

# RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	Bone conduction earphone
Test Model:	SJ2
Sample ID:	HC-C-202410-0190-01-02#
Environmental Conditions	
Temperature:	25°C
Relative Humidity:	55%
Test Voltage:	DC 3.7V
Test Engineer:	Jolin Lee
Note: For a more detailed features description, please refer to the report TBR-C-202410-0190-1 The report only show the worst case data.	

## Contents

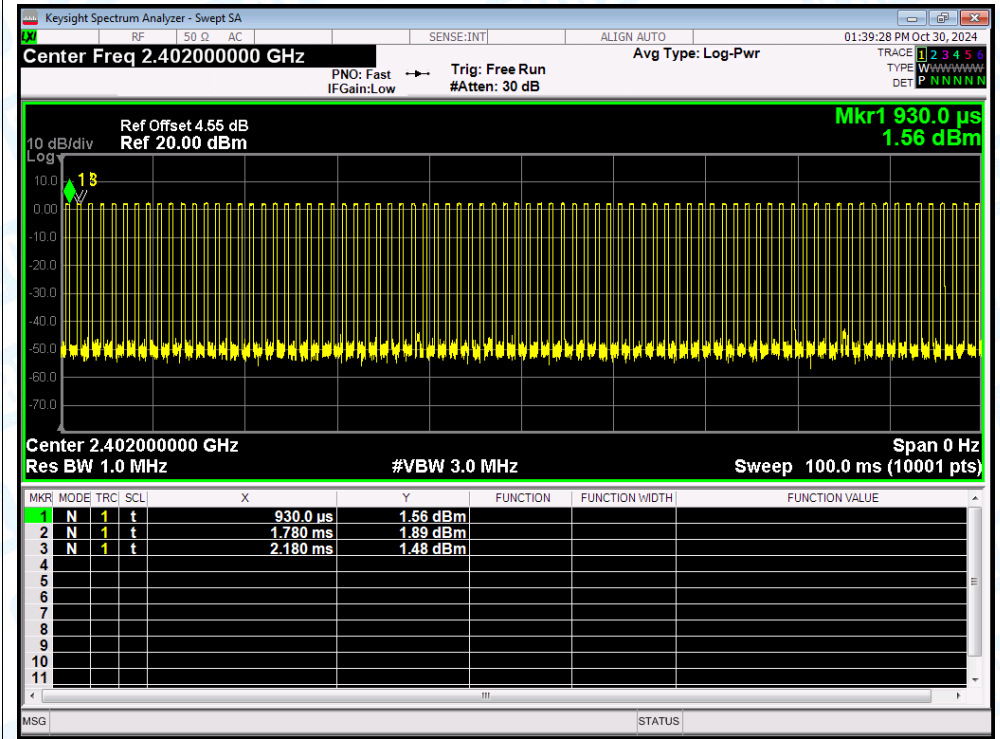
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## 1. Duty Cycle

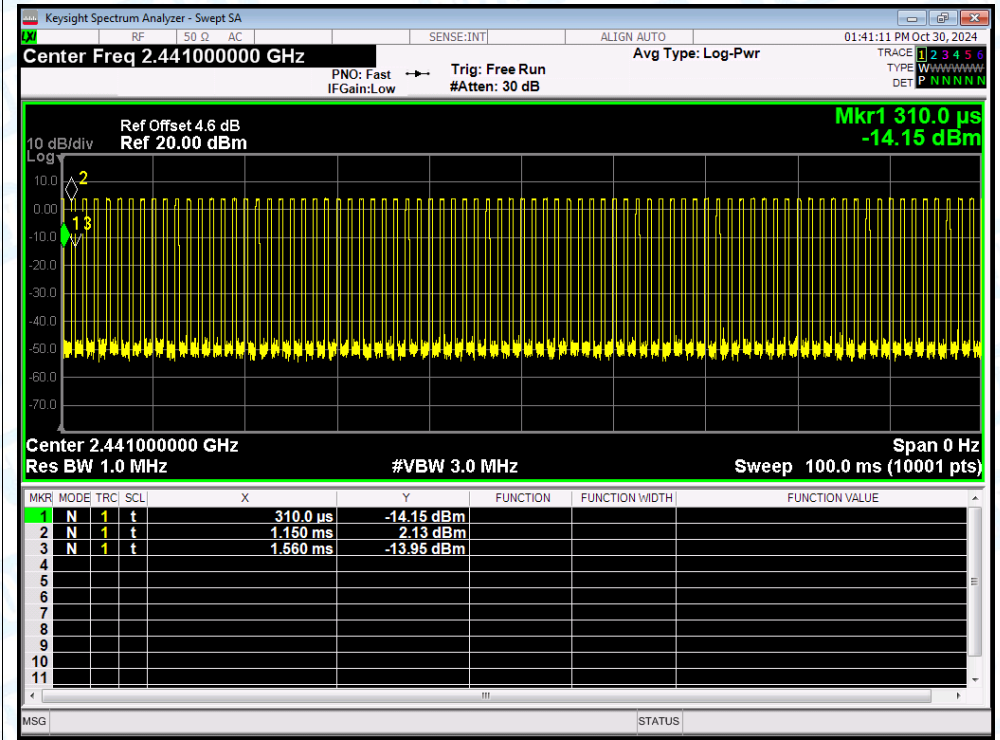
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	32	4.95	2.5
NVNT	1-DH1	2441	Ant1	32.8	4.84	2.44
NVNT	1-DH1	2480	Ant1	32	4.95	2.5
NVNT	2-DH1	2402	Ant1	33.6	4.74	2.38
NVNT	2-DH1	2441	Ant1	32.8	4.84	2.44
NVNT	2-DH1	2480	Ant1	33.6	4.74	2.38
NVNT	3-DH1	2402	Ant1	33.6	4.74	2.38
NVNT	3-DH1	2441	Ant1	32.8	4.84	2.44
NVNT	3-DH1	2480	Ant1	32.8	4.84	2.44

Test Graphs

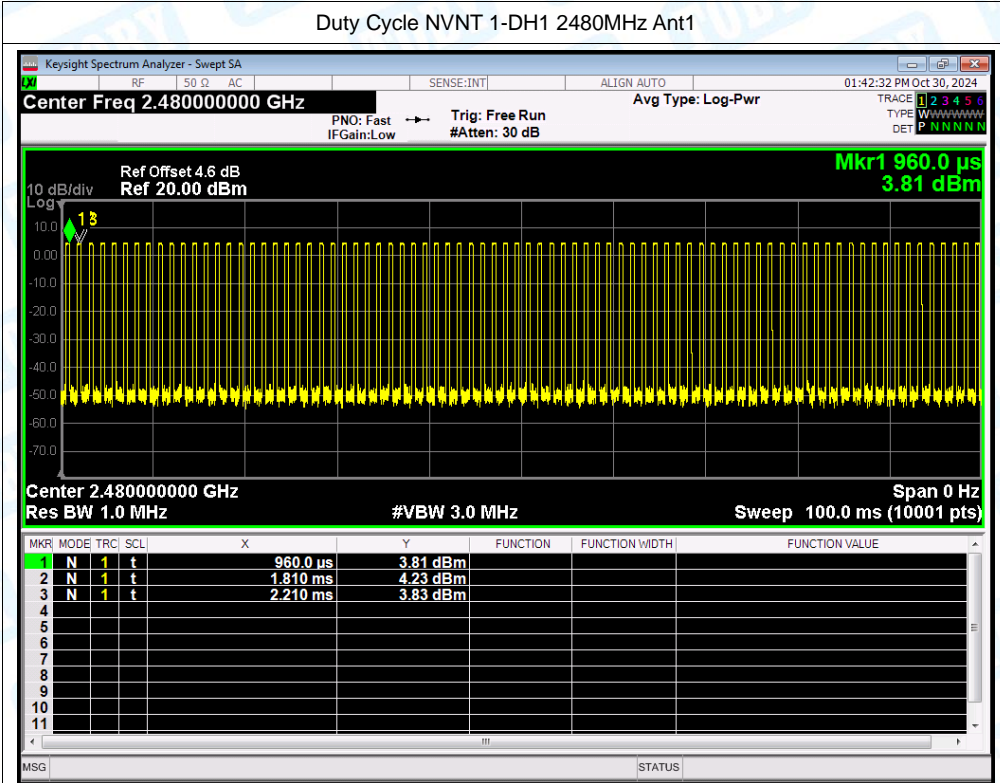
Duty Cycle NVNT 1-DH1 2402MHz Ant1



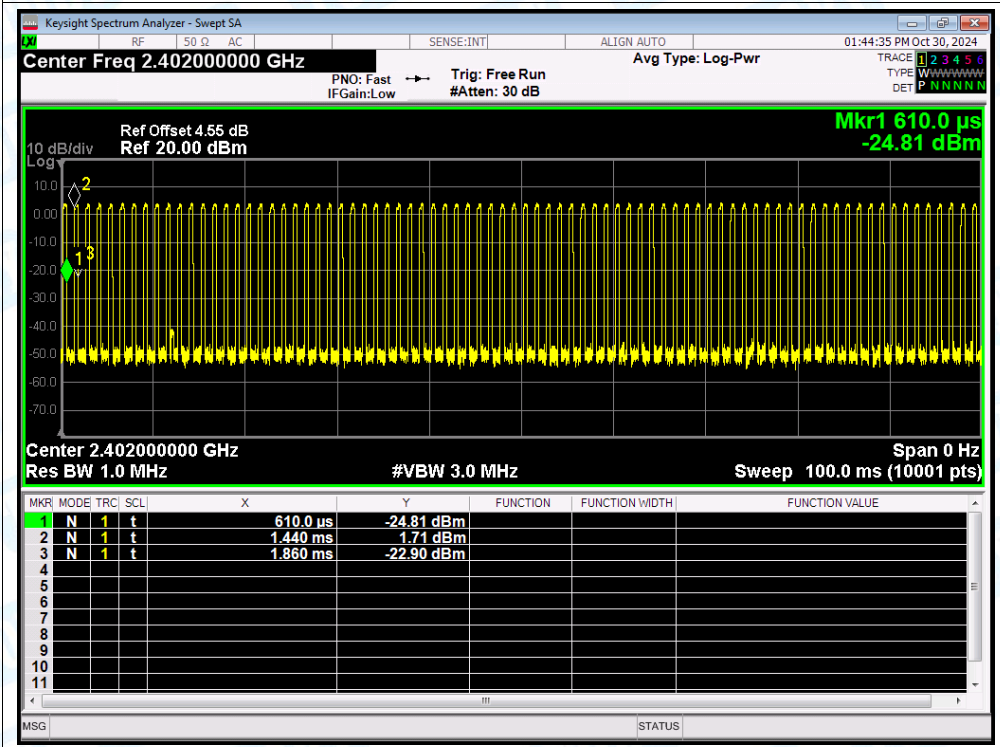
Duty Cycle NVNT 1-DH1 2441MHz Ant1



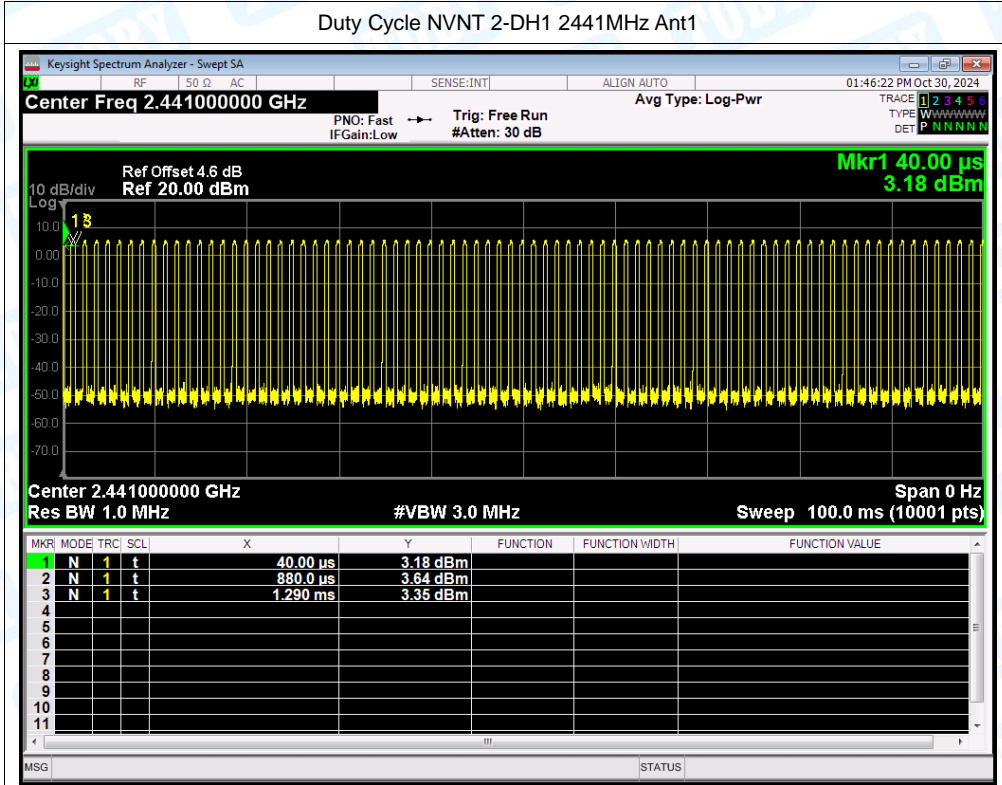
Duty Cycle NVNT 1-DH1 2480MHz Ant1



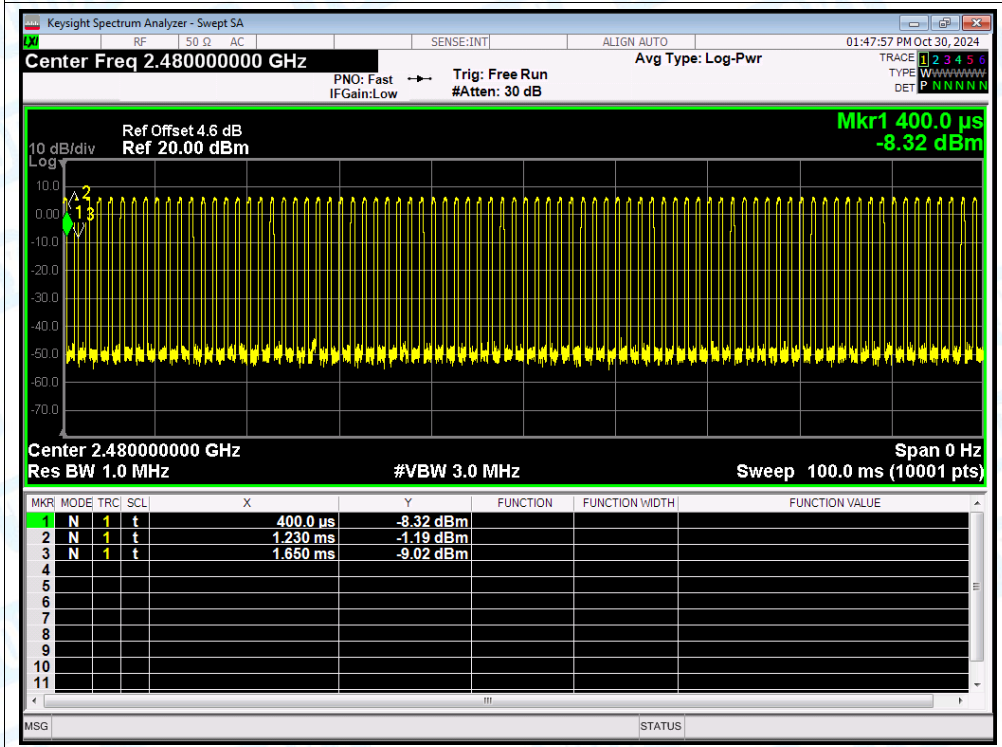
Duty Cycle NVNT 2-DH1 2402MHz Ant1



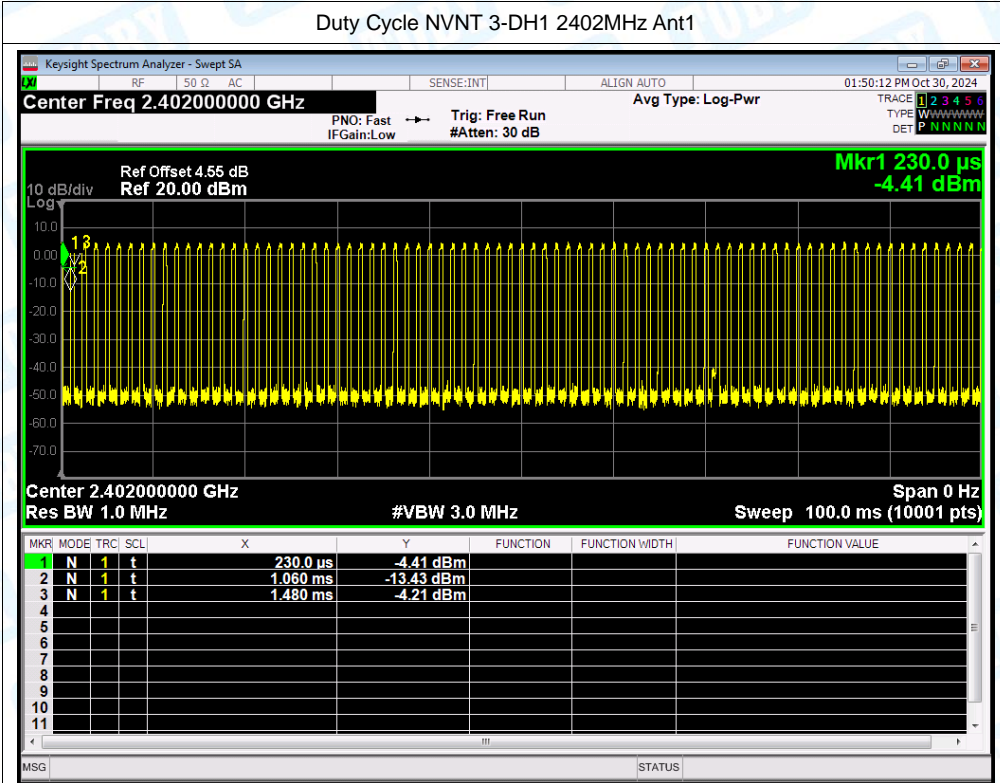
Duty Cycle NVNT 2-DH1 2441MHz Ant1



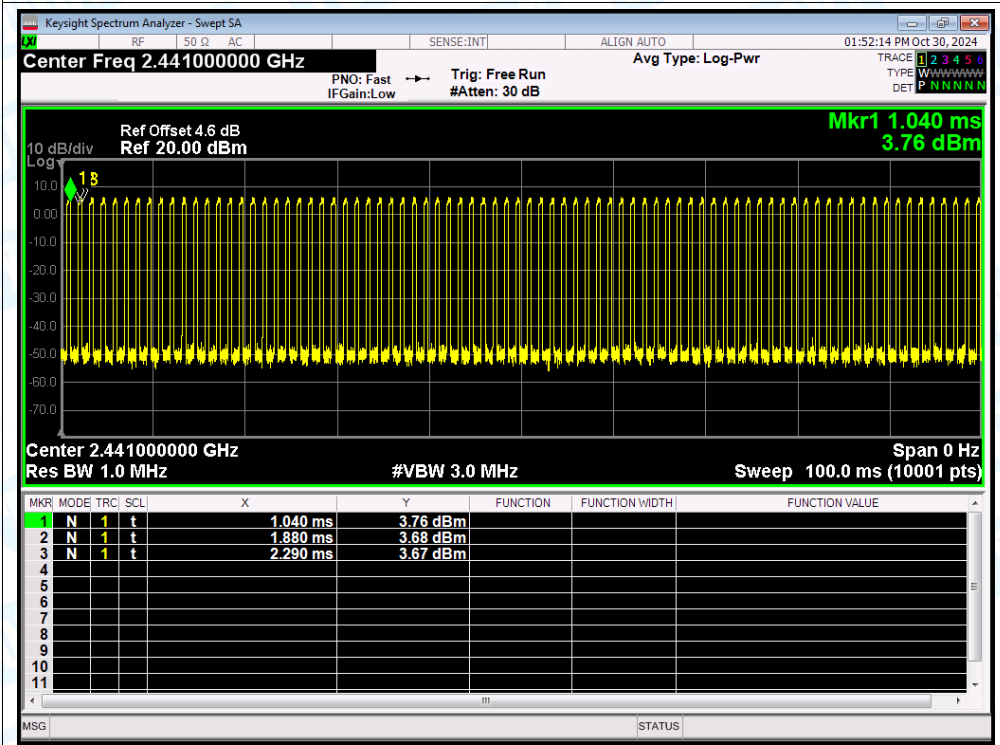
Duty Cycle NVNT 2-DH1 2480MHz Ant1

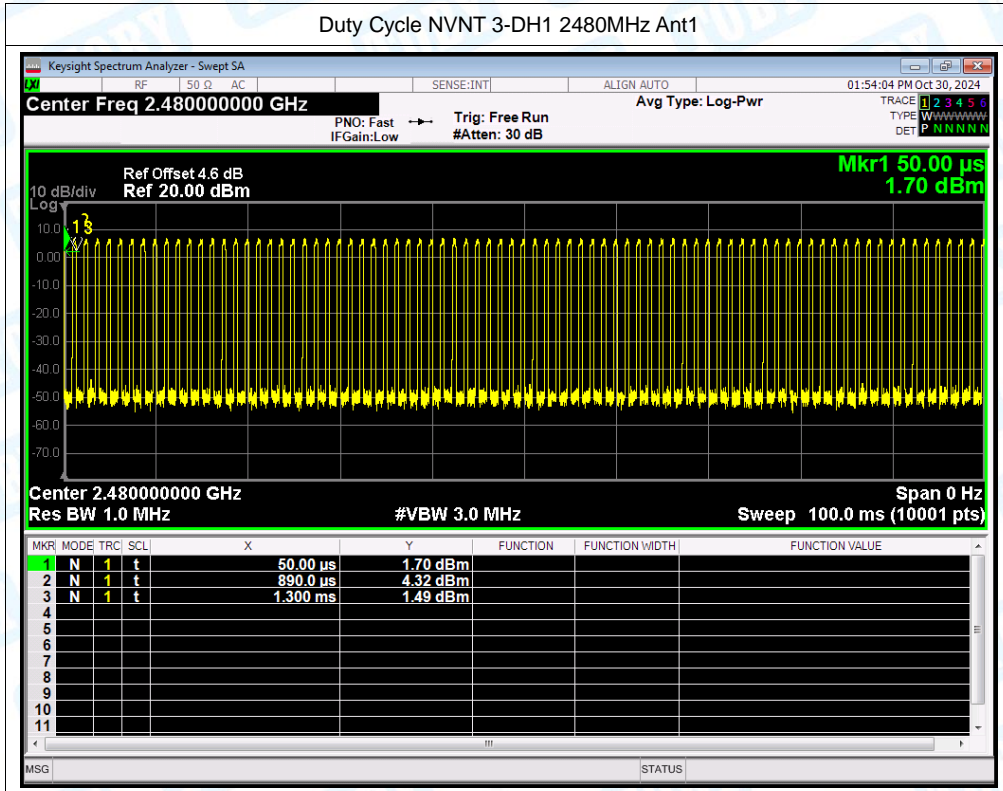


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1





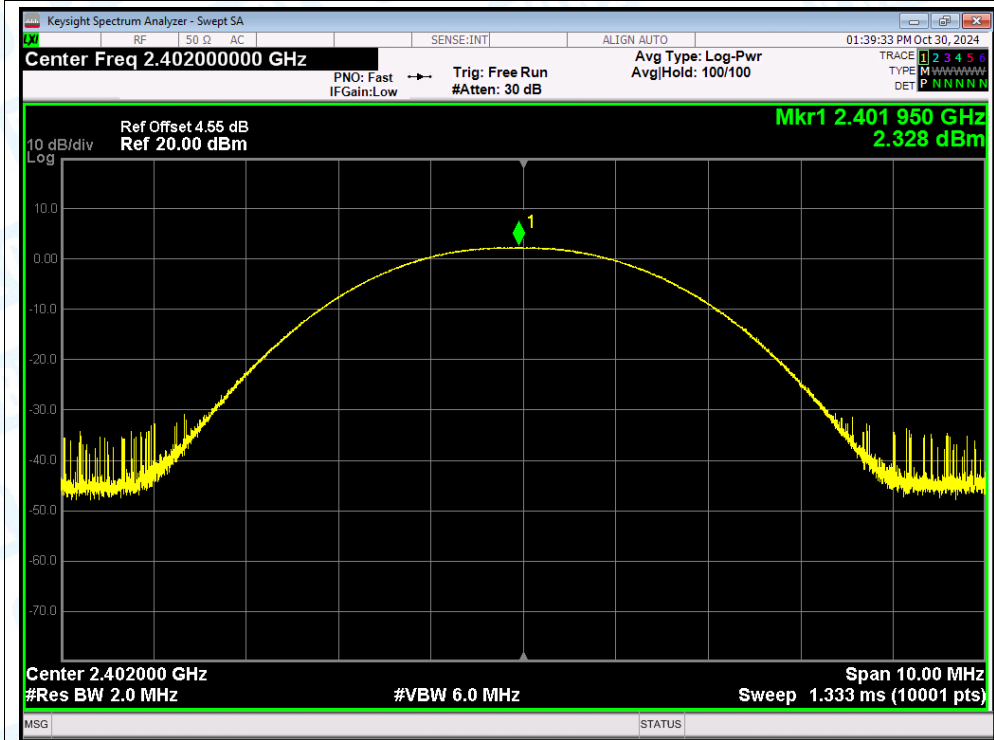


## 2. Maximum Conducted Output Power

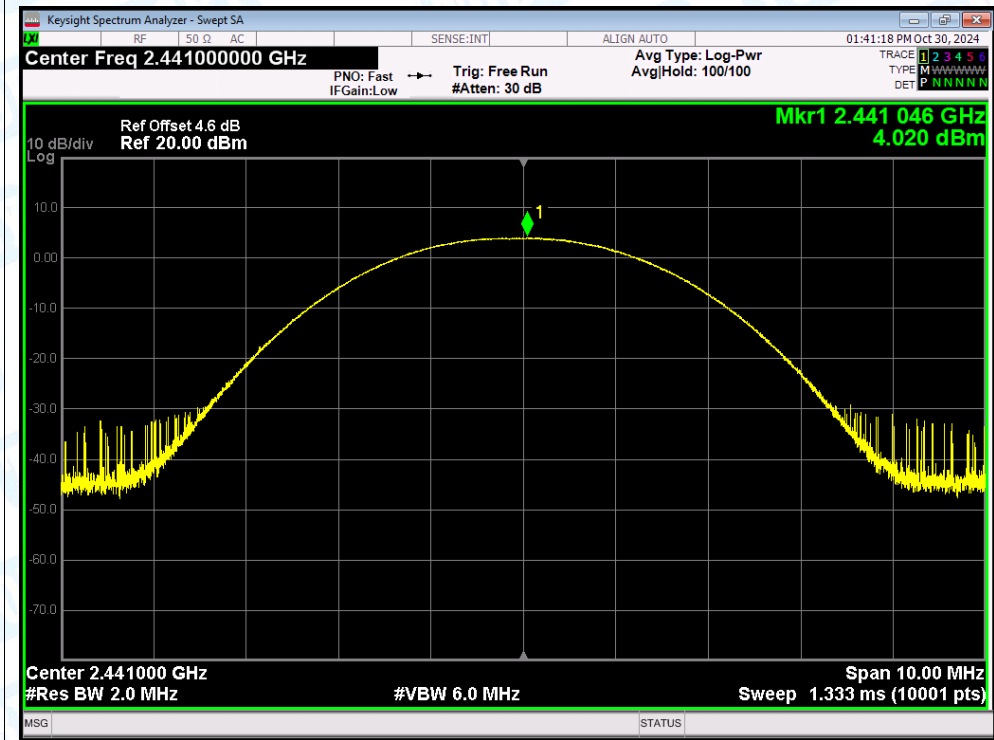
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	2.328	21	Pass
NVNT	1-DH1	2441	Ant1	4.02	21	Pass
NVNT	1-DH1	2480	Ant1	4.587	21	Pass
NVNT	2-DH1	2402	Ant1	4.385	21	Pass
NVNT	2-DH1	2441	Ant1	5.95	21	Pass
NVNT	2-DH1	2480	Ant1	6.611	21	Pass
NVNT	3-DH1	2402	Ant1	4.993	21	Pass
NVNT	3-DH1	2441	Ant1	6.721	21	Pass
NVNT	3-DH1	2480	Ant1	7.283	21	Pass

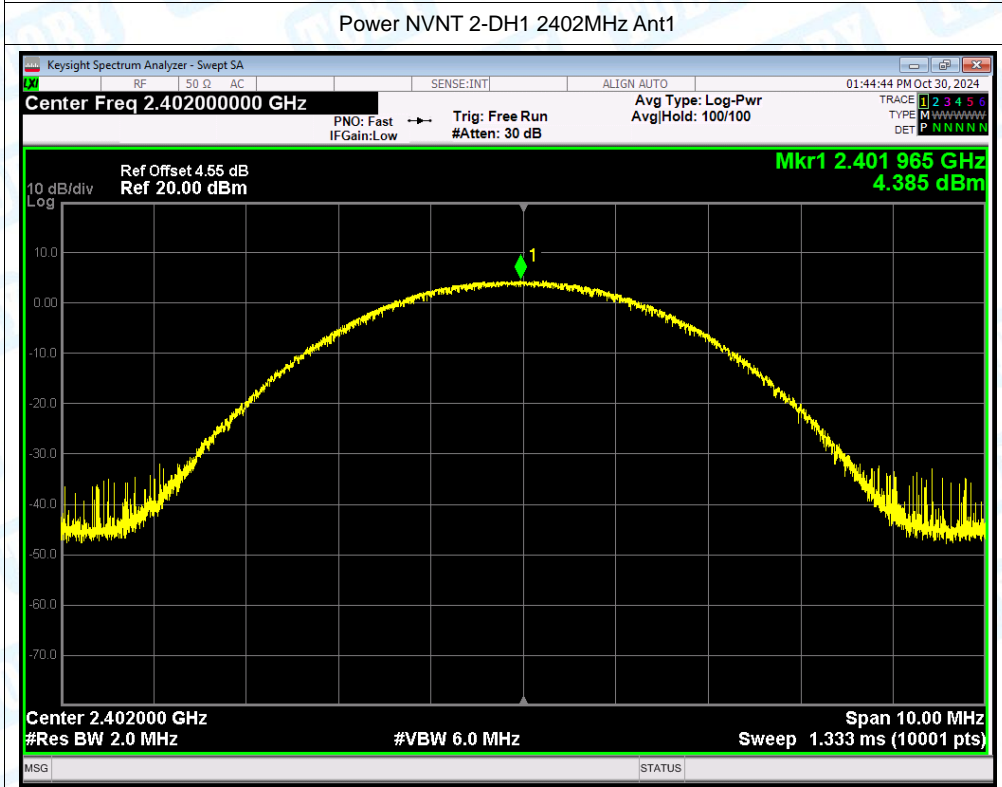
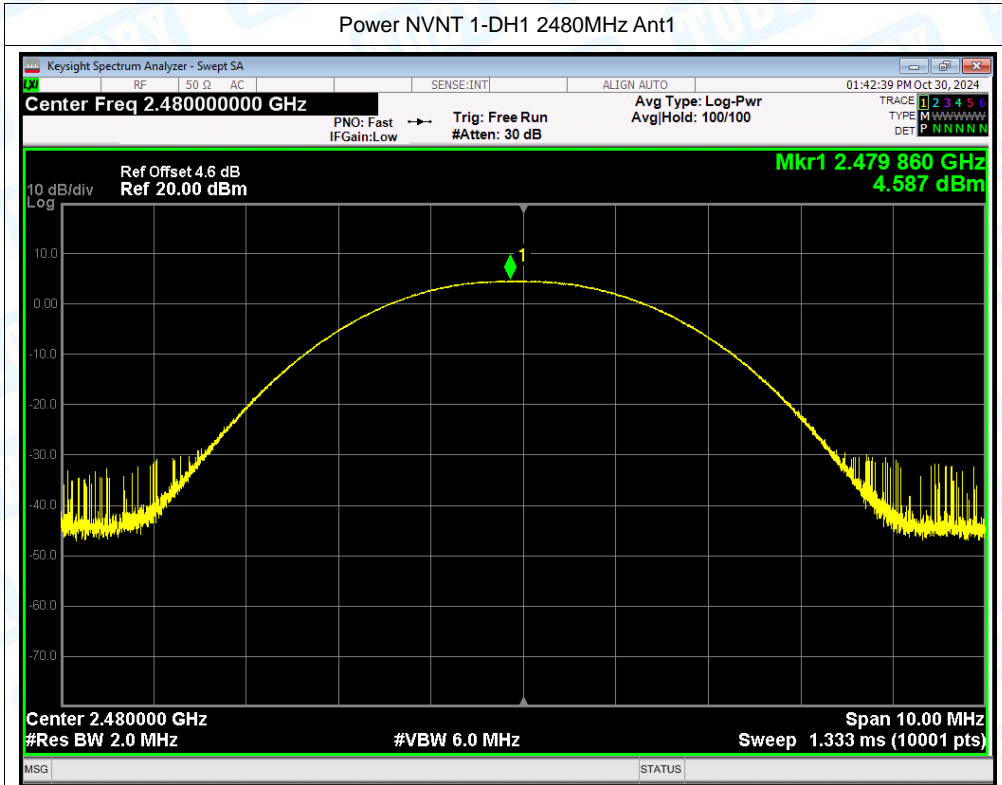
Test Graphs

