

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	Smart Watch
Test Model:	HD WATCHX
Sample ID:	HC-C-202406-0189-02-01
Environmental Conditions	
Temperature:	24.6℃
Relative Humidity:	52.3%
Test Voltage:	DC3.7V
Test Engineer:	Jolin Lee
Note: For a more detailed features description, please refer to the report TBR-C-202406-0189-31 The report only show the worst case data.	

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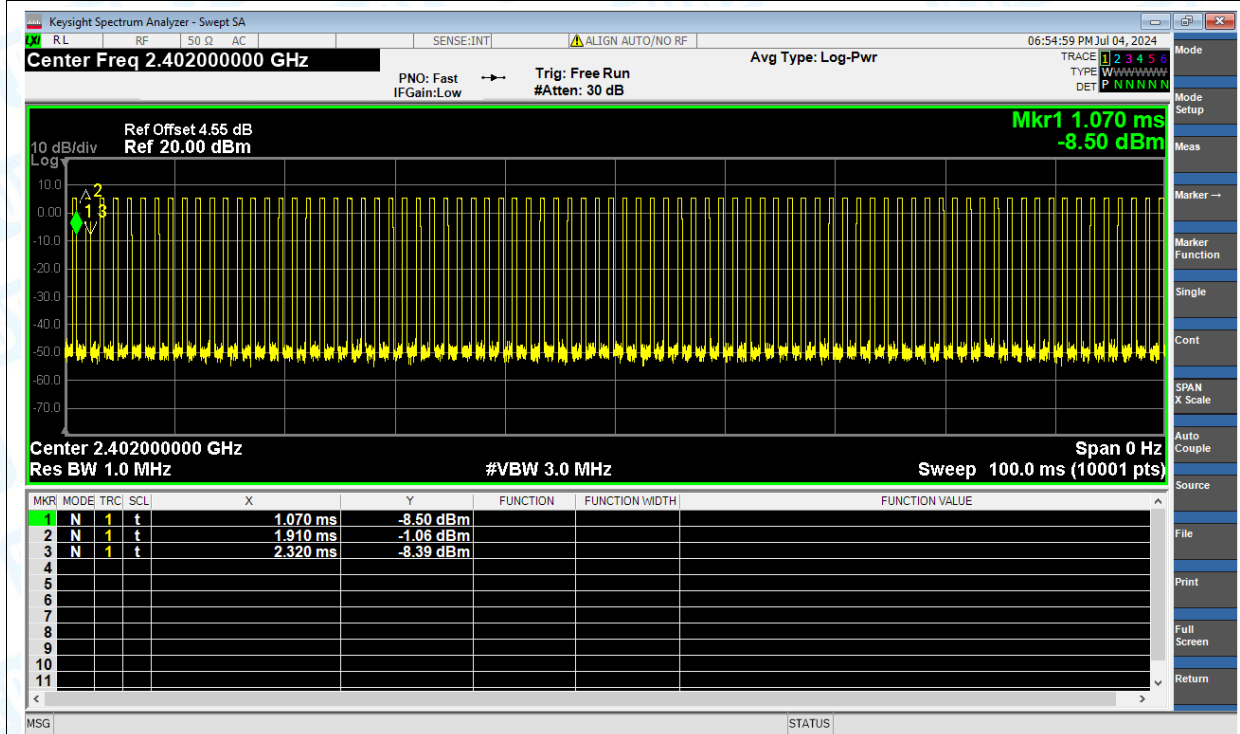
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1. Duty Cycle

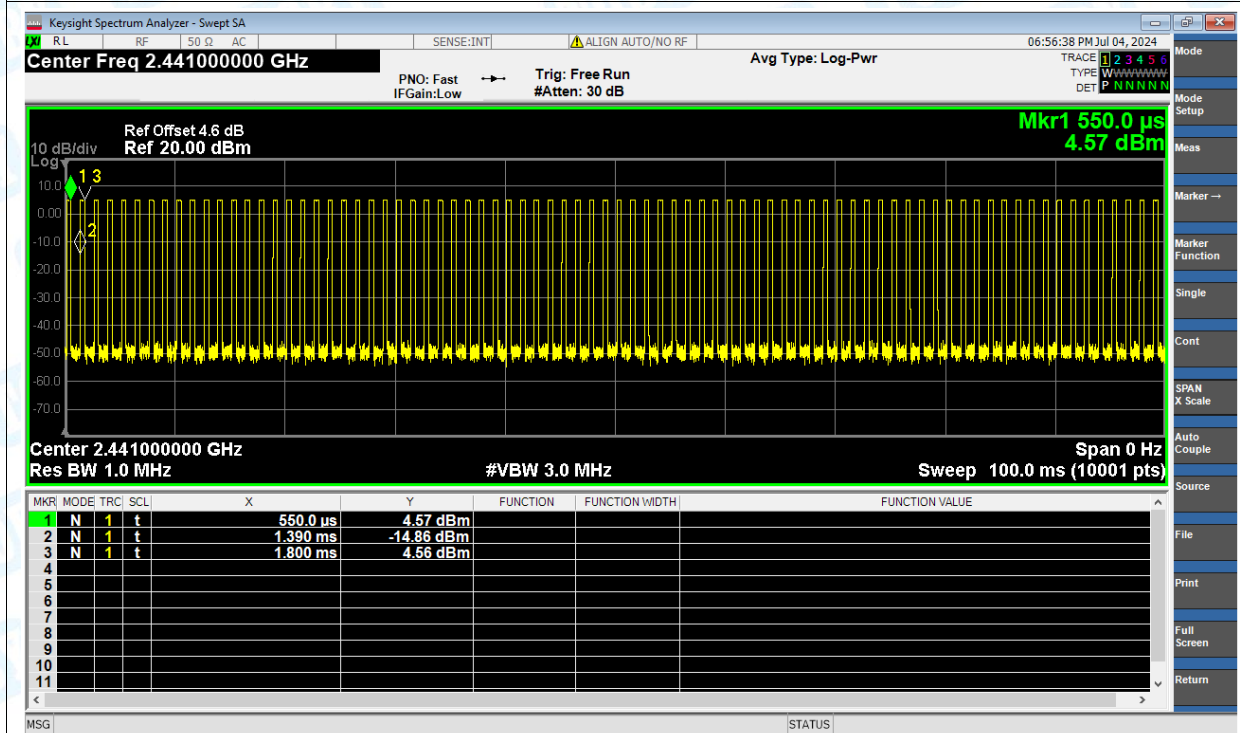
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	32.8	4.84	2.44
NVNT	1-DH1	2441	Ant1	32.8	4.84	2.44
NVNT	1-DH1	2480	Ant1	32.8	4.84	2.44
NVNT	2-DH1	2402	Ant1	33.6	4.74	2.38
NVNT	2-DH1	2441	Ant1	33.6	4.74	2.38
NVNT	2-DH1	2480	Ant1	33.6	4.74	2.38
NVNT	3-DH1	2402	Ant1	33.6	4.74	2.38
NVNT	3-DH1	2441	Ant1	33.6	4.74	2.38
NVNT	3-DH1	2480	Ant1	33.6	4.74	2.38

Test Graphs

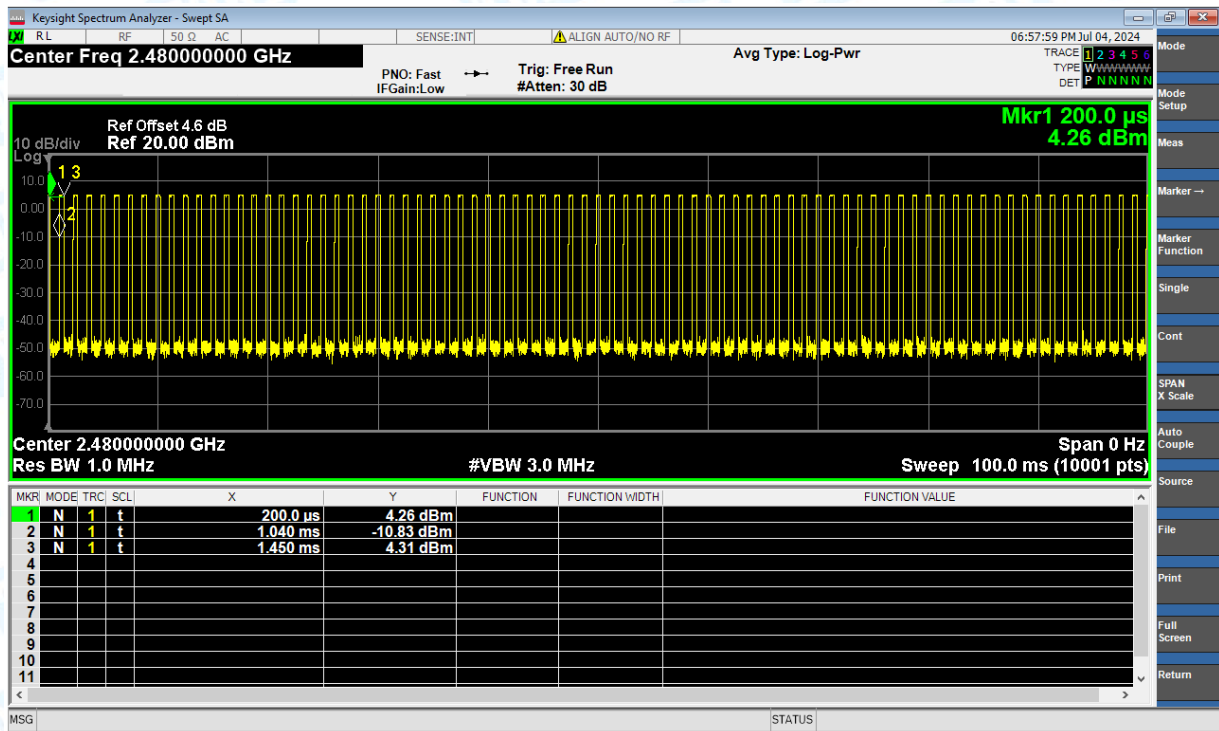
Duty Cycle NVNT 1-DH1 2402MHz Ant1



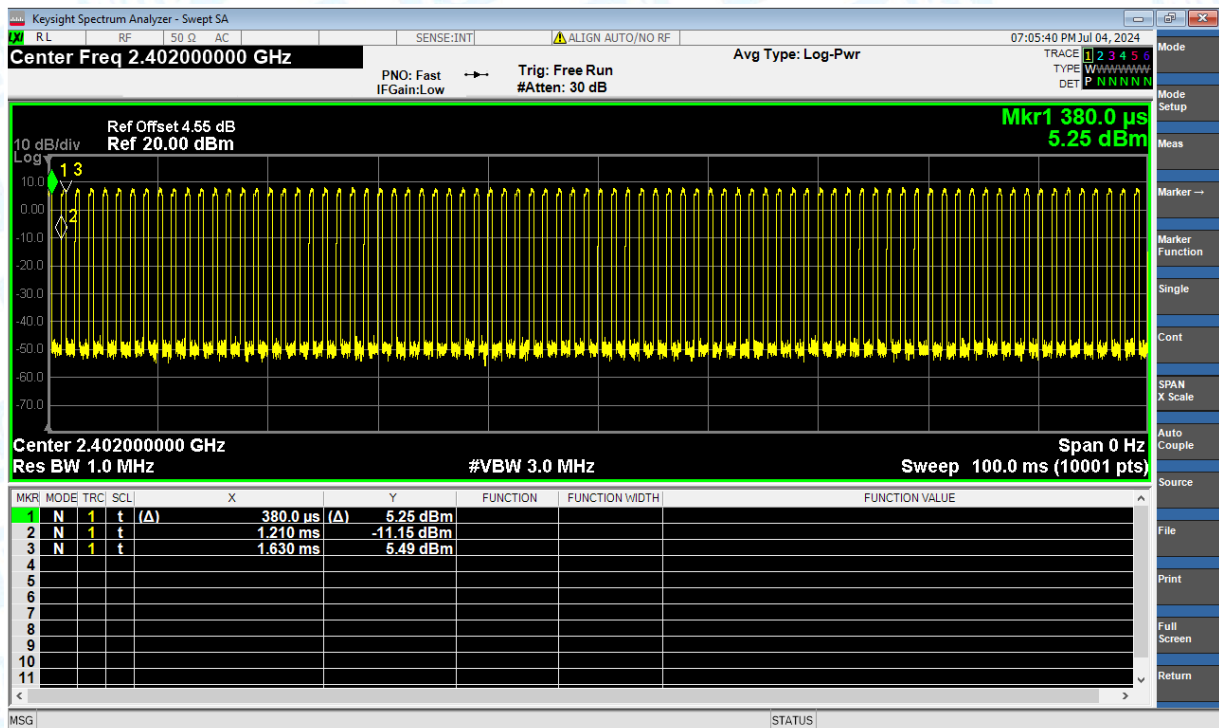
Duty Cycle NVNT 1-DH1 2441MHz Ant1



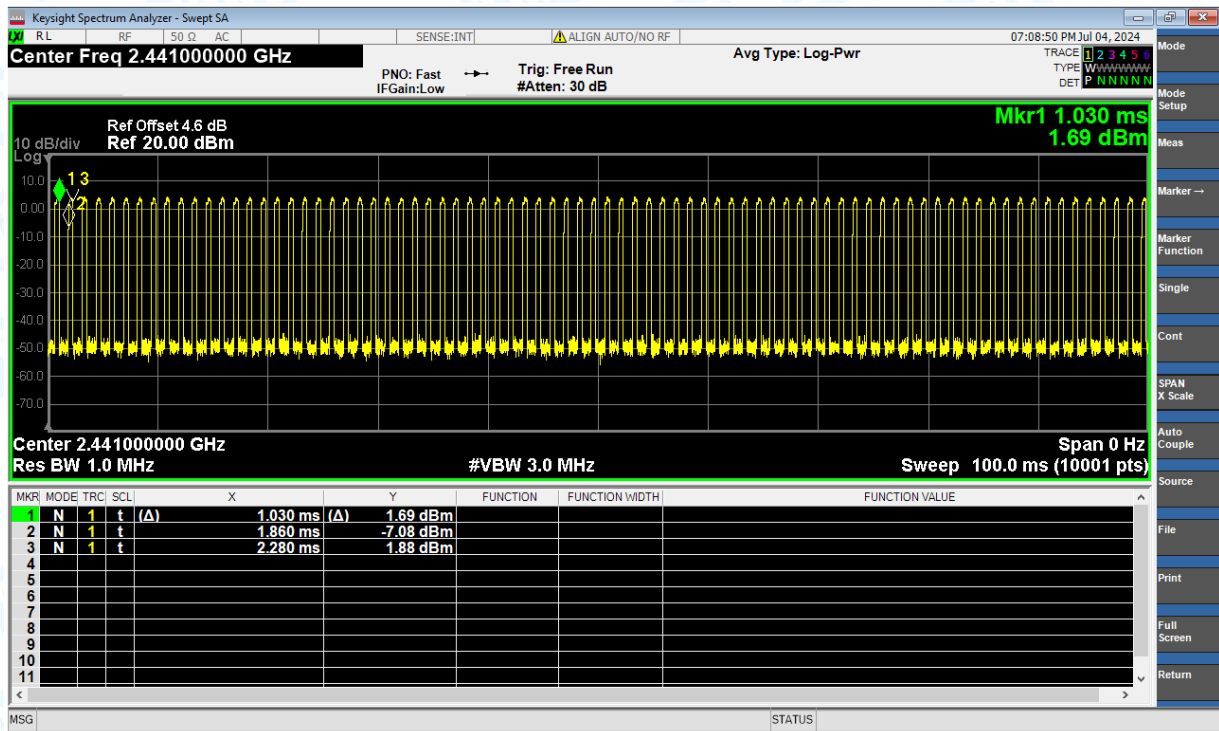
Duty Cycle NVNT 1-DH1 2480MHz Ant1



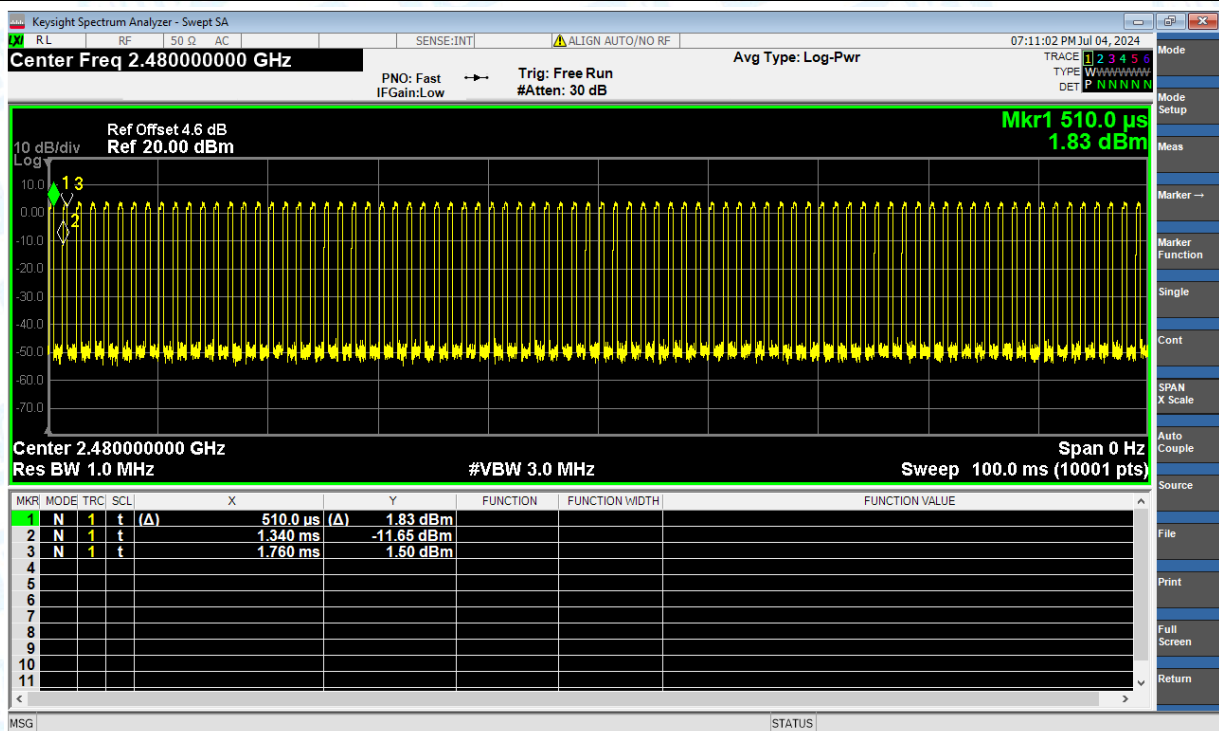
Duty Cycle NVNT 2-DH1 2402MHz Ant1



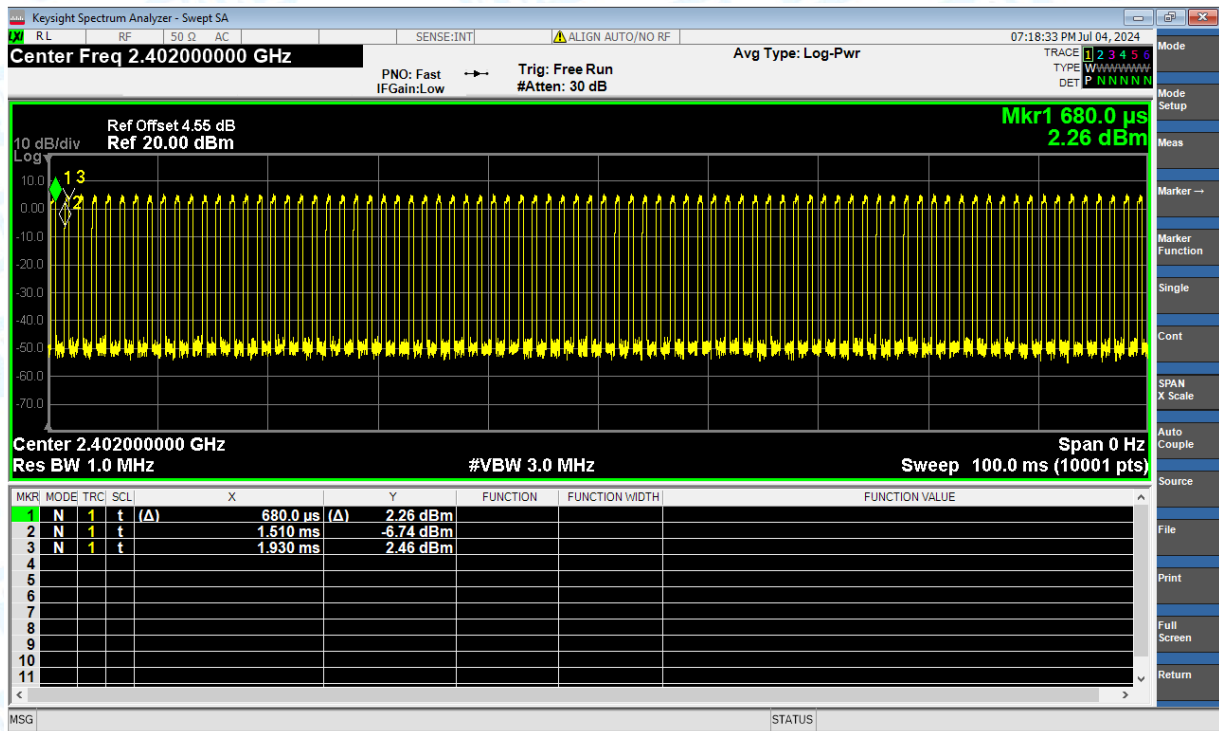
Duty Cycle NVNT 2-DH1 2441MHz Ant1



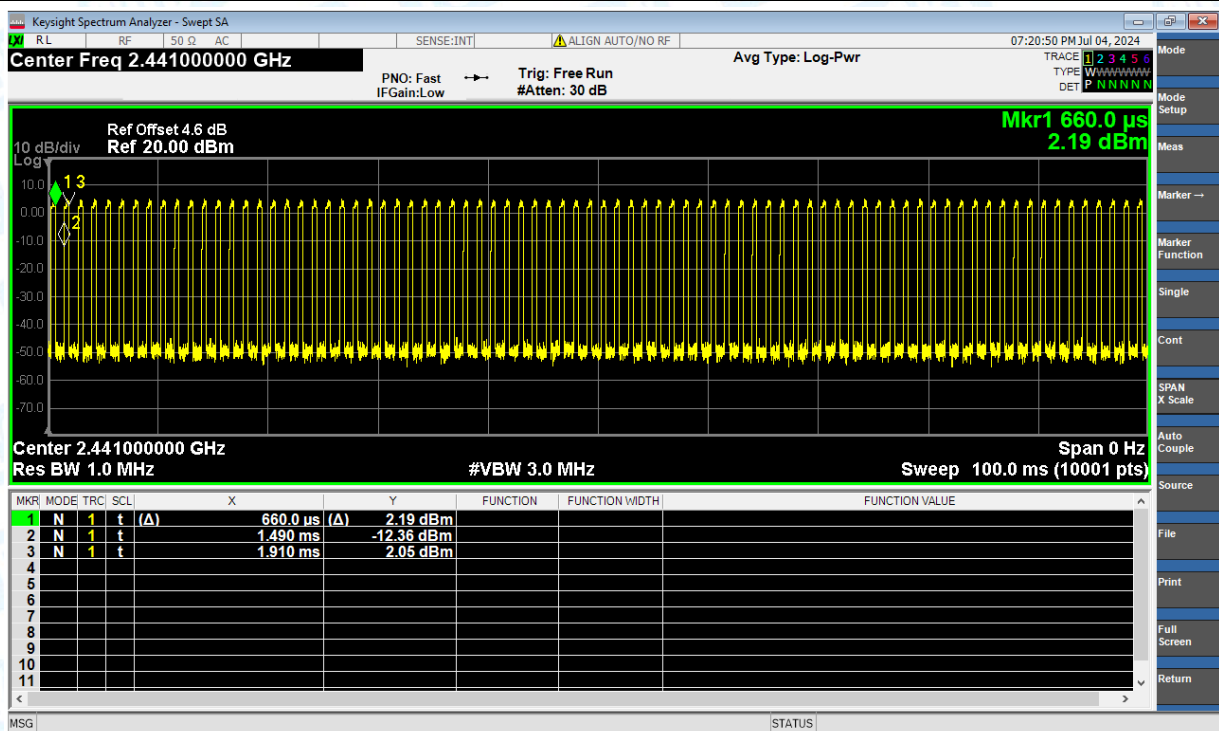
Duty Cycle NVNT 2-DH1 2480MHz Ant1

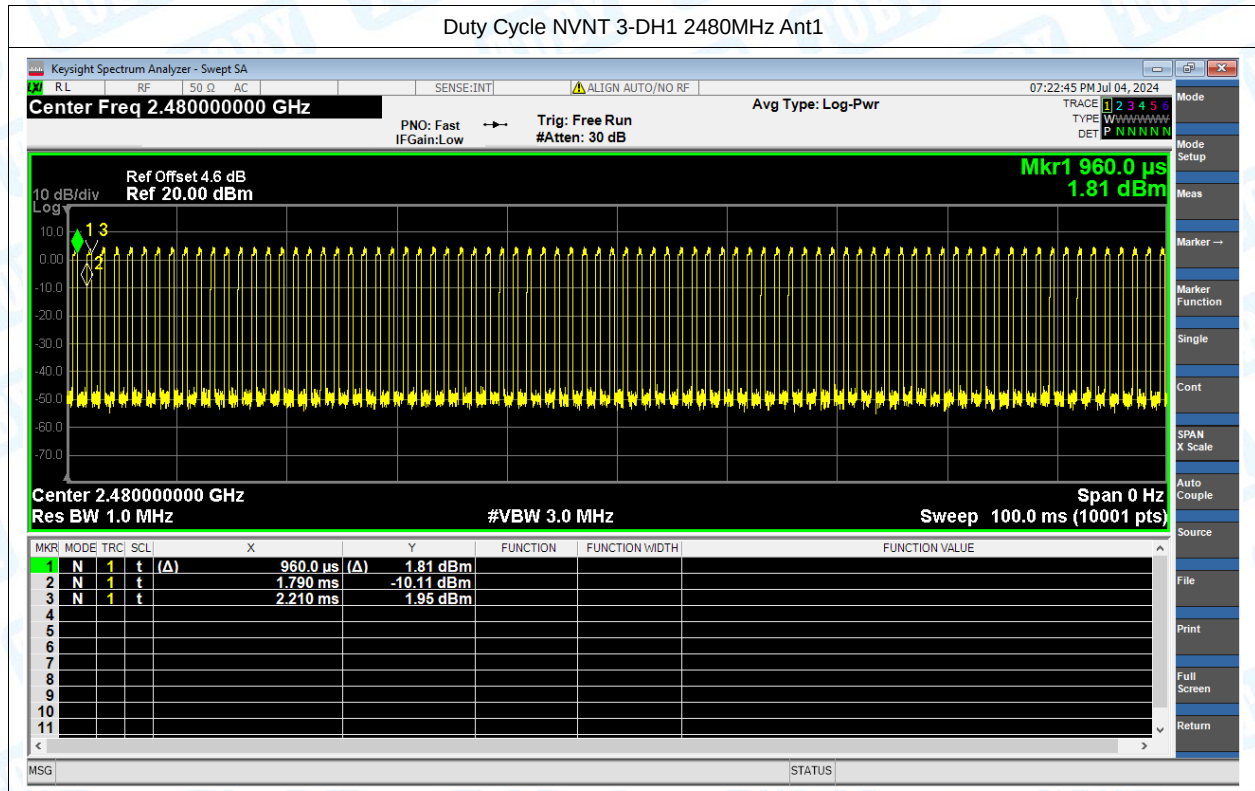


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



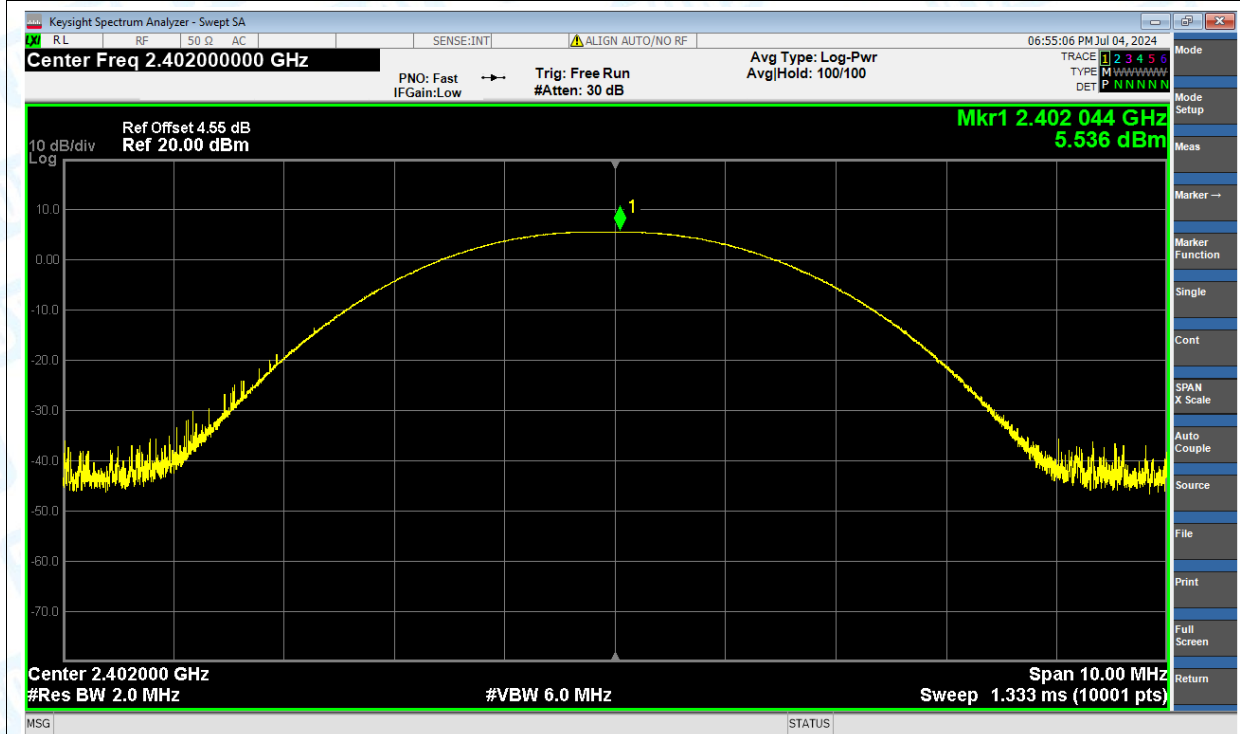


2. Maximum Conducted Output Power

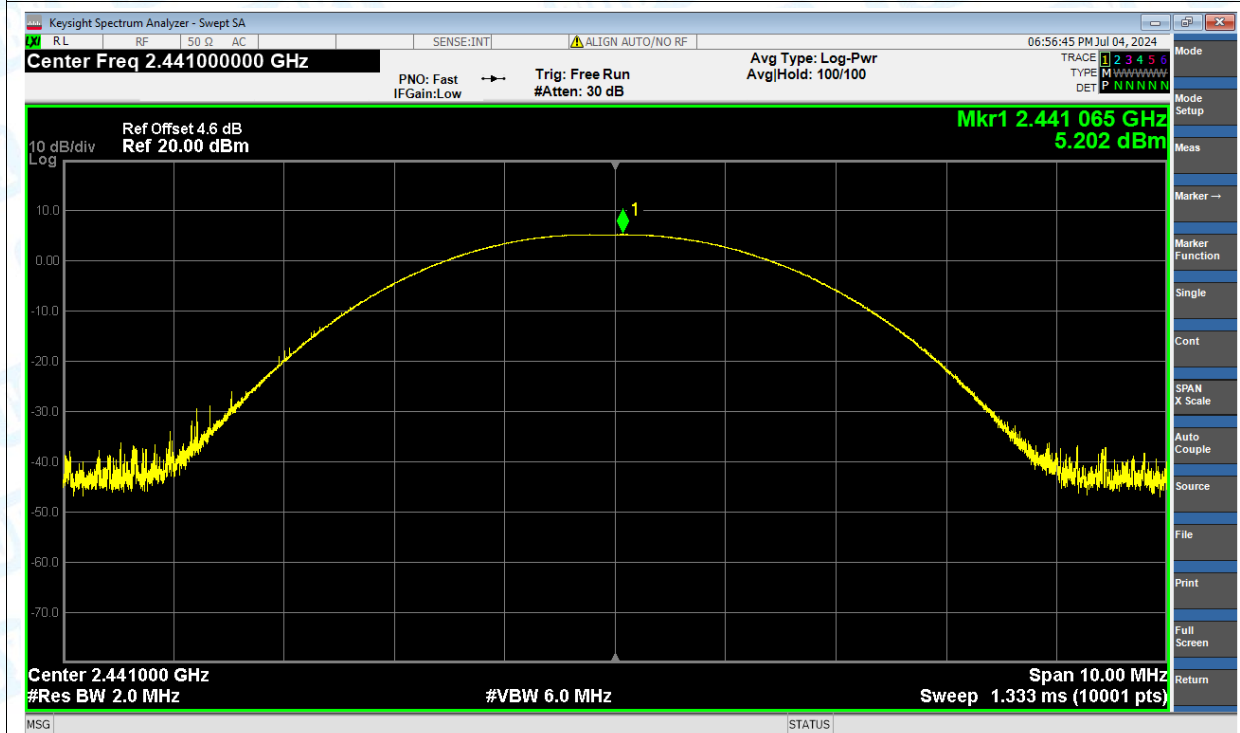
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	5.536	21	Pass
NVNT	1-DH1	2441	Ant1	5.202	21	Pass
NVNT	1-DH1	2480	Ant1	5.067	21	Pass
NVNT	1-DH3	2441	Ant1	5.501	21	Pass
NVNT	1-DH5	2441	Ant1	5.422	21	Pass
NVNT	2-DH1	2402	Ant1	5.084	21	Pass
NVNT	2-DH1	2441	Ant1	4.697	21	Pass
NVNT	2-DH1	2480	Ant1	4.495	21	Pass
NVNT	2-DH3	2441	Ant1	3.984	21	Pass
NVNT	2-DH5	2441	Ant1	4.69	21	Pass
NVNT	3-DH1	2402	Ant1	5.678	21	Pass
NVNT	3-DH1	2441	Ant1	5.478	21	Pass
NVNT	3-DH1	2480	Ant1	5.277	21	Pass
NVNT	3-DH3	2441	Ant1	4.655	21	Pass
NVNT	3-DH5	2441	Ant1	4.201	21	Pass

