

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	Smart Watch
Test Model:	X2MINI
Sample ID:	HC-C-202505-0230-01-01
Environmental Conditions	
Temperature:	25.6℃
Relative Humidity:	52%
Test Voltage:	DC 3.8V
Test Engineer:	Lily zhang
Note: For a more detailed features description, please refer to the report TBR-C-202505-0230-3 The report only show the worst case data.	

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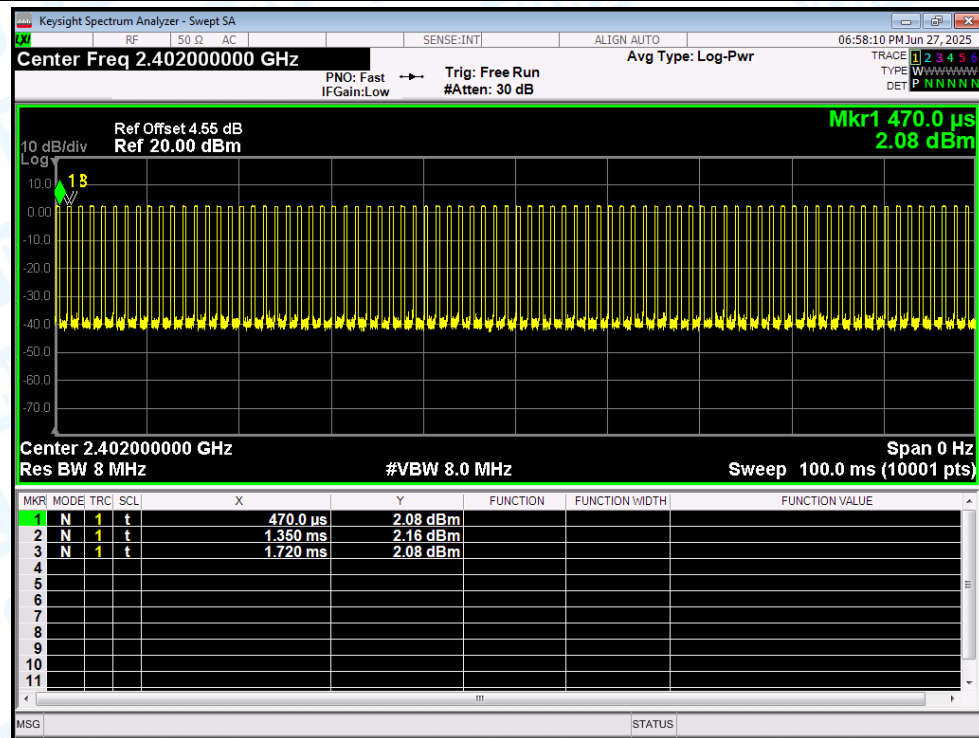
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1. Duty Cycle

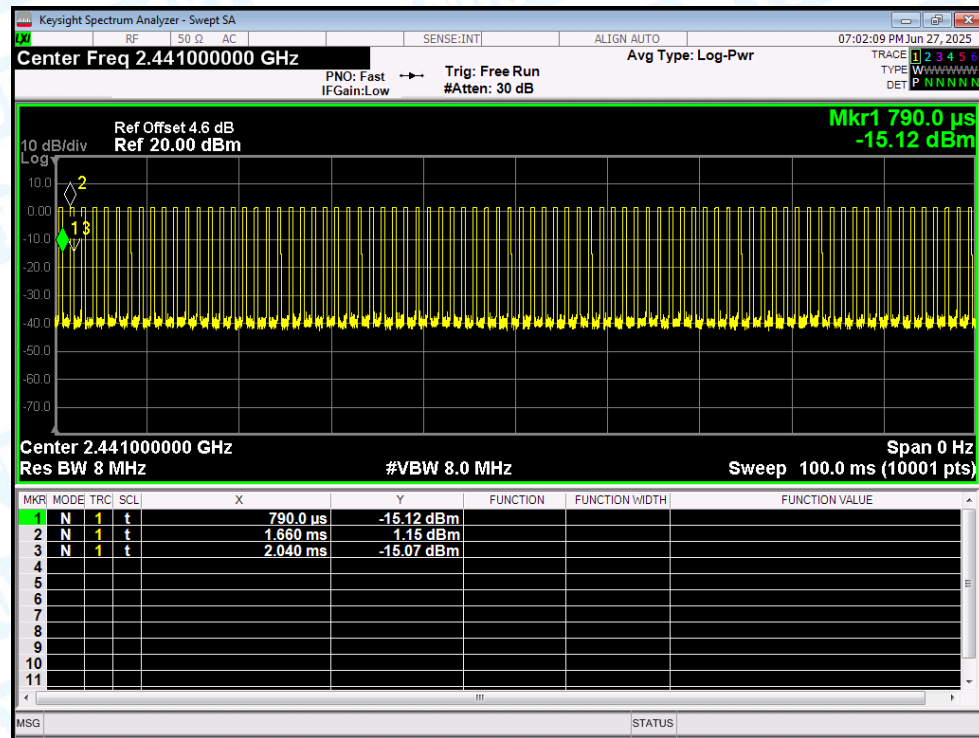
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	29.6	5.29	2.7
NVNT	1-DH1	2441	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2480	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2480	Ant1	31.2	5.06	2.56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

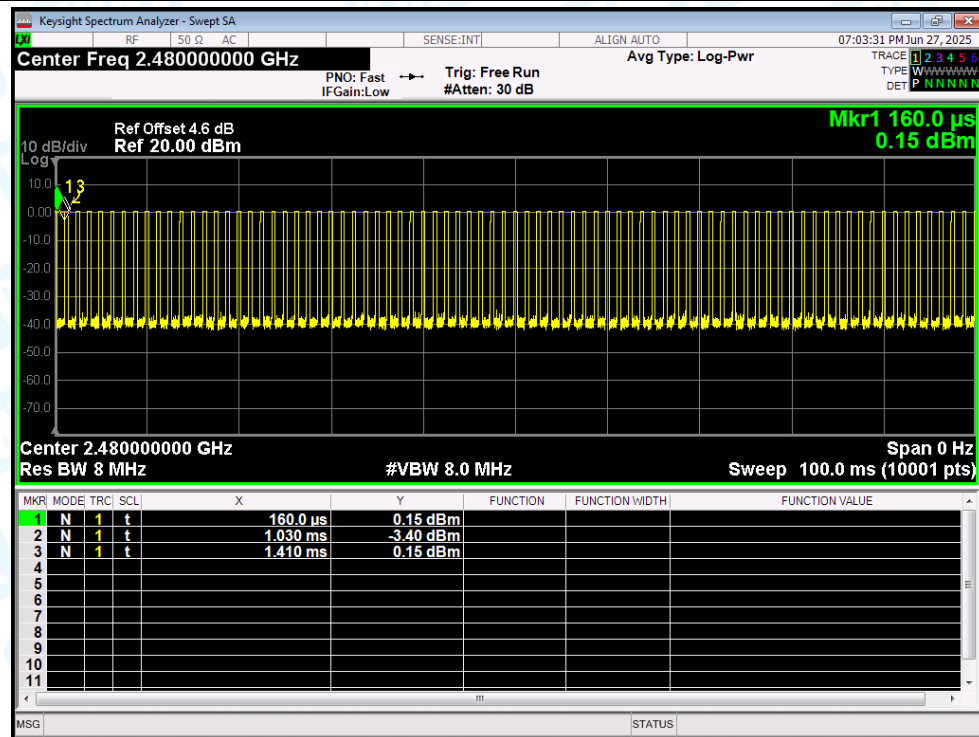
Duty Cycle NVNT 1-DH1 2402MHz Ant1



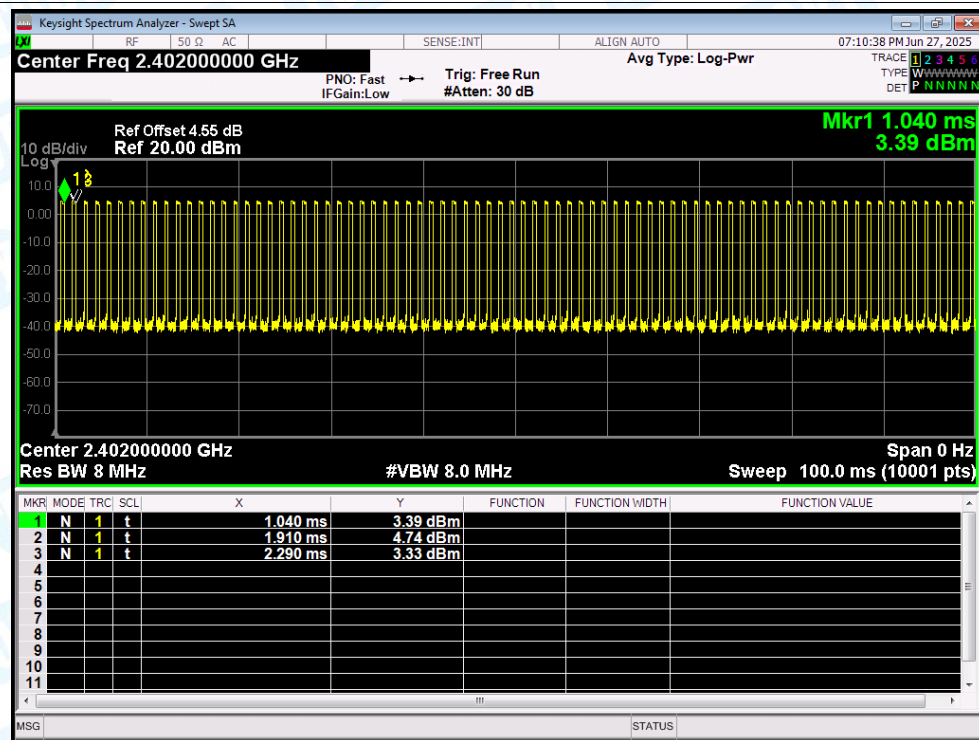
Duty Cycle NVNT 1-DH1 2441MHz Ant1



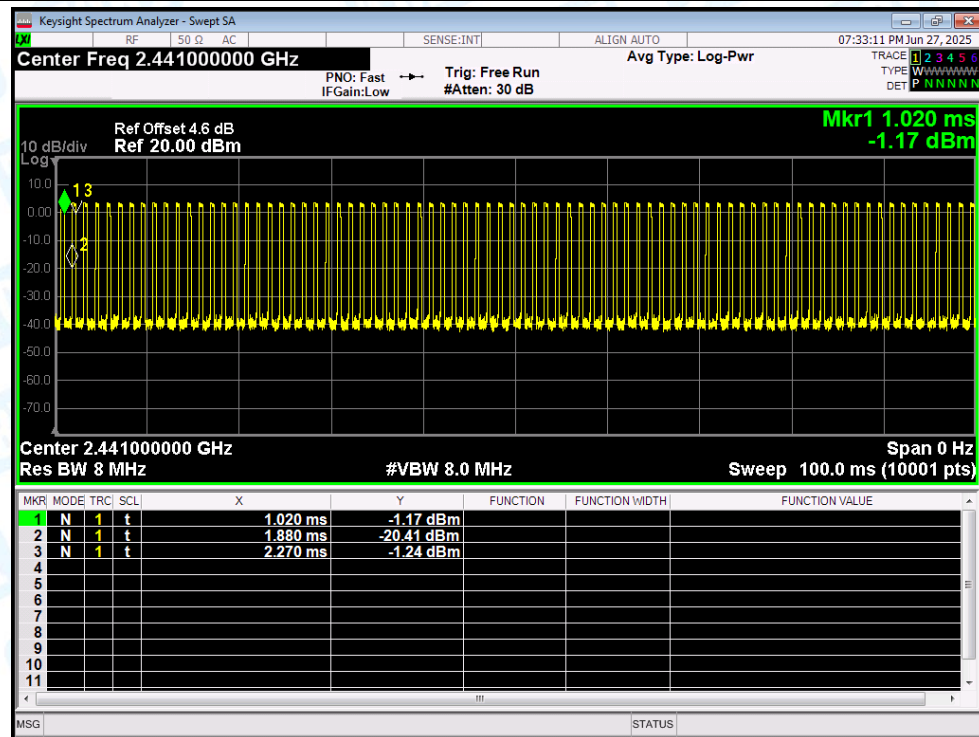
Duty Cycle NVNT 1-DH1 2480MHz Ant1



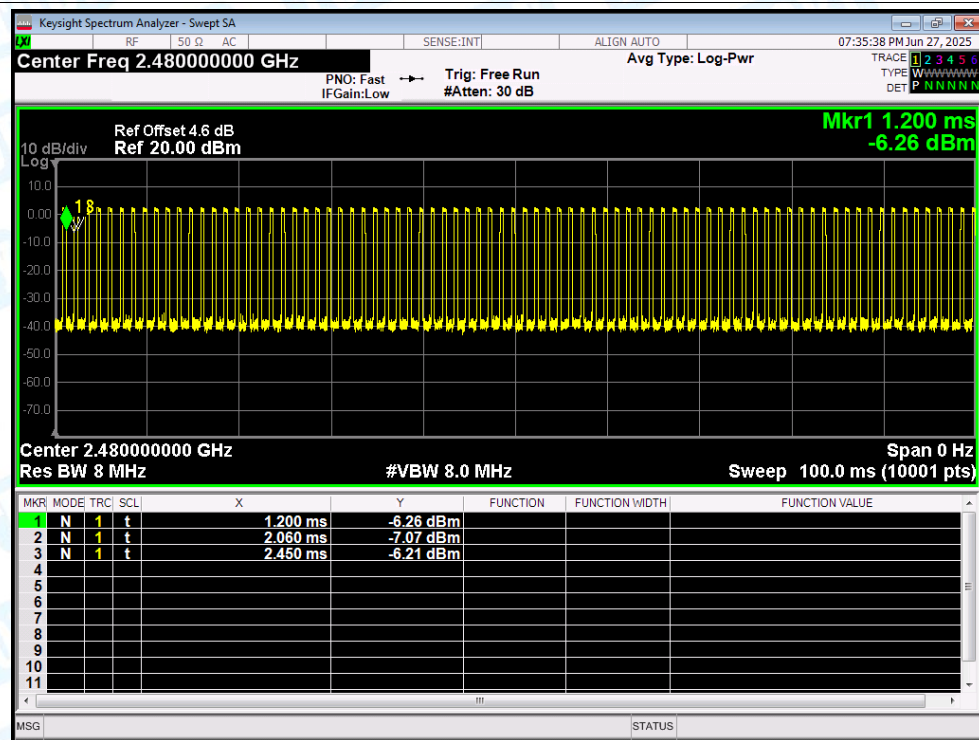
Duty Cycle NVNT 2-DH1 2402MHz Ant1



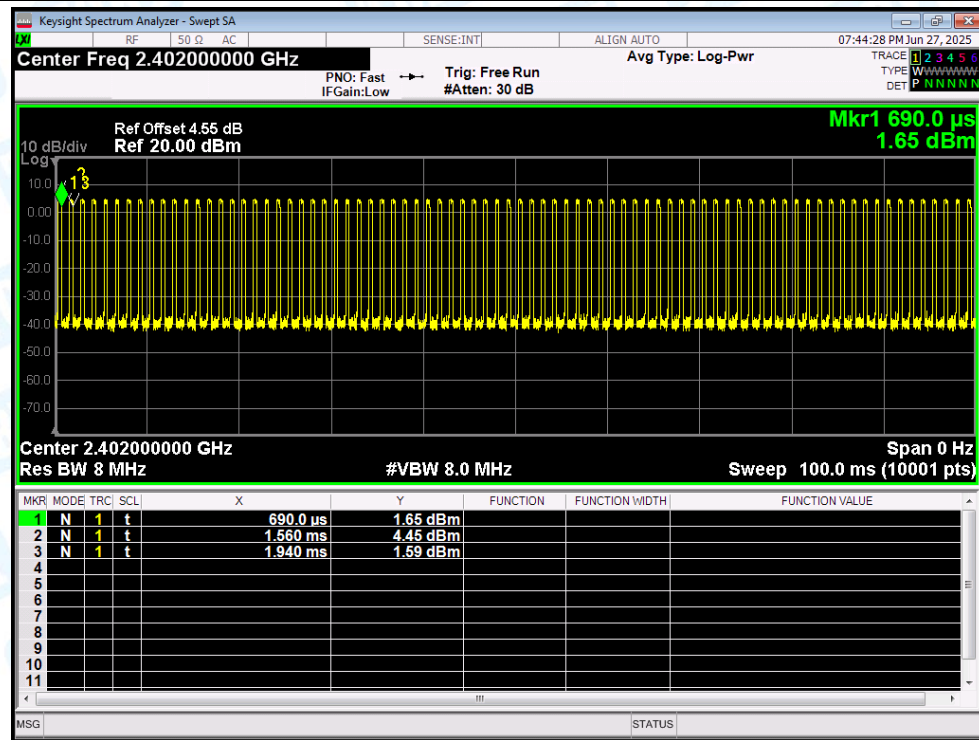
Duty Cycle NVNT 2-DH1 2441MHz Ant1



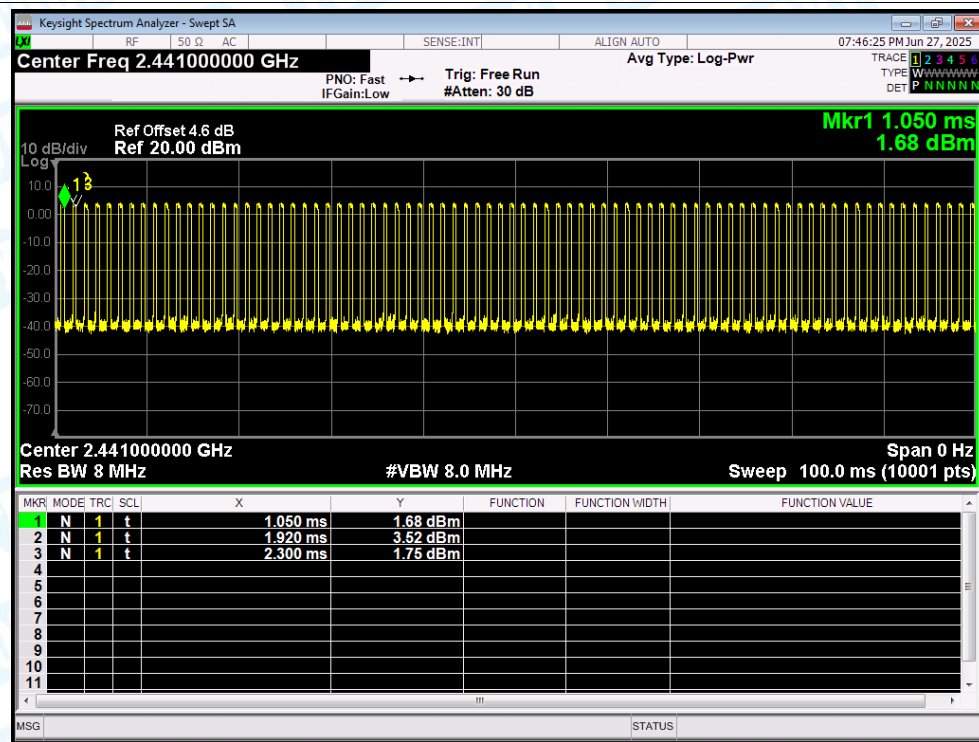
Duty Cycle NVNT 2-DH1 2480MHz Ant1

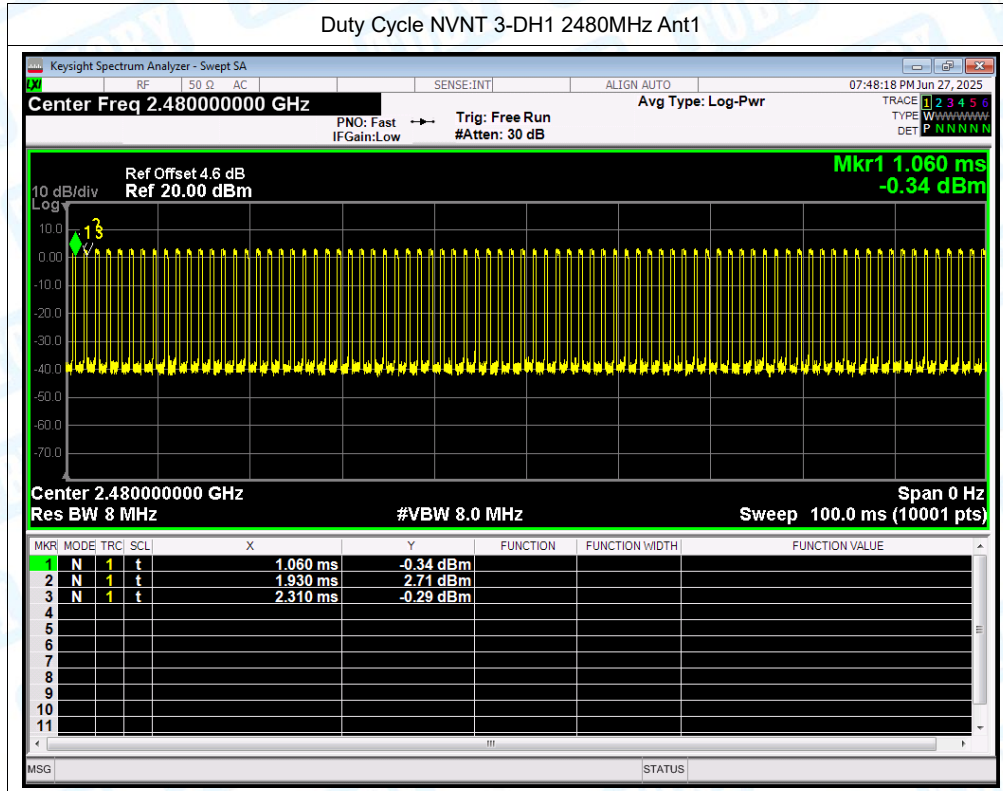


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



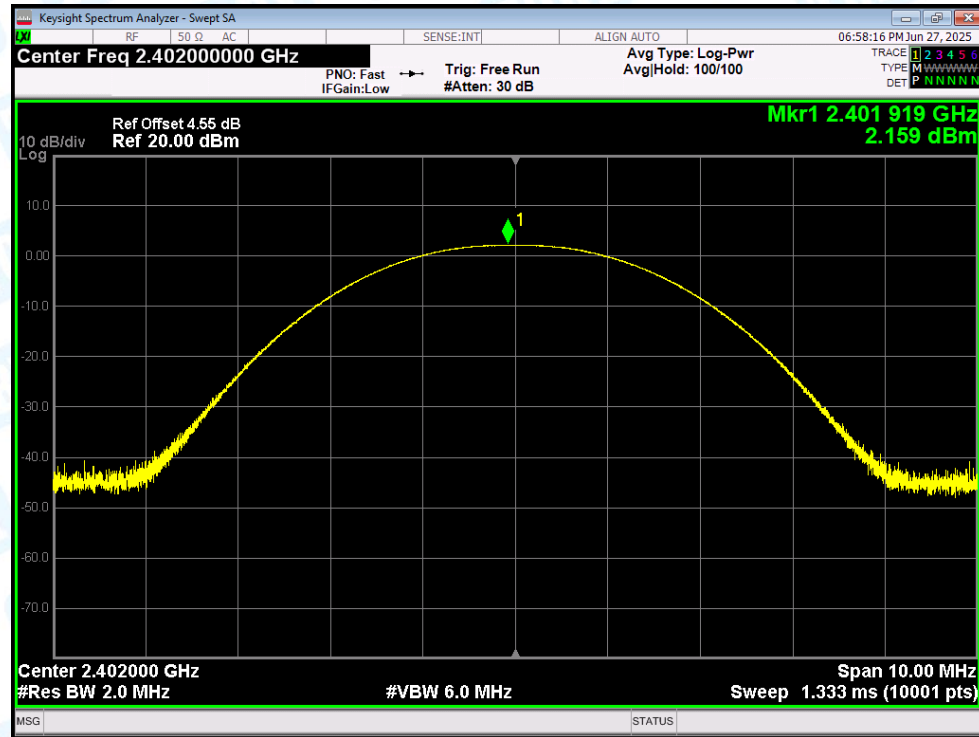


2. Maximum Conducted Output Power

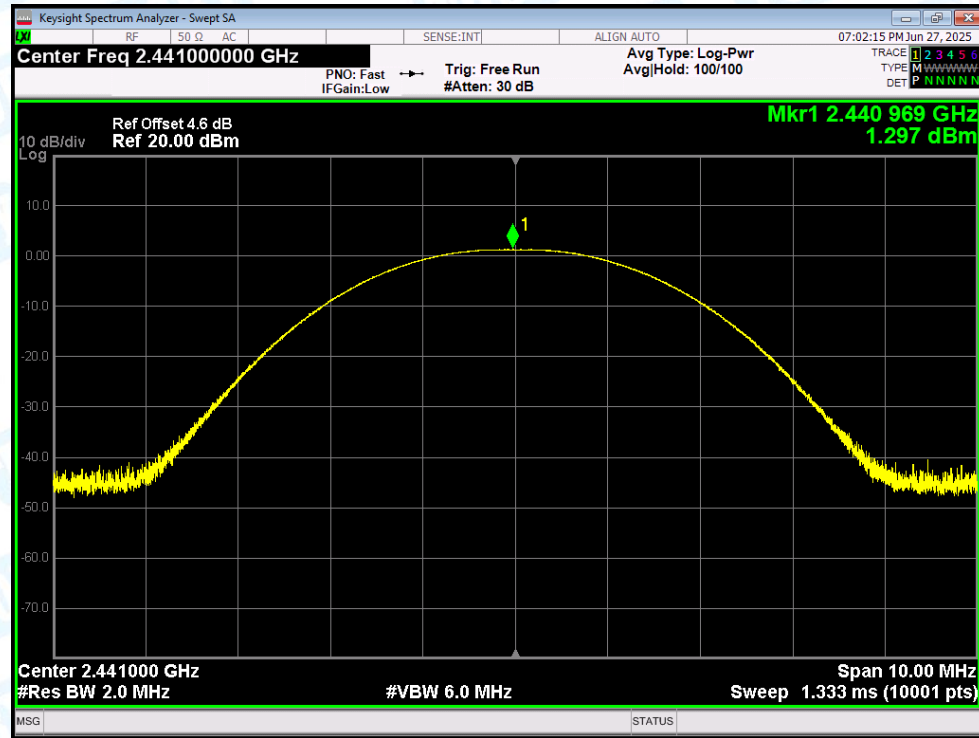
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	2.159	21	Pass
NVNT	1-DH1	2441	Ant1	1.297	21	Pass
NVNT	1-DH1	2480	Ant1	0.321	21	Pass
NVNT	2-DH1	2402	Ant1	4.752	21	Pass
NVNT	2-DH1	2441	Ant1	3.417	21	Pass
NVNT	2-DH1	2480	Ant1	2.453	21	Pass
NVNT	3-DH1	2402	Ant1	4.616	21	Pass
NVNT	3-DH1	2441	Ant1	3.897	21	Pass
NVNT	3-DH1	2480	Ant1	2.767	21	Pass

