RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	Smart Watch
Test Model:	KE3PRO
Sample ID:	HC-C-202504-0051-01-01
Environmental Conditions	
Temperature:	25.6℃
Relative Humidity:	48%
Test Voltage:	DC 3.8V
Test Engineer:	Lily zhang
Note: For a more detailed features description, please refer to the report TBR-C-202504-0051-21 The report only show the worst case data.	

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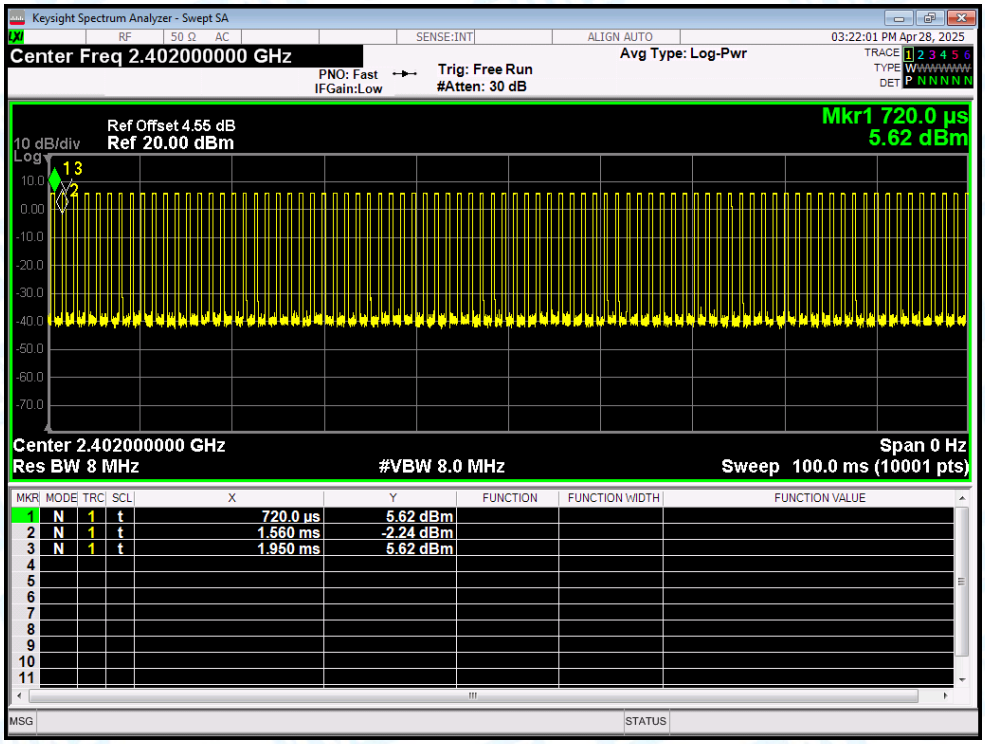
1. Duty Cycle

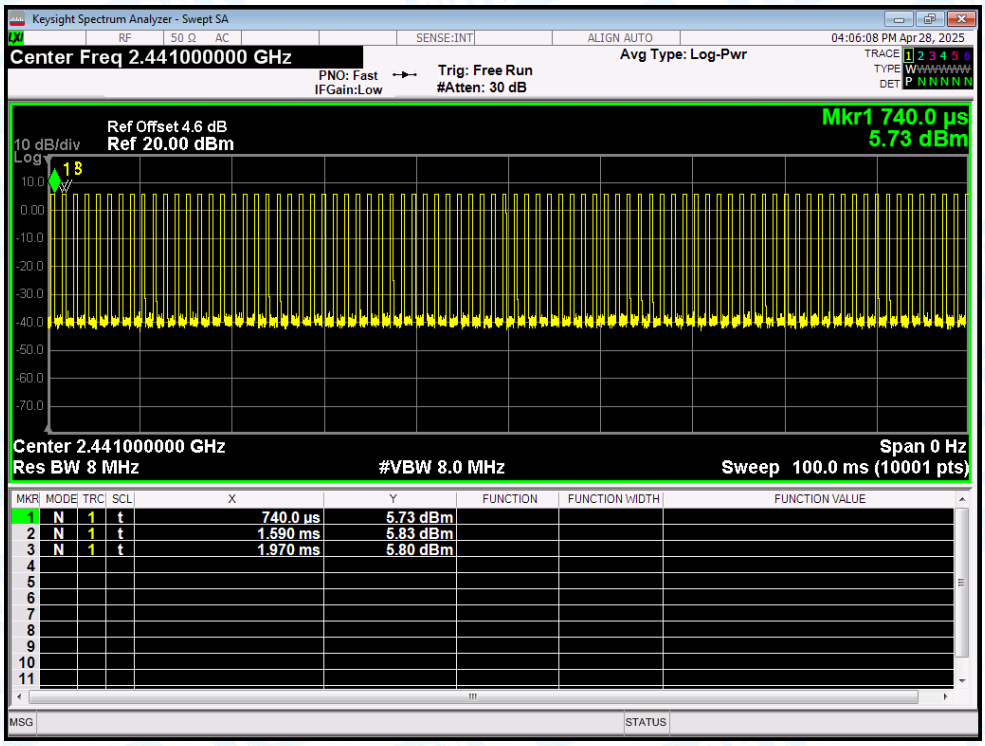
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	31.71	4.99	2.56
NVNT	1-DH1	2441	Ant1	30.89	5.1	2.63
NVNT	1-DH1	2480	Ant1	31.15	5.07	2.63
NVNT	2-DH1	2402	Ant1	31.71	4.99	2.56
NVNT	2-DH1	2441	Ant1	31.71	4.99	2.56
NVNT	2-DH1	2480	Ant1	32.26	4.91	2.5
NVNT	3-DH1	2402	Ant1	32.26	4.91	2.5
NVNT	3-DH1	2441	Ant1	31.71	4.99	2.56
NVNT	3-DH1	2480	Ant1	31.71	4.99	2.56

Test Graphs

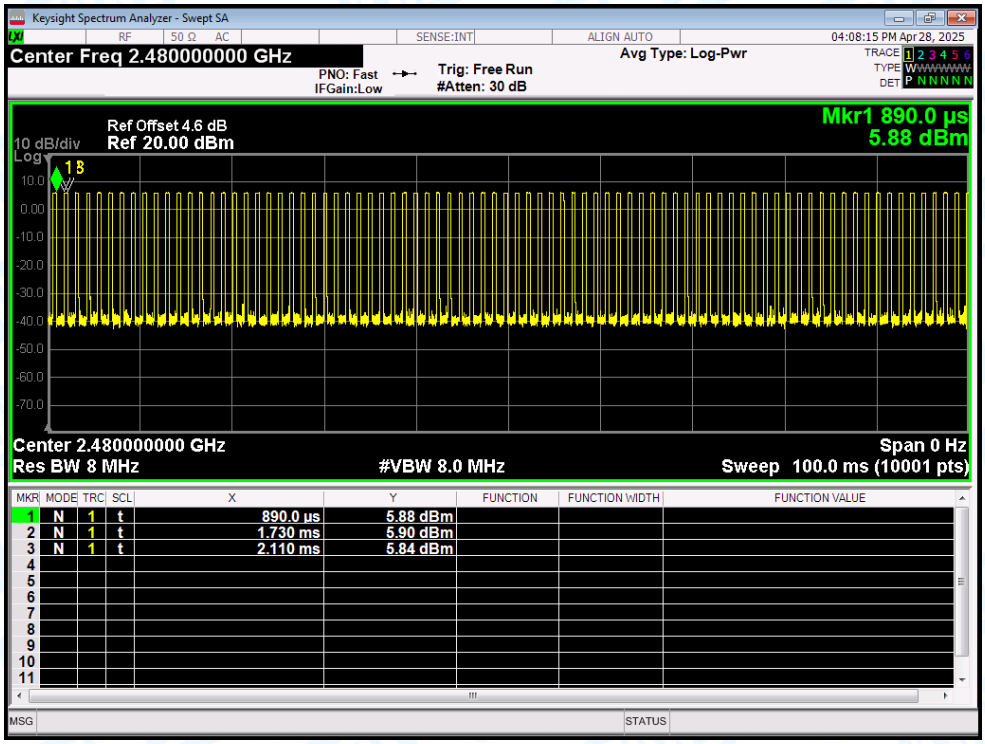
Duty Cycle NVNT 1-DH1 2402MHz Ant1



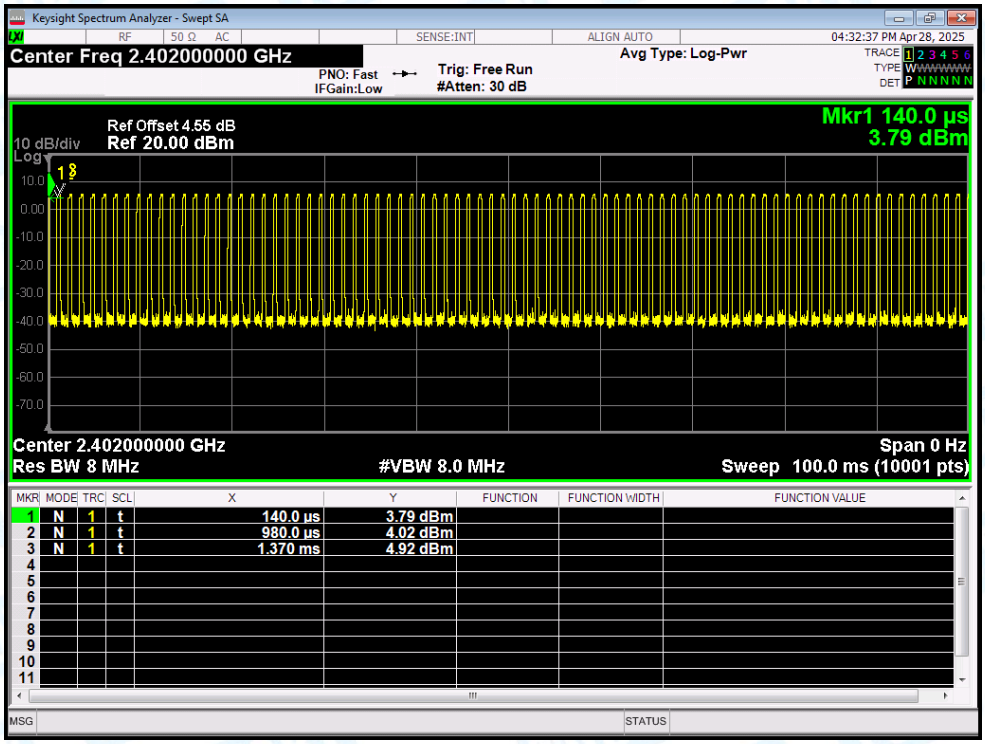
Duty Cycle NVNT 1-DH1 2441MHz Ant1



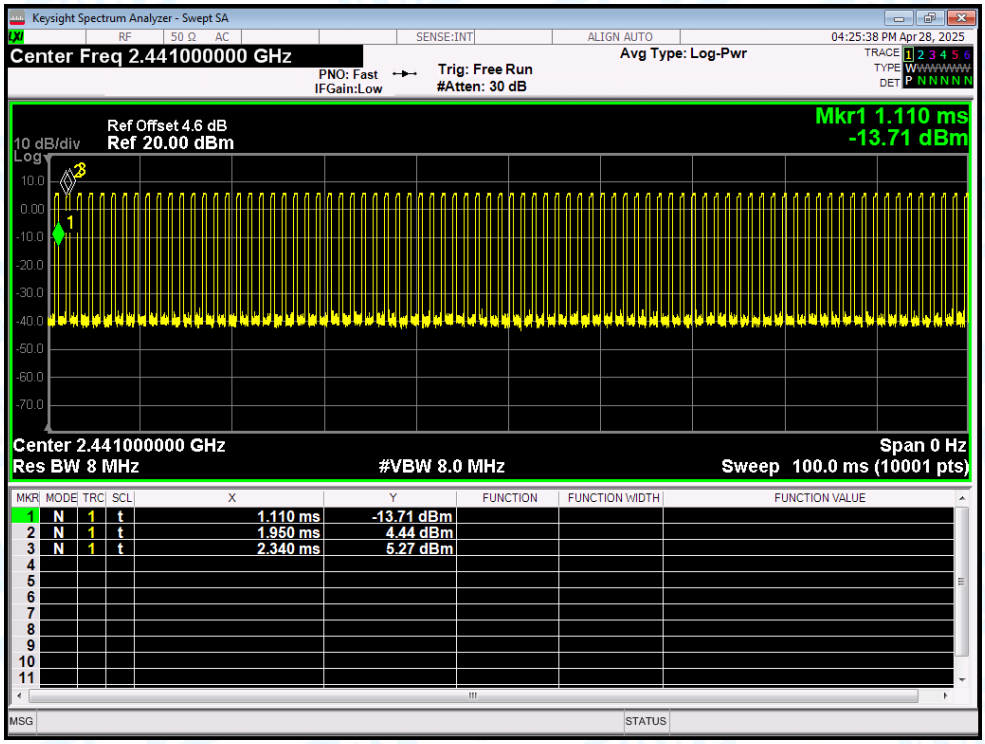
Duty Cycle NVNT 1-DH1 2480MHz Ant1



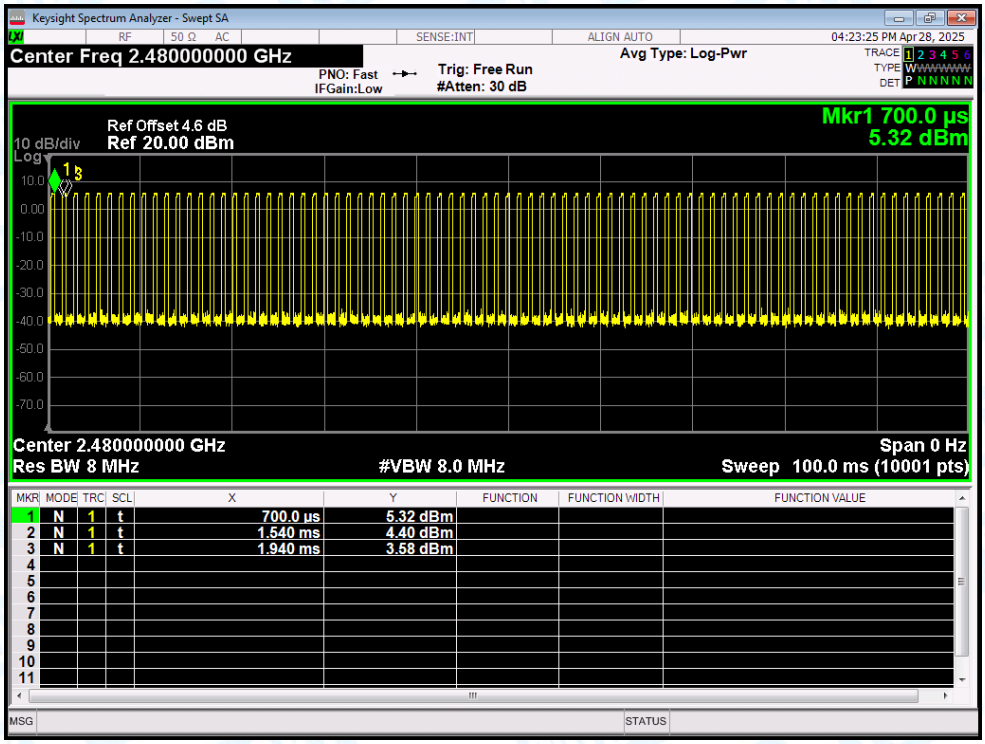
Duty Cycle NVNT 2-DH1 2402MHz Ant1



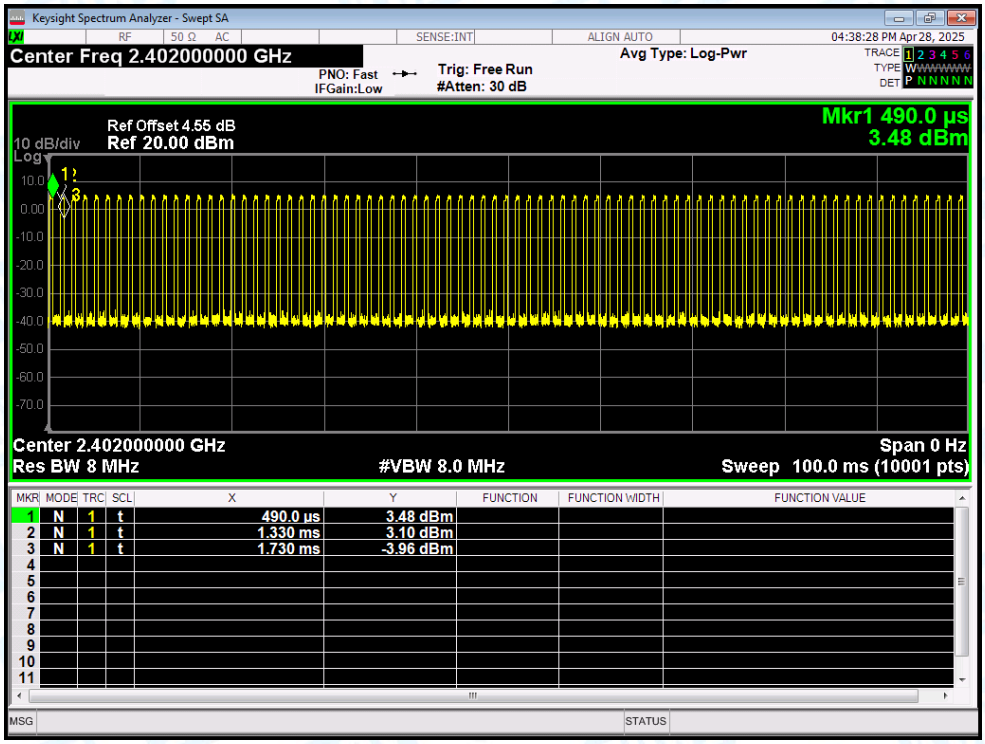
Duty Cycle NVNT 2-DH1 2441MHz Ant1



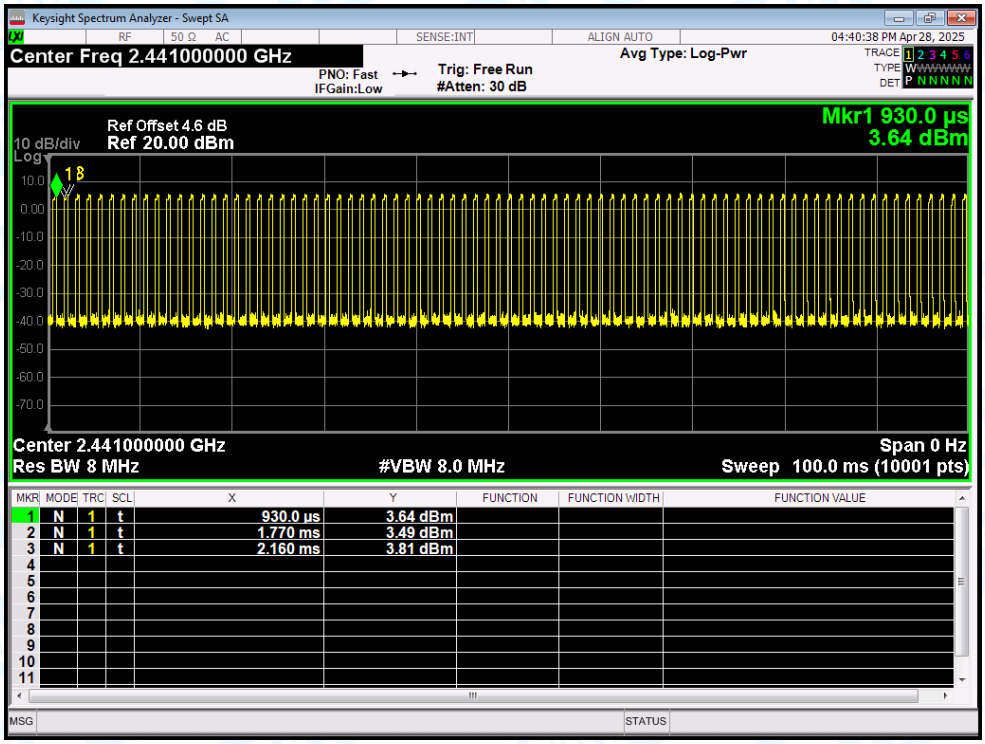
Duty Cycle NVNT 2-DH1 2480MHz Ant1



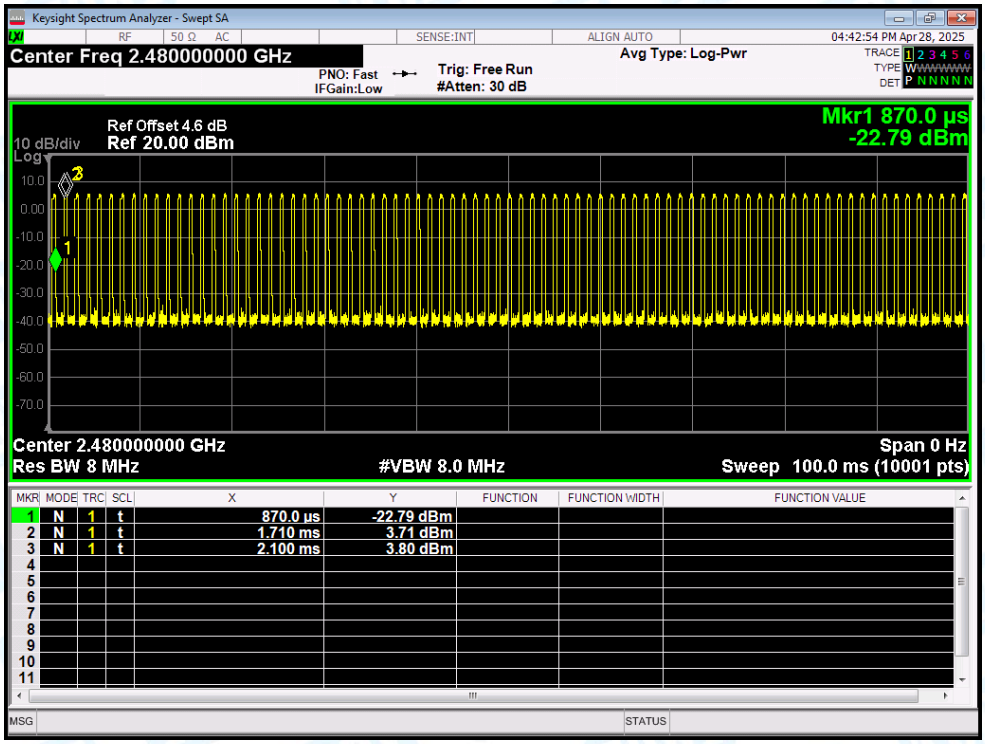
Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



Duty Cycle NVNT 3-DH1 2480MHz Ant1

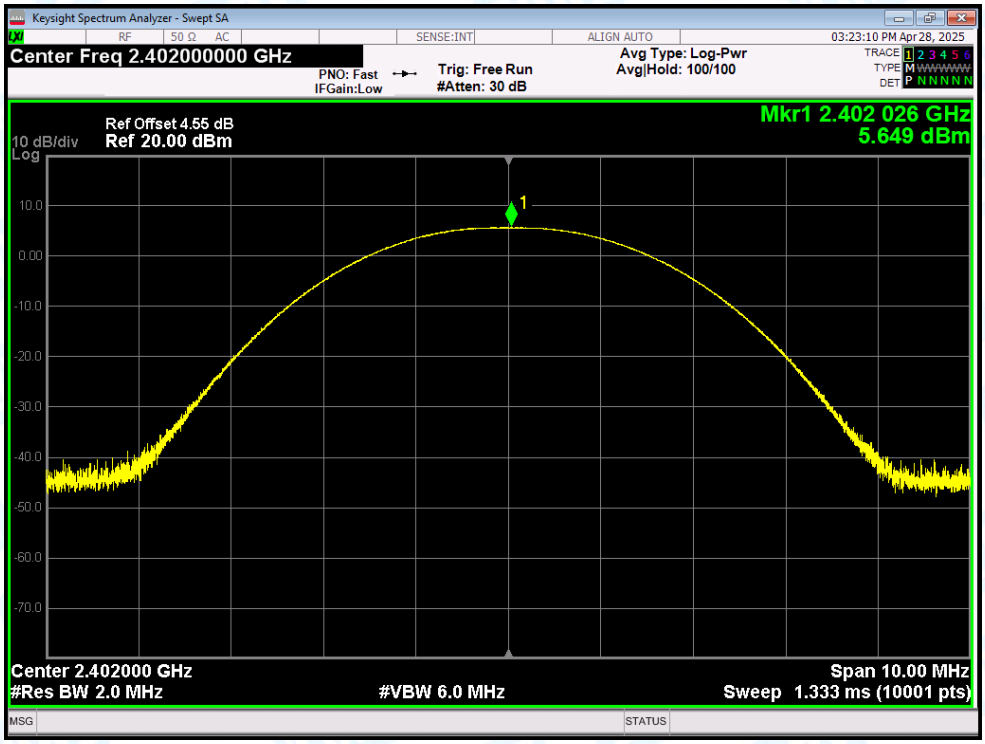


2. Maximum Conducted Output Power

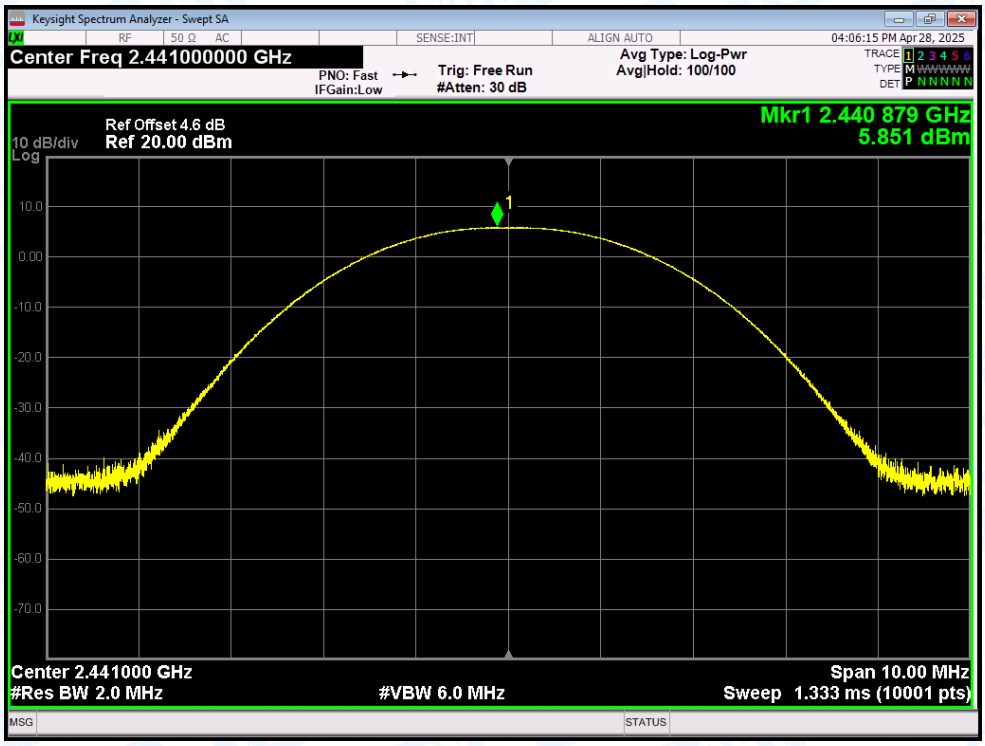
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	5.649	21	Pass
NVNT	1-DH1	2441	Ant1	5.851	21	Pass
NVNT	1-DH1	2480	Ant1	5.891	21	Pass
NVNT	2-DH1	2402	Ant1	5.311	21	Pass
NVNT	2-DH1	2441	Ant1	5.647	21	Pass
NVNT	2-DH1	2480	Ant1	5.731	21	Pass
NVNT	3-DH1	2402	Ant1	5.054	21	Pass
NVNT	3-DH1	2441	Ant1	5.417	21	Pass
NVNT	3-DH1	2480	Ant1	5.522	21	Pass

