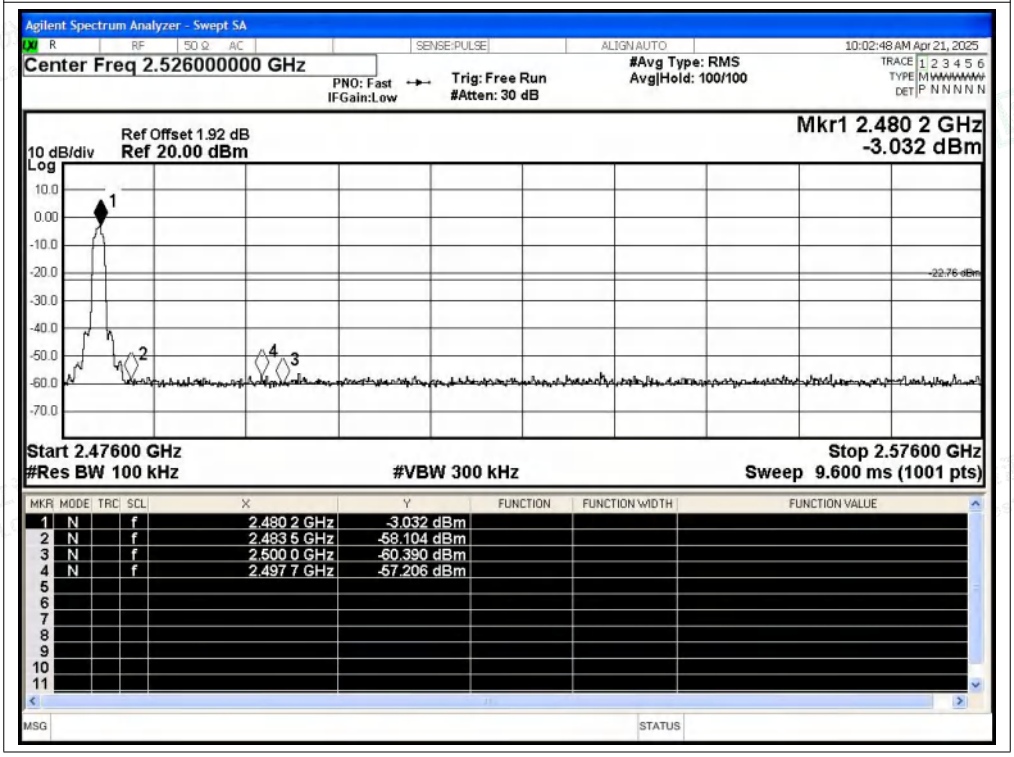
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission



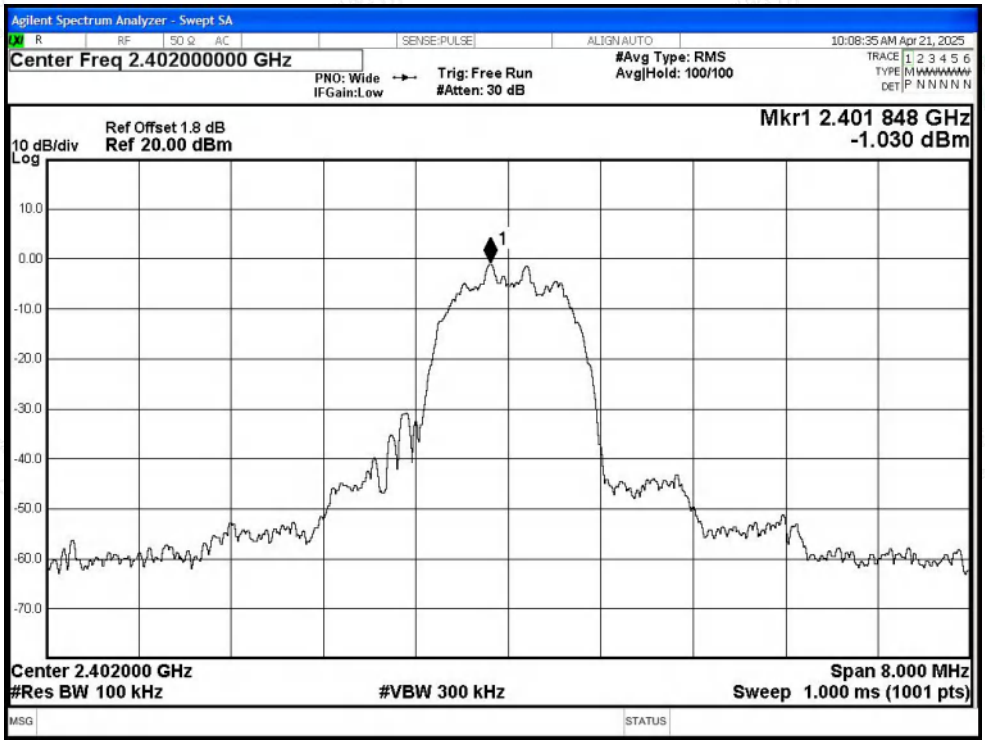
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



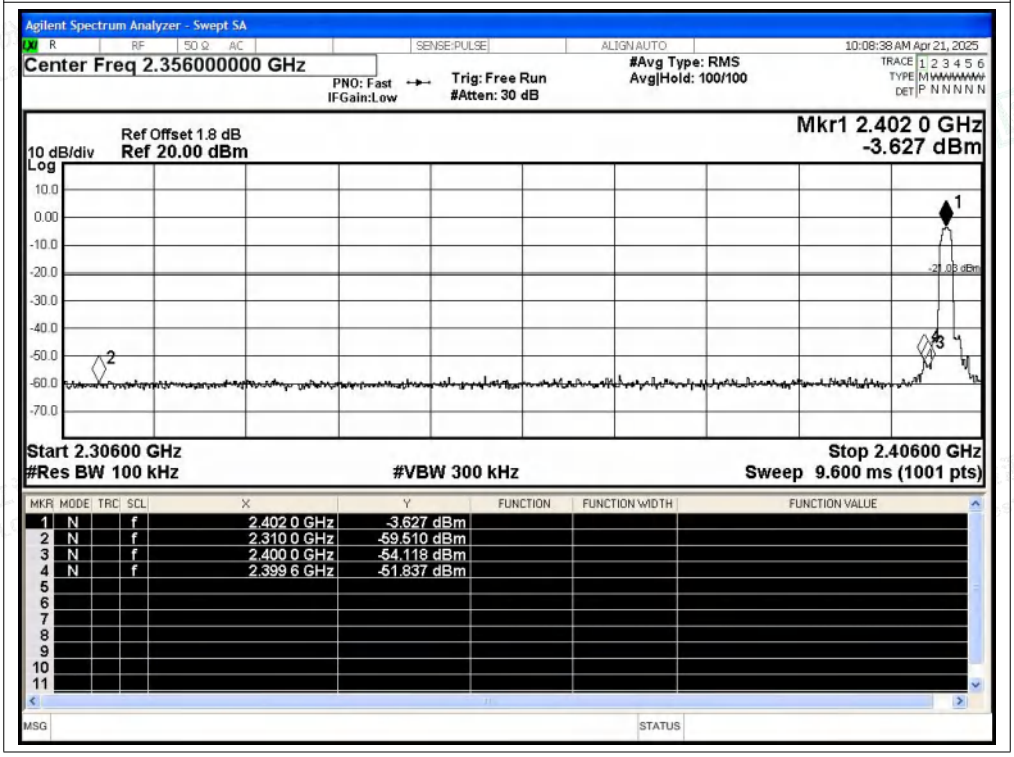
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission



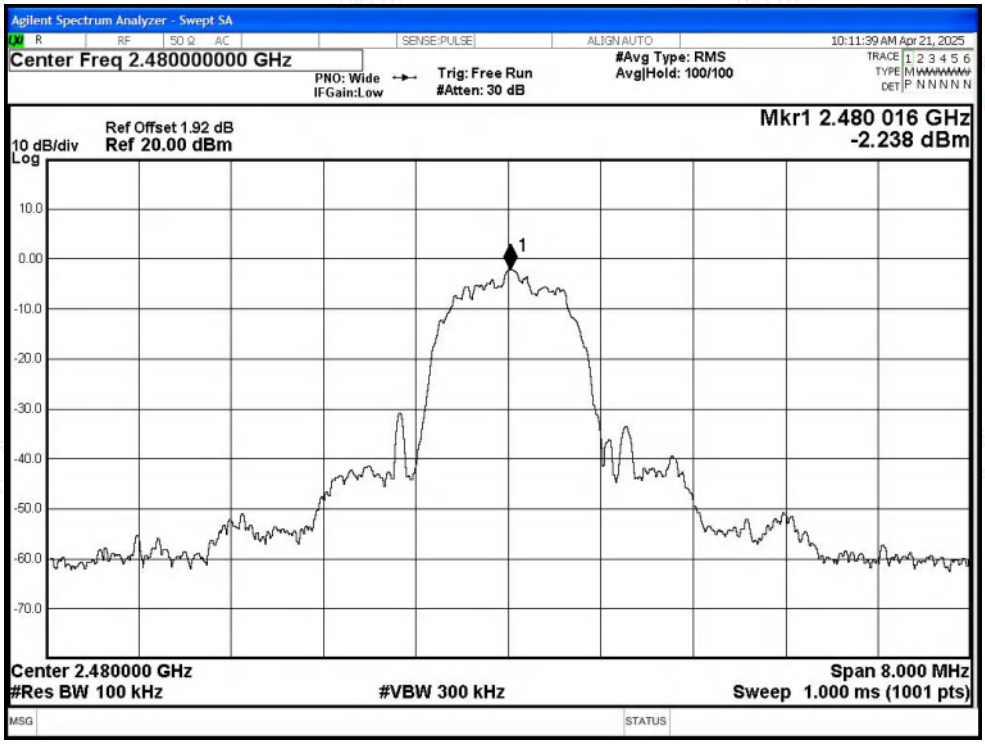
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref



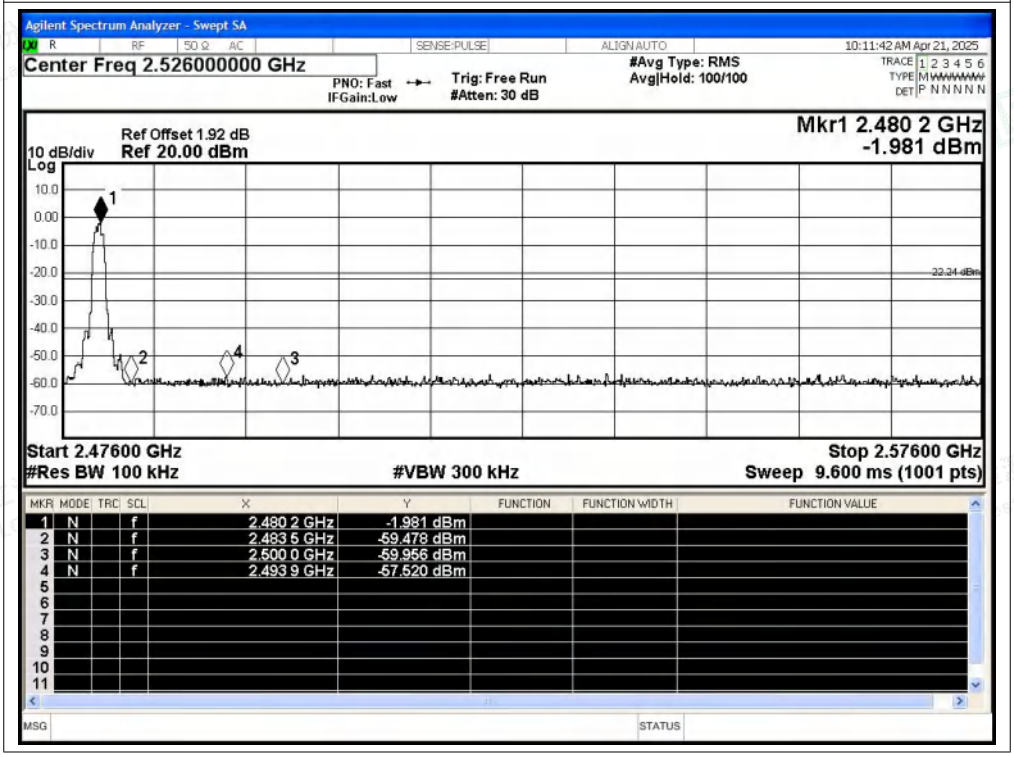
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission



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



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

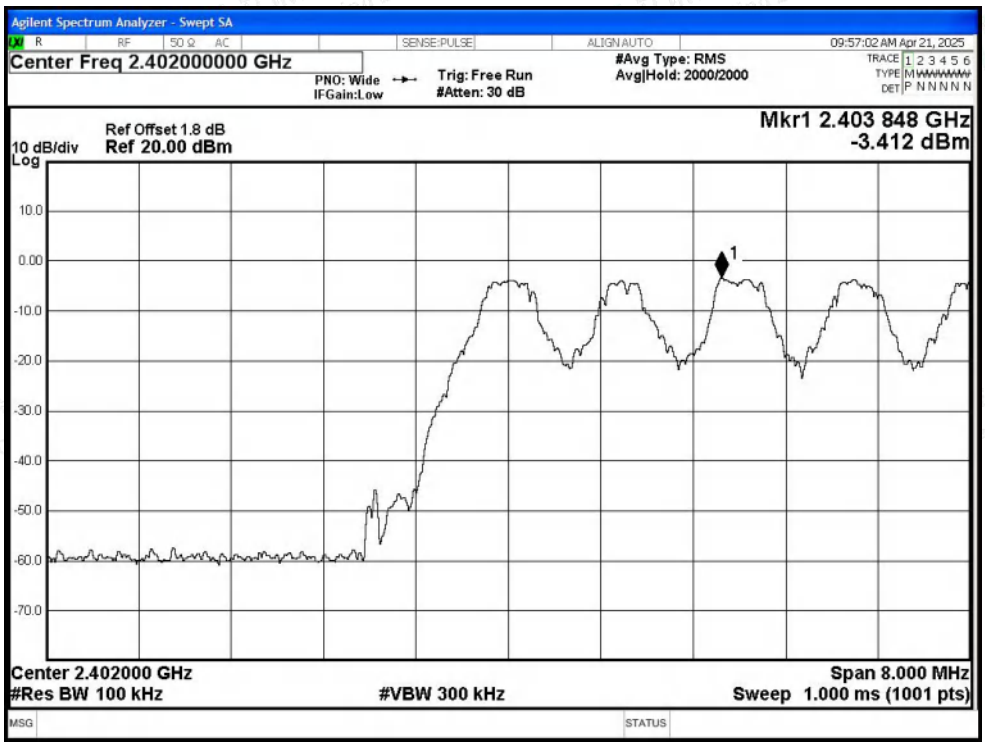


(Hopping)

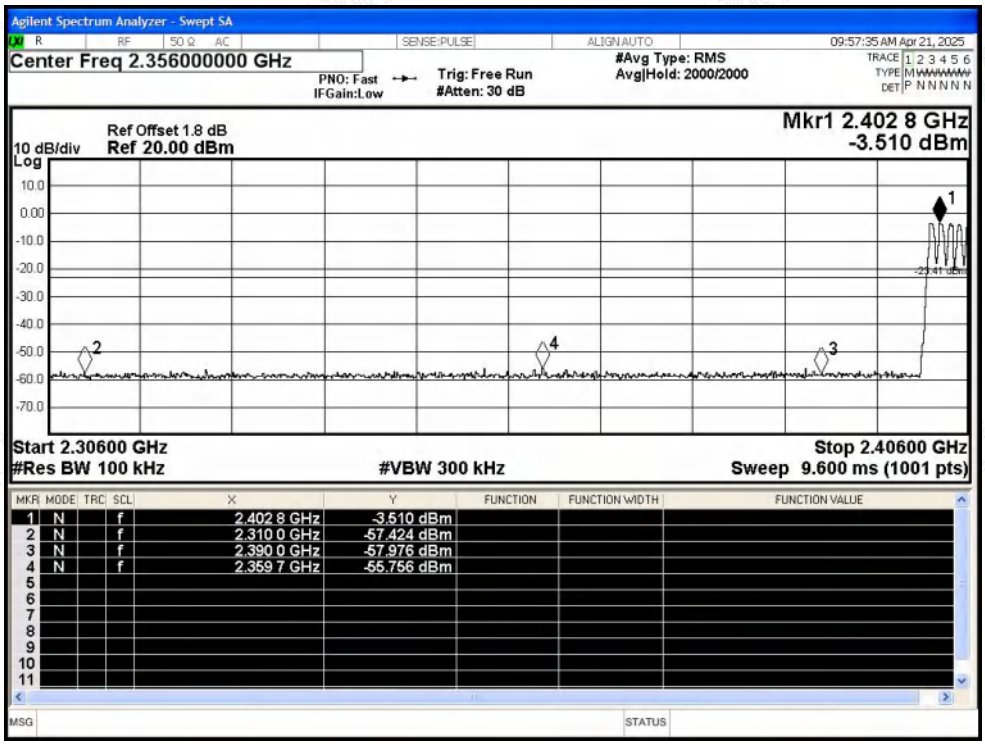
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-52.34	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-54.31	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-52.56	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-53.8	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-53.27	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-53.22	-20	Pass

