

# RF Test Data for Bluetooth(BDR+EDR) (Conducted Measurements)

General Description of EUT	
<b>Product Name:</b>	Digital Wind Instrument
<b>Test Model:</b>	NES-1
<b>Sample ID:</b>	202309-0169-4-2#
Environmental Conditions	
<b>Temperature:</b>	24°C
<b>Relative Humidity:</b>	50%
<b>Test Voltage:</b>	3.7V
<b>Test Engineer:</b>	Liyingsing
Note: For a more detailed features description, please refer to the report TBR-C-202309-0169-71 The report only show the worst case data.	

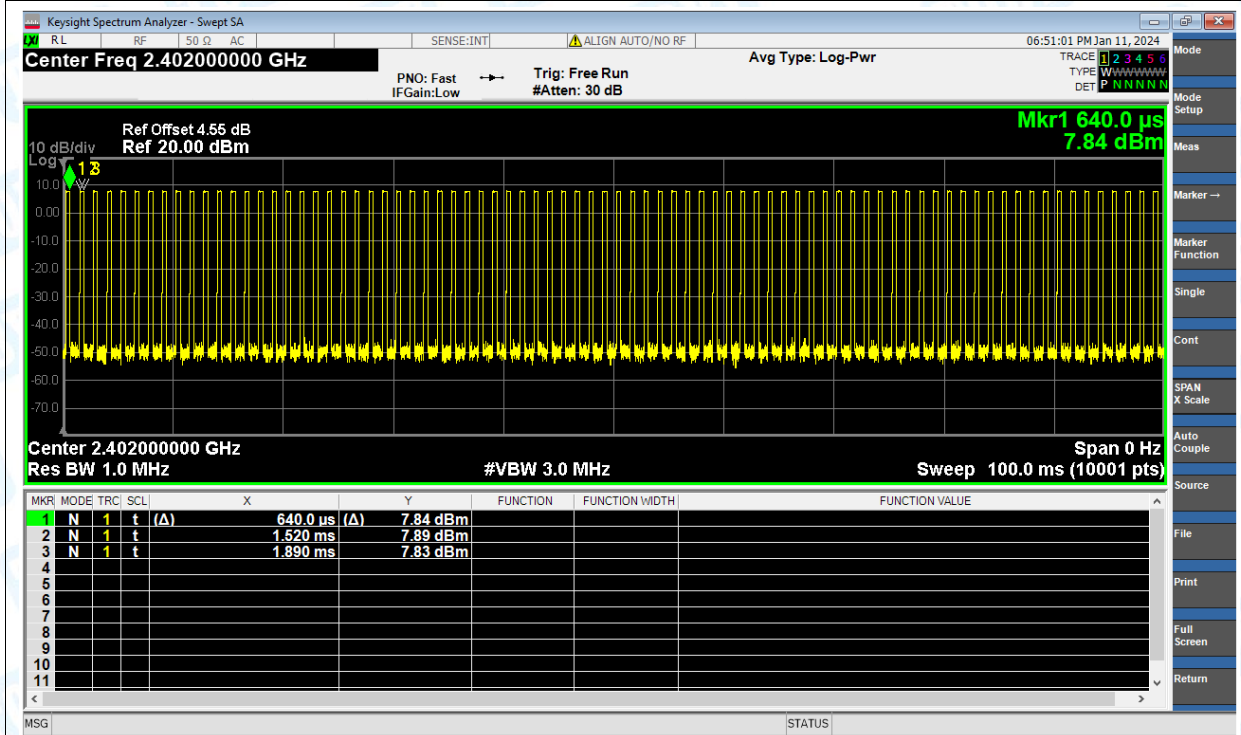


## Duty Cycle

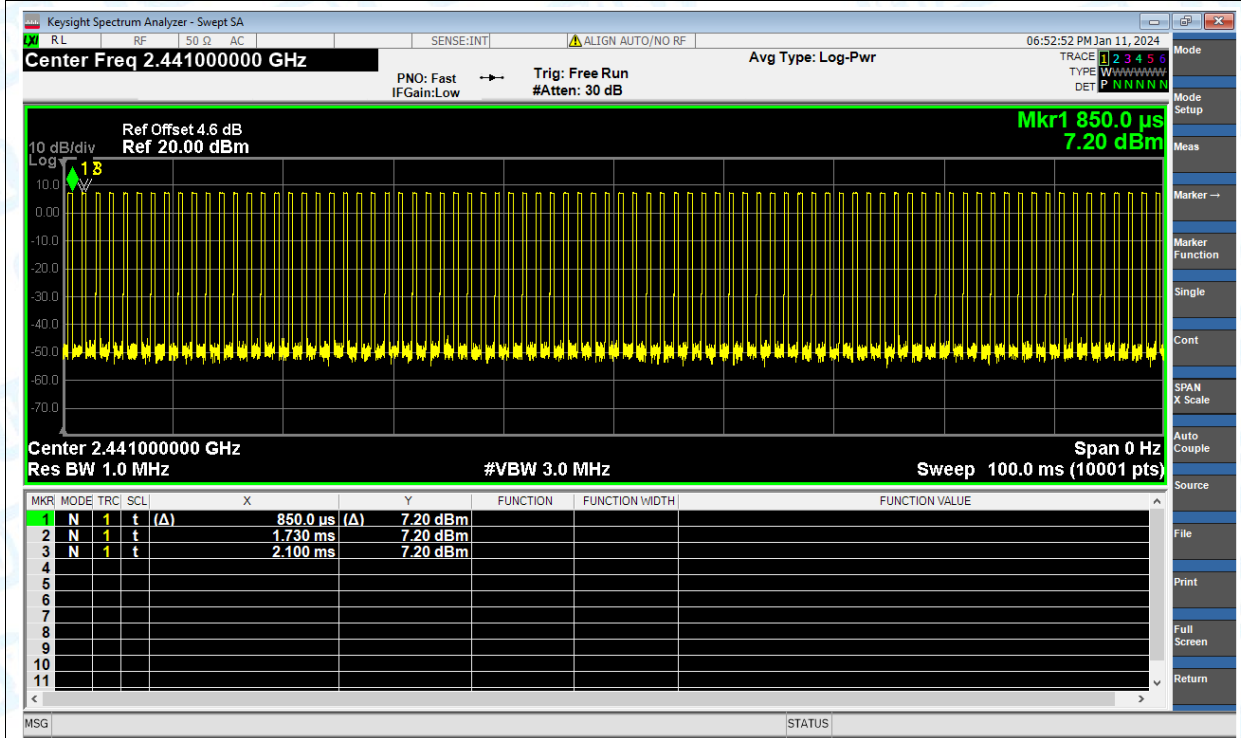
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	29.6	5.29	2.7
NVNT	1-DH1	2441	Ant1	29.6	5.29	2.7
NVNT	1-DH1	2480	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2441	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2480	Ant1	30.4	5.17	2.63
NVNT	3-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	3-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	3-DH1	2480	Ant1	30.4	5.17	2.63

Test Graphs

Duty Cycle NVNT 1-DH1 2402MHz Ant1

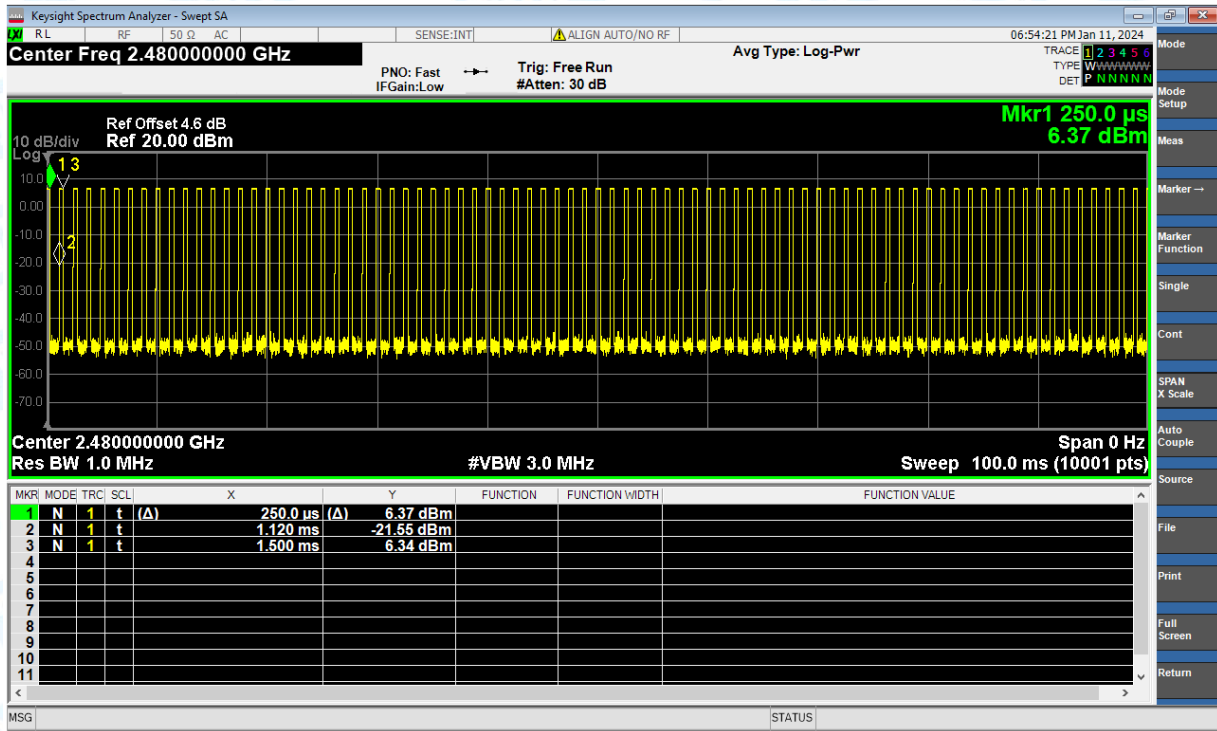


Duty Cycle NVNT 1-DH1 2441MHz Ant1

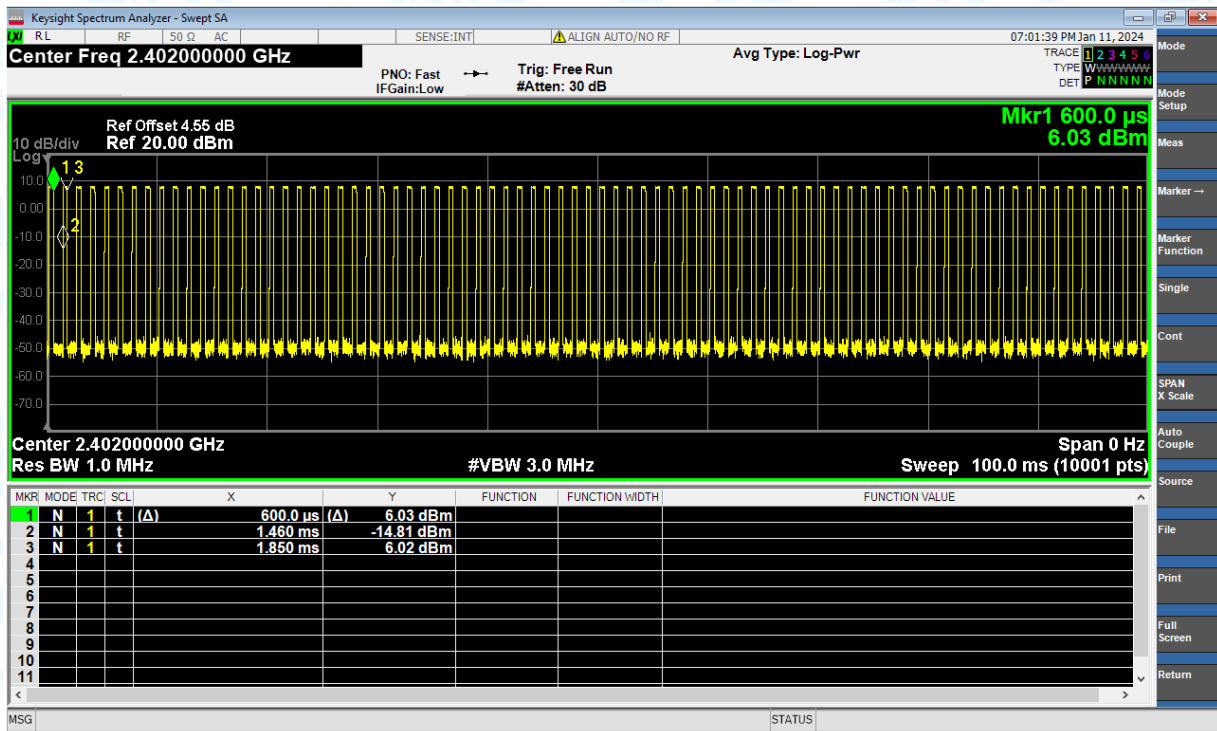




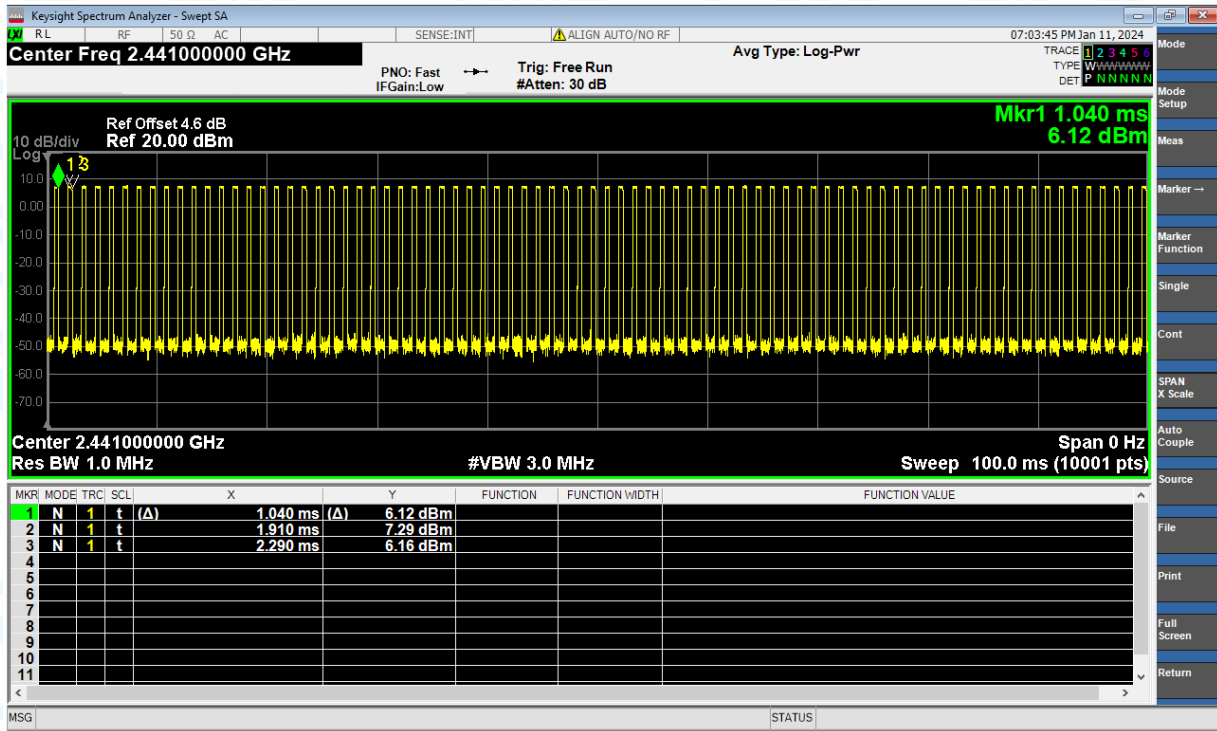
Duty Cycle NVNT 1-DH1 2480MHz Ant1



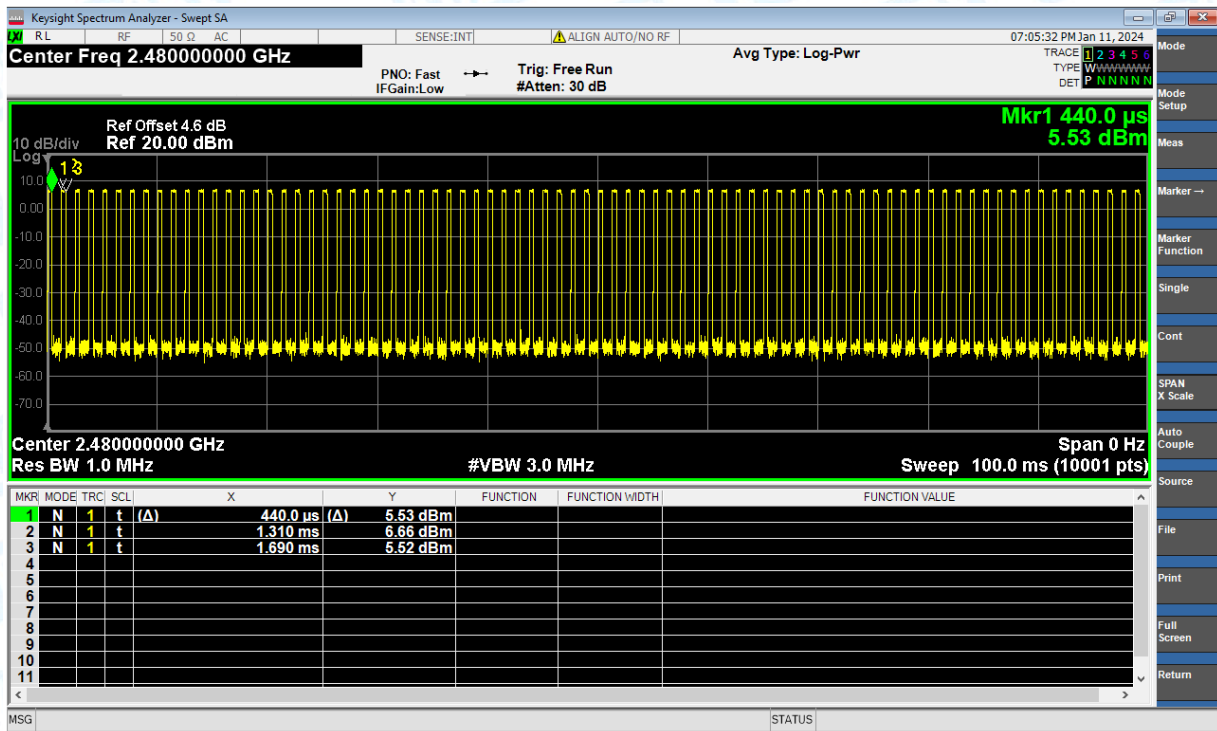
Duty Cycle NVNT 2-DH1 2402MHz Ant1



Duty Cycle NVNT 2-DH1 2441MHz Ant1

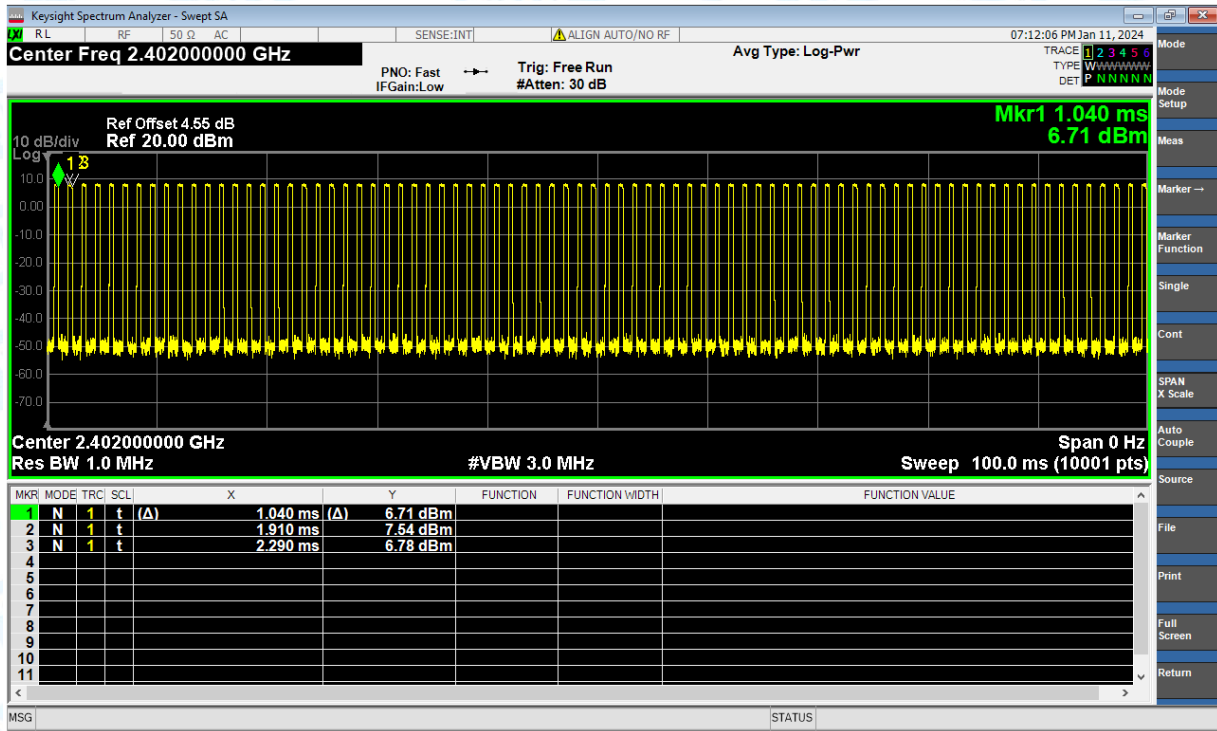


Duty Cycle NVNT 2-DH1 2480MHz Ant1

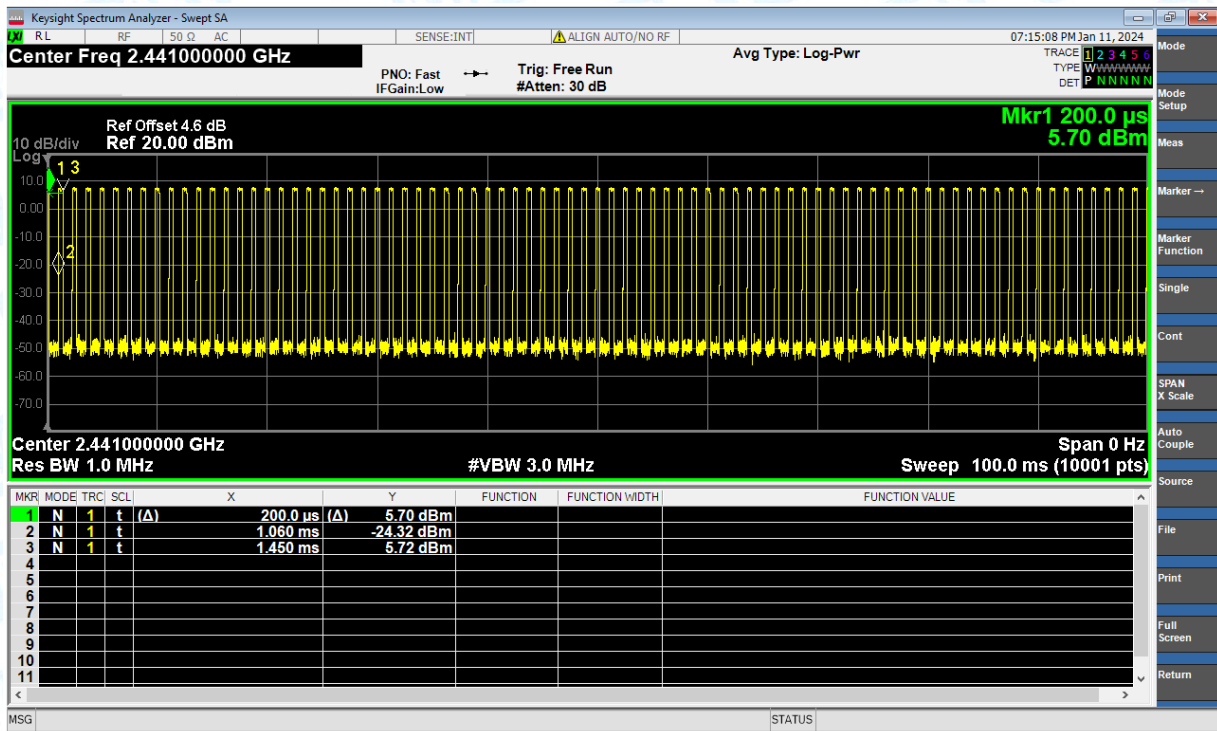


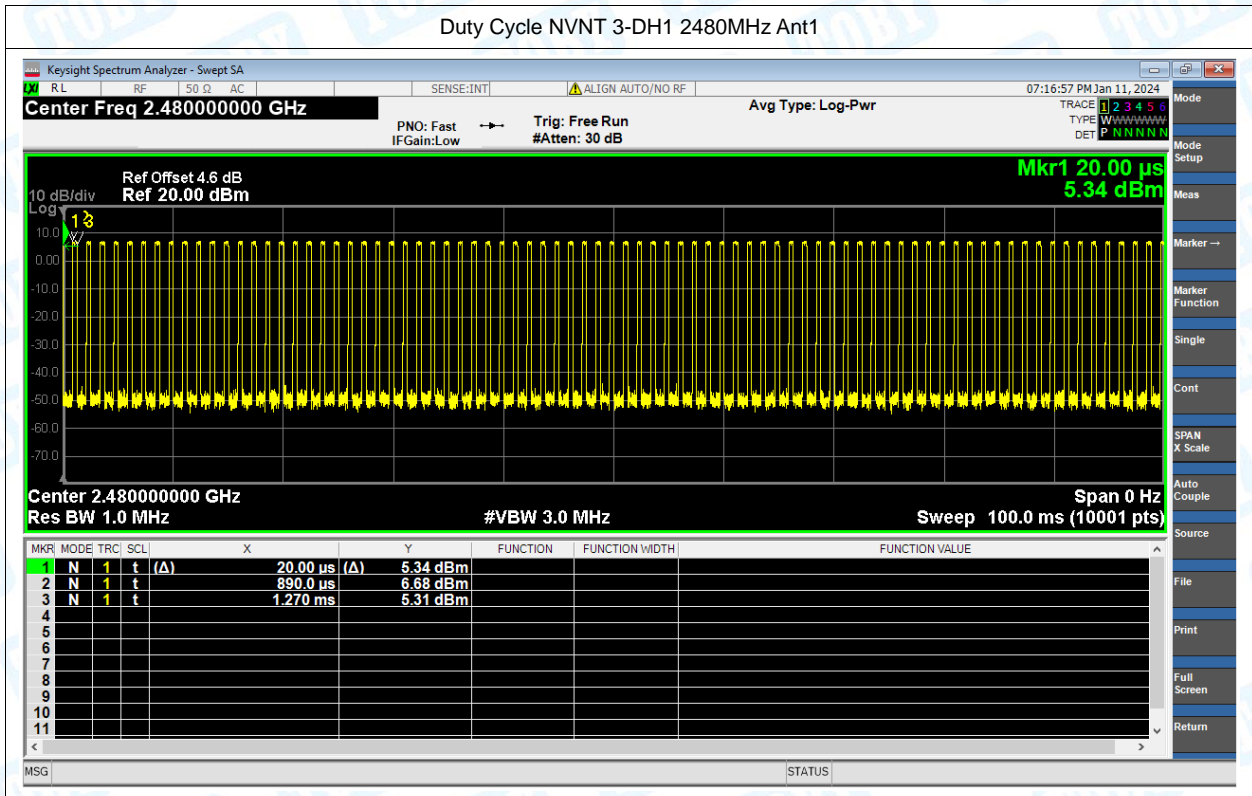


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1







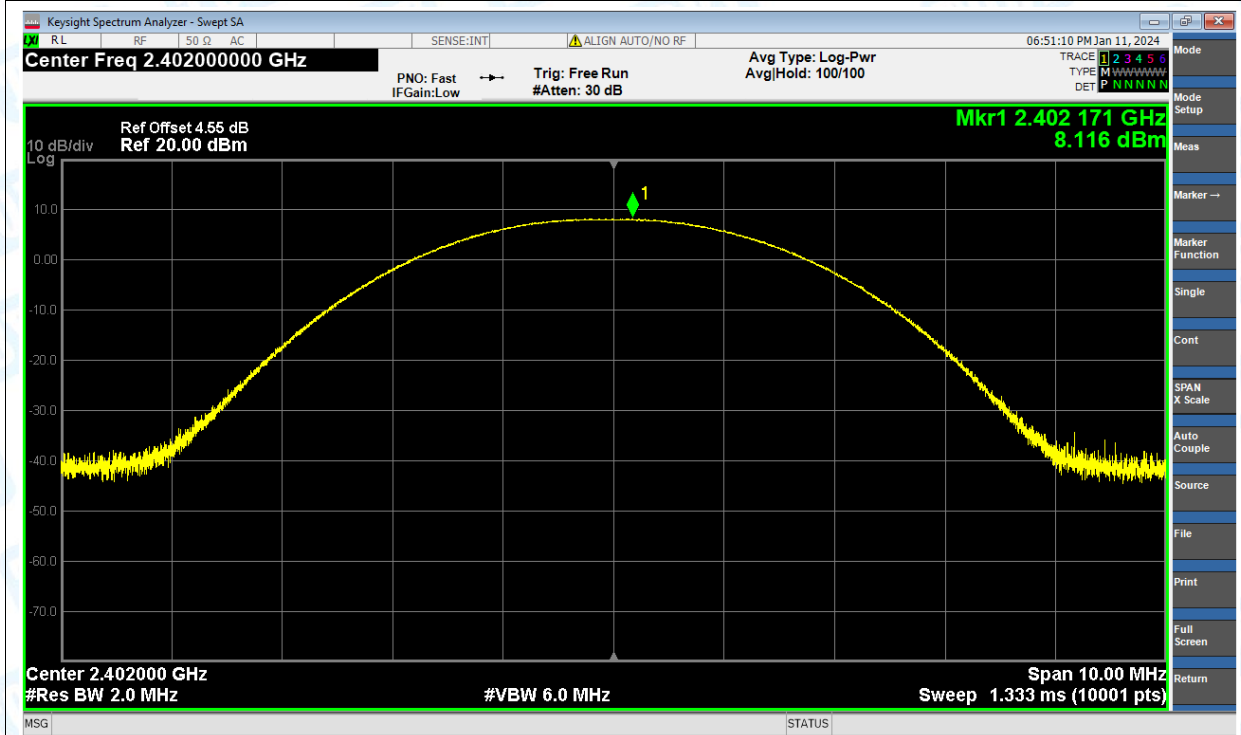
## Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	8.116	21	Pass
NVNT	1-DH1	2441	Ant1	7.505	21	Pass
NVNT	1-DH1	2480	Ant1	6.903	21	Pass
NVNT	2-DH1	2402	Ant1	8.585	21	Pass
NVNT	2-DH1	2441	Ant1	7.942	21	Pass
NVNT	2-DH1	2480	Ant1	7.322	21	Pass
NVNT	3-DH1	2402	Ant1	8.919	21	Pass
NVNT	3-DH1	2441	Ant1	8.216	21	Pass
NVNT	3-DH1	2480	Ant1	7.632	21	Pass



