

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

General Description of EUT	
<b>Product Name:</b>	Galaxy projector
<b>Test Model:</b>	GP06
<b>Sample ID:</b>	202307-0028-5-2#
Environmental Conditions	
<b>Temperature:</b>	25°C
<b>Relative Humidity:</b>	55%
<b>Test Voltage:</b>	DC 5V
<b>Test Engineer:</b>	Huang jian ping
Note: For a more detailed features description, please refer to the report TBR-C-202307-0028-111 The report only show the worst case data.	

## Contents

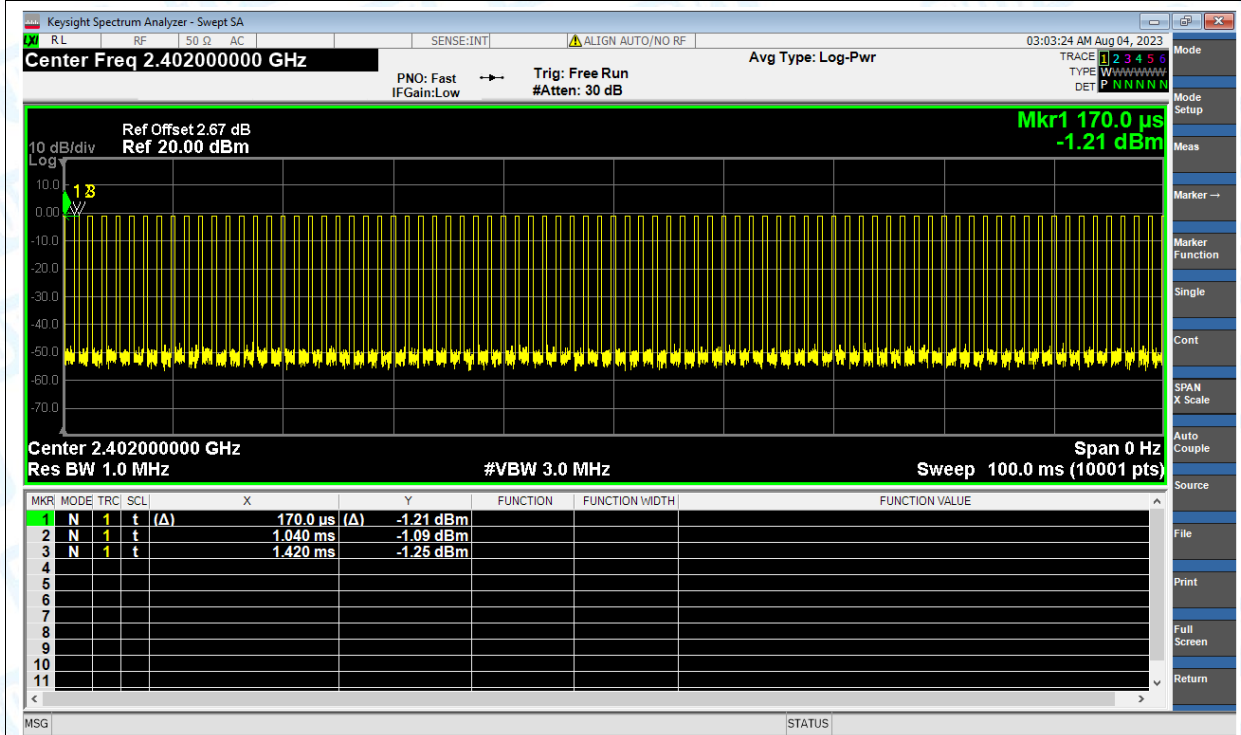
1. Duty Cycle.....	3
2. Maximum Conducted Output Power.....	9
3. -20dB Bandwidth.....	18
4. Occupied Channel Bandwidth.....	24
5. Band Edge.....	30
6. Band Edge(Hopping).....	37
7. Conducted RF Spurious Emission.....	44
8. Restrict Band.....	54
9. Carrier Frequencies Separation.....	61
10. Number of Hopping Channel.....	64
11. Dwell Time.....	67

## 1. Duty Cycle

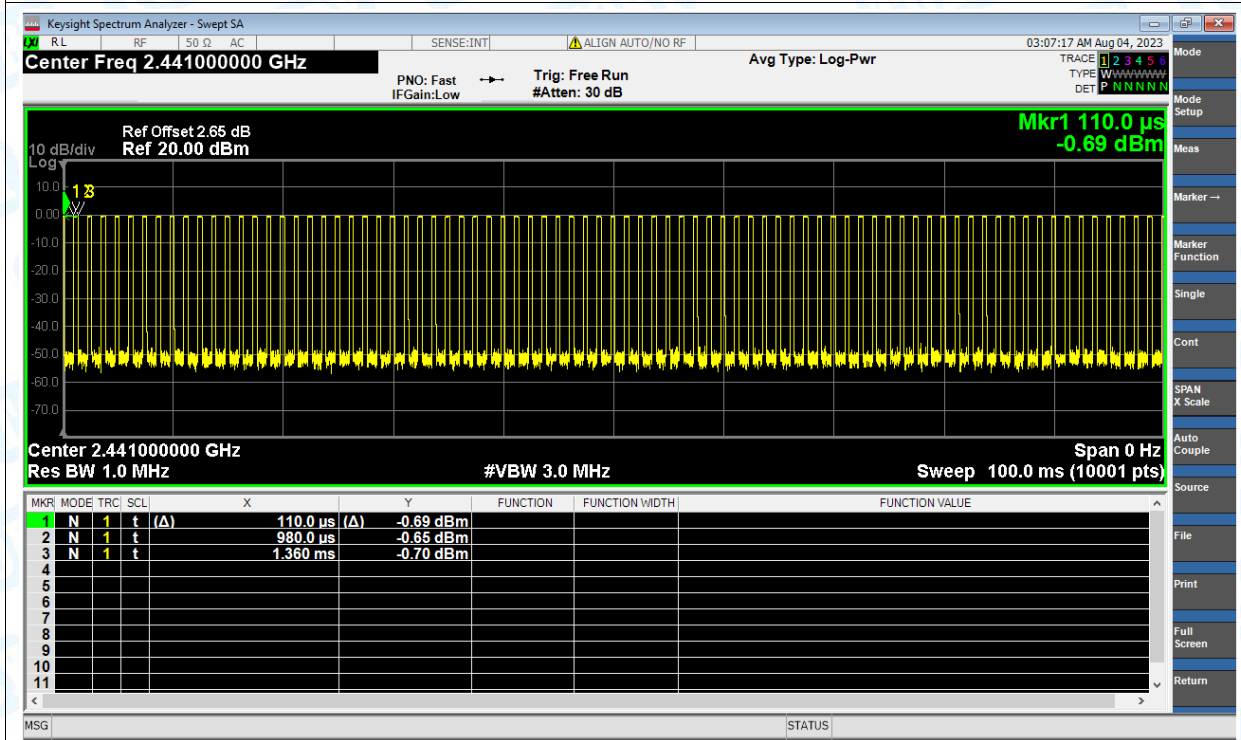
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2441	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2480	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2480	Ant1	31.2	5.06	2.56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

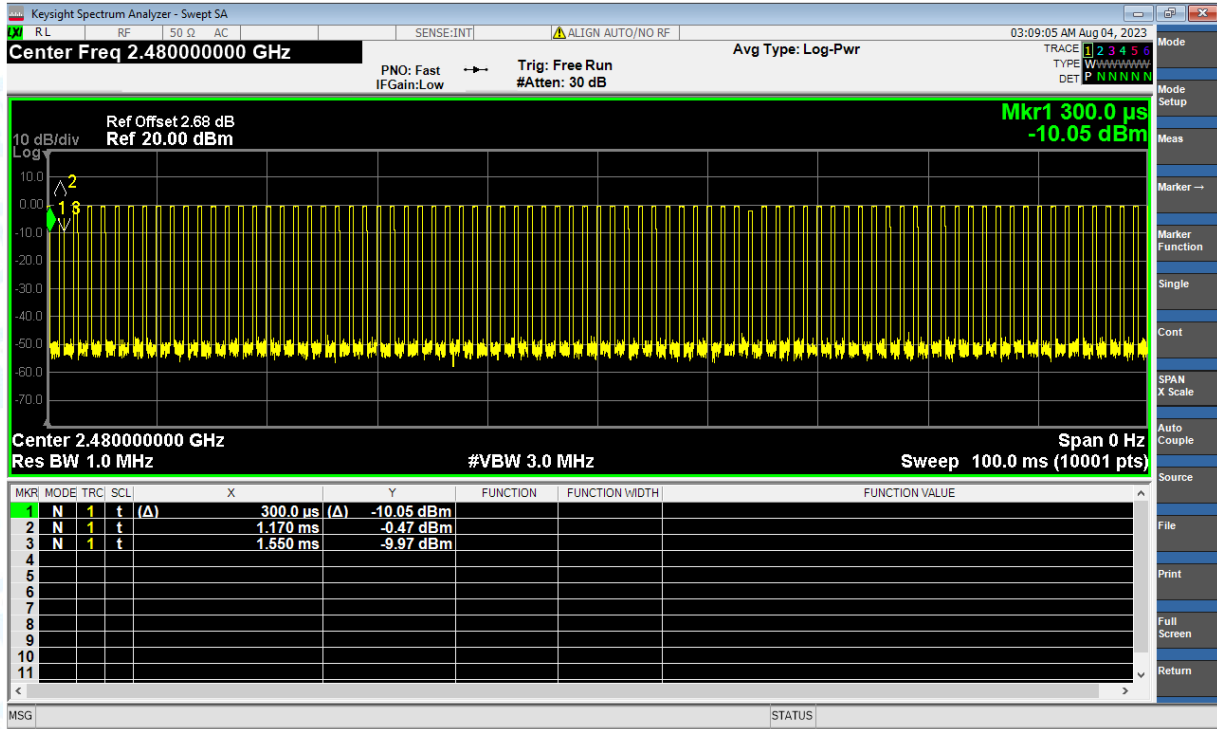
Duty Cycle NVNT 1-DH1 2402MHz Ant1



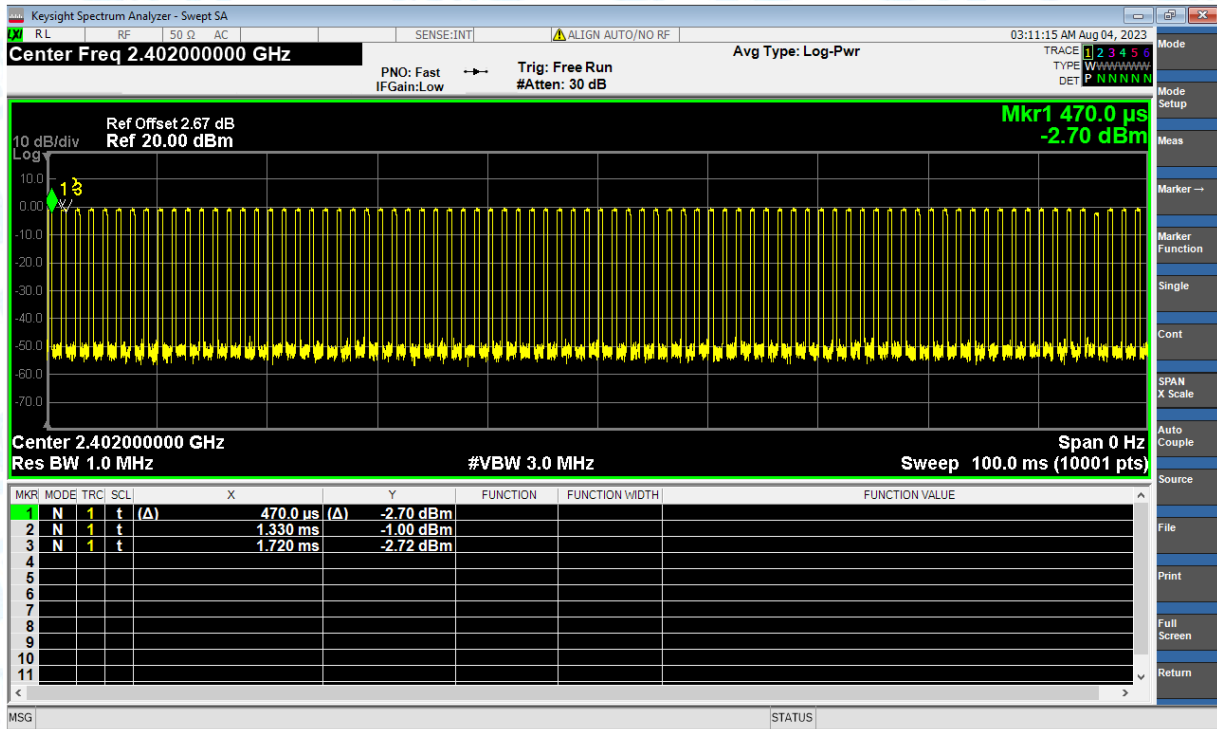
Duty Cycle NVNT 1-DH1 2441MHz Ant1



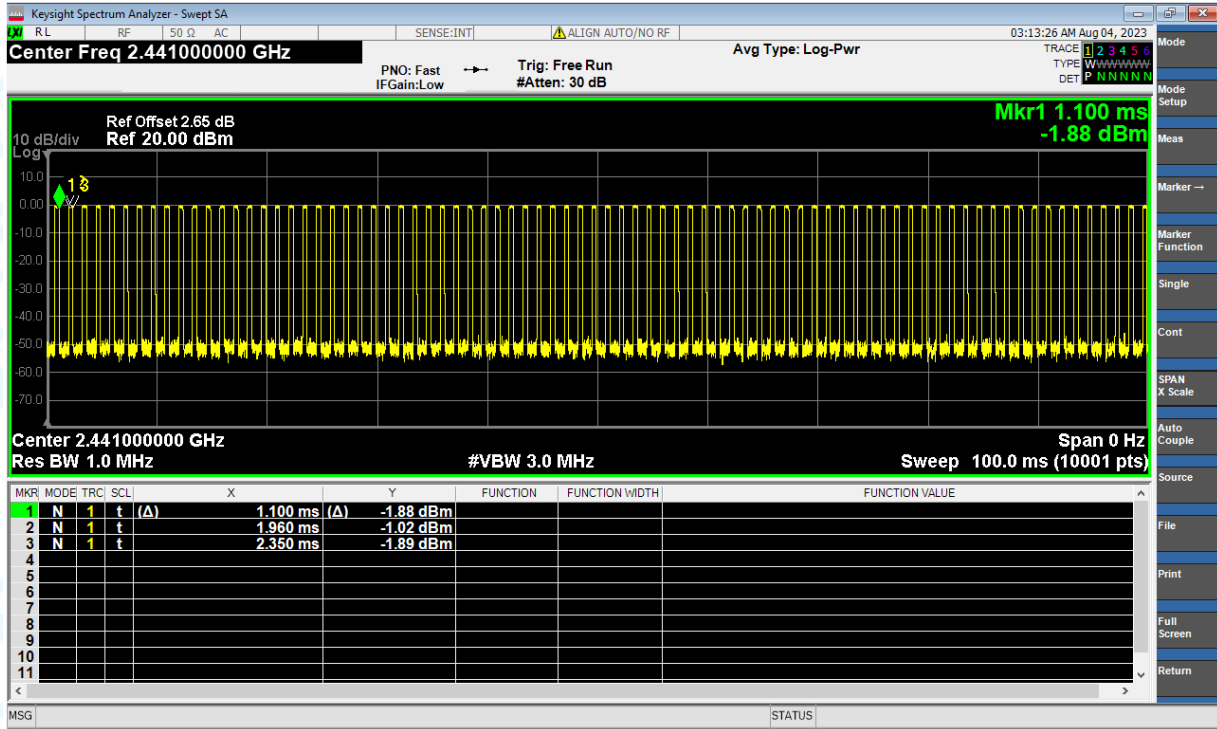
Duty Cycle NVNT 1-DH1 2480MHz Ant1



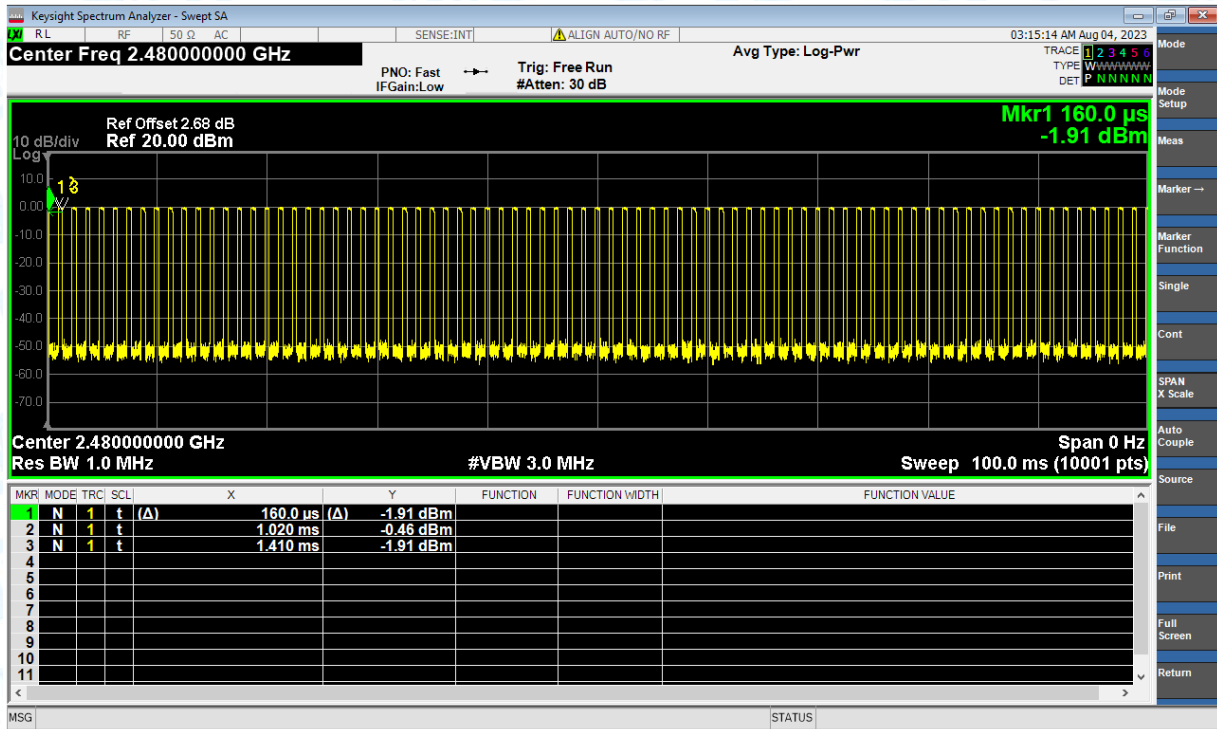
Duty Cycle NVNT 2-DH1 2402MHz Ant1



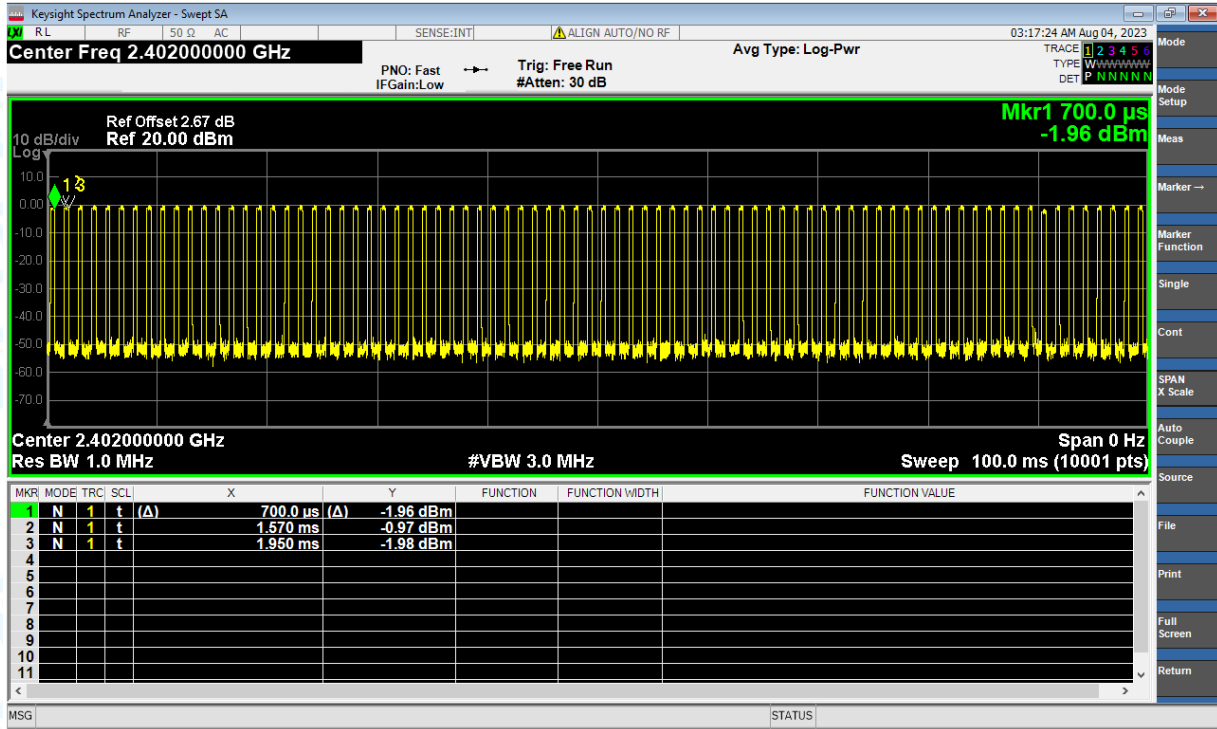
Duty Cycle NVNT 2-DH1 2441MHz Ant1



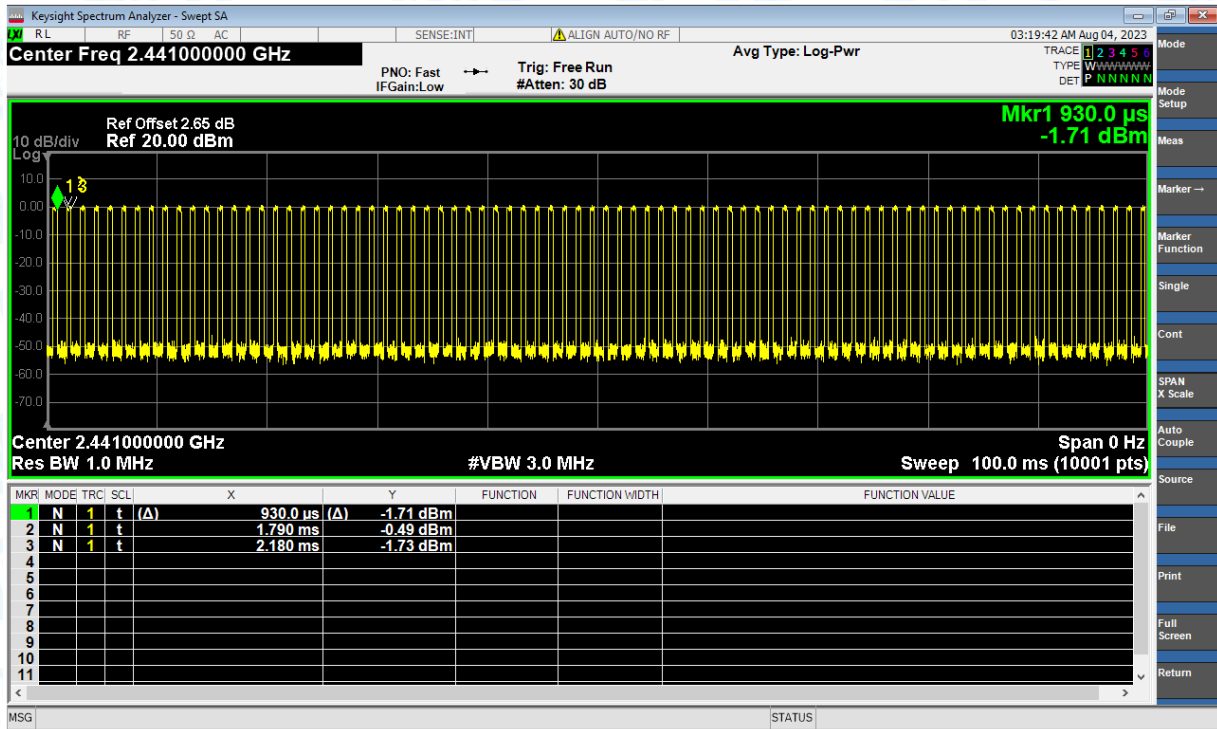
Duty Cycle NVNT 2-DH1 2480MHz Ant1

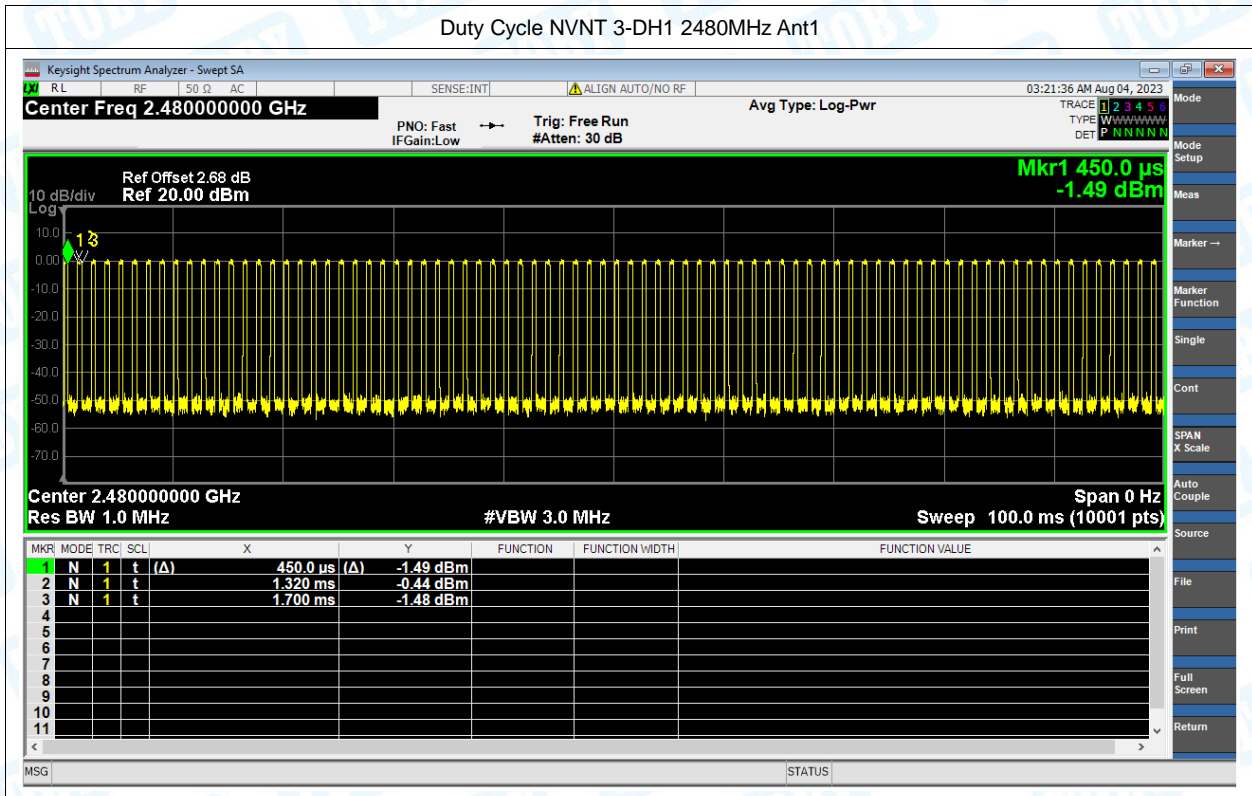


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1





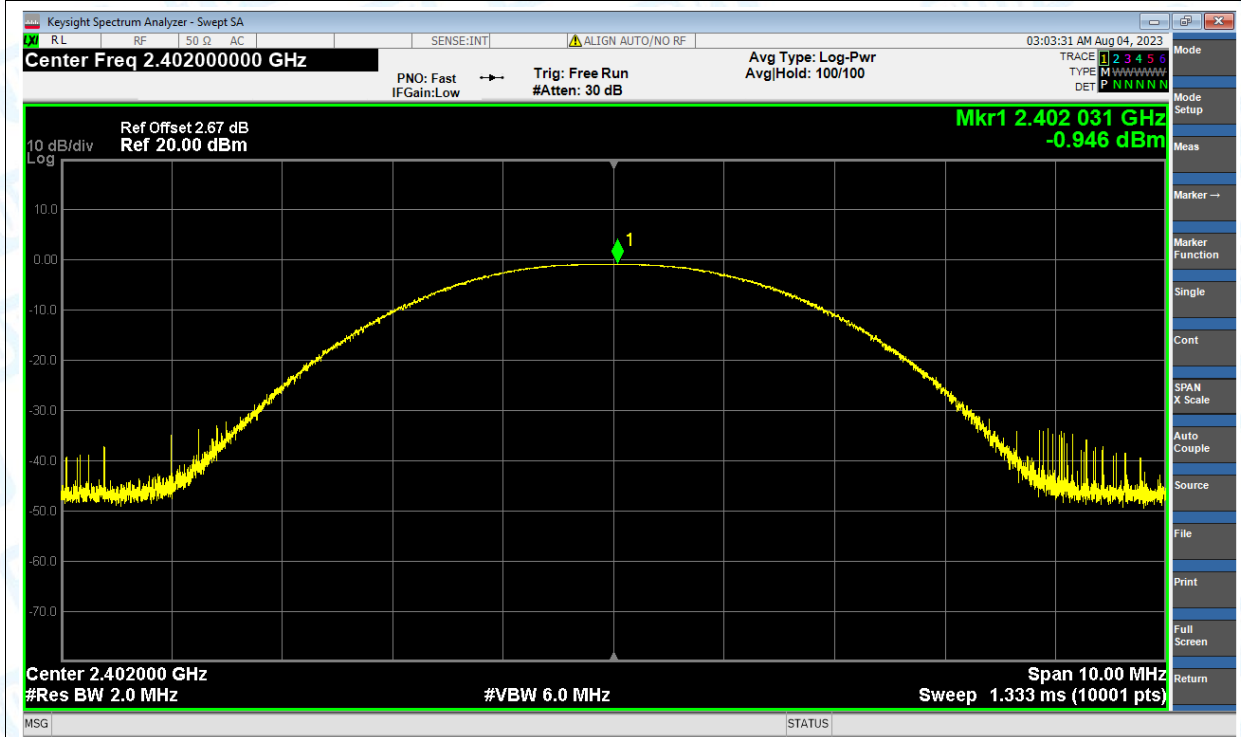


## 2. Maximum Conducted Output Power

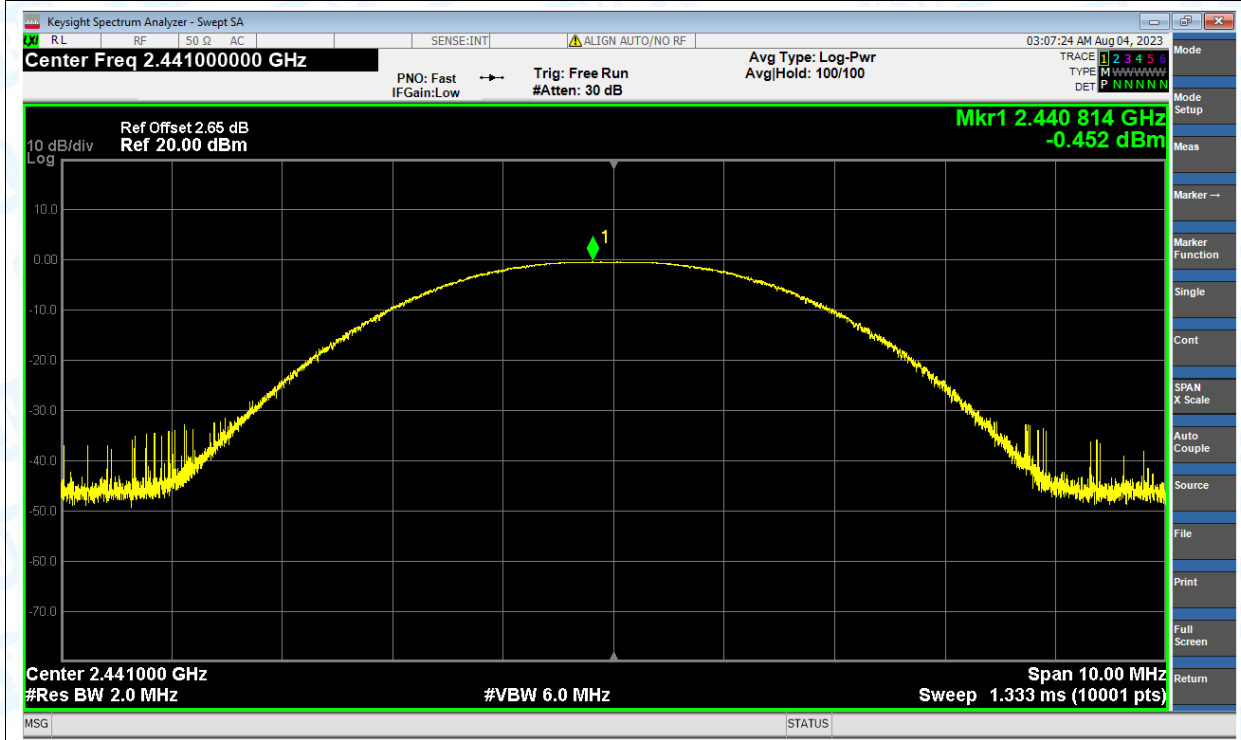
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	-0.946	21	Pass
NVNT	1-DH1	2441	Ant1	-0.452	21	Pass
NVNT	1-DH1	2480	Ant1	-0.375	21	Pass
NVNT	1-DH3	2441	Ant1	-0.396	21	Pass
NVNT	1-DH5	2441	Ant1	-0.418	21	Pass
NVNT	2-DH1	2402	Ant1	-0.056	21	Pass
NVNT	2-DH1	2441	Ant1	0.382	21	Pass
NVNT	2-DH1	2480	Ant1	0.377	21	Pass
NVNT	2-DH3	2441	Ant1	0.419	21	Pass
NVNT	2-DH5	2441	Ant1	0.412	21	Pass
NVNT	3-DH1	2402	Ant1	0.48	21	Pass
NVNT	3-DH1	2441	Ant1	0.943	21	Pass
NVNT	3-DH1	2480	Ant1	0.928	21	Pass
NVNT	3-DH3	2441	Ant1	0.804	21	Pass
NVNT	3-DH5	2441	Ant1	0.817	21	Pass