Power NVNT 1-DH1 2402MHz Ant1

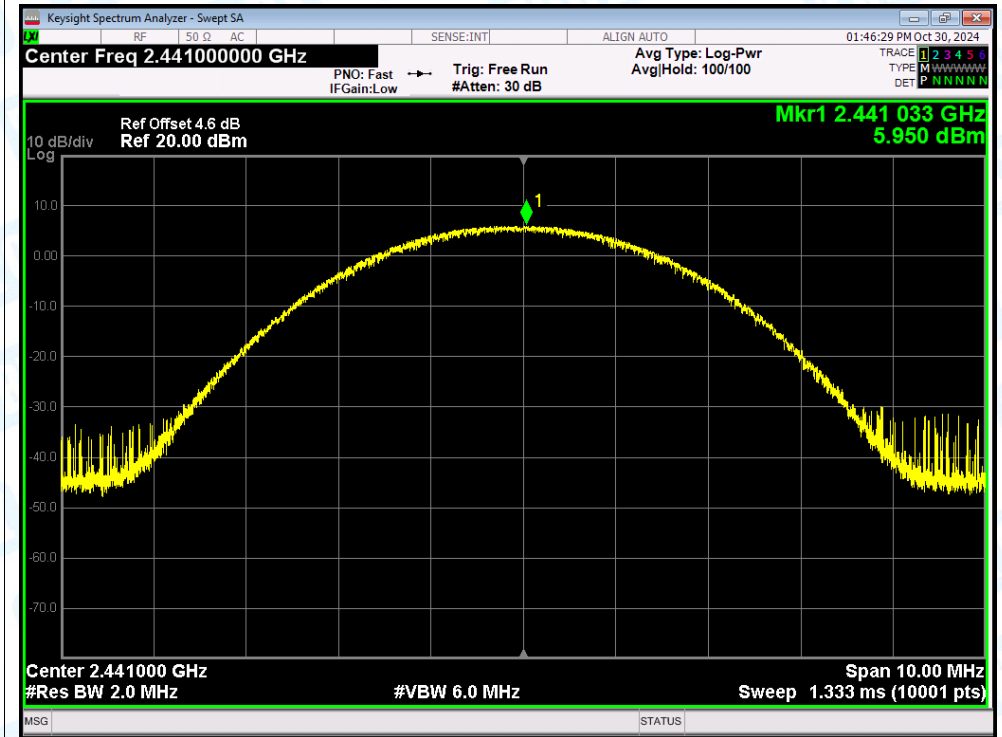


Power NVNT 1-DH1 2441MHz Ant1

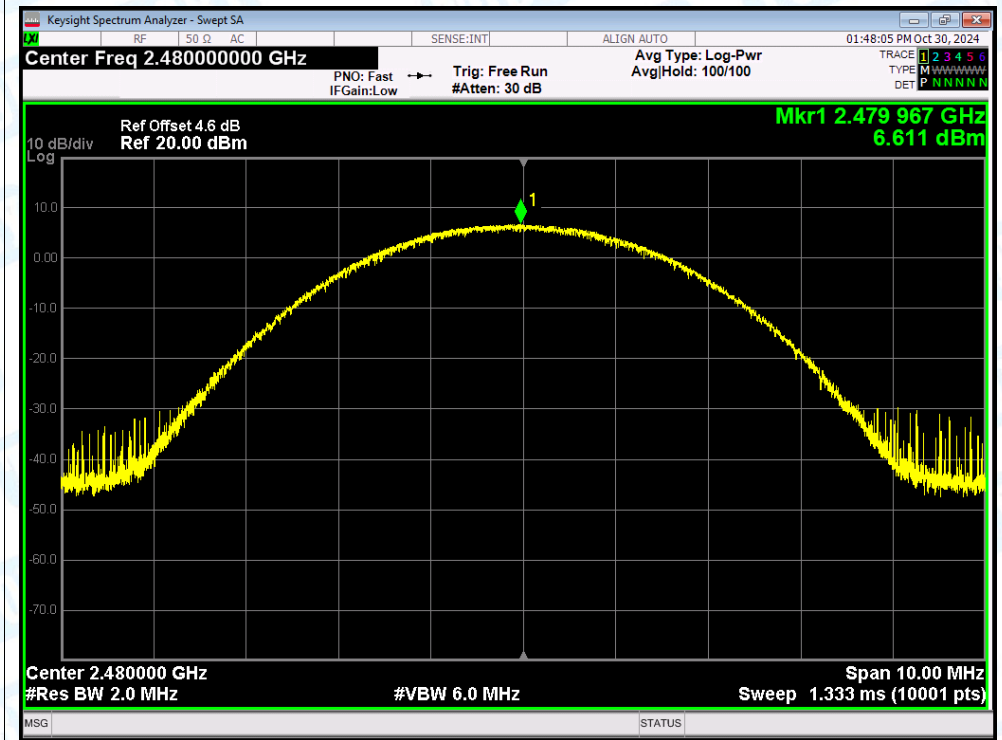




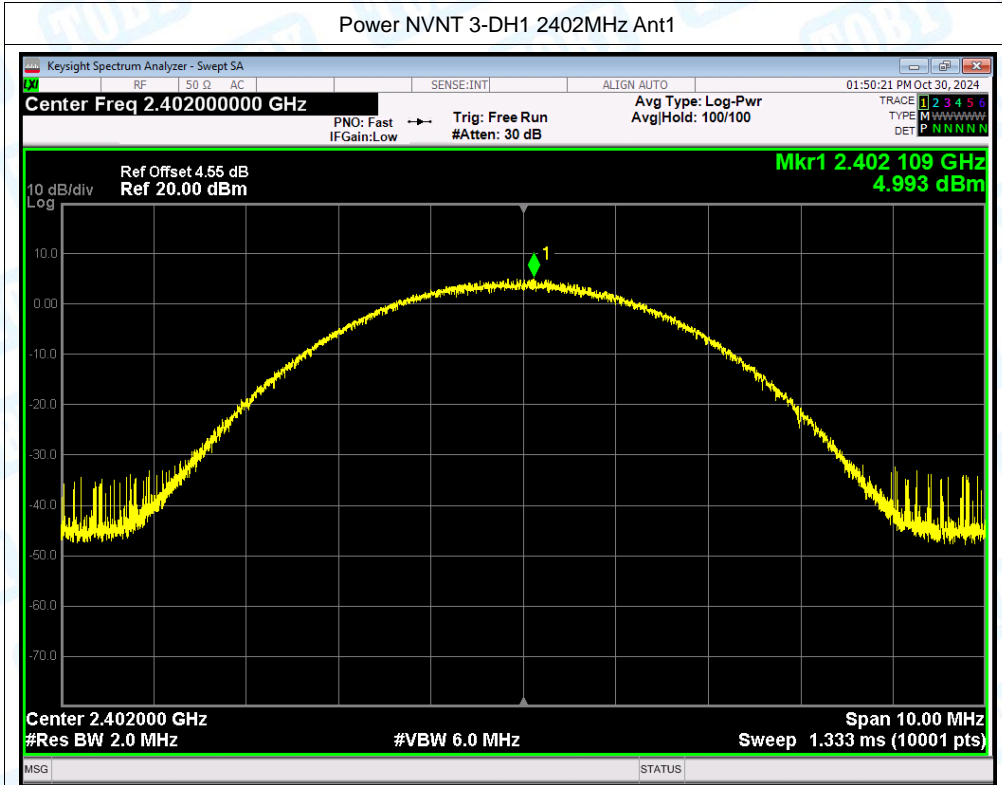
Power NVNT 2-DH1 2441MHz Ant1



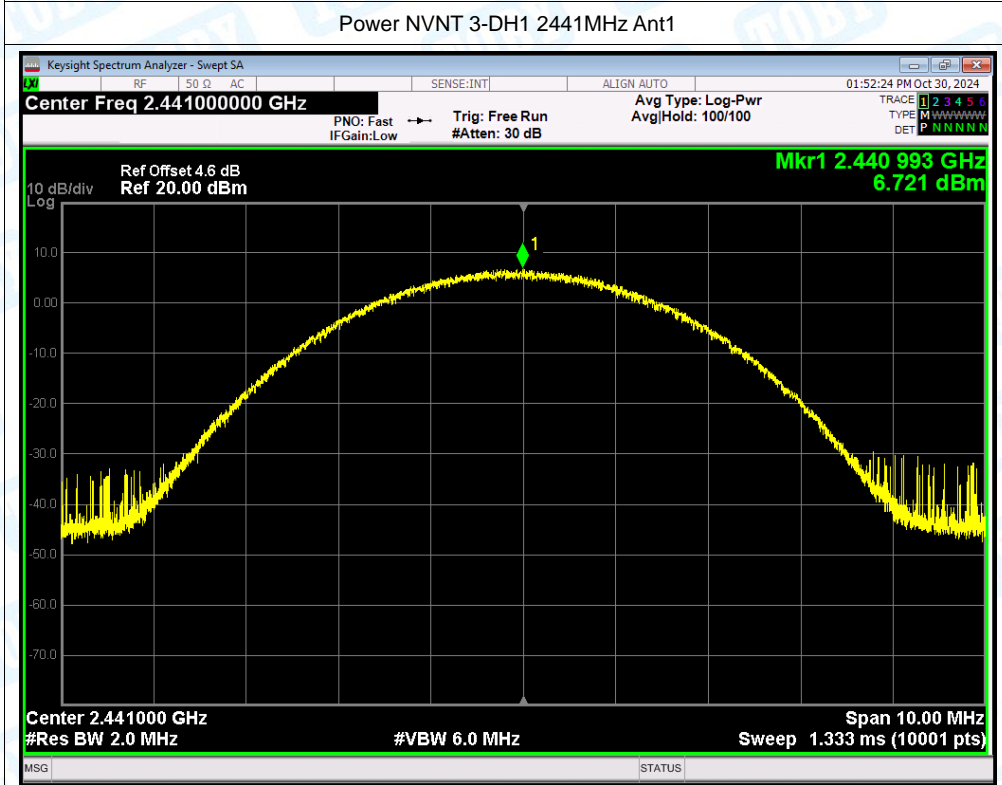
Power NVNT 2-DH1 2480MHz Ant1

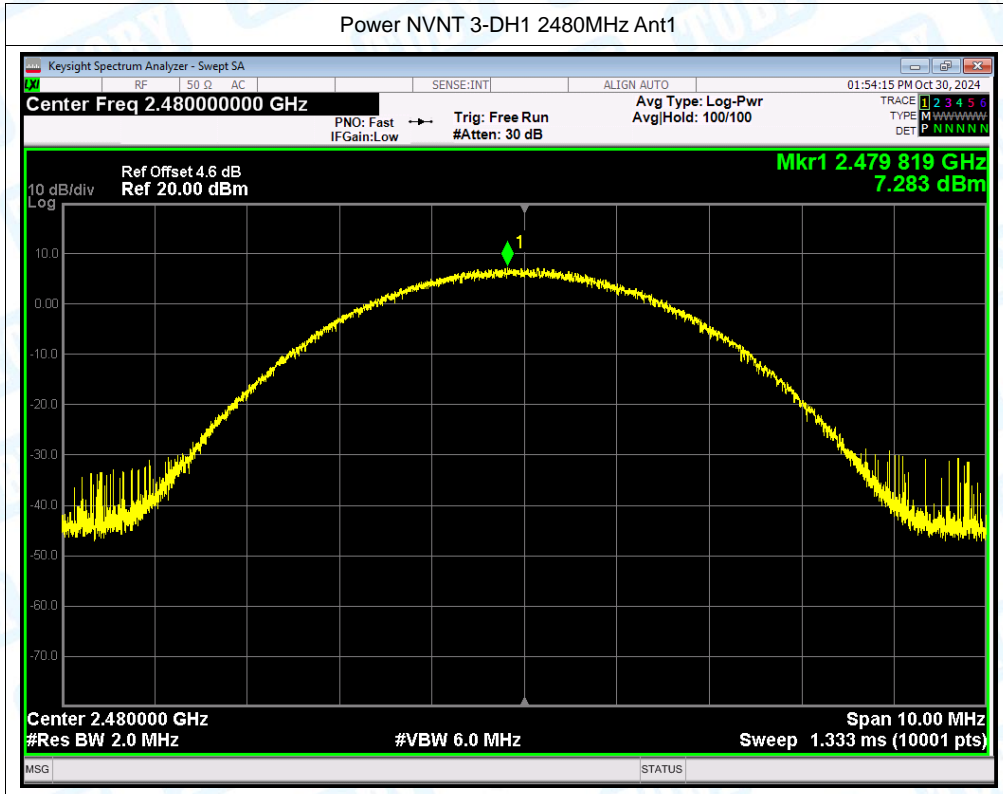


Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



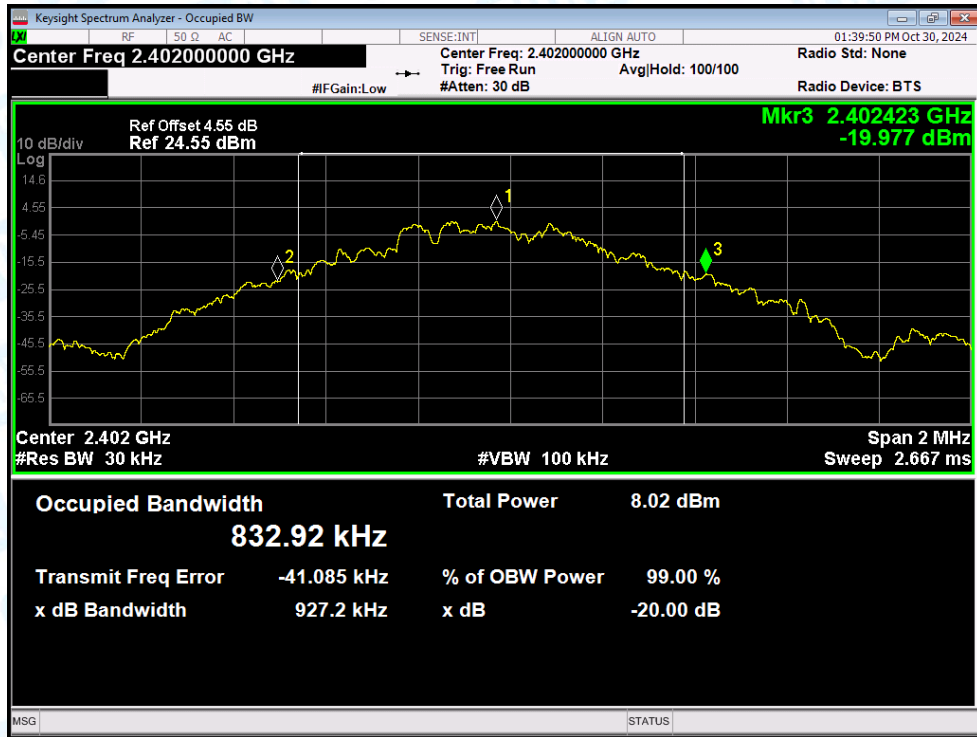


### 3.-20dB Bandwidth

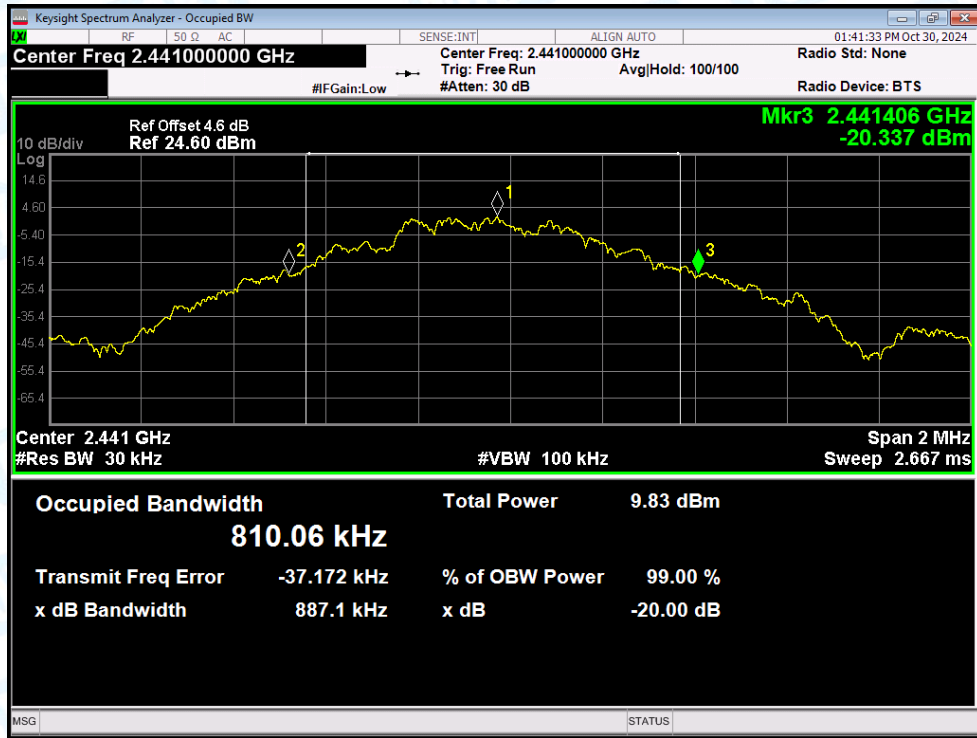
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.93	0	Pass
NVNT	1-DH1	2441	Ant1	0.89	0	Pass
NVNT	1-DH1	2480	Ant1	0.93	0	Pass
NVNT	2-DH1	2402	Ant1	1.29	0	Pass
NVNT	2-DH1	2441	Ant1	1.29	0	Pass
NVNT	2-DH1	2480	Ant1	1.29	0	Pass
NVNT	3-DH1	2402	Ant1	1.21	0	Pass
NVNT	3-DH1	2441	Ant1	1.22	0	Pass
NVNT	3-DH1	2480	Ant1	1.22	0	Pass

Test Graphs

-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1

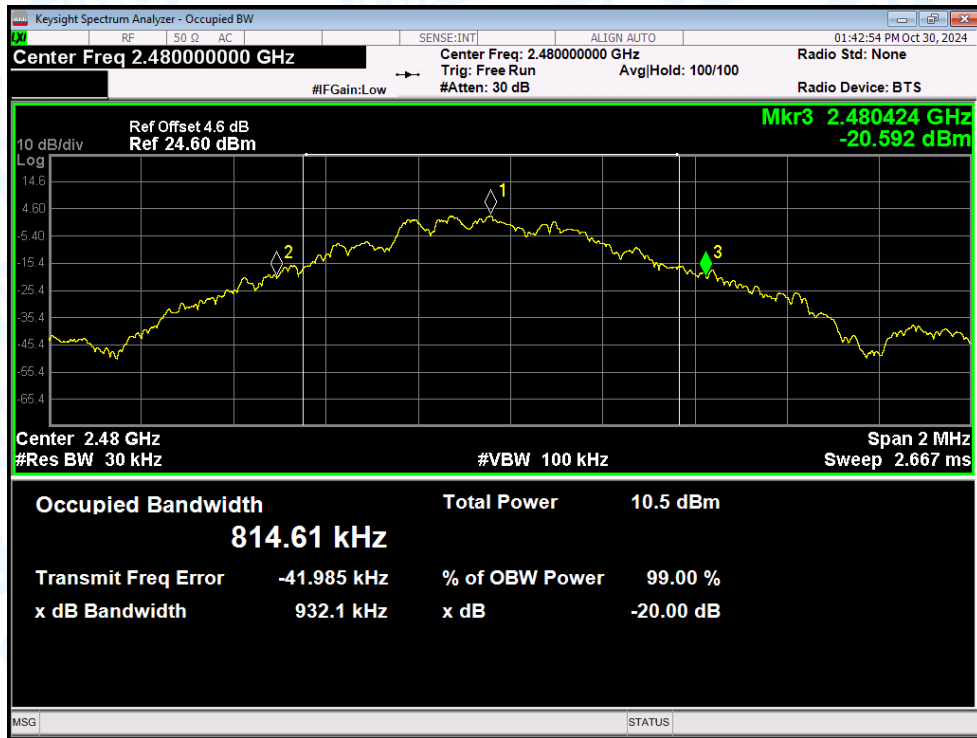


-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1

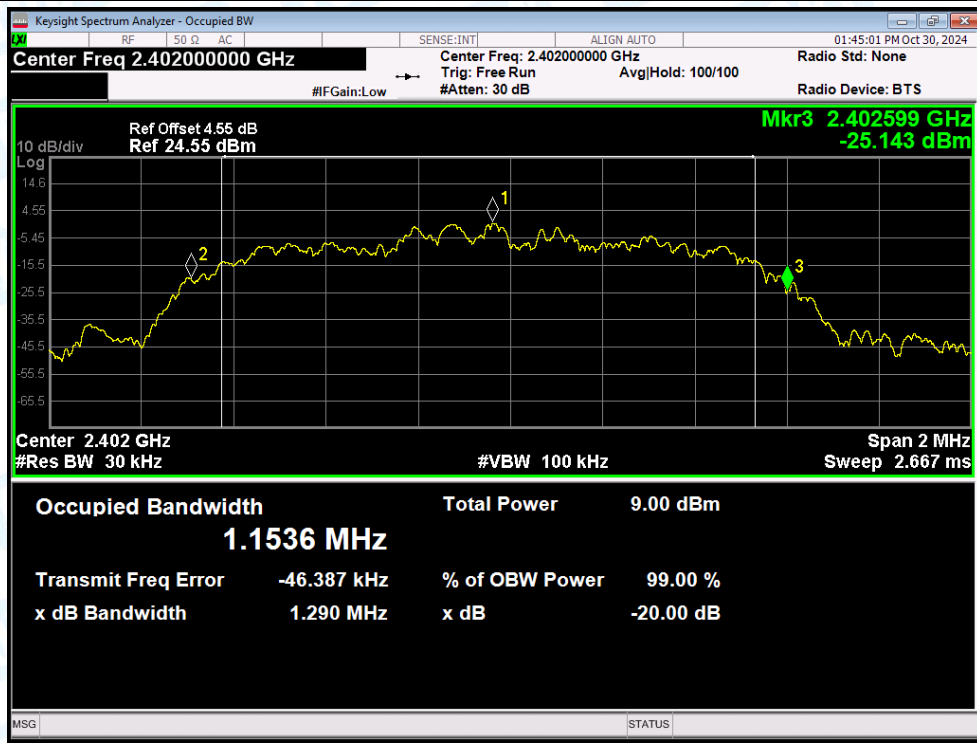




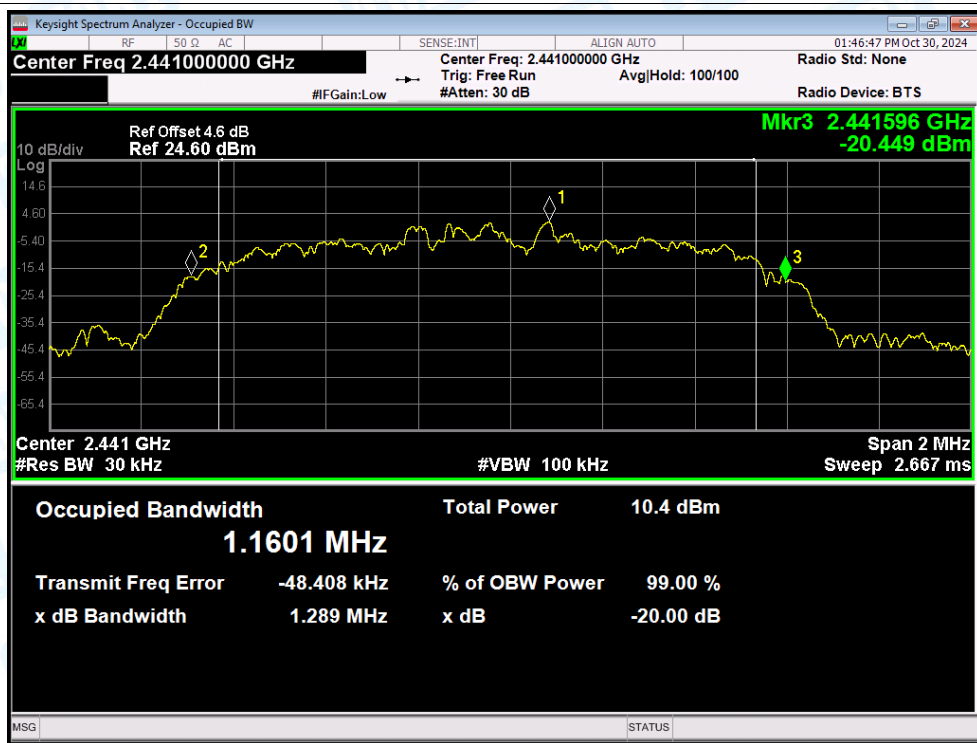
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



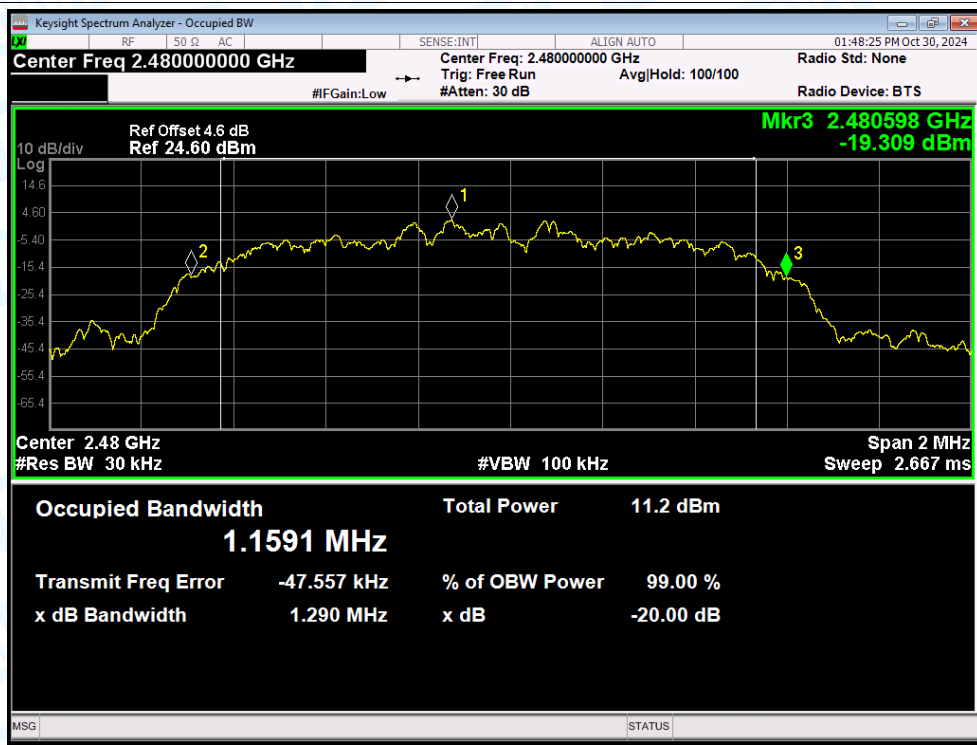
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



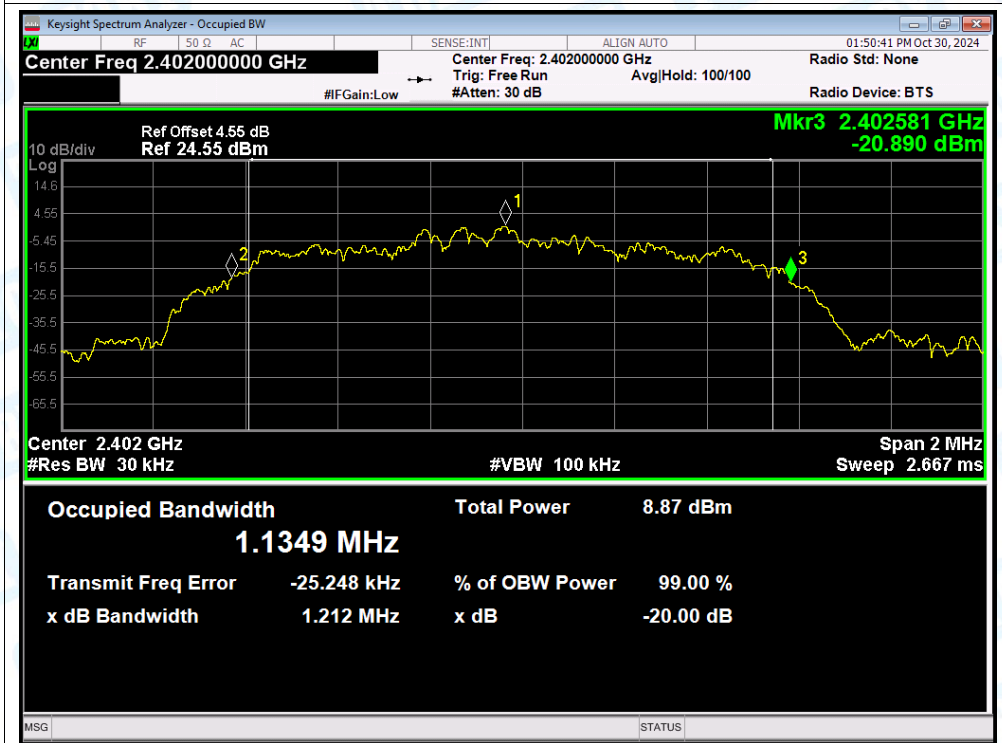
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



