

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	Smart Watch
Test Model:	KE8
Sample ID:	HC-C-202503-0061-01-01
Environmental Conditions	
Temperature:	24.6℃
Relative Humidity:	48.6%
Test Voltage:	DC 3.8V
Test Engineer:	Lily zhang
Note: For a more detailed features description, please refer to the report TBR-C-202503-0061-12 The report only show the worst case data.	

Contents

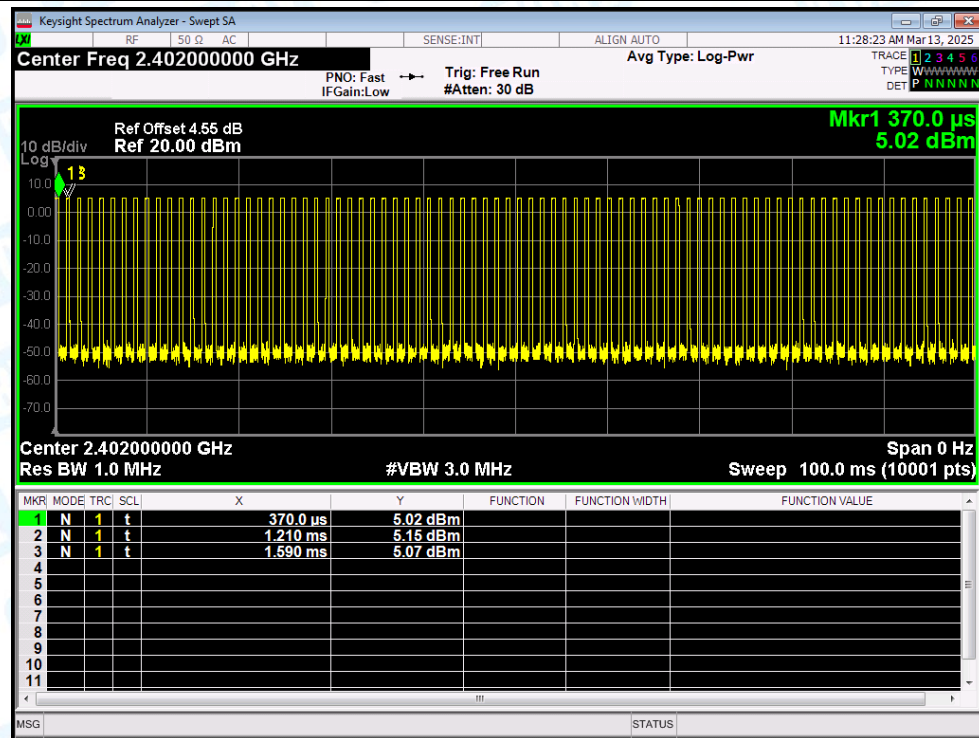
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1. Duty Cycle

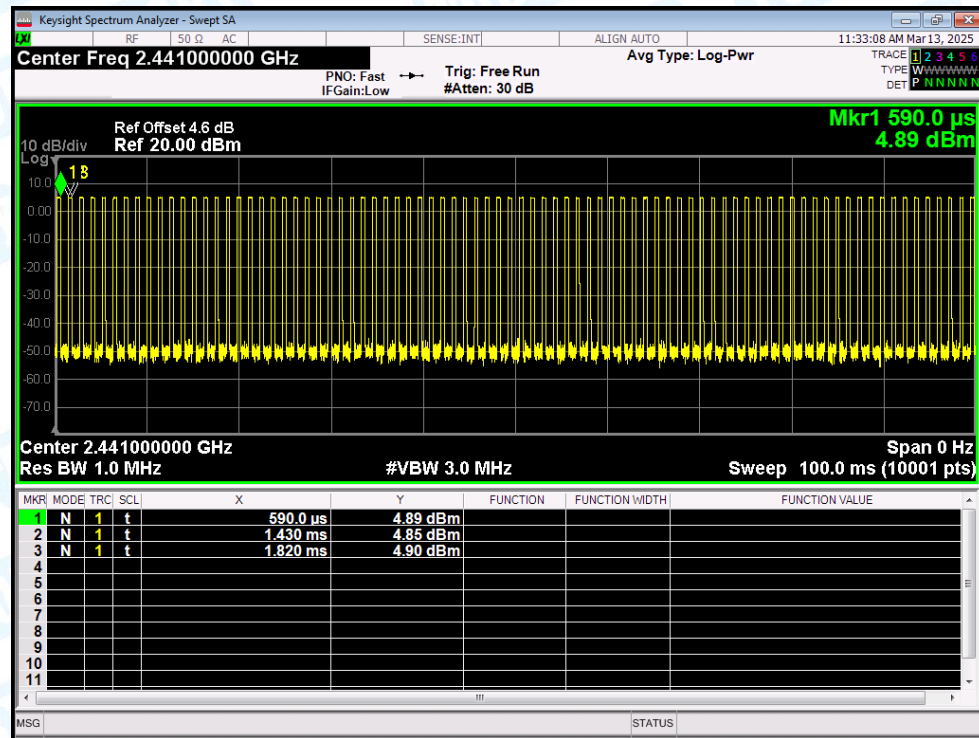
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	31.15	5.07	2.63
NVNT	1-DH1	2441	Ant1	31.71	4.99	2.56
NVNT	1-DH1	2480	Ant1	31.71	4.99	2.56
NVNT	2-DH1	2402	Ant1	31.71	4.99	2.56
NVNT	2-DH1	2441	Ant1	31.71	4.99	2.56
NVNT	2-DH1	2480	Ant1	31.45	5.02	2.56
NVNT	3-DH1	2402	Ant1	31.71	4.99	2.56
NVNT	3-DH1	2441	Ant1	32.26	4.91	2.5
NVNT	3-DH1	2480	Ant1	31.45	5.02	2.56

Test Graphs

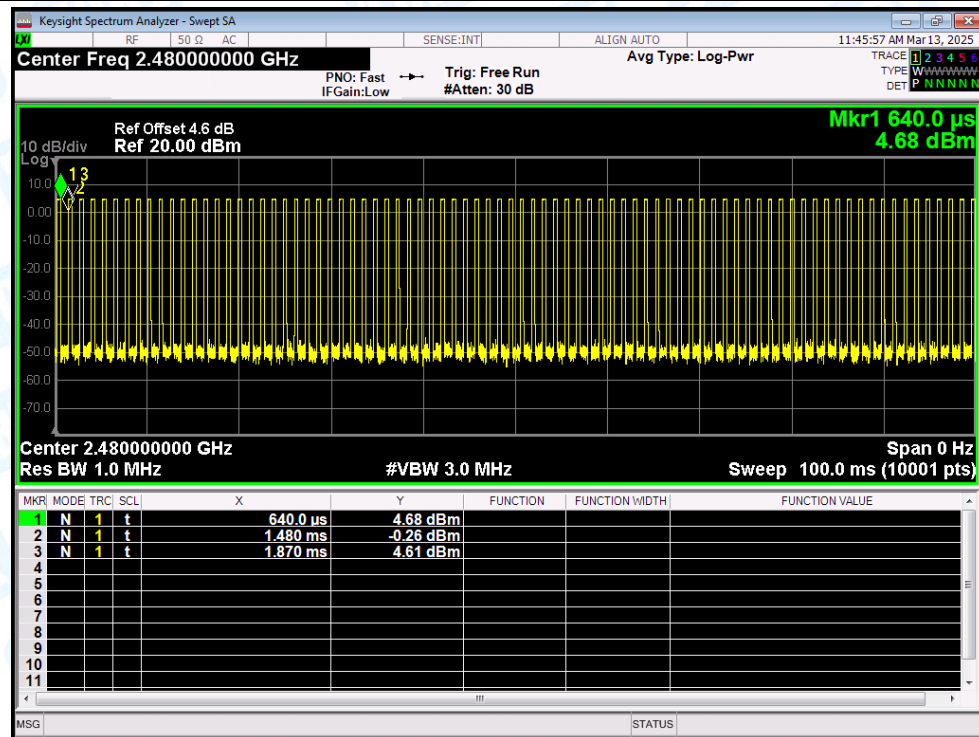
Duty Cycle NVNT 1-DH1 2402MHz Ant1



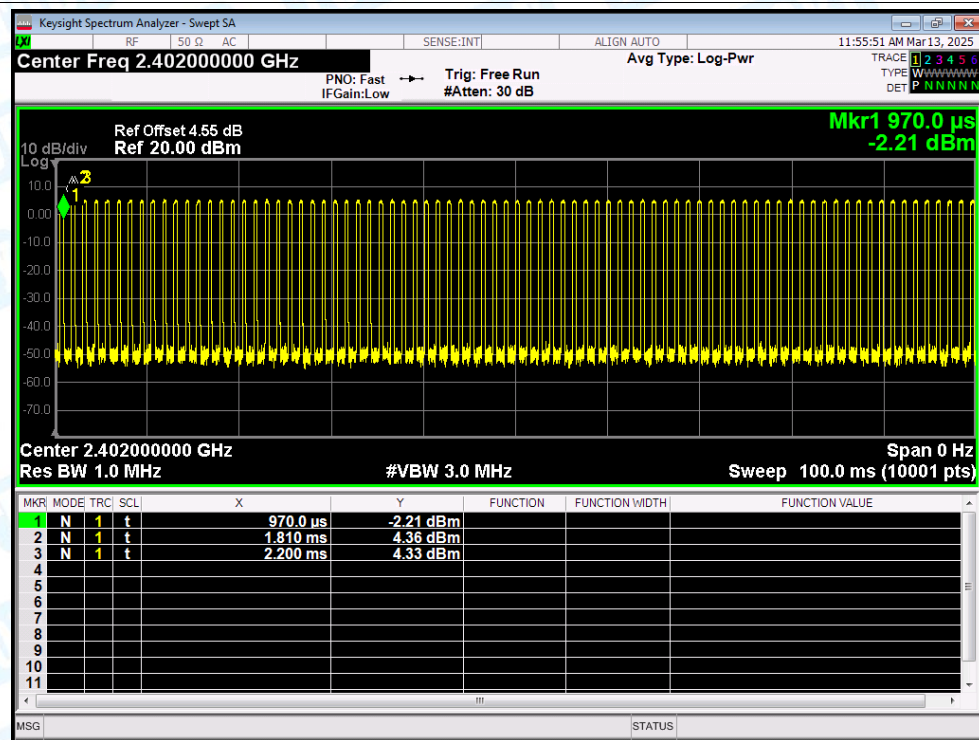
Duty Cycle NVNT 1-DH1 2441MHz Ant1



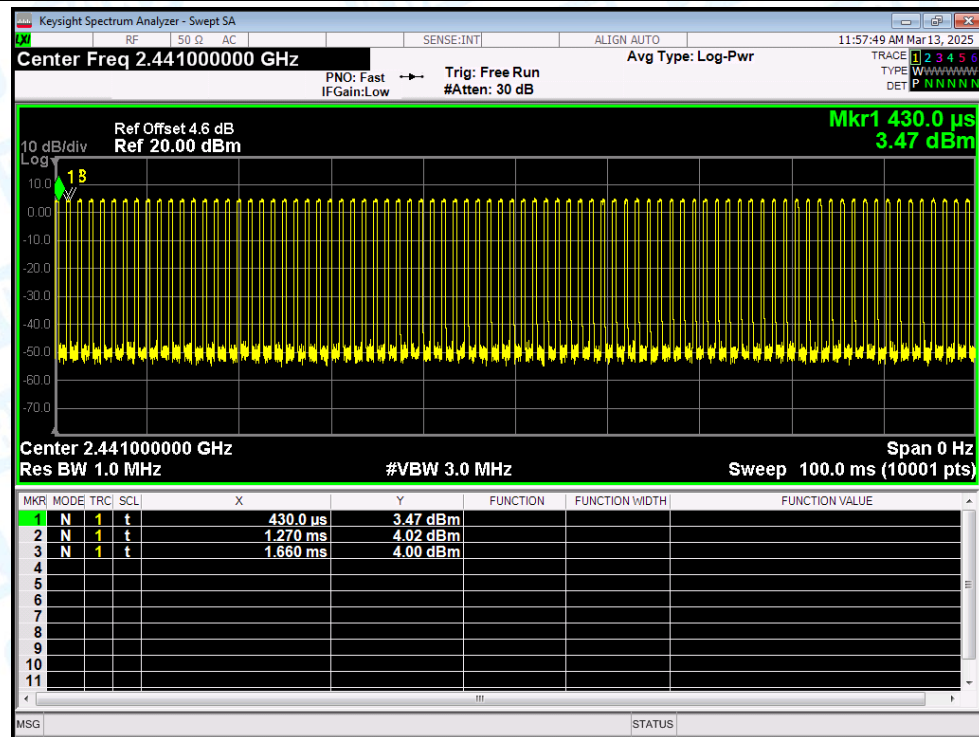
Duty Cycle NVNT 1-DH1 2480MHz Ant1



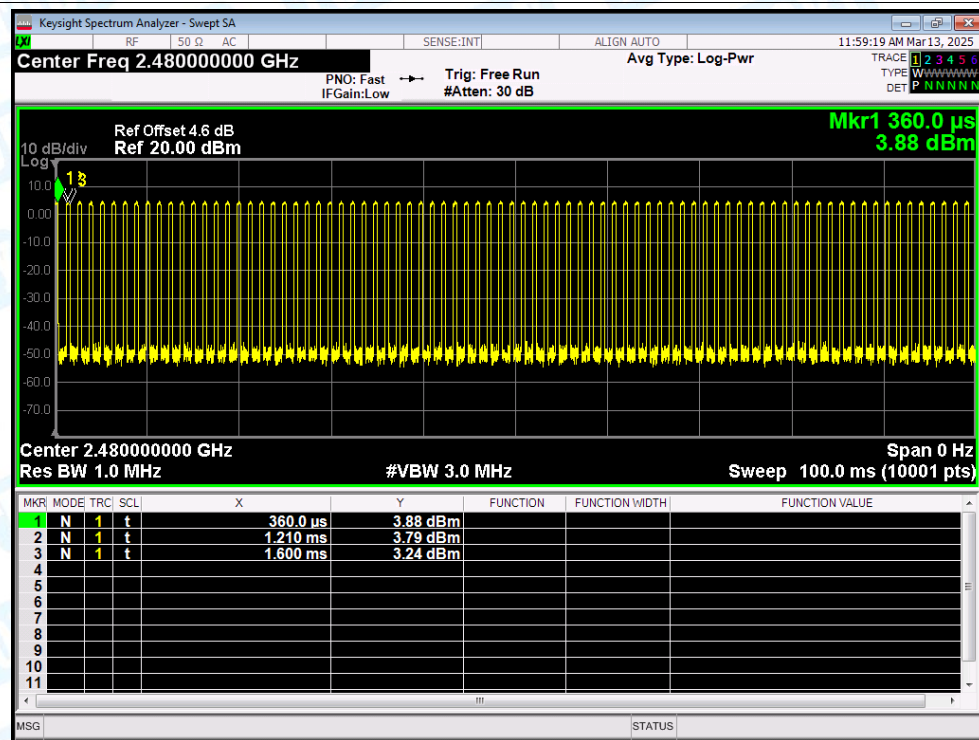
Duty Cycle NVNT 2-DH1 2402MHz Ant1



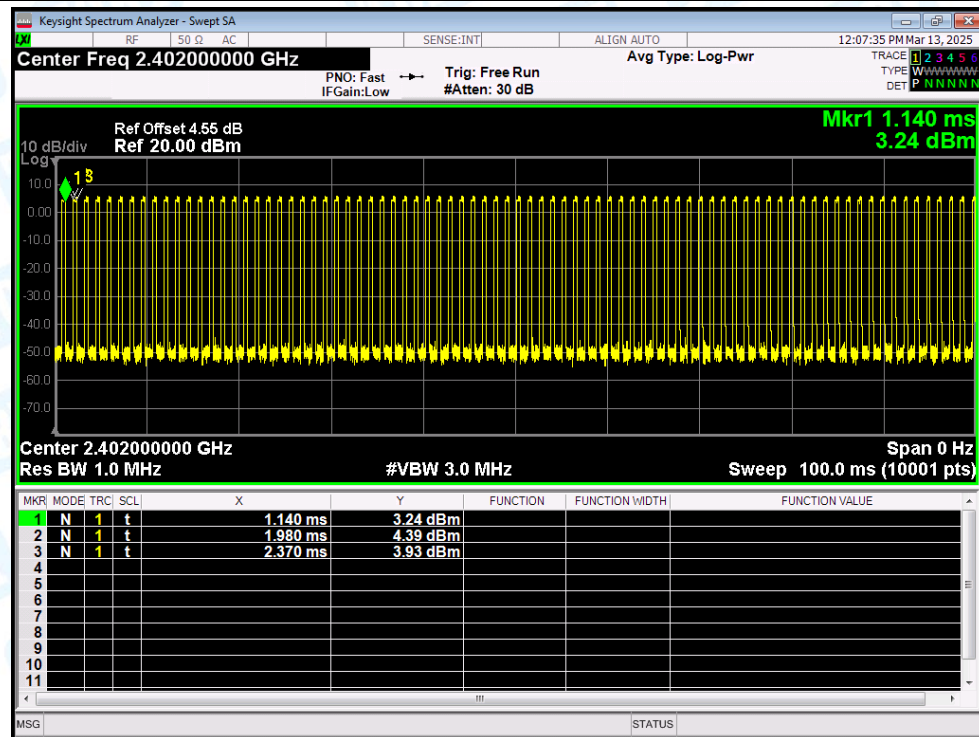
Duty Cycle NVNT 2-DH1 2441MHz Ant1



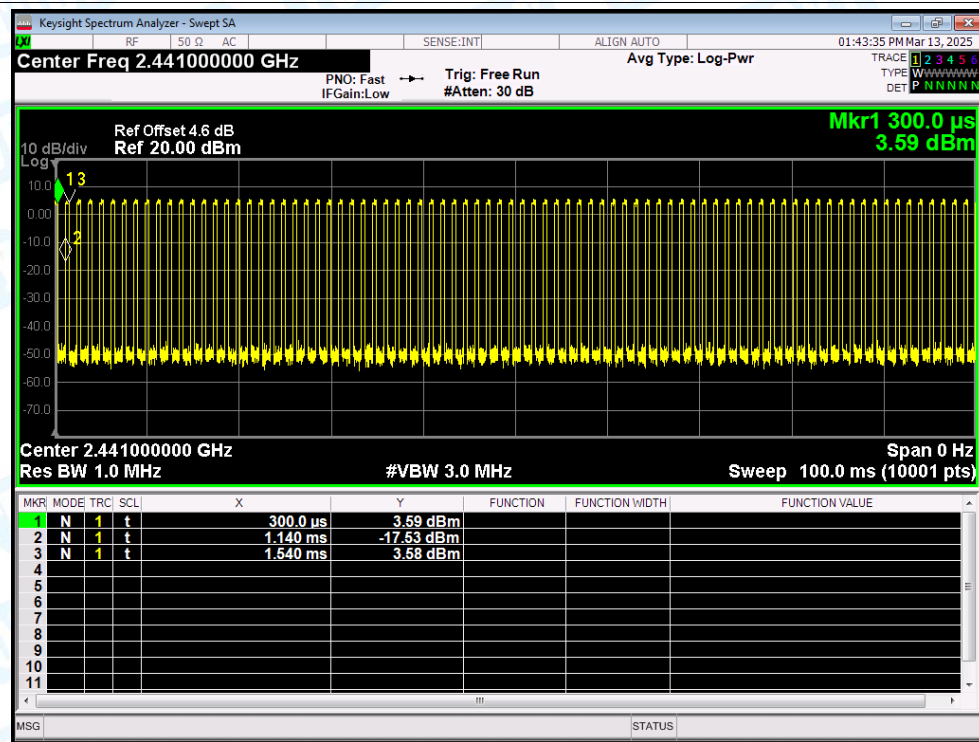
Duty Cycle NVNT 2-DH1 2480MHz Ant1

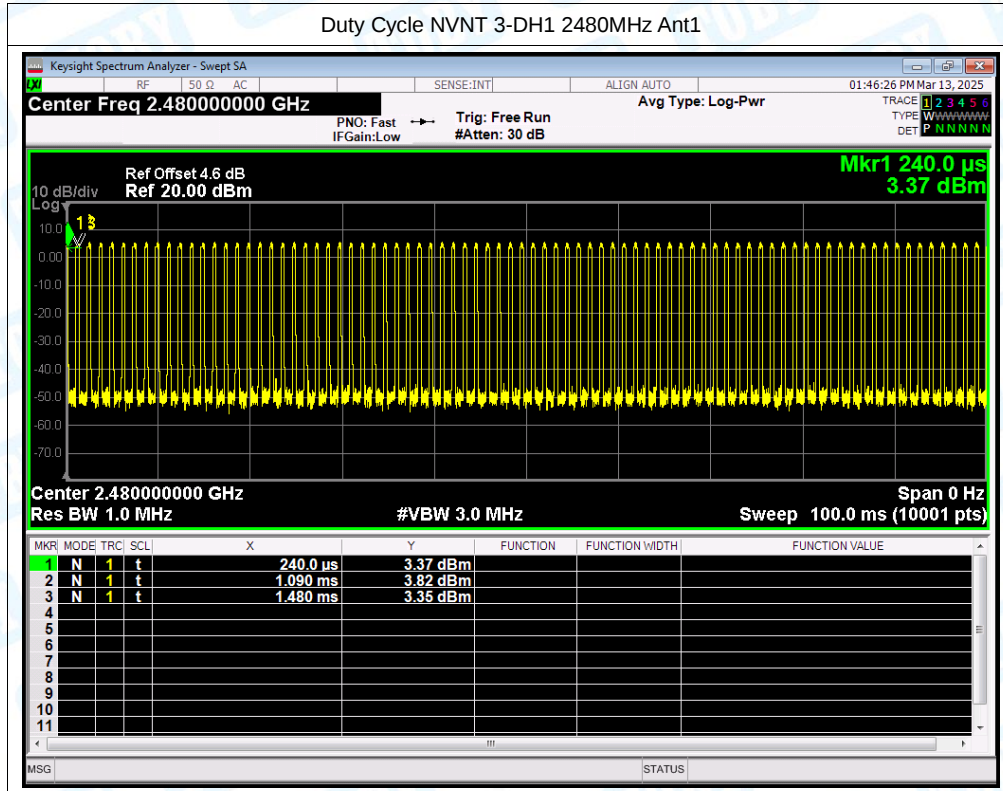


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



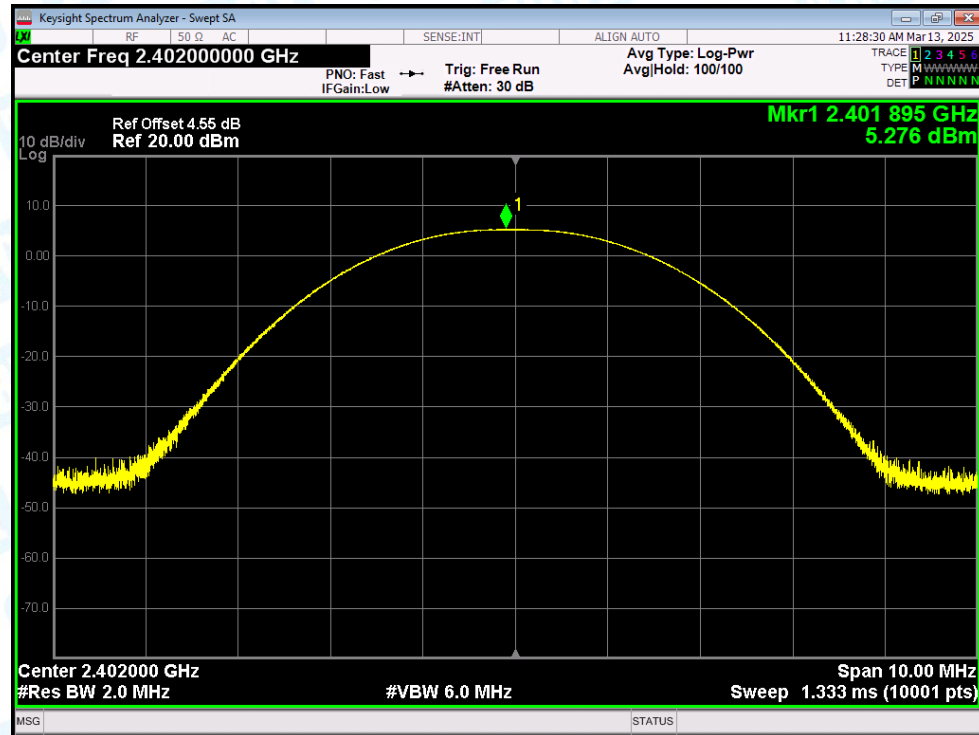


2. Maximum Conducted Output Power

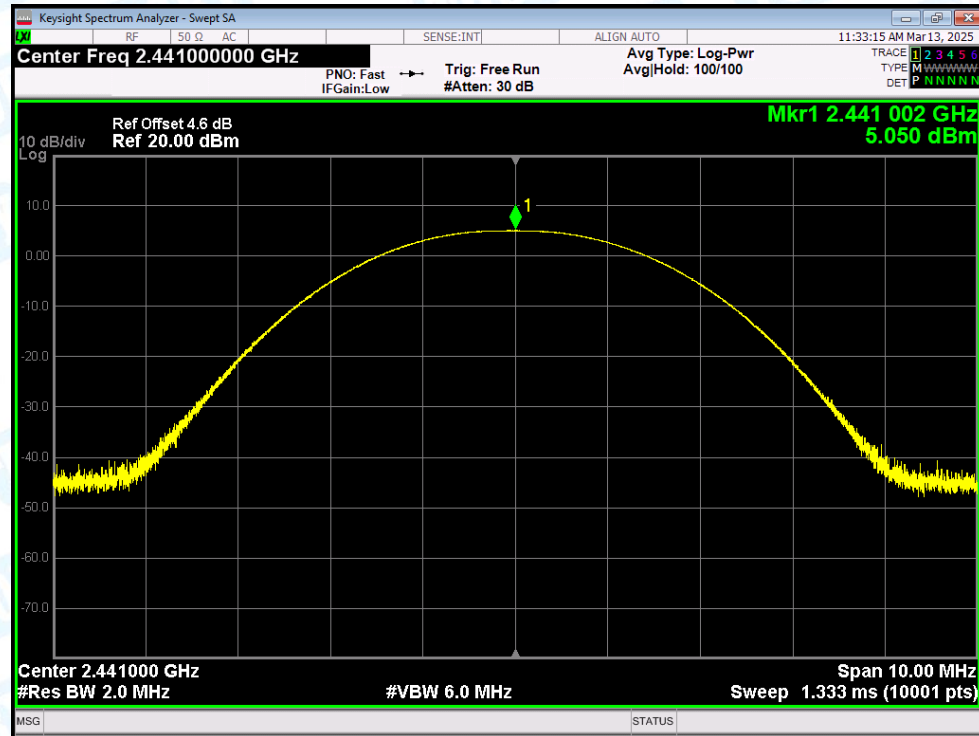
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	5.276	21	Pass
NVNT	1-DH1	2441	Ant1	5.05	21	Pass
NVNT	1-DH1	2480	Ant1	4.862	21	Pass
NVNT	2-DH1	2402	Ant1	5.673	21	Pass
NVNT	2-DH1	2441	Ant1	5.391	21	Pass
NVNT	2-DH1	2480	Ant1	5.136	21	Pass
NVNT	3-DH1	2402	Ant1	6.342	21	Pass
NVNT	3-DH1	2441	Ant1	5.942	21	Pass
NVNT	3-DH1	2480	Ant1	5.743	21	Pass