Test Graphs

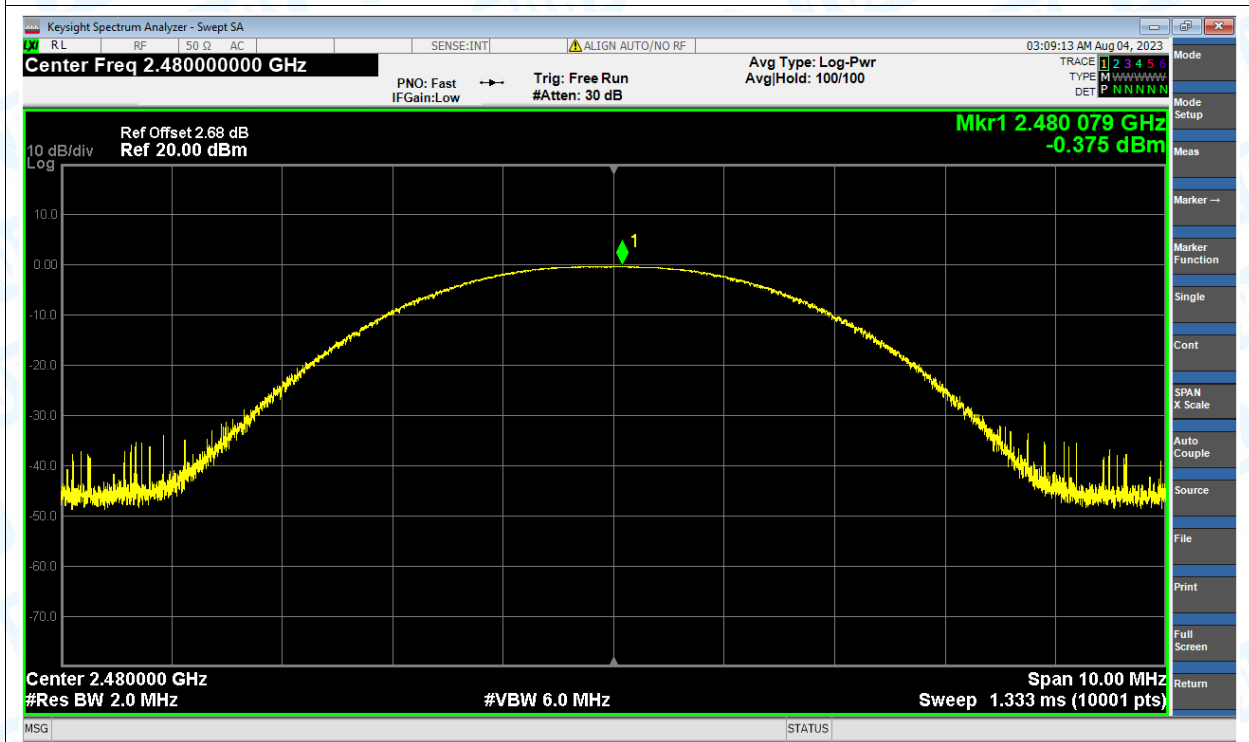
Power NVNT 1-DH1 2402MHz Ant1



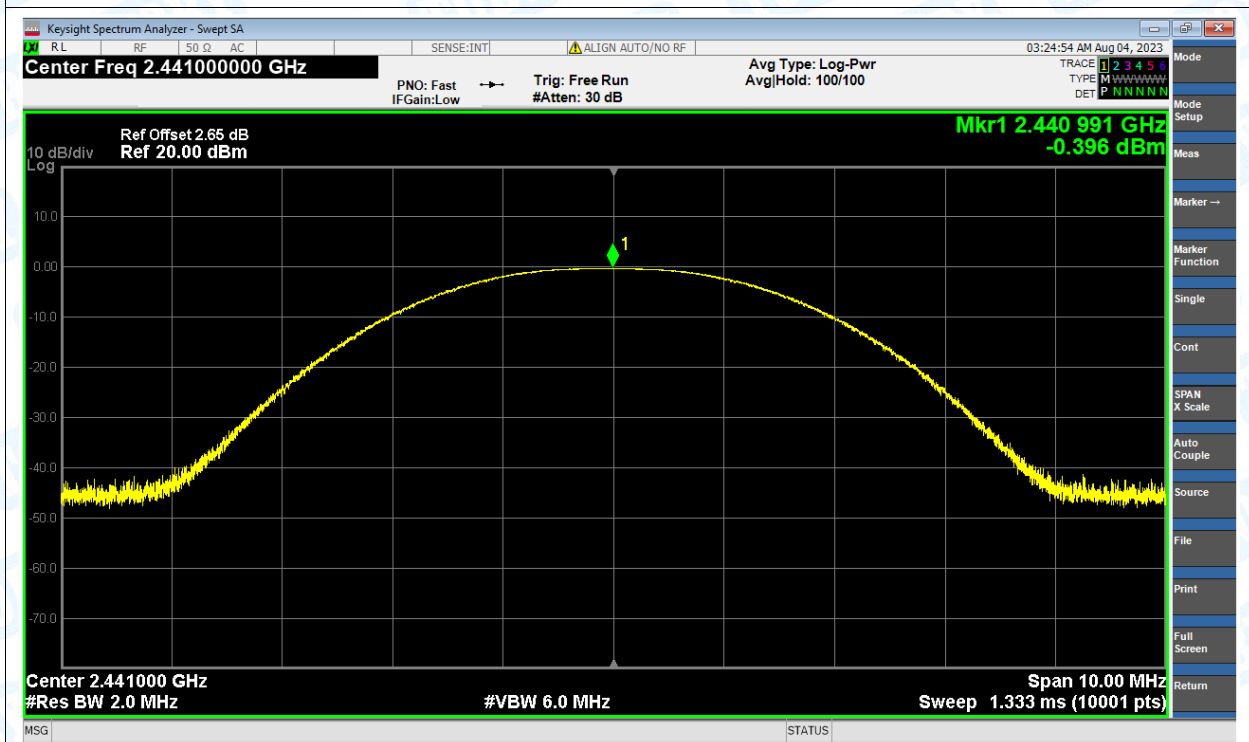
Power NVNT 1-DH1 2441MHz Ant1



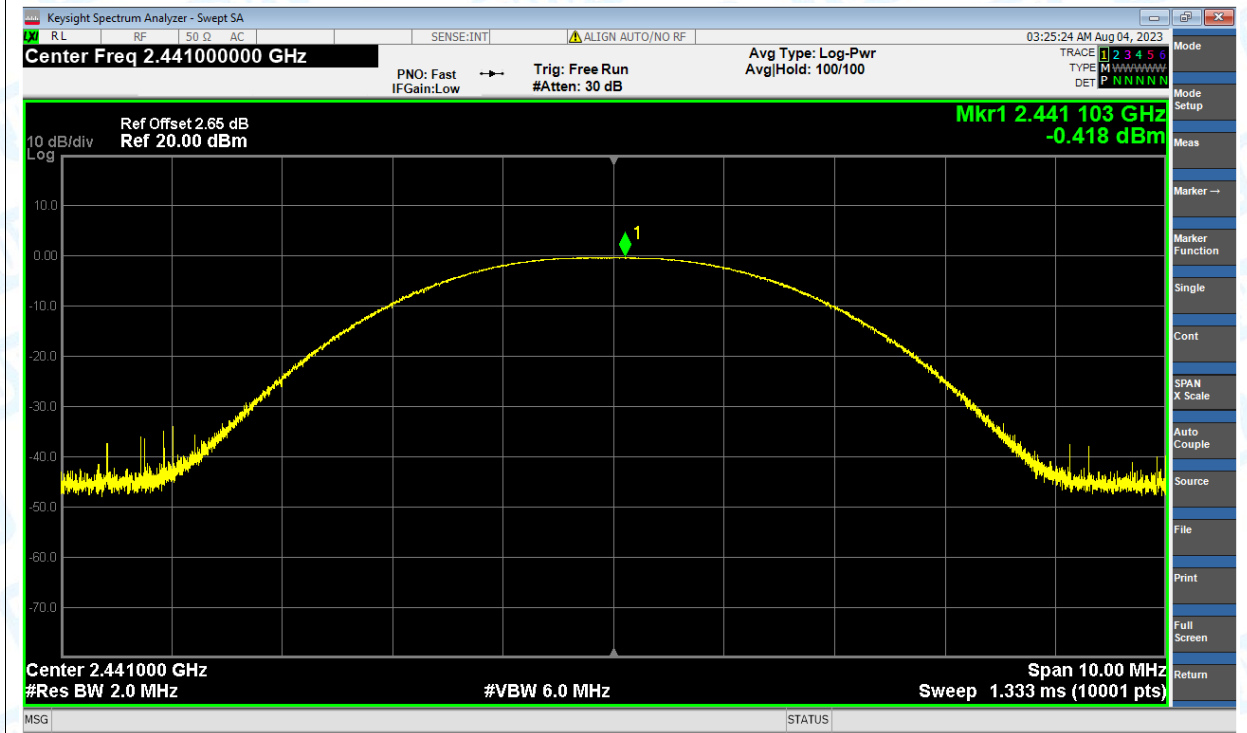
Power NVNT 1-DH1 2480MHz Ant1



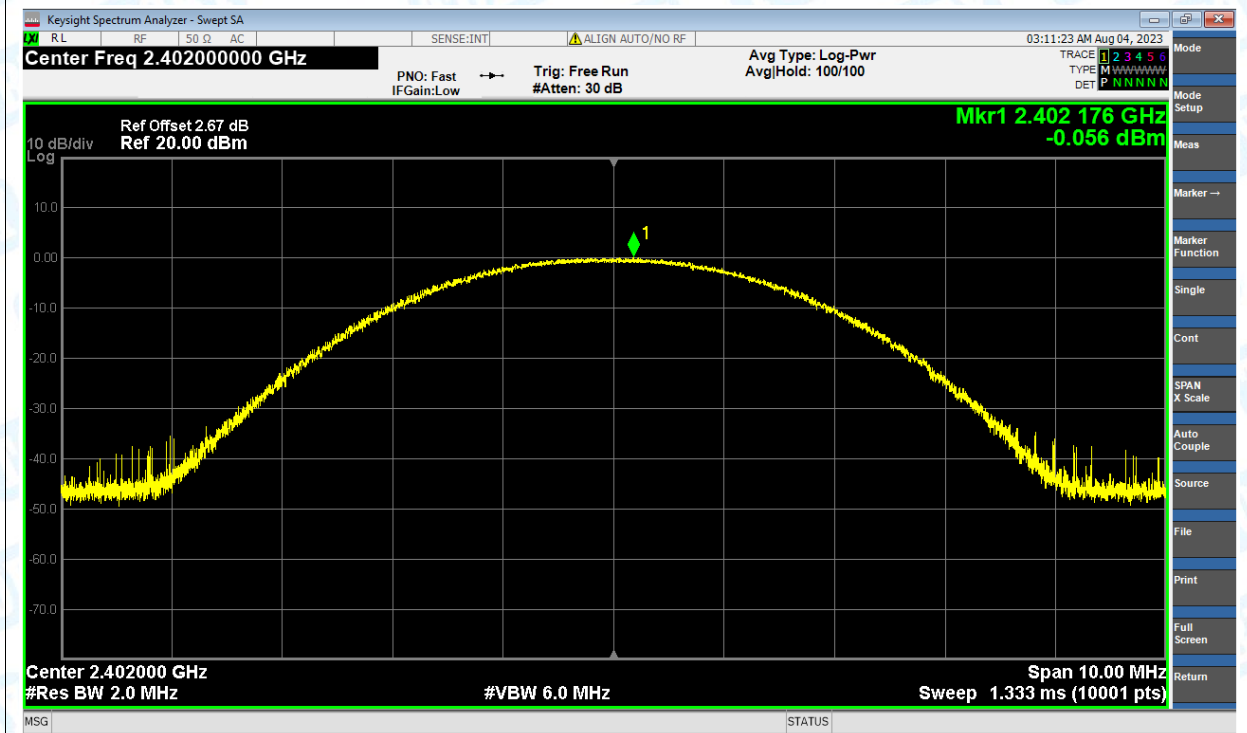
Power NVNT 1-DH3 2441MHz Ant1

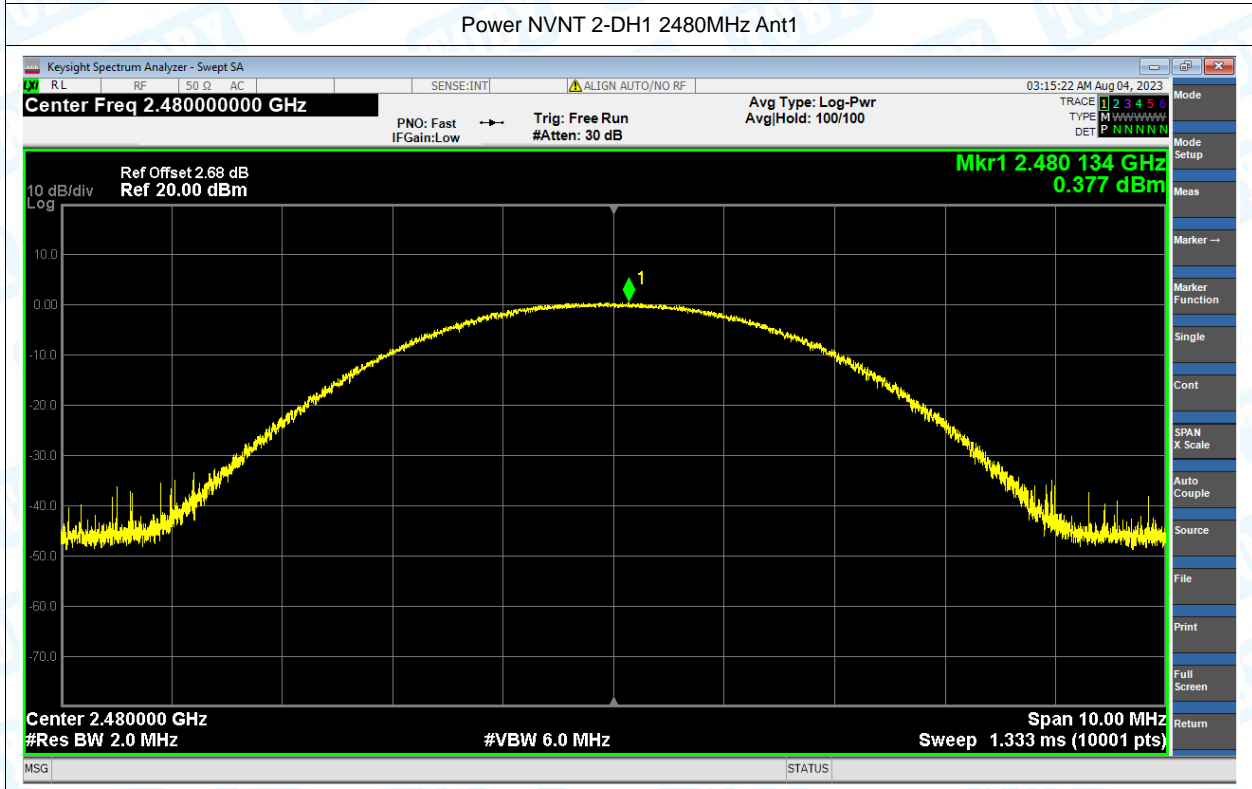
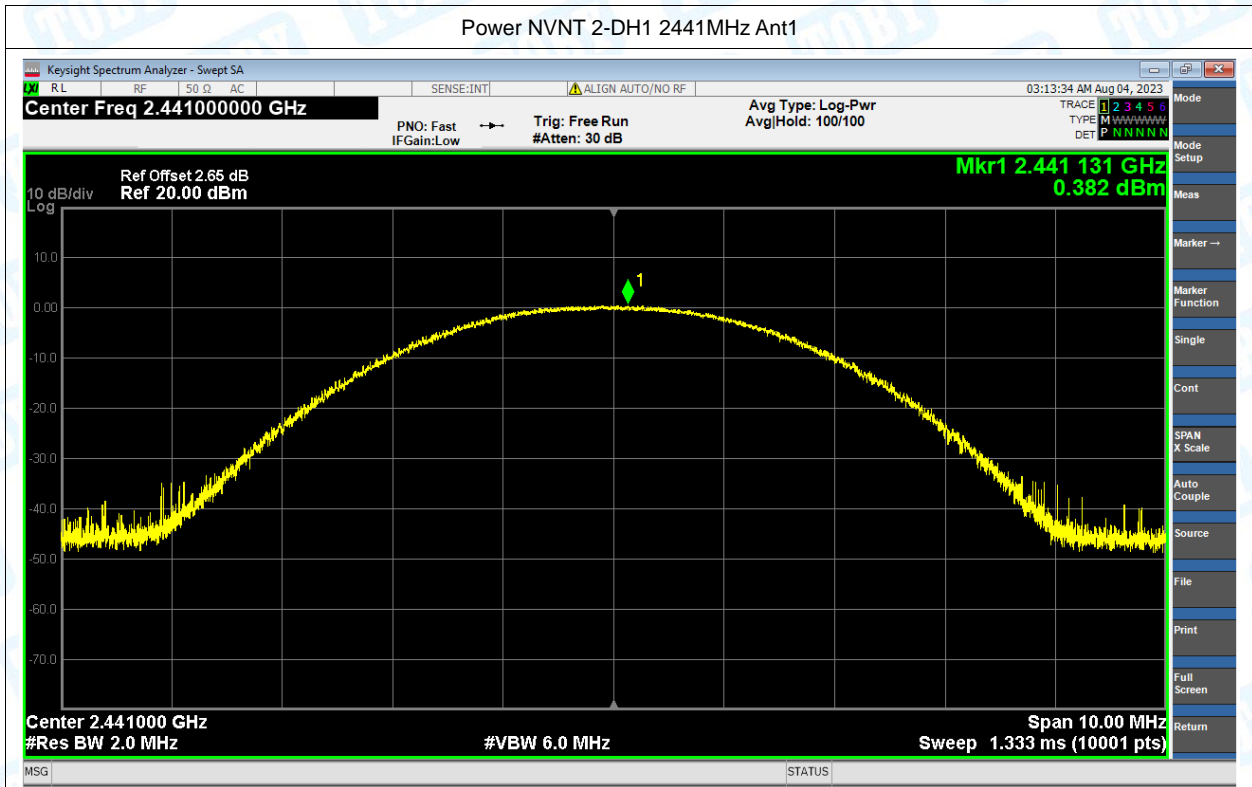


Power NVNT 1-DH5 2441MHz Ant1



Power NVNT 2-DH1 2402MHz Ant1

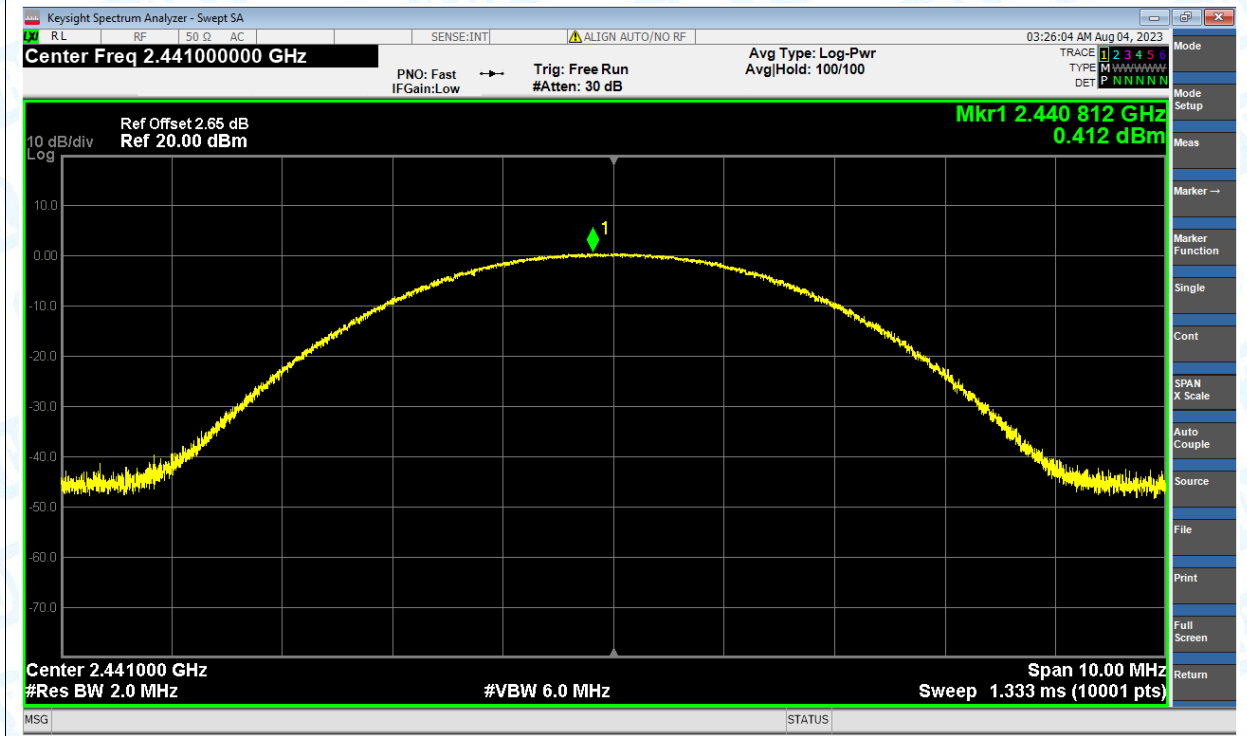




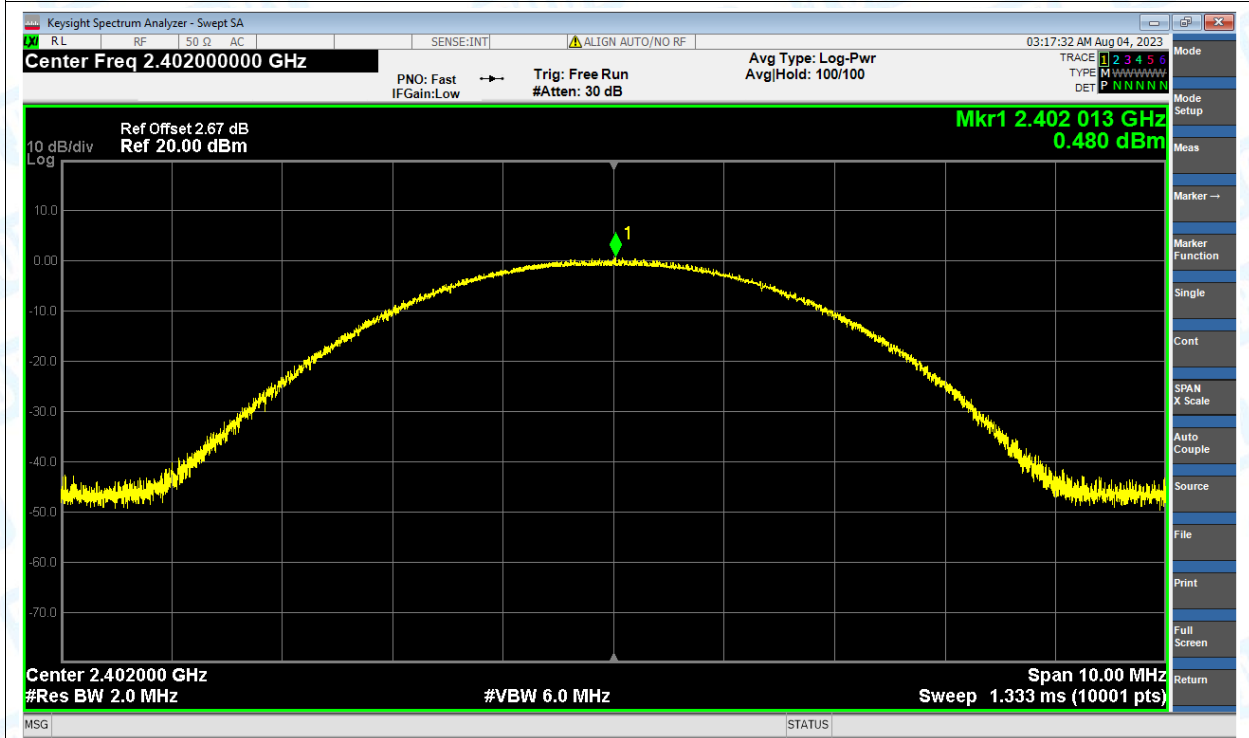
Power NVNT 2-DH3 2441MHz Ant1



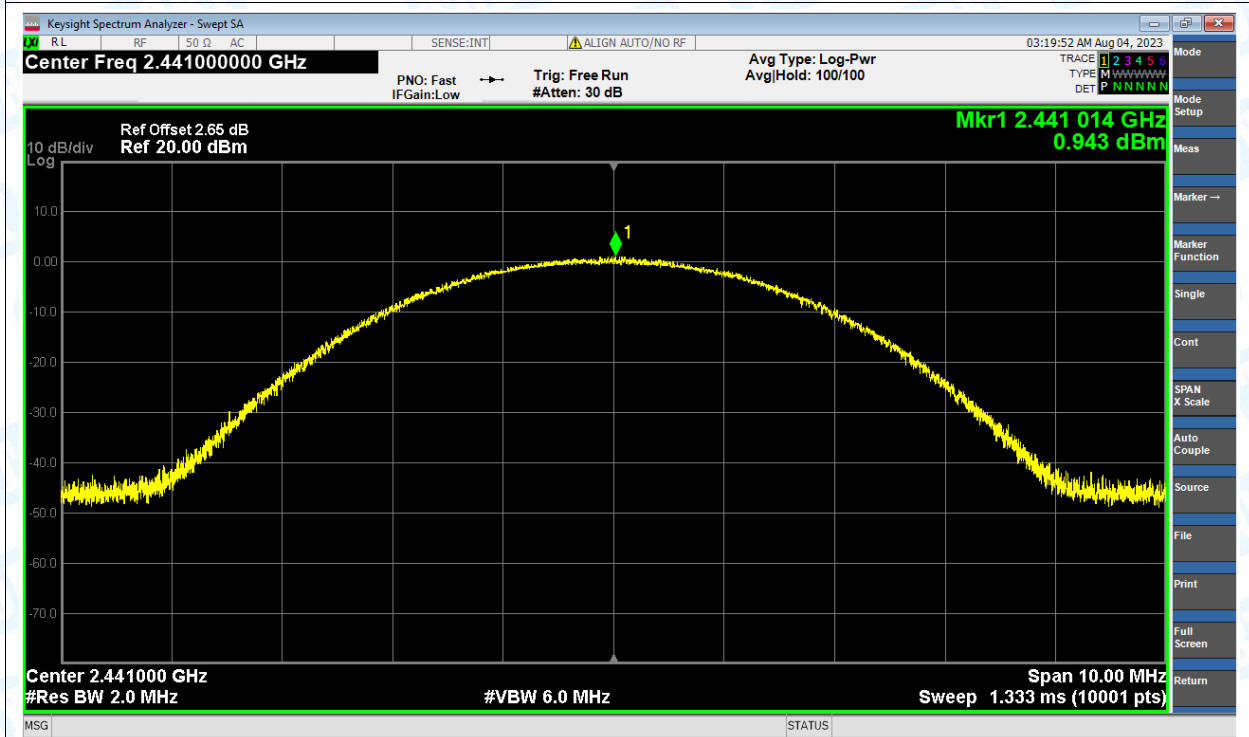
Power NVNT 2-DH5 2441MHz Ant1



Power NVNT 3-DH1 2402MHz Ant1



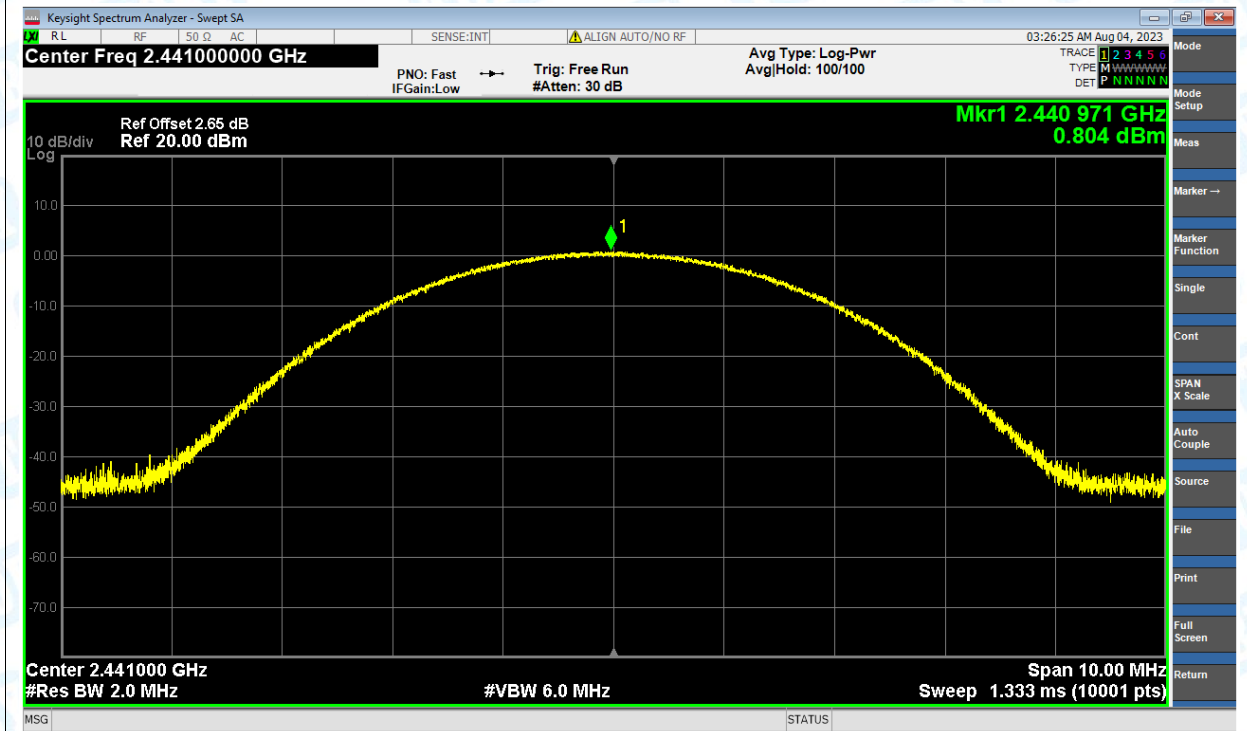
Power NVNT 3-DH1 2441MHz Ant1



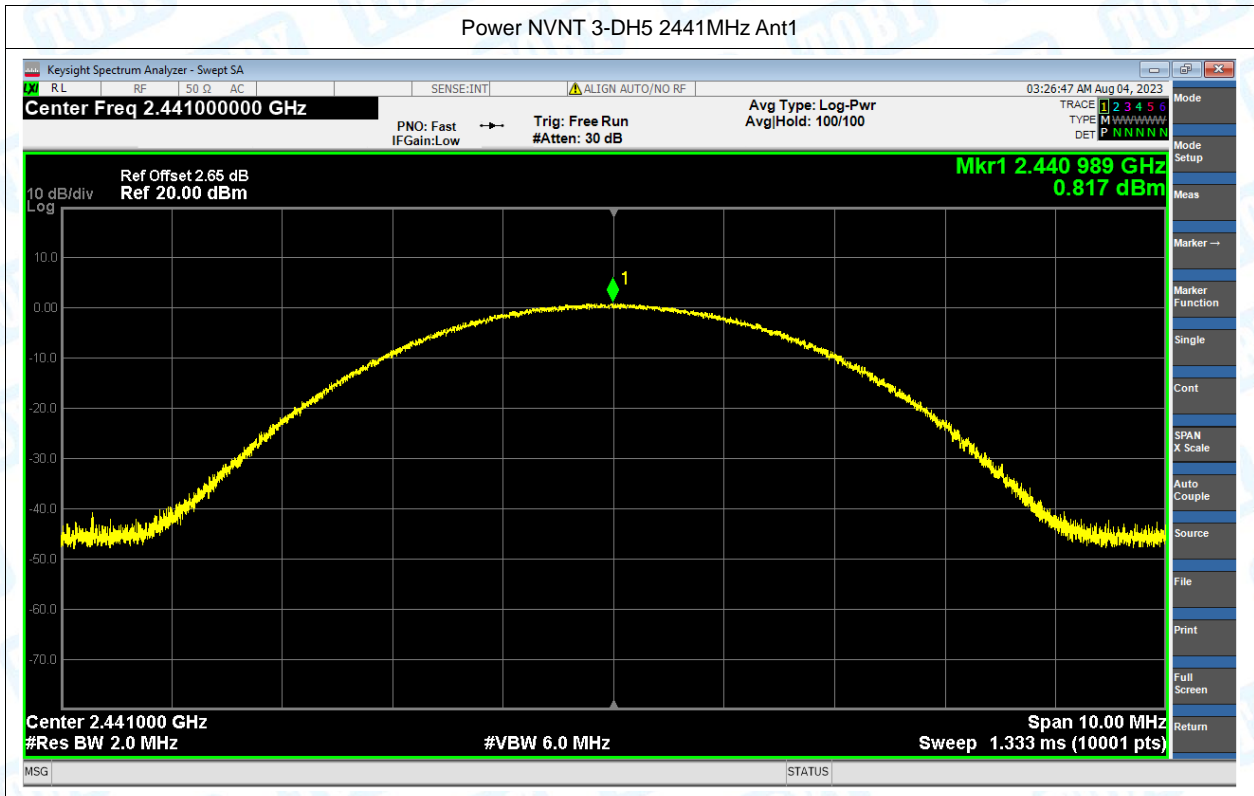
Power NVNT 3-DH1 2480MHz Ant1



Power NVNT 3-DH3 2441MHz Ant1





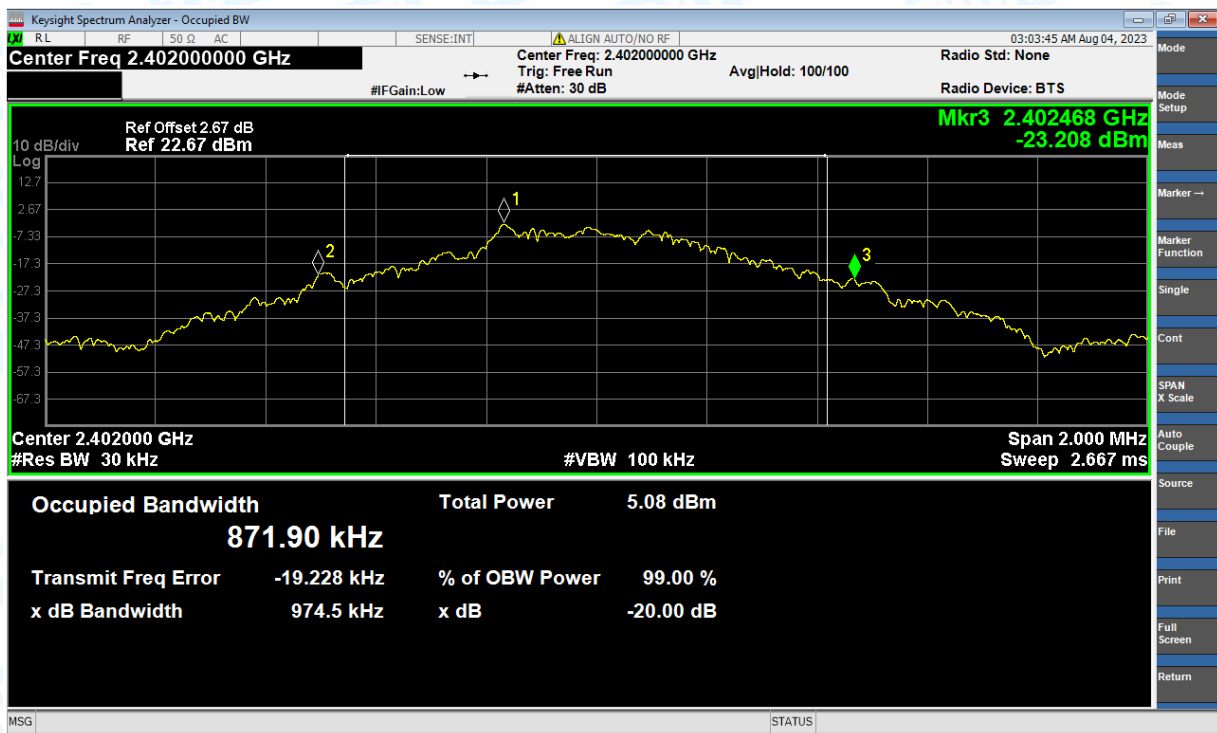


### 3. -20dB Bandwidth

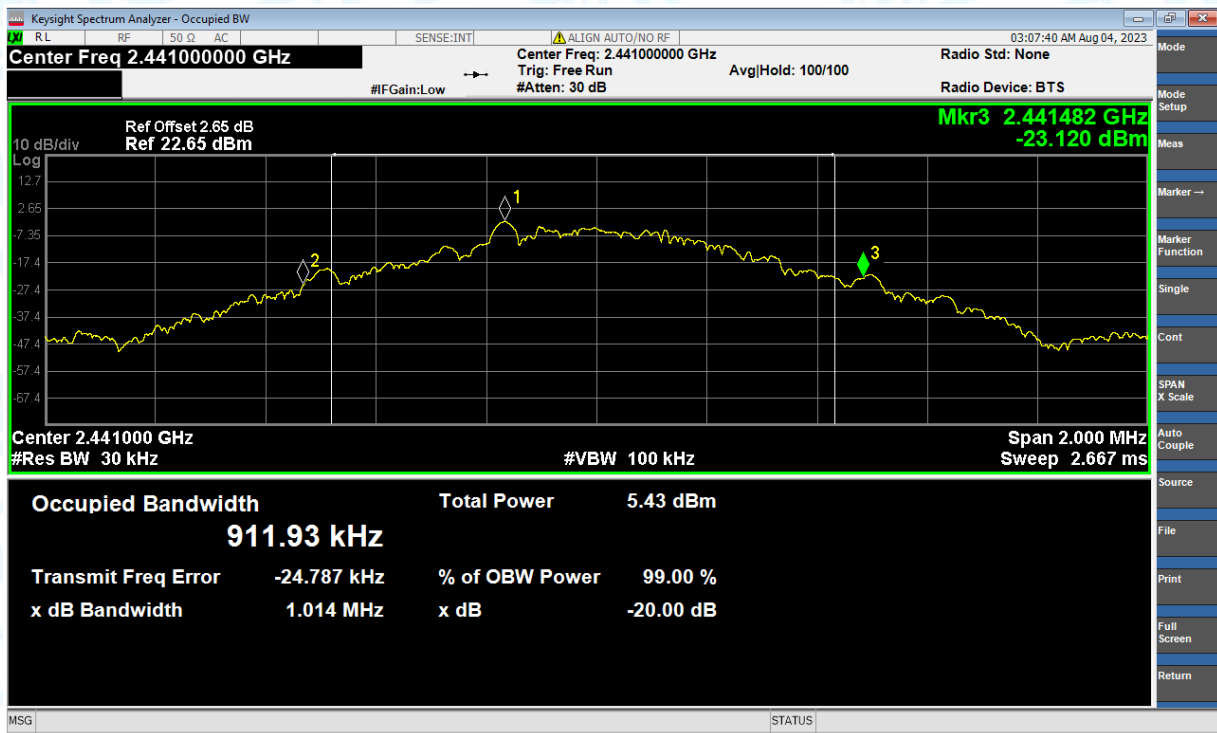
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.97	0	Pass
NVNT	1-DH1	2441	Ant1	1.01	0	Pass
NVNT	1-DH1	2480	Ant1	1.03	0	Pass
NVNT	2-DH1	2402	Ant1	1.27	0	Pass
NVNT	2-DH1	2441	Ant1	1.27	0	Pass
NVNT	2-DH1	2480	Ant1	1.31	0	Pass
NVNT	3-DH1	2402	Ant1	1.26	0	Pass
NVNT	3-DH1	2441	Ant1	1.24	0	Pass
NVNT	3-DH1	2480	Ant1	1.23	0	Pass