Test Graphs

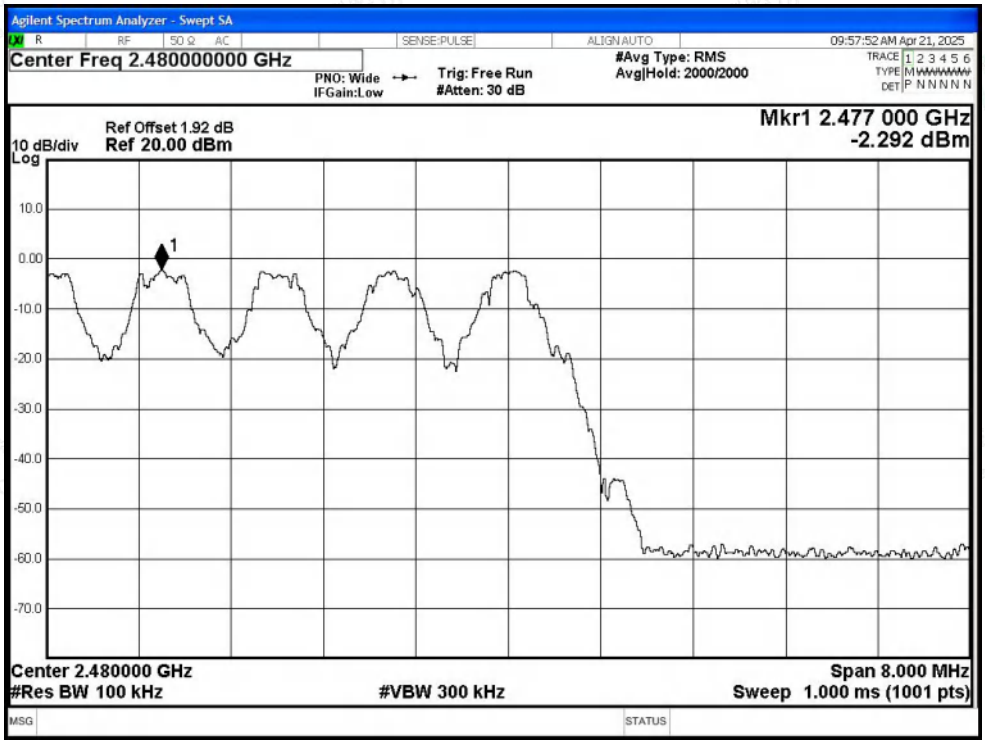
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



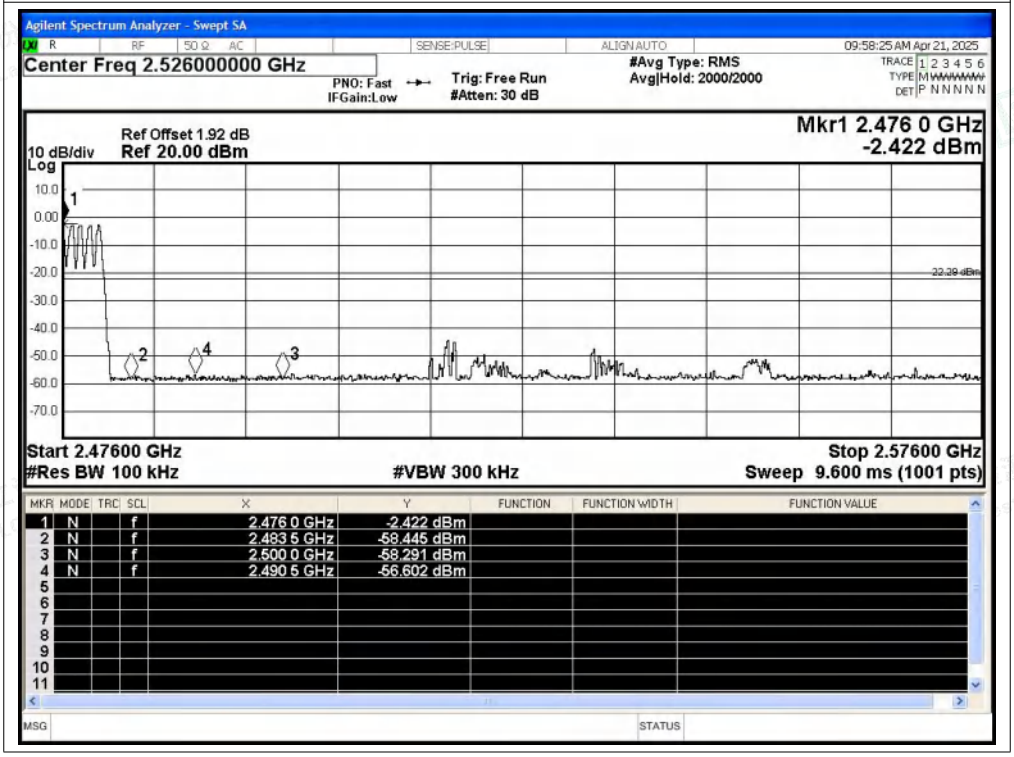
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



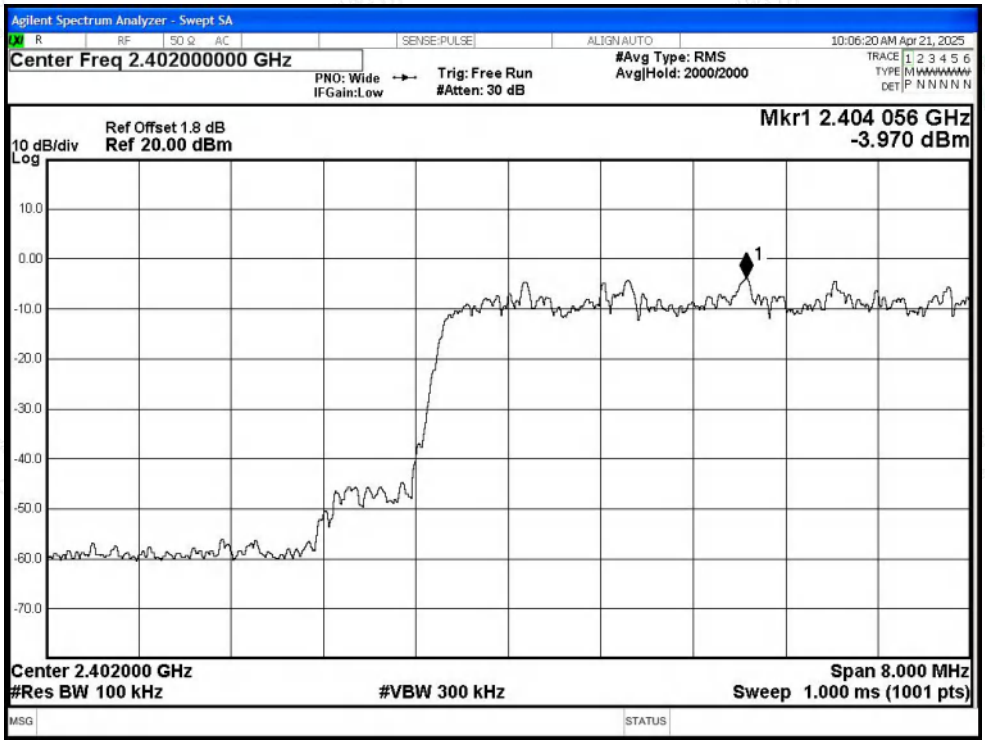
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



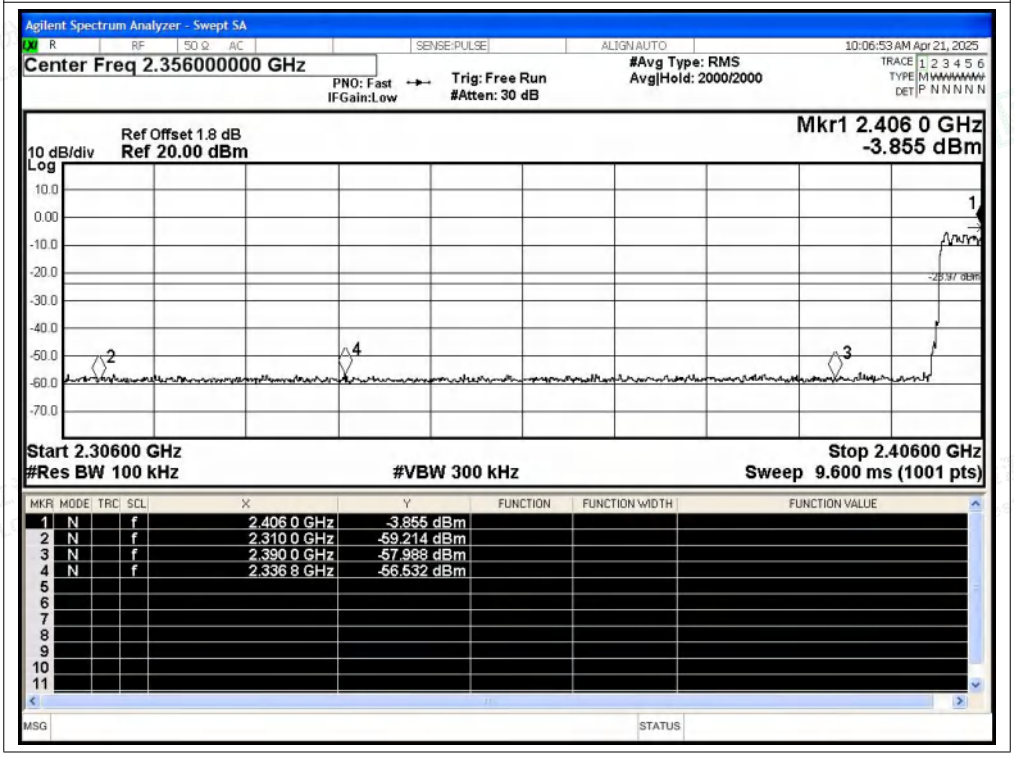
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission



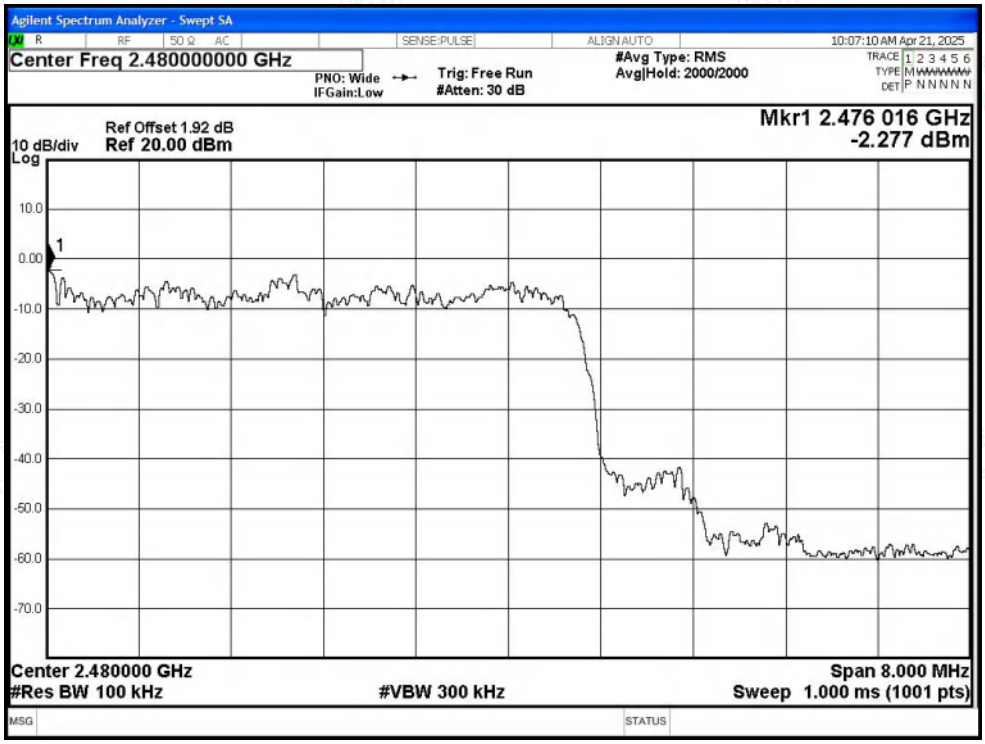
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



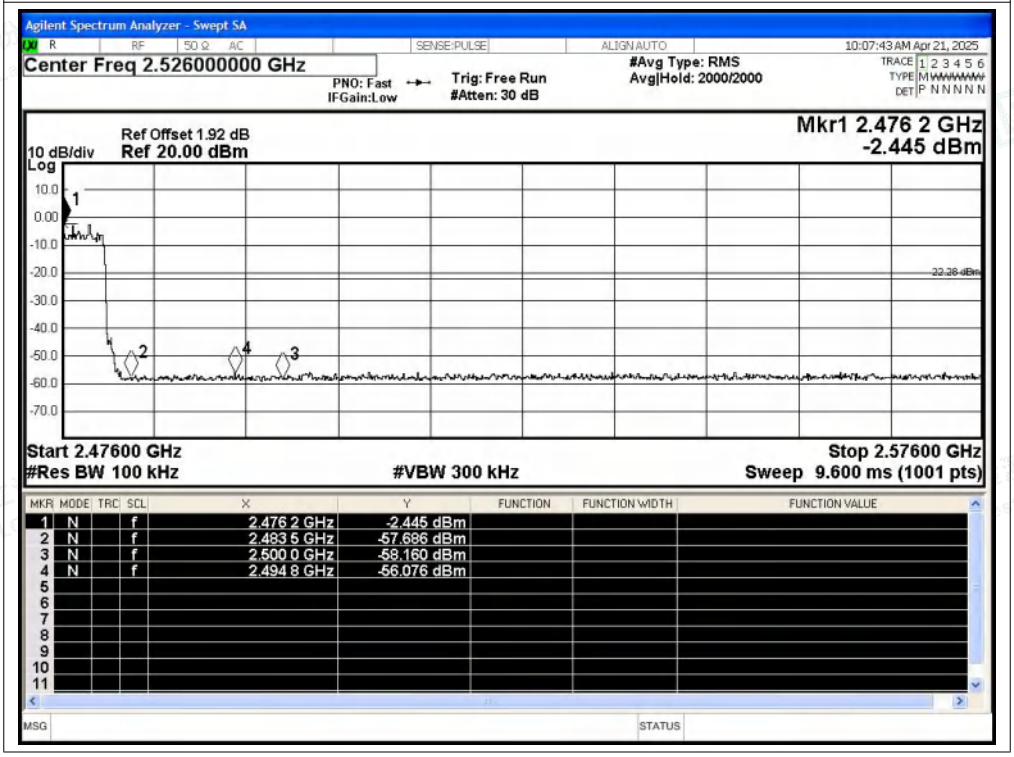
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission



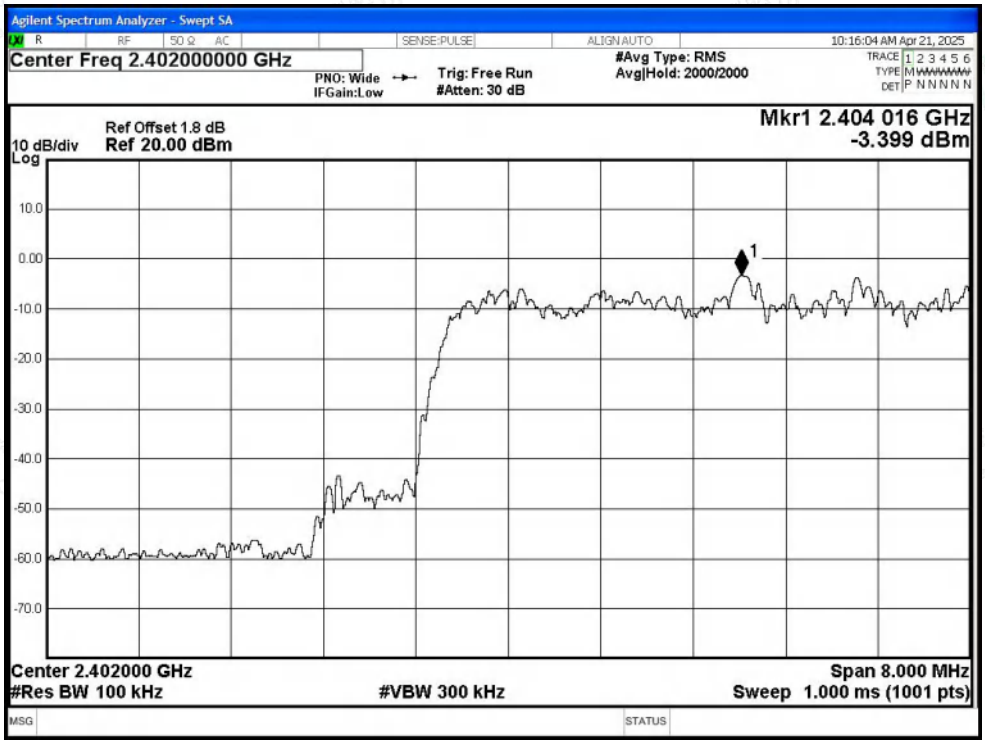
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



