

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	Smart Watch
Test Model:	HK08
Sample ID:	HC-C-202504-0201-01-2#
Environmental Conditions	
Temperature:	23.8℃
Relative Humidity:	52%
Test Voltage:	DC 5V
Test Engineer:	Lily Zhang
Note: For a more detailed features description, please refer to the report TBR-C-202504-0201-21 The report only show the worst case data.	

Contents

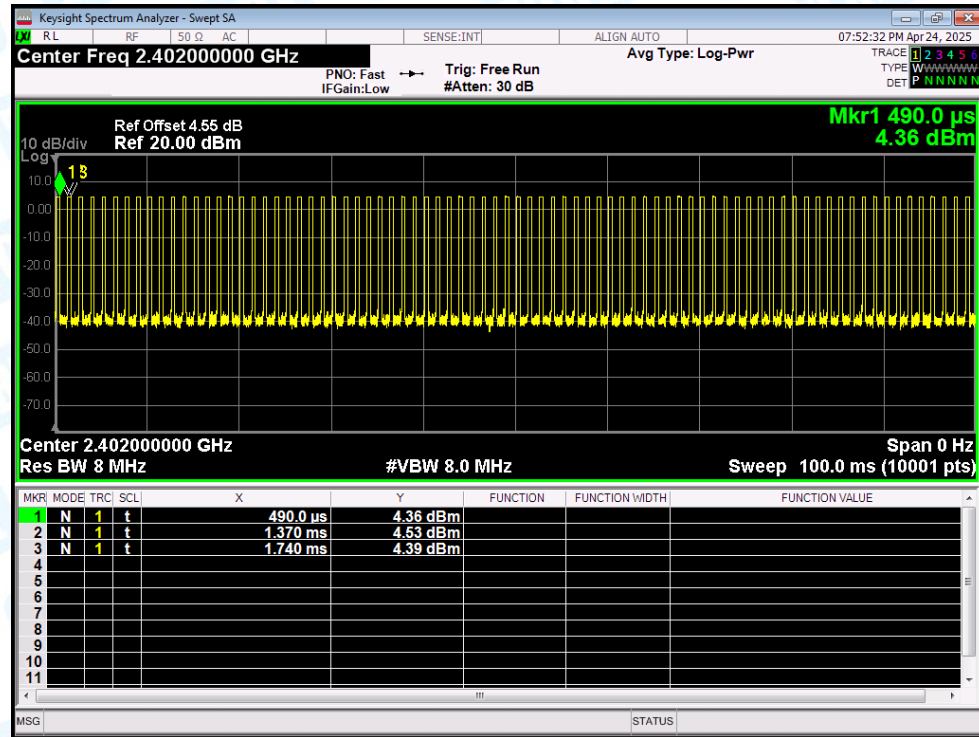
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1. Duty Cycle

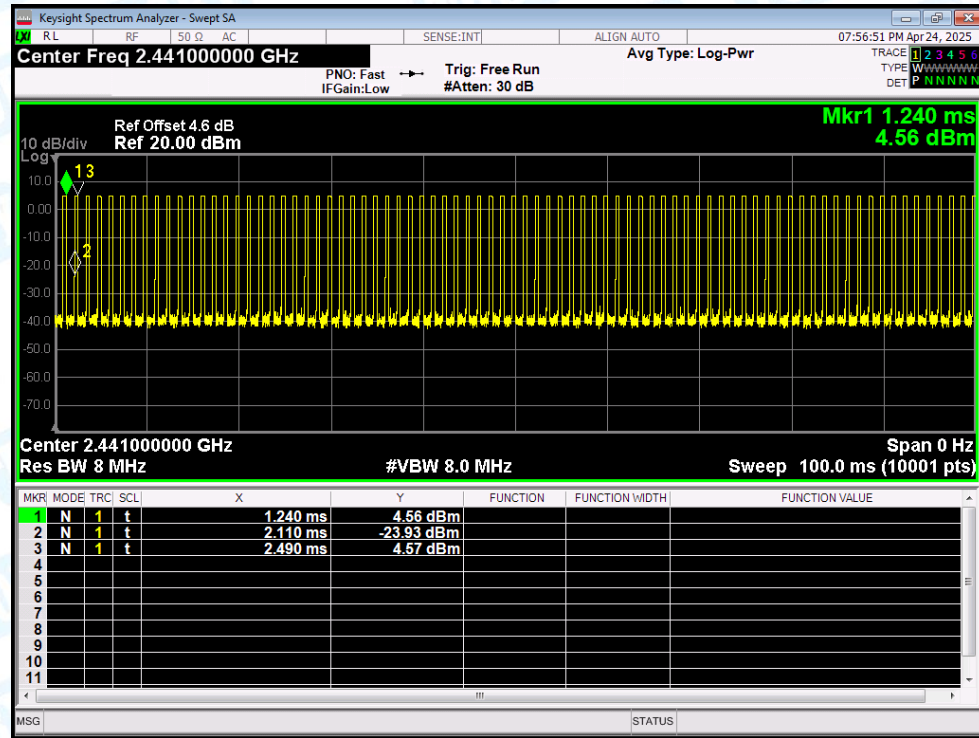
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	29.6	5.29	2.7
NVNT	1-DH1	2441	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2480	Ant1	29.6	5.29	2.7
NVNT	2-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2480	Ant1	30.4	5.17	2.63
NVNT	3-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	3-DH1	2441	Ant1	30.4	5.17	2.63
NVNT	3-DH1	2480	Ant1	30.4	5.17	2.63

Test Graphs

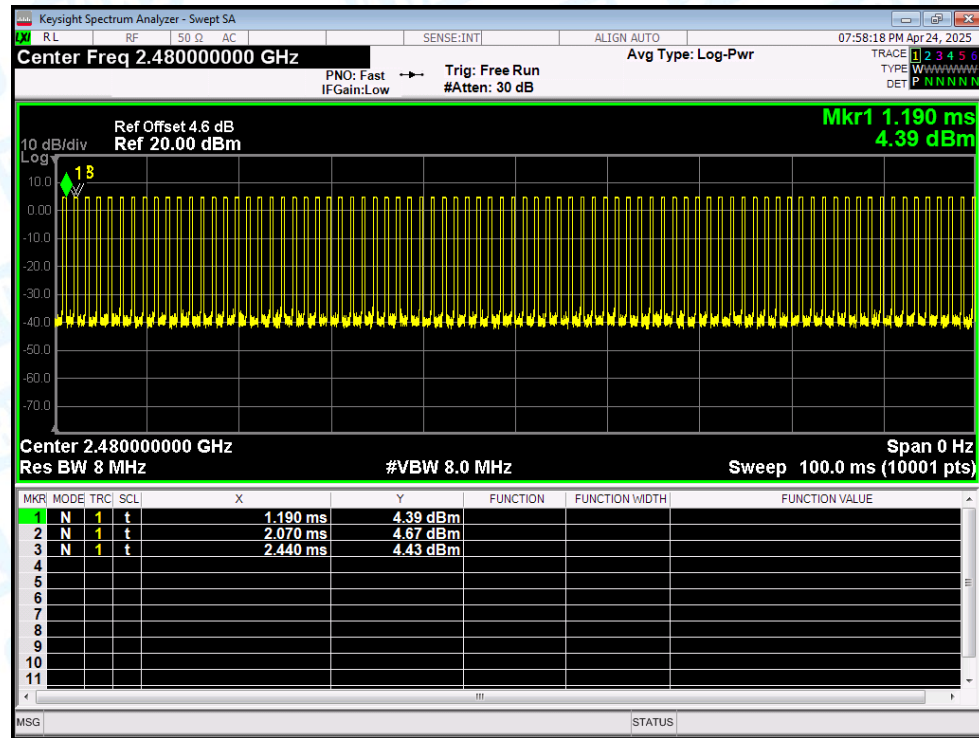
Duty Cycle NVNT 1-DH1 2402MHz Ant1



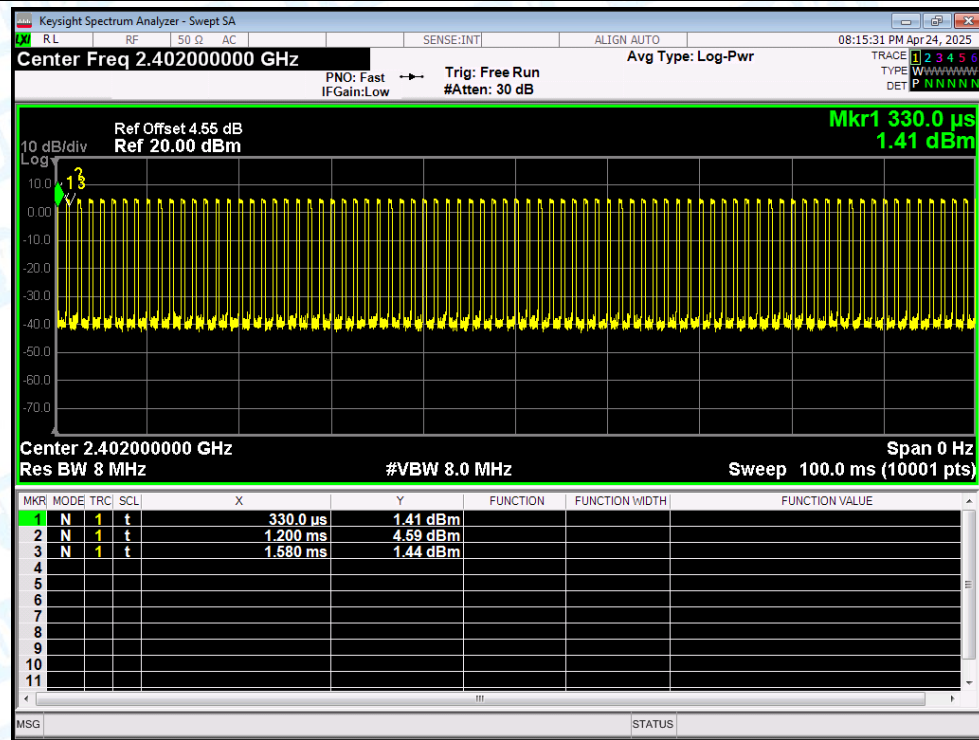
Duty Cycle NVNT 1-DH1 2441MHz Ant1



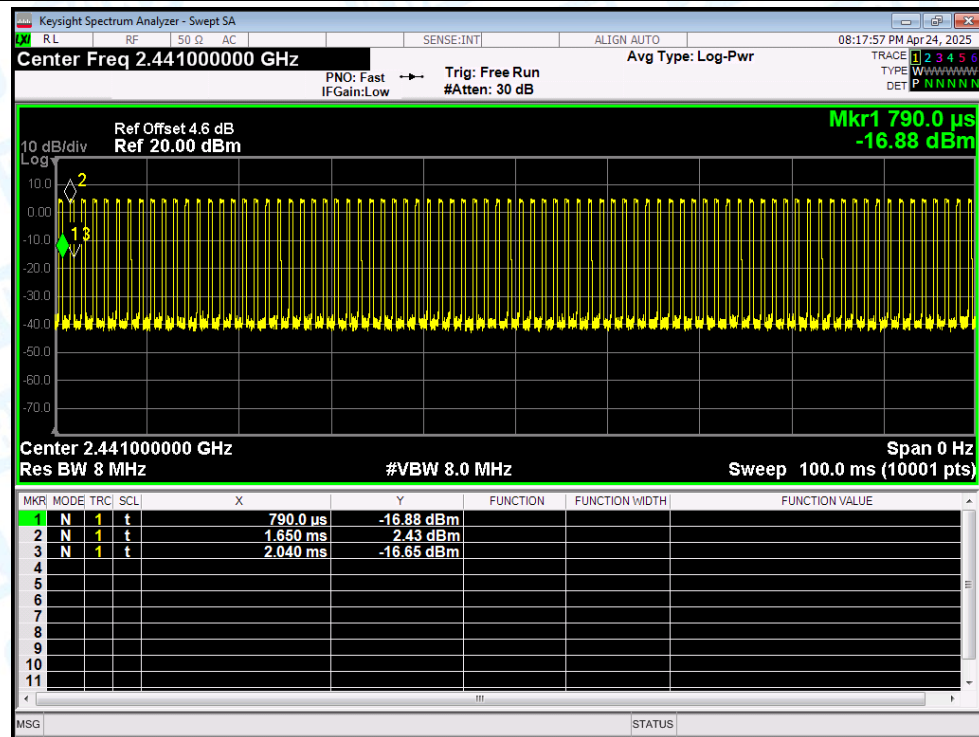
Duty Cycle NVNT 1-DH1 2480MHz Ant1



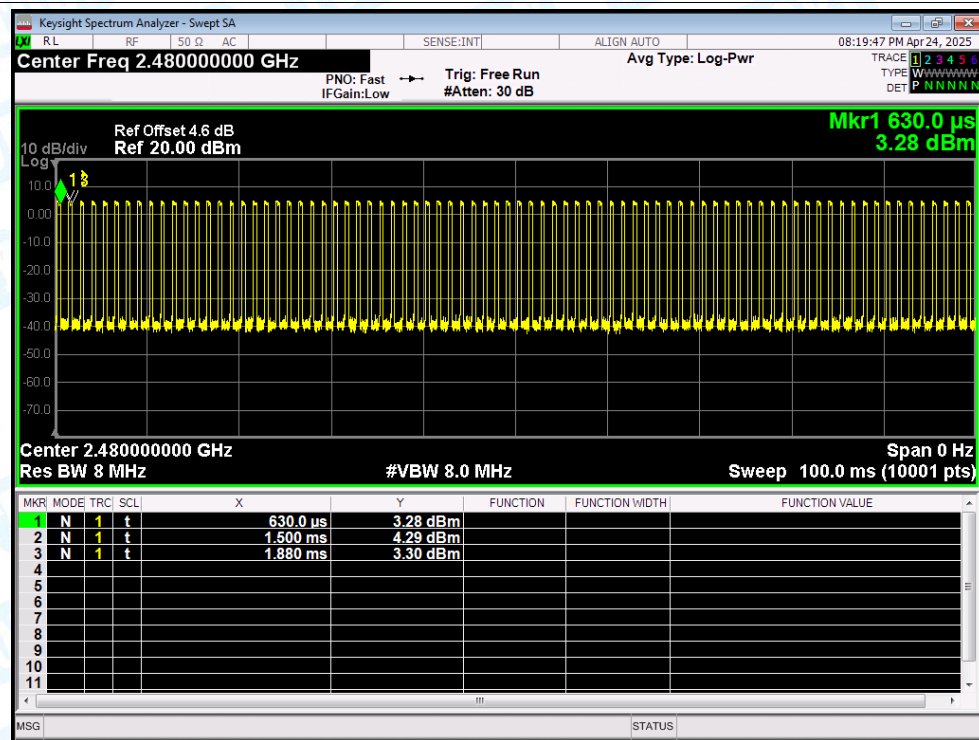
Duty Cycle NVNT 2-DH1 2402MHz Ant1



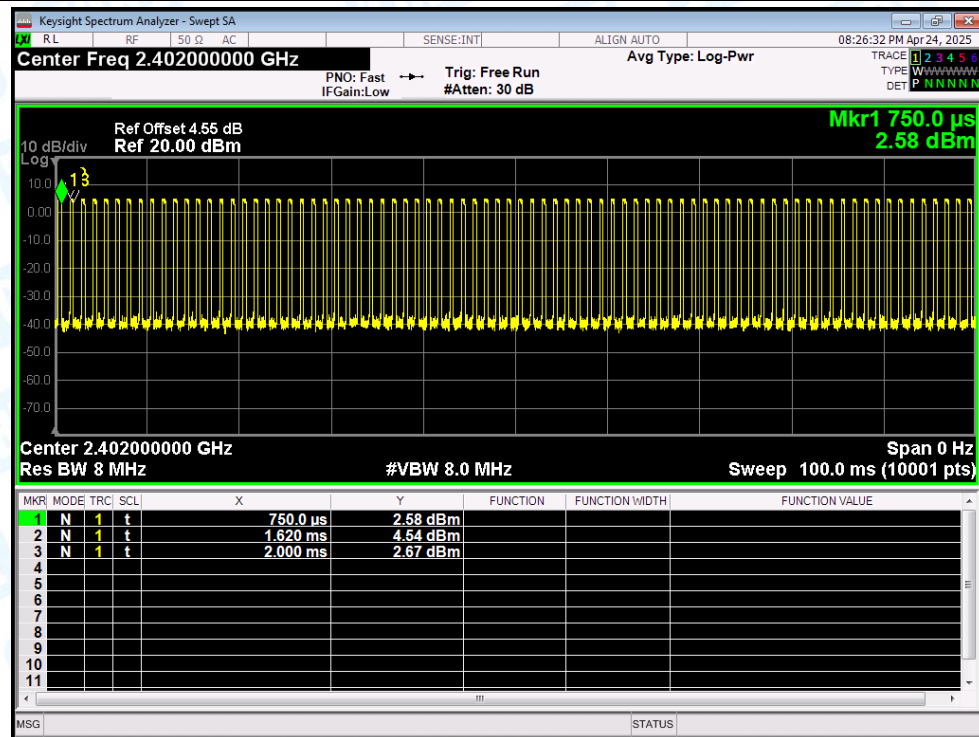
Duty Cycle NVNT 2-DH1 2441MHz Ant1



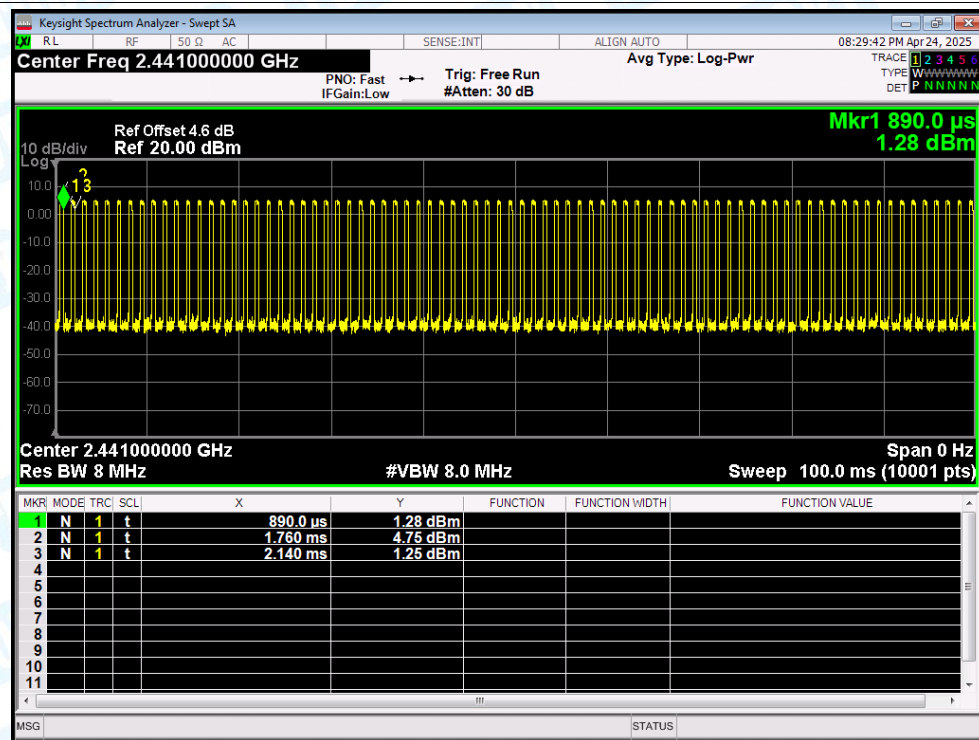
Duty Cycle NVNT 2-DH1 2480MHz Ant1

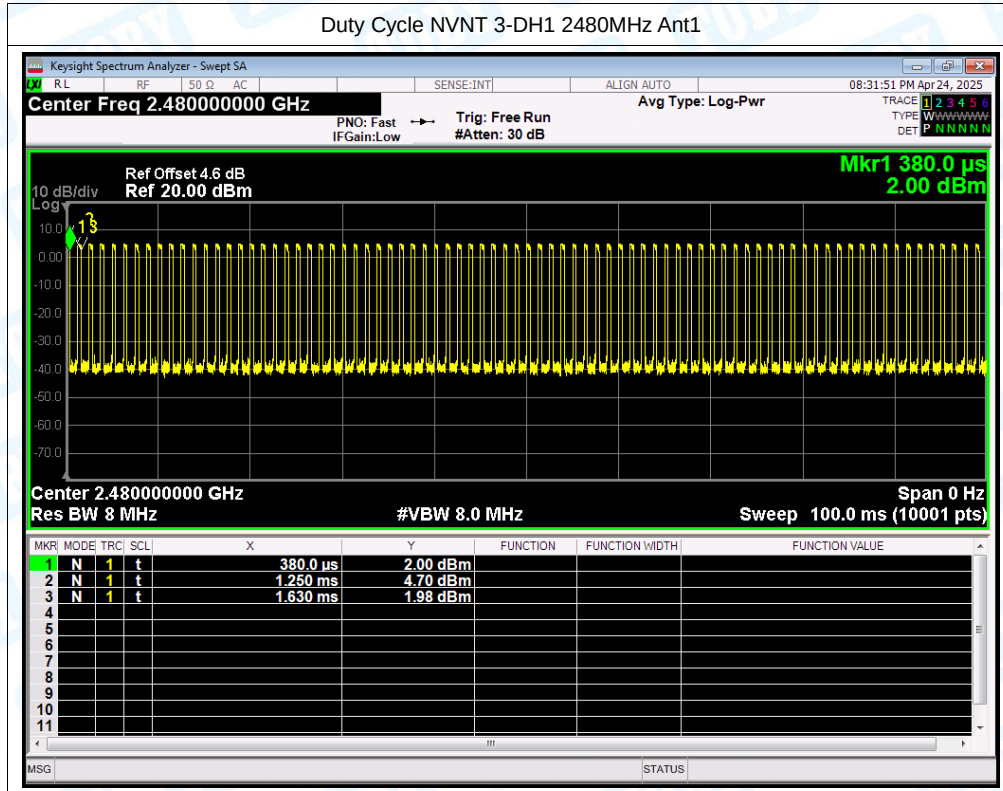


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



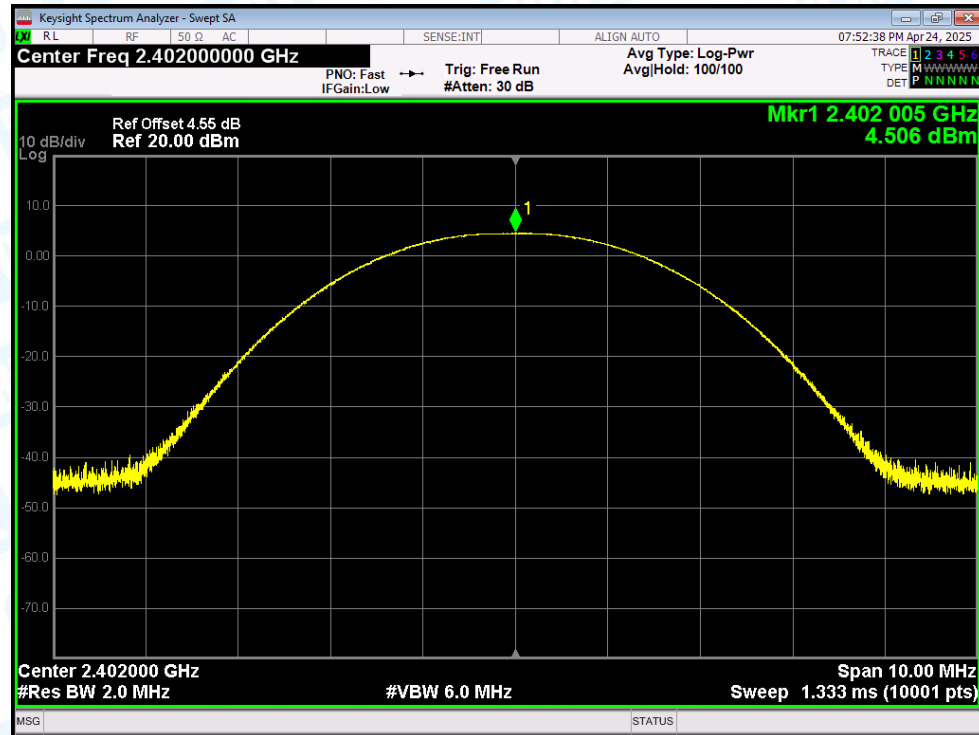


2. Maximum Conducted Output Power

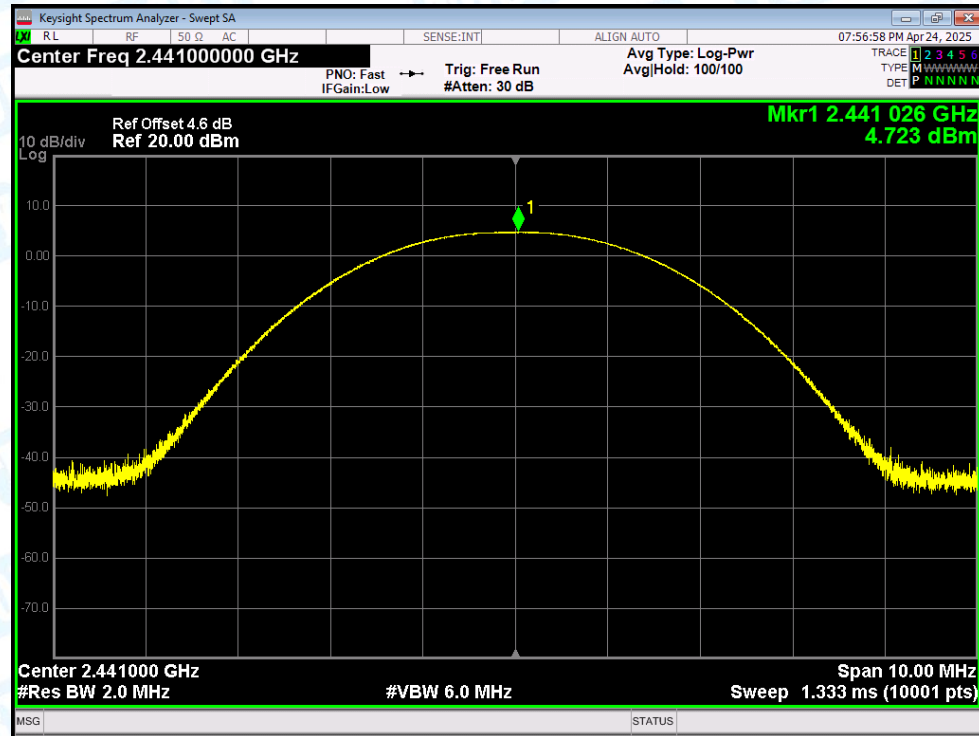
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	4.506	21	Pass
NVNT	1-DH1	2441	Ant1	4.723	21	Pass
NVNT	1-DH1	2480	Ant1	4.667	21	Pass
NVNT	2-DH1	2402	Ant1	4.599	21	Pass
NVNT	2-DH1	2441	Ant1	4.742	21	Pass
NVNT	2-DH1	2480	Ant1	4.642	21	Pass
NVNT	3-DH1	2402	Ant1	4.689	21	Pass
NVNT	3-DH1	2441	Ant1	4.855	21	Pass
NVNT	3-DH1	2480	Ant1	4.673	21	Pass