Test Graphs

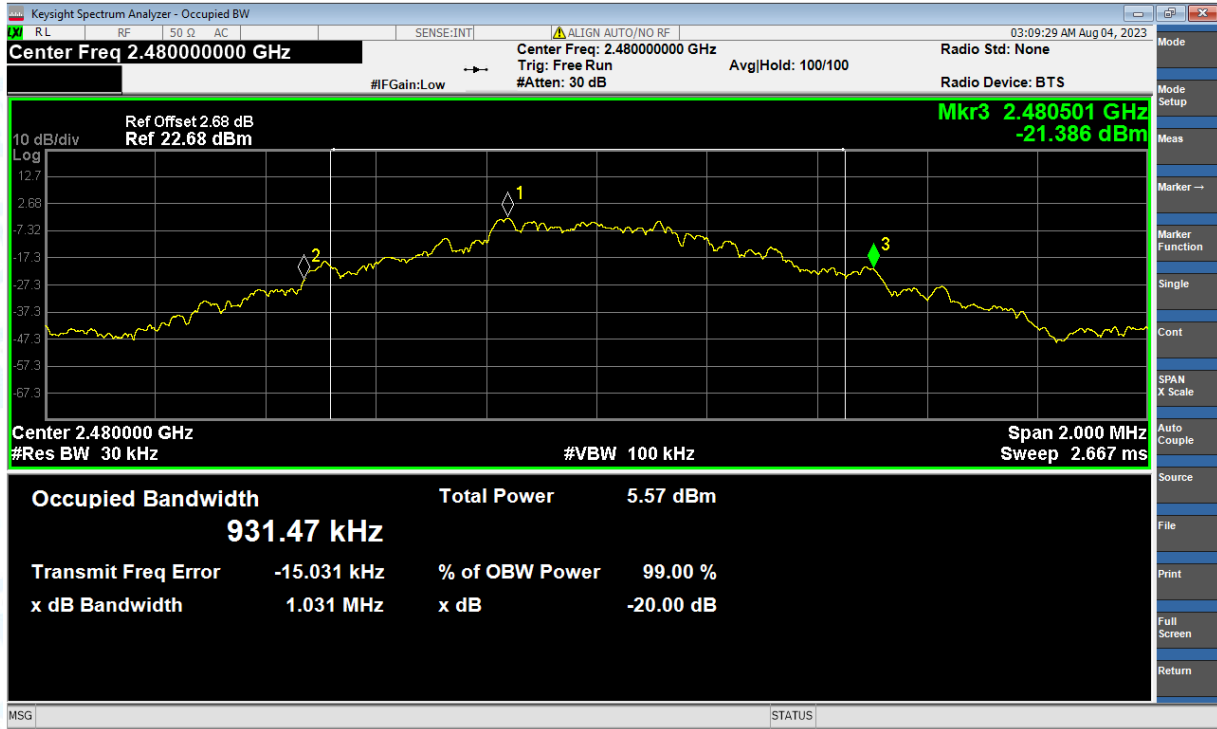
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



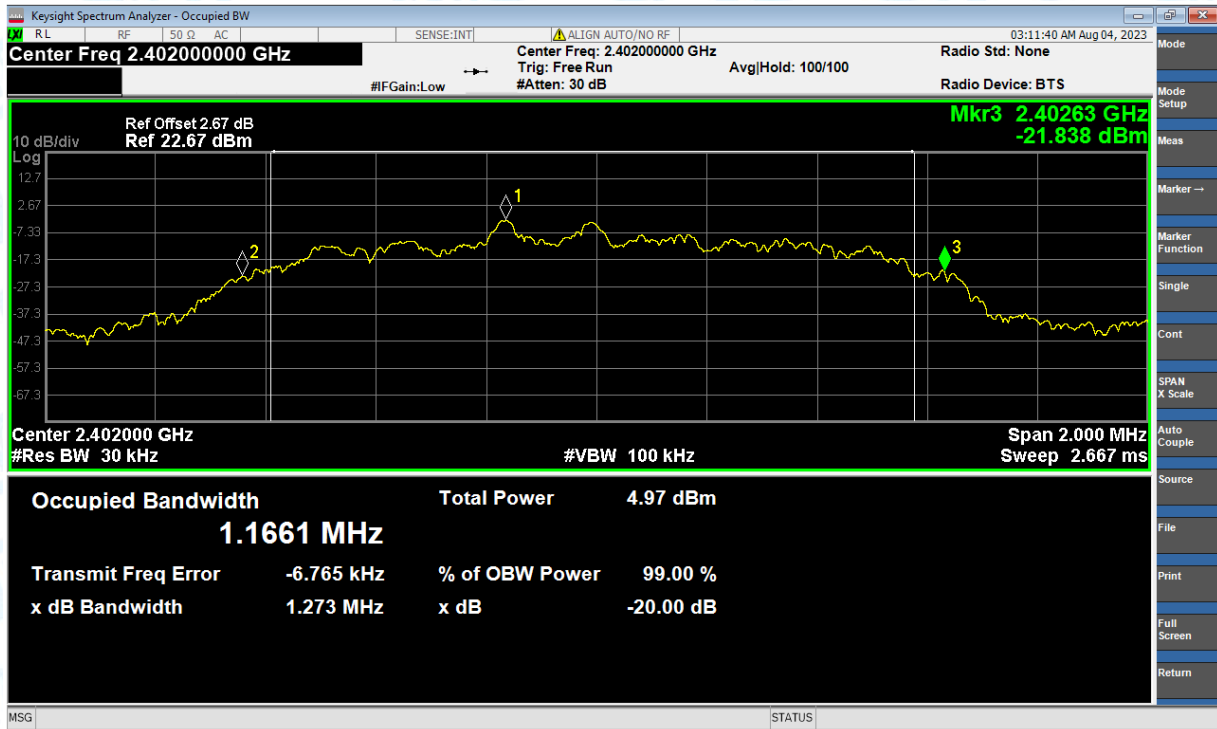
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



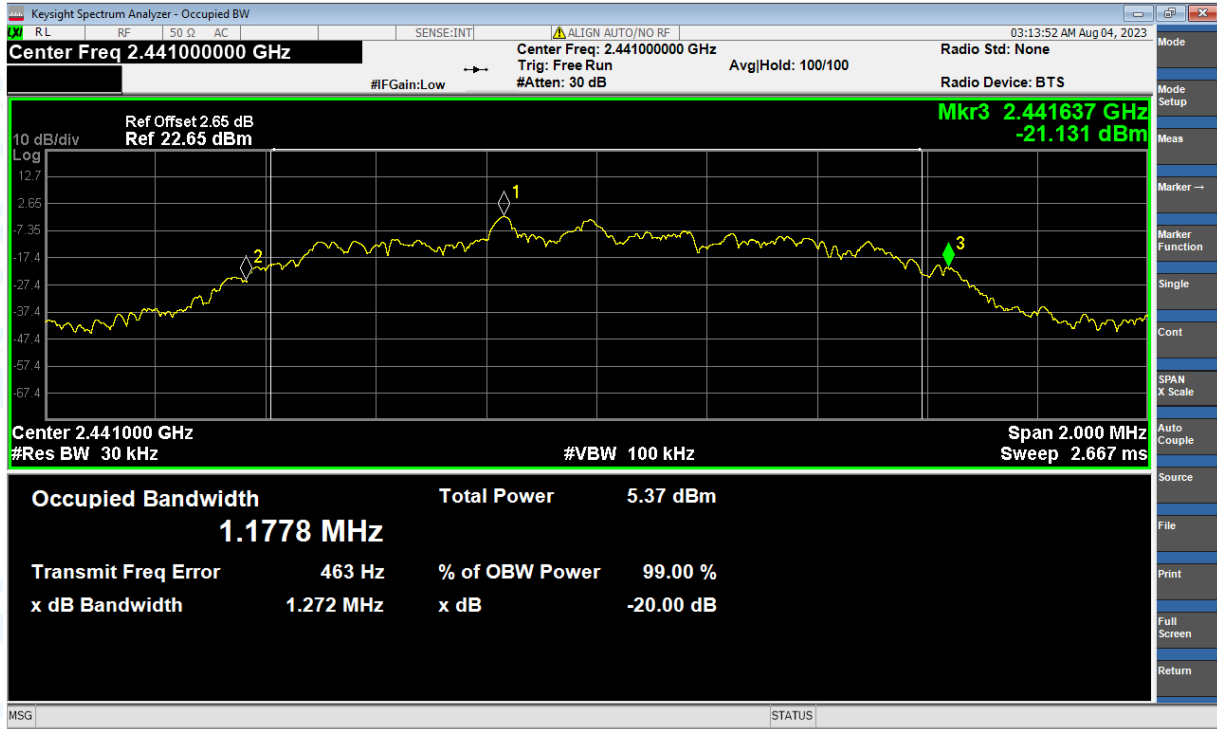
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



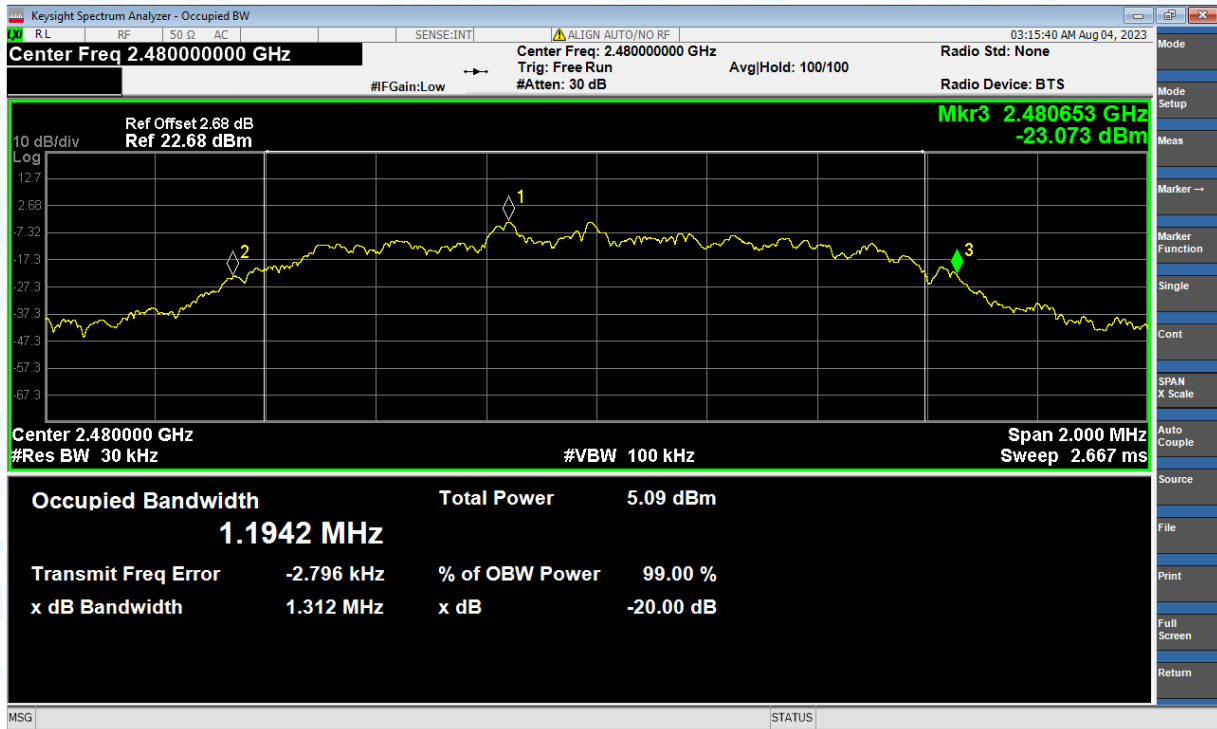
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



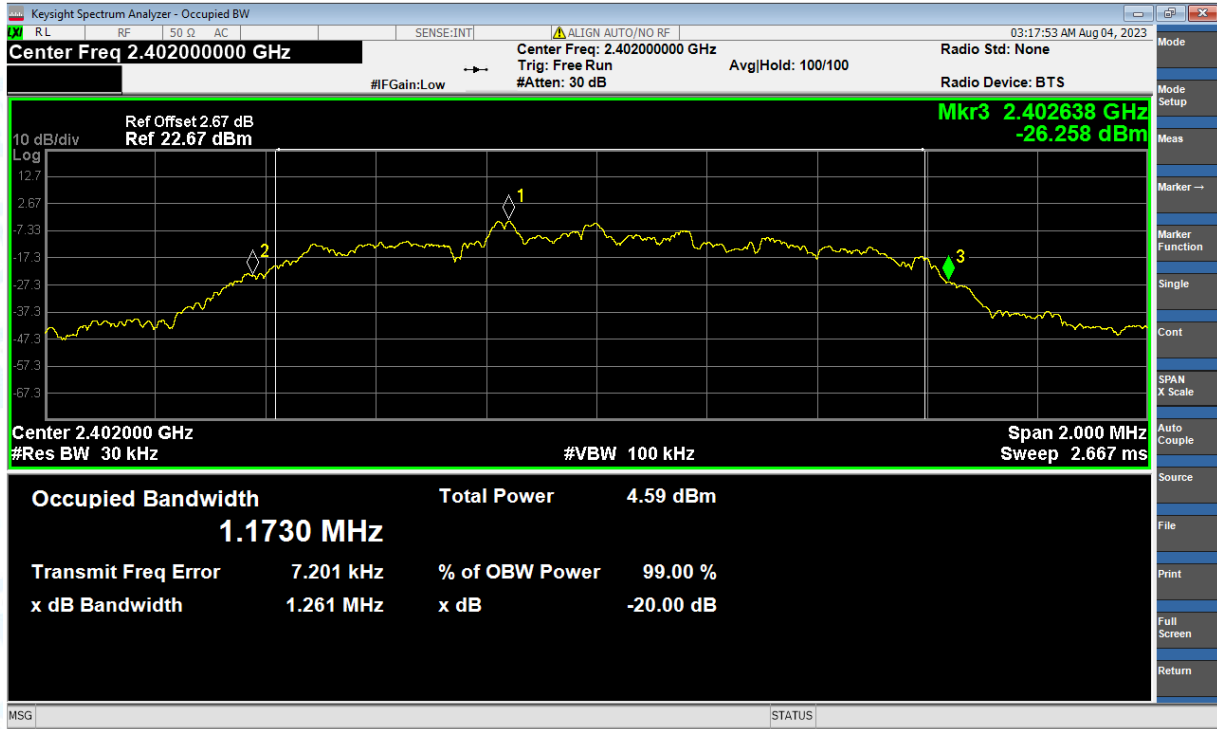
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



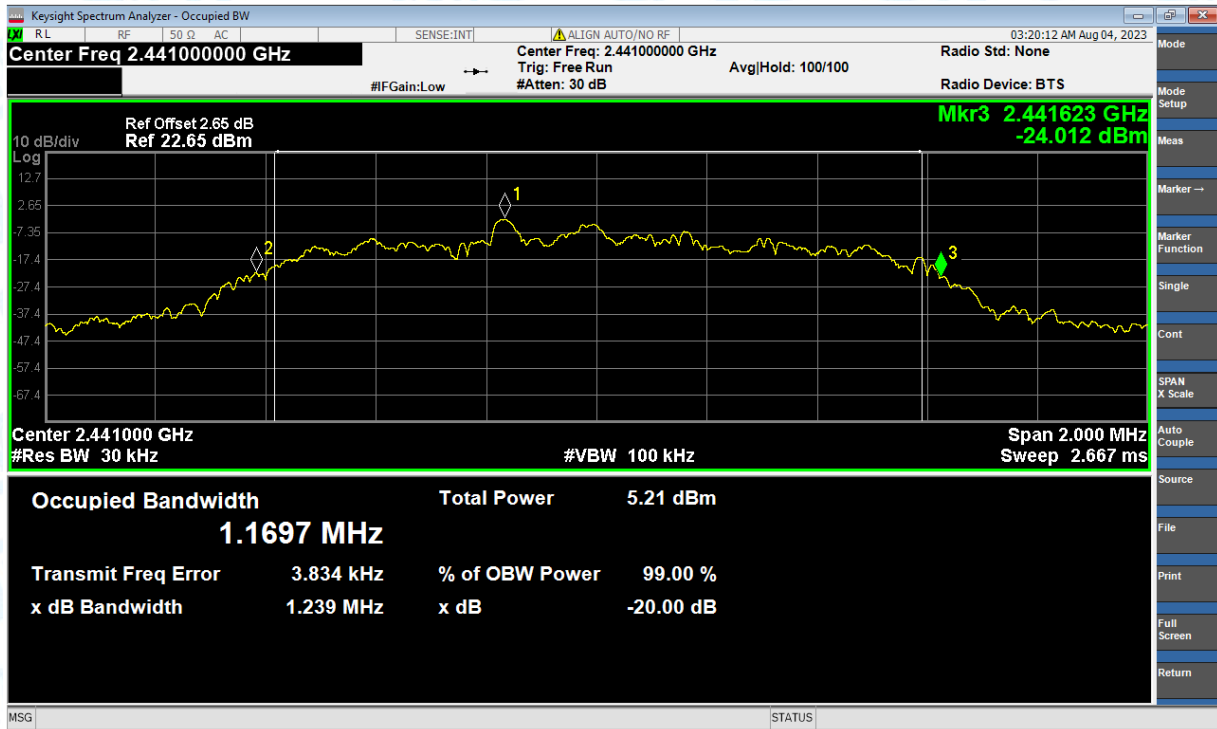
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

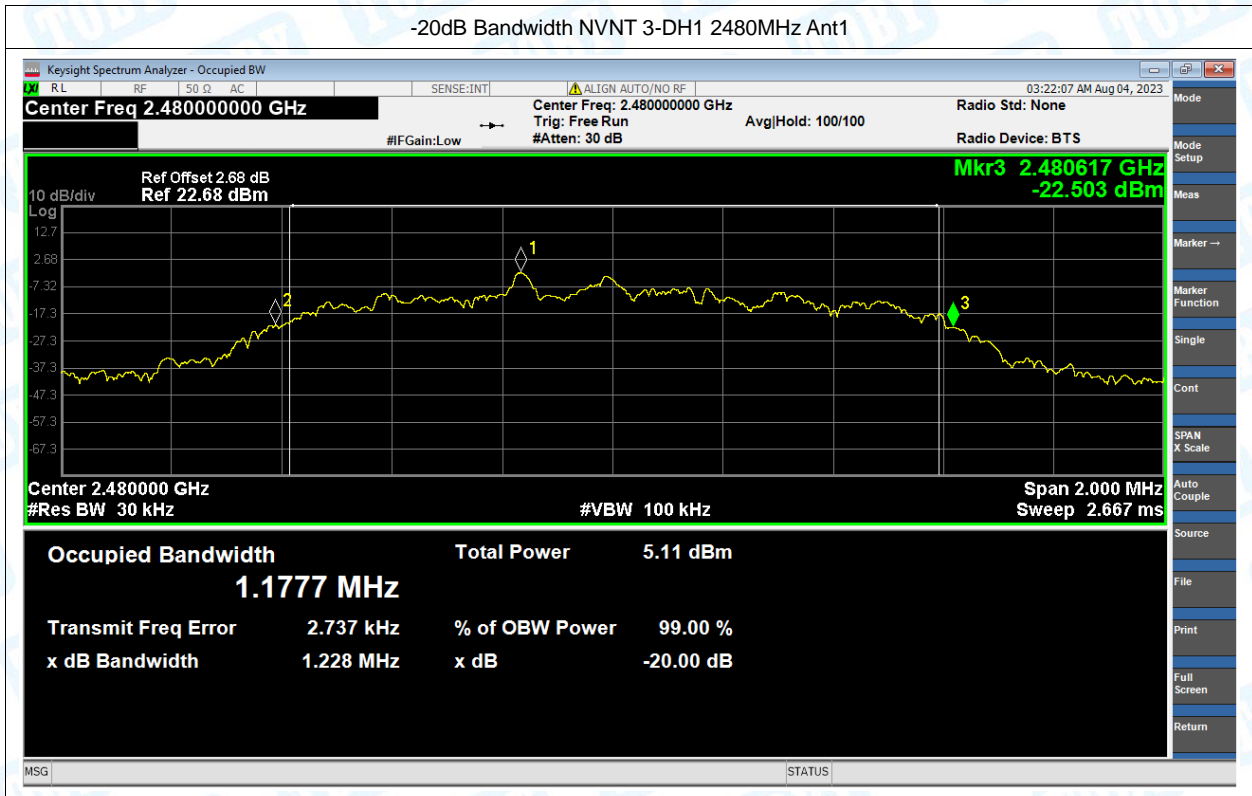


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1





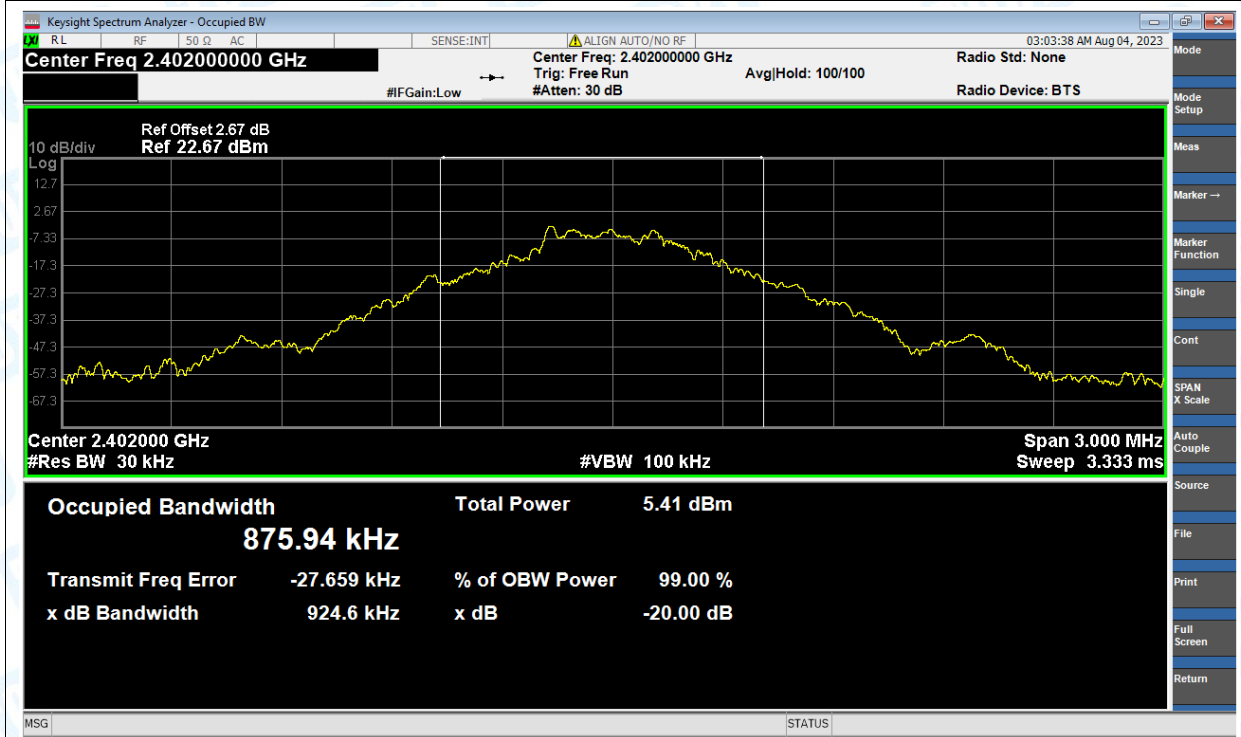
## 4. Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.876
NVNT	1-DH1	2441	Ant1	0.91
NVNT	1-DH1	2480	Ant1	0.916
NVNT	2-DH1	2402	Ant1	1.183
NVNT	2-DH1	2441	Ant1	1.169
NVNT	2-DH1	2480	Ant1	1.194
NVNT	3-DH1	2402	Ant1	1.173
NVNT	3-DH1	2441	Ant1	1.174
NVNT	3-DH1	2480	Ant1	1.173

