

# RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	SMART WATCH
Test Model:	G104
Sample ID:	HC-C-202407-0182-02-01
Environmental Conditions	
Temperature:	24.6°C
Relative Humidity:	51.2%
Test Voltage:	DC 3.7V
Test Engineer:	Jolin Lee
Note: For a more detailed features description, please refer to the report TBR-C-202407-0182-43 The report only show the worst case data.	

## Contents

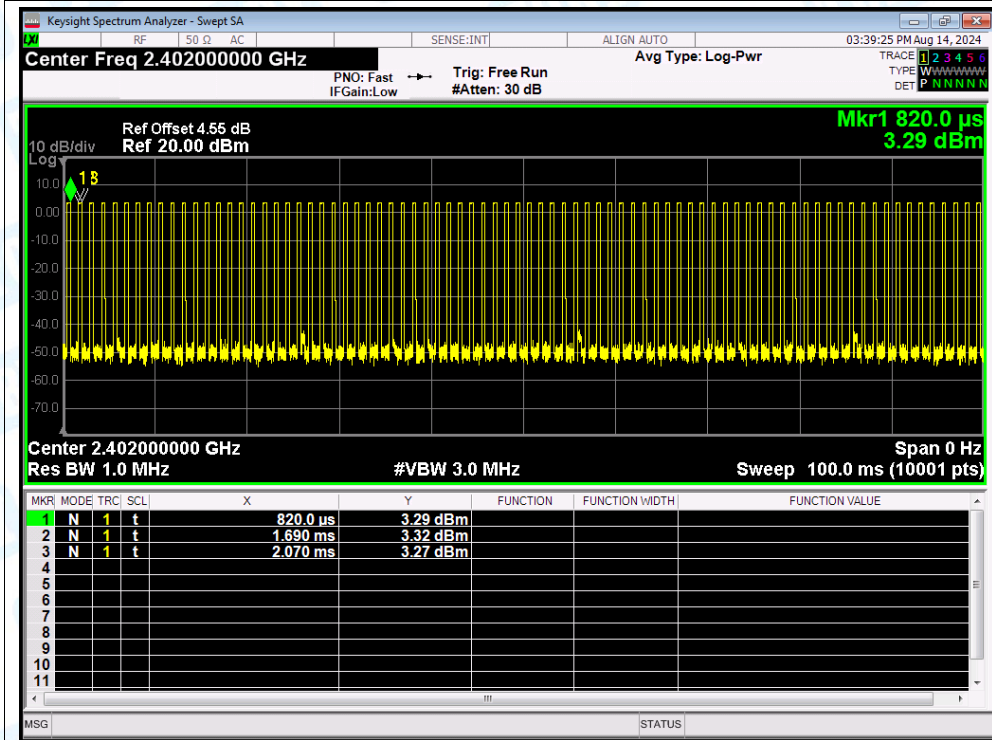
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## 1. Duty Cycle

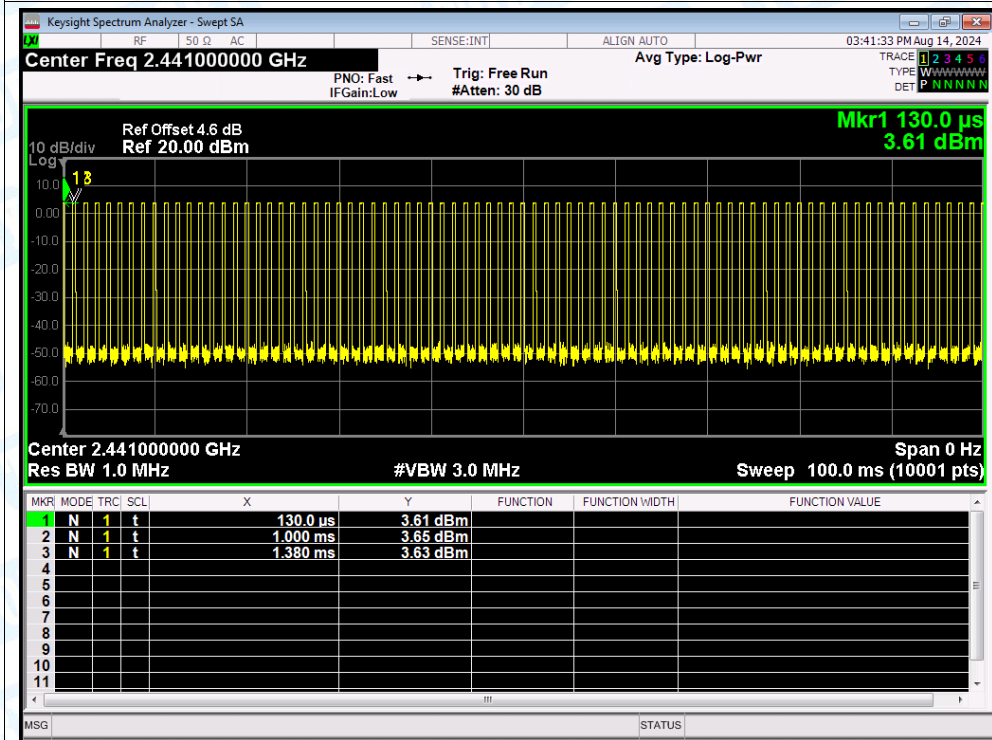
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2441	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2480	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2480	Ant1	32	4.95	2.5
NVNT	3-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	3-DH1	2441	Ant1	32	4.95	2.5
NVNT	3-DH1	2480	Ant1	31.2	5.06	2.56

Test Graphs

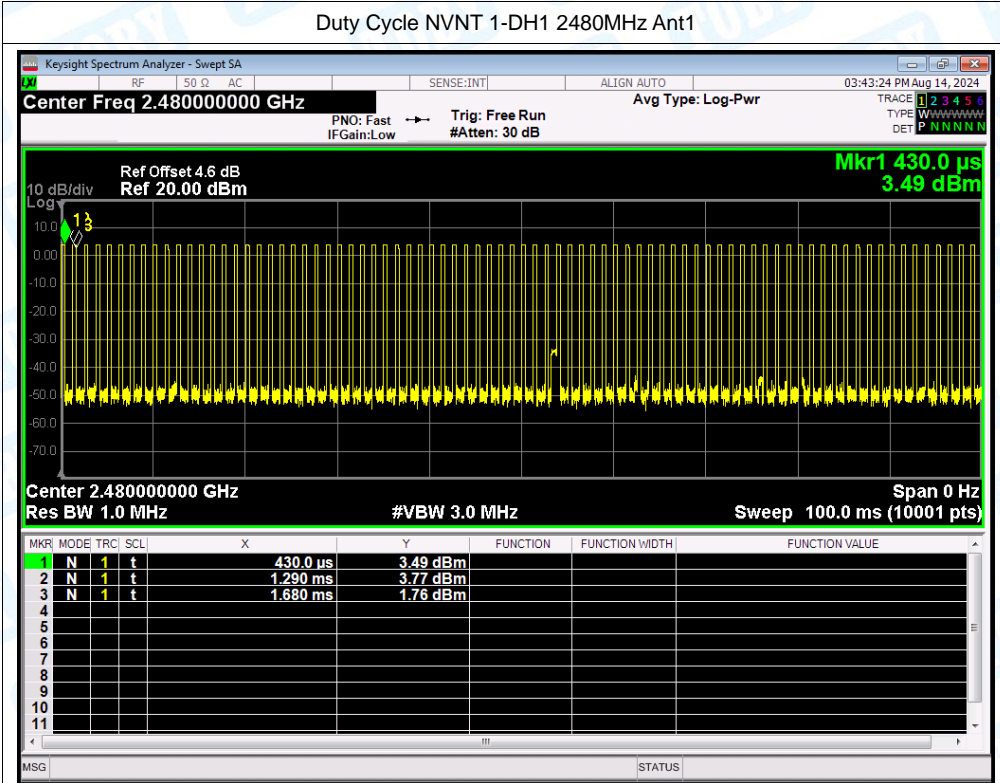
Duty Cycle NVNT 1-DH1 2402MHz Ant1



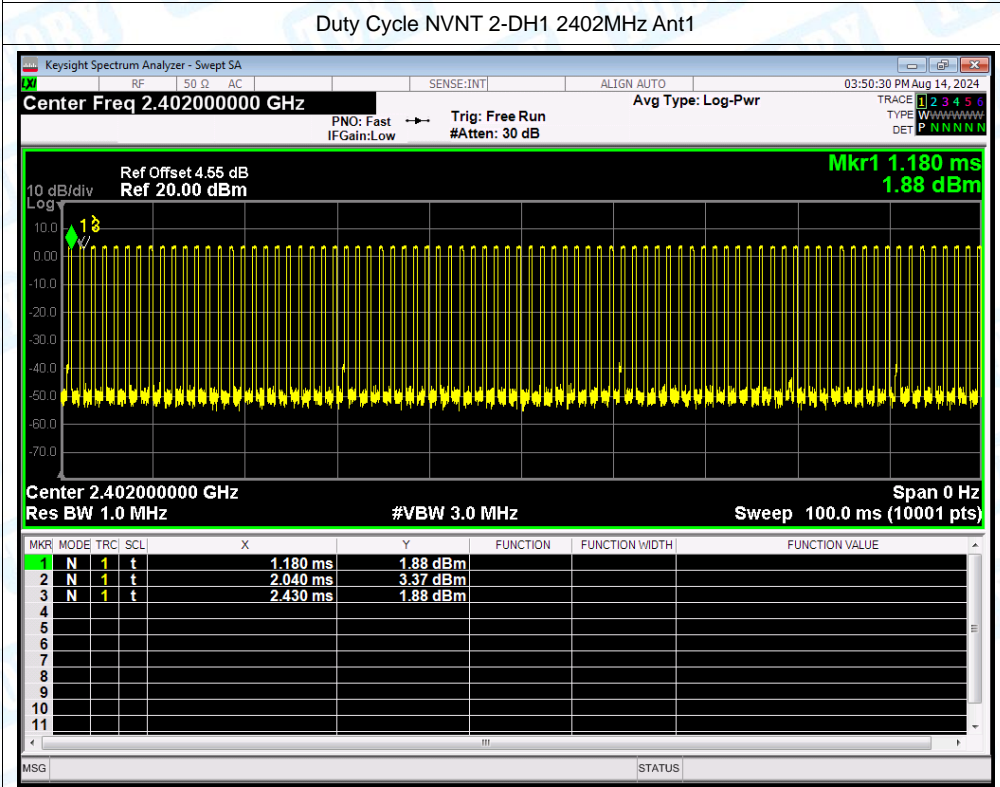
Duty Cycle NVNT 1-DH1 2441MHz Ant1



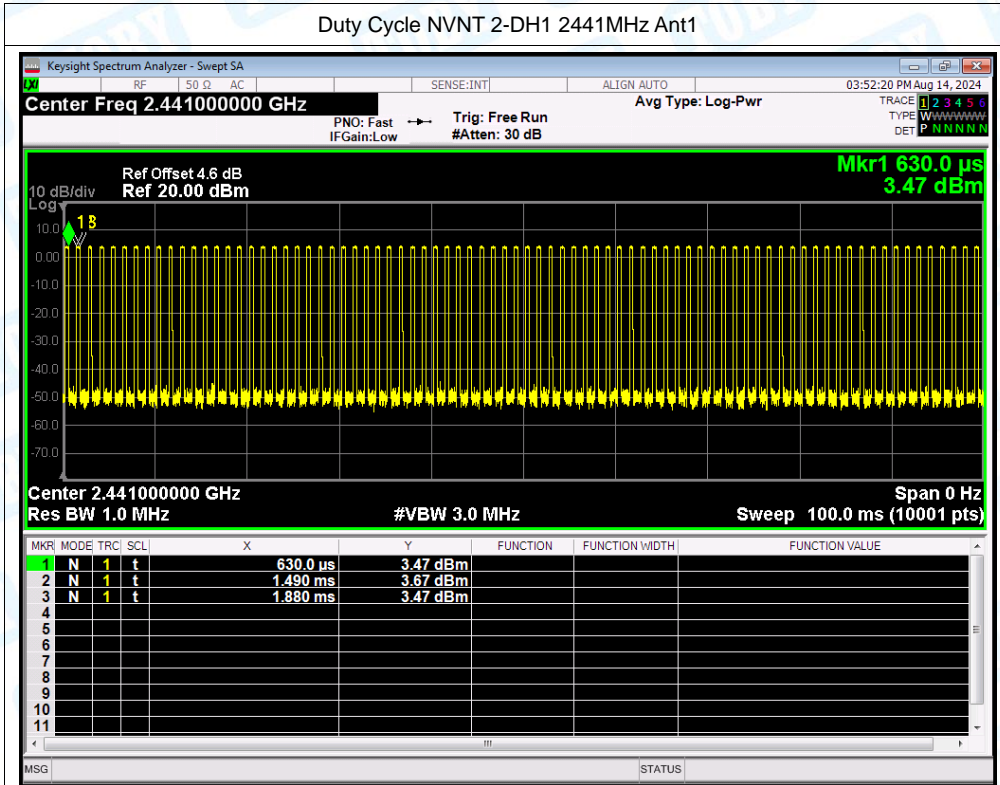
Duty Cycle NVNT 1-DH1 2480MHz Ant1



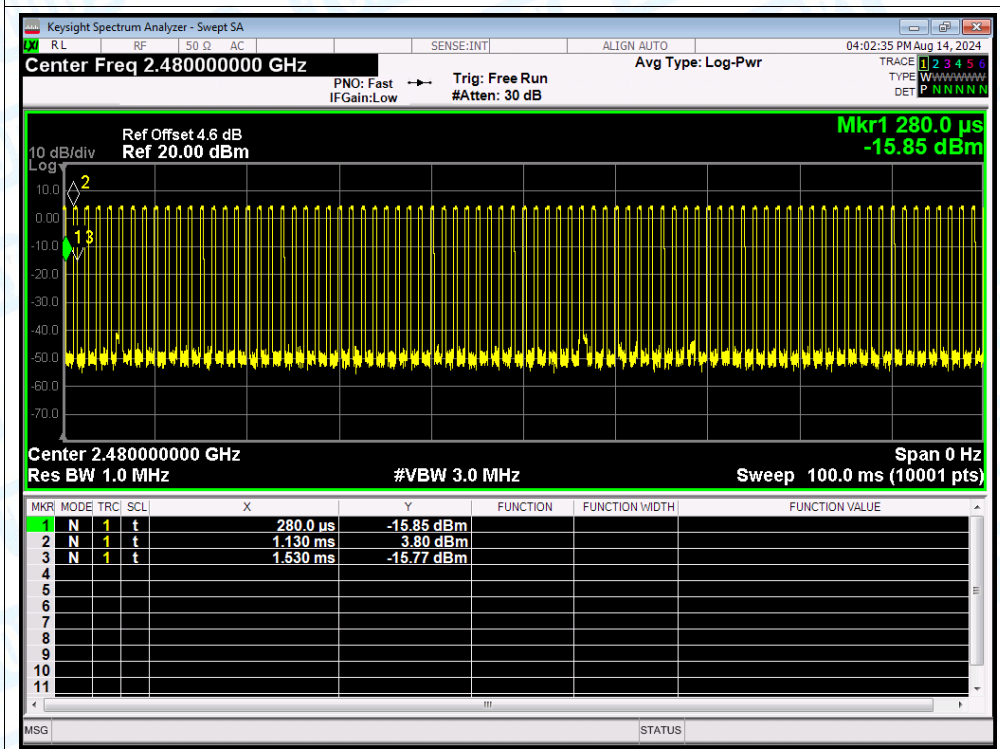
Duty Cycle NVNT 2-DH1 2402MHz Ant1



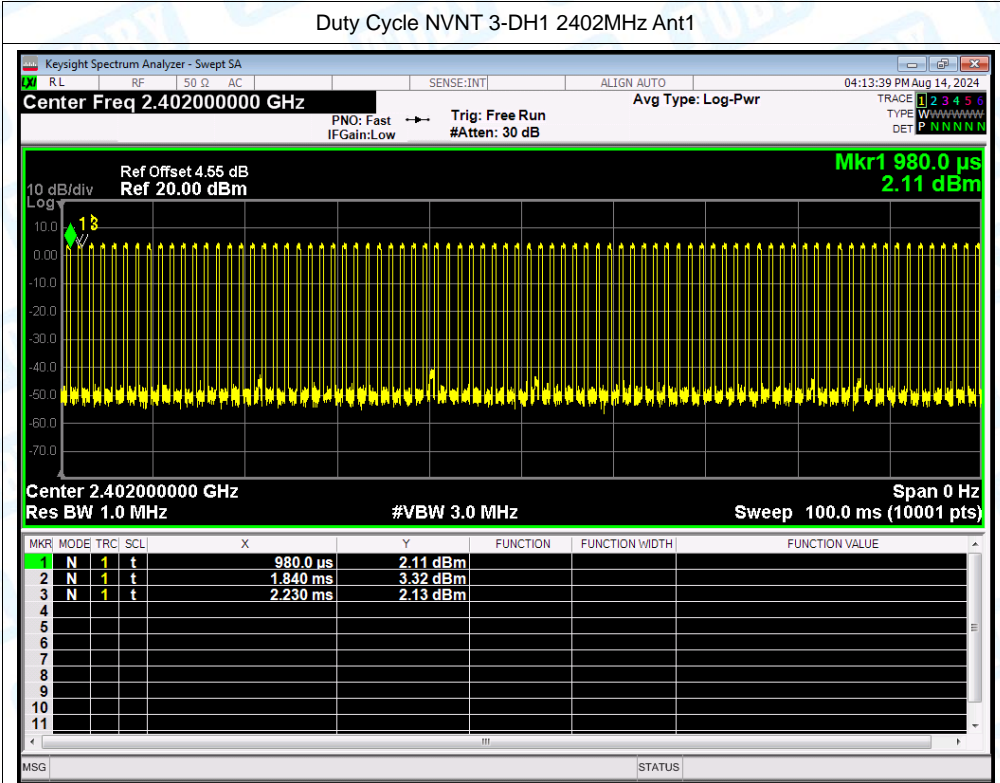
Duty Cycle NVNT 2-DH1 2441MHz Ant1



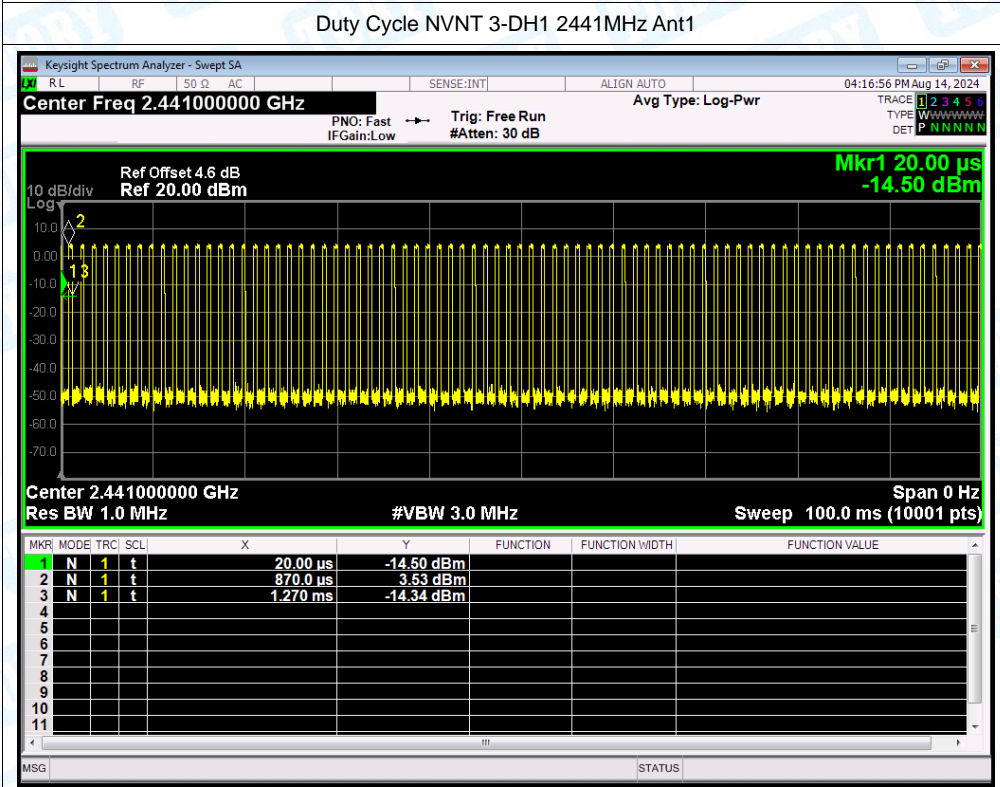
Duty Cycle NVNT 2-DH1 2480MHz Ant1

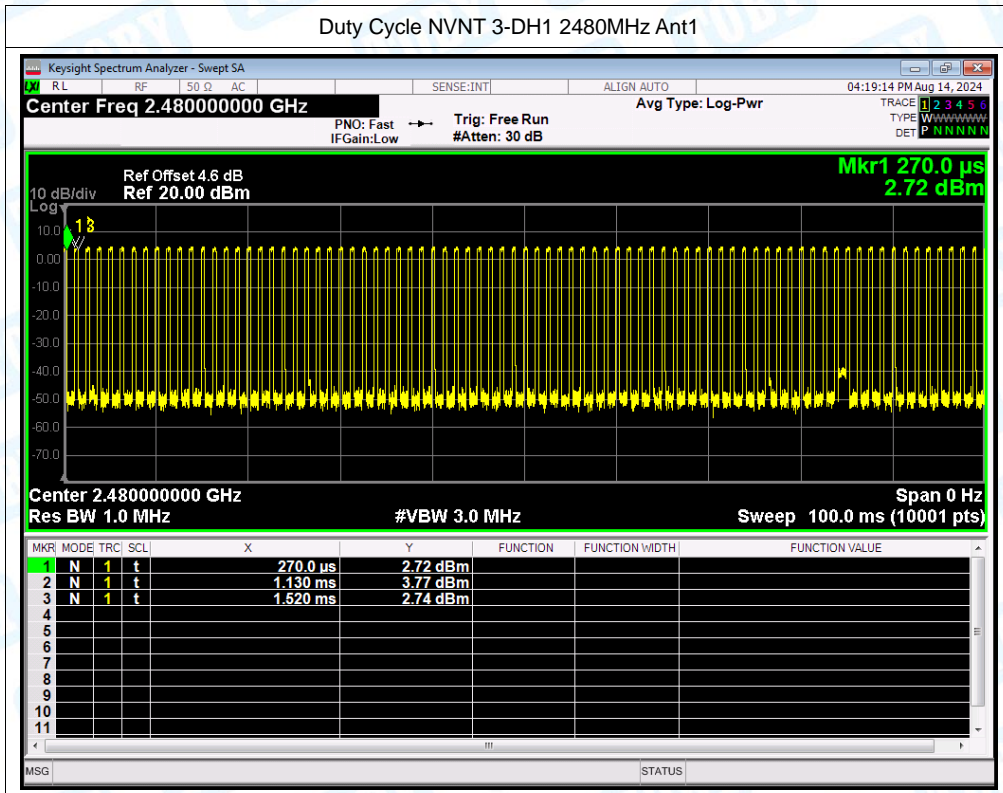


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1





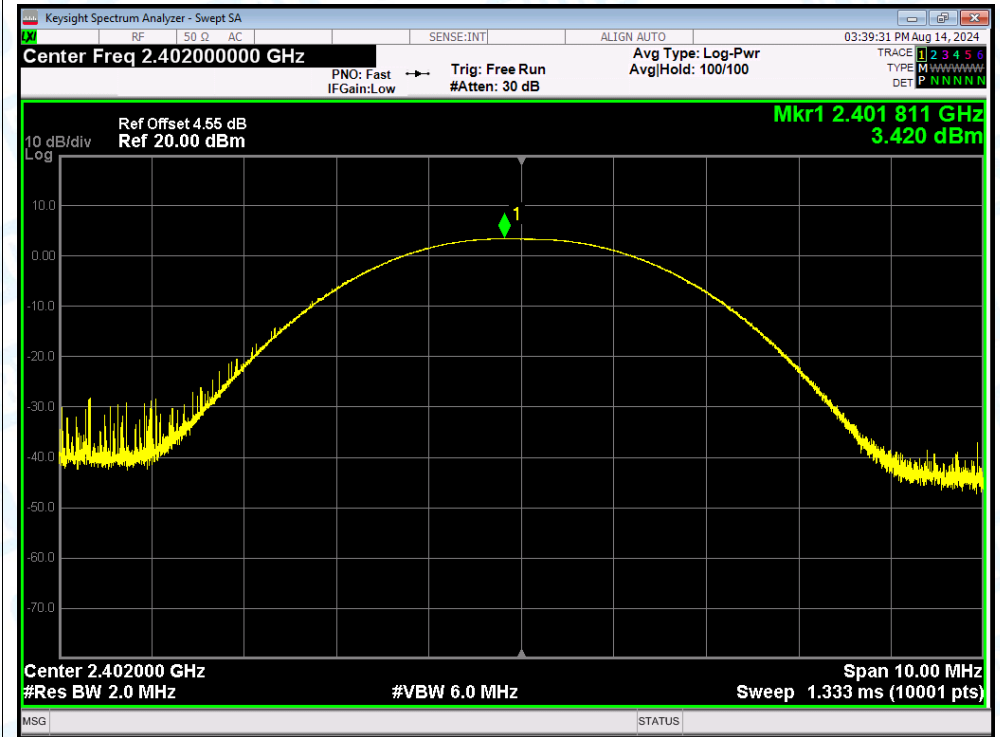


## 2. Maximum Conducted Output Power

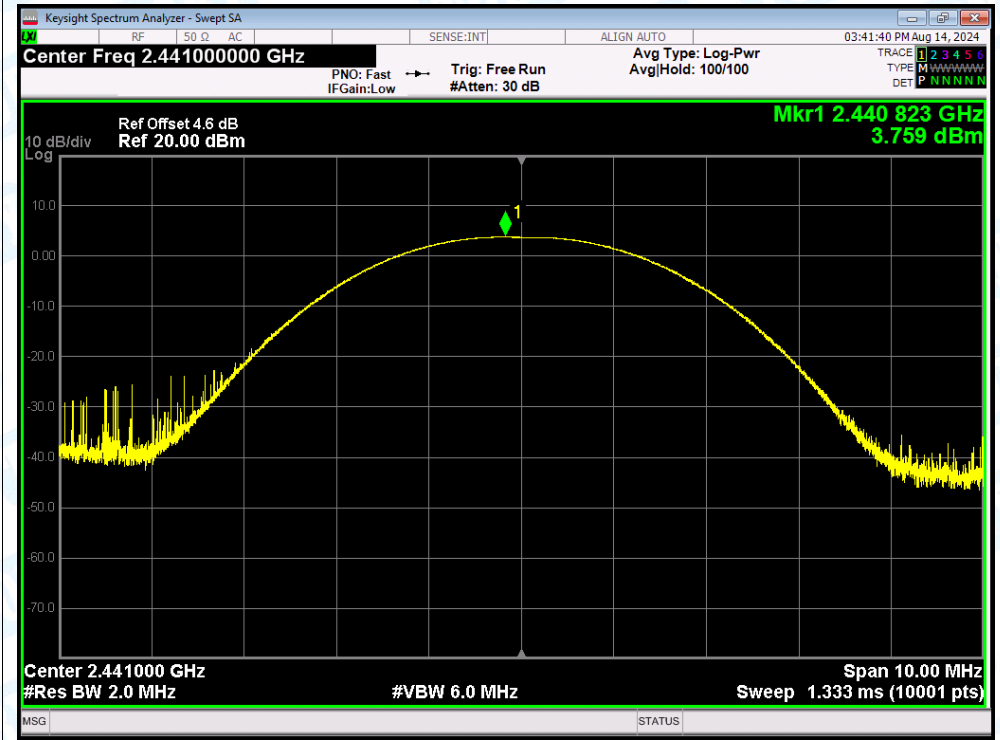
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	3.42	21	Pass
NVNT	1-DH1	2441	Ant1	3.759	21	Pass
NVNT	1-DH1	2480	Ant1	3.954	21	Pass
NVNT	1-DH3	2441	Ant1	3.603	21	Pass
NVNT	1-DH5	2441	Ant1	3.553	21	Pass
NVNT	2-DH1	2402	Ant1	4.258	21	Pass
NVNT	2-DH1	2441	Ant1	4.529	21	Pass
NVNT	2-DH1	2480	Ant1	4.902	21	Pass
NVNT	2-DH3	2441	Ant1	4.365	21	Pass
NVNT	2-DH5	2441	Ant1	4.332	21	Pass
NVNT	3-DH1	2402	Ant1	4.788	21	Pass
NVNT	3-DH1	2441	Ant1	4.811	21	Pass
NVNT	3-DH1	2480	Ant1	4.867	21	Pass
NVNT	3-DH3	2441	Ant1	4.638	21	Pass
NVNT	3-DH5	2441	Ant1	4.642	21	Pass

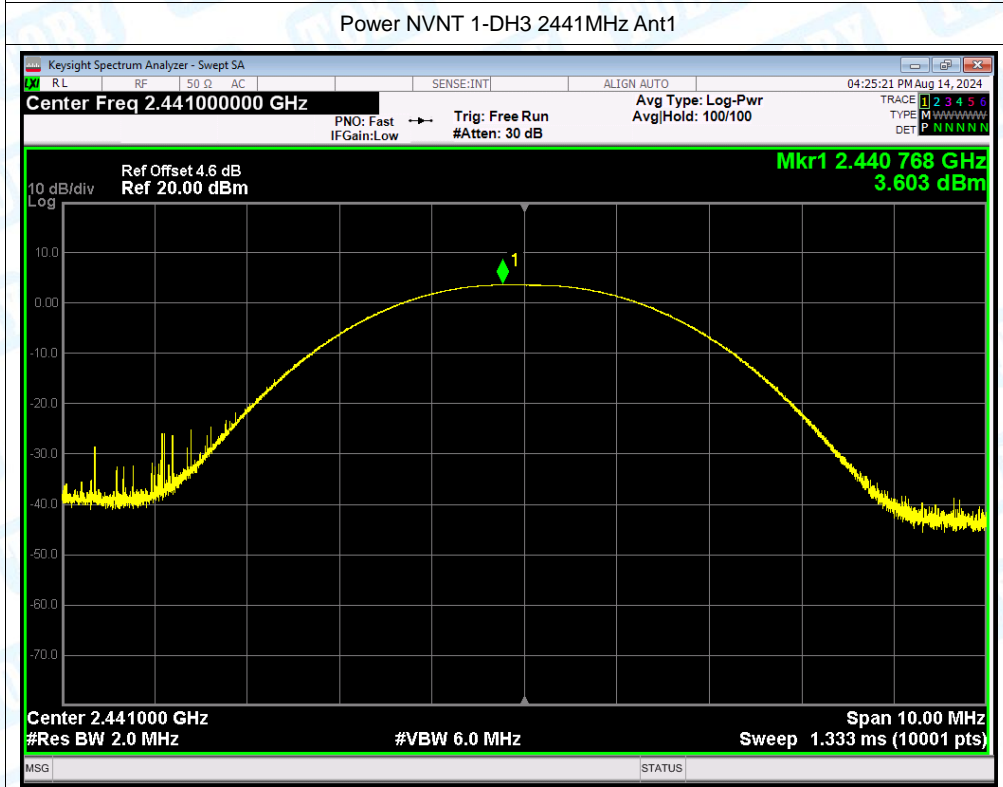
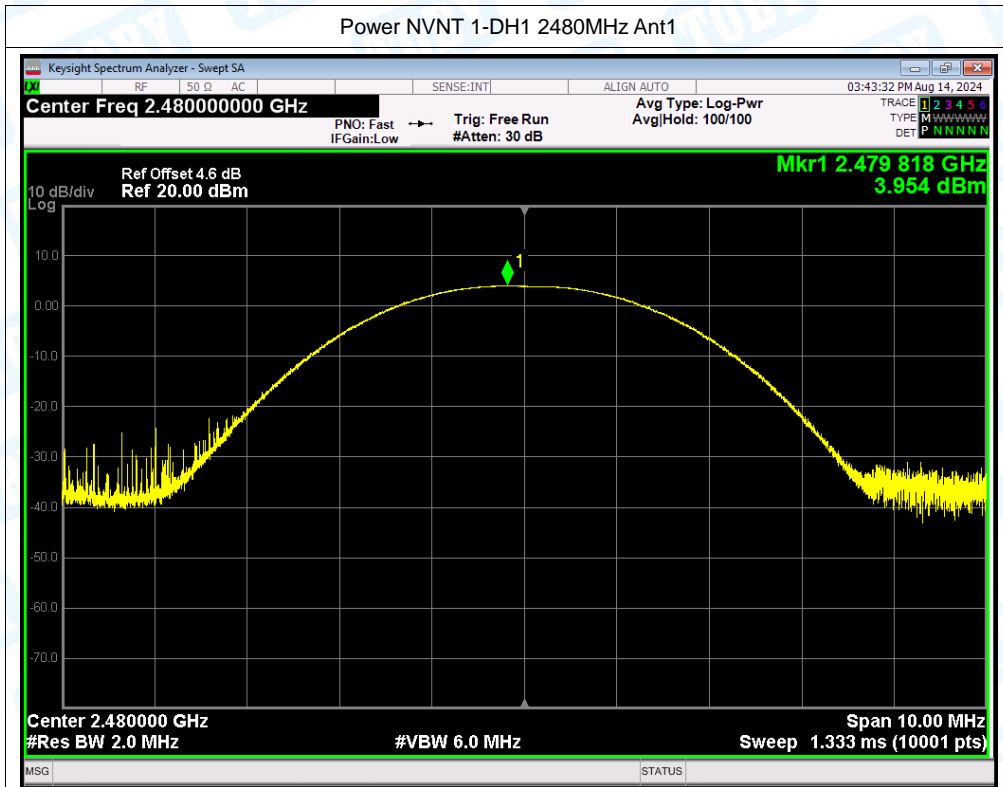
Test Graphs