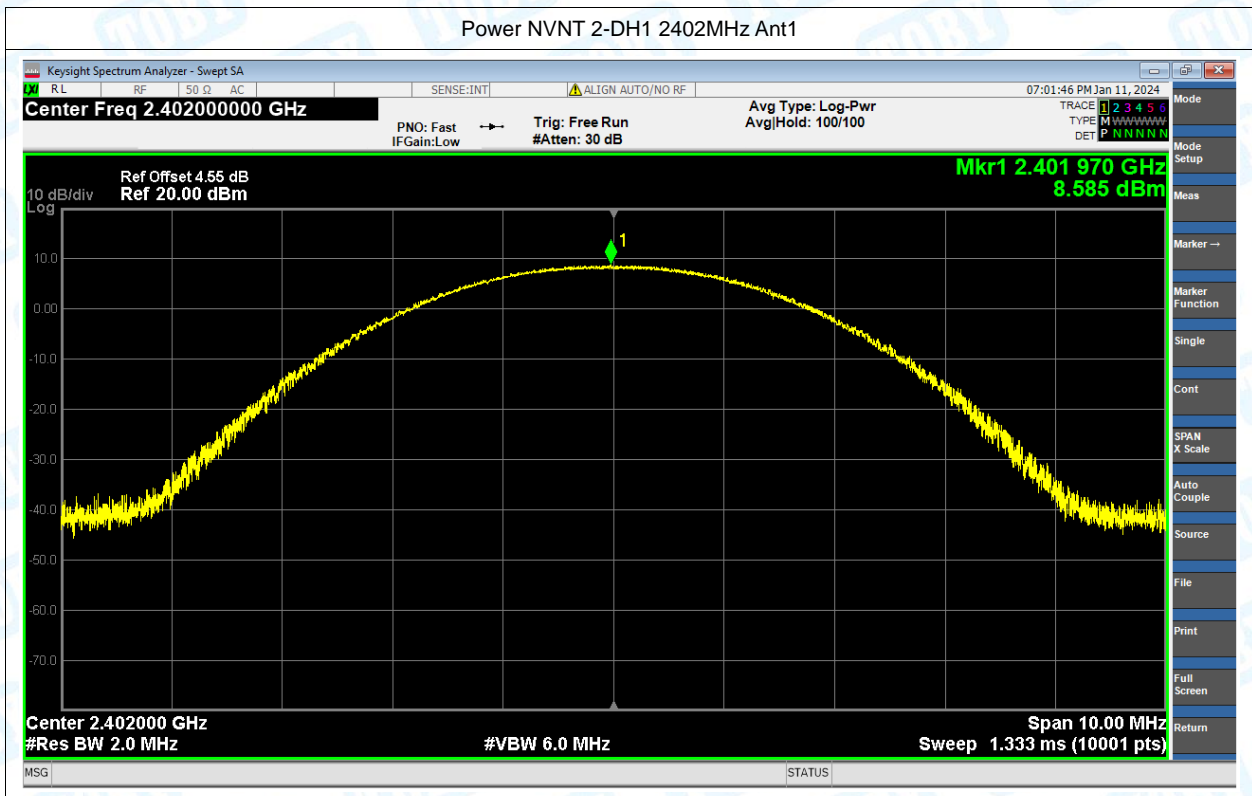
Test Graphs

Power NVNT 1-DH1 2402MHz Ant1



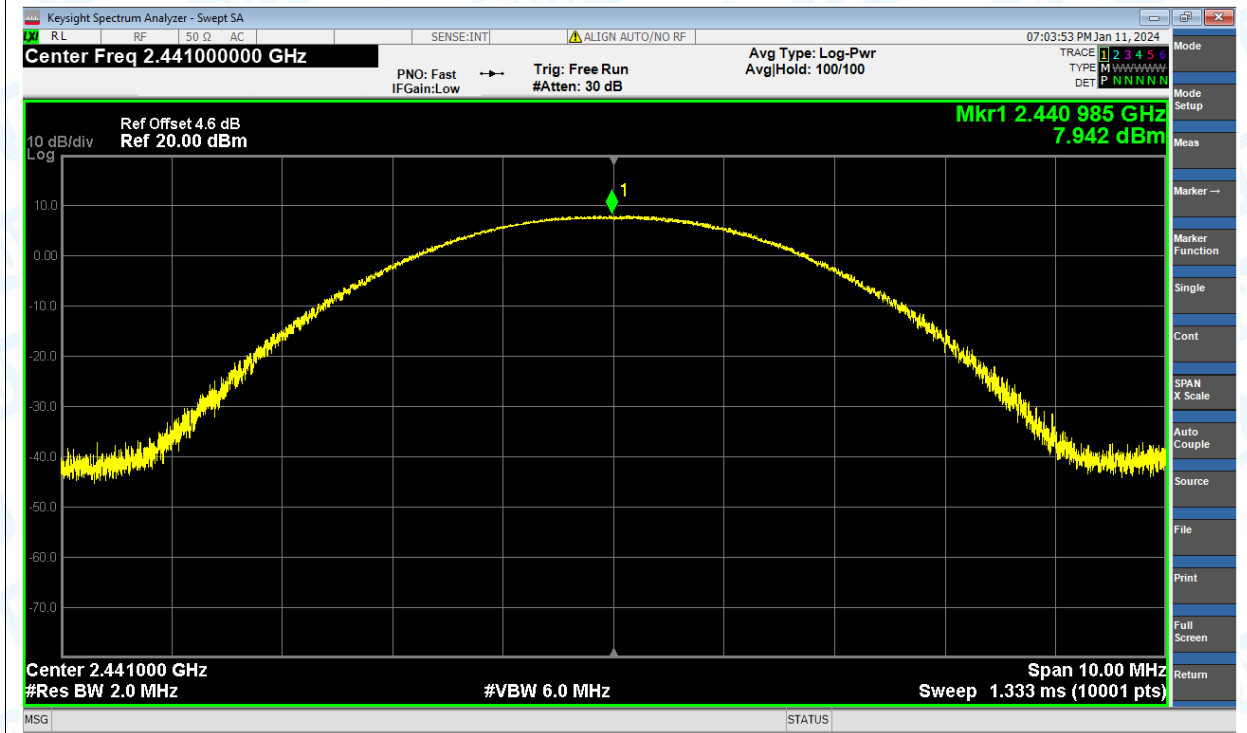
Power NVNT 1-DH1 2441MHz Ant1







Power NVNT 2-DH1 2441MHz Ant1

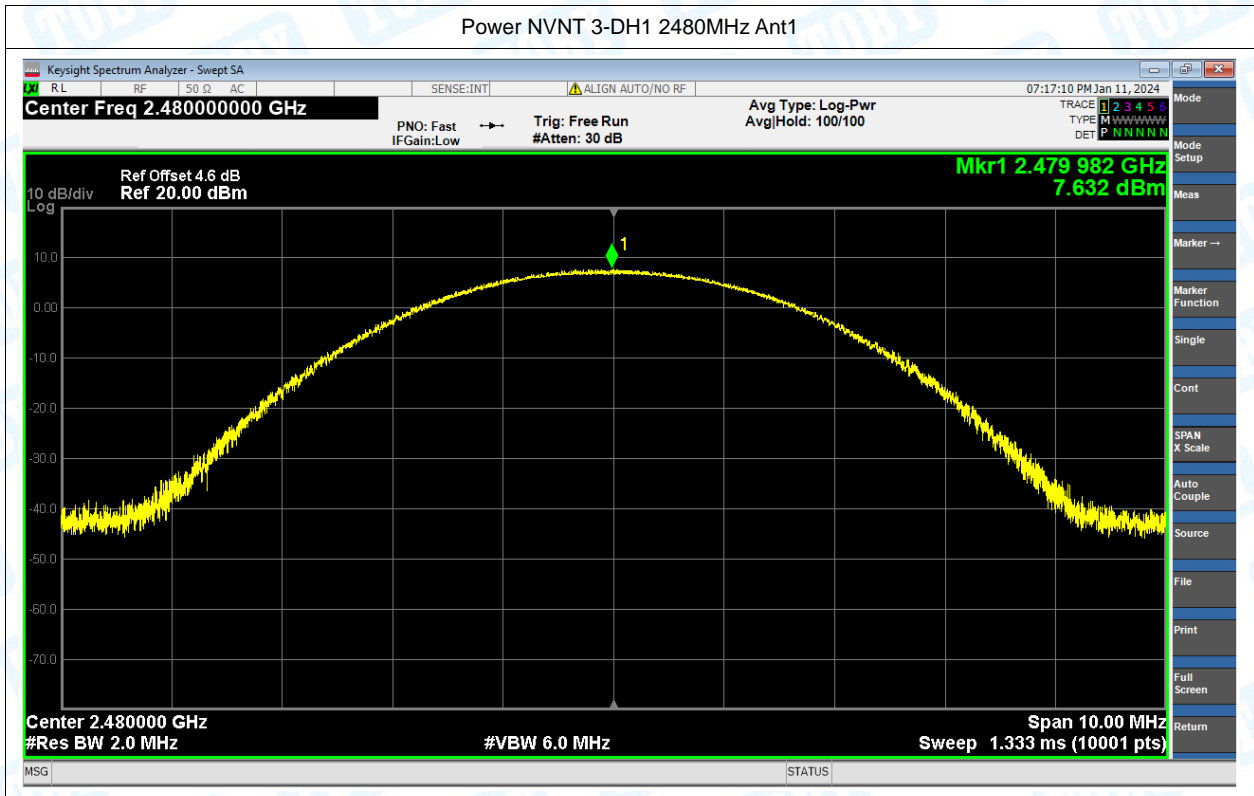


Power NVNT 2-DH1 2480MHz Ant1









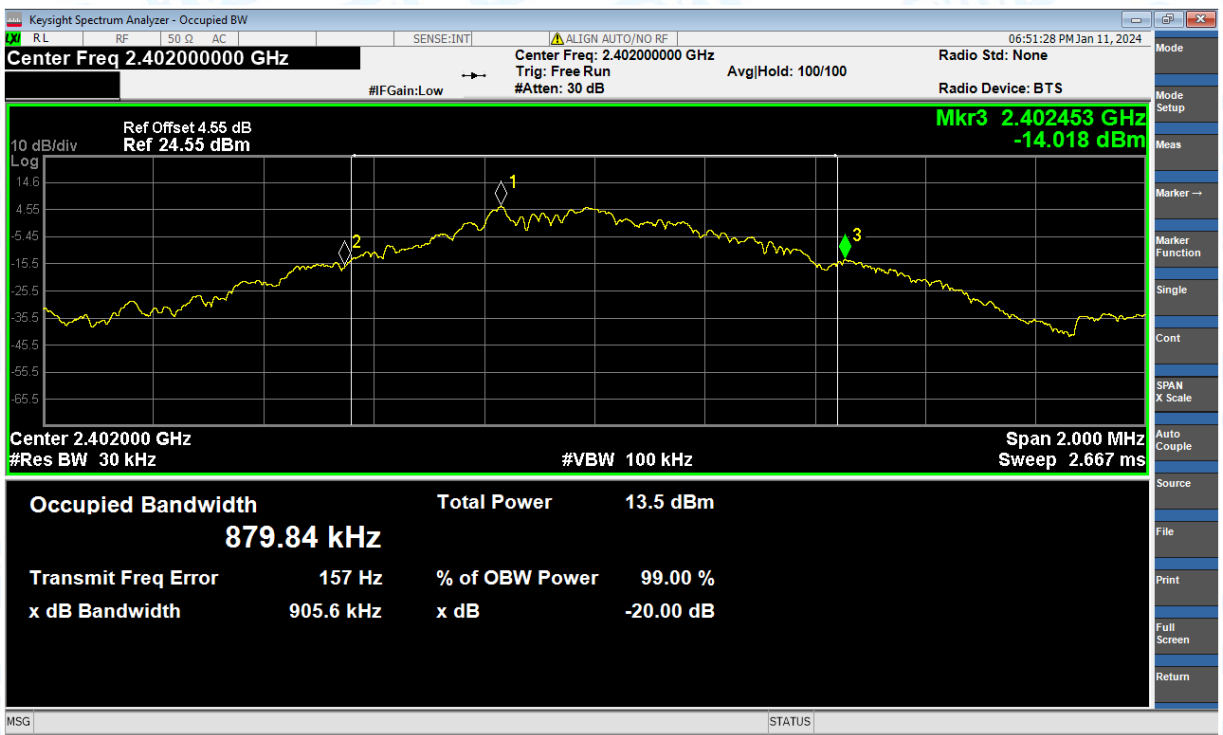
## -20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.91	0	Pass
NVNT	1-DH1	2441	Ant1	0.95	0	Pass
NVNT	1-DH1	2480	Ant1	0.96	0	Pass
NVNT	2-DH1	2402	Ant1	1.26	0	Pass
NVNT	2-DH1	2441	Ant1	1.25	0	Pass
NVNT	2-DH1	2480	Ant1	1.24	0	Pass
NVNT	3-DH1	2402	Ant1	1.22	0	Pass
NVNT	3-DH1	2441	Ant1	1.22	0	Pass
NVNT	3-DH1	2480	Ant1	1.22	0	Pass

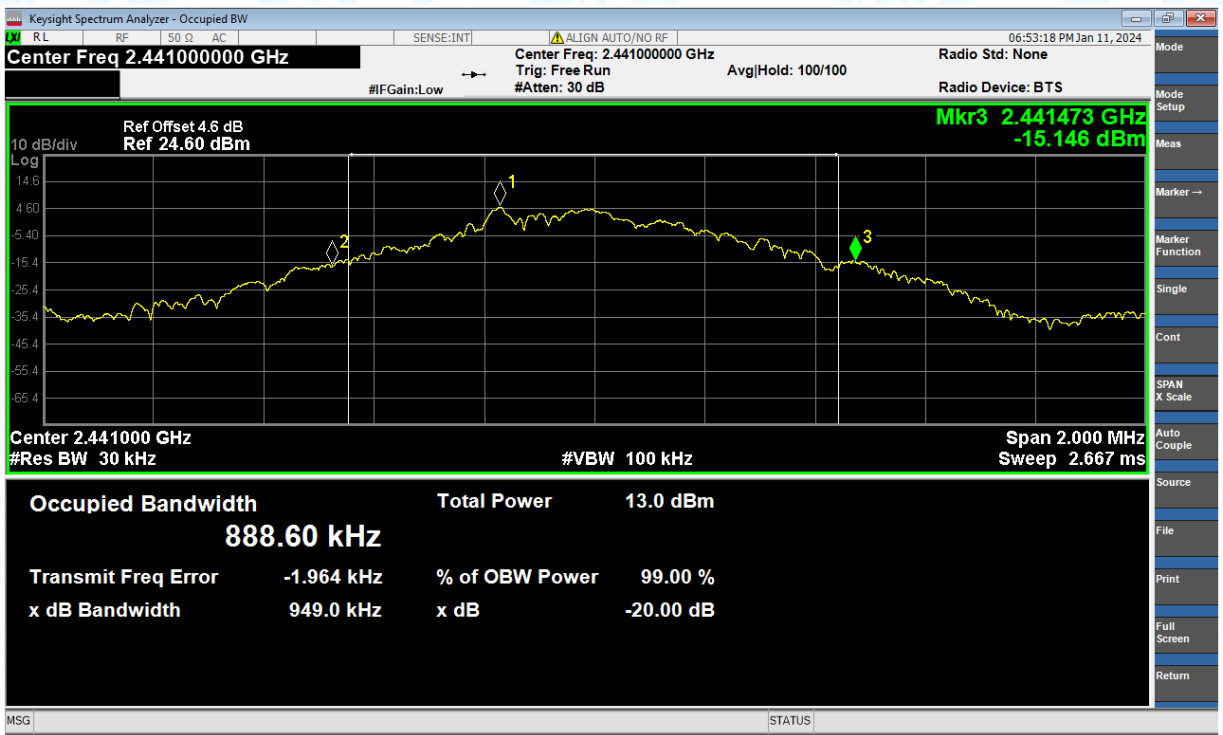


Test Graphs

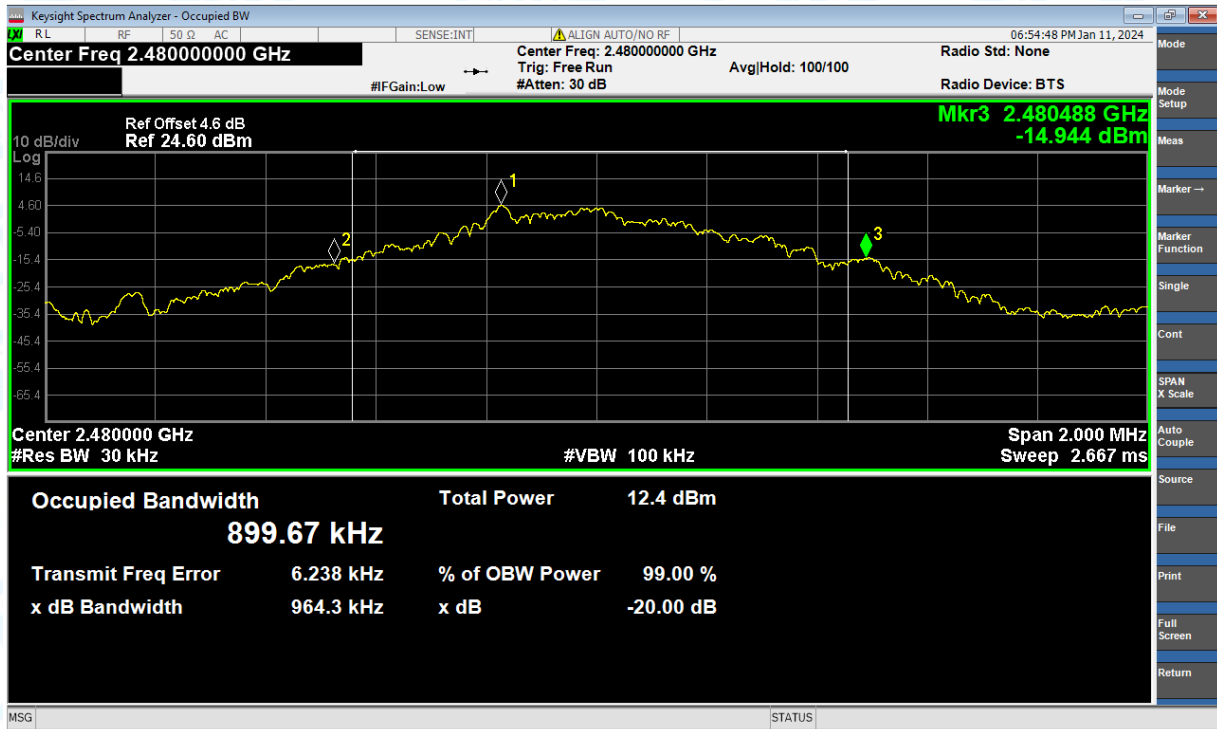
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



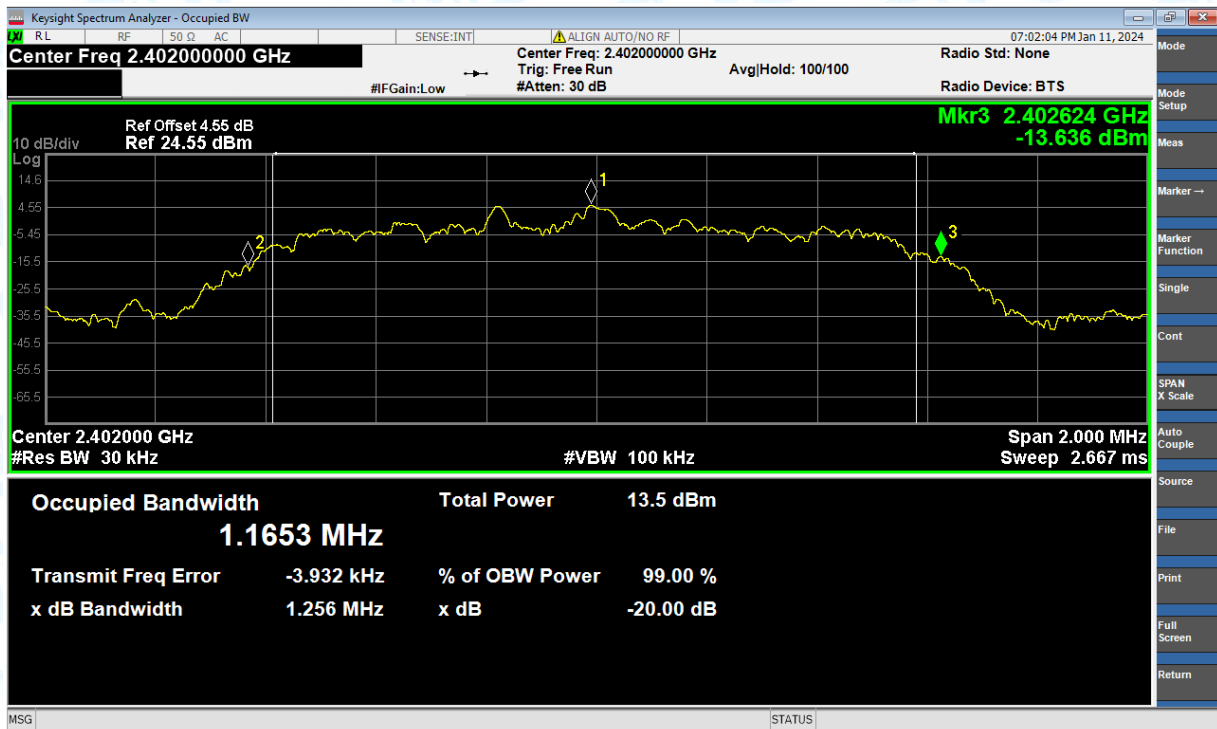
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1

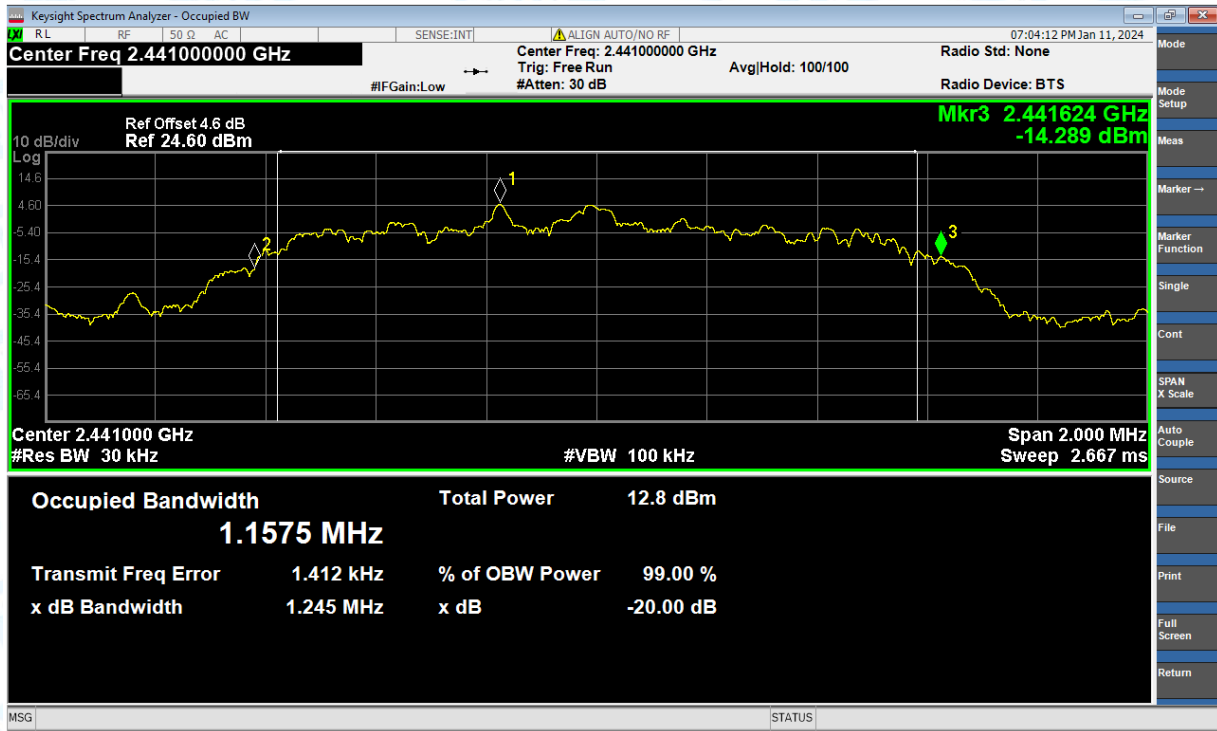


-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1

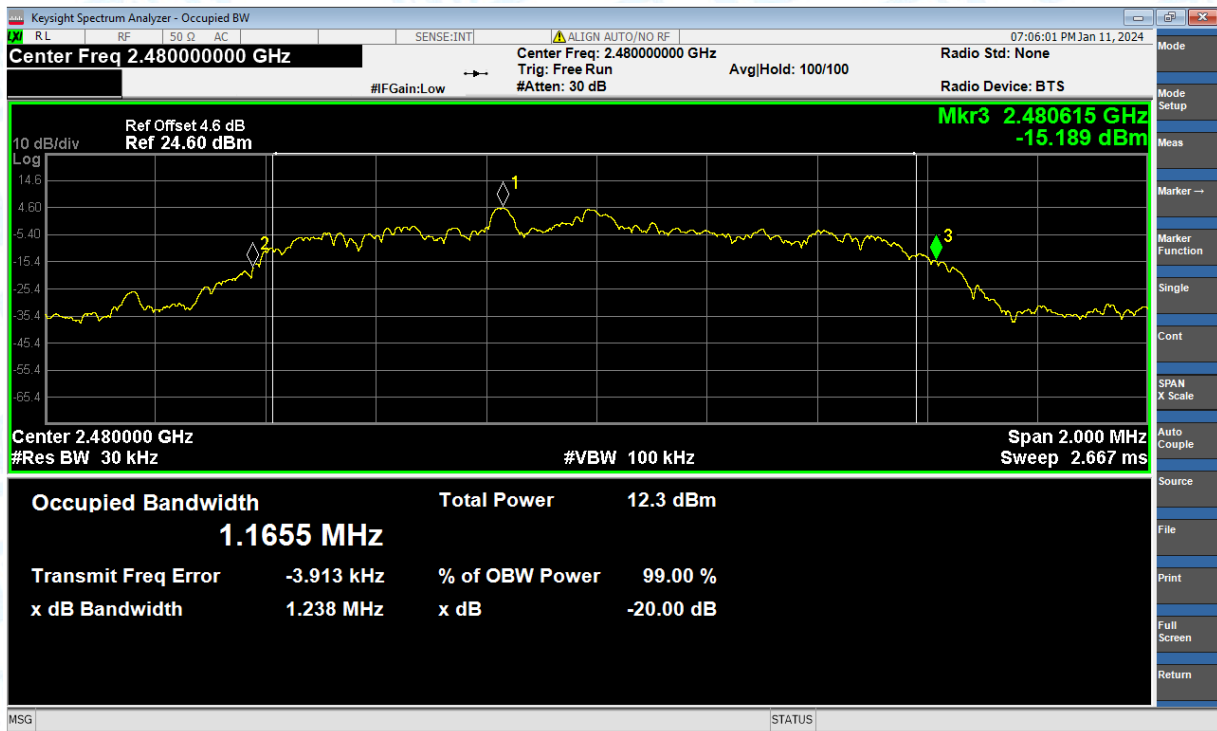




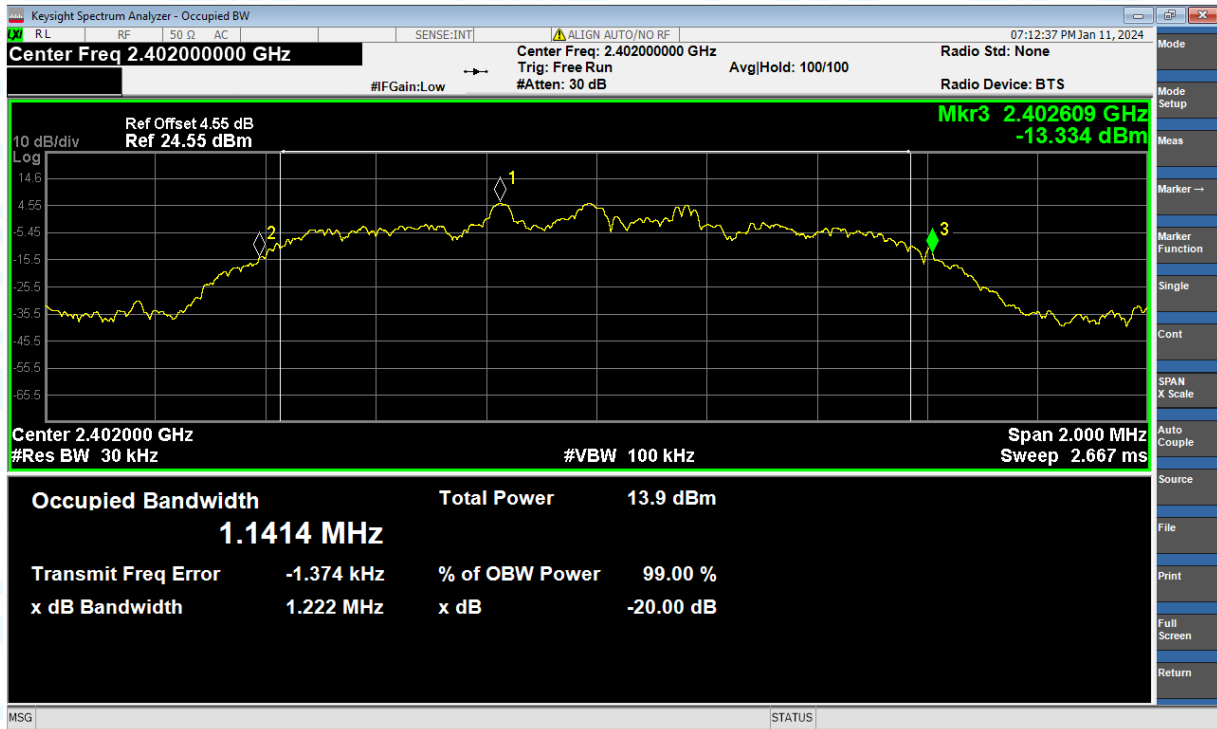
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



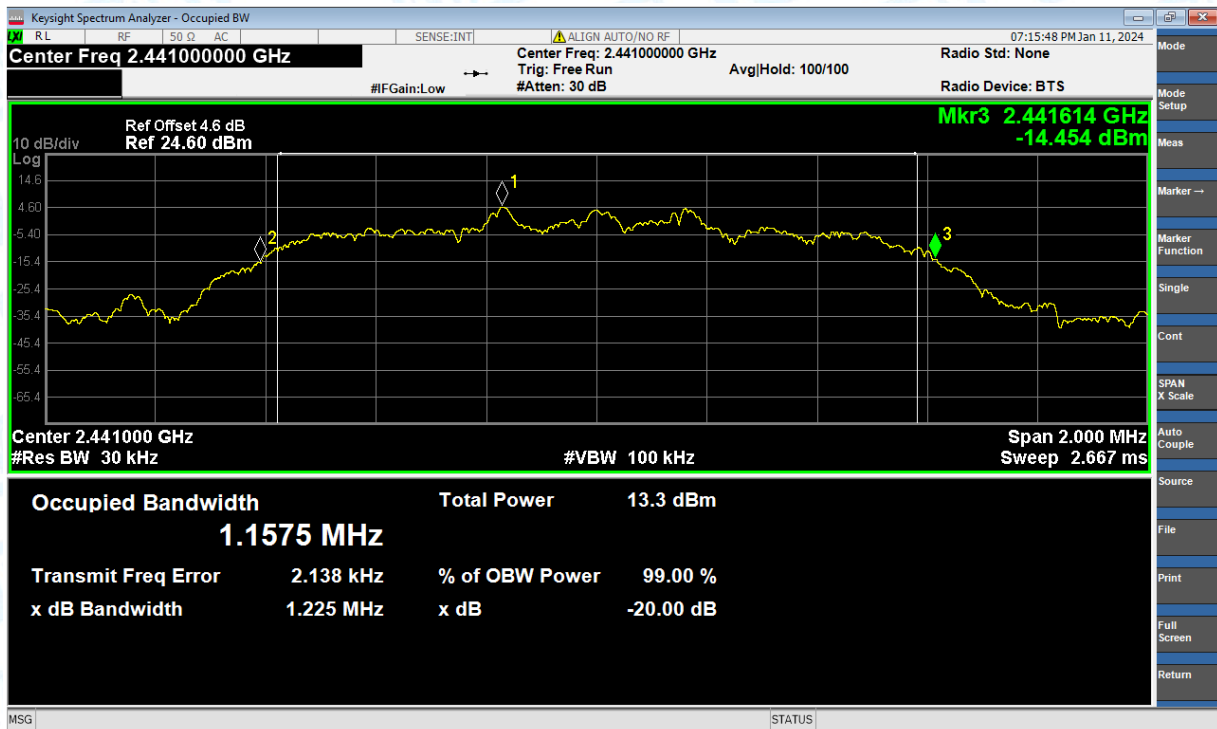
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1



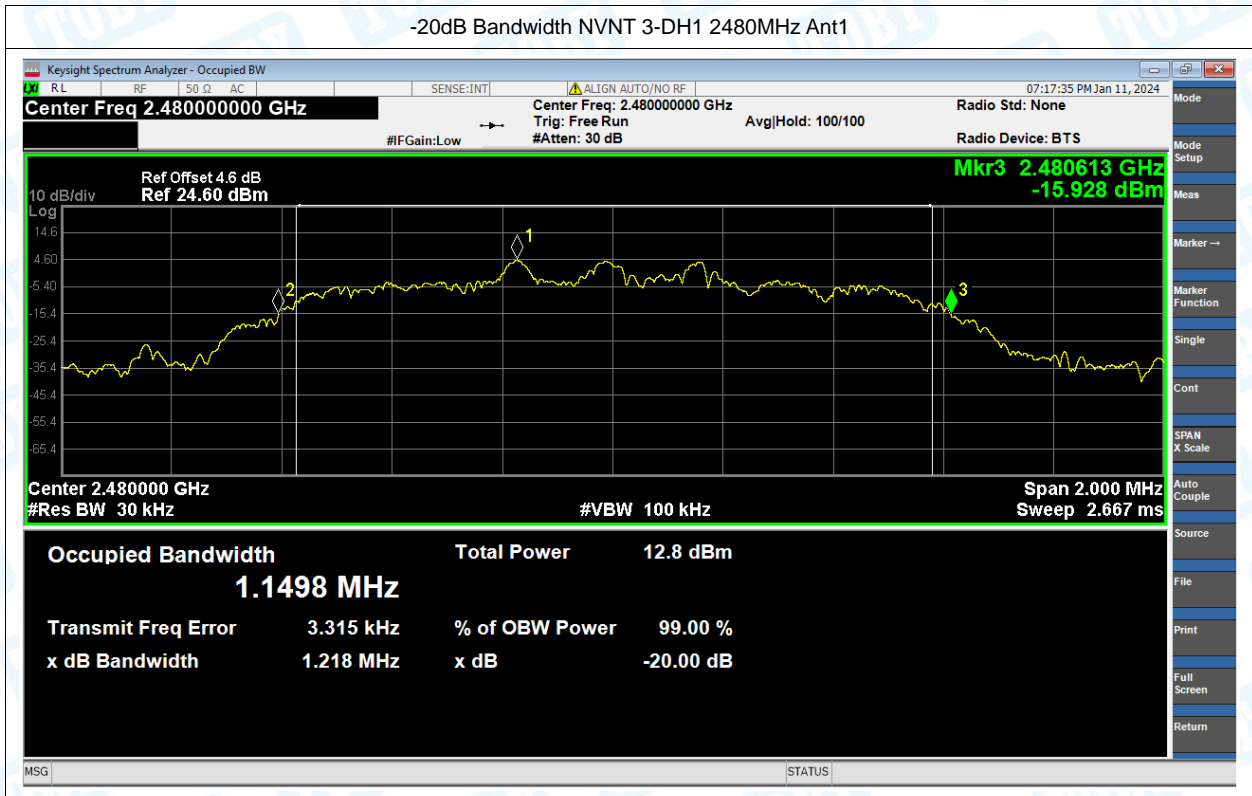
-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1