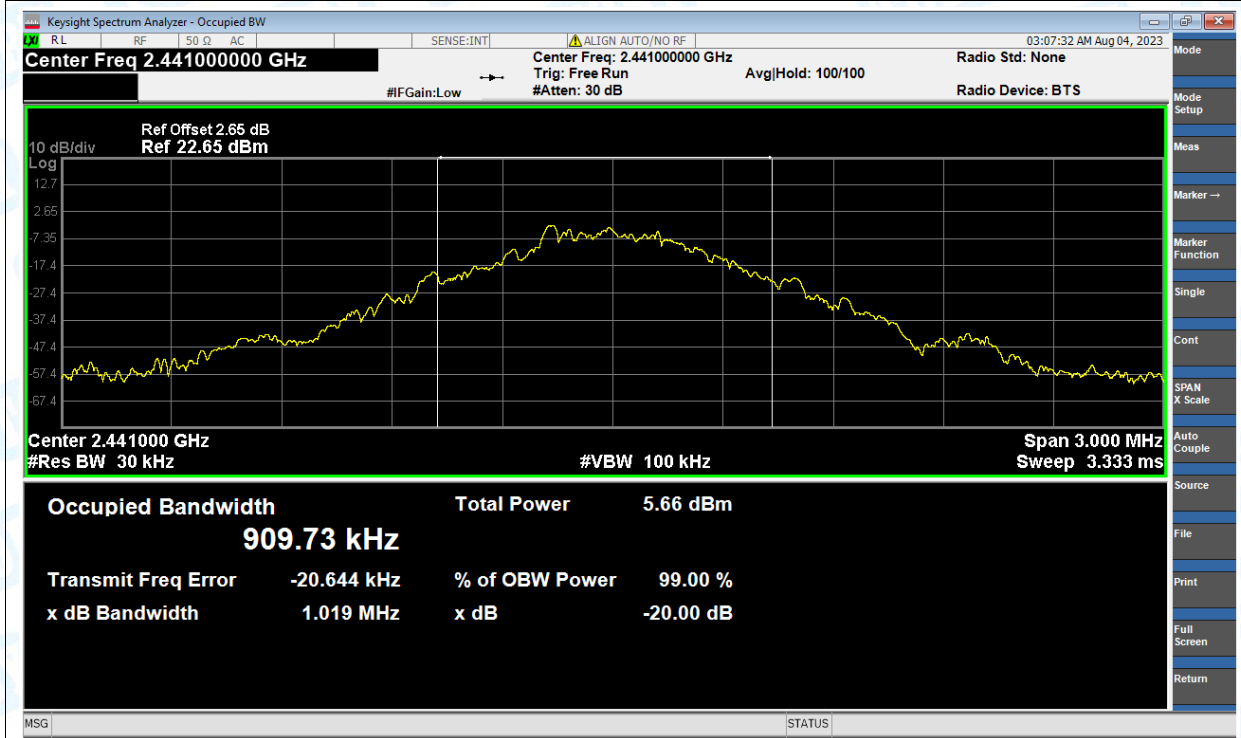


Test Graphs

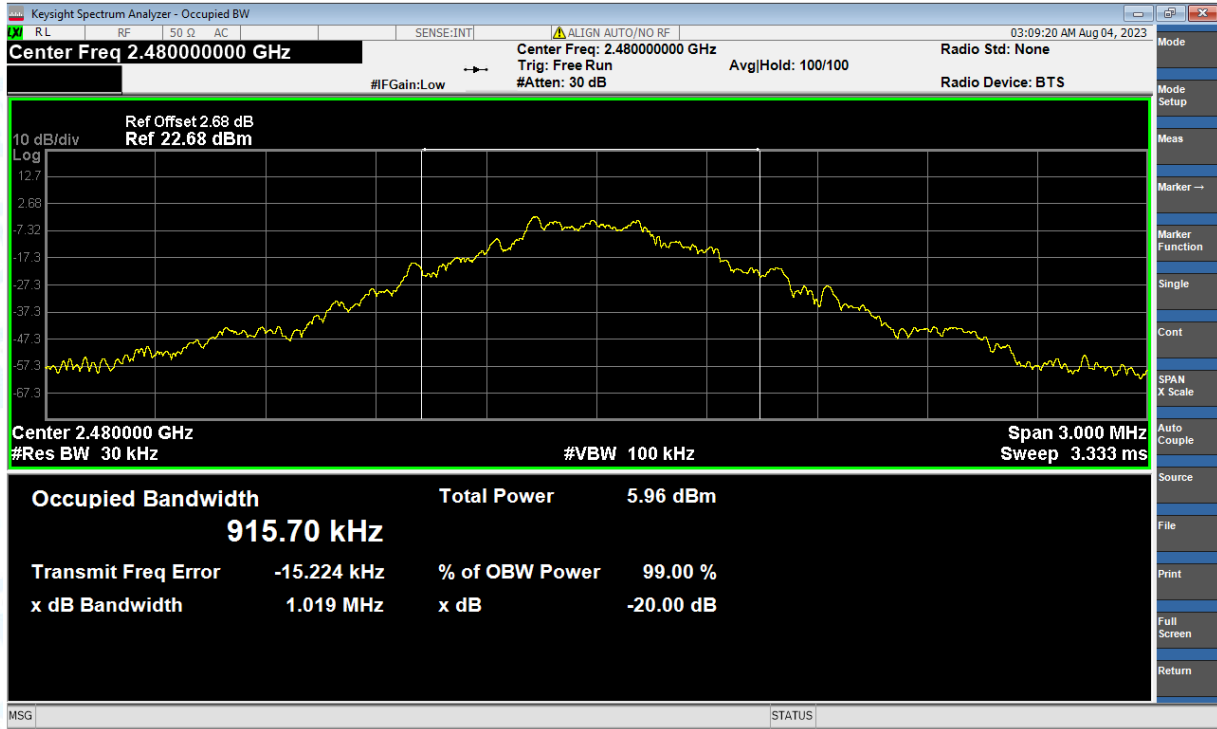
OBW NVNT 1-DH1 2402MHz Ant1



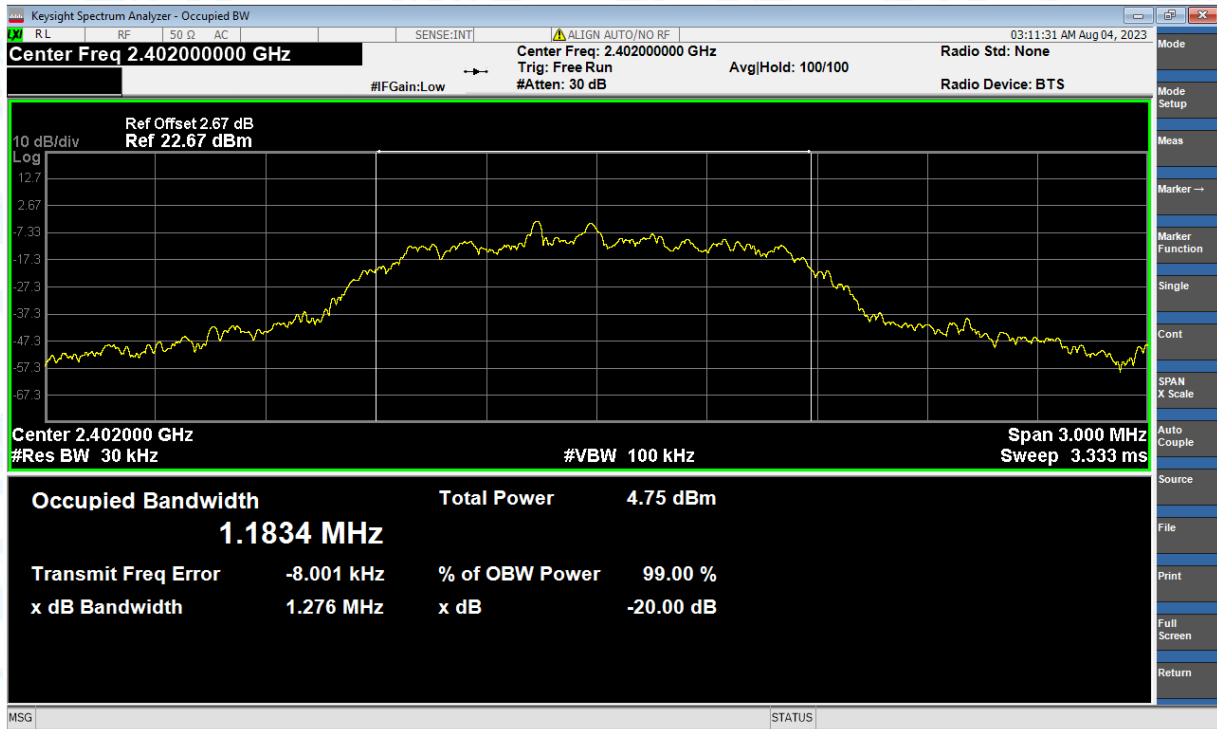
OBW NVNT 1-DH1 2441MHz Ant1



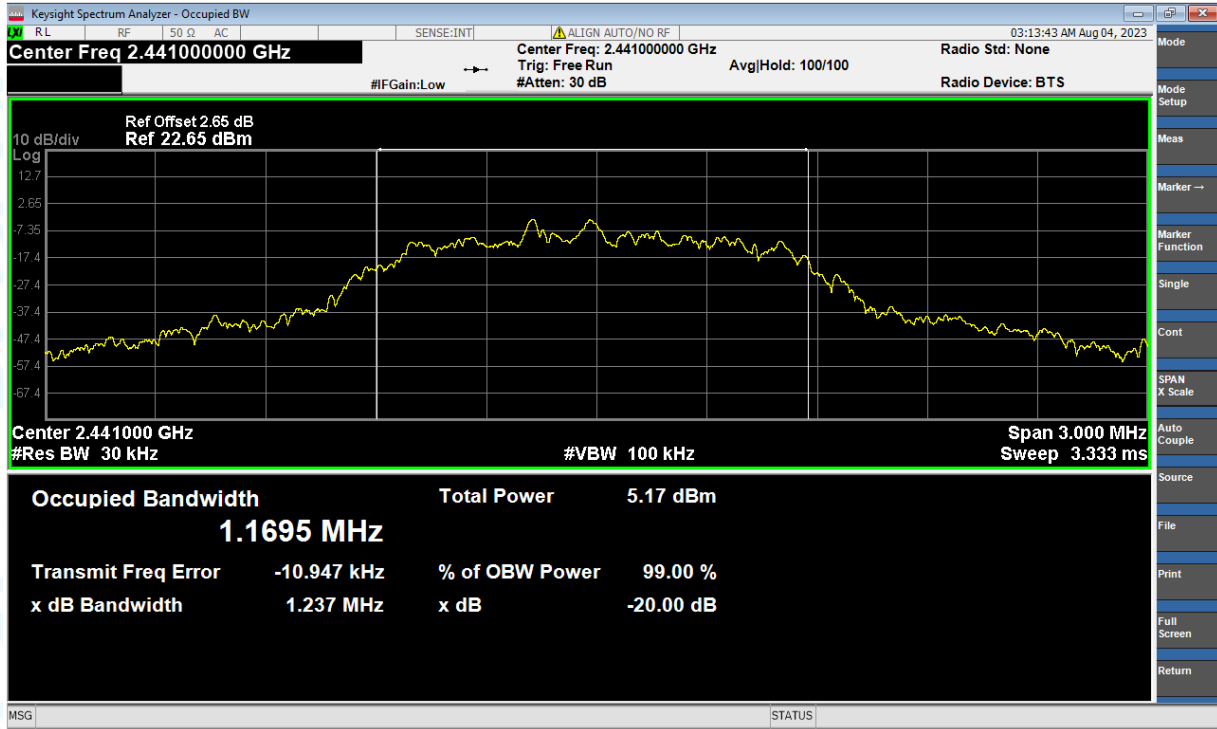
OBW NVNT 1-DH1 2480MHz Ant1



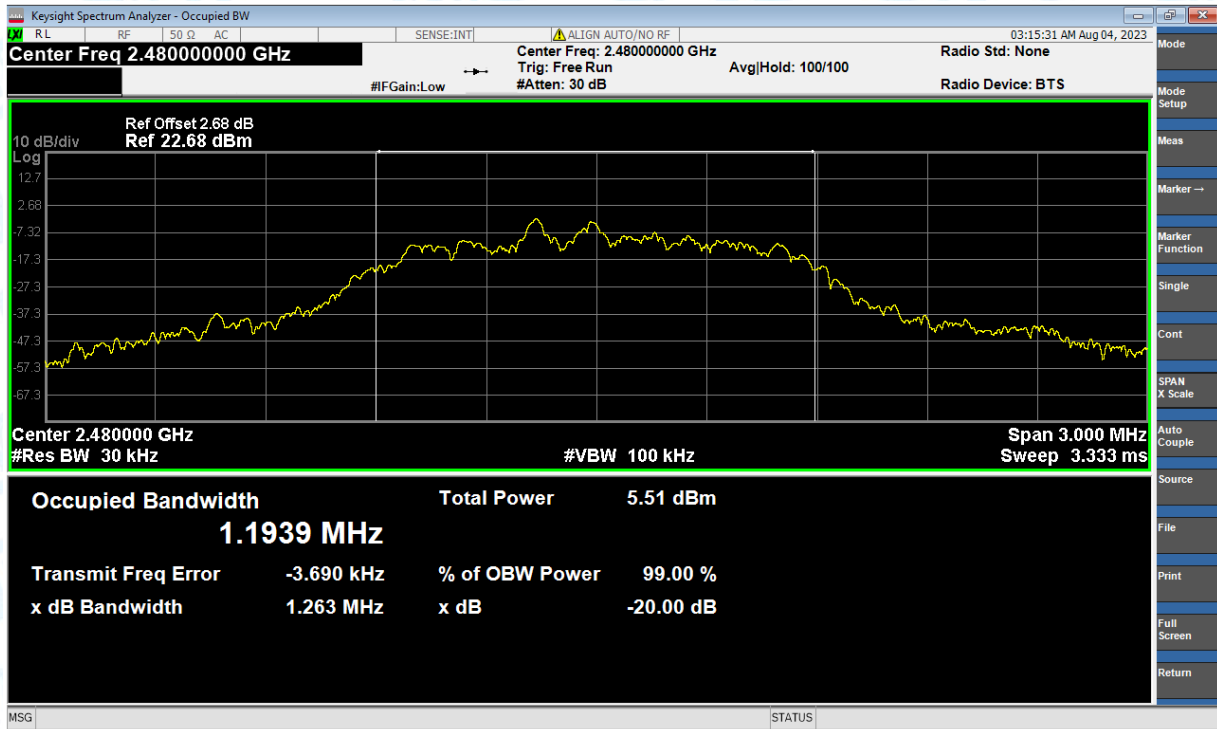
OBW NVNT 2-DH1 2402MHz Ant1



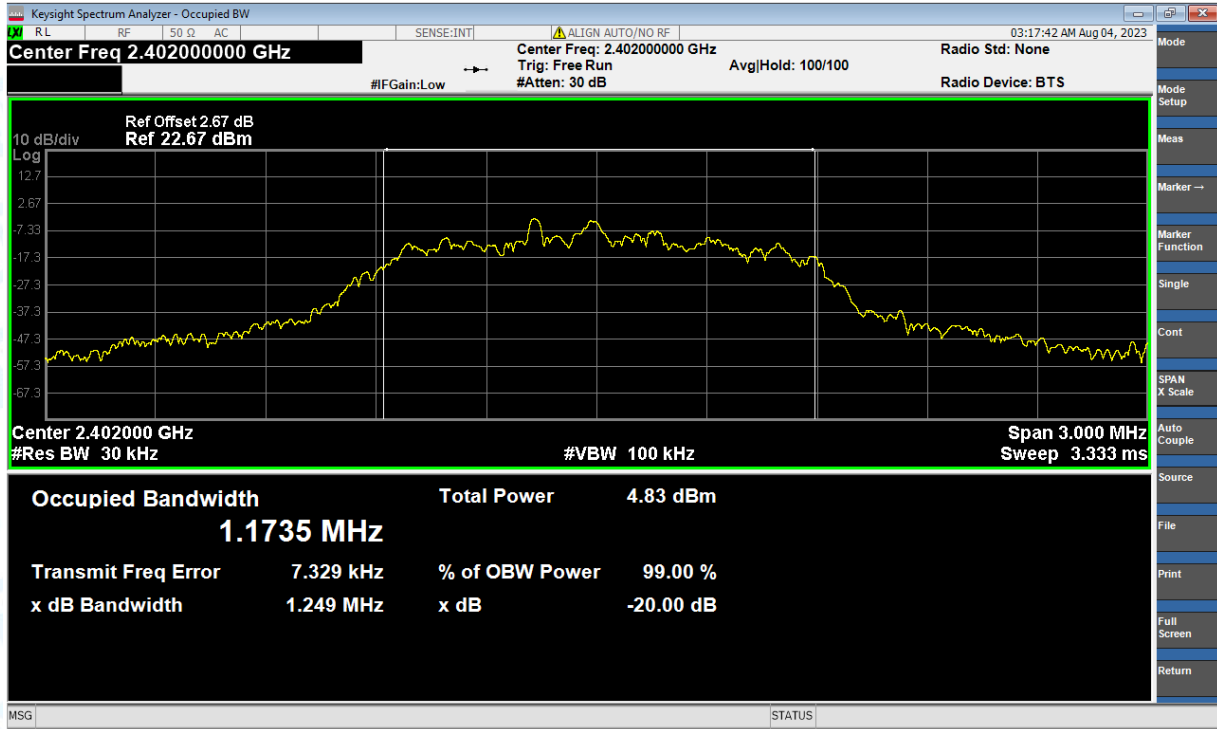
OBW NVNT 2-DH1 2441MHz Ant1



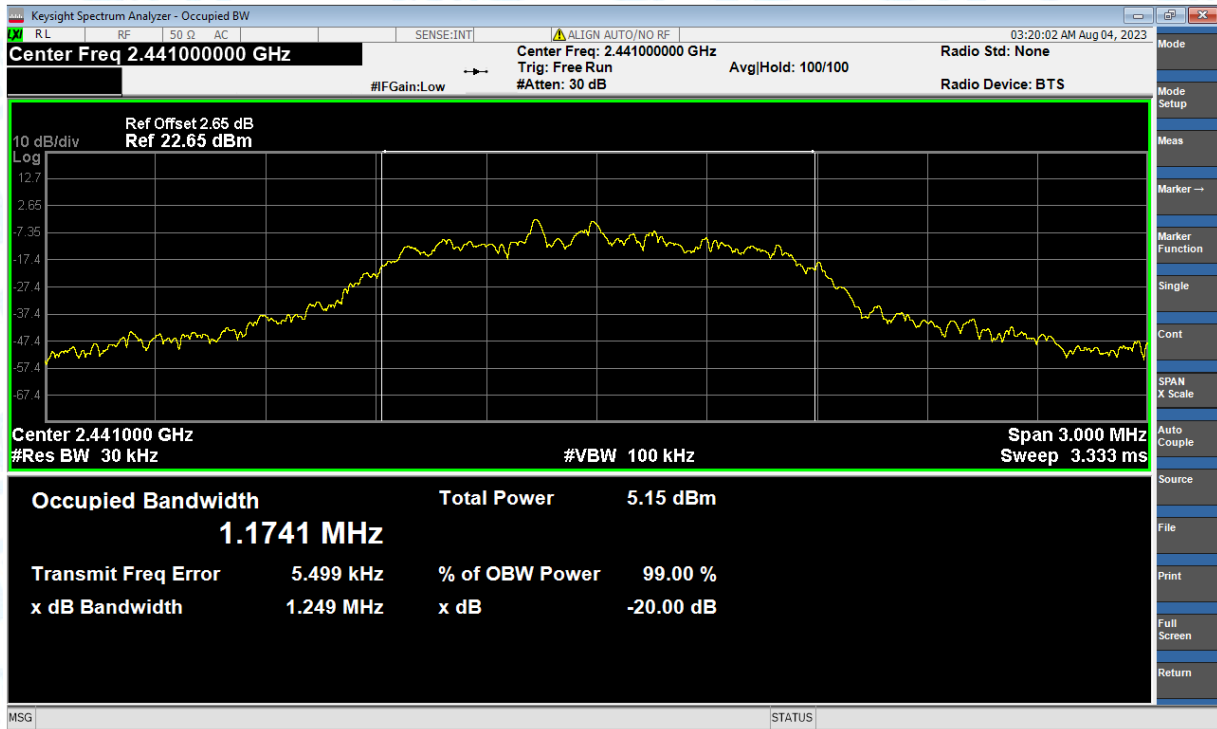
OBW NVNT 2-DH1 2480MHz Ant1



OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



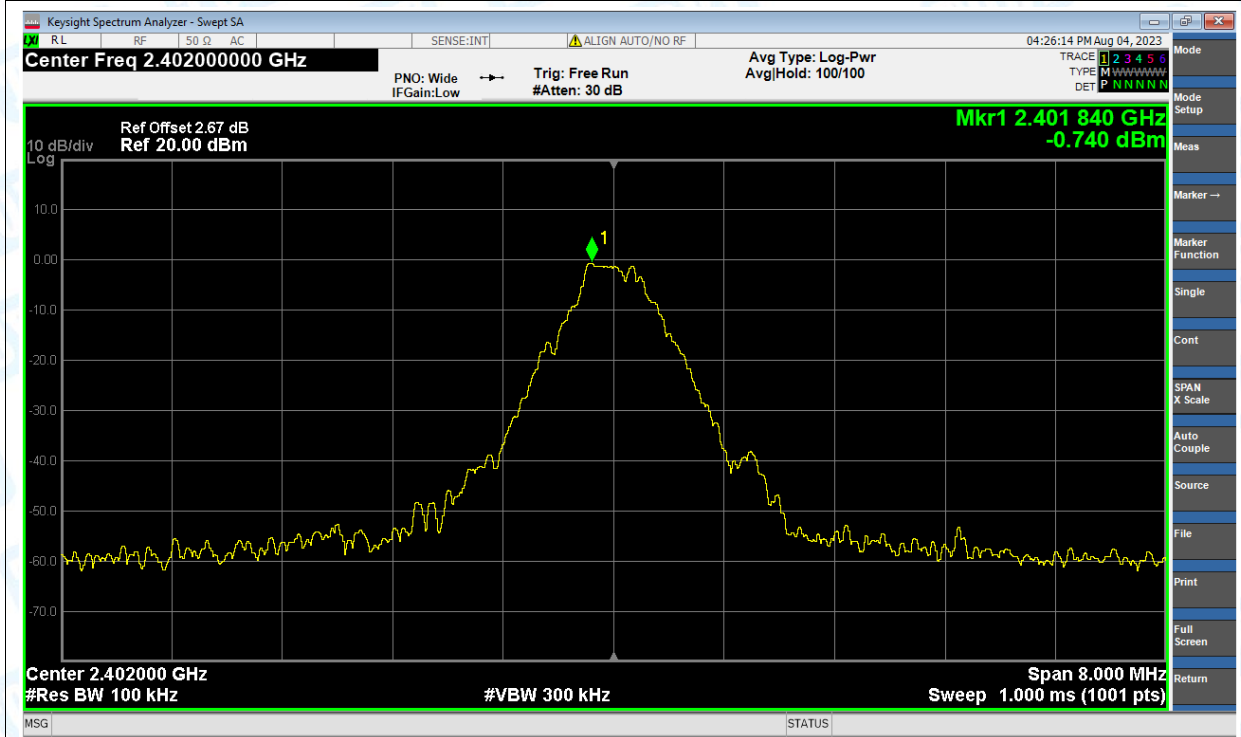


## 5. Band Edge

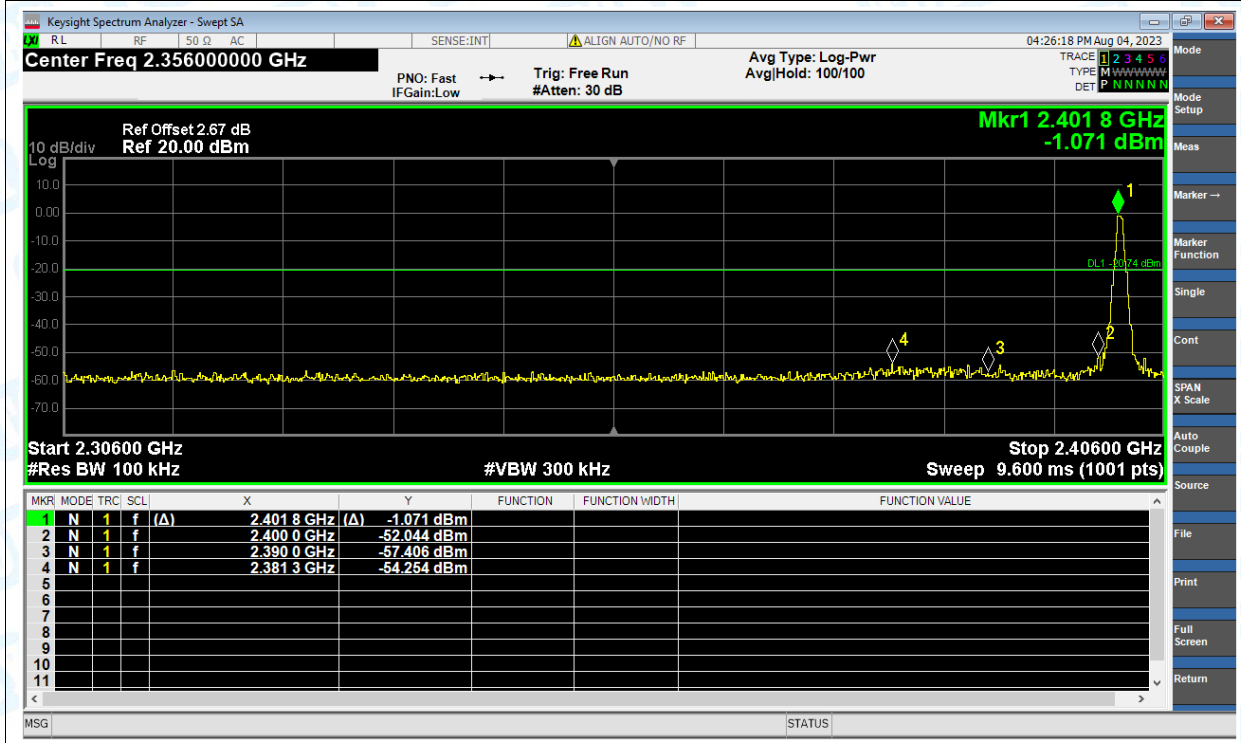
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-53.51	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-53.42	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-53.3	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-53.42	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-53.83	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-51.76	-20	Pass

Test Graphs

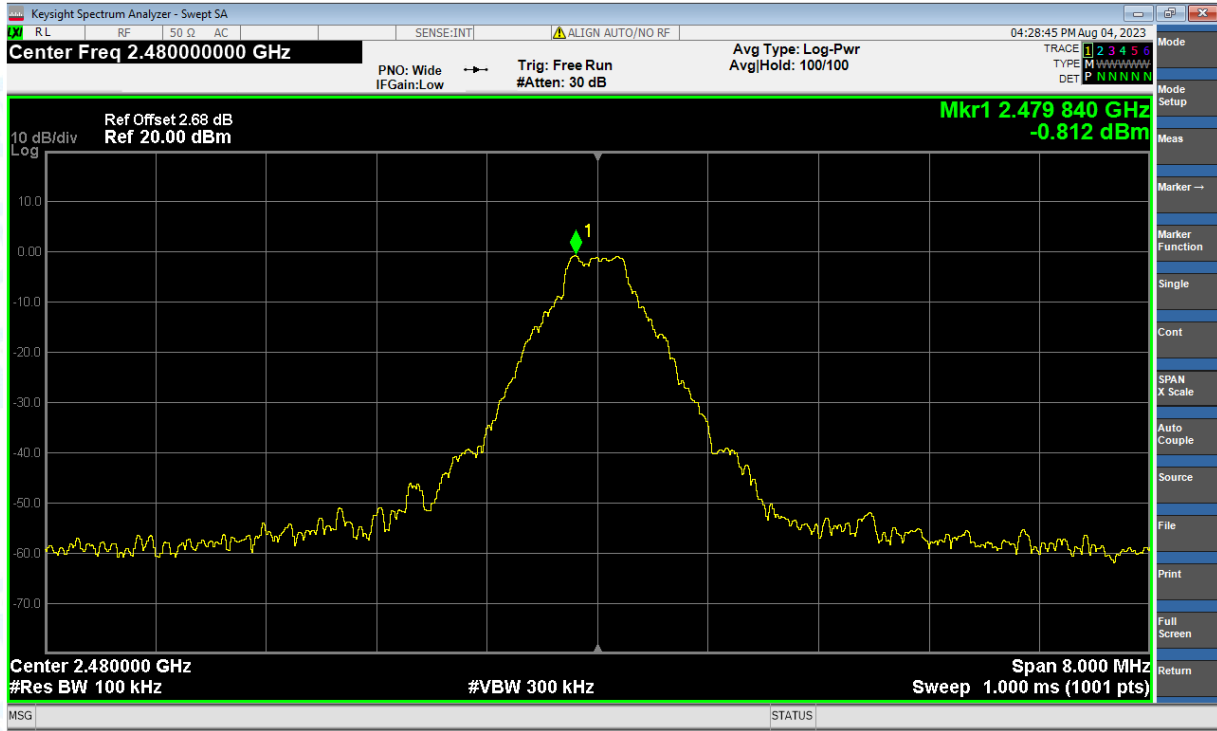
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



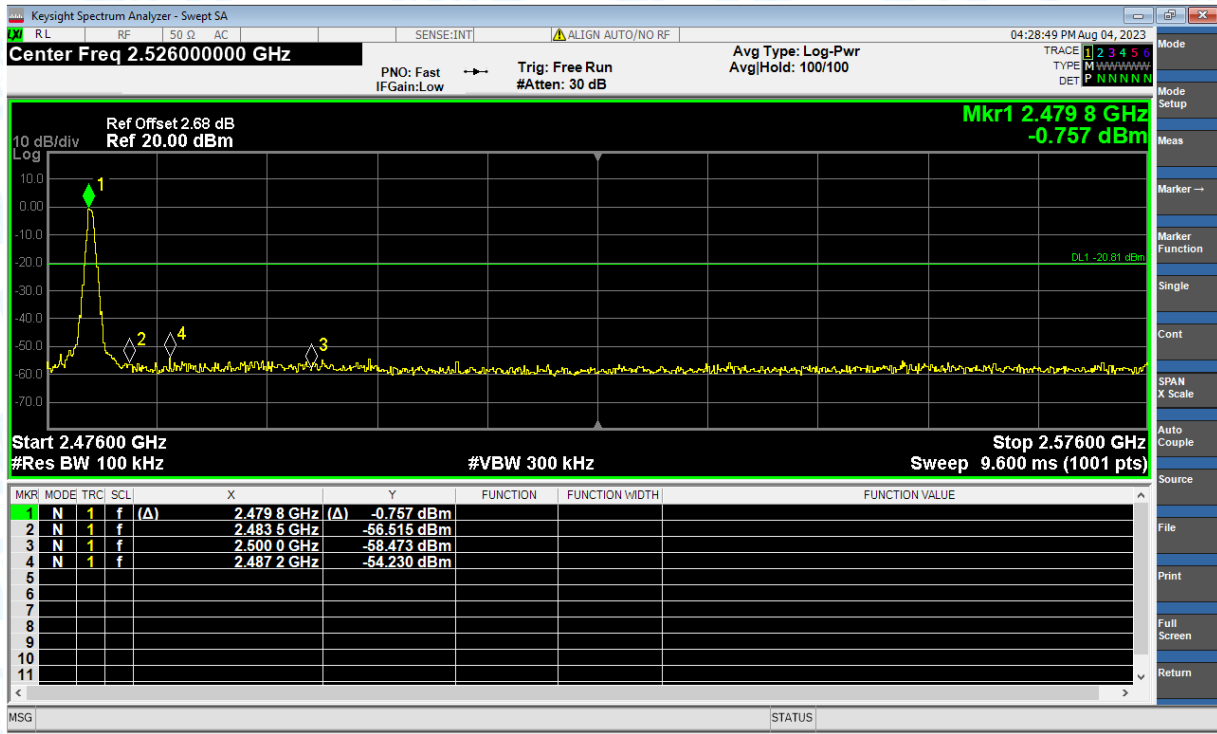
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



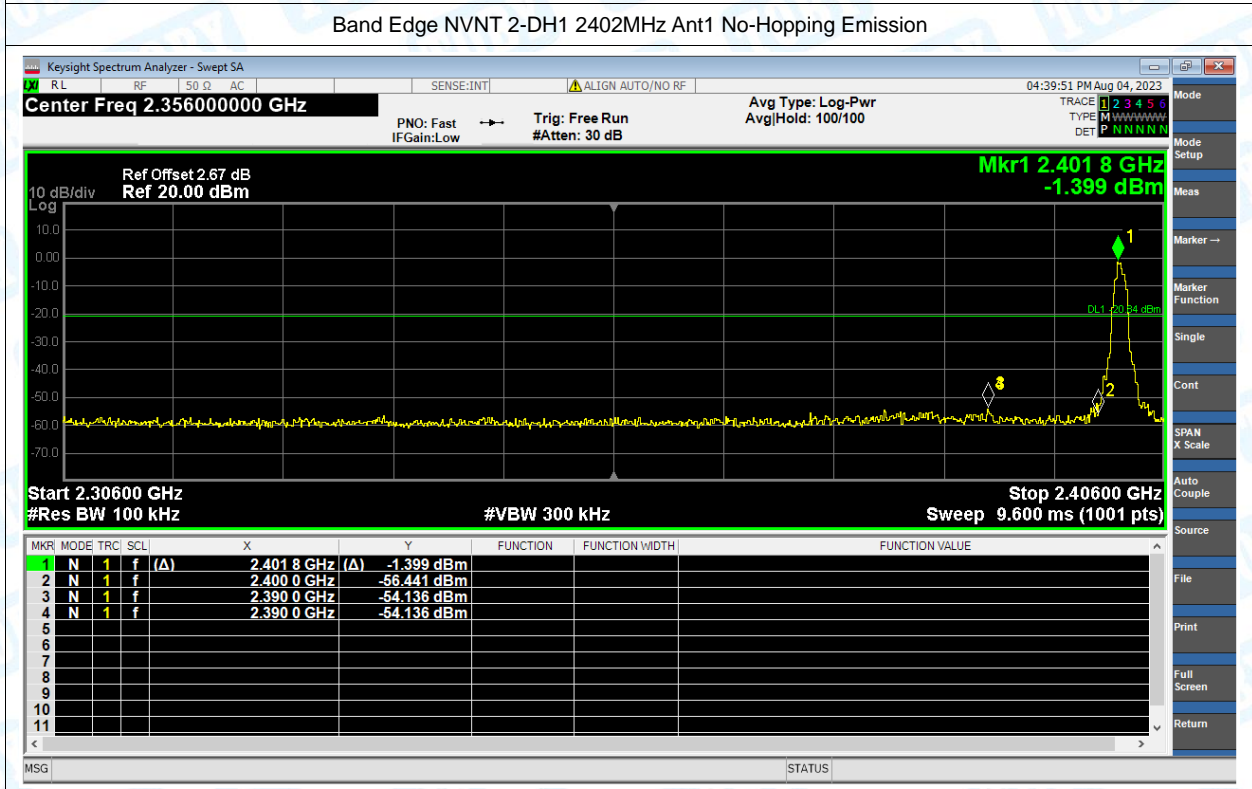
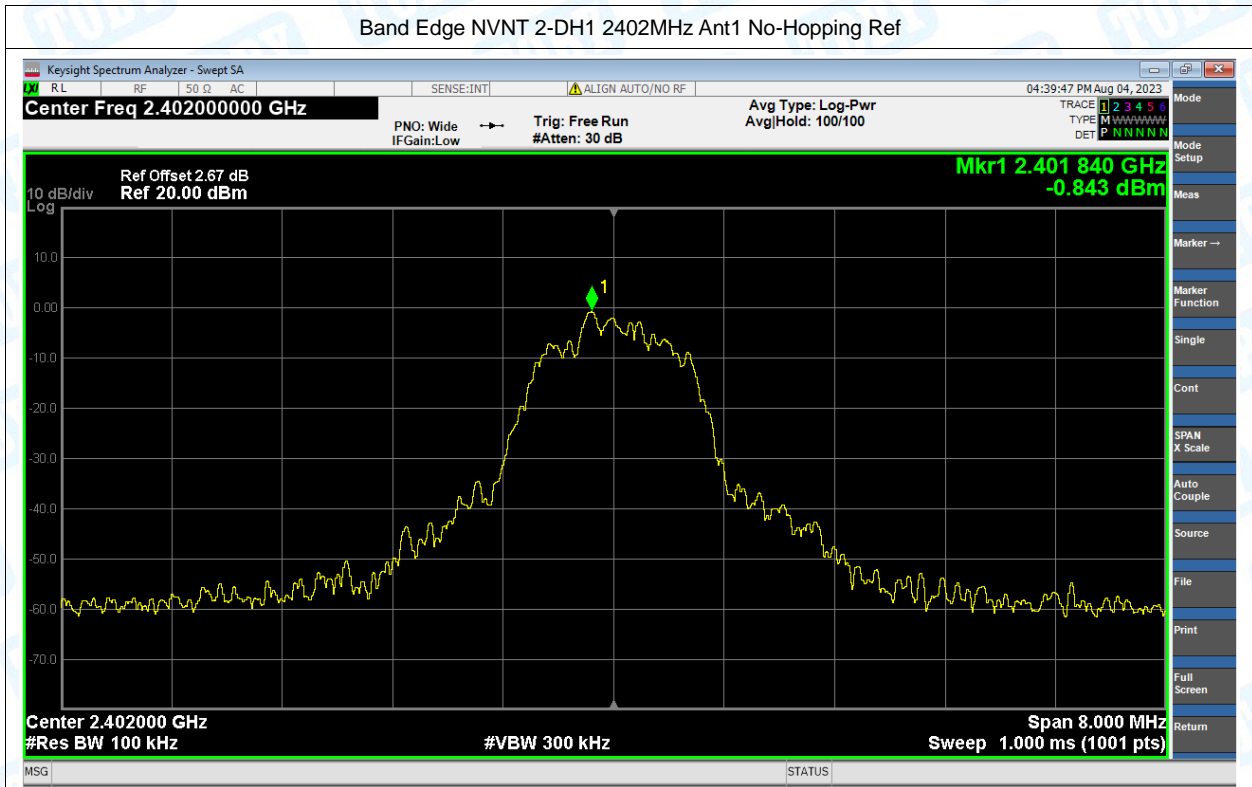
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref

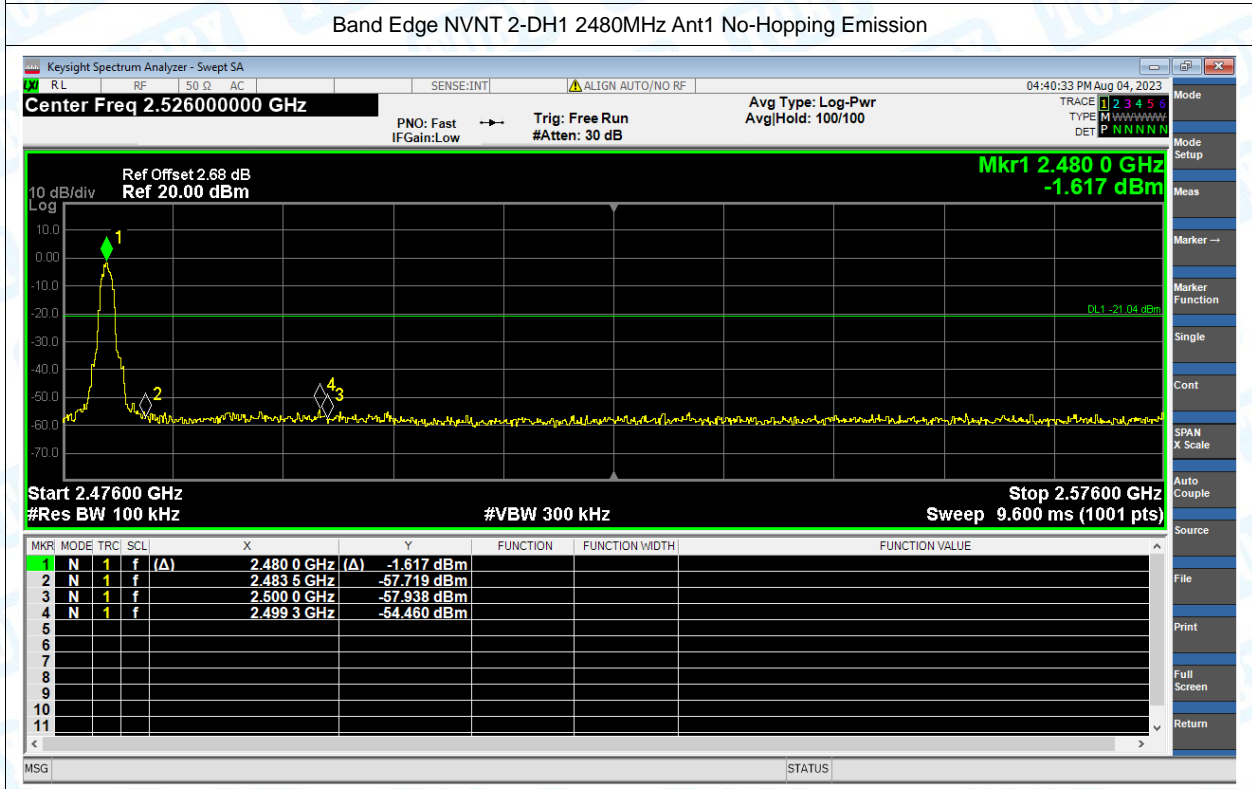
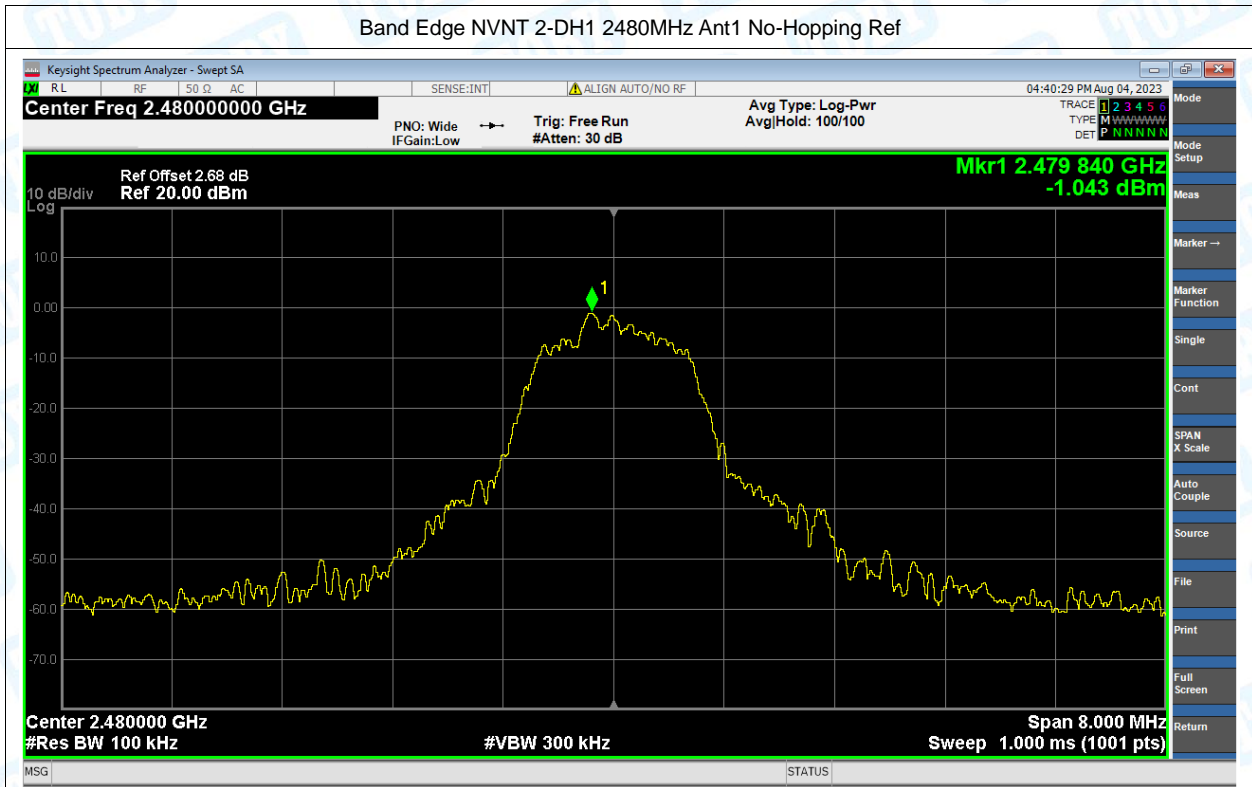


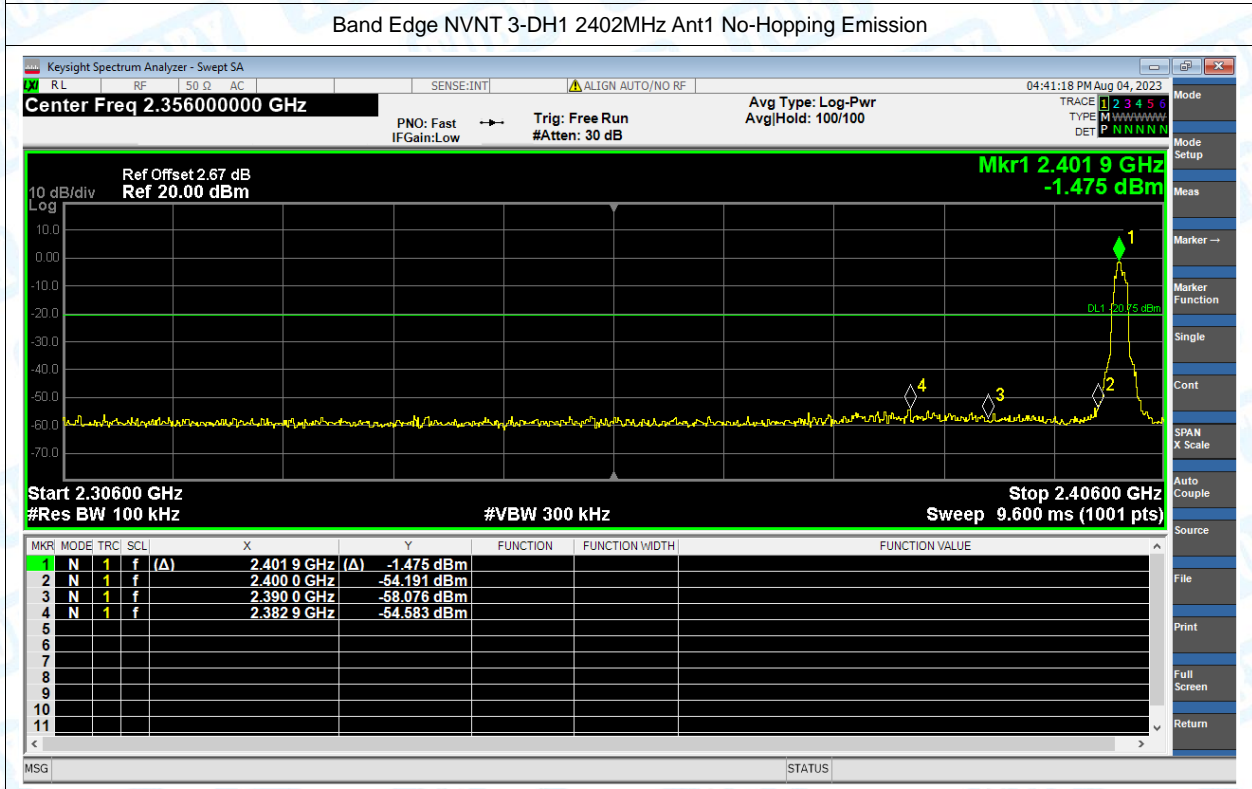
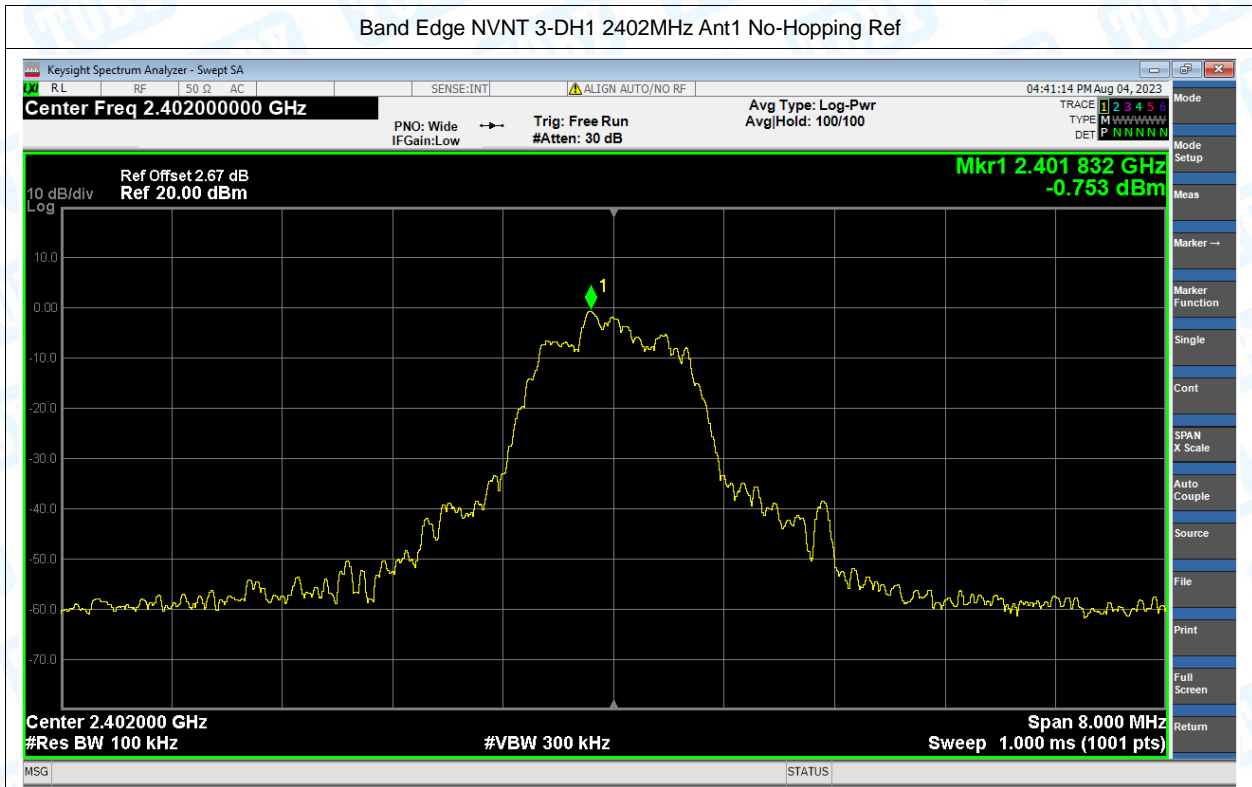
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



