

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	SMART WATCH
Test Model:	X37
Sample ID:	HC-C-202503-0106-01-01
Environmental Conditions	
Temperature:	25.6℃
Relative Humidity:	42.8%
Test Voltage:	DC 3.8V
Test Engineer:	Lily zhang
Note: For a more detailed features description, please refer to the report TBR-C-202503-0106-16 The report only show the worst case data.	

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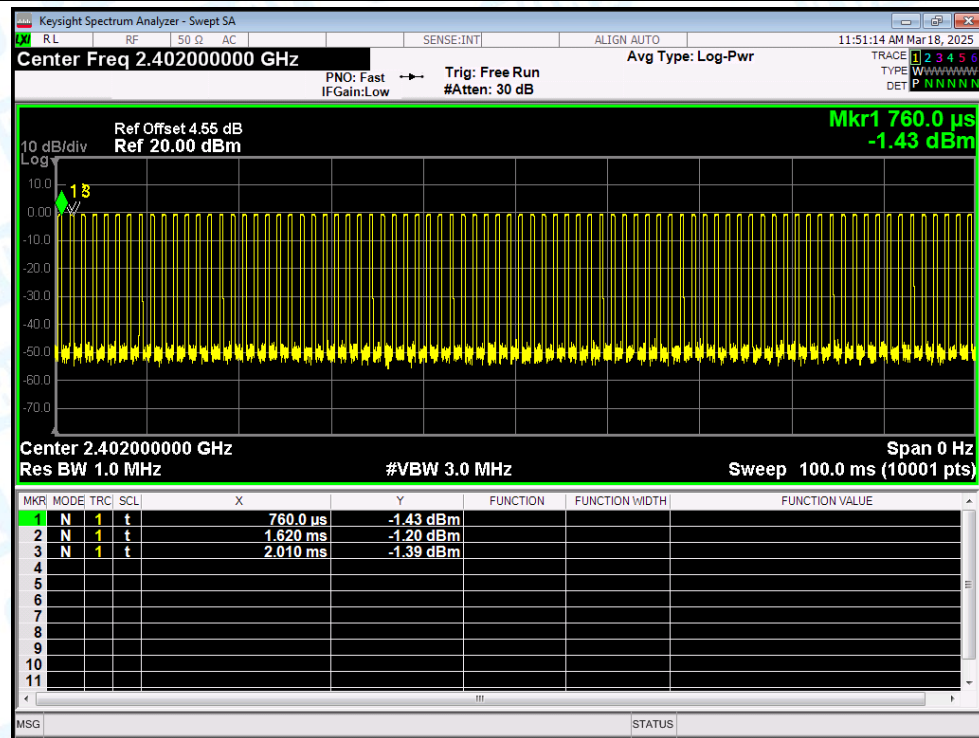
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1. Duty Cycle

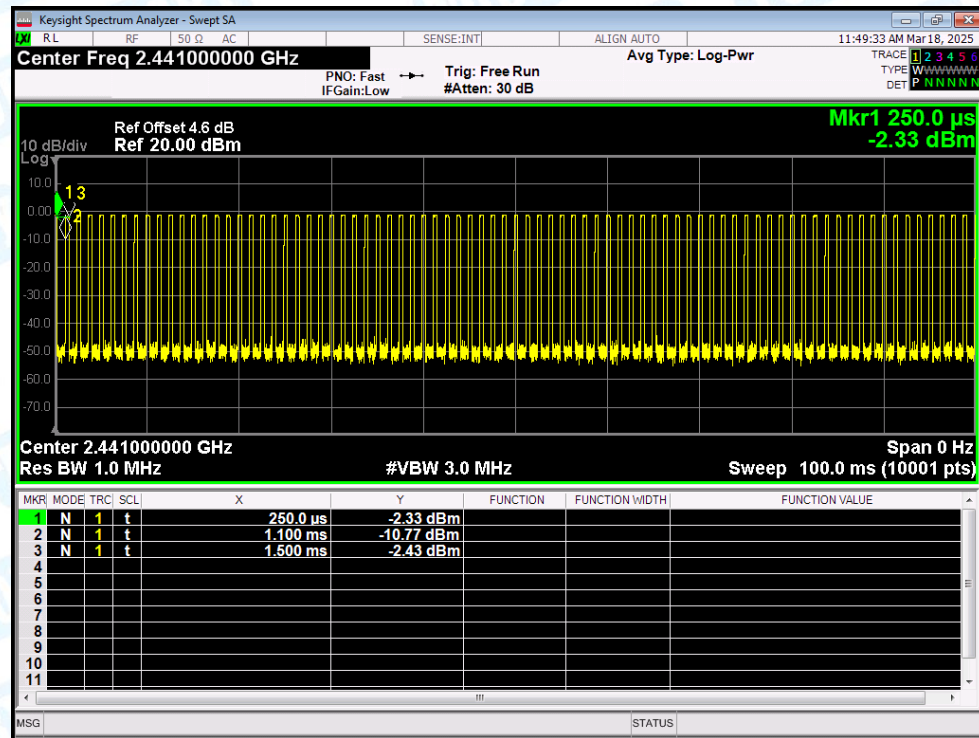
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	1-DH1	2441	Ant1	32	4.95	2.5
NVNT	1-DH1	2480	Ant1	32	4.95	2.5
NVNT	2-DH1	2402	Ant1	32	4.95	2.5
NVNT	2-DH1	2441	Ant1	32.8	4.84	2.44
NVNT	2-DH1	2480	Ant1	32.8	4.84	2.44
NVNT	3-DH1	2402	Ant1	32.8	4.84	2.44
NVNT	3-DH1	2441	Ant1	32.8	4.84	2.44
NVNT	3-DH1	2480	Ant1	32	4.95	2.5

Test Graphs

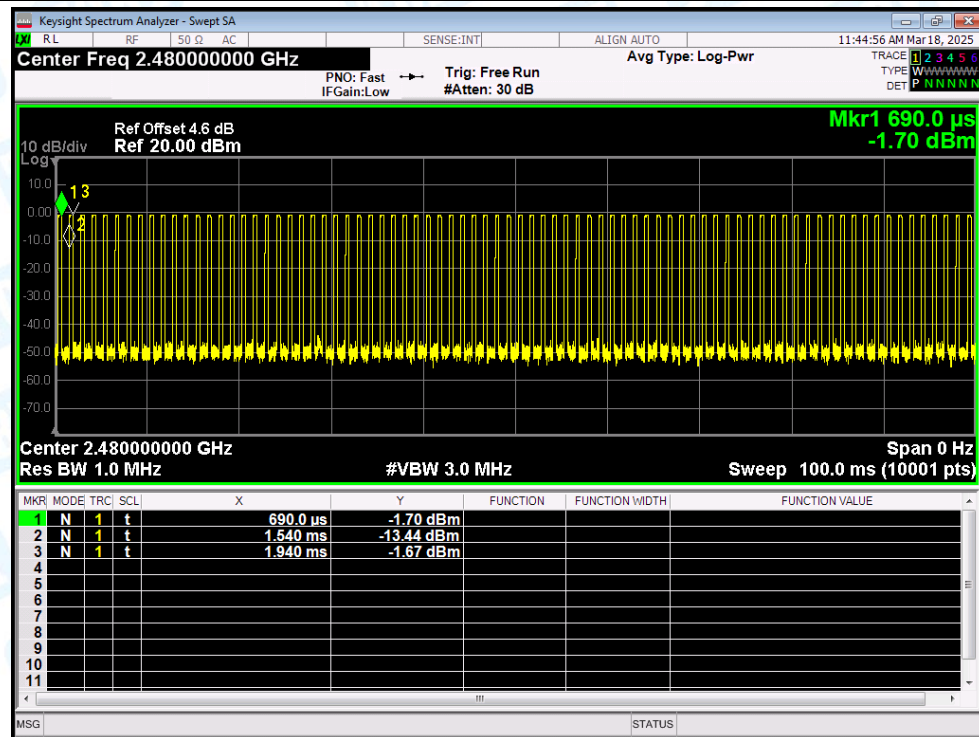
Duty Cycle NVNT 1-DH1 2402MHz Ant1



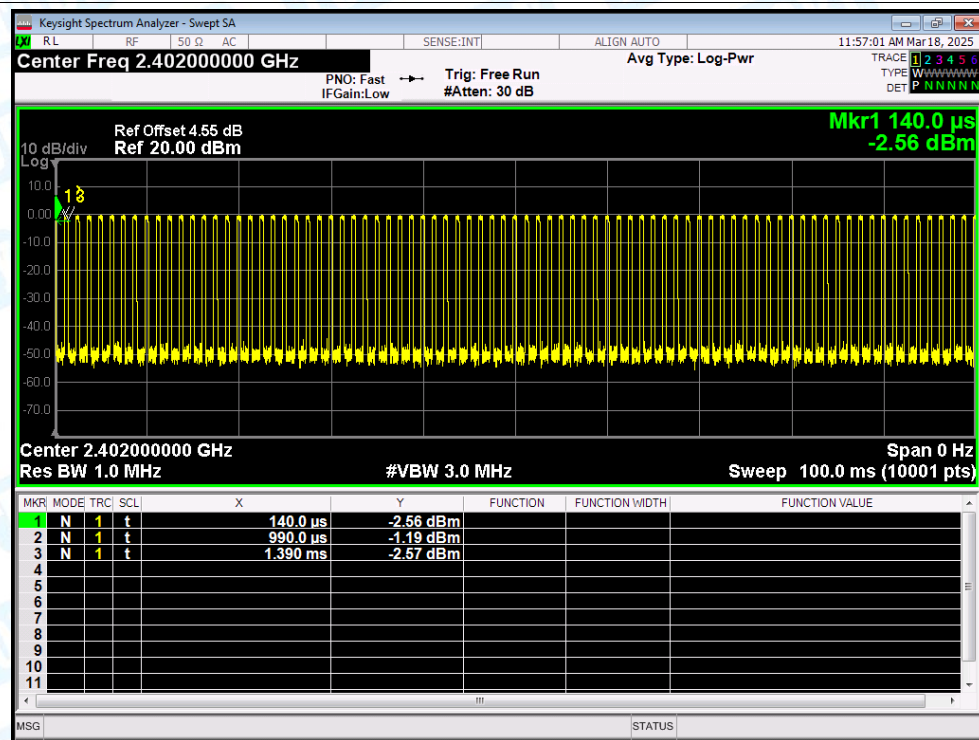
Duty Cycle NVNT 1-DH1 2441MHz Ant1



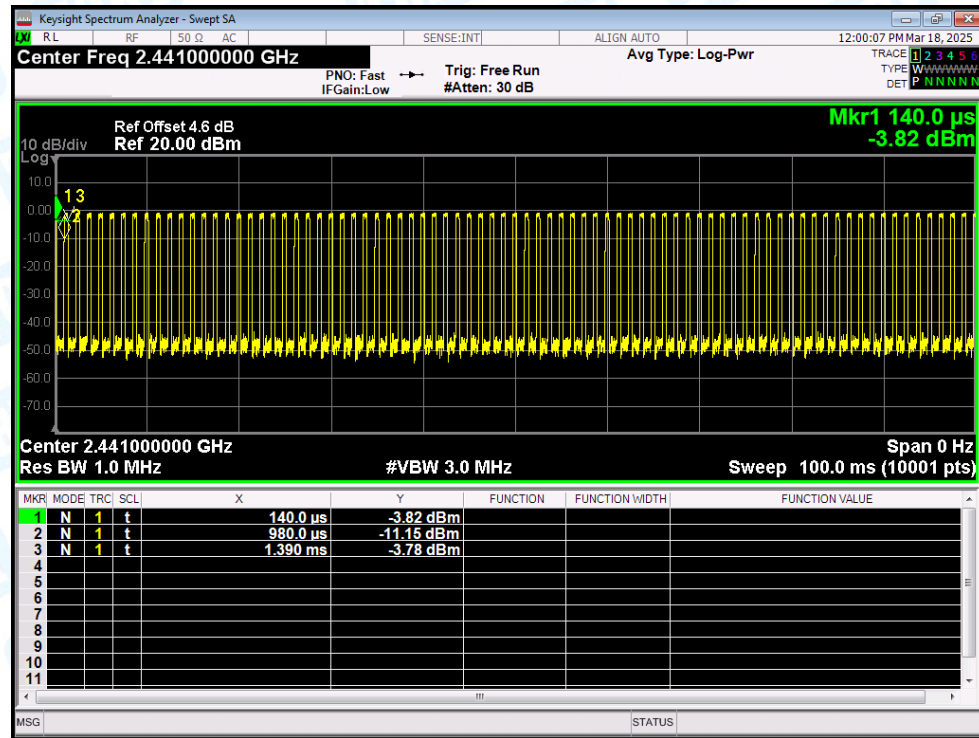
Duty Cycle NVNT 1-DH1 2480MHz Ant1



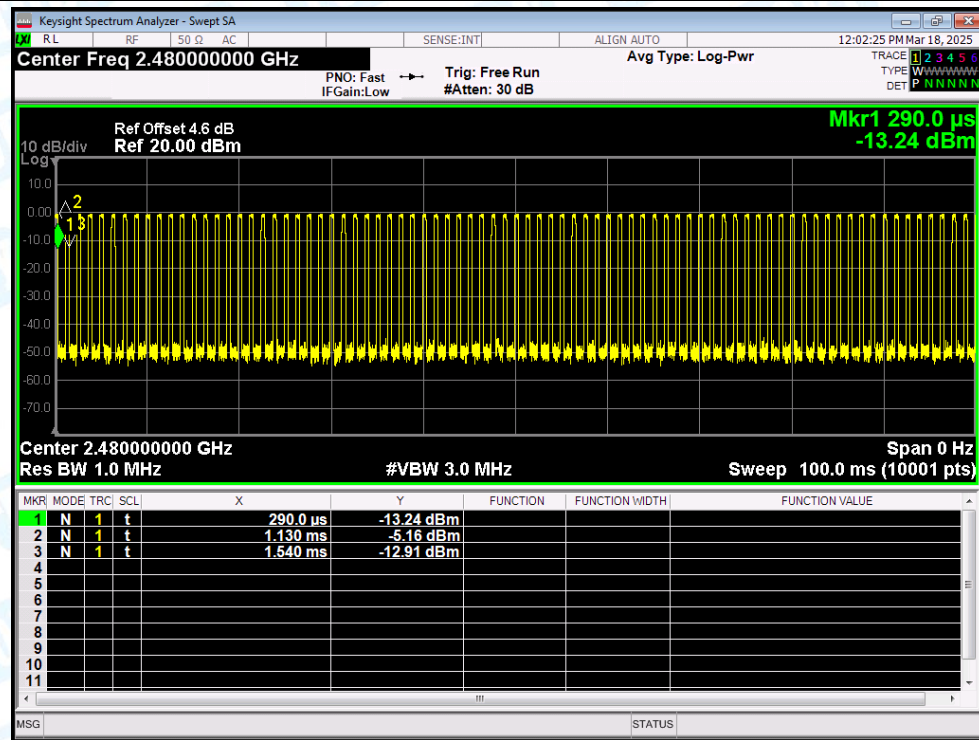
Duty Cycle NVNT 2-DH1 2402MHz Ant1



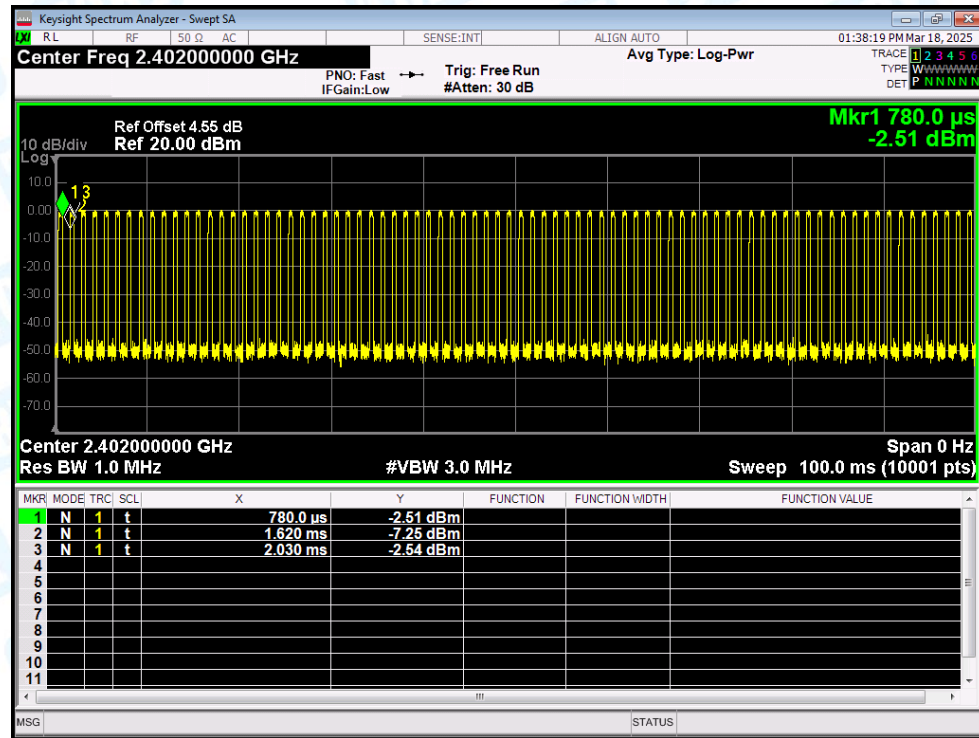
Duty Cycle NVNT 2-DH1 2441MHz Ant1



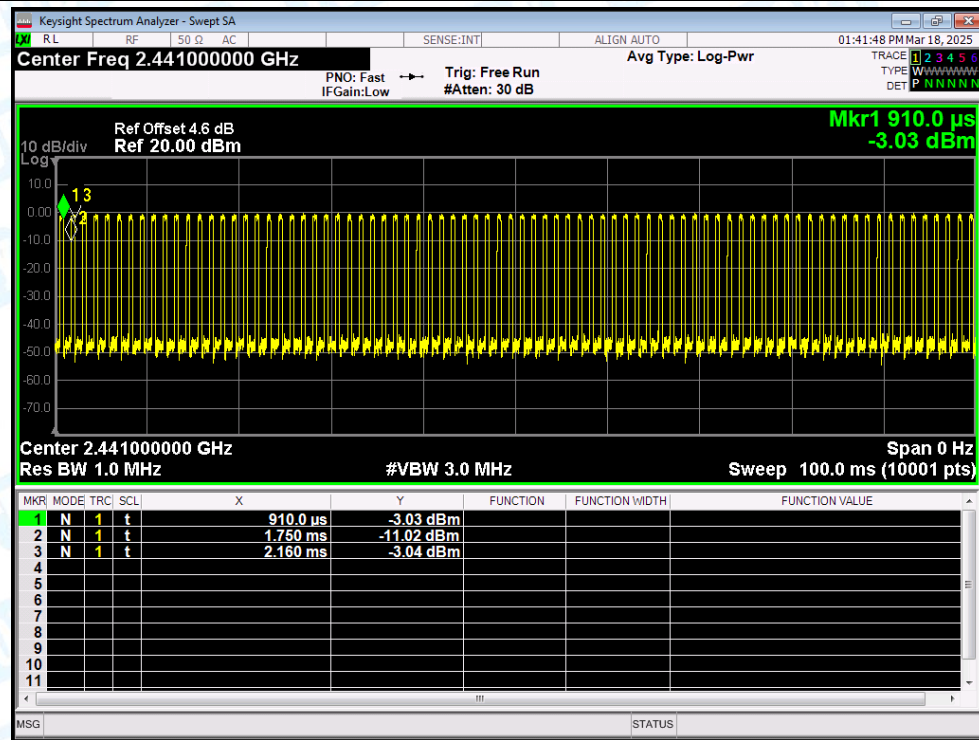
Duty Cycle NVNT 2-DH1 2480MHz Ant1

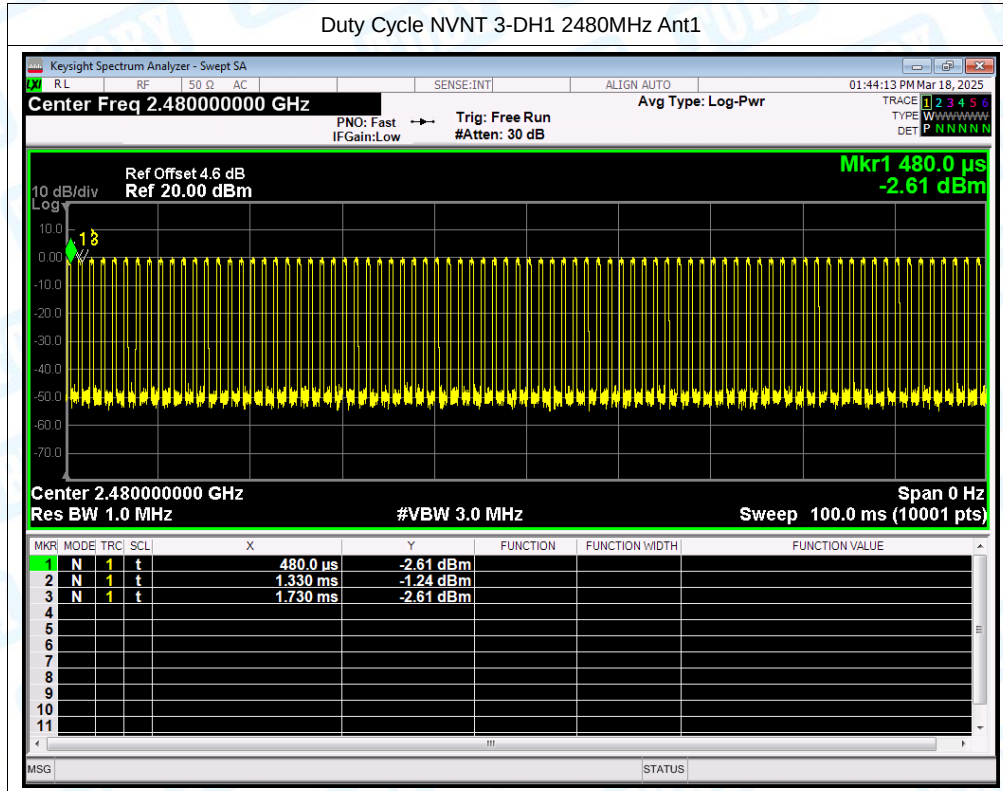


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



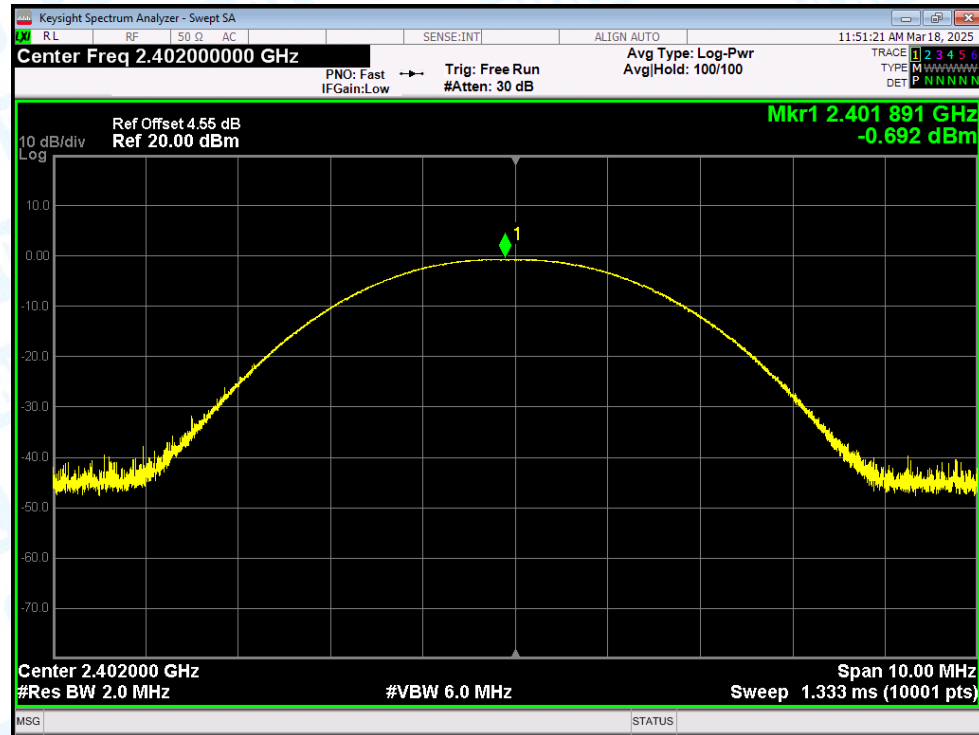


2. Maximum Conducted Output Power

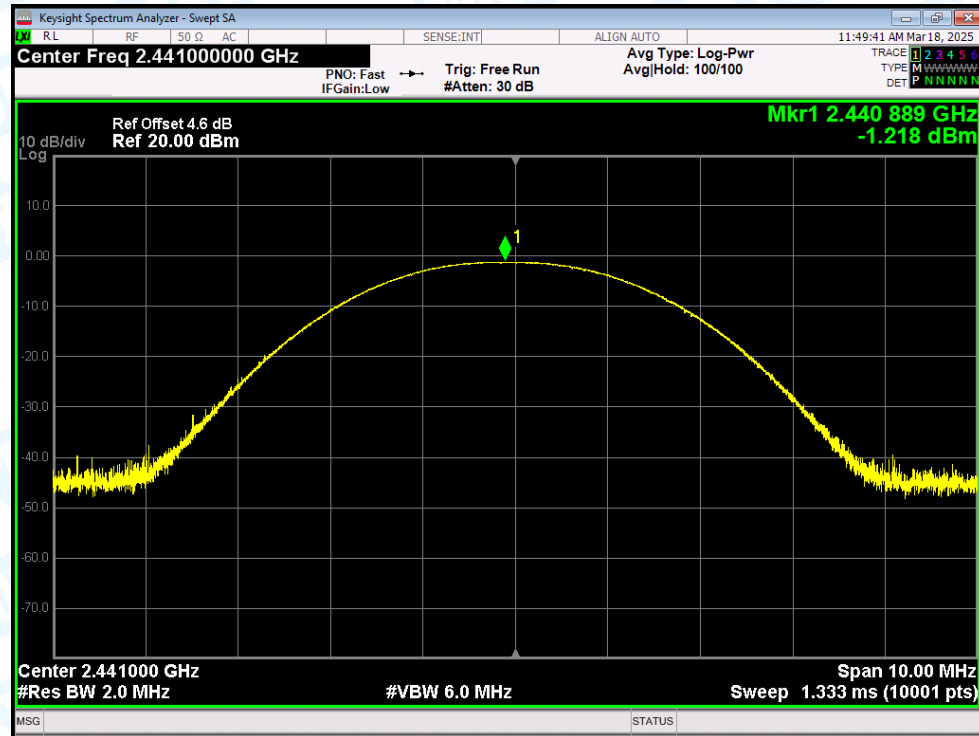
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	-0.692	21	Pass
NVNT	1-DH1	2441	Ant1	-1.218	21	Pass
NVNT	1-DH1	2480	Ant1	-0.895	21	Pass
NVNT	2-DH1	2402	Ant1	-0.025	21	Pass
NVNT	2-DH1	2441	Ant1	-0.455	21	Pass
NVNT	2-DH1	2480	Ant1	-0.162	21	Pass
NVNT	3-DH1	2402	Ant1	0.539	21	Pass
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NVNT	3-DH1	2480	Ant1	0.566	21	Pass