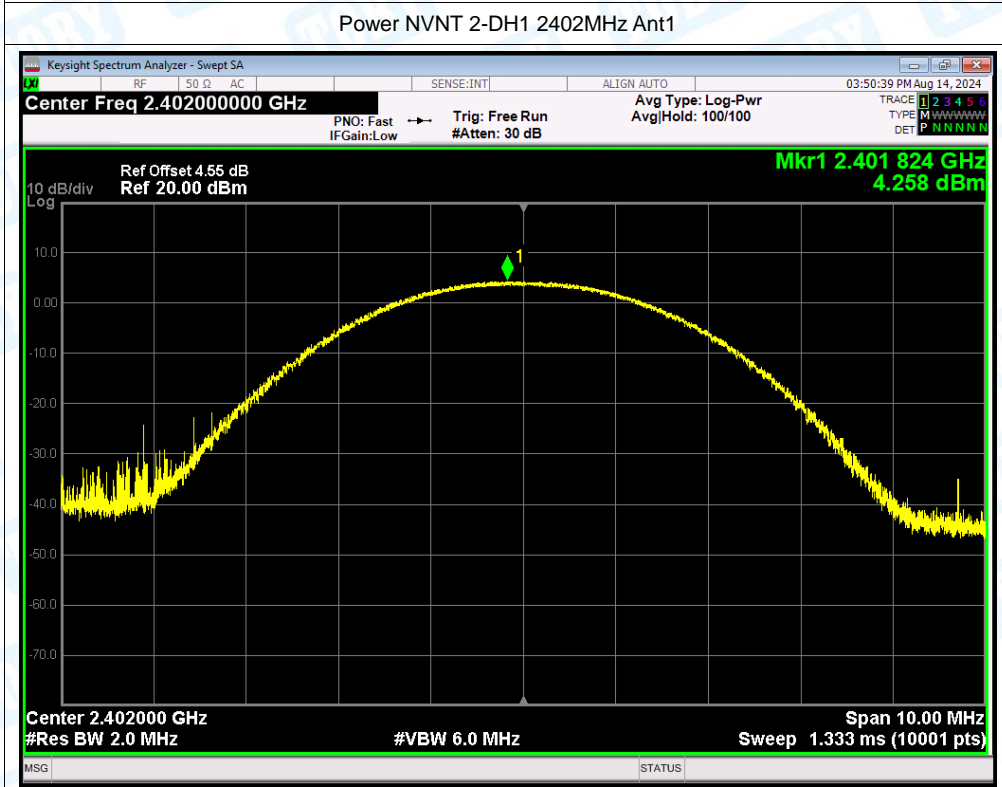
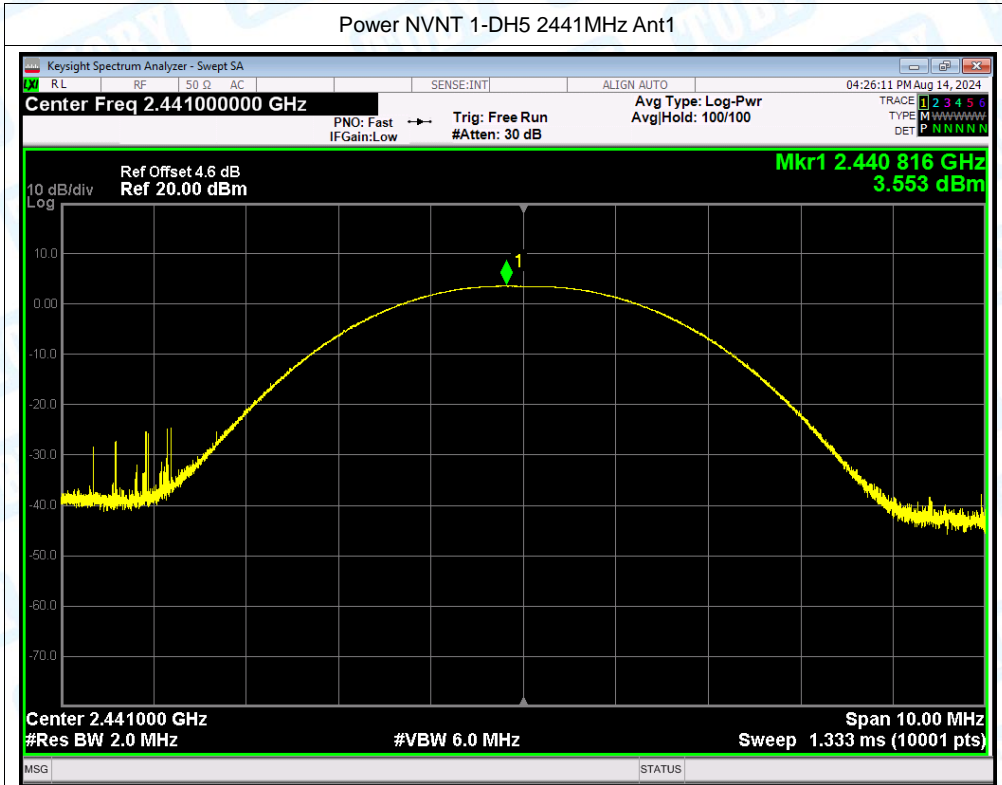
Power NVNT 1-DH1 2402MHz Ant1

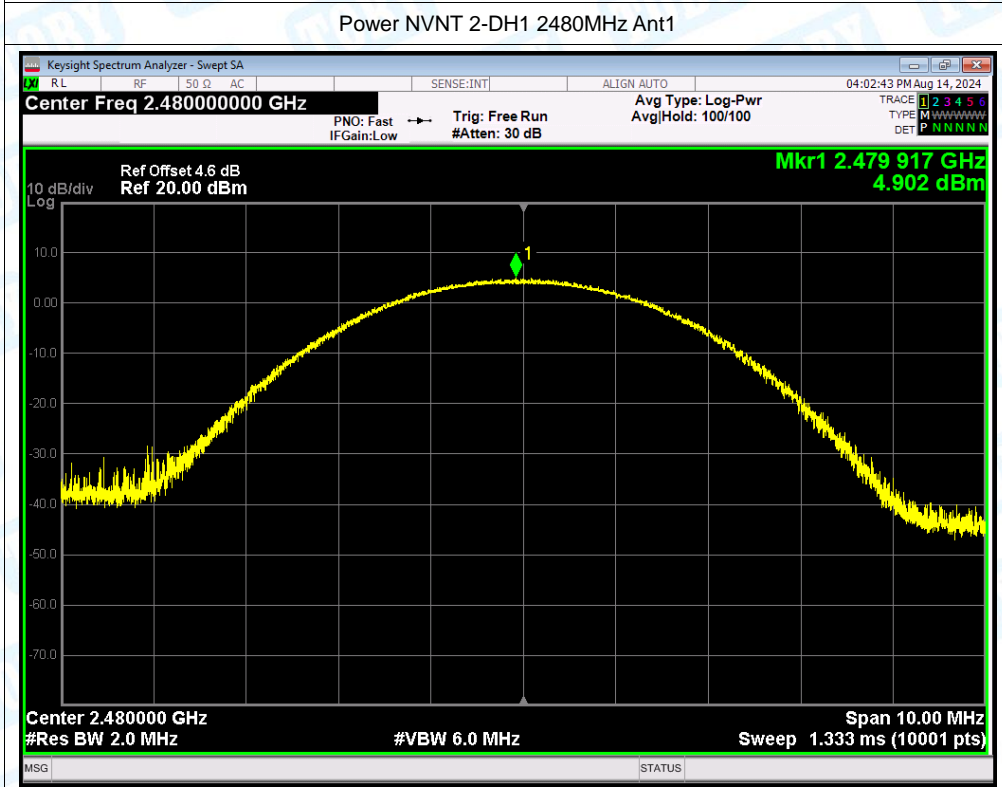
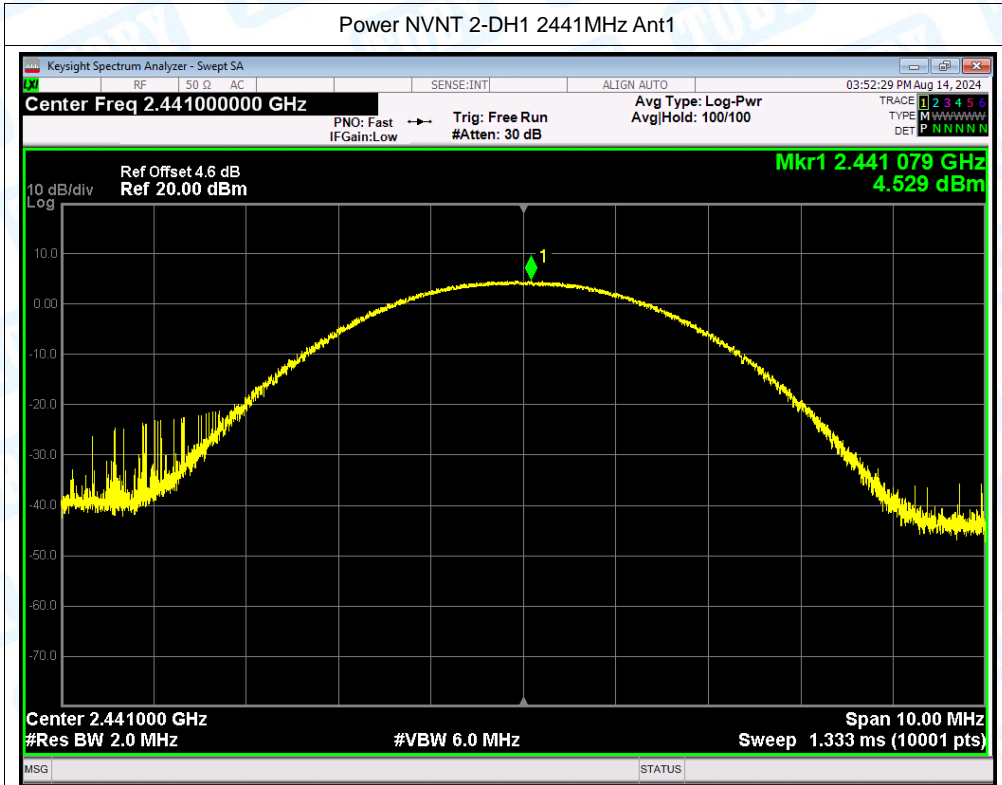


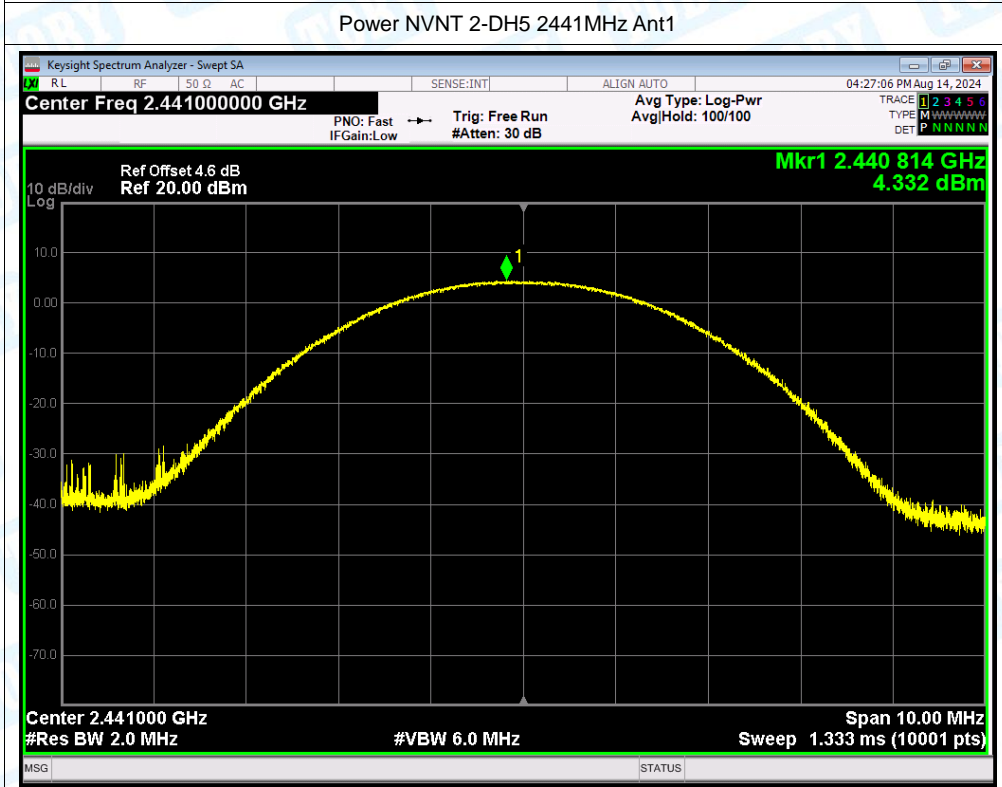
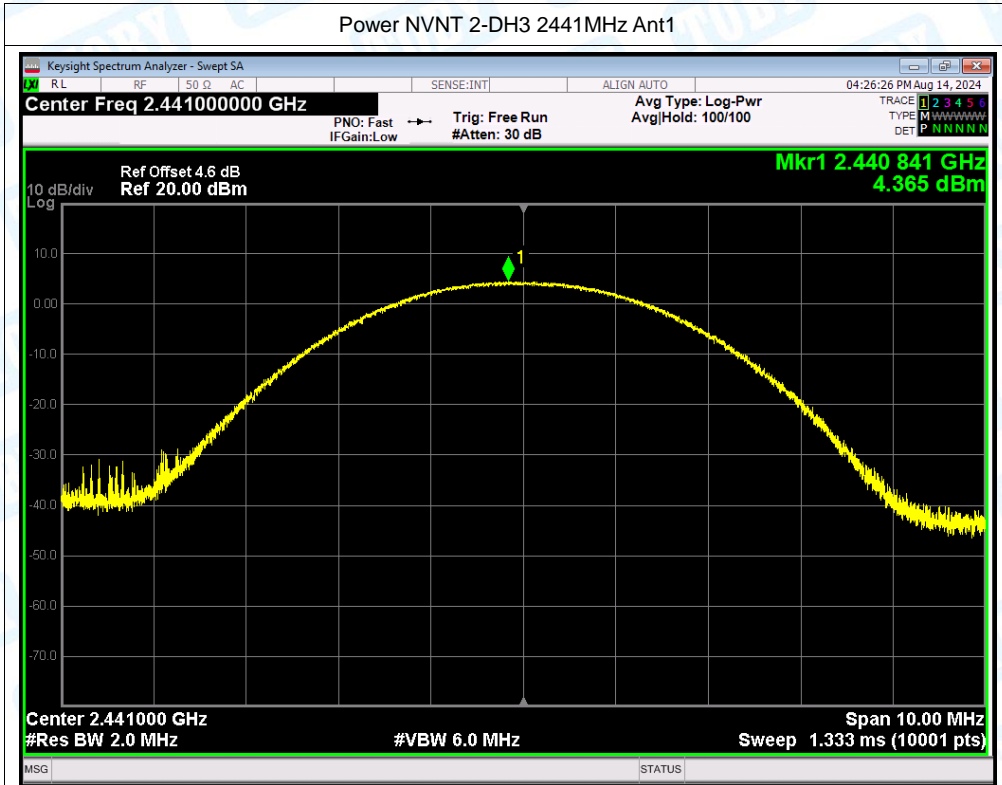
Power NVNT 1-DH1 2441MHz Ant1

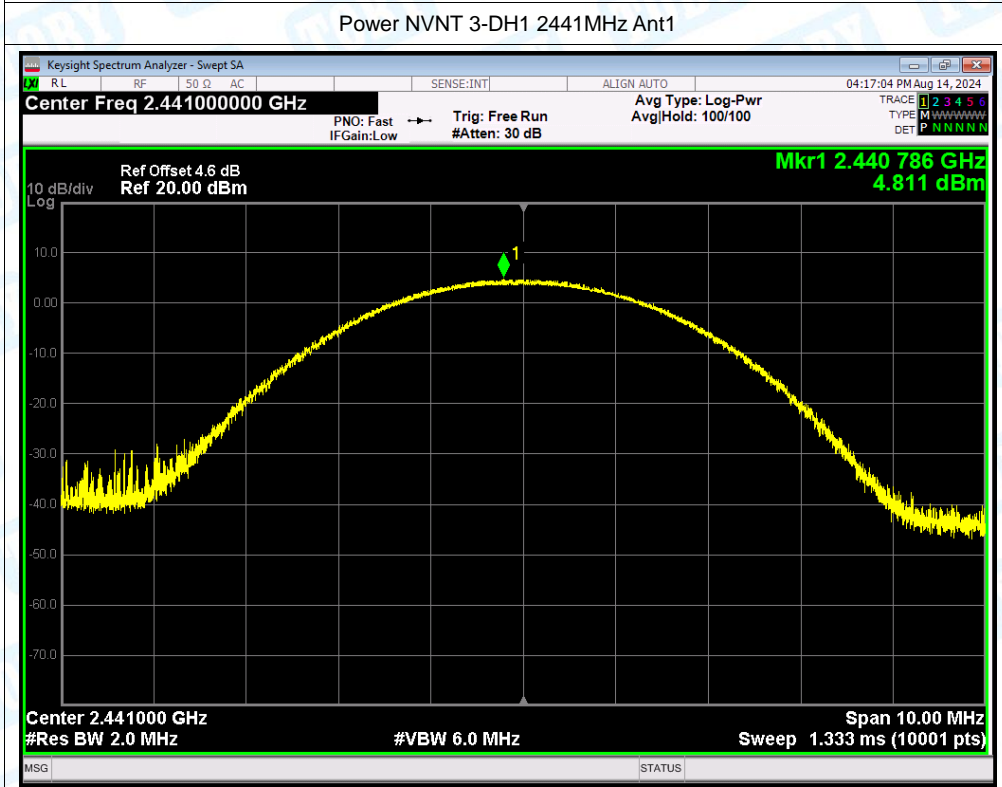
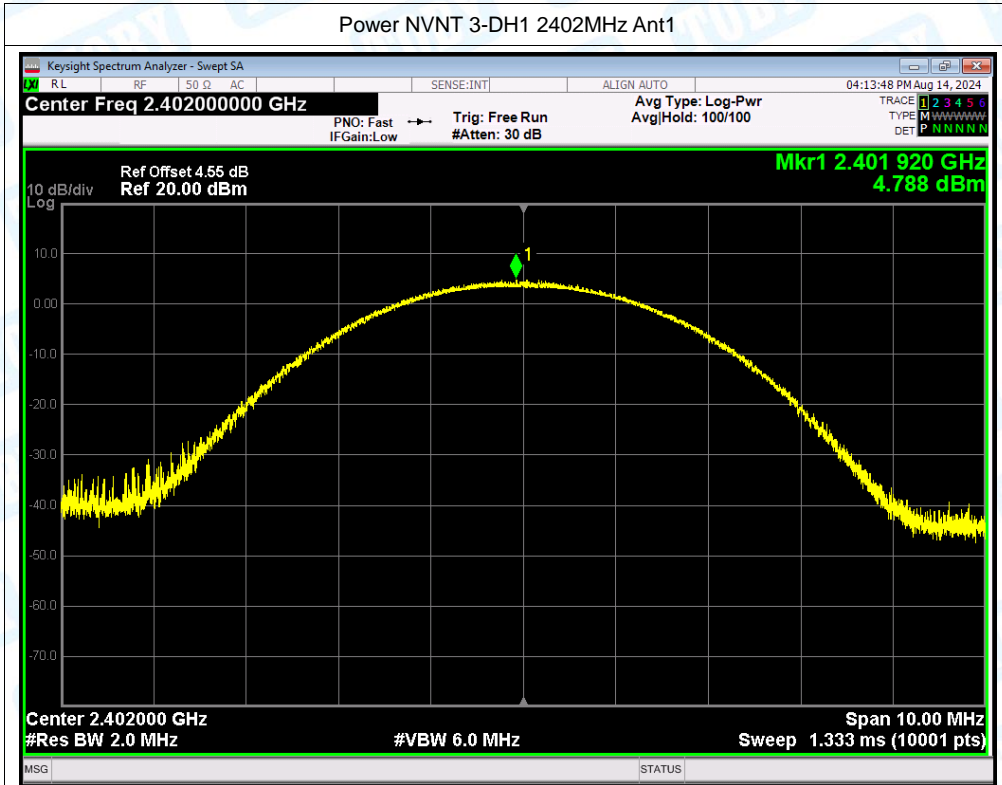


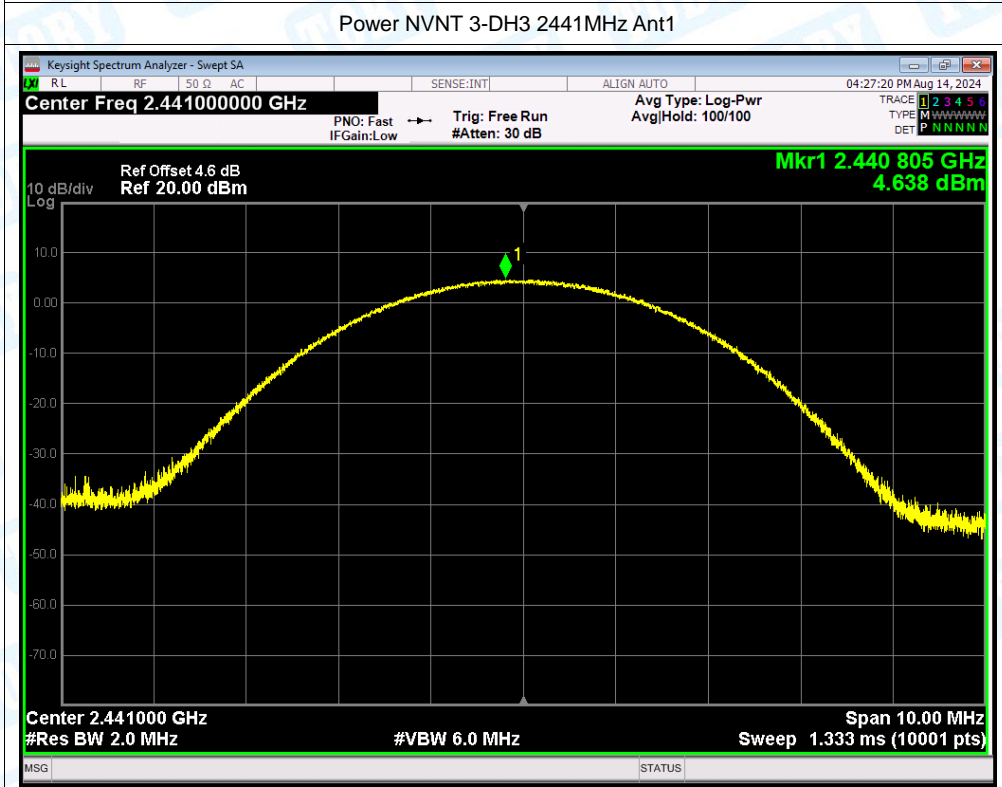
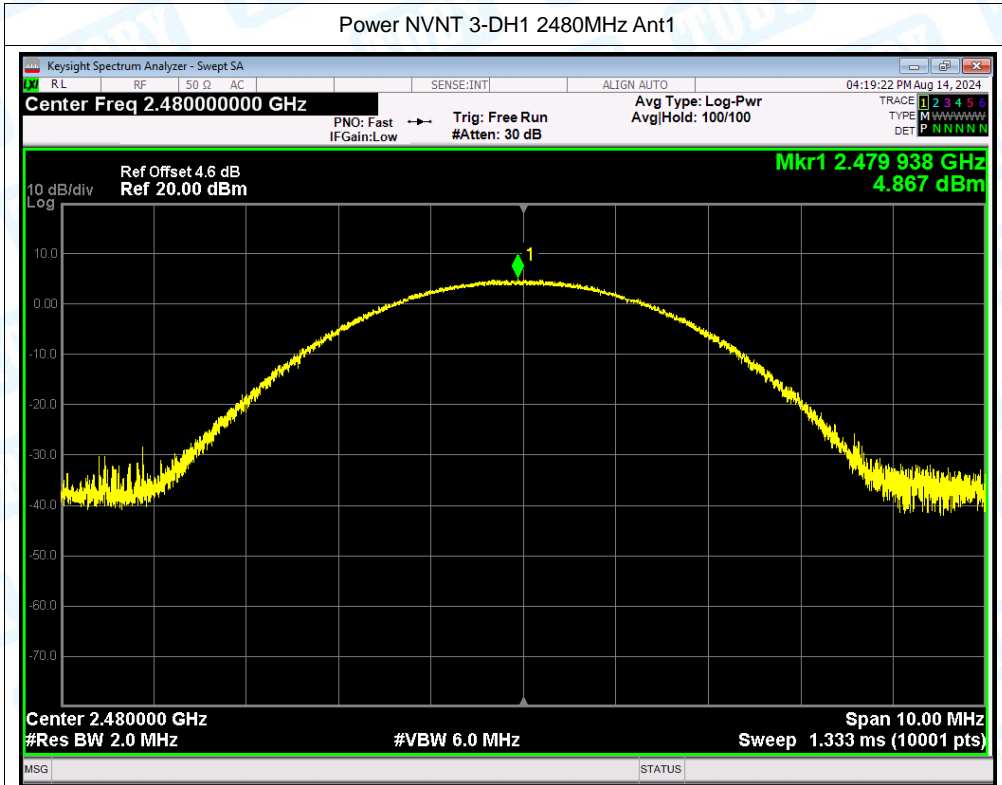




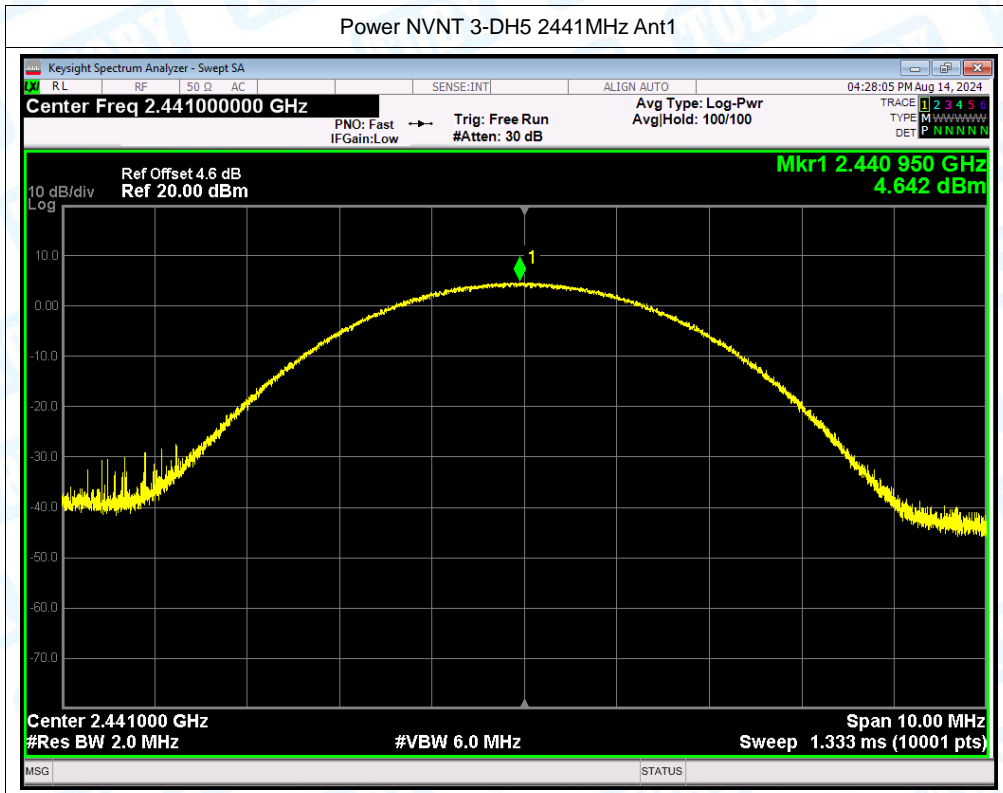












### 3. -20dB Bandwidth

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	0.85	0	Pass
NVNT	1-DH1	2480	Ant1	0.86	0	Pass
NVNT	2-DH1	2402	Ant1	1.24	0	Pass
NVNT	2-DH1	2441	Ant1	1.28	0	Pass
NVNT	2-DH1	2480	Ant1	1.22	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	1.22	0	Pass

Test Graphs

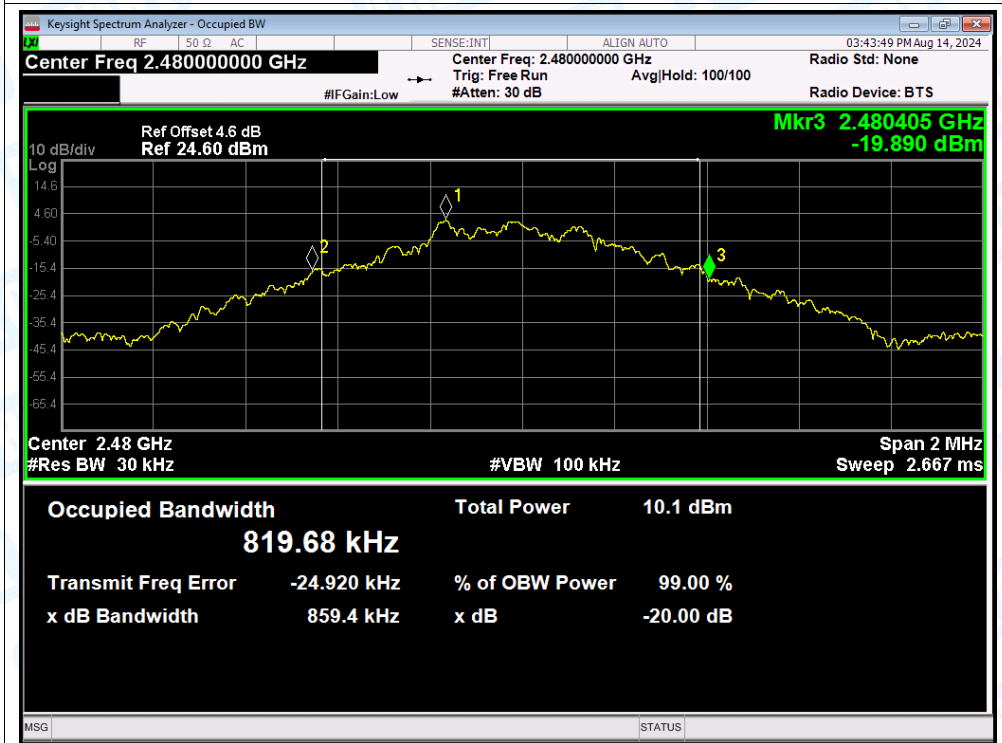
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



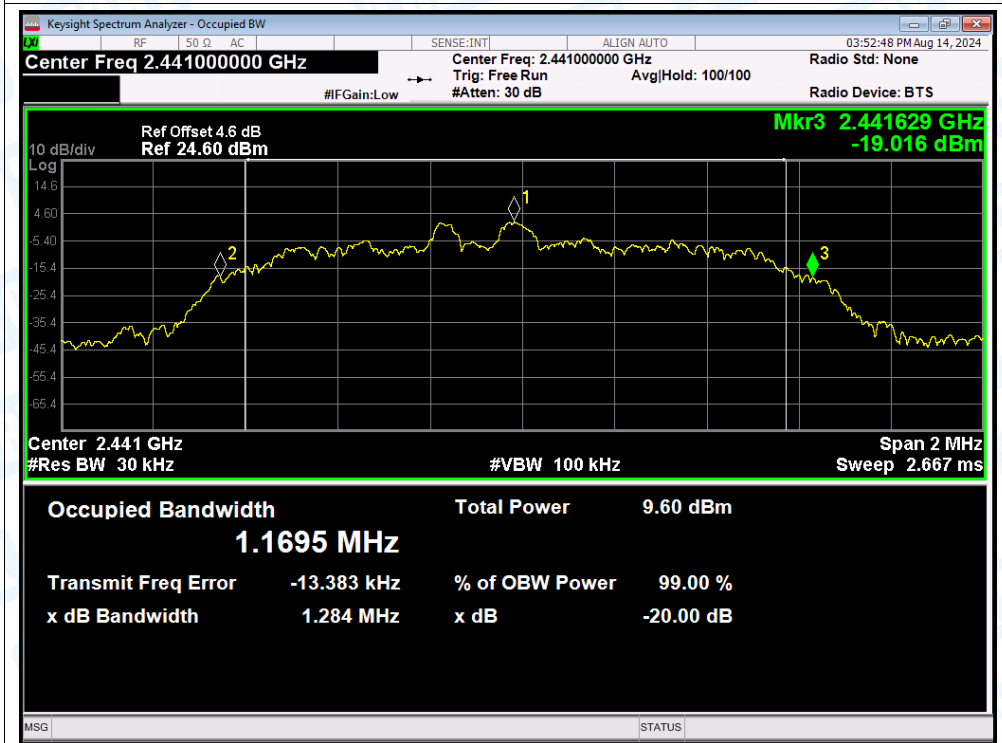
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