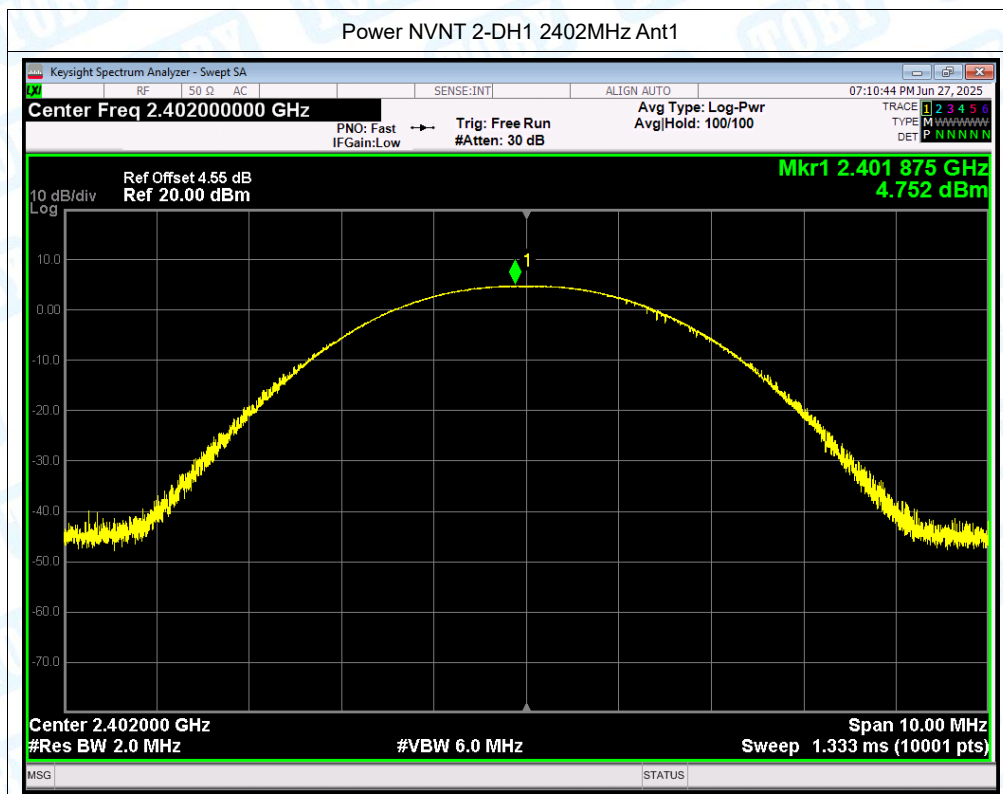
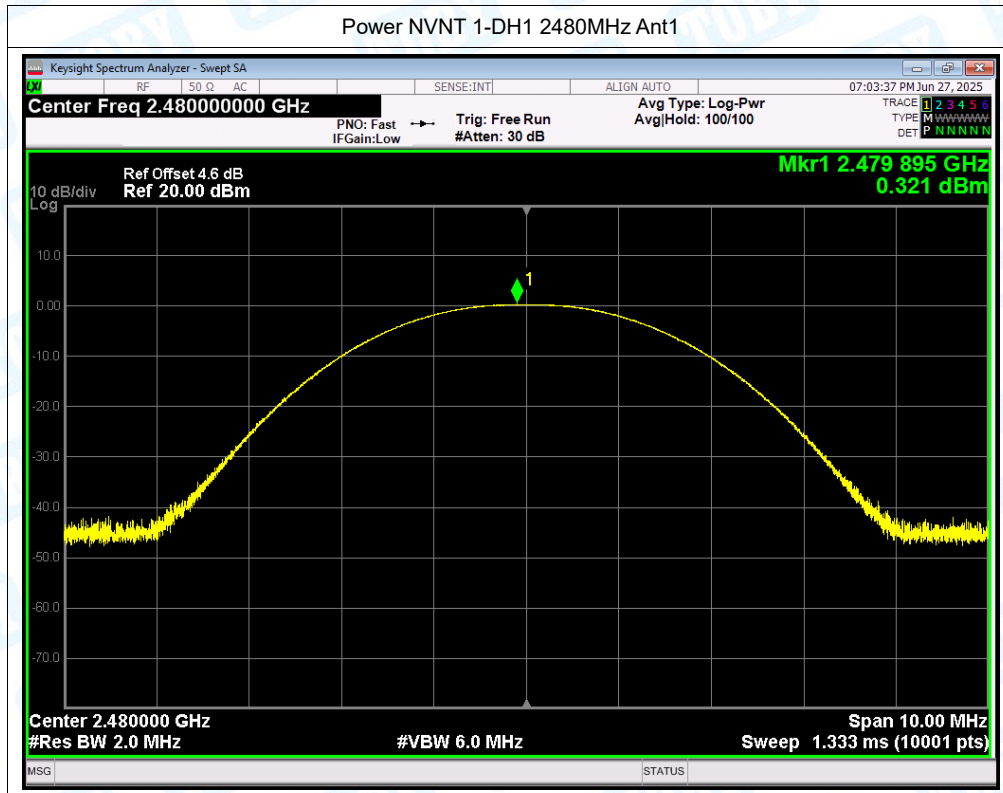
Test Graphs

Power NVNT 1-DH1 2402MHz Ant1

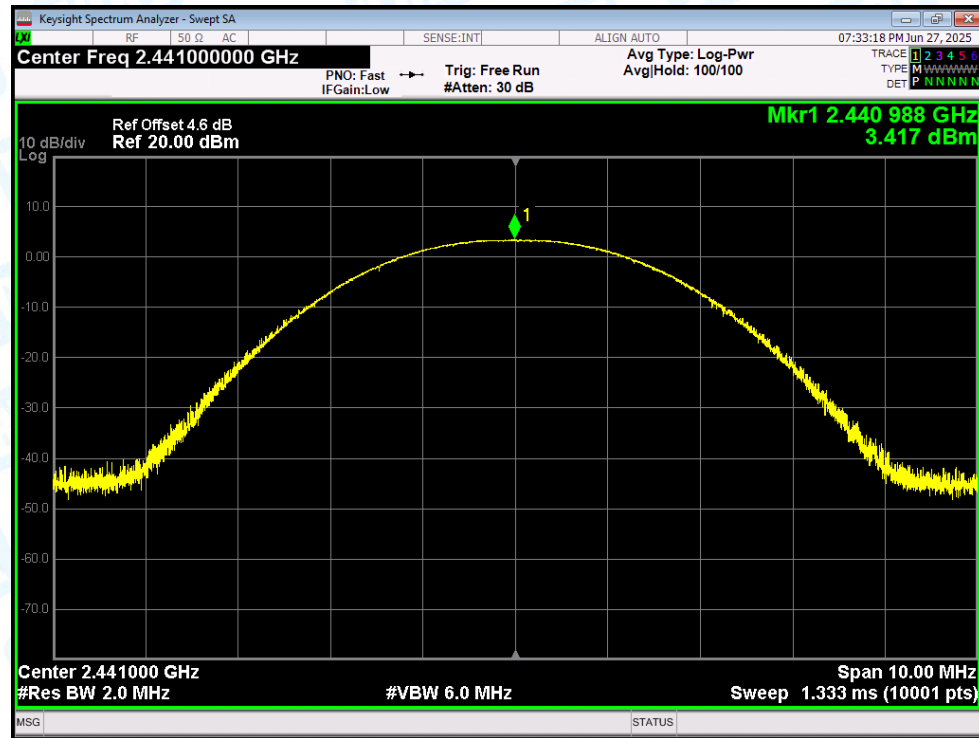


Power NVNT 1-DH1 2441MHz Ant1

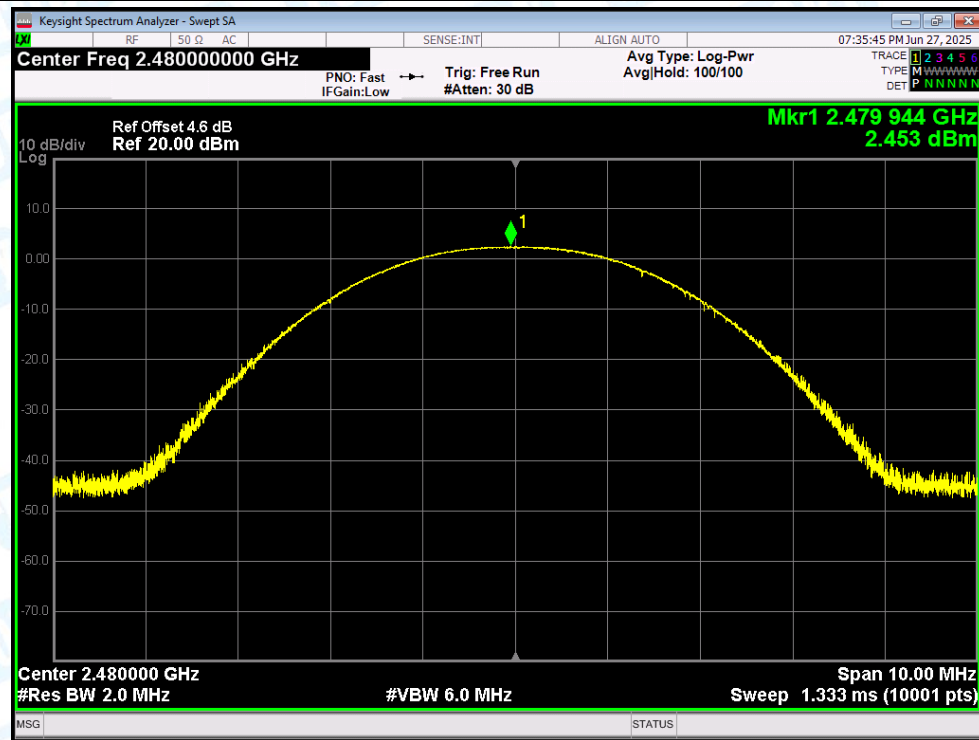




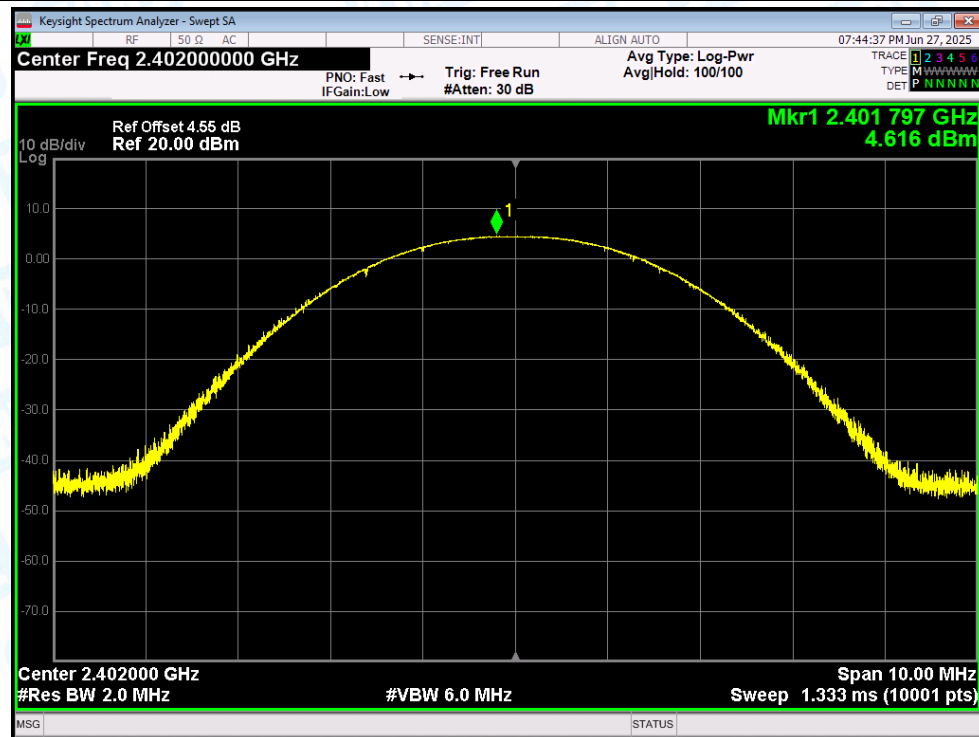
Power NVNT 2-DH1 2441MHz Ant1



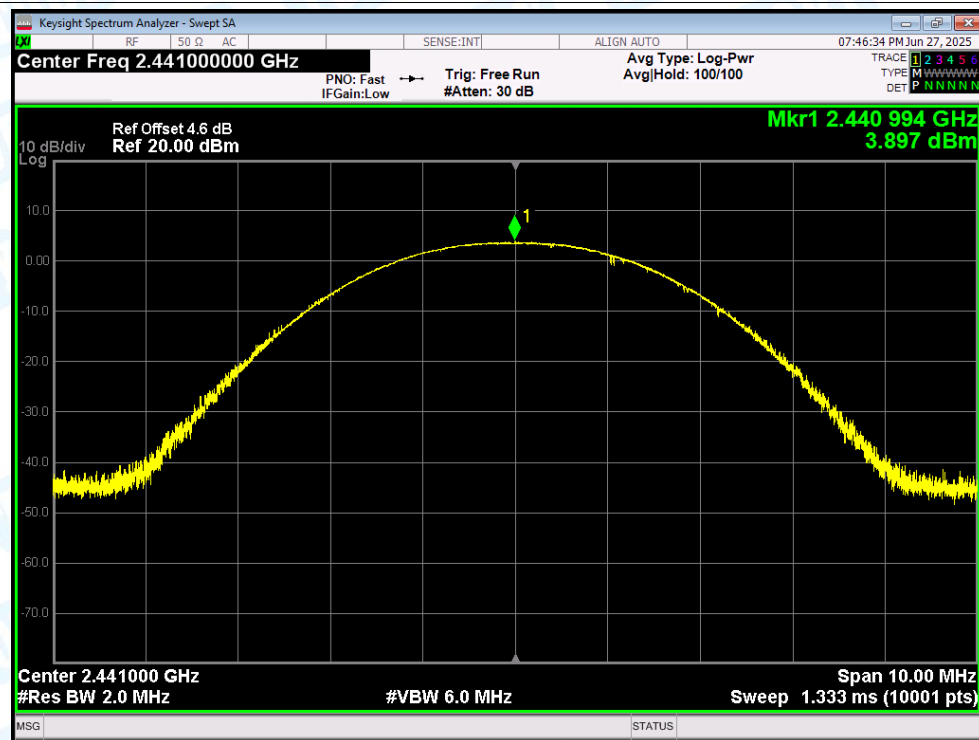
Power NVNT 2-DH1 2480MHz Ant1

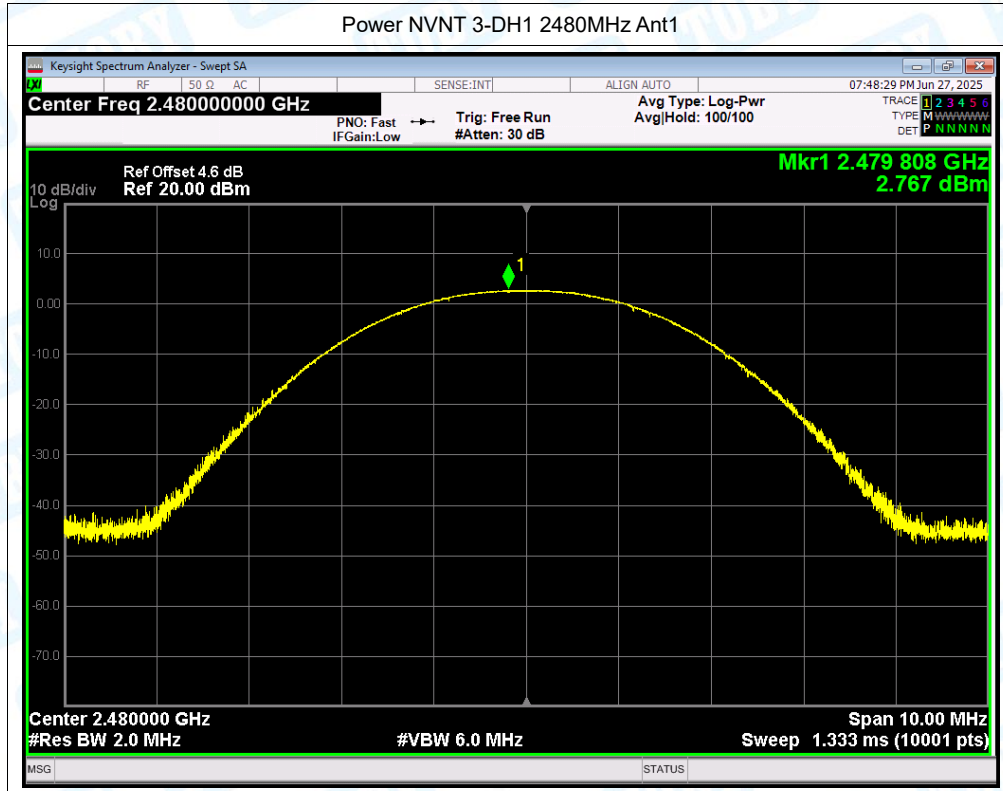


Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1





3. -20dB Bandwidth

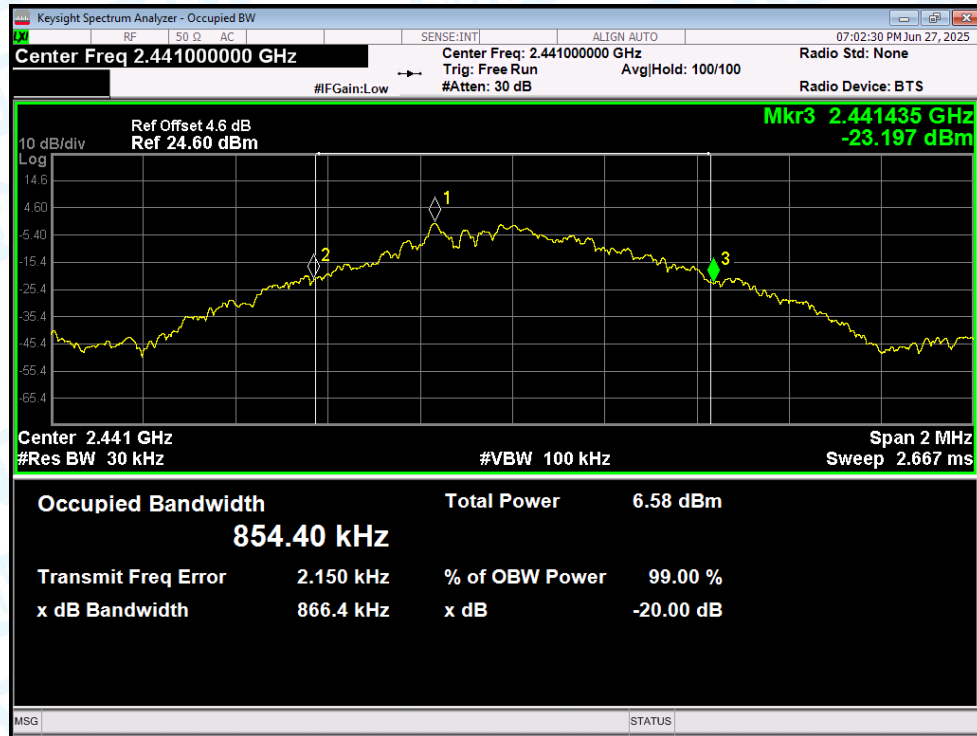
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.87	/	Pass
NVNT	1-DH1	2441	Ant1	0.87	/	Pass
NVNT	1-DH1	2480	Ant1	0.82	/	Pass
NVNT	2-DH1	2402	Ant1	1.19	/	Pass
NVNT	2-DH1	2441	Ant1	1.2	/	Pass
NVNT	2-DH1	2480	Ant1	1.2	/	Pass
NVNT	3-DH1	2402	Ant1	1.19	/	Pass
NVNT	3-DH1	2441	Ant1	1.21	/	Pass
NVNT	3-DH1	2480	Ant1	1.19	/	Pass

Test Graphs

-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



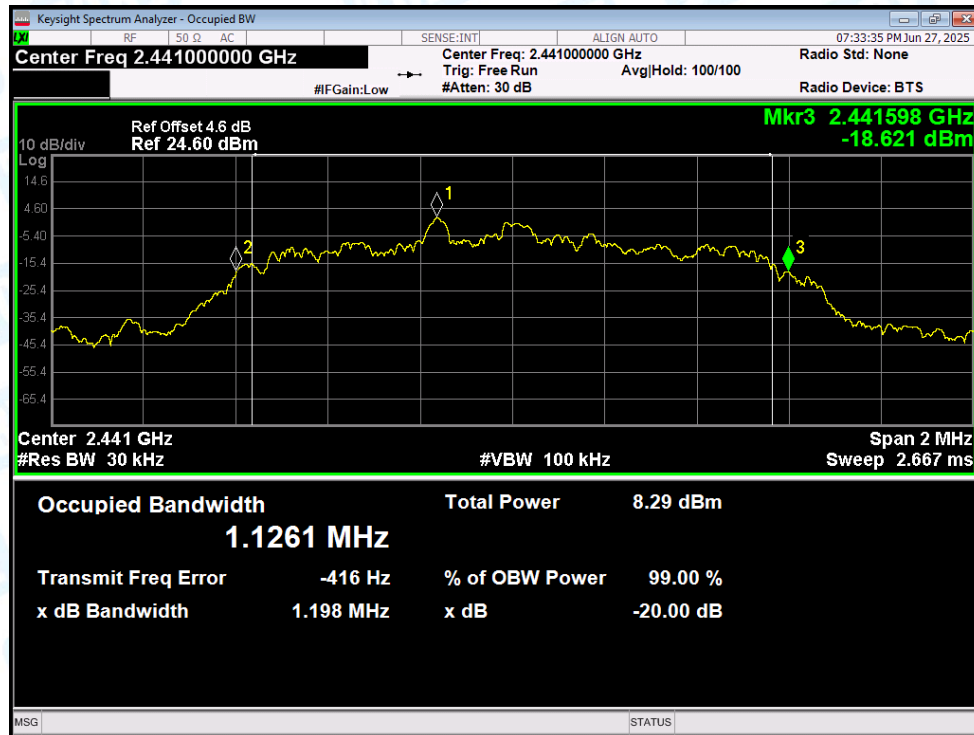
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



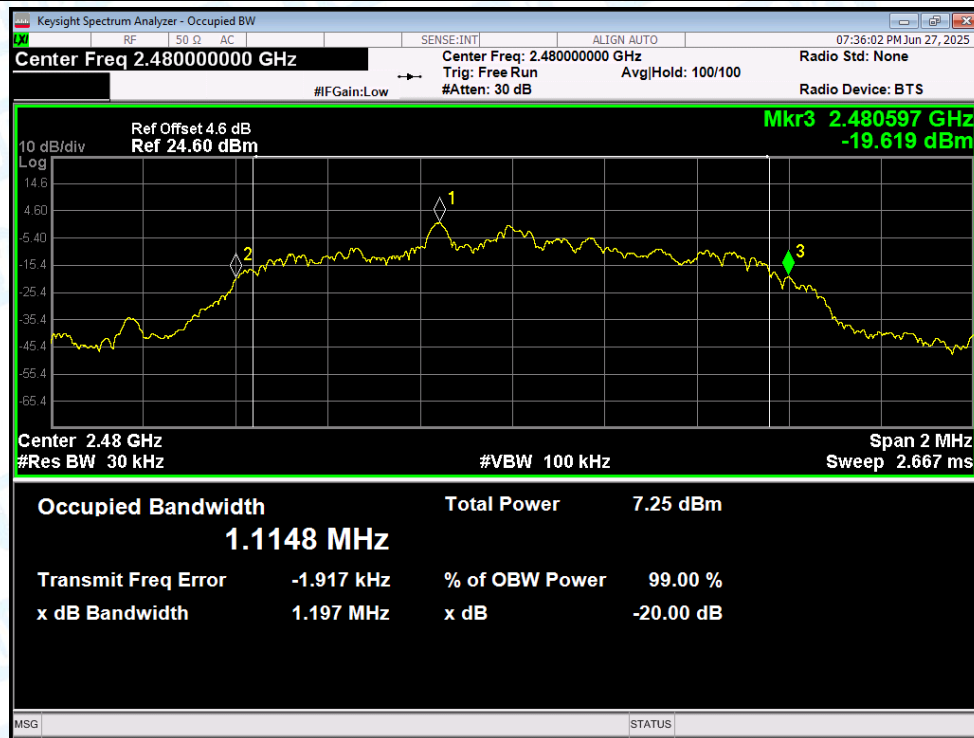
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



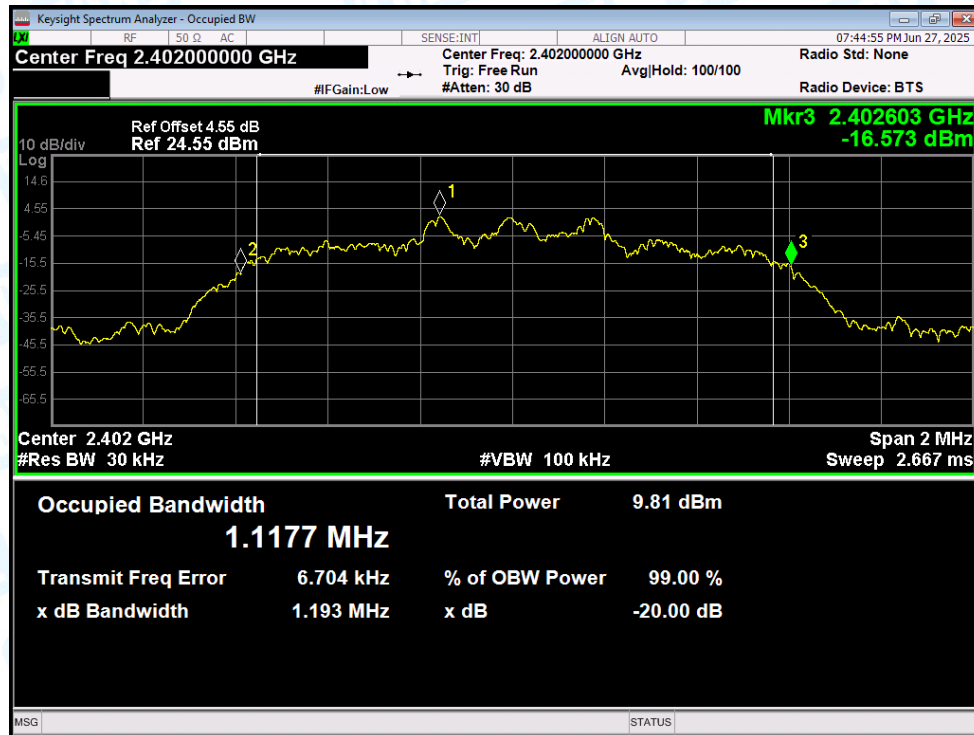
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



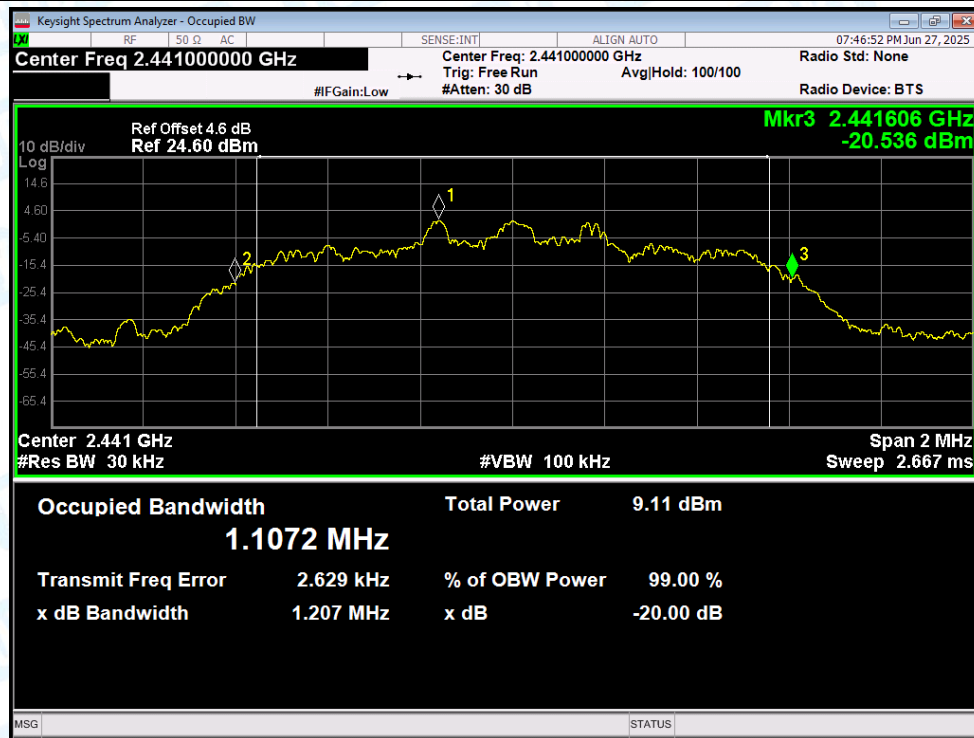
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