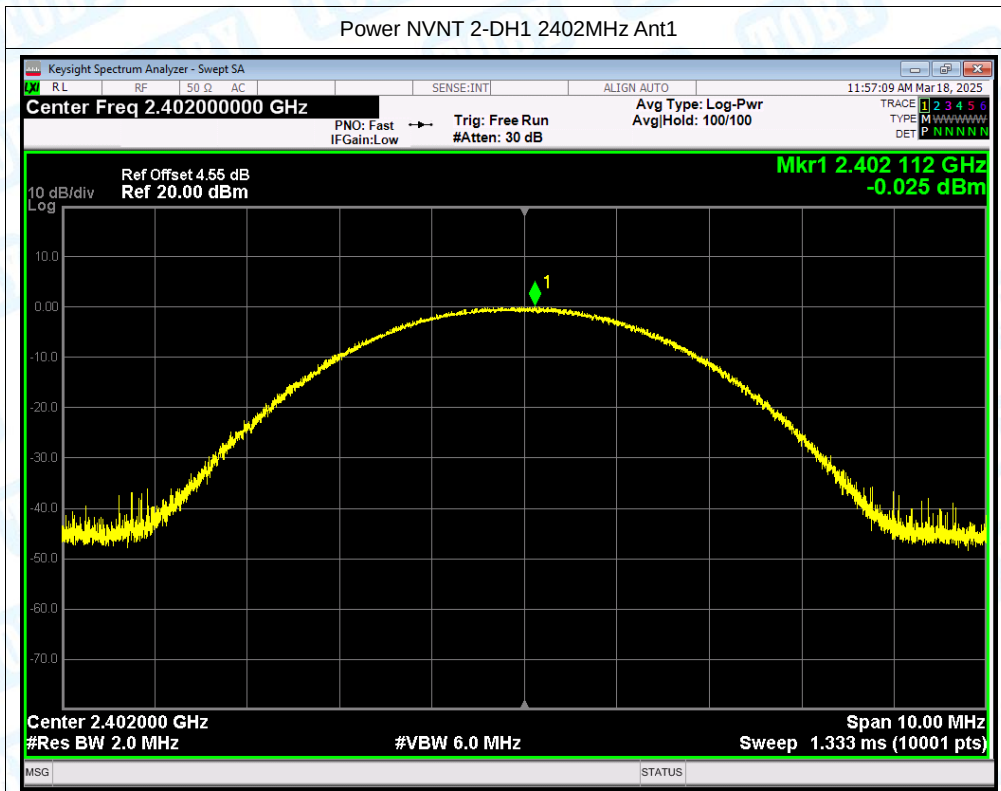
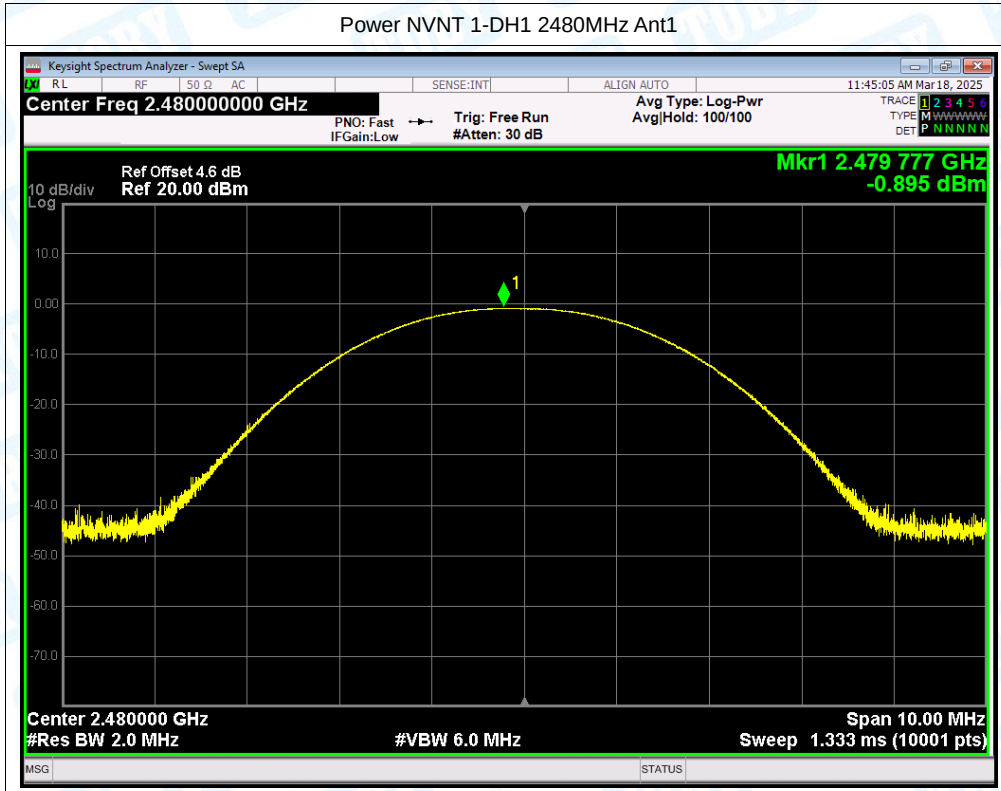
Test Graphs

Power NVNT 1-DH1 2402MHz Ant1

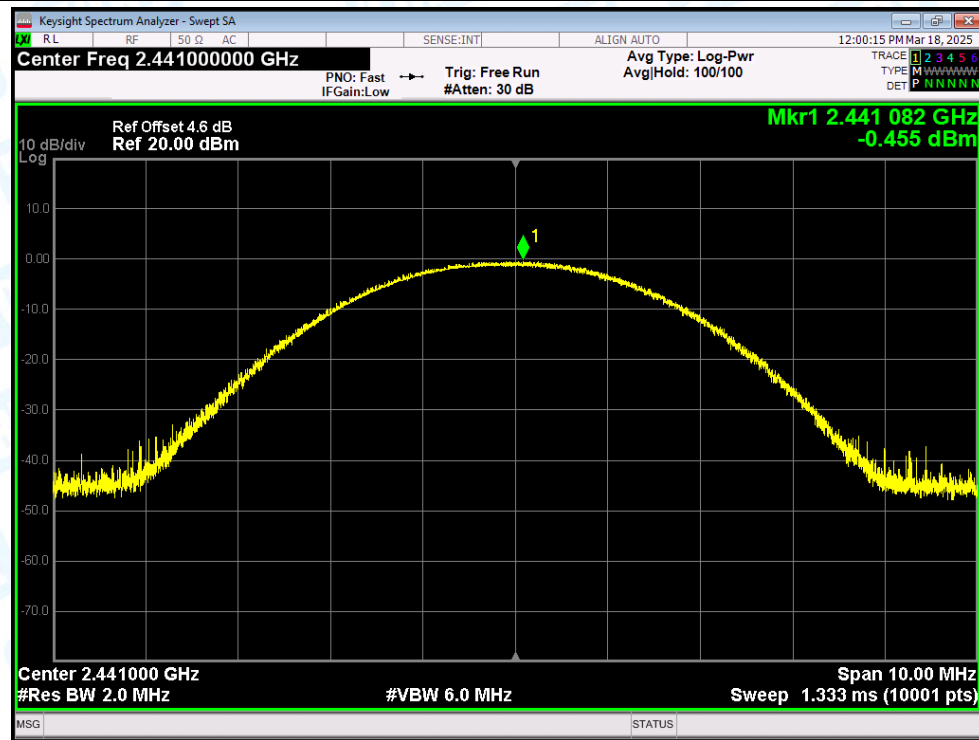


Power NVNT 1-DH1 2441MHz Ant1

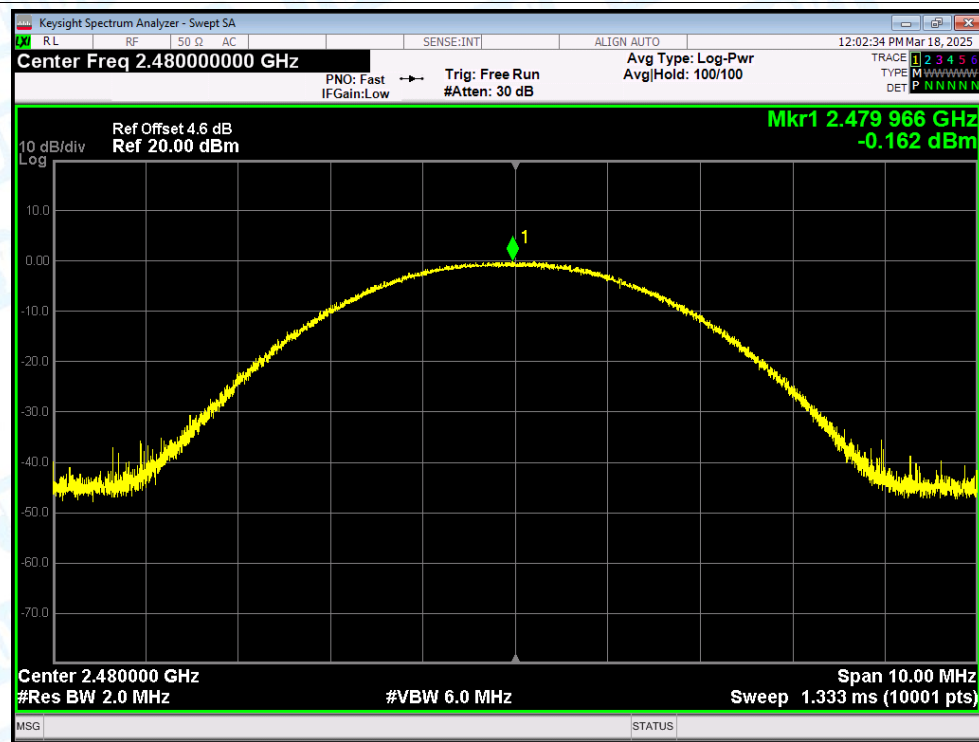




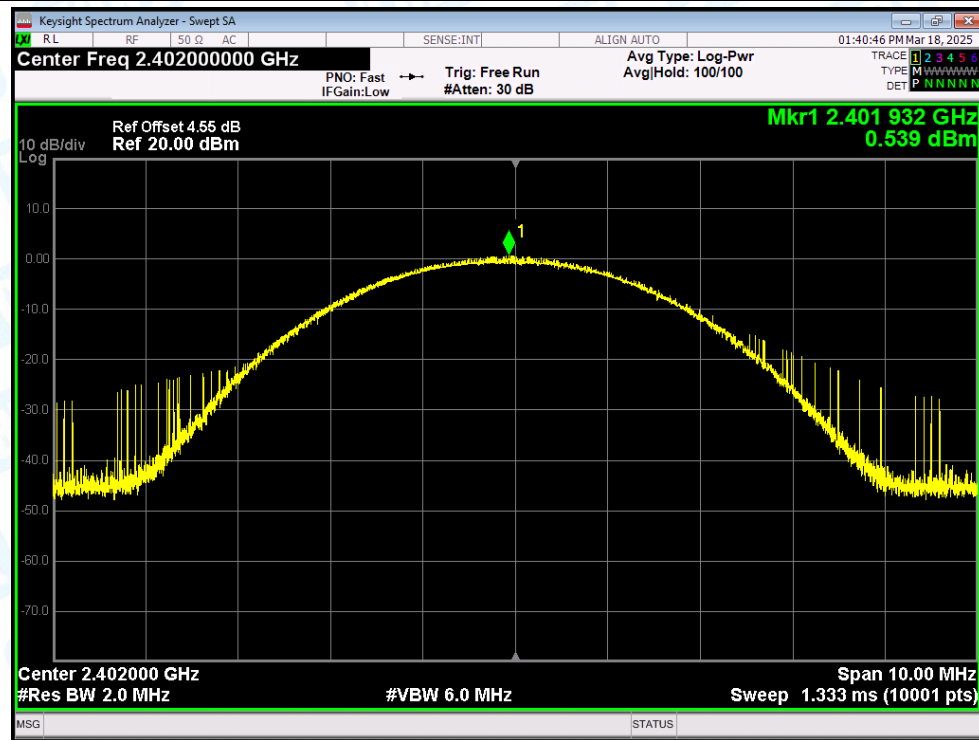
Power NVNT 2-DH1 2441MHz Ant1



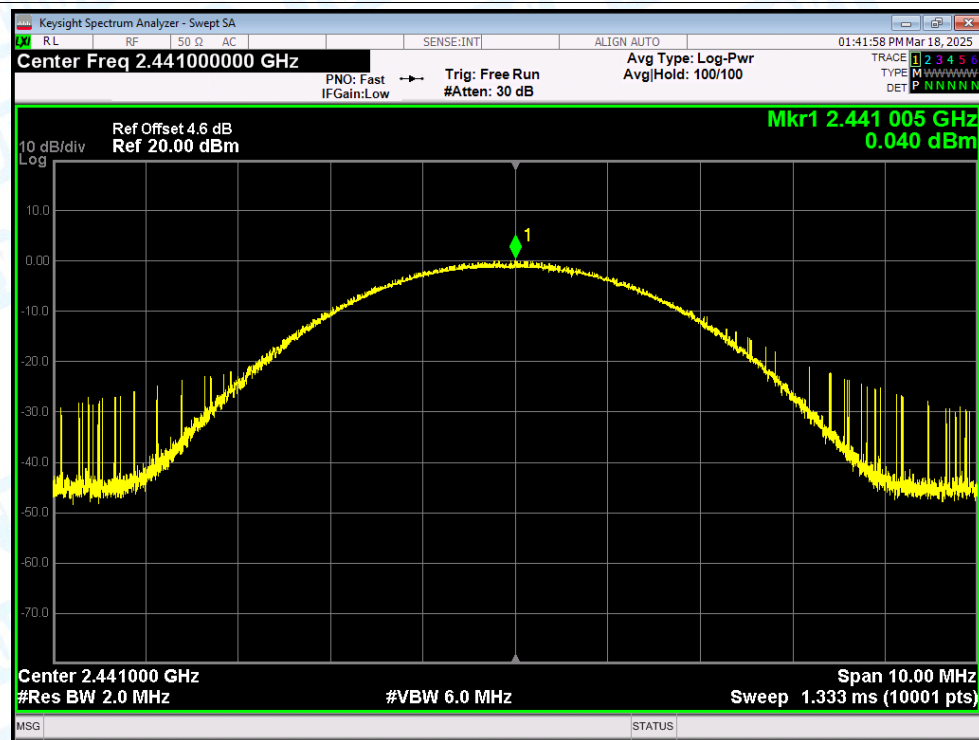
Power NVNT 2-DH1 2480MHz Ant1

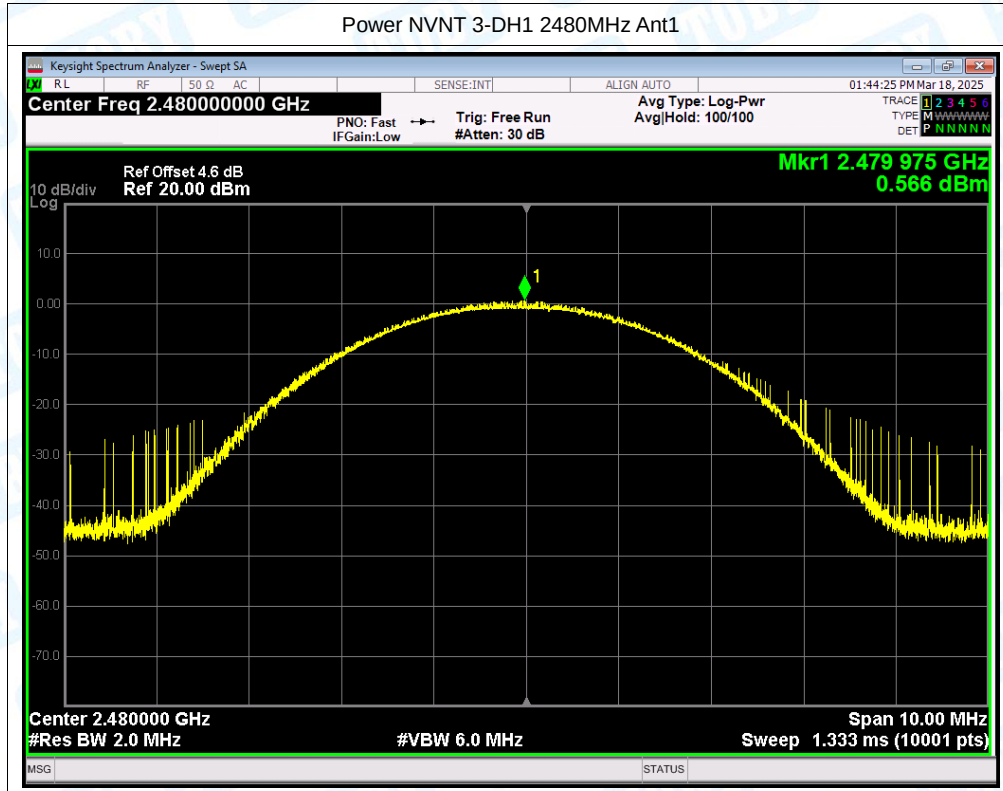


Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



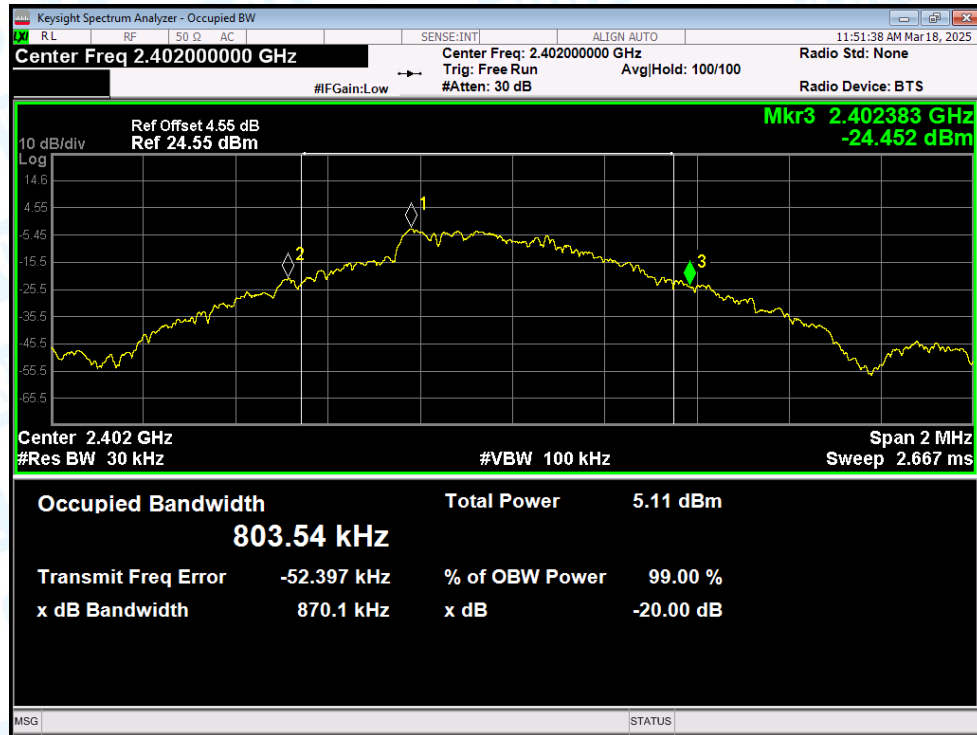


3. -20dB Bandwidth

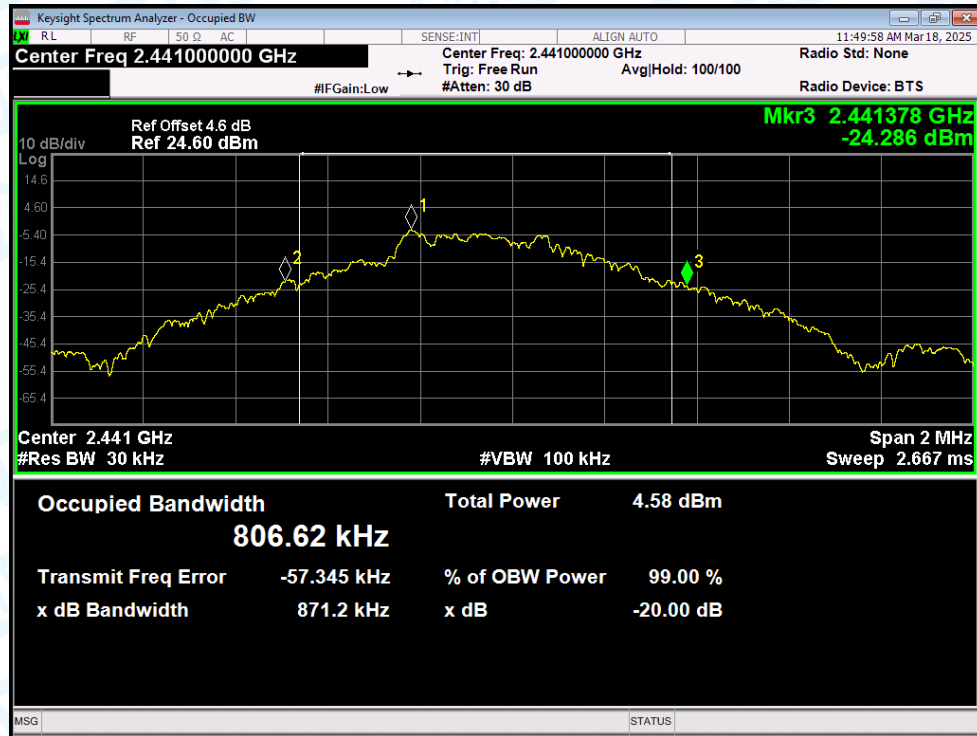
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.87	0	Pass
NVNT	1-DH1	2441	Ant1	0.87	0	Pass
NVNT	1-DH1	2480	Ant1	0.85	0	Pass
NVNT	2-DH1	2402	Ant1	1.22	0	Pass
NVNT	2-DH1	2441	Ant1	1.24	0	Pass
NVNT	2-DH1	2480	Ant1	1.25	0	Pass
NVNT	3-DH1	2402	Ant1	1.21	0	Pass
NVNT	3-DH1	2441	Ant1	1.24	0	Pass
NVNT	3-DH1	2480	Ant1	1.2	0	Pass

Test Graphs

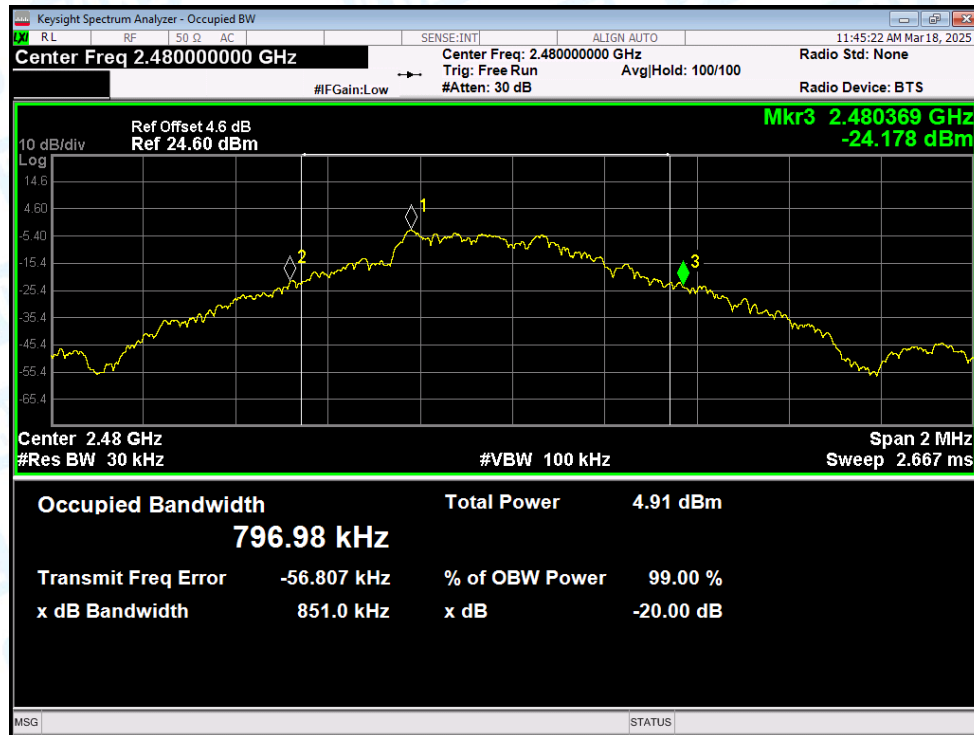
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



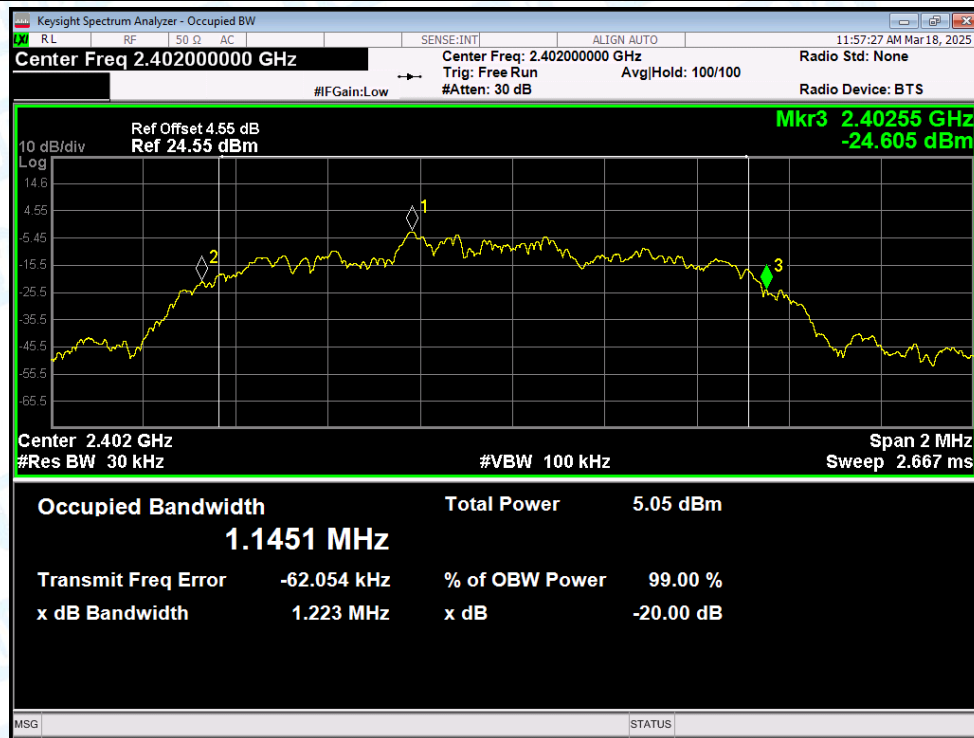
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



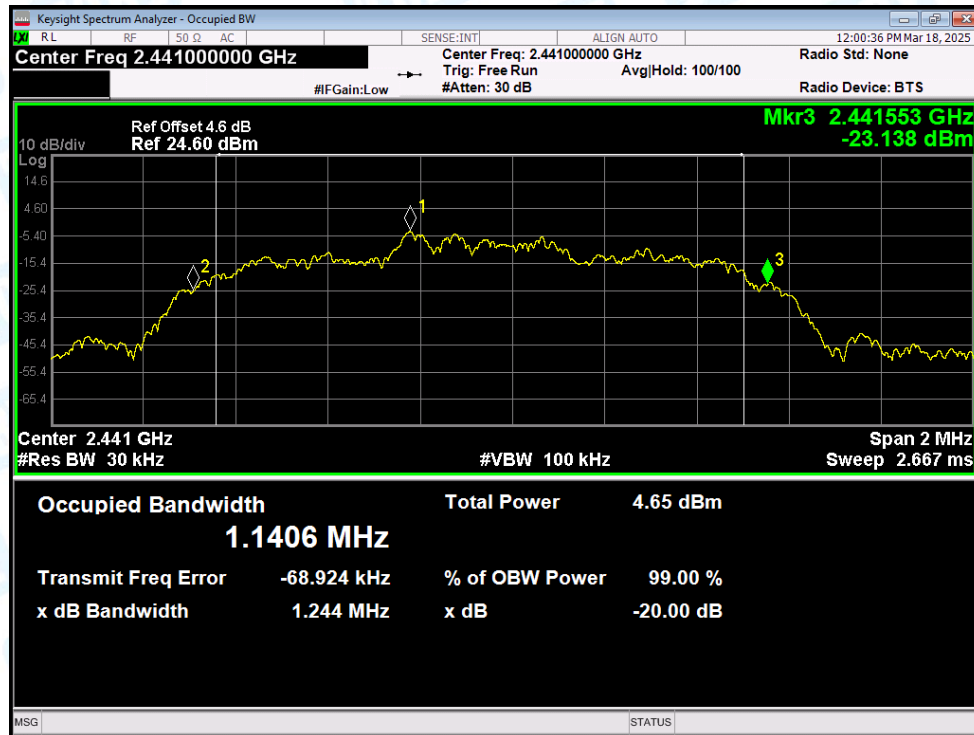
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



