

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	Smart watch
Test Model:	A5 Pro
Sample ID:	HC-C-202406-0053-01-02
Environmental Conditions	
Temperature:	24.6°C
Relative Humidity:	52.6%
Test Voltage:	DC 3.8V
Test Engineer:	Jolin Lee
Note: For a more detailed features description, please refer to the report TBR-C-202406-0053-51 The report only show the worst case data.	

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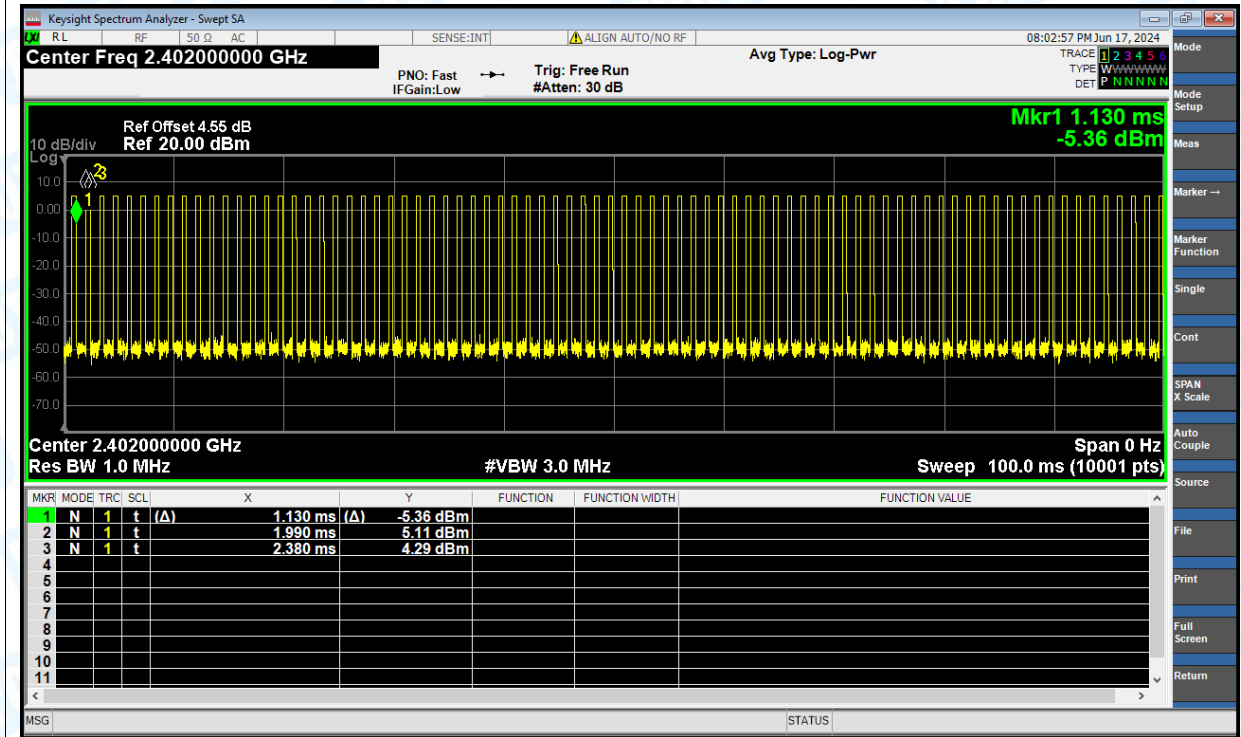
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1. Duty Cycle

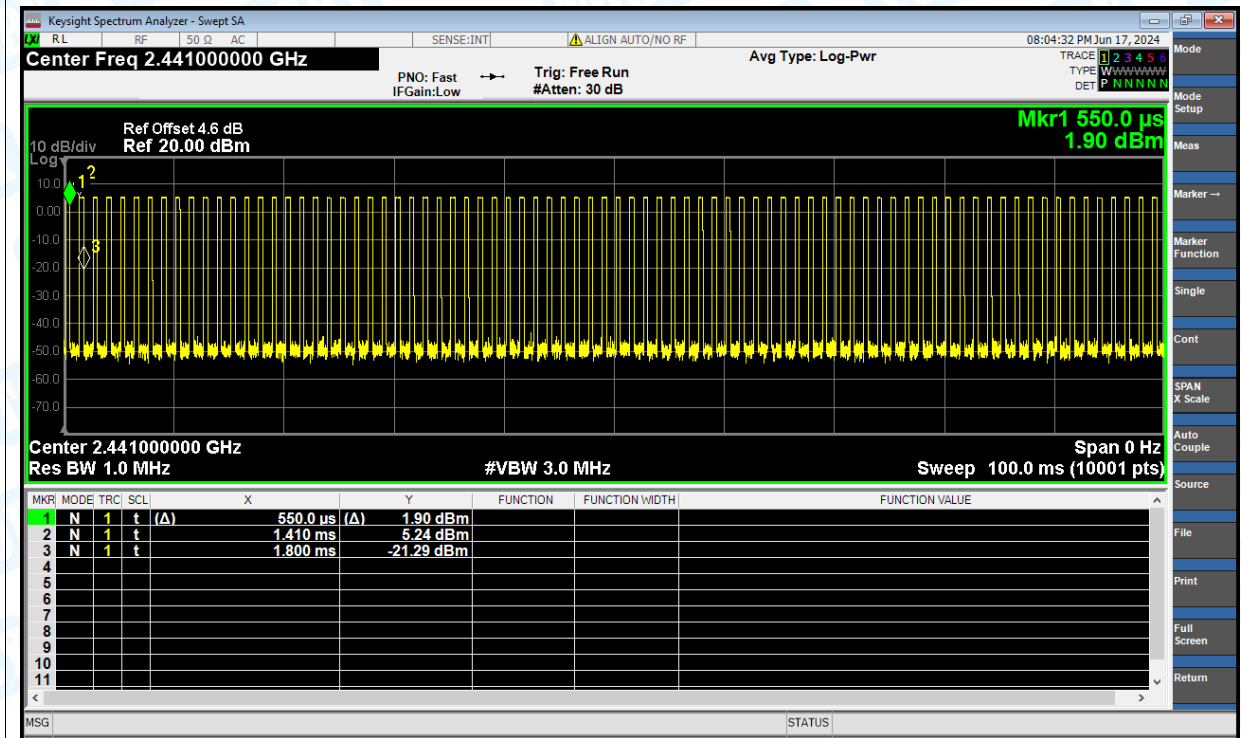
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	1-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	1-DH1	2480	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2480	Ant1	31.2	5.06	2.56