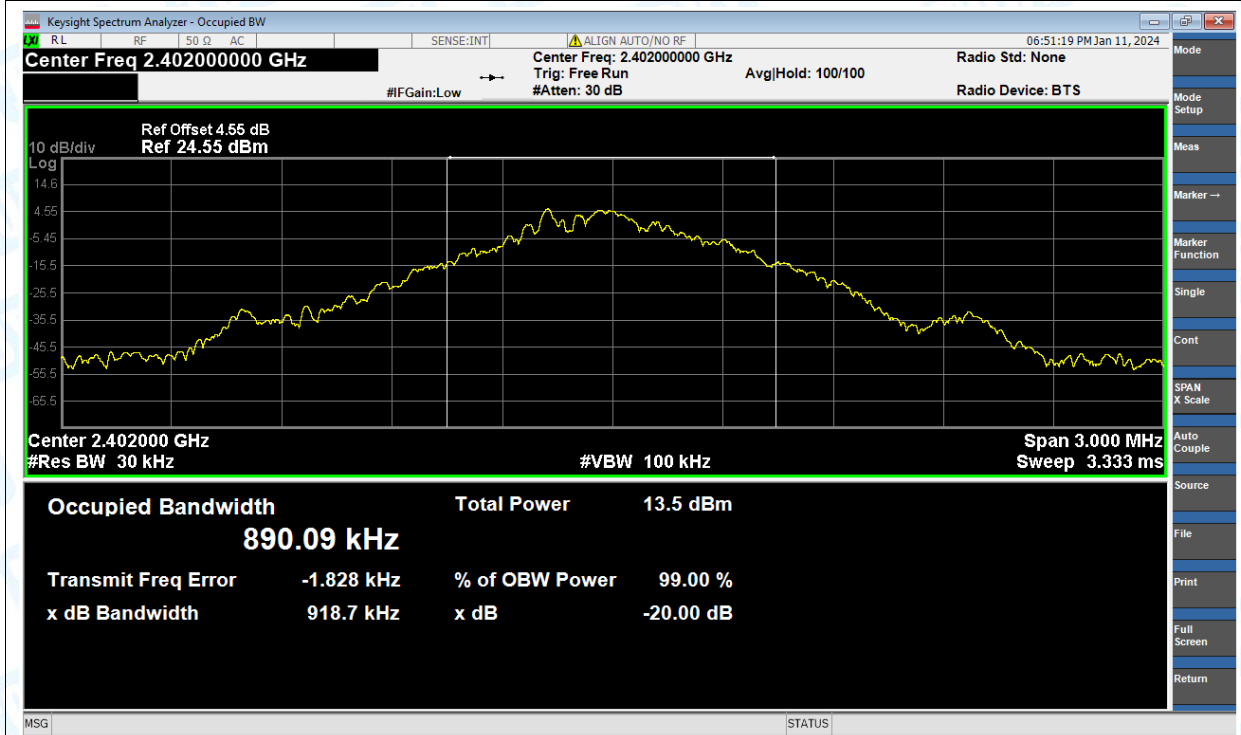
## Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.89
NVNT	1-DH1	2441	Ant1	0.88
NVNT	1-DH1	2480	Ant1	0.917
NVNT	2-DH1	2402	Ant1	1.161
NVNT	2-DH1	2441	Ant1	1.175
NVNT	2-DH1	2480	Ant1	1.164
NVNT	3-DH1	2402	Ant1	1.145
NVNT	3-DH1	2441	Ant1	1.148
NVNT	3-DH1	2480	Ant1	1.162

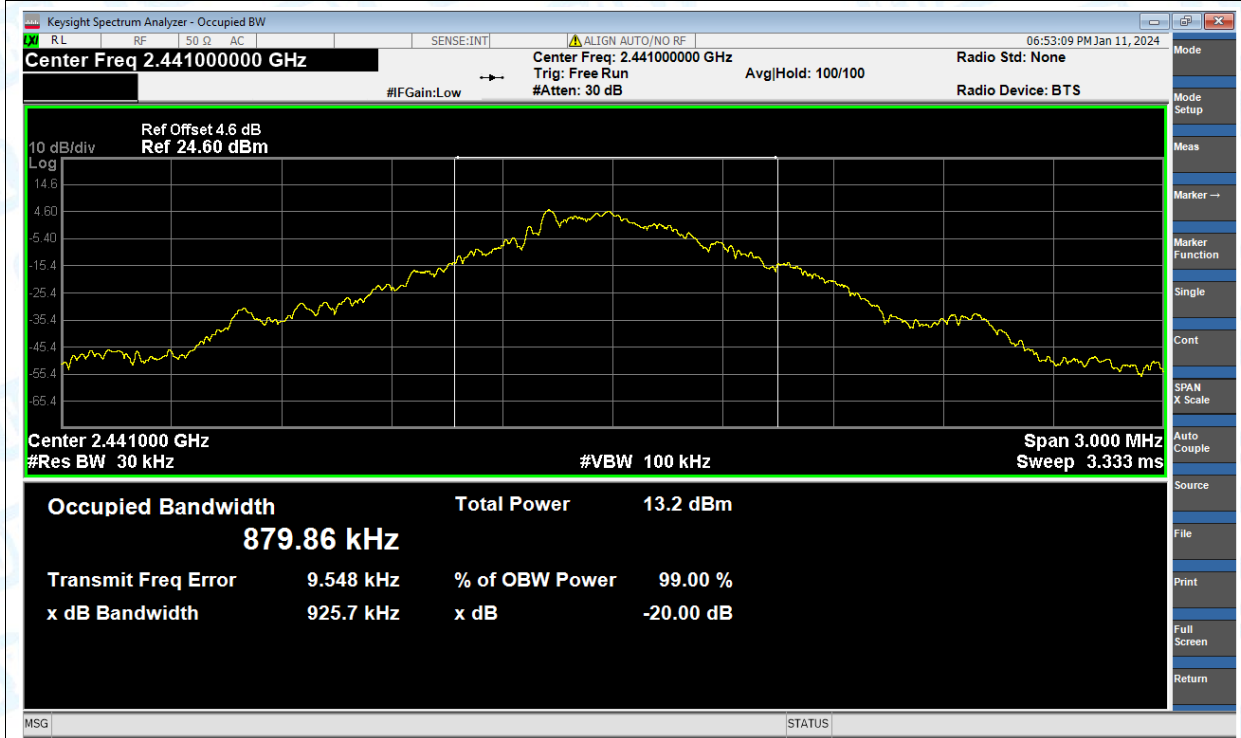


Test Graphs

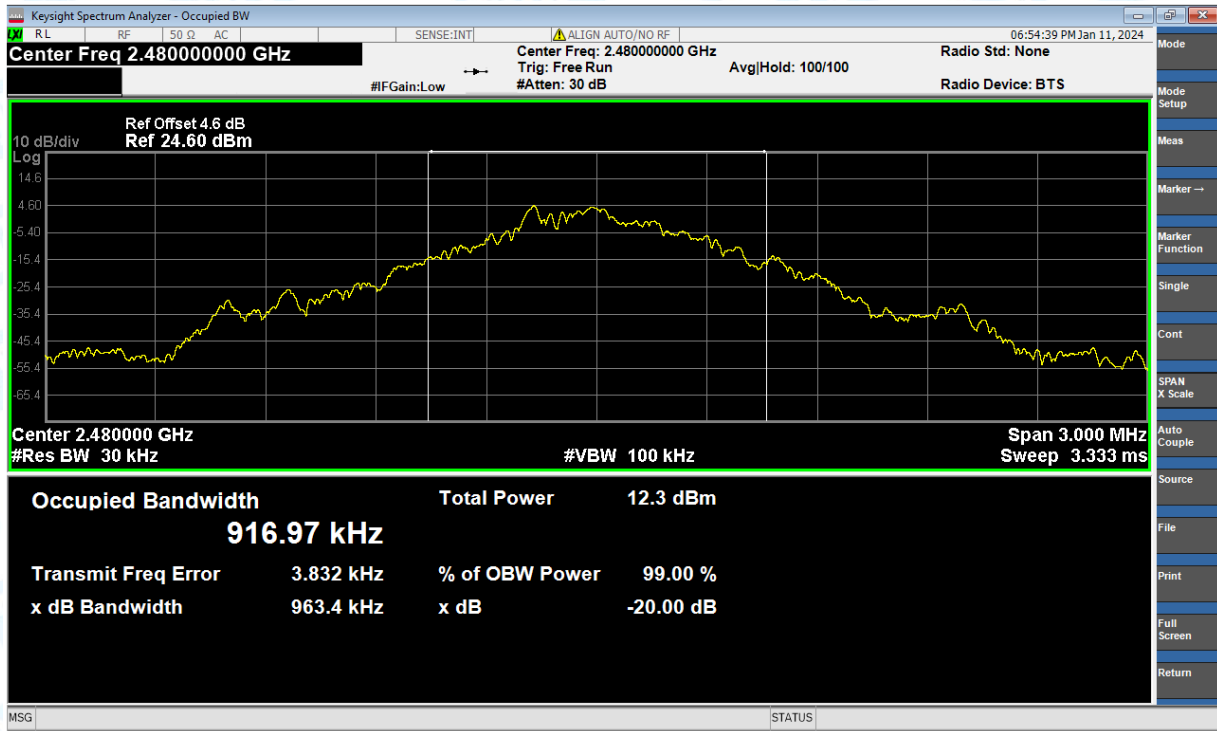
OBW NVNT 1-DH1 2402MHz Ant1



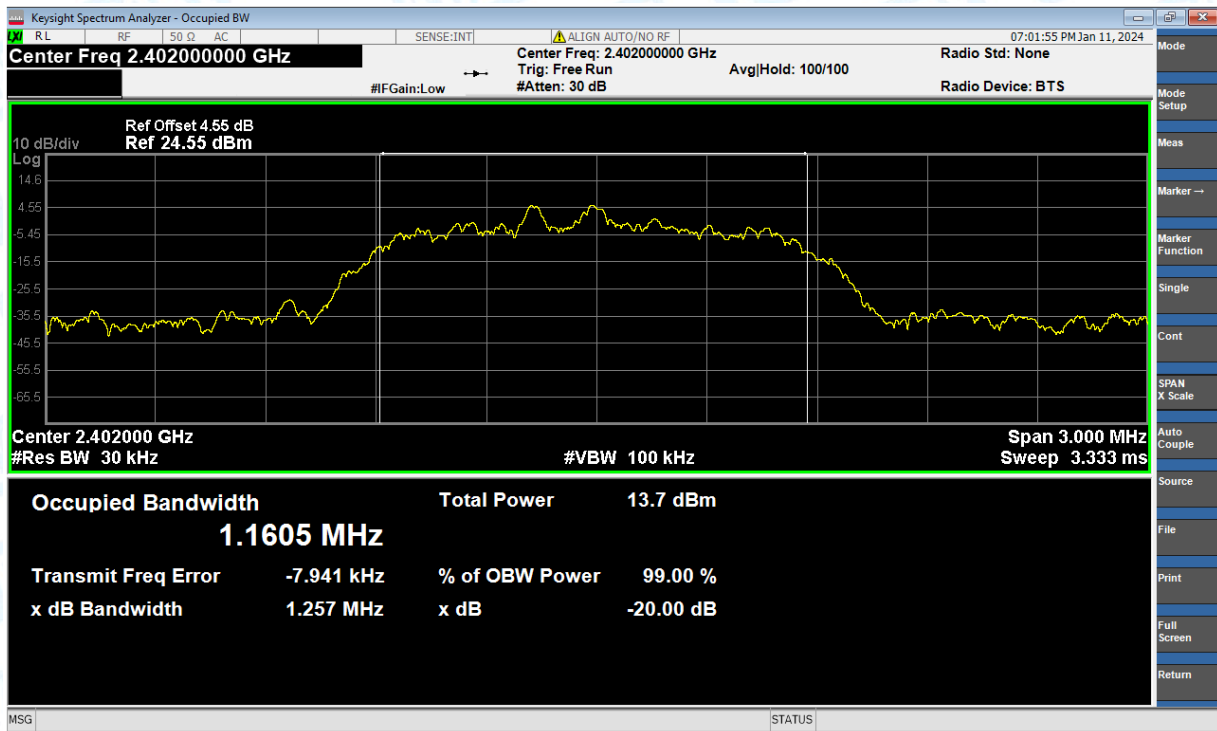
OBW NVNT 1-DH1 2441MHz Ant1



OBW NVNT 1-DH1 2480MHz Ant1

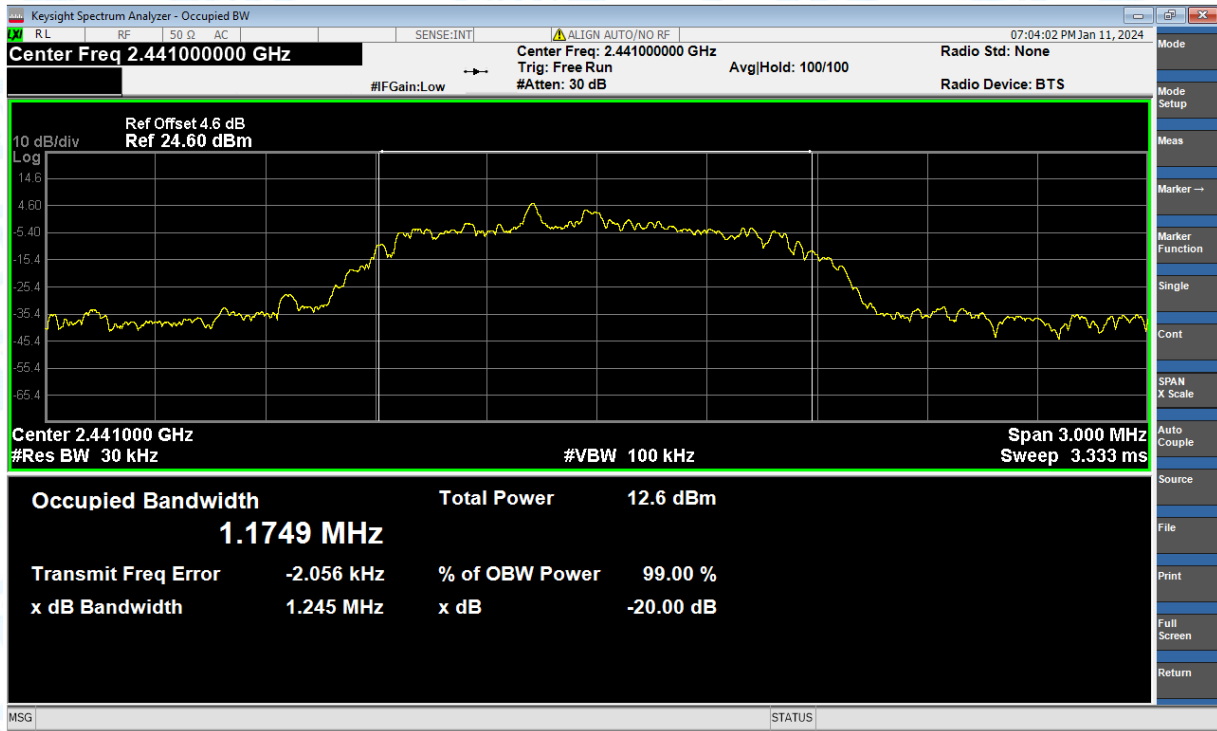


OBW NVNT 2-DH1 2402MHz Ant1

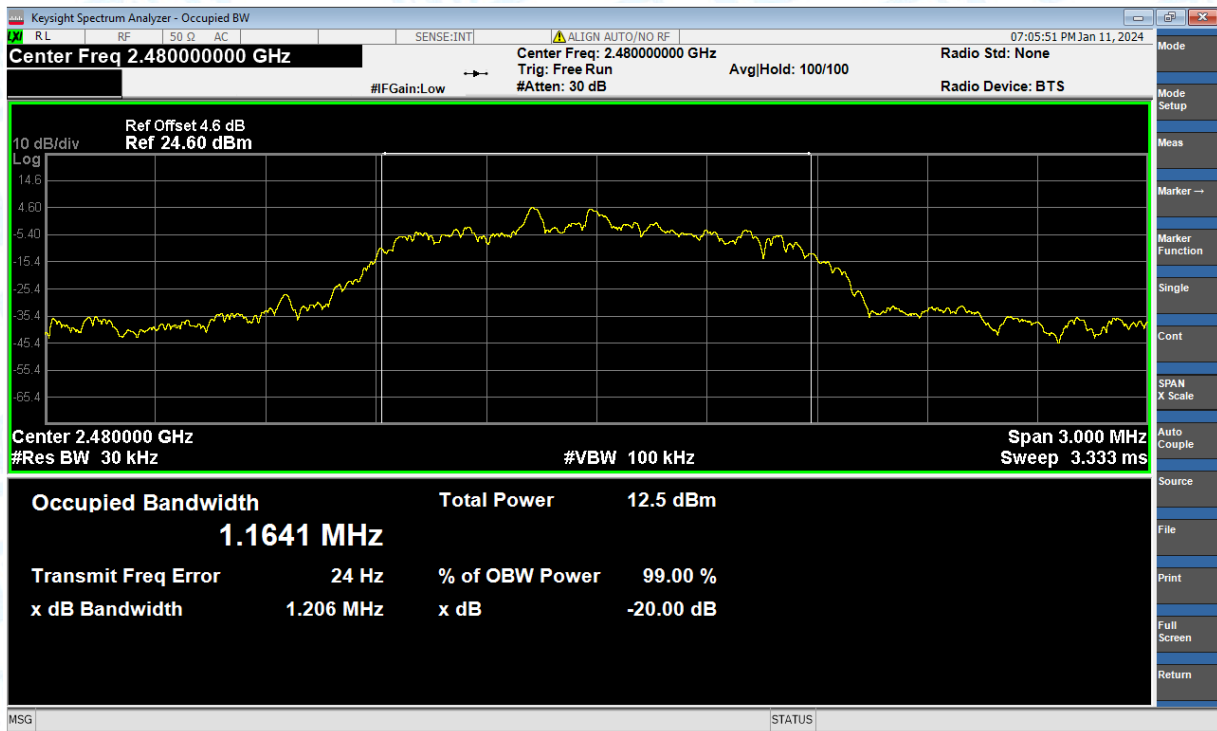




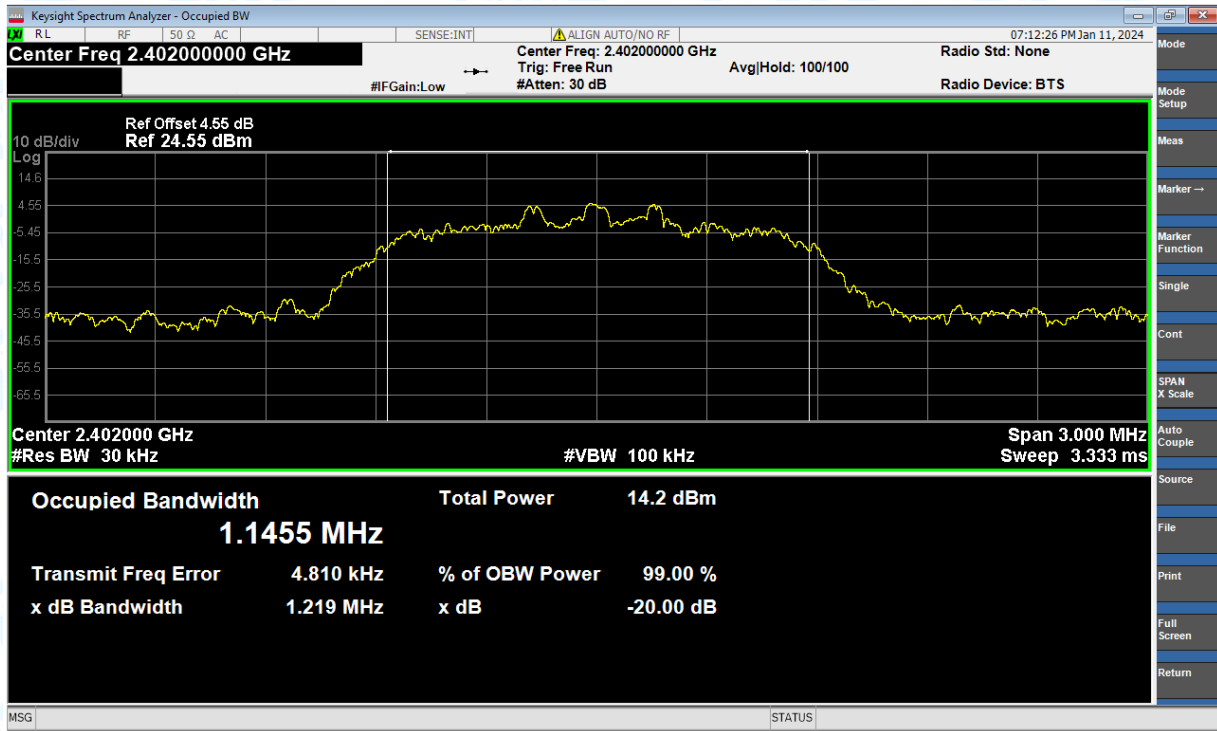
OBW NVNT 2-DH1 2441MHz Ant1



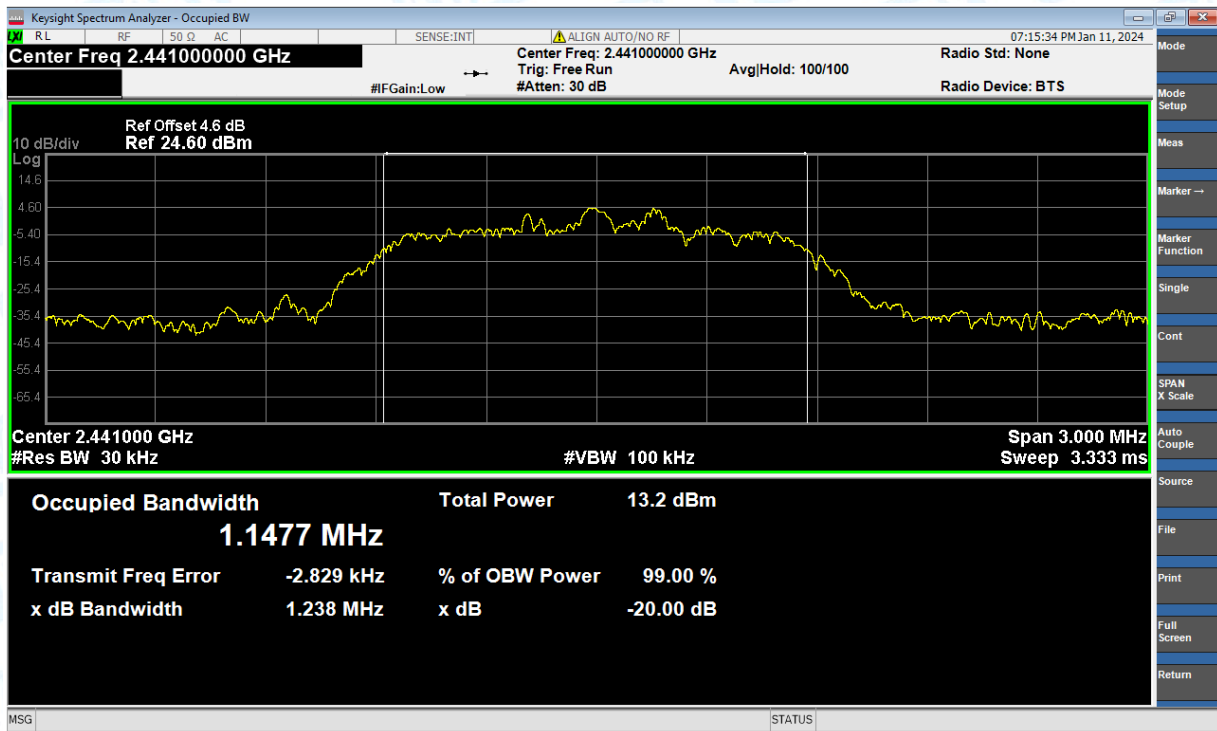
OBW NVNT 2-DH1 2480MHz Ant1



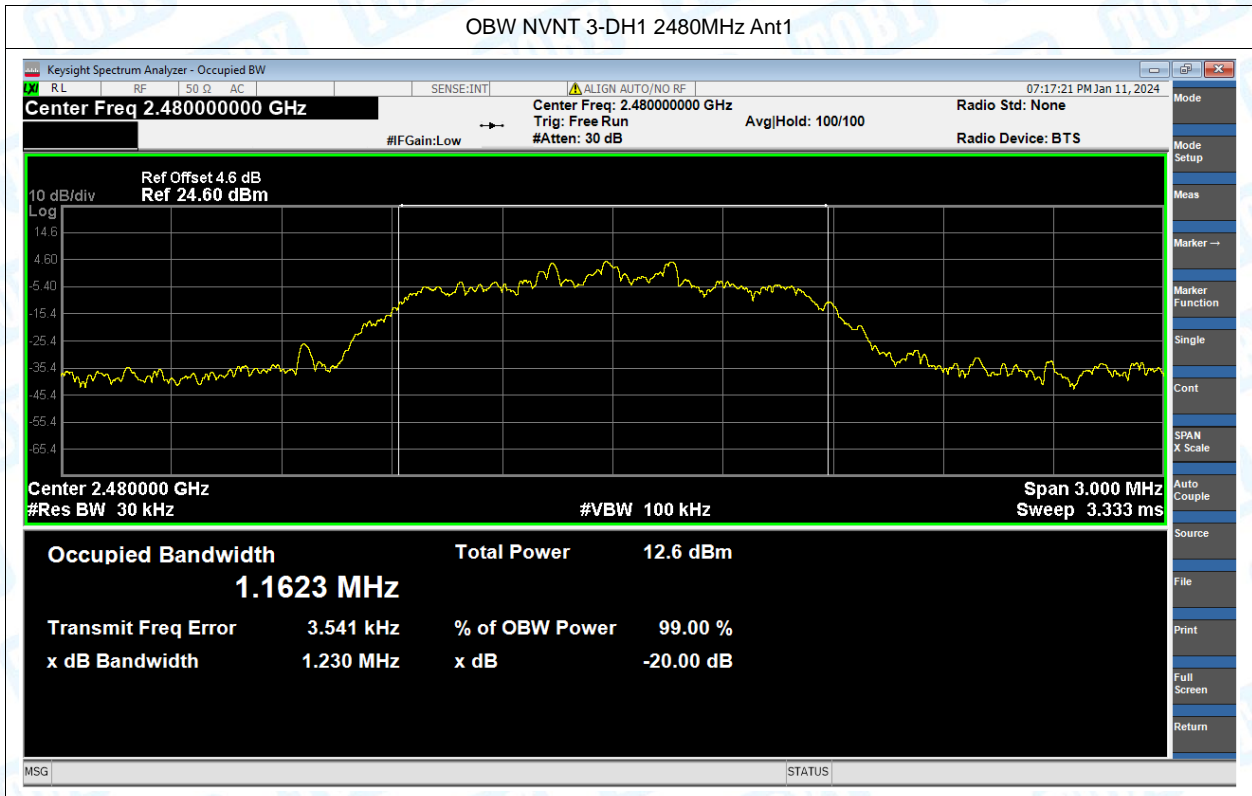
OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1







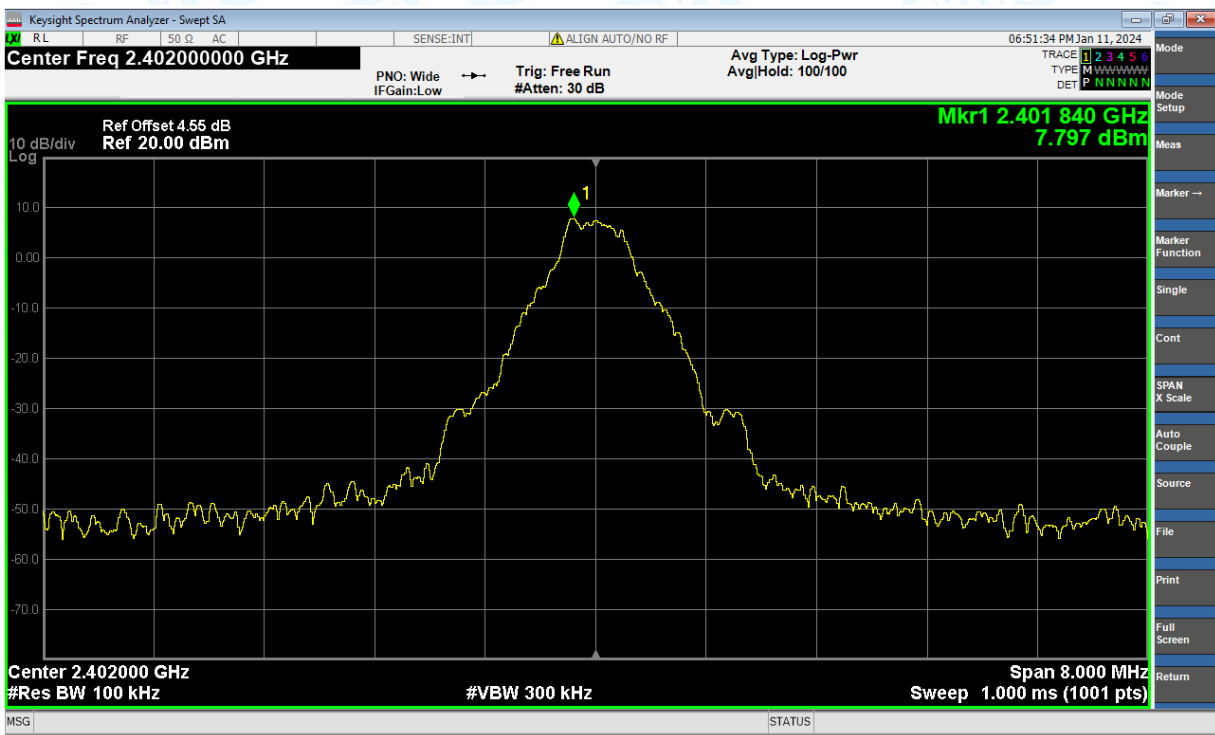
## Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-58.24	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-53.99	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-58.82	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-53.89	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-58.83	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-54.17	-20	Pass