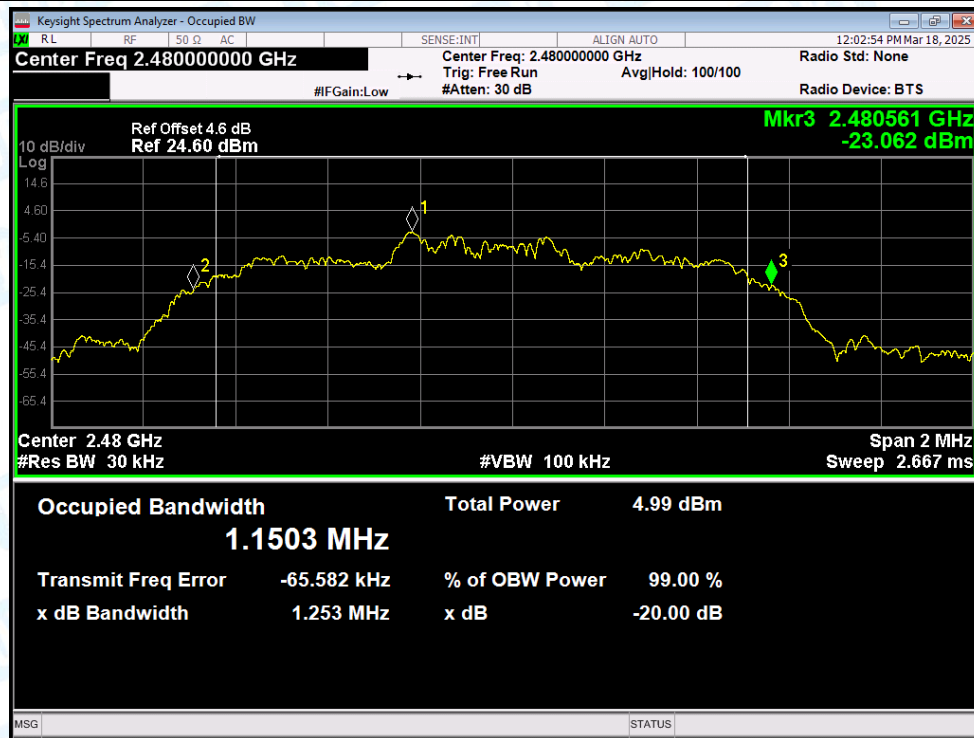
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



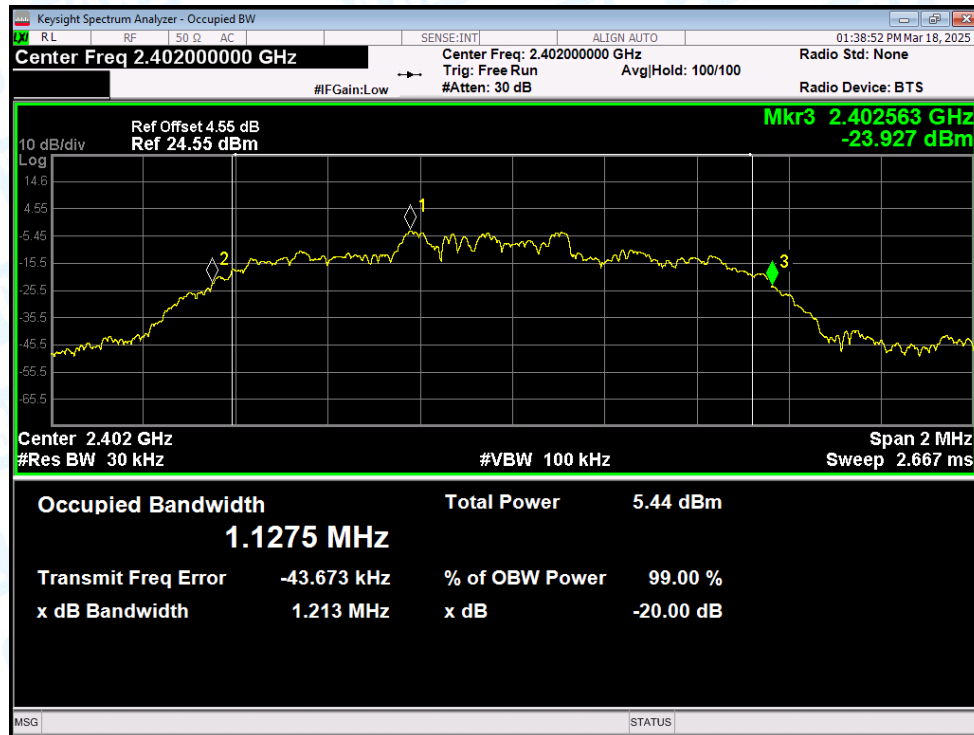
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



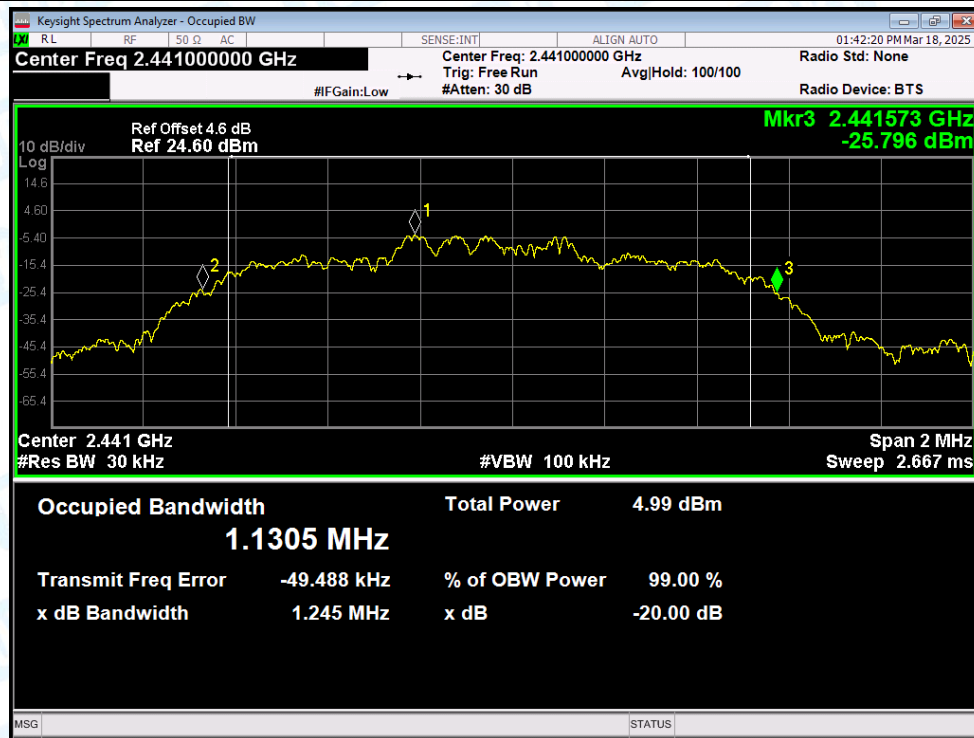
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

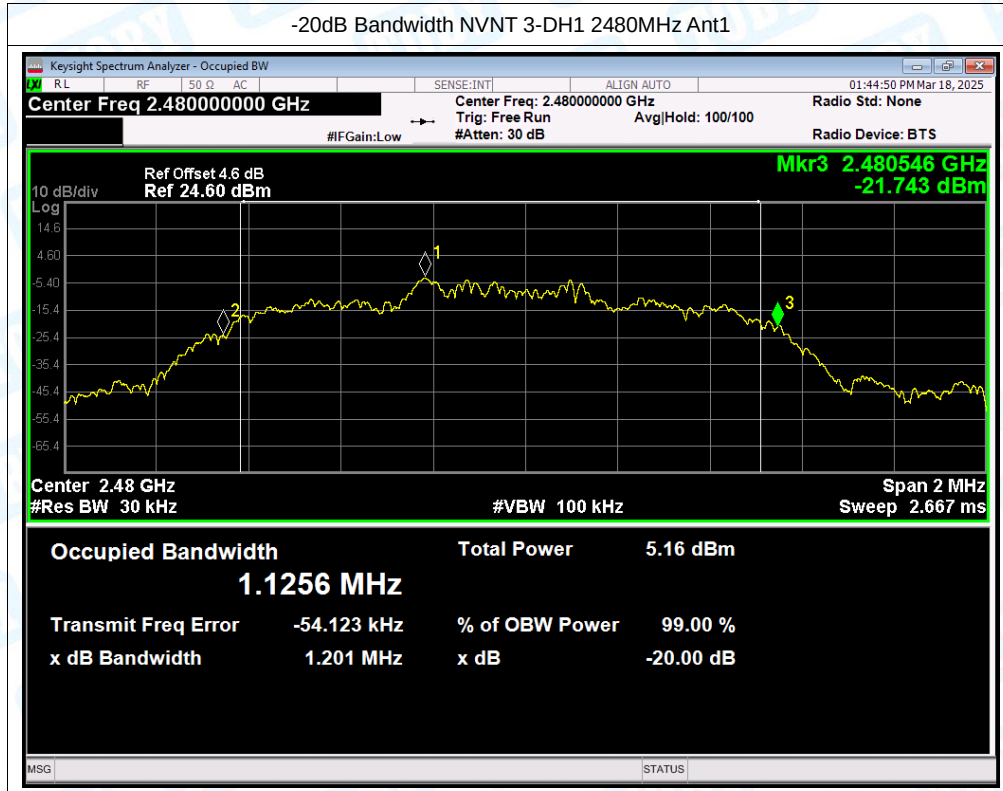


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



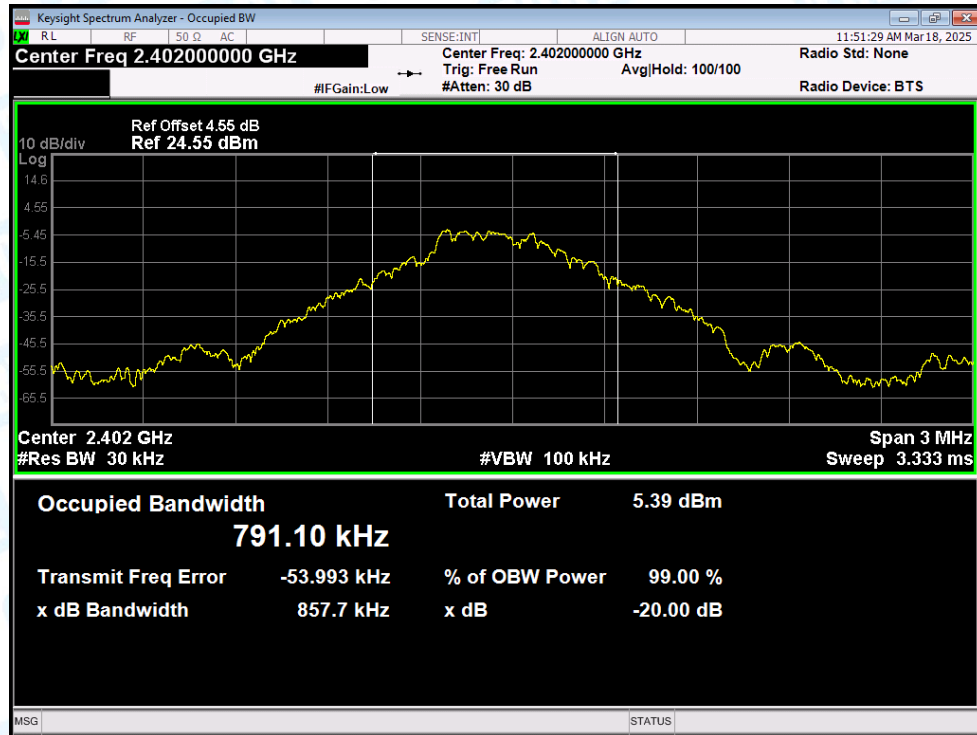


4. Occupied Channel Bandwidth

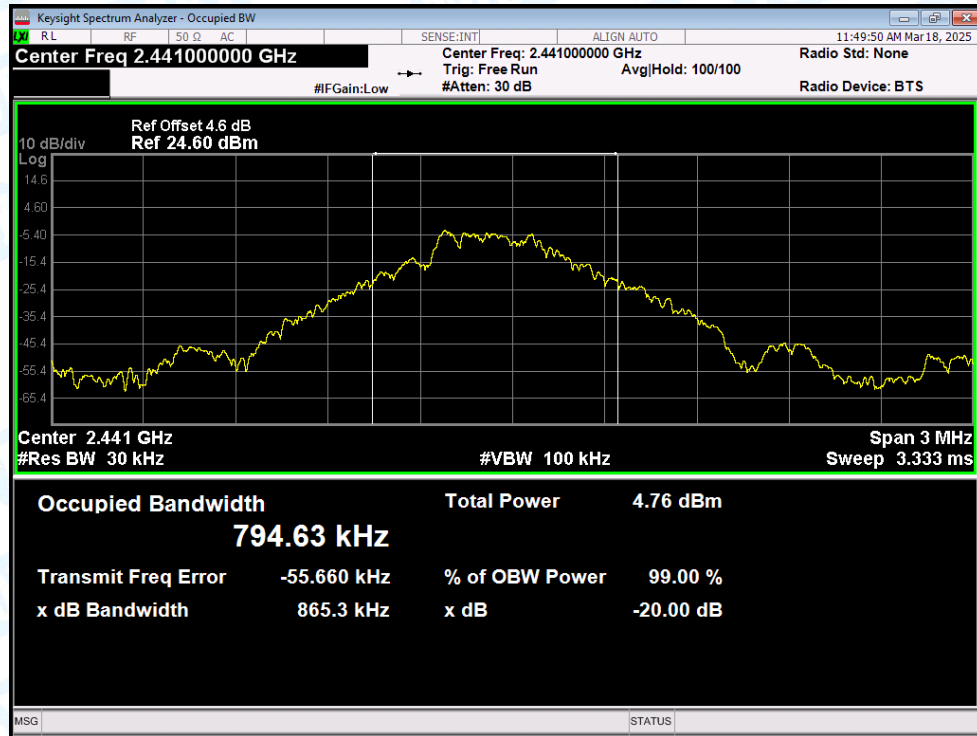
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.791
NVNT	1-DH1	2441	Ant1	0.795
NVNT	1-DH1	2480	Ant1	0.808
NVNT	2-DH1	2402	Ant1	1.152
NVNT	2-DH1	2441	Ant1	1.14
NVNT	2-DH1	2480	Ant1	1.147
NVNT	3-DH1	2402	Ant1	1.137
NVNT	3-DH1	2441	Ant1	1.137
NVNT	3-DH1	2480	Ant1	1.141

