RF Test Data for Bluetooth(BR+EDR) (Conducted Measurements)

General Description of EUT	
Product Name:	portable speaker
Test Model:	K30
Sample ID:	202307-0127-8-2#
Environmental Conditions	
Temperature:	25℃
Relative Humidity:	55%
Test Voltage:	DC 7.4V
Test Engineer:	Liu ji ming
Note: For a more detailed features description, please refer to the report TBR-C-202307-0127-14 The report only show the worst case data.	

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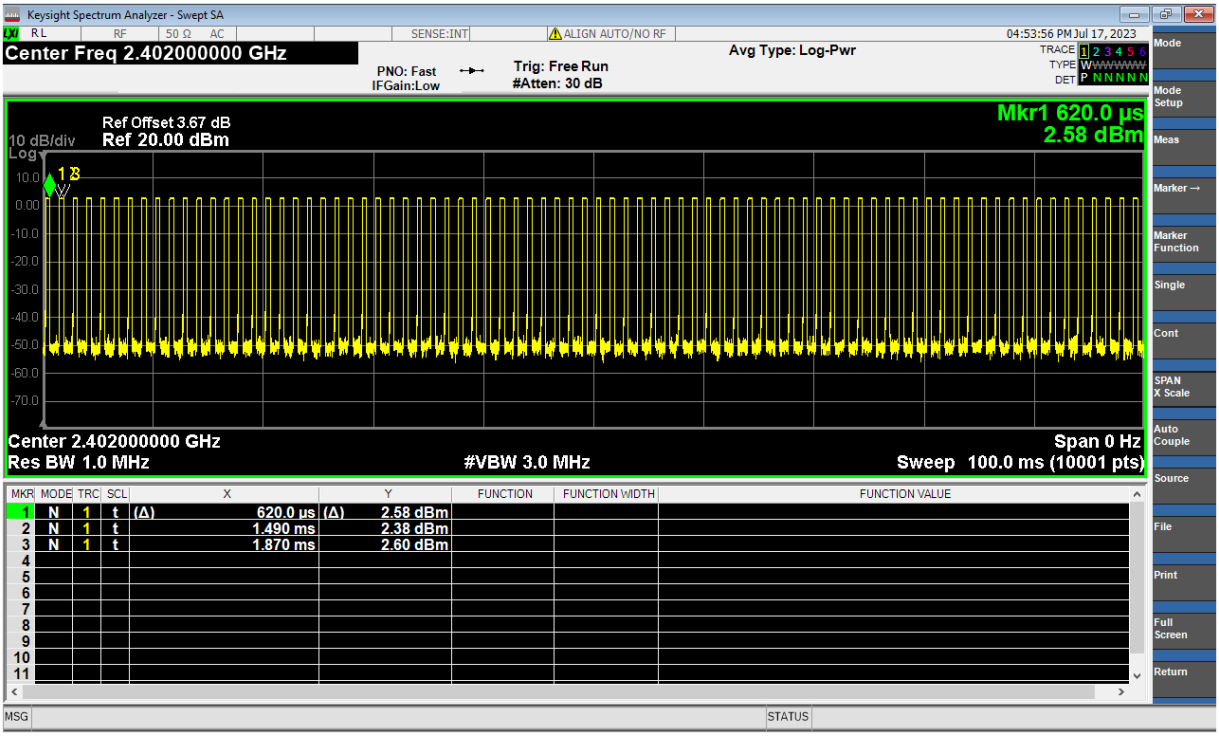
1. Duty Cycle

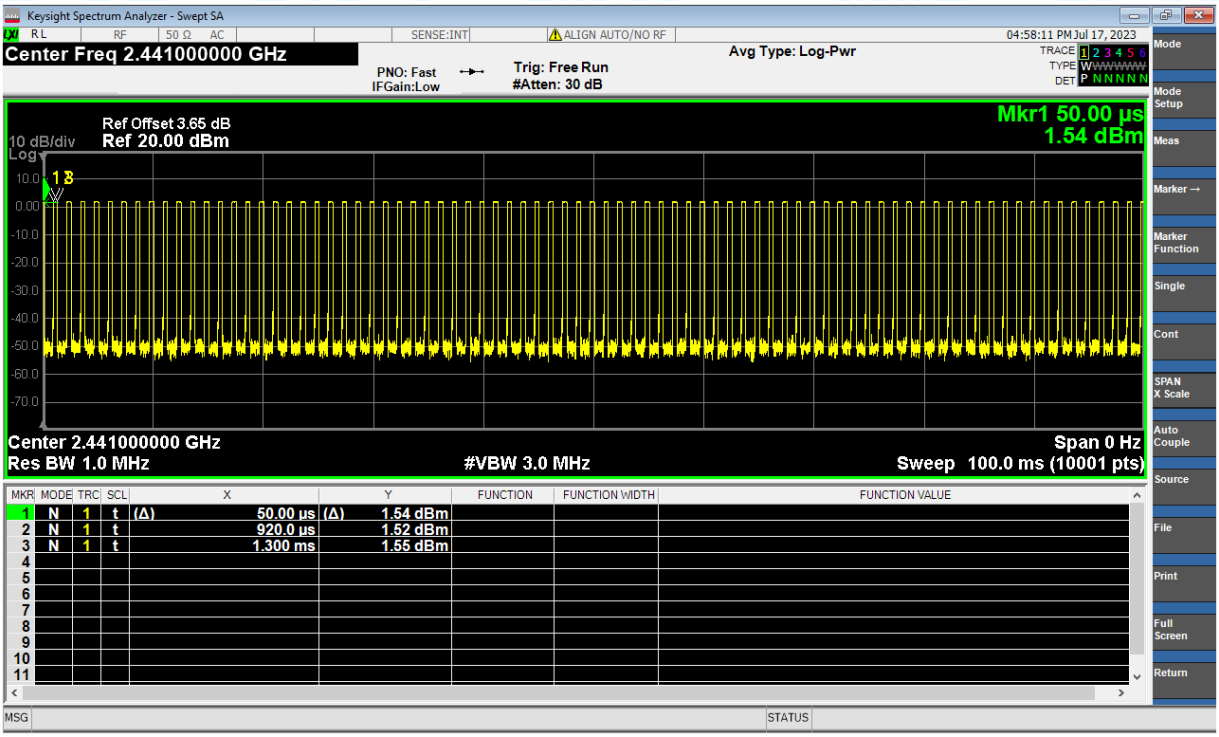
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2441	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2480	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2480	Ant1	30.4	5.17	2.63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

Test Graphs

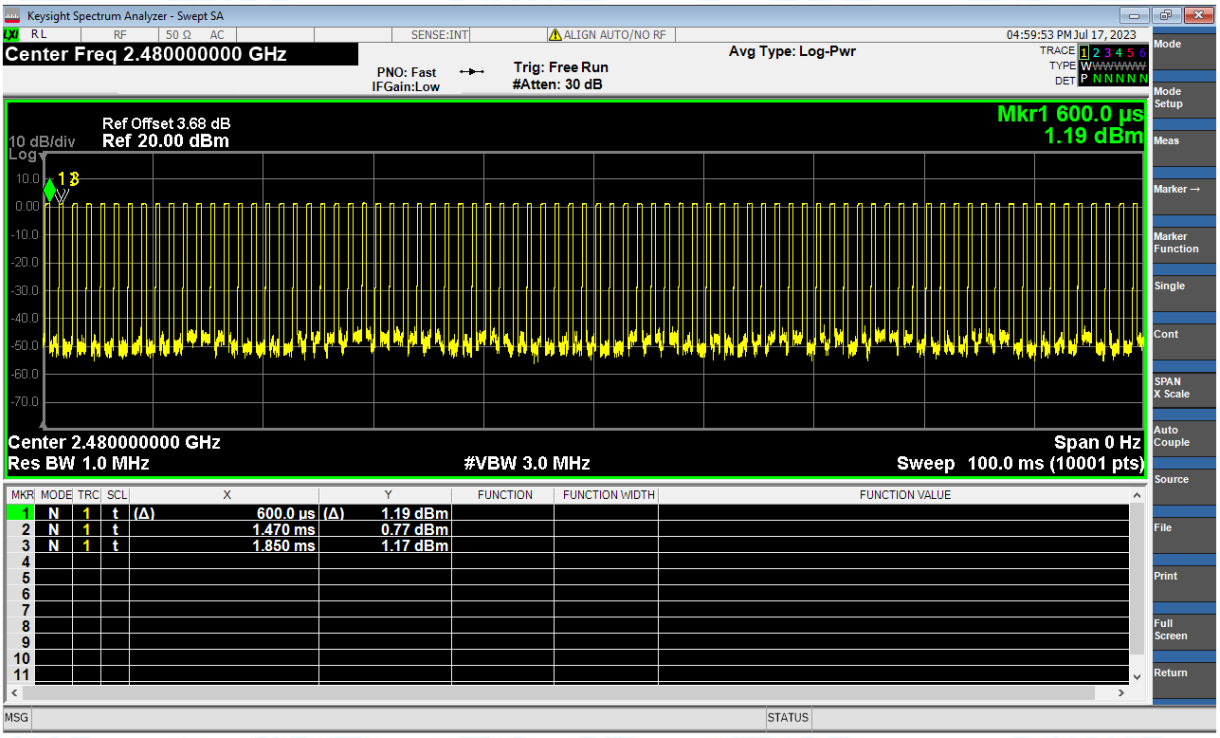
Duty Cycle NVNT 1-DH1 2402MHz Ant1



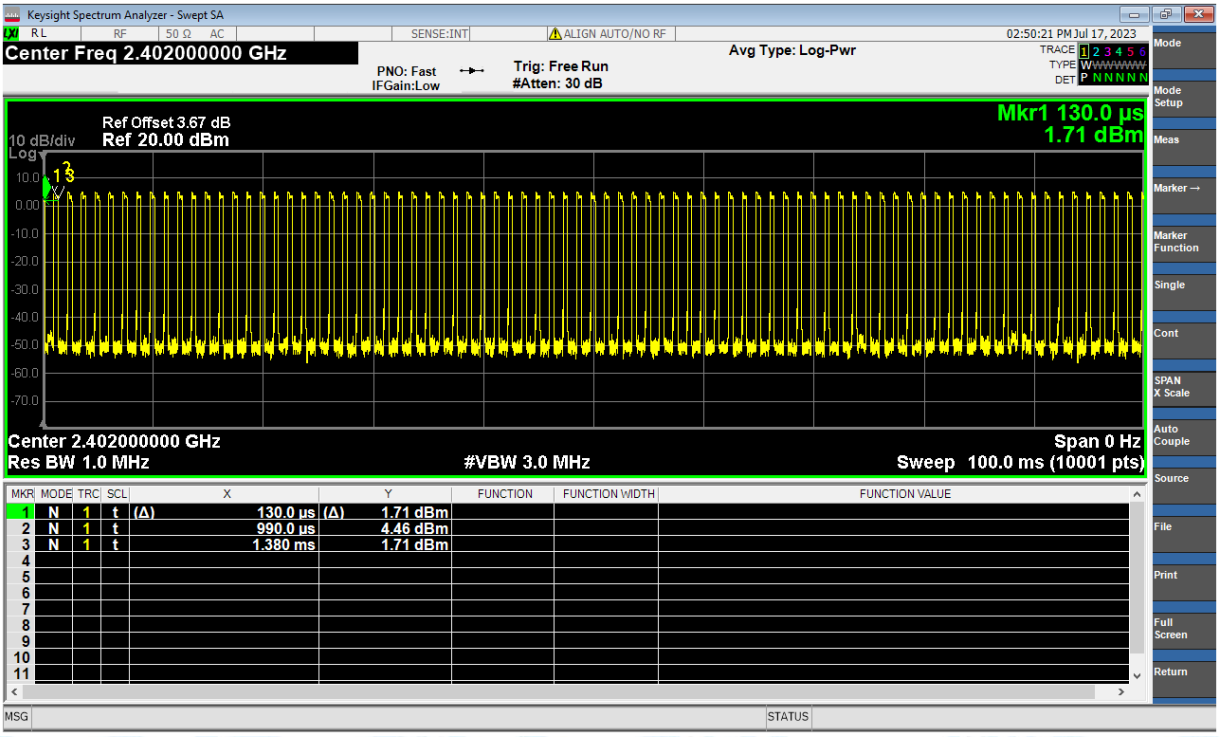
Duty Cycle NVNT 1-DH1 2441MHz Ant1



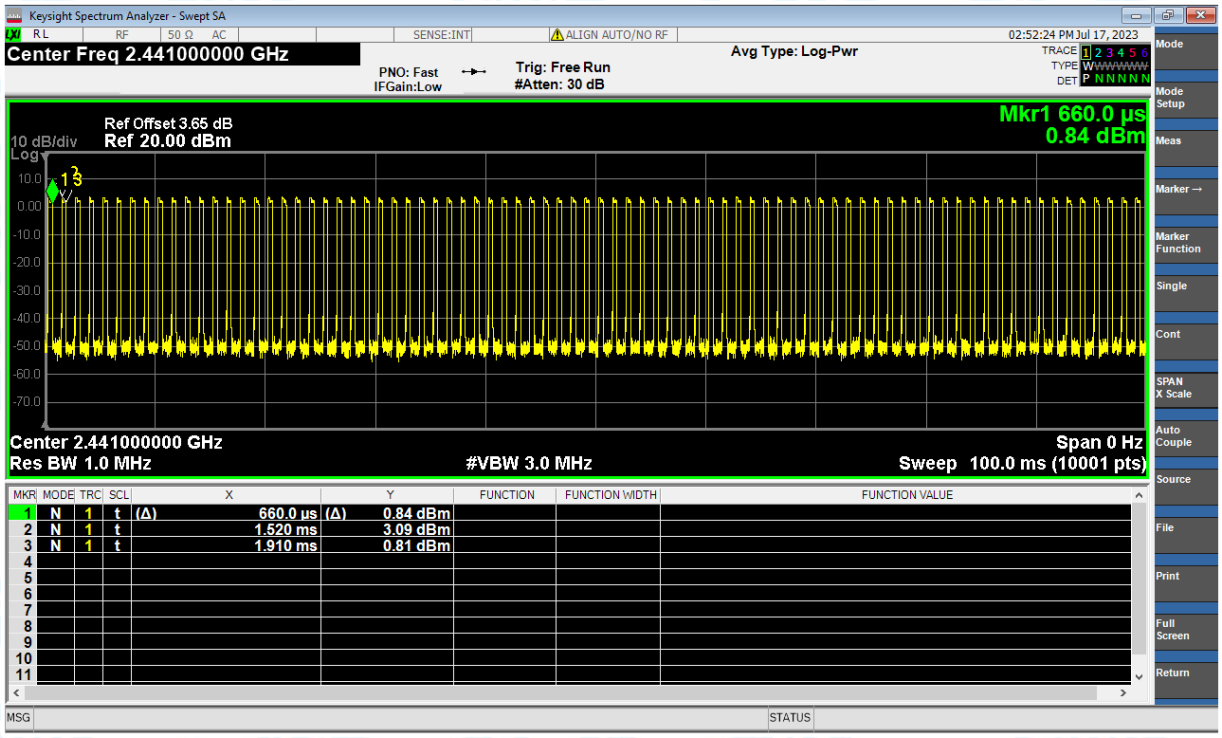
Duty Cycle NVNT 1-DH1 2480MHz Ant1



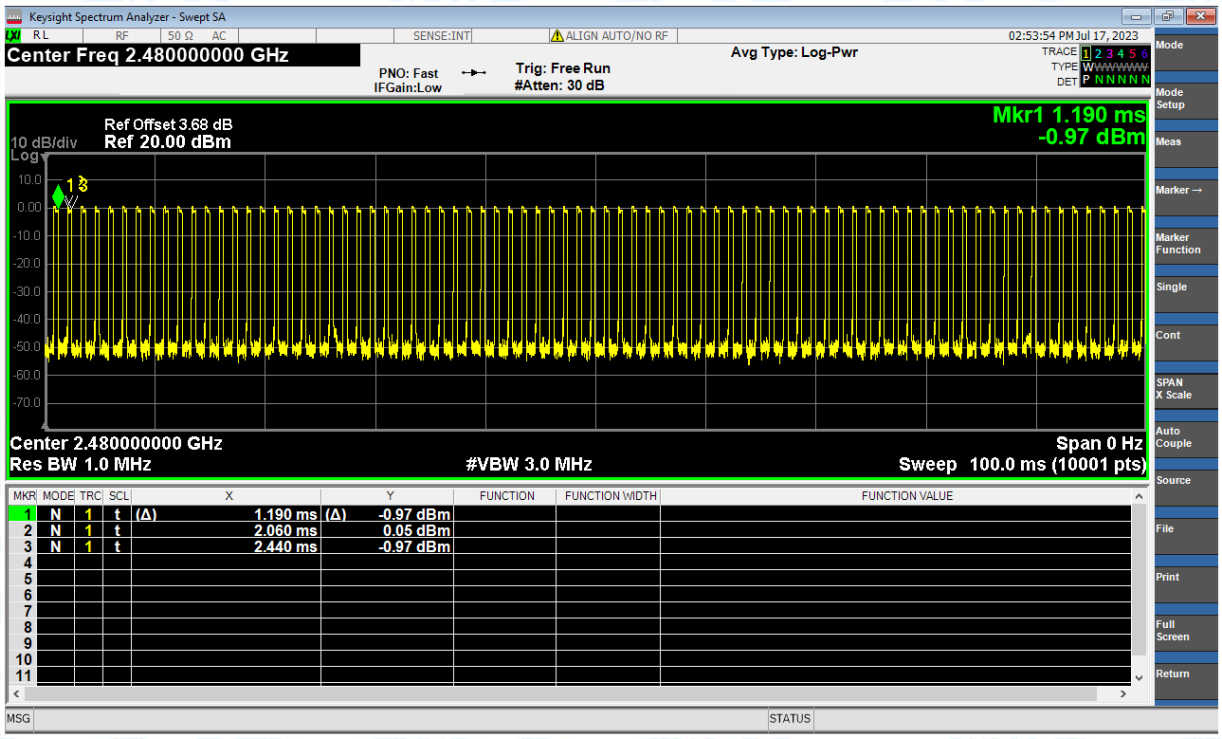
Duty Cycle NVNT 2-DH1 2402MHz Ant1



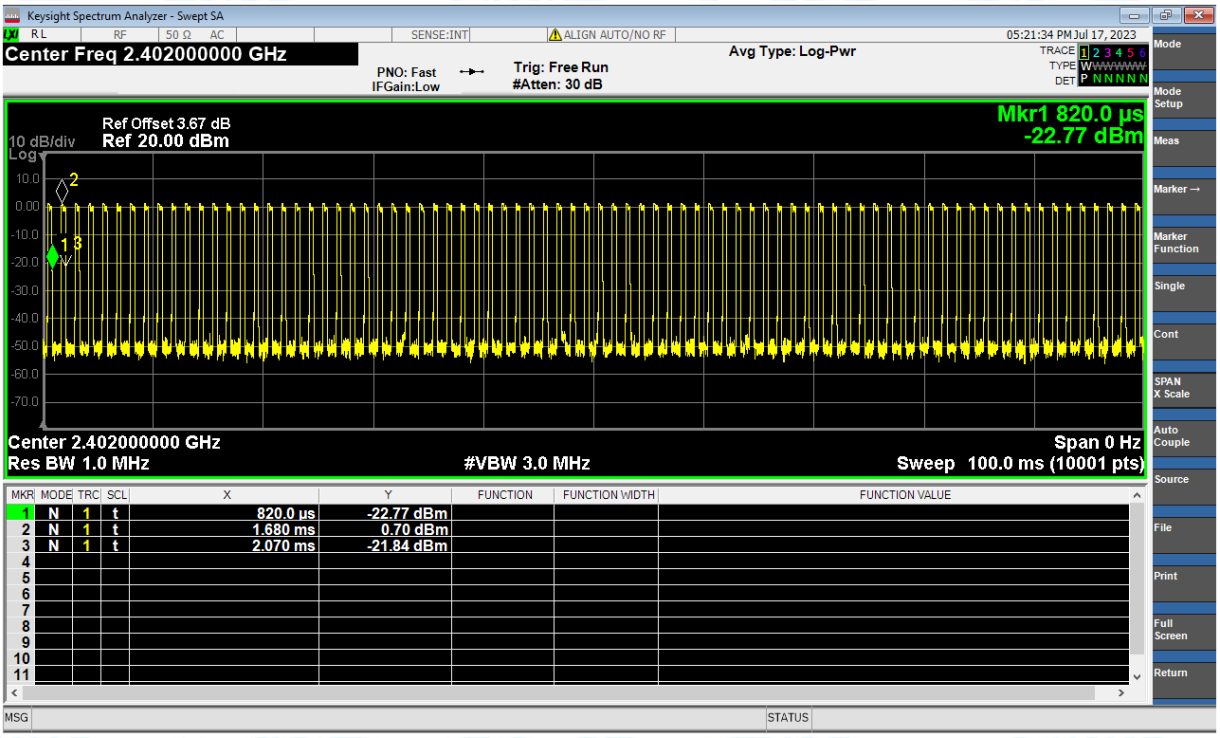
Duty Cycle NVNT 2-DH1 2441MHz Ant1



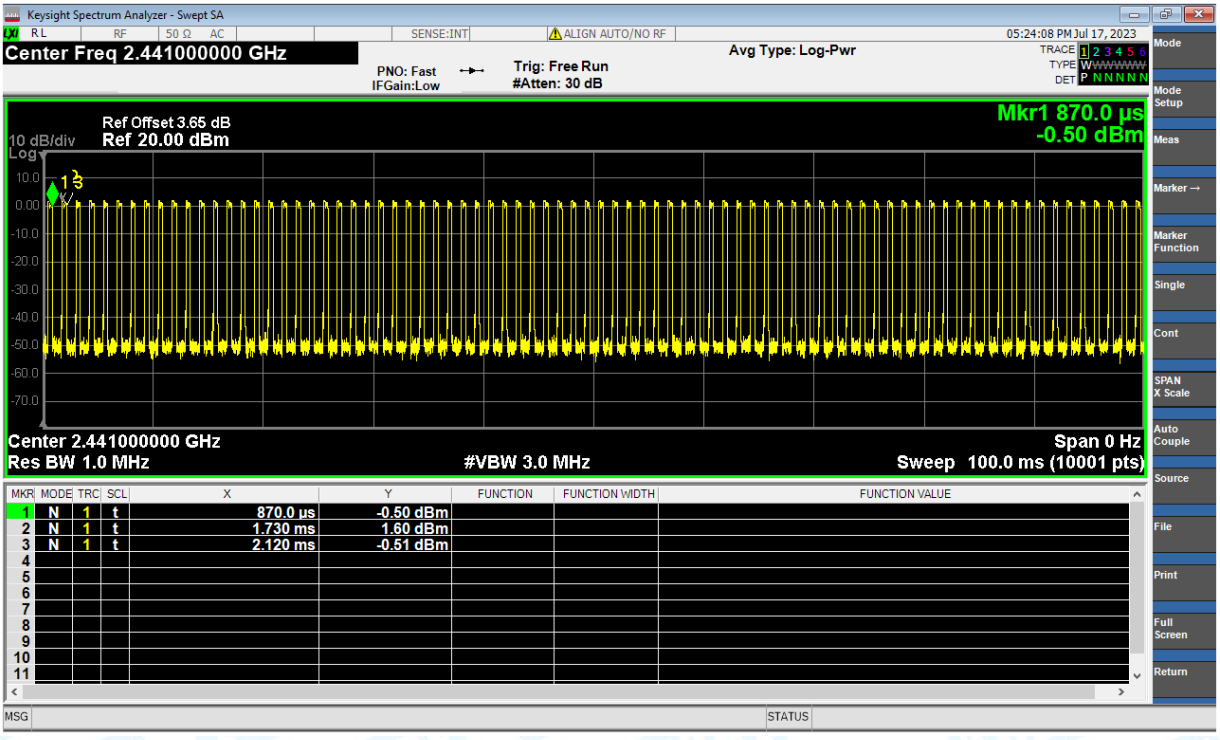
Duty Cycle NVNT 2-DH1 2480MHz Ant1



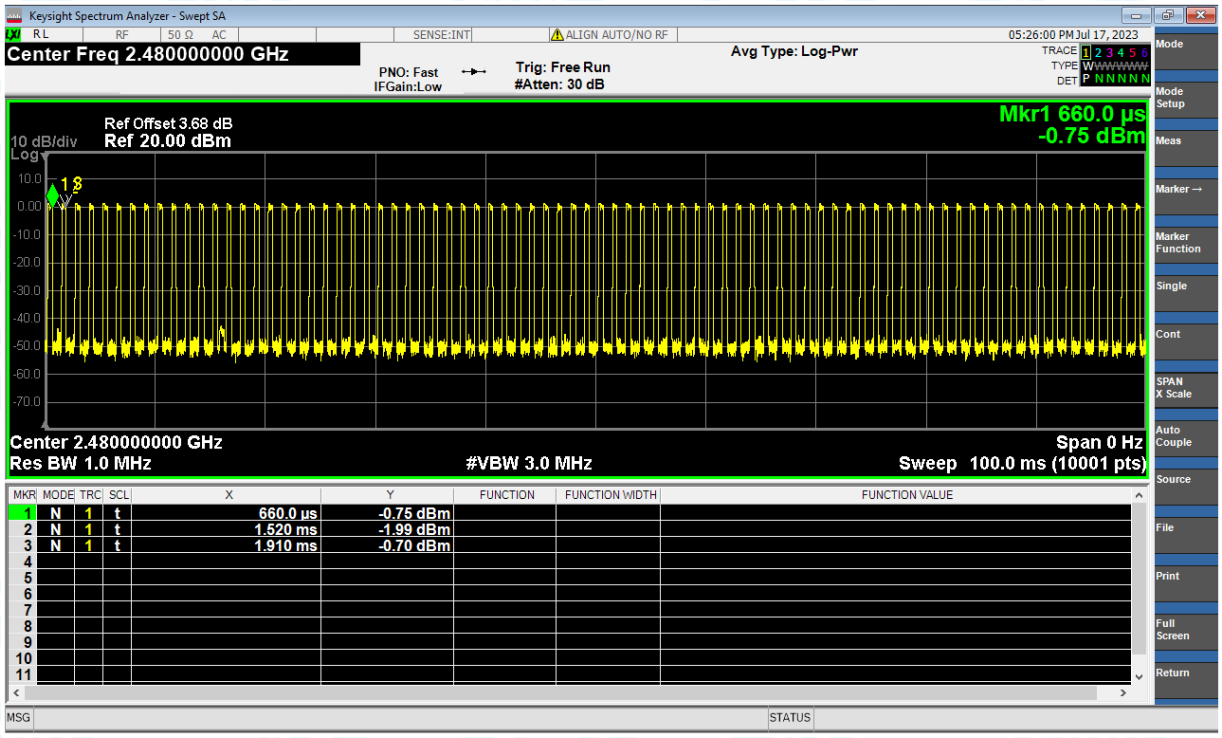
Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



Duty Cycle NVNT 3-DH1 2480MHz Ant1

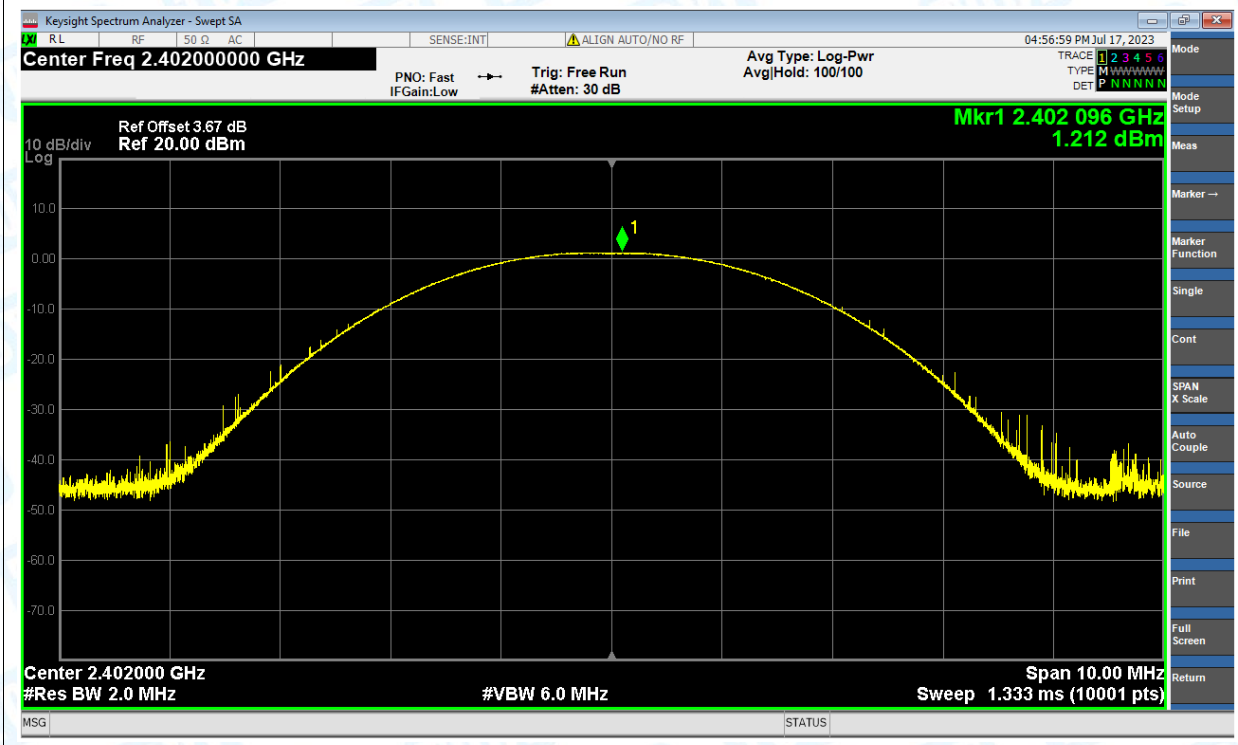


2. Maximum Conducted Output Power

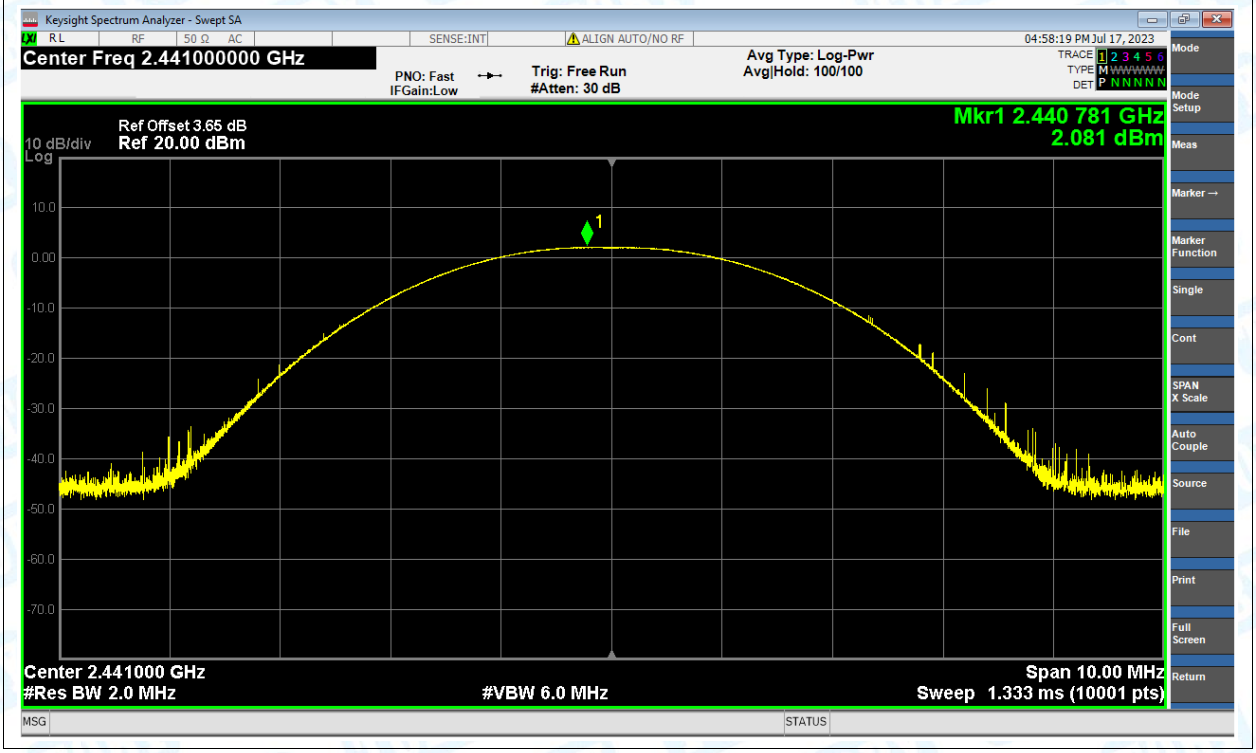
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	1.212	21	Pass
NVNT	1-DH1	2441	Ant1	2.081	21	Pass
NVNT	1-DH1	2480	Ant1	1.596	21	Pass
NVNT	2-DH1	2402	Ant1	3.009	21	Pass
NVNT	2-DH1	2441	Ant1	3.47	21	Pass
NVNT	2-DH1	2480	Ant1	3.017	21	Pass
NVNT	3-DH1	2402	Ant1	1.328	21	Pass
NVNT	3-DH1	2441	Ant1	2.16	21	Pass
NVNT	3-DH1	2480	Ant1	1.567	21	Pass