Test Graphs

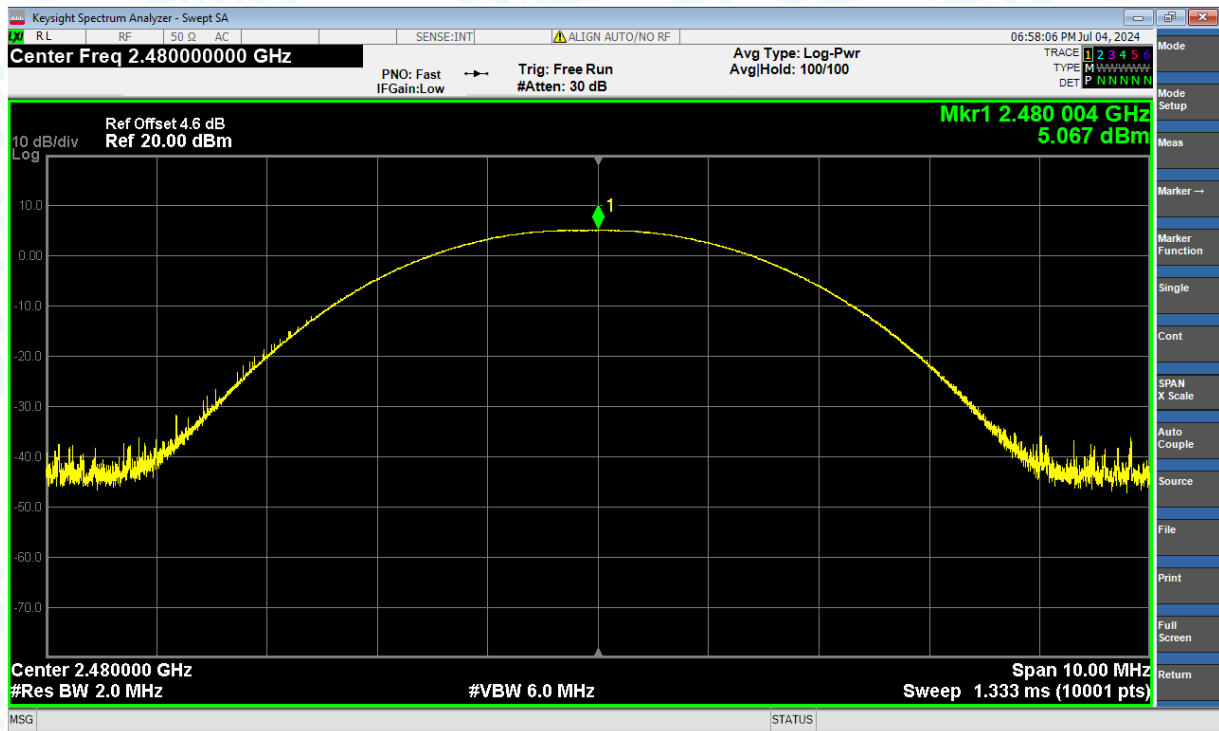
Power NVNT 1-DH1 2402MHz Ant1



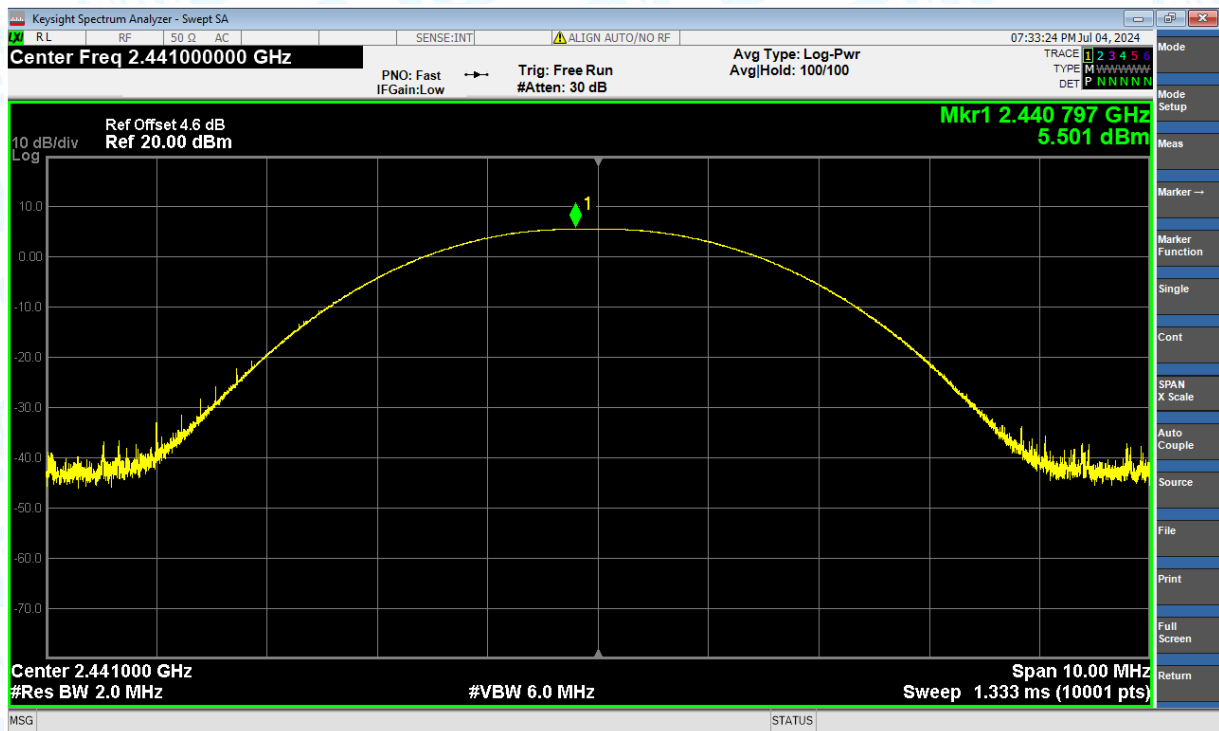
Power NVNT 1-DH1 2441MHz Ant1



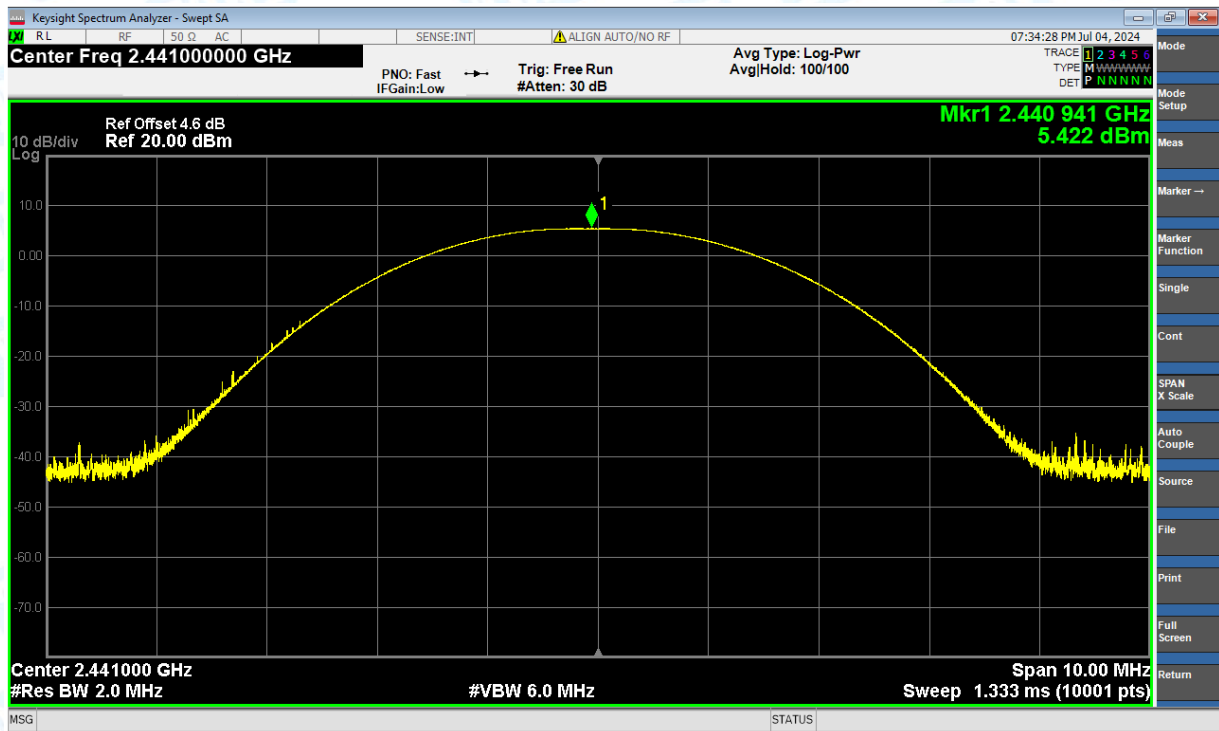
Power NVNT 1-DH1 2480MHz Ant1



Power NVNT 1-DH3 2441MHz Ant1



Power NVNT 1-DH5 2441MHz Ant1



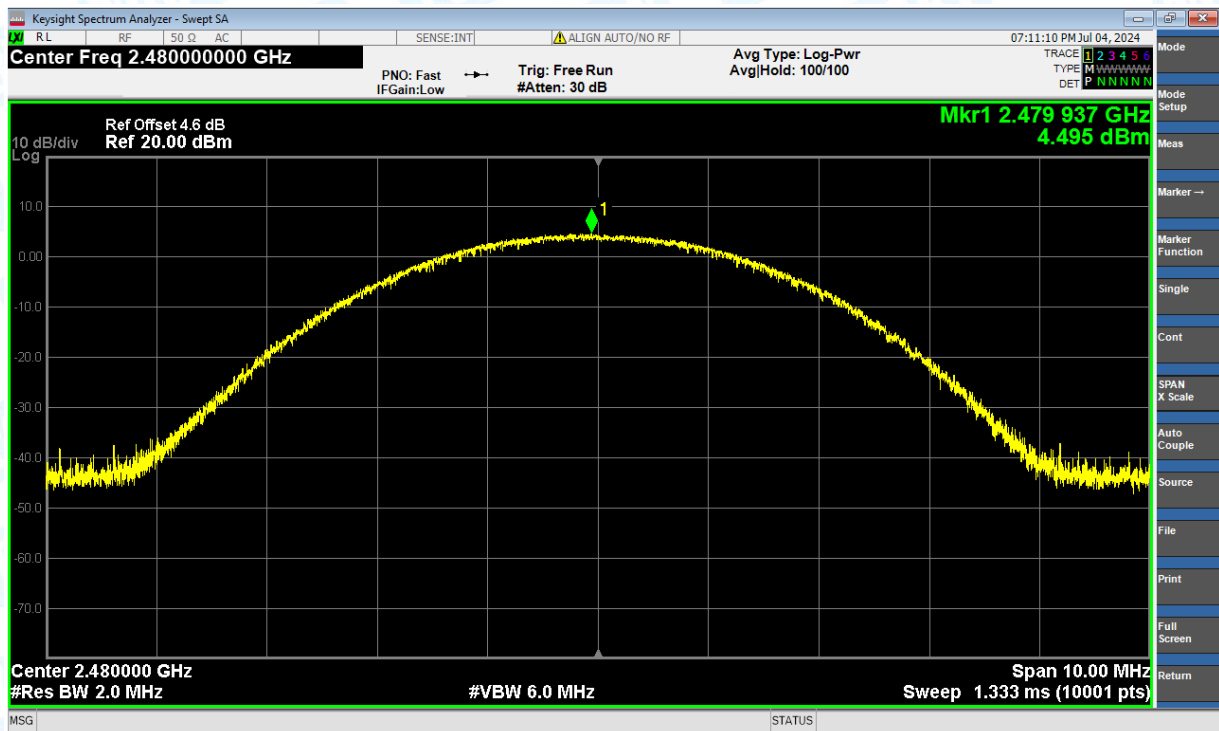
Power NVNT 2-DH1 2402MHz Ant1



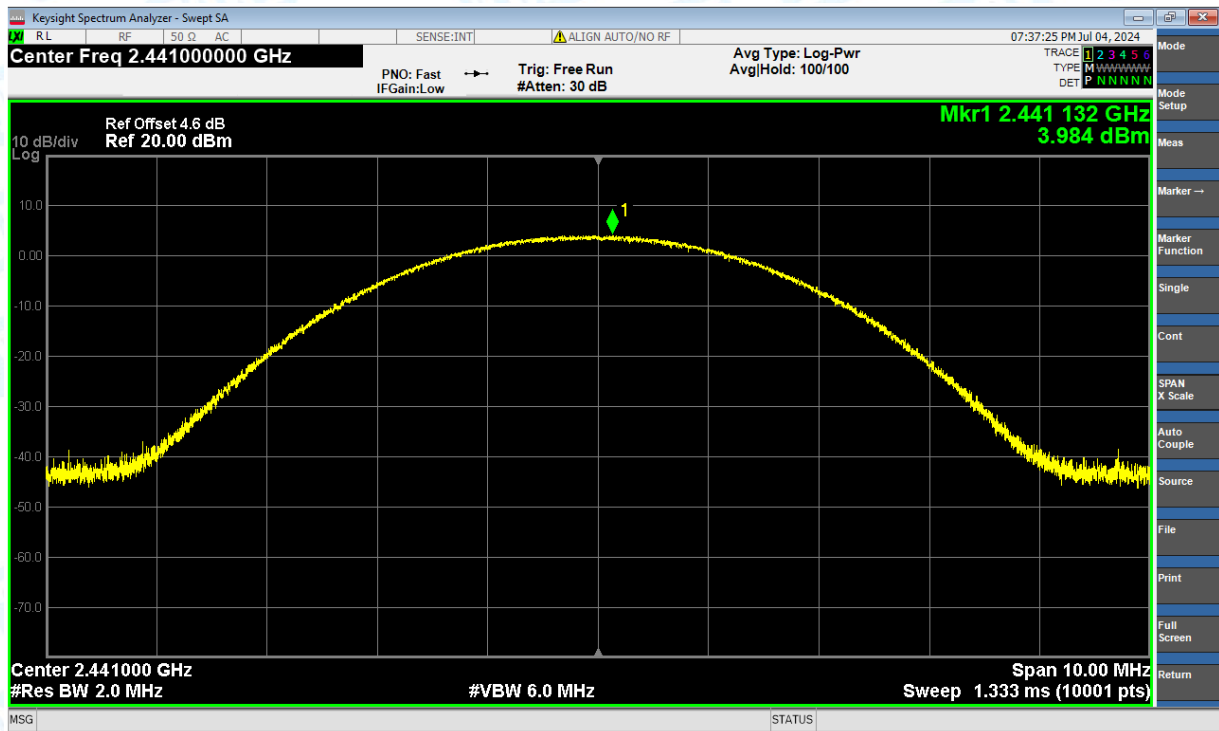
Power NVNT 2-DH1 2441MHz Ant1



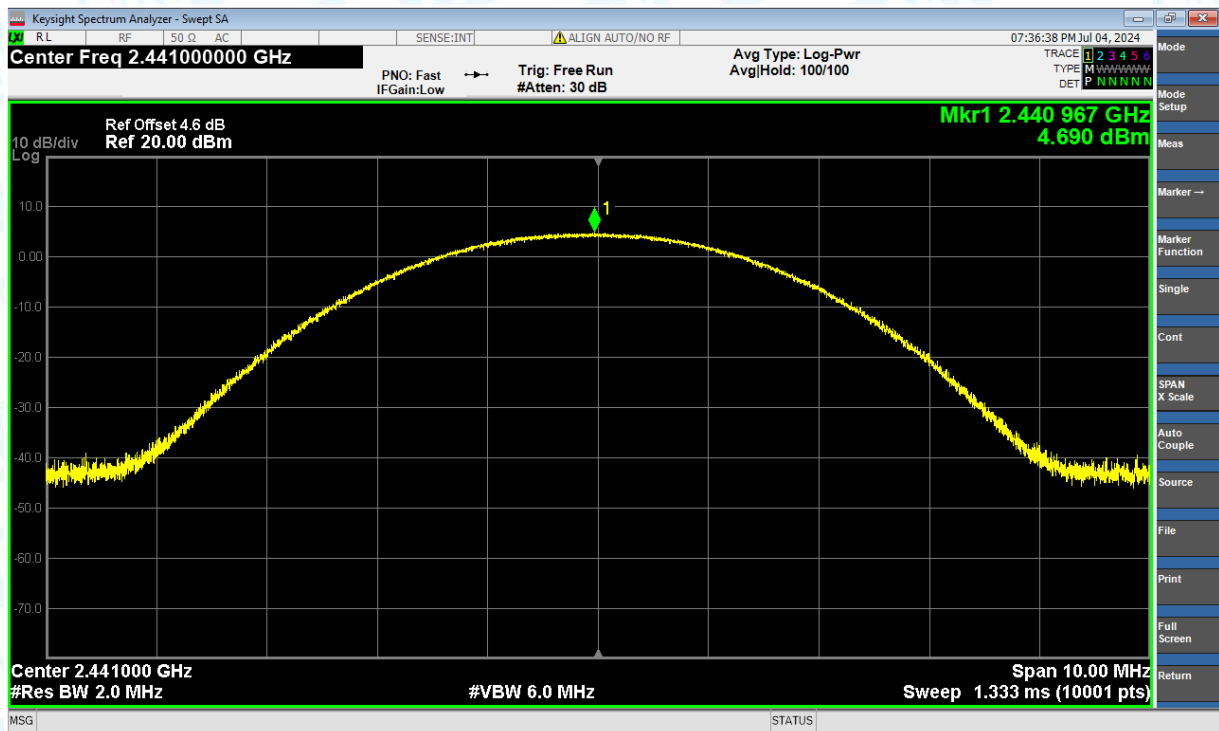
Power NVNT 2-DH1 2480MHz Ant1



Power NVNT 2-DH3 2441MHz Ant1



Power NVNT 2-DH5 2441MHz Ant1



Power NVNT 3-DH1 2402MHz Ant1



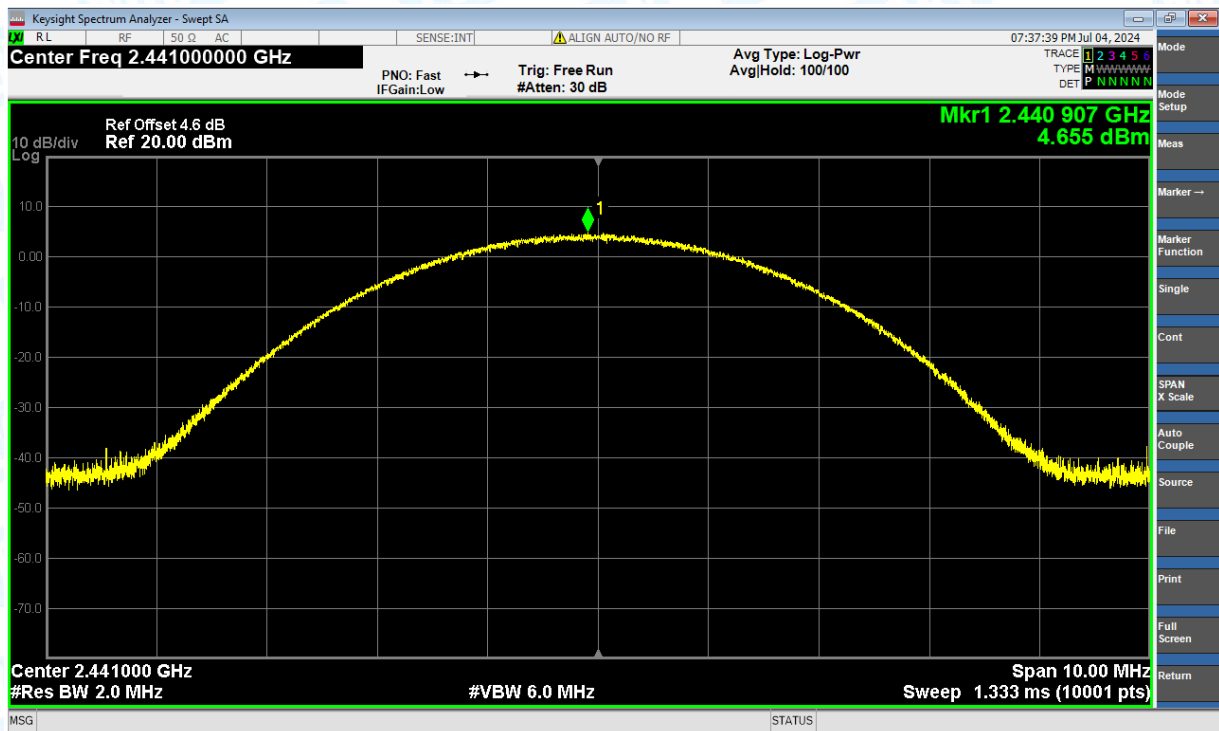
Power NVNT 3-DH1 2441MHz Ant1

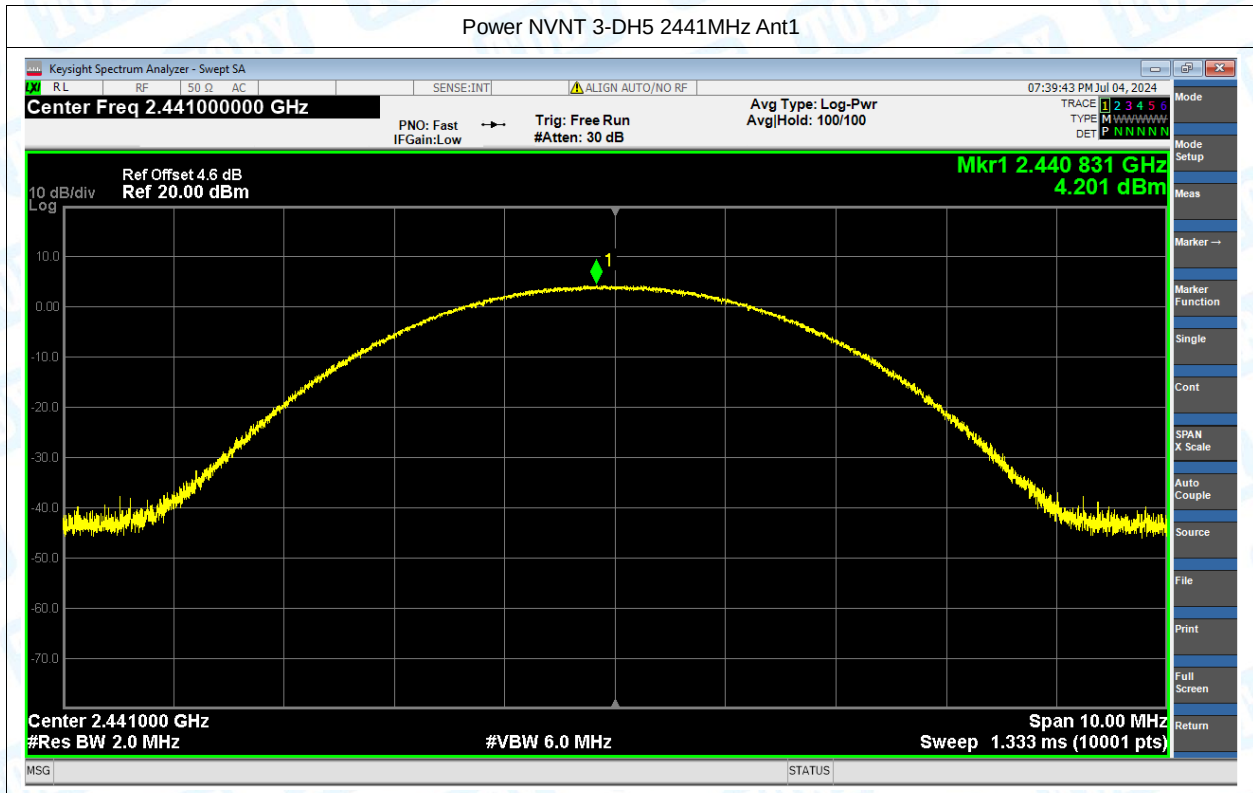


Power NVNT 3-DH1 2480MHz Ant1



Power NVNT 3-DH3 2441MHz Ant1



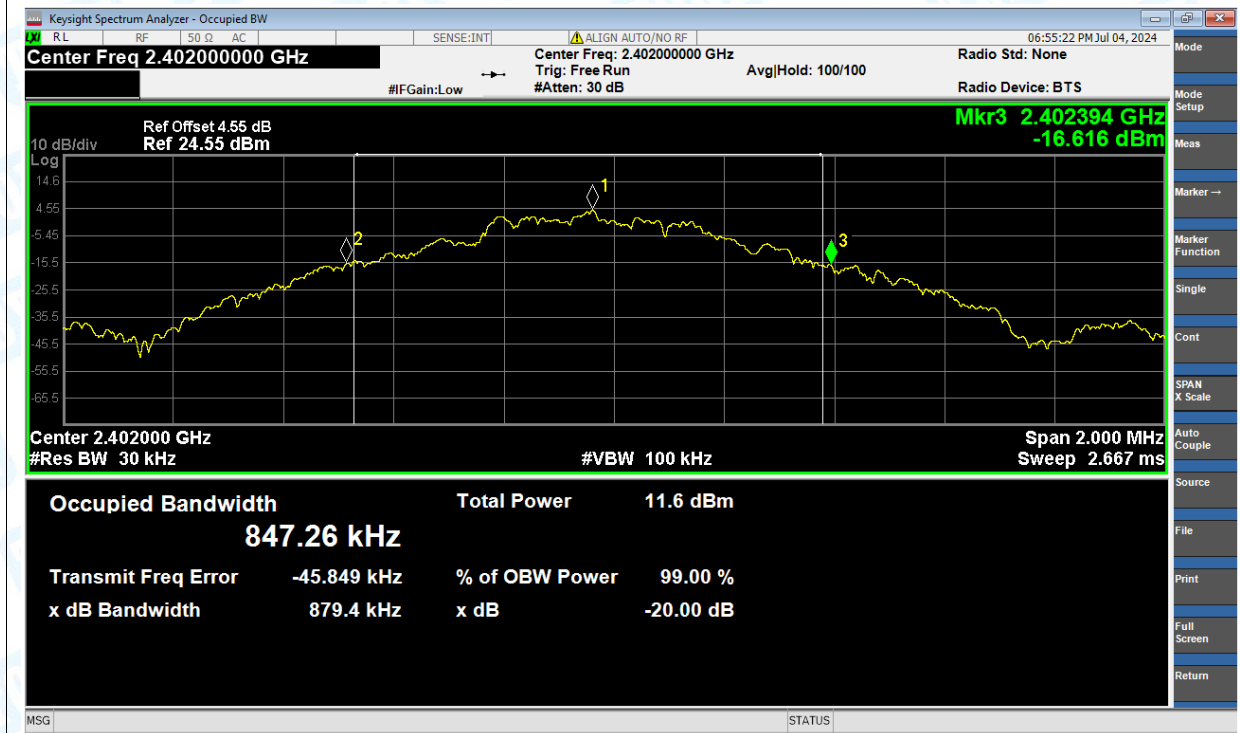


3. -20dB Bandwidth

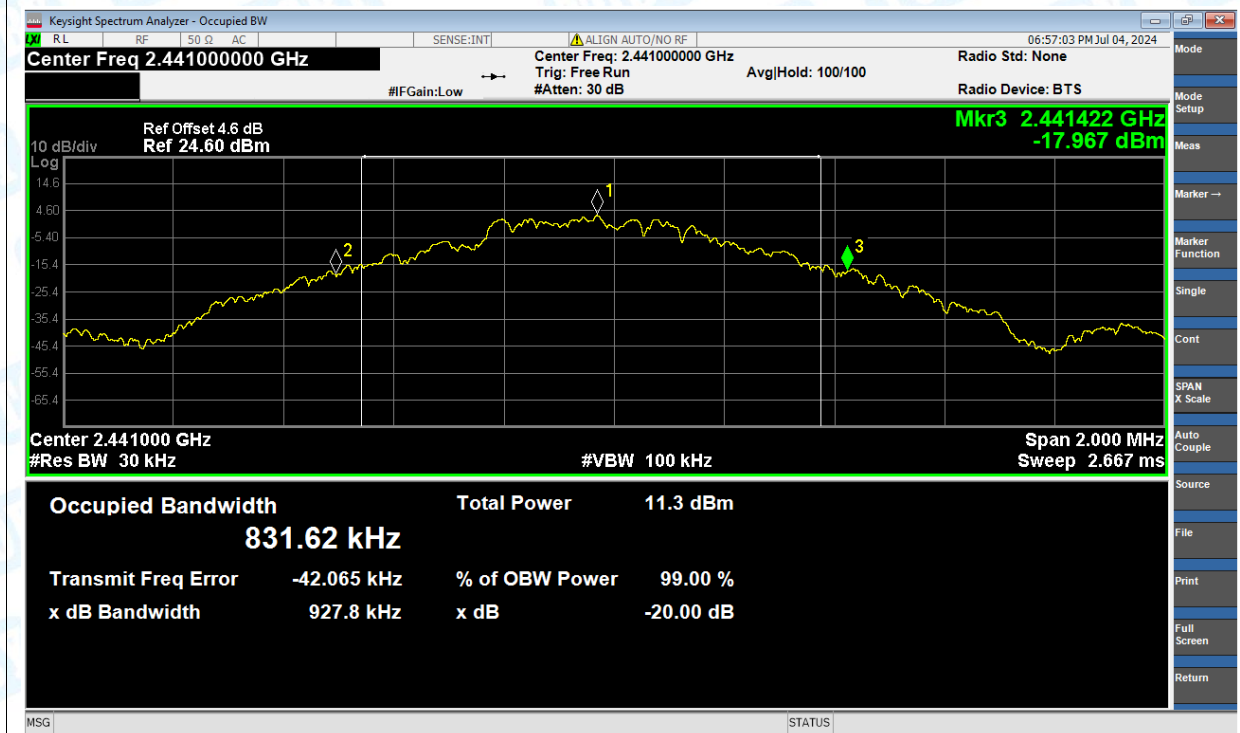
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.88	0	Pass
NVNT	1-DH1	2441	Ant1	0.93	0	Pass
NVNT	1-DH1	2480	Ant1	0.86	0	Pass
NVNT	2-DH1	2402	Ant1	1.29	0	Pass
NVNT	2-DH1	2441	Ant1	1.26	0	Pass
NVNT	2-DH1	2480	Ant1	1.25	0	Pass
NVNT	3-DH1	2402	Ant1	1.21	0	Pass
NVNT	3-DH1	2441	Ant1	1.21	0	Pass
NVNT	3-DH1	2480	Ant1	1.21	0	Pass

Test Graphs

-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



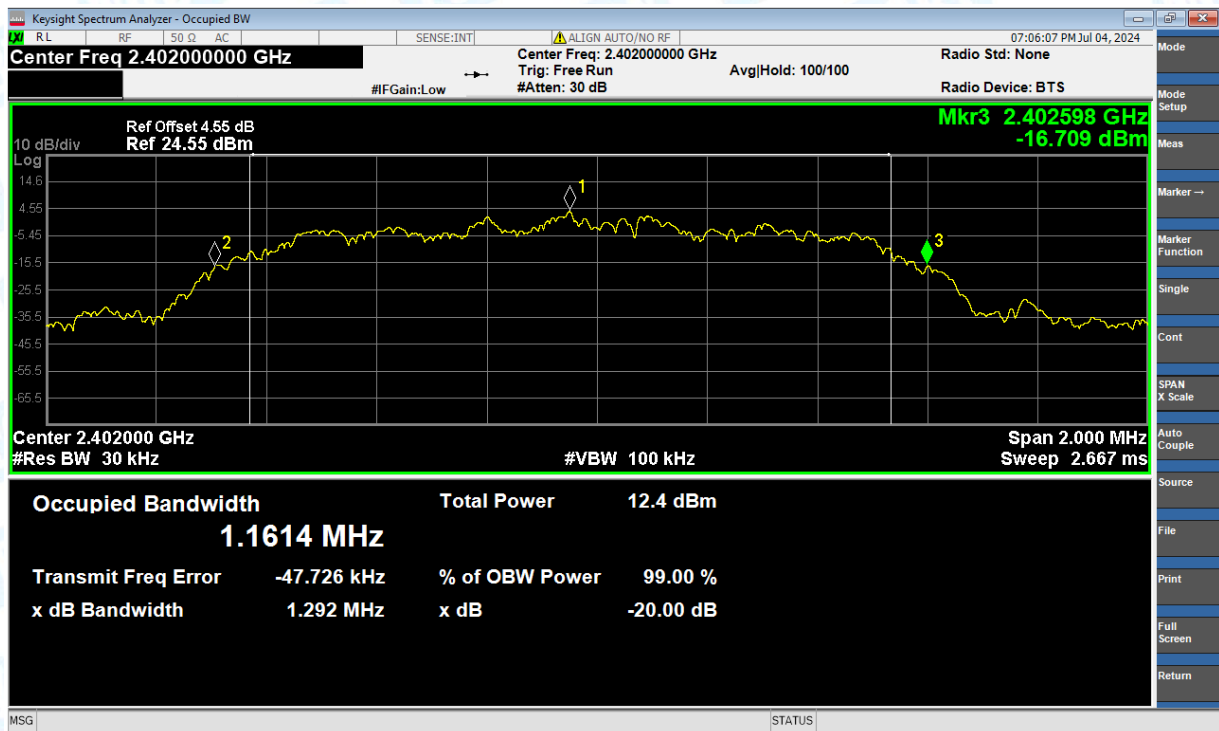
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



