

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

General Description of EUT	
<b>Product Name:</b>	projector
<b>Test Model:</b>	TS-1
<b>Sample ID:</b>	202308-0329-1-2#
Environmental Conditions	
<b>Temperature:</b>	25°C
<b>Relative Humidity:</b>	55%
<b>Test Voltage:</b>	DC 22V
<b>Test Engineer:</b>	Li ying jing
Note: For a more detailed features description, please refer to the report TBR-C-202308-0329-4 The report only show the worst case data.	



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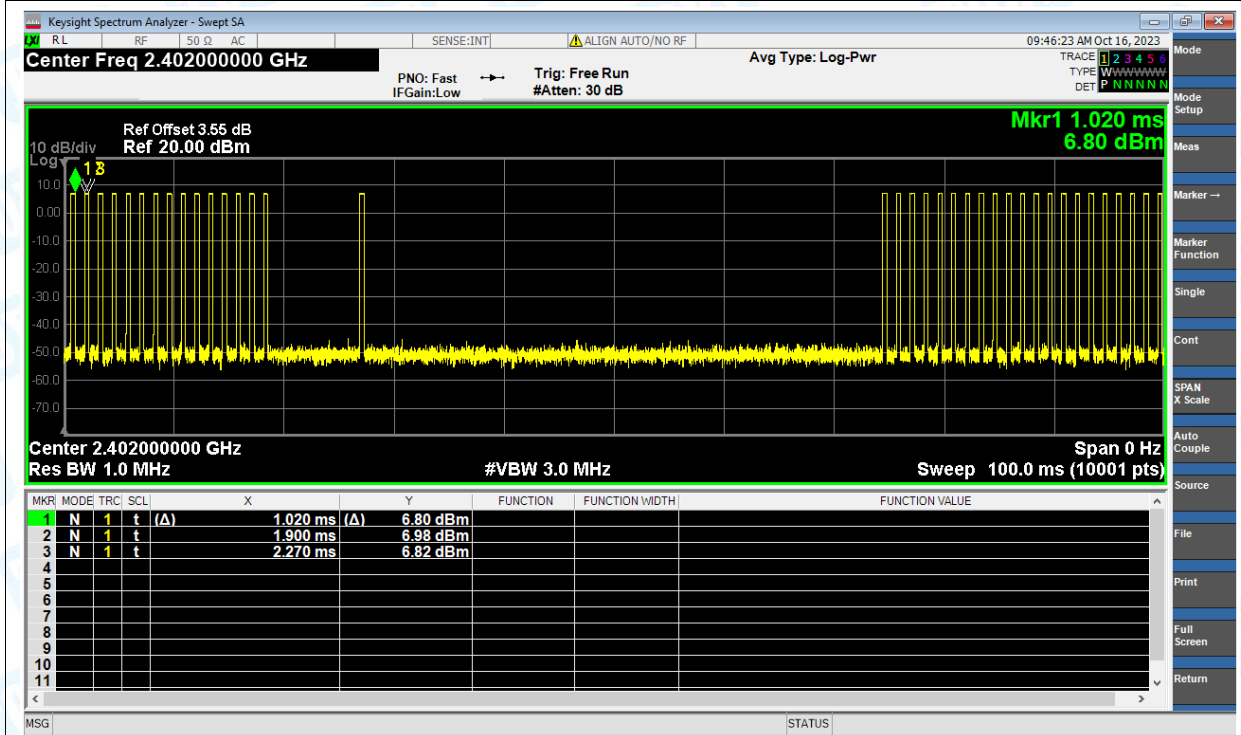


# 1. Duty Cycle

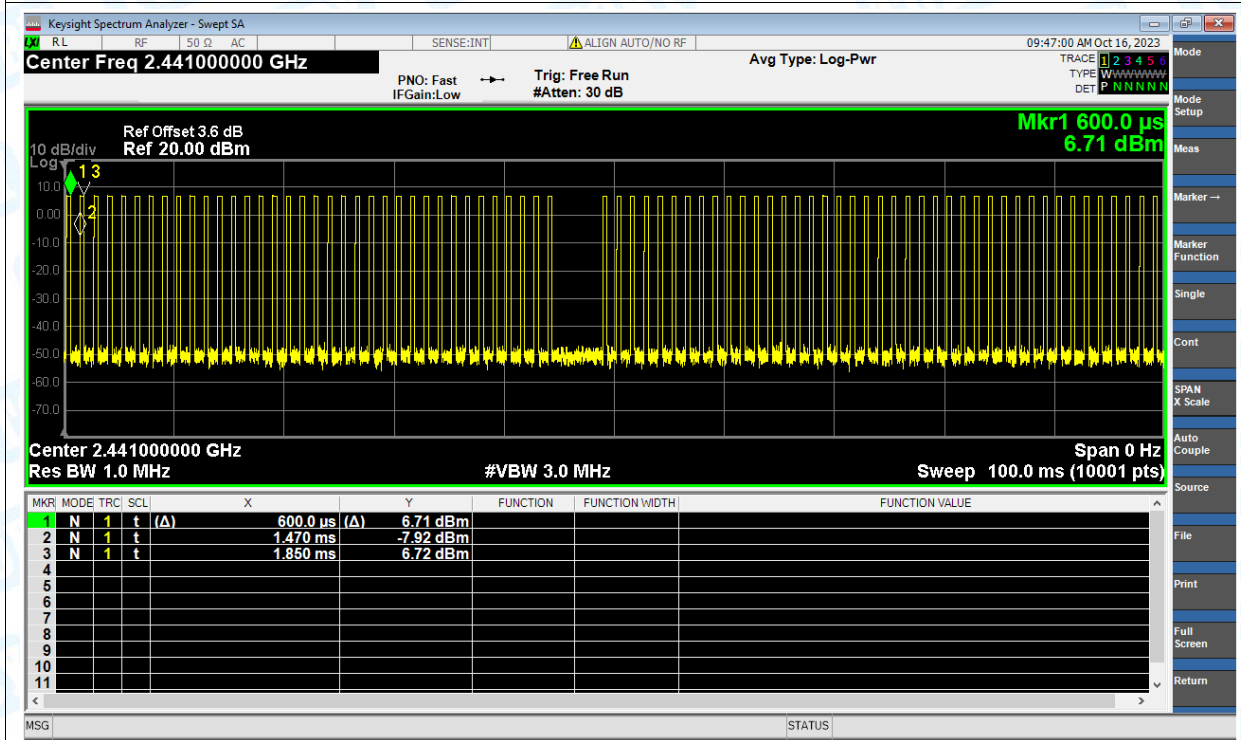
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	29.6	5.29	2.7
NVNT	1-DH1	2441	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2480	Ant1	29.6	5.29	2.7
NVNT	2-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2441	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2480	Ant1	30.4	5.17	2.63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

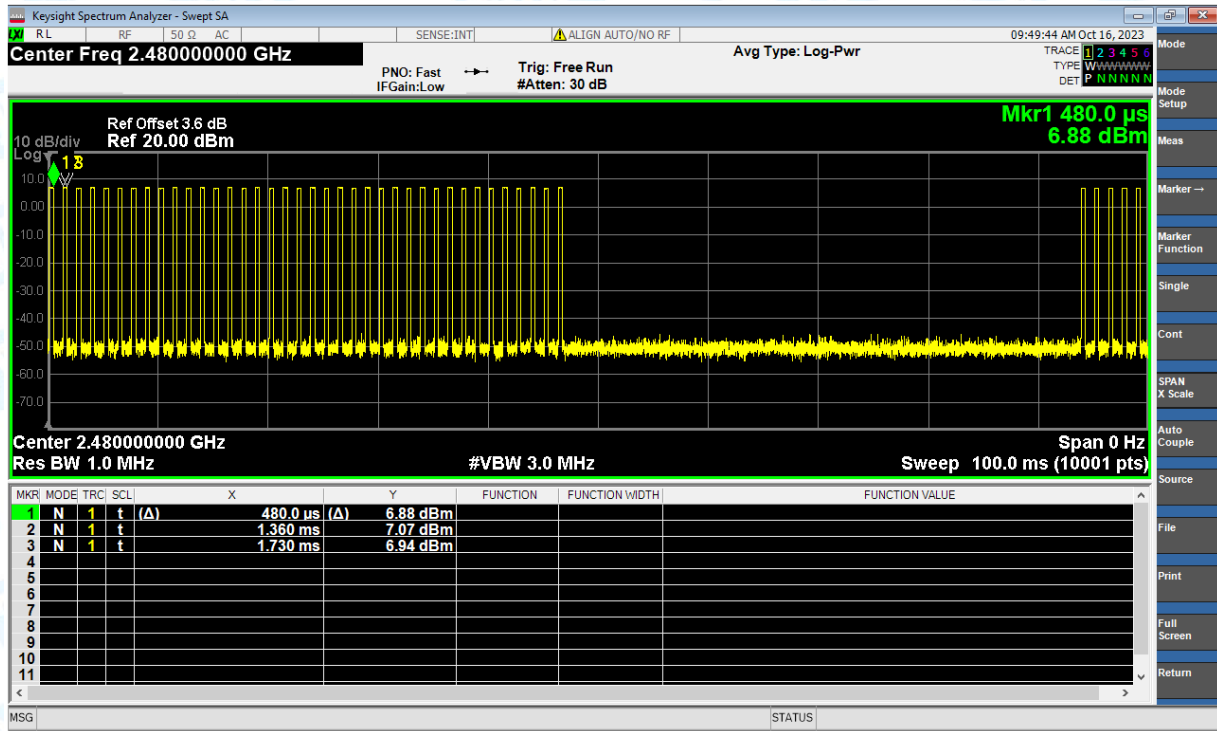


Duty Cycle NVNT 1-DH1 2441MHz Ant1

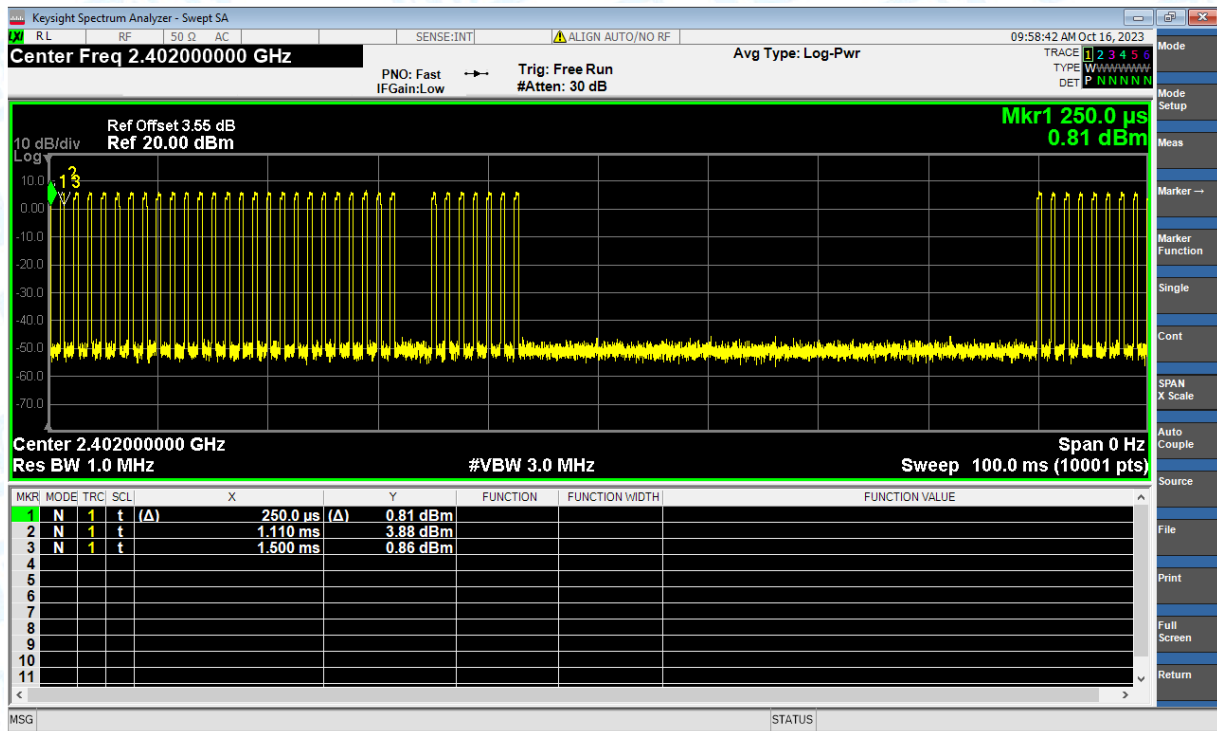




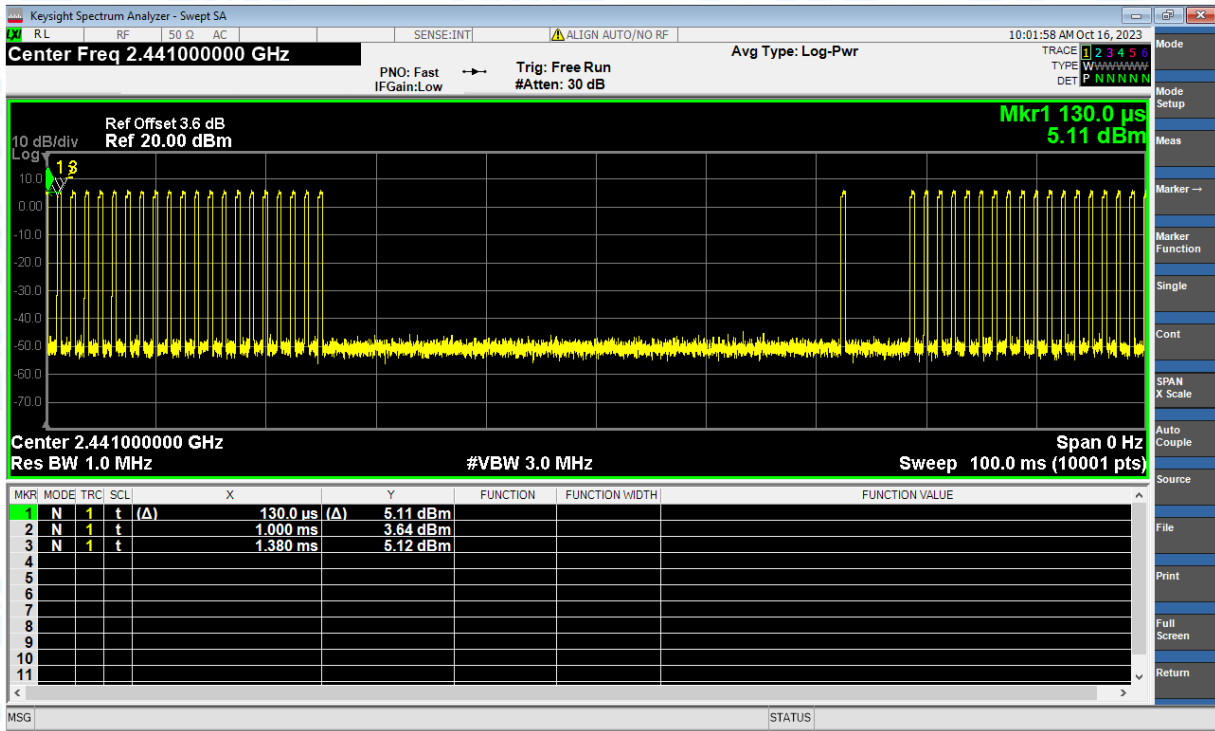
Duty Cycle NVNT 1-DH1 2480MHz Ant1



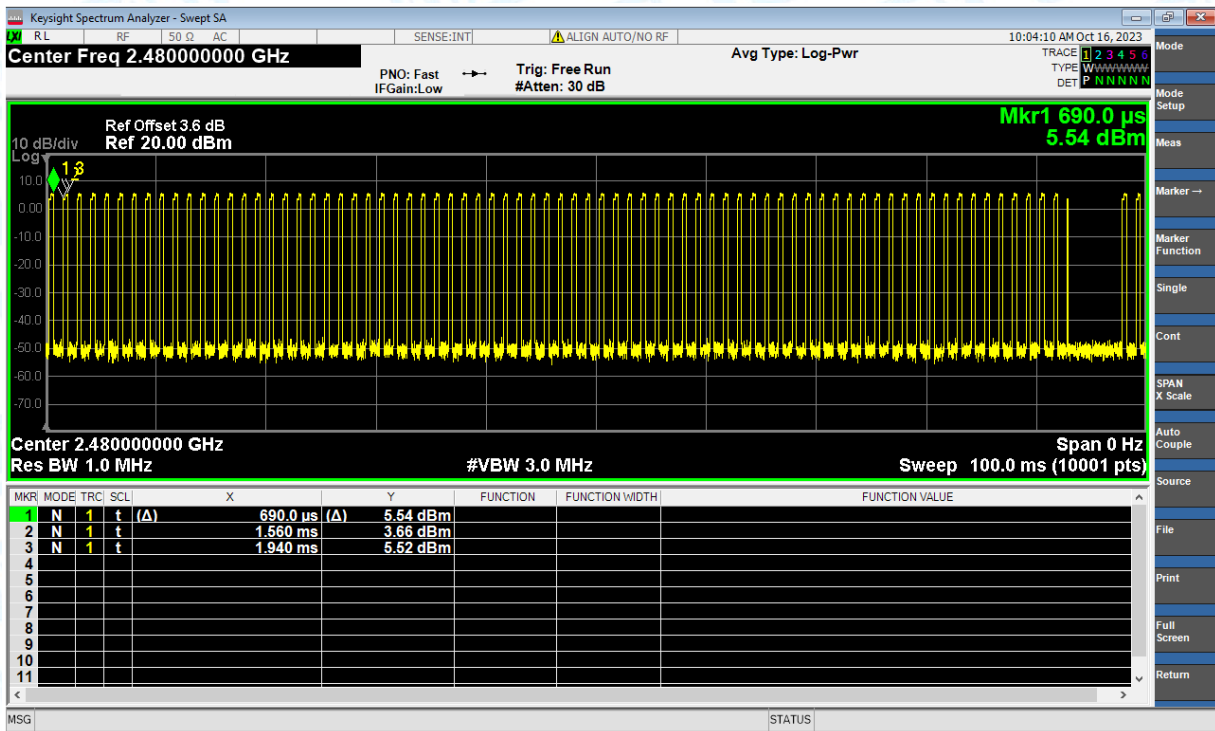
Duty Cycle NVNT 2-DH1 2402MHz Ant1



Duty Cycle NVNT 2-DH1 2441MHz Ant1

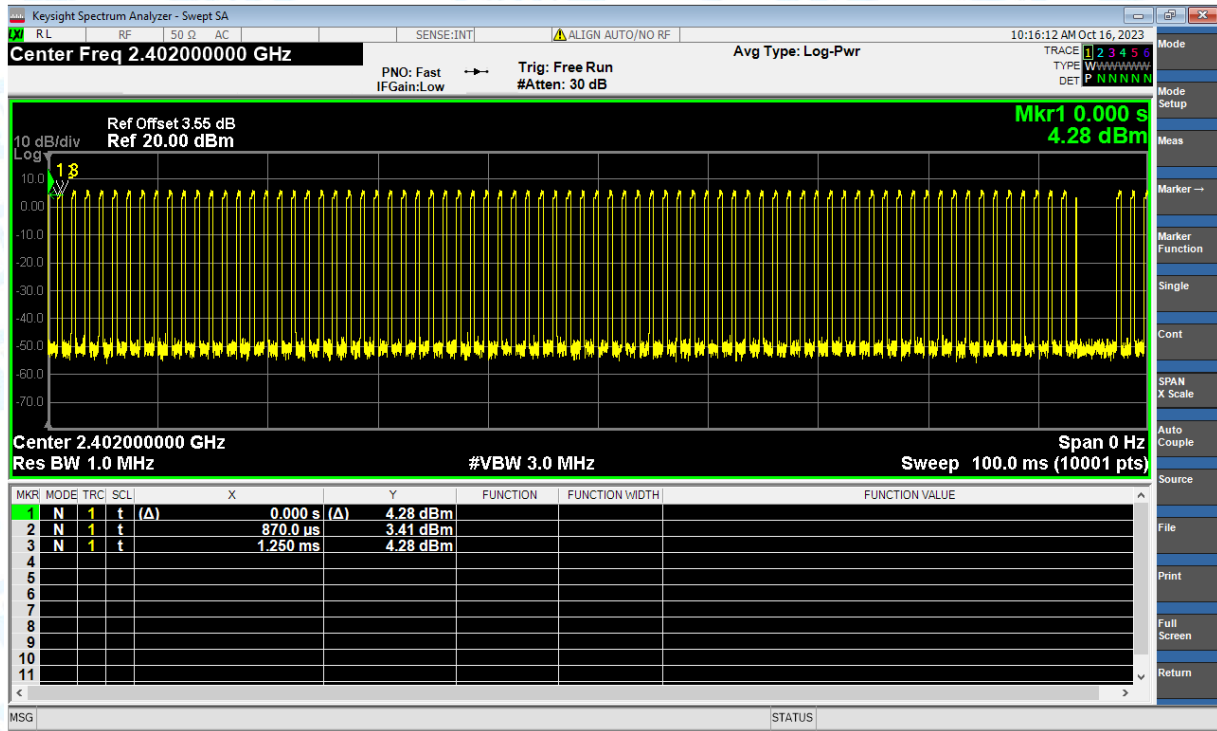


Duty Cycle NVNT 2-DH1 2480MHz Ant1

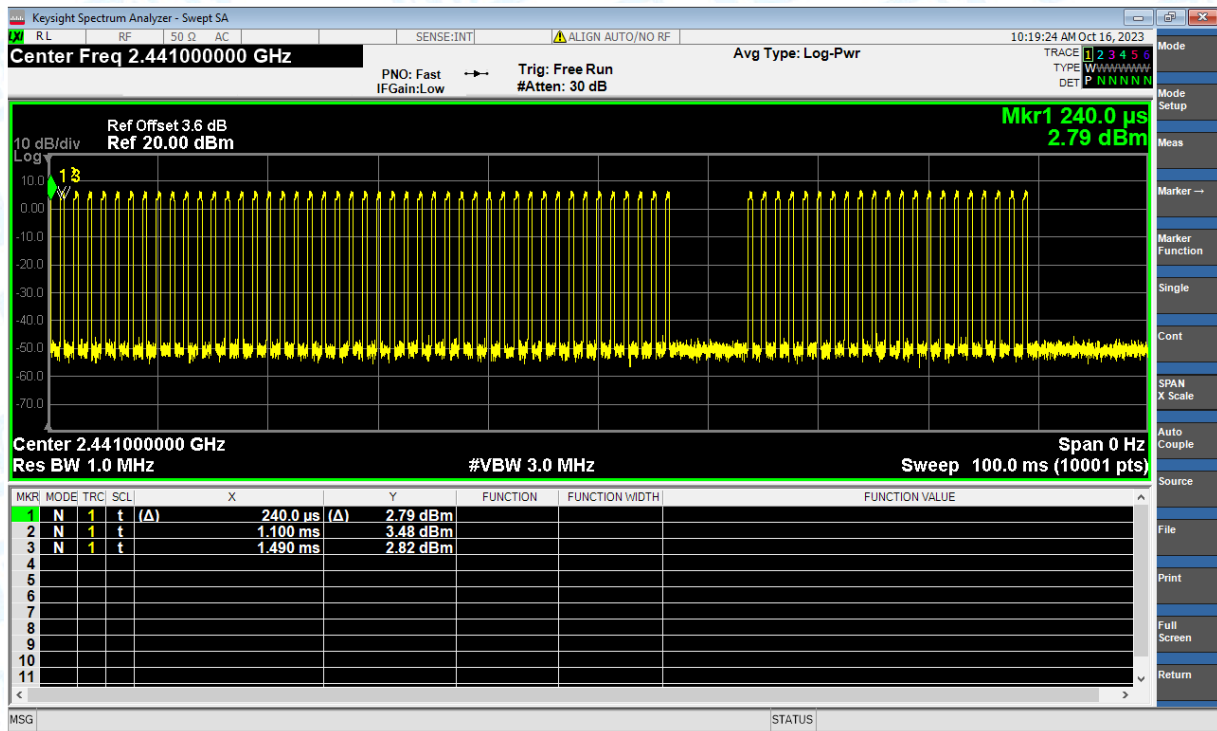


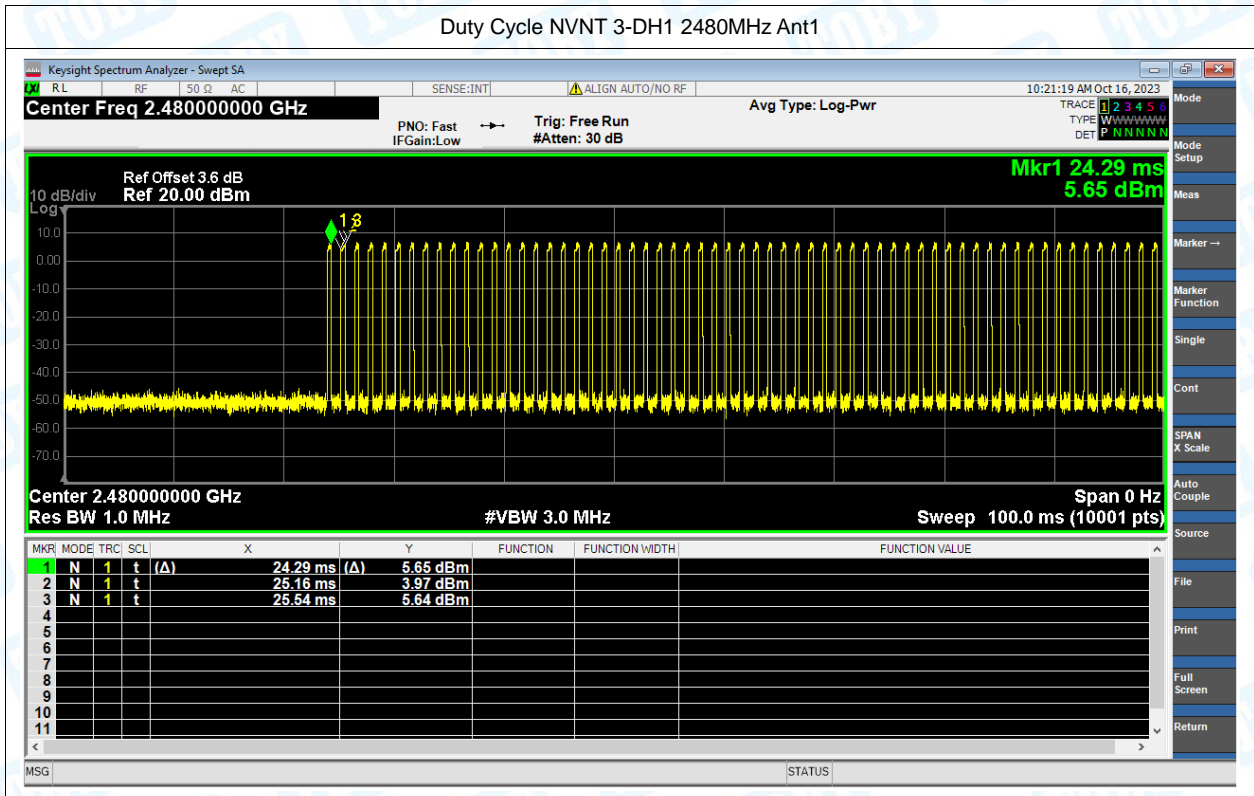


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1





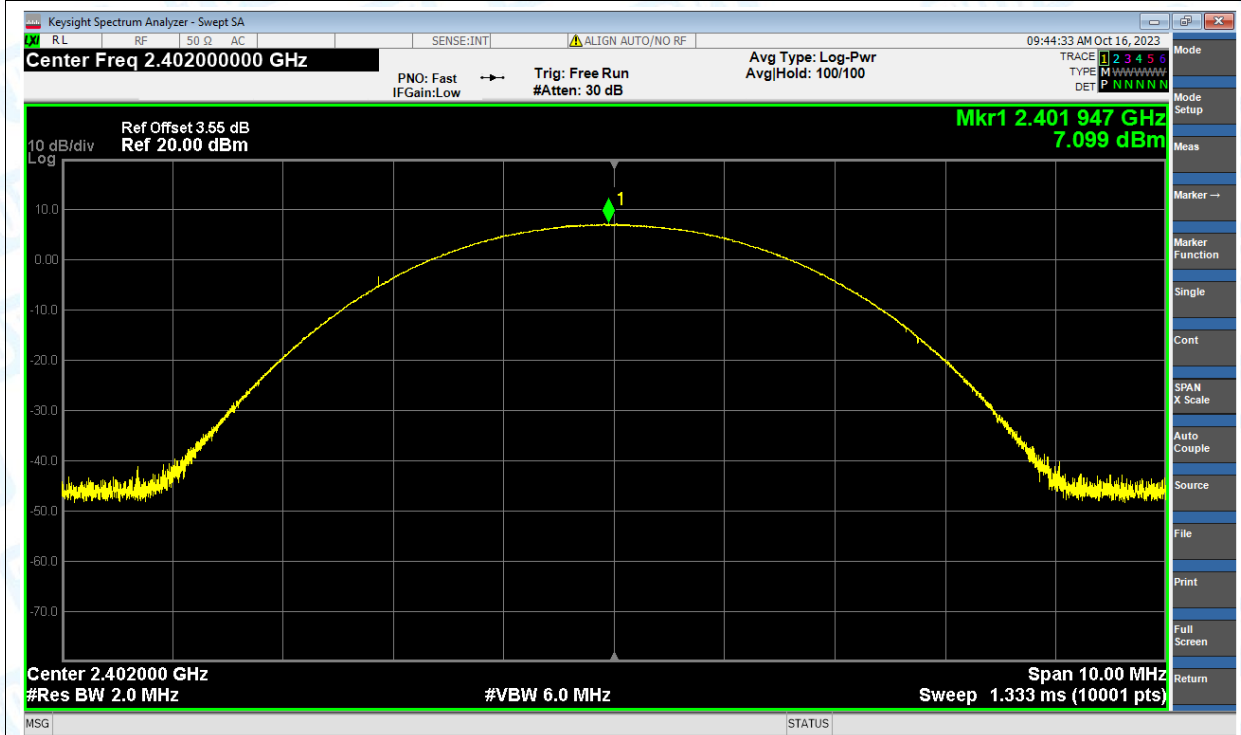


## 2. Maximum Conducted Output Power

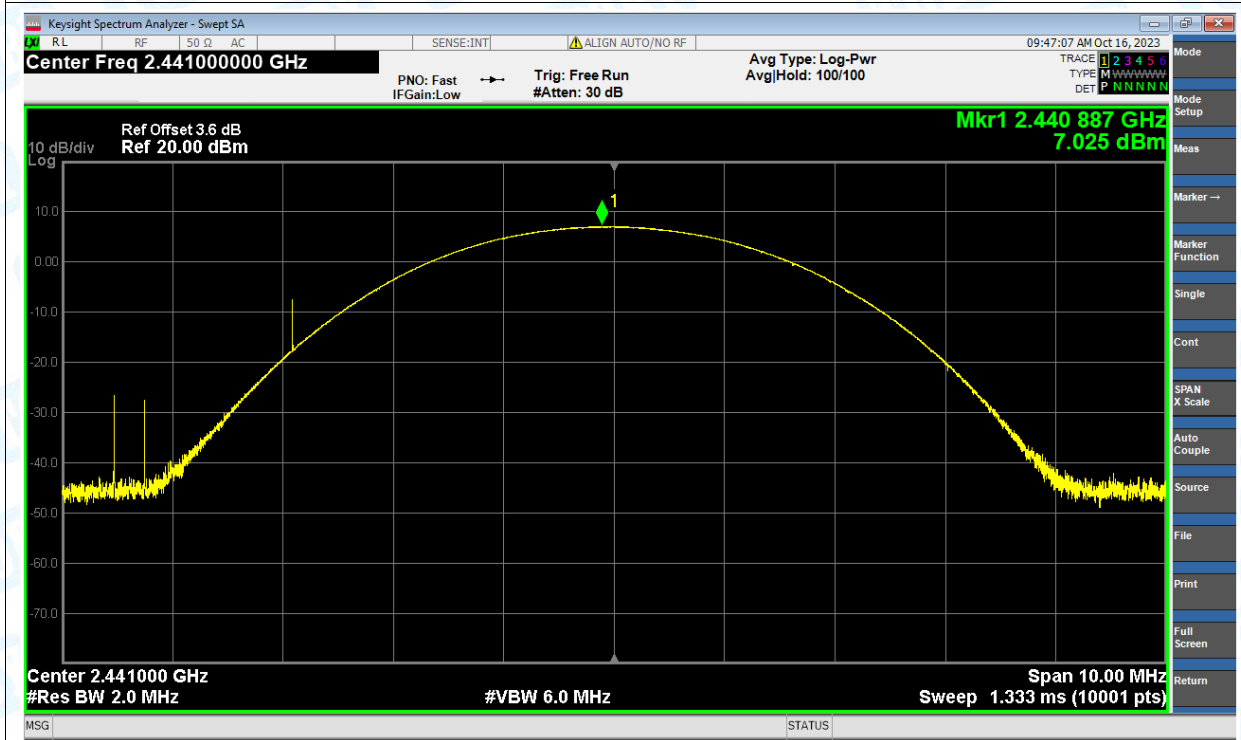
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	7.099	21	Pass
NVNT	1-DH1	2441	Ant1	7.025	21	Pass
NVNT	1-DH1	2480	Ant1	7.187	21	Pass
NVNT	2-DH1	2402	Ant1	6.545	21	Pass
NVNT	2-DH1	2441	Ant1	6.534	21	Pass
NVNT	2-DH1	2480	Ant1	6.472	21	Pass
NVNT	3-DH1	2402	Ant1	6.775	21	Pass
NVNT	3-DH1	2441	Ant1	7.013	21	Pass
NVNT	3-DH1	2480	Ant1	7.013	21	Pass