Test Graphs

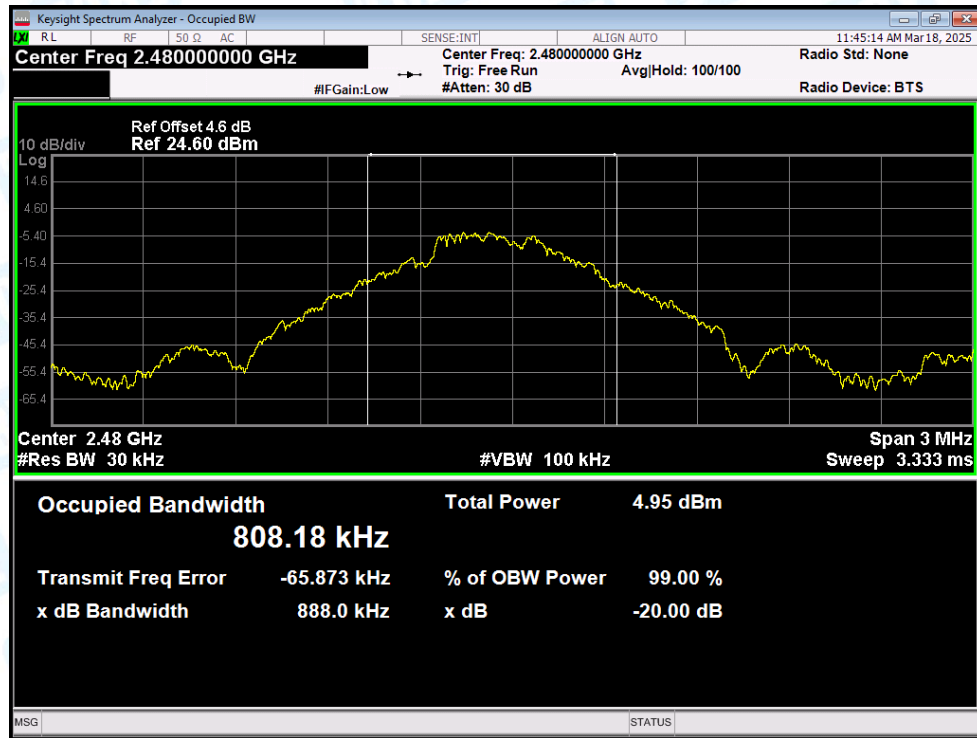
OBW NVNT 1-DH1 2402MHz Ant1



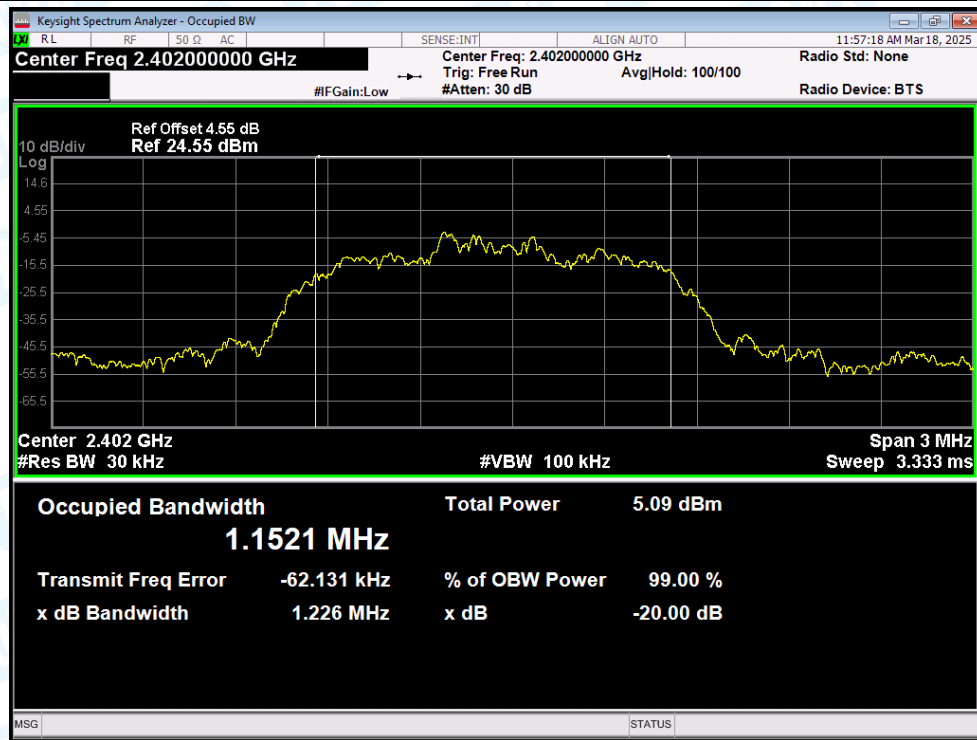
OBW NVNT 1-DH1 2441MHz Ant1



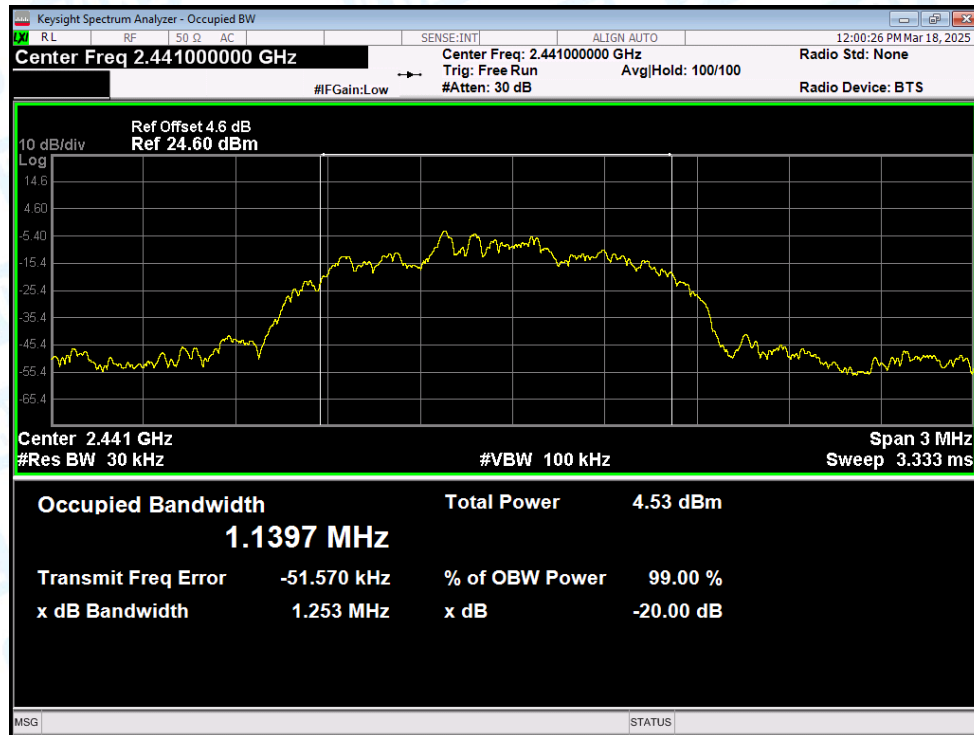
OBW NVNT 1-DH1 2480MHz Ant1



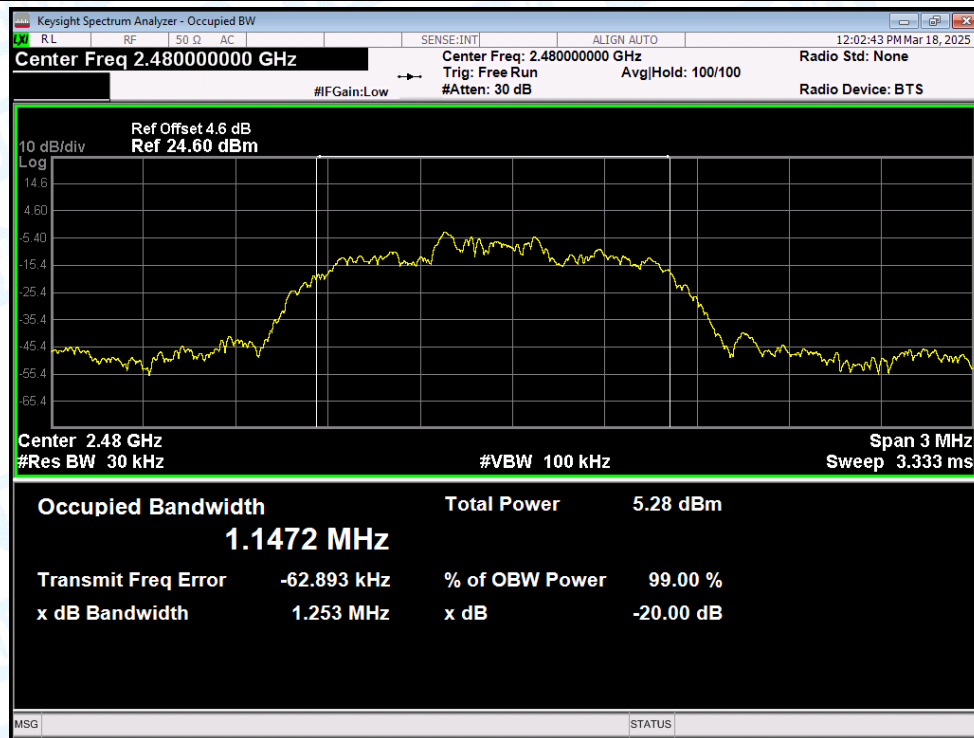
OBW NVNT 2-DH1 2402MHz Ant1



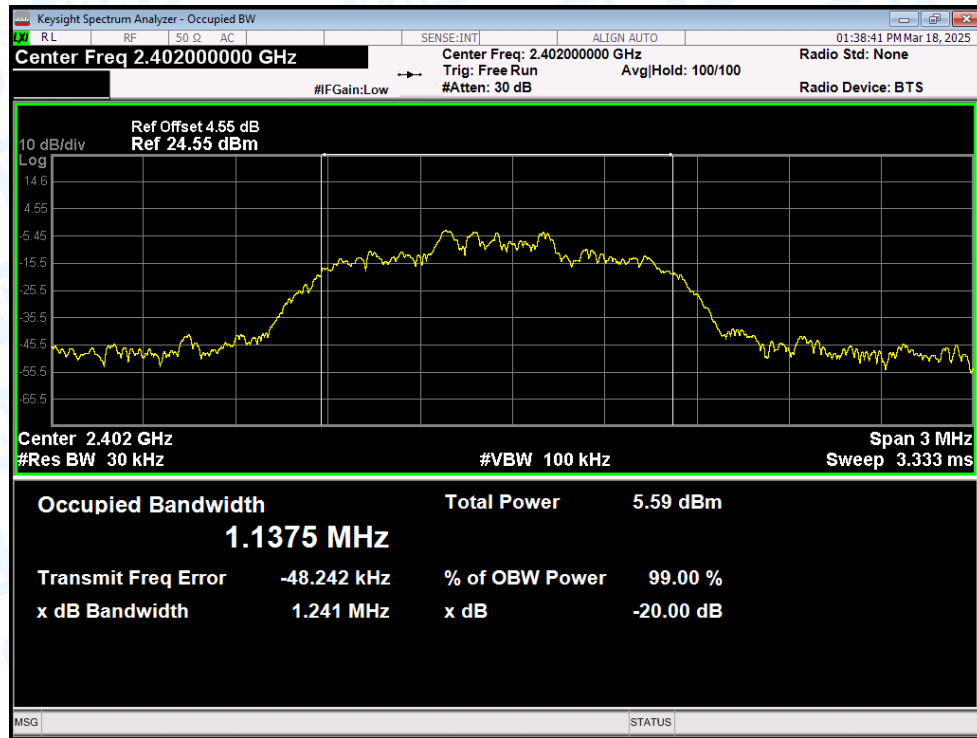
OBW NVNT 2-DH1 2441MHz Ant1



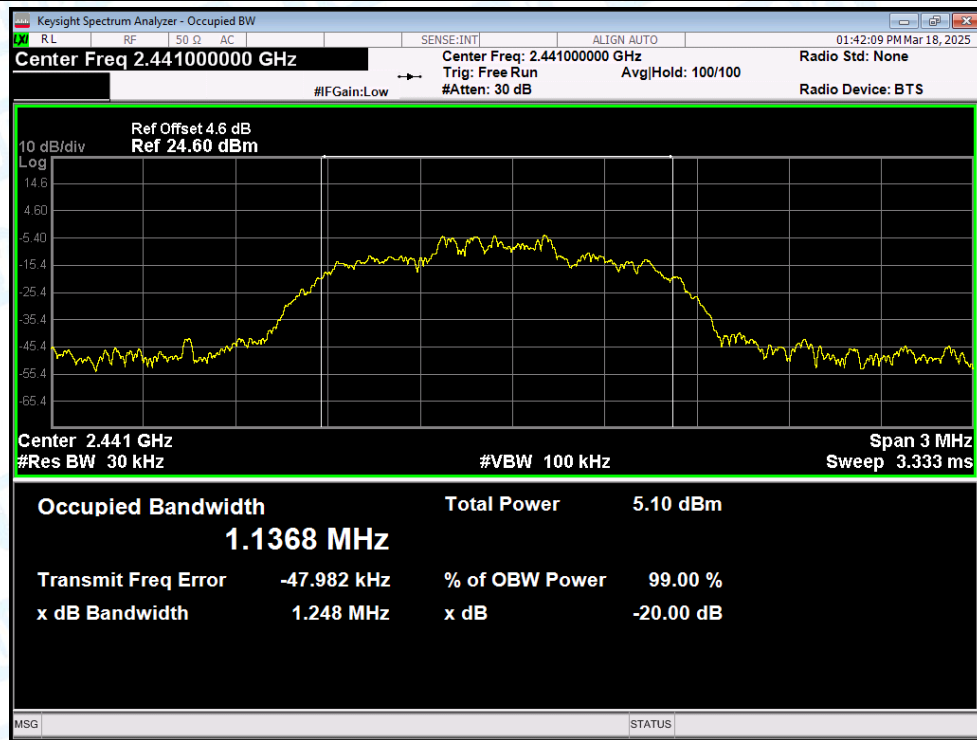
OBW NVNT 2-DH1 2480MHz Ant1

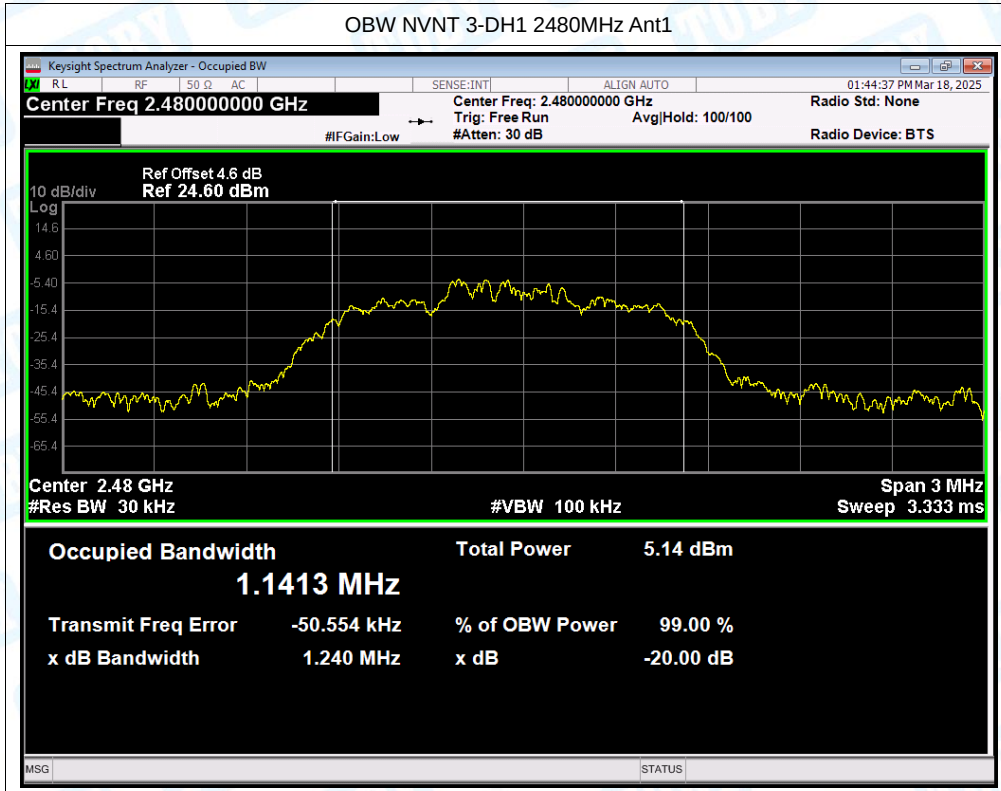


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1





5. Band Edge

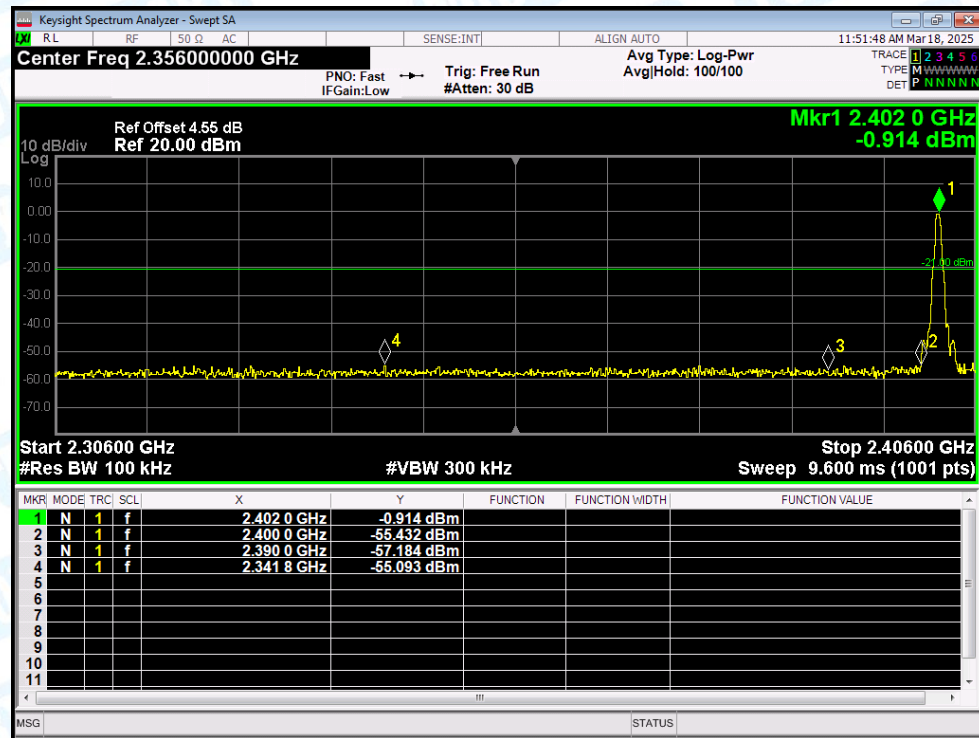
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-54.09	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-53.49	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-52.97	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-52.02	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-54.11	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-49.07	-20	Pass

Test Graphs

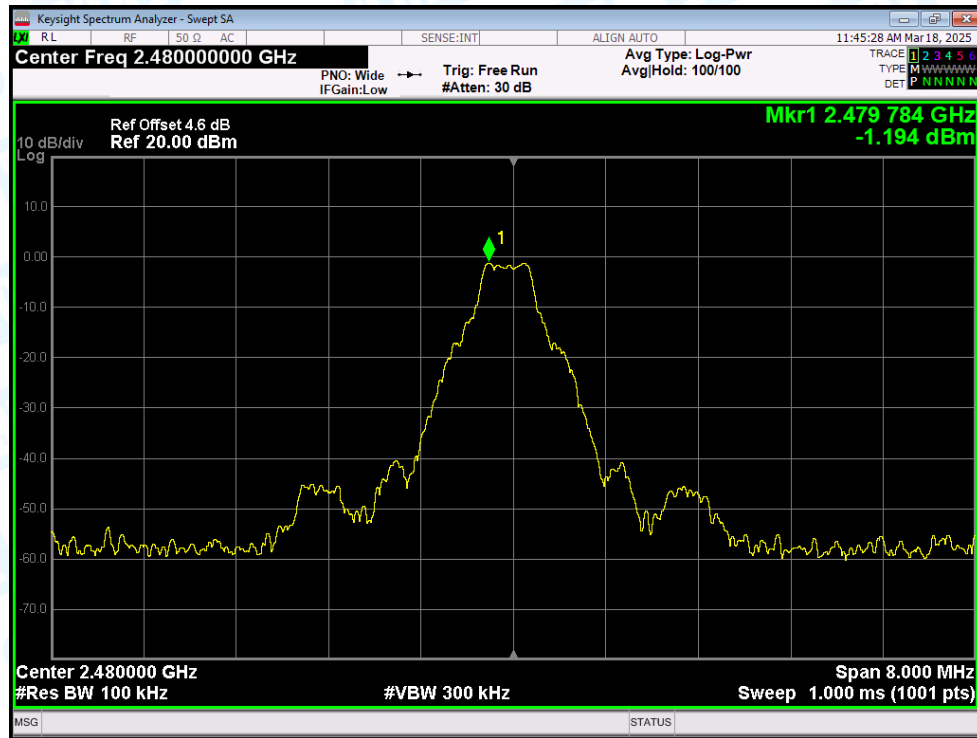
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



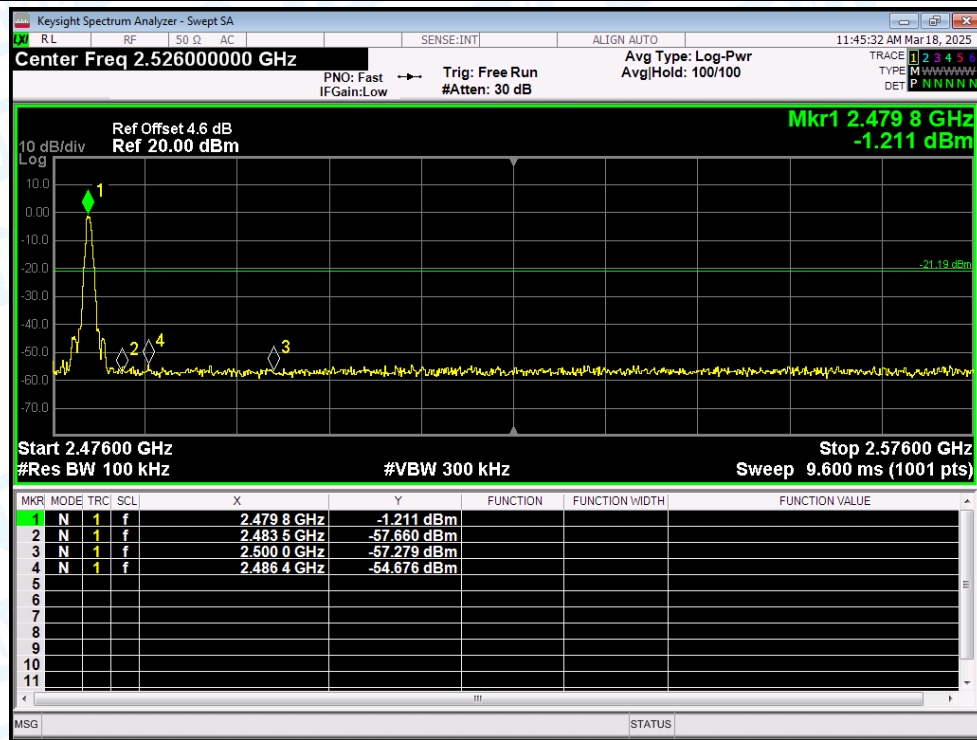
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



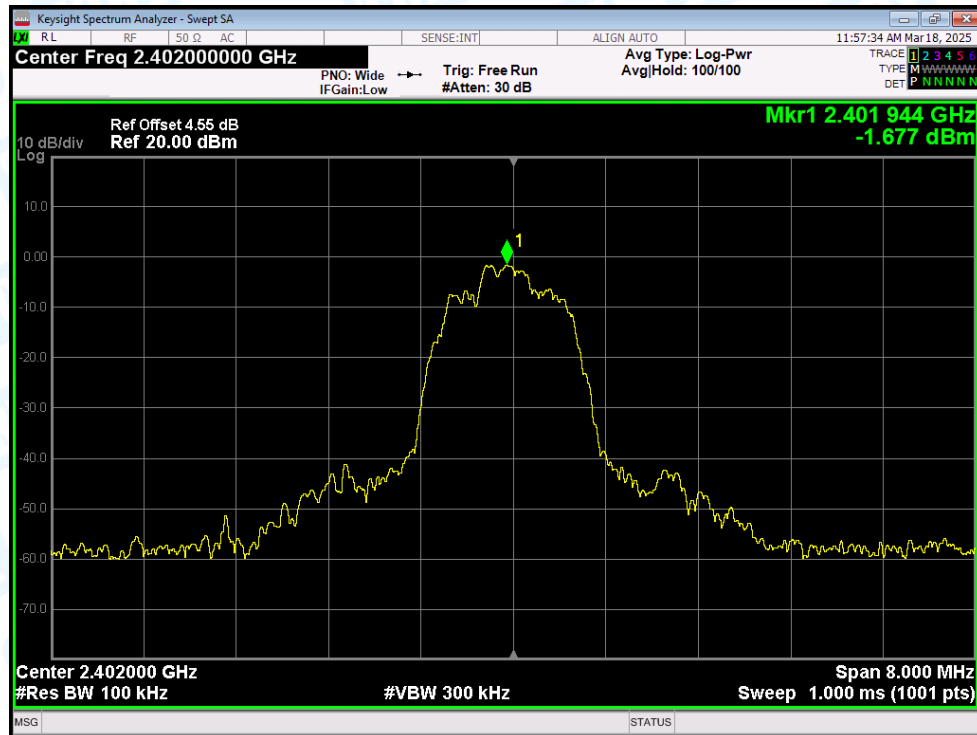
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



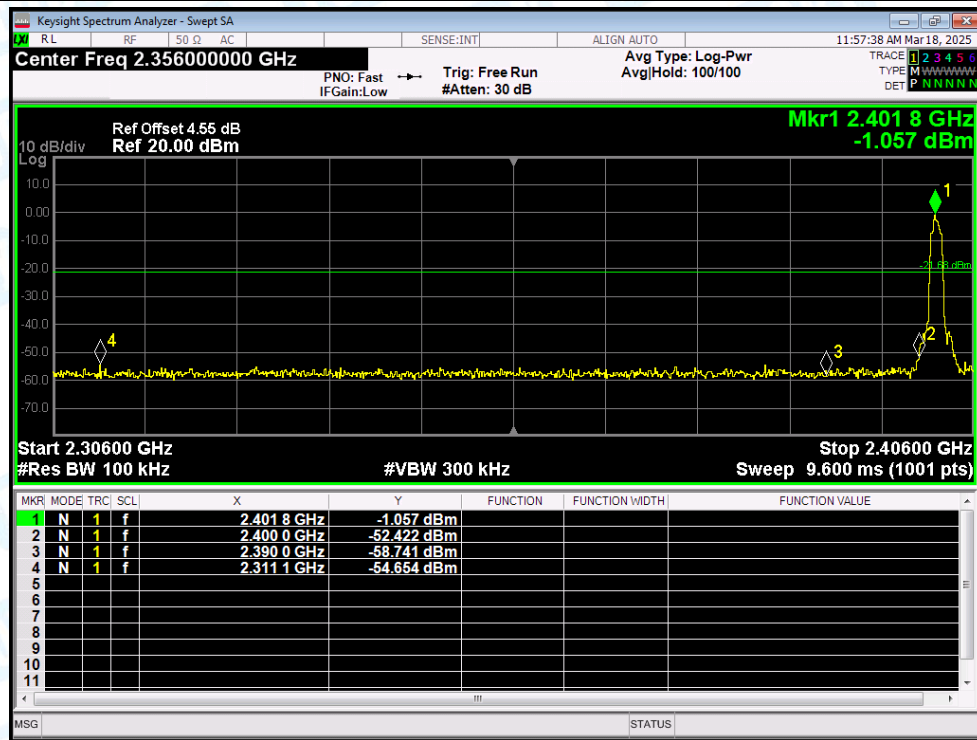
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



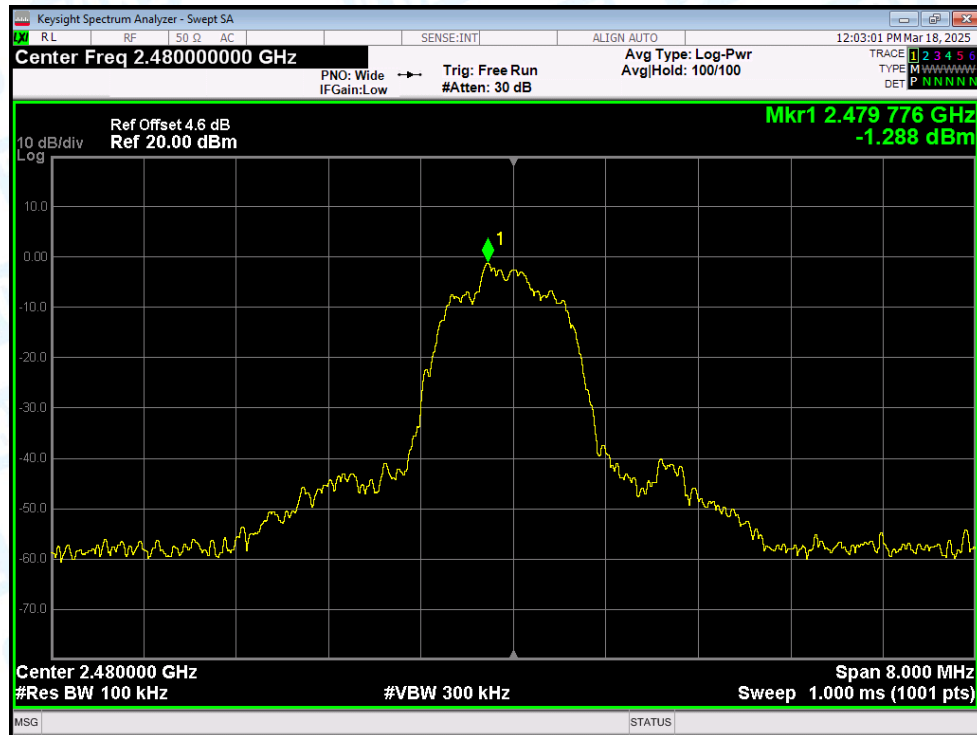
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



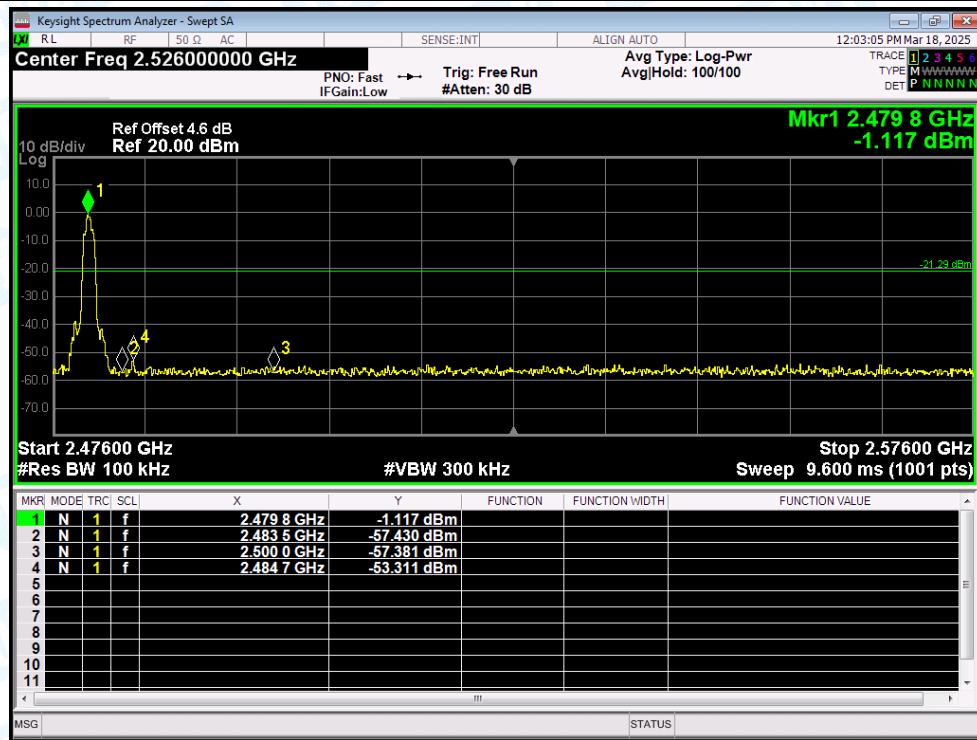
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



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



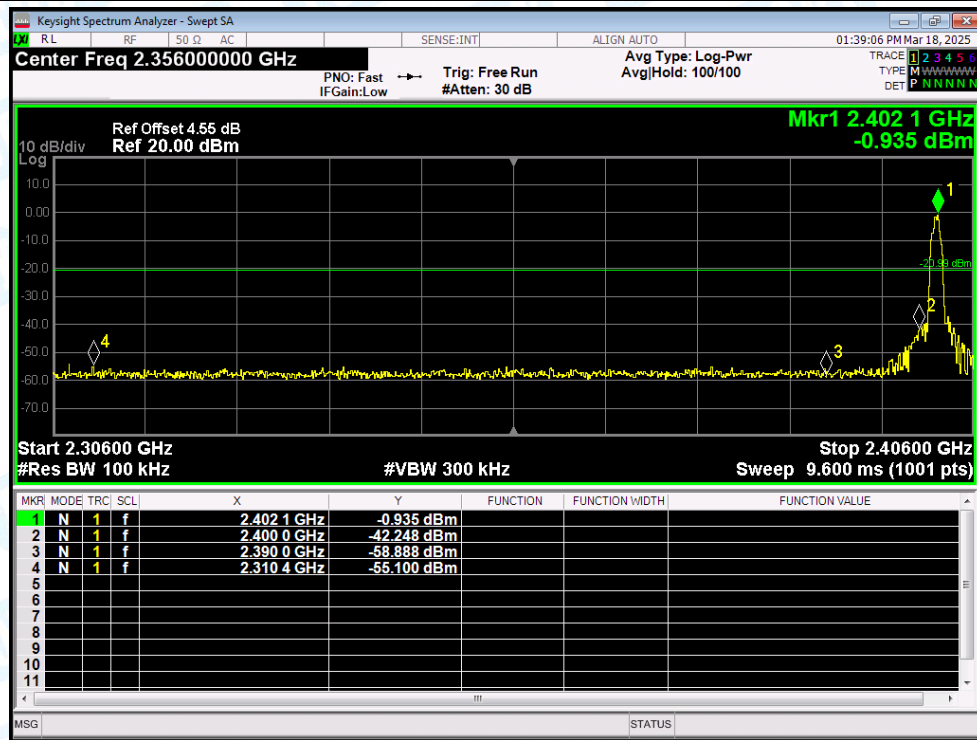
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



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



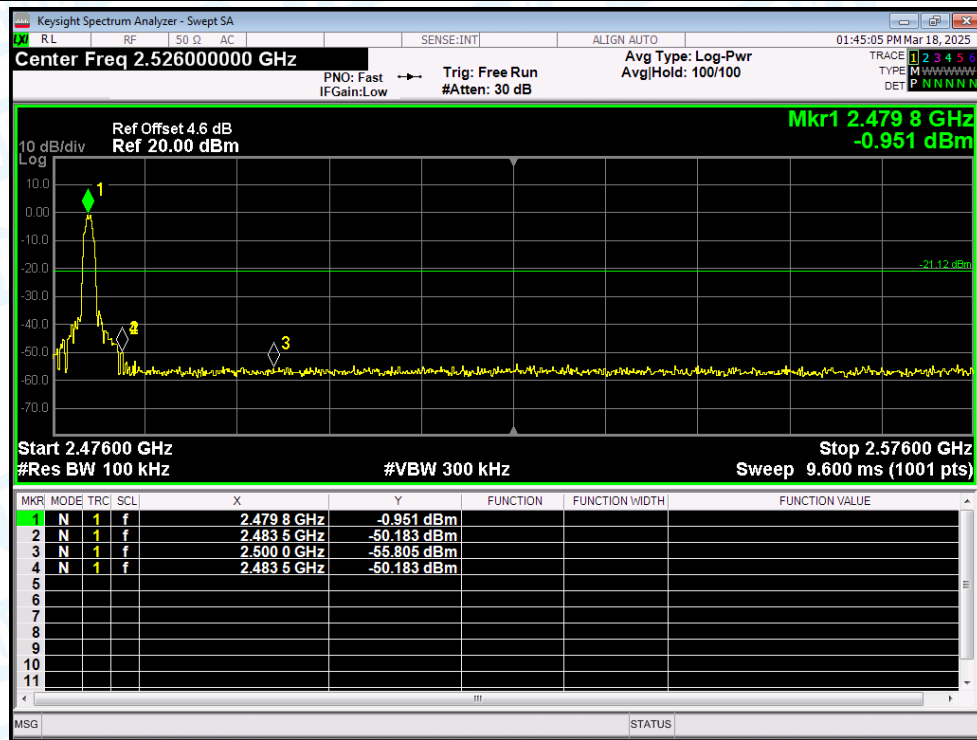
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



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



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



6. Band Edge(Hopping)

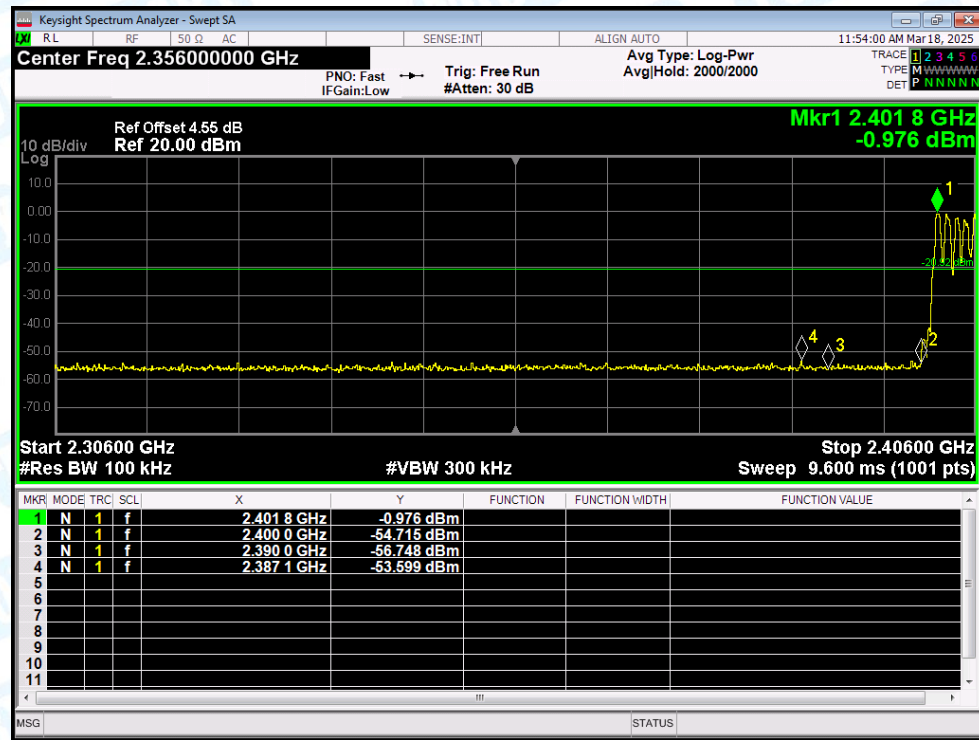
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-52.68	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-52.15	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-52.37	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-51.76	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-52.42	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-52.69	-20	Pass