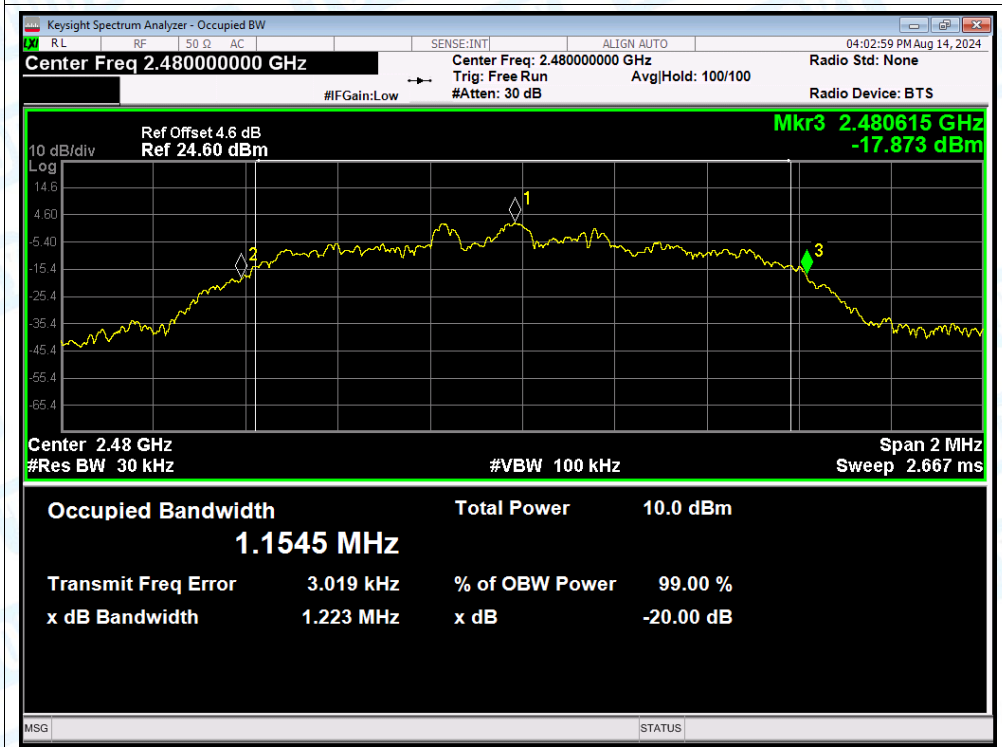
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



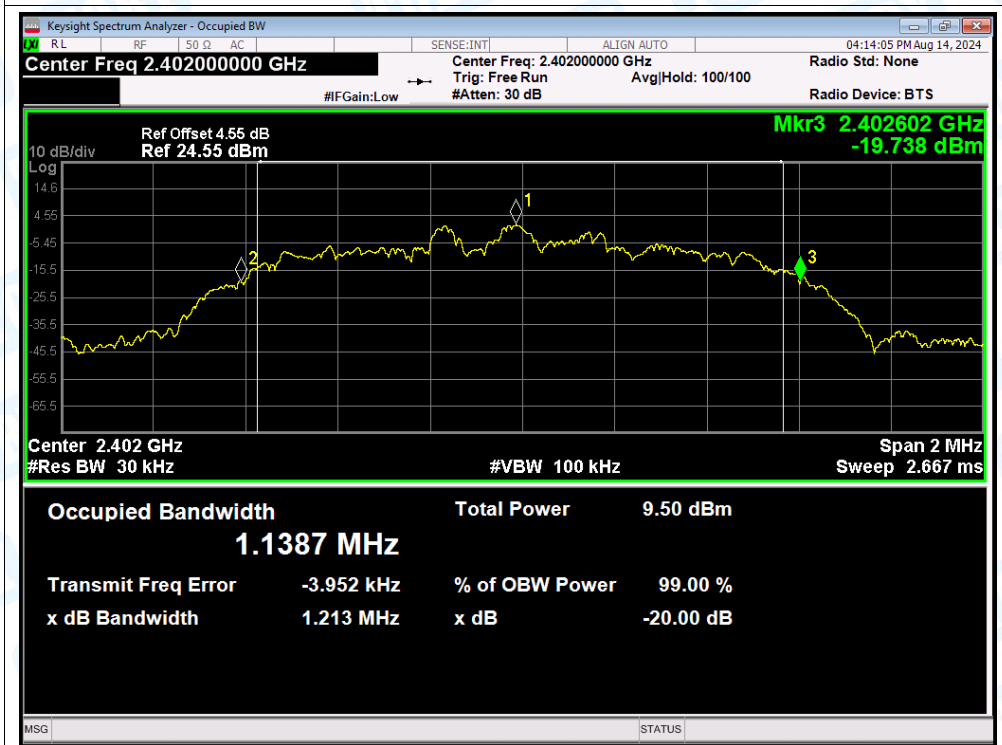
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



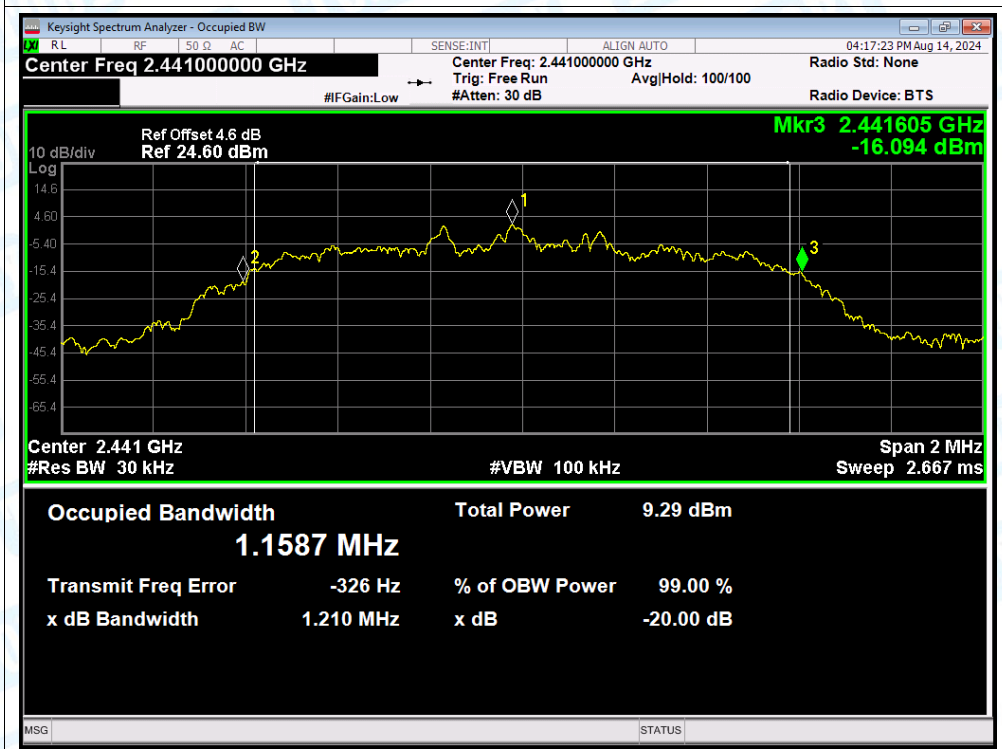
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

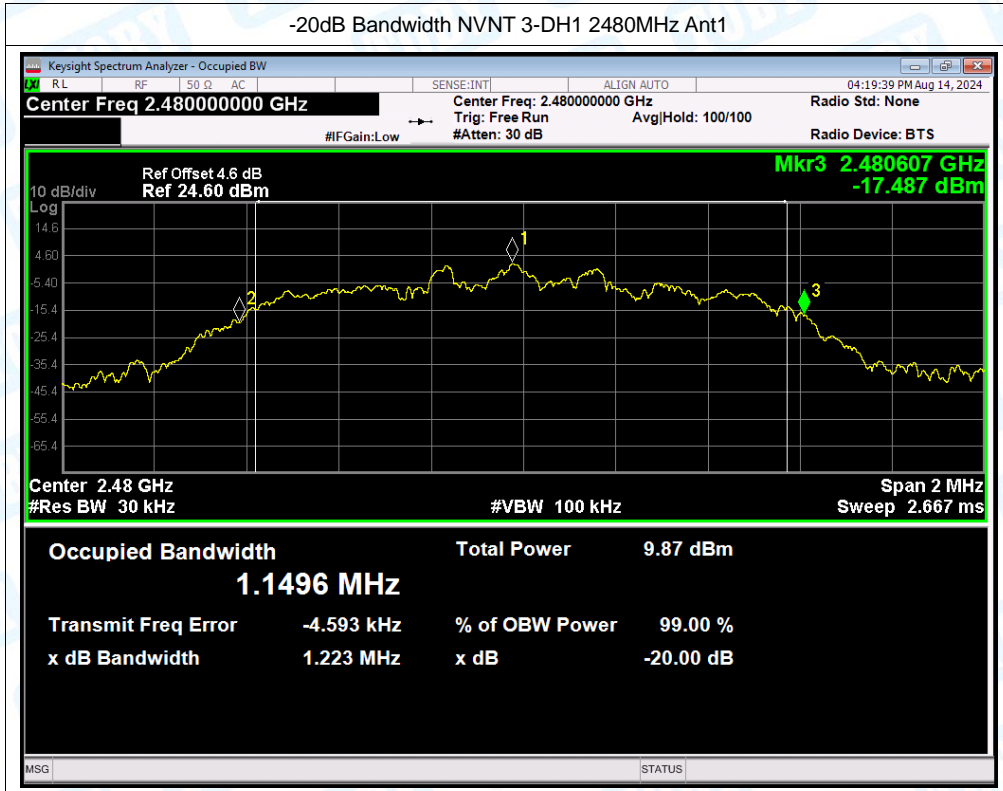


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1





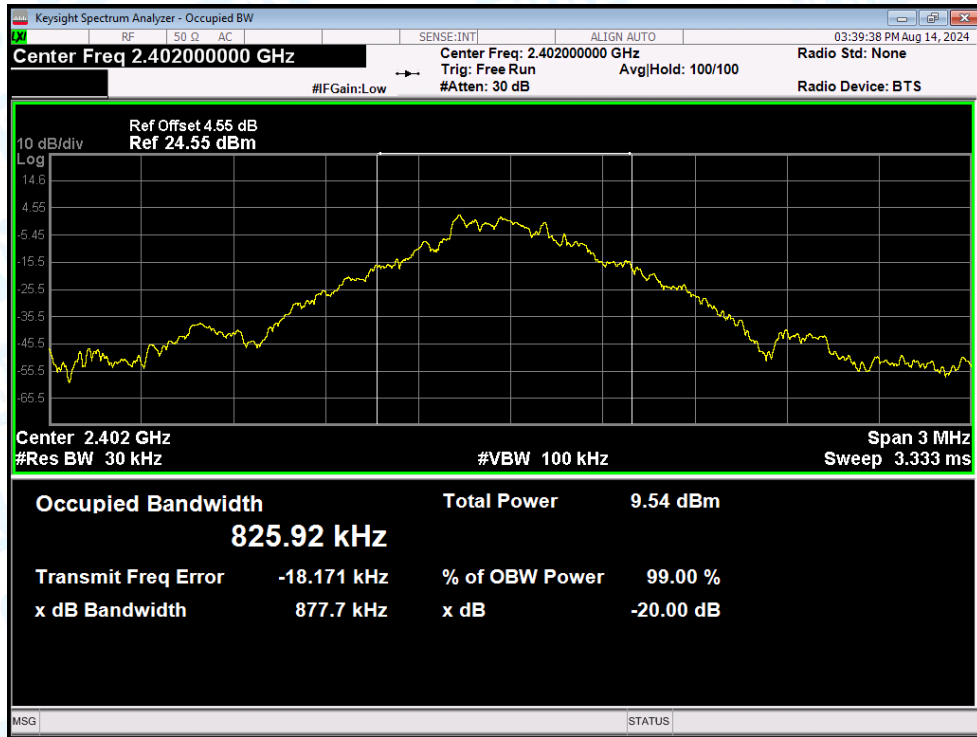
## 4. Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.826
NVNT	1-DH1	2441	Ant1	0.834
NVNT	1-DH1	2480	Ant1	0.842
NVNT	2-DH1	2402	Ant1	1.156
NVNT	2-DH1	2441	Ant1	1.175
NVNT	2-DH1	2480	Ant1	1.161
NVNT	3-DH1	2402	Ant1	1.141
NVNT	3-DH1	2441	Ant1	1.153
NVNT	3-DH1	2480	Ant1	1.16

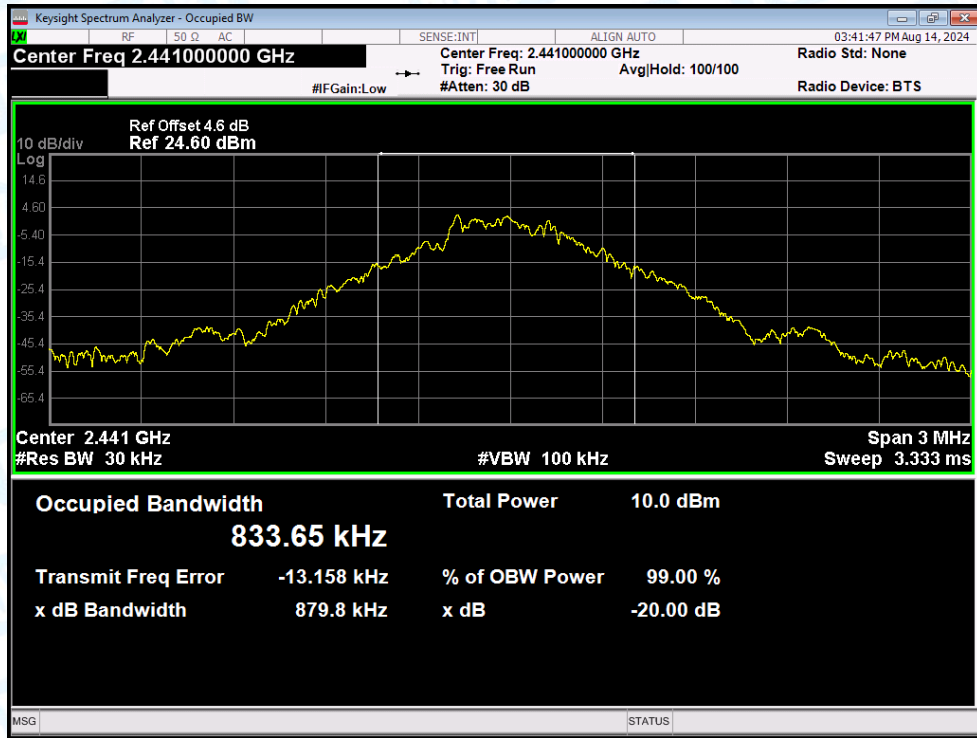


Test Graphs

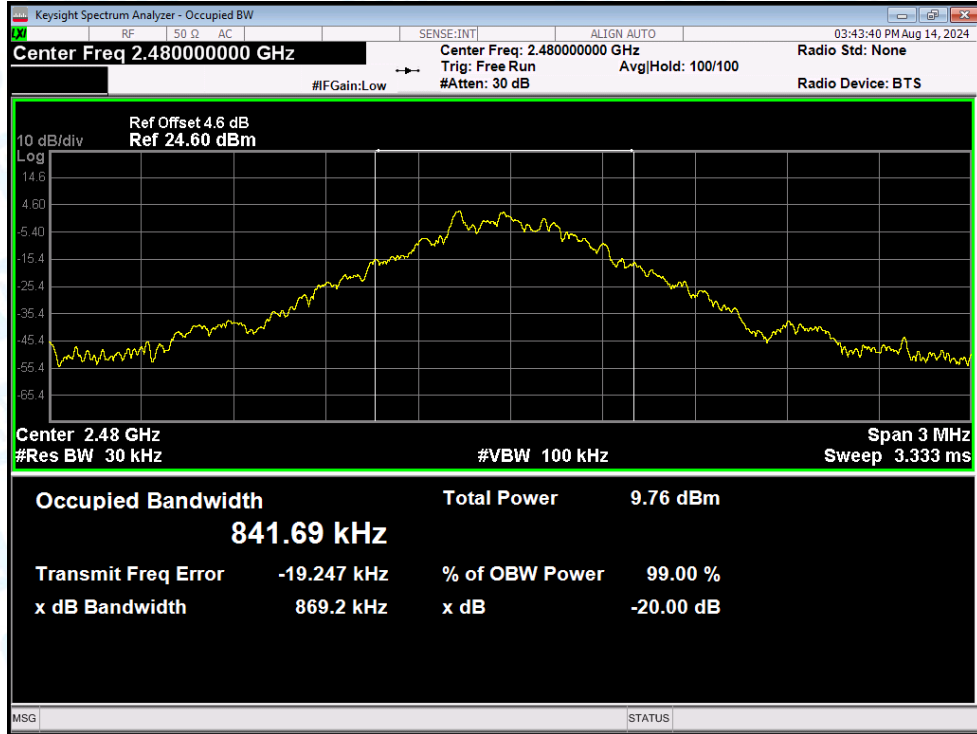
OBW NVNT 1-DH1 2402MHz Ant1



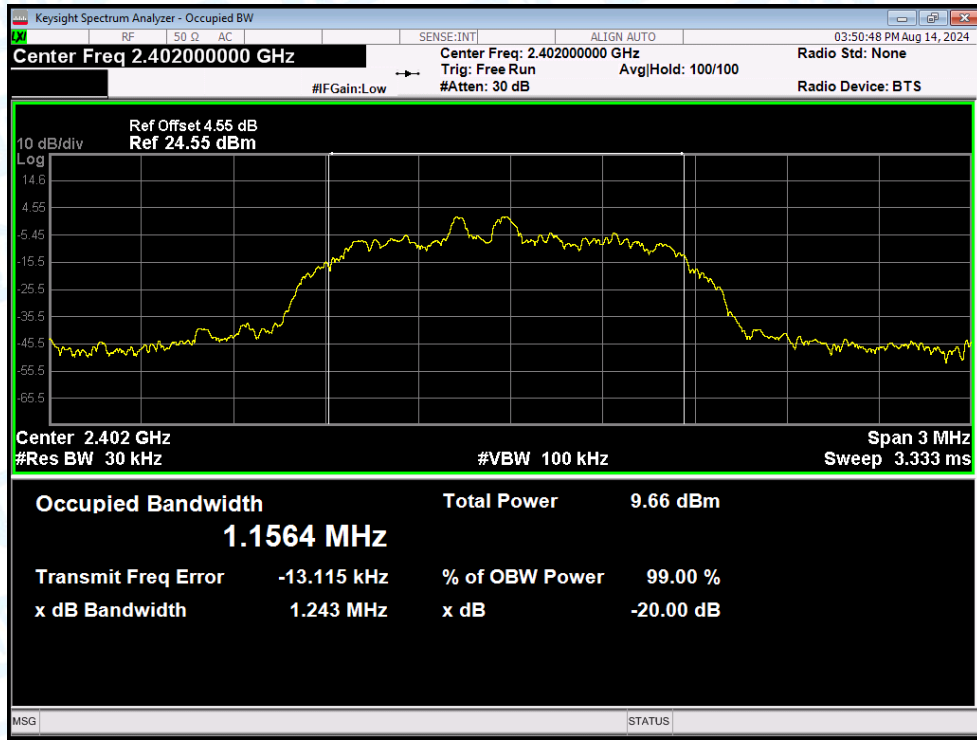
OBW NVNT 1-DH1 2441MHz Ant1



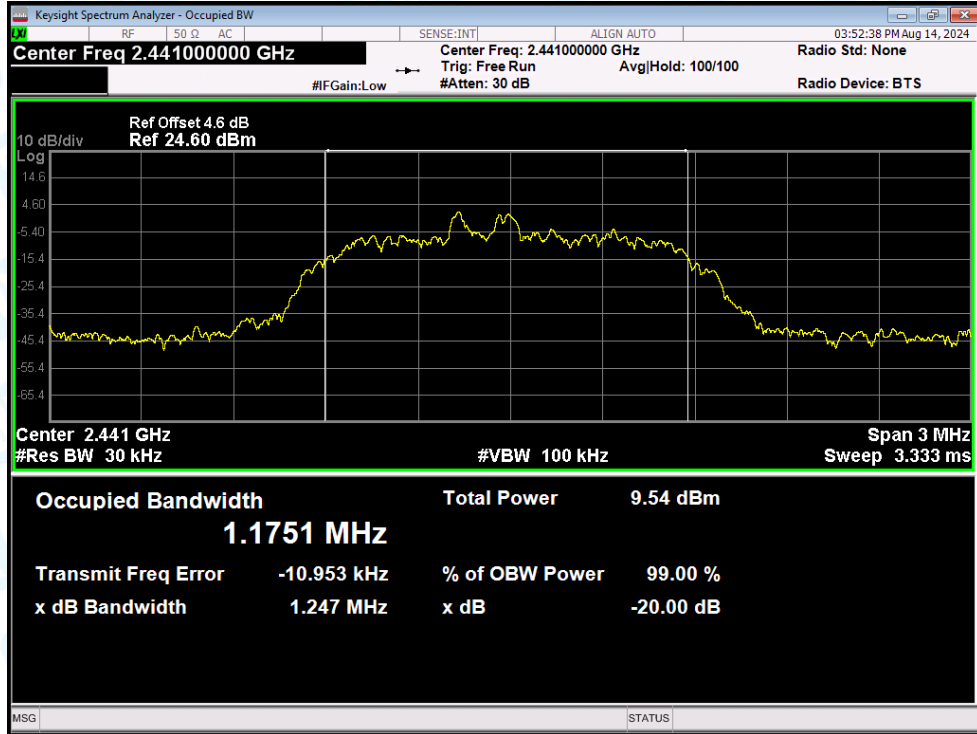
OBW NVNT 1-DH1 2480MHz Ant1



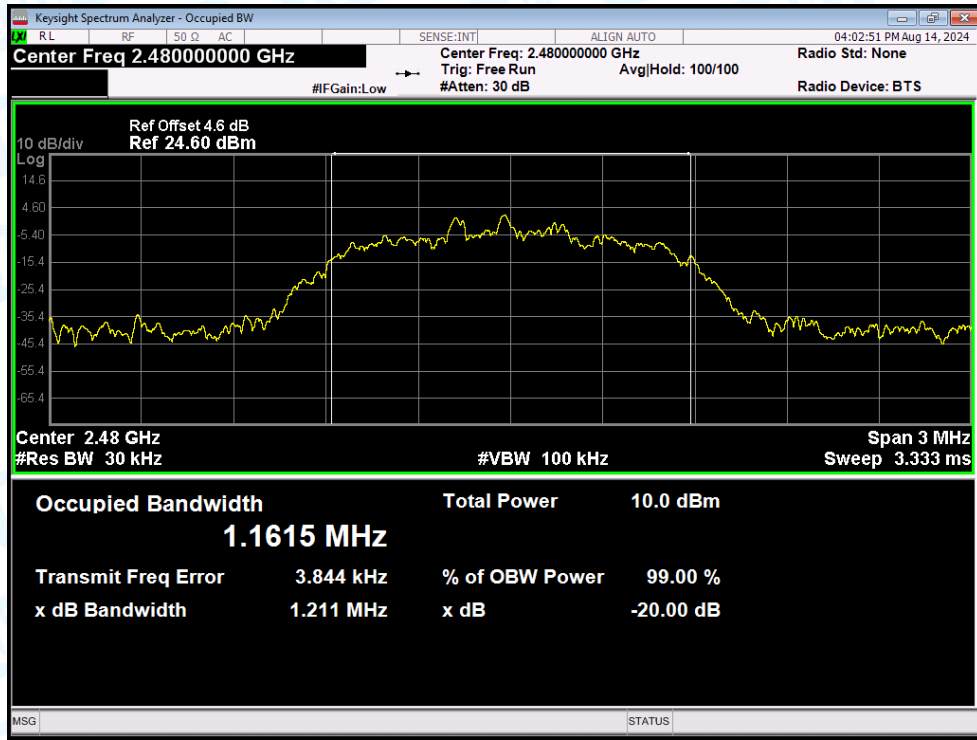
OBW NVNT 2-DH1 2402MHz Ant1

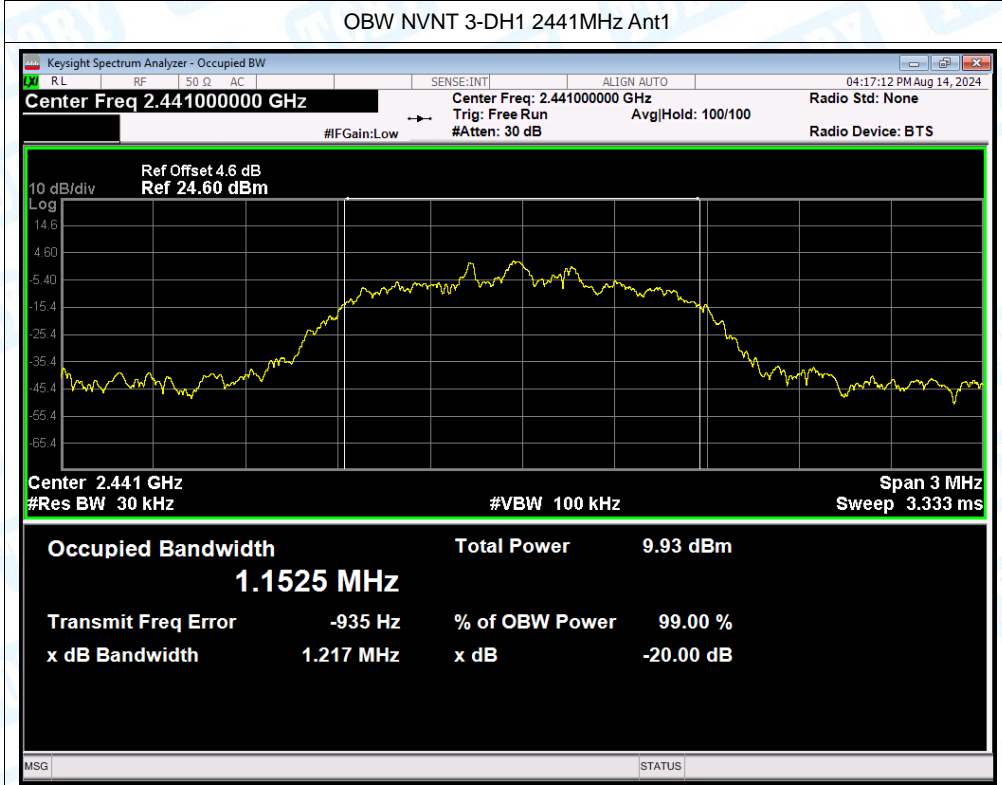
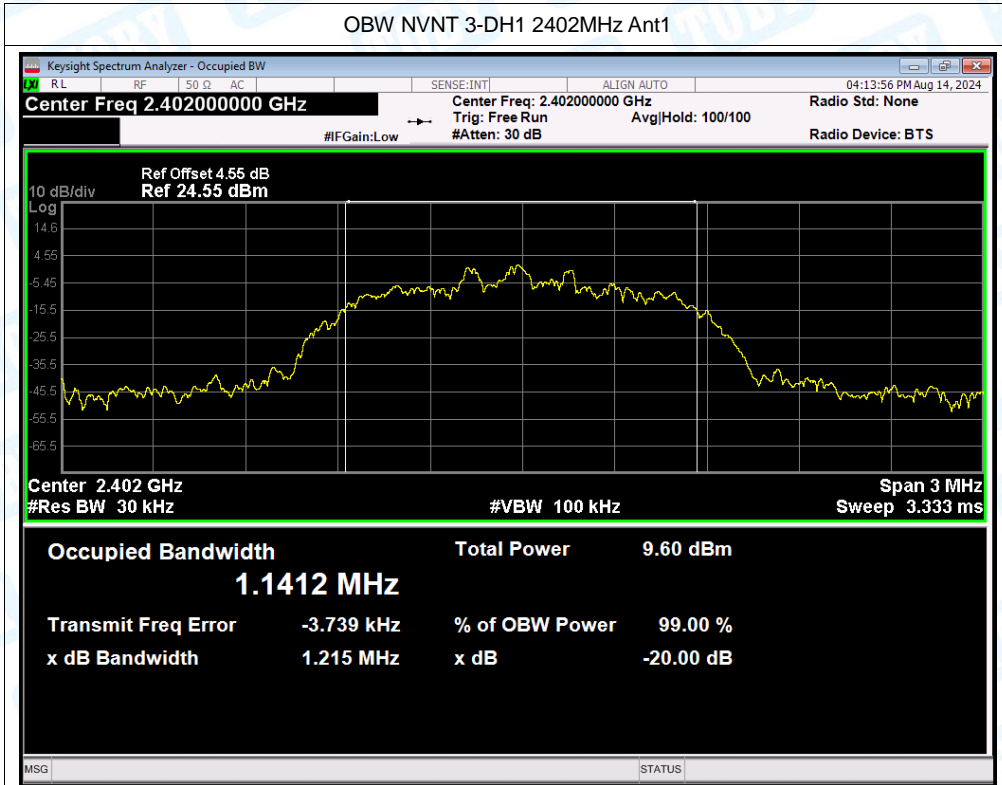