Test Graphs

Power NVNT 1-DH1 2402MHz Ant1



Power NVNT 1-DH1 2441MHz Ant1



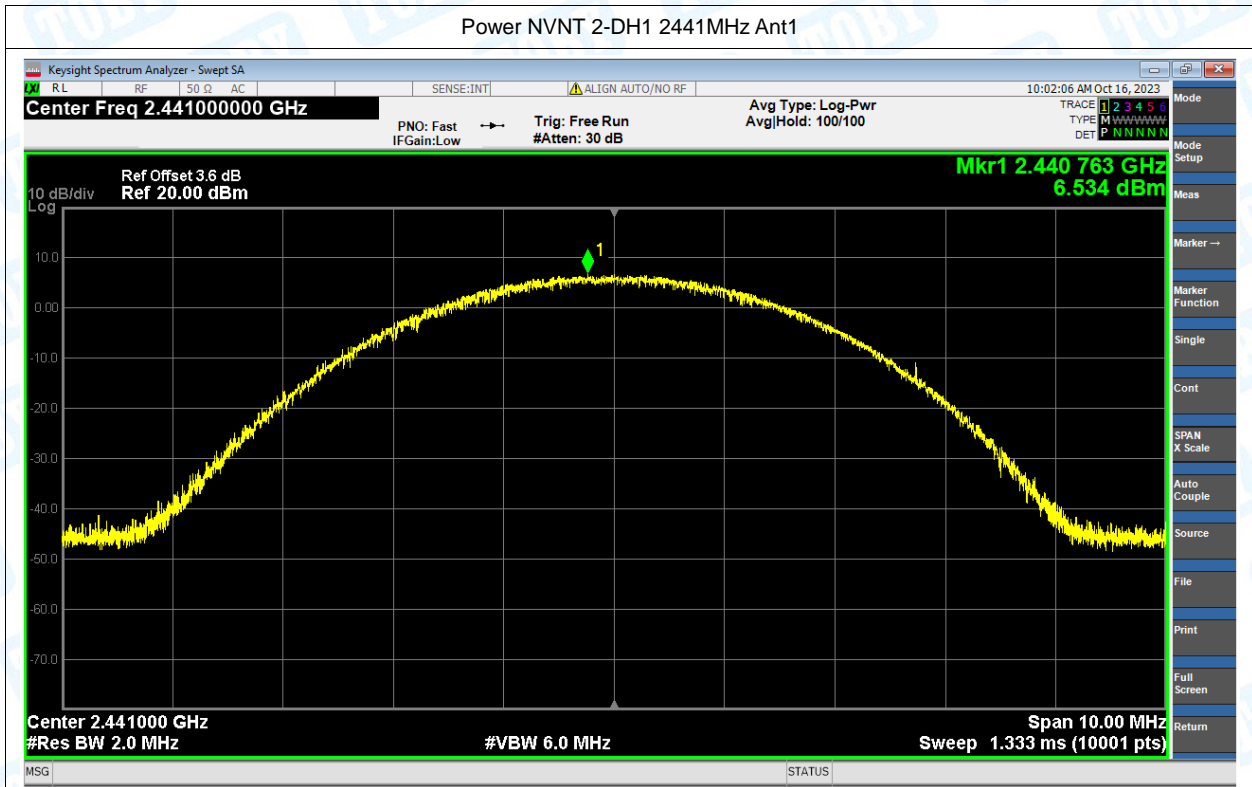


Power NVNT 1-DH1 2480MHz Ant1



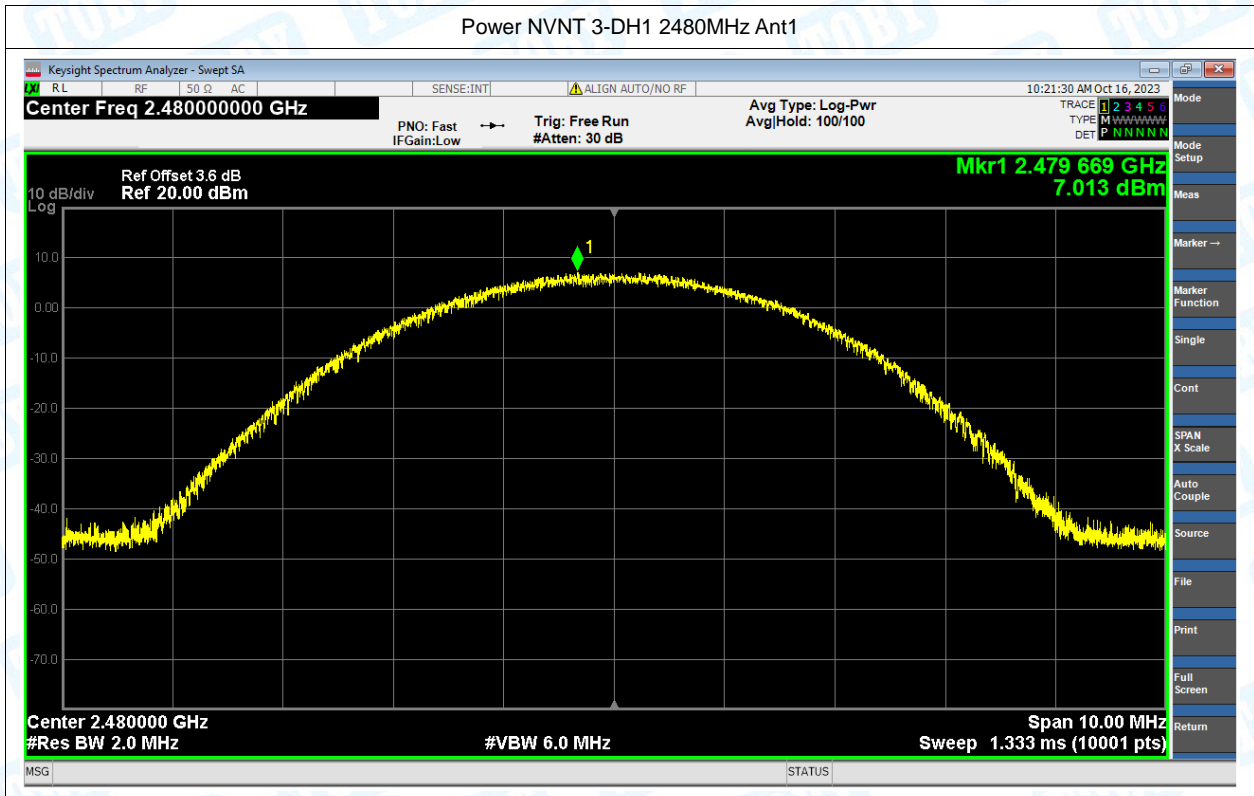
Power NVNT 2-DH1 2402MHz Ant1











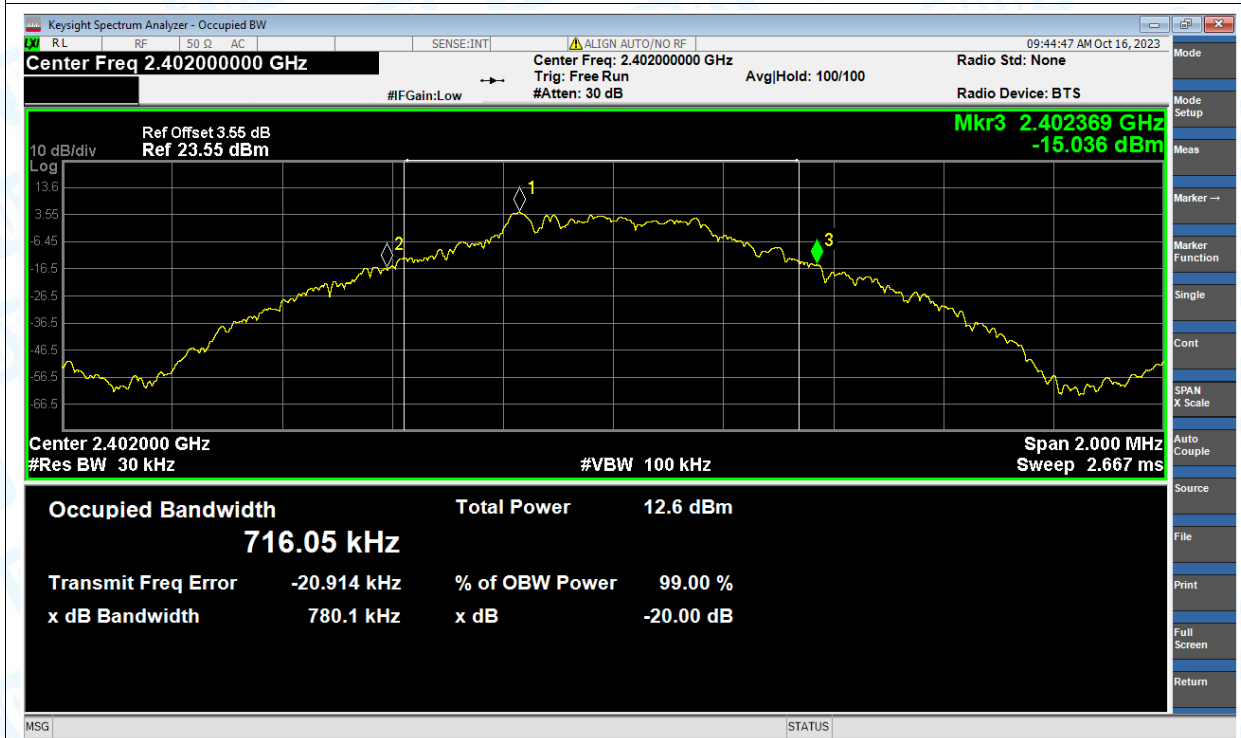


### 3. -20dB Bandwidth

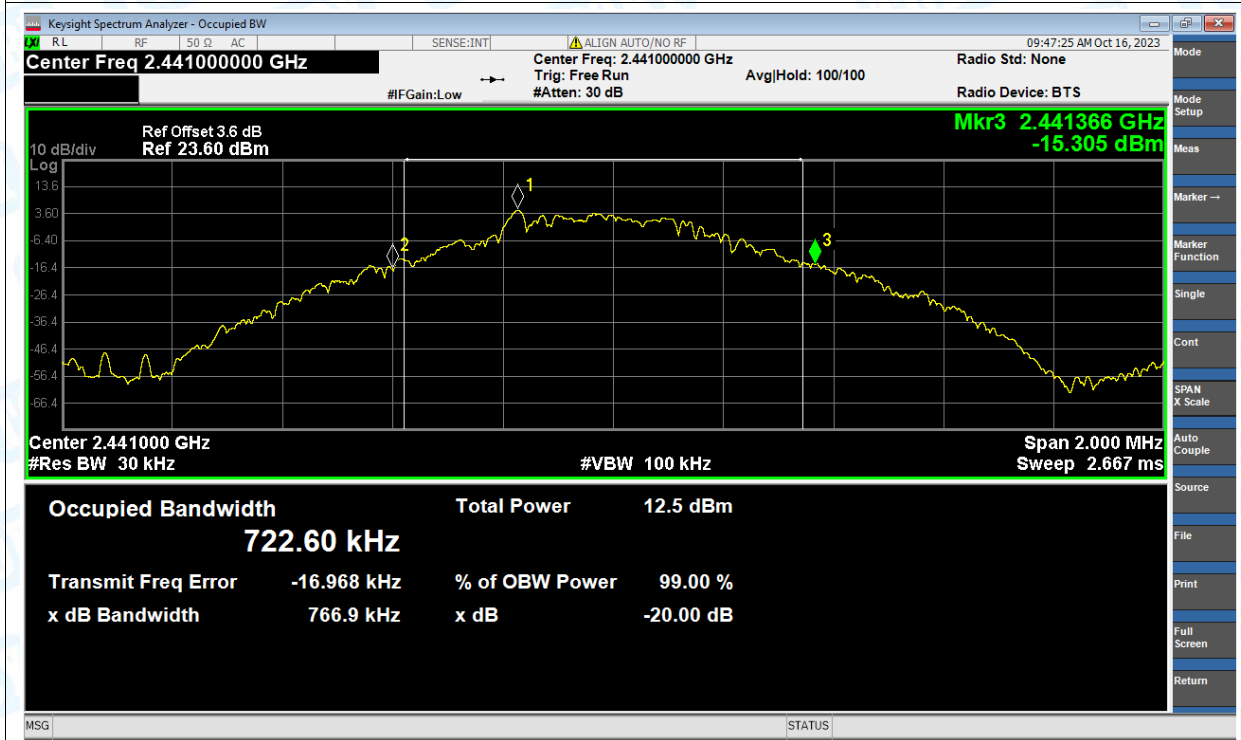
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.78	----	Pass
NVNT	1-DH1	2441	Ant1	0.77	----	Pass
NVNT	1-DH1	2480	Ant1	0.77	----	Pass
NVNT	2-DH1	2402	Ant1	1.26	----	Pass
NVNT	2-DH1	2441	Ant1	1.26	----	Pass
NVNT	2-DH1	2480	Ant1	1.27	----	Pass
NVNT	3-DH1	2402	Ant1	1.26	----	Pass
NVNT	3-DH1	2441	Ant1	1.27	----	Pass
NVNT	3-DH1	2480	Ant1	1.27	----	Pass

Test Graphs

-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1

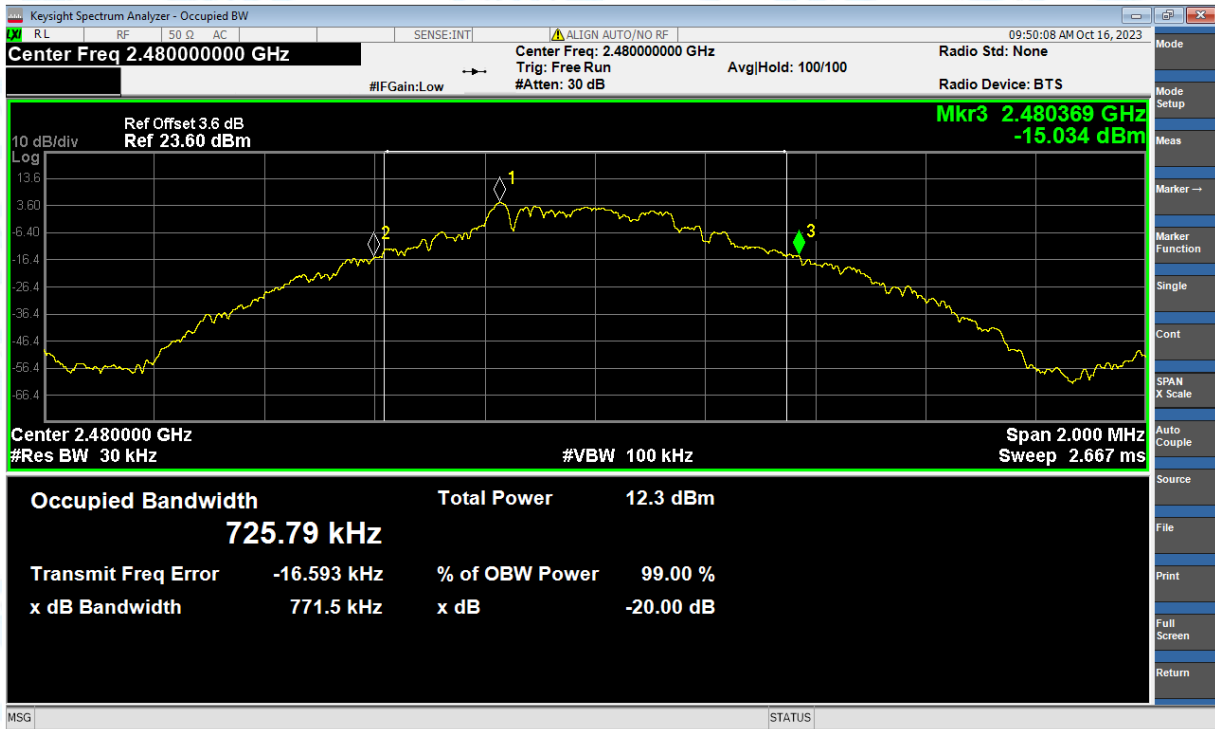


-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1

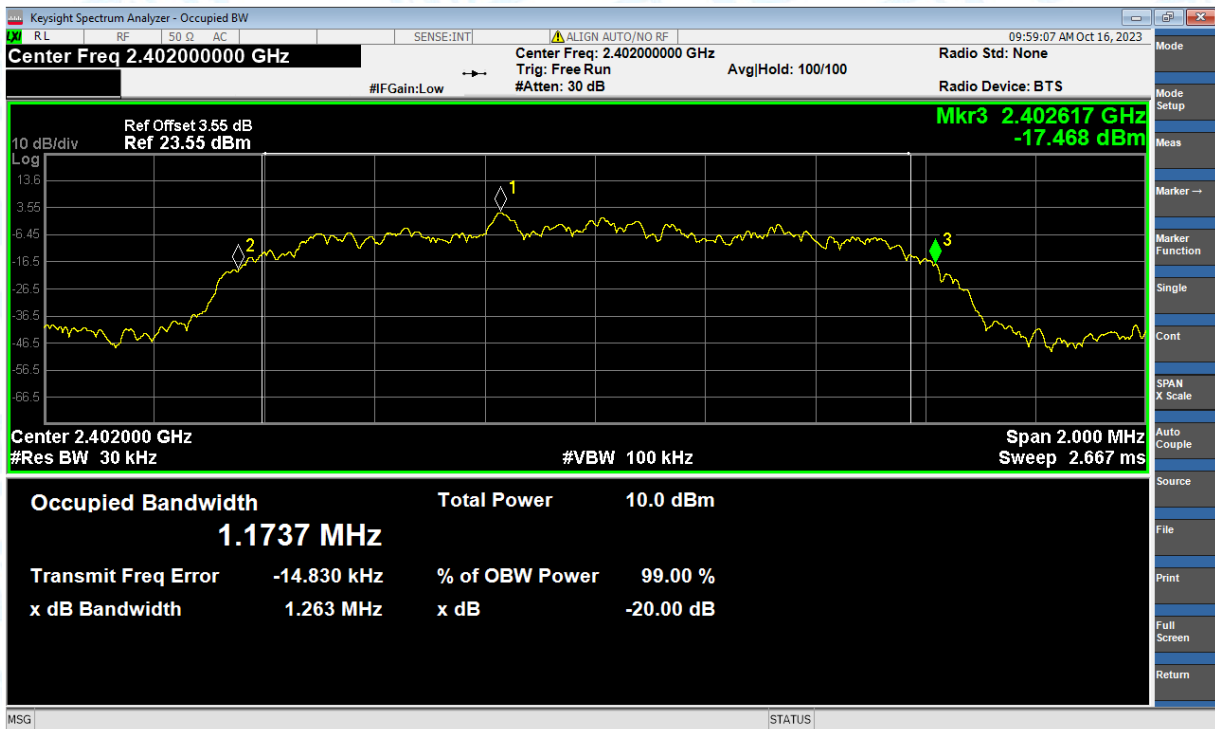




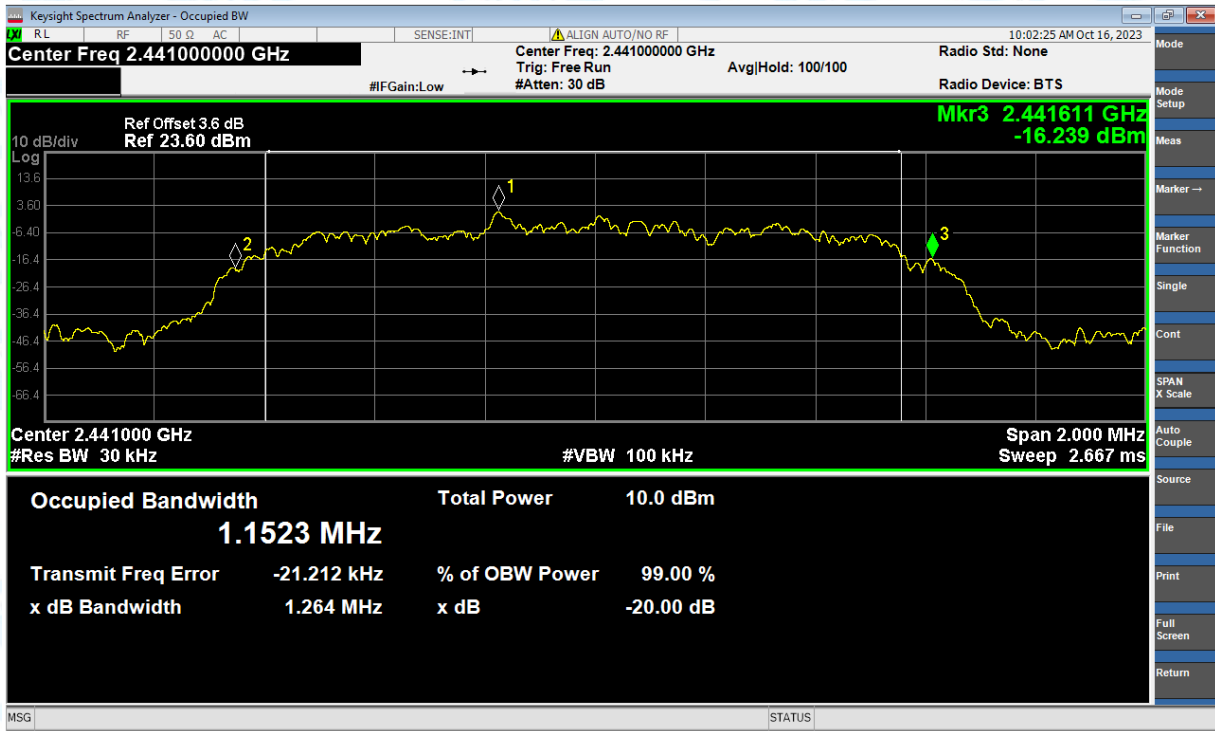
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



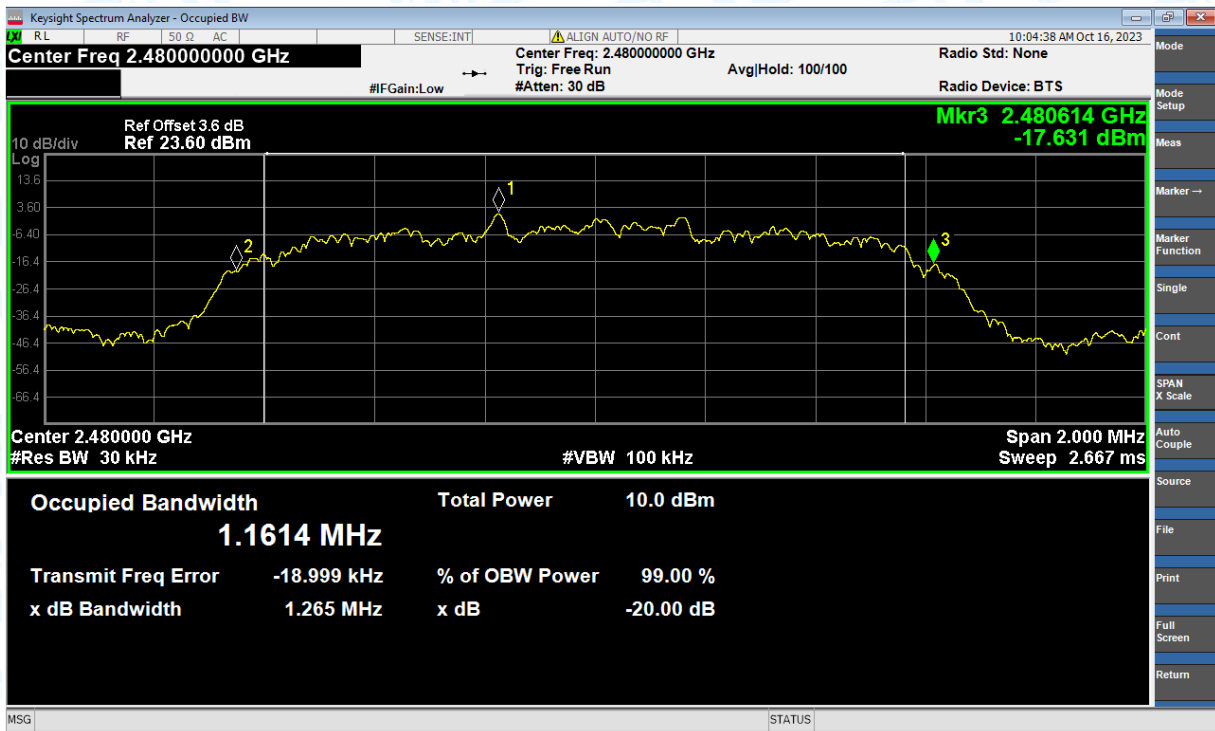
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1

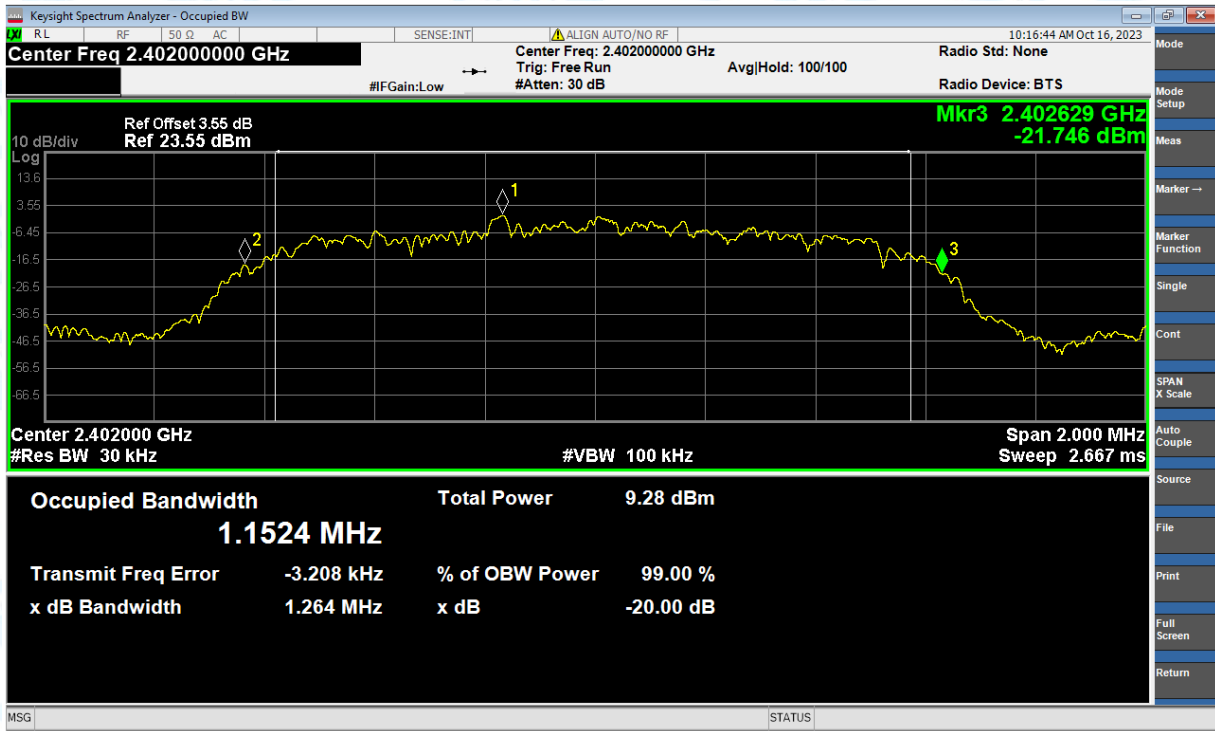


-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

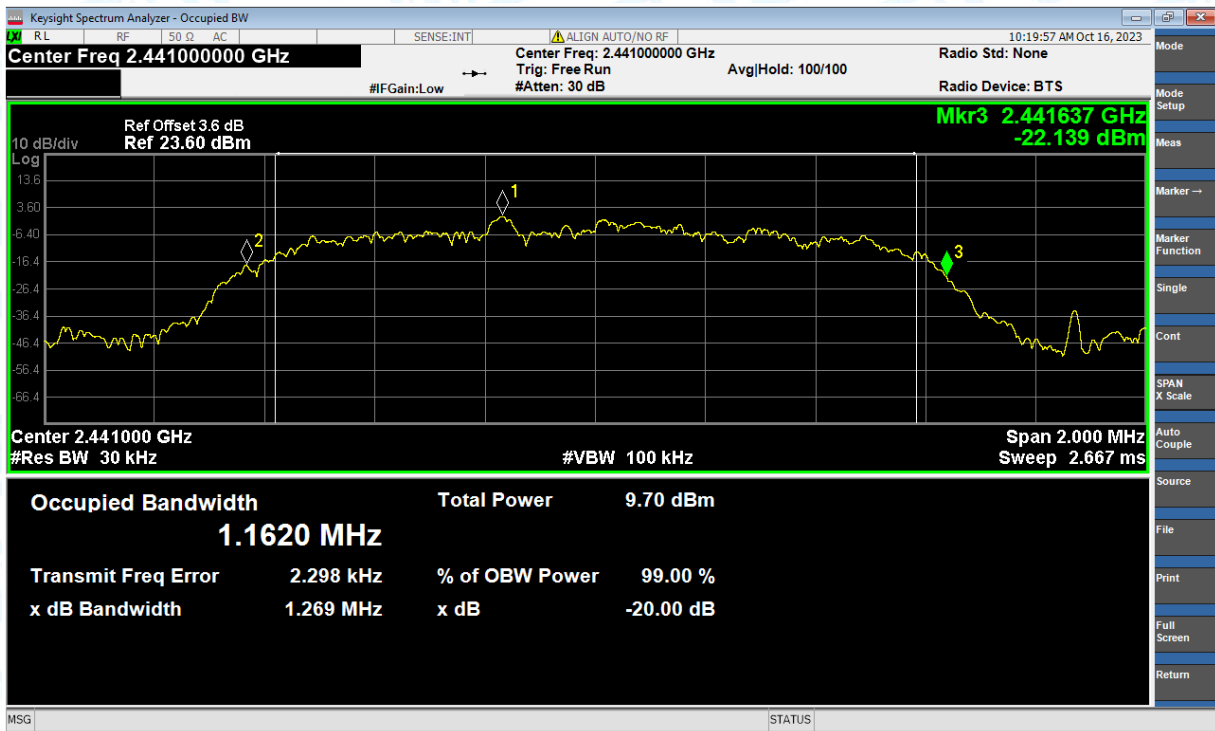


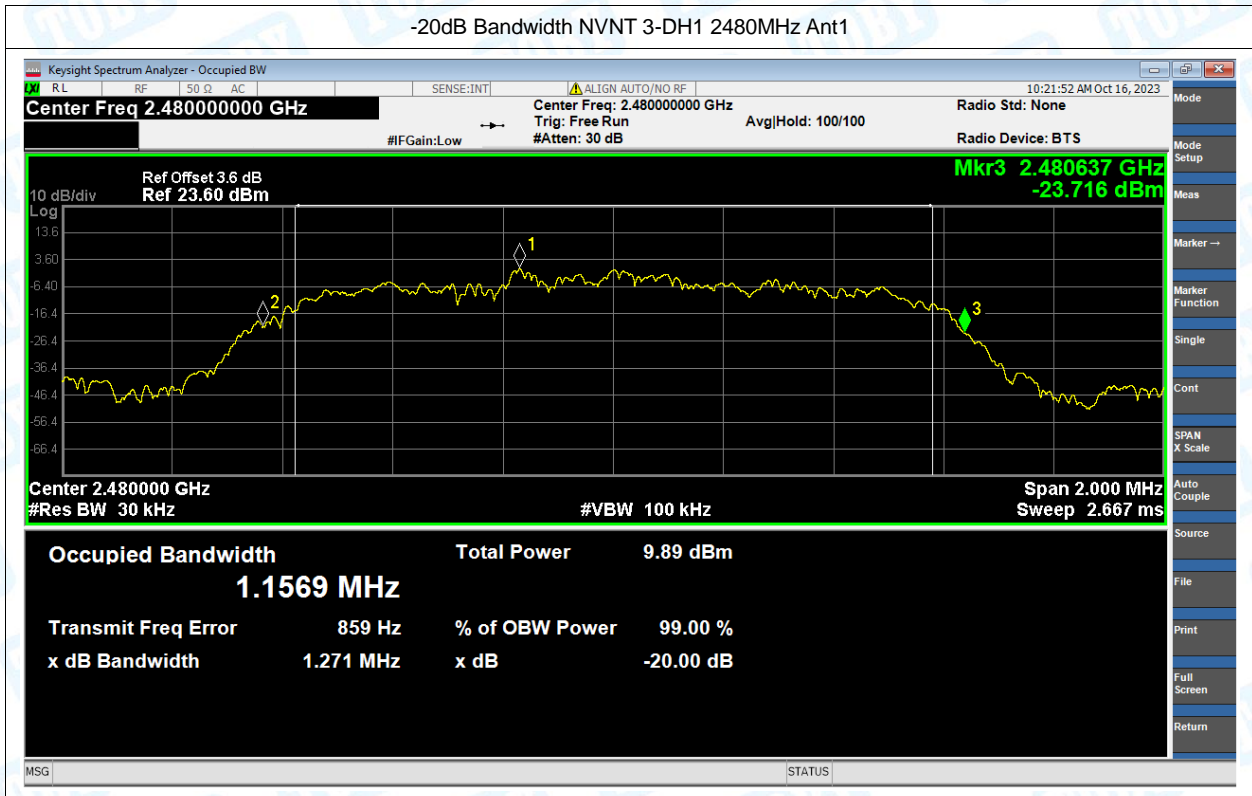


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1





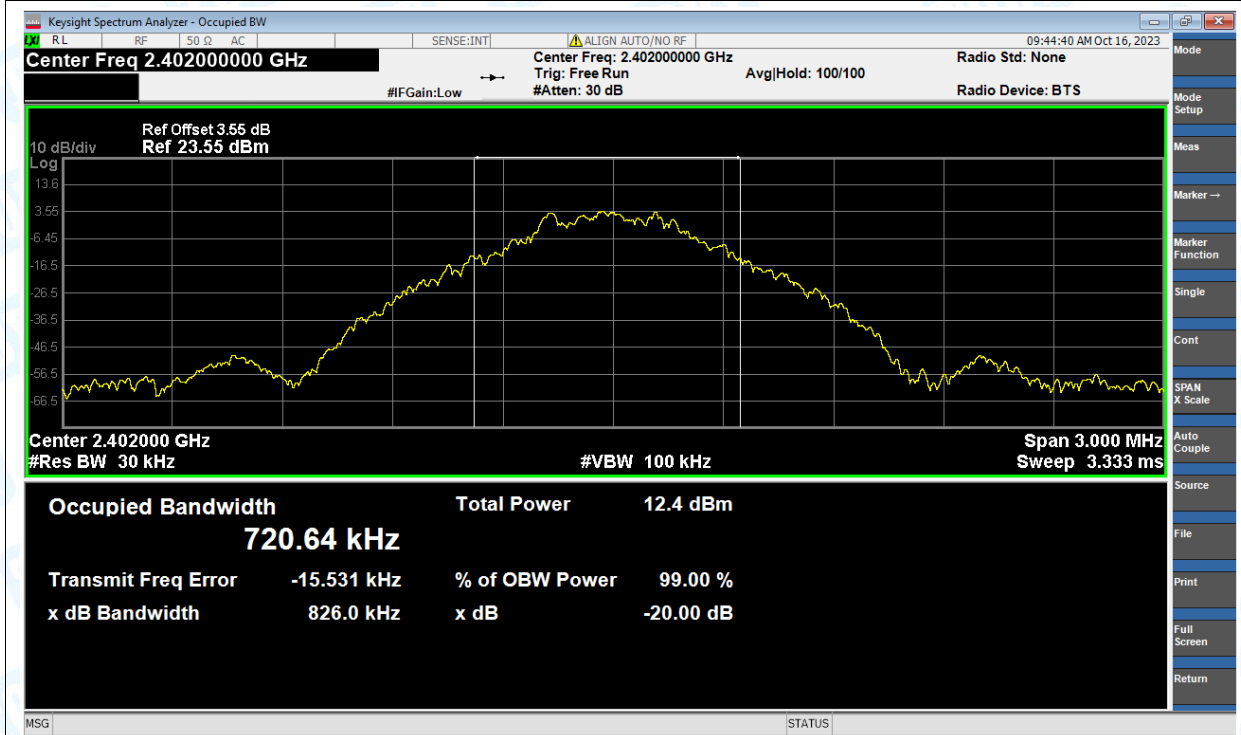


## 4. Occupied Channel Bandwidth

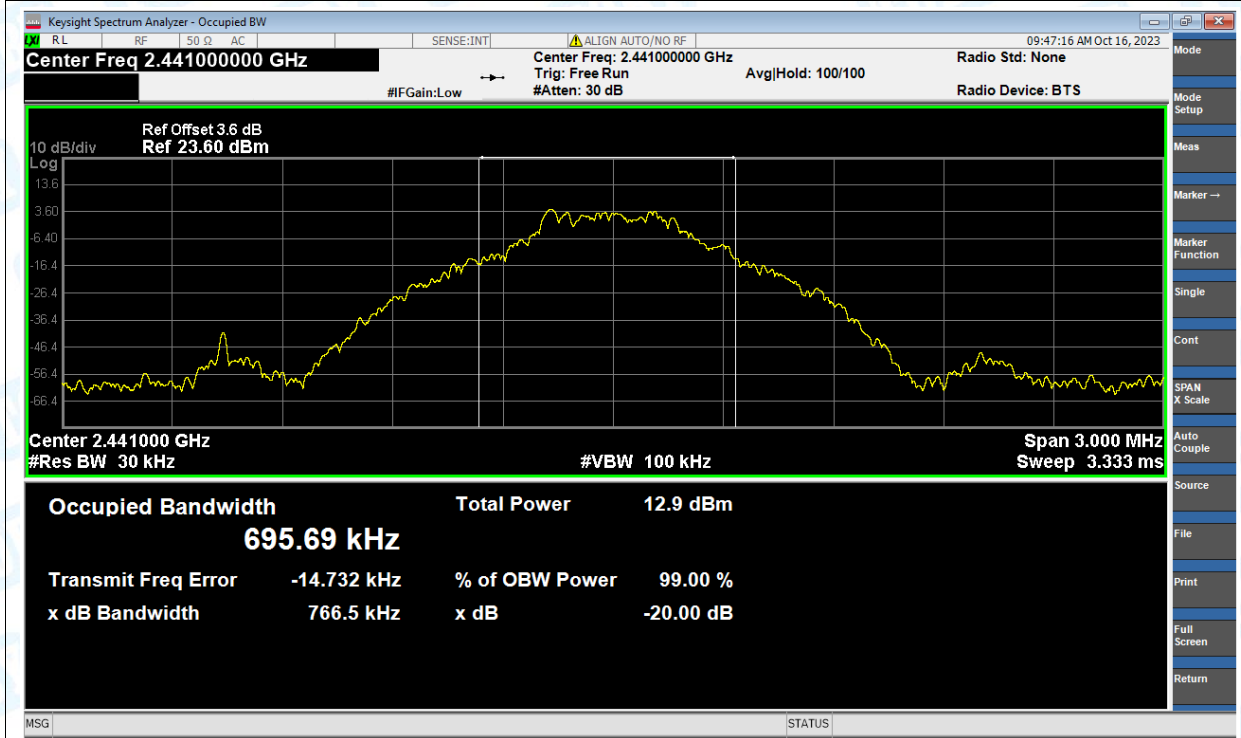
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.721
NVNT	1-DH1	2441	Ant1	0.696
NVNT	1-DH1	2480	Ant1	0.72
NVNT	2-DH1	2402	Ant1	1.179
NVNT	2-DH1	2441	Ant1	1.135
NVNT	2-DH1	2480	Ant1	1.167
NVNT	3-DH1	2402	Ant1	1.159
NVNT	3-DH1	2441	Ant1	1.155
NVNT	3-DH1	2480	Ant1	1.152