Test Graphs

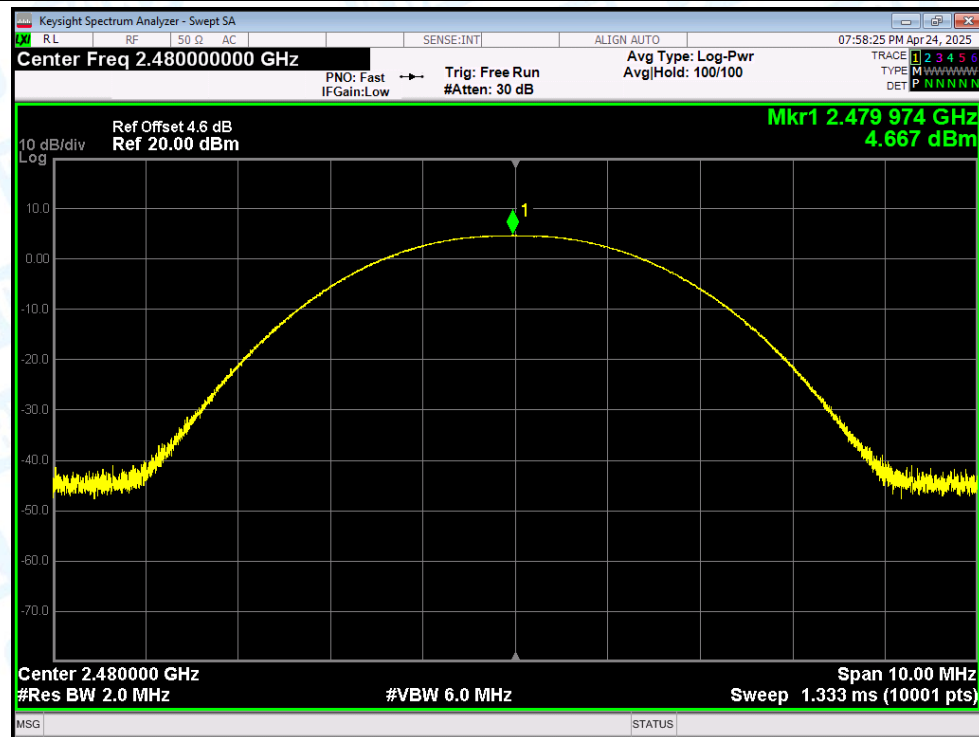
Power NVNT 1-DH1 2402MHz Ant1



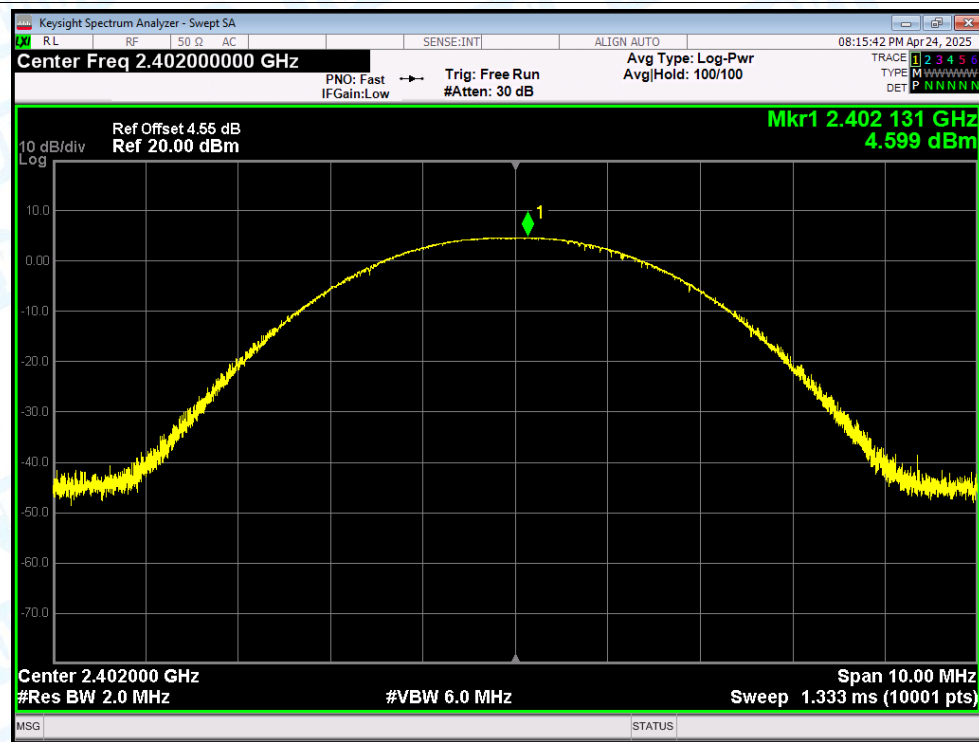
Power NVNT 1-DH1 2441MHz Ant1



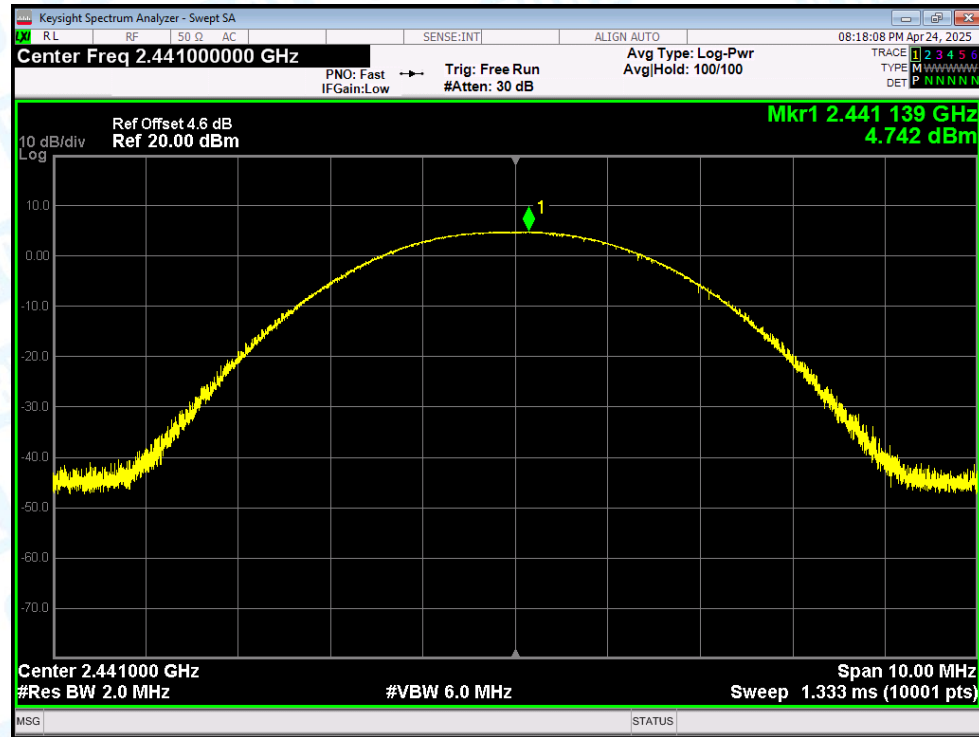
Power NVNT 1-DH1 2480MHz Ant1



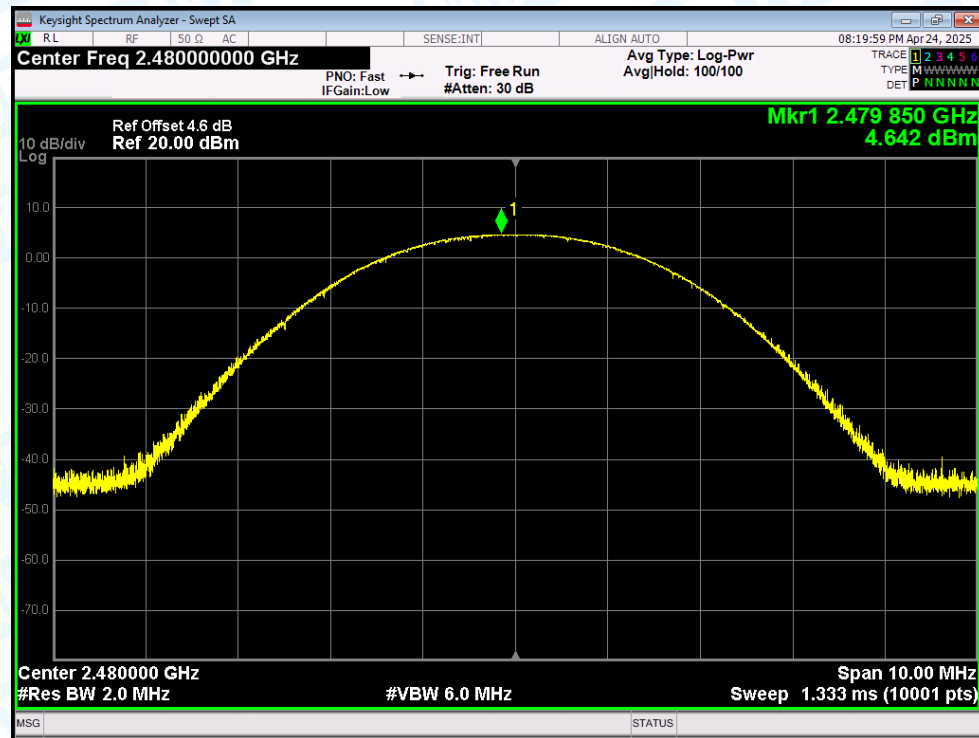
Power NVNT 2-DH1 2402MHz Ant1



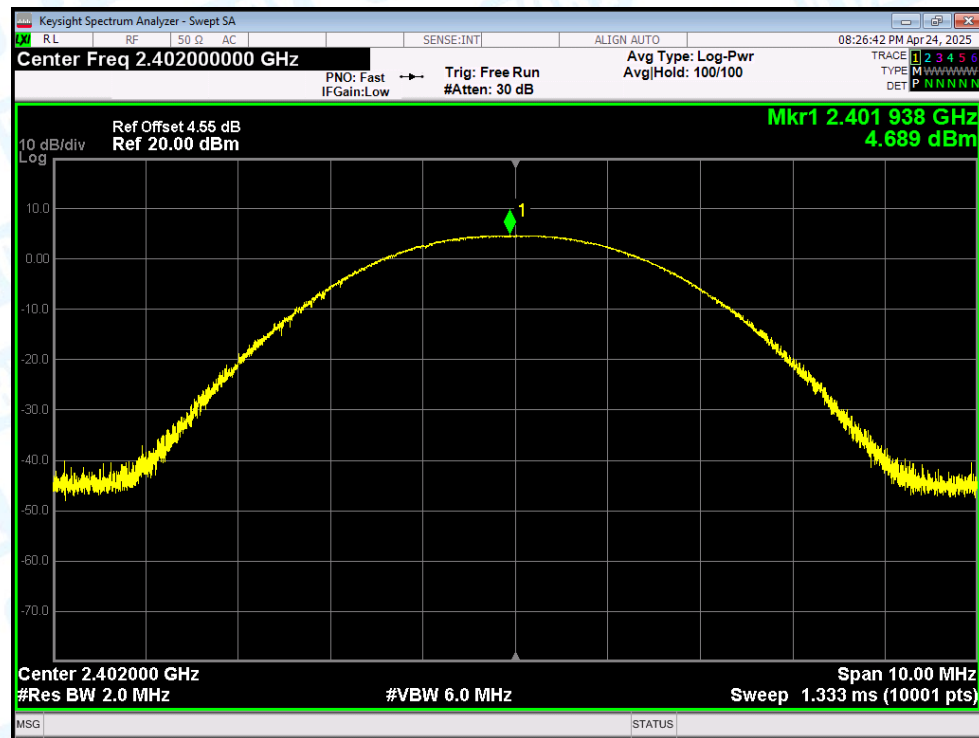
Power NVNT 2-DH1 2441MHz Ant1



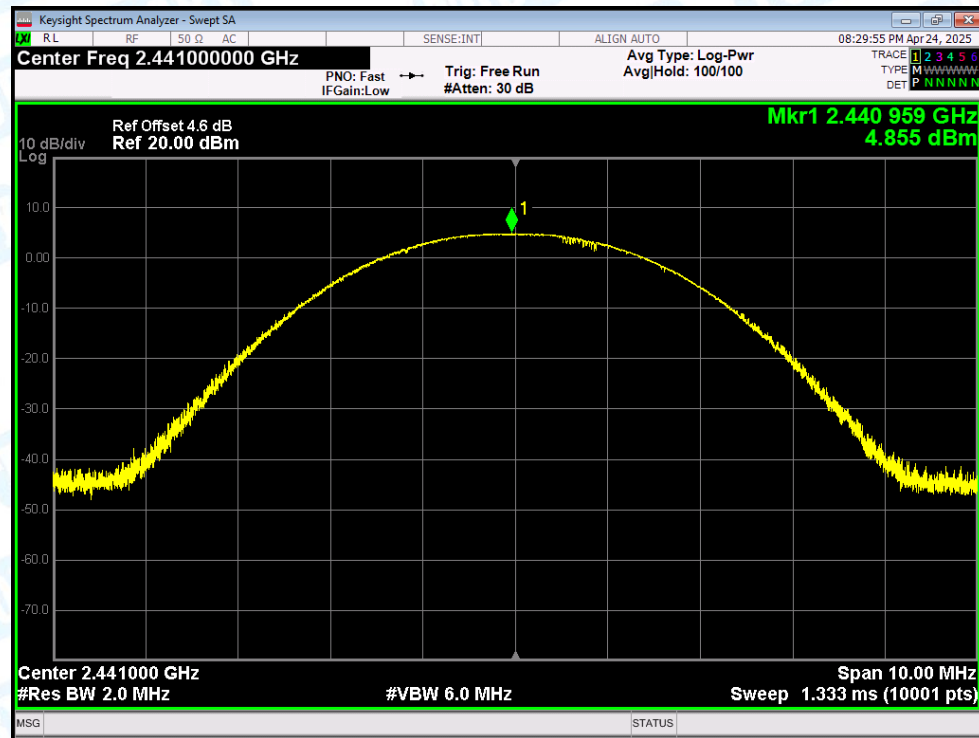
Power NVNT 2-DH1 2480MHz Ant1

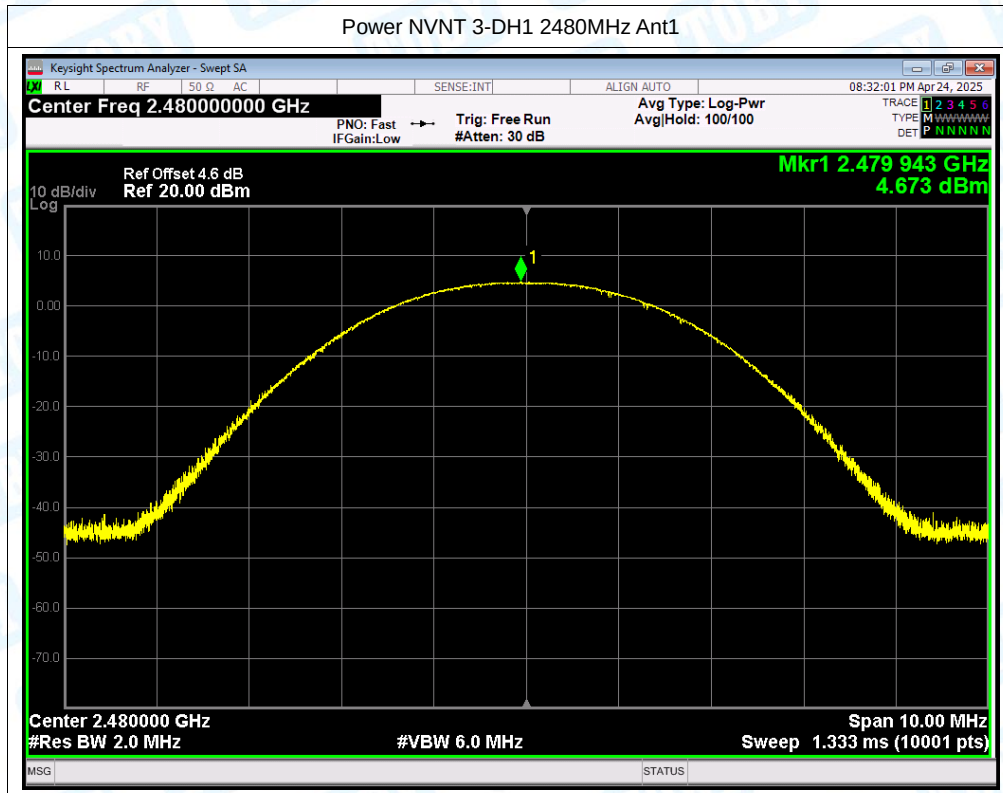


Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



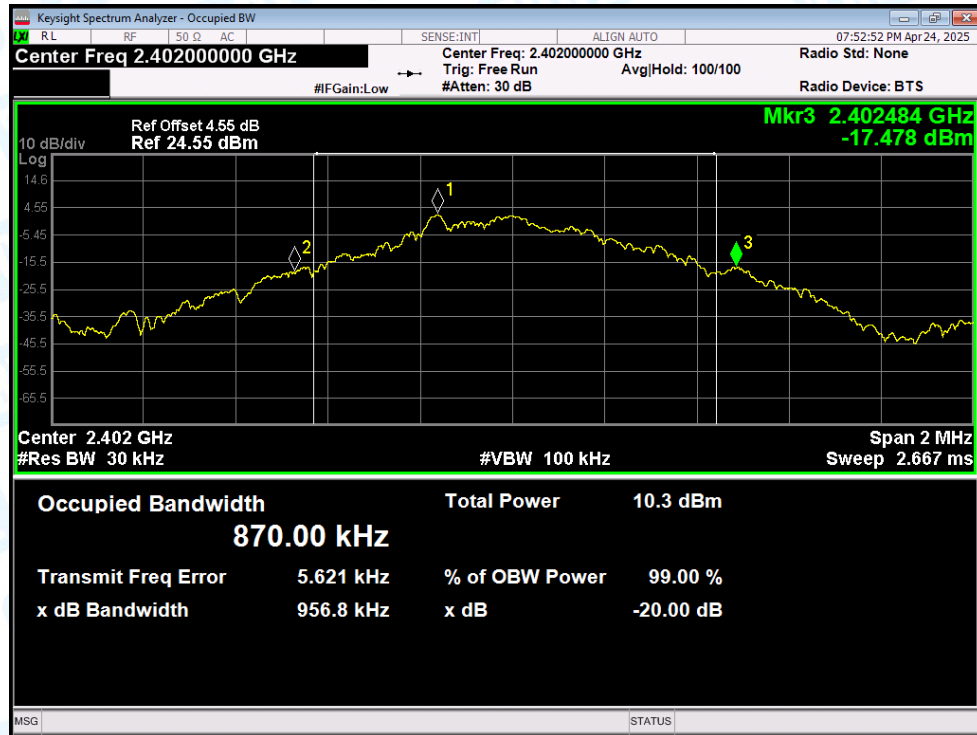


3. -20dB Bandwidth

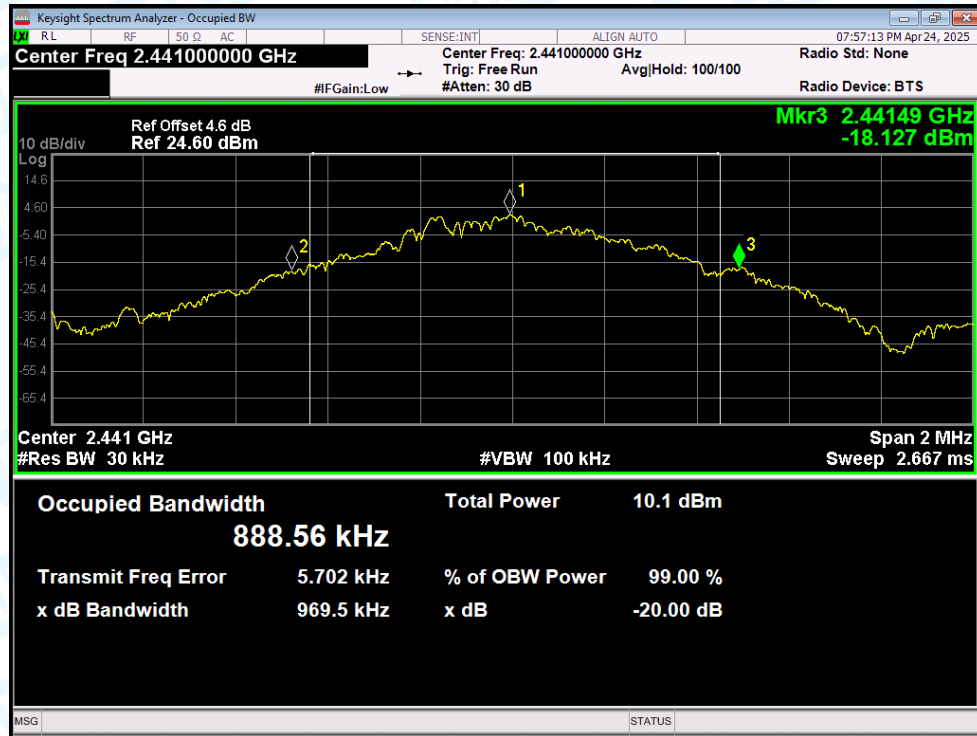
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.96	0	Pass
NVNT	1-DH1	2441	Ant1	0.97	0	Pass
NVNT	1-DH1	2480	Ant1	0.94	0	Pass
NVNT	2-DH1	2402	Ant1	1.21	0	Pass
NVNT	2-DH1	2441	Ant1	1.2	0	Pass
NVNT	2-DH1	2480	Ant1	1.16	0	Pass
NVNT	3-DH1	2402	Ant1	1.21	0	Pass
NVNT	3-DH1	2441	Ant1	1.2	0	Pass
NVNT	3-DH1	2480	Ant1	1.2	0	Pass

Test Graphs

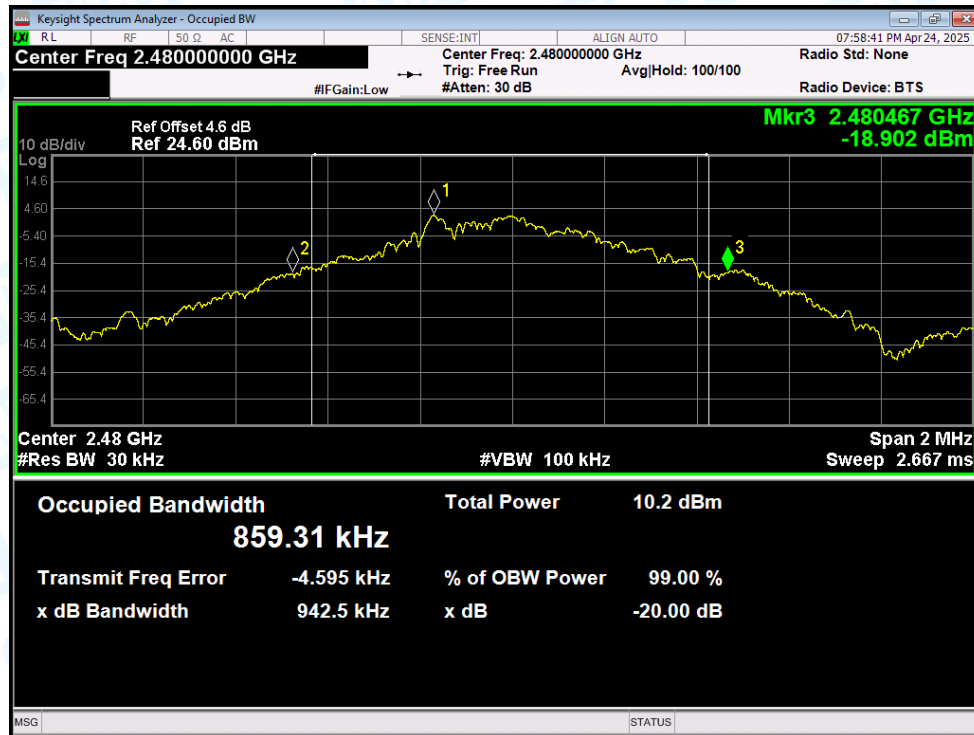
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



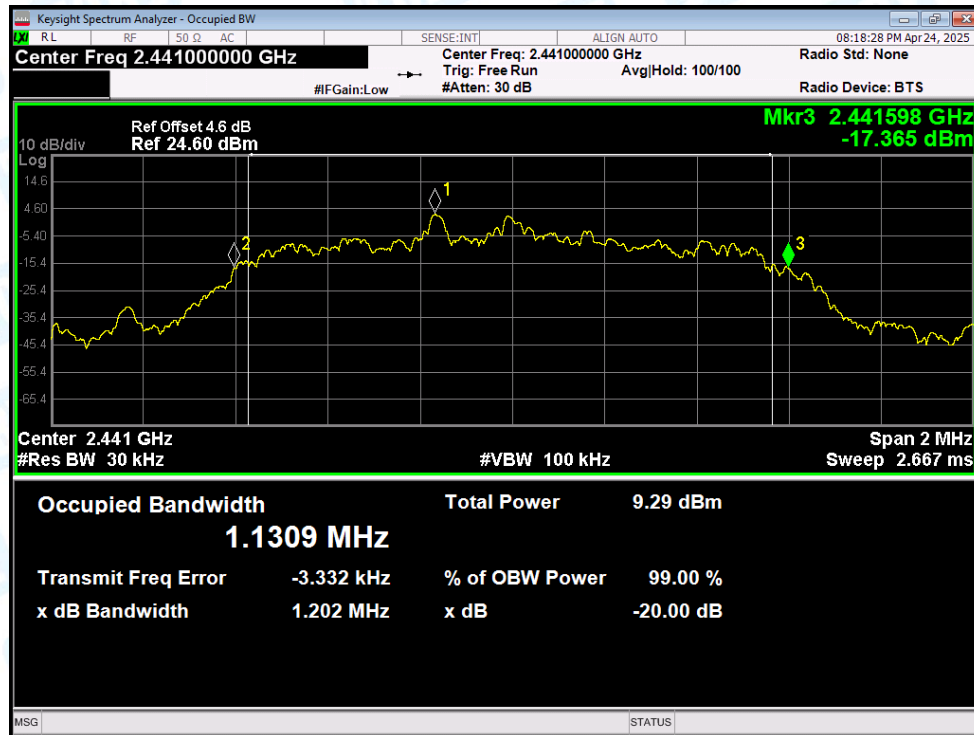
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



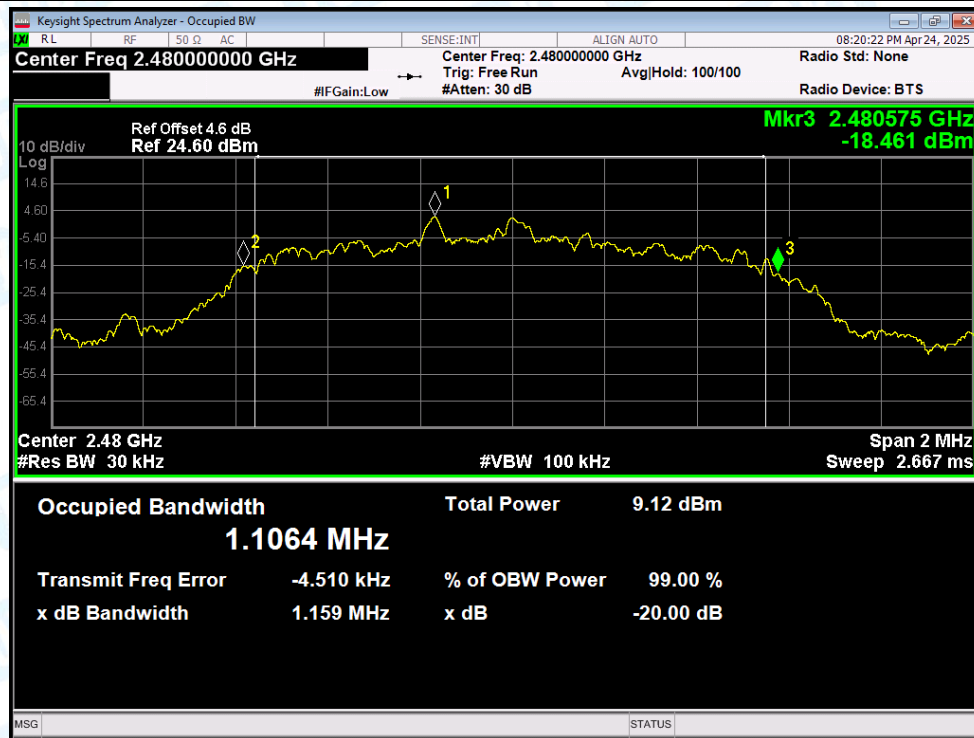
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



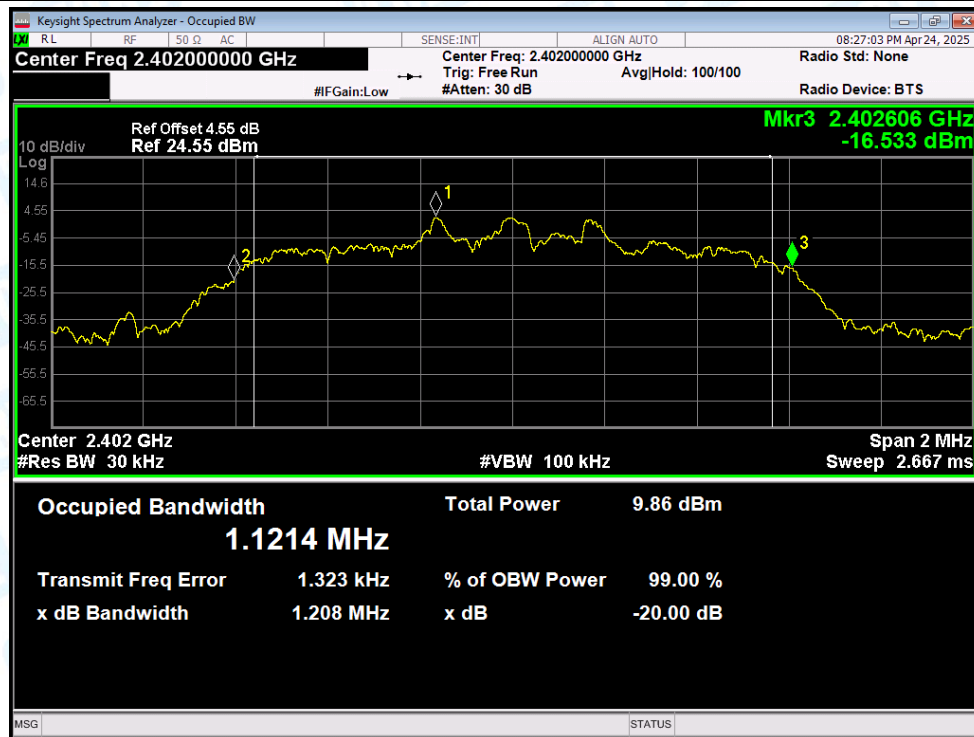
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