Test Graphs

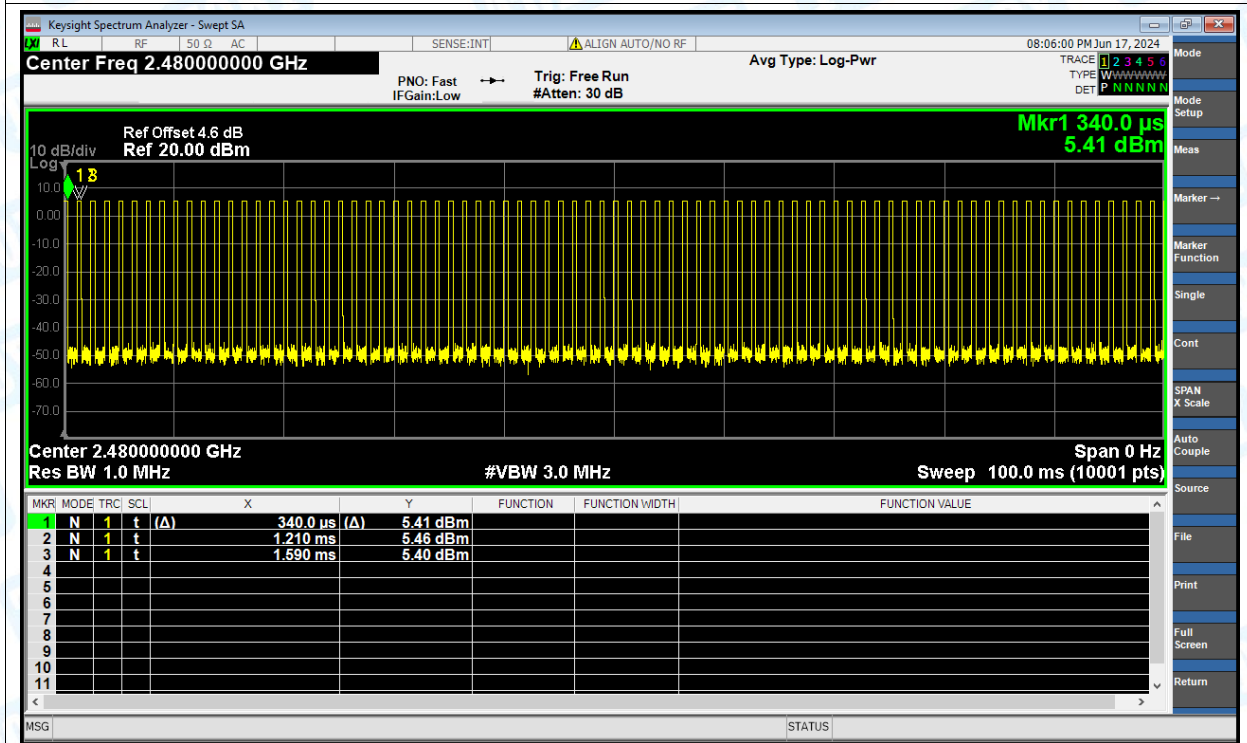
Duty Cycle NVNT 1-DH1 2402MHz Ant1



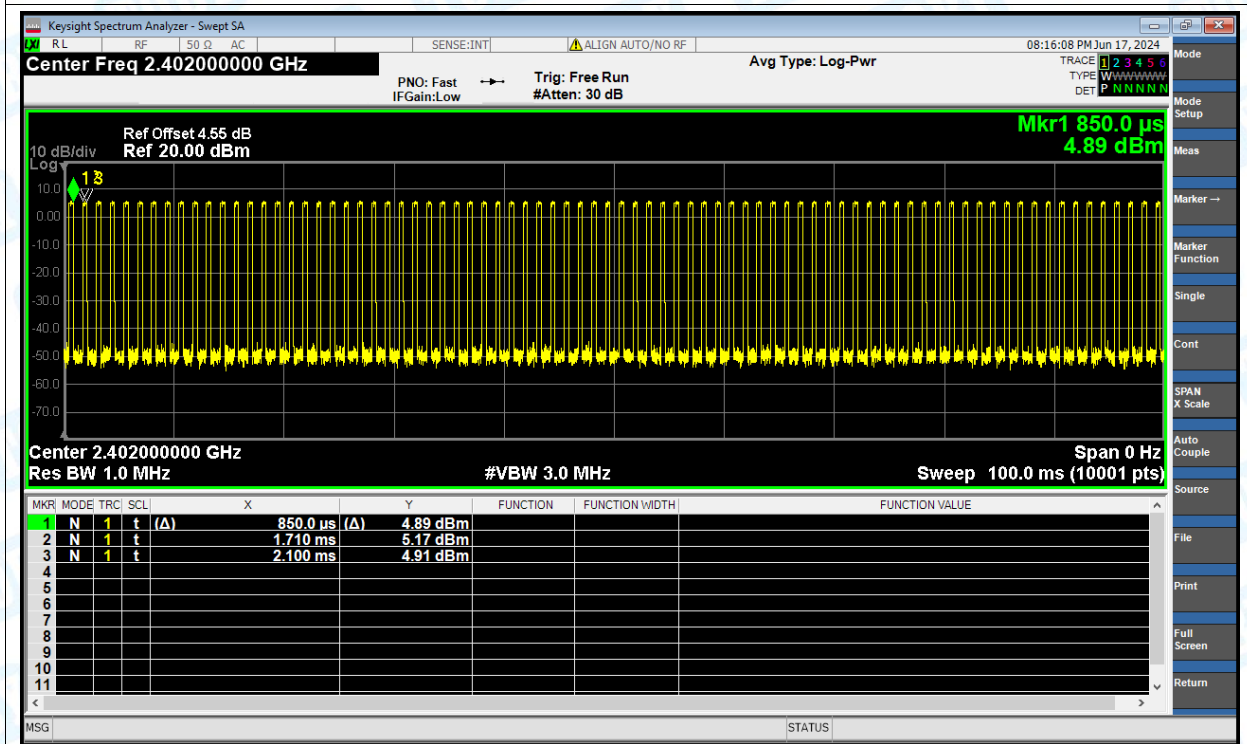
Duty Cycle NVNT 1-DH1 2441MHz Ant1



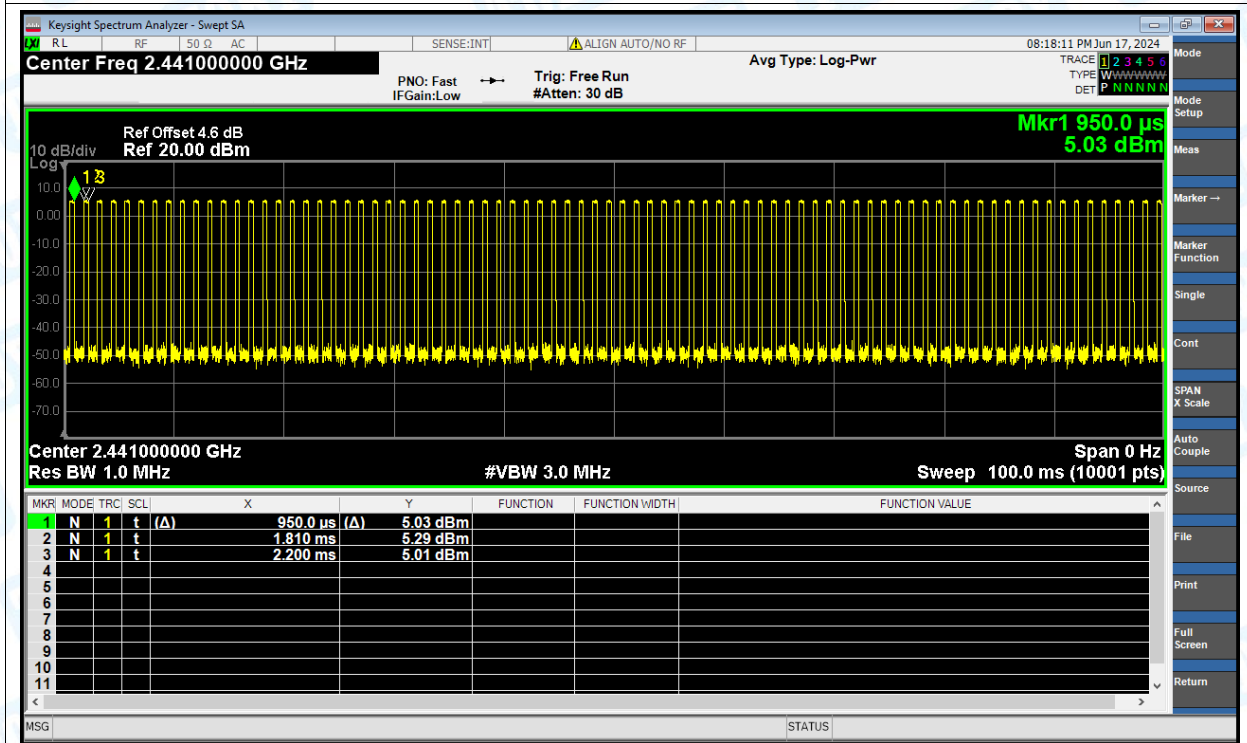
Duty Cycle NVNT 1-DH1 2480MHz Ant1



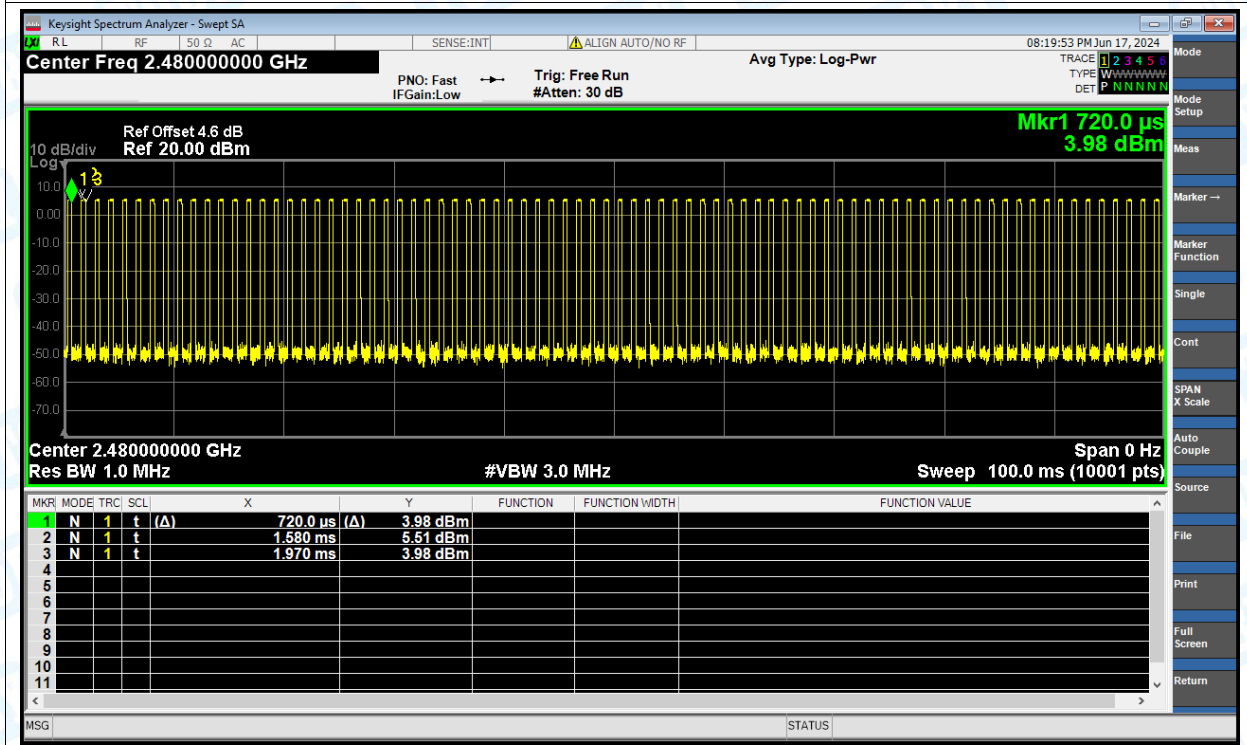
Duty Cycle NVNT 2-DH1 2402MHz Ant1



Duty Cycle NVNT 2-DH1 2441MHz Ant1



Duty Cycle NVNT 2-DH1 2480MHz Ant1

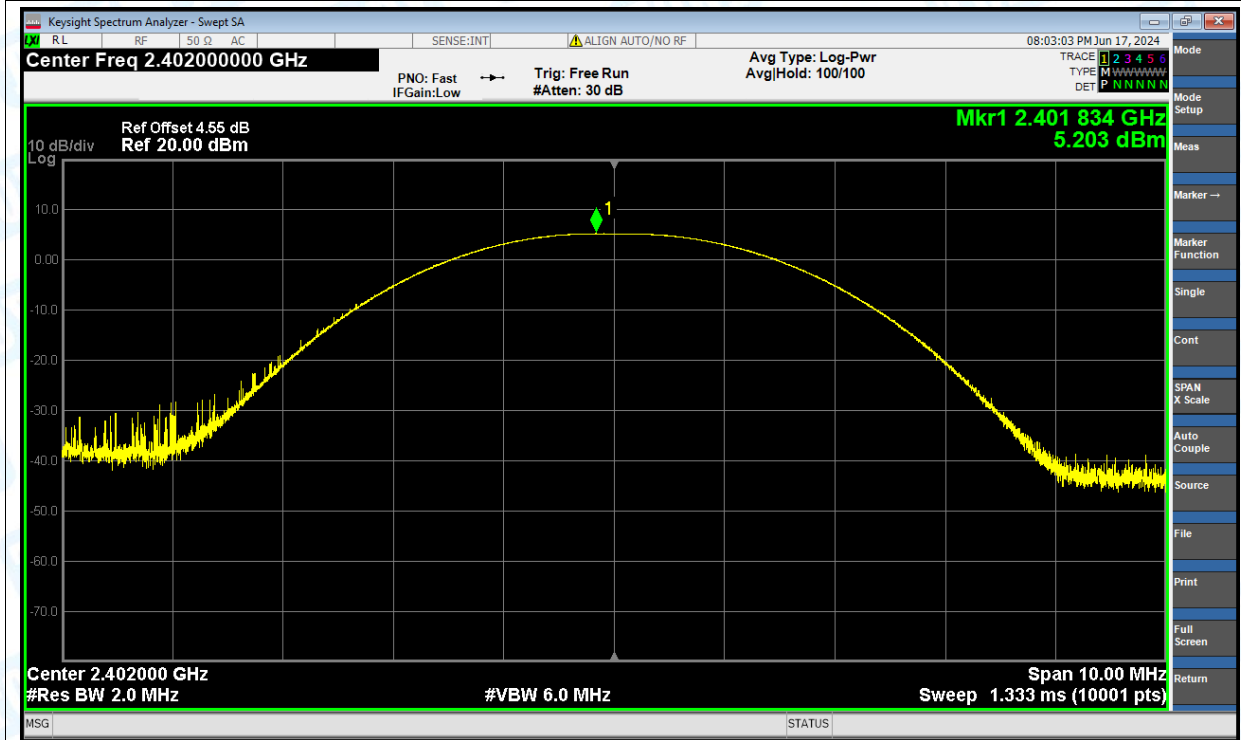


2. Maximum Conducted Output Power

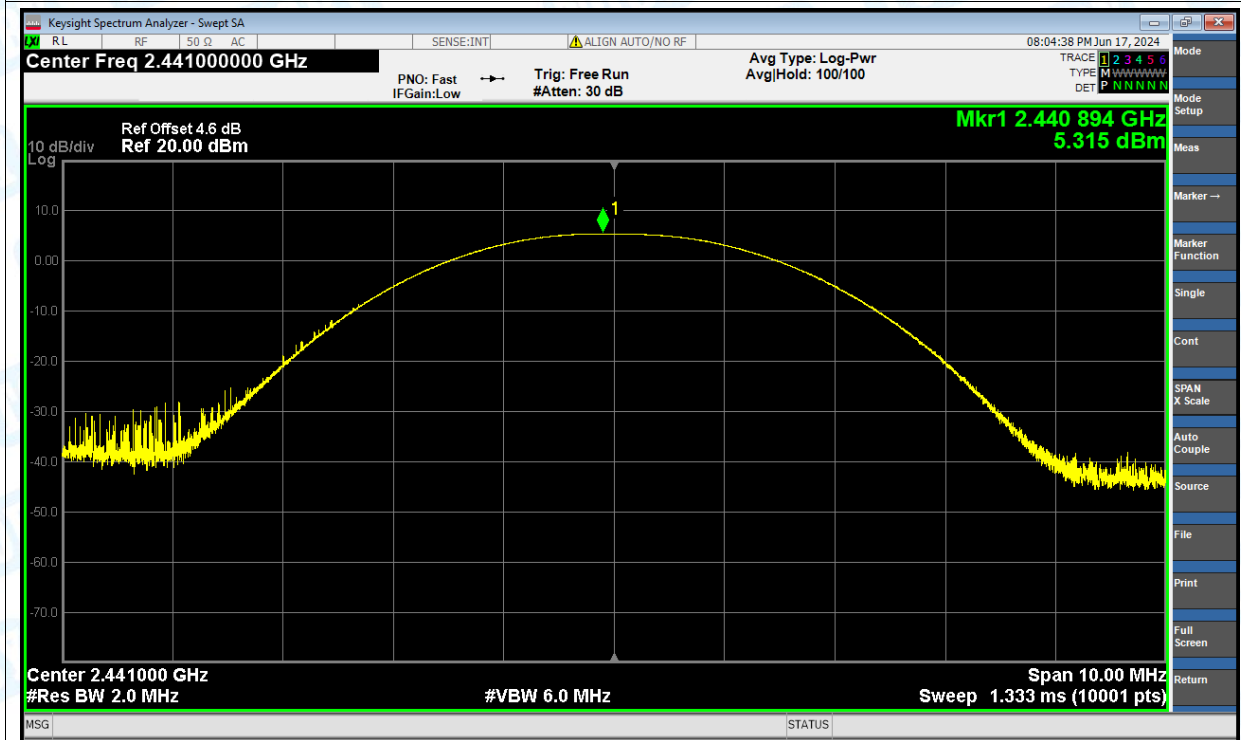
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	5.203	21	Pass
NVNT	1-DH1	2441	Ant1	5.315	21	Pass
NVNT	1-DH1	2480	Ant1	5.536	21	Pass
NVNT	1-DH3	2441	Ant1	5.307	21	Pass
NVNT	1-DH5	2441	Ant1	5.289	21	Pass
NVNT	2-DH1	2402	Ant1	6.059	21	Pass
NVNT	2-DH1	2441	Ant1	6.158	21	Pass
NVNT	2-DH1	2480	Ant1	6.325	21	Pass
NVNT	2-DH3	2441	Ant1	6.124	21	Pass
NVNT	2-DH5	2441	Ant1	6.127	21	Pass