Test Graphs

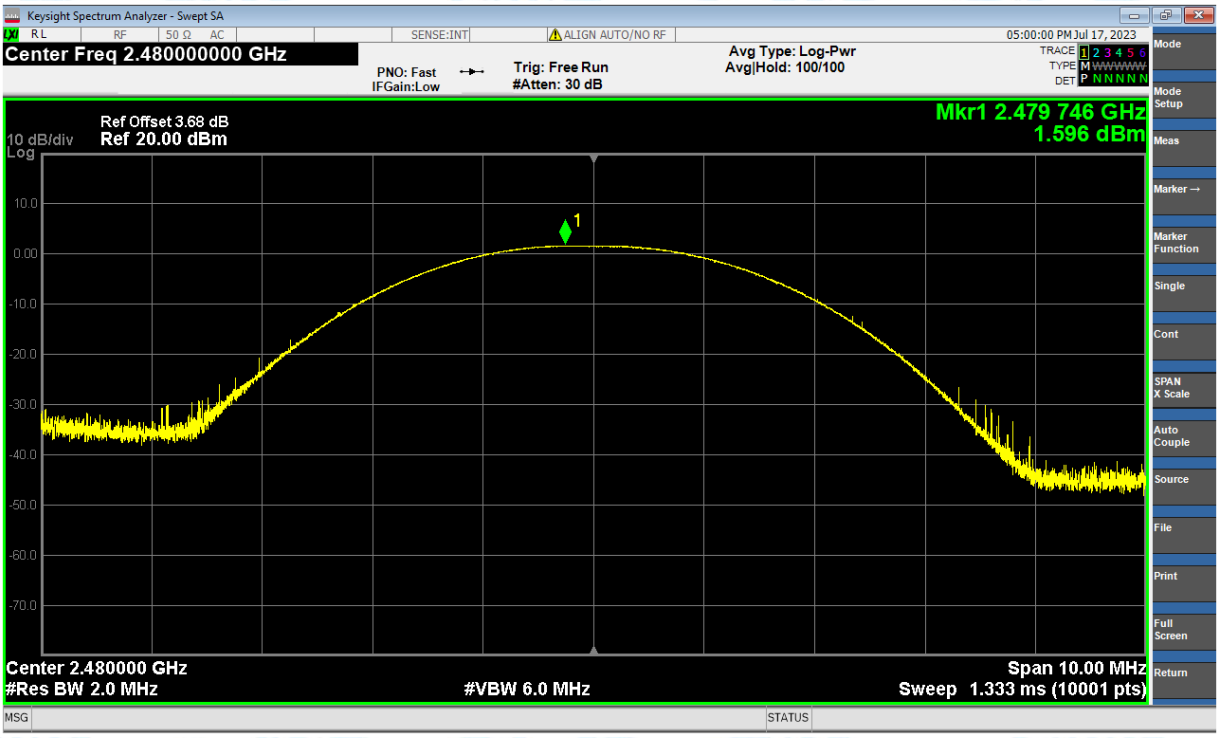
Power NVNT 1-DH1 2402MHz Ant1



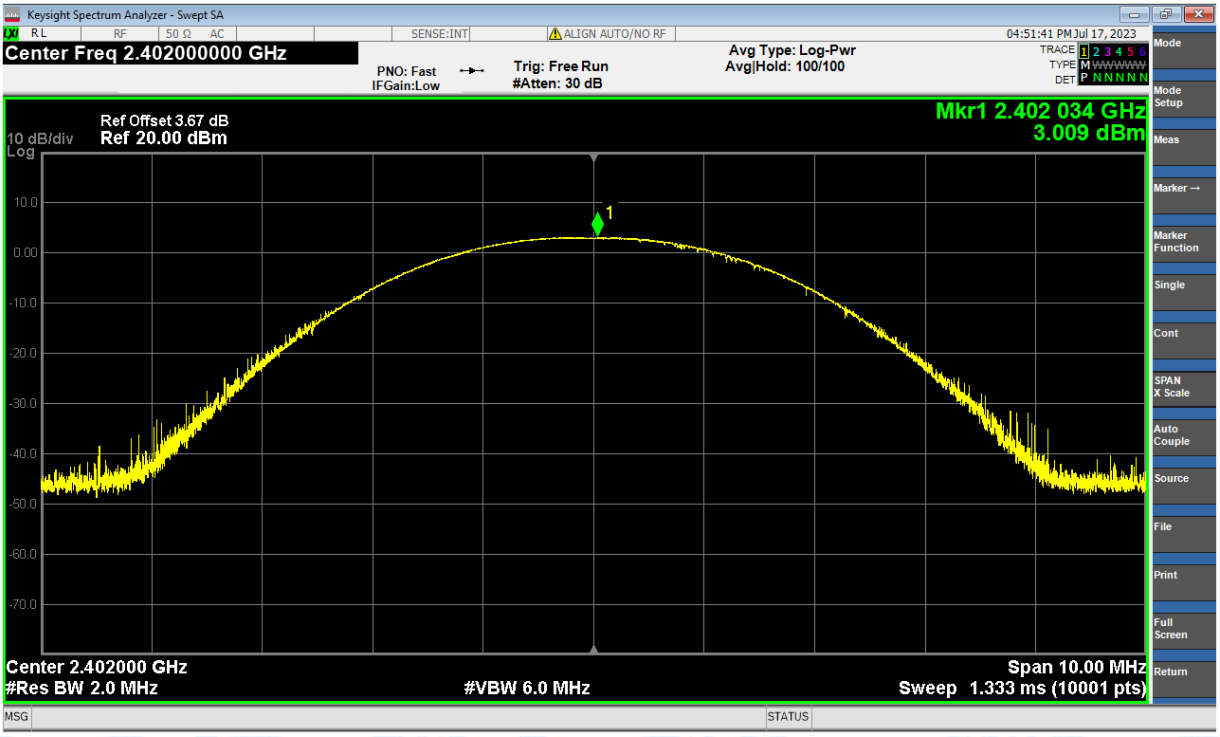
Power NVNT 1-DH1 2441MHz Ant1



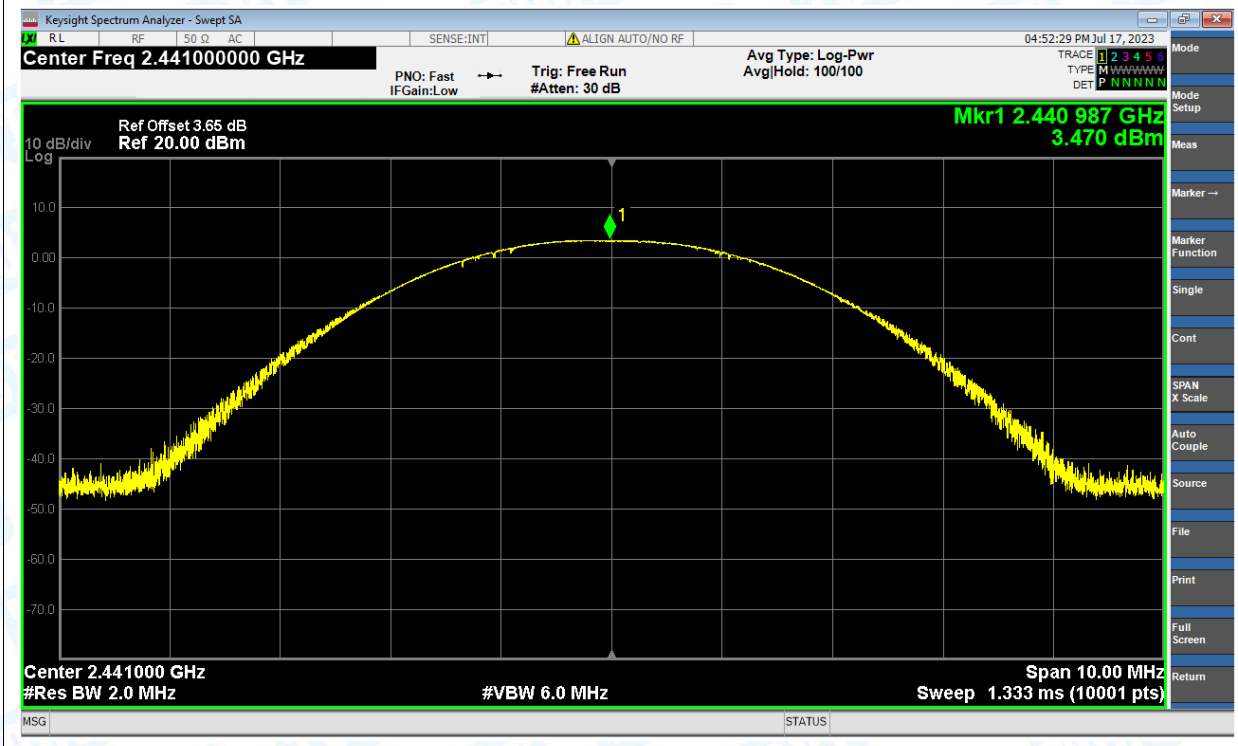
Power NVNT 1-DH1 2480MHz Ant1



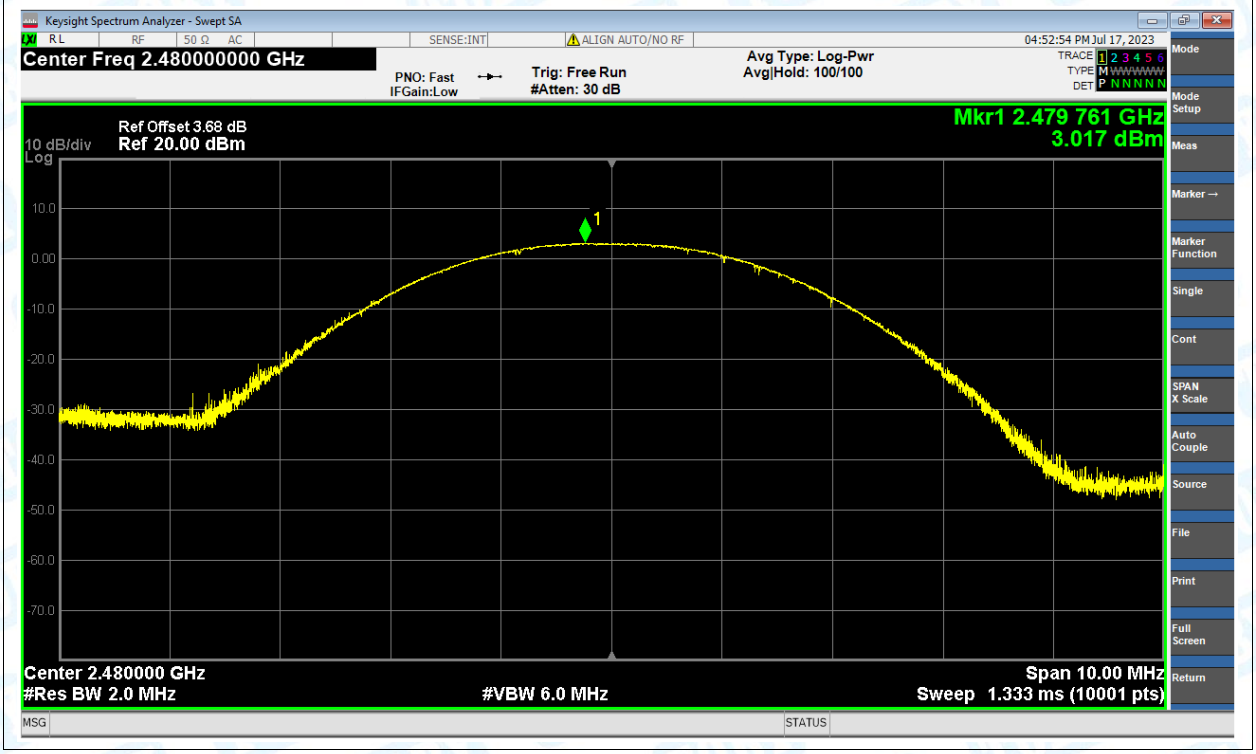
Power NVNT 2-DH1 2402MHz Ant1



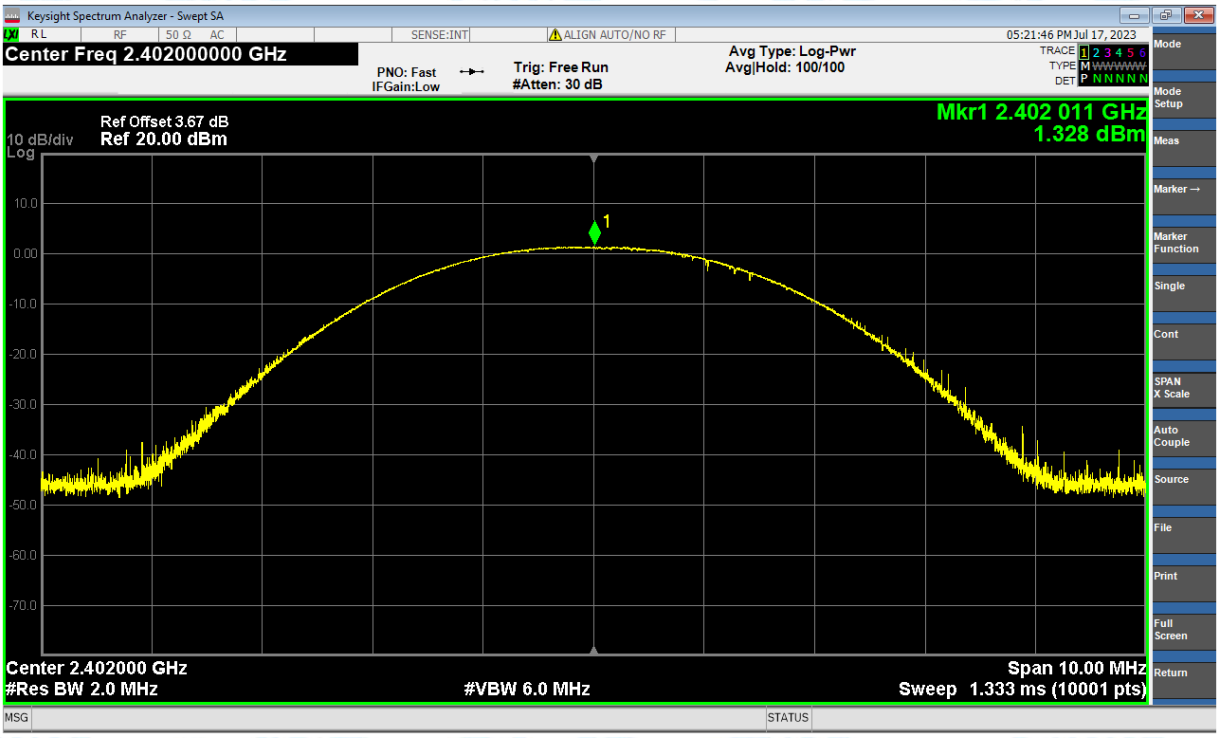
Power NVNT 2-DH1 2441MHz Ant1



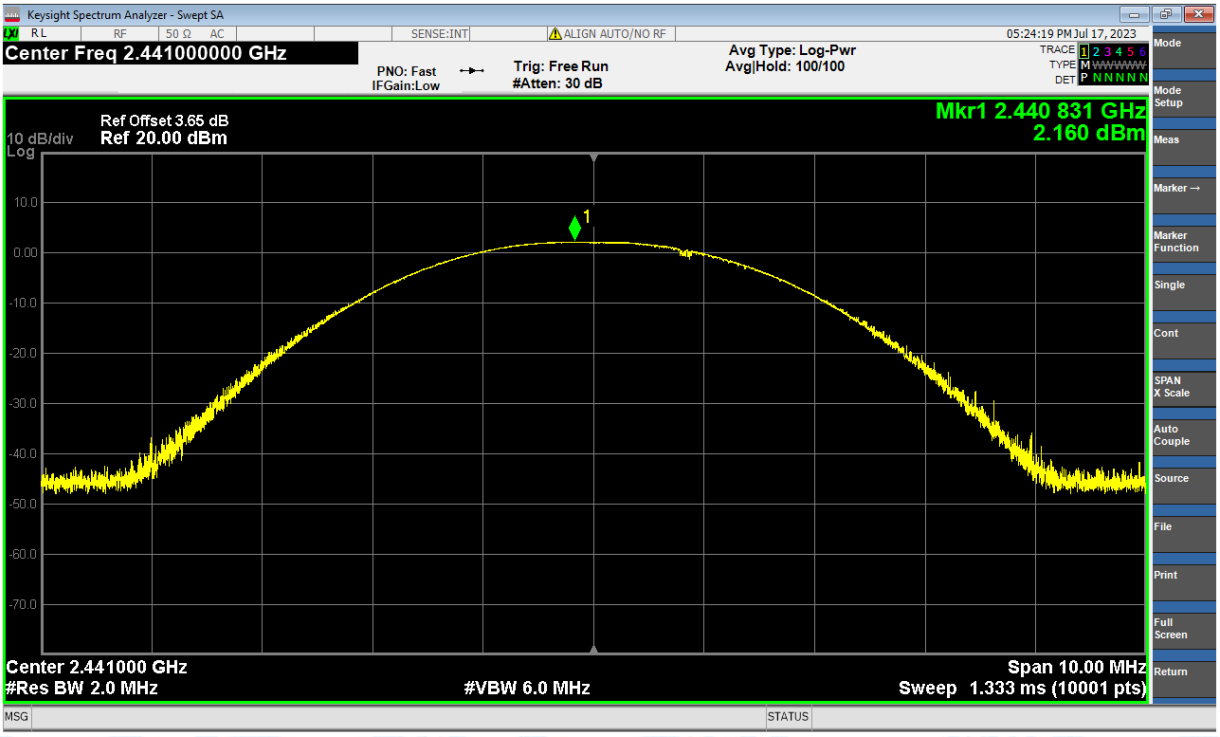
Power NVNT 2-DH1 2480MHz Ant1



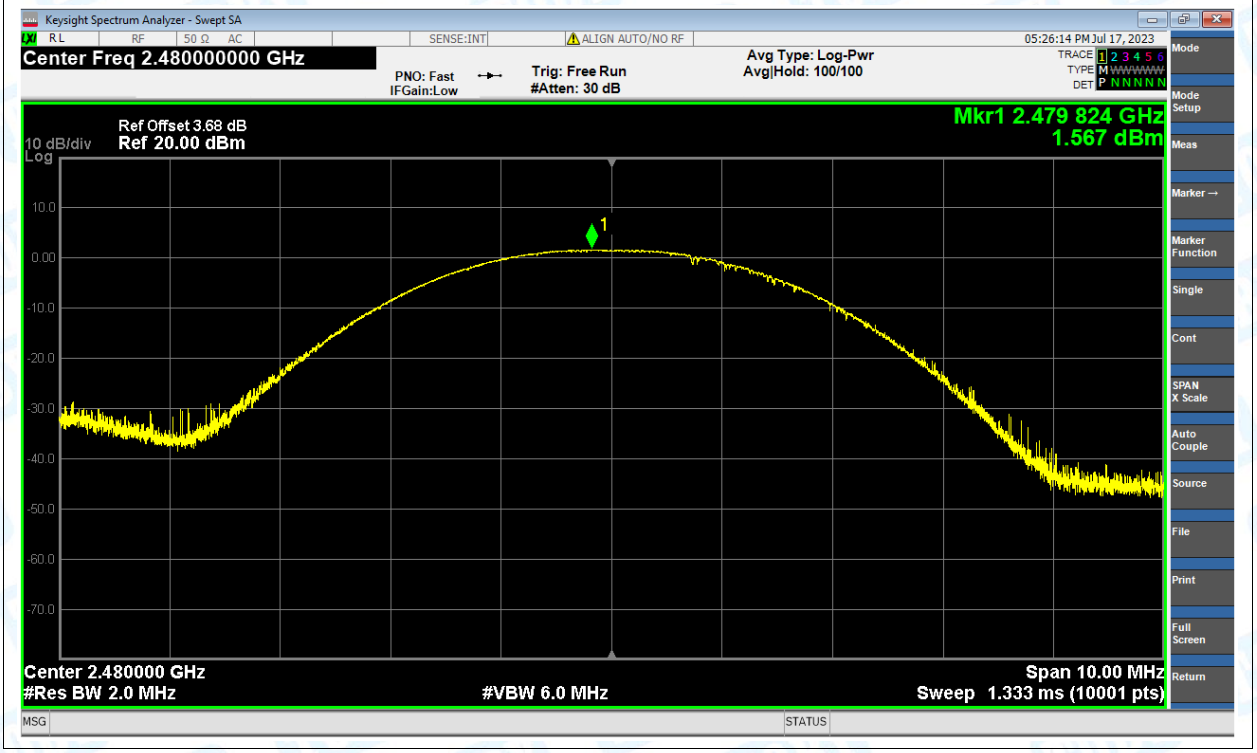
Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



Power NVNT 3-DH1 2480MHz Ant1

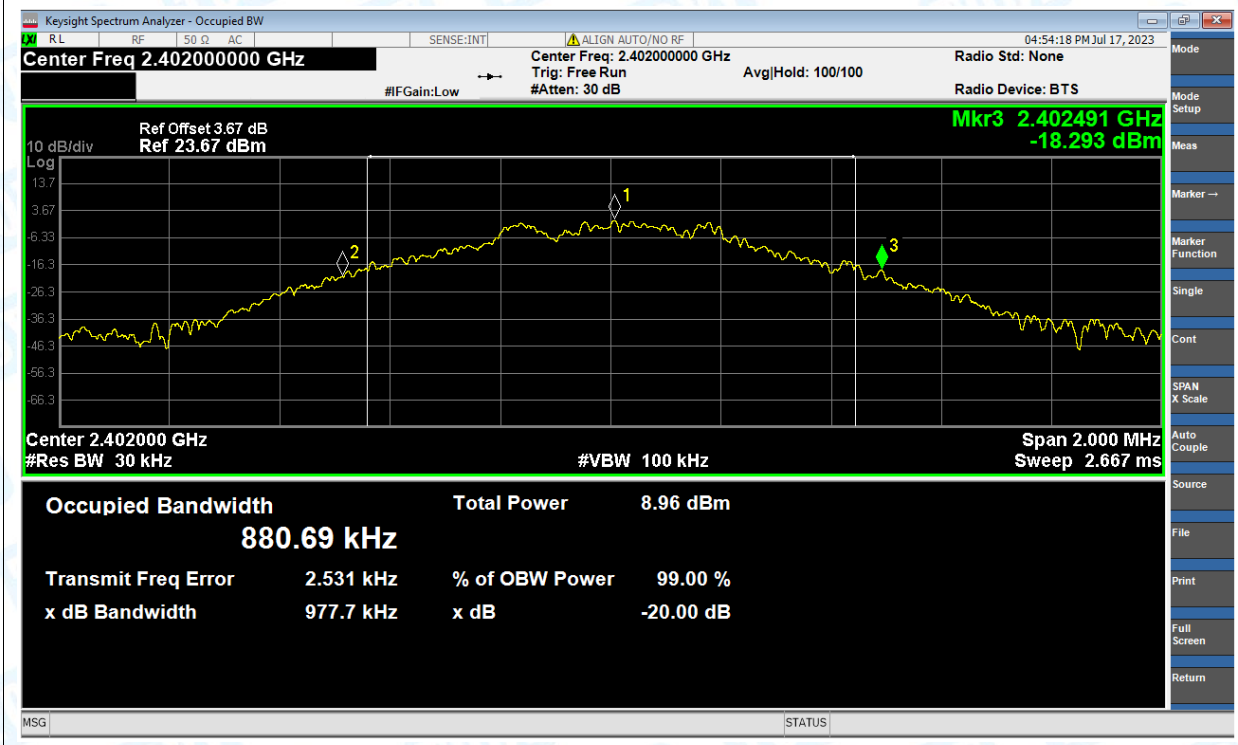


3. -20dB Bandwidth

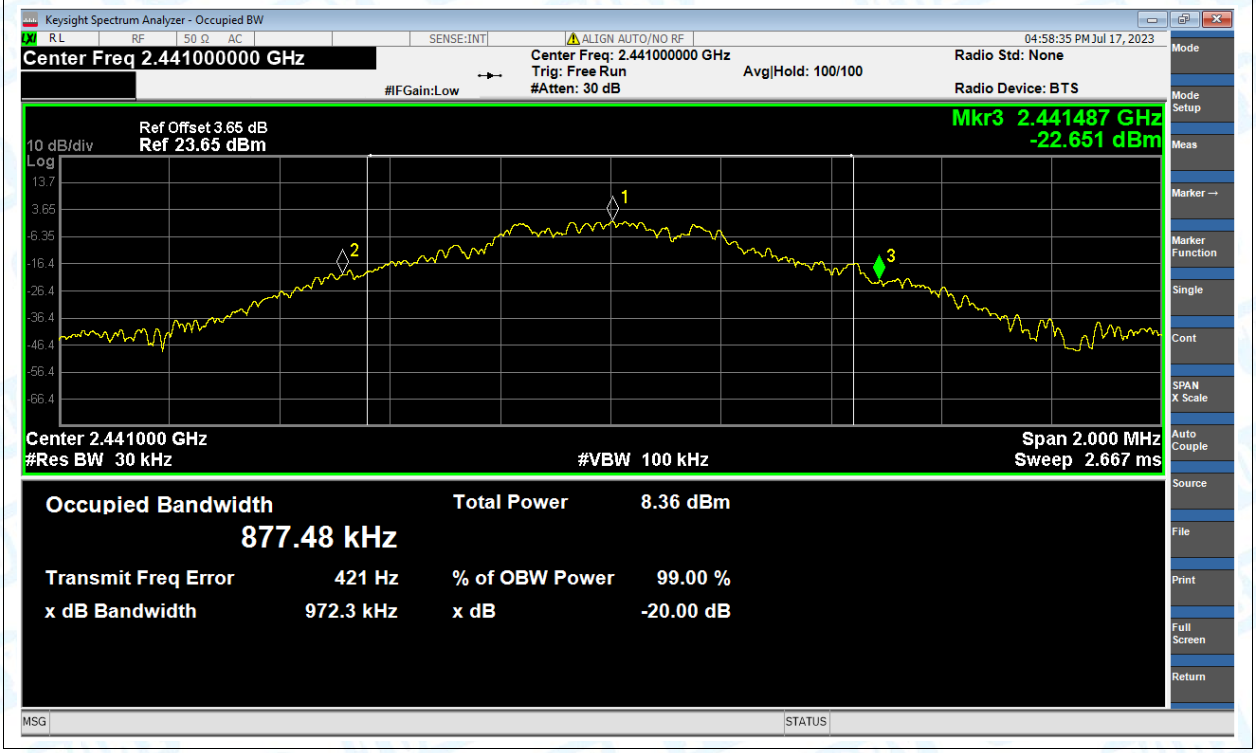
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.98	0	Pass
NVNT	1-DH1	2441	Ant1	0.97	0	Pass
NVNT	1-DH1	2480	Ant1	1.03	0	Pass
NVNT	2-DH1	2402	Ant1	1.27	0	Pass
NVNT	2-DH1	2441	Ant1	1.28	0	Pass
NVNT	2-DH1	2480	Ant1	1.26	0	Pass
NVNT	3-DH1	2402	Ant1	1.27	0	Pass
NVNT	3-DH1	2441	Ant1	1.26	0	Pass
NVNT	3-DH1	2480	Ant1	1.26	0	Pass

Test Graphs

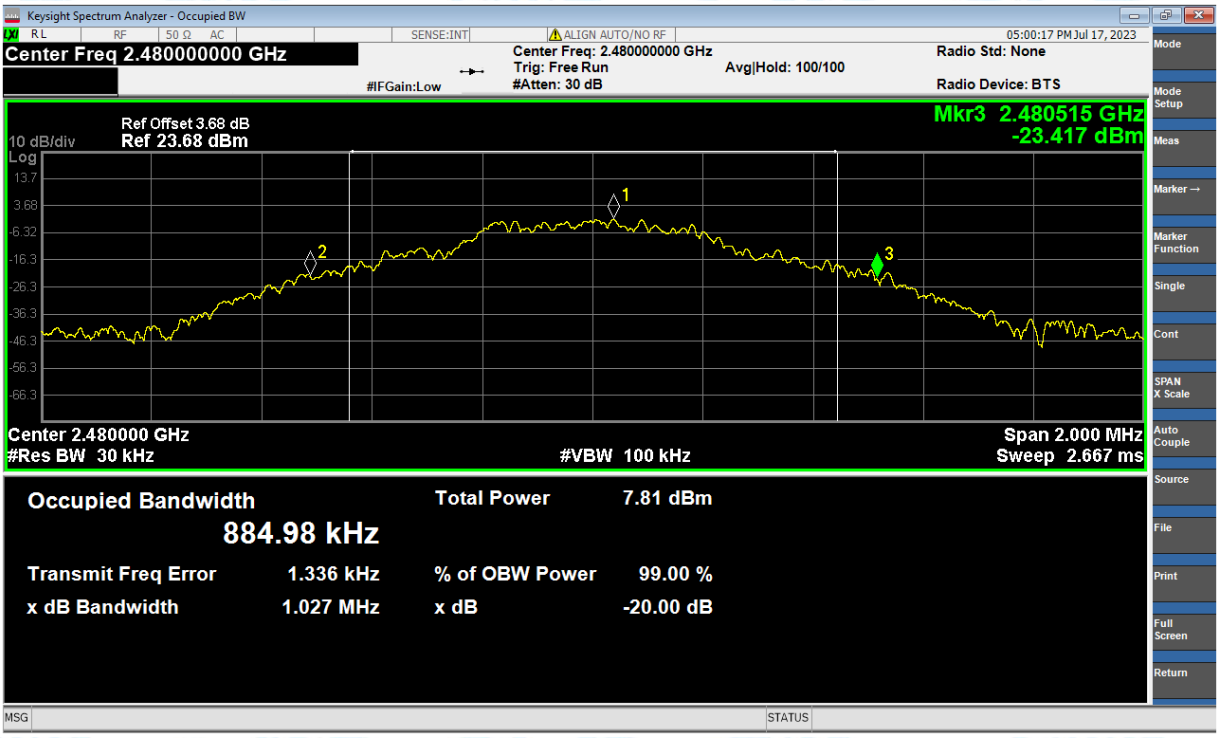
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



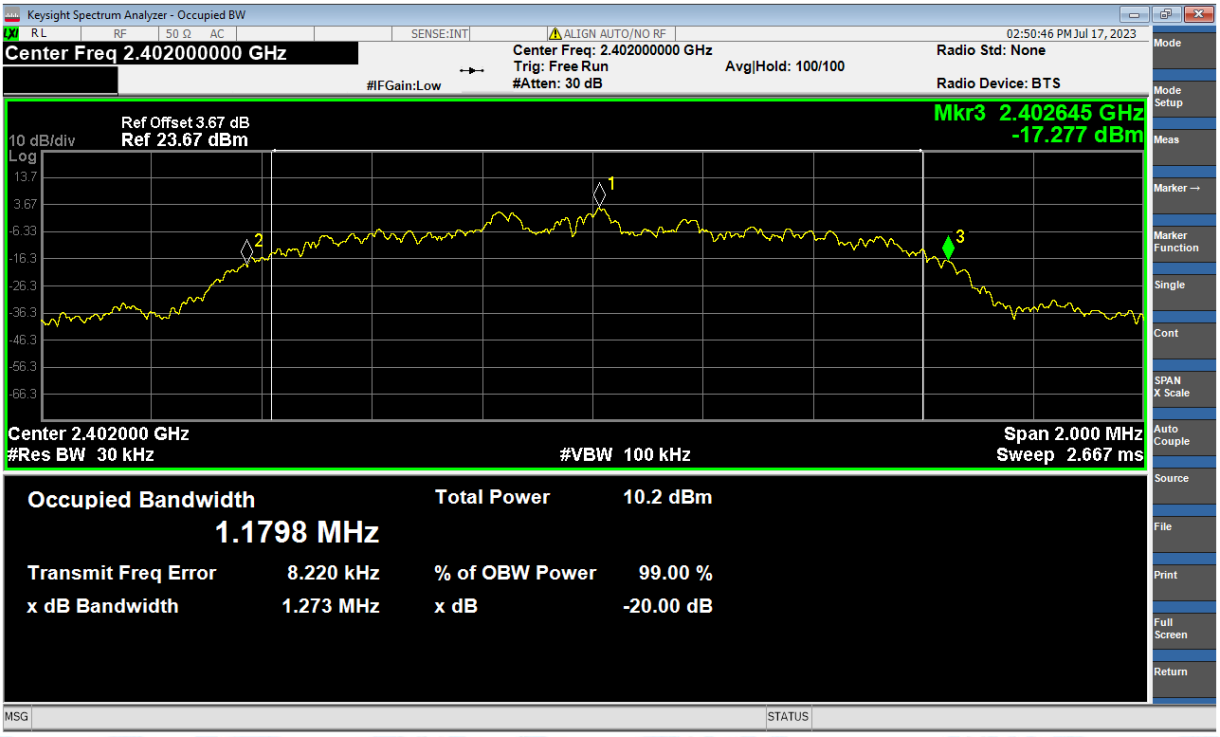
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



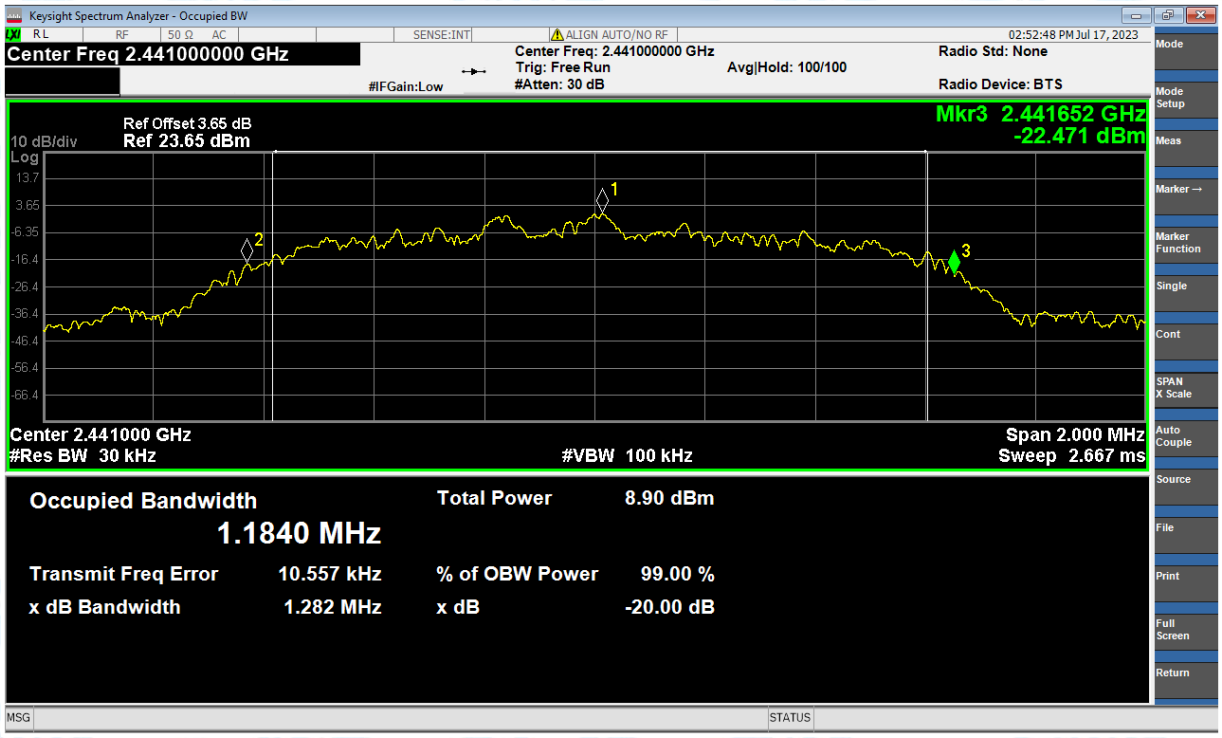
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



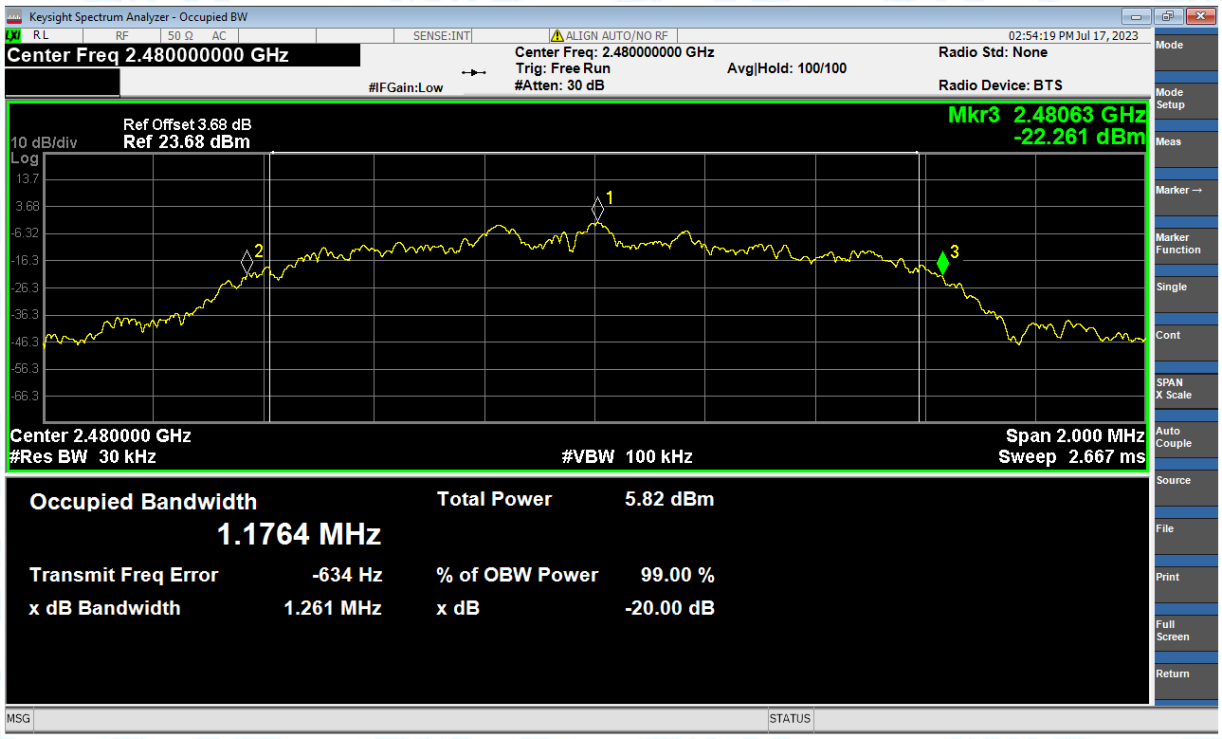
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