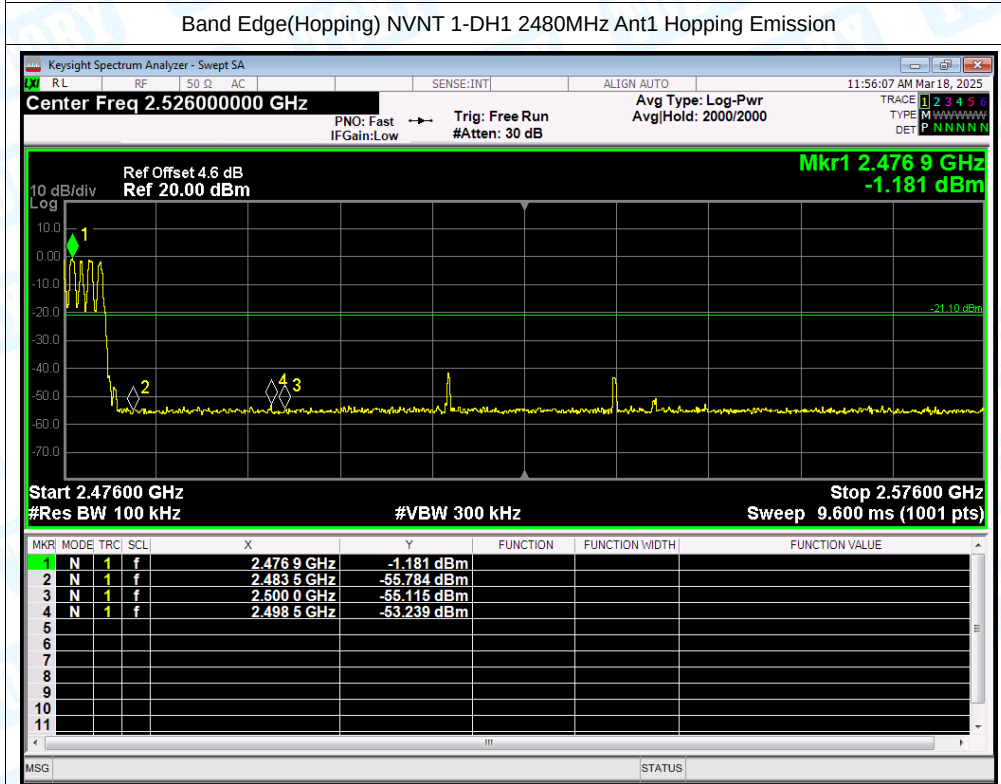
Test Graphs

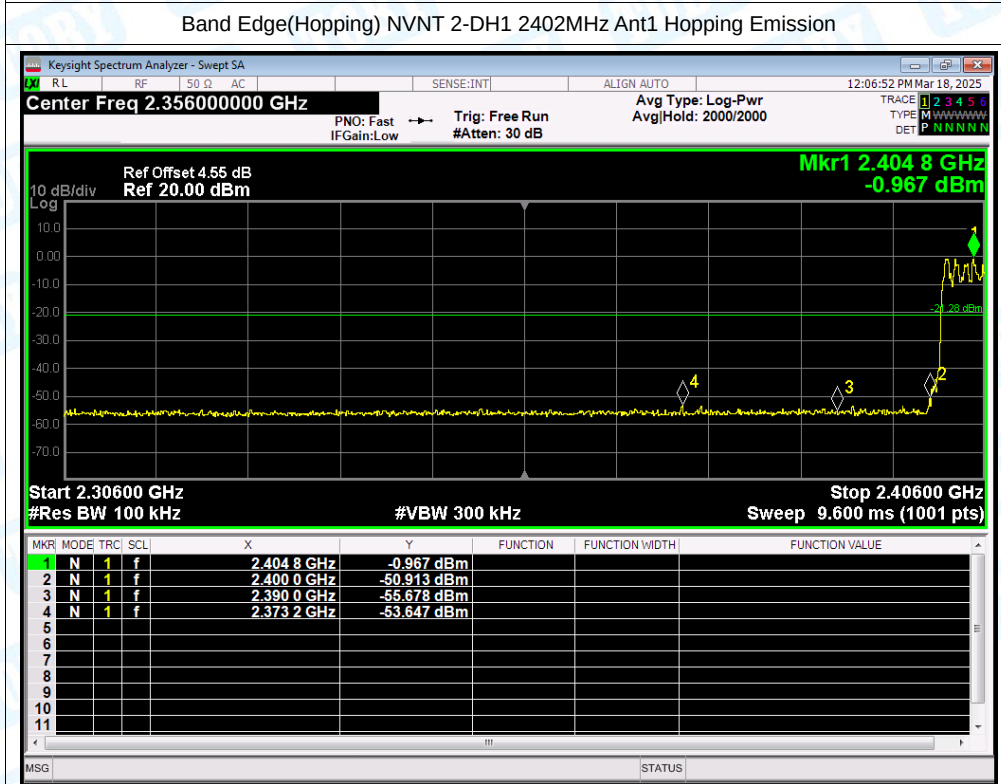
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref

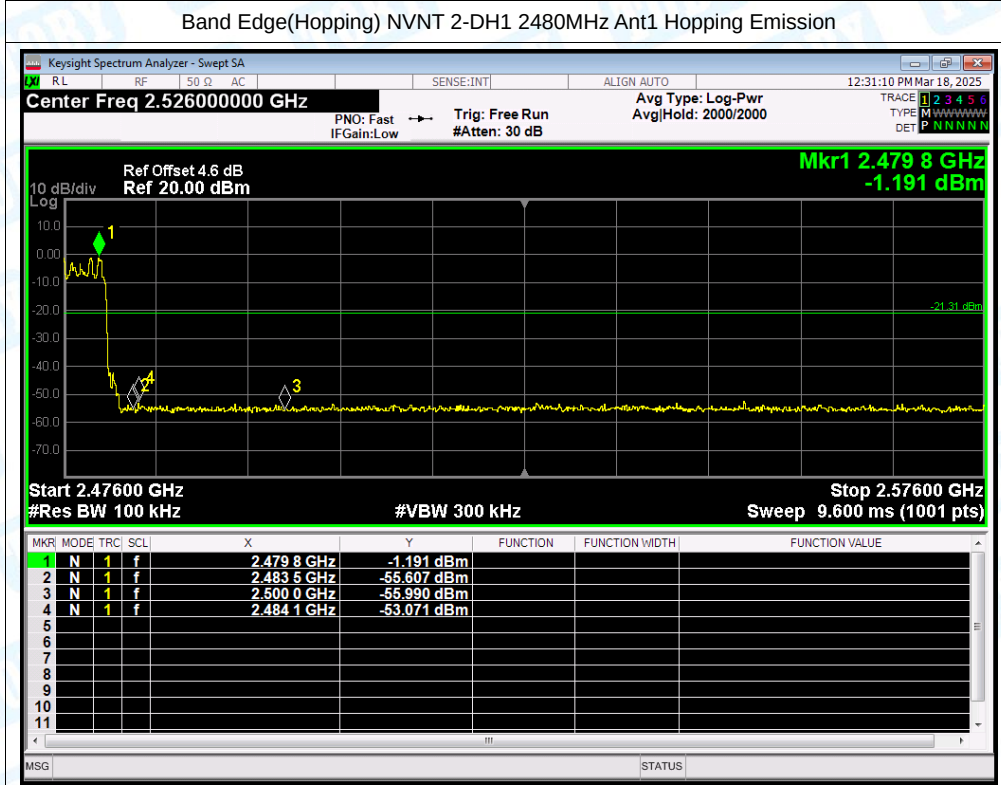
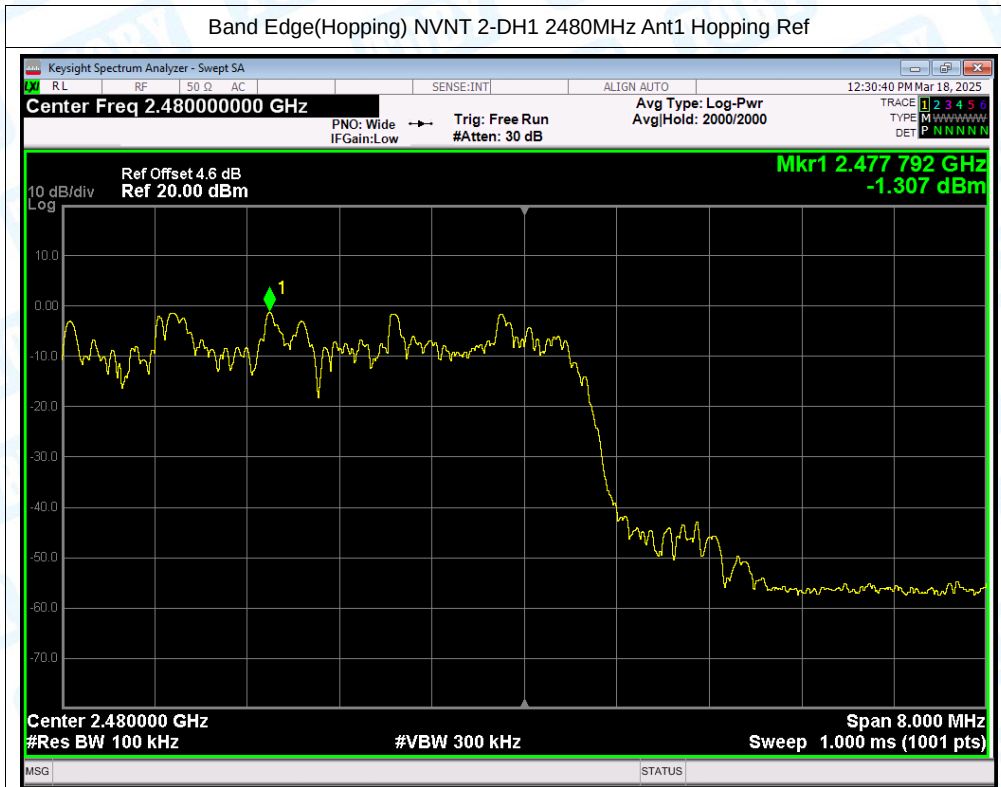


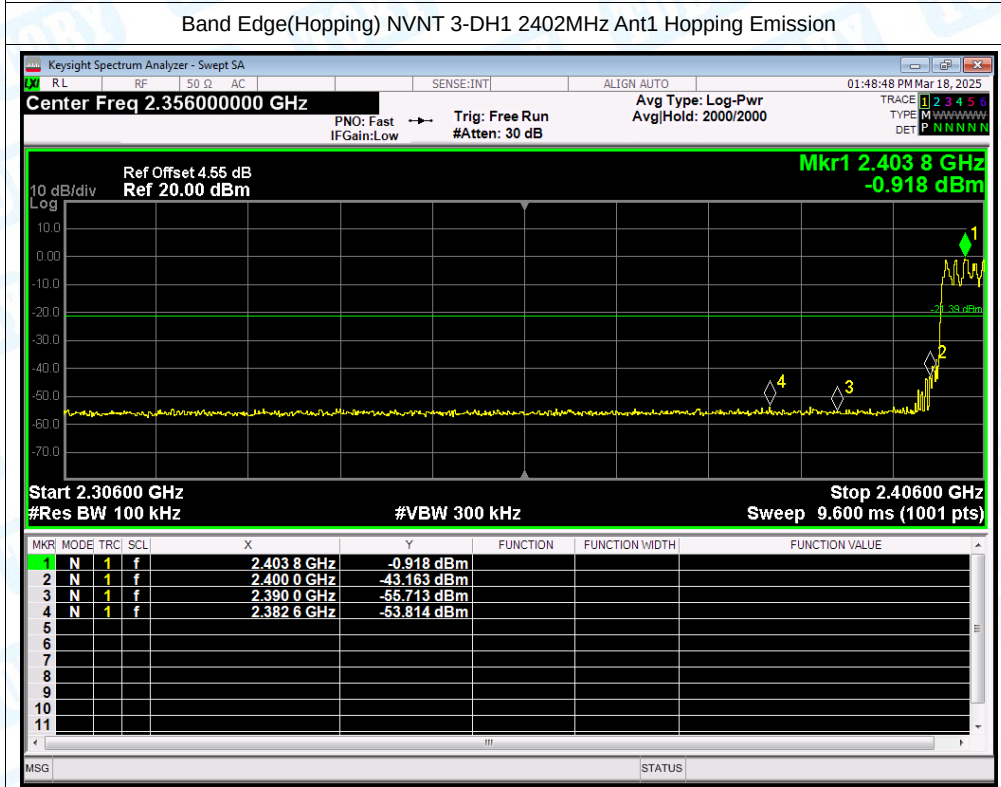
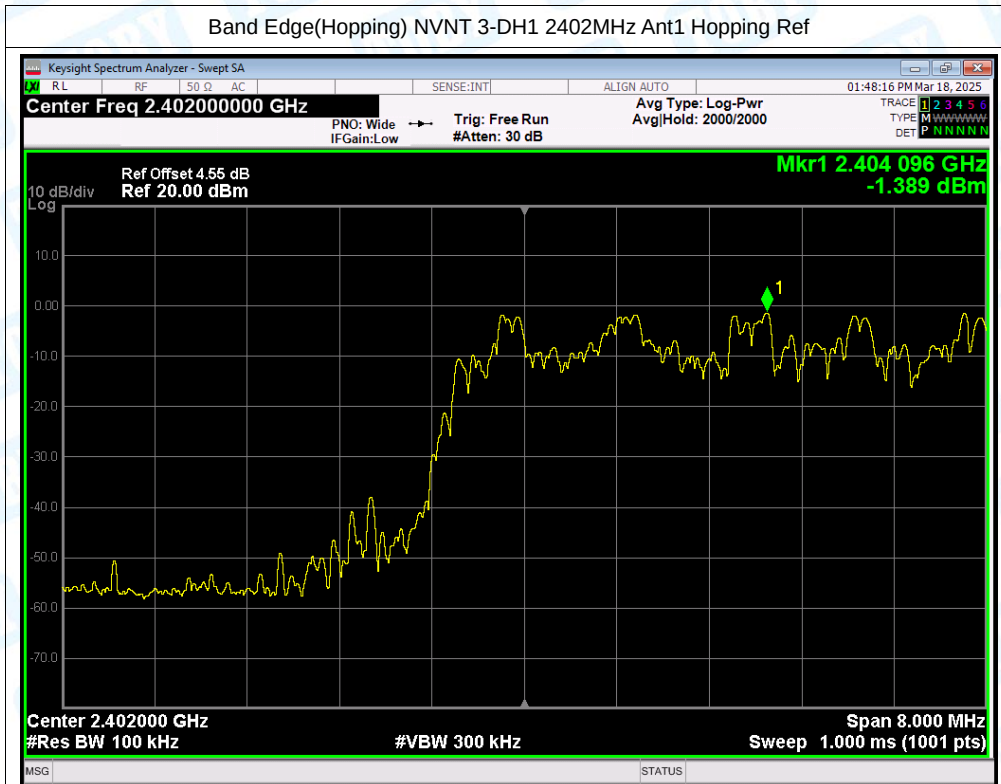
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission

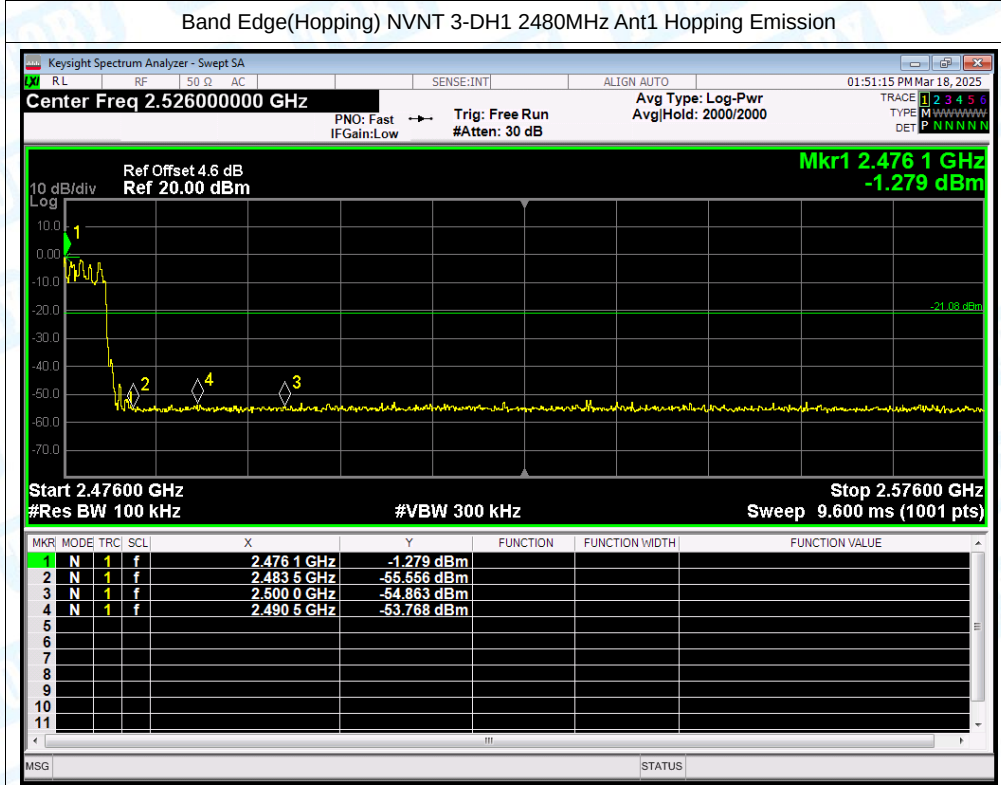
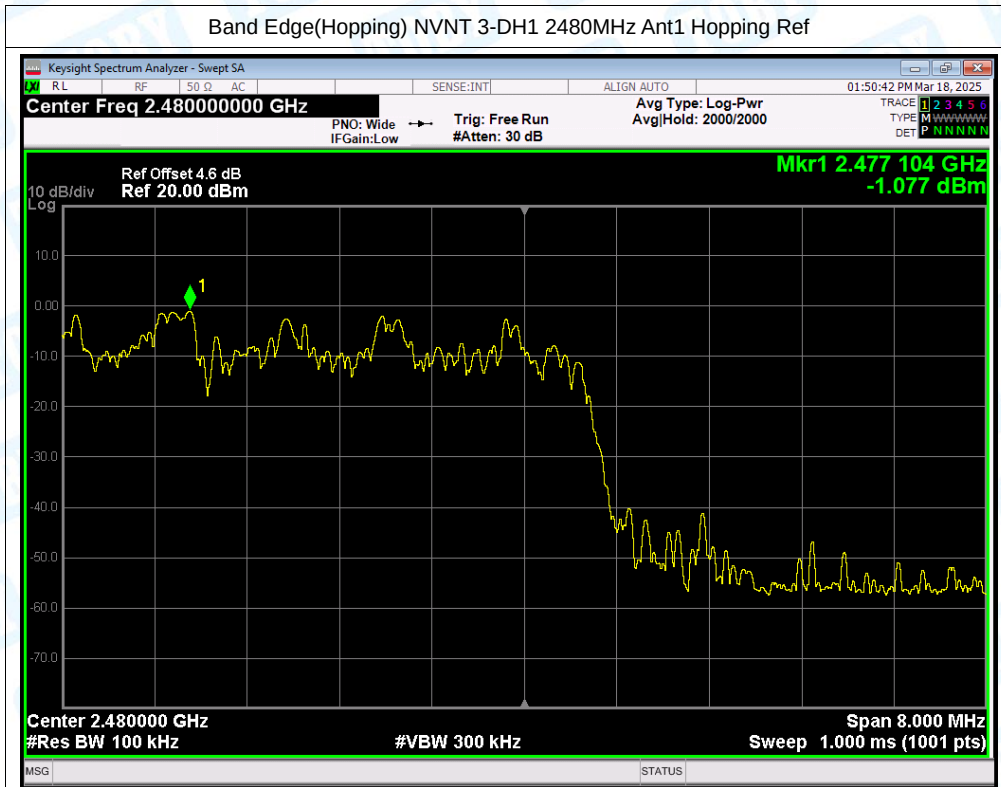










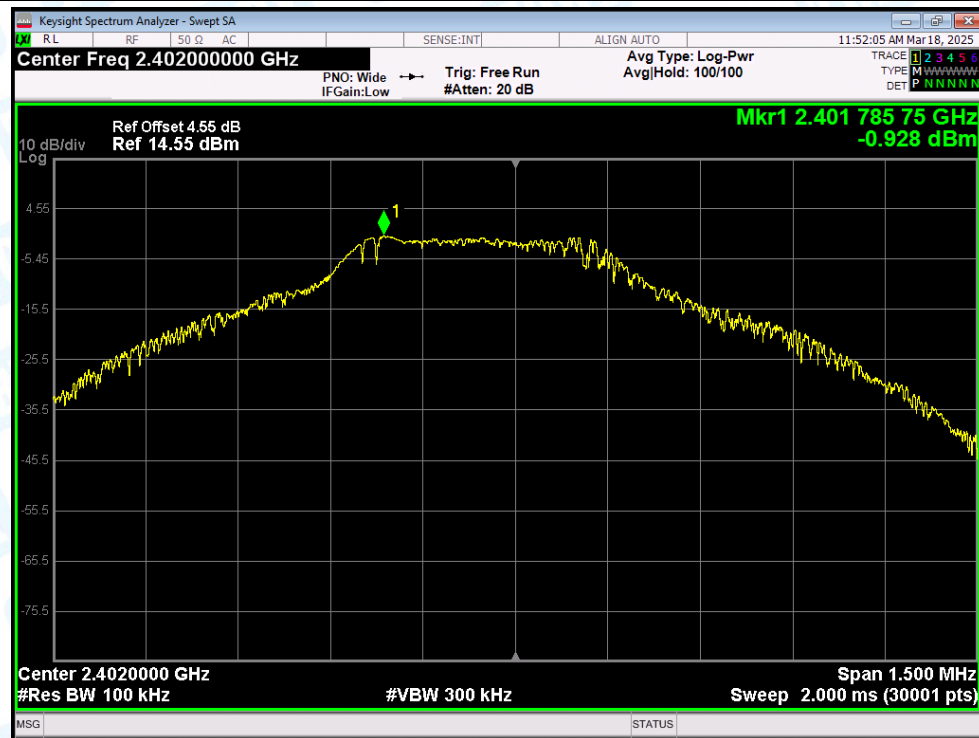


7. Conducted RF Spurious Emission

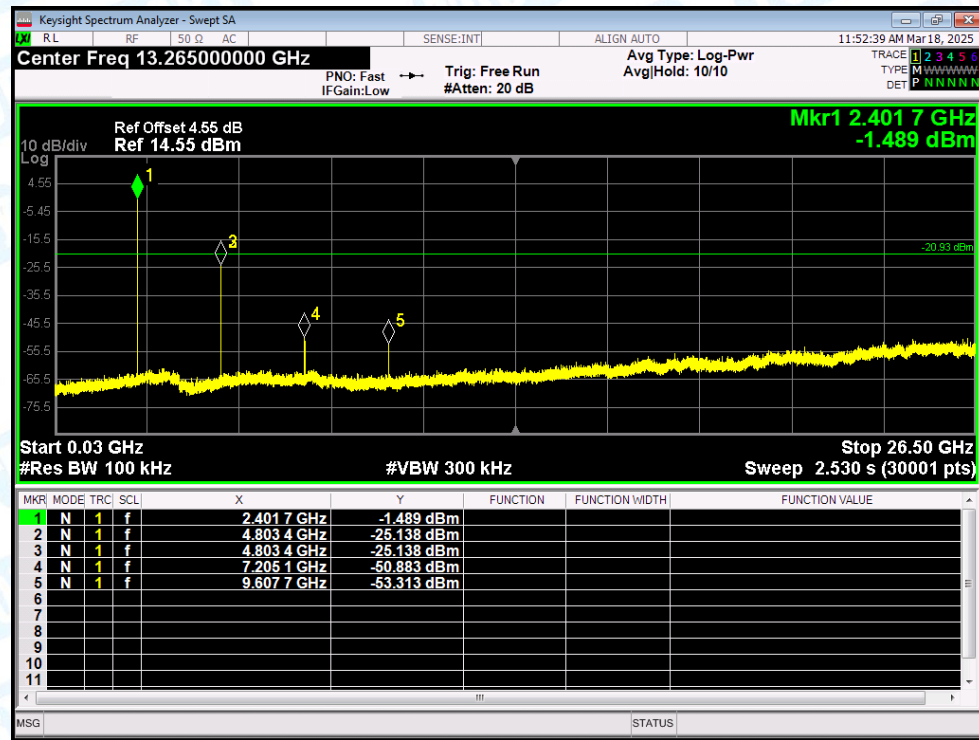
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-24.21	-20	Pass
NVNT	1-DH1	2441	Ant1	-27.93	-20	Pass
NVNT	1-DH1	2480	Ant1	-24.72	-20	Pass
NVNT	2-DH1	2402	Ant1	-28.29	-20	Pass
NVNT	2-DH1	2441	Ant1	-23.06	-20	Pass
NVNT	2-DH1	2480	Ant1	-22.54	-20	Pass
NVNT	3-DH1	2402	Ant1	-26.49	-20	Pass
NVNT	3-DH1	2441	Ant1	-32.63	-20	Pass
NVNT	3-DH1	2480	Ant1	-24.95	-20	Pass

Test Graphs

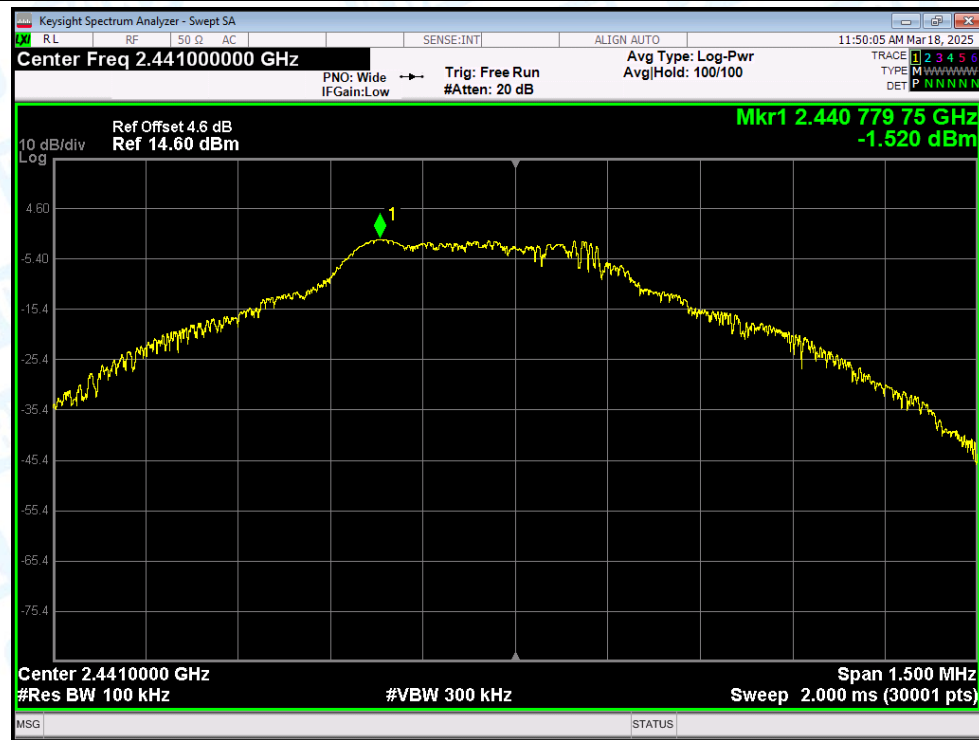
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



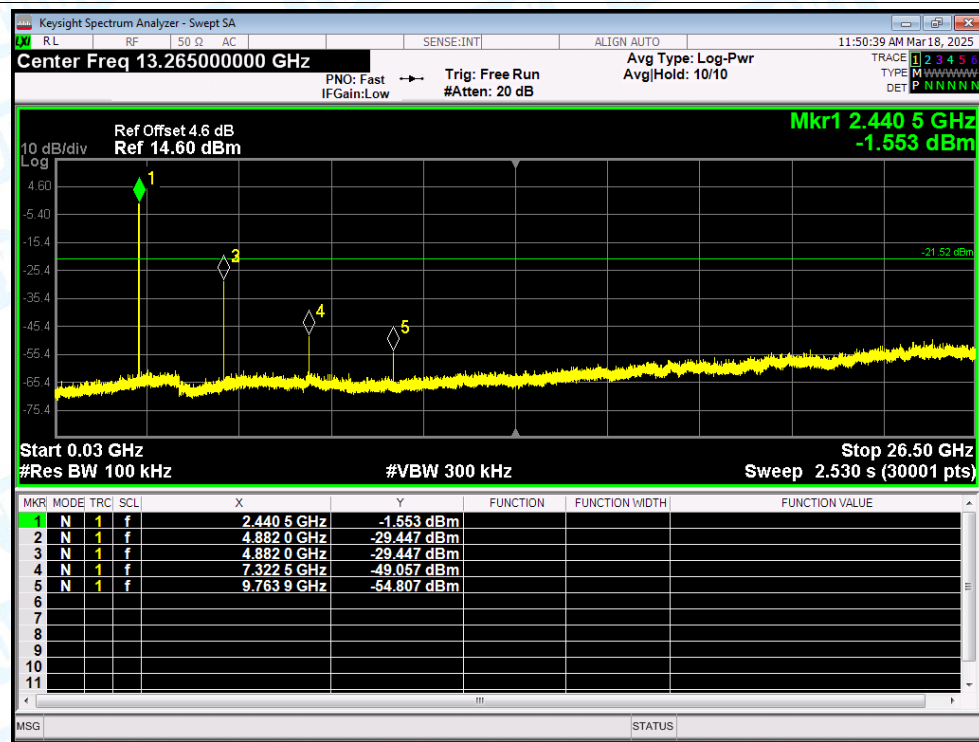
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