Test Graphs

Power NVNT 1-DH1 2402MHz Ant1



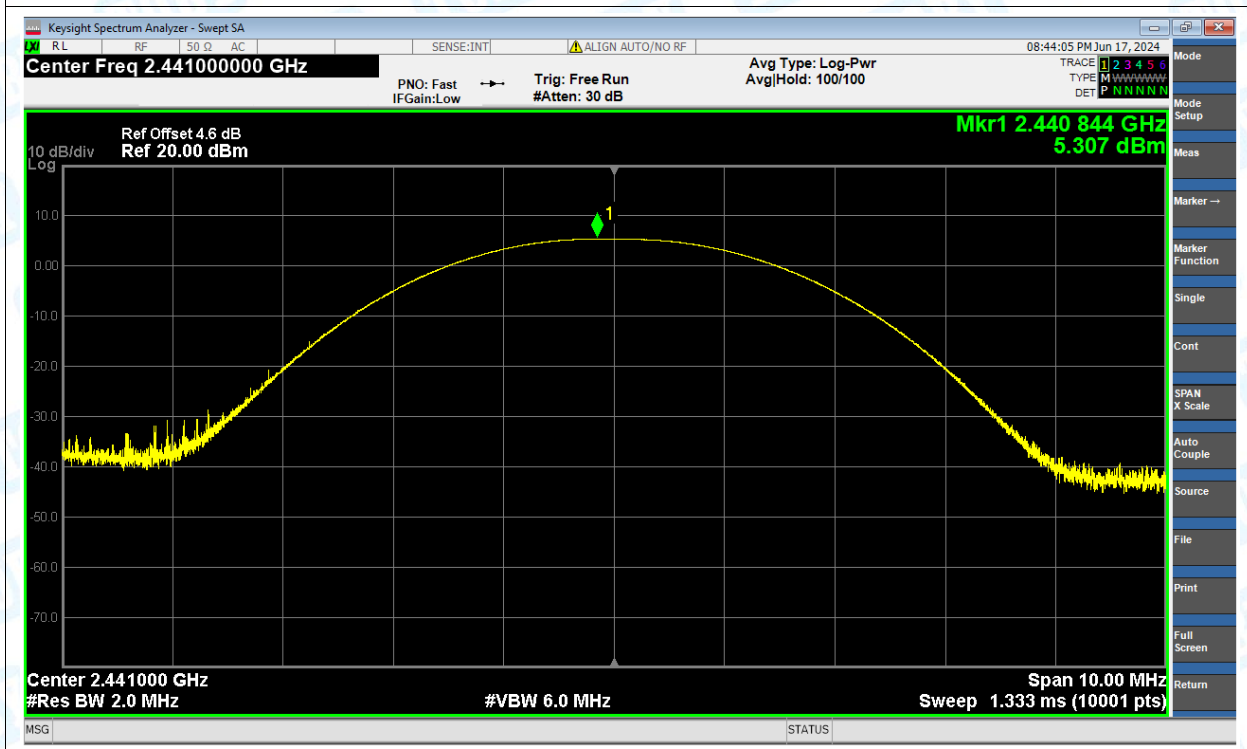
Power NVNT 1-DH1 2441MHz Ant1



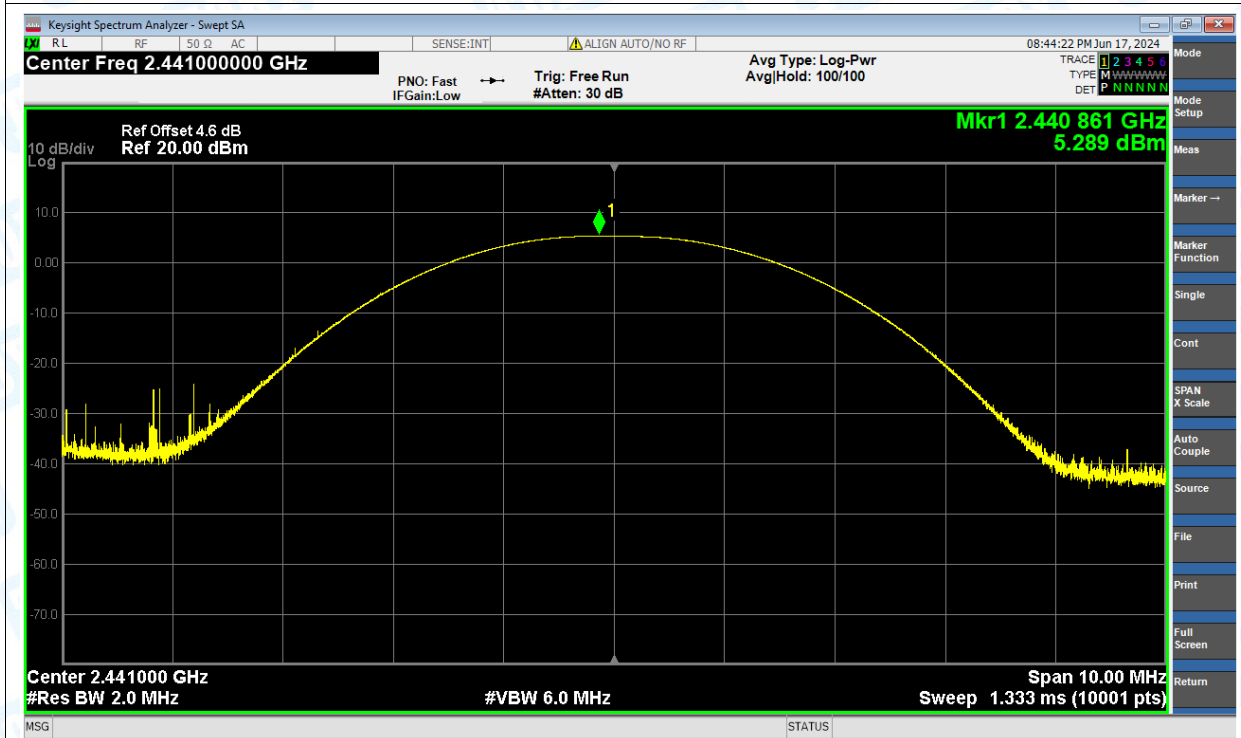
Power NVNT 1-DH1 2480MHz Ant1



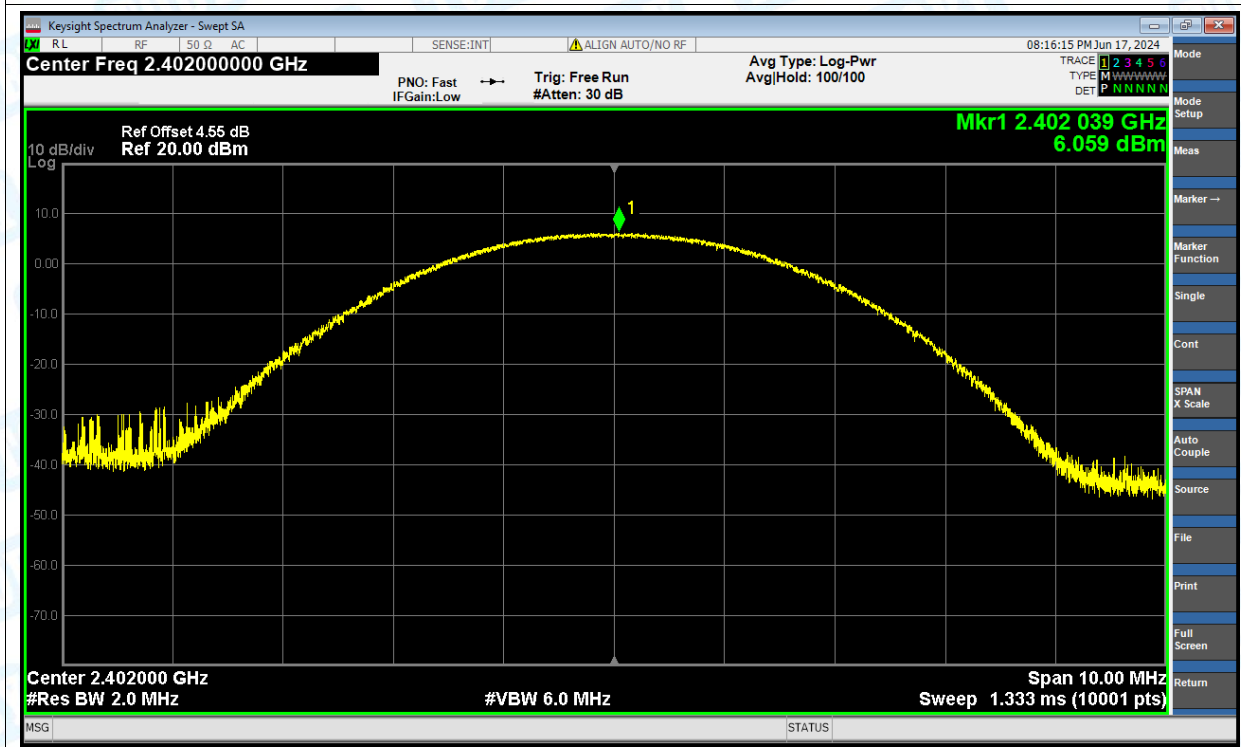
Power NVNT 1-DH3 2441MHz Ant1



Power NVNT 1-DH5 2441MHz Ant1



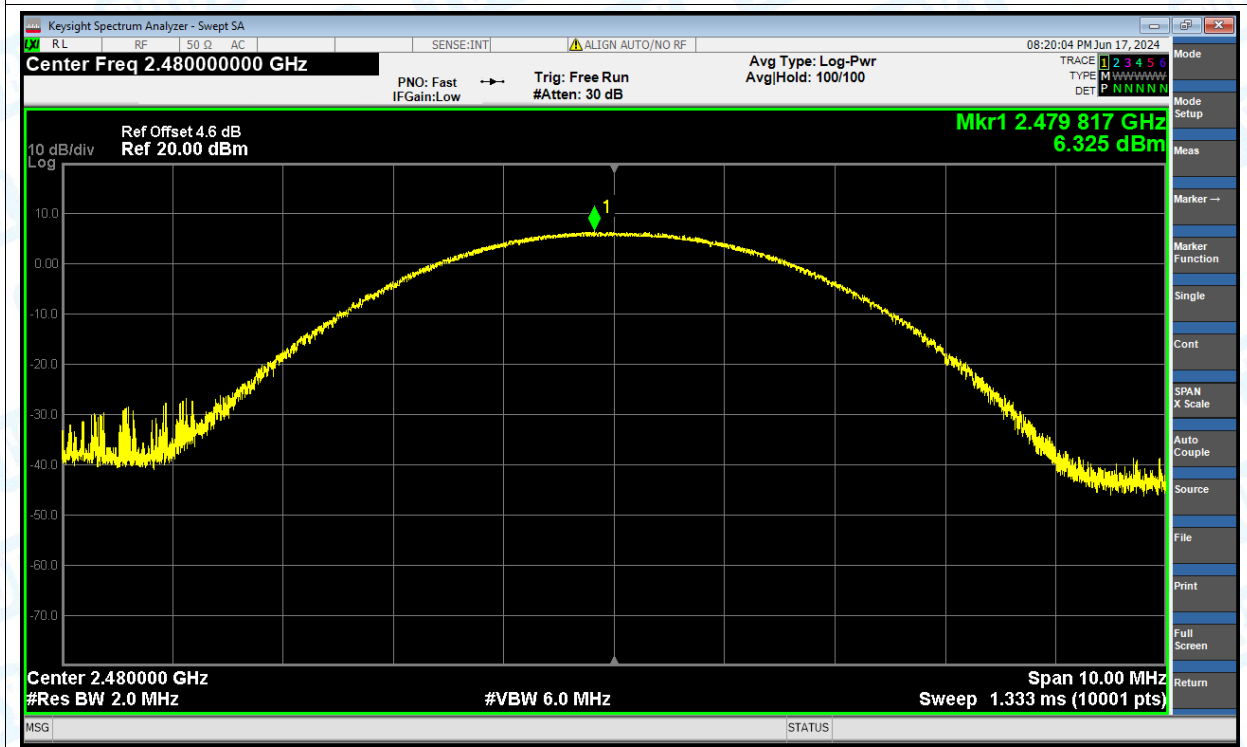
Power NVNT 2-DH1 2402MHz Ant1



Power NVNT 2-DH1 2441MHz Ant1



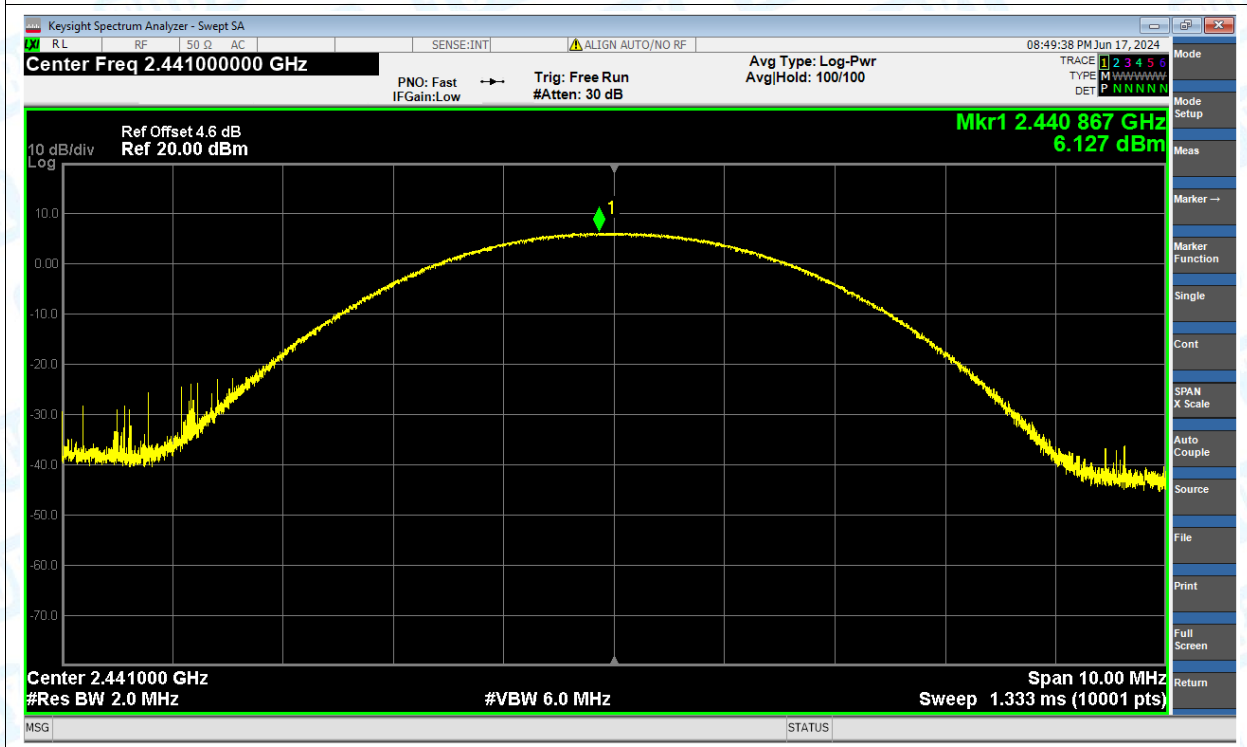
Power NVNT 2-DH1 2480MHz Ant1



Power NVNT 2-DH3 2441MHz Ant1



Power NVNT 2-DH5 2441MHz Ant1

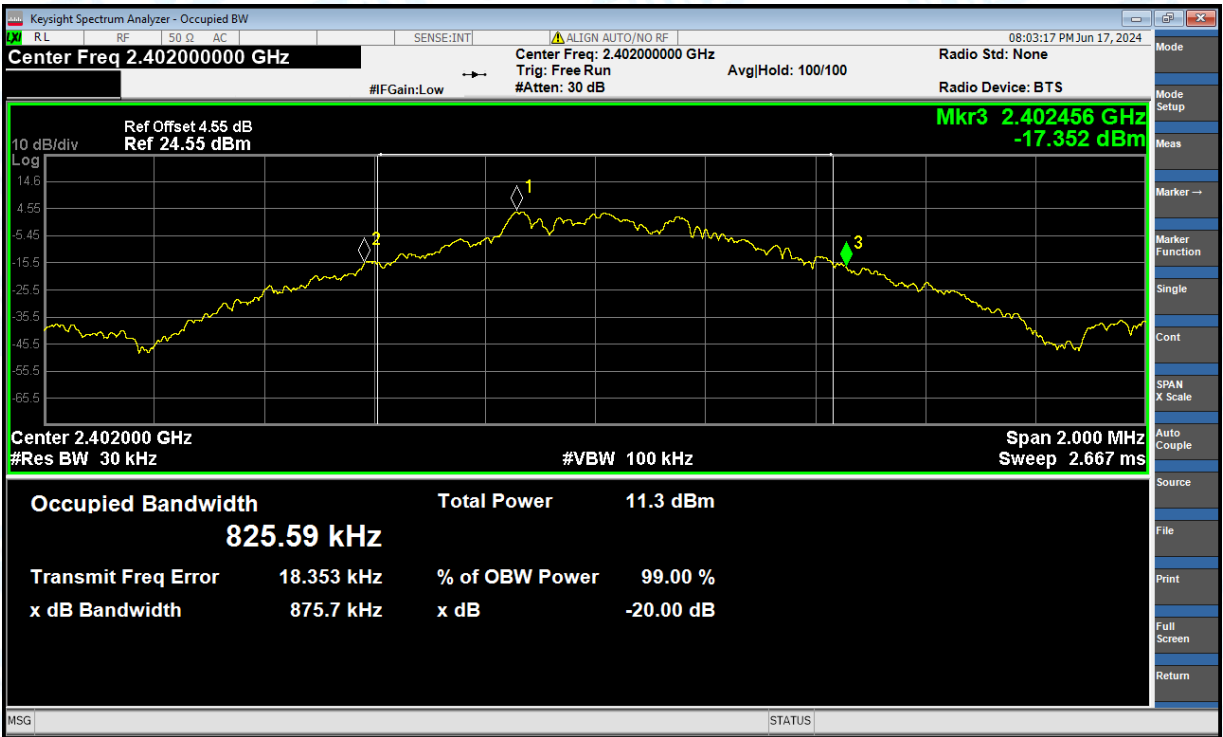


3. -20dB Bandwidth

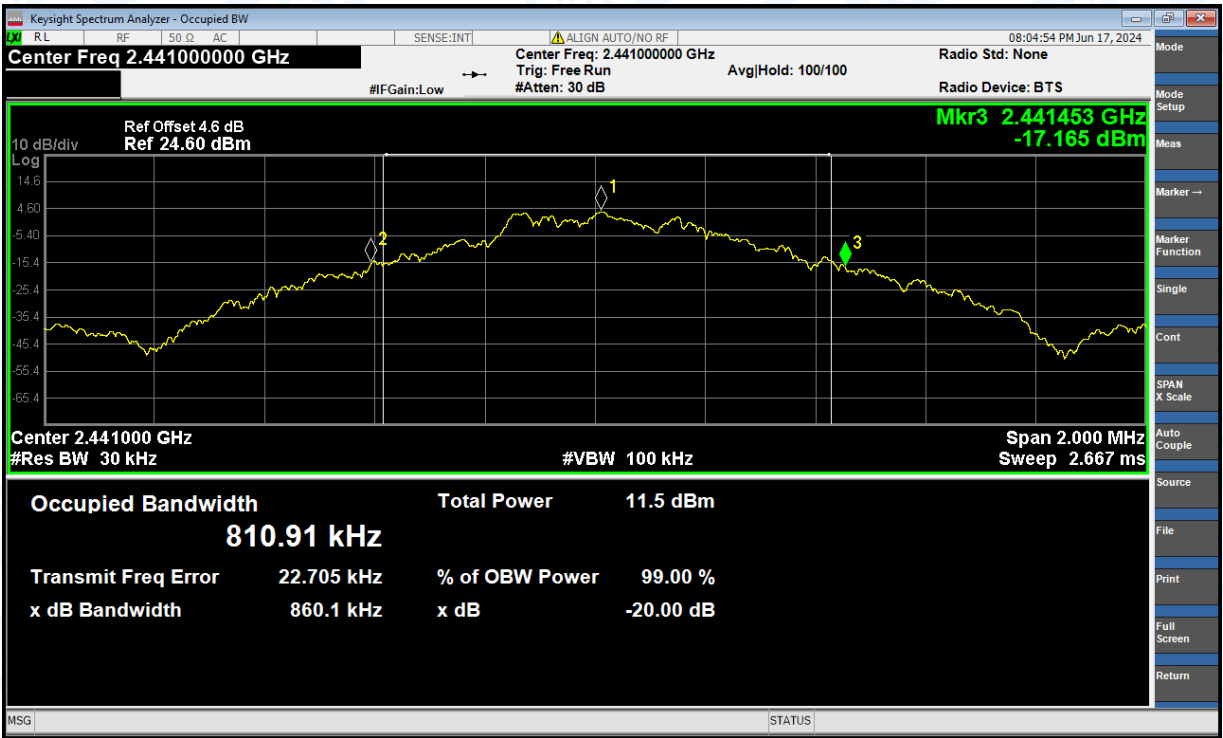
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.88	0	Pass
NVNT	1-DH1	2441	Ant1	0.86	0	Pass
NVNT	1-DH1	2480	Ant1	0.88	0	Pass
NVNT	2-DH1	2402	Ant1	1.24	0	Pass
NVNT	2-DH1	2441	Ant1	1.25	0	Pass
NVNT	2-DH1	2480	Ant1	1.28	0	Pass

Test Graphs

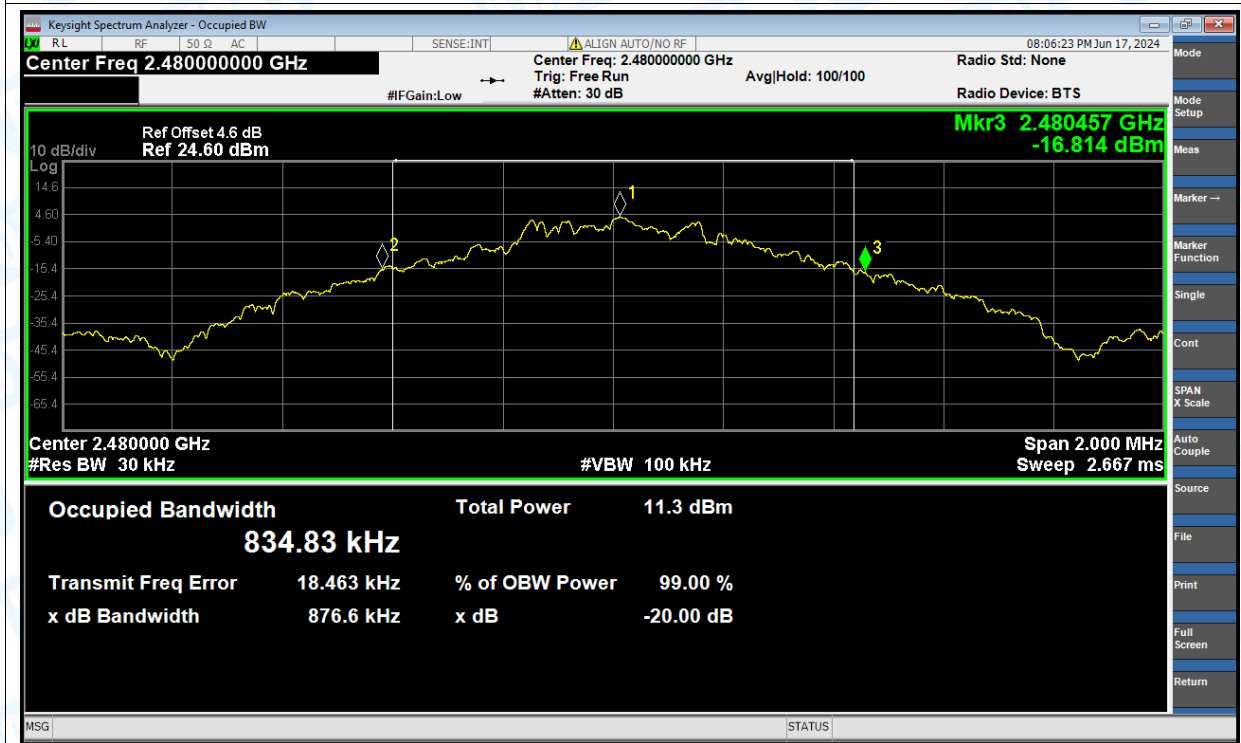
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



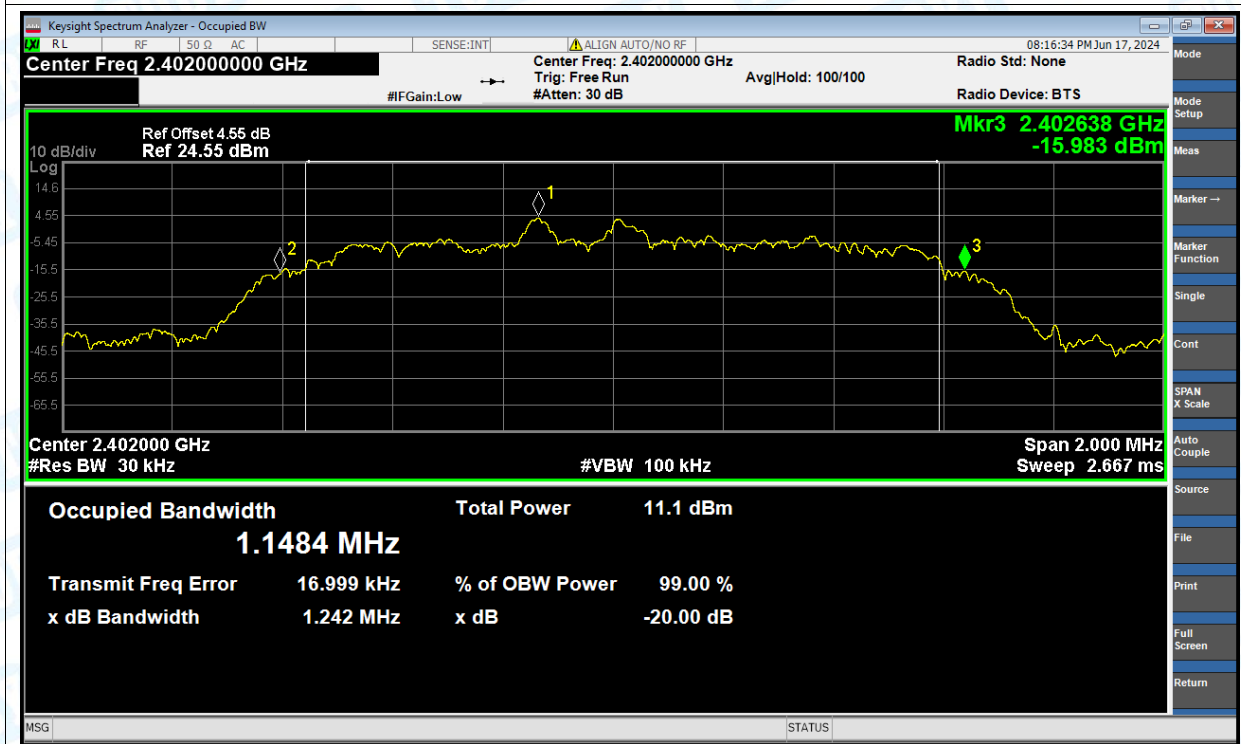
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



