RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	P-7 Pro Professional HD GNSS Receiver
Test Model:	P-7 Pro
Sample ID:	HC-C-202406-0280-01-01
Environmental Conditions	
Temperature:	24.6℃
Relative Humidity:	52.6%
Test Voltage:	DC 5V
Test Engineer:	Jolin Lee
Note: For a more detailed features description, please refer to the report TBR-C-202404-0280-3 The report only show the worst case data.	

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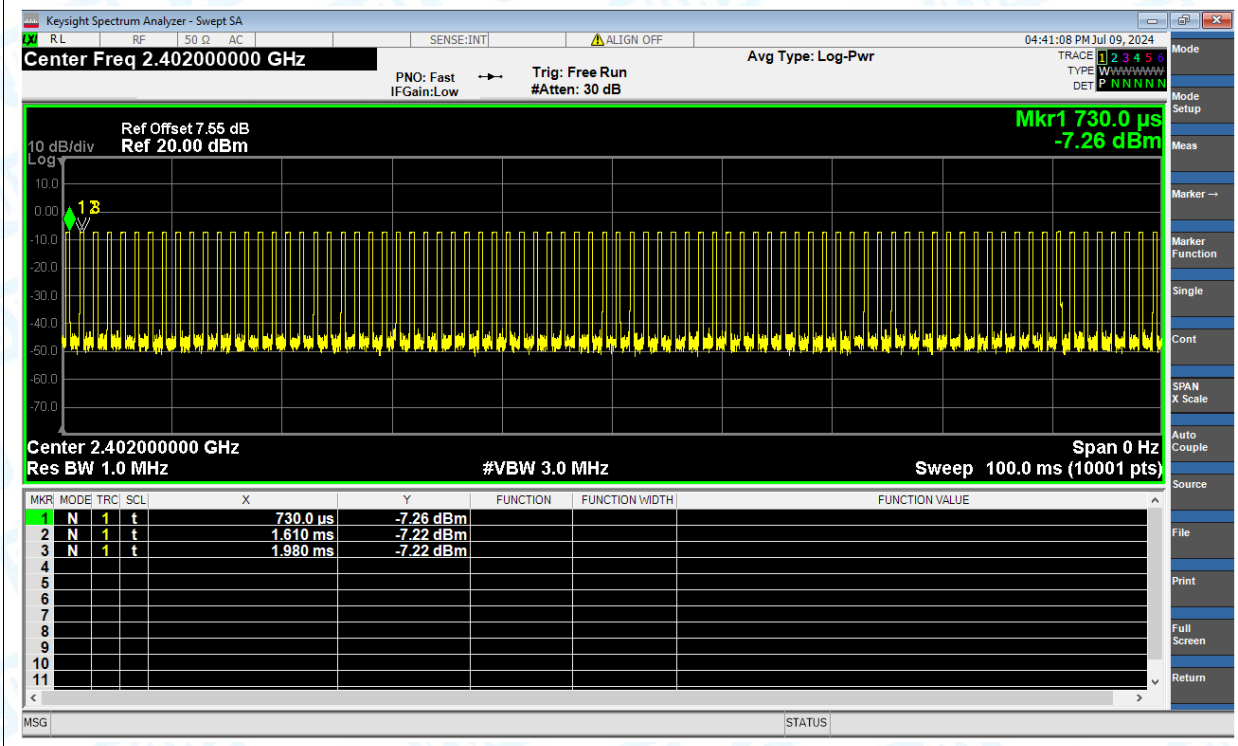
1. Duty Cycle

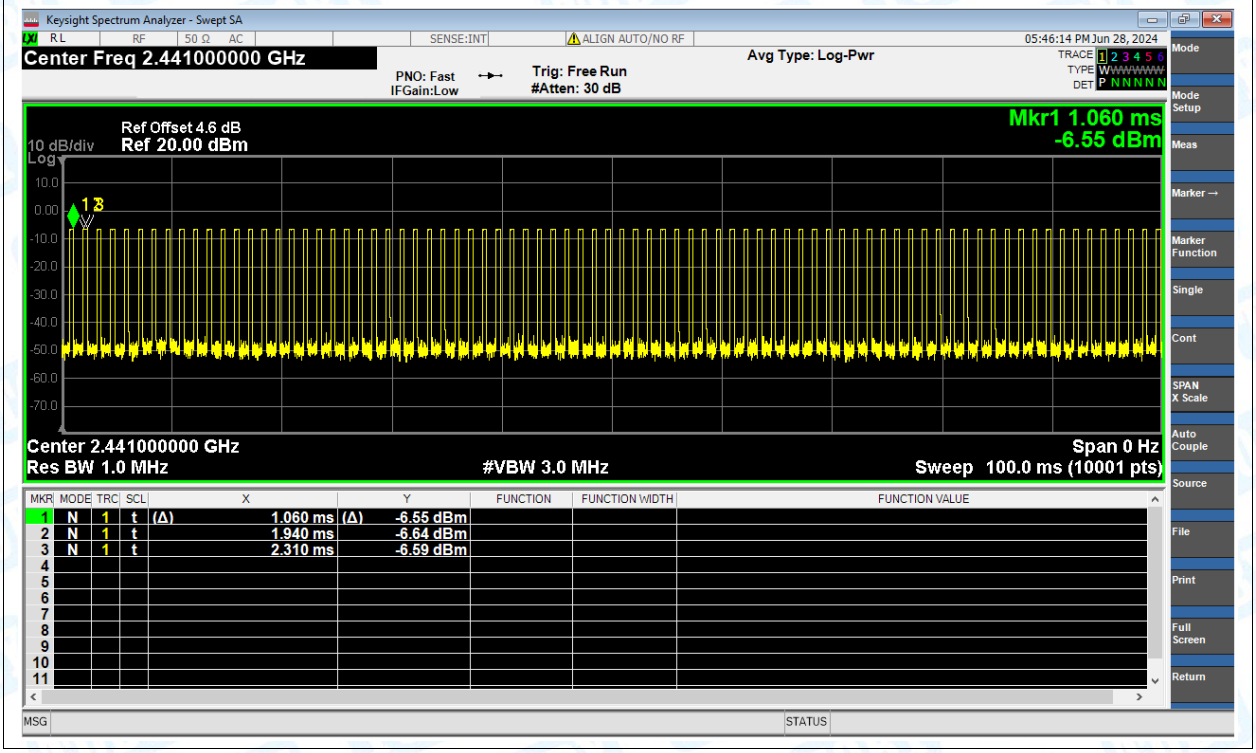
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	29.6	5.29	2.7
NVNT	1-DH1	2441	Ant1	29.6	5.29	2.7
NVNT	1-DH1	2480	Ant1	29.6	5.29	2.7
NVNT	2-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2480	Ant1	30.4	5.17	2.63

Test Graphs

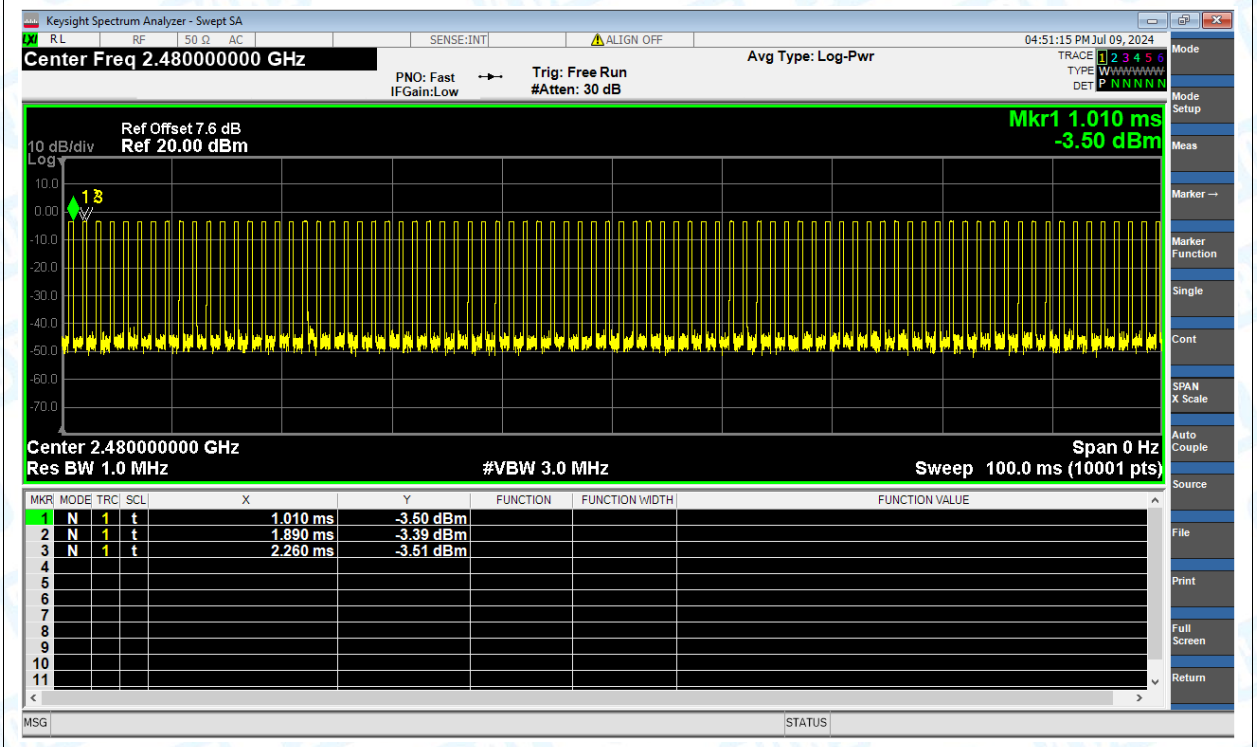
Duty Cycle NVNT 1-DH1 2402MHz Ant1



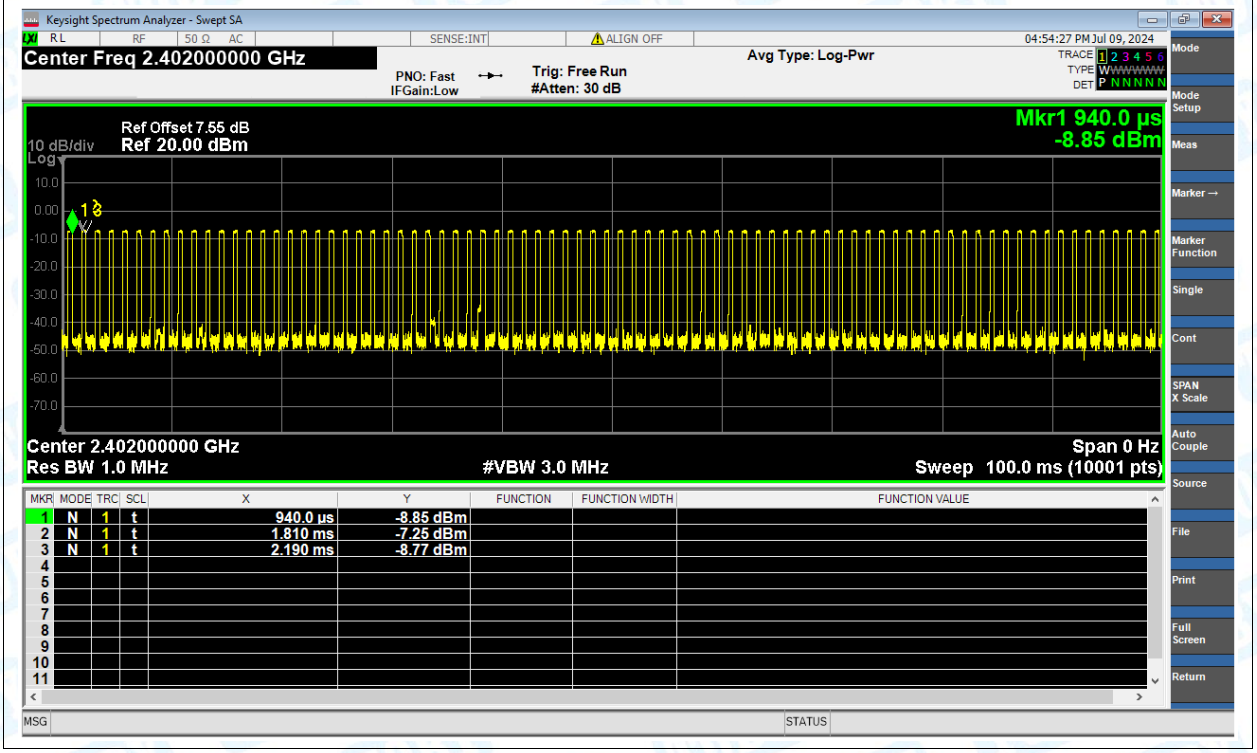
Duty Cycle NVNT 1-DH1 2441MHz Ant1



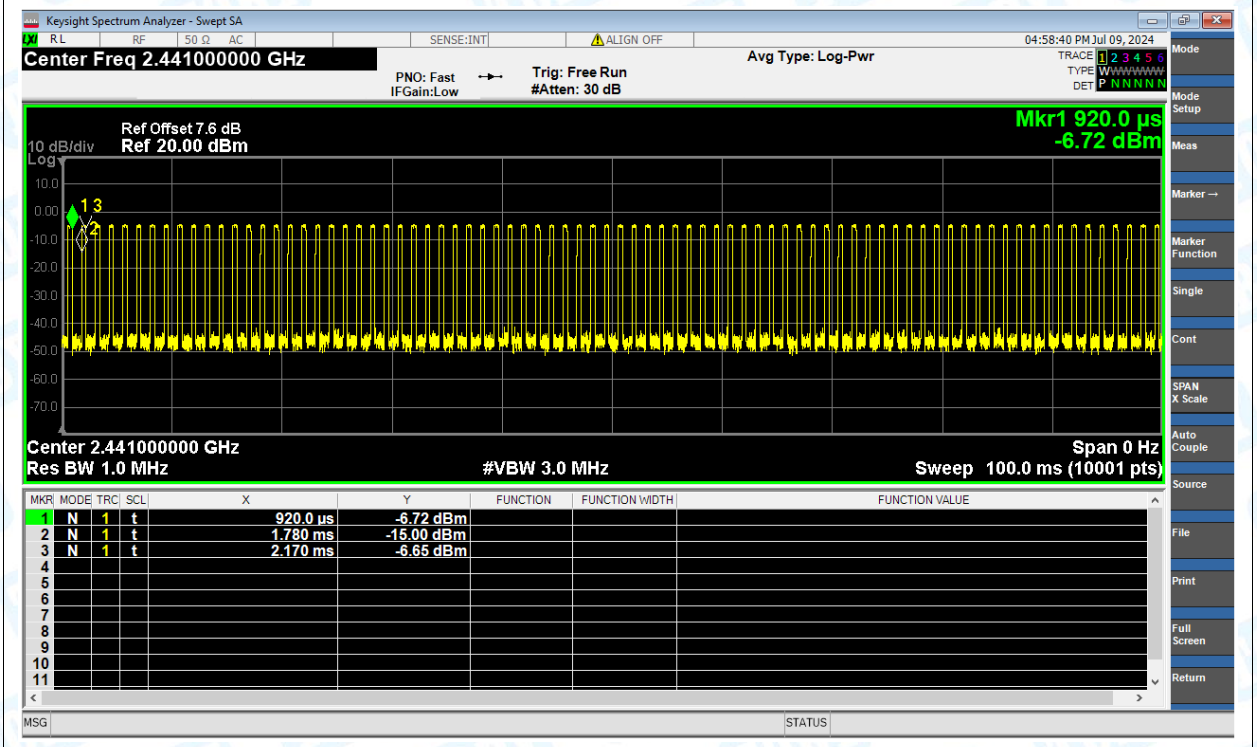
Duty Cycle NVNT 1-DH1 2480MHz Ant1



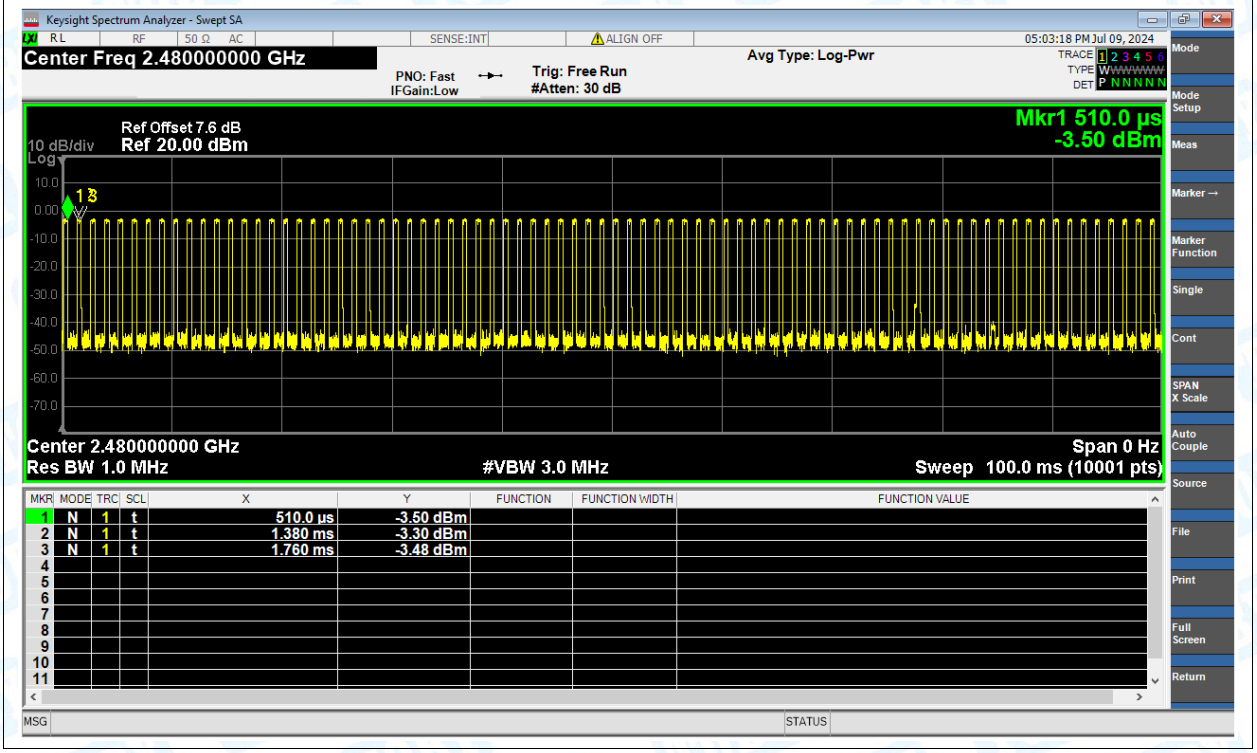
Duty Cycle NVNT 2-DH1 2402MHz Ant1



Duty Cycle NVNT 2-DH1 2441MHz Ant1



Duty Cycle NVNT 2-DH1 2480MHz Ant1



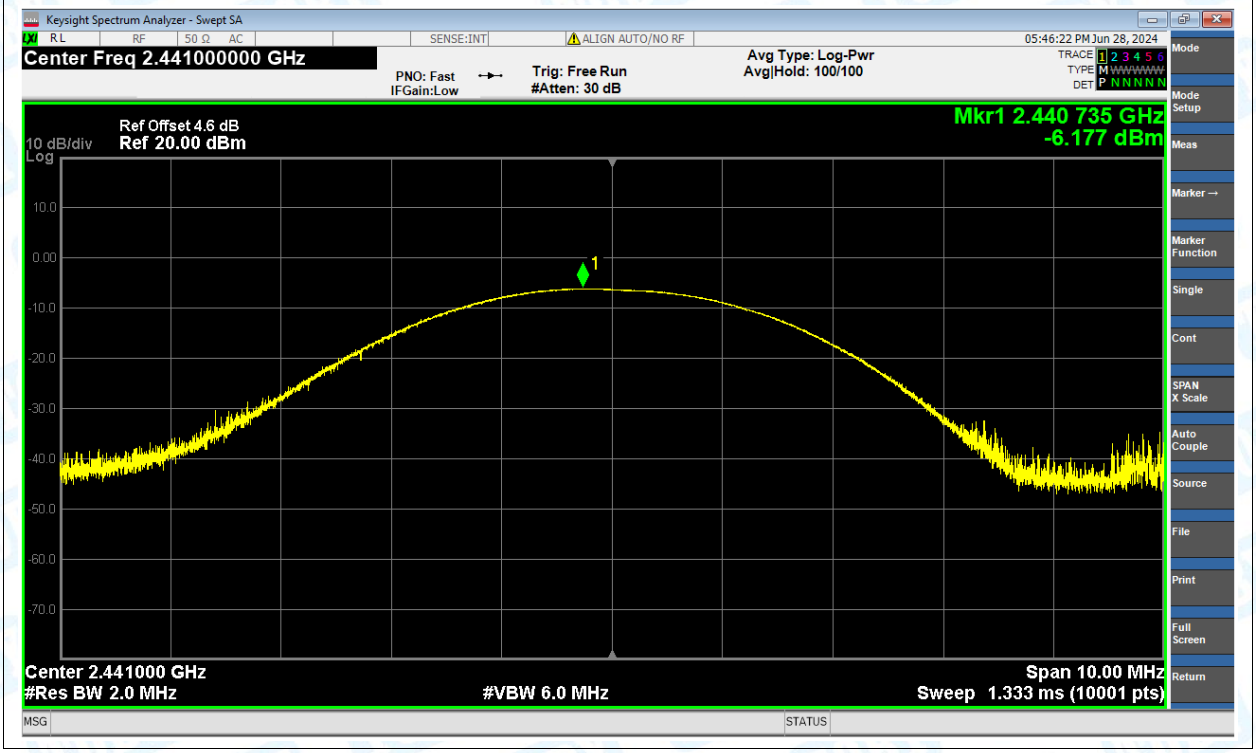
2. Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	-6.252	21	Pass
NVNT	1-DH1	2441	Ant1	-6.177	21	Pass
NVNT	1-DH1	2480	Ant1	-5.496	21	Pass
NVNT	1-DH3	2441	Ant1	-6.245	21	Pass
NVNT	1-DH5	2441	Ant1	-6.226	21	Pass
NVNT	2-DH1	2402	Ant1	-5.757	21	Pass
NVNT	2-DH1	2441	Ant1	-5.664	21	Pass
NVNT	2-DH1	2480	Ant1	-5.077	21	Pass
NVNT	2-DH3	2441	Ant1	-5.462	21	Pass
NVNT	2-DH5	2441	Ant1	-5.422	21	Pass