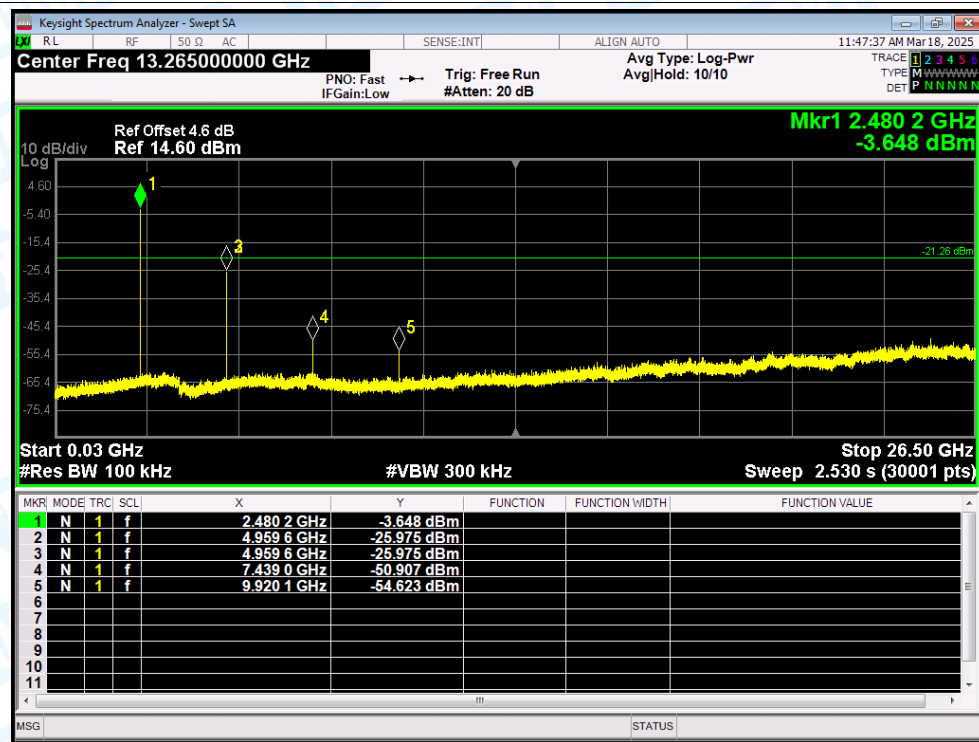
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



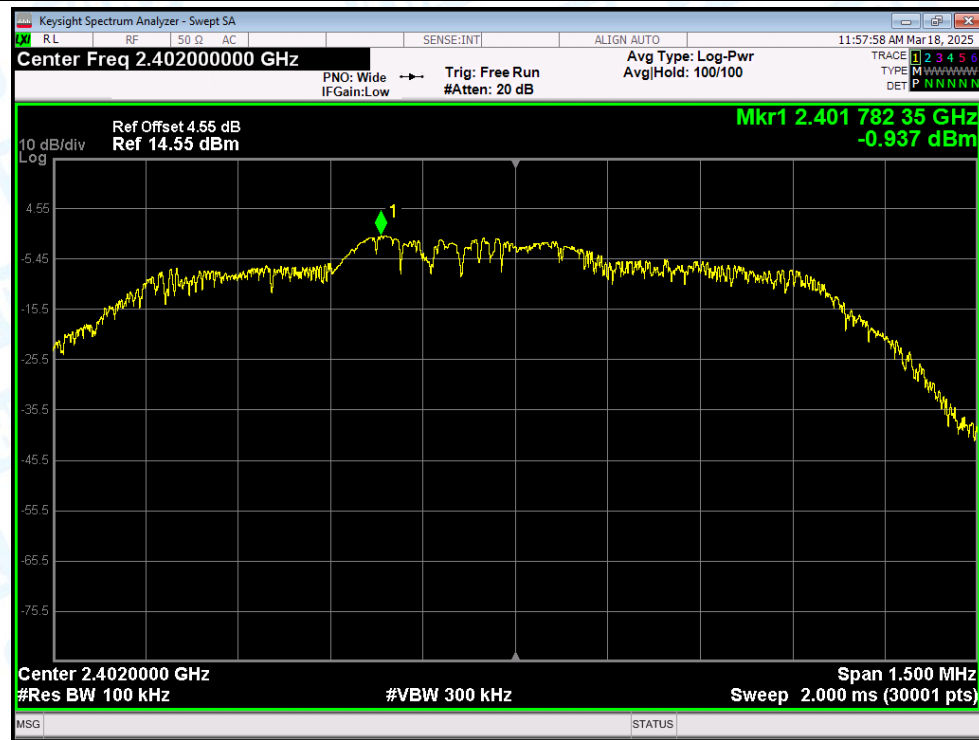
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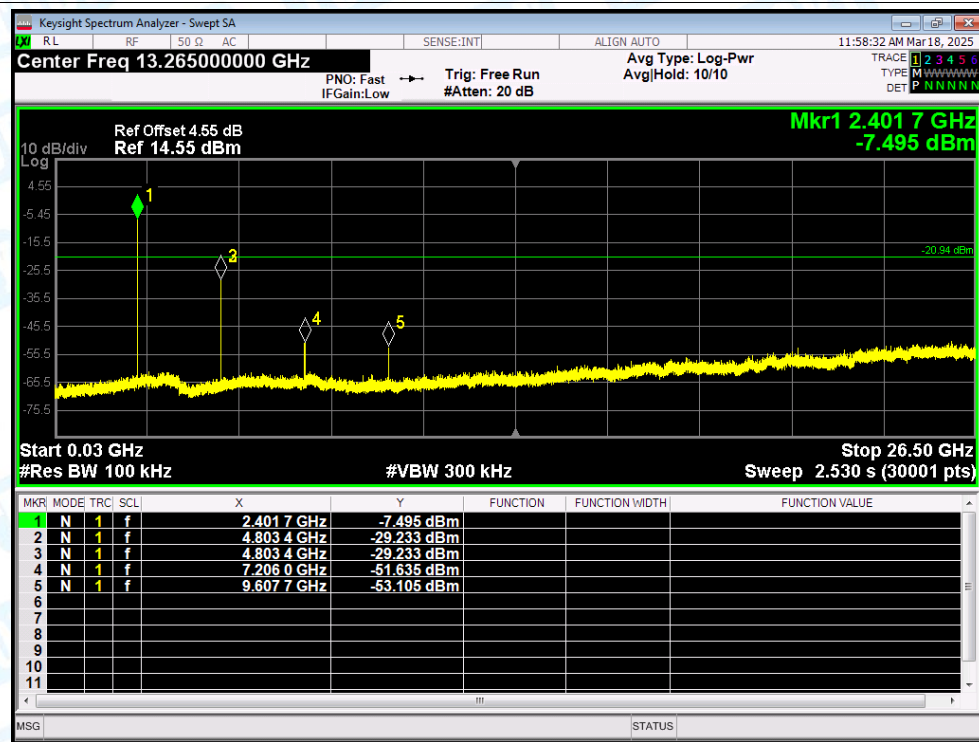
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



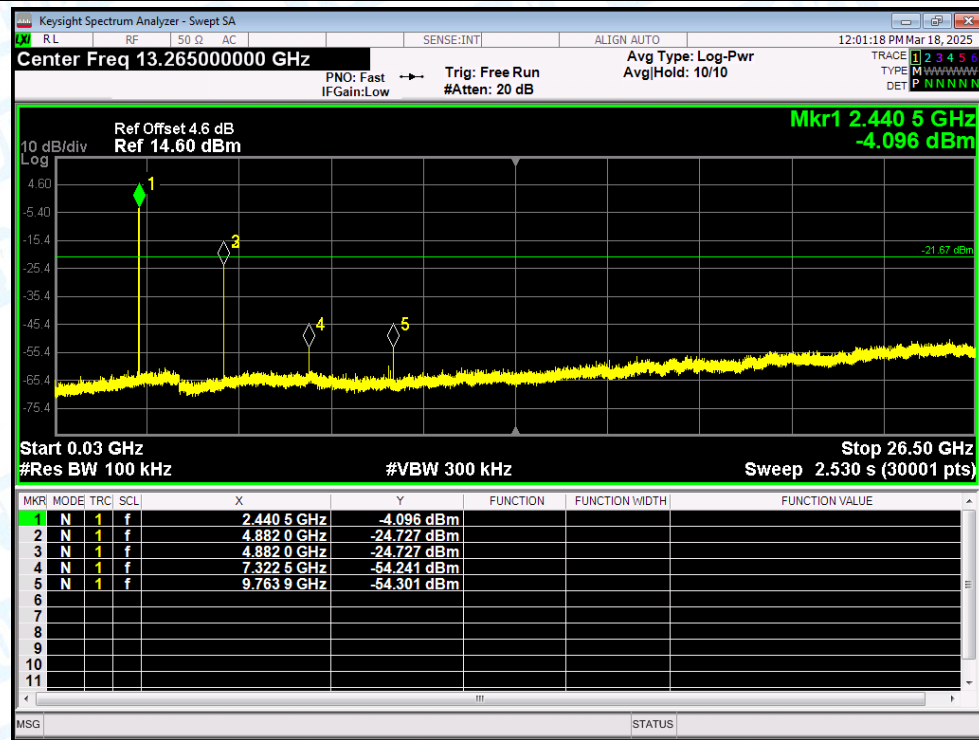
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



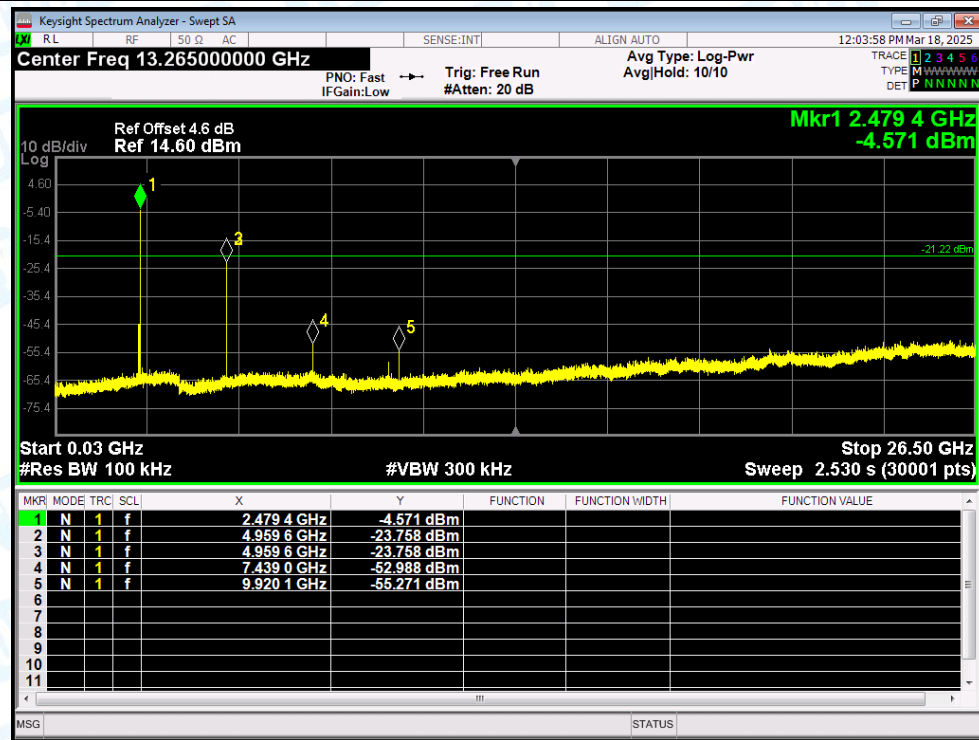
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



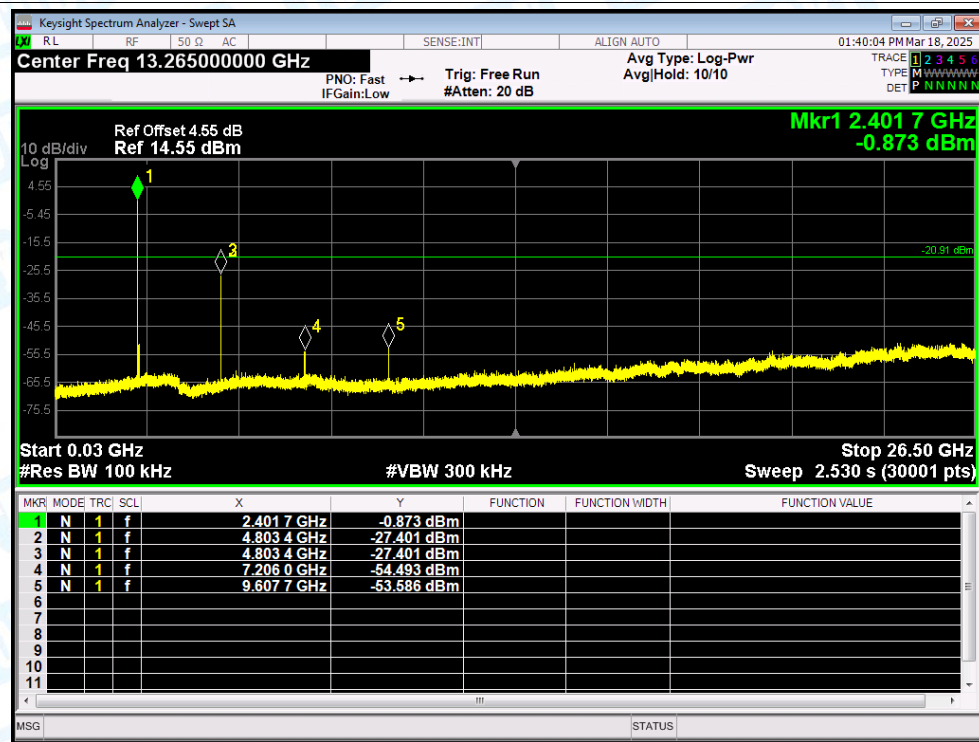
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



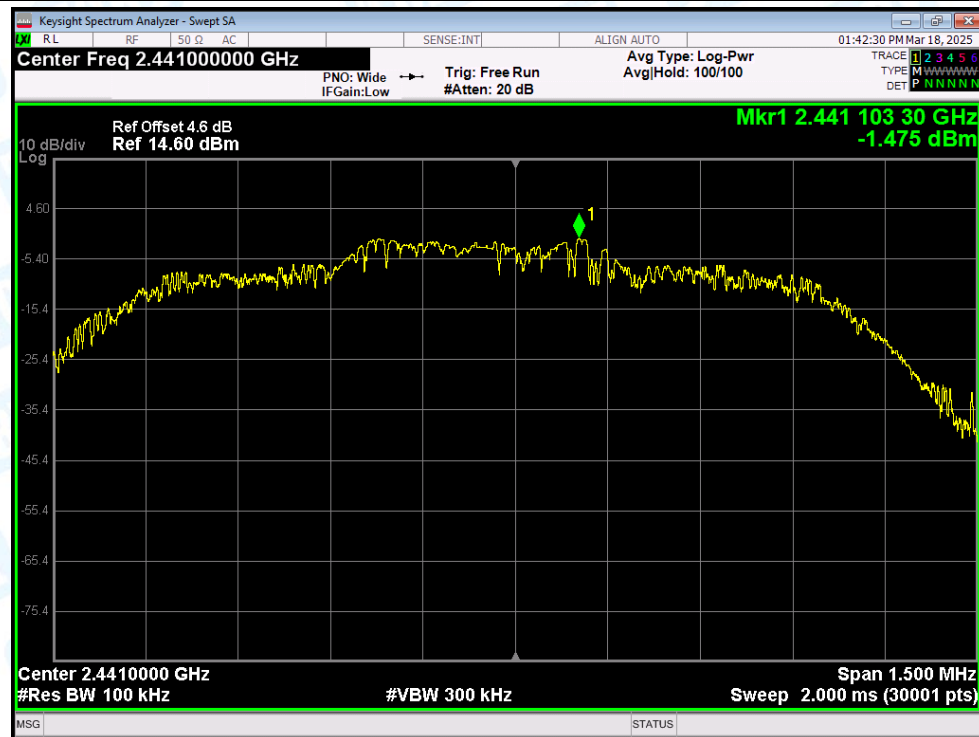
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



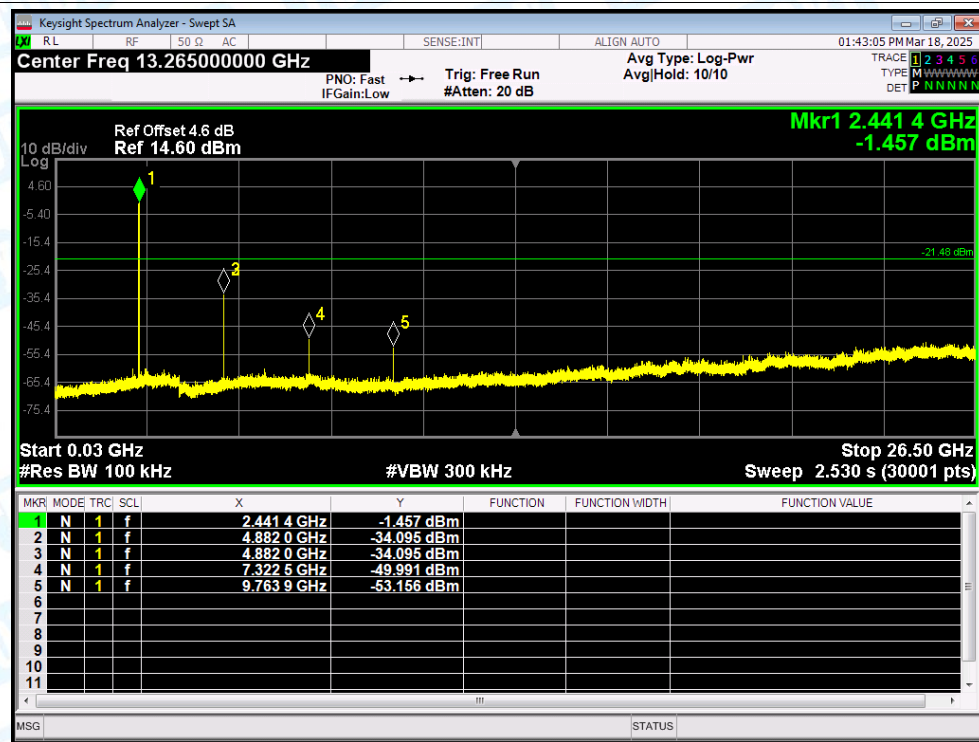
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



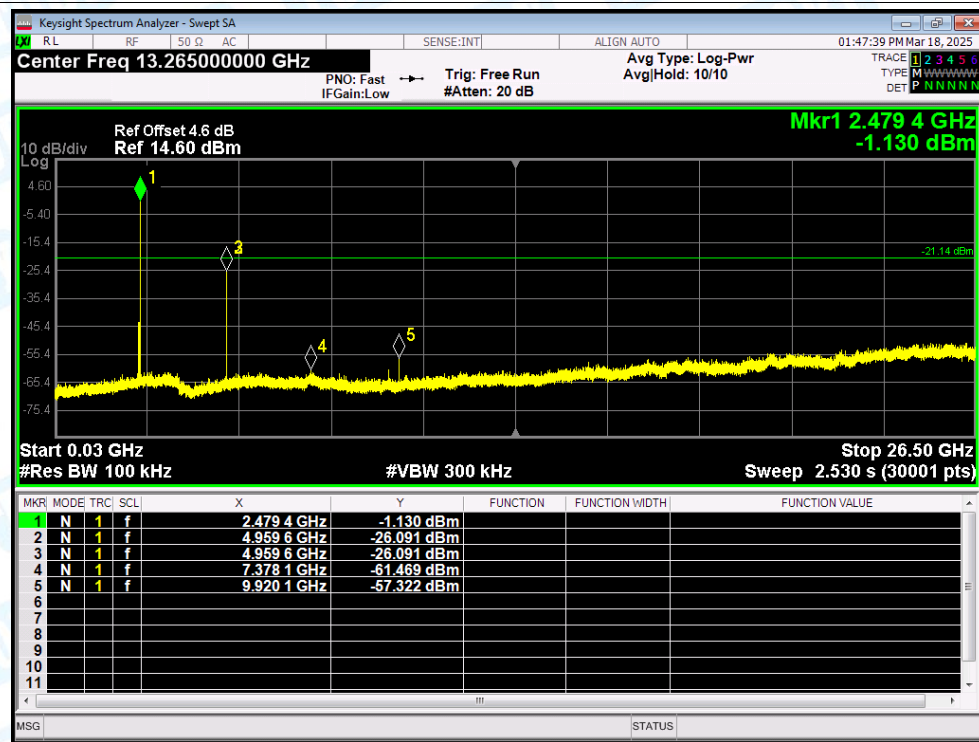
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

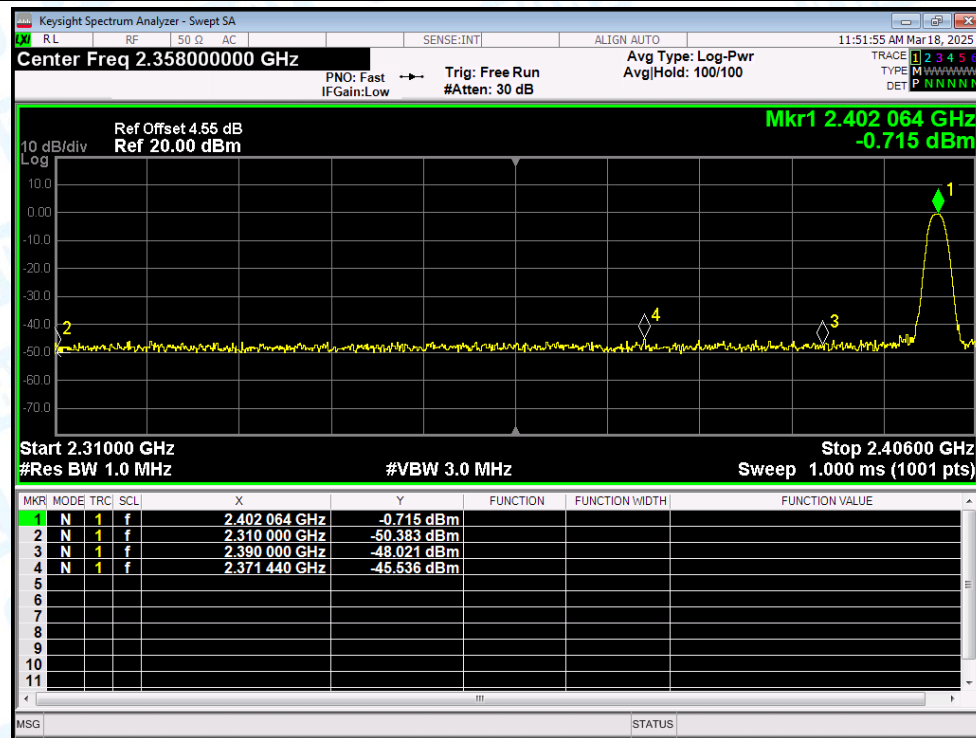


8. Restrict Band

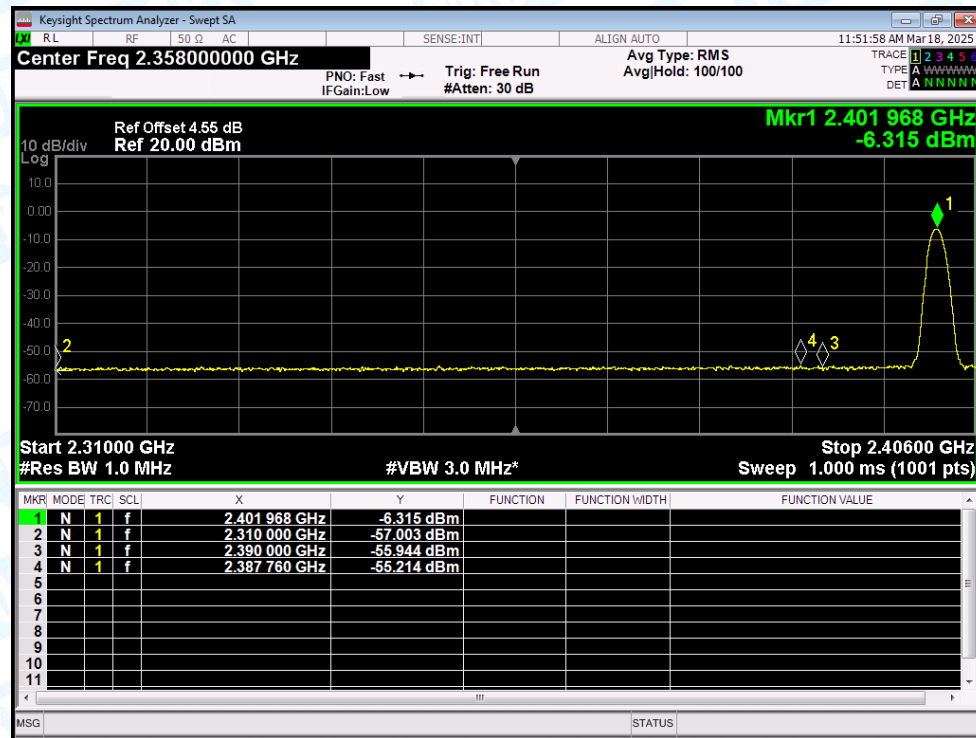
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-50.38	2	-	46.88	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-57	2	5.06	45.32	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2371.44	-45.54	2	-	51.72	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2387.76	-55.21	2	5.06	47.11	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-48.02	2	-	49.24	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-55.94	2	5.06	46.38	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-46.75	2	-	50.51	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-54.95	2	4.95	47.26	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2487.784	-44.18	2	-	53.08	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2484.304	-54.28	2	4.95	47.93	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-48.77	2	-	48.49	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-55.44	2	4.95	46.77	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-46.57	2	-	50.69	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.76	2	4.95	45.45	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2366.256	-44.34	2	-	52.92	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2379.216	-55.4	2	4.95	46.81	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-47.81	2	-	49.45	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-55.71	2	4.95	46.5	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-46.15	2	-	51.11	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-54.77	2	4.84	47.33	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2484.544	-44.08	2	-	53.18	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2495.488	-54.75	2	4.84	47.35	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-48.53	2	-	48.73	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.8	2	4.84	46.3	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-48.68	2	-	48.58	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.59	2	4.84	45.51	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2376.144	-45.14	2	-	52.12	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2384.4	-55.22	2	4.84	46.88	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-47.8	2	-	49.46	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-56.25	2	4.84	45.85	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-46.63	2	-	50.63	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-55.52	2	4.95	46.69	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.728	-32.01	2	-	65.25	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2484.304	-52.98	2	4.95	49.23	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-46.45	2	-	50.81	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.3	2	4.95	46.91	Average	54	Pass

Test Graphs

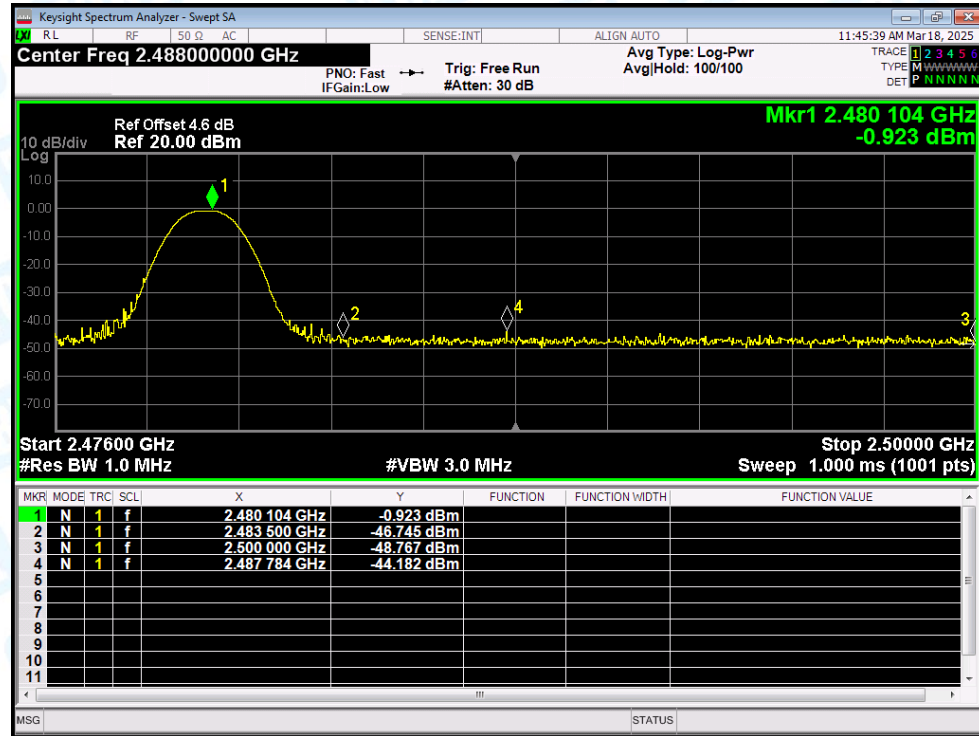
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