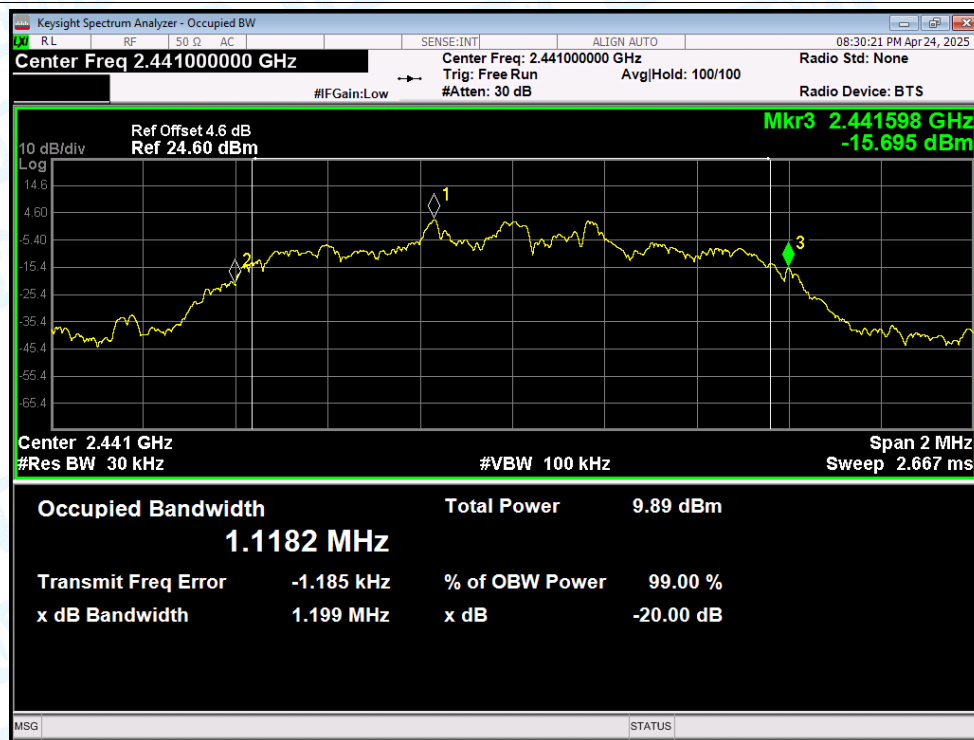
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

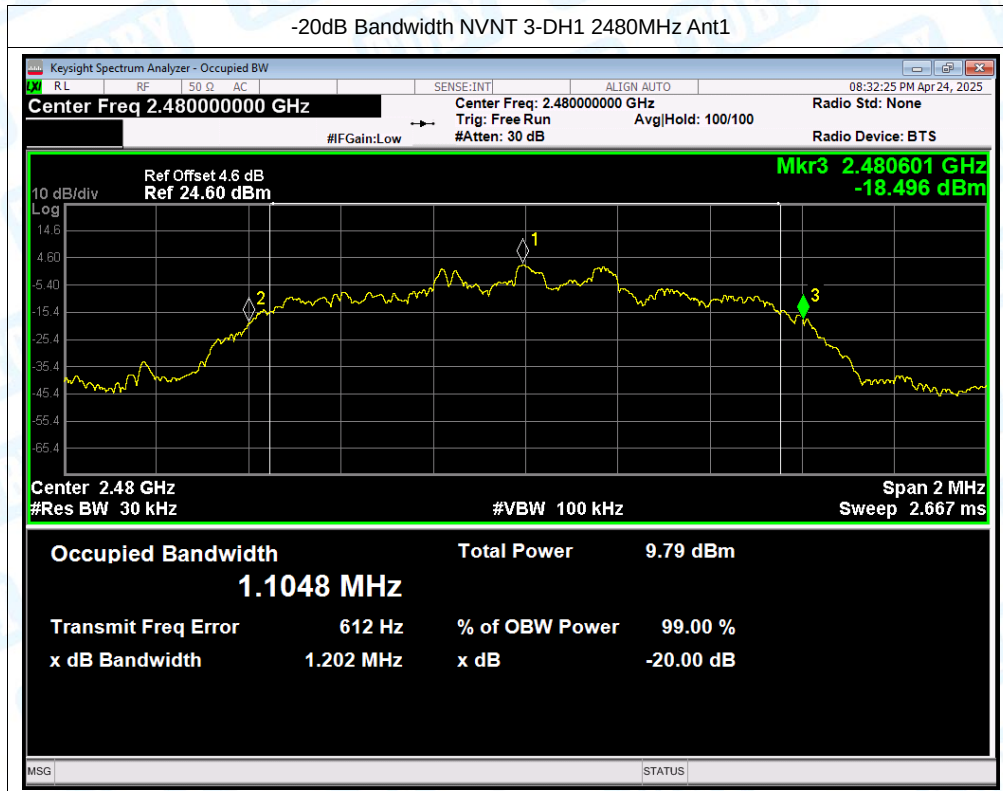


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



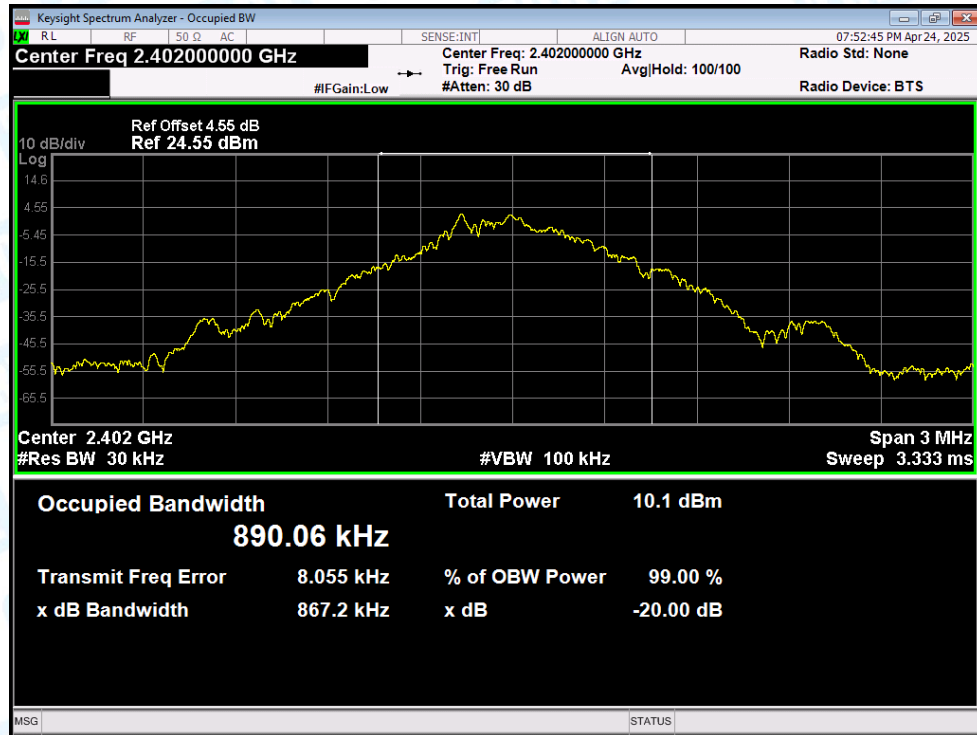


4. Occupied Channel Bandwidth

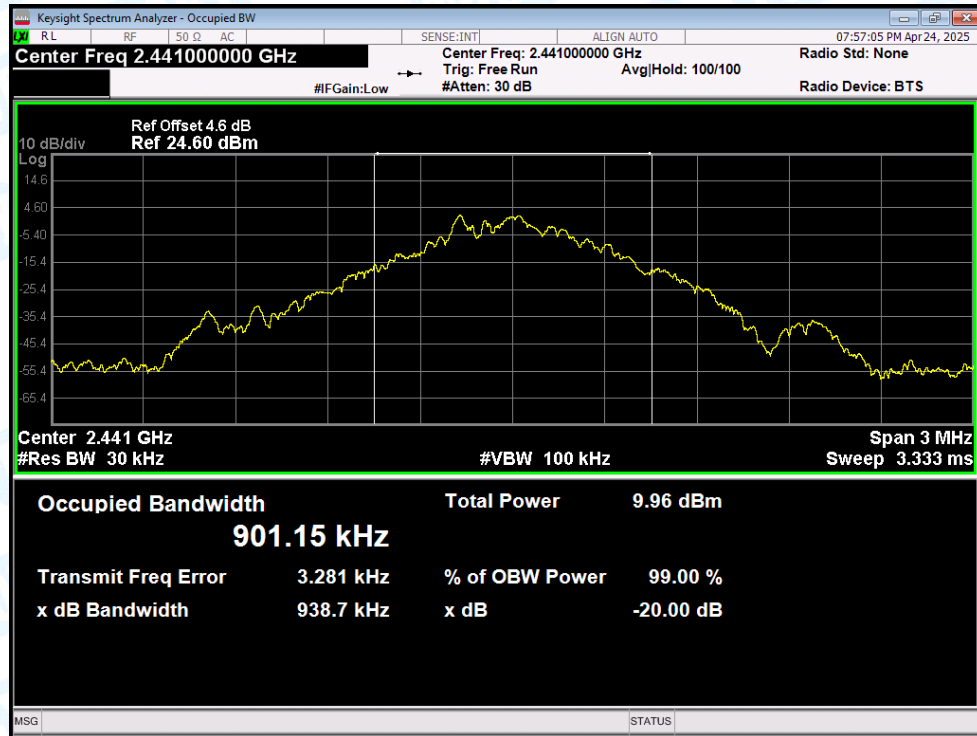
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.89
NVNT	1-DH1	2441	Ant1	0.901
NVNT	1-DH1	2480	Ant1	0.847
NVNT	2-DH1	2402	Ant1	1.123
NVNT	2-DH1	2441	Ant1	1.136
NVNT	2-DH1	2480	Ant1	1.095
NVNT	3-DH1	2402	Ant1	1.113
NVNT	3-DH1	2441	Ant1	1.115
NVNT	3-DH1	2480	Ant1	1.107

Test Graphs

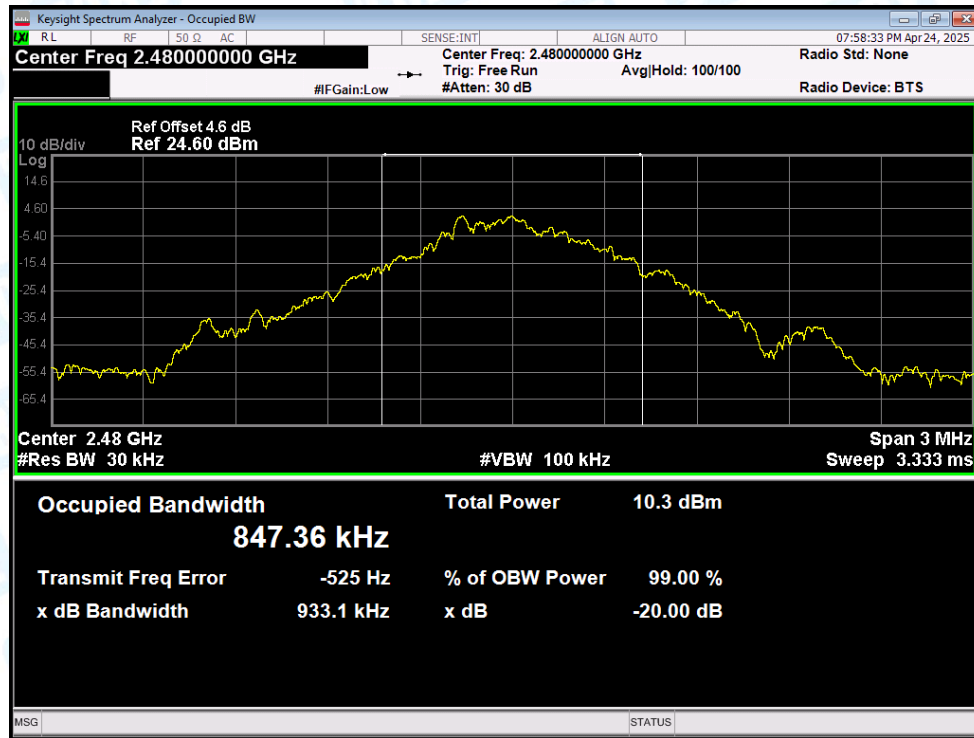
OBW NVNT 1-DH1 2402MHz Ant1



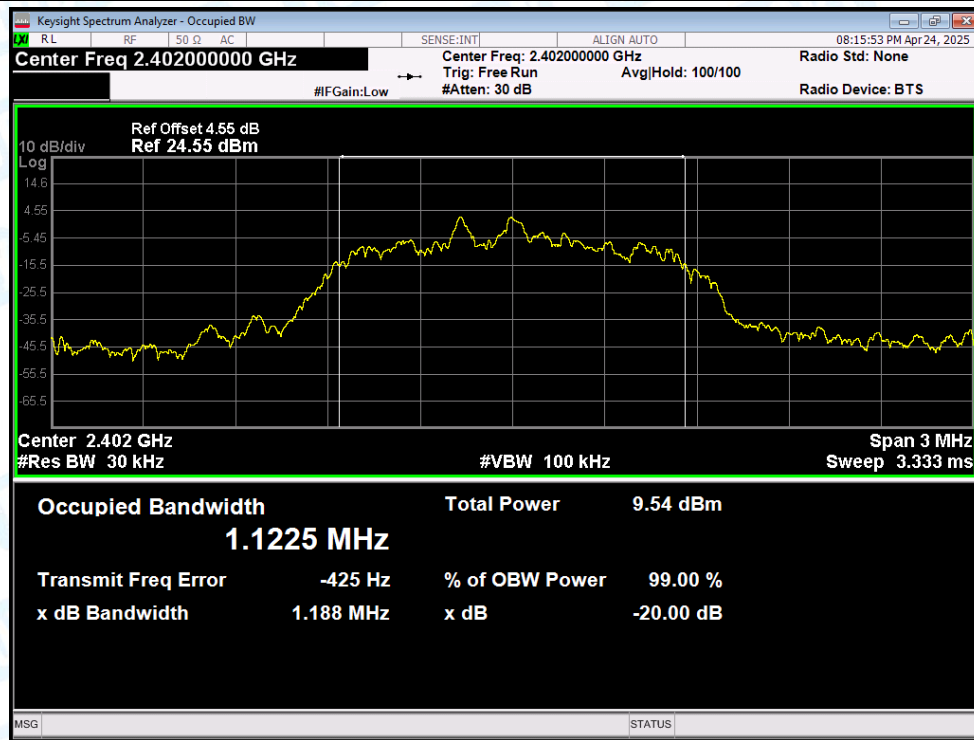
OBW NVNT 1-DH1 2441MHz Ant1



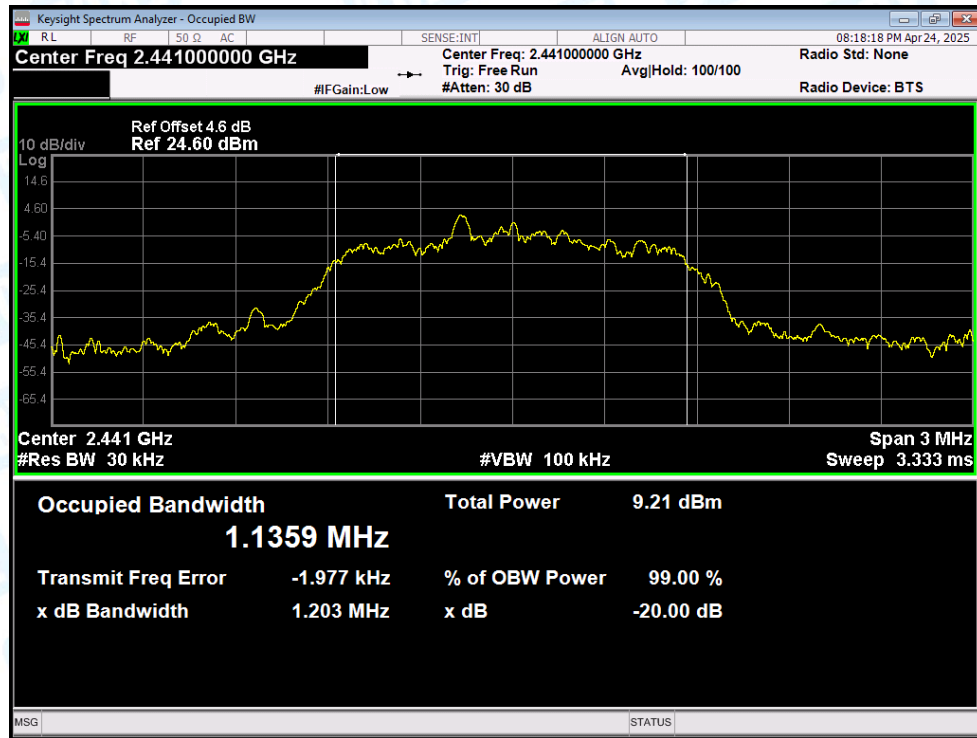
OBW NVNT 1-DH1 2480MHz Ant1



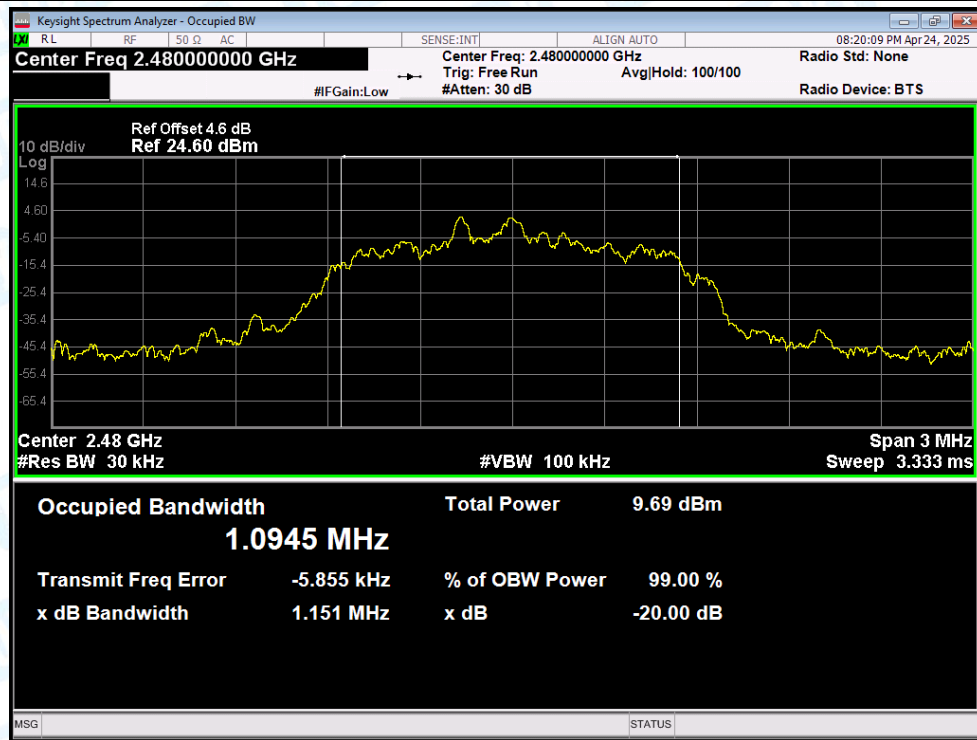
OBW NVNT 2-DH1 2402MHz Ant1



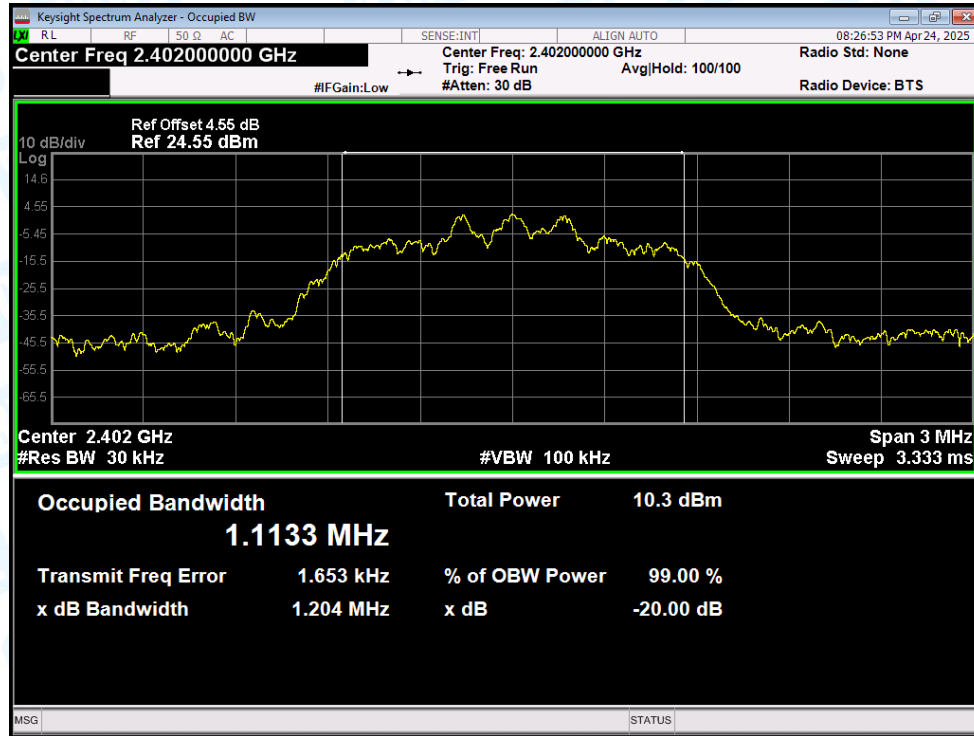
OBW NVNT 2-DH1 2441MHz Ant1



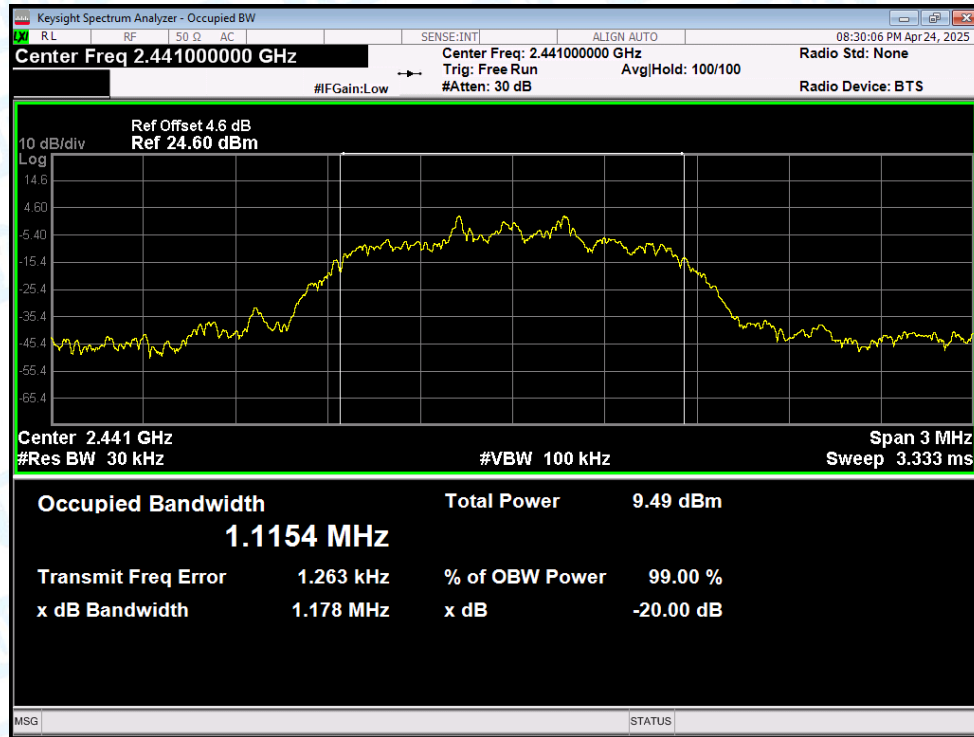
OBW NVNT 2-DH1 2480MHz Ant1

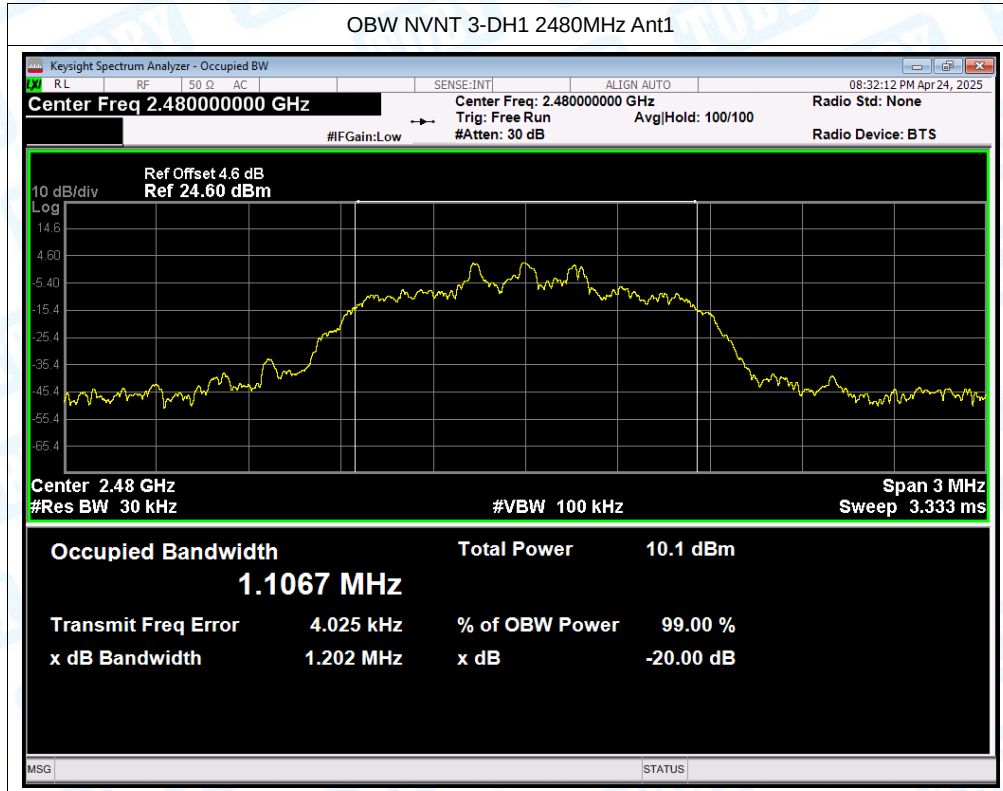


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



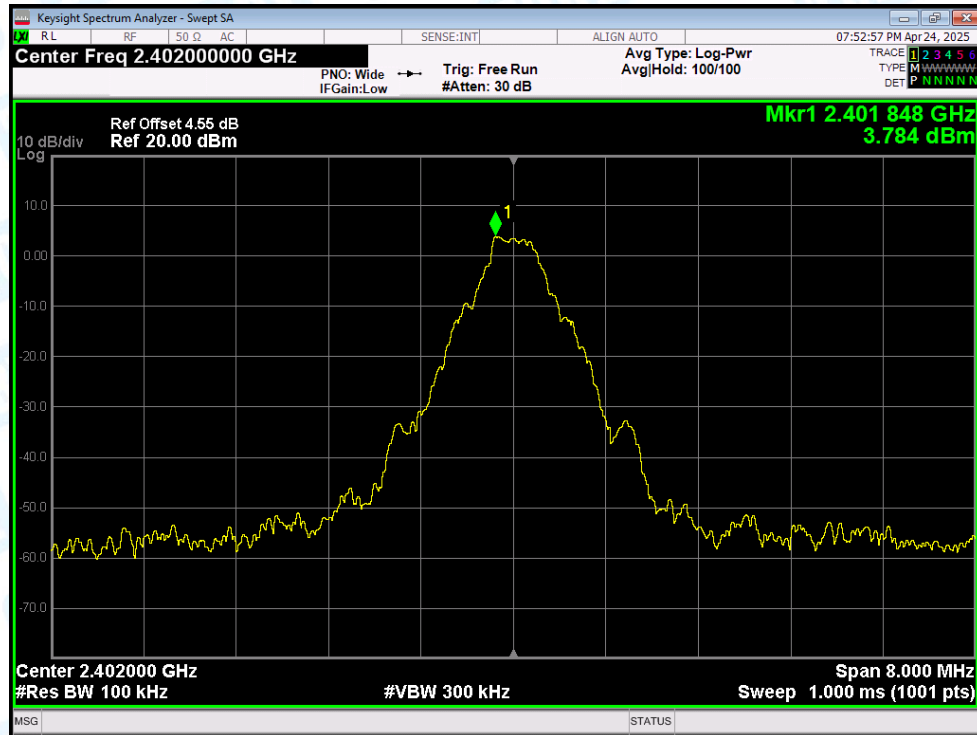


5. Band Edge

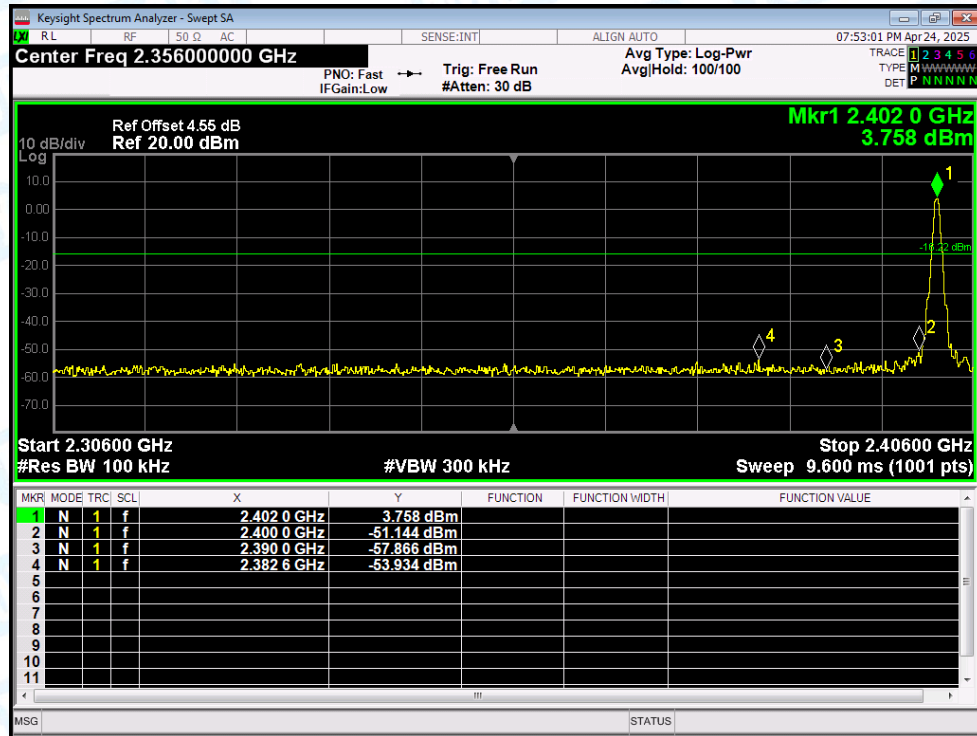
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-57.71	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-57.91	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-58.73	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-58.51	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-59.15	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-59.08	-20	Pass