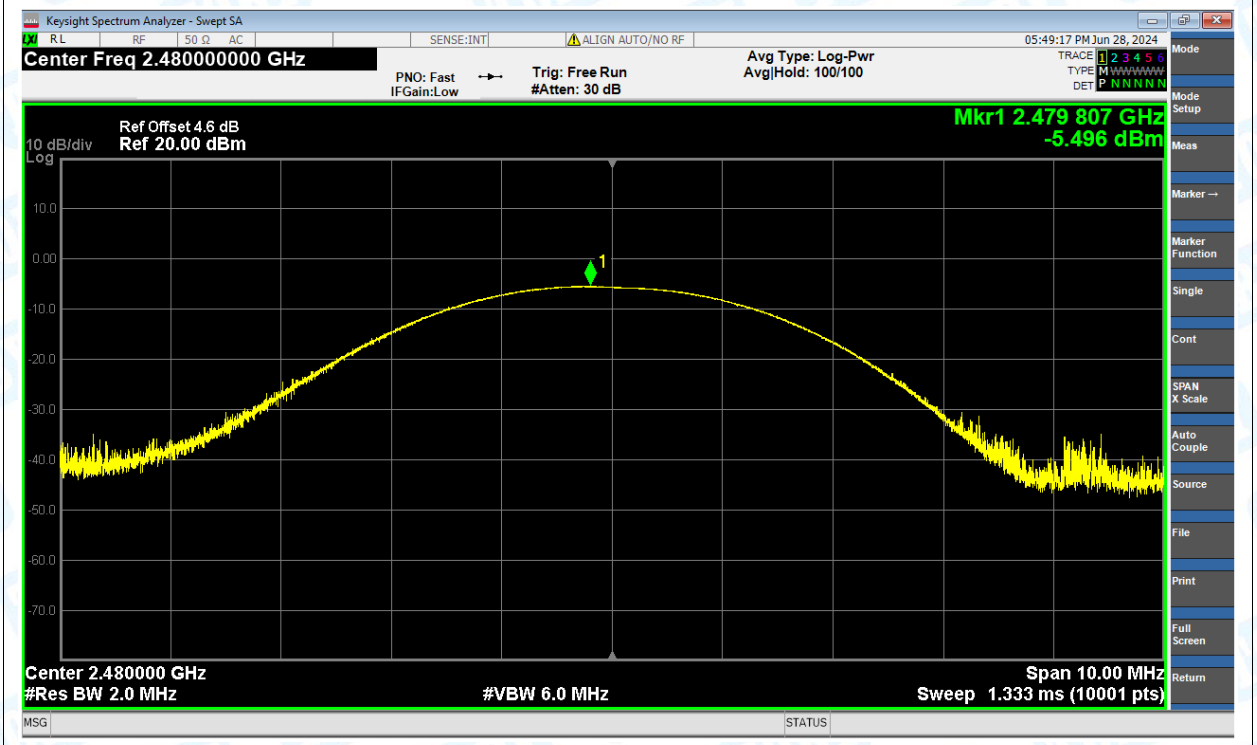
Test Graphs

Power NVNT 1-DH1 2402MHz Ant1

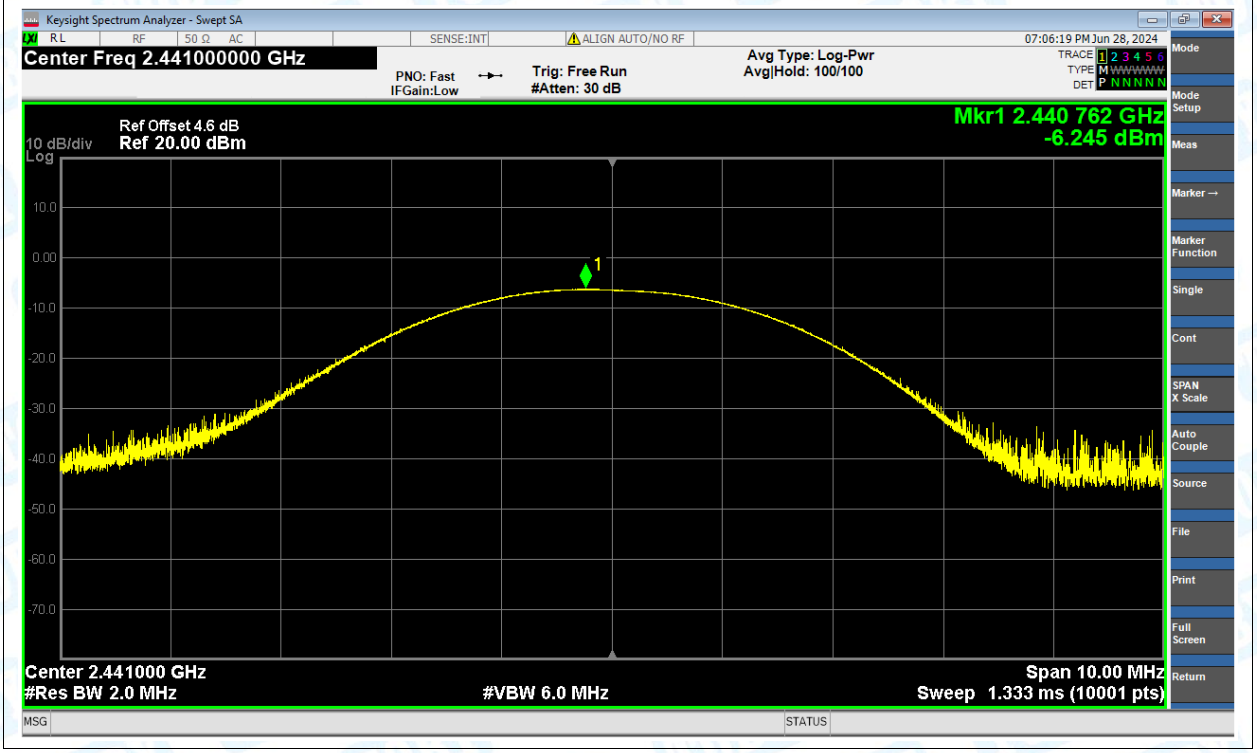
Power NVNT 1-DH1 2441MHz Ant1



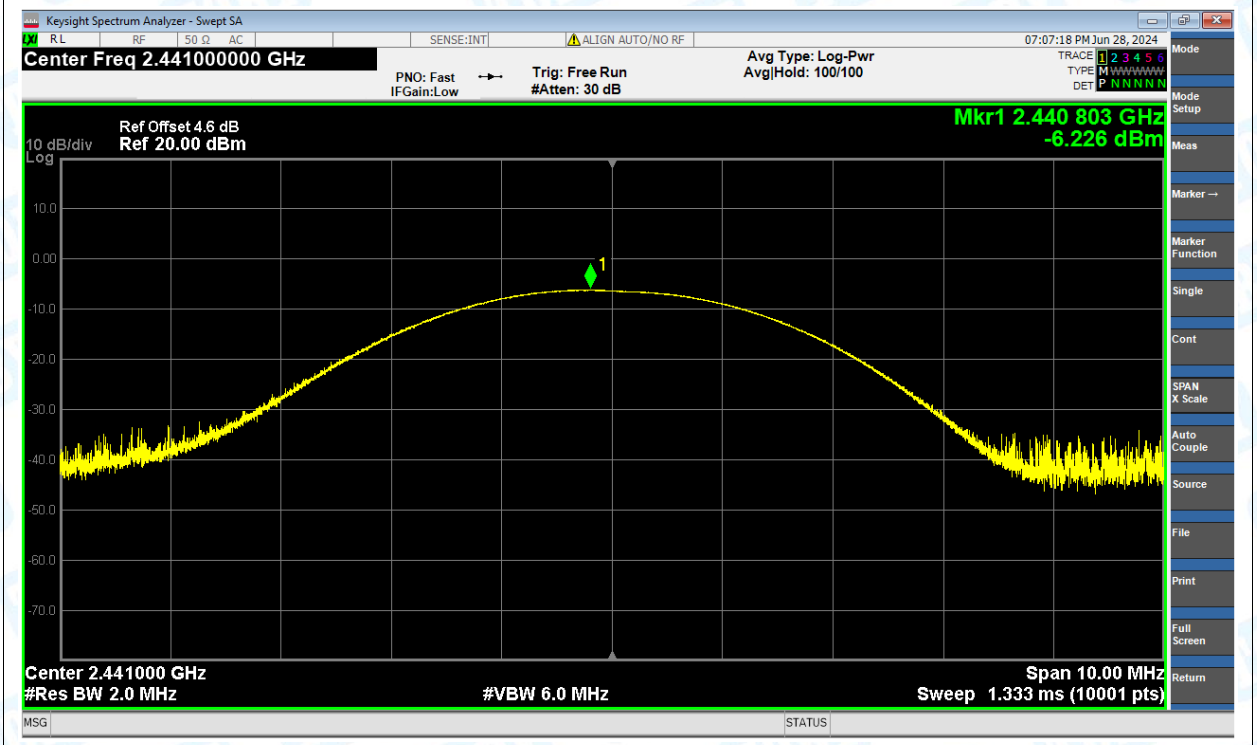
Power NVNT 1-DH1 2480MHz Ant1



Power NVNT 1-DH3 2441MHz Ant1

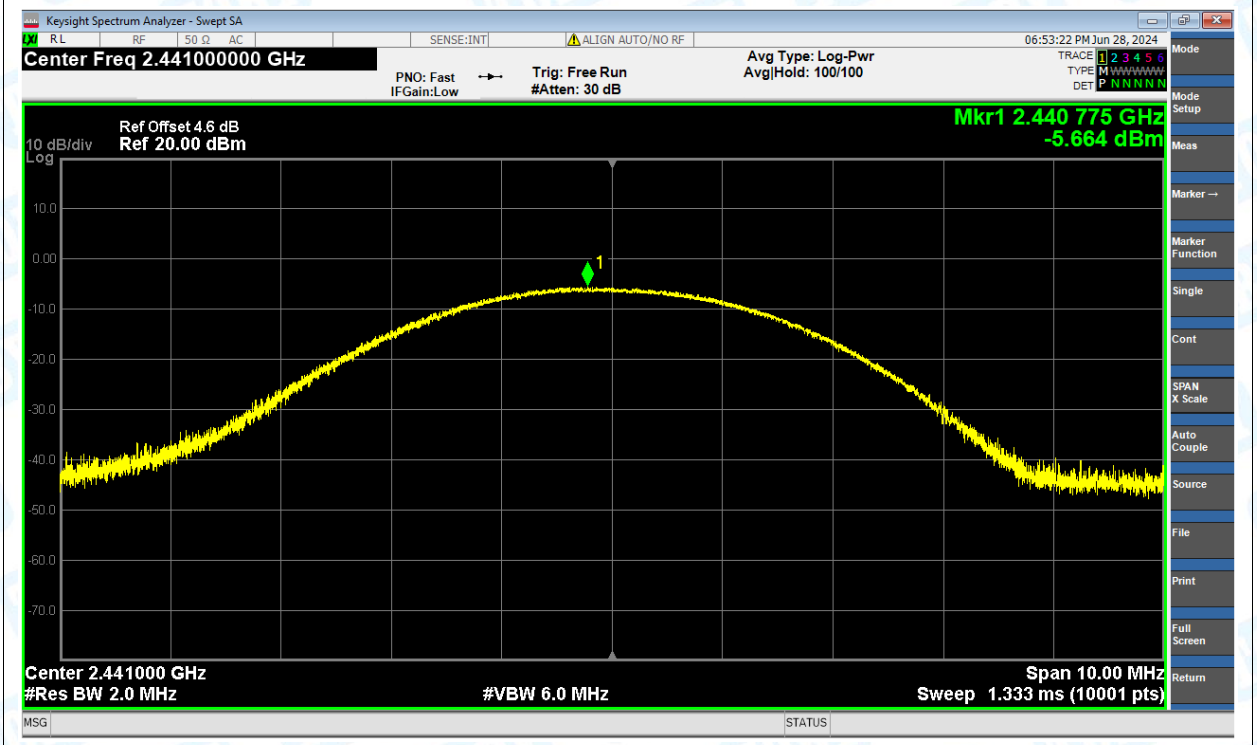


Power NVNT 1-DH5 2441MHz Ant1

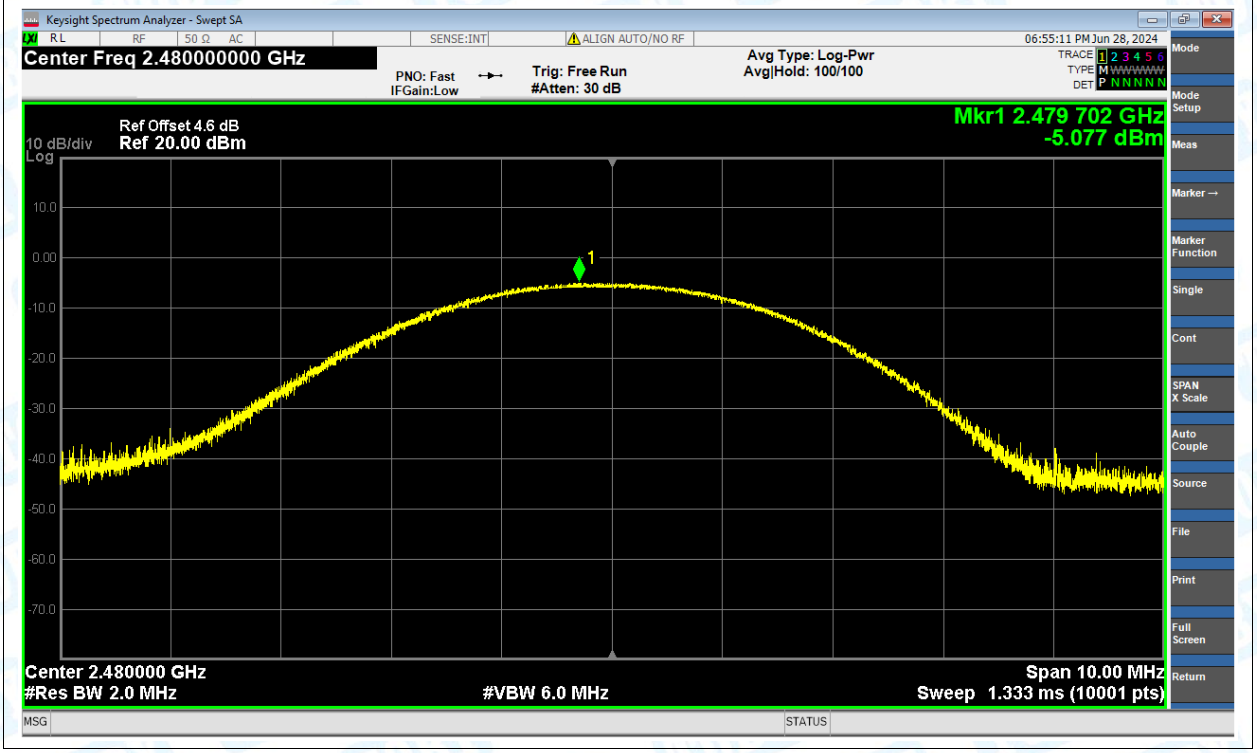


Power NVNT 2-DH1 2402MHz Ant1

Power NVNT 2-DH1 2441MHz Ant1



Power NVNT 2-DH1 2480MHz Ant1



Power NVNT 2-DH3 2441MHz Ant1

Power NVNT 2-DH5 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	0.85	0	Pass
NVNT	1-DH1	2441	Ant1	0.87	0	Pass
NVNT	1-DH1	2480	Ant1	0.87	0	Pass
NVNT	2-DH1	2402	Ant1	1.2	0	Pass
NVNT	2-DH1	2441	Ant1	1.24	0	Pass
NVNT	2-DH1	2480	Ant1	1.24	0	Pass

Test Graphs

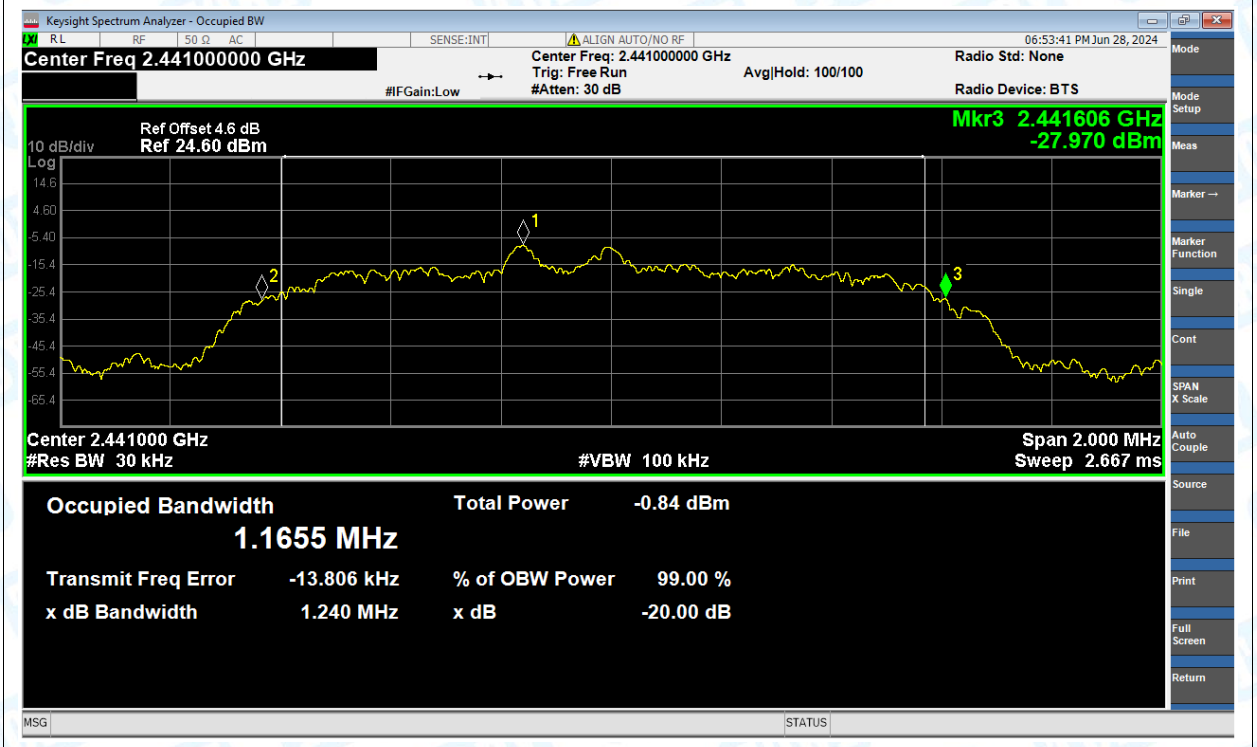
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1

-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1

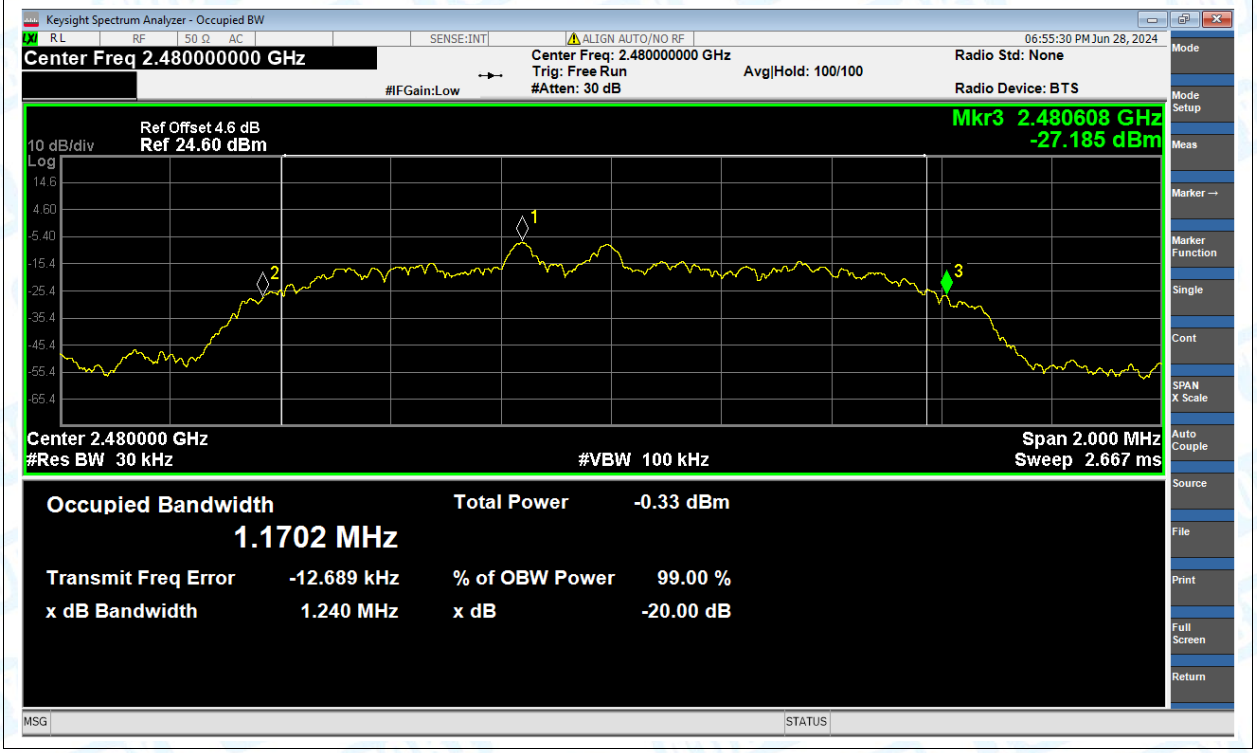
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1