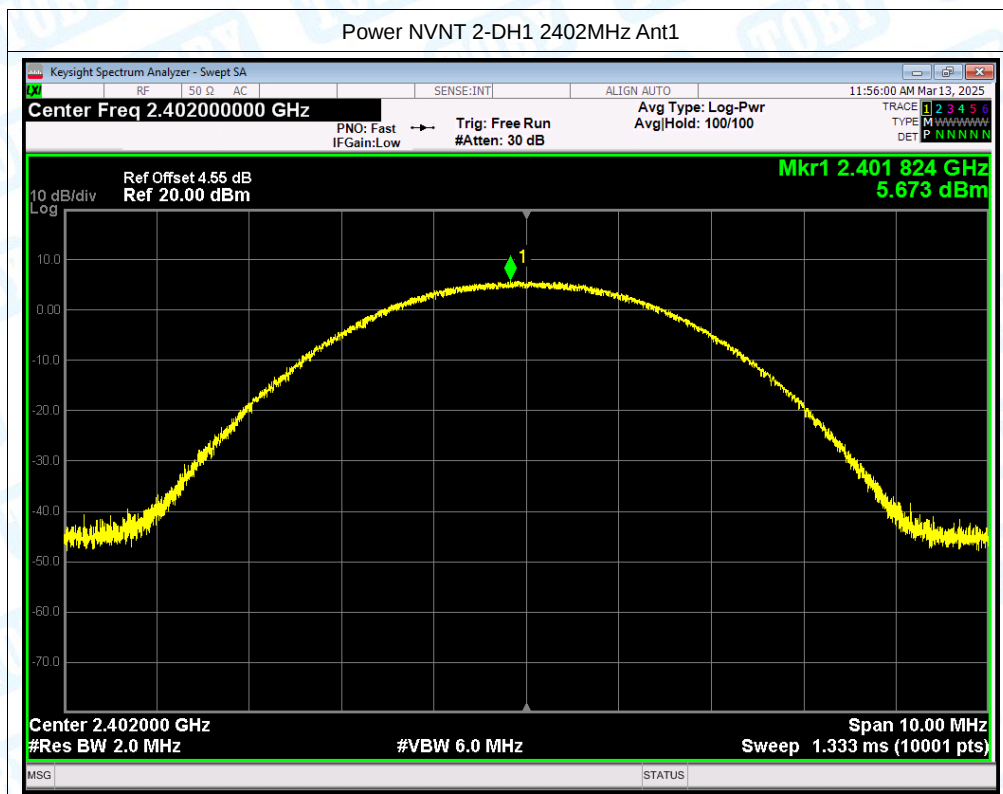
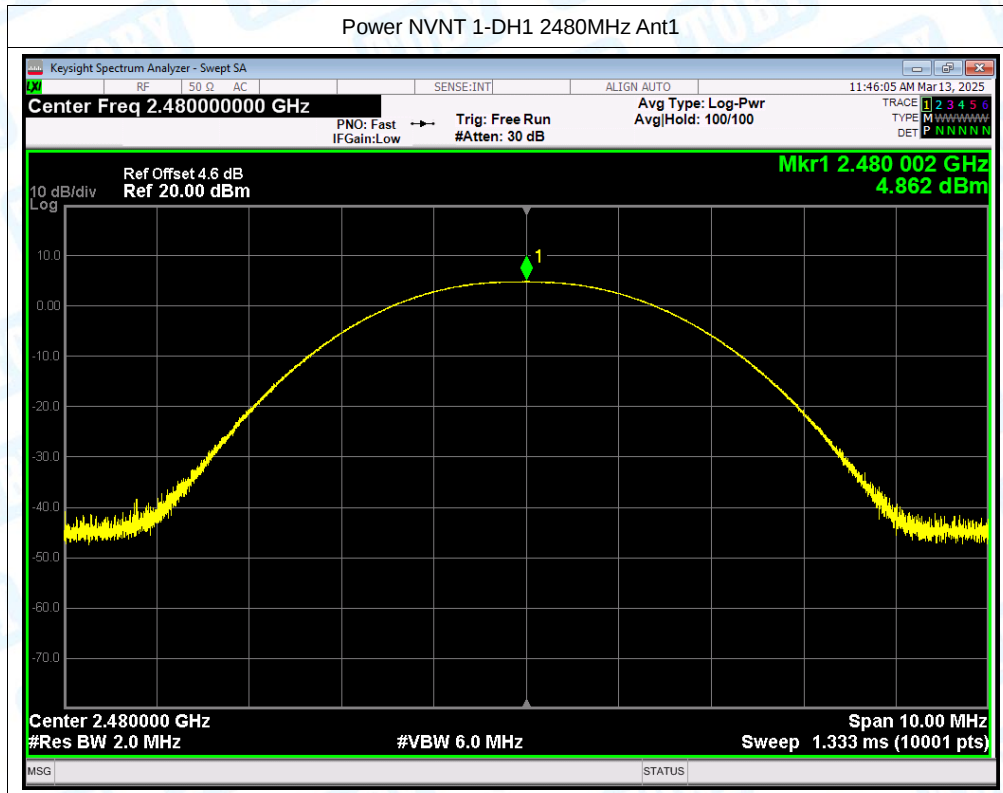
Test Graphs

Power NVNT 1-DH1 2402MHz Ant1

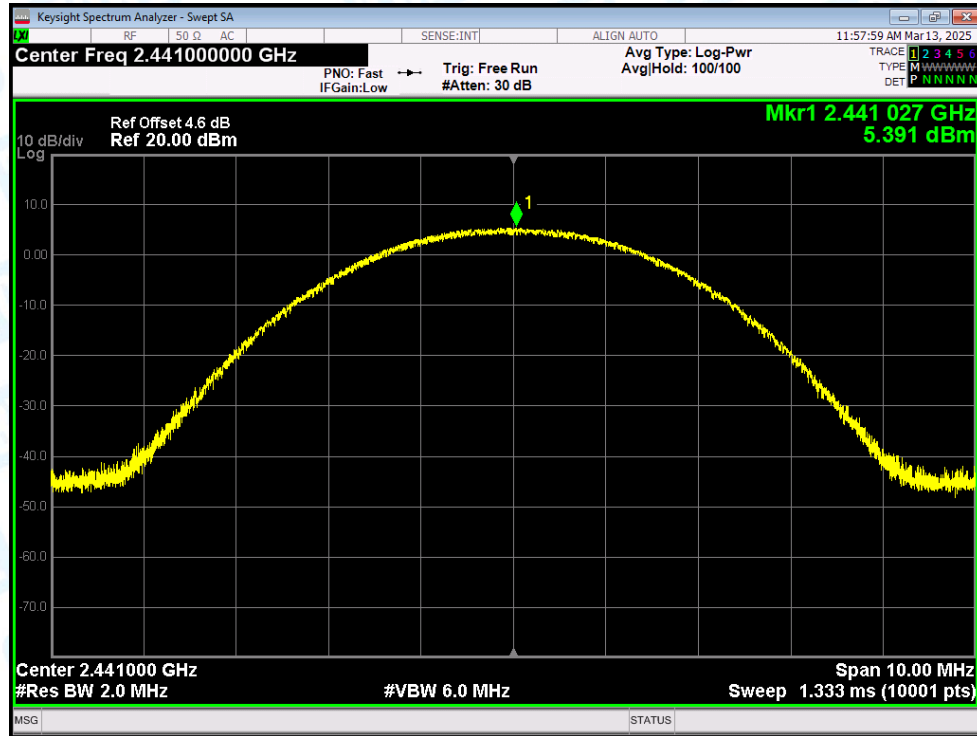


Power NVNT 1-DH1 2441MHz Ant1

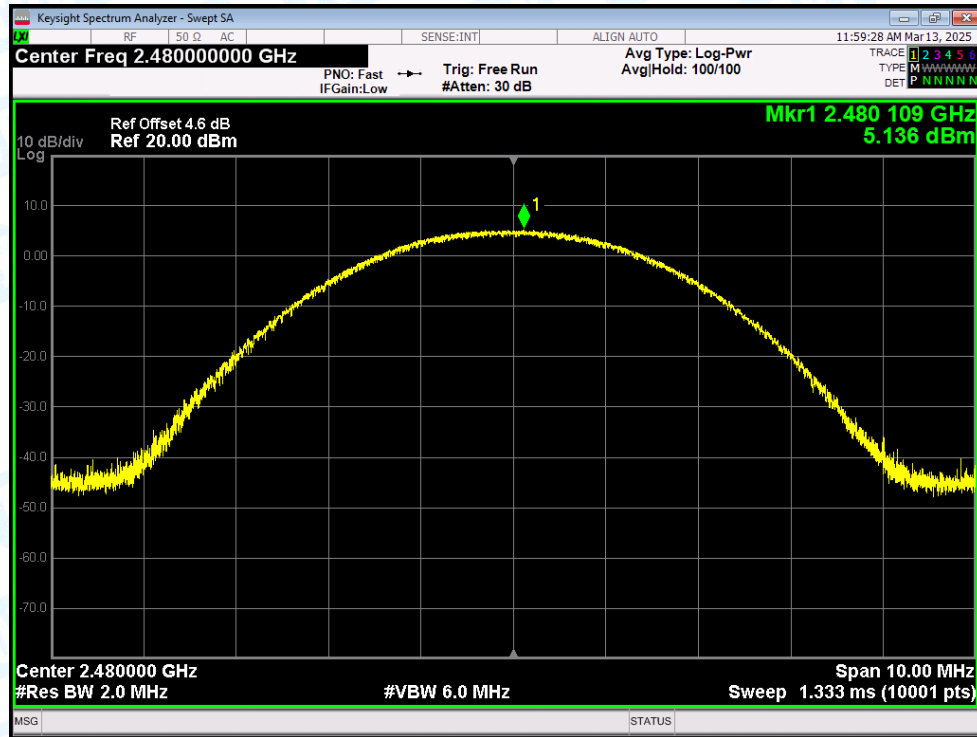




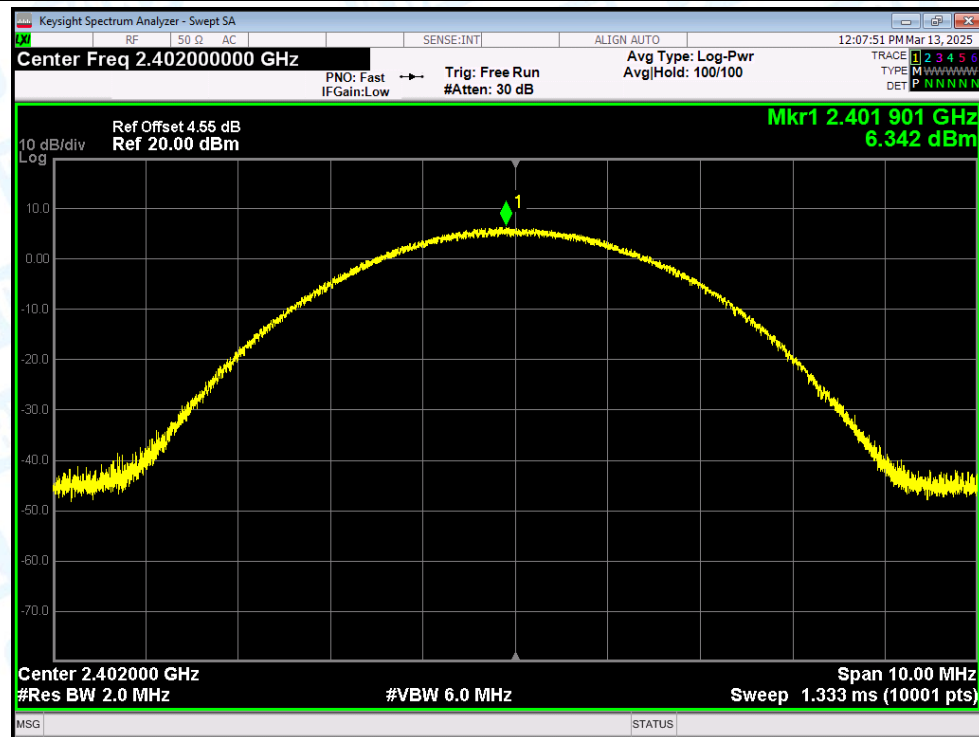
Power NVNT 2-DH1 2441MHz Ant1



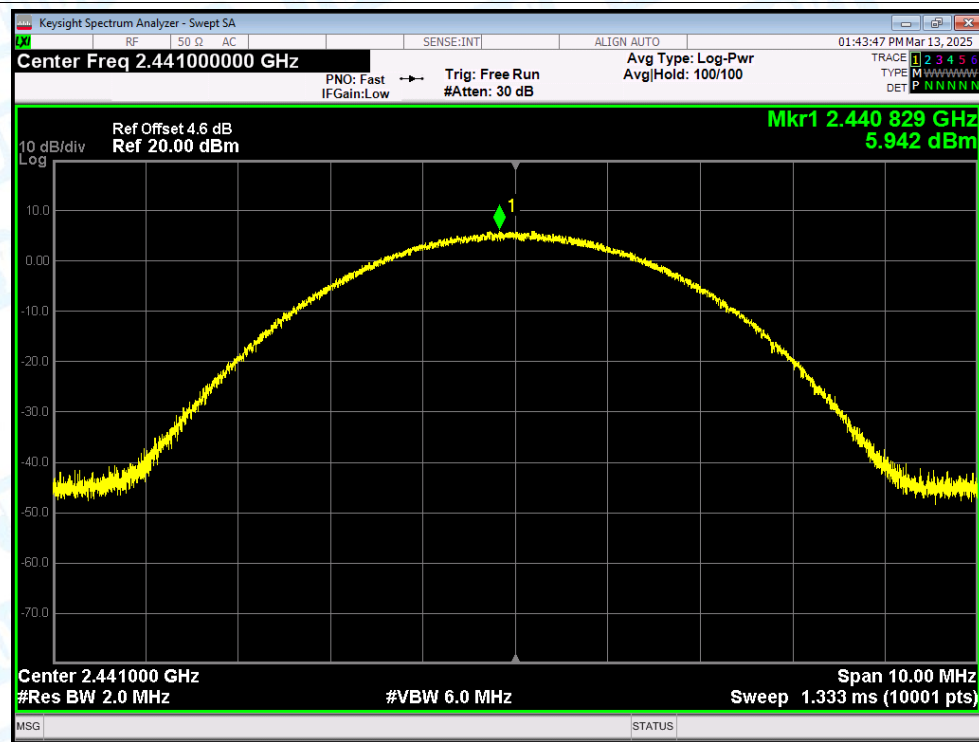
Power NVNT 2-DH1 2480MHz Ant1

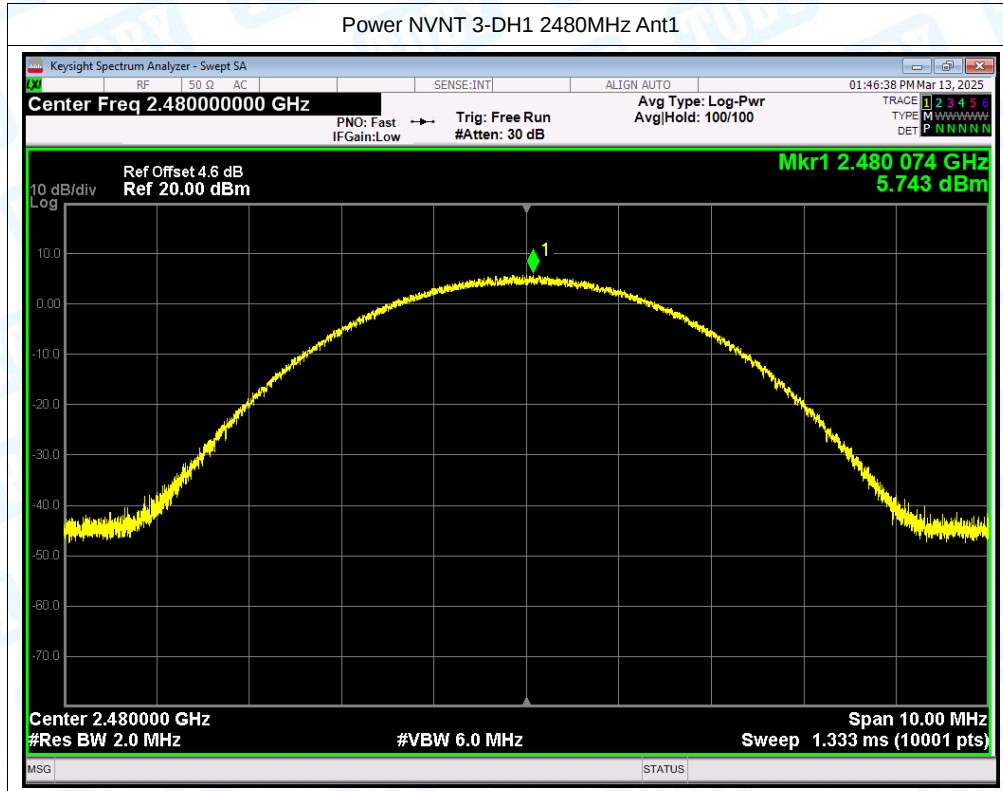


Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



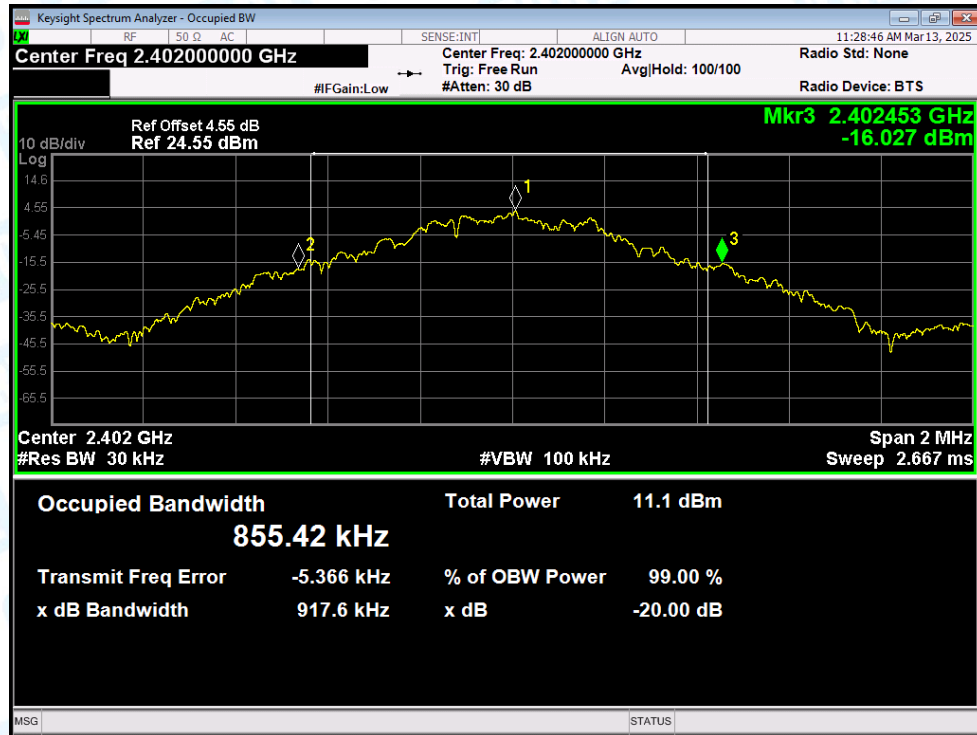


3. -20dB Bandwidth

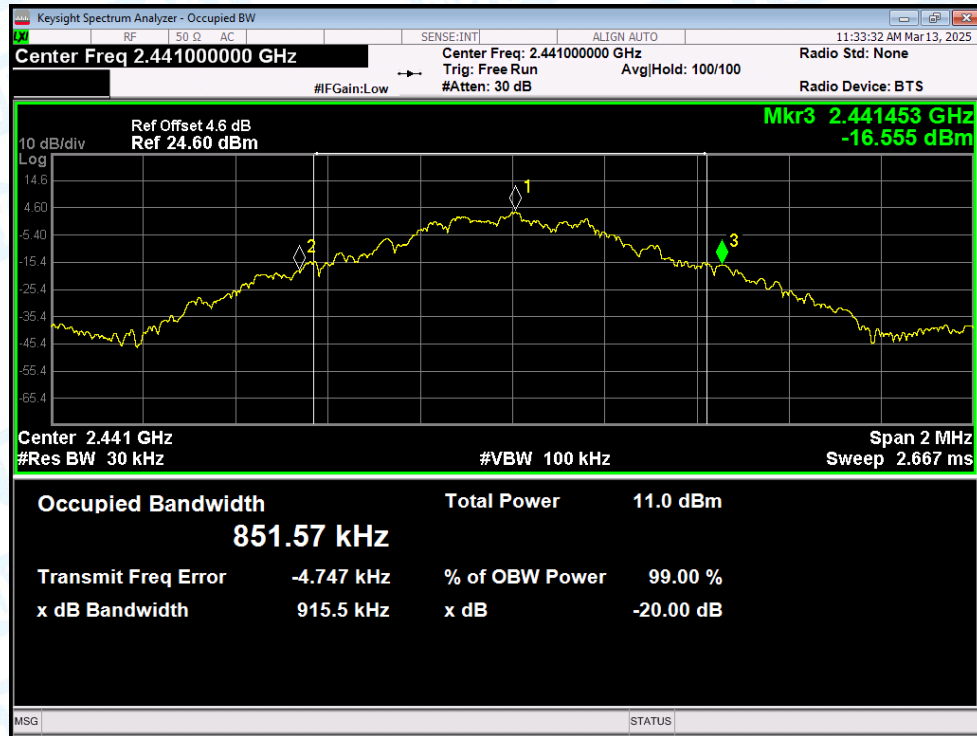
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.92	0	Pass
NVNT	1-DH1	2441	Ant1	0.92	0	Pass
NVNT	1-DH1	2480	Ant1	0.93	0	Pass
NVNT	2-DH1	2402	Ant1	1.23	0	Pass
NVNT	2-DH1	2441	Ant1	1.23	0	Pass
NVNT	2-DH1	2480	Ant1	1.19	0	Pass
NVNT	3-DH1	2402	Ant1	1.21	0	Pass
NVNT	3-DH1	2441	Ant1	1.22	0	Pass
NVNT	3-DH1	2480	Ant1	1.21	0	Pass

Test Graphs

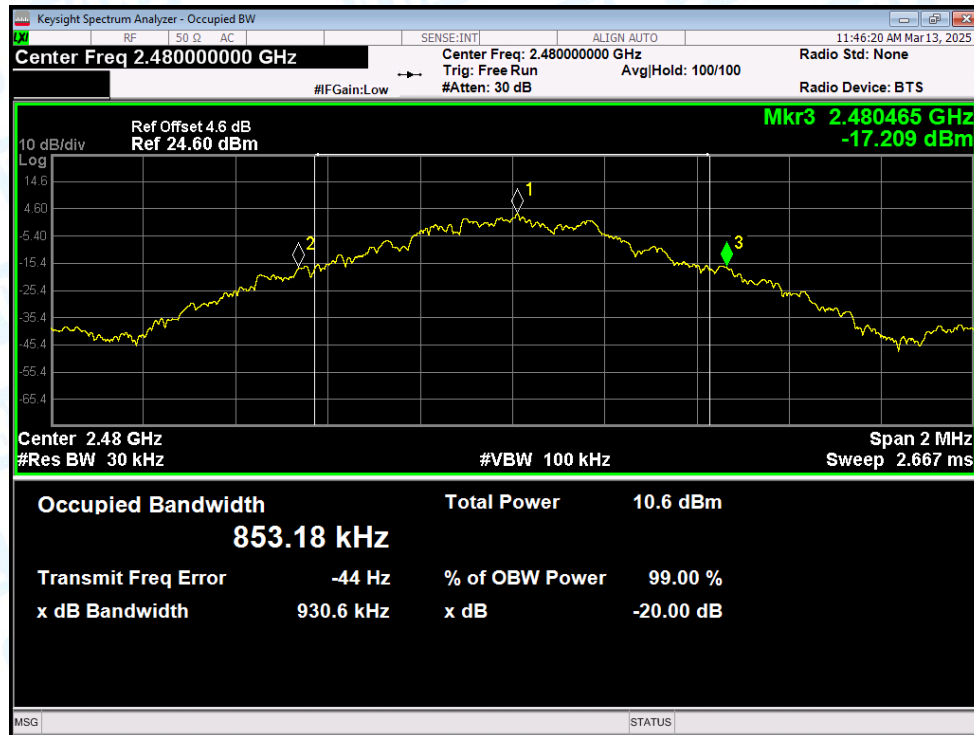
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



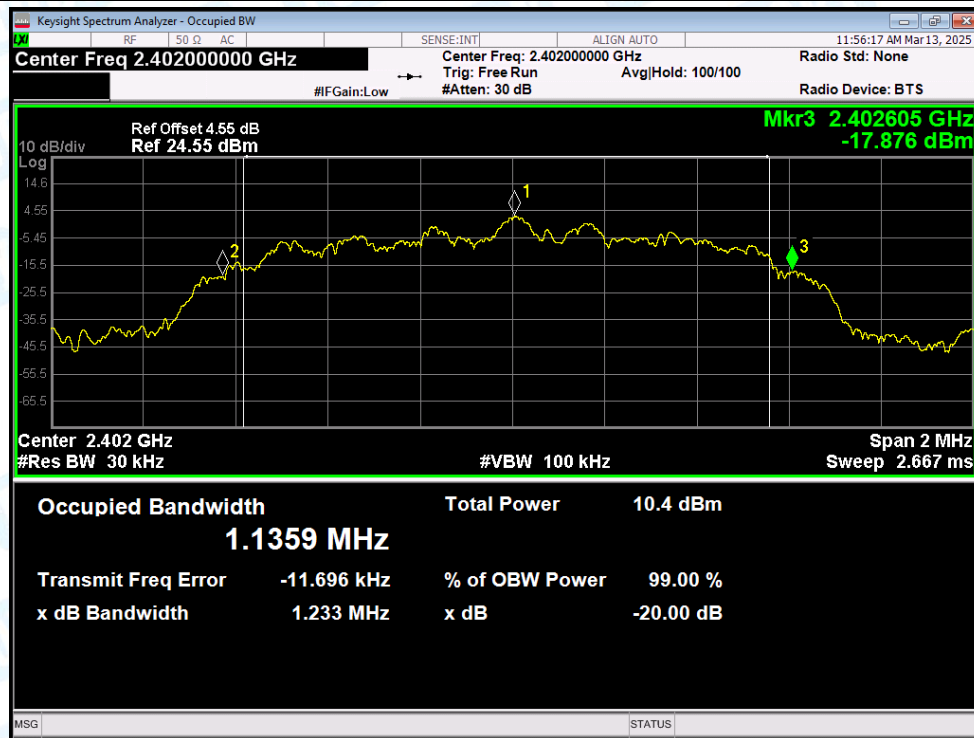
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



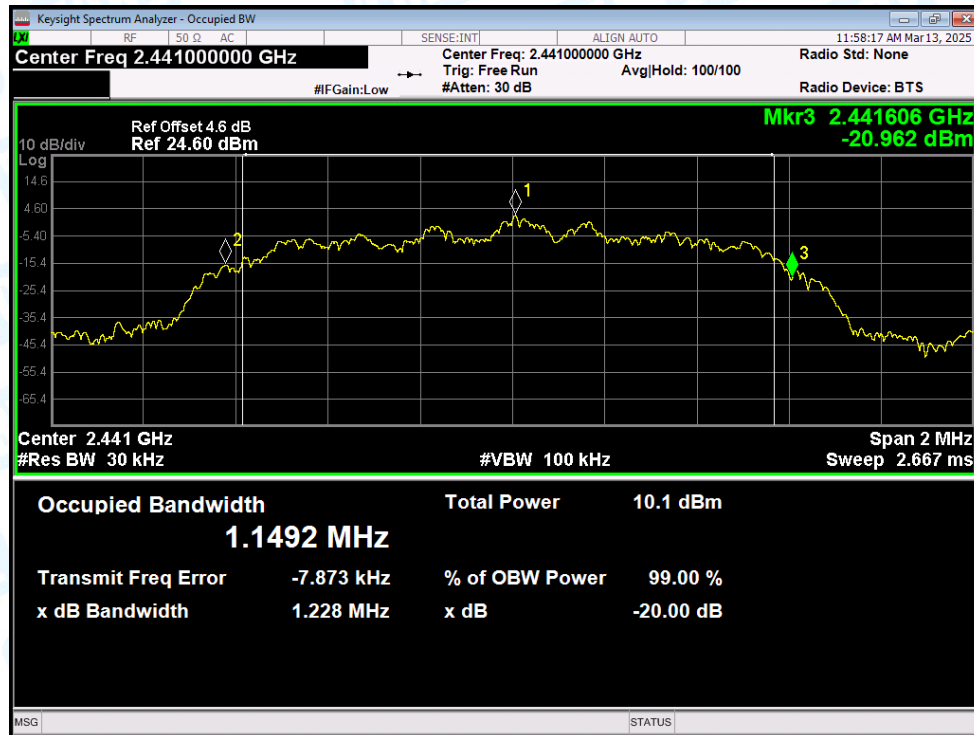
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