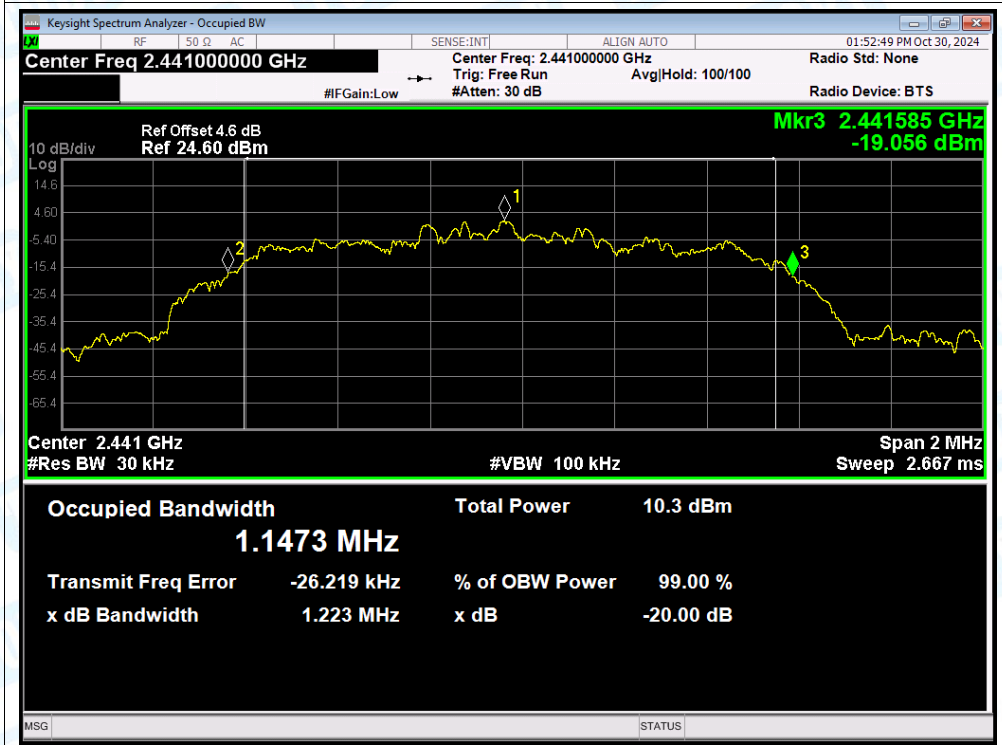
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

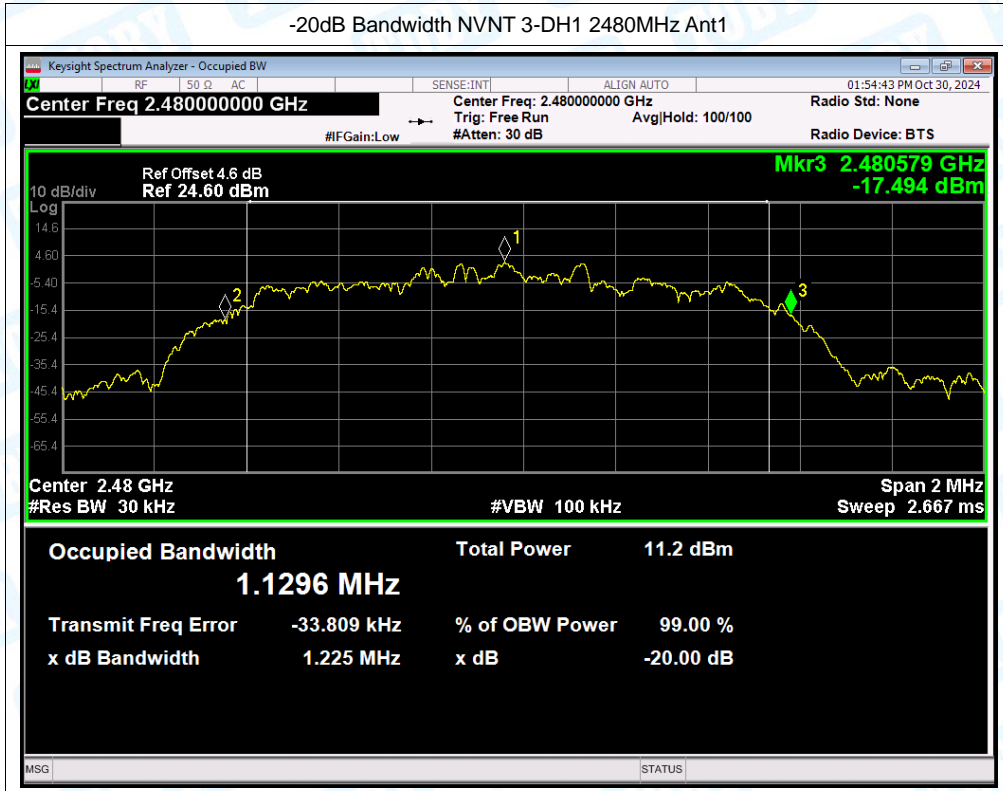


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



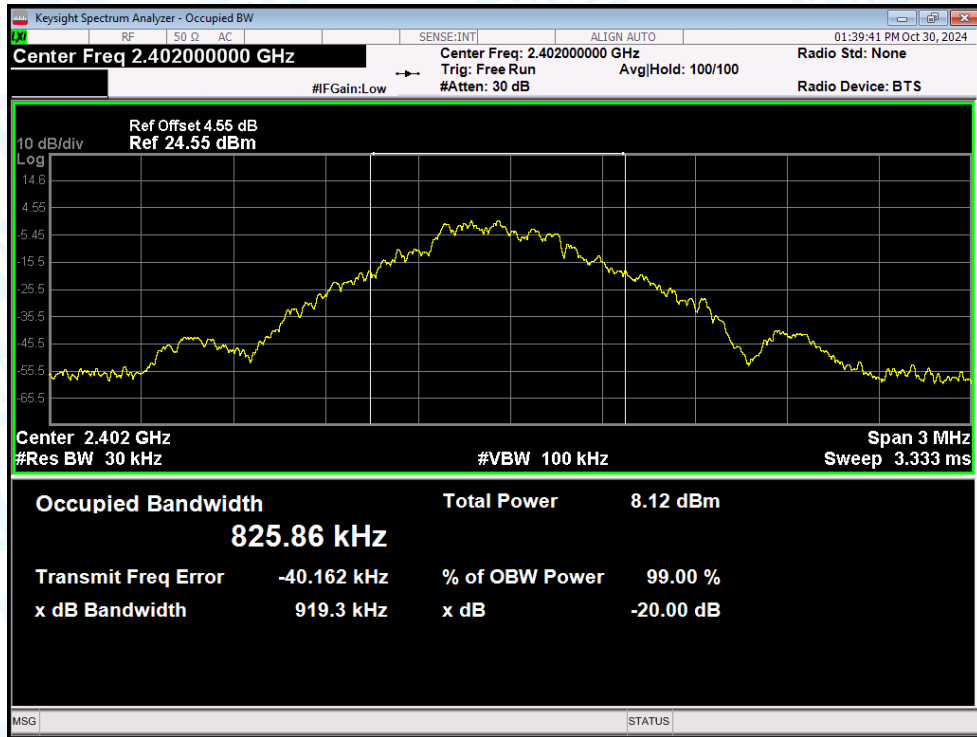


## 4.Occupied Channel Bandwidth

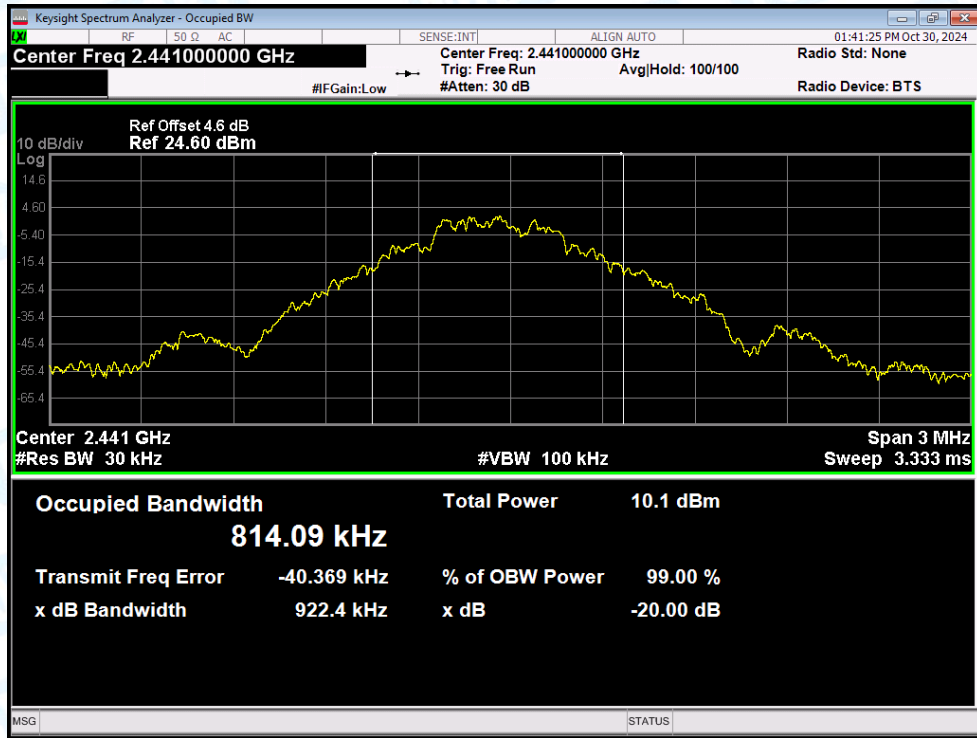
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.826
NVNT	1-DH1	2441	Ant1	0.814
NVNT	1-DH1	2480	Ant1	0.808
NVNT	2-DH1	2402	Ant1	1.141
NVNT	2-DH1	2441	Ant1	1.156
NVNT	2-DH1	2480	Ant1	1.148
NVNT	3-DH1	2402	Ant1	1.131
NVNT	3-DH1	2441	Ant1	1.135
NVNT	3-DH1	2480	Ant1	1.143

Test Graphs

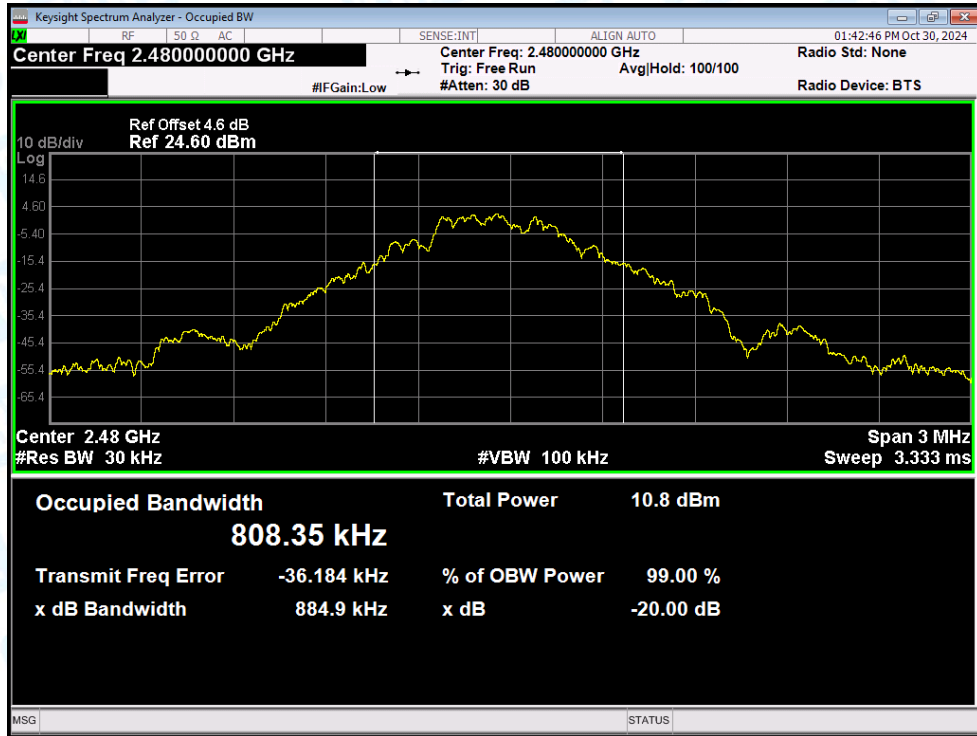
OBW NVNT 1-DH1 2402MHz Ant1



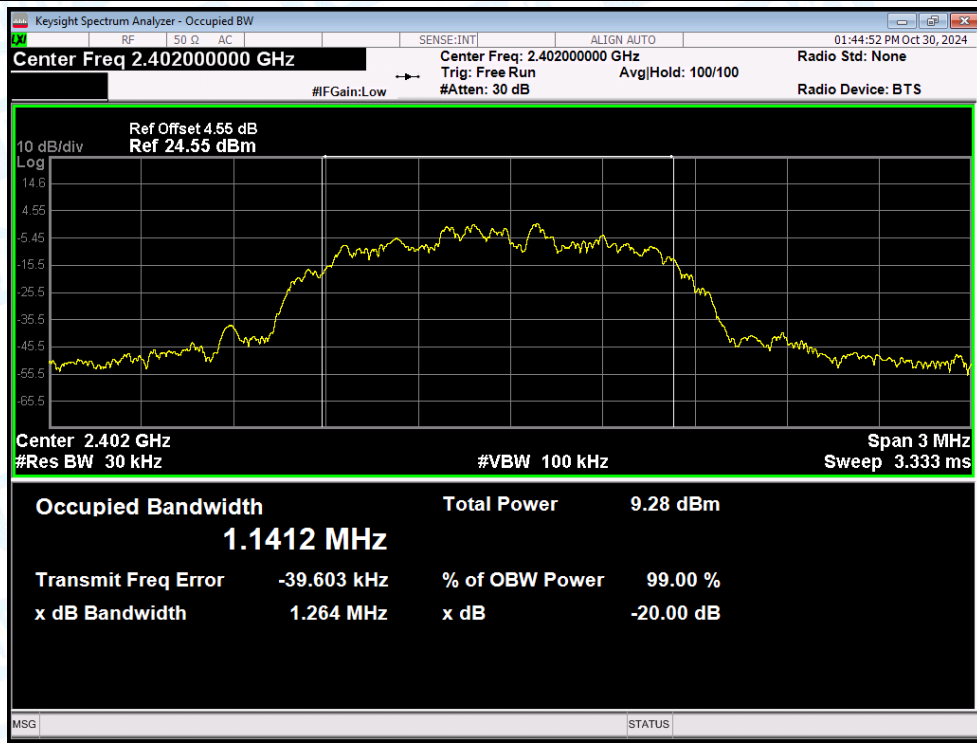
OBW NVNT 1-DH1 2441MHz Ant1



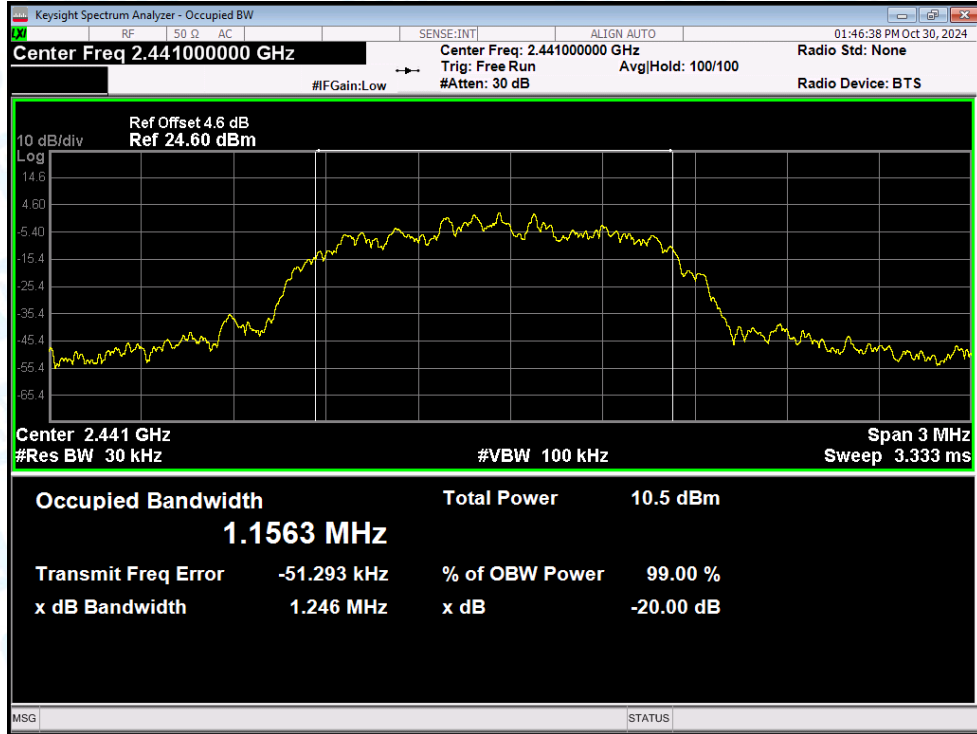
OBW NVNT 1-DH1 2480MHz Ant1



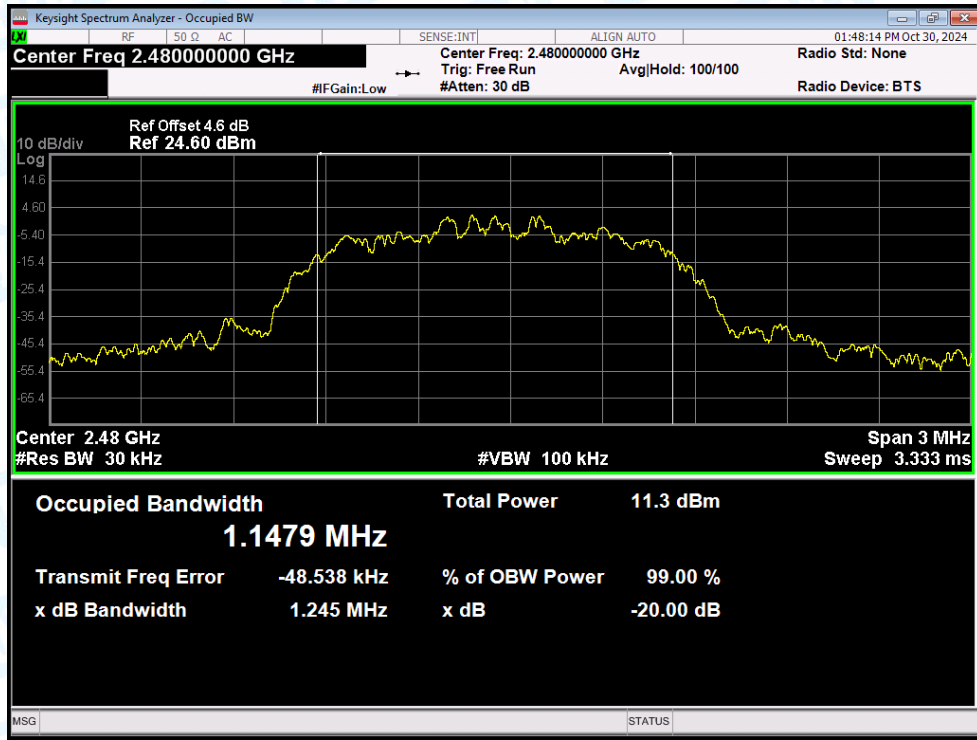
OBW NVNT 2-DH1 2402MHz Ant1



OBW NVNT 2-DH1 2441MHz Ant1

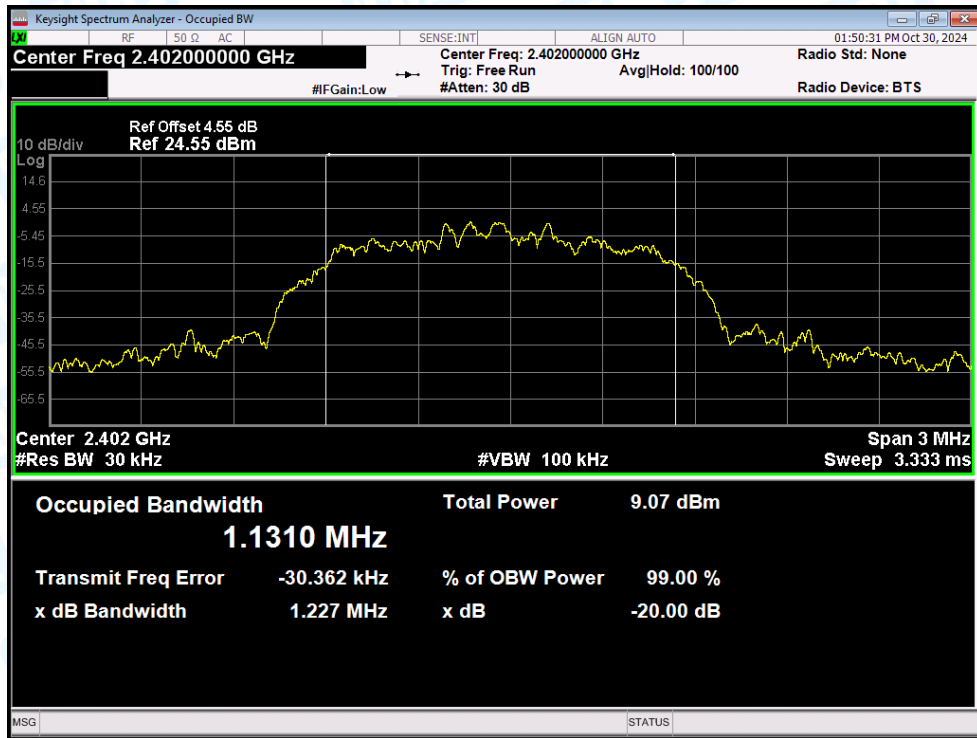


OBW NVNT 2-DH1 2480MHz Ant1

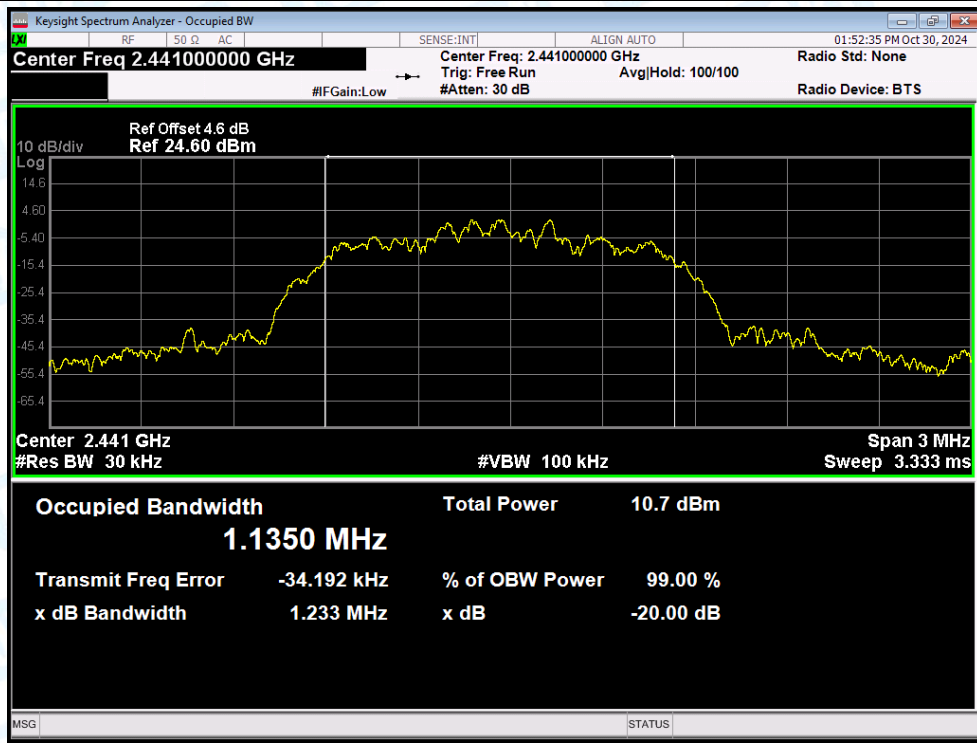


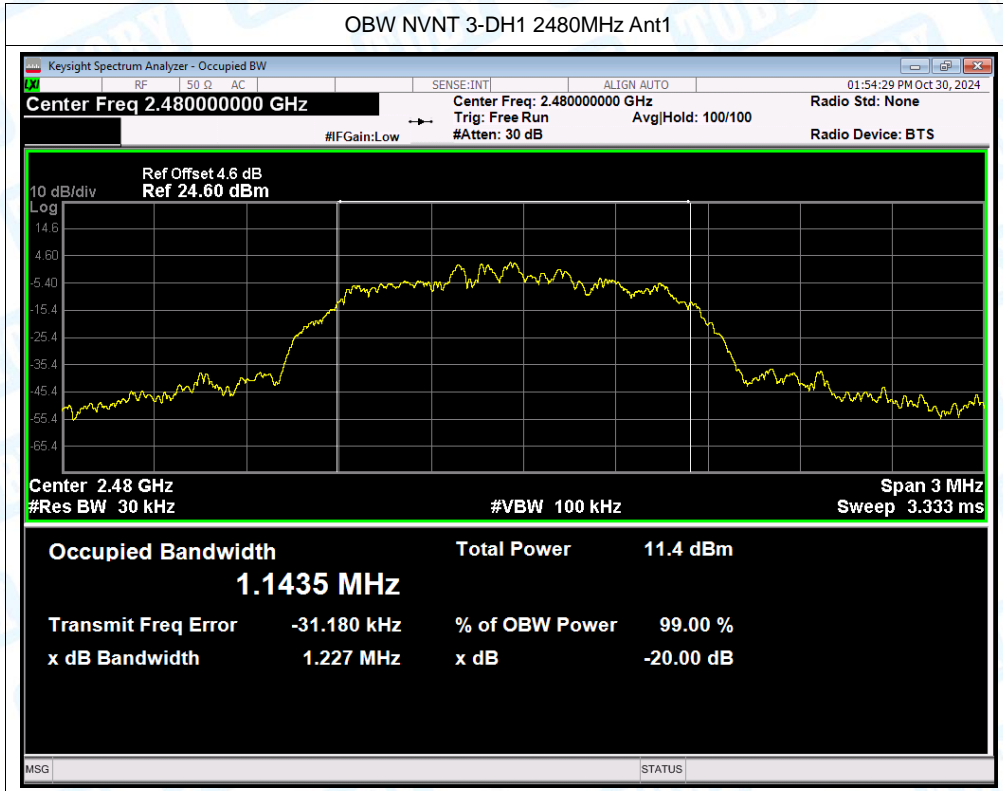


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



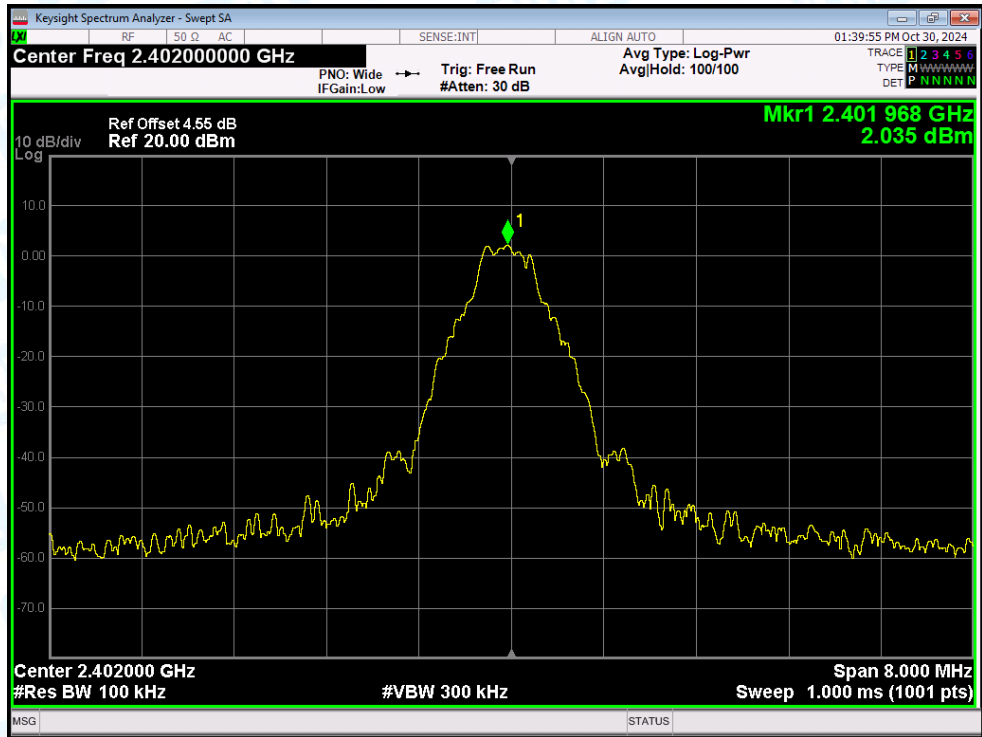


## 5.Band Edge

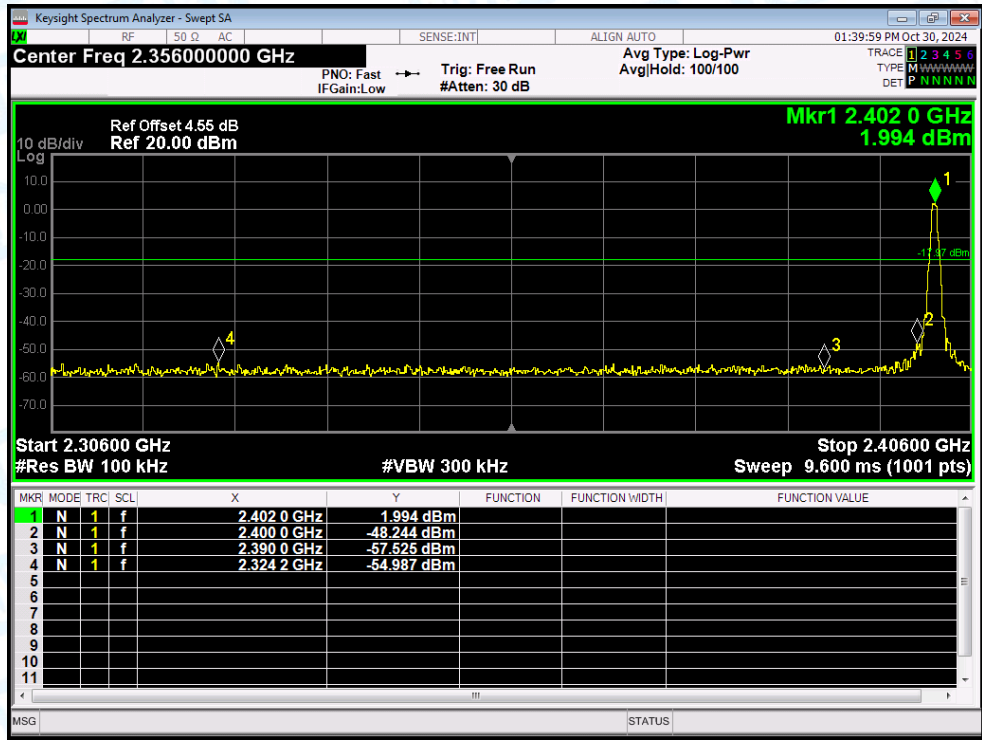
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-57.03	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-58.22	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-56.65	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-56.56	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-56.88	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-58.21	-20	Pass