Test Graphs

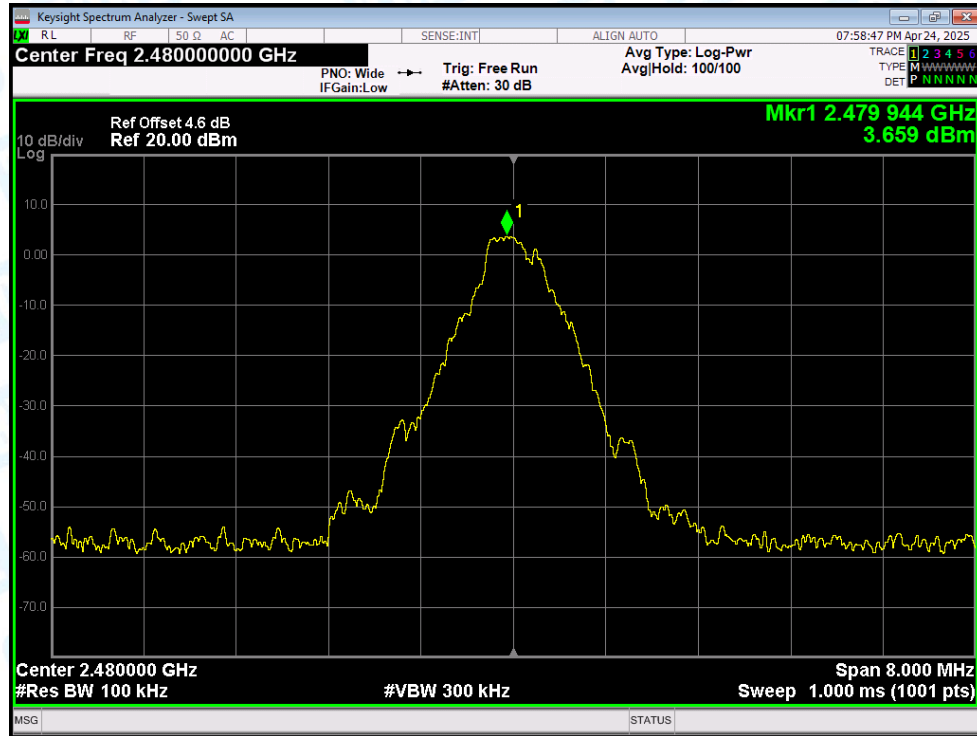
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



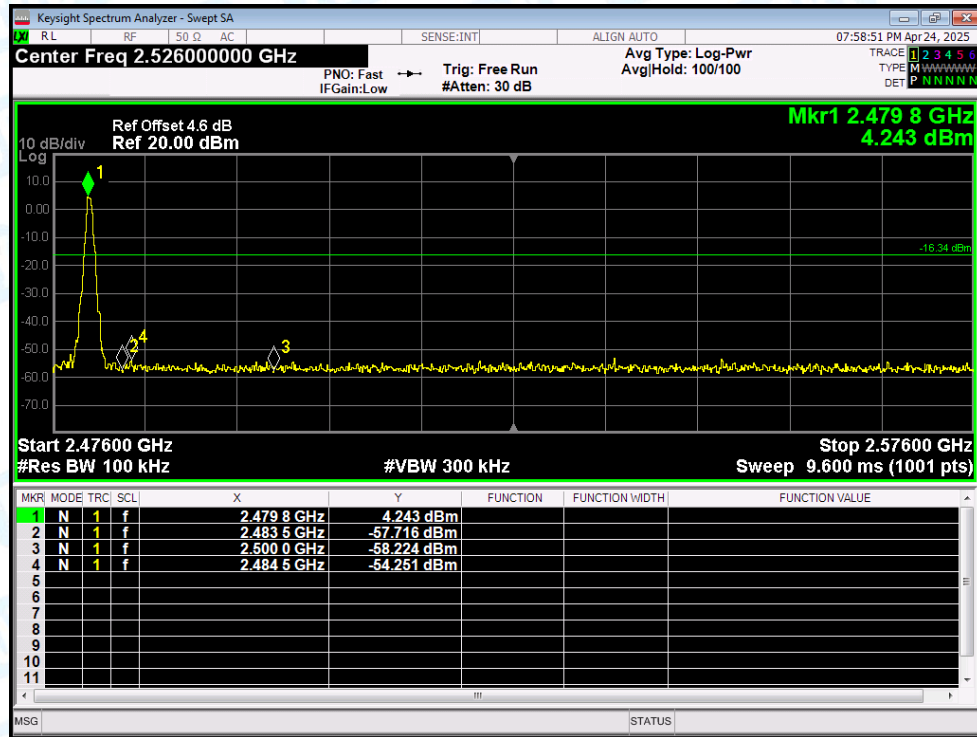
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



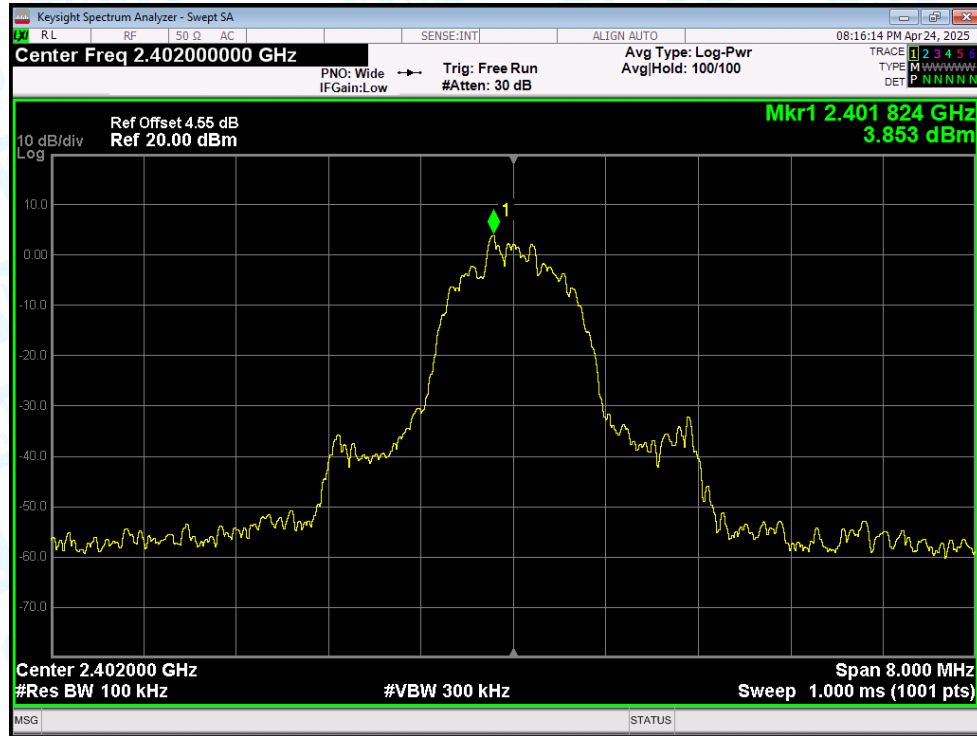
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



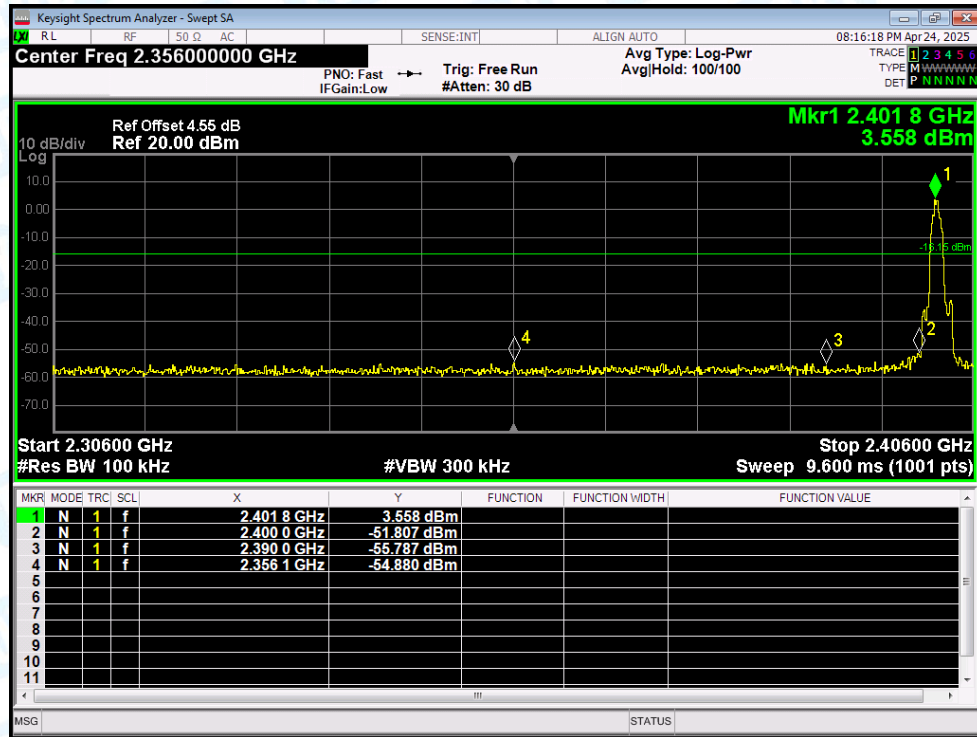
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



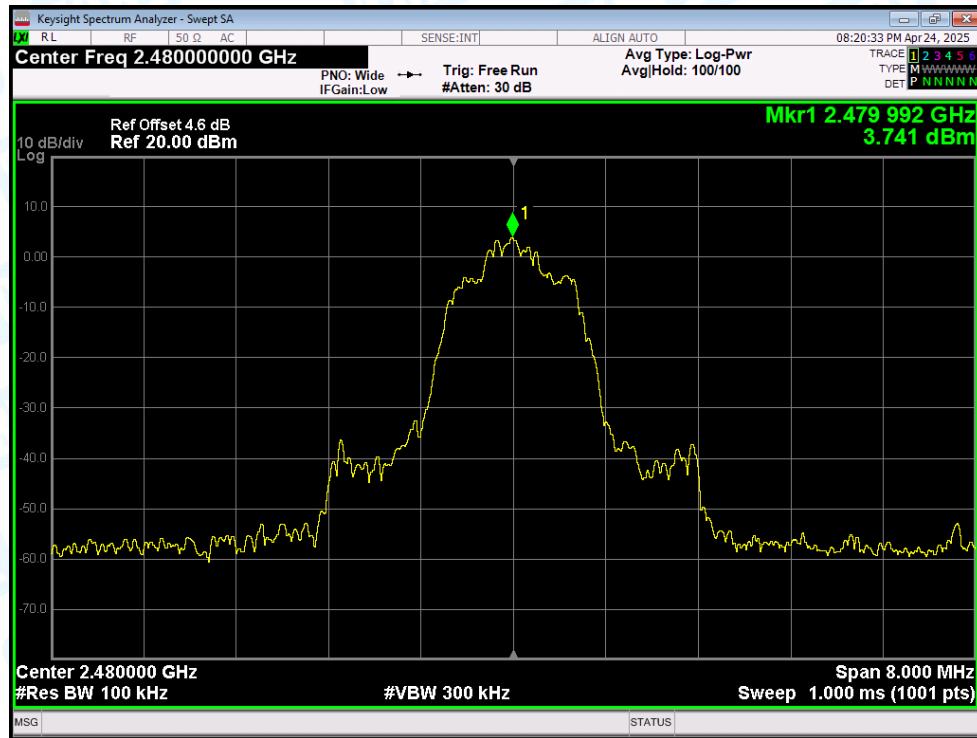
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



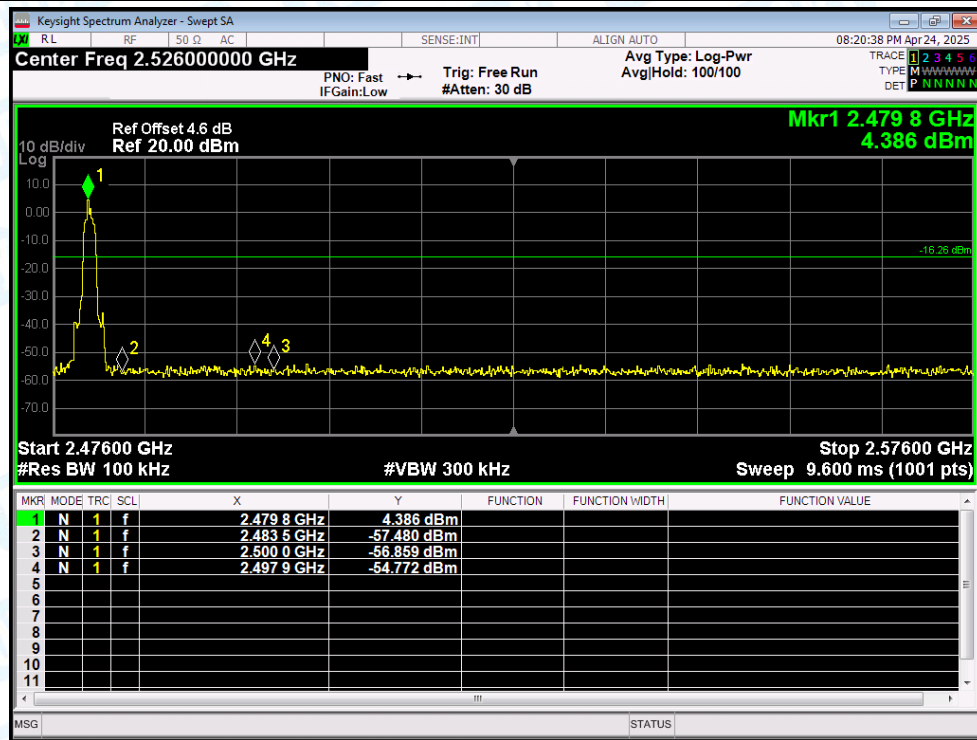
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



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



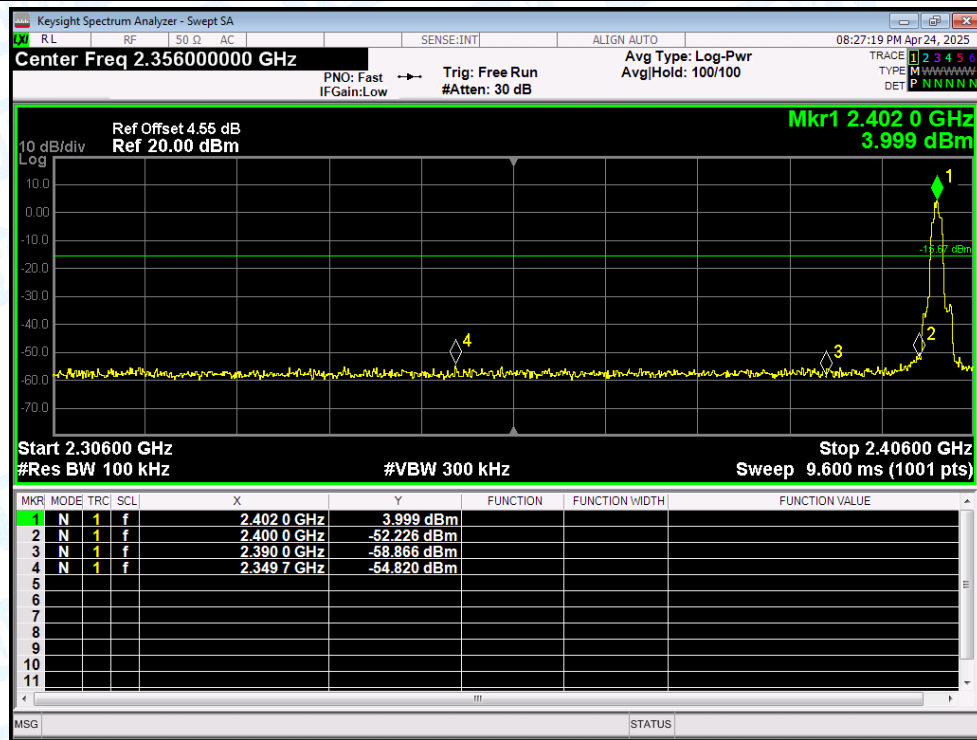
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



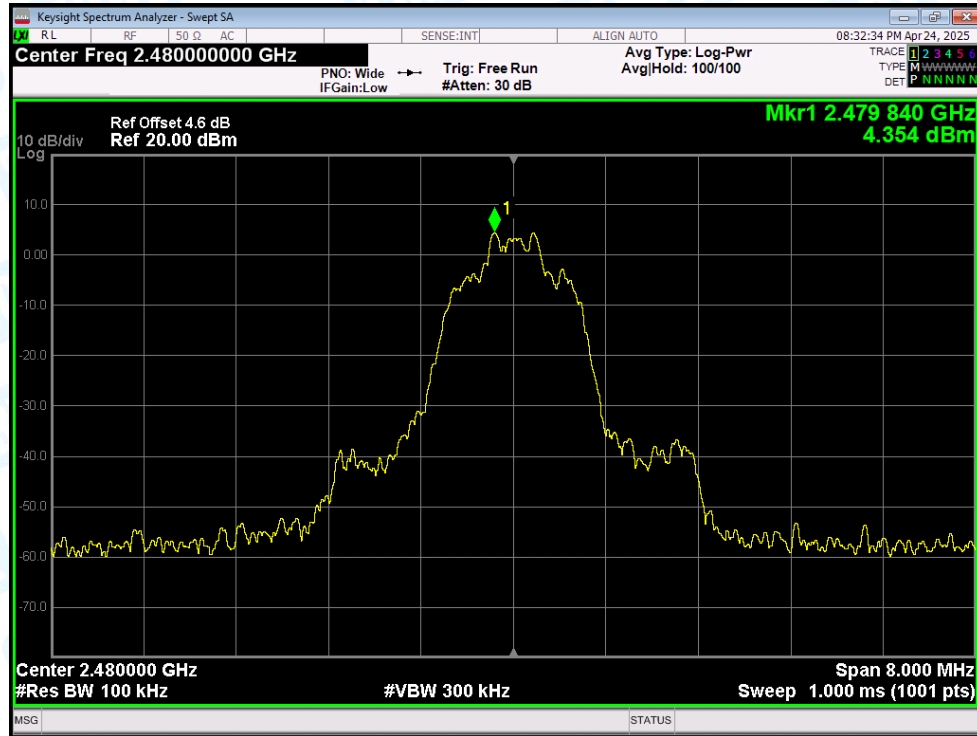
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



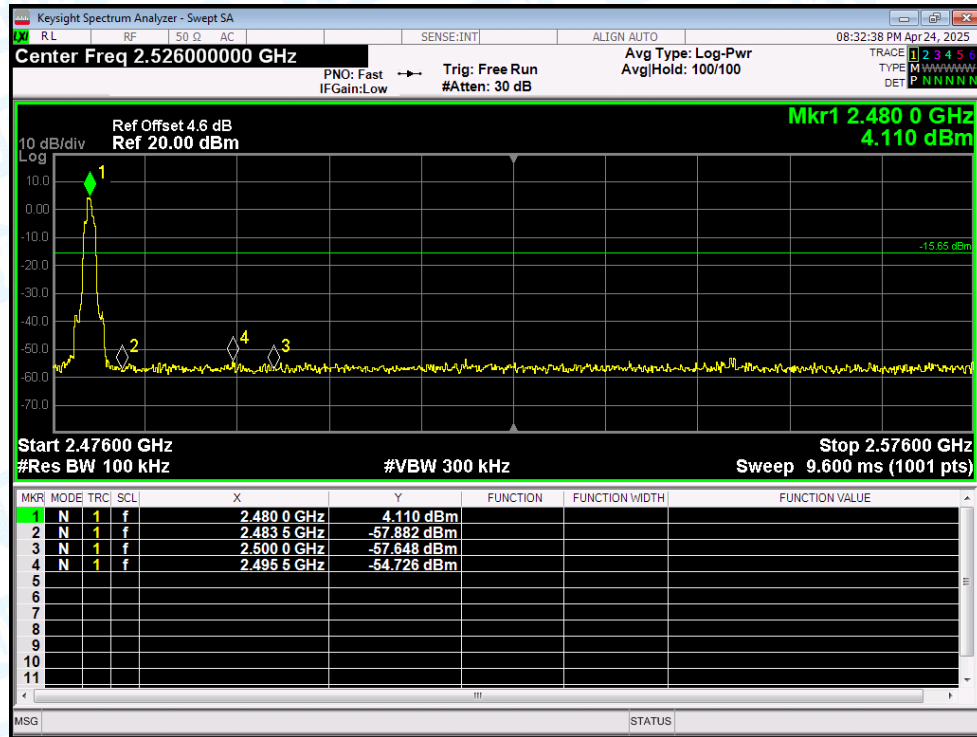
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



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



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



6. Band Edge(Hopping)

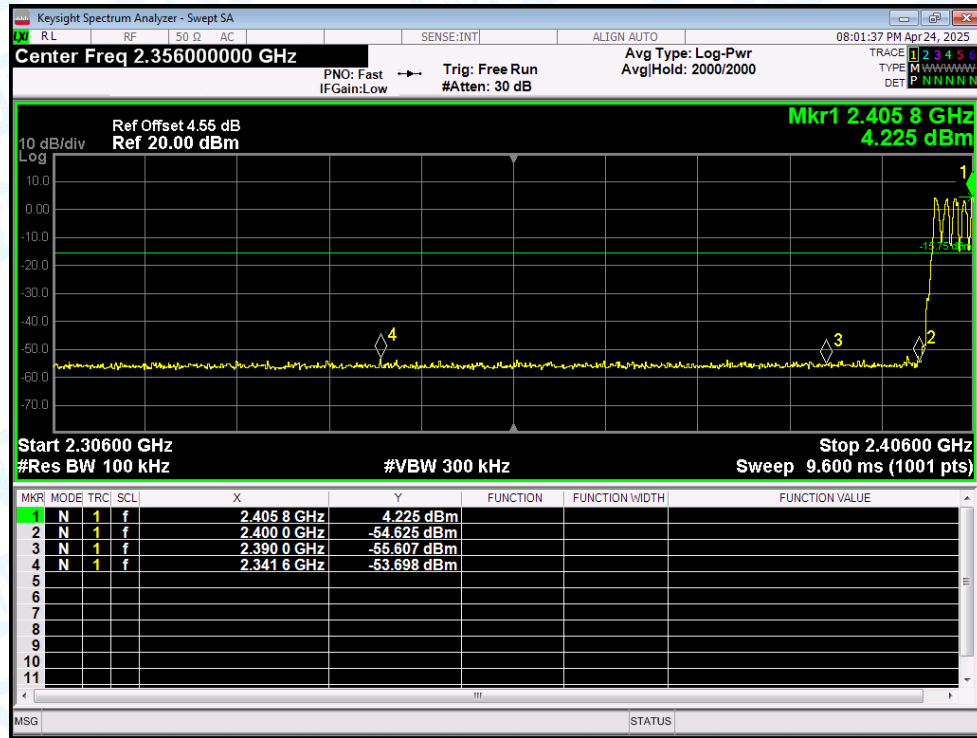
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-57.95	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-57.99	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-57.61	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-58.12	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-58.18	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-58	-20	Pass

Test Graphs

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



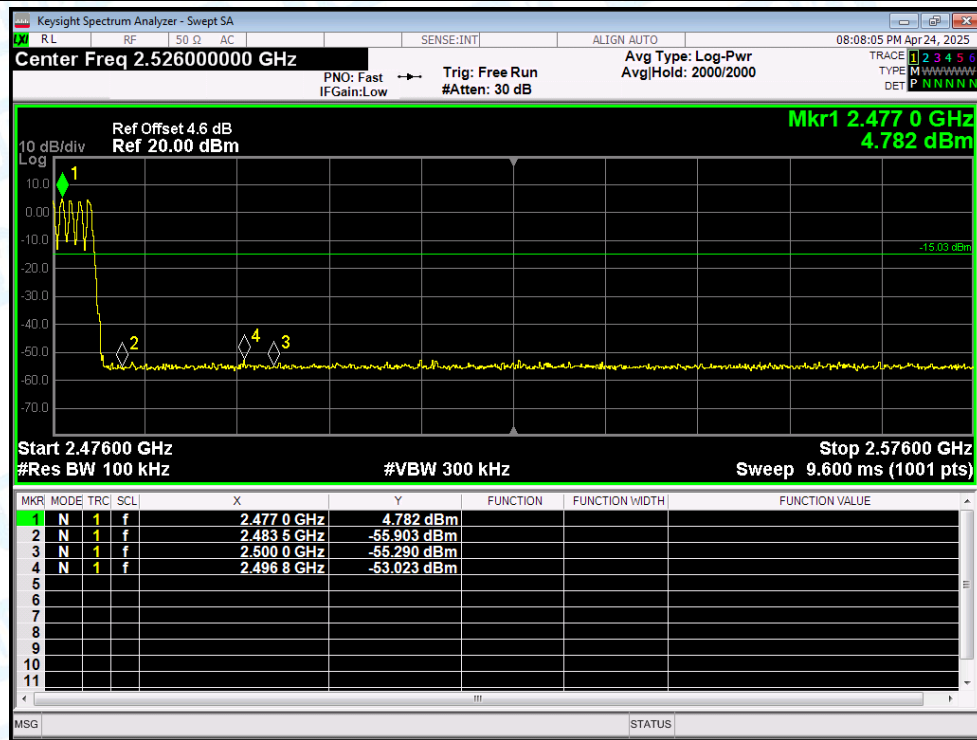
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