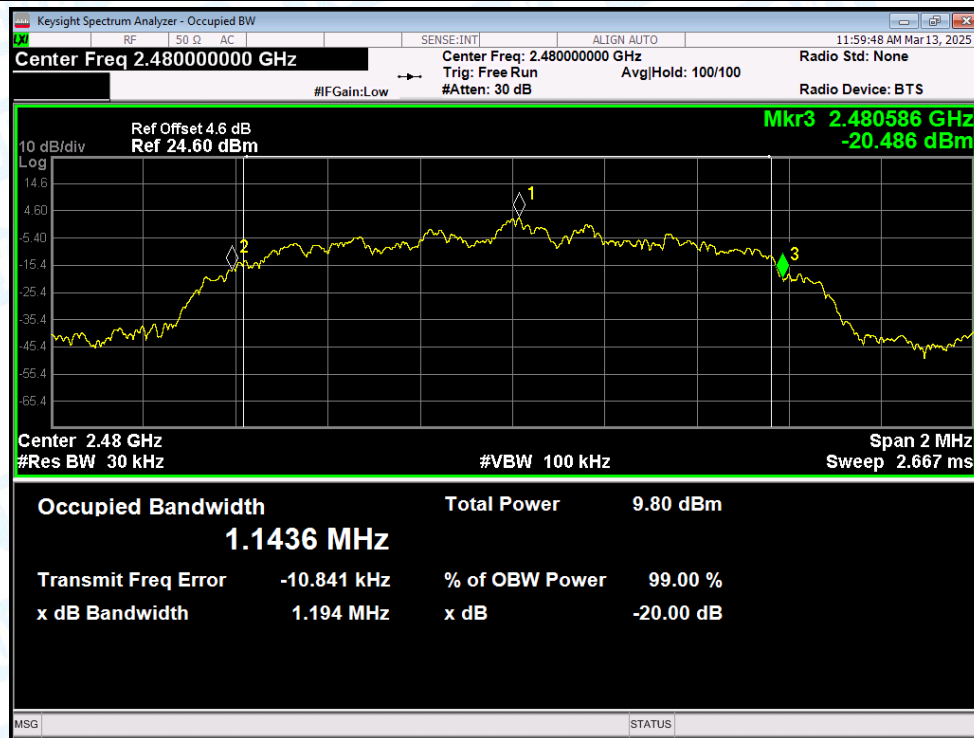
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



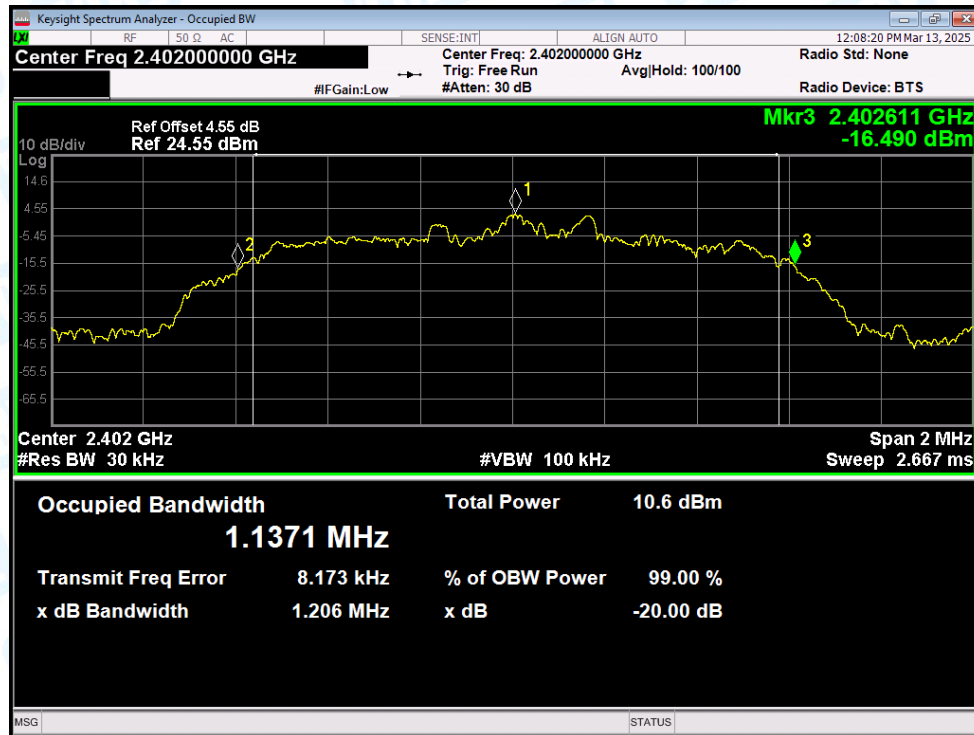
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

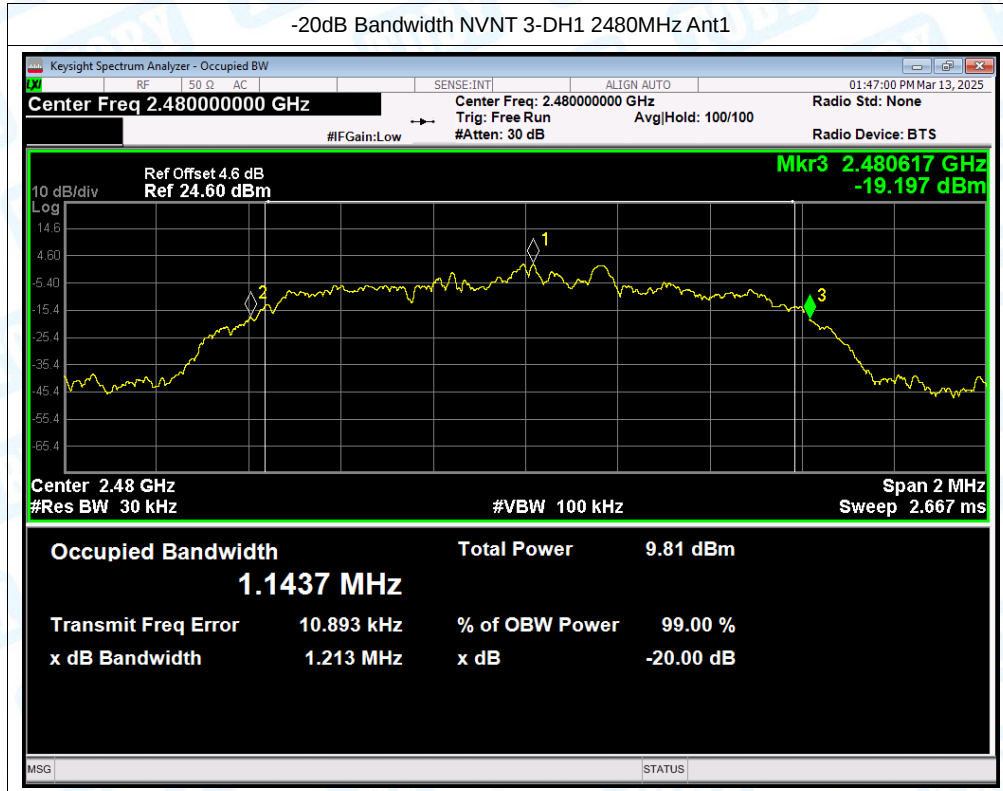


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



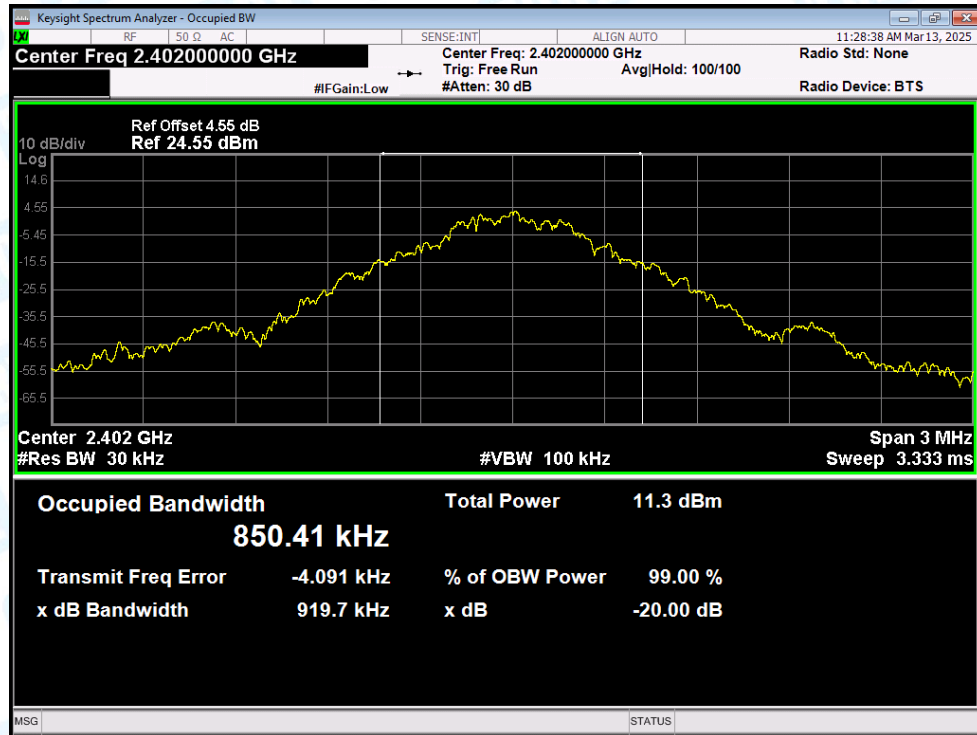


4. Occupied Channel Bandwidth

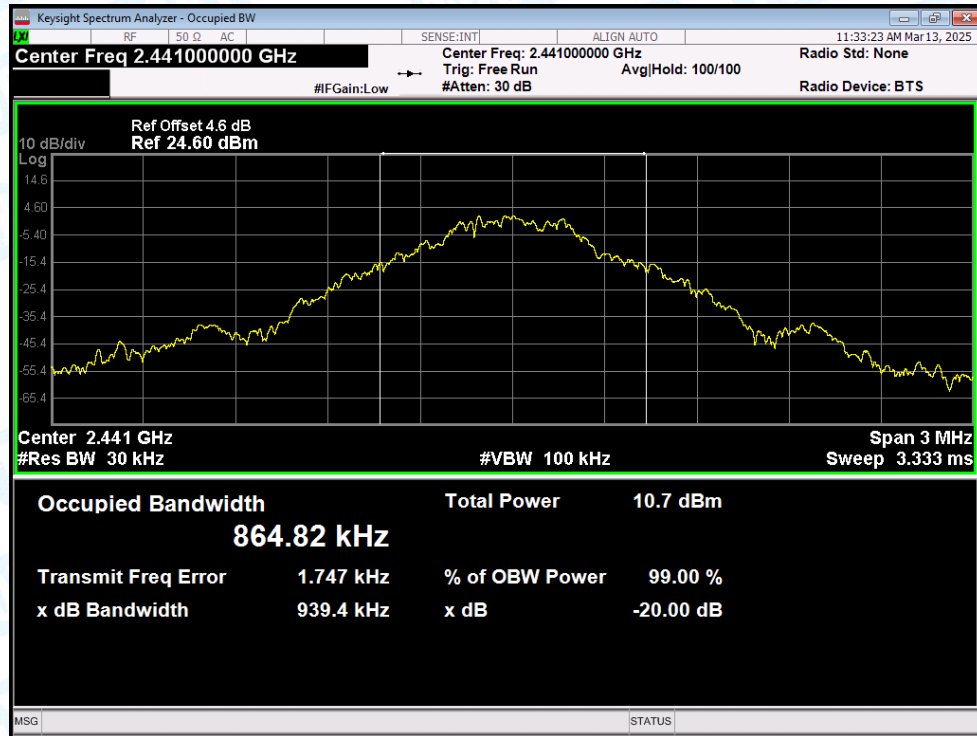
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.85
NVNT	1-DH1	2441	Ant1	0.865
NVNT	1-DH1	2480	Ant1	0.866
NVNT	2-DH1	2402	Ant1	1.155
NVNT	2-DH1	2441	Ant1	1.158
NVNT	2-DH1	2480	Ant1	1.151
NVNT	3-DH1	2402	Ant1	1.133
NVNT	3-DH1	2441	Ant1	1.12
NVNT	3-DH1	2480	Ant1	1.142

Test Graphs

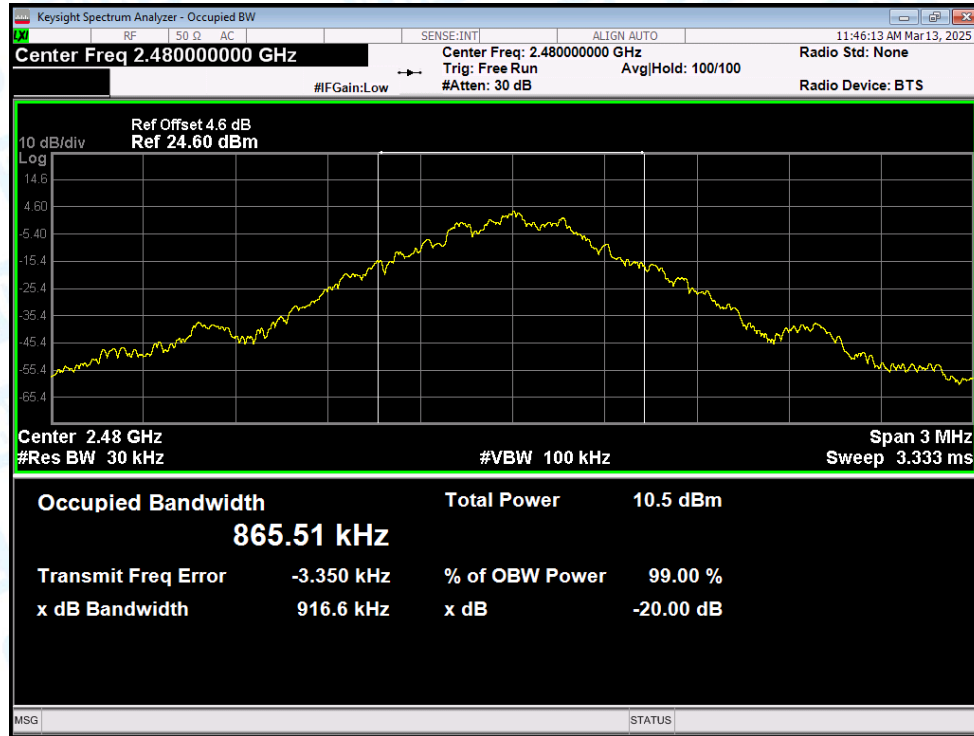
OBW NVNT 1-DH1 2402MHz Ant1



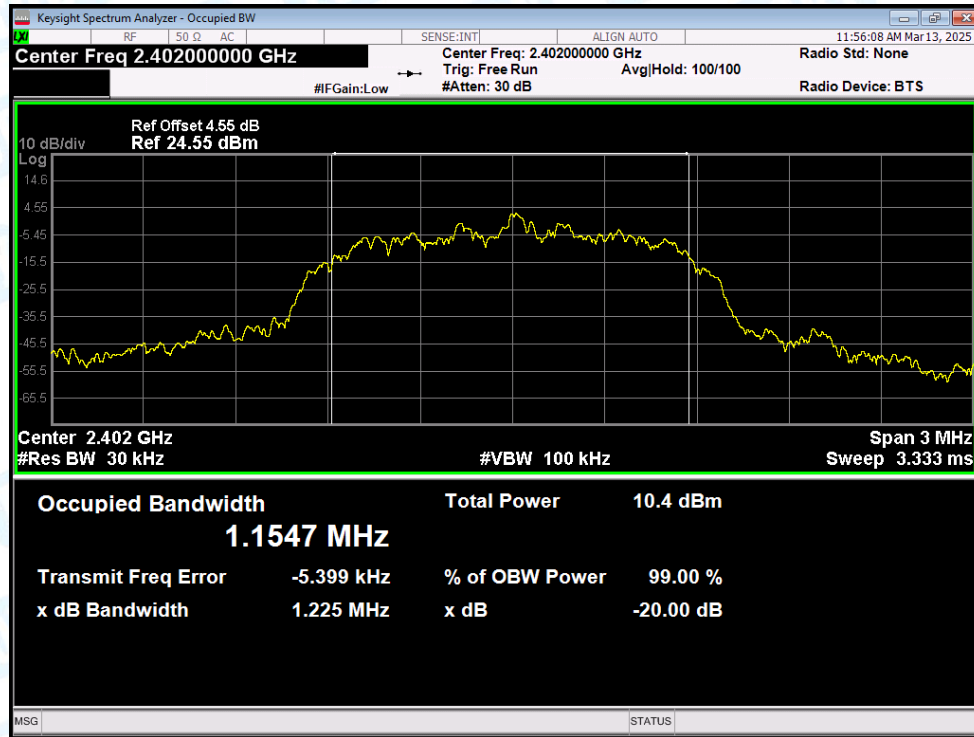
OBW NVNT 1-DH1 2441MHz Ant1



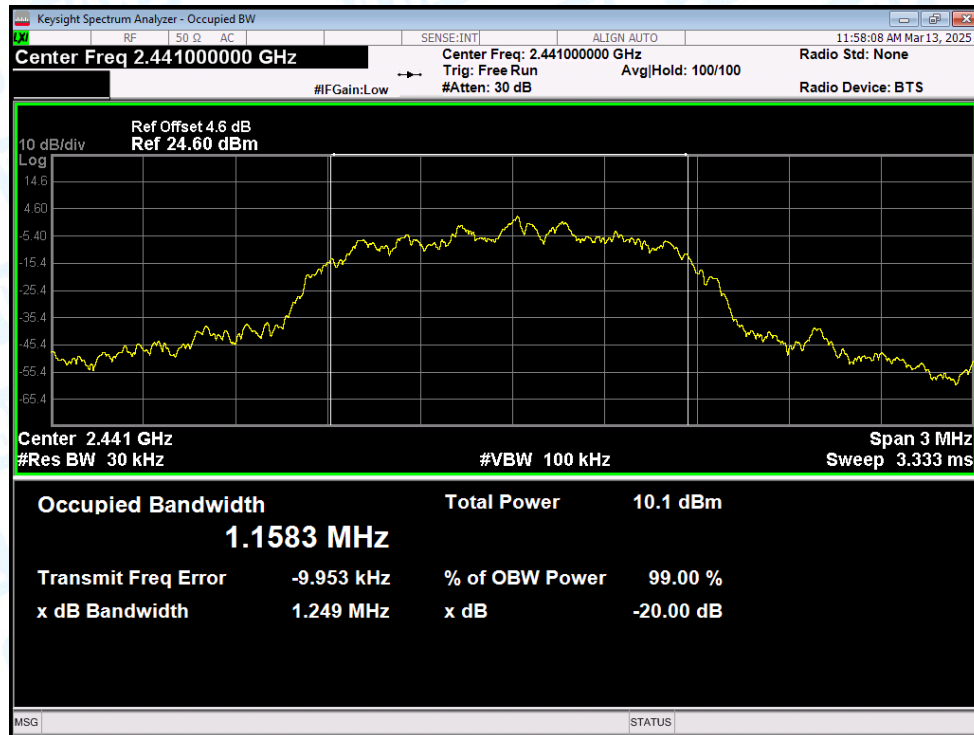
OBW NVNT 1-DH1 2480MHz Ant1



OBW NVNT 2-DH1 2402MHz Ant1



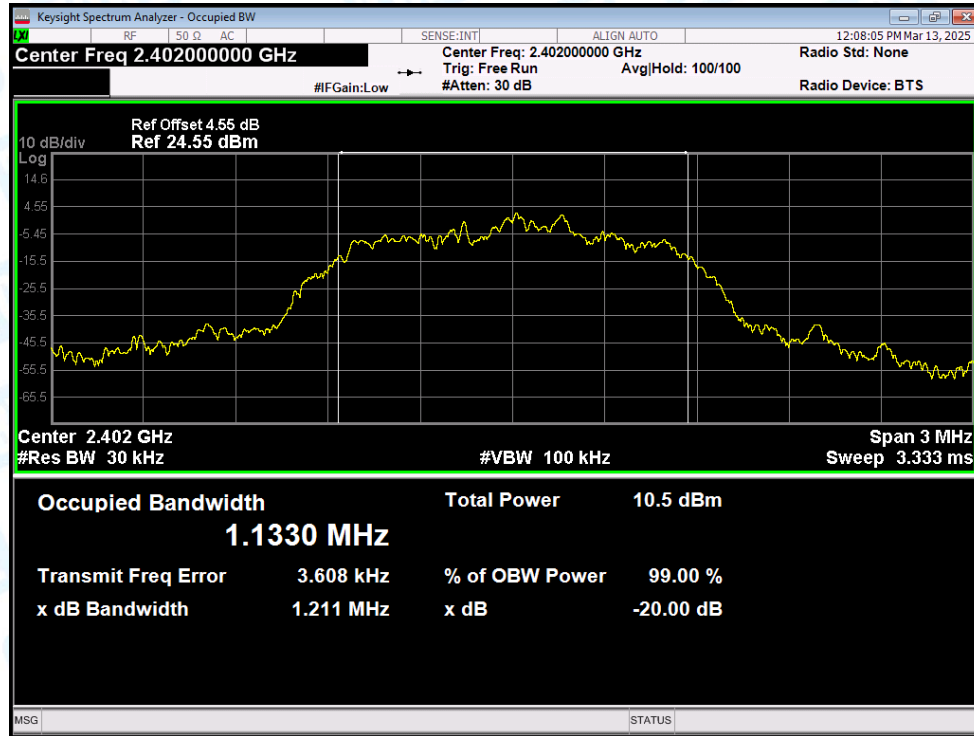
OBW NVNT 2-DH1 2441MHz Ant1



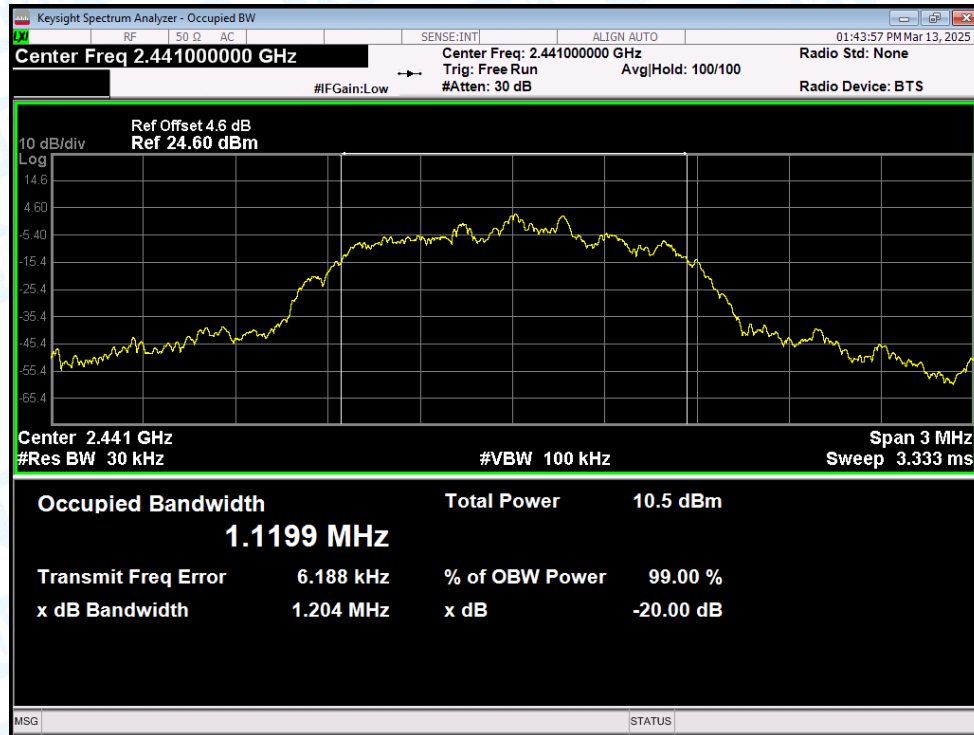
OBW NVNT 2-DH1 2480MHz Ant1

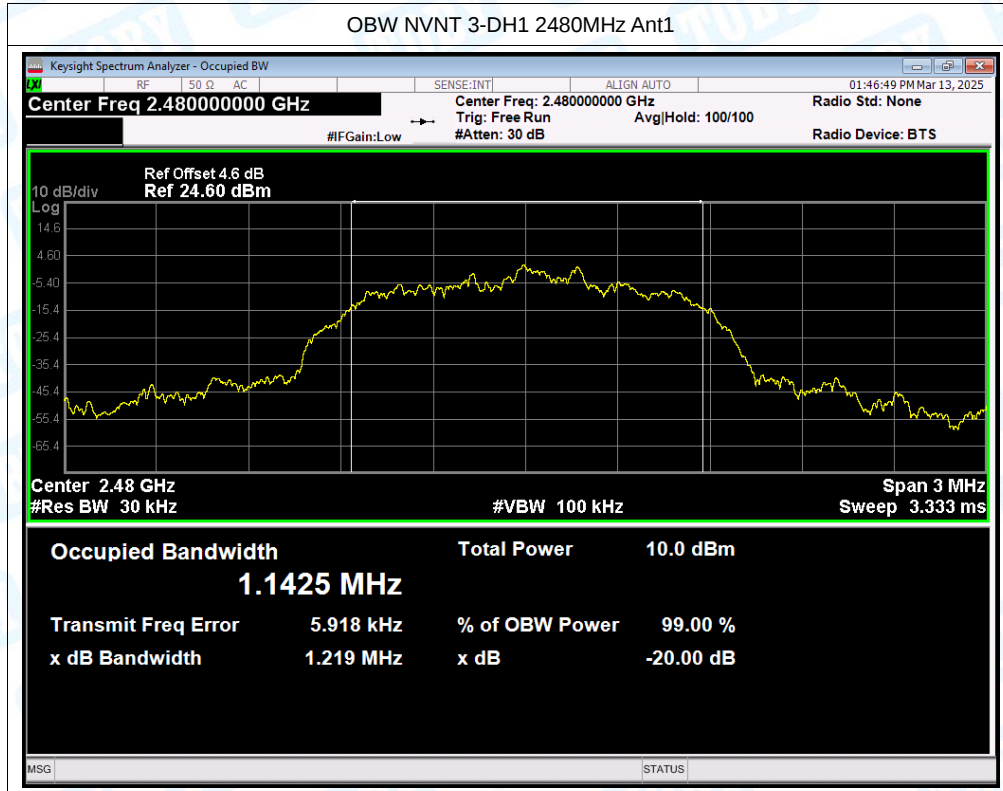


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1





5. Band Edge

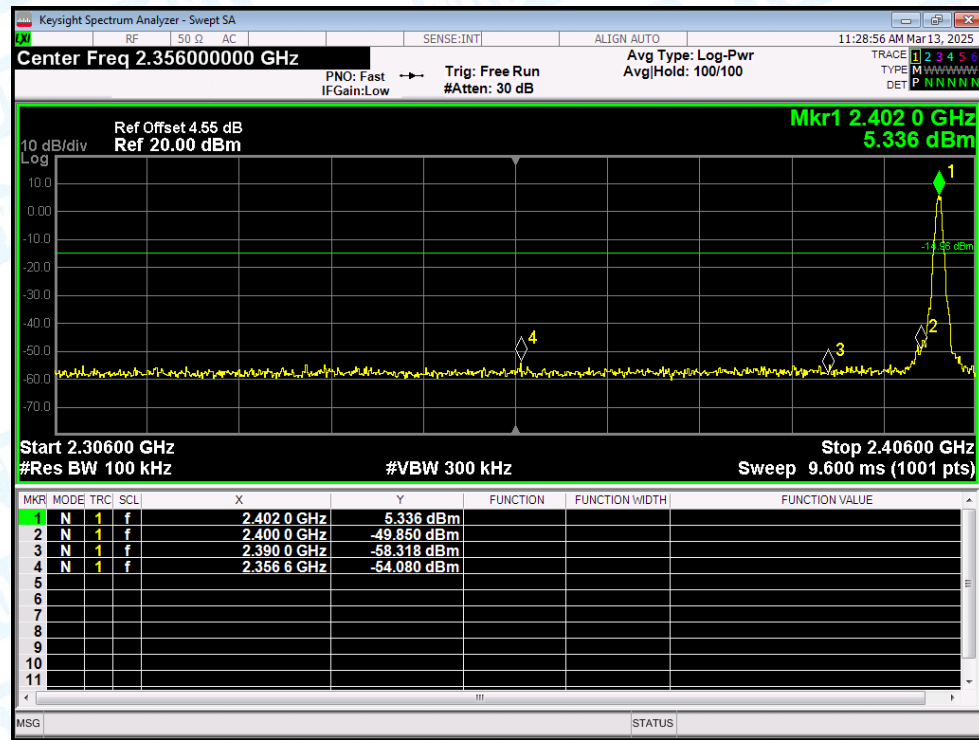
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-59.12	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-59.18	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-59	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-57.67	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-58.97	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-58.96	-20	Pass