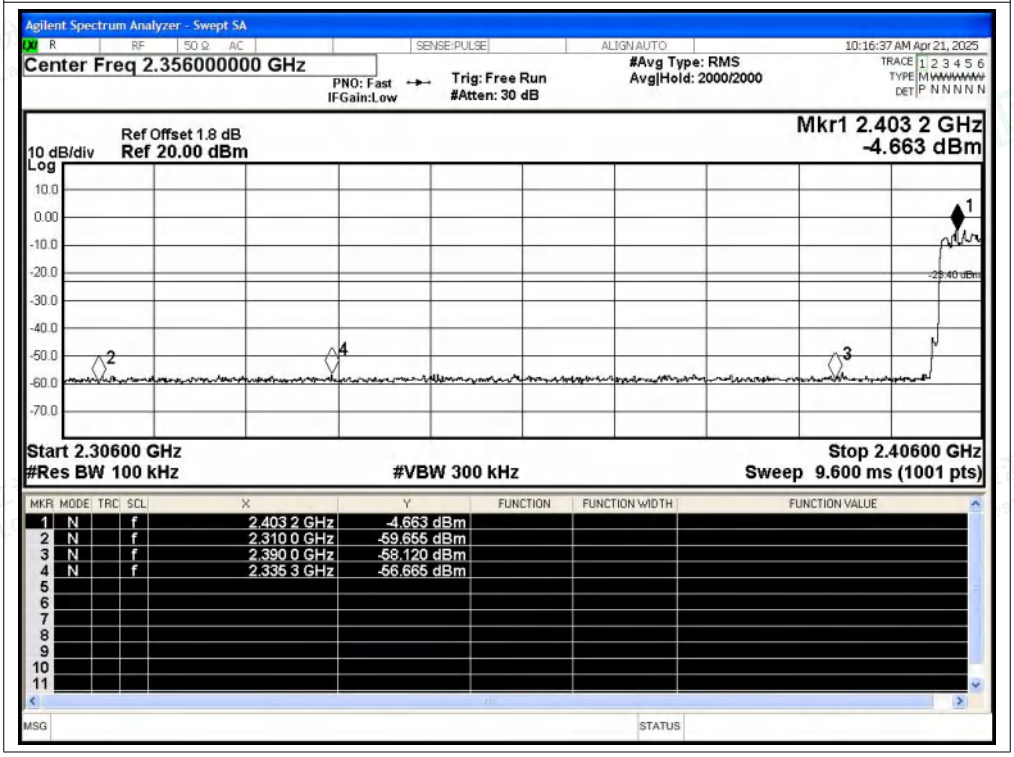
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission



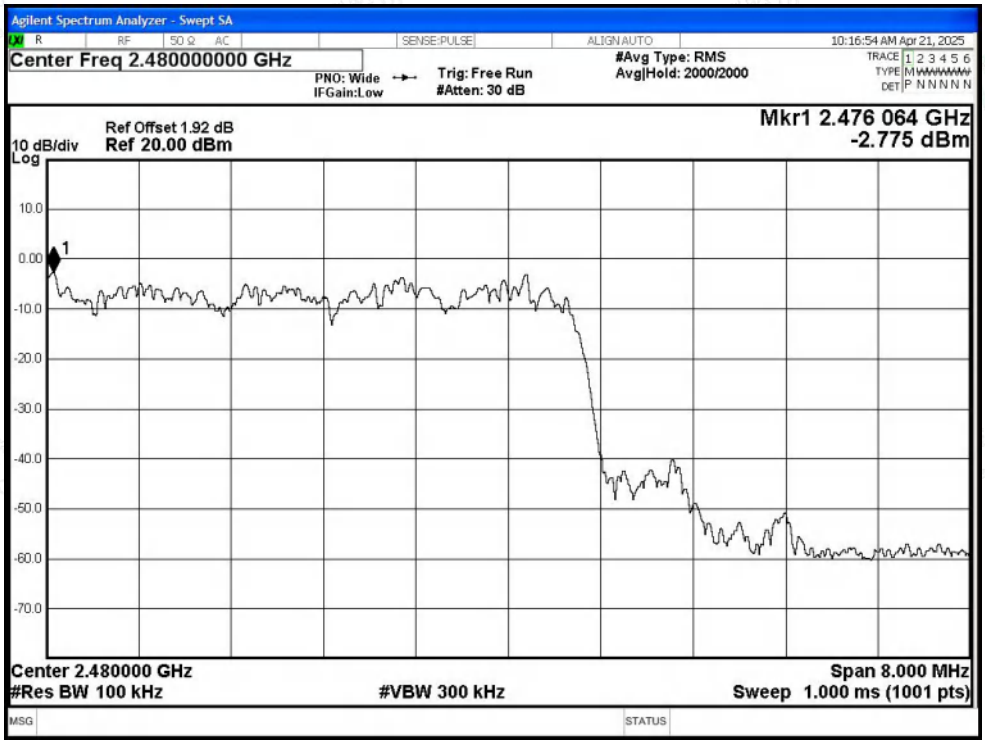
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref



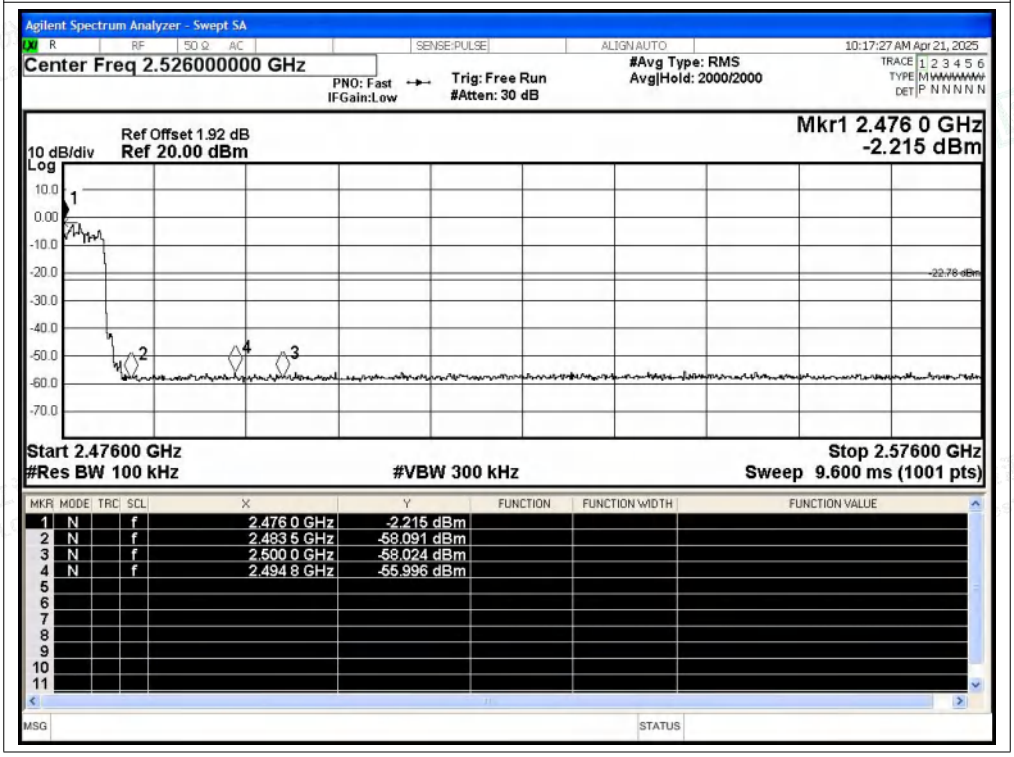
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Emission



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



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

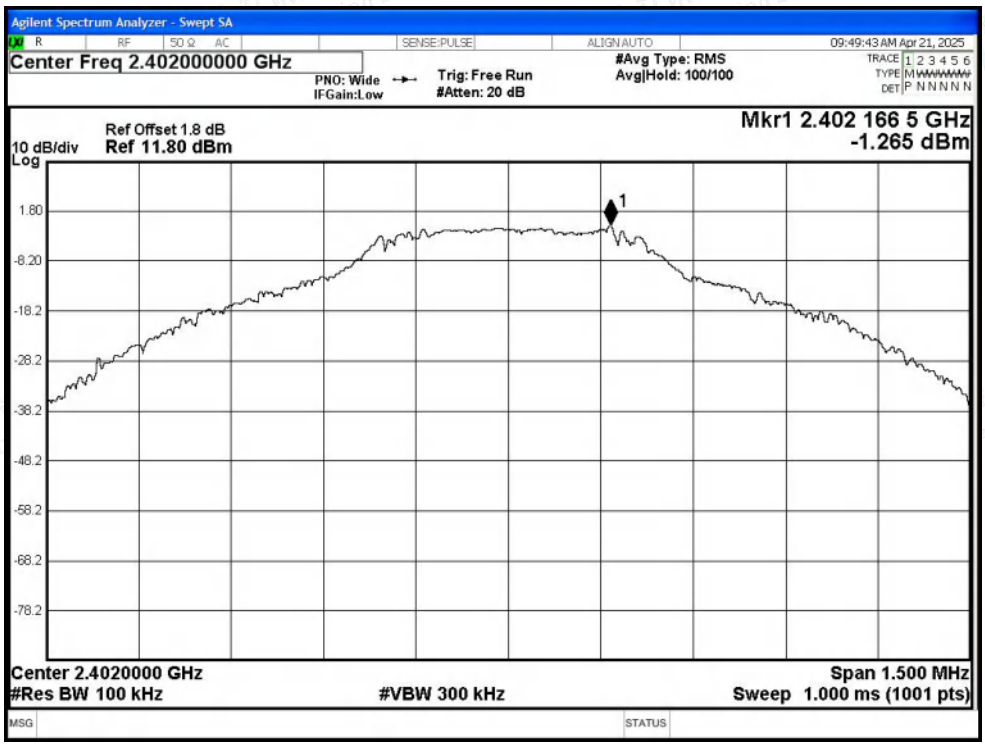


A.7 Conducted RF Spurious Emission

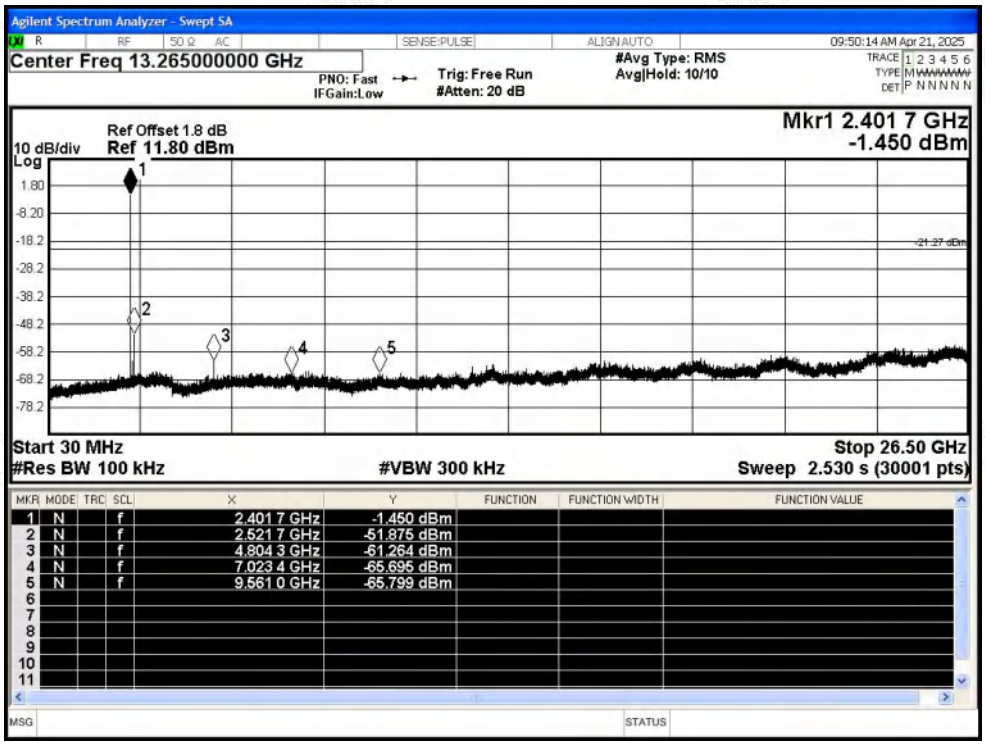
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-50.61	-20	Pass
NVNT	1-DH5	2441	Ant1	-53.87	-20	Pass
NVNT	1-DH5	2480	Ant1	-53.28	-20	Pass
NVNT	2-DH5	2402	Ant1	-54.2	-20	Pass
NVNT	2-DH5	2441	Ant1	-54.2	-20	Pass
NVNT	2-DH5	2480	Ant1	-52.49	-20	Pass
NVNT	3-DH5	2402	Ant1	-54.16	-20	Pass
NVNT	3-DH5	2441	Ant1	-54.19	-20	Pass
NVNT	3-DH5	2480	Ant1	-51.43	-20	Pass

Test Graphs

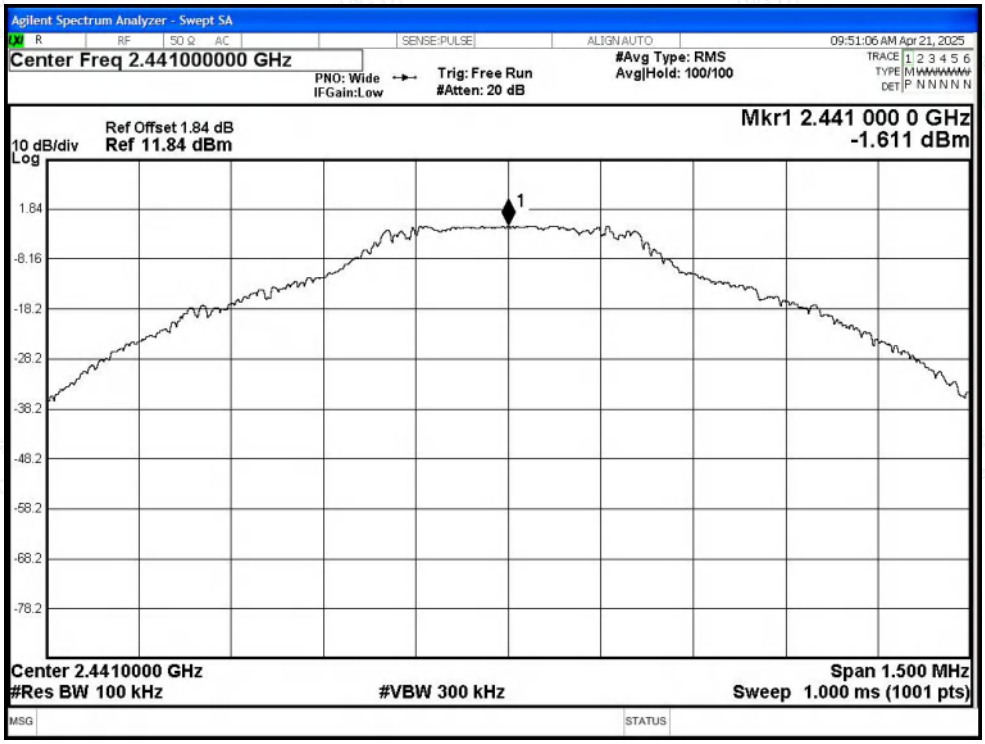
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



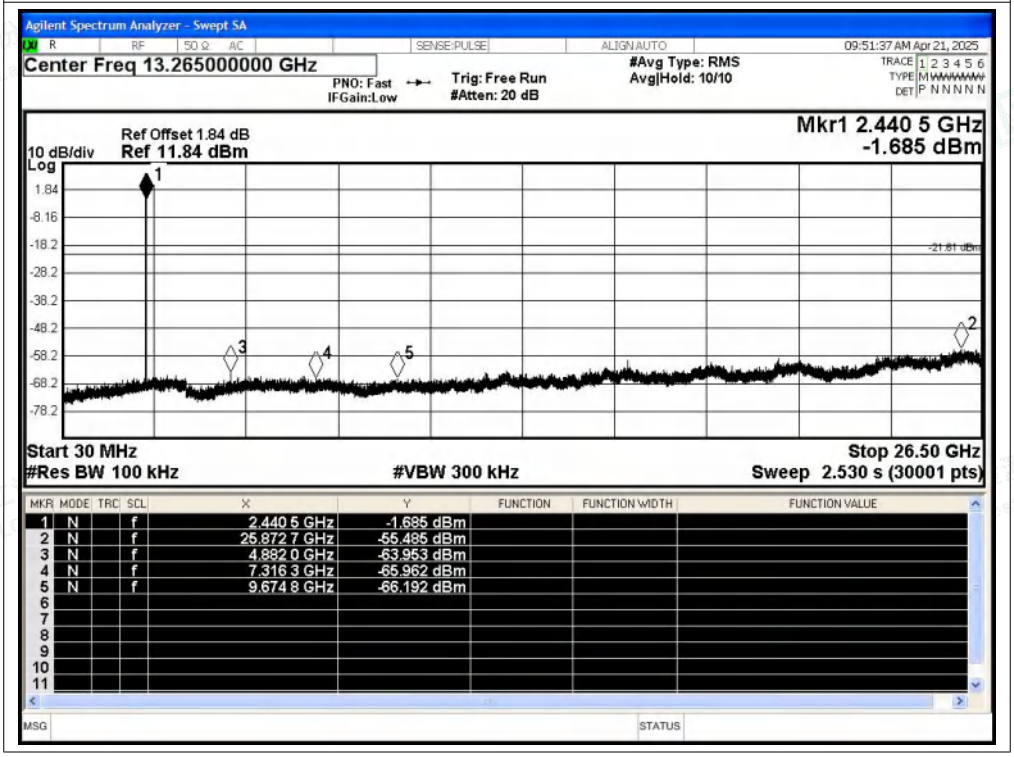
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