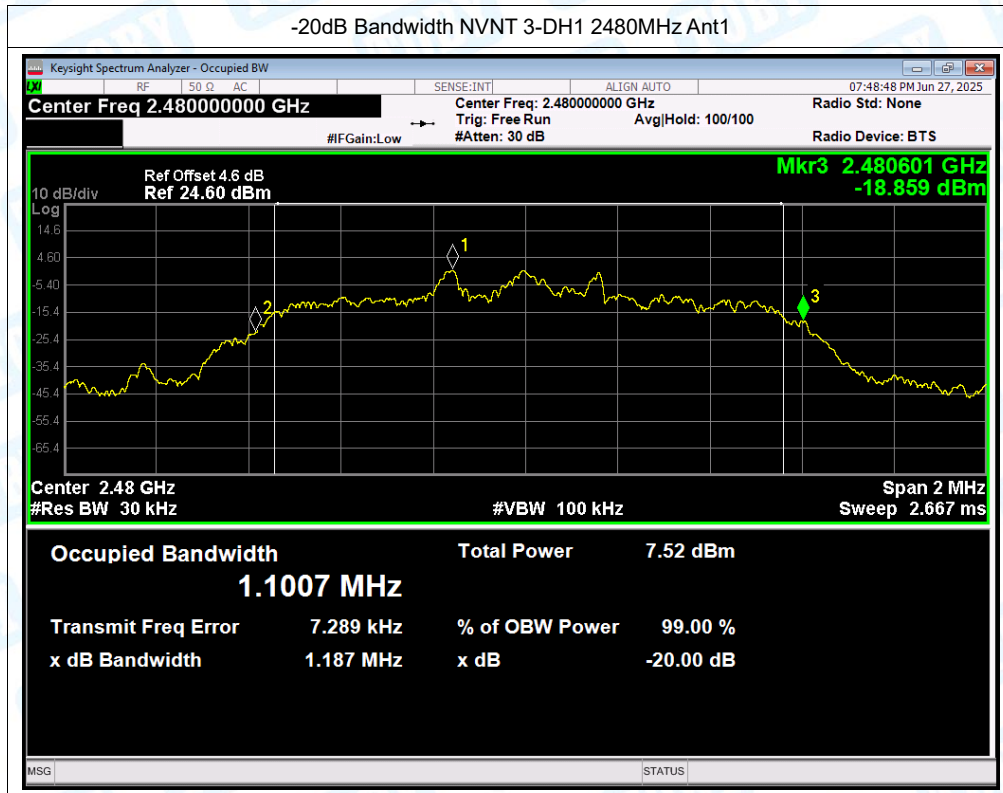


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



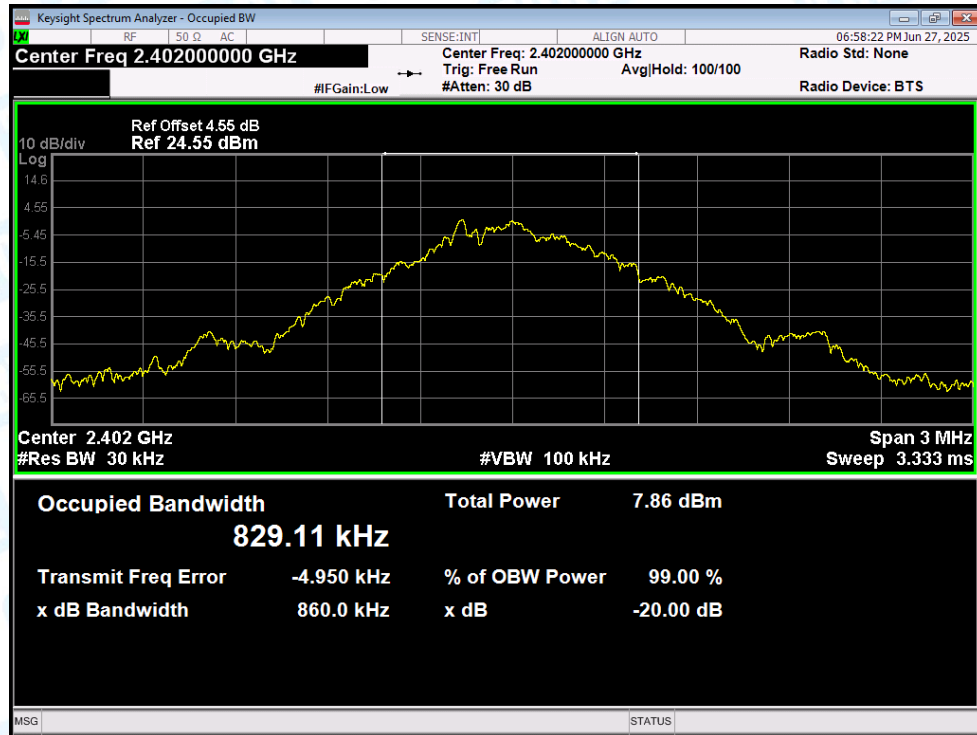


4. Occupied Channel Bandwidth

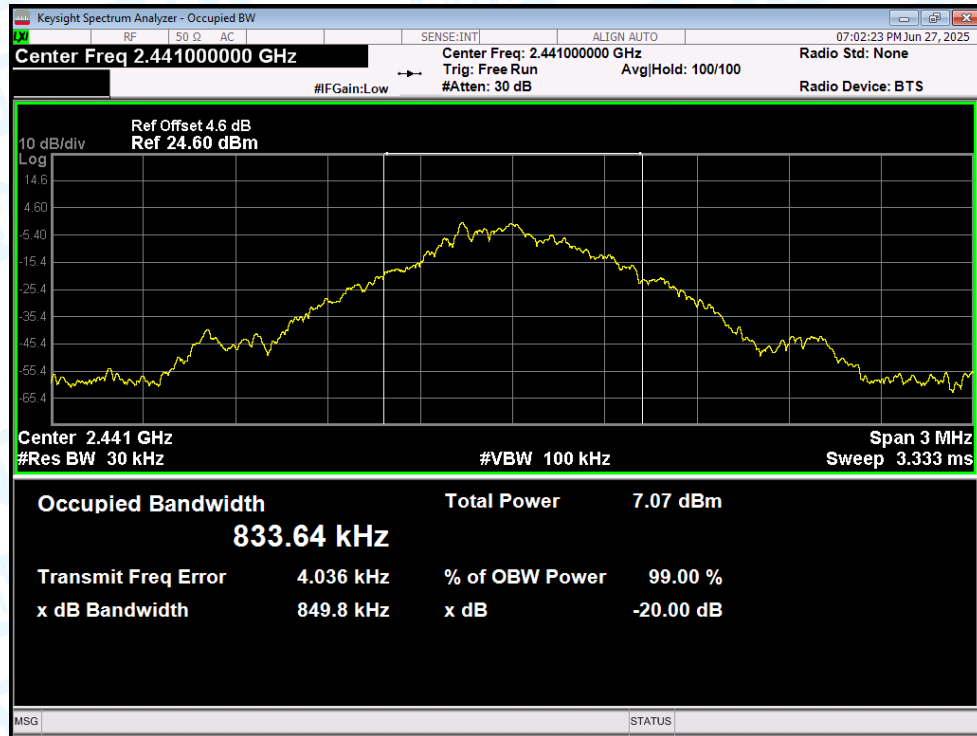
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.829
NVNT	1-DH1	2441	Ant1	0.834
NVNT	1-DH1	2480	Ant1	0.825
NVNT	2-DH1	2402	Ant1	1.129
NVNT	2-DH1	2441	Ant1	1.13
NVNT	2-DH1	2480	Ant1	1.122
NVNT	3-DH1	2402	Ant1	1.117
NVNT	3-DH1	2441	Ant1	1.108
NVNT	3-DH1	2480	Ant1	1.098

Test Graphs

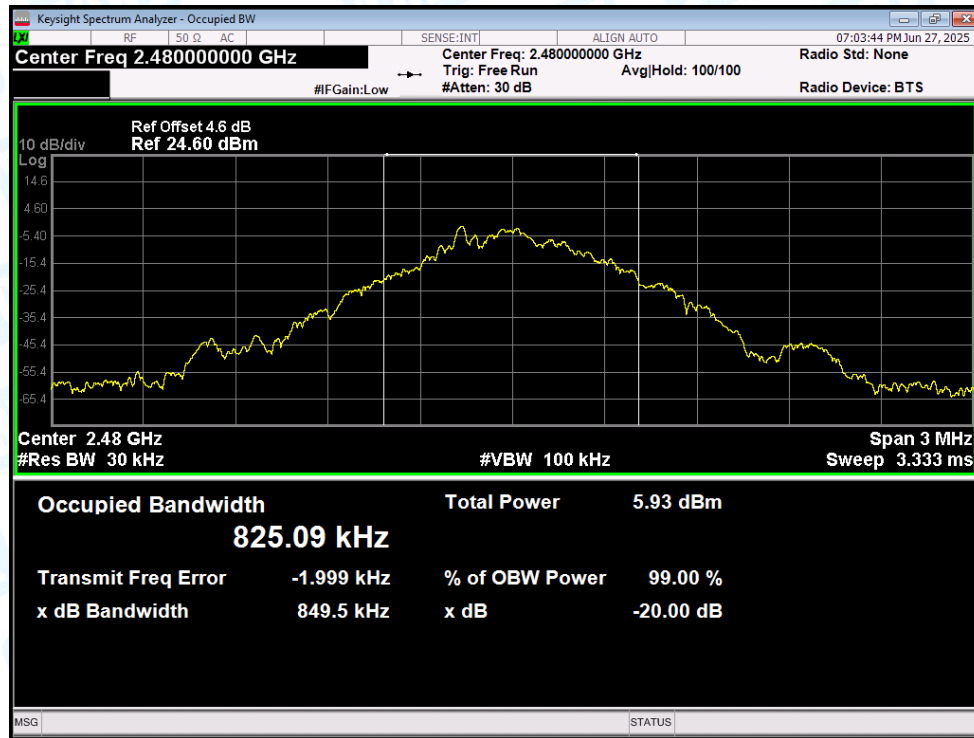
OBW NVNT 1-DH1 2402MHz Ant1



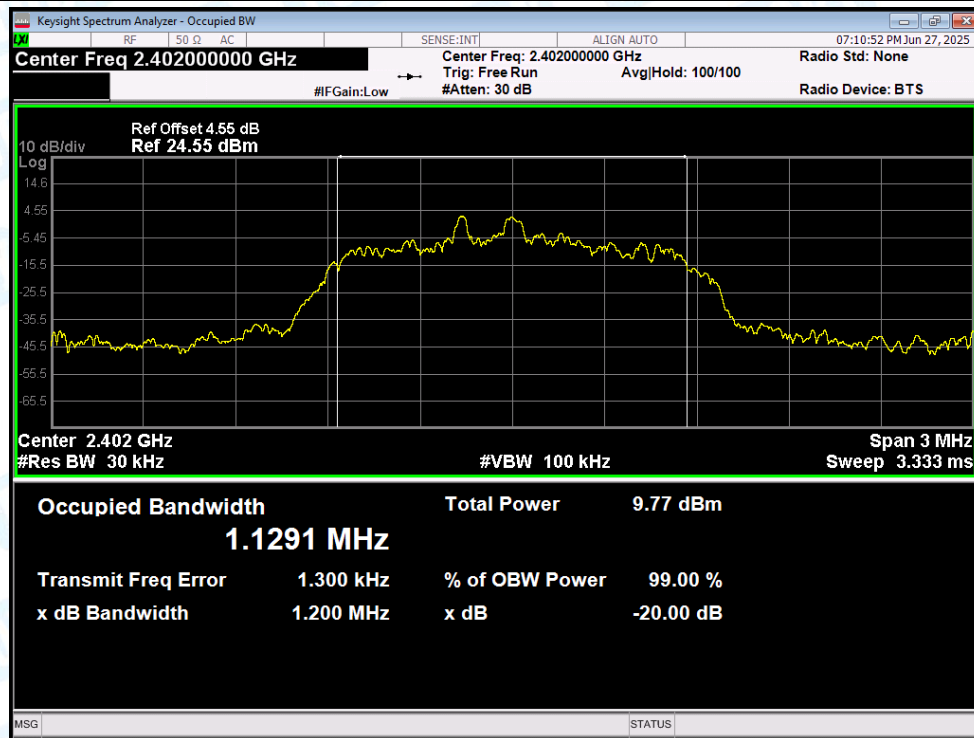
OBW NVNT 1-DH1 2441MHz Ant1



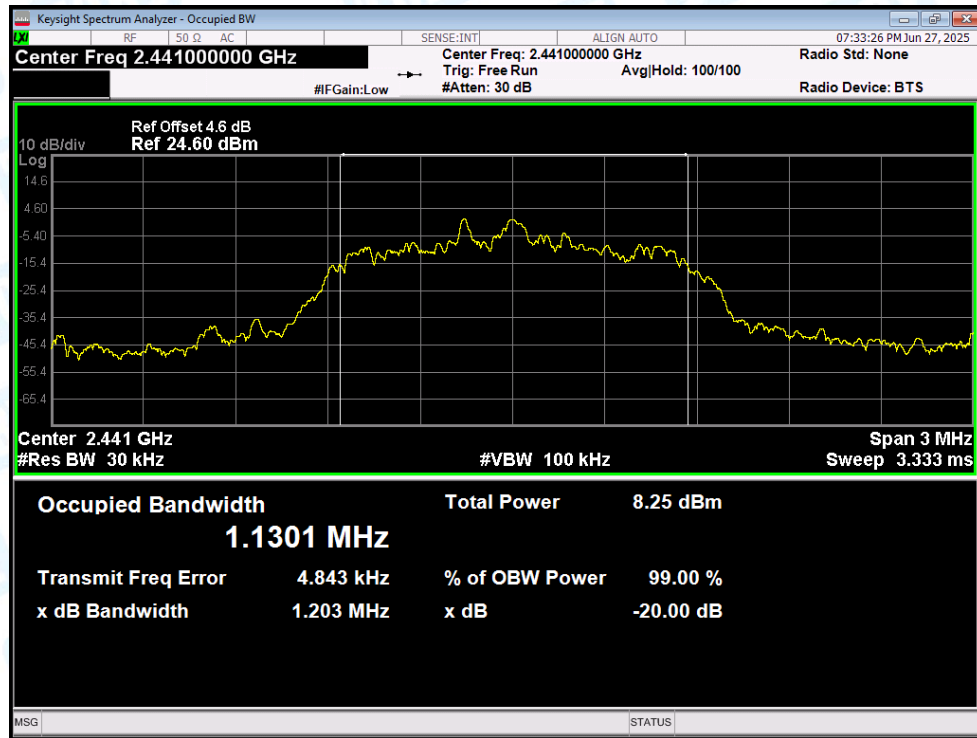
OBW NVNT 1-DH1 2480MHz Ant1



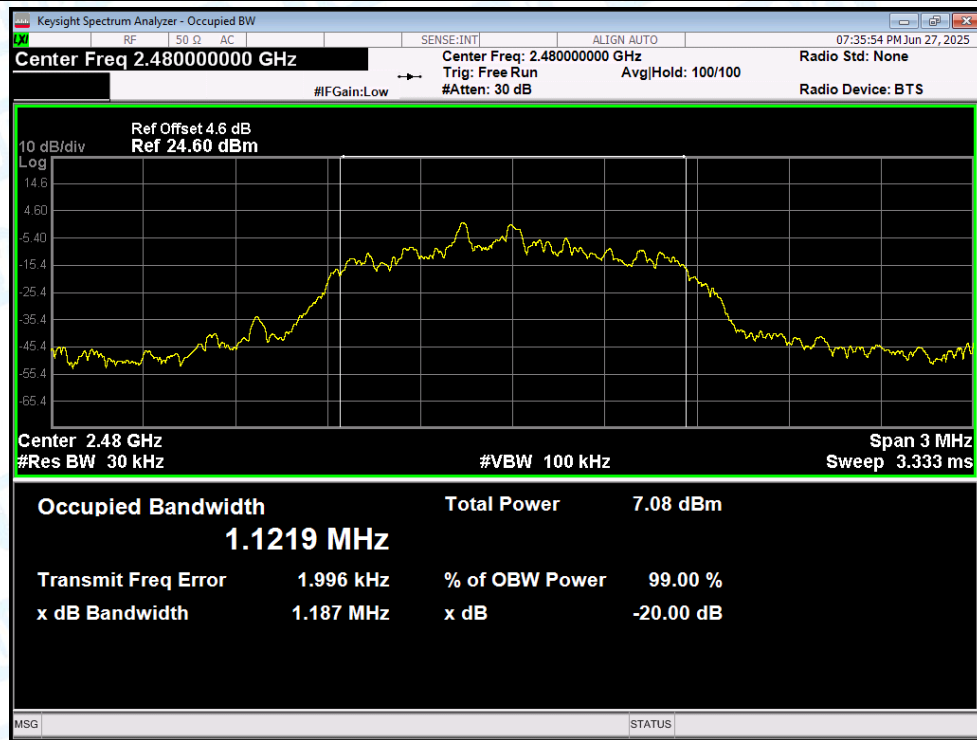
OBW NVNT 2-DH1 2402MHz Ant1



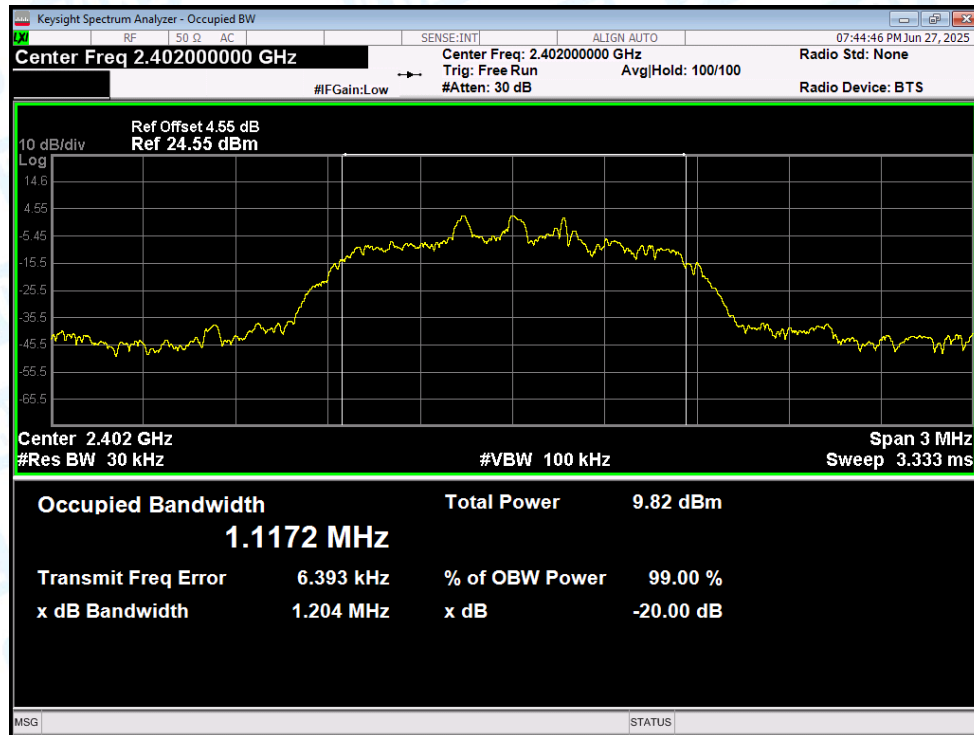
OBW NVNT 2-DH1 2441MHz Ant1



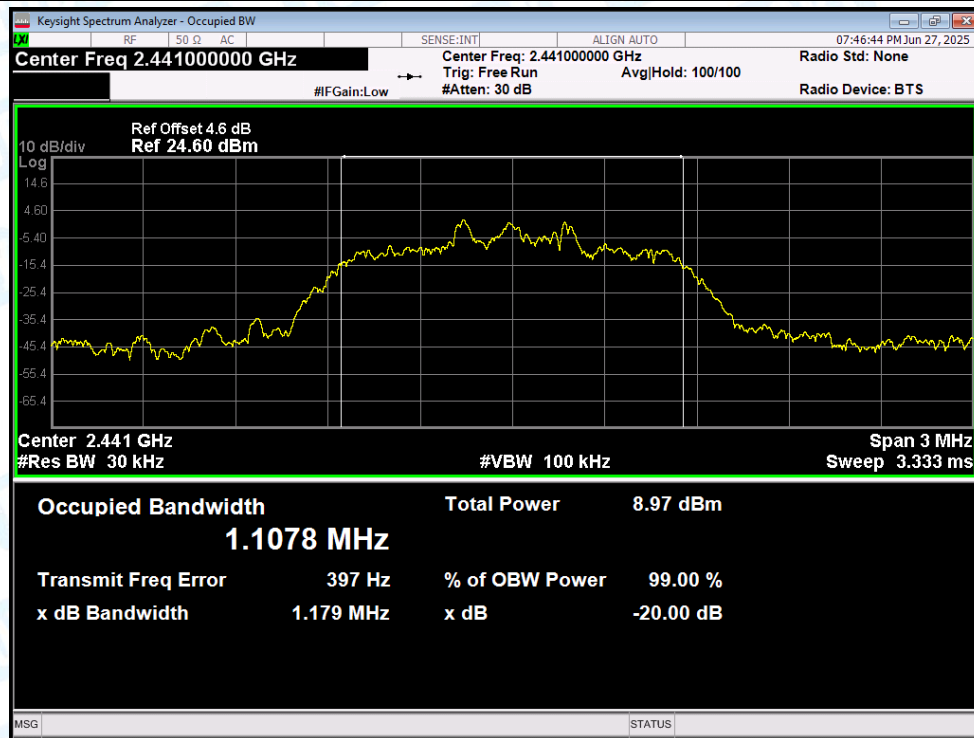
OBW NVNT 2-DH1 2480MHz Ant1

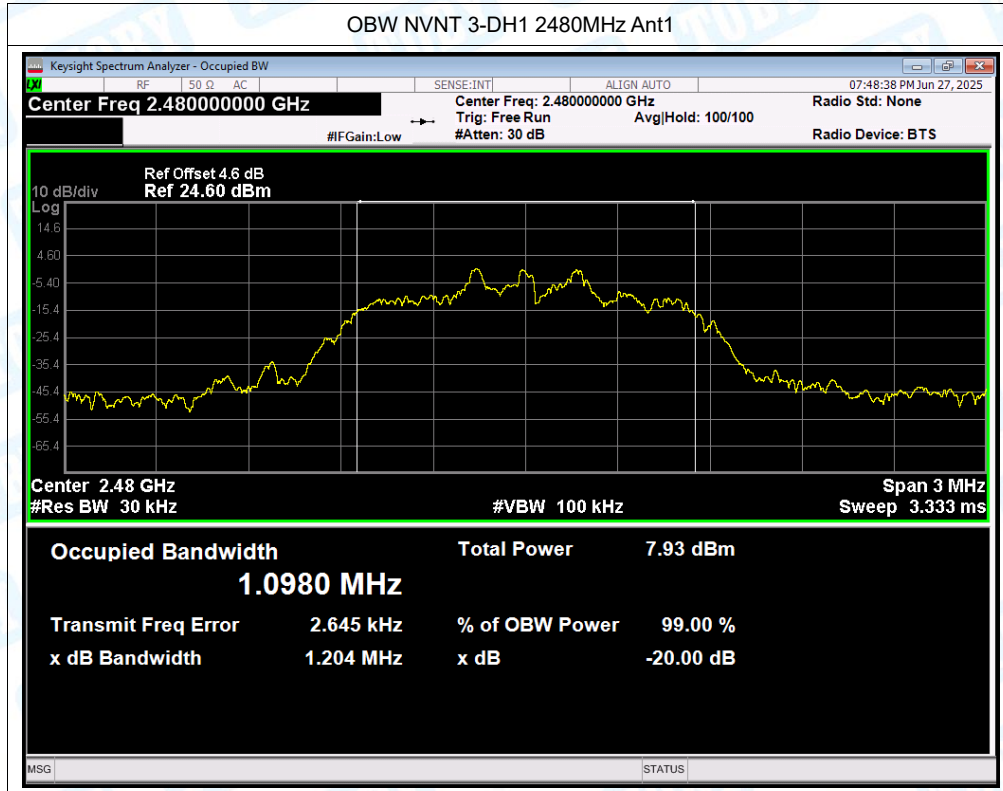


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



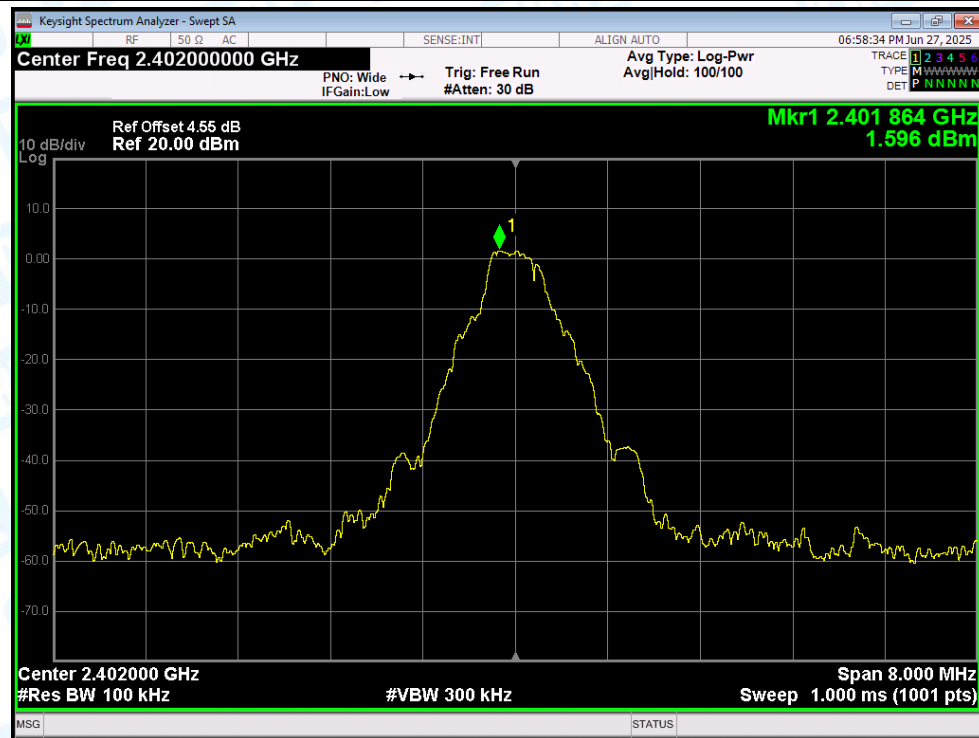


5. Band Edge

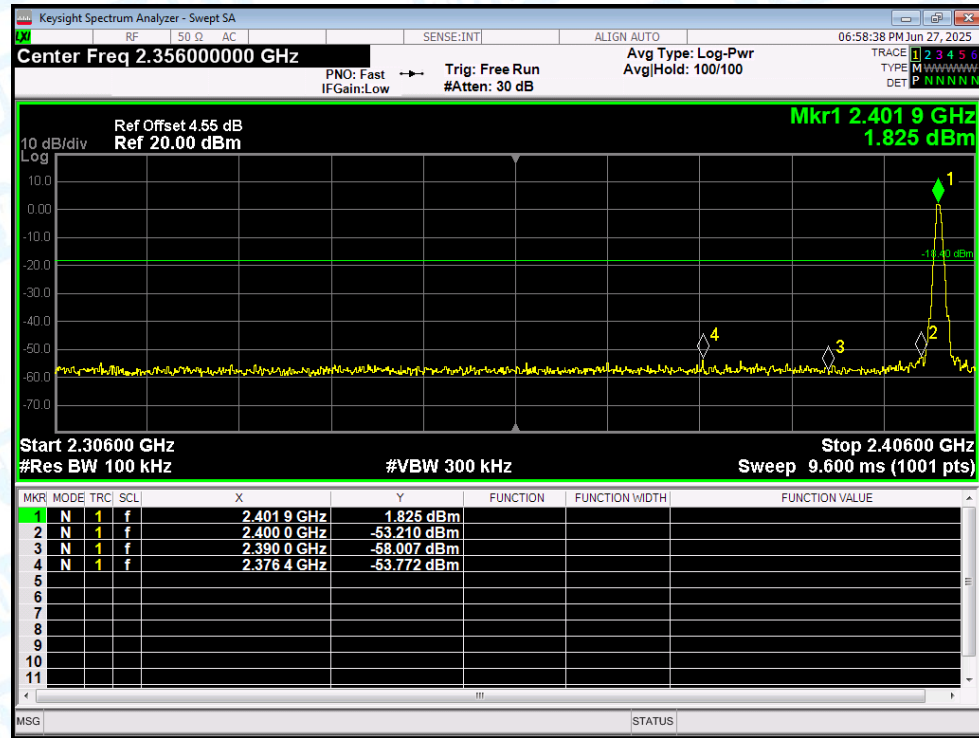
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-55.37	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-55.21	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-59.12	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-57.21	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-59.36	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-56.57	-20	Pass