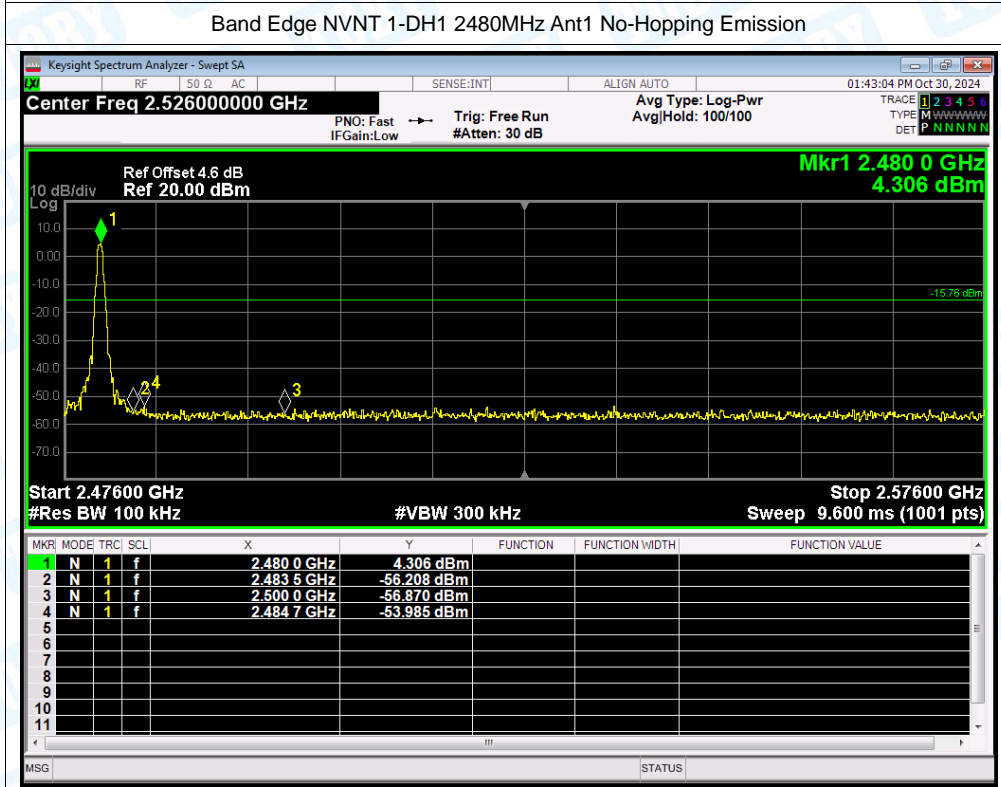
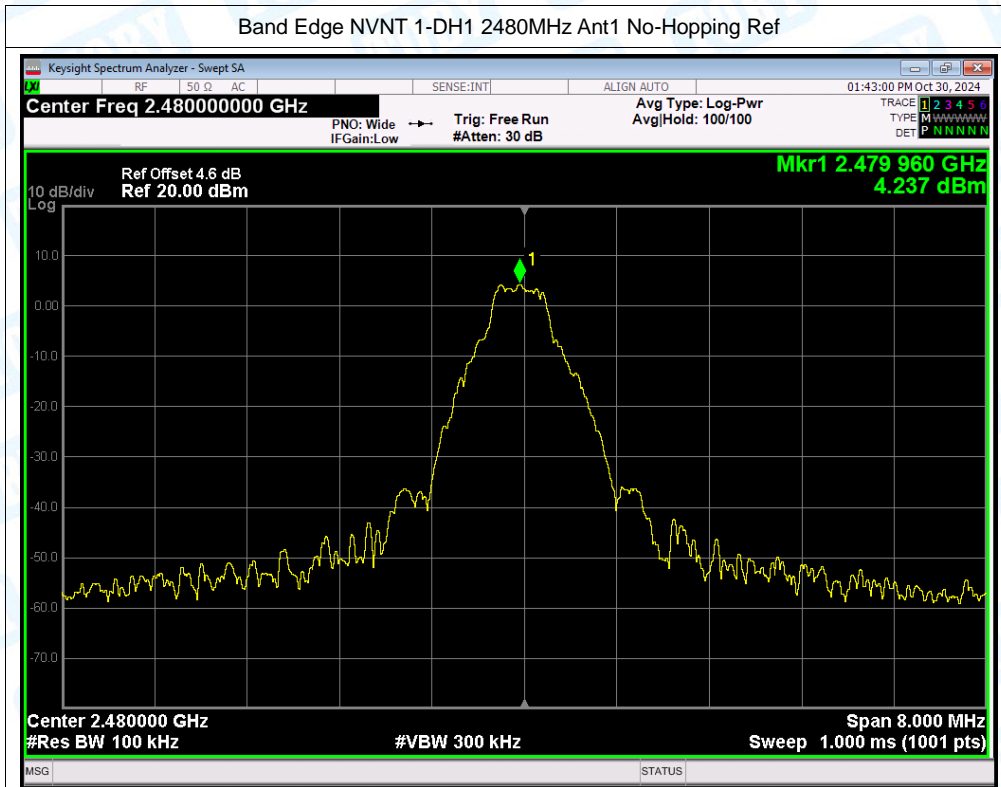
Test Graphs

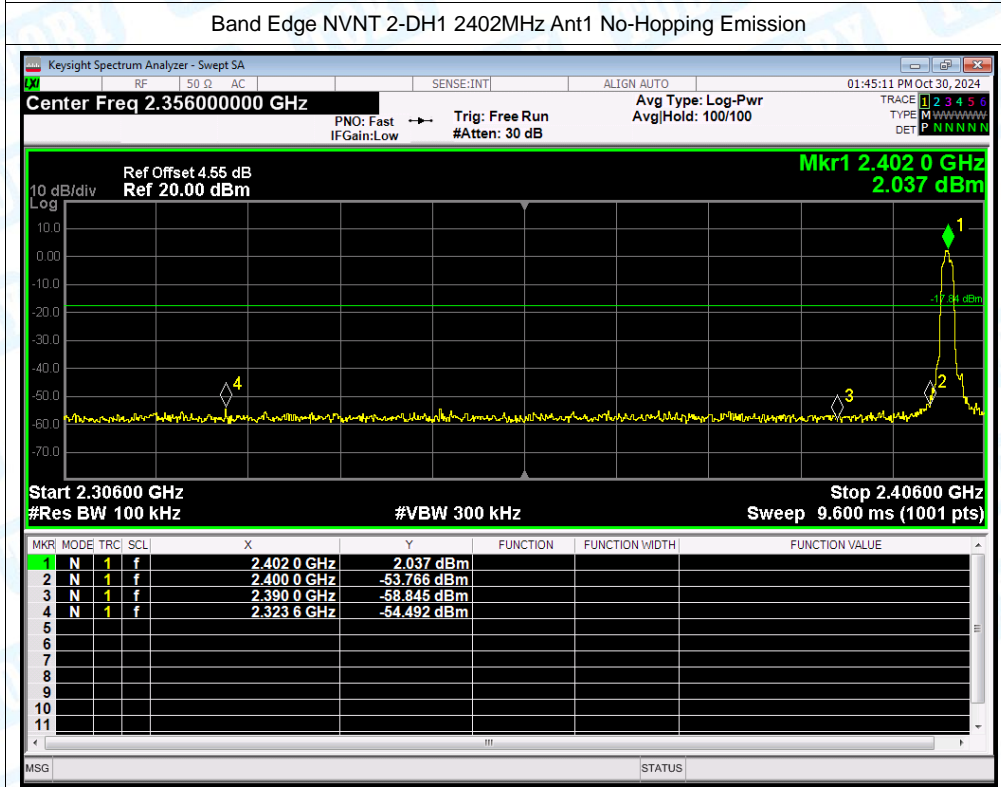
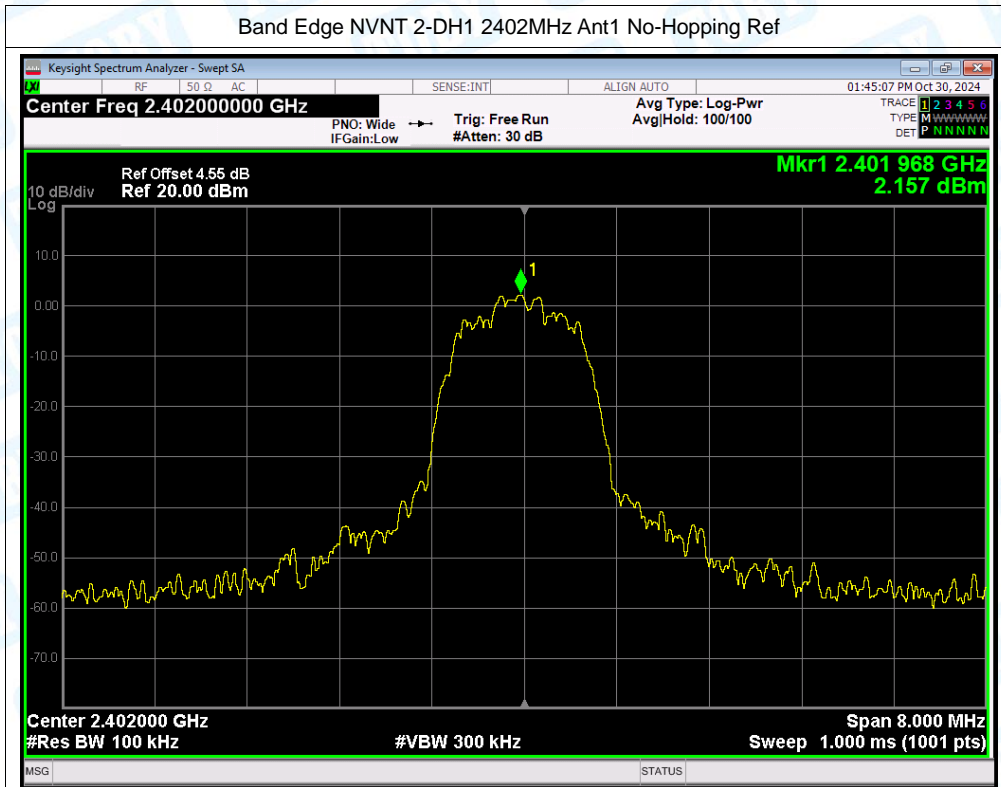
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref

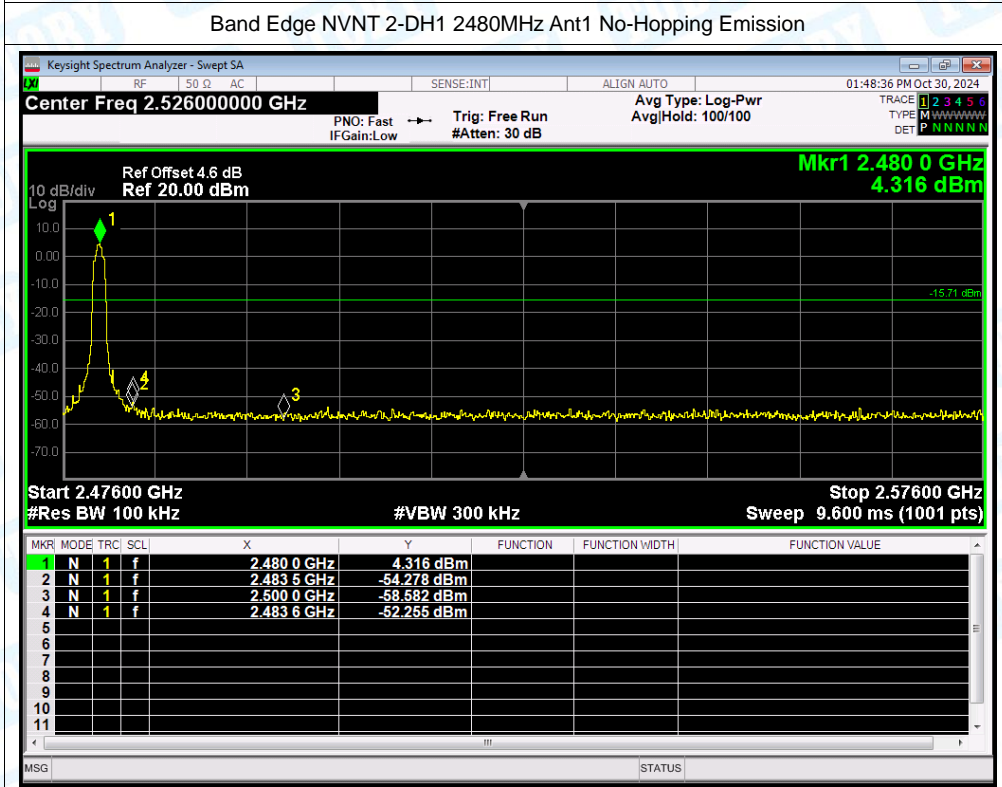
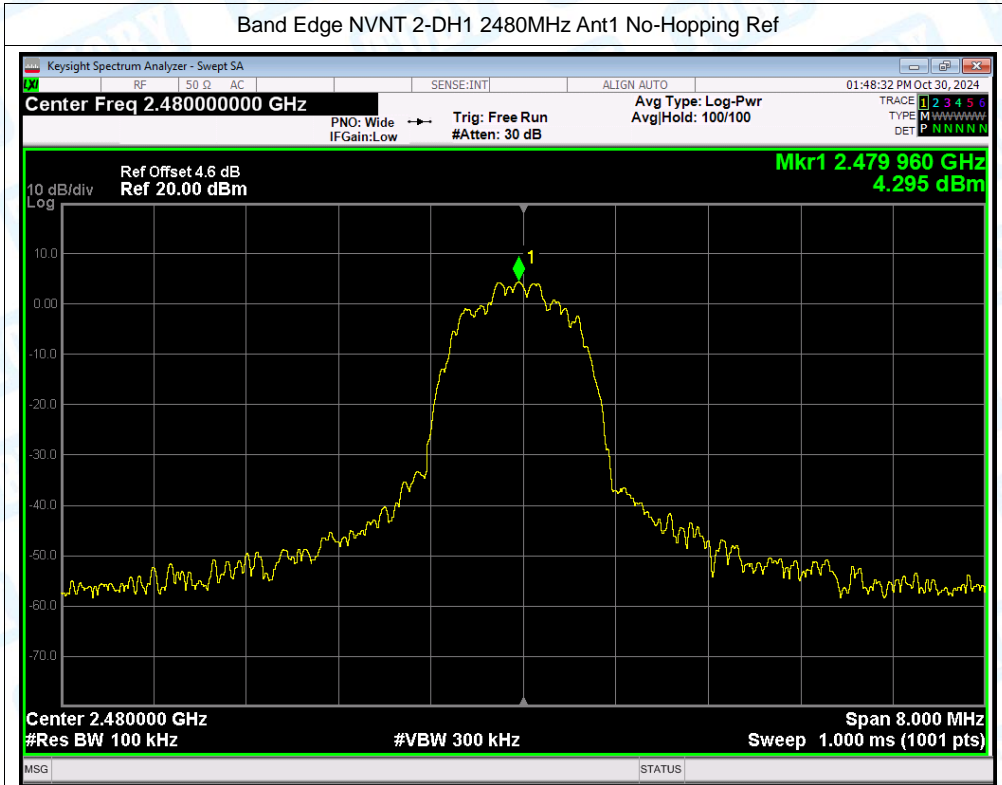


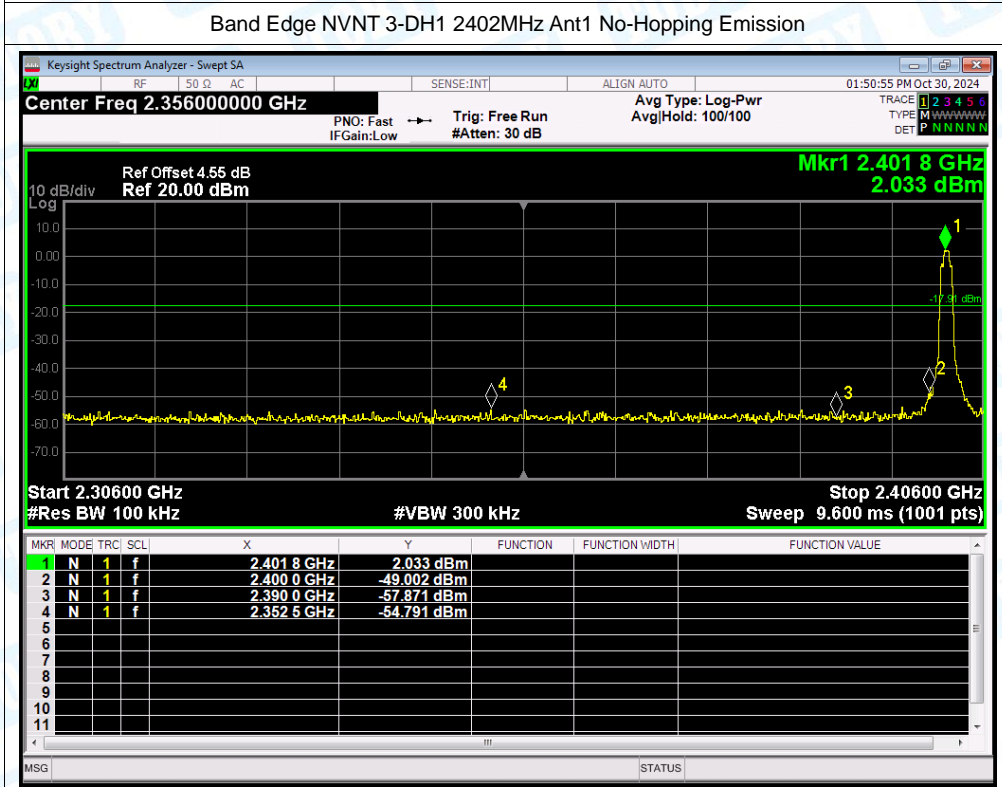
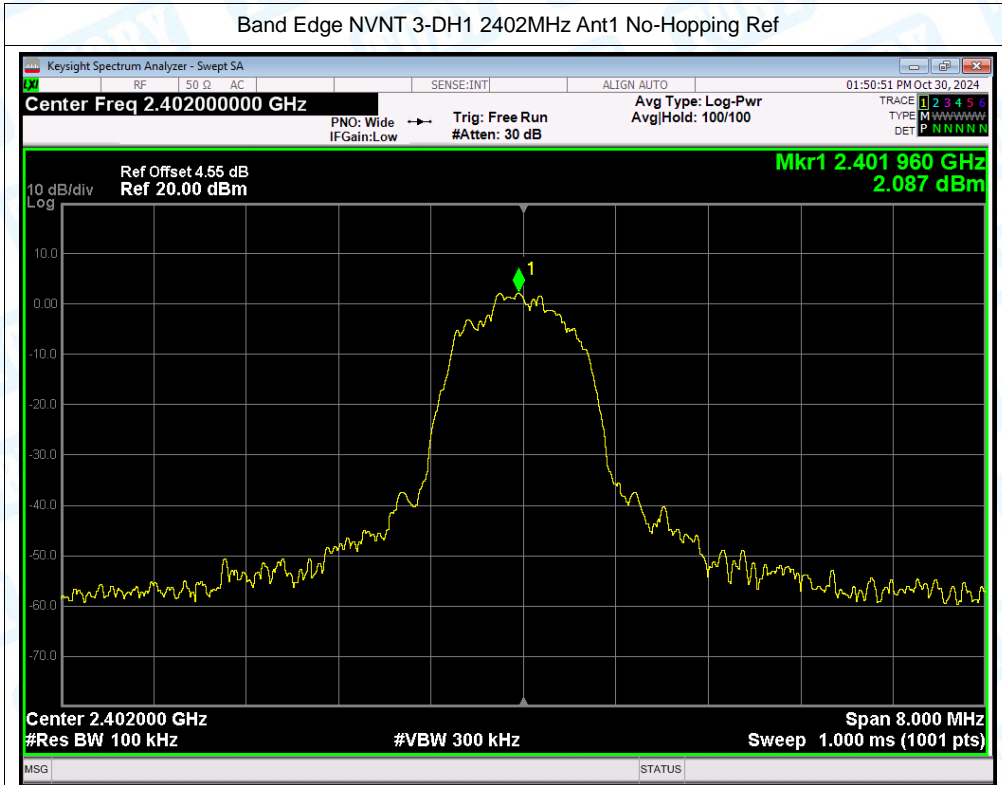
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



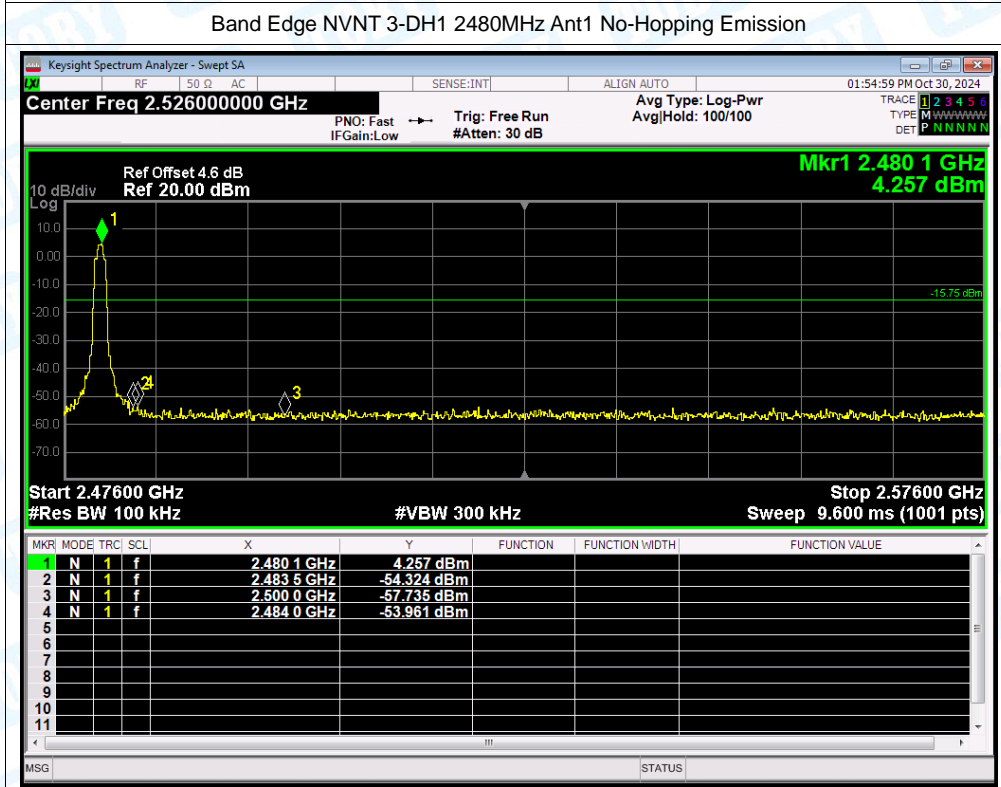
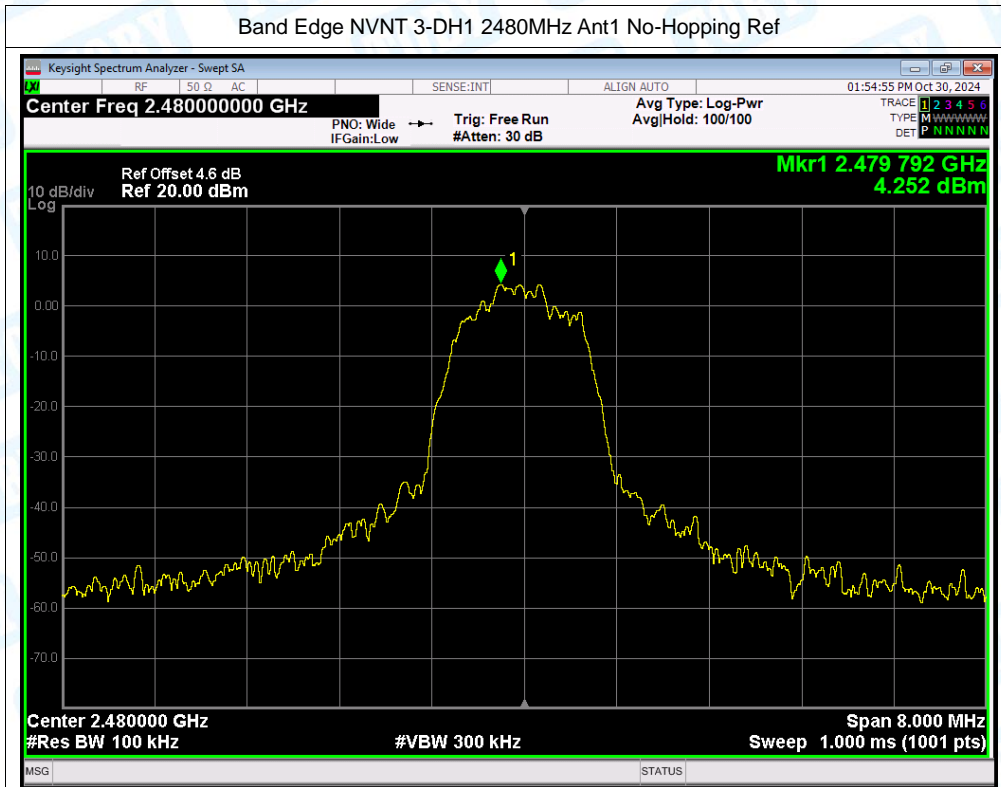










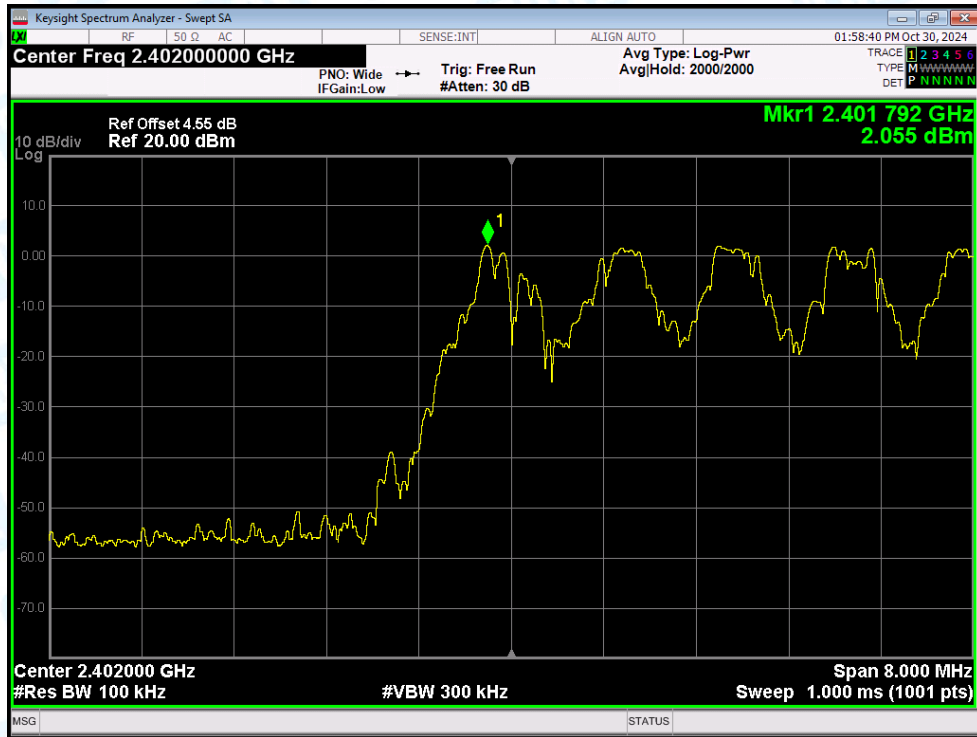


## 6. Band Edge(Hopping)

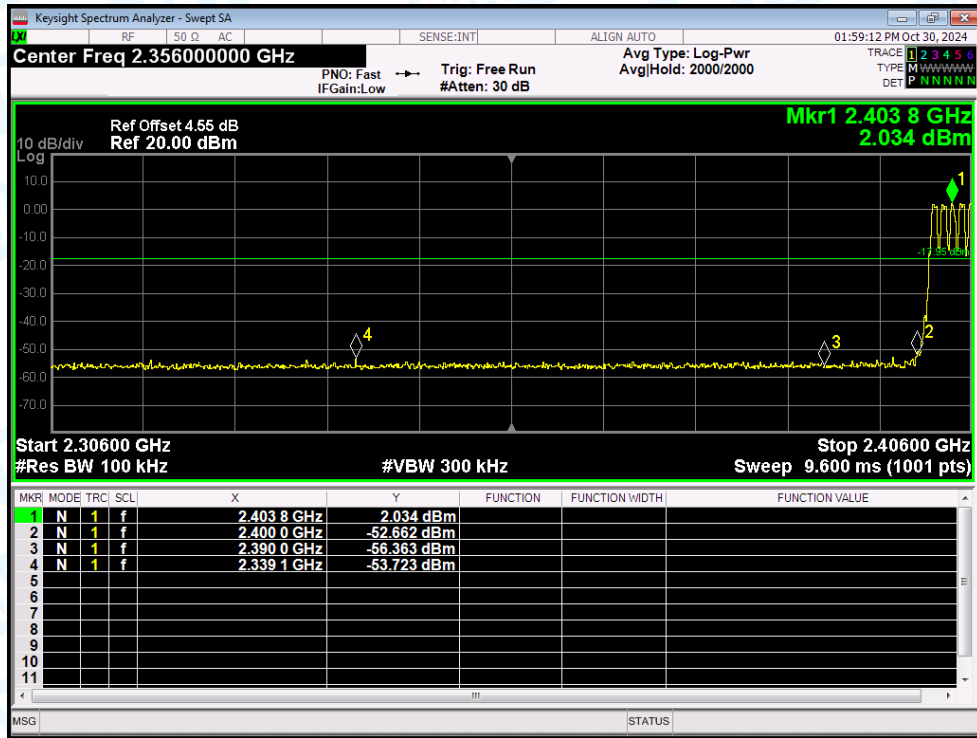
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-55.78	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-57.91	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-55.18	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-57.86	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-55.89	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-57.65	-20	Pass

Test Graphs

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



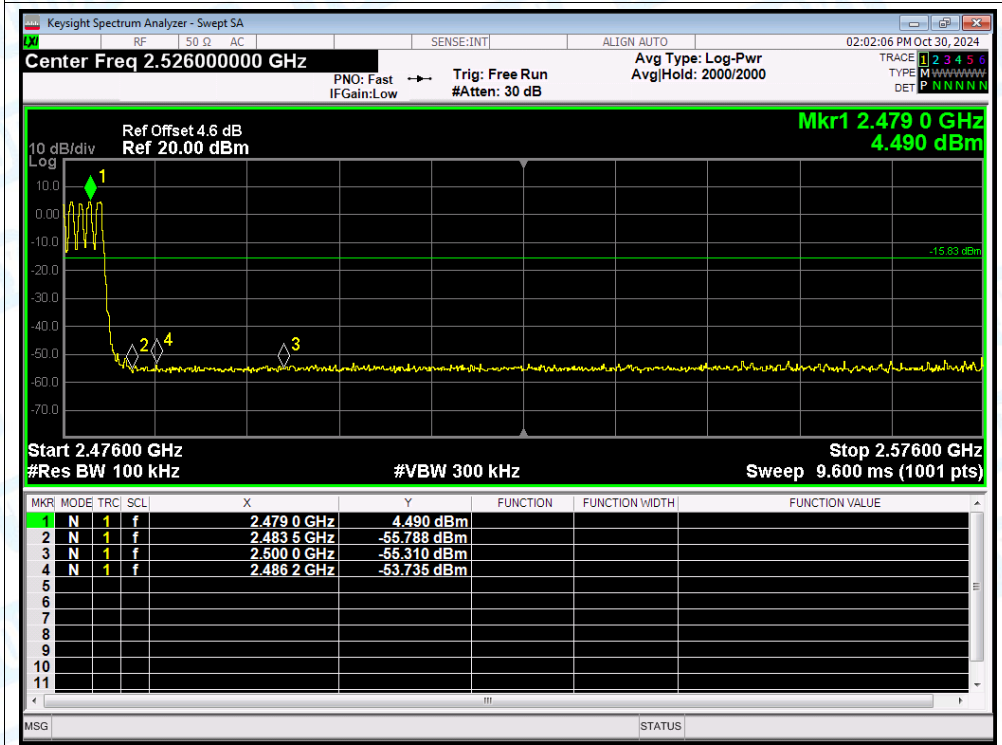
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