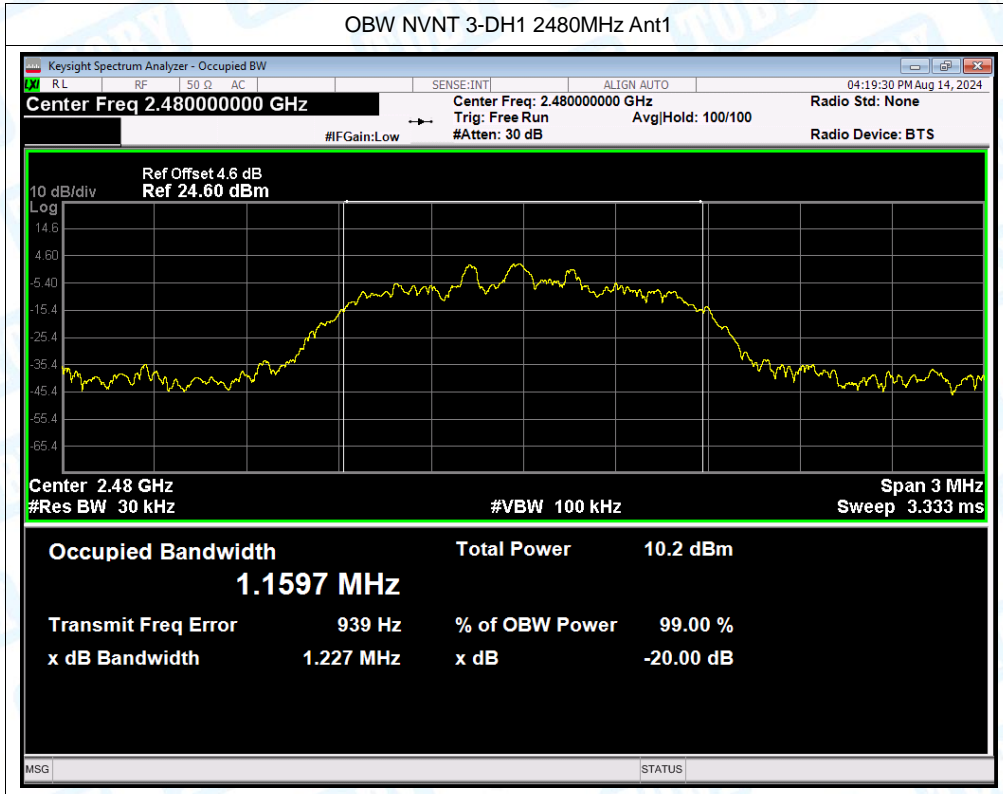
OBW NVNT 2-DH1 2441MHz Ant1



OBW NVNT 2-DH1 2480MHz Ant1





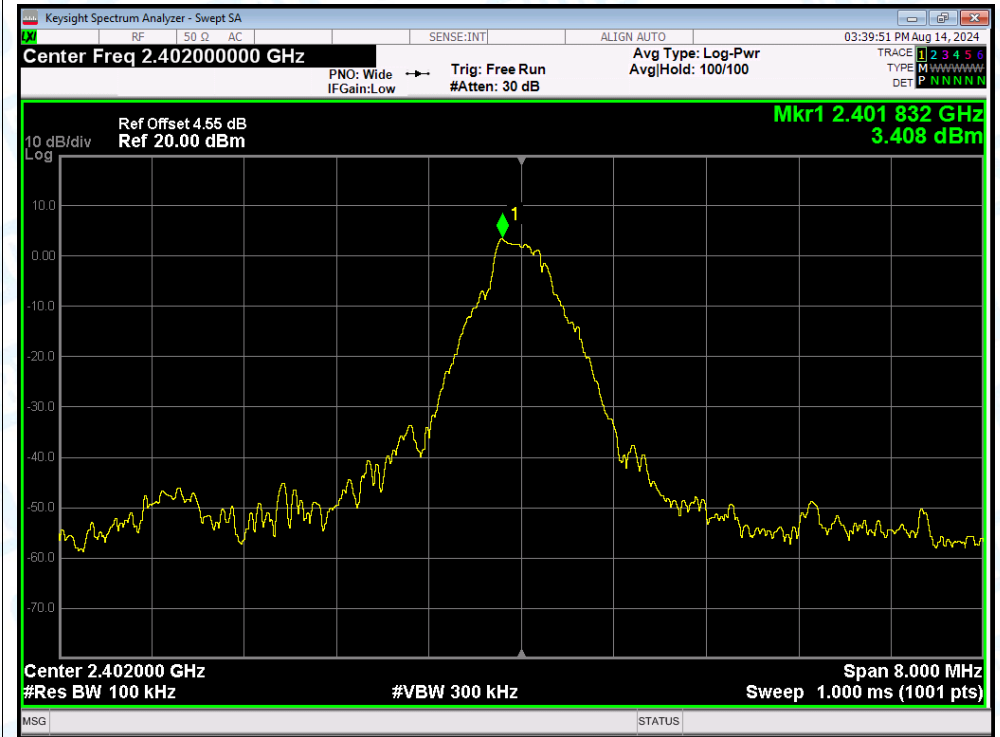


## 5. Band Edge

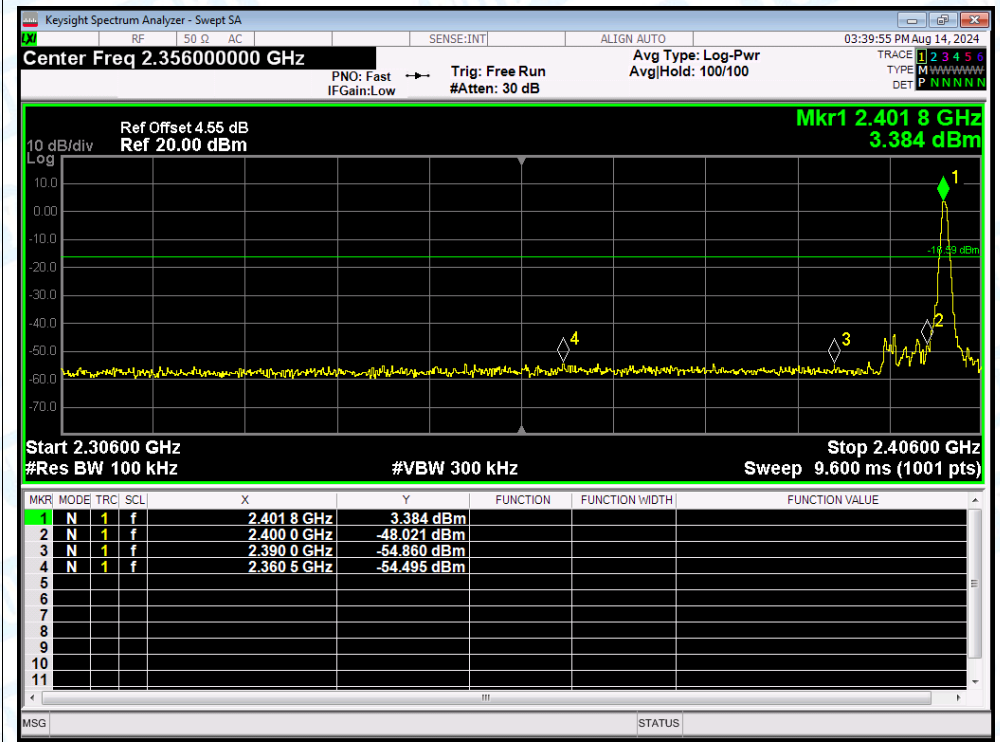
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-57.91	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-56.57	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-57.12	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-54.72	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-56.67	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-57.49	-20	Pass

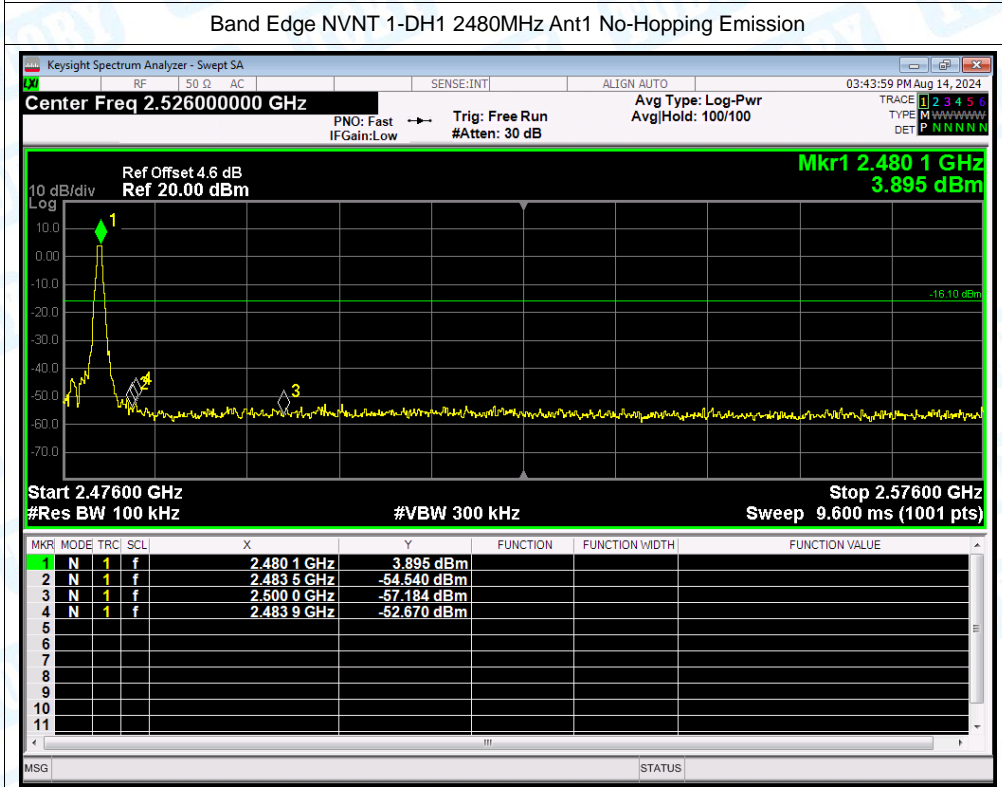
Test Graphs

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

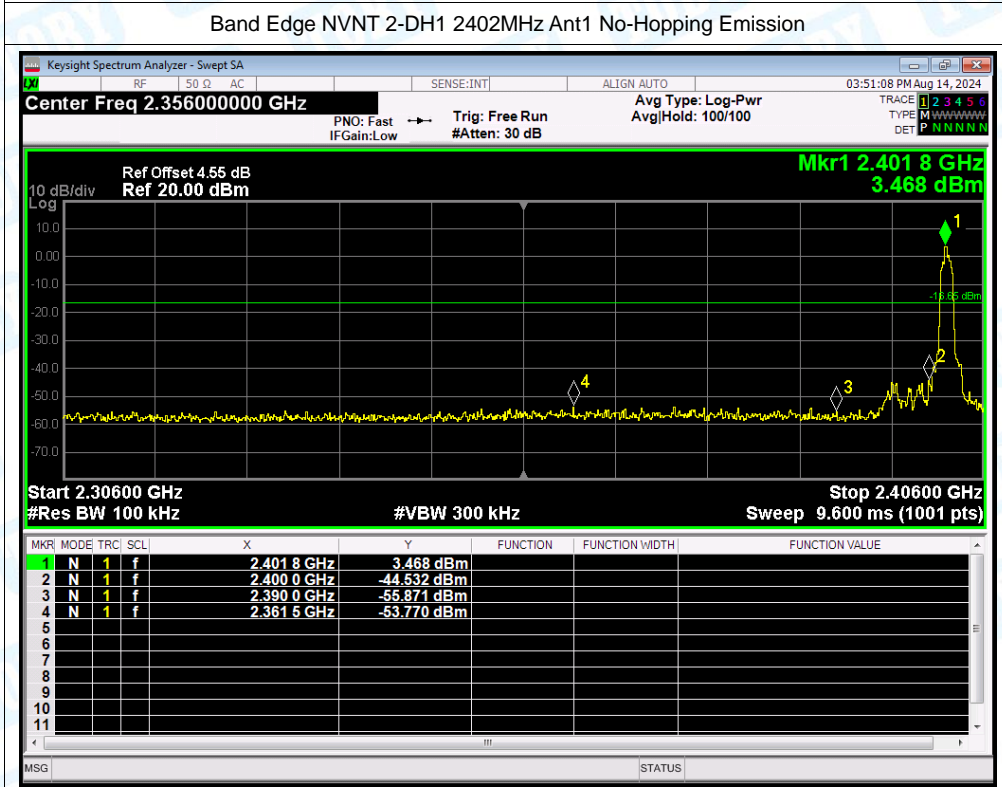
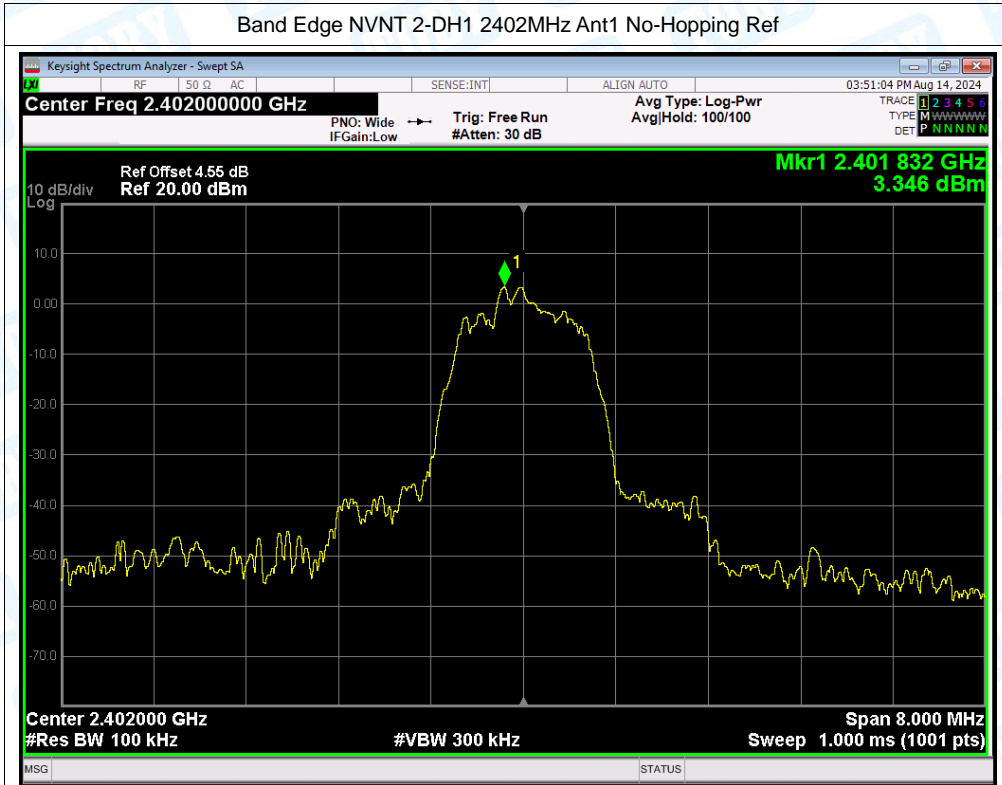


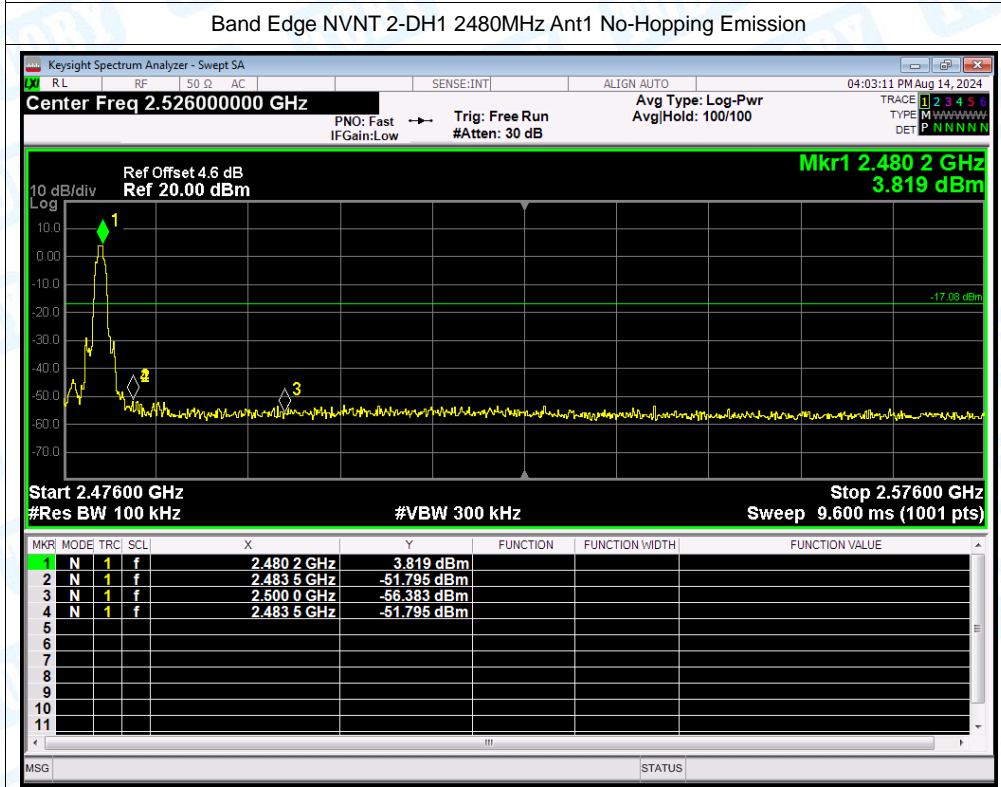
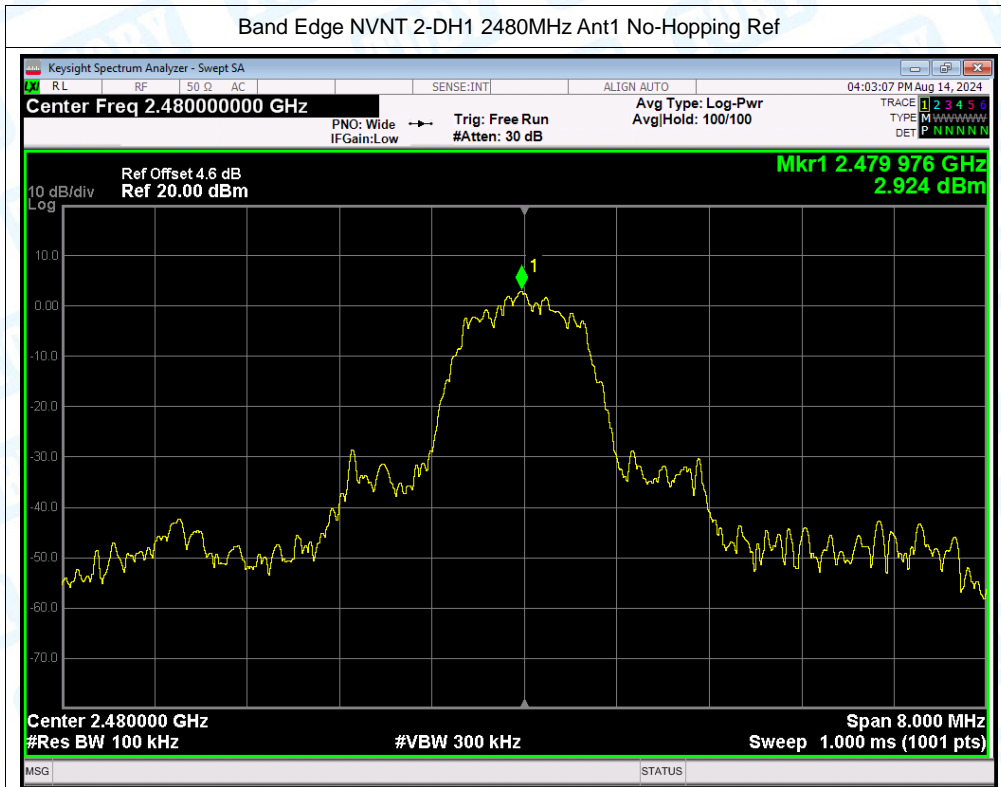
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission

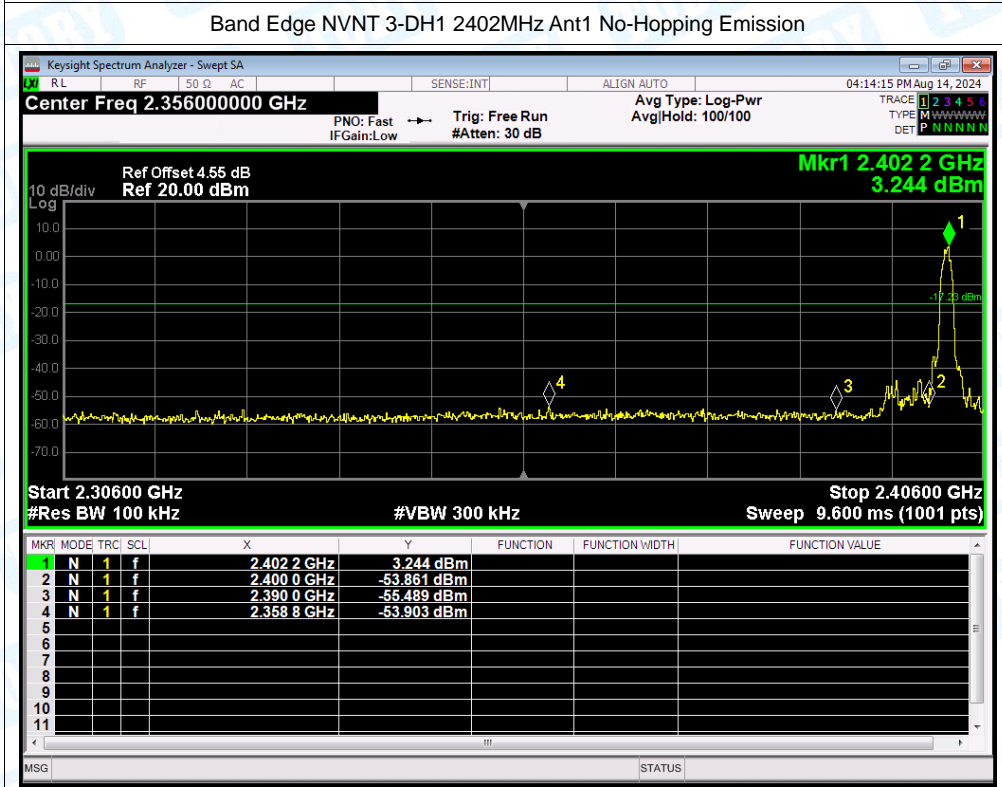
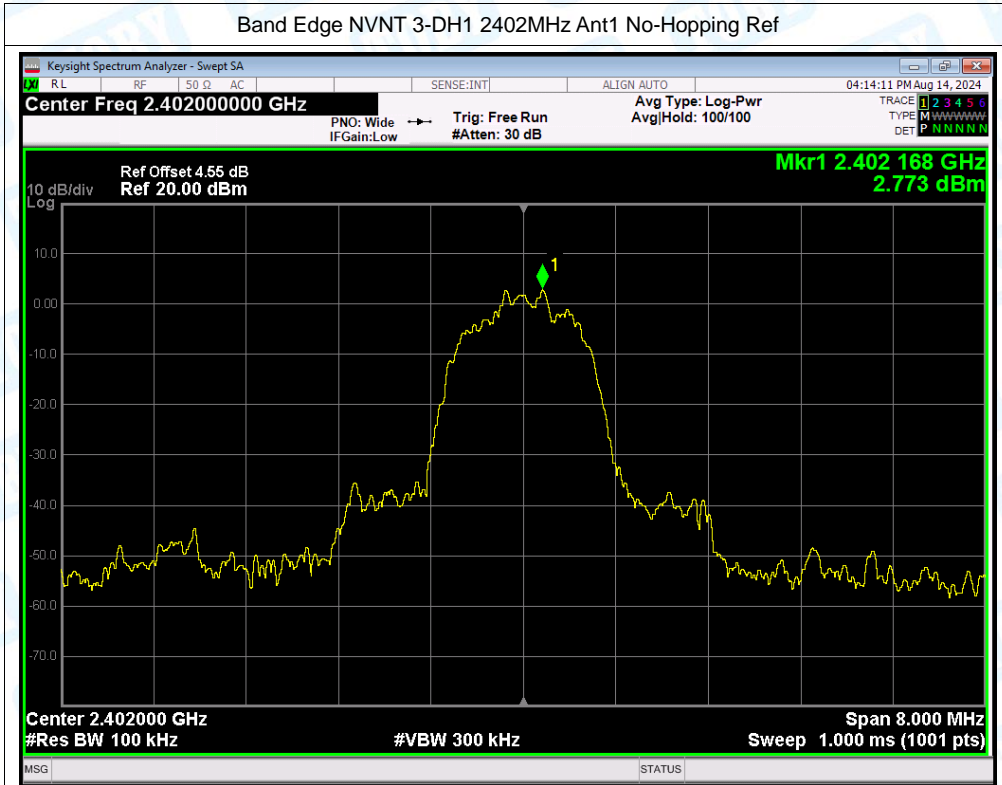


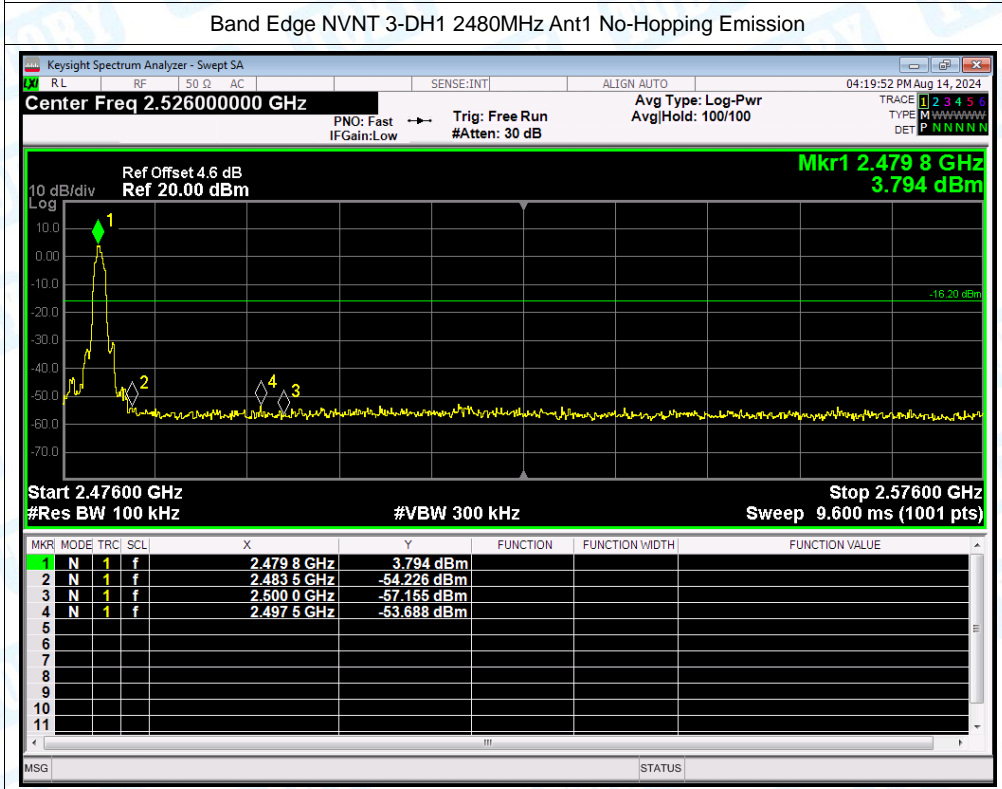
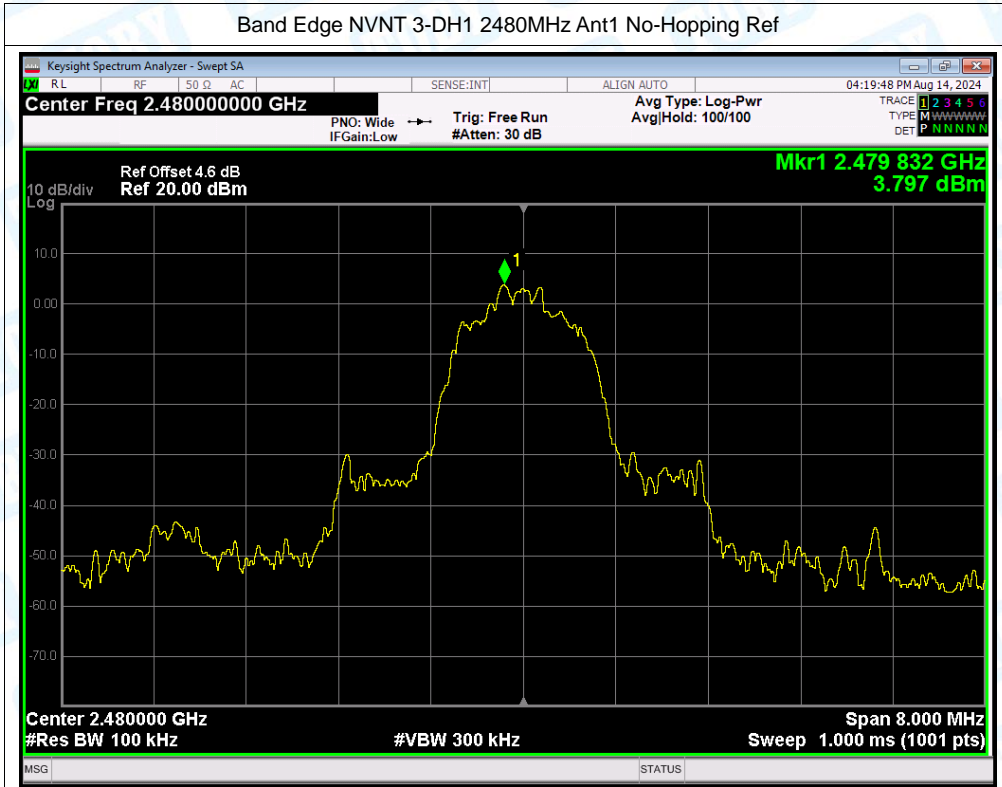










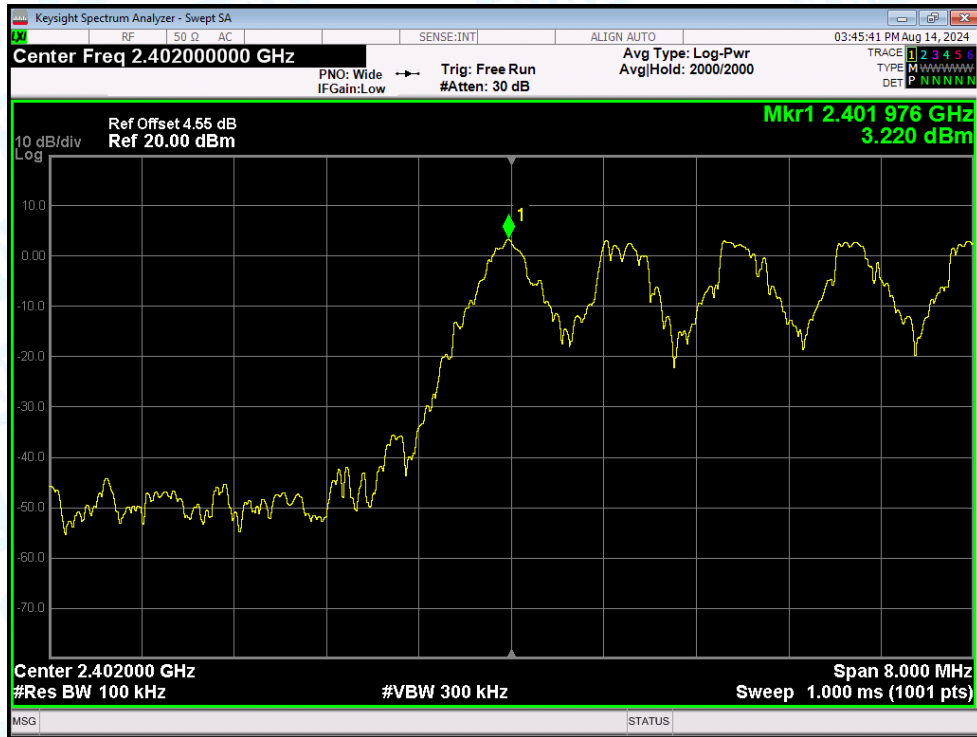


## 6. Band Edge(Hopping)

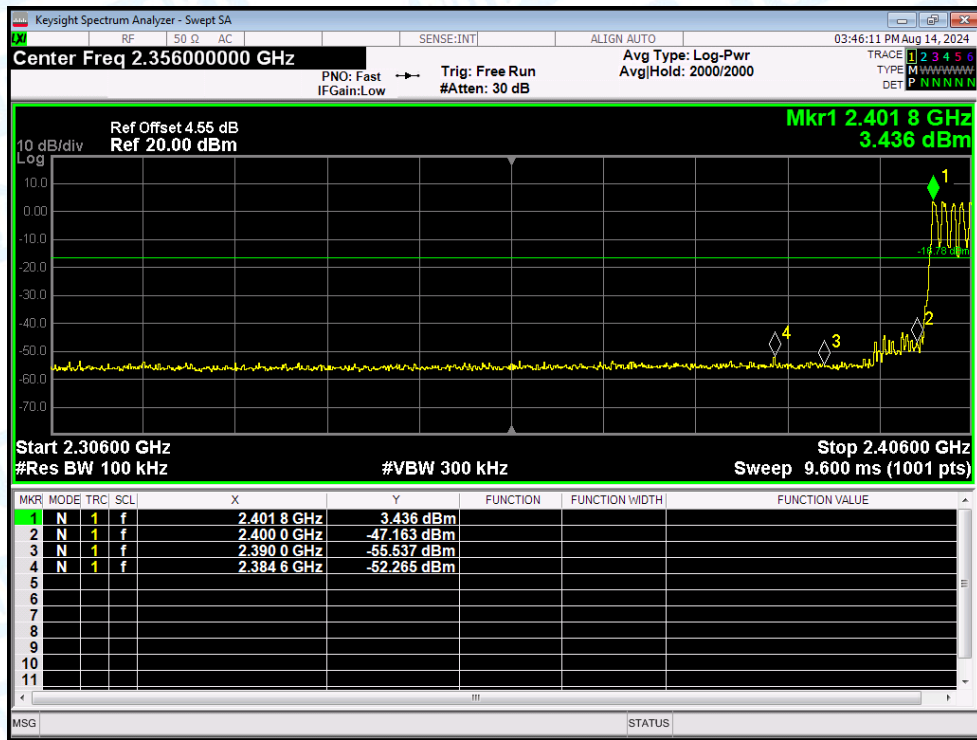
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-55.49	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-47.71	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-56.33	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-38.74	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-55.51	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-42	-20	Pass