Test Graphs

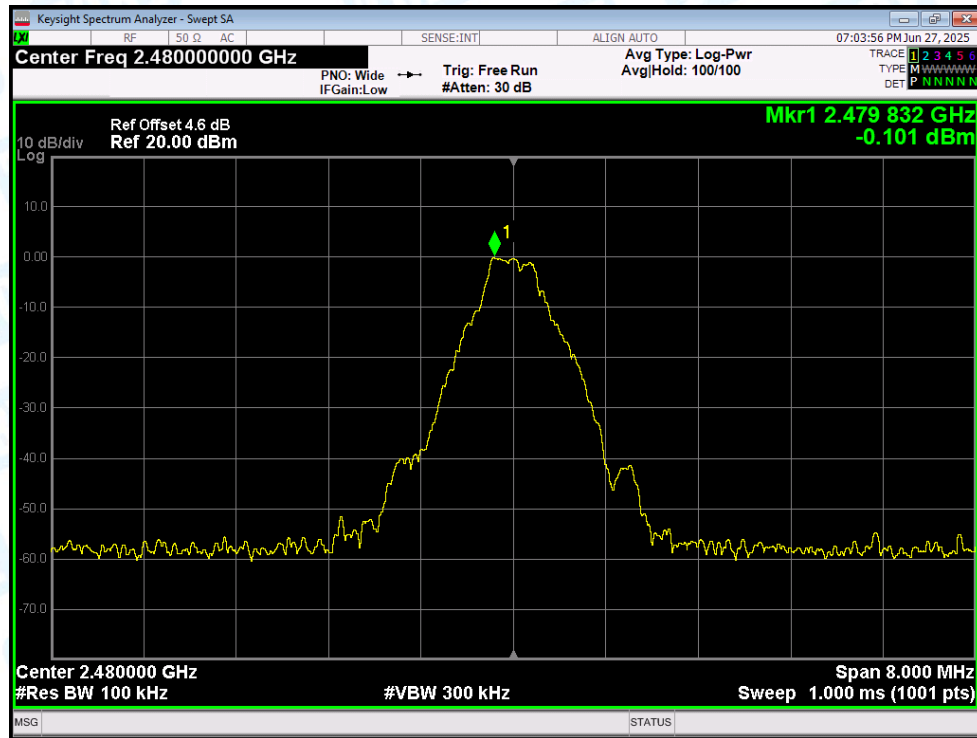
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



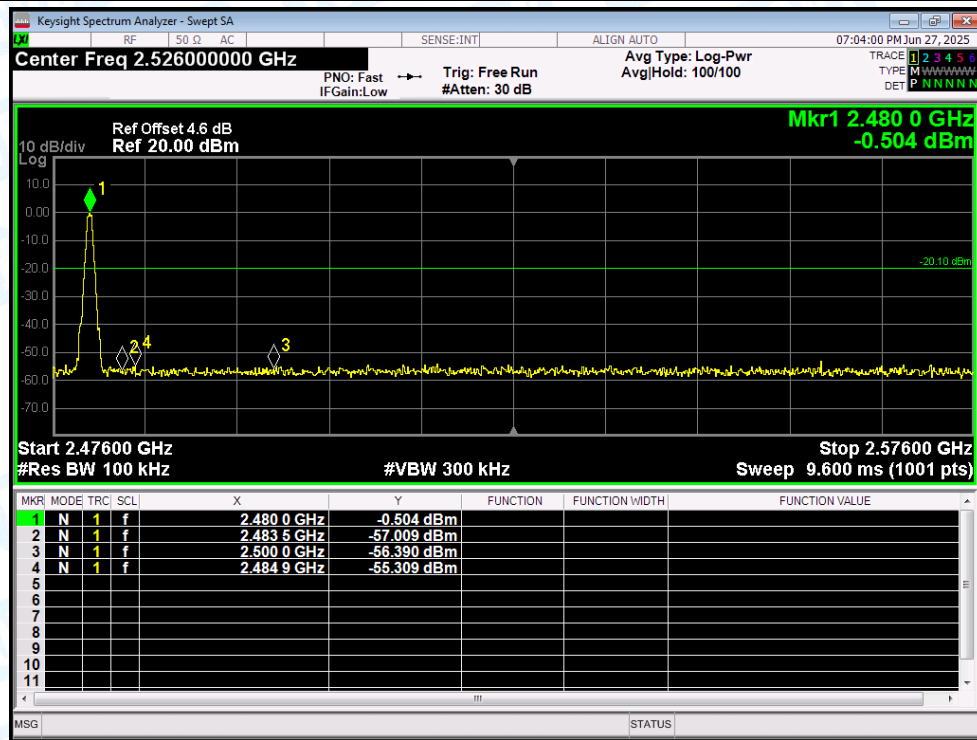
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



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



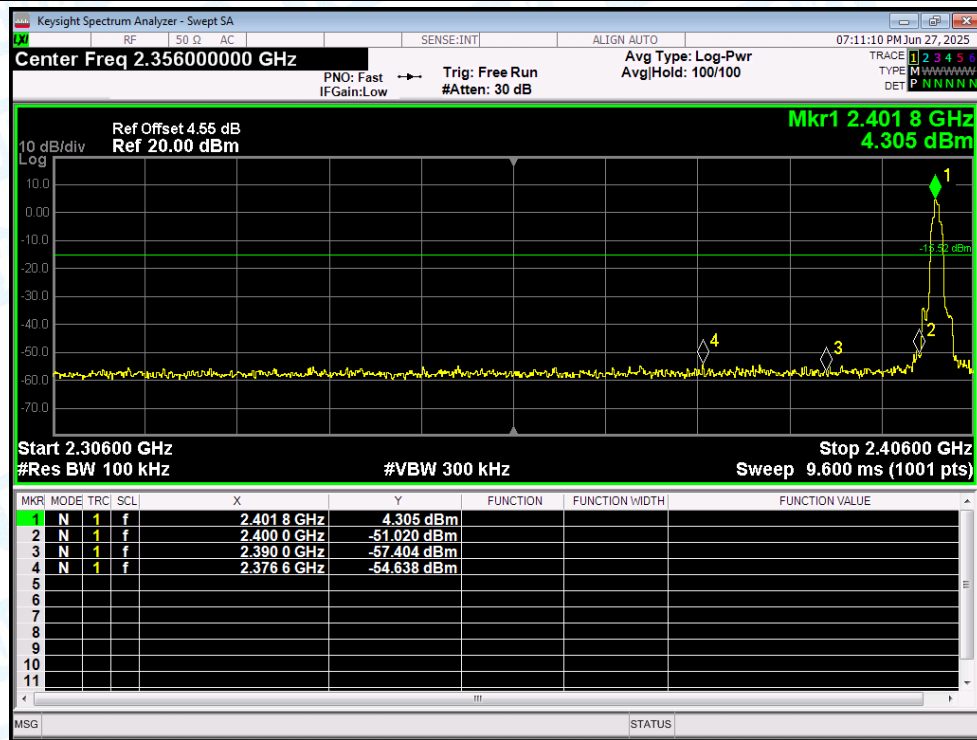
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



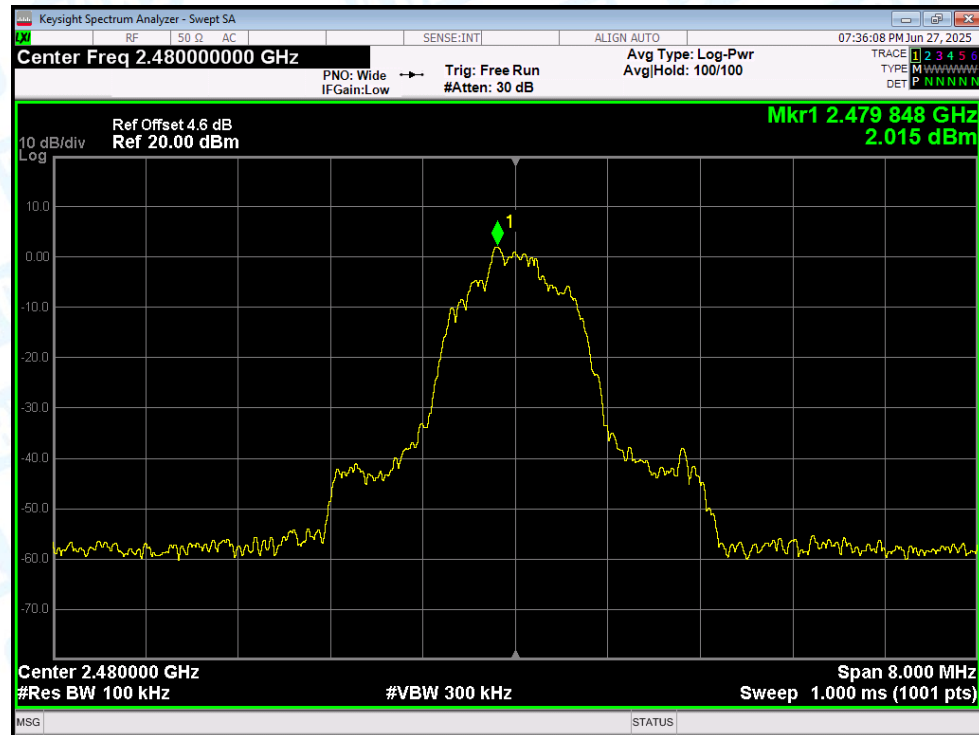
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



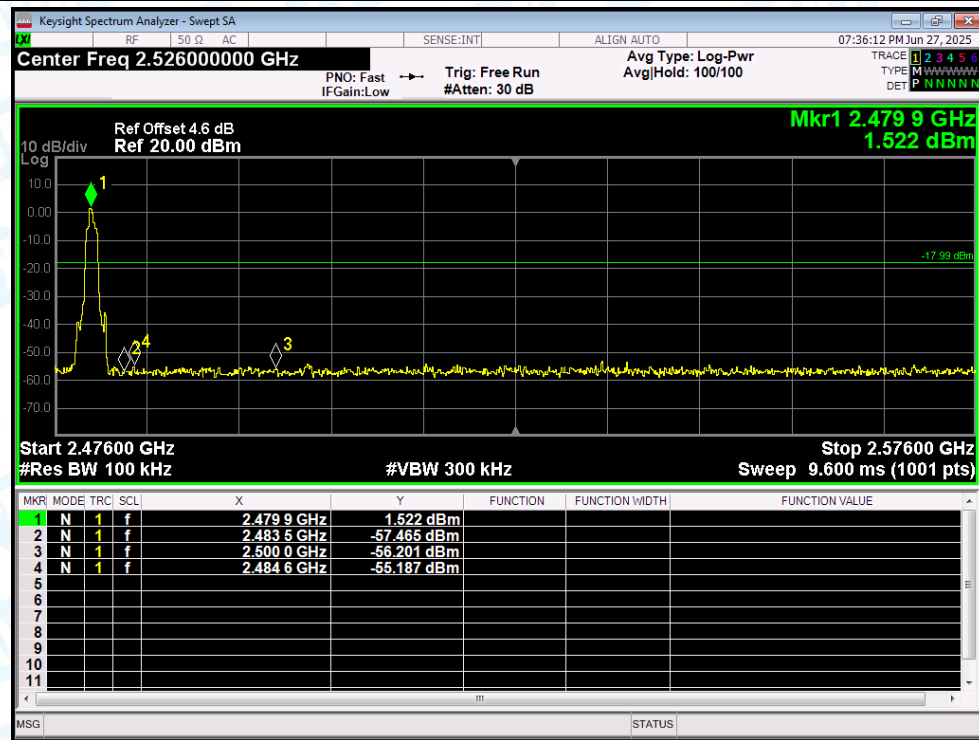
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Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



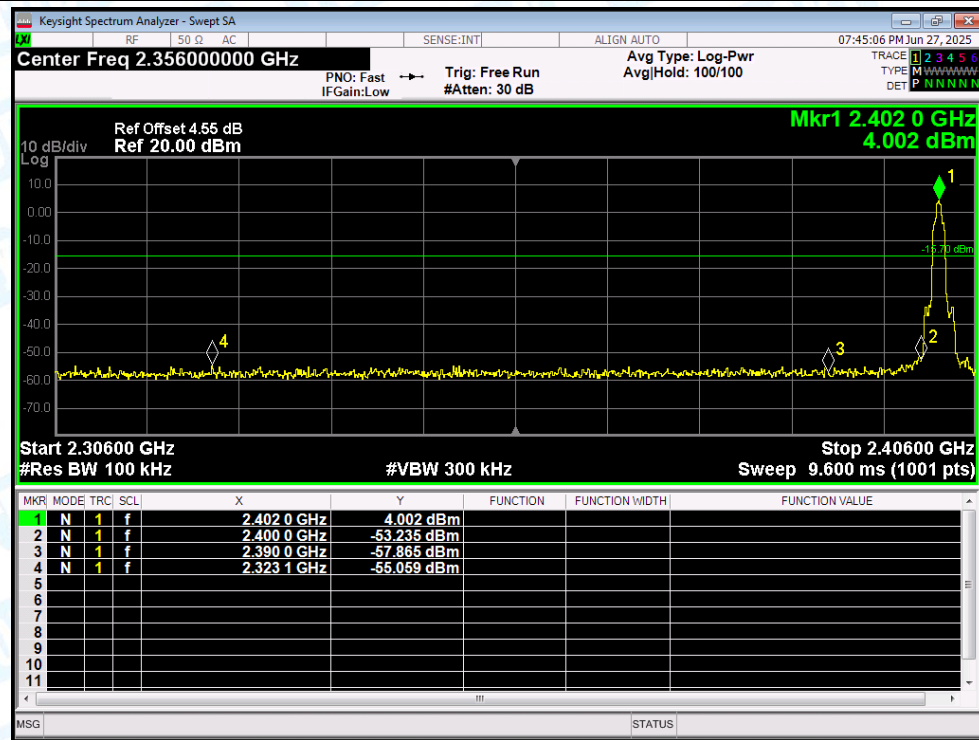
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission

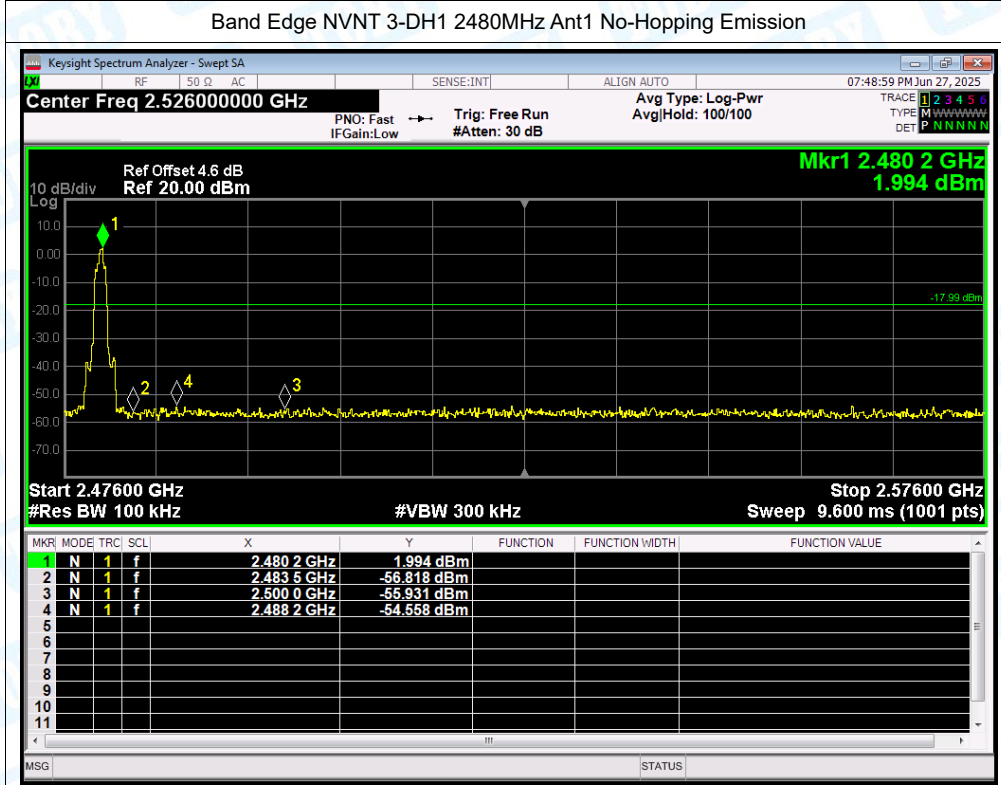
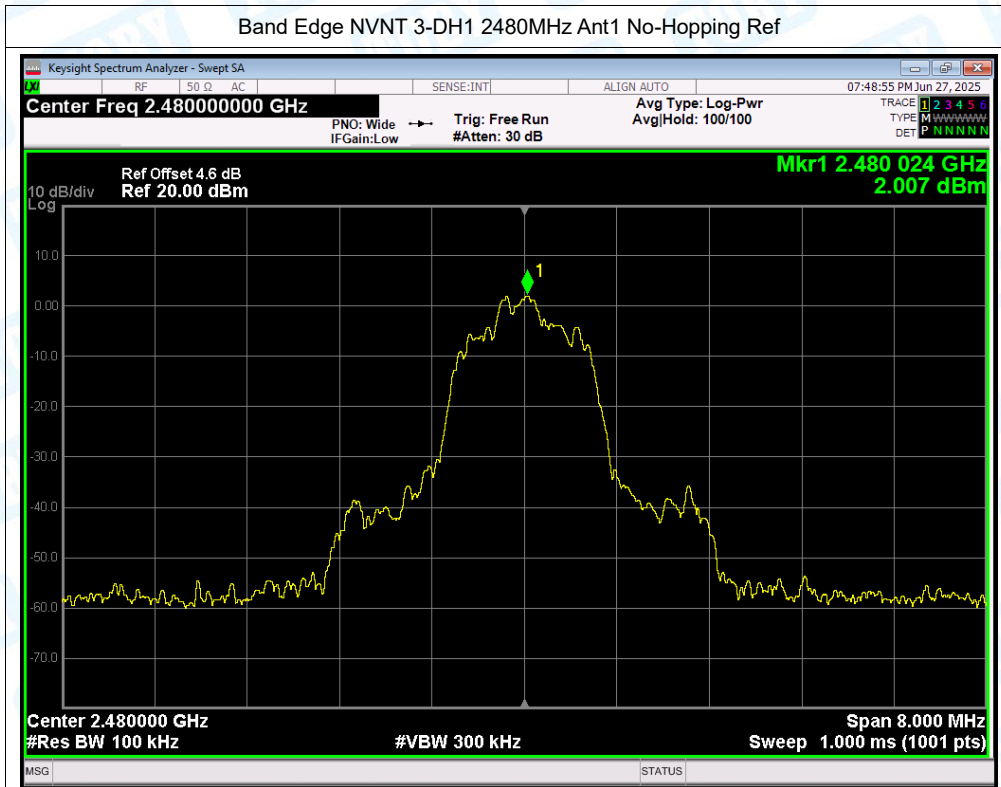


Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



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





6. Band Edge(Hopping)

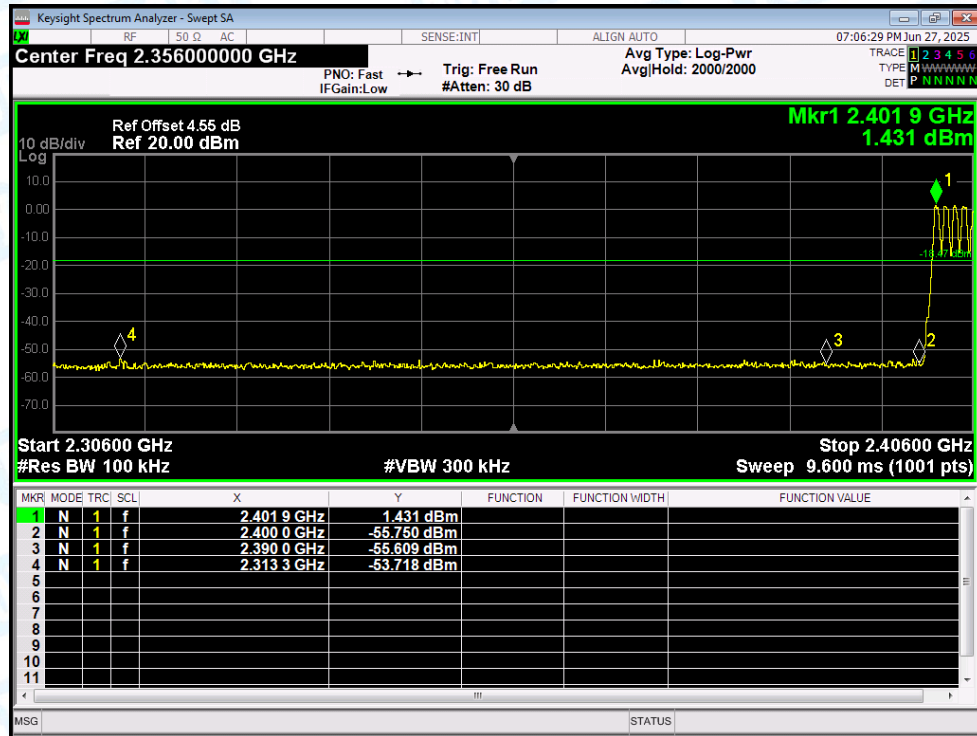
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-55.25	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-54.25	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-57.71	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-56.45	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-57.79	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-56.84	-20	Pass

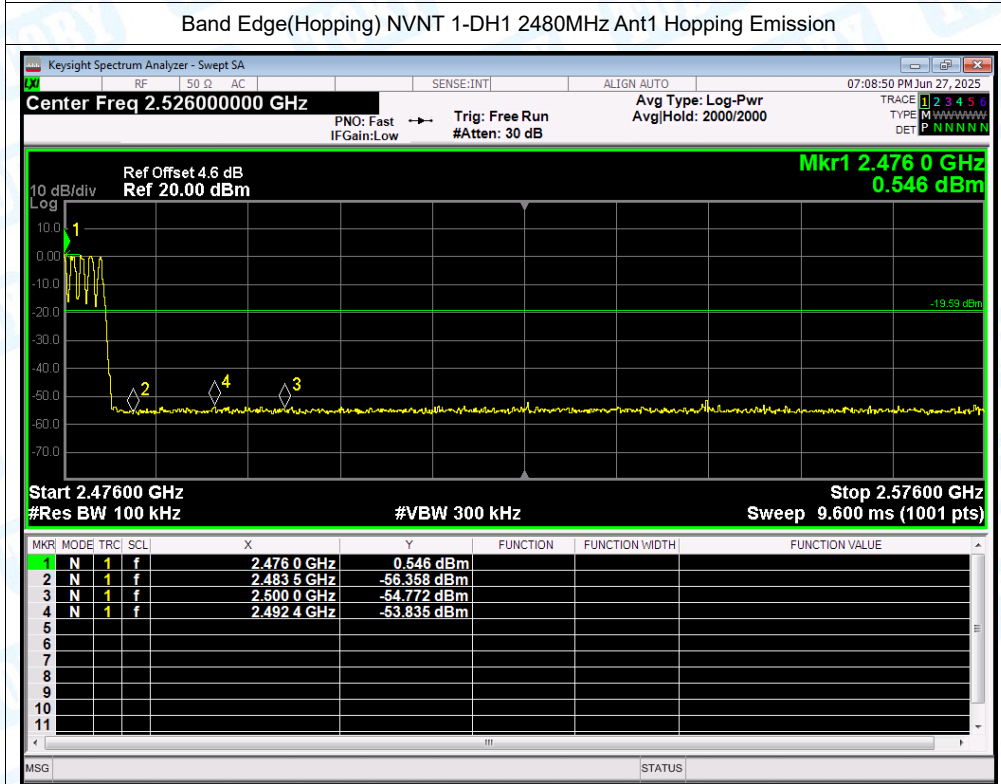
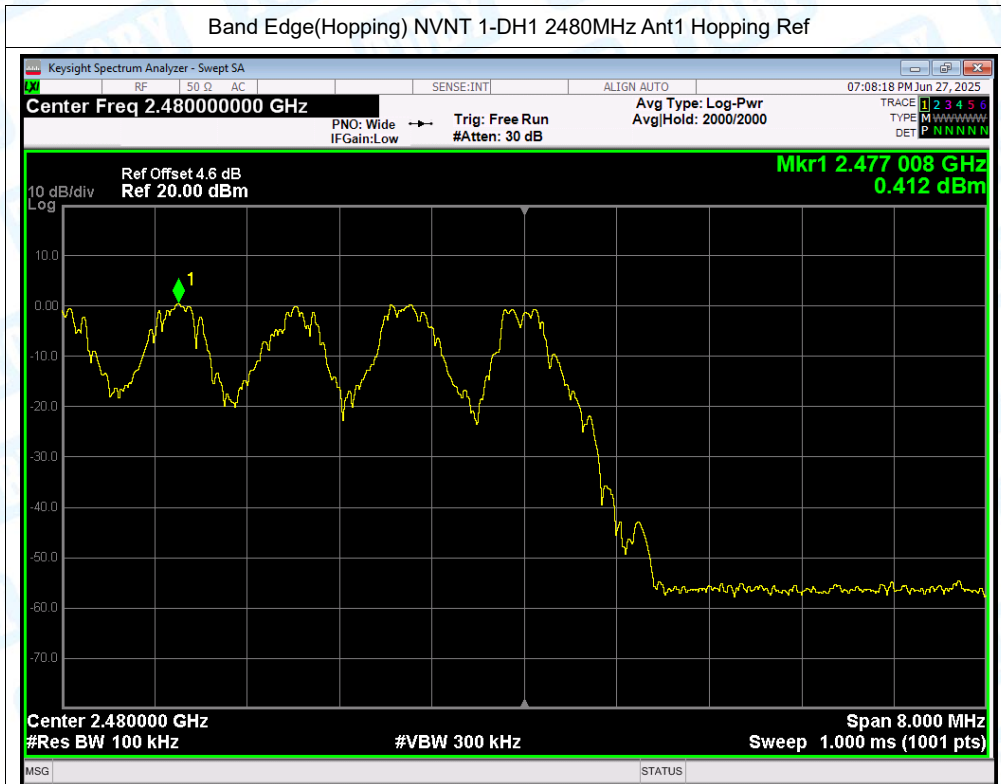
Test Graphs