-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1

-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

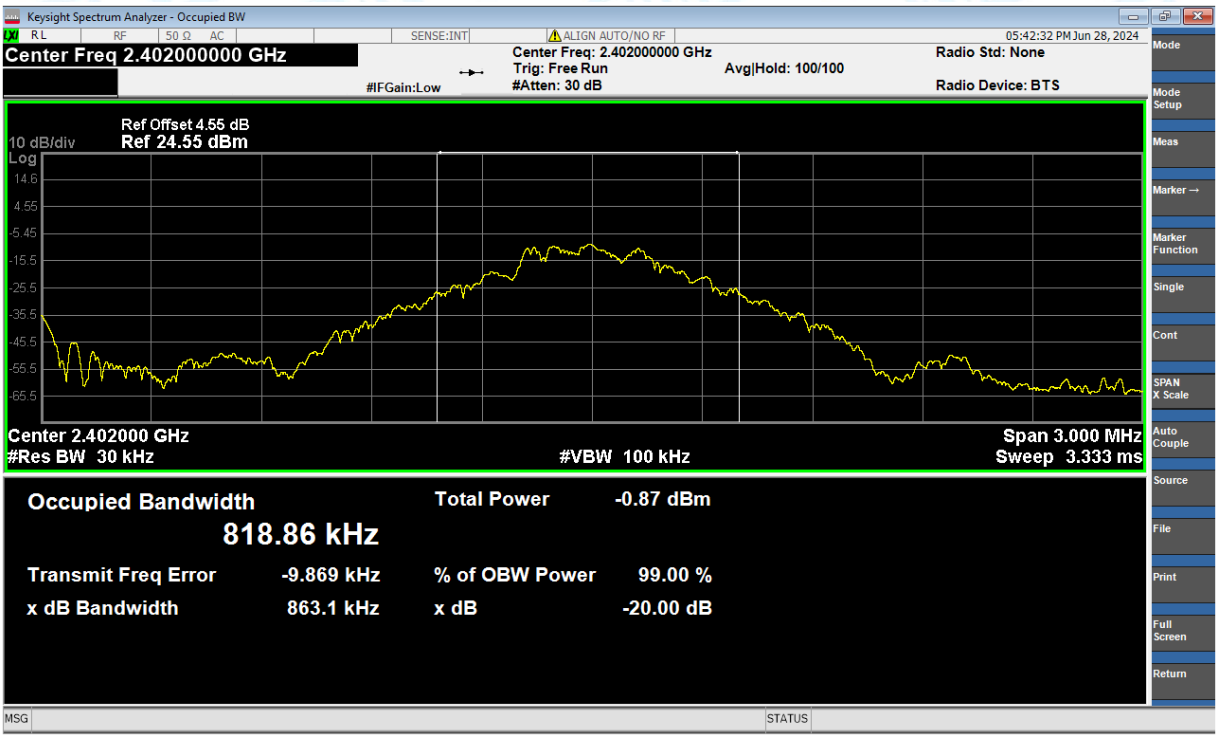


4. Occupied Channel Bandwidth

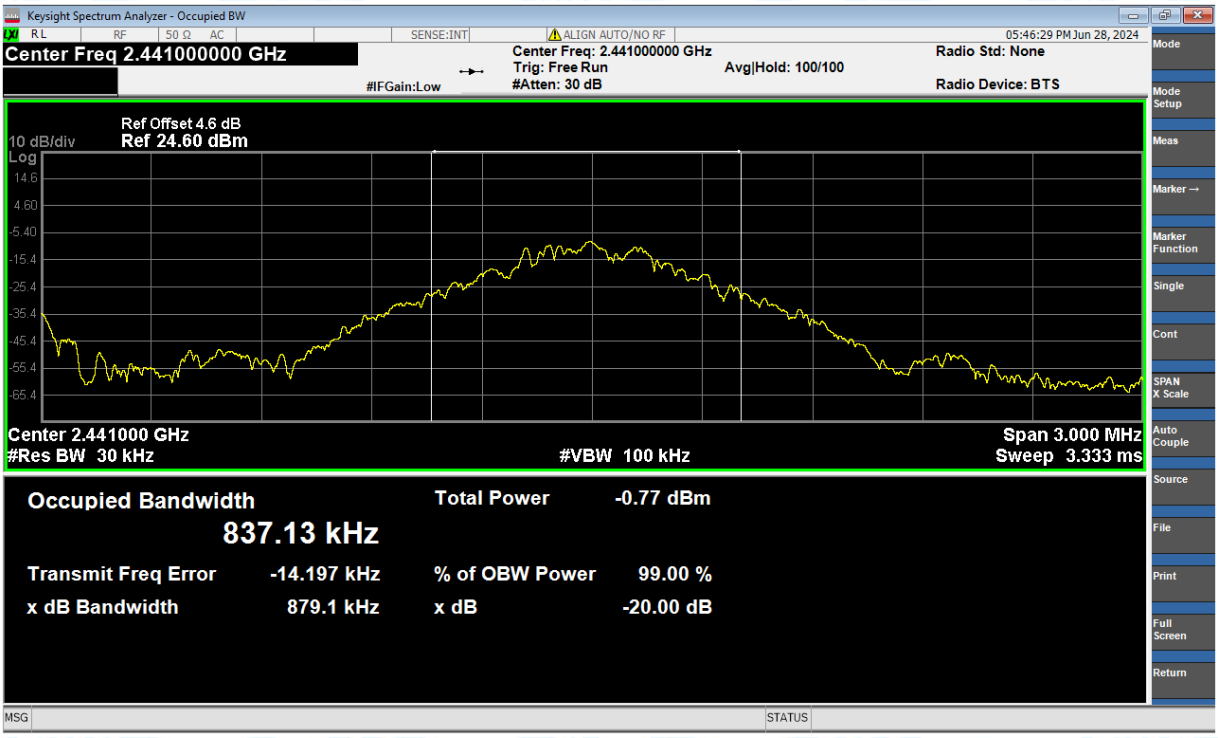
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.819
NVNT	1-DH1	2441	Ant1	0.837
NVNT	1-DH1	2480	Ant1	0.823
NVNT	2-DH1	2402	Ant1	1.17
NVNT	2-DH1	2441	Ant1	1.17
NVNT	2-DH1	2480	Ant1	1.15

Test Graphs

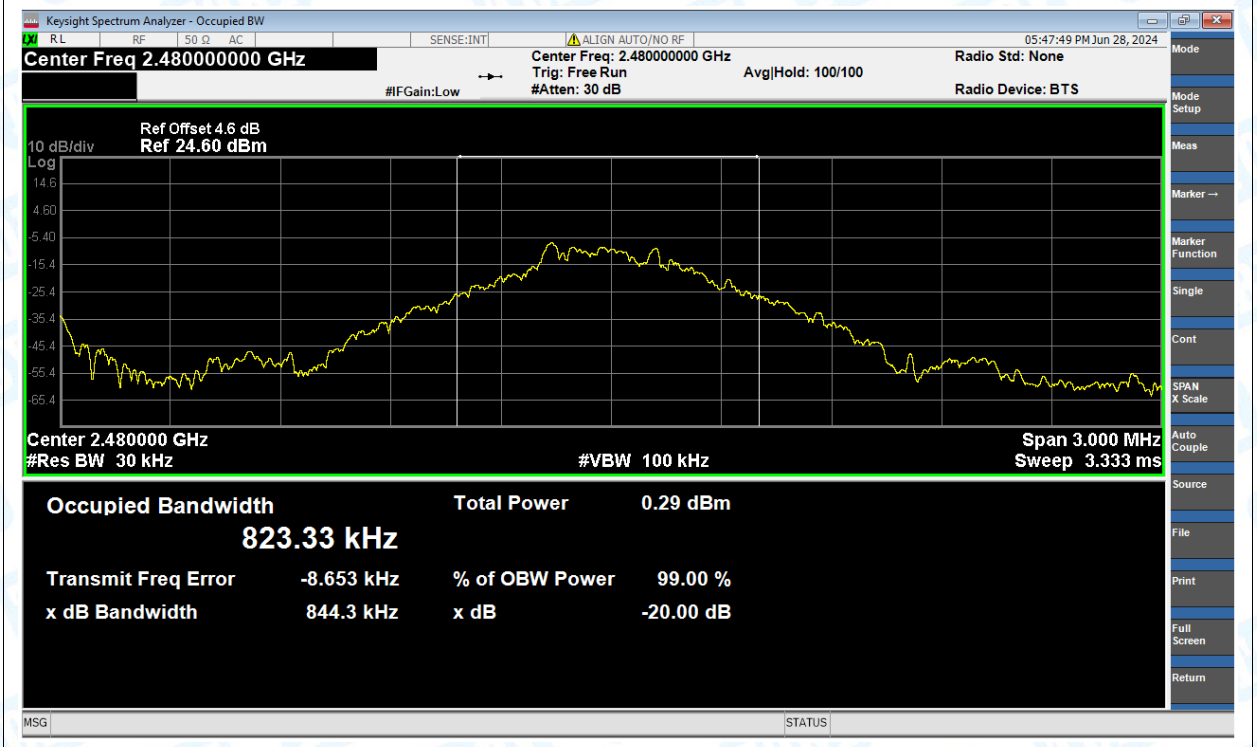
OBW NVNT 1-DH1 2402MHz Ant1



OBW NVNT 1-DH1 2441MHz Ant1

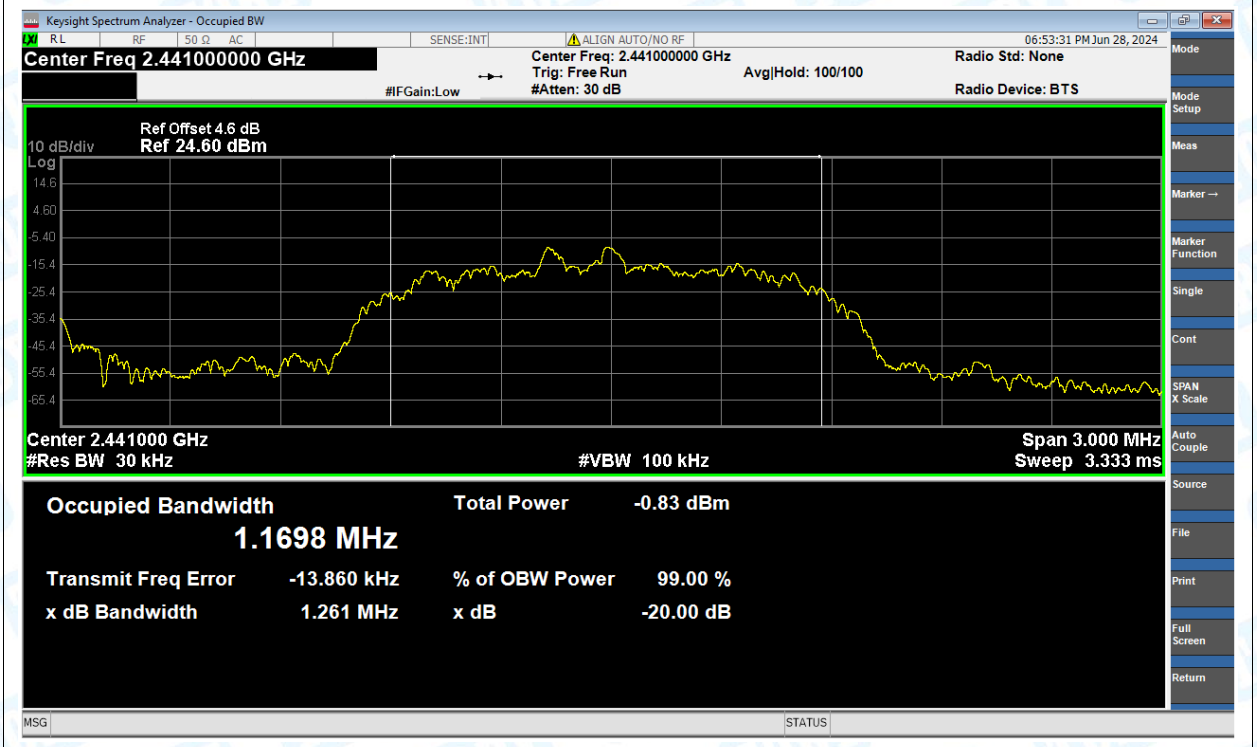


OBW NVNT 1-DH1 2480MHz Ant1

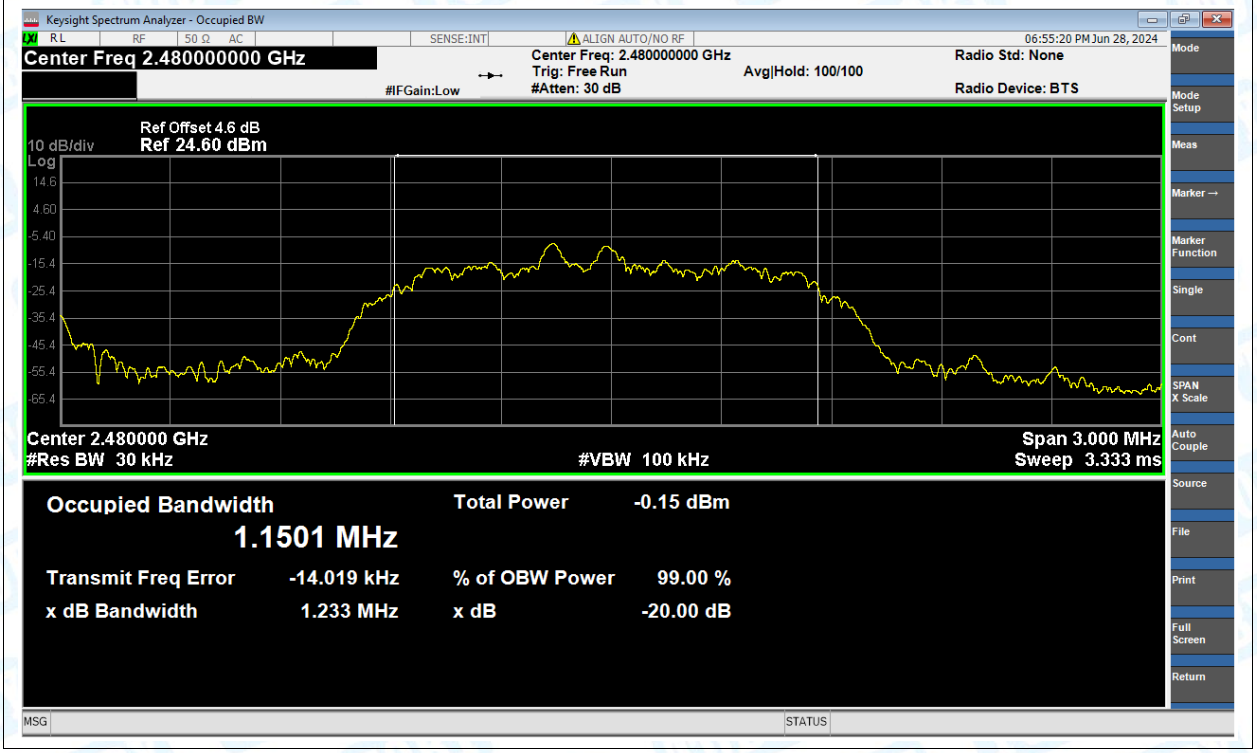


OBW NVNT 2-DH1 2402MHz Ant1

OBW NVNT 2-DH1 2441MHz Ant1



OBW NVNT 2-DH1 2480MHz Ant1

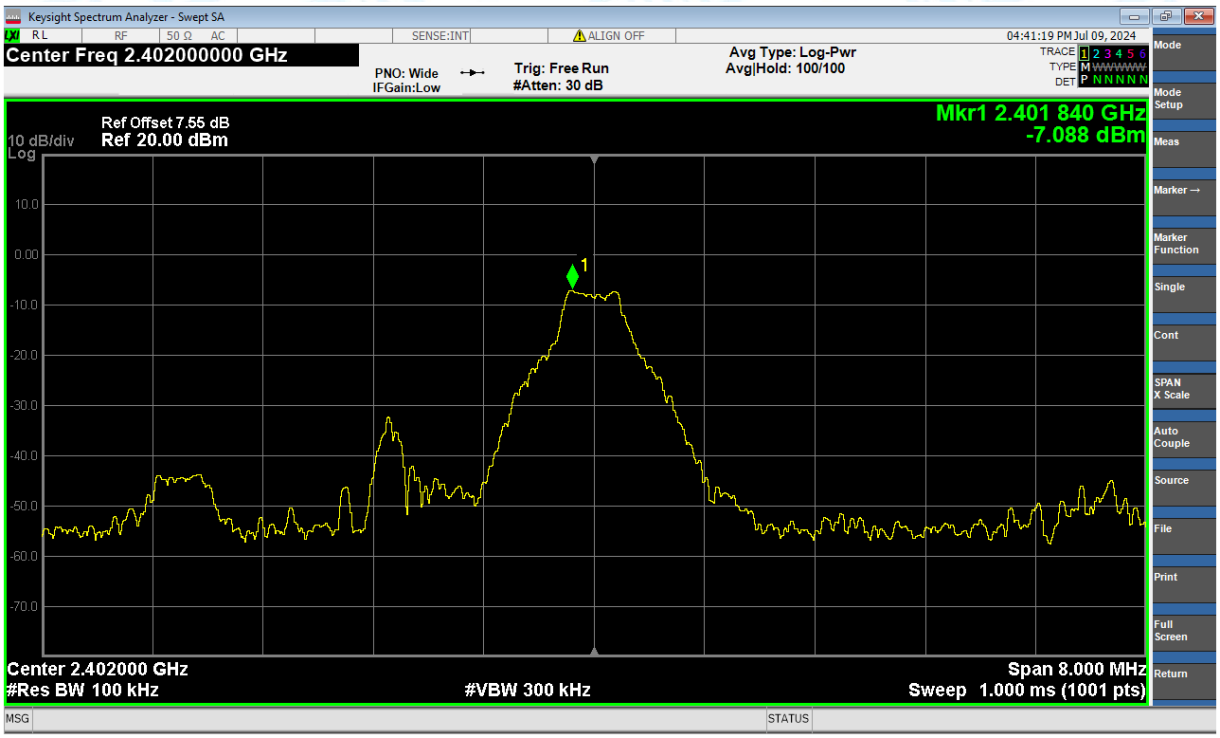


5. Band Edge

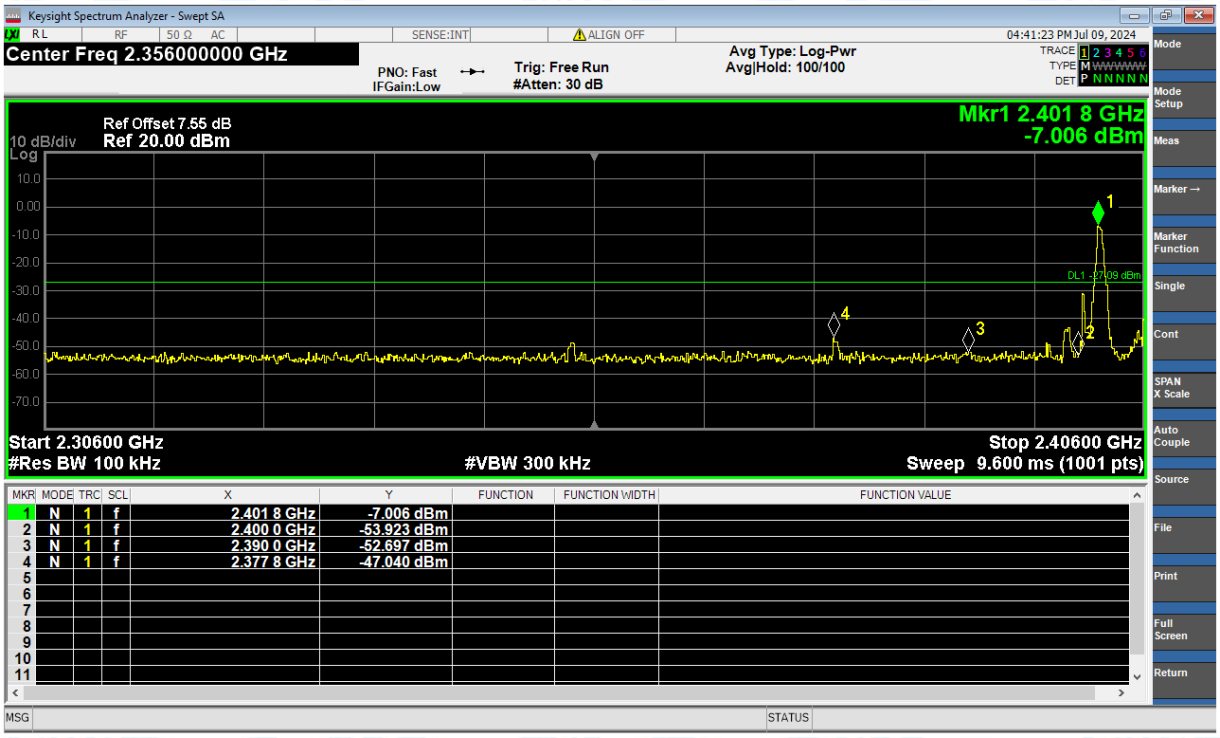
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-39.95	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-43.51	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-40	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-43.92	-20	Pass

Test Graphs

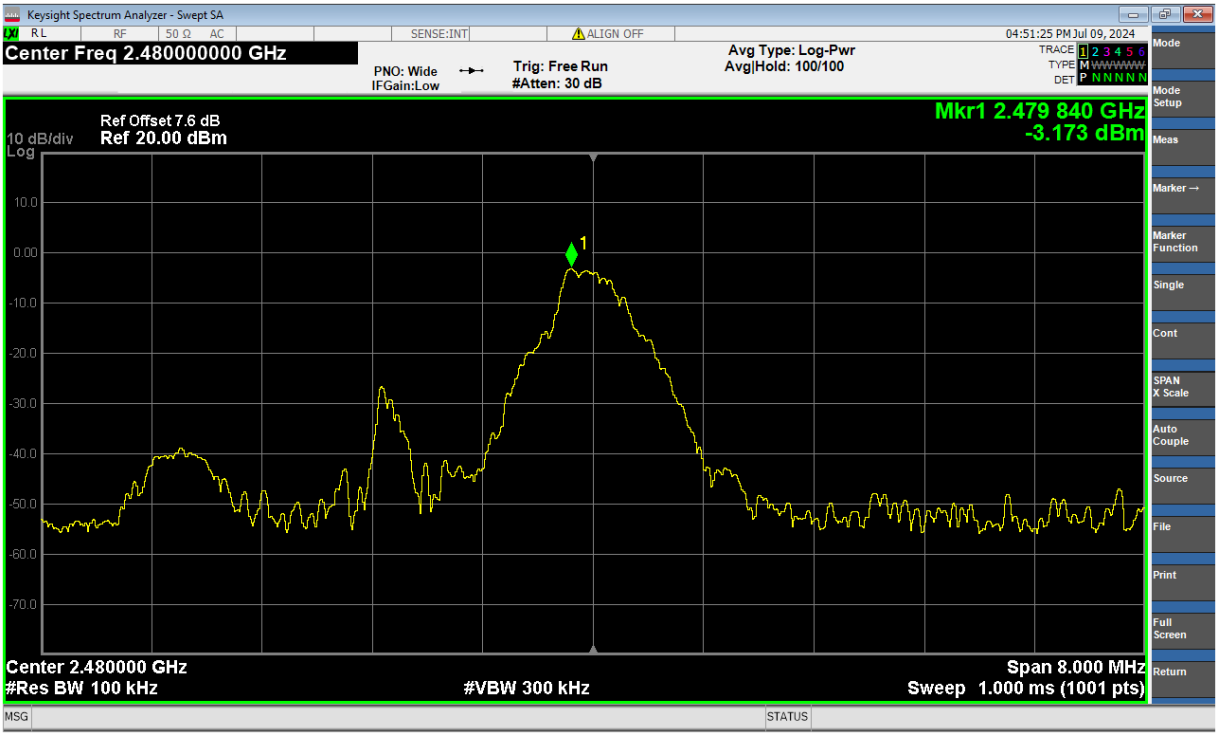
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