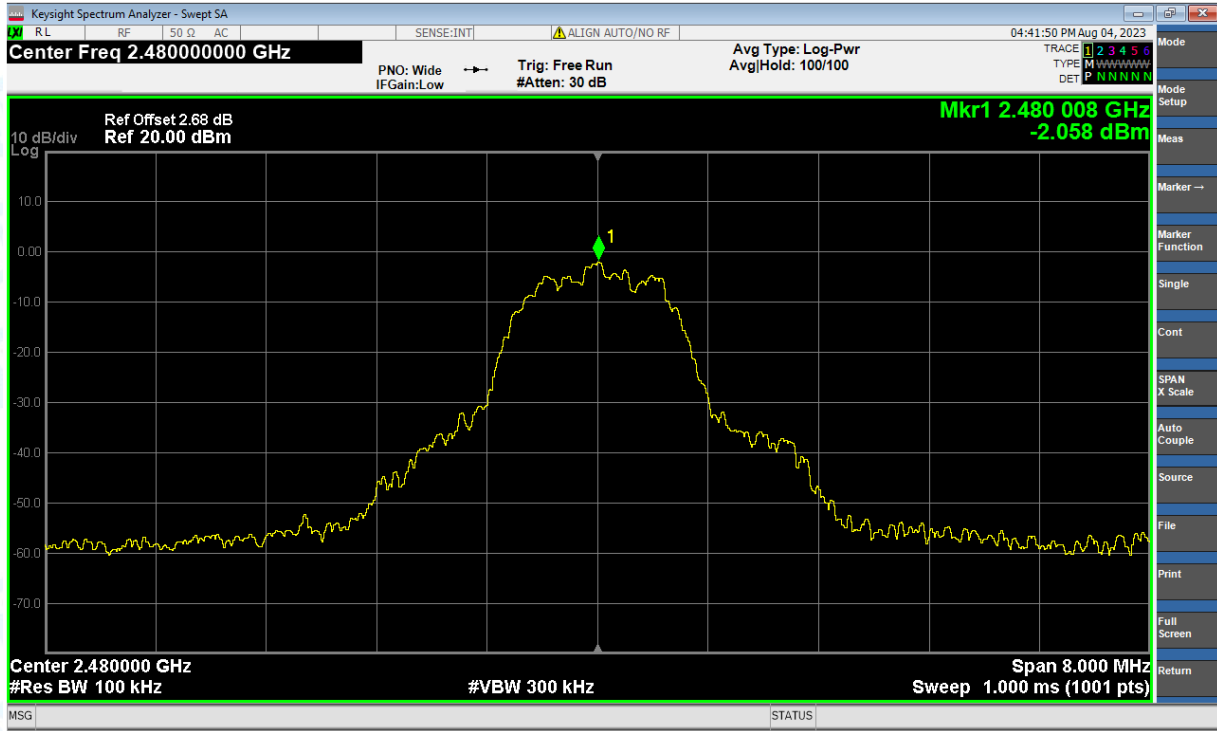




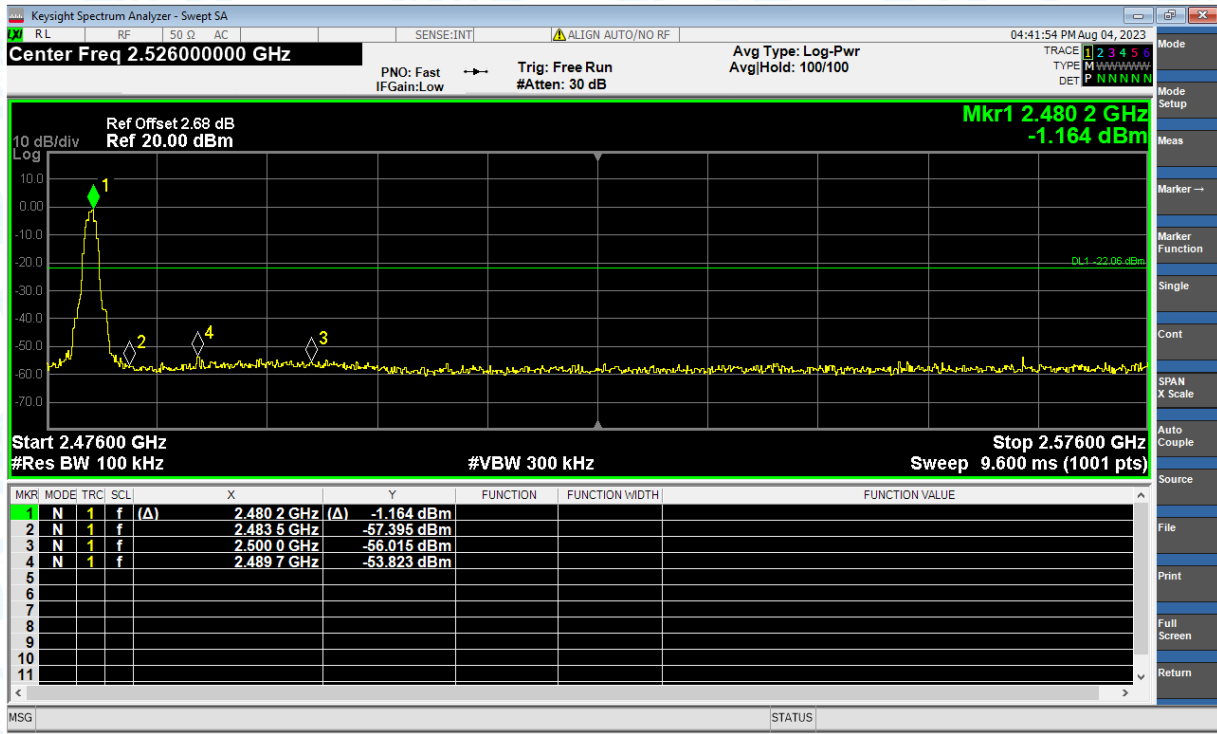




Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Ref



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

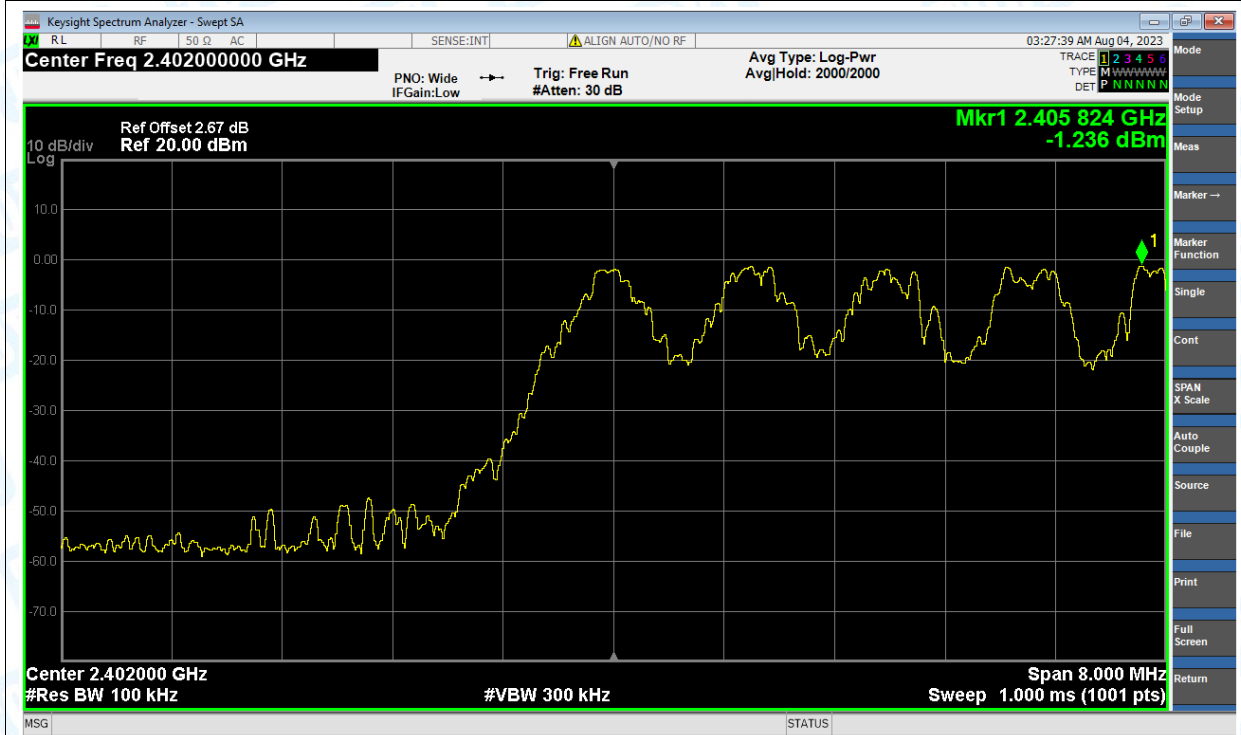


## 6. Band Edge(Hopping)

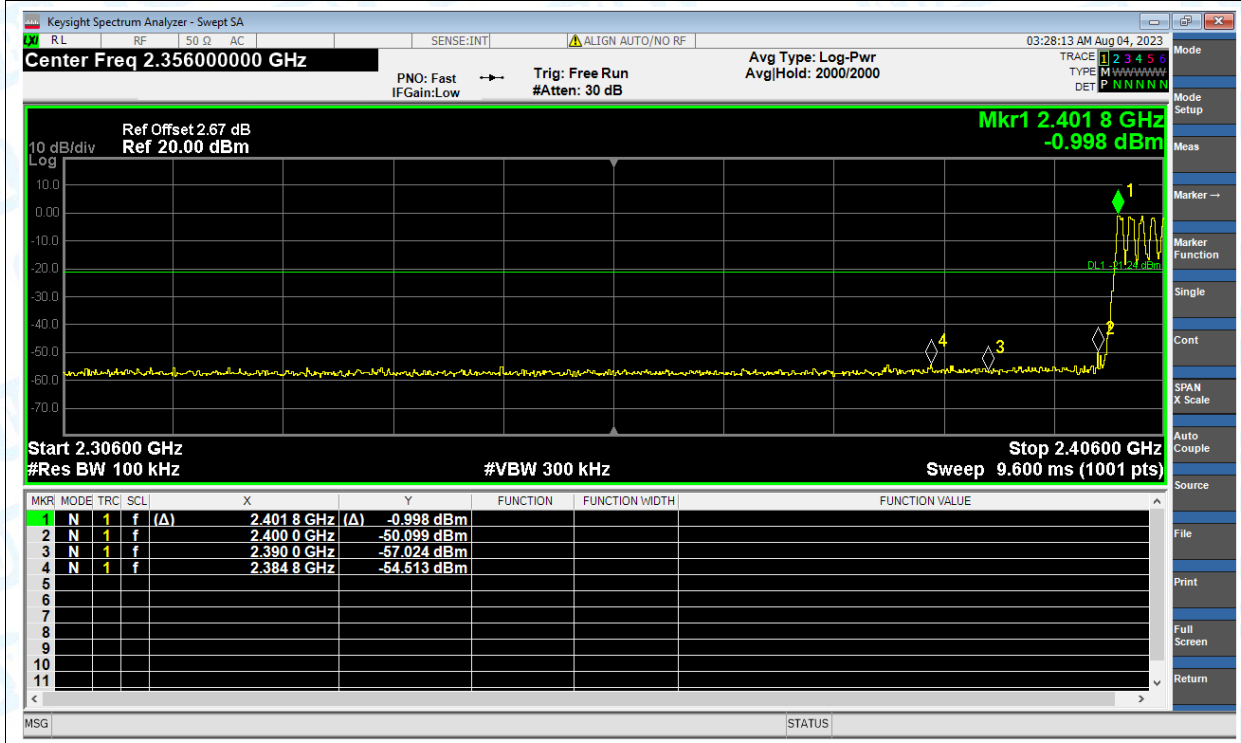
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-53.27	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-51.92	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-53.03	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-51.91	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-53.4	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-53.42	-20	Pass

Test Graphs

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



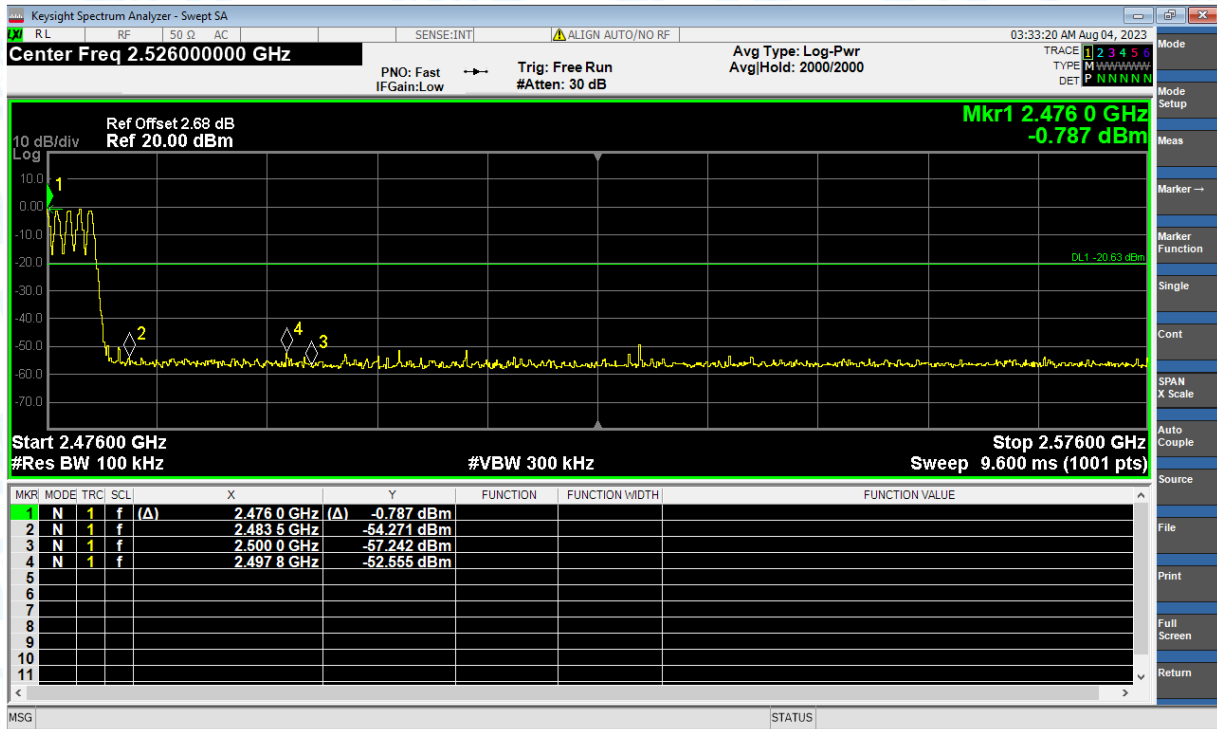
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



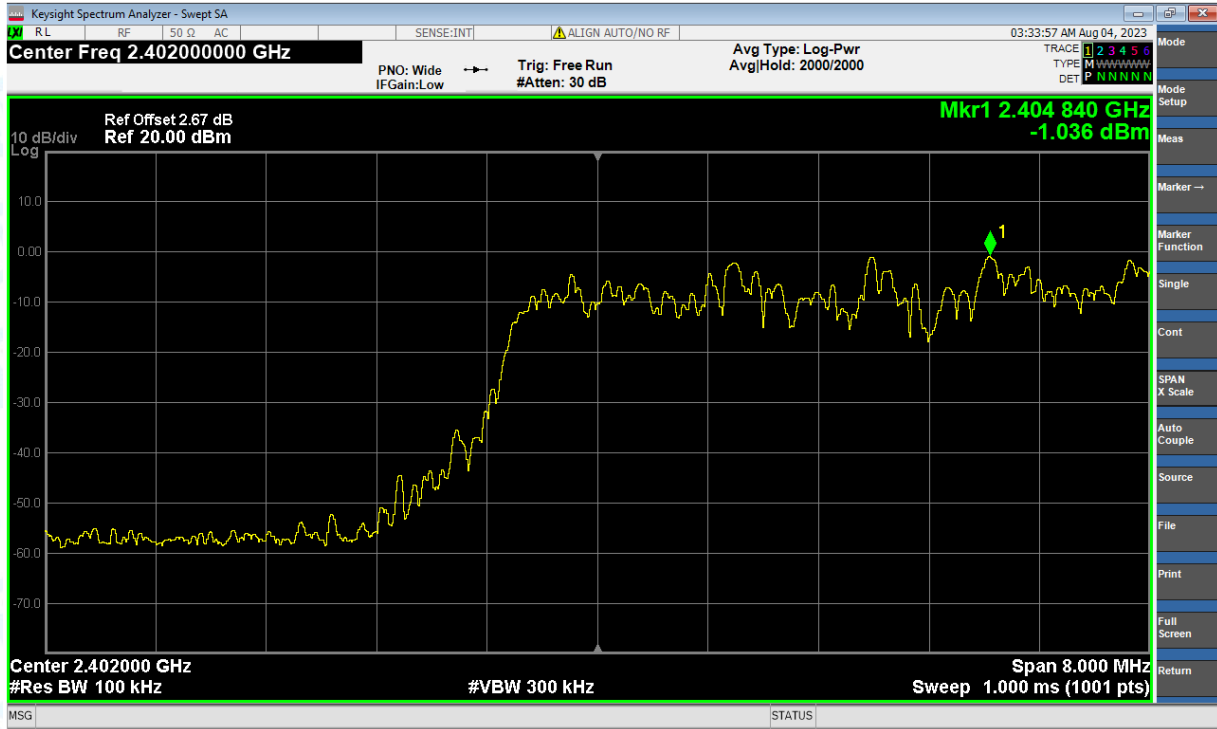
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref



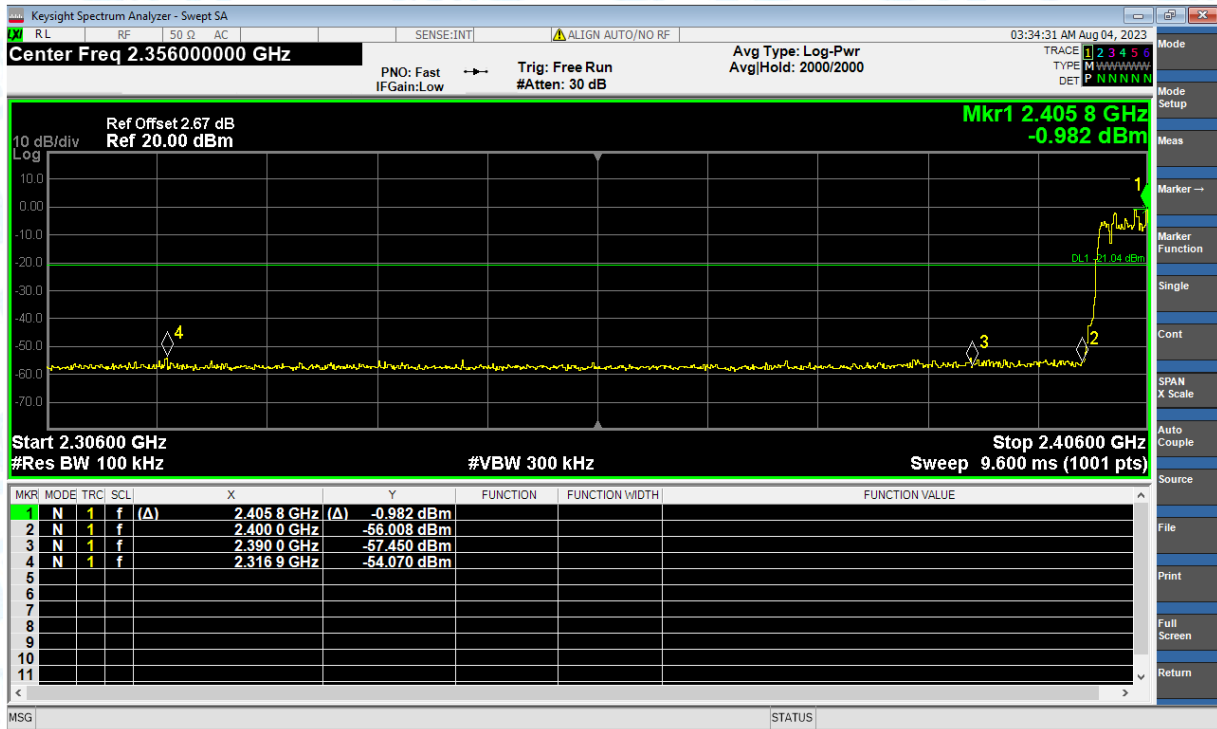
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



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

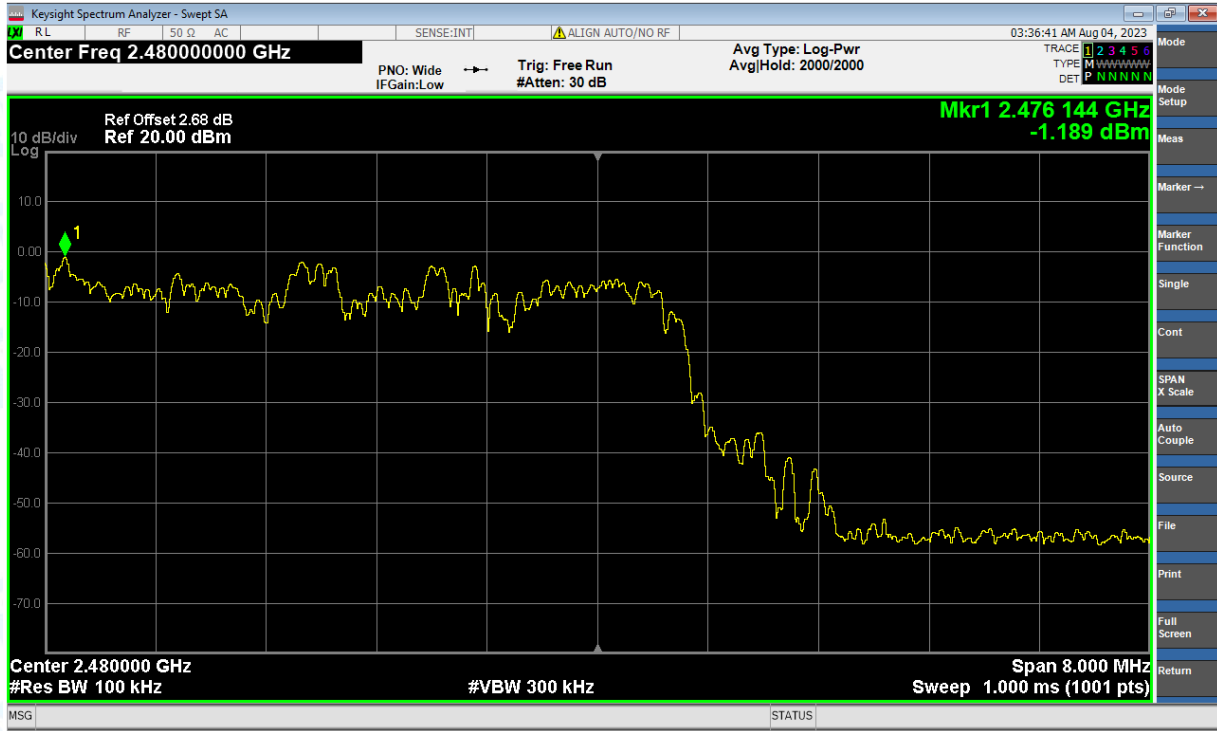


Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission

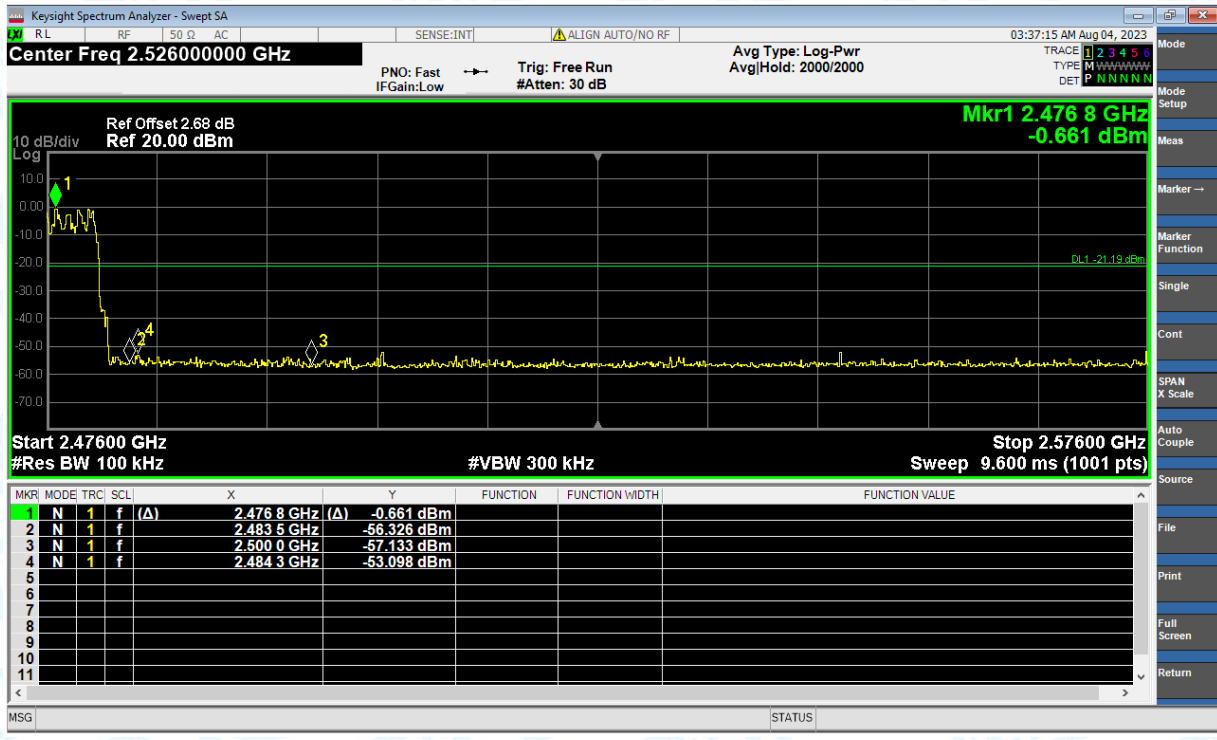




Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref



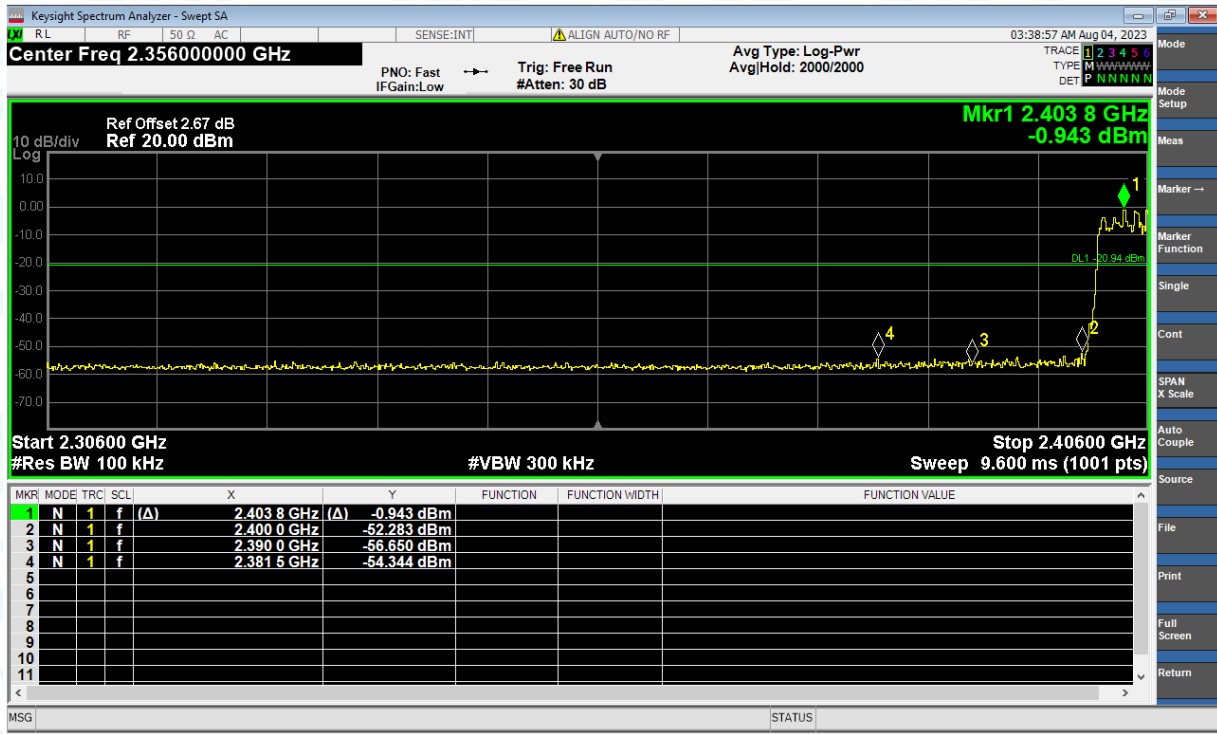
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission



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



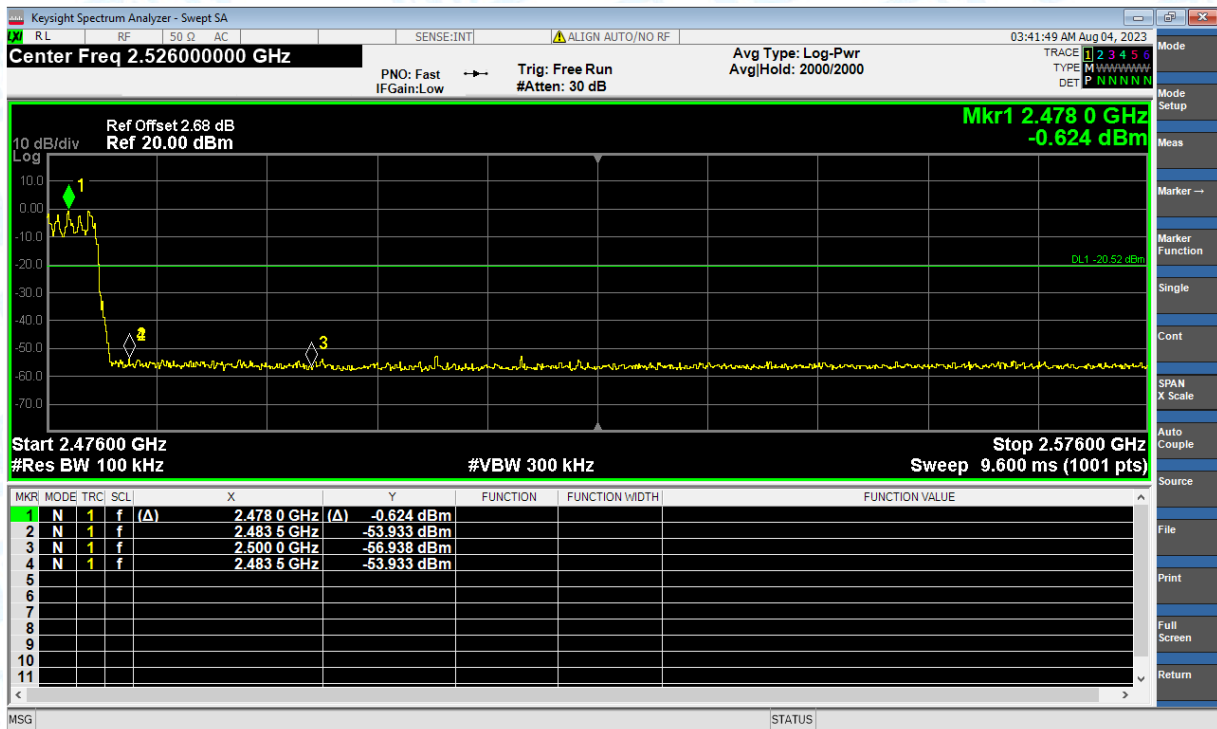
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



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



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

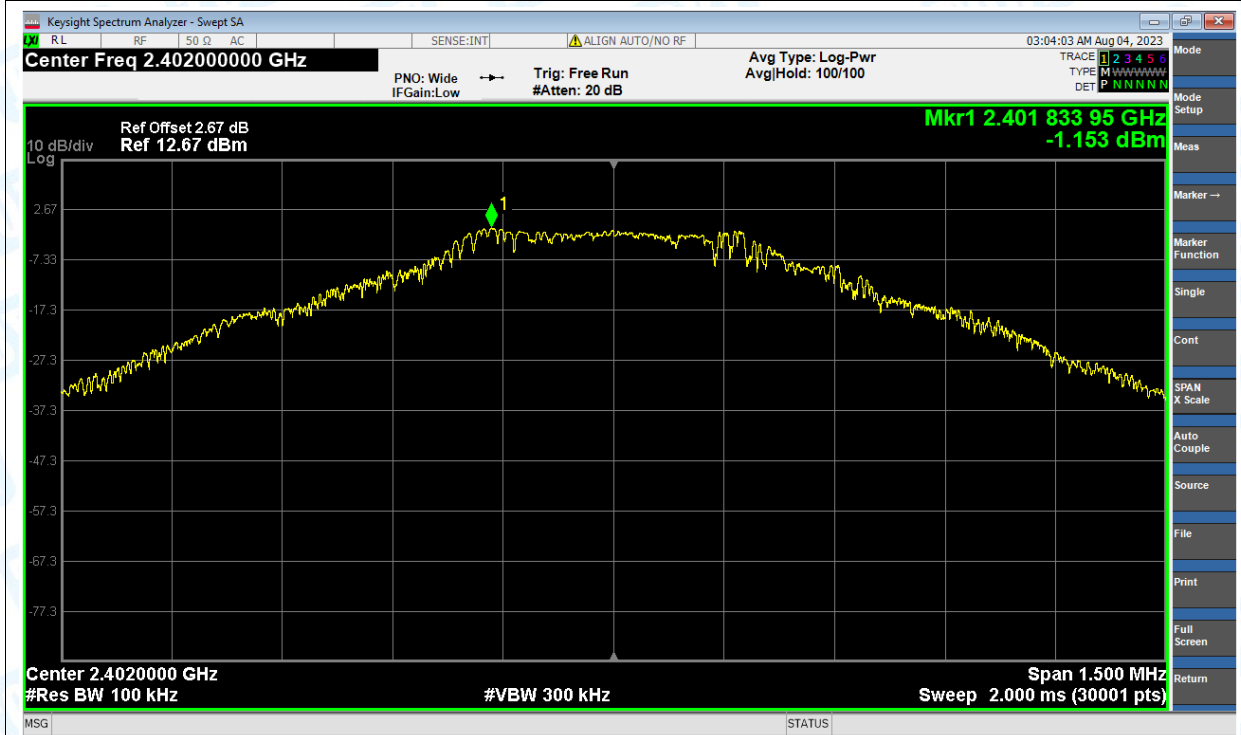


## 7. Conducted RF Spurious Emission

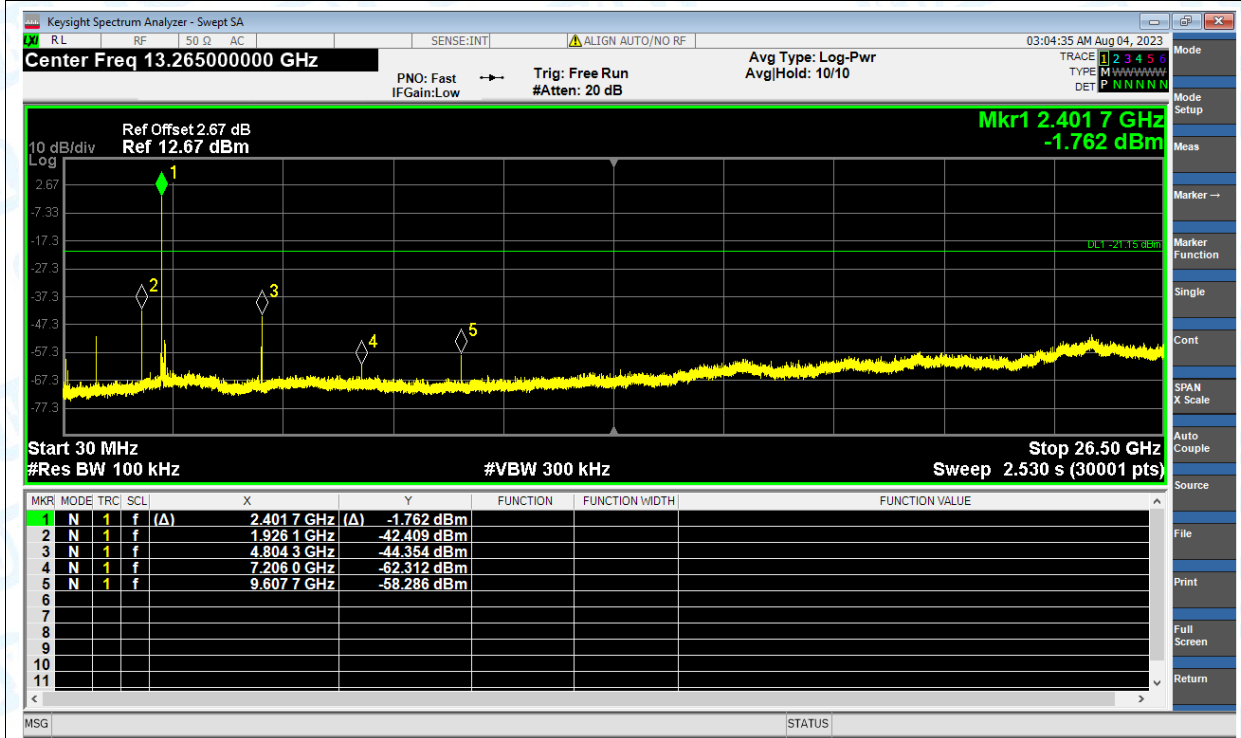
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-41.26	-20	Pass
NVNT	1-DH1	2441	Ant1	-48.73	-20	Pass
NVNT	1-DH1	2480	Ant1	-47.48	-20	Pass
NVNT	2-DH1	2402	Ant1	-48.37	-20	Pass
NVNT	2-DH1	2441	Ant1	-47.15	-20	Pass
NVNT	2-DH1	2480	Ant1	-48.82	-20	Pass
NVNT	3-DH1	2402	Ant1	-45.99	-20	Pass
NVNT	3-DH1	2441	Ant1	-50.06	-20	Pass
NVNT	3-DH1	2480	Ant1	-48.74	-20	Pass