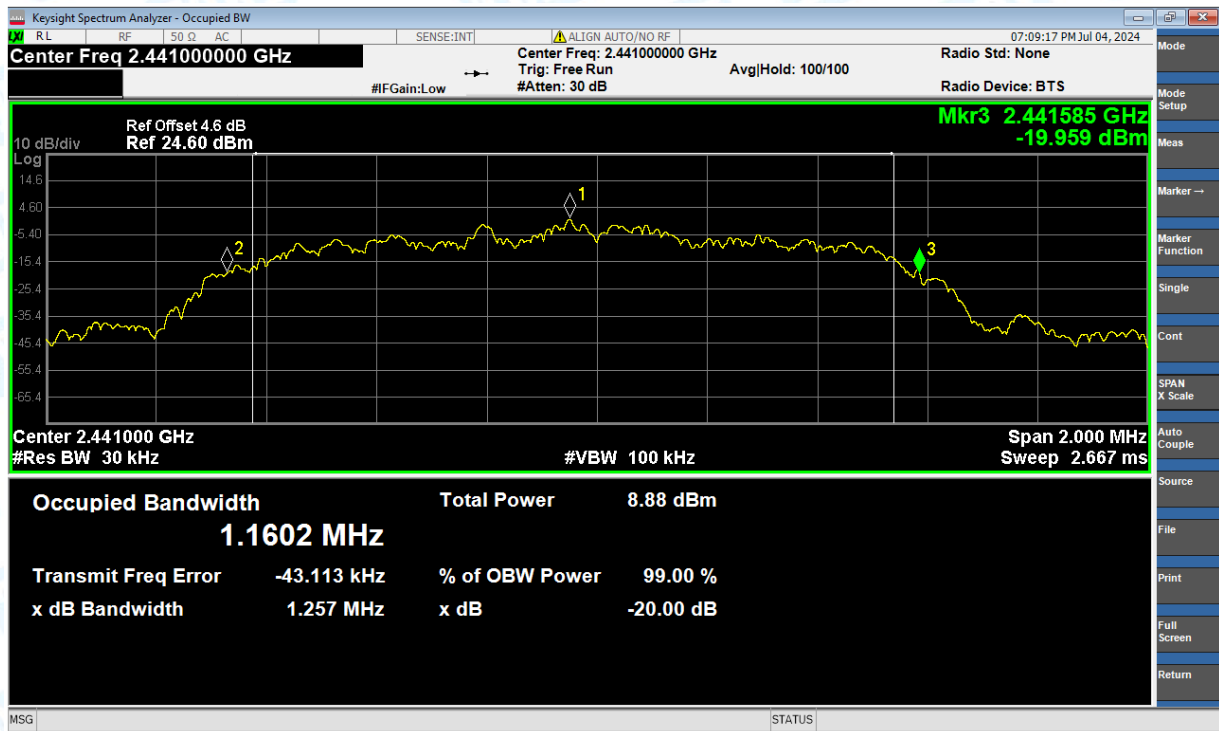
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



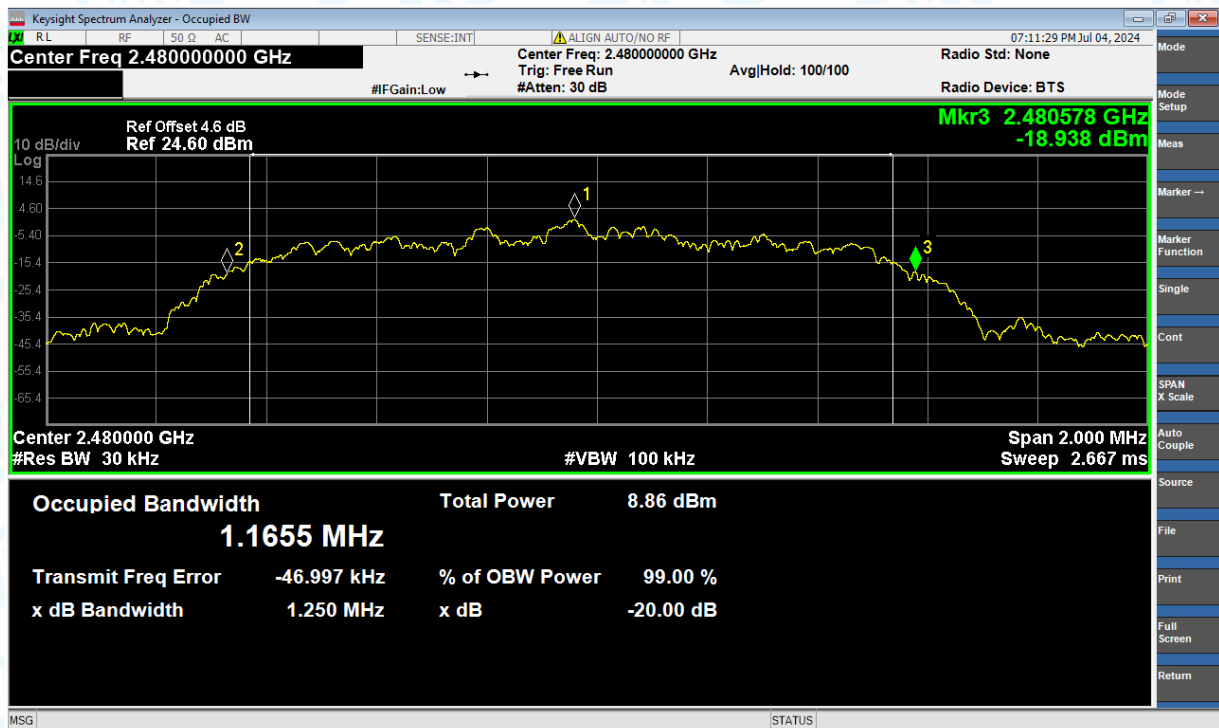
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



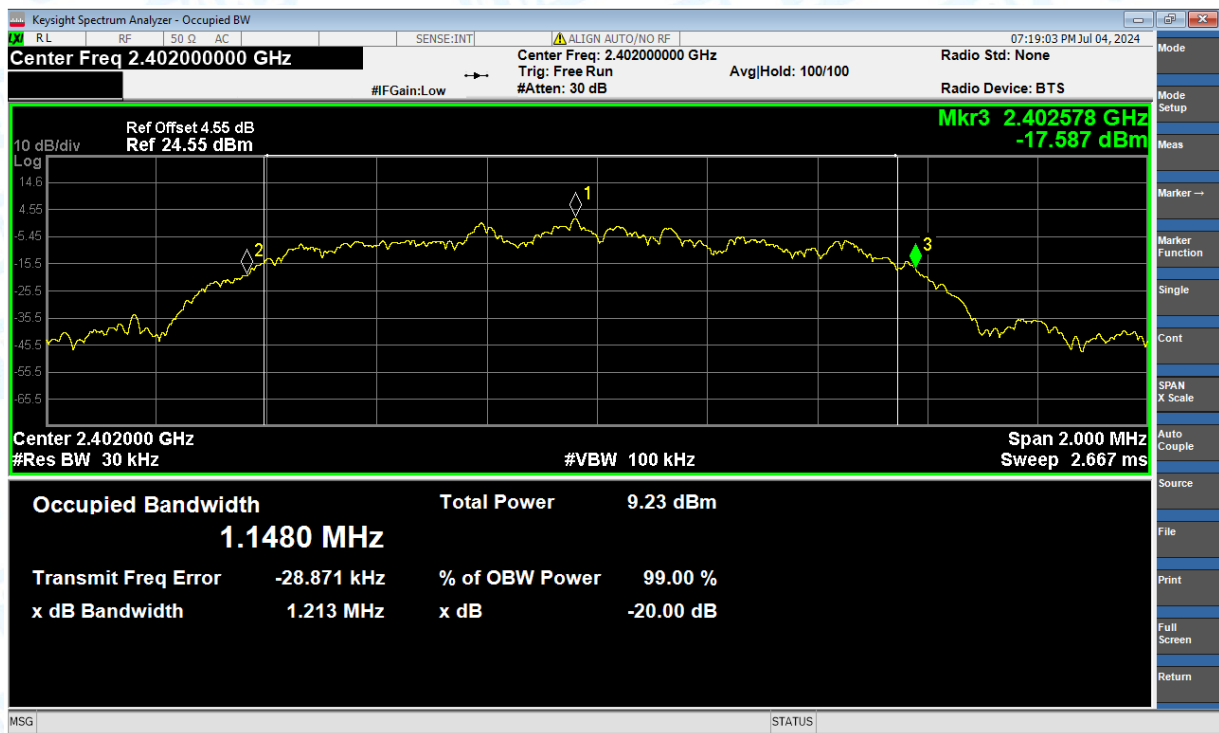
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



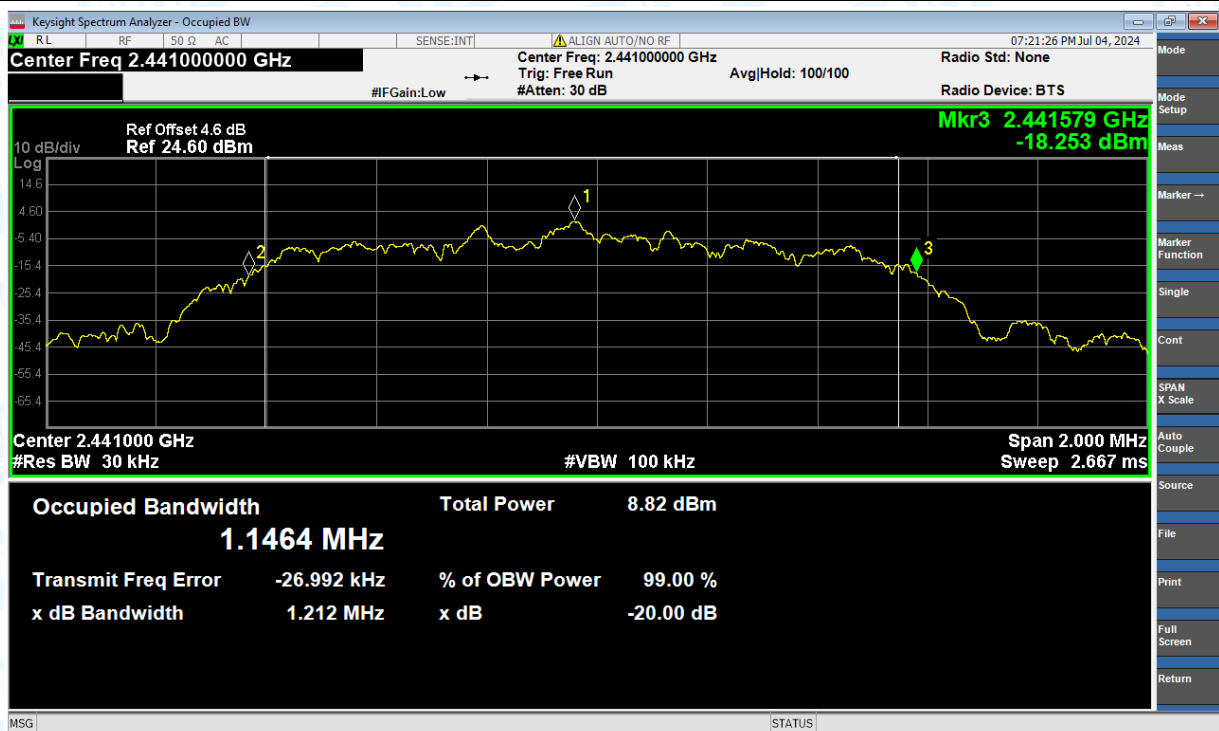
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

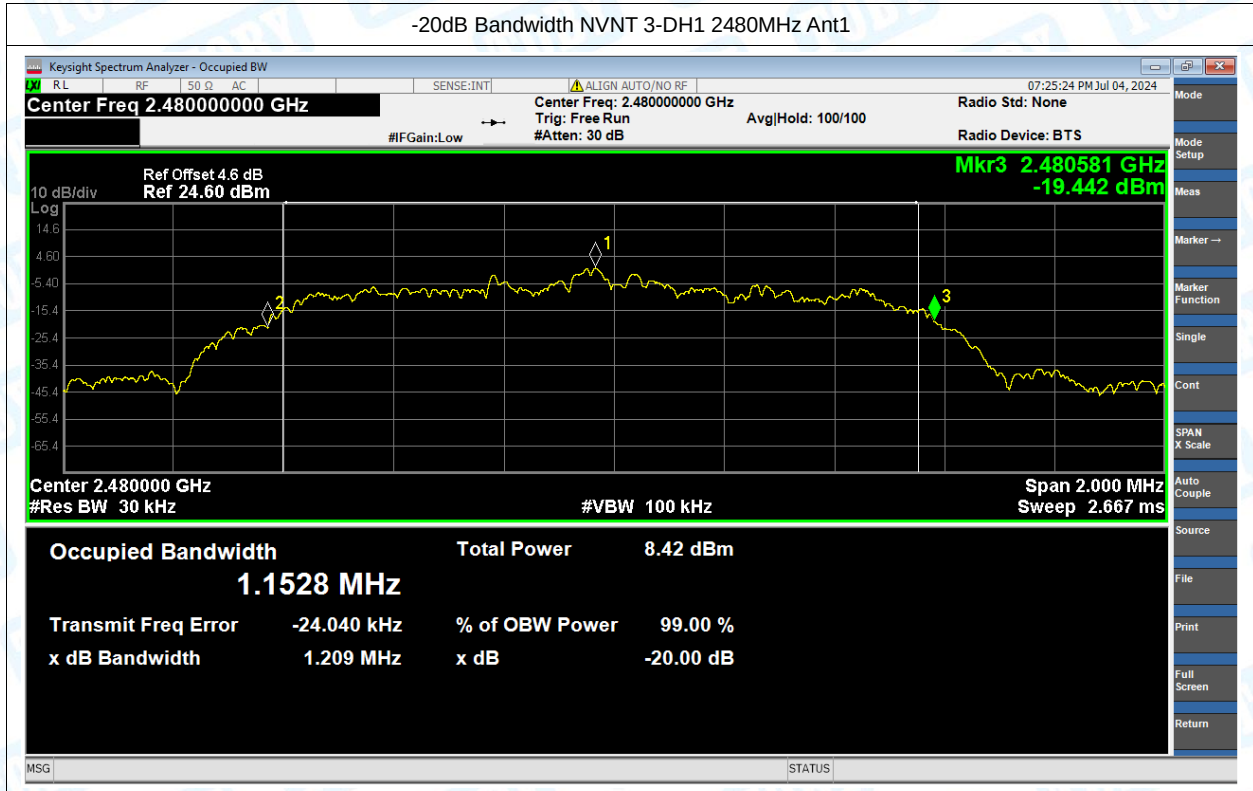


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



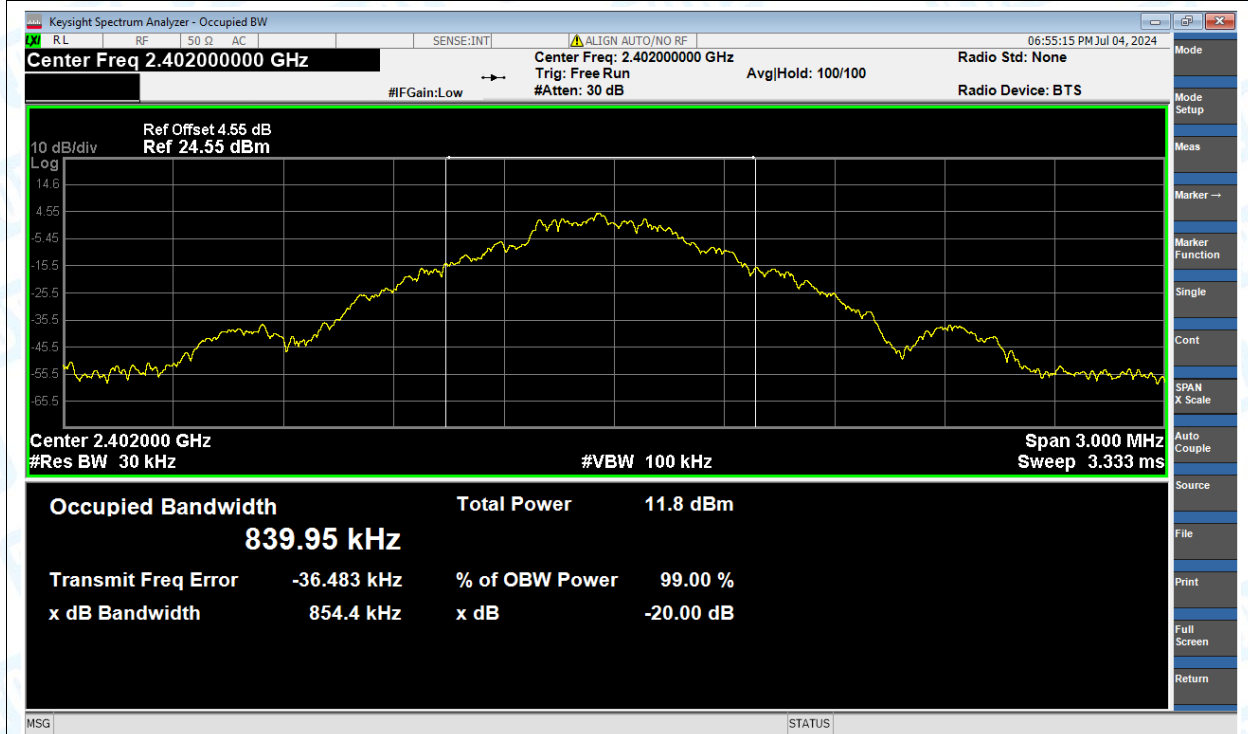


4. Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.84
NVNT	1-DH1	2441	Ant1	0.837
NVNT	1-DH1	2480	Ant1	0.844
NVNT	2-DH1	2402	Ant1	1.156
NVNT	2-DH1	2441	Ant1	1.167
NVNT	2-DH1	2480	Ant1	1.164
NVNT	3-DH1	2402	Ant1	1.147
NVNT	3-DH1	2441	Ant1	1.143
NVNT	3-DH1	2480	Ant1	1.158