Test Graphs

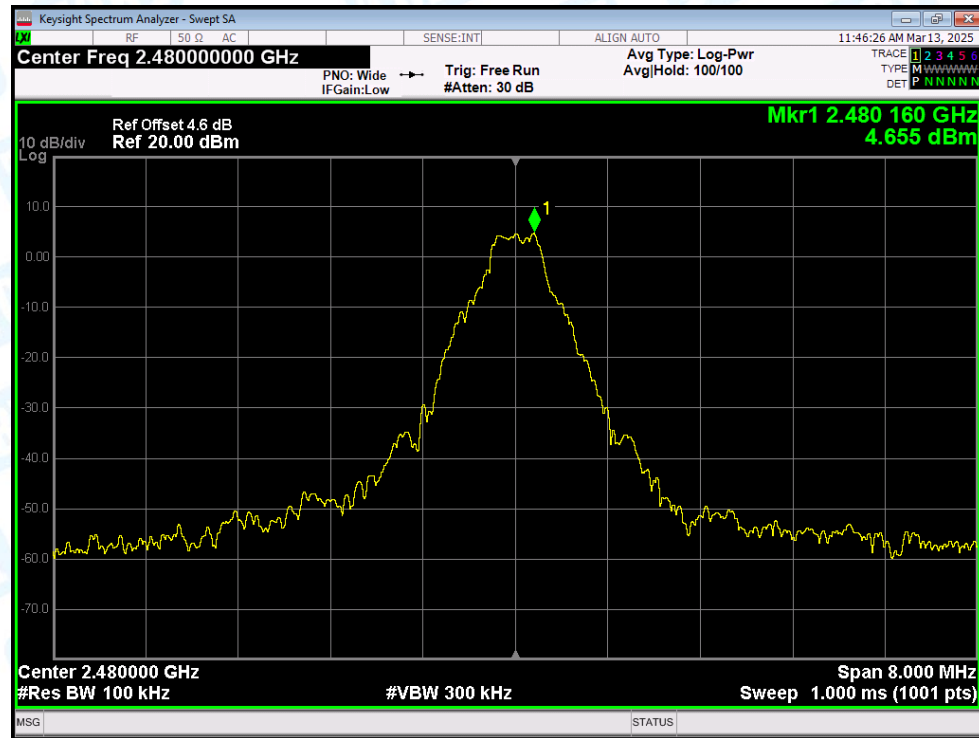
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



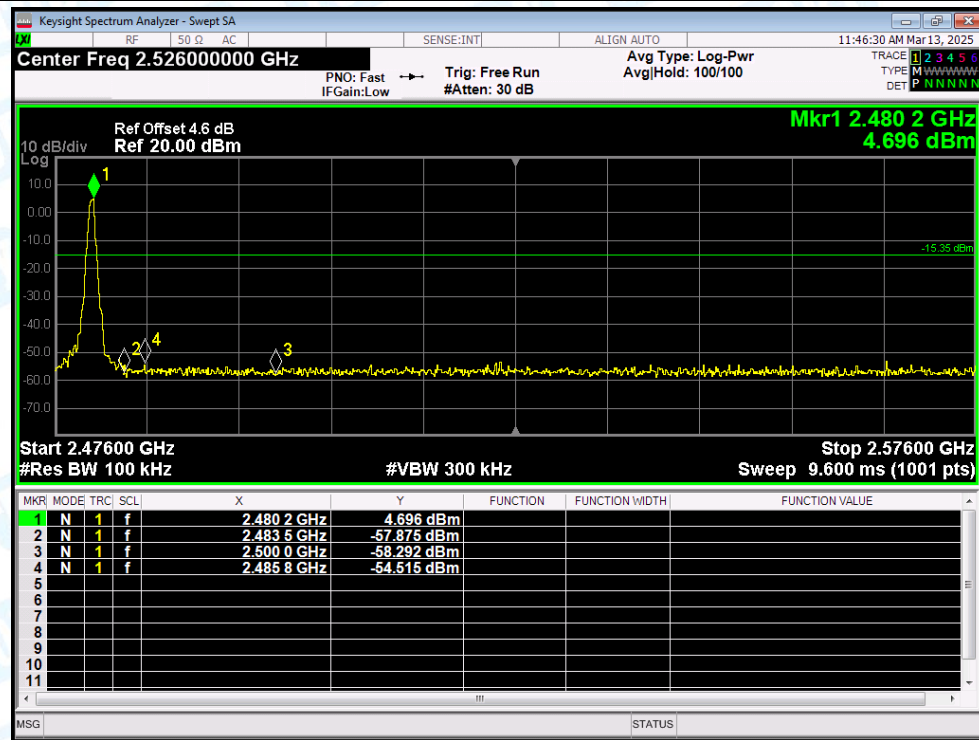
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



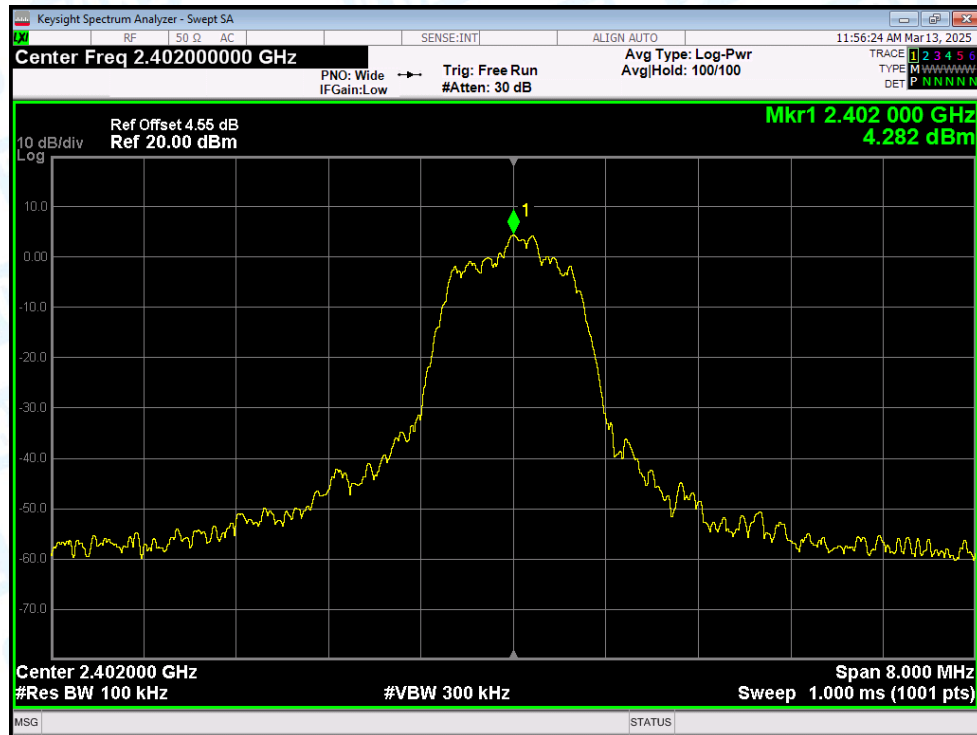
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



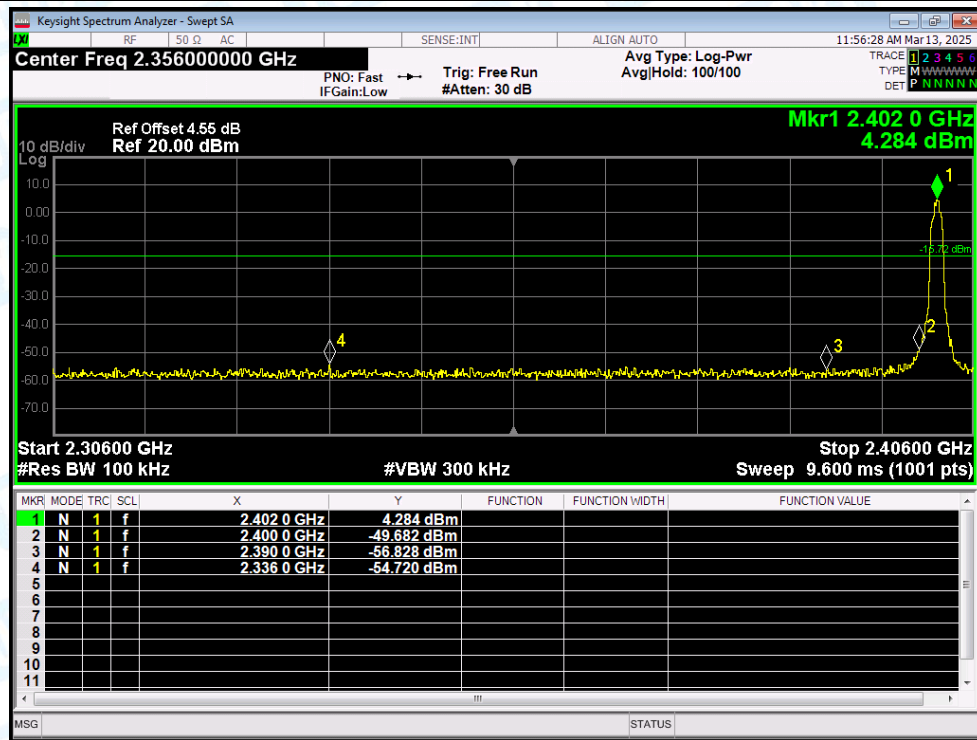
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



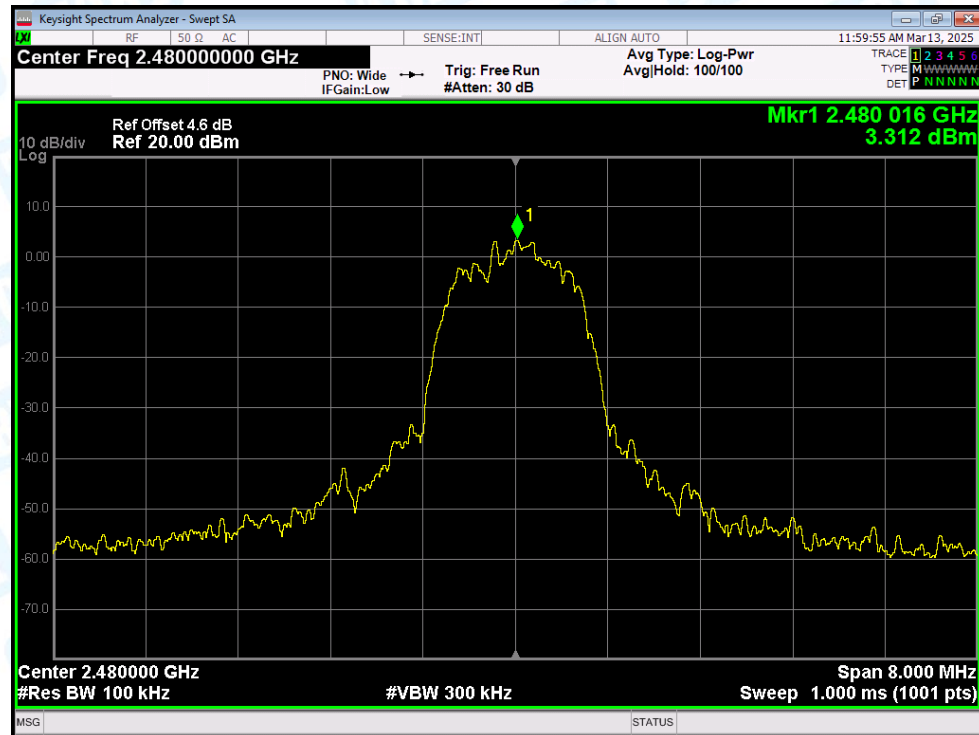
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



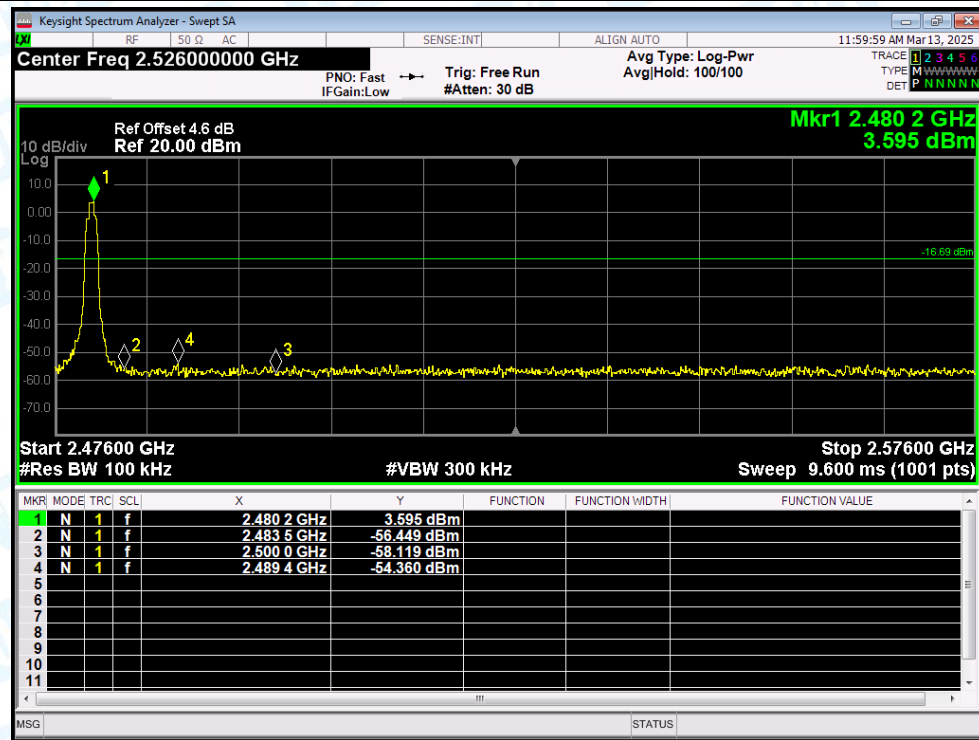
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



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



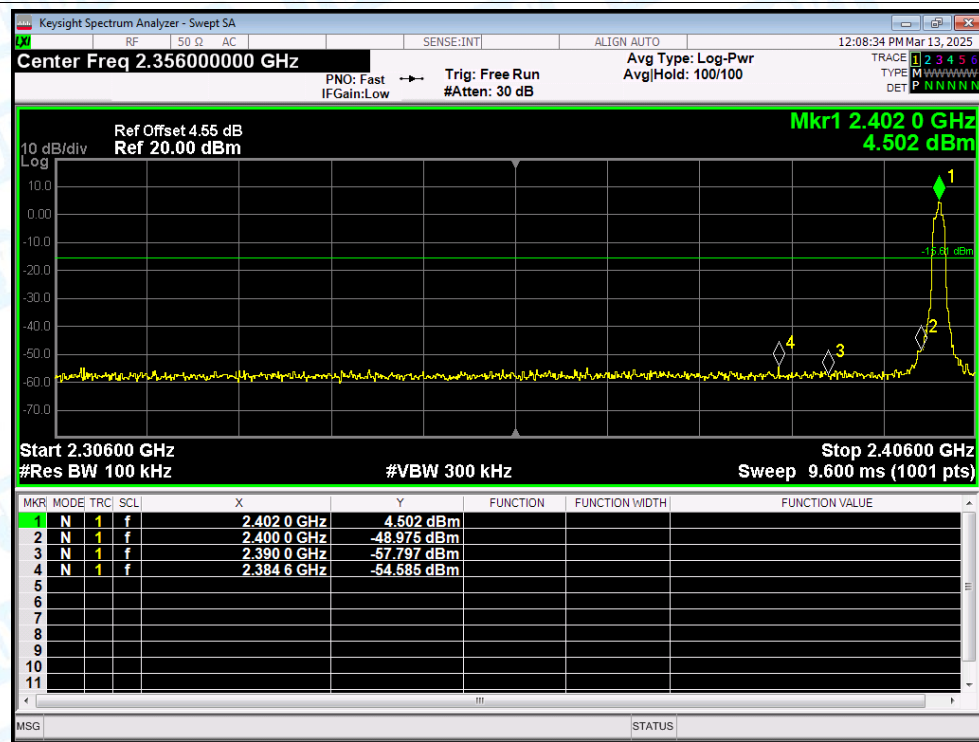
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



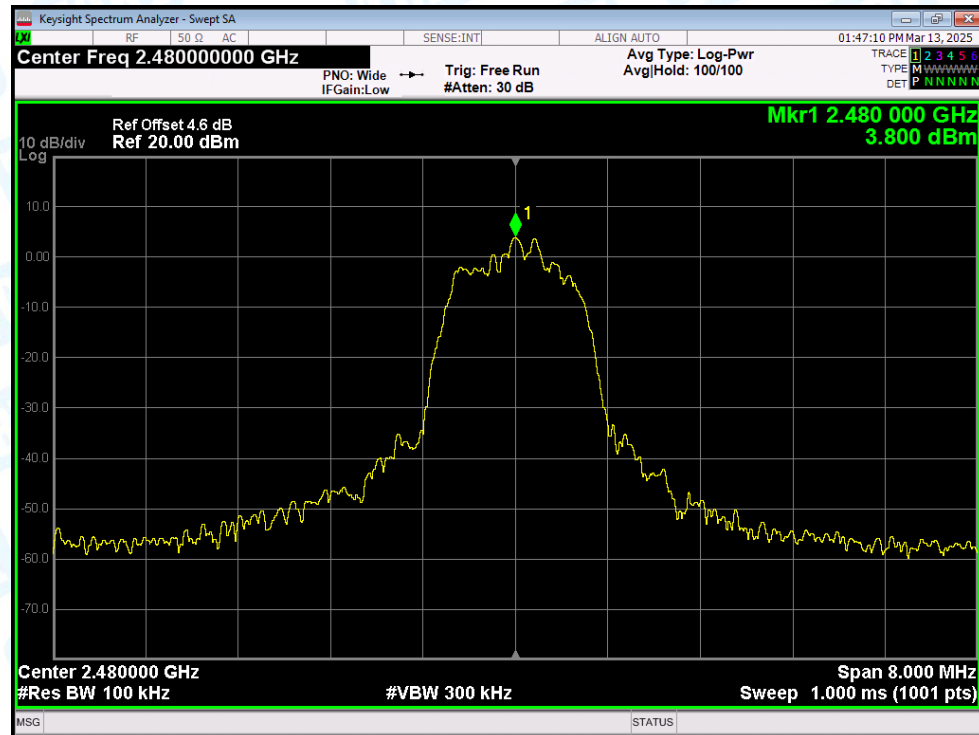
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



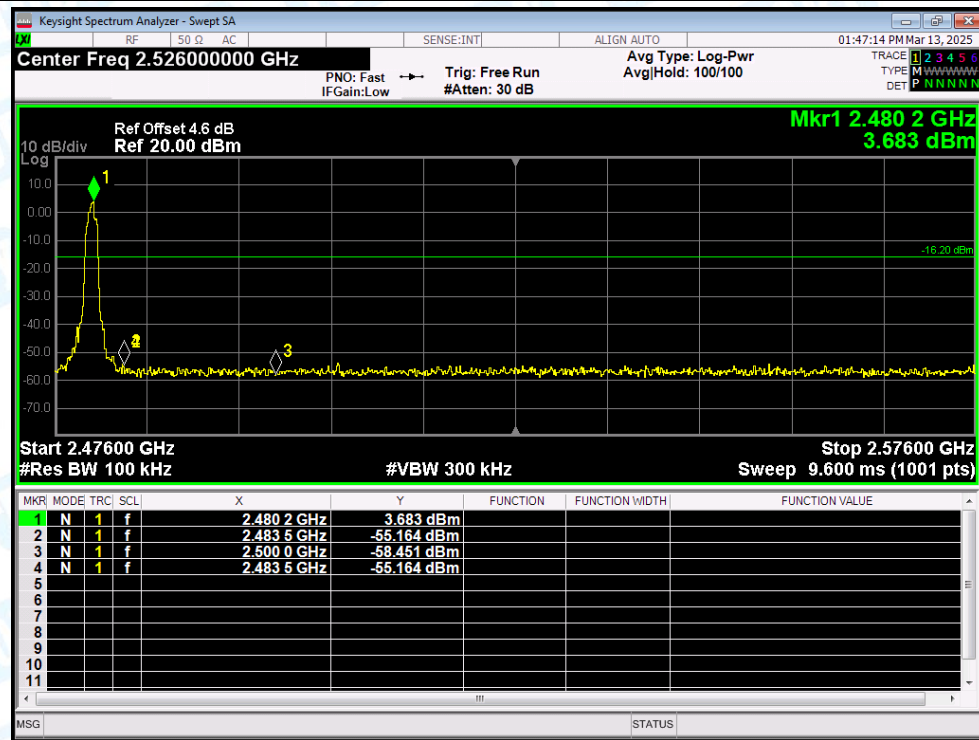
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



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



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



6. Band Edge(Hopping)

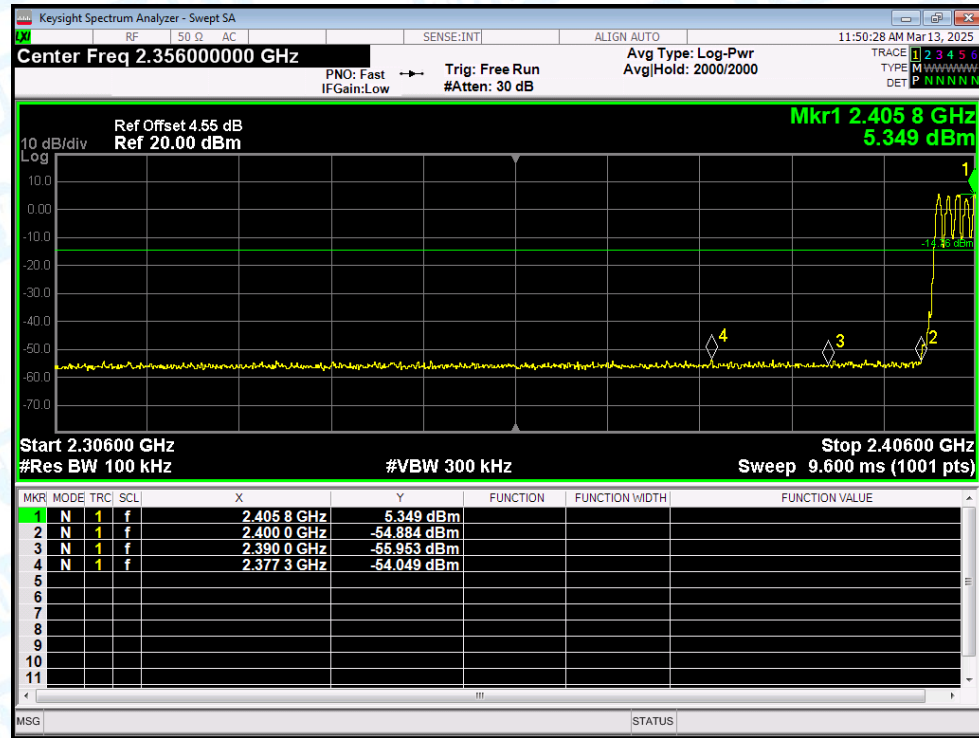
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-59.29	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-58.49	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-58.51	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-57.5	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-58.53	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-57.29	-20	Pass