Test Graphs

Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



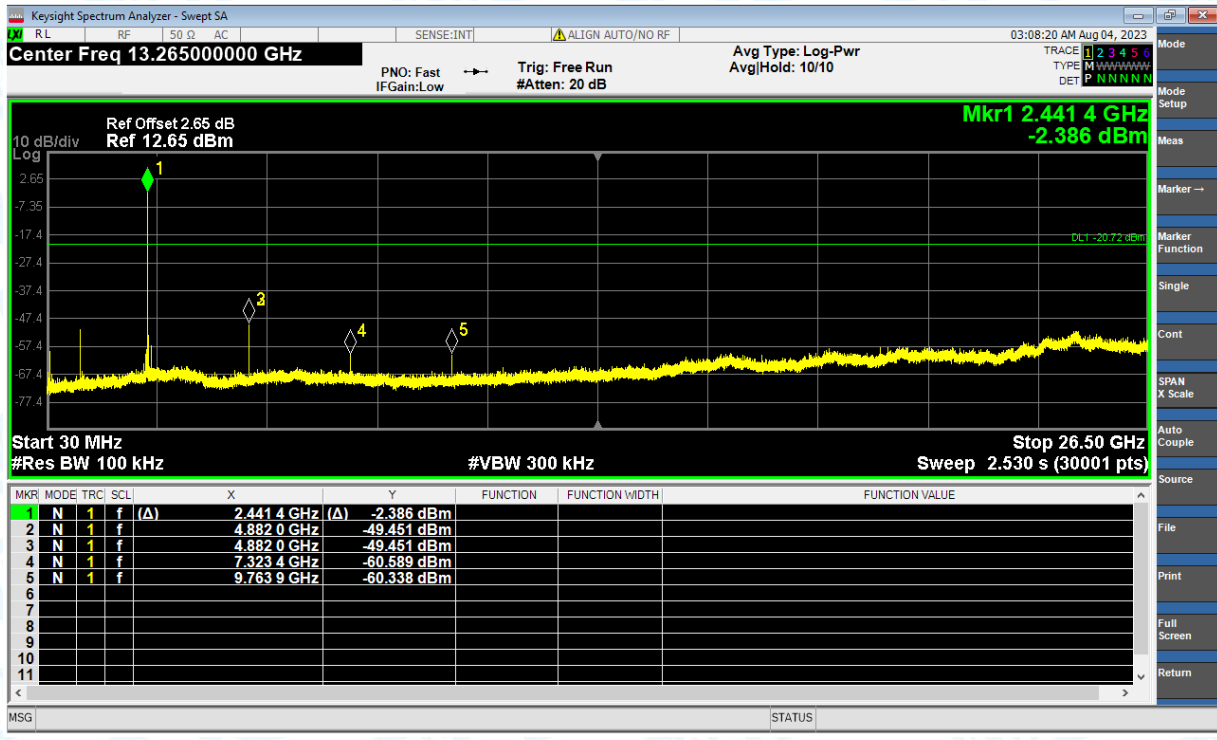
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



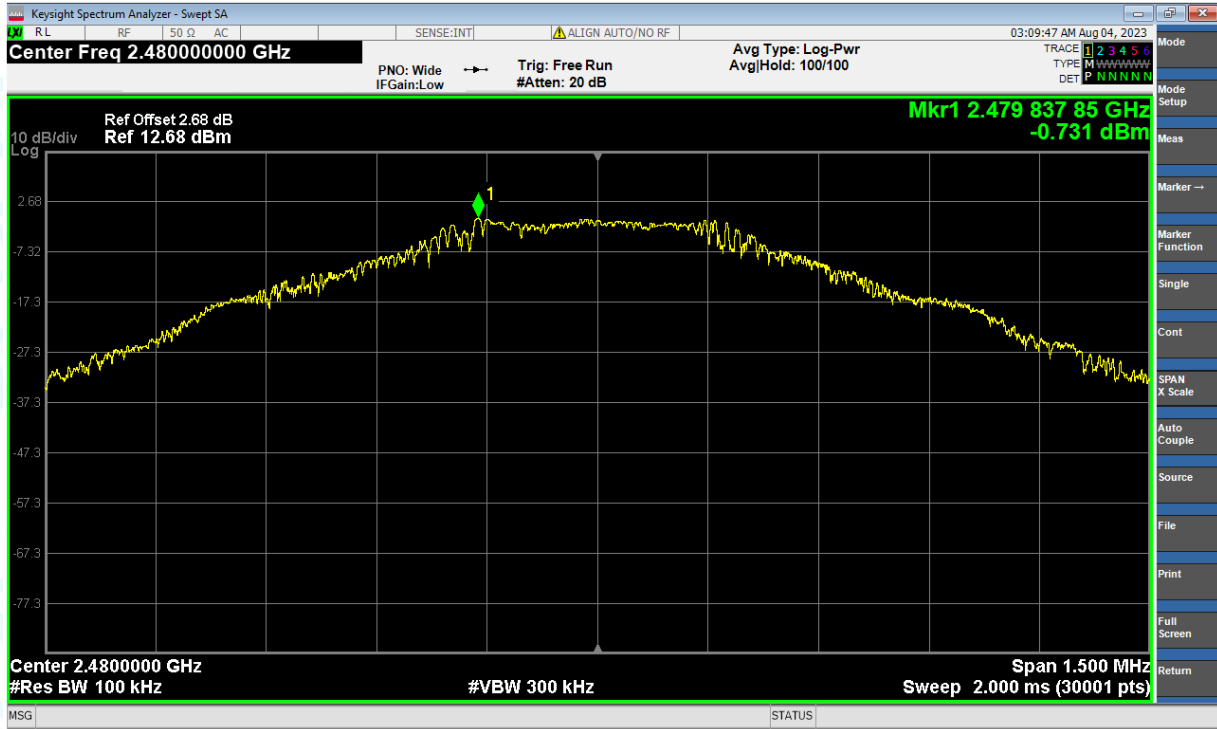
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



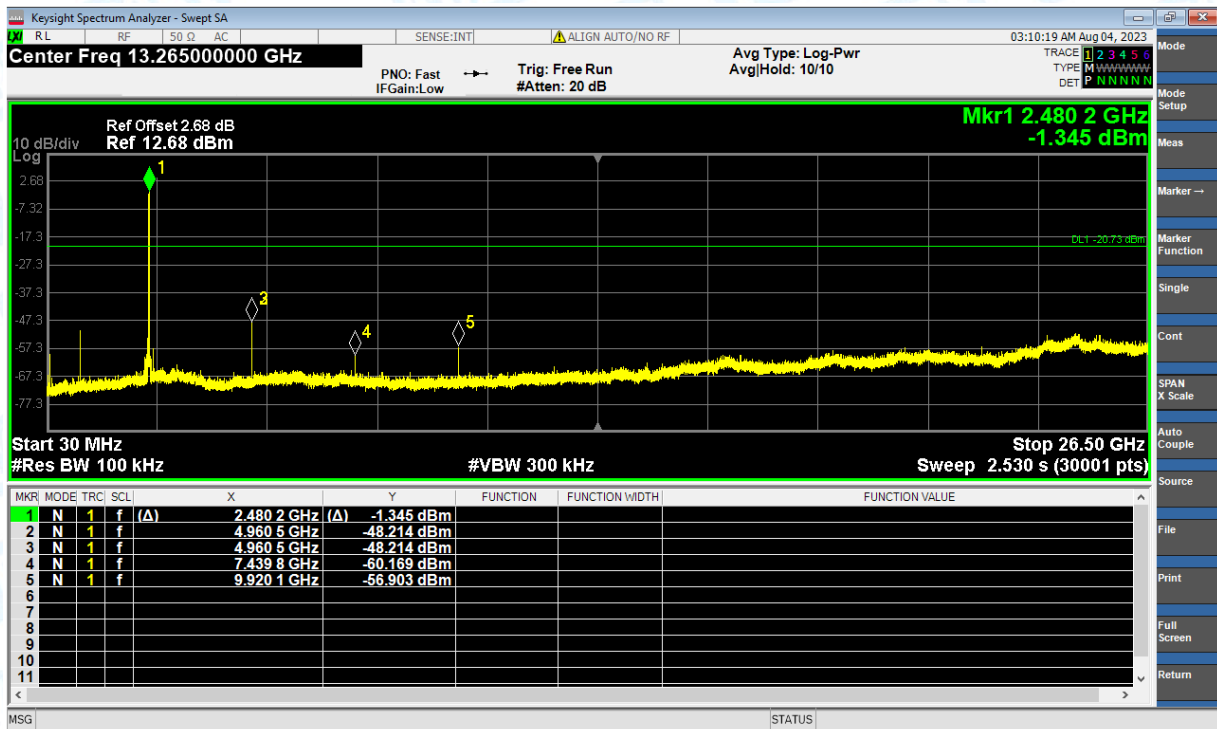
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



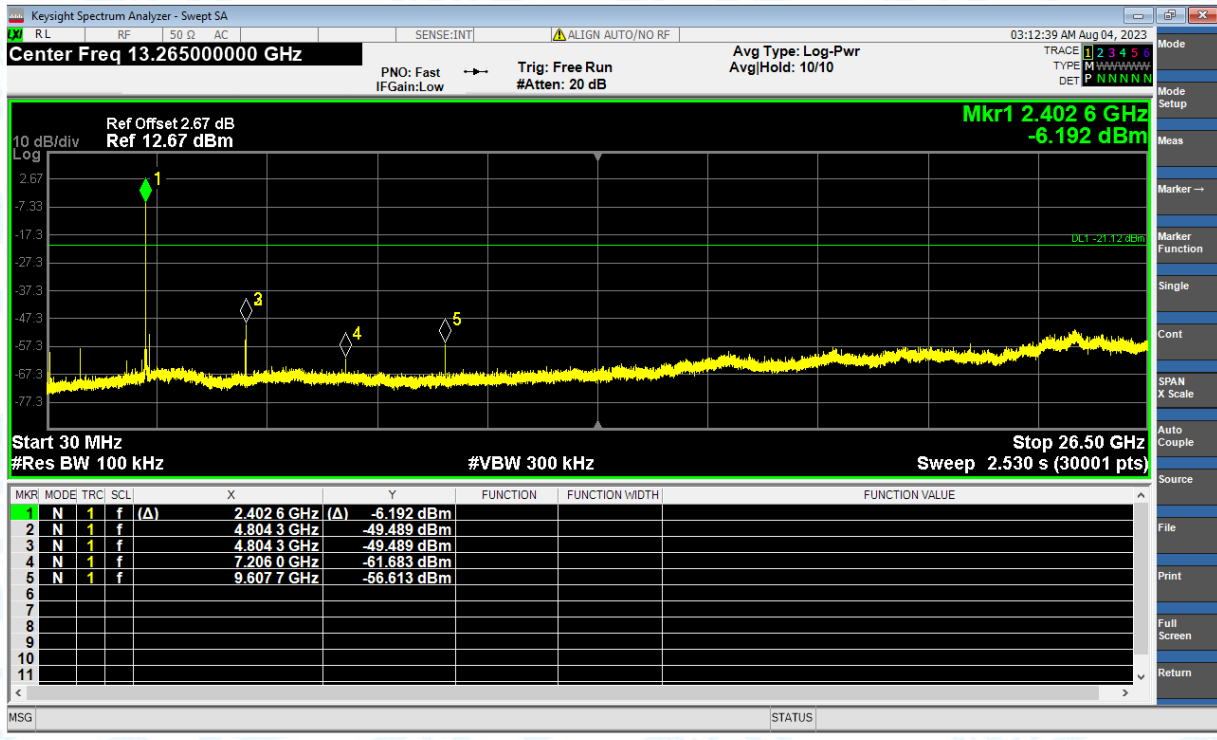
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref

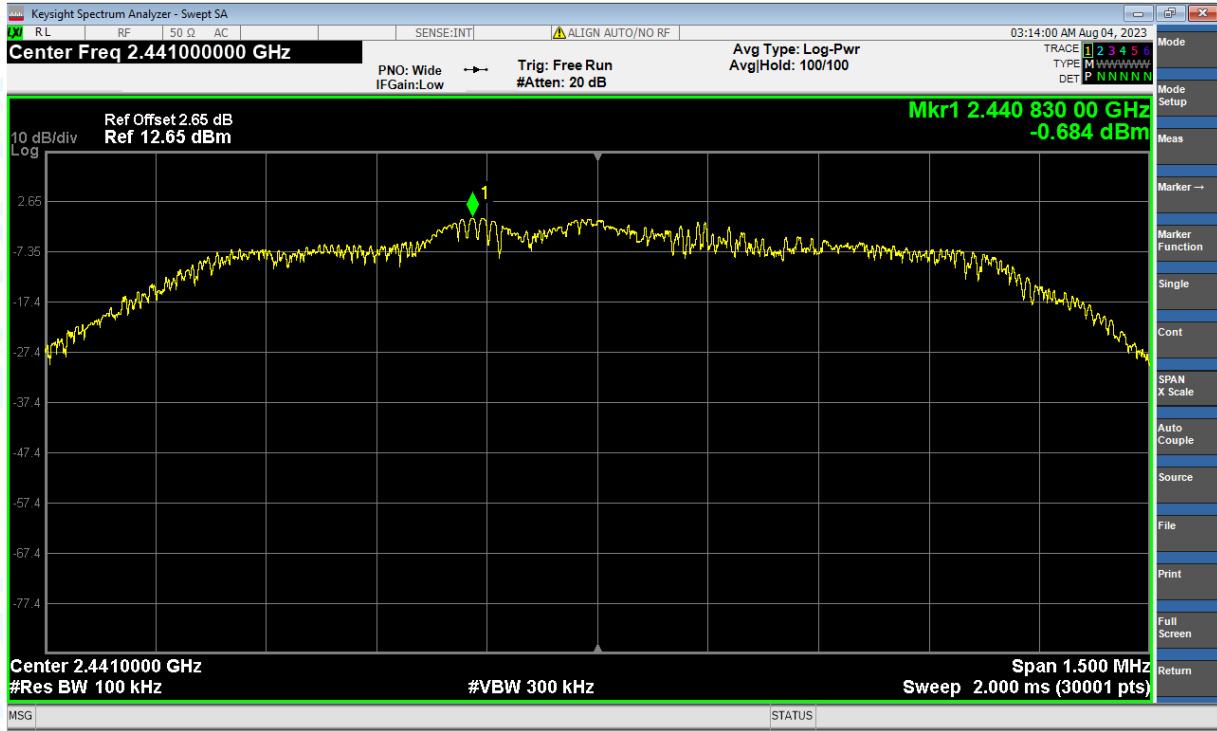


Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission

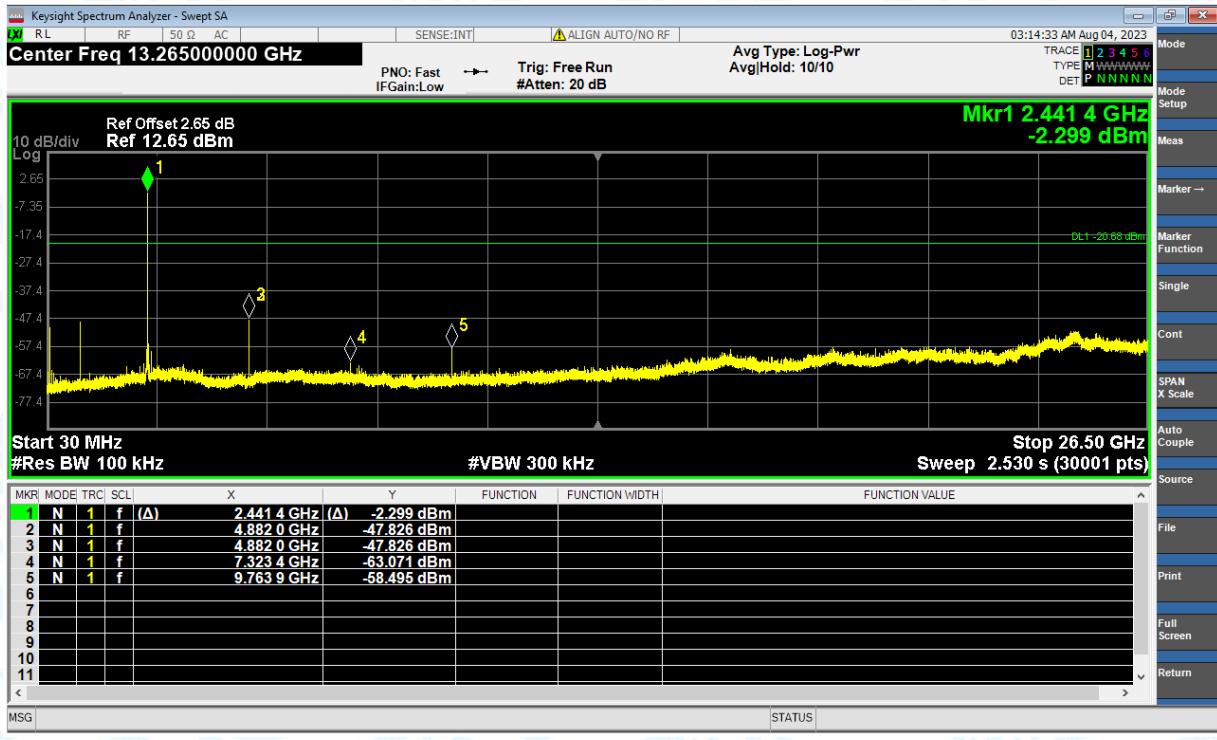




Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



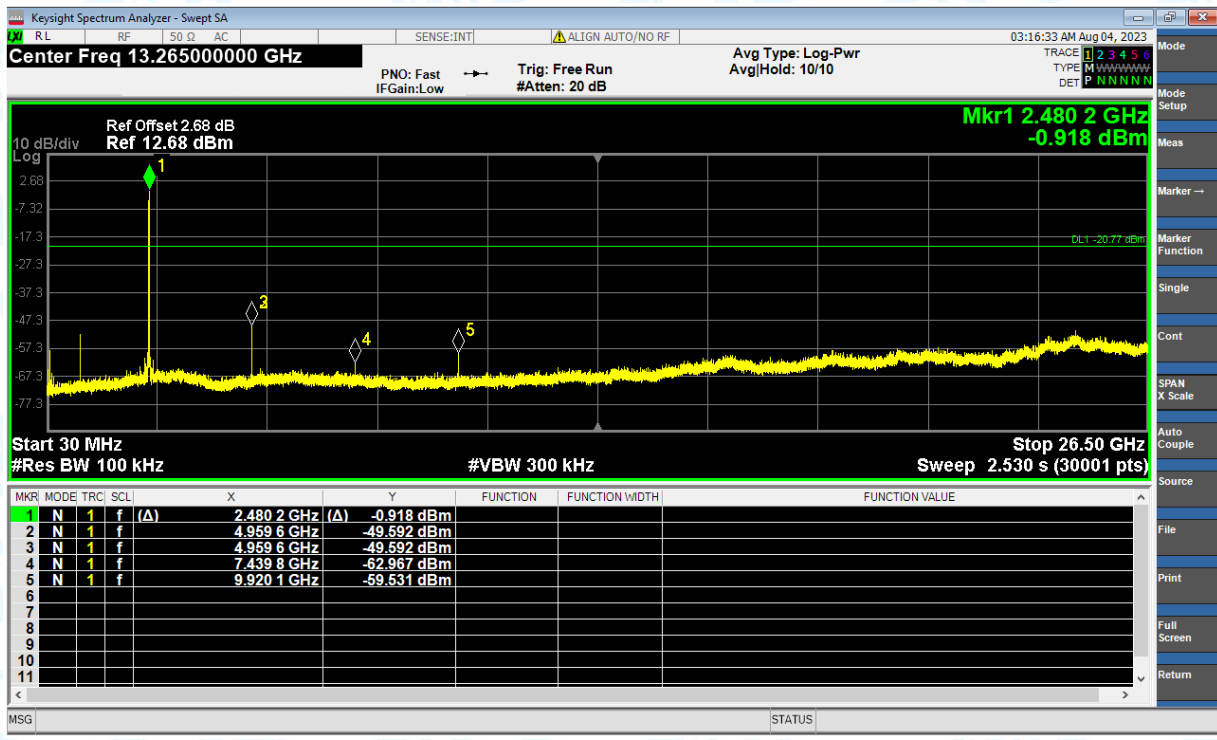
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



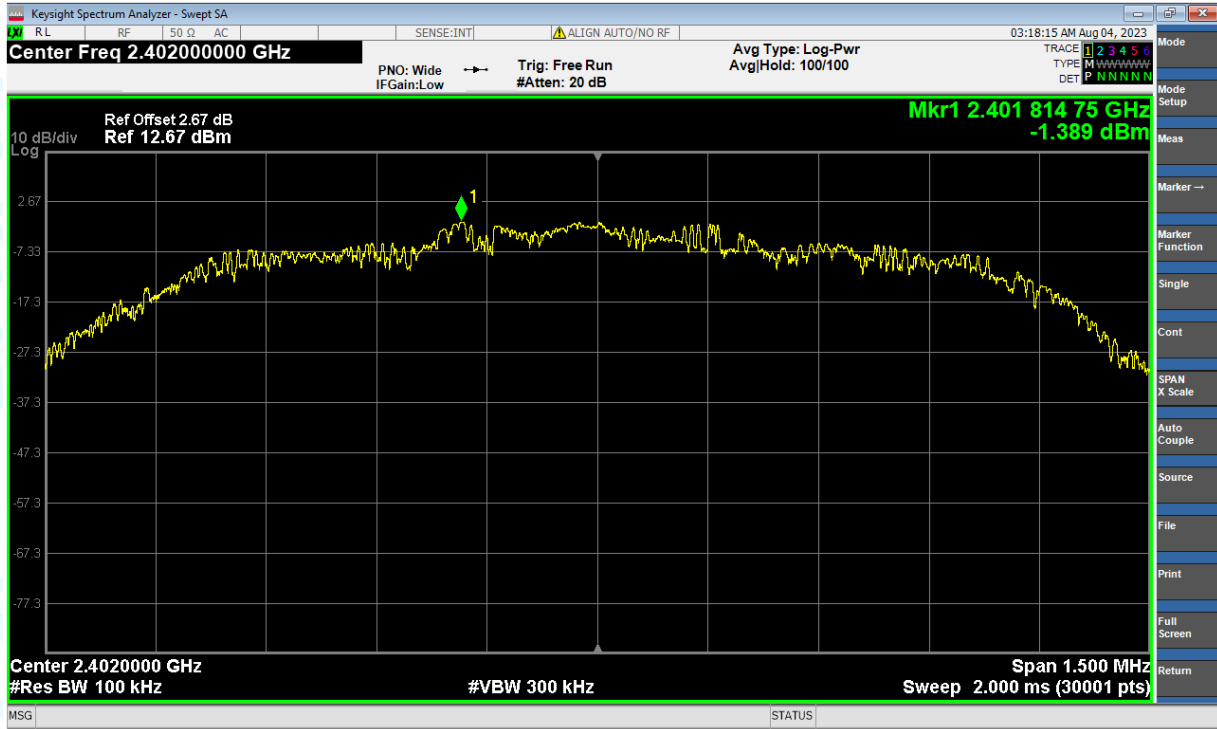
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



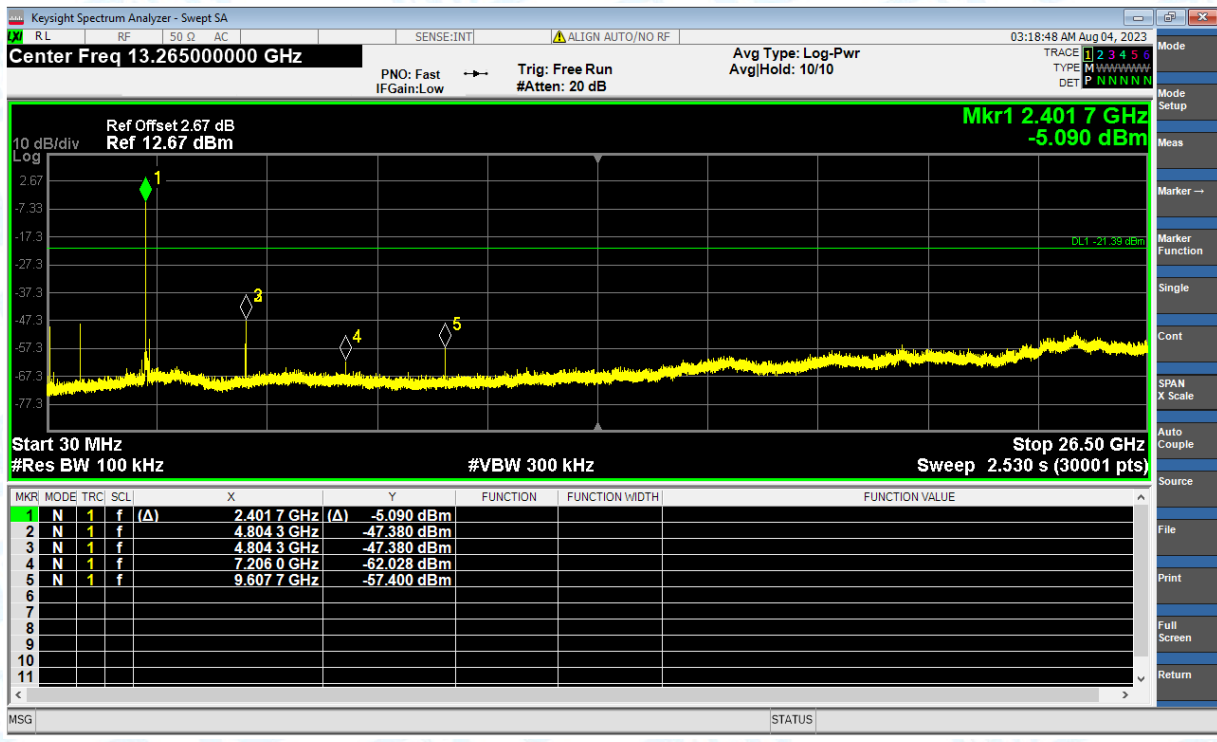
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



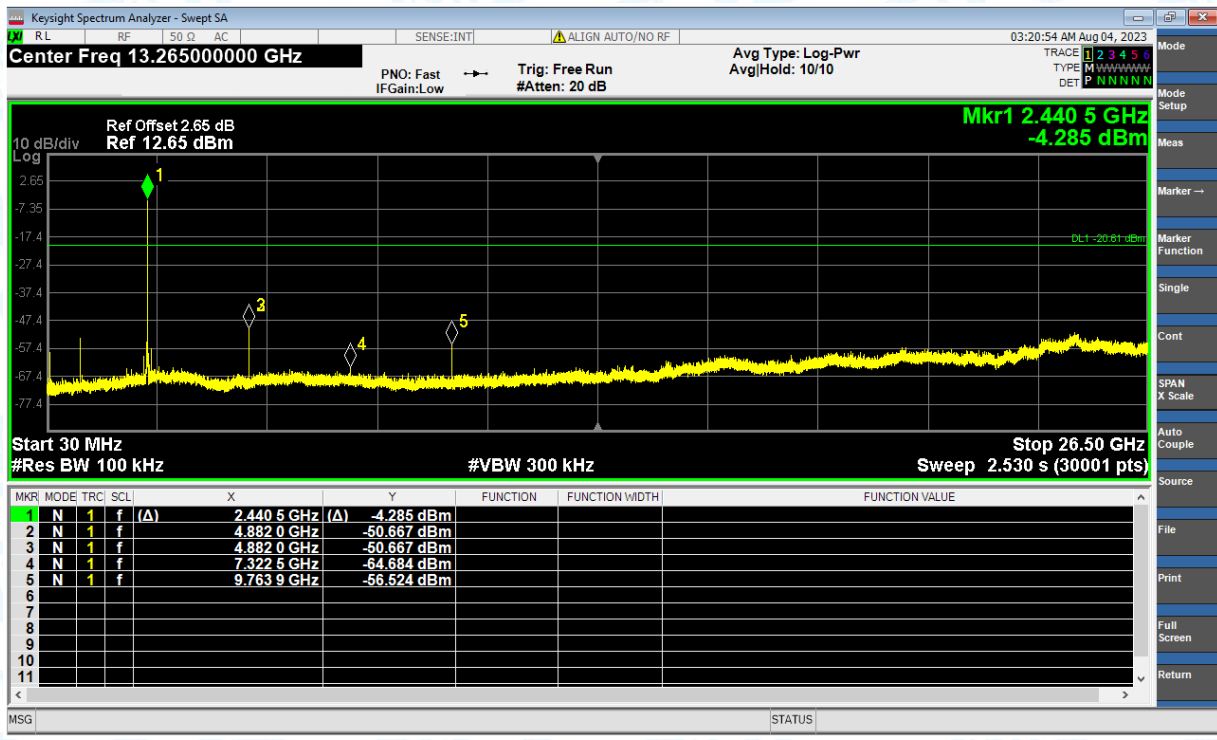
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



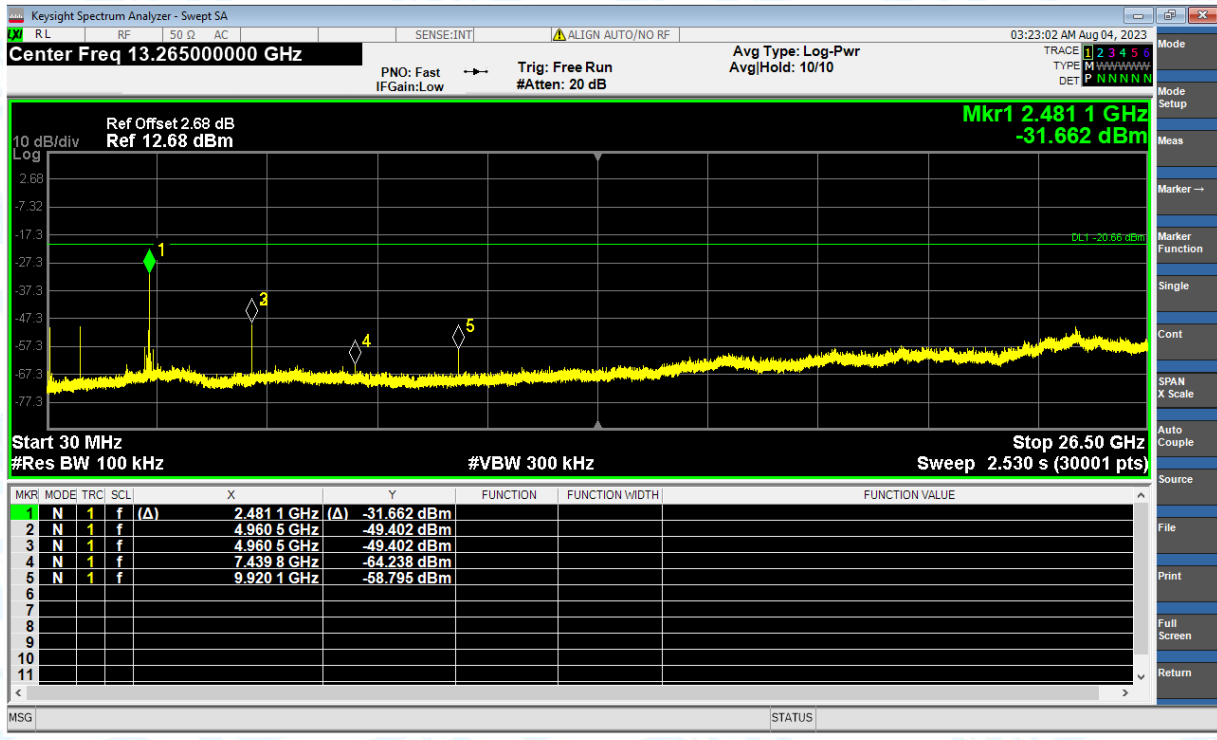
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

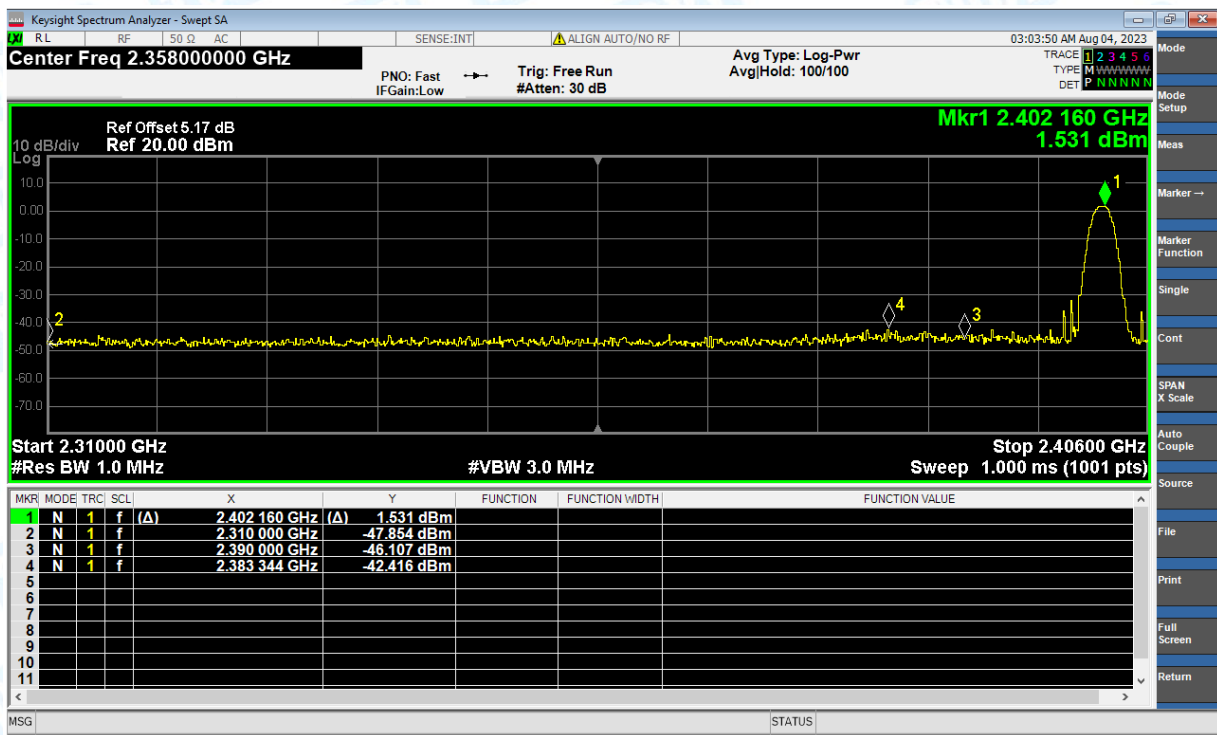


## 8. Restrict Band

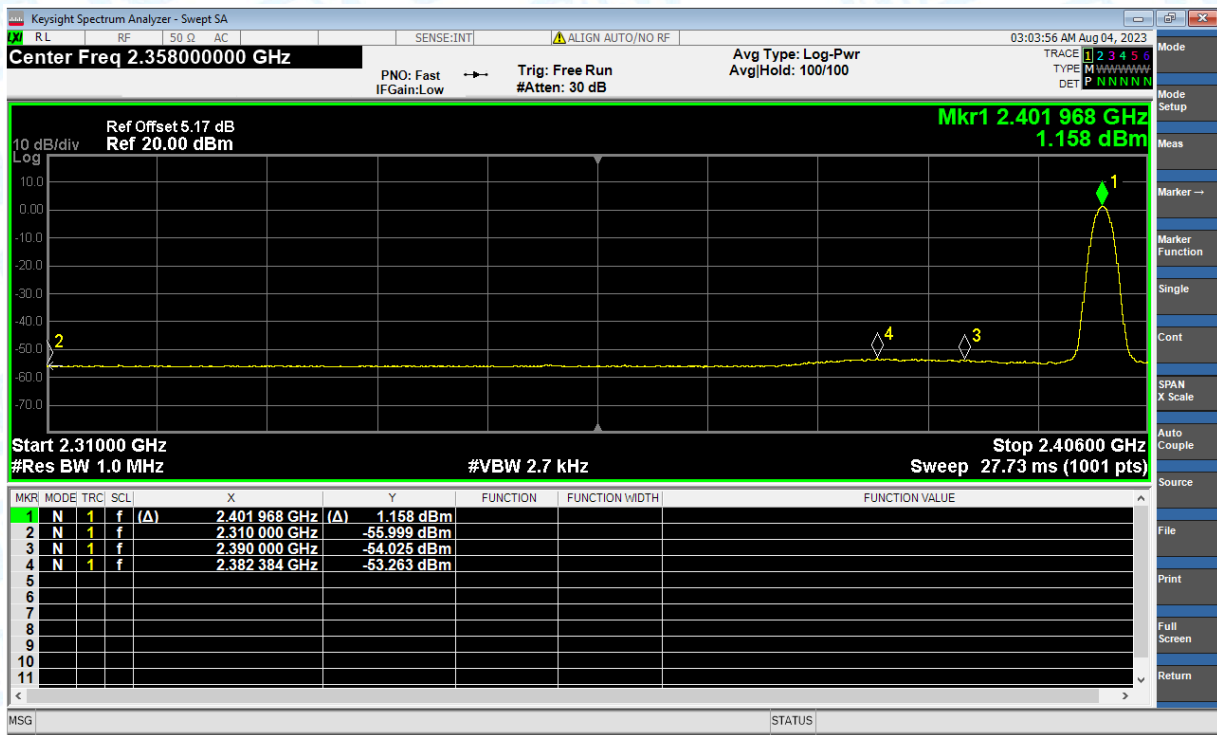
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-47.85	2.499	49.909	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56	2.499	41.759	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2383.344	-42.42	2.499	55.339	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2382.384	-53.26	2.499	44.499	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-45.14	2.499	52.619	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-54.28	2.499	43.479	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-35.73	2.499	62.029	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-54.03	2.499	43.729	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.512	-35.73	2.499	62.029	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2499.016	-52.7	2.499	45.059	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-44.65	2.499	53.109	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-53.2	2.499	44.559	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-47.88	2.499	49.879	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-55.88	2.499	41.879	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2378.256	-43	2.499	54.759	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2383.728	-53.03	2.499	44.729	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-46.44	2.499	51.319	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-54	2.499	43.759	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-45.66	2.499	52.099	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-54.39	2.499	43.369	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.752	-40.46	2.499	57.299	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2498.872	-52.7	2.499	45.059	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-46.26	2.499	51.499	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-53.29	2.499	44.469	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-47.36	2.499	50.399	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.03	2.499	41.729	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2381.04	-42.8	2.499	54.959	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2382.288	-53.15	2.499	44.609	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-44.24	2.499	53.519	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-54.05	2.499	43.709	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-46.25	2.499	51.509	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-53.81	2.499	43.949	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2495.608	-42.28	2.499	55.479	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2499.424	-52.63	2.499	45.129	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-44.77	2.499	52.989	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-53.38	2.499	44.379	Average	54	Pass