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



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

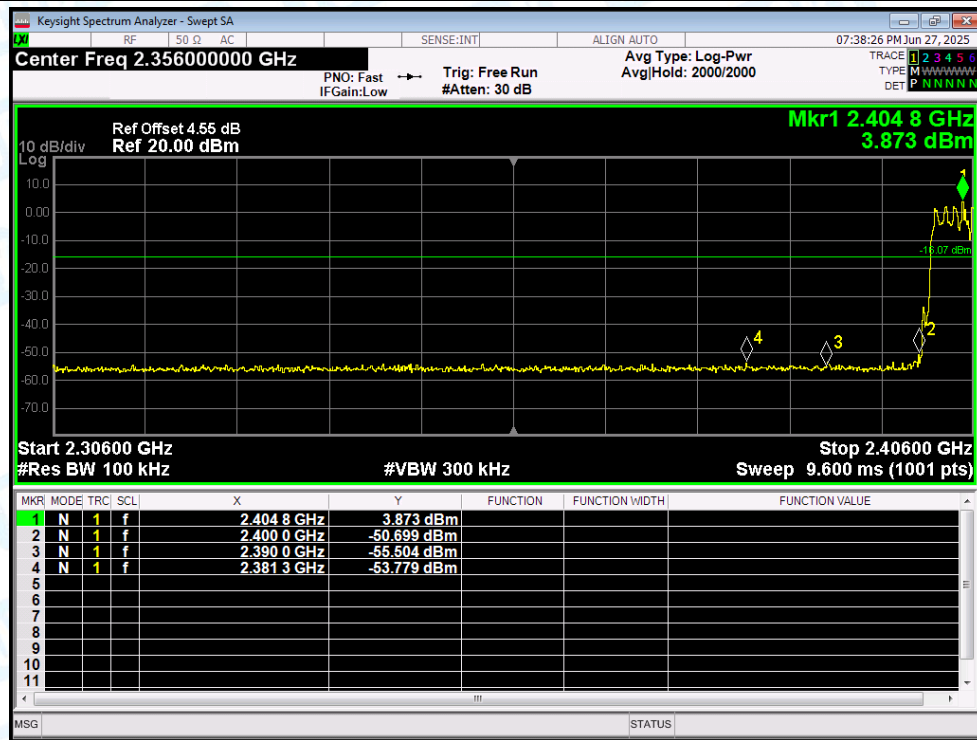


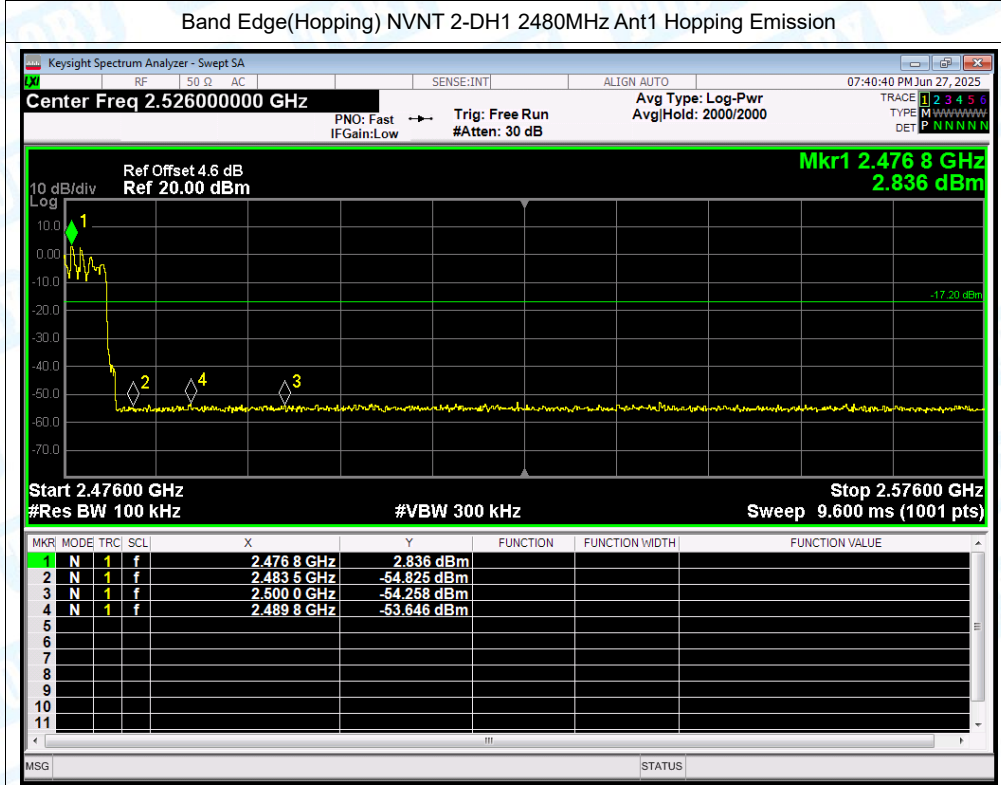


Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref

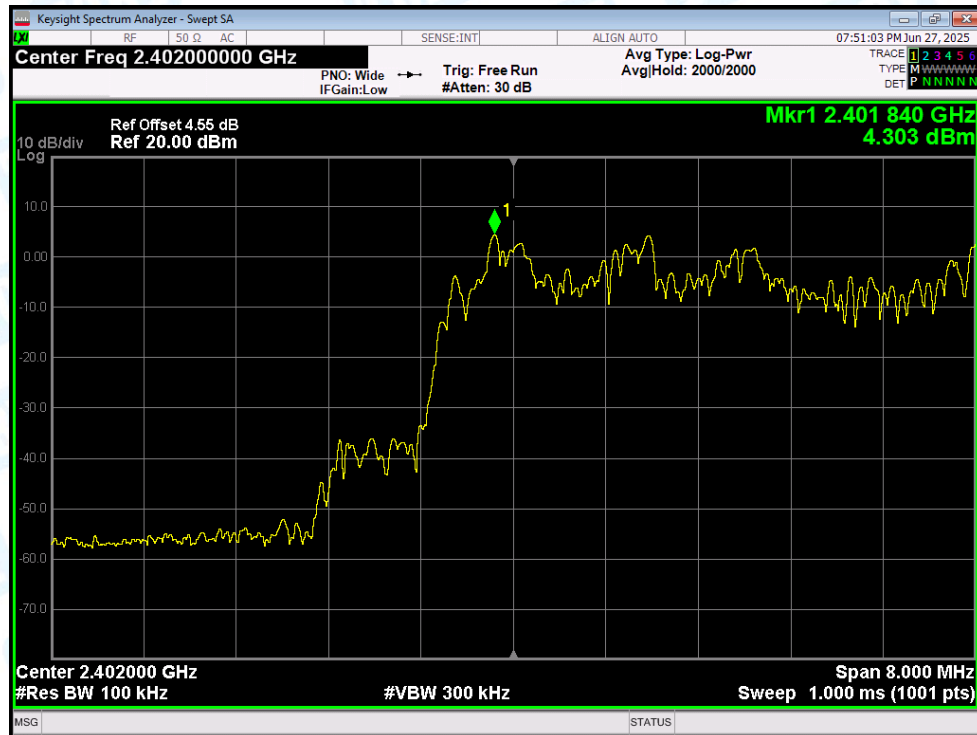


Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission

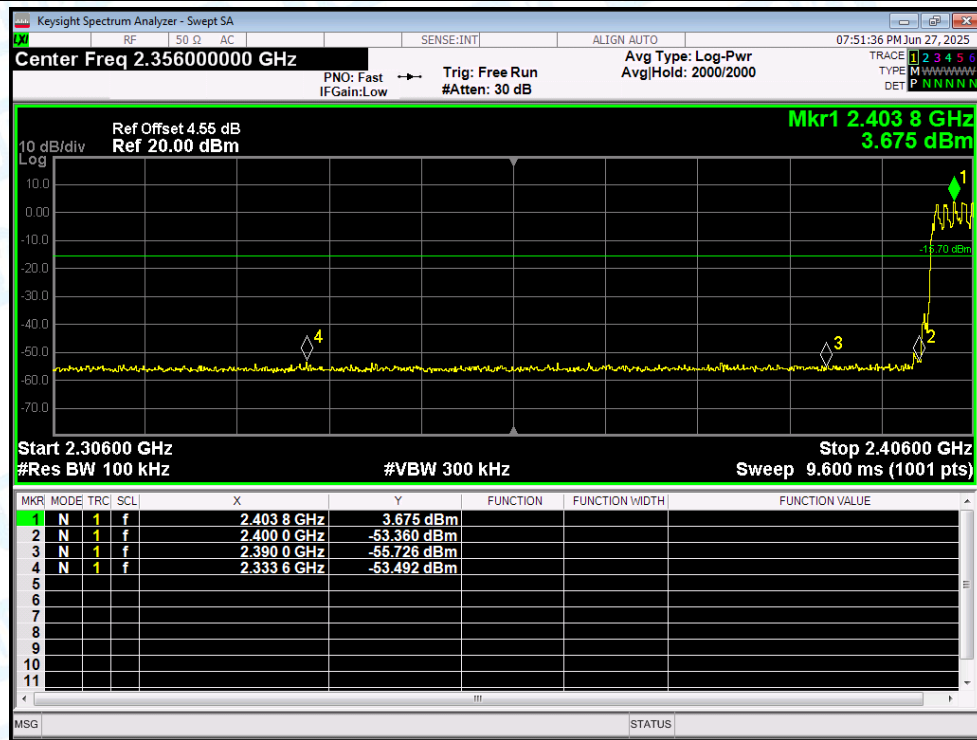


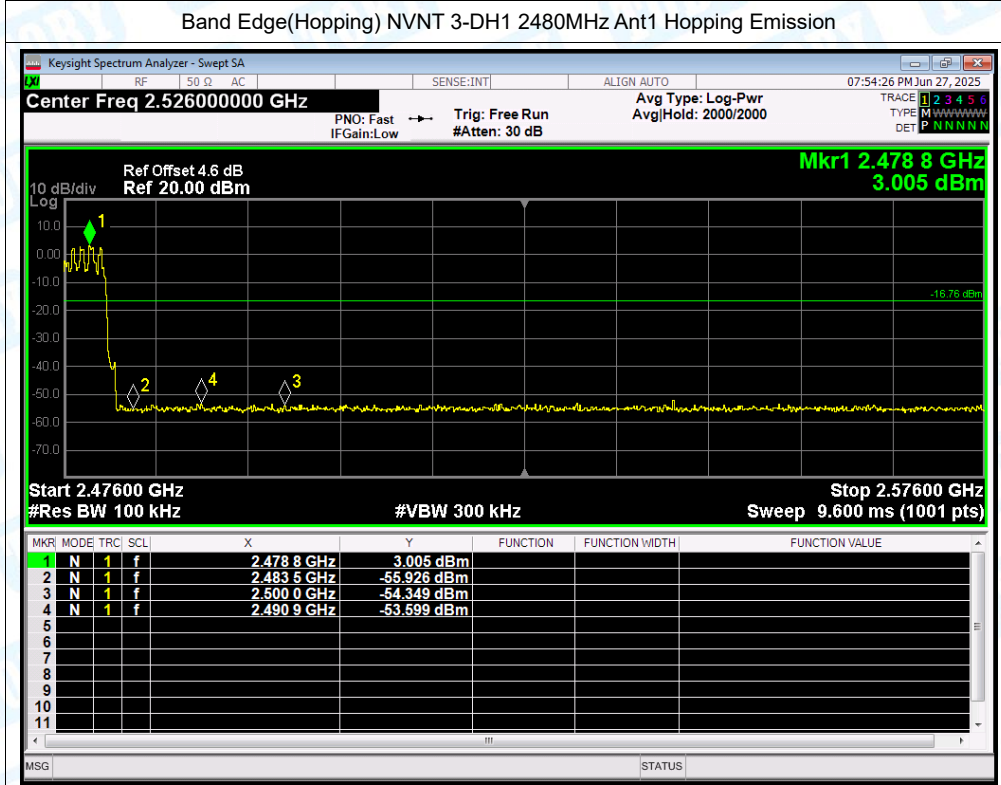


Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



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



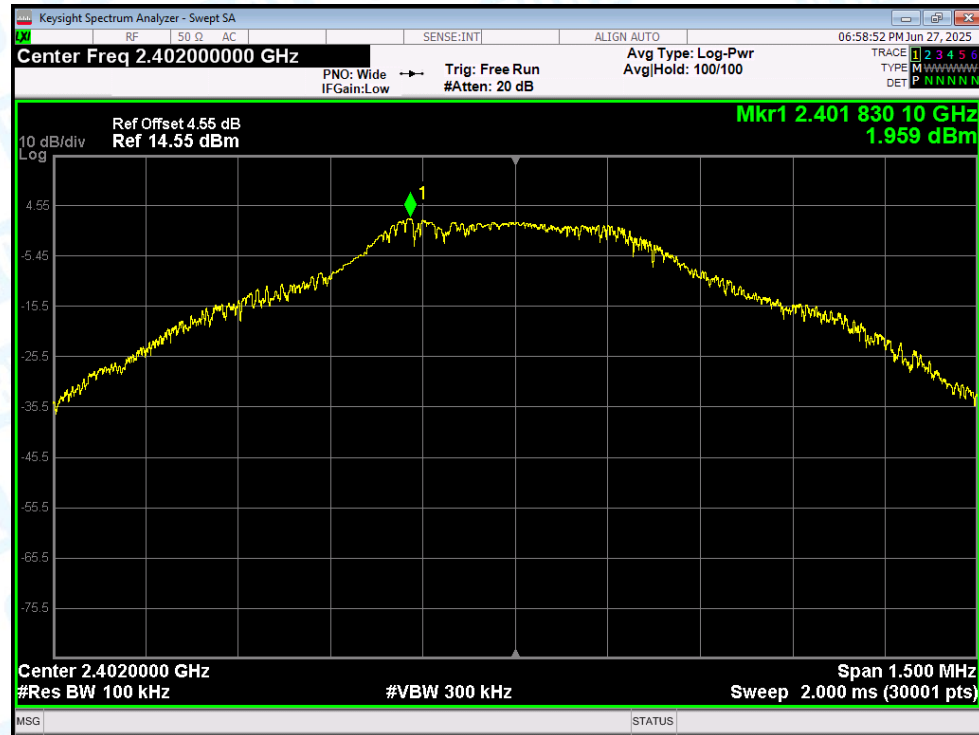


7. Conducted RF Spurious Emission

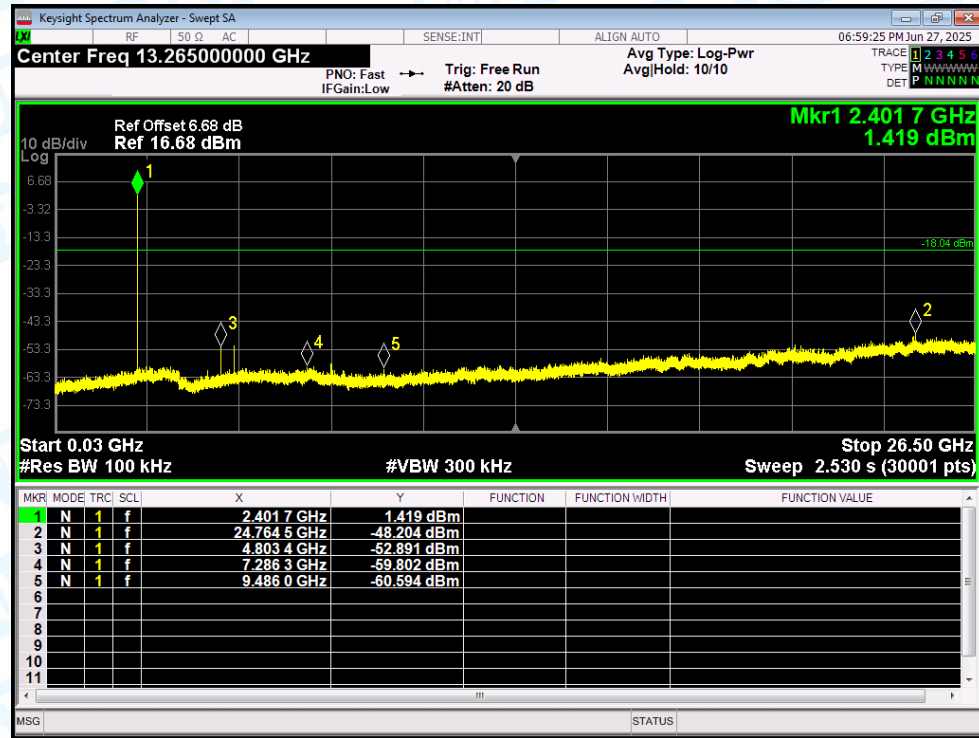
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-50.16	-20	Pass
NVNT	1-DH1	2441	Ant1	-50.03	-20	Pass
NVNT	1-DH1	2480	Ant1	-45.81	-20	Pass
NVNT	2-DH1	2402	Ant1	-50.72	-20	Pass
NVNT	2-DH1	2441	Ant1	-44.45	-20	Pass
NVNT	2-DH1	2480	Ant1	-49.82	-20	Pass
NVNT	3-DH1	2402	Ant1	-47.74	-20	Pass
NVNT	3-DH1	2441	Ant1	-50.47	-20	Pass
NVNT	3-DH1	2480	Ant1	-48.49	-20	Pass

Test Graphs

Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



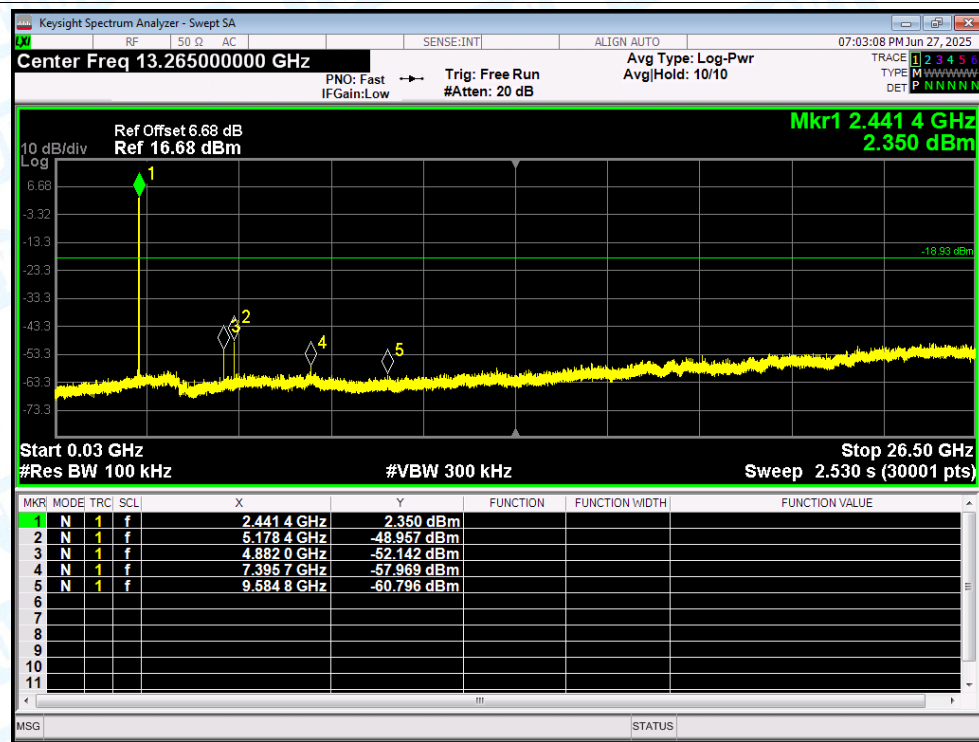
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



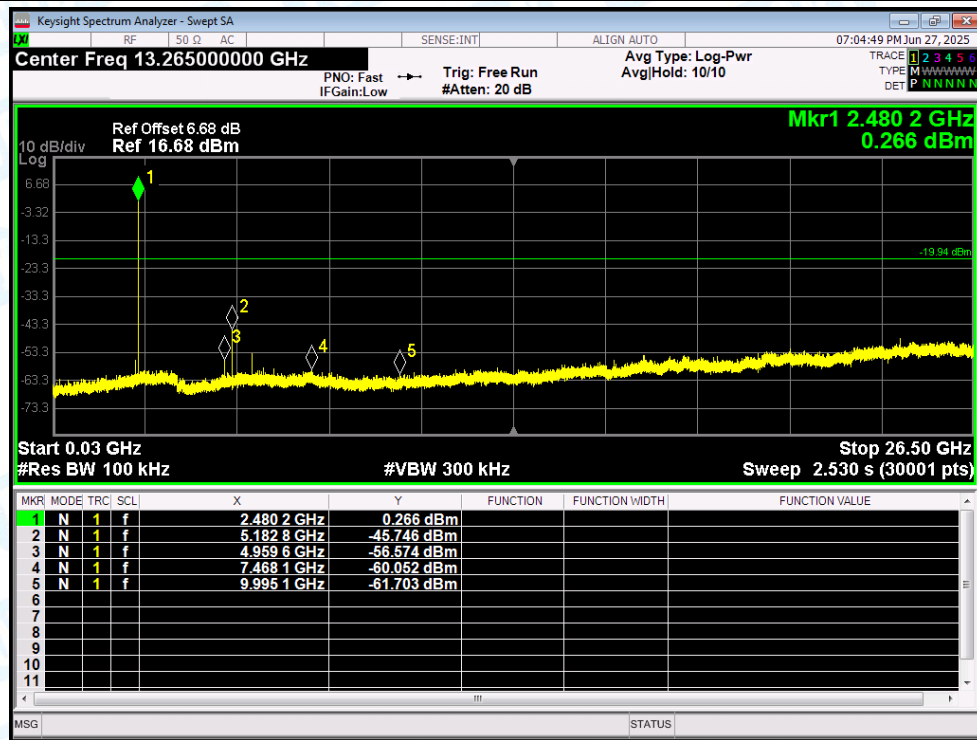
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



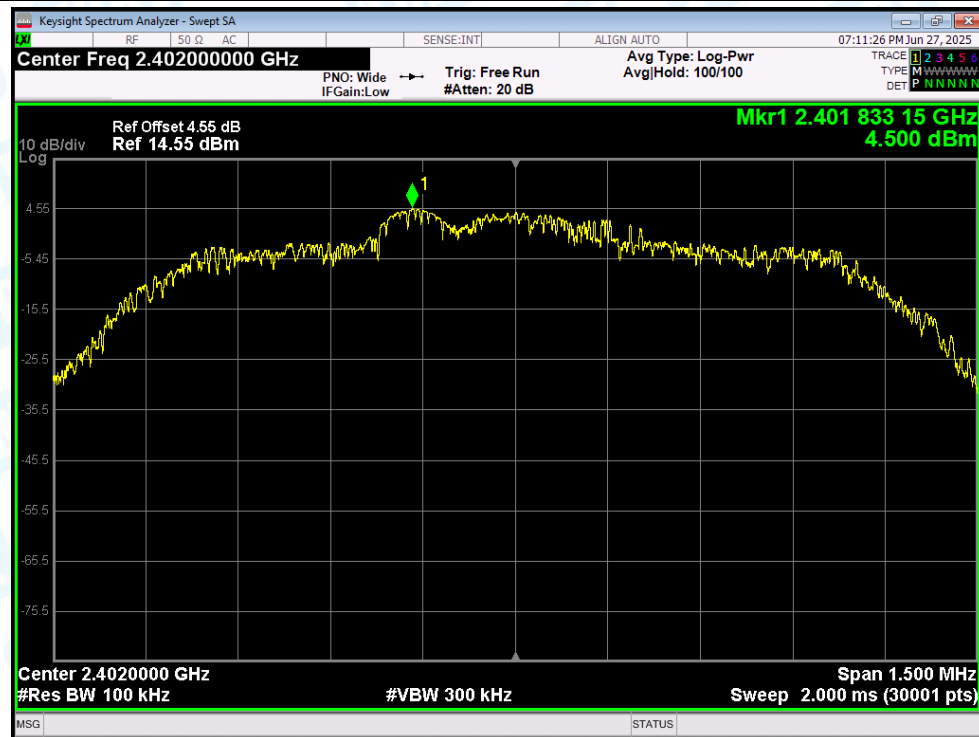
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



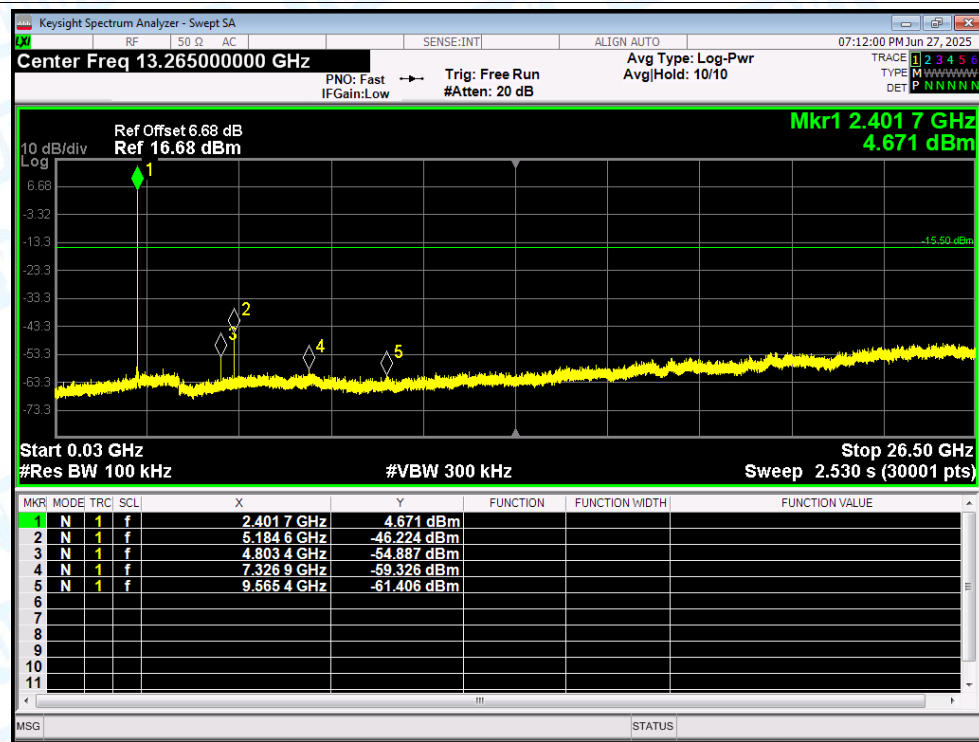
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



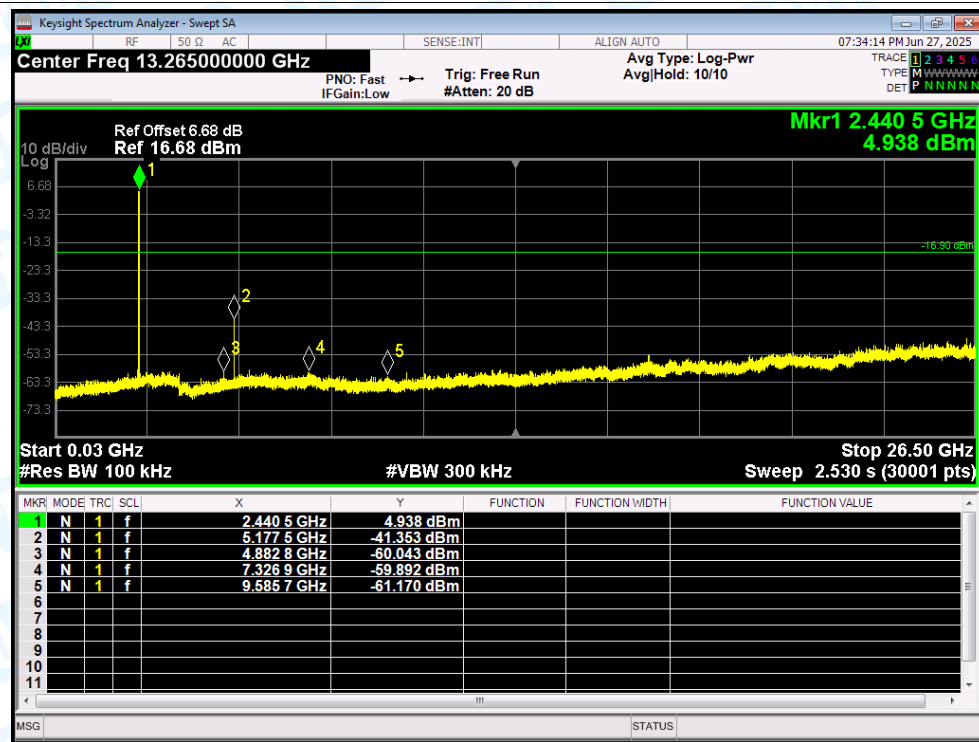
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