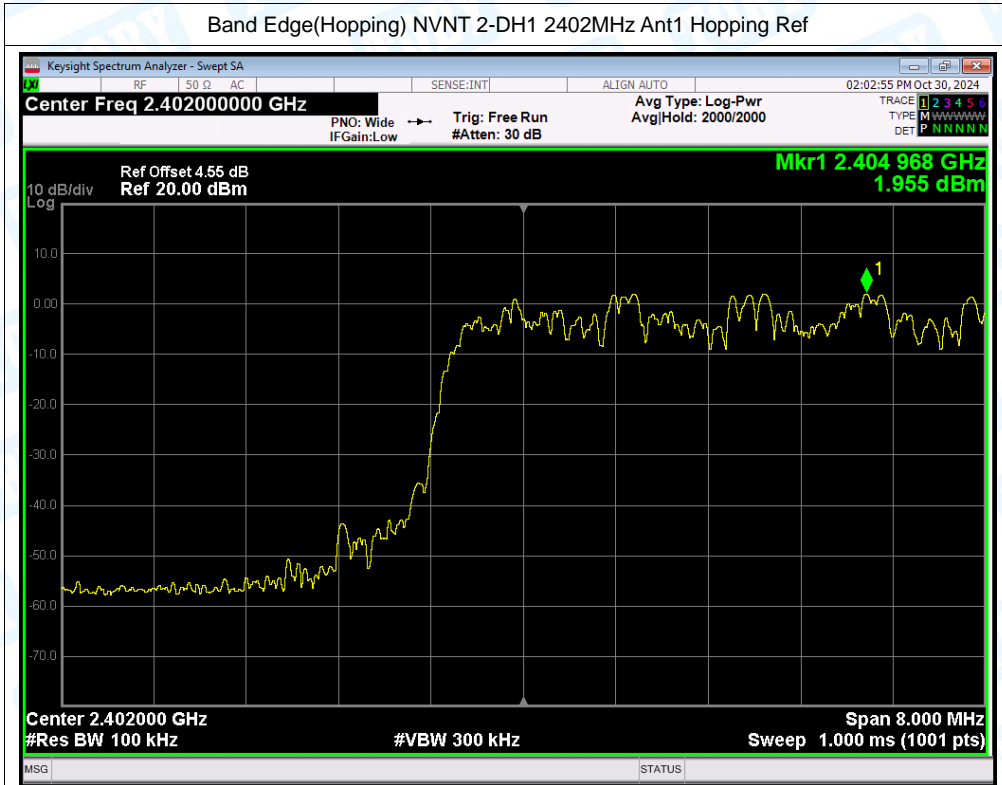
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref



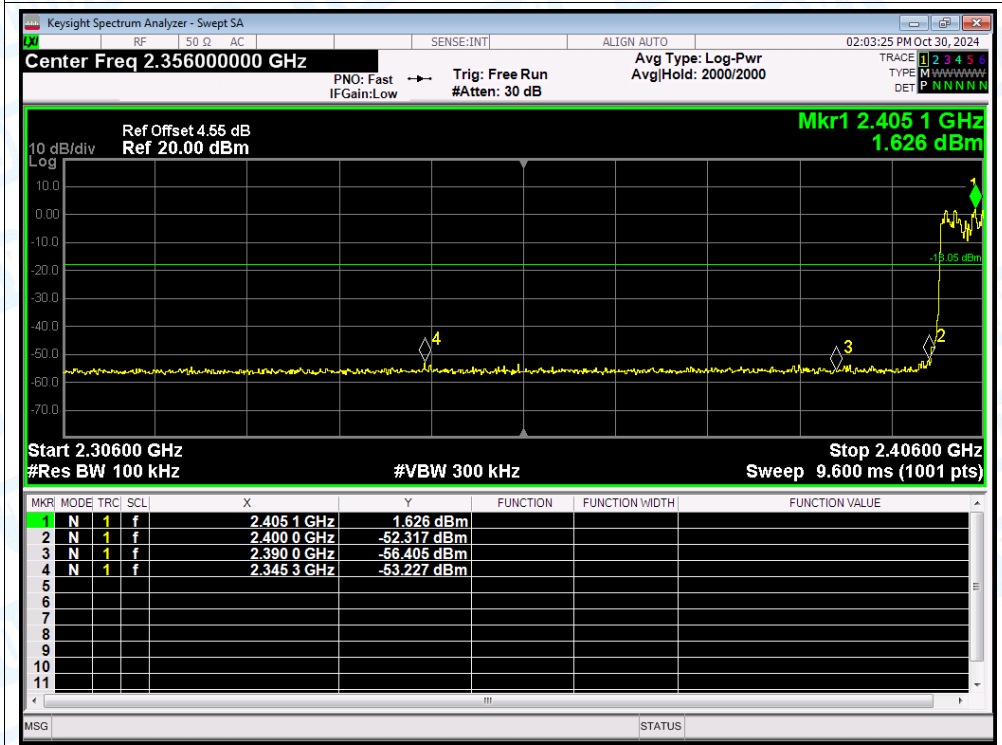
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



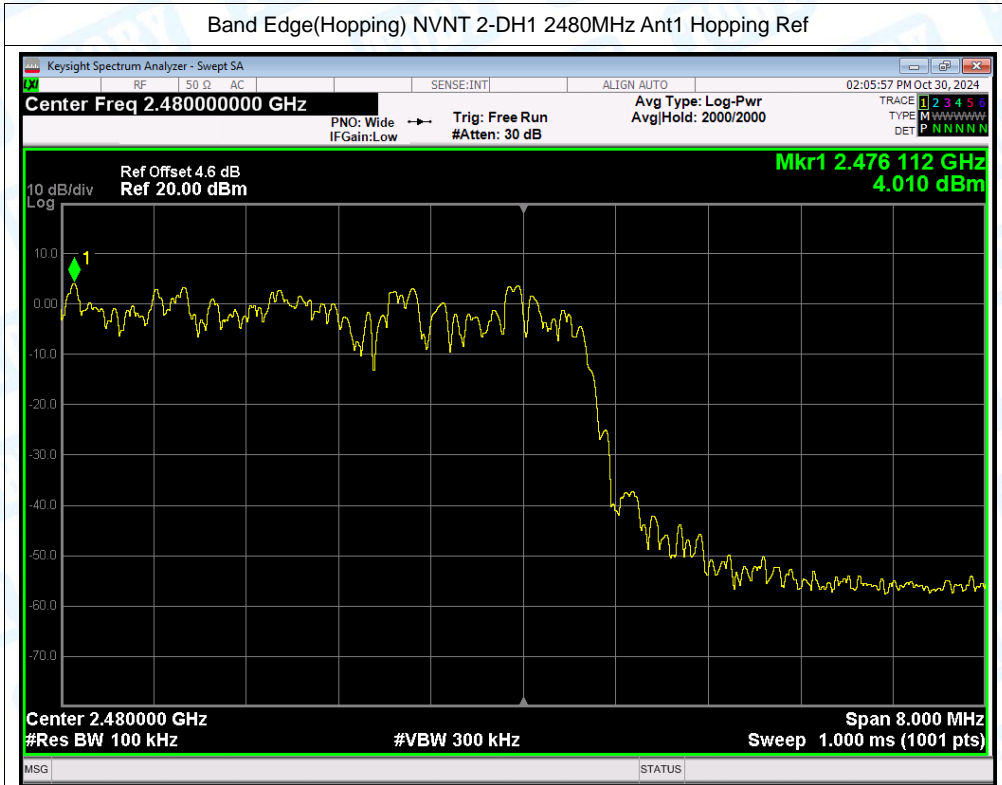
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref



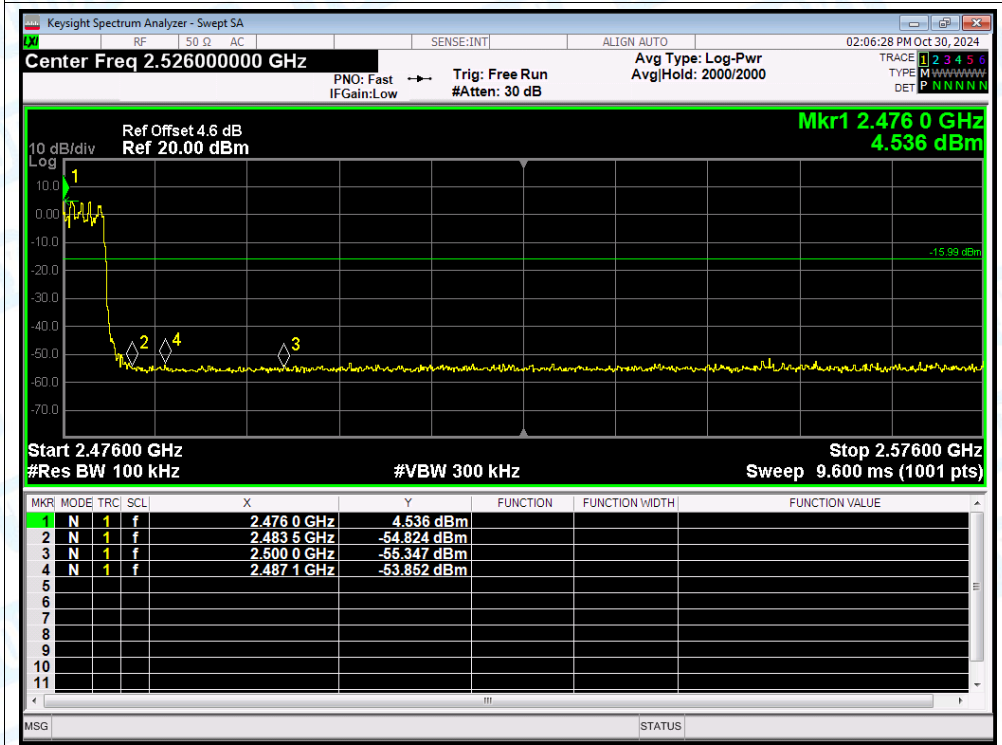
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



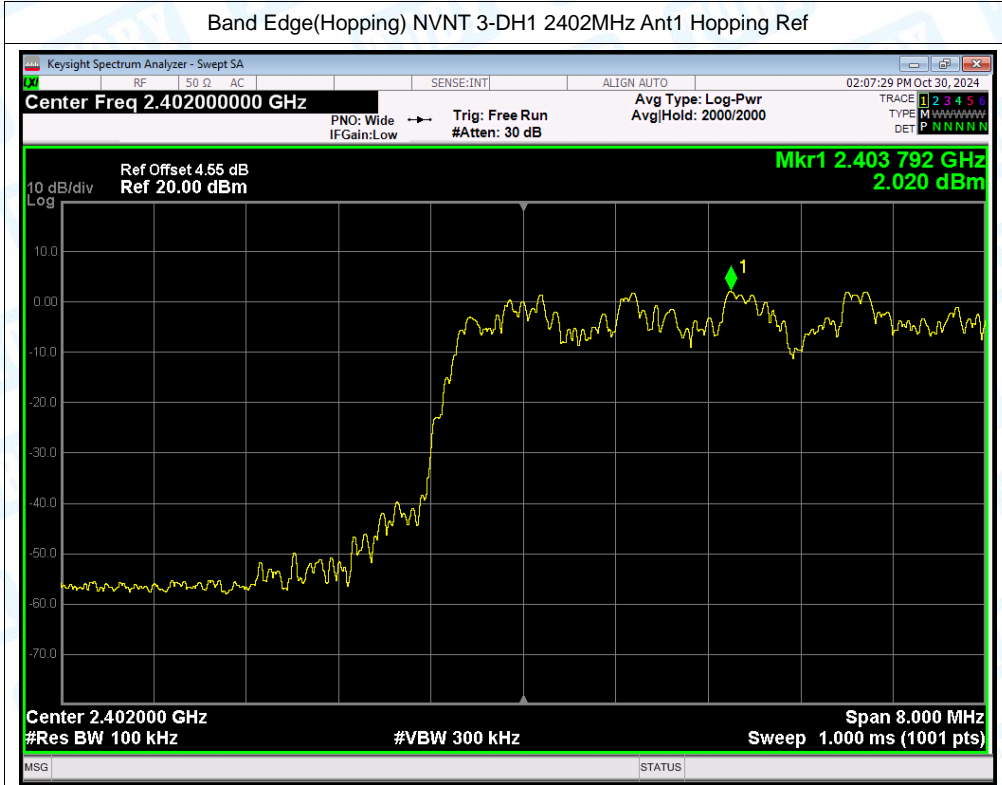
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref



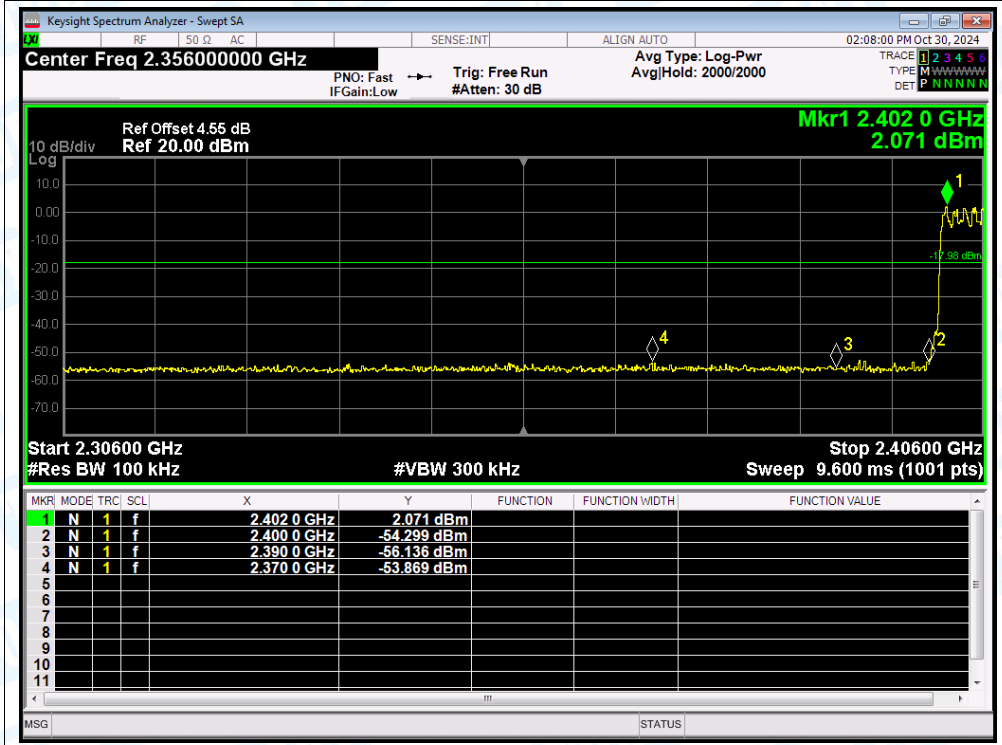
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission



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



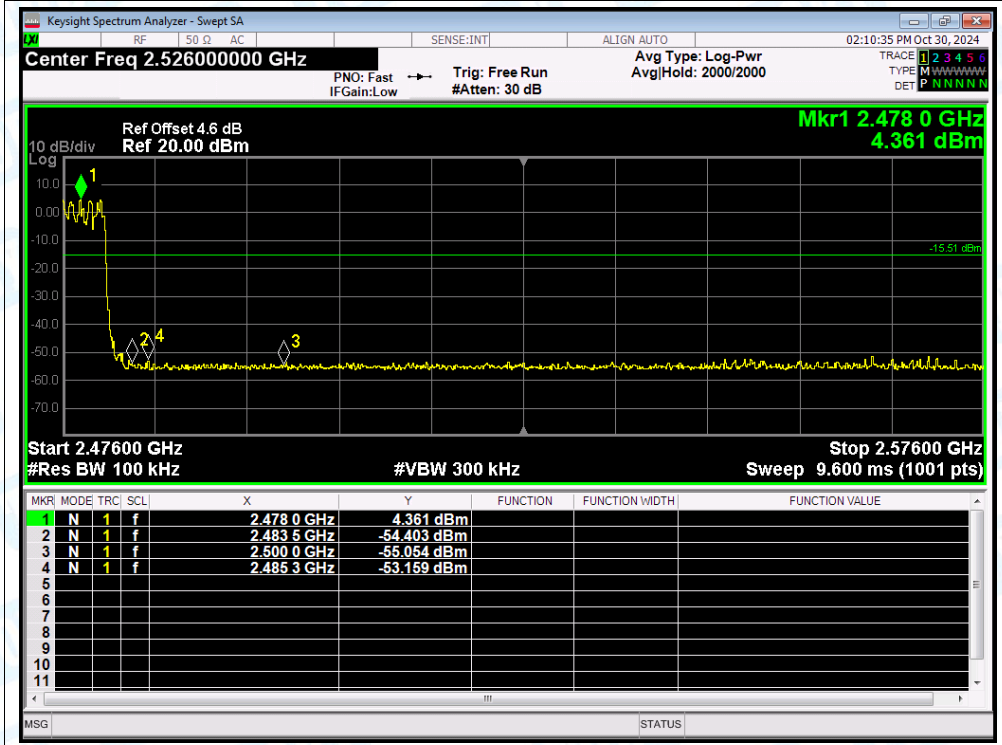
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



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



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



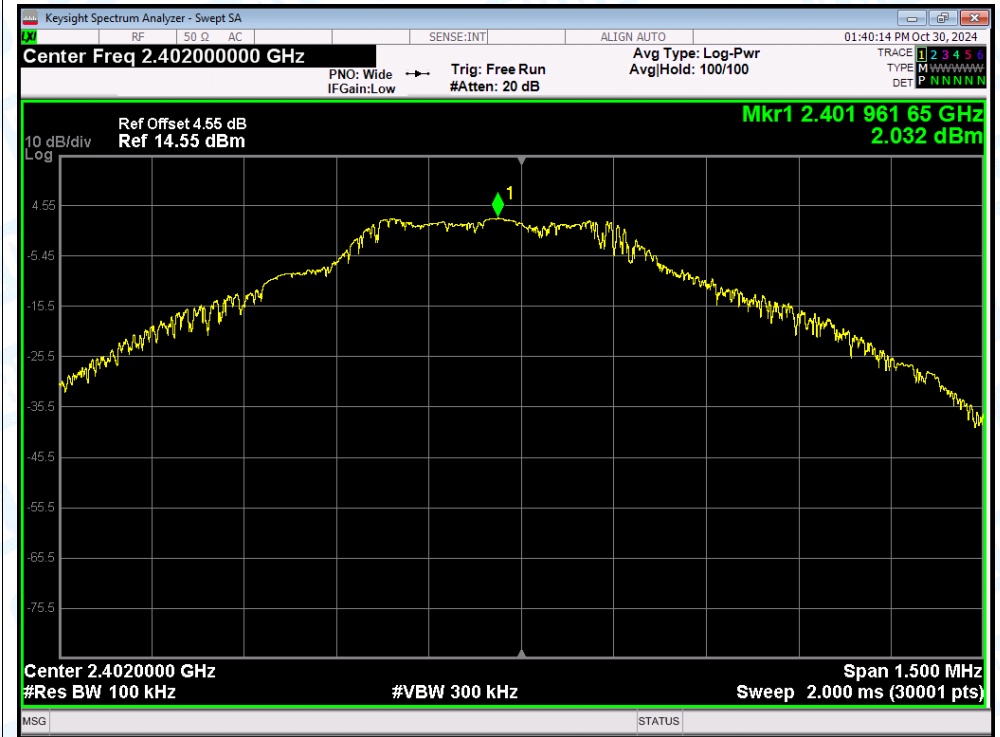


## 7. Conducted RF Spurious Emission

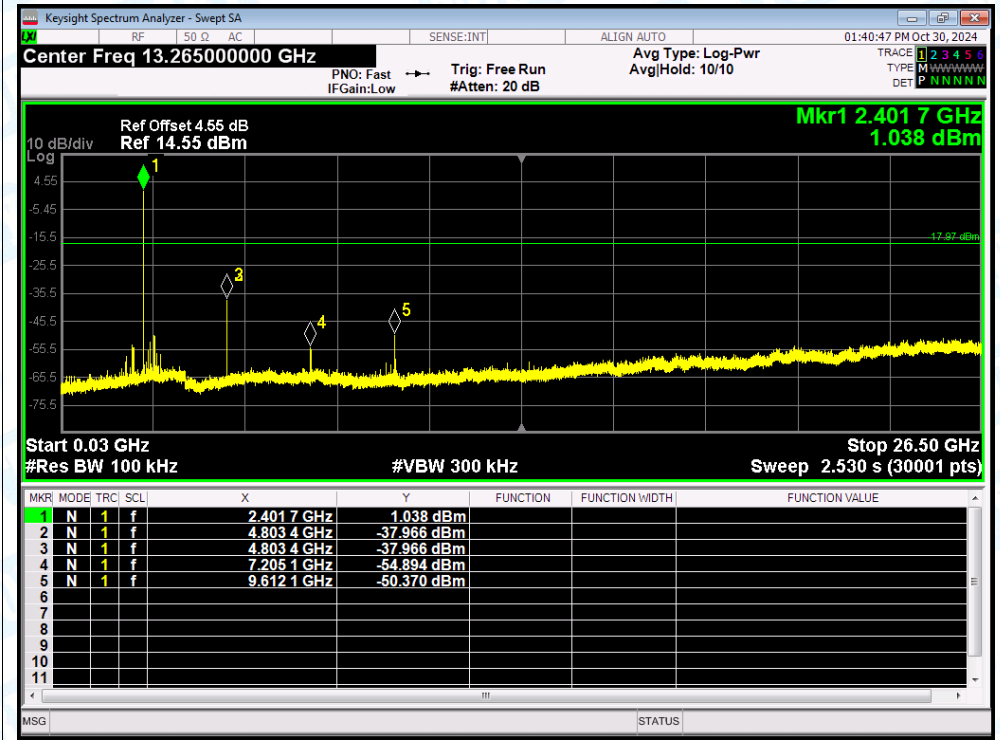
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-40	-20	Pass
NVNT	1-DH1	2441	Ant1	-37.47	-20	Pass
NVNT	1-DH1	2480	Ant1	-38.72	-20	Pass
NVNT	2-DH1	2402	Ant1	-39.07	-20	Pass
NVNT	2-DH1	2441	Ant1	-40.18	-20	Pass
NVNT	2-DH1	2480	Ant1	-38.91	-20	Pass
NVNT	3-DH1	2402	Ant1	-38.74	-20	Pass
NVNT	3-DH1	2441	Ant1	-37.59	-20	Pass
NVNT	3-DH1	2480	Ant1	-42.15	-20	Pass

Test Graphs

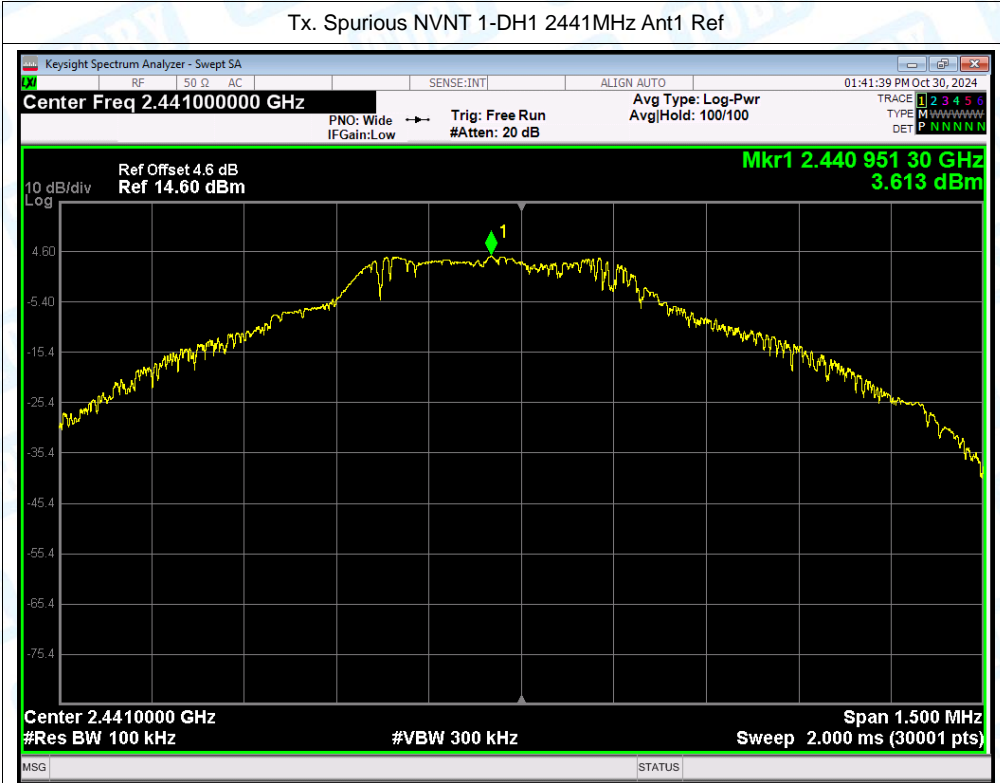
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



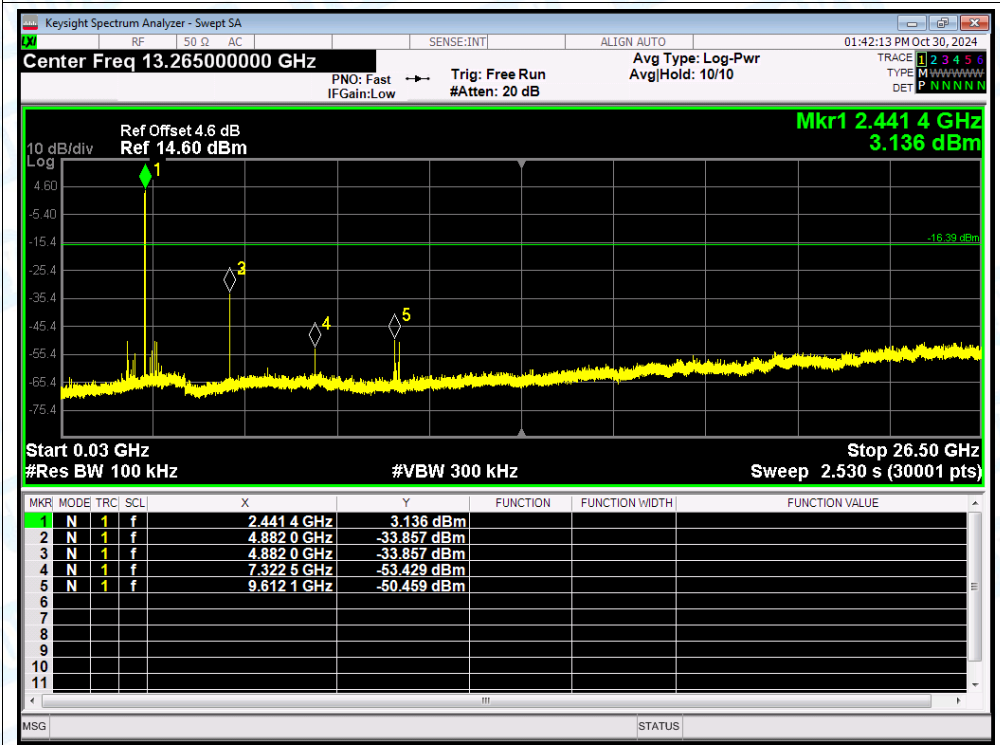
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



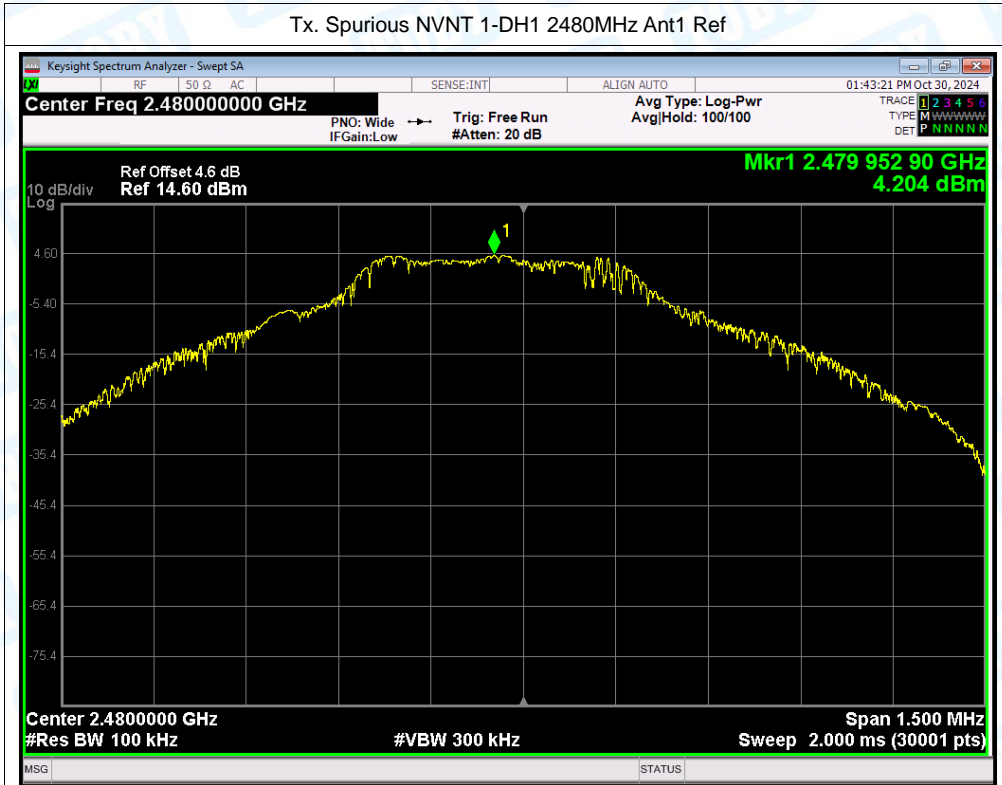
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



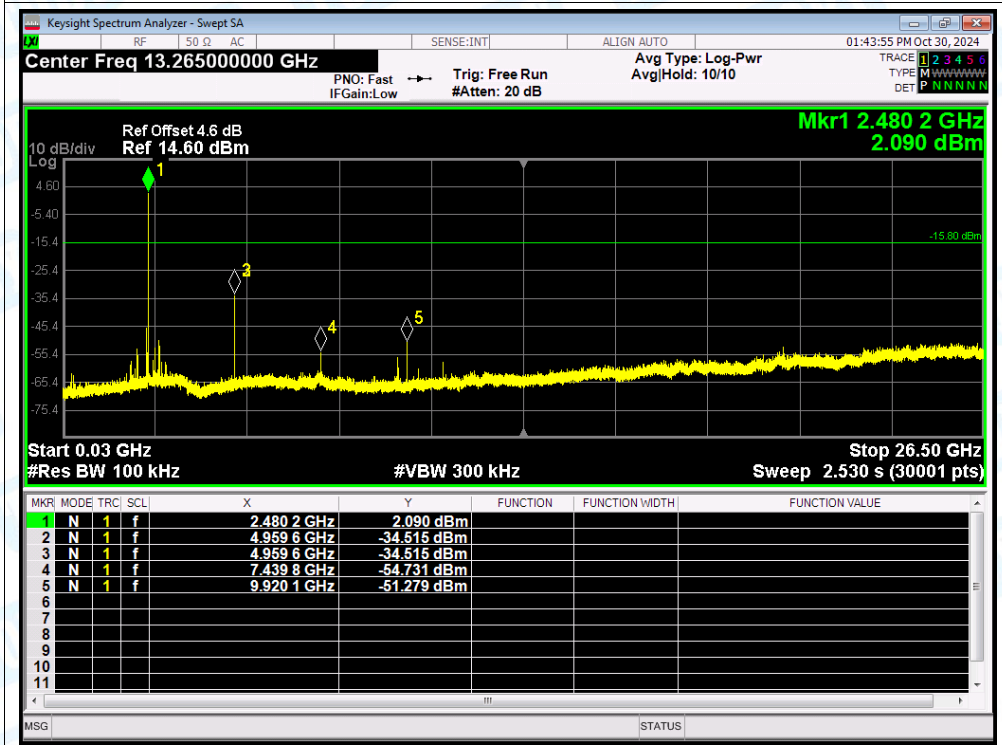
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