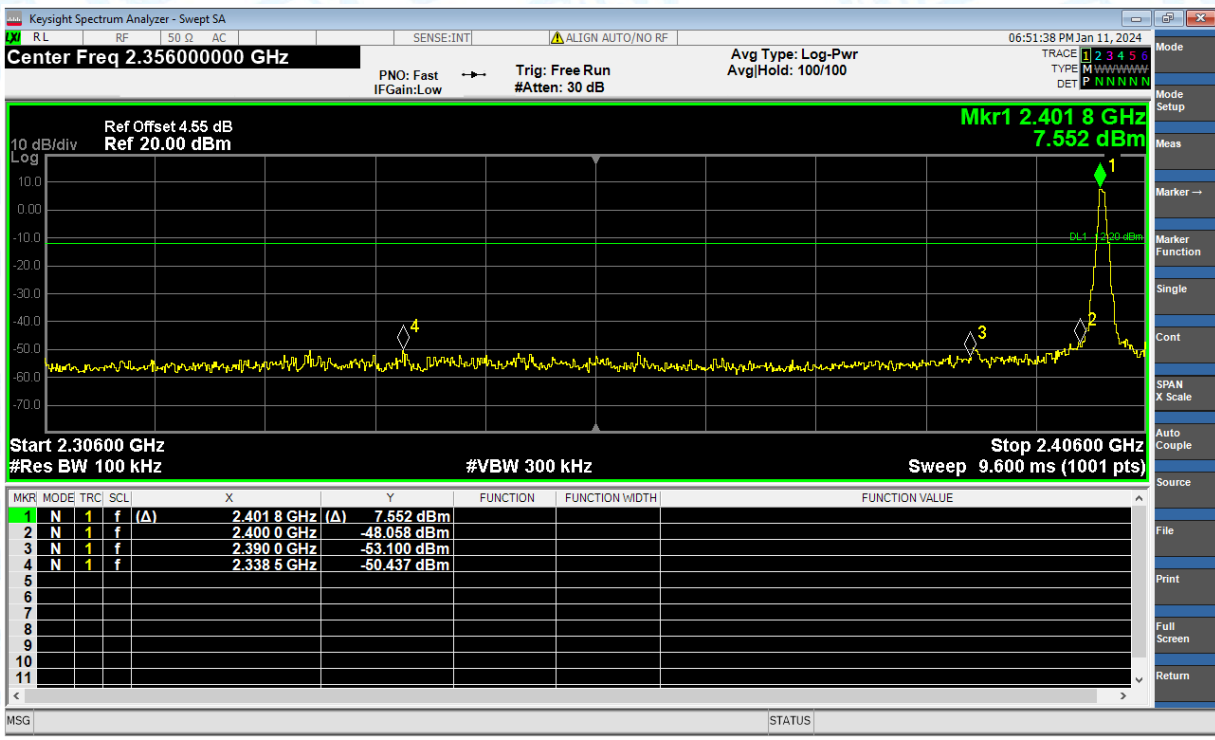


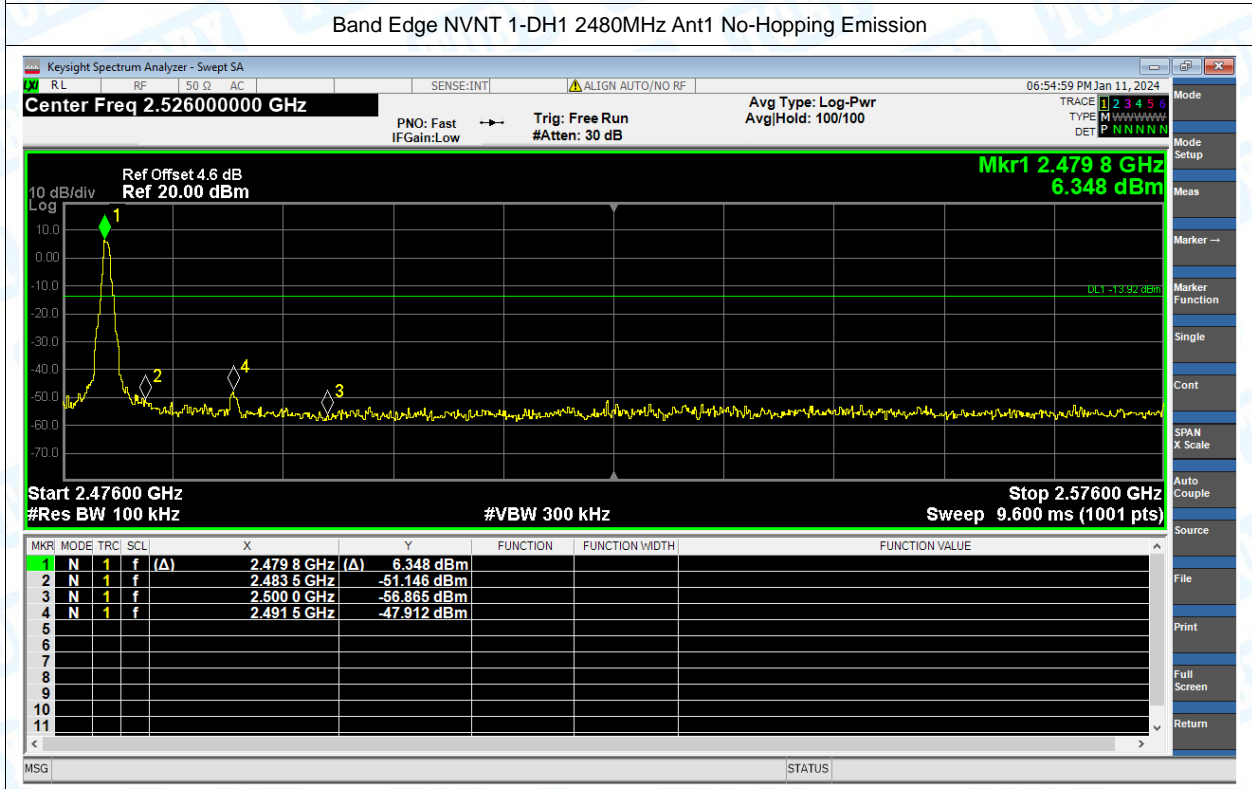
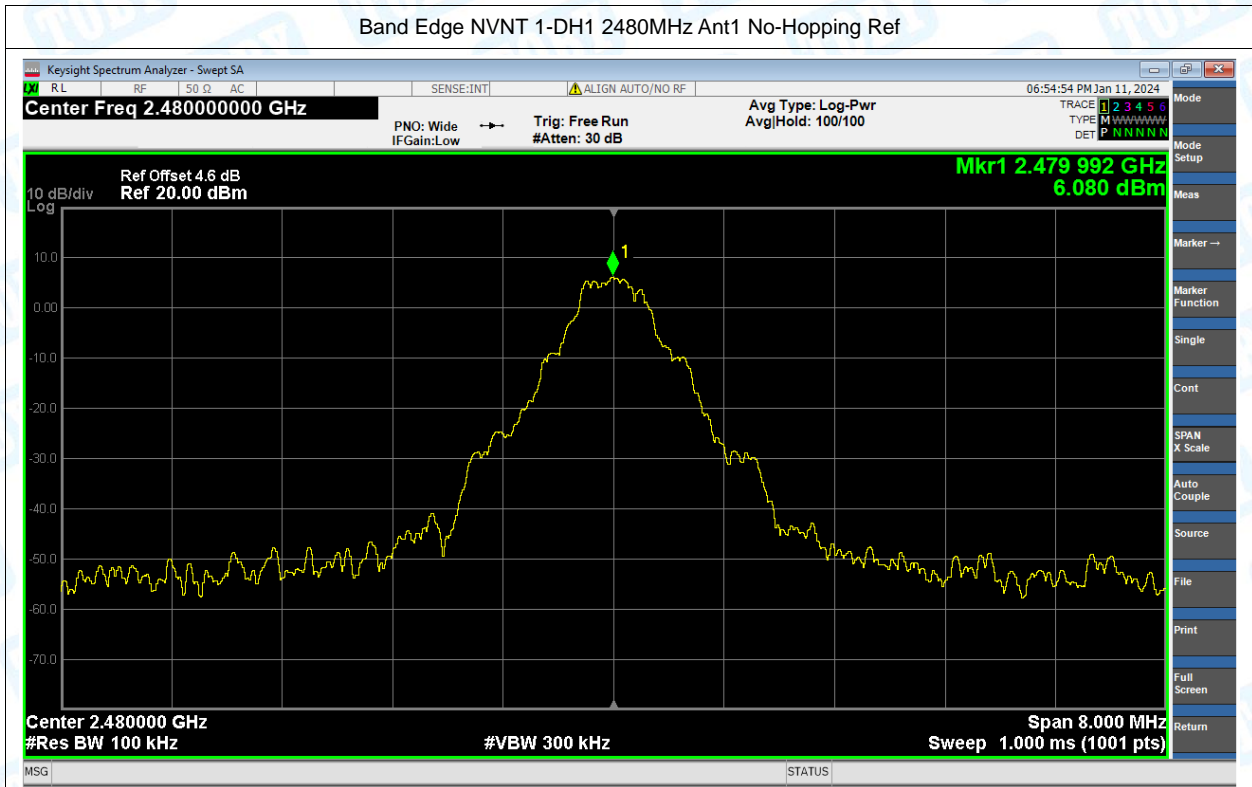
Test Graphs

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

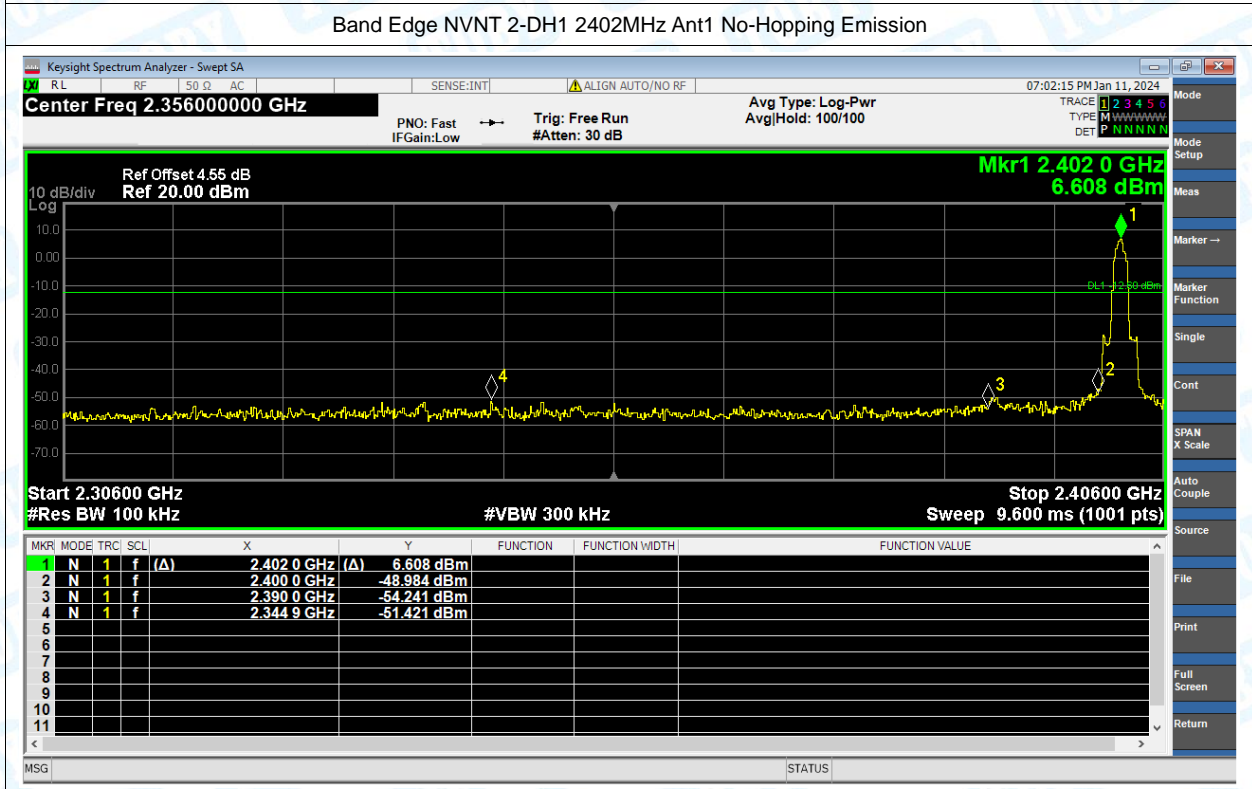
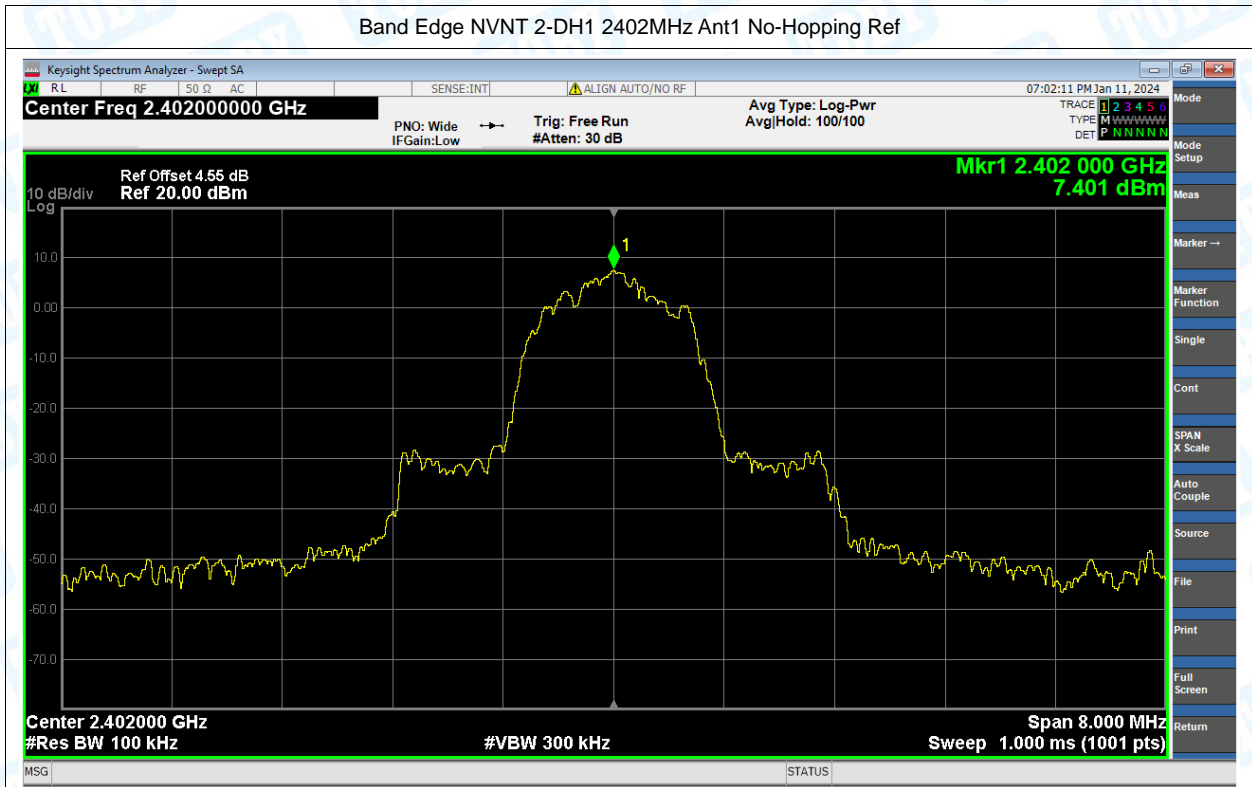


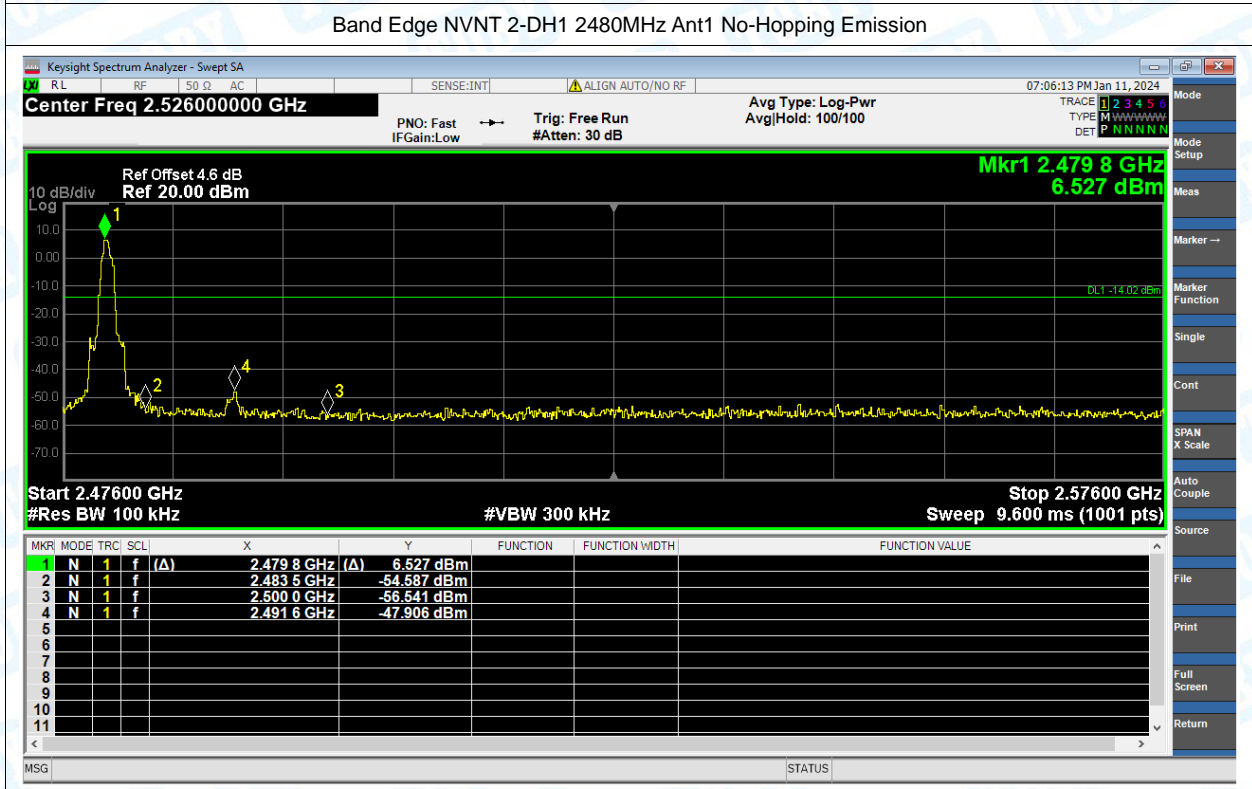
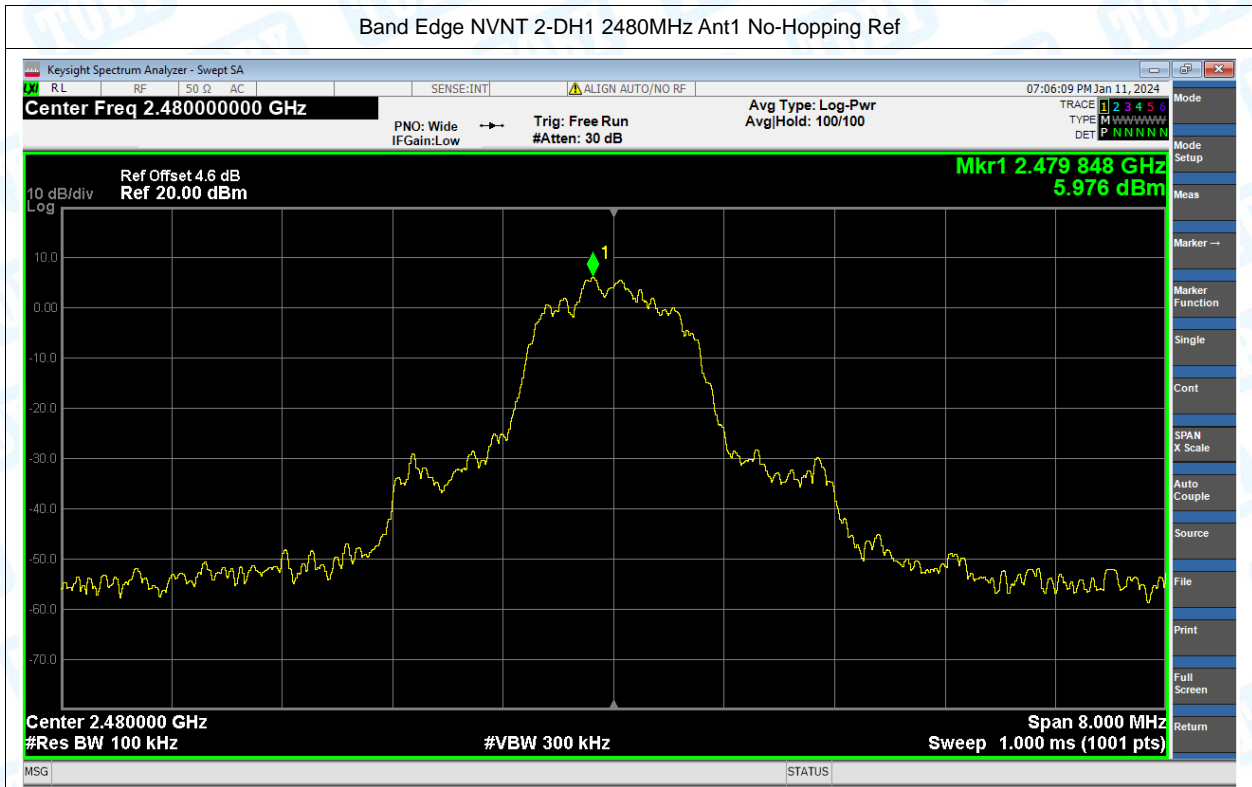
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



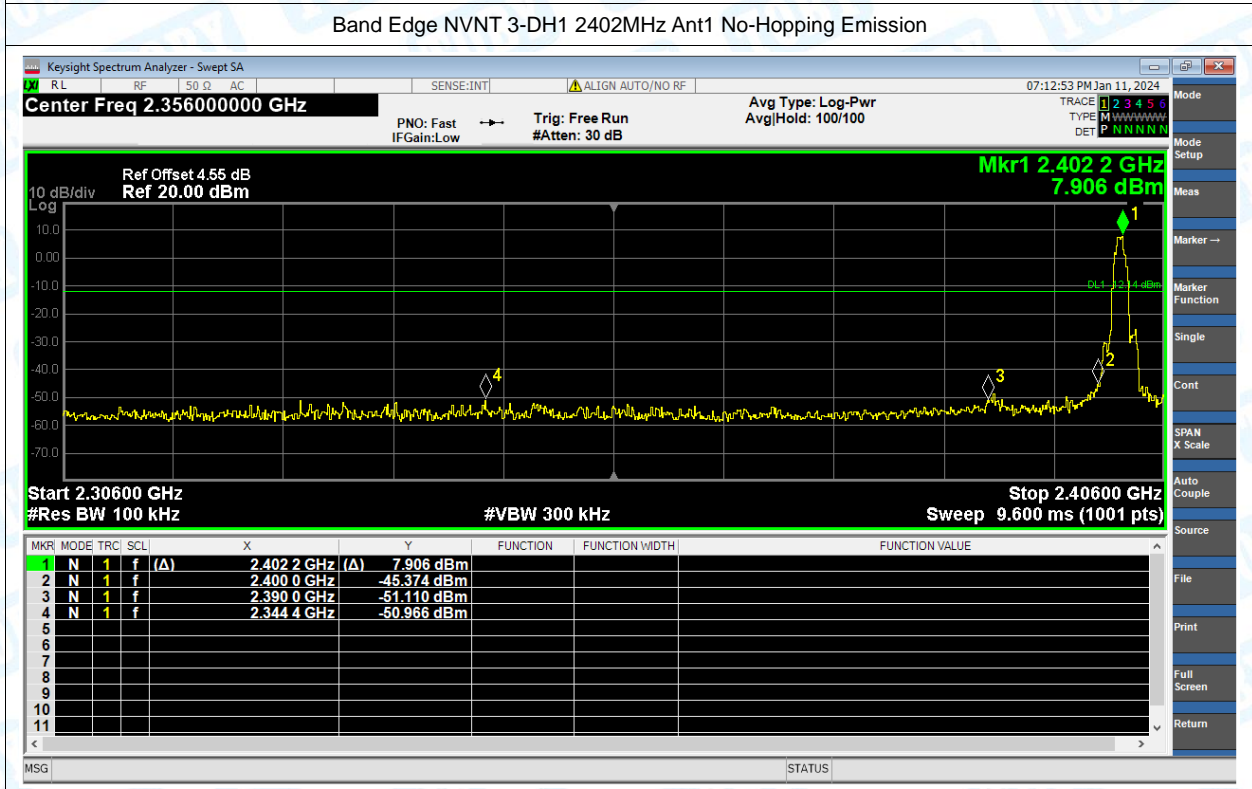
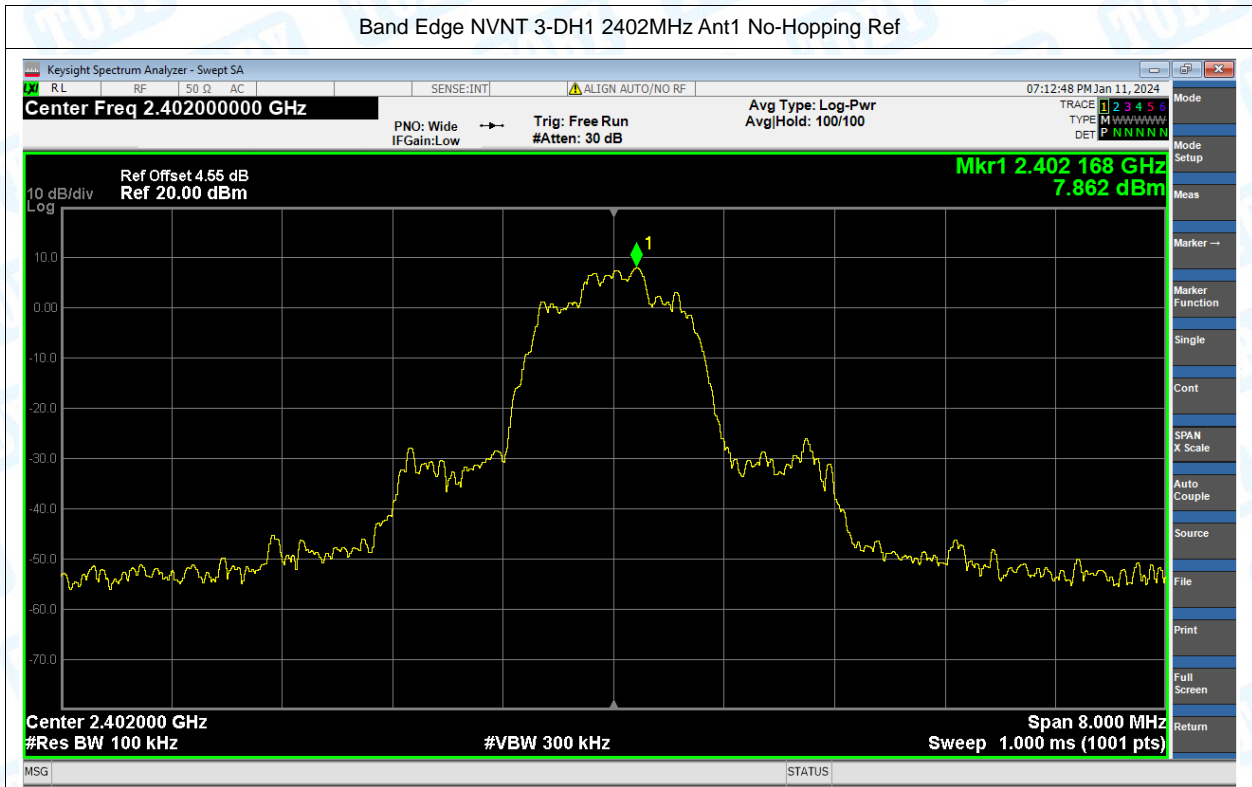


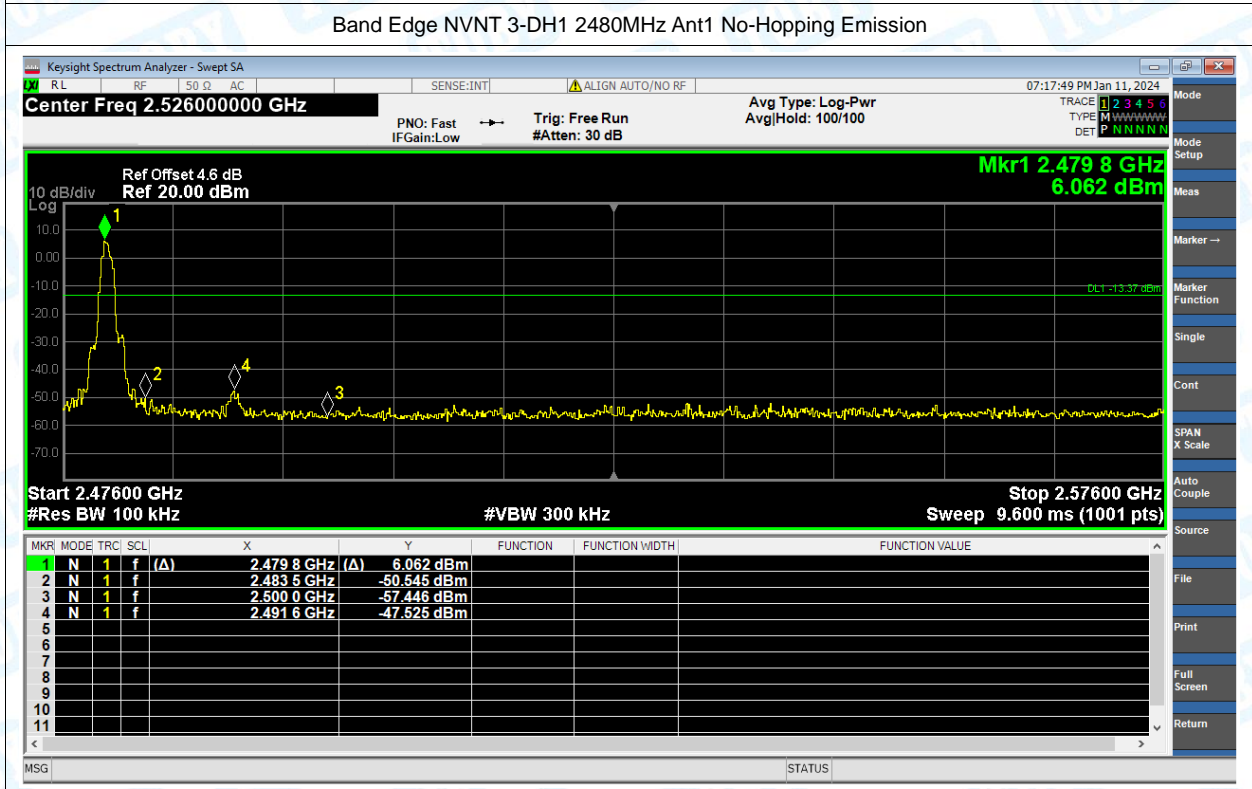
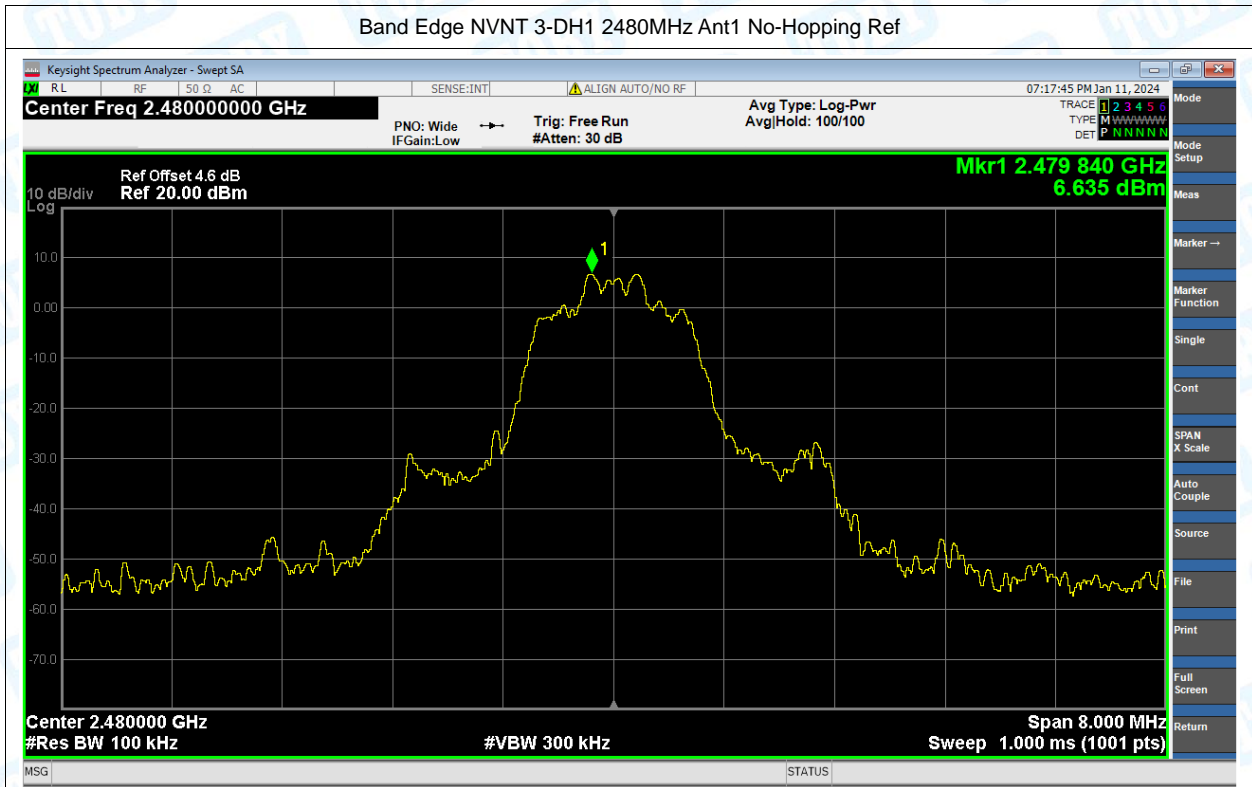