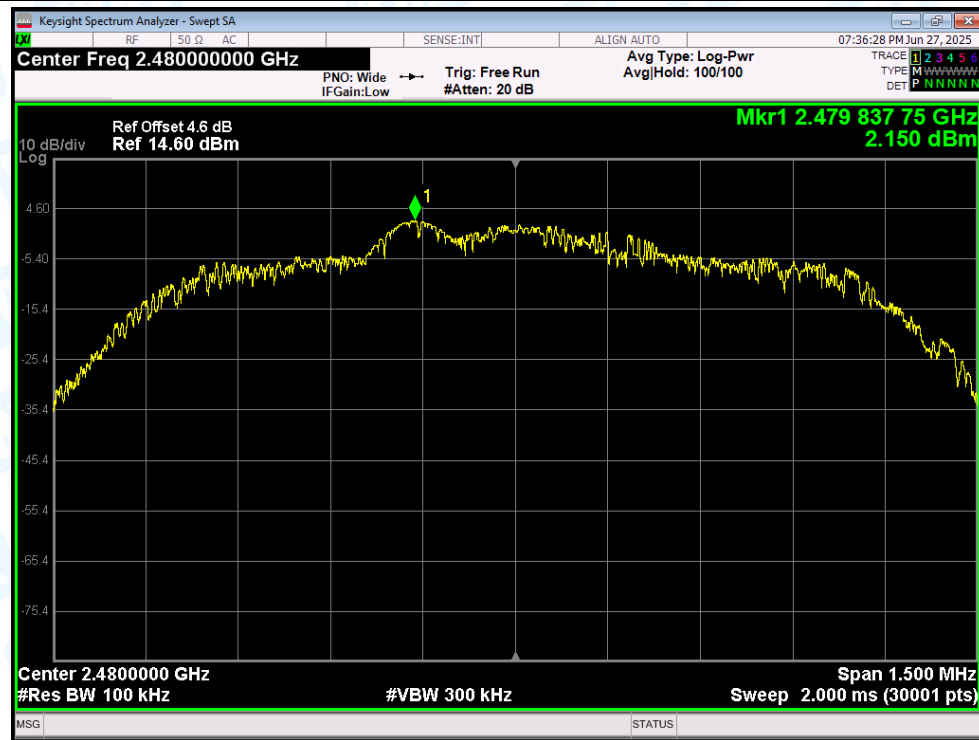
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



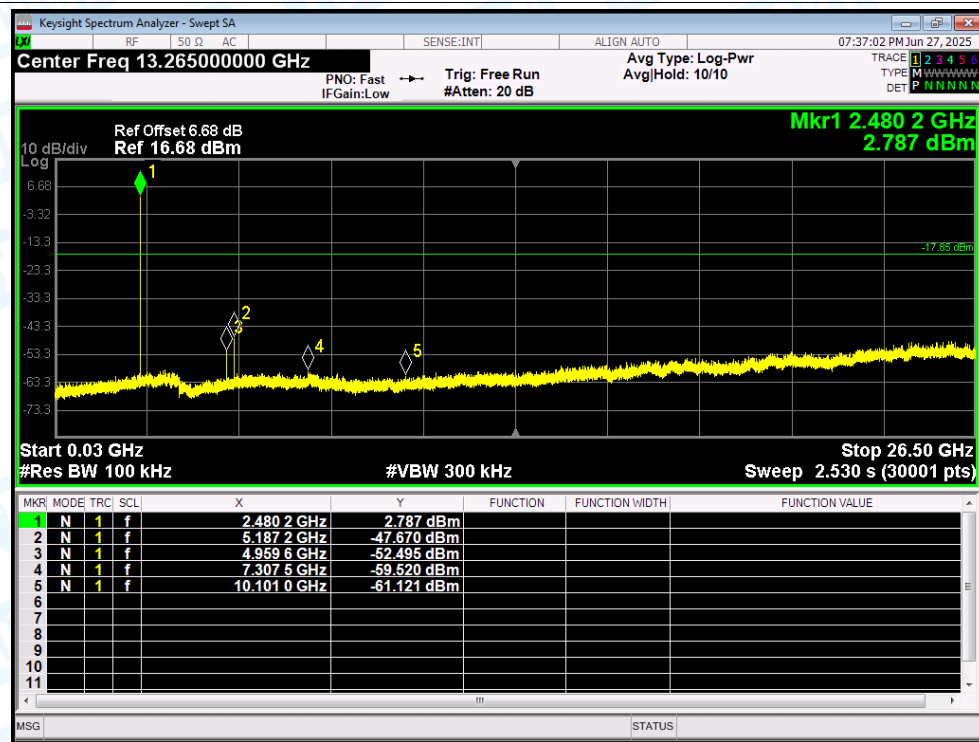
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



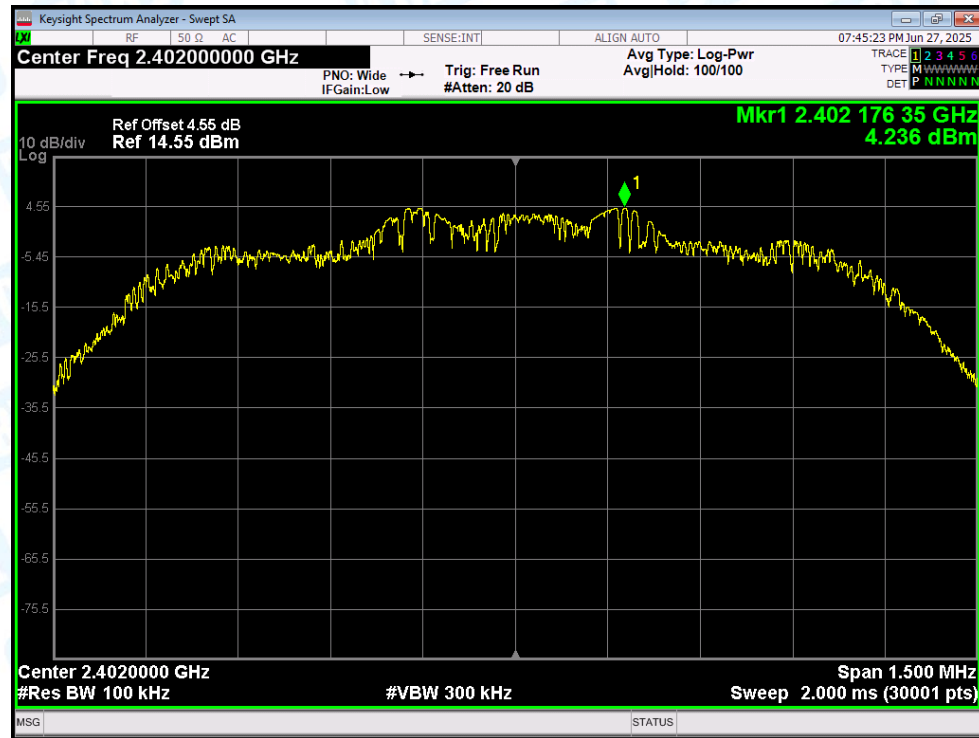
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



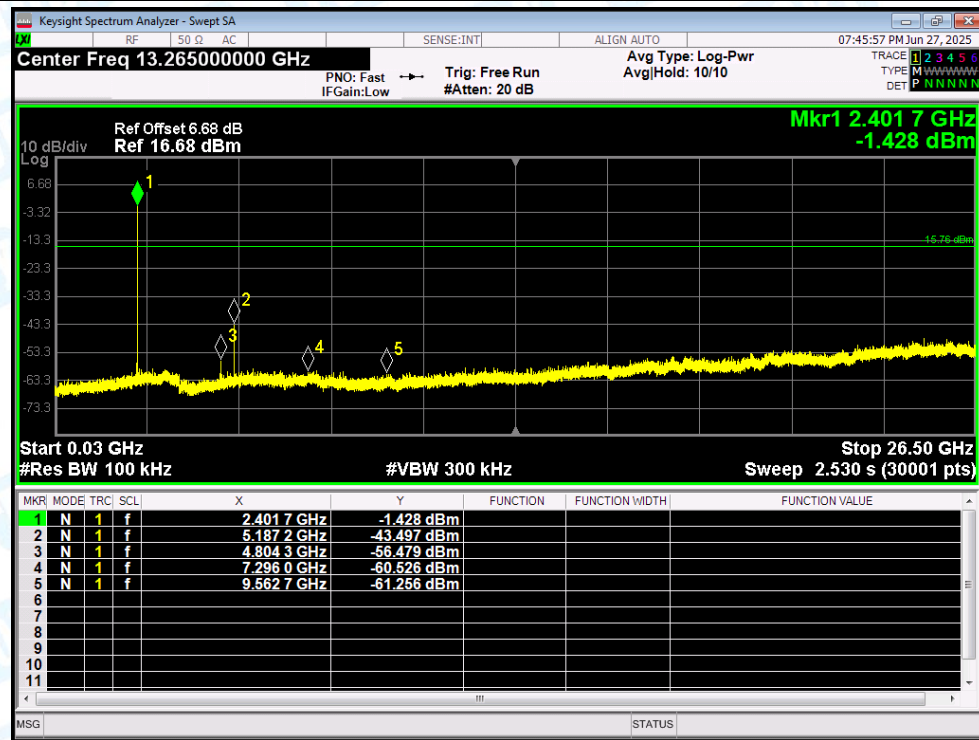
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



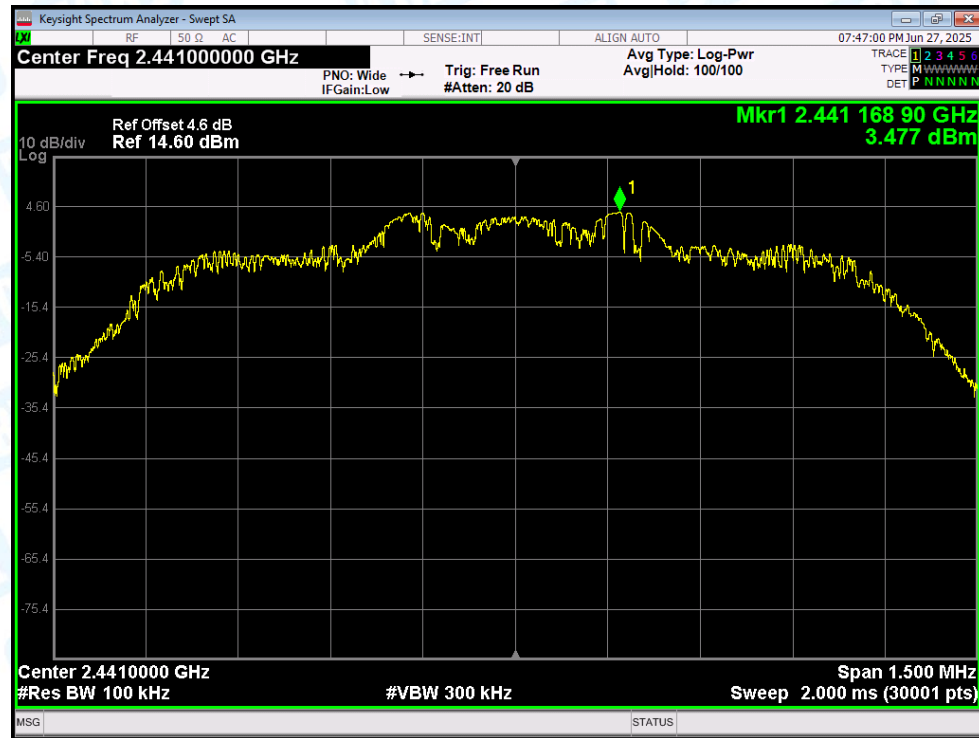
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



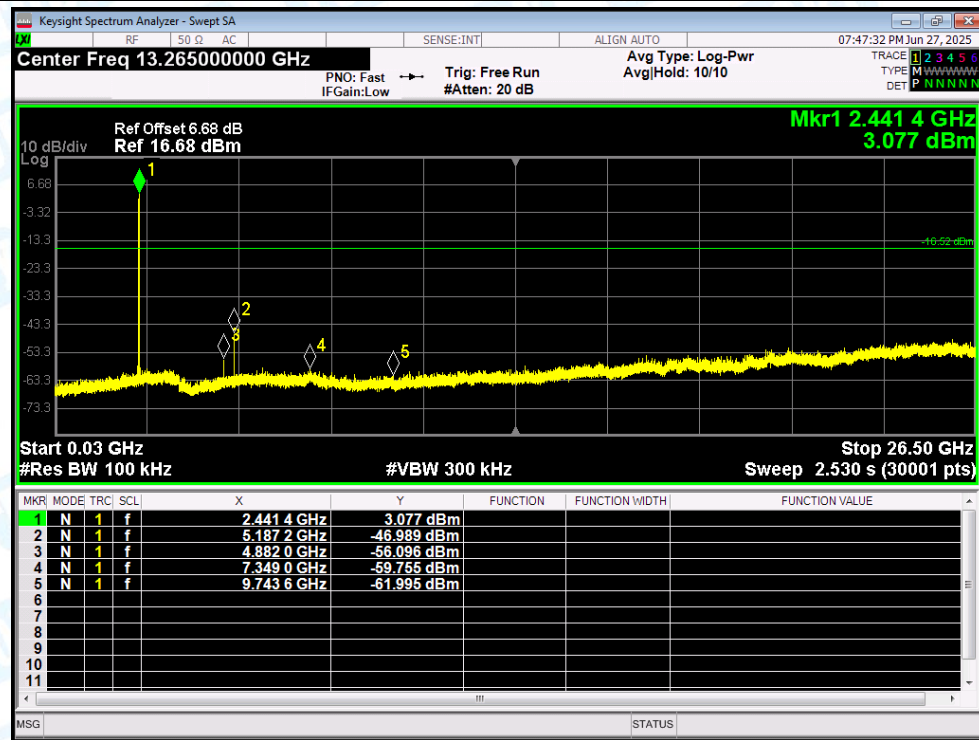
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



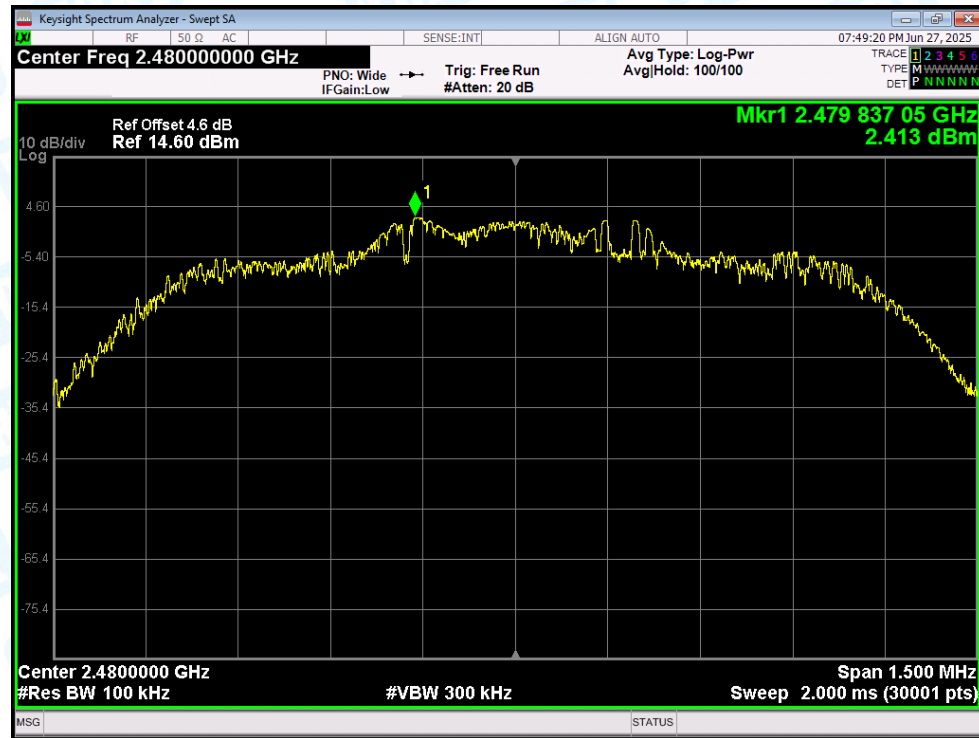
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



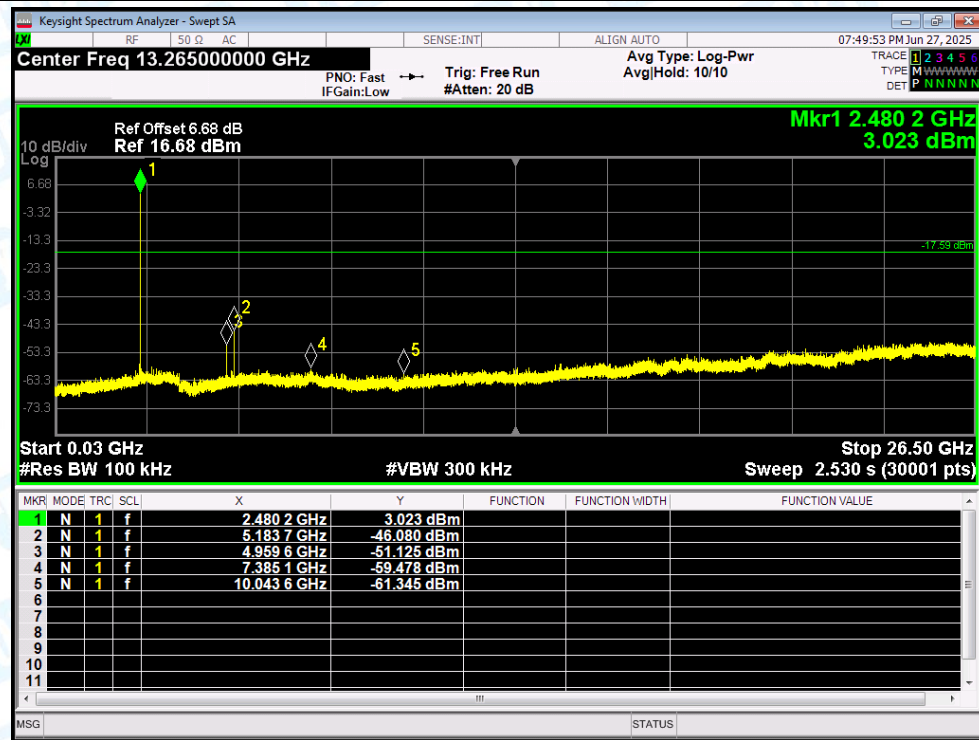
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

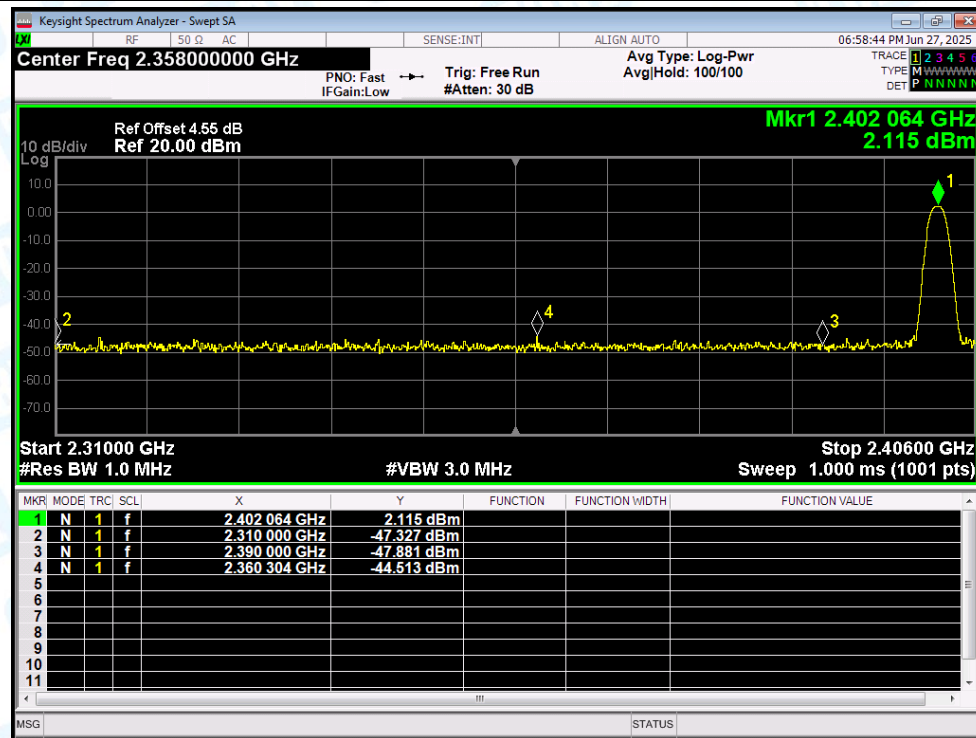


8. Restrict Band

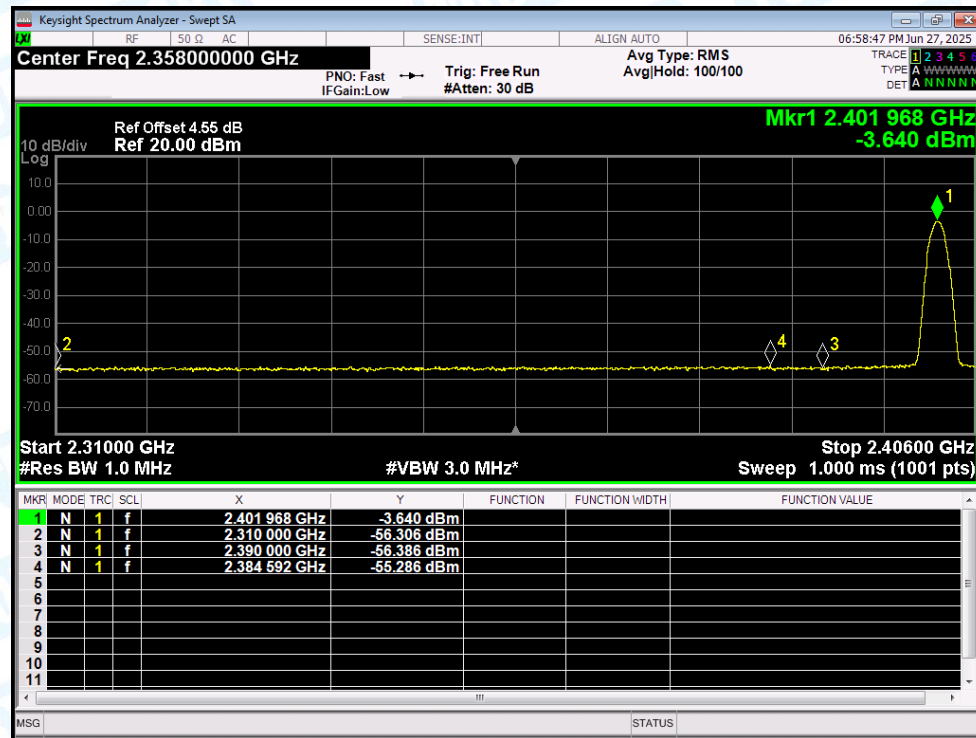
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-47.33	2	-	49.93	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.31	2	5.29	46.24	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2360.304	-44.51	2	-	52.75	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2384.592	-55.29	2	5.29	47.26	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-47.88	2	-	49.38	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-56.39	2	5.29	46.16	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-47.68	2	-	49.58	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-55.48	2	5.17	46.95	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2498.512	-43.99	2	-	53.27	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2497.432	-54.65	2	5.17	47.78	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-48.23	2	-	49.03	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-56.05	2	5.17	46.38	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-49.55	2	-	47.71	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.75	2	5.17	45.68	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2367.888	-45.22	2	-	52.04	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2389.872	-54.98	2	5.17	47.45	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-47.28	2	-	49.98	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-55.77	2	5.17	46.66	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-47.17	2	-	50.09	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-55.28	2	5.06	47.04	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2493.376	-44.57	2	-	52.69	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2484.472	-54.77	2	5.06	47.55	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-46.25	2	-	51.01	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.87	2	5.06	46.45	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-47.56	2	-	49.7	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.18	2	5.17	46.25	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2383.632	-44.5	2	-	52.76	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2352.624	-55.07	2	5.17	47.36	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-48.61	2	-	48.65	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-55.68	2	5.17	46.75	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-46.5	2	-	50.76	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-55.28	2	5.17	47.15	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2485.72	-44.71	2	-	52.55	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2499.112	-54.58	2	5.17	47.85	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-46.19	2	-	51.07	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-56.15	2	5.17	46.28	Average	54	Pass

Test Graphs

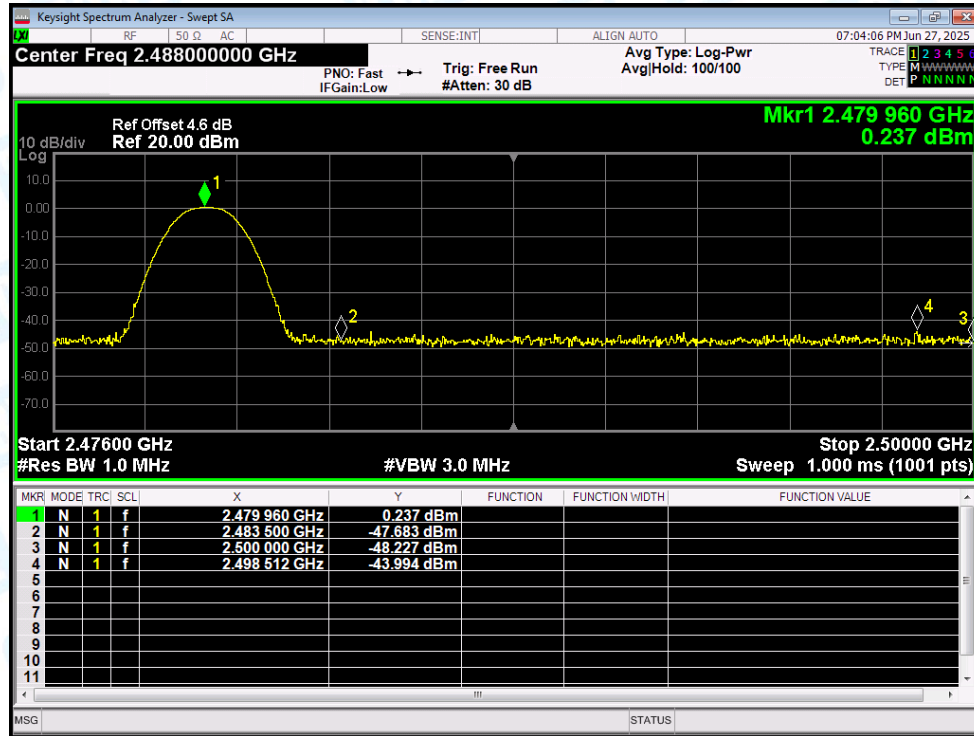
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