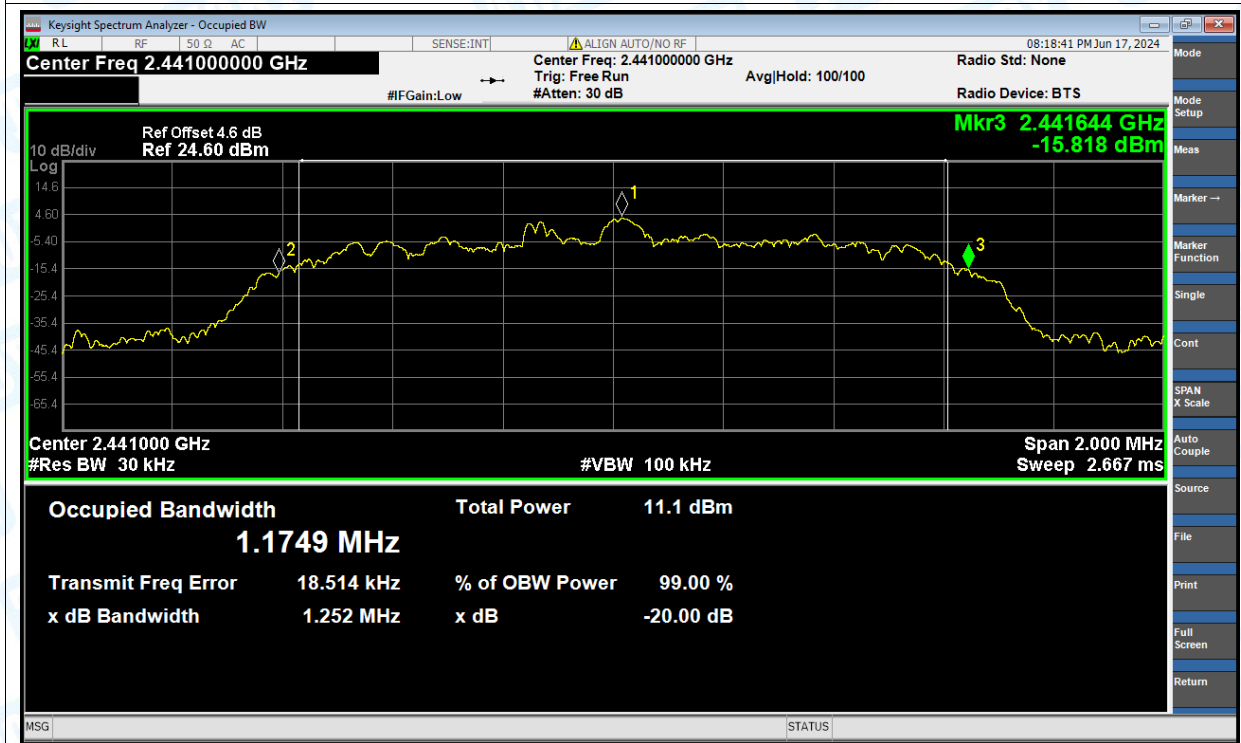
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



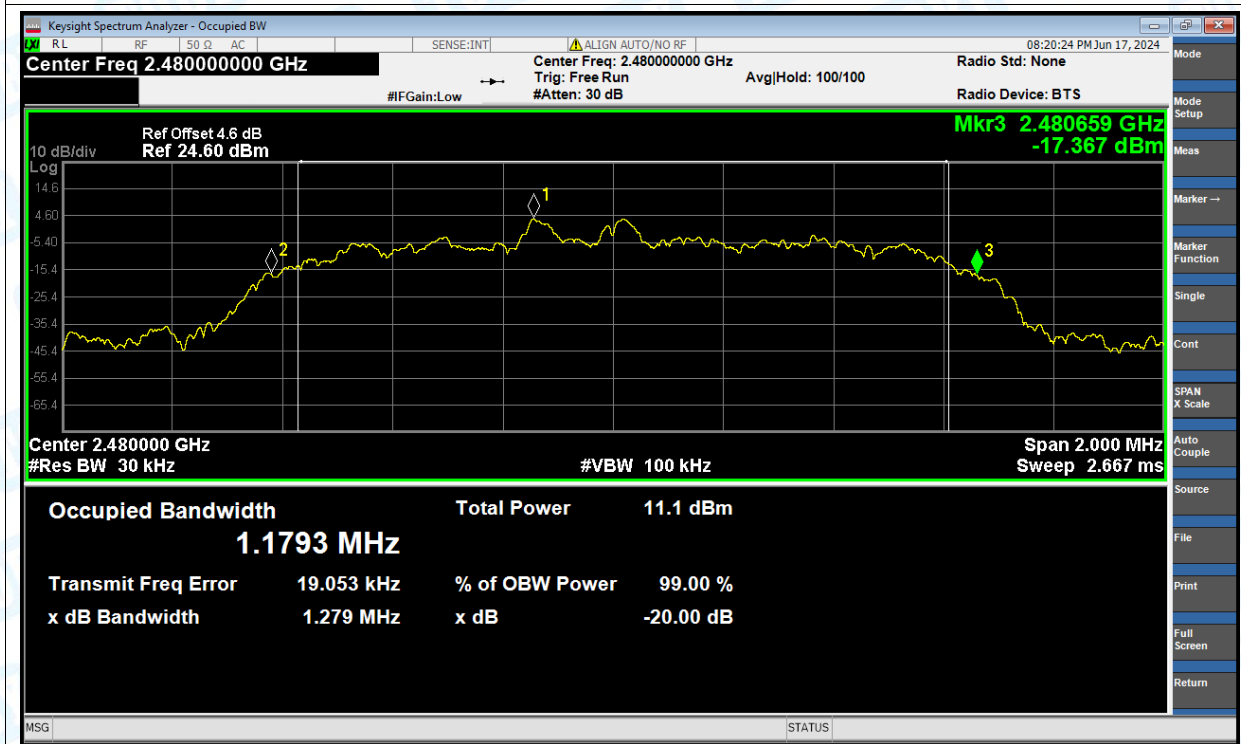
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

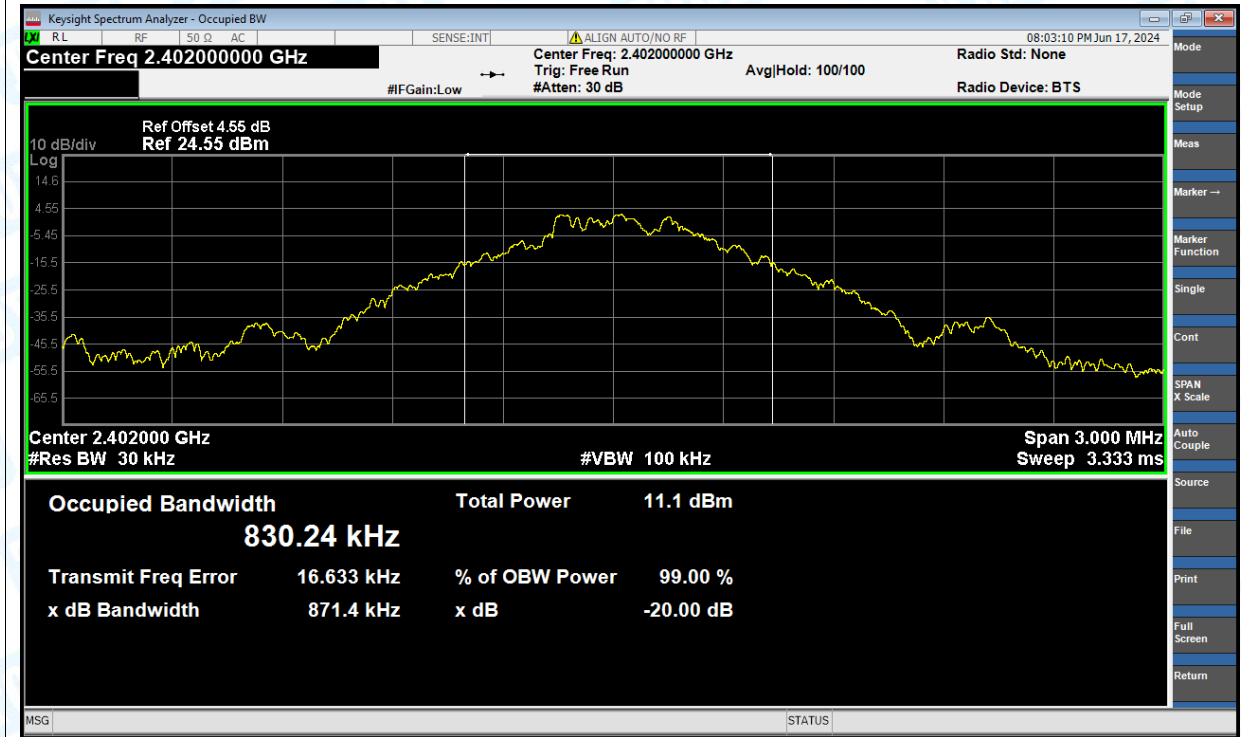


4. Occupied Channel Bandwidth

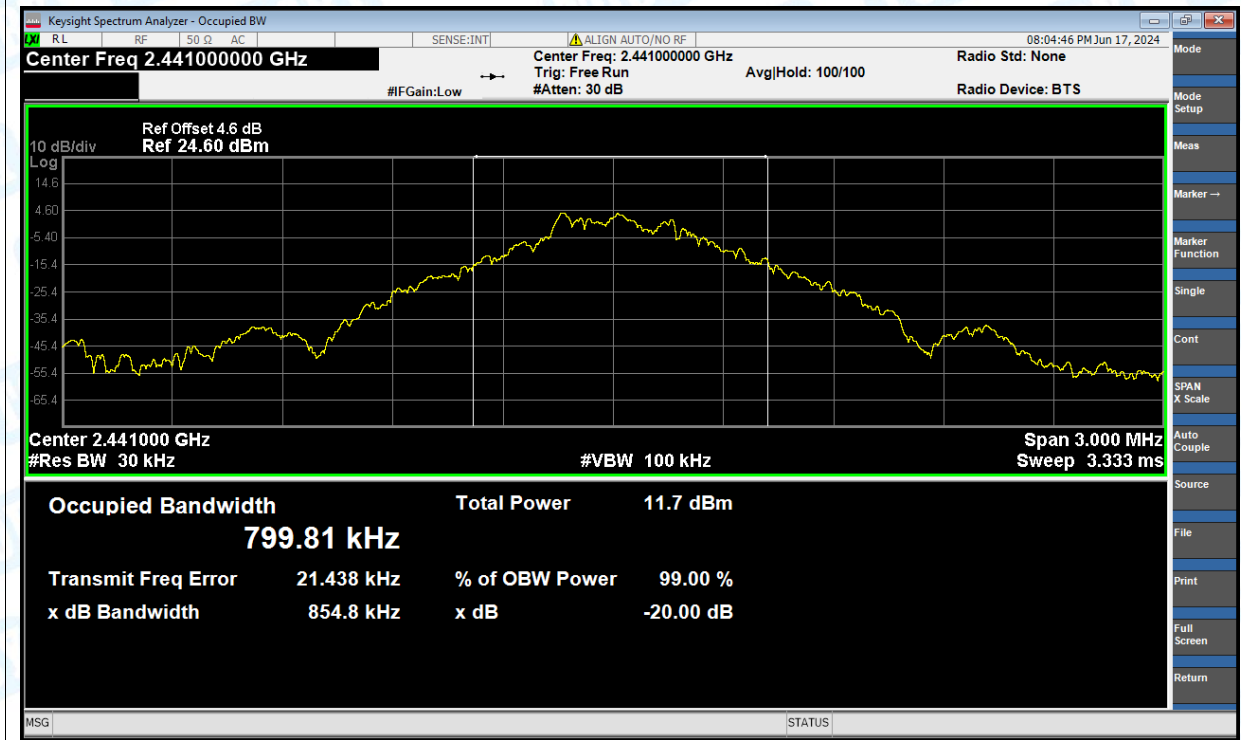
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.83
NVNT	1-DH1	2441	Ant1	0.8
NVNT	1-DH1	2480	Ant1	0.812
NVNT	2-DH1	2402	Ant1	1.172
NVNT	2-DH1	2441	Ant1	1.162
NVNT	2-DH1	2480	Ant1	1.171