Test Graphs

OBW NVNT 1-DH1 2402MHz Ant1

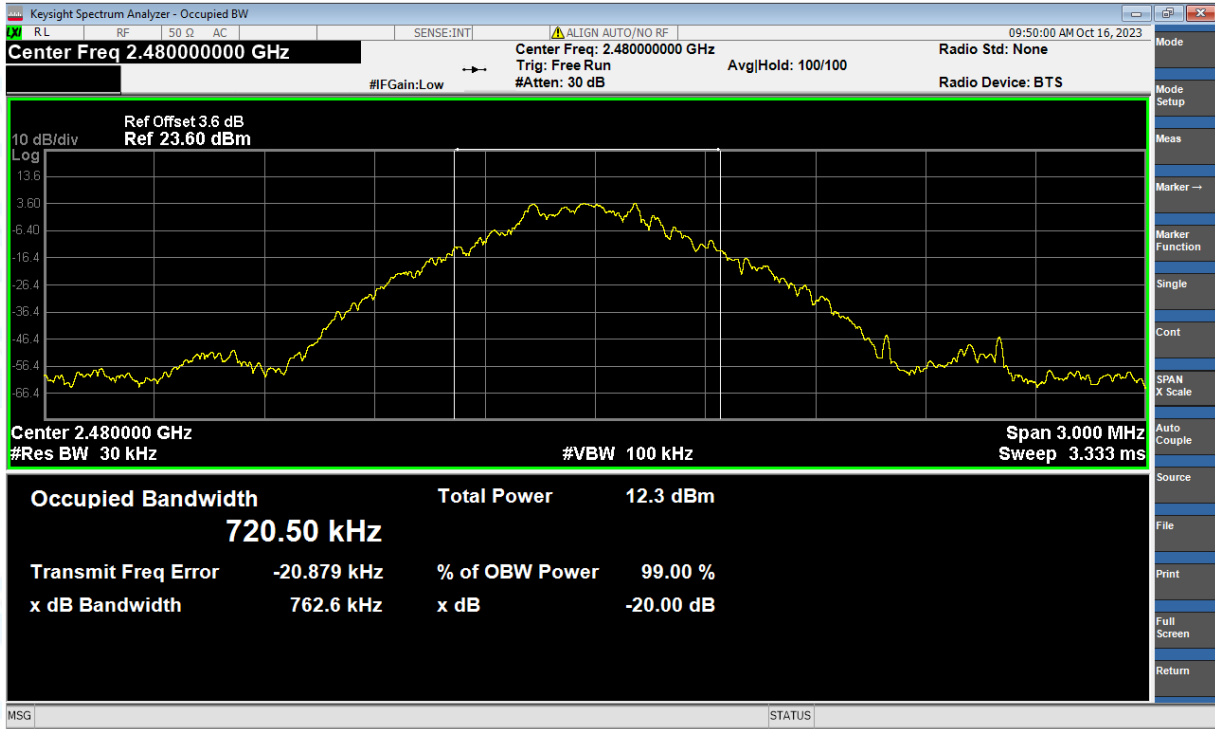


OBW NVNT 1-DH1 2441MHz Ant1

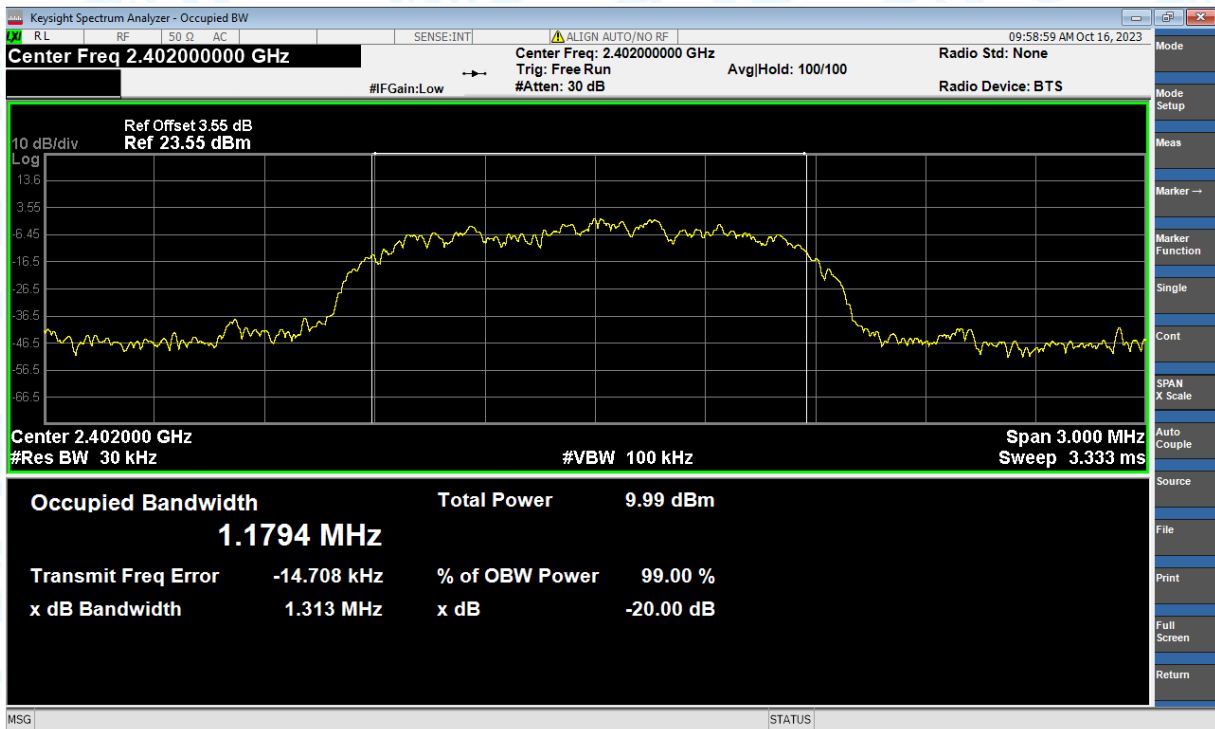




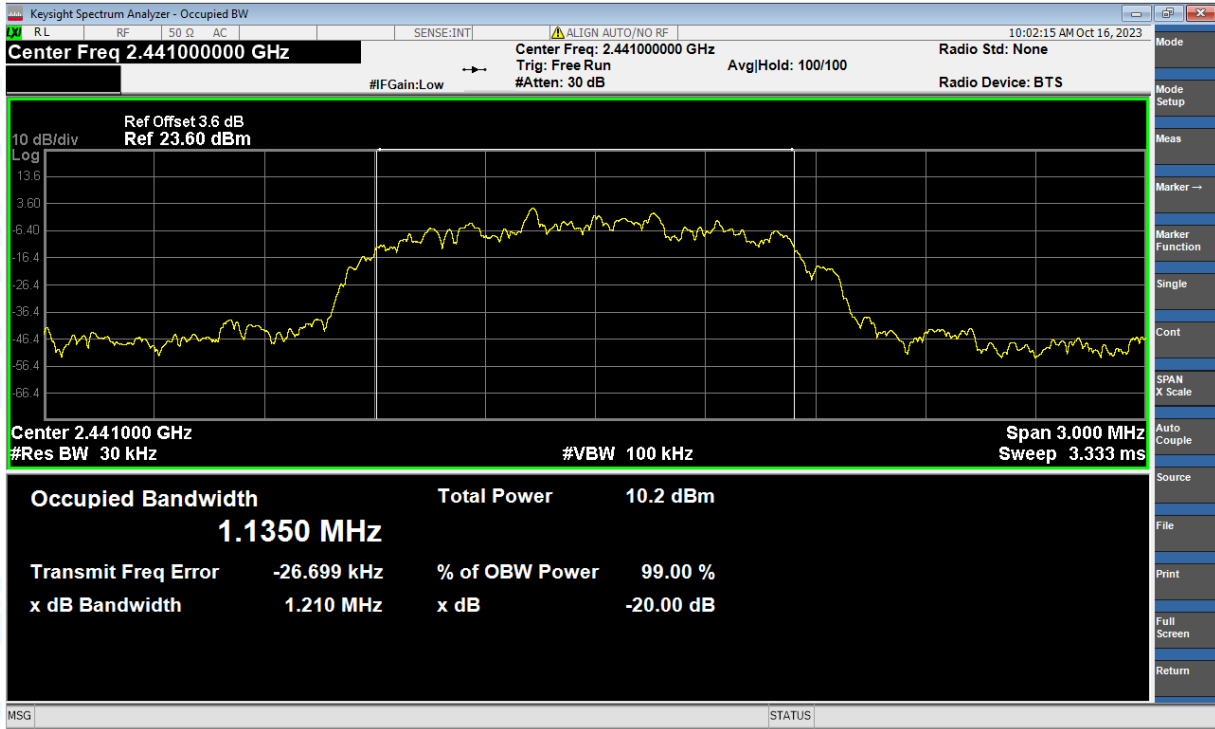
OBW NVNT 1-DH1 2480MHz Ant1



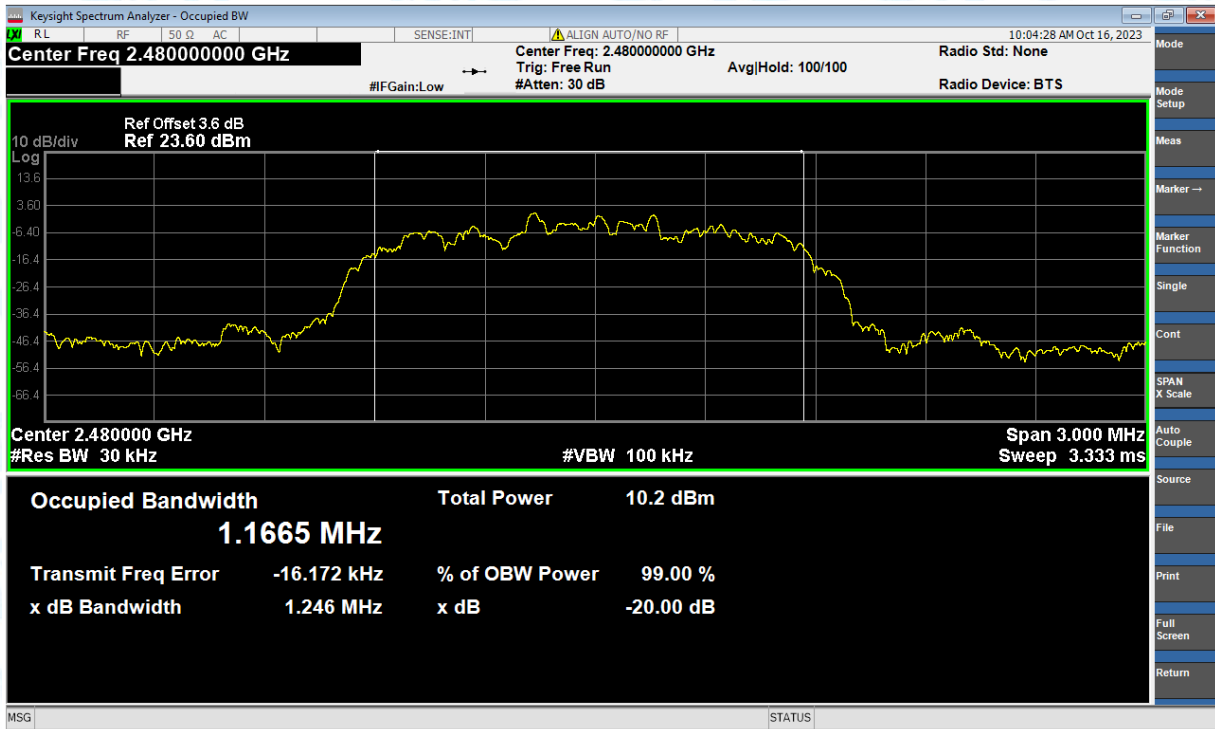
OBW NVNT 2-DH1 2402MHz Ant1



OBW NVNT 2-DH1 2441MHz Ant1

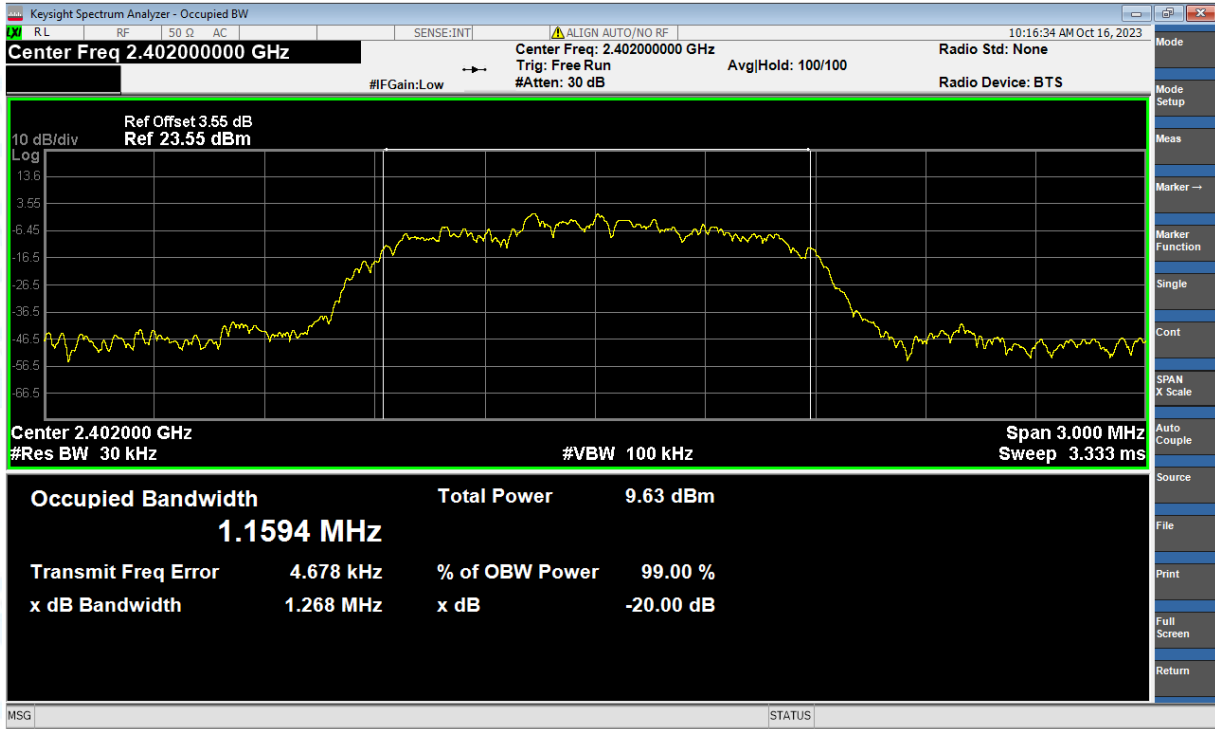


OBW NVNT 2-DH1 2480MHz Ant1

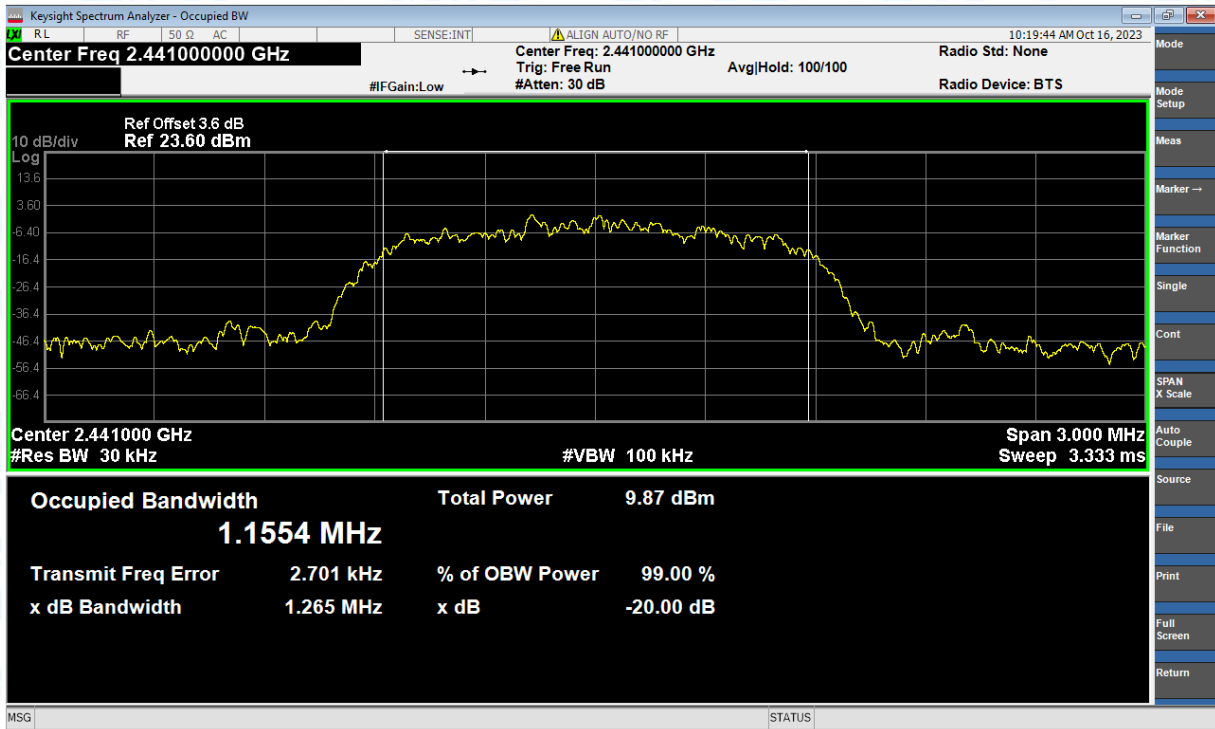


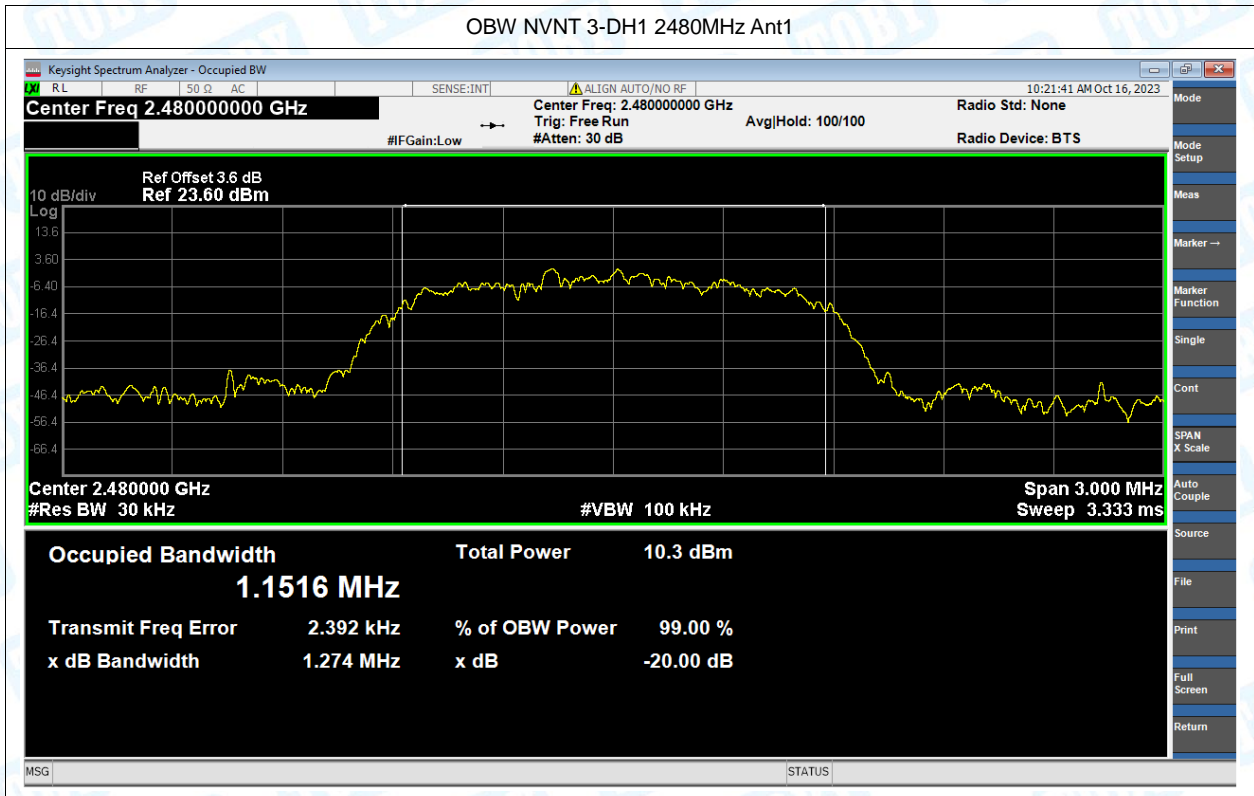


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1





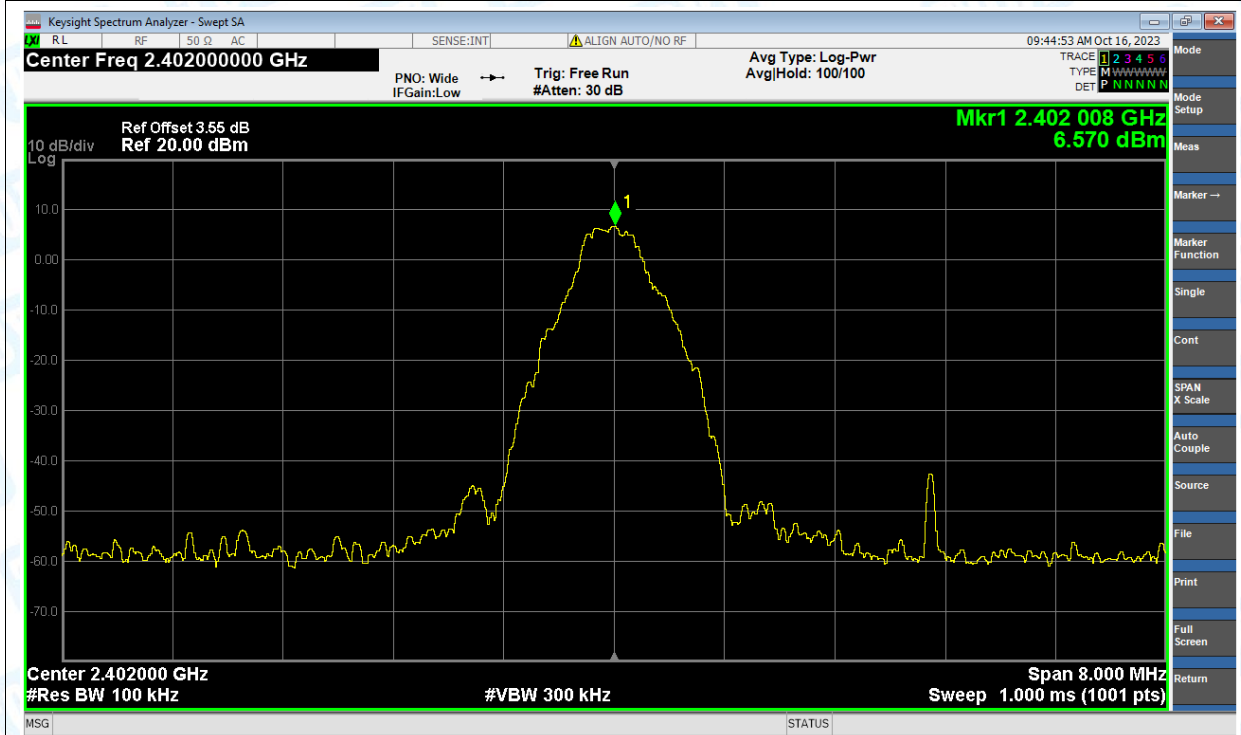


## 5. Band Edge

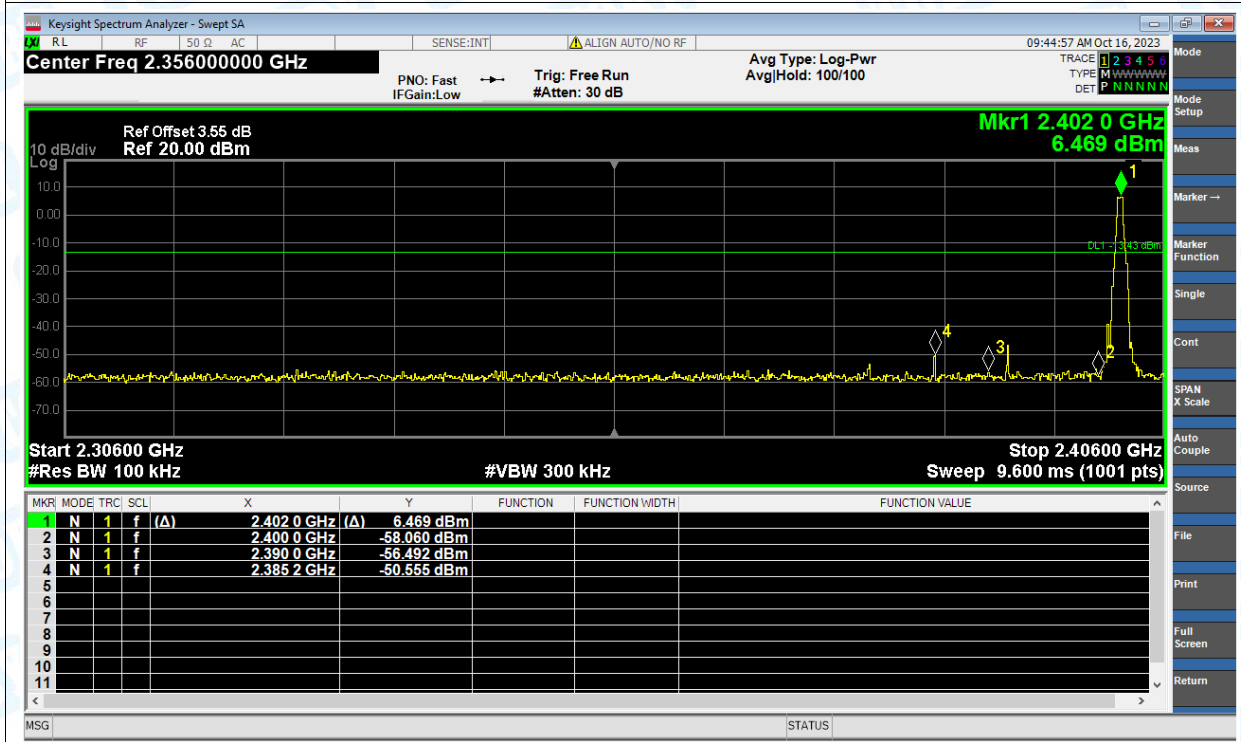
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-57.13	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-47.44	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-58.18	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-58.33	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-56.89	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-58.93	-20	Pass

Test Graphs

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

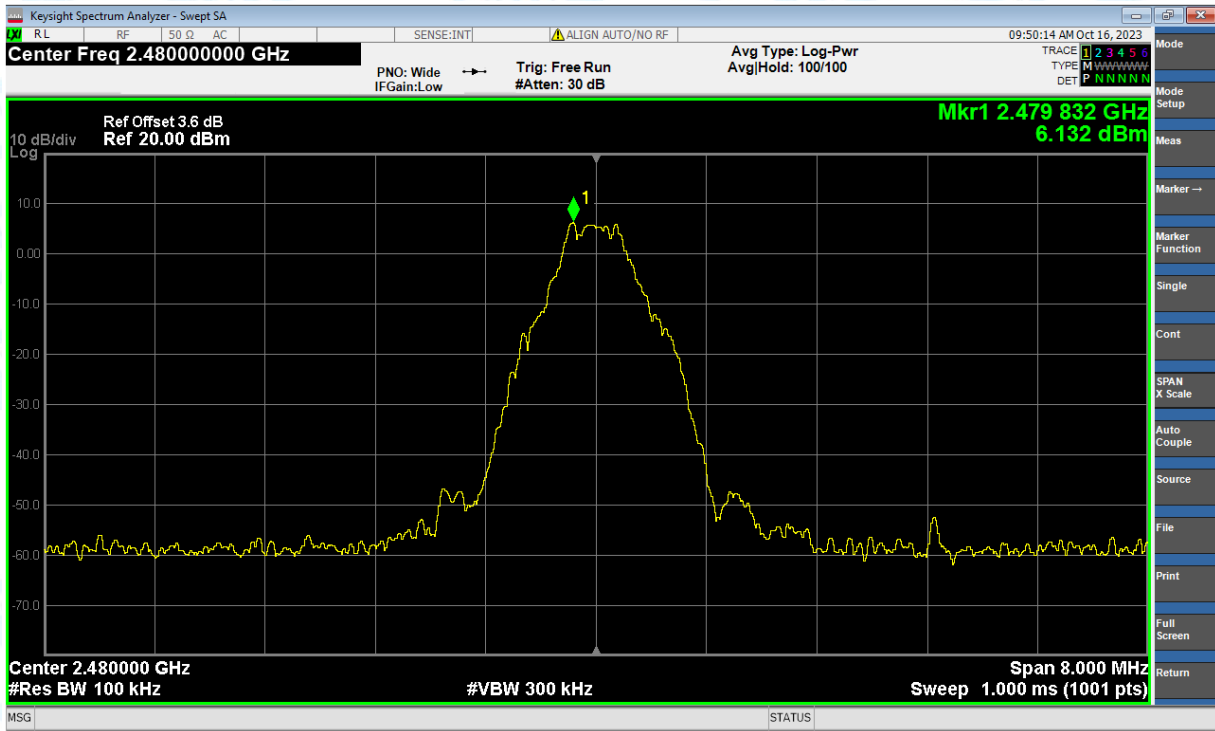


Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission

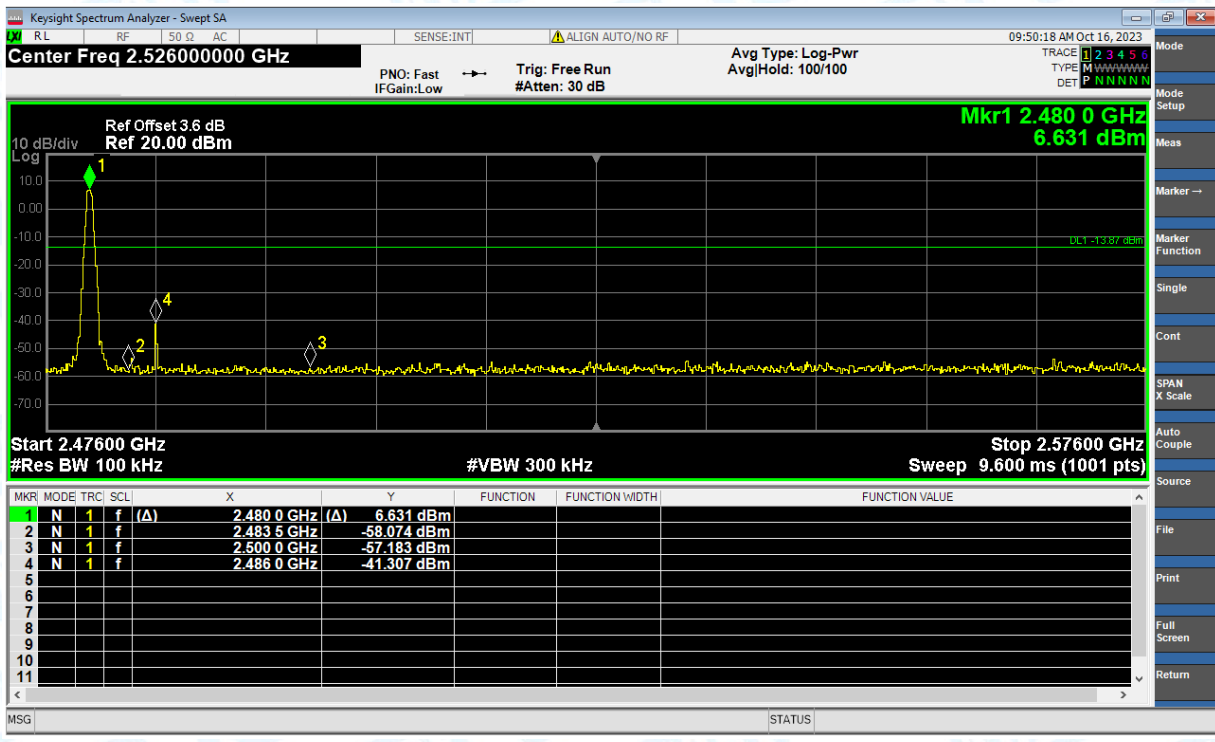




Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



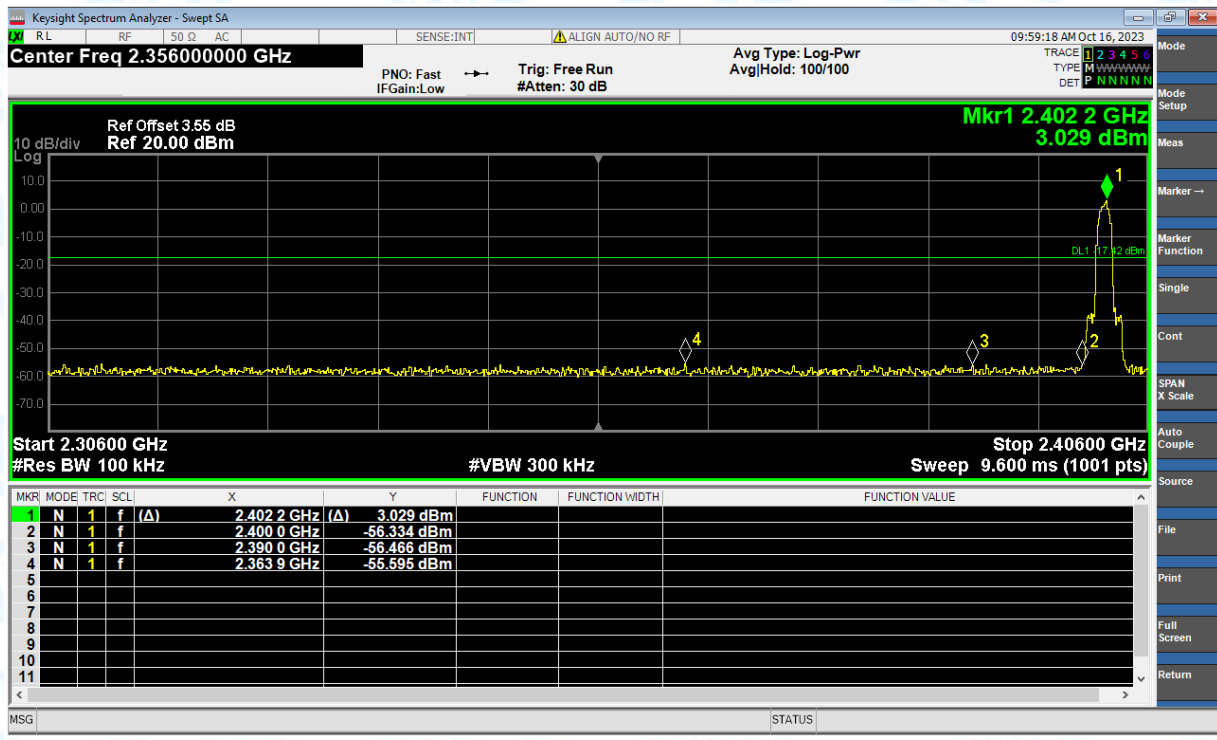
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