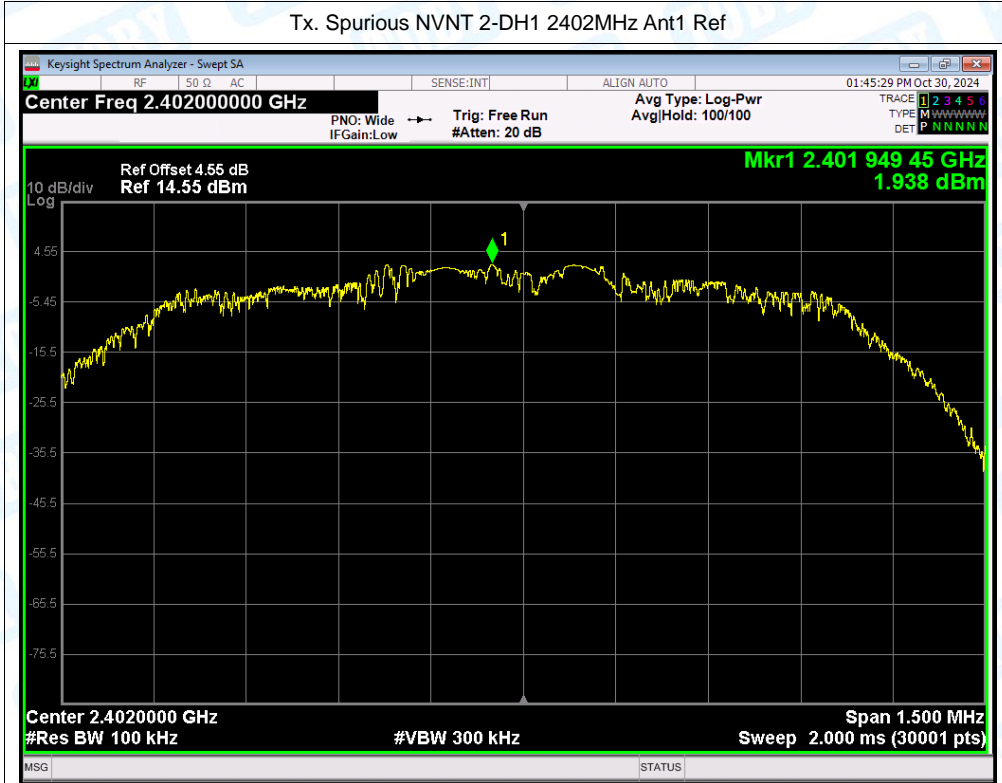
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



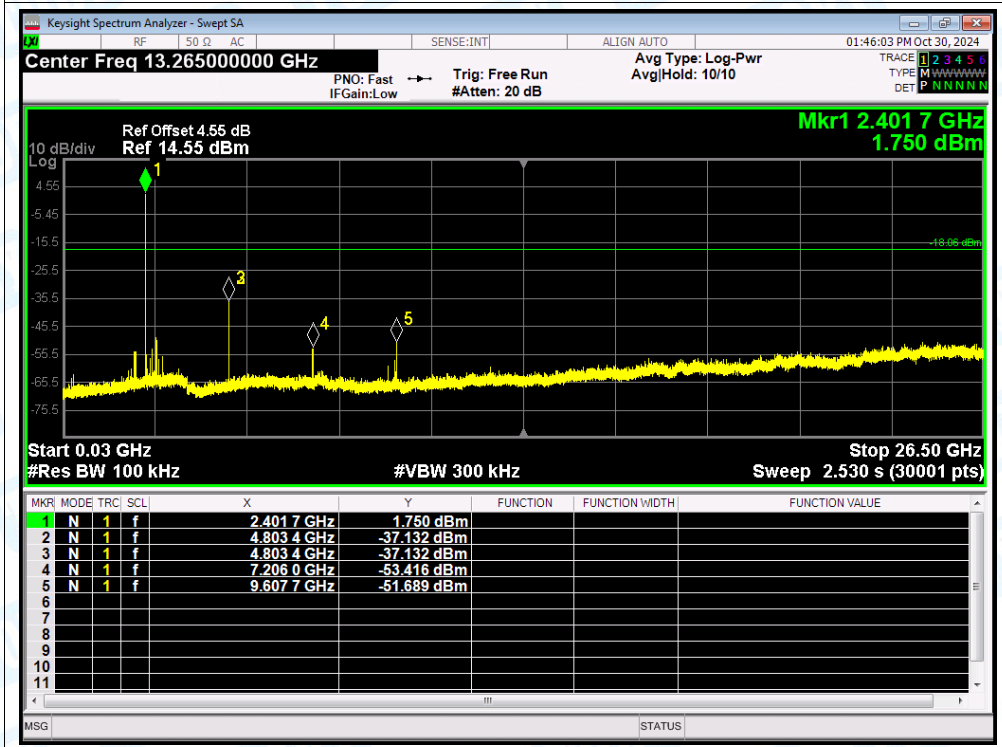
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



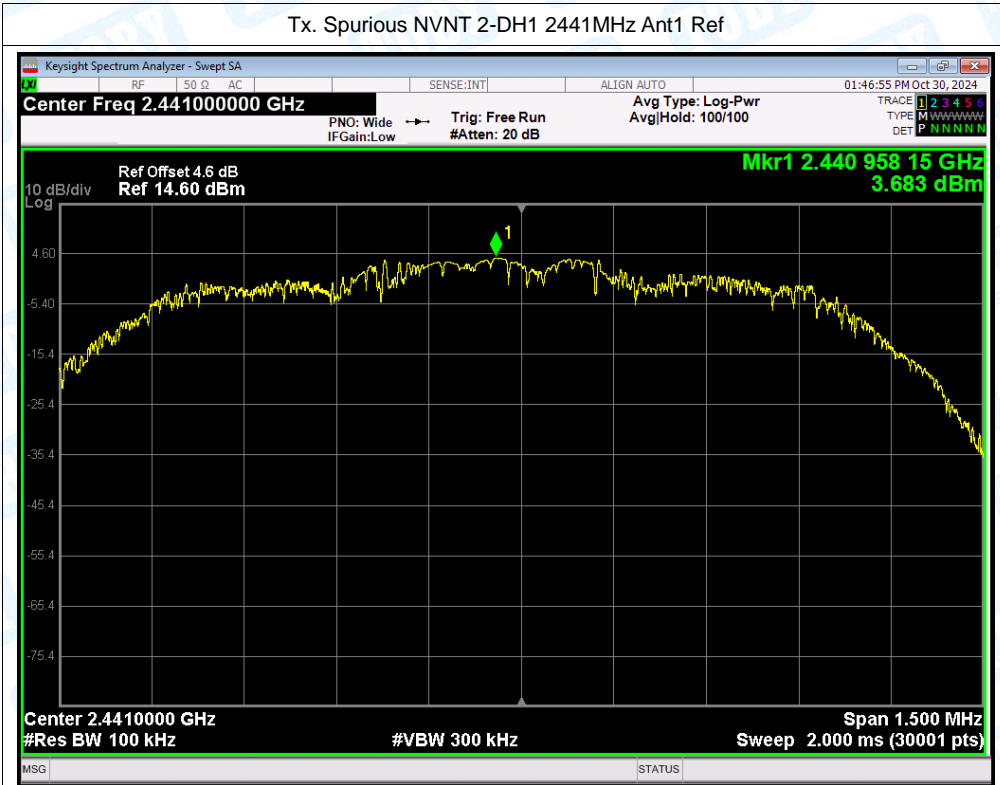
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



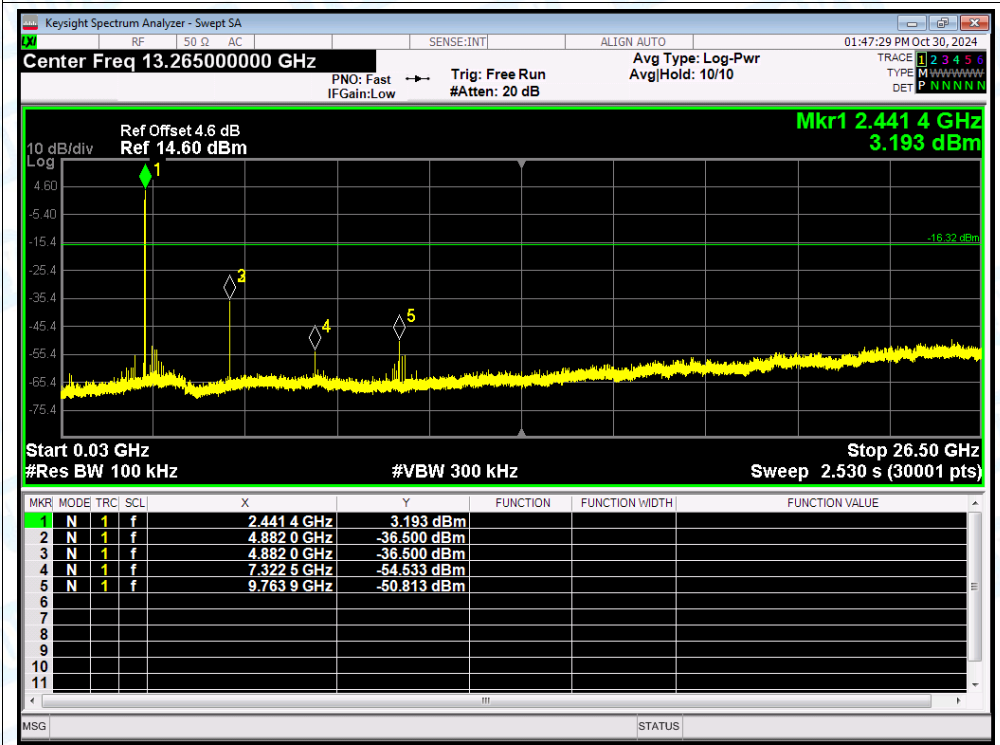
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



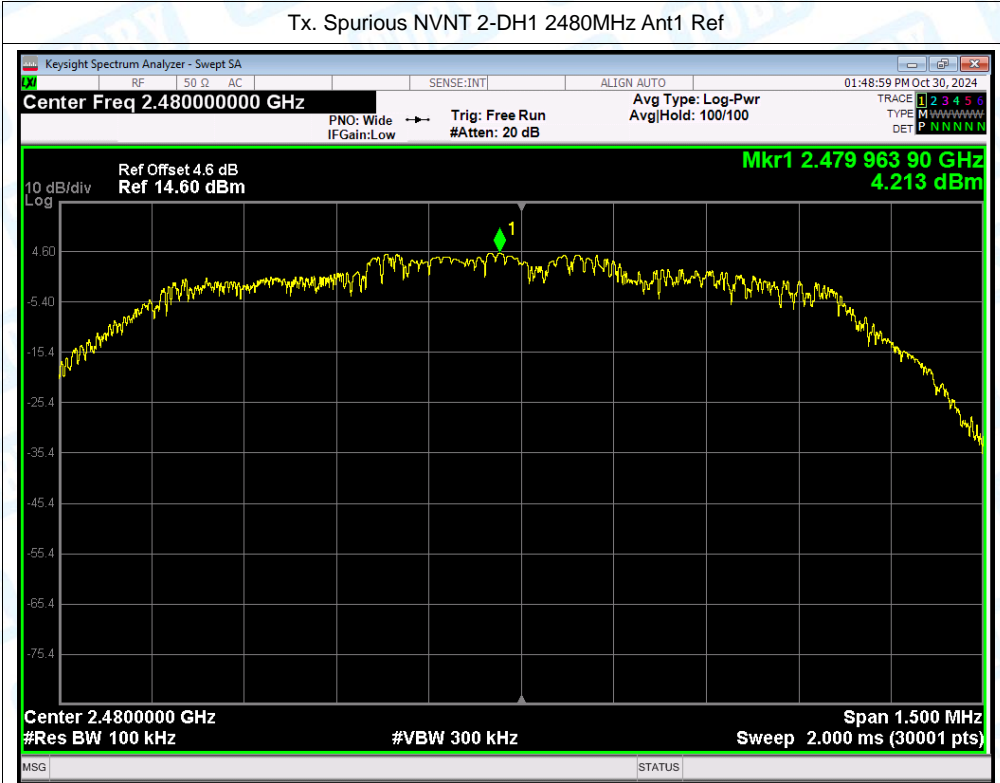
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



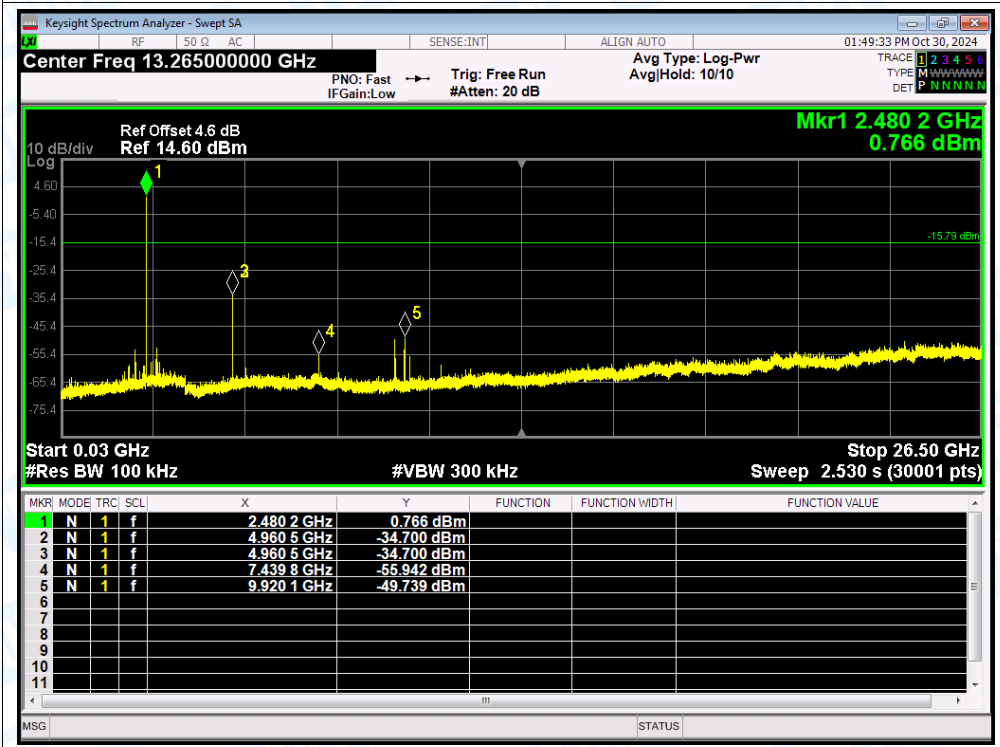
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



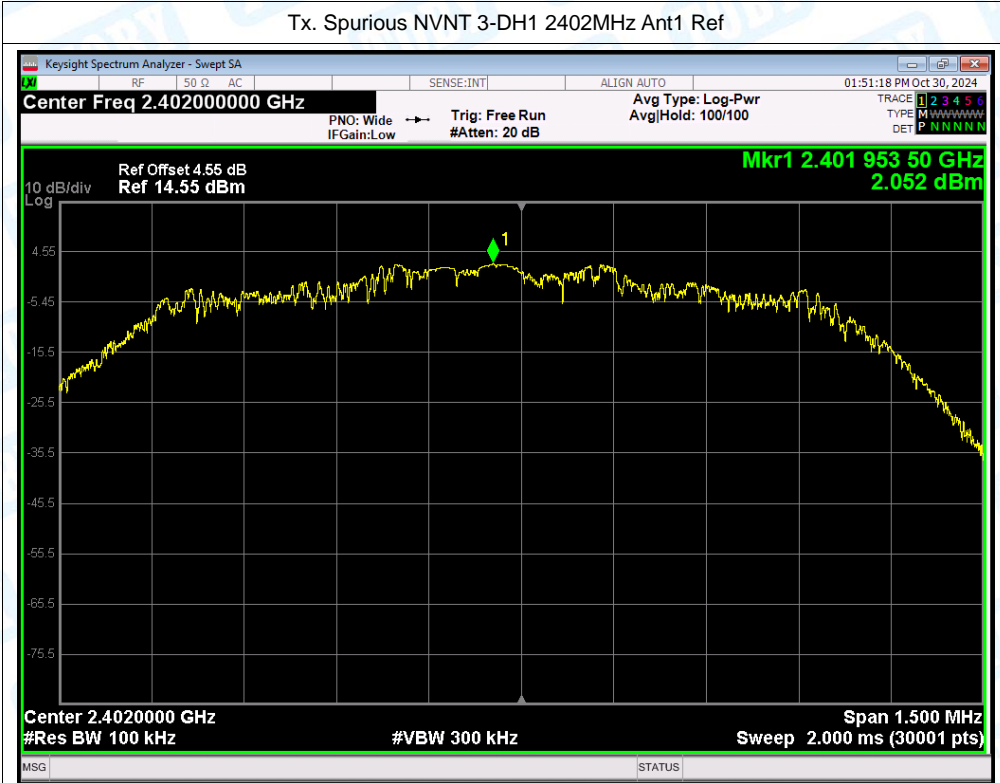
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



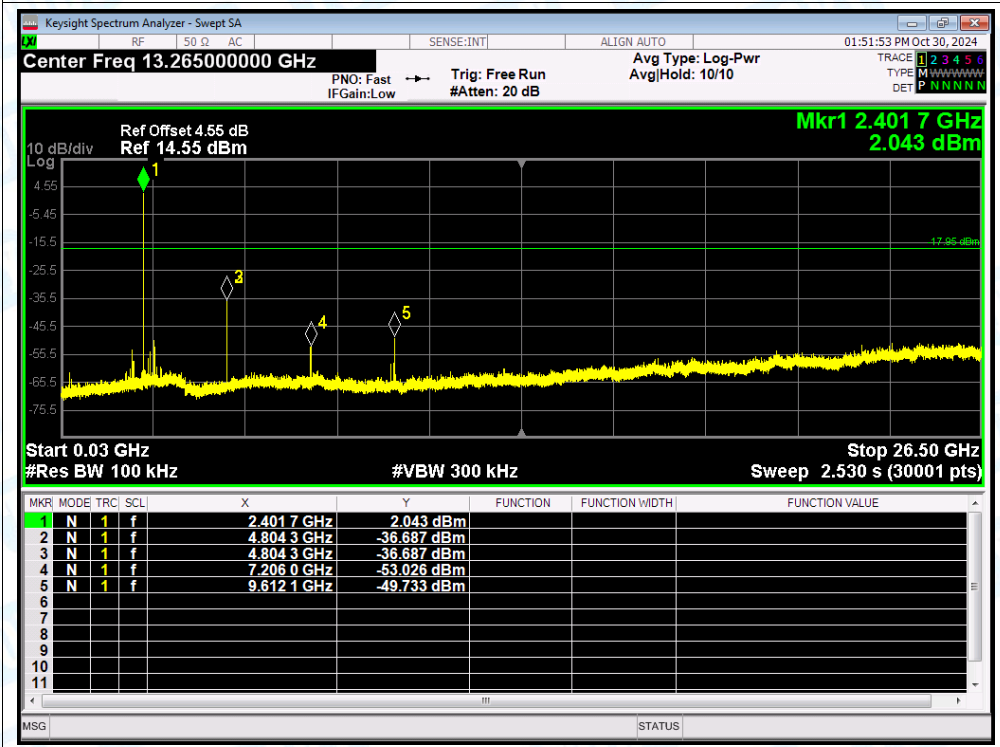
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref

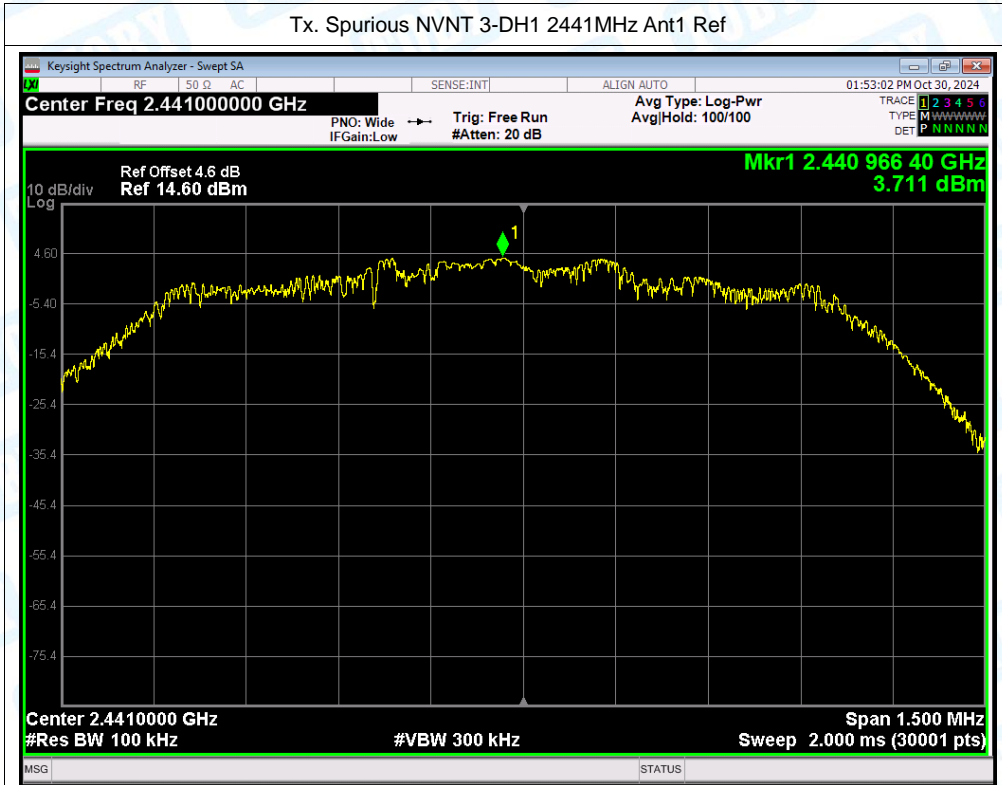


Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission

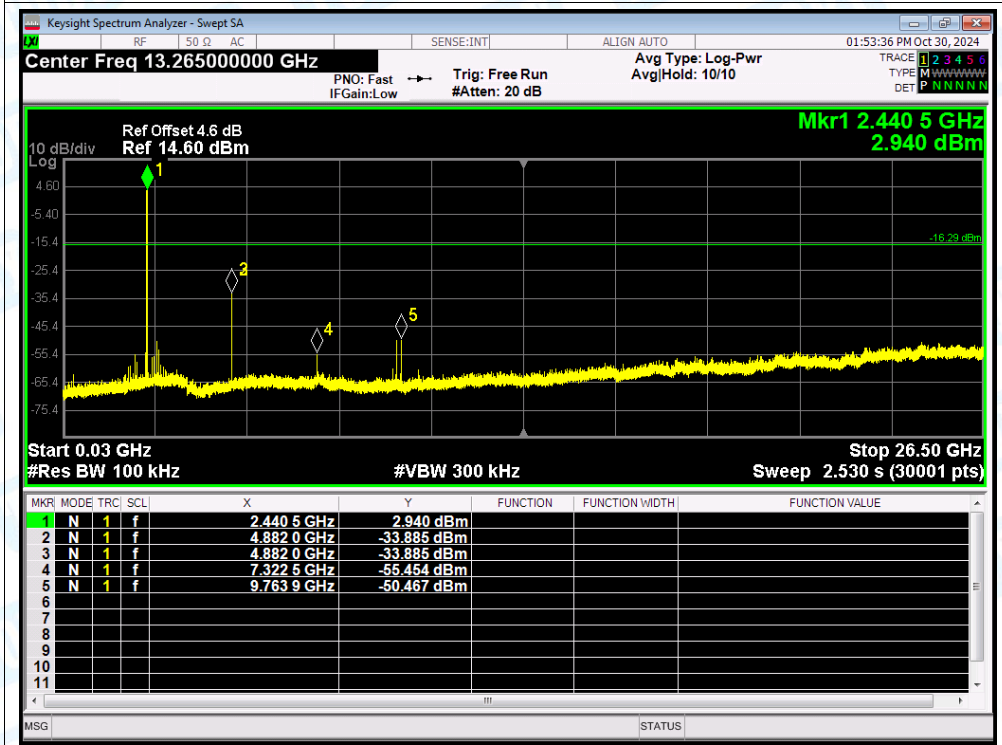




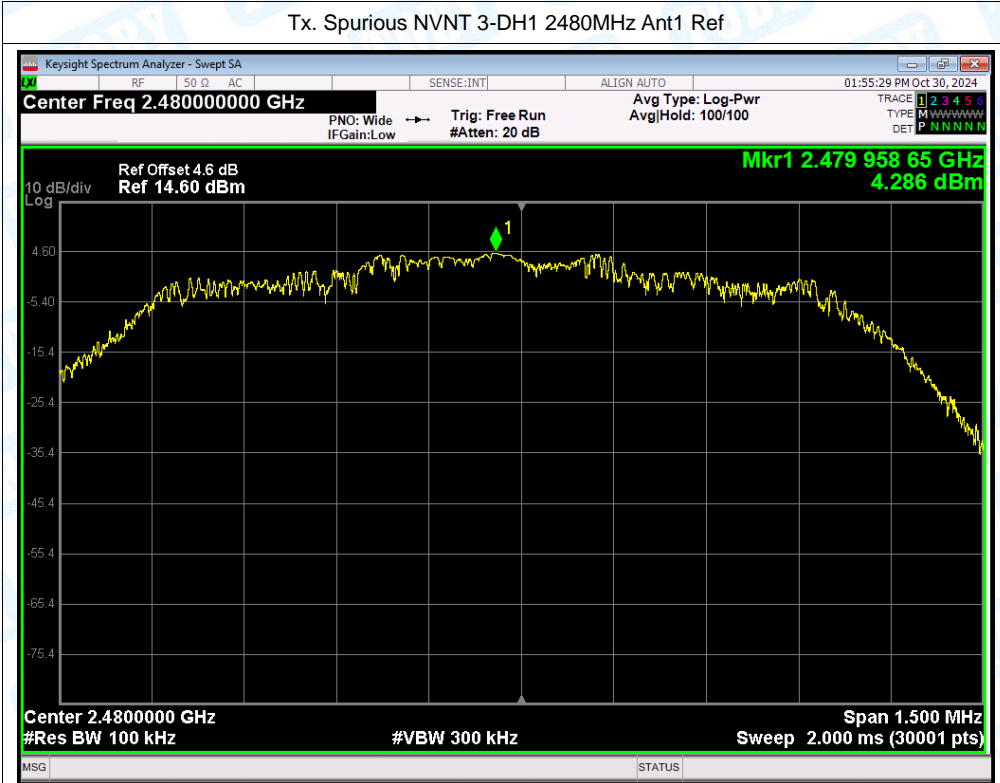
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



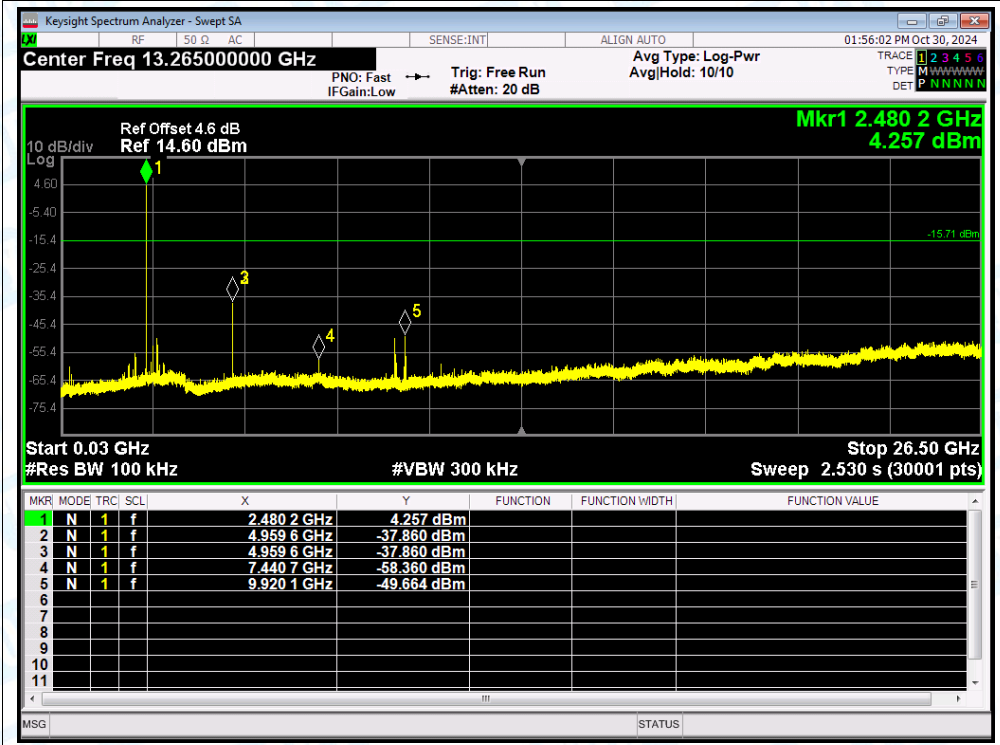
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

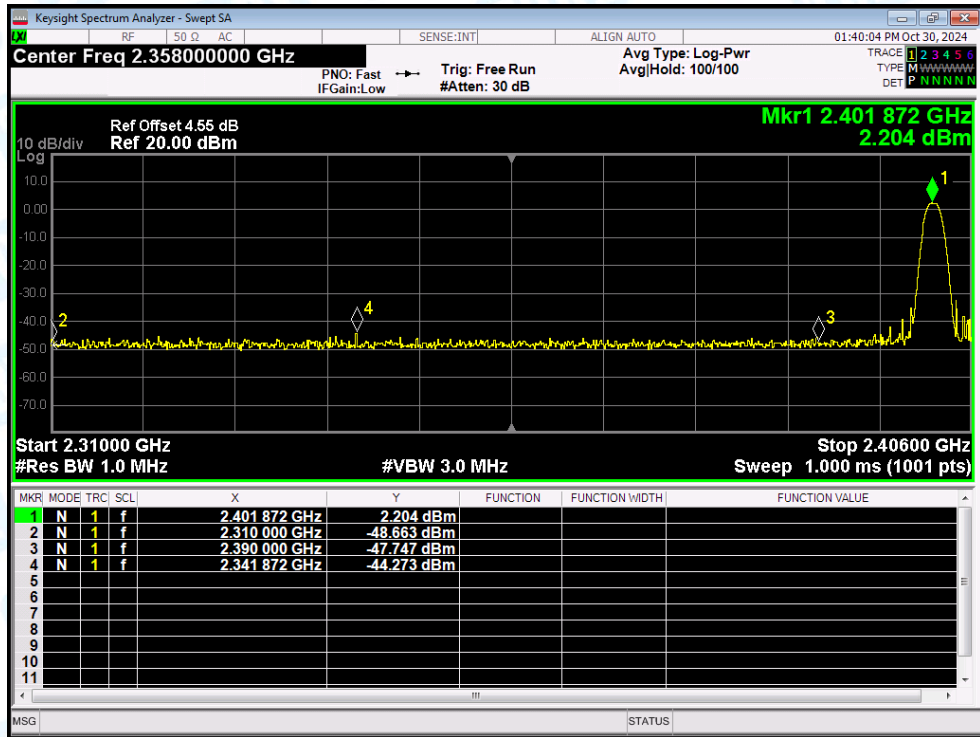


## 8.Restrict Band

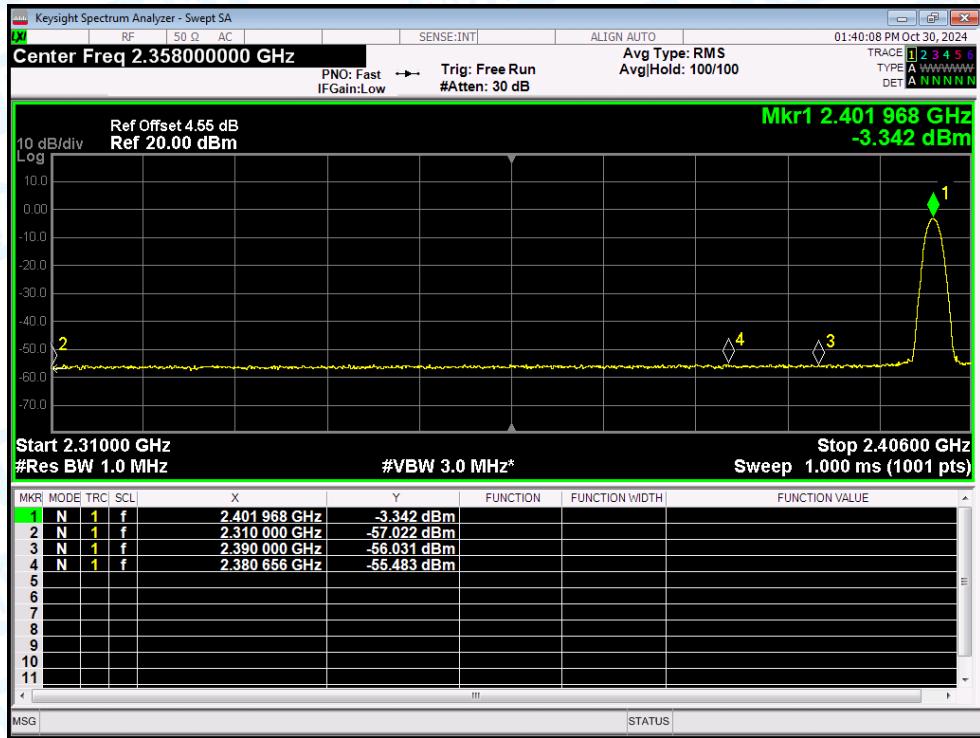
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-48.66	2	-	48.6	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-57.02	2	4.95	45.19	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2341.872	-44.27	2	-	52.99	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2380.656	-55.48	2	4.95	46.73	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-47.75	2	-	49.51	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-56.03	2	4.95	46.18	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-45.17	2	-	52.09	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-54.79	2	4.95	47.42	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.776	-37.1	2	-	60.16	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.536	-53.75	2	4.95	48.46	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-47.32	2	-	49.94	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-55.58	2	4.95	46.63	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-48.72	2	-	48.54	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.91	2	4.74	45.09	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2386.128	-45.38	2	-	51.88	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2378.064	-55.28	2	4.74	46.72	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-48.84	2	-	48.42	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-55.98	2	4.74	46.02	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-45.42	2	-	51.84	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-54.69	2	4.74	47.31	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2485.048	-38.01	2	-	59.25	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.728	-53.5	2	4.74	48.5	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-46.96	2	-	50.3	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.54	2	4.74	46.46	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-49.01	2	-	48.25	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.86	2	4.74	45.14	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2382.576	-45.34	2	-	51.92	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2359.824	-55.26	2	4.74	46.74	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-48.51	2	-	48.75	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-56.39	2	4.74	45.61	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-46.35	2	-	50.91	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-54.06	2	4.84	48.04	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2484.184	-36.4	2	-	60.86	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2484.304	-53.58	2	4.84	48.52	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-47.71	2	-	49.55	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.38	2	4.84	46.72	Average	54	Pass