Test Graphs

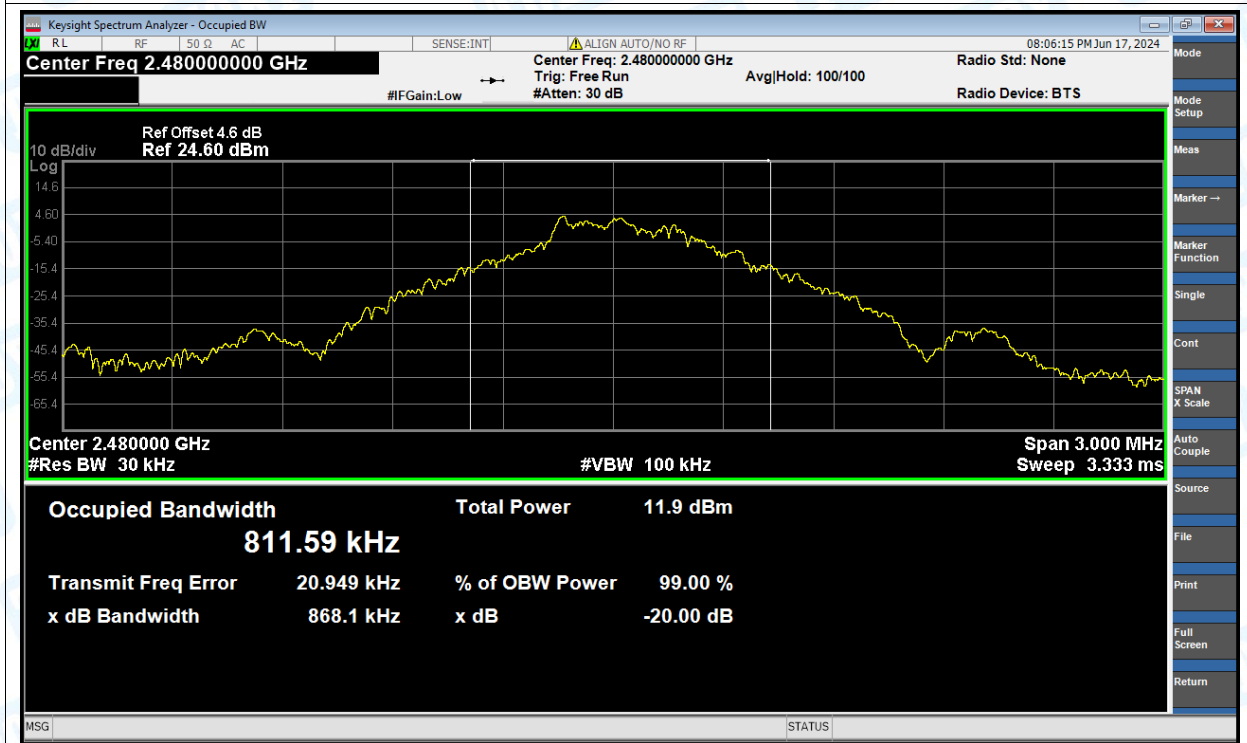
OBW NVNT 1-DH1 2402MHz Ant1



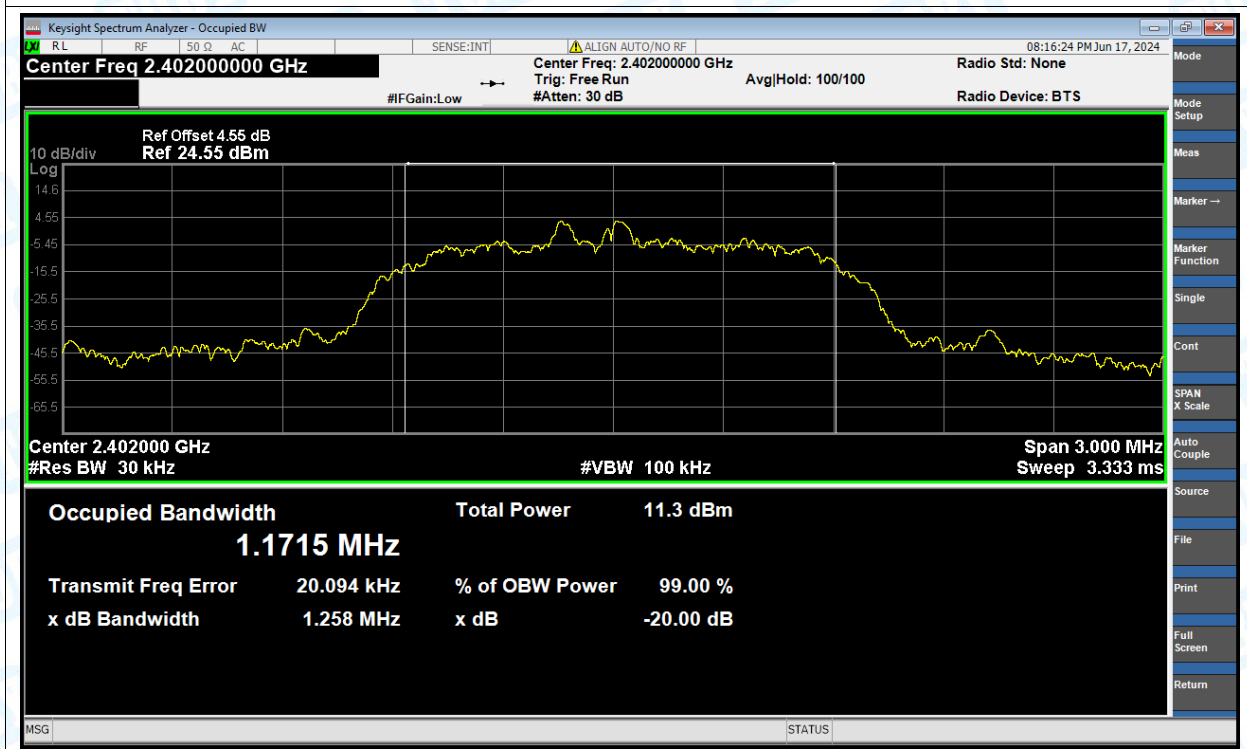
OBW NVNT 1-DH1 2441MHz Ant1



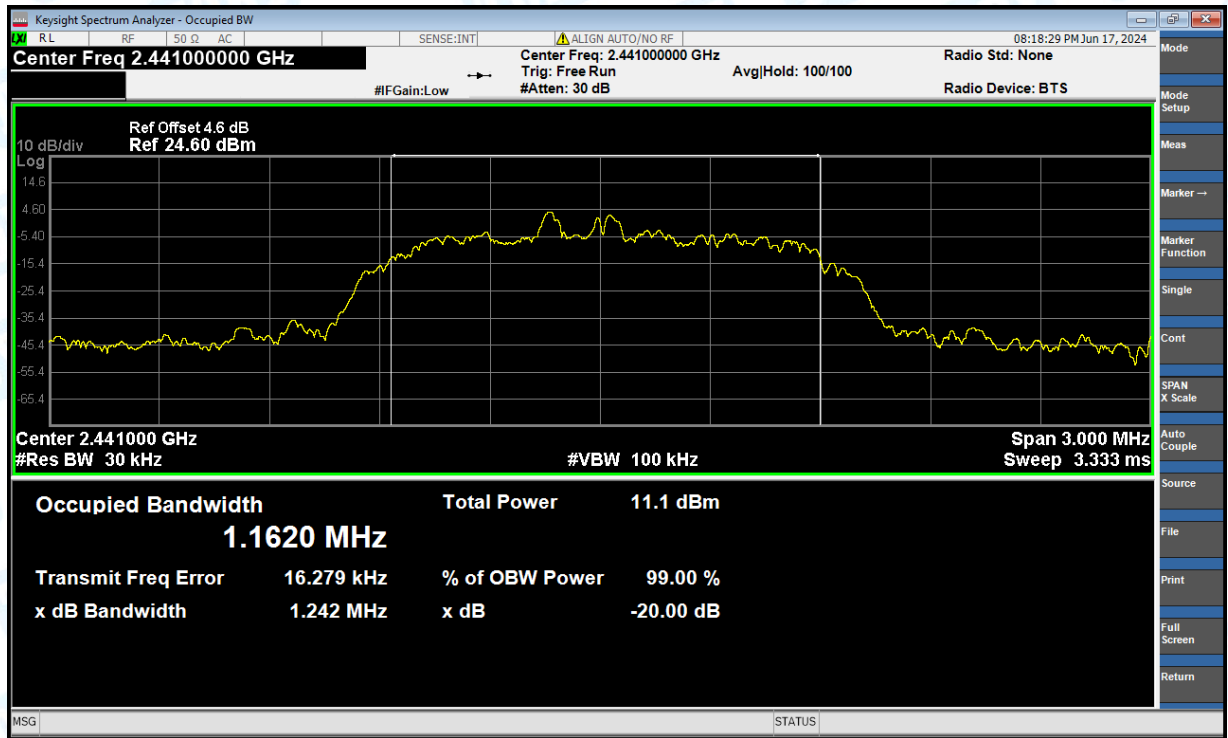
OBW NVNT 1-DH1 2480MHz Ant1



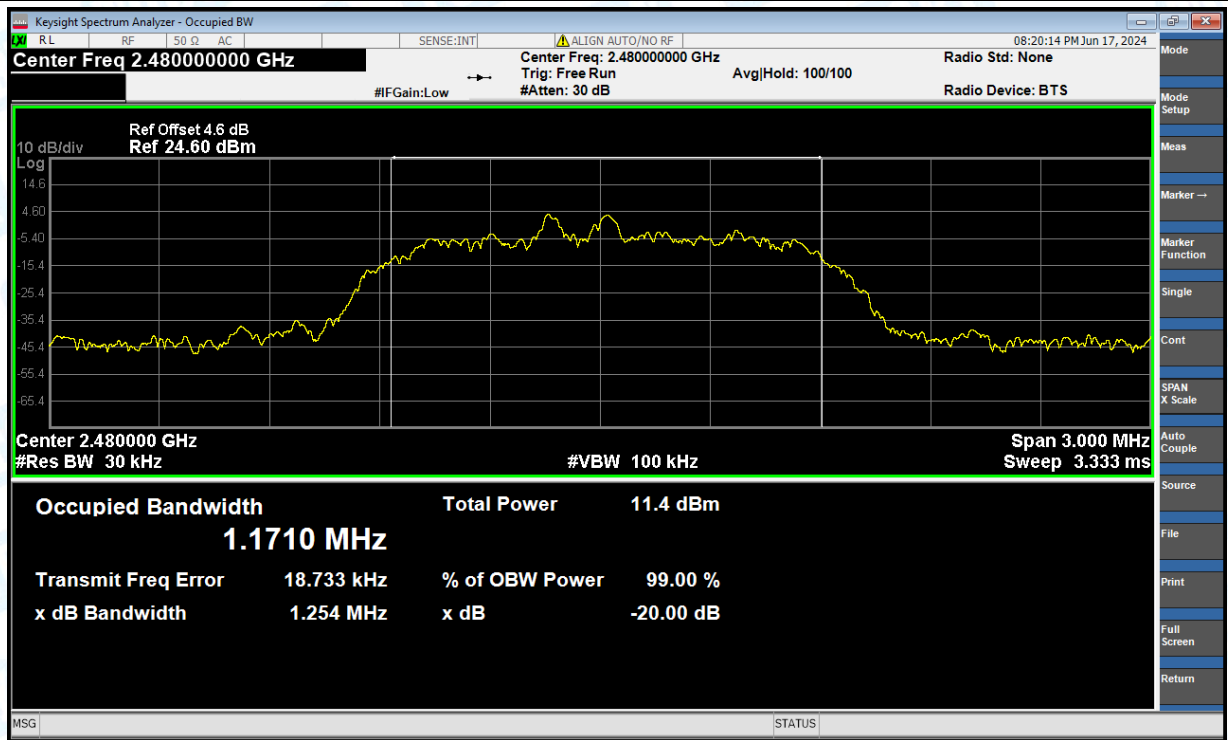
OBW NVNT 2-DH1 2402MHz Ant1



OBW NVNT 2-DH1 2441MHz Ant1



OBW NVNT 2-DH1 2480MHz Ant1

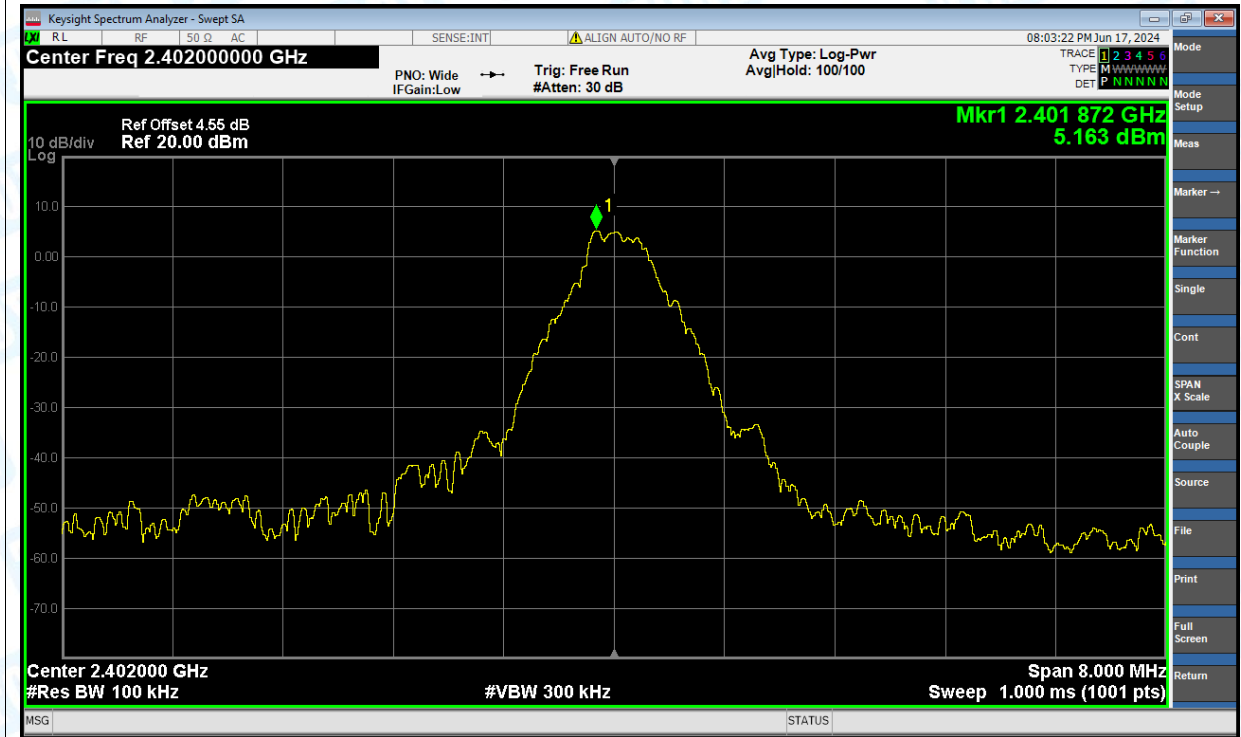


5. Band Edge

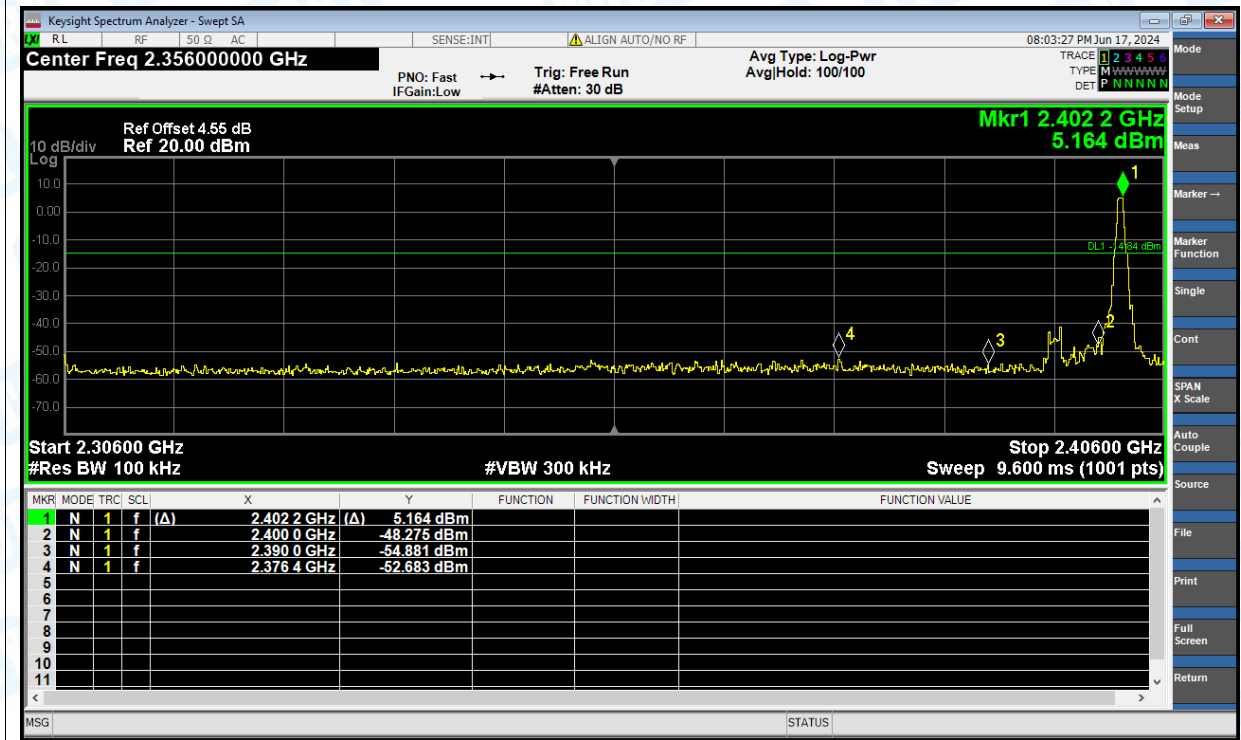
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-57.84	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-55.89	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-57.48	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-56.48	-20	Pass

Test Graphs

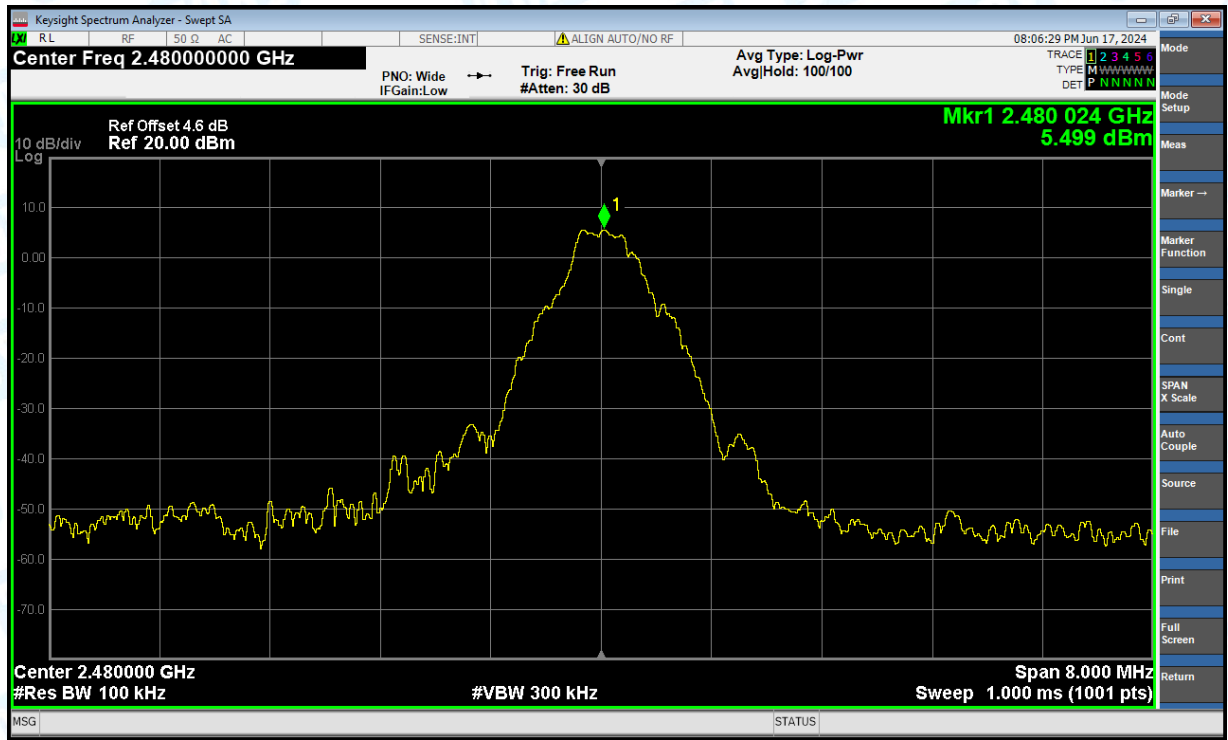
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