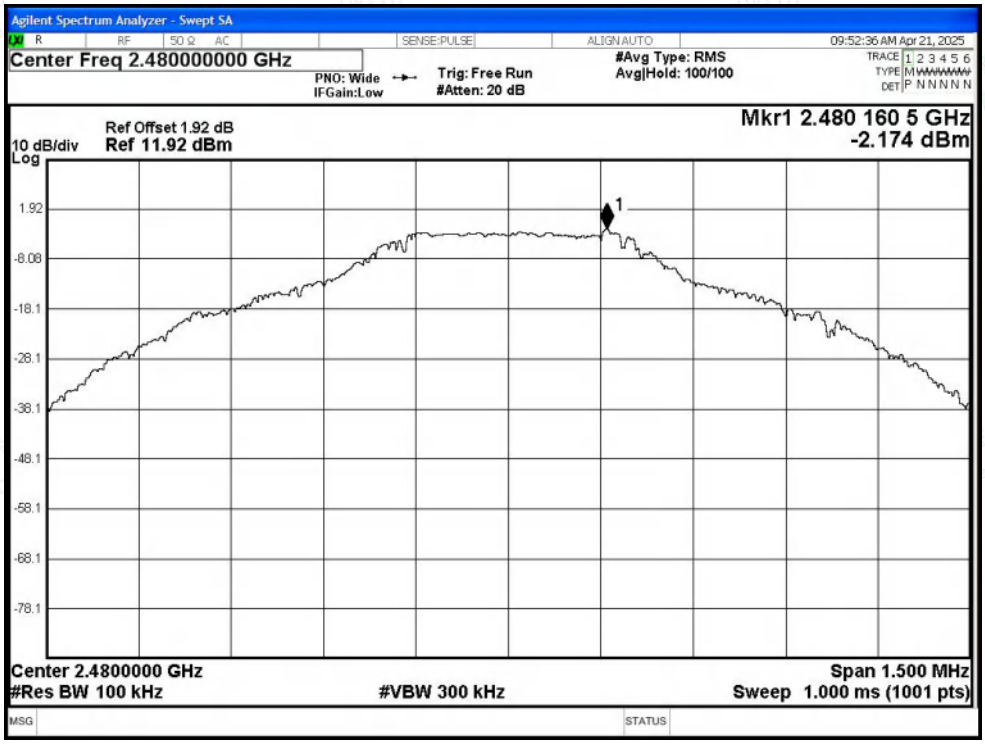
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



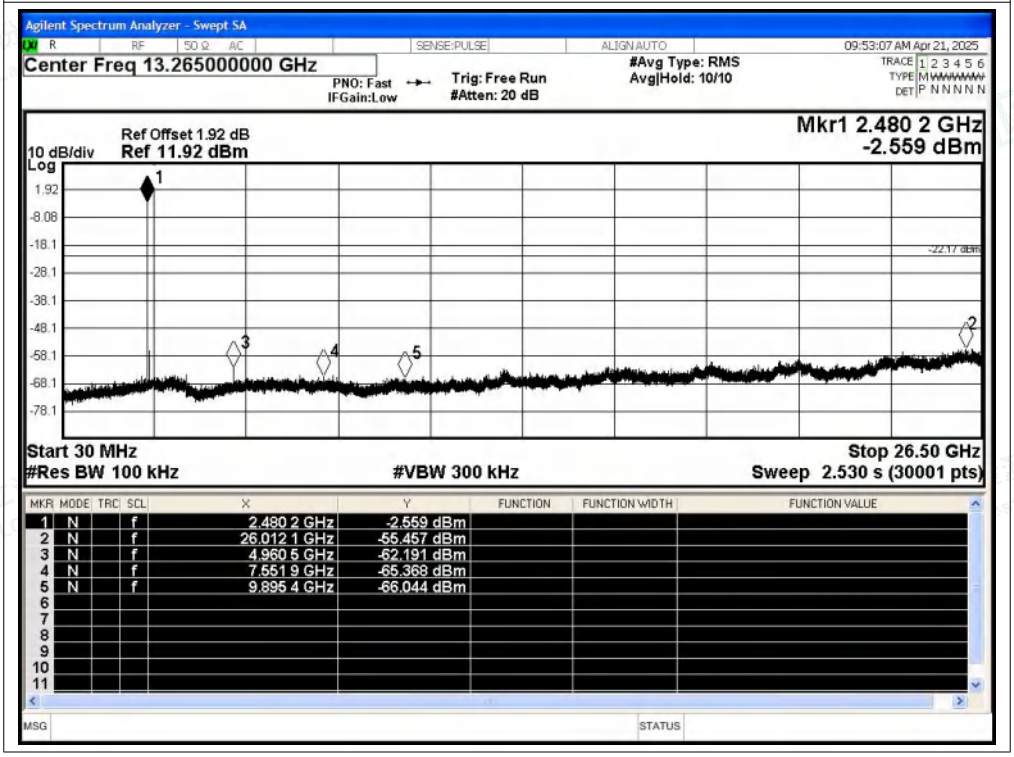
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



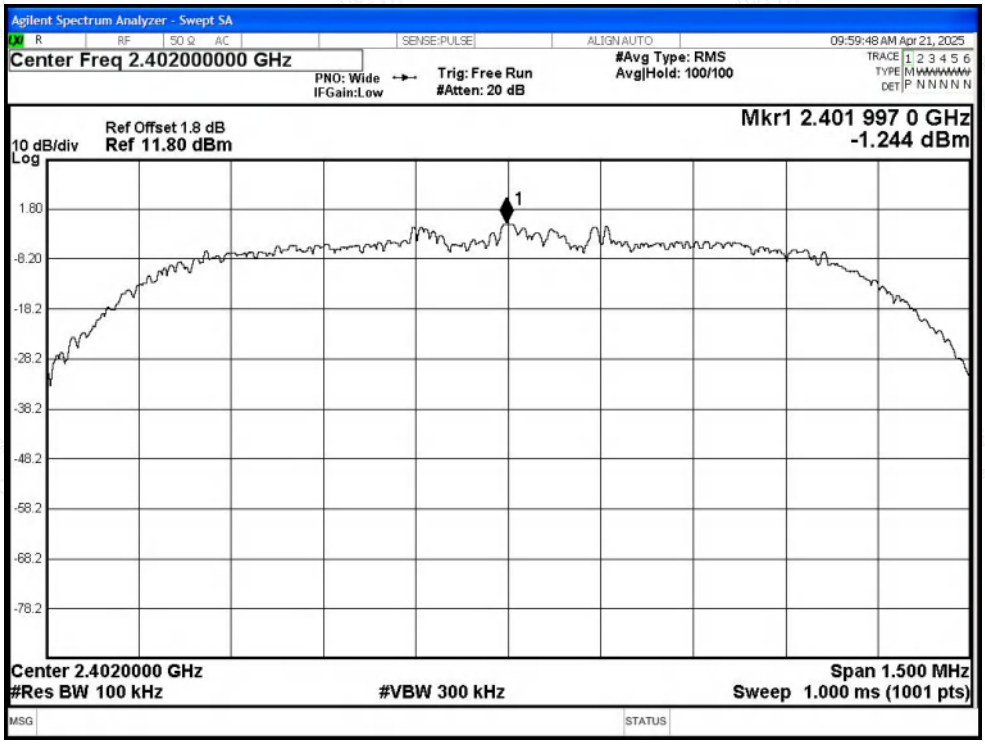
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



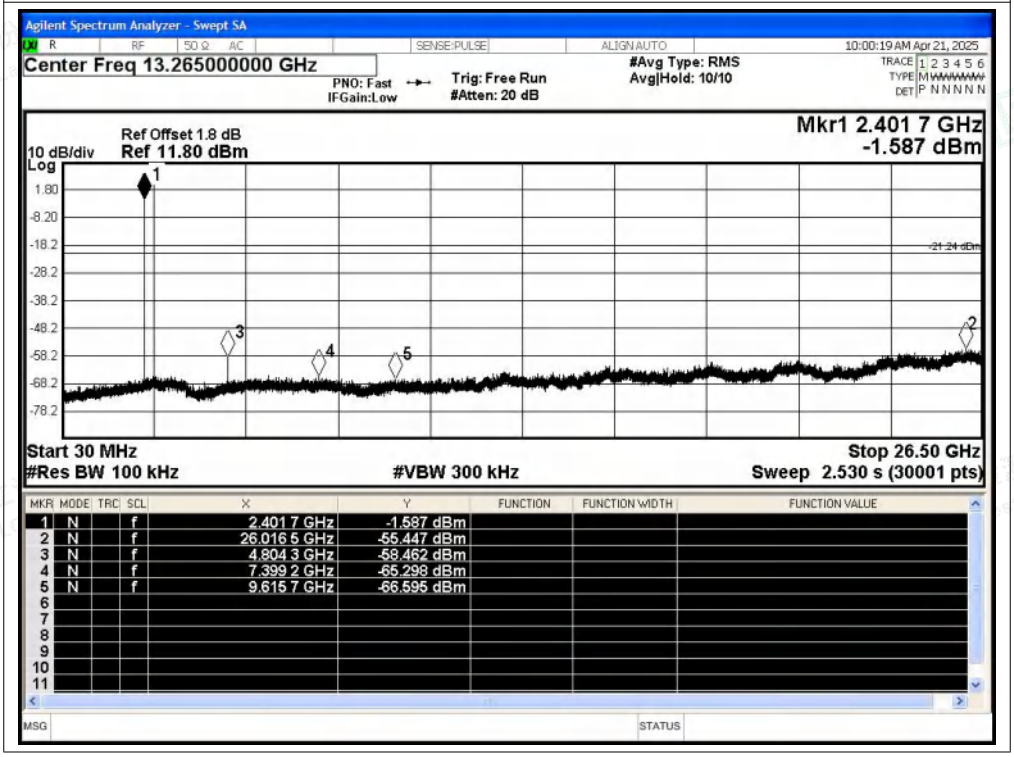
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



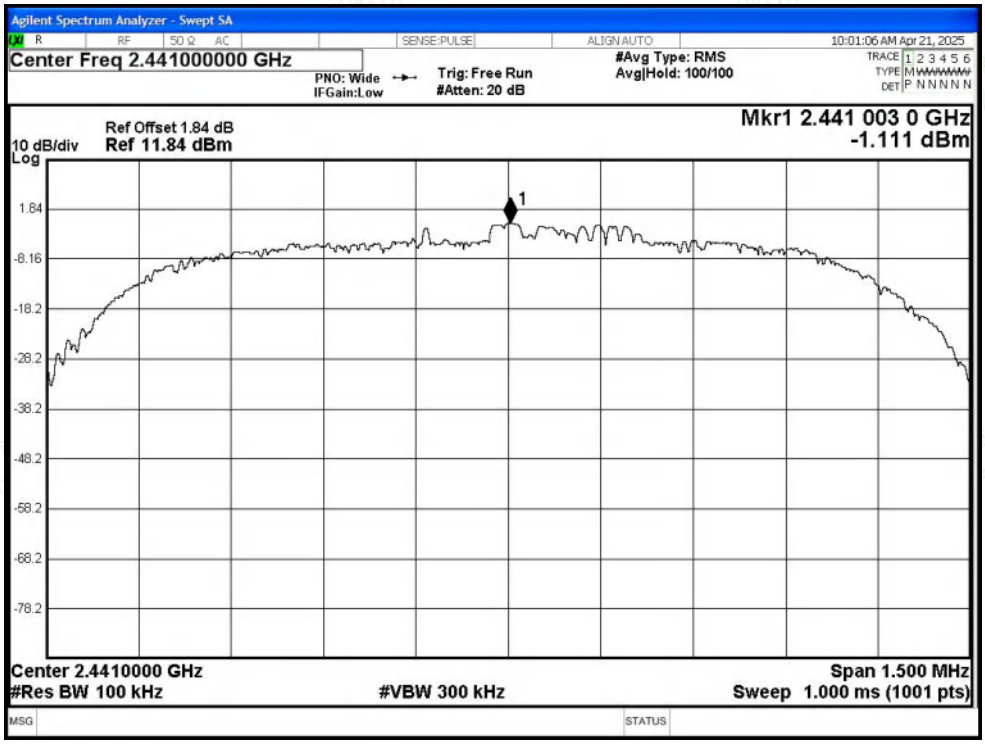
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



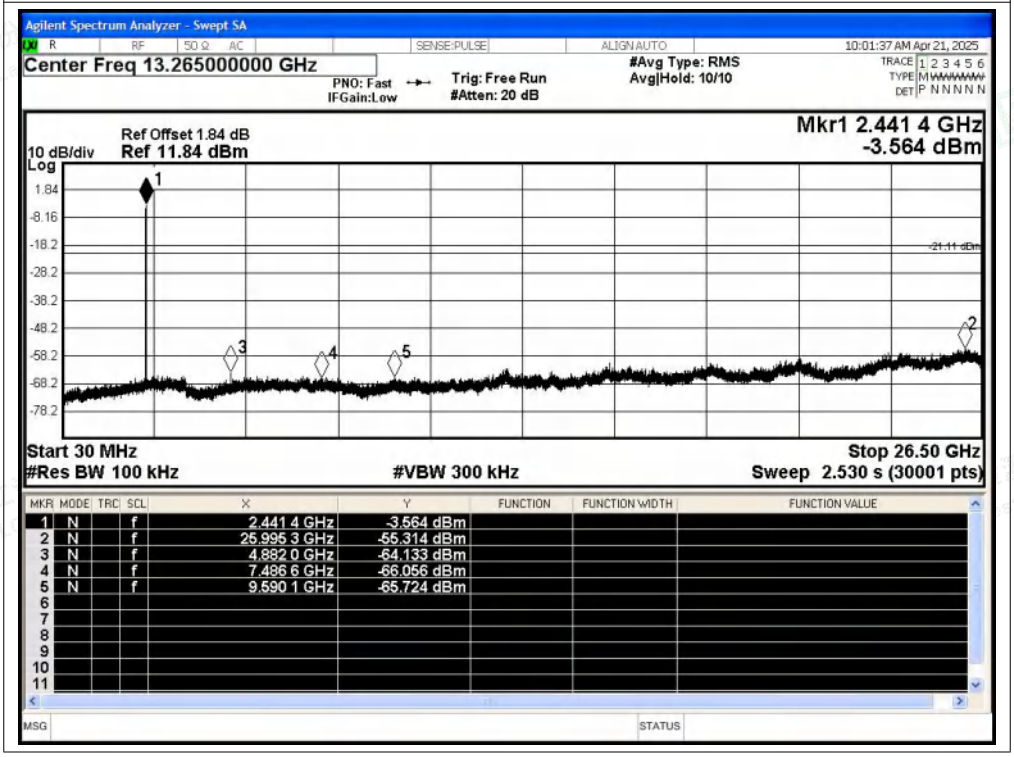
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



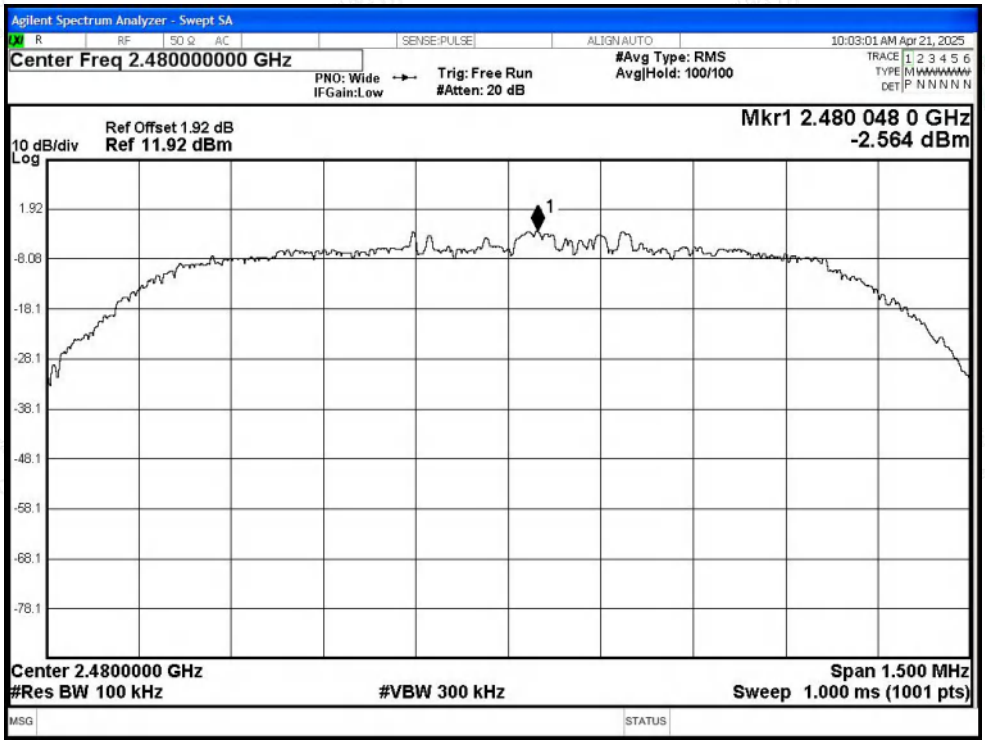
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