## Band Edge(Hopping)

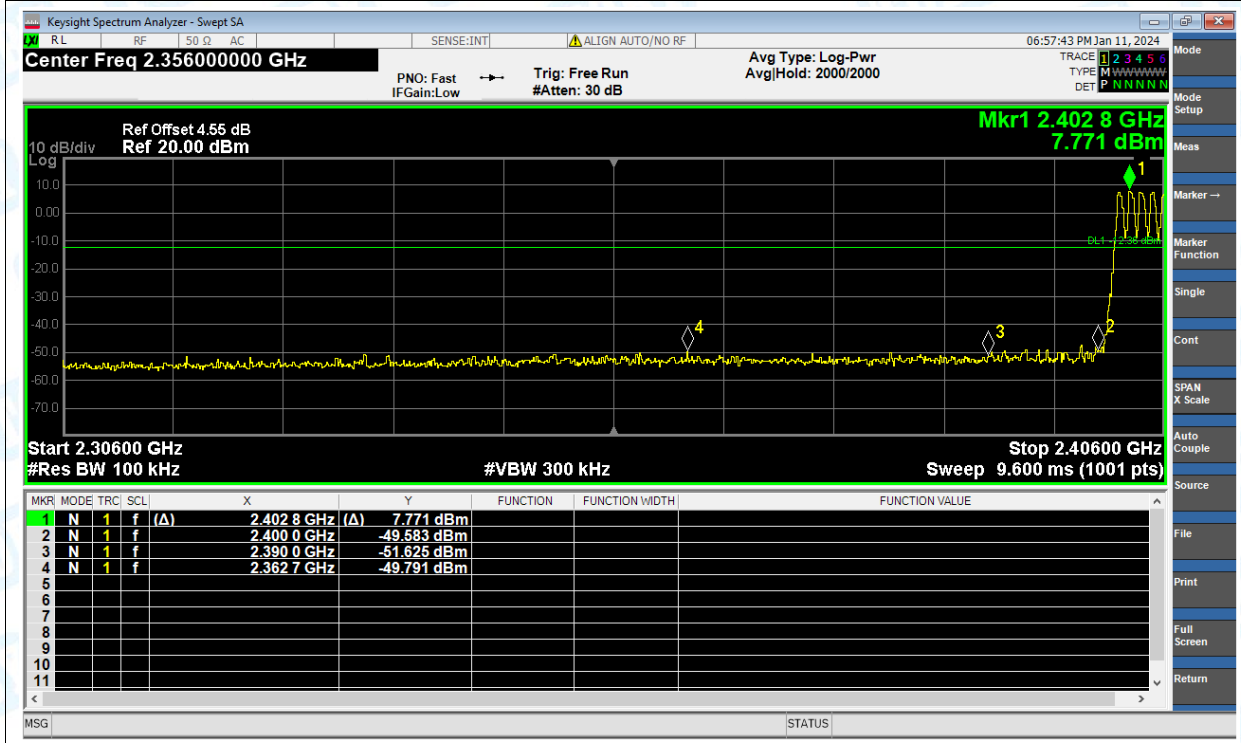
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-57.43	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-54.29	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-58.06	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-55.12	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-58.33	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-54.33	-20	Pass

Test Graphs

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



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

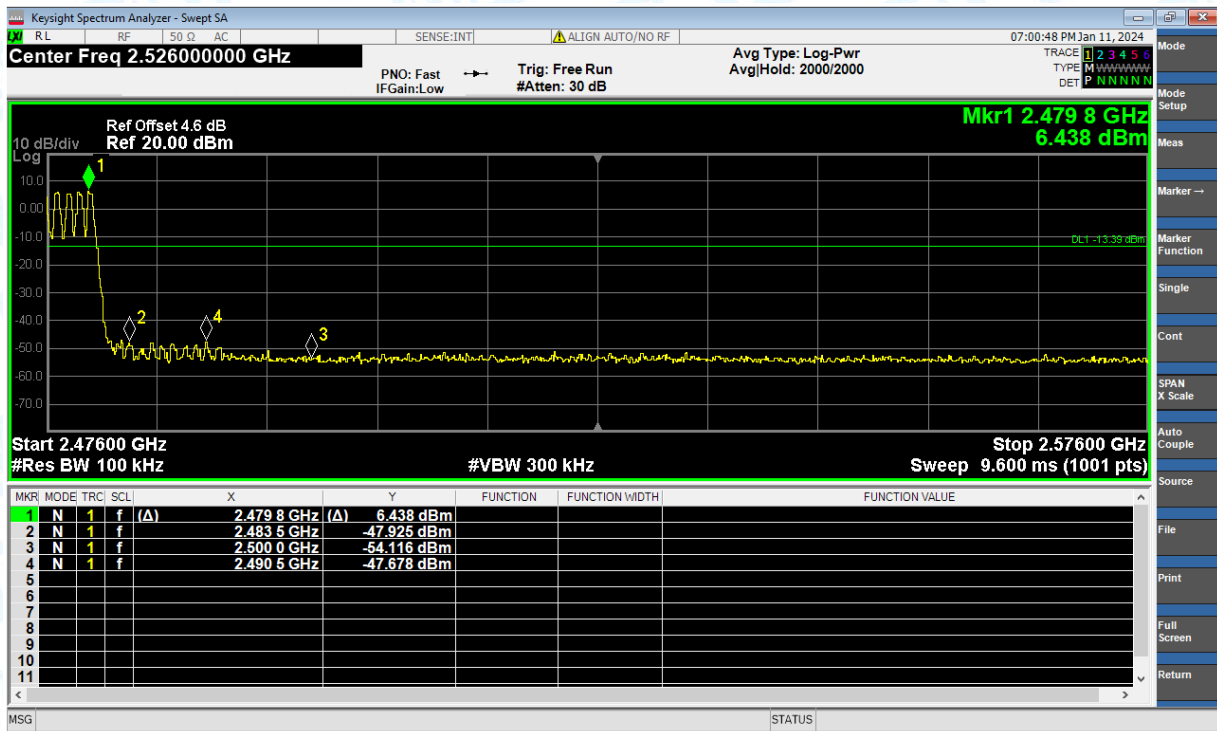




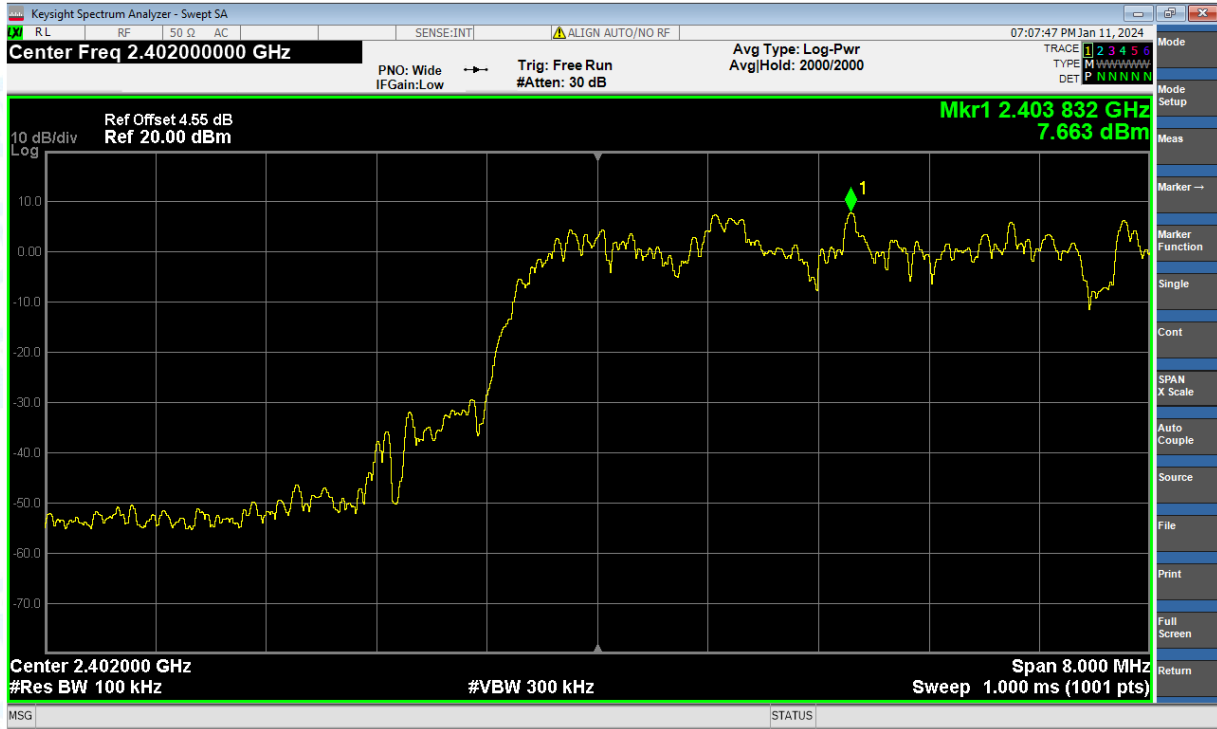
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref



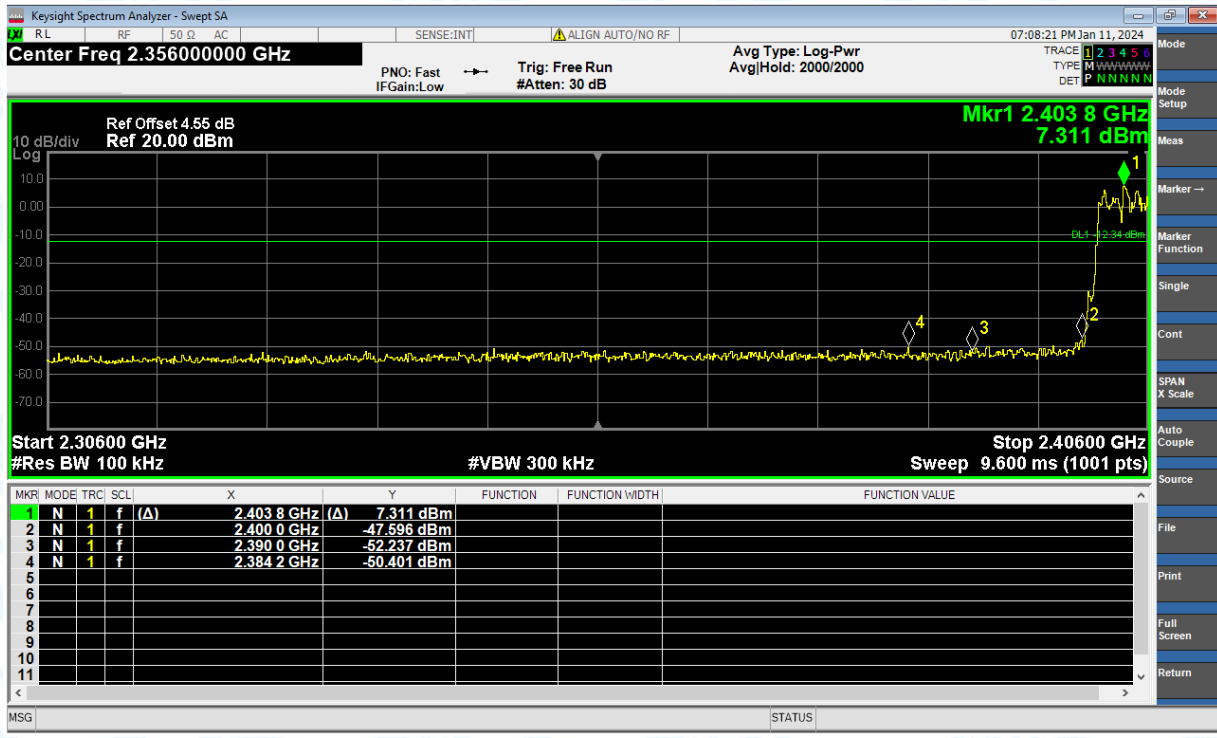
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



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



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

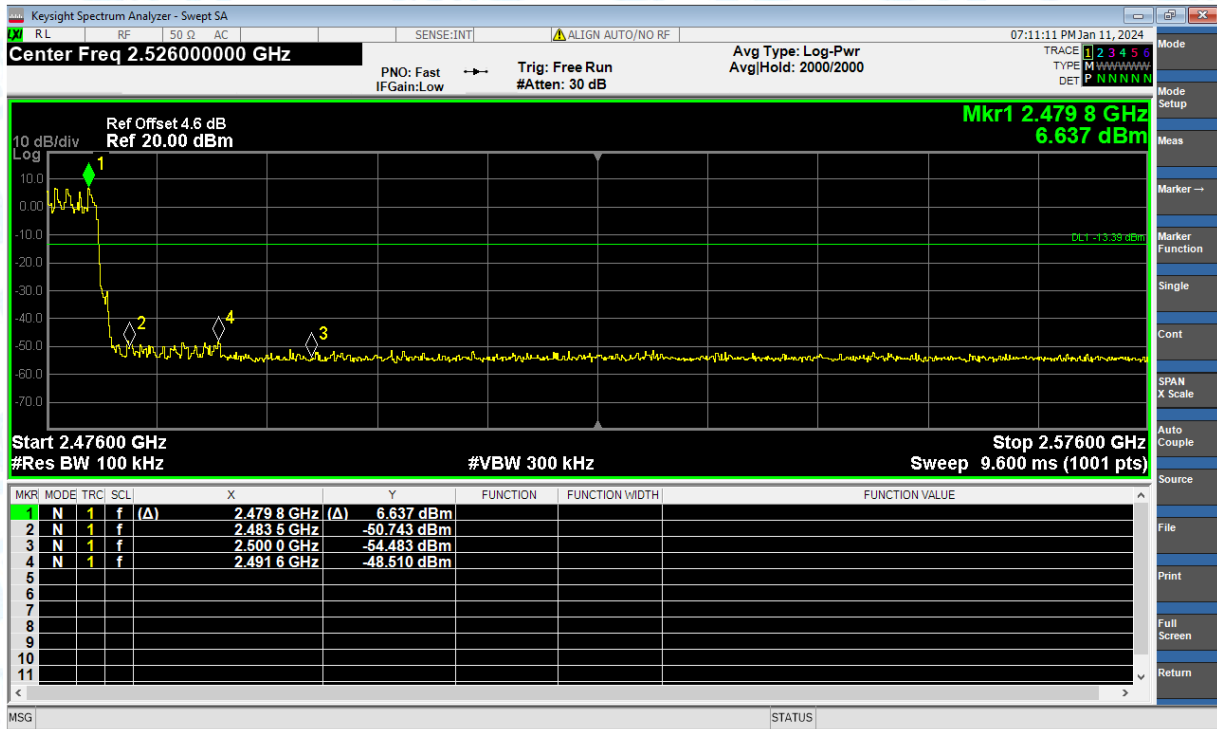




Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref



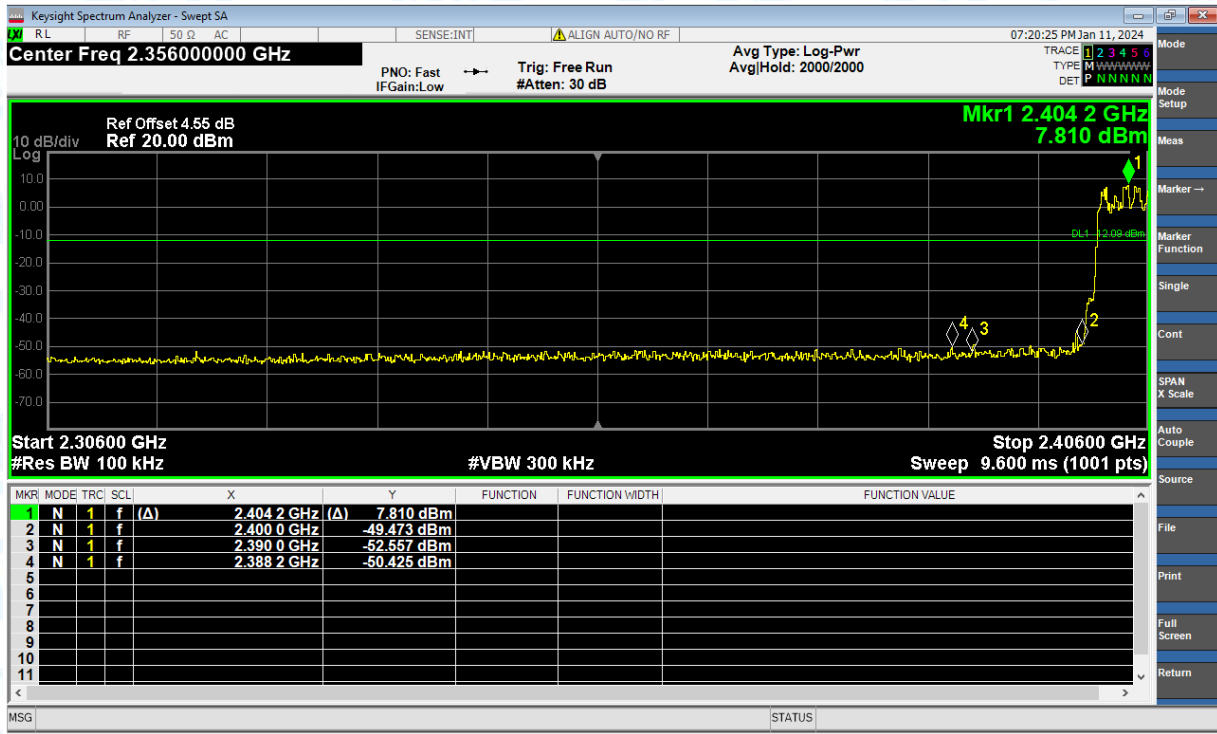
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission



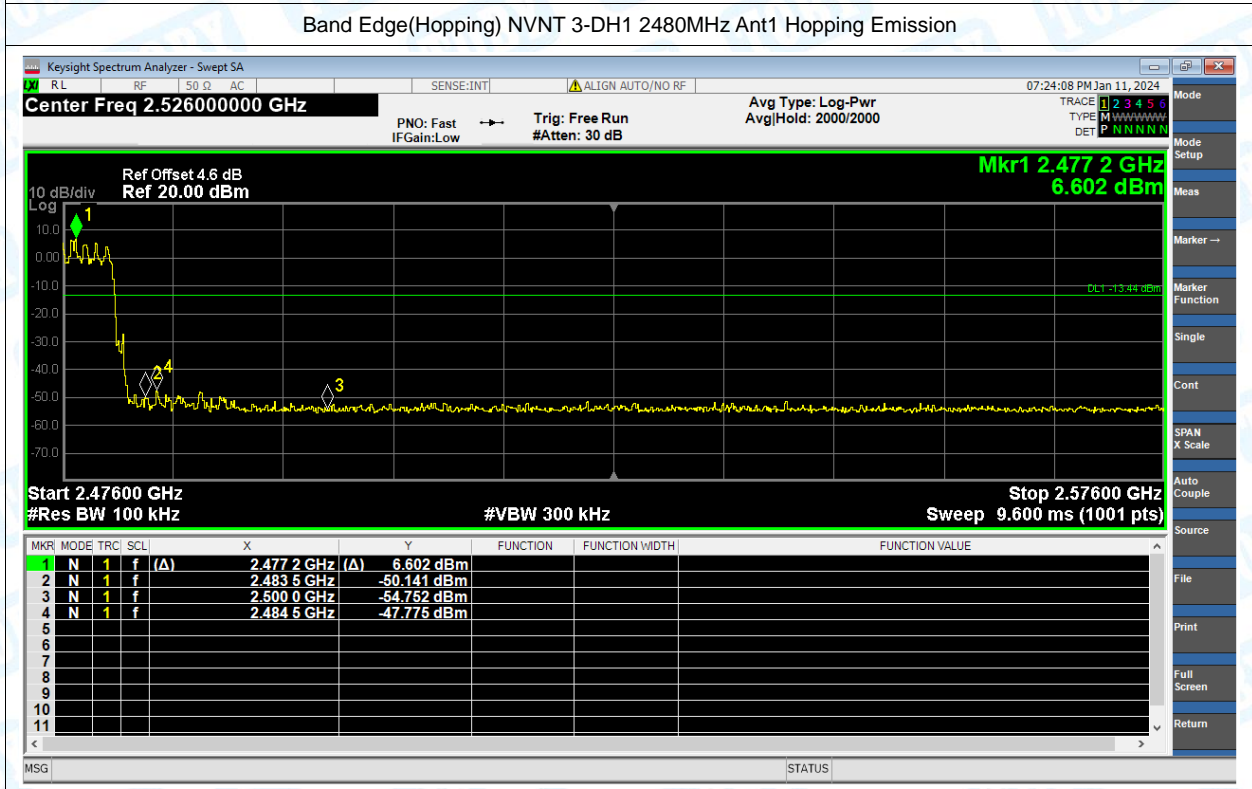
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



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







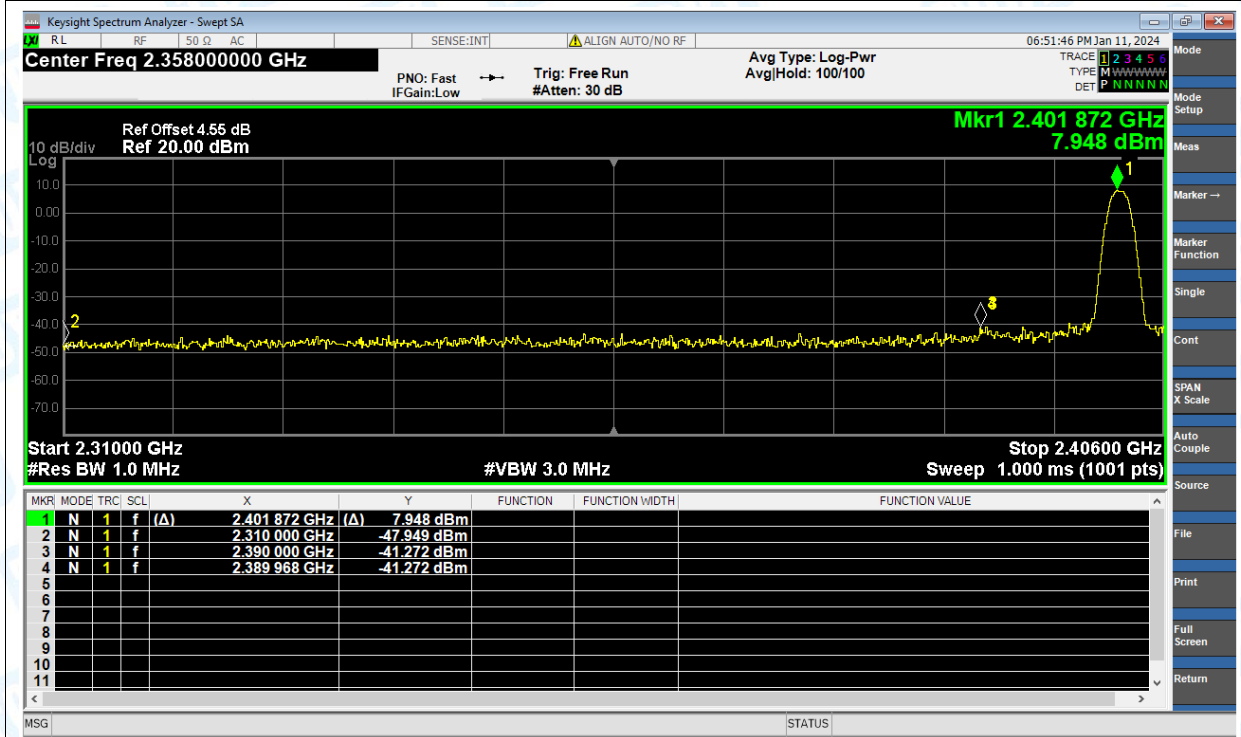
## Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-47.95	2	-	49.31	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-55.61	2	5.29	46.94	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2389.968	-41.27	2	-	55.99	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2389.2	-50.8	2	5.29	51.75	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-41.27	2	-	55.99	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-55.1	2	5.29	47.45	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-43.14	2	-	54.12	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-52.53	2	5.17	49.9	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2491.528	-40.93	2	-	56.33	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2491.384	-49.07	2	5.17	53.36	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-46.6	2	-	50.66	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-54.21	2	5.17	48.22	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-46.67	2	-	50.59	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-52.82	2	5.06	49.5	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2389.872	-41.36	2	-	55.9	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2356.176	-52.43	2	5.06	49.89	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-44.78	2	-	52.48	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-54.38	2	5.06	47.94	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-44.74	2	-	52.52	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-53.03	2	5.17	49.4	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2485.576	-41.73	2	-	55.53	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2491.12	-50.37	2	5.17	52.06	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-46.45	2	-	50.81	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.75	2	5.17	46.68	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	-57.8	2	5.17	44.63	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2389.872	-42.1	2	-	55.16	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2319.696	-52.69	2	5.17	49.74	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-42.16	2	-	55.1	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-53.87	2	5.17	48.56	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-46.01	2	-	51.25	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-55.07	2	5.17	47.36	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2490.952	-40.13	2	-	57.13	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2495.92	-52.54	2	5.17	49.89	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-47.23	2	-	50.03	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-54.38	2	5.17	48.05	Average	54	Pass

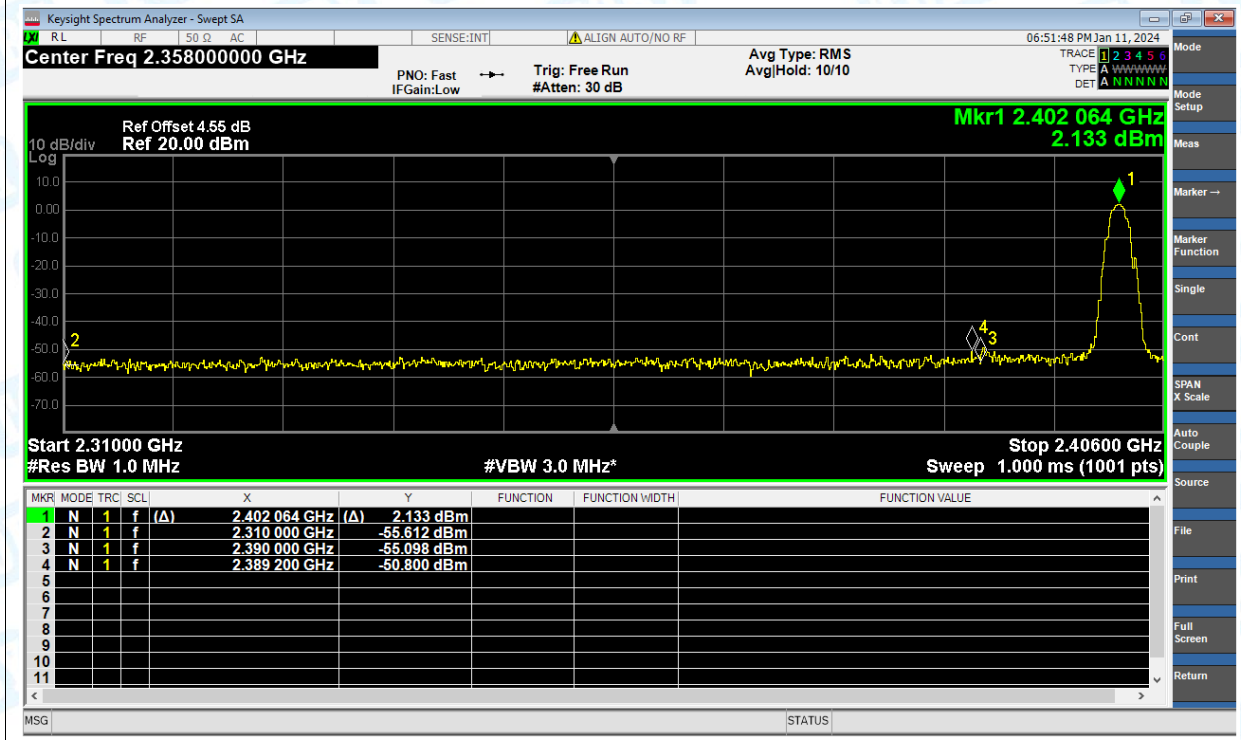


Test Graphs

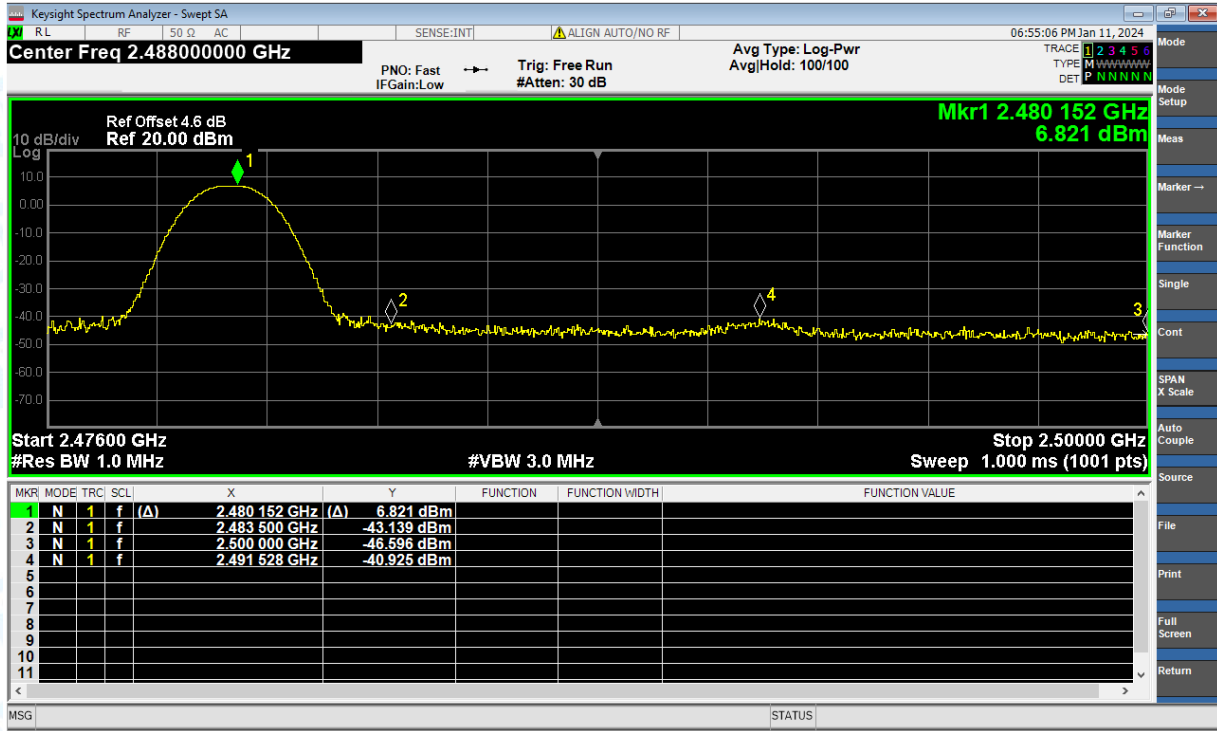
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



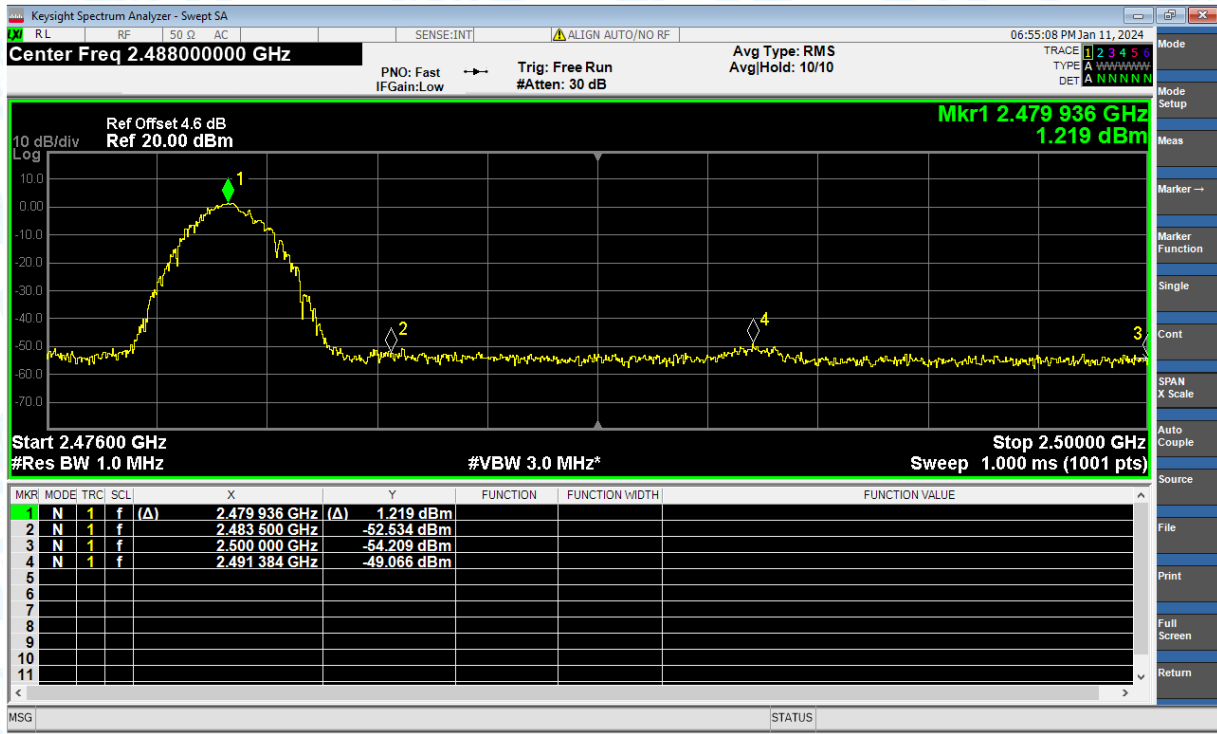
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