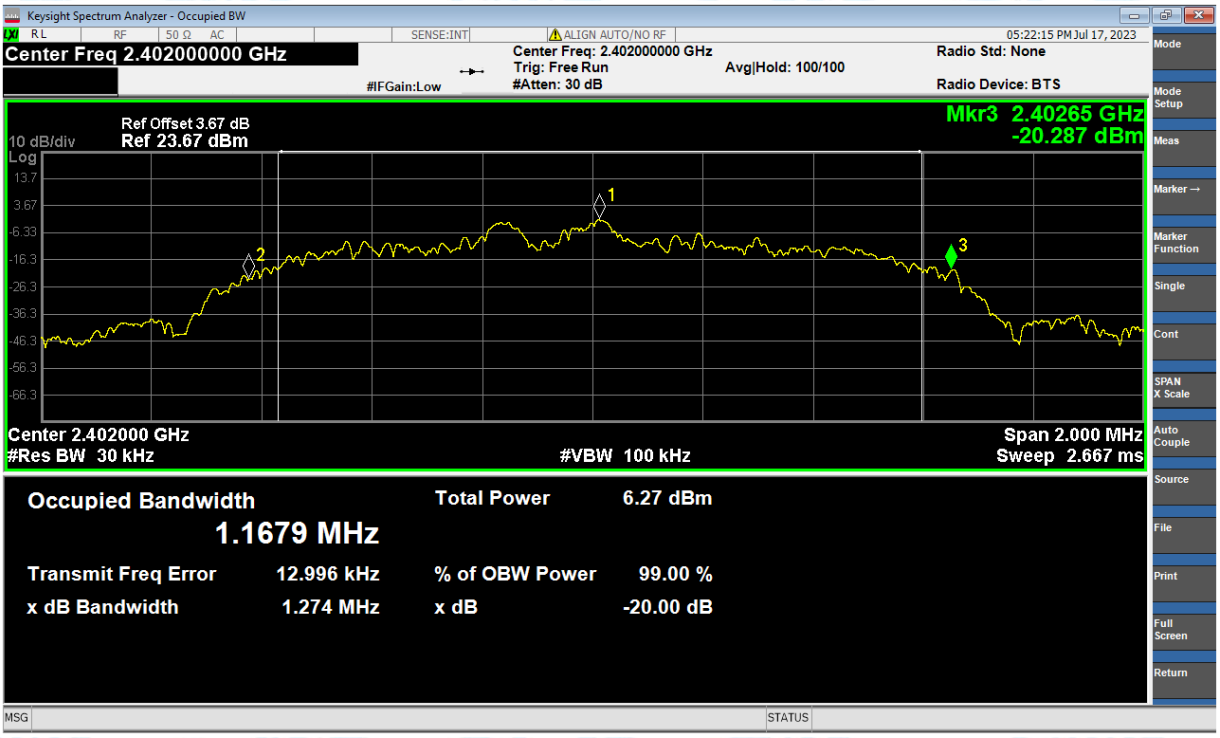
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



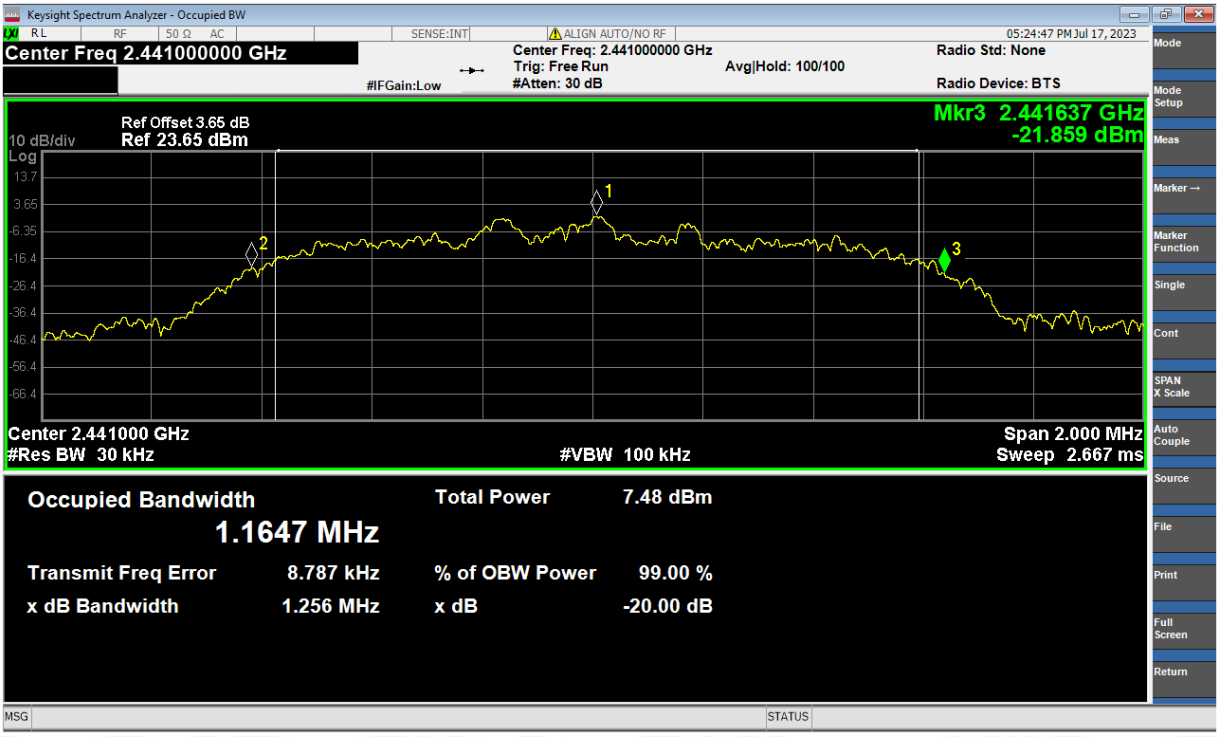
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1



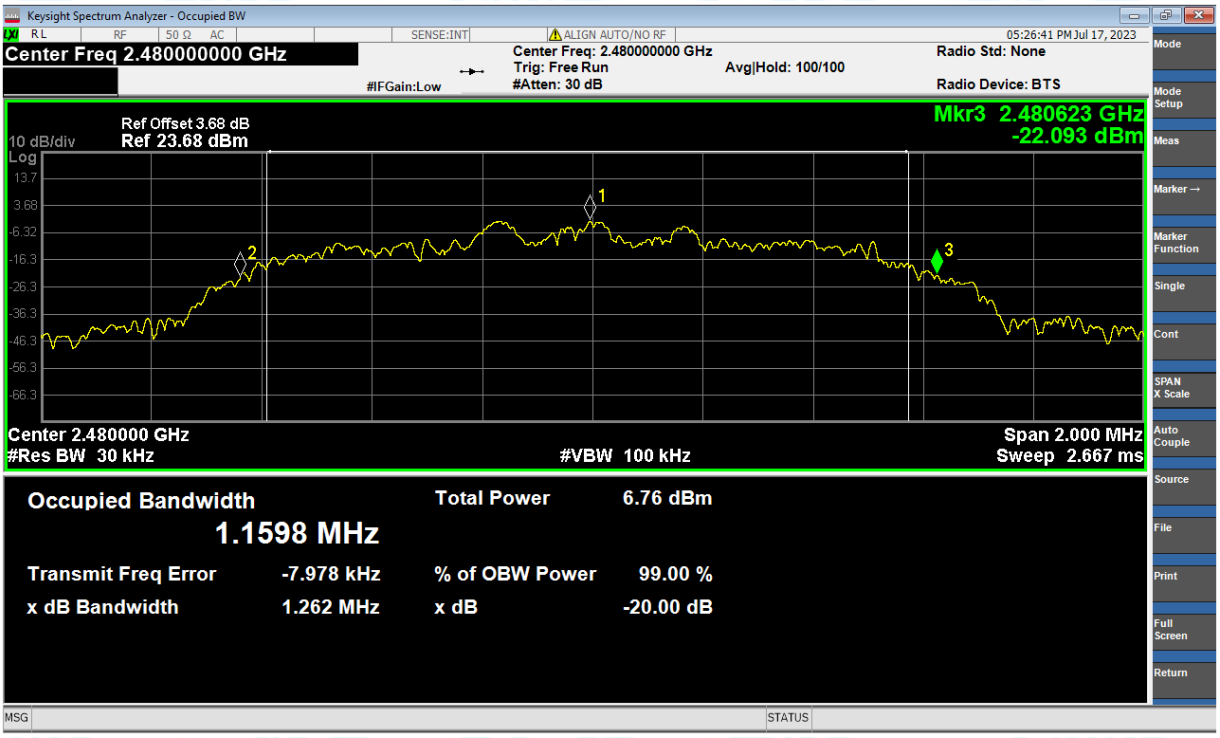
-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2480MHz Ant1

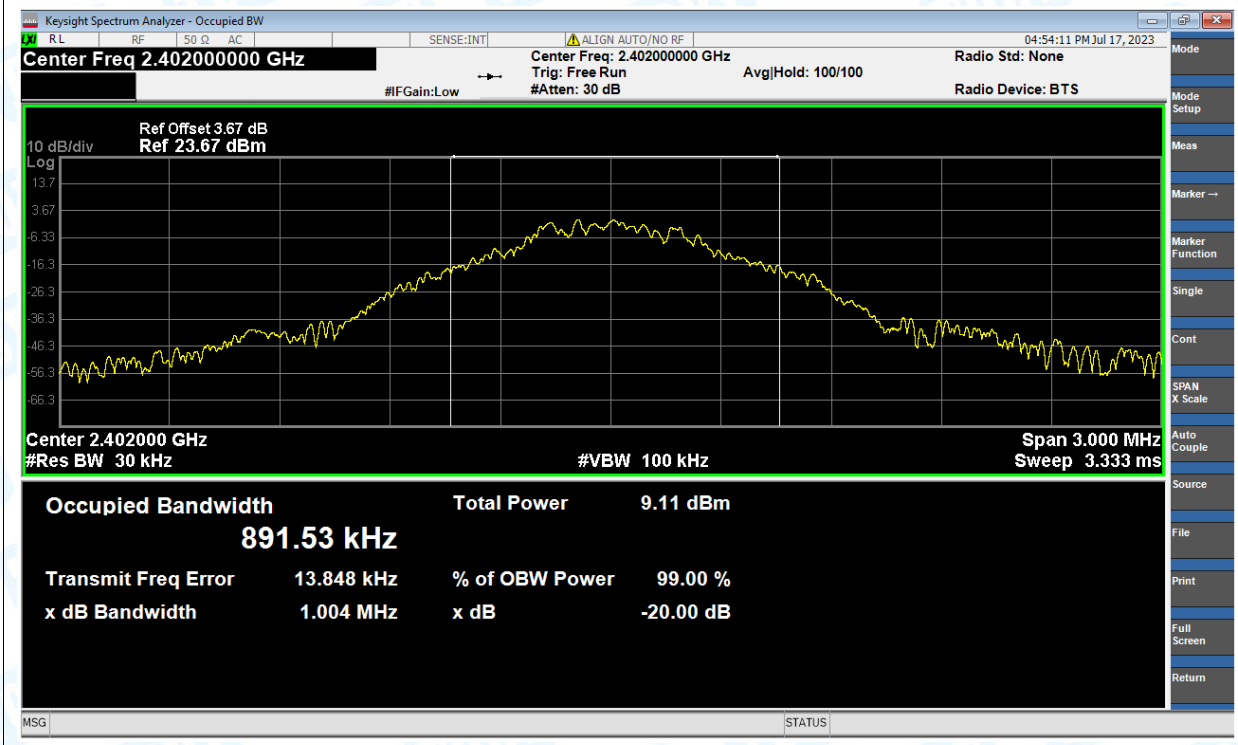


4. Occupied Channel Bandwidth

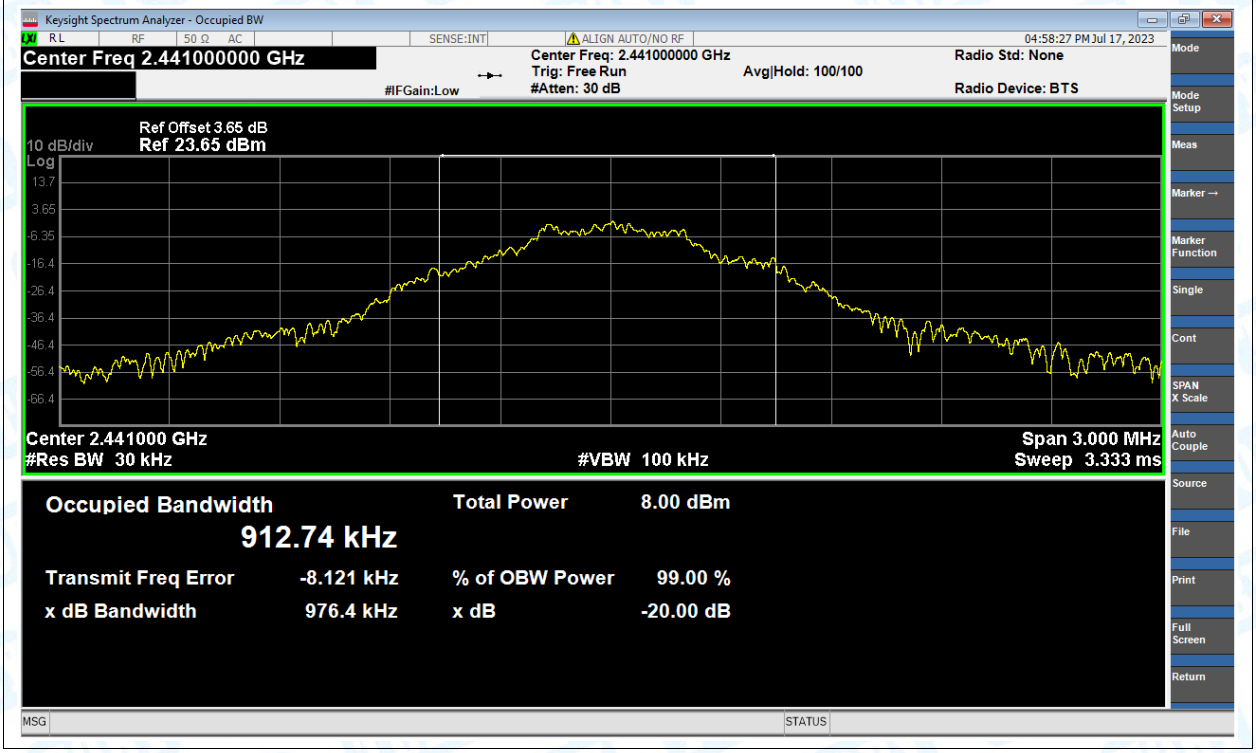
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.892
NVNT	1-DH1	2441	Ant1	0.913
NVNT	1-DH1	2480	Ant1	0.902
NVNT	2-DH1	2402	Ant1	1.185
NVNT	2-DH1	2441	Ant1	1.2
NVNT	2-DH1	2480	Ant1	1.169
NVNT	3-DH1	2402	Ant1	1.144
NVNT	3-DH1	2441	Ant1	1.163
NVNT	3-DH1	2480	Ant1	1.168

Test Graphs

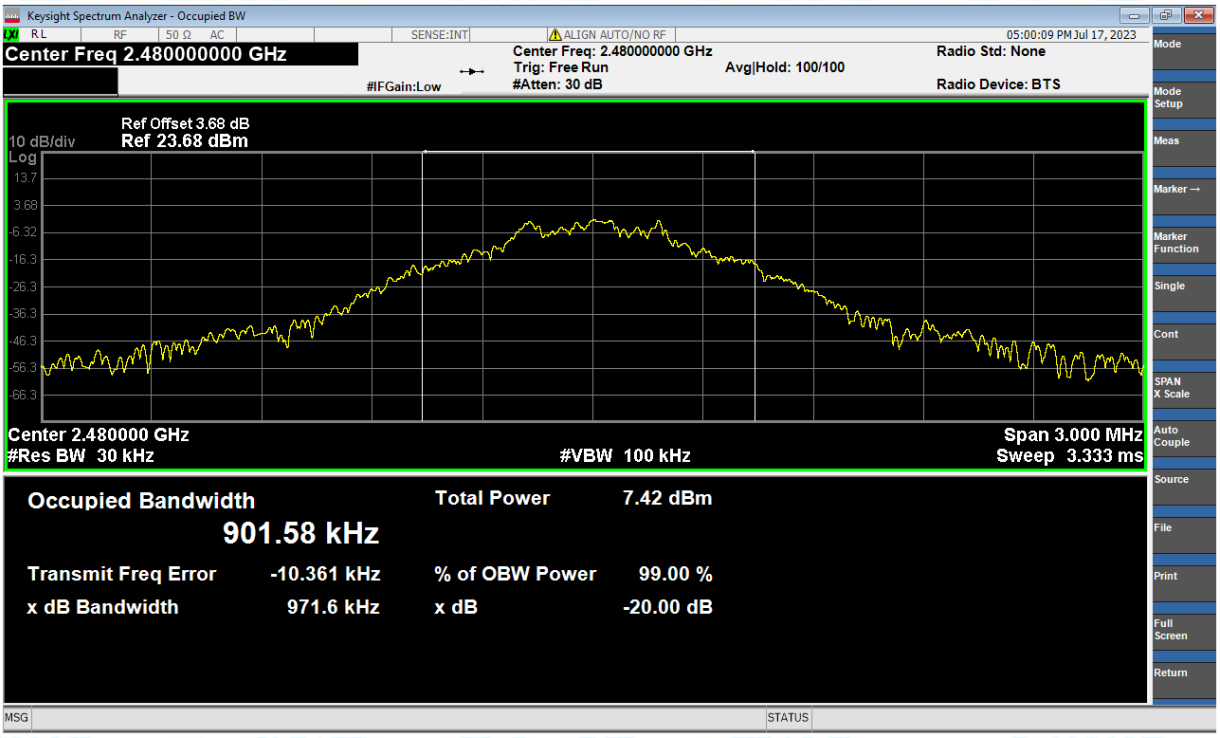
OBW NVNT 1-DH1 2402MHz Ant1



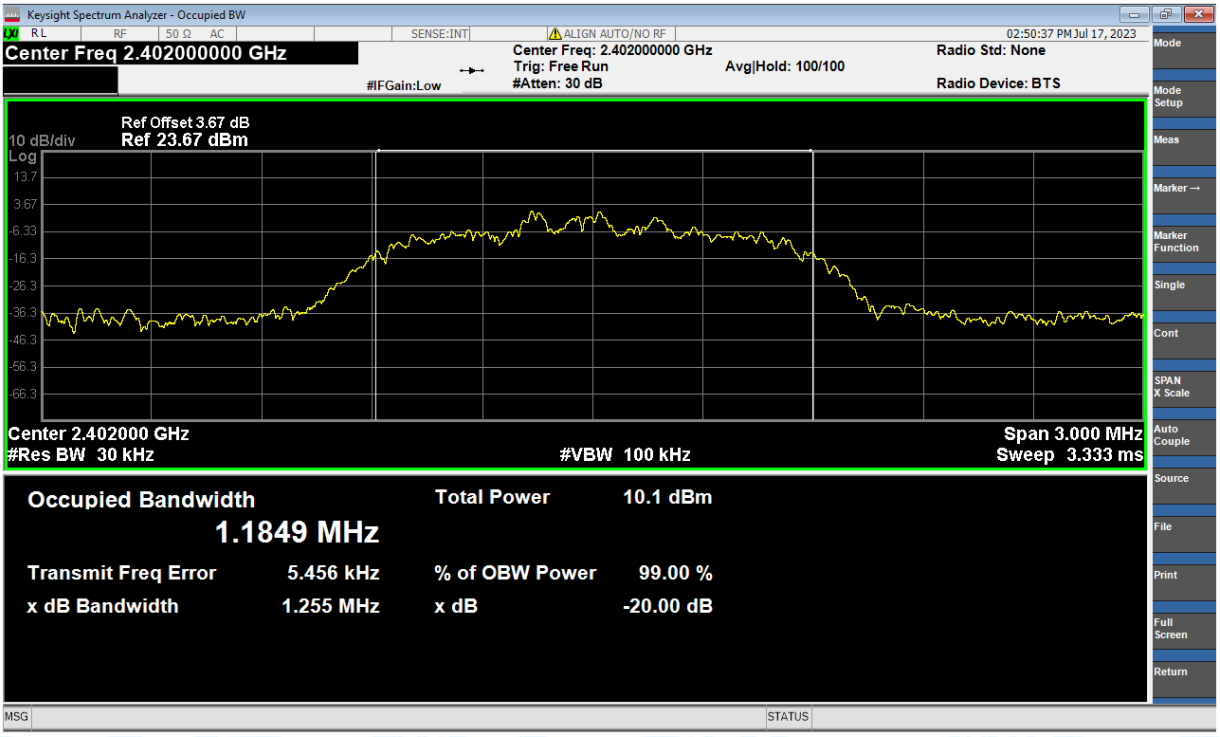
OBW NVNT 1-DH1 2441MHz Ant1



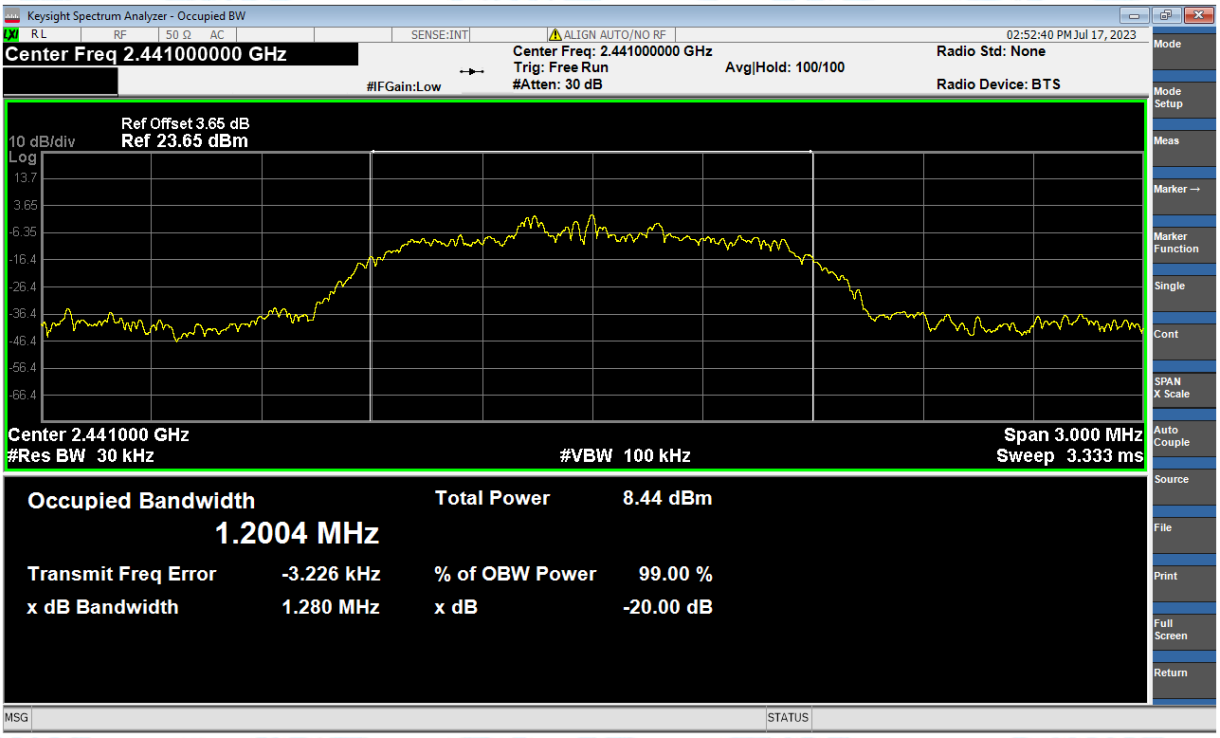
OBW NVNT 1-DH1 2480MHz Ant1



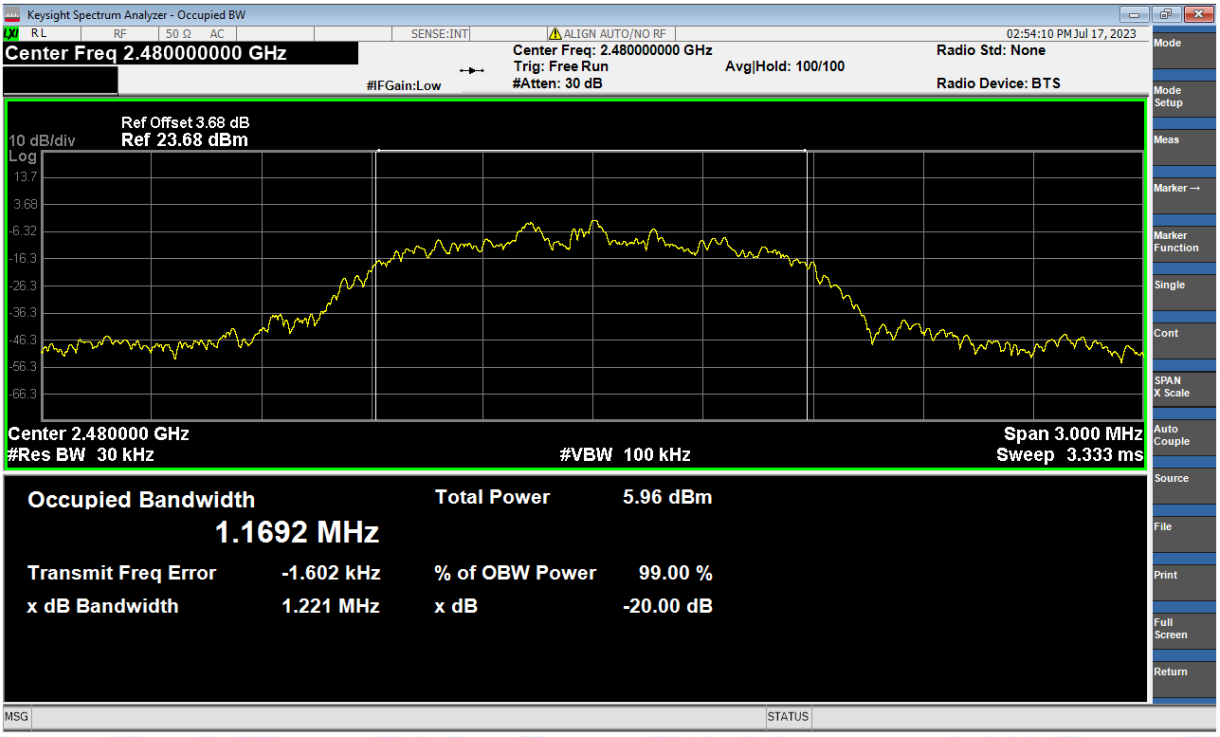
OBW NVNT 2-DH1 2402MHz Ant1



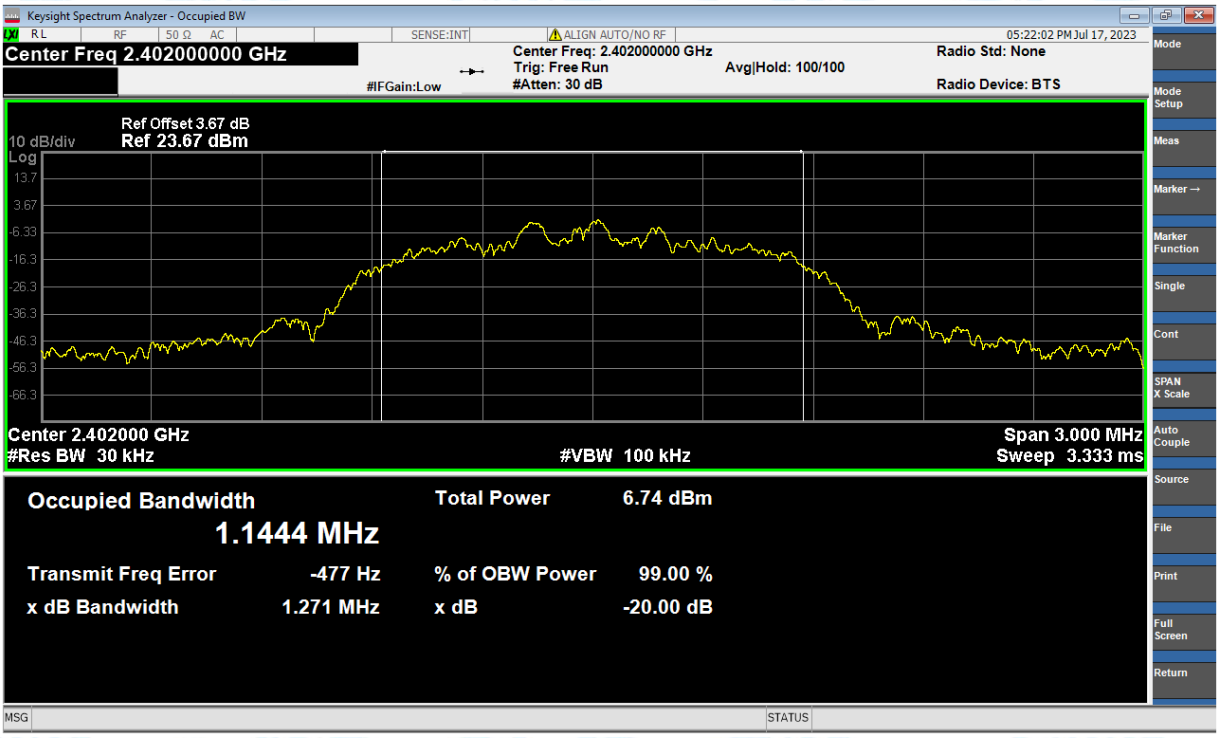
OBW NVNT 2-DH1 2441MHz Ant1



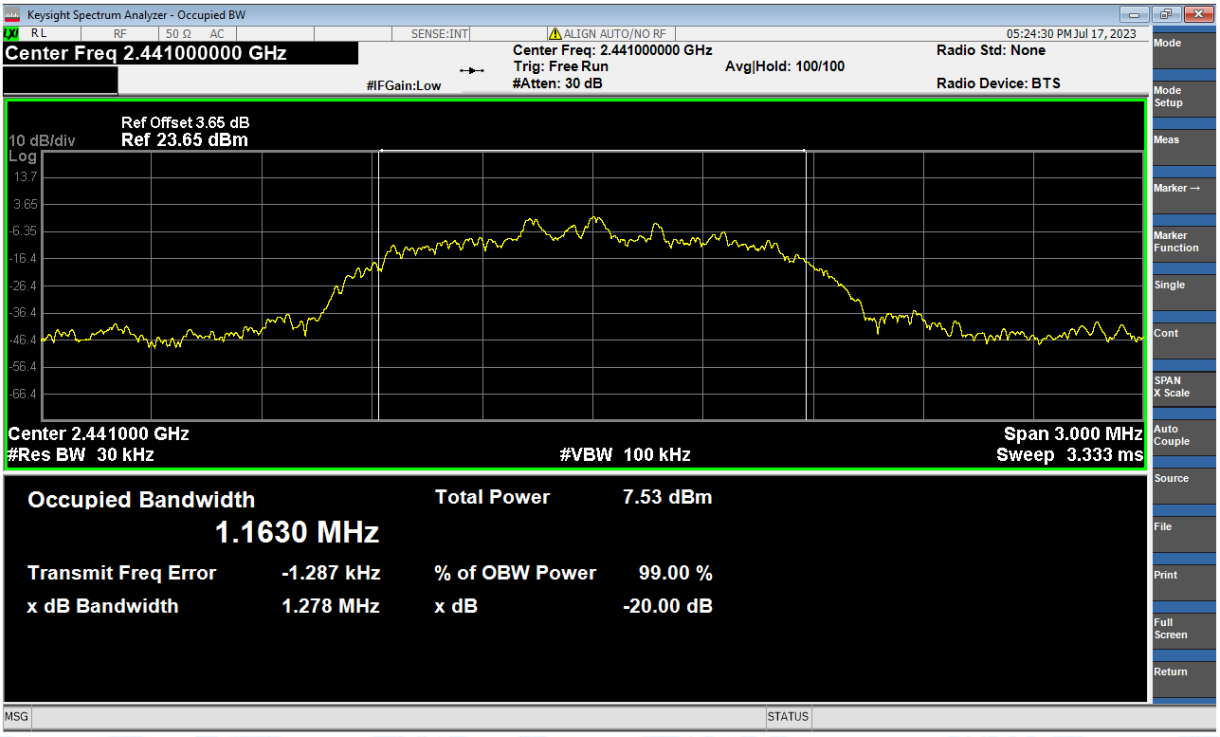
OBW NVNT 2-DH1 2480MHz Ant1



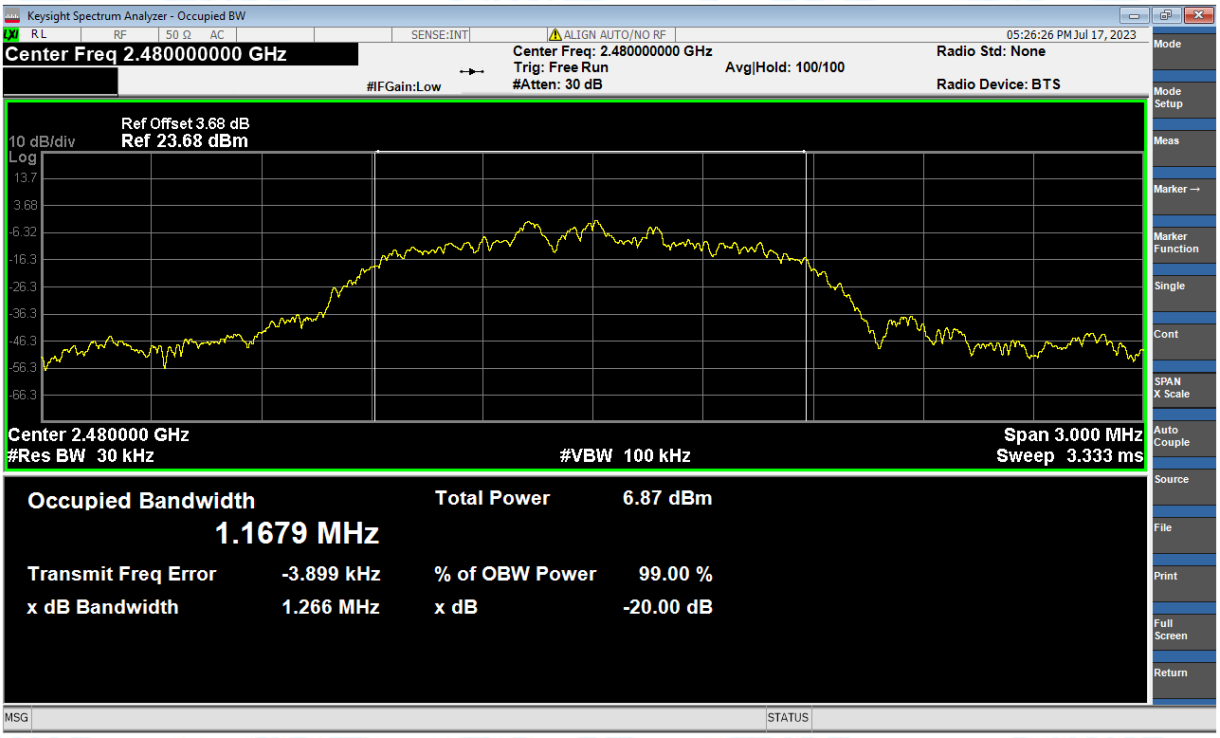
OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