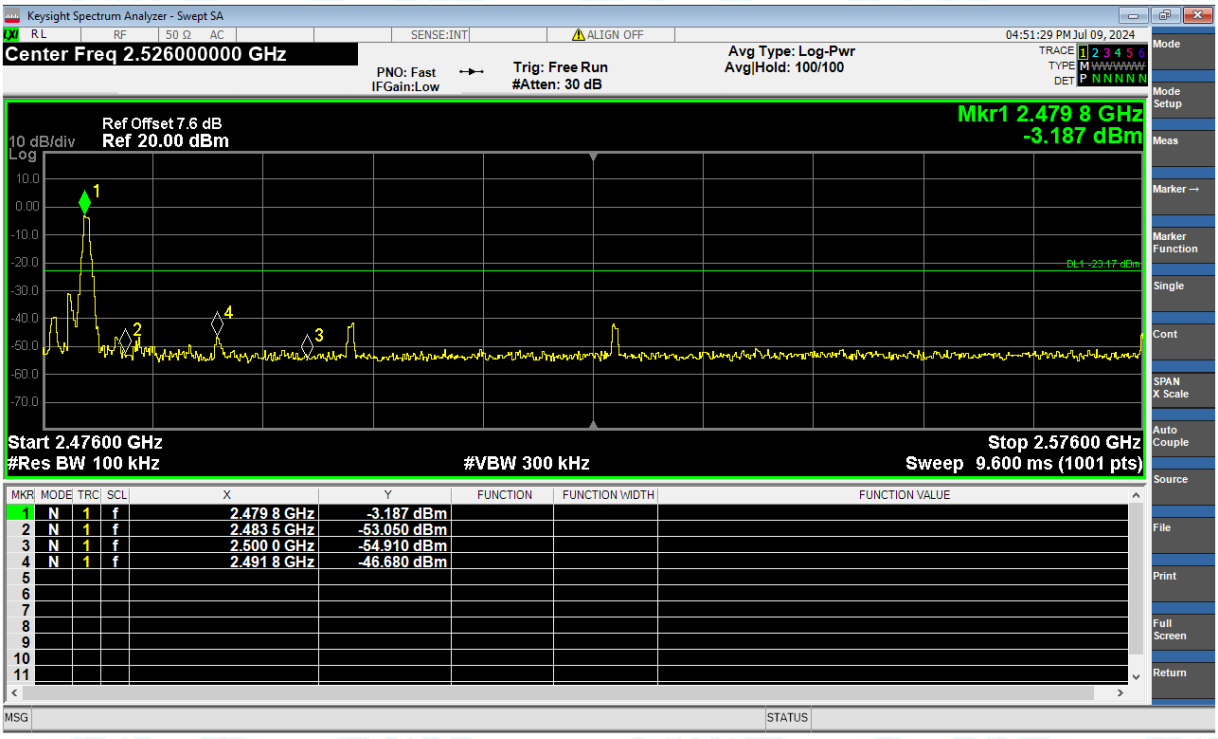
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



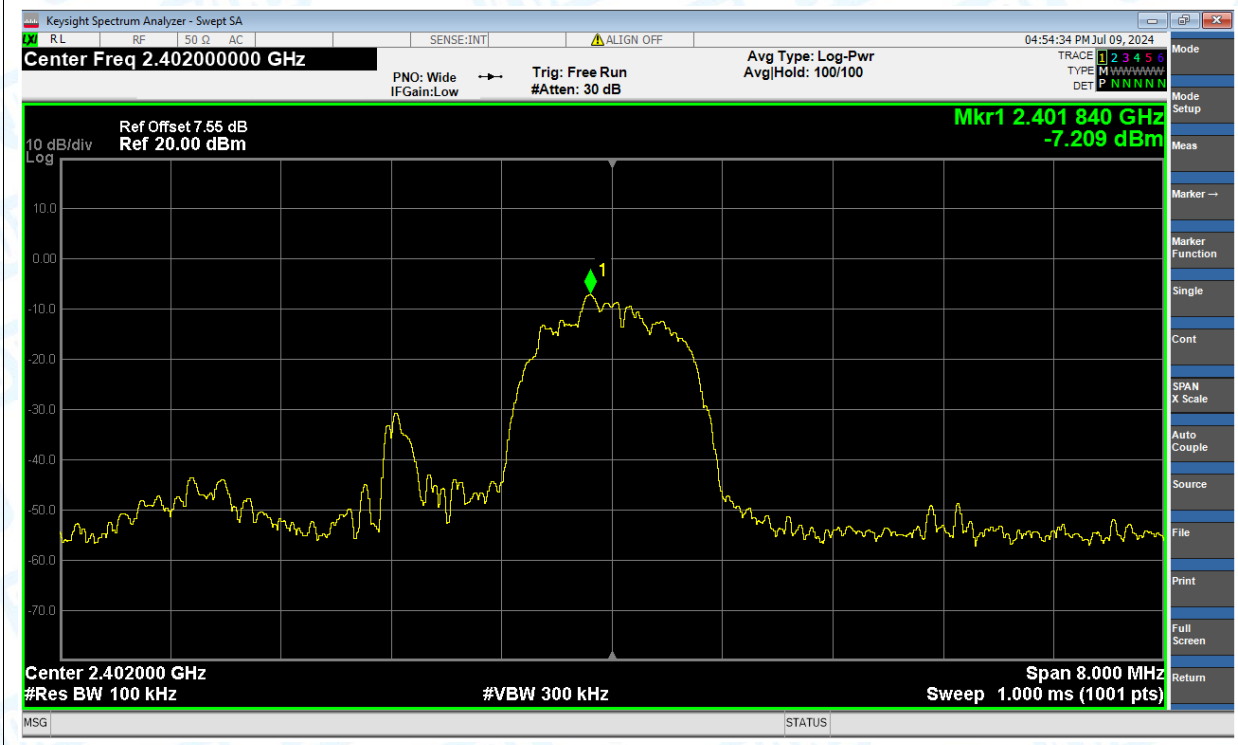
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



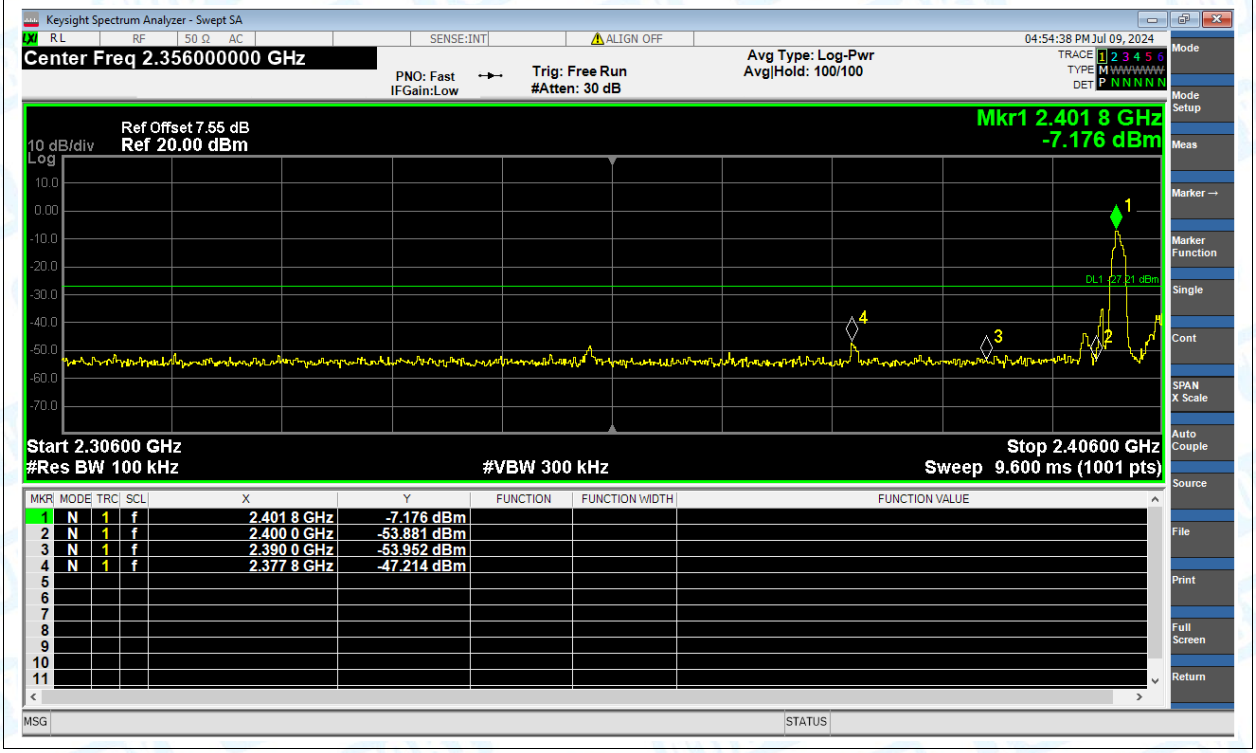
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



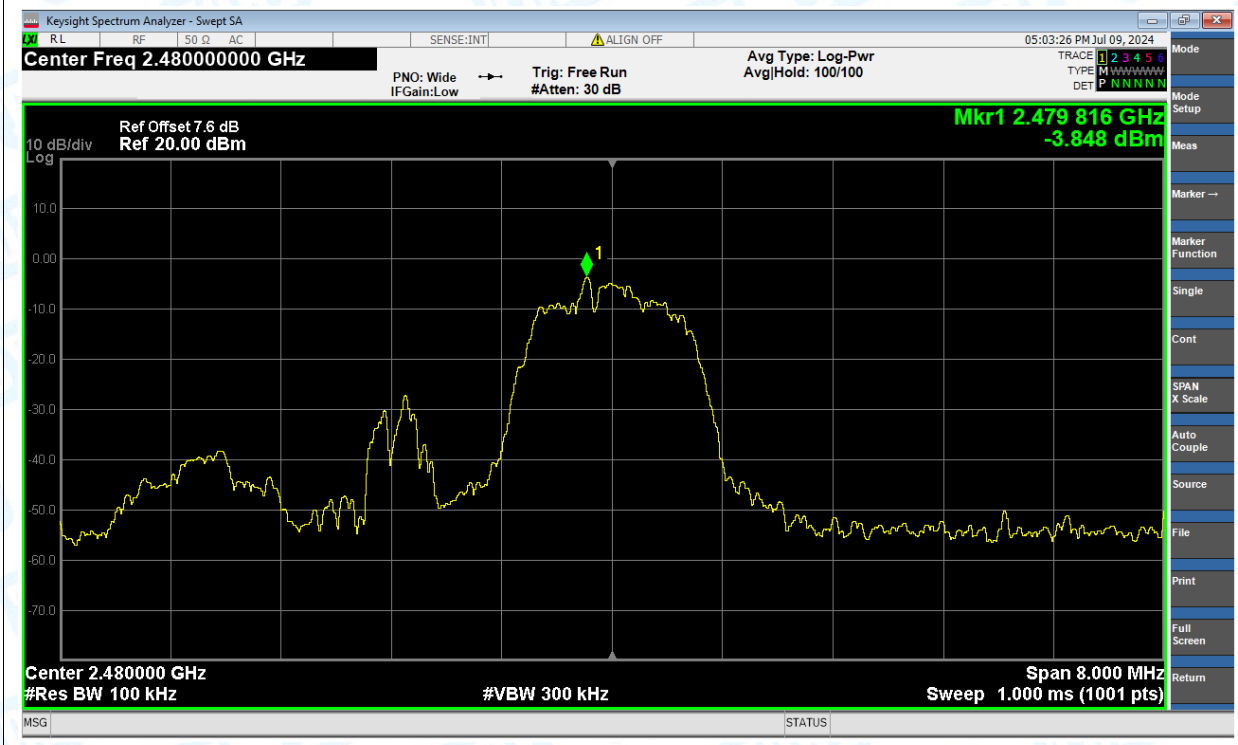
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



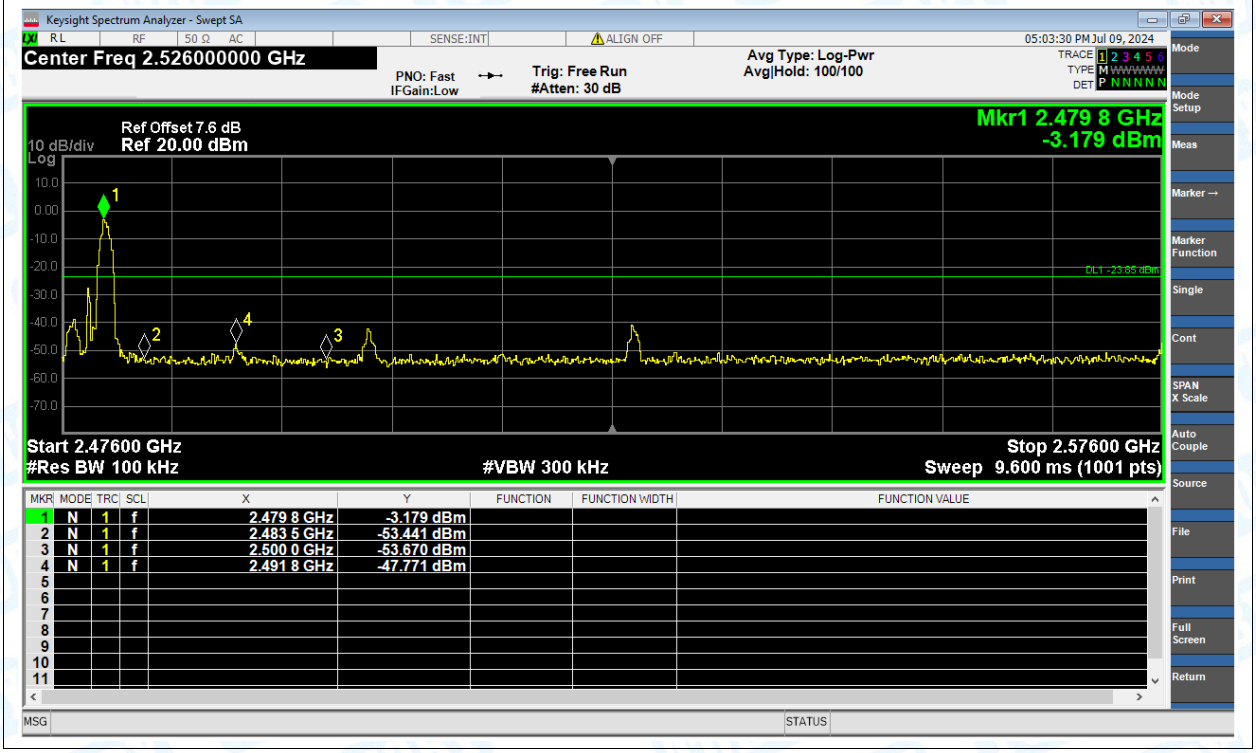
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



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



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

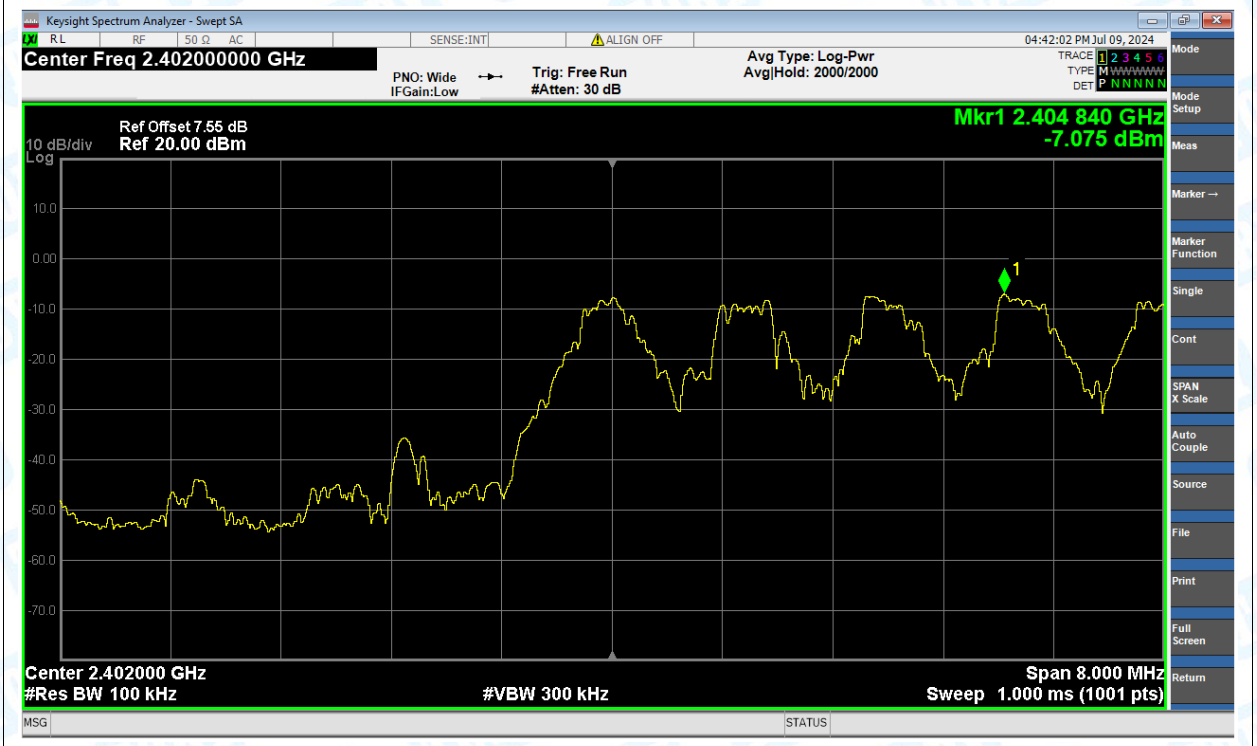


6. Band Edge(Hopping)

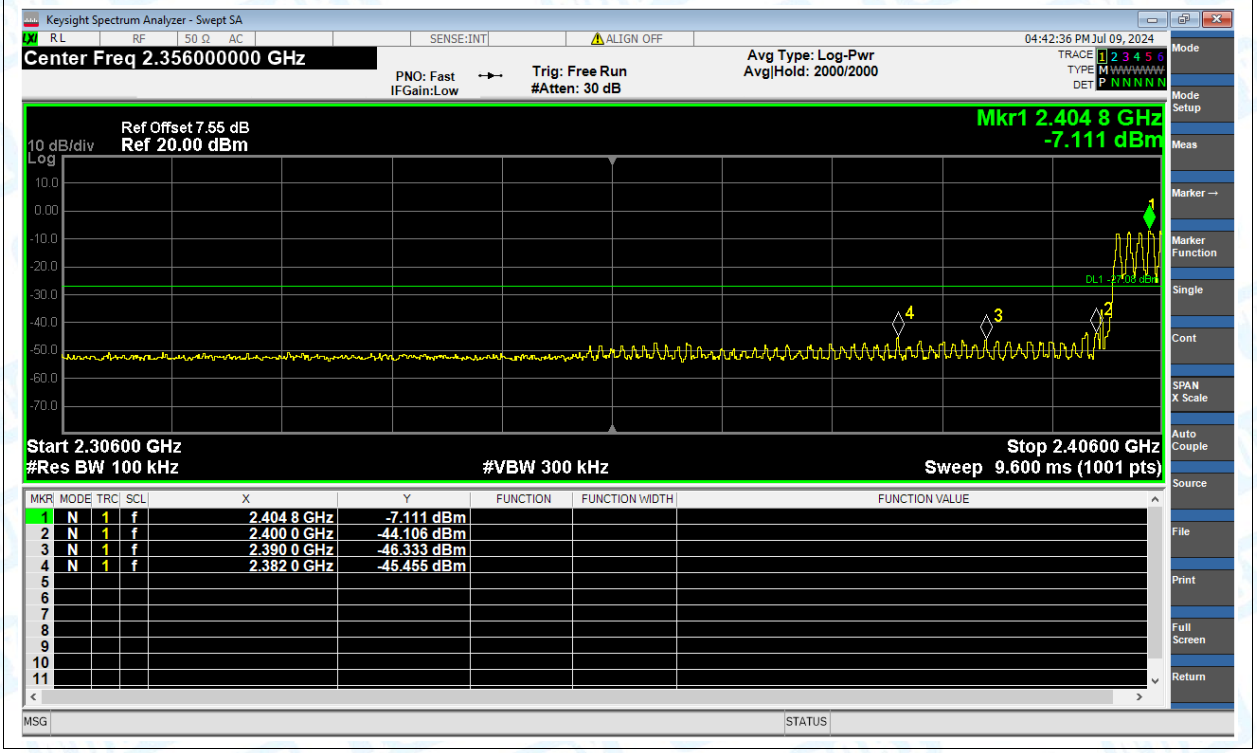
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-38.39	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-38.35	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-39.62	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-38.14	-20	Pass

Test Graphs

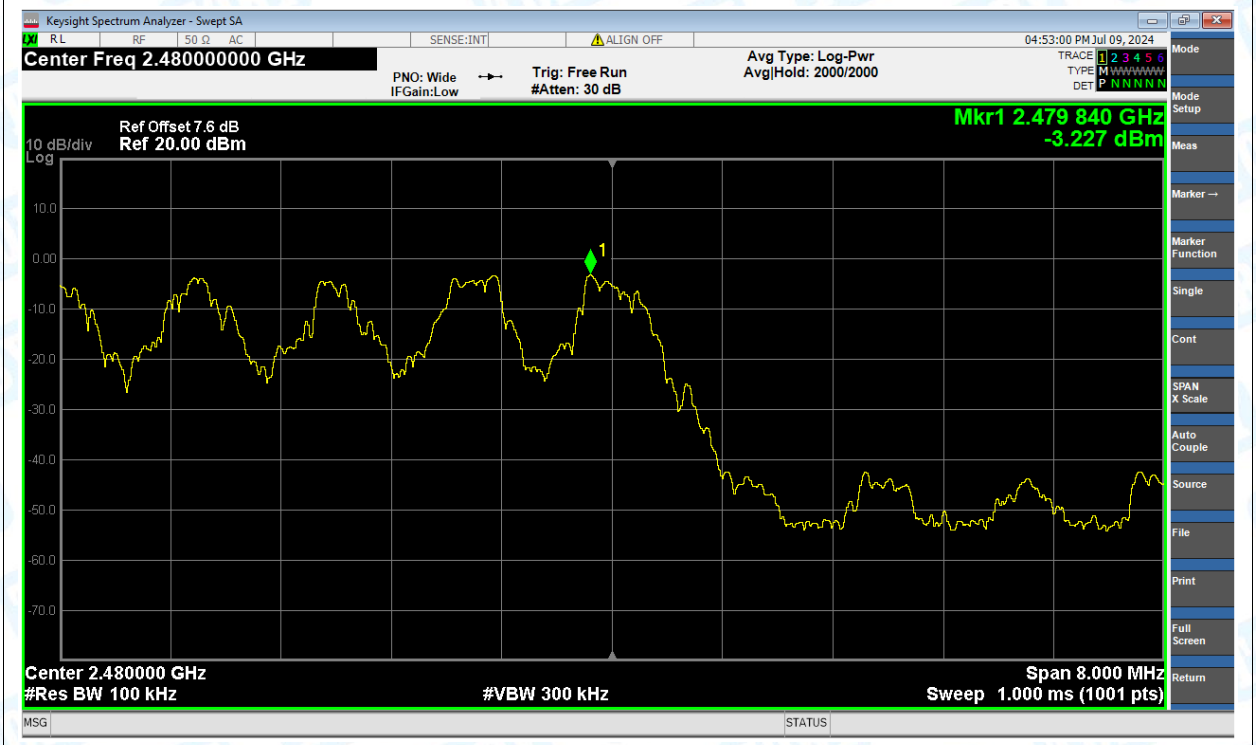
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref



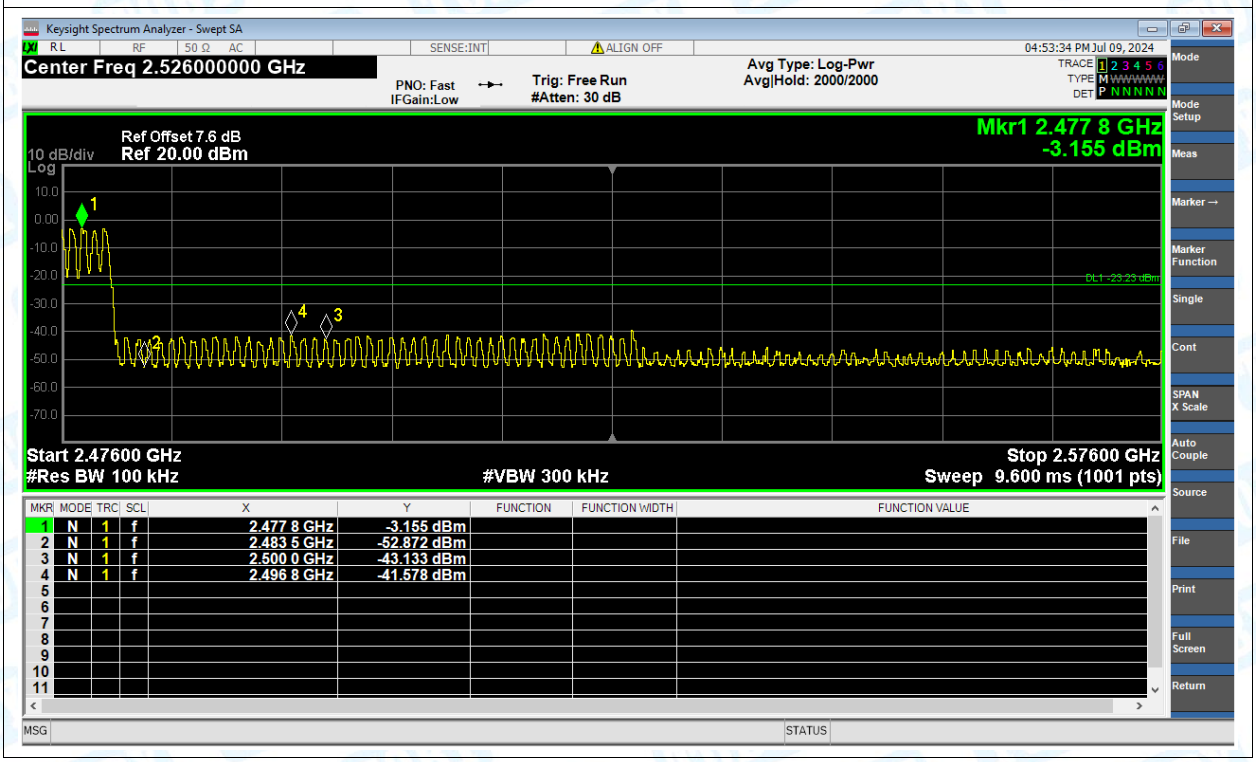
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



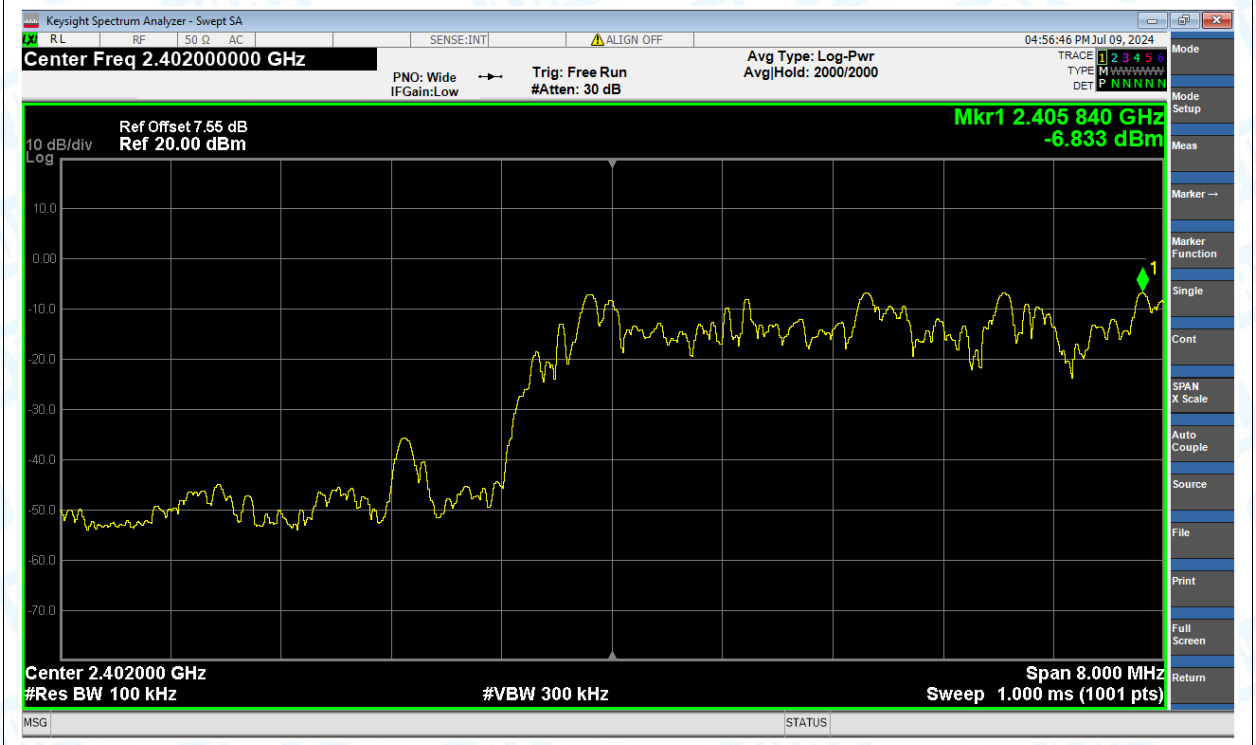
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref



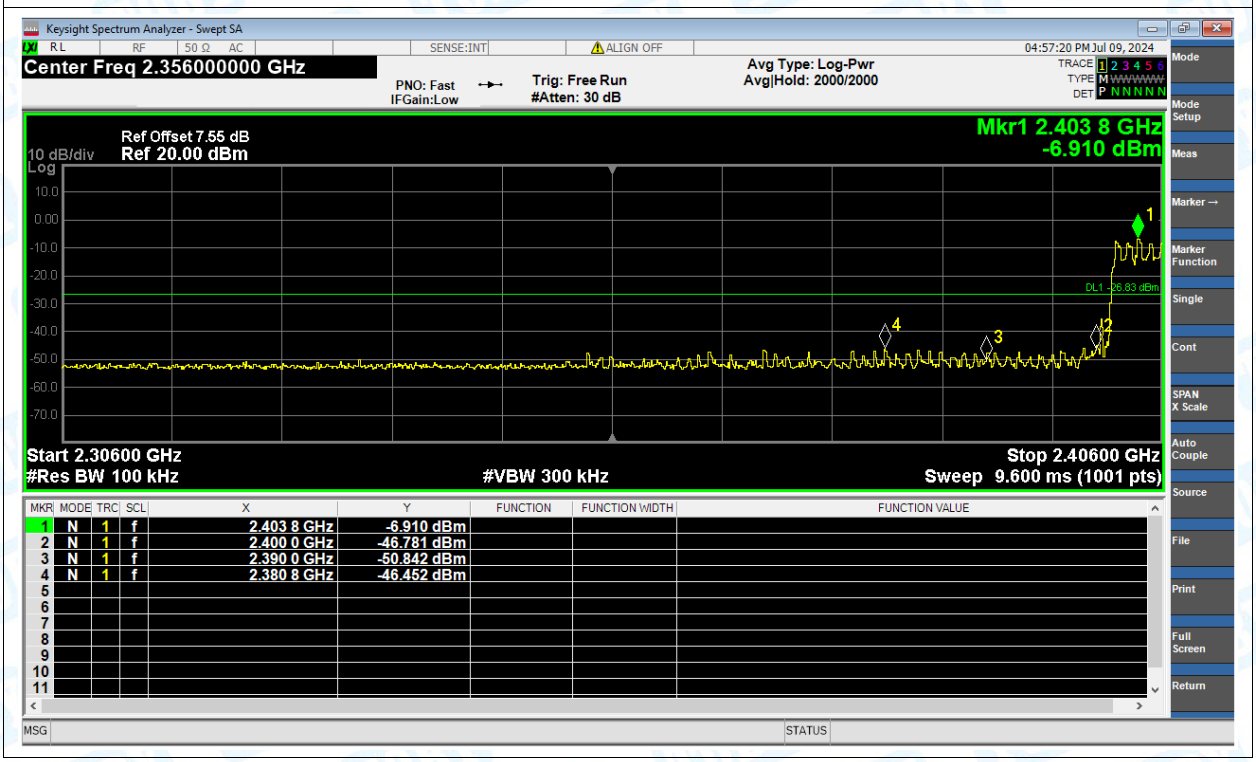
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



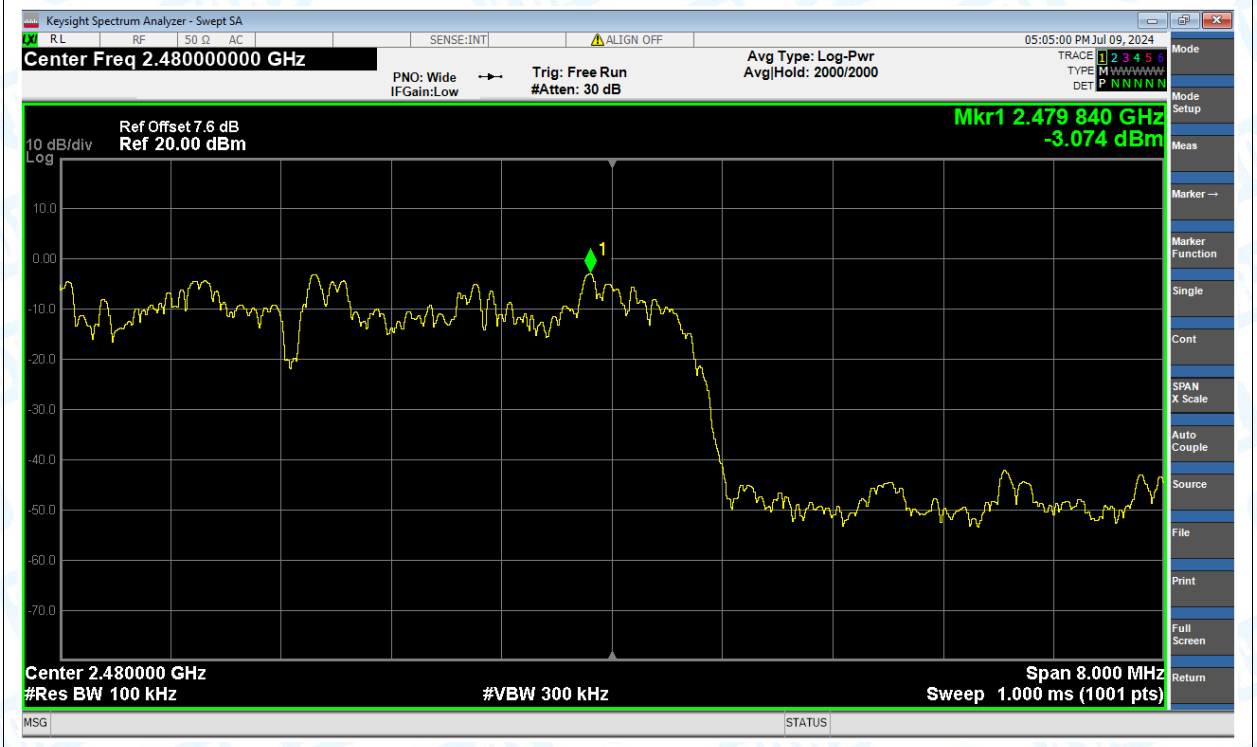
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref



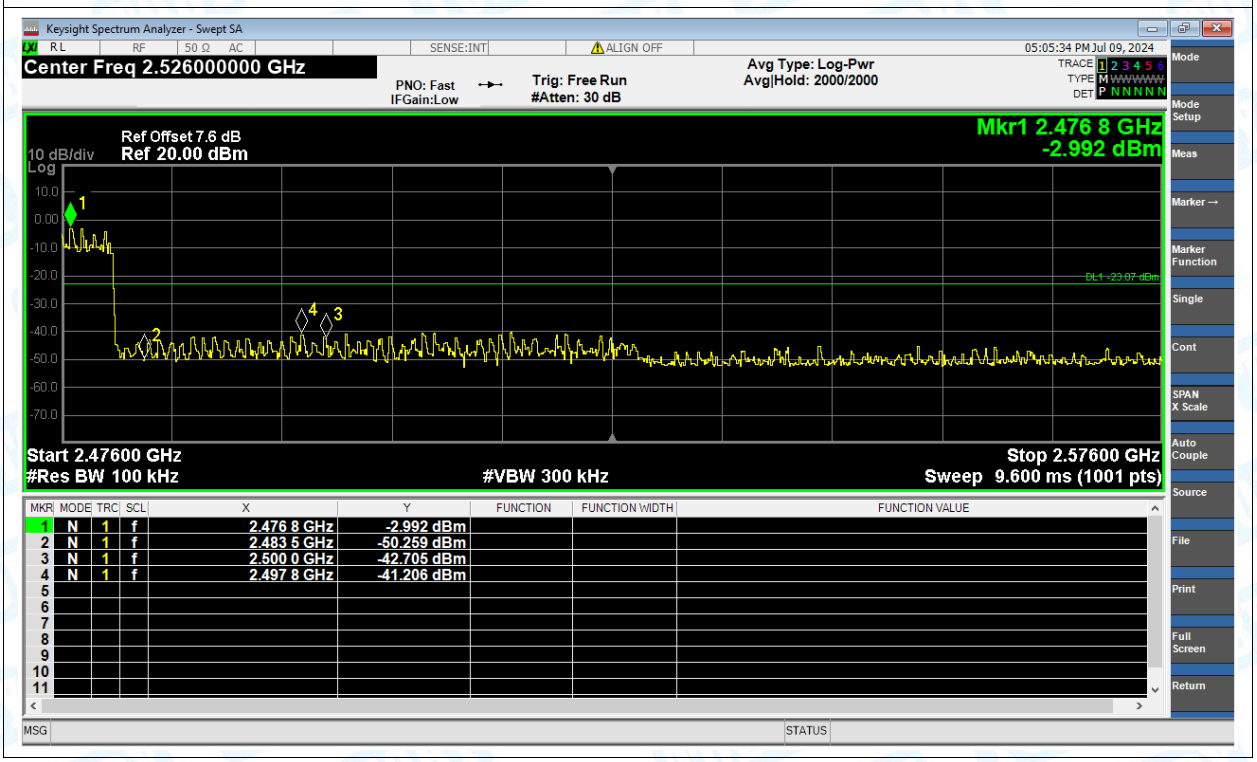
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



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



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

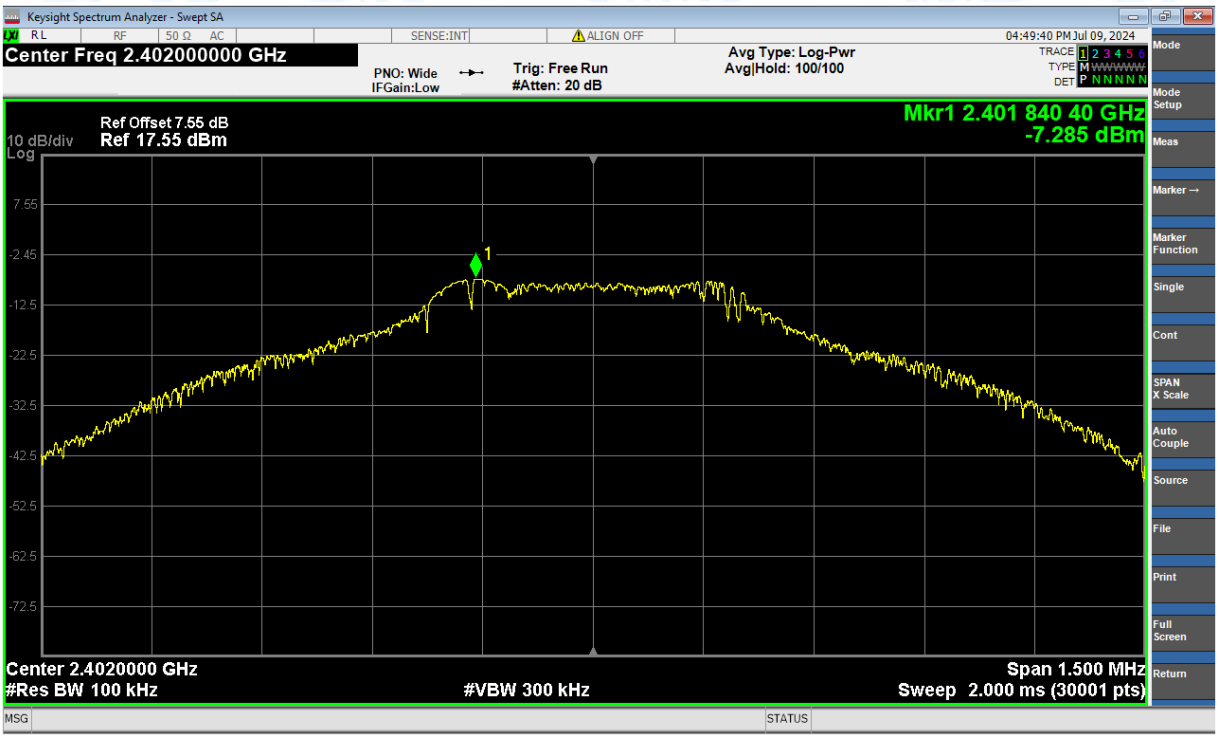


7. Conducted RF Spurious Emission

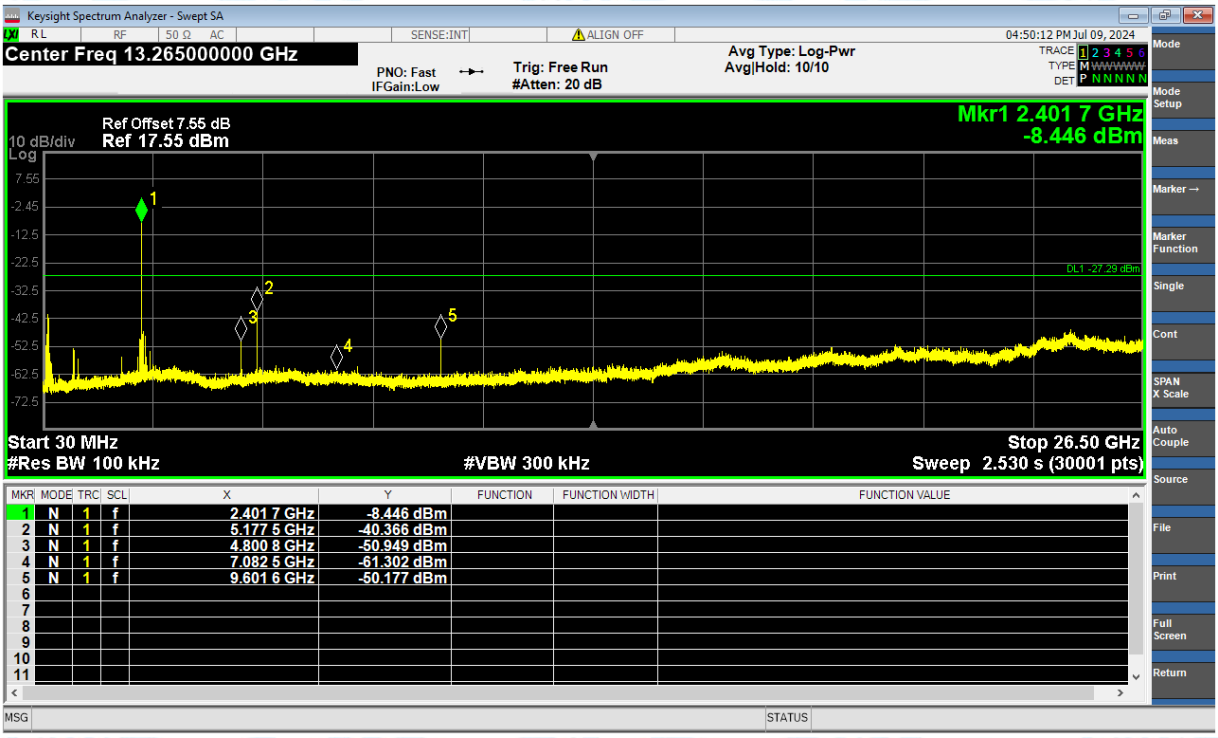
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-33.08	-20	Pass
NVNT	1-DH1	2441	Ant1	-35.66	-20	Pass
NVNT	1-DH1	2480	Ant1	-37.4	-20	Pass
NVNT	2-DH1	2402	Ant1	-33.34	-20	Pass
NVNT	2-DH1	2441	Ant1	-35.71	-20	Pass
NVNT	2-DH1	2480	Ant1	-35.64	-20	Pass

Test Graphs

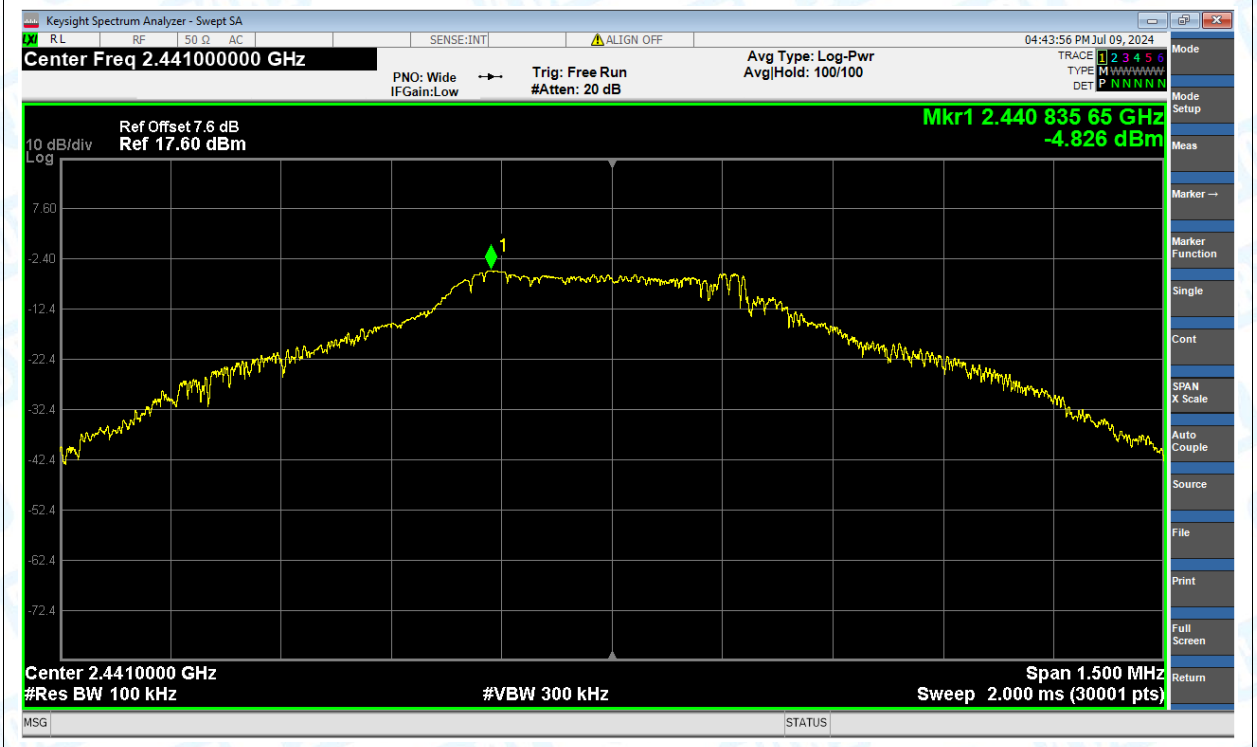
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