Test Graphs

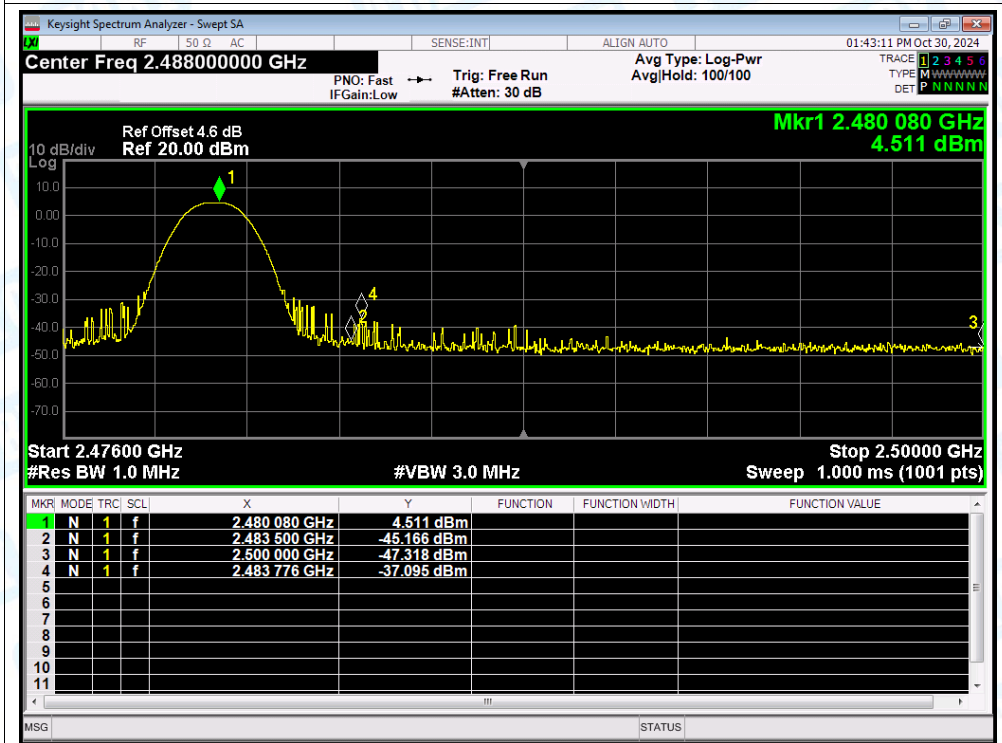
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



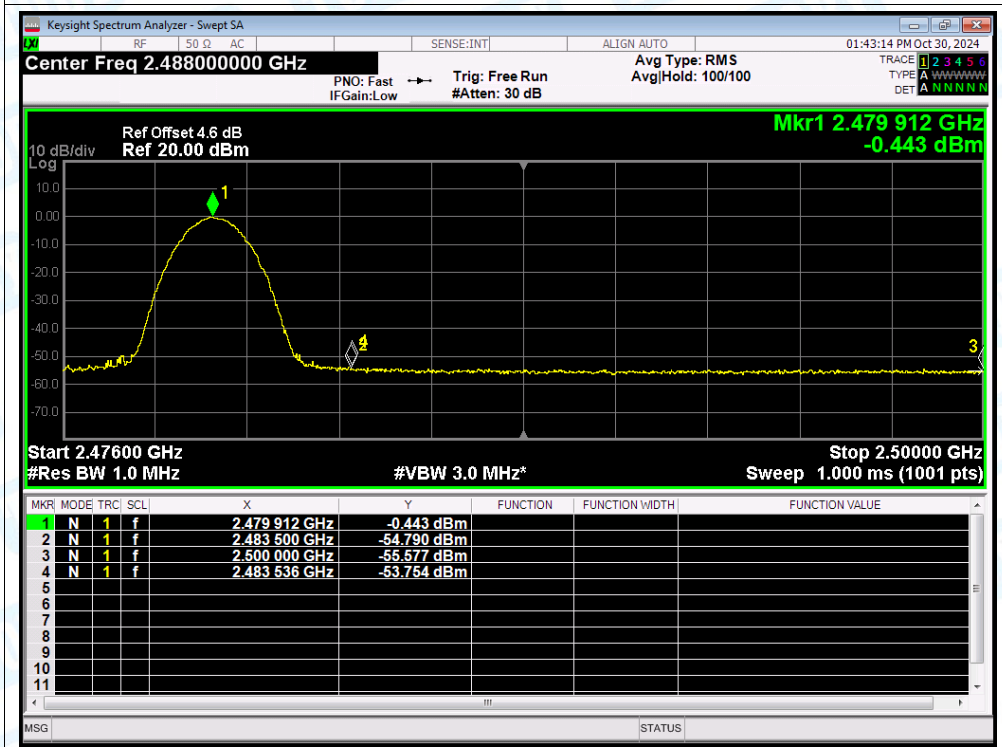
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average

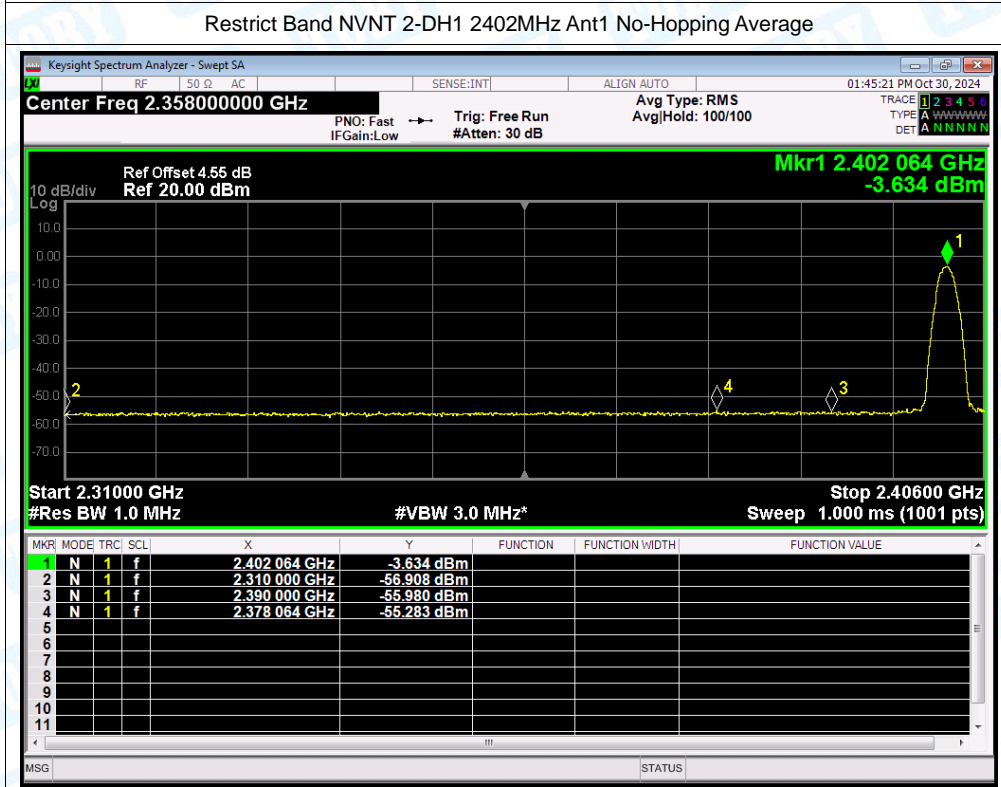
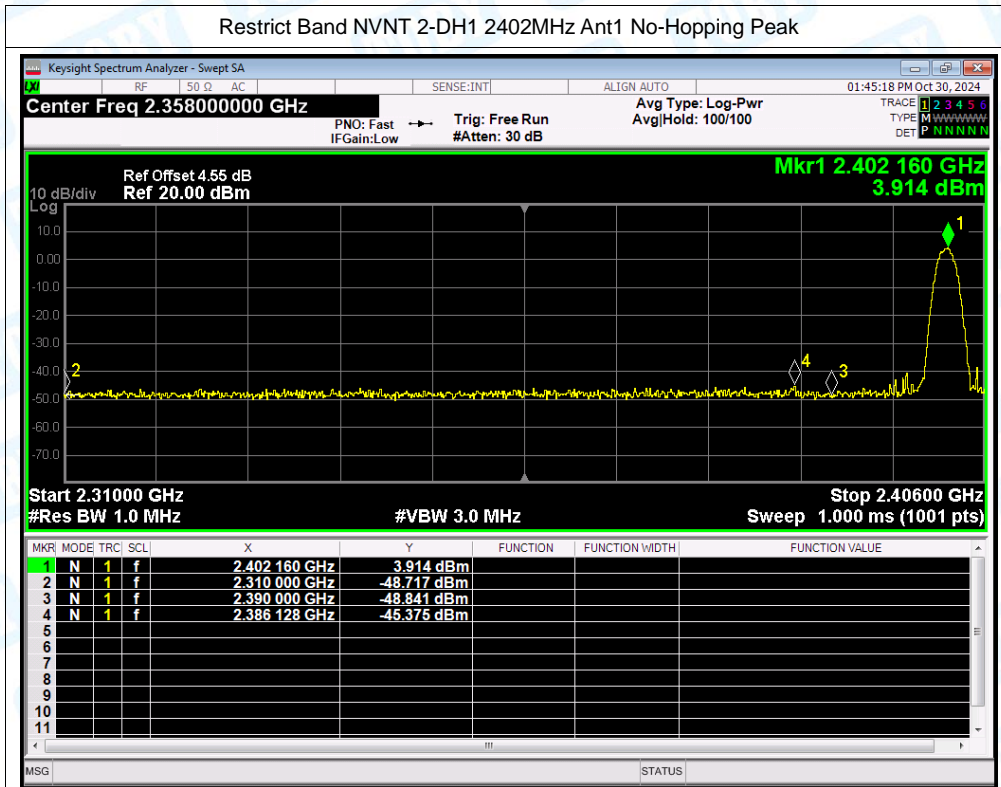


Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak

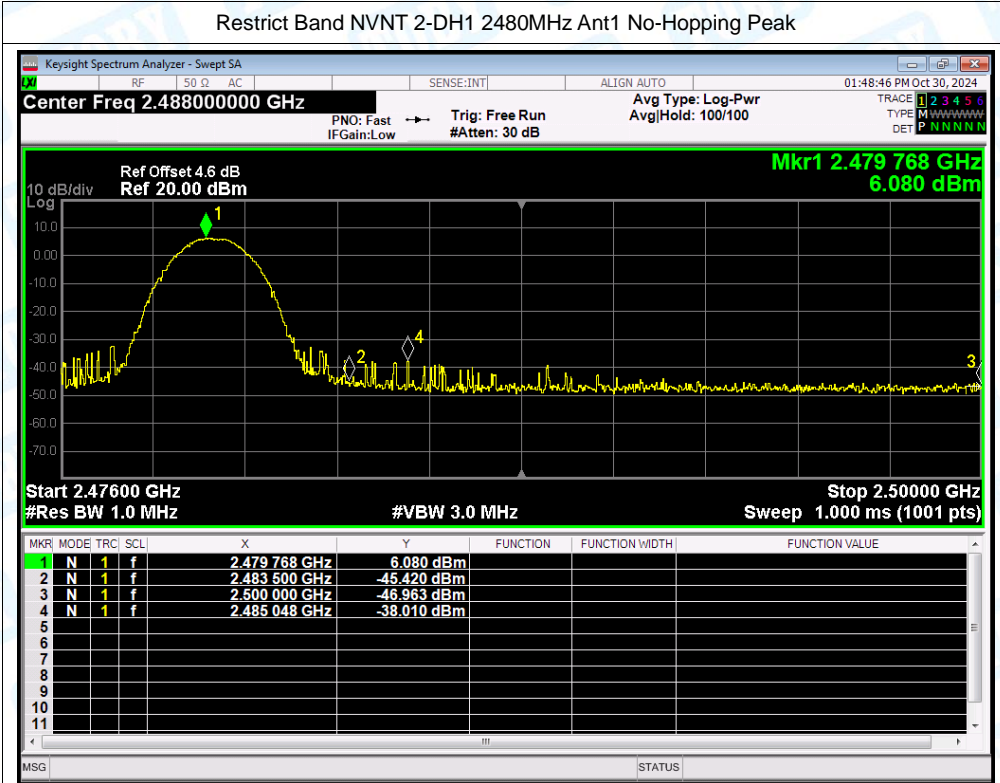


Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average

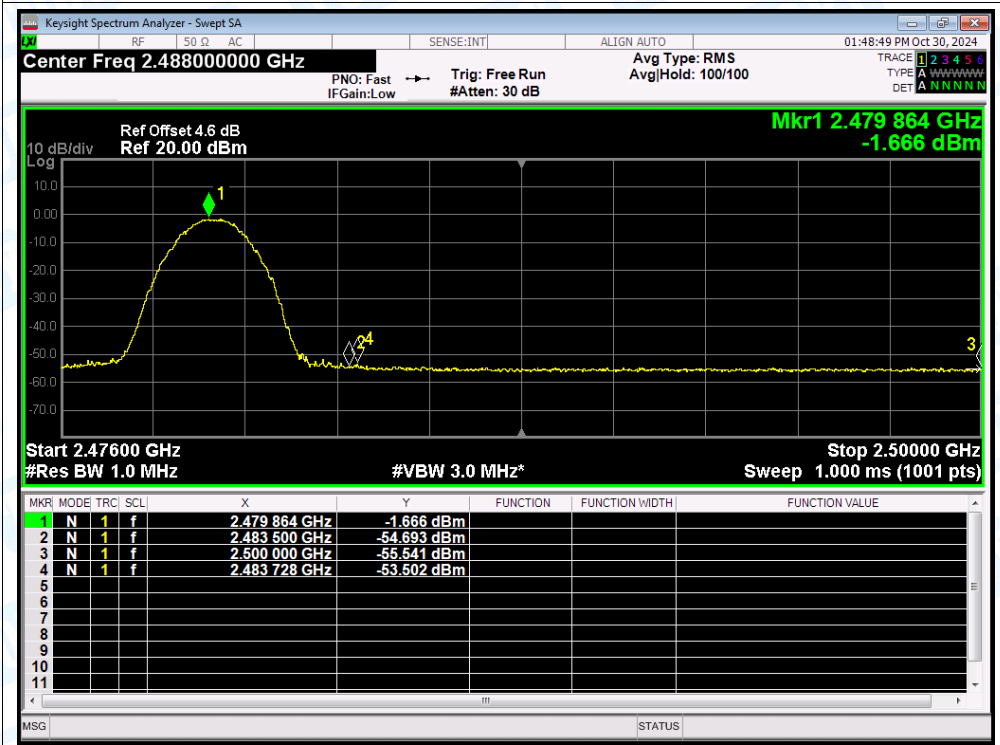


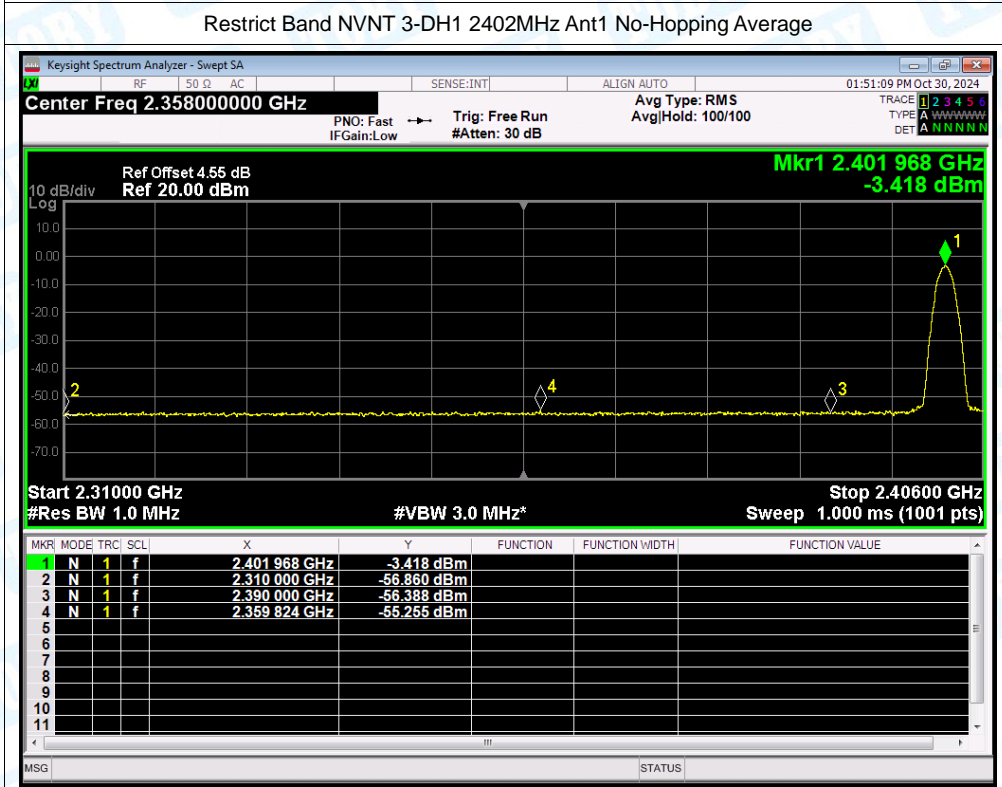
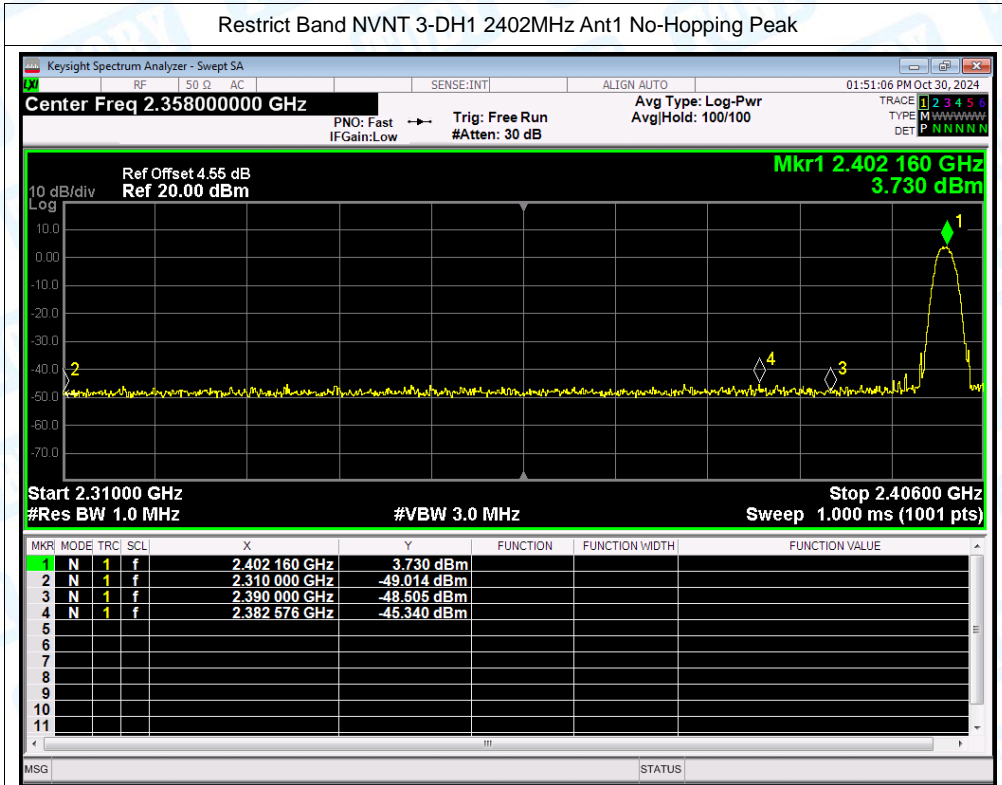


Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



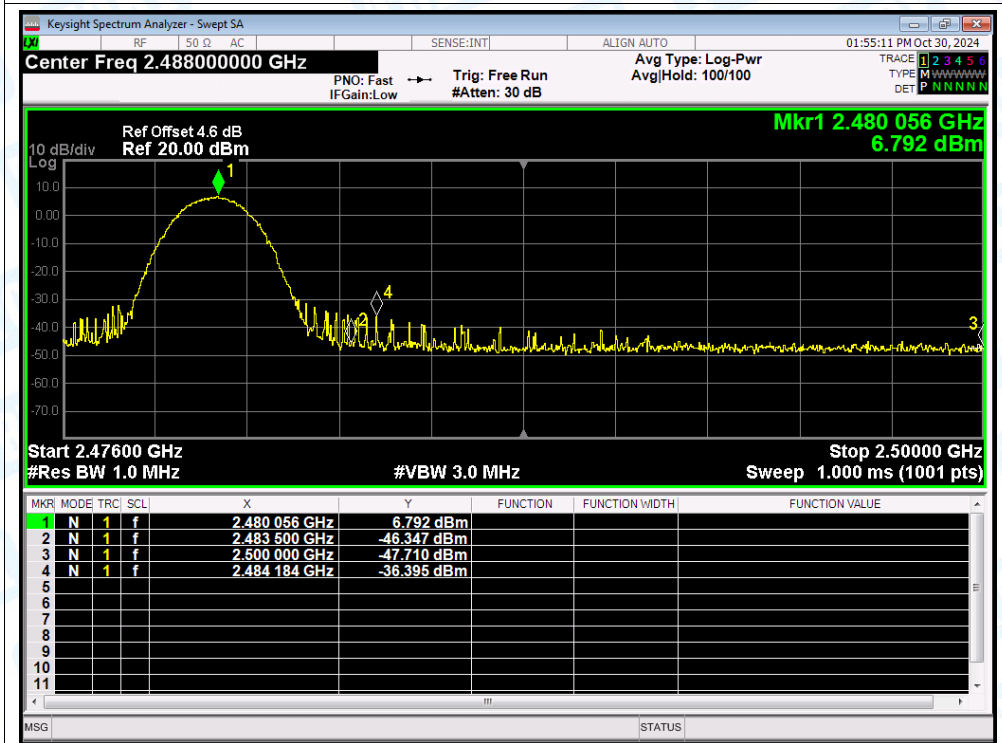
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



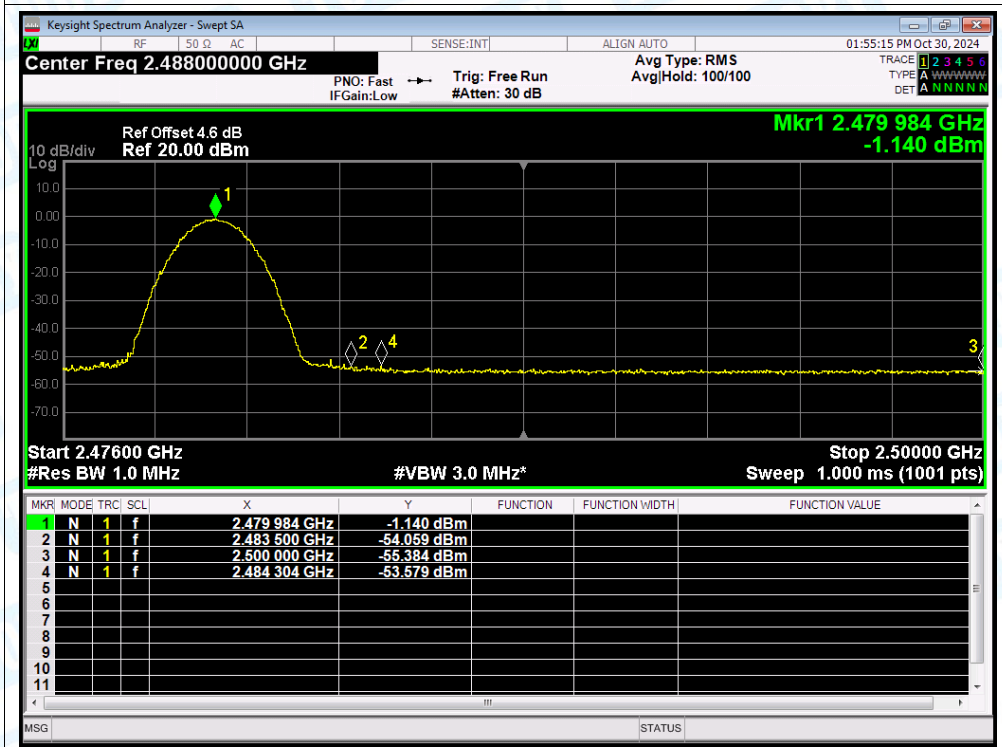




Restrict Band NVNT 3-DH1 2480MHz Ant1 No-Hopping Peak



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

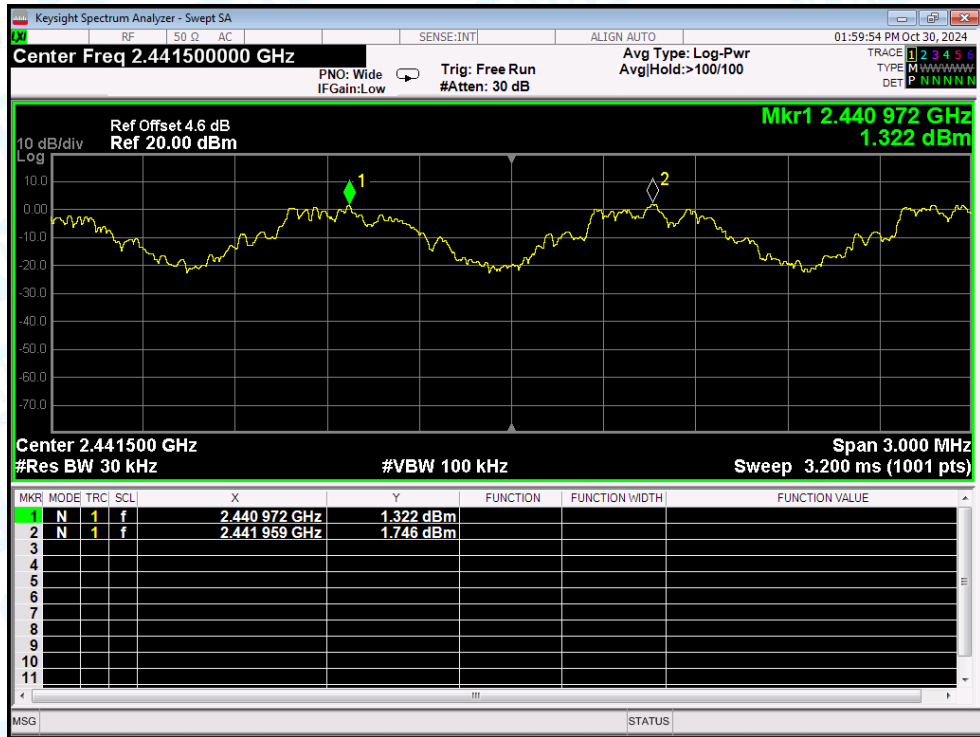


## 9. Carrier Frequencies Separation

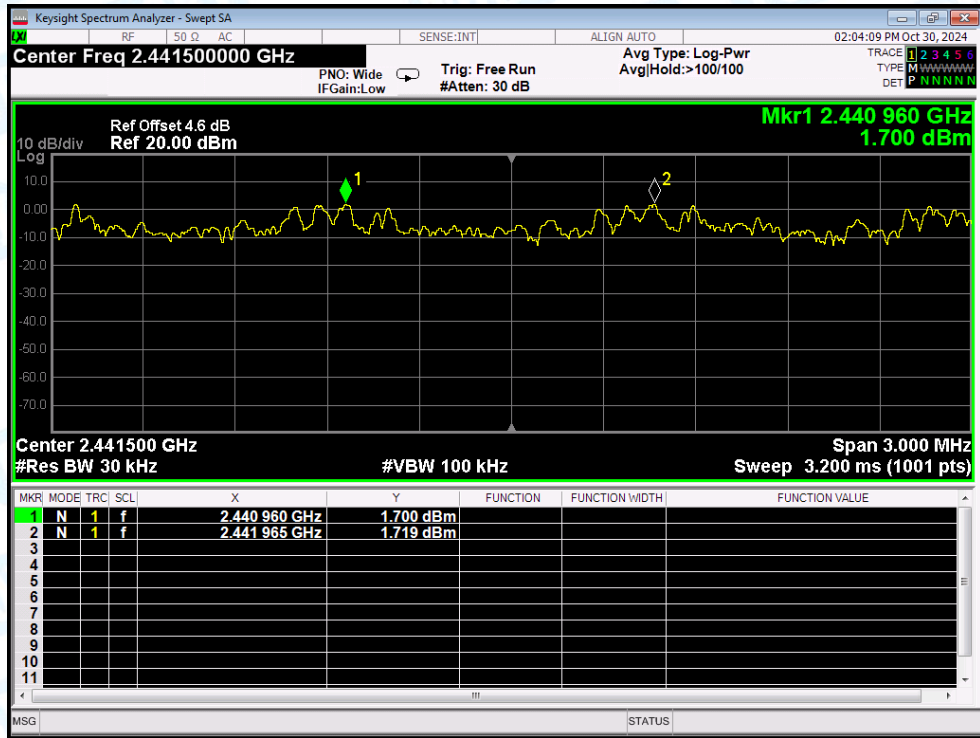
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.972	2441.959	0.987	0.593	Pass
NVNT	2-DH1	Ant1	2440.96	2441.965	1.005	0.86	Pass
NVNT	3-DH1	Ant1	2440.963	2441.956	0.993	0.813	Pass