Test Graphs

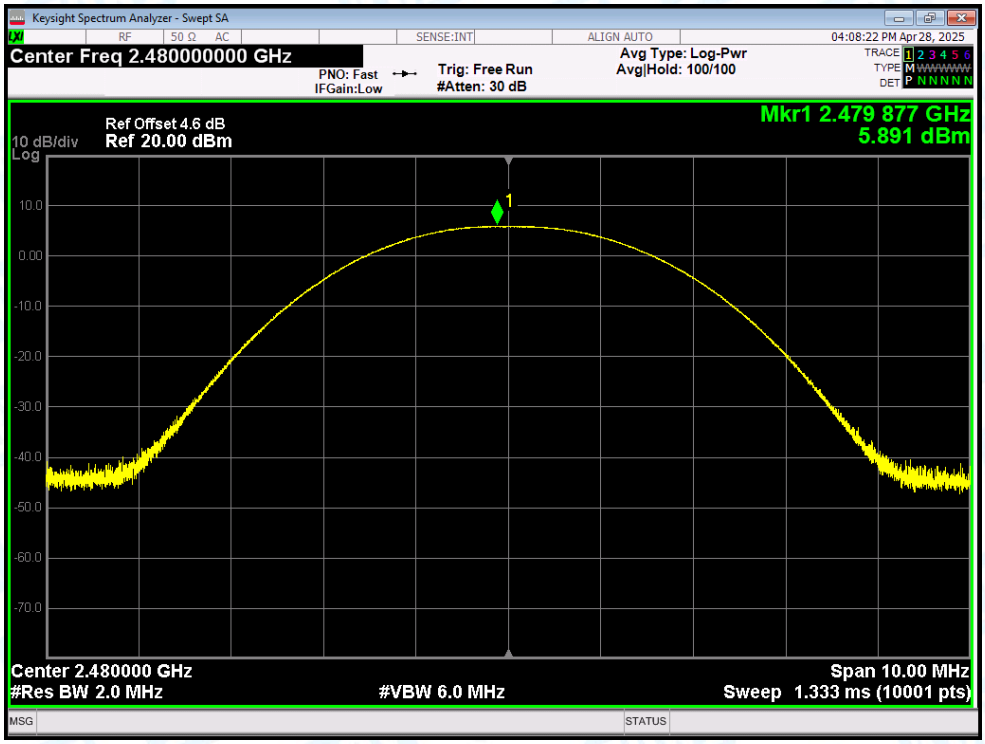
Power NVNT 1-DH1 2402MHz Ant1



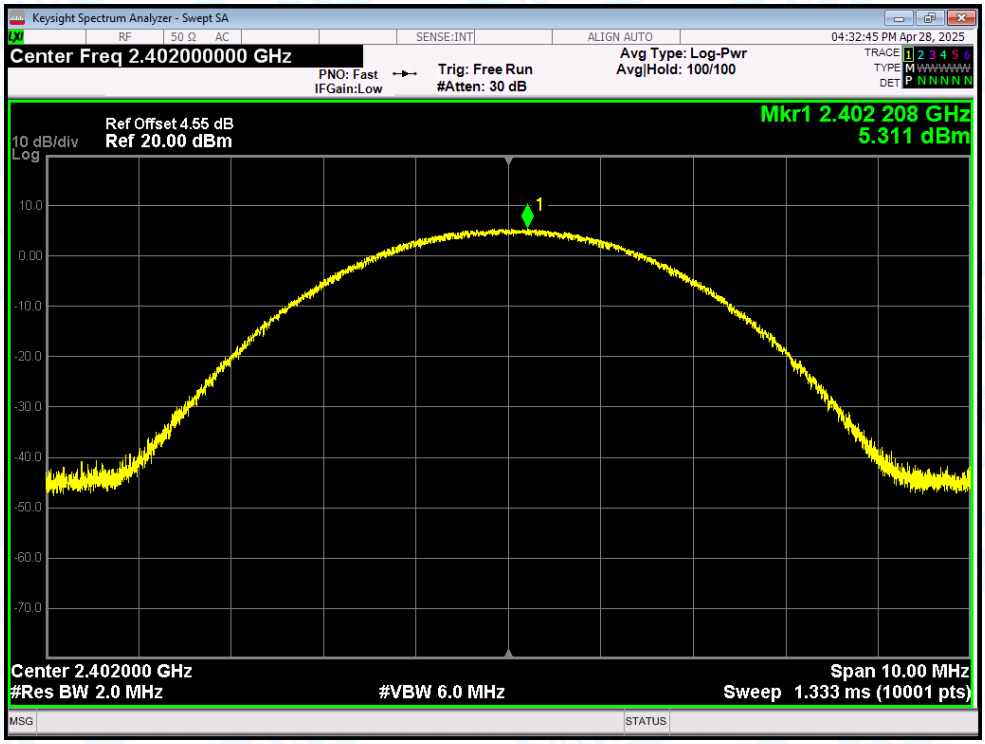
Power NVNT 1-DH1 2441MHz Ant1



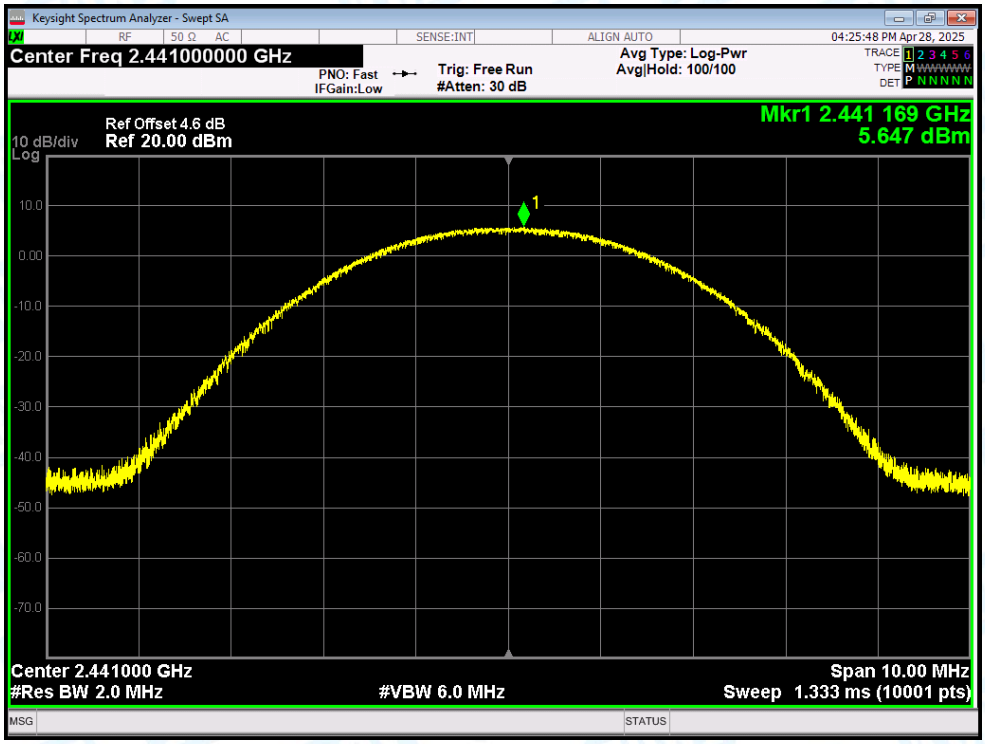
Power NVNT 1-DH1 2480MHz Ant1



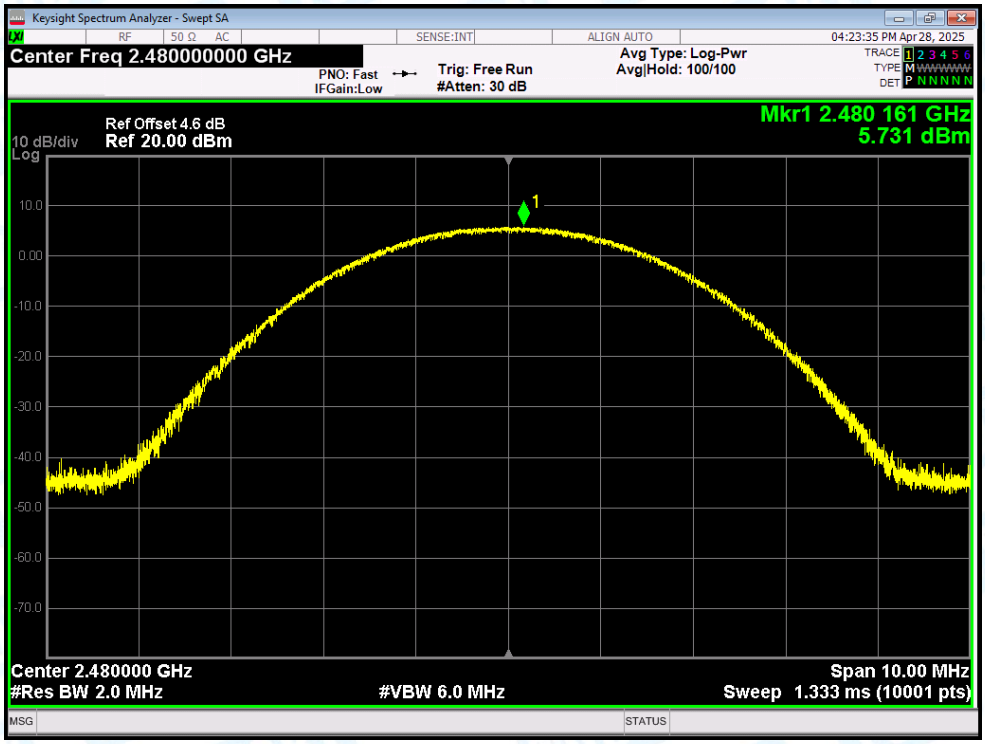
Power NVNT 2-DH1 2402MHz Ant1



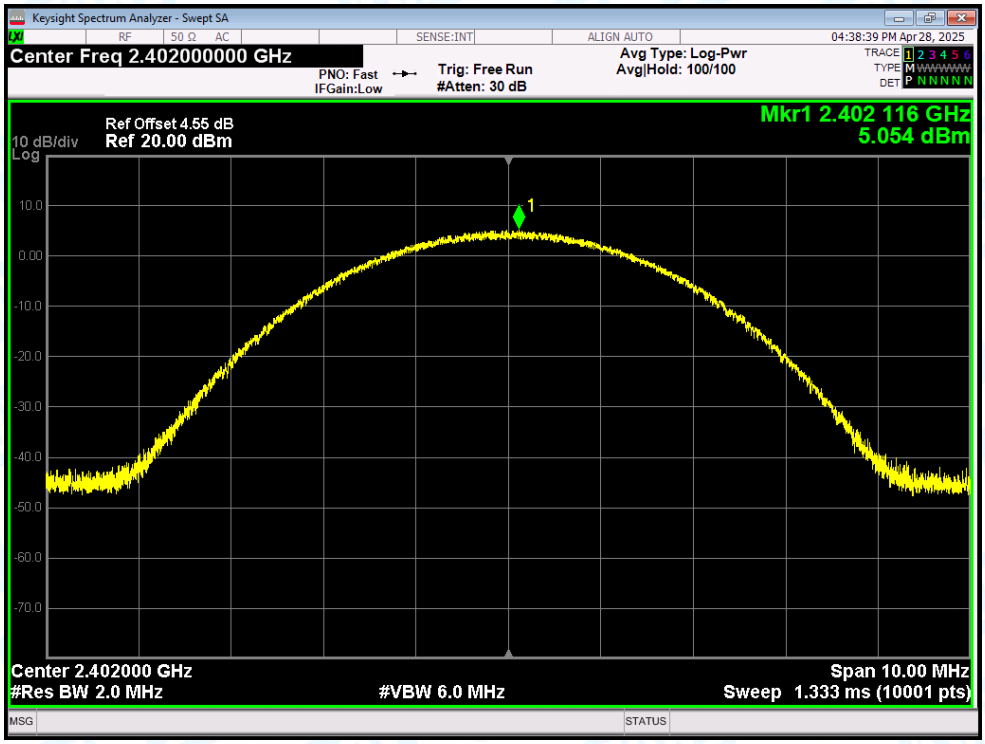
Power NVNT 2-DH1 2441MHz Ant1



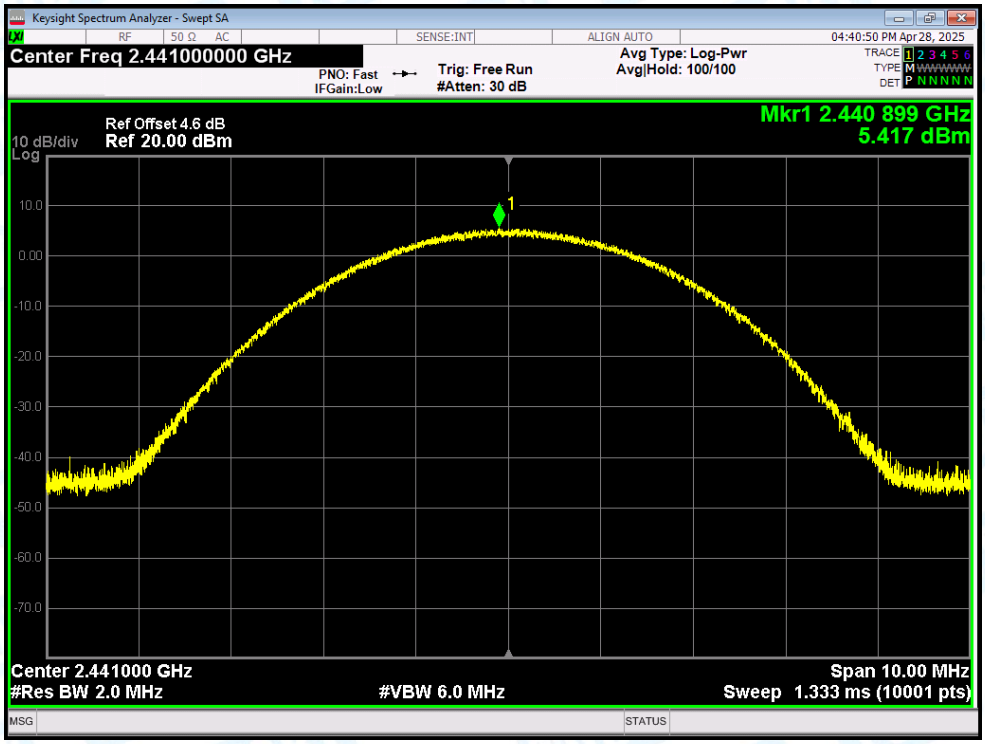
Power NVNT 2-DH1 2480MHz Ant1



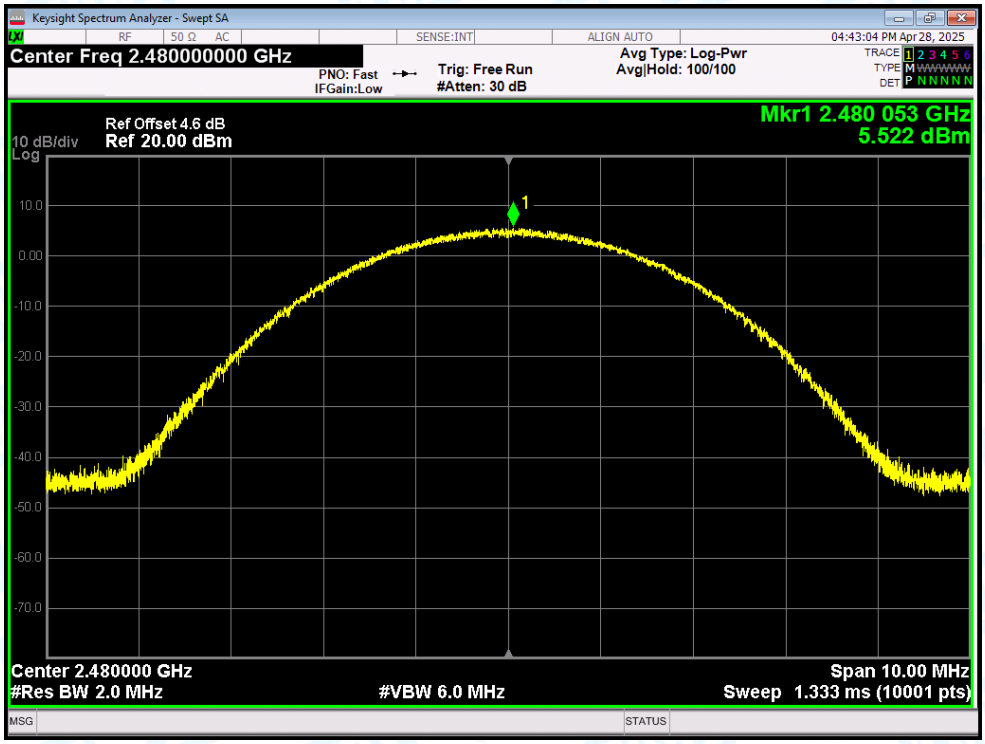
Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



Power NVNT 3-DH1 2480MHz Ant1

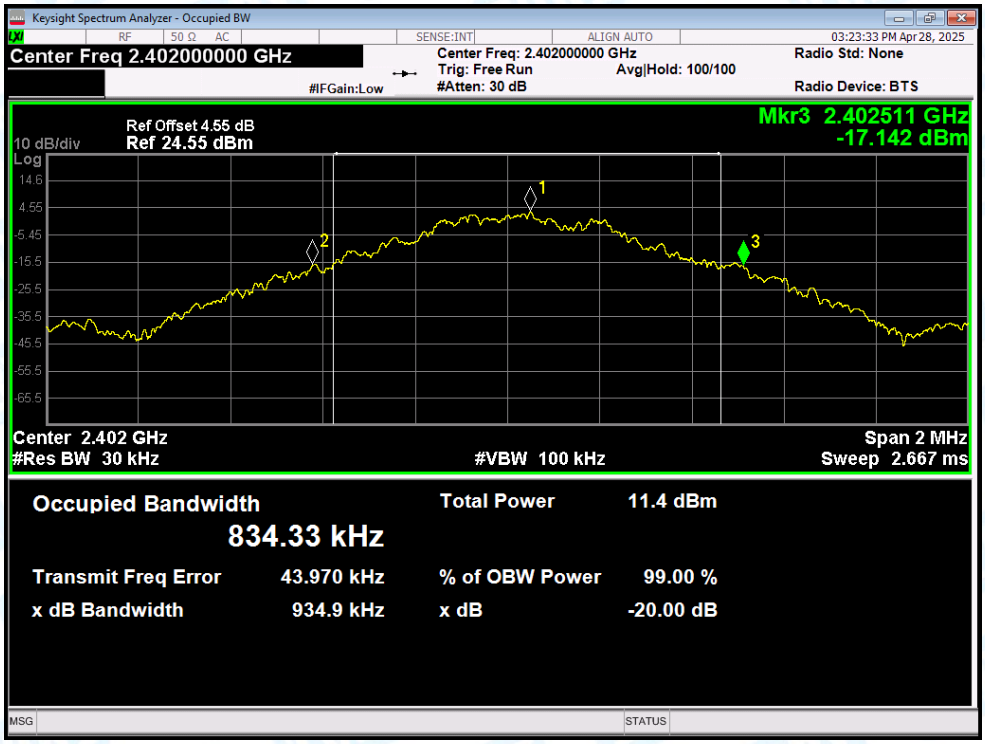


3. -20dB Bandwidth

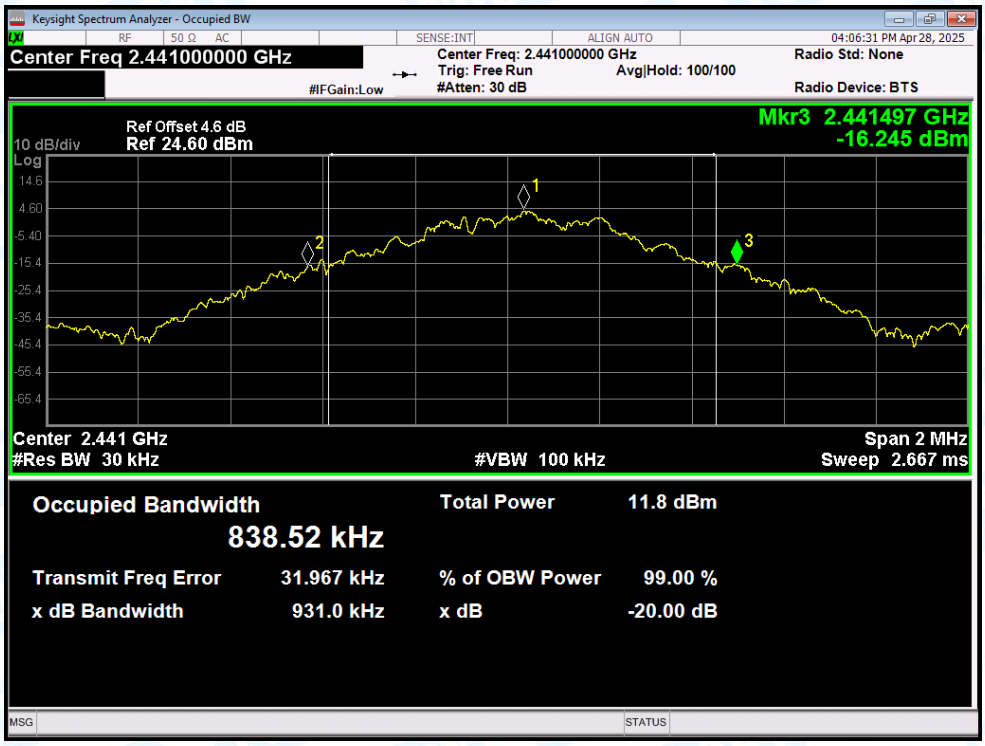
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.93	0	Pass
NVNT	1-DH1	2441	Ant1	0.93	0	Pass
NVNT	1-DH1	2480	Ant1	0.92	0	Pass
NVNT	2-DH1	2402	Ant1	1.24	0	Pass
NVNT	2-DH1	2441	Ant1	1.26	0	Pass
NVNT	2-DH1	2480	Ant1	1.22	0	Pass
NVNT	3-DH1	2402	Ant1	1.22	0	Pass
NVNT	3-DH1	2441	Ant1	1.21	0	Pass
NVNT	3-DH1	2480	Ant1	1.21	0	Pass

Test Graphs

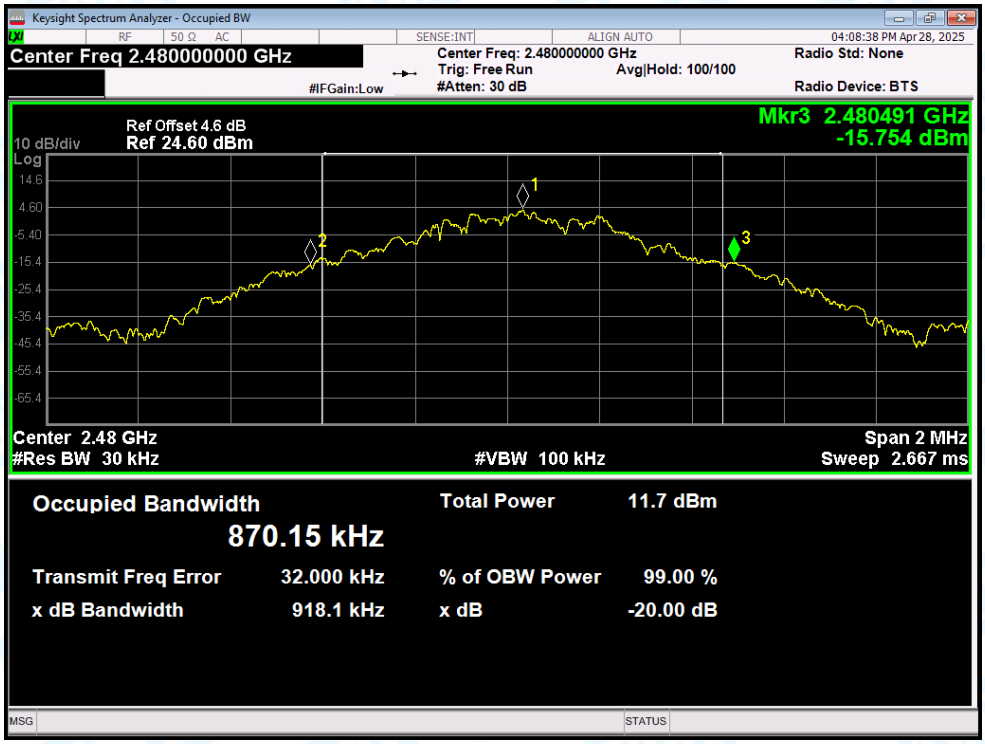
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



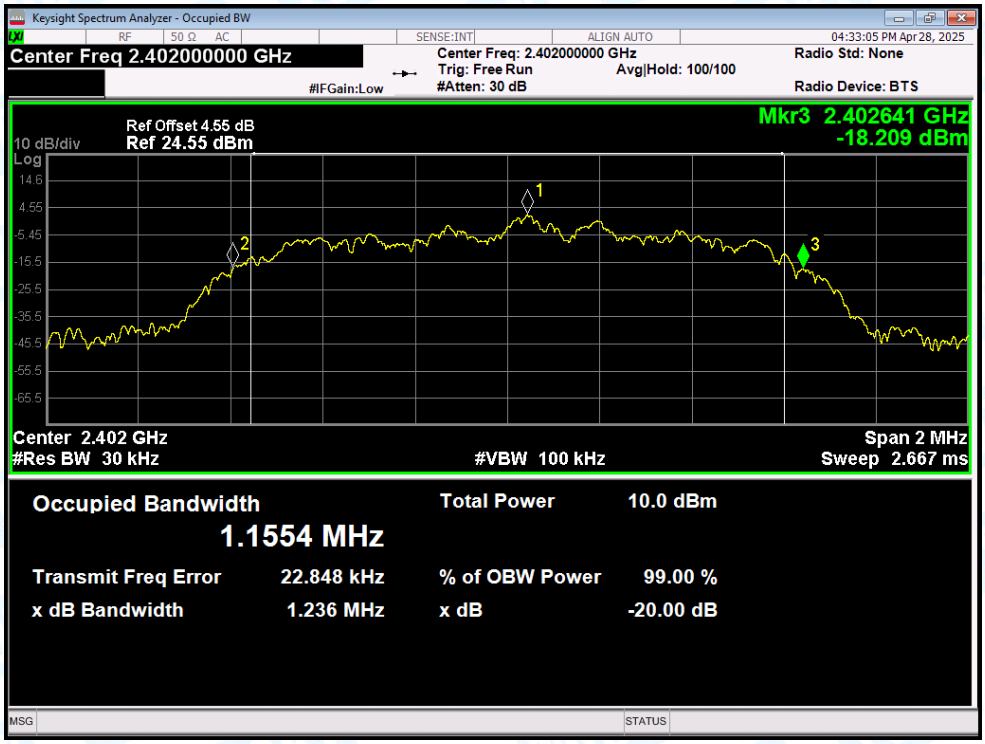
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



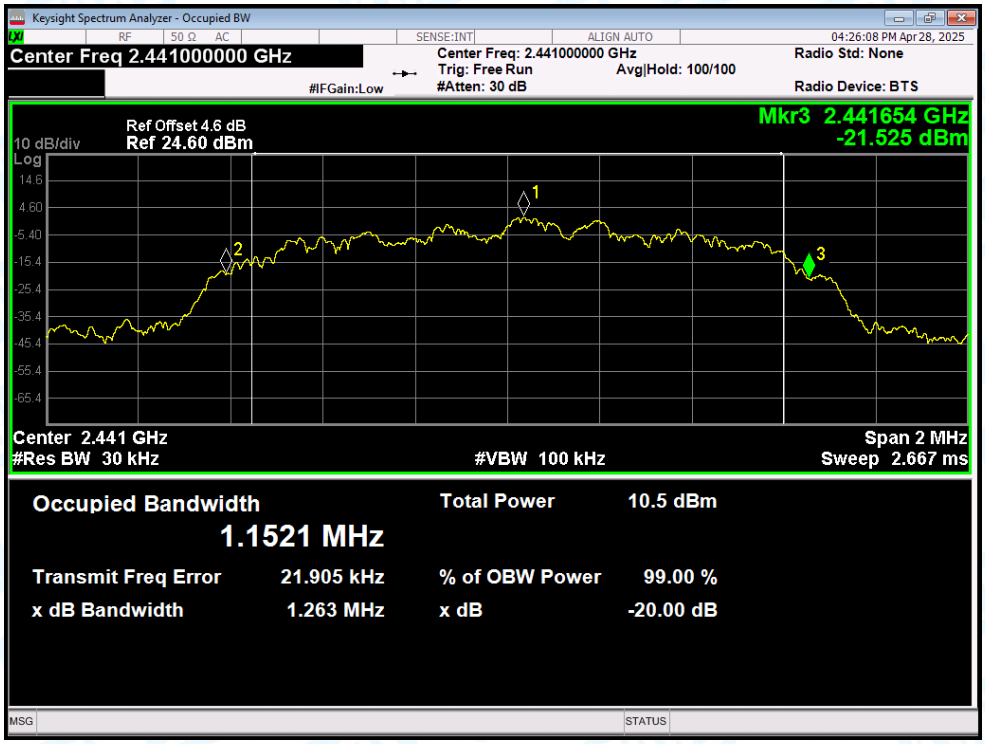
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



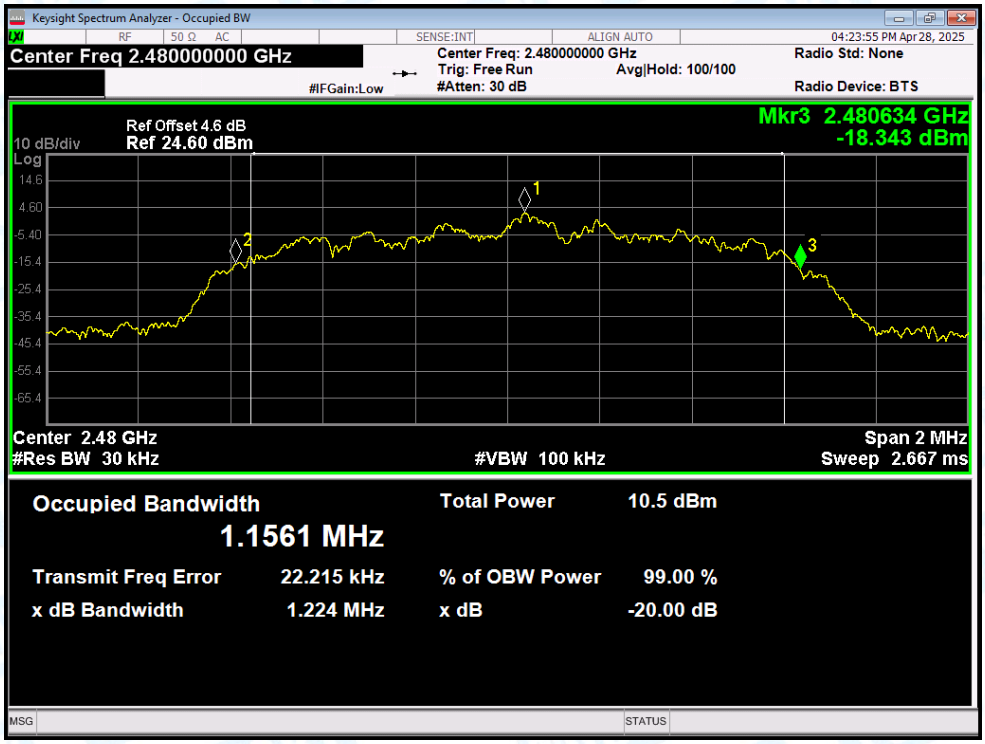
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



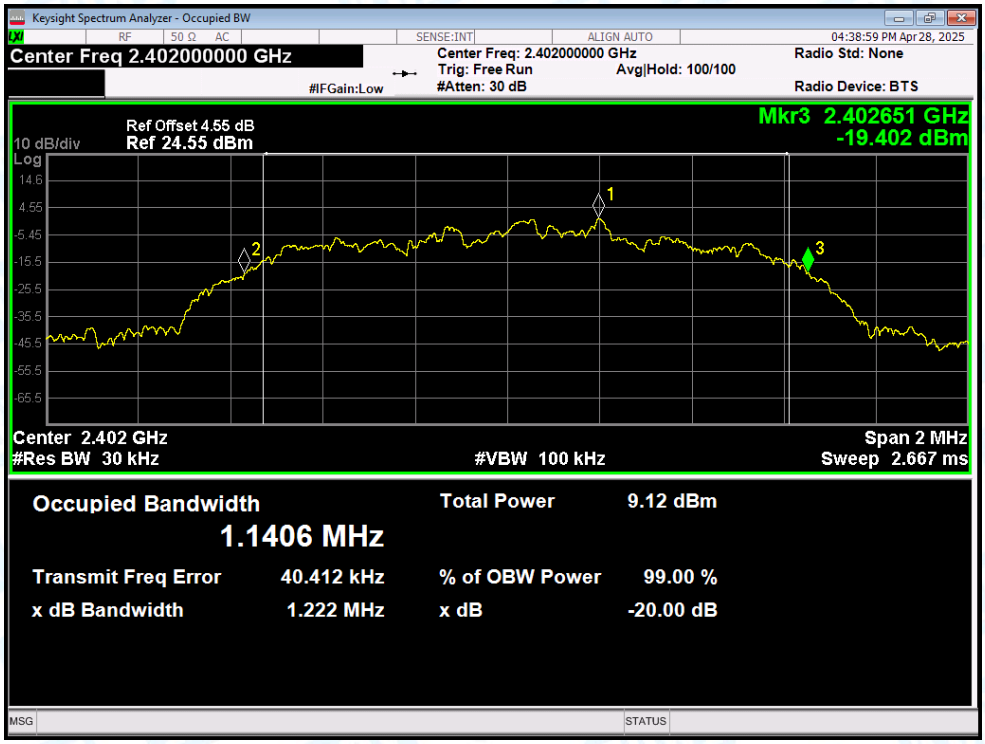
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