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

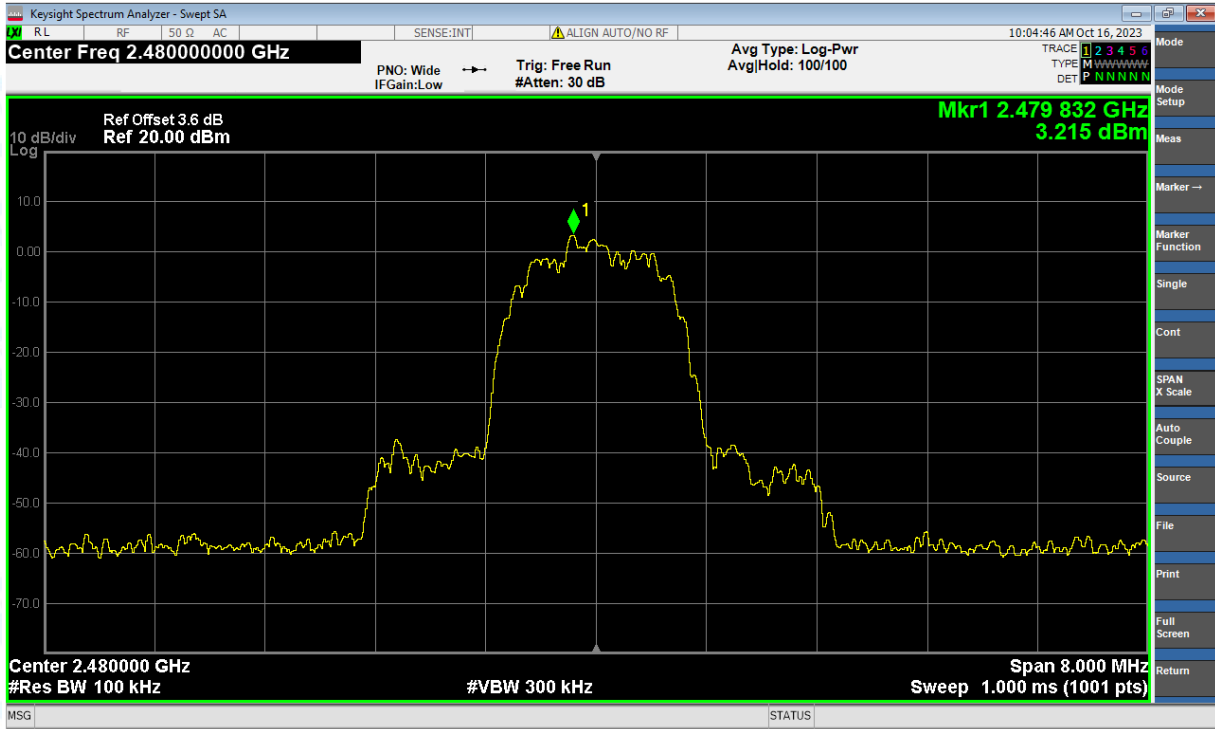


Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission

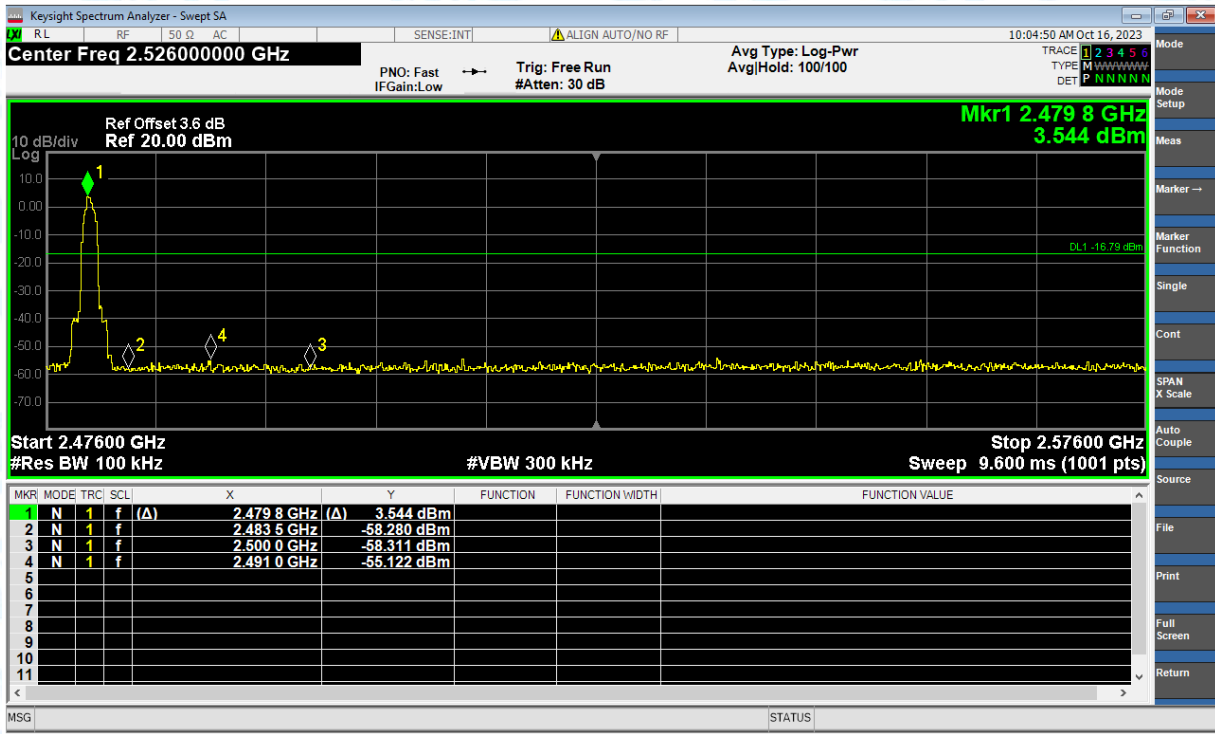




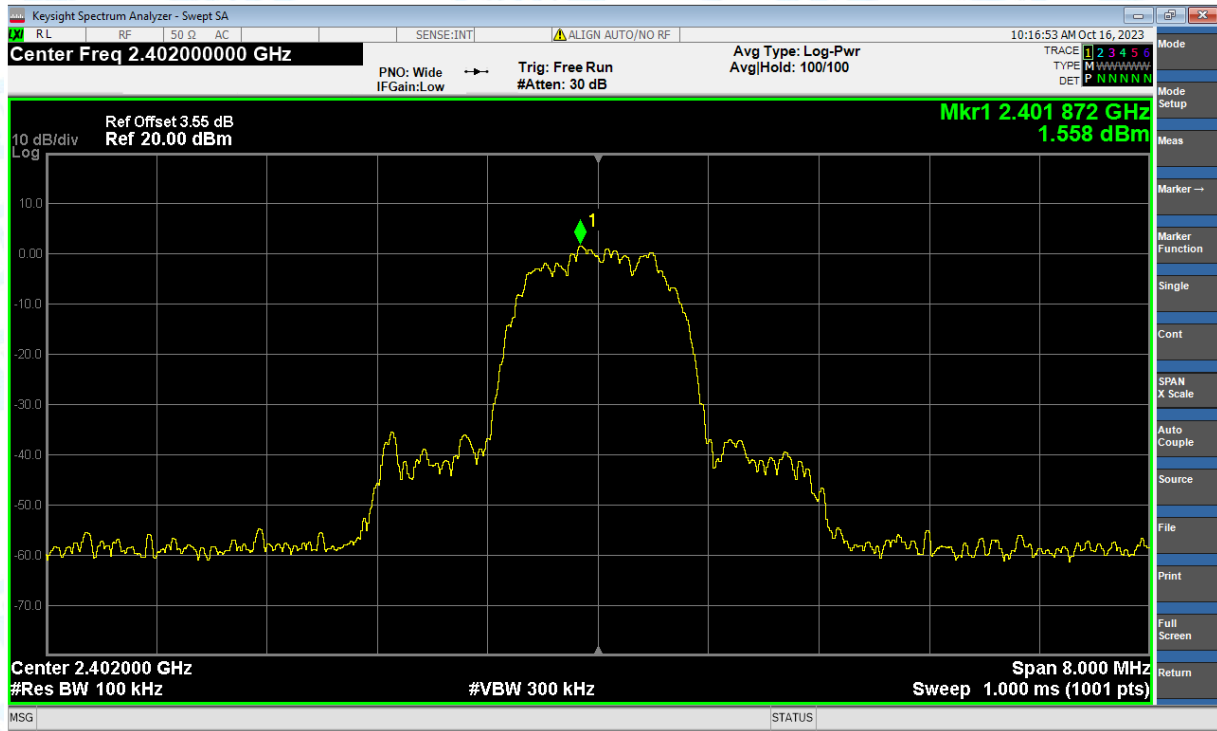
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



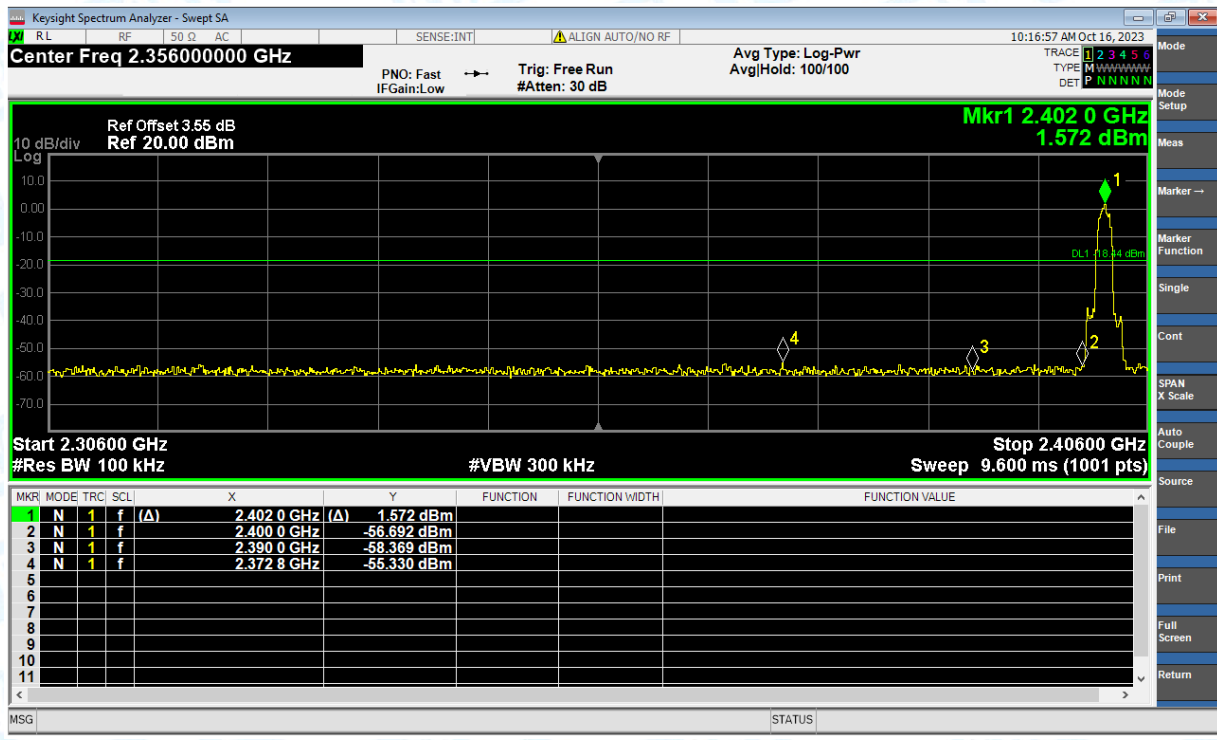
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



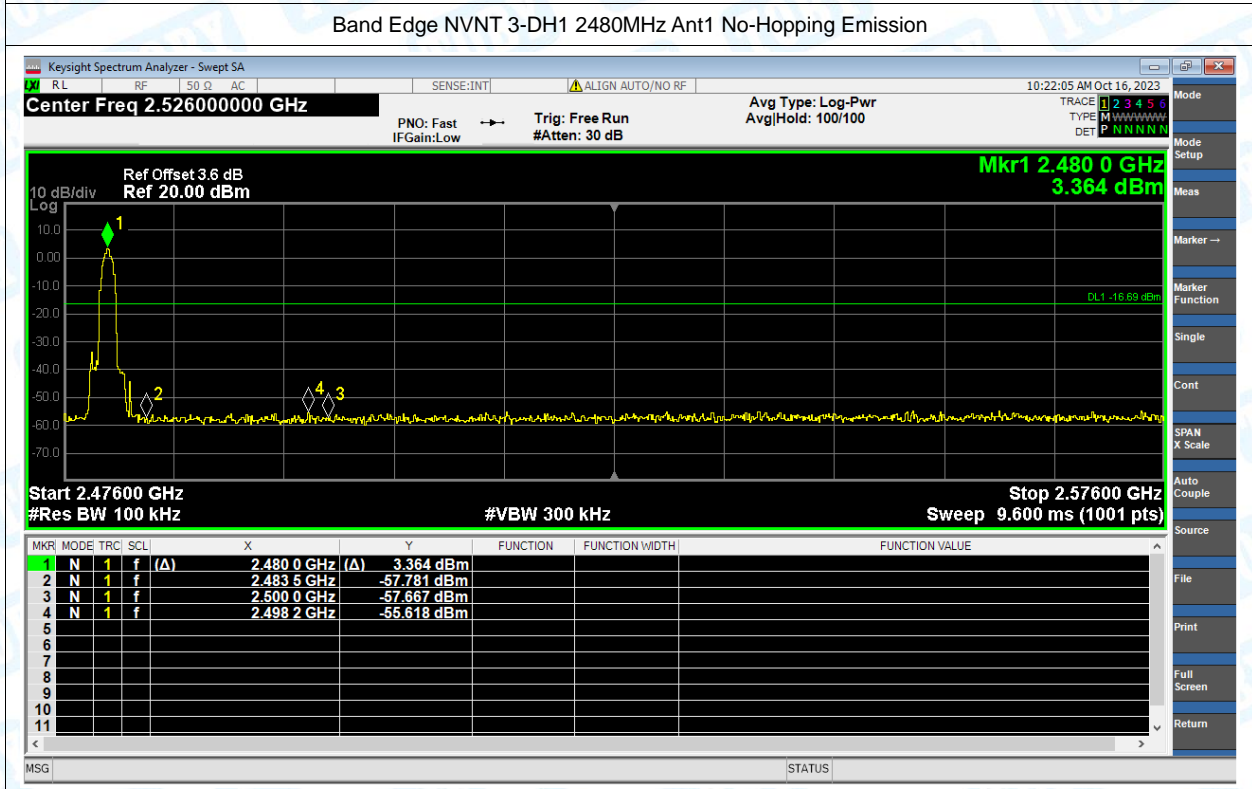
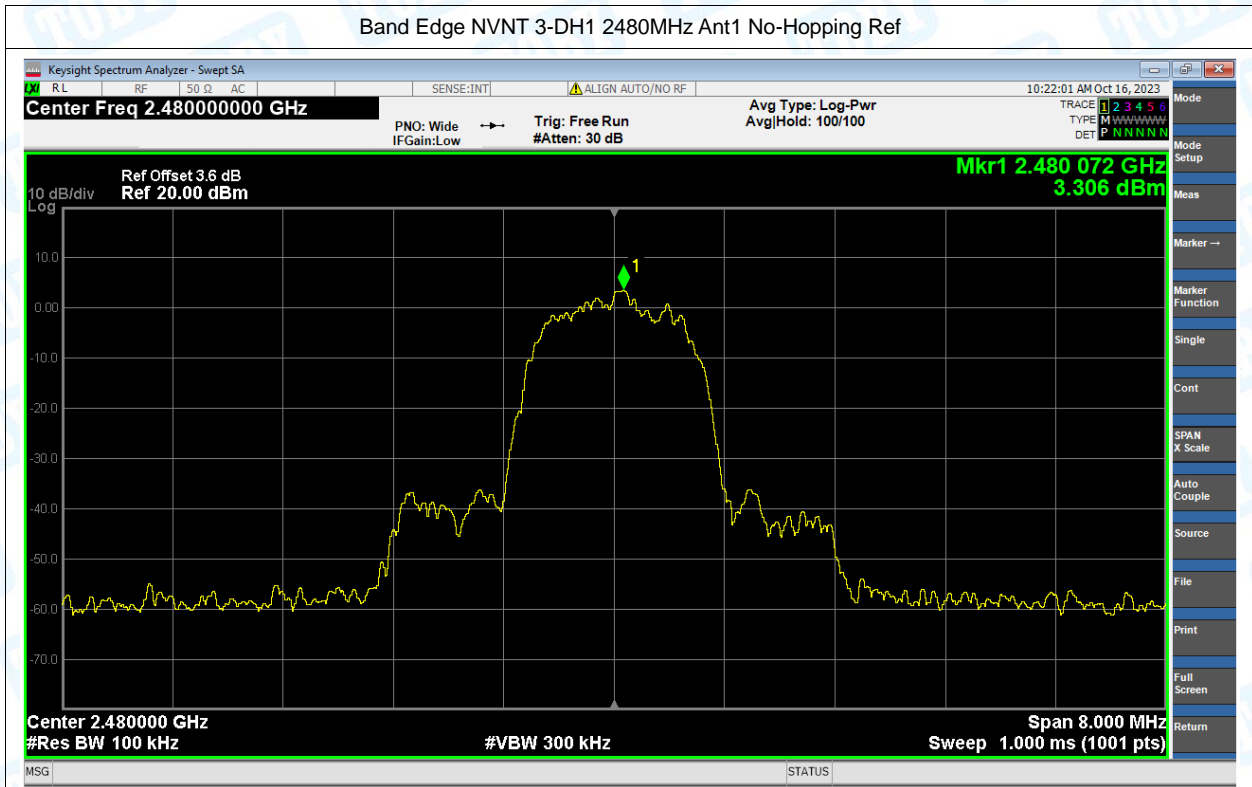
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



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







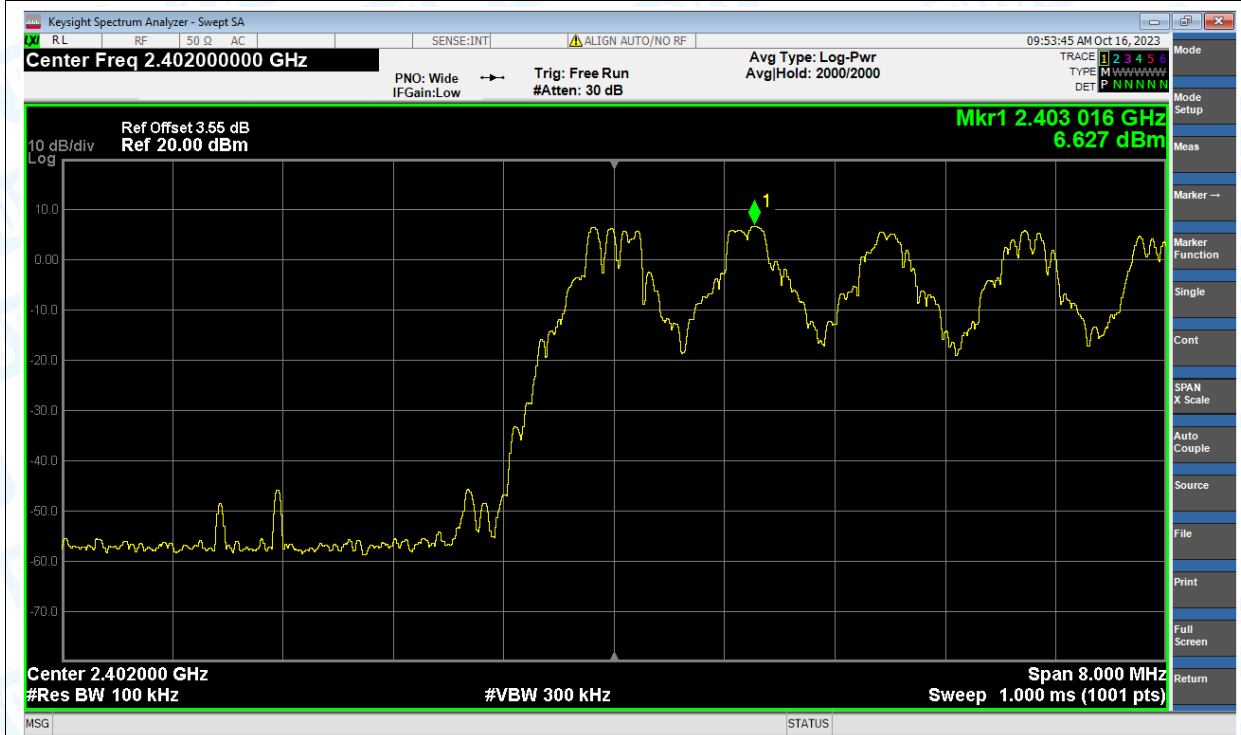
## 6. Band Edge(Hopping)

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-59.91	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-50.43	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-58.04	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-52.62	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-57.51	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-58.06	-20	Pass

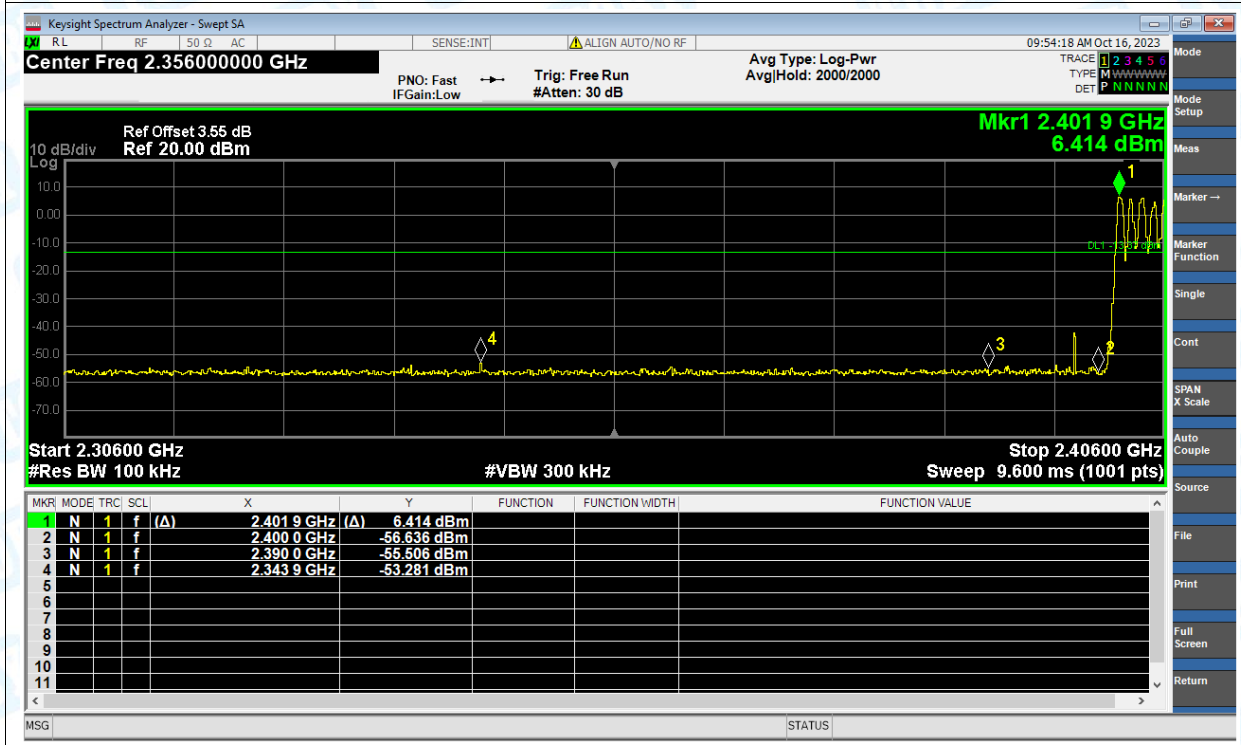


Test Graphs

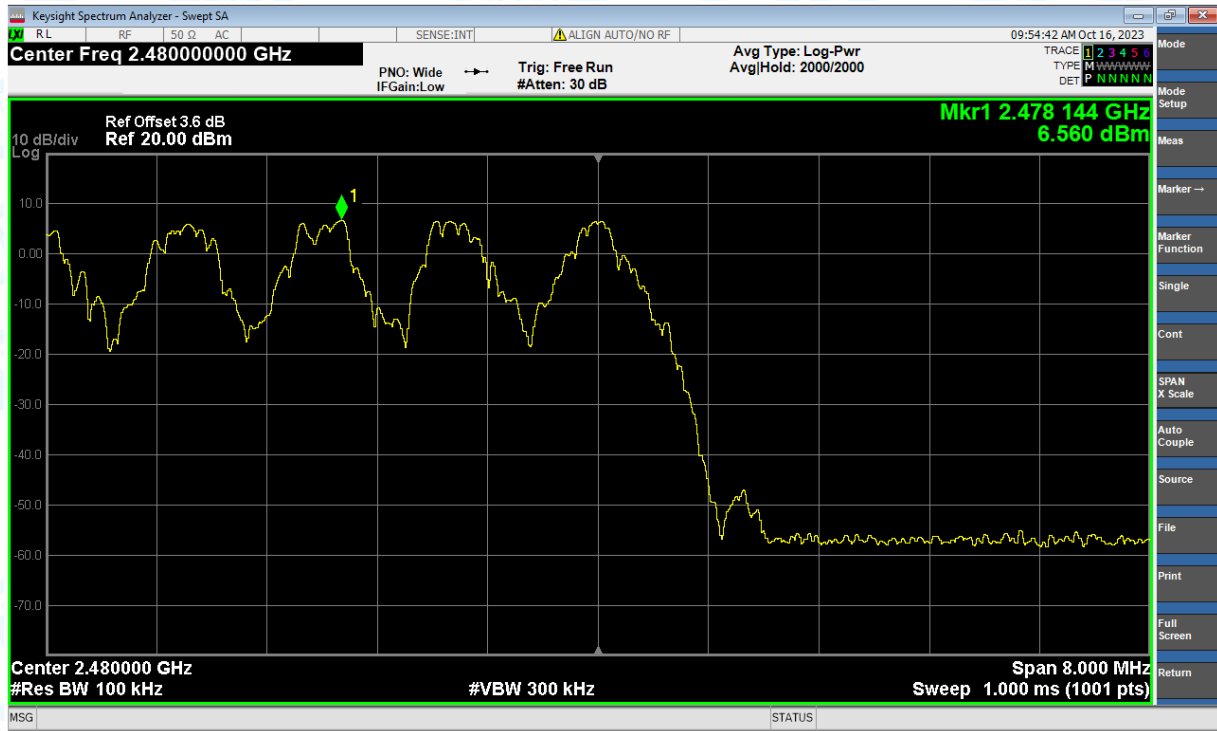
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref



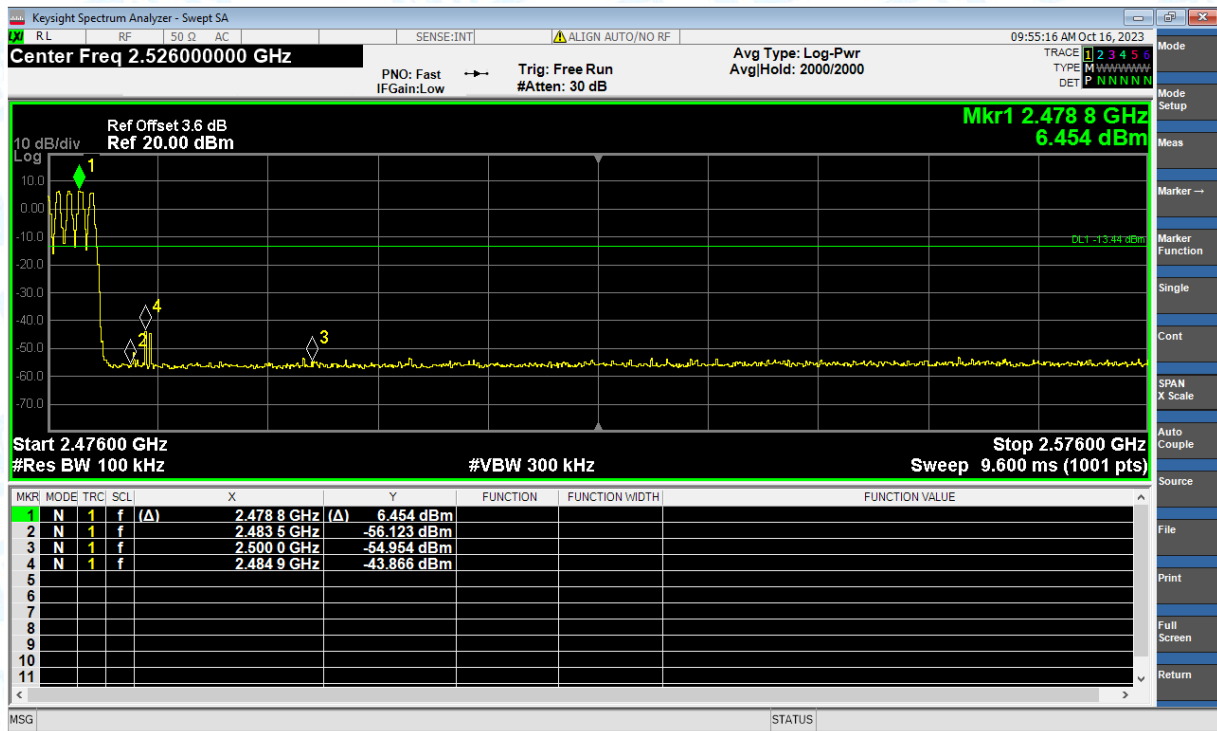
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