OBW NVNT 3-DH1 2480MHz Ant1

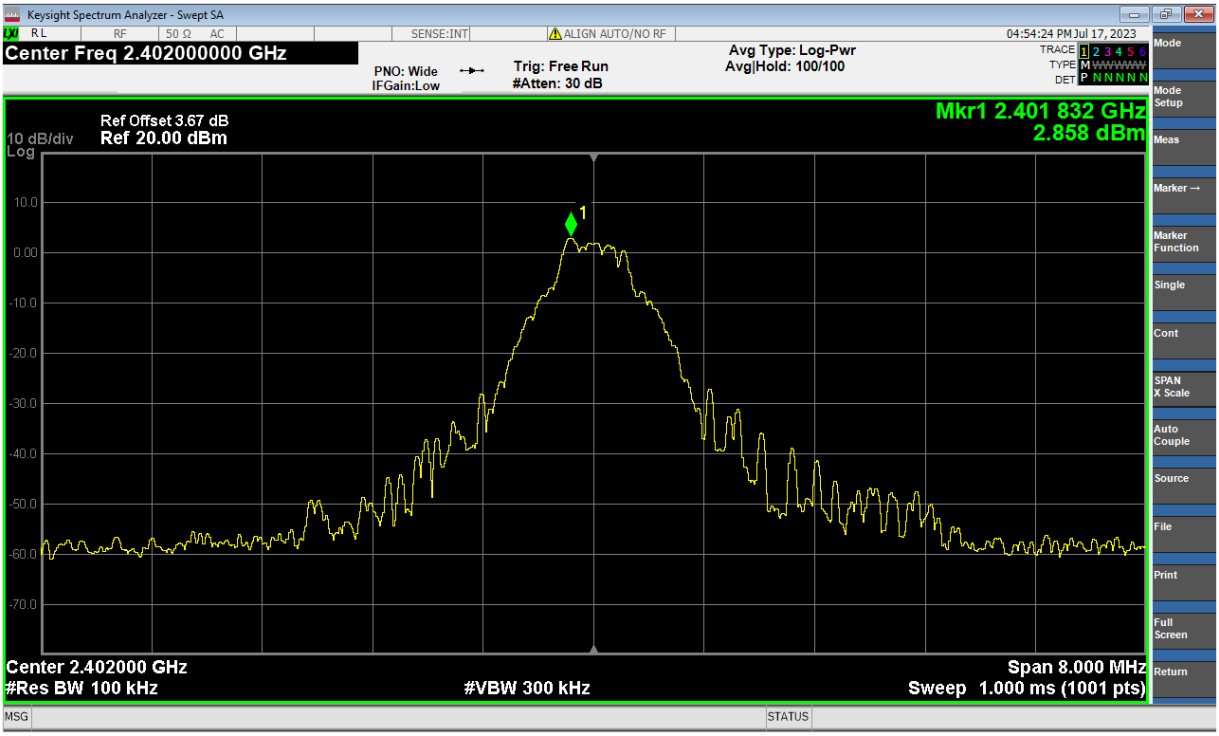


5. Band Edge

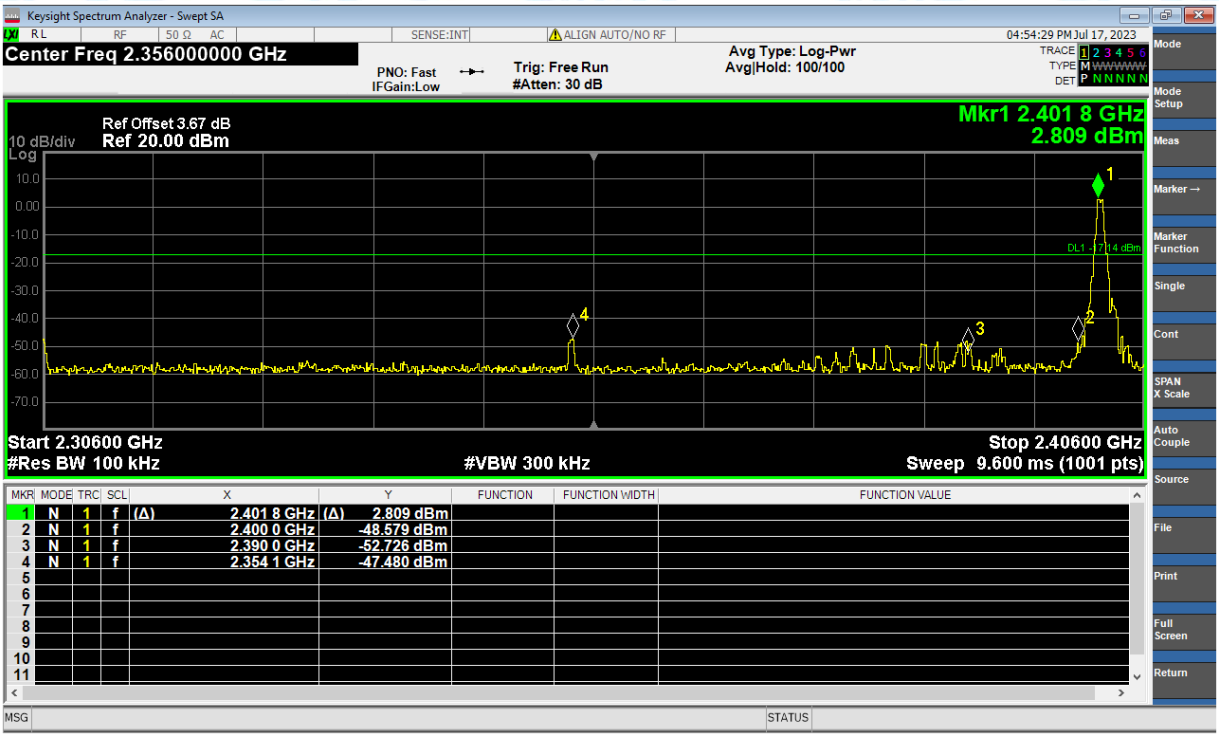
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-50.34	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-52.43	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-51.06	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-53.22	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-52.11	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-54.76	-20	Pass

Test Graphs

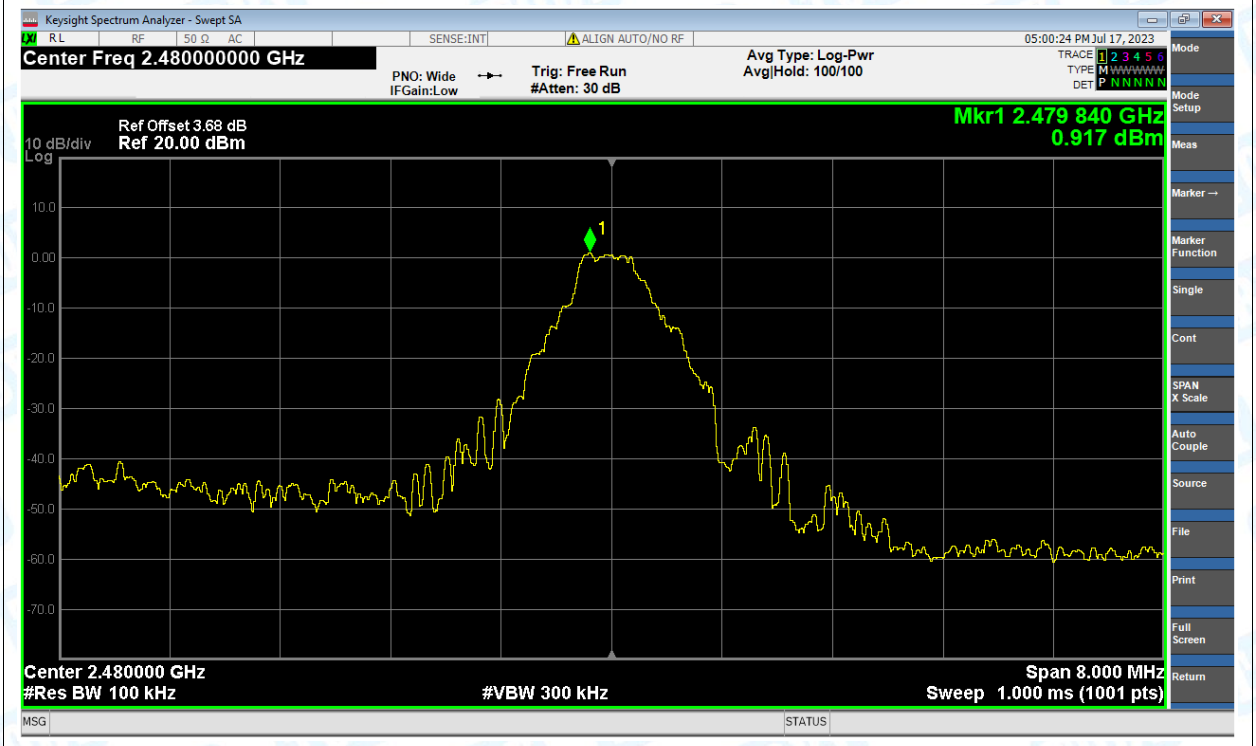
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



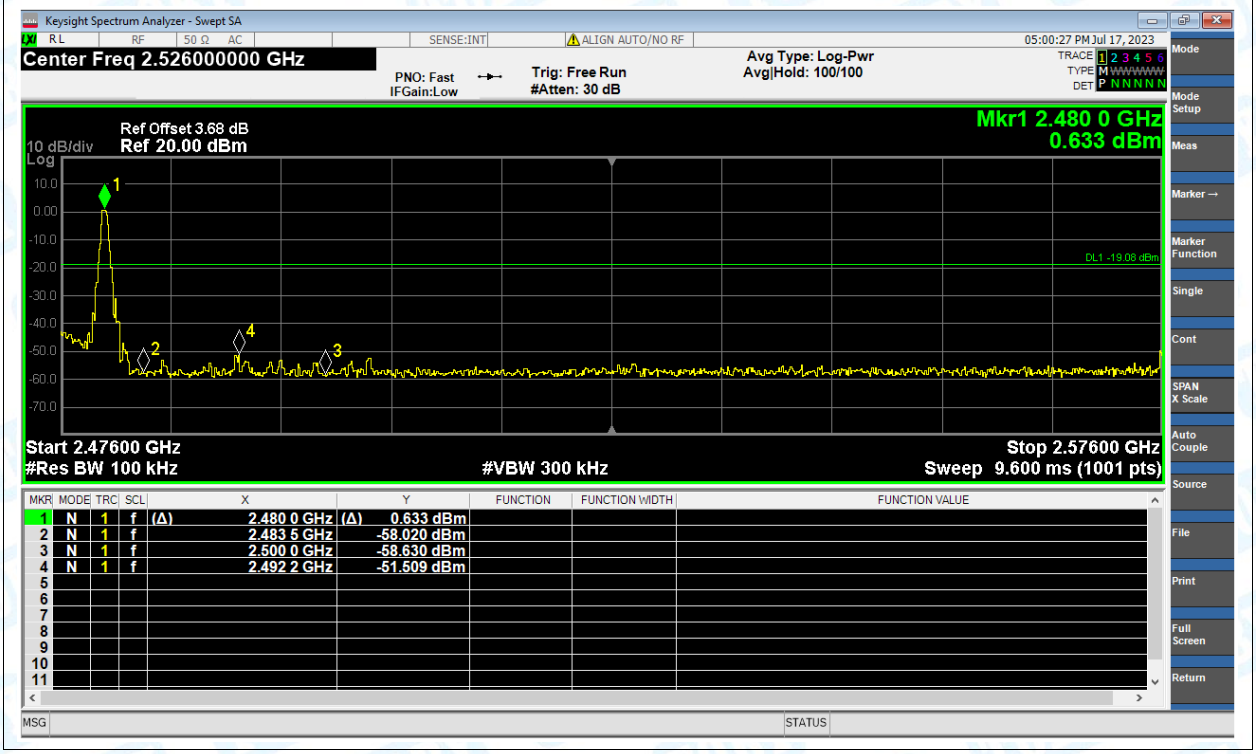
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



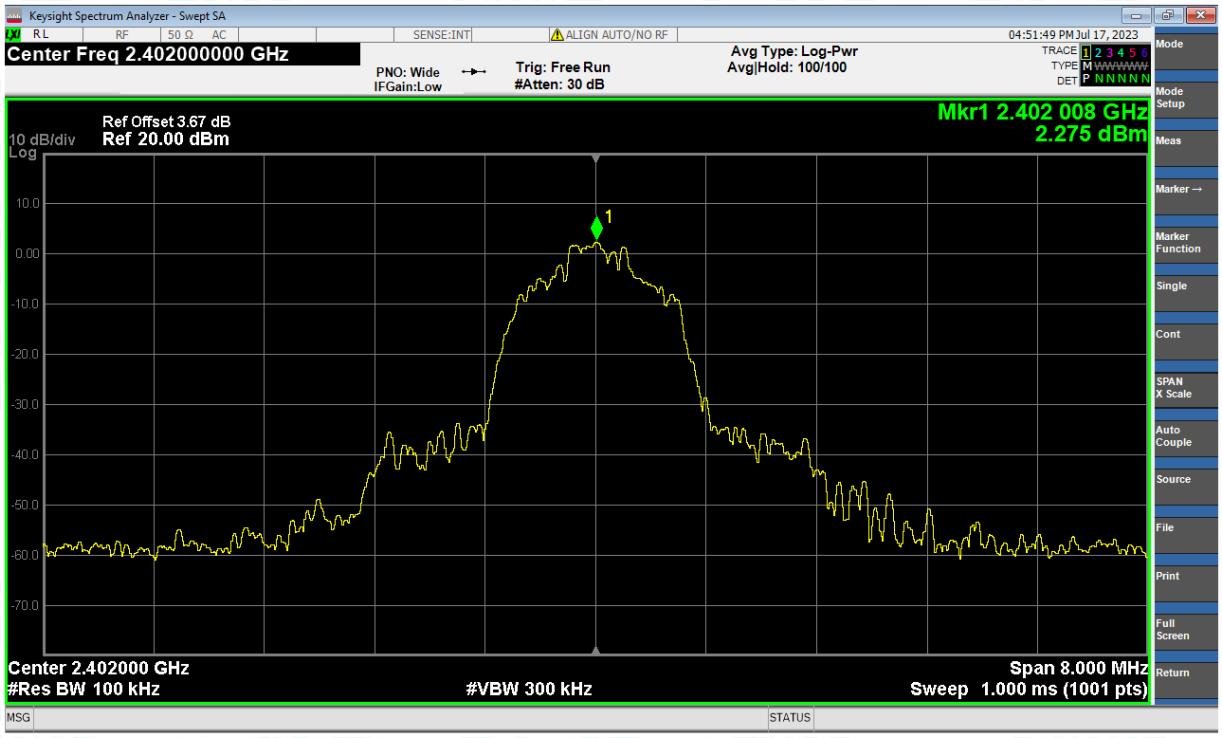
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



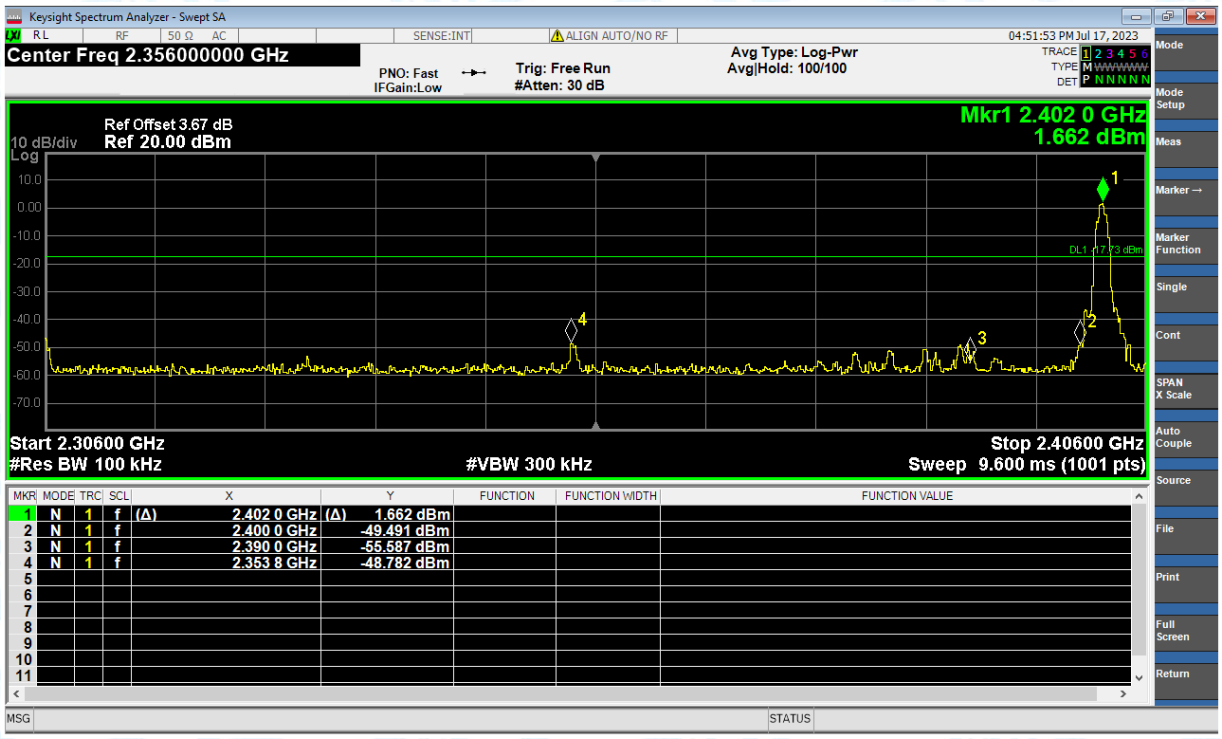
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



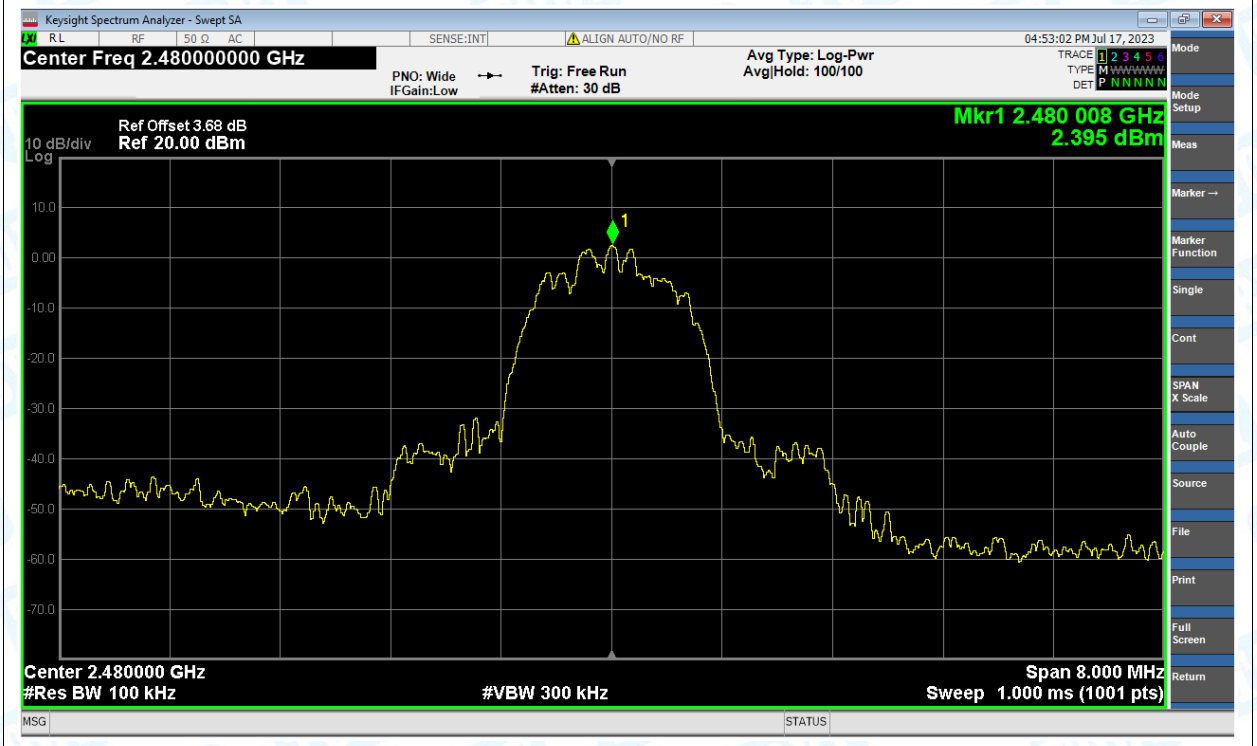
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



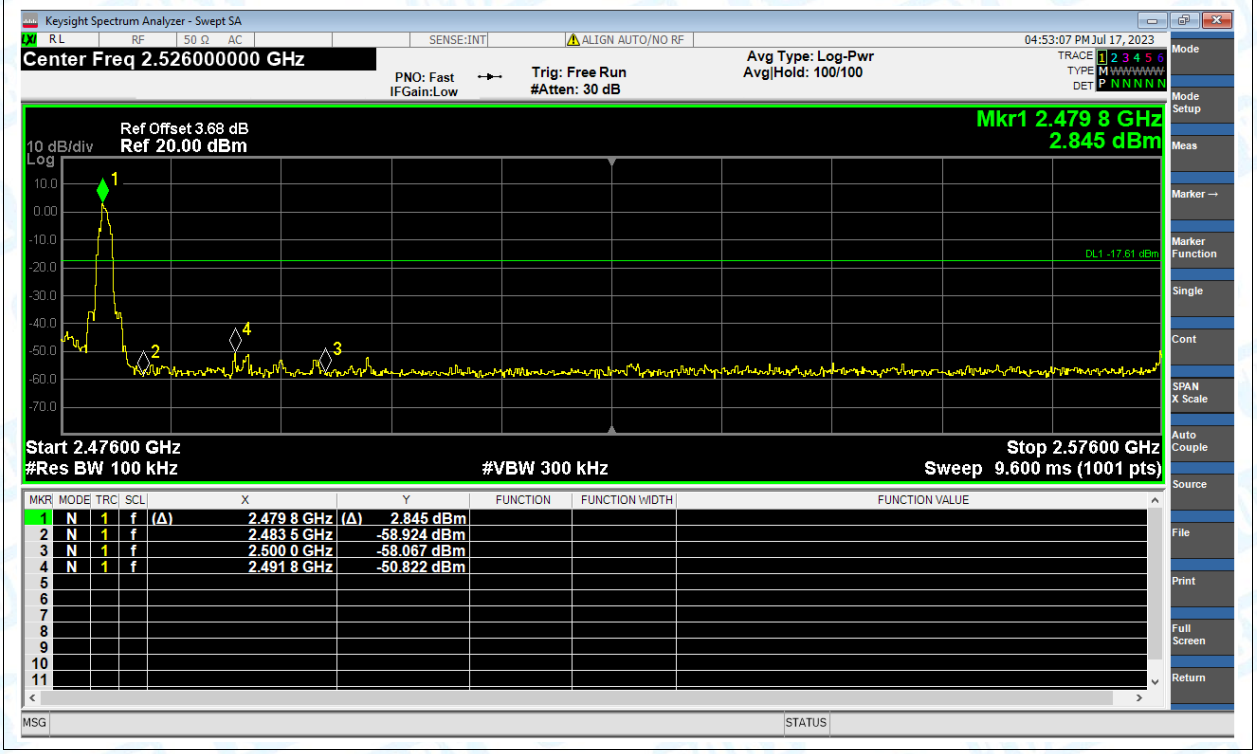
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



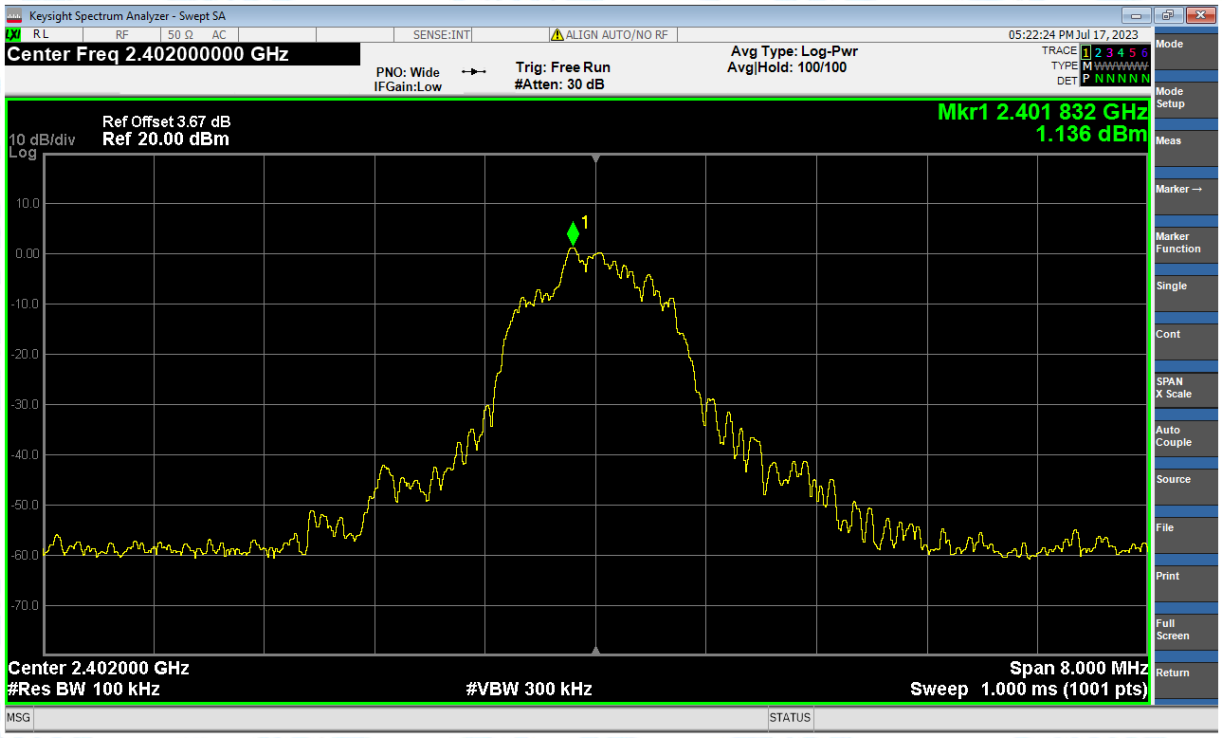
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



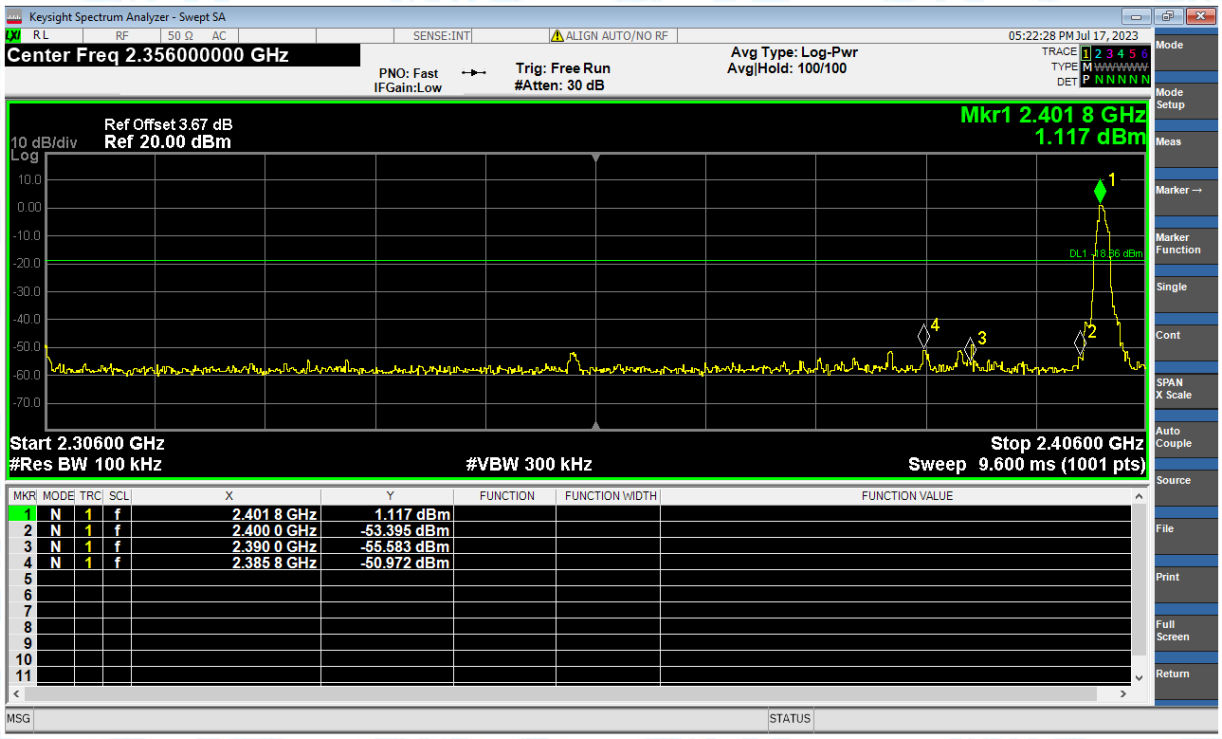
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



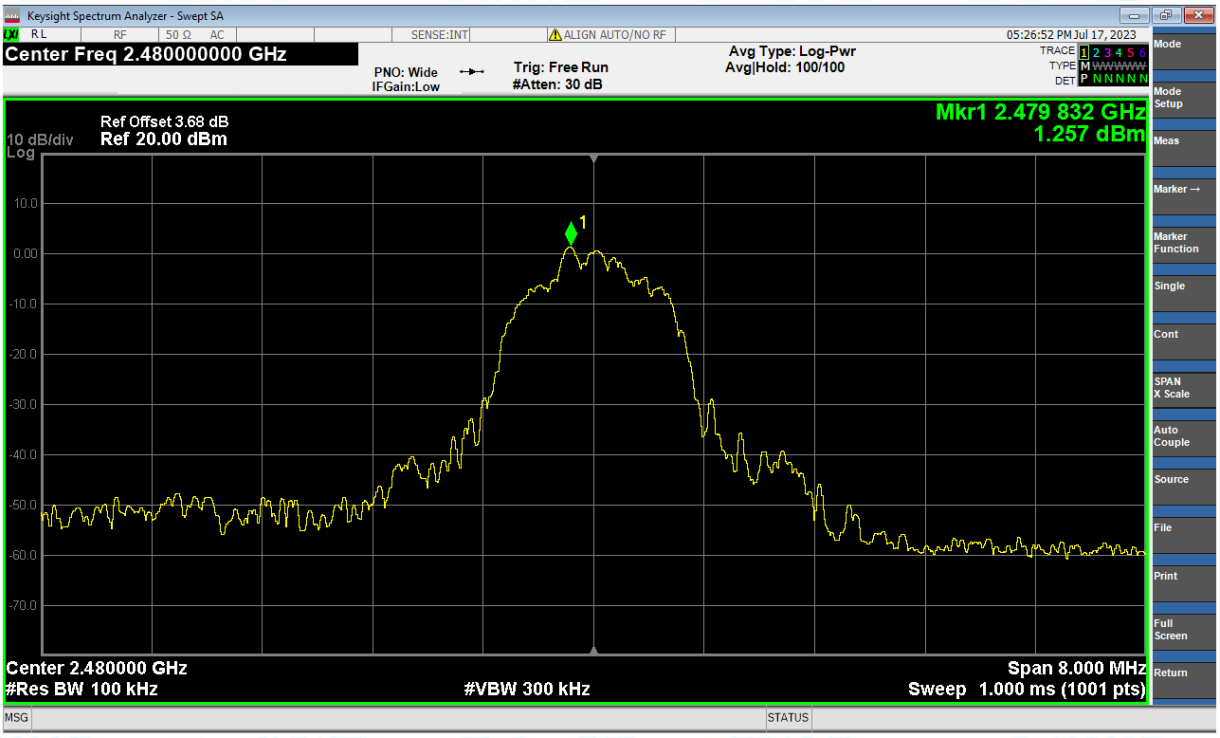
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



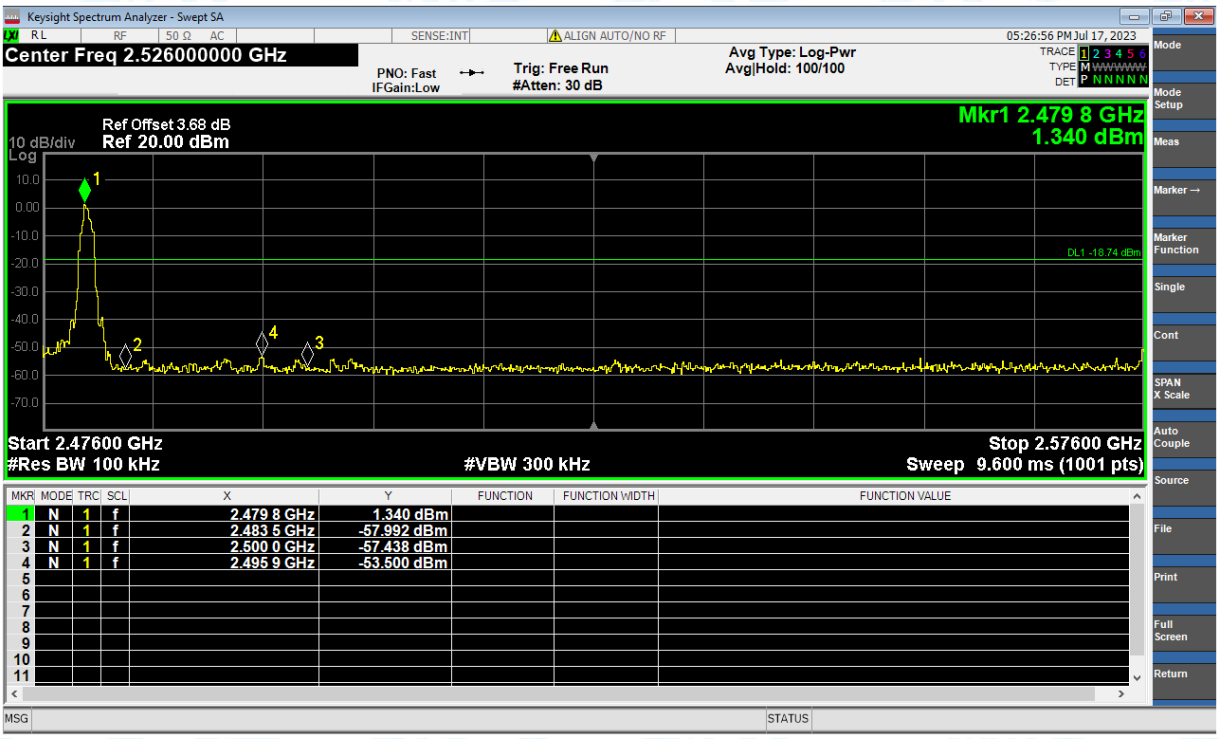
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



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



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



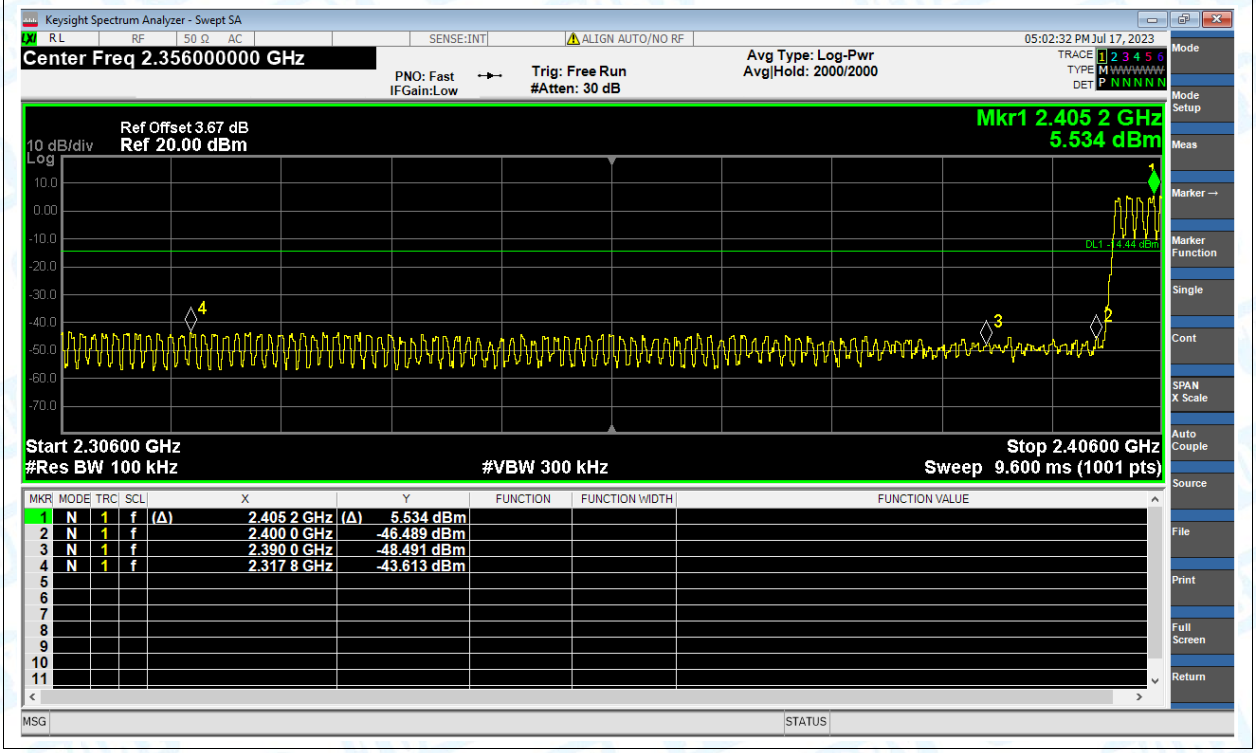
6. Band Edge(Hopping)

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-49.17	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-50.48	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-47.82	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-52.47	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-48.72	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-49.1	-20	Pass