Test Graphs

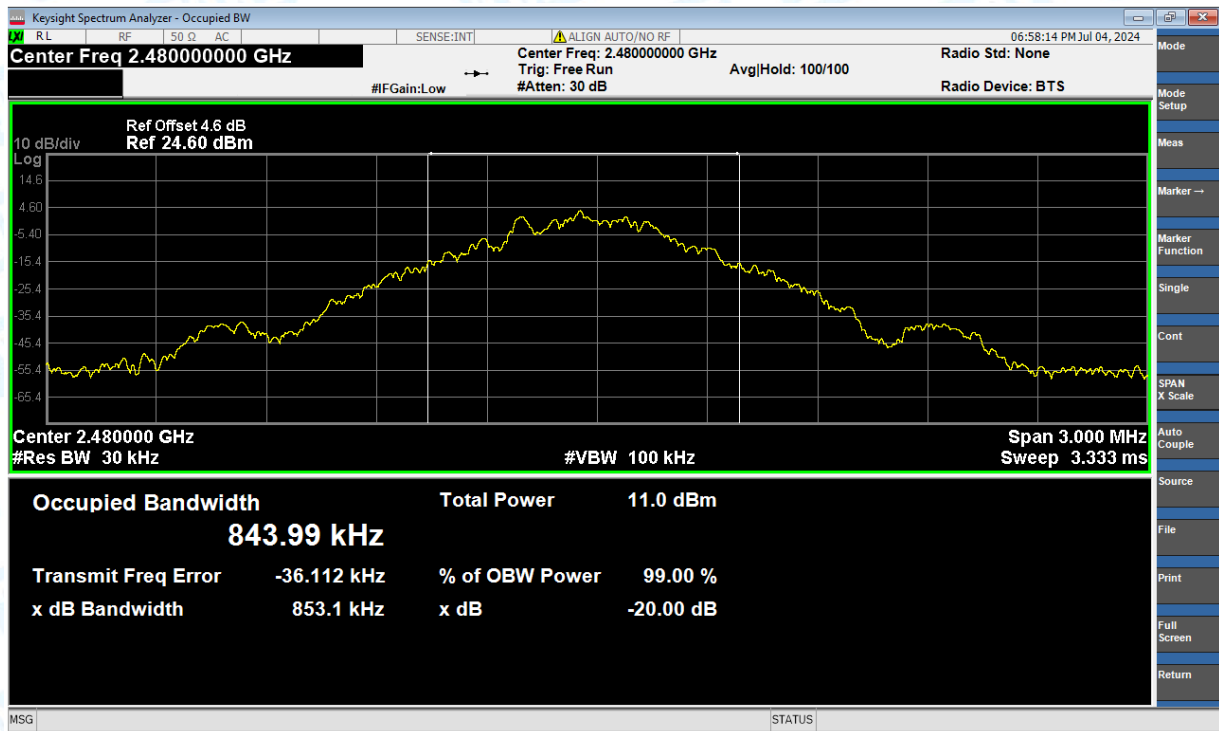
OBW NVNT 1-DH1 2402MHz Ant1



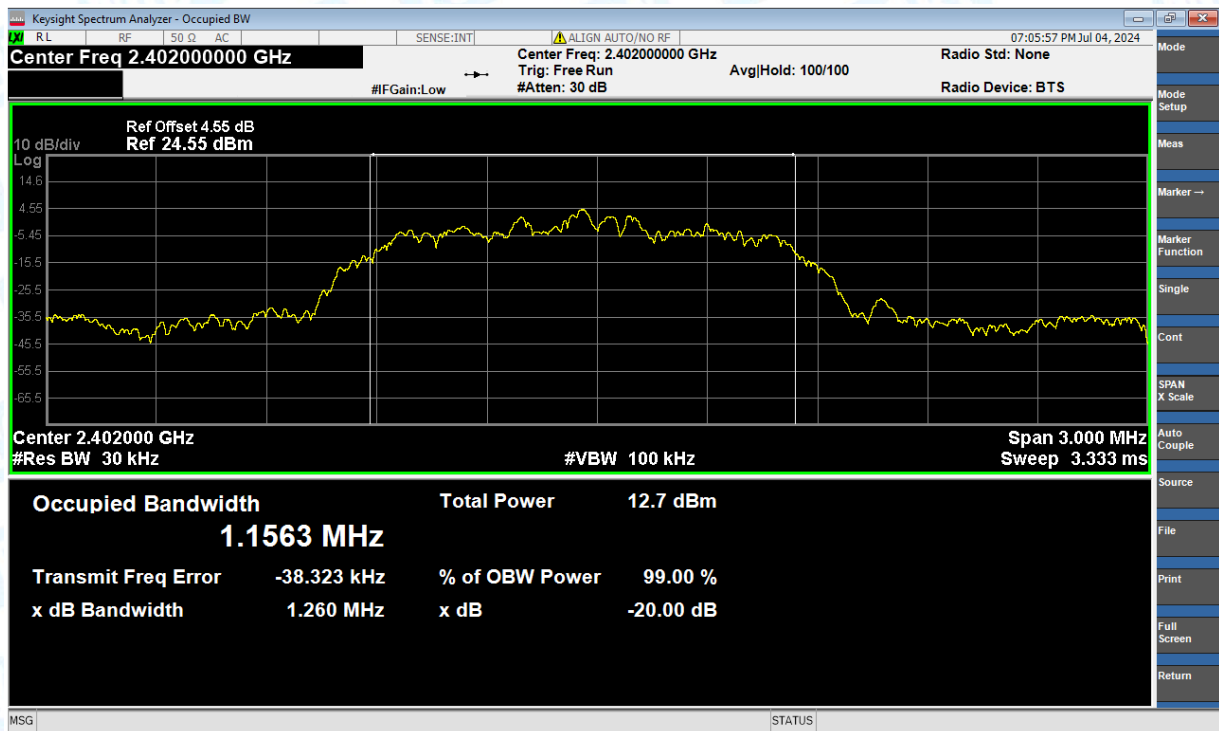
OBW NVNT 1-DH1 2441MHz Ant1



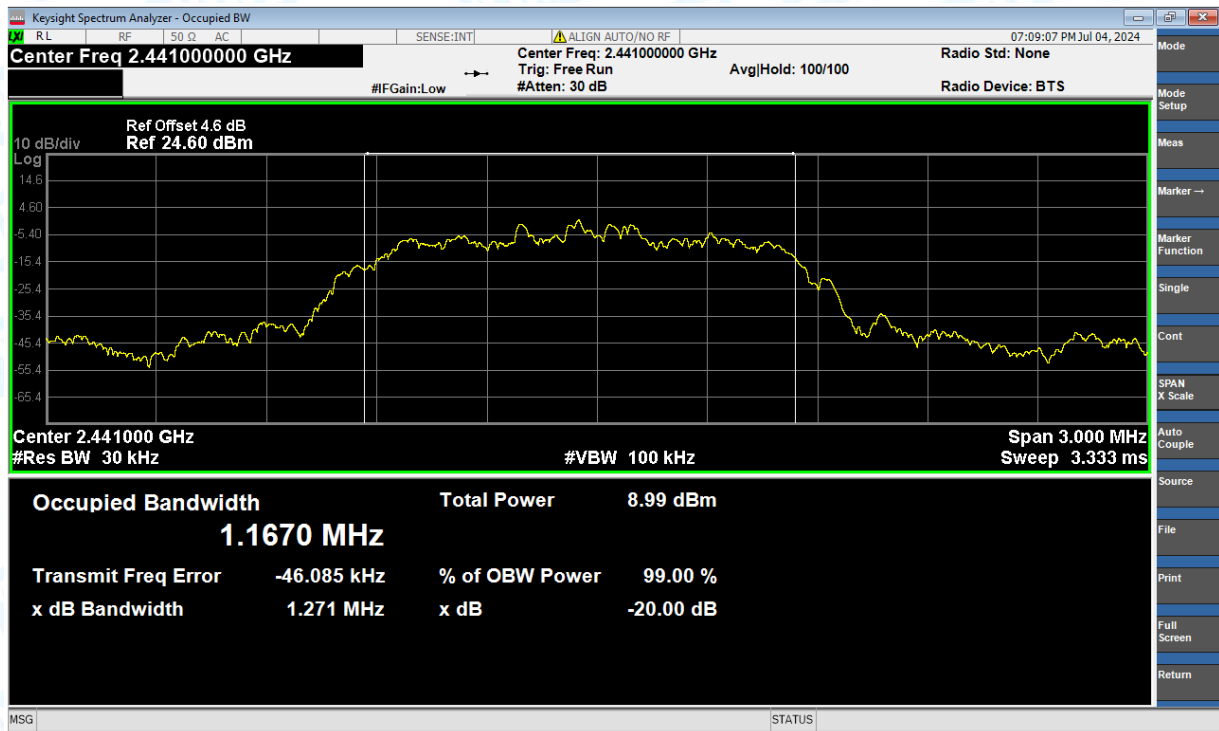
OBW NVNT 1-DH1 2480MHz Ant1



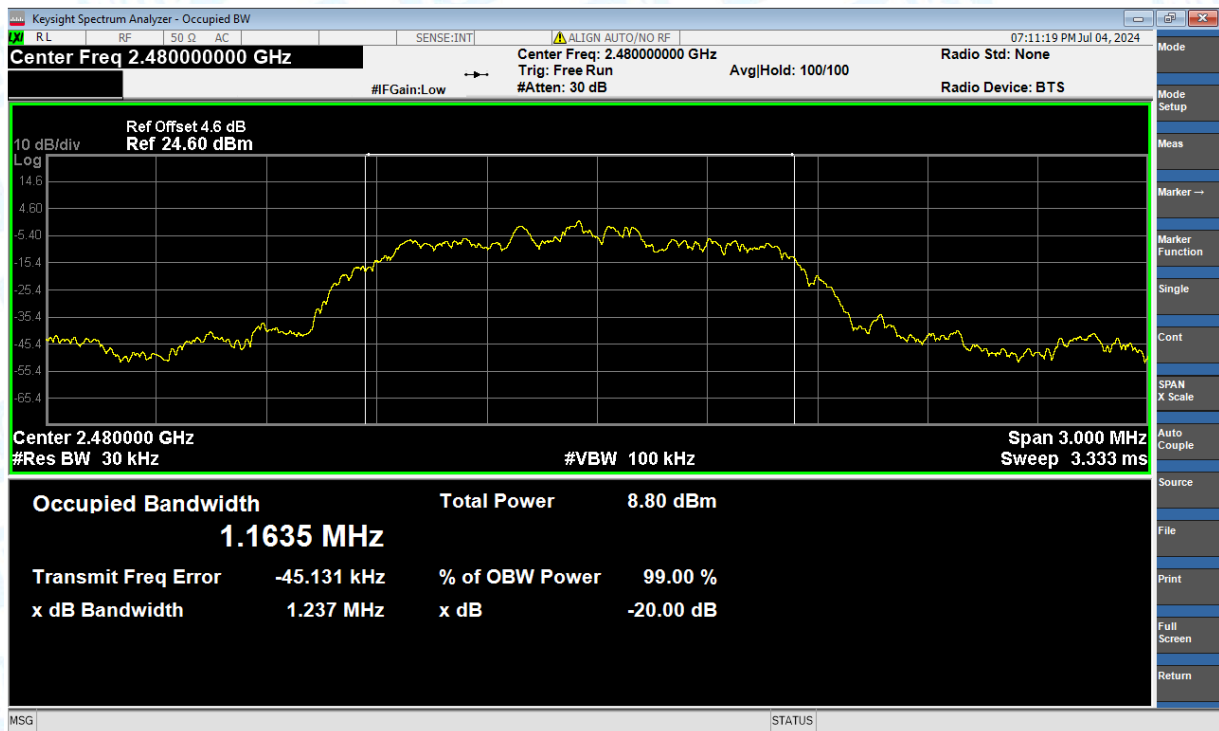
OBW NVNT 2-DH1 2402MHz Ant1



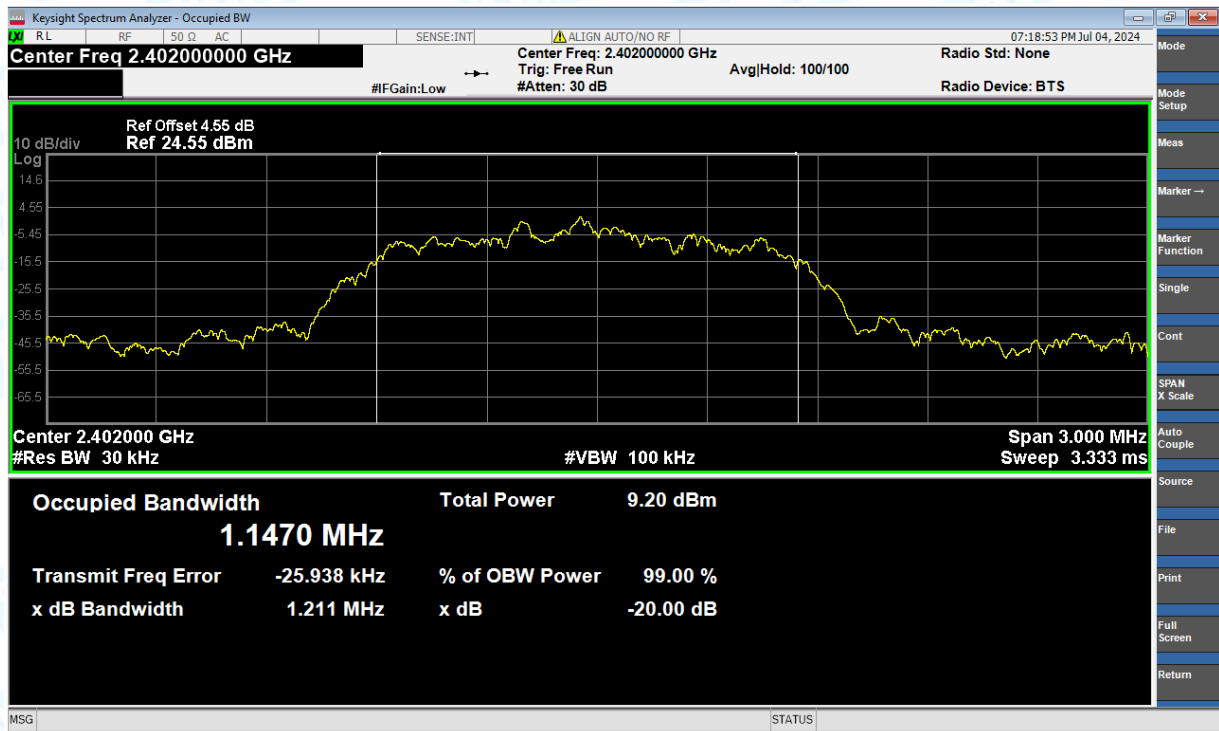
OBW NVNT 2-DH1 2441MHz Ant1



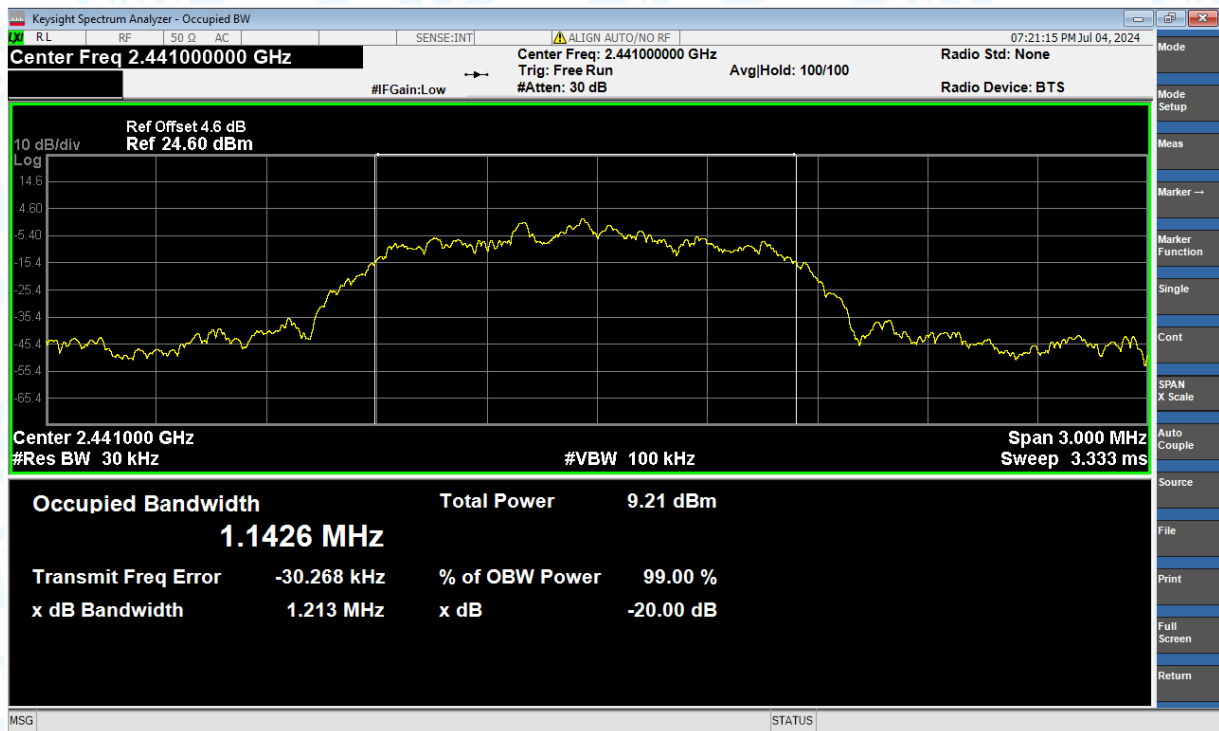
OBW NVNT 2-DH1 2480MHz Ant1

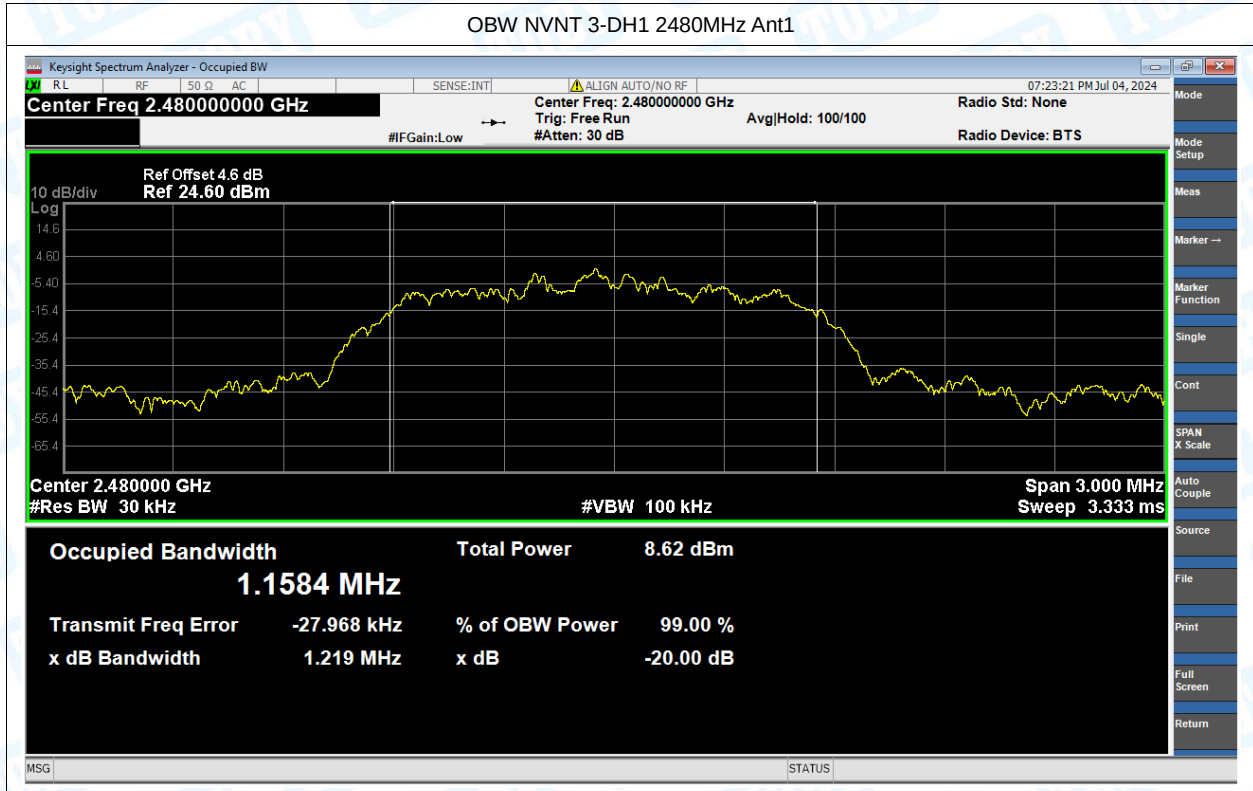


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



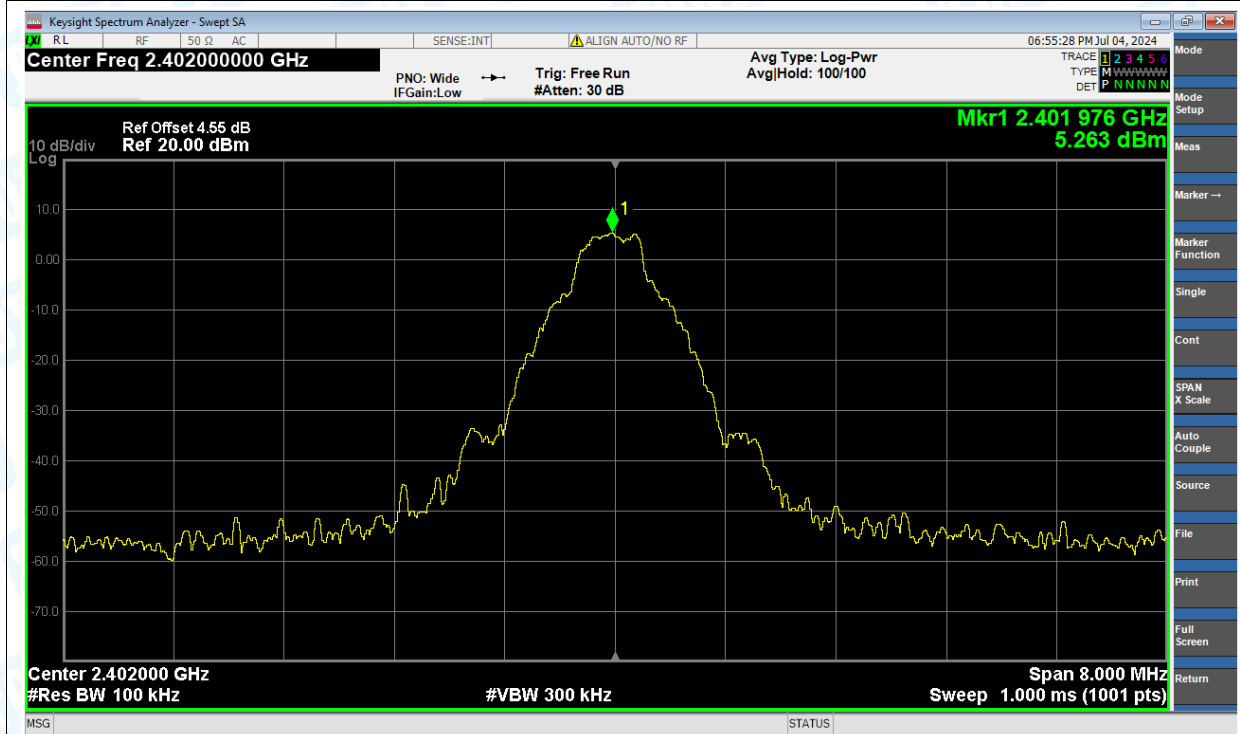


5. Band Edge

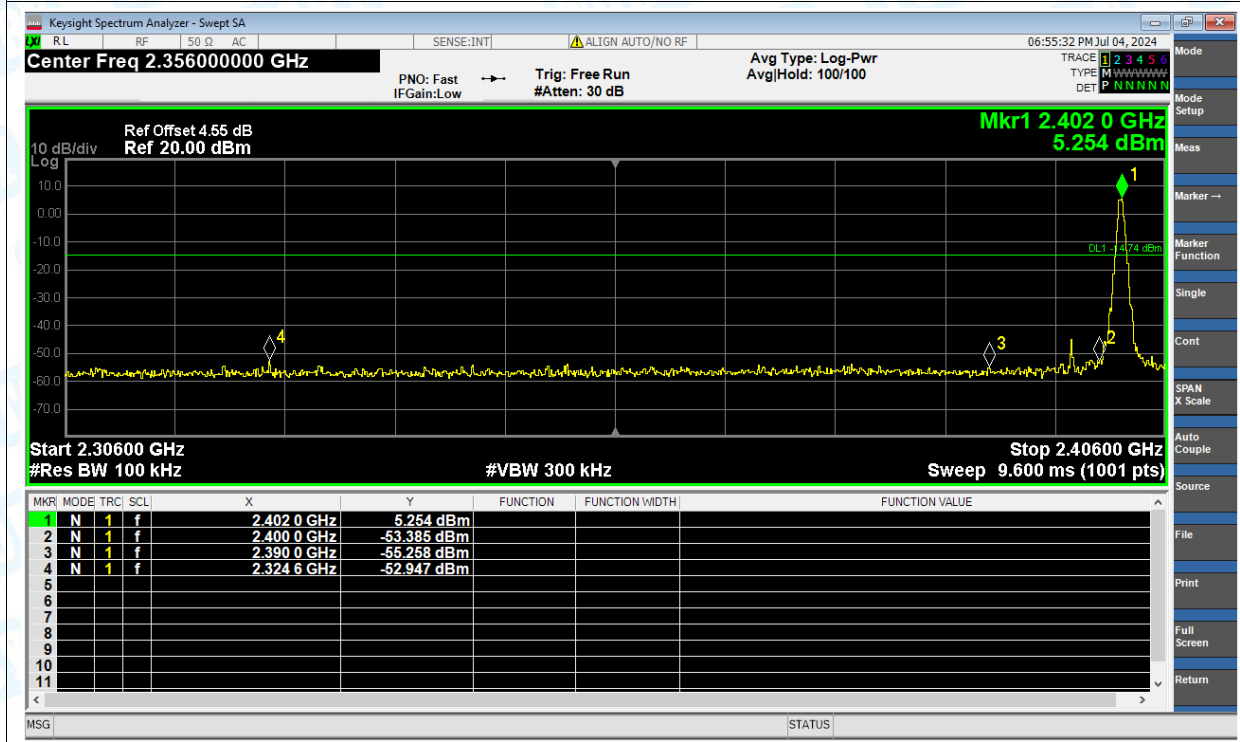
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-58.21	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-52.6	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-55.92	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-50.81	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-55.78	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-53.96	-20	Pass

Test Graphs

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



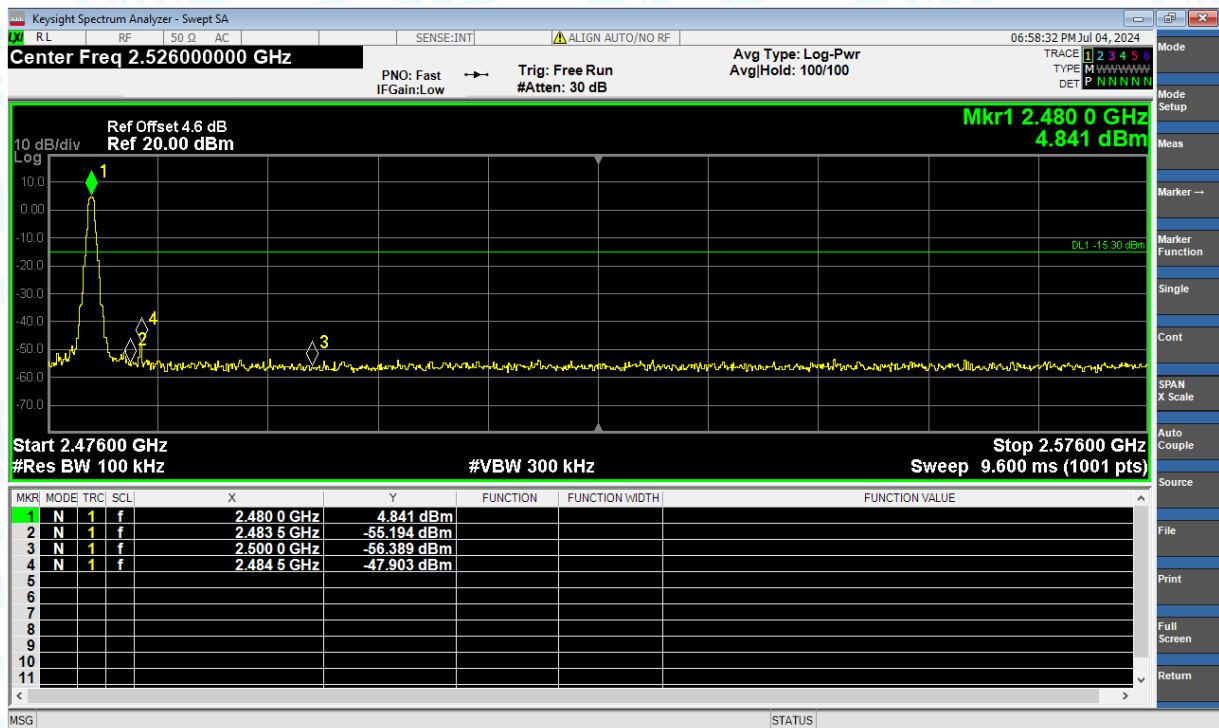
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



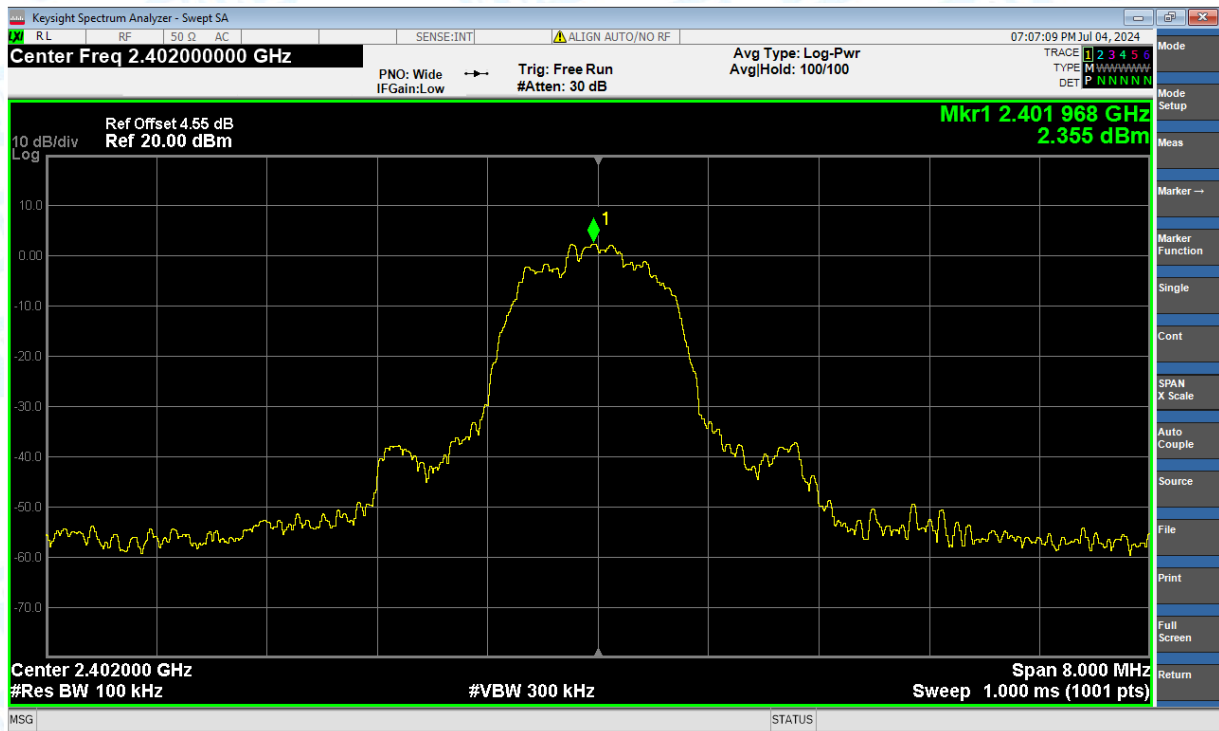
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



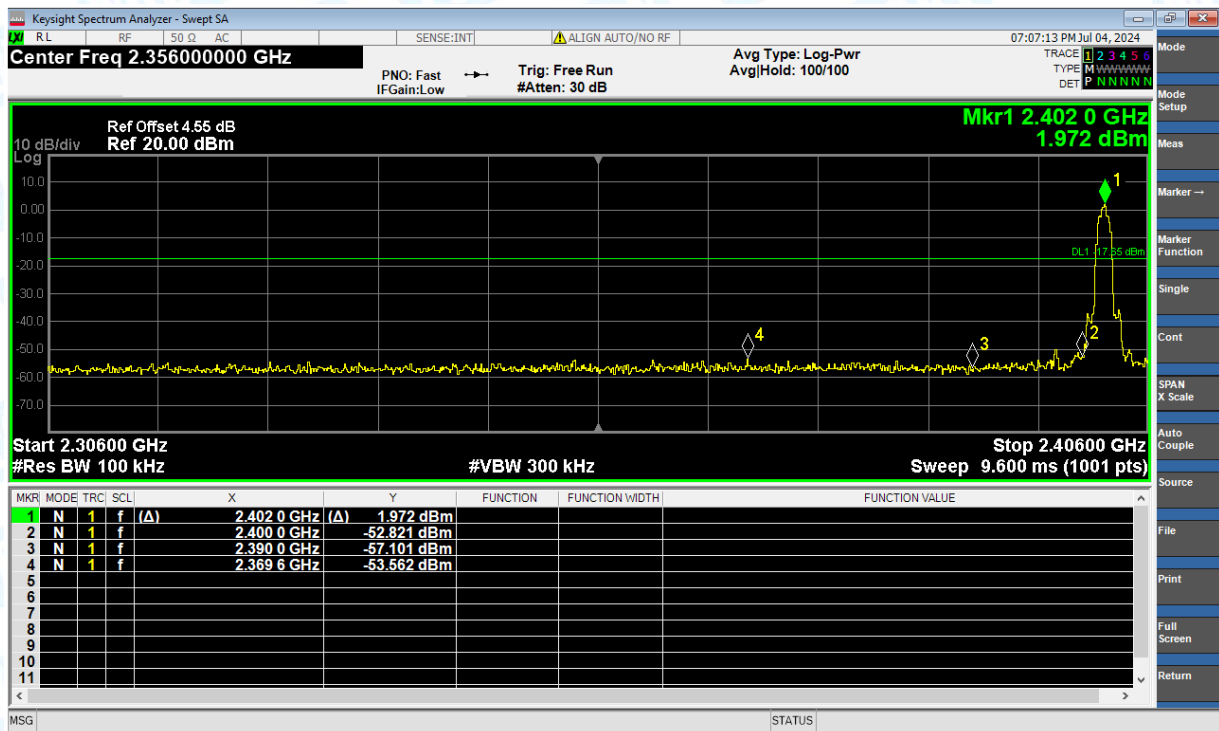
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



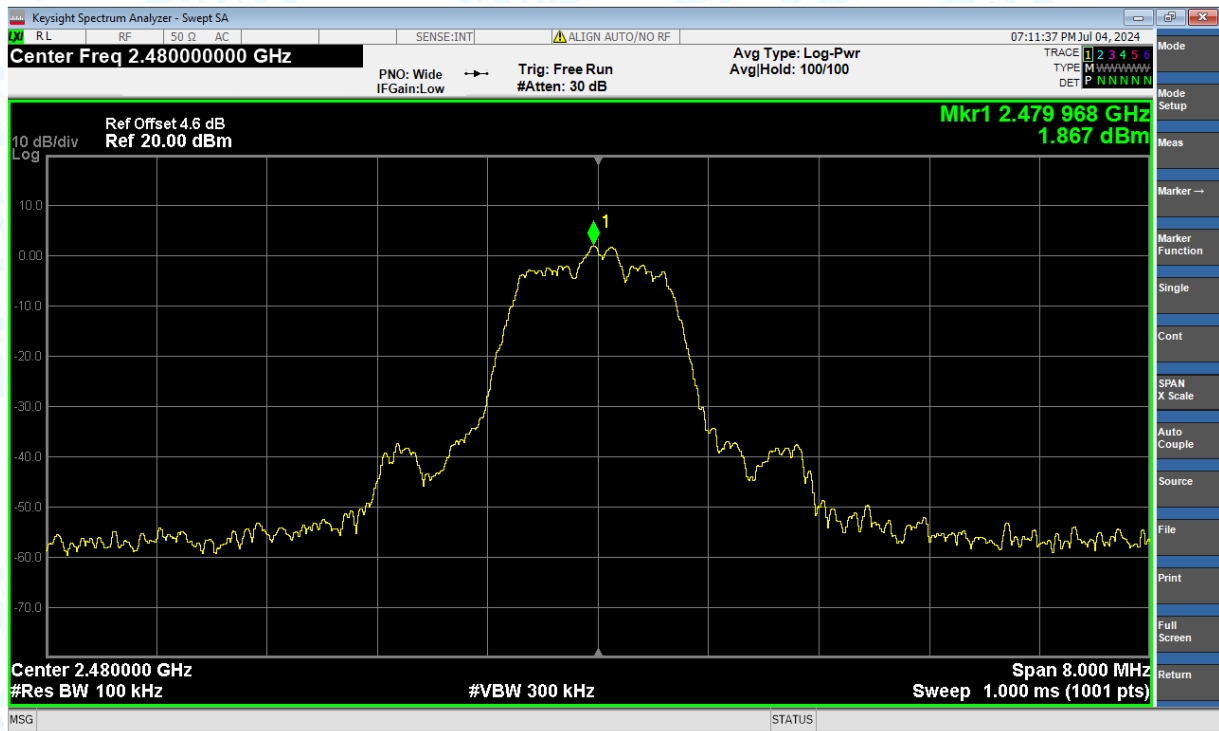
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



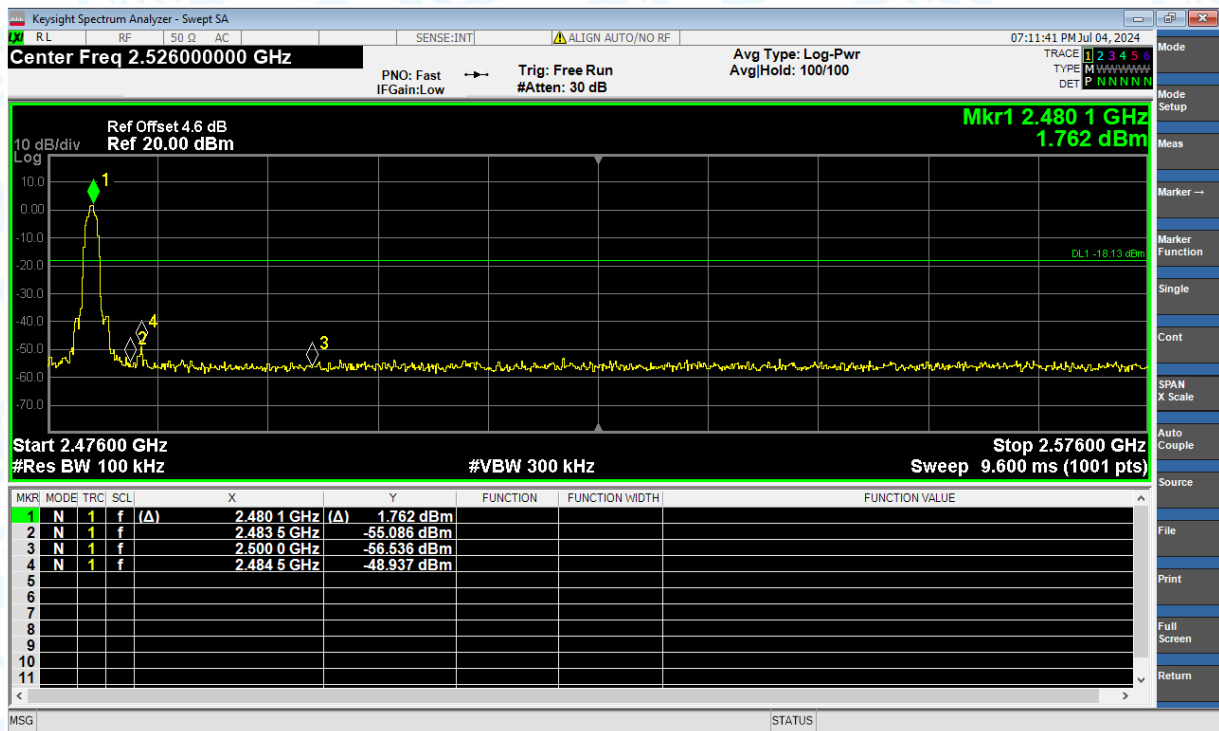
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



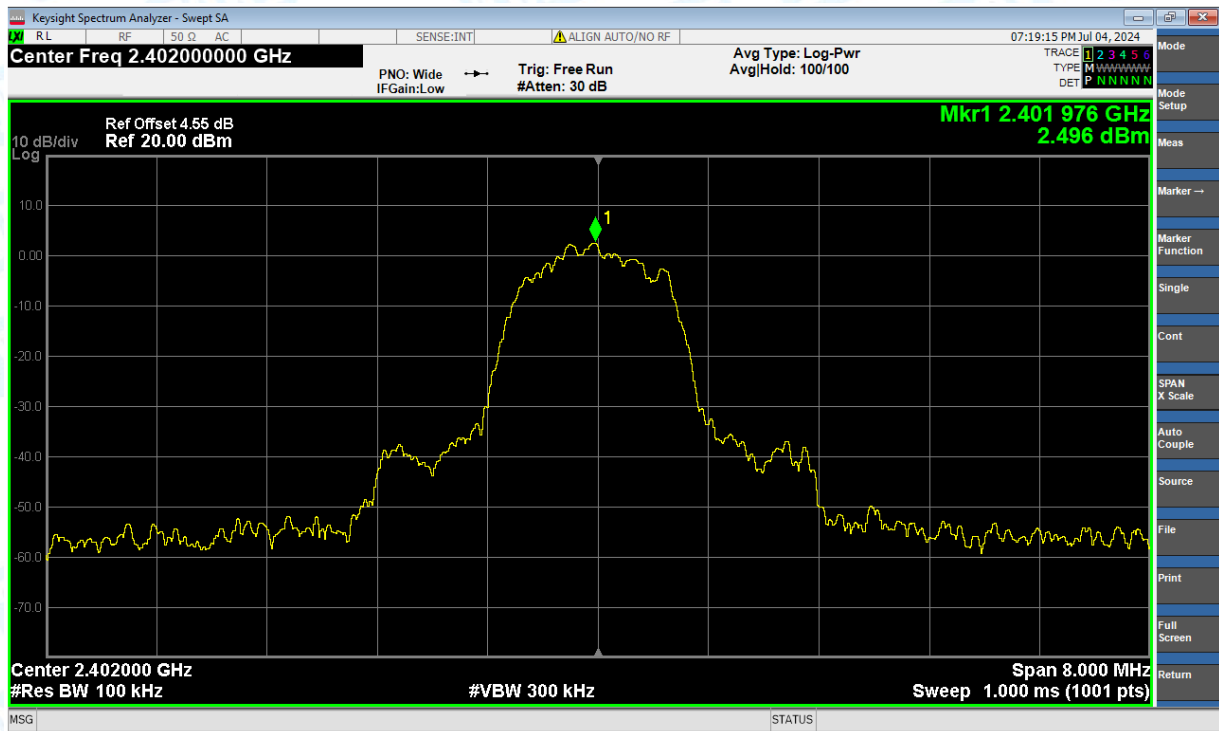
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



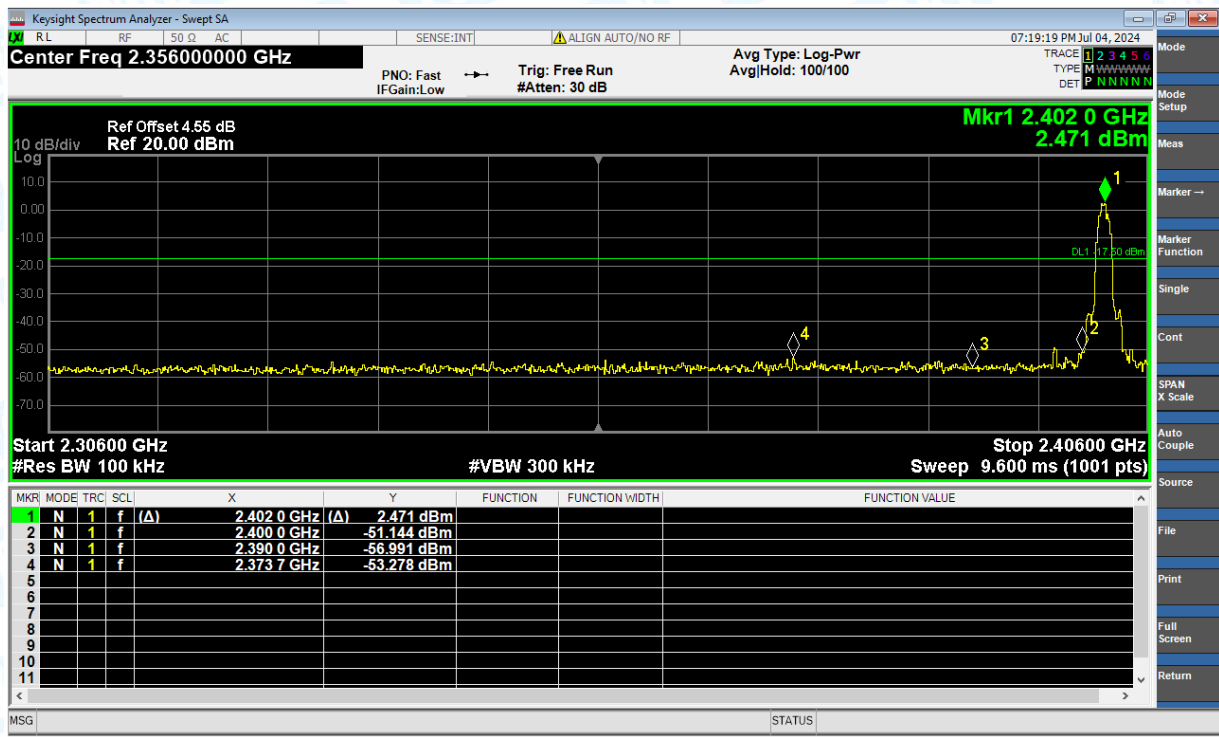
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



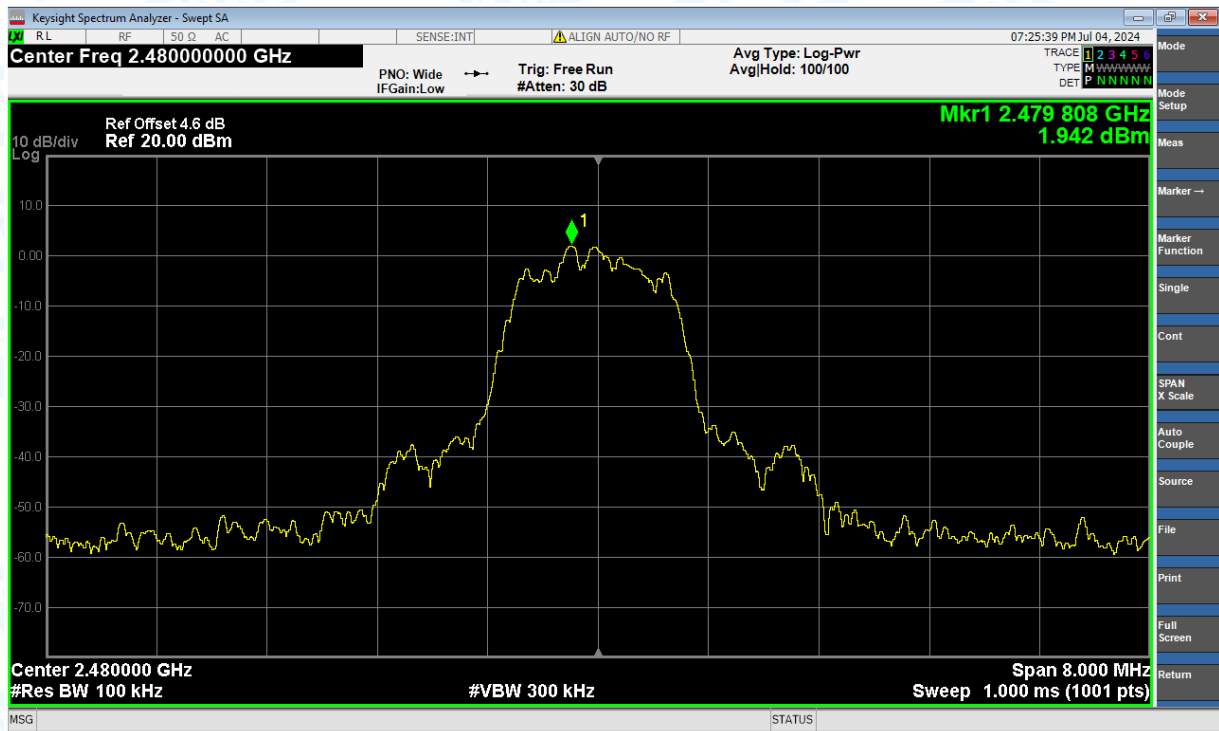
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



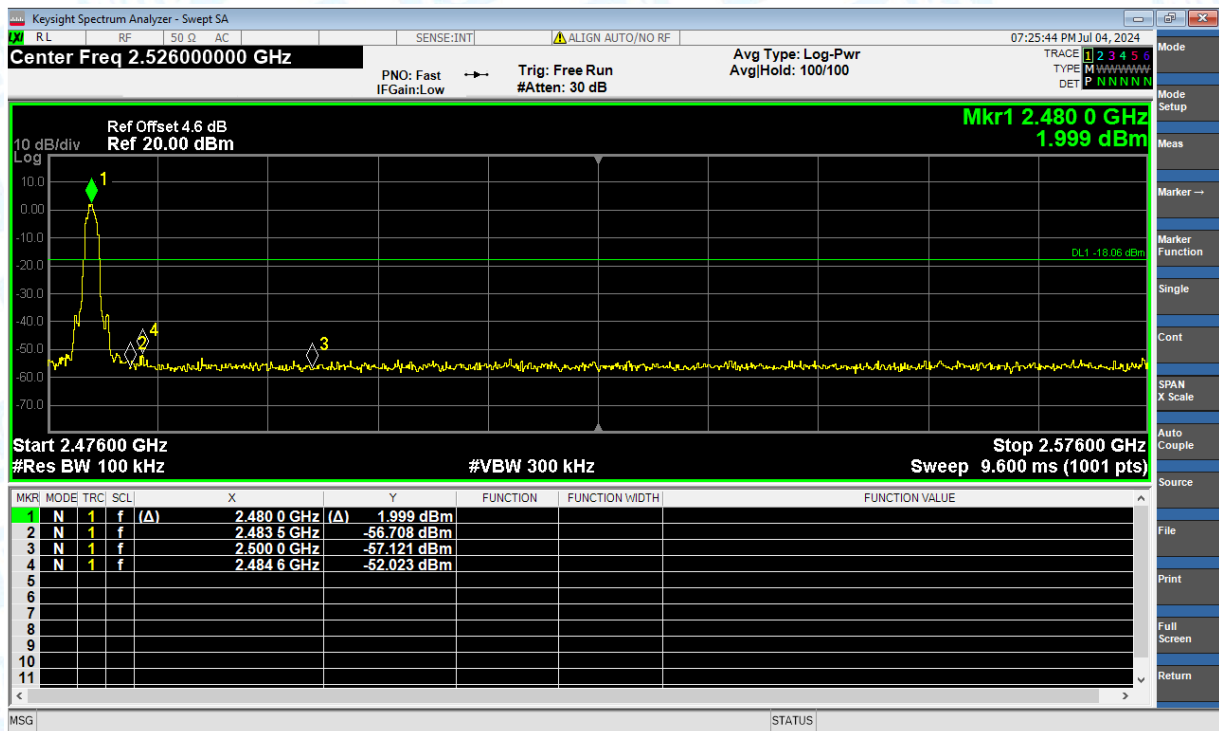
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