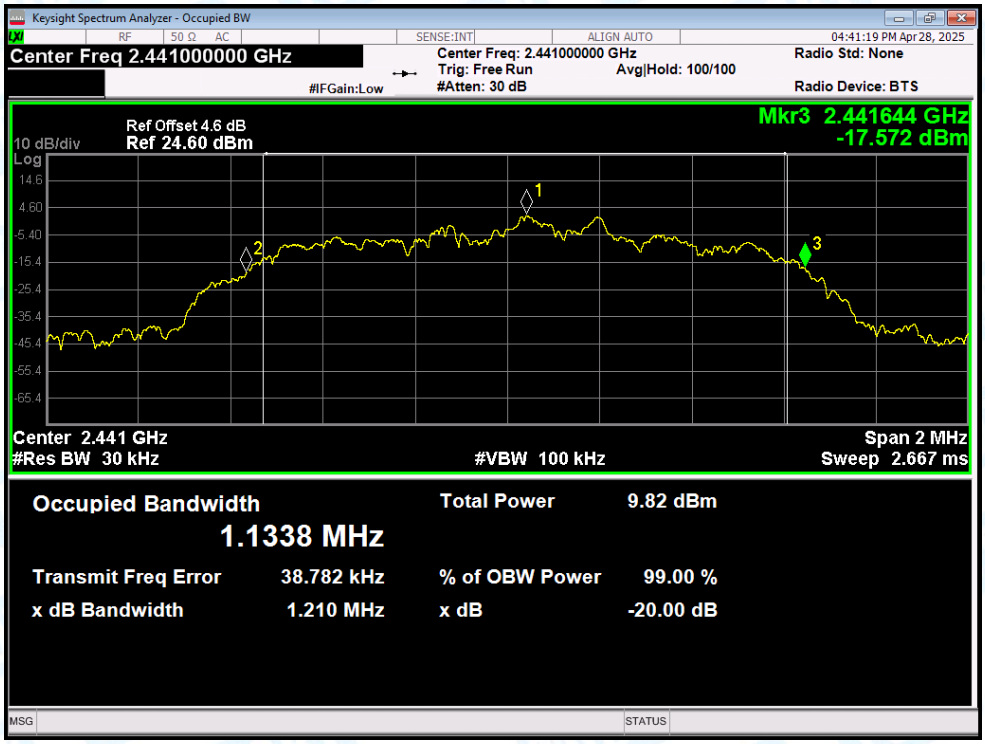
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1



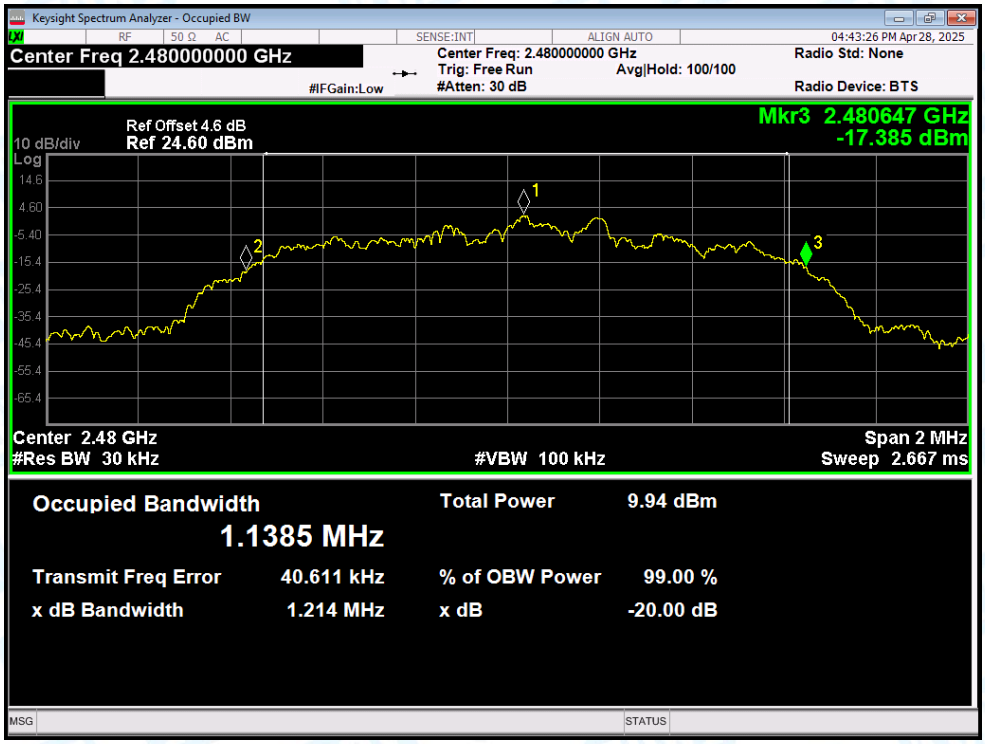
-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2480MHz Ant1

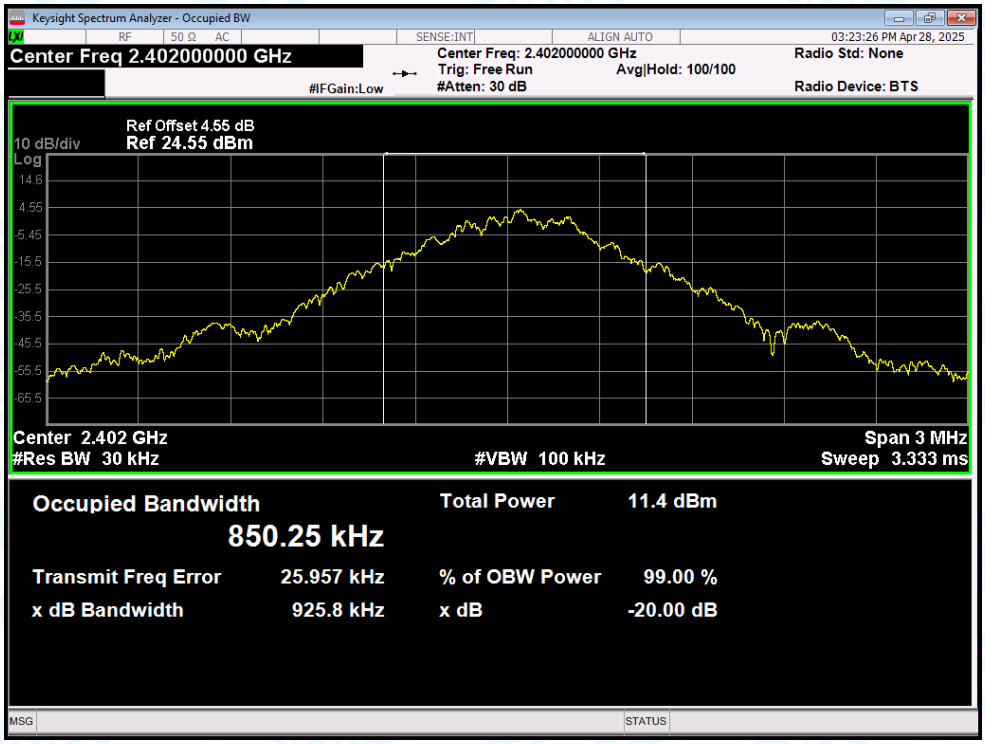


4. Occupied Channel Bandwidth

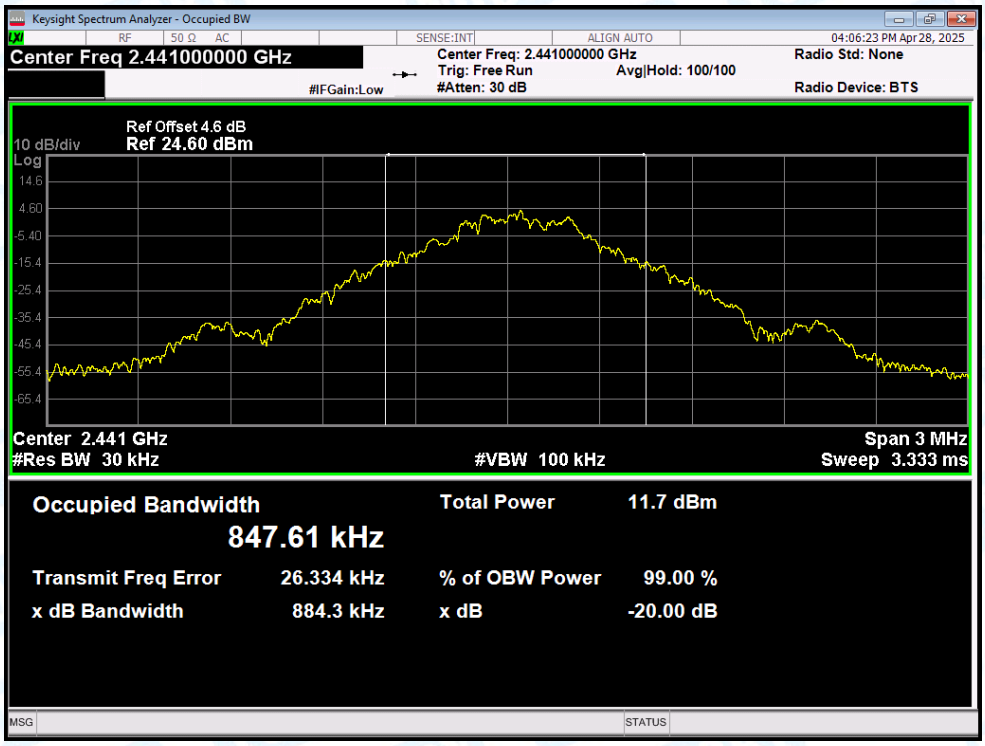
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.85
NVNT	1-DH1	2441	Ant1	0.848
NVNT	1-DH1	2480	Ant1	0.862
NVNT	2-DH1	2402	Ant1	1.144
NVNT	2-DH1	2441	Ant1	1.158
NVNT	2-DH1	2480	Ant1	1.156
NVNT	3-DH1	2402	Ant1	1.145
NVNT	3-DH1	2441	Ant1	1.143
NVNT	3-DH1	2480	Ant1	1.135

Test Graphs

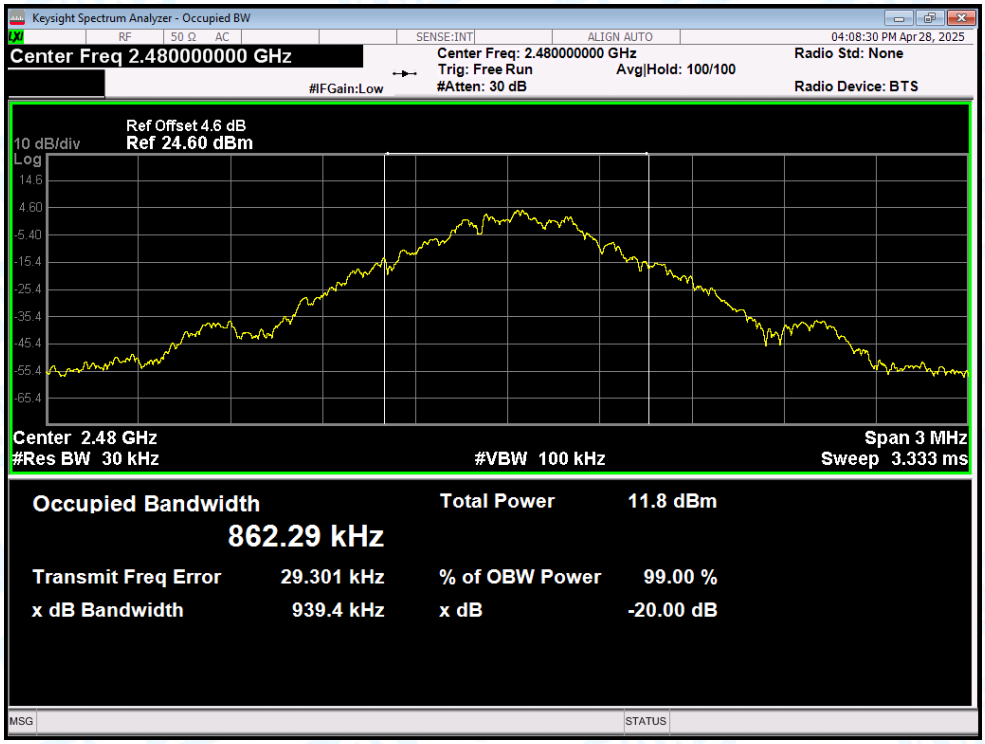
OBW NVNT 1-DH1 2402MHz Ant1



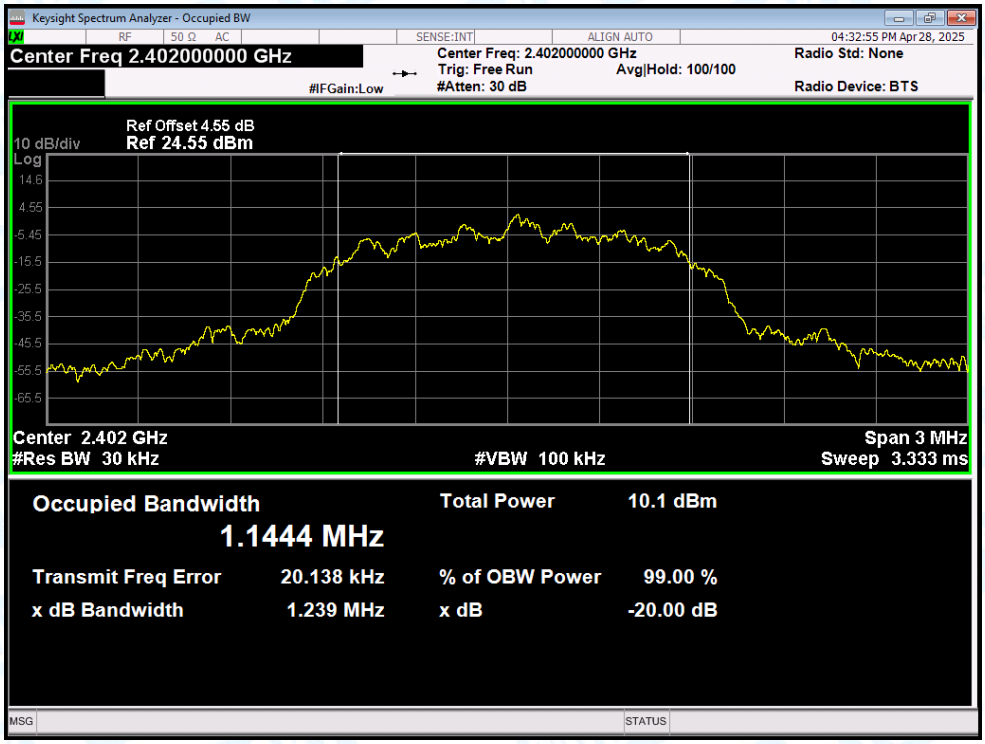
OBW NVNT 1-DH1 2441MHz Ant1



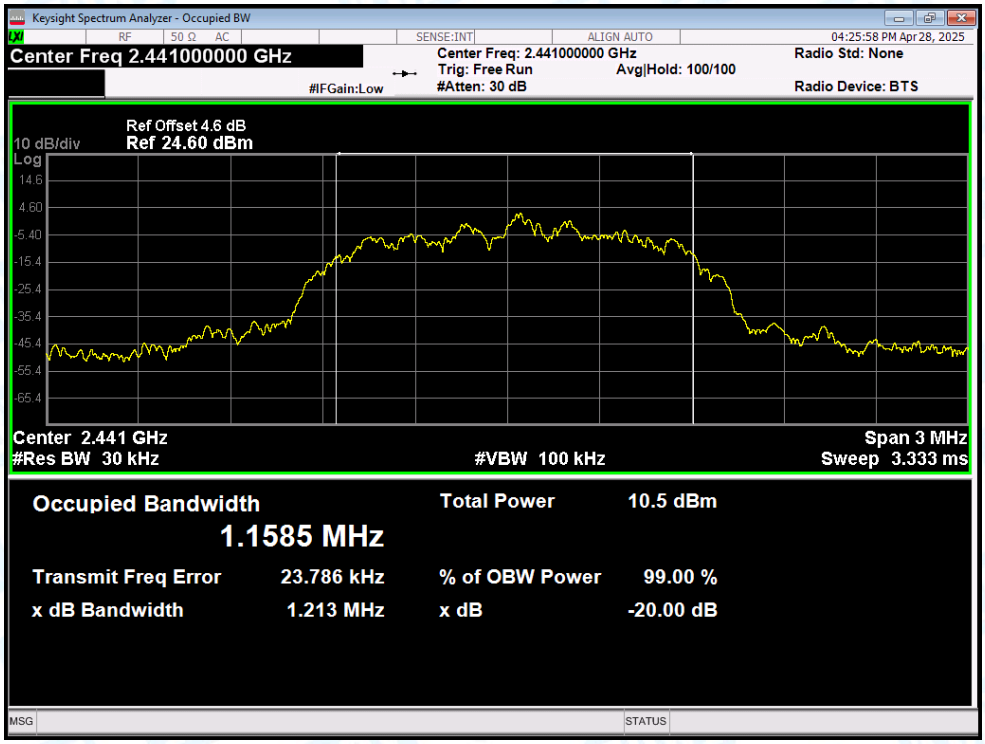
OBW NVNT 1-DH1 2480MHz Ant1



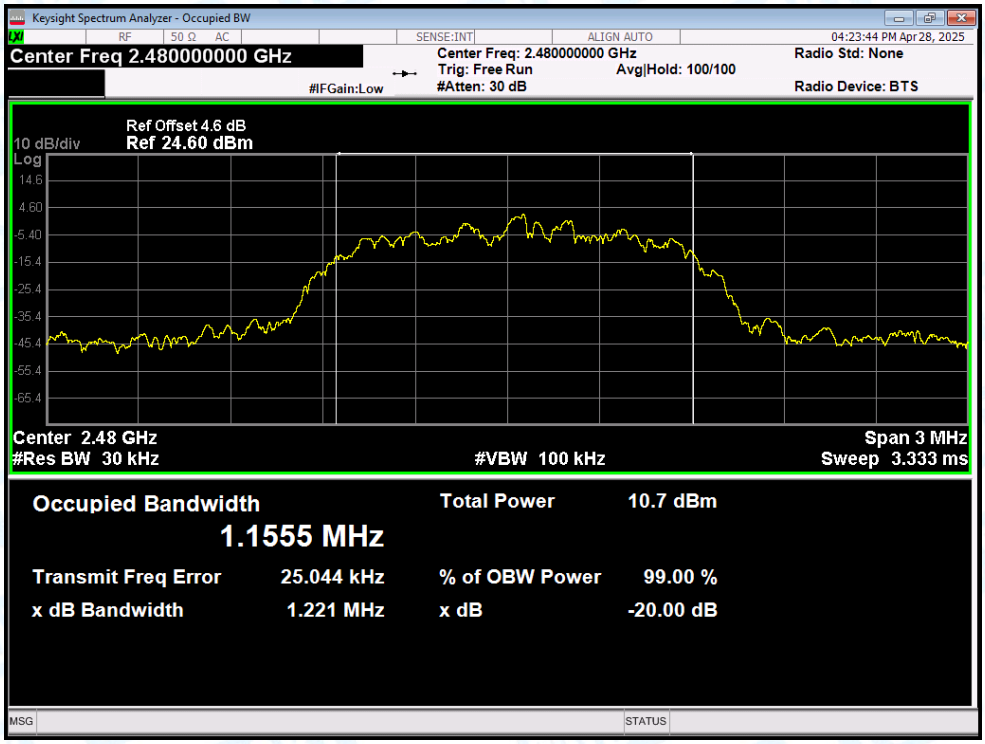
OBW NVNT 2-DH1 2402MHz Ant1



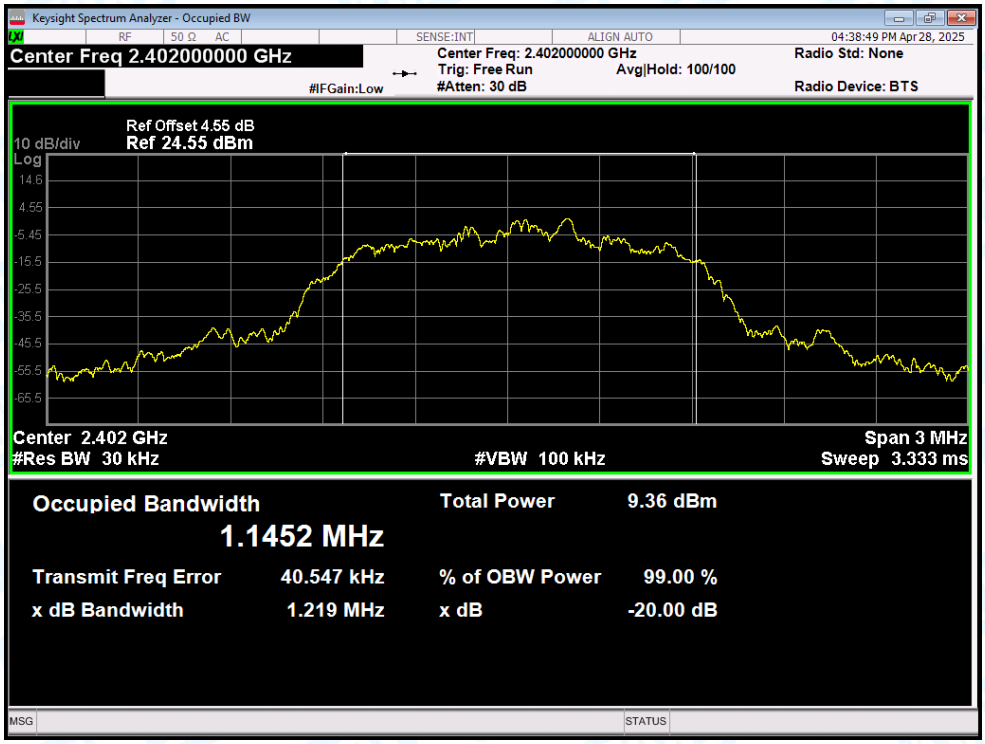
OBW NVNT 2-DH1 2441MHz Ant1



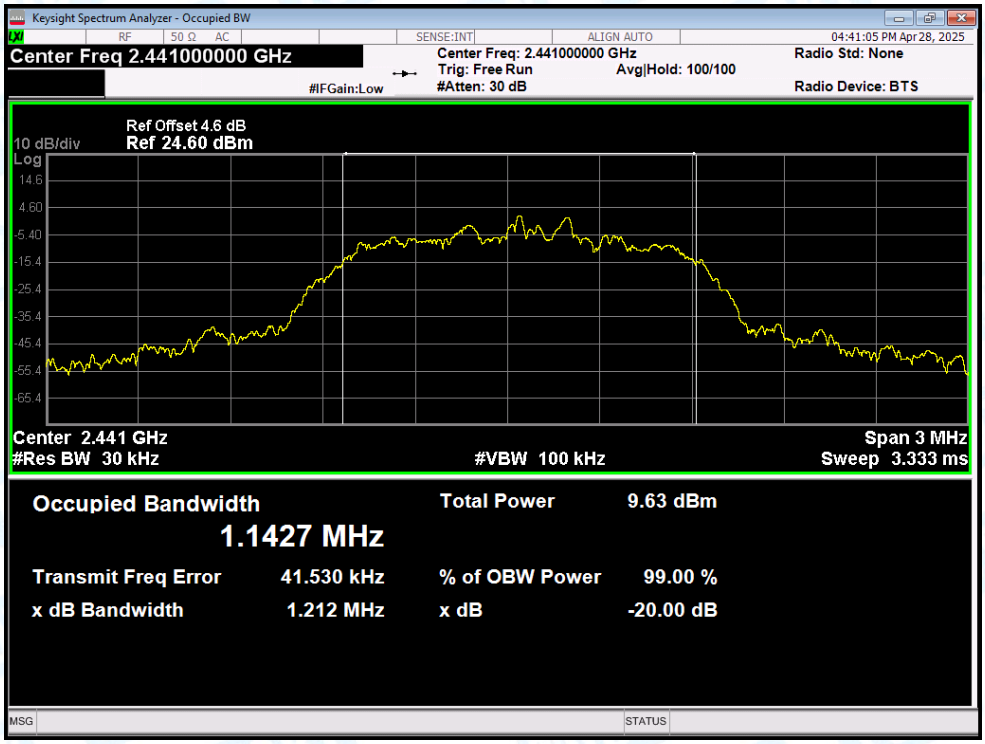
OBW NVNT 2-DH1 2480MHz Ant1



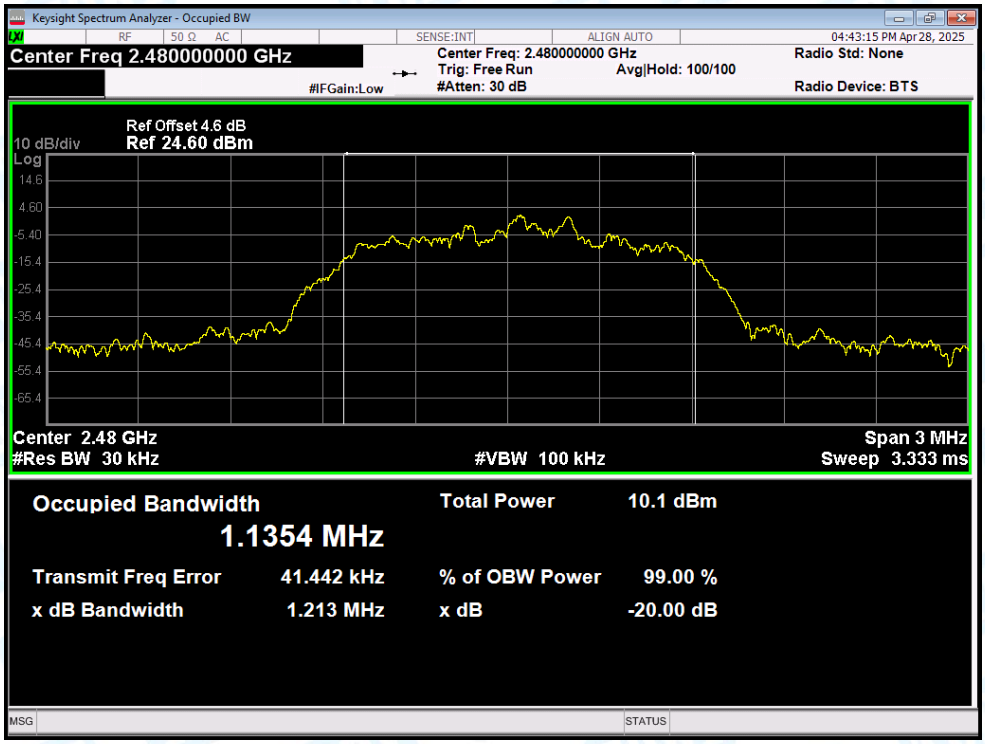
OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



OBW NVNT 3-DH1 2480MHz Ant1

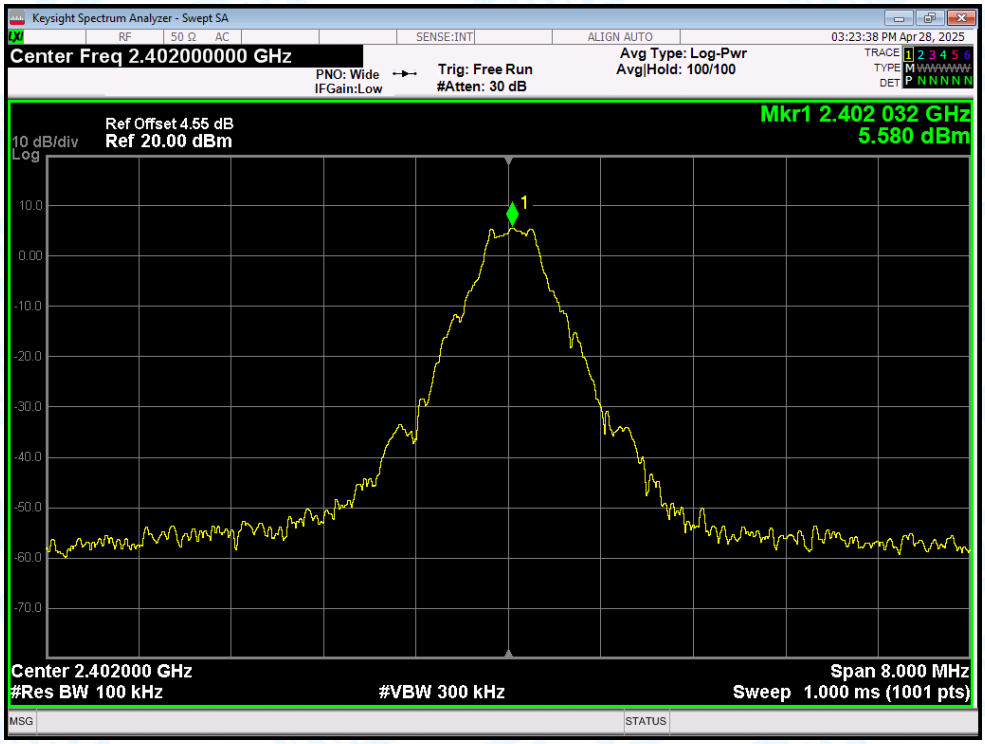


5. Band Edge

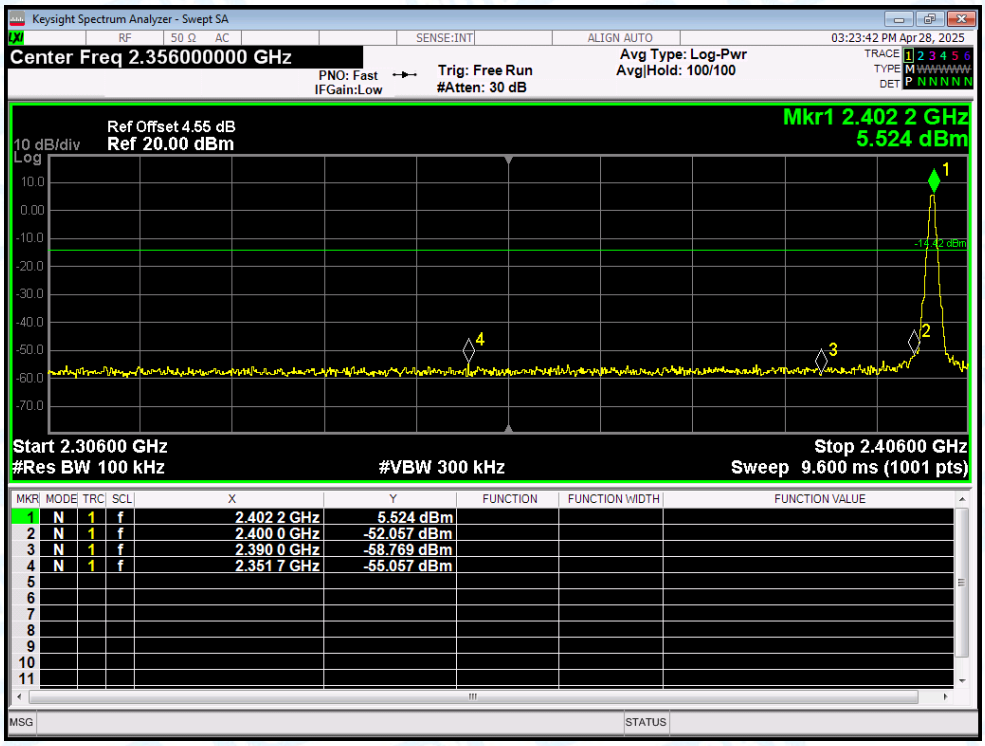
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-60.64	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-60.63	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-57.42	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-59.02	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-58.6	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-57.3	-20	Pass