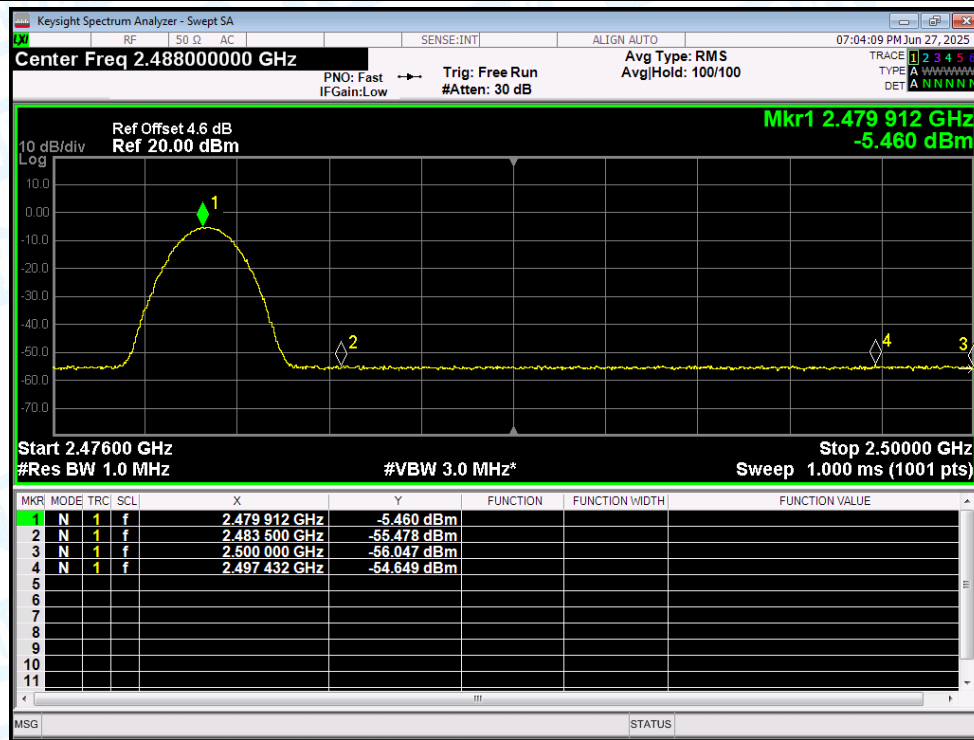
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



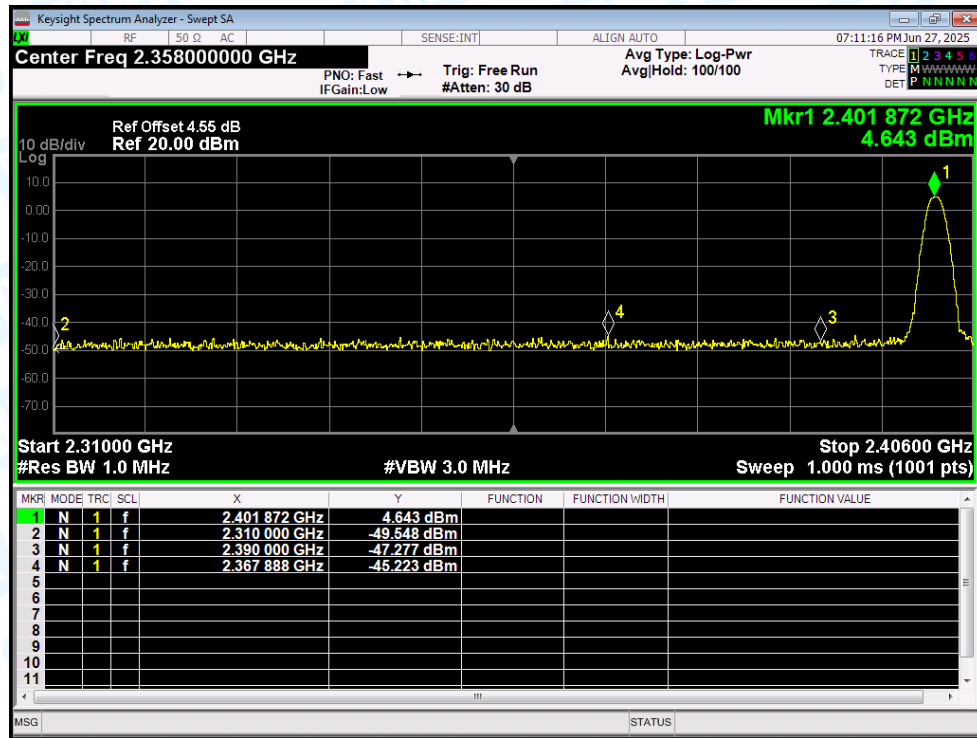
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



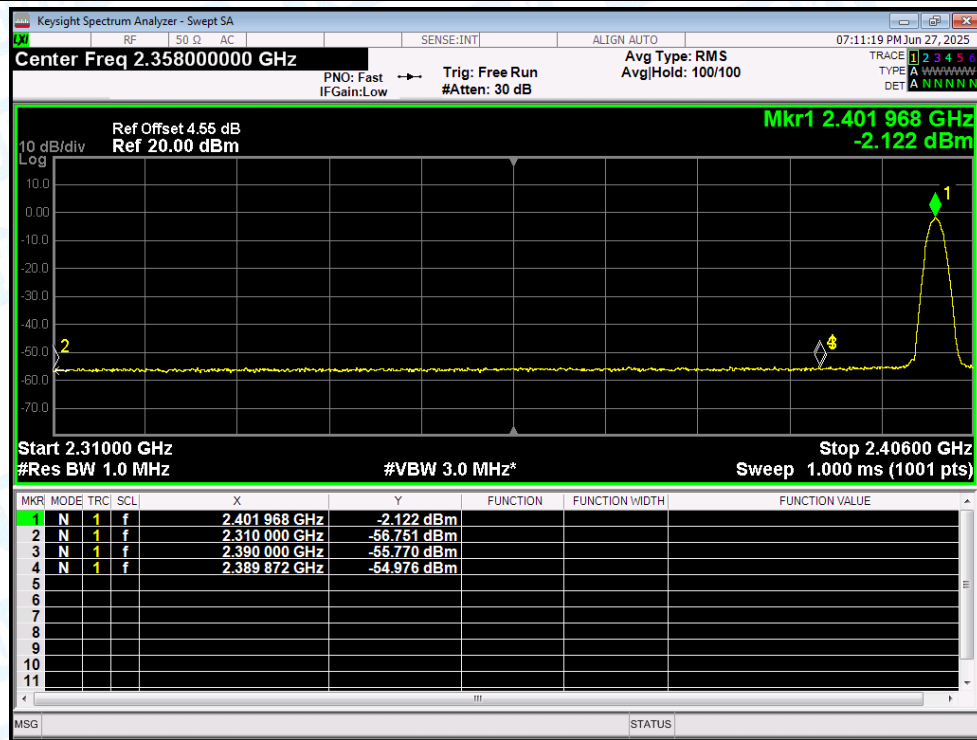
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



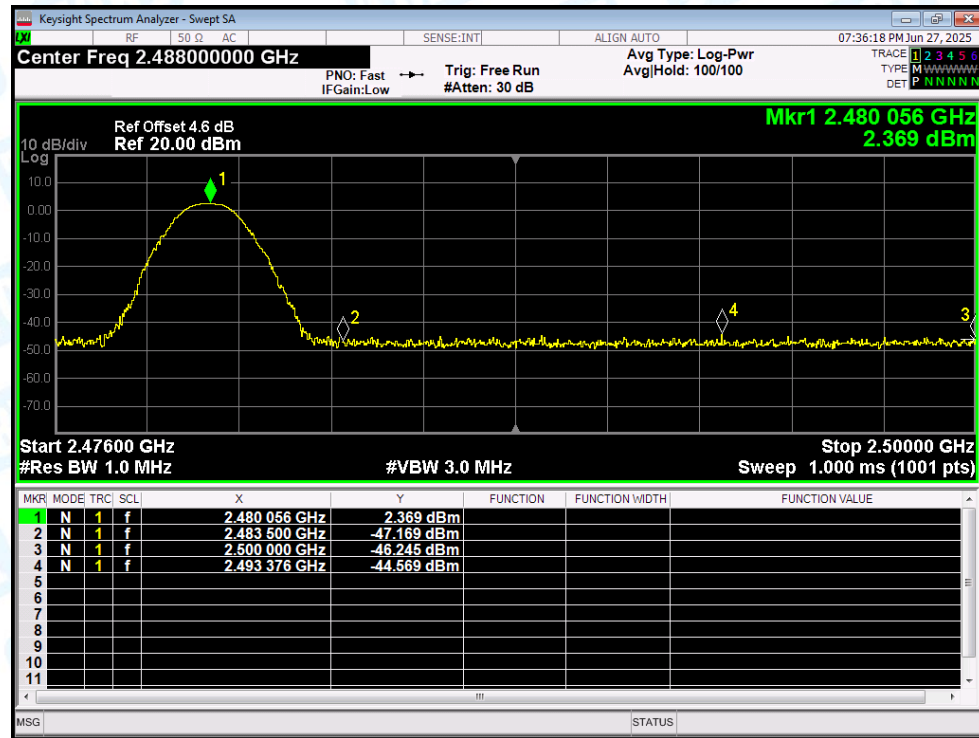
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



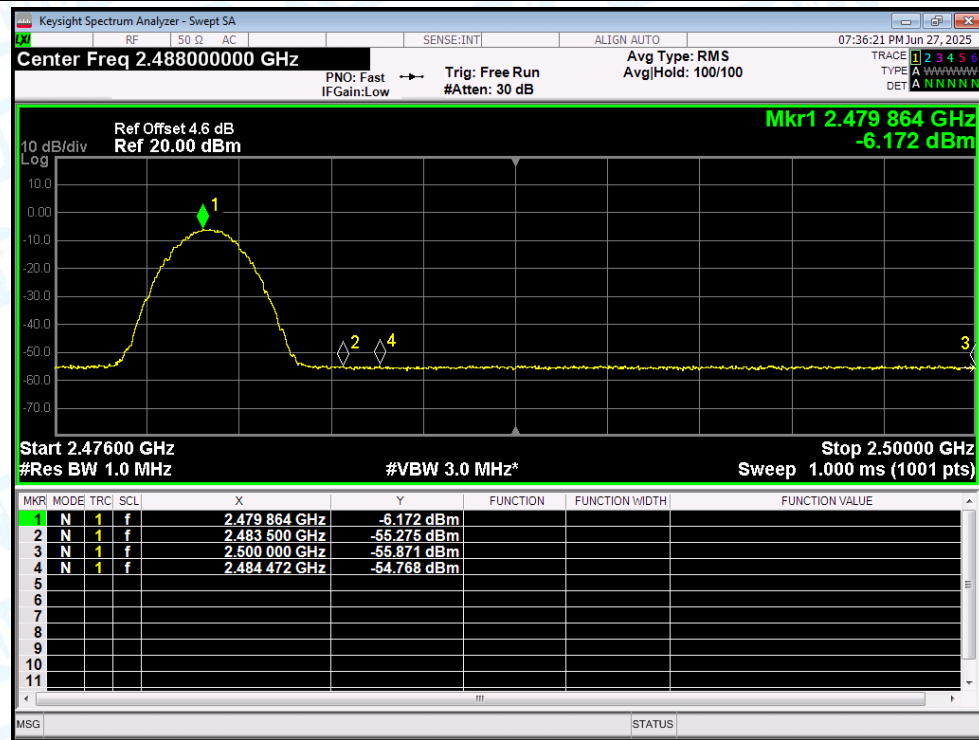
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



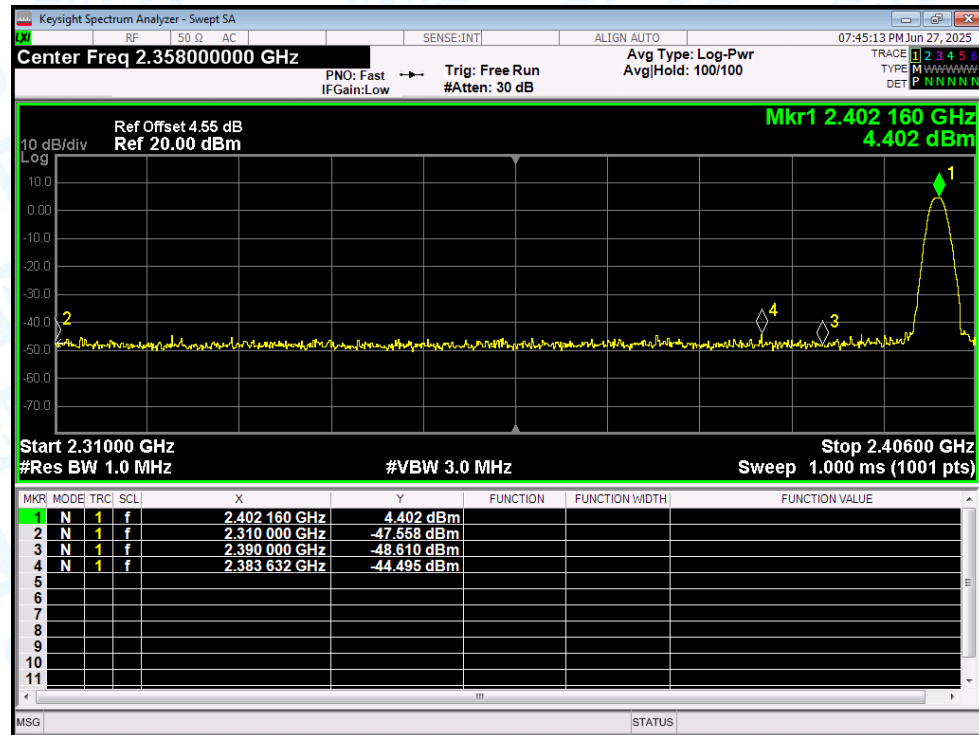
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



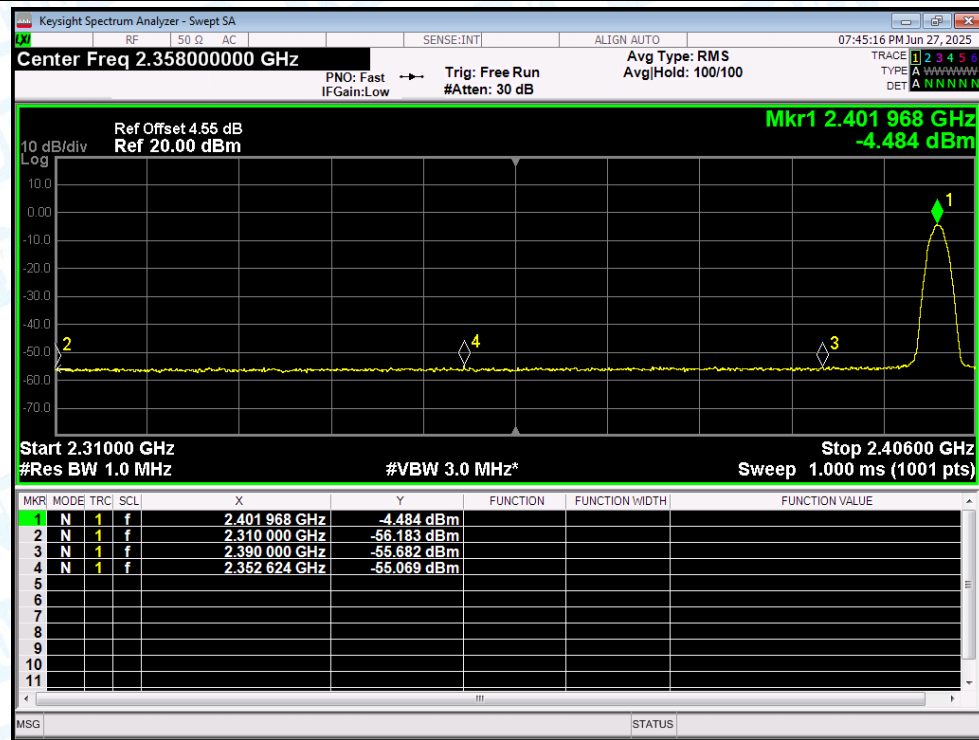
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



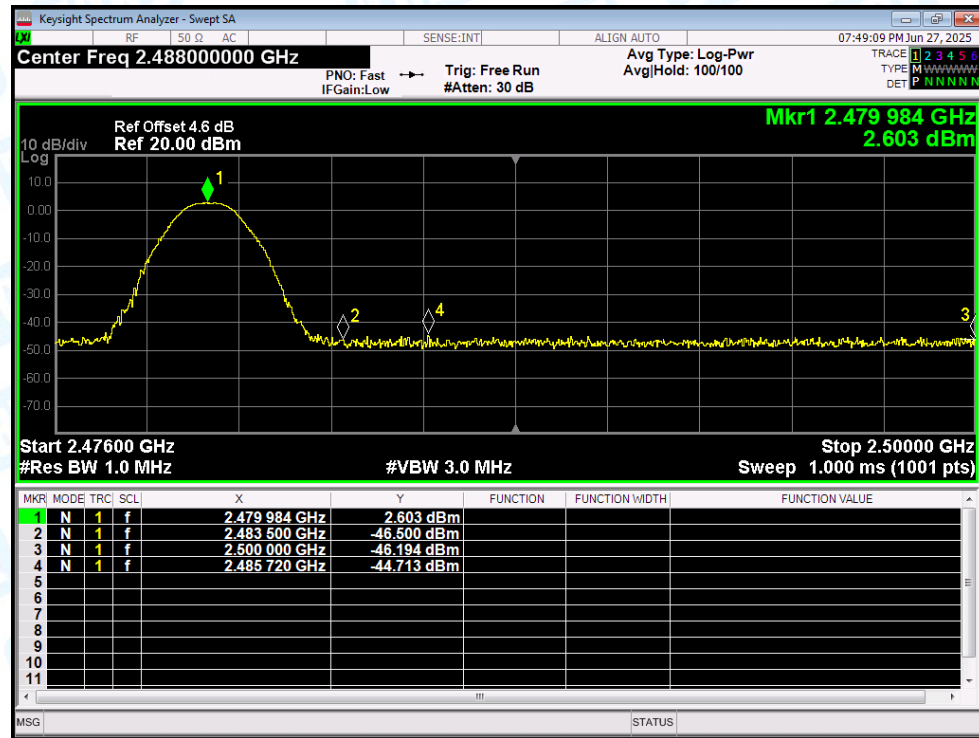
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



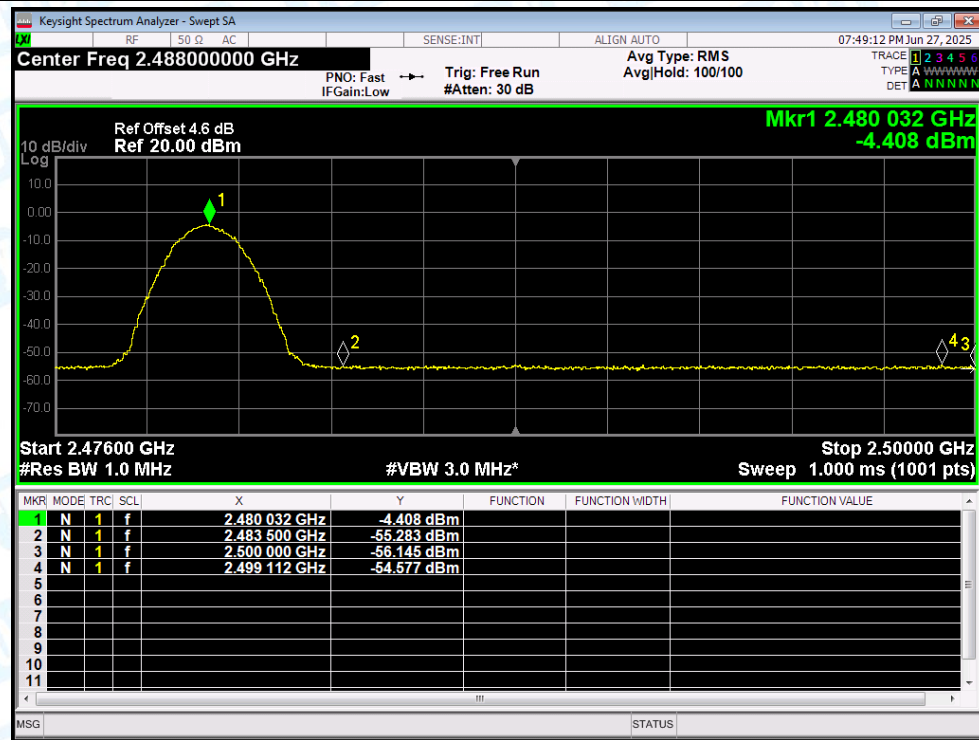
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

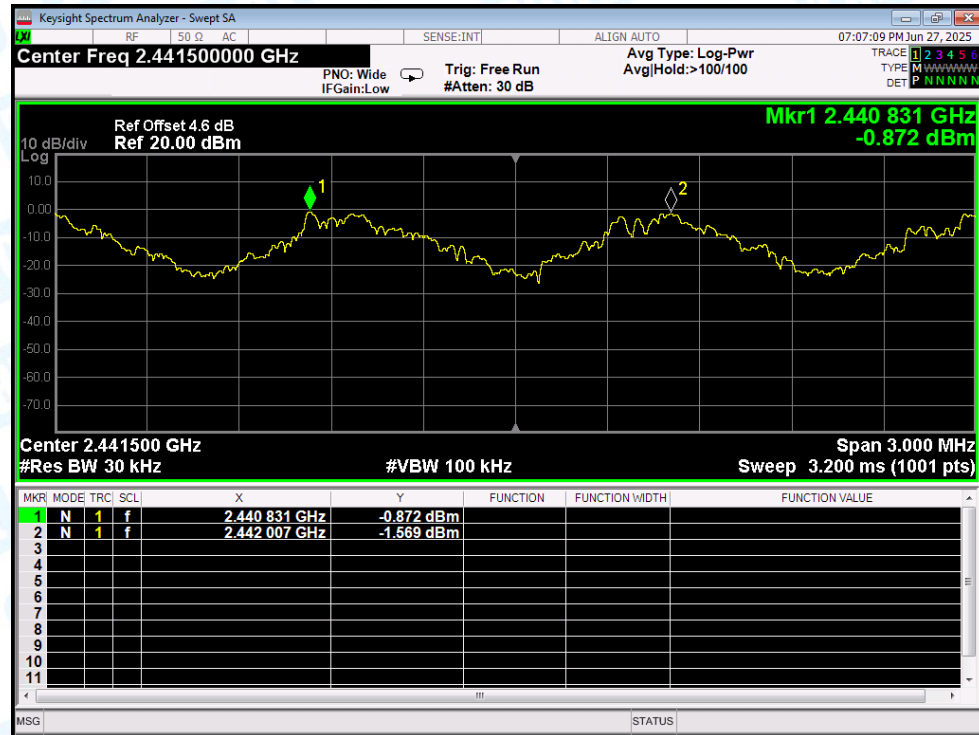


9. Carrier Frequencies Separation

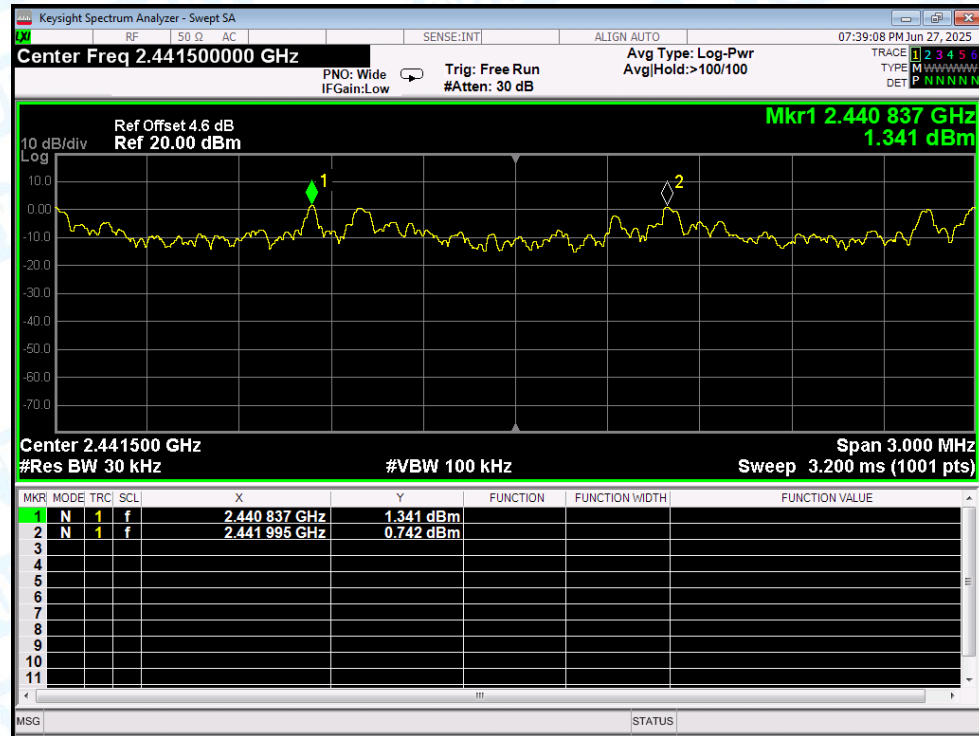
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.831	2442.007	1.176	0.58	Pass
NVNT	2-DH1	Ant1	2440.837	2441.995	1.158	0.8	Pass
NVNT	3-DH1	Ant1	2440.828	2441.833	1.005	0.807	Pass

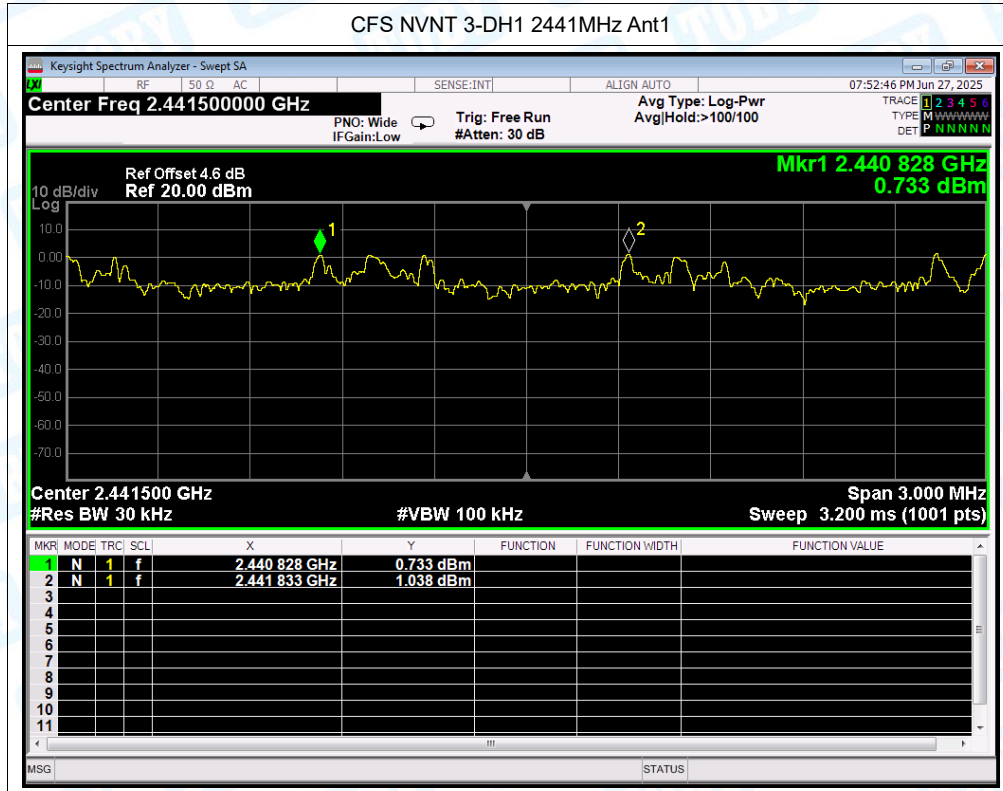
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