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



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



6. Band Edge(Hopping)

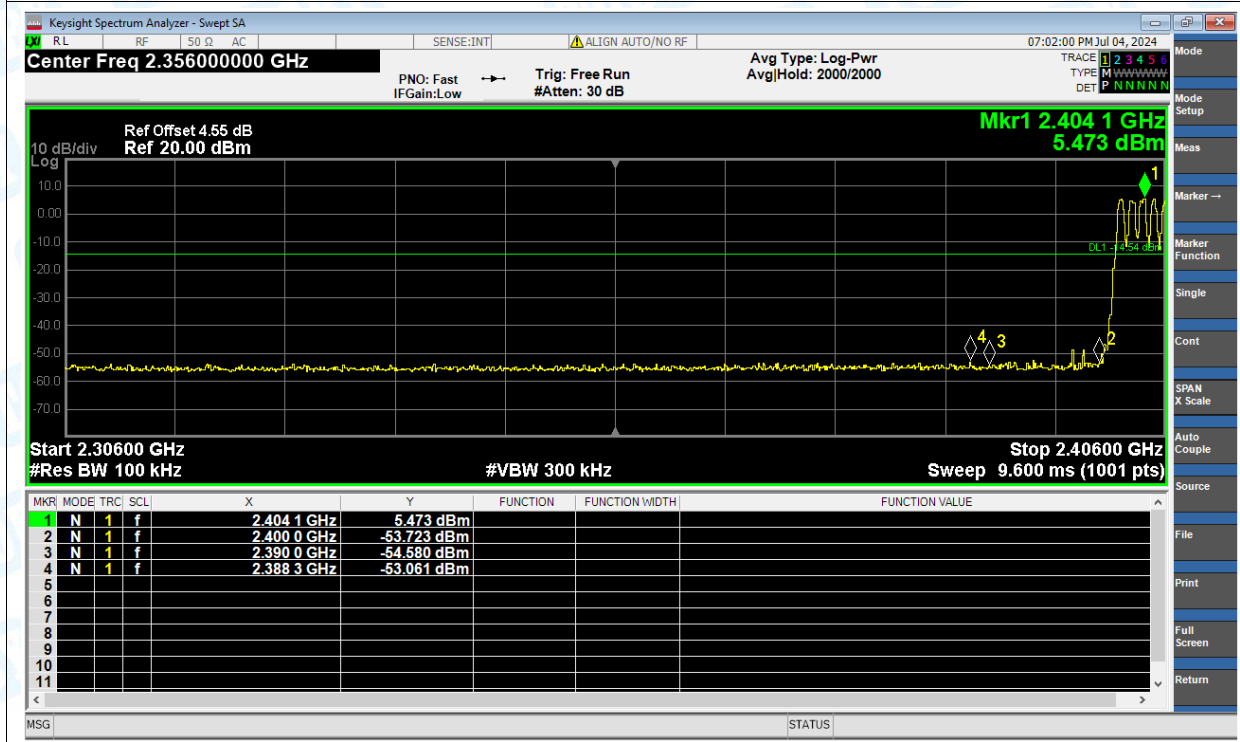
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-58.52	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-51.56	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-55.25	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-53.05	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-55.58	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-54.36	-20	Pass

Test Graphs

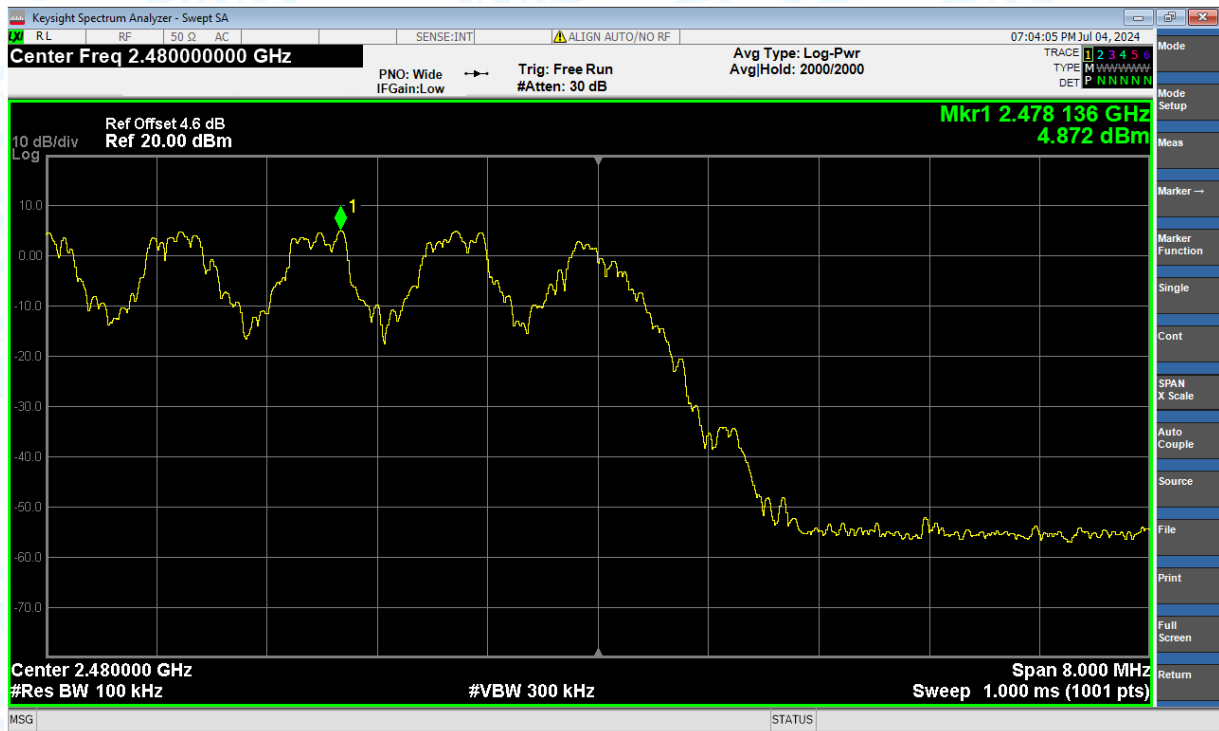
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref



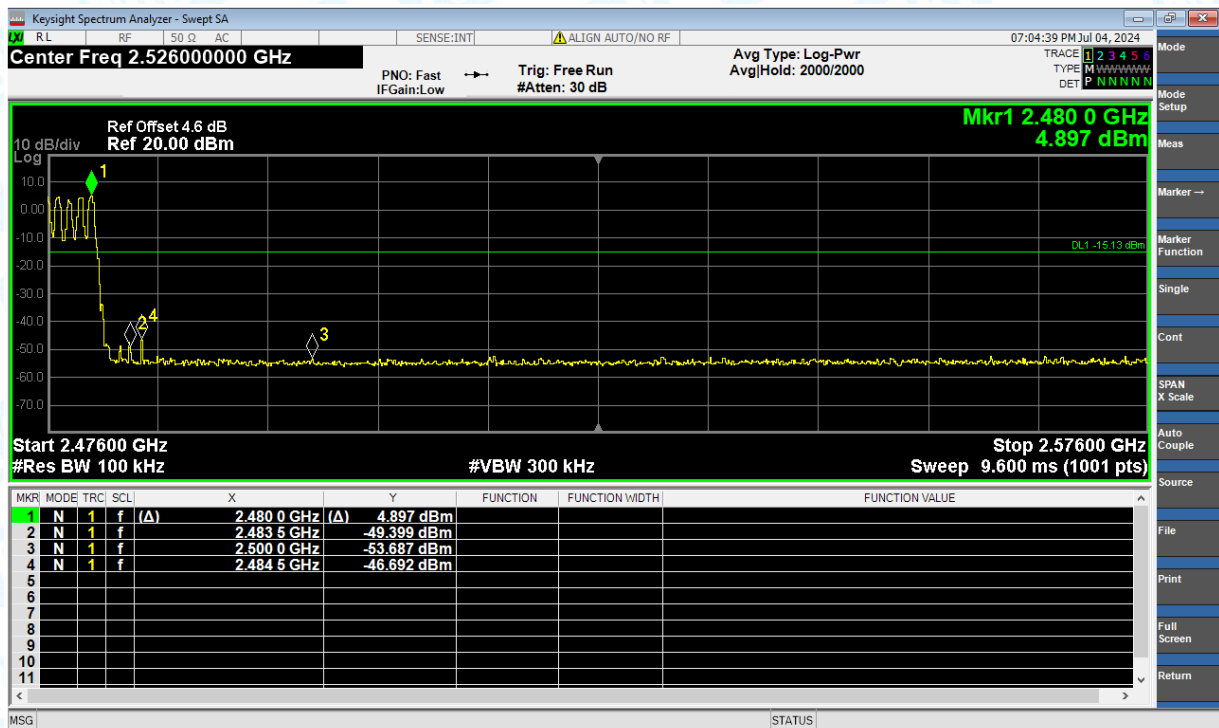
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



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



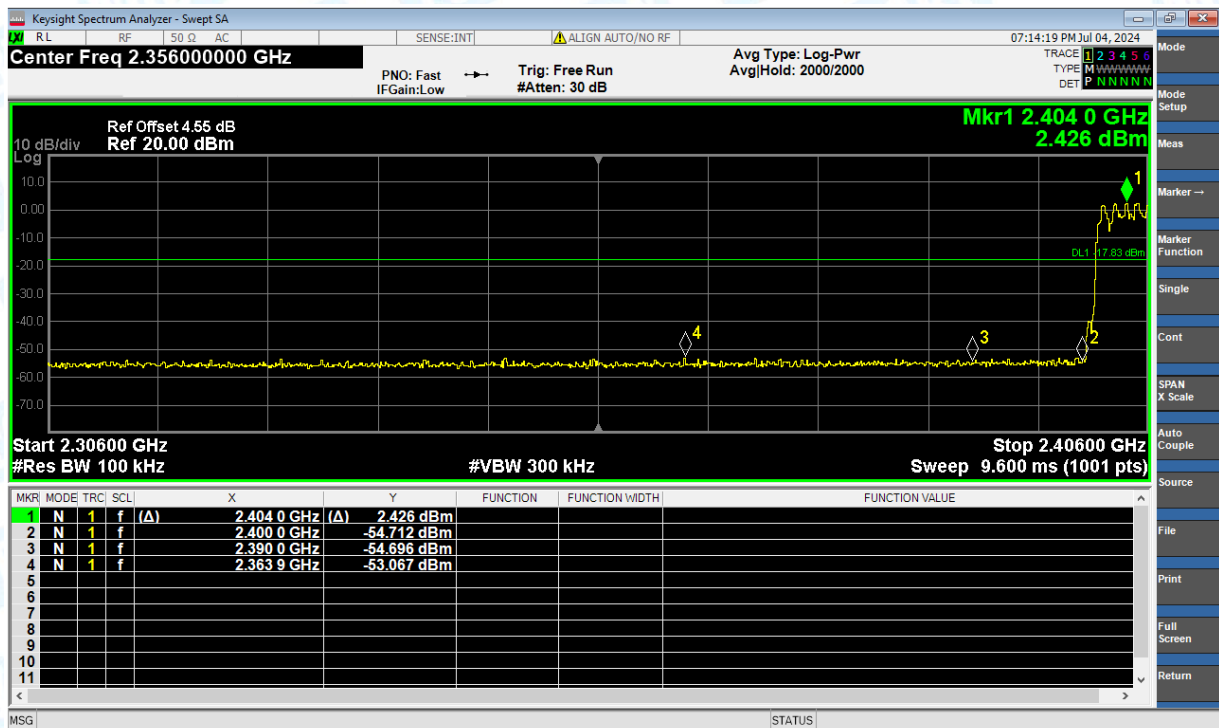
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



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



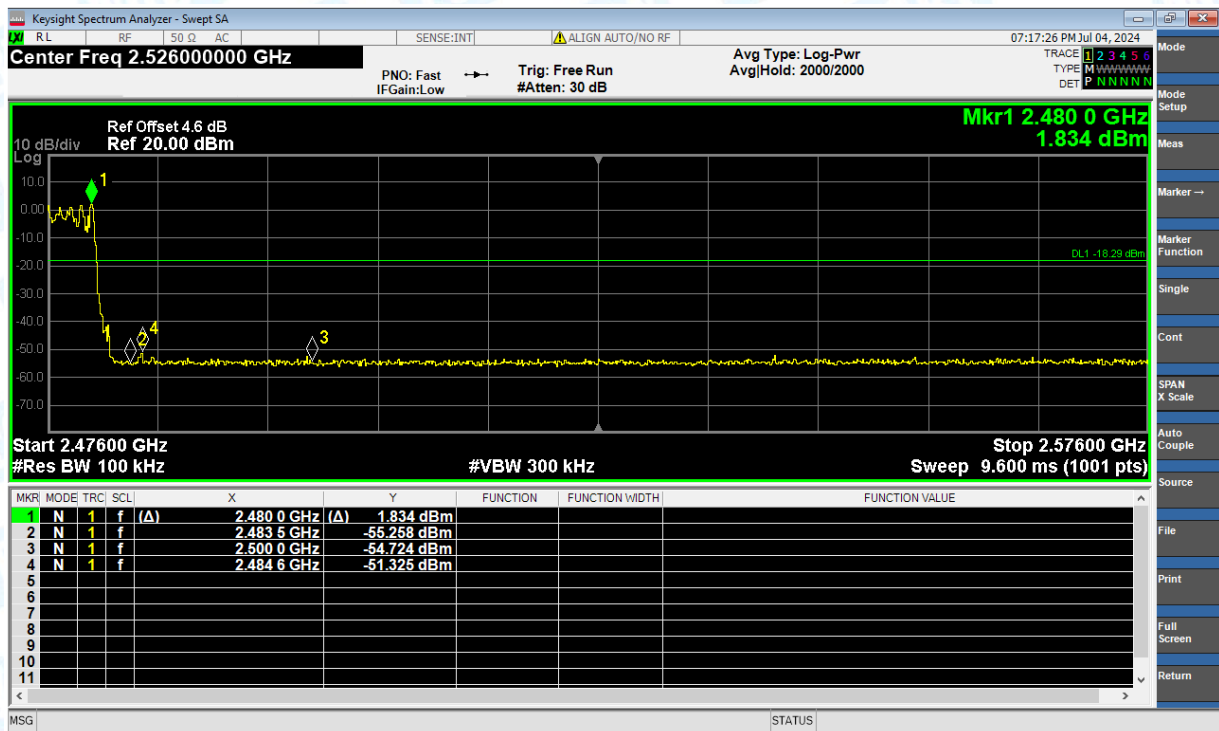
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



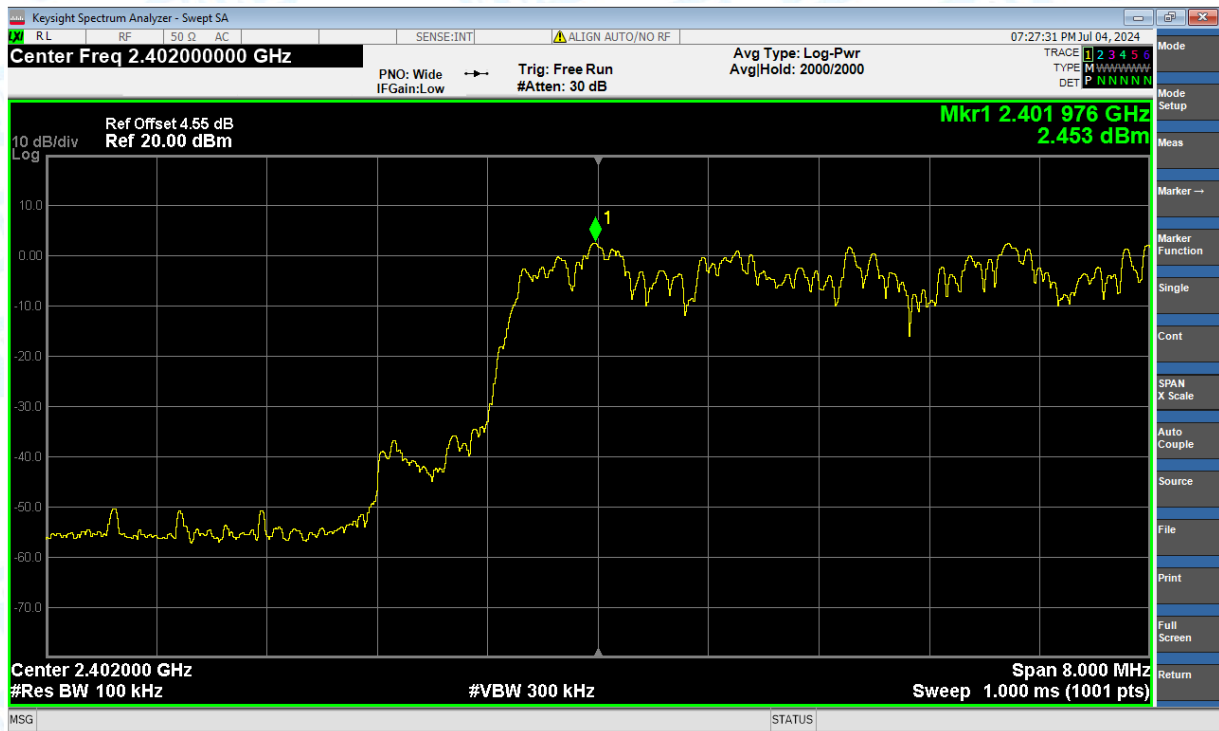
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref



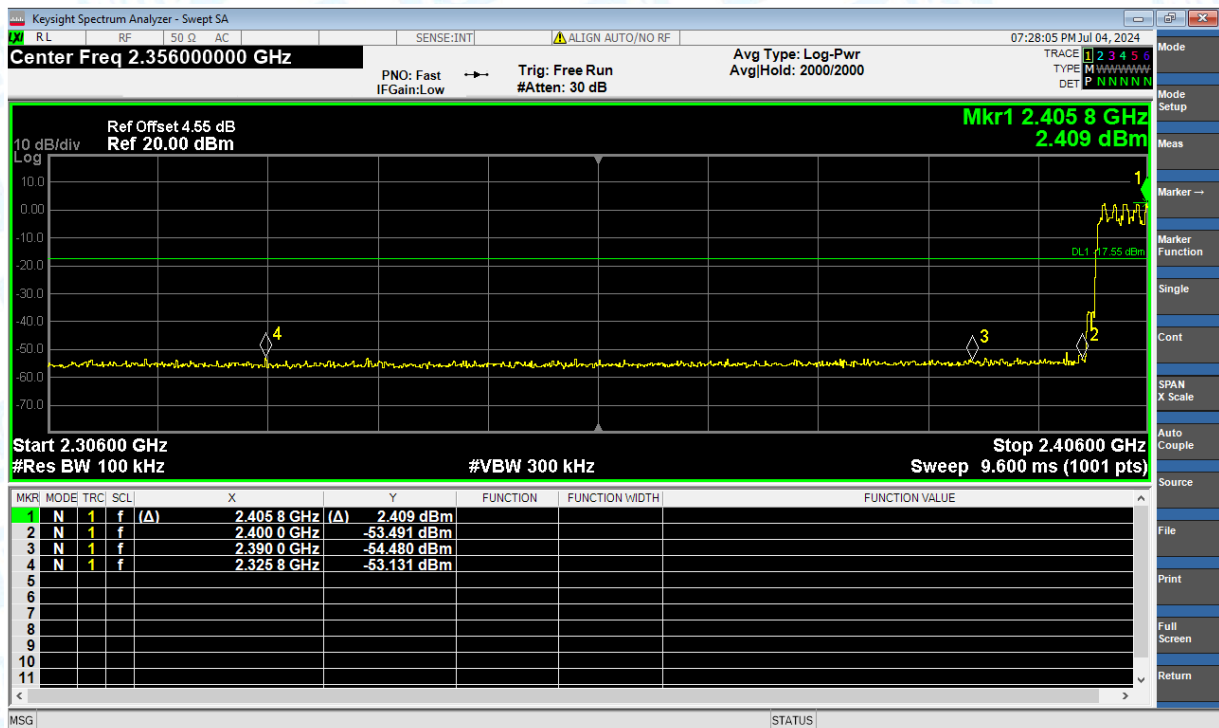
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission



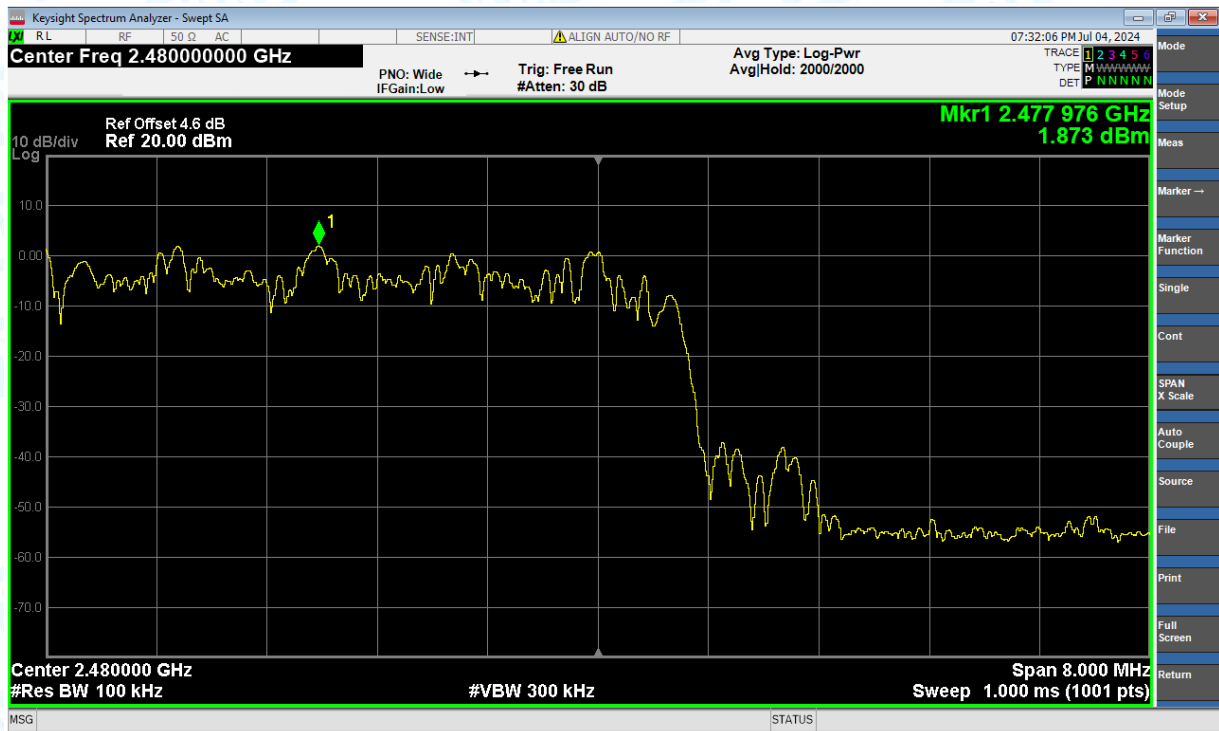
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



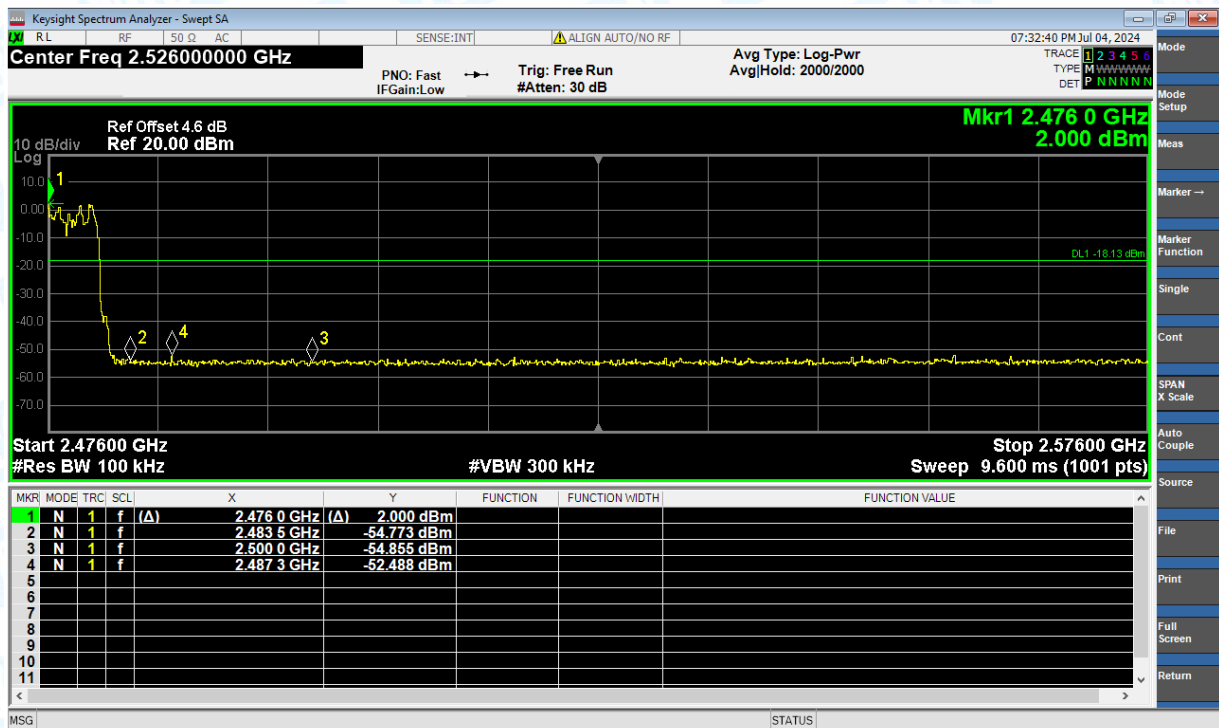
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



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



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



7. Conducted RF Spurious Emission

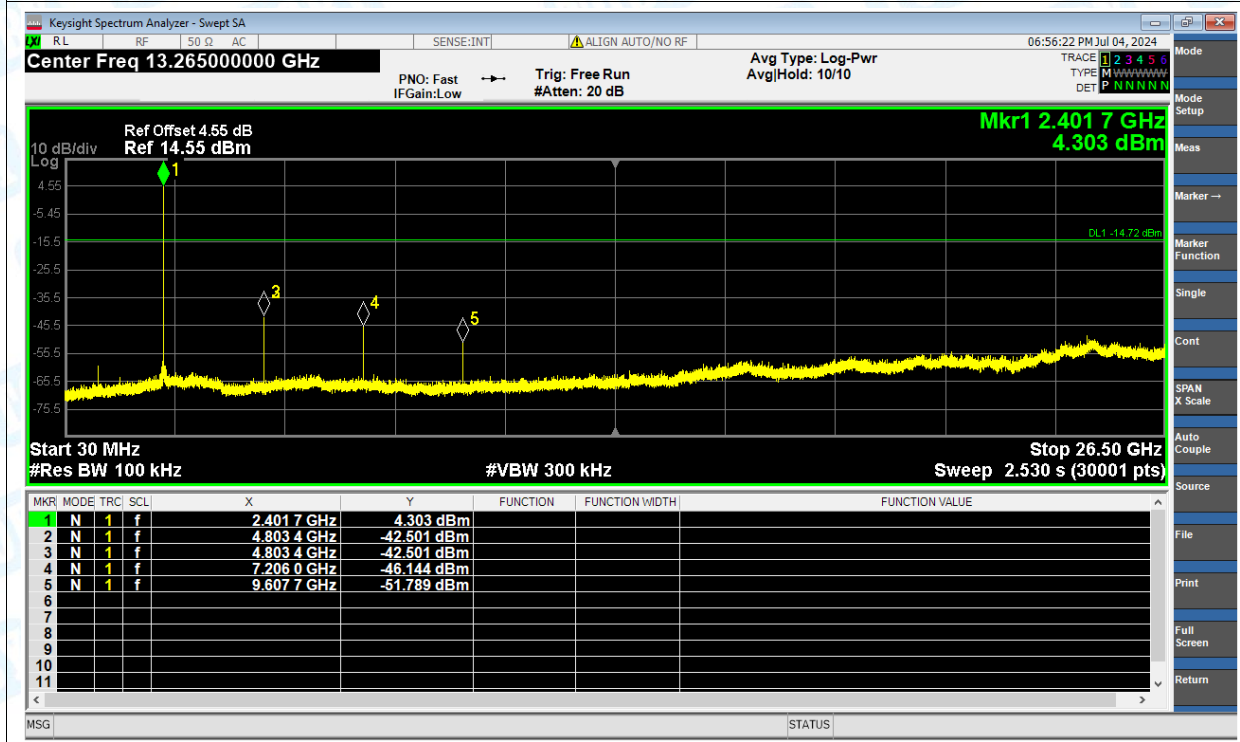
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-47.78	-20	Pass
NVNT	1-DH1	2441	Ant1	-44.24	-20	Pass
NVNT	1-DH1	2480	Ant1	-42.52	-20	Pass
NVNT	2-DH1	2402	Ant1	-48.48	-20	Pass
NVNT	2-DH1	2441	Ant1	-49.45	-20	Pass
NVNT	2-DH1	2480	Ant1	-46.12	-20	Pass
NVNT	3-DH1	2402	Ant1	-45.13	-20	Pass
NVNT	3-DH1	2441	Ant1	-44.67	-20	Pass
NVNT	3-DH1	2480	Ant1	-47.2	-20	Pass

Test Graphs

Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



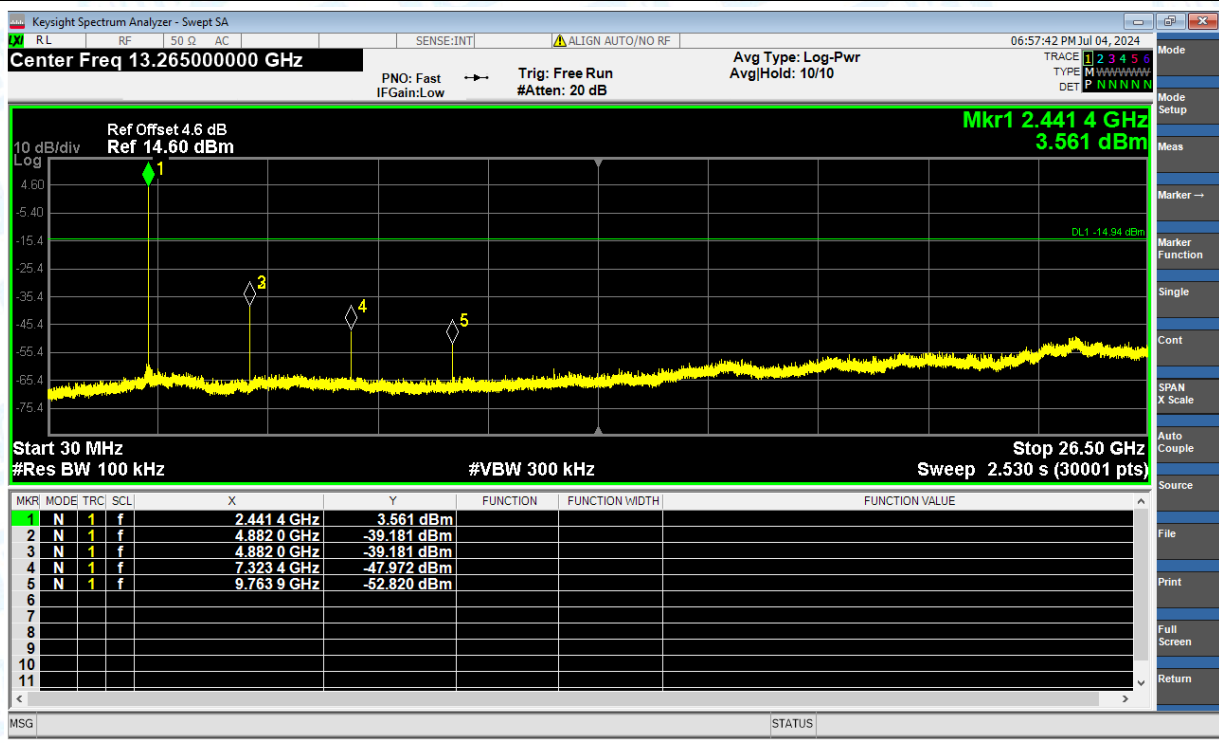
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



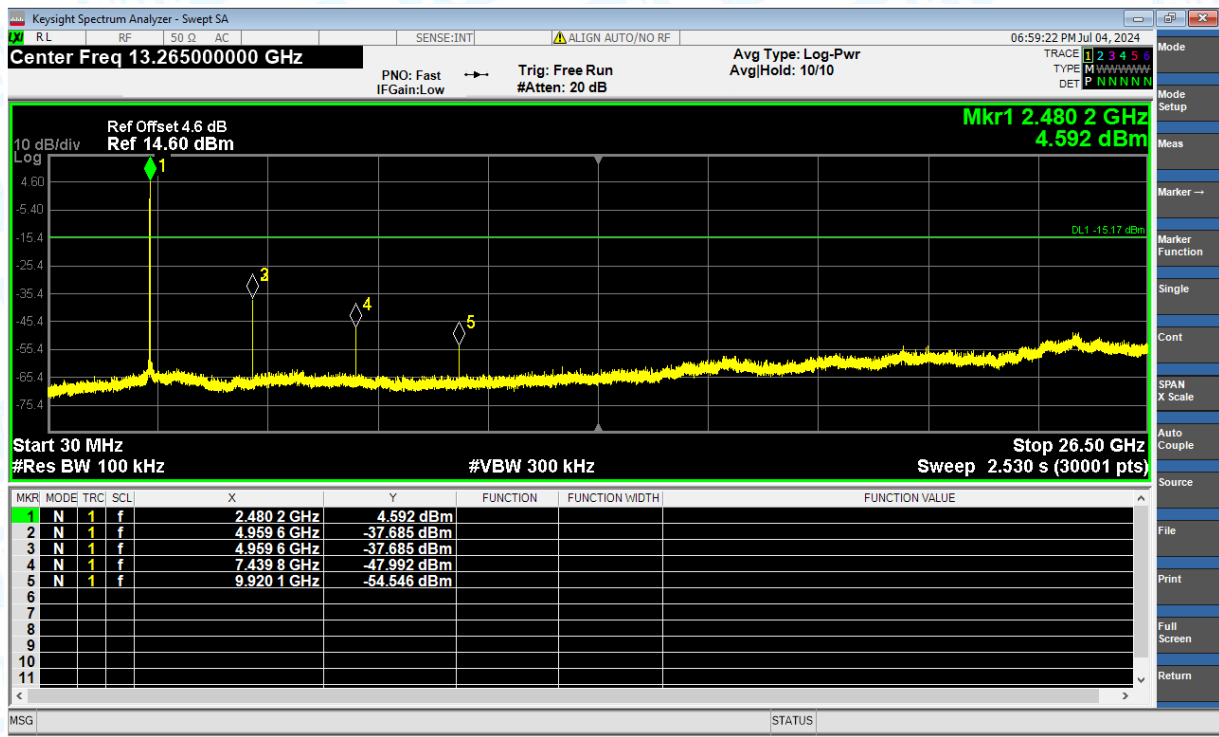
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