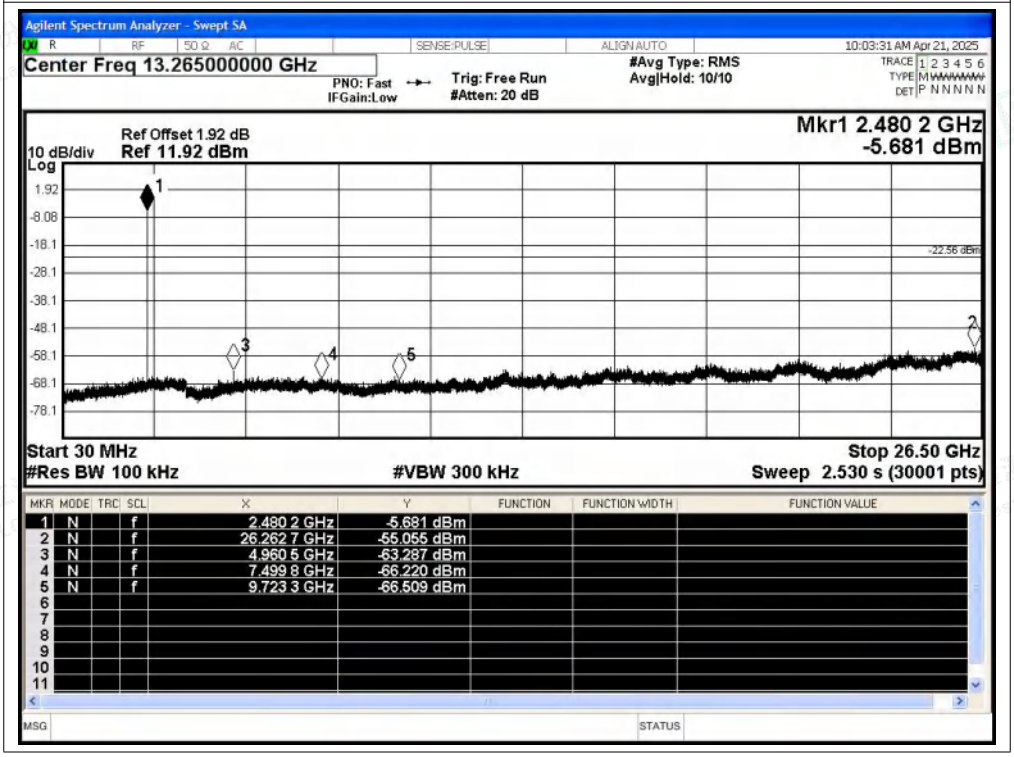
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



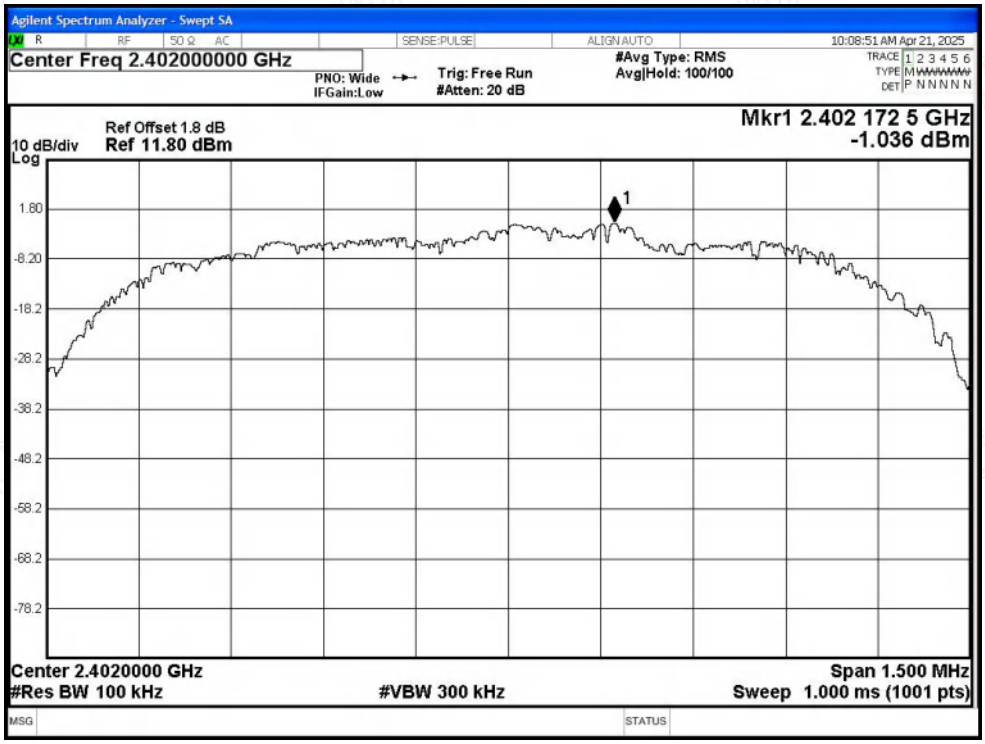
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



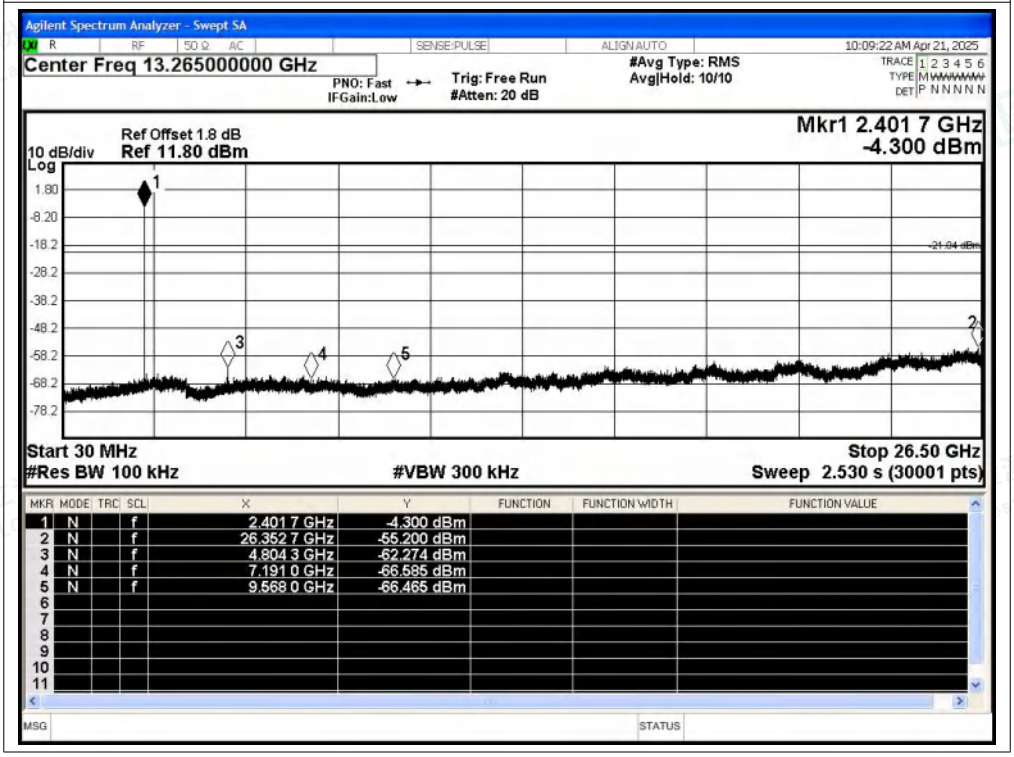
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission



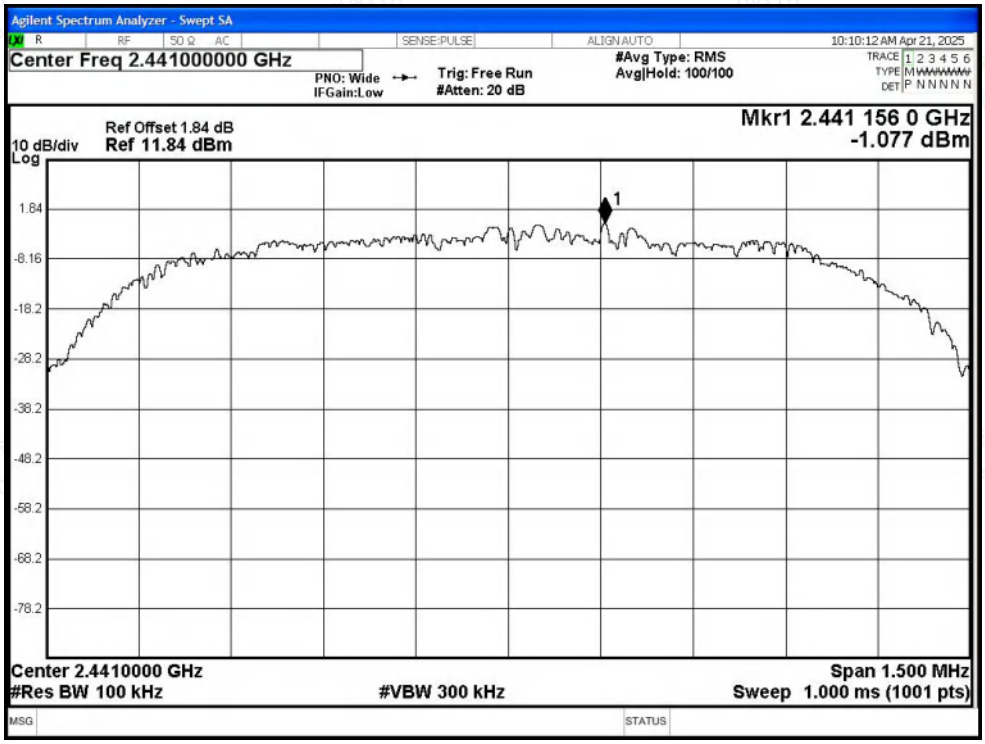
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref



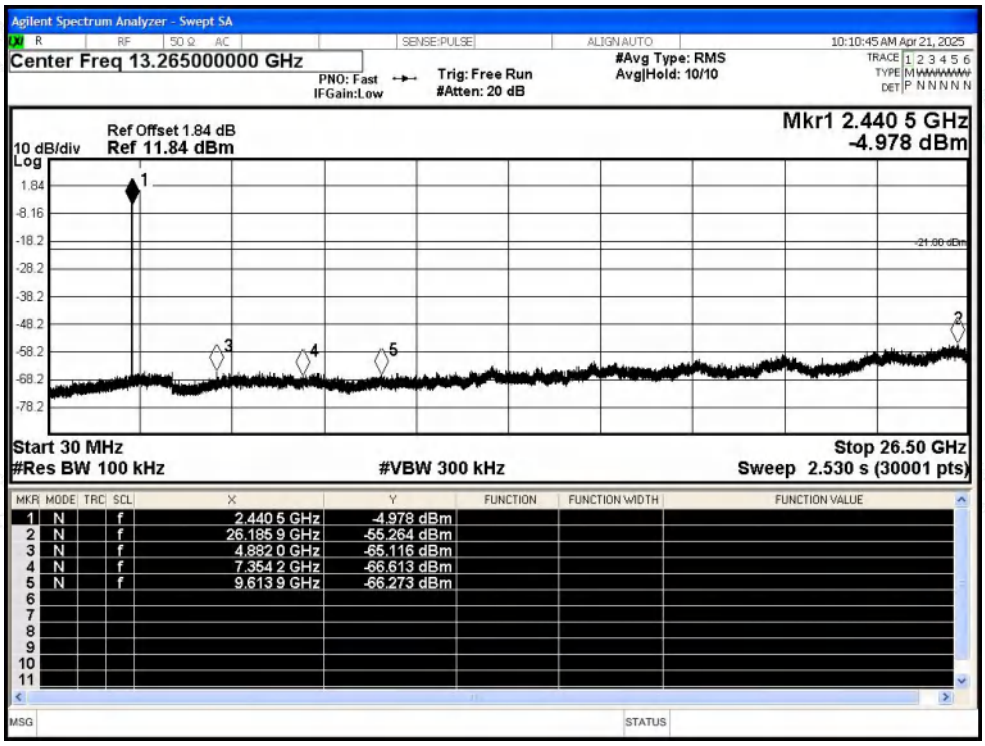
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission



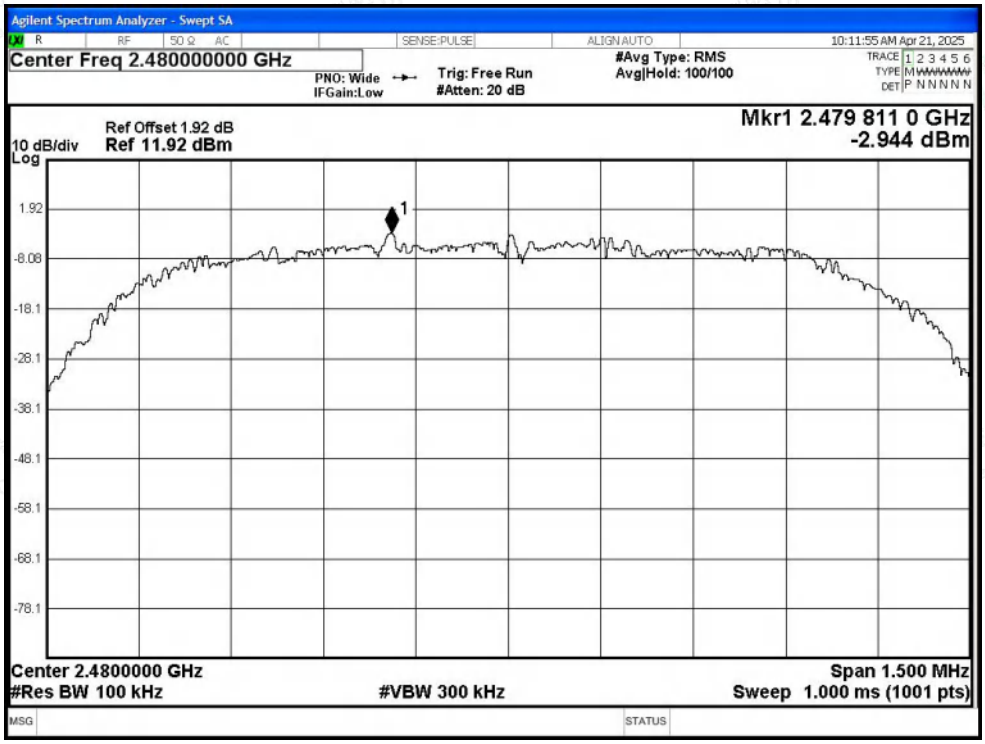
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



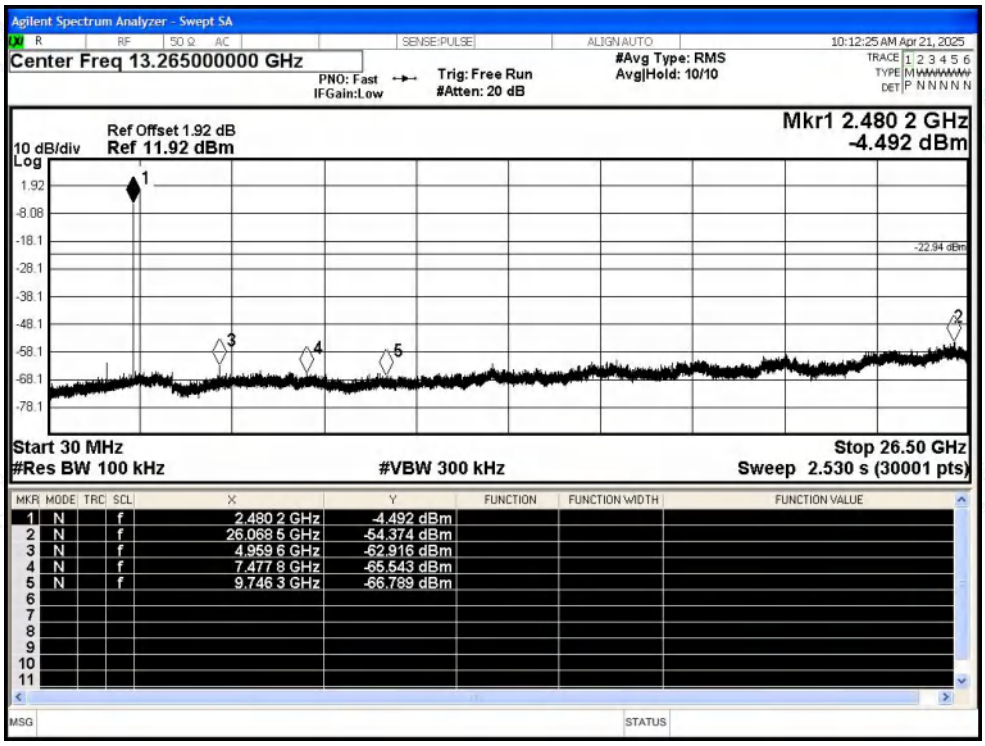
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission