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

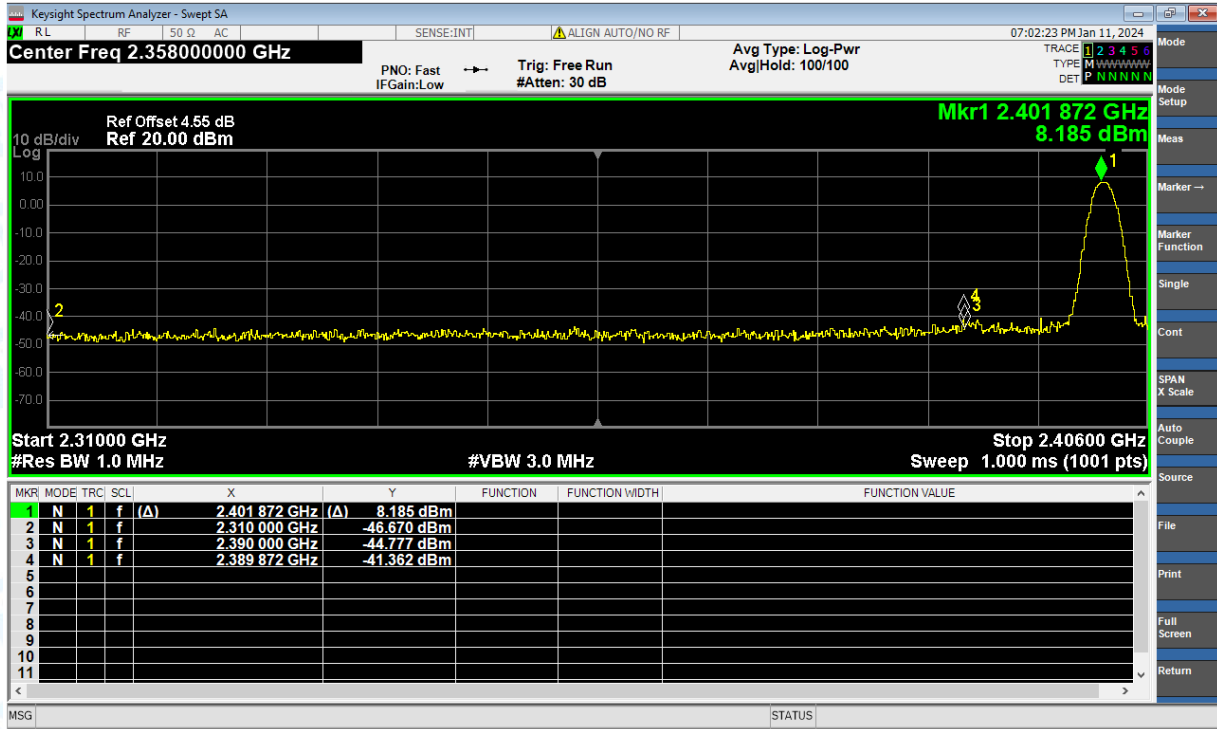


Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average

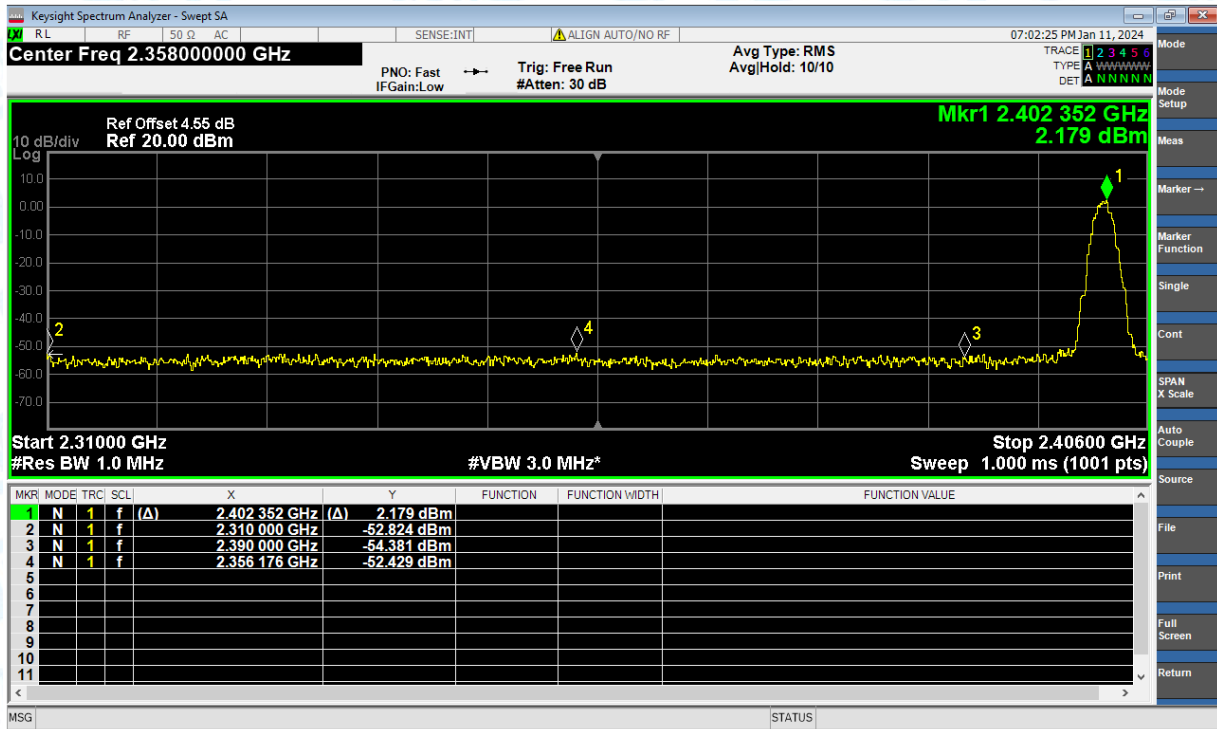




Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



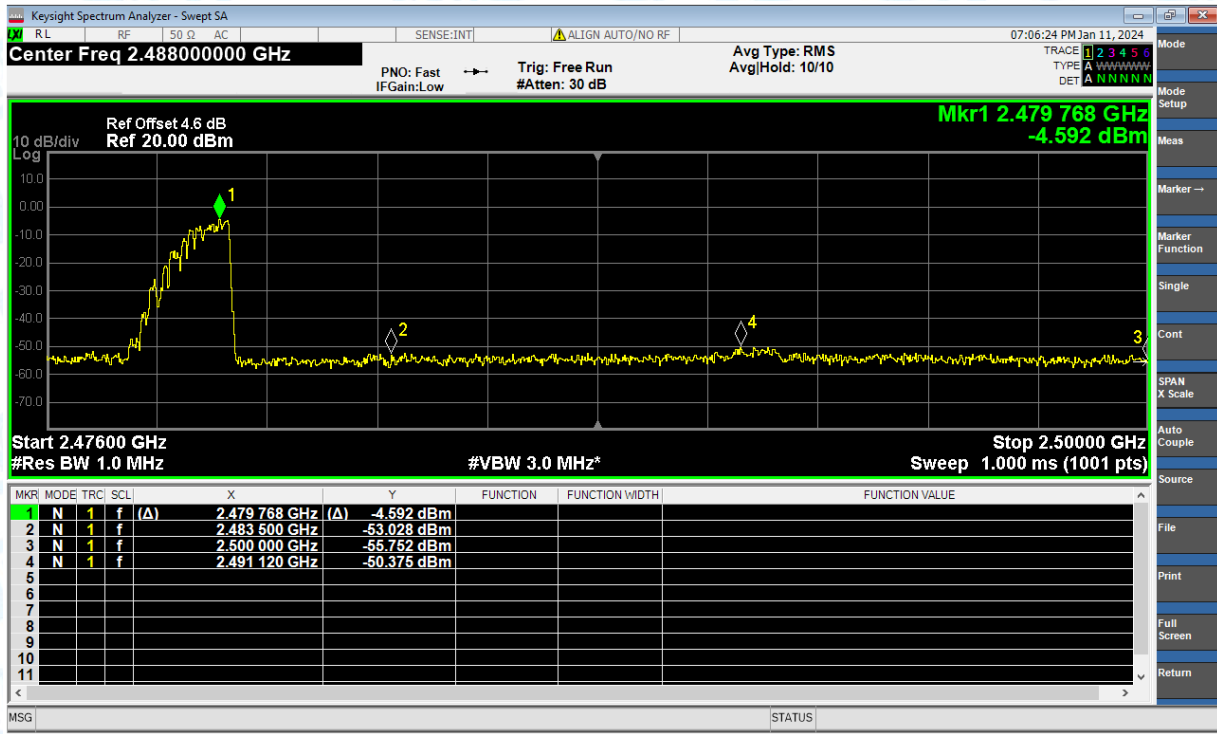
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



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

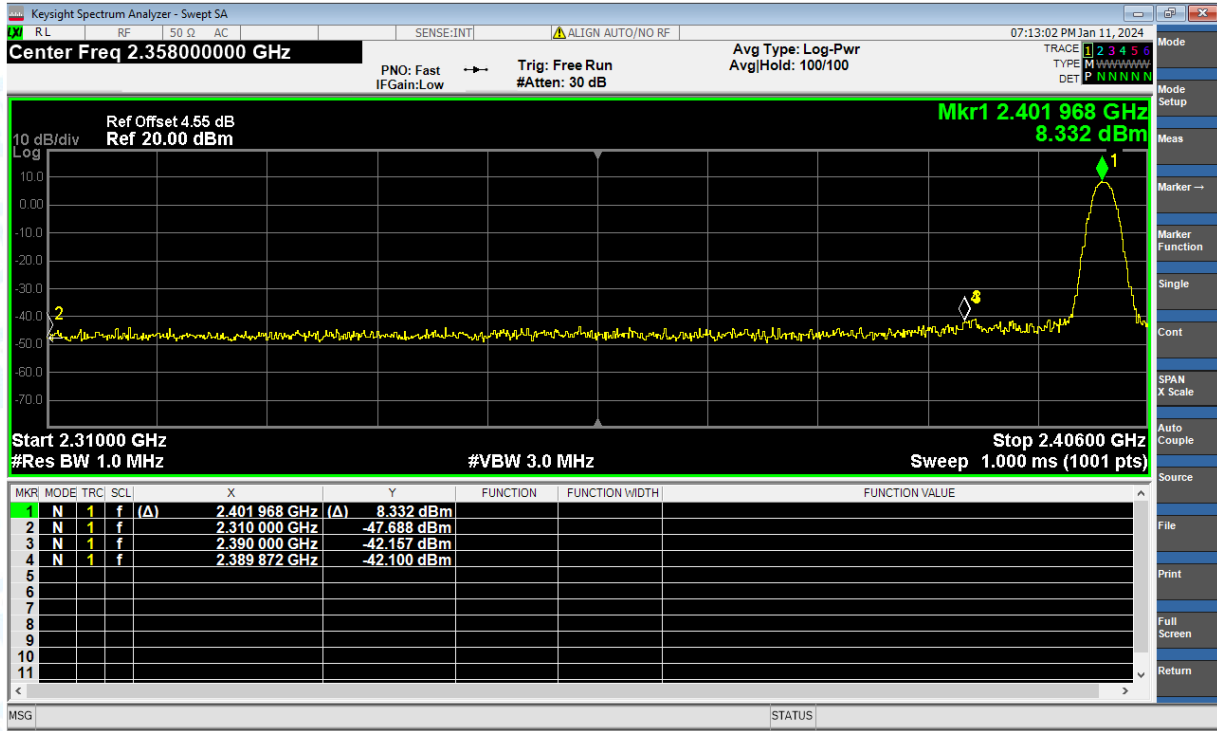


Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average

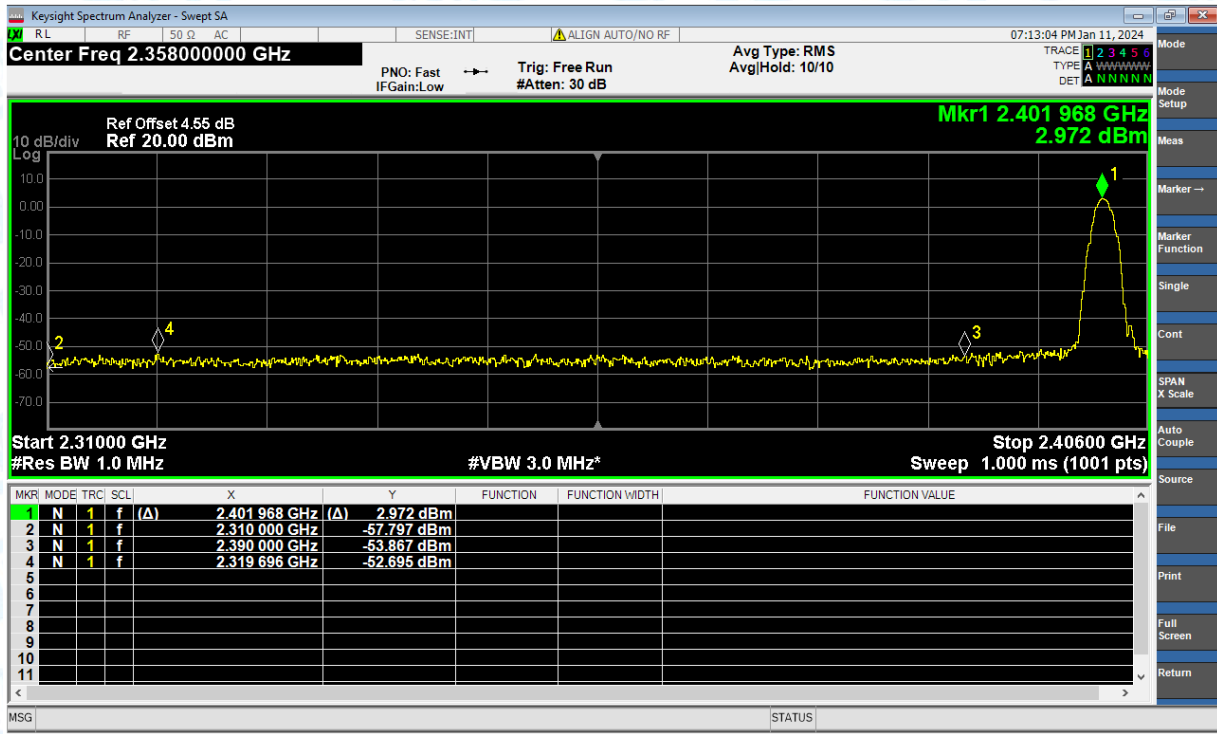




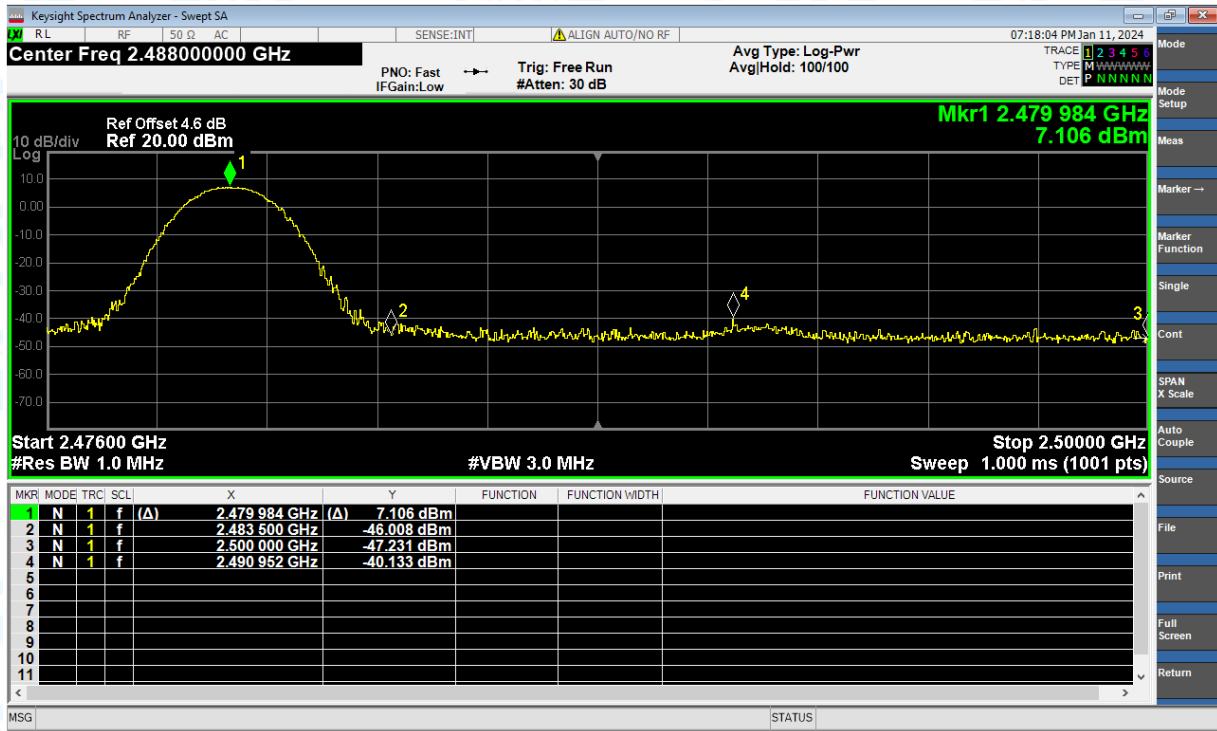
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



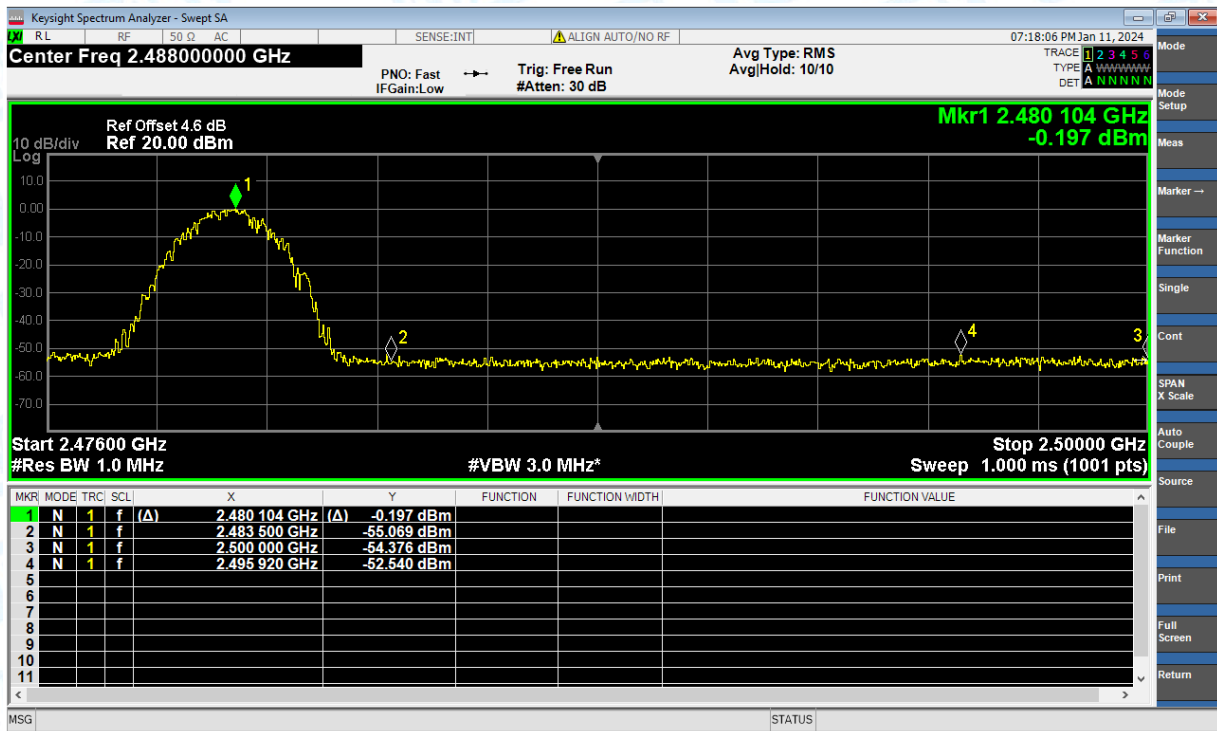
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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



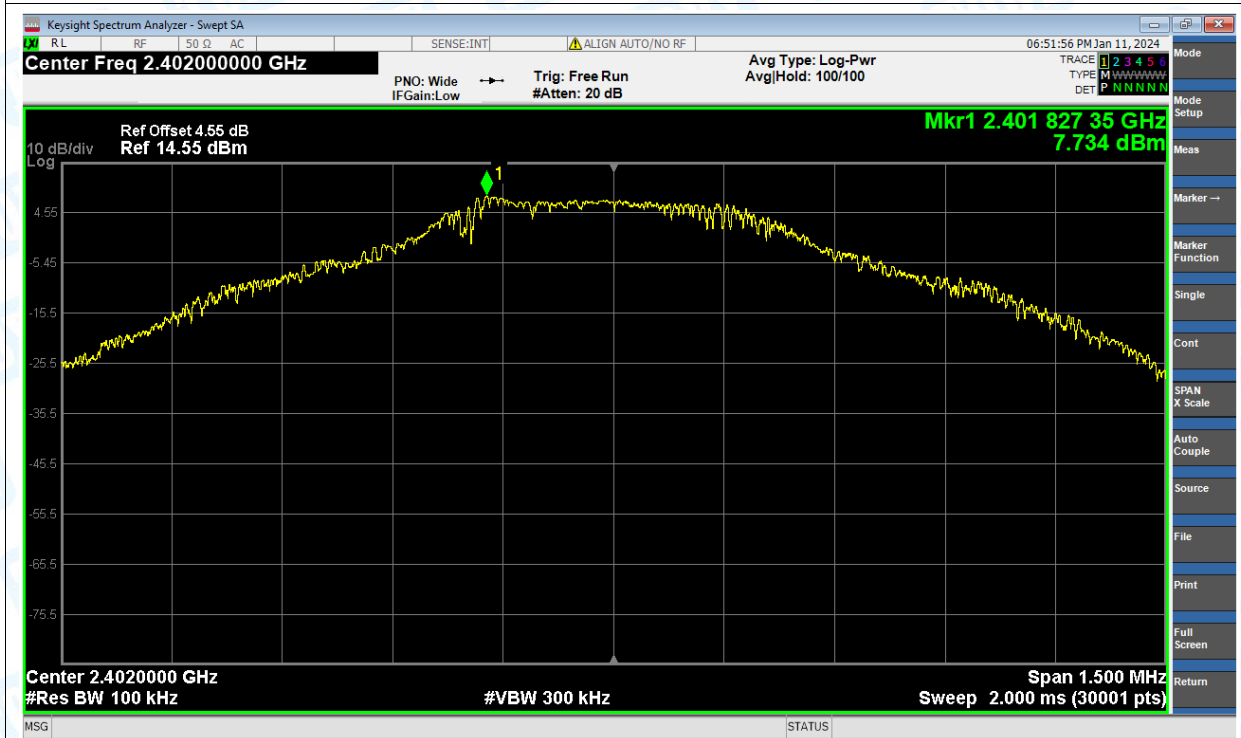


## Conducted RF Spurious Emission

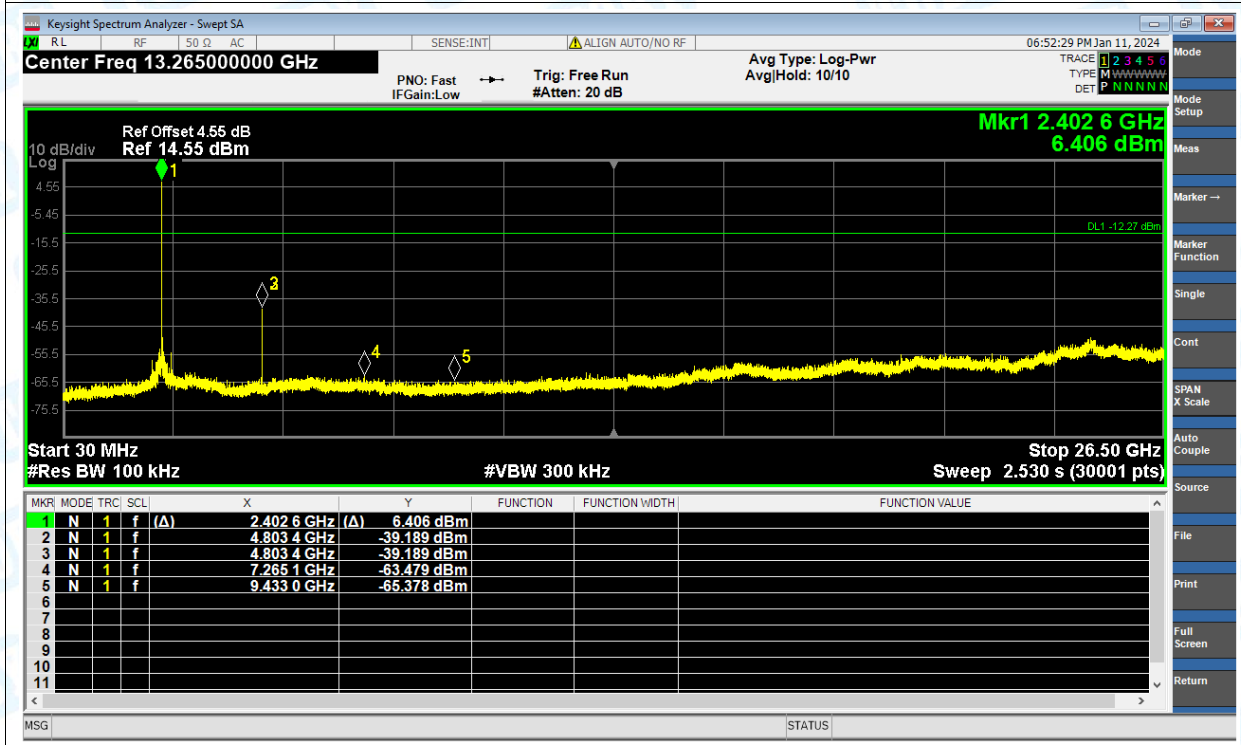
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-46.92	-20	Pass
NVNT	1-DH1	2441	Ant1	-50.96	-20	Pass
NVNT	1-DH1	2480	Ant1	-51.77	-20	Pass
NVNT	2-DH1	2402	Ant1	-44	-20	Pass
NVNT	2-DH1	2441	Ant1	-50.15	-20	Pass
NVNT	2-DH1	2480	Ant1	-54.17	-20	Pass
NVNT	3-DH1	2402	Ant1	-42.31	-20	Pass
NVNT	3-DH1	2441	Ant1	-48.55	-20	Pass
NVNT	3-DH1	2480	Ant1	-54.13	-20	Pass

Test Graphs

Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref

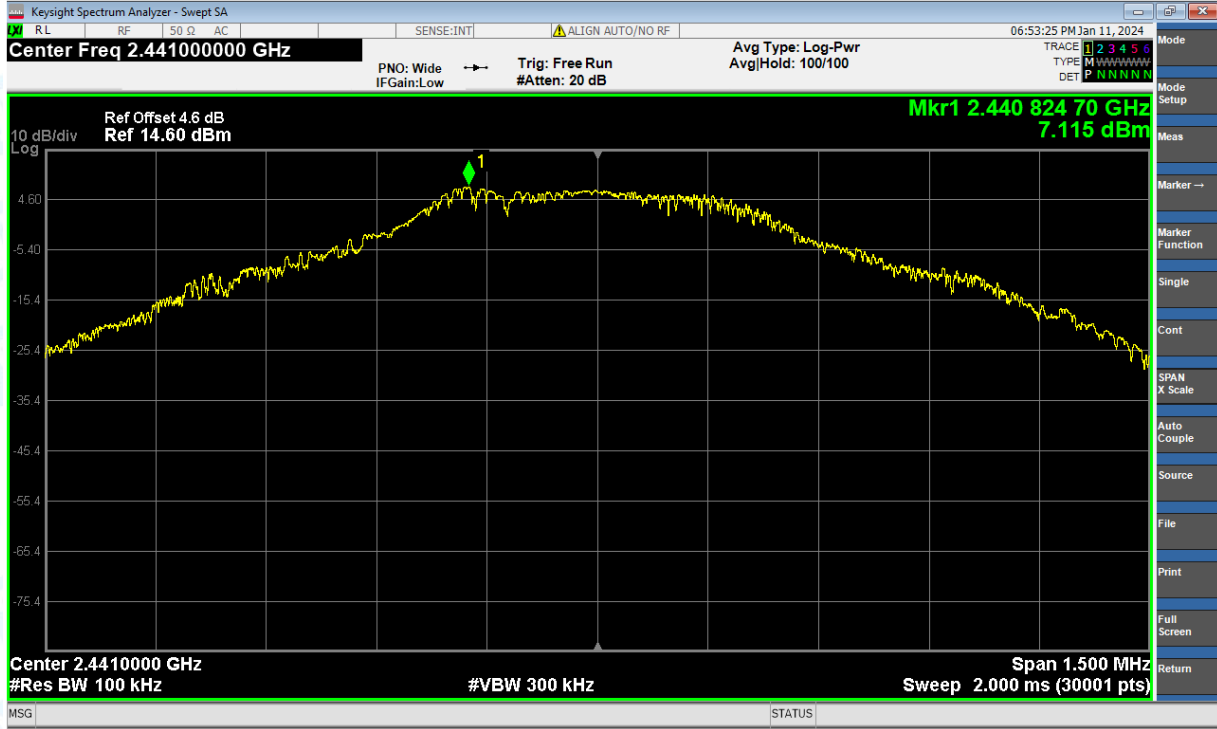


Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission





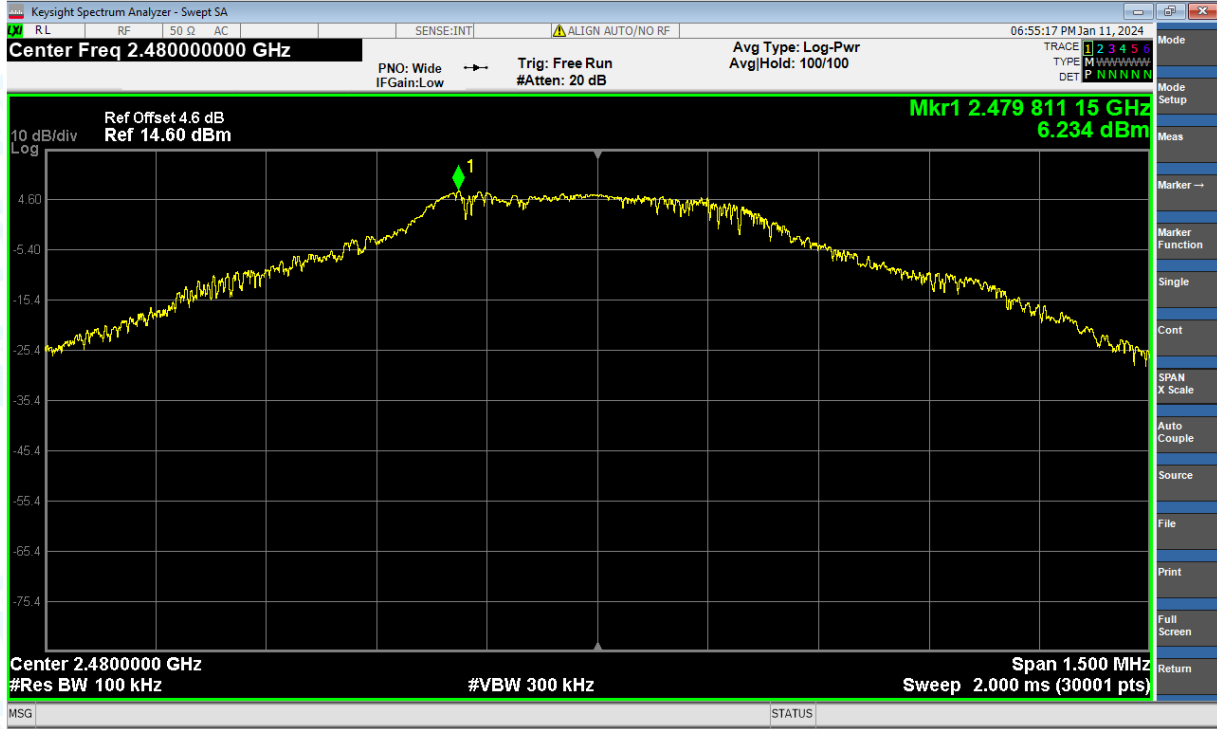
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref