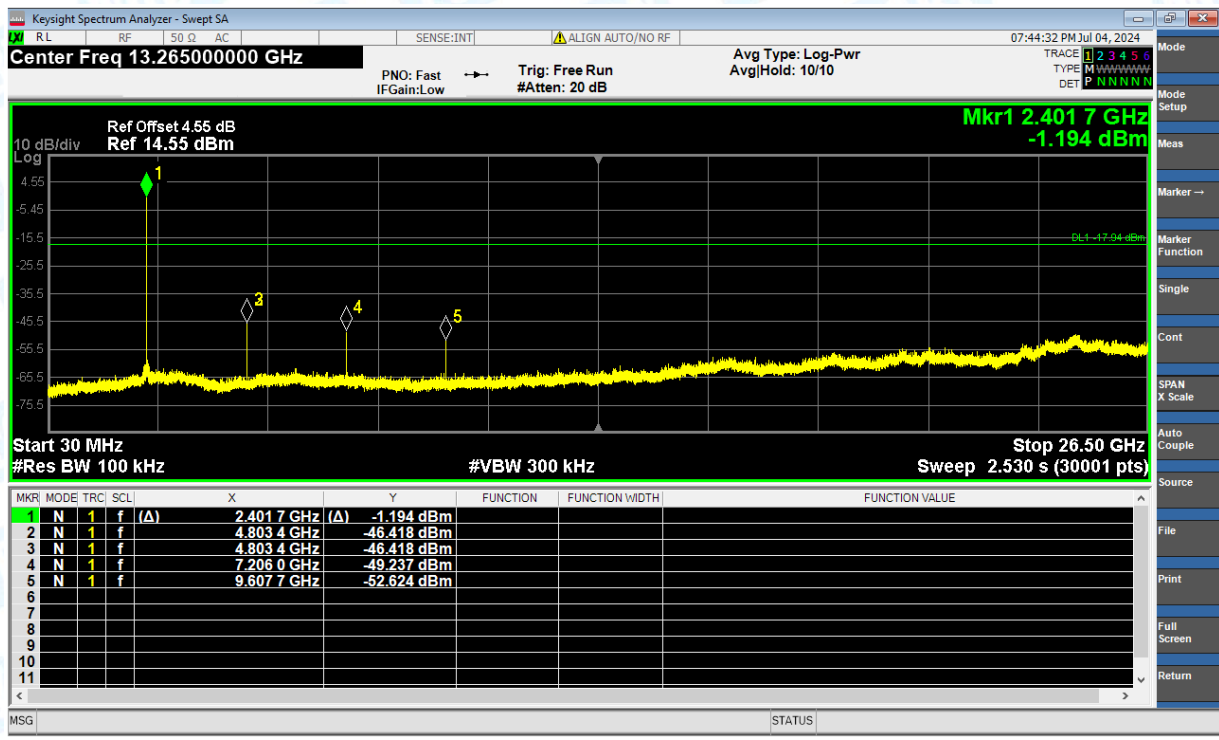
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



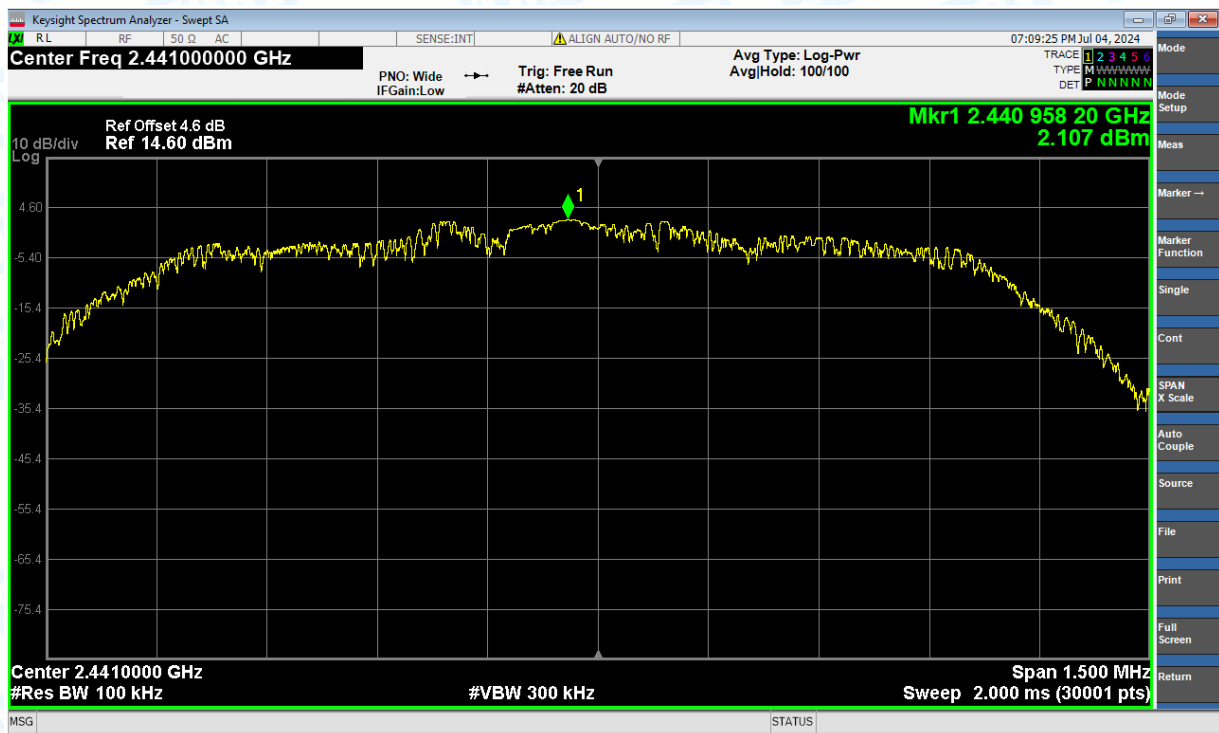
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



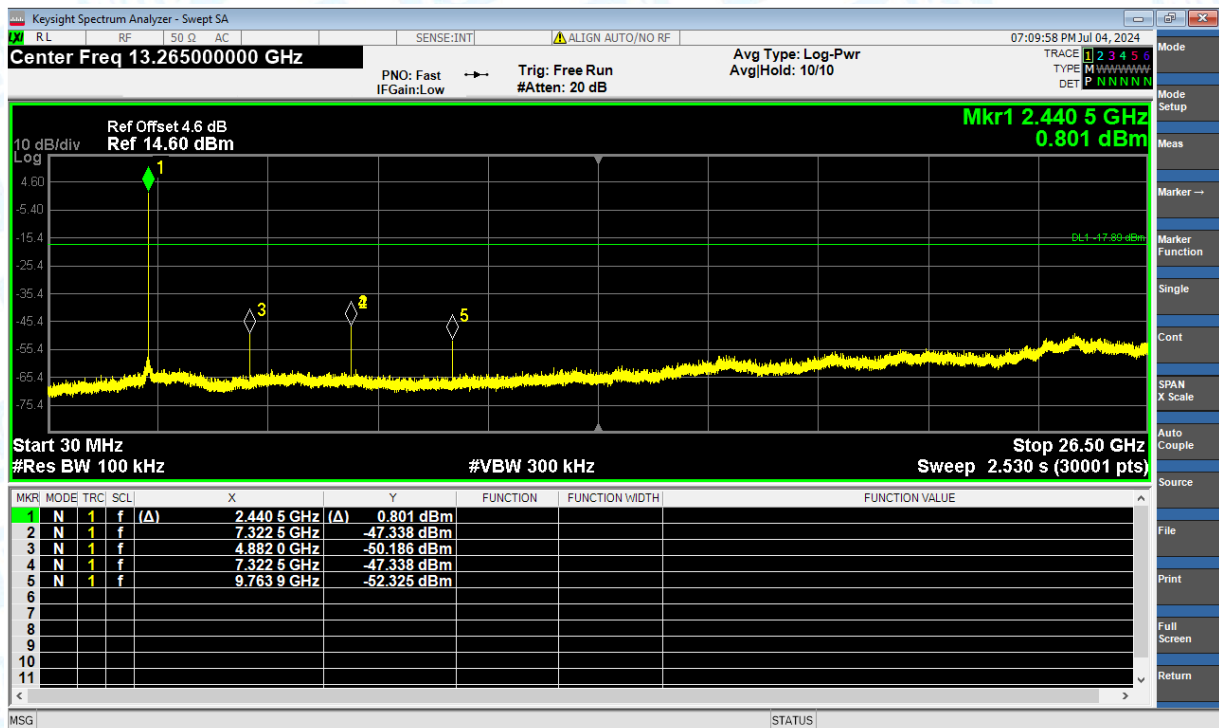
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



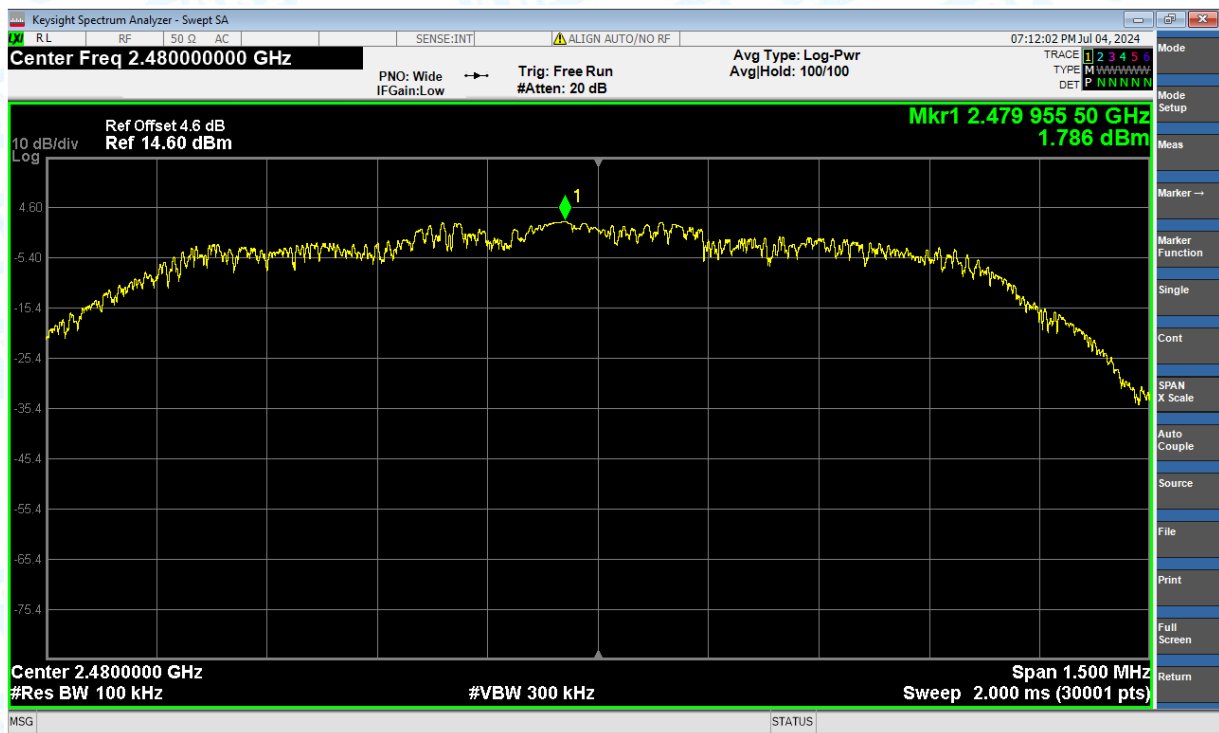
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



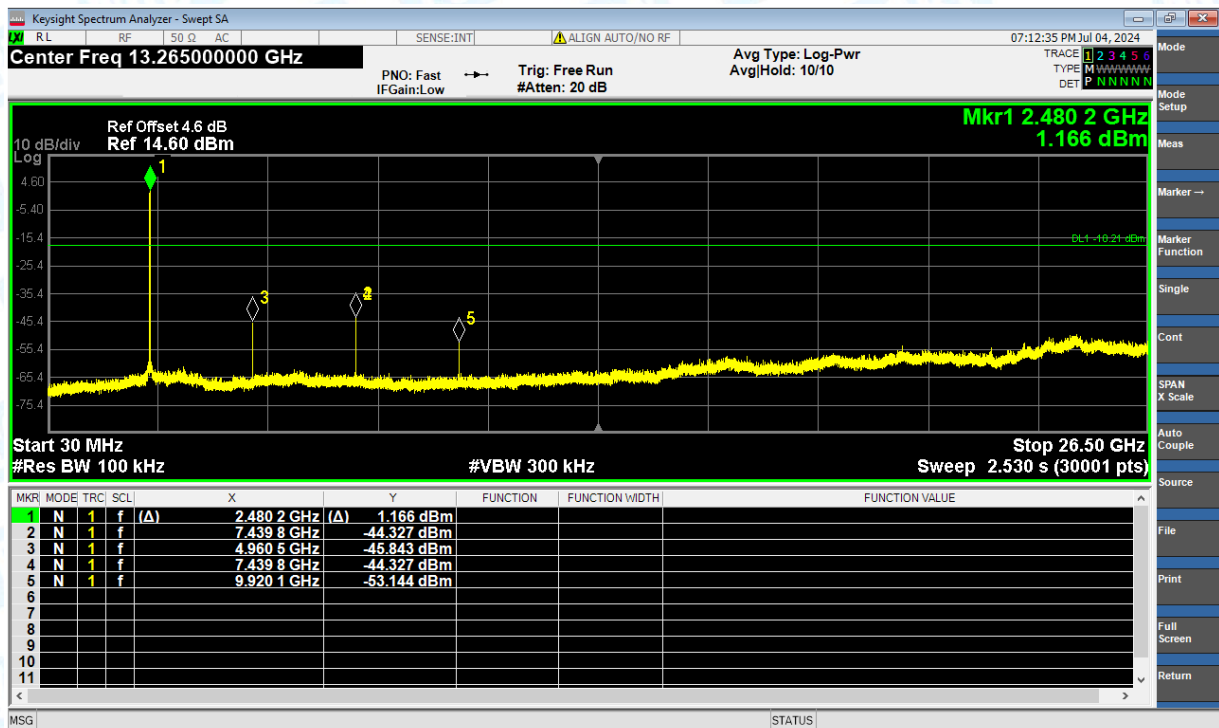
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



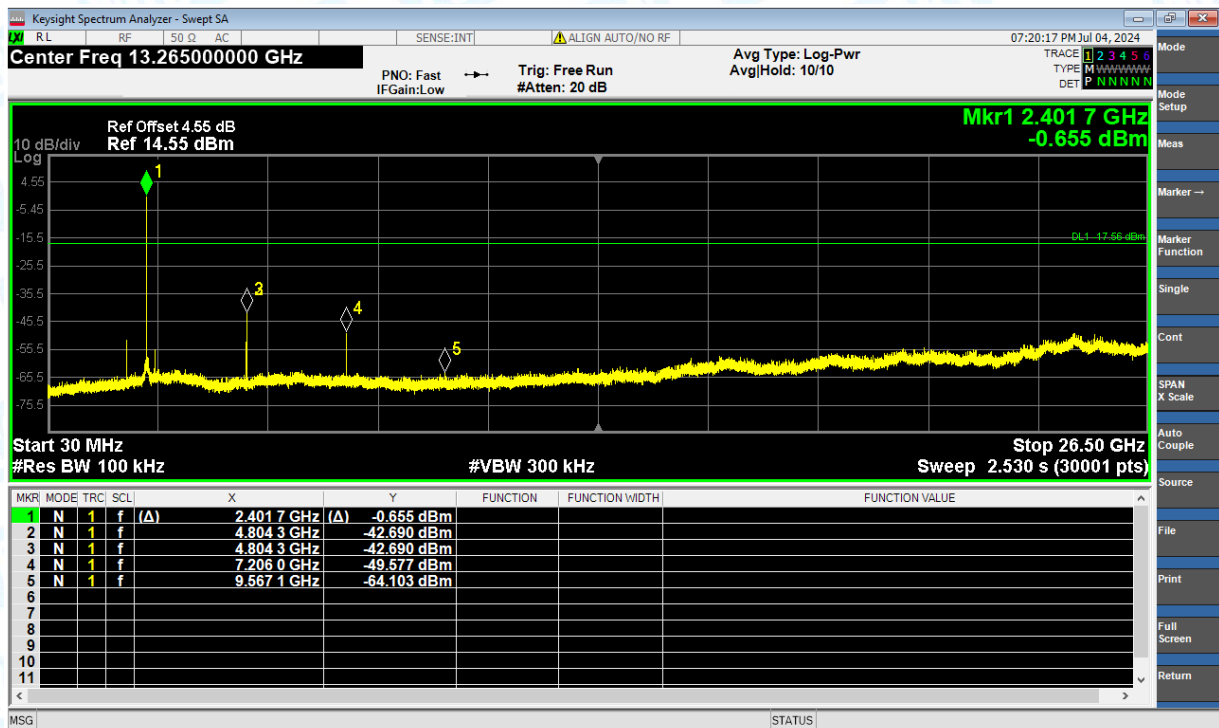
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



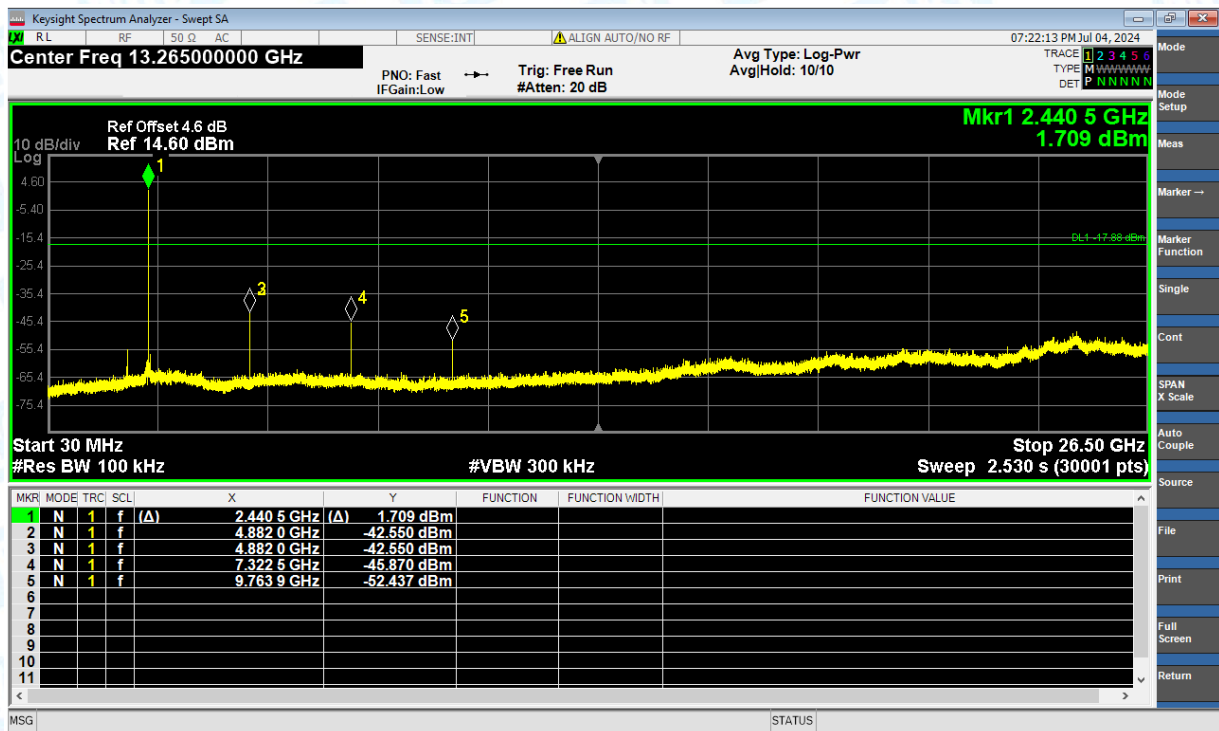
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



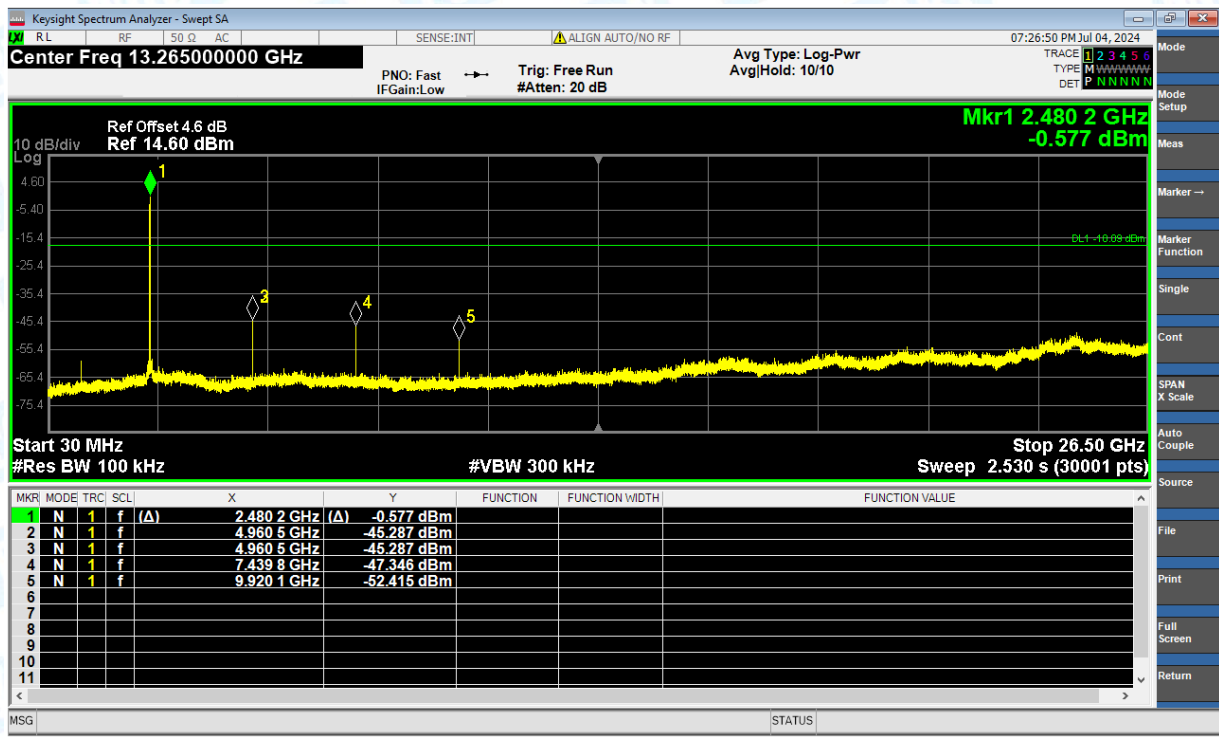
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

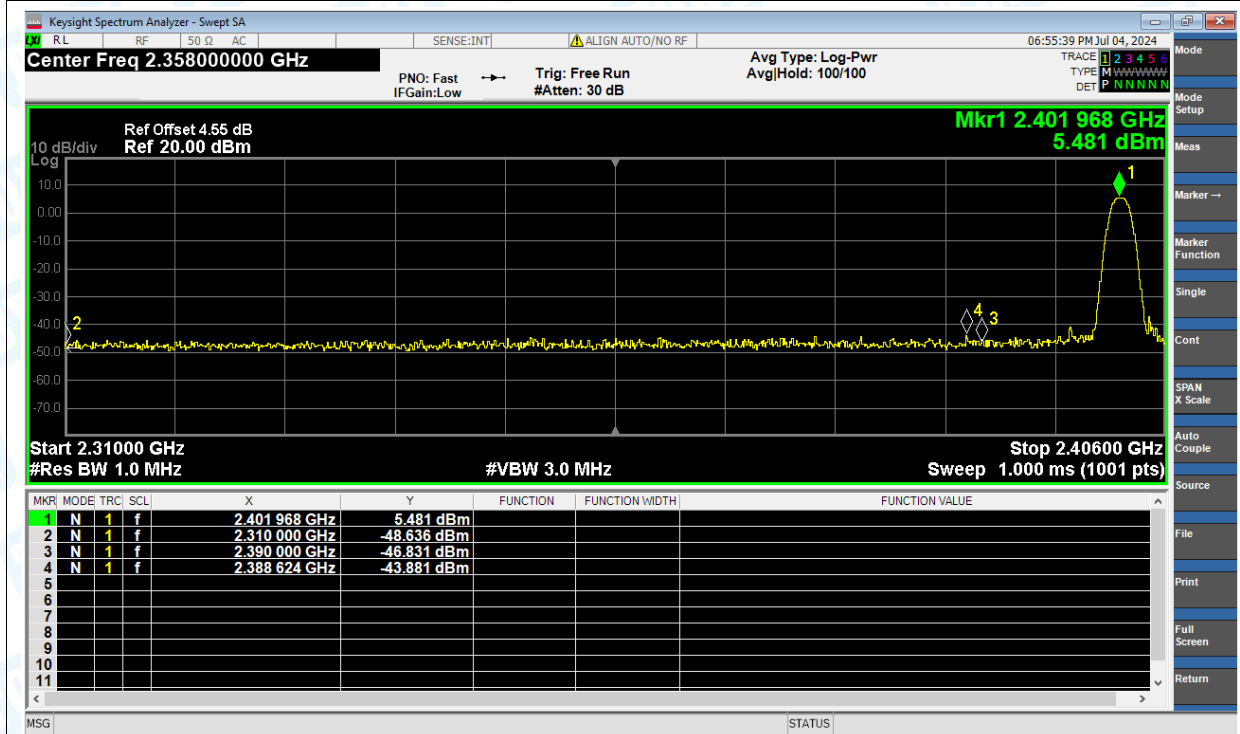


8. Restrict Band

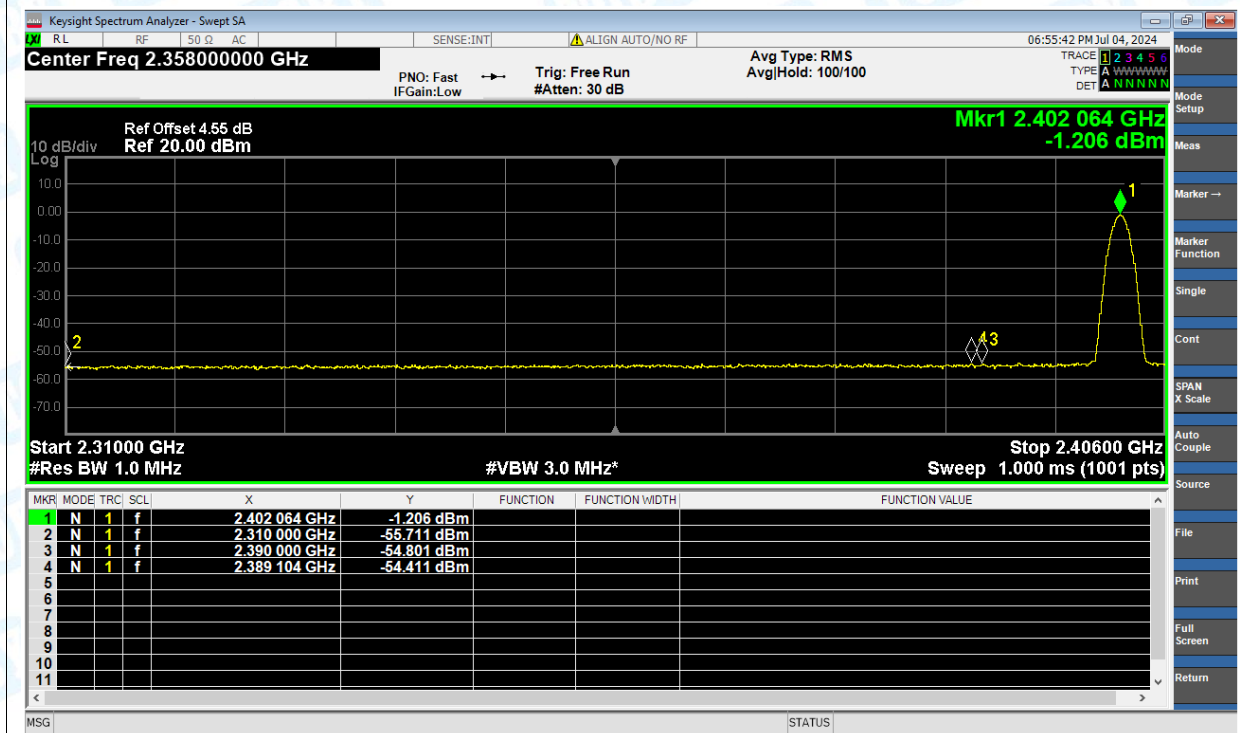
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-48.64	2	-	48.62	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-55.71	2	4.84	46.39	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2388.624	-43.88	2	-	53.38	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2389.104	-54.41	2	4.84	47.69	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-46.83	2	-	50.43	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-54.8	2	4.84	47.3	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-46.15	2	-	51.11	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-54.43	2	4.84	47.67	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2484.016	-40.6	2	-	56.66	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2497.432	-54.06	2	4.84	48.04	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-45.65	2	-	51.61	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-55.4	2	4.84	46.7	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-47.5	2	-	49.76	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-55.44	2	4.74	46.56	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2379.216	-43.44	2	-	53.82	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2383.056	-54.43	2	4.74	47.57	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-47.03	2	-	50.23	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-55.5	2	4.74	46.5	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-46.81	2	-	50.45	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-54.59	2	4.74	47.41	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2484.376	-41.73	2	-	55.53	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.752	-53.7	2	4.74	48.3	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-47.98	2	-	49.28	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.11	2	4.74	46.89	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-47.43	2	-	49.83	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-55.88	2	4.74	46.12	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2388.528	-43.62	2	-	53.64	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2388.24	-54.47	2	4.74	47.53	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-46.55	2	-	50.71	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-55.61	2	4.74	46.39	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-44.58	2	-	52.68	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-54.97	2	4.74	47.03	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2484.568	-40.42	2	-	56.84	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2484.088	-53.37	2	4.74	48.63	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-46.95	2	-	50.31	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.07	2	4.74	46.93	Average	54	Pass

Test Graphs

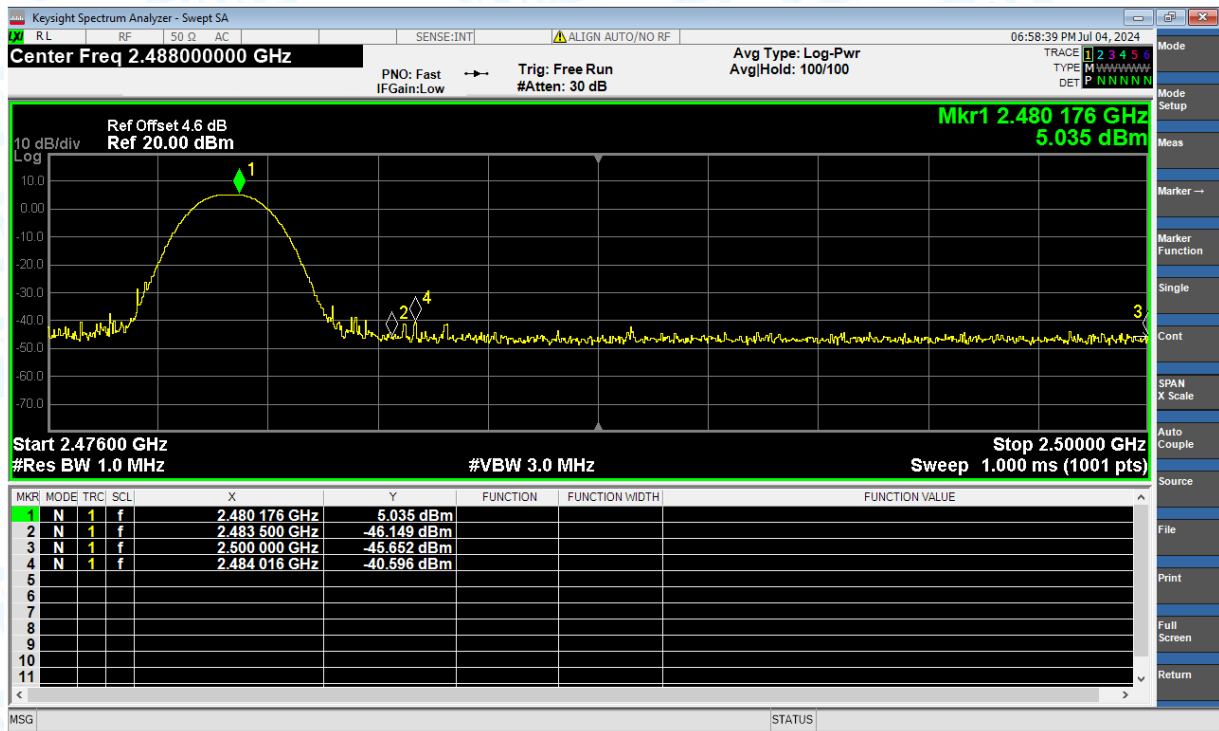
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