Test Graphs

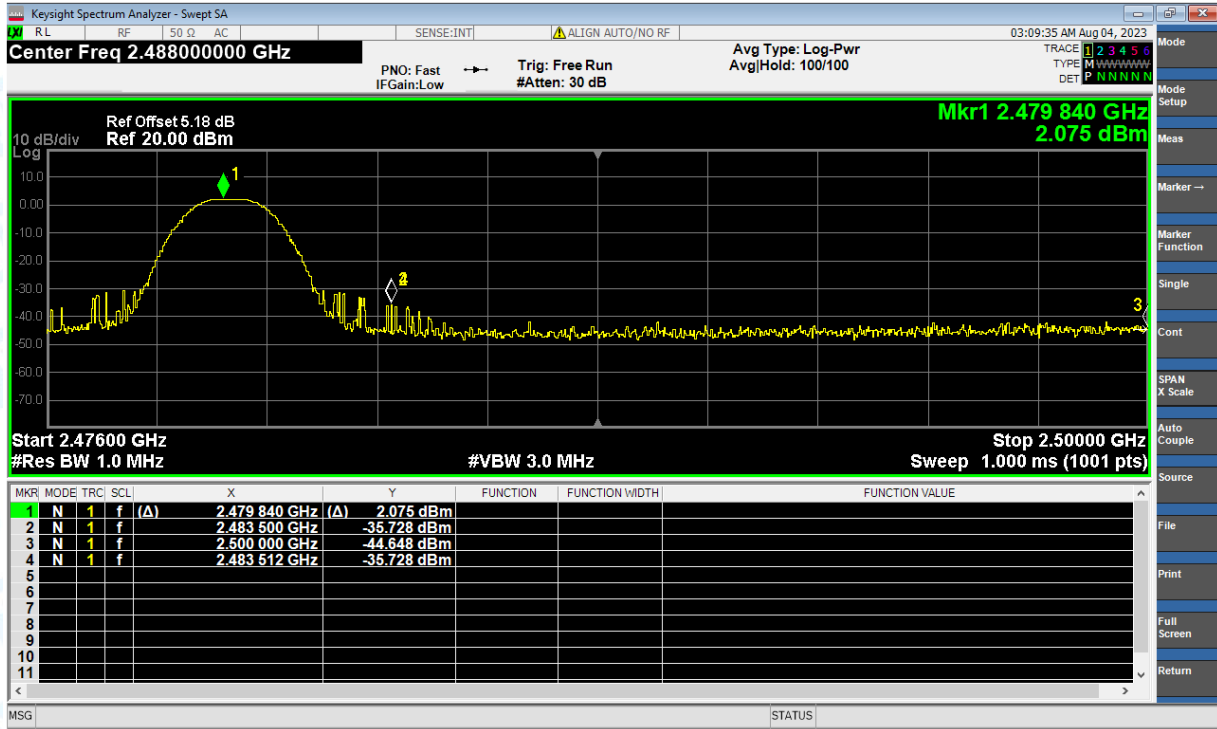
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



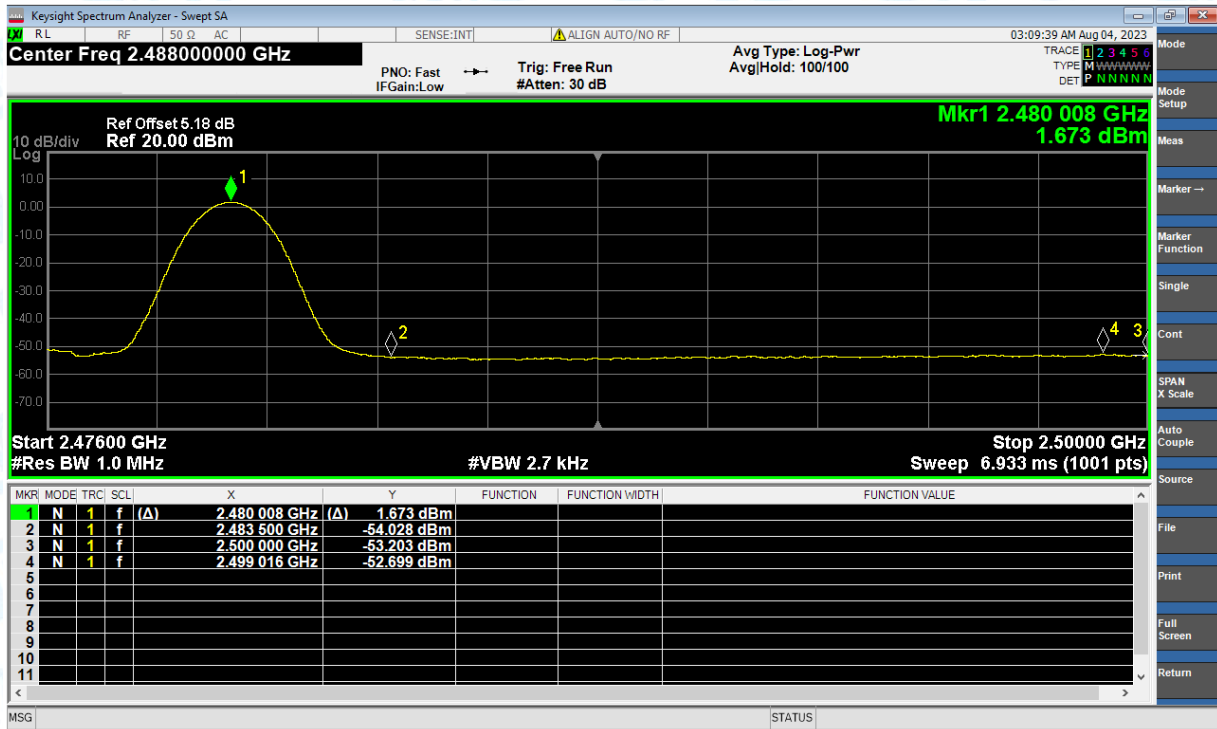
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



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

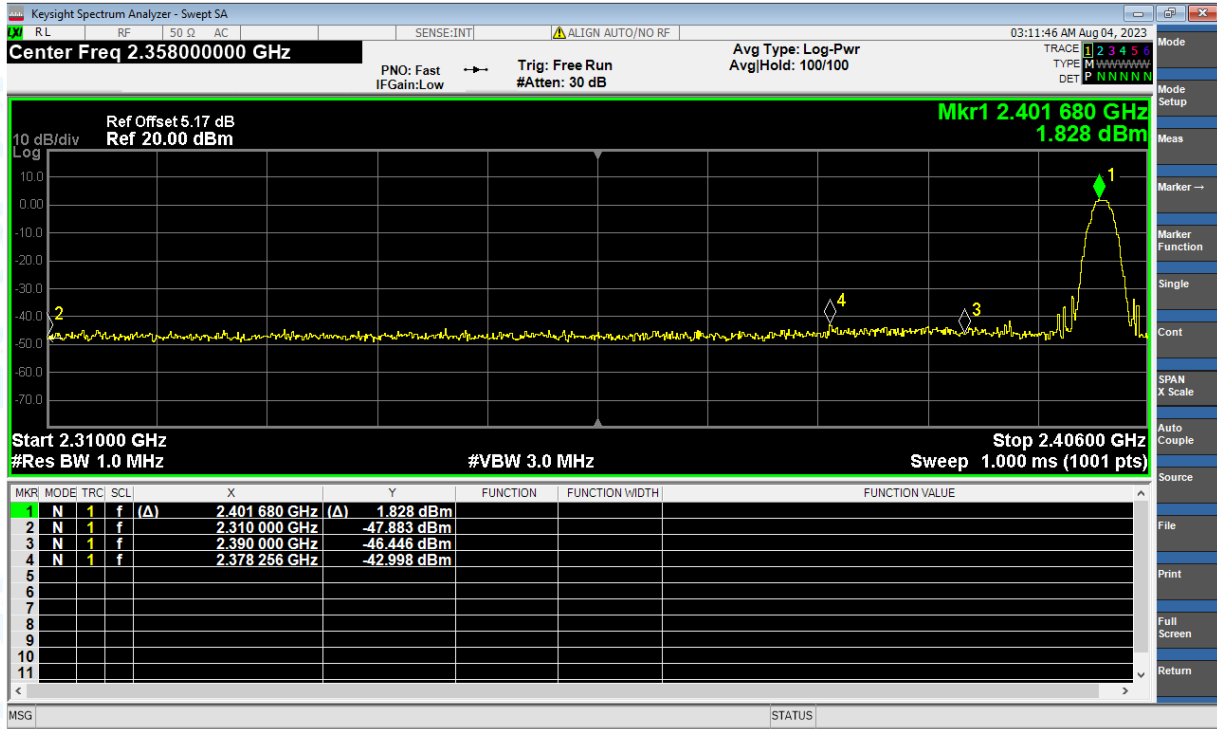


Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average

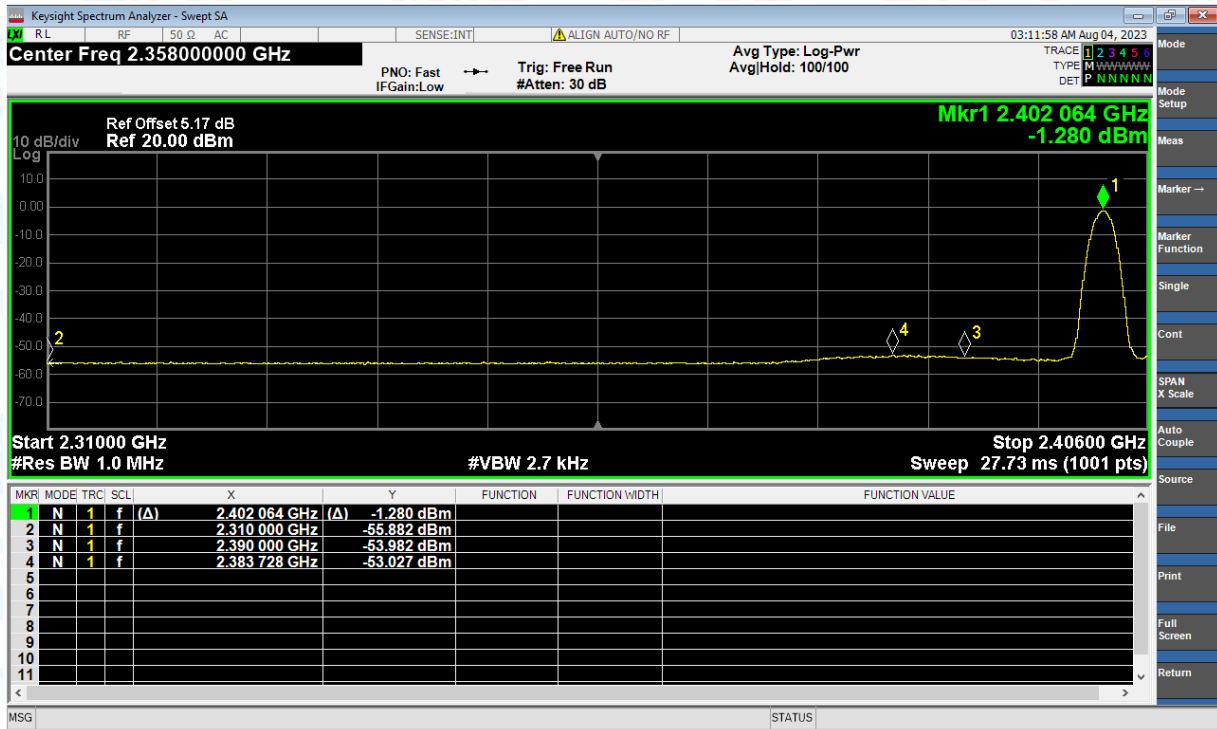




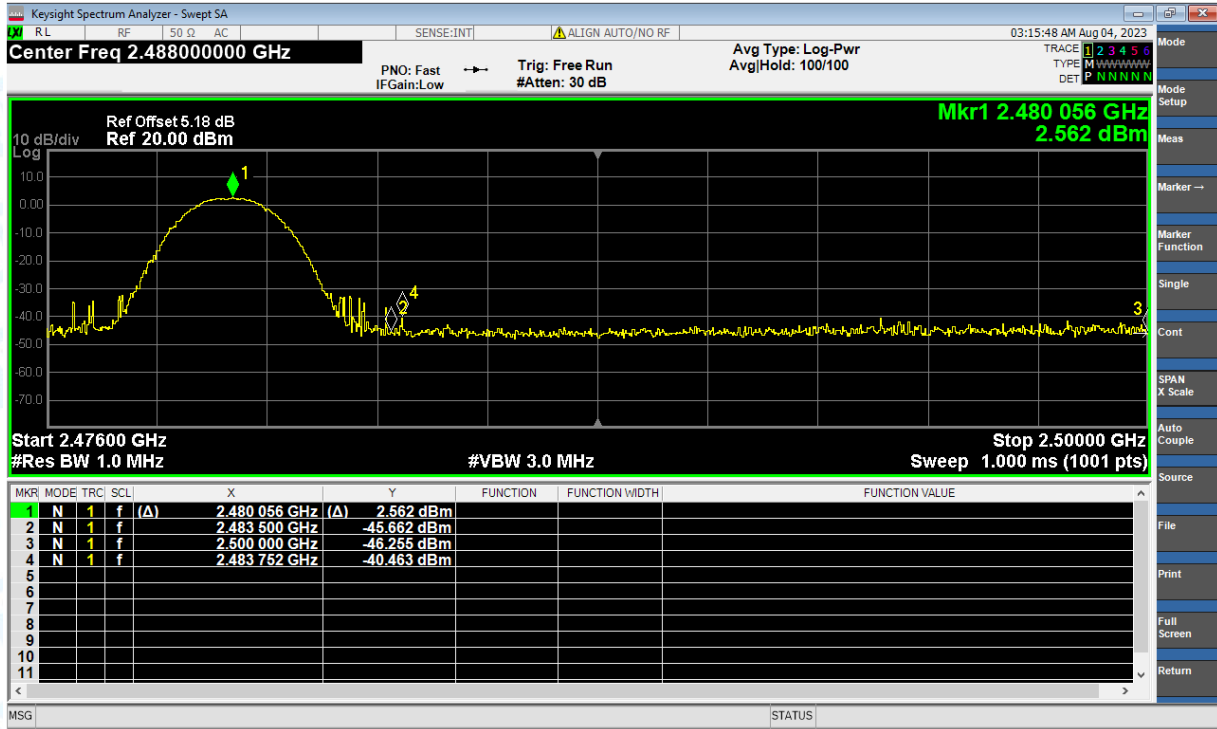
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



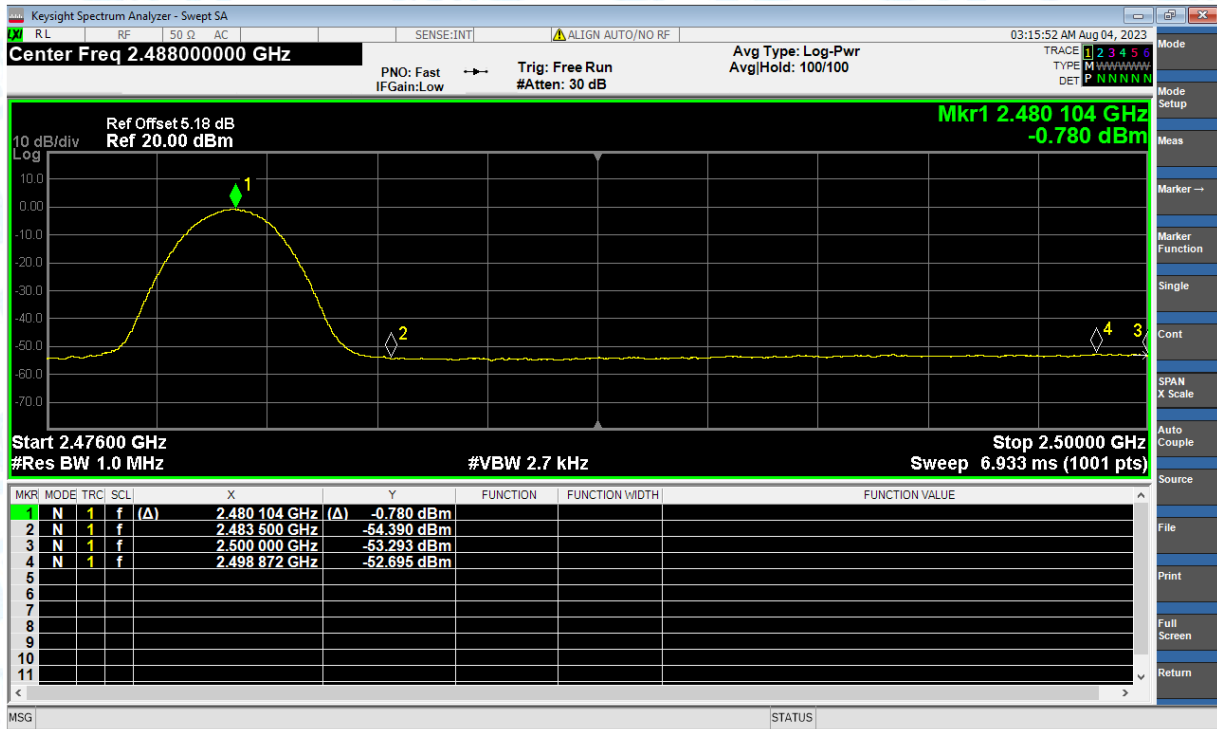
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



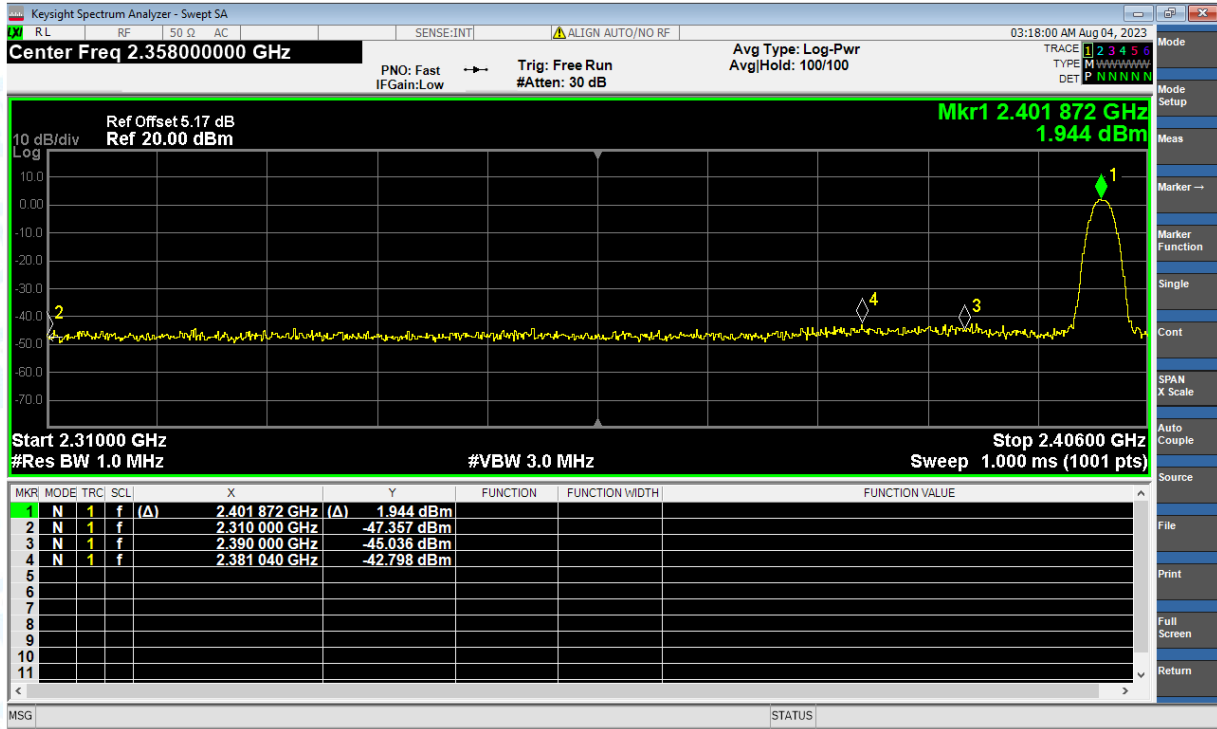
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



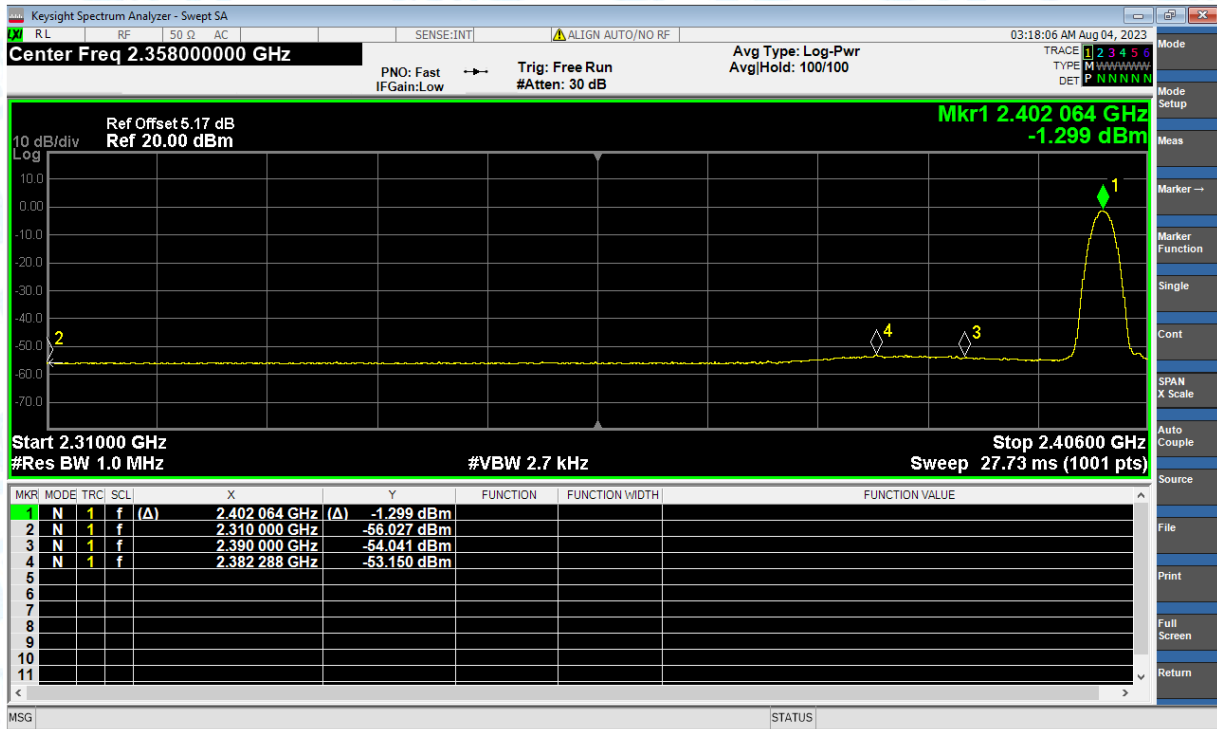
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



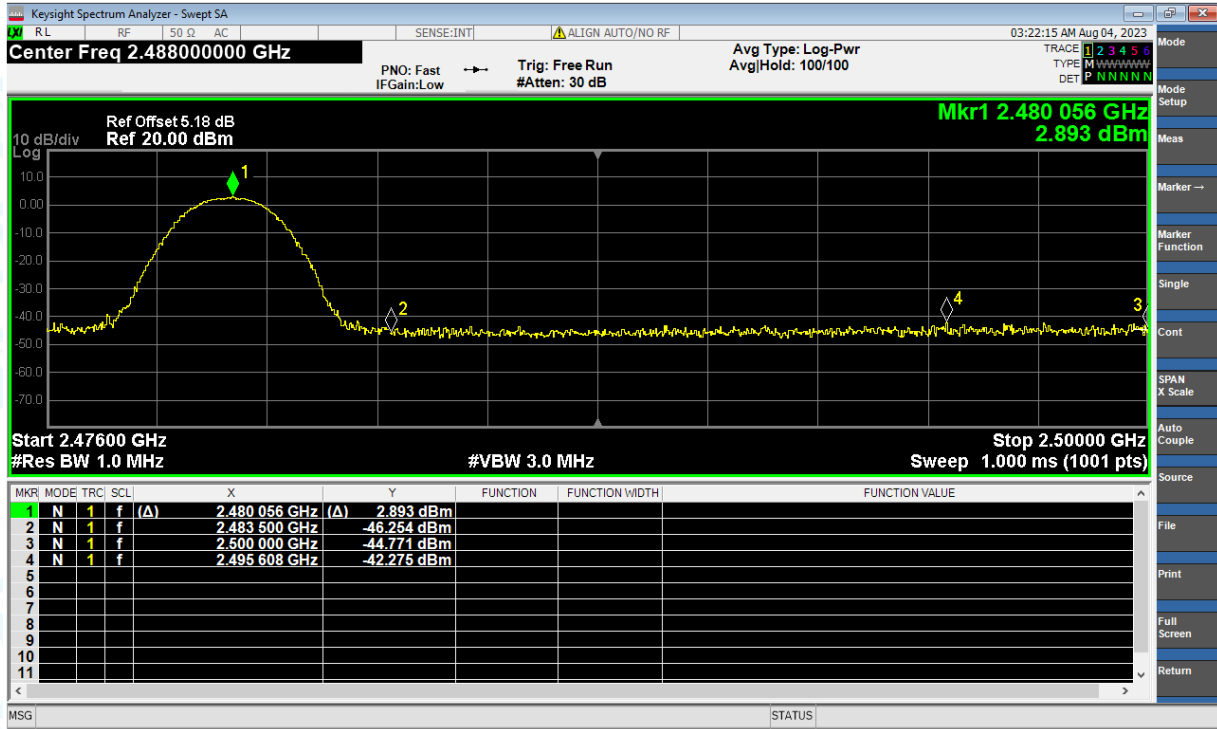
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



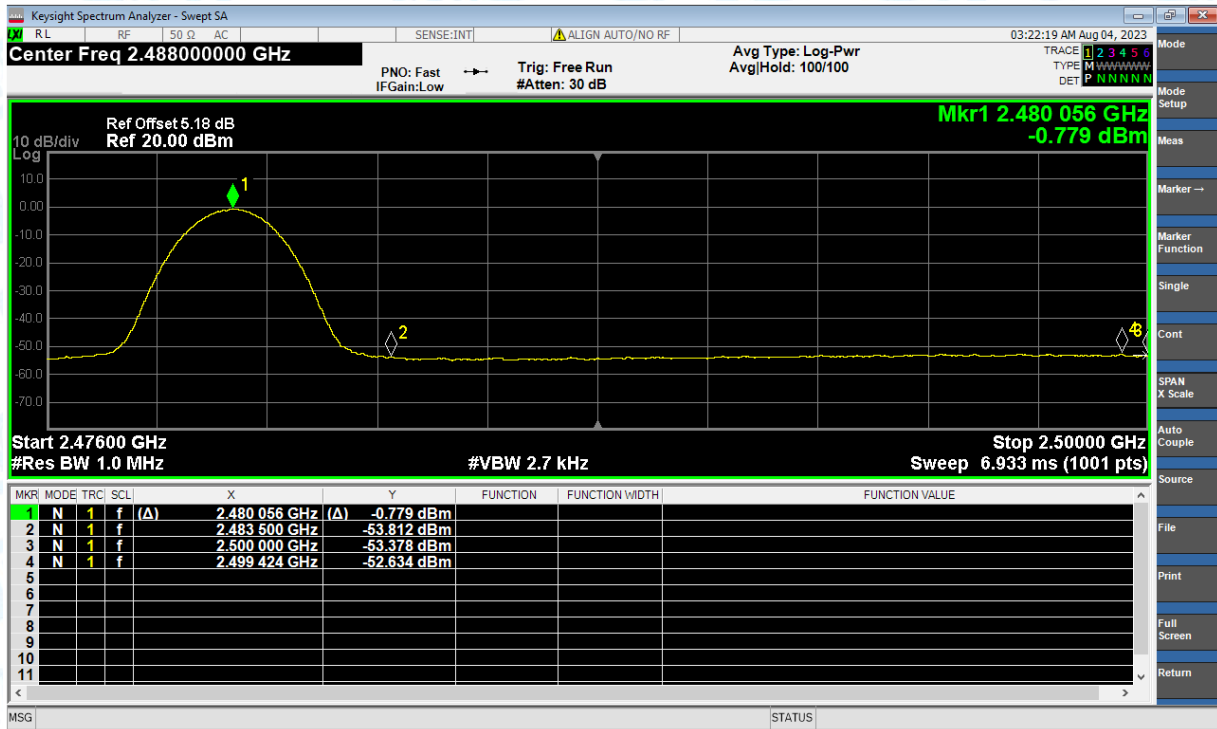
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

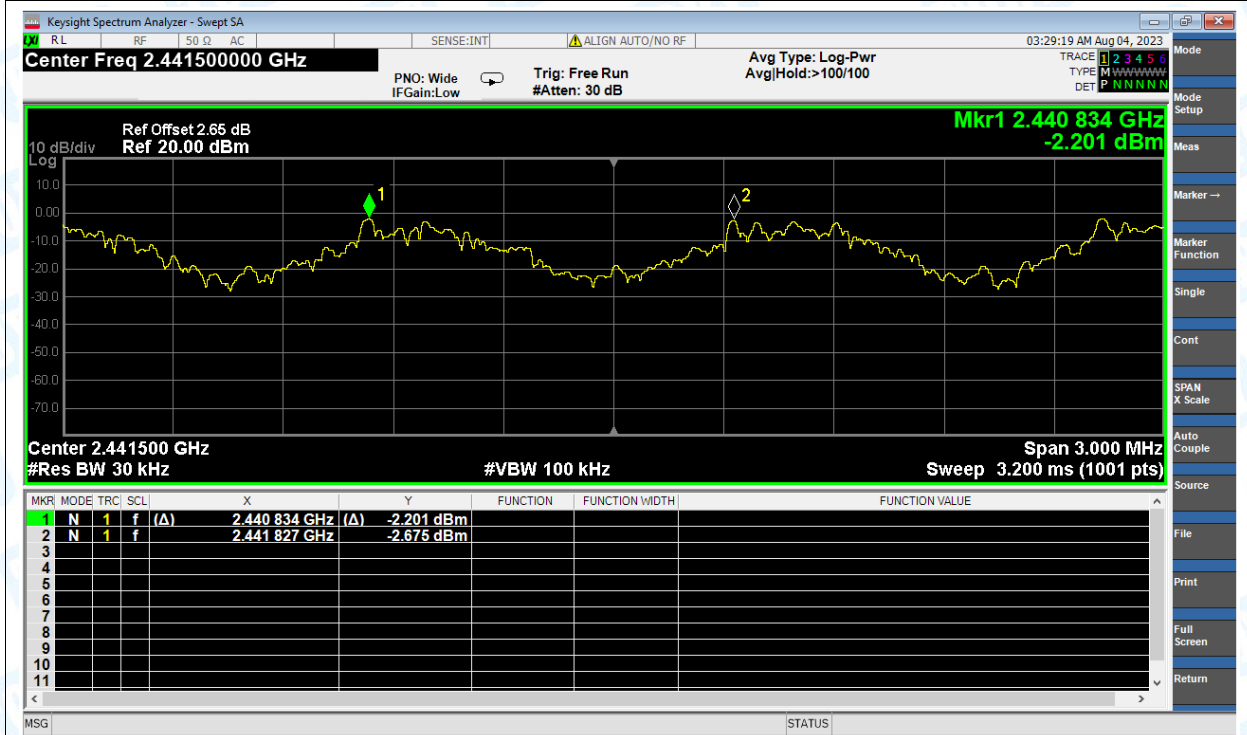


## 9. Carrier Frequencies Separation

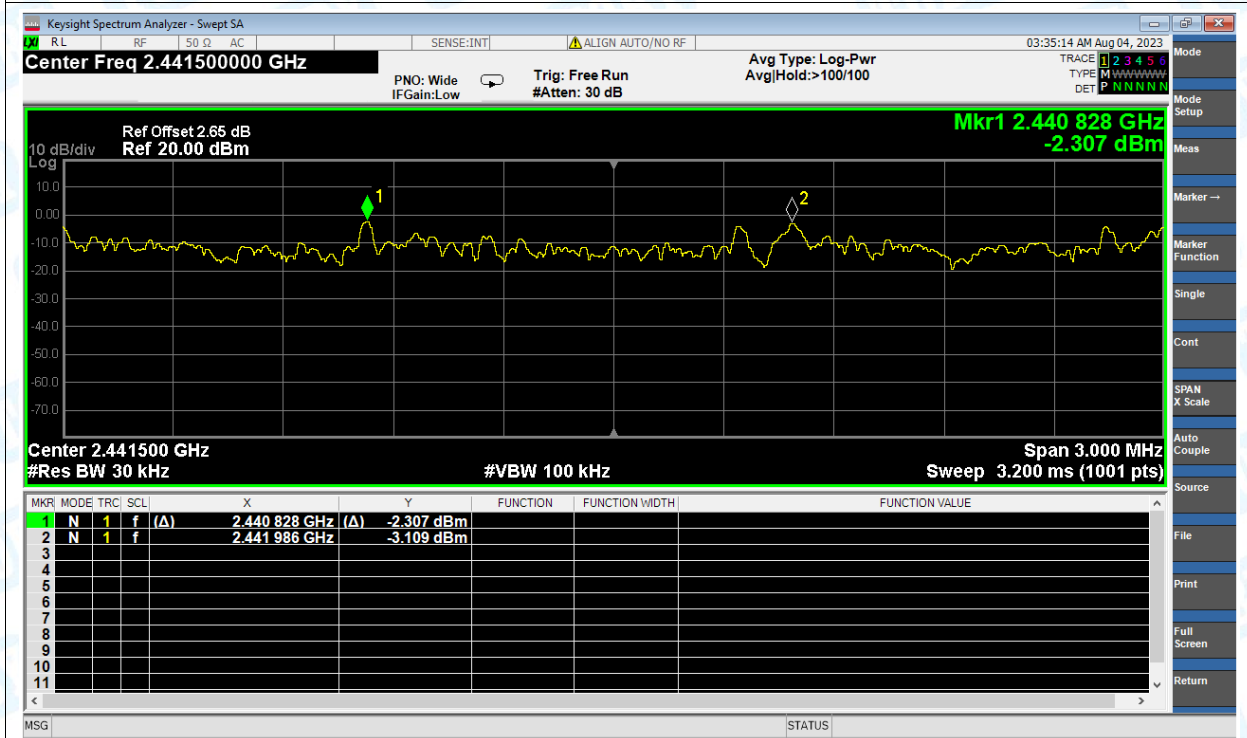
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.834	2441.827	0.993	0.673	Pass
NVNT	2-DH1	Ant1	2440.828	2441.986	1.158	0.847	Pass
NVNT	3-DH1	Ant1	2440.987	2441.995	1.008	0.827	Pass