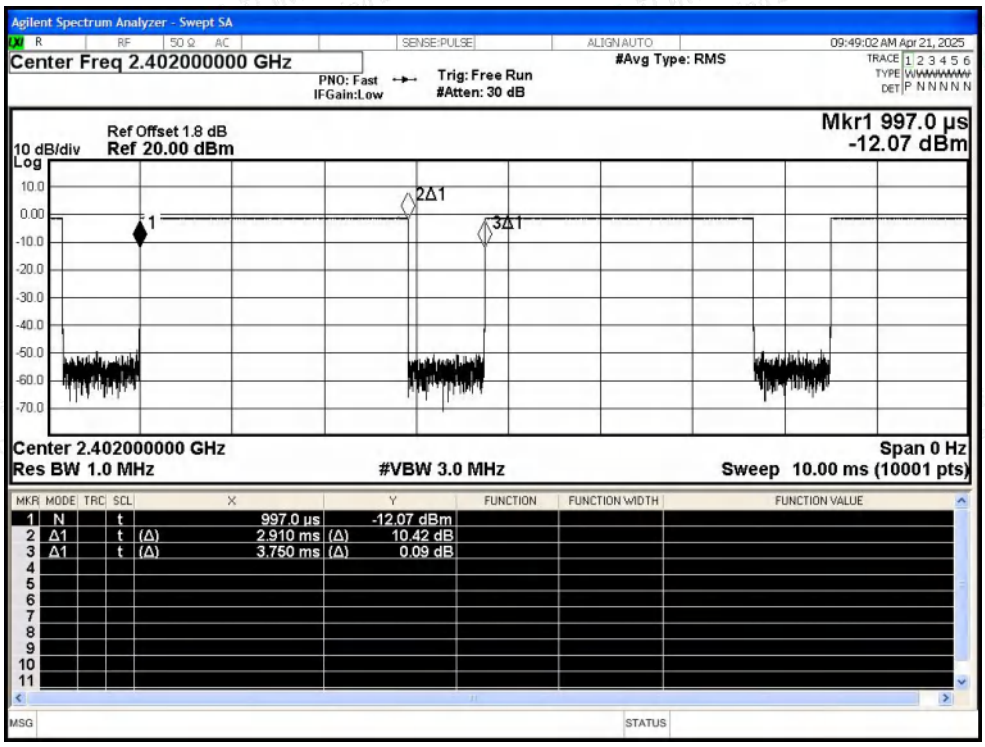


A.8 Duty Cycle

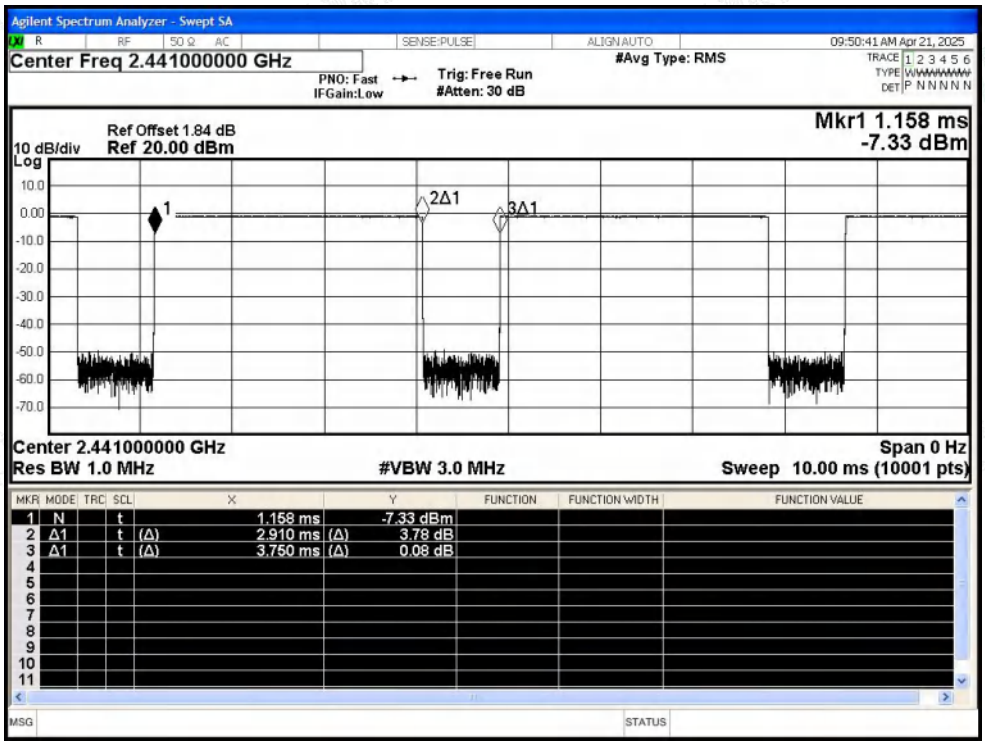
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	77.6	1.1	0.34
NVNT	1-DH5	2441	Ant1	77.6	1.1	0.34
NVNT	1-DH5	2480	Ant1	77.6	1.1	0.34
NVNT	2-DH5	2402	Ant1	77.28	1.12	0.35
NVNT	2-DH5	2441	Ant1	77.28	1.12	0.35
NVNT	2-DH5	2480	Ant1	77.28	1.12	0.35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