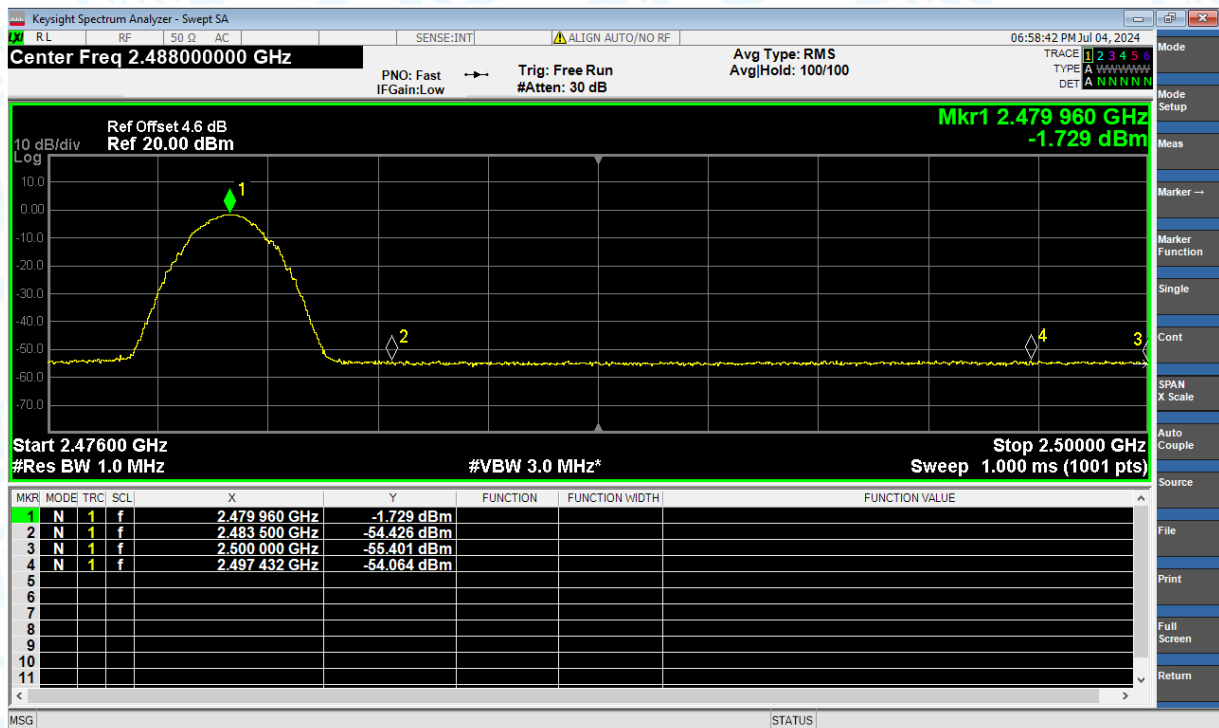
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



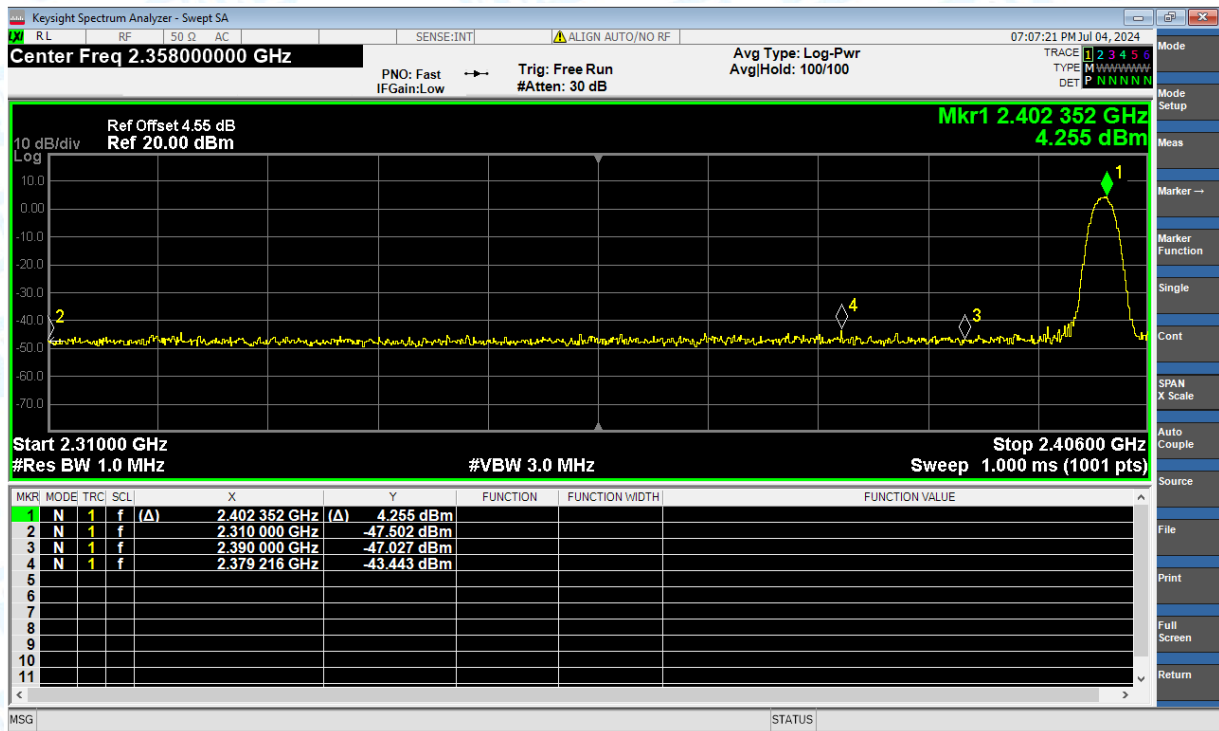
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



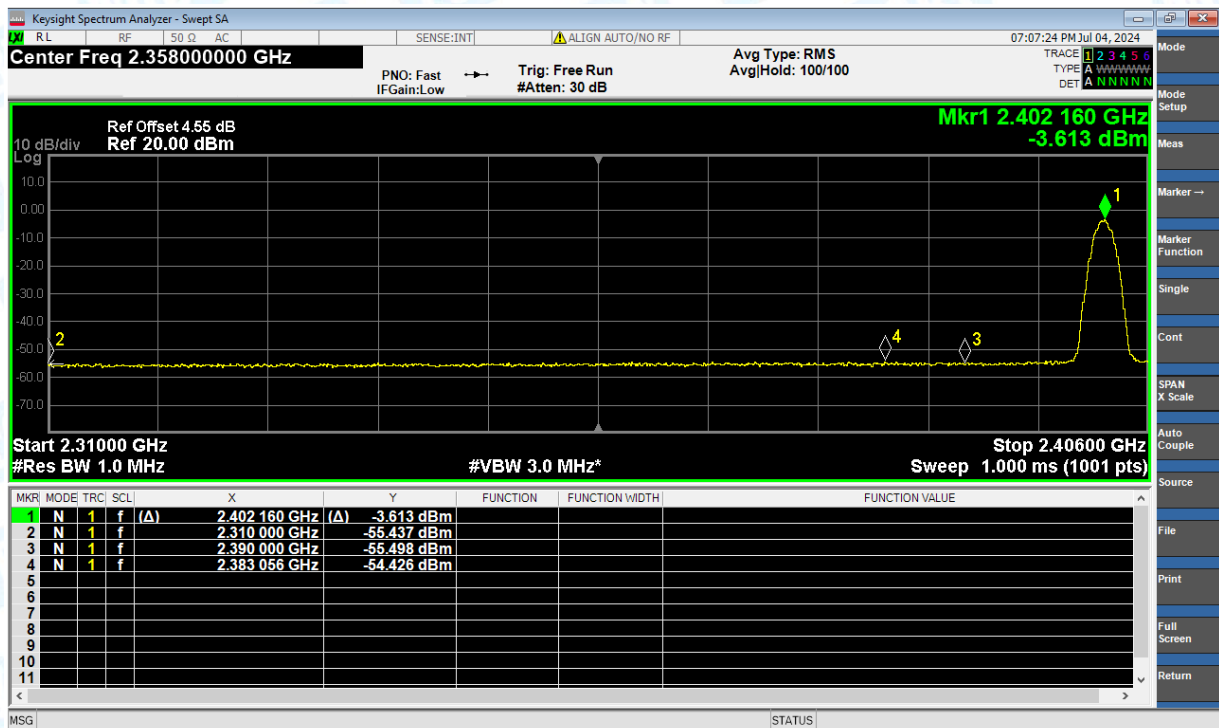
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



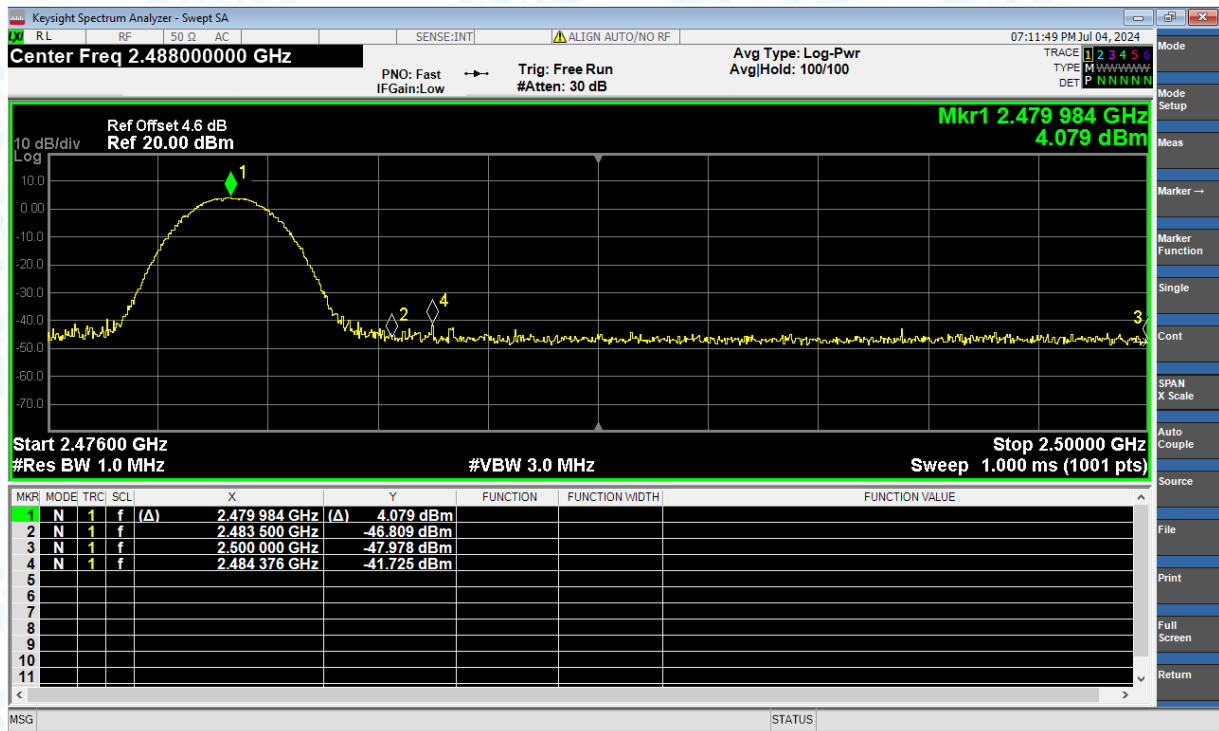
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



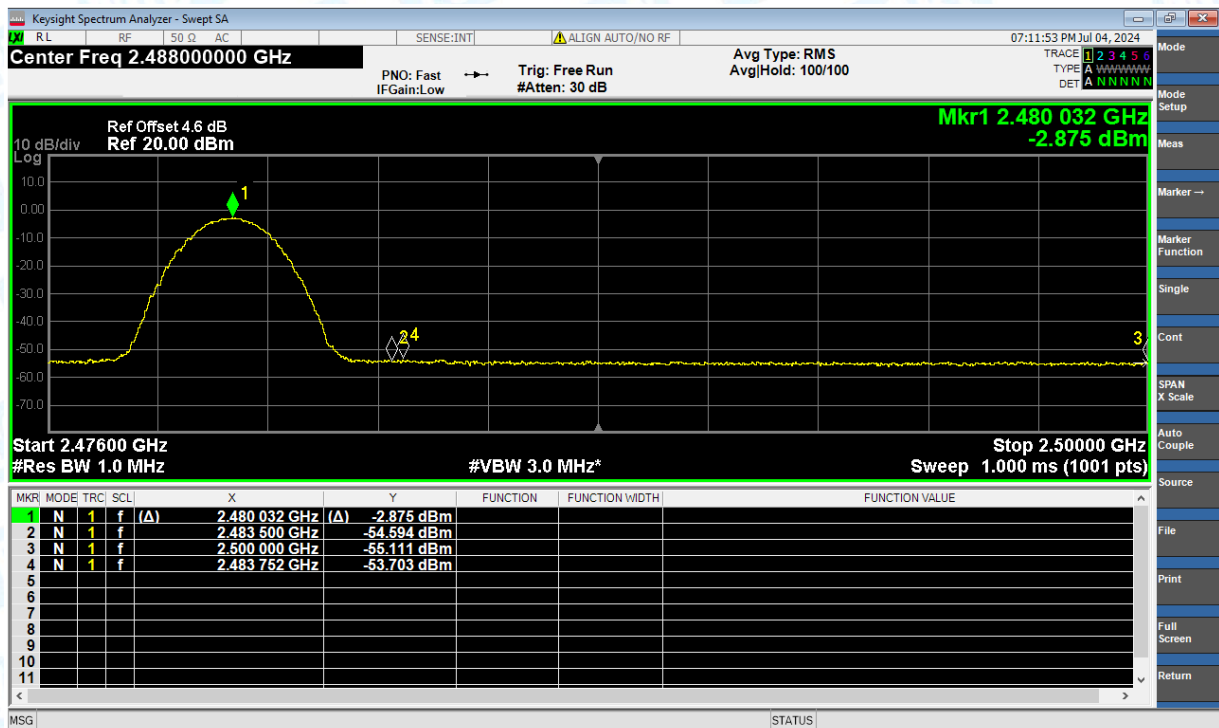
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



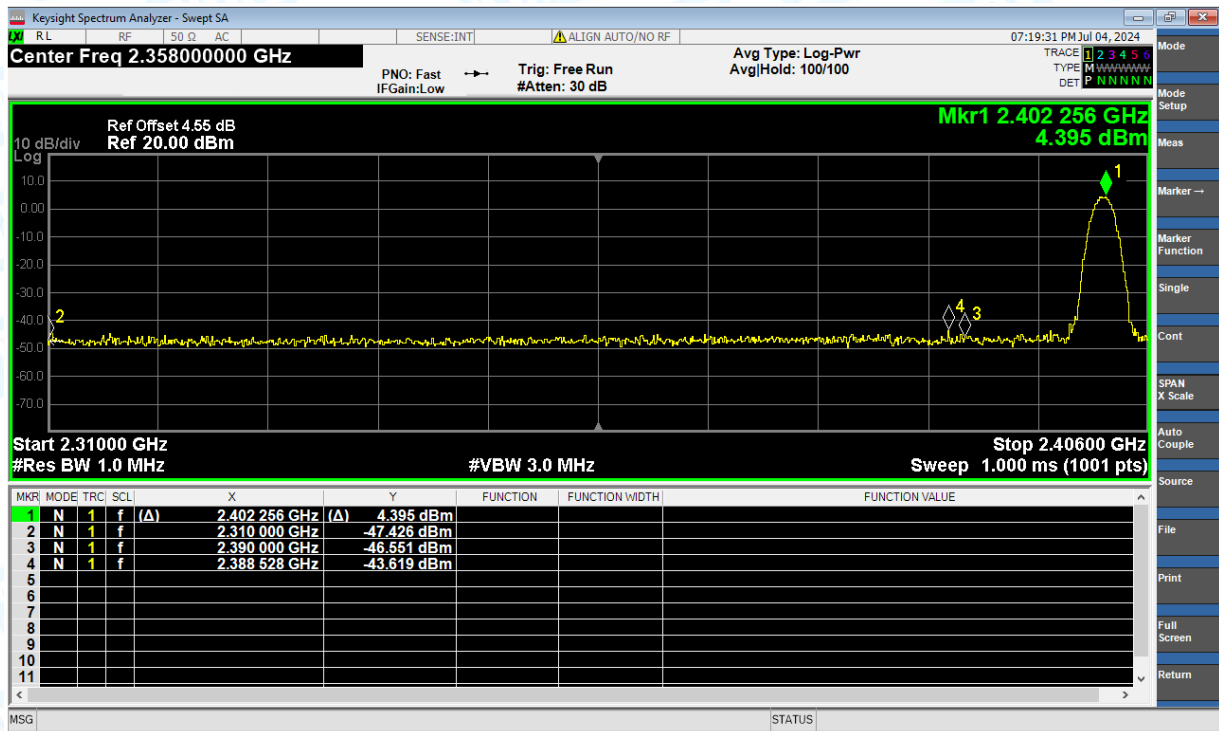
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



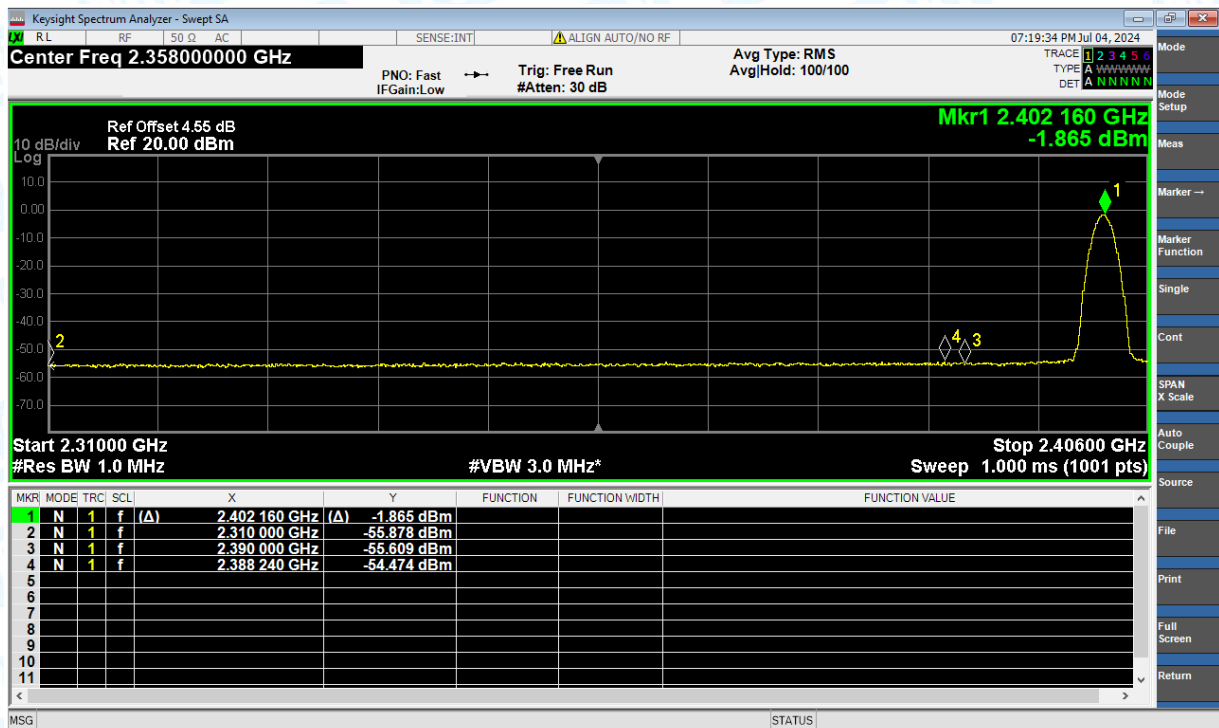
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



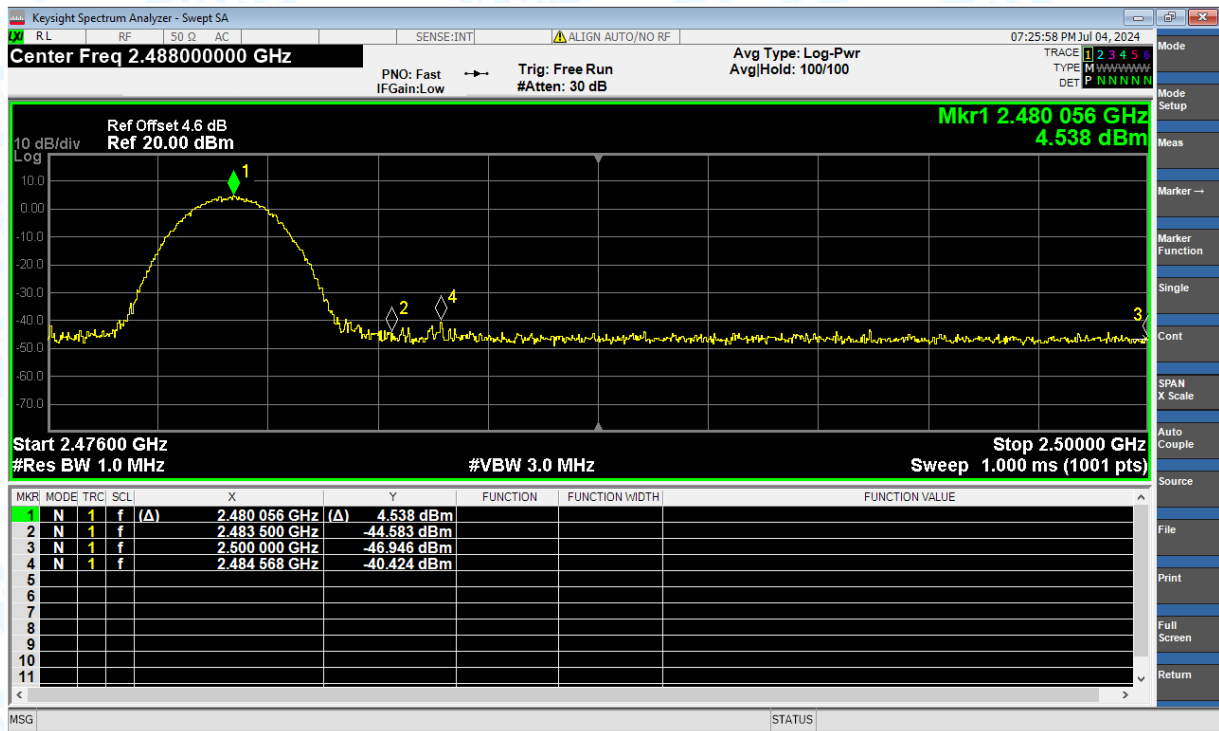
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



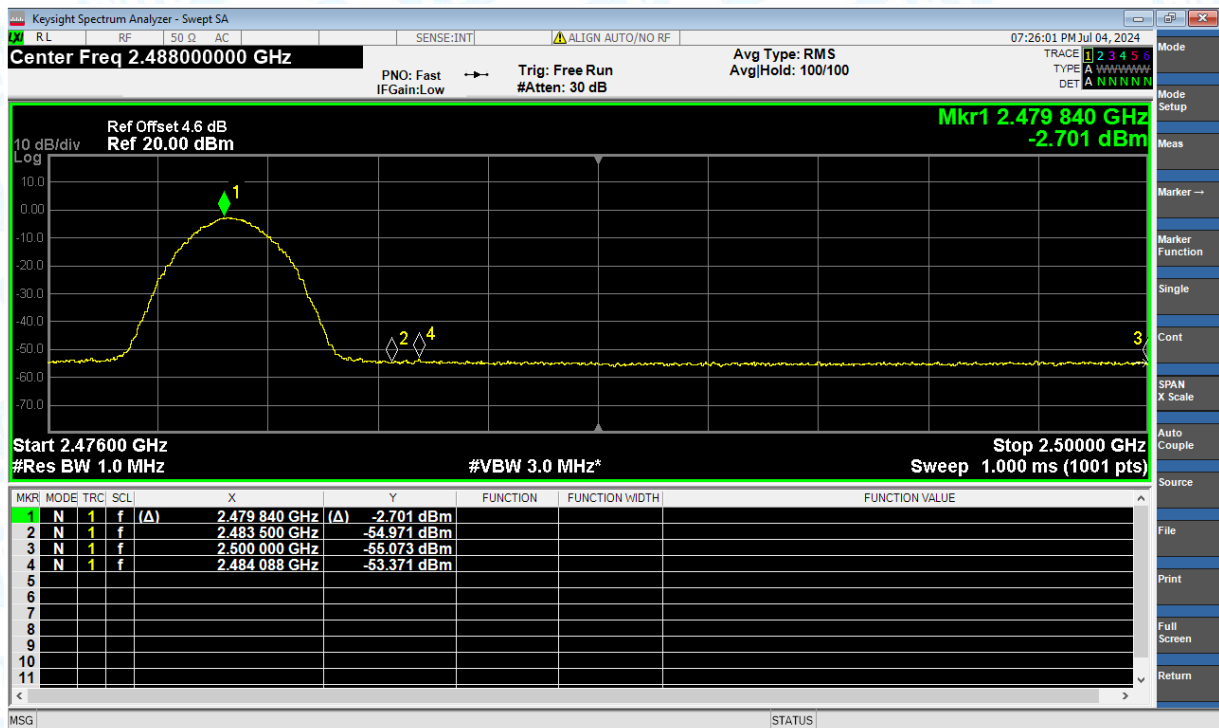
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

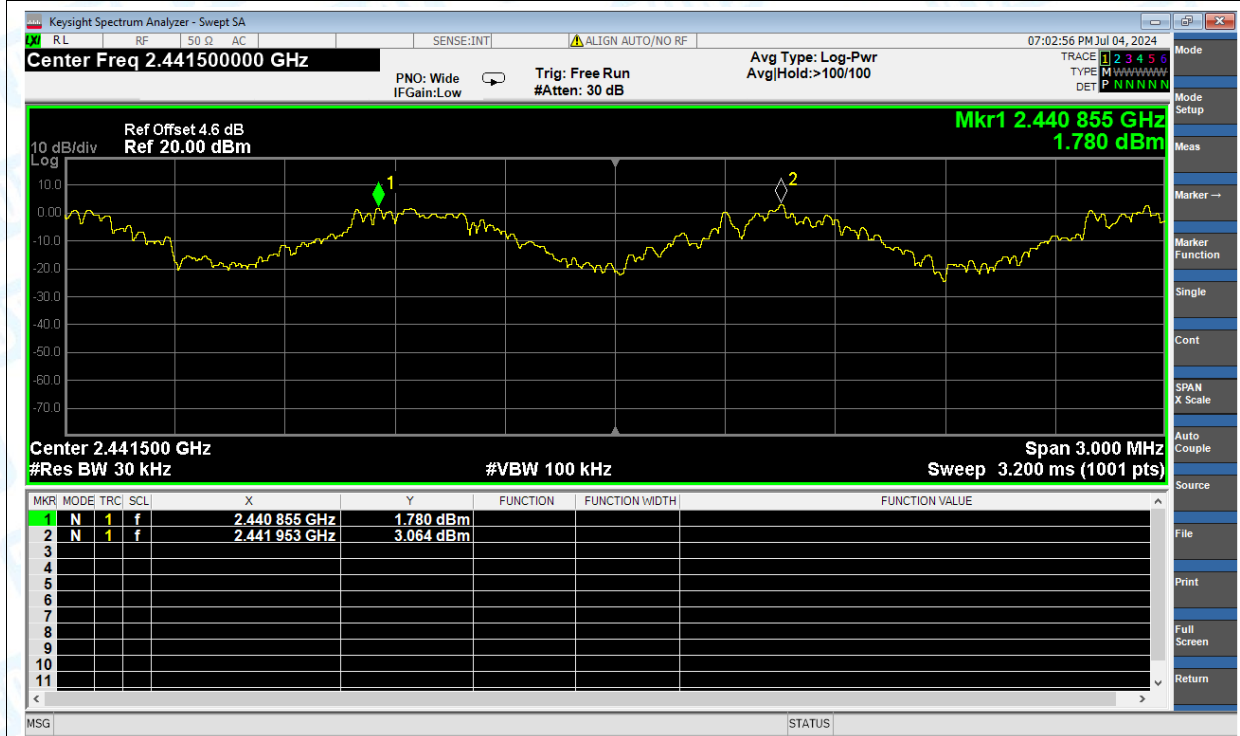


9. Carrier Frequencies Separation

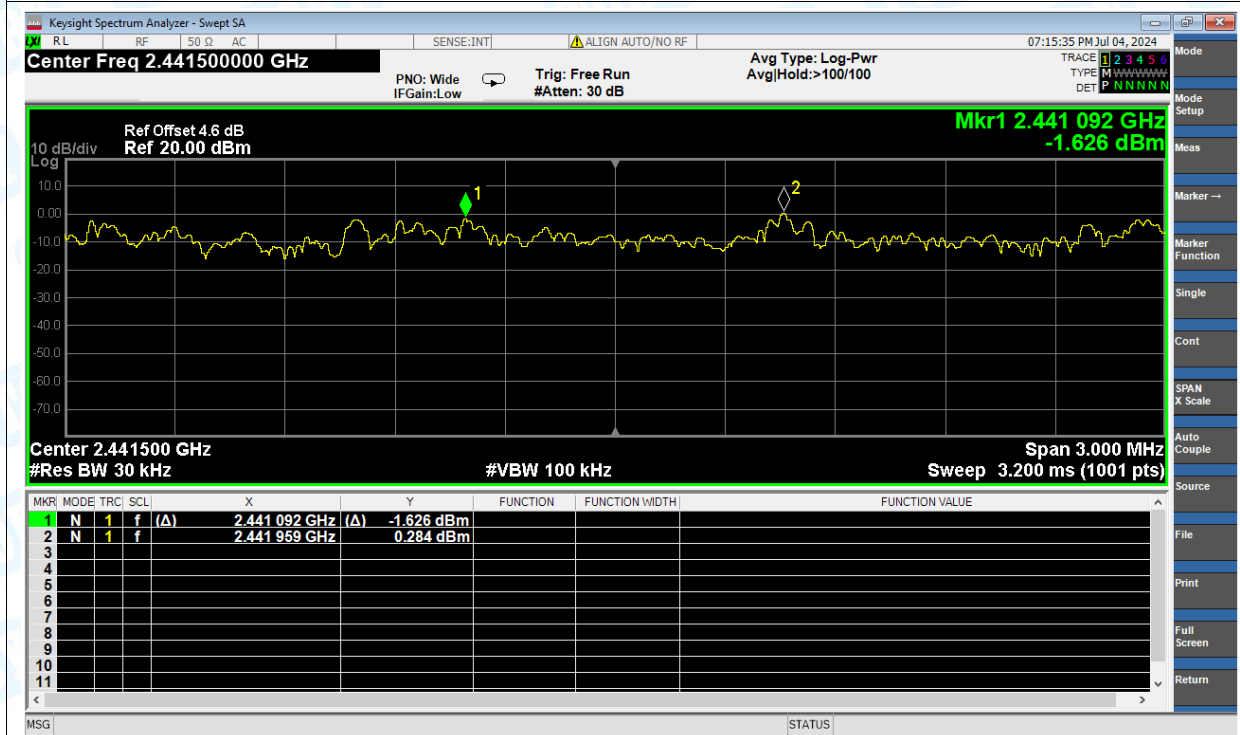
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.855	2441.953	1.098	0.62	Pass
NVNT	2-DH1	Ant1	2441.092	2441.959	0.867	0.84	Pass
NVNT	3-DH1	Ant1	2440.96	2441.797	0.837	0.807	Pass

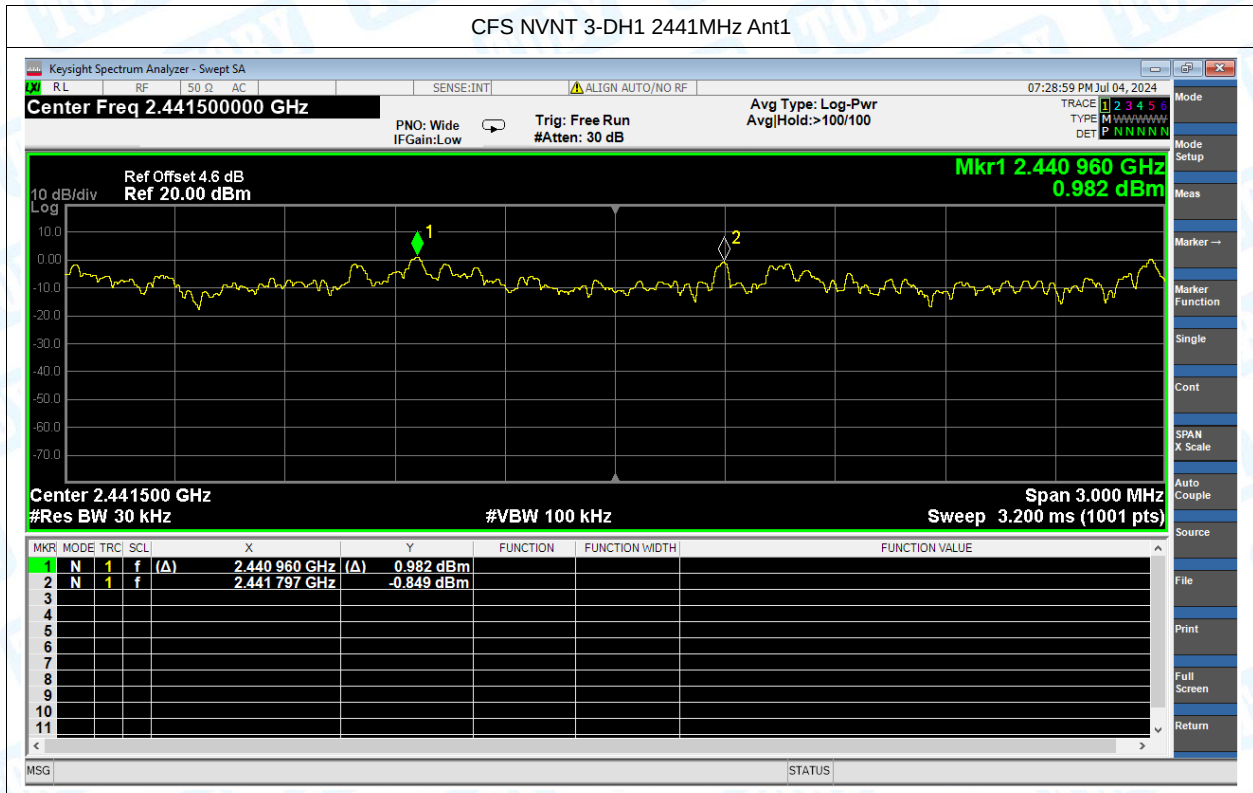
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