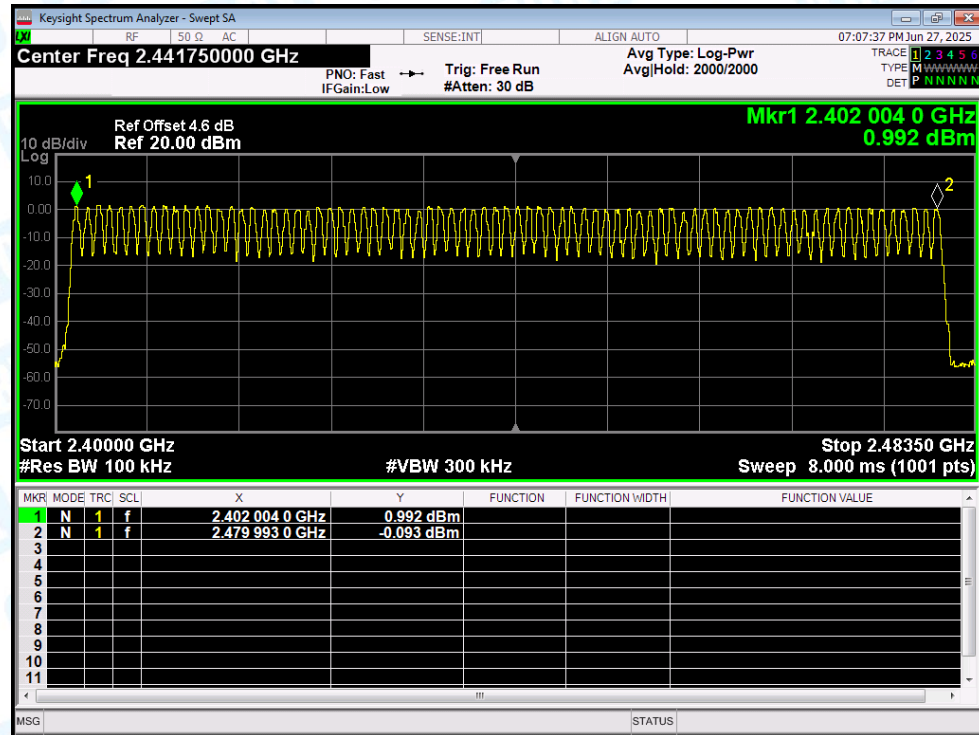


10. Number of Hopping Channel

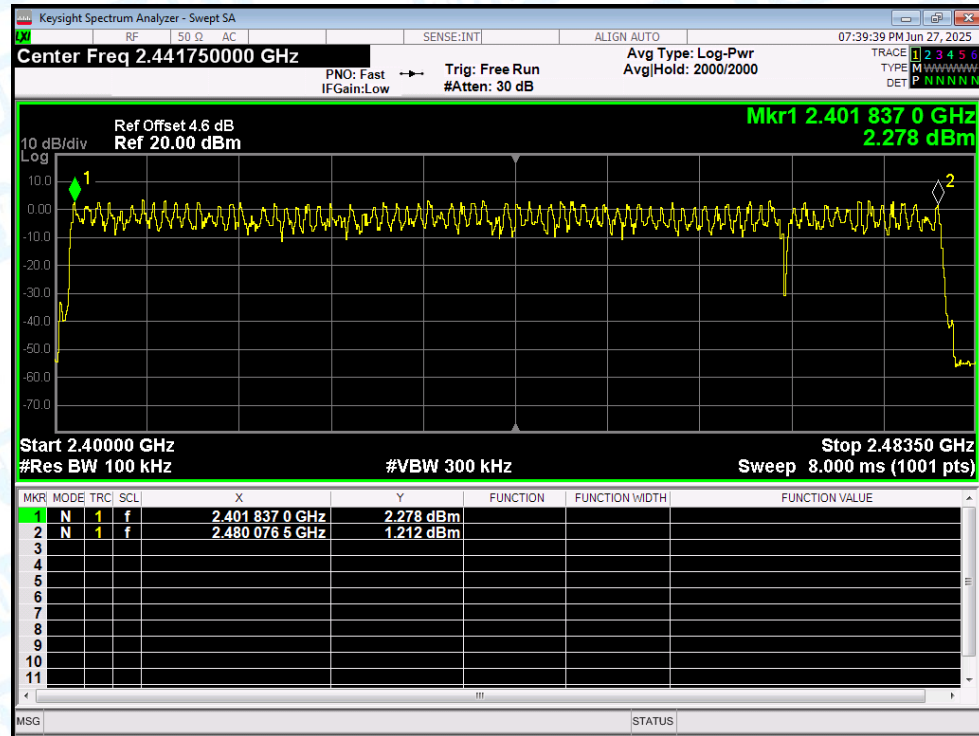
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

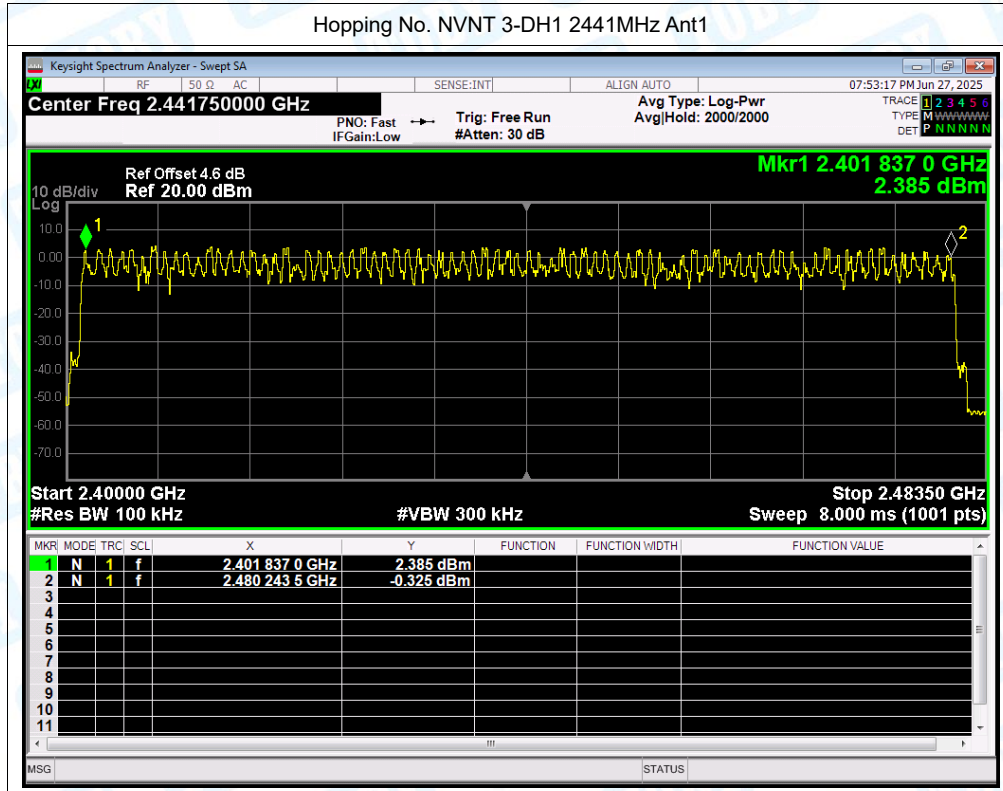
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



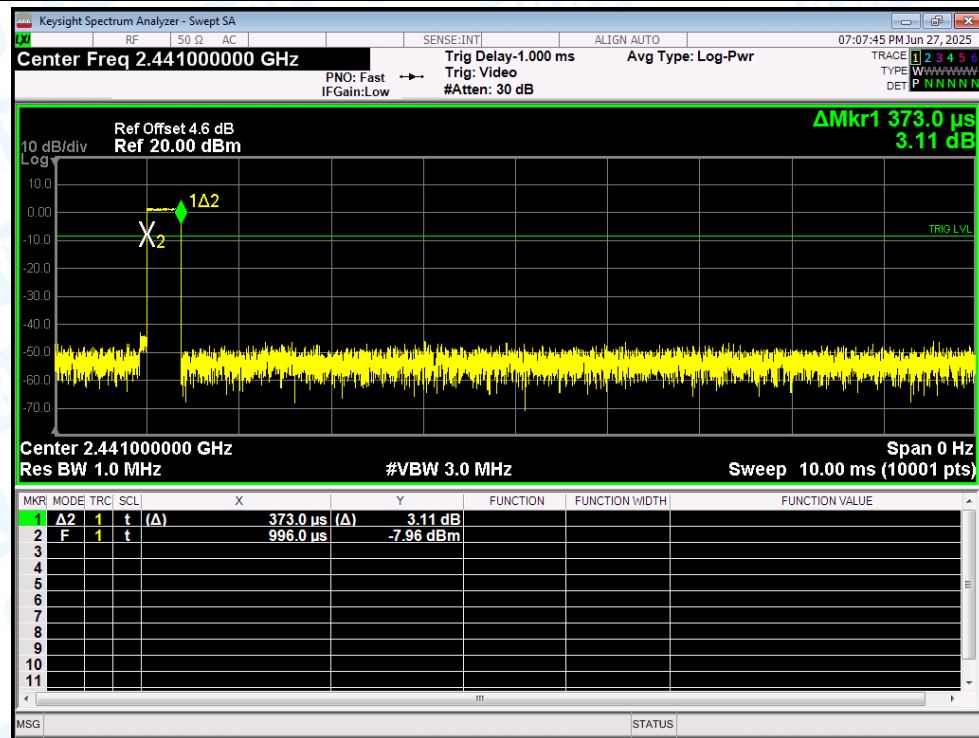


11. Dwell Time

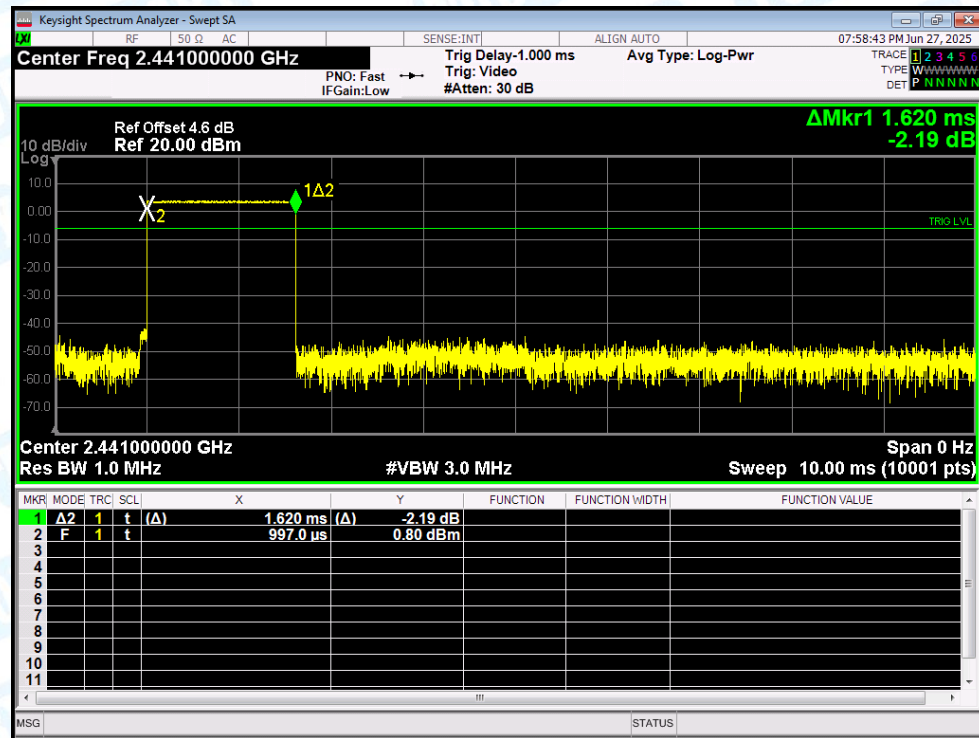
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.373	119.36	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.62	259.2	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.868	305.92	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.38	121.6	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.632	261.12	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.88	307.2	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.38	121.6	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.63	260.8	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.881	307.307	31600	400	Pass

Test Graphs

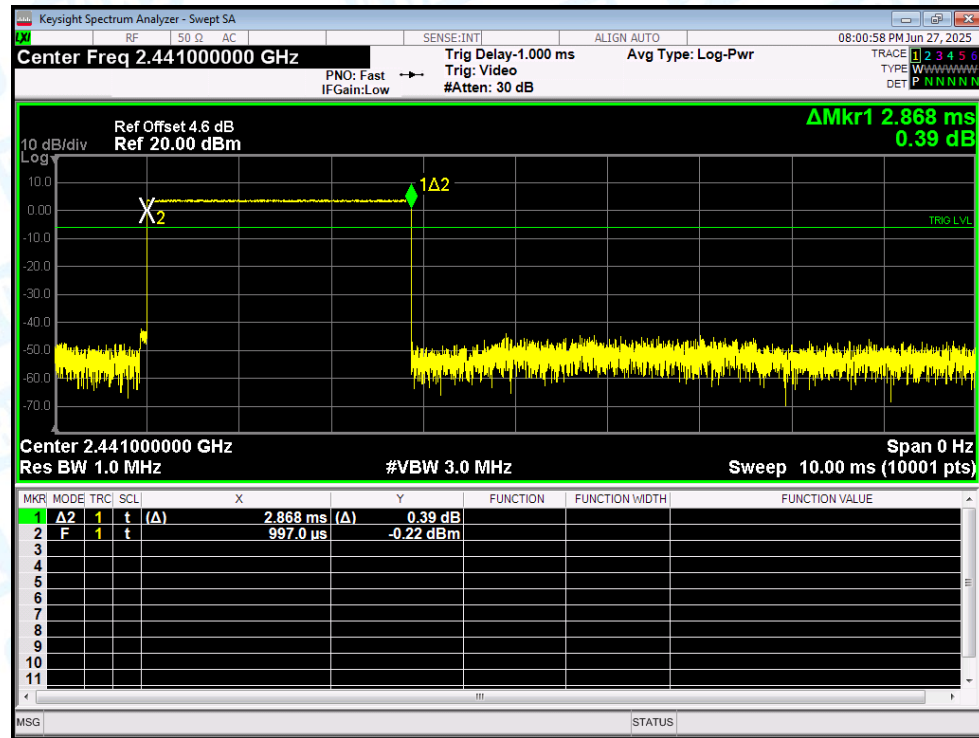
Dwell NVNT 1-DH1 2441MHz Ant1



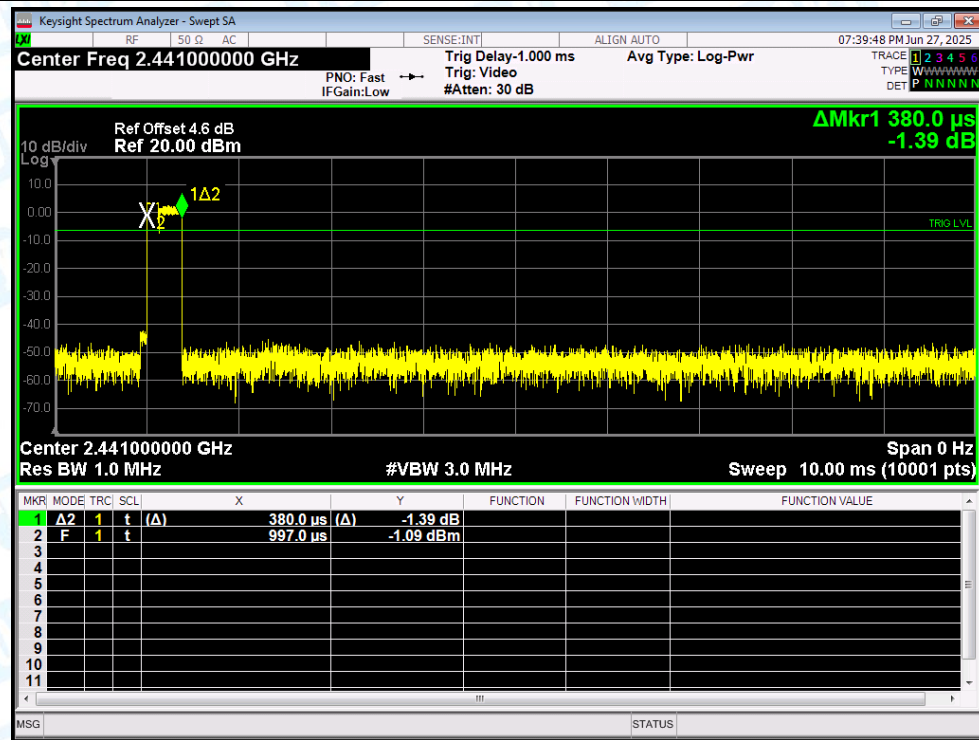
Dwell NVNT 1-DH3 2441MHz Ant1



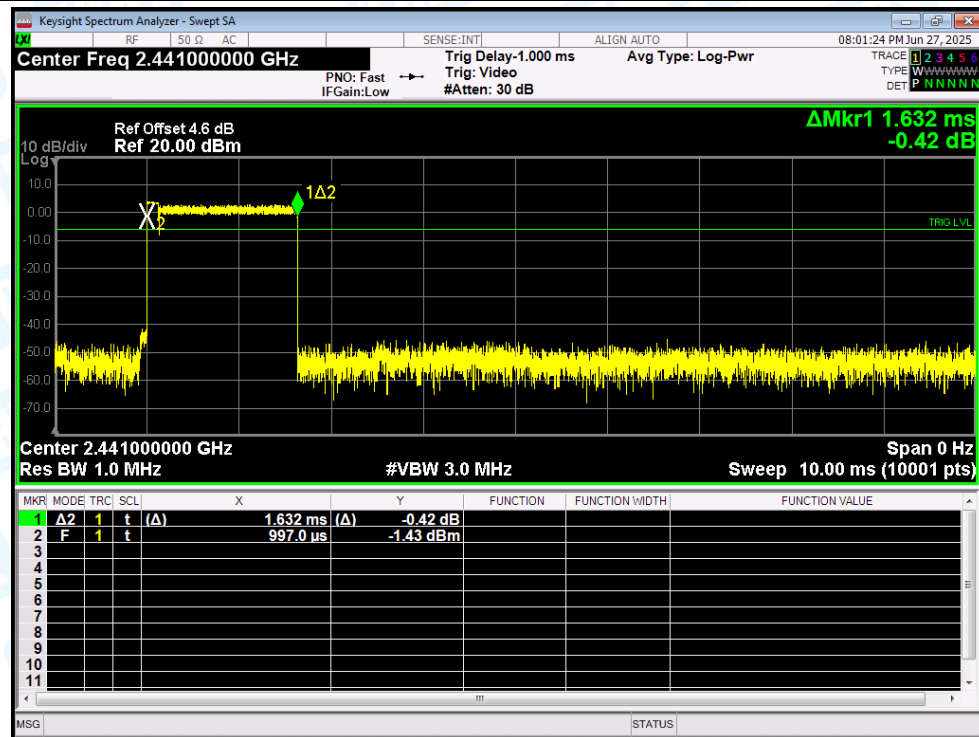
Dwell NVNT 1-DH5 2441MHz Ant1



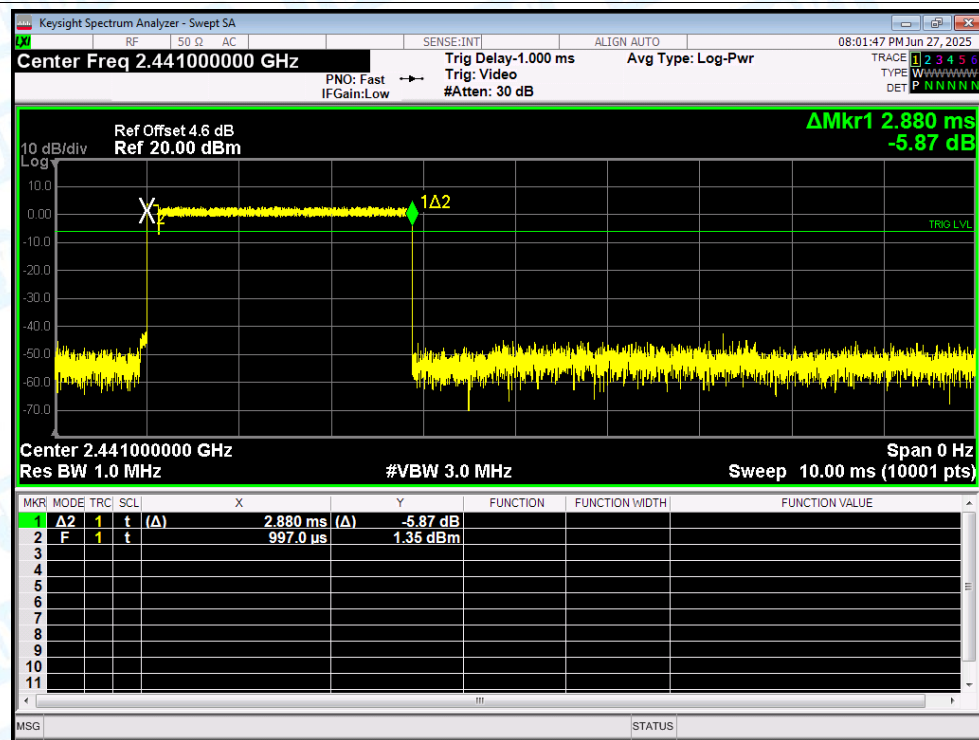
Dwell NVNT 2-DH1 2441MHz Ant1



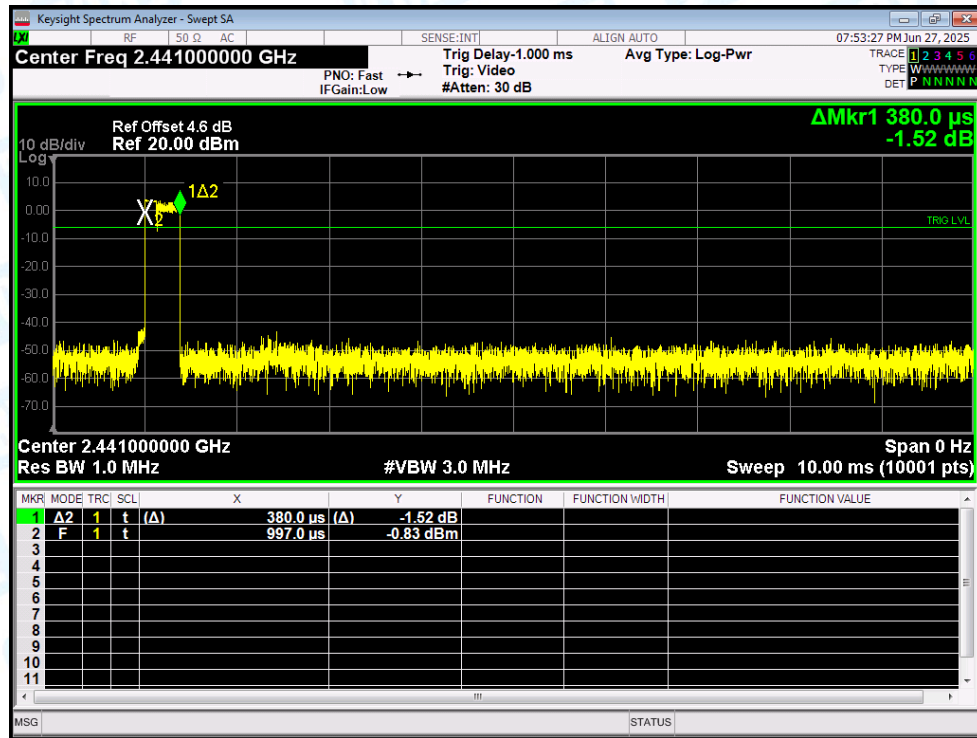
Dwell NVNT 2-DH3 2441MHz Ant1



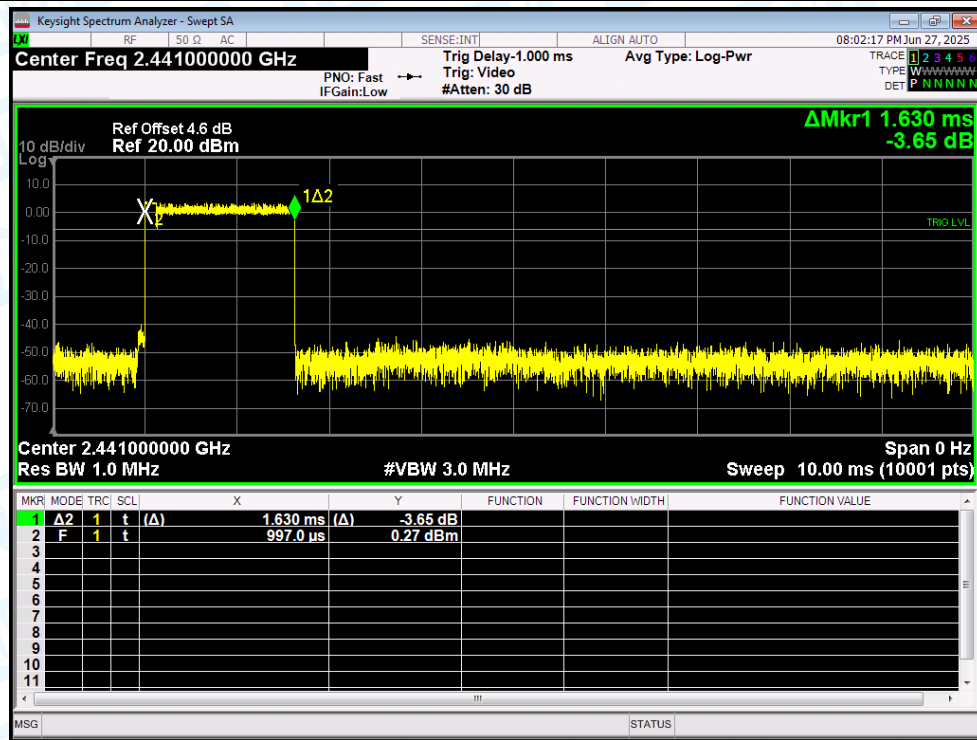
Dwell NVNT 2-DH5 2441MHz Ant1

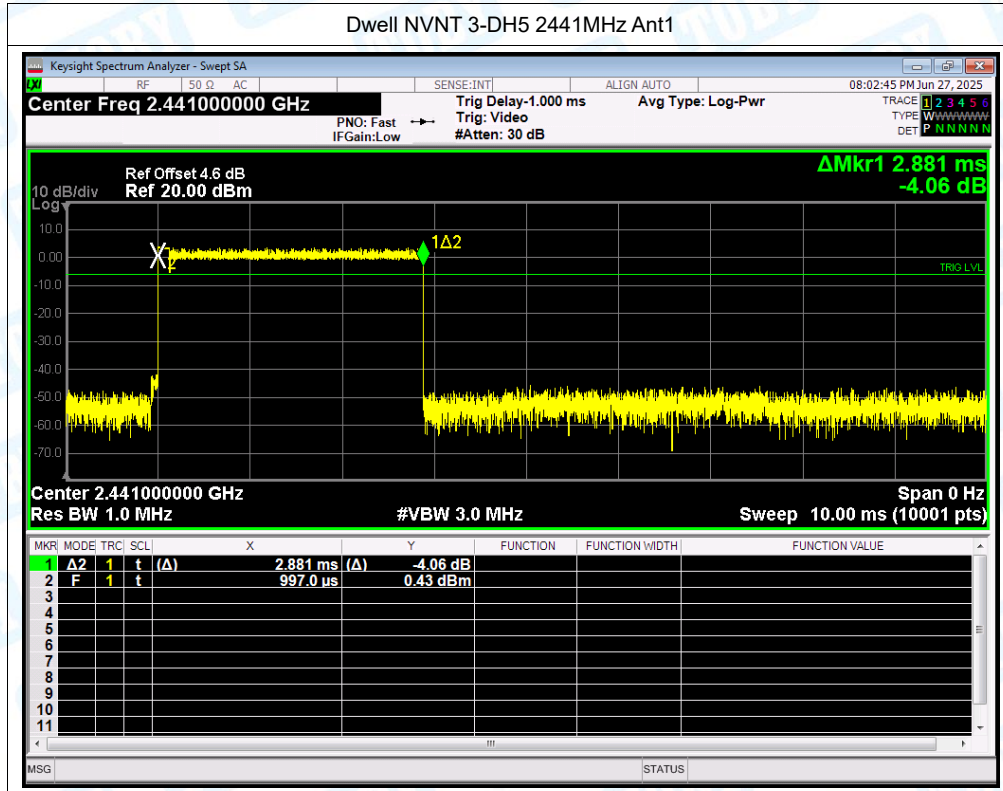


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





--- END OF THE REPORT ---