Test Graphs

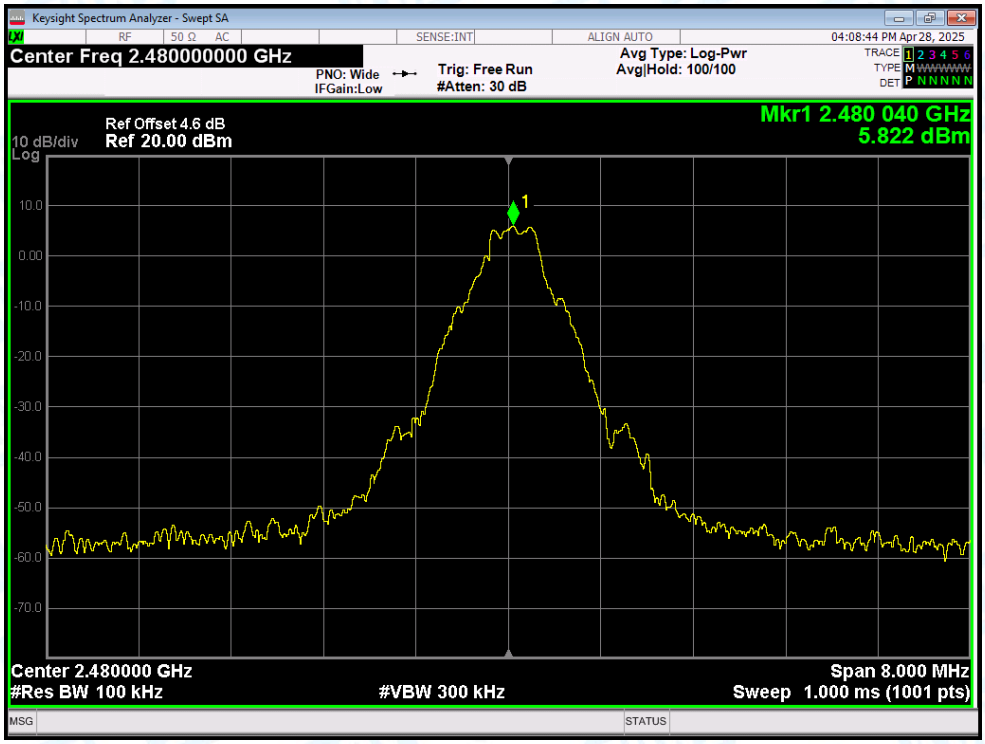
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



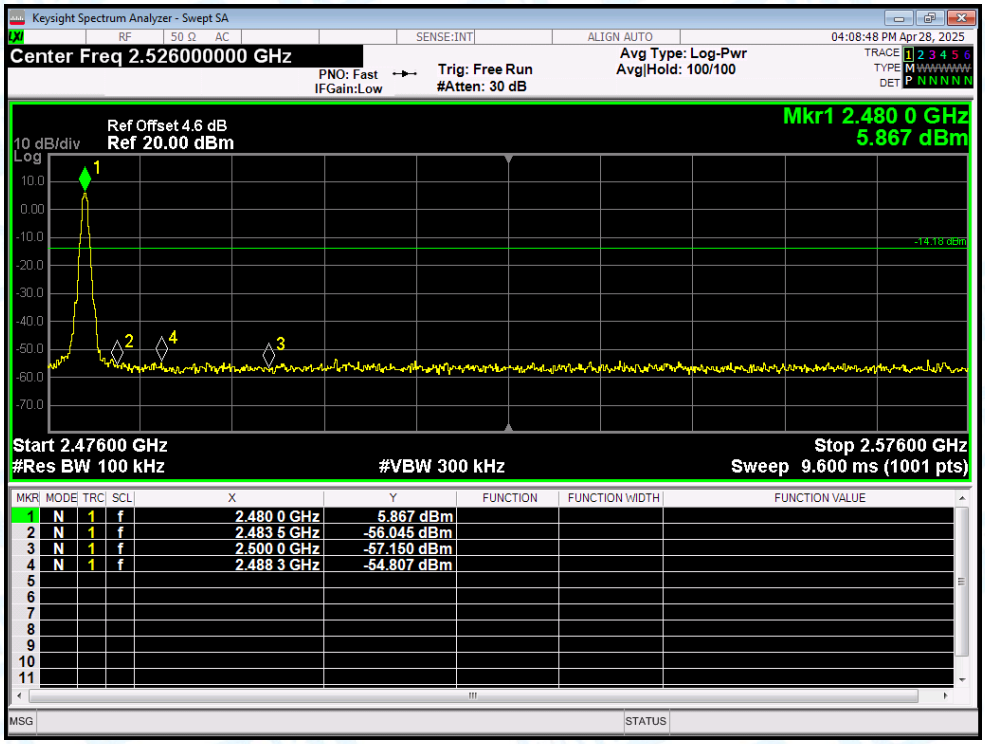
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



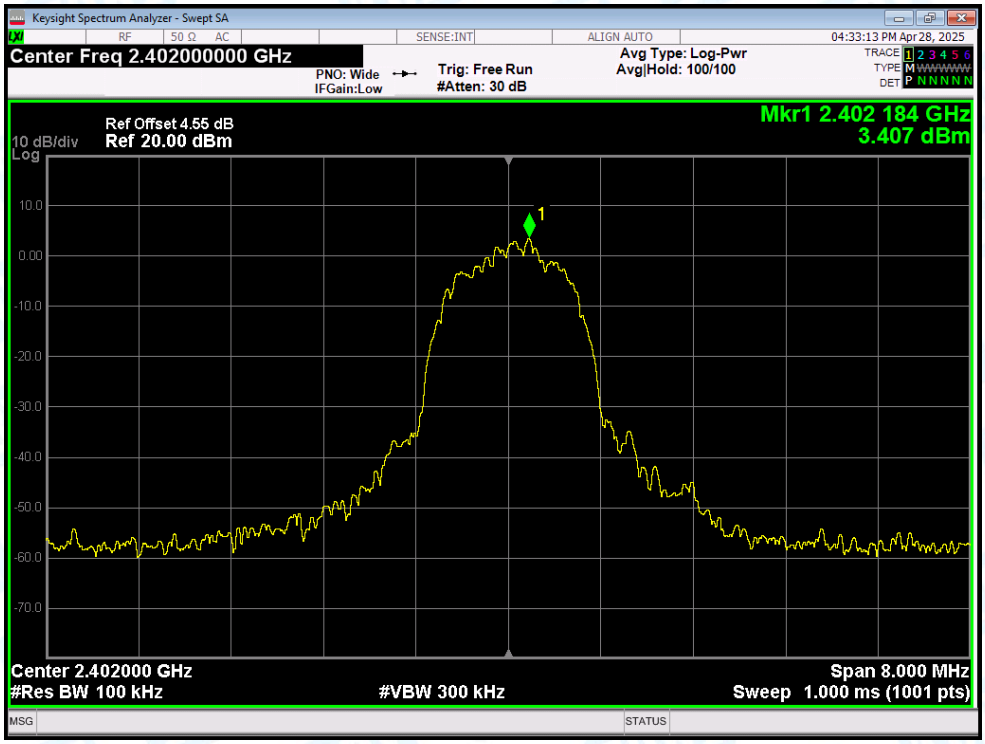
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



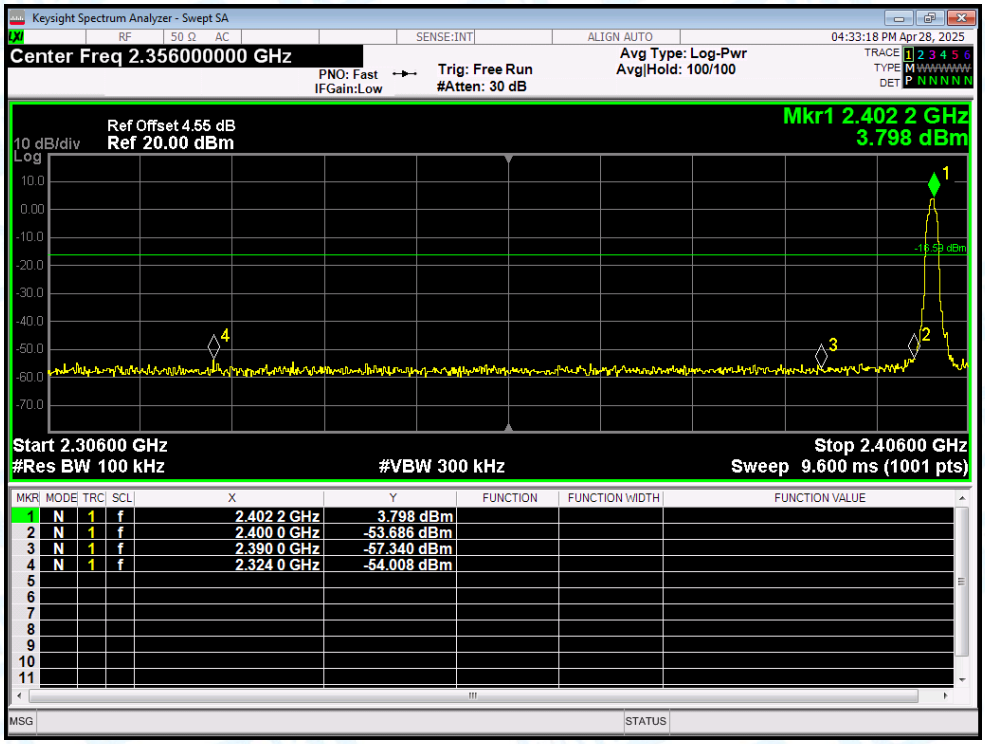
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



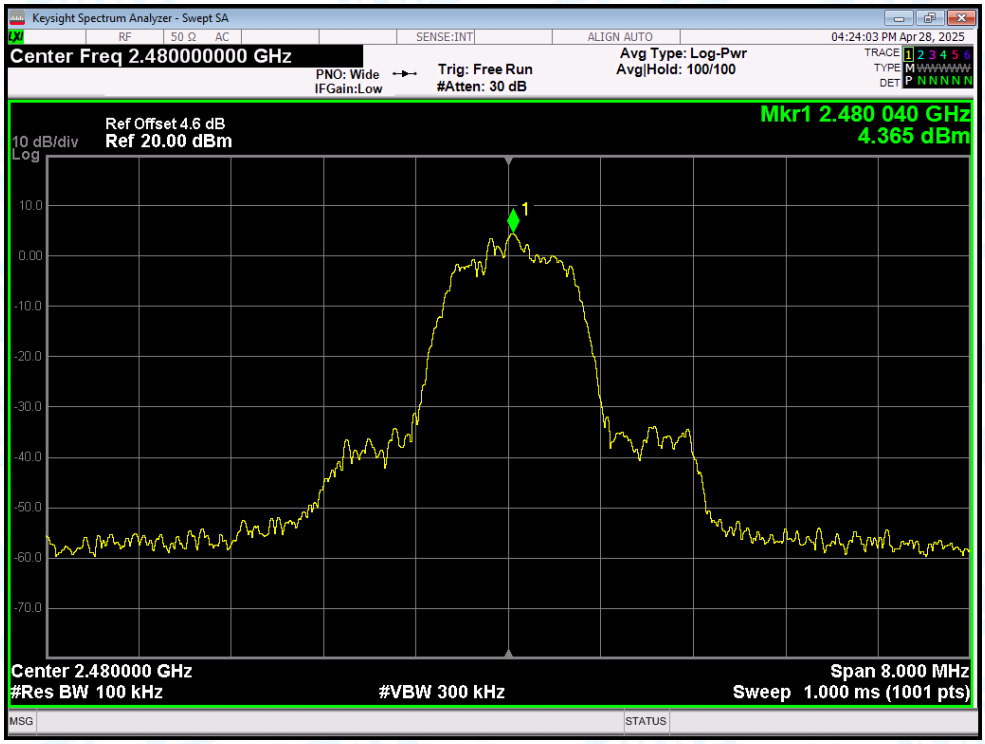
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



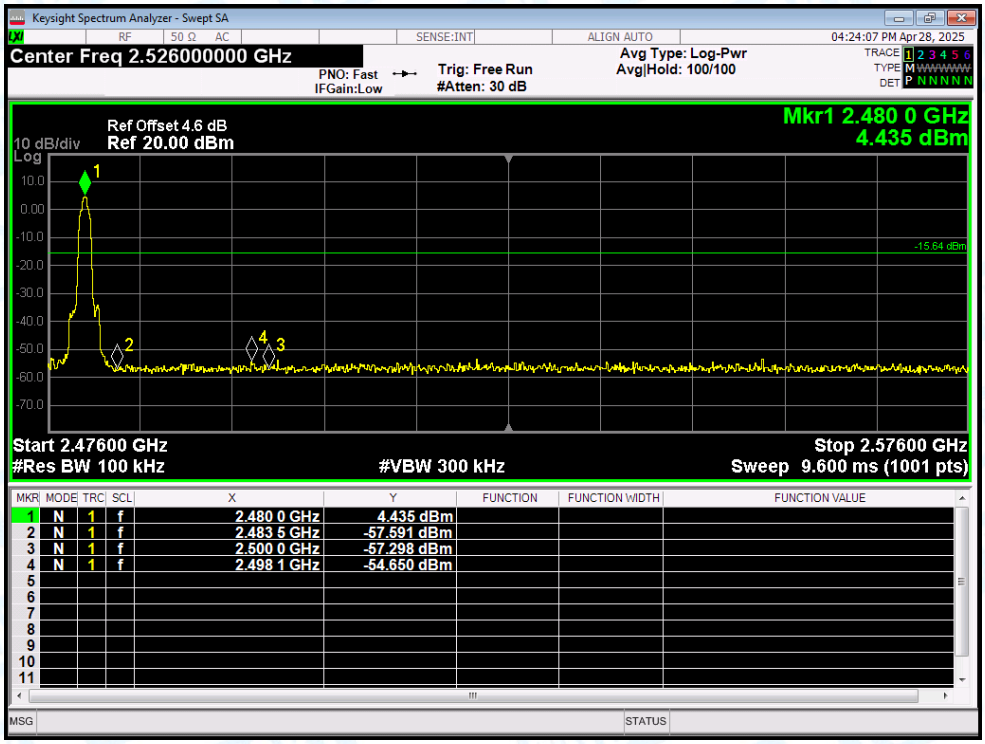
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



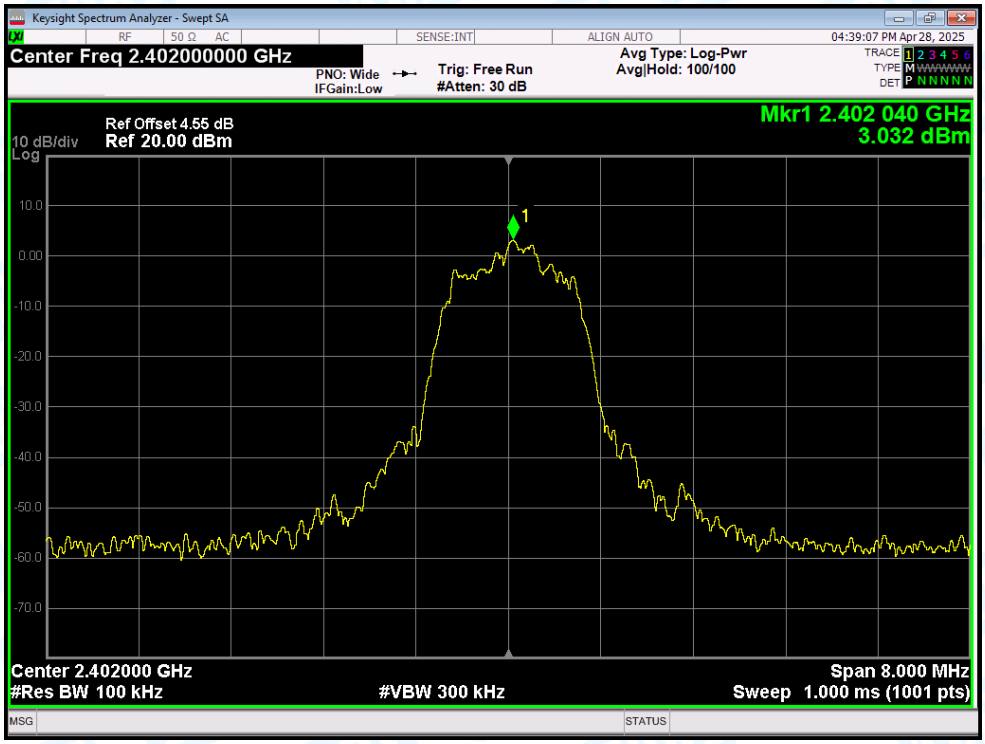
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



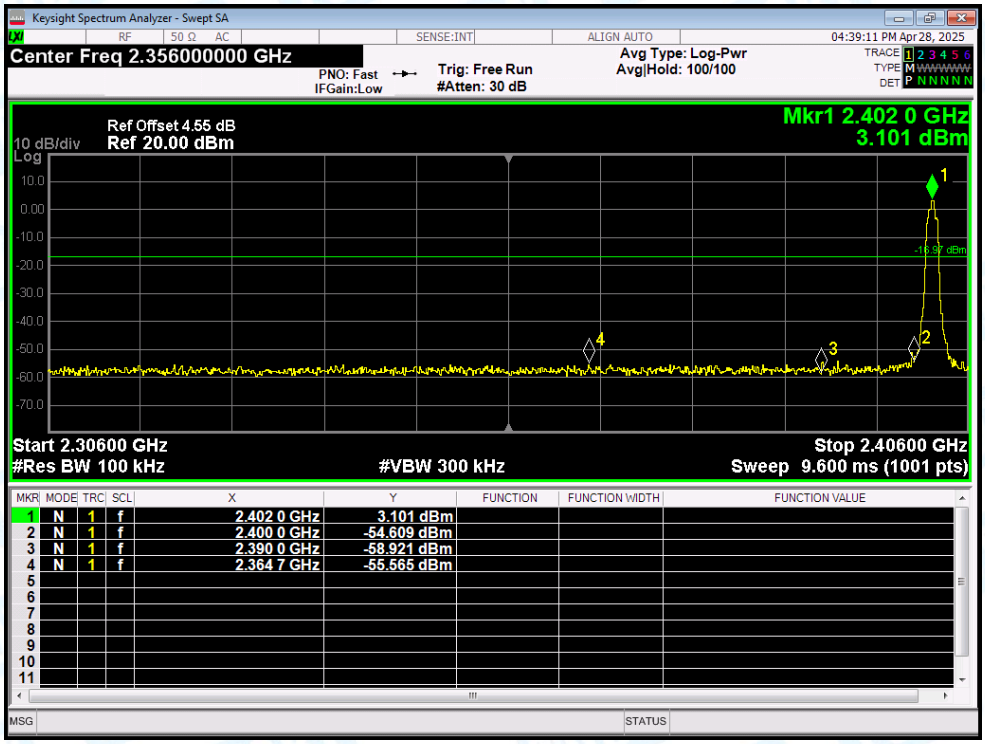
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



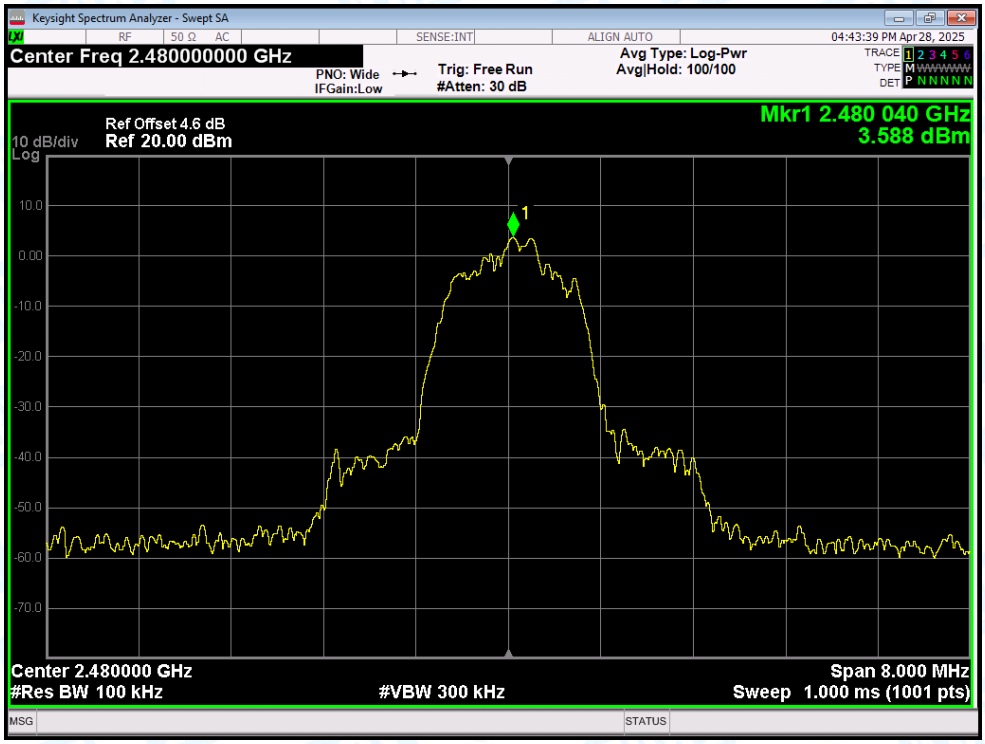
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



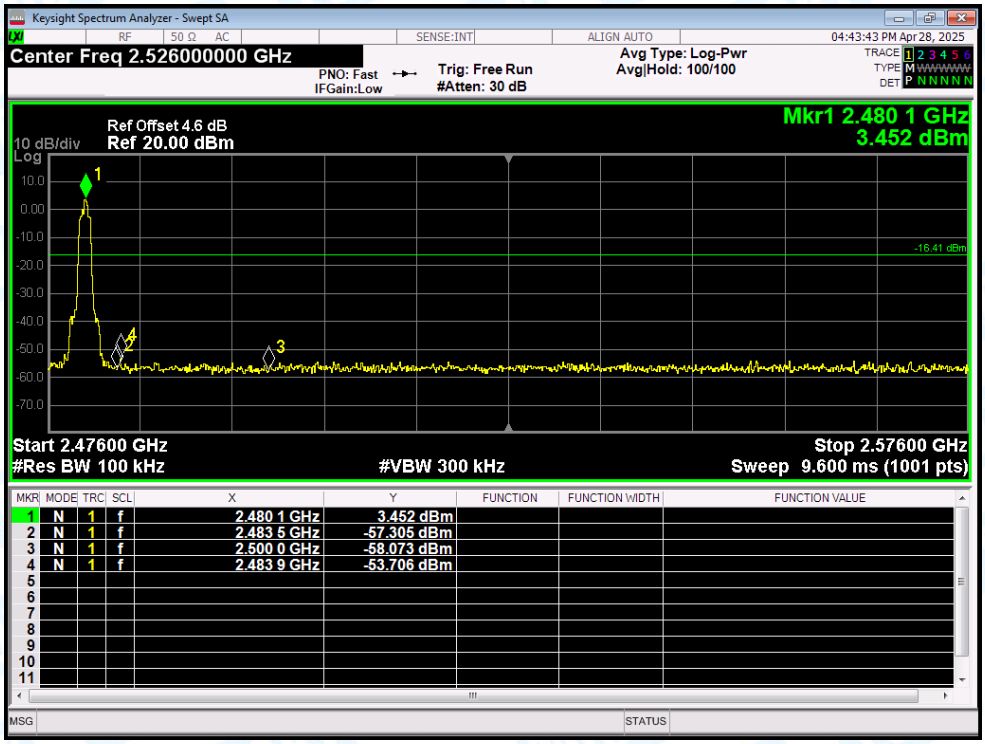
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Ref



Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Emission



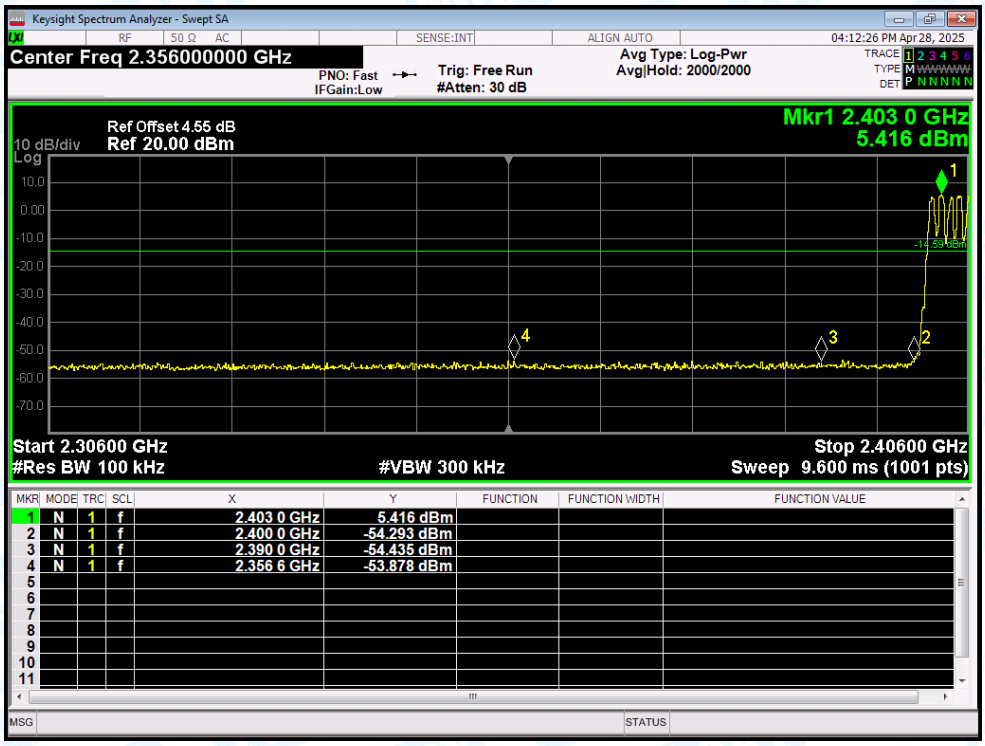
6. Band Edge(Hopping)

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-59.29	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-58.99	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-57.76	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-58.16	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-56.99	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-57.07	-20	Pass

Test Graphs

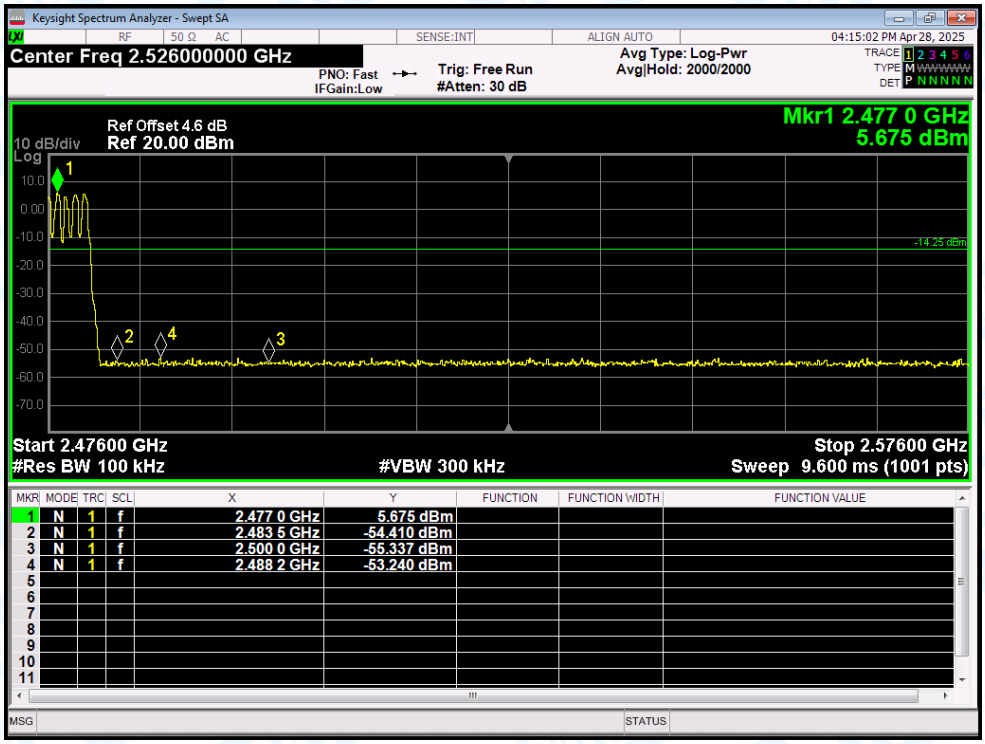
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref

Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission

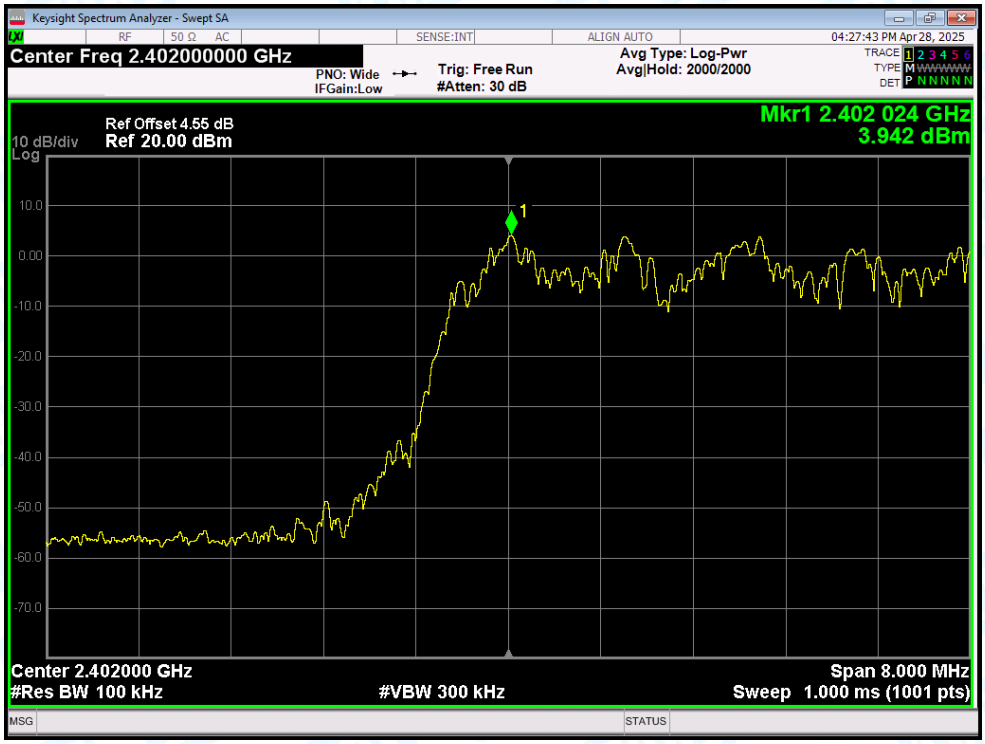


Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref

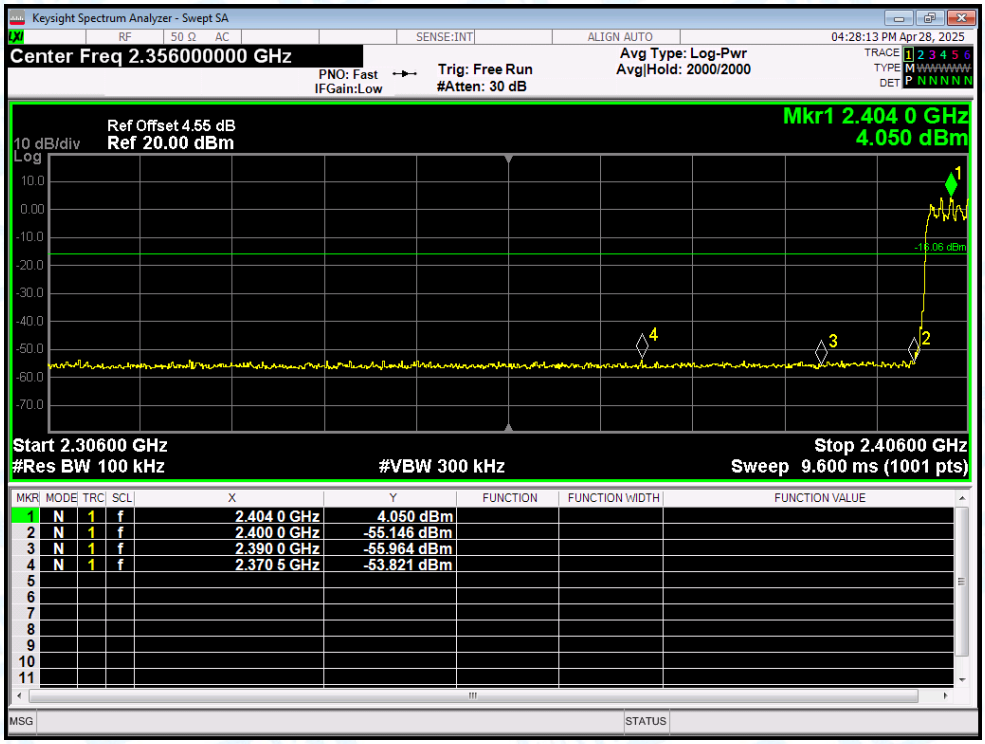
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



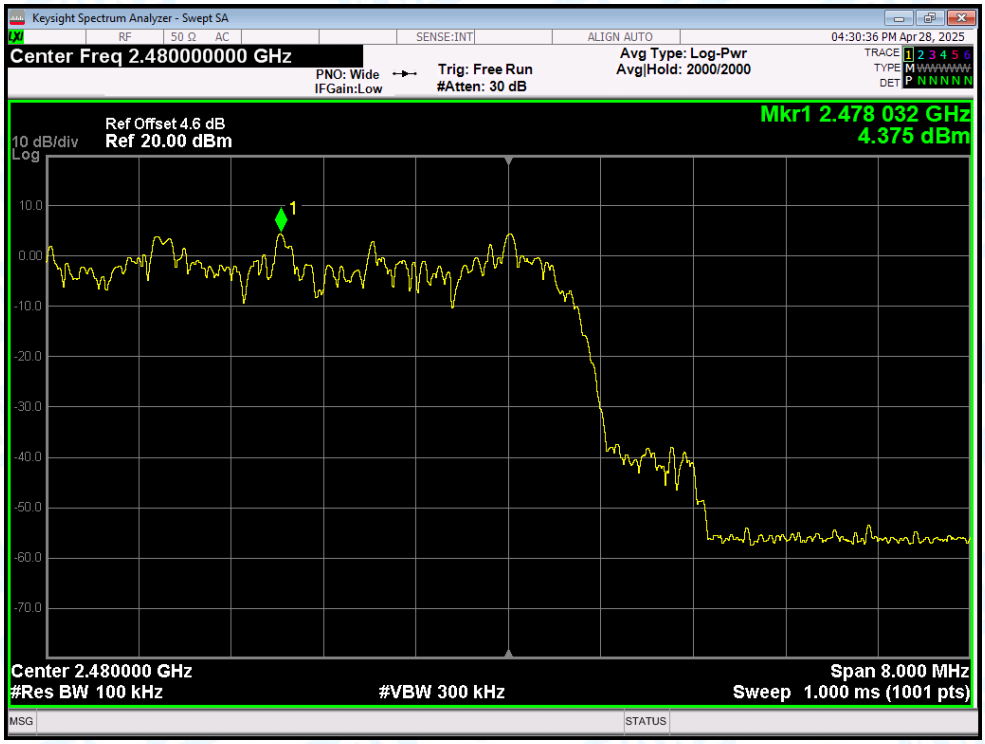
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref



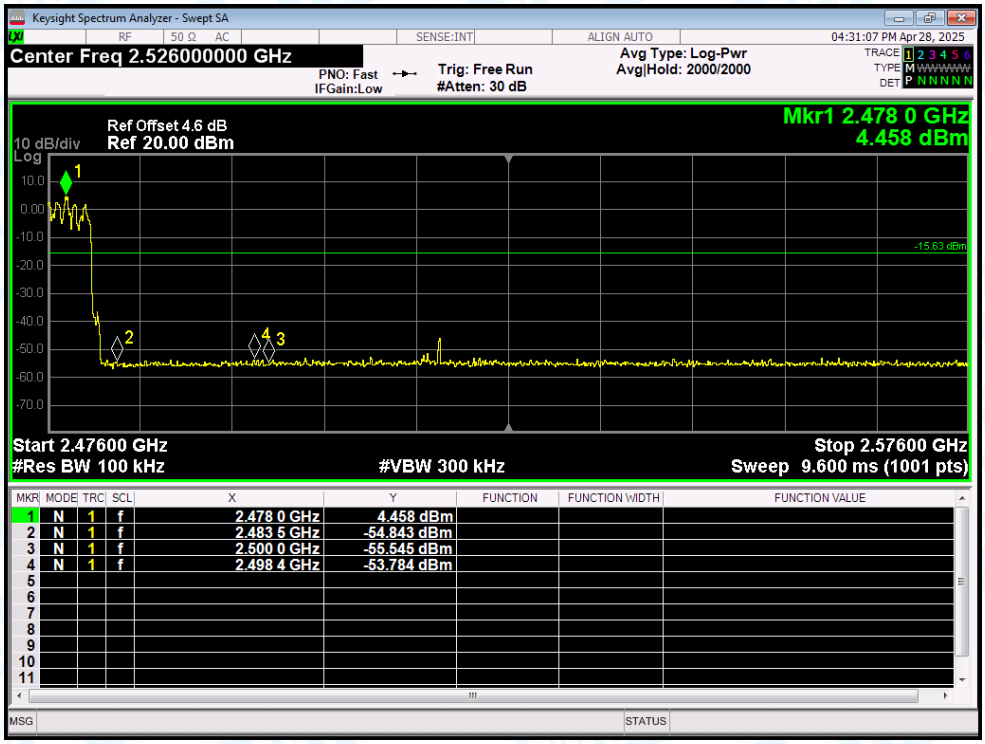
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref

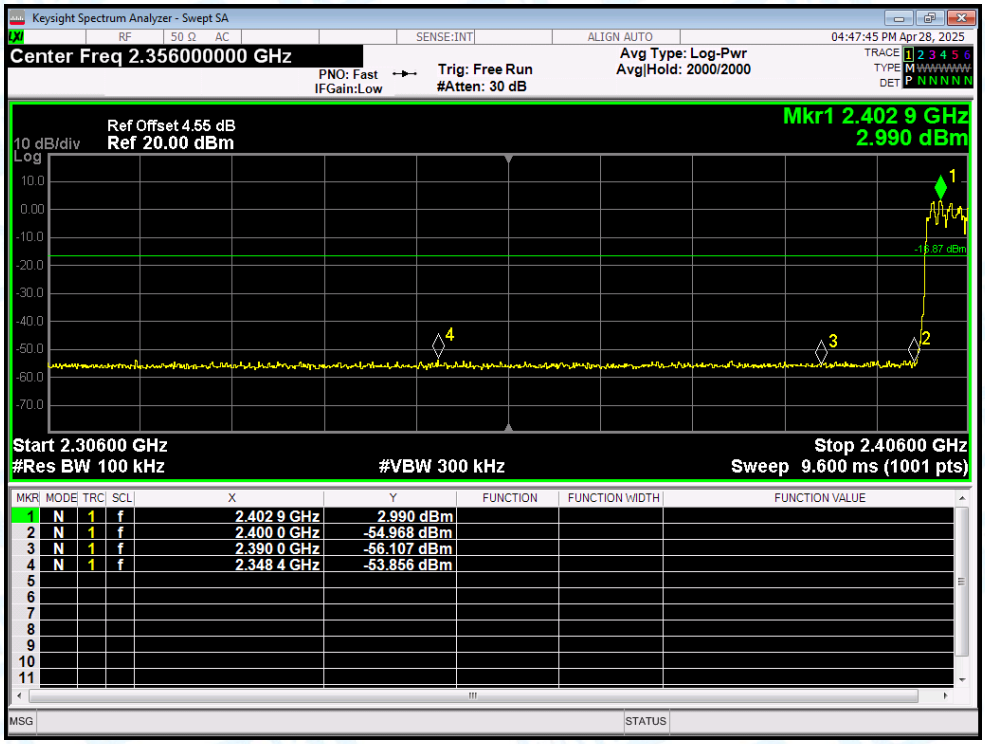


Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission



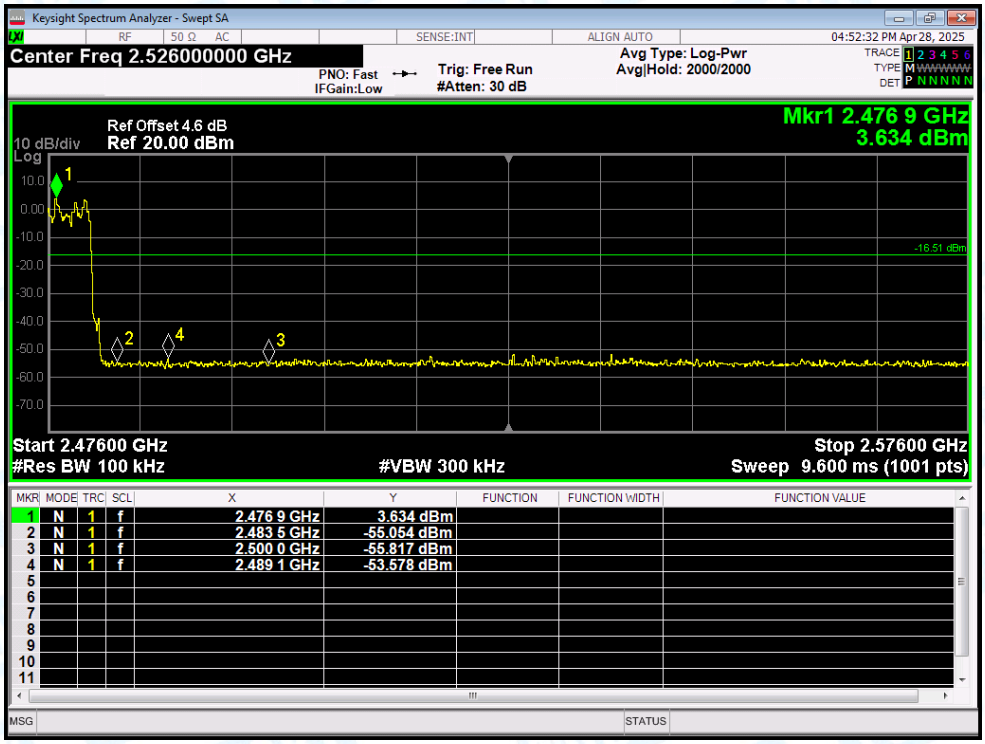
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref

Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 3-DH1 2480MHz Ant1 Hopping Ref

Band Edge(Hopping) NVNT 3-DH1 2480MHz Ant1 Hopping Emission

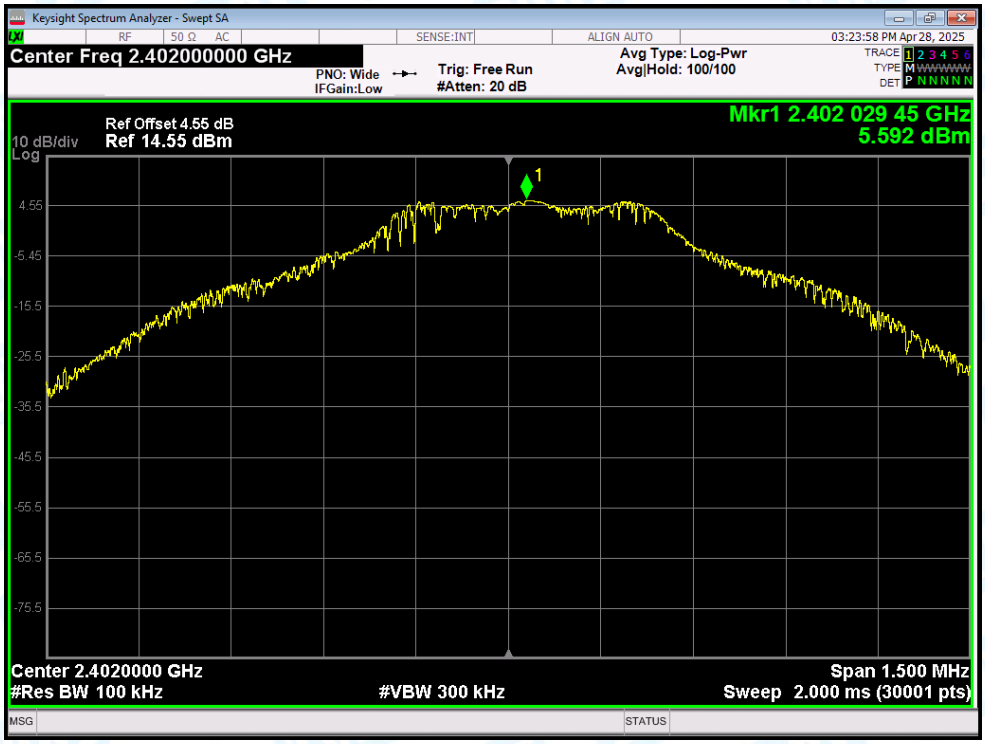


7. Conducted RF Spurious Emission

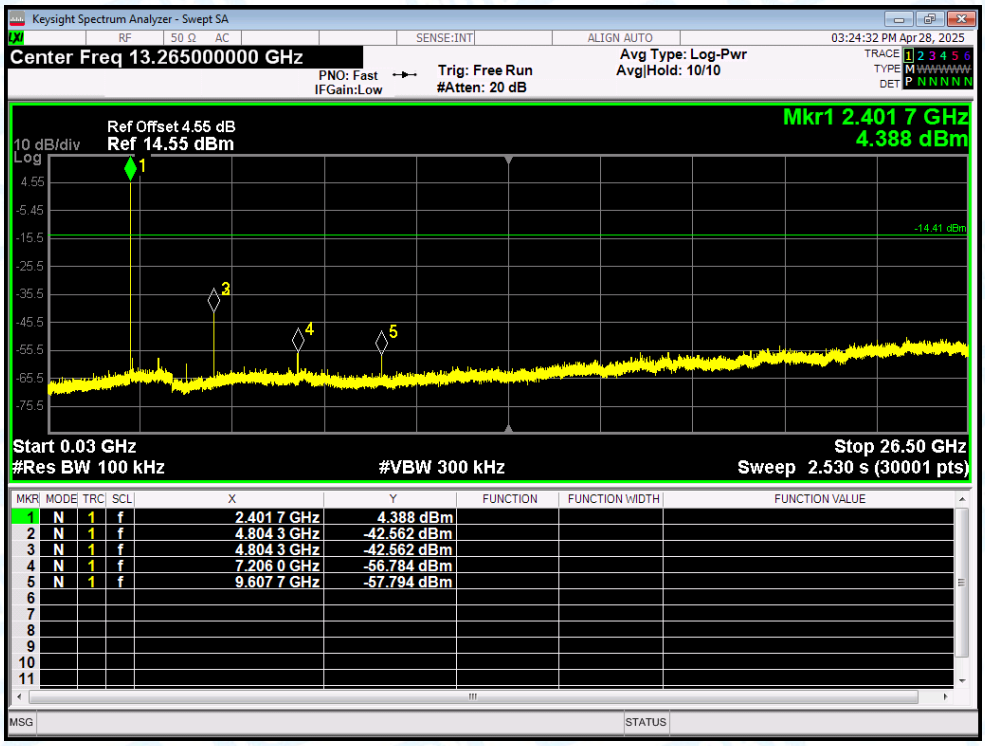
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-48.15	-20	Pass
NVNT	1-DH1	2441	Ant1	-47.21	-20	Pass
NVNT	1-DH1	2480	Ant1	-42.55	-20	Pass
NVNT	2-DH1	2402	Ant1	-48.84	-20	Pass
NVNT	2-DH1	2441	Ant1	-49.09	-20	Pass
NVNT	2-DH1	2480	Ant1	-48.28	-20	Pass
NVNT	3-DH1	2402	Ant1	-46.34	-20	Pass
NVNT	3-DH1	2441	Ant1	-50.26	-20	Pass
NVNT	3-DH1	2480	Ant1	-42.59	-20	Pass

Test Graphs

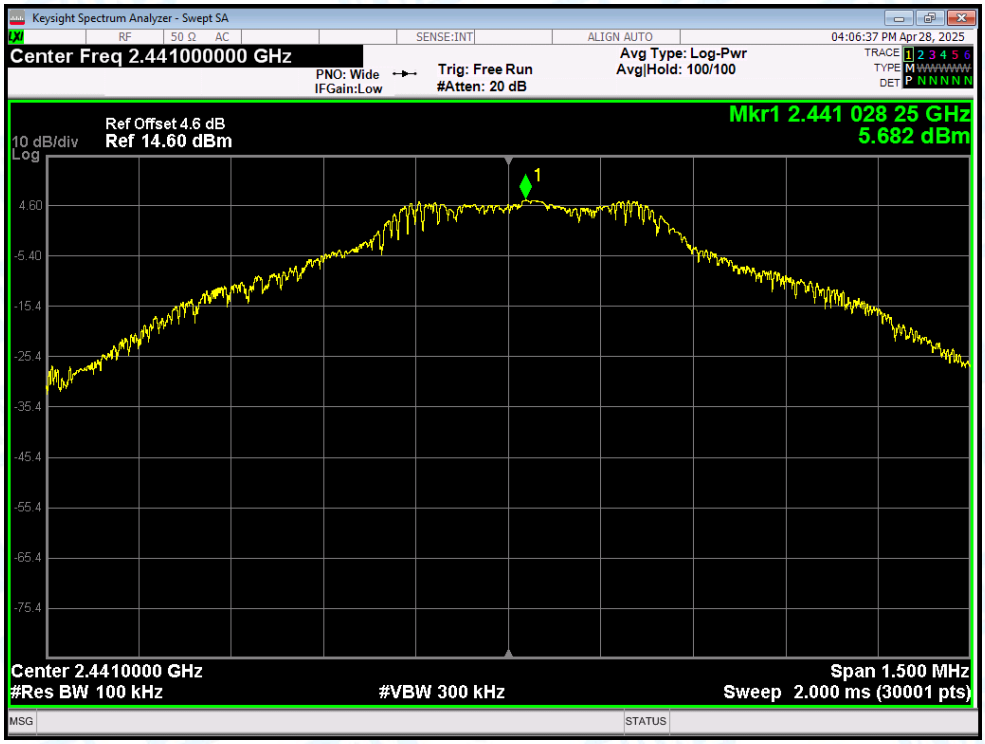
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



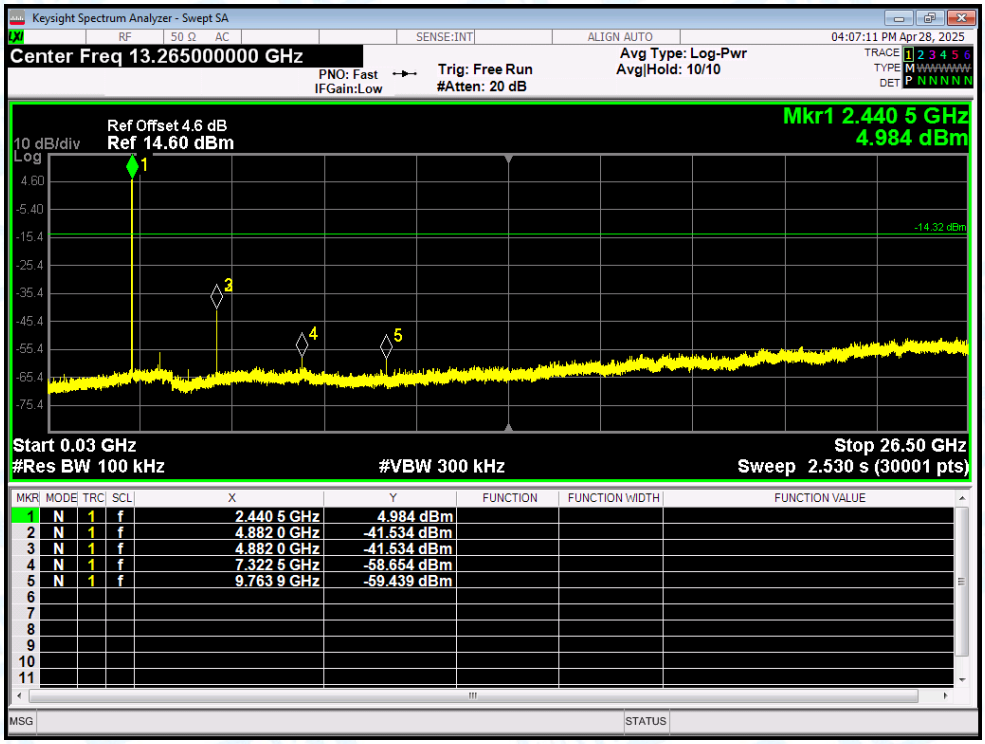
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



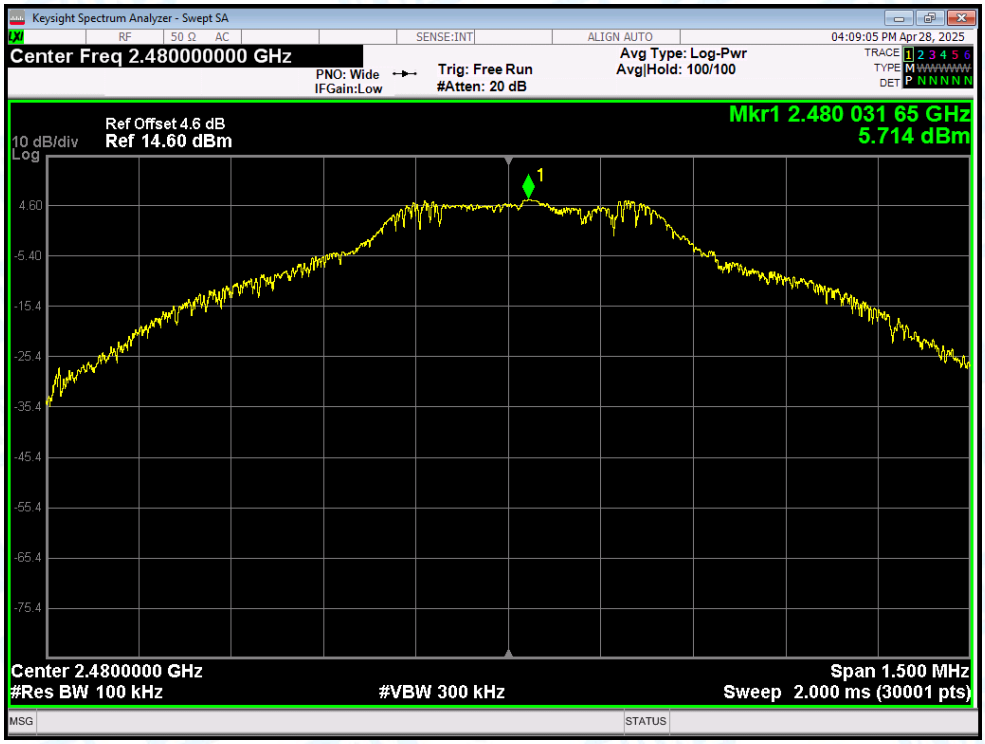
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



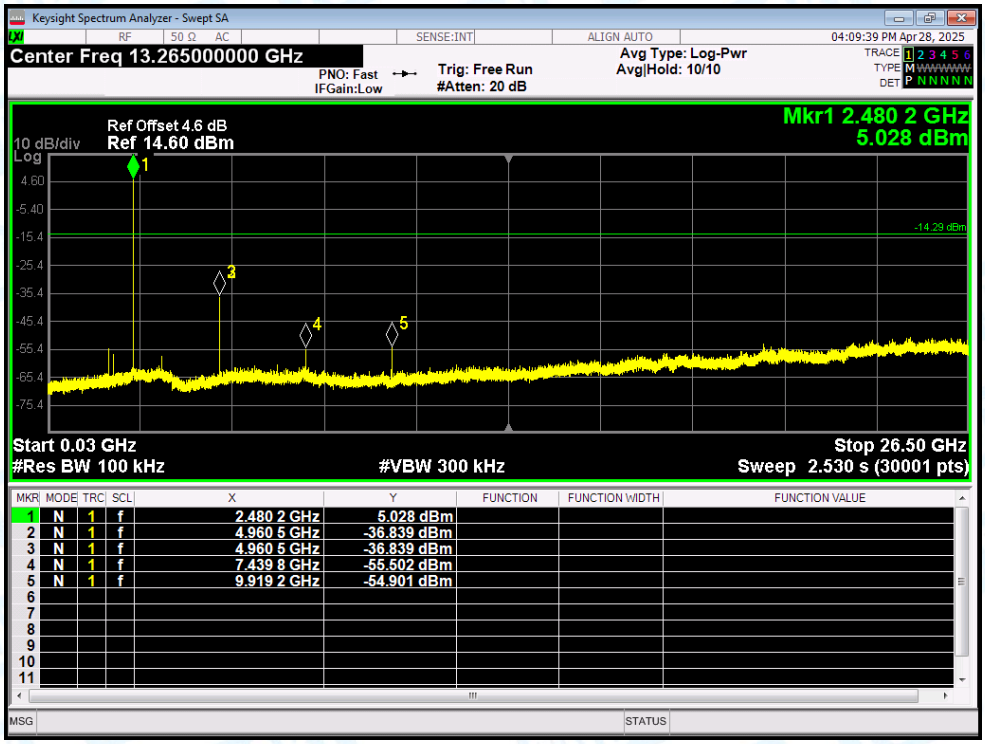
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



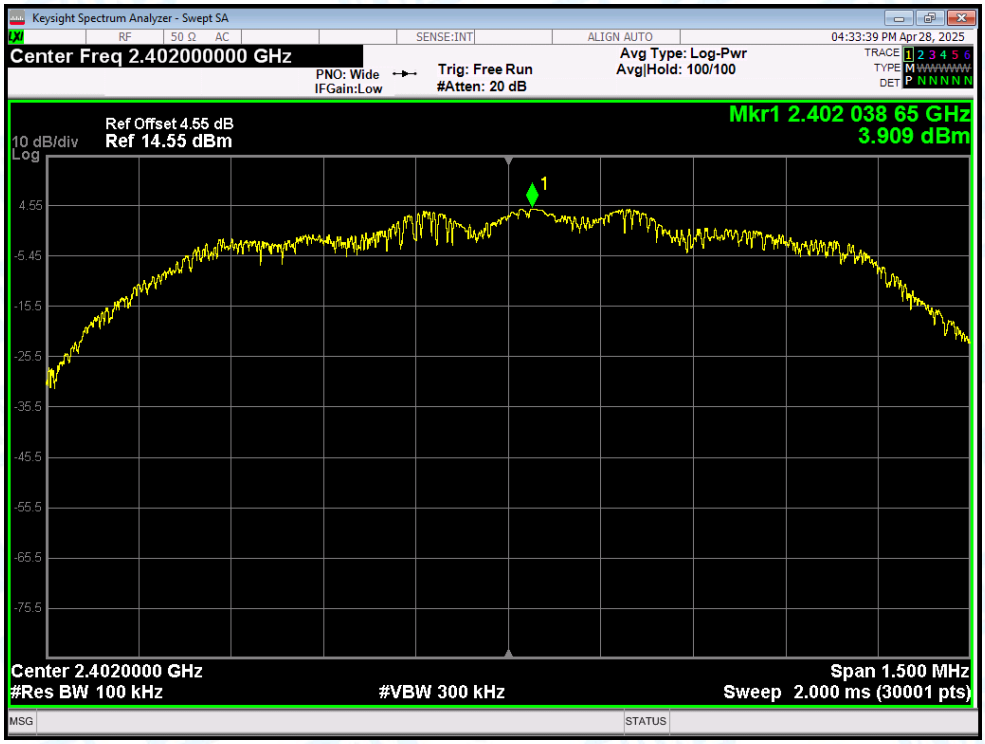
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