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



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

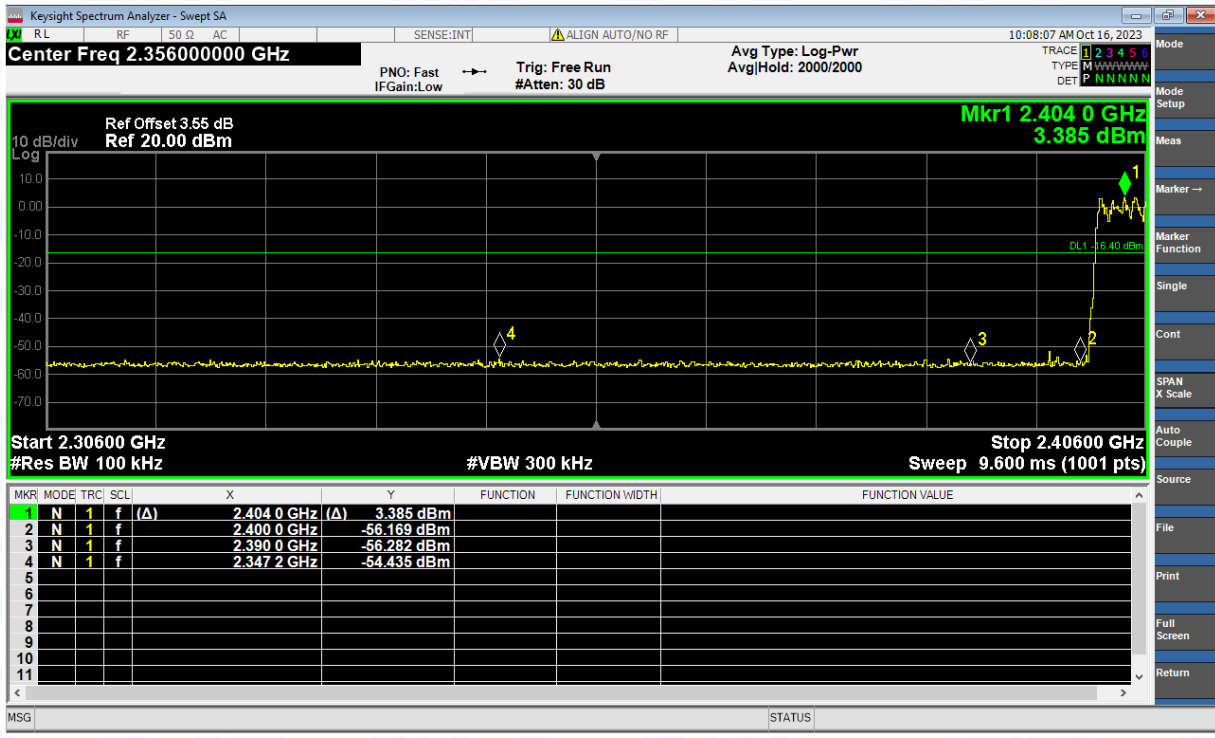


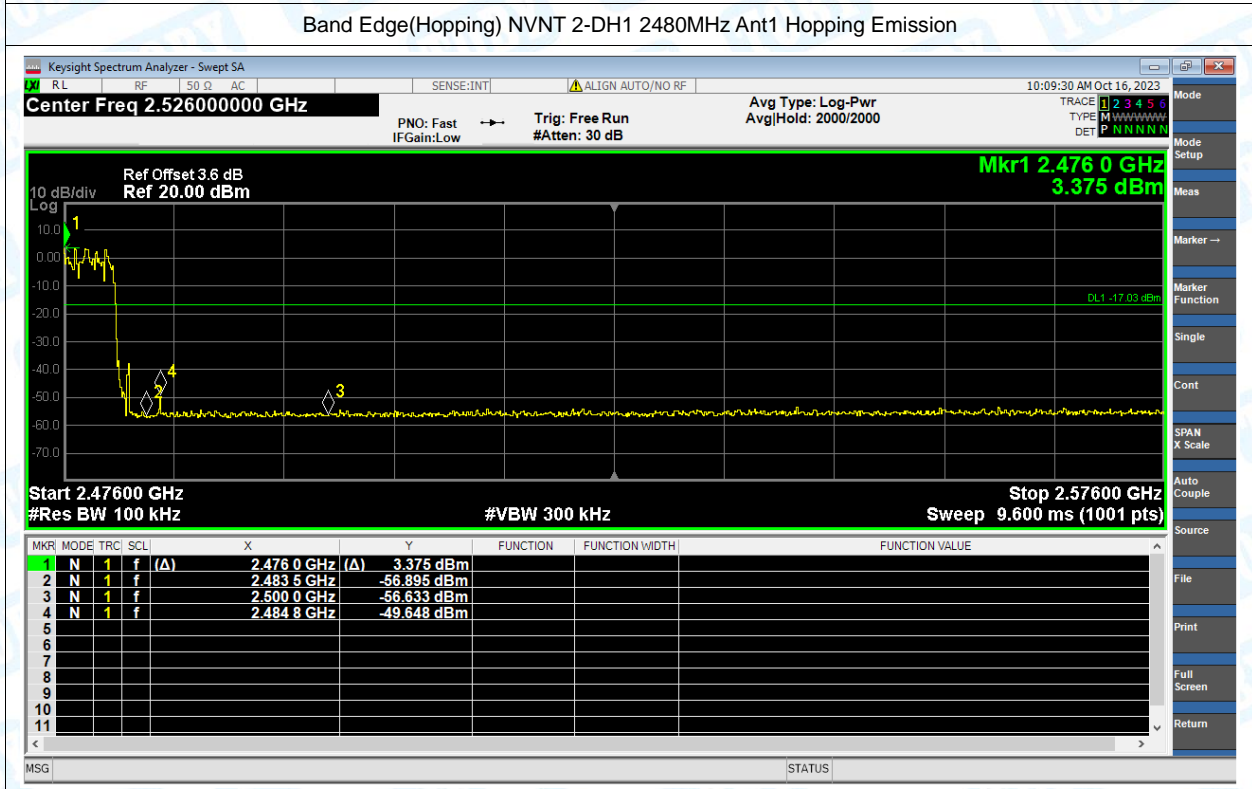
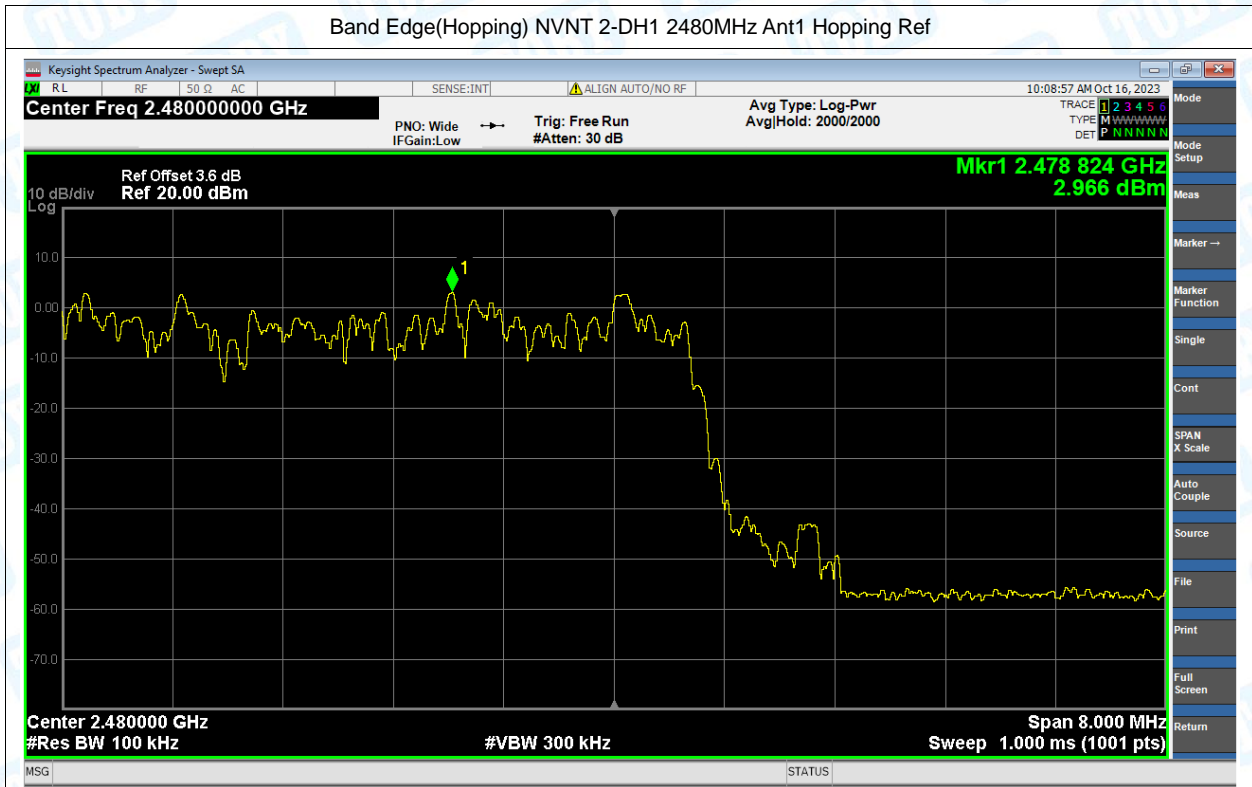


Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref



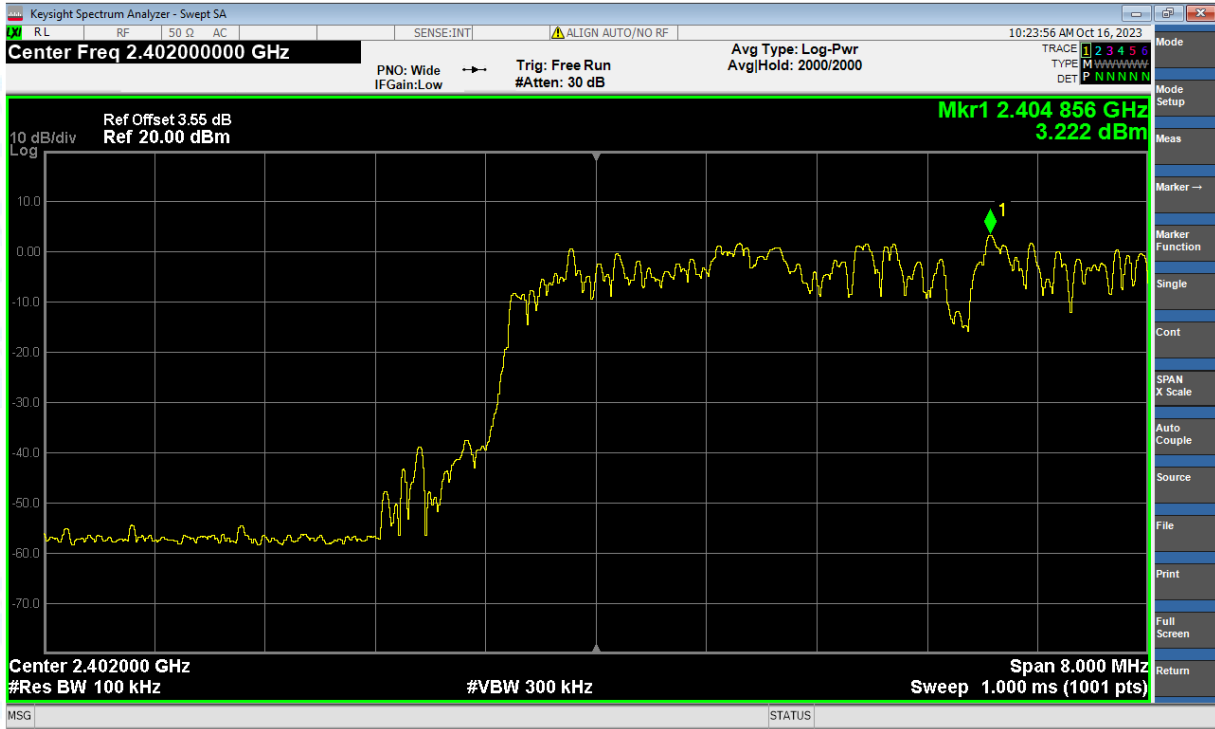
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



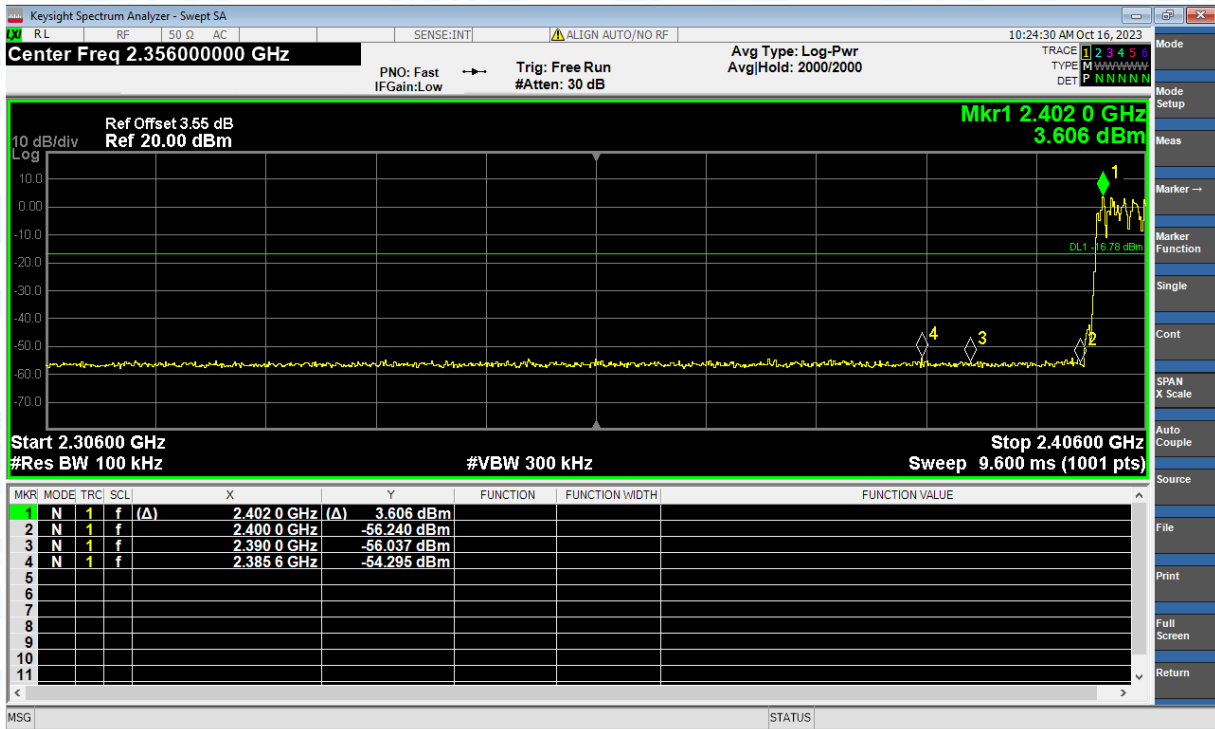




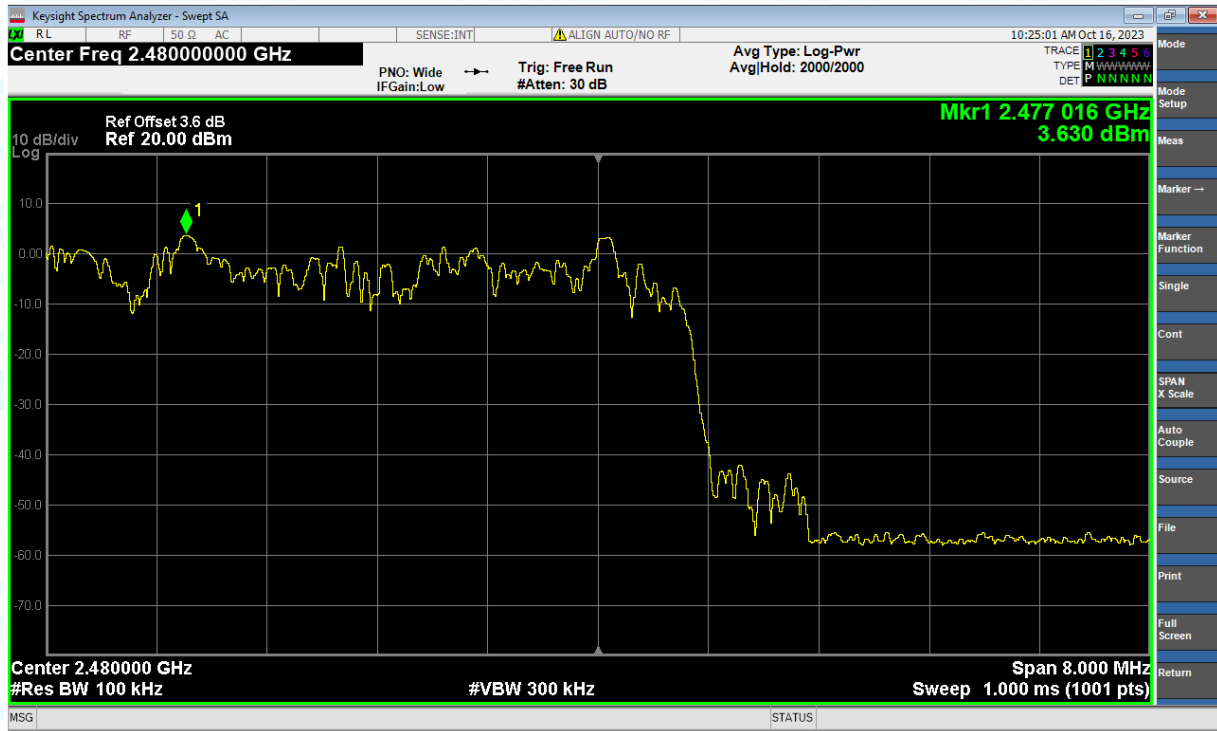
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



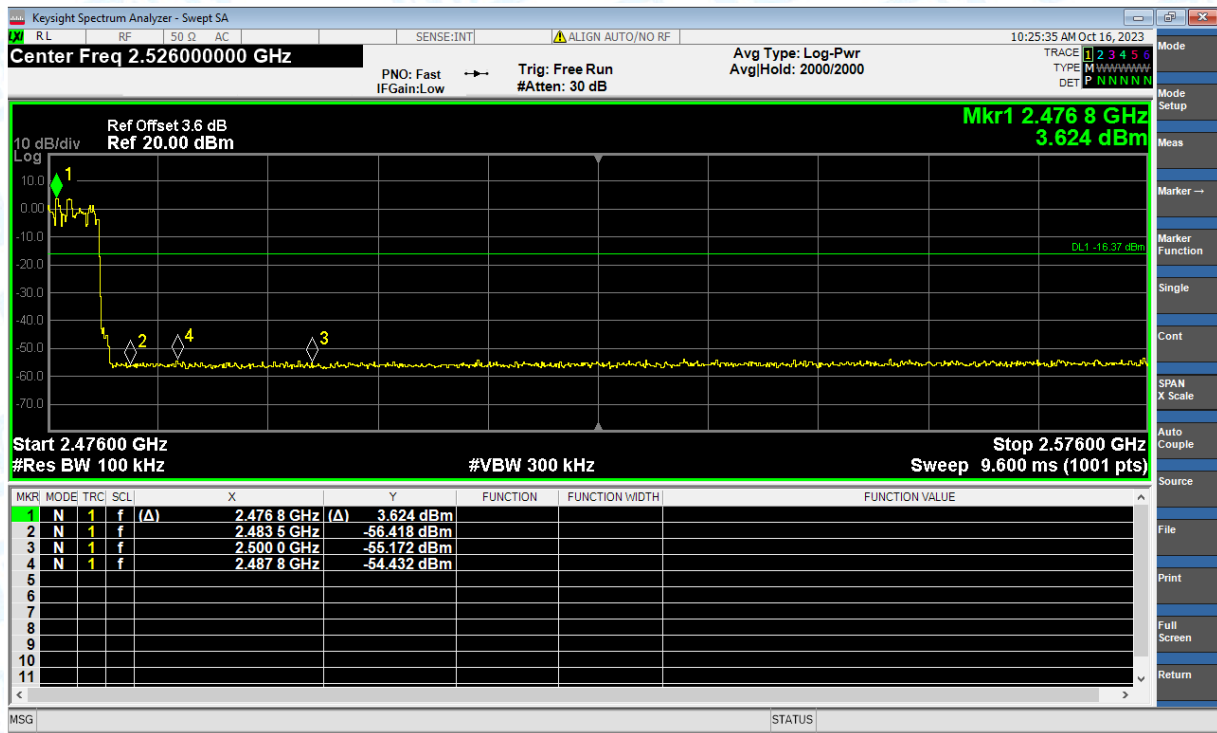
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



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



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



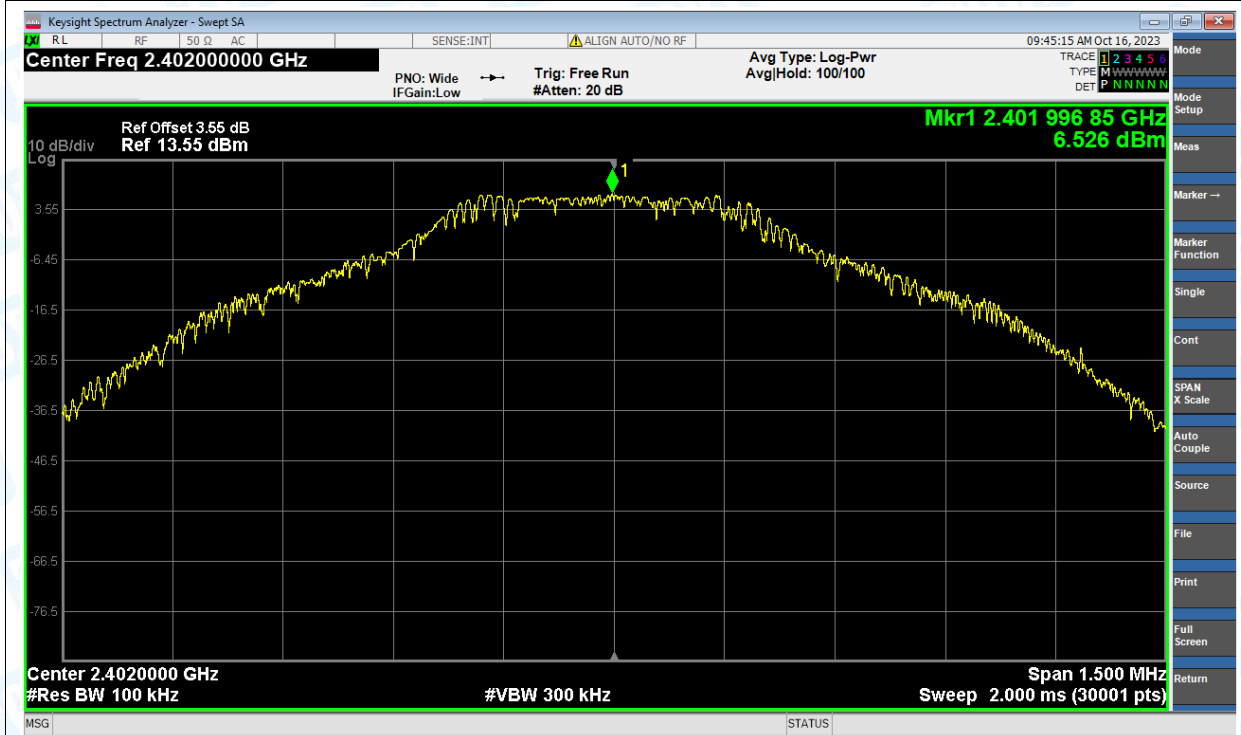


## 7. Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-57.08	-20	Pass
NVNT	1-DH1	2441	Ant1	-57.50	-20	Pass
NVNT	1-DH1	2480	Ant1	-57.22	-20	Pass
NVNT	2-DH1	2402	Ant1	-53.62	-20	Pass
NVNT	2-DH1	2441	Ant1	-54.12	-20	Pass
NVNT	2-DH1	2480	Ant1	-54.28	-20	Pass
NVNT	3-DH1	2402	Ant1	-54.66	-20	Pass
NVNT	3-DH1	2441	Ant1	-53.67	-20	Pass
NVNT	3-DH1	2480	Ant1	-54.50	-20	Pass

Test Graphs

Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission





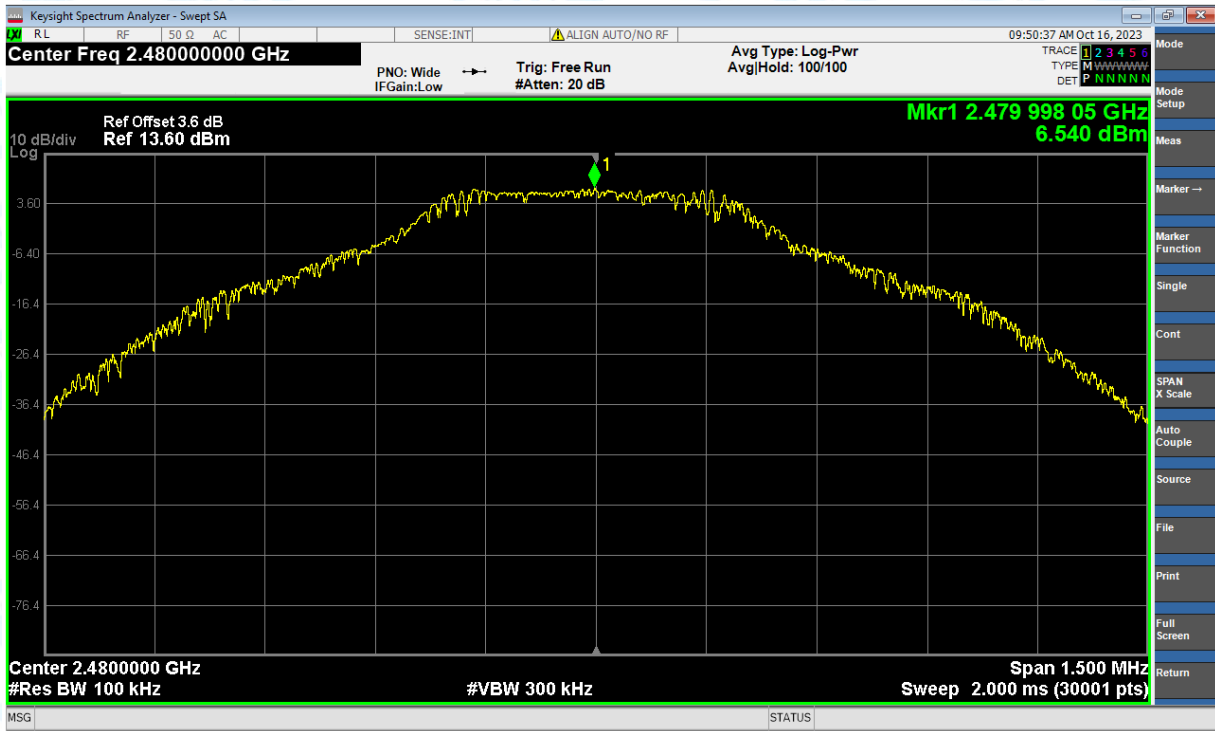
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



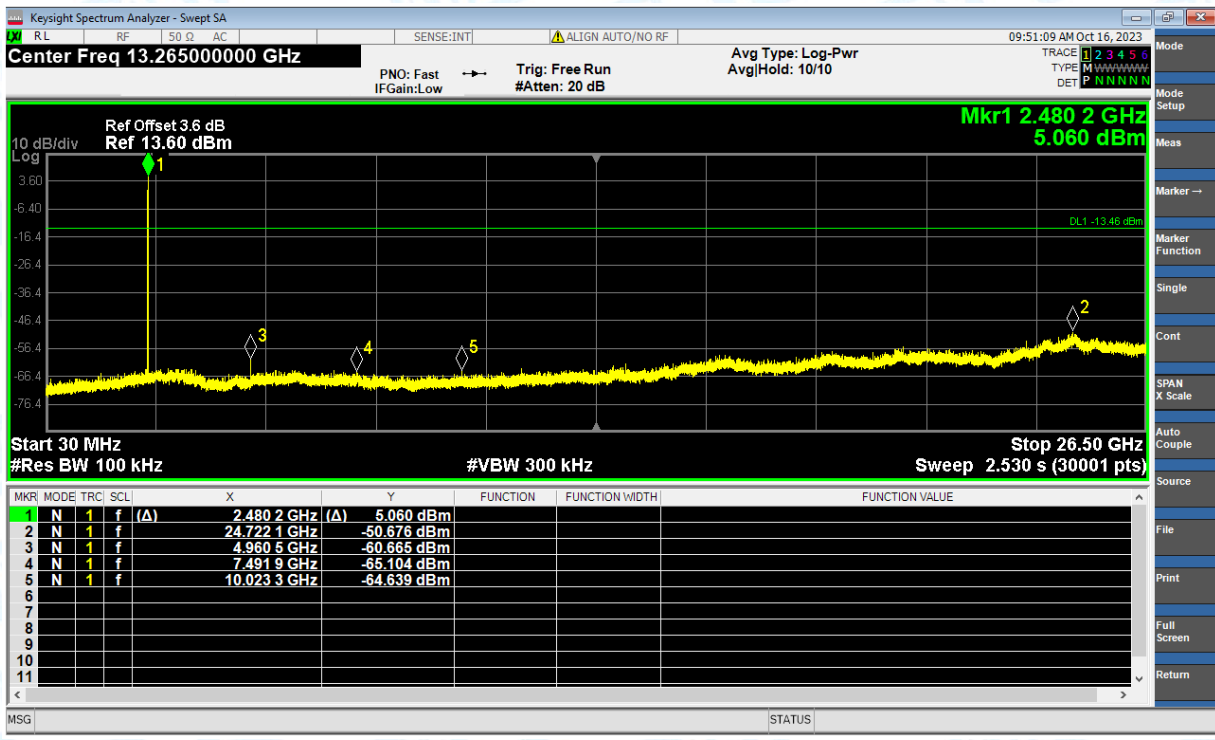
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref

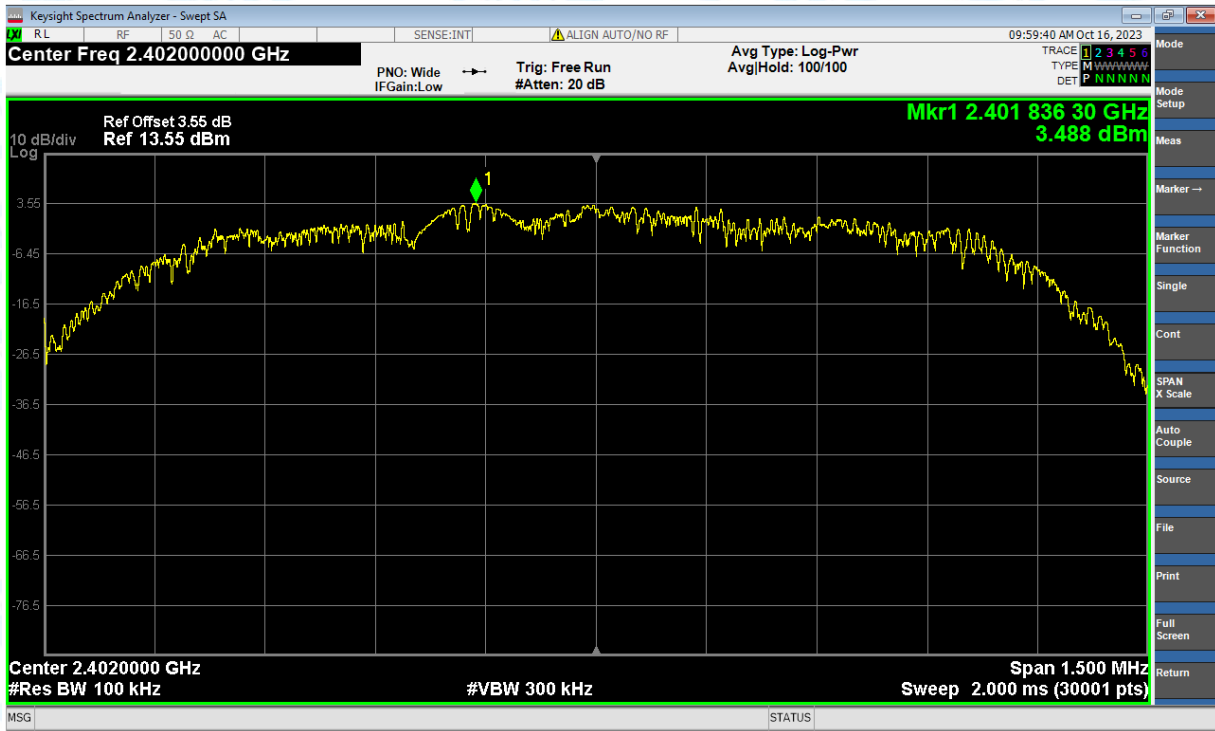


Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission

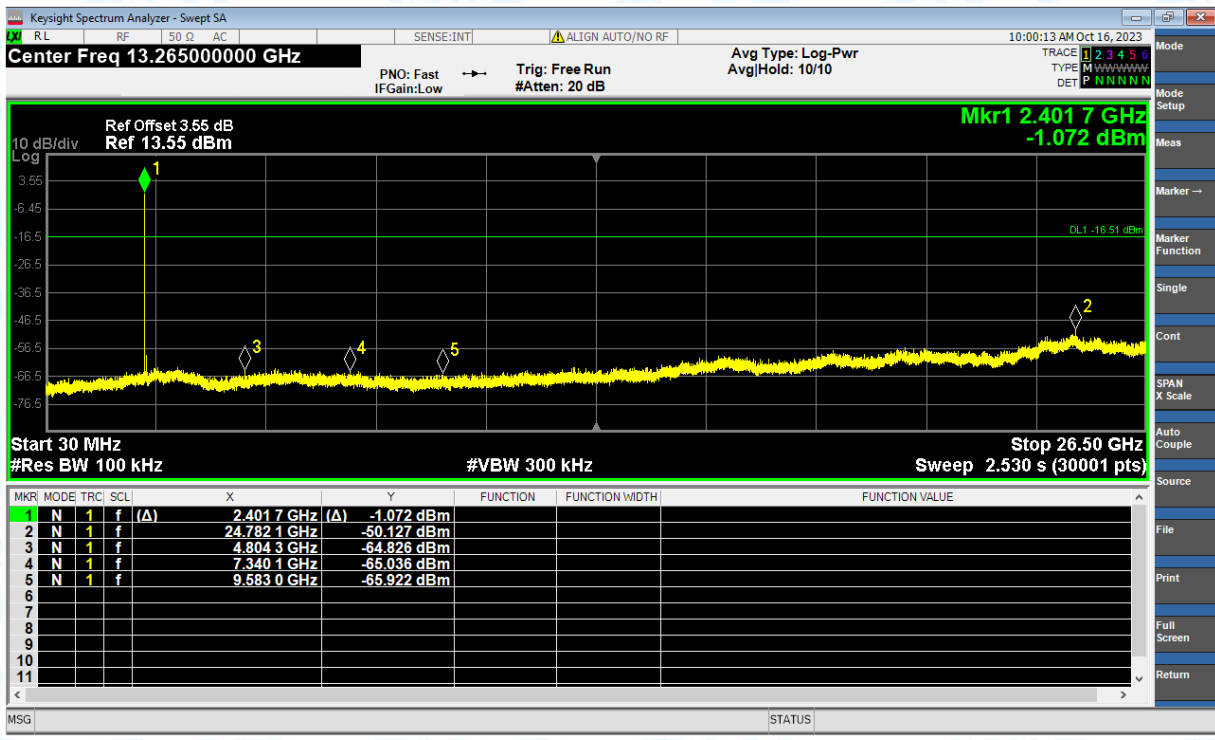




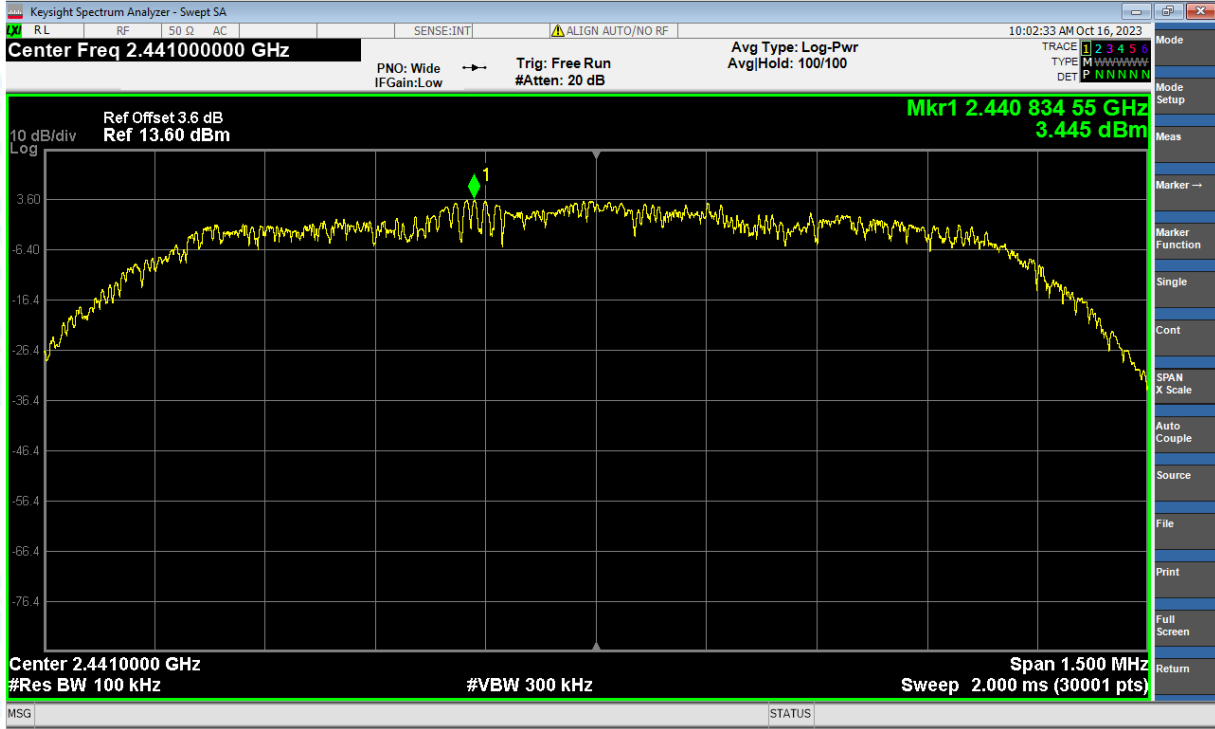
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