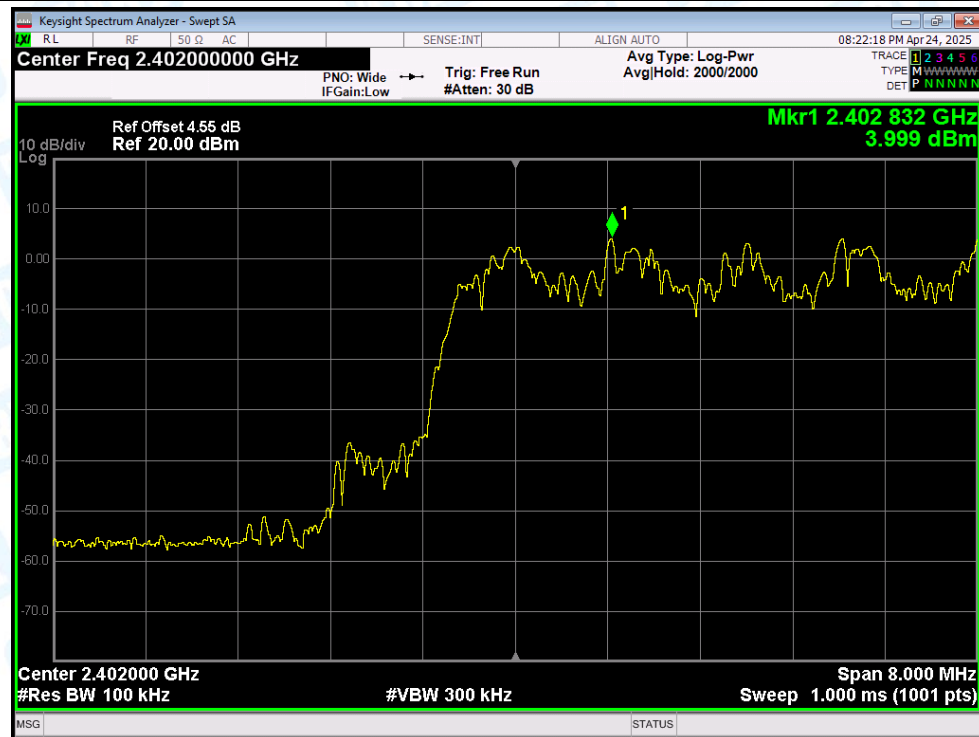
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref



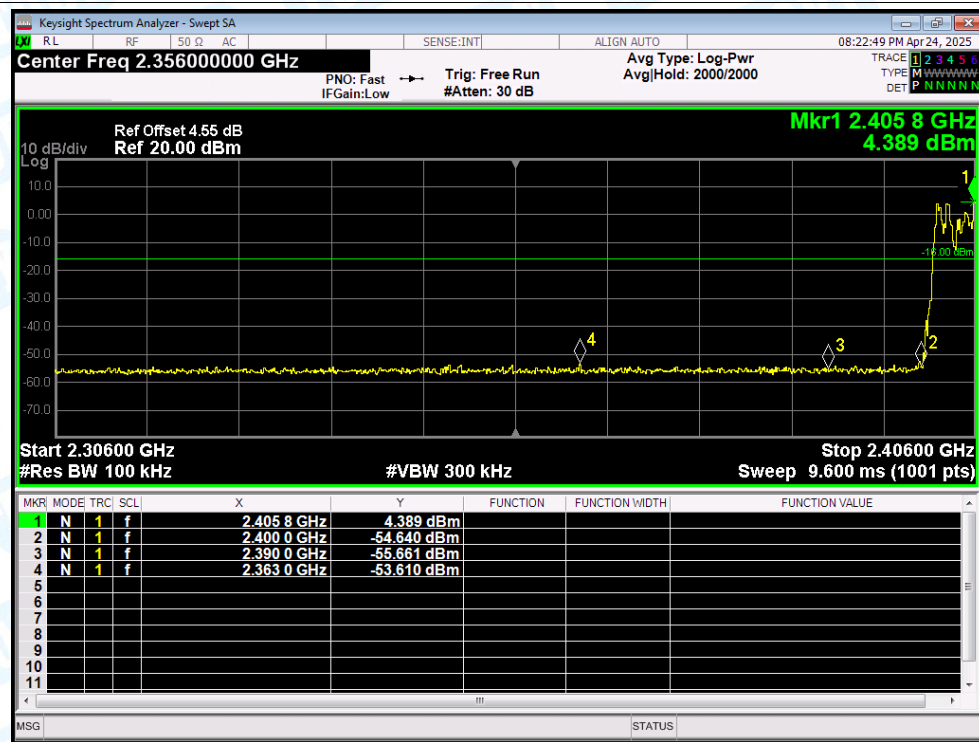
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



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



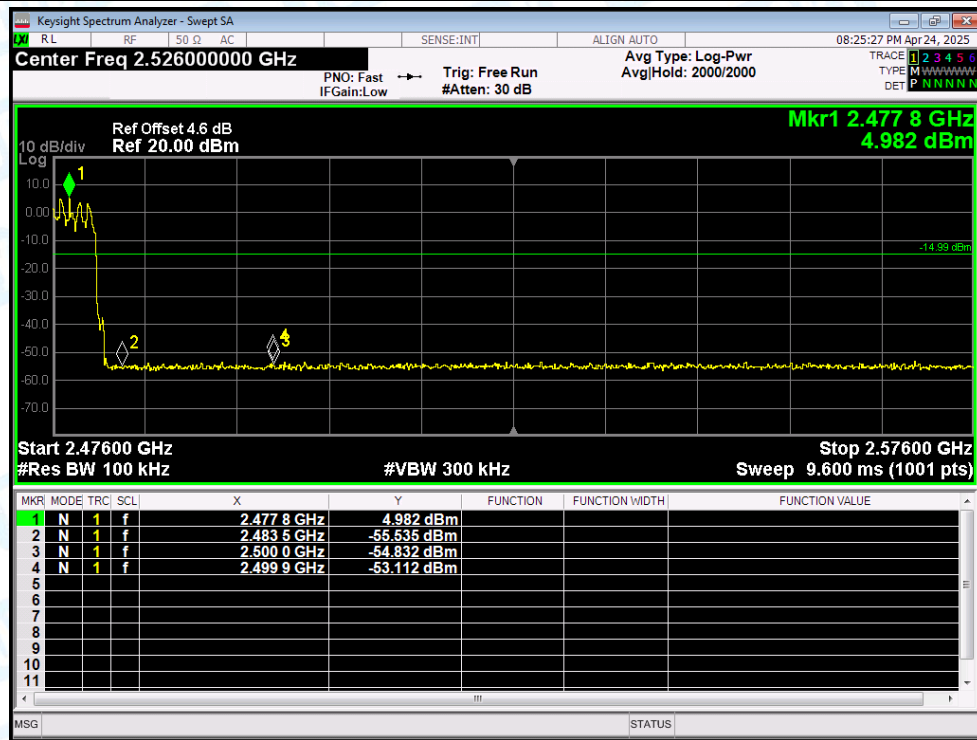
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



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



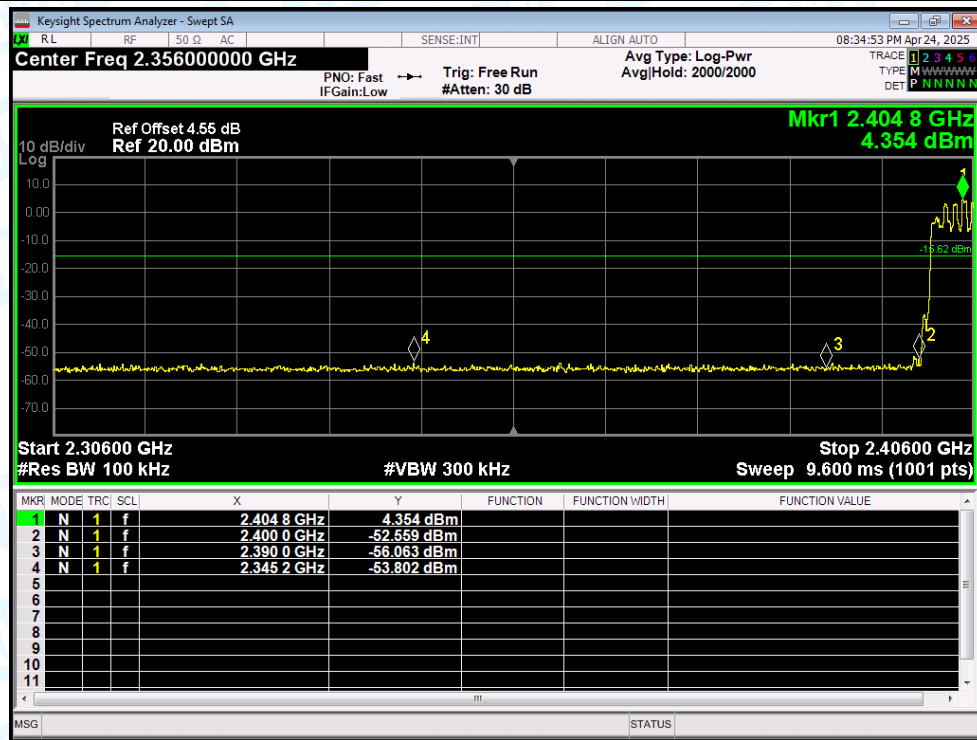
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission



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



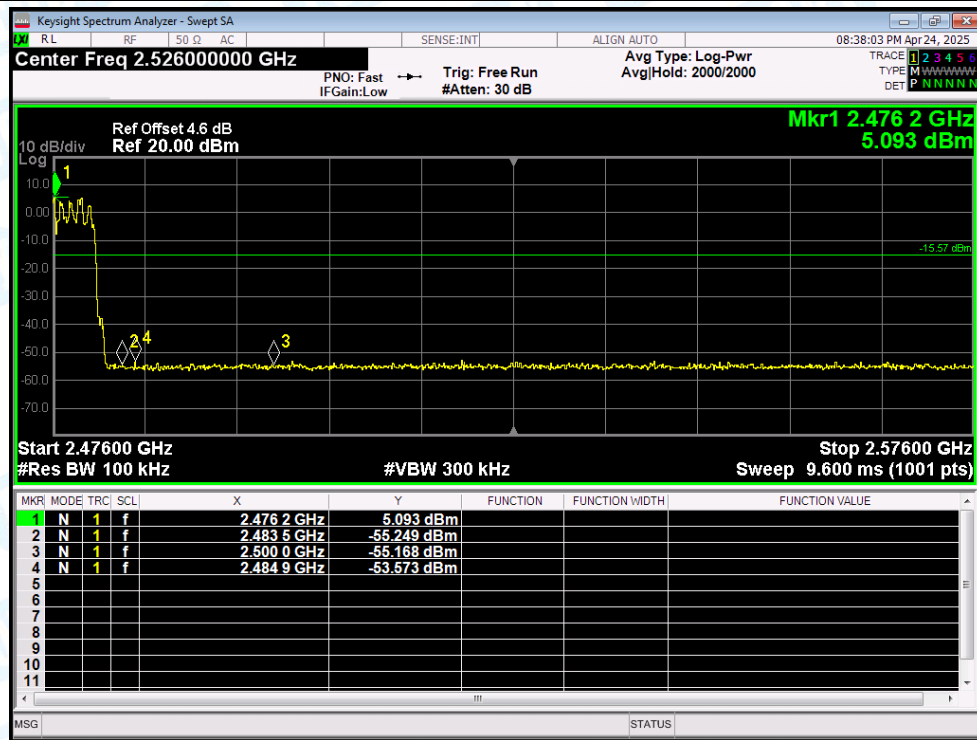
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



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



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

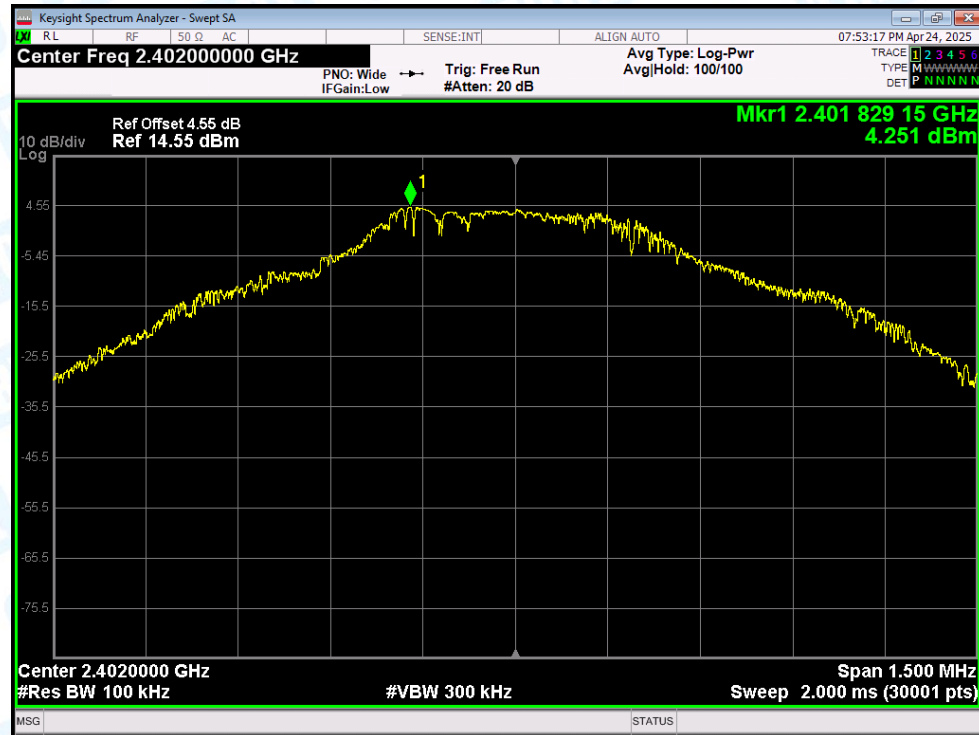


7. Conducted RF Spurious Emission

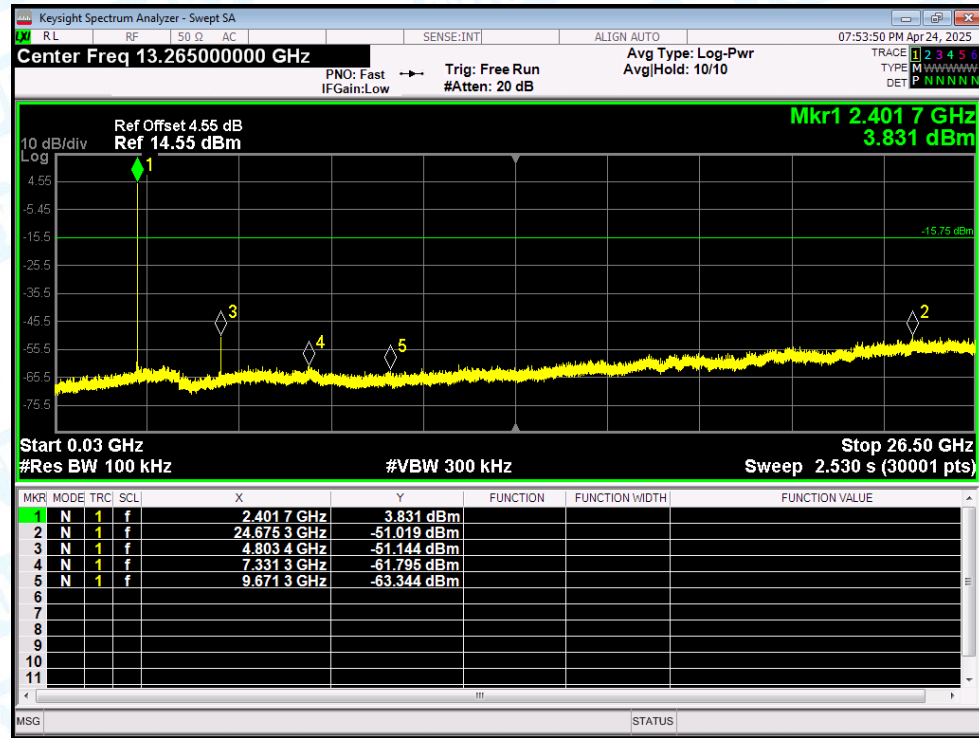
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-55.27	-20	Pass
NVNT	1-DH1	2441	Ant1	-55.85	-20	Pass
NVNT	1-DH1	2480	Ant1	-55.71	-20	Pass
NVNT	2-DH1	2402	Ant1	-55.97	-20	Pass
NVNT	2-DH1	2441	Ant1	-54.45	-20	Pass
NVNT	2-DH1	2480	Ant1	-55.35	-20	Pass
NVNT	3-DH1	2402	Ant1	-54.38	-20	Pass
NVNT	3-DH1	2441	Ant1	-55.87	-20	Pass
NVNT	3-DH1	2480	Ant1	-55.06	-20	Pass

Test Graphs

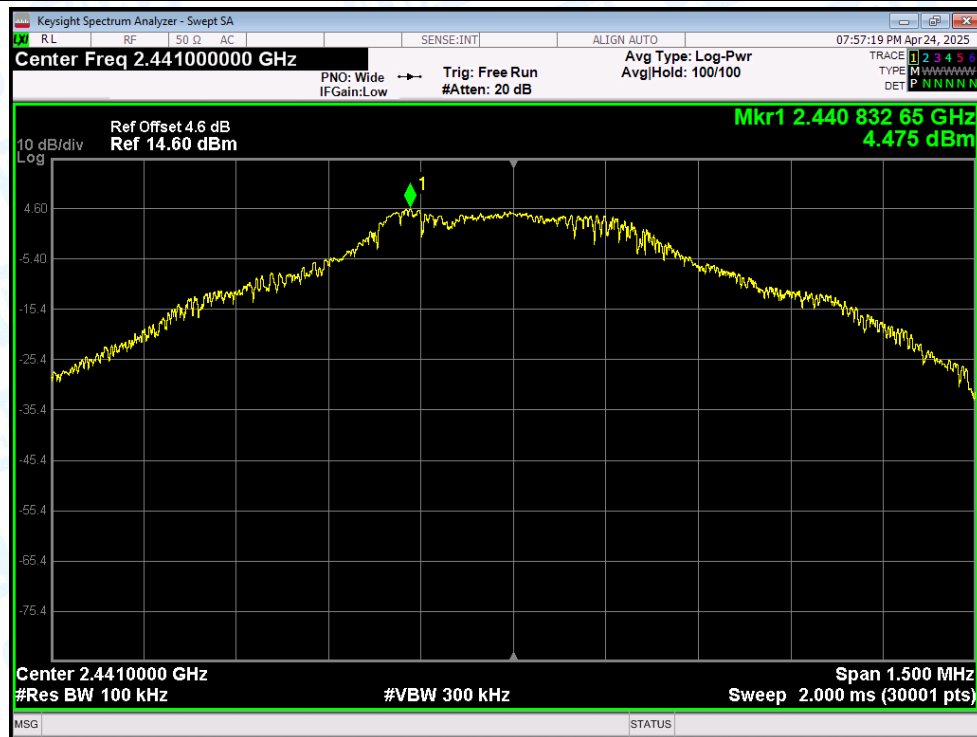
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



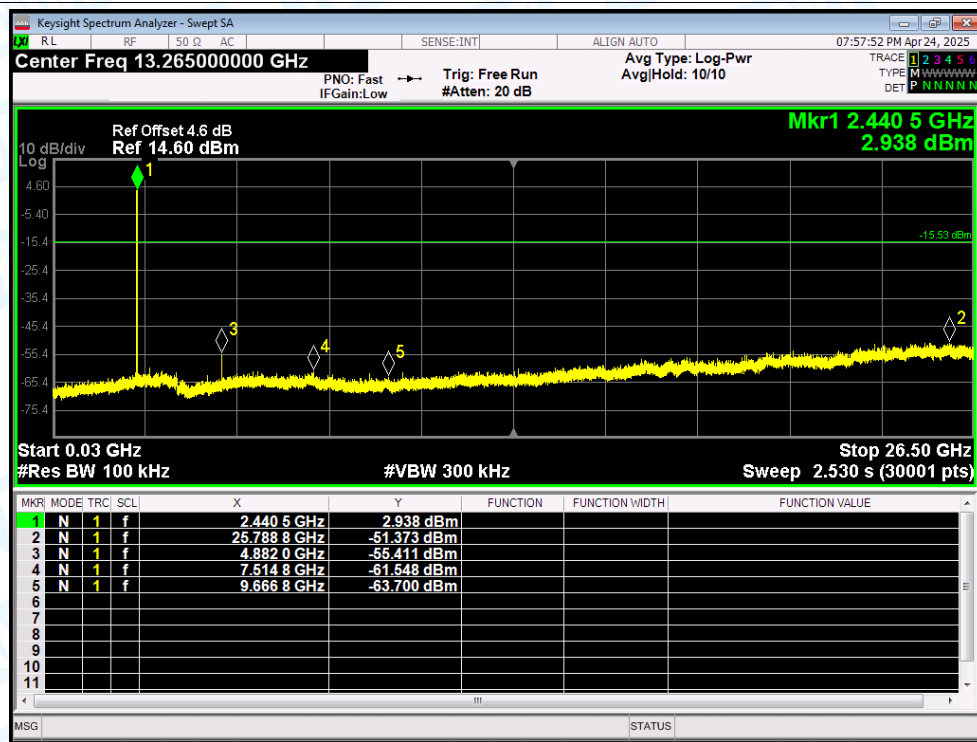
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



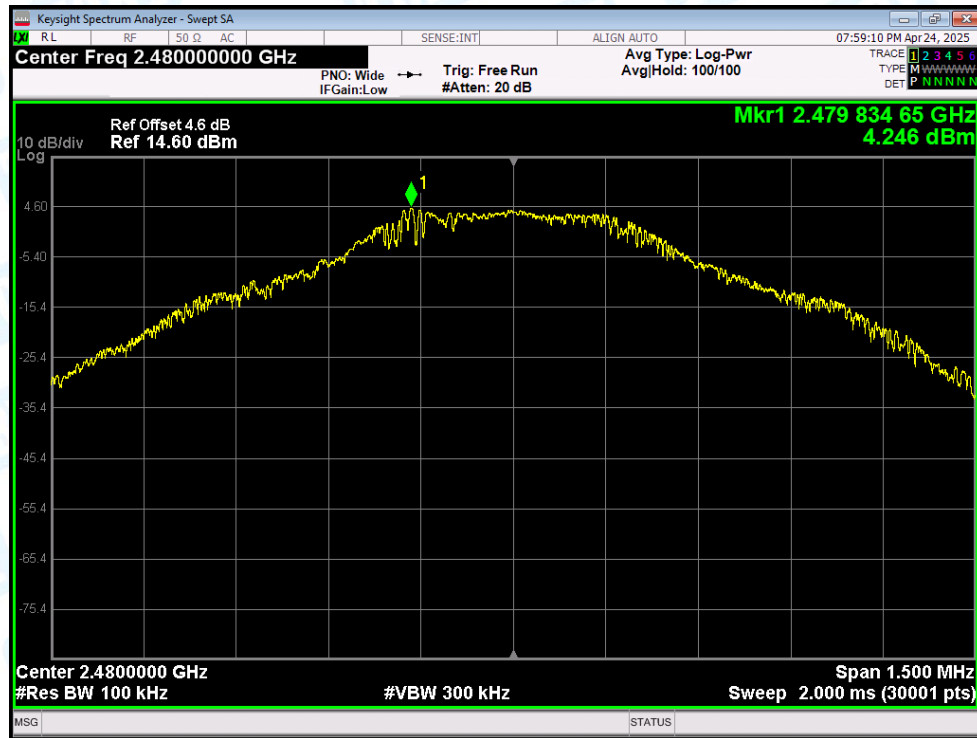
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



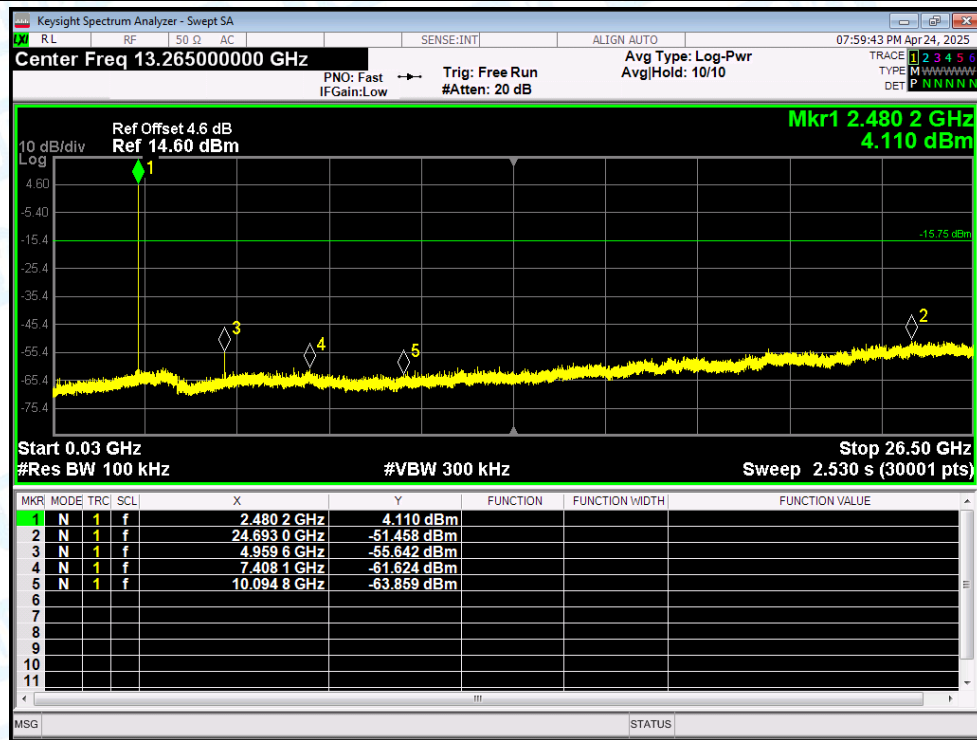
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



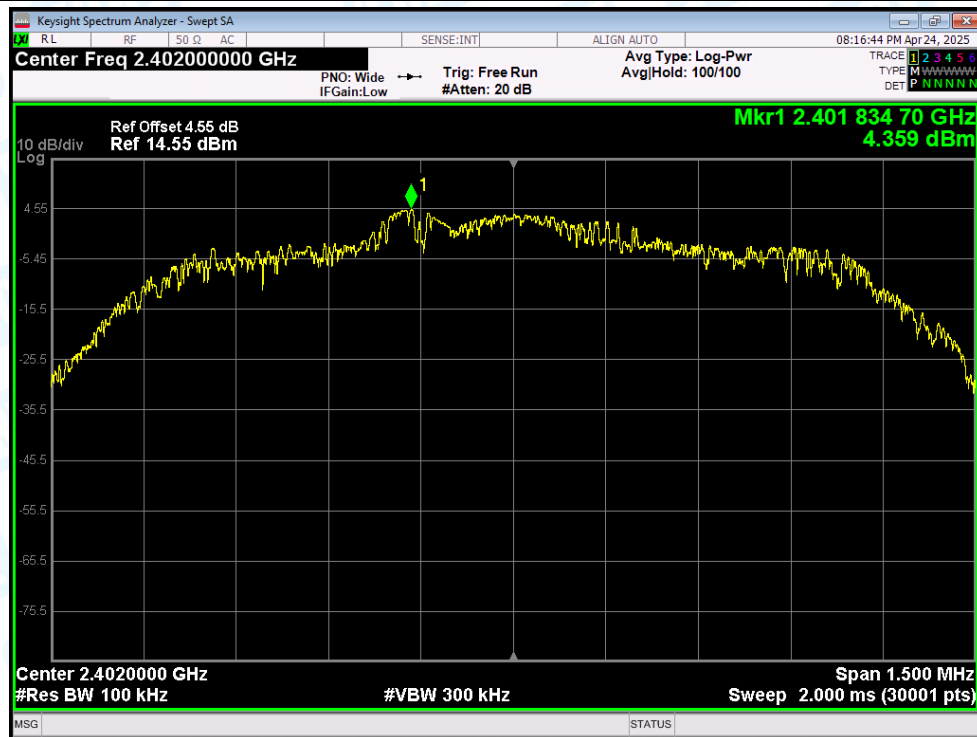
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



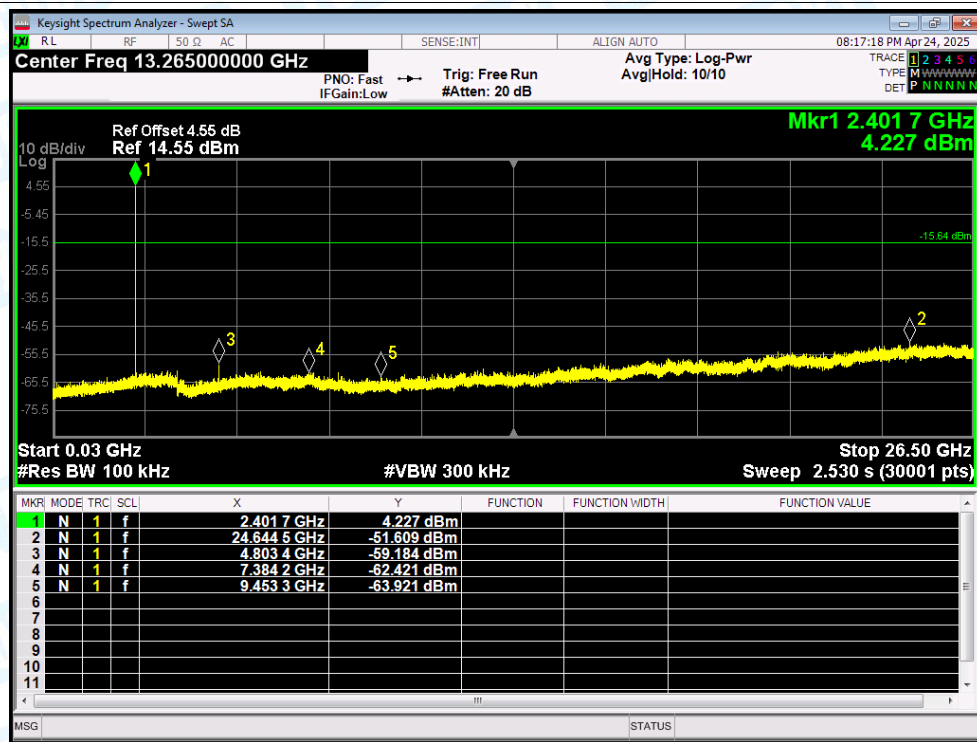
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