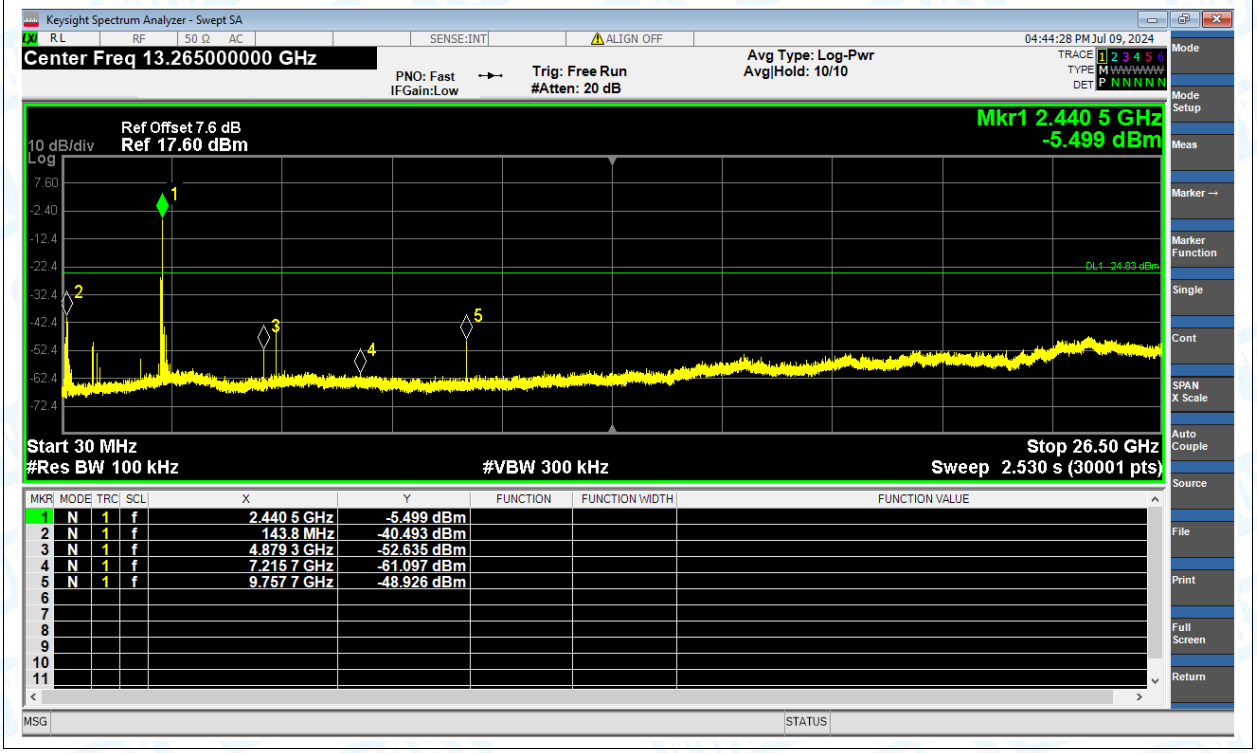
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



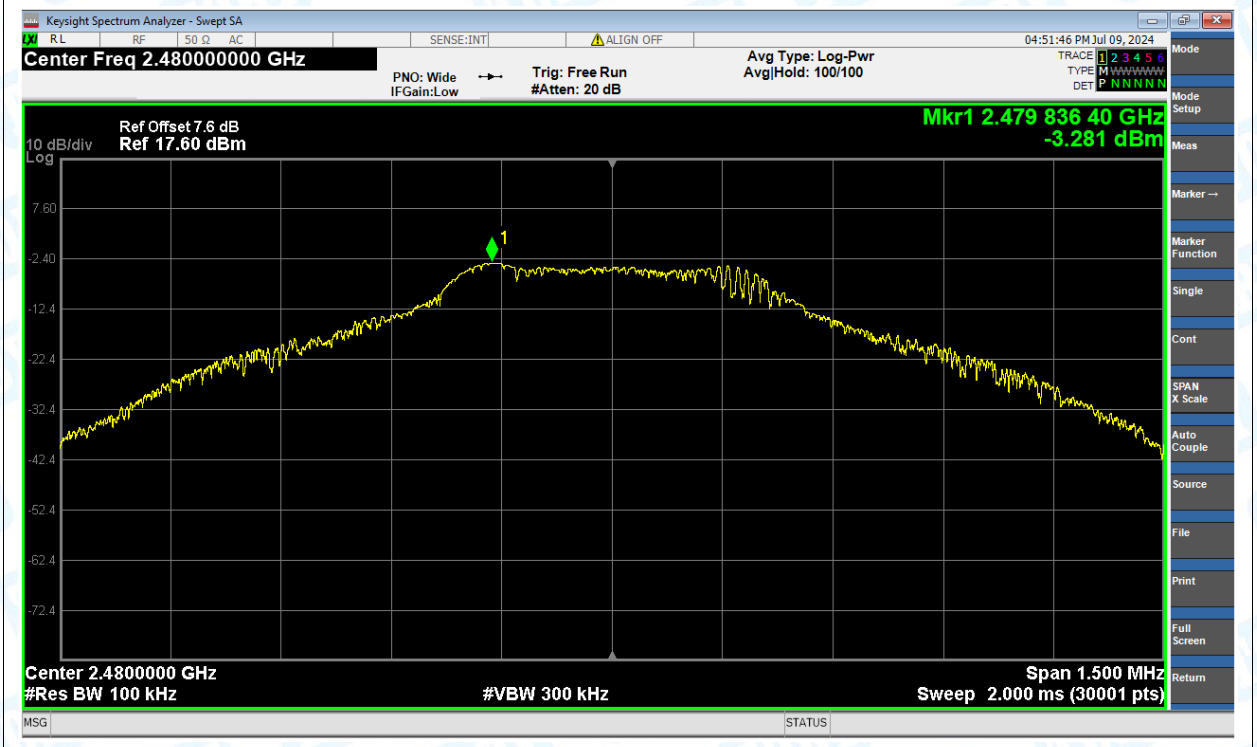
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



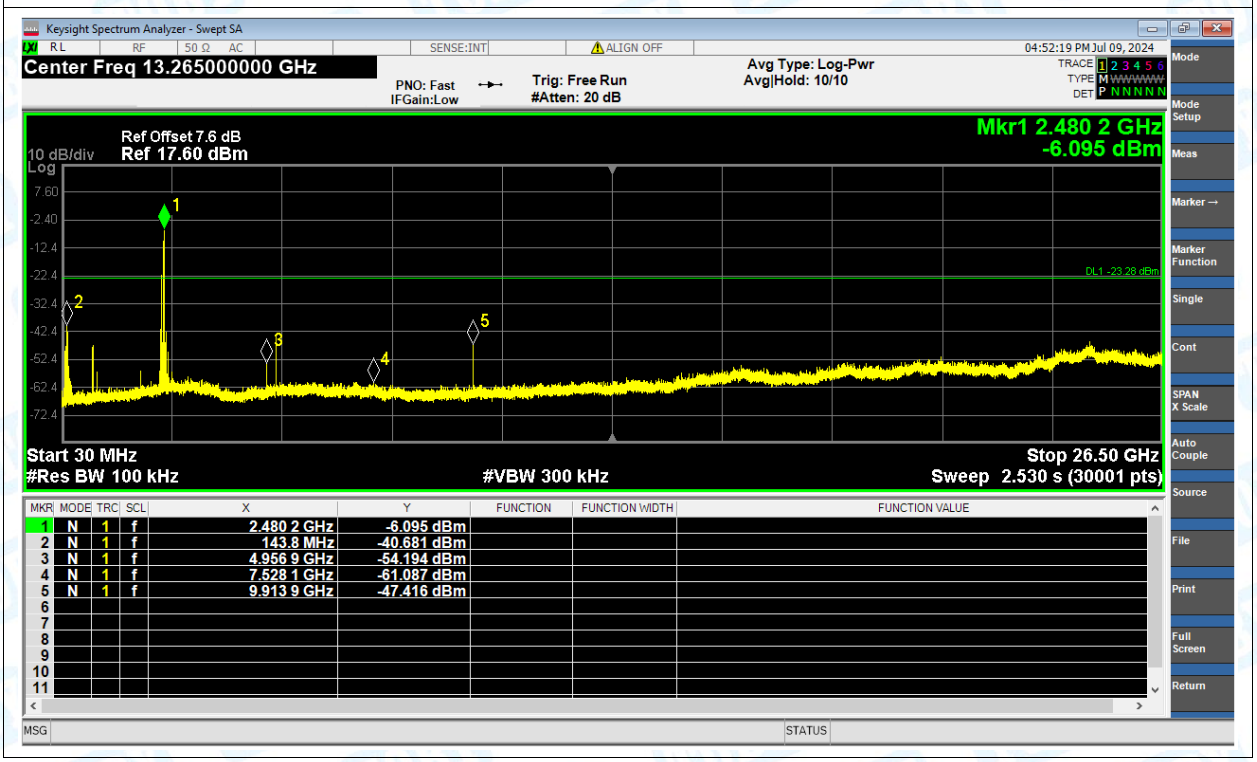
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



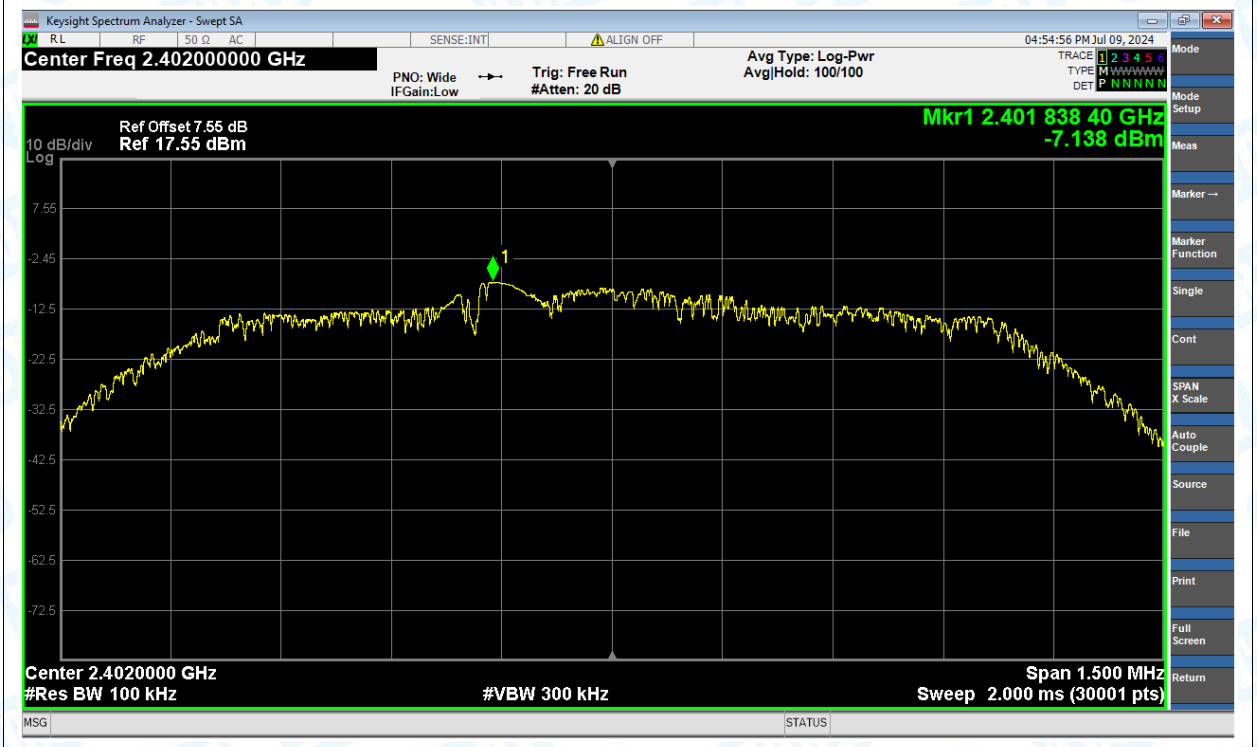
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



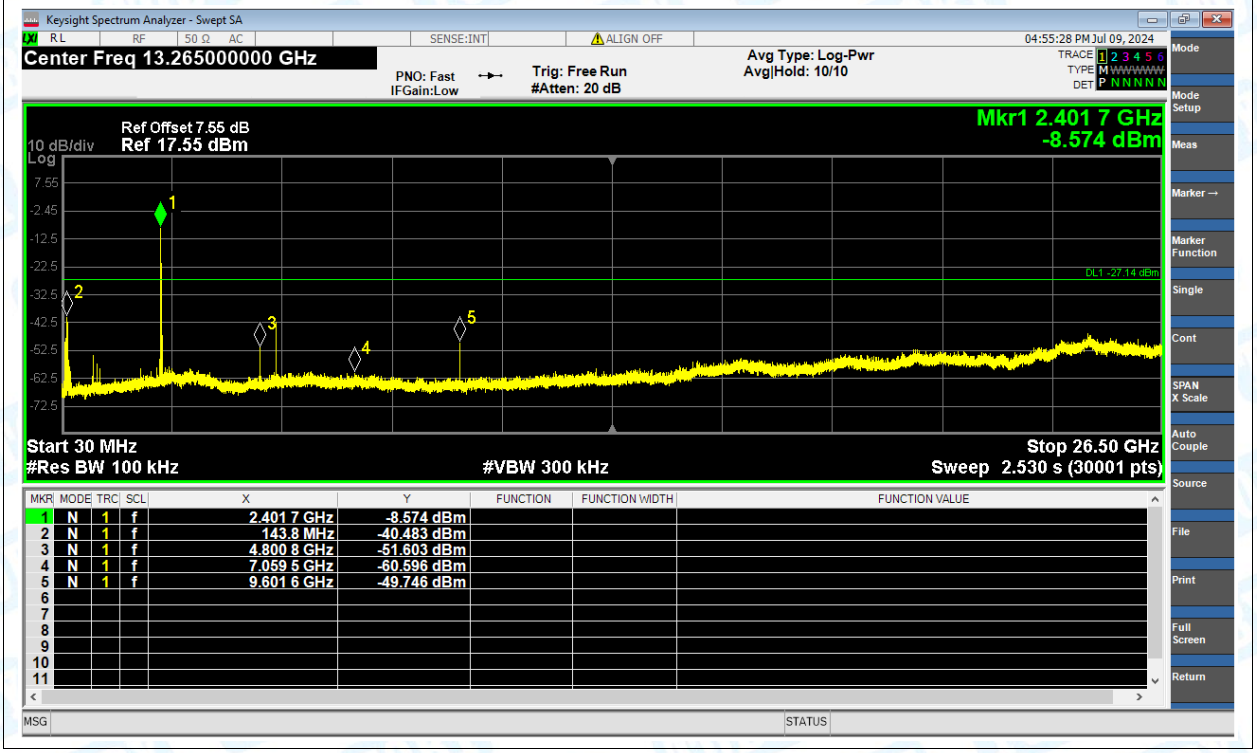
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



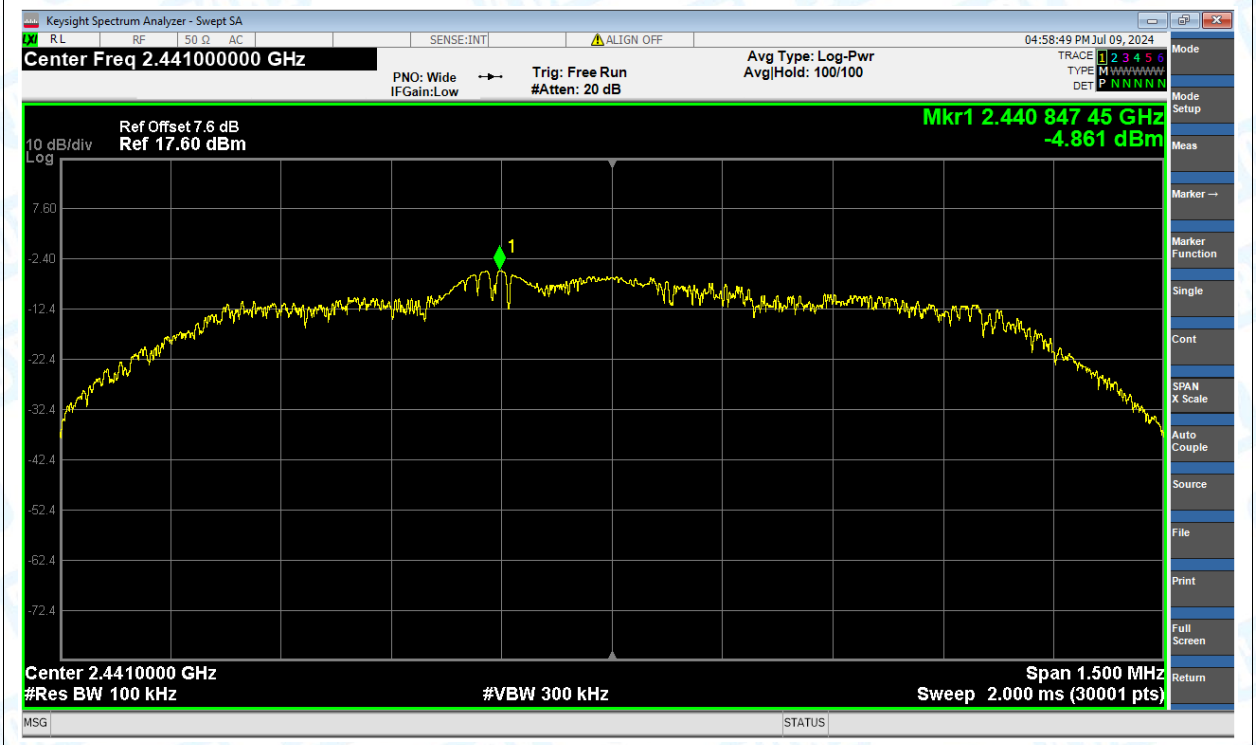
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



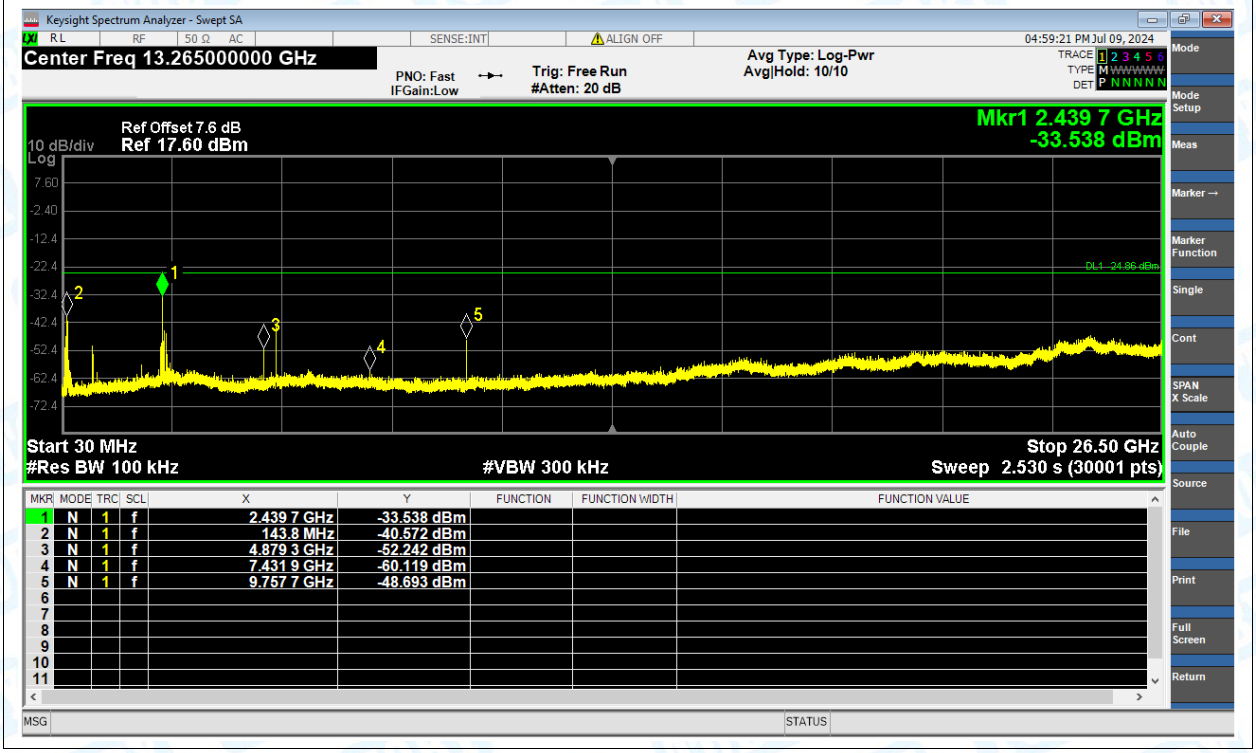
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



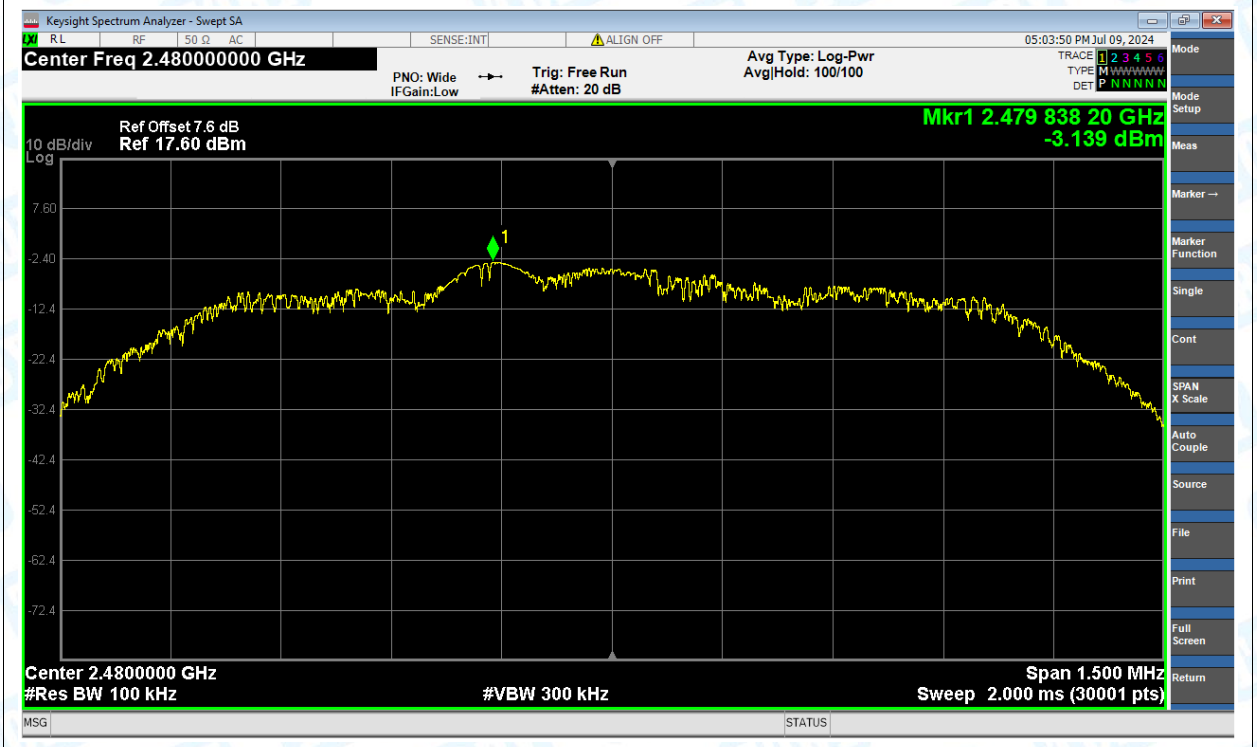
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