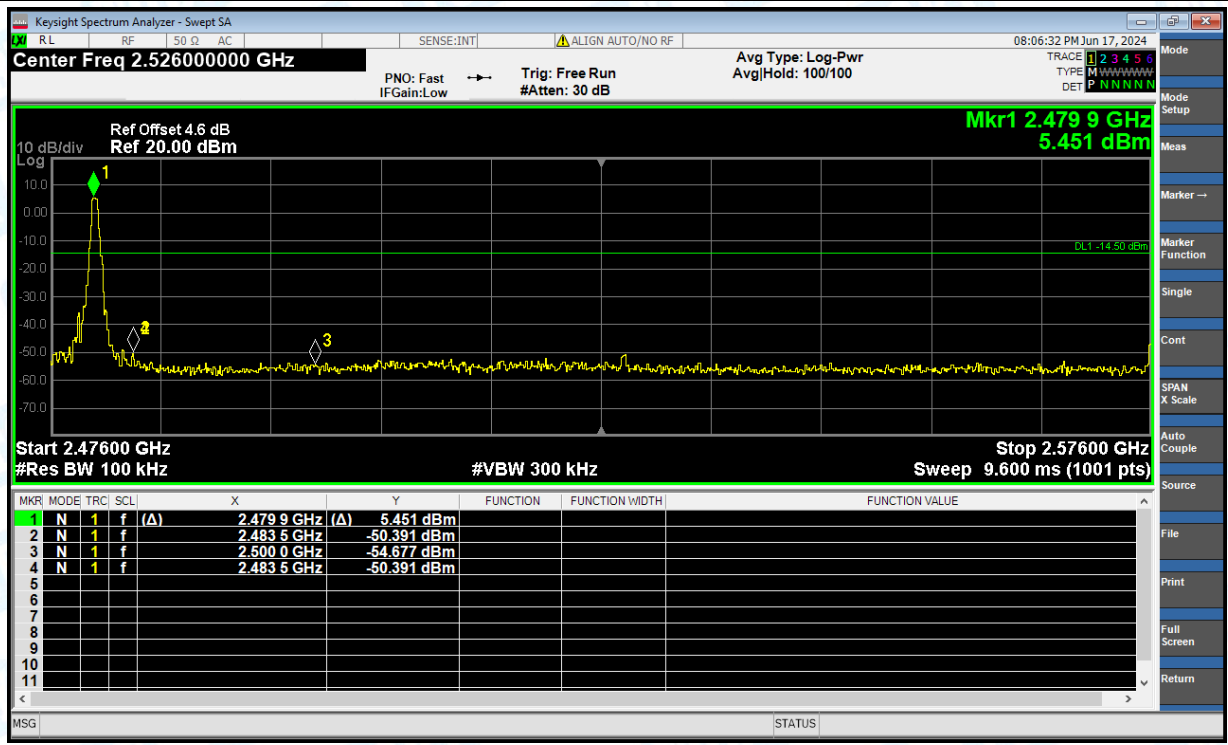
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



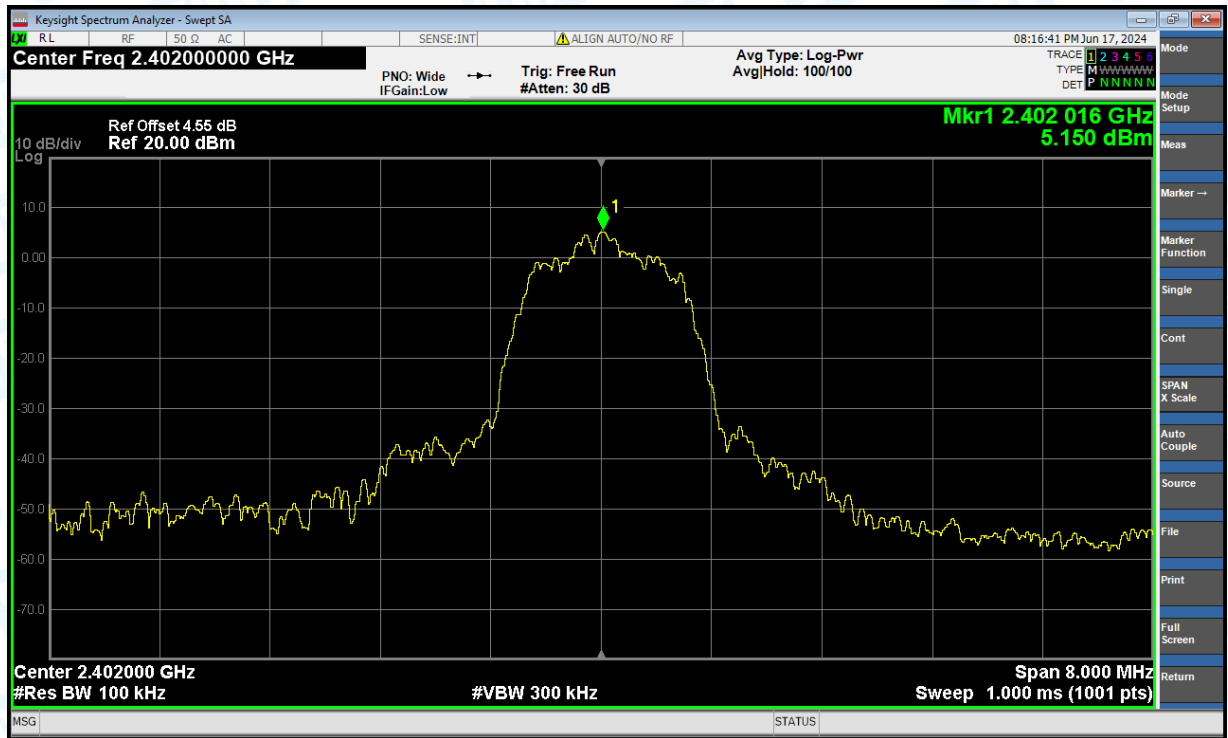
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



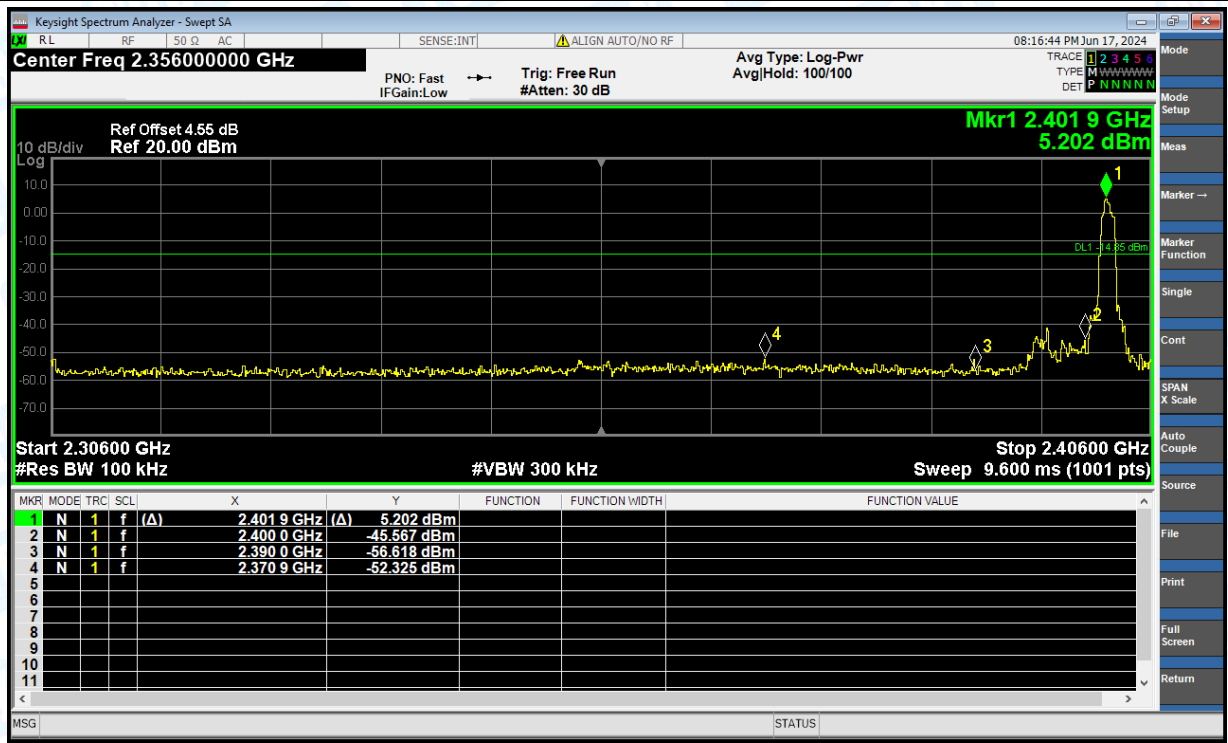
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



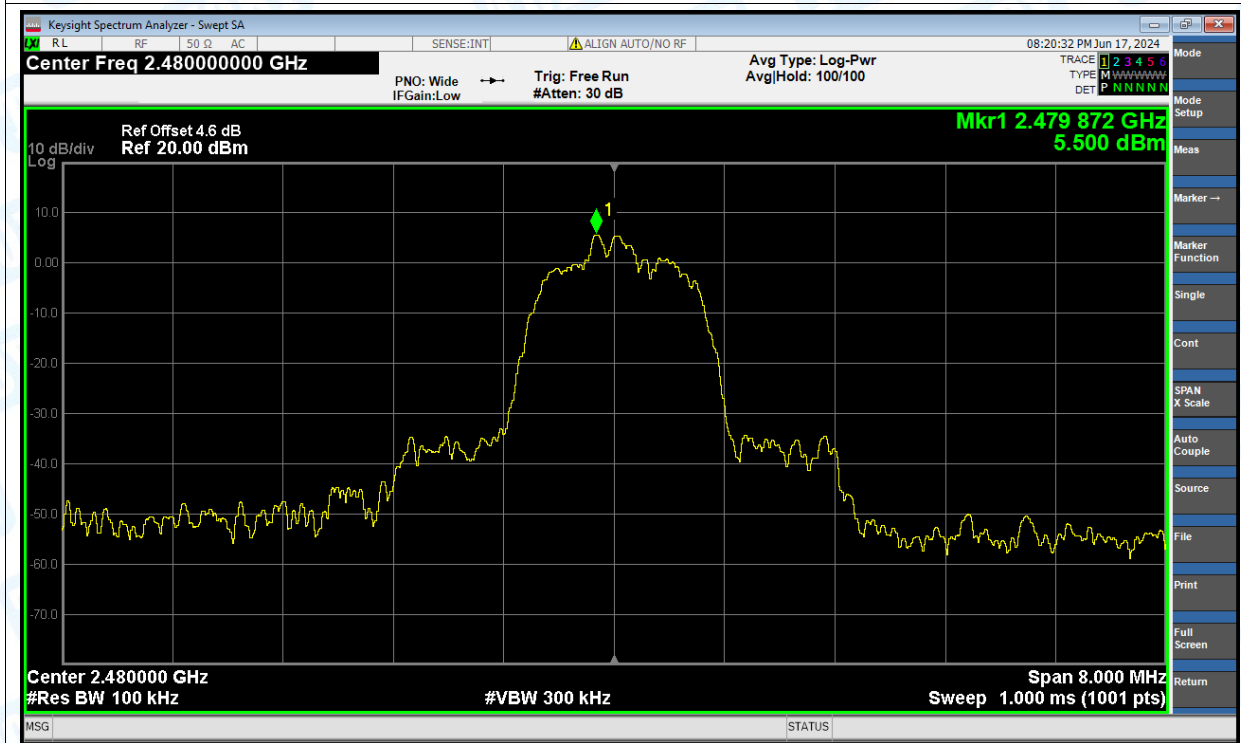
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



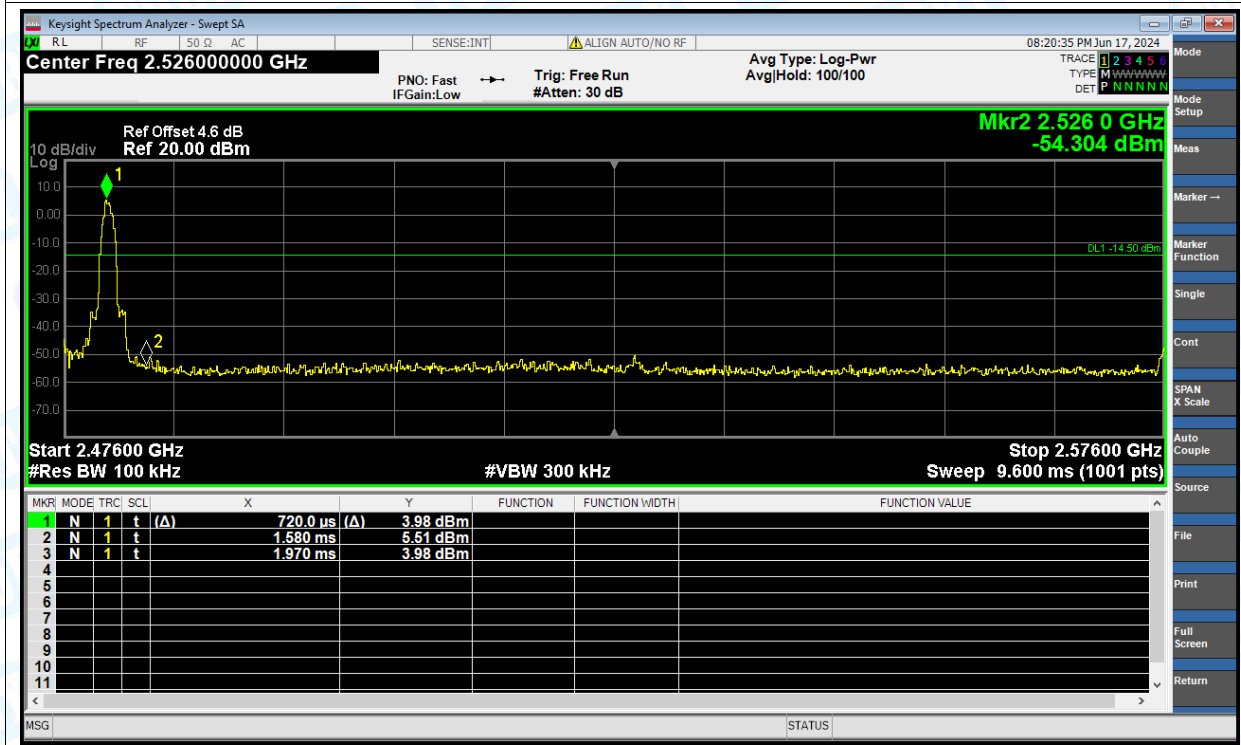
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



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



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



6. Band Edge(Hopping)

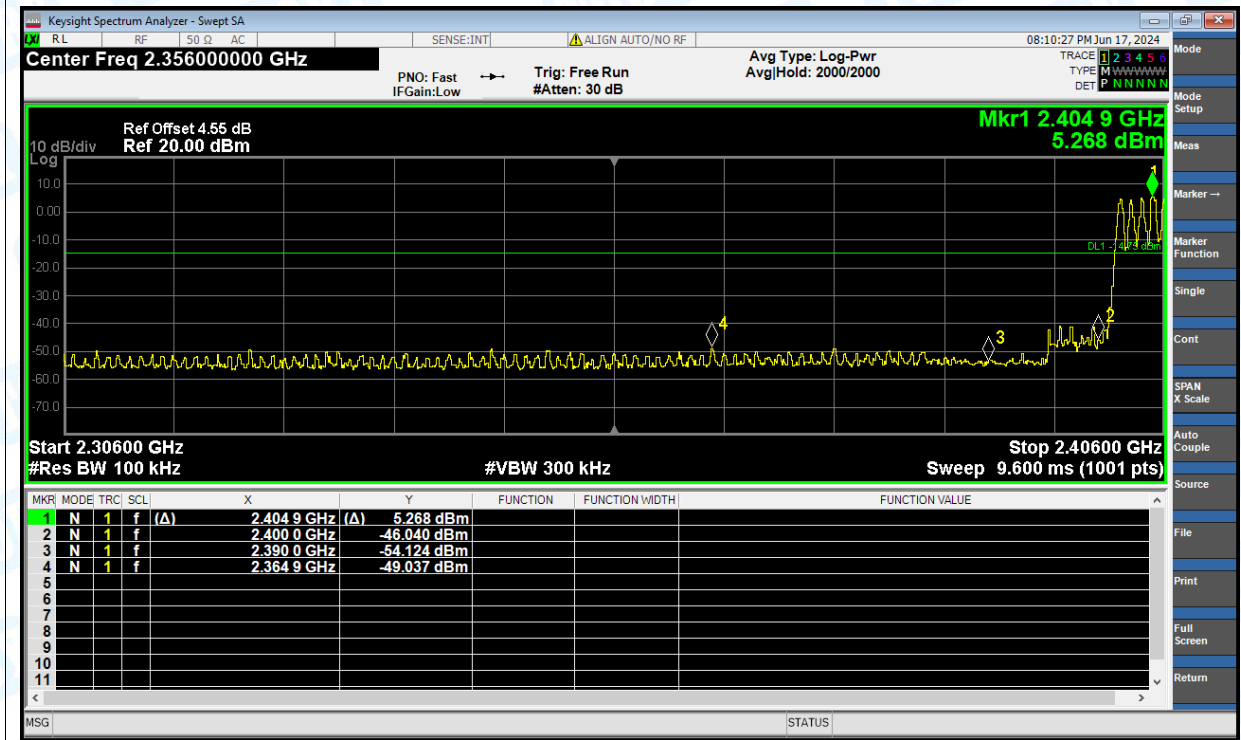
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-54.29	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-52.64	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-54.59	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-51.82	-20	Pass