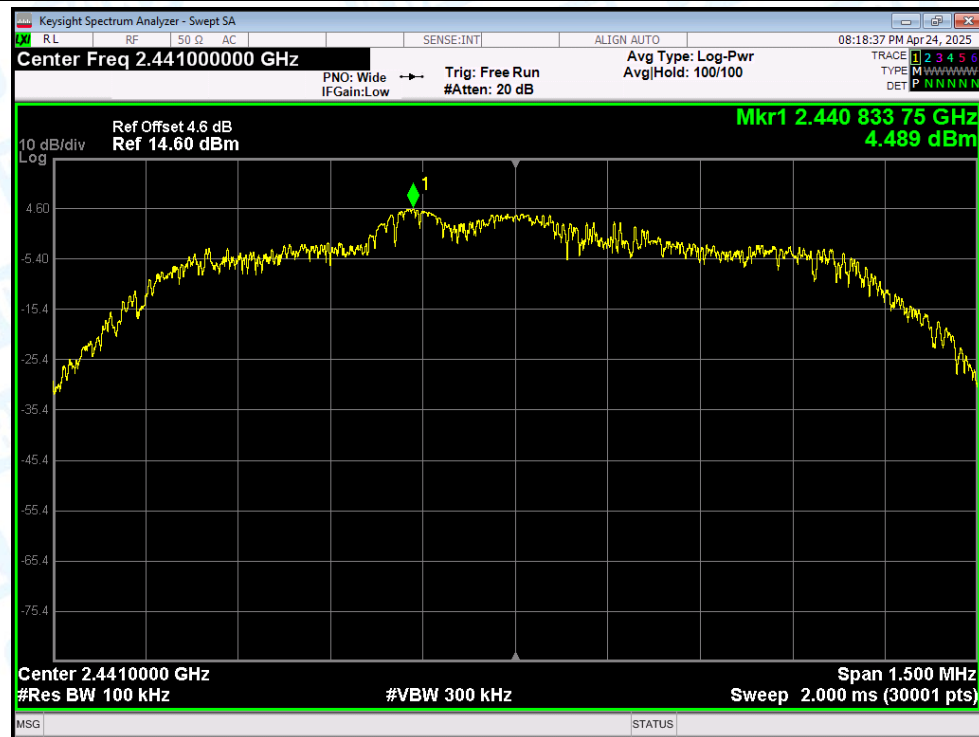
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



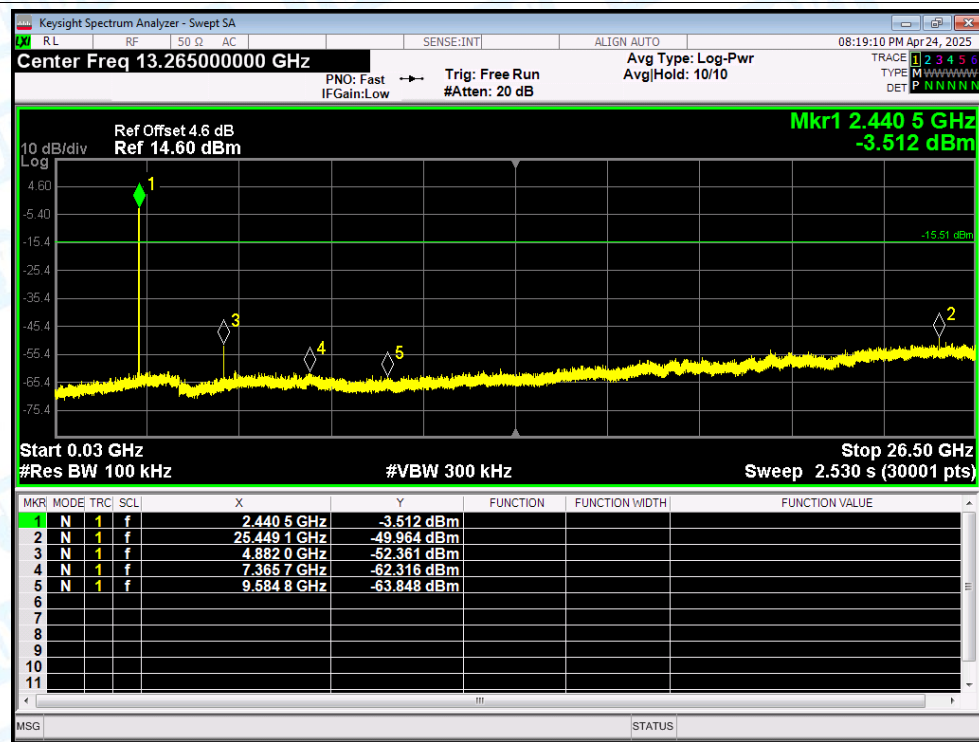
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



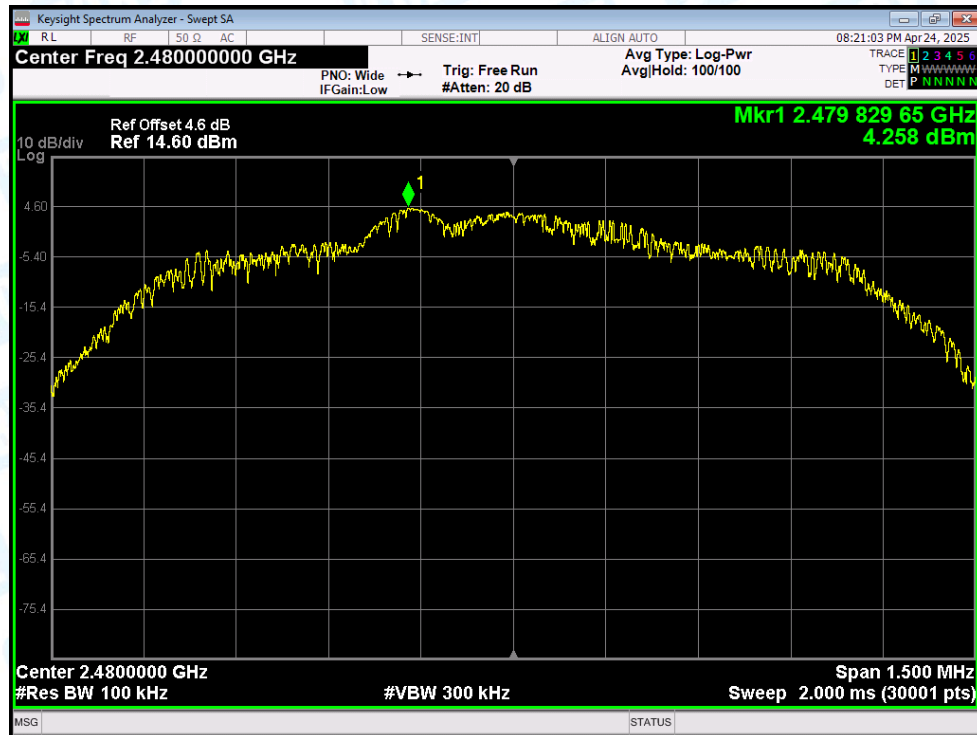
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



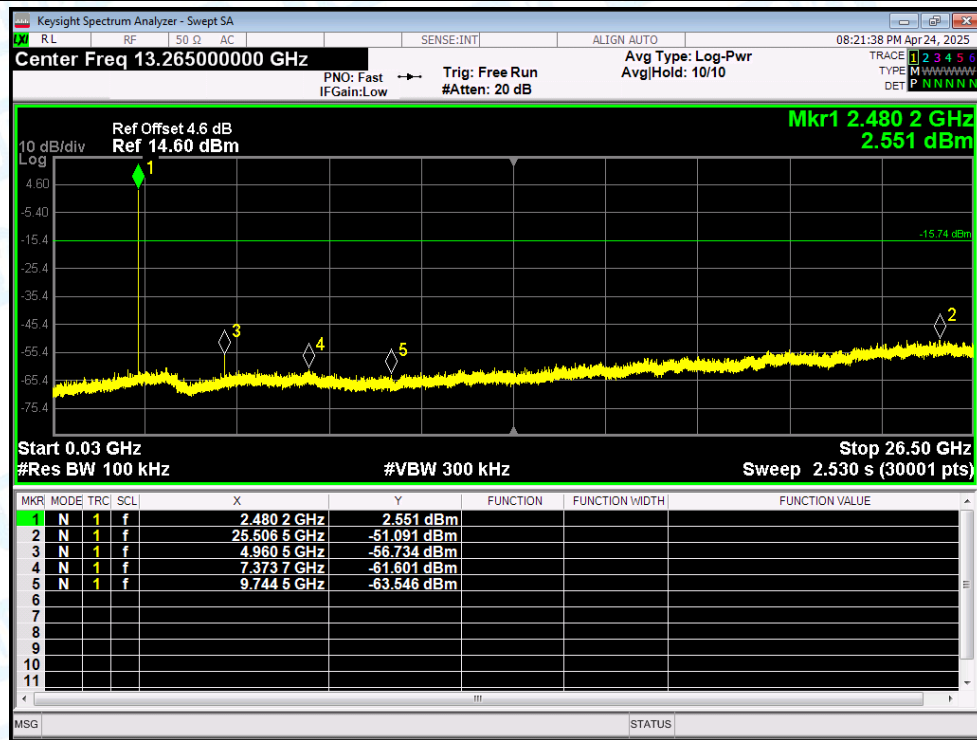
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



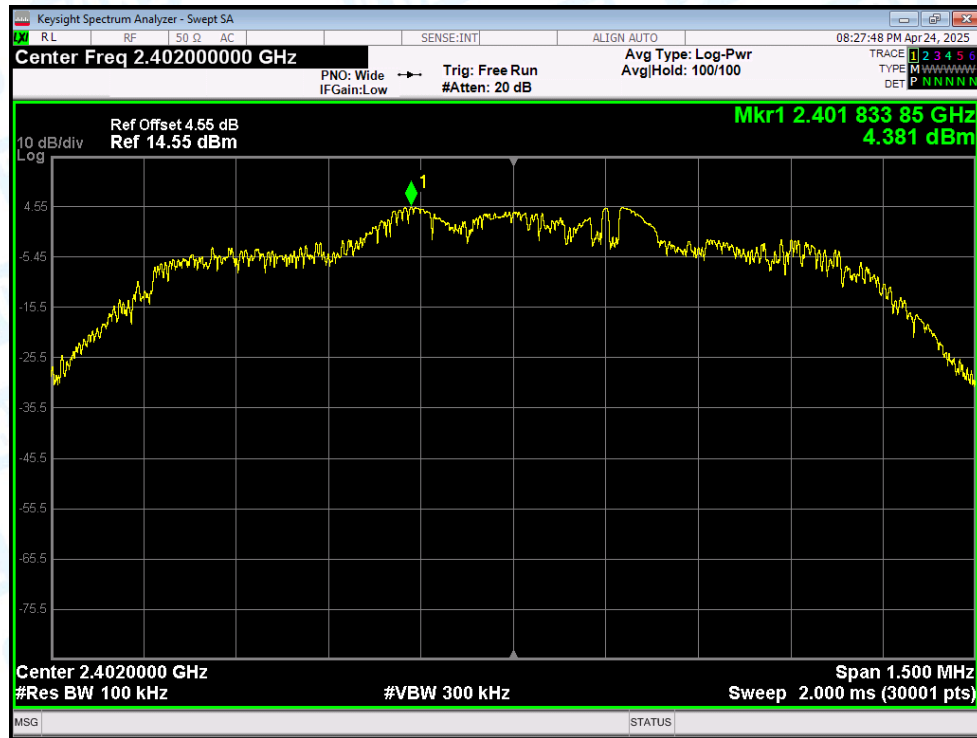
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



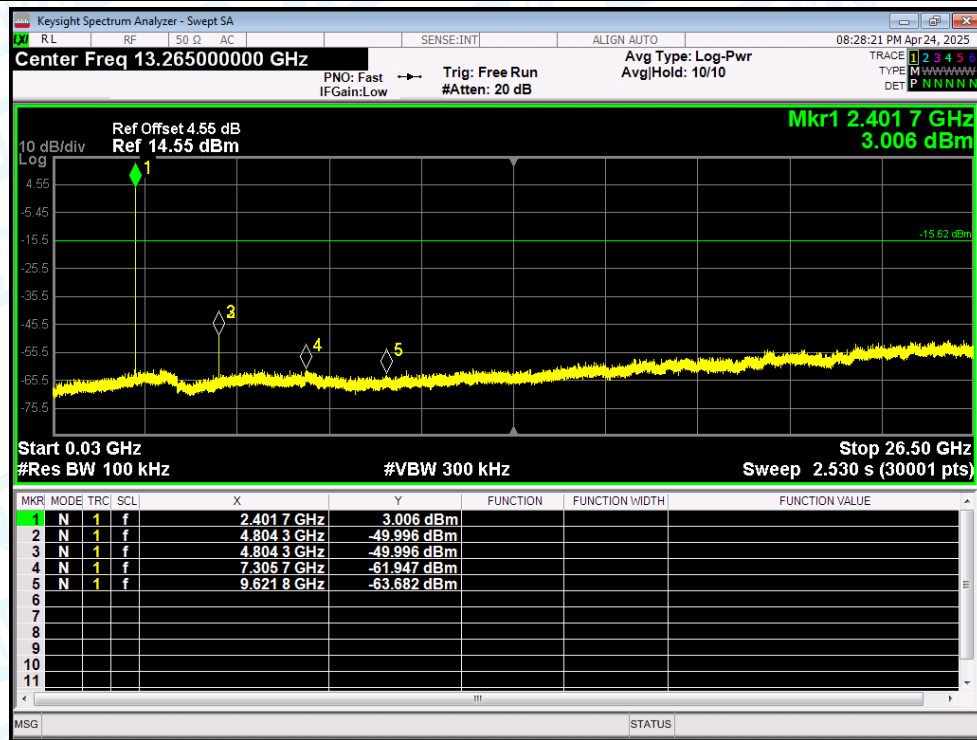
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



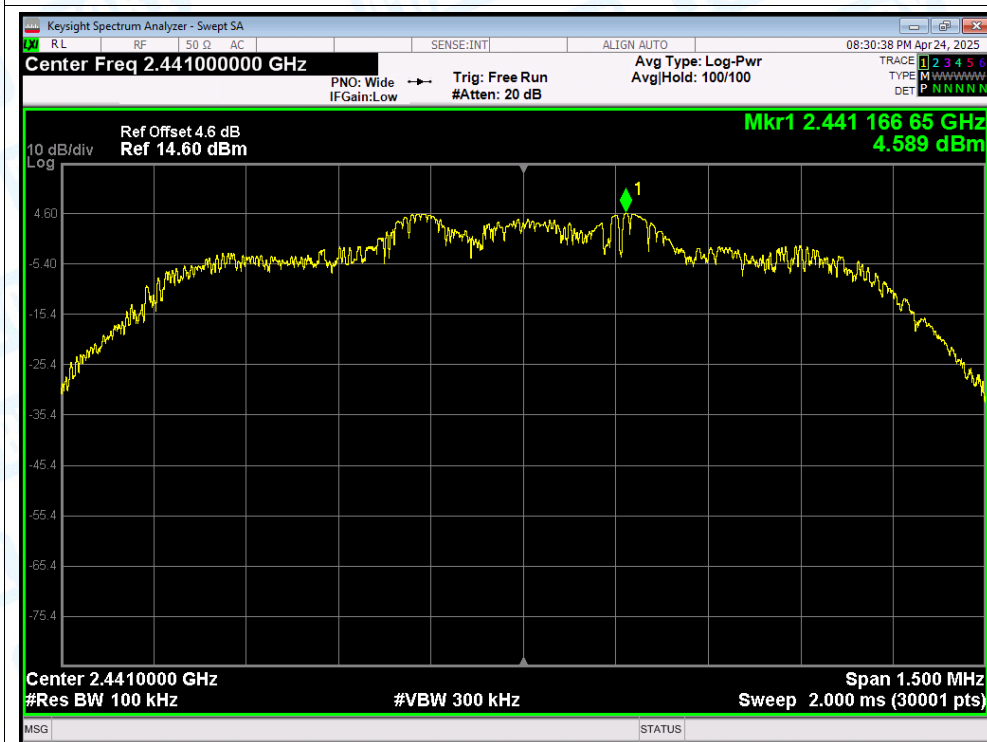
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



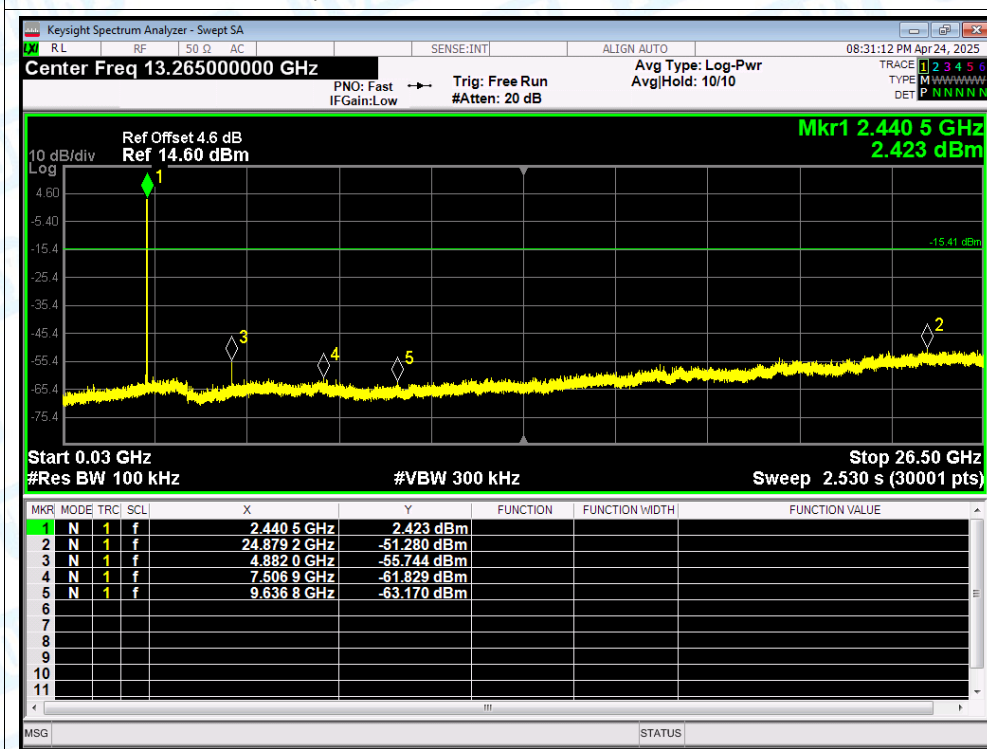
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



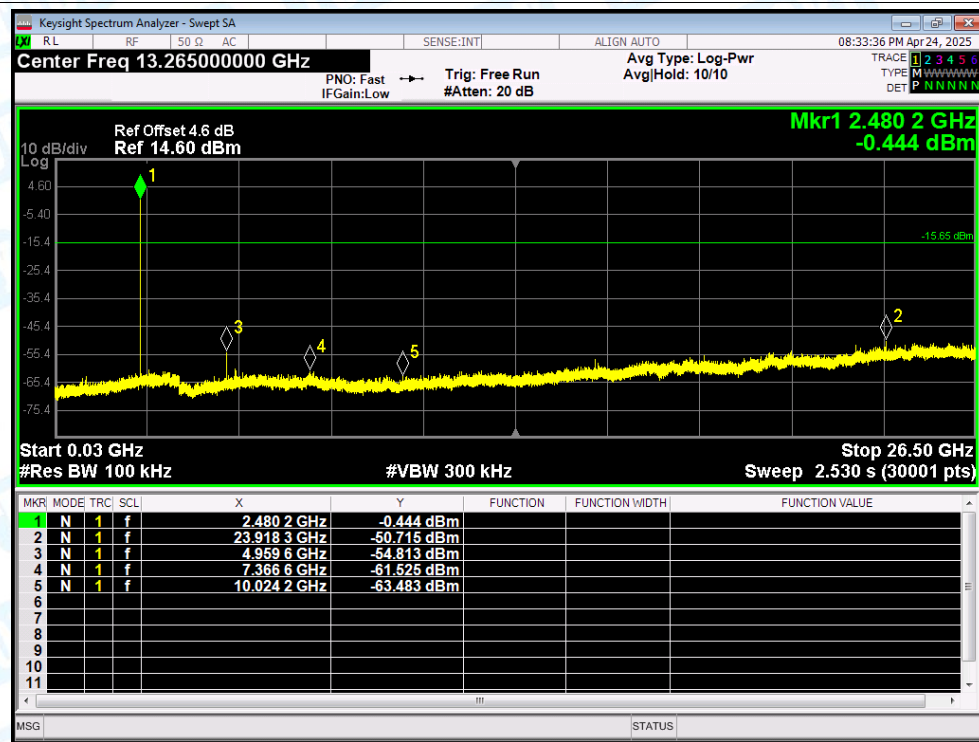
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

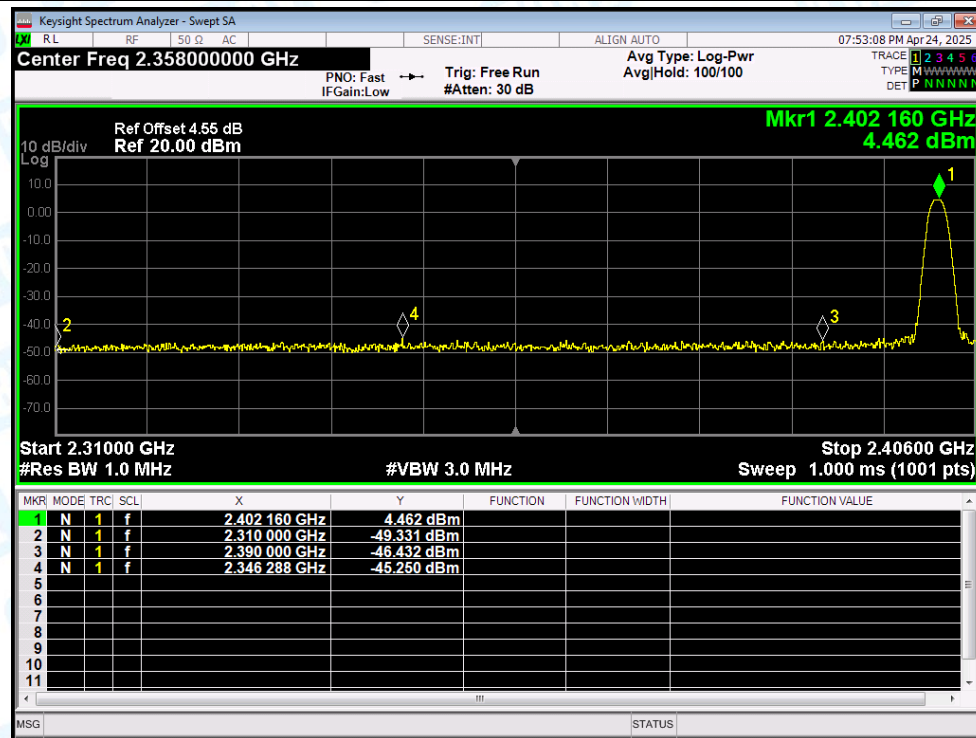


8. Restrict Band

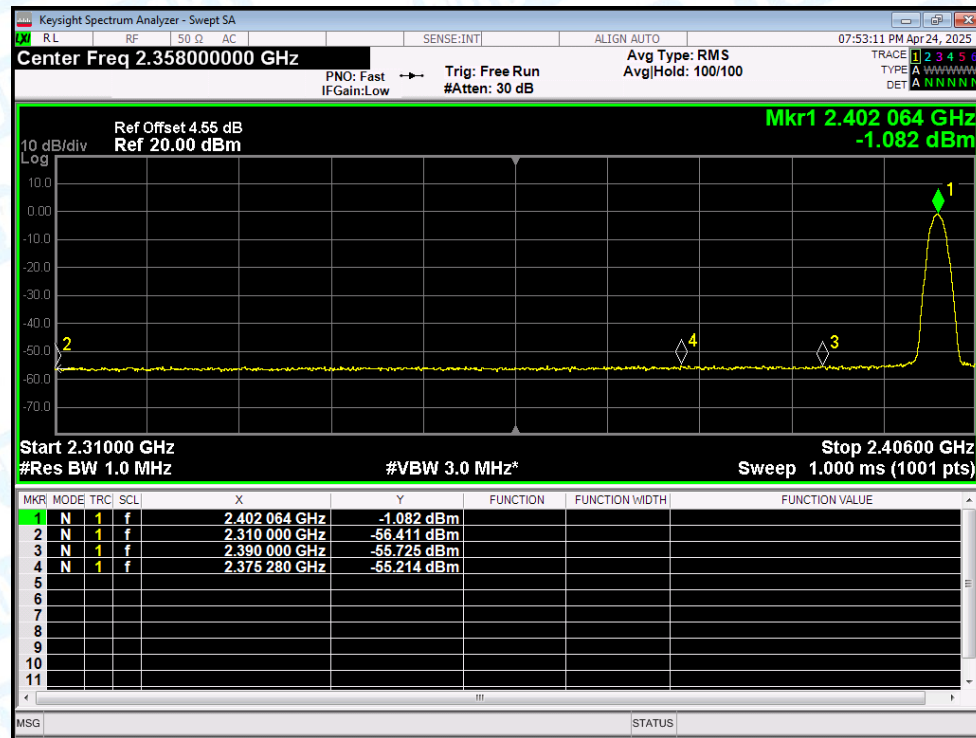
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-49.33	3.35	-	49.28	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.41	3.35	5.29	47.49	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2346.288	-45.25	3.35	-	53.36	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2375.28	-55.21	3.35	5.29	48.69	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-46.43	3.35	-	52.18	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-55.73	3.35	5.29	48.17	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-46.78	3.35	-	51.83	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-54.75	3.35	5.29	49.15	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2493.808	-43.94	3.35	-	54.67	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2499.448	-54.69	3.35	5.29	49.21	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-48.15	3.35	-	50.46	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-55.54	3.35	5.29	48.36	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-47.37	3.35	-	51.24	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.31	3.35	5.17	47.47	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2343.504	-44.77	3.35	-	53.84	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2378.064	-55.06	3.35	5.17	48.72	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-47.92	3.35	-	50.69	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-55.68	3.35	5.17	48.1	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-47.29	3.35	-	51.32	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-55	3.35	5.17	48.78	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2496.208	-44.22	3.35	-	54.39	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2496.664	-54.59	3.35	5.17	49.19	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-46.95	3.35	-	51.66	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.85	3.35	5.17	47.93	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-47.93	3.35	-	50.68	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-55.76	3.35	5.17	48.02	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2333.136	-44.27	3.35	-	54.34	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2386.032	-55.39	3.35	5.17	48.39	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-48.59	3.35	-	50.02	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-56.38	3.35	5.17	47.4	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-45.64	3.35	-	52.97	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-55.57	3.35	5.17	48.21	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2496.496	-44.3	3.35	-	54.31	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2496.496	-54.73	3.35	5.17	49.05	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-47.43	3.35	-	51.18	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.6	3.35	5.17	48.18	Average	54	Pass