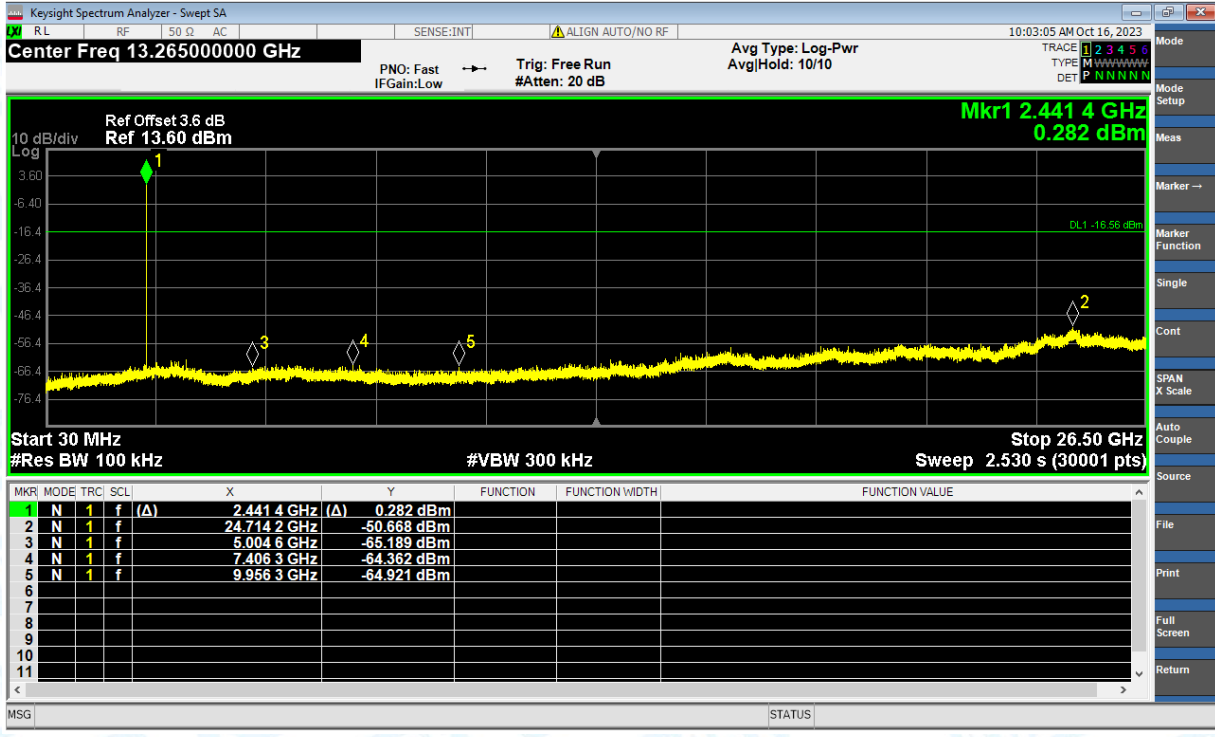
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref

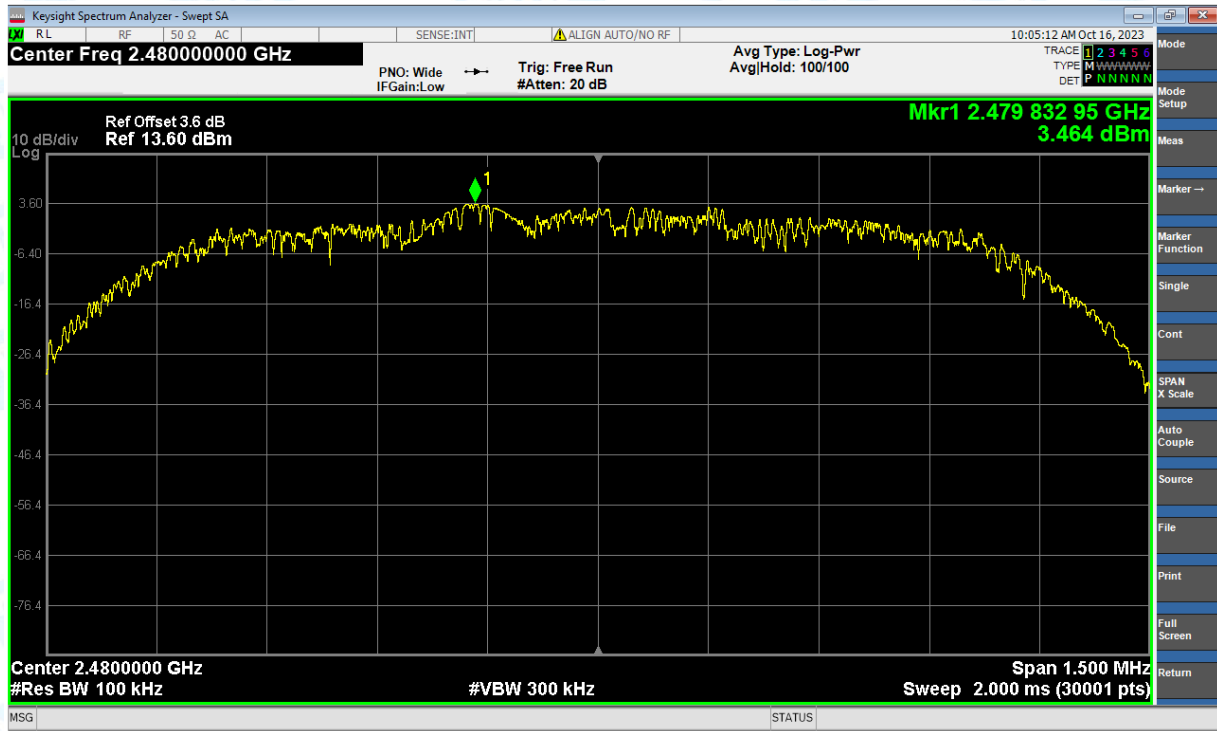


Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission

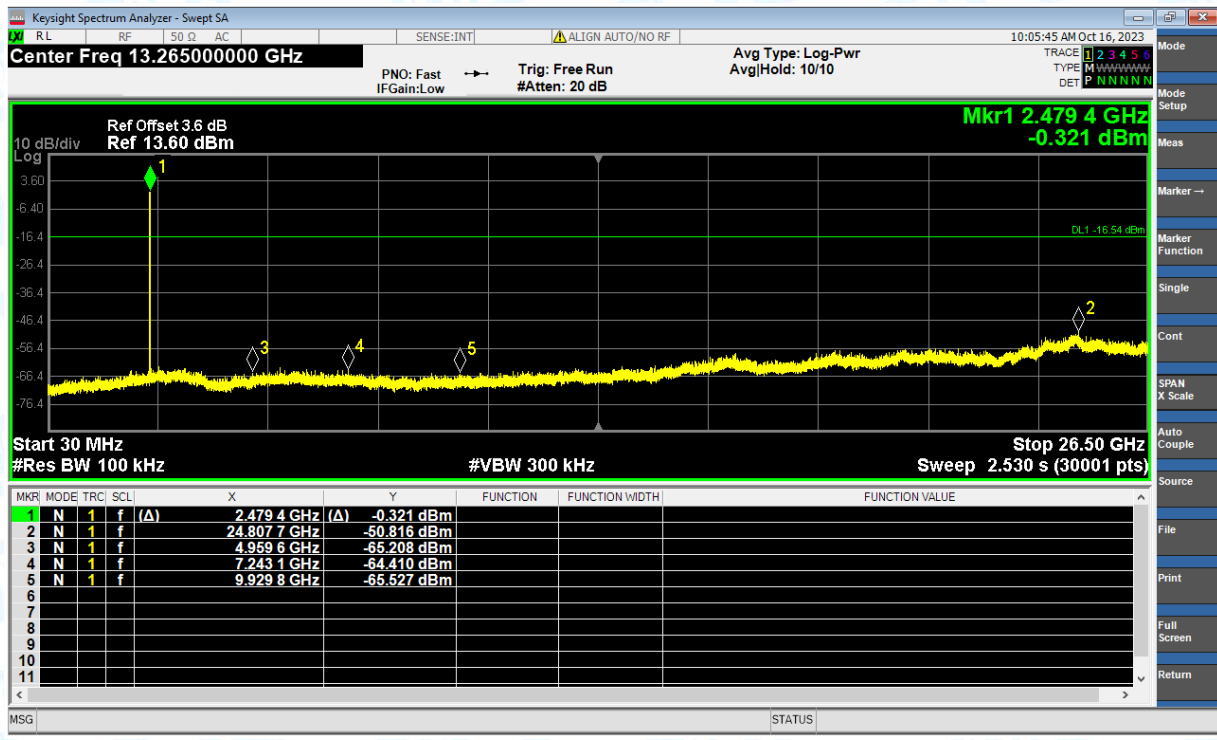




Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



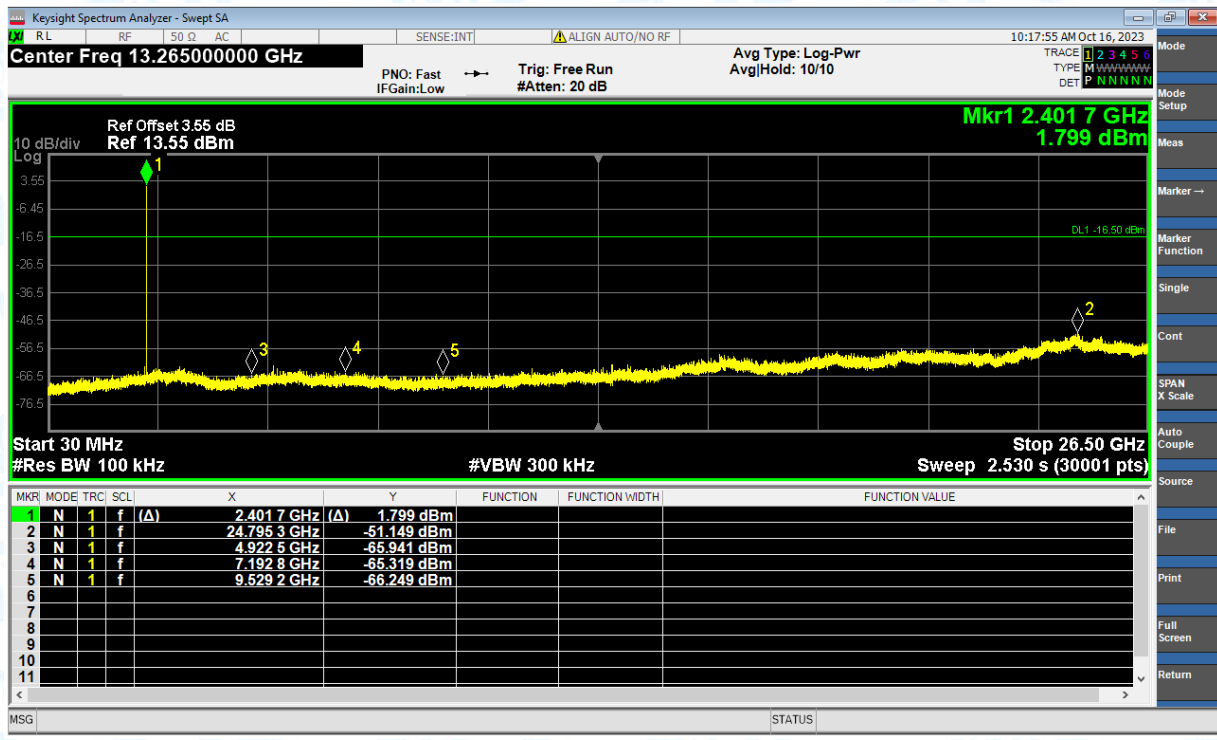
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref

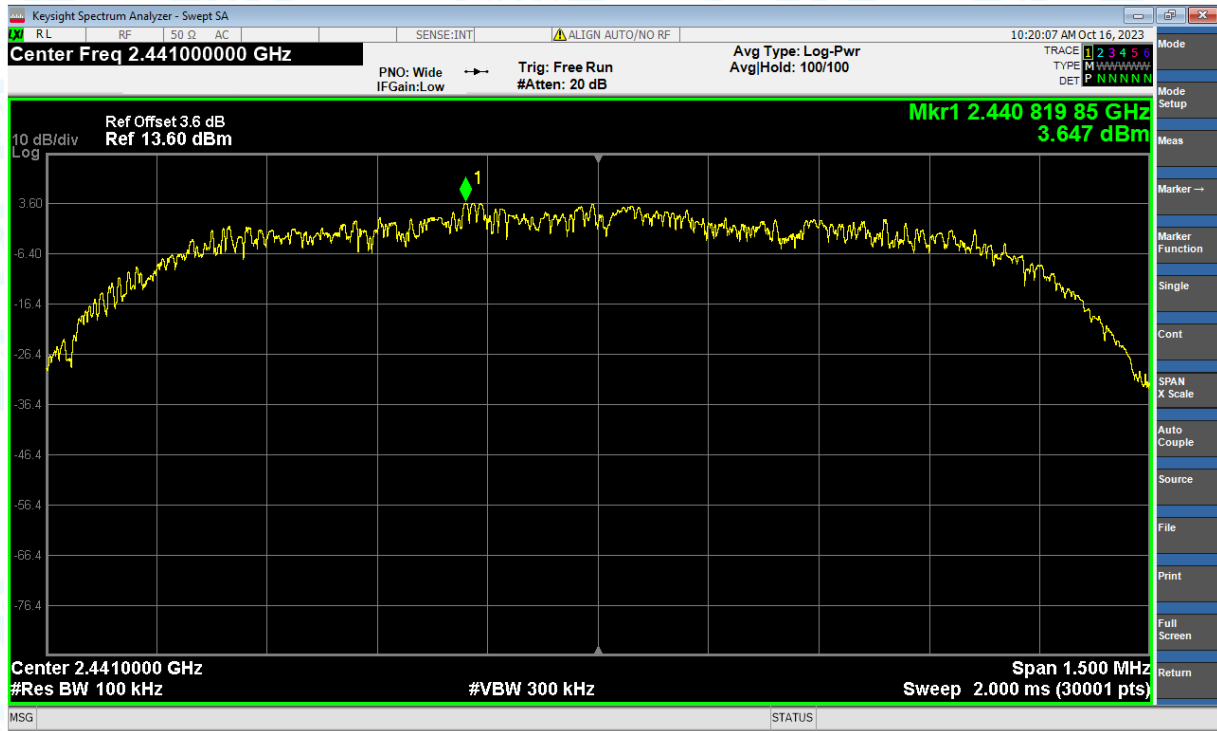


Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission

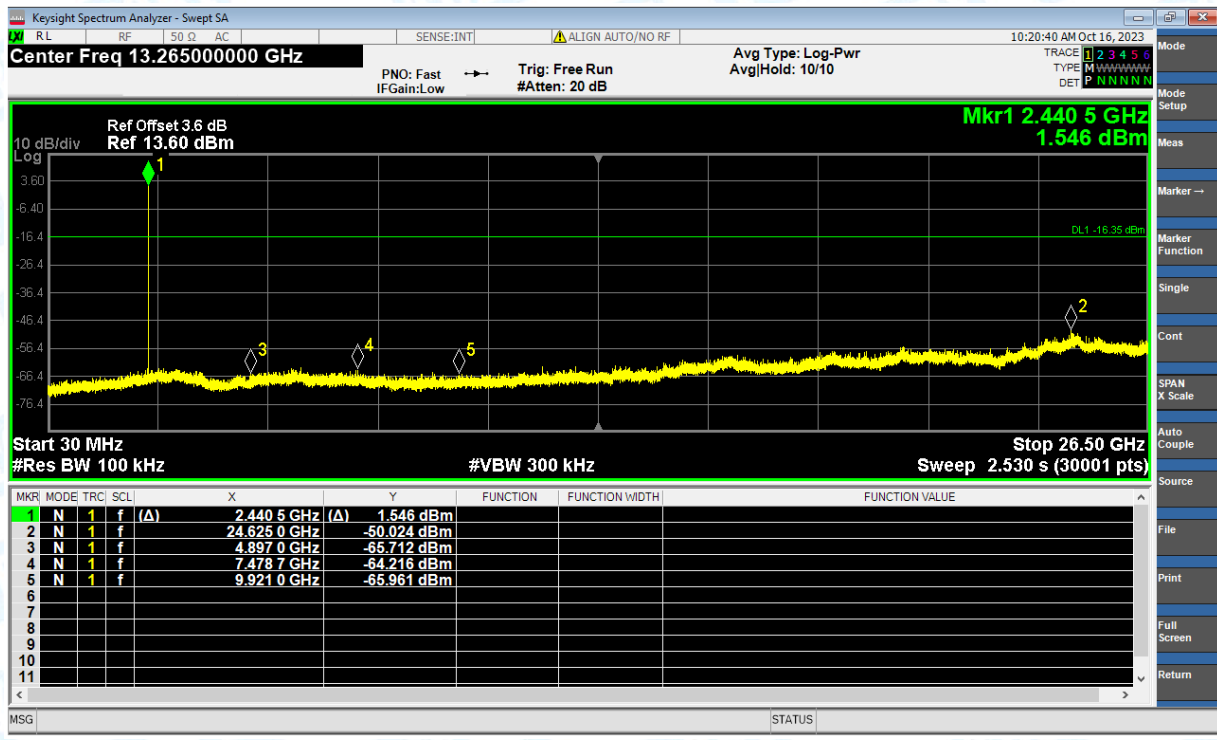




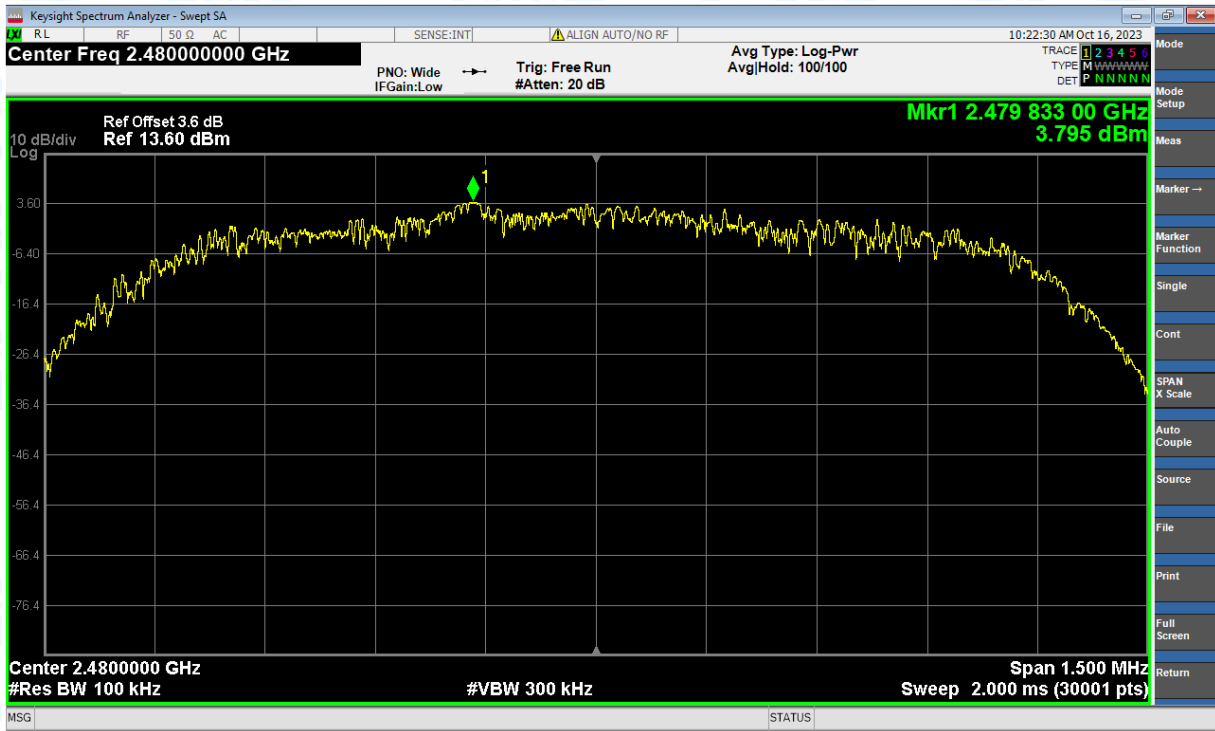
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



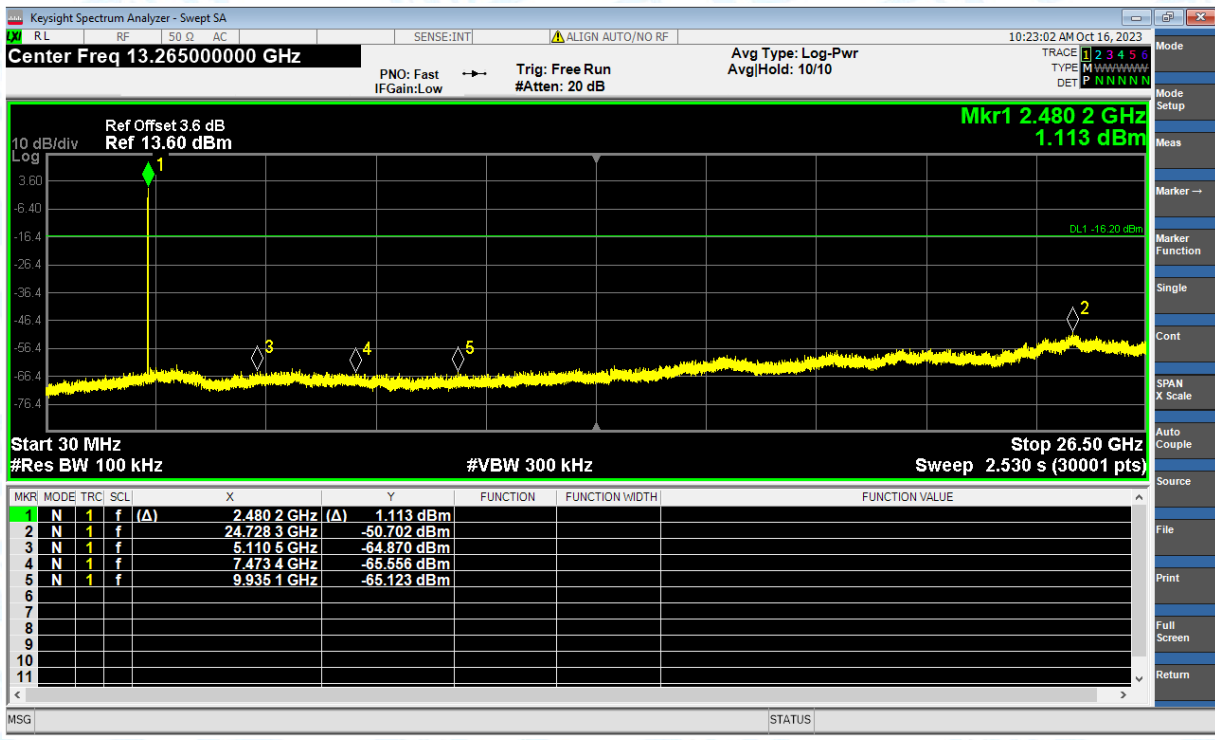
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission



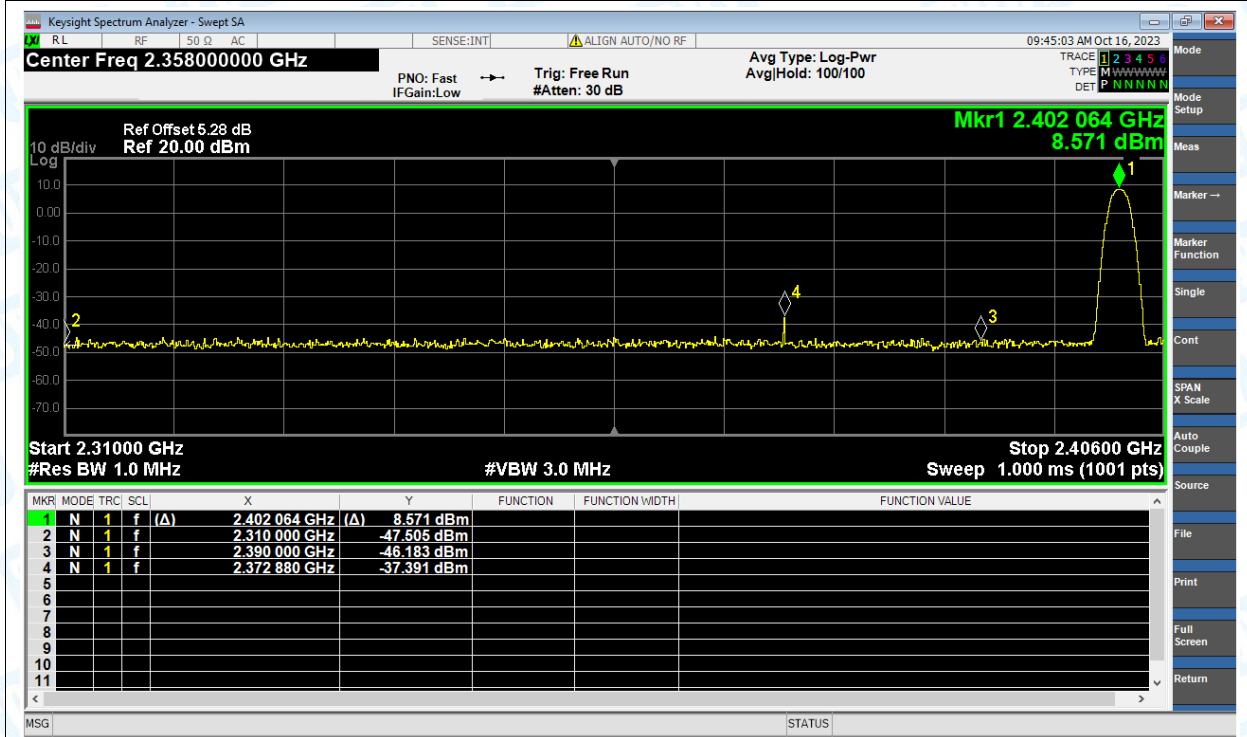


## 8. Restrict Band

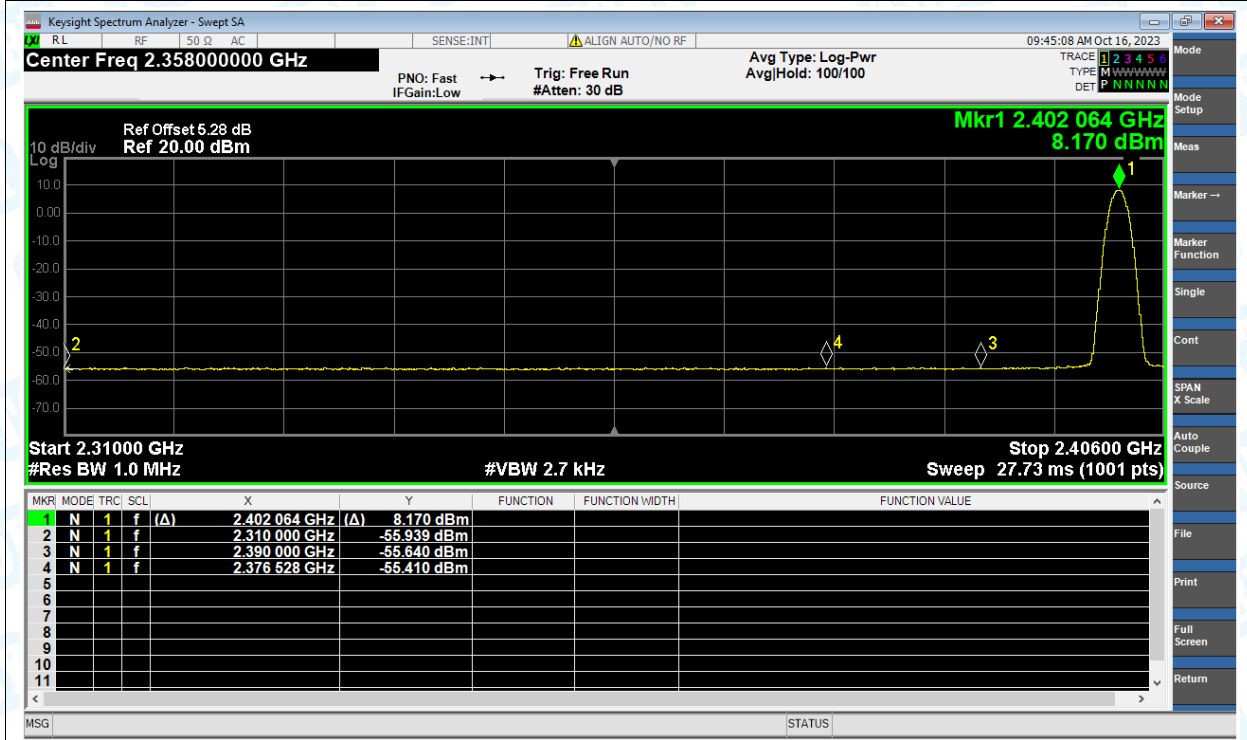
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-47.5	2	49.76	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-55.94	2	41.32	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2372.88	-37.39	2	59.87	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2376.528	-55.41	2	41.85	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-46.29	2	50.97	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-55.95	2	41.31	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-46.35	2	50.91	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-55.08	2	42.18	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2497	-43.56	2	53.7	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.92	-54.93	2	42.33	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-45.74	2	51.52	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-55.53	2	41.73	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-46.9	2	50.36	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-55.86	2	41.4	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2322.192	-43.55	2	53.71	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2338.32	-55.28	2	41.98	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-46.03	2	51.23	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-55.8	2	41.46	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-47.48	2	49.78	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-55.19	2	42.07	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2487.736	-24.92	2	72.34	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.704	-54.85	2	42.41	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-46.08	2	51.18	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.63	2	41.63	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-45.77	2	51.49	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-55.83	2	41.43	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2367.696	-39.39	2	57.87	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2332.656	-55.34	2	41.92	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-47.94	2	49.32	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-55.84	2	41.42	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-47.28	2	49.98	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-55.08	2	42.18	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2490.688	-43.59	2	53.67	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.728	-54.56	2	42.7	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-46.47	2	50.79	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.68	2	41.58	Average	54	Pass