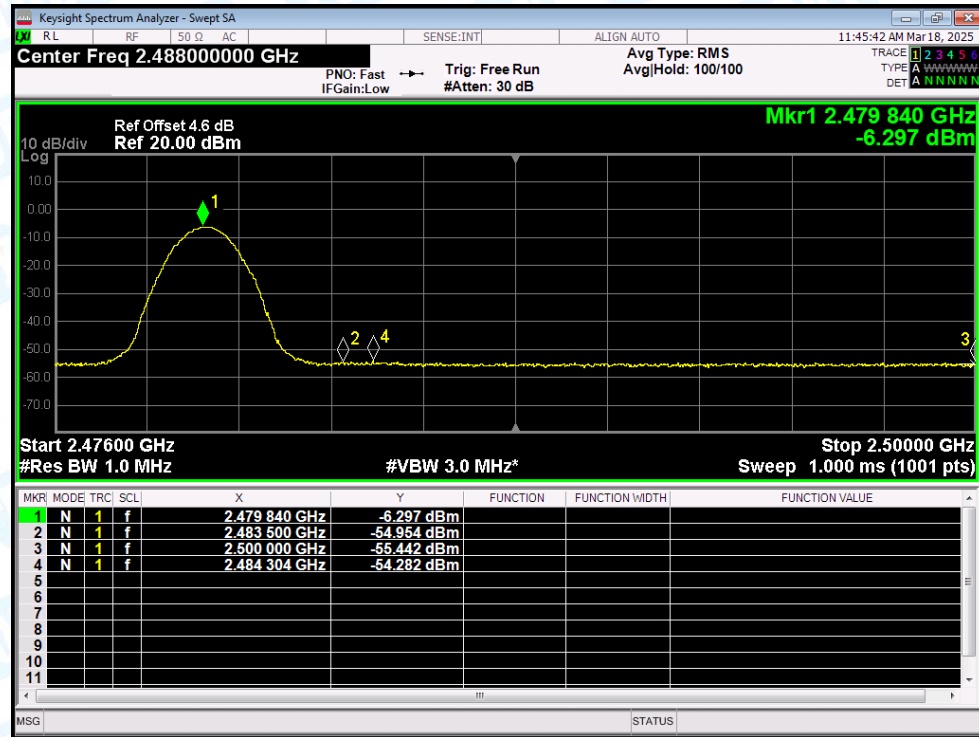
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



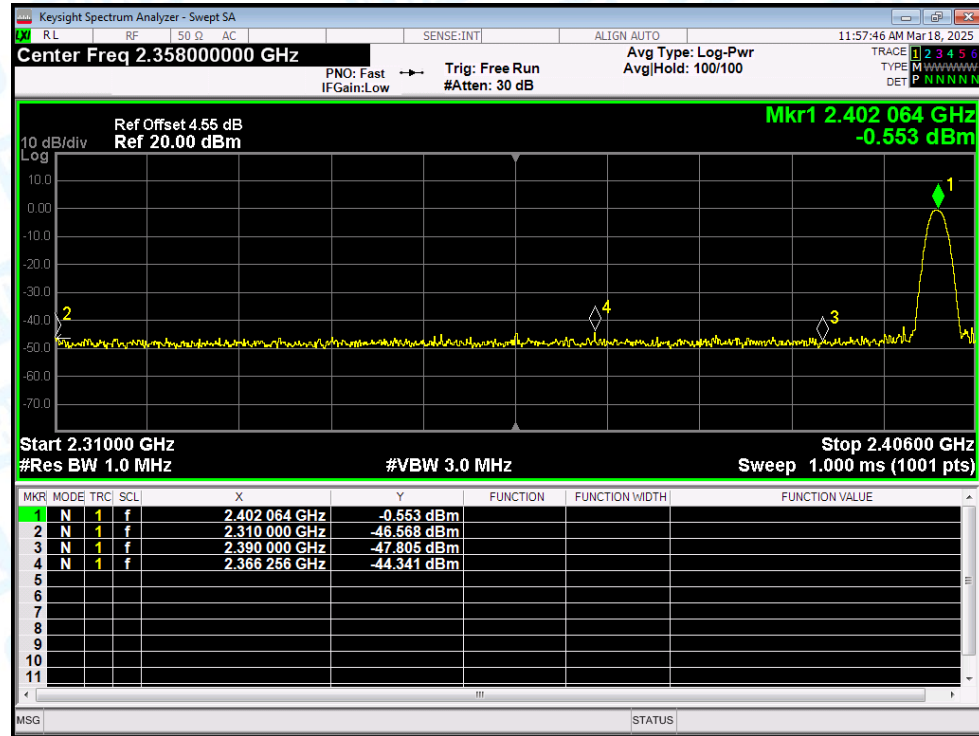
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



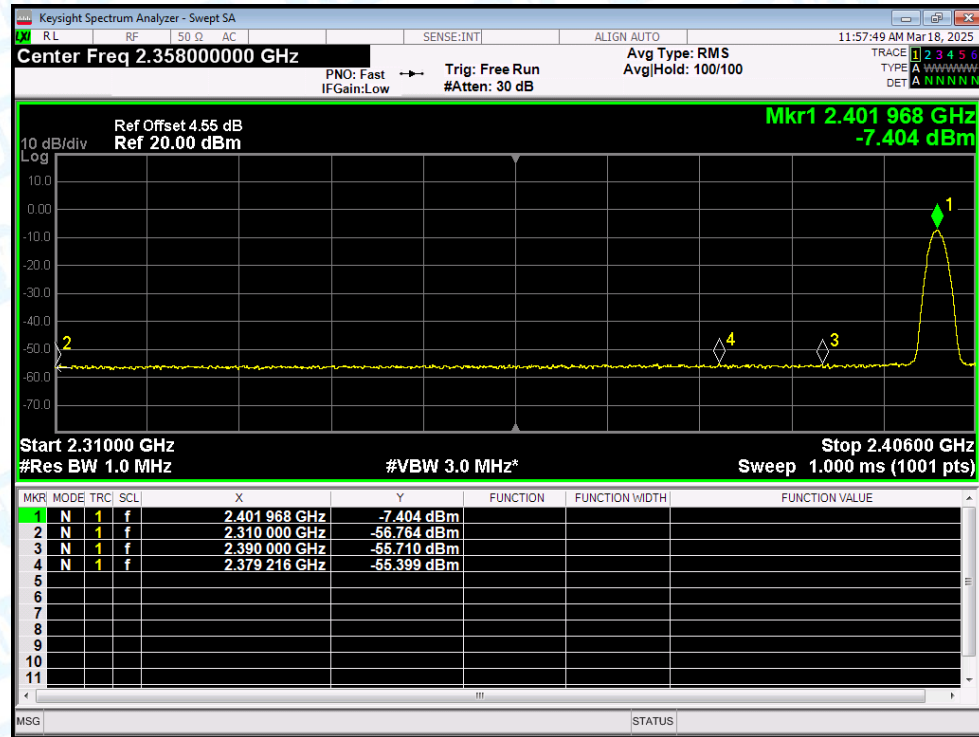
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



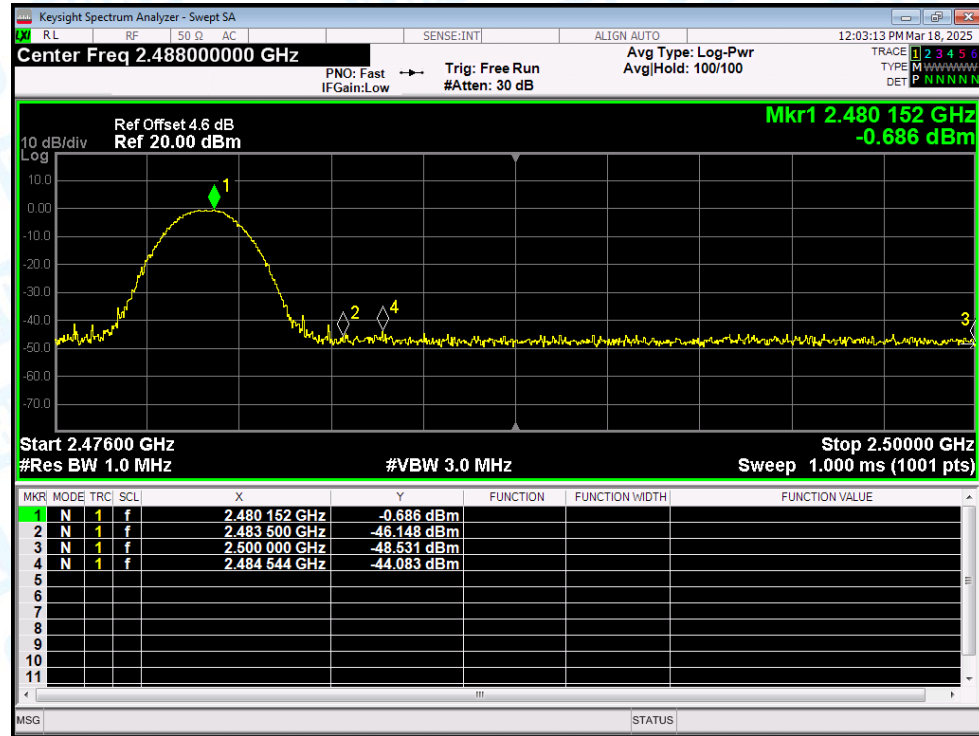
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



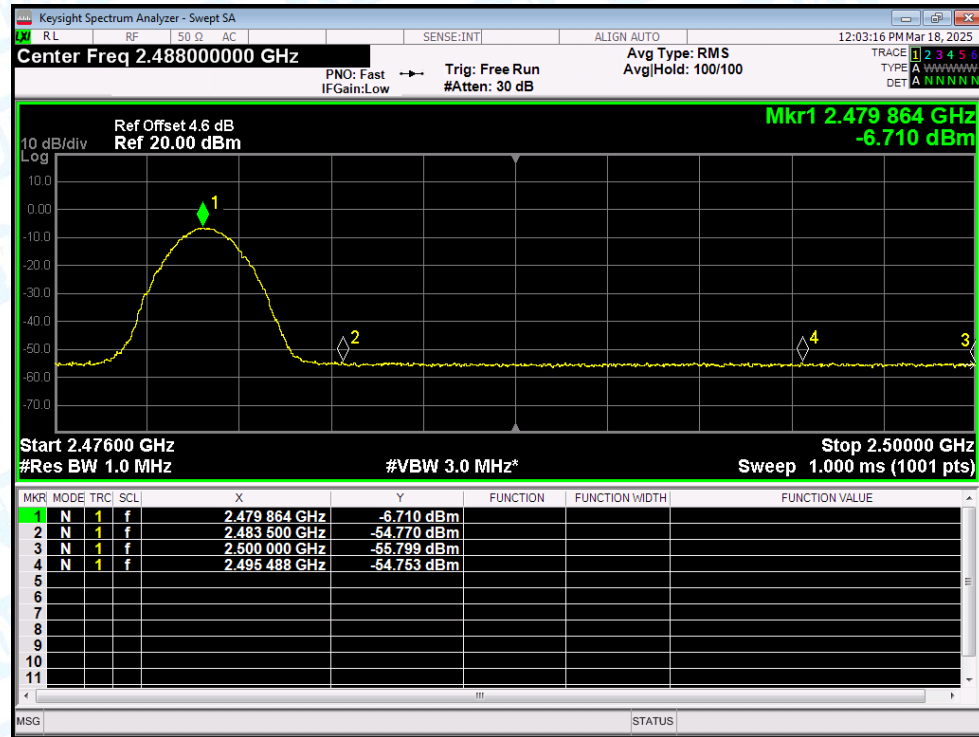
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



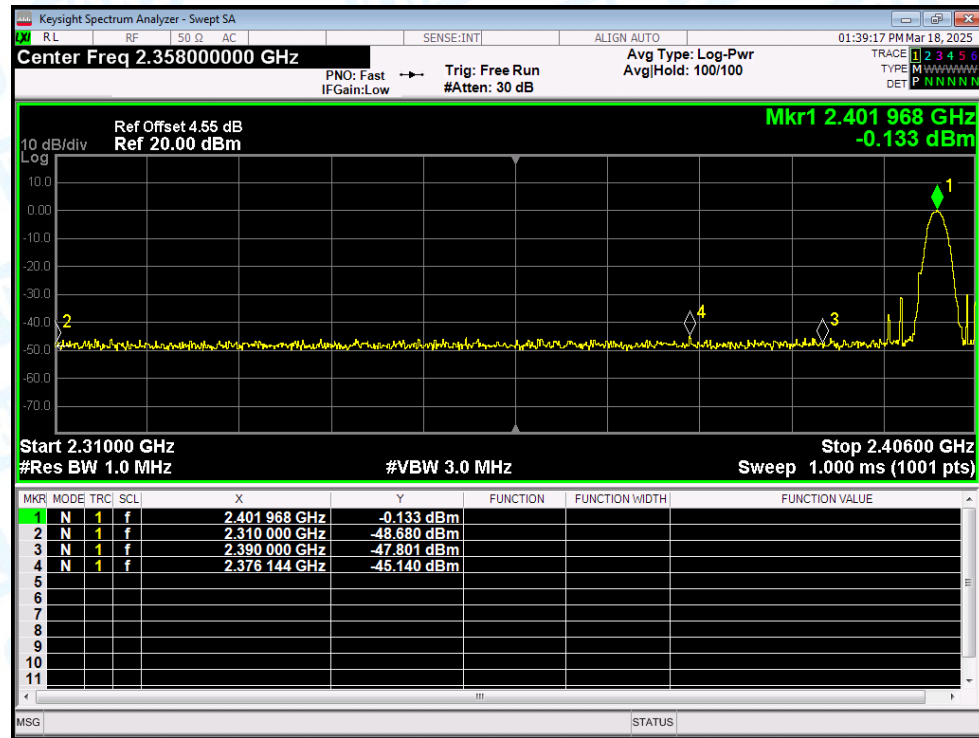
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



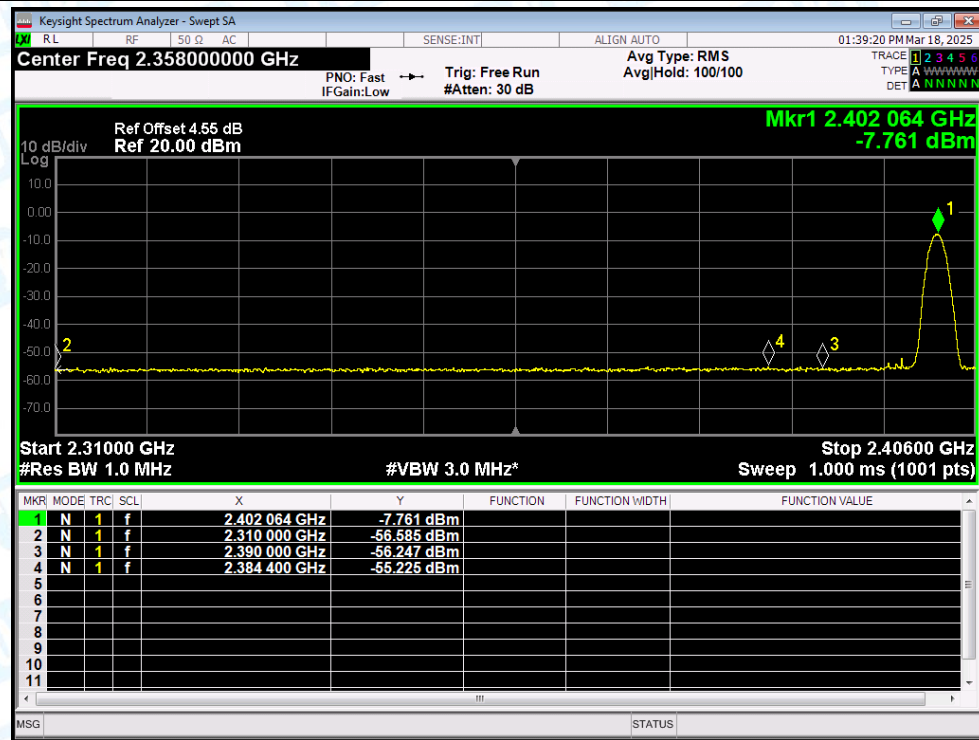
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



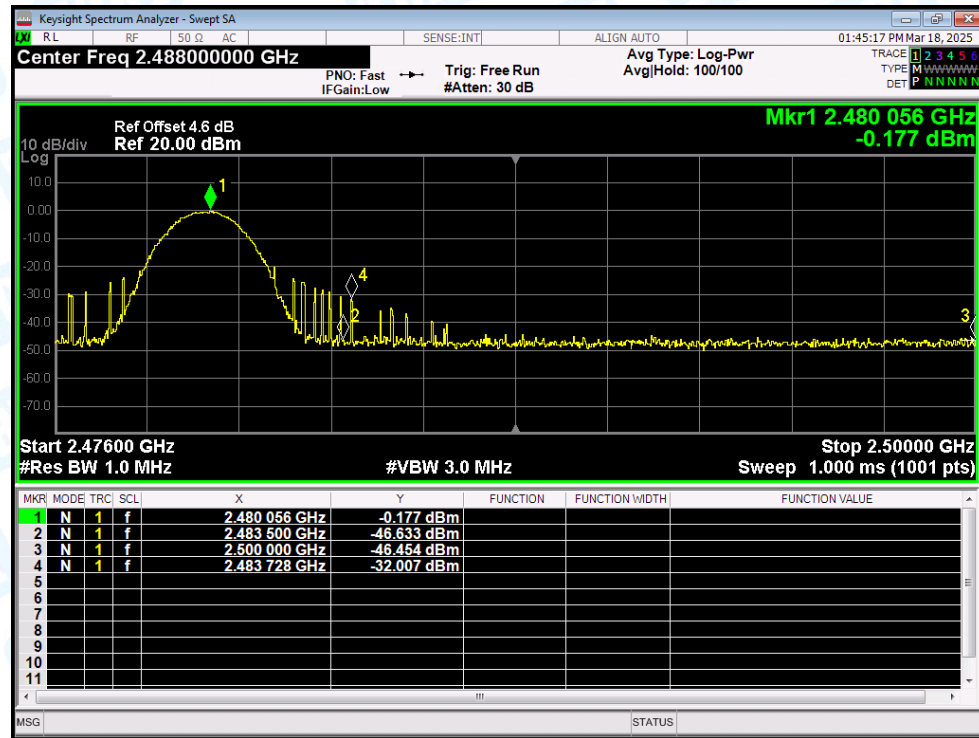
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



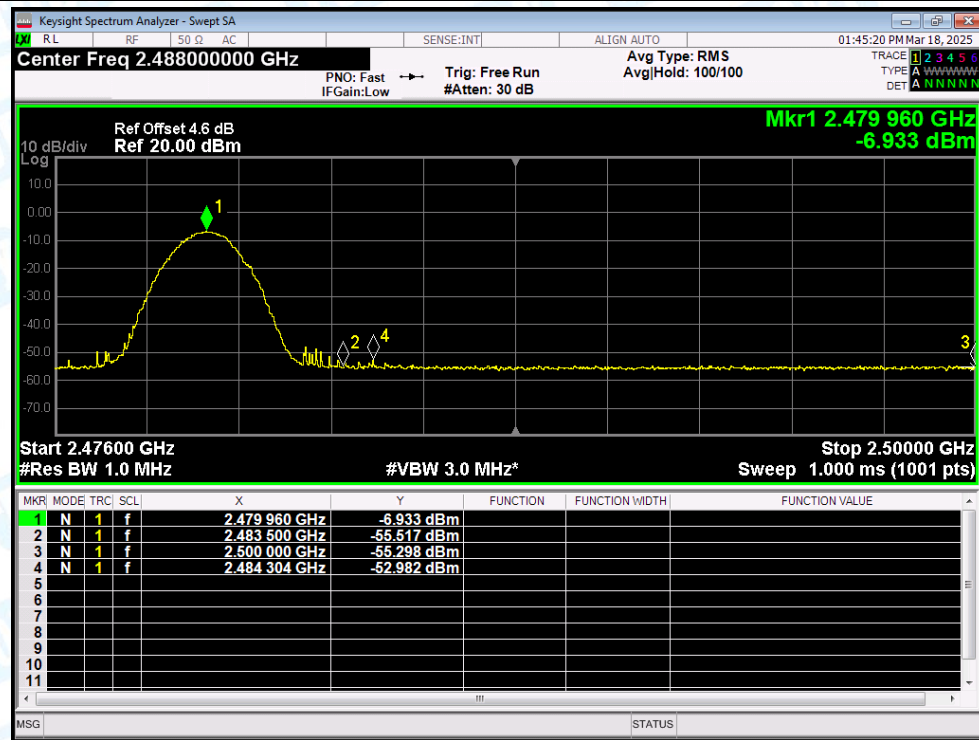
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

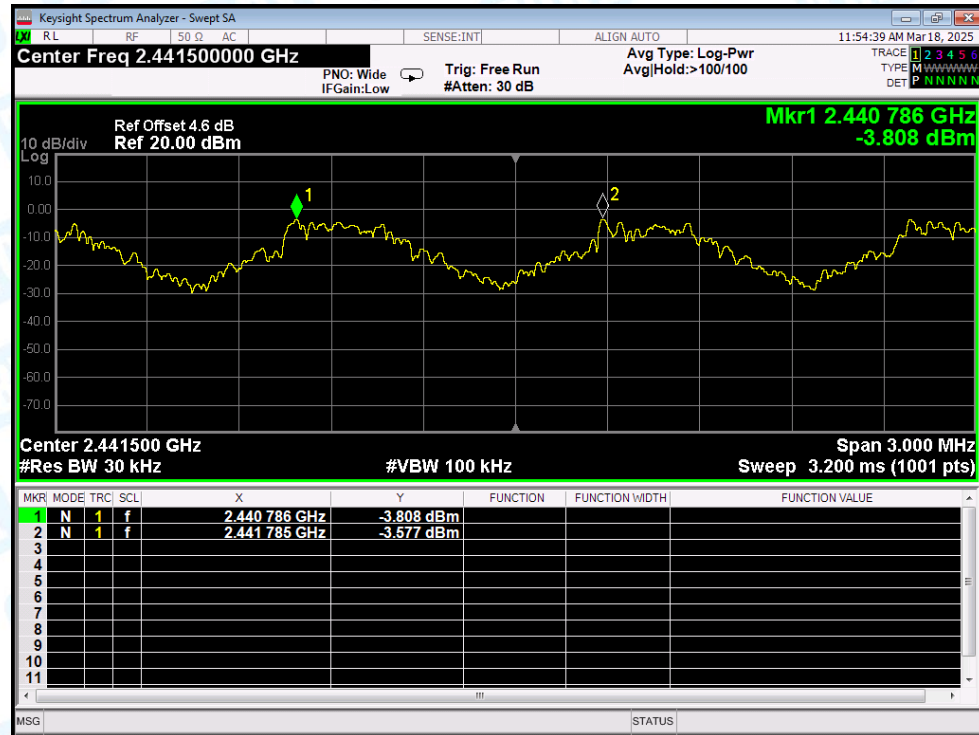


9. Carrier Frequencies Separation

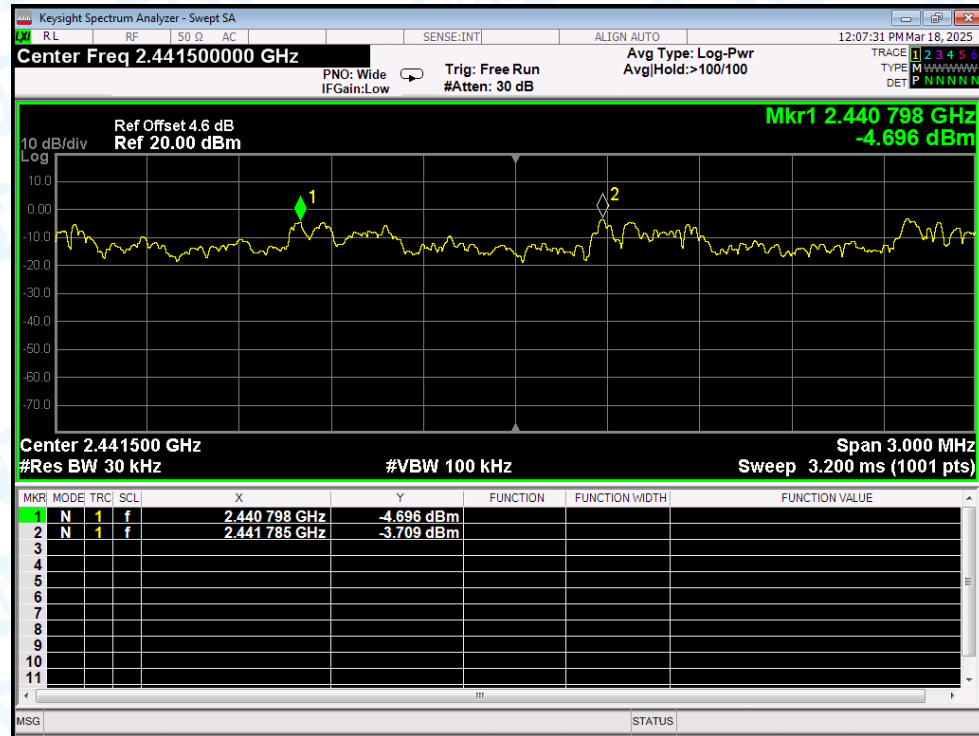
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.786	2441.785	0.999	0.58	Pass
NVNT	2-DH1	Ant1	2440.798	2441.785	0.987	0.827	Pass
NVNT	3-DH1	Ant1	2440.792	2441.794	1.002	0.827	Pass

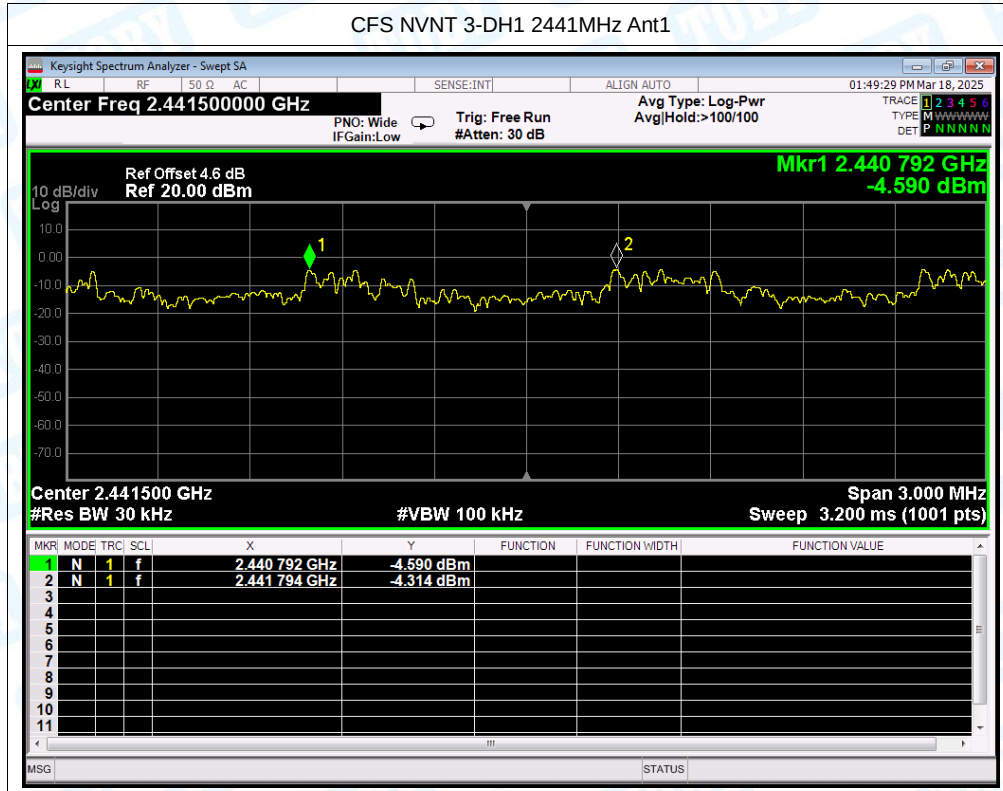
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