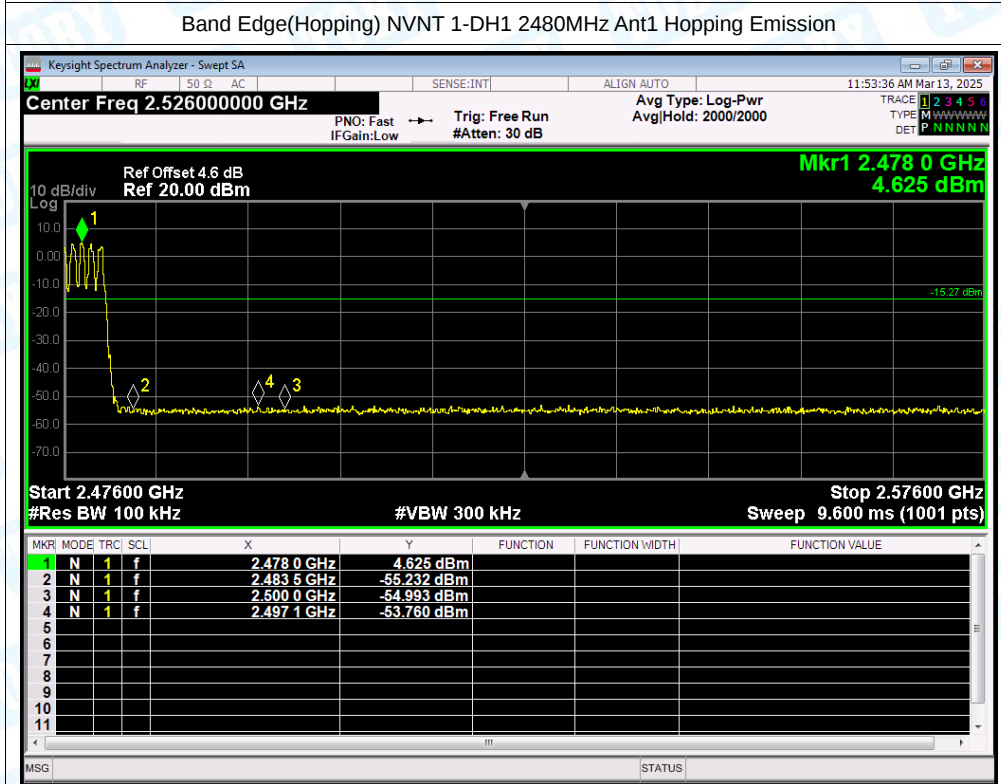
Test Graphs

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



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

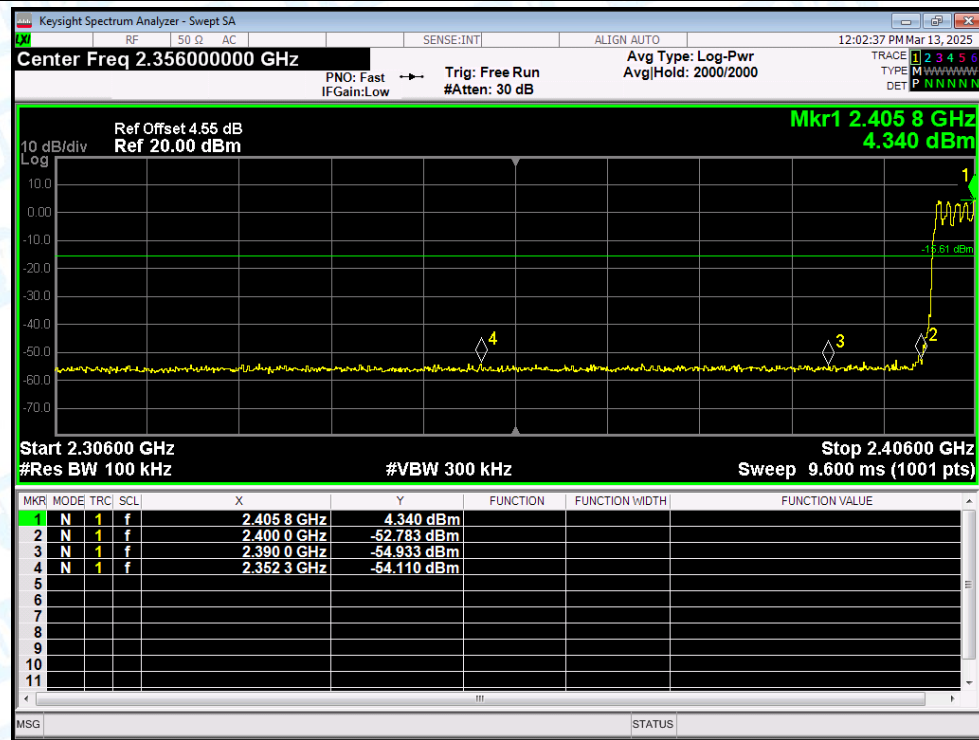


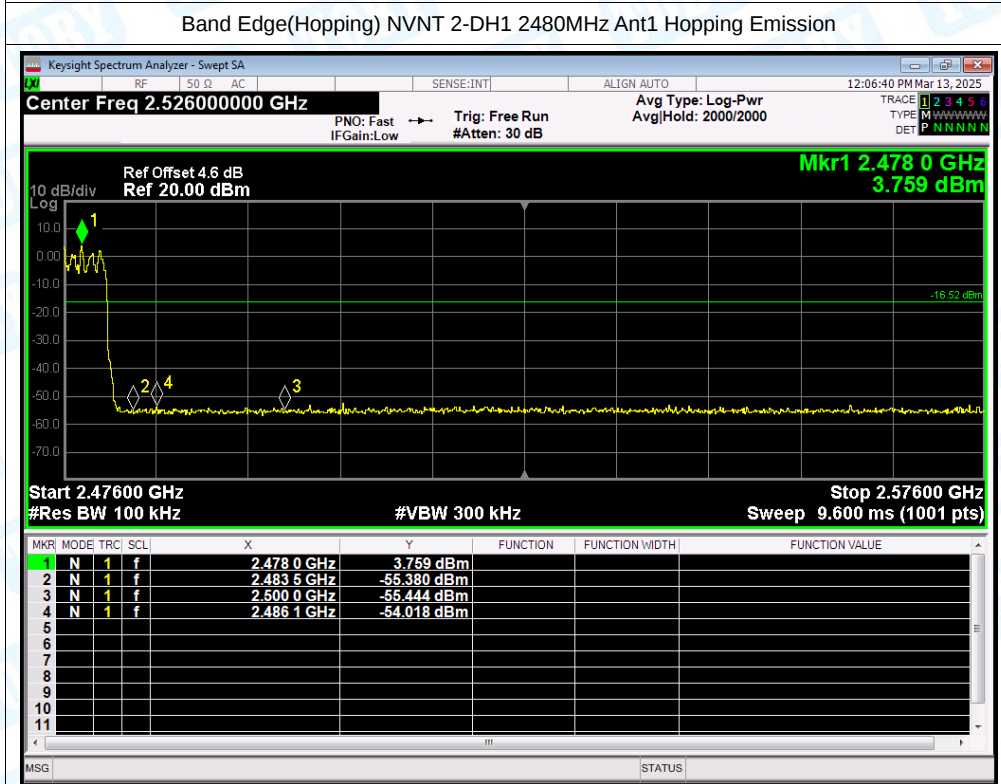


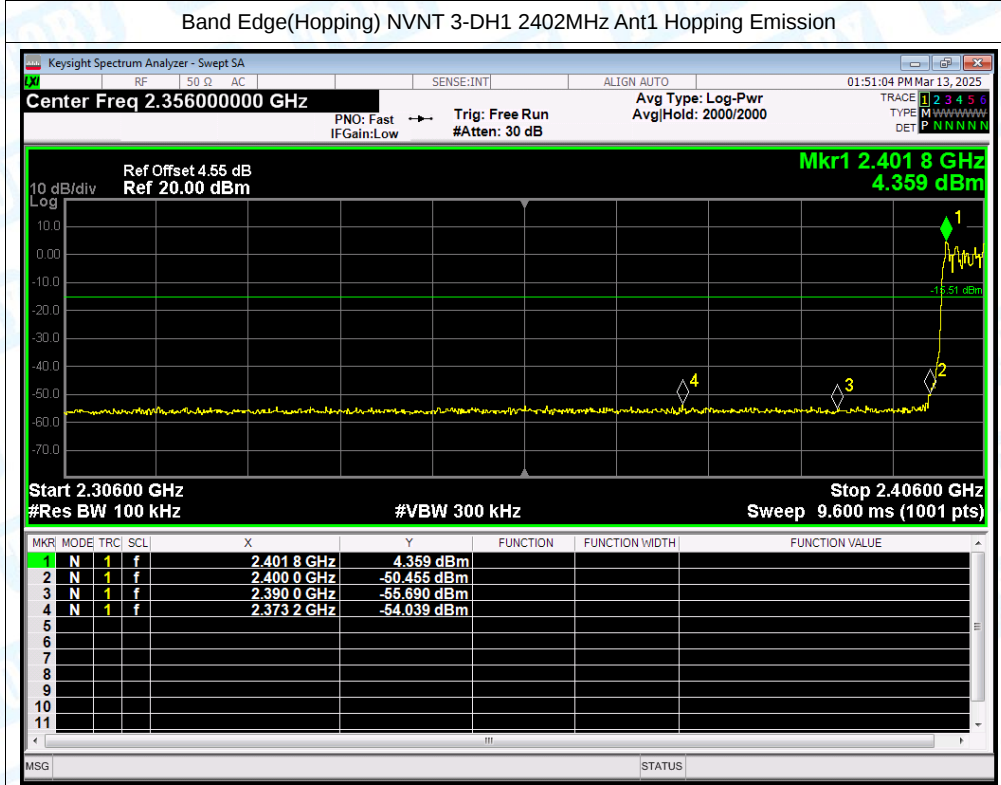
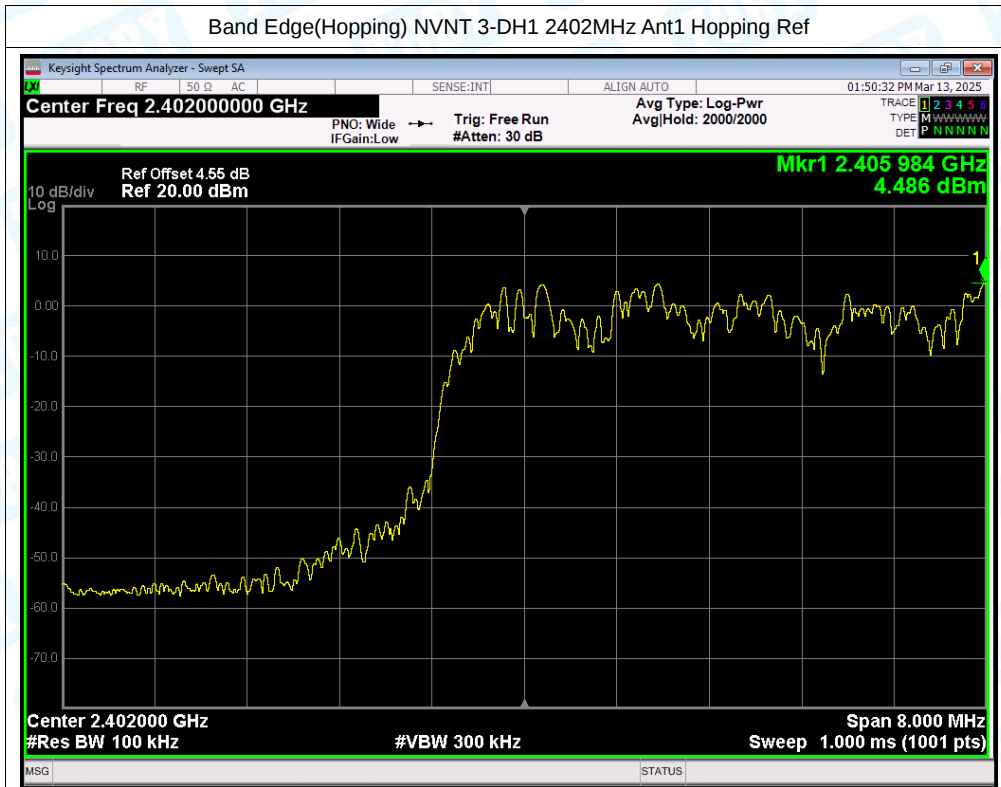
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref

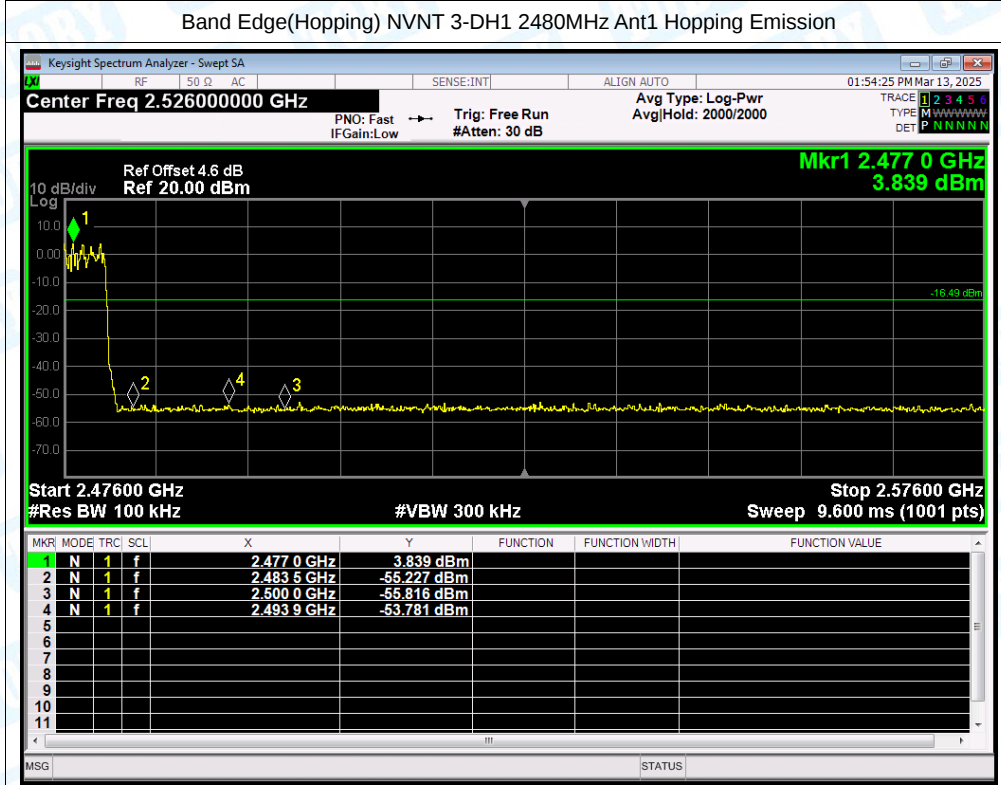


Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission







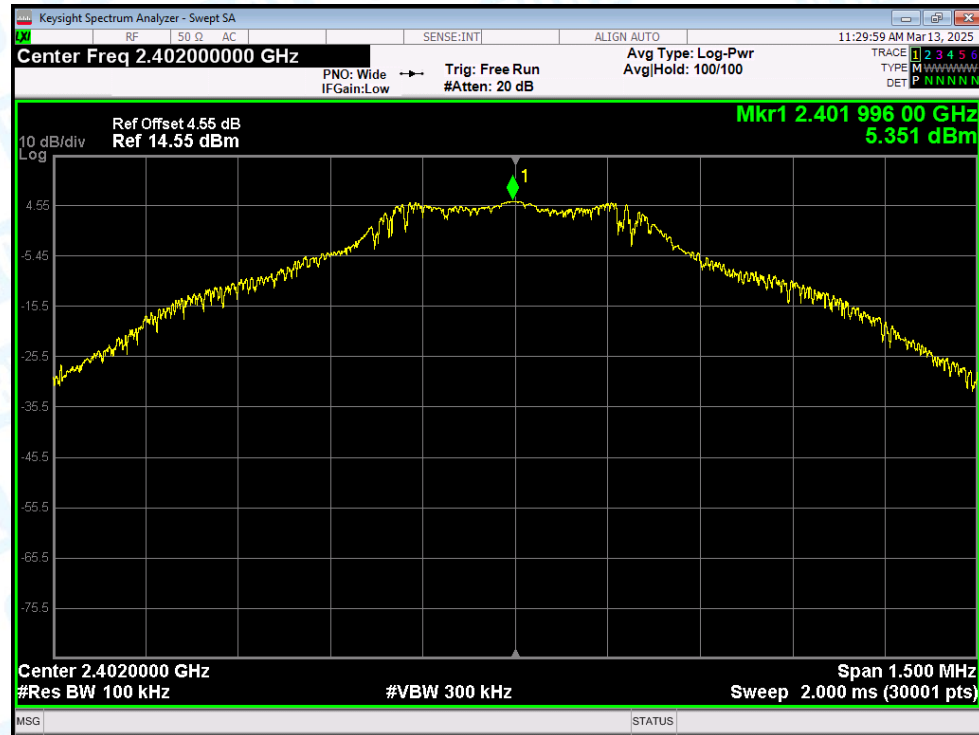


7. Conducted RF Spurious Emission

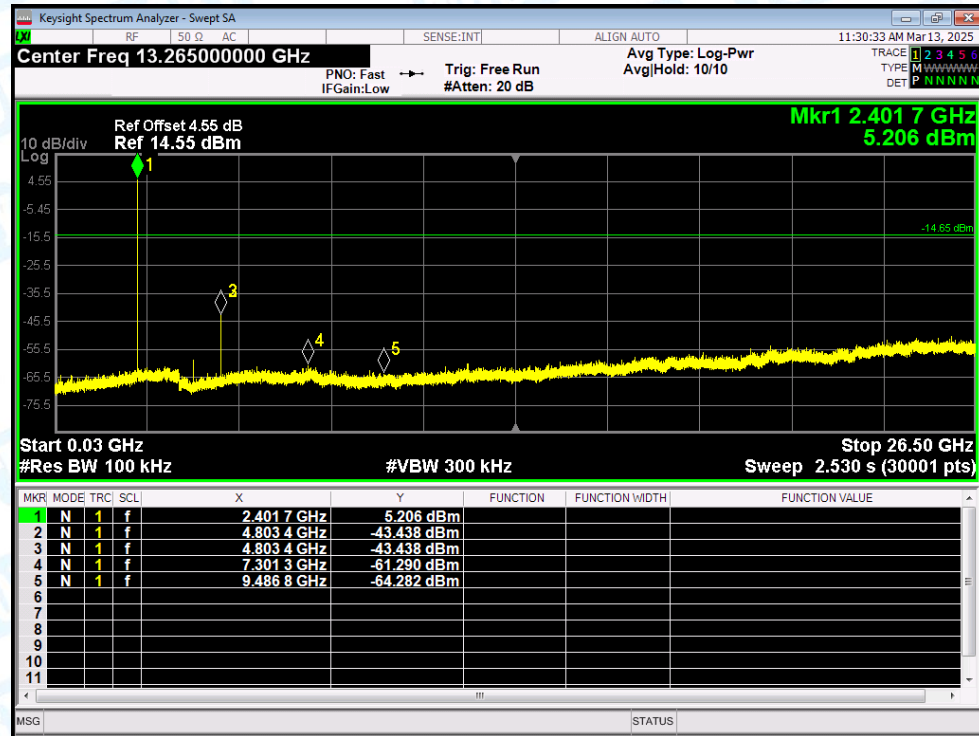
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-48.79	-20	Pass
NVNT	1-DH1	2441	Ant1	-50.94	-20	Pass
NVNT	1-DH1	2480	Ant1	-53.63	-20	Pass
NVNT	2-DH1	2402	Ant1	-53.96	-20	Pass
NVNT	2-DH1	2441	Ant1	-54.63	-20	Pass
NVNT	2-DH1	2480	Ant1	-54.91	-20	Pass
NVNT	3-DH1	2402	Ant1	-50.29	-20	Pass
NVNT	3-DH1	2441	Ant1	-54.98	-20	Pass
NVNT	3-DH1	2480	Ant1	-54.72	-20	Pass

Test Graphs

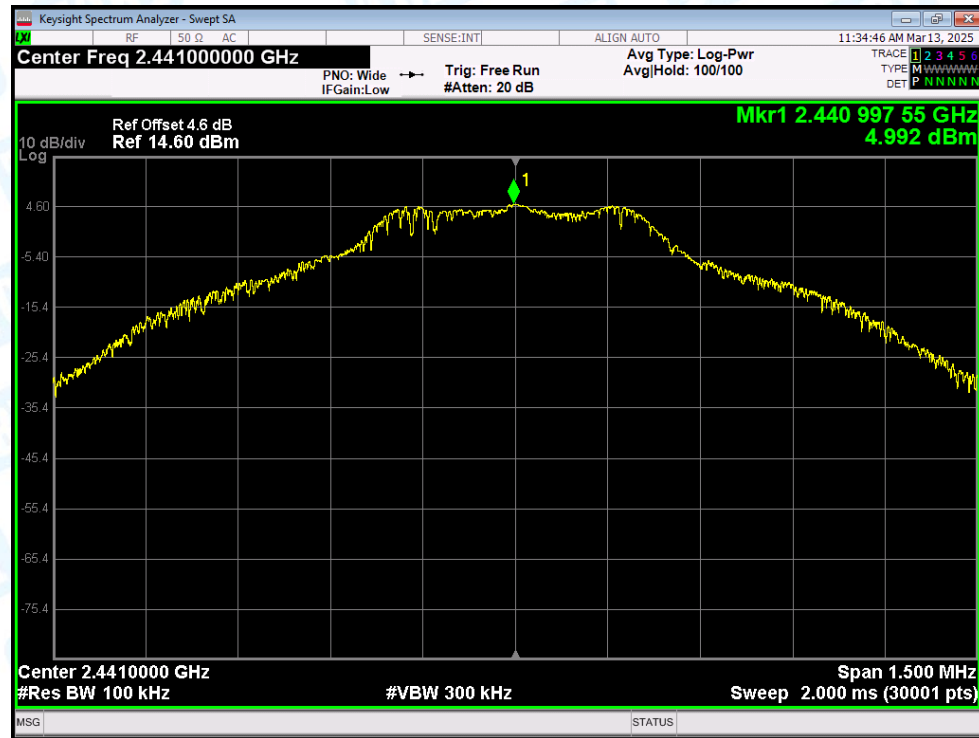
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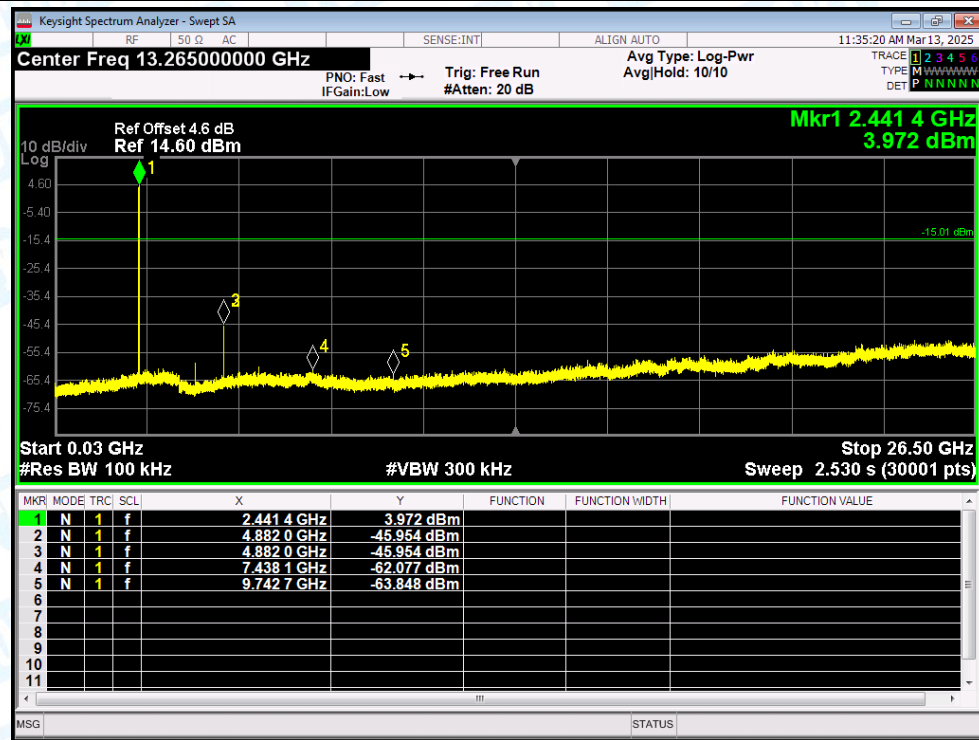
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



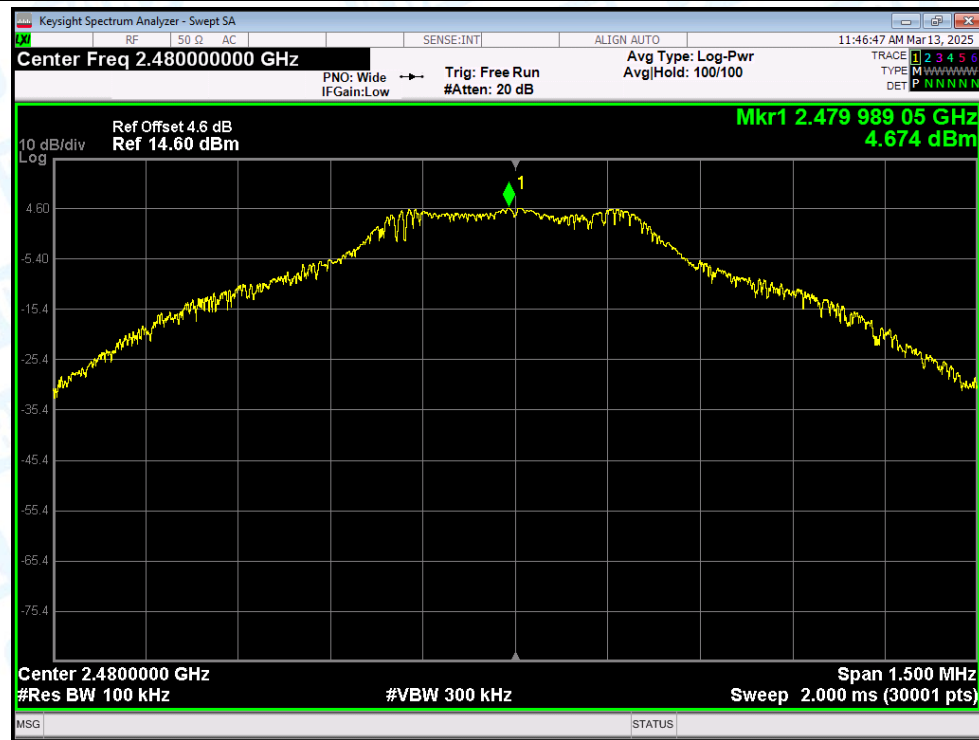
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



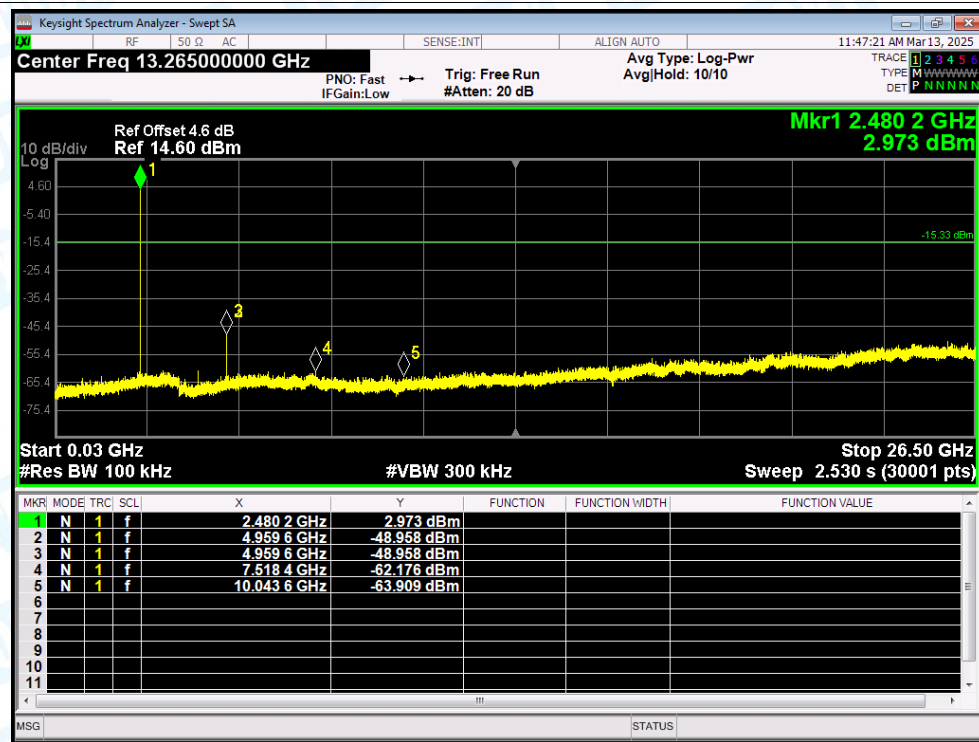
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



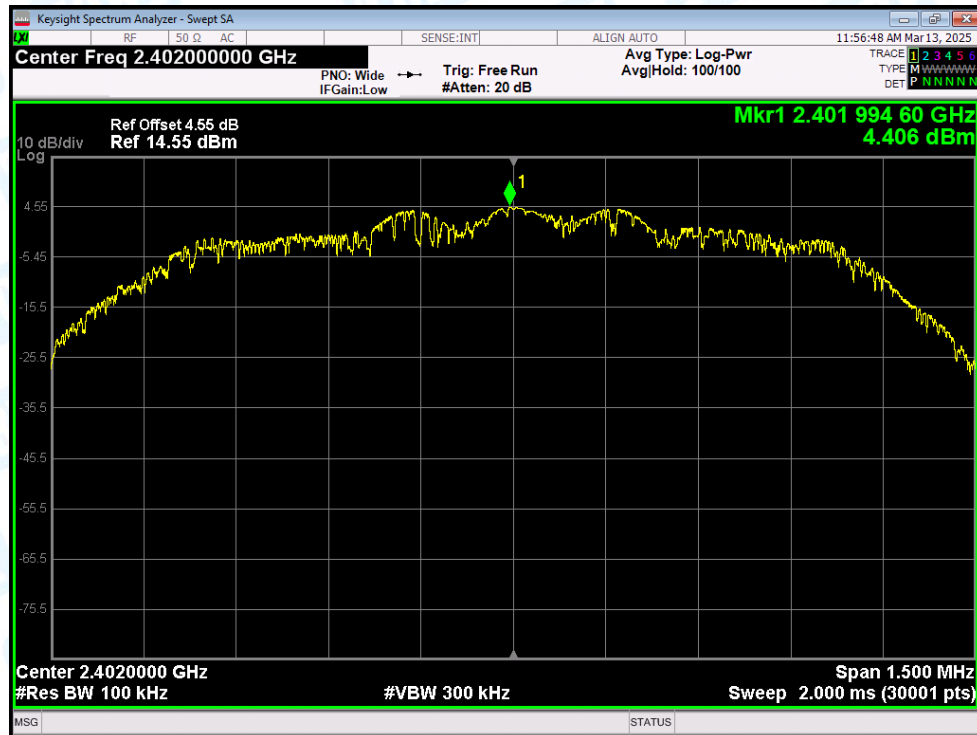
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



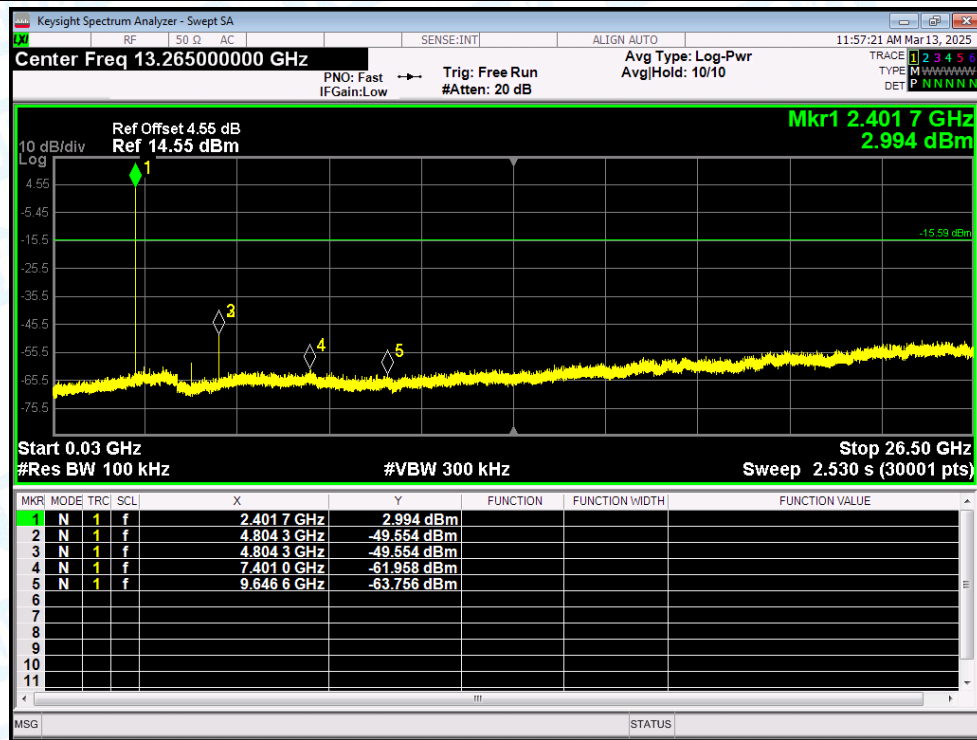
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



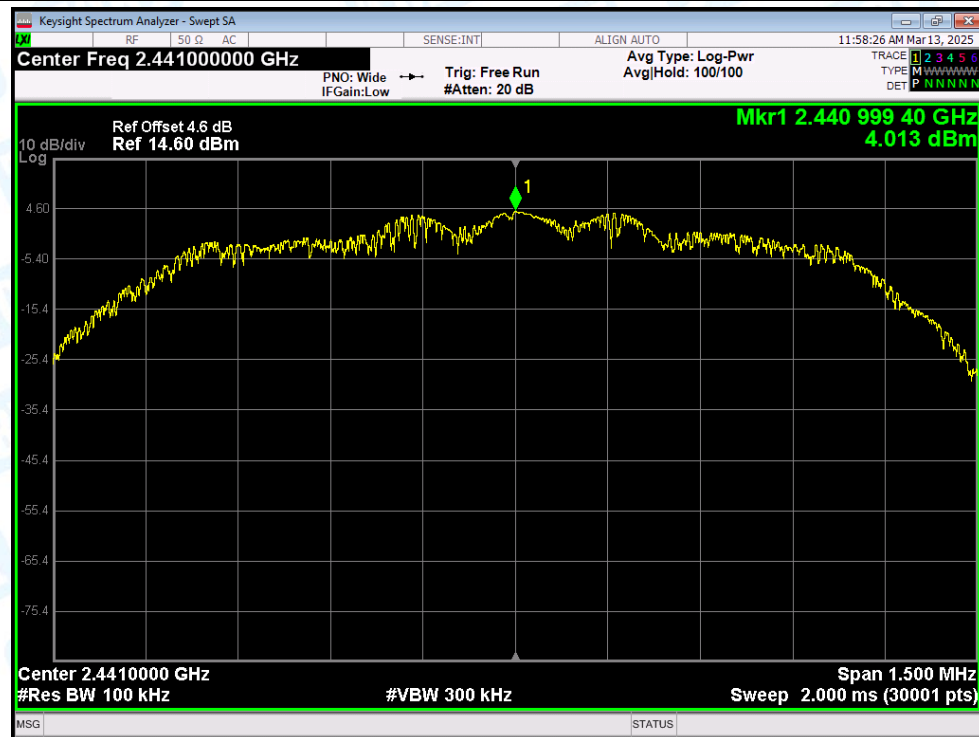
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