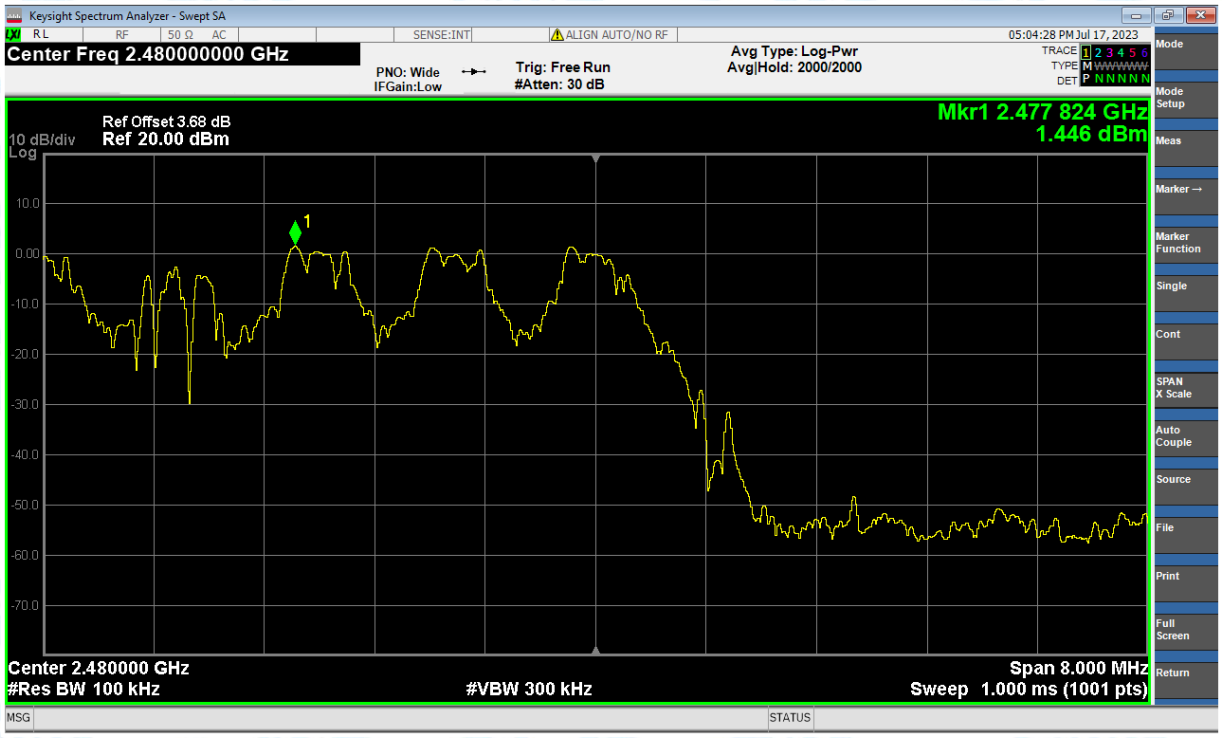
Test Graphs

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

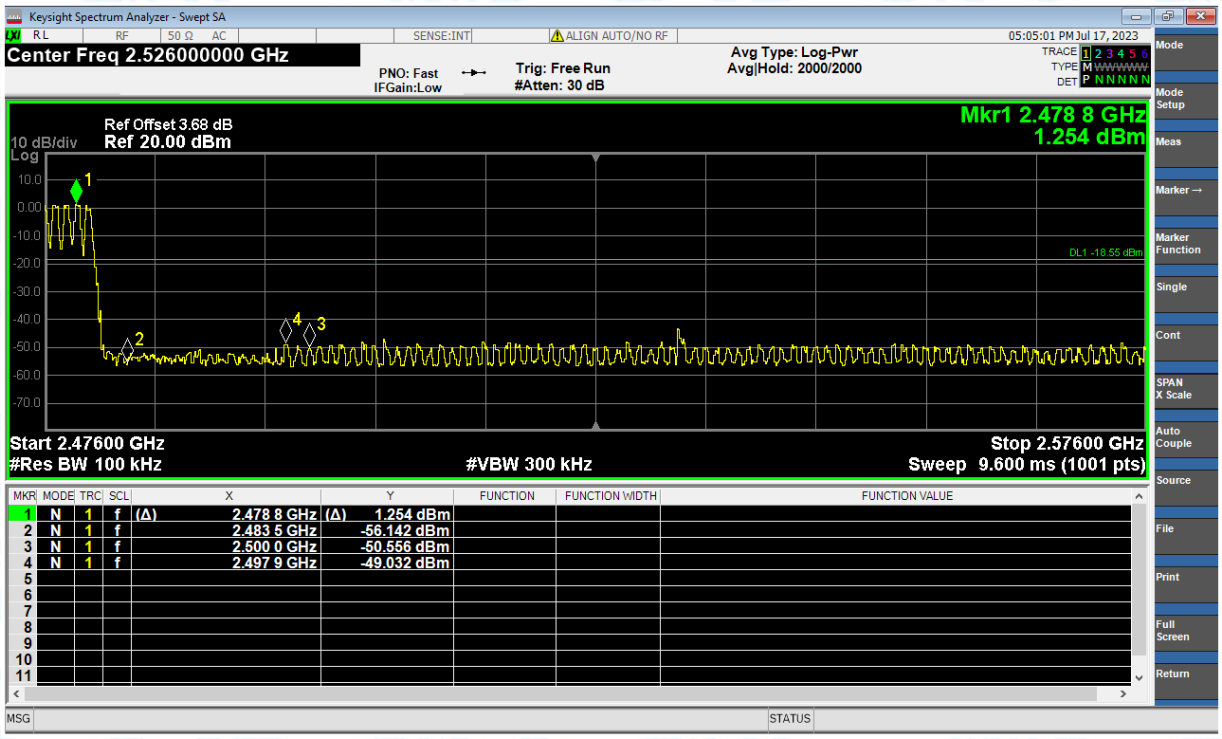
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



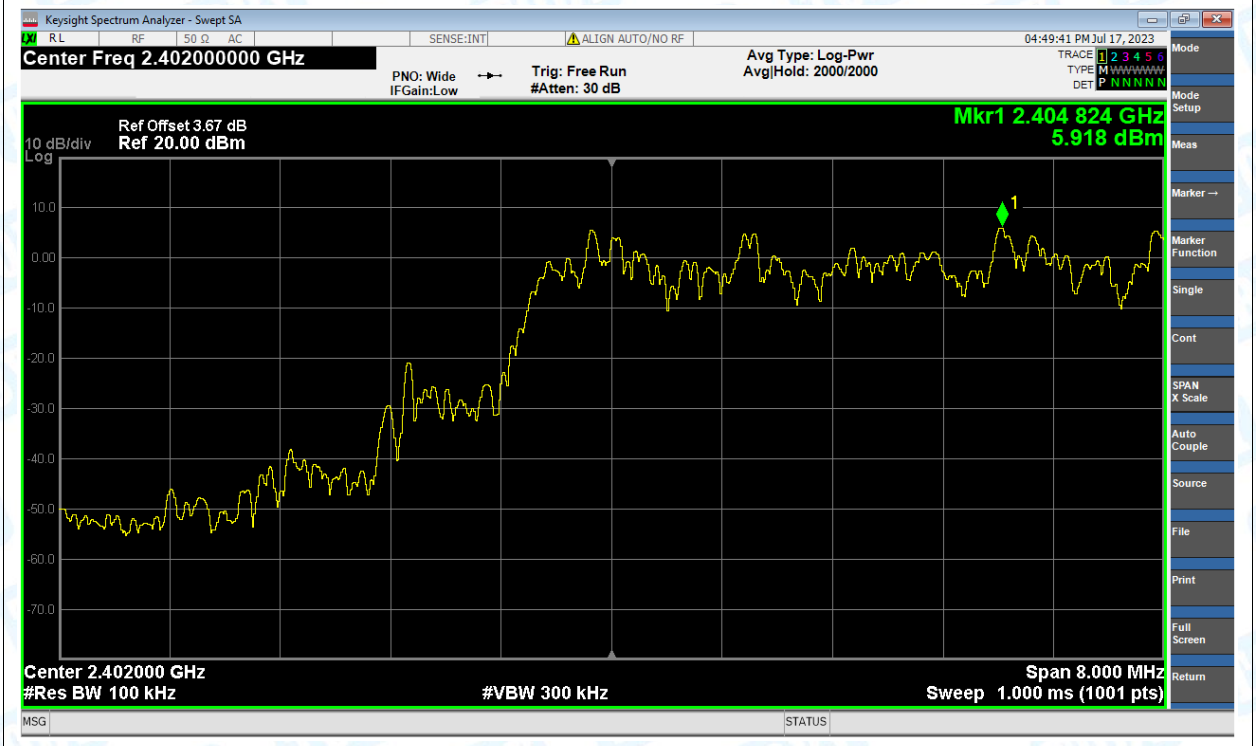
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref



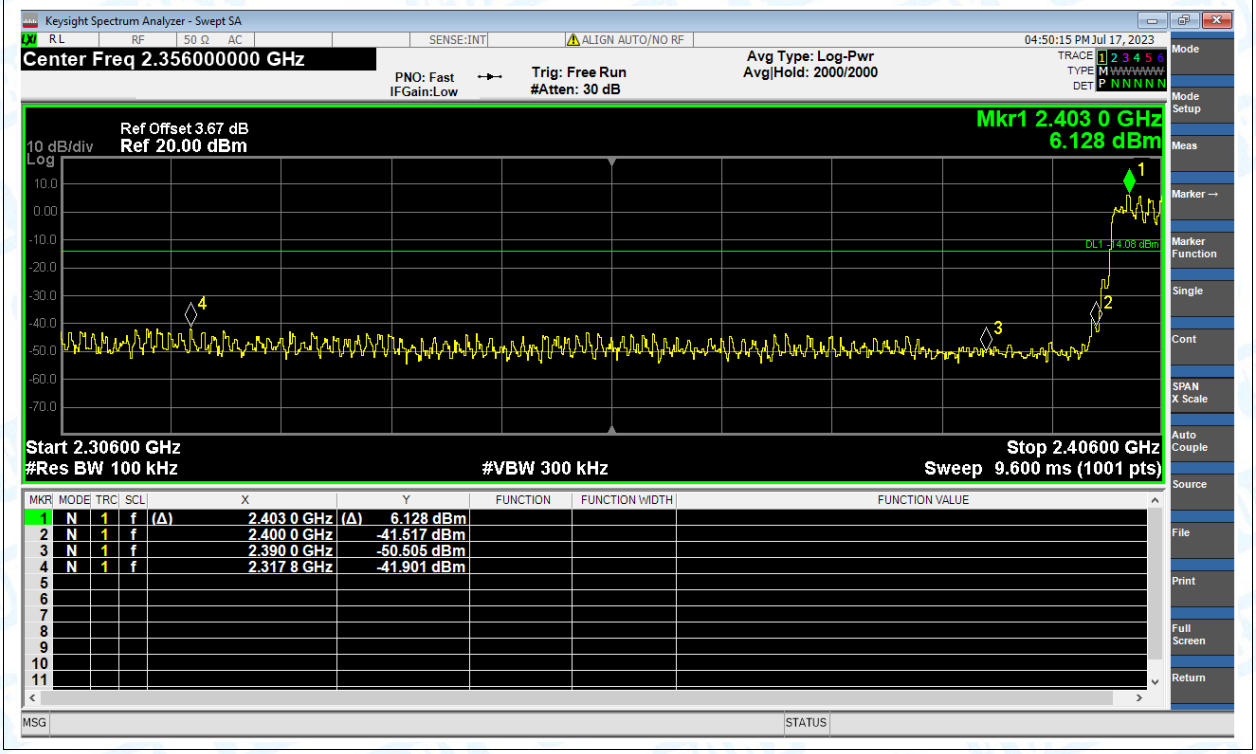
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



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

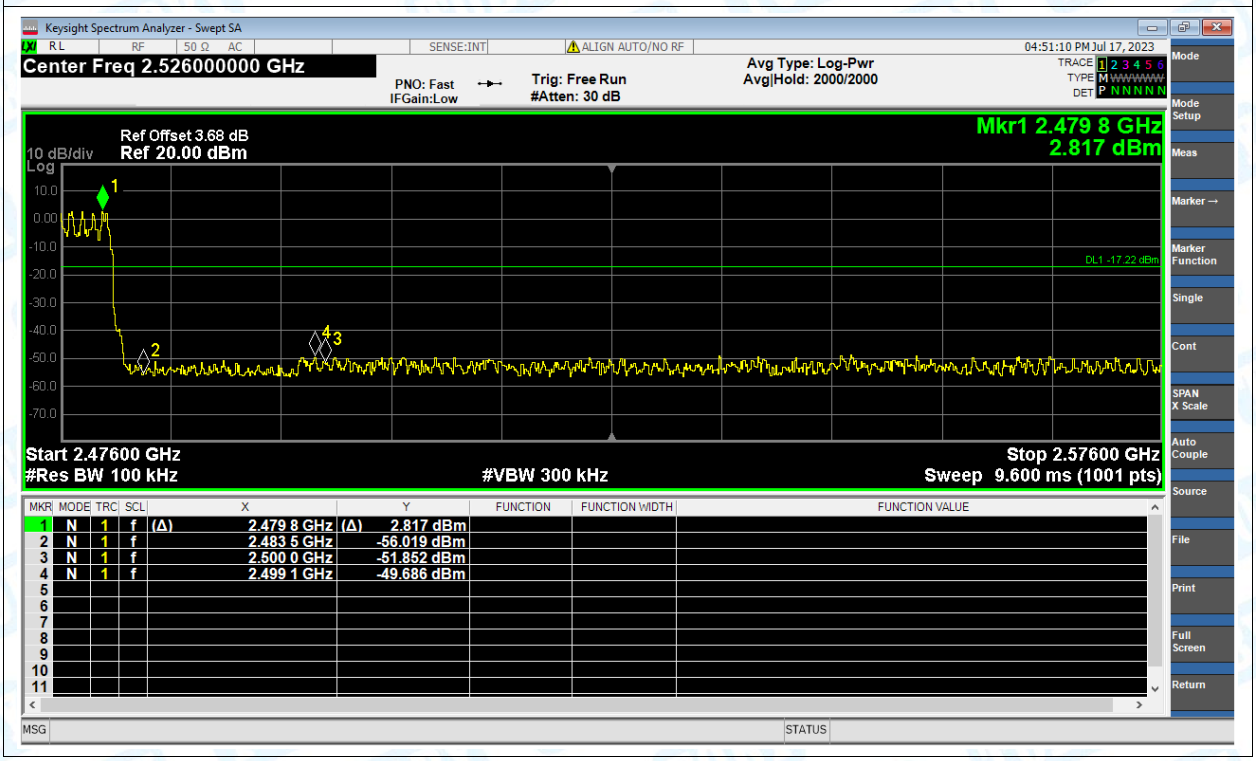


Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



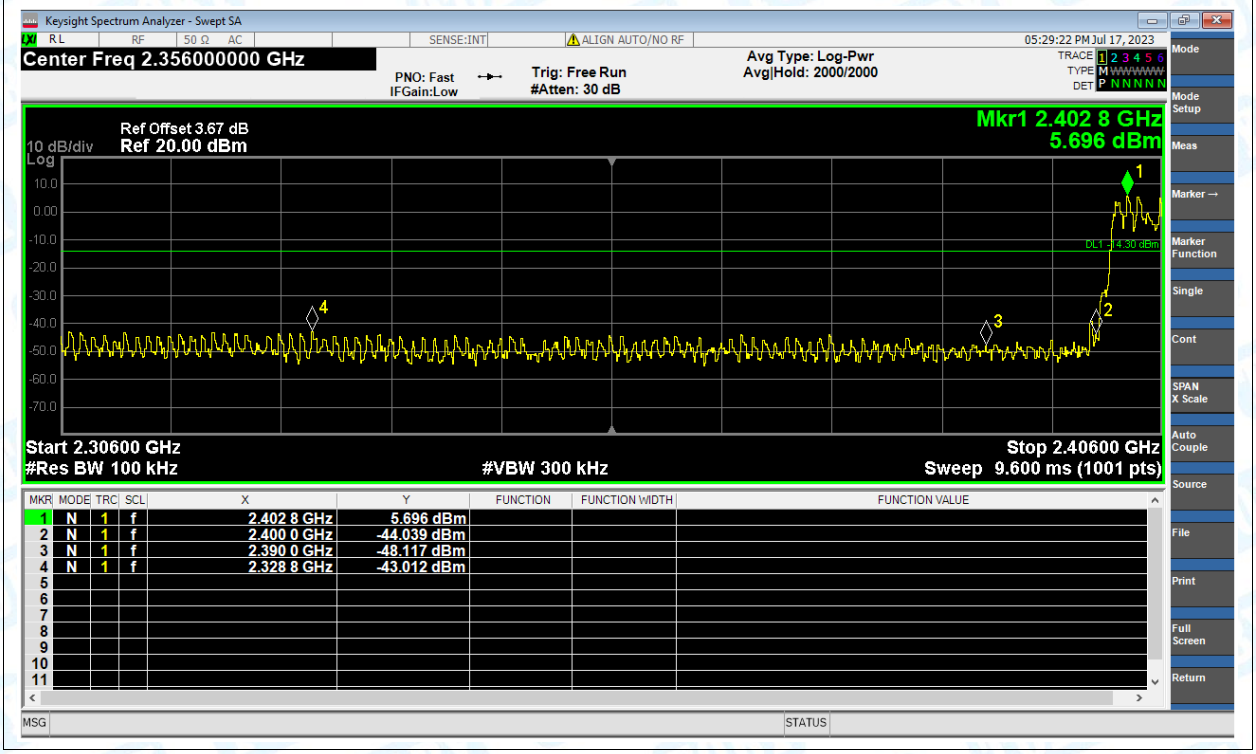
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref

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

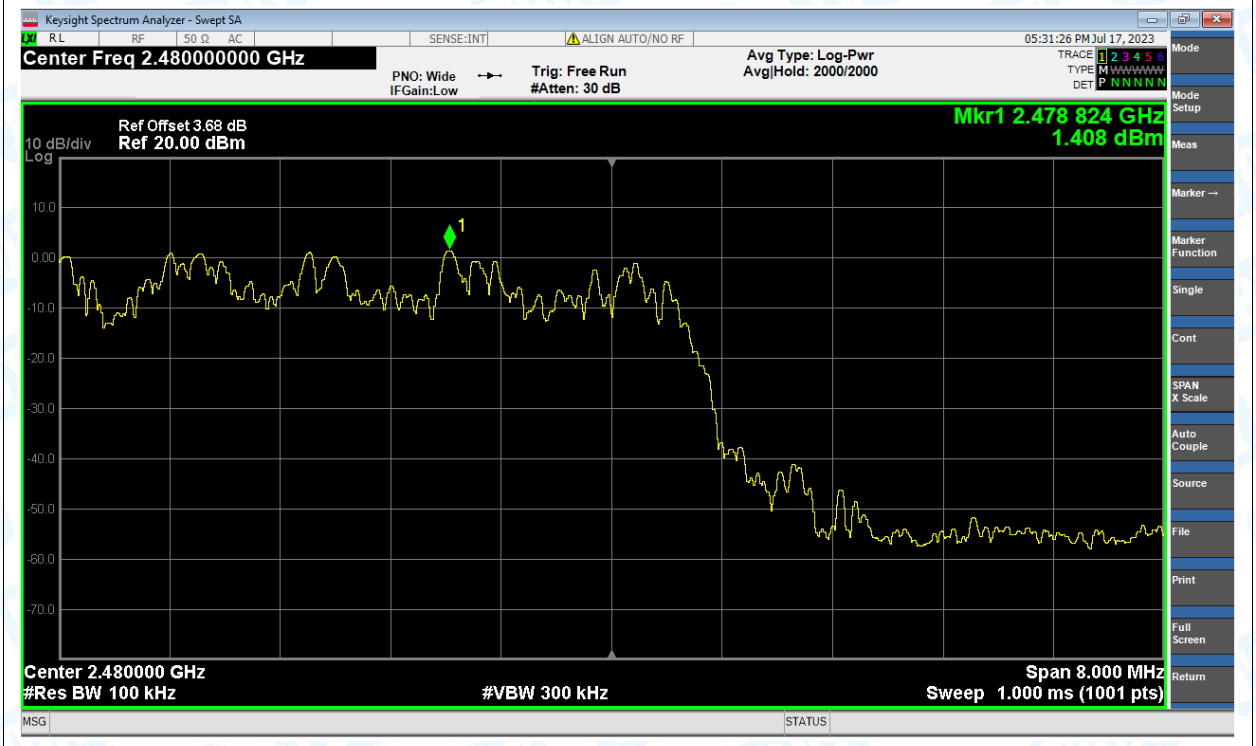


Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref

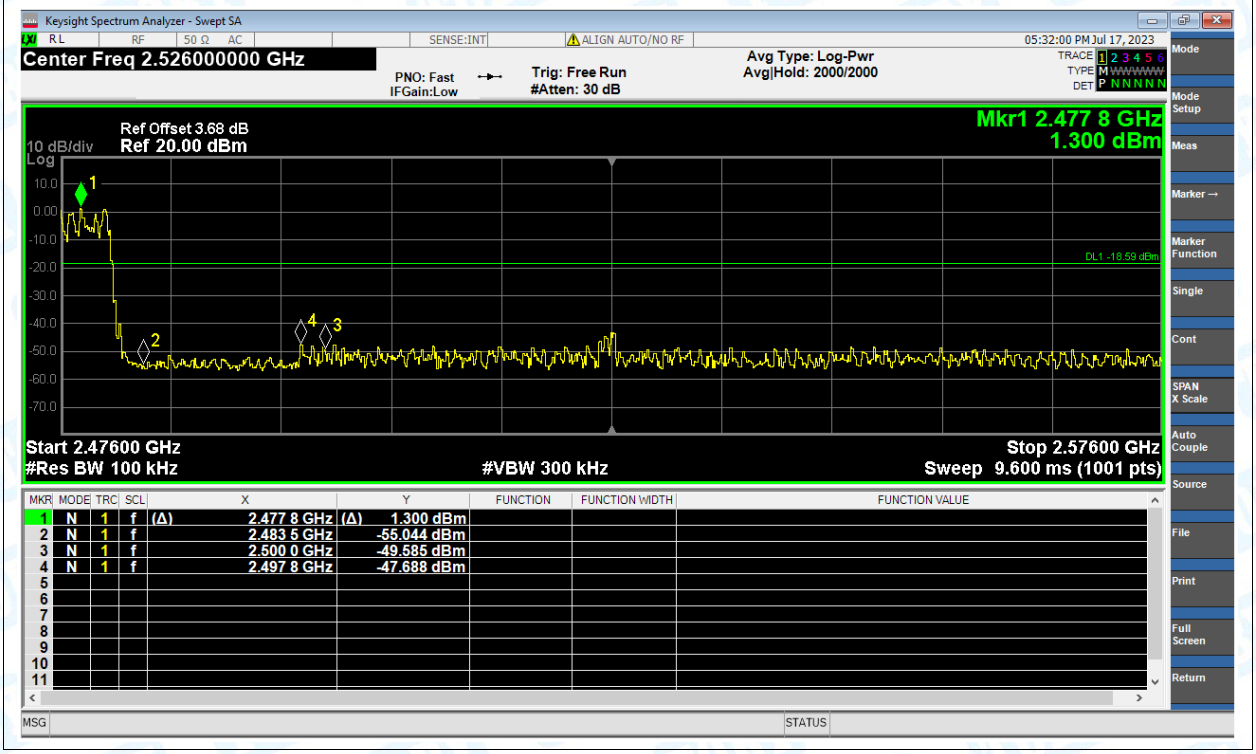
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



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



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

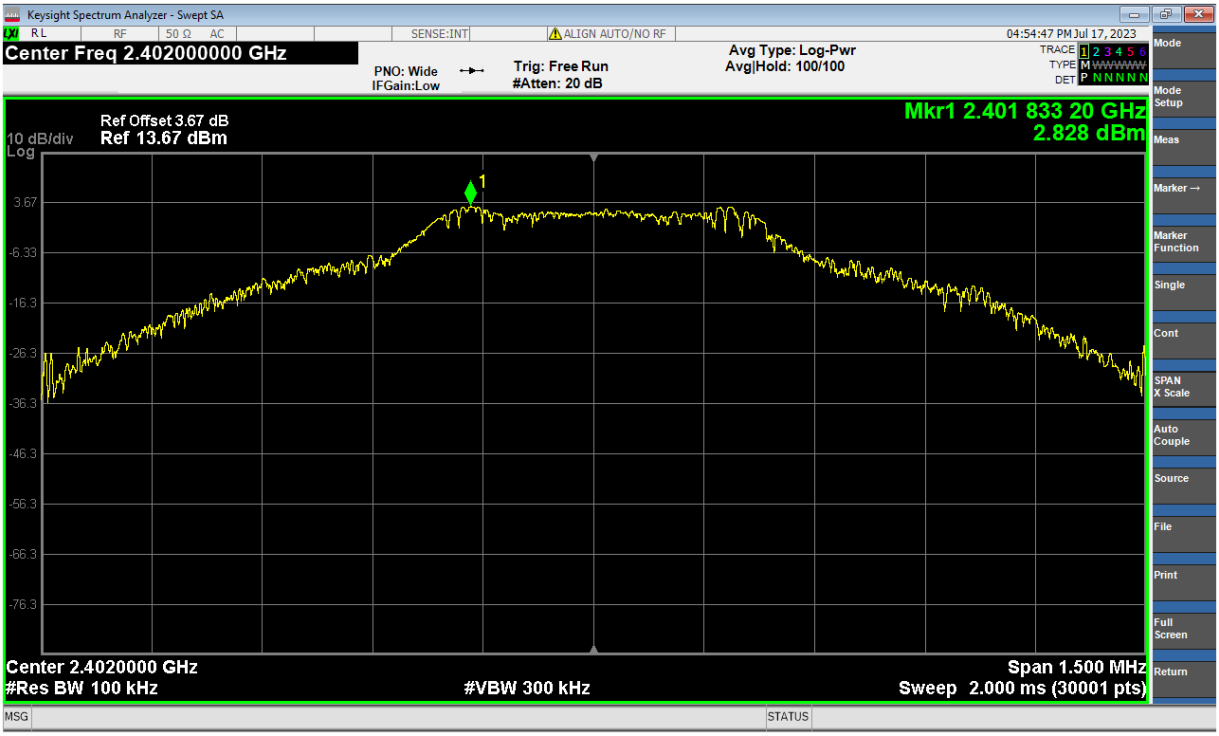


7. Conducted RF Spurious Emission

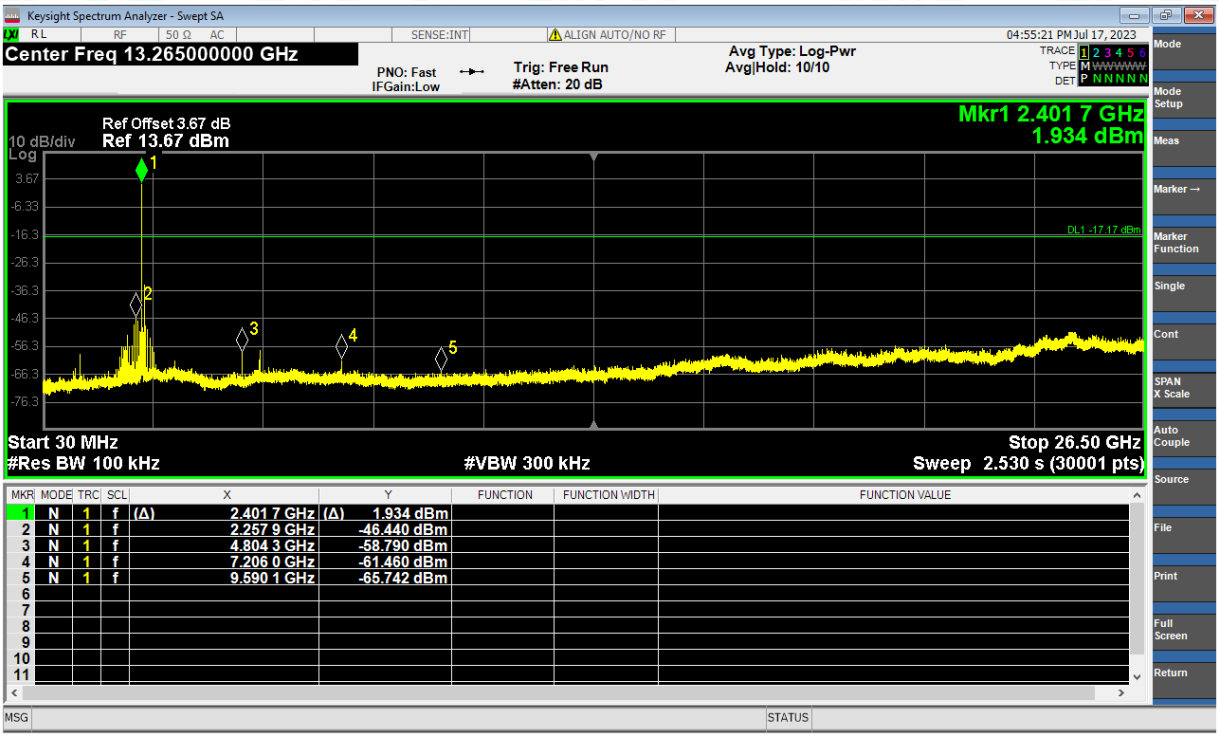
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-49.27	-20	Pass
NVNT	1-DH1	2441	Ant1	-50.25	-20	Pass
NVNT	1-DH1	2480	Ant1	-47.78	-20	Pass
NVNT	2-DH1	2402	Ant1	-49.33	-20	Pass
NVNT	2-DH1	2441	Ant1	-36.59	-20	Pass
NVNT	2-DH1	2480	Ant1	-49.31	-20	Pass
NVNT	3-DH1	2402	Ant1	-51.26	-20	Pass
NVNT	3-DH1	2441	Ant1	-45.85	-20	Pass
NVNT	3-DH1	2480	Ant1	-48.35	-20	Pass

Test Graphs

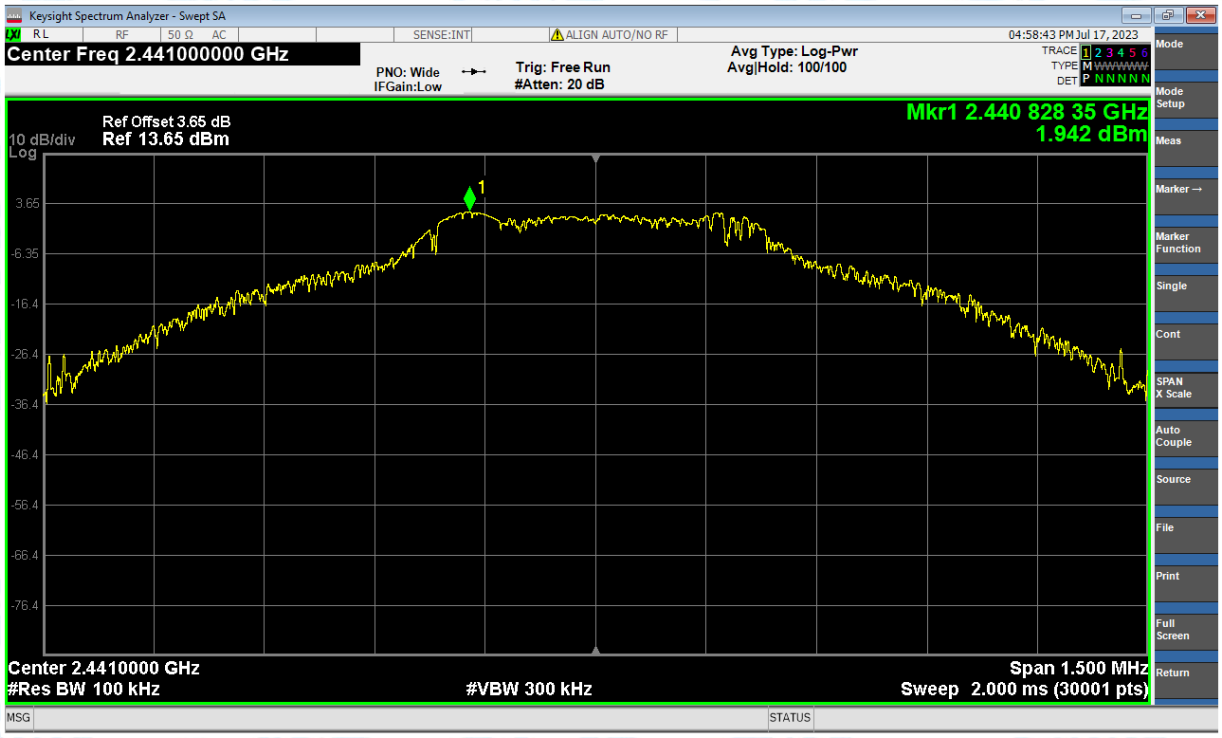
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



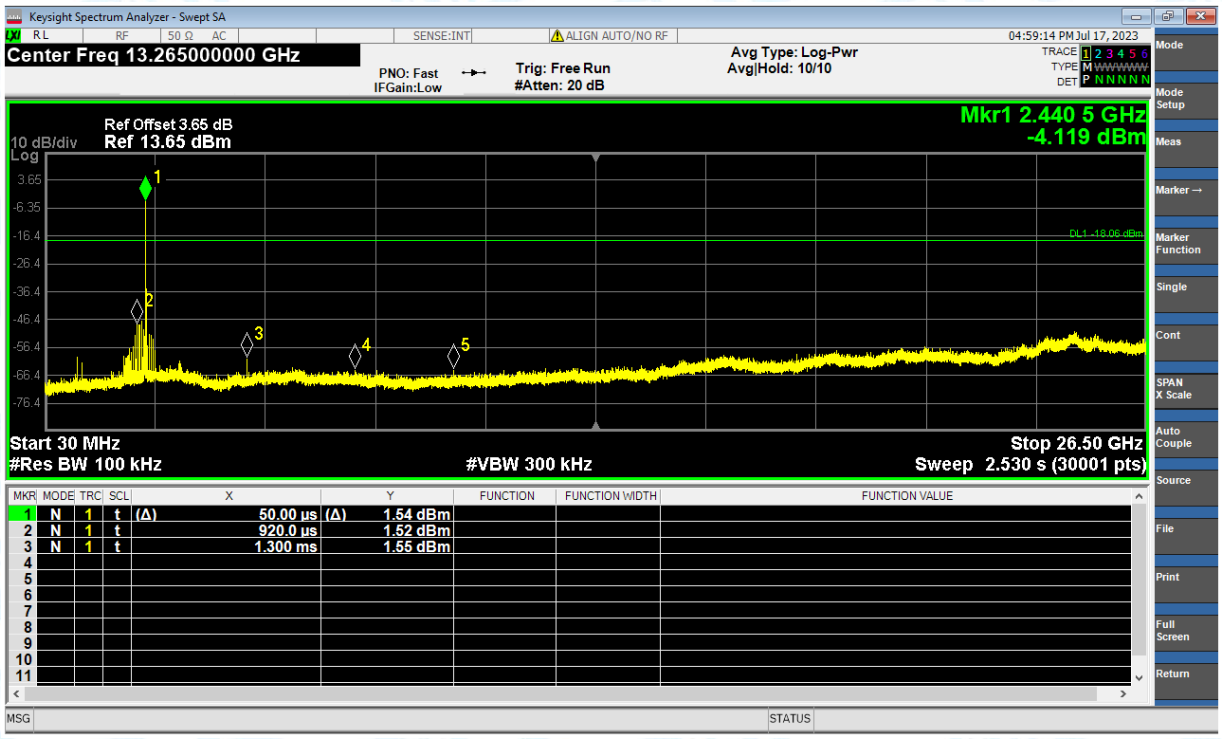
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



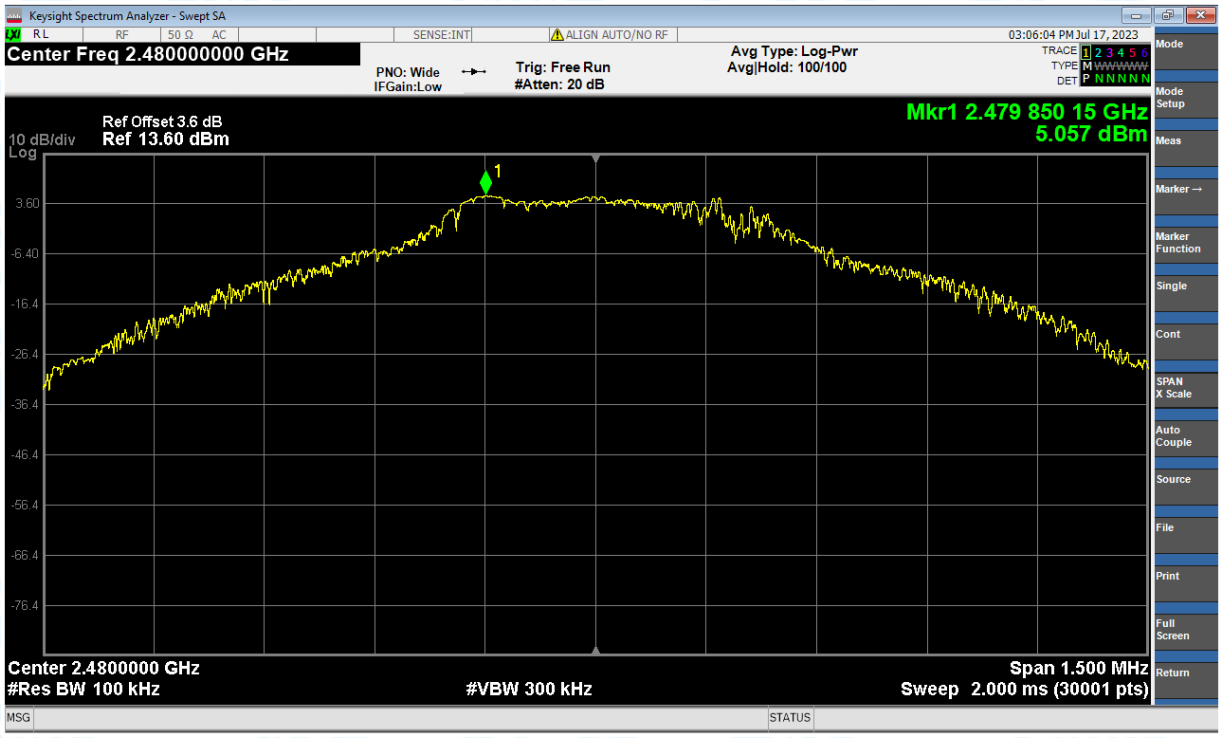
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