Test Graphs

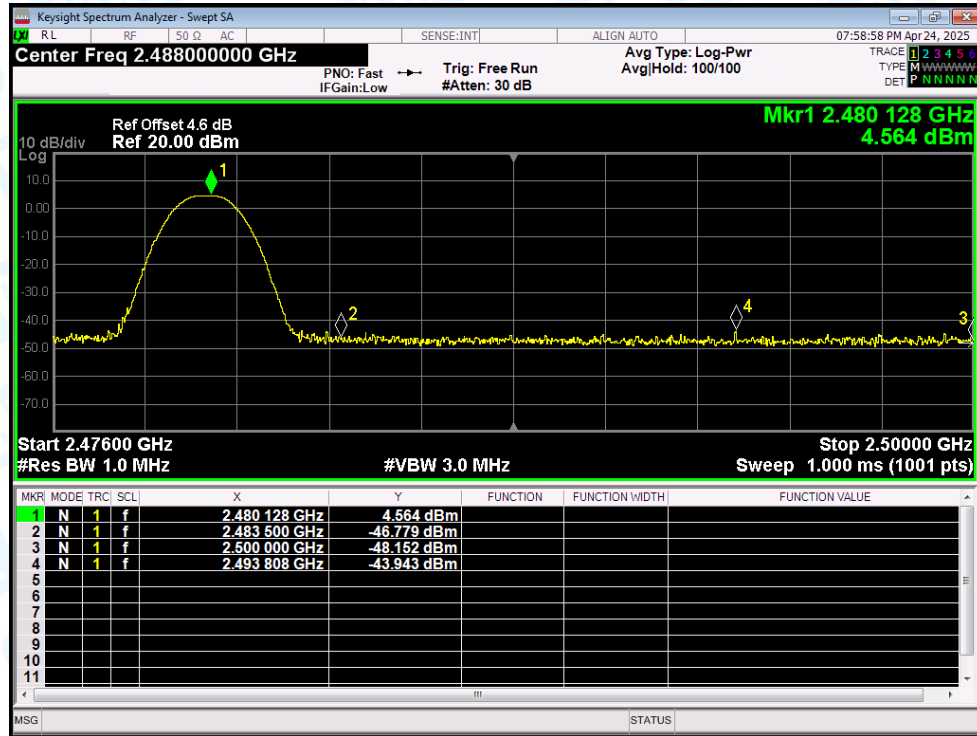
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



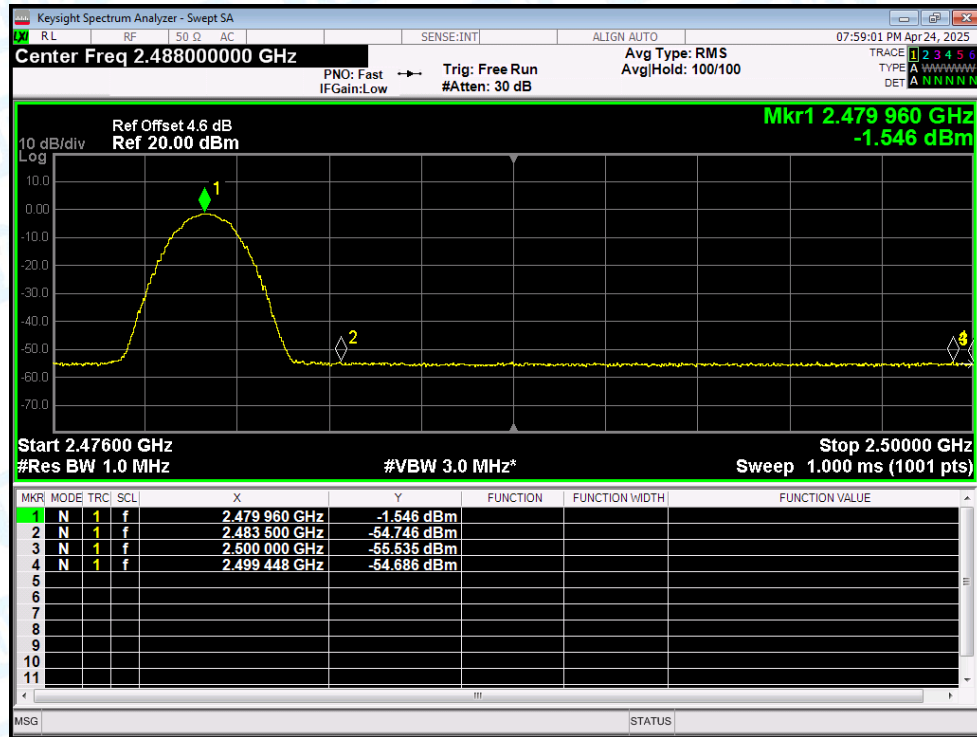
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



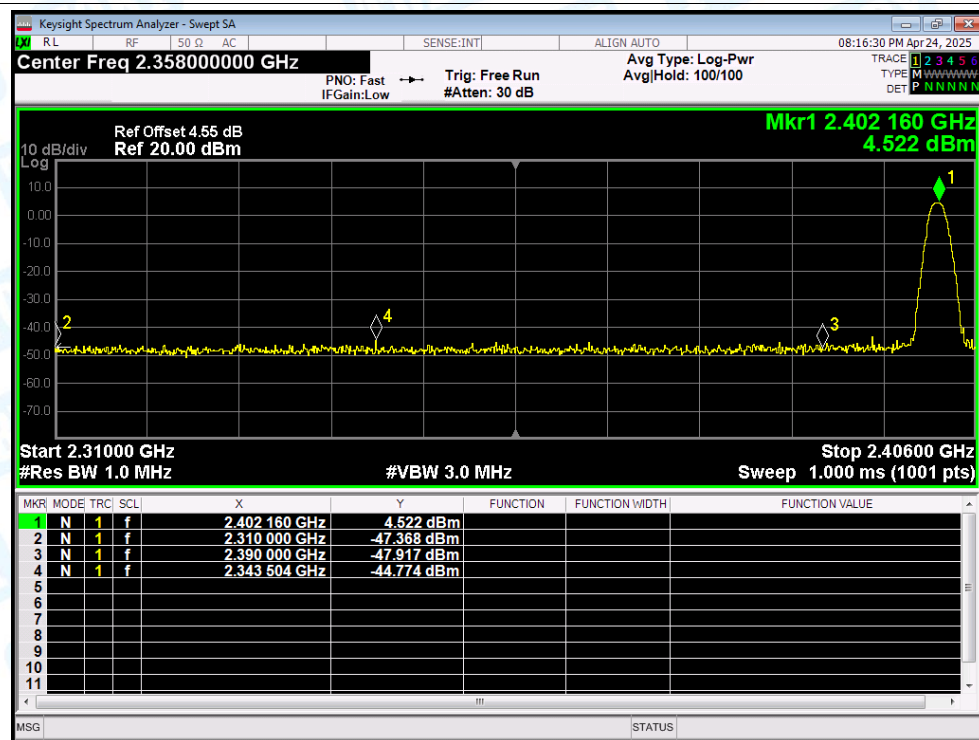
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



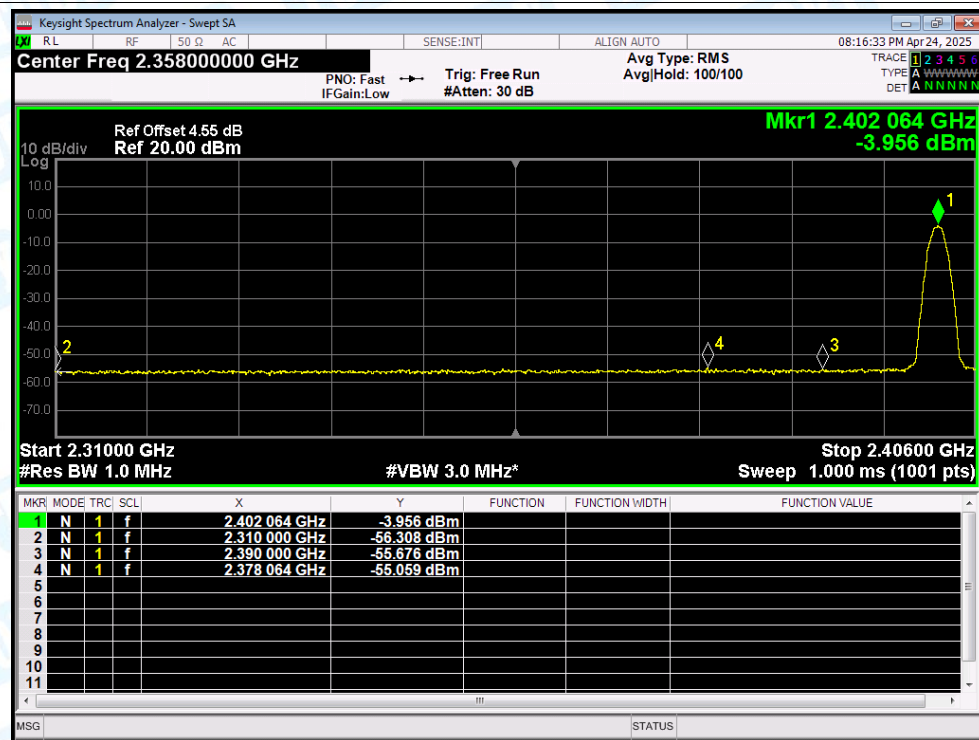
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



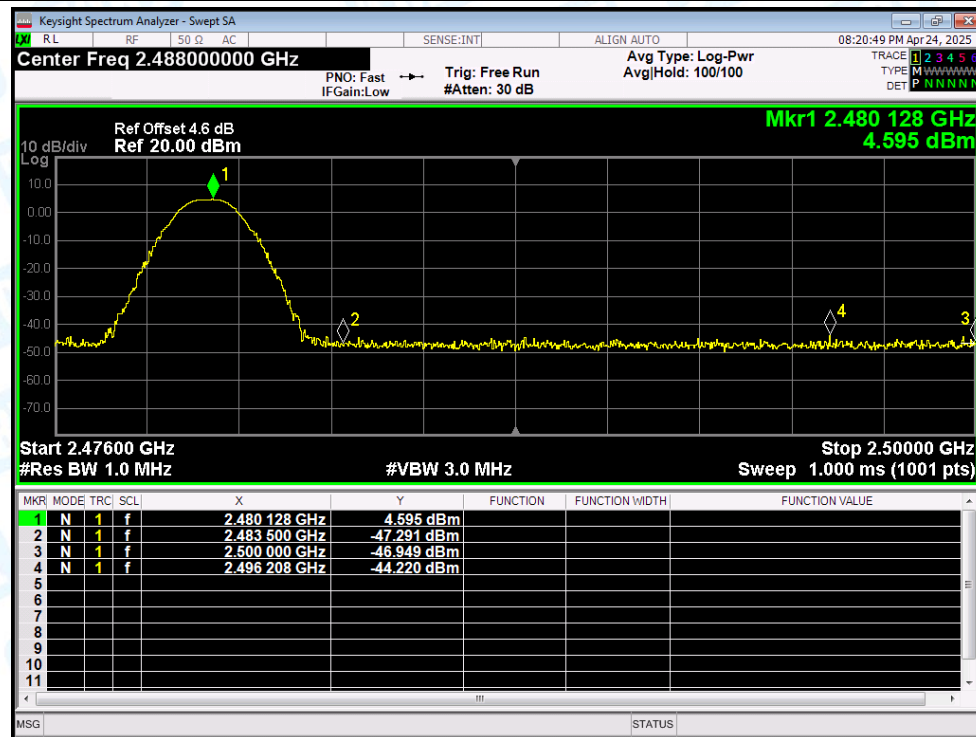
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



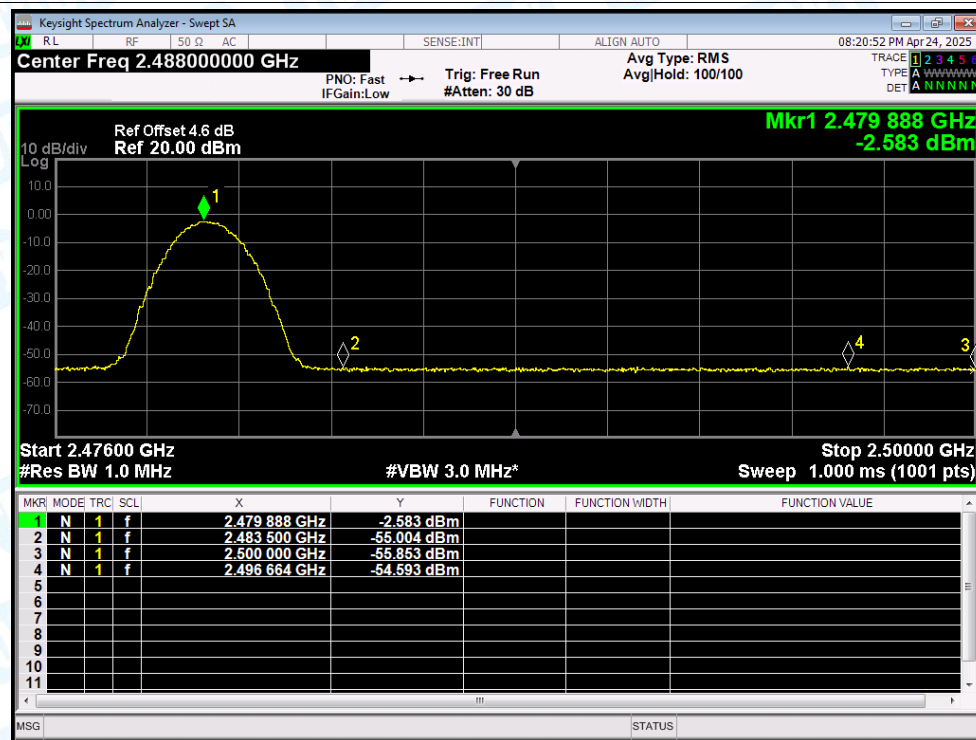
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



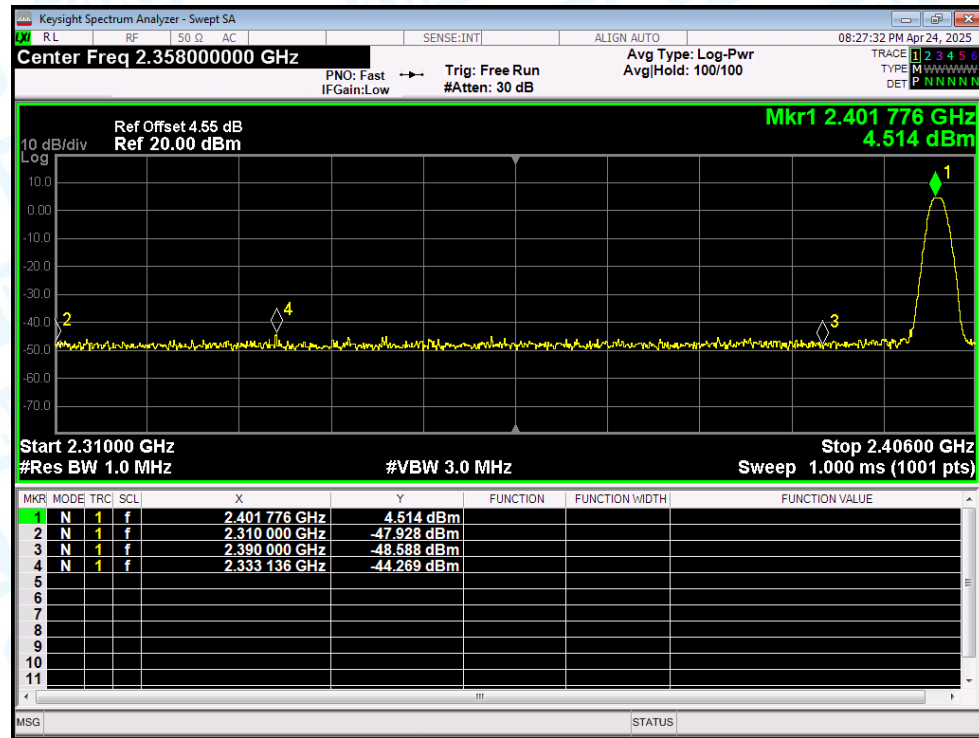
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



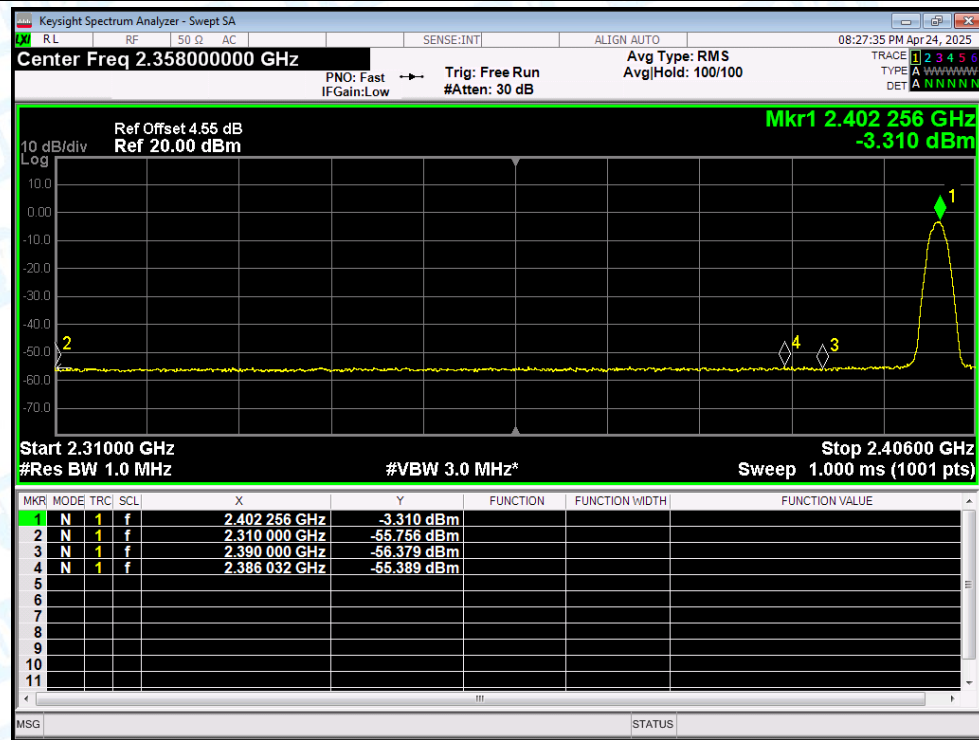
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



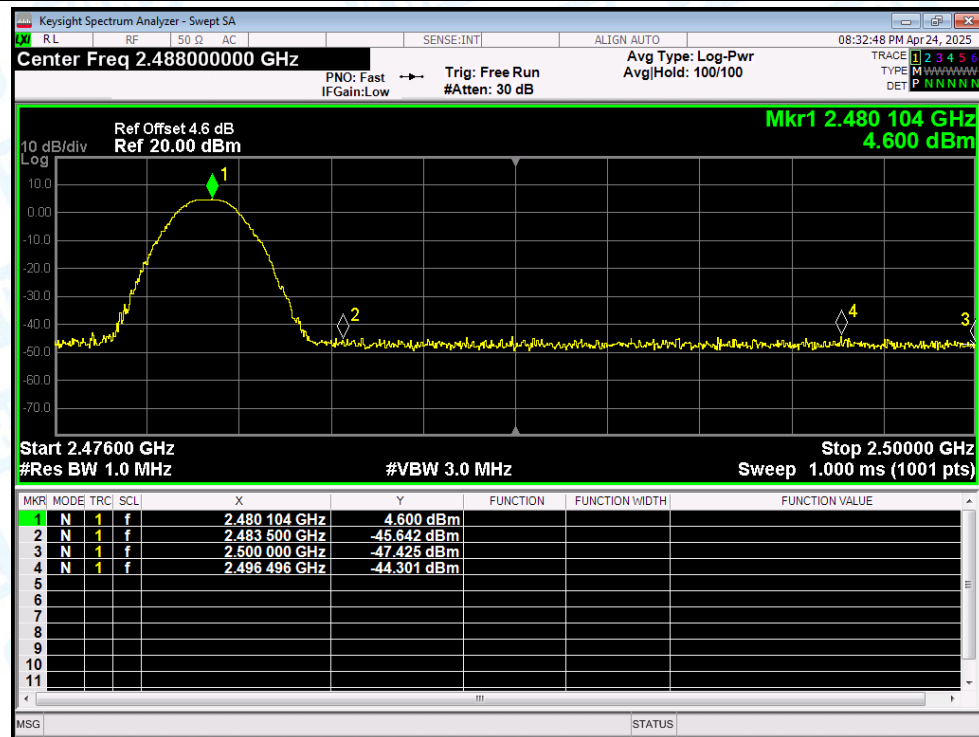
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



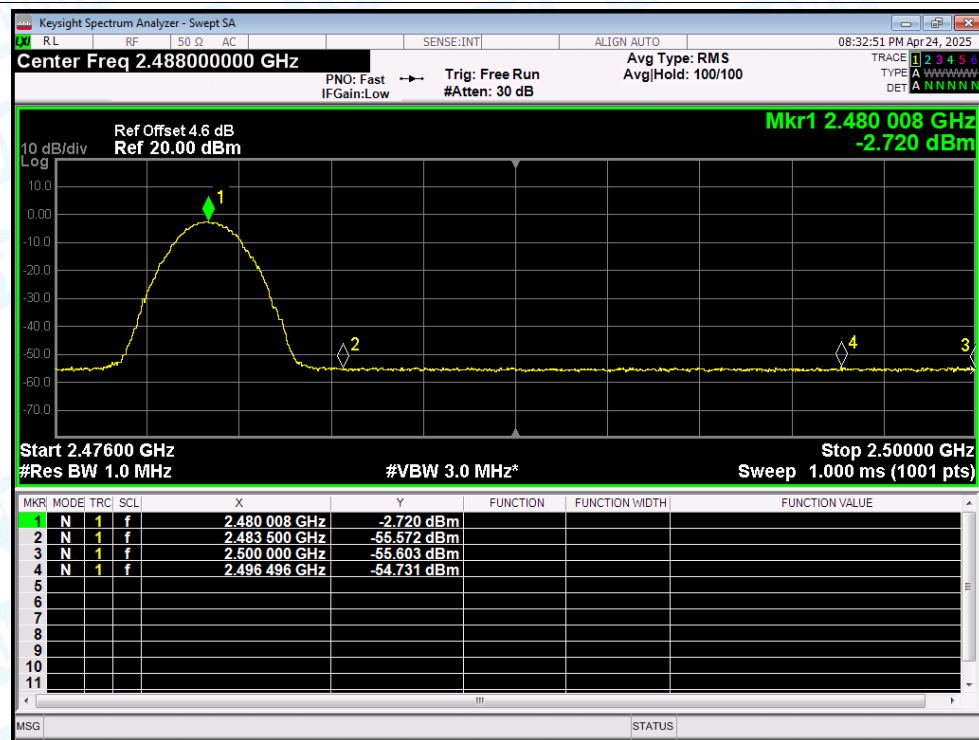
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

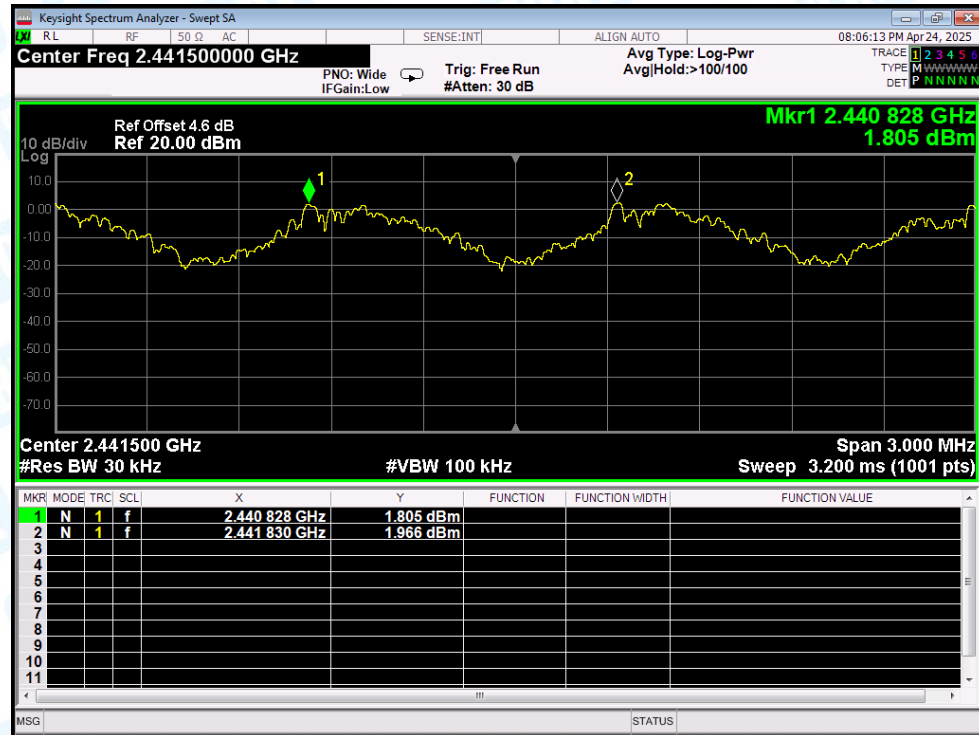


9. Carrier Frequencies Separation

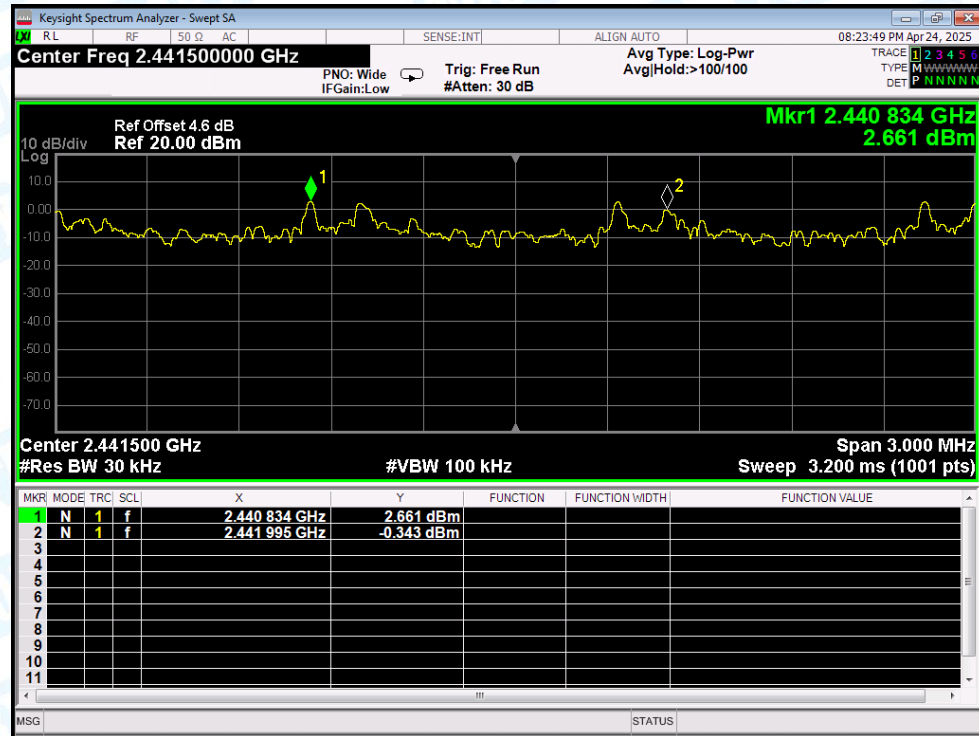
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.828	2441.83	1.002	0.025	Pass
NVNT	2-DH1	Ant1	2440.834	2441.995	1.161	0.8	Pass
NVNT	3-DH1	Ant1	2440.828	2441.998	1.17	0.8	Pass

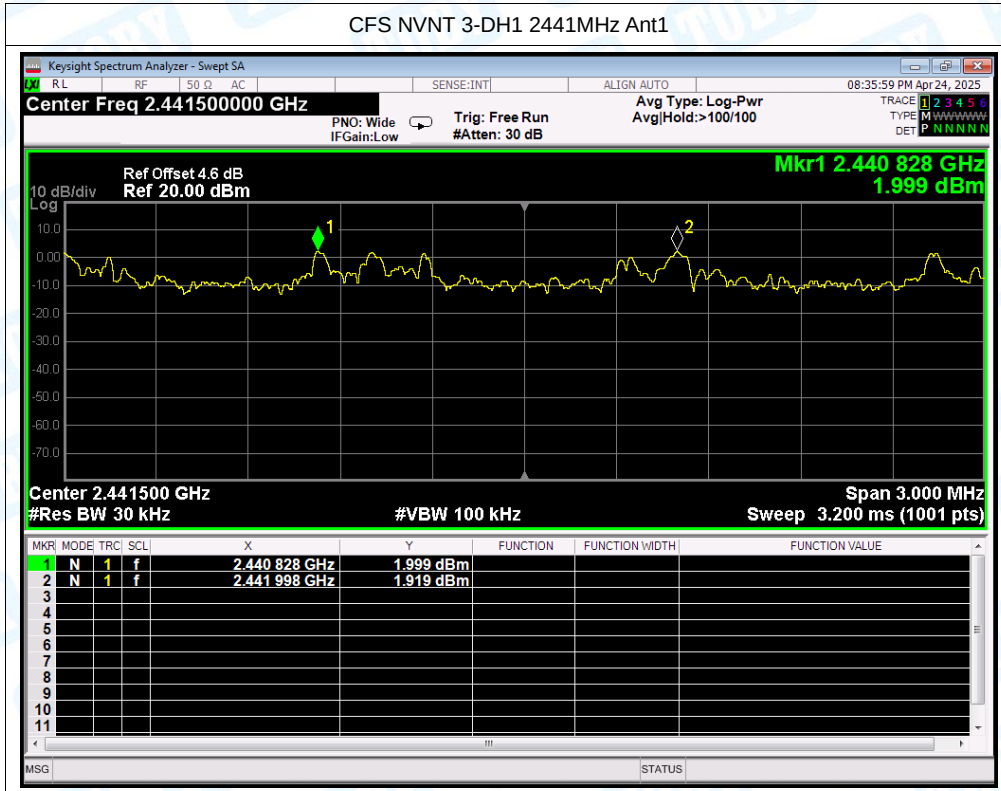
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