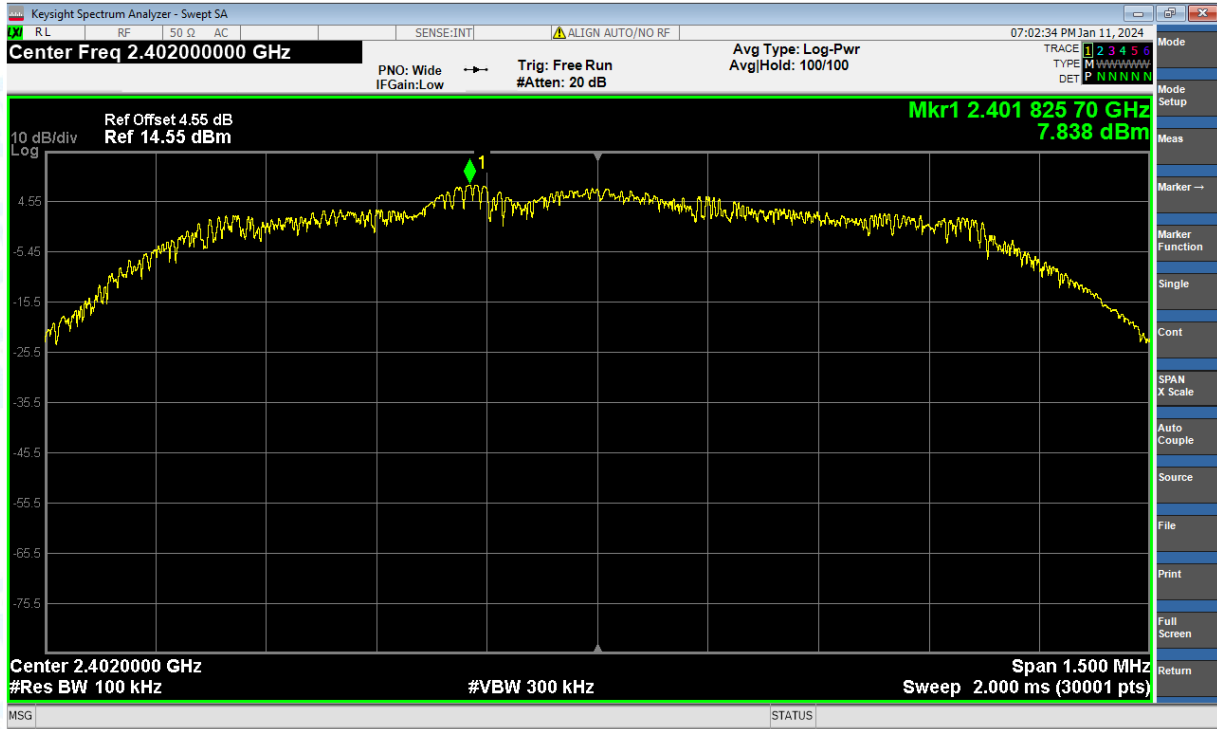


Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission

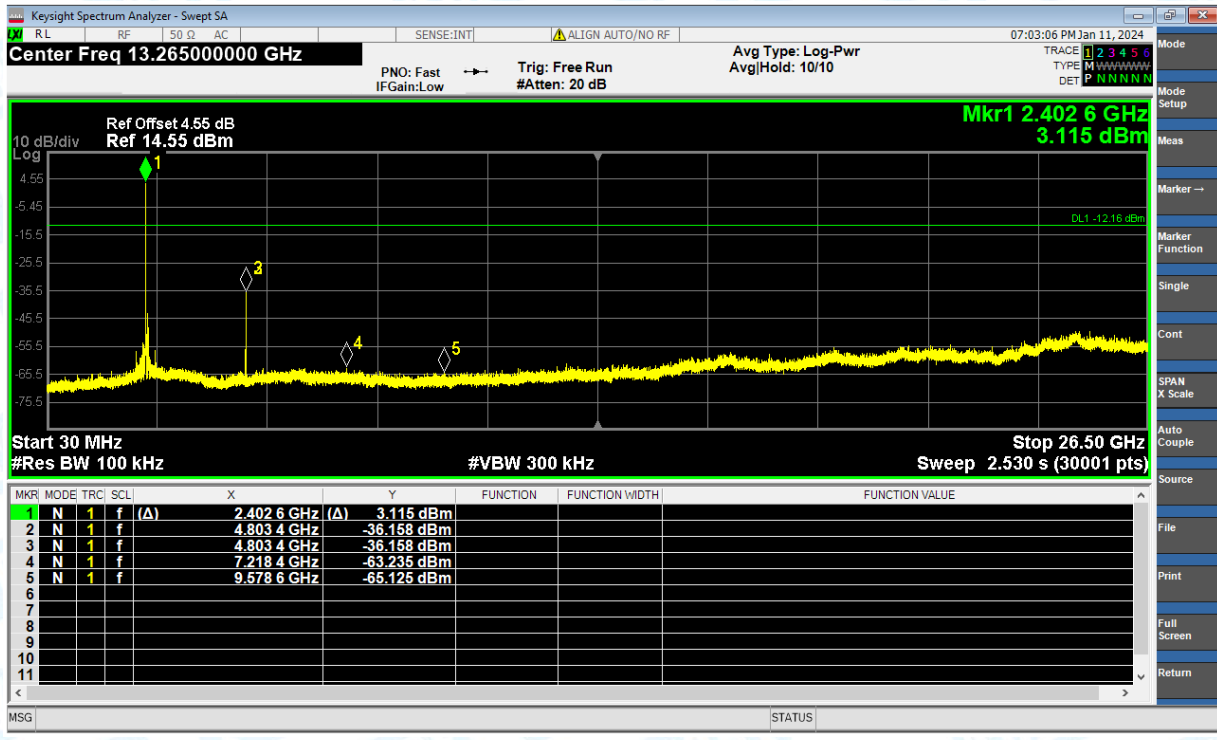




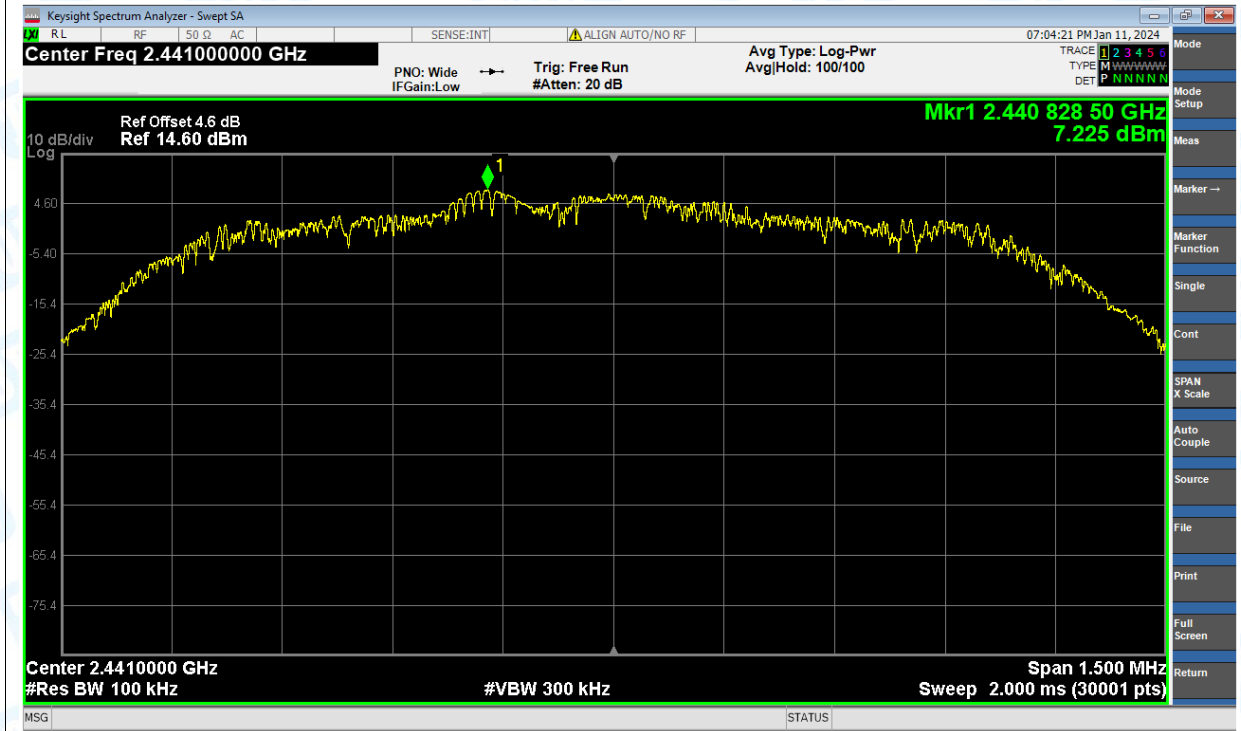
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



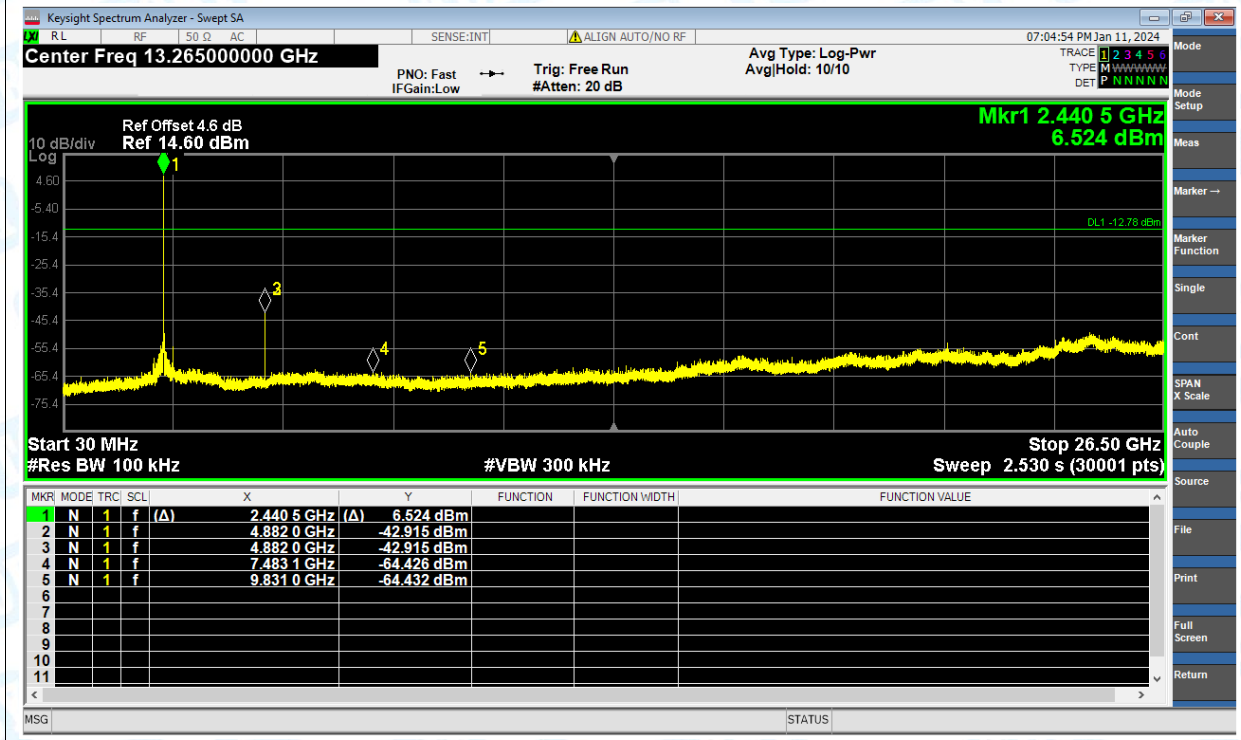
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref

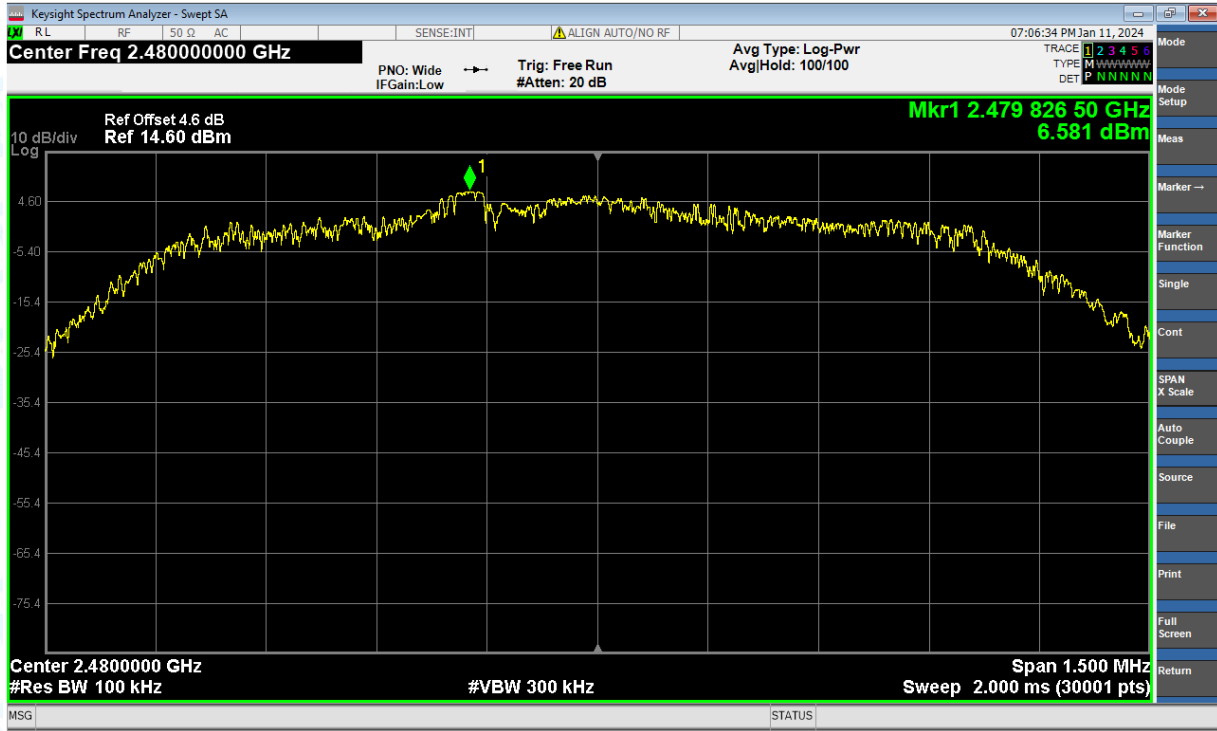


Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission

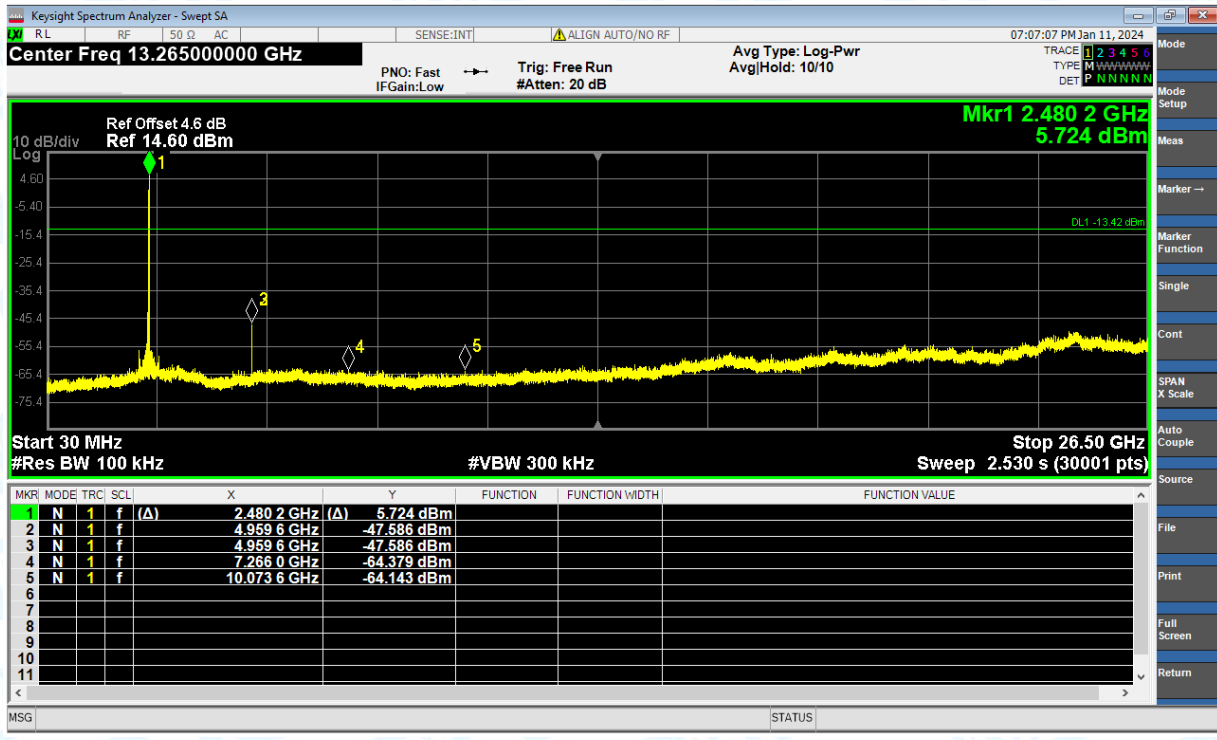




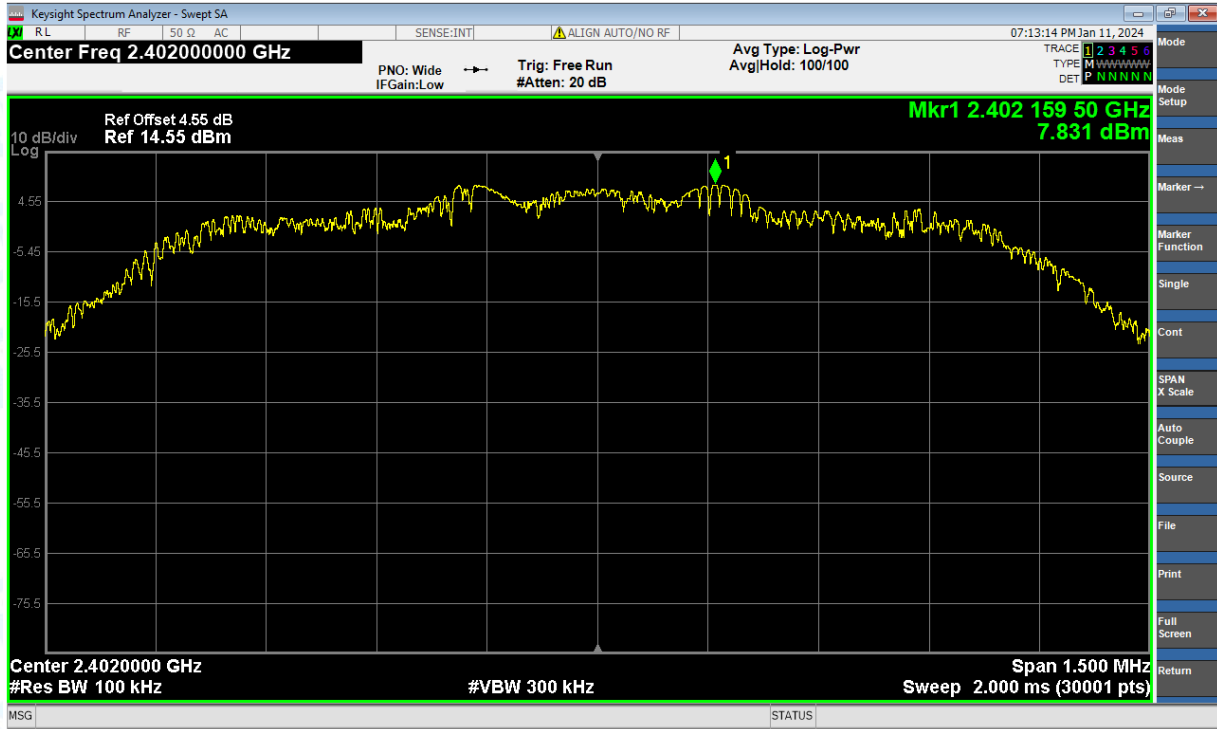
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



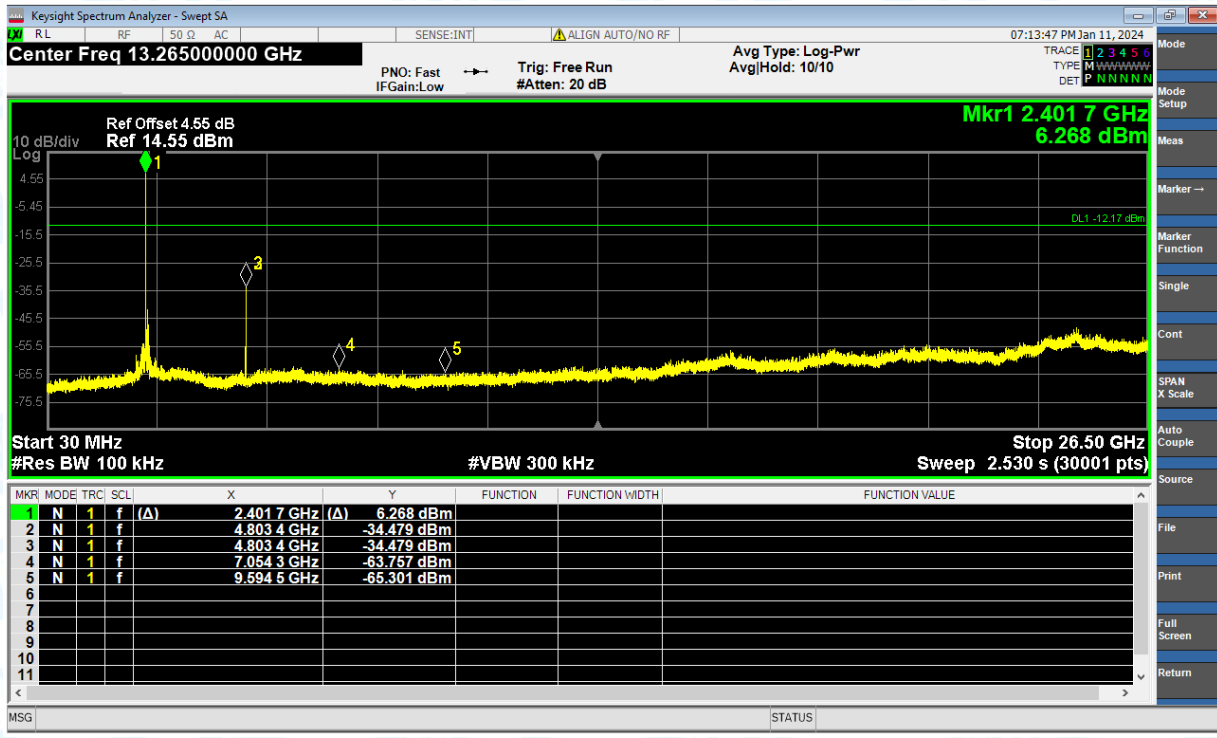
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission

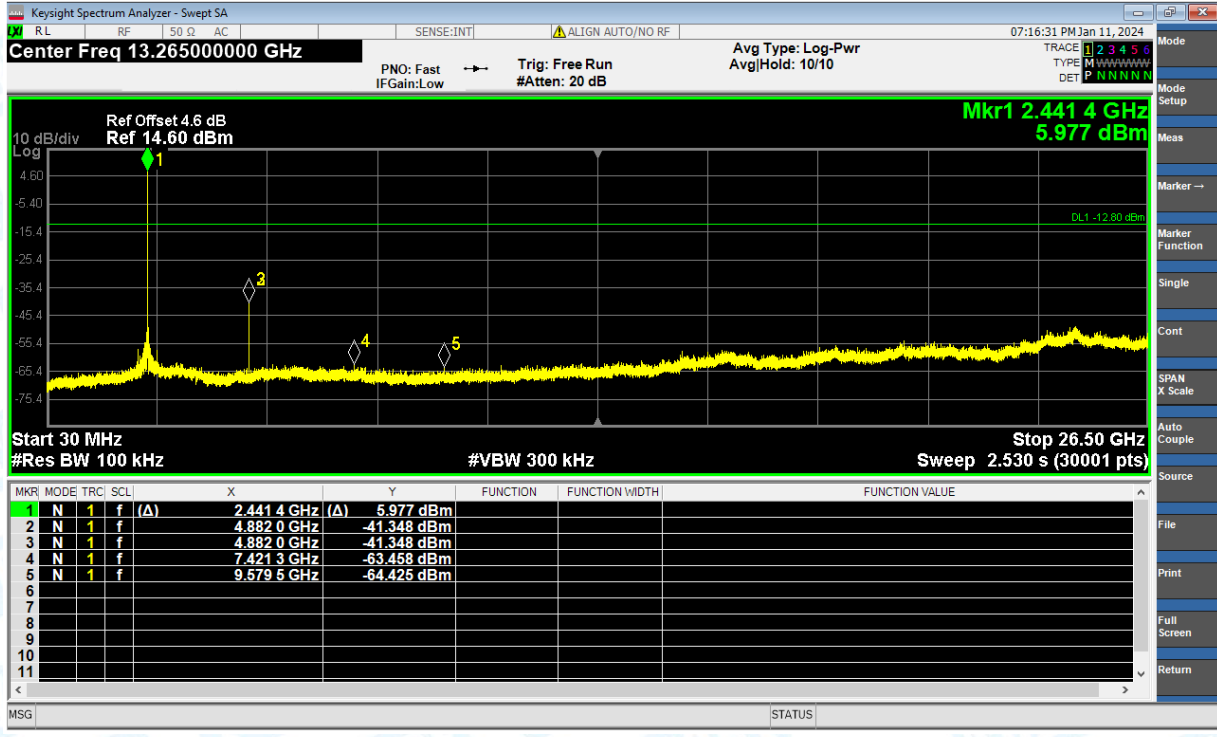




Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



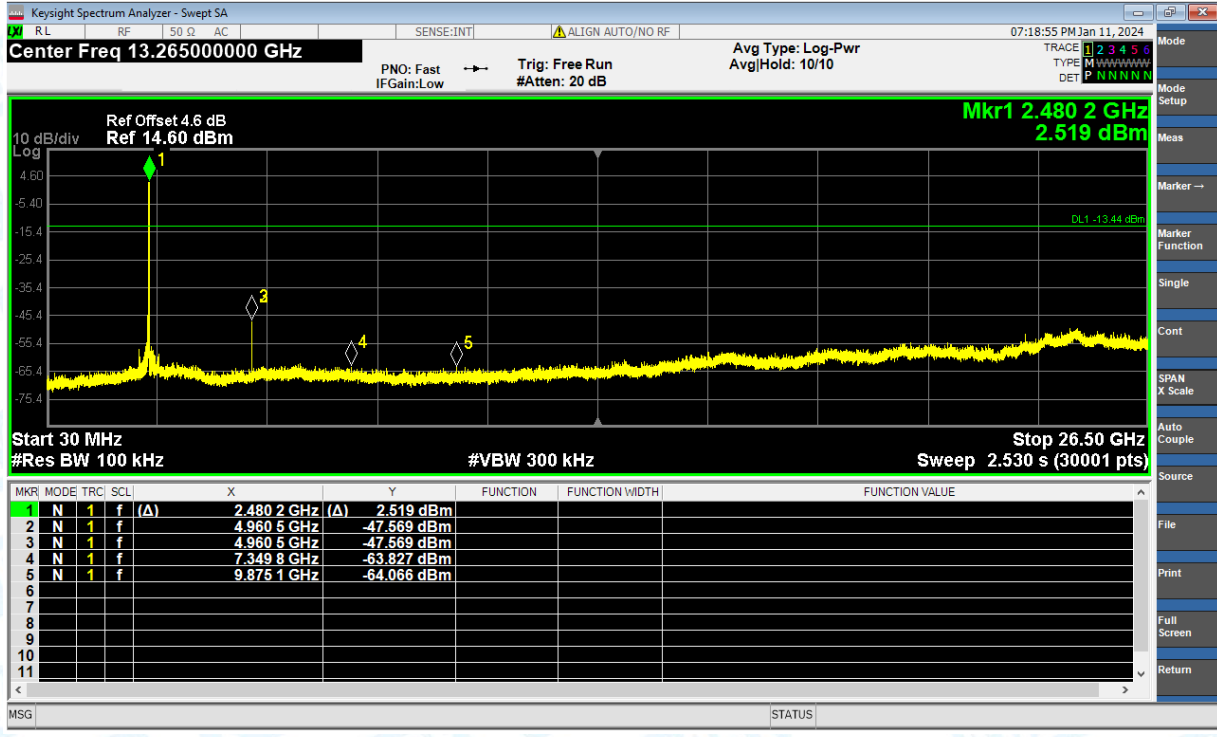
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission





## Carrier Frequencies Separation

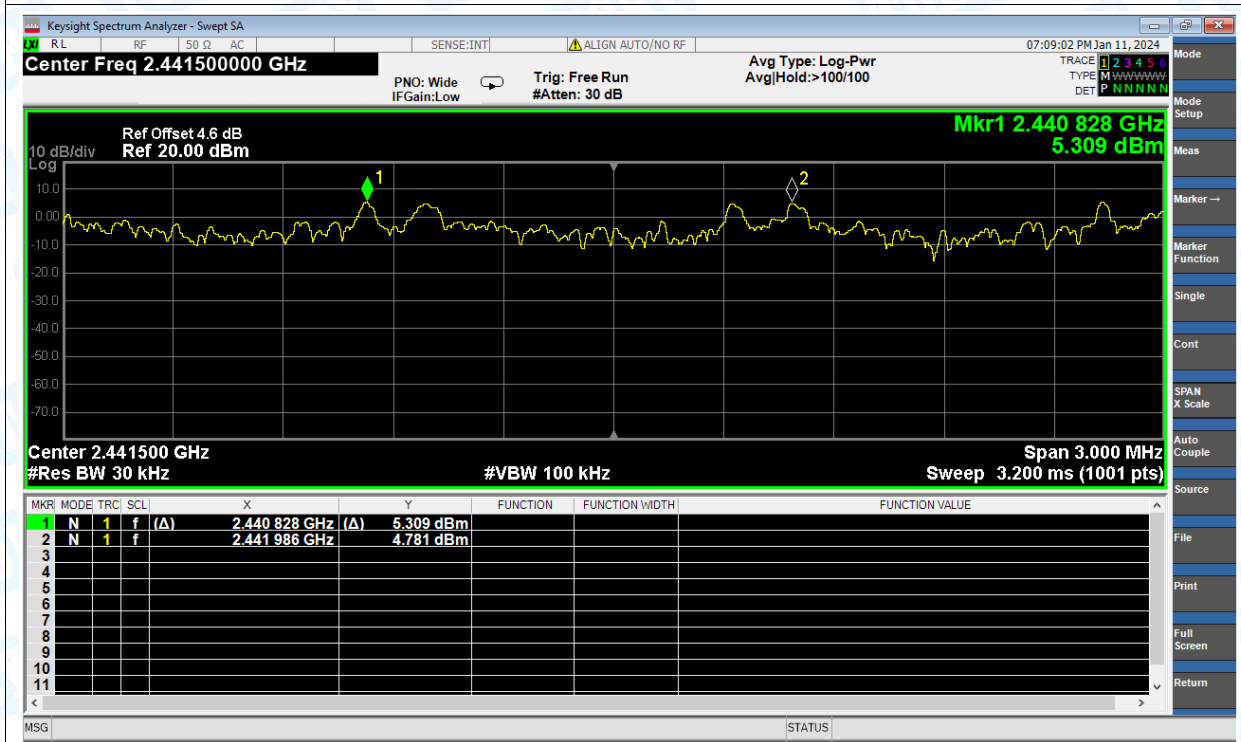
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.966	2441.824	0.858	0.633	Pass
NVNT	2-DH1	Ant1	2440.828	2441.986	1.158	0.833	Pass
NVNT	3-DH1	Ant1	2440.987	2441.83	0.843	0.813	Pass