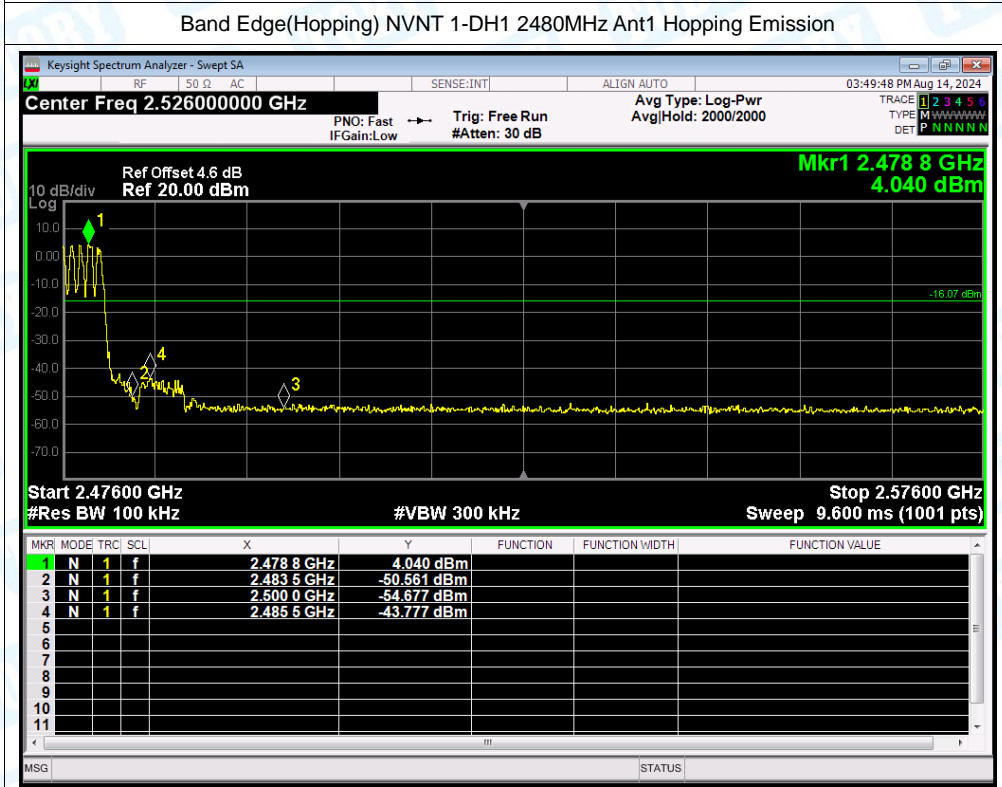
Test Graphs

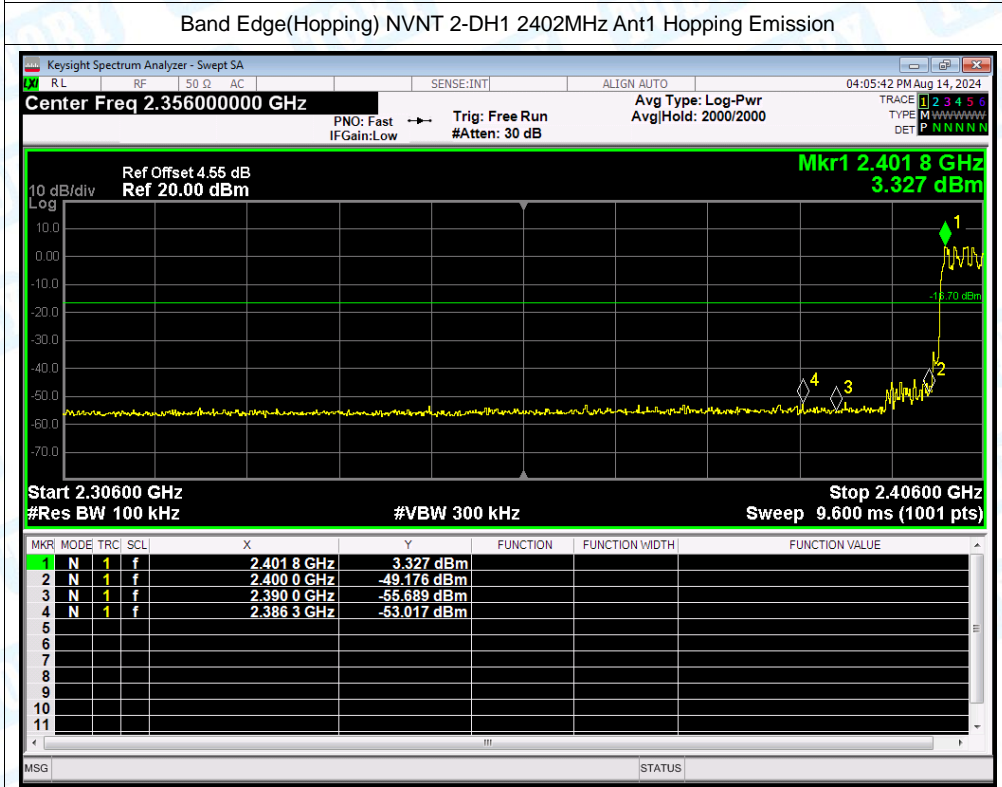
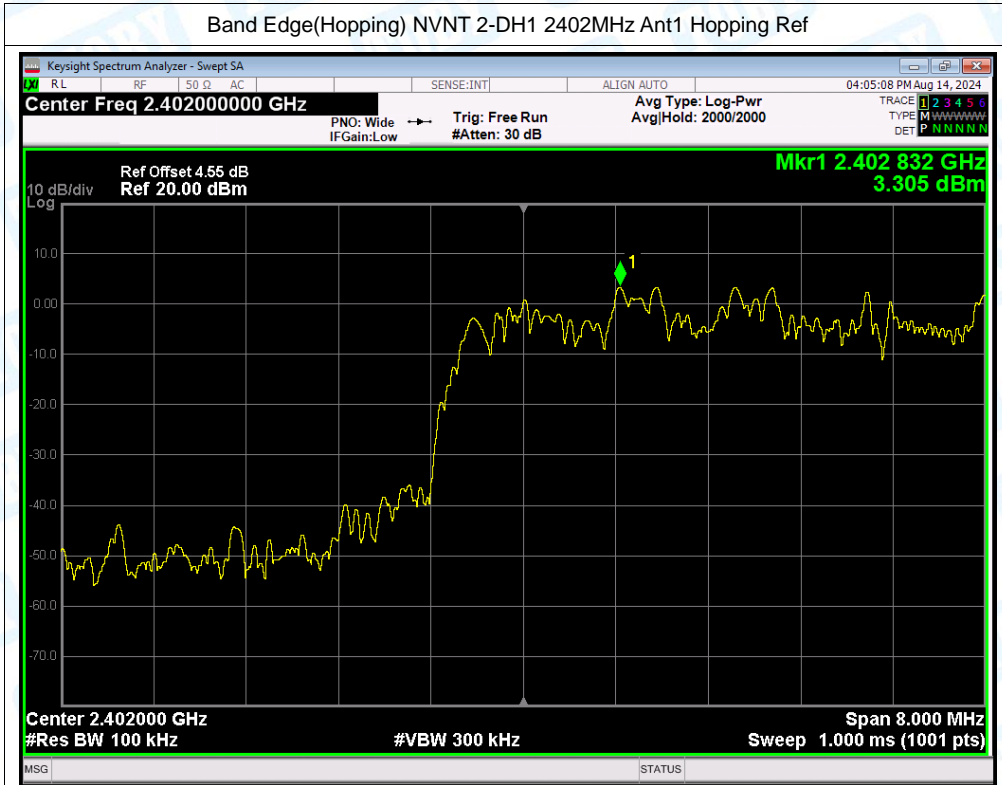
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref



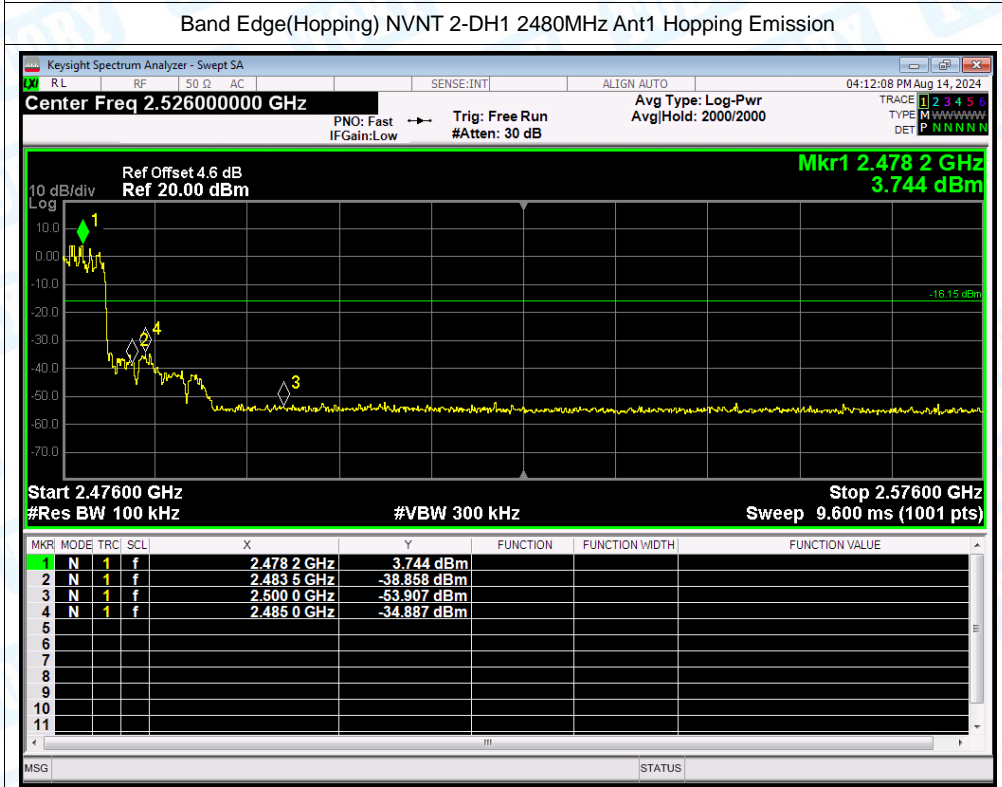
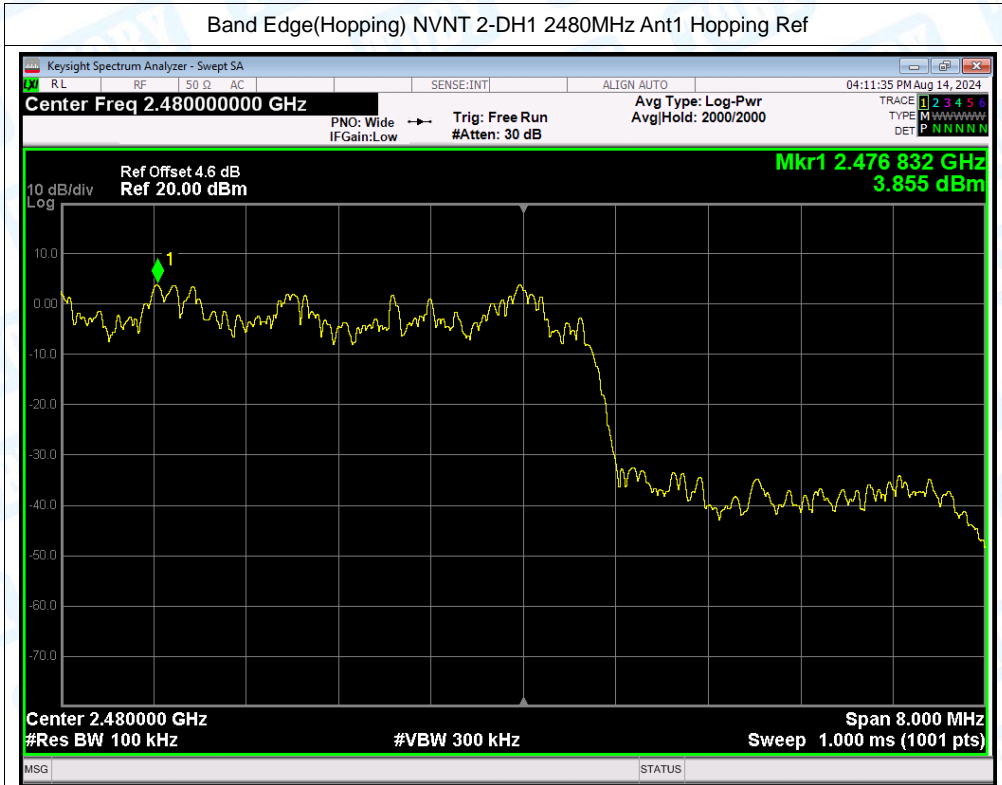
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission

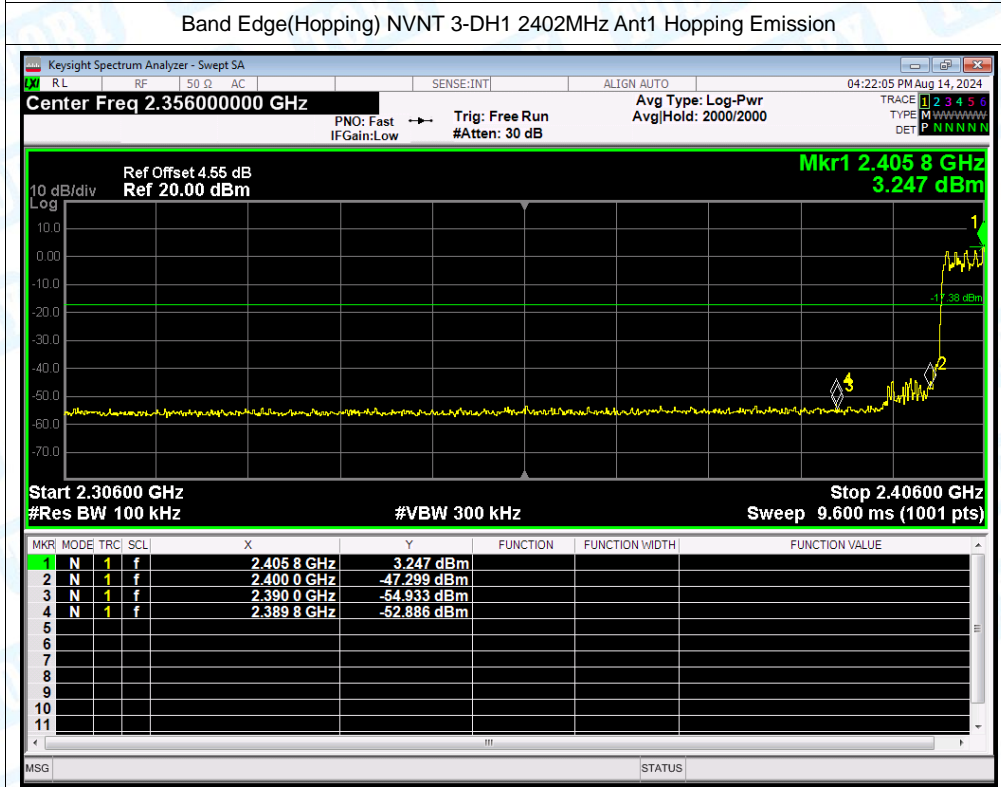
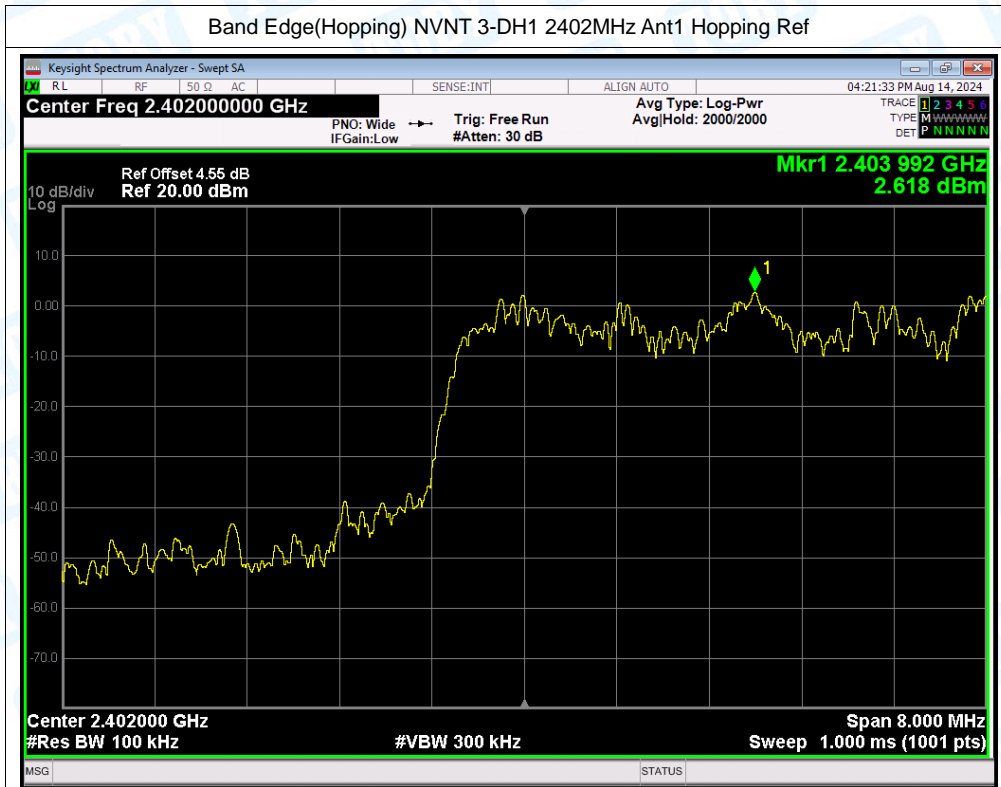


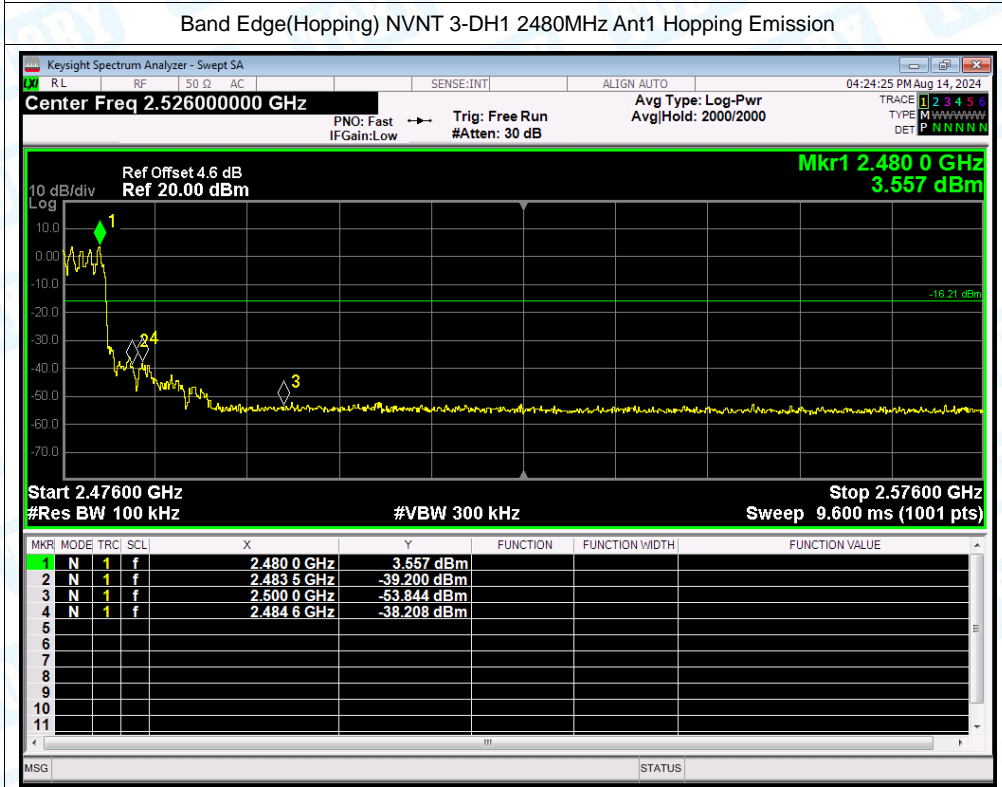
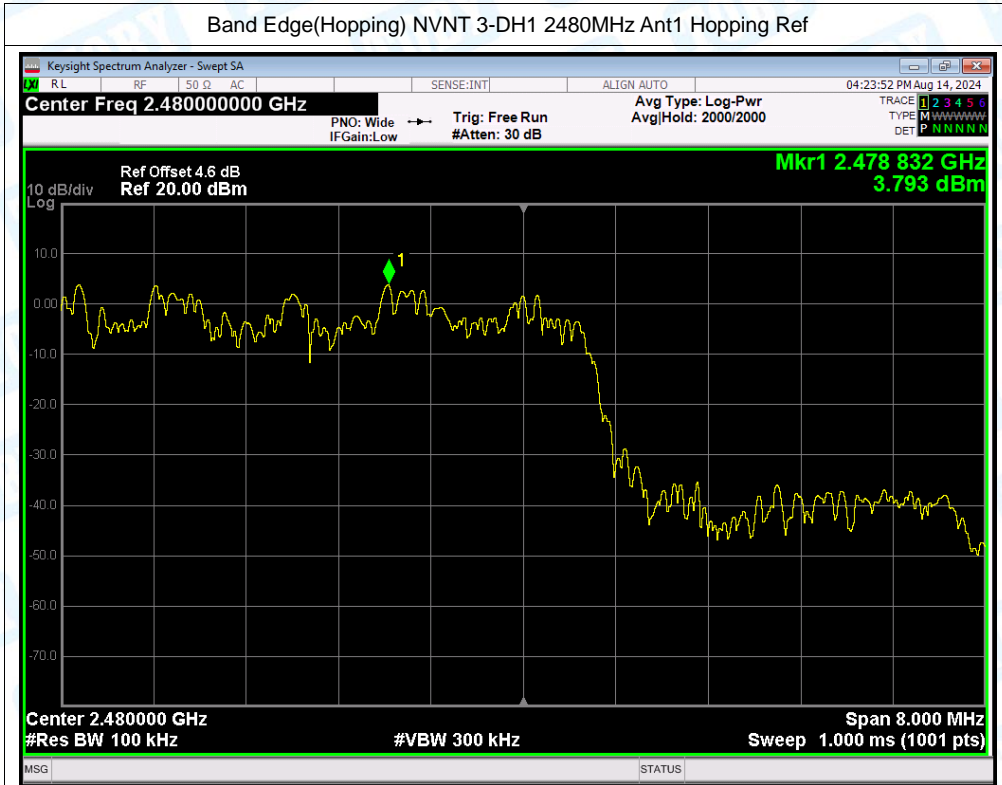










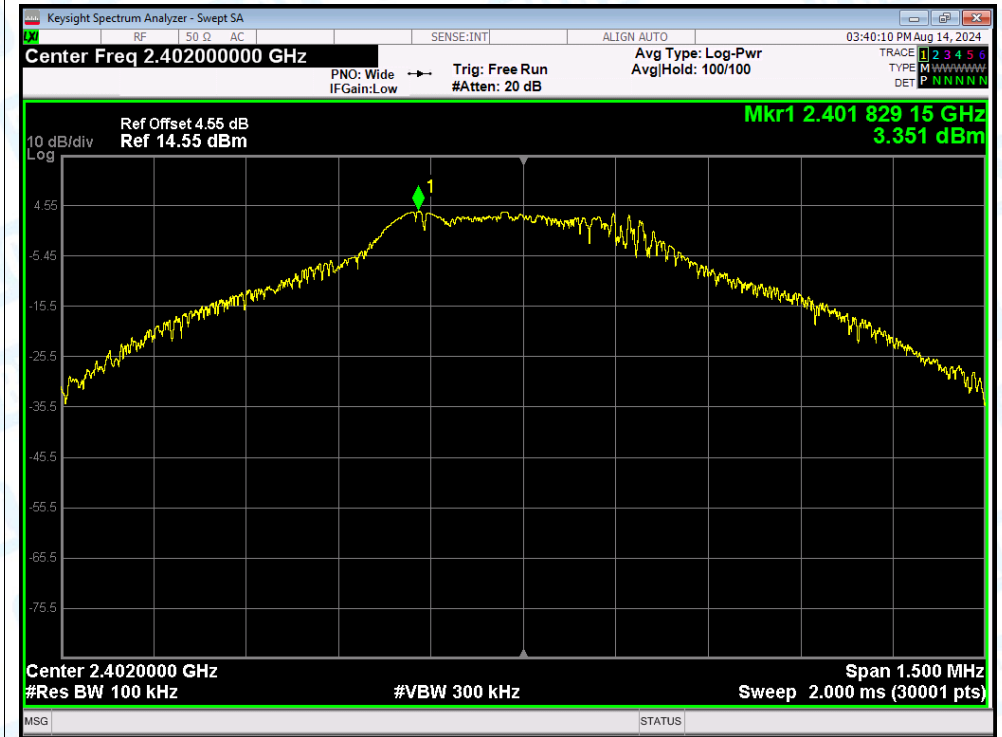


## 7. Conducted RF Spurious Emission

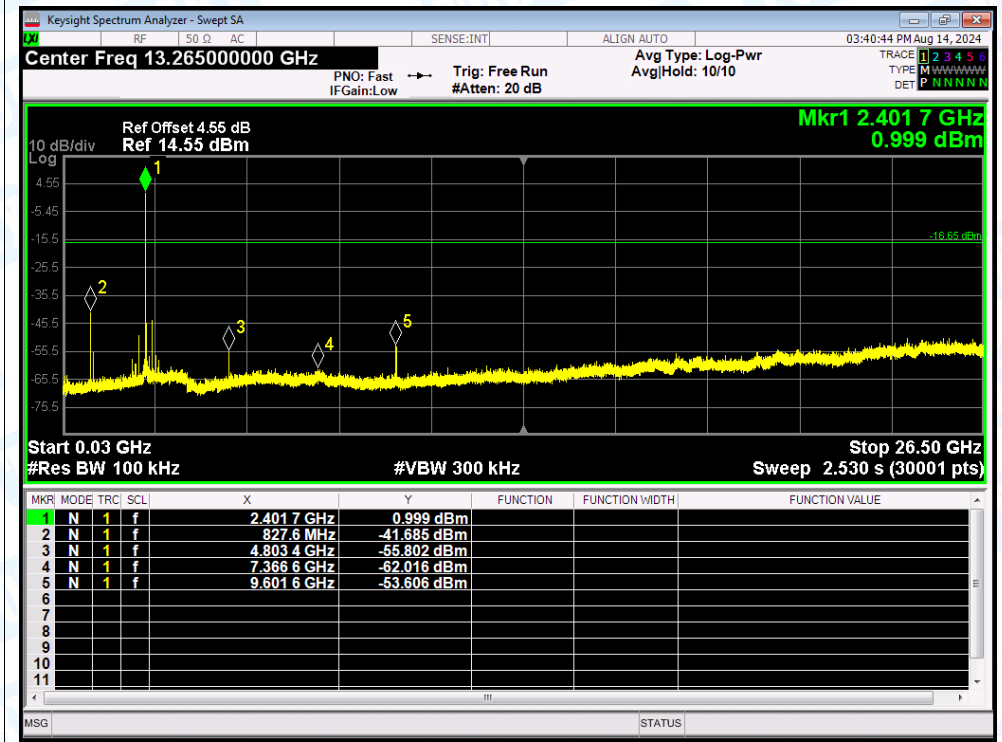
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-45.04	-20	Pass
NVNT	1-DH1	2441	Ant1	-49.7	-20	Pass
NVNT	1-DH1	2480	Ant1	-50.23	-20	Pass
NVNT	2-DH1	2402	Ant1	-48.23	-20	Pass
NVNT	2-DH1	2441	Ant1	-51.86	-20	Pass
NVNT	2-DH1	2480	Ant1	-52.09	-20	Pass
NVNT	3-DH1	2402	Ant1	-48.92	-20	Pass
NVNT	3-DH1	2441	Ant1	-51.7	-20	Pass
NVNT	3-DH1	2480	Ant1	-51.55	-20	Pass

Test Graphs

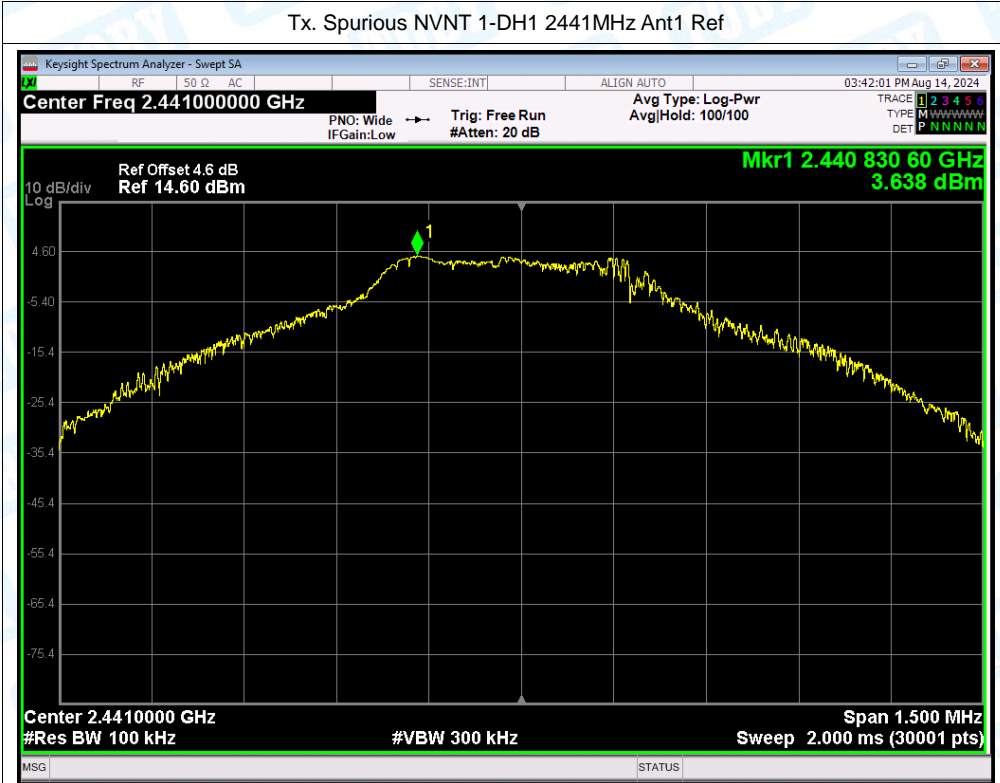
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



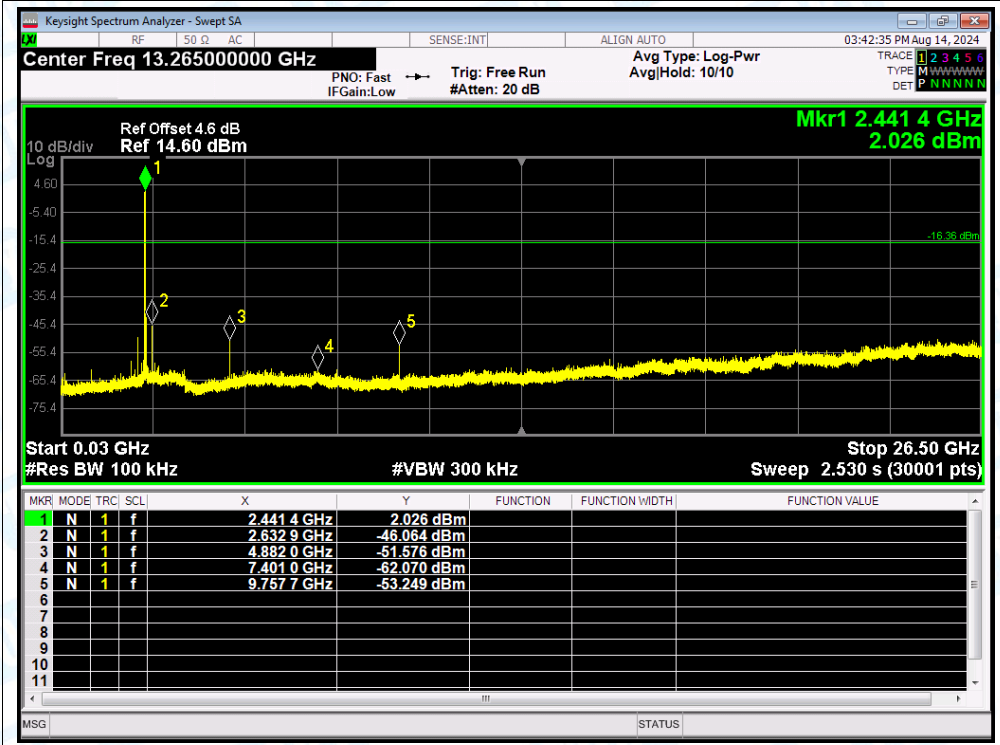
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



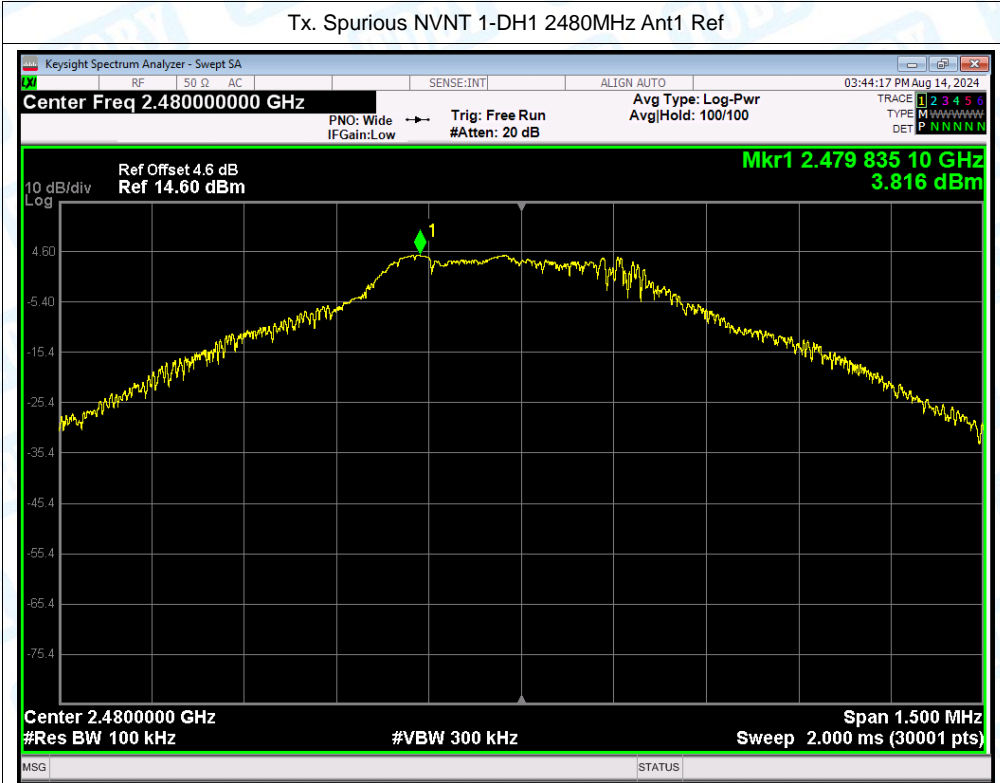
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