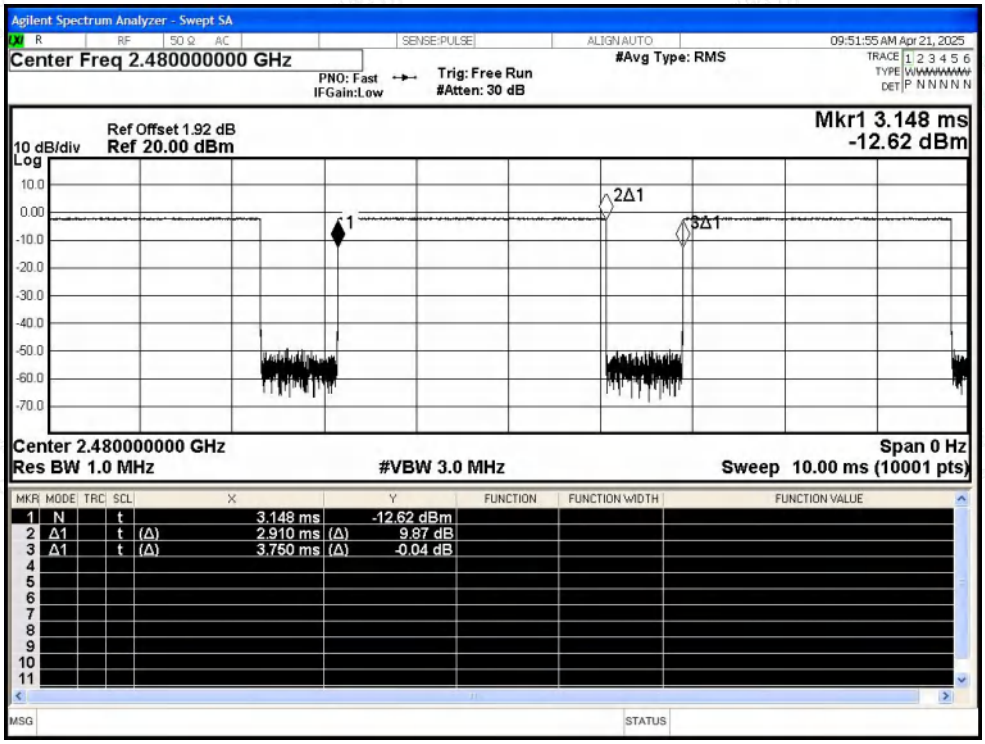
Duty Cycle NVNT 1-DH5 2402MHz Ant1



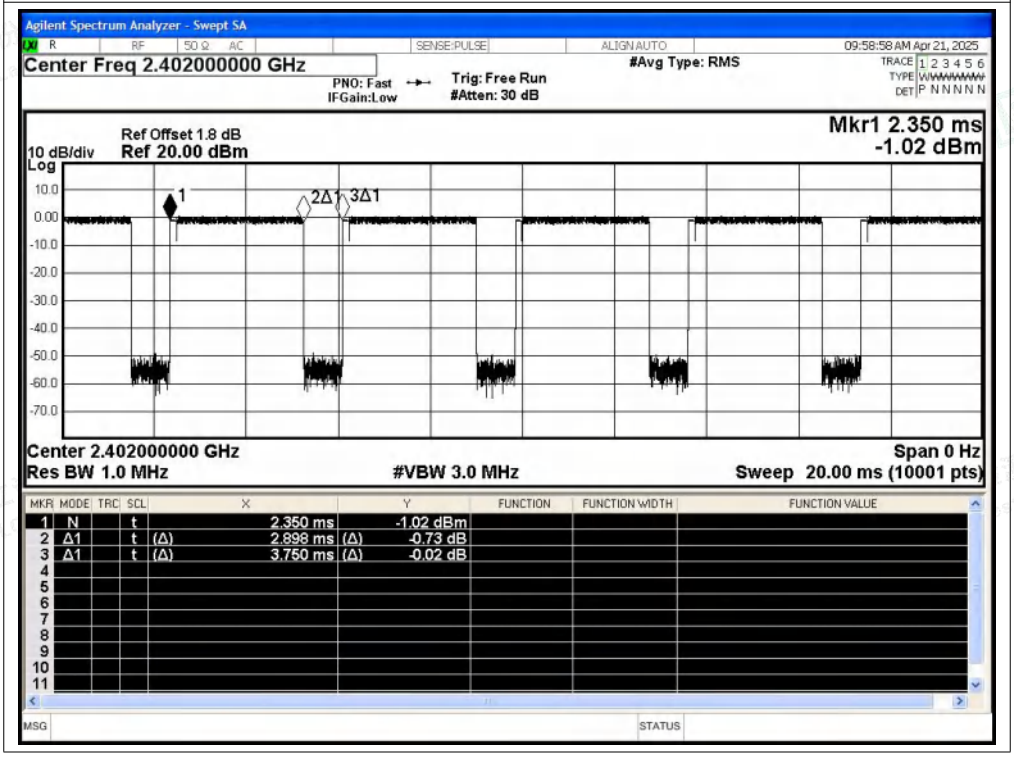
Duty Cycle NVNT 1-DH5 2441MHz Ant1



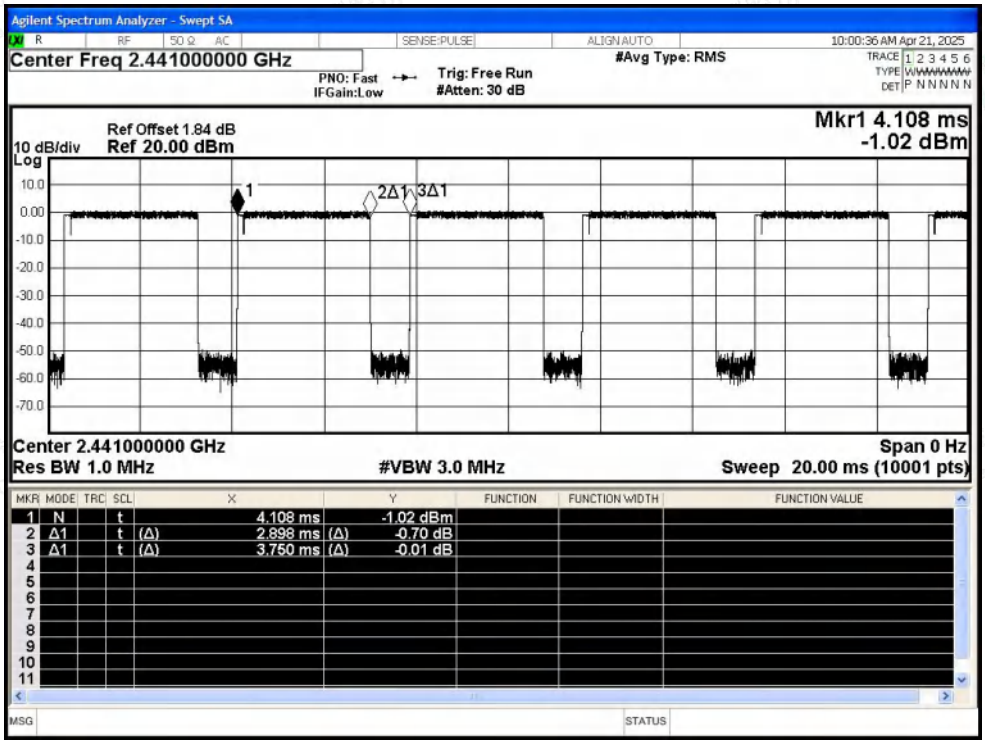
Duty Cycle NVNT 1-DH5 2480MHz Ant1



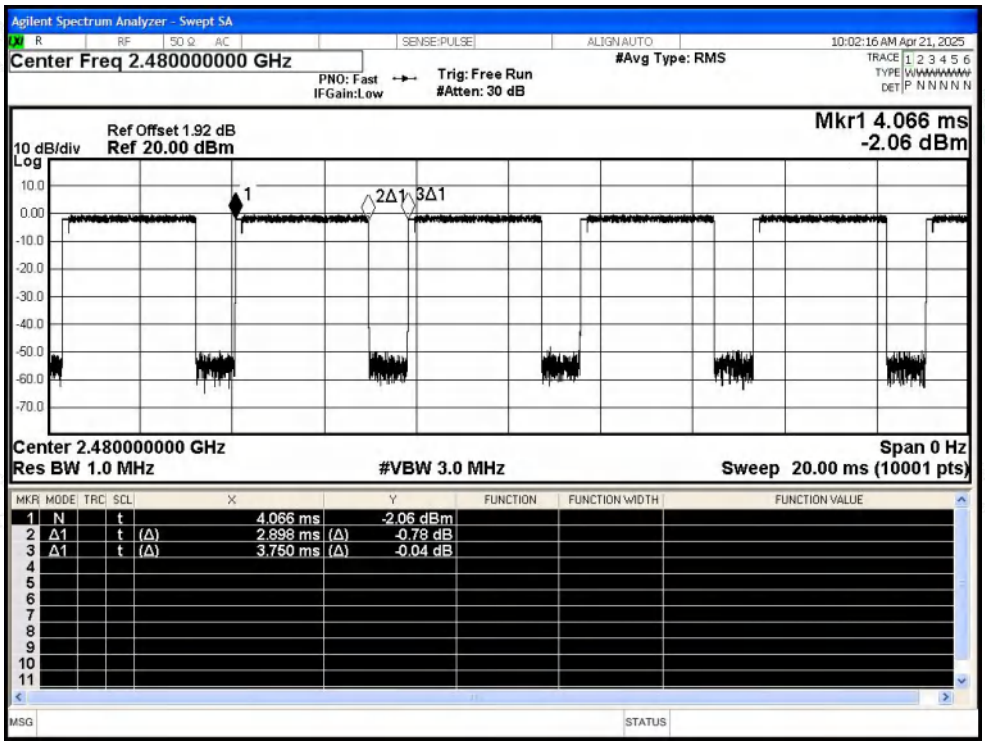
Duty Cycle NVNT 2-DH5 2402MHz Ant1



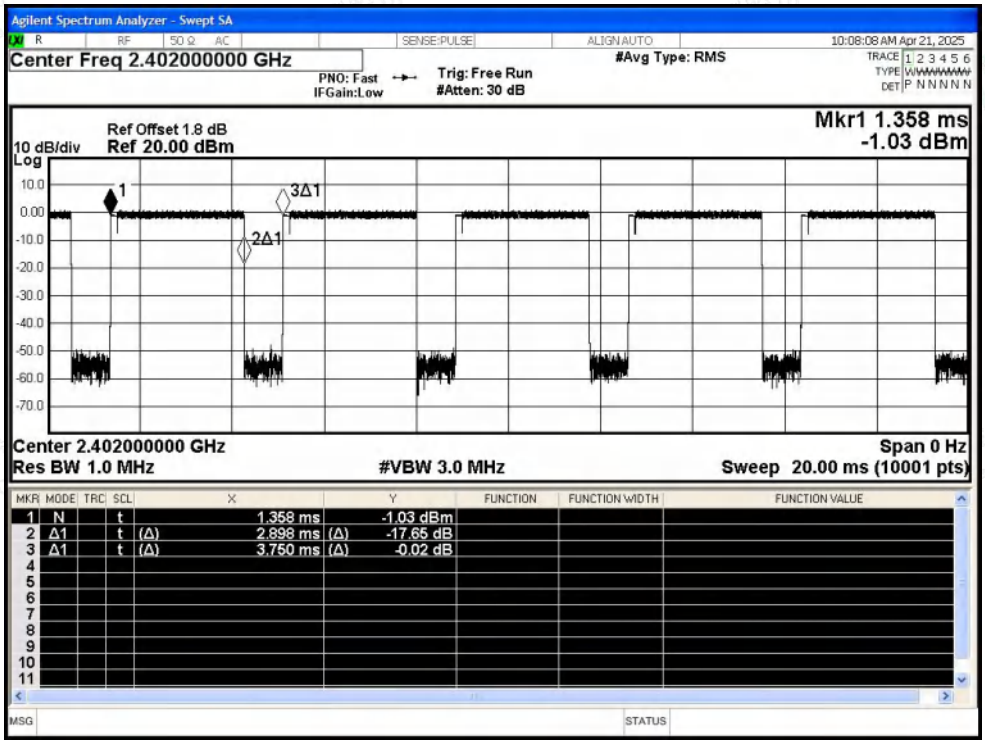
Duty Cycle NVNT 2-DH5 2441MHz Ant1



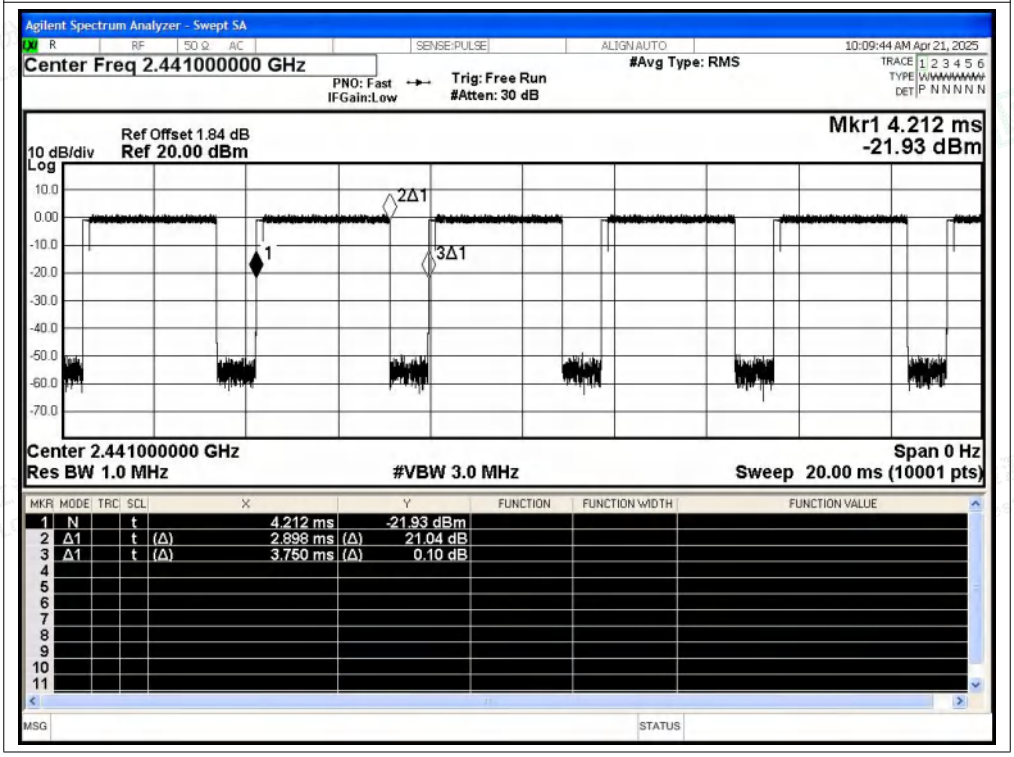
Duty Cycle NVNT 2-DH5 2480MHz Ant1



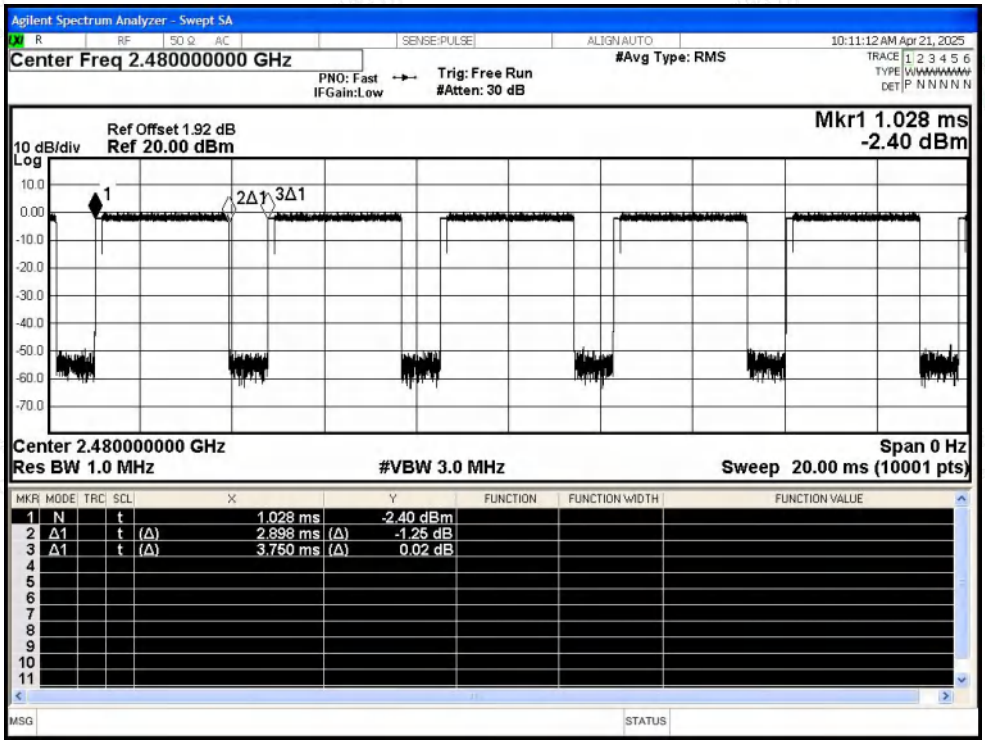
Duty Cycle NVNT 3-DH5 2402MHz Ant1



Duty Cycle NVNT 3-DH5 2441MHz Ant1



Duty Cycle NVNT 3-DH5 2480MHz Ant1

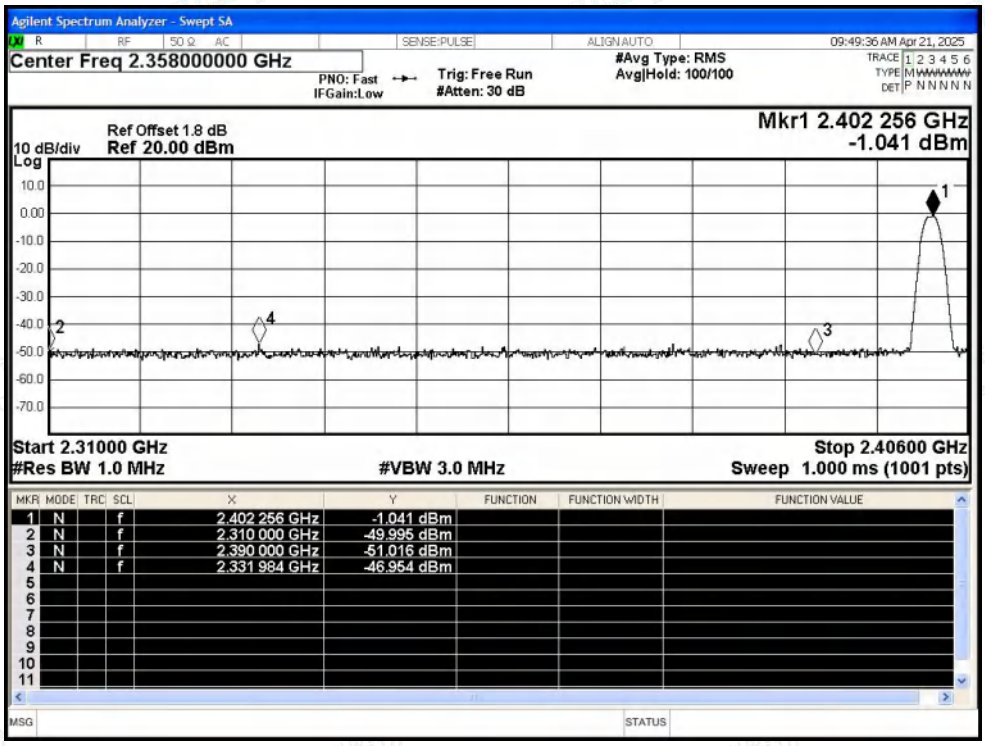


A.9 Restrict Band

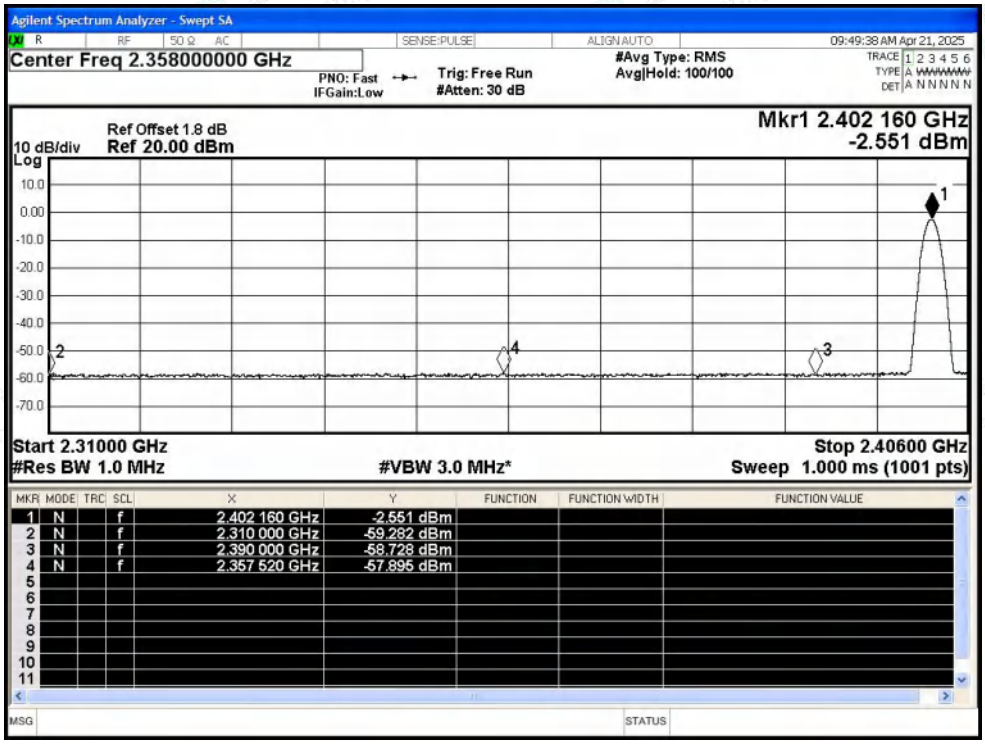
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-50	2	-	47.26	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-59.28	2	1.1	39.08	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2331.984	-46.95	2	-	50.31	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2357.52	-57.9	2	1.1	40.46	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-51.02	2	-	46.24	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-58.73	2	1.1	39.63	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-51.08	2	-	46.18	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	2485.144	-45.62	2	-	51.64	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.872	-57.31	2	1.1	41.05	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-48.94	2	-	48.32	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-58.95	2	1.1	39.41	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-50.77	2	-	46.49	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-58.48	2	1.12	39.9	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2369.136	-47.78	2	-	49.48	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2367.696	-57.9	2	1.12	40.48	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-50.3	2	-	46.96	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-58.58	2	1.12	39.8	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-48.26	2	-	49	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-57.67	2	1.12	40.71	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2486.704	-45.2	2	-	52.06	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.752	-57.06	2	1.12	41.32	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-49.56	2	-	47.7	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-57.98	2	1.12	40.4	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-50.47	2	-	46.79	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-59.22	2	1.12	39.16	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2380.272	-47.04	2	-	50.22	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2380.656	-58.01	2	1.12	40.37	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-50.76	2	-	46.5	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-58.67	2	1.12	39.71	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-47.37	2	-	49.89	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-57.33	2	1.12	41.05	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2484.352	-45.95	2	-	51.31	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.536	-57.1	2	1.12	41.28	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-51.03	2	-	46.23	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-58.02	2	1.12	40.36	Average	54	Pass

Test Graphs

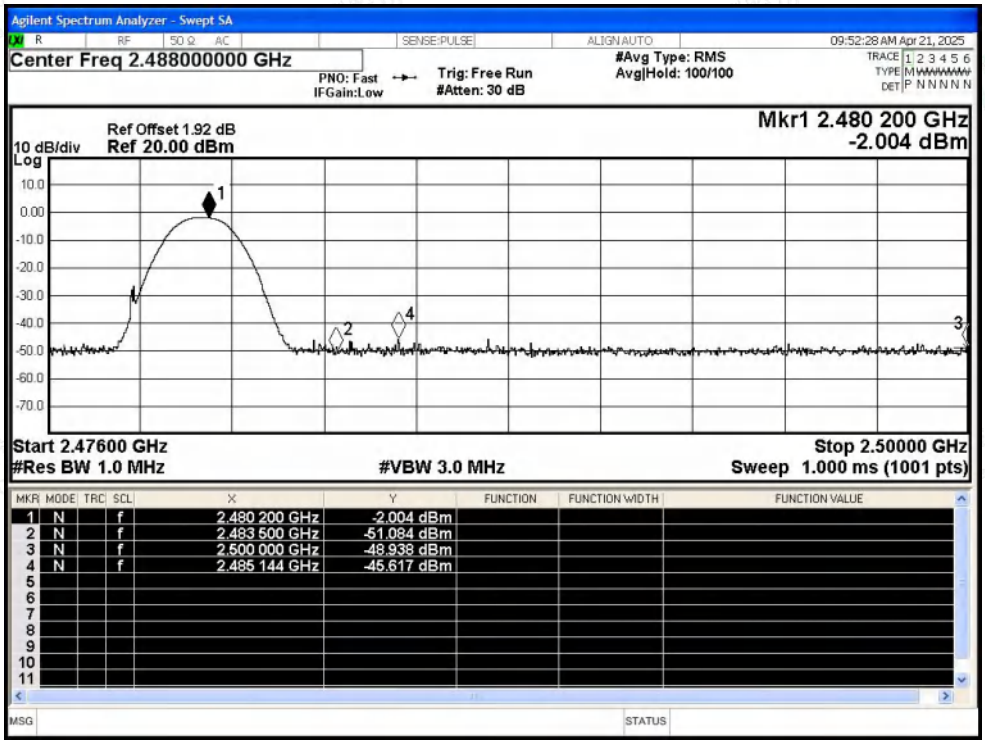
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak



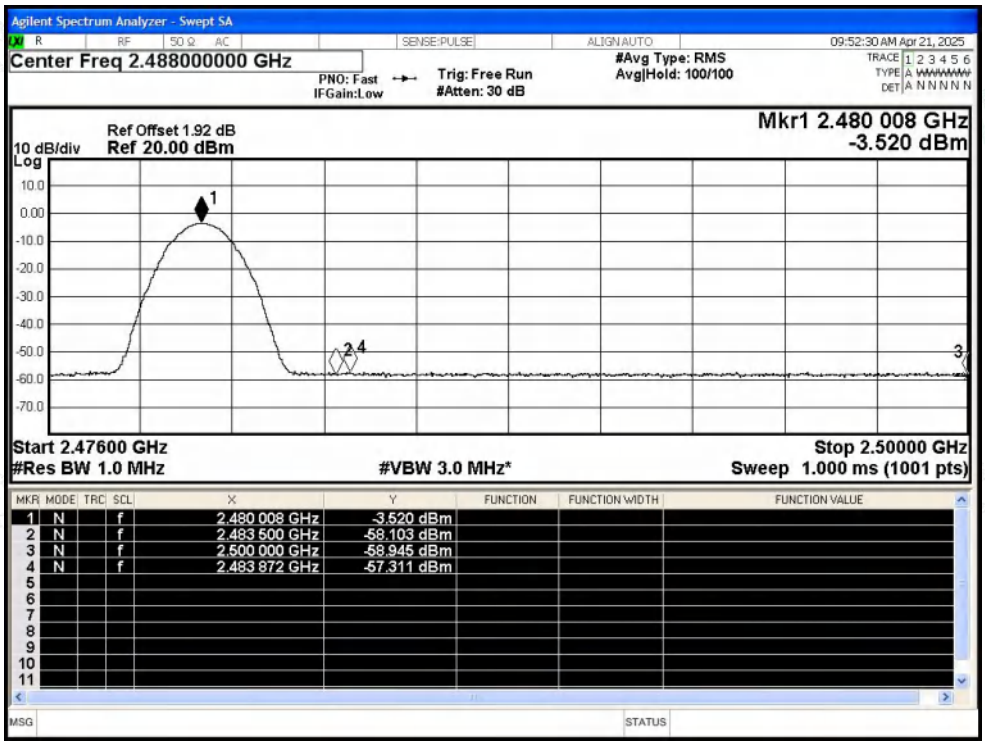
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average



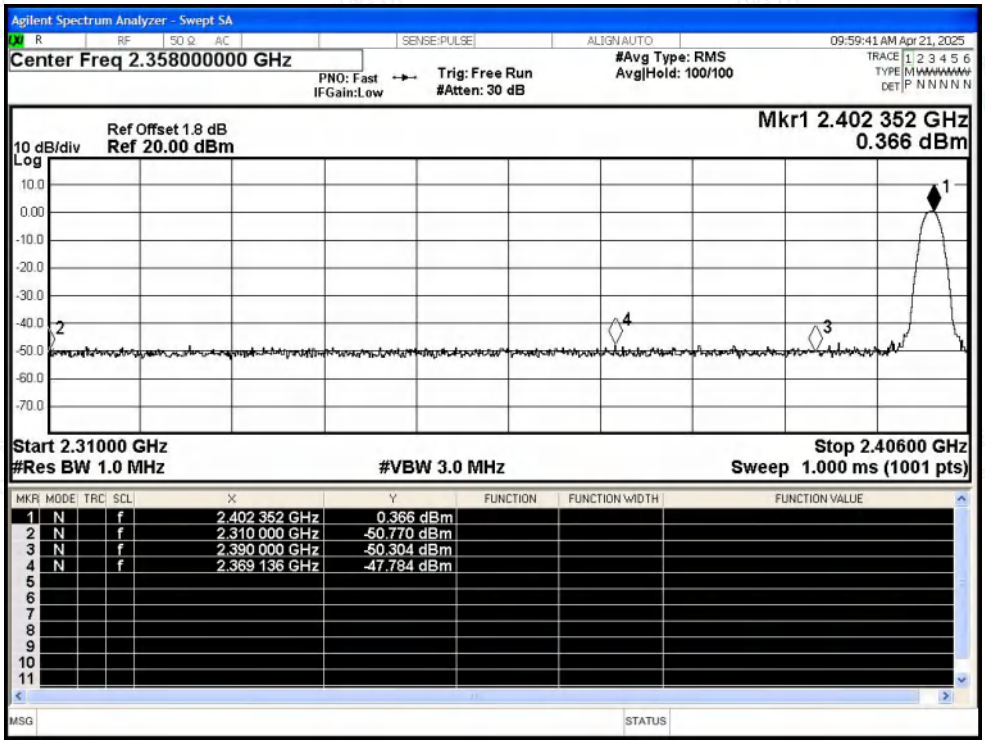
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak



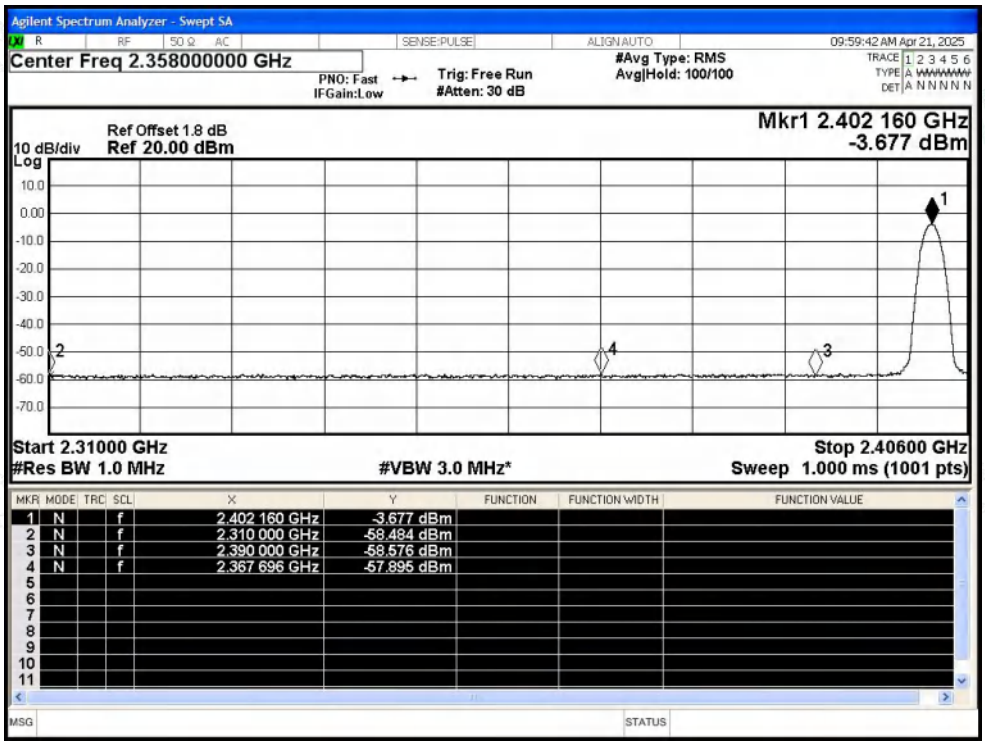
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average



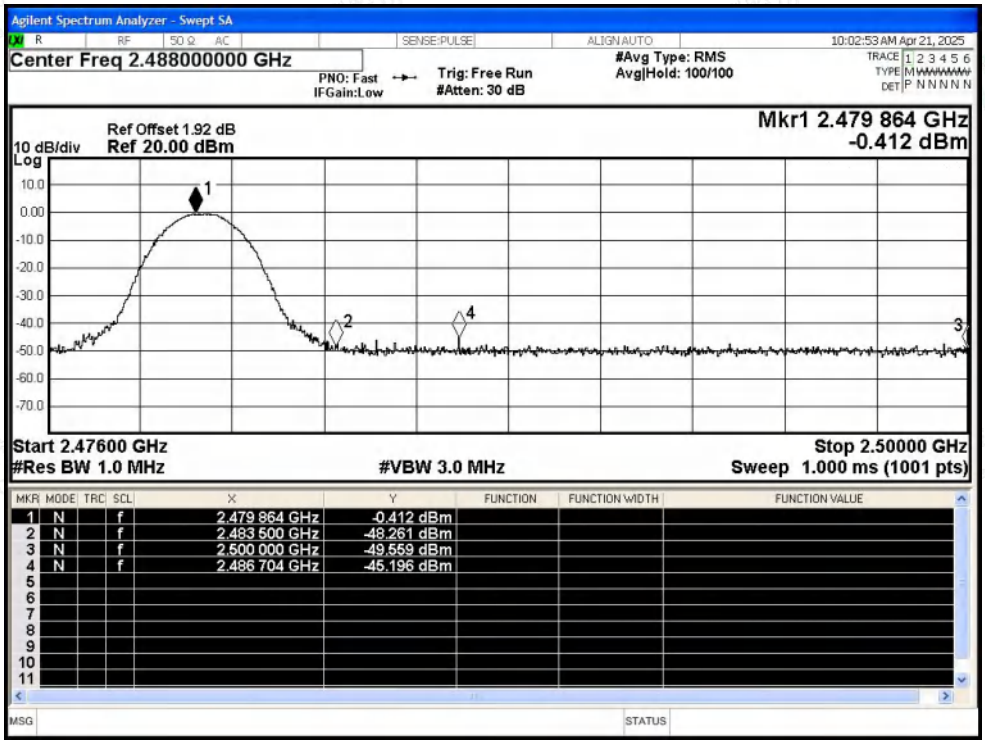
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak



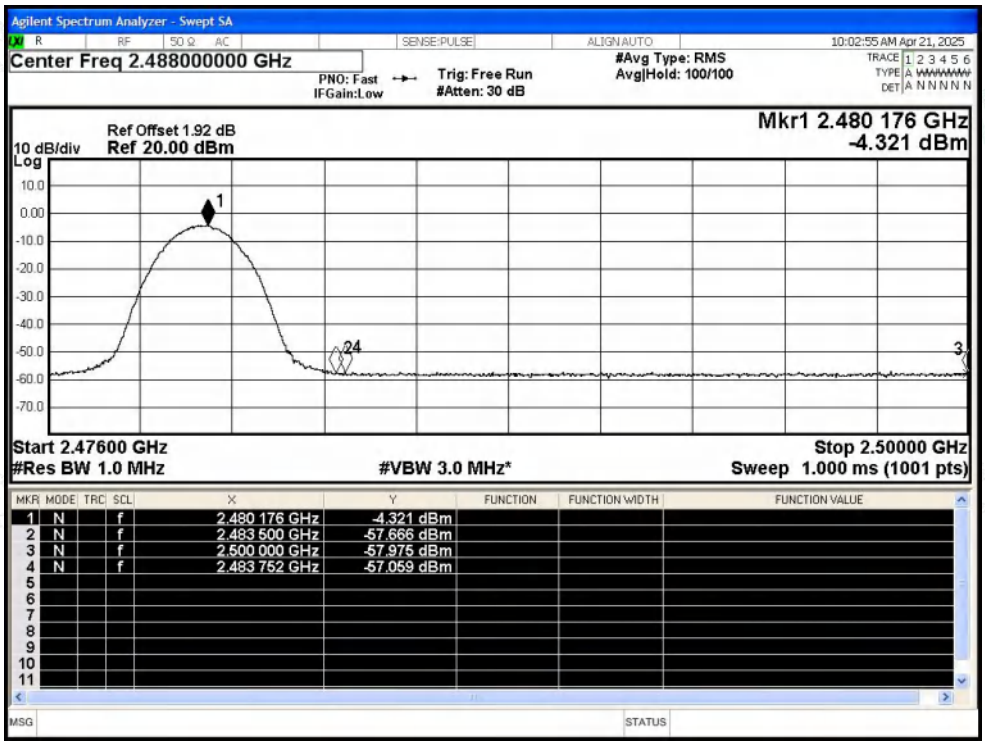
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average



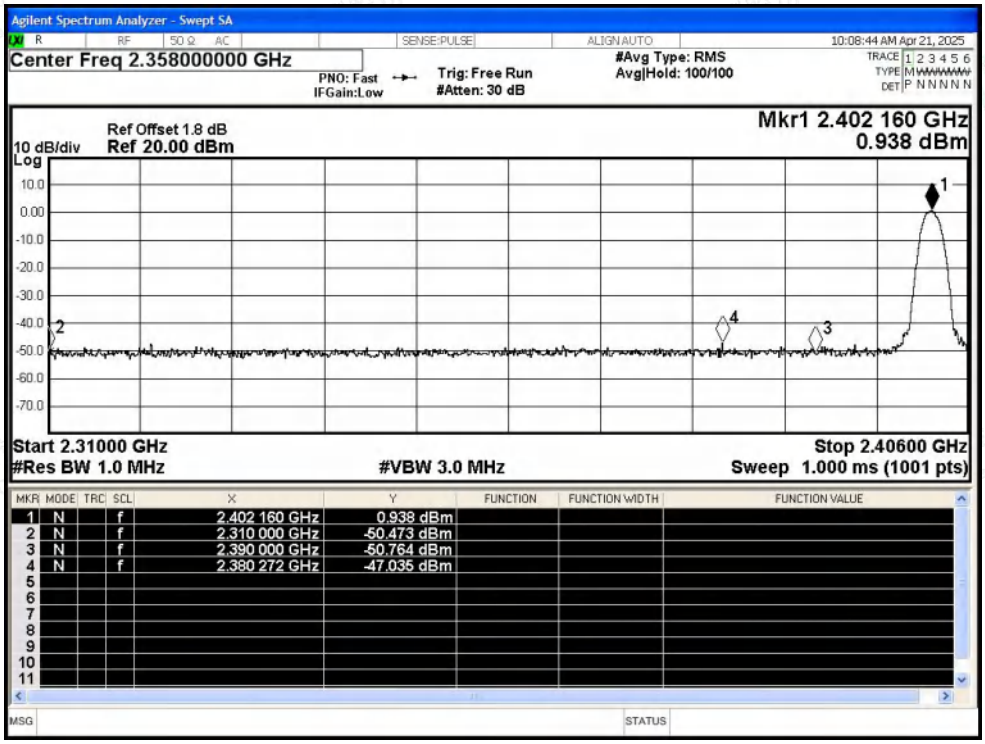
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Peak



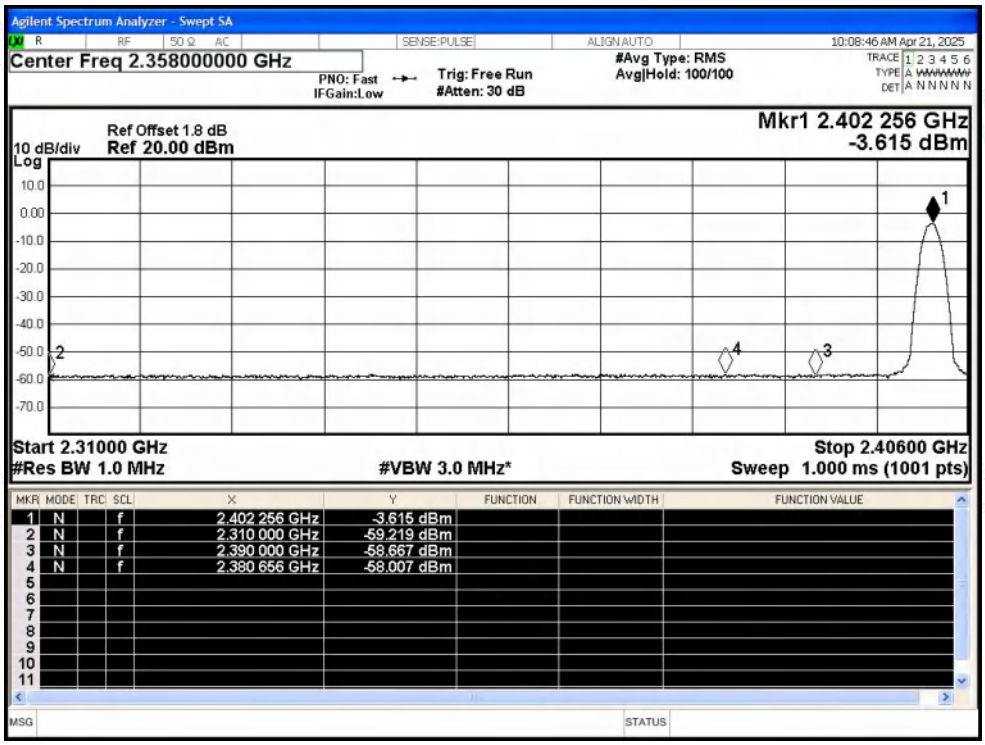
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Average



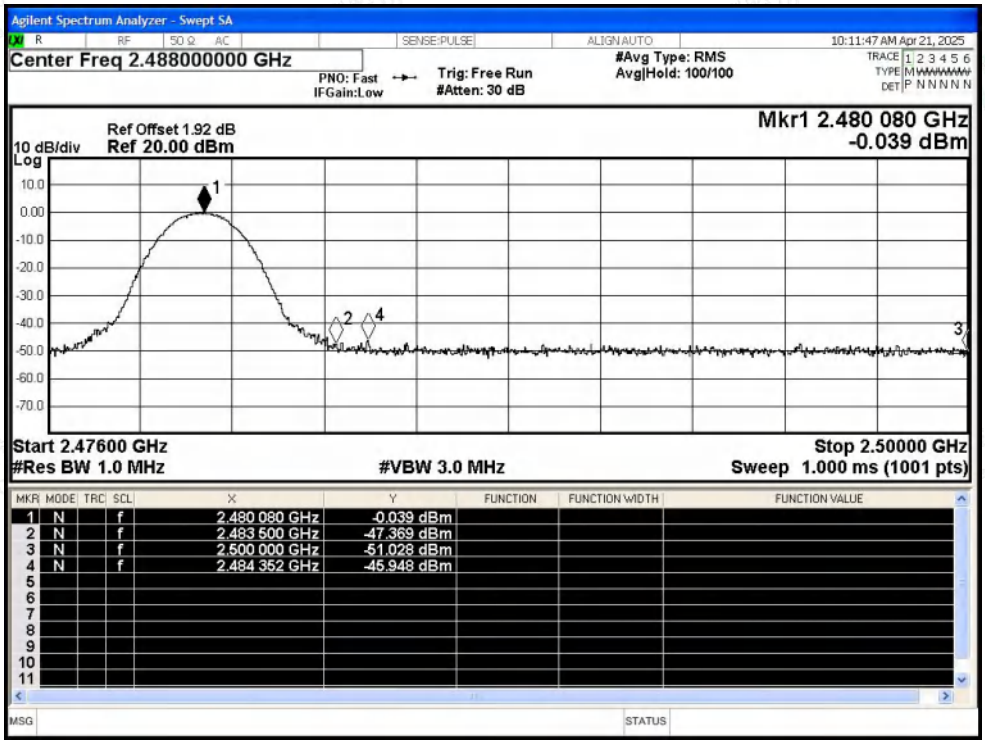
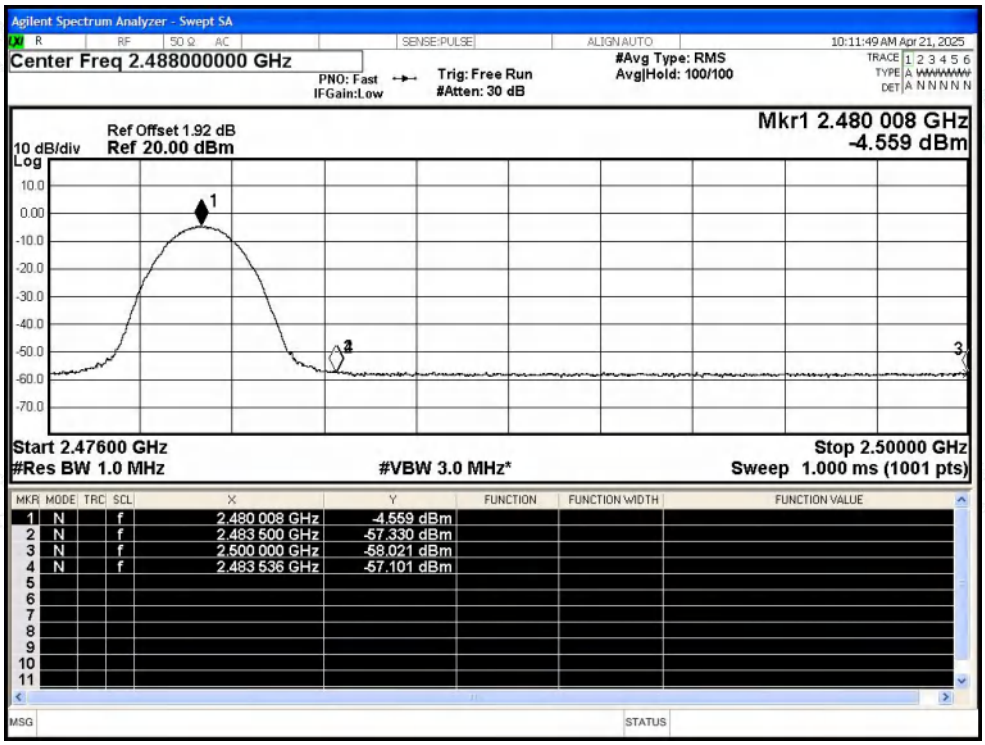
Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Peak



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