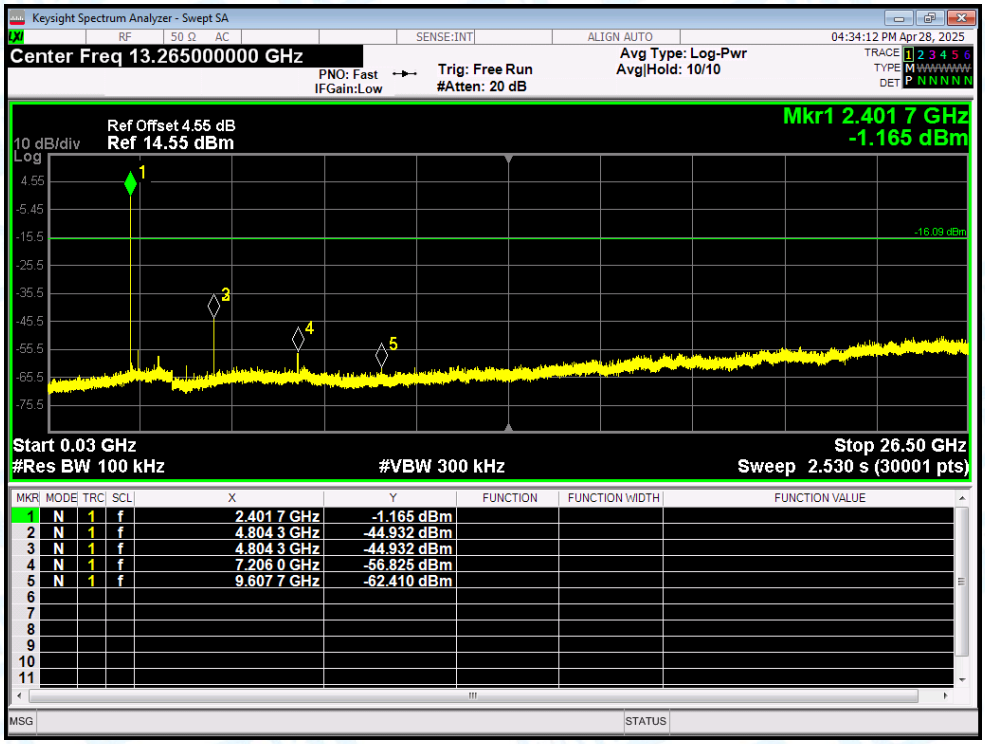
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



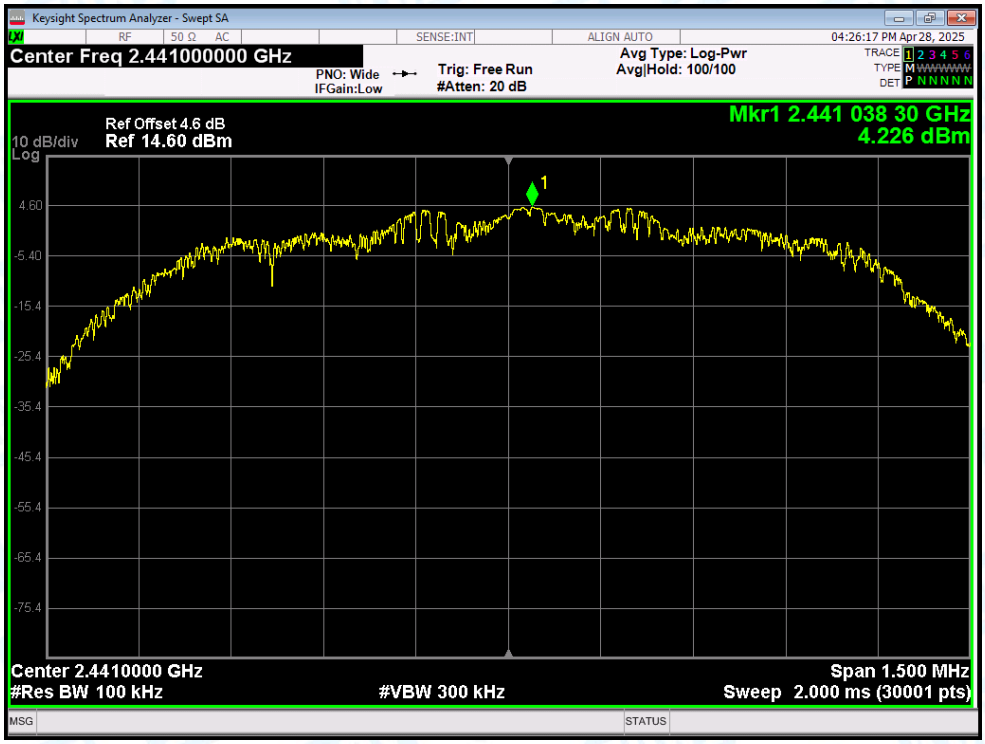
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



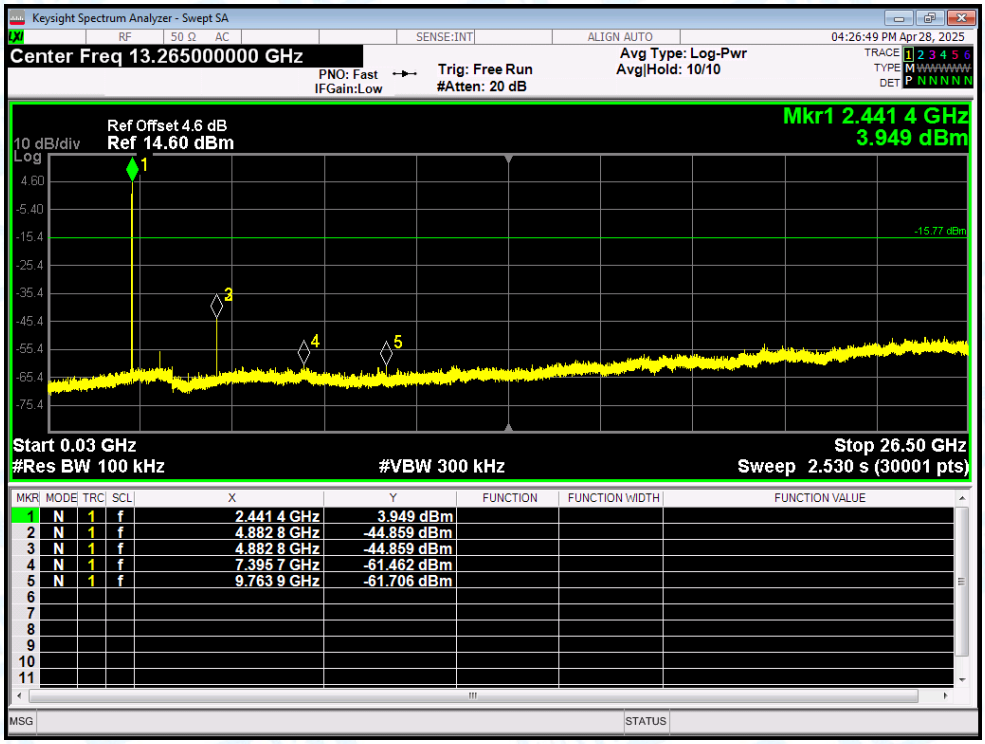
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



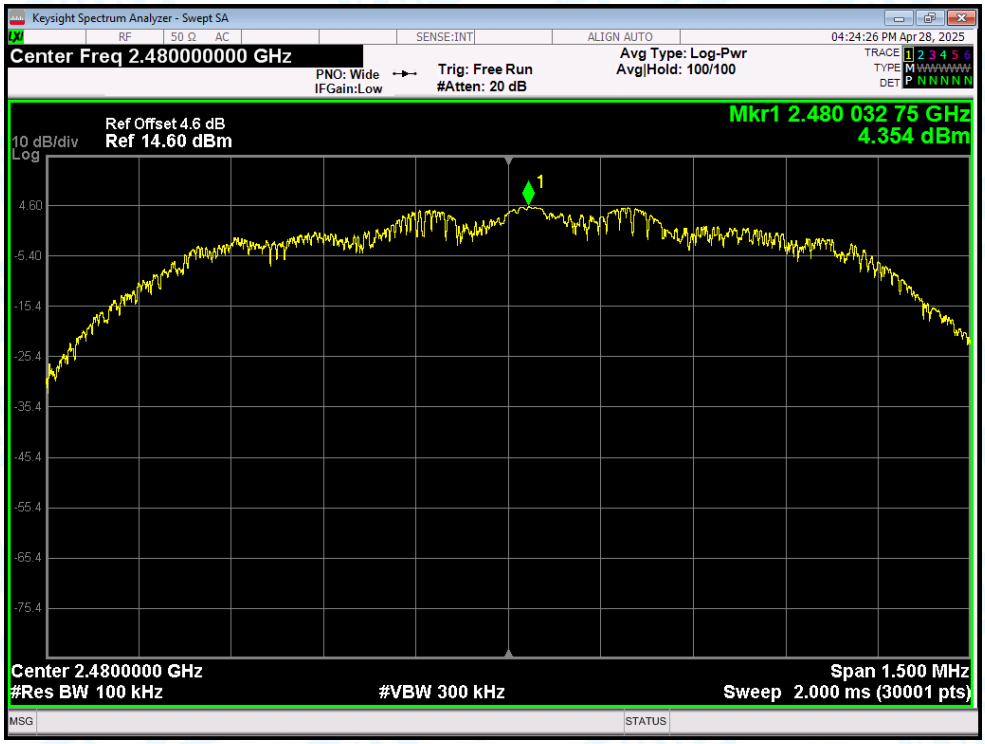
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



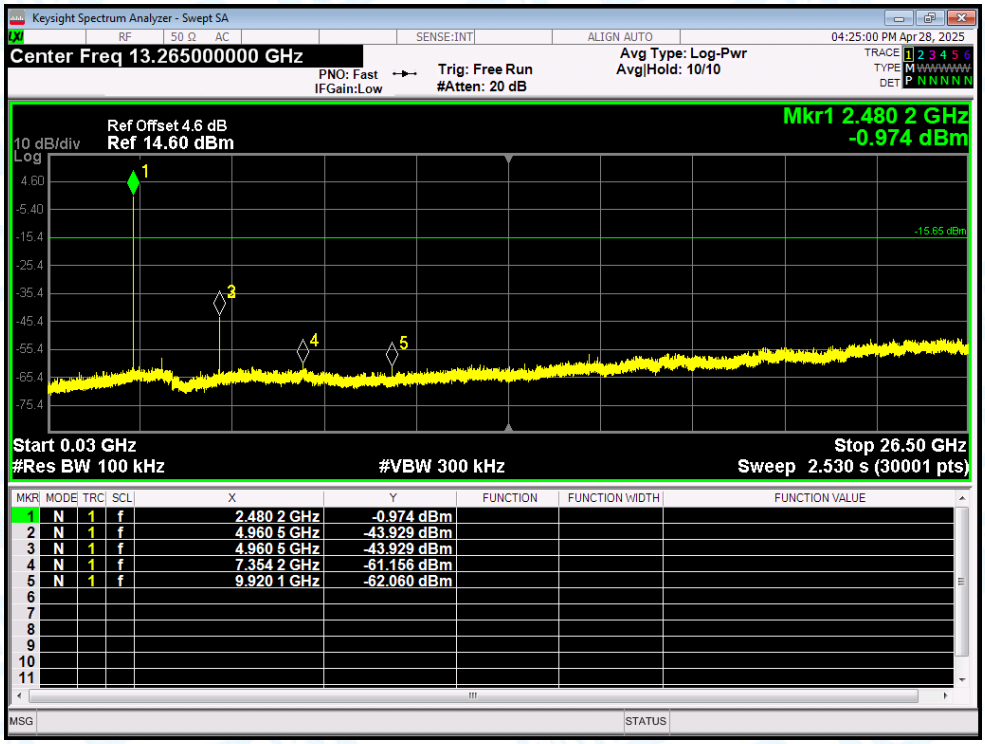
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



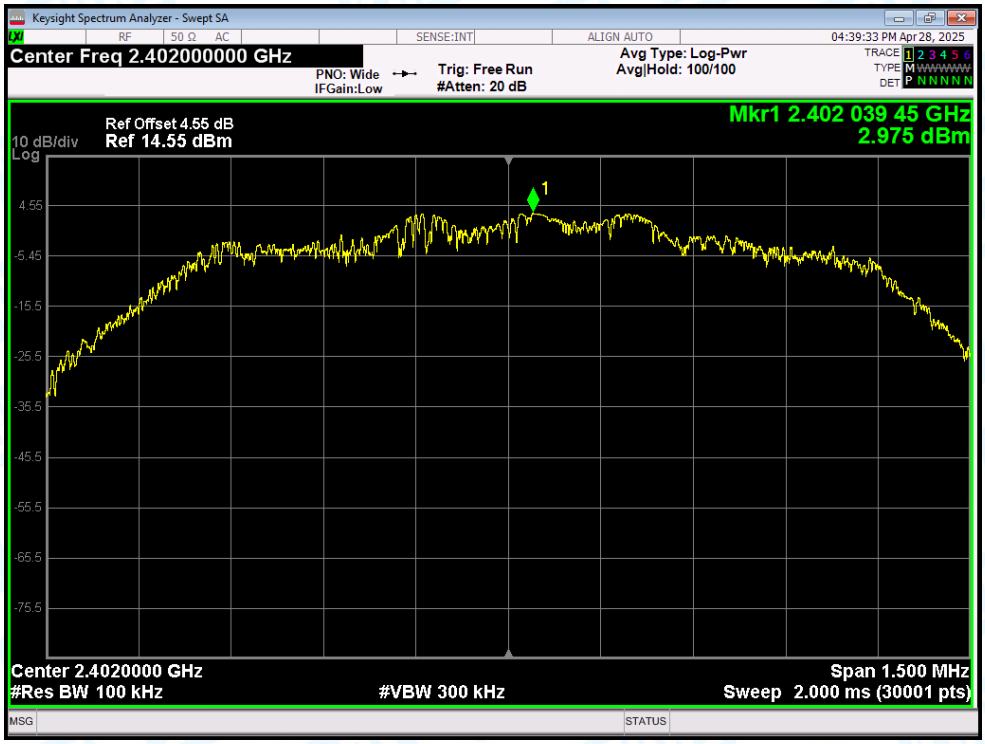
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



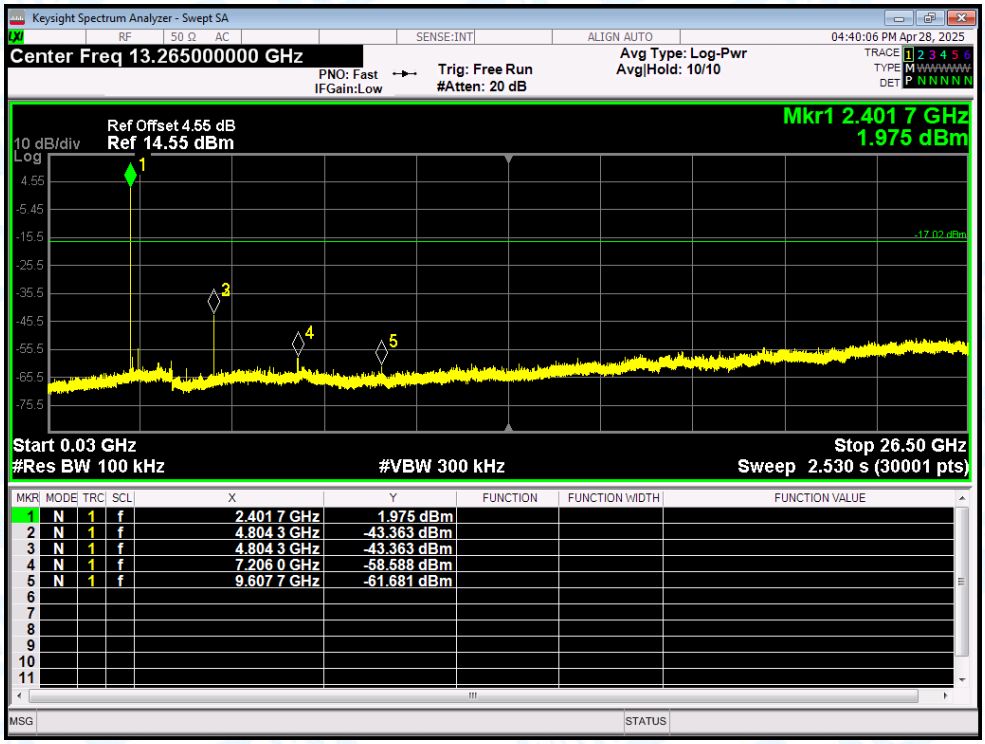
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



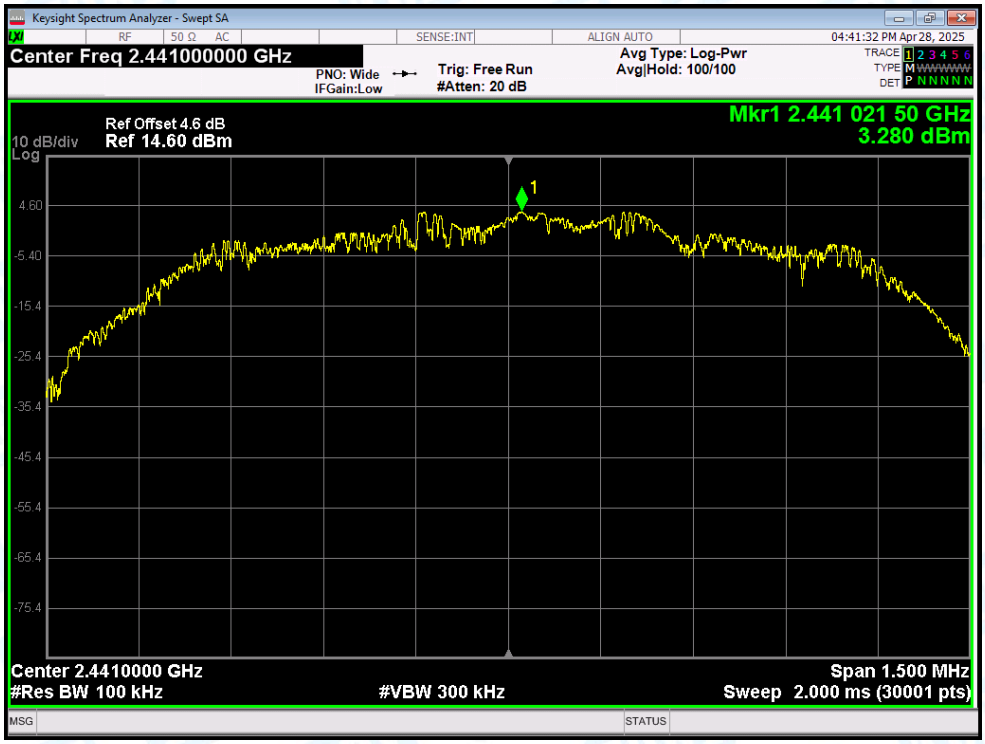
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



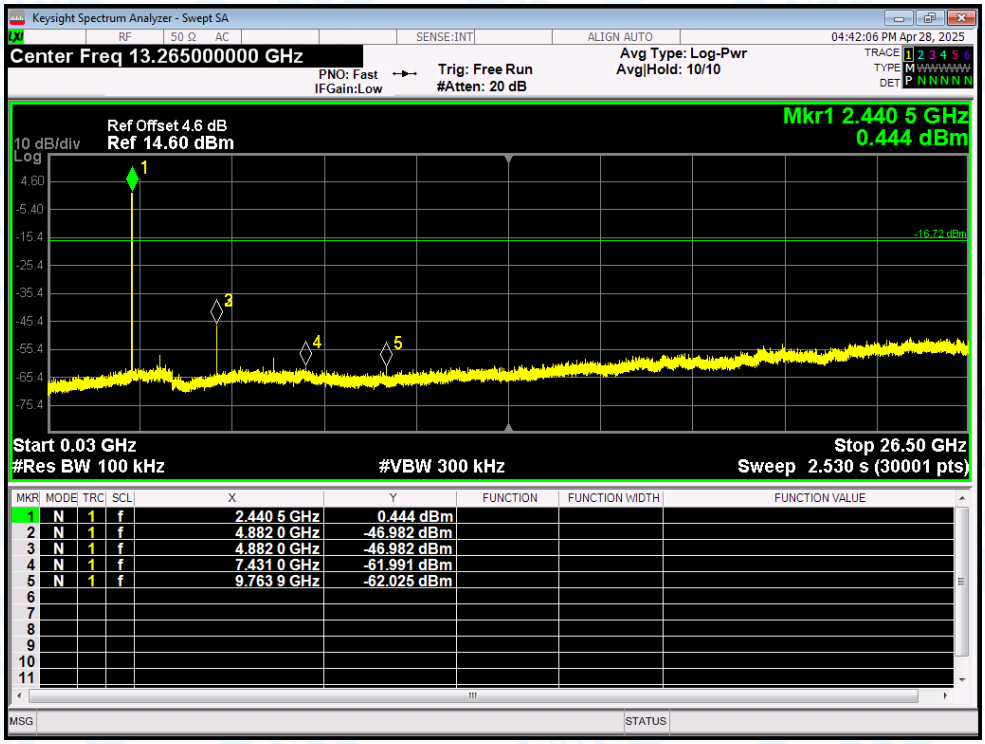
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



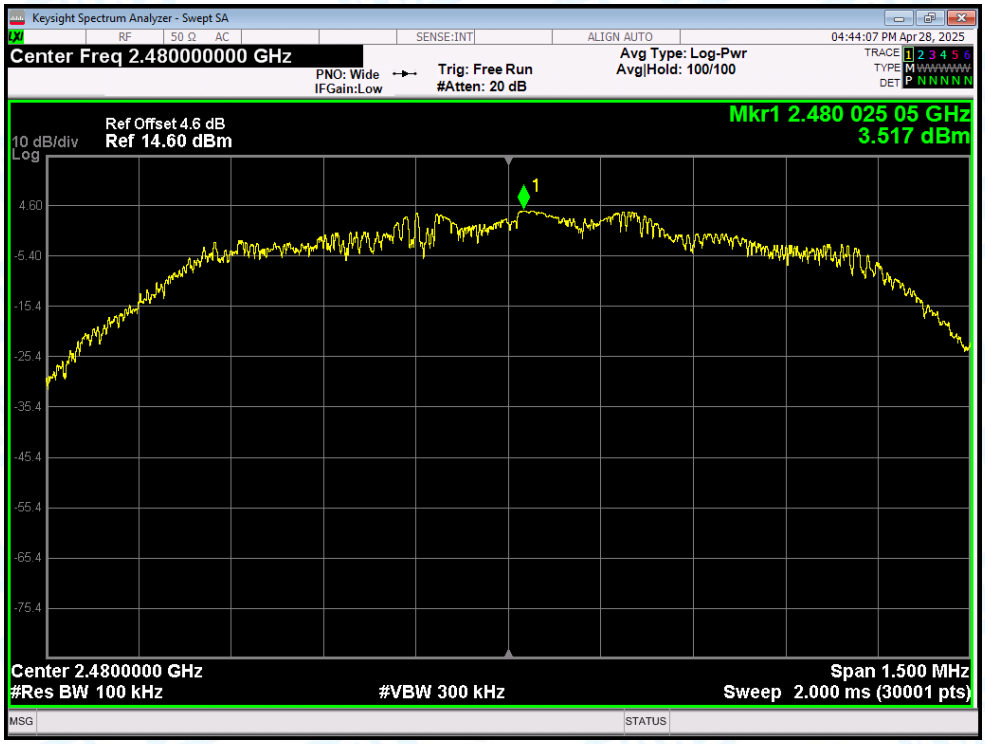
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



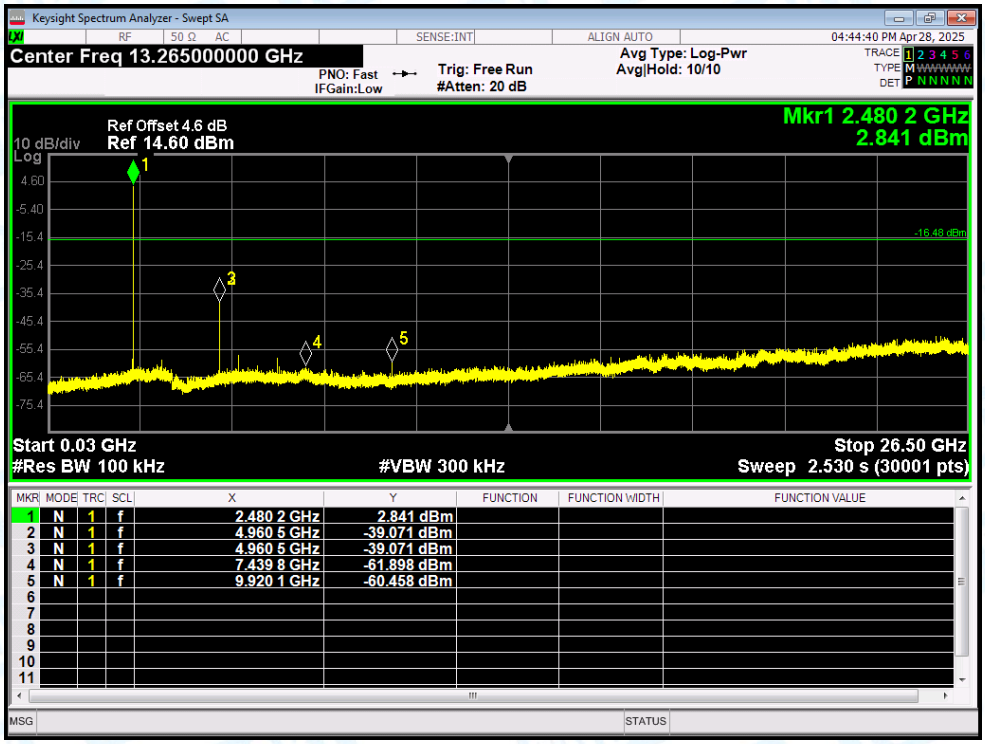
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

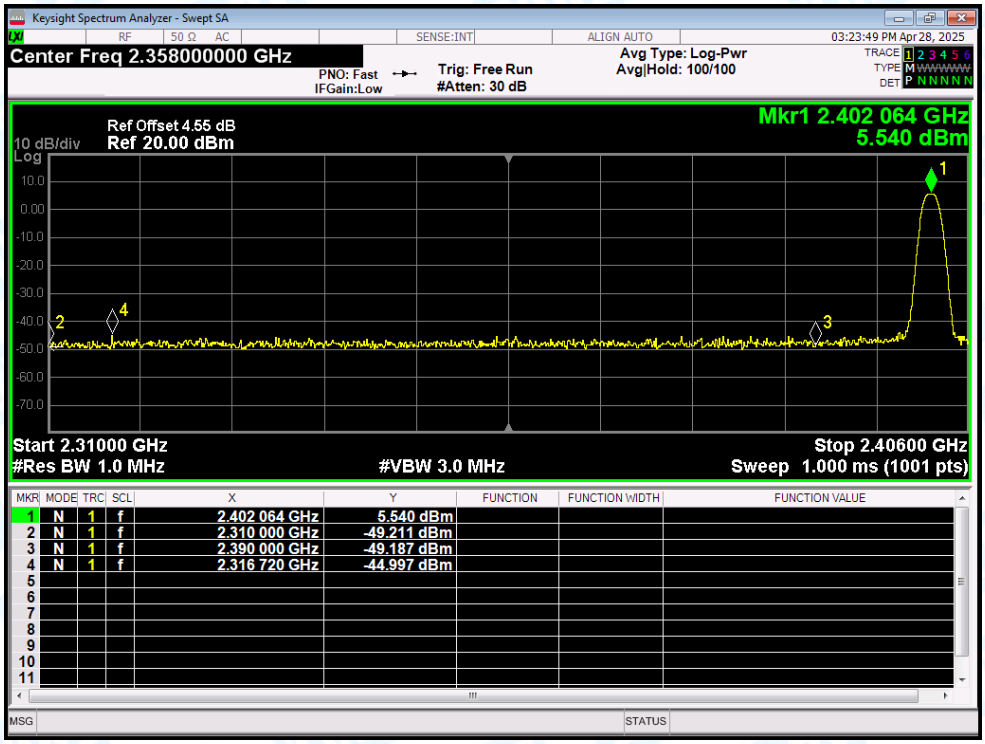


8. Restrict Band

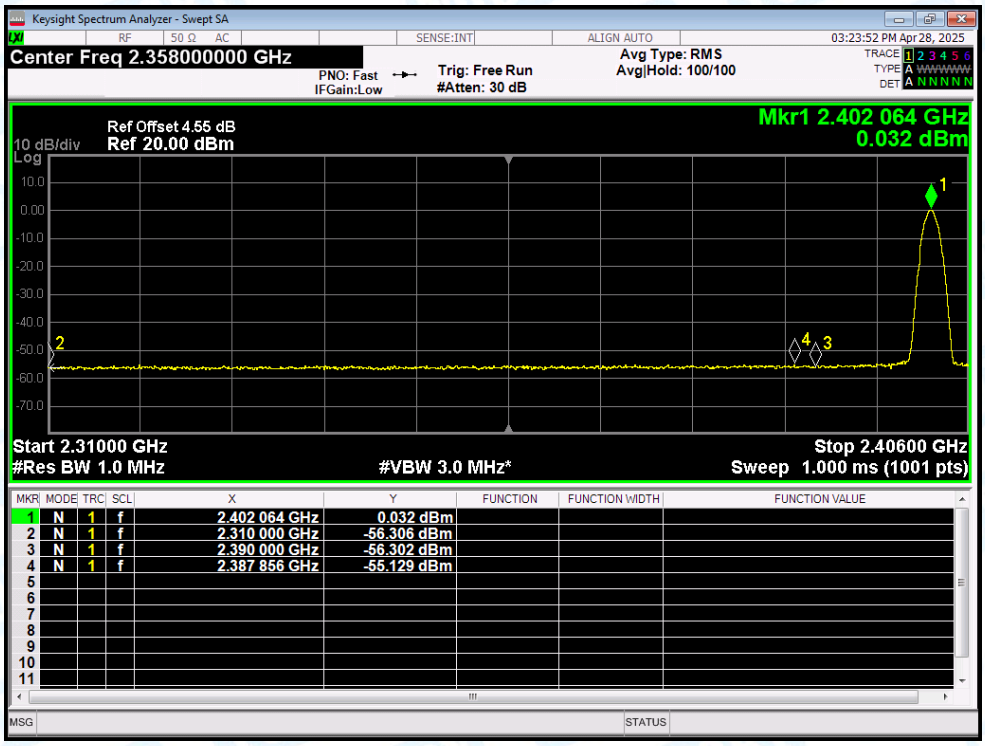
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-49.21	2	-	48.05	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.31	2	4.99	45.94	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2316.72	-45	2	-	52.26	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2387.856	-55.13	2	4.99	47.12	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-49.19	2	-	48.07	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-56.3	2	4.99	45.95	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-45.05	2	-	52.21	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-54.74	2	5.07	47.59	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.68	-44.09	2	-	53.17	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.632	-54.31	2	5.07	48.02	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-49.1	2	-	48.16	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-55.5	2	5.07	46.83	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-48.83	2	-	48.43	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.07	2	4.99	46.18	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2345.424	-45.24	2	-	52.02	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2386.8	-55.44	2	4.99	46.81	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-46.69	2	-	50.57	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-55.77	2	4.99	46.48	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-47.76	2	-	49.5	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-55.54	2	4.91	46.63	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2489.608	-44.83	2	-	52.43	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2484.352	-54.48	2	4.91	47.69	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-48.77	2	-	48.49	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.62	2	4.91	46.55	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-48.63	2	-	48.63	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.6	2	4.91	45.57	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2366.64	-45.52	2	-	51.74	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2376.72	-55.26	2	4.91	46.91	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-47.72	2	-	49.54	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-56.01	2	4.91	46.16	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-44.95	2	-	52.31	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-55.68	2	4.99	46.57	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2486.728	-43.91	2	-	53.35	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2485.744	-54.63	2	4.99	47.62	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-48.07	2	-	49.19	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.17	2	4.99	47.08	Average	54	Pass