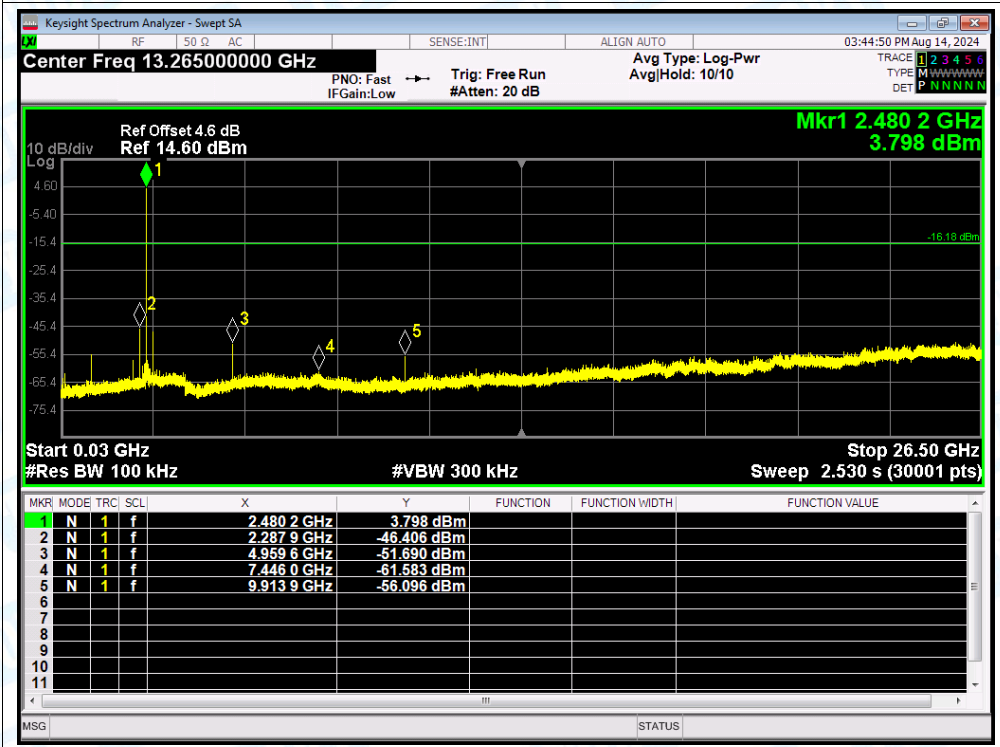
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



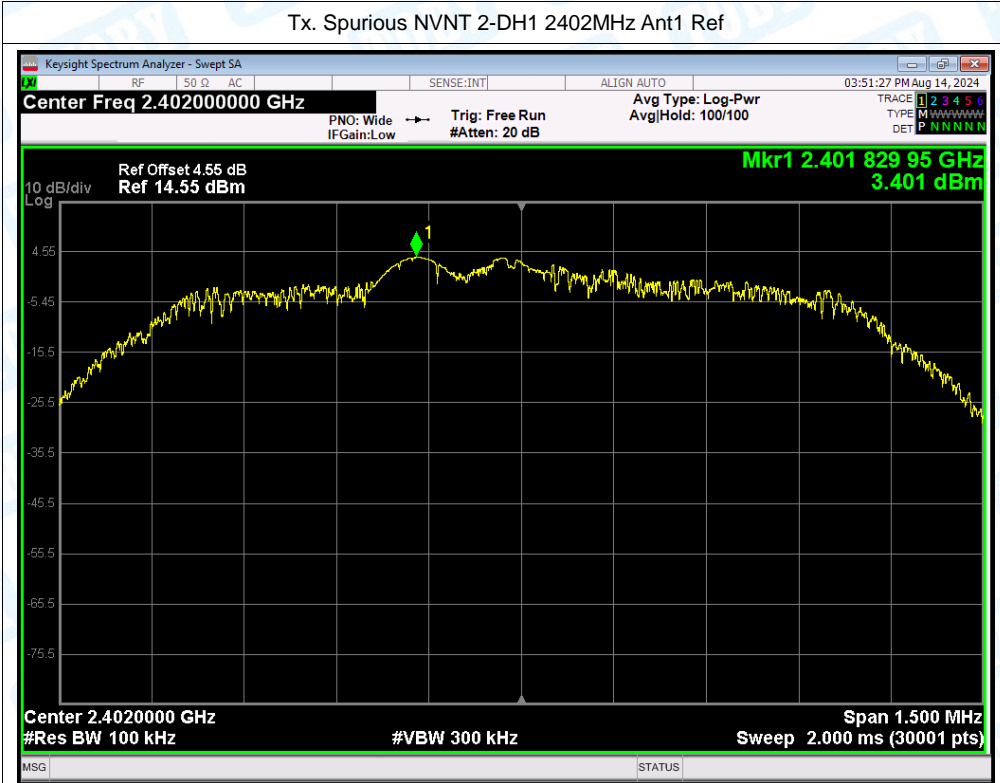
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



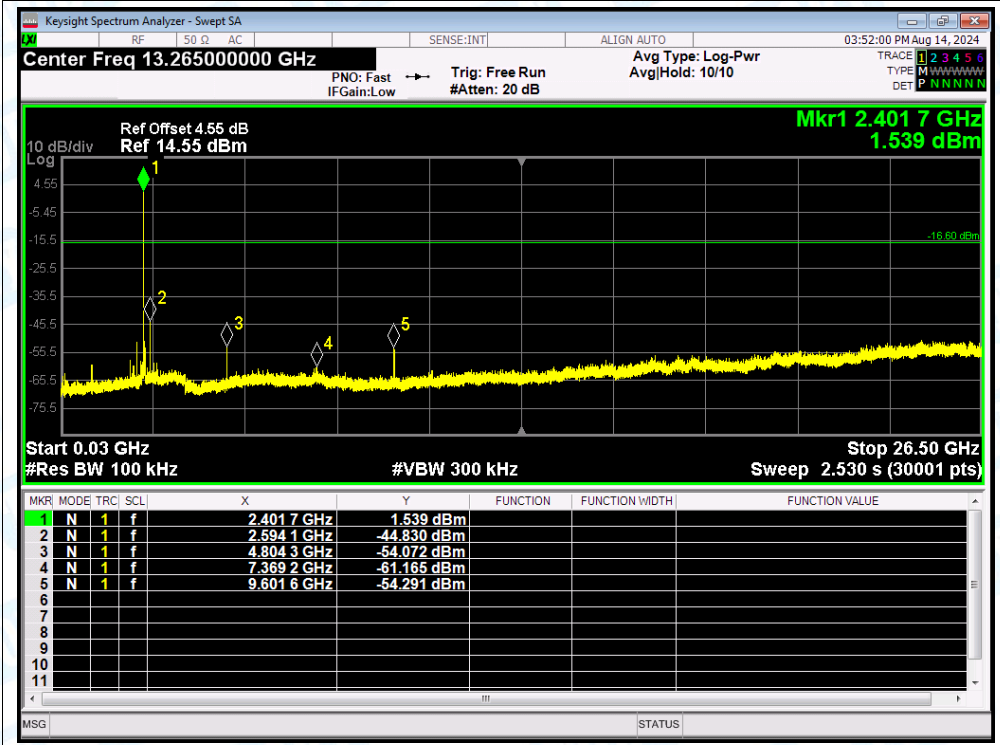
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref

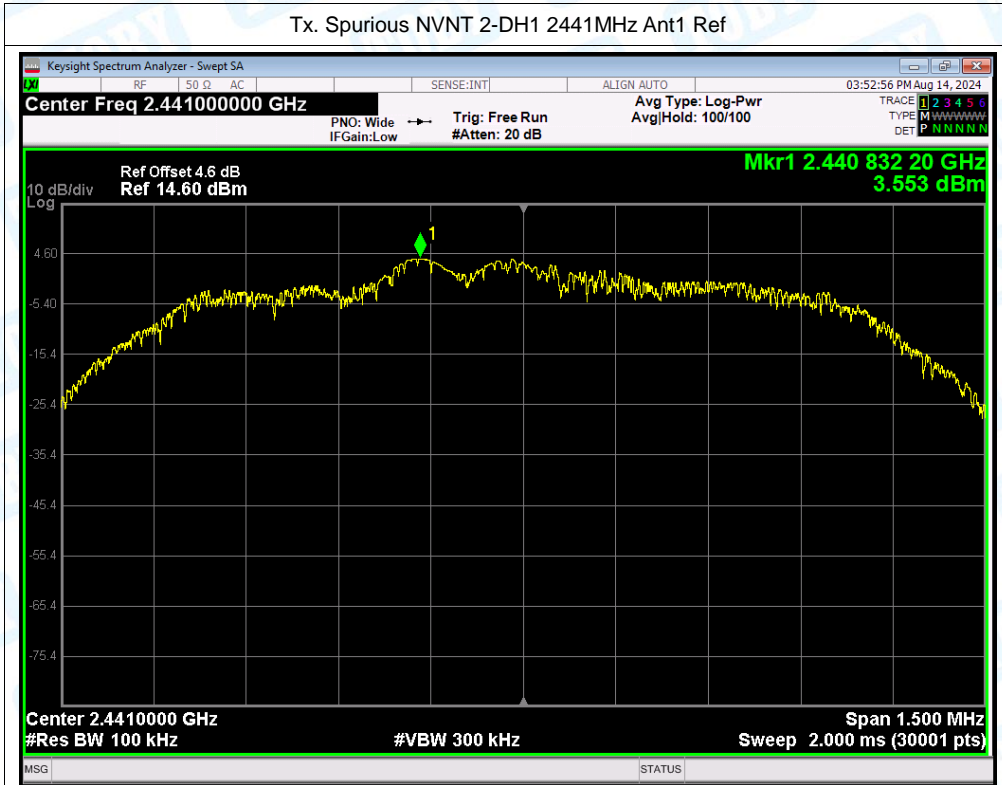


Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission

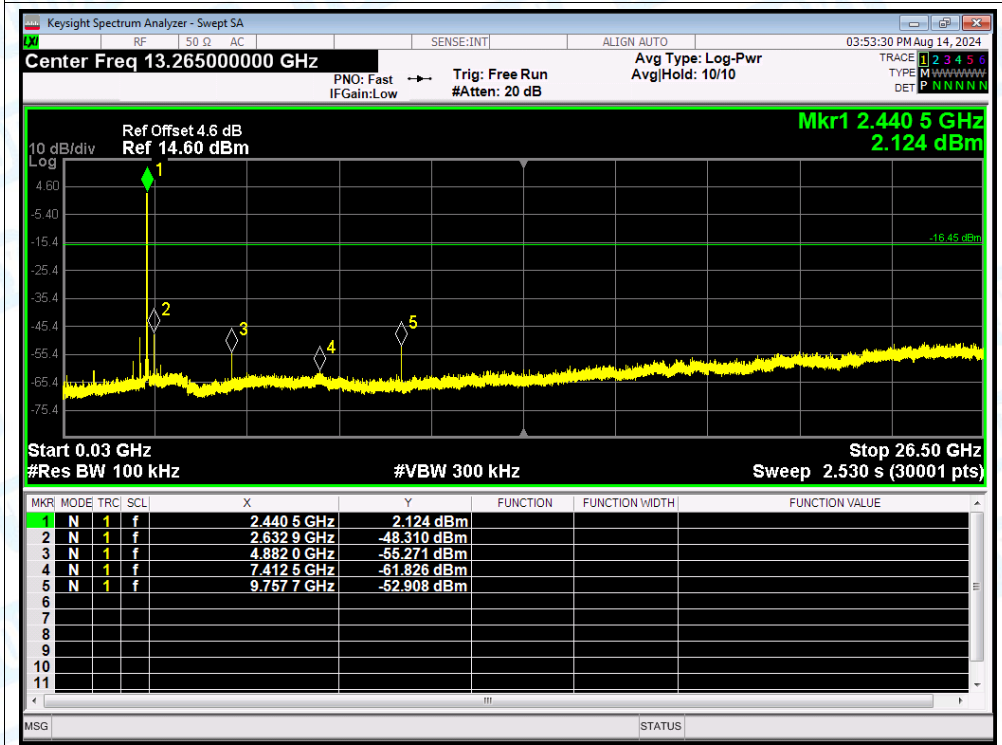




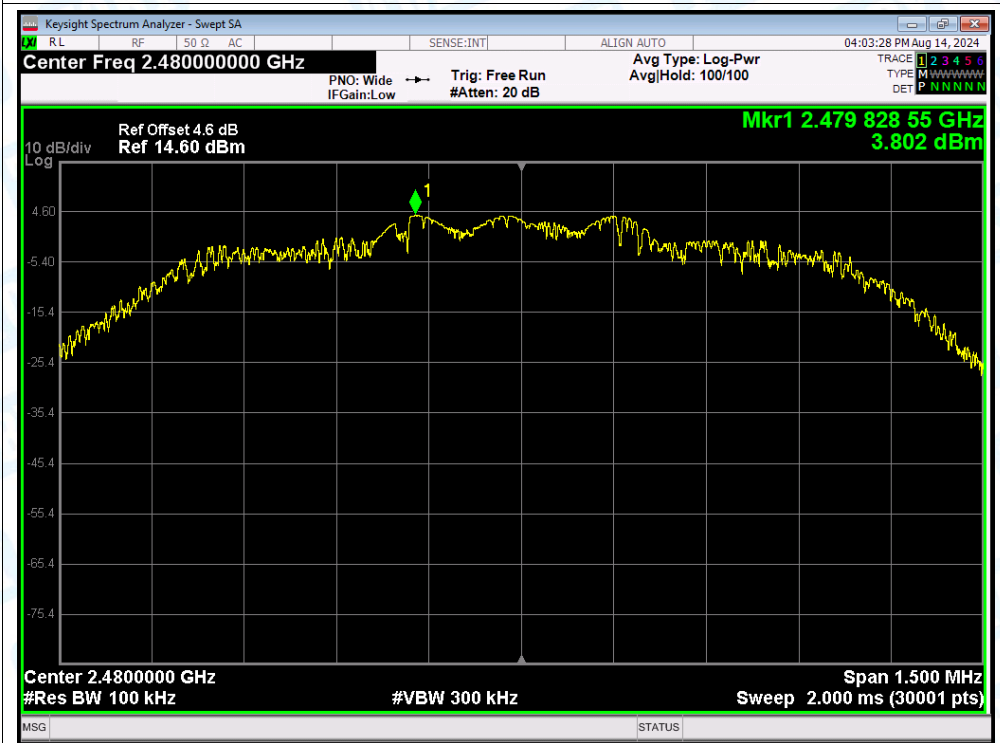
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



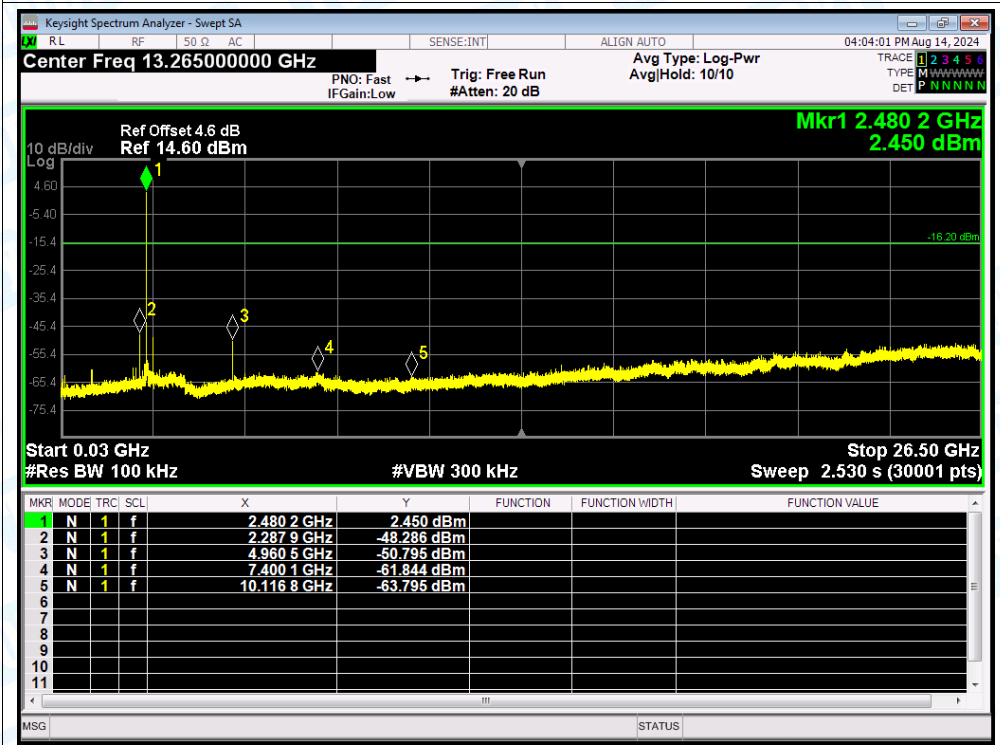
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



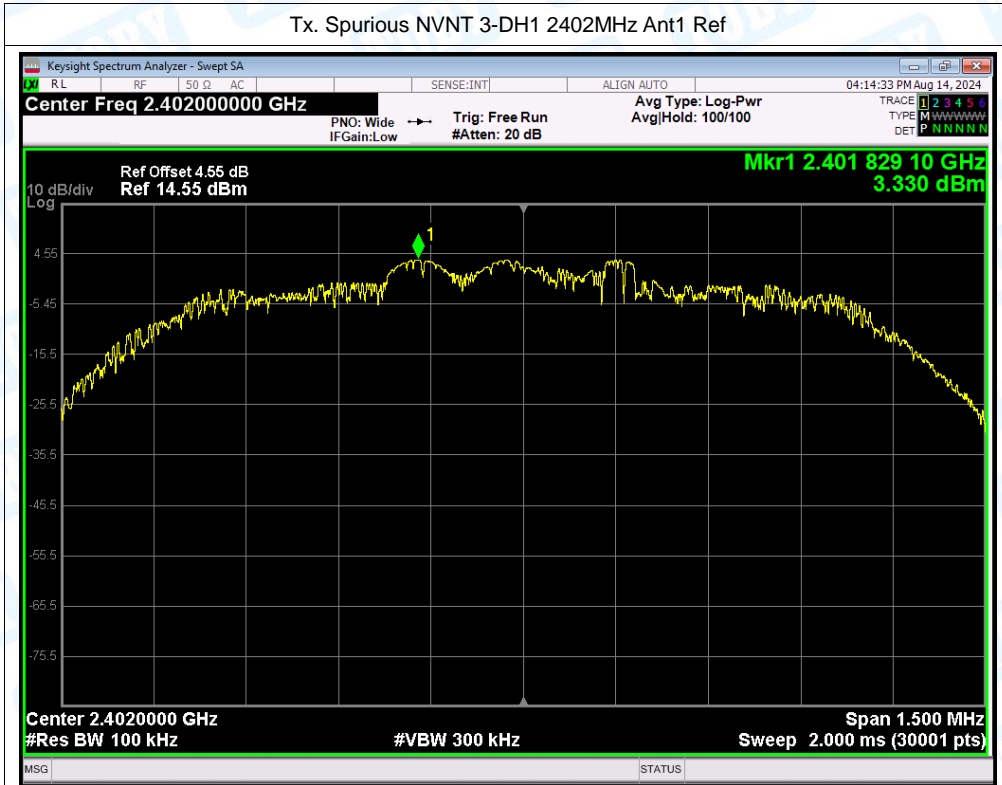
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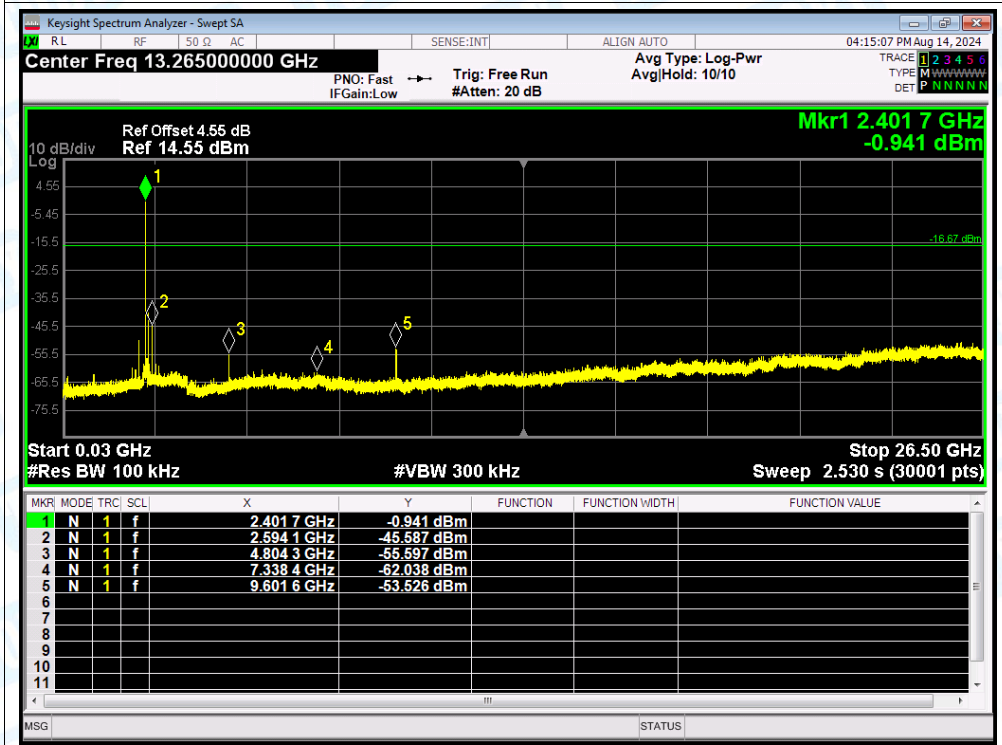
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



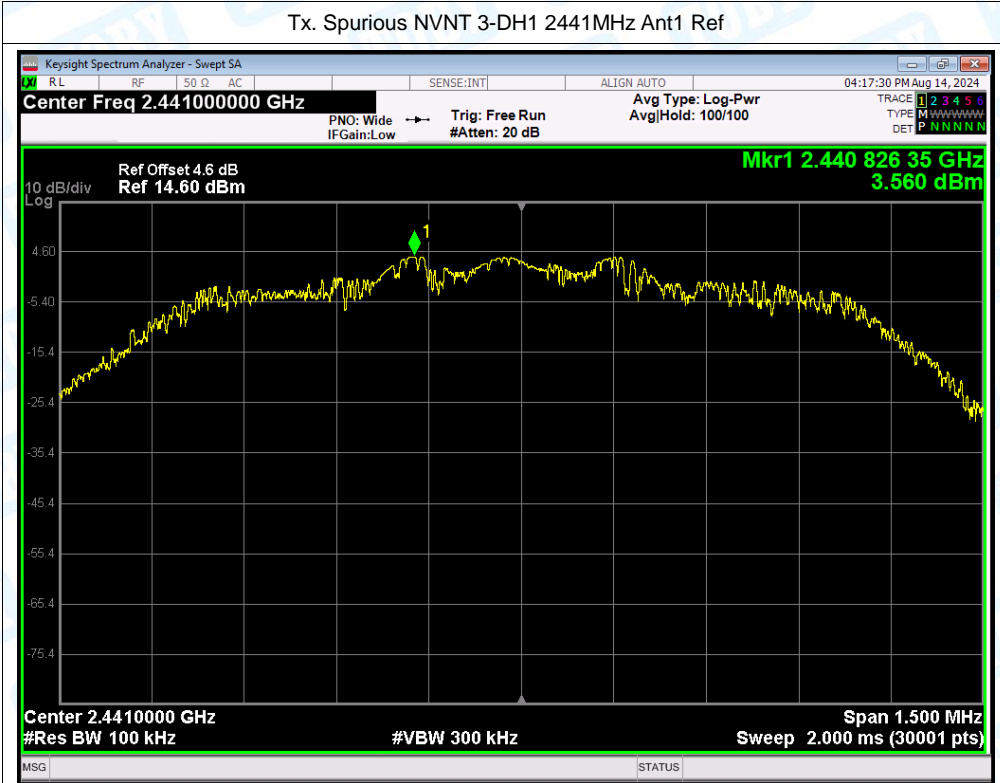
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



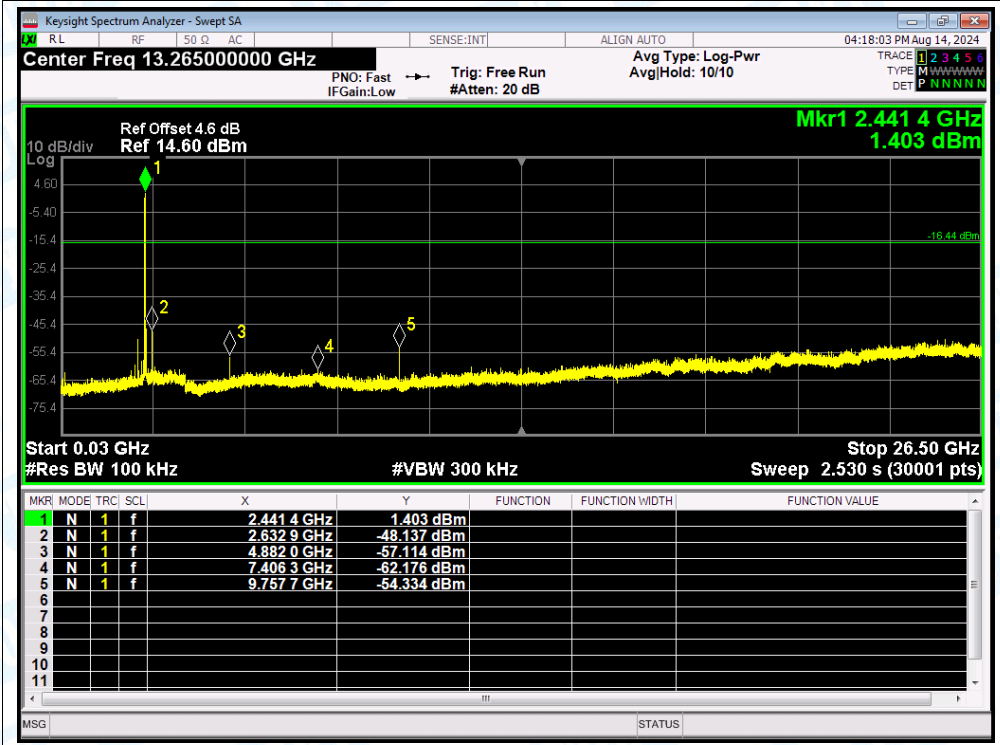
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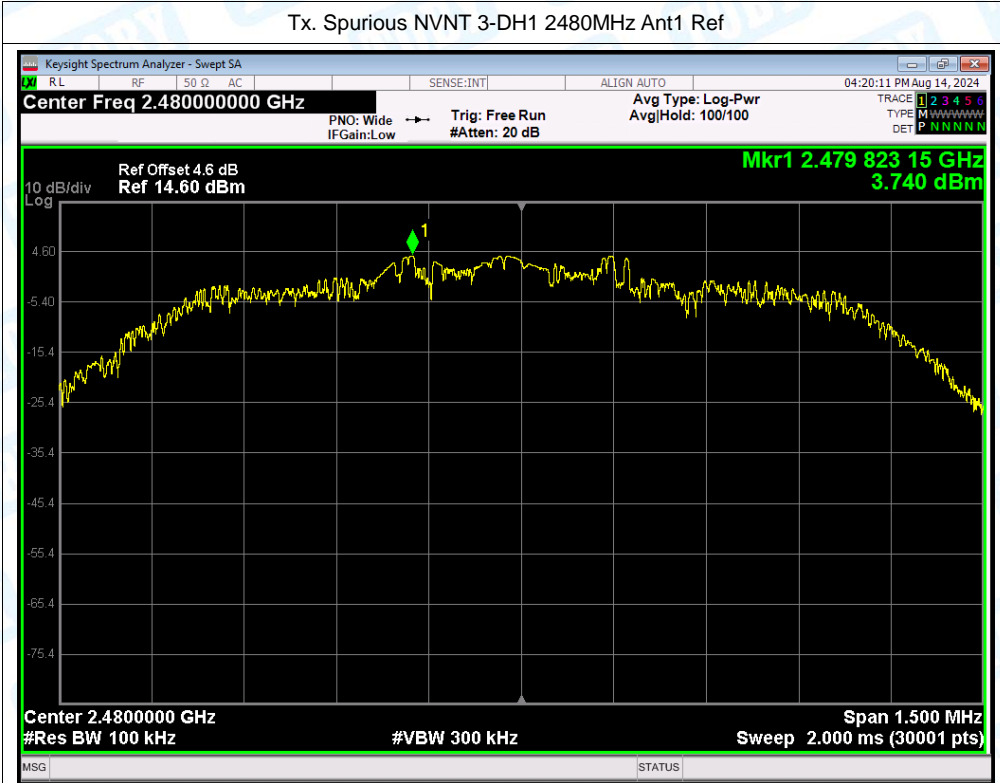
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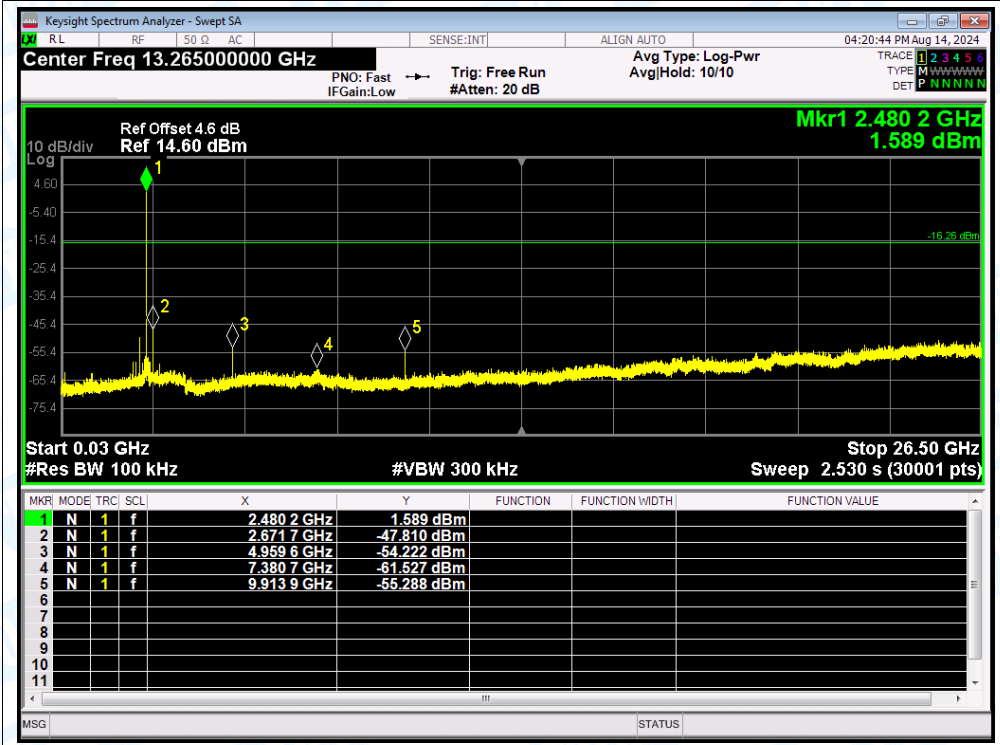
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