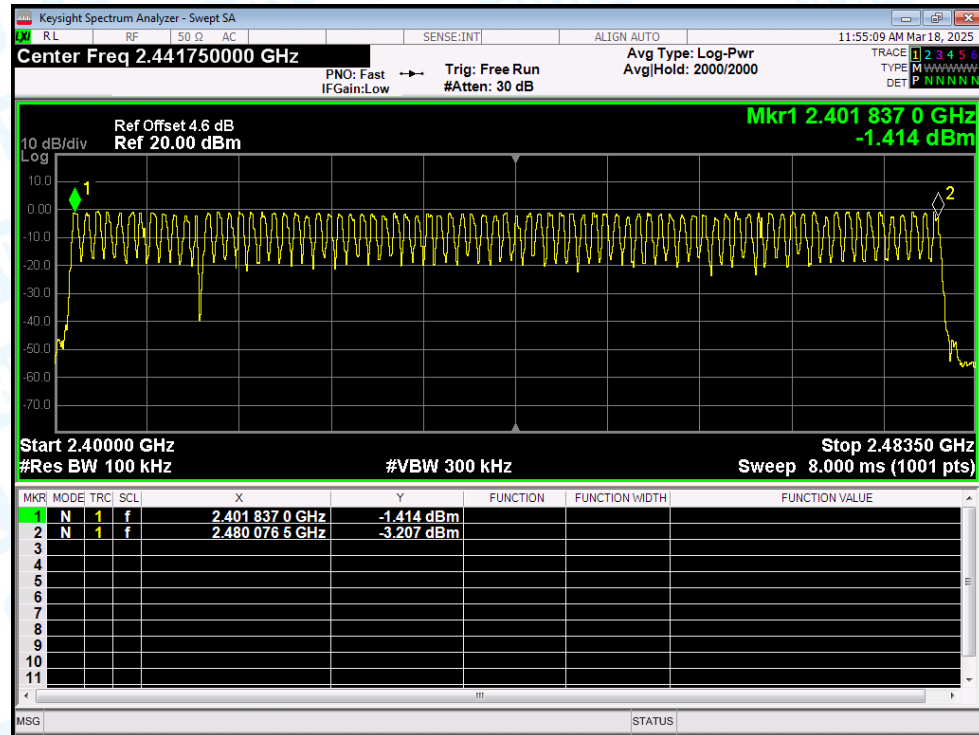


10. Number of Hopping Channel

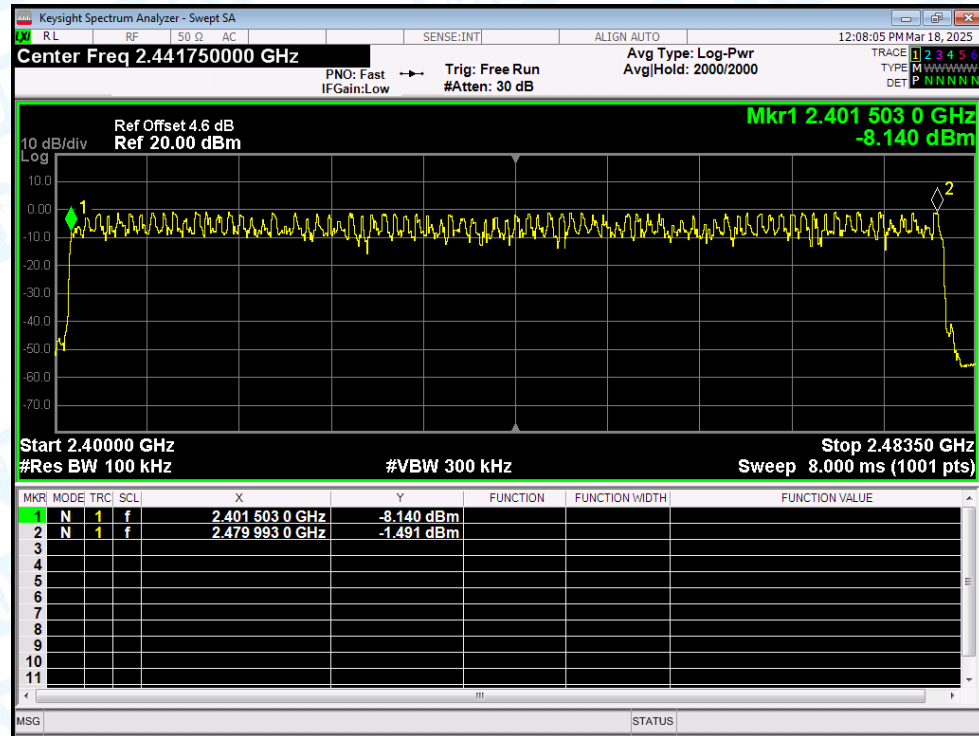
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

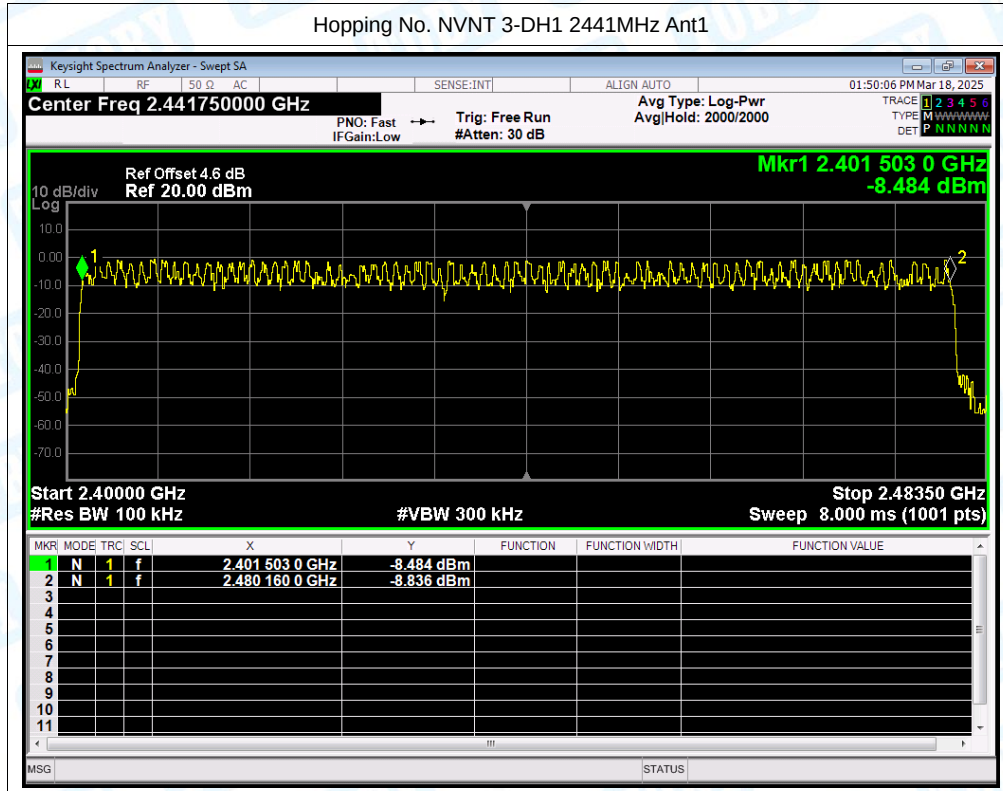
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



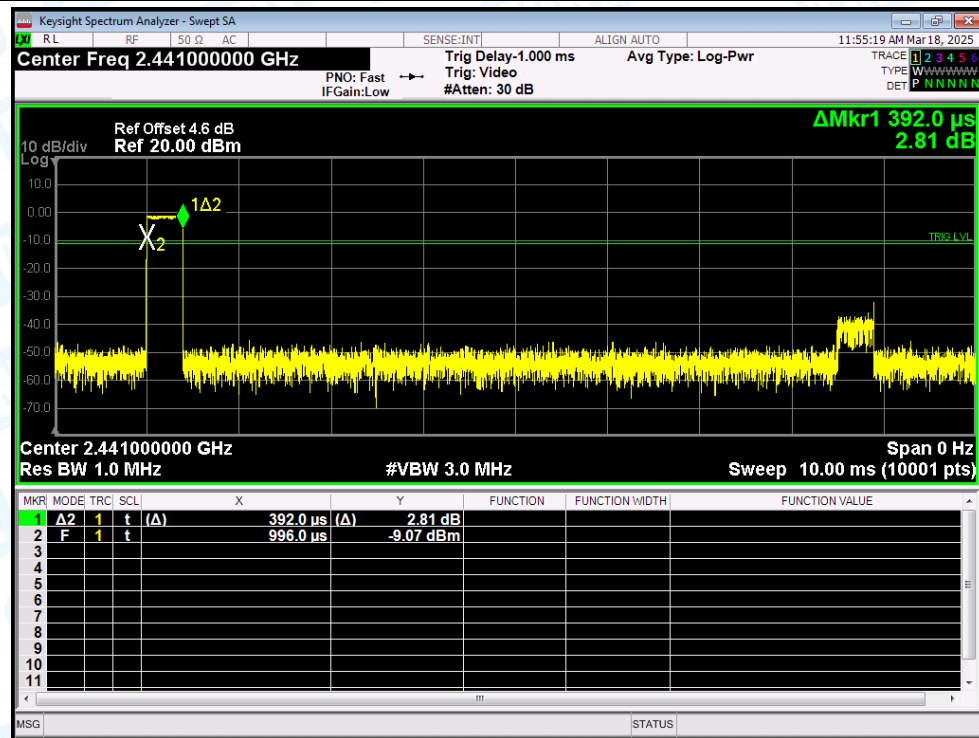


11. Dwell Time

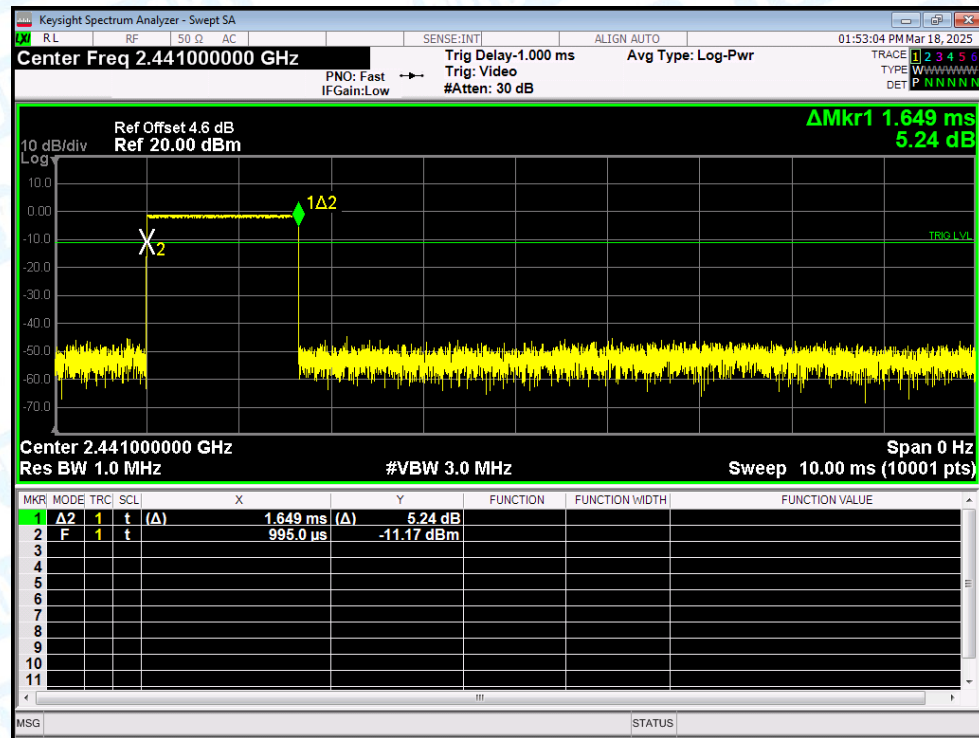
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.392	125.44	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.649	263.84	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.897	309.013	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.403	128.96	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.655	264.8	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.903	309.653	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.403	128.96	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.654	264.64	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.904	309.76	31600	400	Pass

Test Graphs

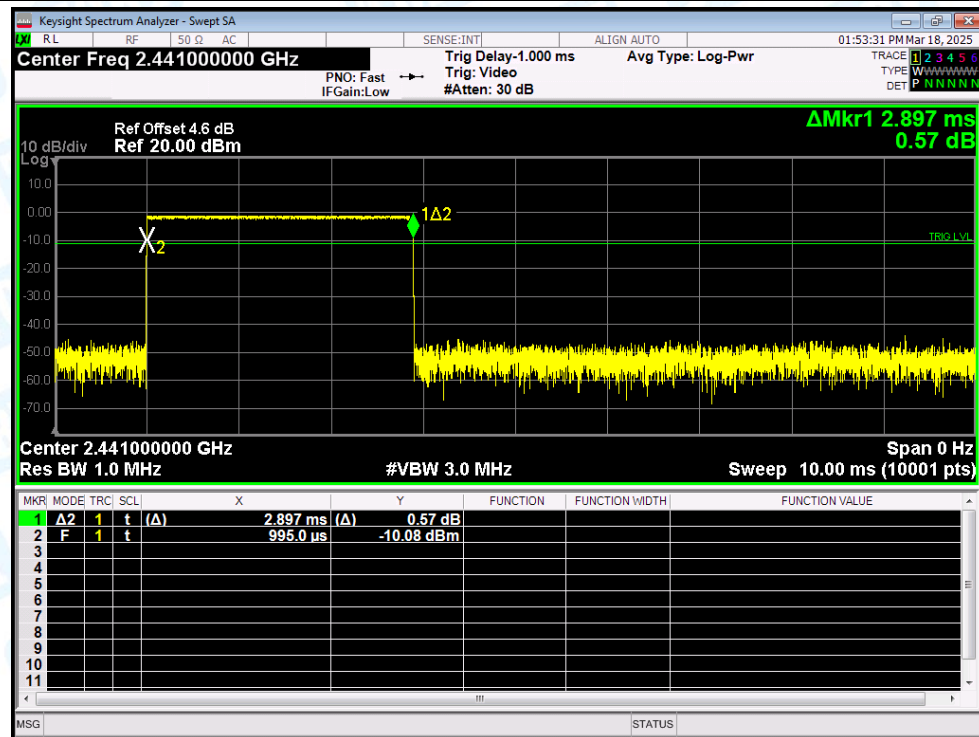
Dwell NVNT 1-DH1 2441MHz Ant1



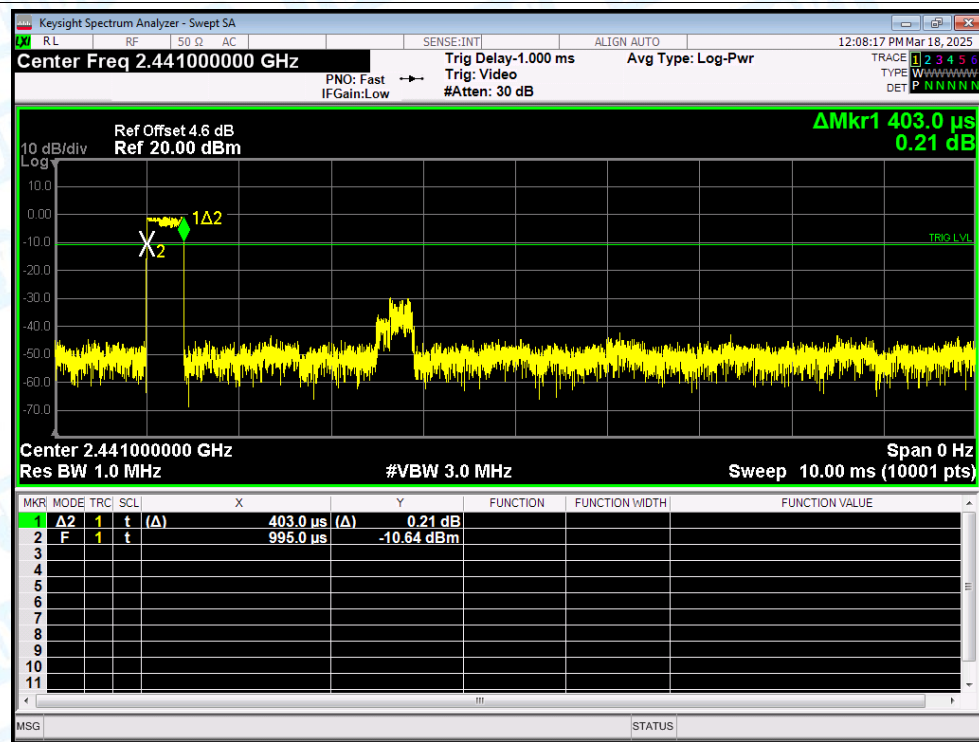
Dwell NVNT 1-DH3 2441MHz Ant1



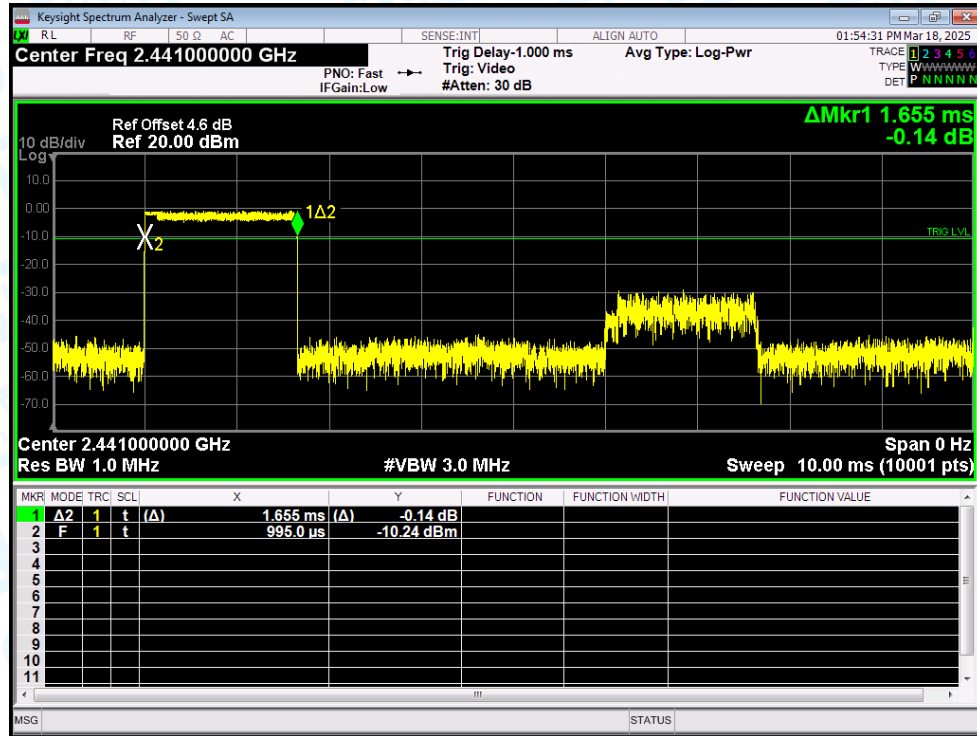
Dwell NVNT 1-DH5 2441MHz Ant1



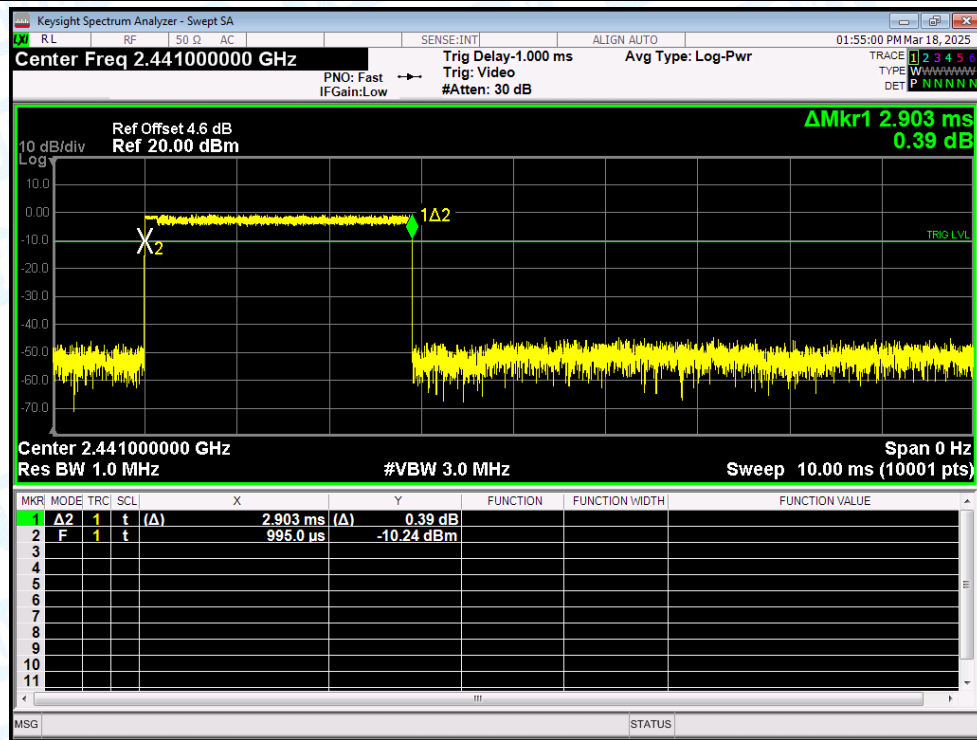
Dwell NVNT 2-DH1 2441MHz Ant1



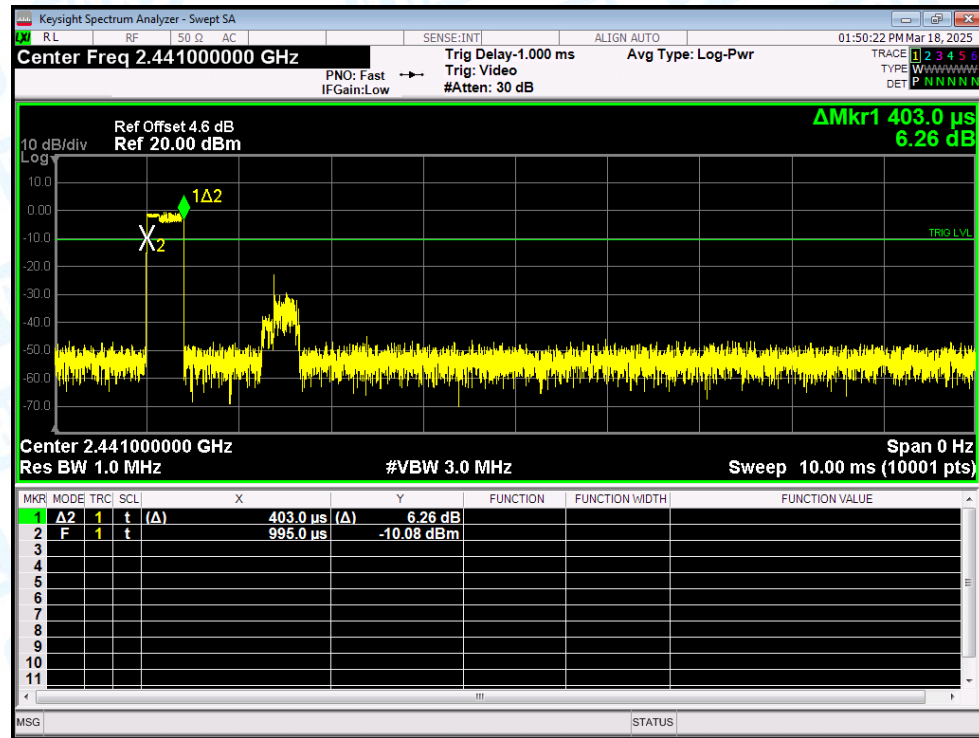
Dwell NVNT 2-DH3 2441MHz Ant1



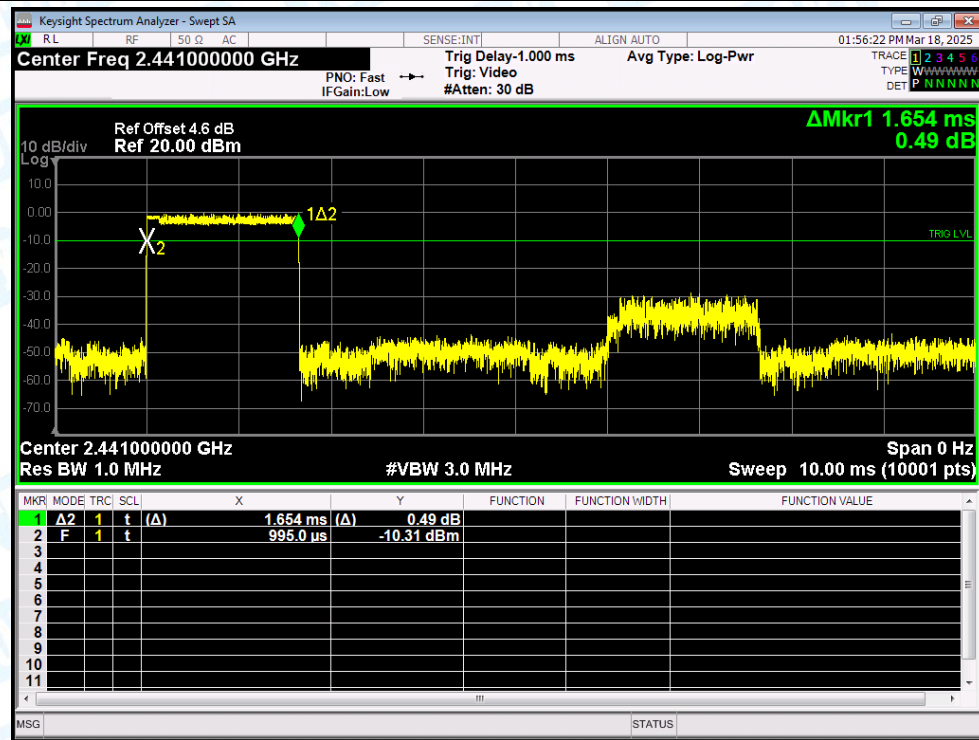
Dwell NVNT 2-DH5 2441MHz Ant1

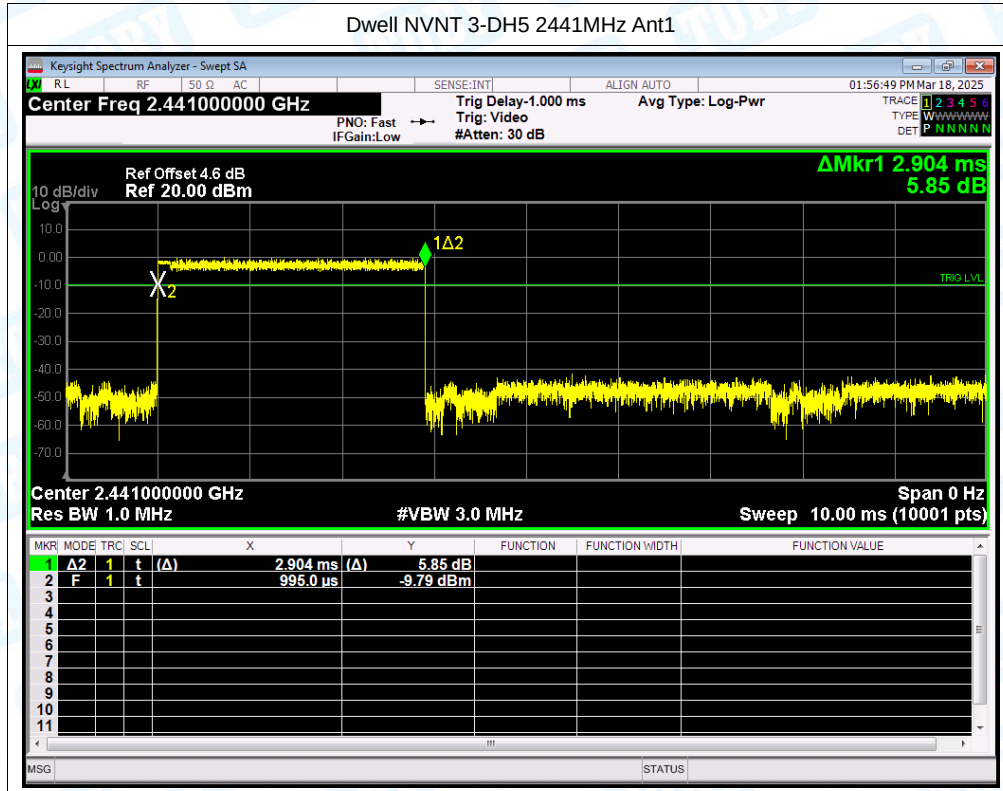


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





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