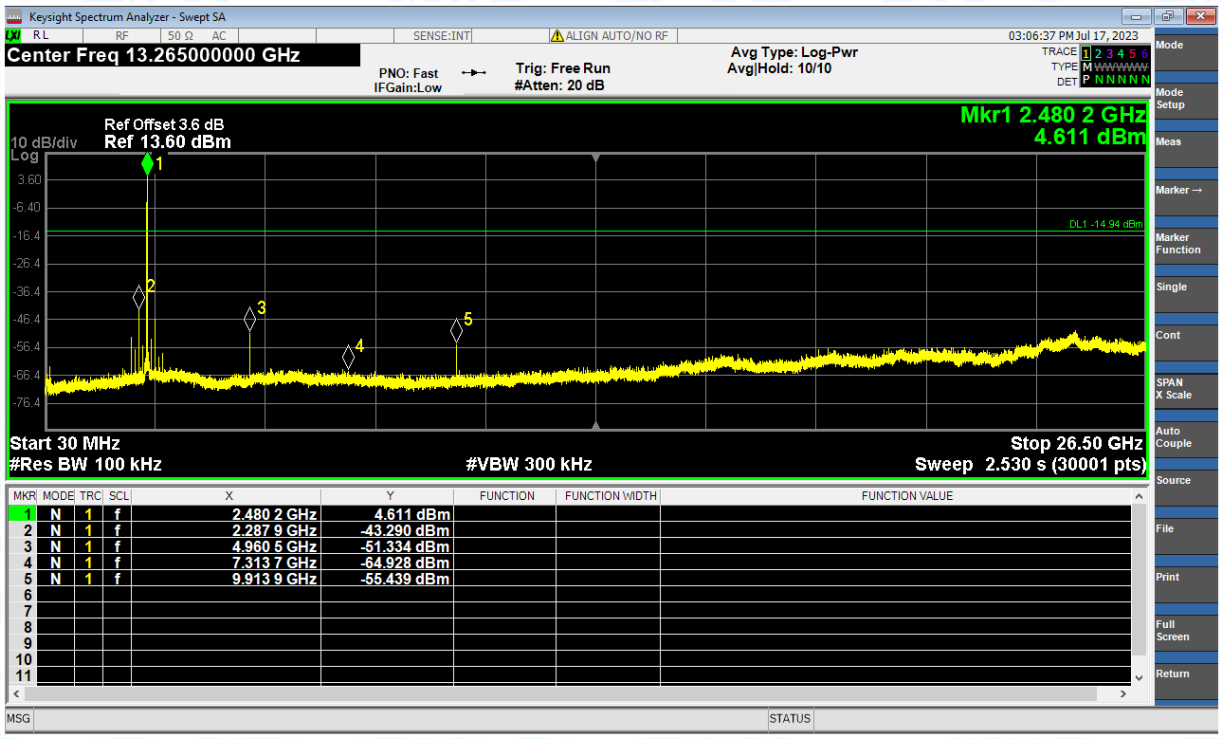
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



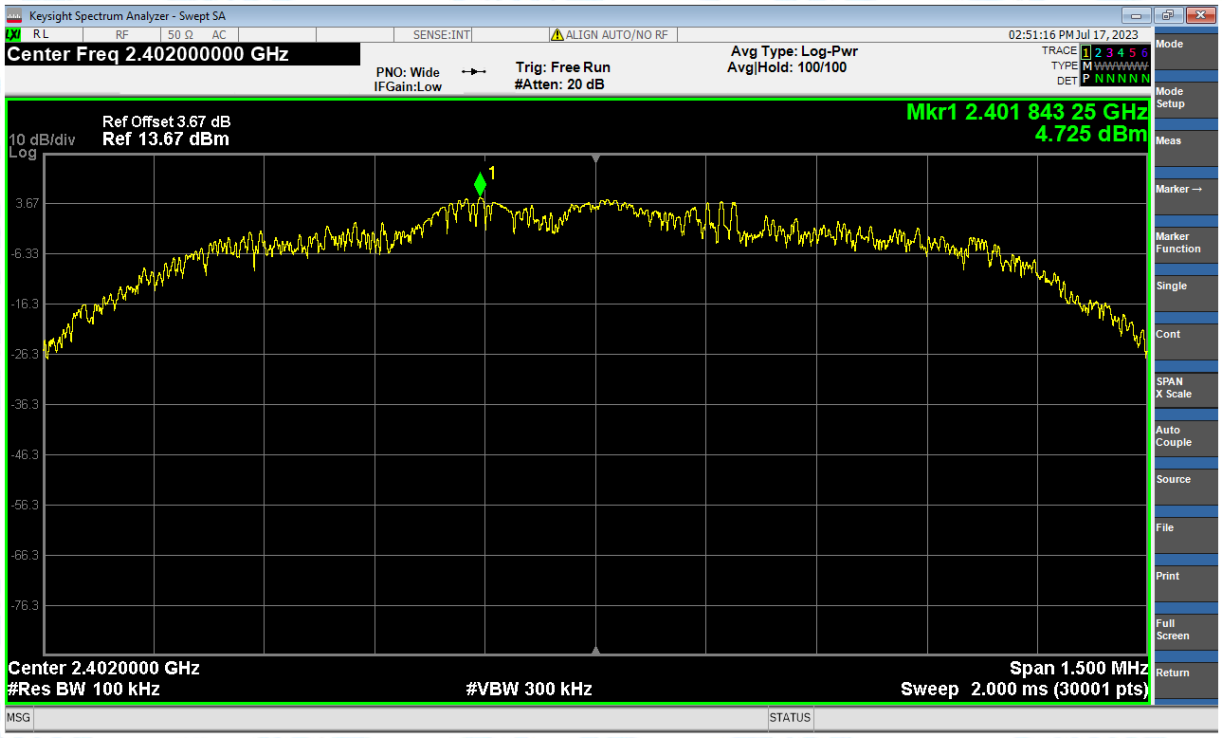
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



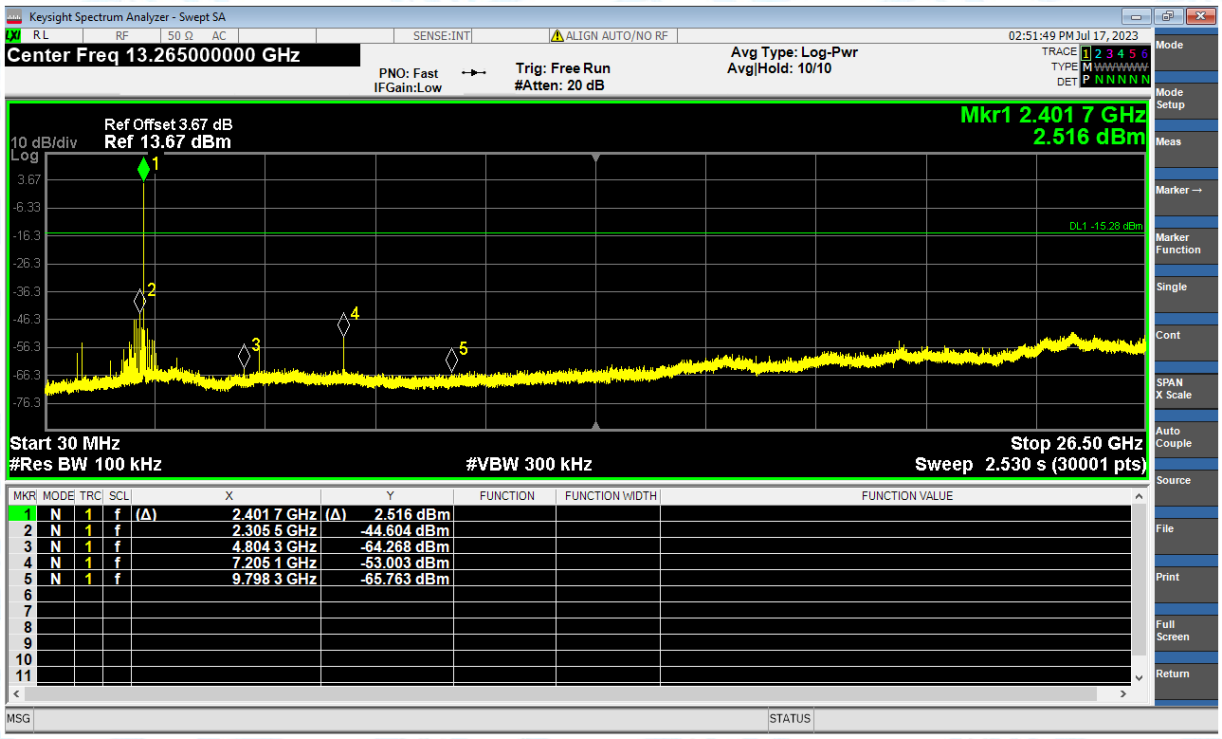
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref

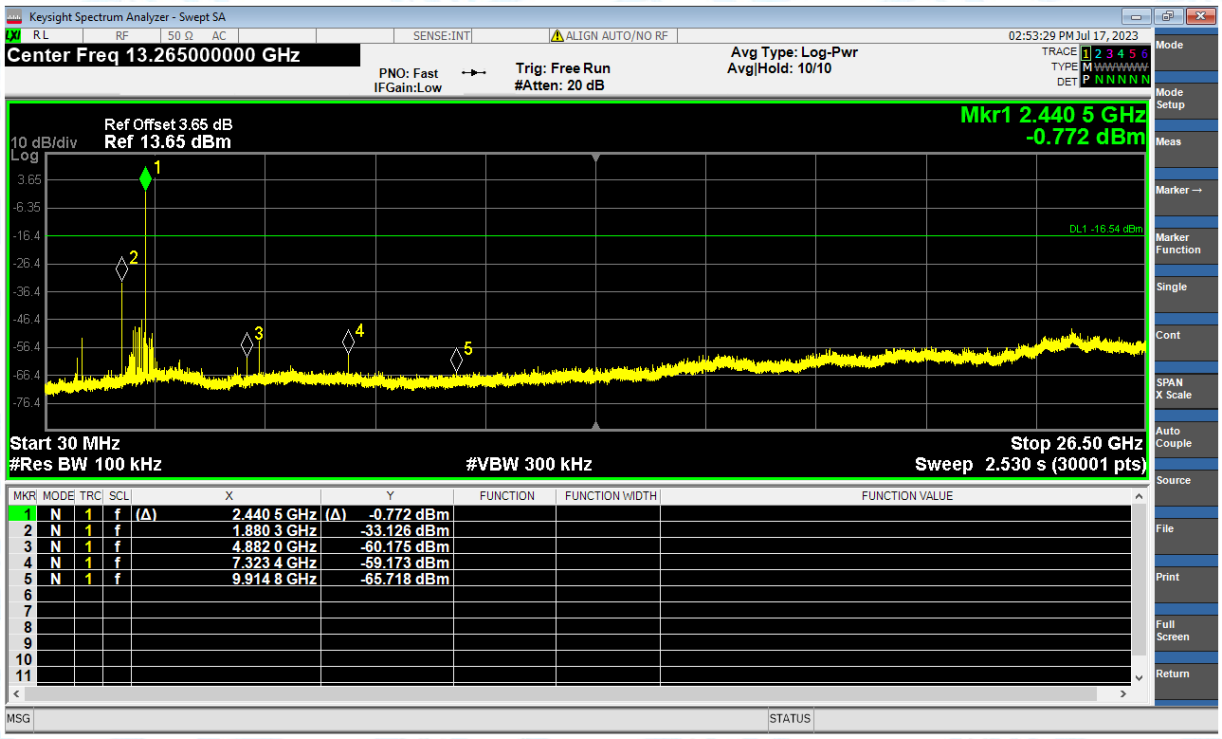


Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission

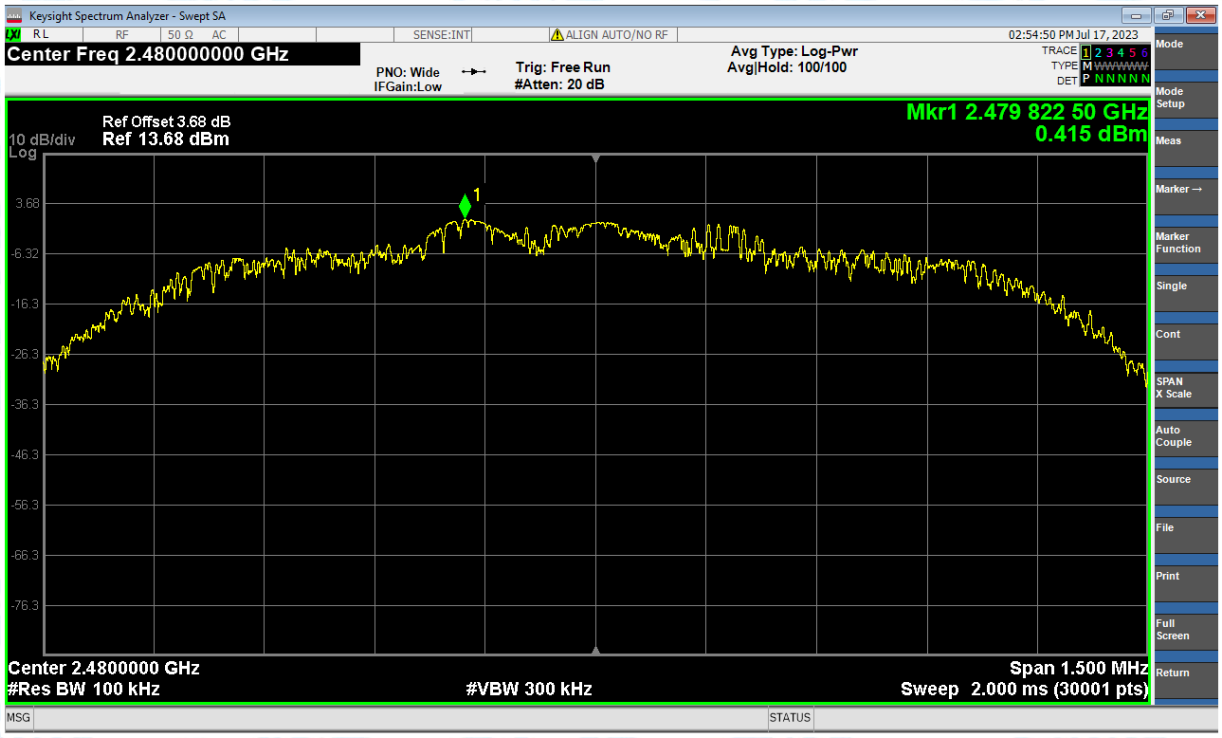


Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref

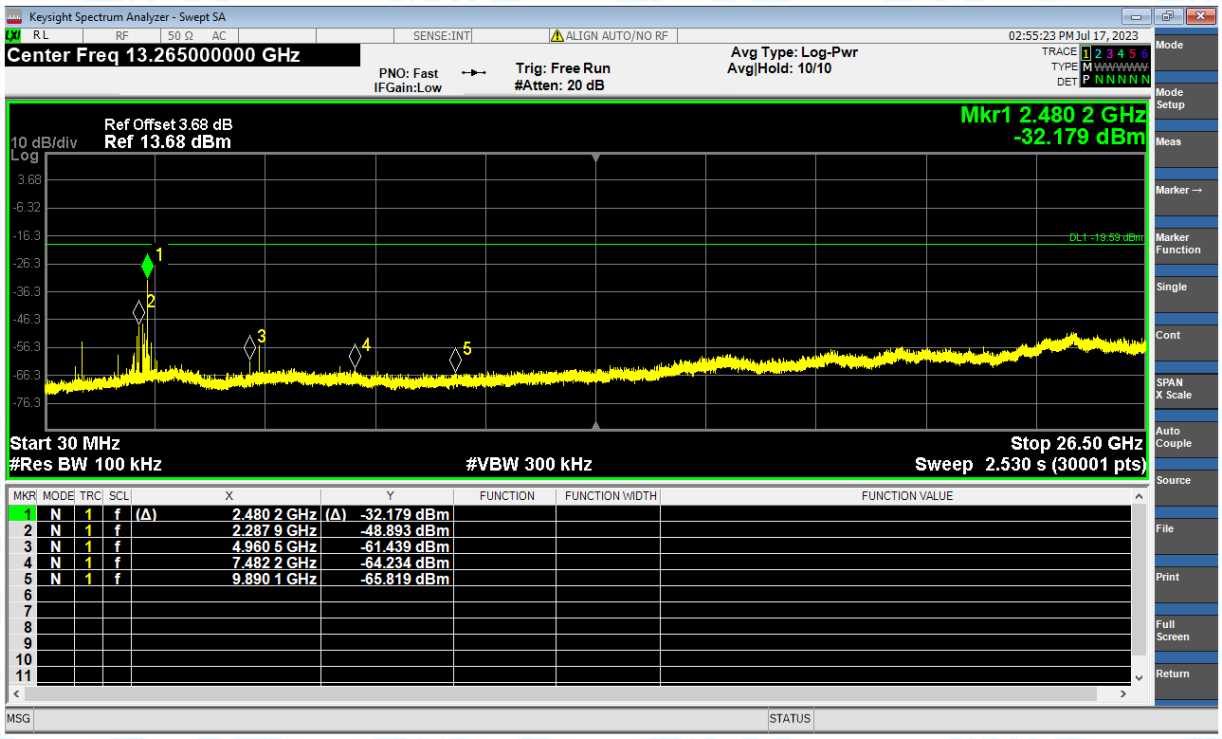
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



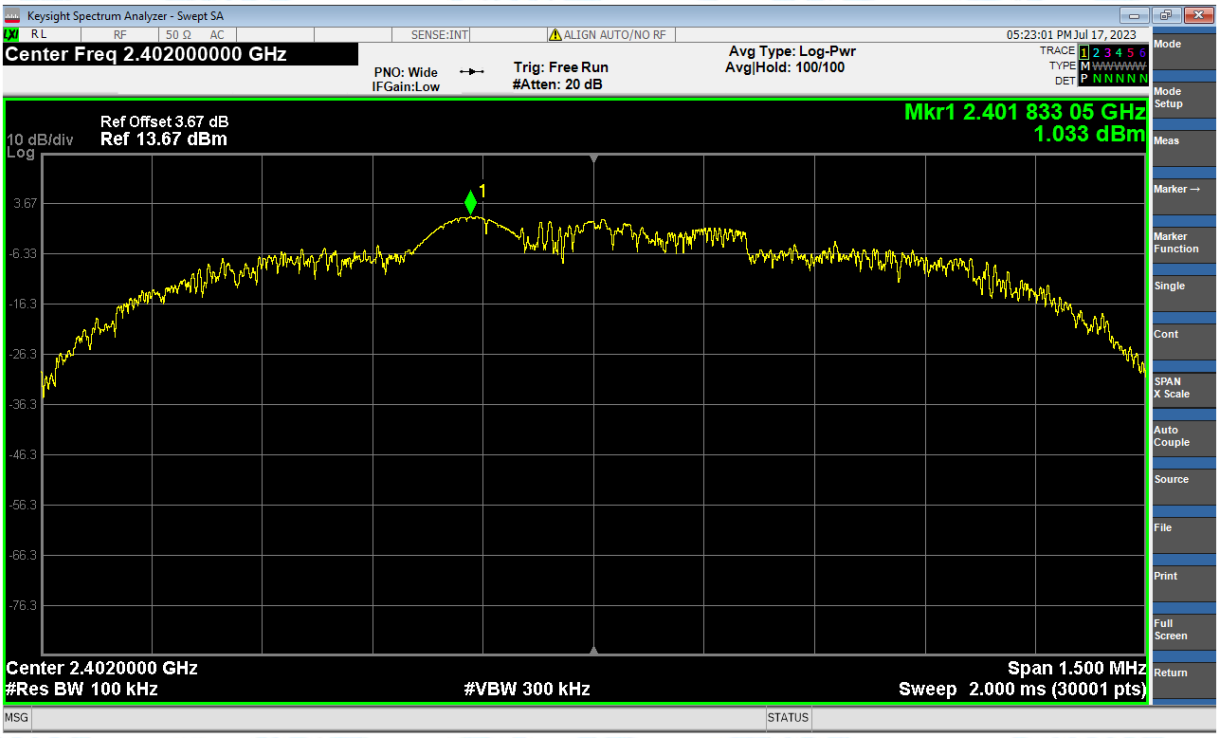
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



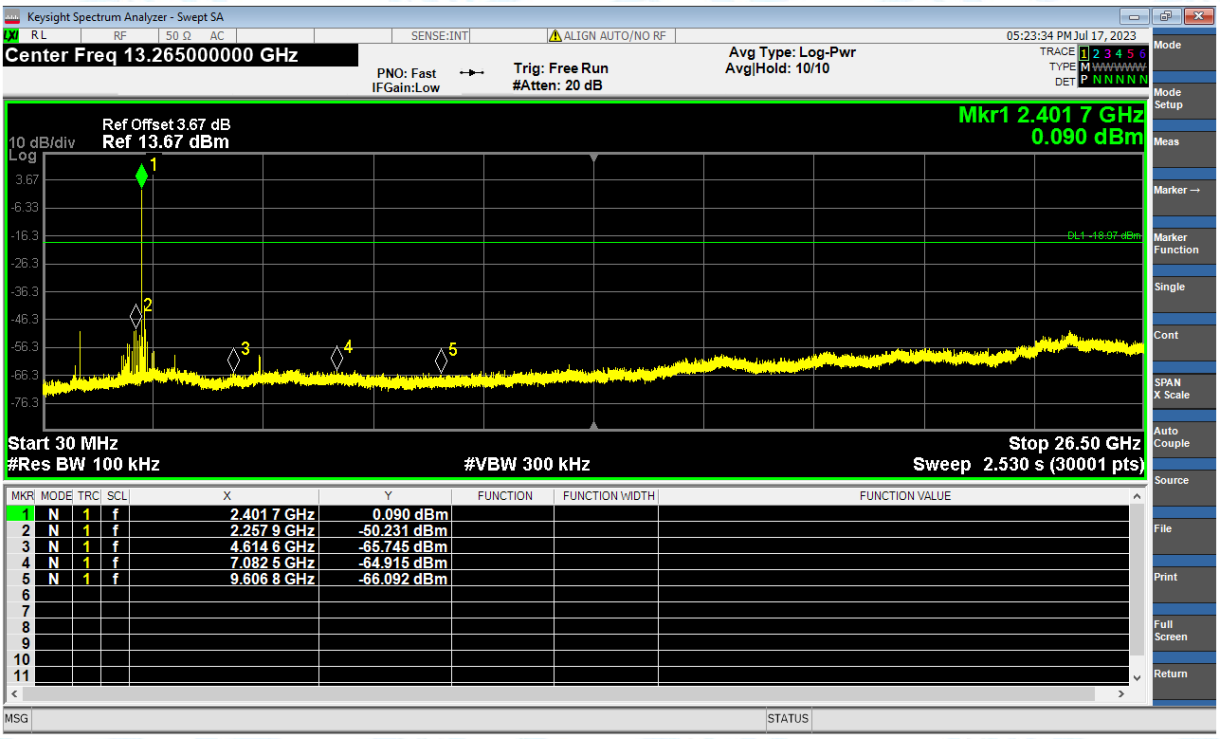
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



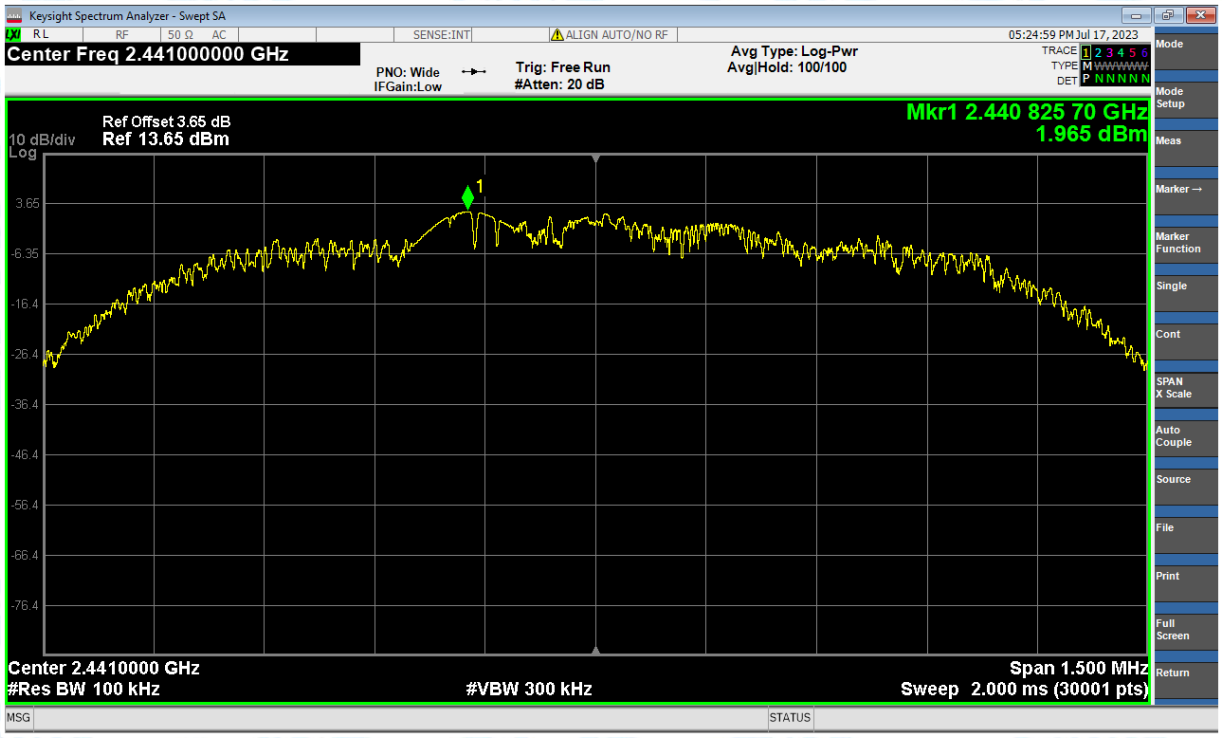
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



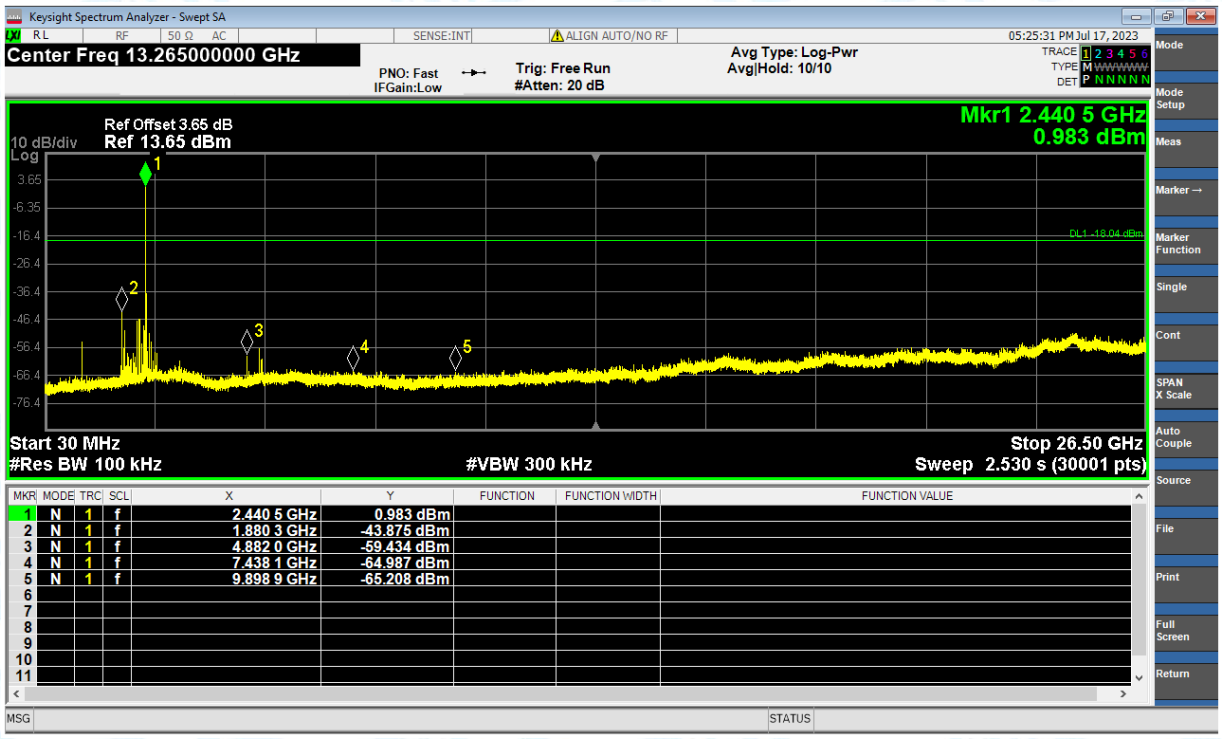
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



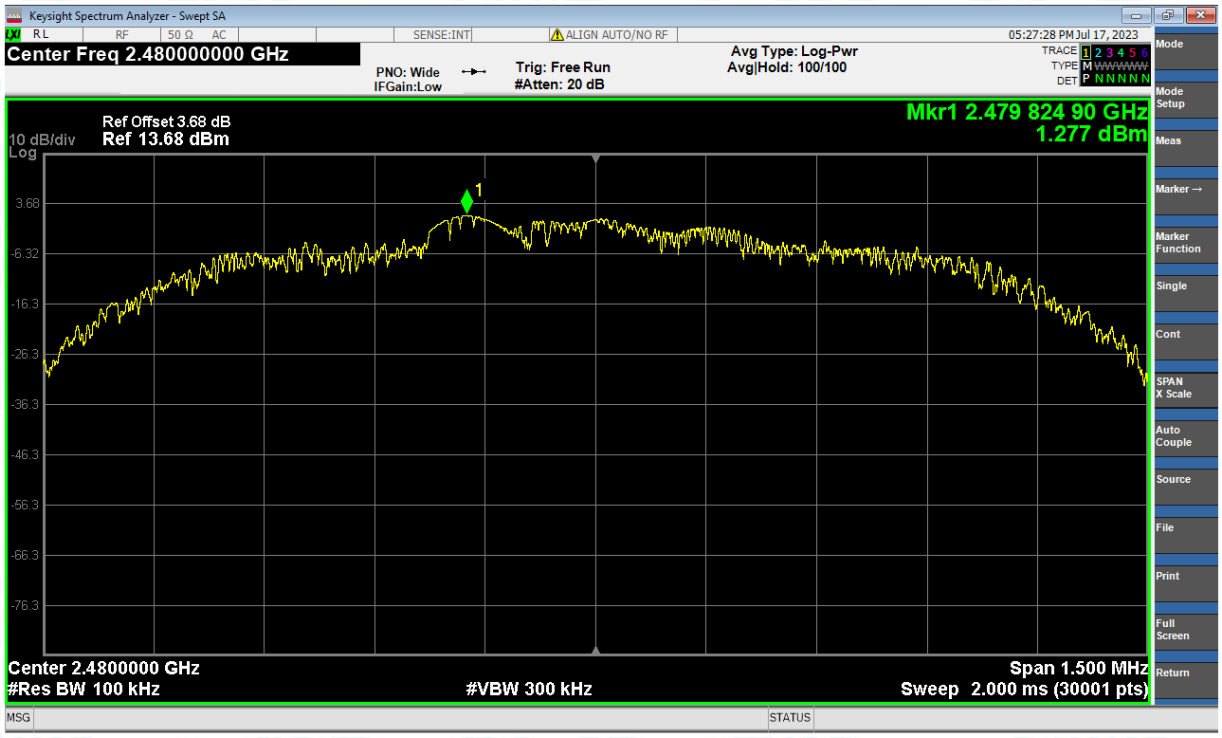
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



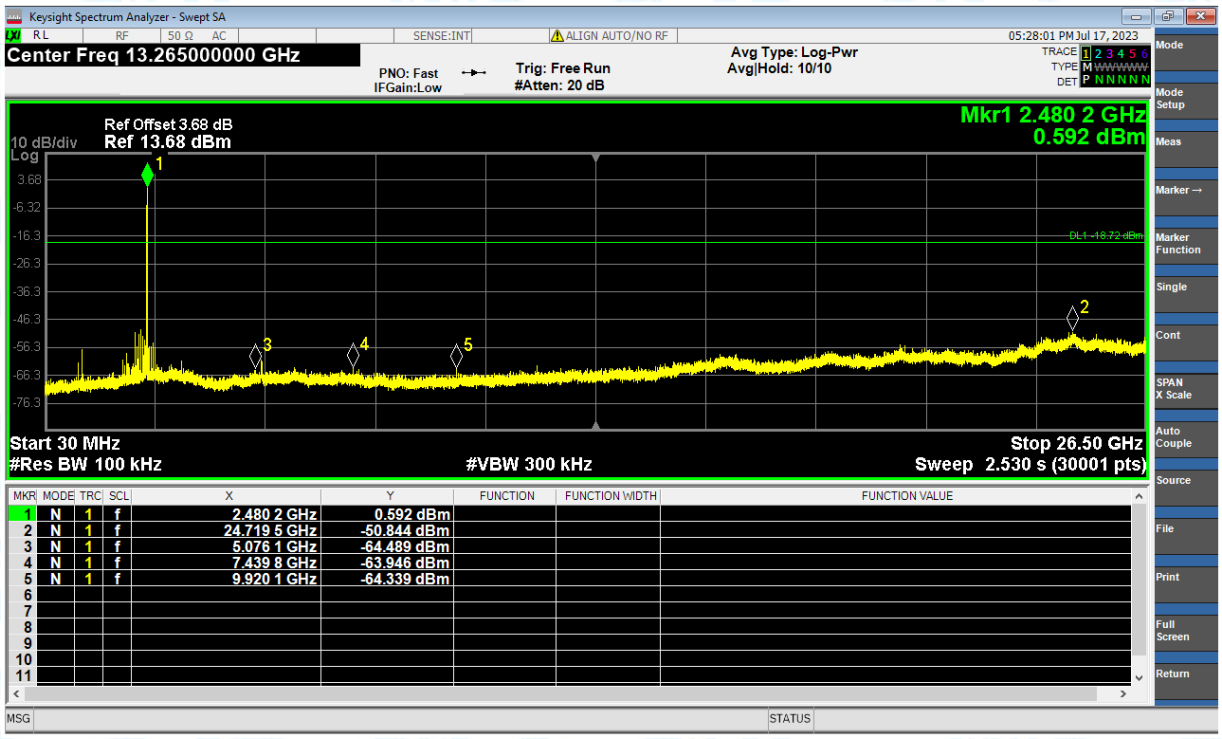
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