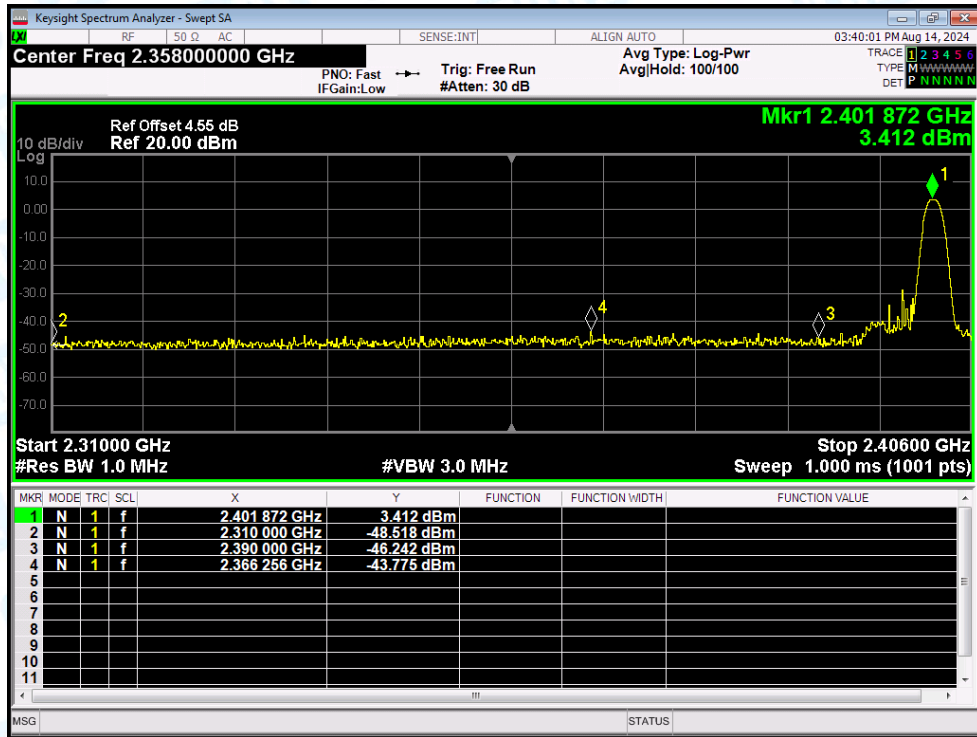


## 8. Restrict Band

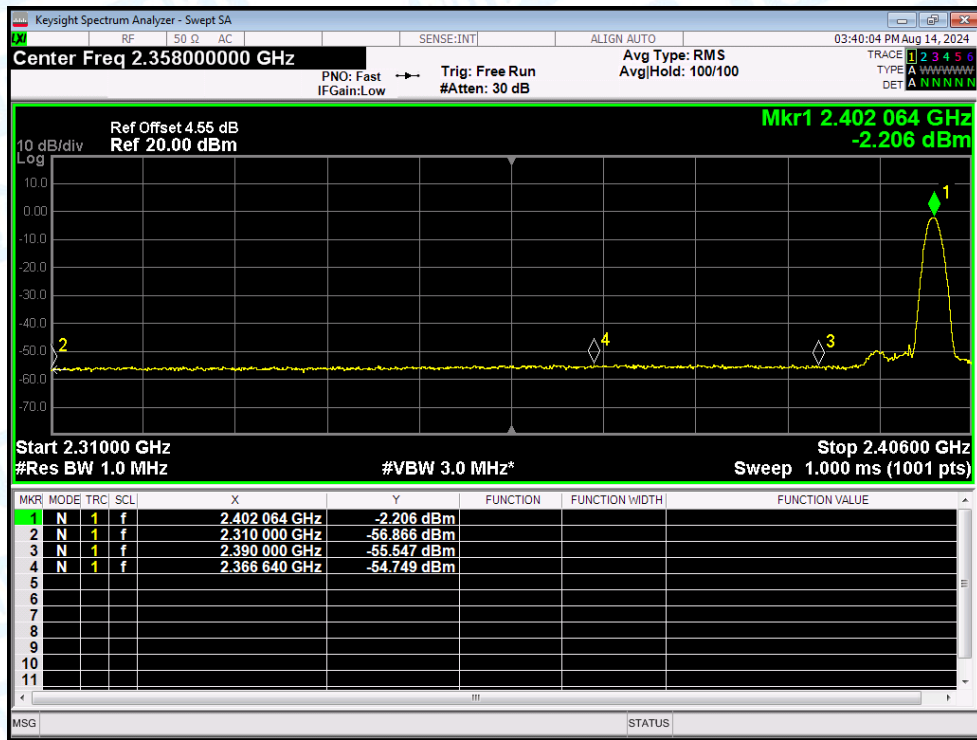
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-48.52	2	-	48.74	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.87	2	5.17	45.56	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2366.256	-43.77	2	-	53.49	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2366.64	-54.75	2	5.17	47.68	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-46.24	2	-	51.02	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-55.55	2	5.17	46.88	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-40.57	2	-	56.69	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-54.27	2	5.06	48.05	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2488.144	-39.38	2	-	57.88	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2498.944	-53.93	2	5.06	48.39	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-47.81	2	-	49.45	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-54.92	2	5.06	47.4	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-49.26	2	-	48	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.52	2	5.06	45.8	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2364.912	-44.36	2	-	52.9	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2361.744	-54.8	2	5.06	47.52	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-47.79	2	-	49.47	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-55.49	2	5.06	46.83	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-45.62	2	-	51.64	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-54.09	2	4.95	48.12	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.968	-38.09	2	-	59.17	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.848	-53.91	2	4.95	48.3	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-48.02	2	-	49.24	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.61	2	4.95	46.6	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-47.69	2	-	49.57	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.4	2	5.06	45.92	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2362.32	-44.12	2	-	53.14	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2372.112	-54.79	2	5.06	47.53	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-49.03	2	-	48.23	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-55.63	2	5.06	46.69	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-37.28	2	-	59.98	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-54.29	2	5.06	48.03	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2485.12	-35.06	2	-	62.2	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.536	-54.11	2	5.06	48.21	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-45.61	2	-	51.65	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.11	2	5.06	47.21	Average	54	Pass

Test Graphs

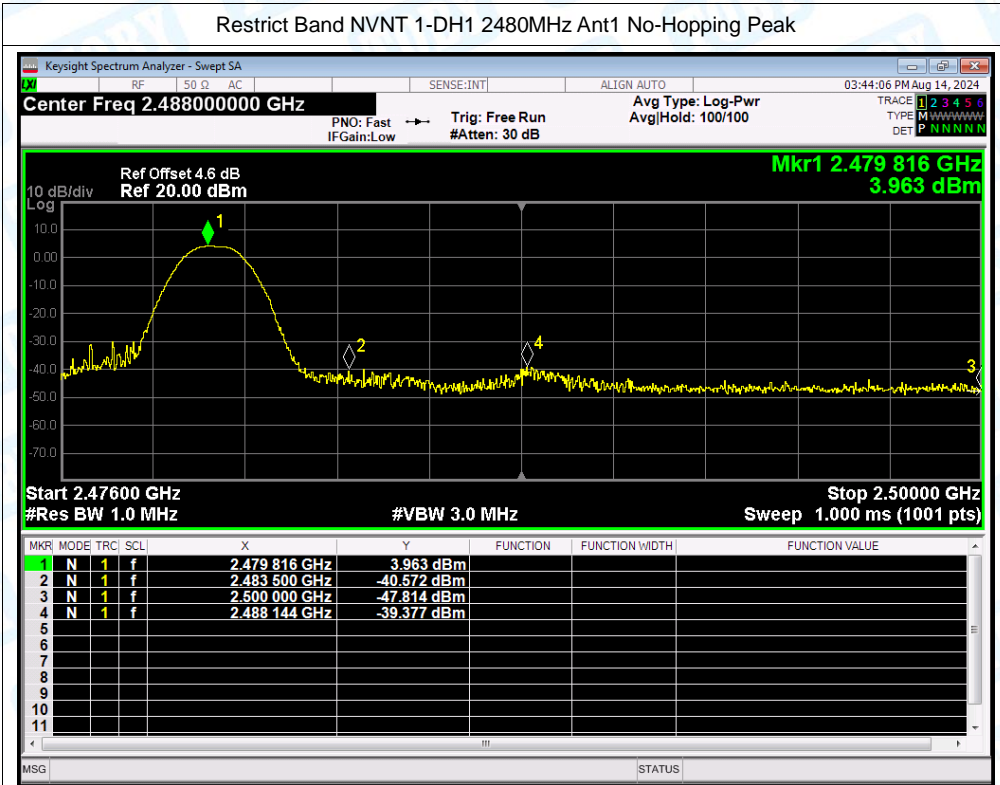
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



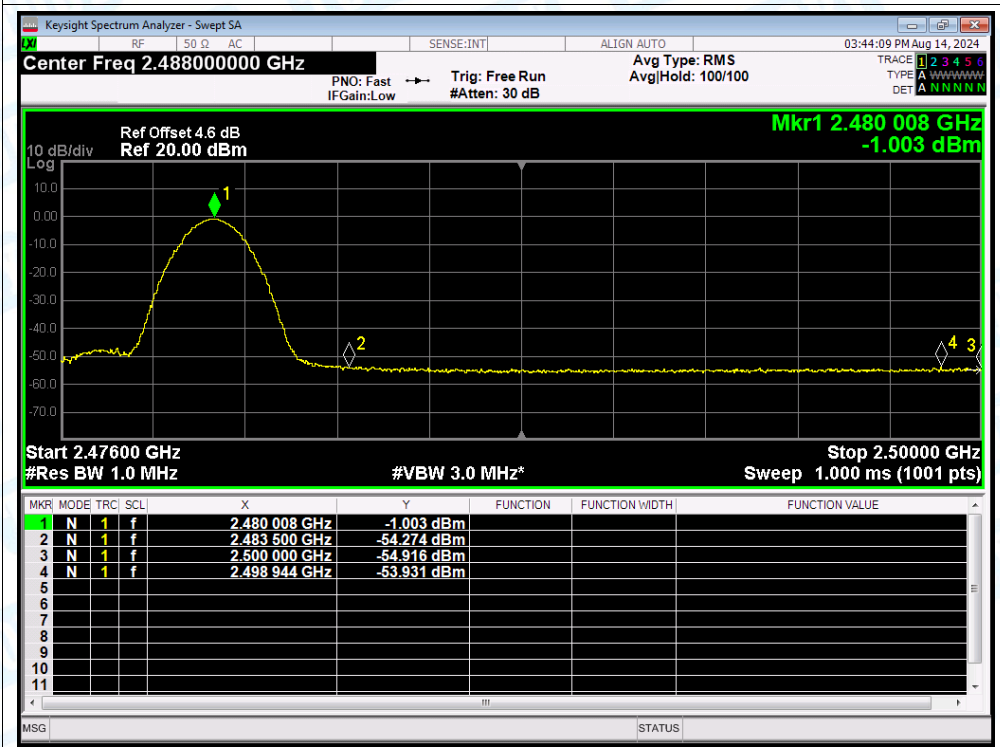
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



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

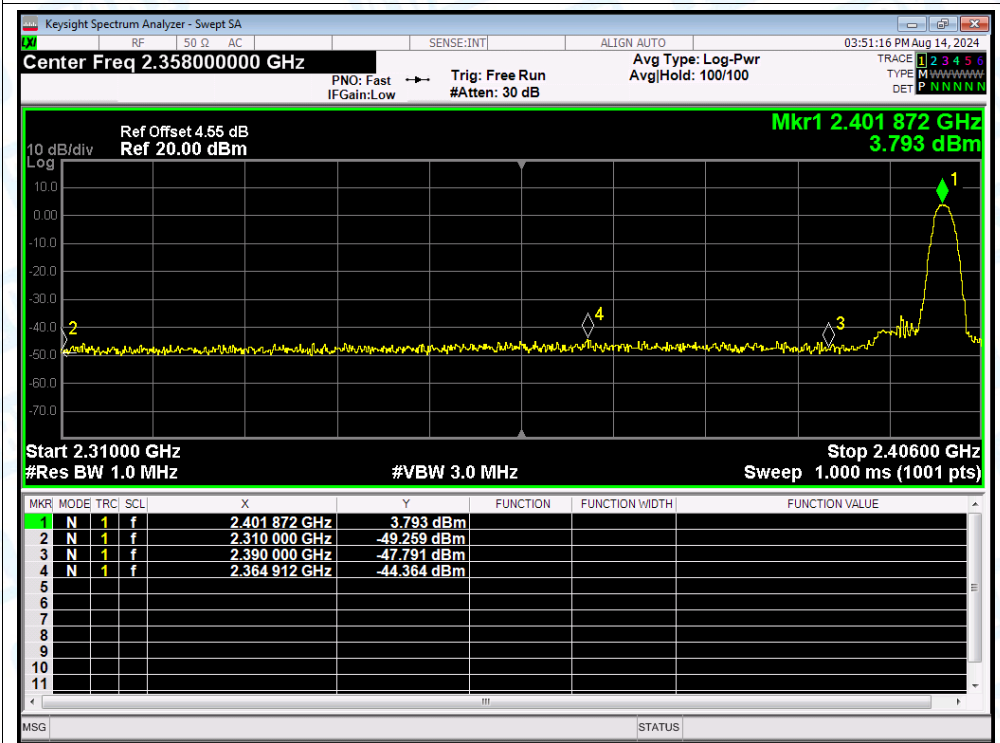


Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average

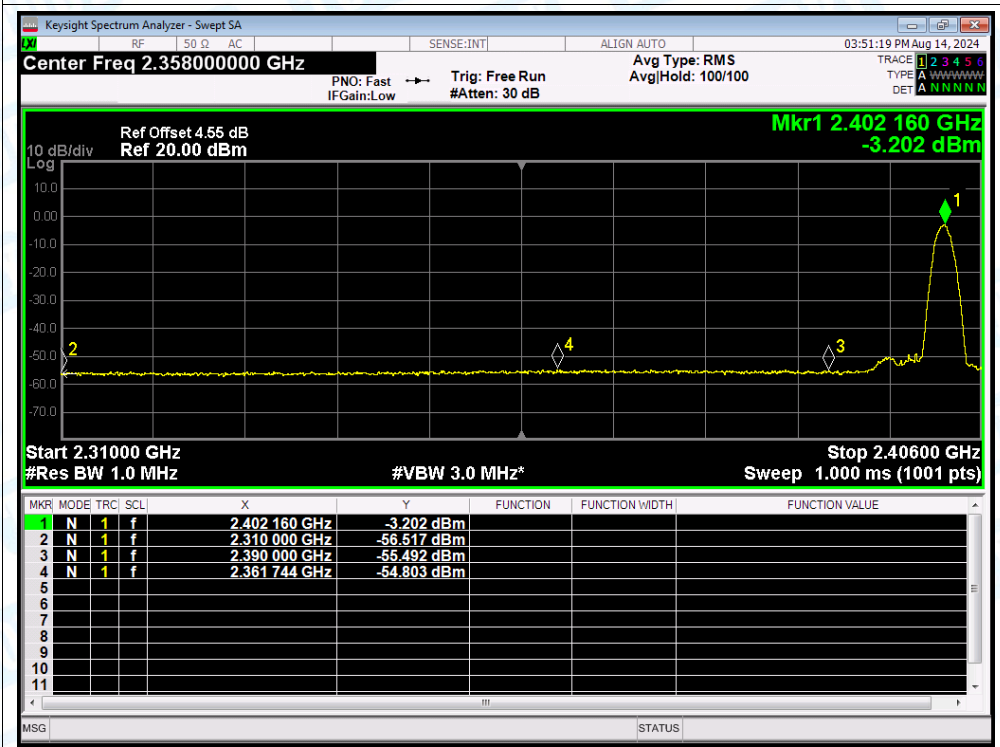


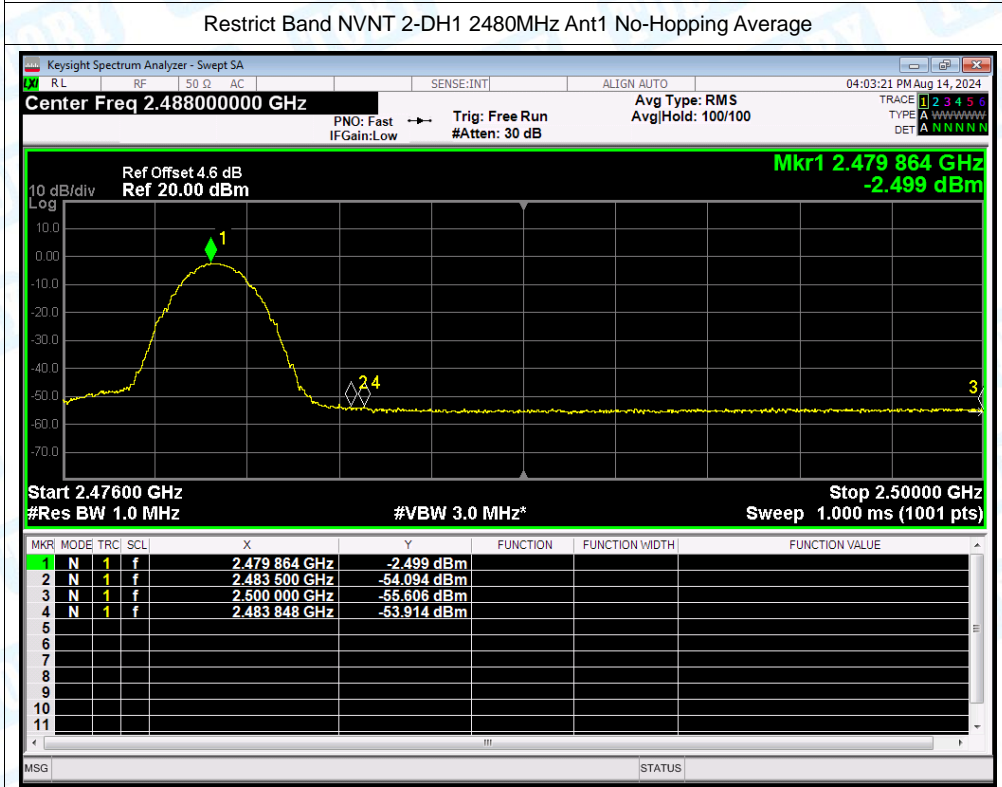
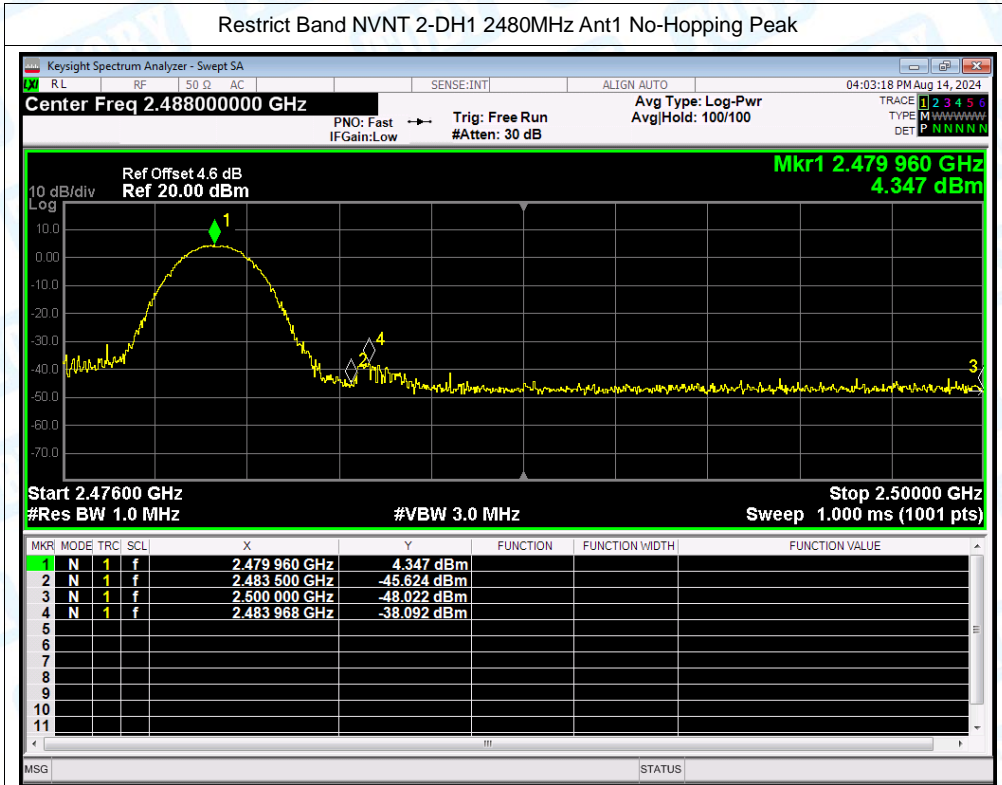


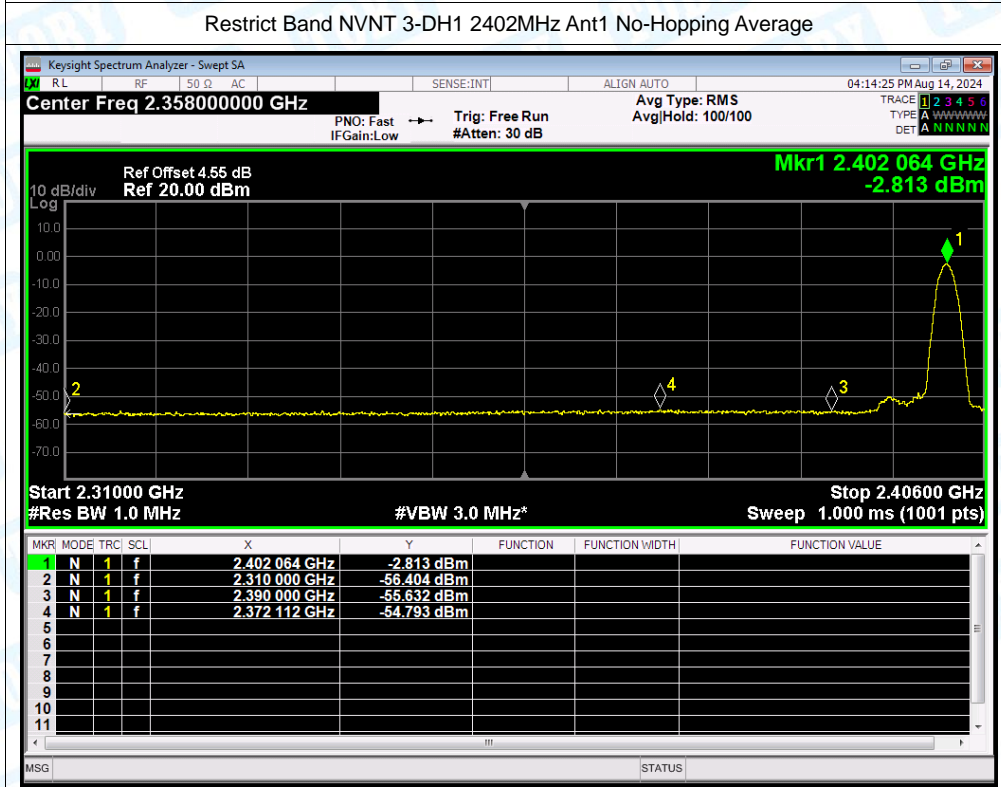
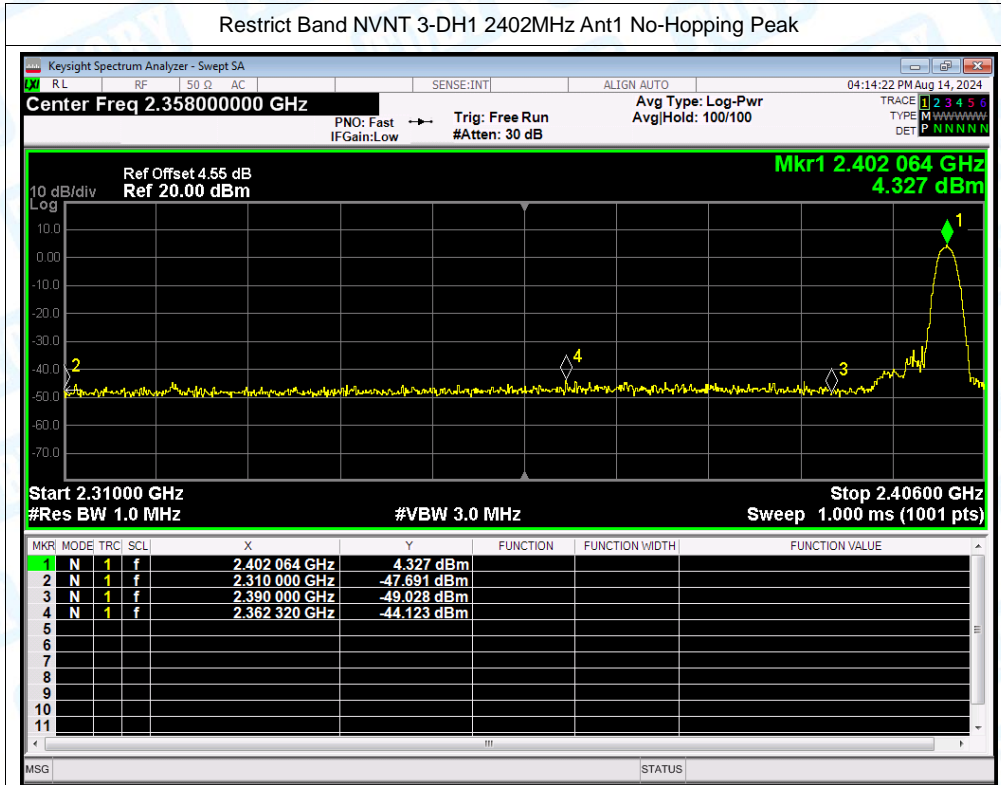
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



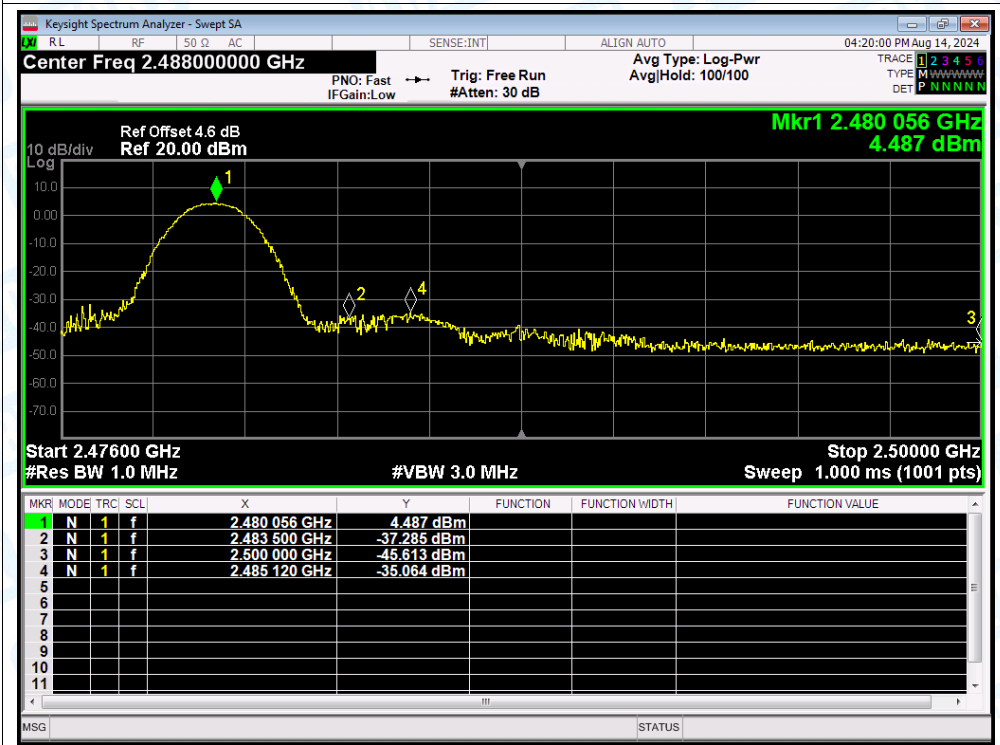
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



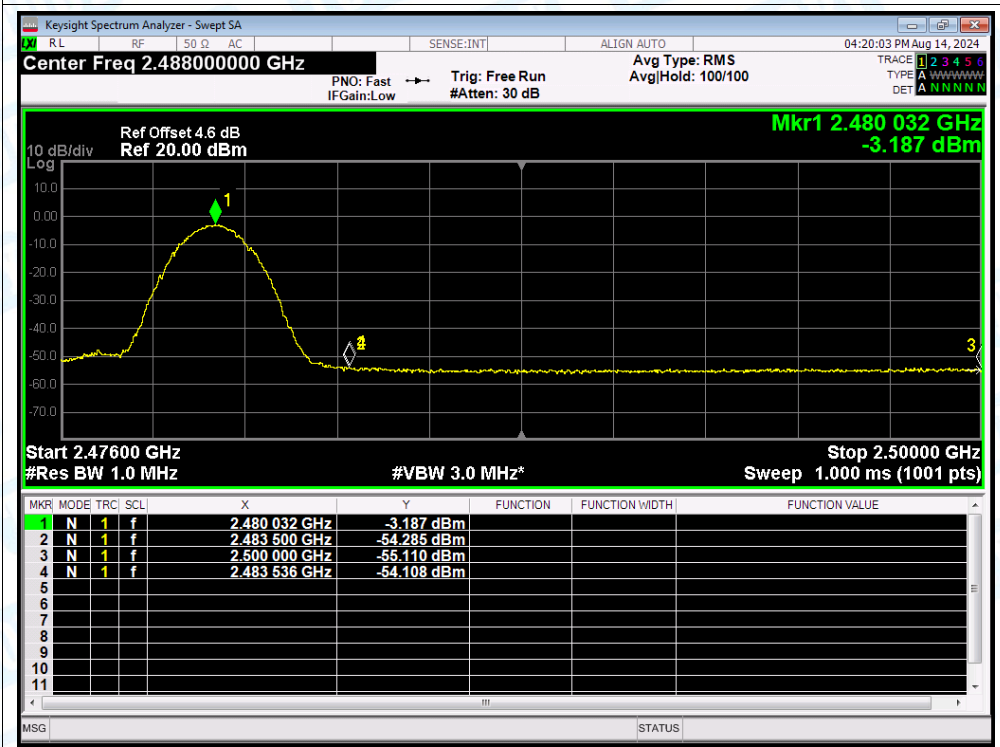




Restrict Band NVNT 3-DH1 2480MHz Ant1 No-Hopping Peak



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

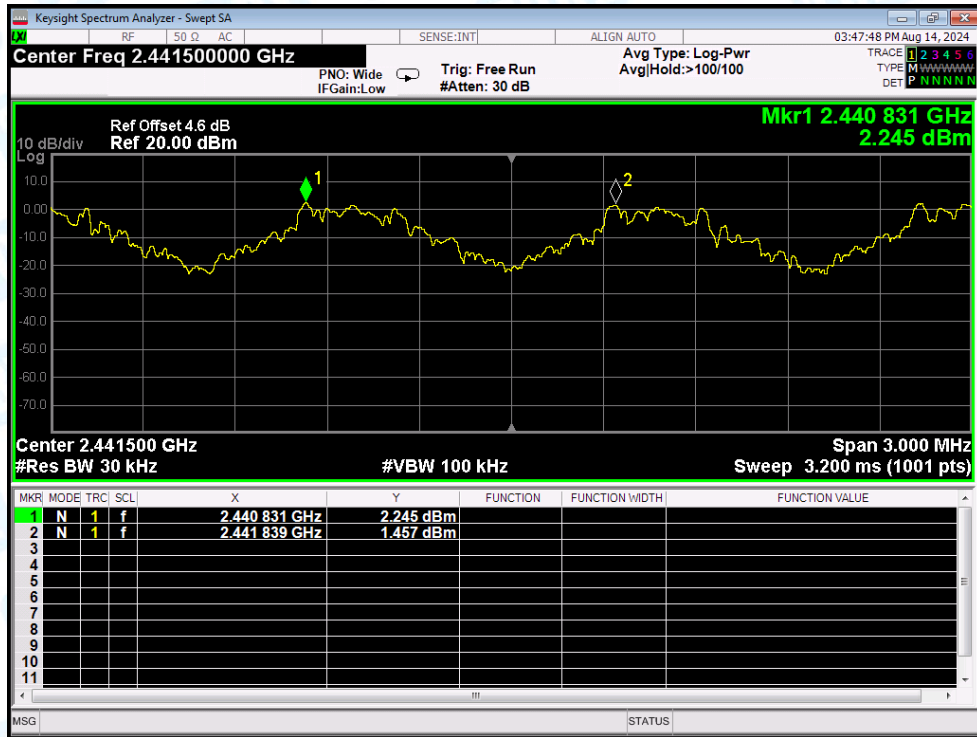


## 9. Carrier Frequencies Separation

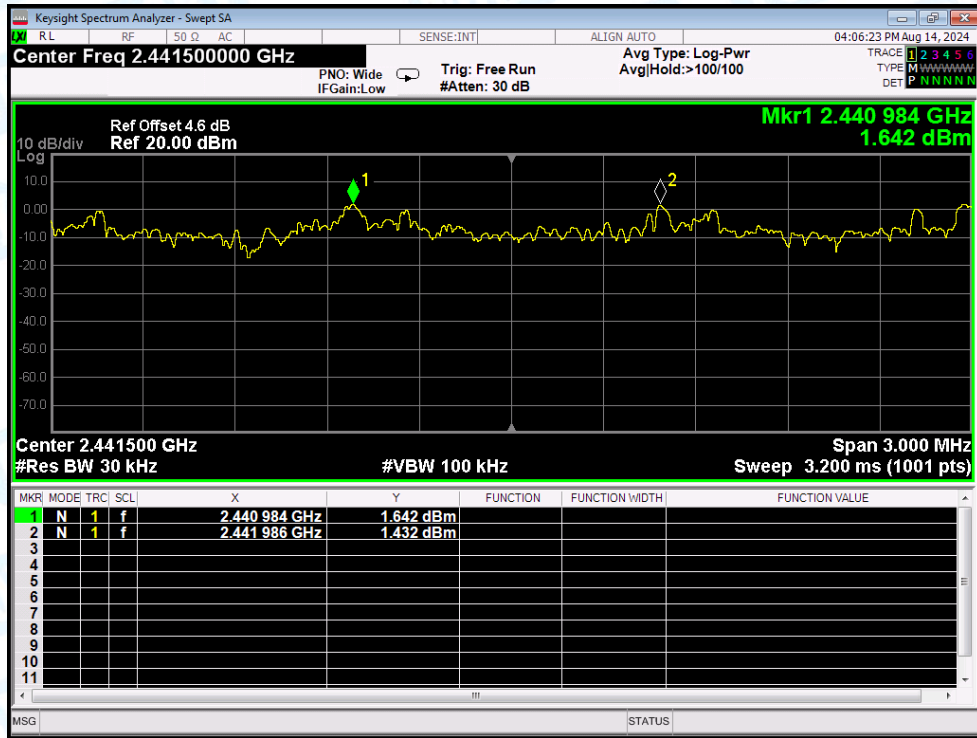
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.831	2441.839	1.008	0.567	Pass
NVNT	2-DH1	Ant1	2440.984	2441.986	1.002	0.025	Pass
NVNT	3-DH1	Ant1	2440.972	2441.815	0.843	0.807	Pass