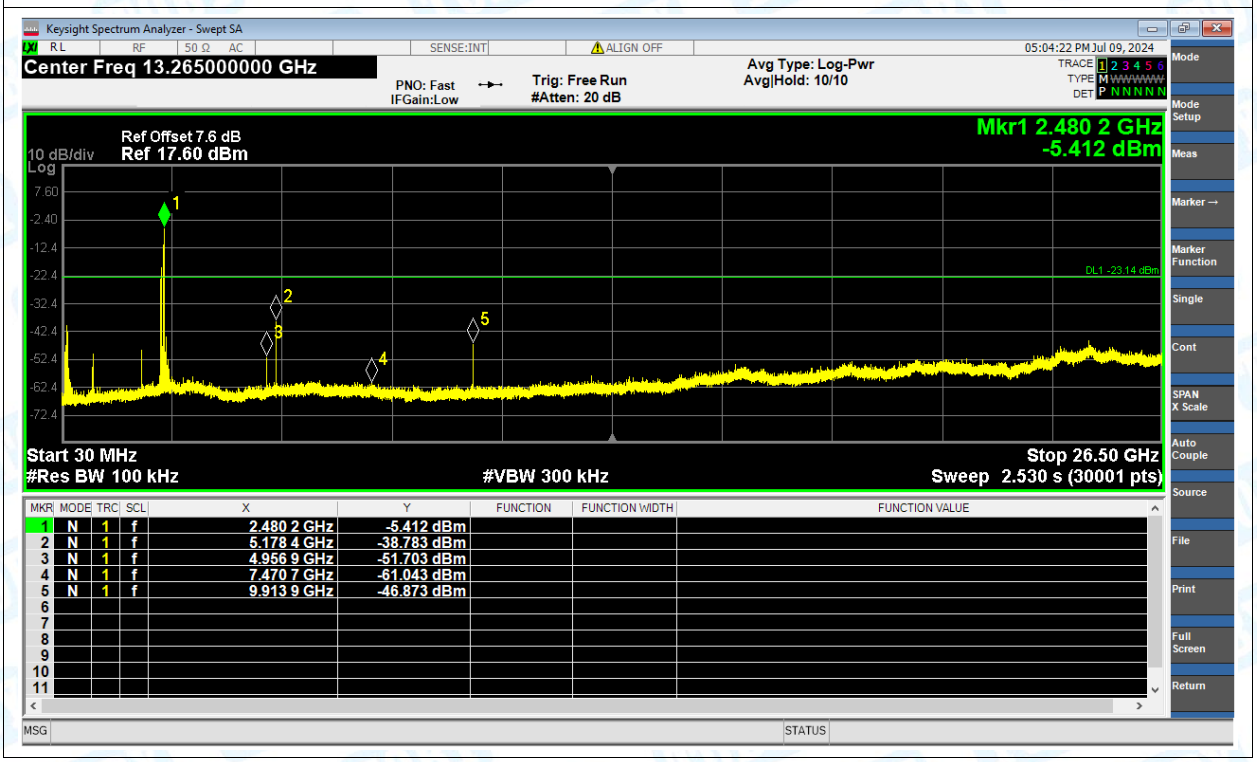
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission

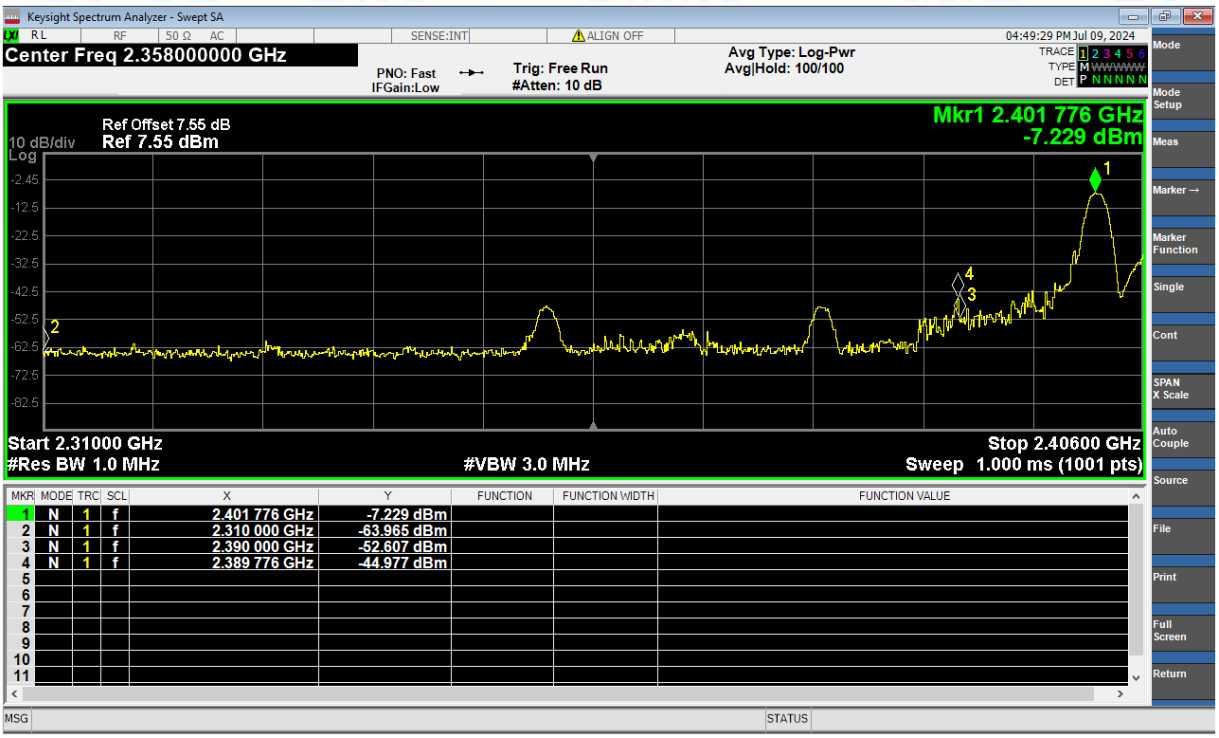


8. Restrict Band

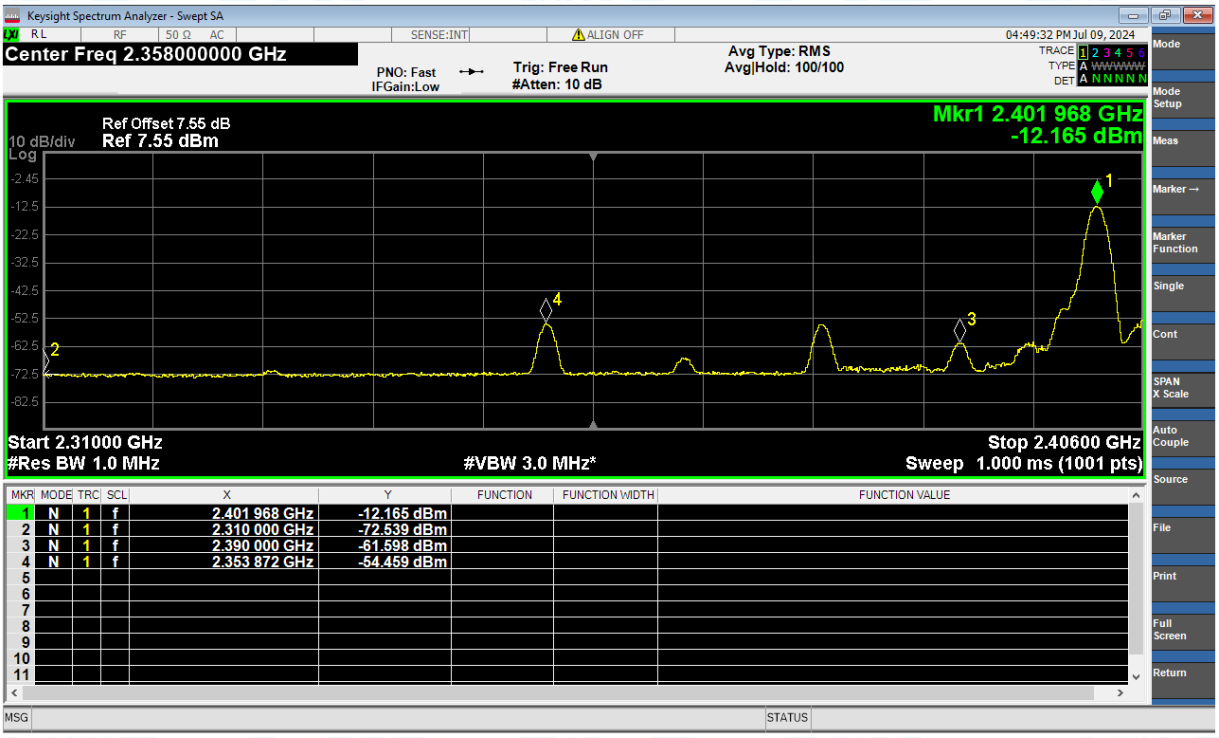
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-63.97	4.3	-	35.59	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-72.54	4.3	5.29	32.31	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2389.776	-44.98	4.3	-	54.58	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2353.872	-54.46	4.3	5.29	50.39	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-52.61	4.3	-	46.95	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-61.6	4.3	5.29	43.25	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-39.36	4.3	-	60.2	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-56.69	4.3	5.29	48.16	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.896	-34.34	4.3	-	65.22	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2492.08	-53.4	4.3	5.29	51.45	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-58.18	4.3	-	41.38	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-70.57	4.3	5.29	34.28	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-66.76	4.3	-	32.8	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-73	4.3	5.17	31.73	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2354.16	-48.03	4.3	-	51.53	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2377.968	-55.4	4.3	5.17	49.33	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-52.67	4.3	-	46.89	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-61.29	4.3	5.17	43.44	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-48.01	4.3	-	51.55	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-60.49	4.3	5.17	44.24	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.728	-37.87	4.3	-	61.69	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2491.96	-55.22	4.3	5.17	49.51	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-58.06	4.3	-	41.5	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-70.04	4.3	5.17	34.69	Average	54	Pass

Test Graphs

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



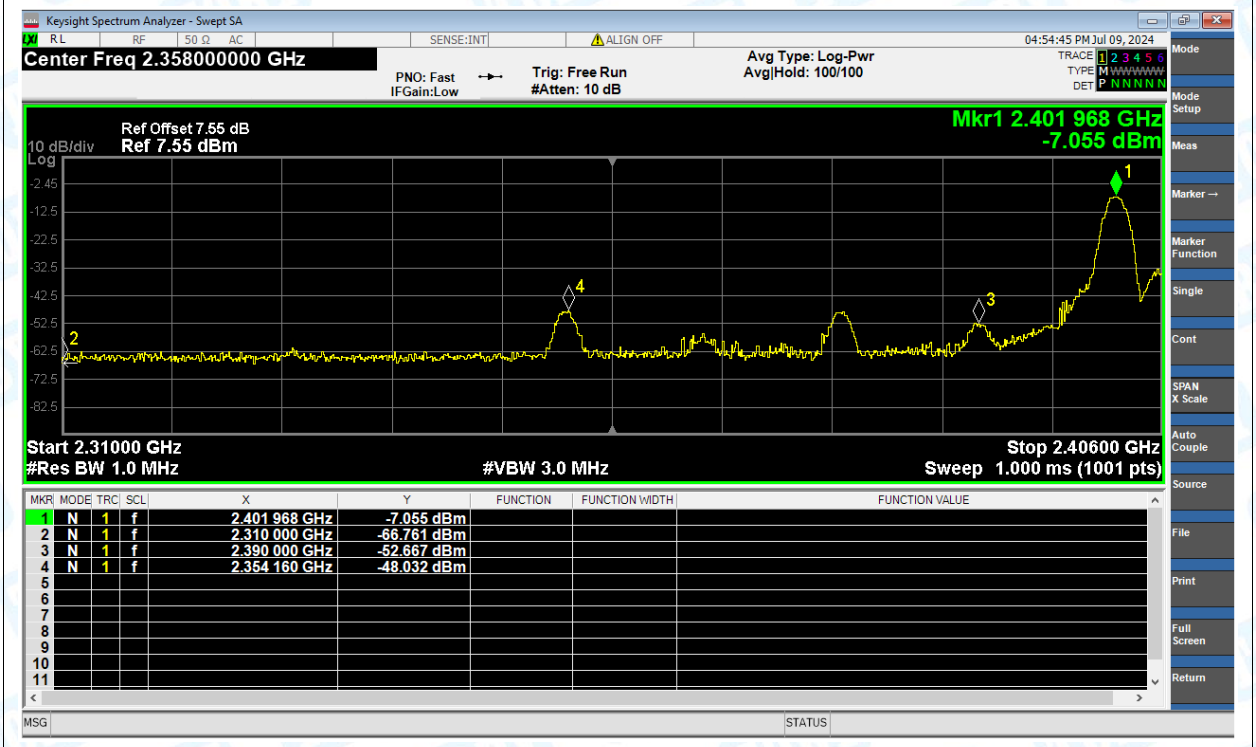
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



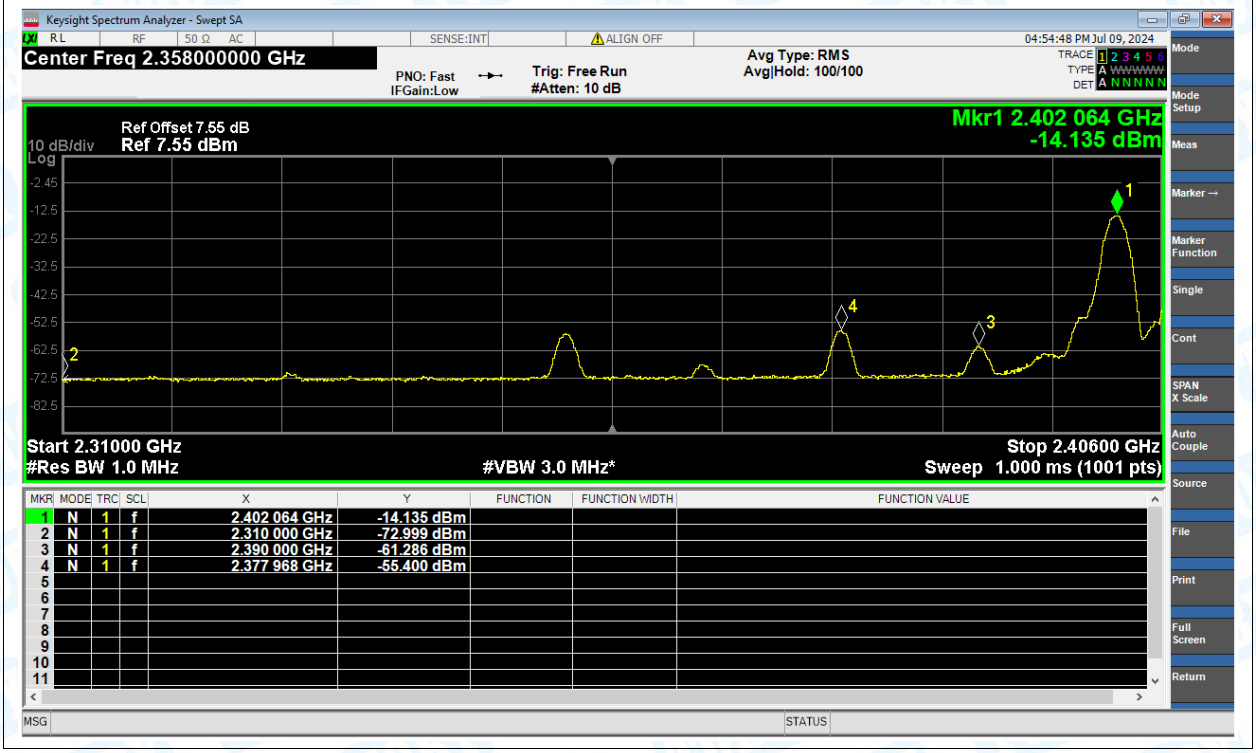
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak

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

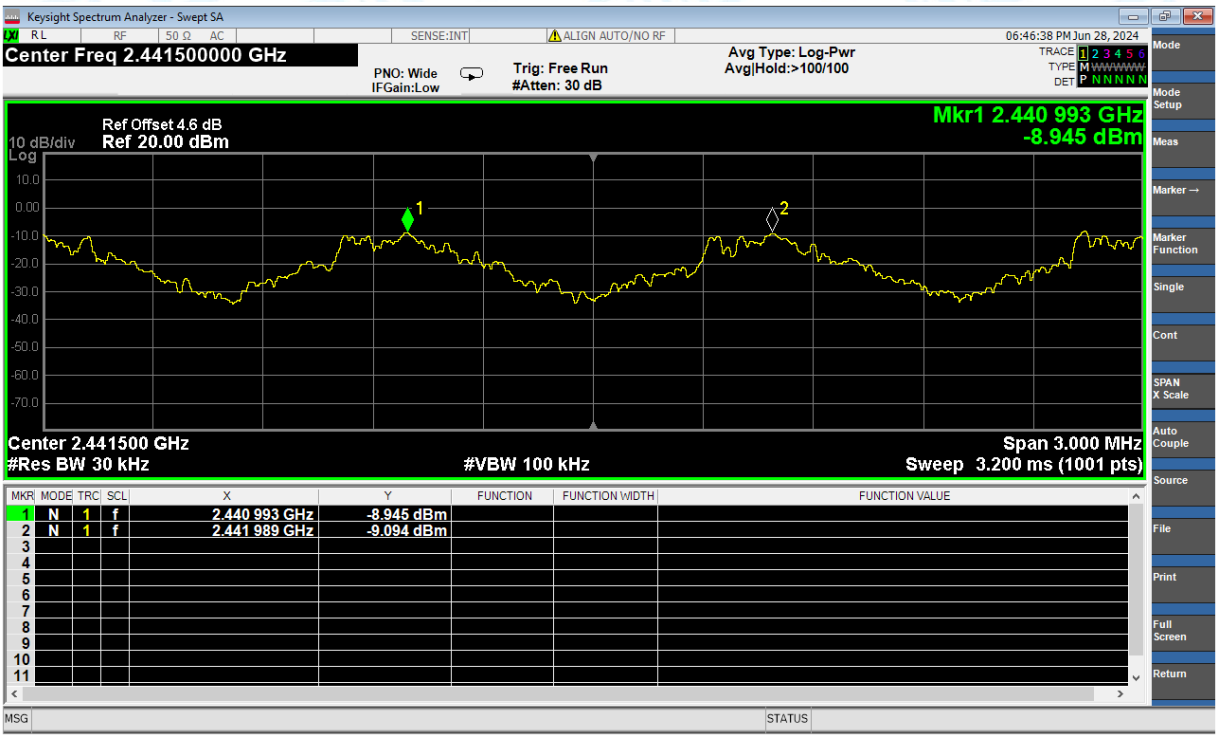
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average

9. Carrier Frequencies Separation

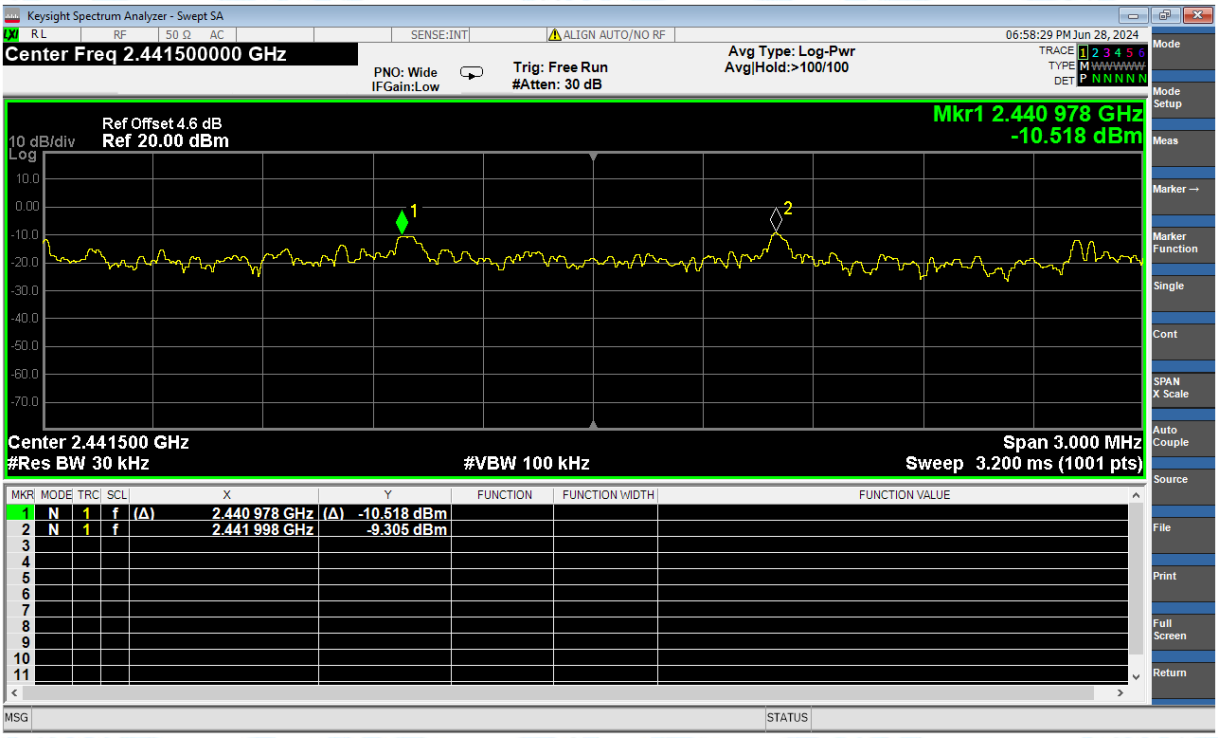
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.993	2441.989	0.996	0.58	Pass
NVNT	2-DH1	Ant1	2440.978	2441.998	1.02	0.827	Pass

Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1

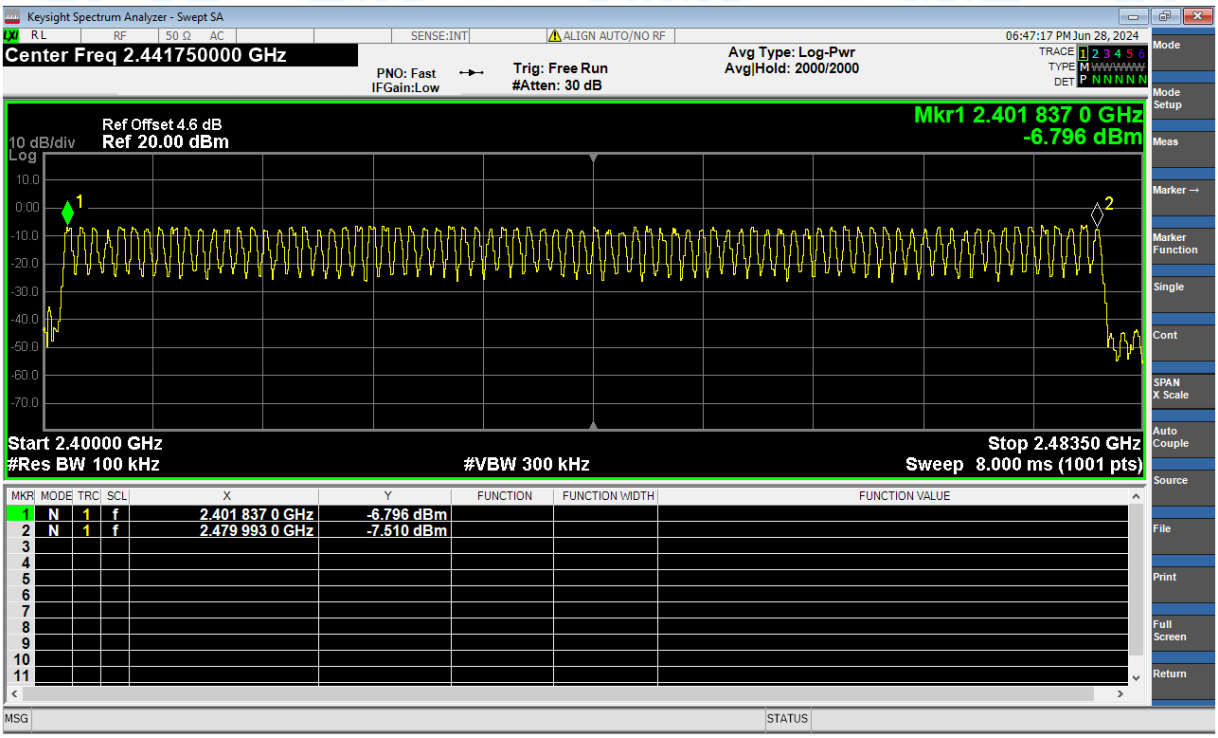


10. Number of Hopping Channel

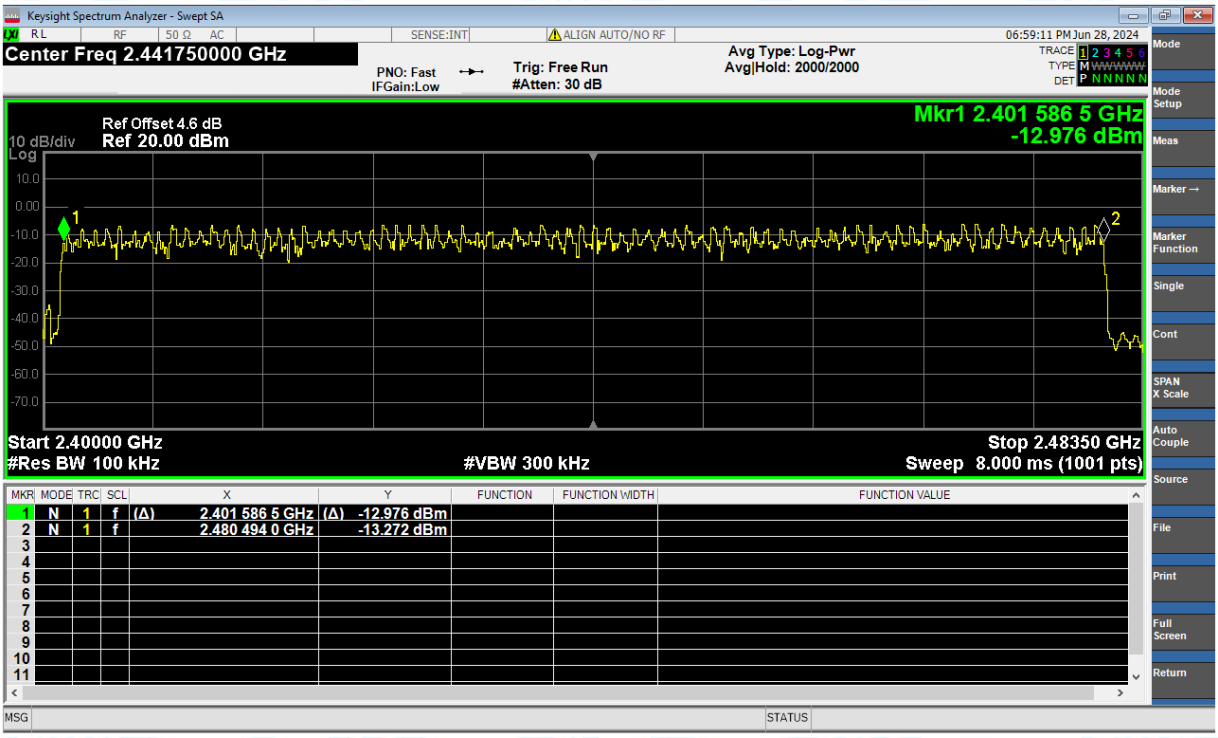
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass

Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1

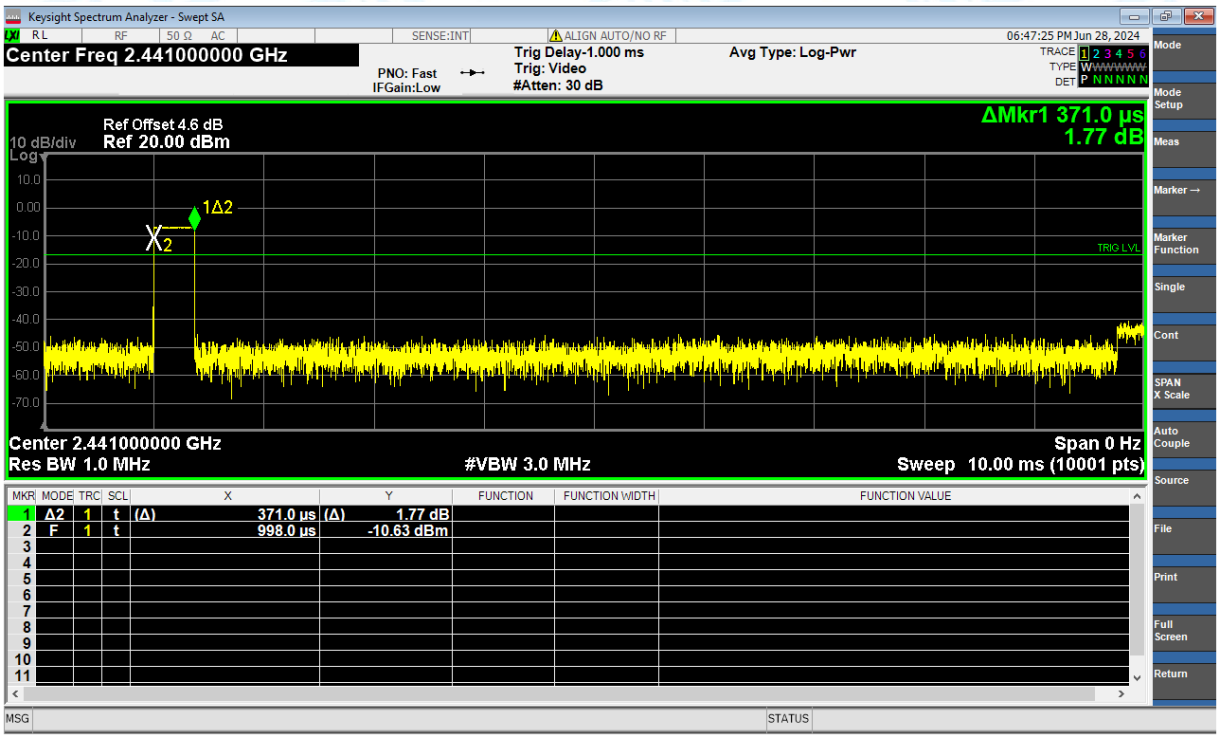


11. Dwell Time

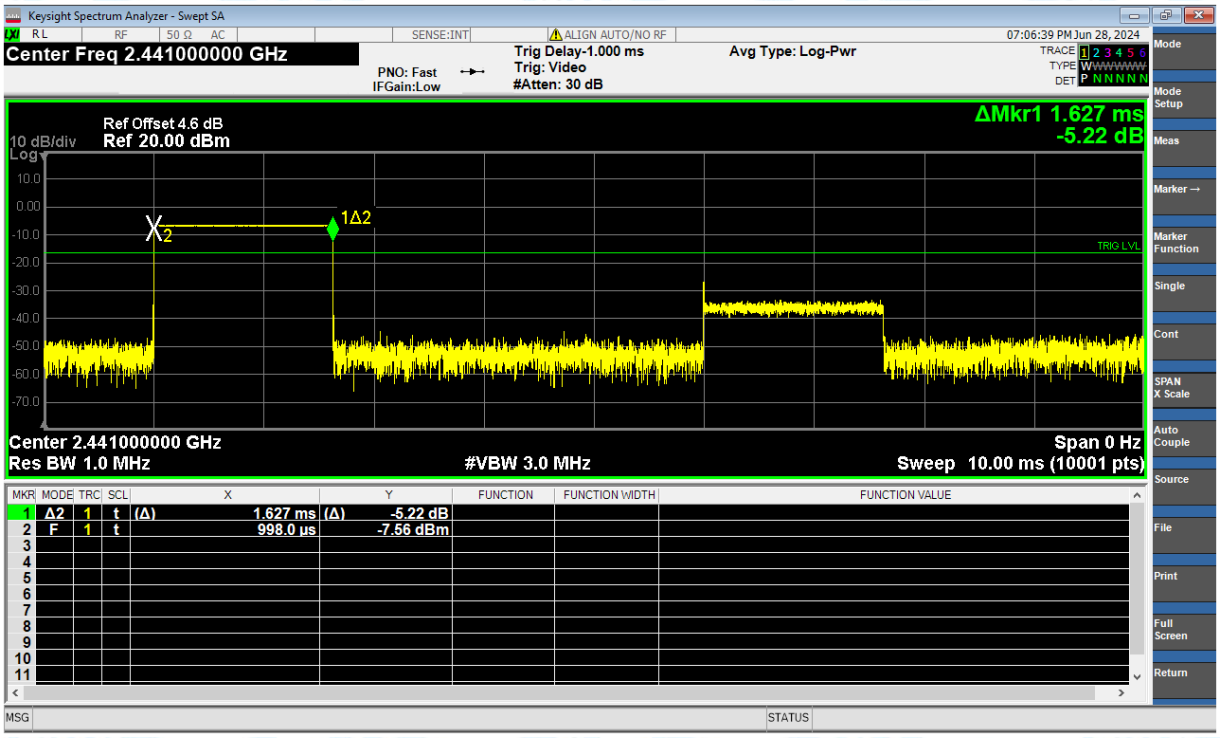
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.371	118.72	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.627	260.32	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.875	306.667	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.38	121.6	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.633	261.28	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.881	307.307	31600	400	Pass

Test Graphs

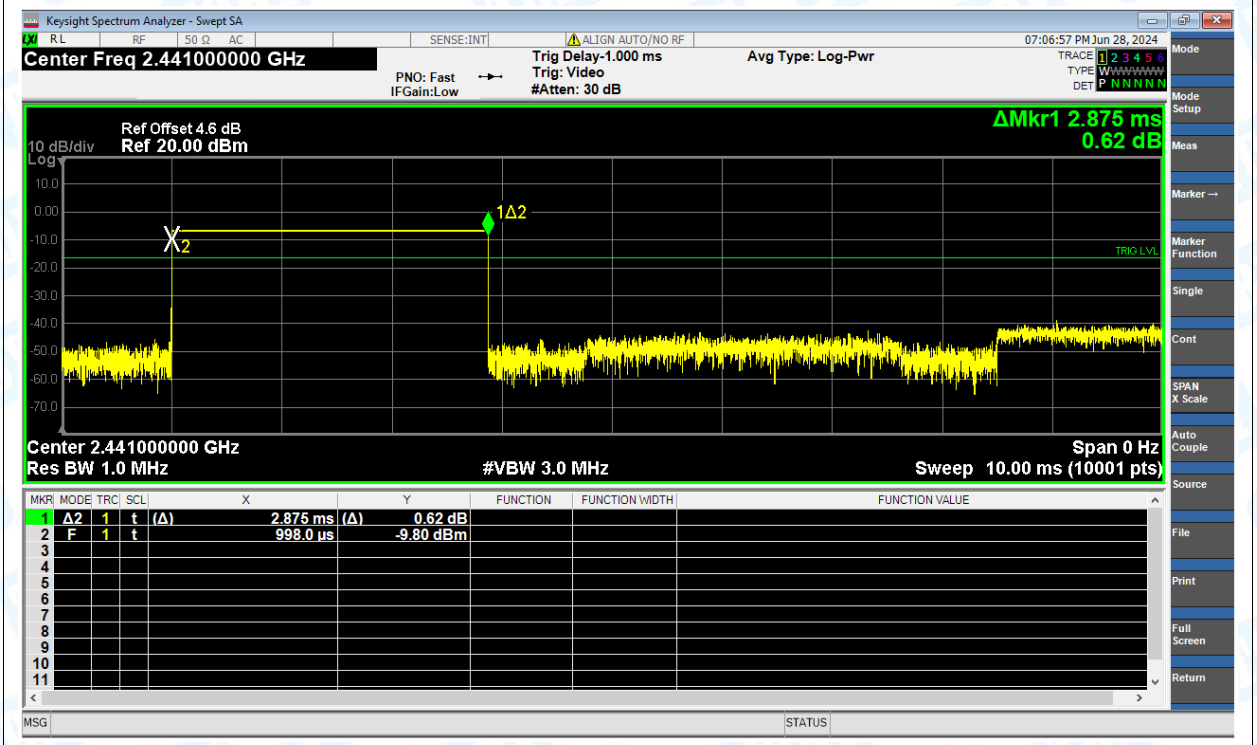
Dwell NVNT 1-DH1 2441MHz Ant1



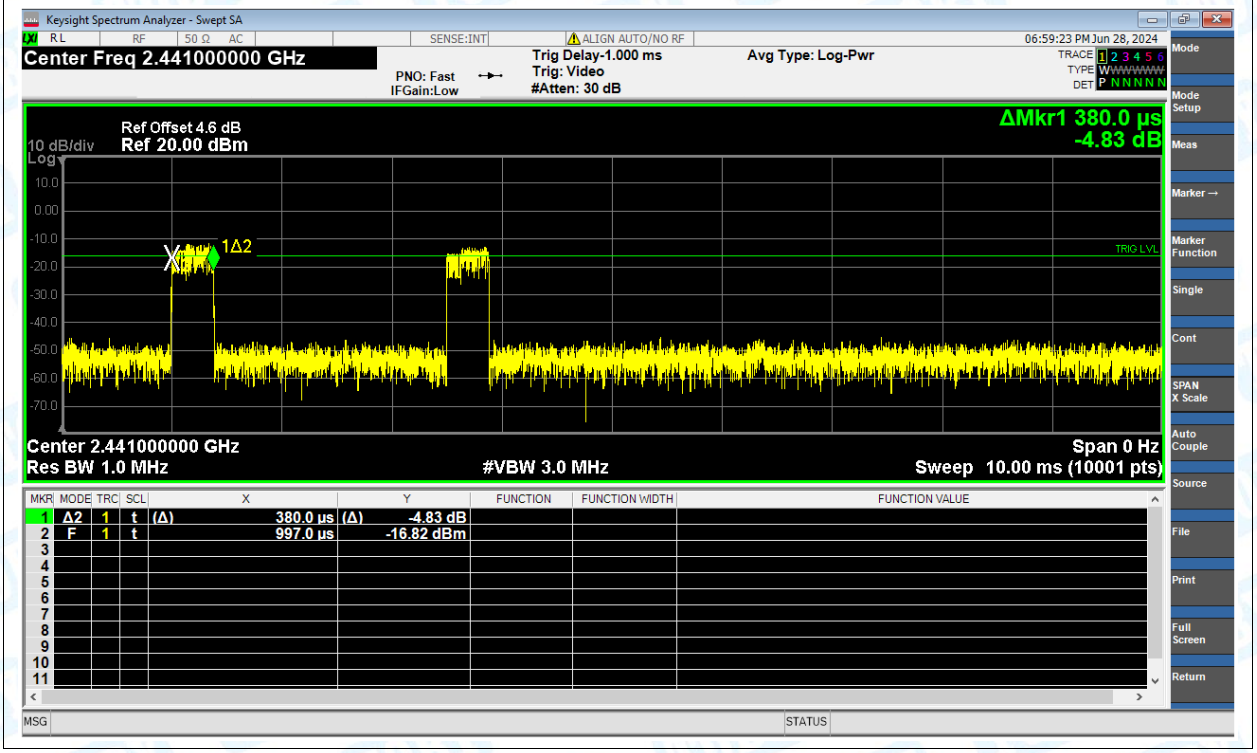
Dwell NVNT 1-DH3 2441MHz Ant1



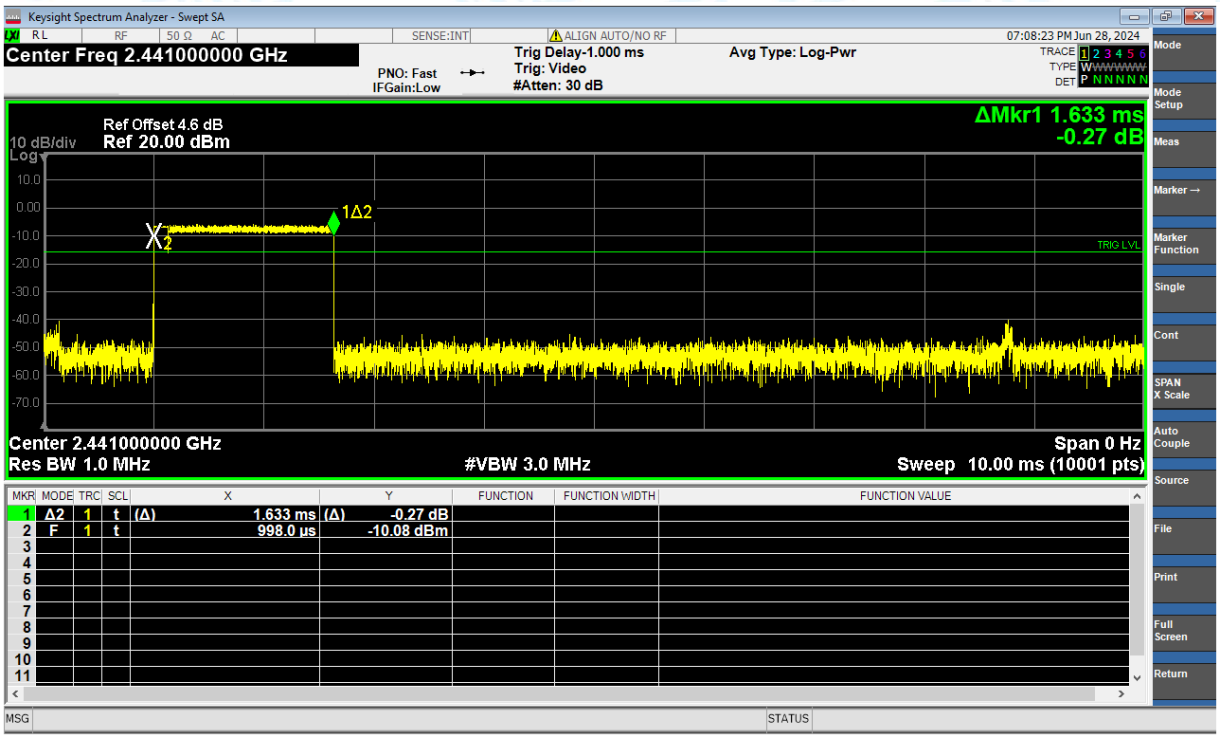
Dwell NVNT 1-DH5 2441MHz Ant1



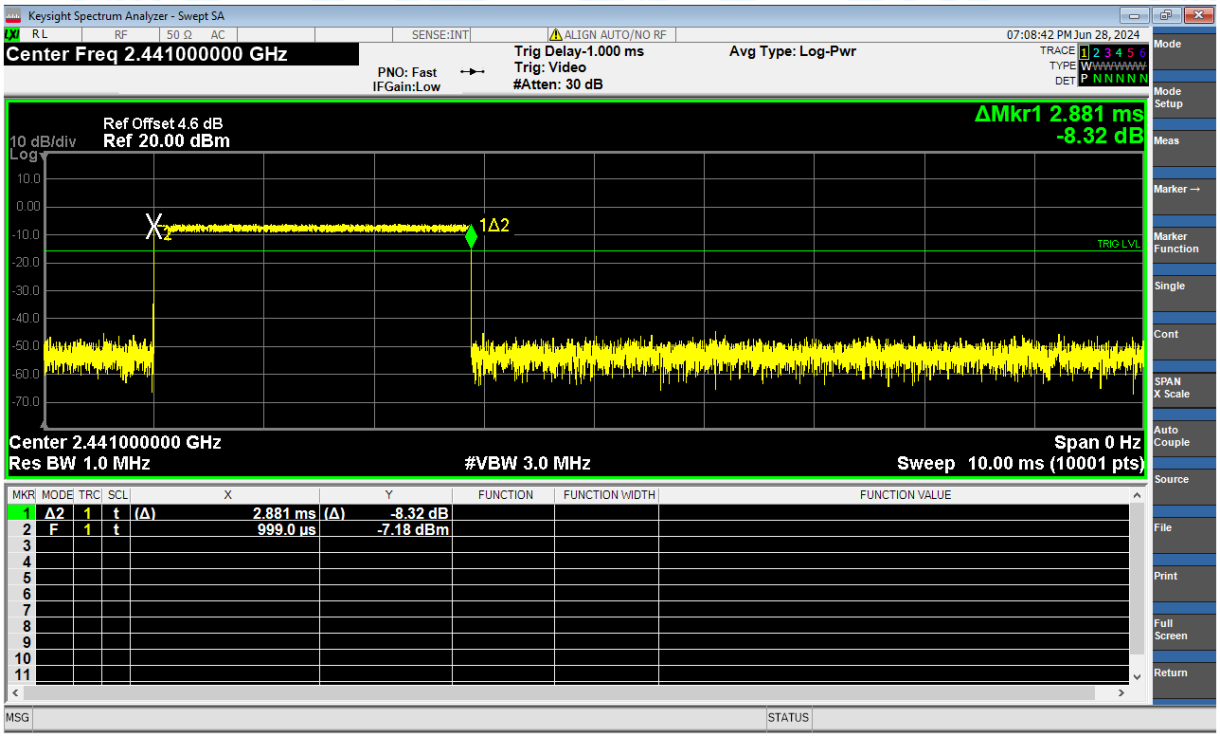
Dwell NVNT 2-DH1 2441MHz Ant1



Dwell NVNT 2-DH3 2441MHz Ant1



Dwell NVNT 2-DH5 2441MHz Ant1



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