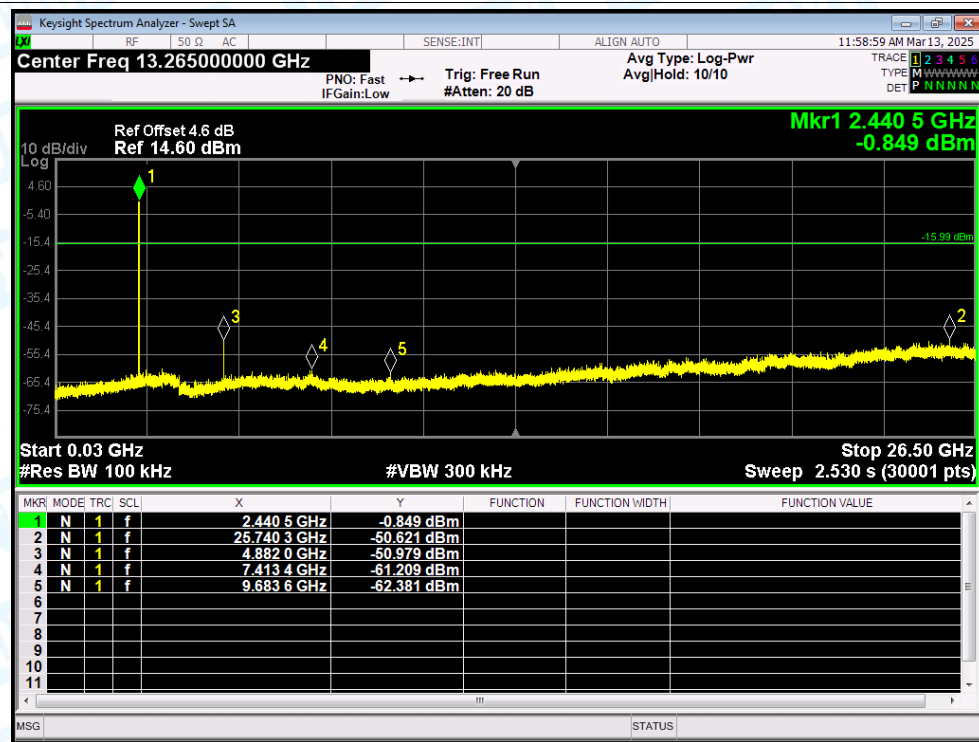
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



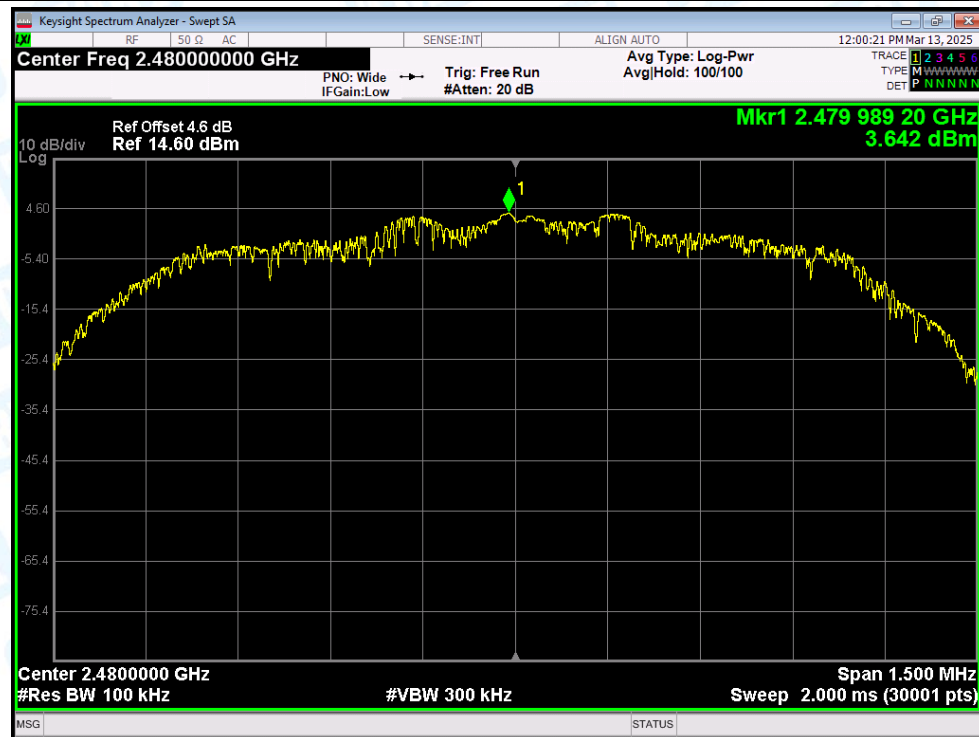
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



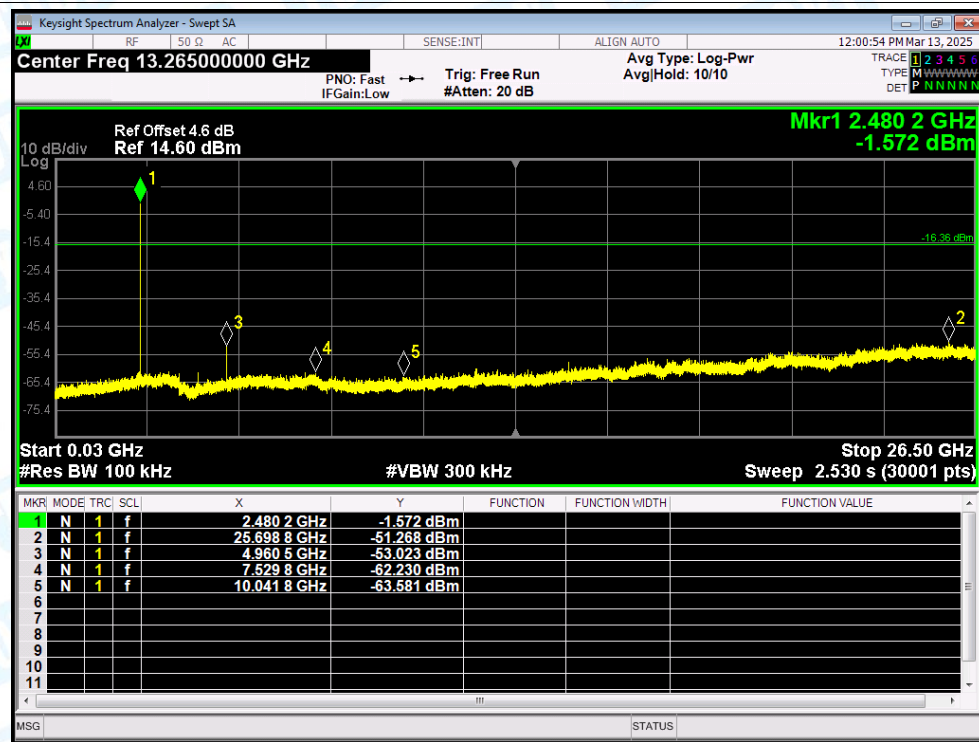
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



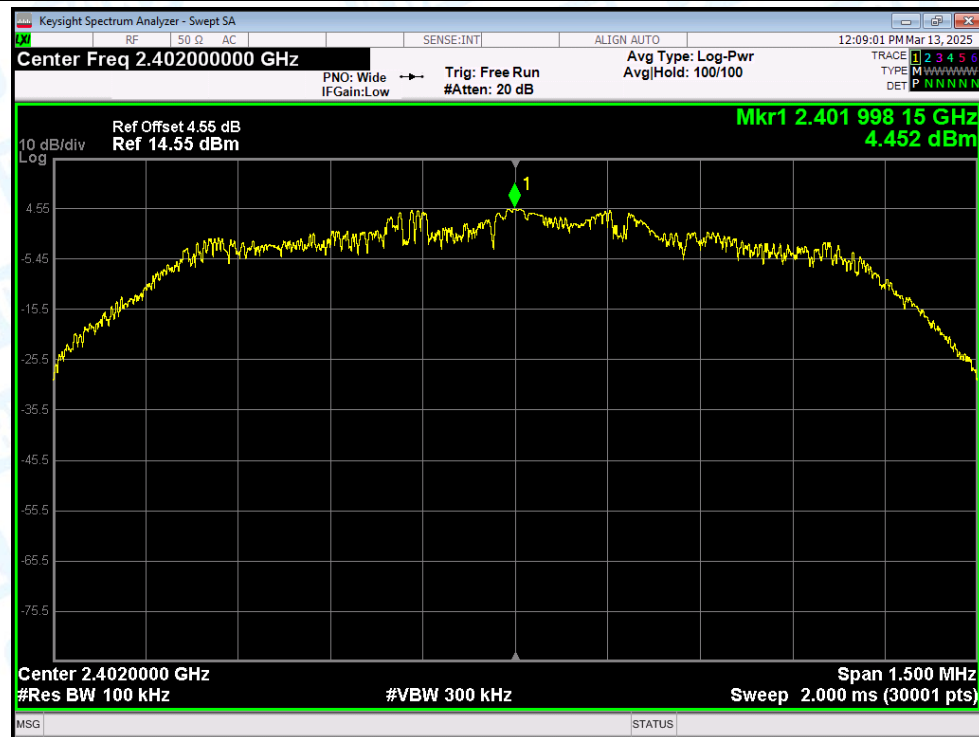
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



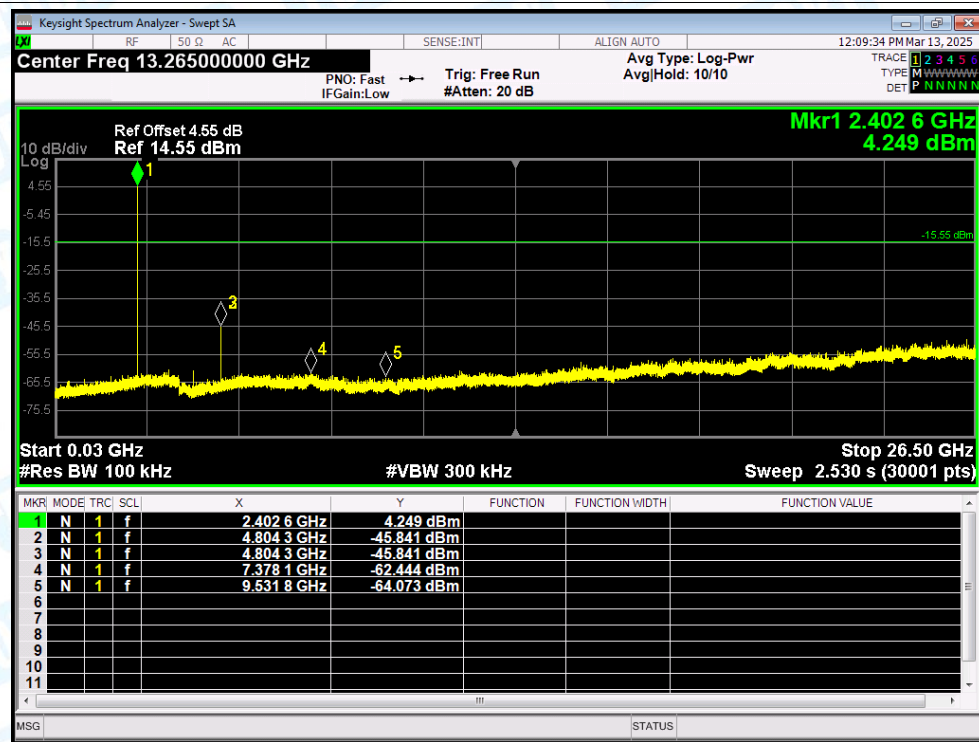
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



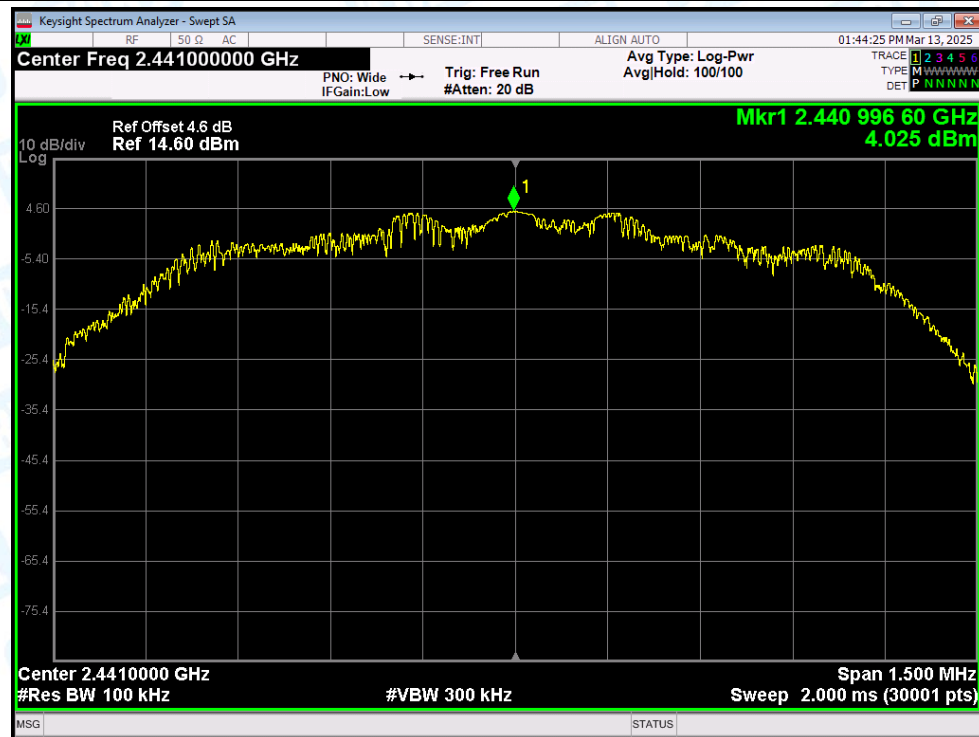
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



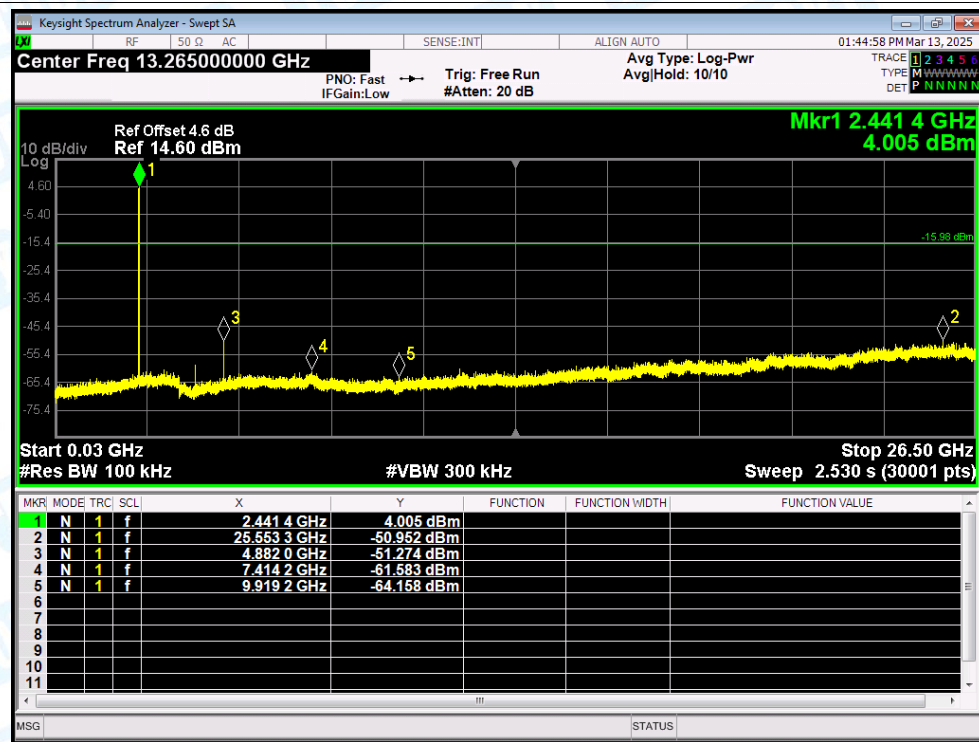
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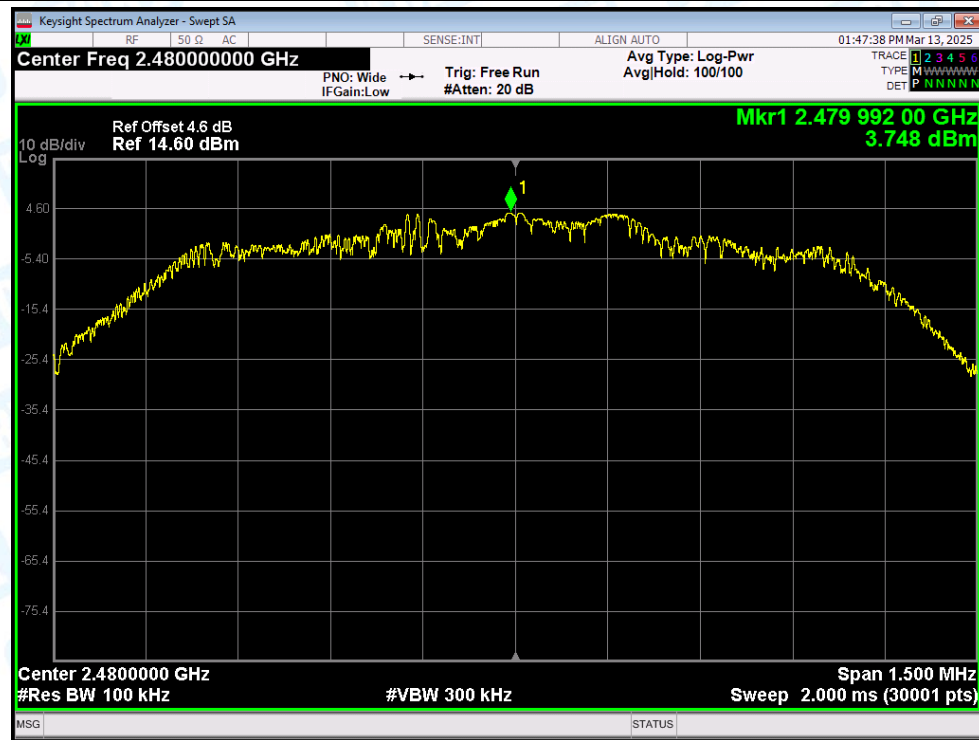
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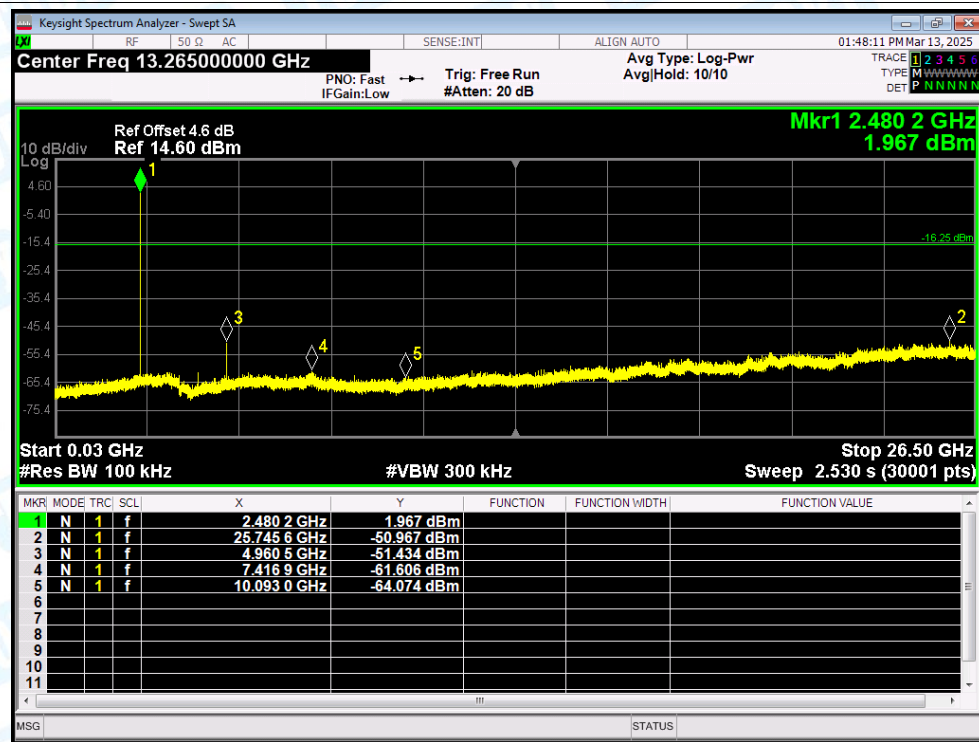
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

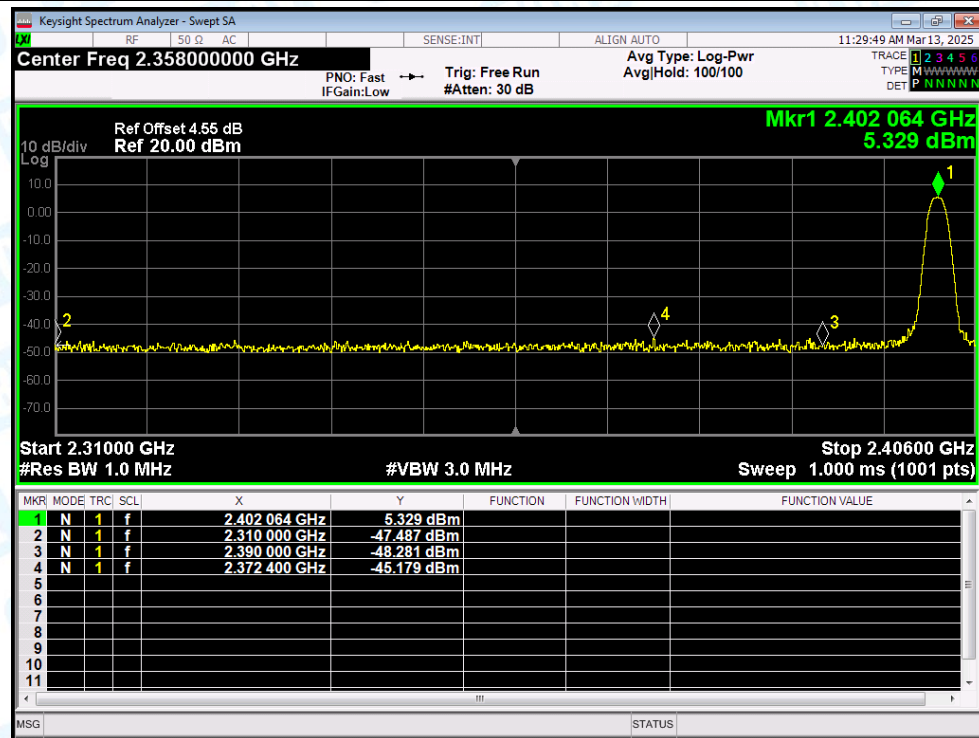


8. Restrict Band

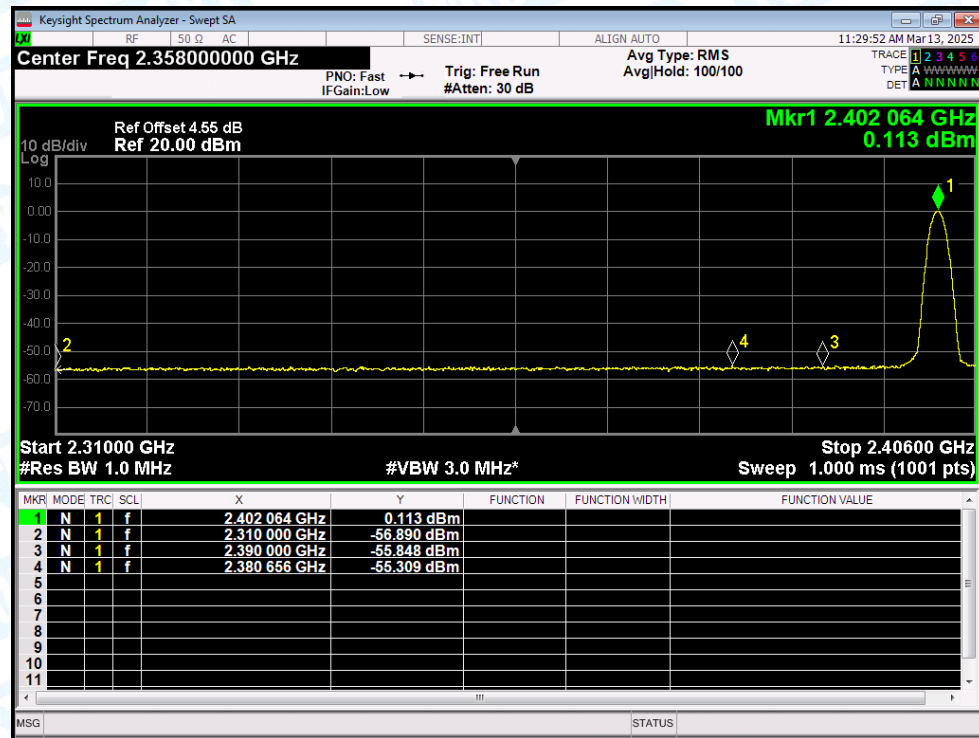
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-47.49	2	-	49.77	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.89	2	5.07	45.44	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2372.4	-45.18	2	-	52.08	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2380.656	-55.31	2	5.07	47.02	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-48.28	2	-	48.98	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-55.85	2	5.07	46.48	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-43.96	2	-	53.3	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-55.31	2	4.99	46.94	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.512	-43.96	2	-	53.3	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.656	-54.5	2	4.99	47.75	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-47.27	2	-	49.99	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-56.26	2	4.99	45.99	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-48.67	2	-	48.59	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.35	2	4.99	45.9	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2312.88	-44.84	2	-	52.42	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2381.808	-55.4	2	4.99	46.85	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-48.19	2	-	49.07	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-56.43	2	4.99	45.82	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-47.82	2	-	49.44	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-54.92	2	5.02	47.36	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2494.816	-44.59	2	-	52.67	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.536	-54.51	2	5.02	47.77	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-48.5	2	-	48.76	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.62	2	5.02	46.66	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-49.19	2	-	48.07	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.32	2	4.99	45.93	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2317.584	-44.78	2	-	52.48	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2388.336	-55.35	2	4.99	46.9	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-47.7	2	-	49.56	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-56.58	2	4.99	45.67	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-46.57	2	-	50.69	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-55.24	2	5.02	47.04	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2488.528	-44.77	2	-	52.49	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2498.296	-54.59	2	5.02	47.69	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-47.29	2	-	49.97	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.89	2	5.02	46.39	Average	54	Pass

Test Graphs

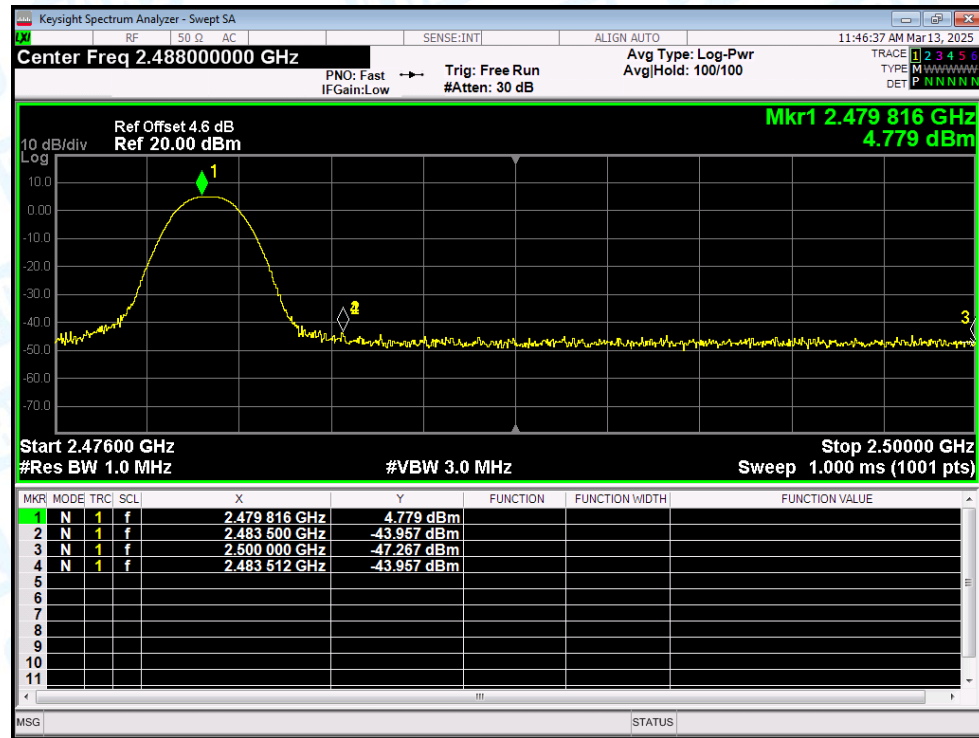
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