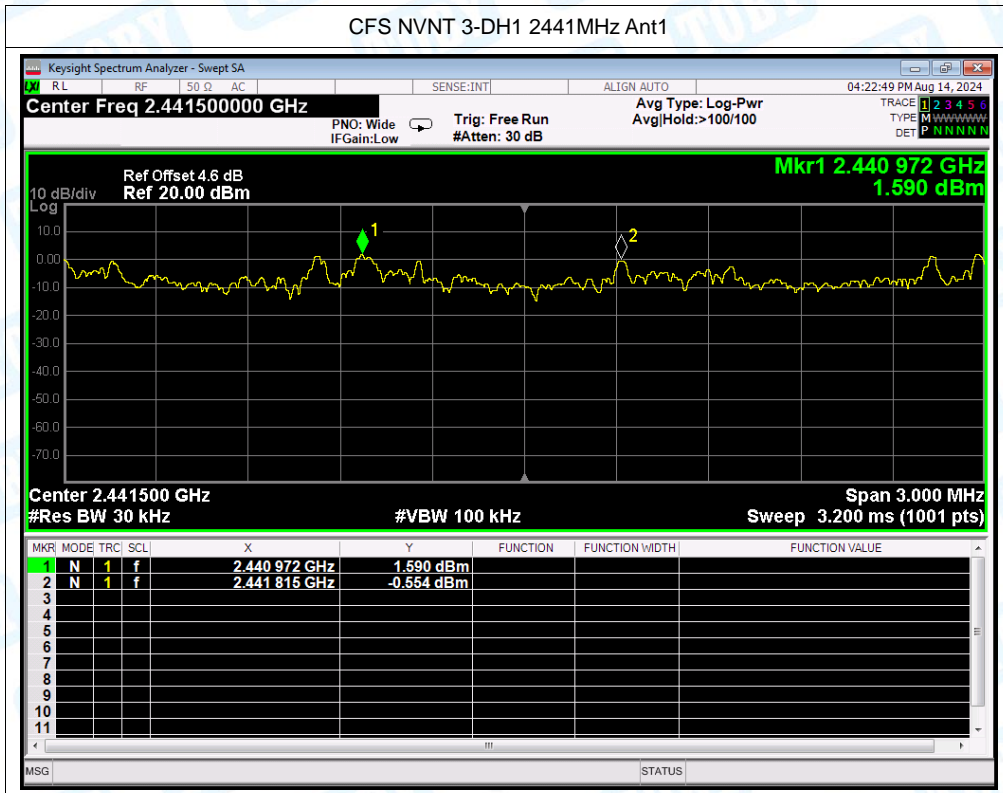
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1





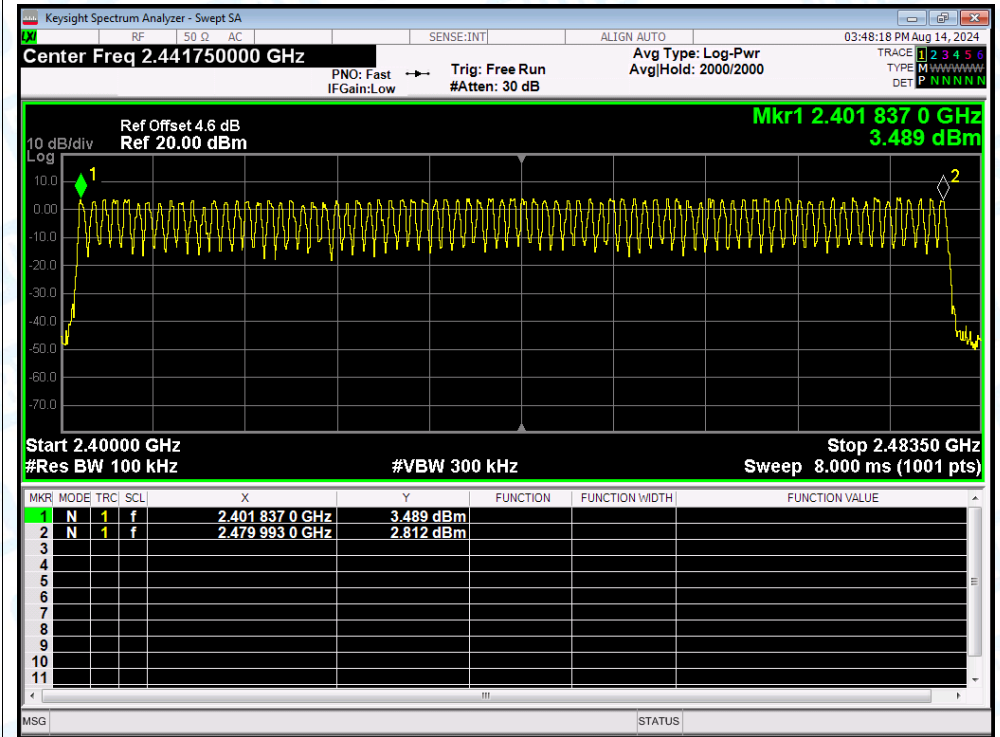
## 10. Number of Hopping Channel

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

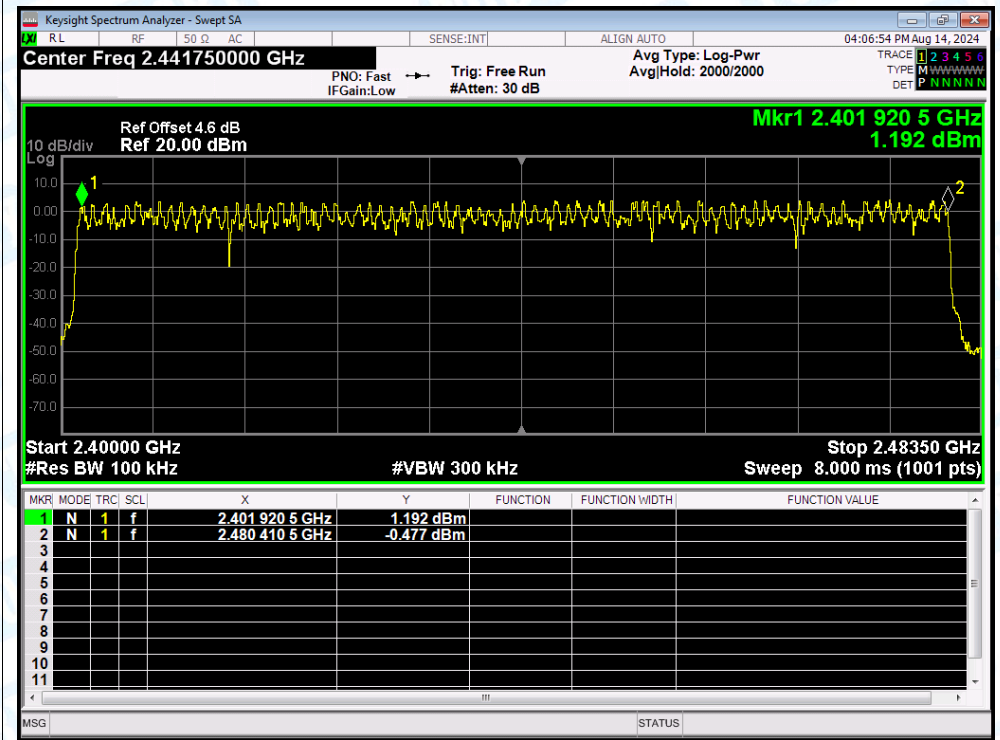


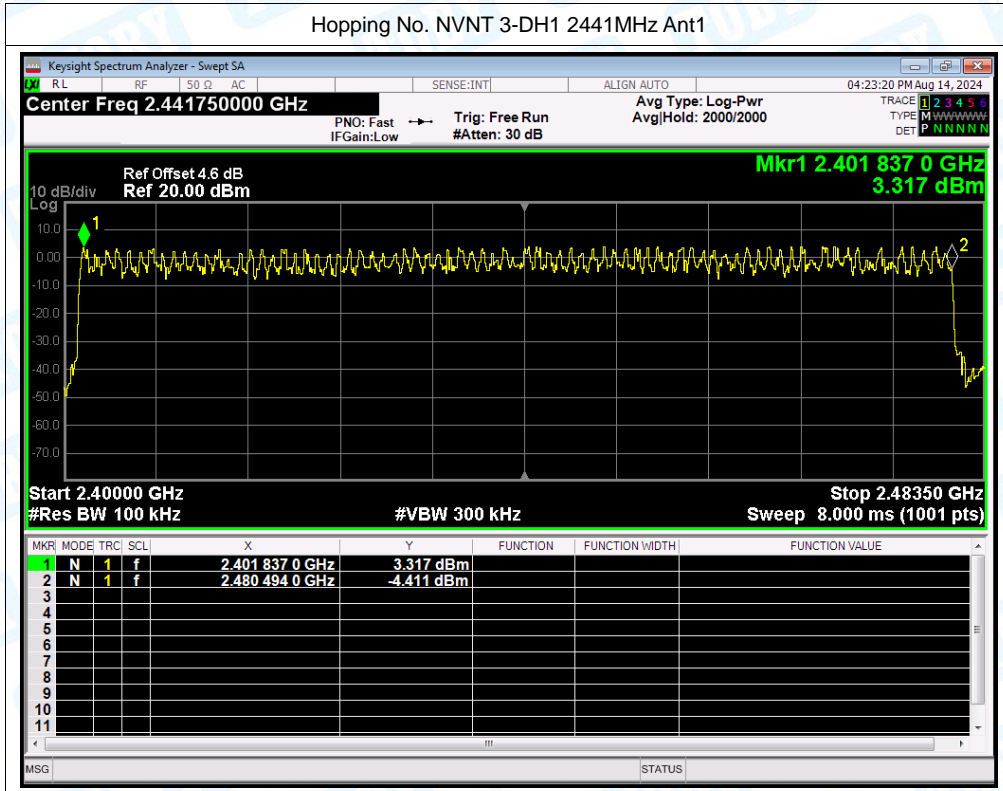
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



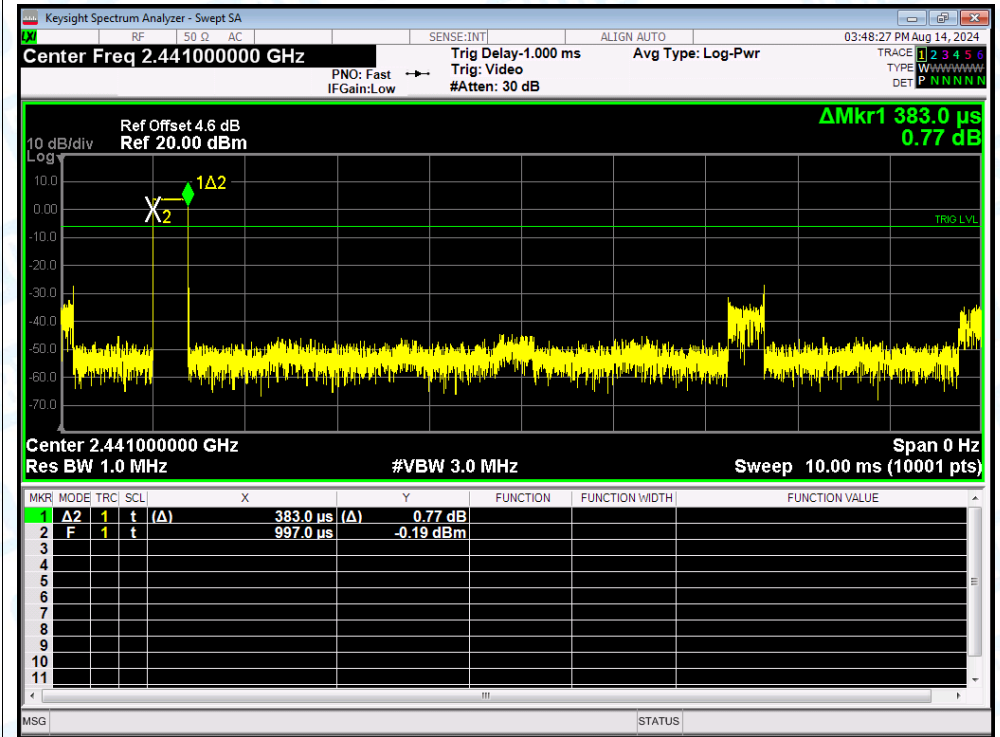


## 11. Dwell Time

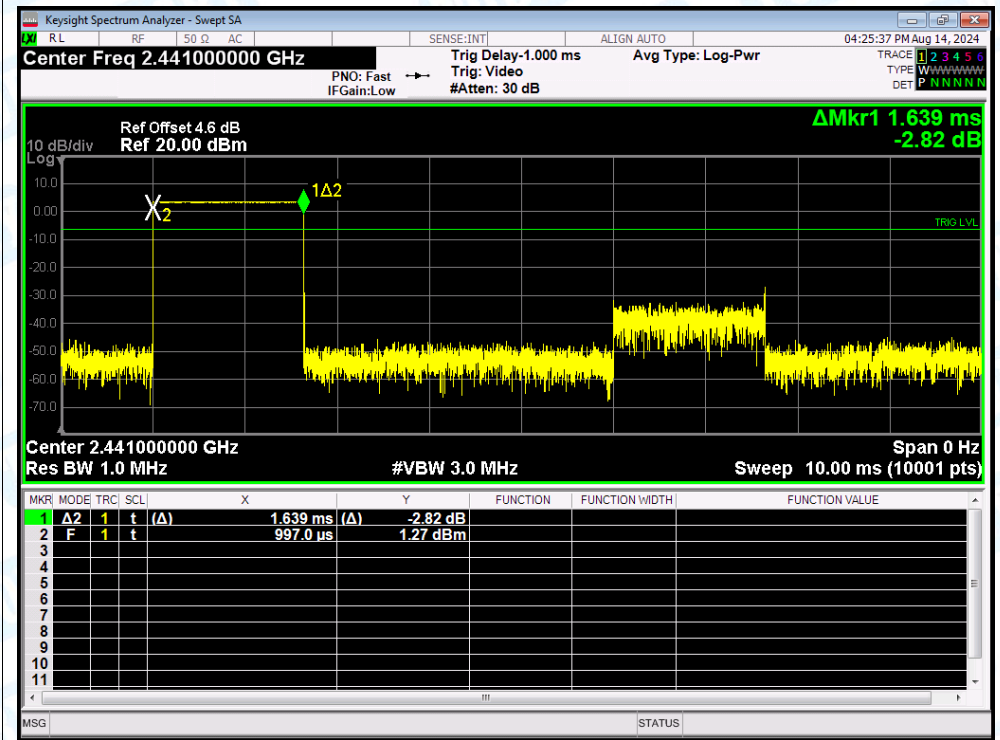
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.383	122.56	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.639	262.24	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.887	307.947	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.392	125.44	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.644	263.04	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.892	308.48	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.391	125.12	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.643	262.88	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.893	308.587	31600	400	Pass

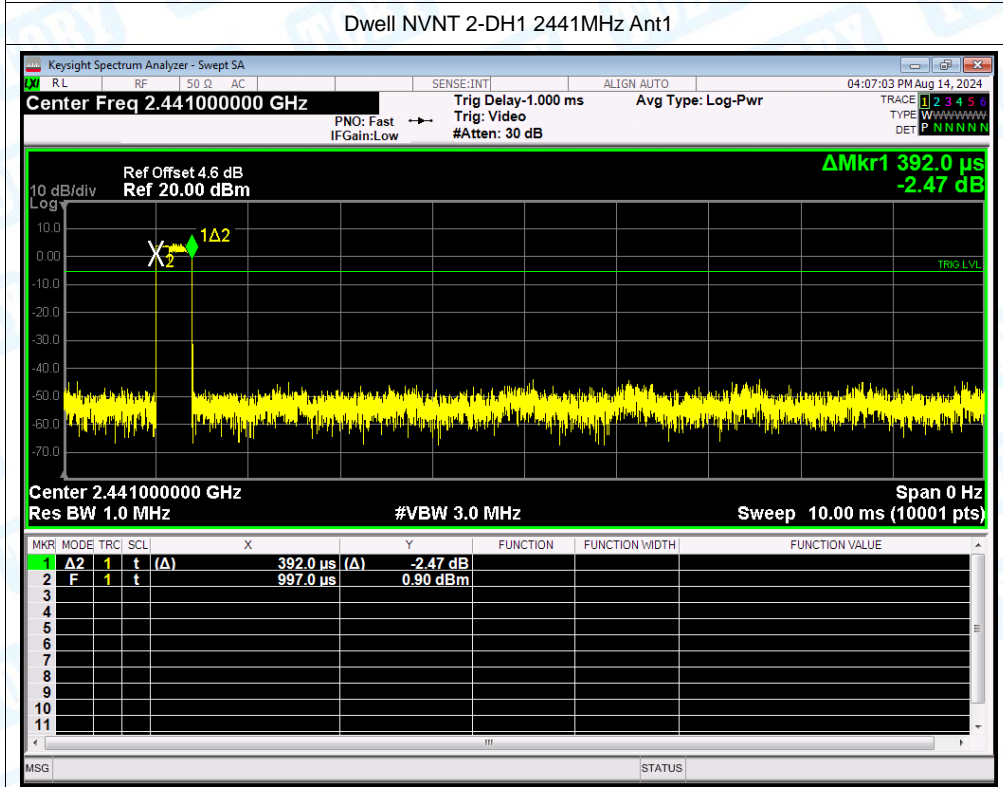
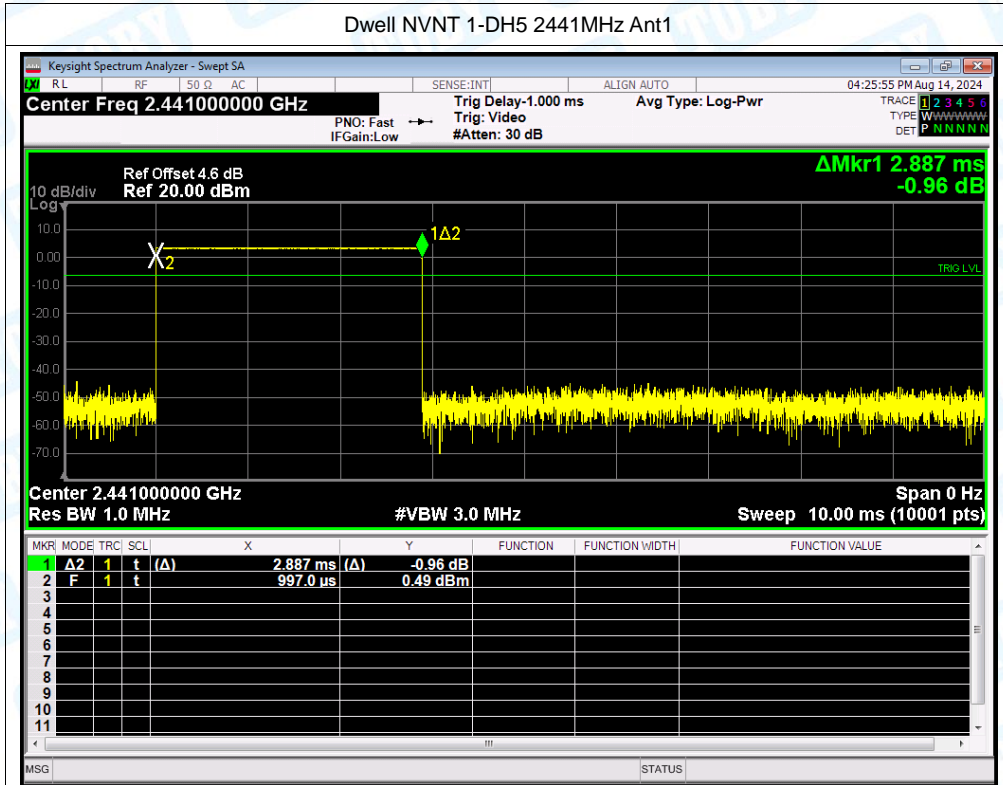
Test Graphs

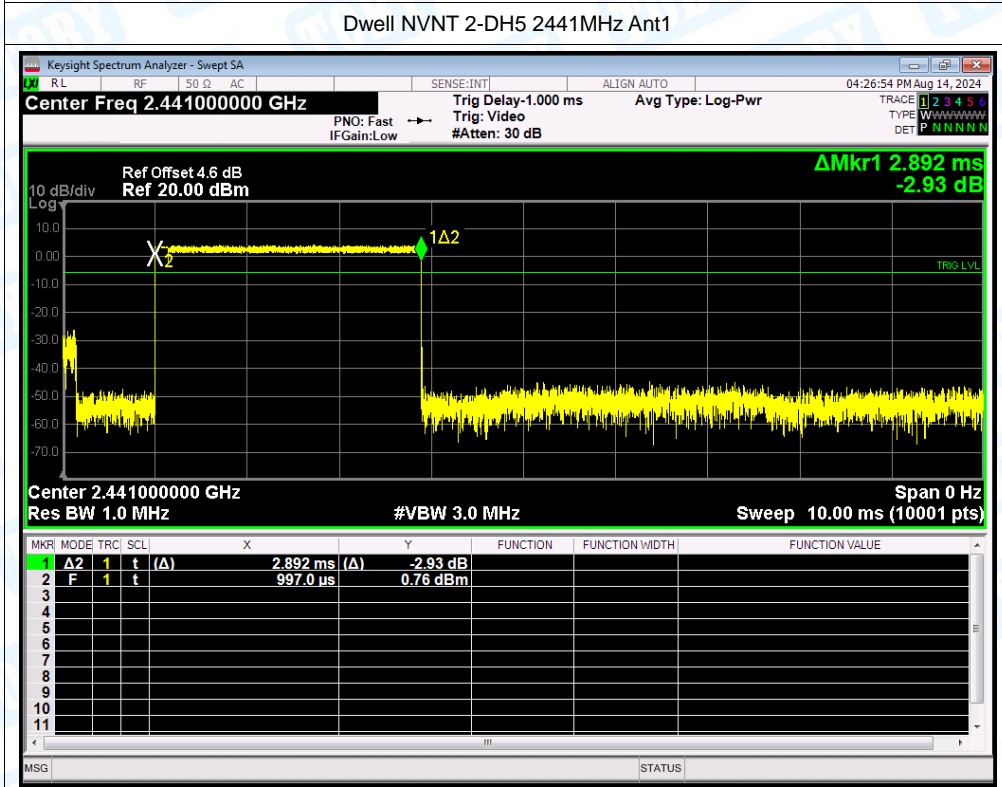
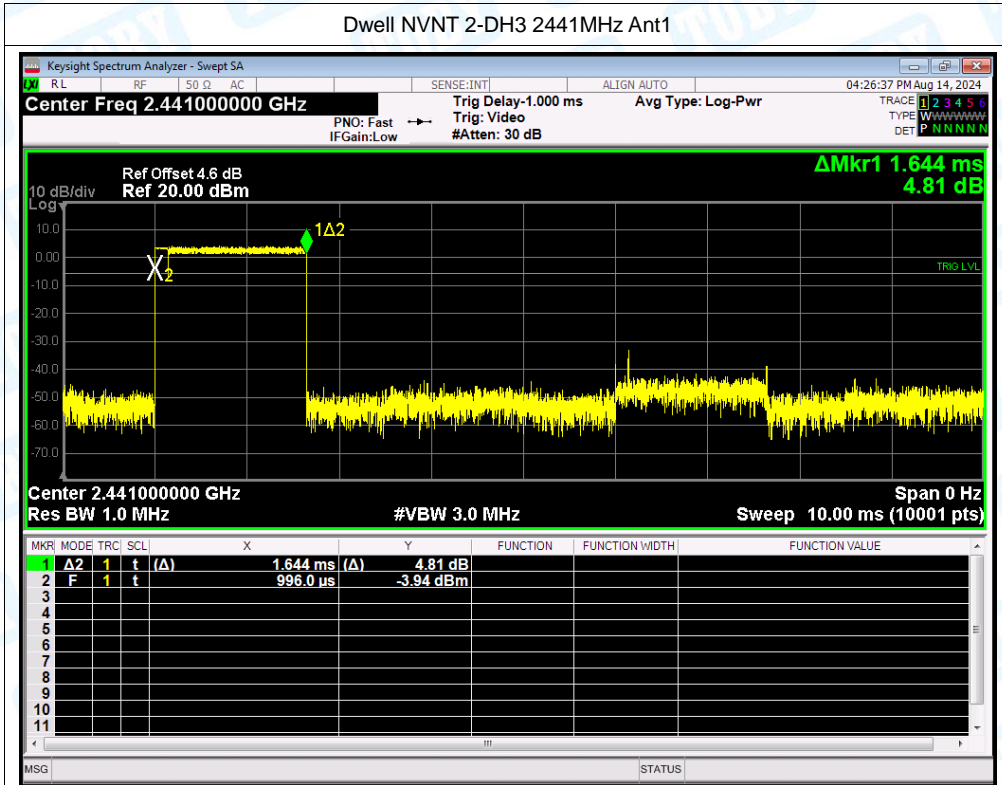
Dwell NVNT 1-DH1 2441MHz Ant1

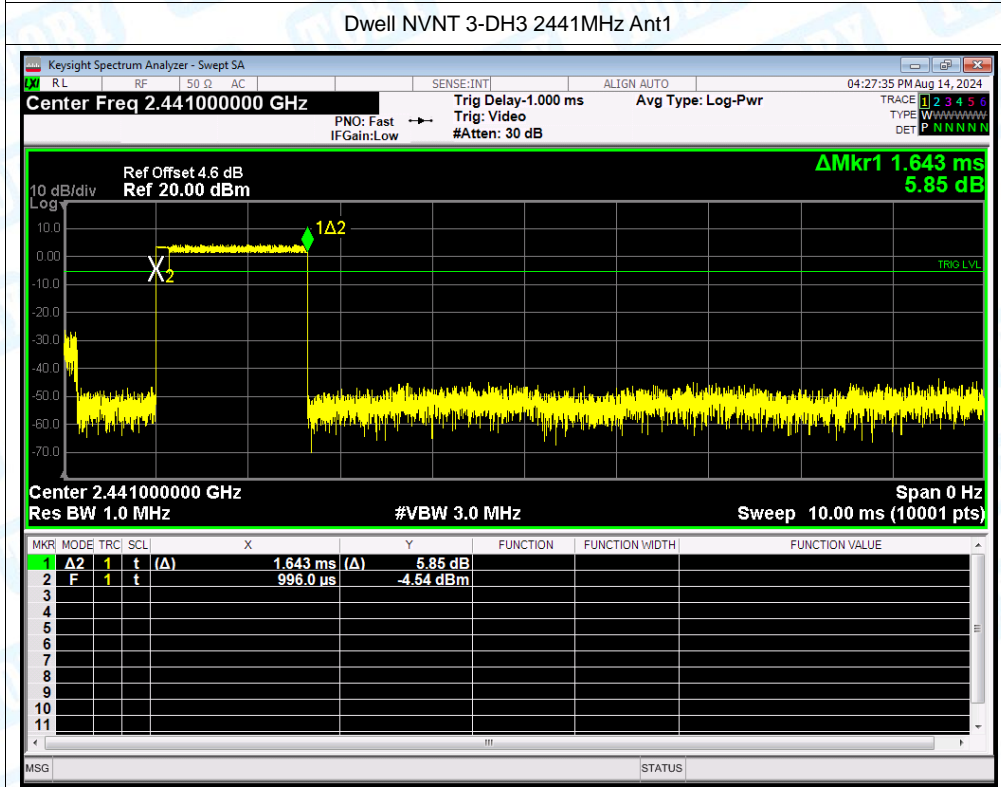
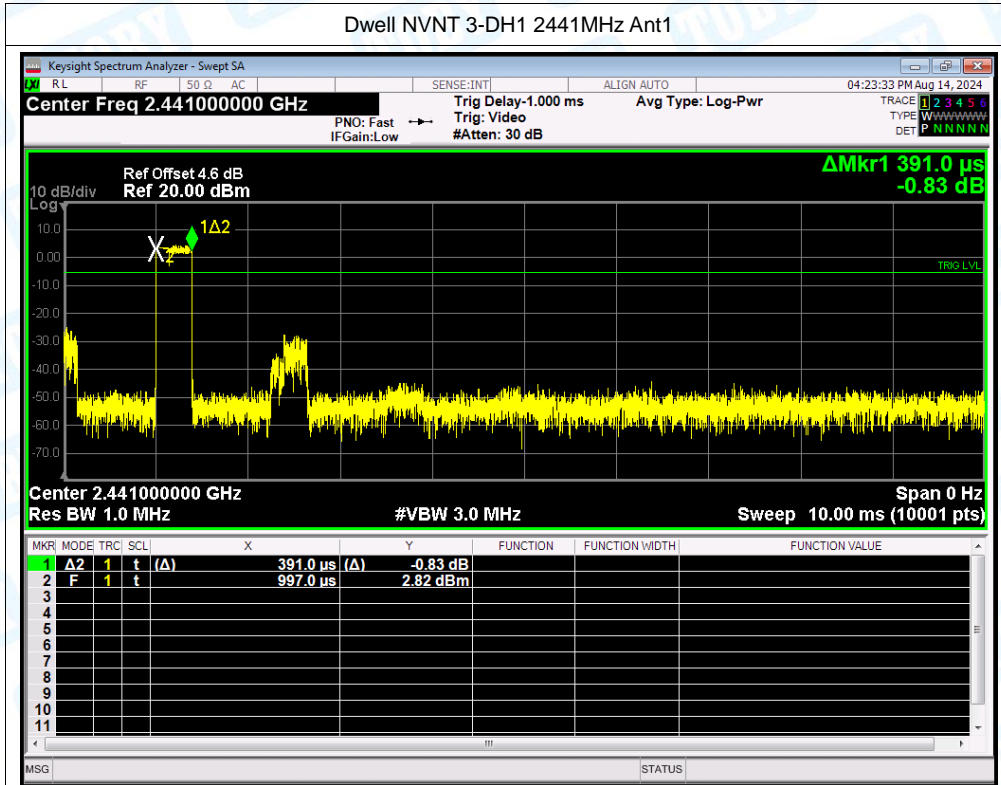


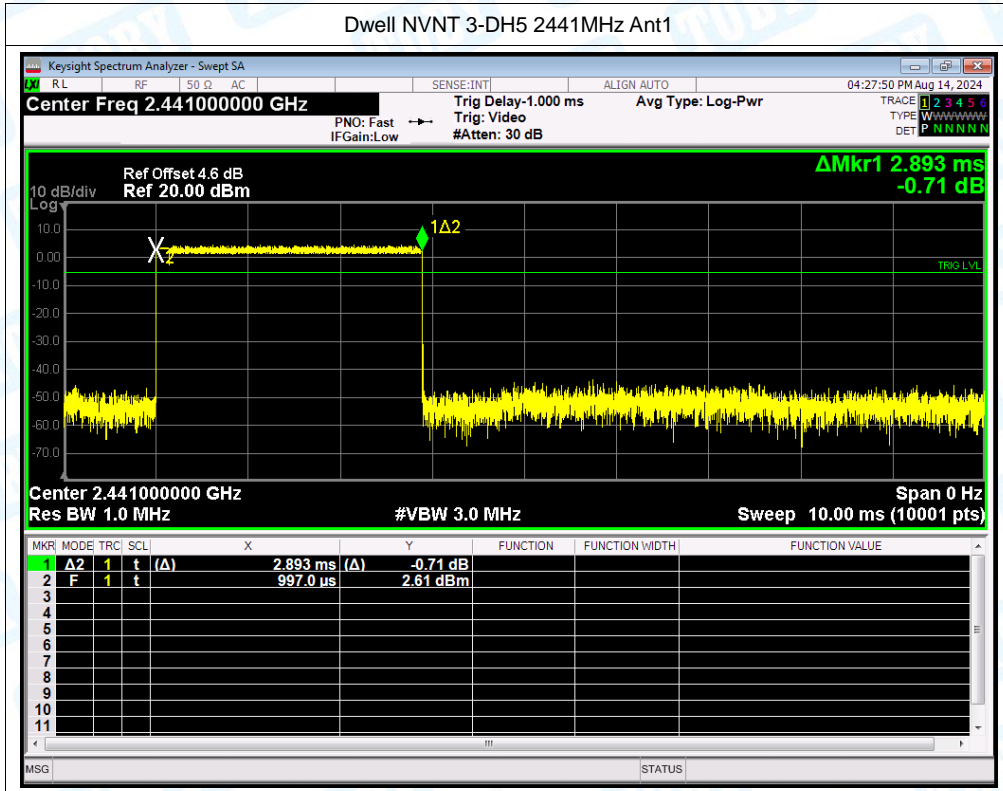
Dwell NVNT 1-DH3 2441MHz Ant1











---- END OF REPORT ----