Test Graphs

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



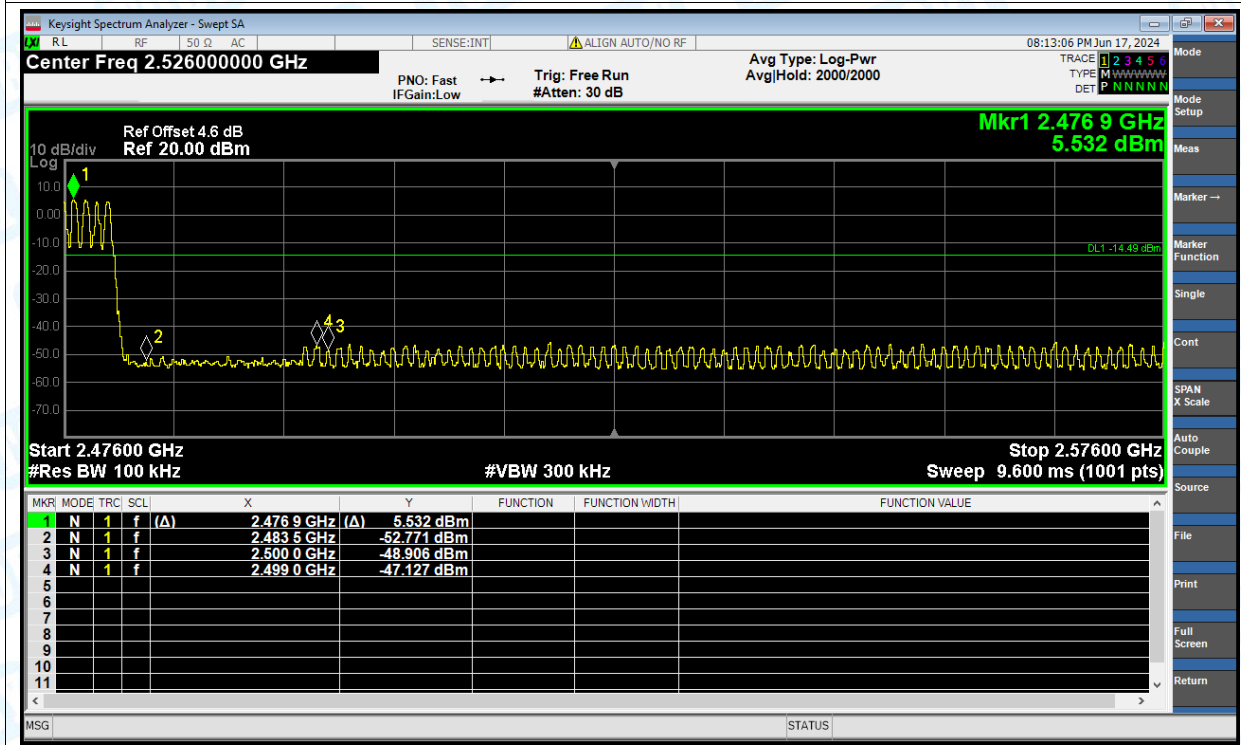
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



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



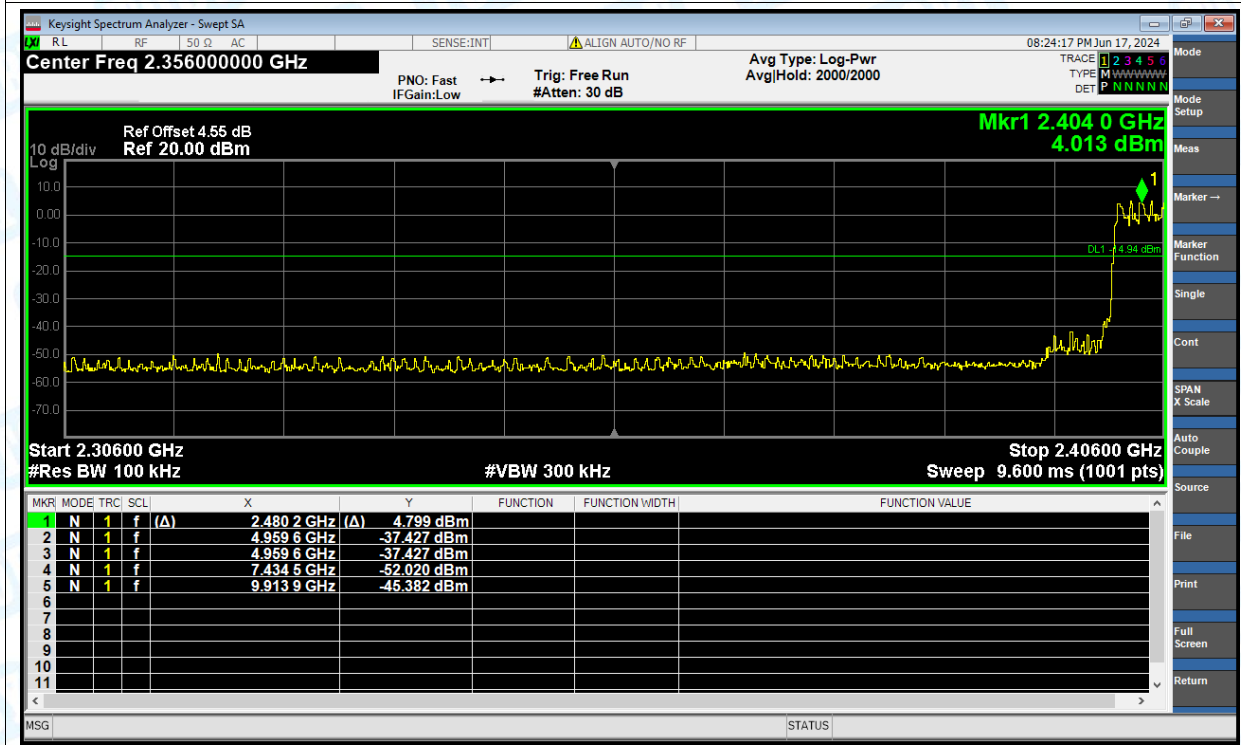
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



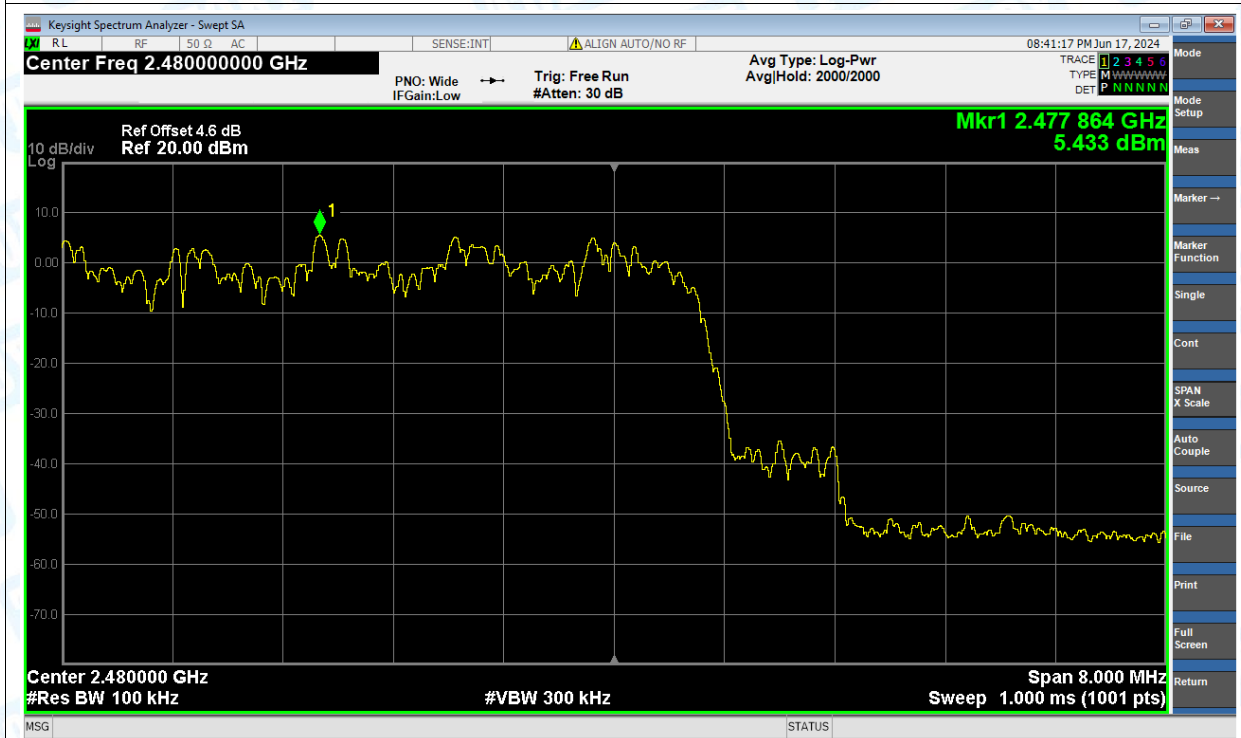
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref



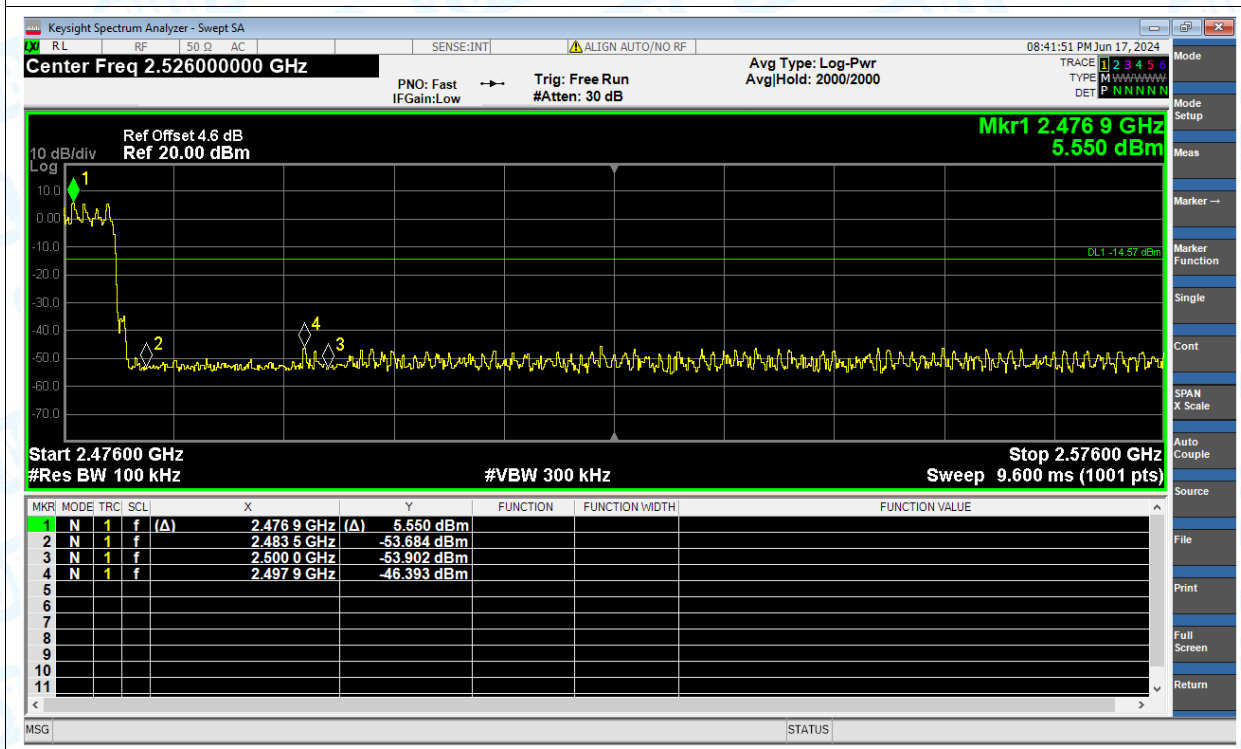
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



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



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

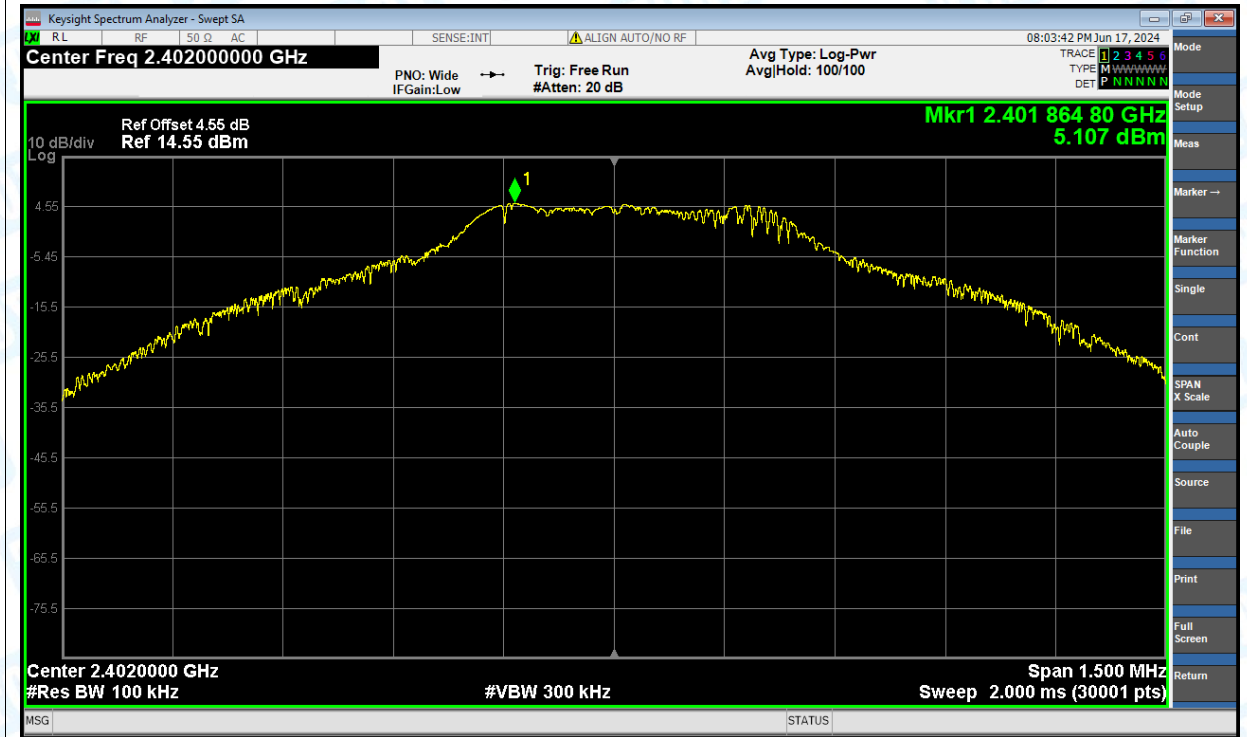


7. Conducted RF Spurious Emission

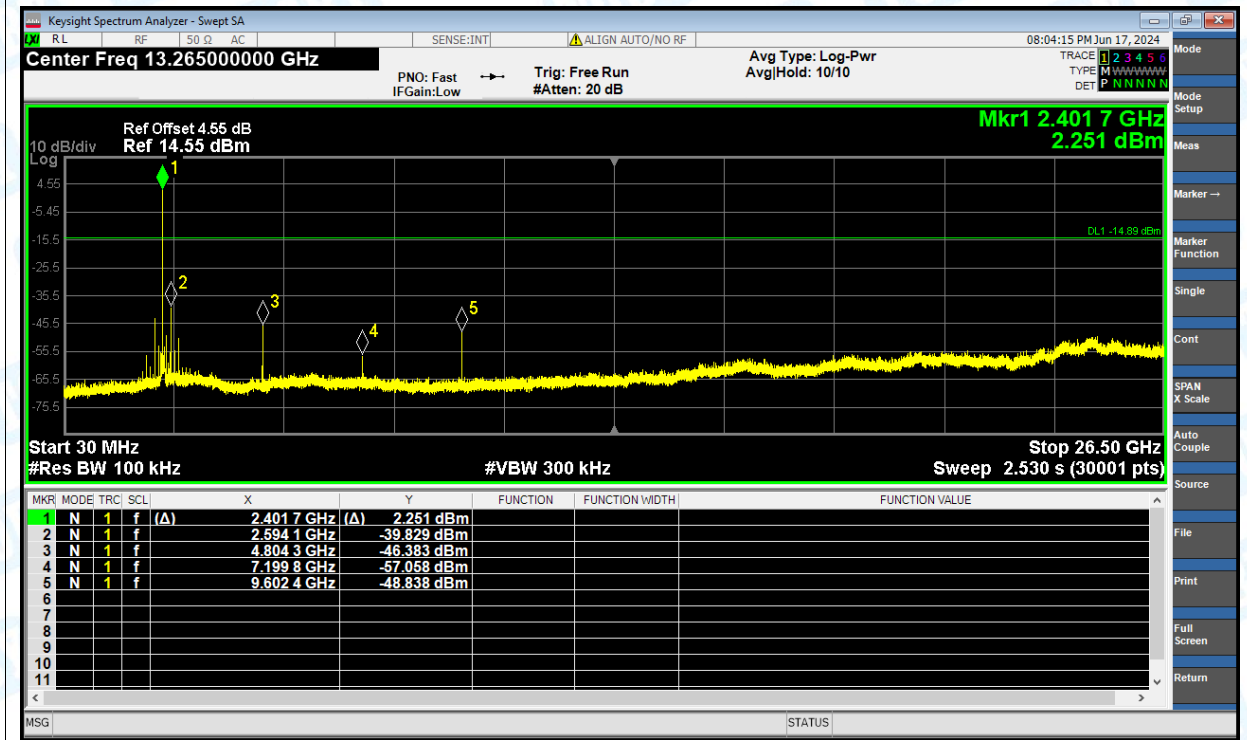
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-44.94	-20	Pass
NVNT	1-DH1	2441	Ant1	-44.67	-20	Pass
NVNT	1-DH1	2480	Ant1	-45.46	-20	Pass
NVNT	2-DH1	2402	Ant1	-47.91	-20	Pass
NVNT	2-DH1	2441	Ant1	-47.74	-20	Pass
NVNT	2-DH1	2480	Ant1	-42.92	-20	Pass