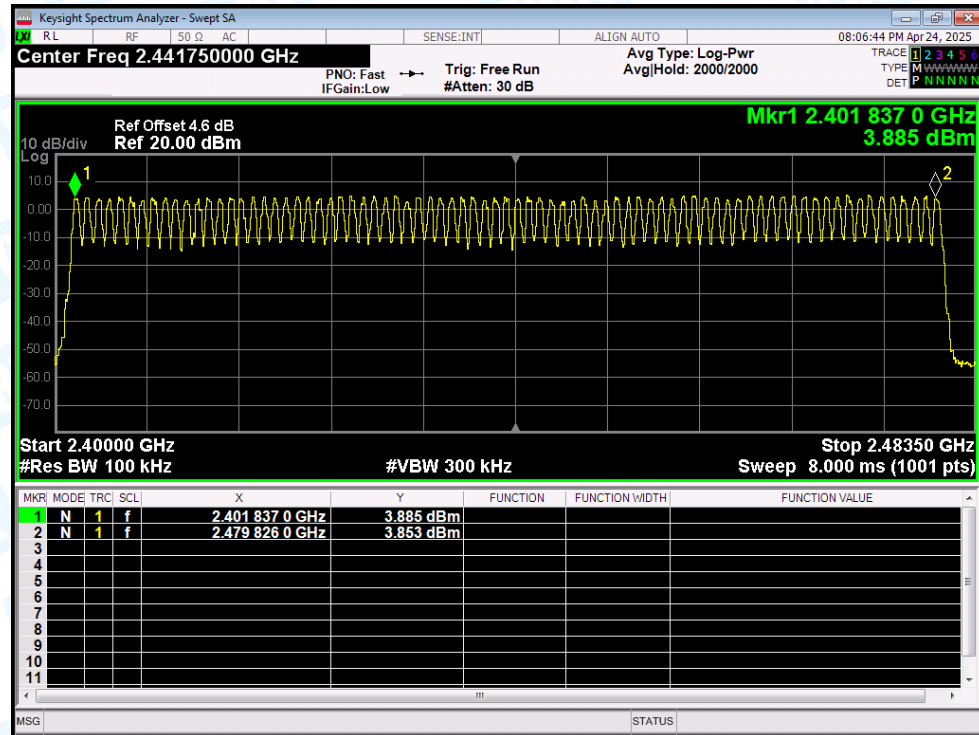


10. Number of Hopping Channel

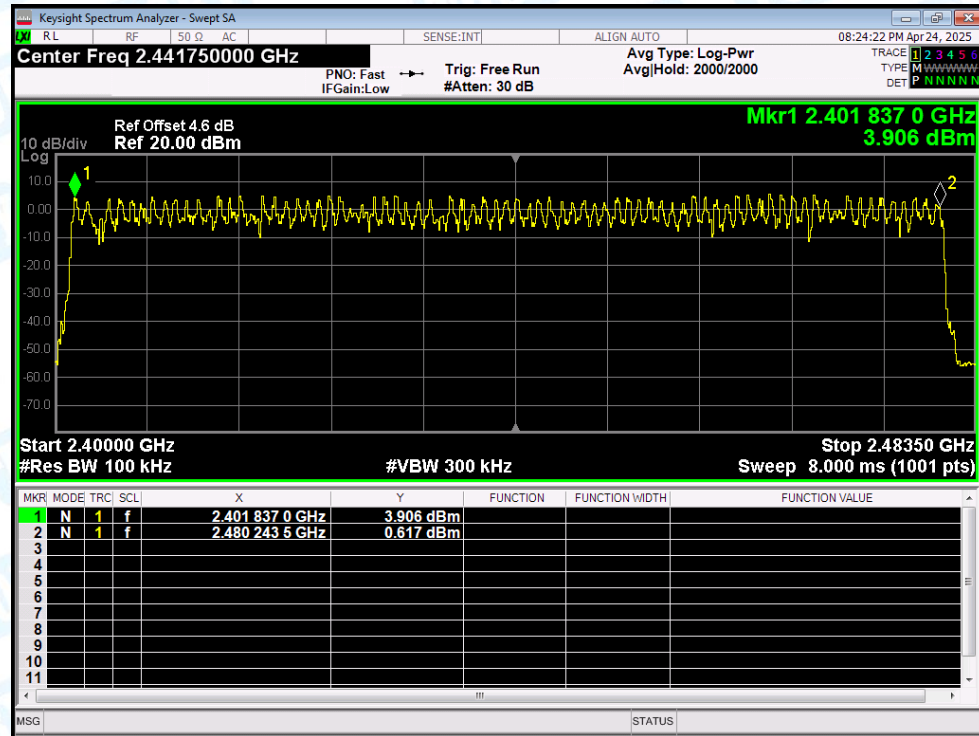
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

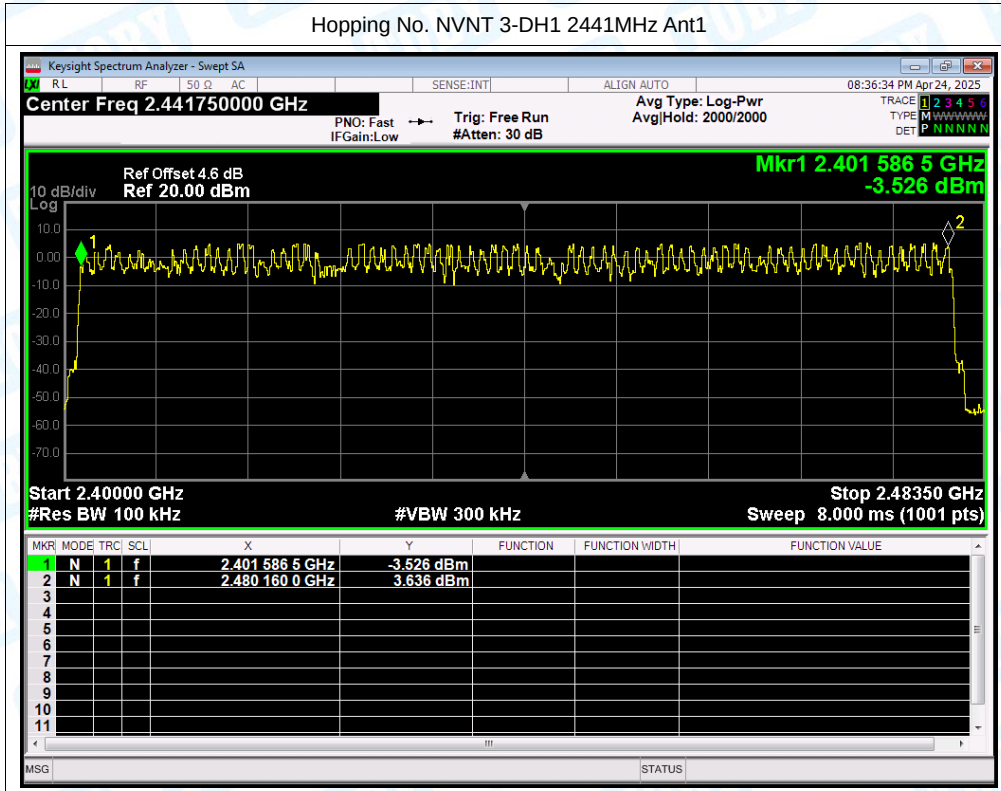
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



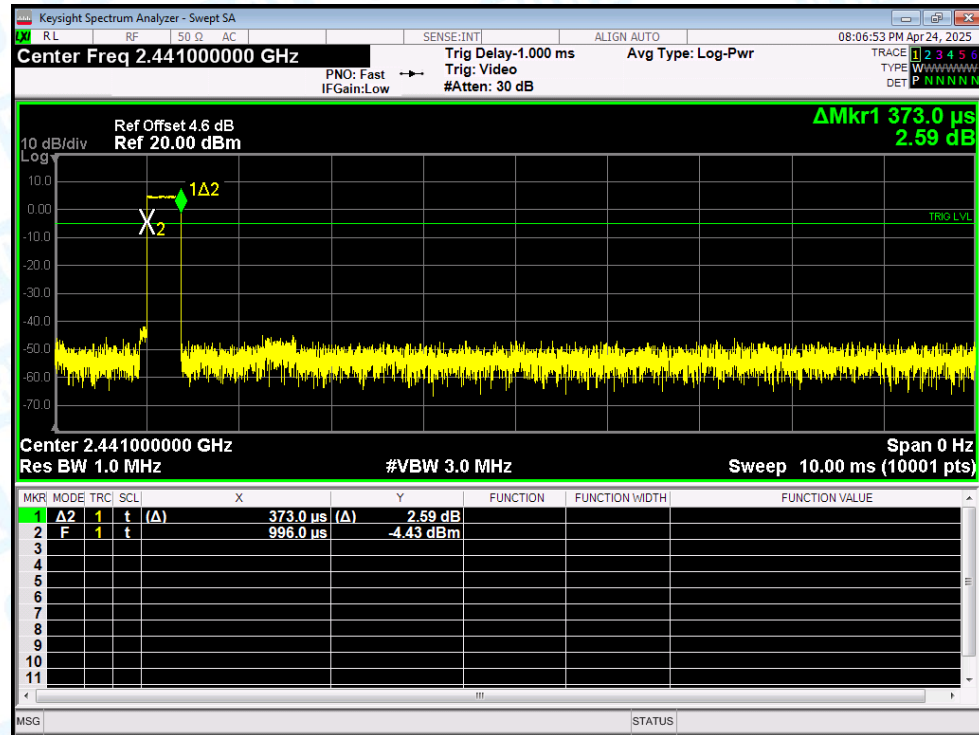


11. Dwell Time

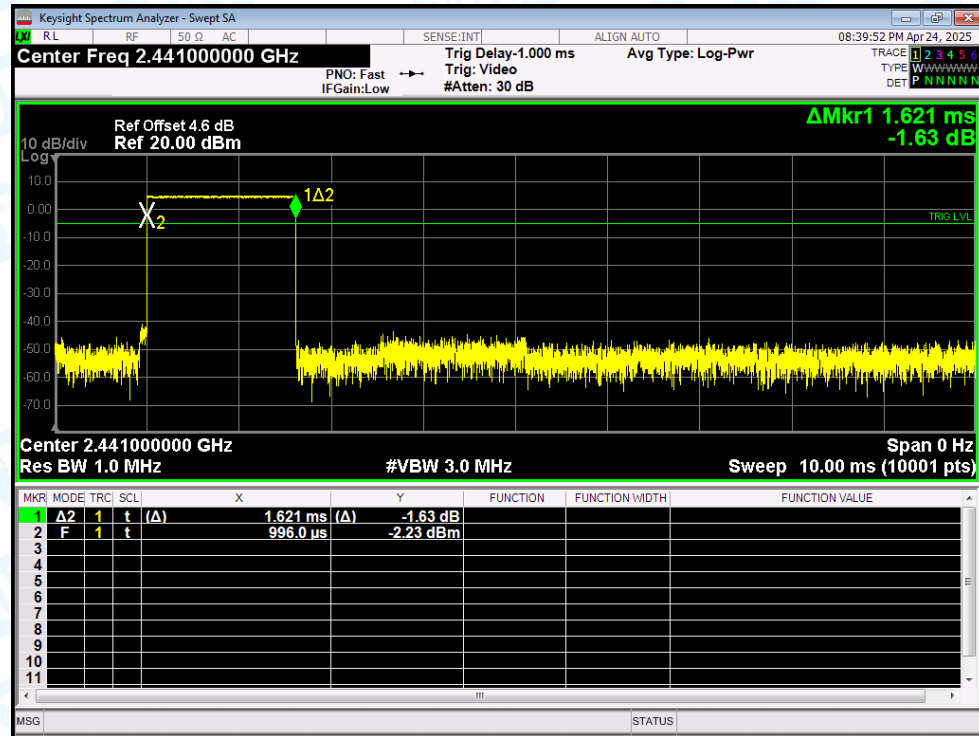
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.373	119.36	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.621	259.36	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.868	305.92	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.38	121.6	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.633	261.28	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.88	307.2	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.381	121.92	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.631	260.96	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.881	307.307	31600	400	Pass

Test Graphs

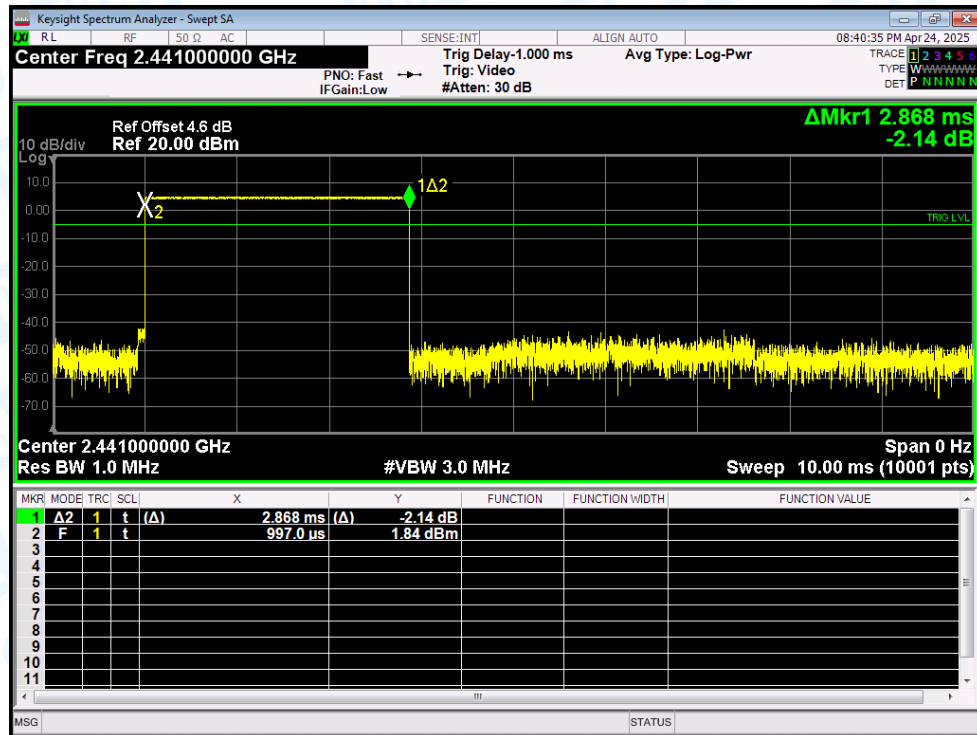
Dwell NVNT 1-DH1 2441MHz Ant1



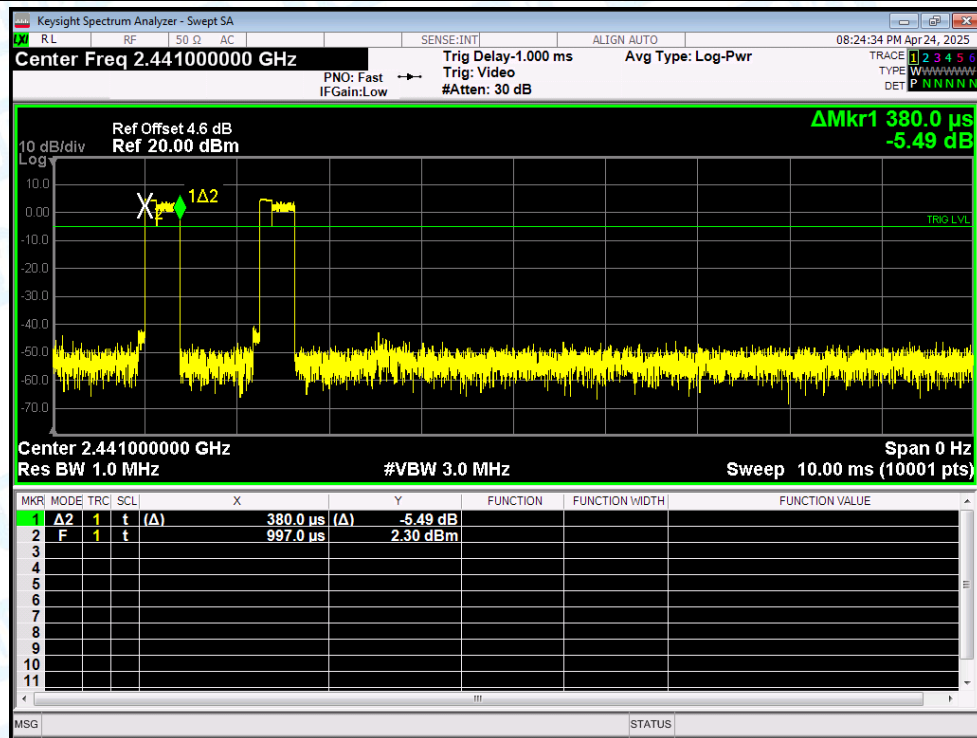
Dwell NVNT 1-DH3 2441MHz Ant1



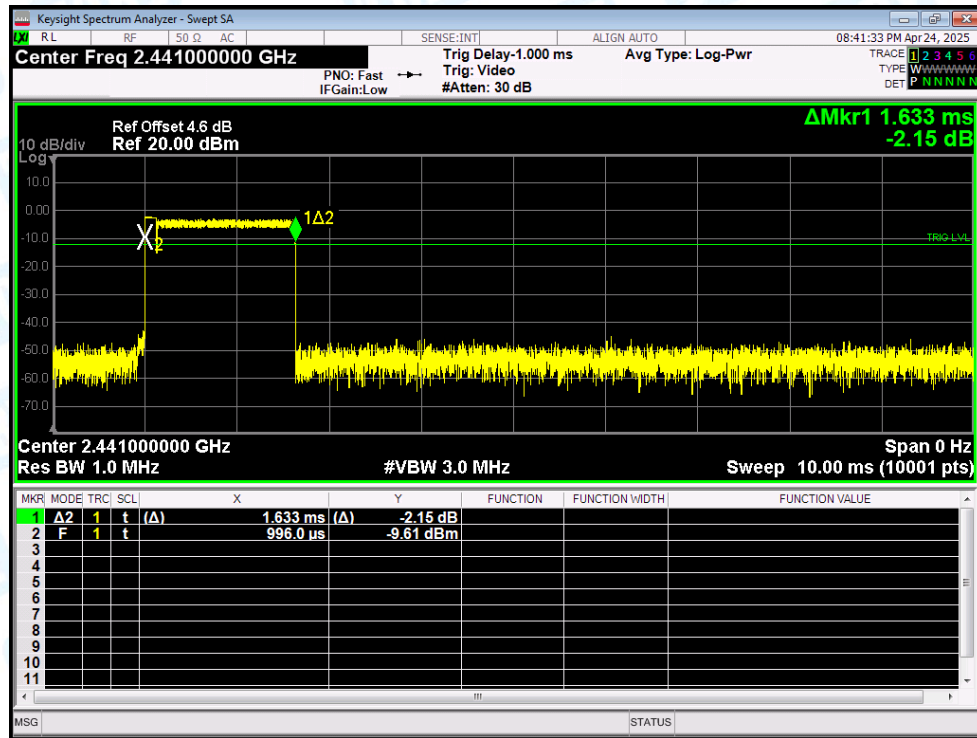
Dwell NVNT 1-DH5 2441MHz Ant1



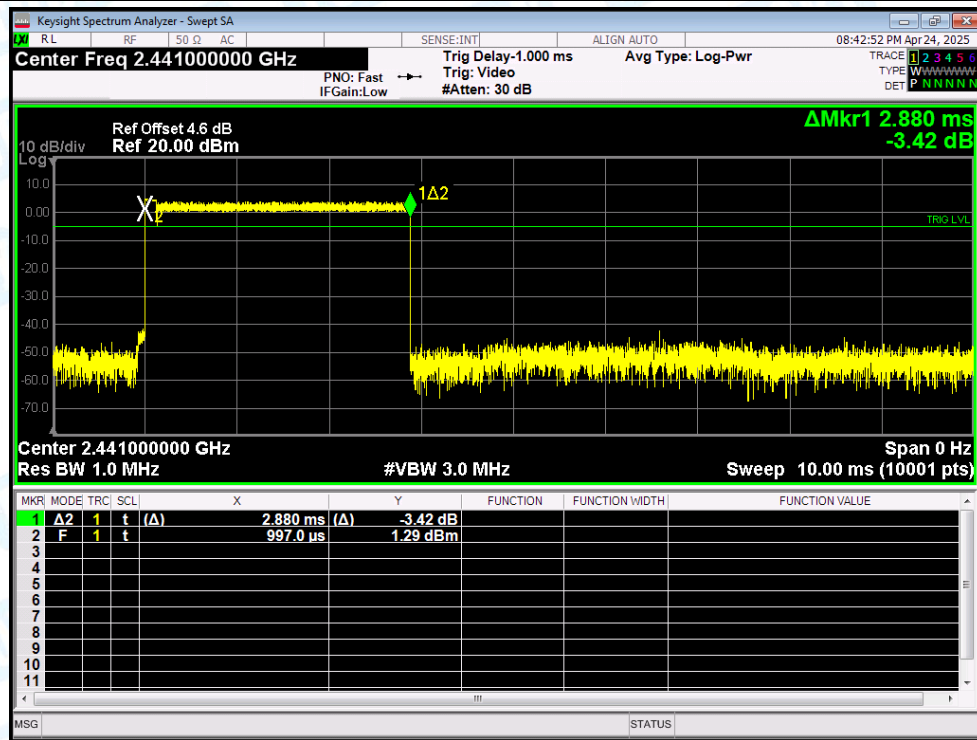
Dwell NVNT 2-DH1 2441MHz Ant1



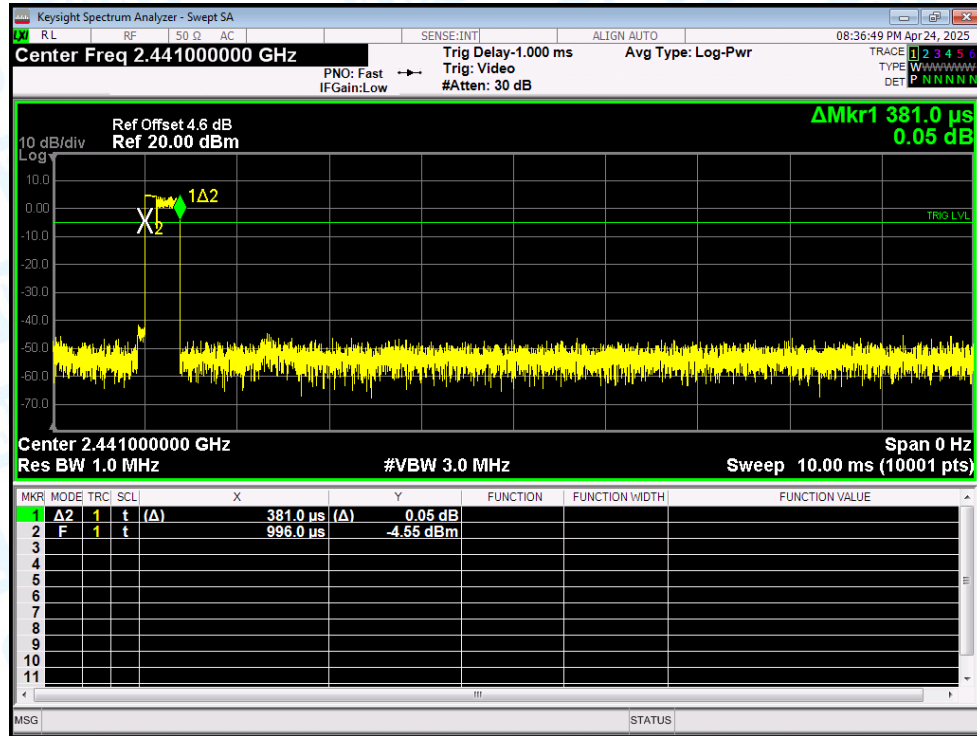
Dwell NVNT 2-DH3 2441MHz Ant1



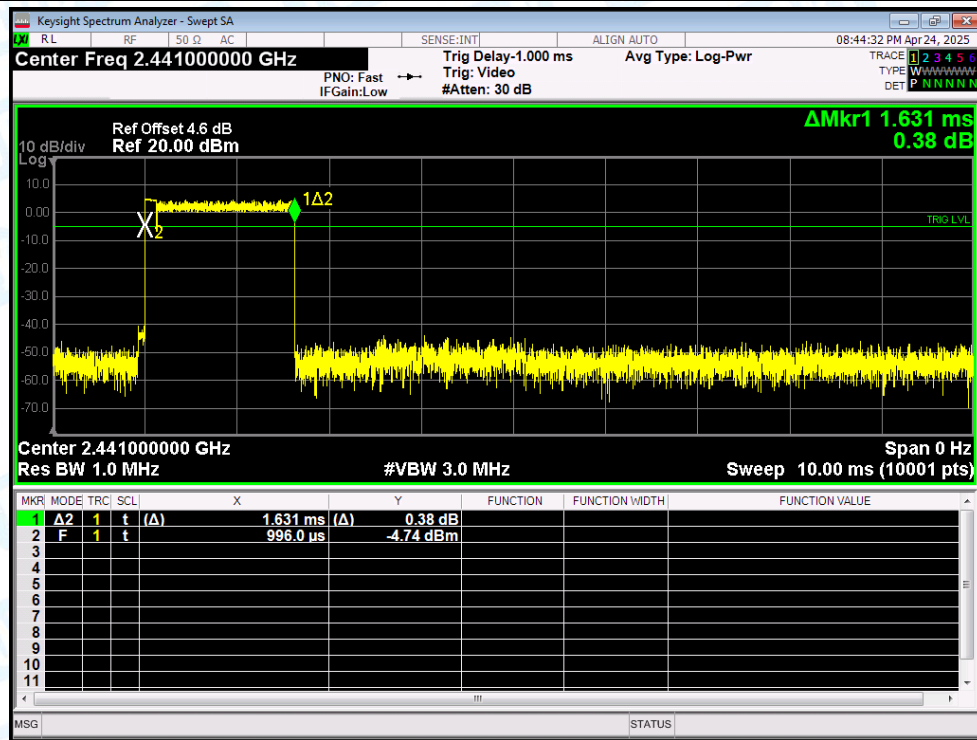
Dwell NVNT 2-DH5 2441MHz Ant1

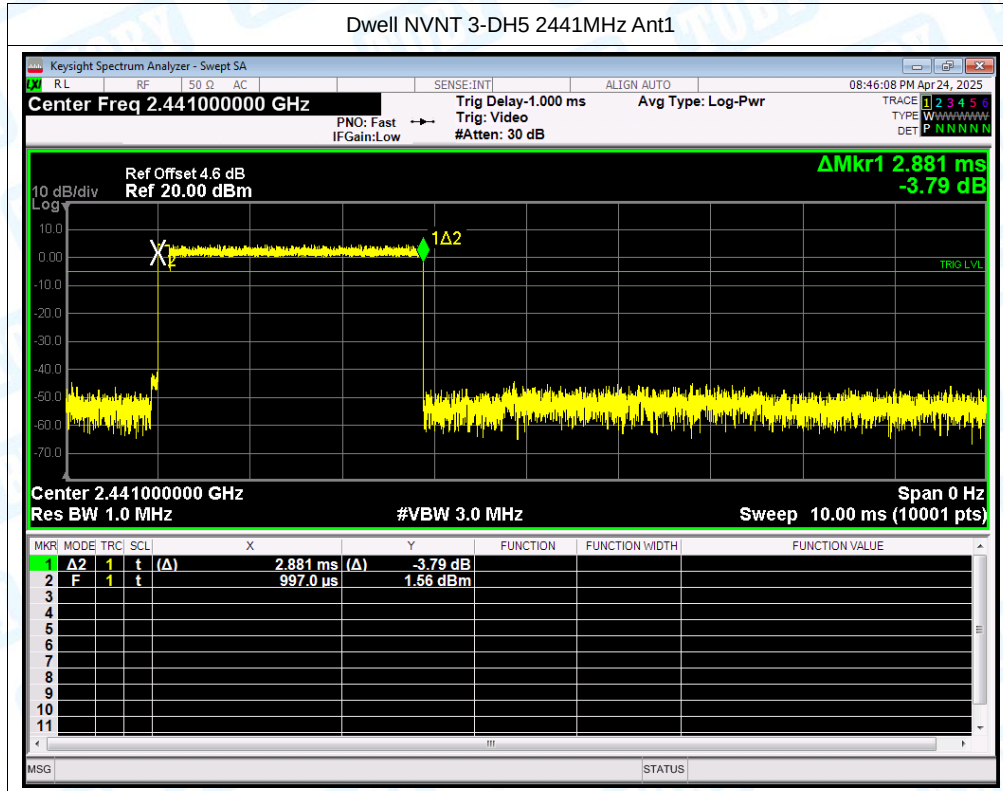


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





-----END OF THE REPORT-----