Test Graphs

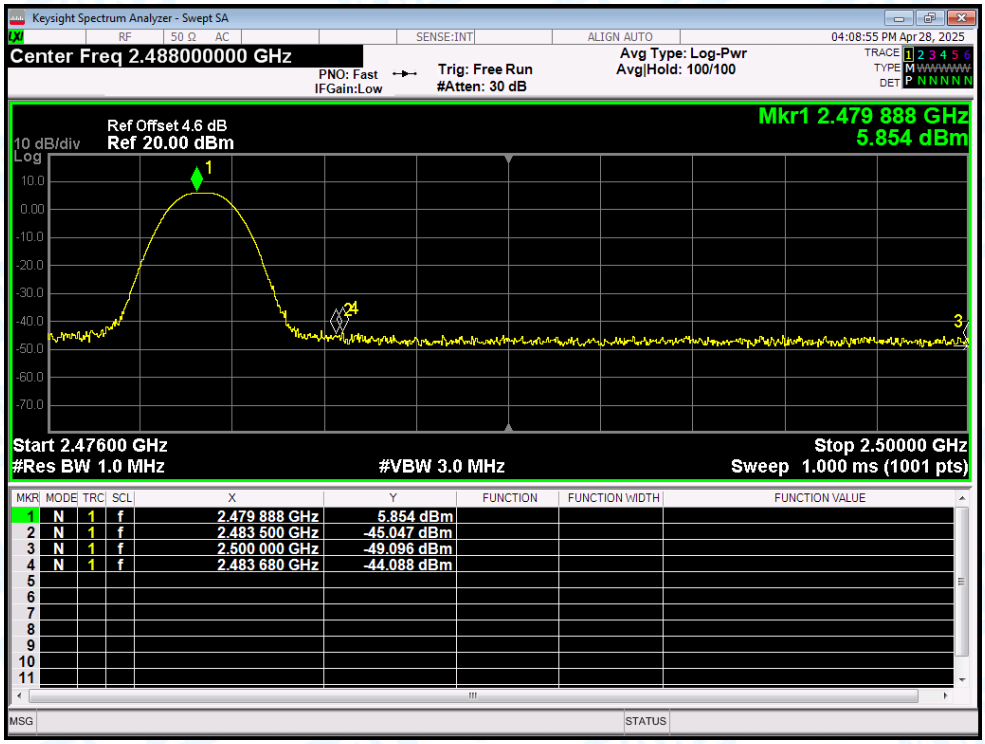
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



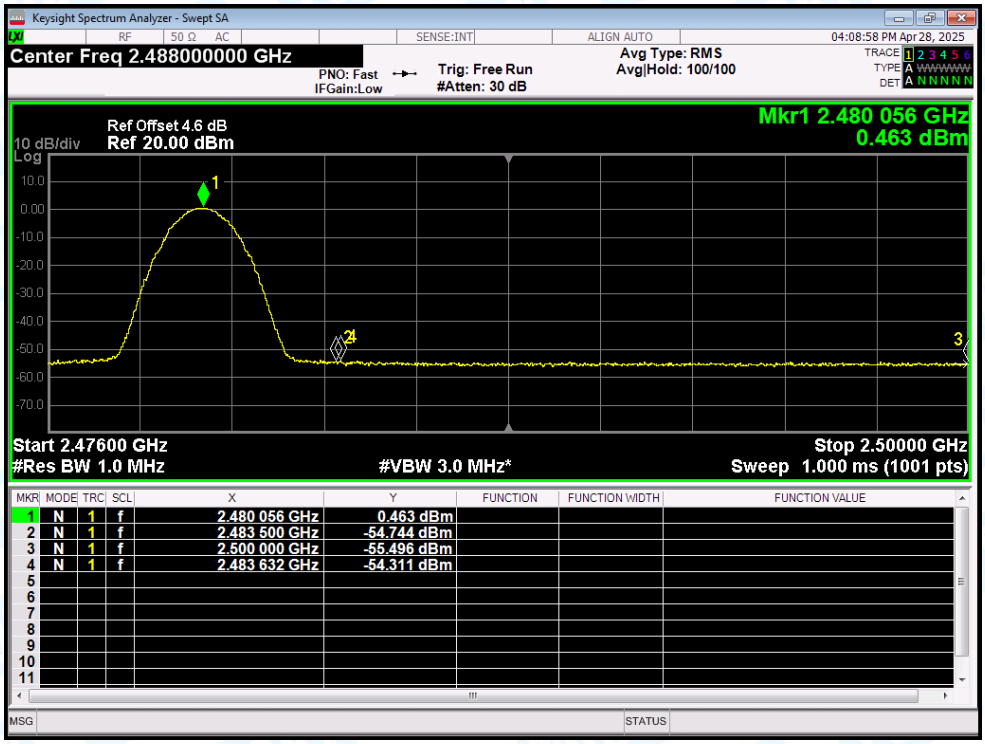
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



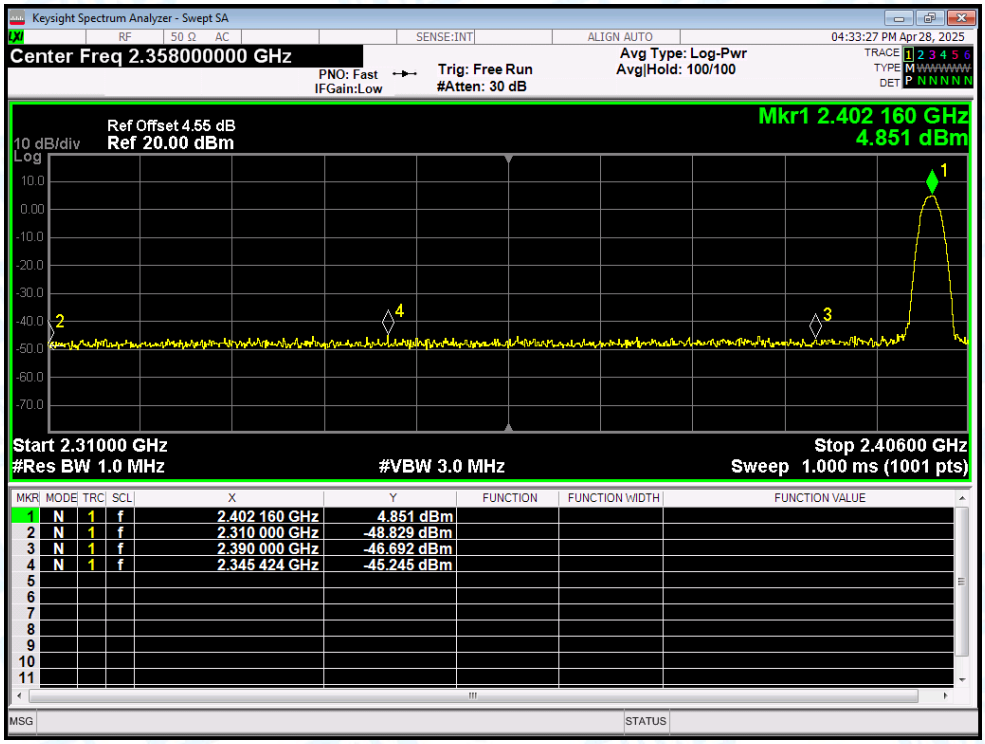
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



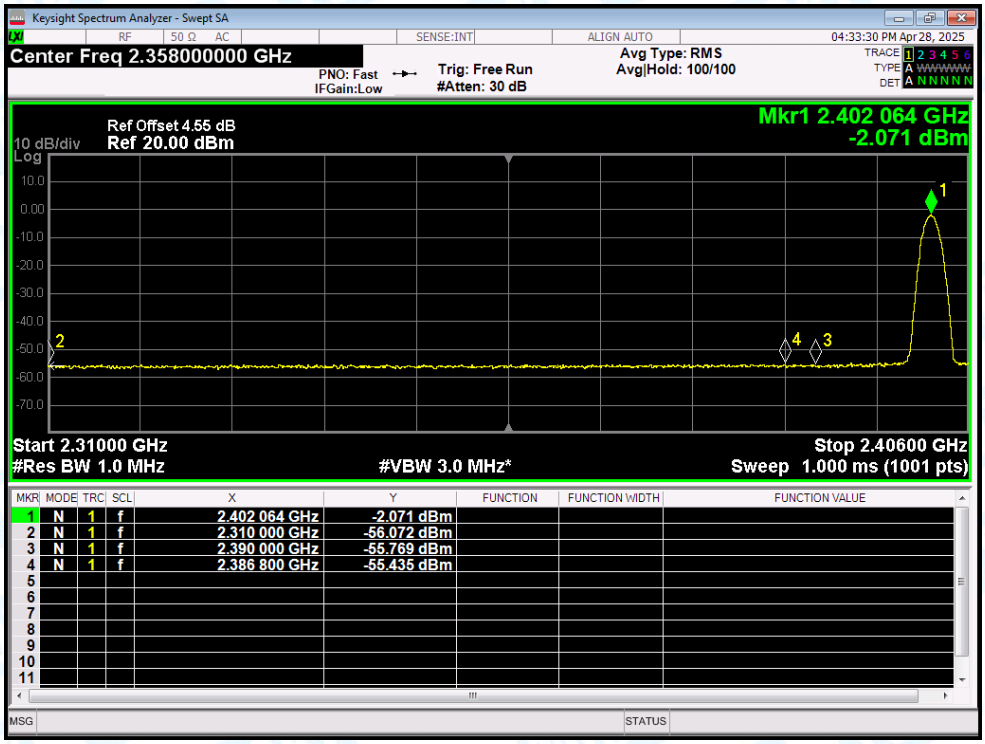
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



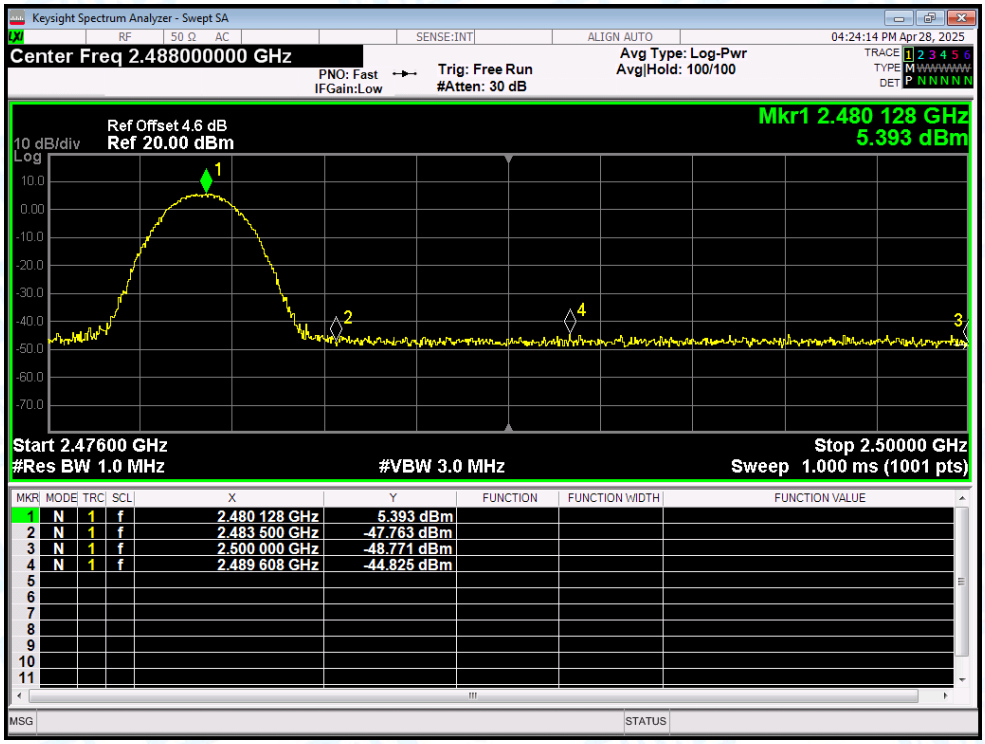
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



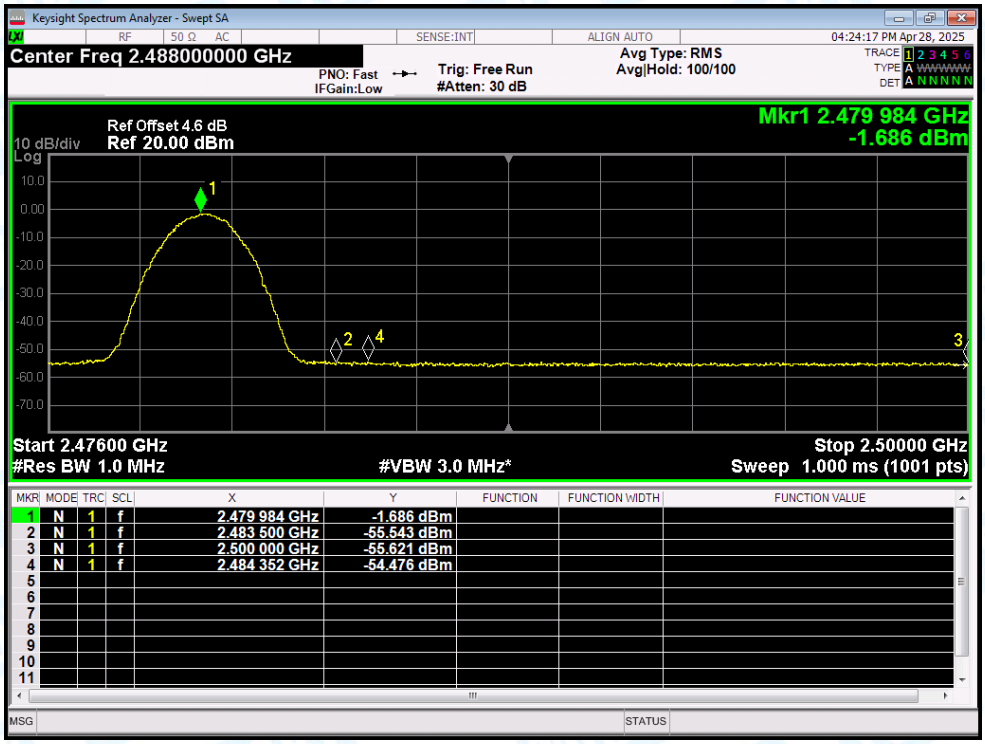
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



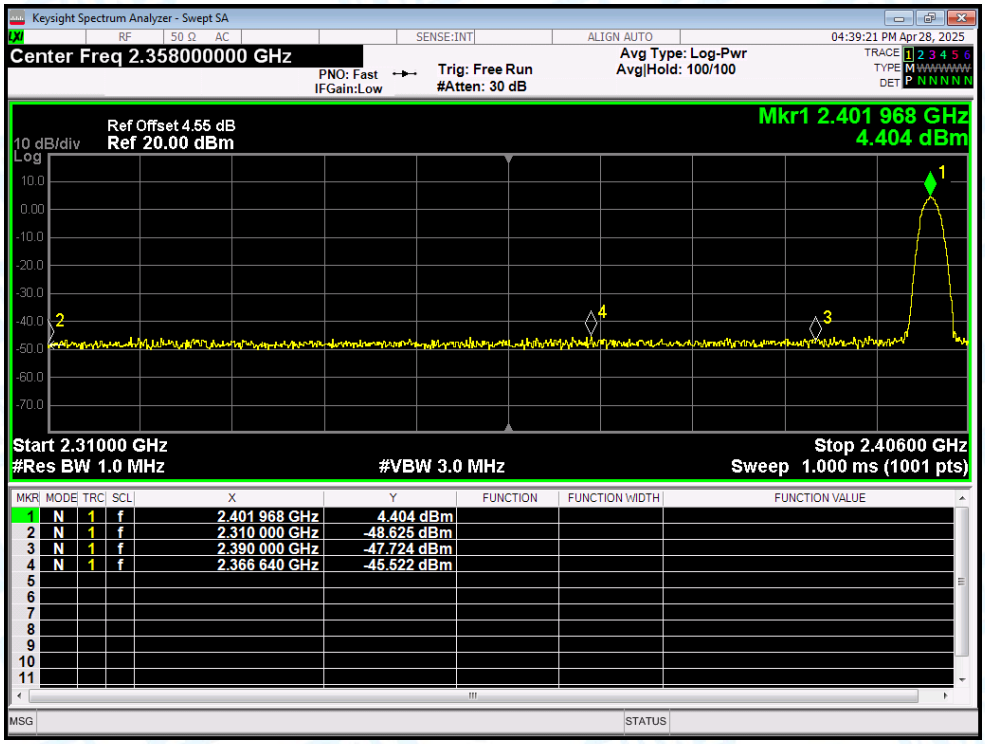
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



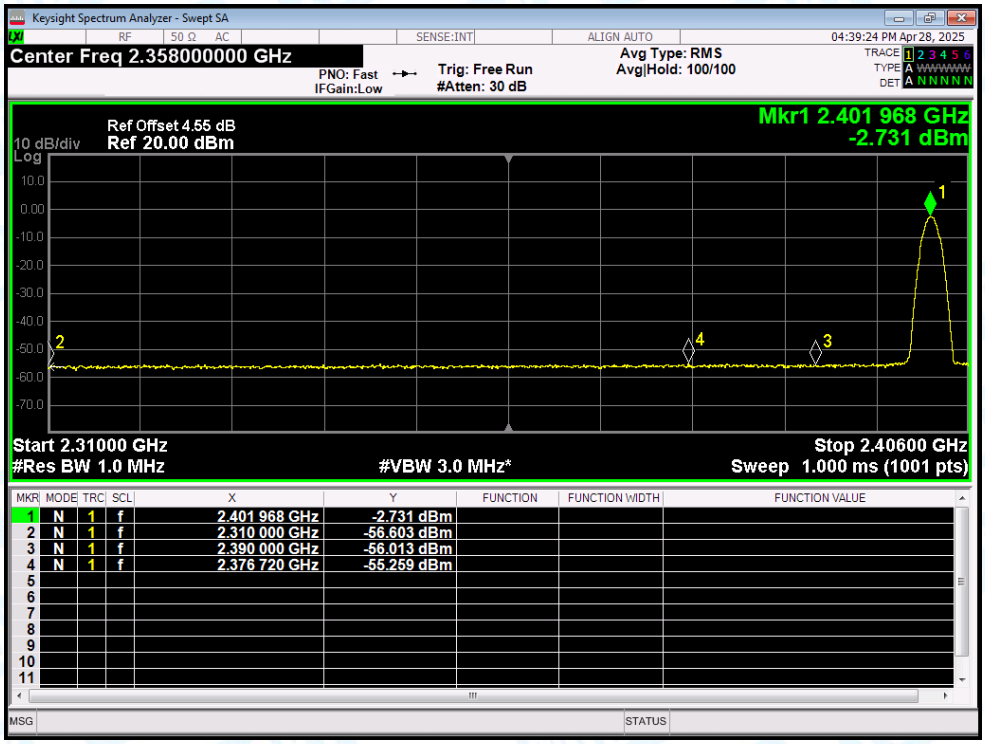
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



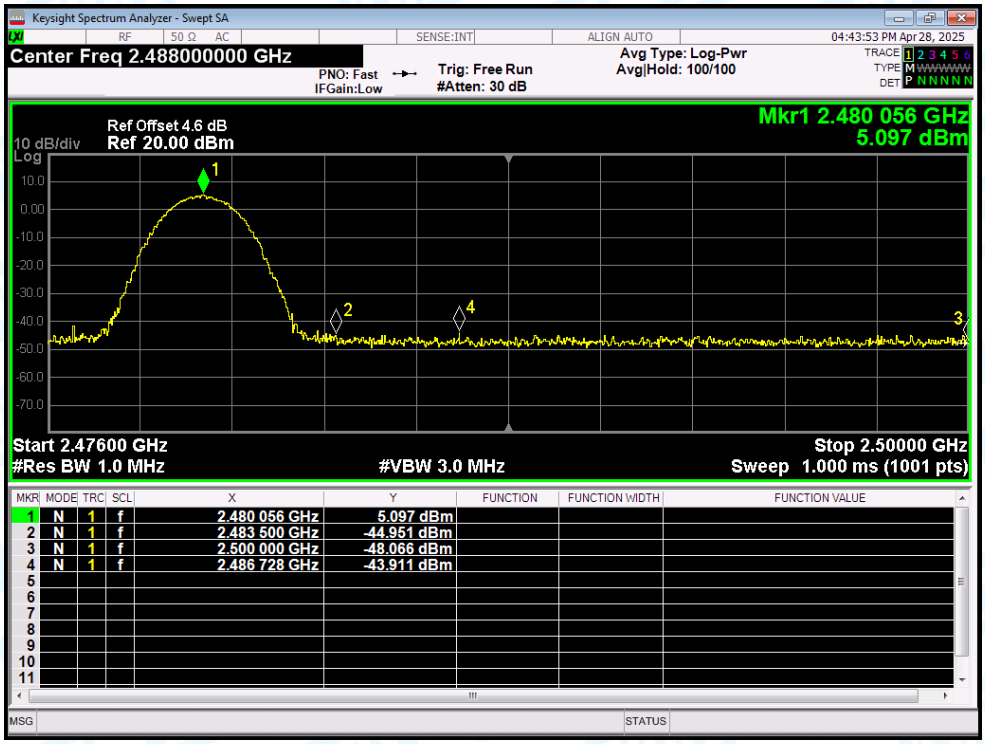
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



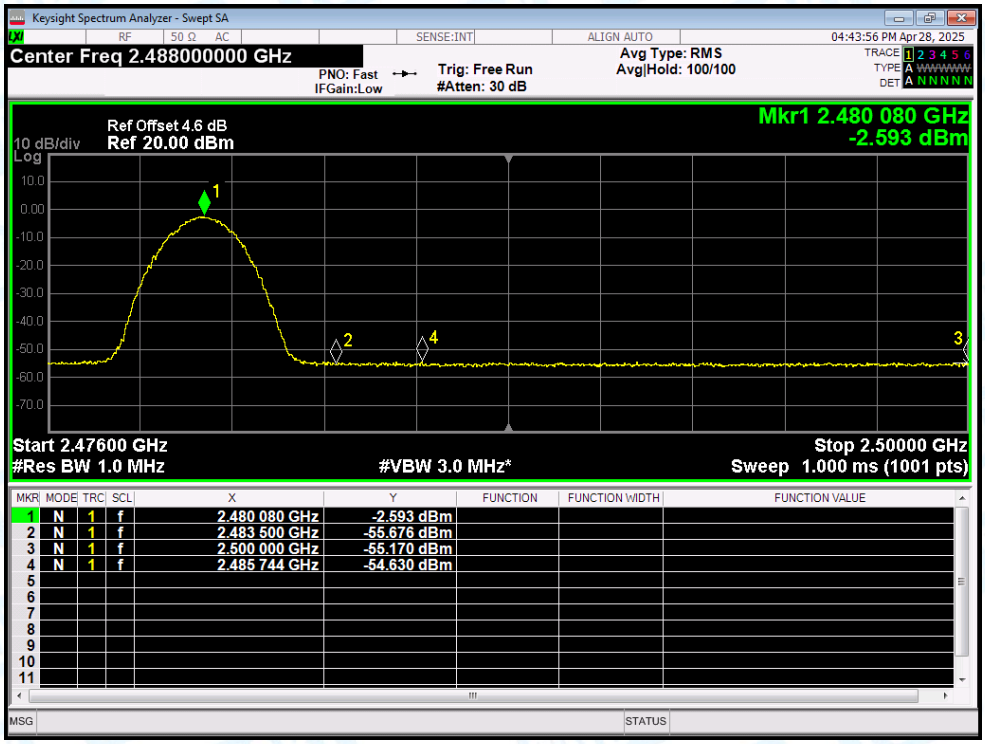
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



Restrict Band NVNT 3-DH1 2480MHz Ant1 No-Hopping Peak



Restrict Band NVNT 3-DH1 2480MHz Ant1 No-Hopping Average

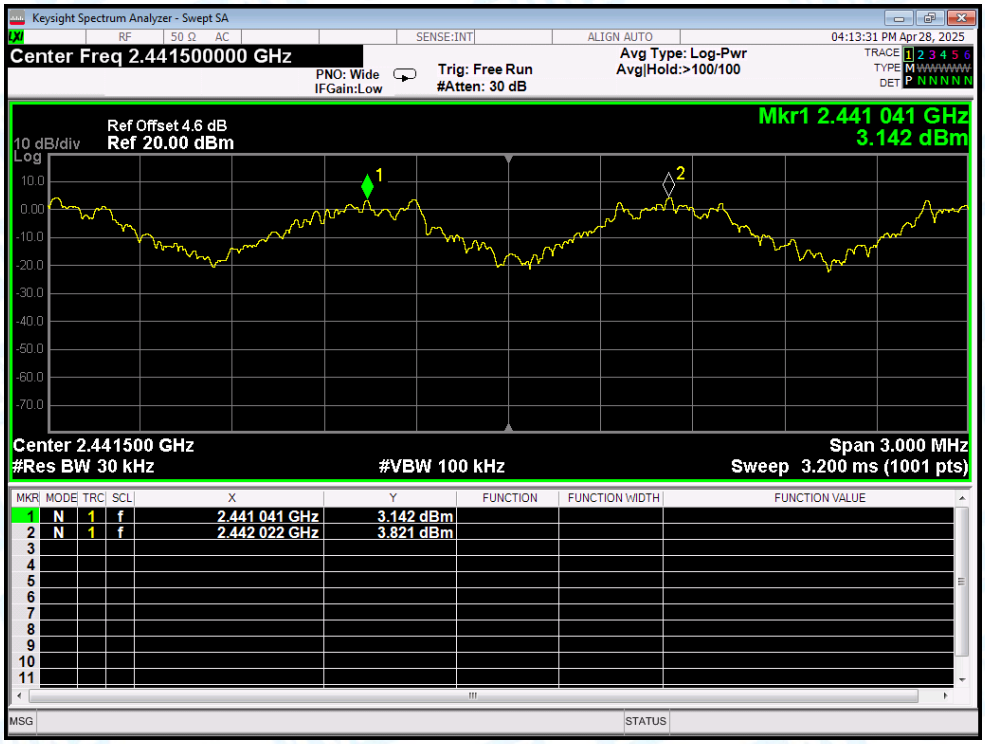


9. Carrier Frequencies Separation

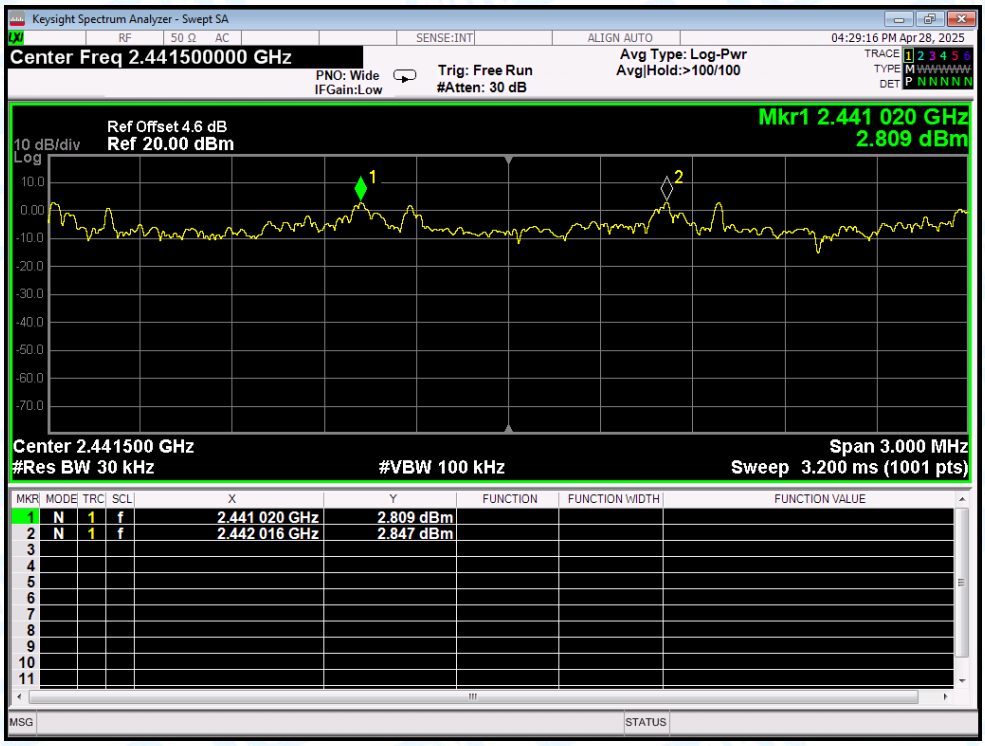
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2441.041	2442.022	0.981	0.025	Pass
NVNT	2-DH1	Ant1	2441.02	2442.016	0.996	0.84	Pass
NVNT	3-DH1	Ant1	2441.014	2442.013	0.999	0.807	Pass