Test Graphs

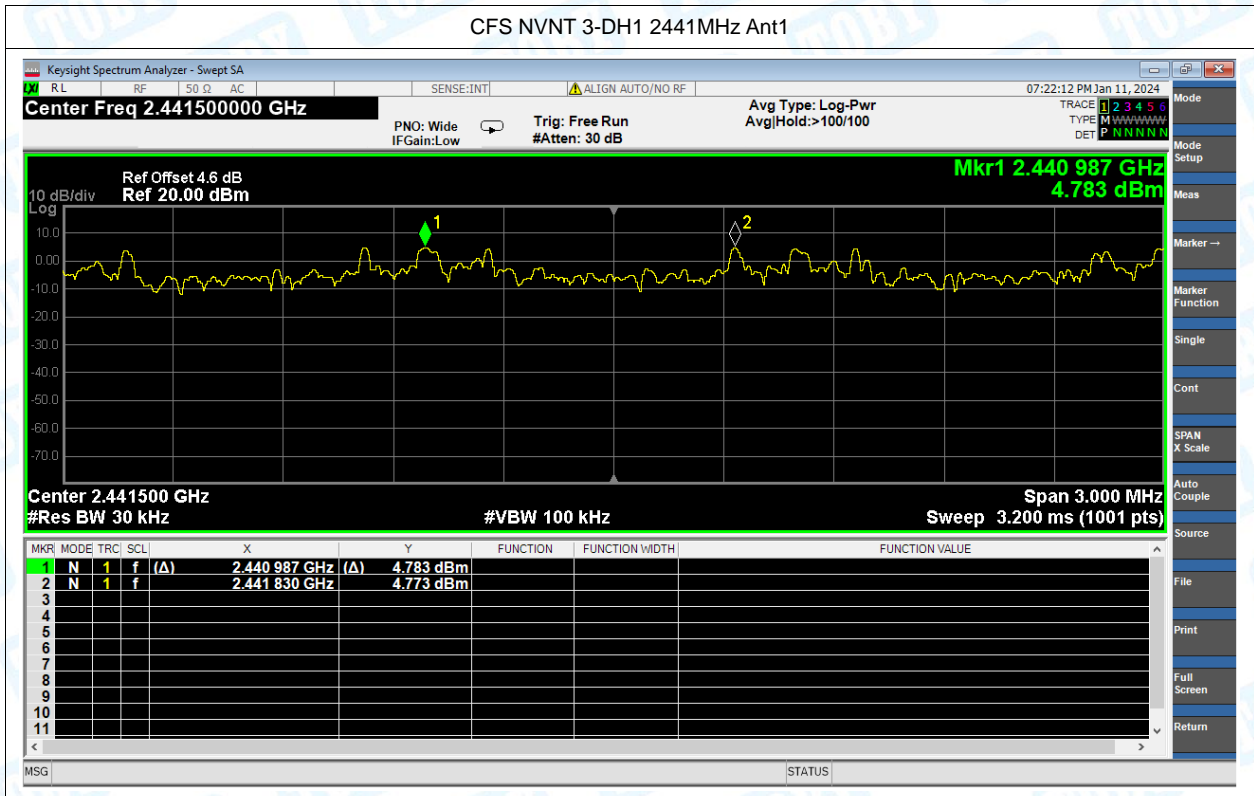
CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1







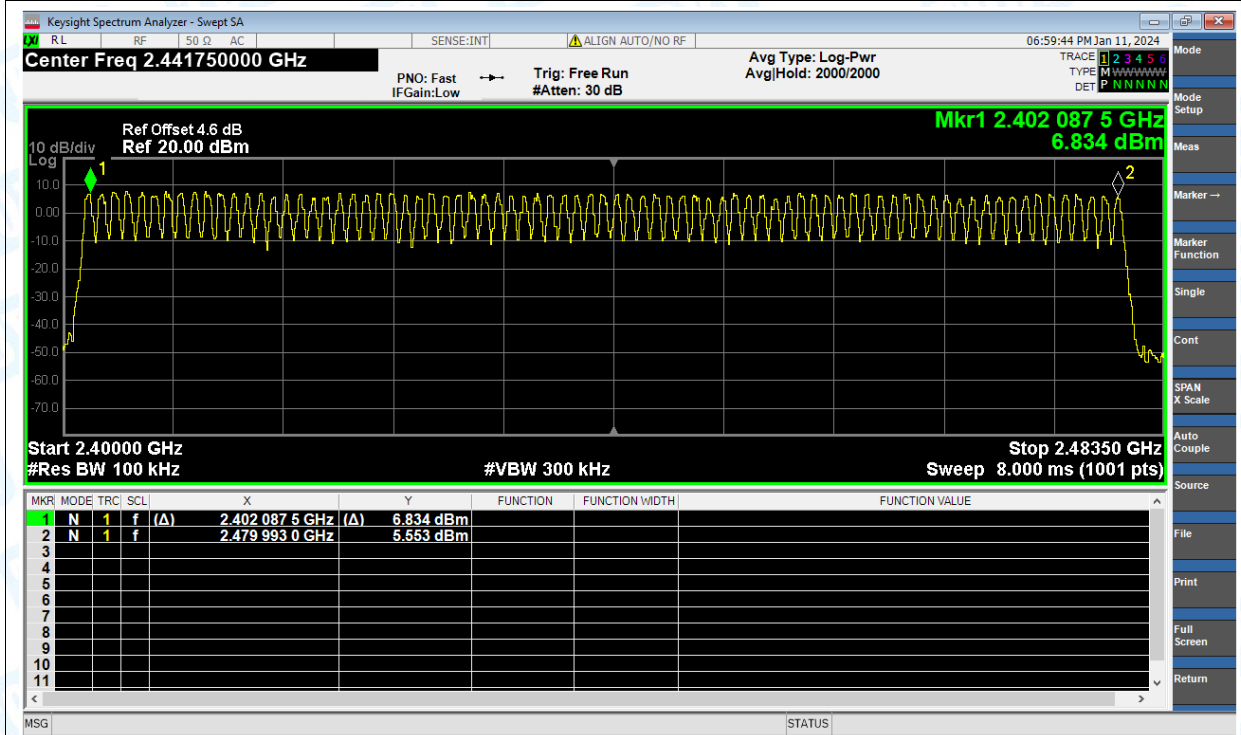
## Number of Hopping Channel

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

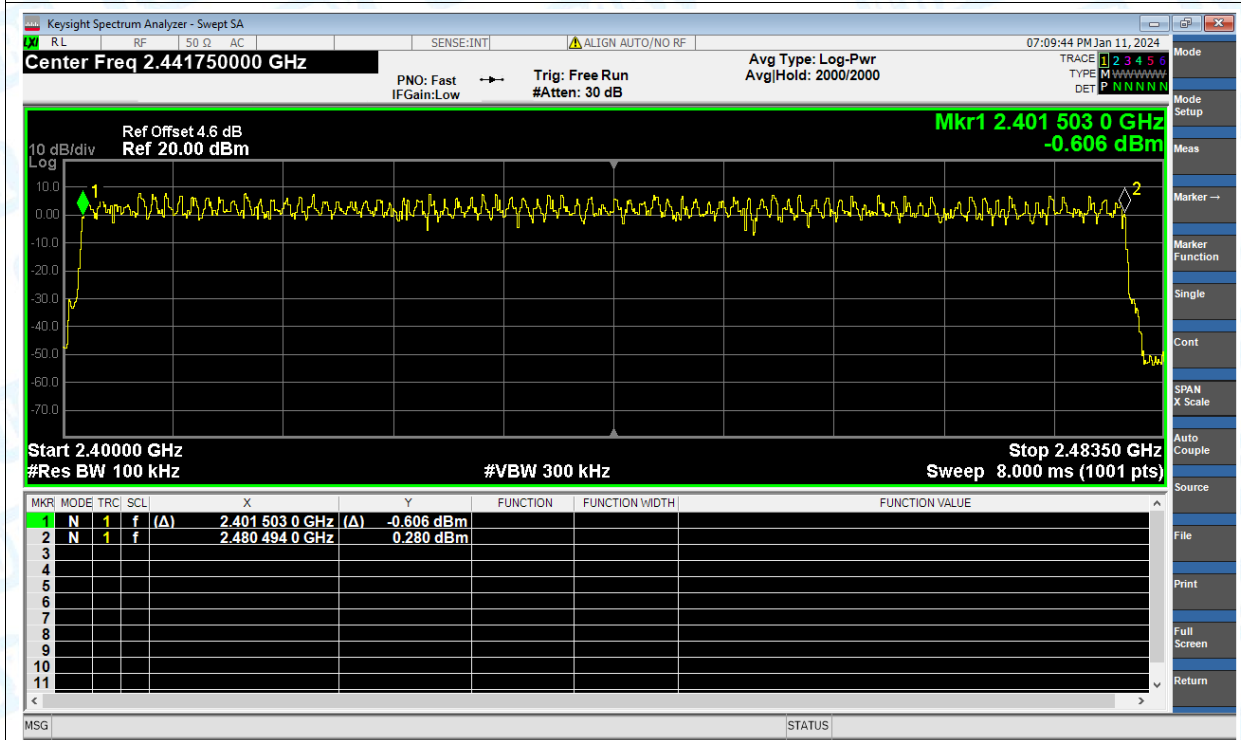


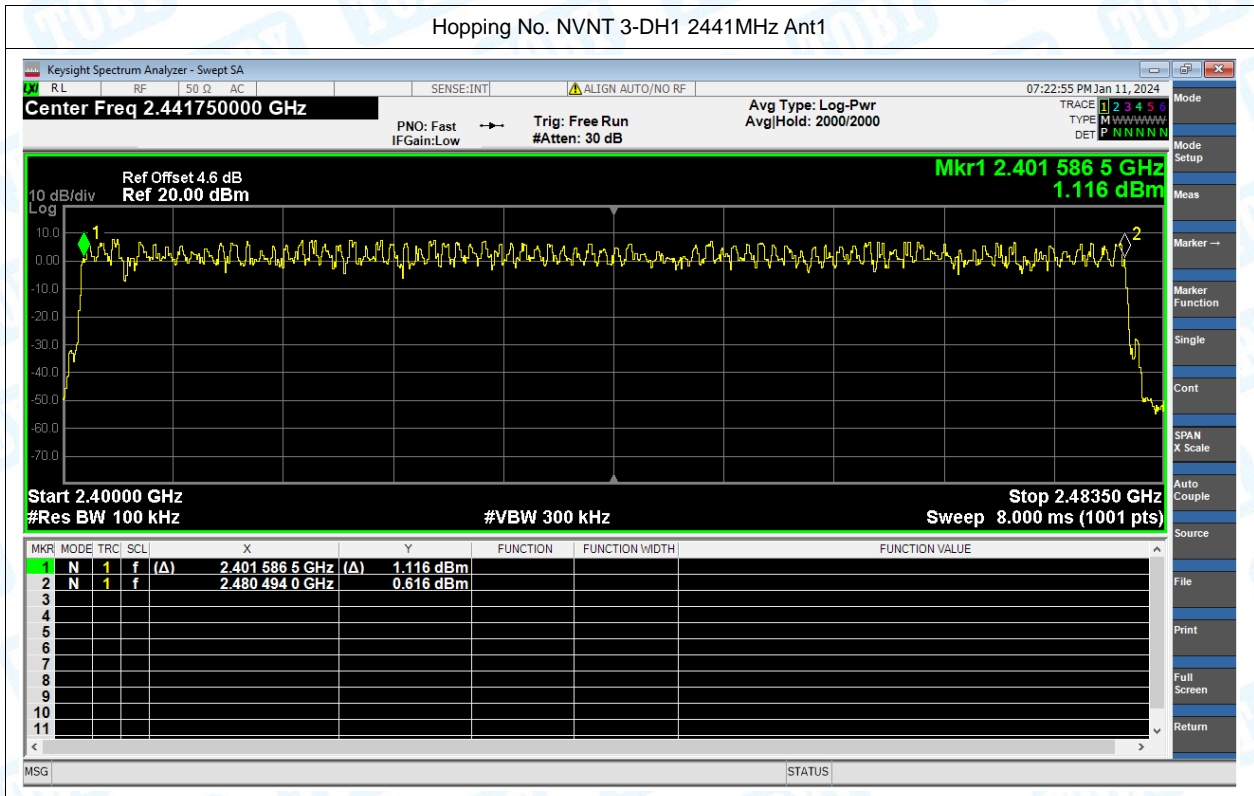
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1





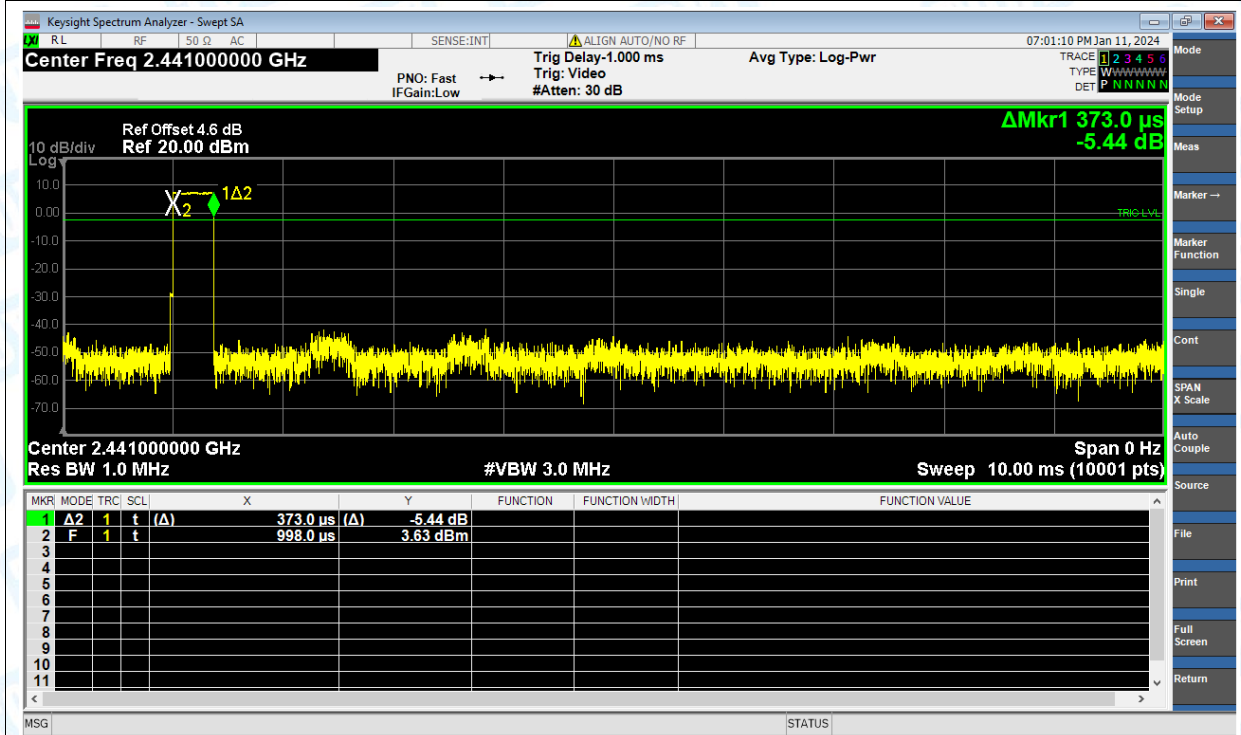


## Dwell Time

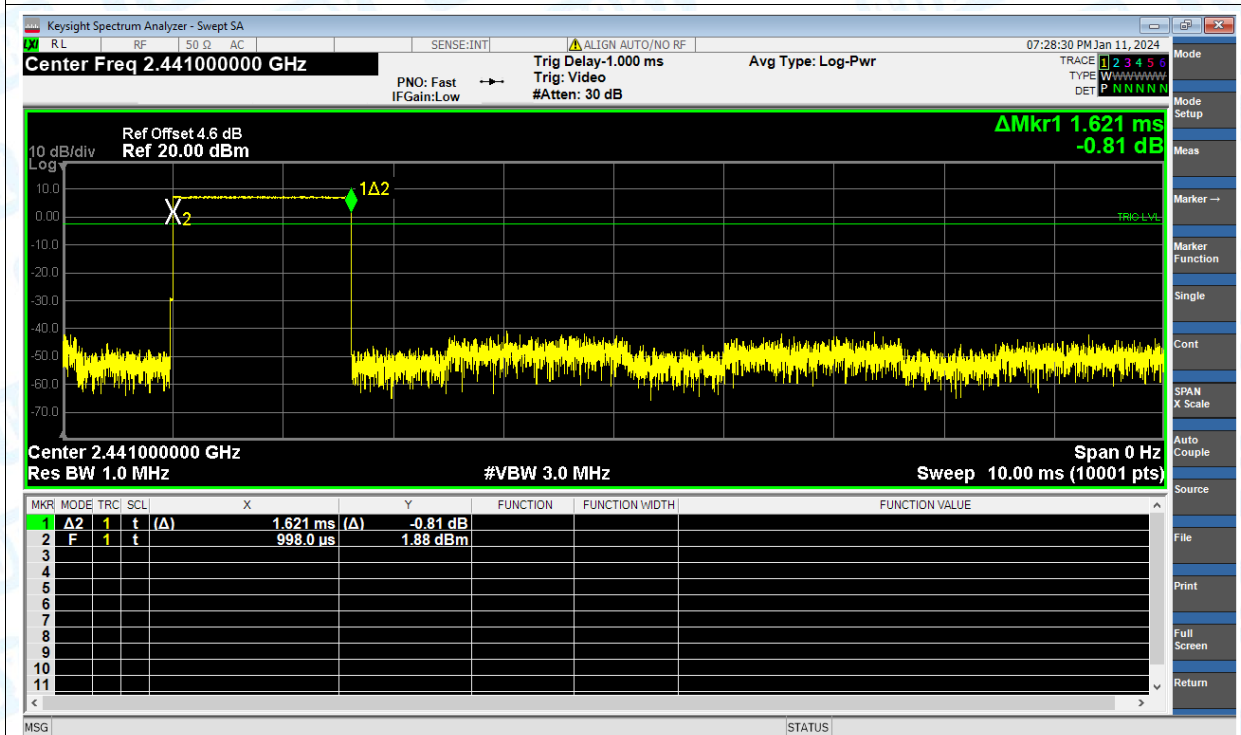
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.373	119.36	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.621	259.36	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.869	306.027	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.381	121.92	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.632	261.12	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.881	307.307	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.38	121.6	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.63	260.8	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.881	307.307	31600	400	Pass

Test Graphs

Dwell NVNT 1-DH1 2441MHz Ant1

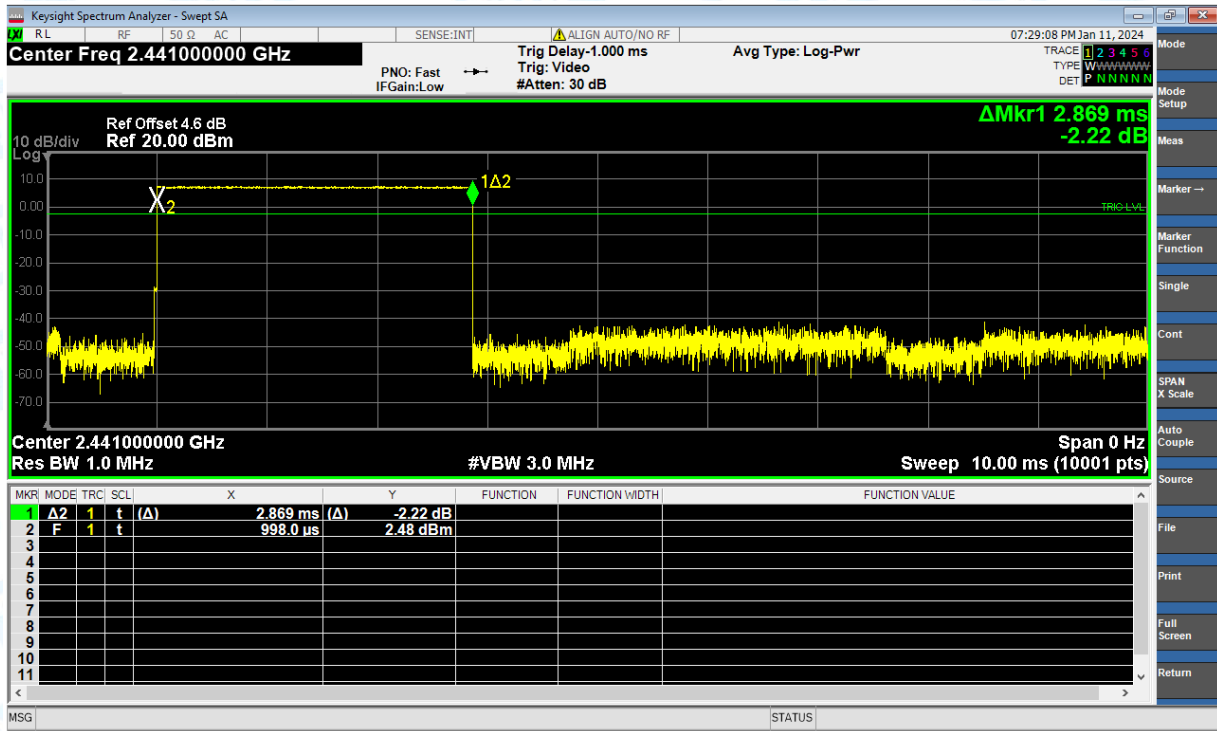


Dwell NVNT 1-DH3 2441MHz Ant1

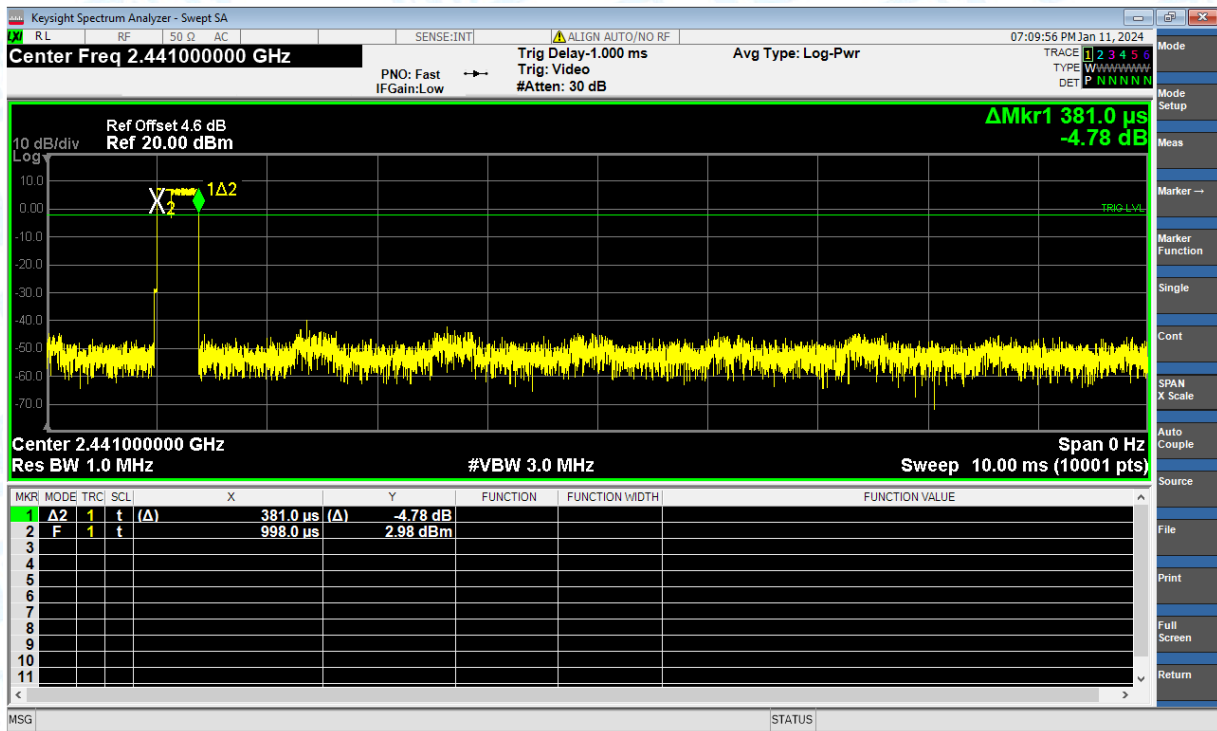




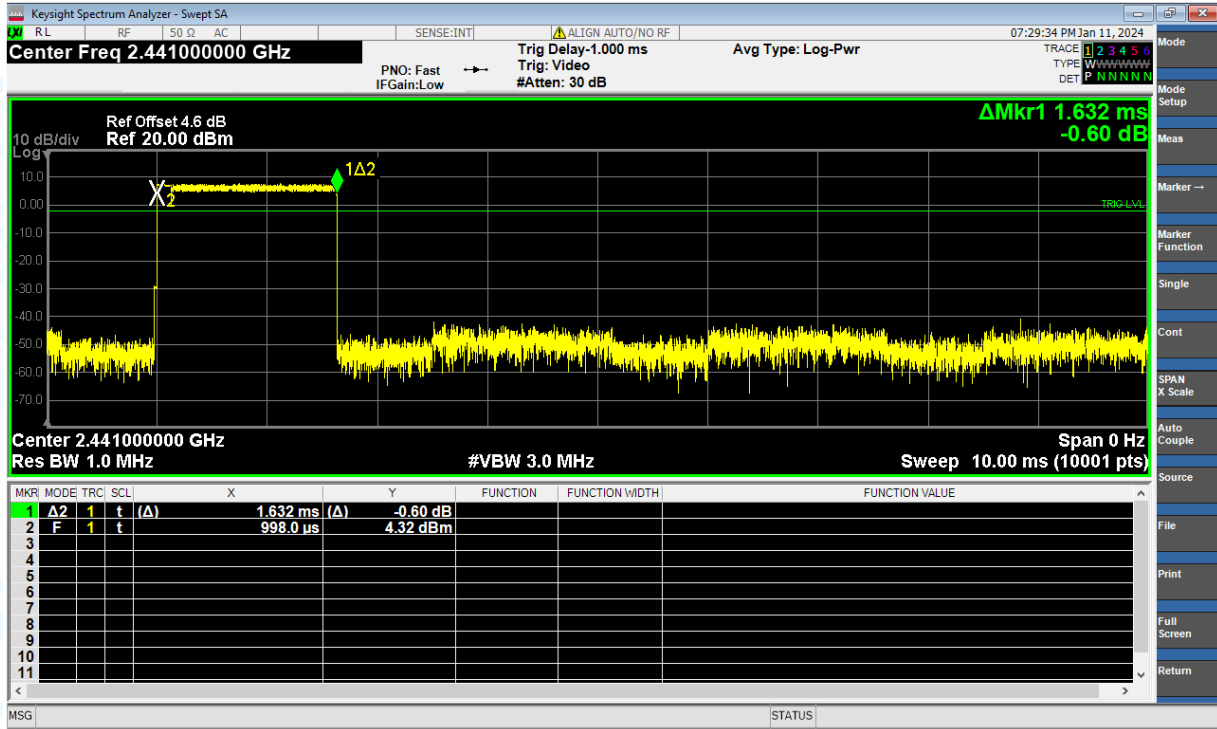
Dwell NVNT 1-DH5 2441MHz Ant1



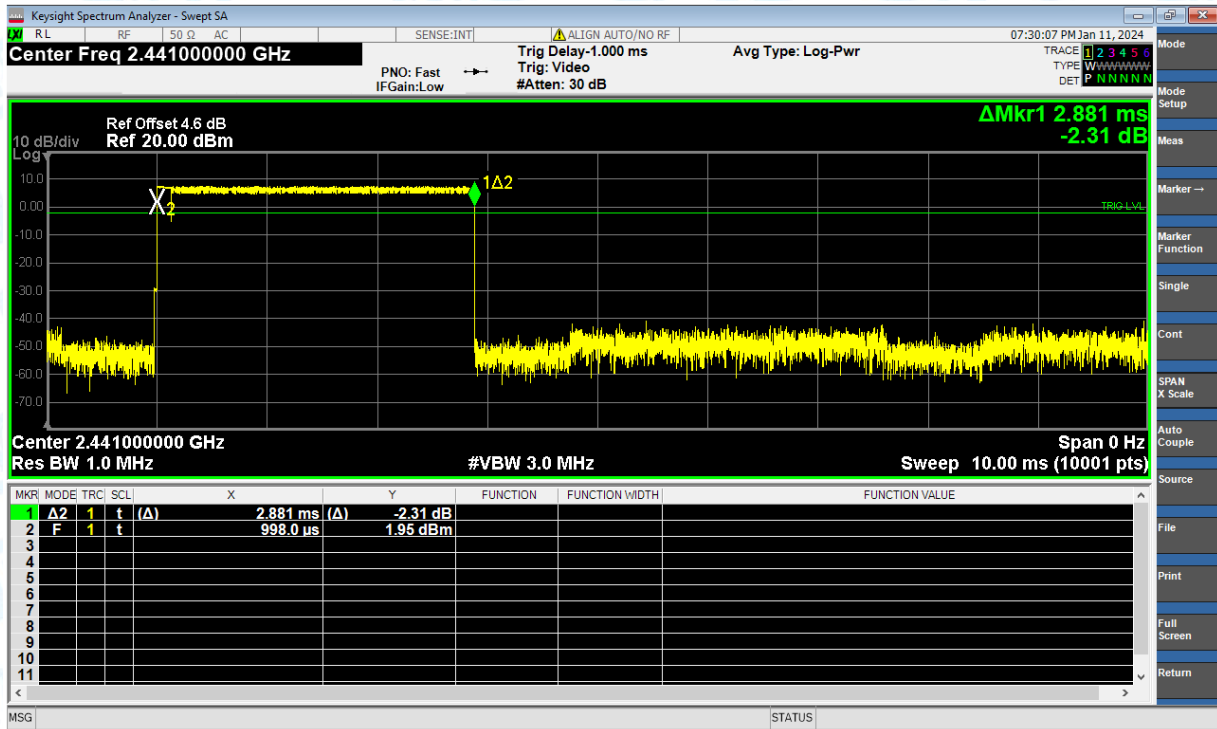
Dwell NVNT 2-DH1 2441MHz Ant1



Dwell NVNT 2-DH3 2441MHz Ant1

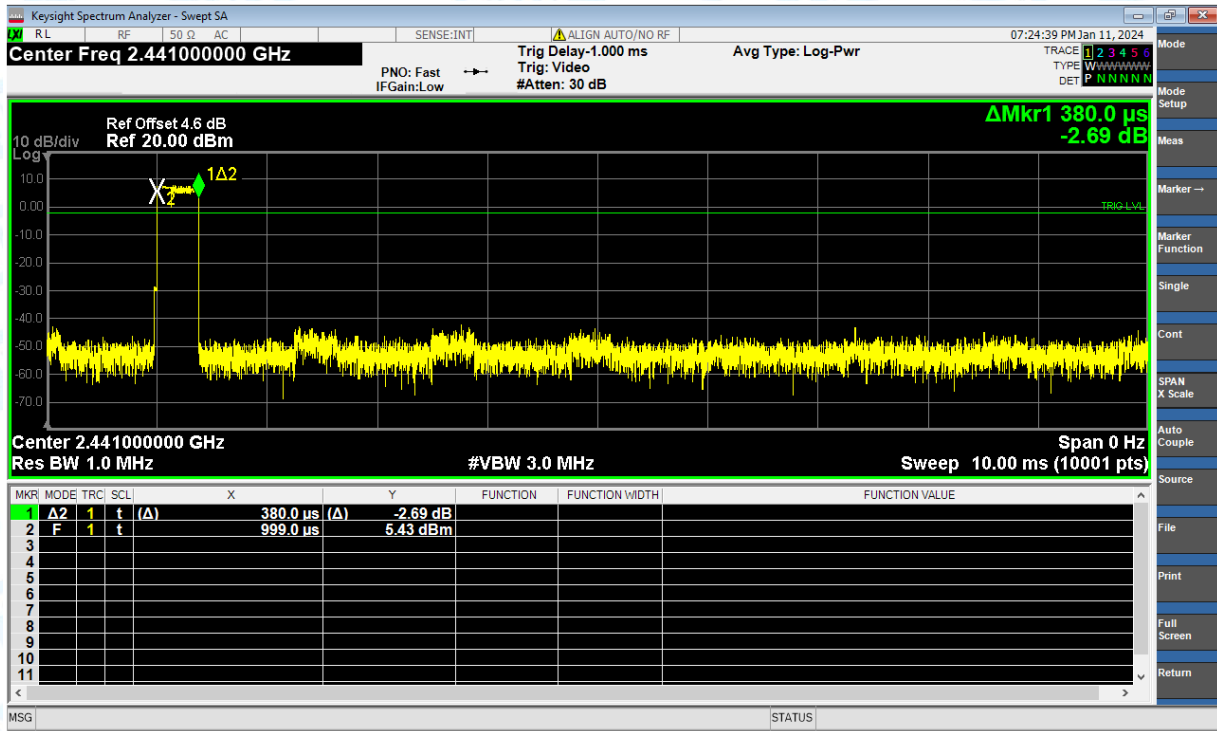


Dwell NVNT 2-DH5 2441MHz Ant1





Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1