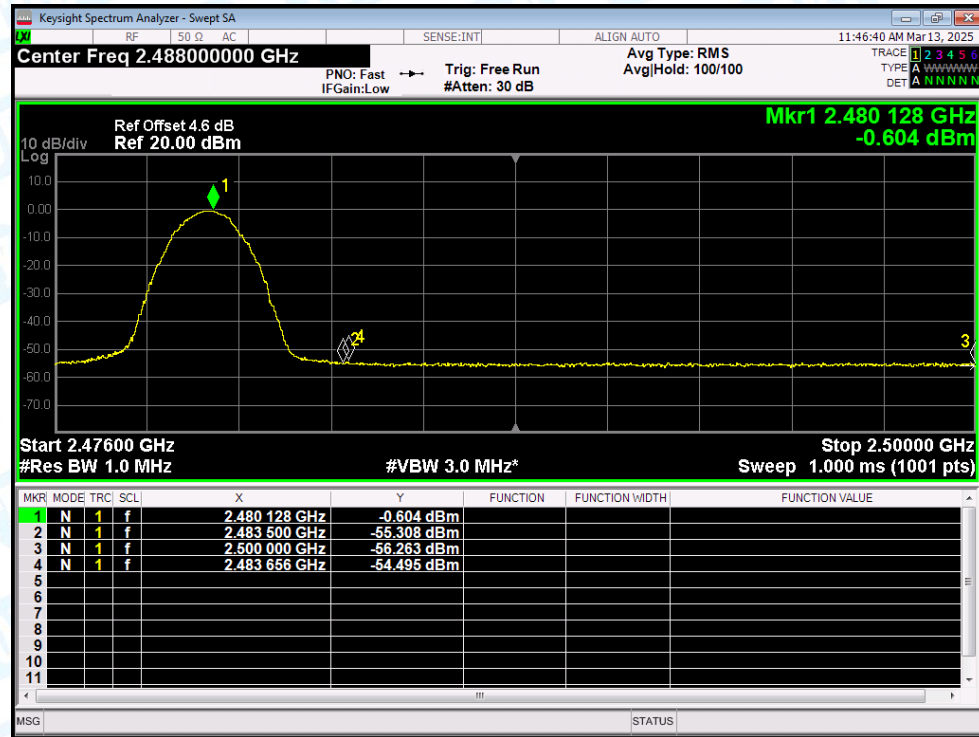
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



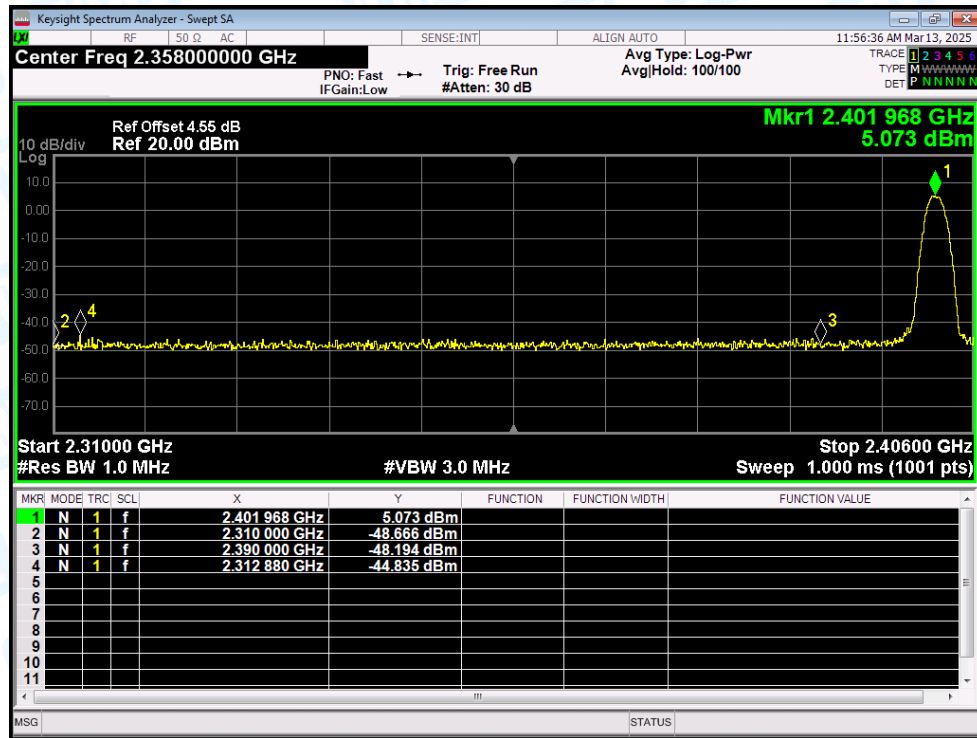
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



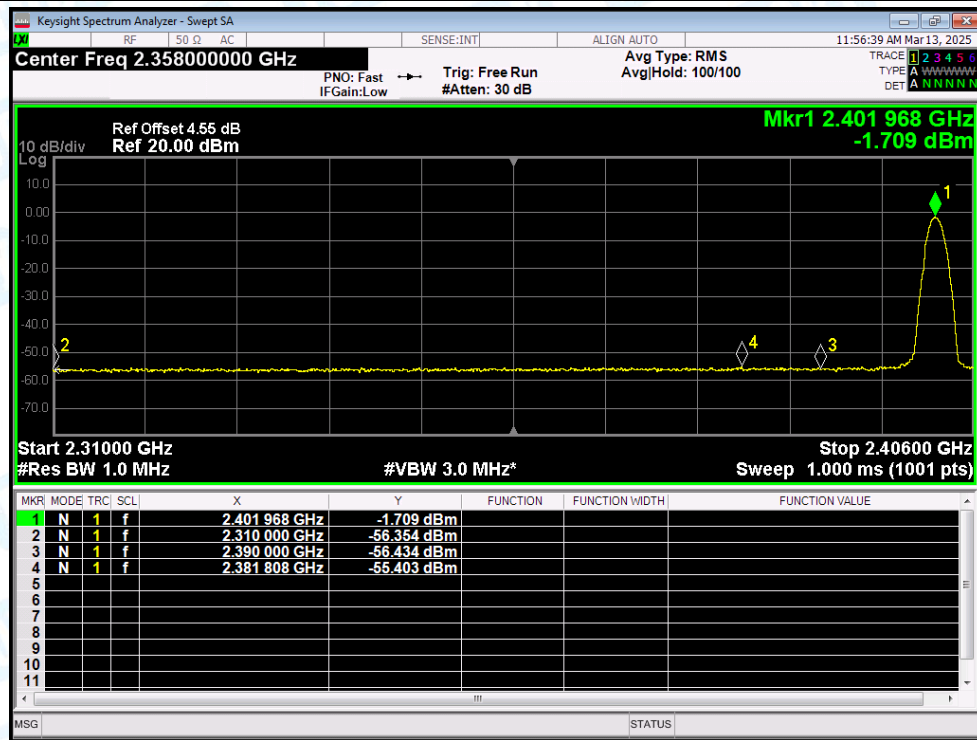
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



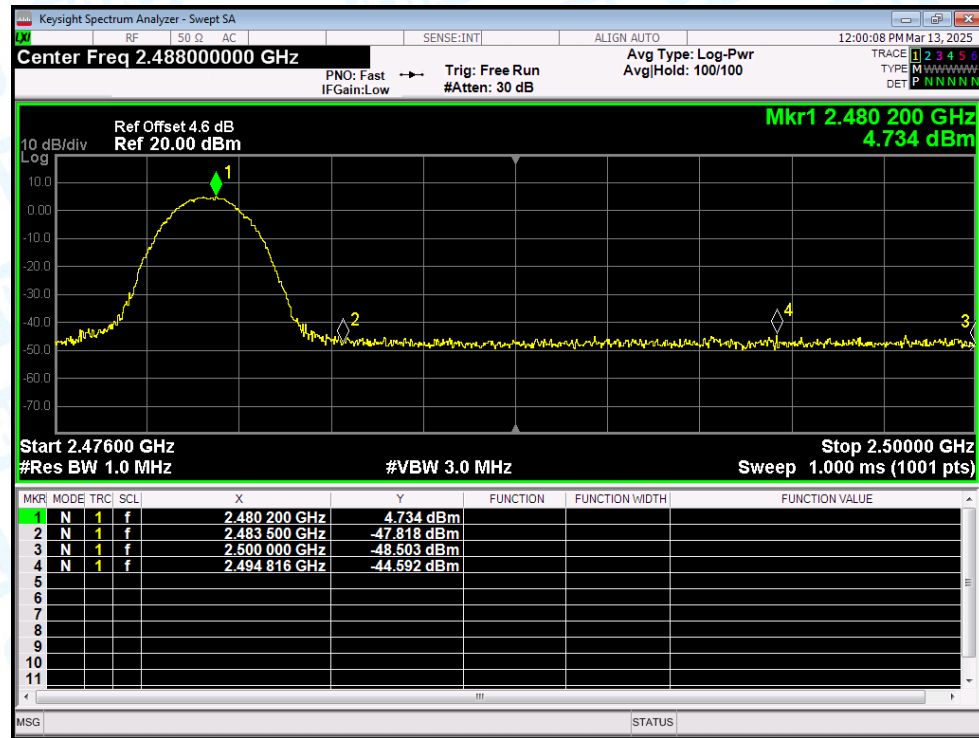
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



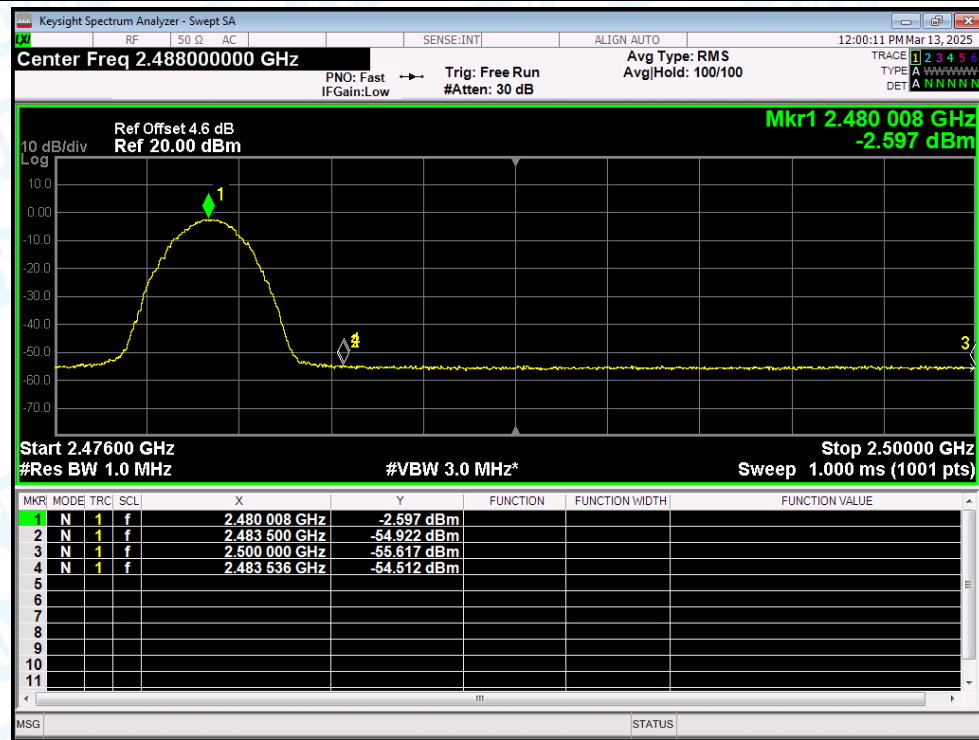
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



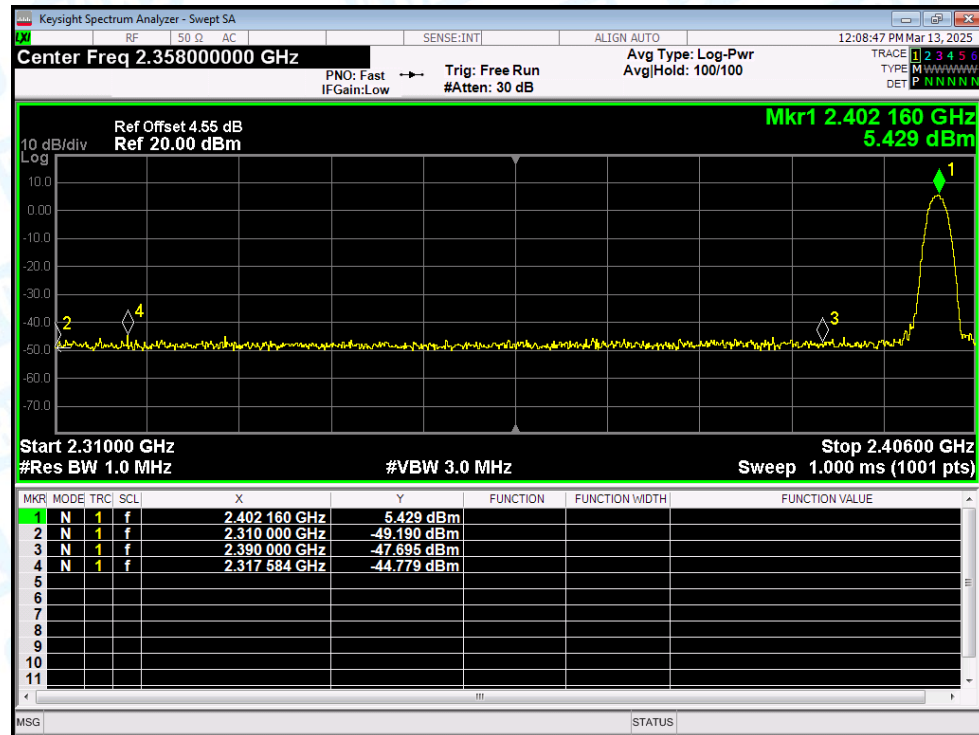
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



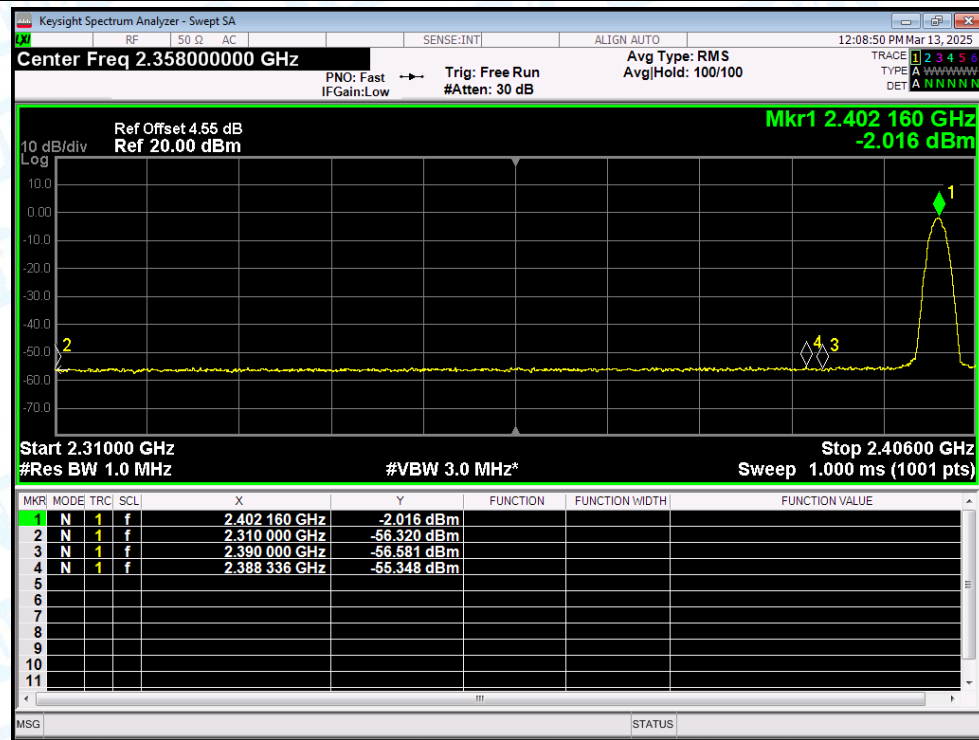
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



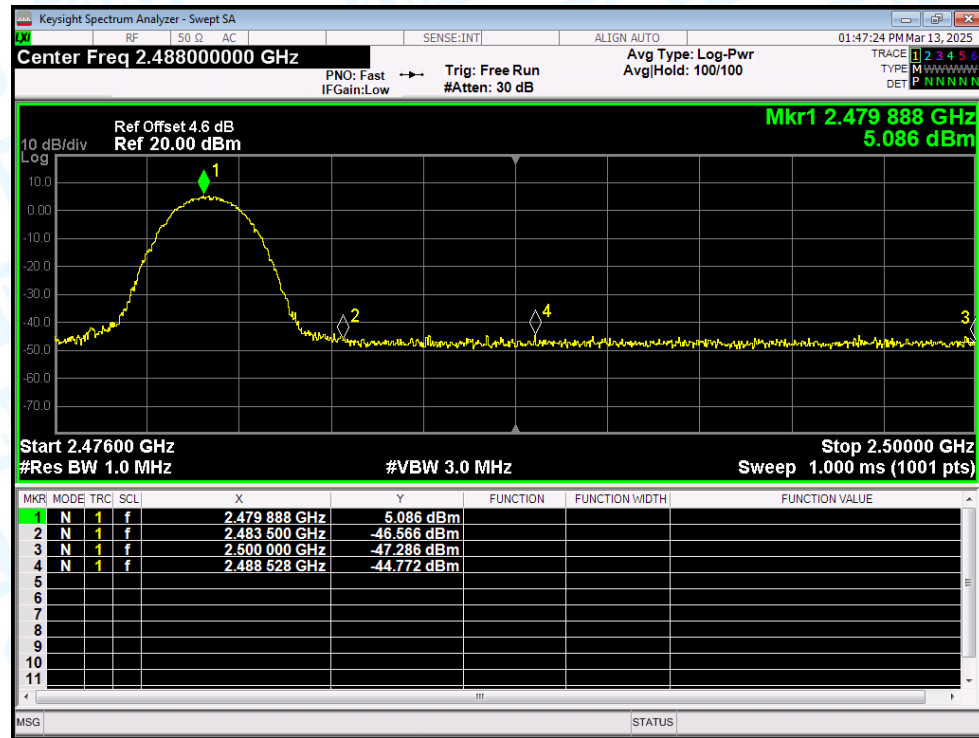
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



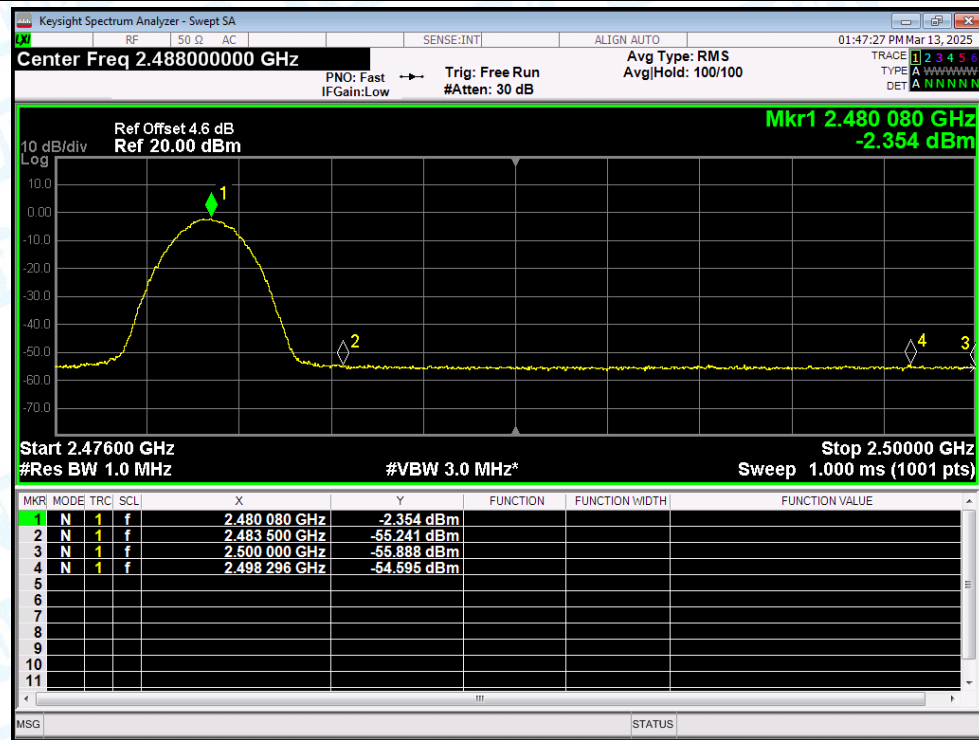
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

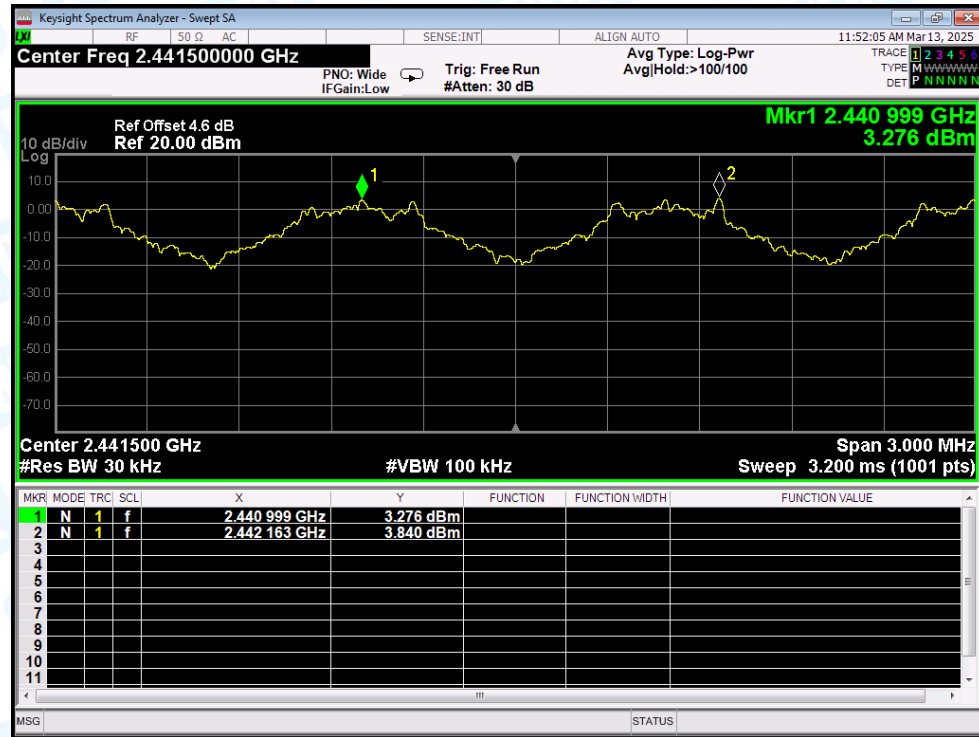


9. Carrier Frequencies Separation

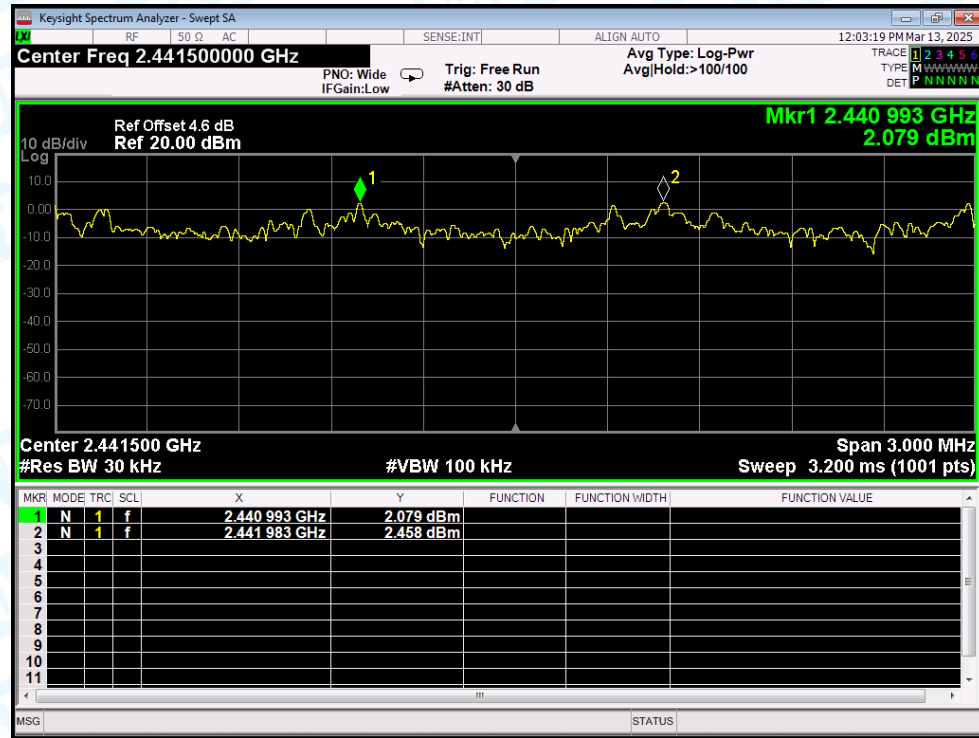
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.999	2442.163	1.164	0.025	Pass
NVNT	2-DH1	Ant1	2440.993	2441.983	0.99	0.82	Pass
NVNT	3-DH1	Ant1	2440.978	2441.986	1.008	0.813	Pass

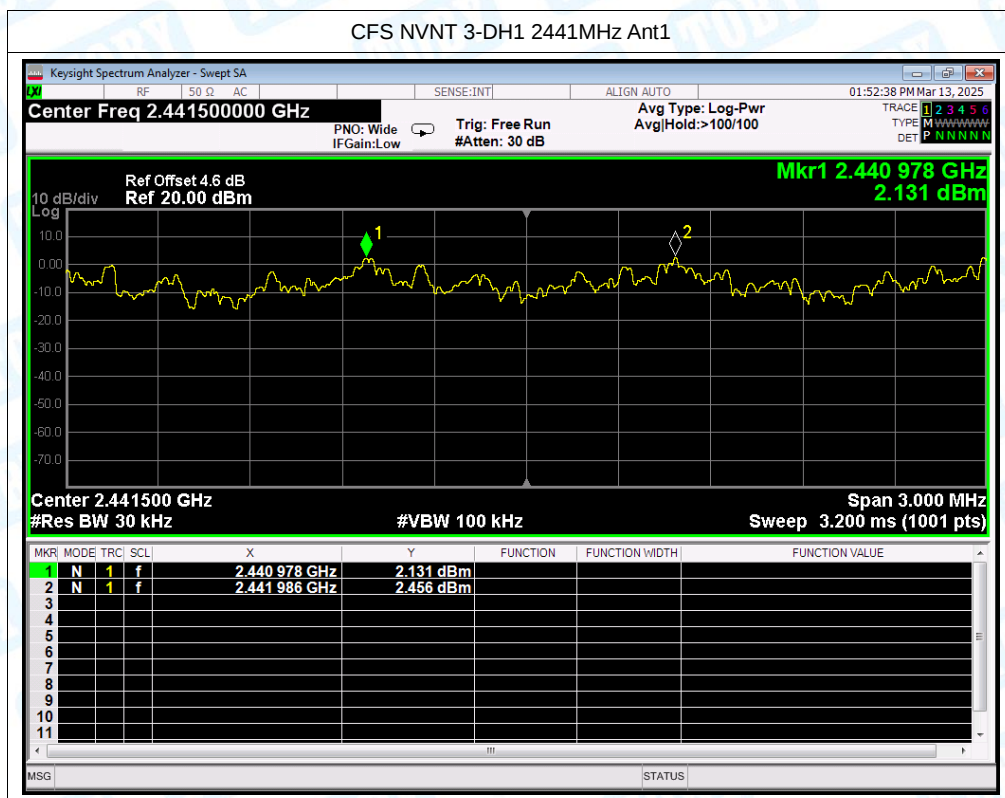
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