Test Graphs

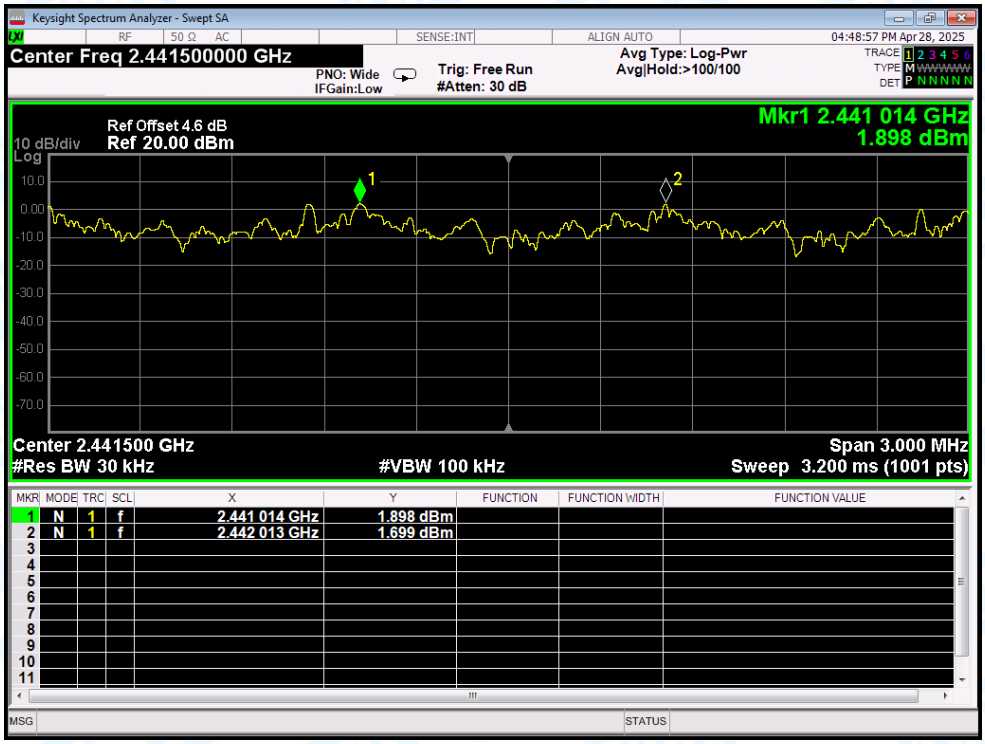
CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



CFS NVNT 3-DH1 2441MHz Ant1

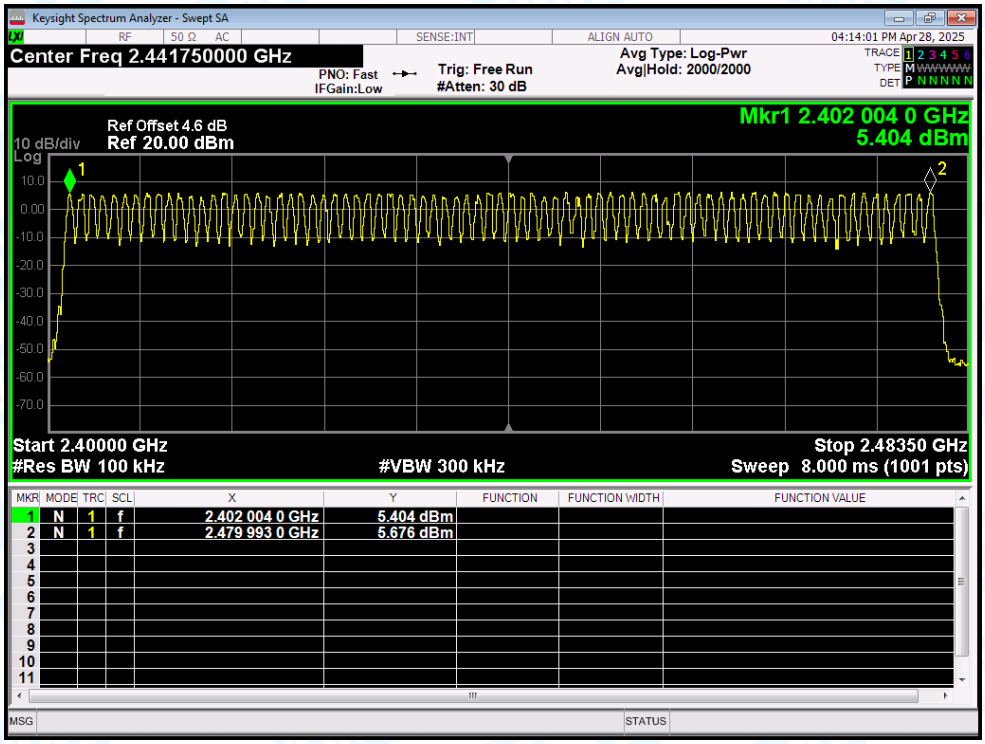


10. Number of Hopping Channel

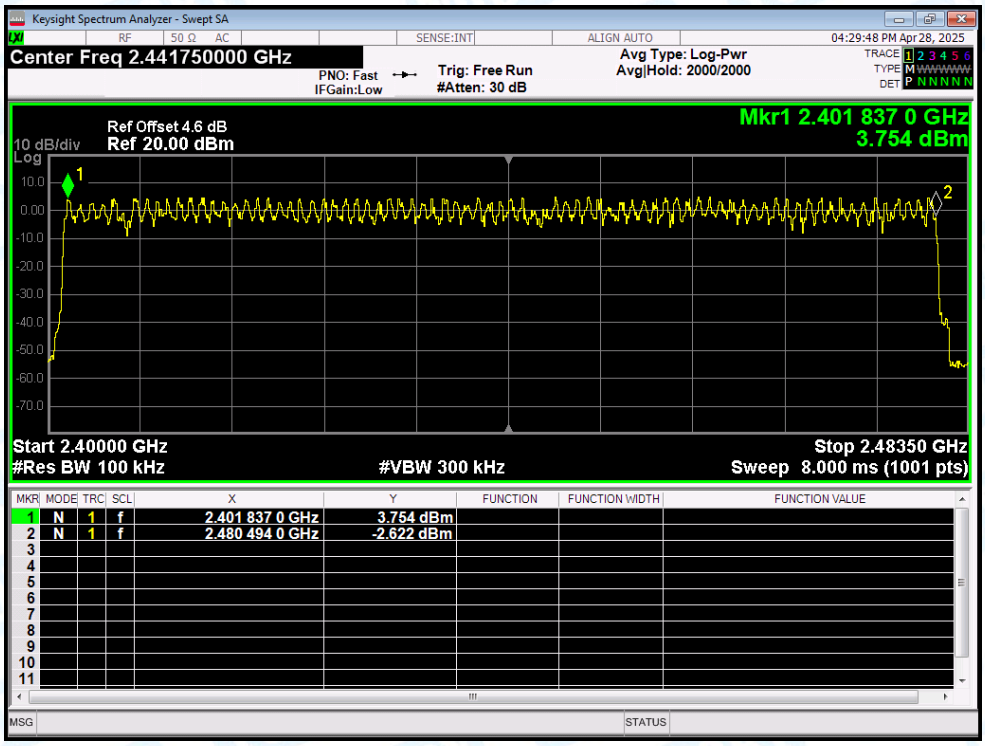
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

Test Graphs

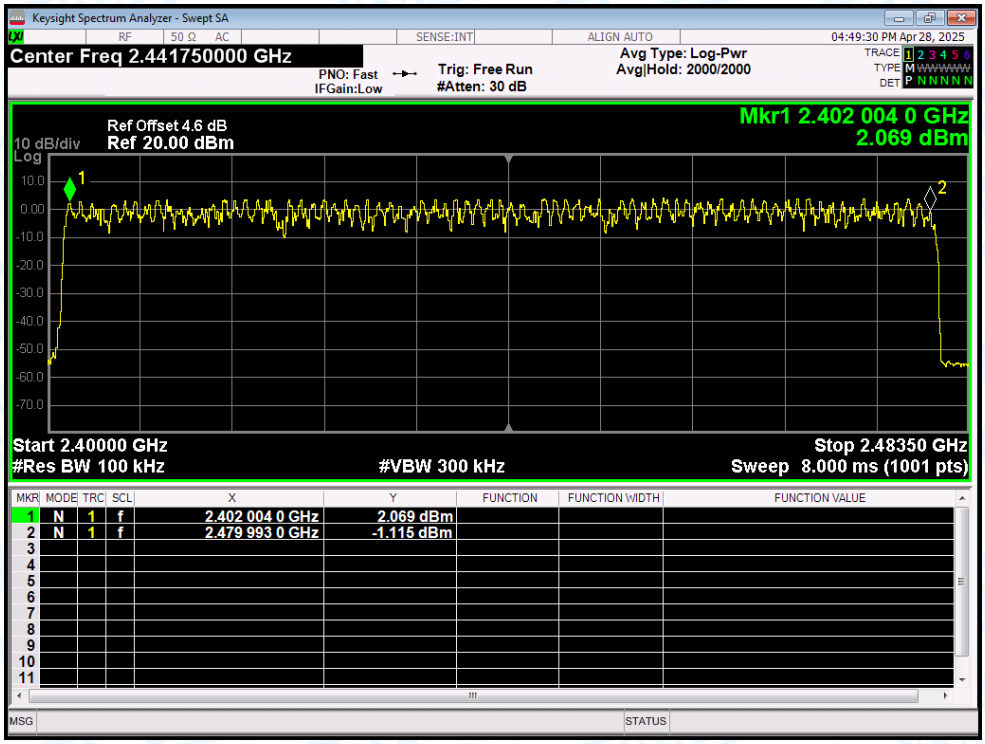
Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



Hopping No. NVNT 3-DH1 2441MHz Ant1

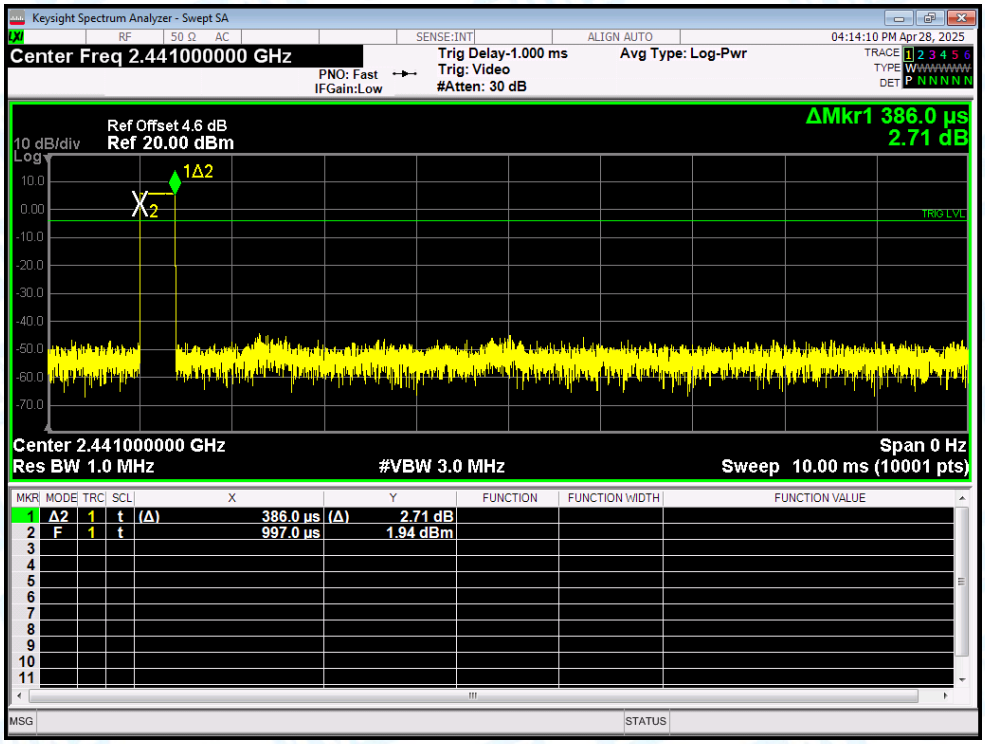


11. Dwell Time

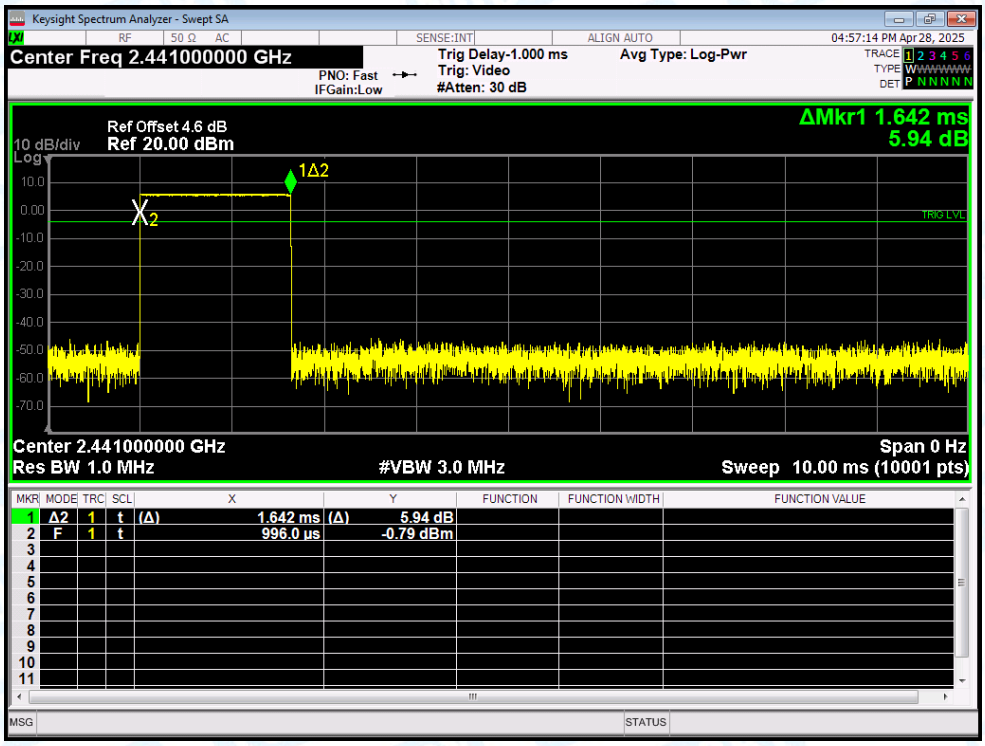
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.386	123.52	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.642	262.72	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.89	308.267	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.394	126.08	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.646	263.36	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.894	308.693	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.394	126.08	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.646	263.36	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.897	309.013	31600	400	Pass

Test Graphs

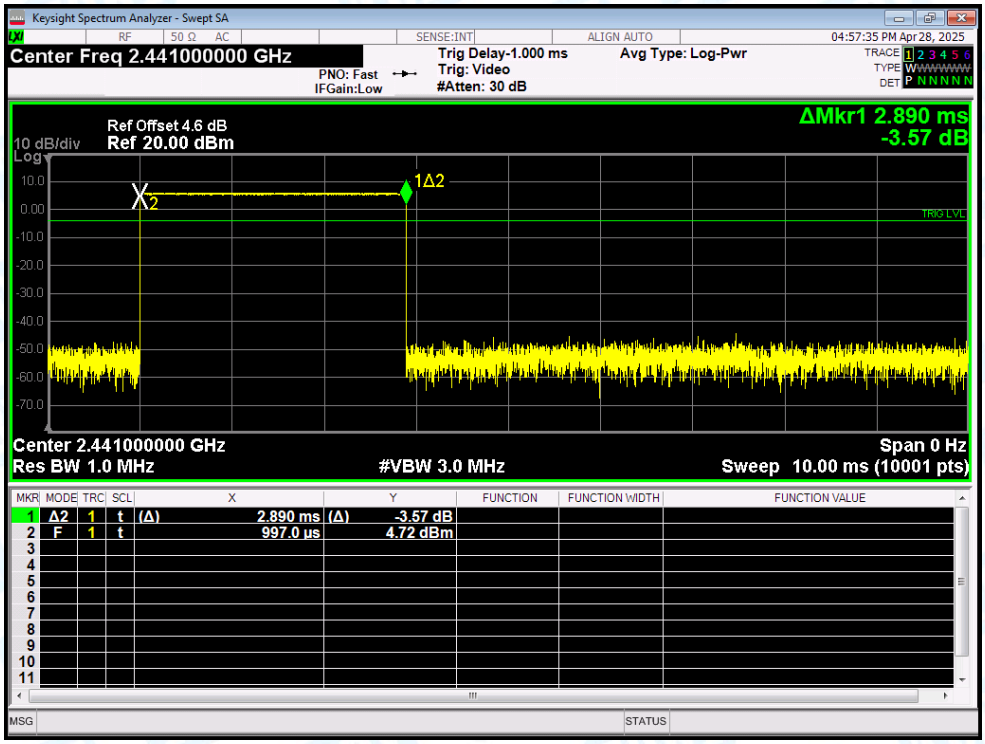
Dwell NVNT 1-DH1 2441MHz Ant1



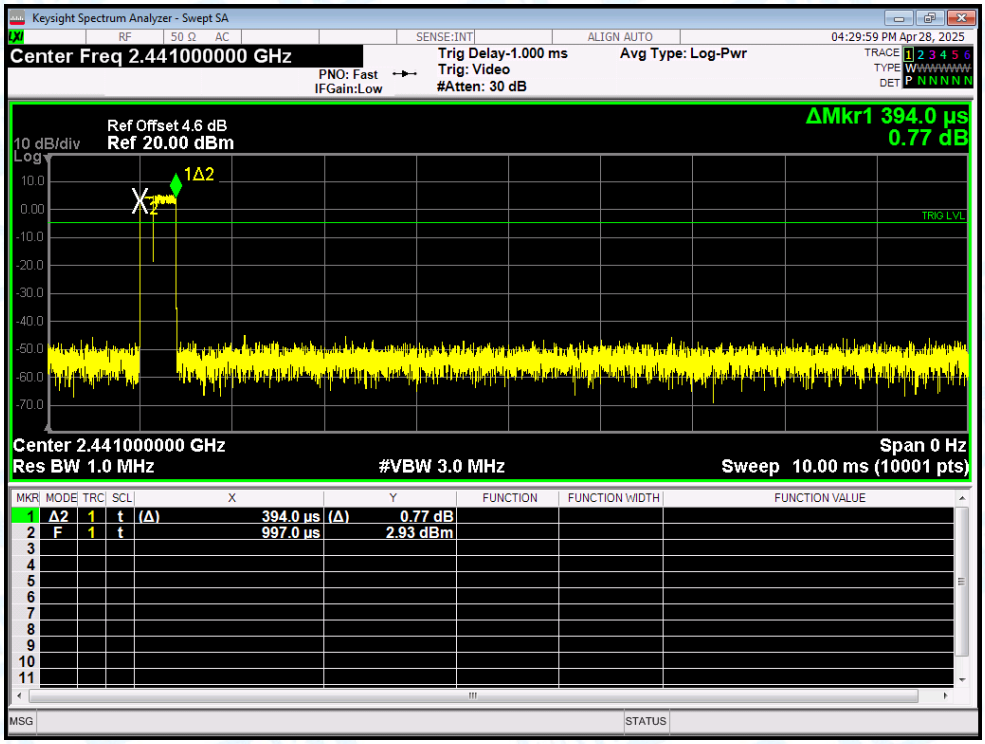
Dwell NVNT 1-DH3 2441MHz Ant1



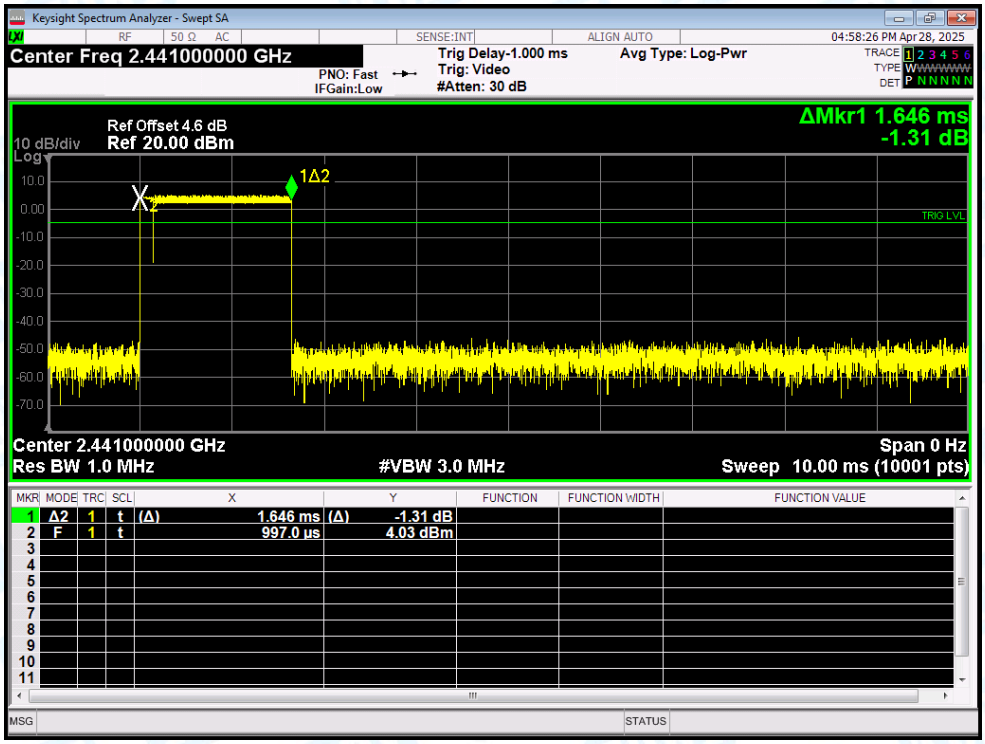
Dwell NVNT 1-DH5 2441MHz Ant1



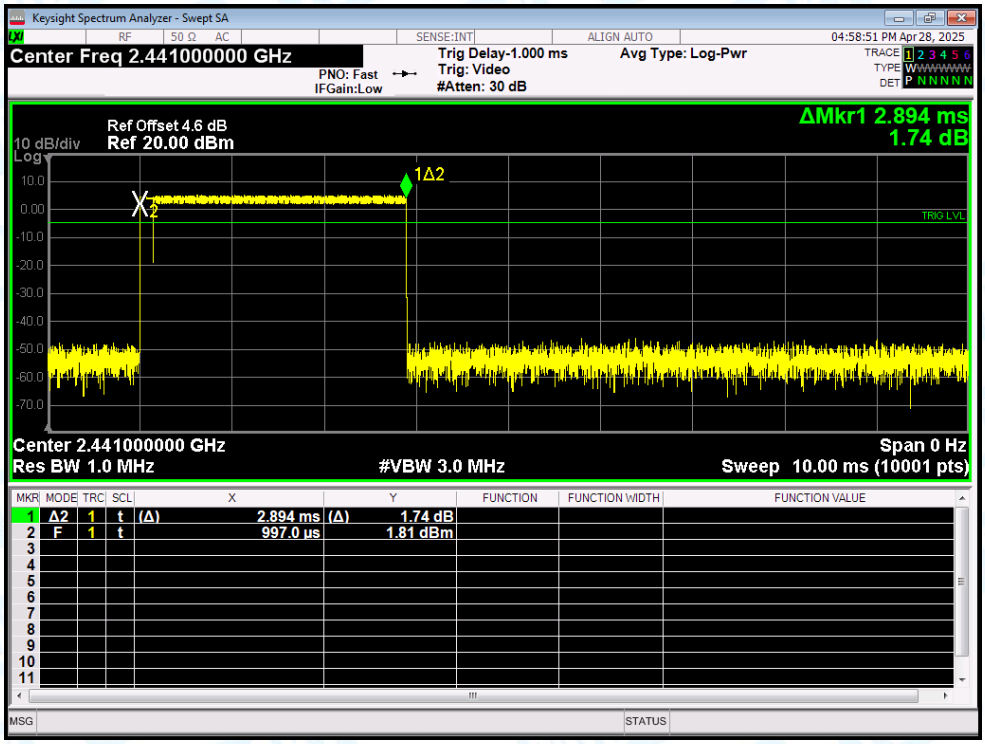
Dwell NVNT 2-DH1 2441MHz Ant1



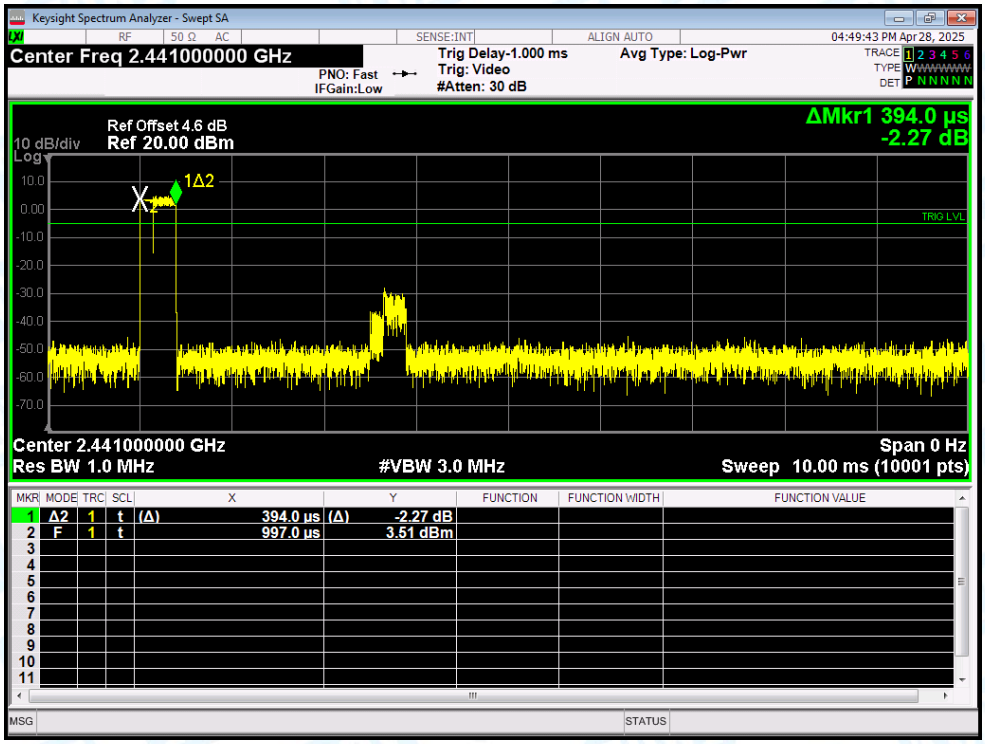
Dwell NVNT 2-DH3 2441MHz Ant1



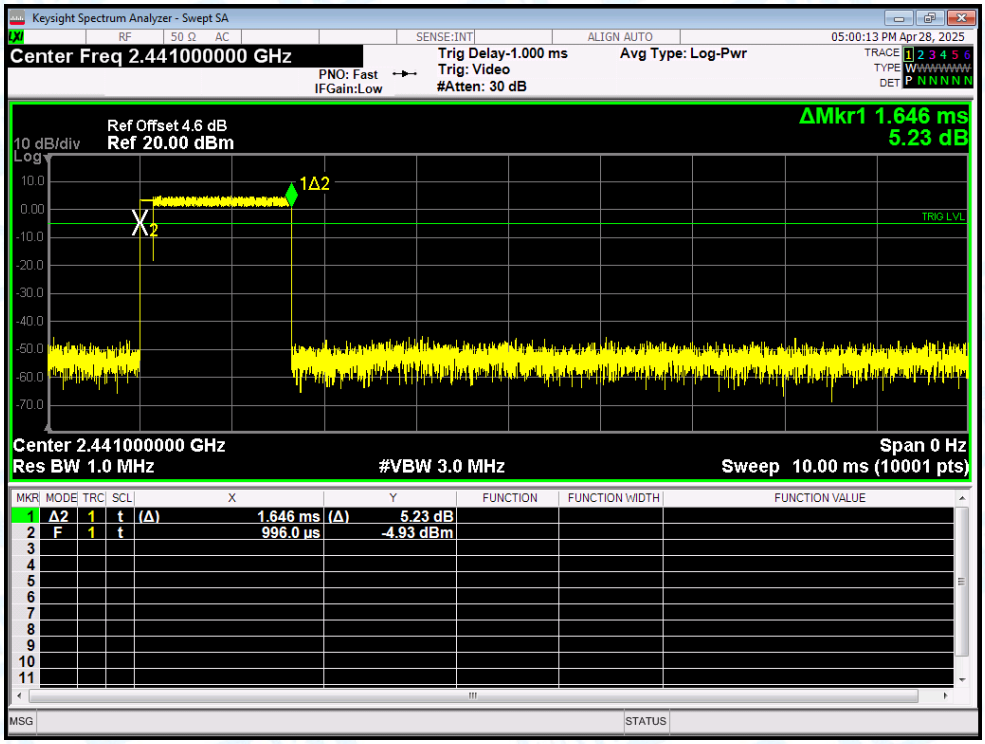
Dwell NVNT 2-DH5 2441MHz Ant1



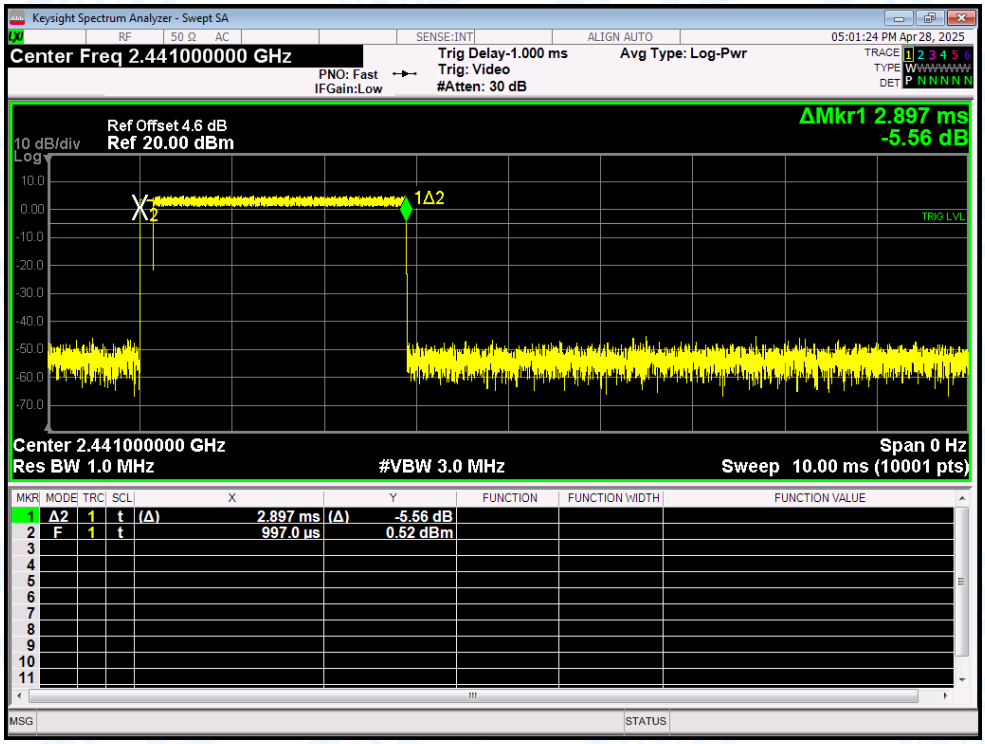
Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1



Dwell NVNT 3-DH5 2441MHz Ant1



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