Test Graphs

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

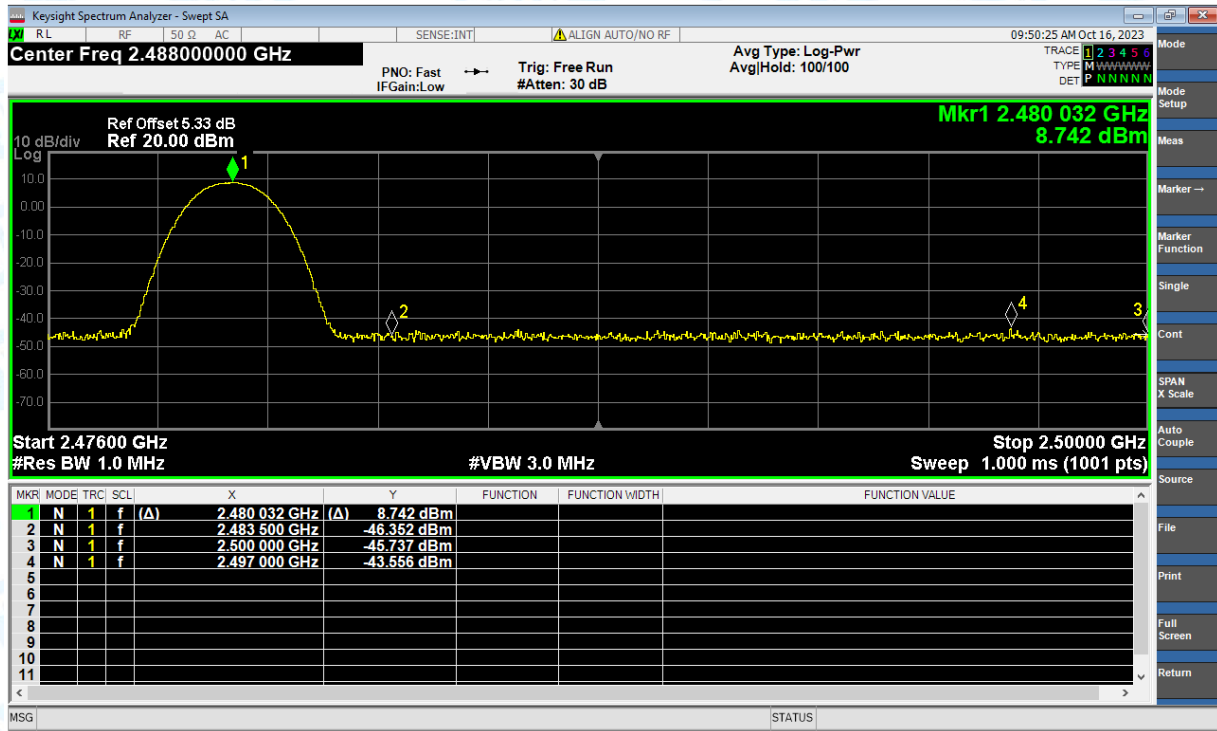


Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average

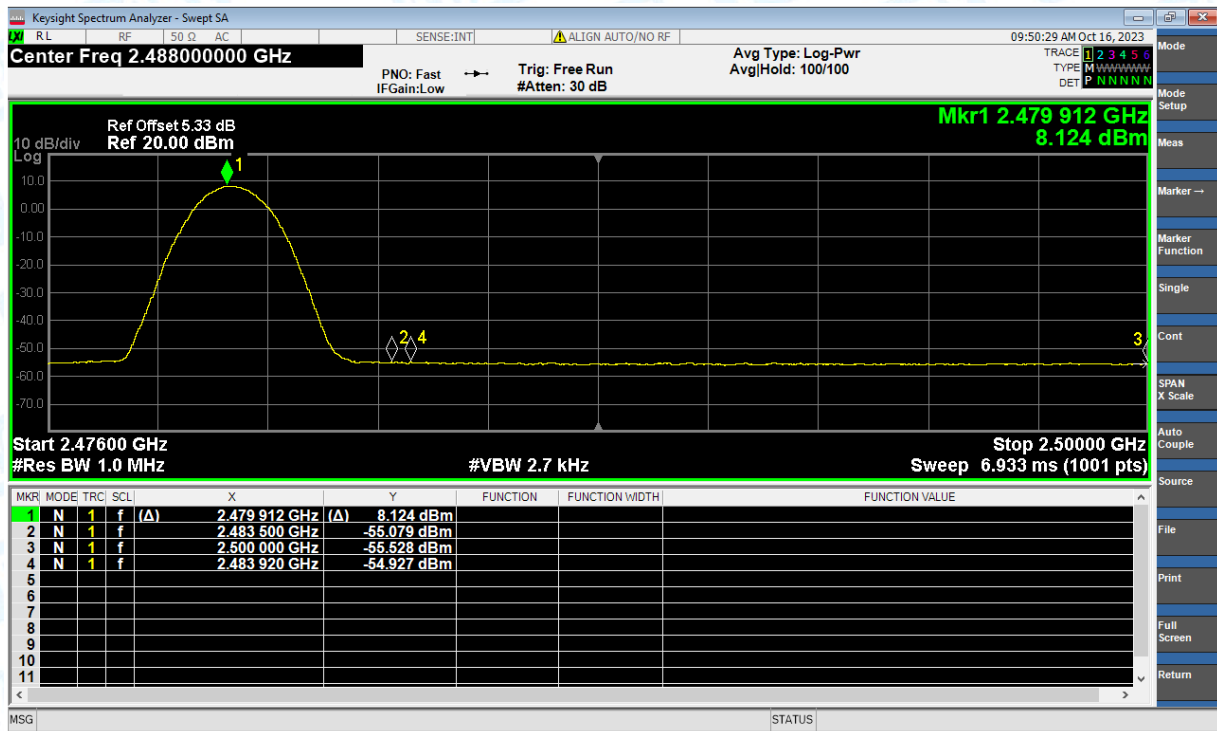




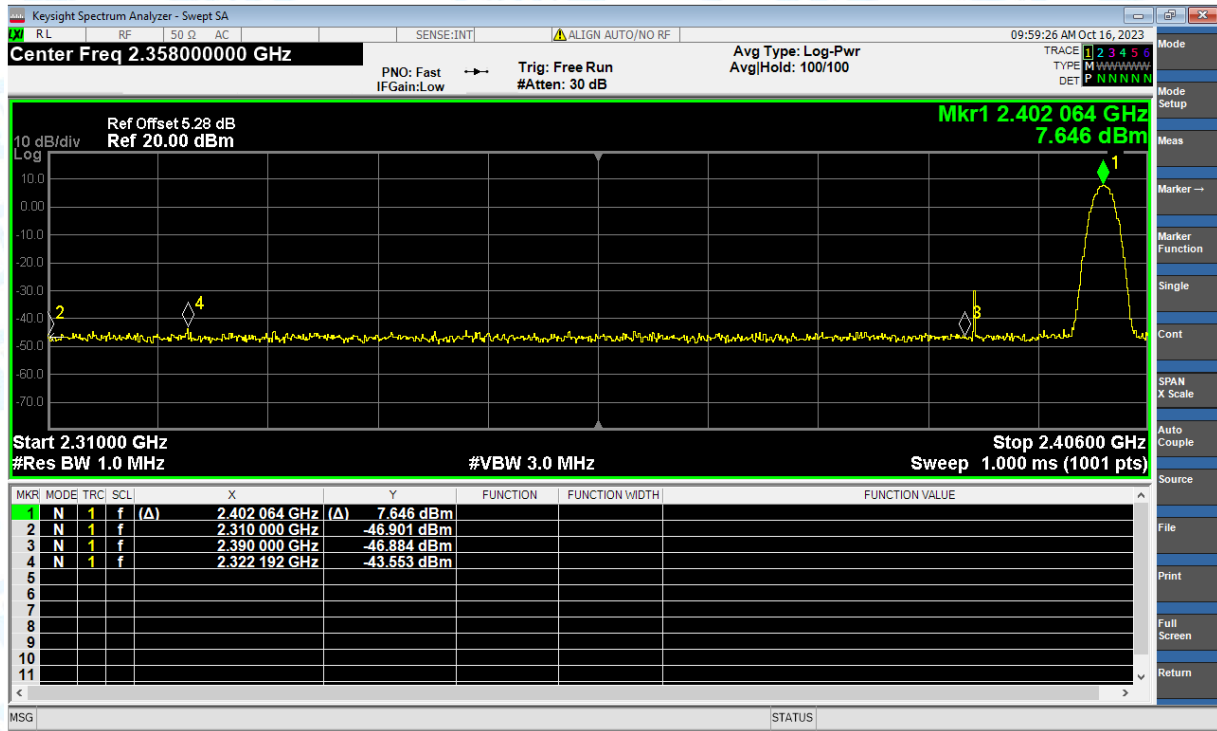
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



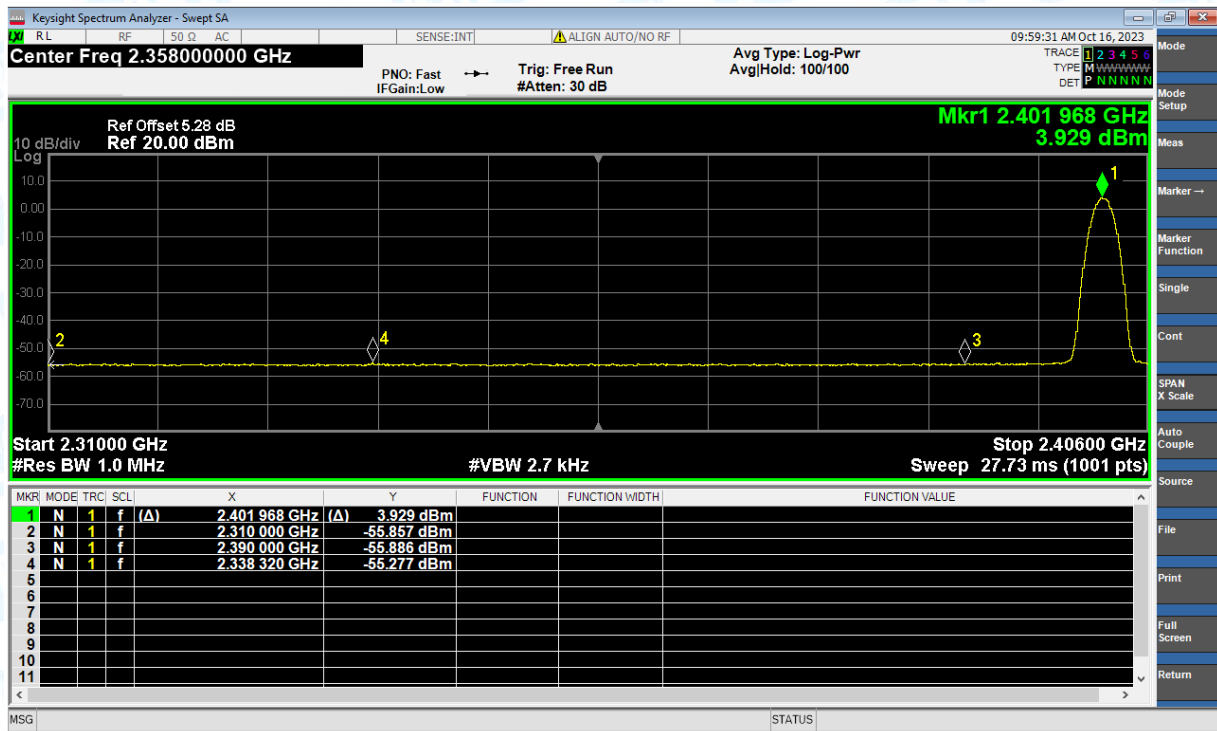
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



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

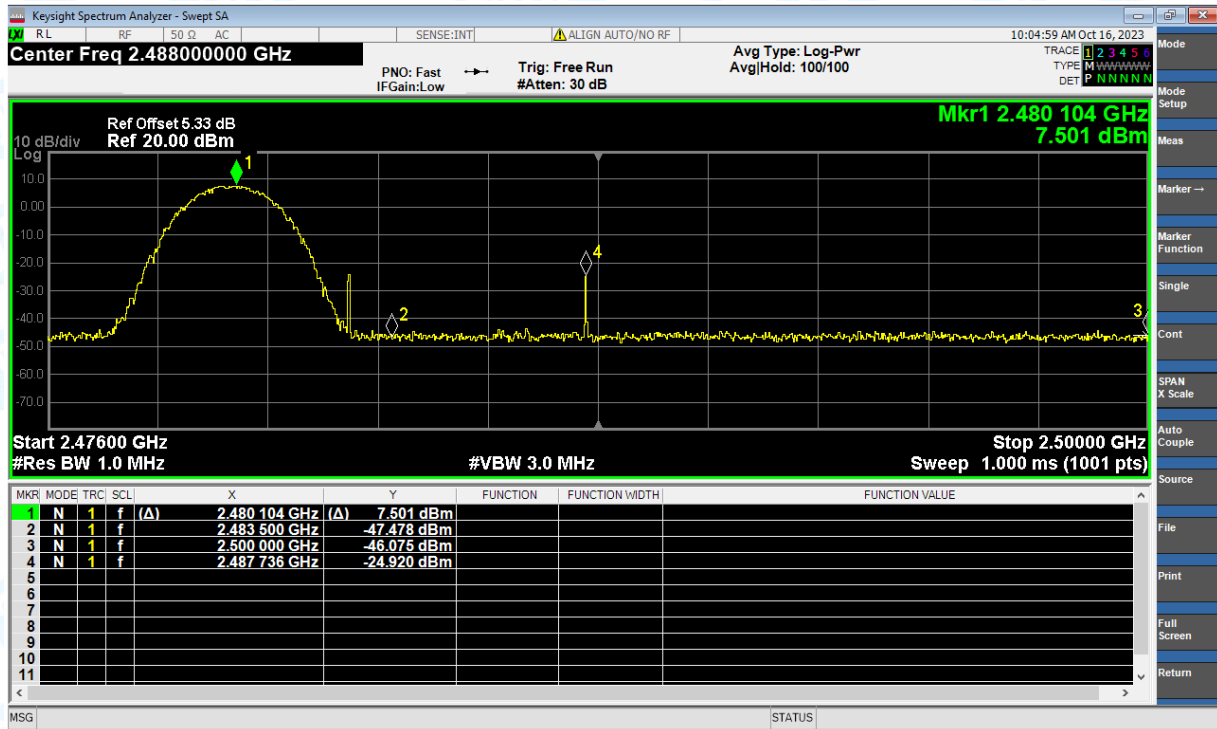


Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average

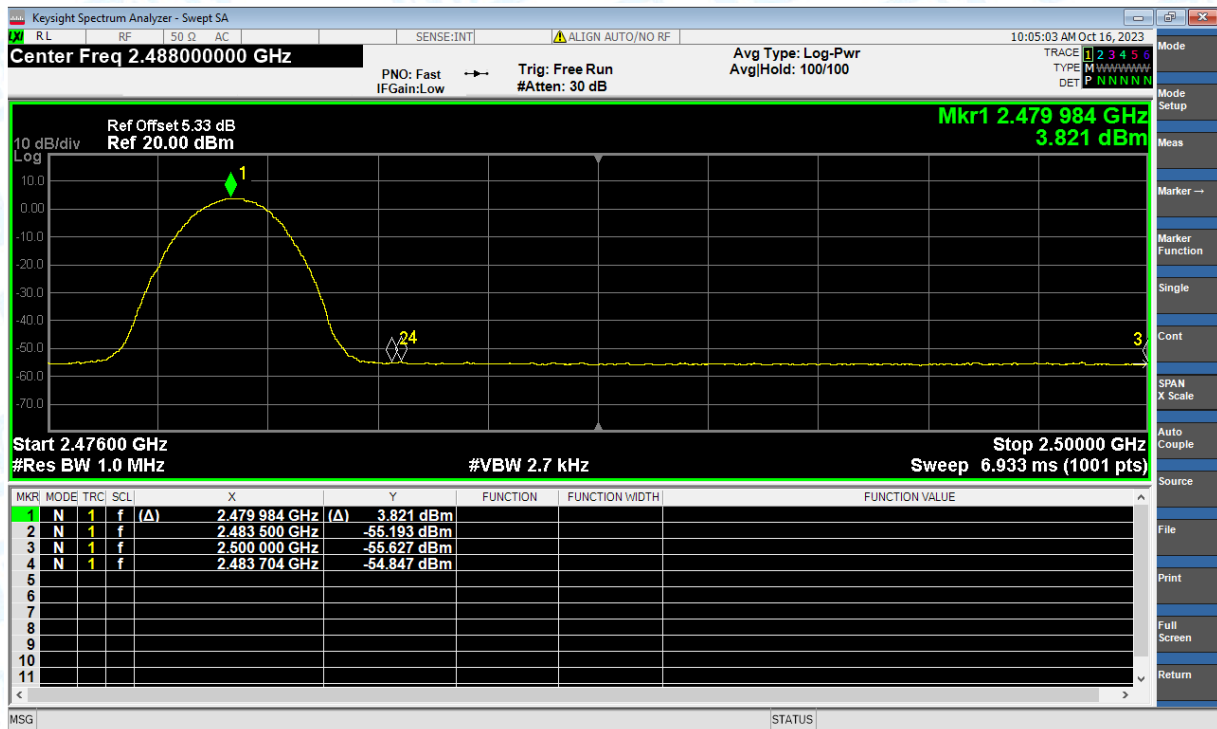




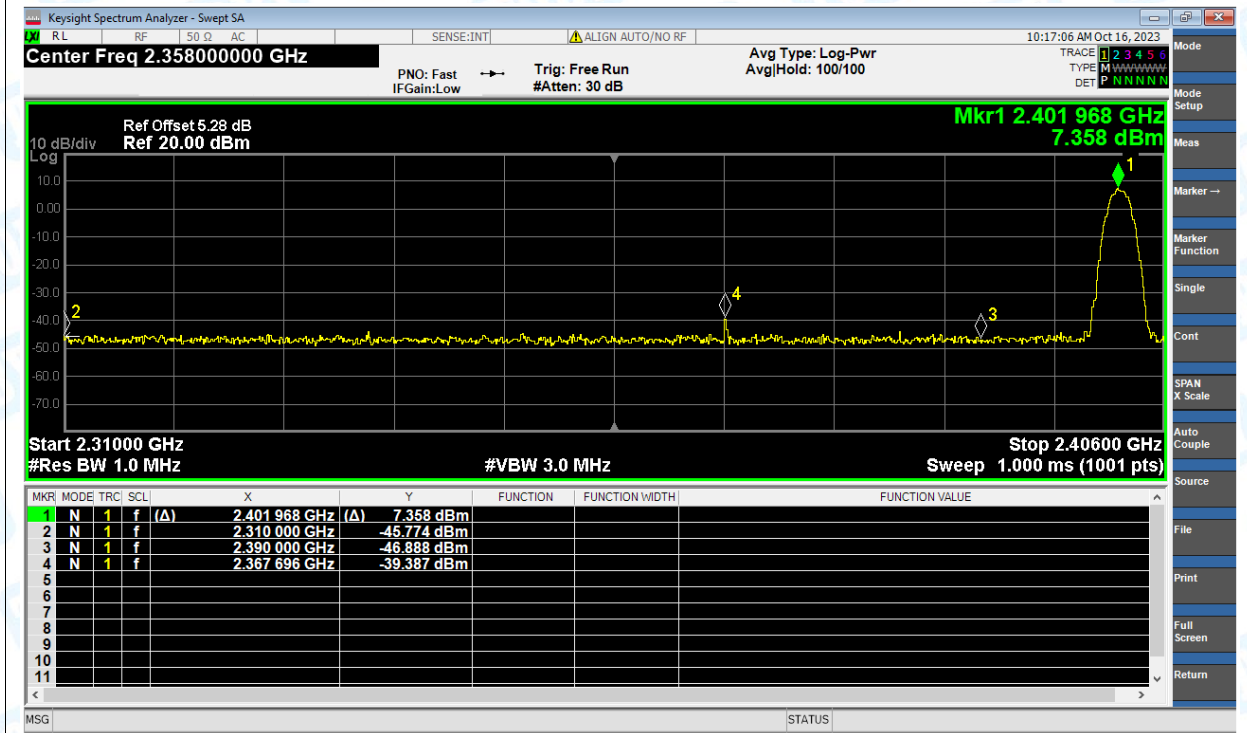
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



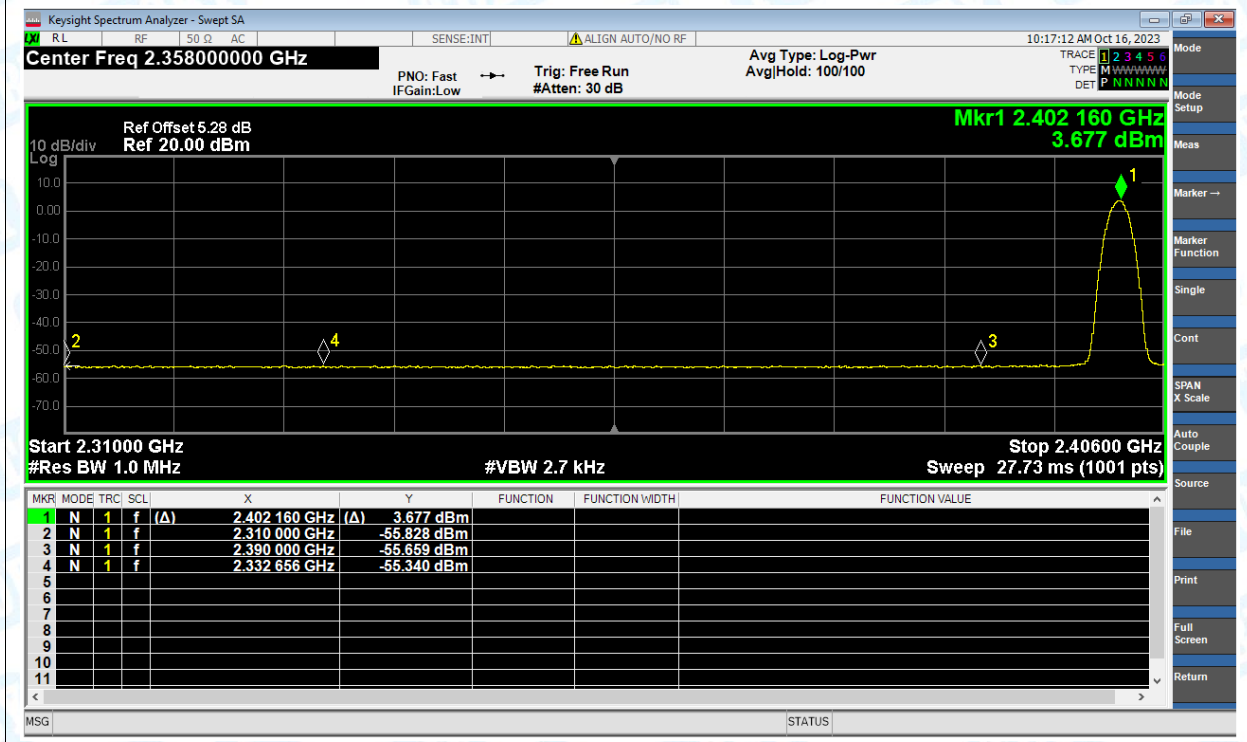
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



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

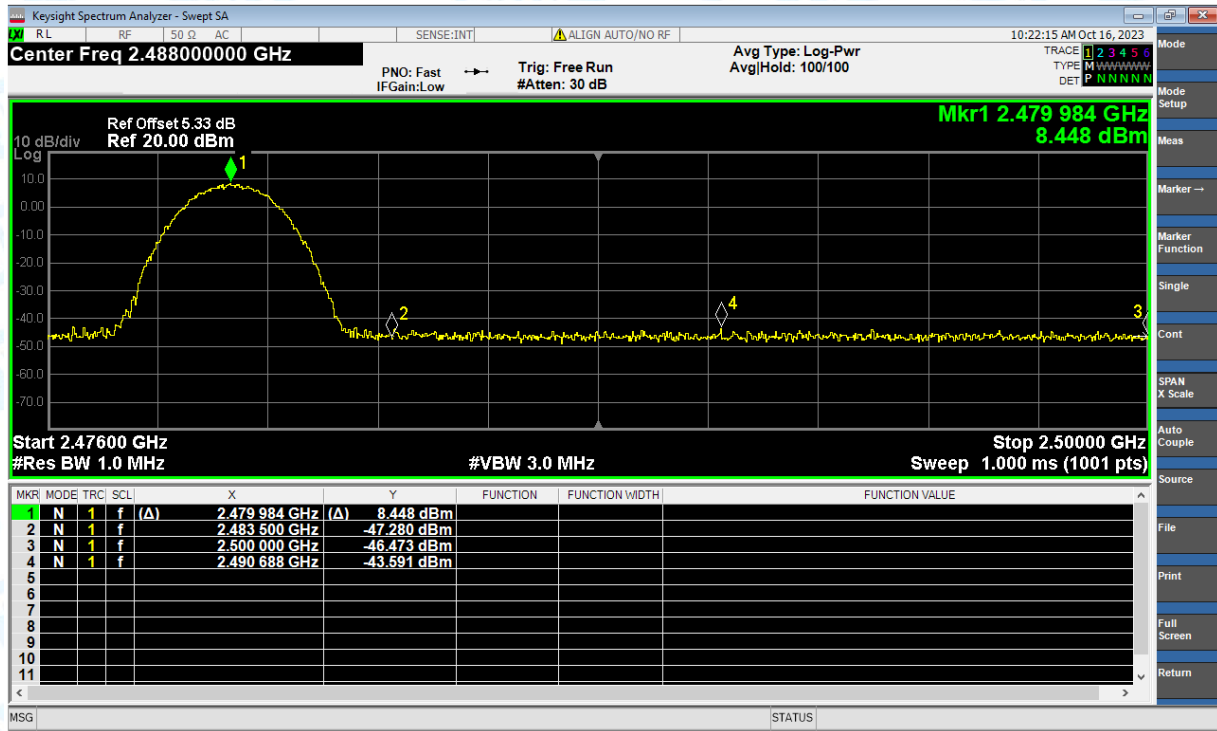


Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average

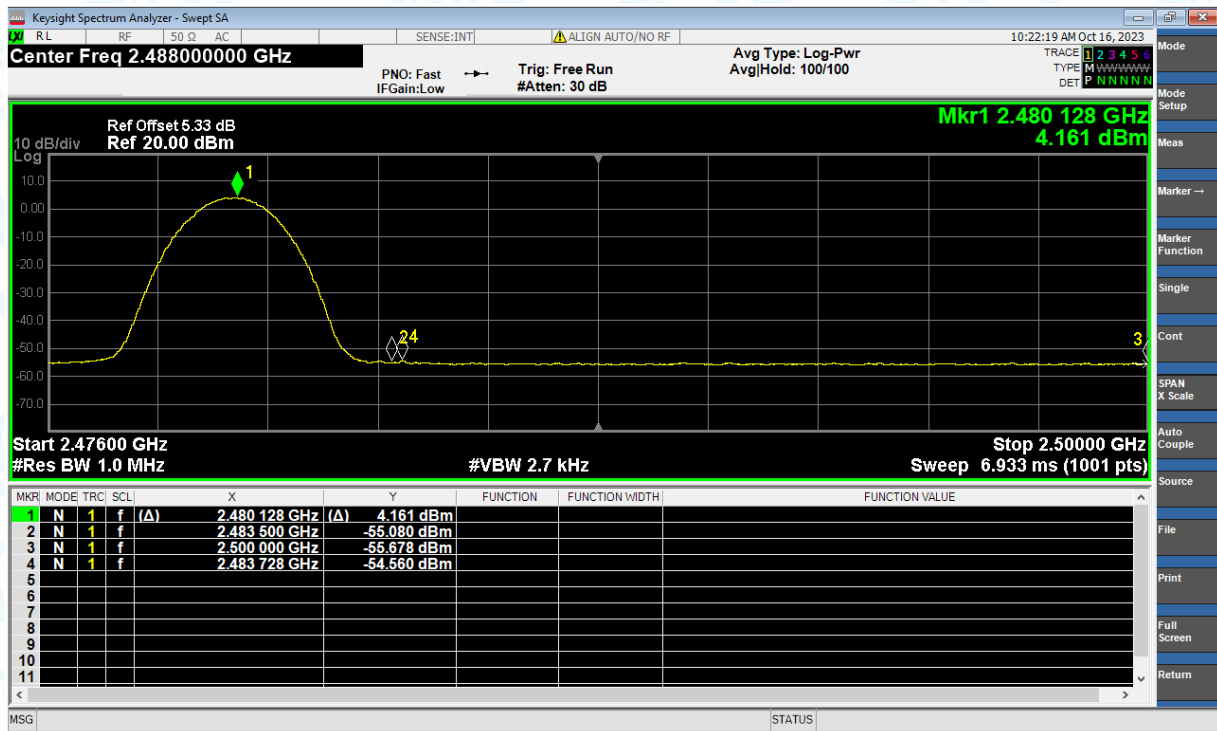




Restrict Band NVNT 3-DH1 2480MHz Ant1 No-Hopping Peak



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



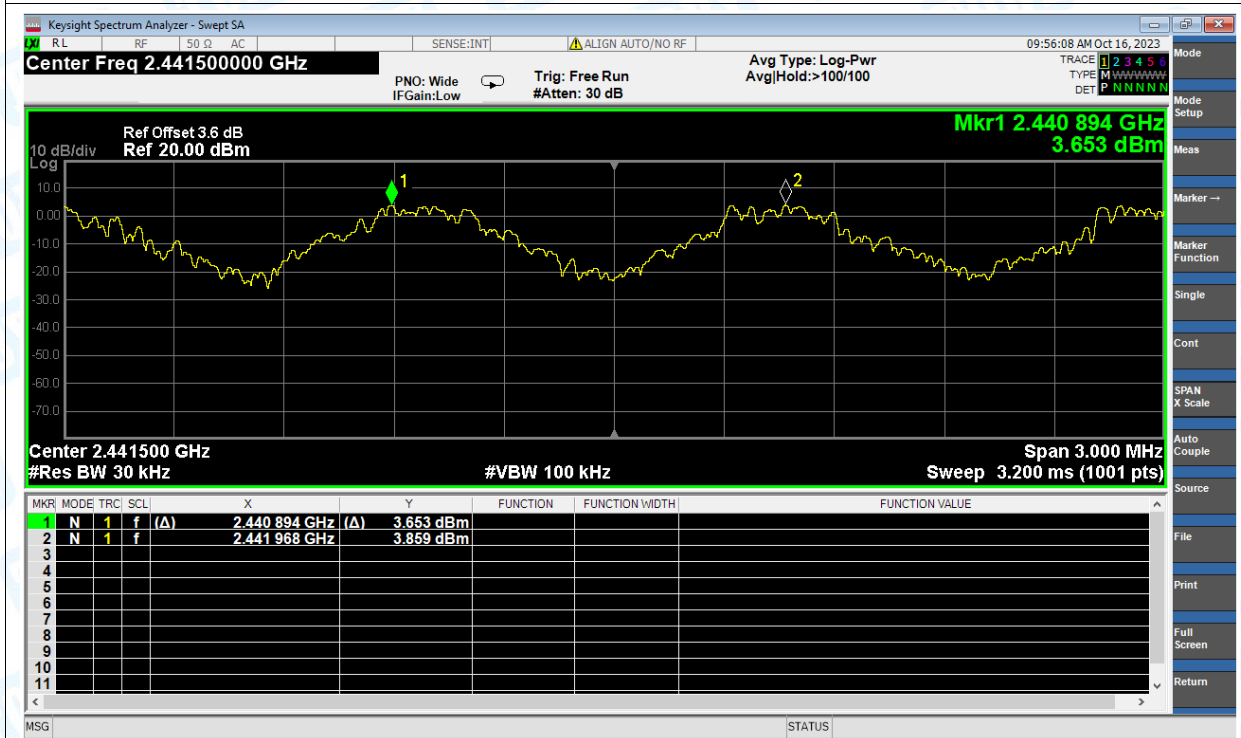
## 9. Carrier Frequencies Separation

Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.894	2441.968	1.074	0.520	Pass
NVNT	2-DH1	Ant1	2441.158	2442.157	0.999	0.847	Pass
NVNT	3-DH1	Ant1	2440.822	2442.001	1.179	0.847	Pass

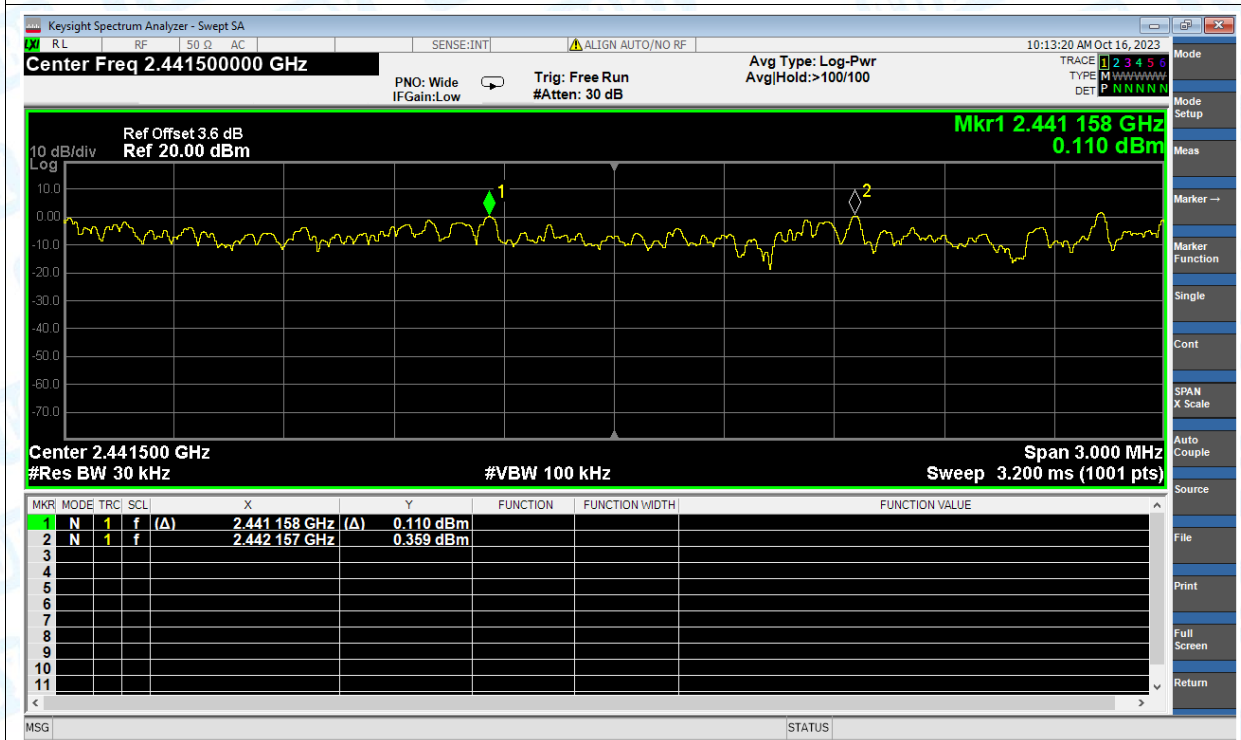


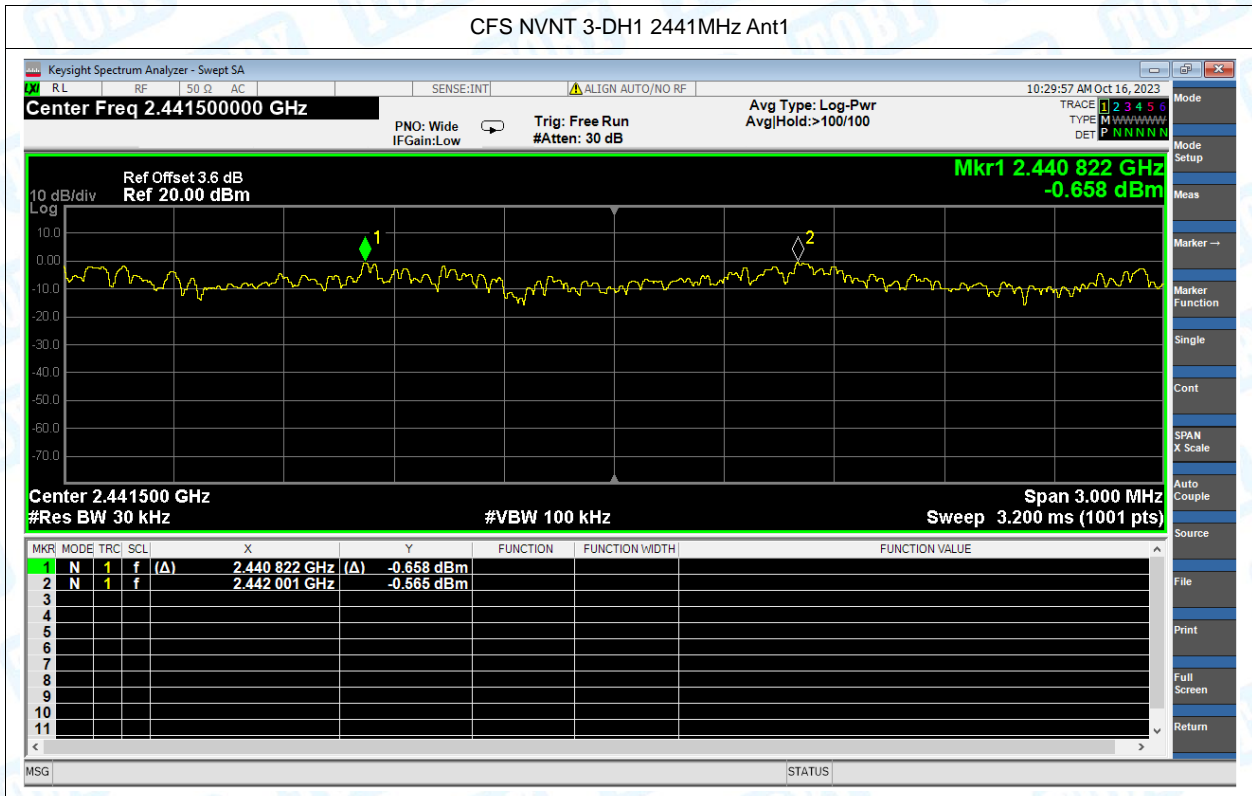
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1