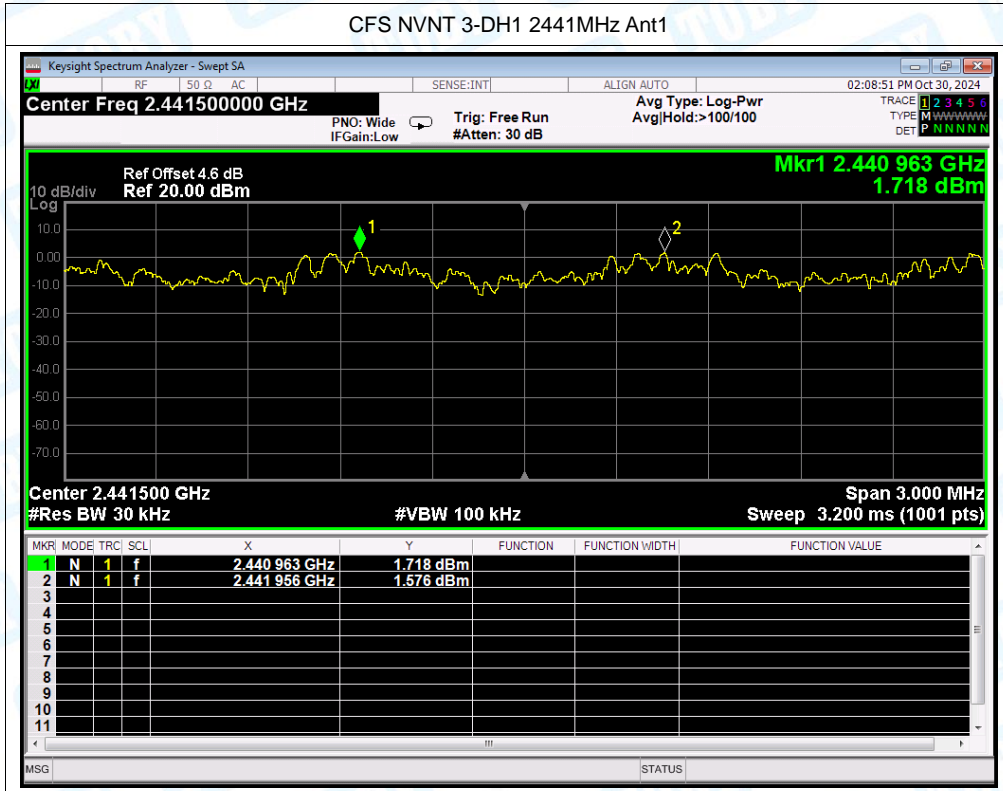
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



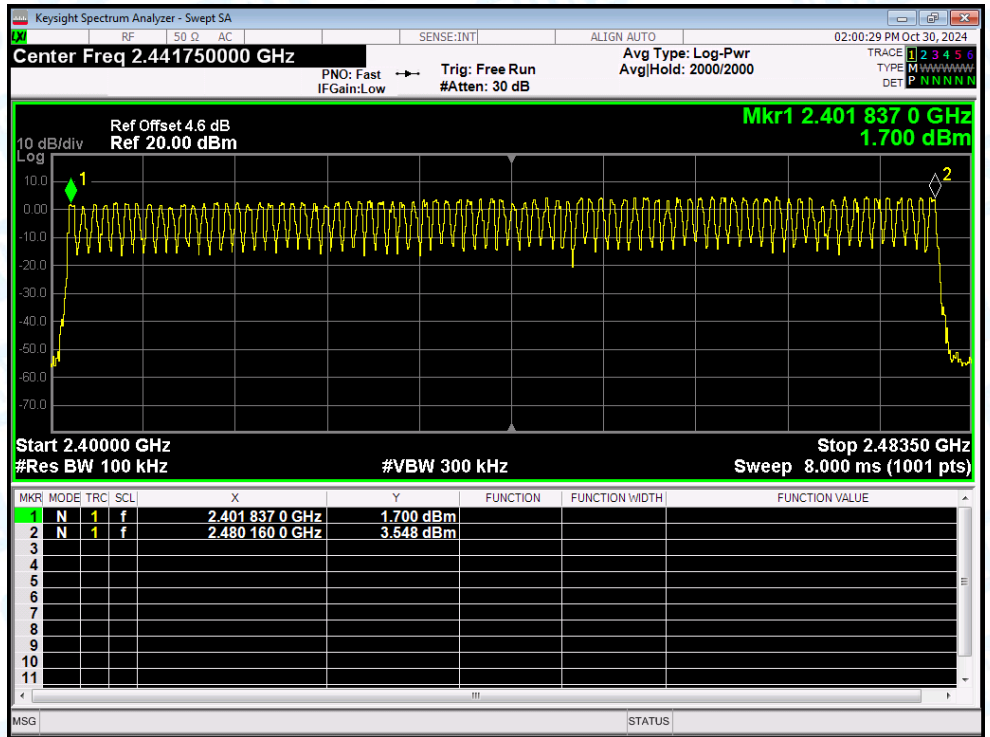


## 10.Number of Hopping Channel

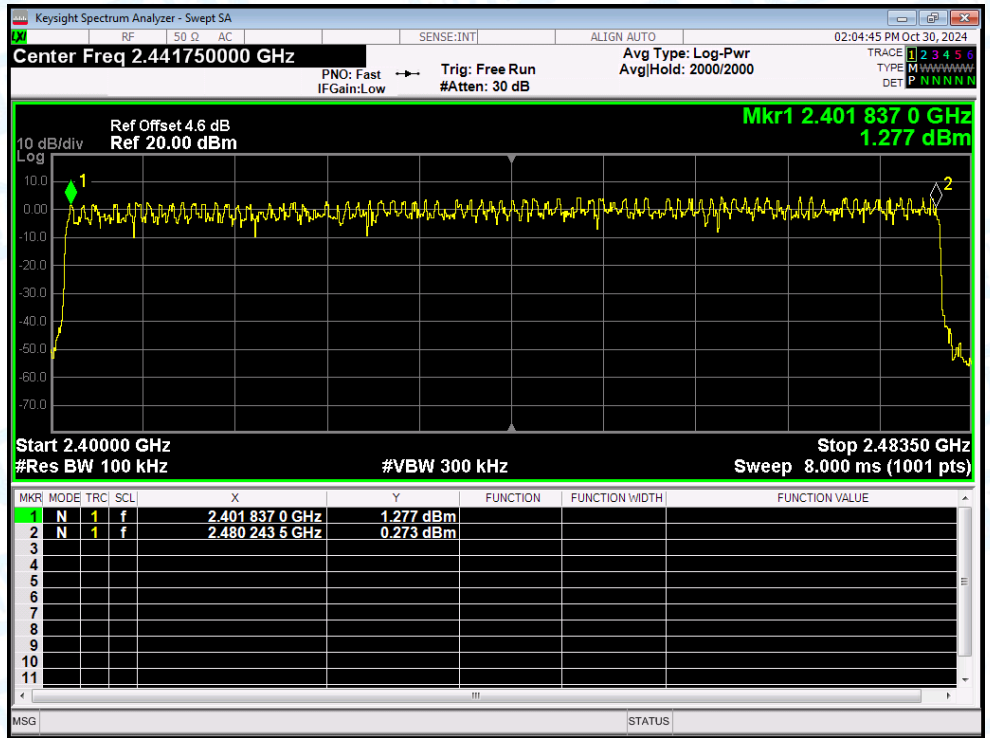
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

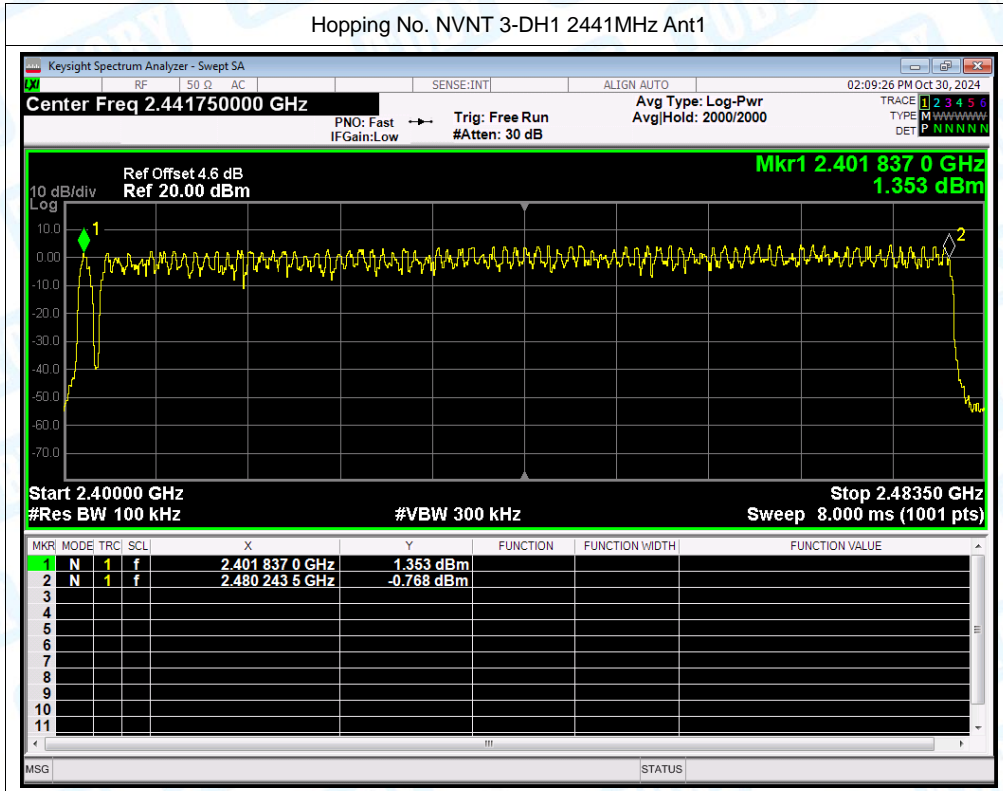
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1





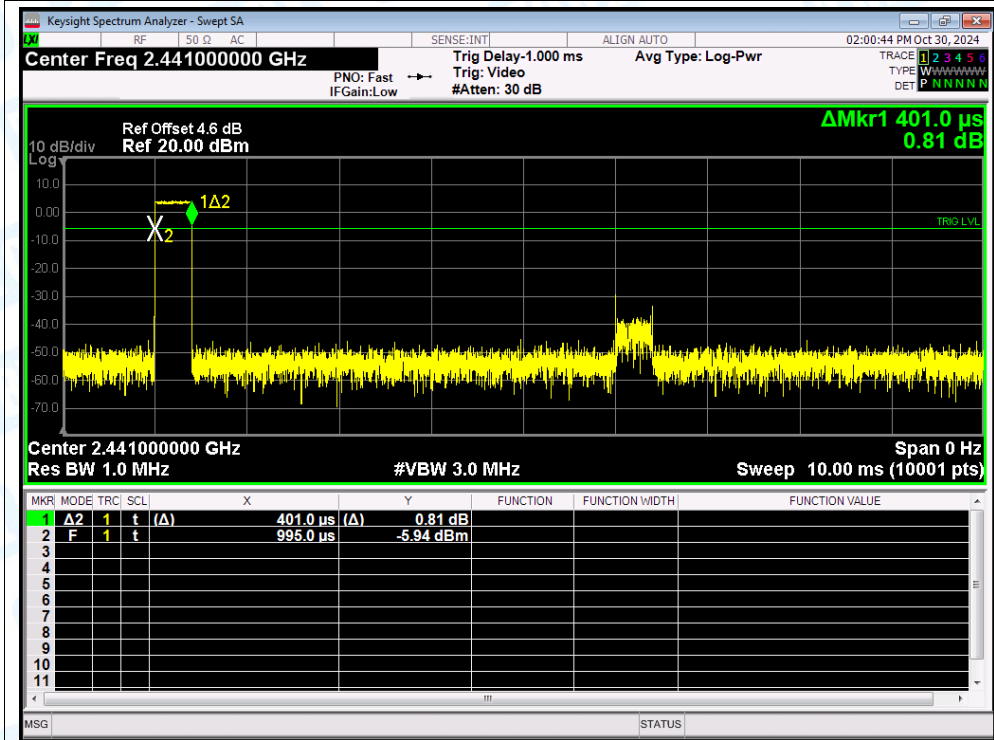
## 11.Dwell Time

Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.401	128.32	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.656	264.96	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.905	309.867	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.409	130.88	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.661	265.76	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.91	310.4	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.409	130.88	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.659	265.44	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.91	310.4	31600	400	Pass

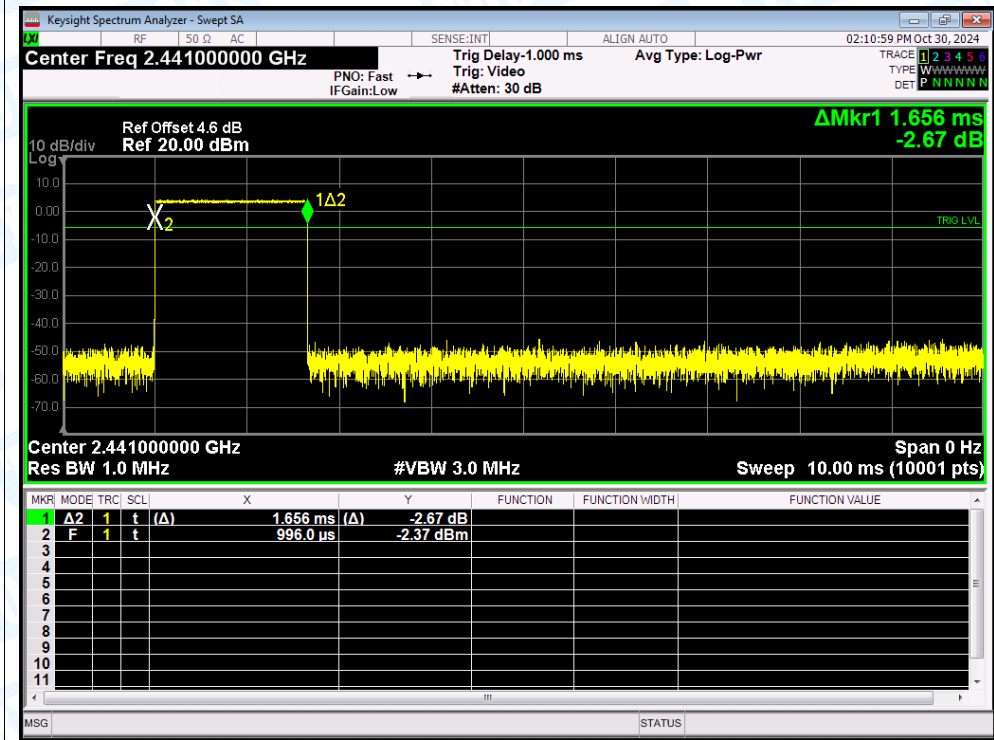


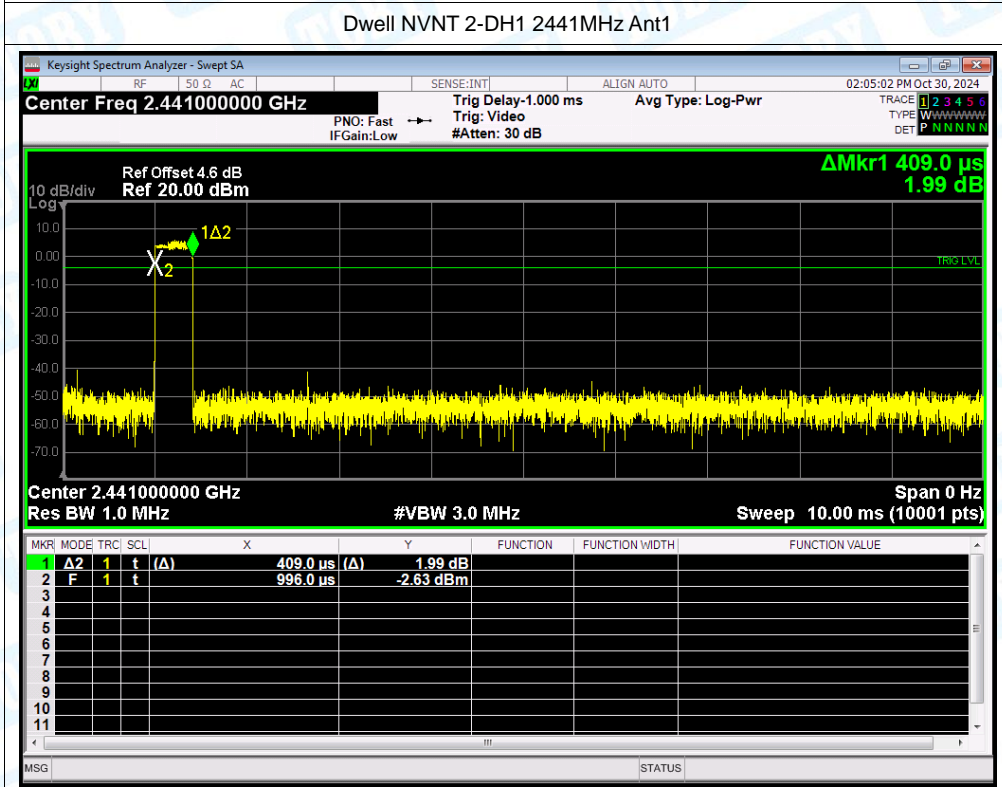
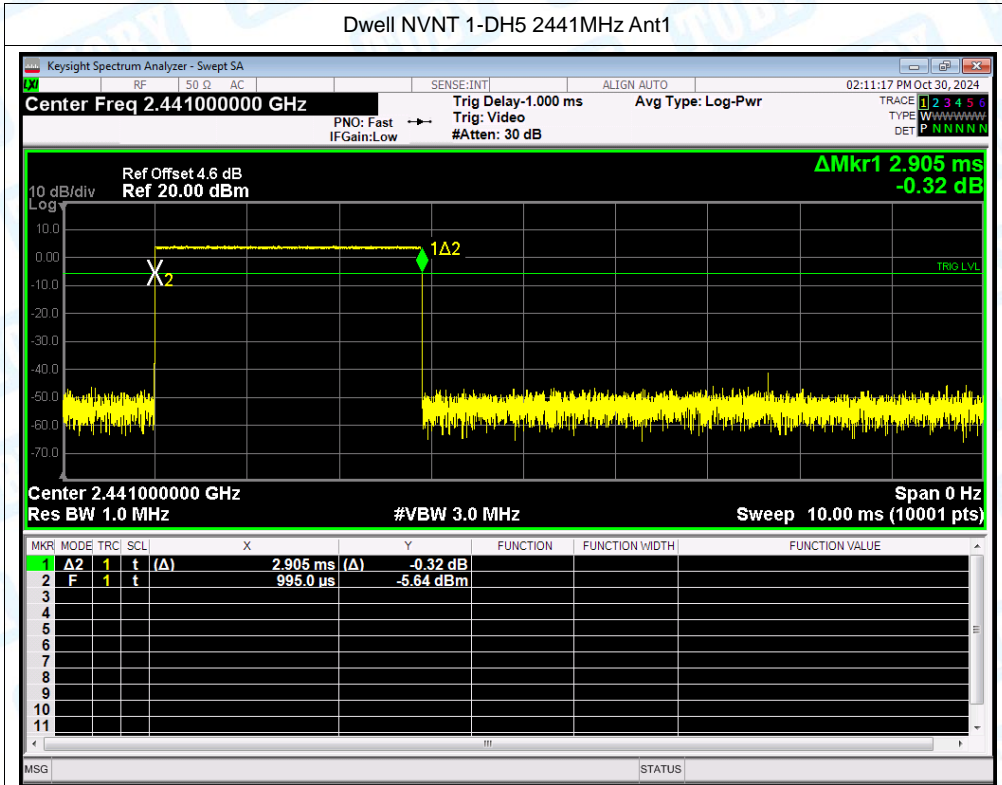
Test Graphs

Dwell NVNT 1-DH1 2441MHz Ant1

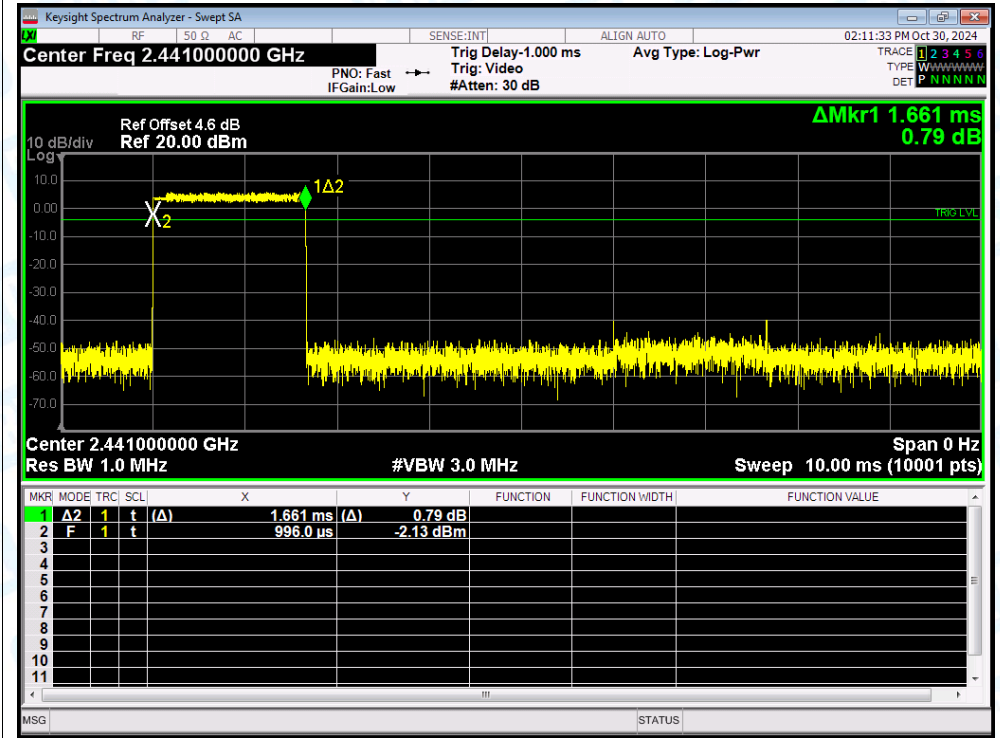


Dwell NVNT 1-DH3 2441MHz Ant1

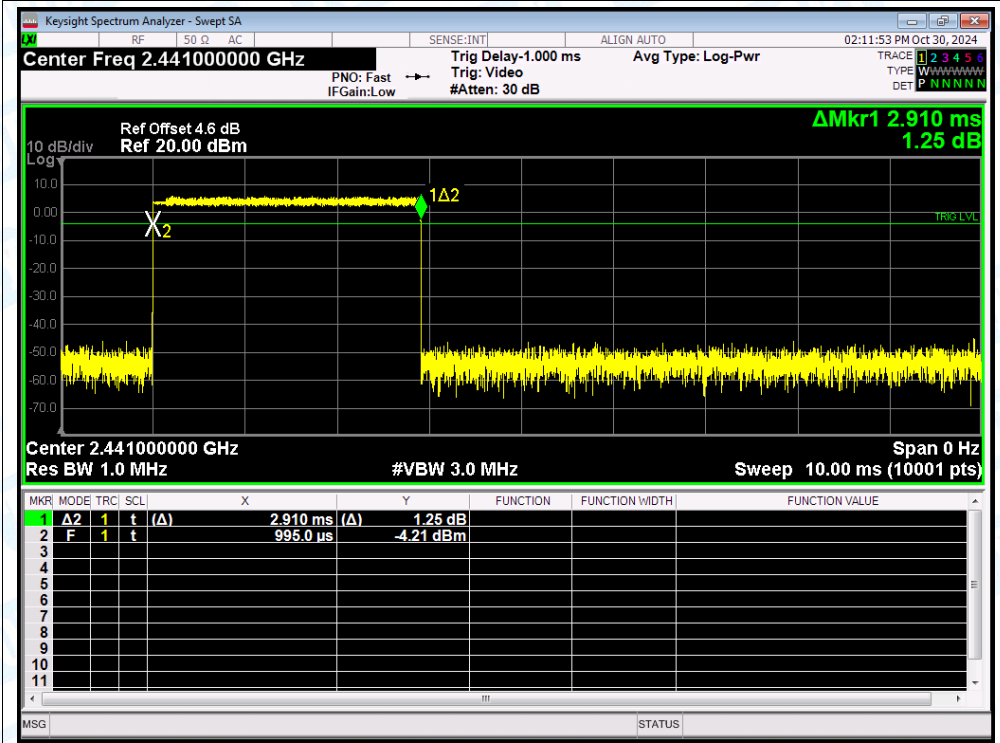




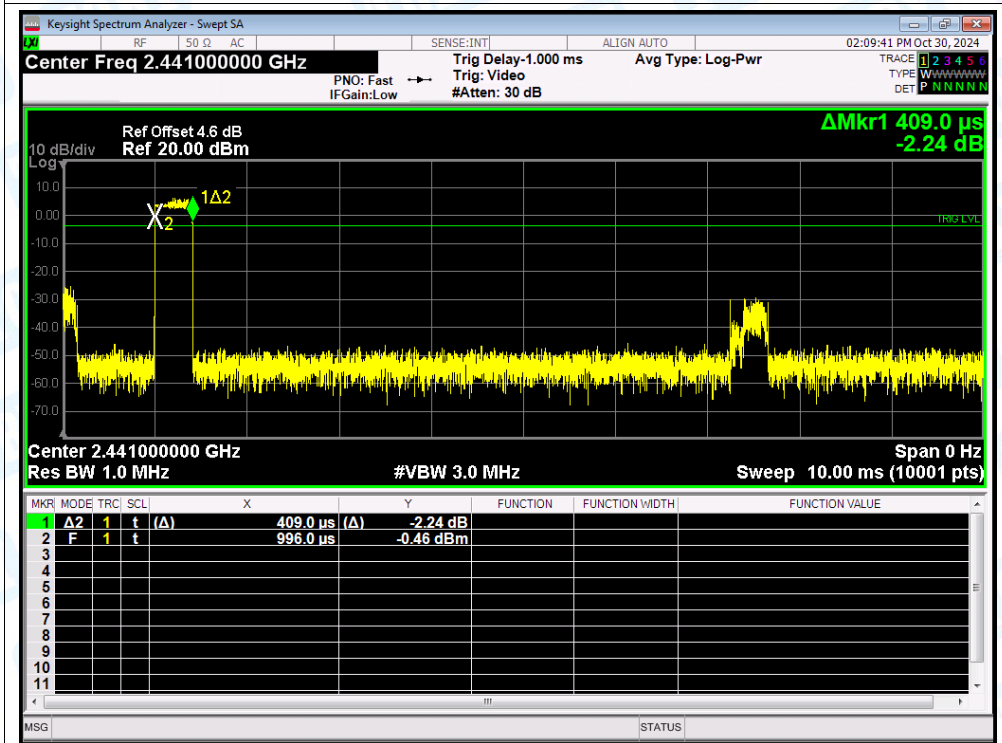
Dwell NVNT 2-DH3 2441MHz Ant1



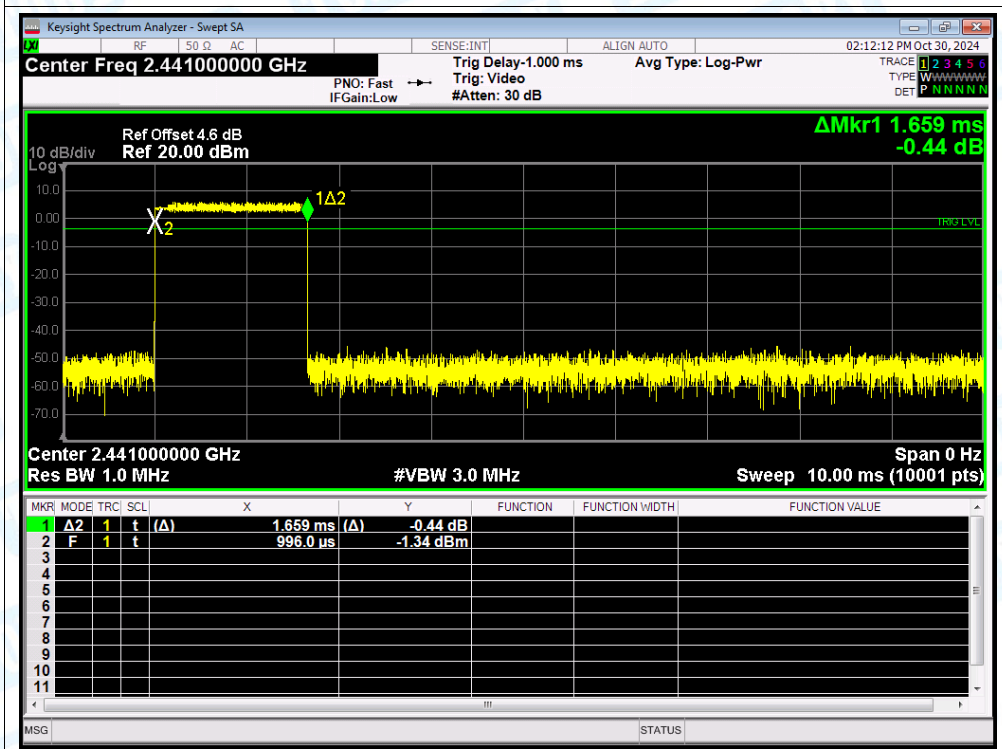
Dwell NVNT 2-DH5 2441MHz Ant1

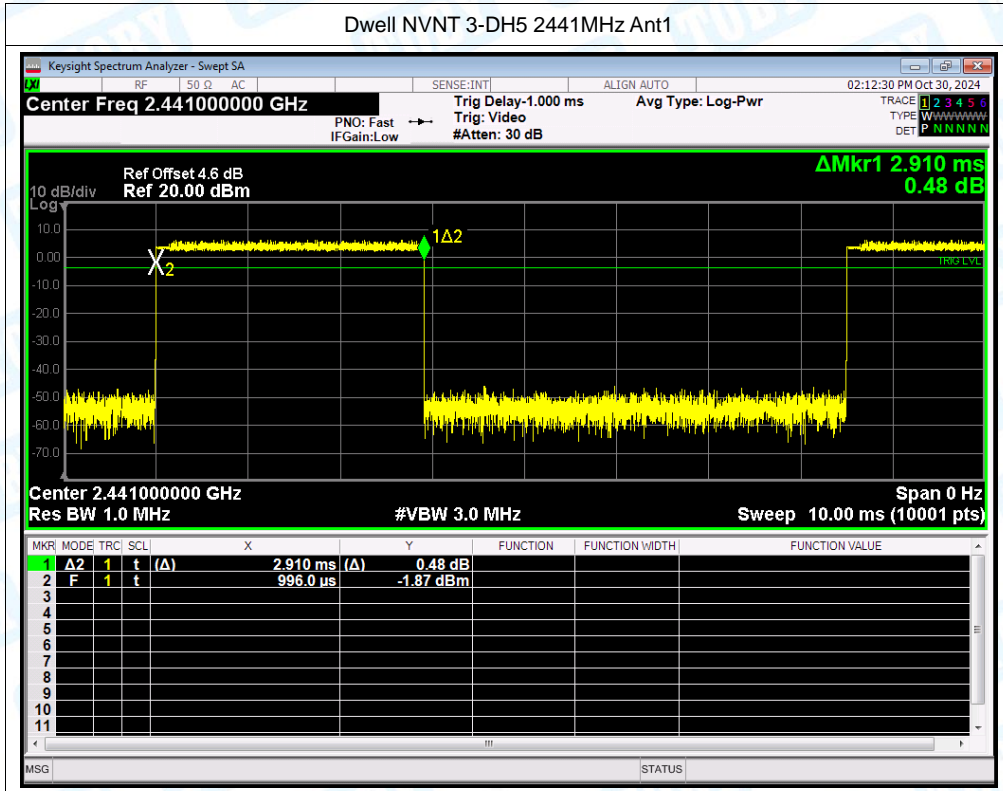


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





-----END OF REPORT-----