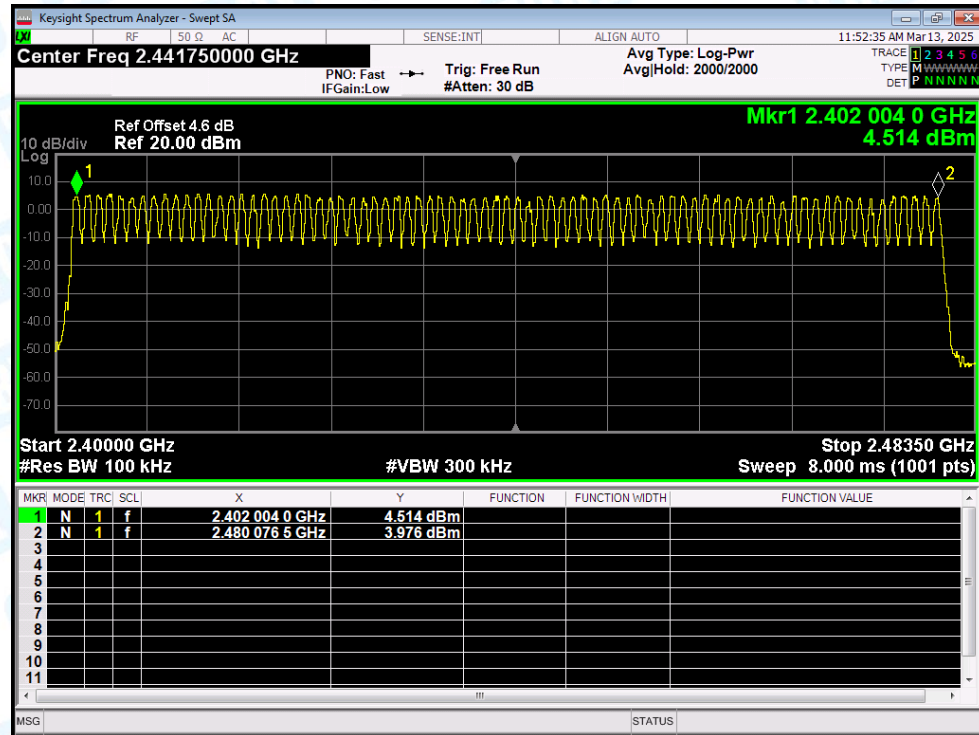


10. Number of Hopping Channel

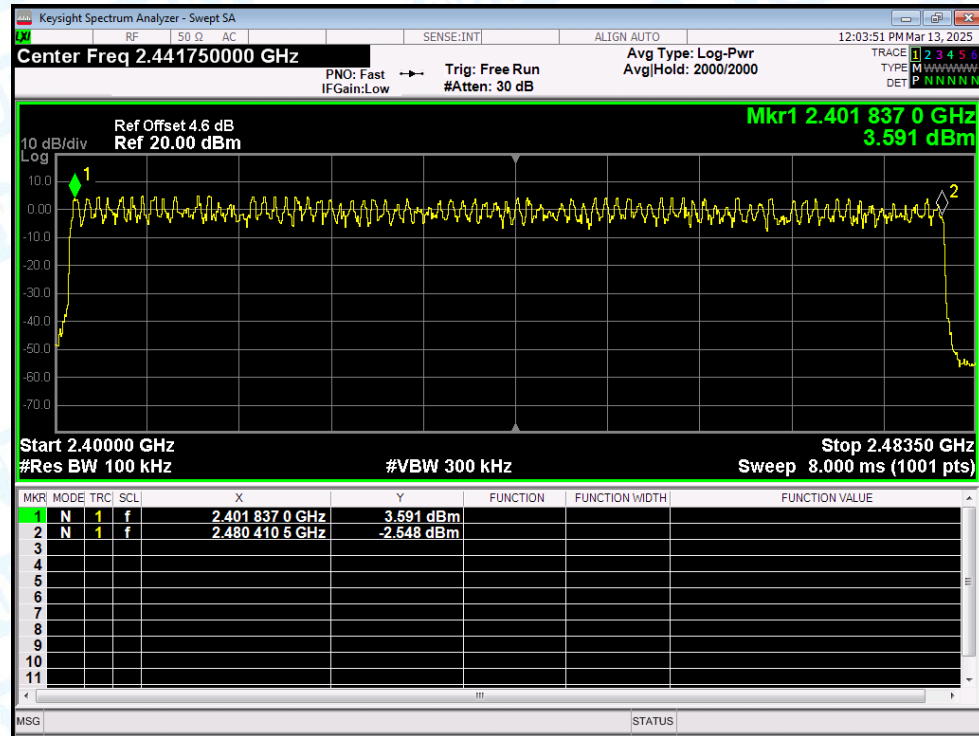
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

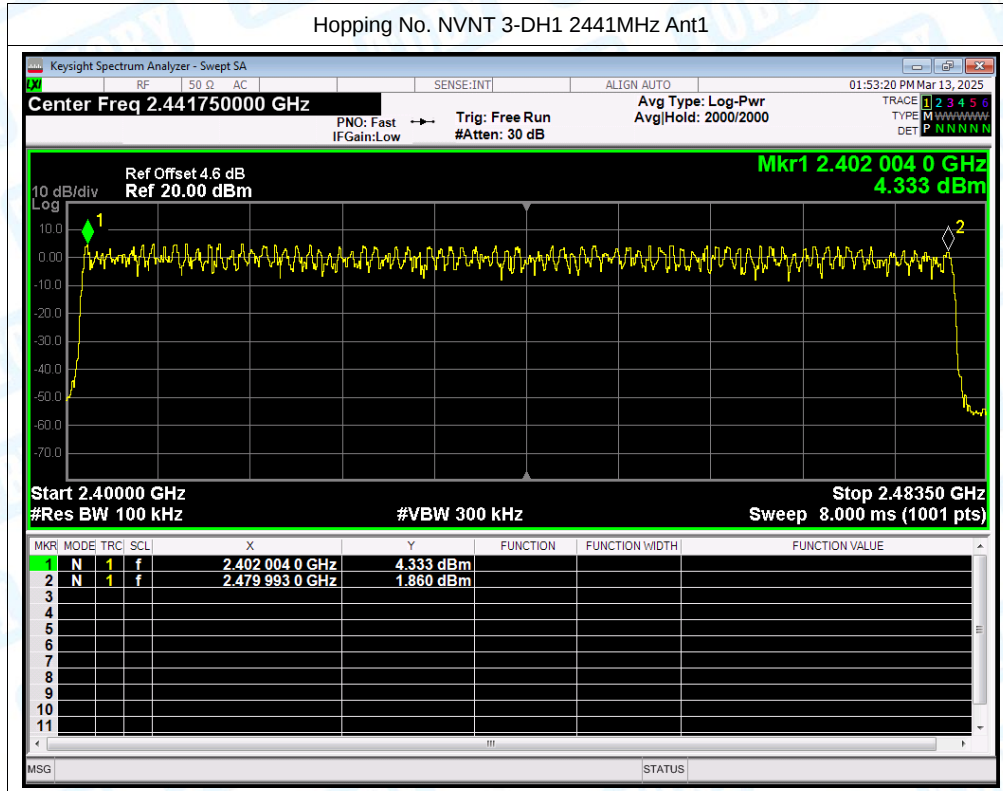
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



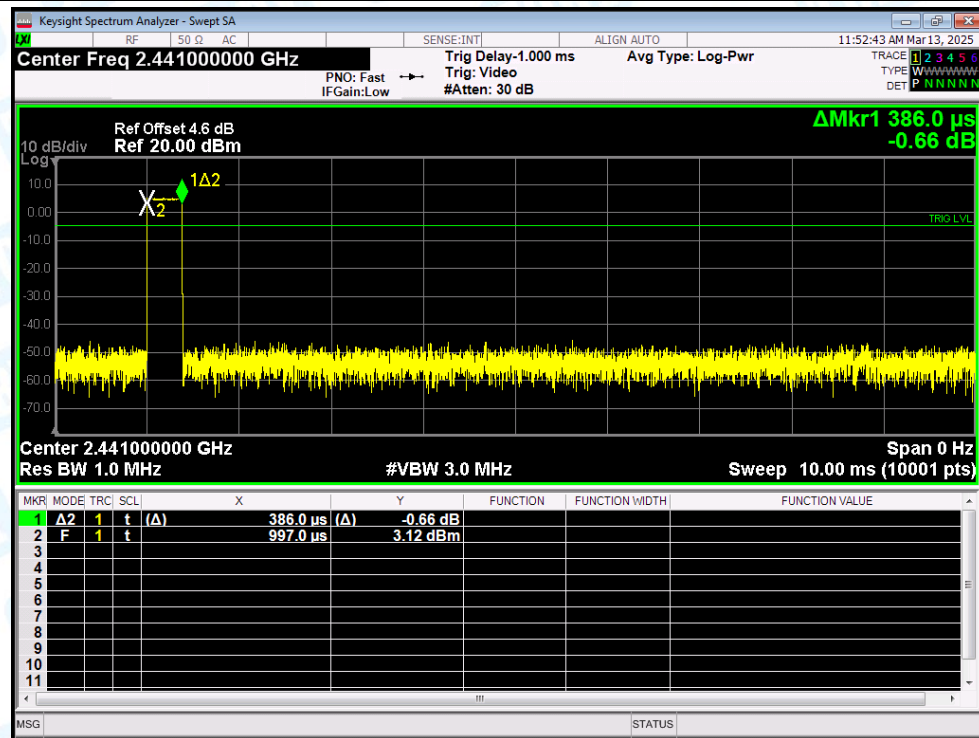


11. Dwell Time

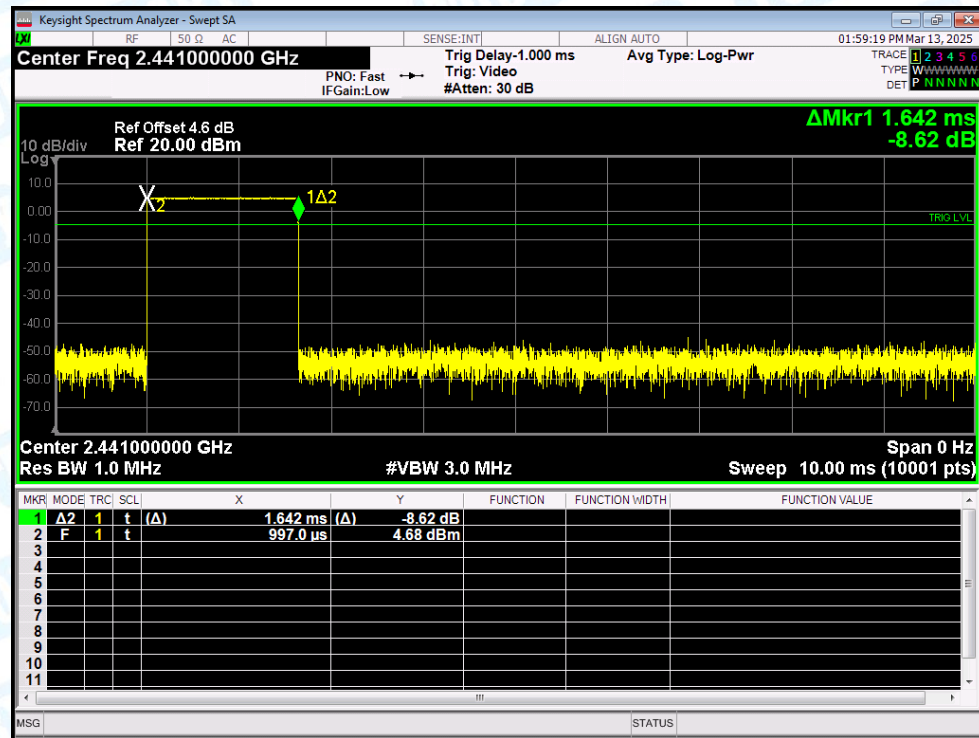
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.386	123.52	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.642	262.72	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.89	308.267	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.394	126.08	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.647	263.52	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.894	308.693	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.395	126.4	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.645	263.2	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.896	308.907	31600	400	Pass

Test Graphs

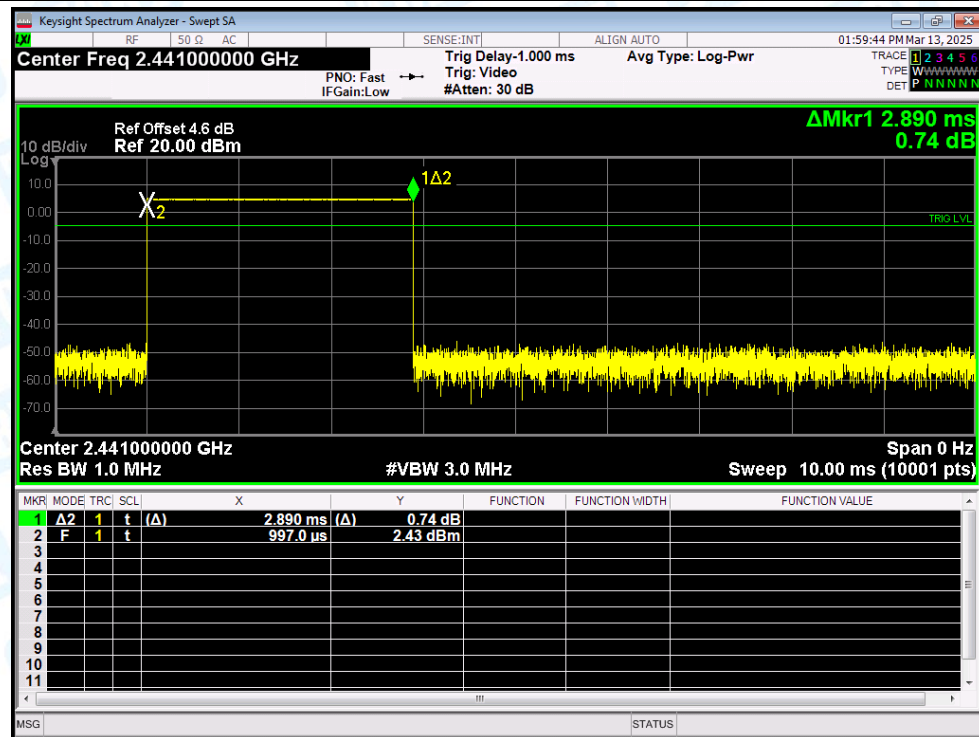
Dwell NVNT 1-DH1 2441MHz Ant1



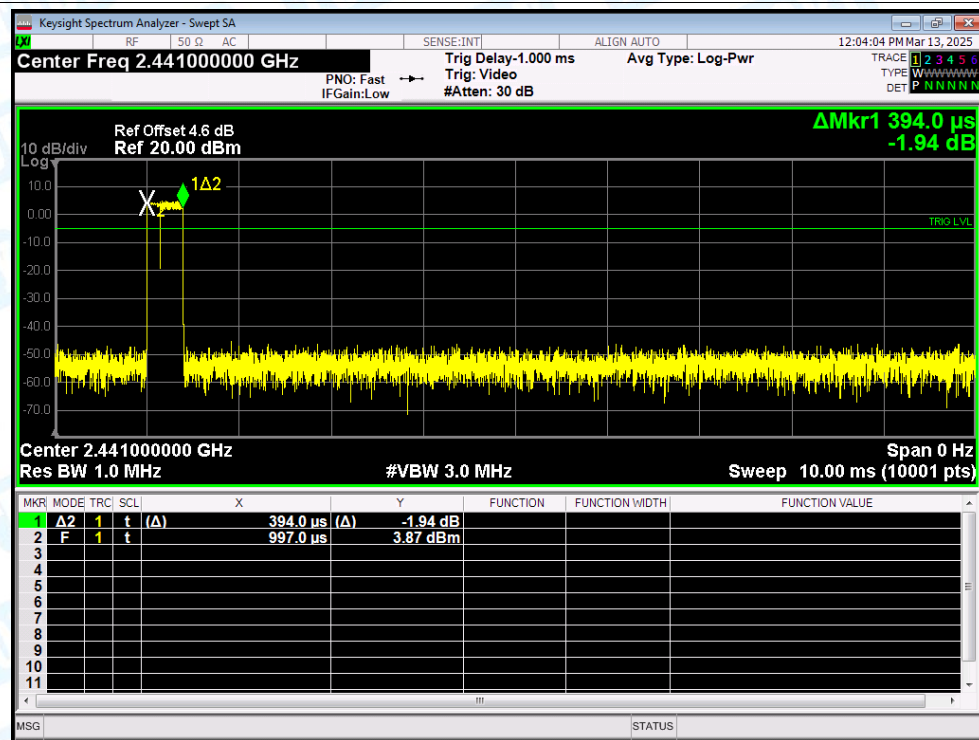
Dwell NVNT 1-DH3 2441MHz Ant1



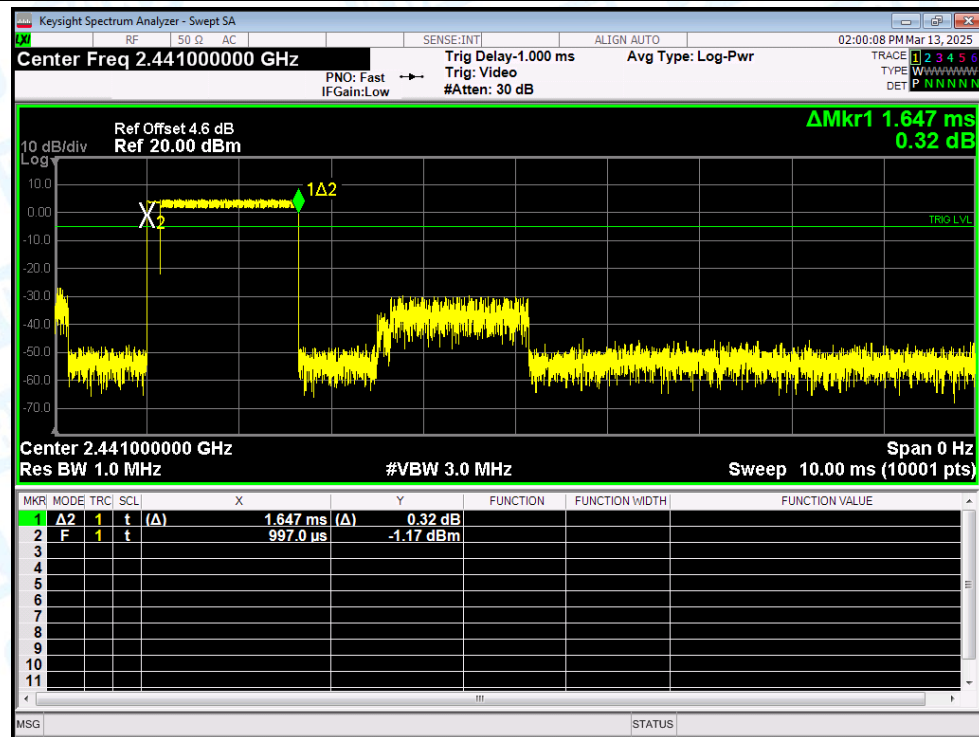
Dwell NVNT 1-DH5 2441MHz Ant1



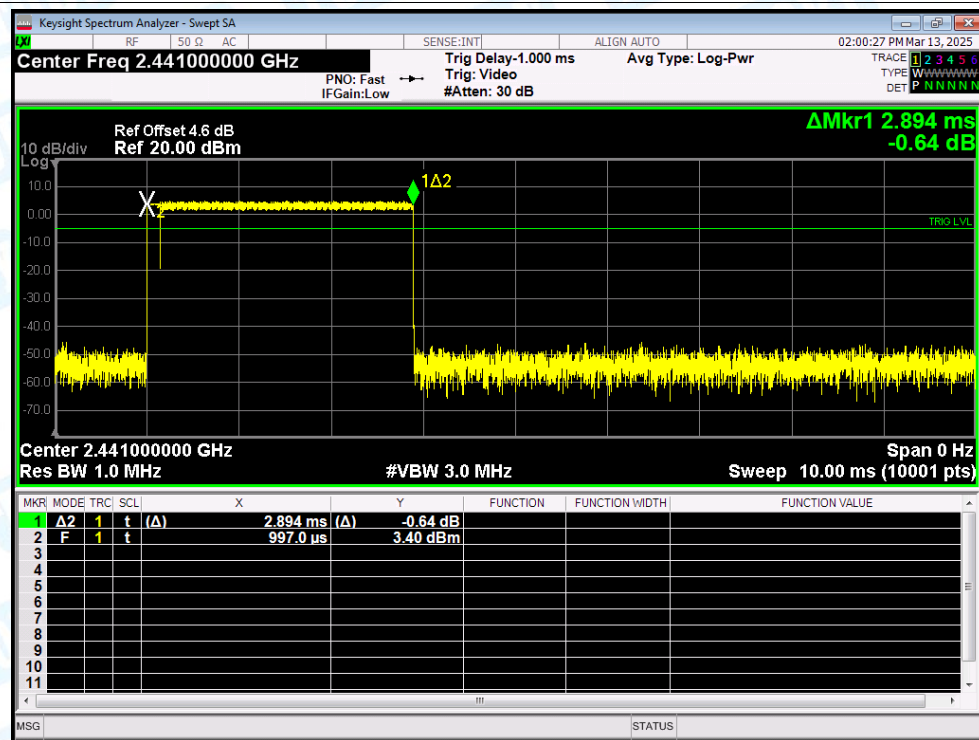
Dwell NVNT 2-DH1 2441MHz Ant1



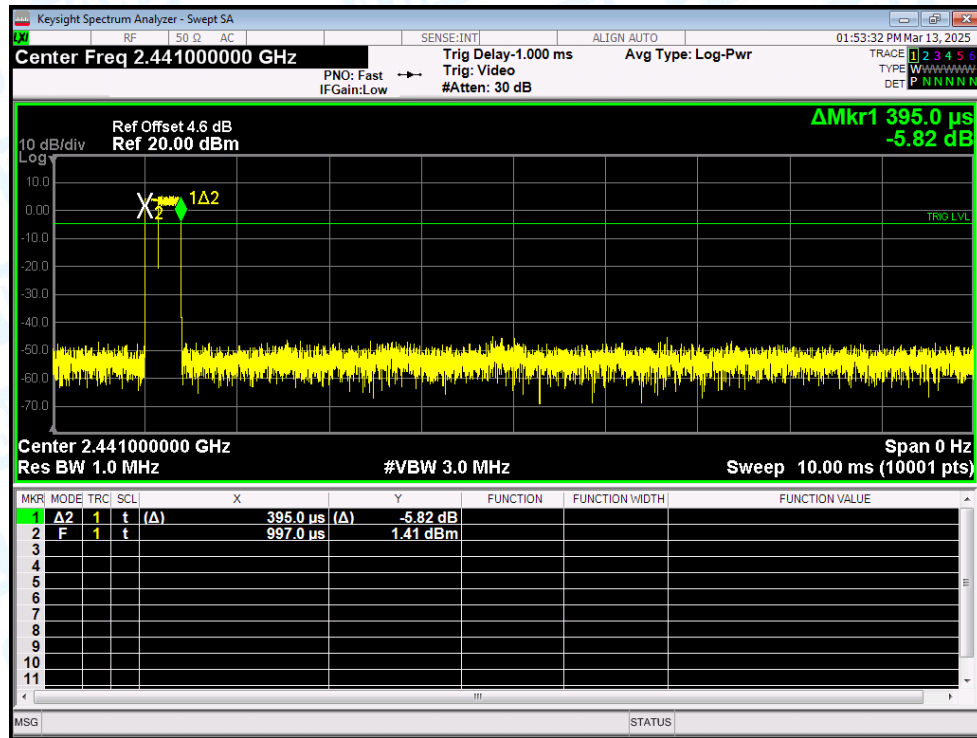
Dwell NVNT 2-DH3 2441MHz Ant1



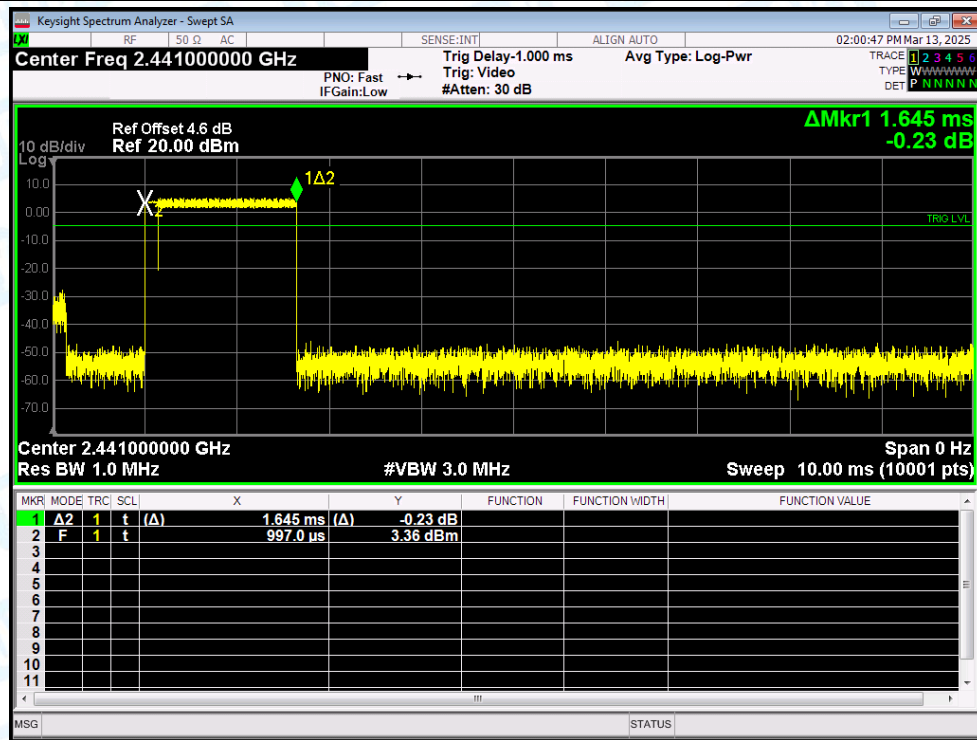
Dwell NVNT 2-DH5 2441MHz Ant1

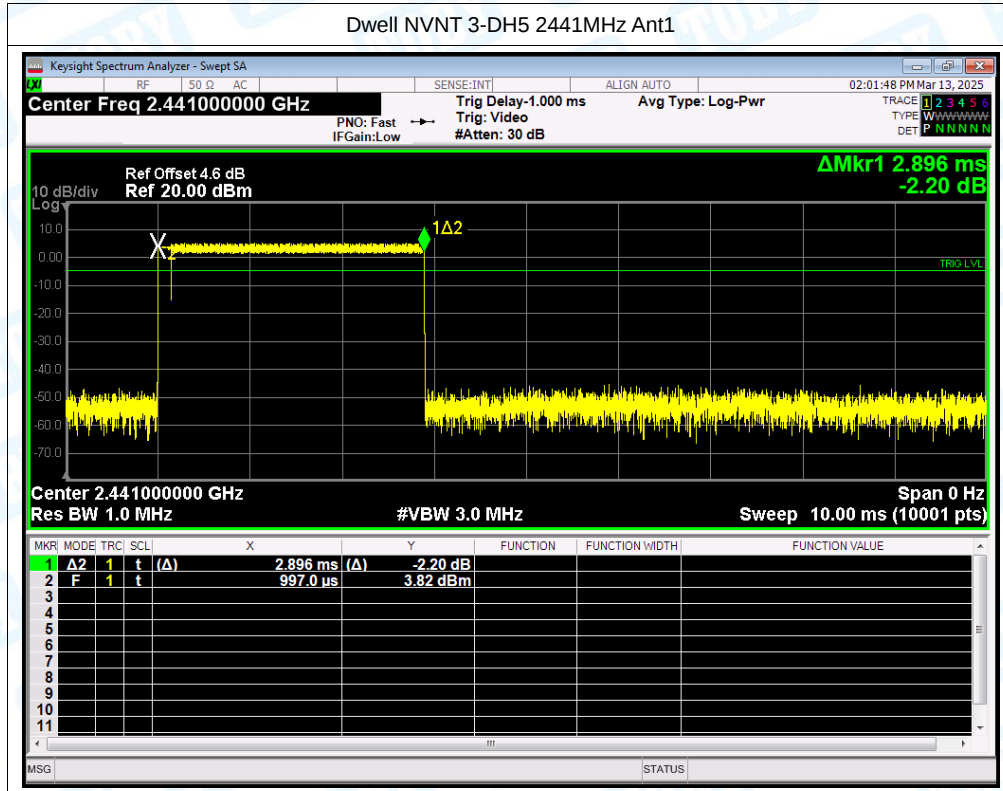


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





--- END OF REPORT ---