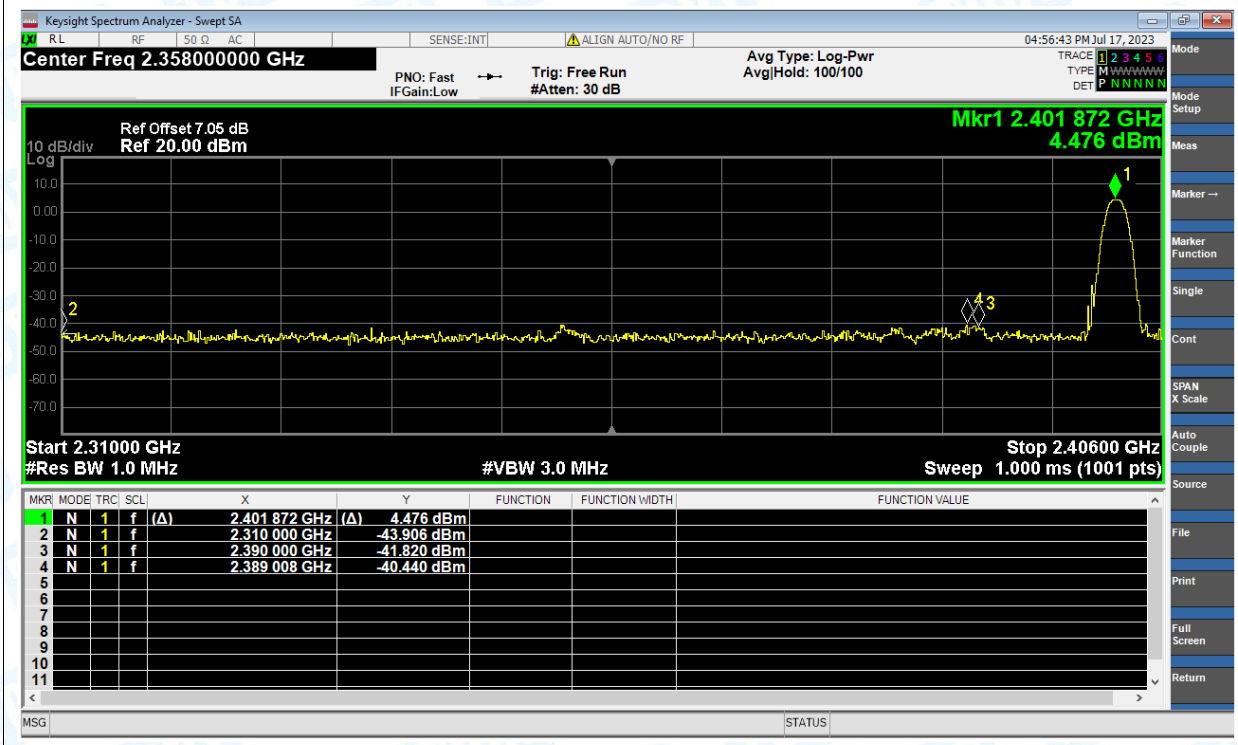


8. Restrict Band

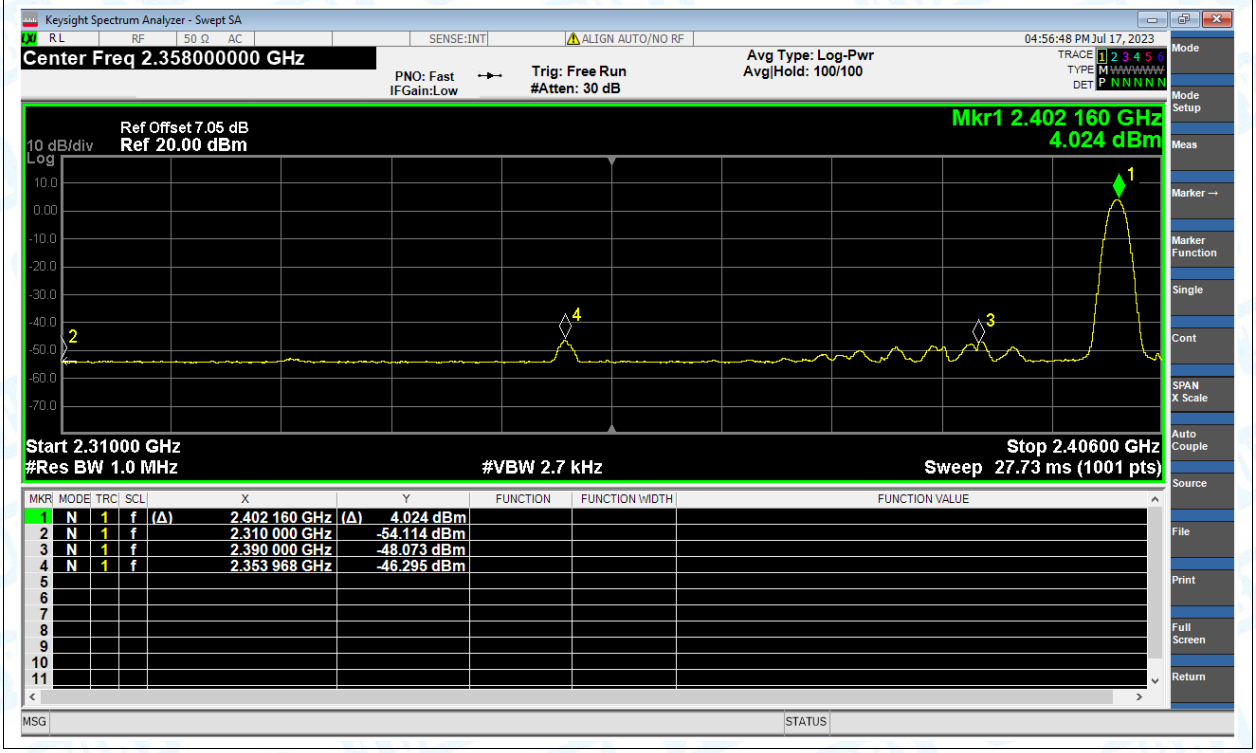
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-43.91	3.38	54.73	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-54.11	3.38	44.53	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2389.008	-40.44	3.38	58.2	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2353.968	-46.29	3.38	52.35	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-41.71	3.38	56.93	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-47.15	3.38	51.49	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-41.86	3.38	56.78	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-53.4	3.38	45.24	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2494.984	-41	3.38	57.64	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2492.104	-48.45	3.38	50.19	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-42.97	3.38	55.67	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-53	3.38	45.64	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-45.75	3.38	52.89	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-54.76	3.38	43.88	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2353.872	-40.07	3.38	58.57	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2354.064	-46.75	3.38	51.89	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-41.31	3.38	57.33	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-52.42	3.38	46.22	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-44.22	3.38	54.42	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-53.36	3.38	45.28	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2484.688	-40.5	3.38	58.14	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2491.528	-49.92	3.38	48.72	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-45.58	3.38	53.06	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-53.73	3.38	44.91	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-45.96	3.38	52.68	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-53.99	3.38	44.65	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2388.72	-39.74	3.38	58.9	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2354.352	-48.72	3.38	49.92	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-45.64	3.38	53	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-49.11	3.38	49.53	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-44.32	3.38	54.32	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-53.22	3.38	45.42	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2489.44	-41.25	3.38	57.39	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2492.056	-48.75	3.38	49.89	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-45.76	3.38	52.88	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-53.48	3.38	45.16	Average	54	Pass

Test Graphs

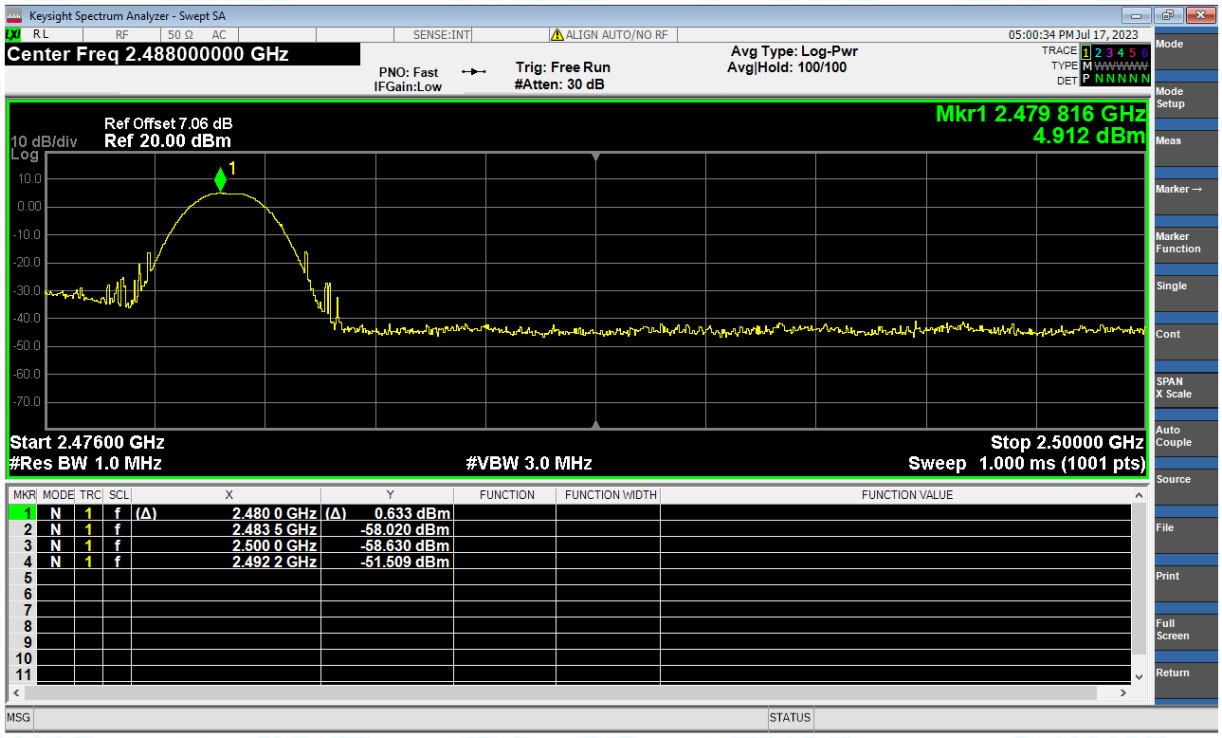
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



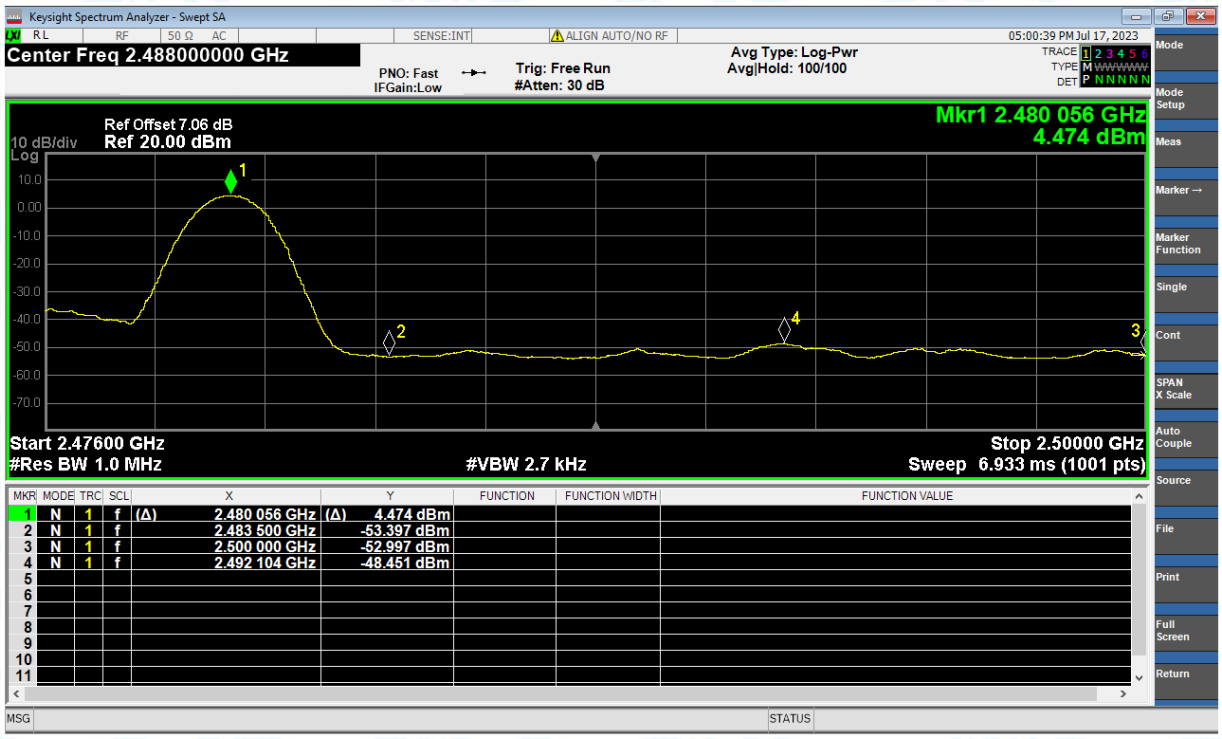
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



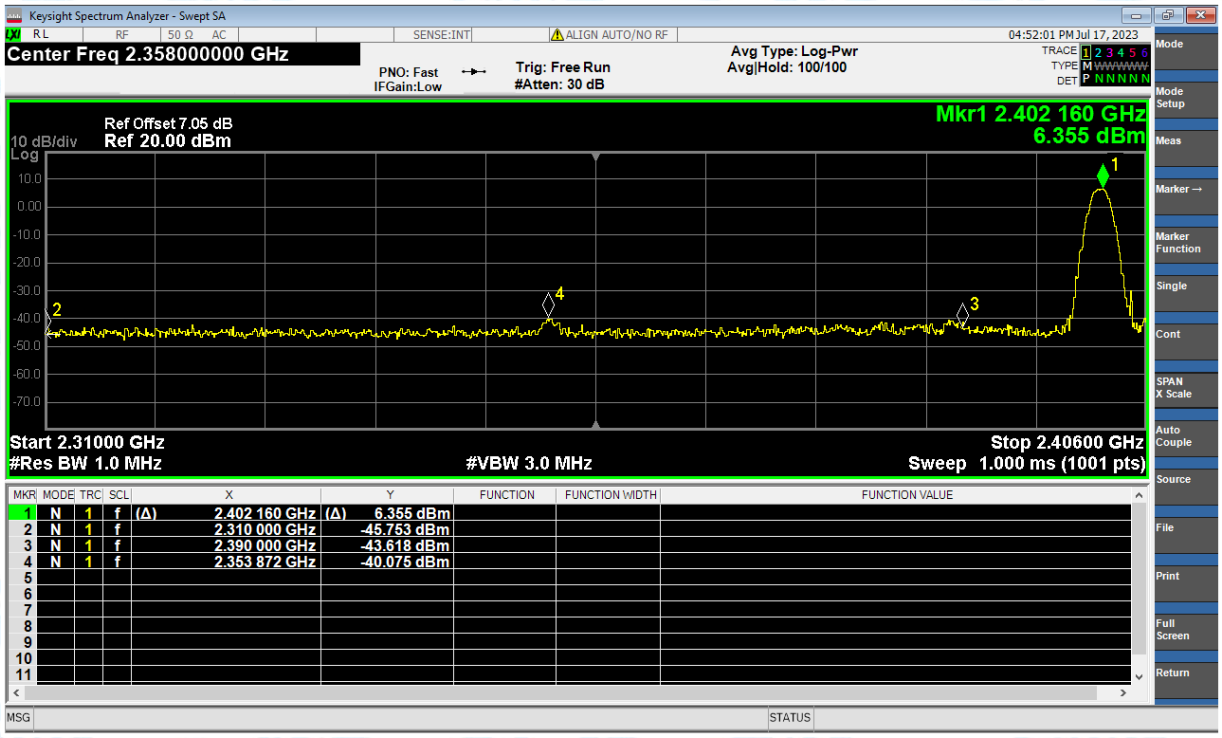
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



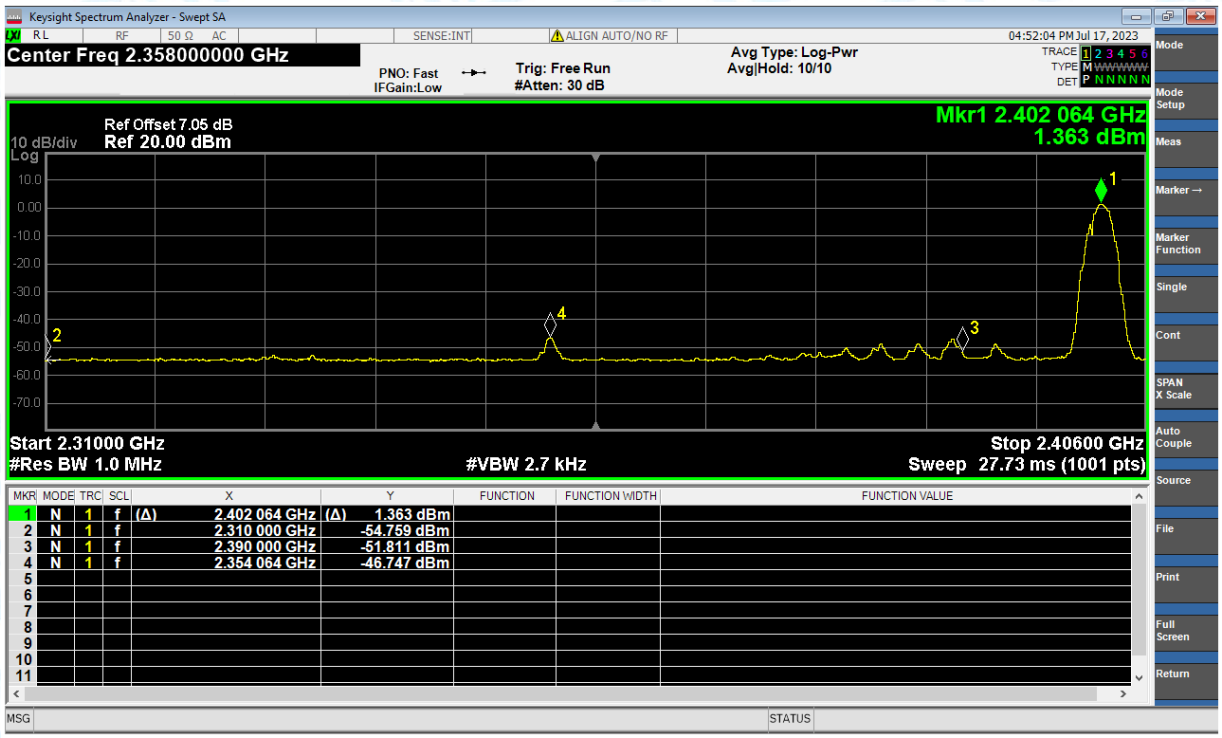
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



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

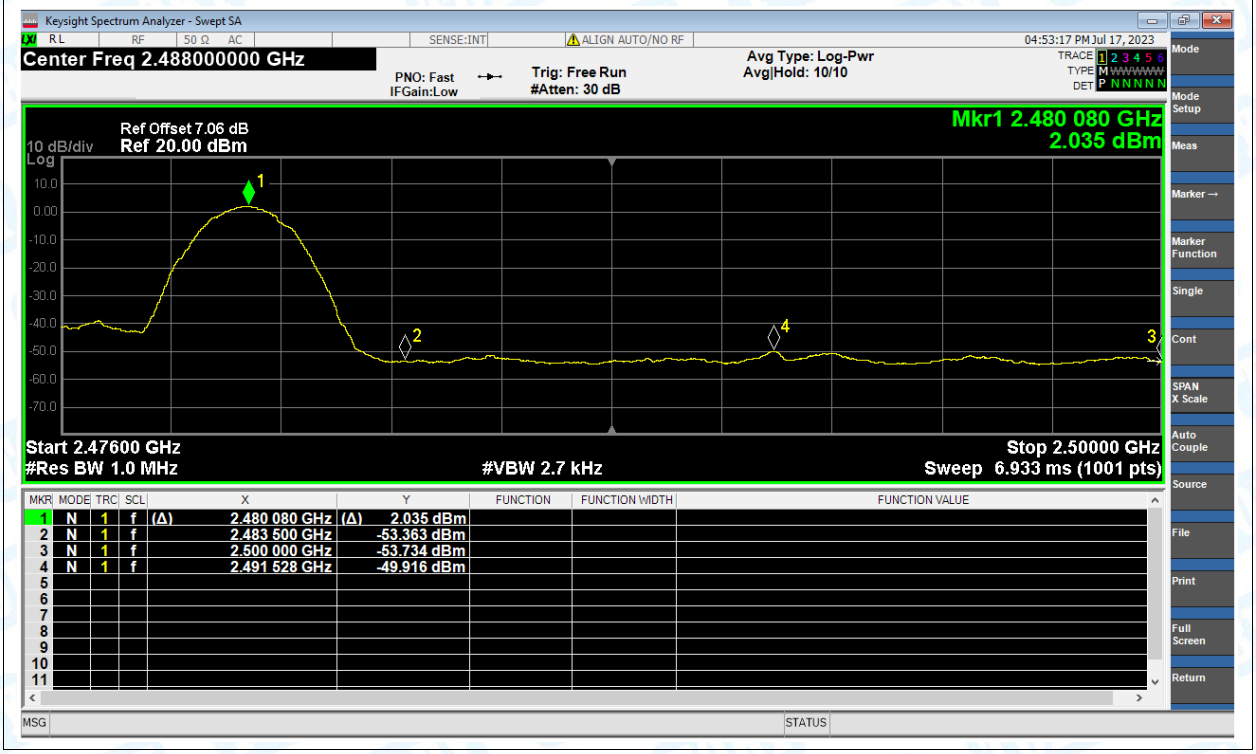


Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average

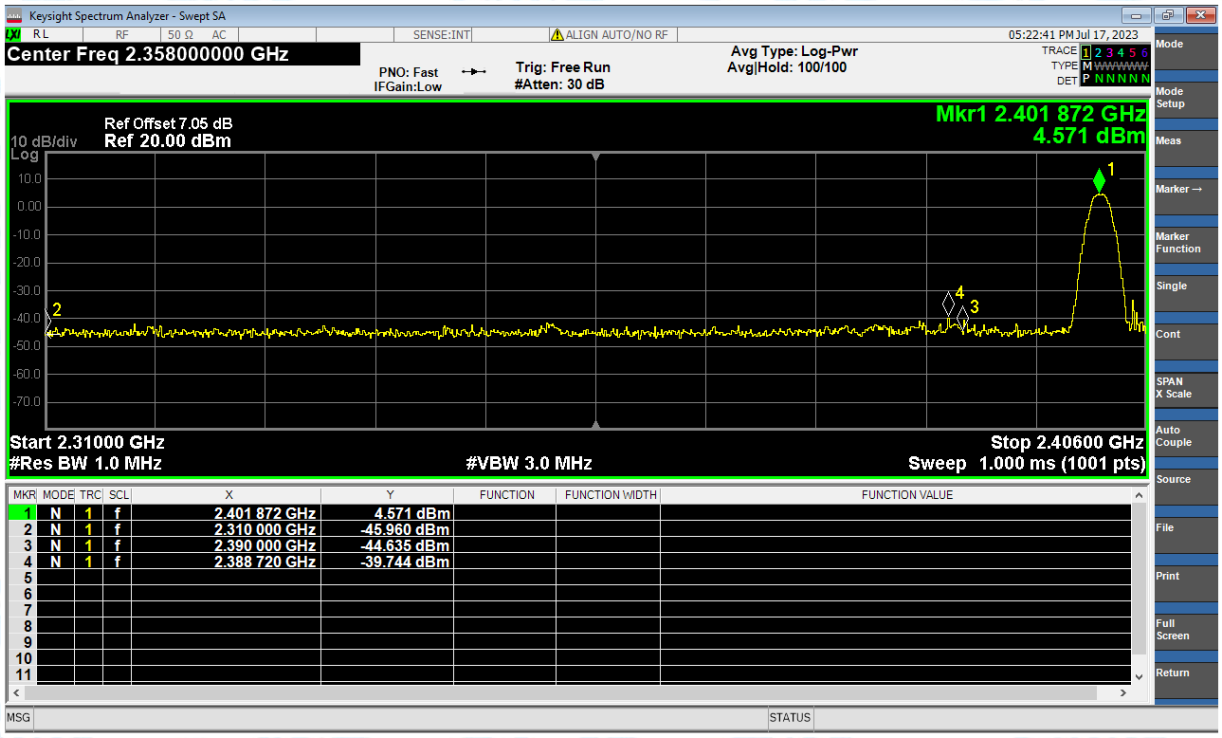


Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak

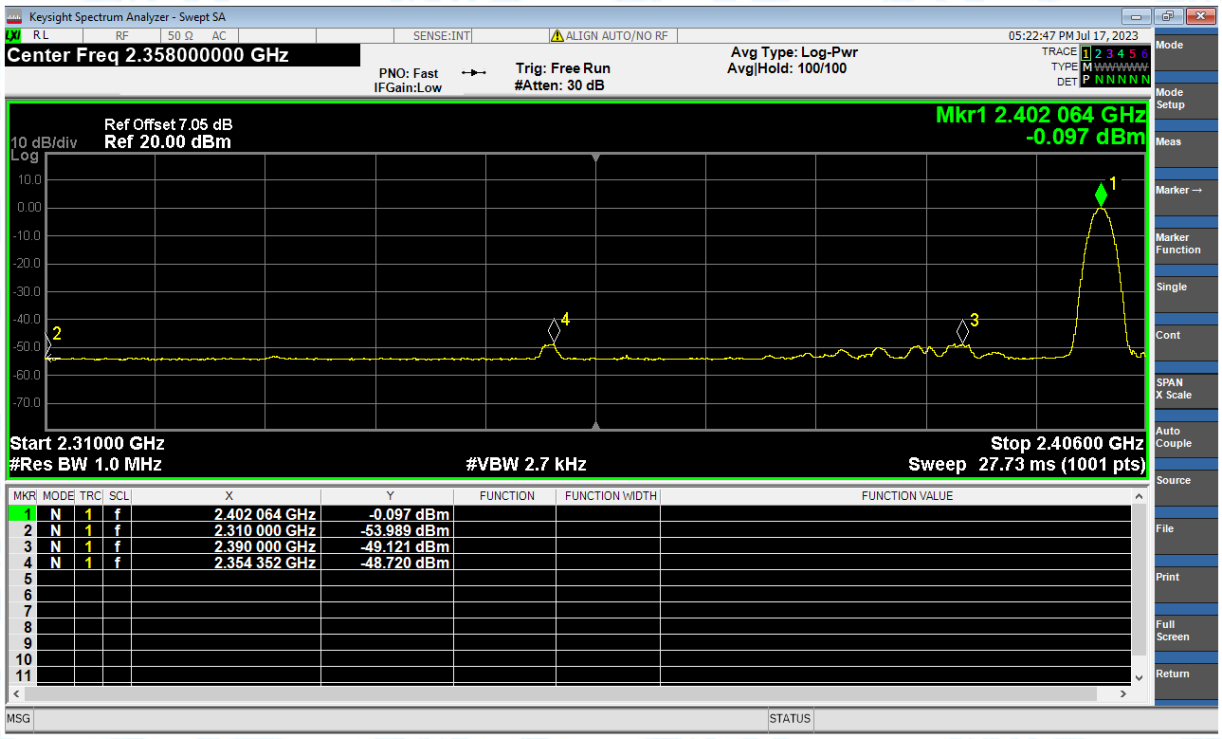
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



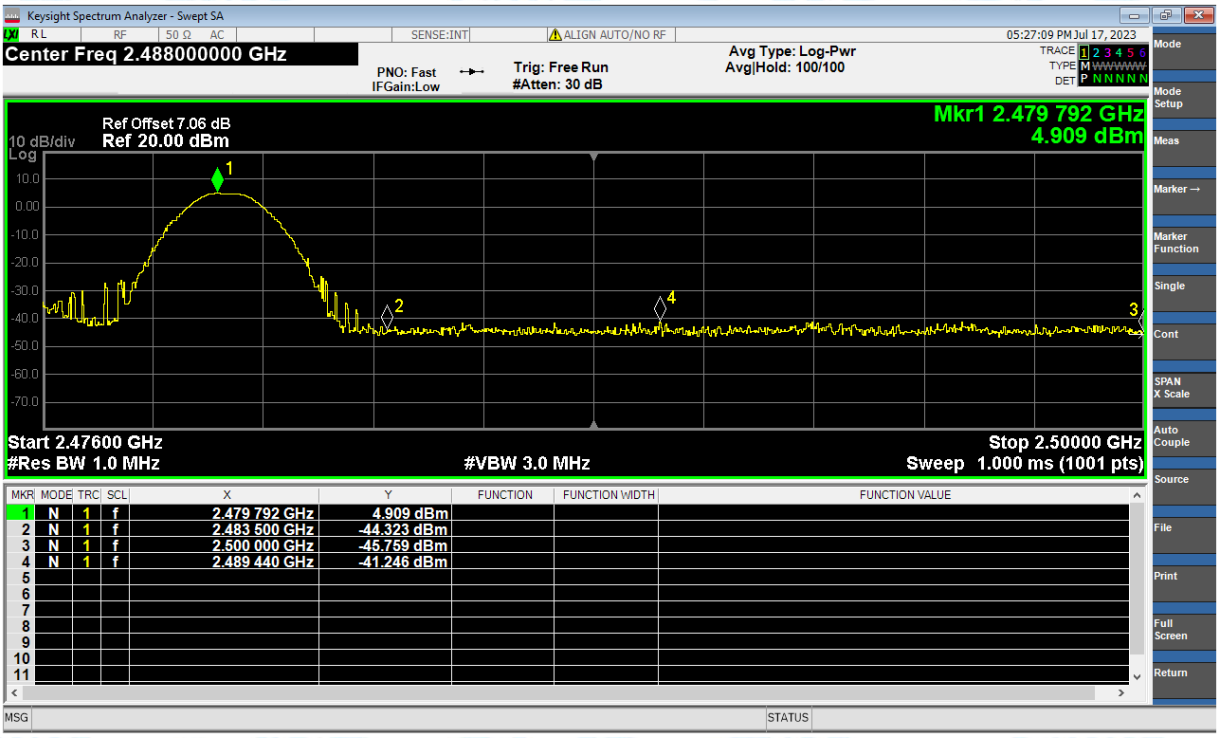
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



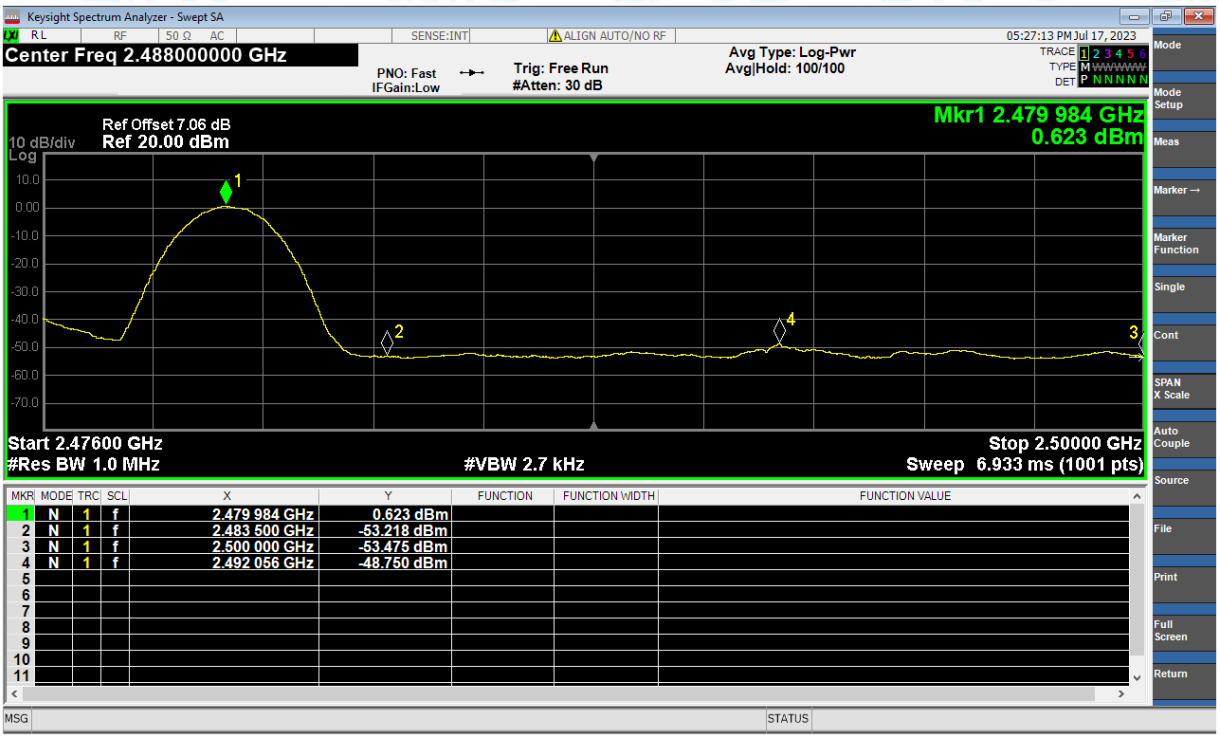
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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



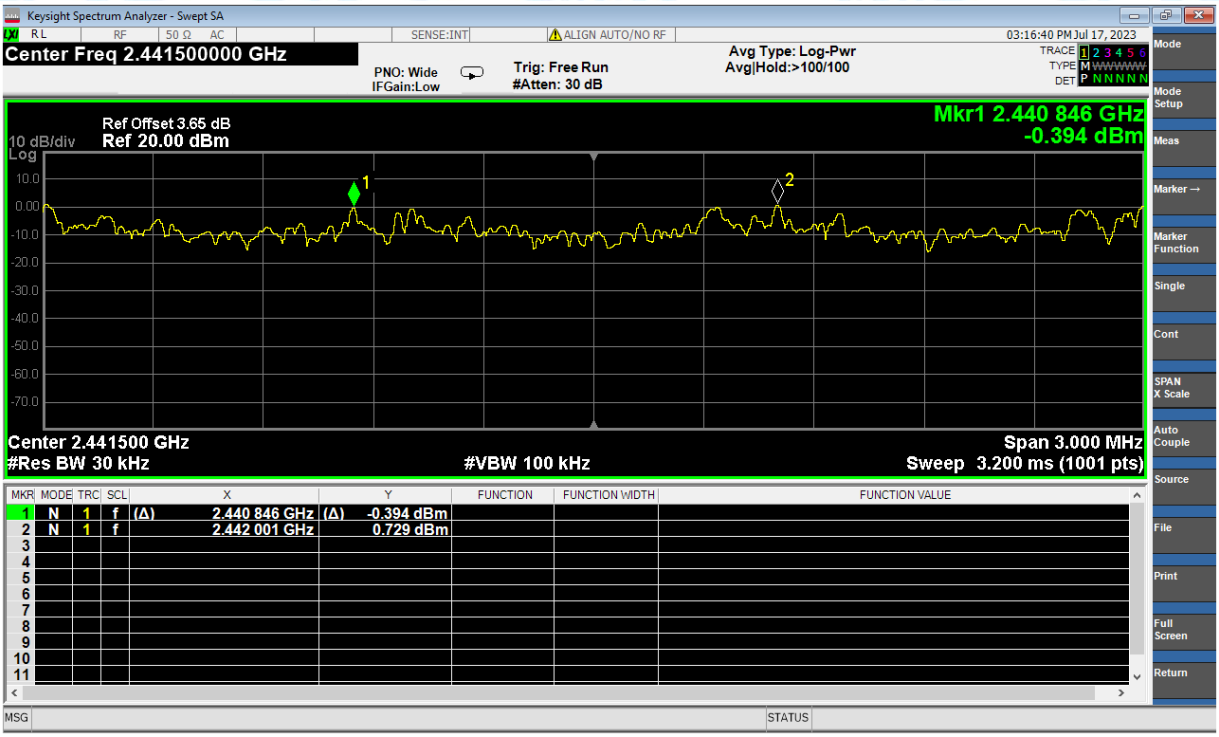
9. Carrier Frequencies Separation

Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2441.023	2441.827	1.149	0.647	Pass
NVNT	2-DH1	Ant1	2440.846	2442.001	1.155	0.853	Pass
NVNT	3-DH1	Ant1	2441.017	2441.998	0.981	0.84	Pass

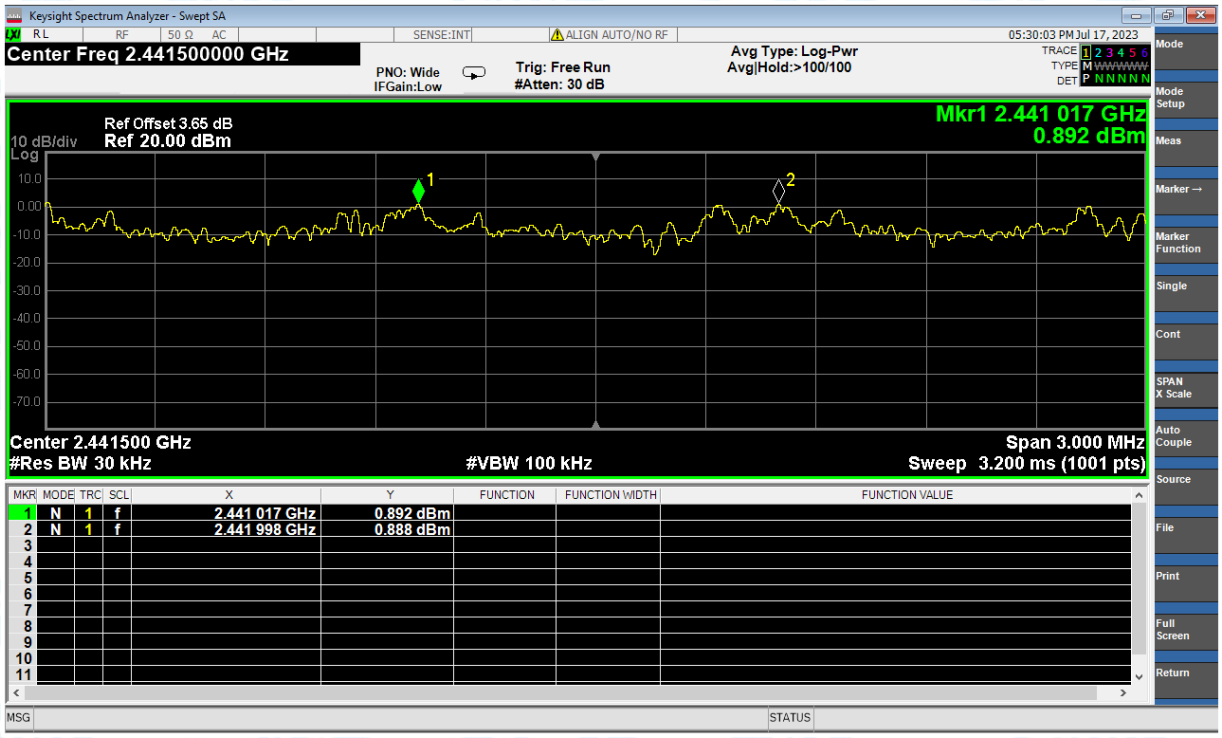
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1