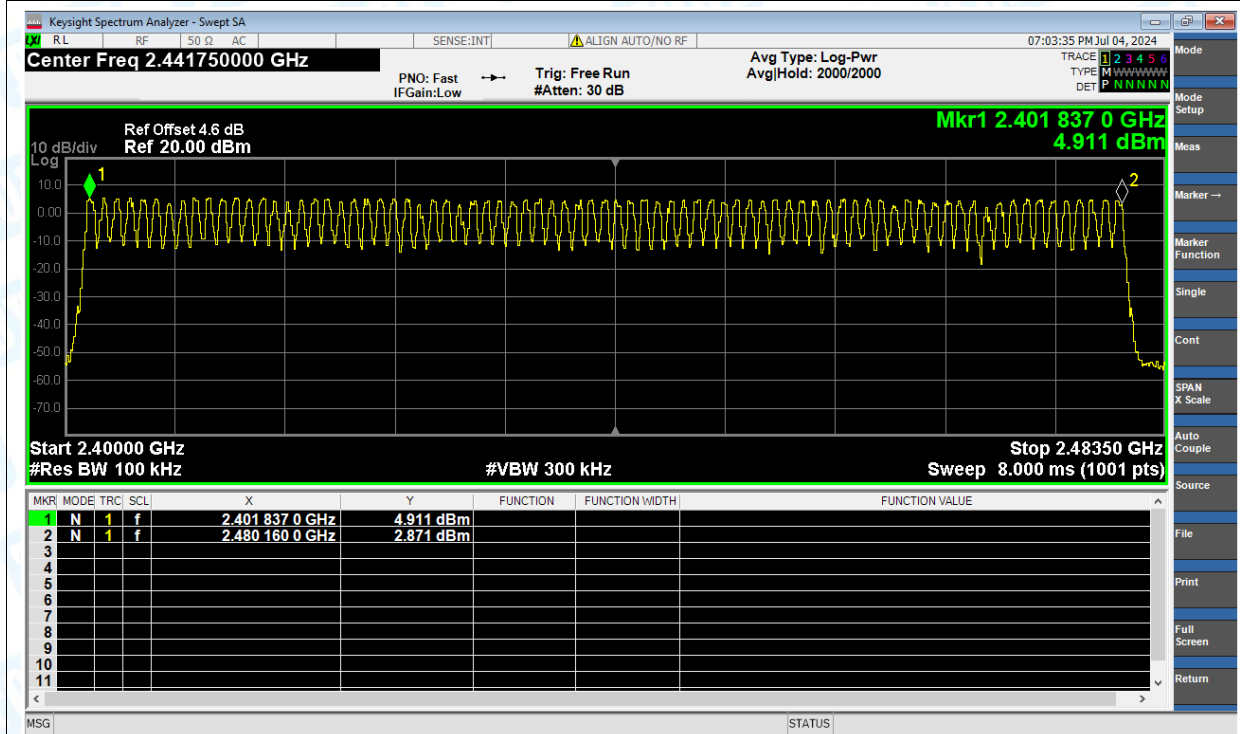


10. Number of Hopping Channel

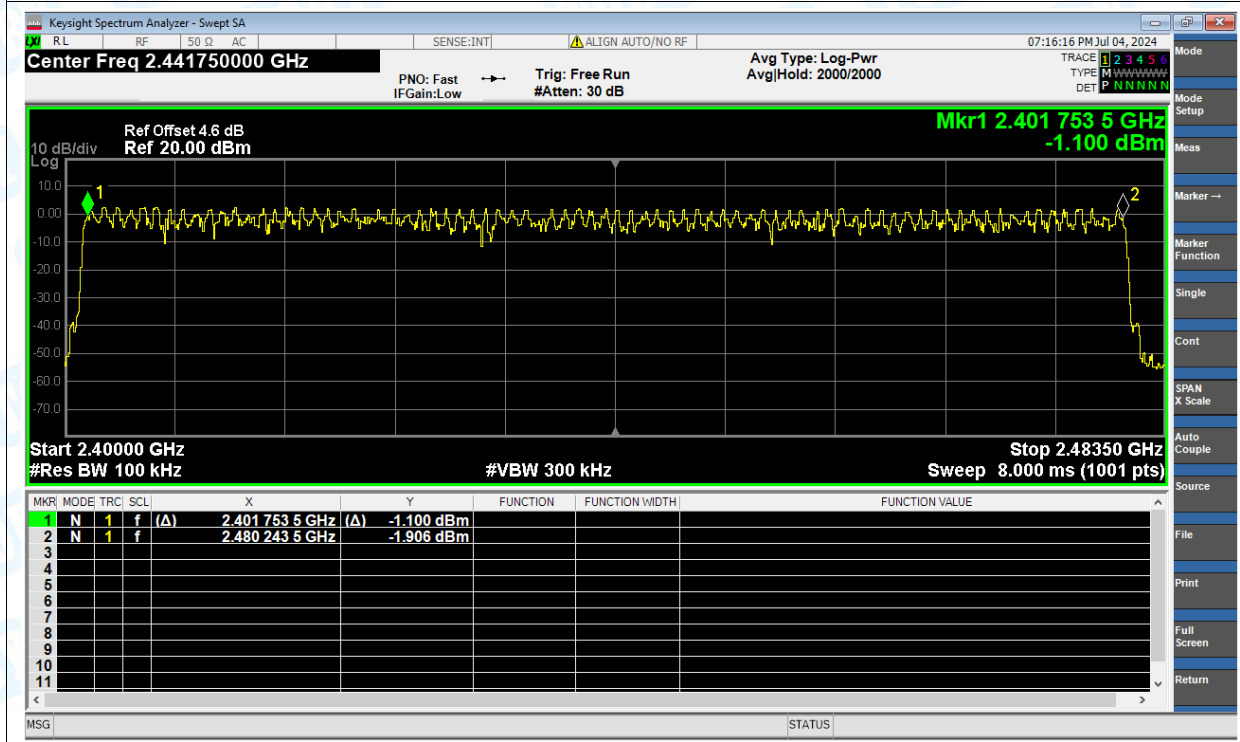
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

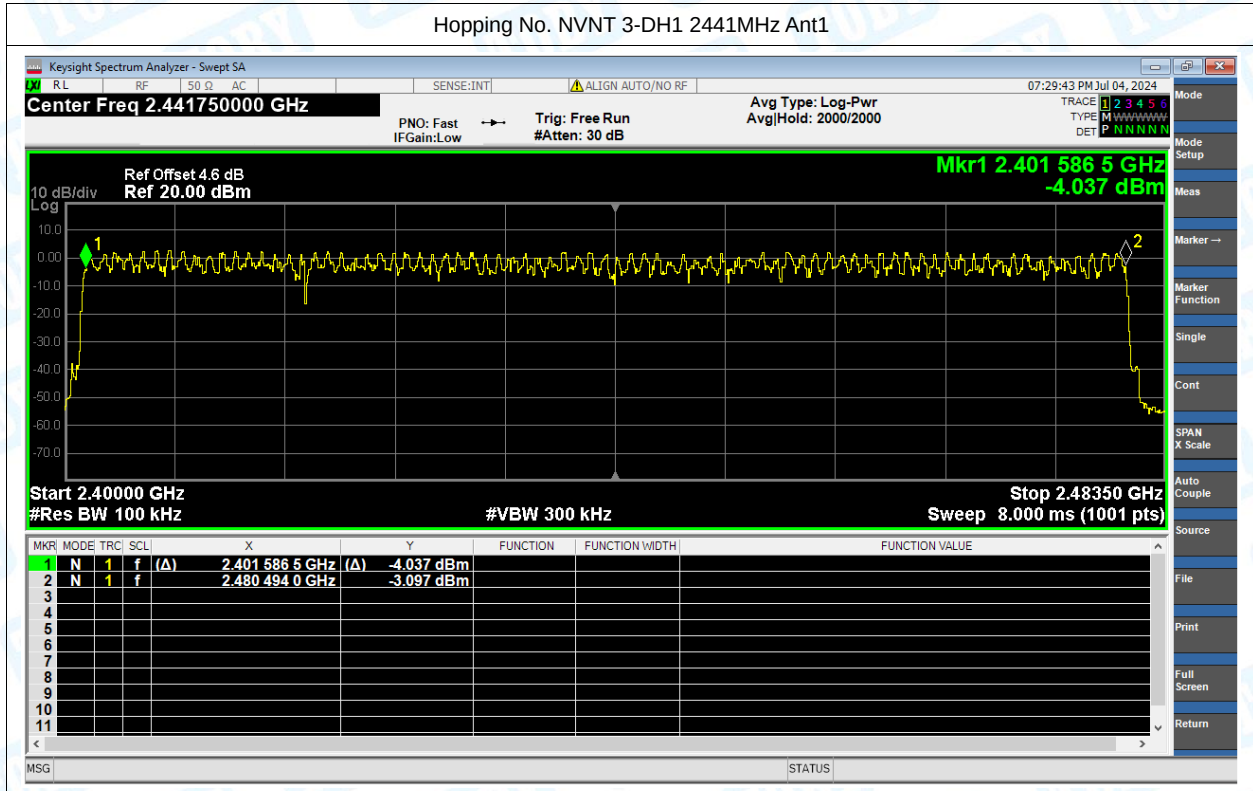
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



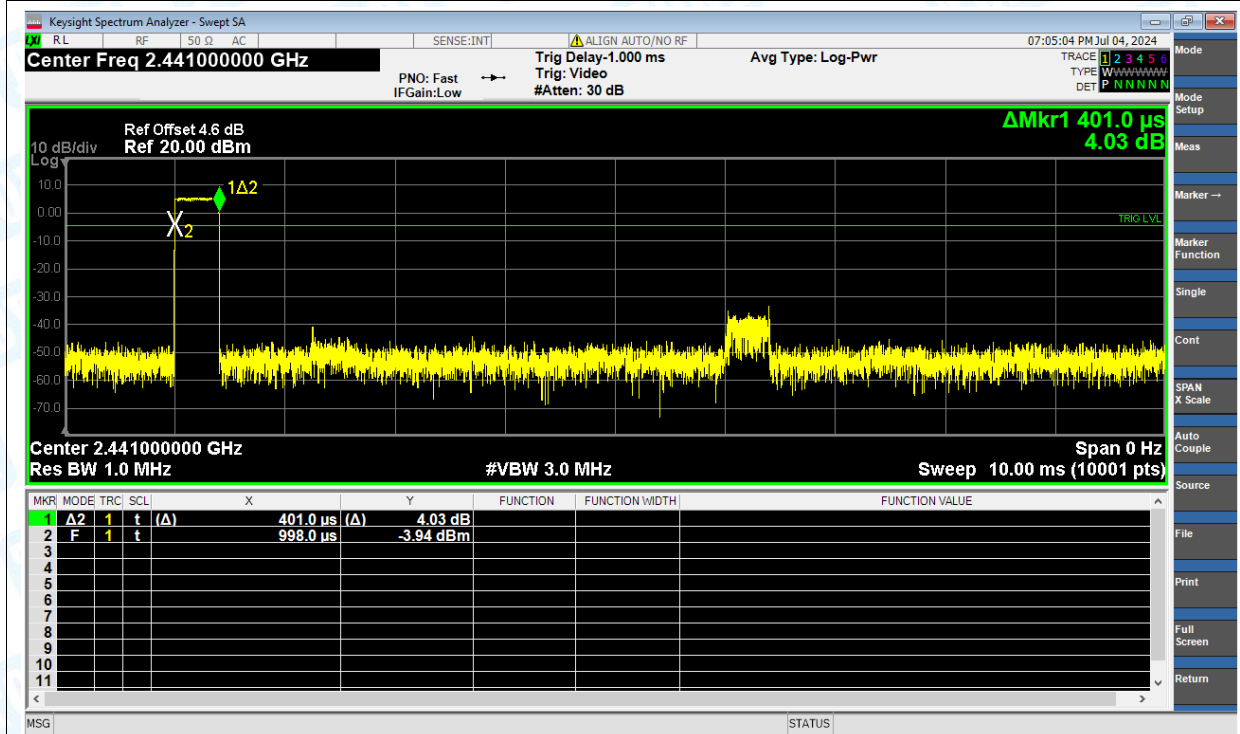


11. Dwell Time

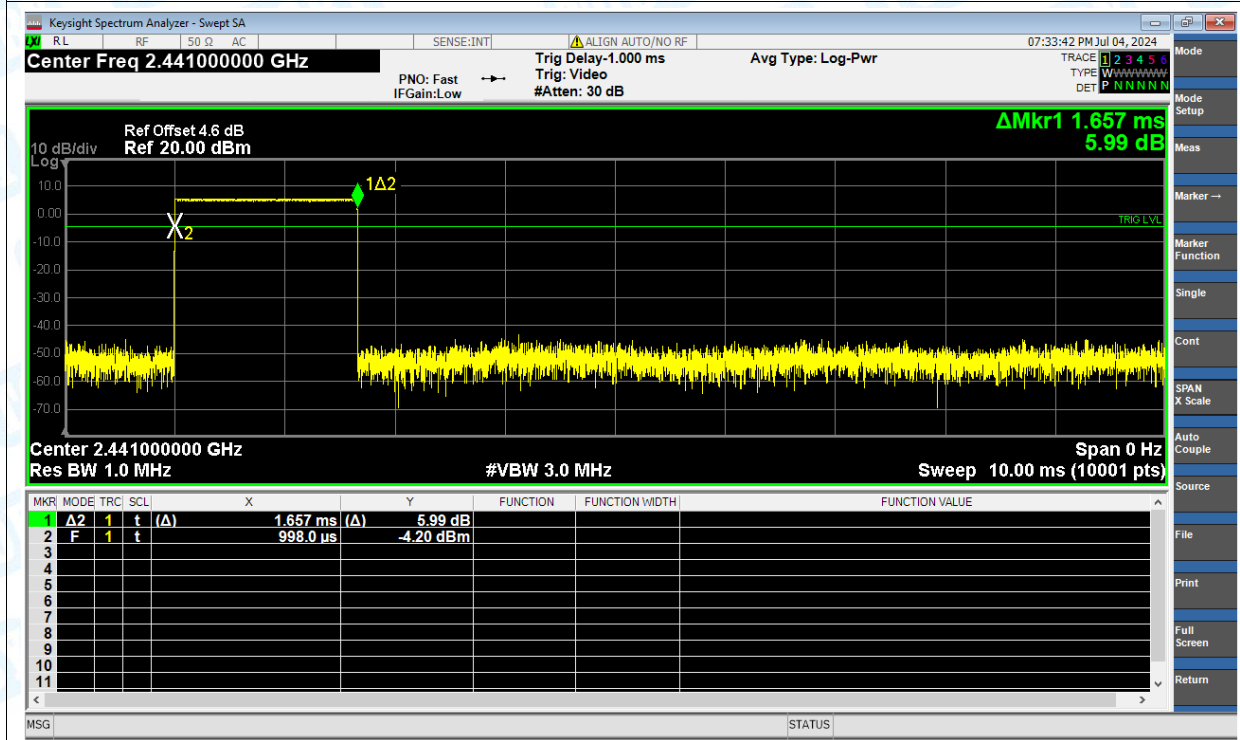
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.401	128.32	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.657	265.12	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.905	309.867	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.411	131.52	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.662	265.92	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.909	310.293	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.411	131.52	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.661	265.76	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.912	310.613	31600	400	Pass

Test Graphs

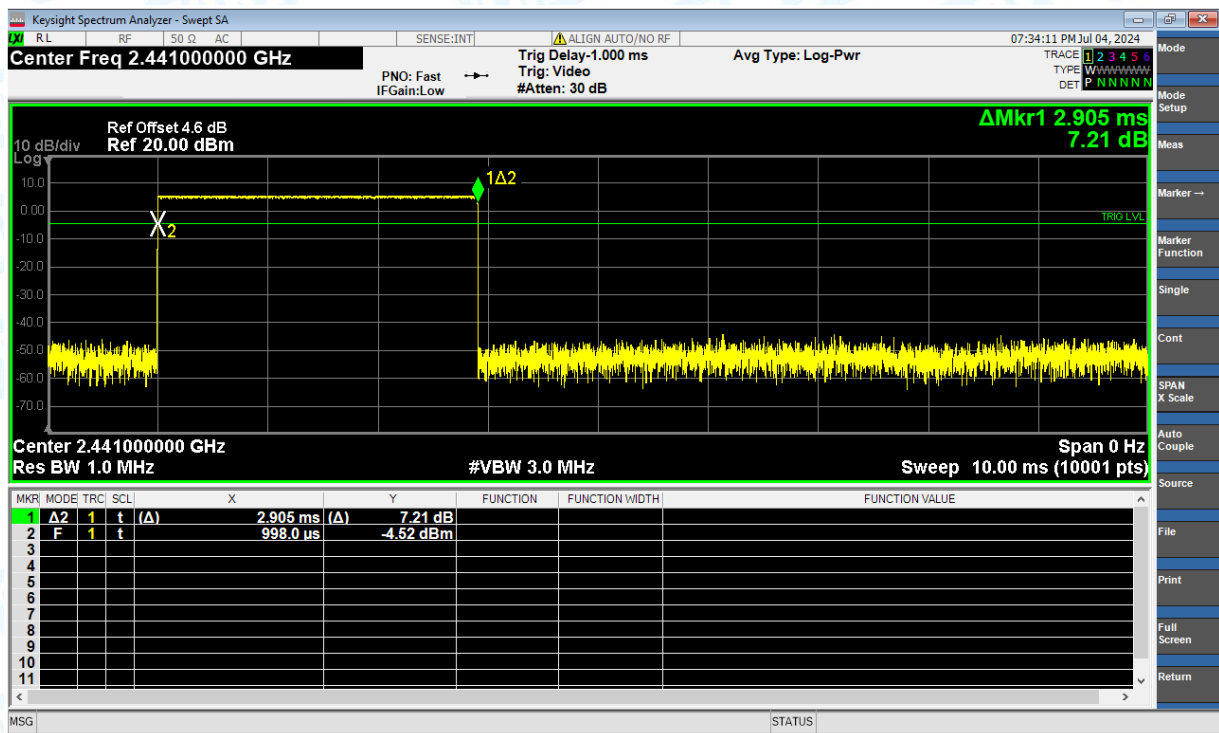
Dwell NVNT 1-DH1 2441MHz Ant1



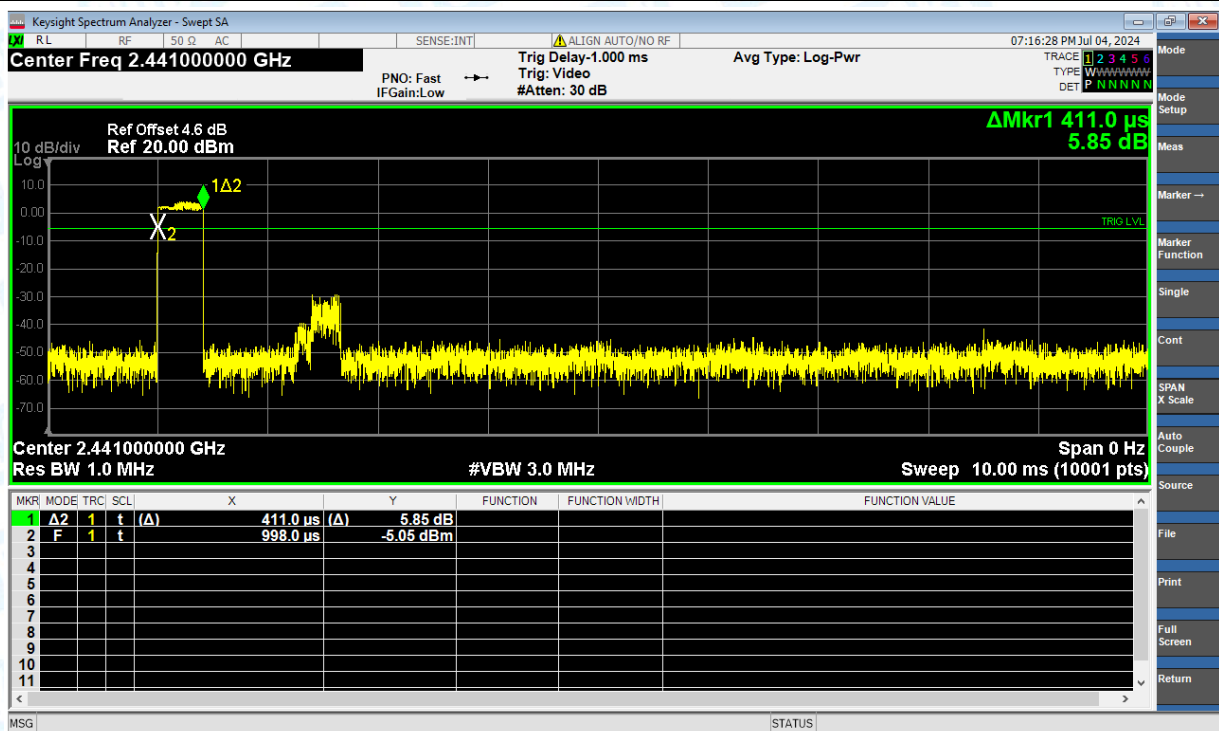
Dwell NVNT 1-DH3 2441MHz Ant1



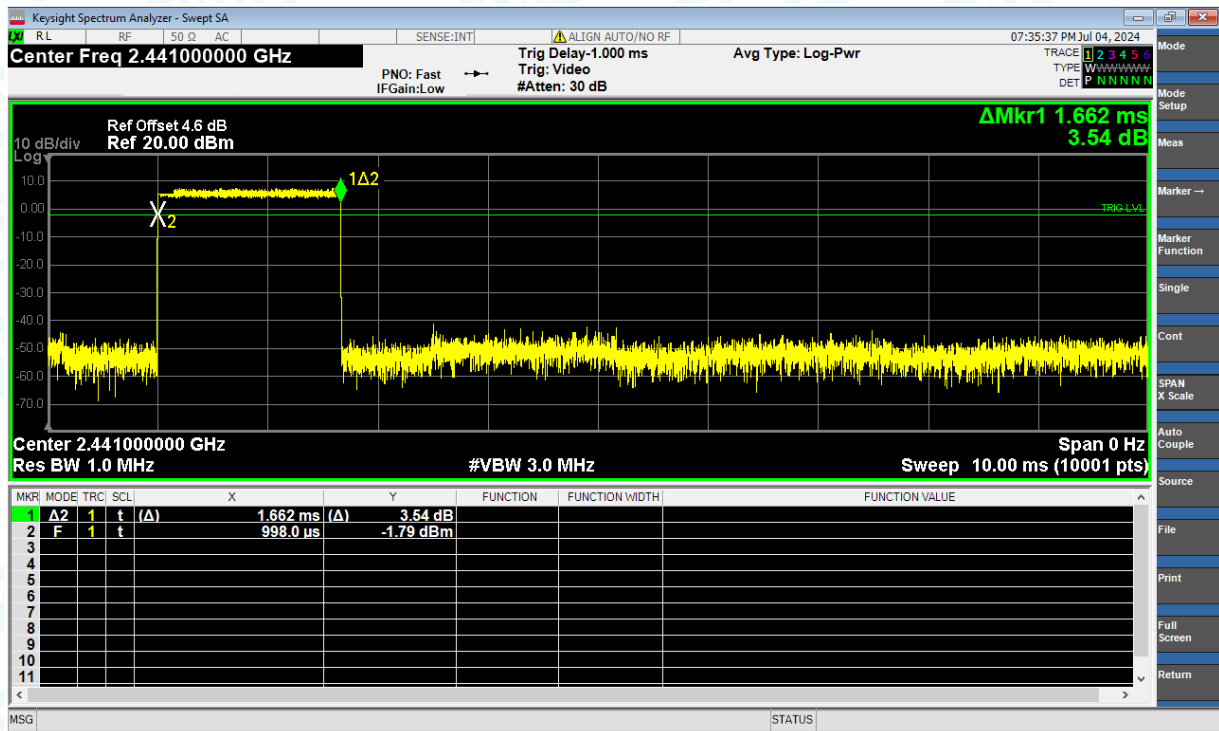
Dwell NVNT 1-DH5 2441MHz Ant1



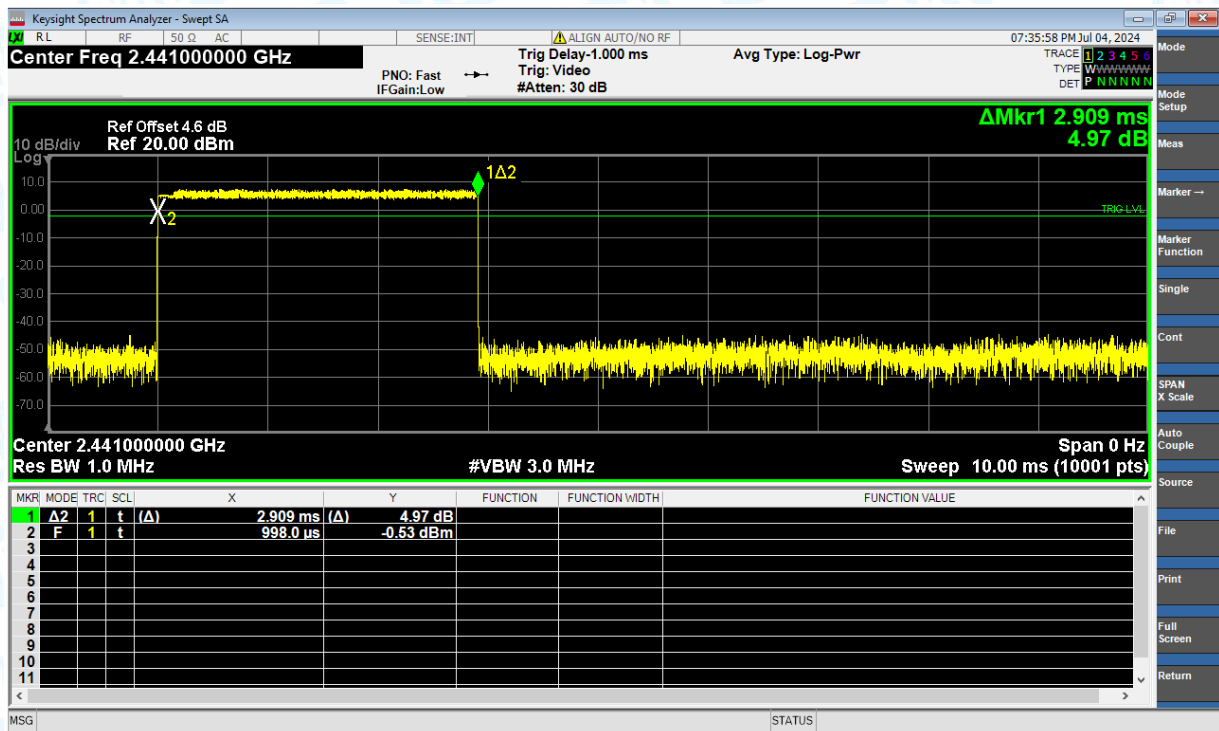
Dwell NVNT 2-DH1 2441MHz Ant1



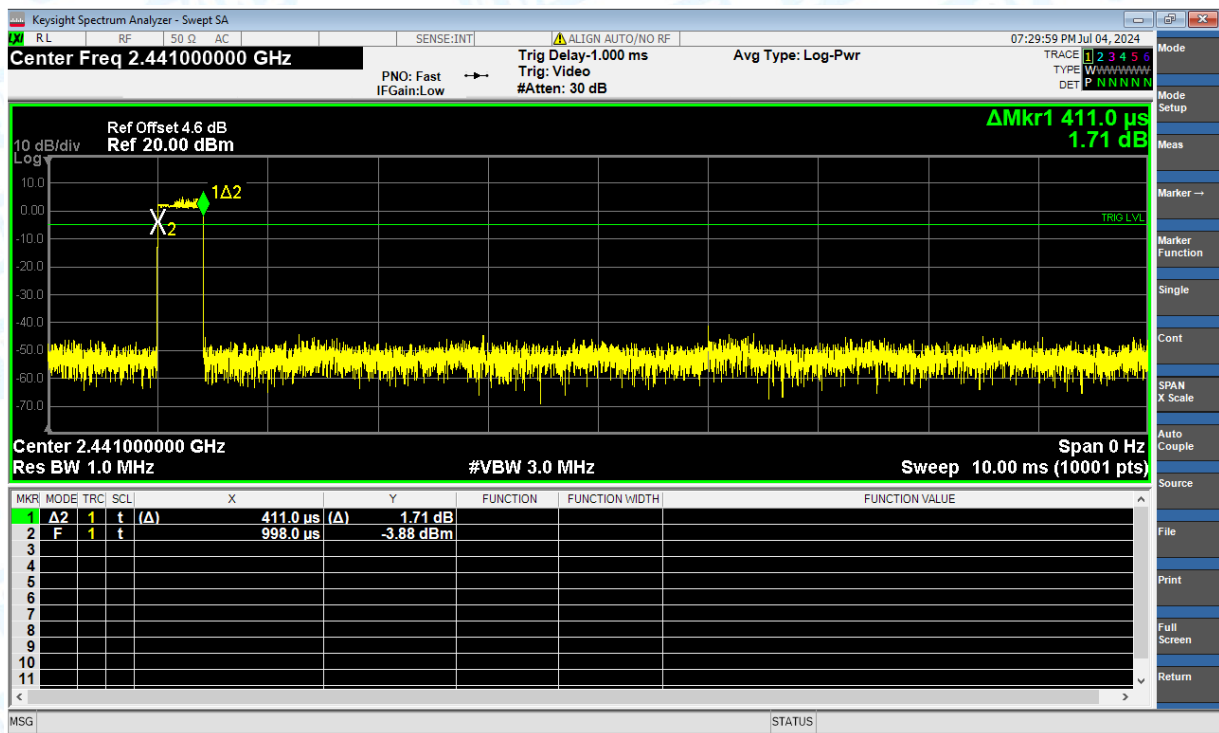
Dwell NVNT 2-DH3 2441MHz Ant1



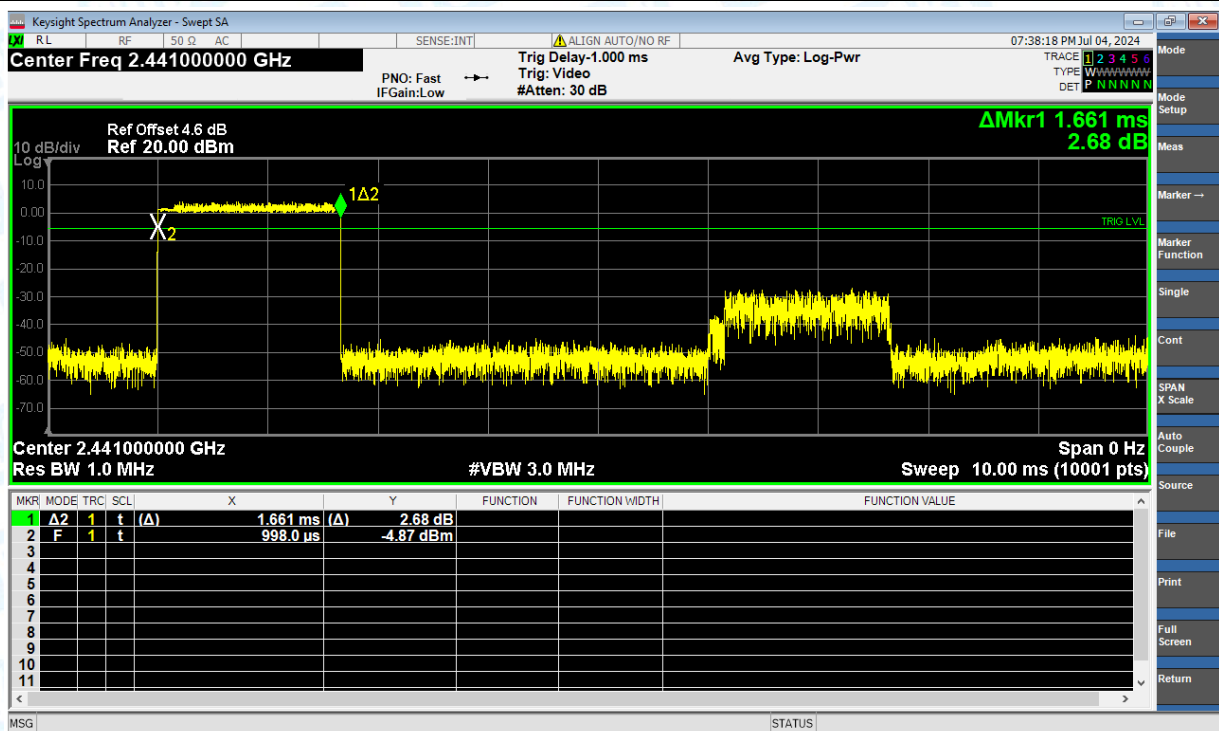
Dwell NVNT 2-DH5 2441MHz Ant1

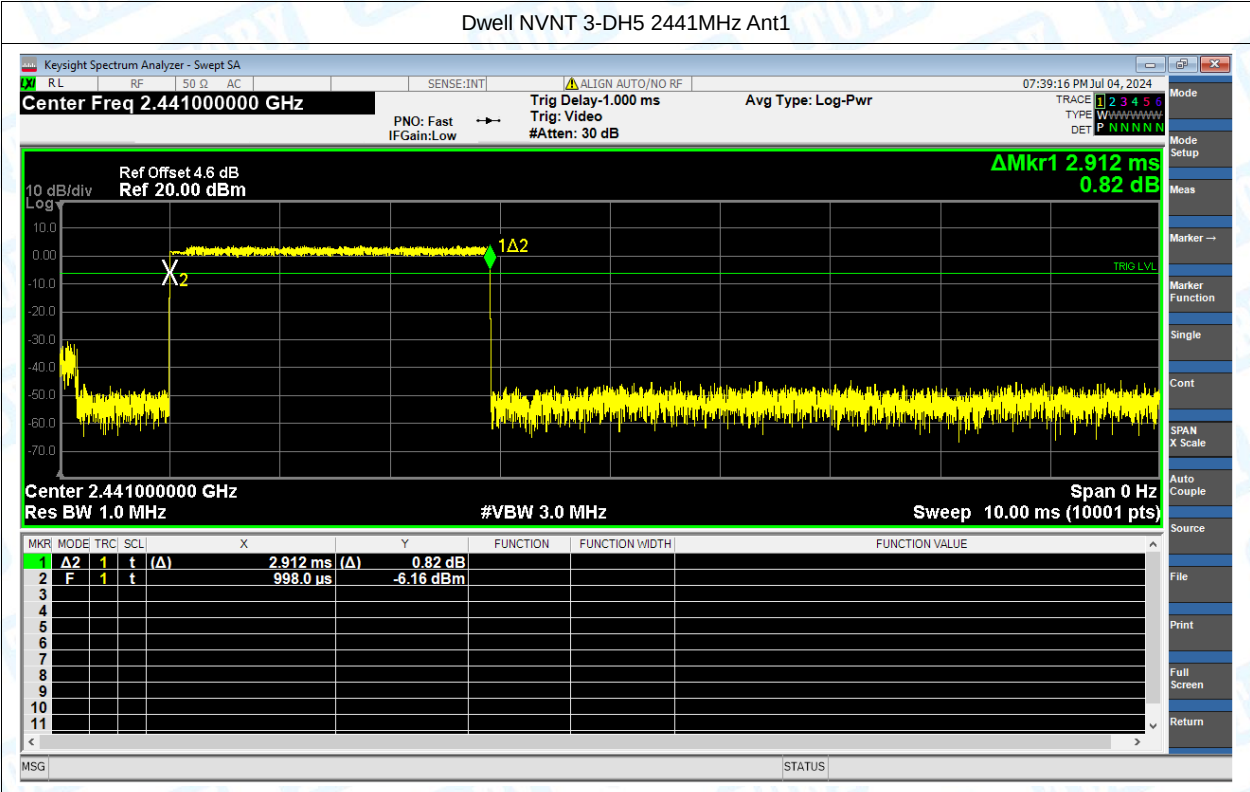


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





----END OF REPORT----