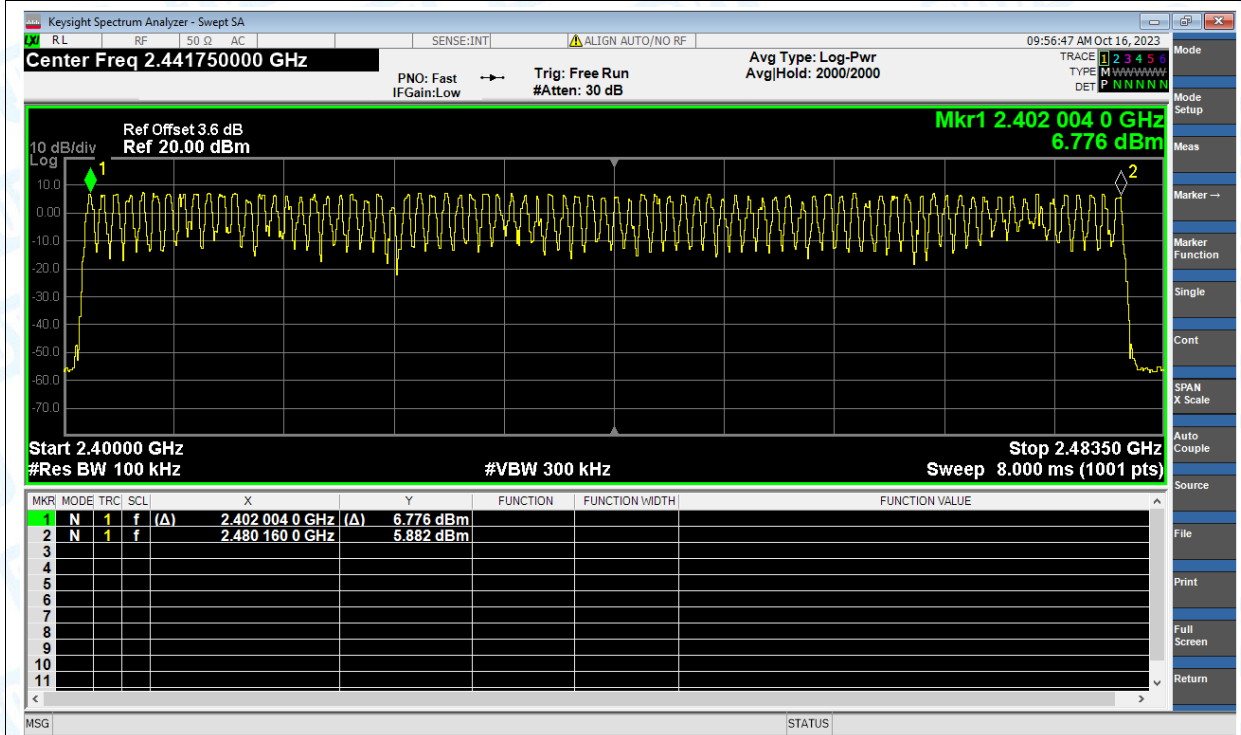


## 10. Number of Hopping Channel

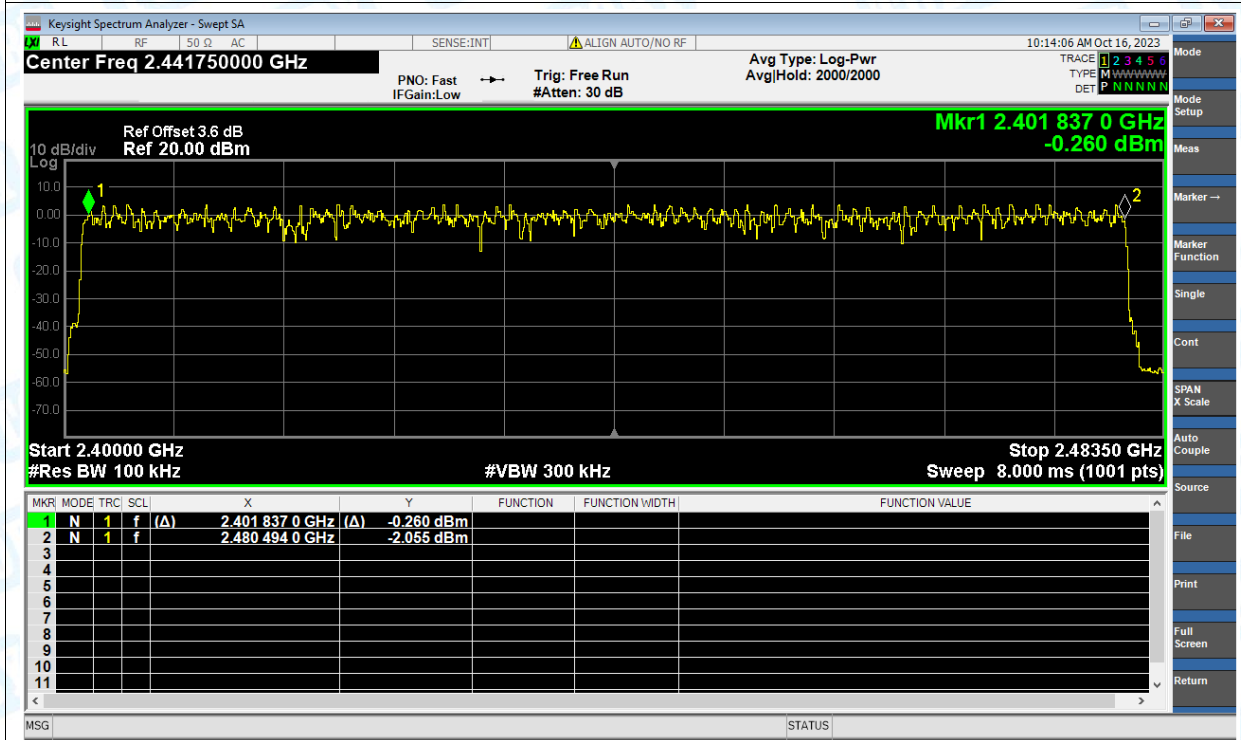
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

Test Graphs

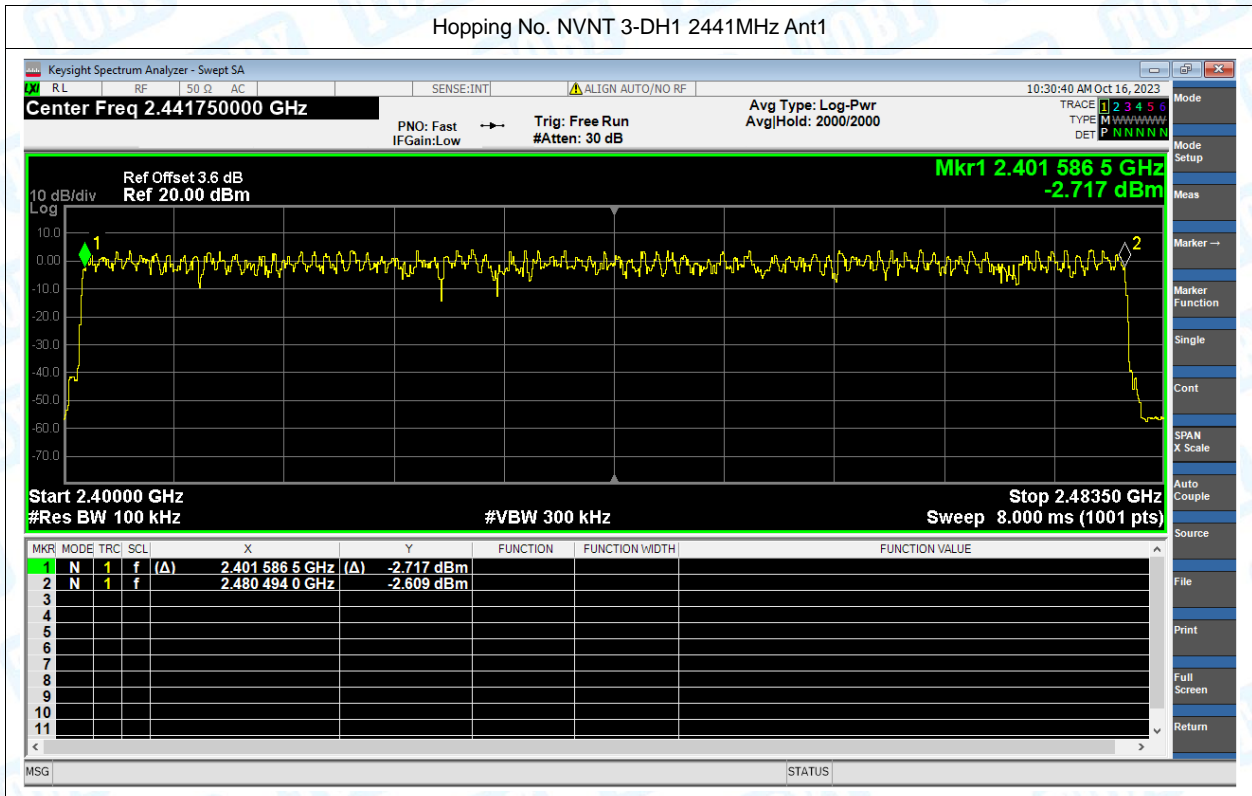
Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1







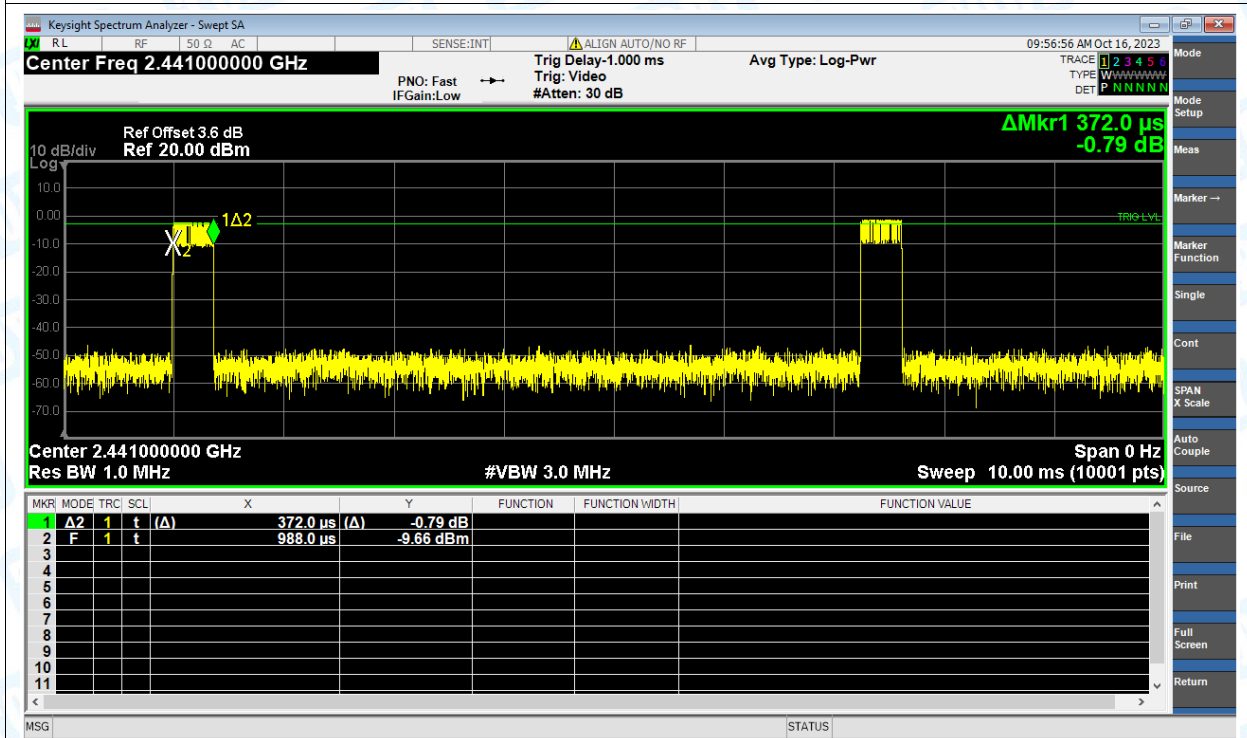
## 11. Dwell Time

Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.372	119.04	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.631	260.96	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.876	306.773	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.383	122.56	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.635	261.6	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.883	307.52	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.383	122.56	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.633	261.28	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.883	307.52	31600	400	Pass

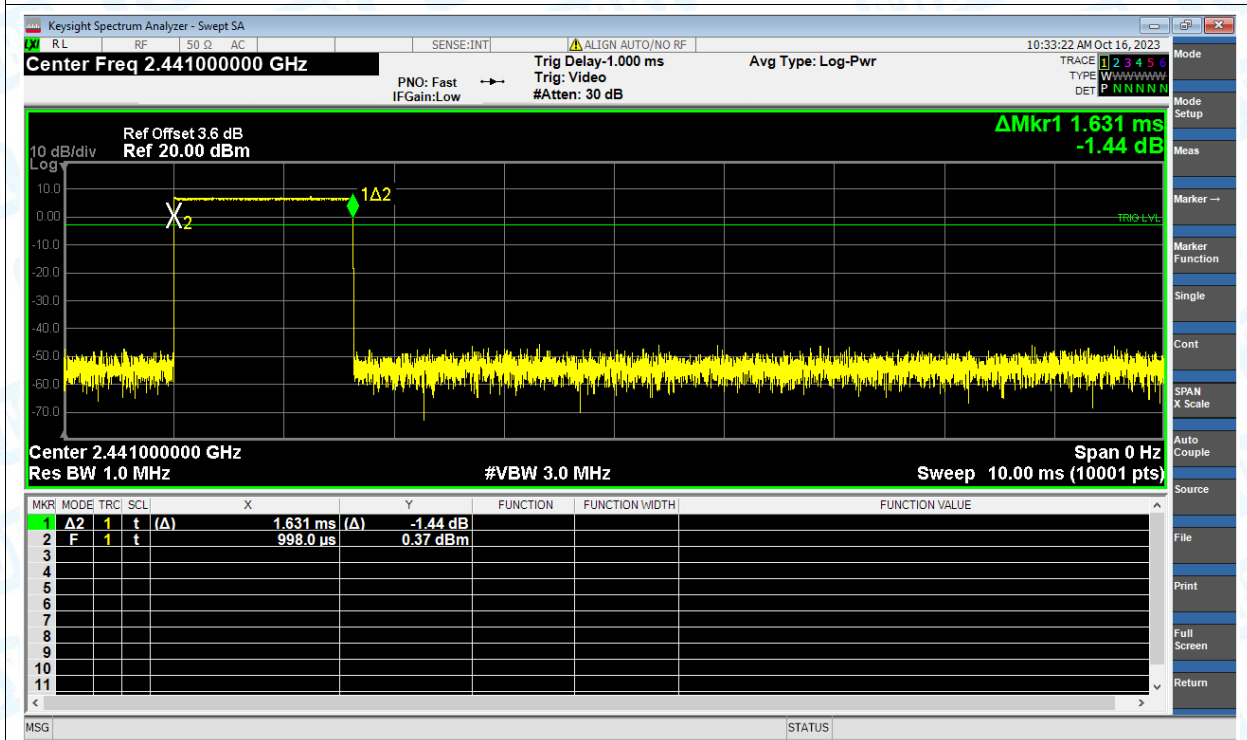


Test Graphs

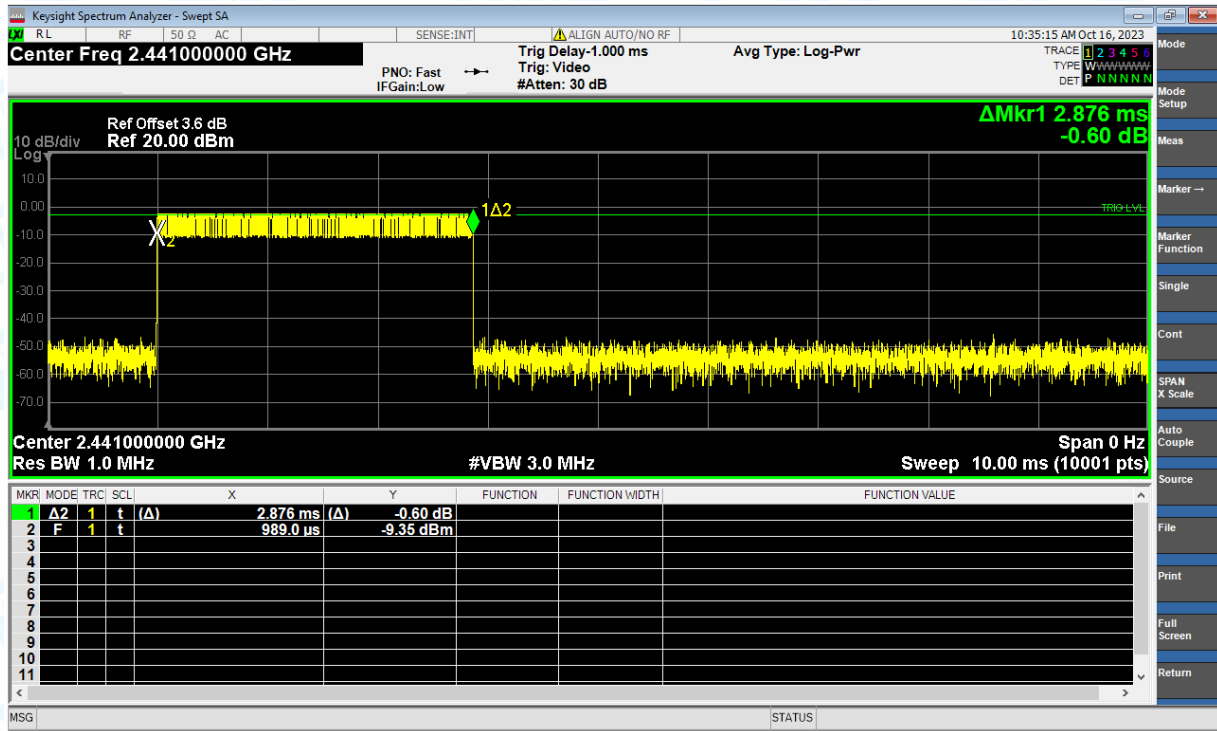
Dwell NVNT 1-DH1 2441MHz Ant1



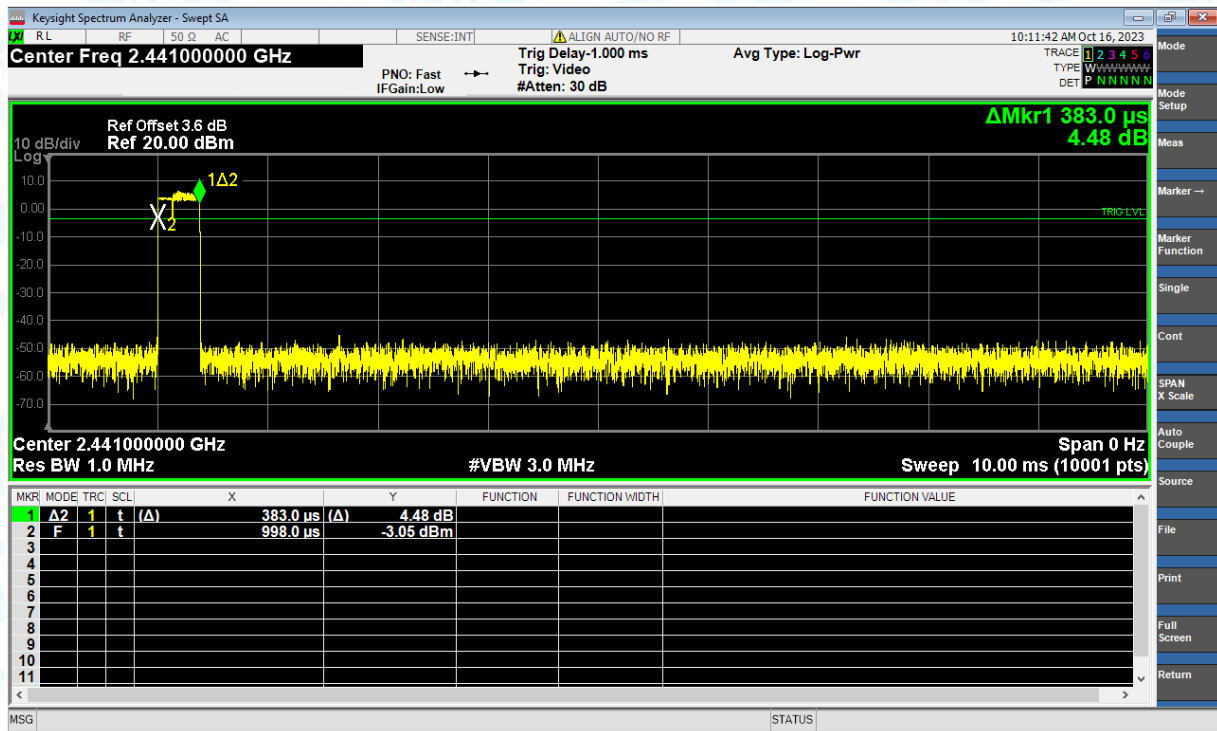
Dwell NVNT 1-DH3 2441MHz Ant1



Dwell NVNT 1-DH5 2441MHz Ant1

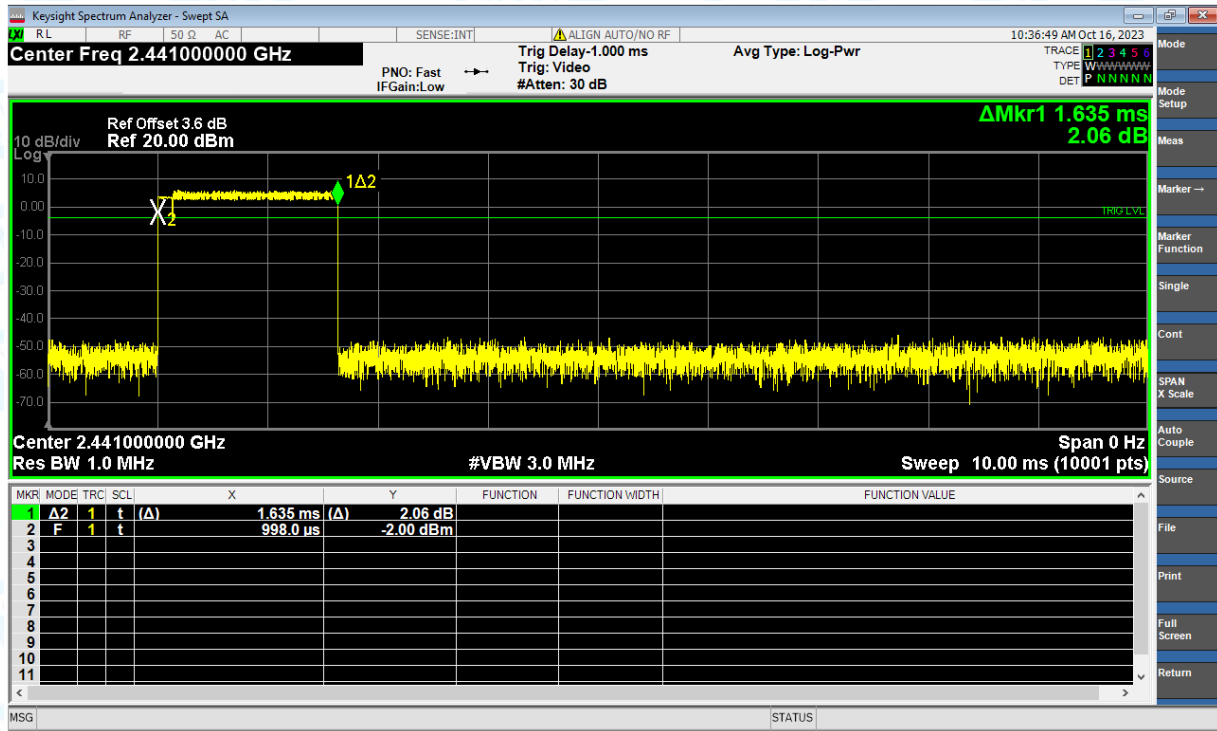


Dwell NVNT 2-DH1 2441MHz Ant1

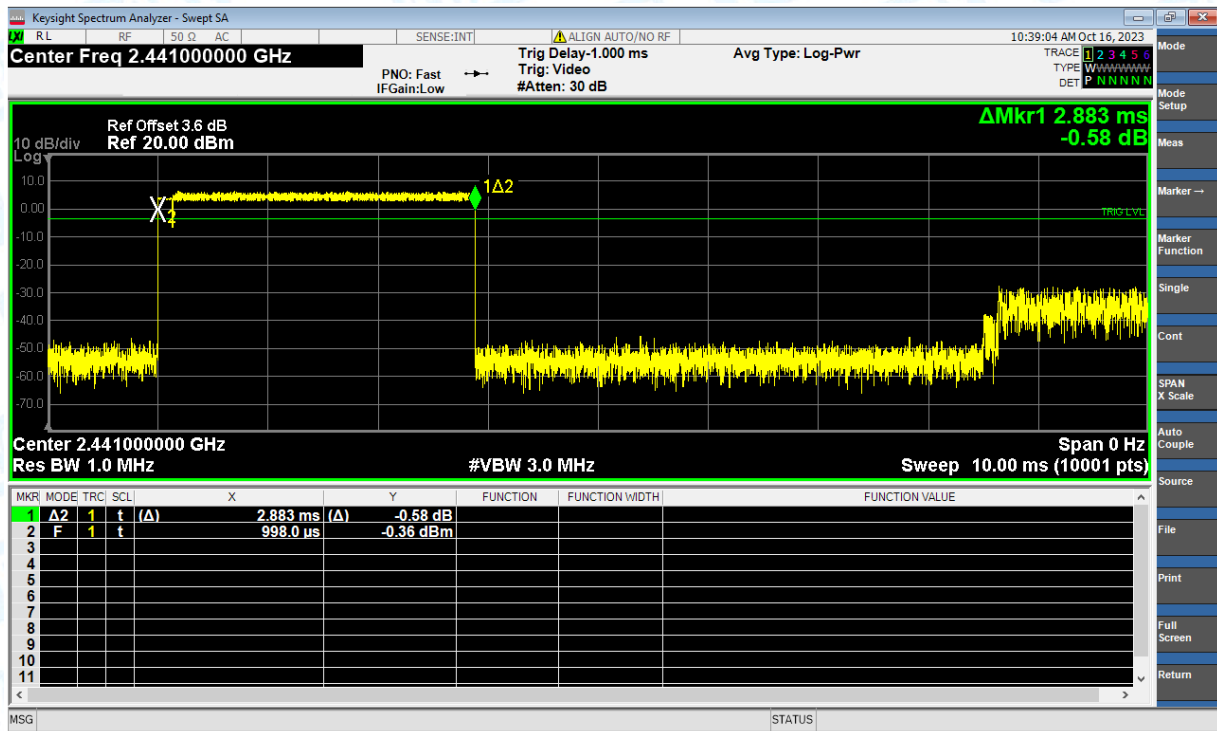




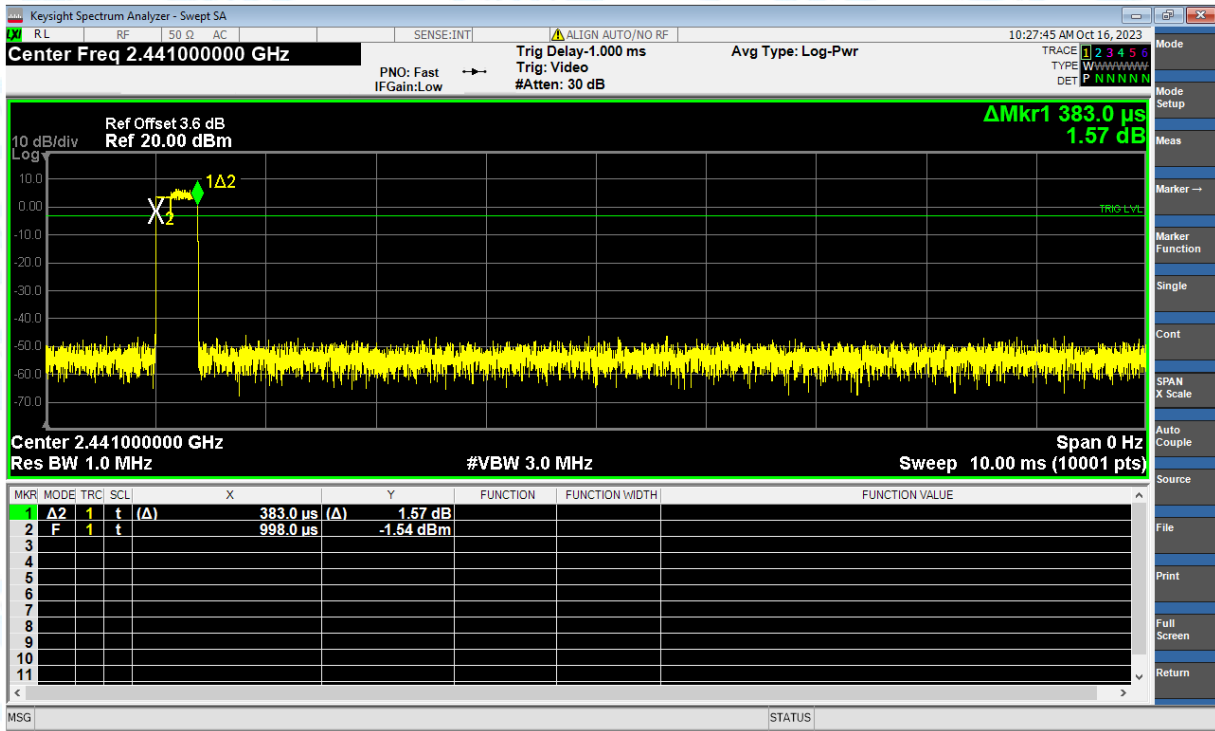
Dwell NVNT 2-DH3 2441MHz Ant1



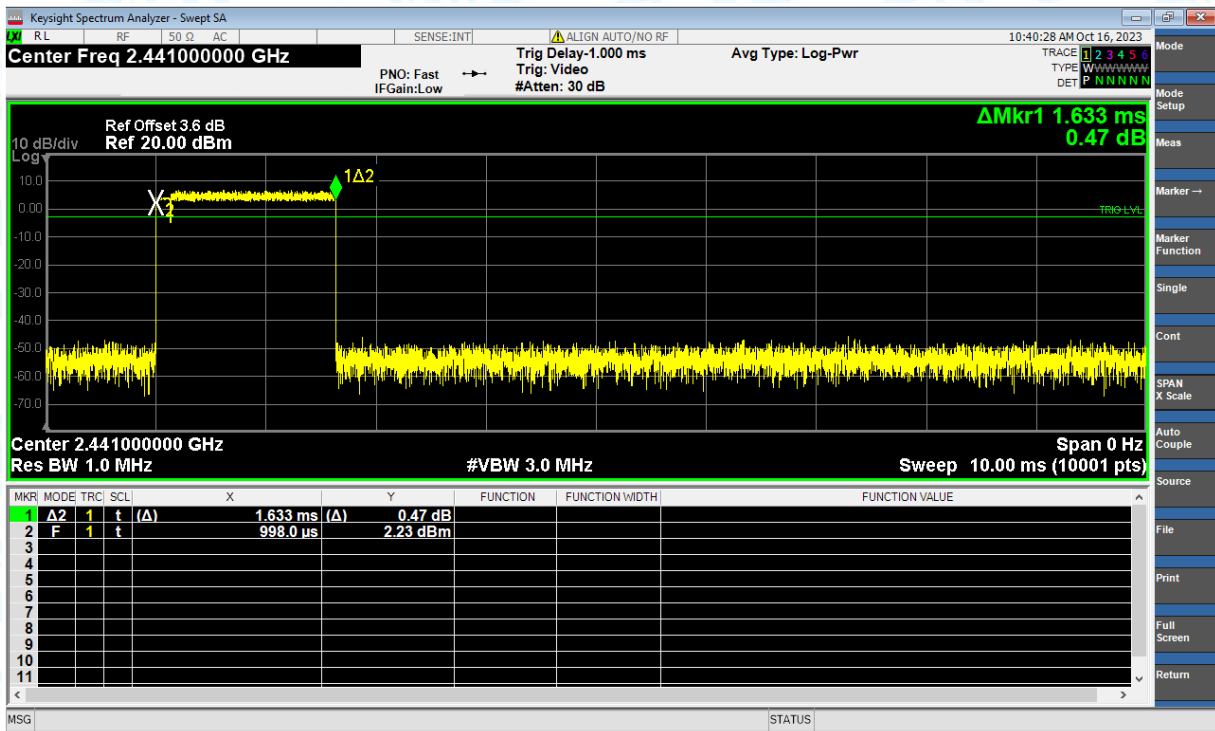
Dwell NVNT 2-DH5 2441MHz Ant1



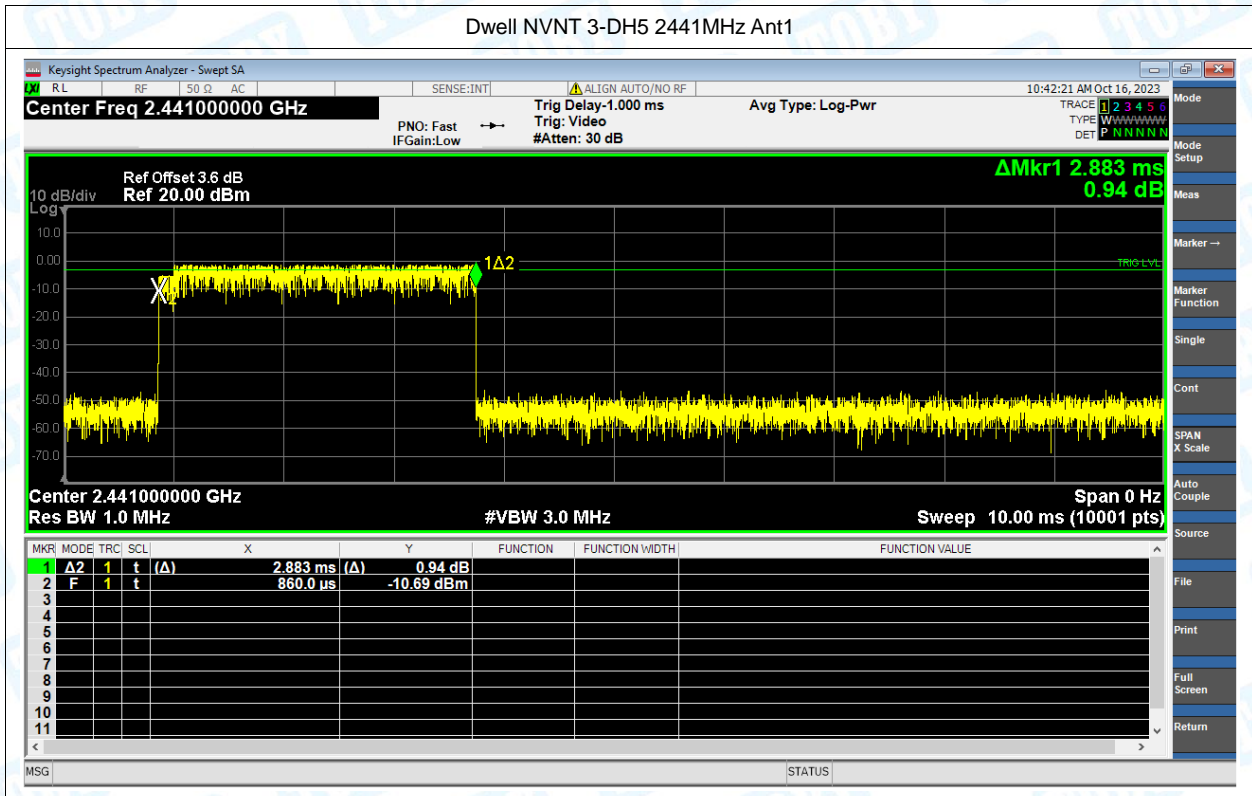
Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1







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