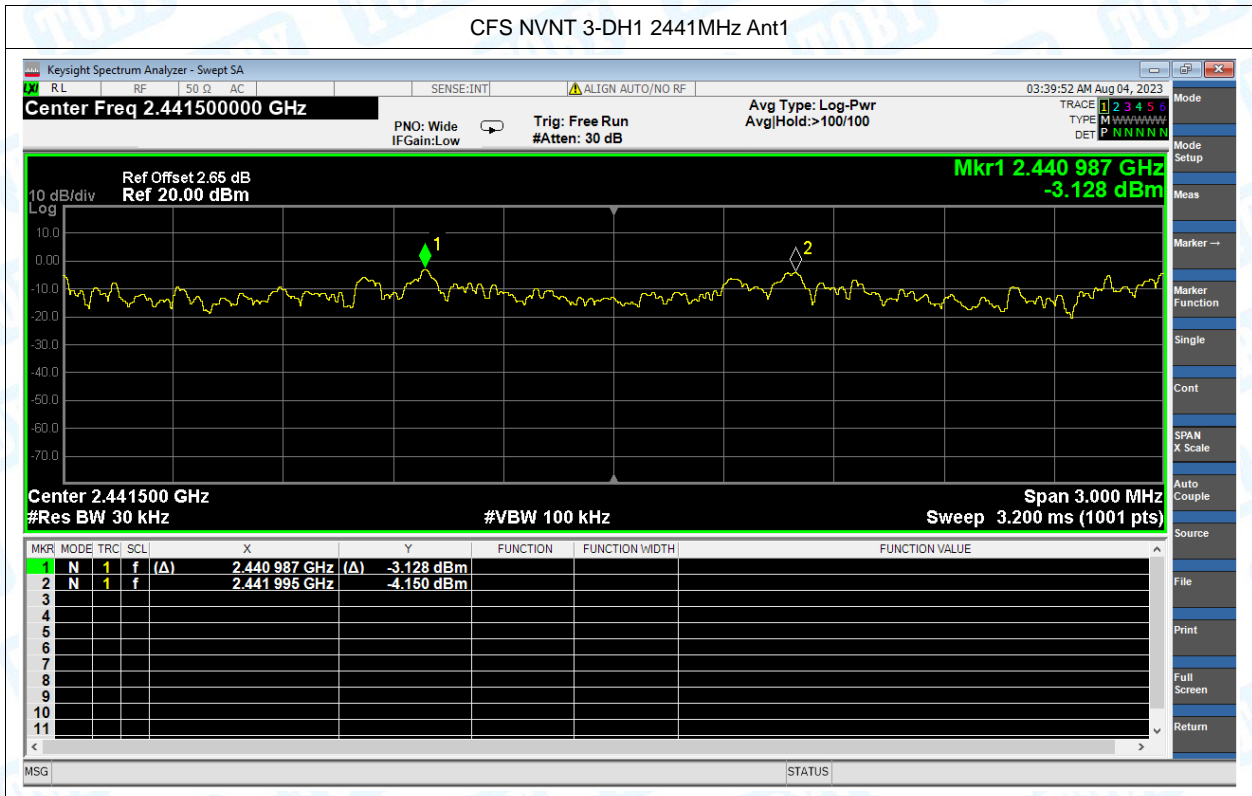
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1





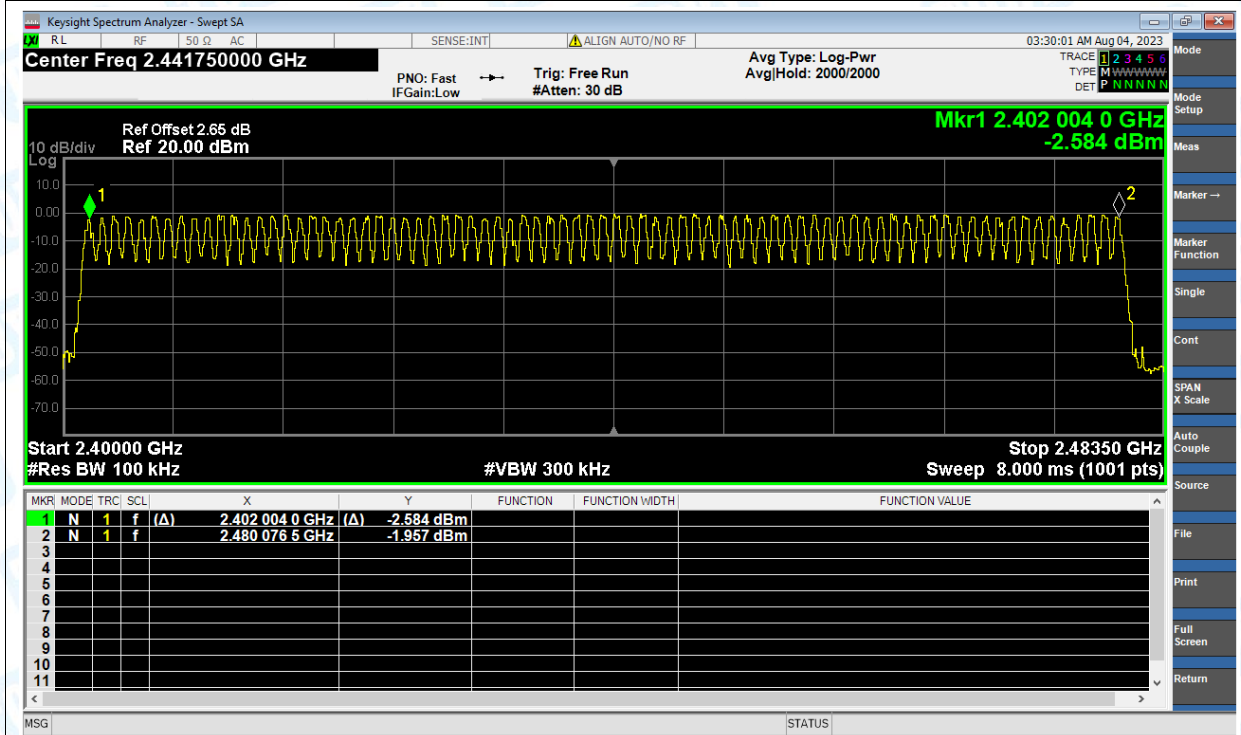
## 10. Number of Hopping Channel

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

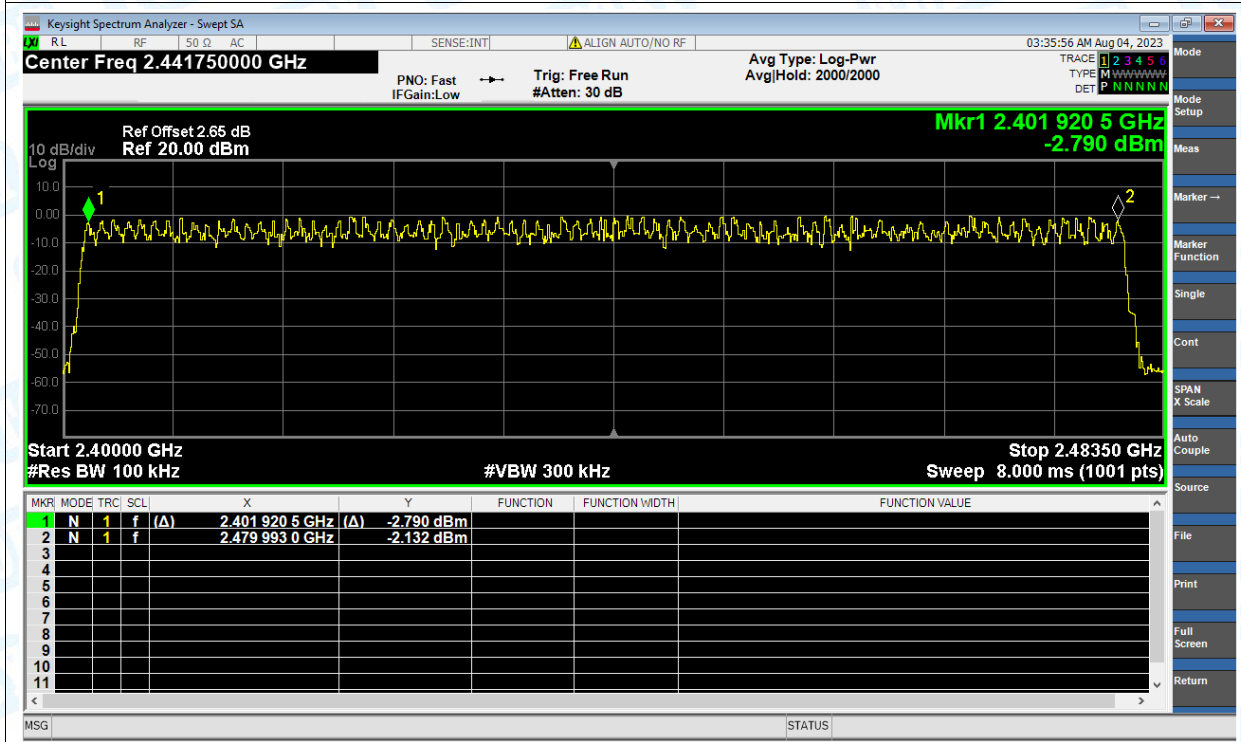


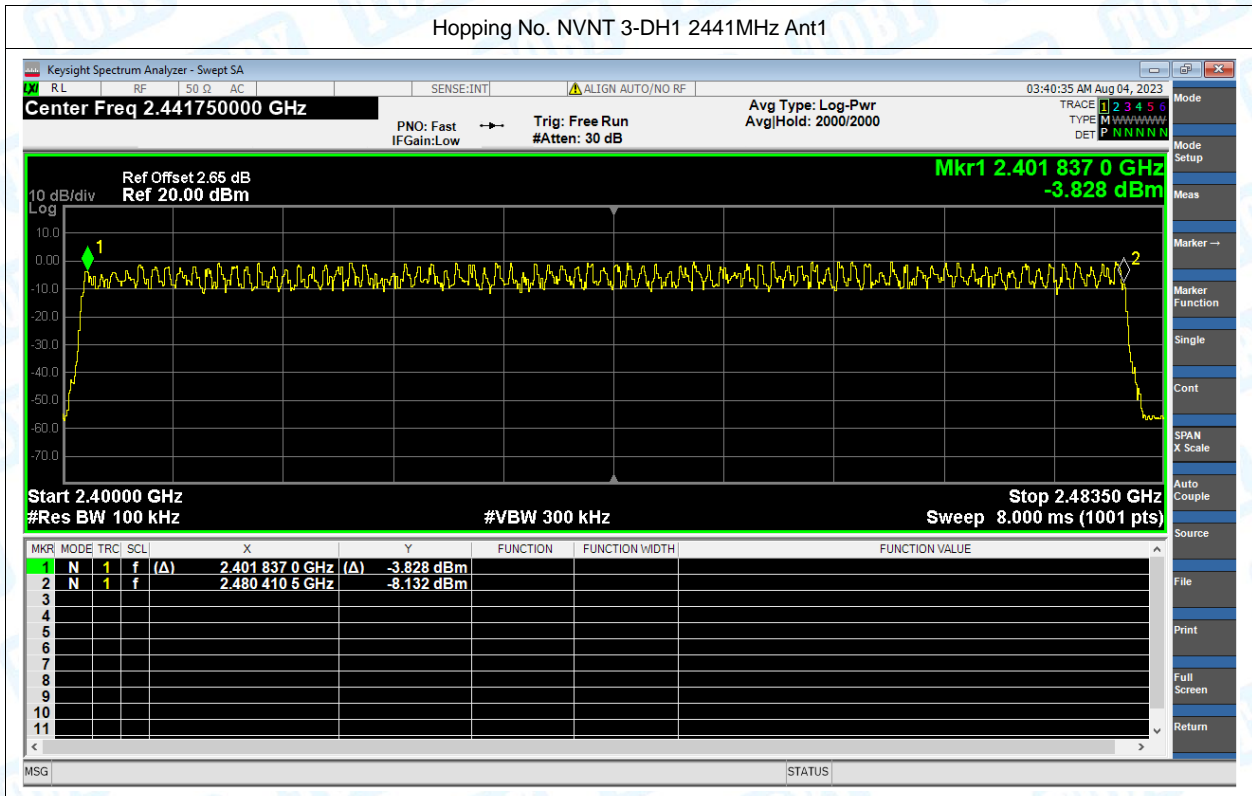
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



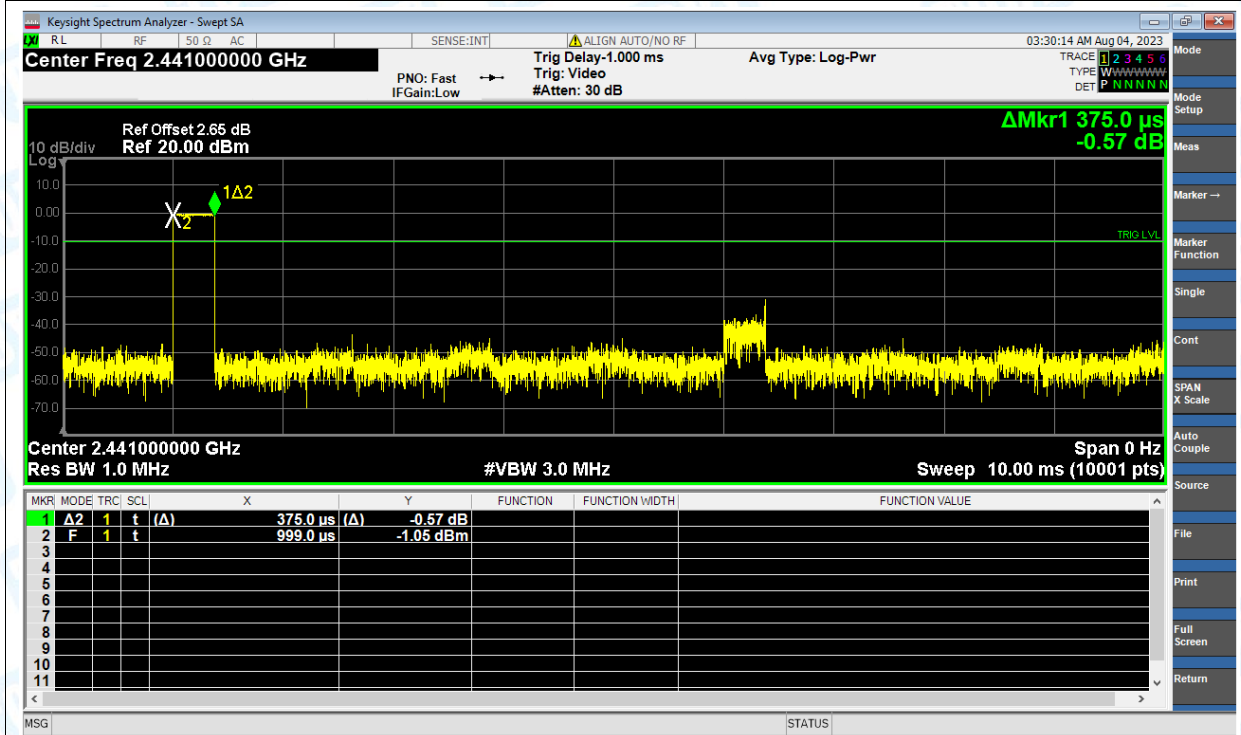


## 11. Dwell Time

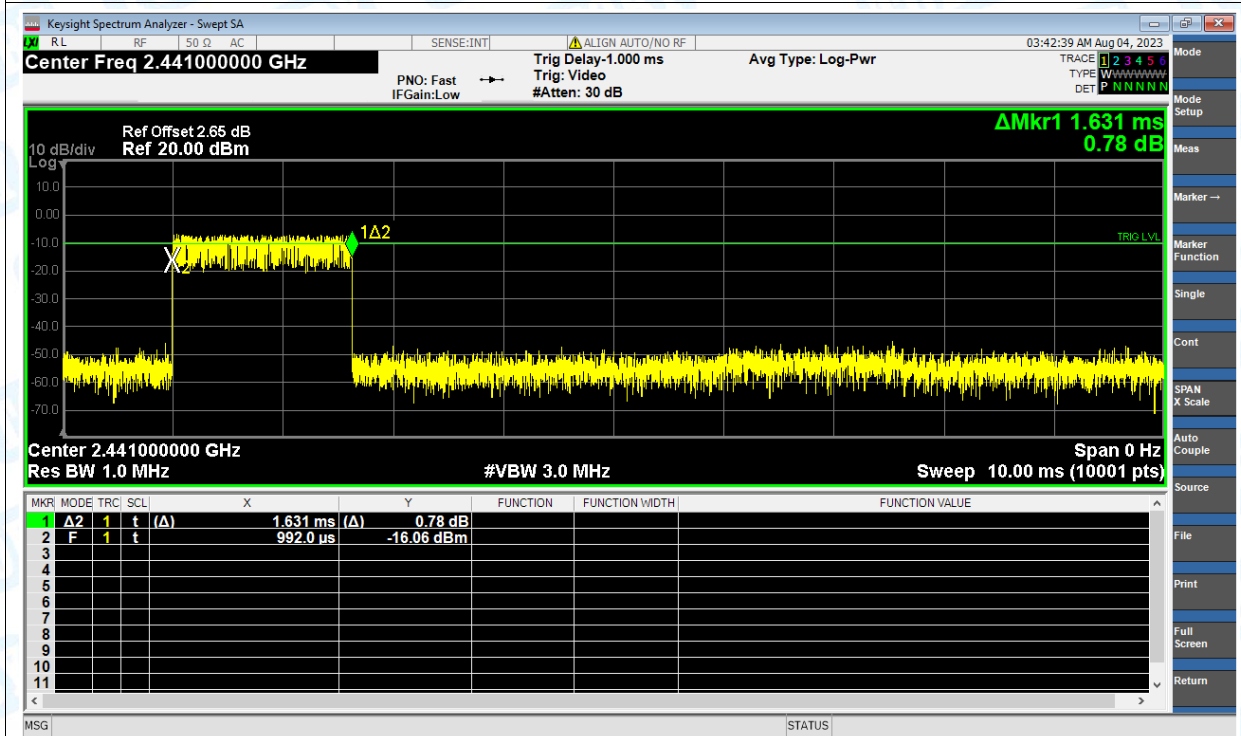
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.375	120	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.631	260.96	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.879	307.093	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.386	123.52	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.635	261.6	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.886	307.84	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.386	123.52	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.636	261.76	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.888	308.053	31600	400	Pass

Test Graphs

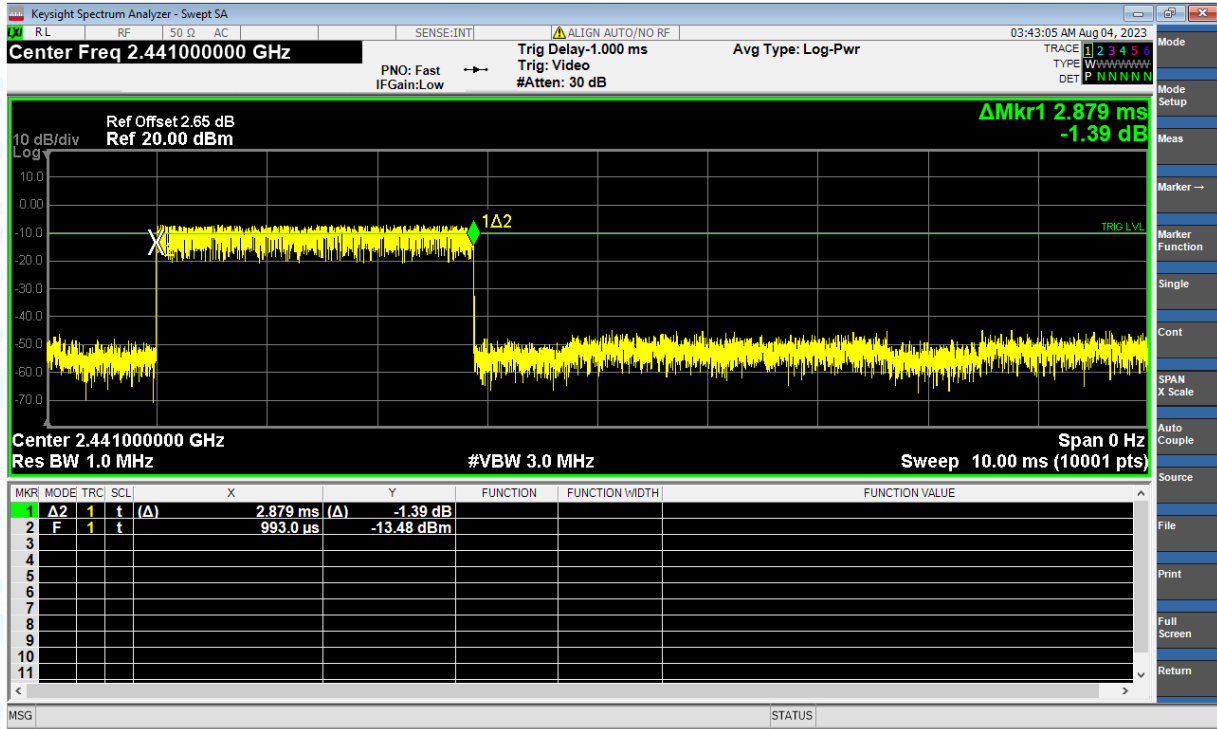
Dwell NVNT 1-DH1 2441MHz Ant1



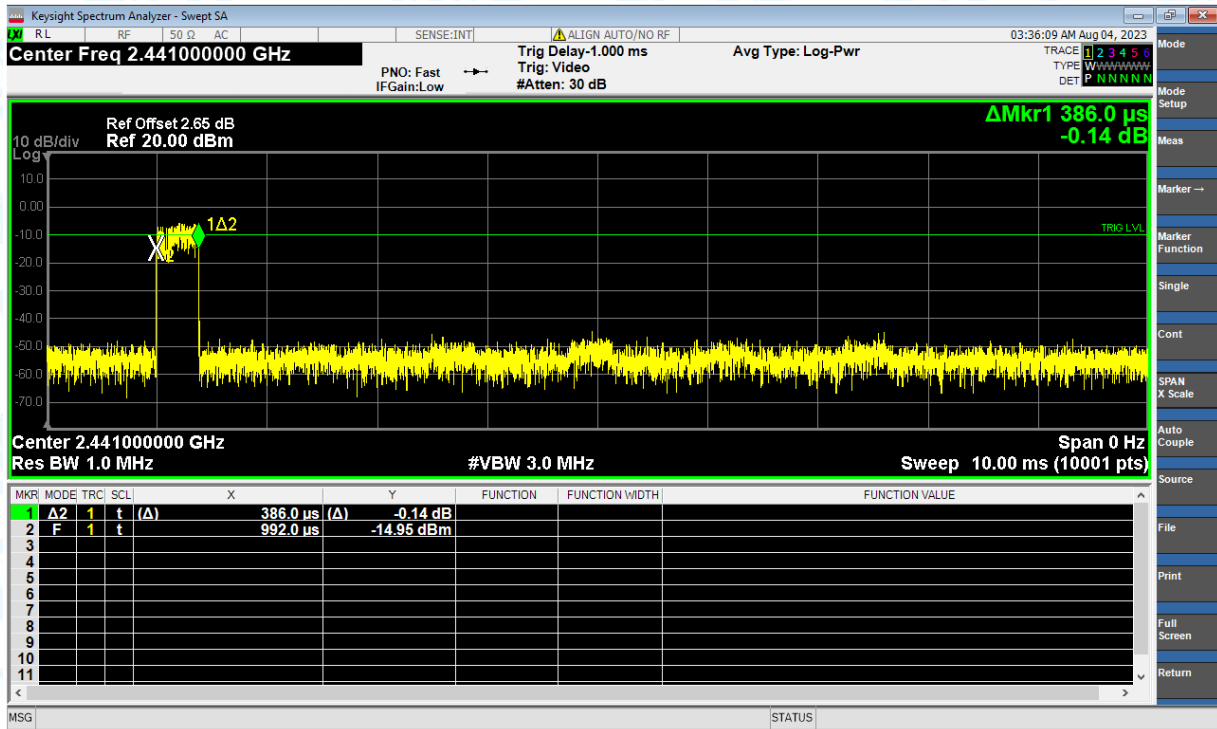
Dwell NVNT 1-DH3 2441MHz Ant1



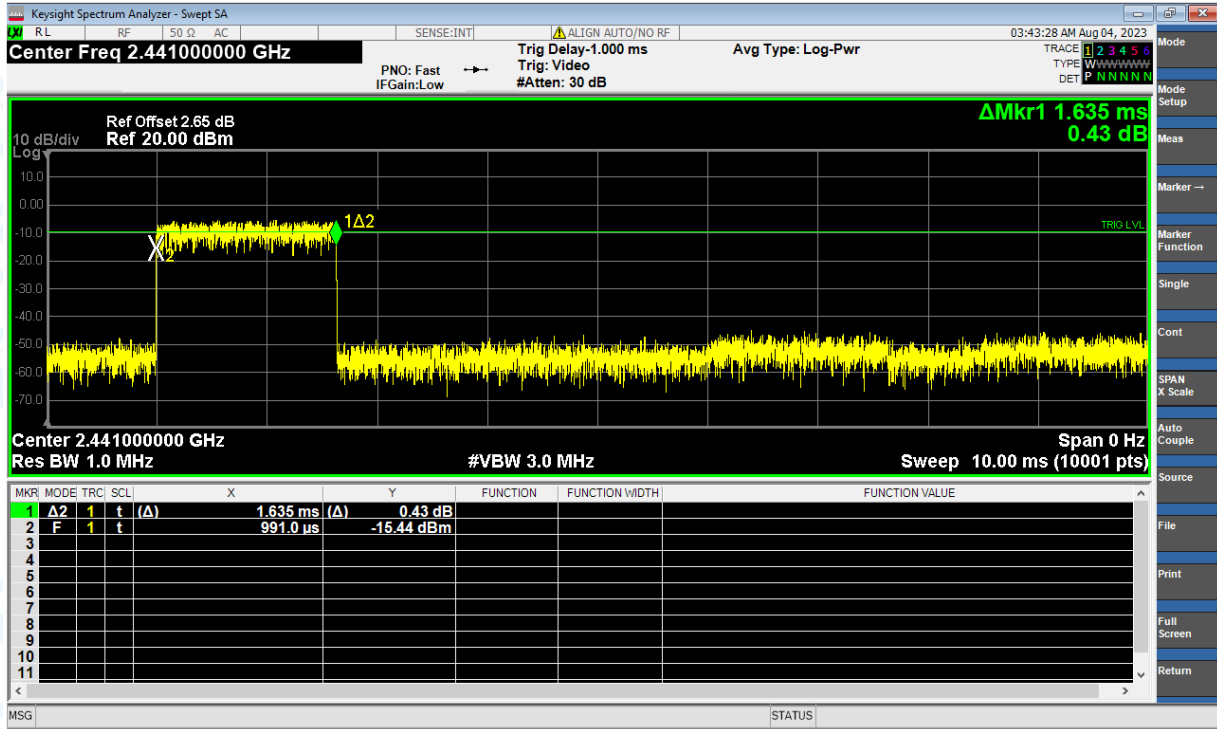
Dwell NVNT 1-DH5 2441MHz Ant1



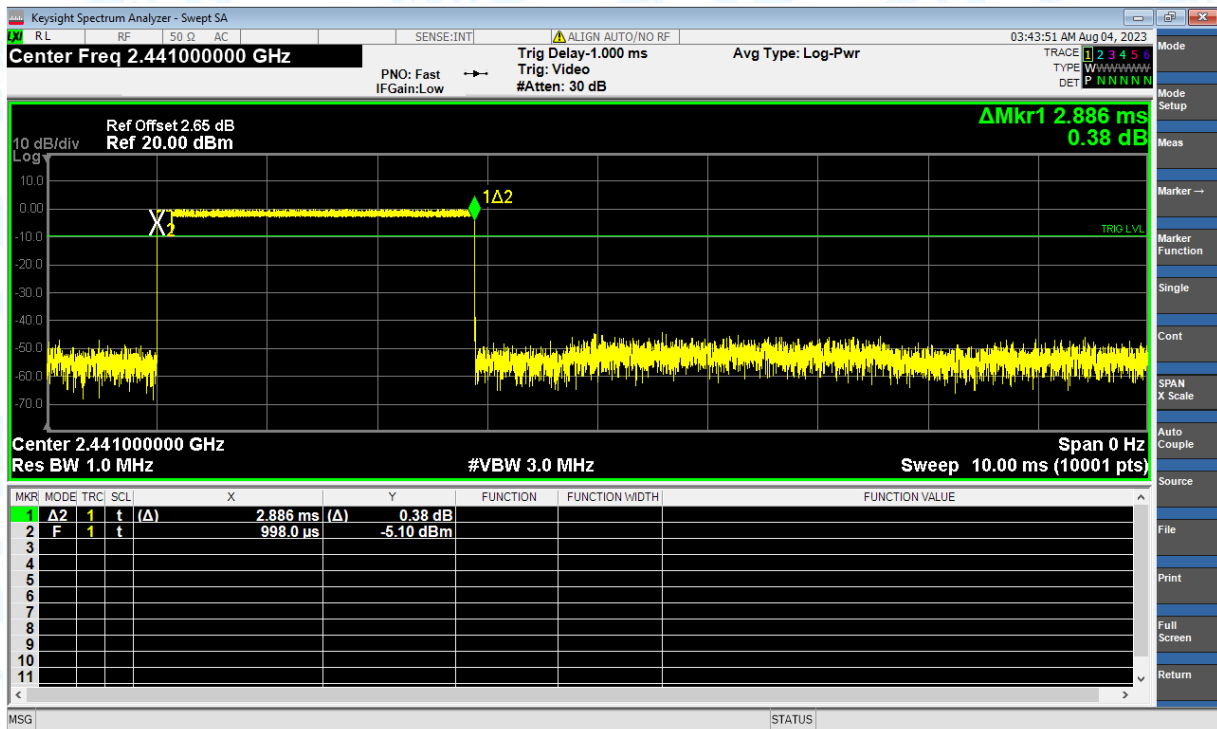
Dwell NVNT 2-DH1 2441MHz Ant1



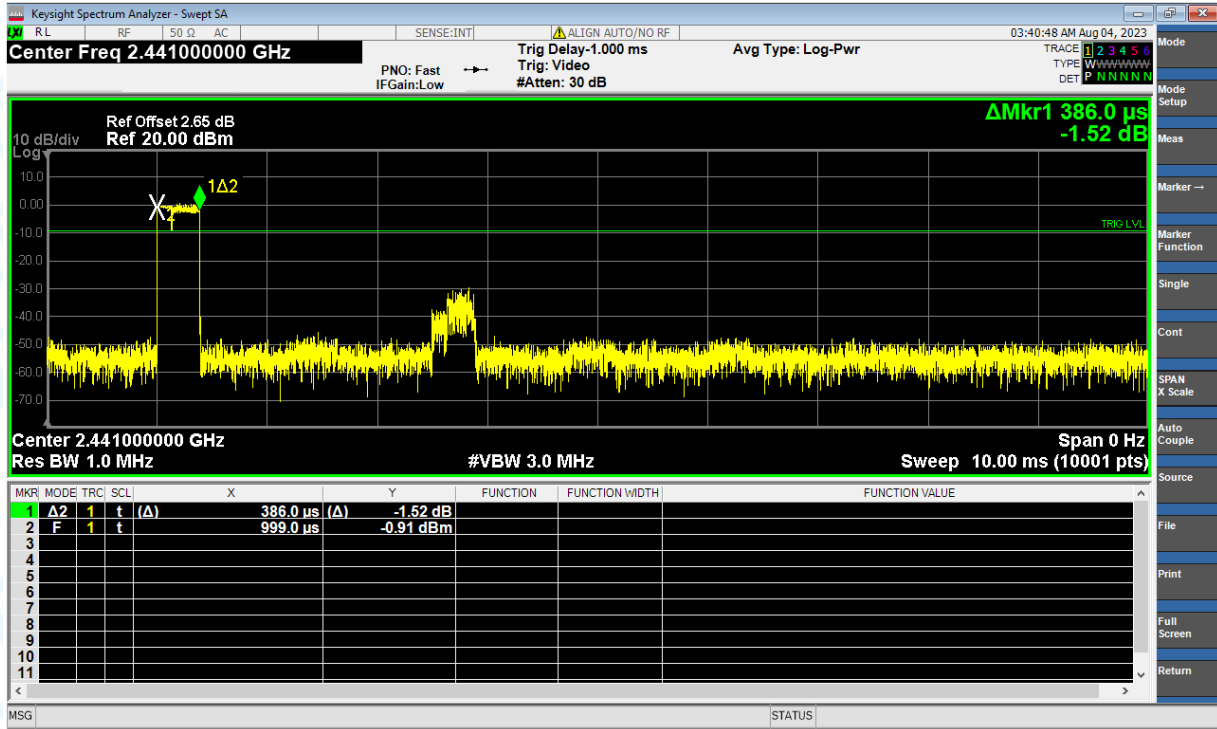
Dwell NVNT 2-DH3 2441MHz Ant1



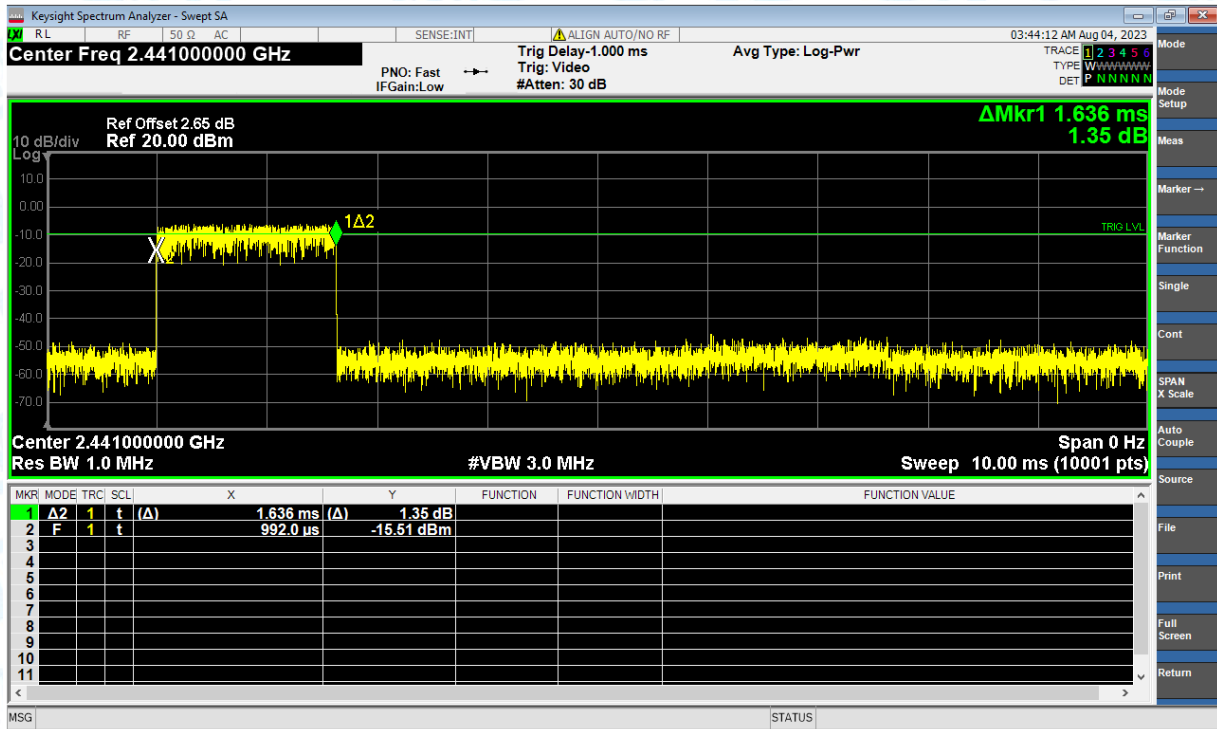
Dwell NVNT 2-DH5 2441MHz Ant1

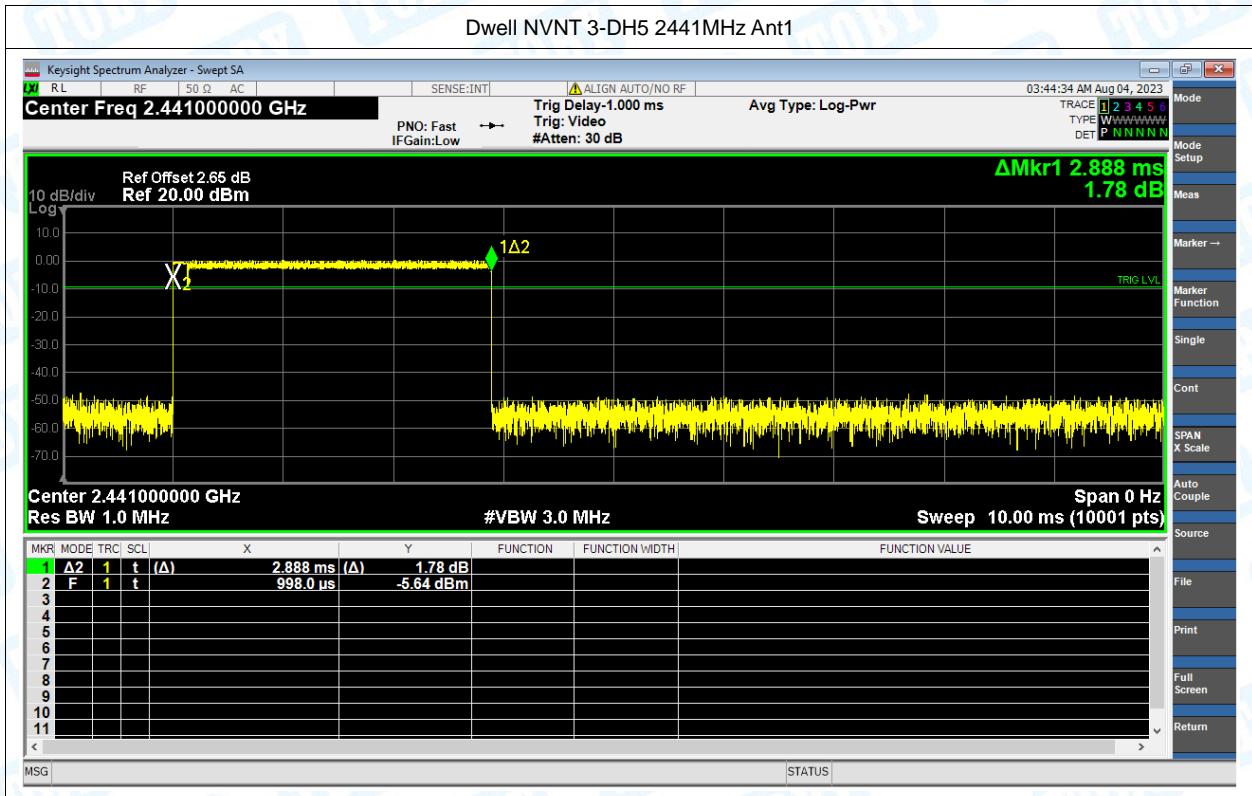


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





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