CFS NVNT 2-DH1 2441MHz Ant1



CFS NVNT 3-DH1 2441MHz Ant1

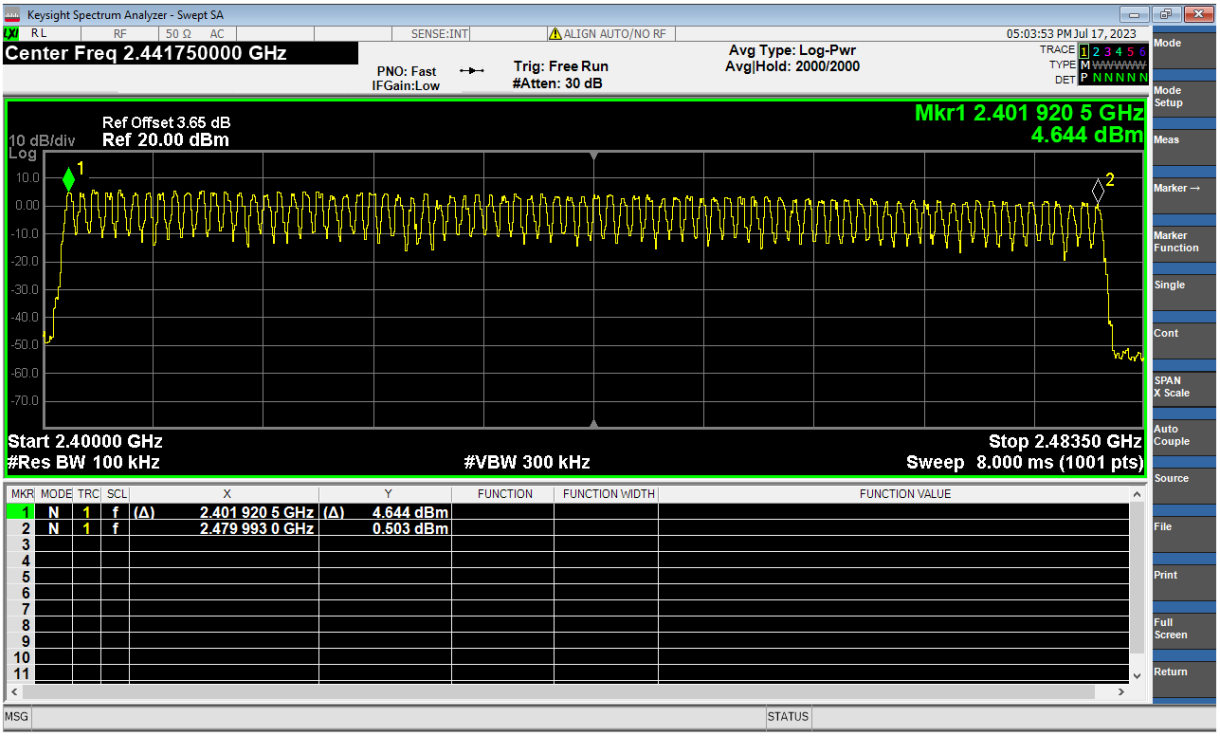


10. Number of Hopping Channel

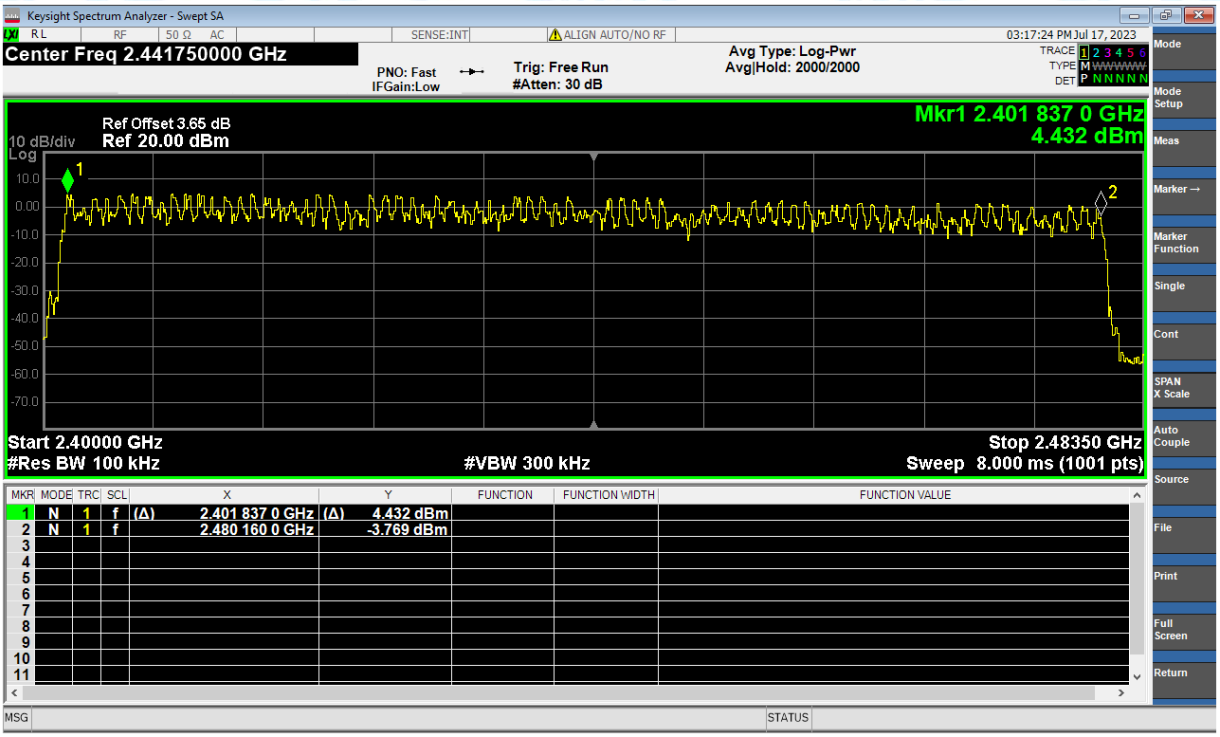
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

Test Graphs

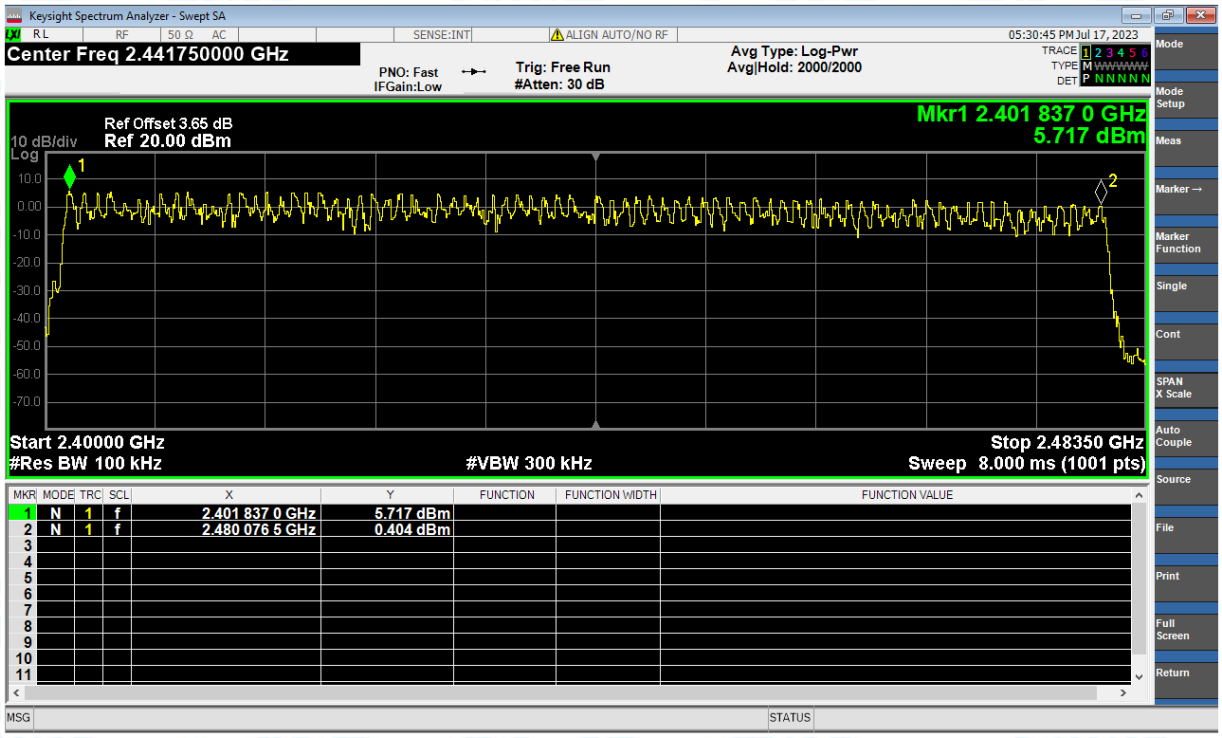
Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



Hopping No. NVNT 3-DH1 2441MHz Ant1

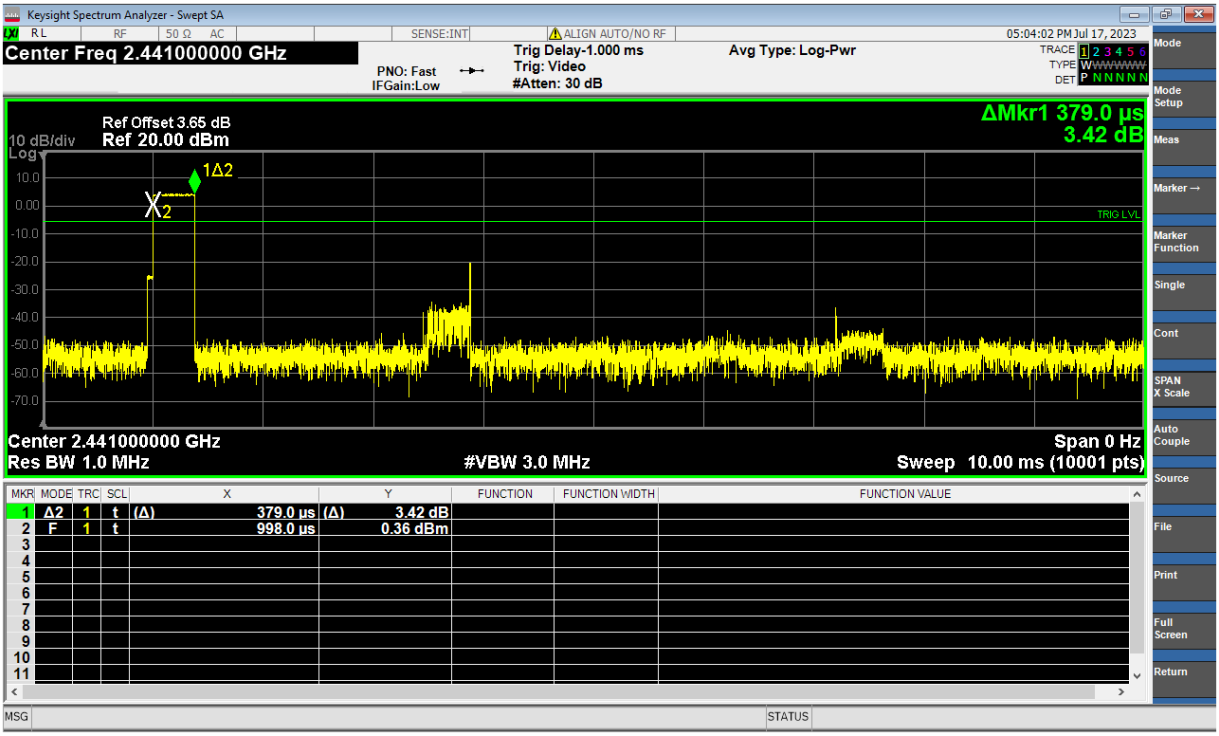


11. Dwell Time

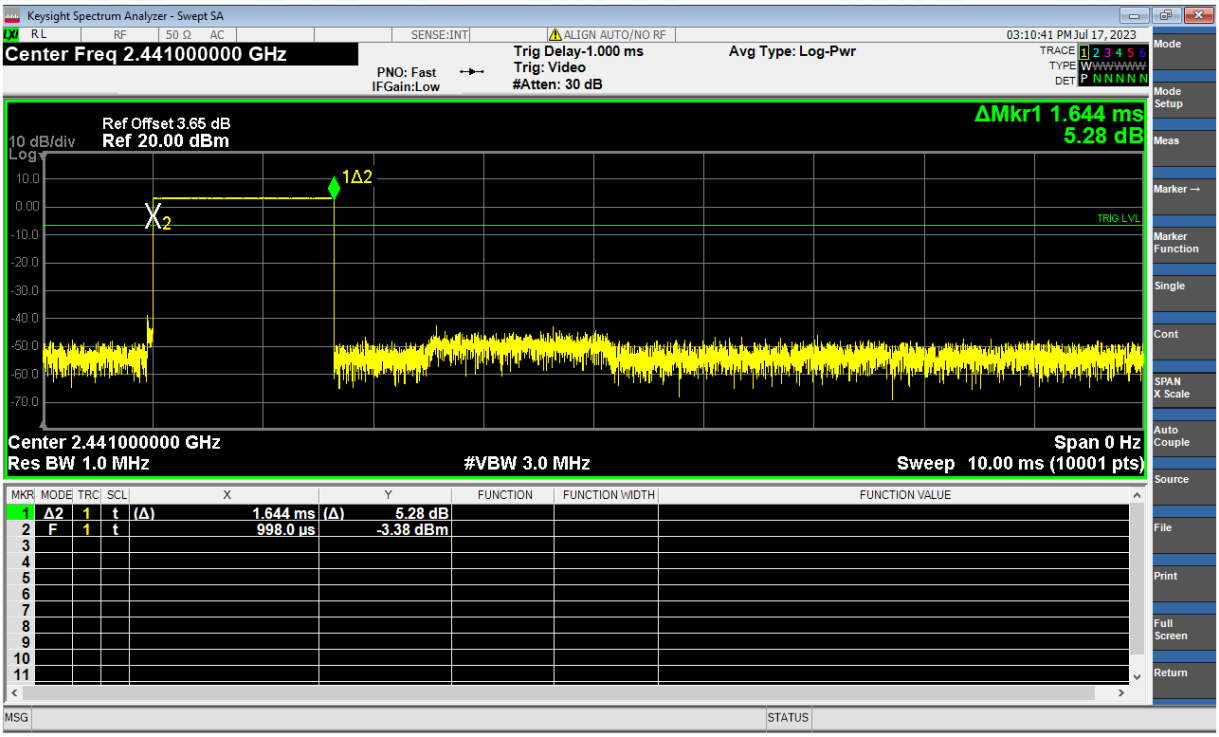
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.379	121.28	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.644	263.04	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.892	308.48	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.386	123.52	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.639	262.24	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.887	307.947	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.386	123.52	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.637	261.92	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.887	307.947	31600	400	Pass

Test Graphs

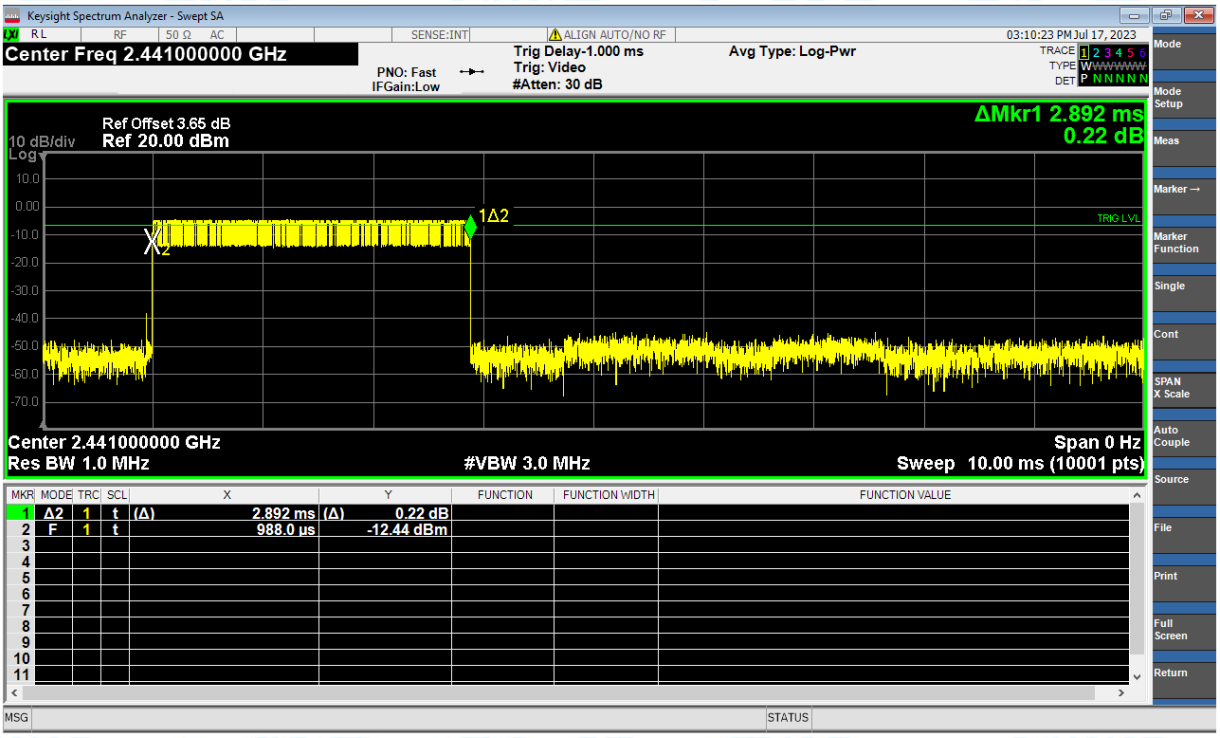
Dwell NVNT 1-DH1 2441MHz Ant1



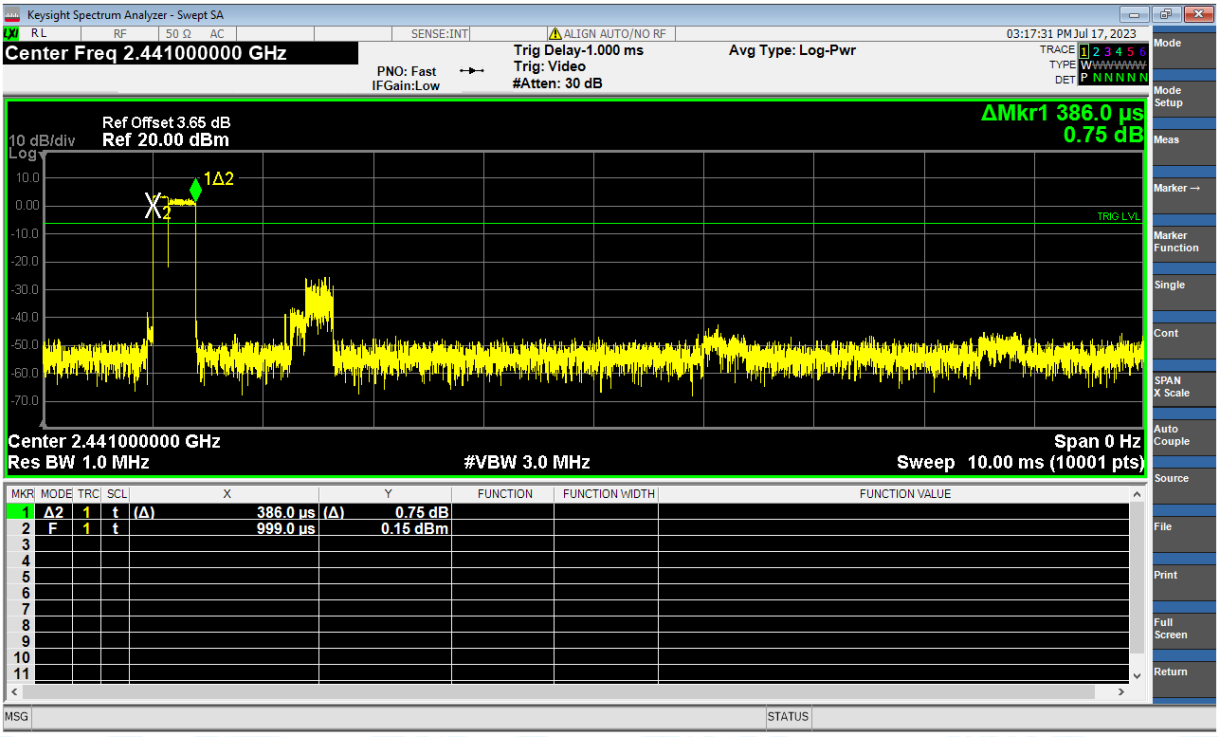
Dwell NVNT 1-DH3 2441MHz Ant1



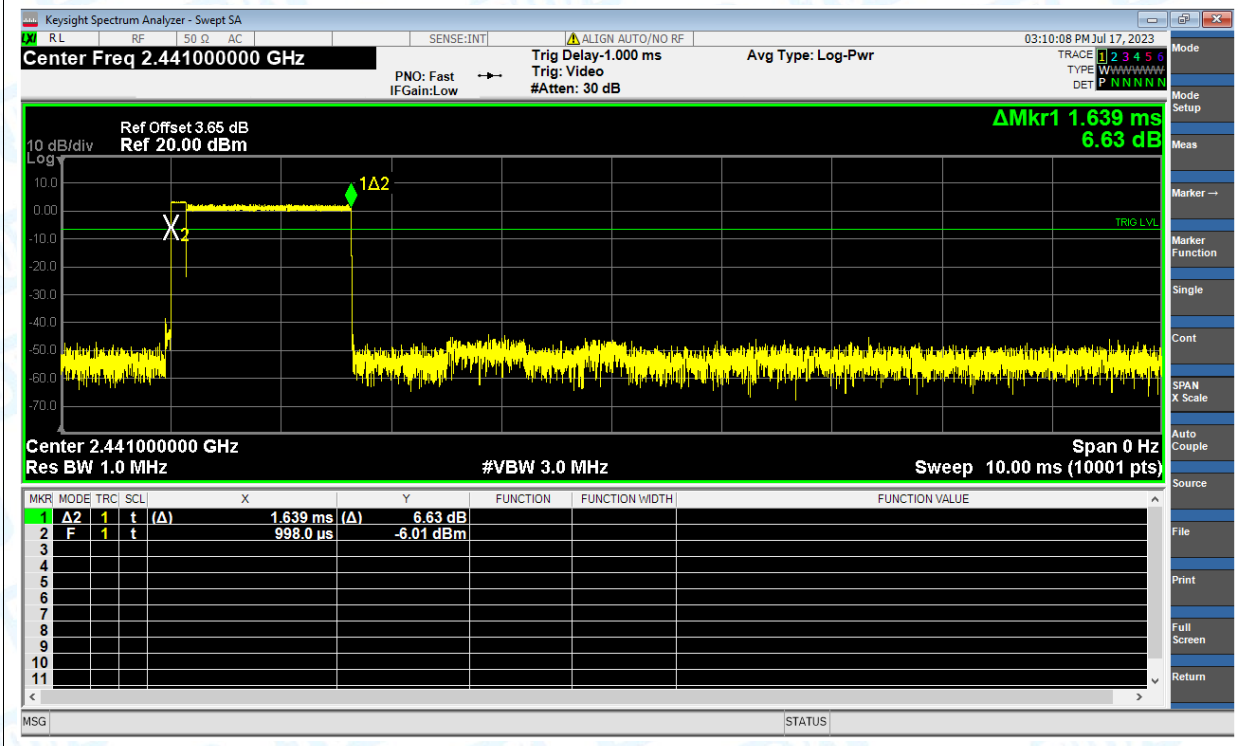
Dwell NVNT 1-DH5 2441MHz Ant1



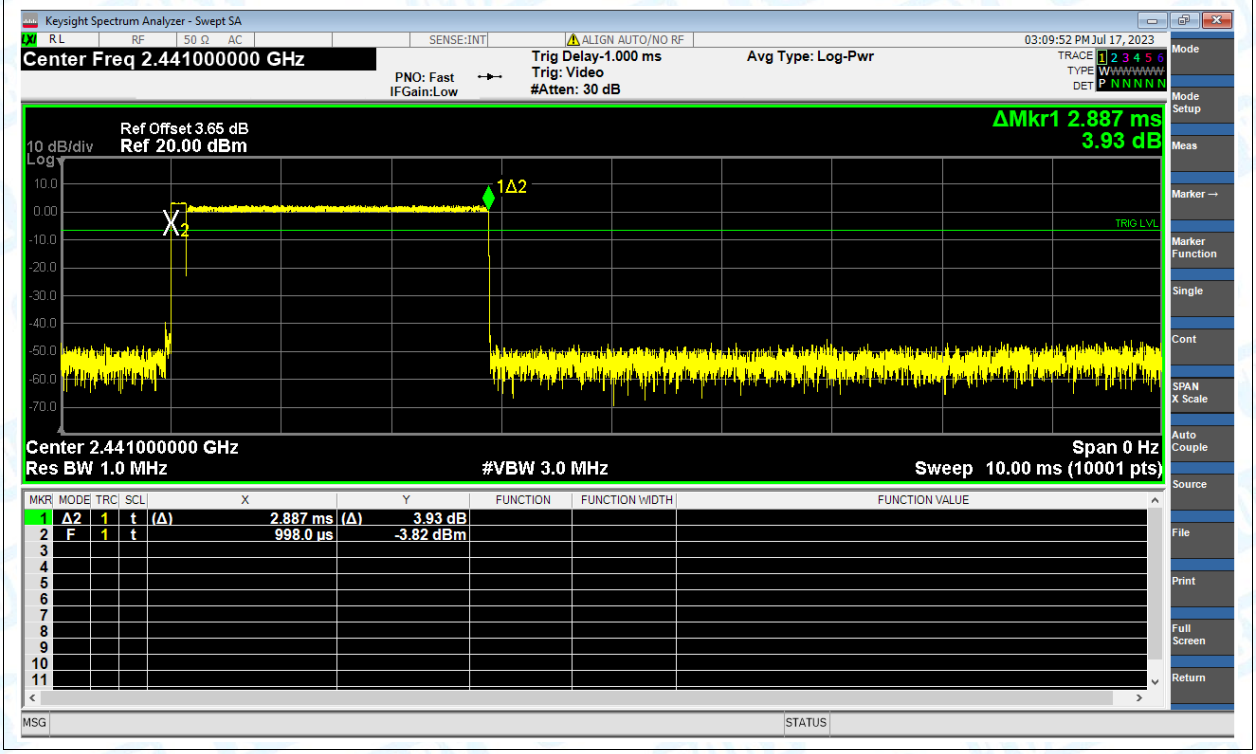
Dwell NVNT 2-DH1 2441MHz Ant1



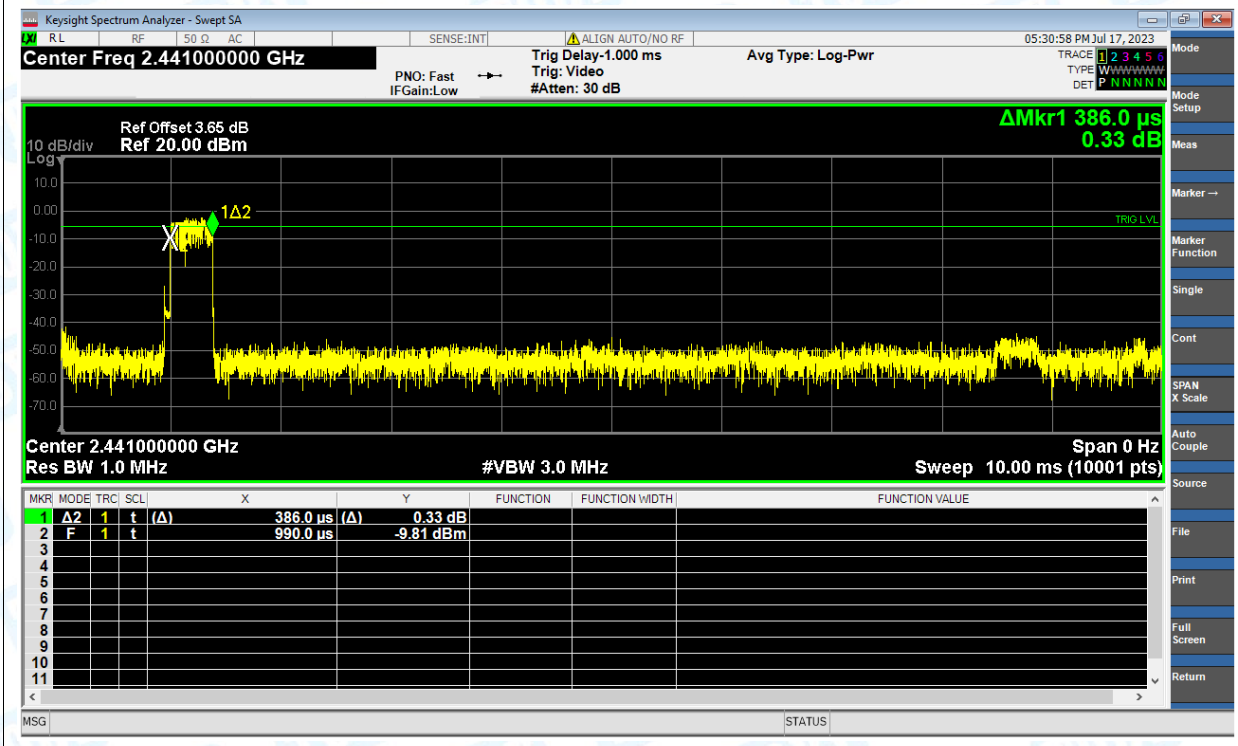
Dwell NVNT 2-DH3 2441MHz Ant1



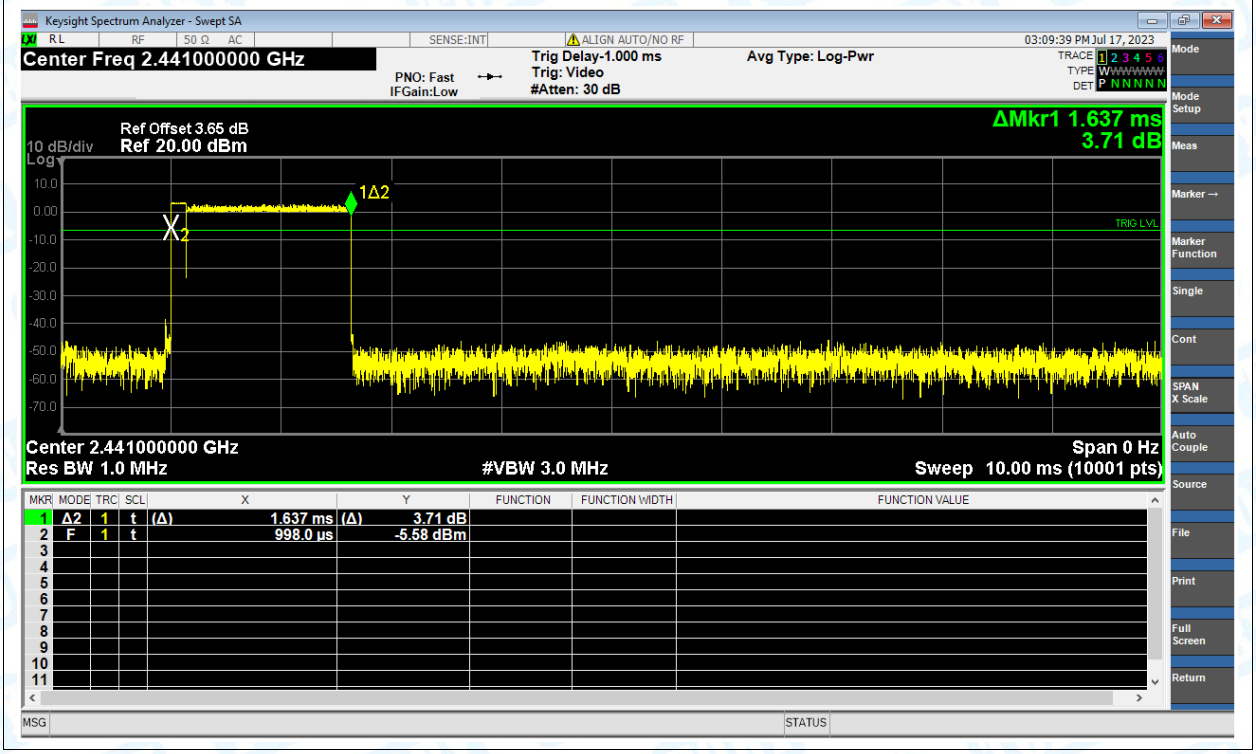
Dwell NVNT 2-DH5 2441MHz Ant1



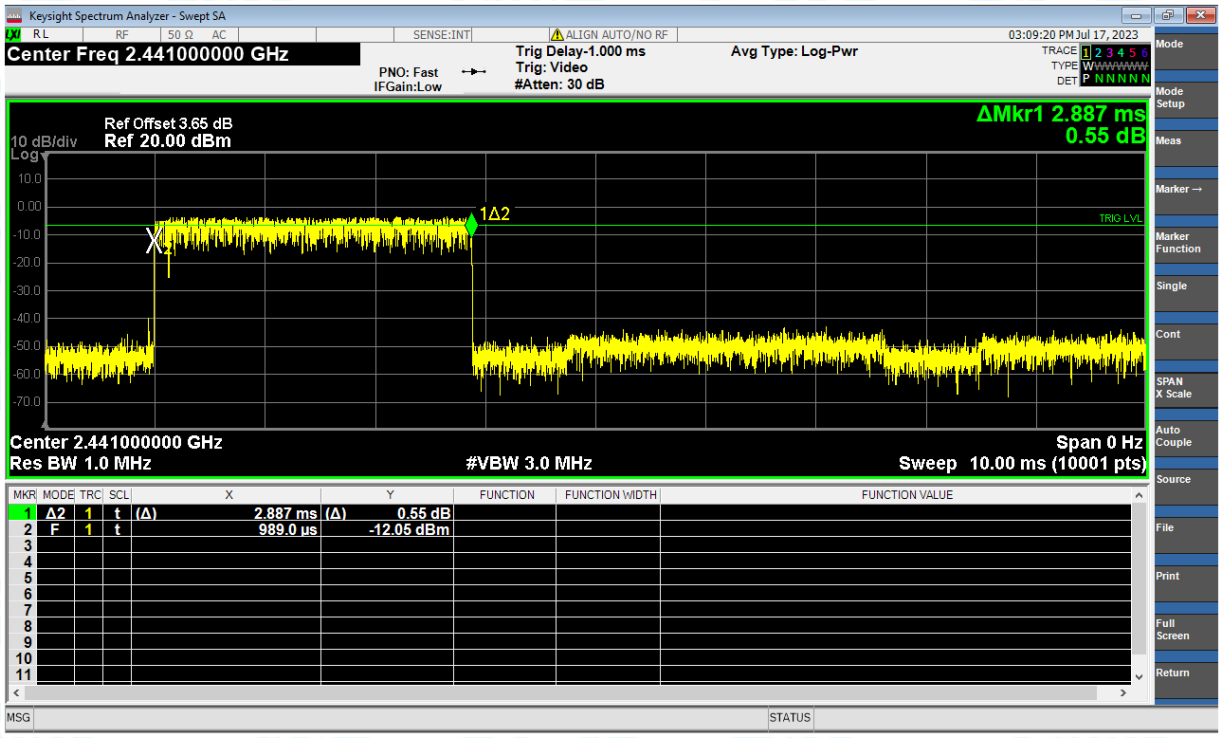
Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1



Dwell NVNT 3-DH5 2441MHz Ant1



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