Test Graphs

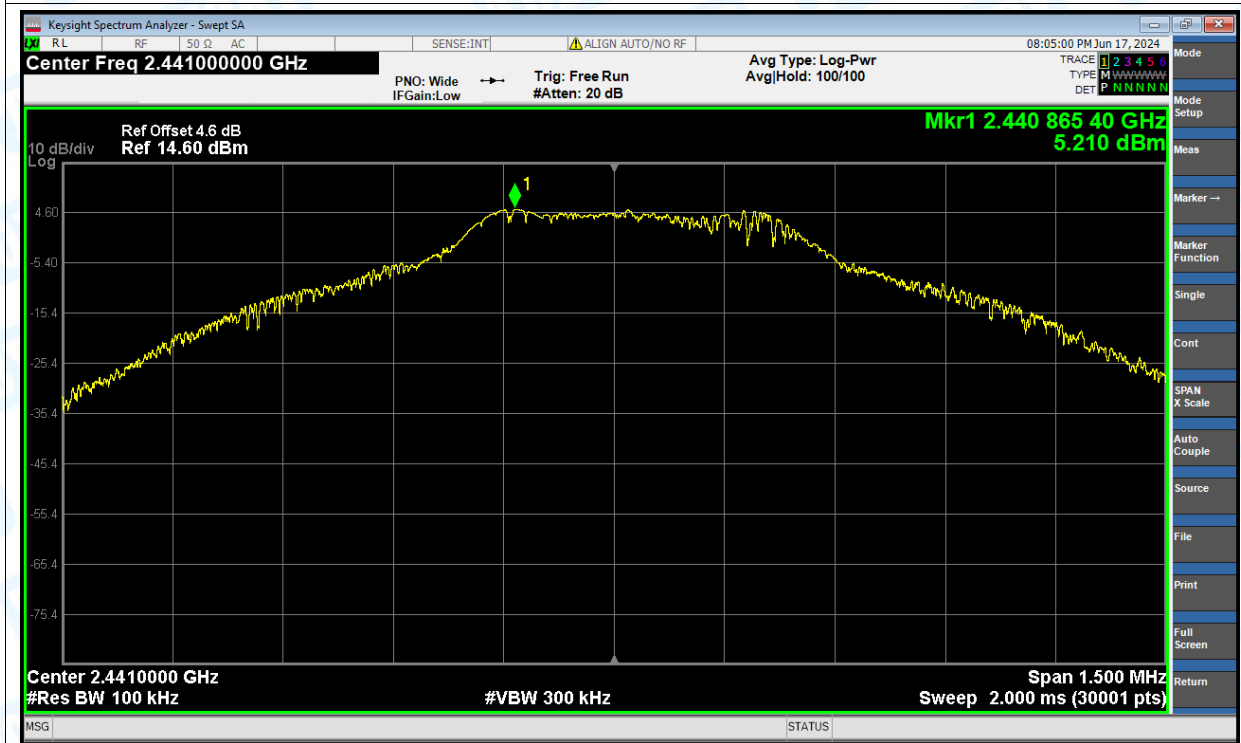
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



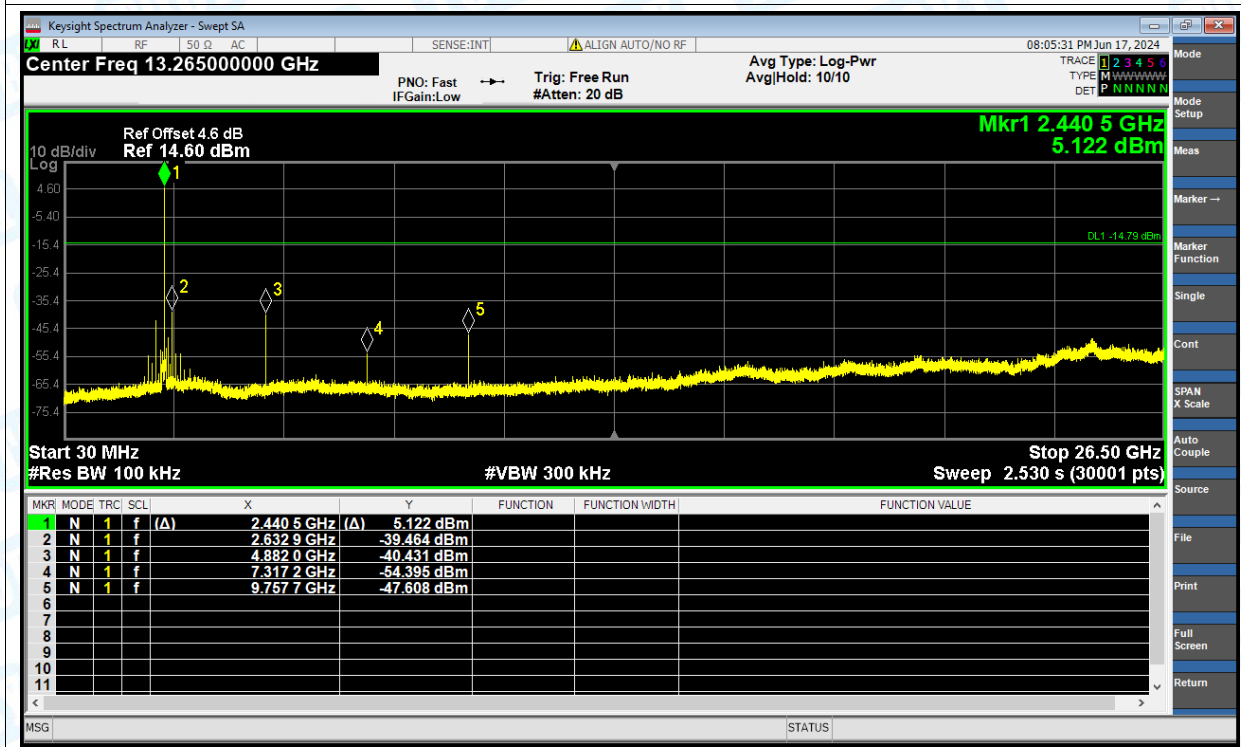
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



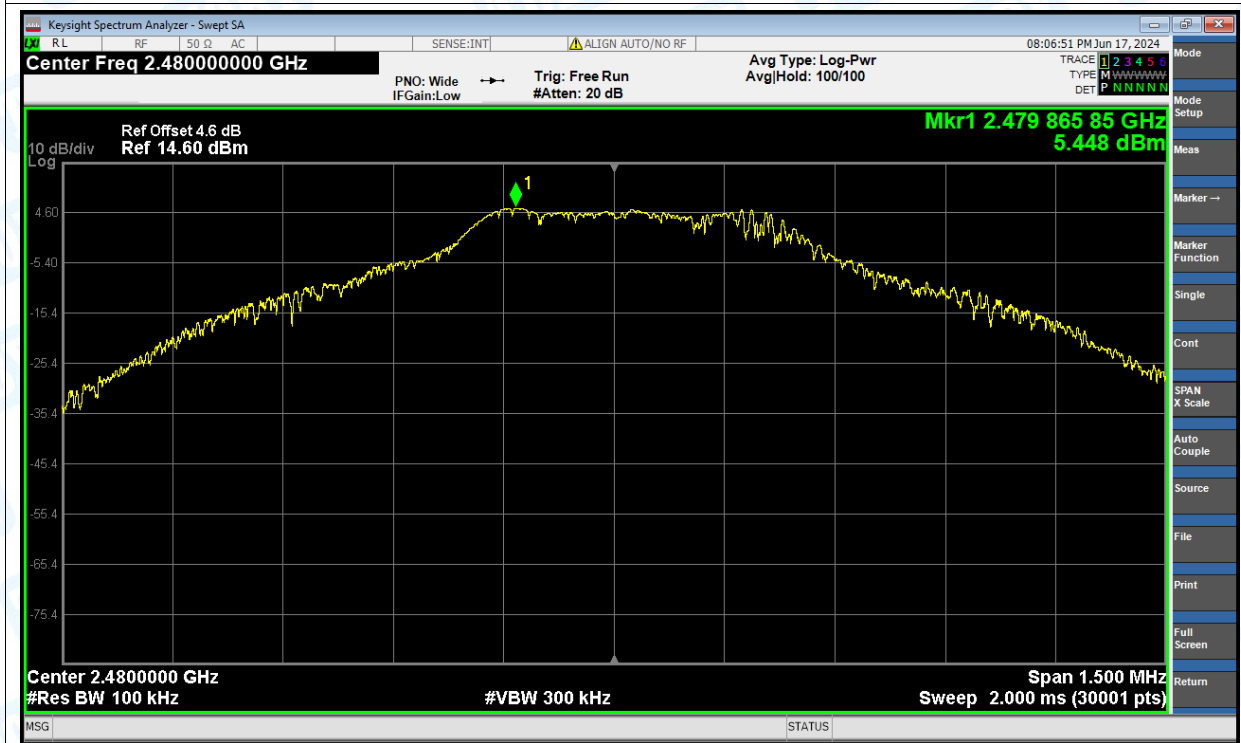
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



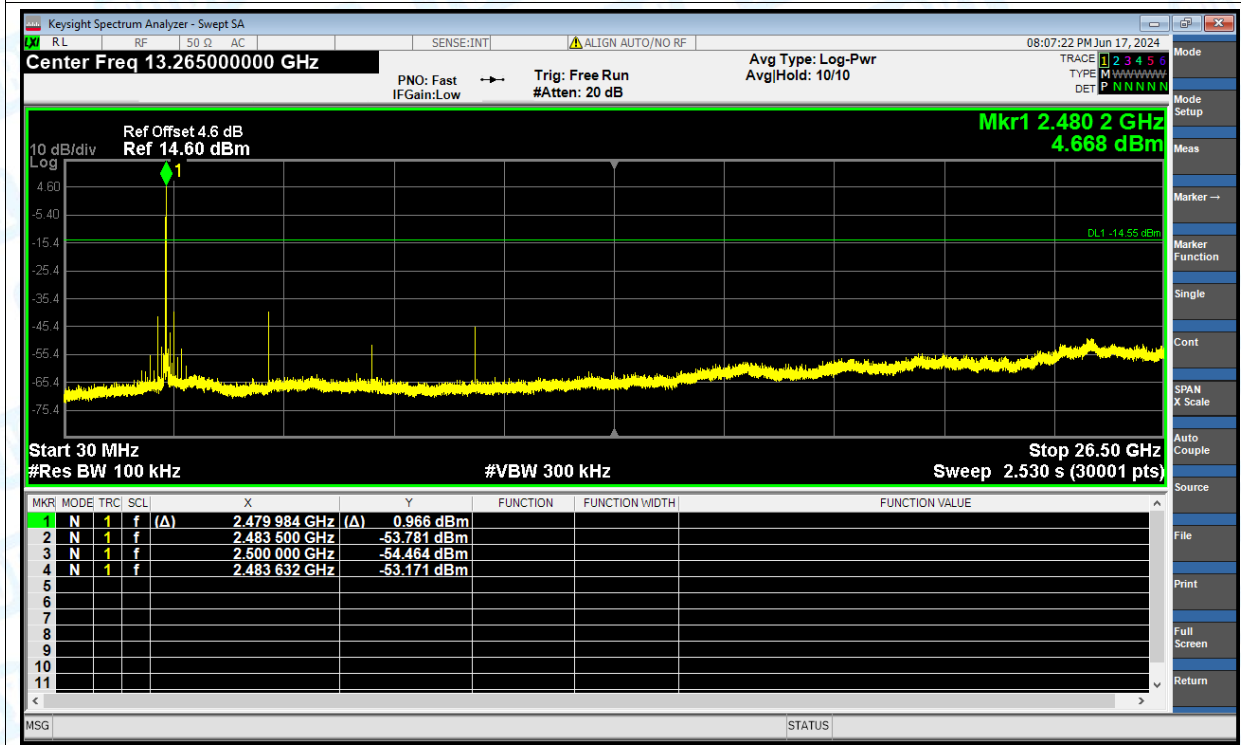
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



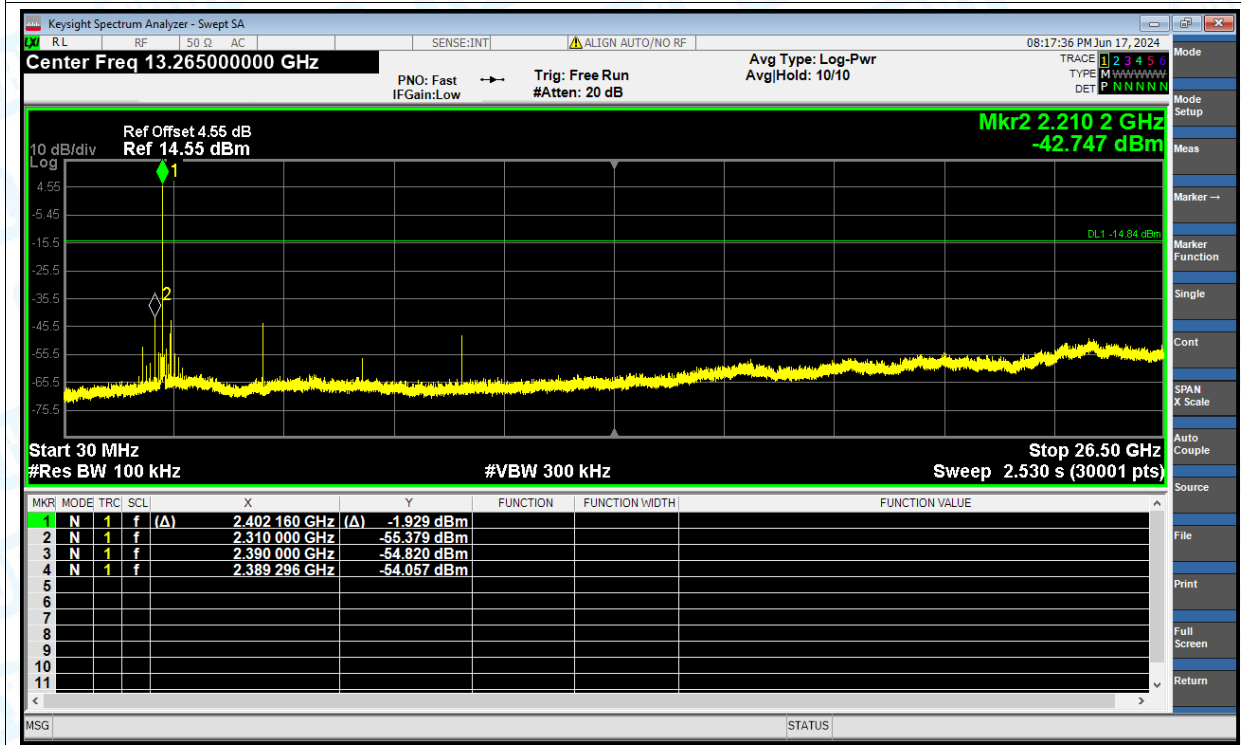
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



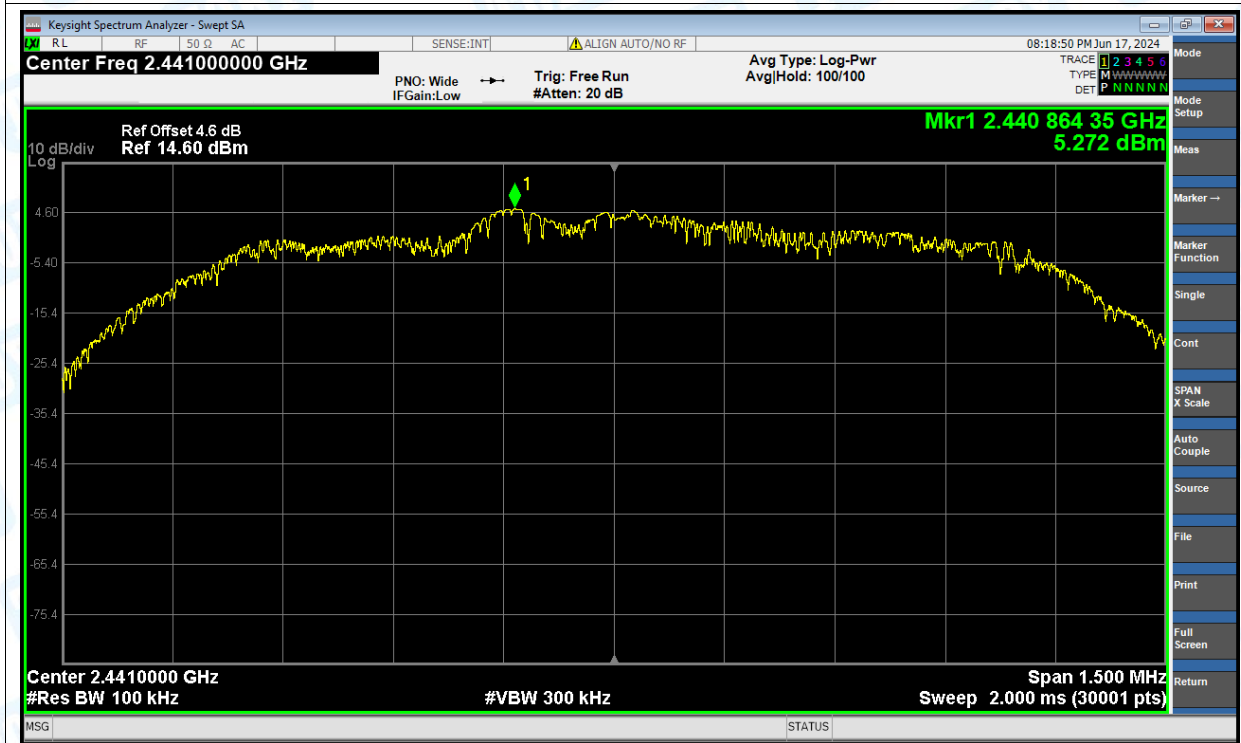
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



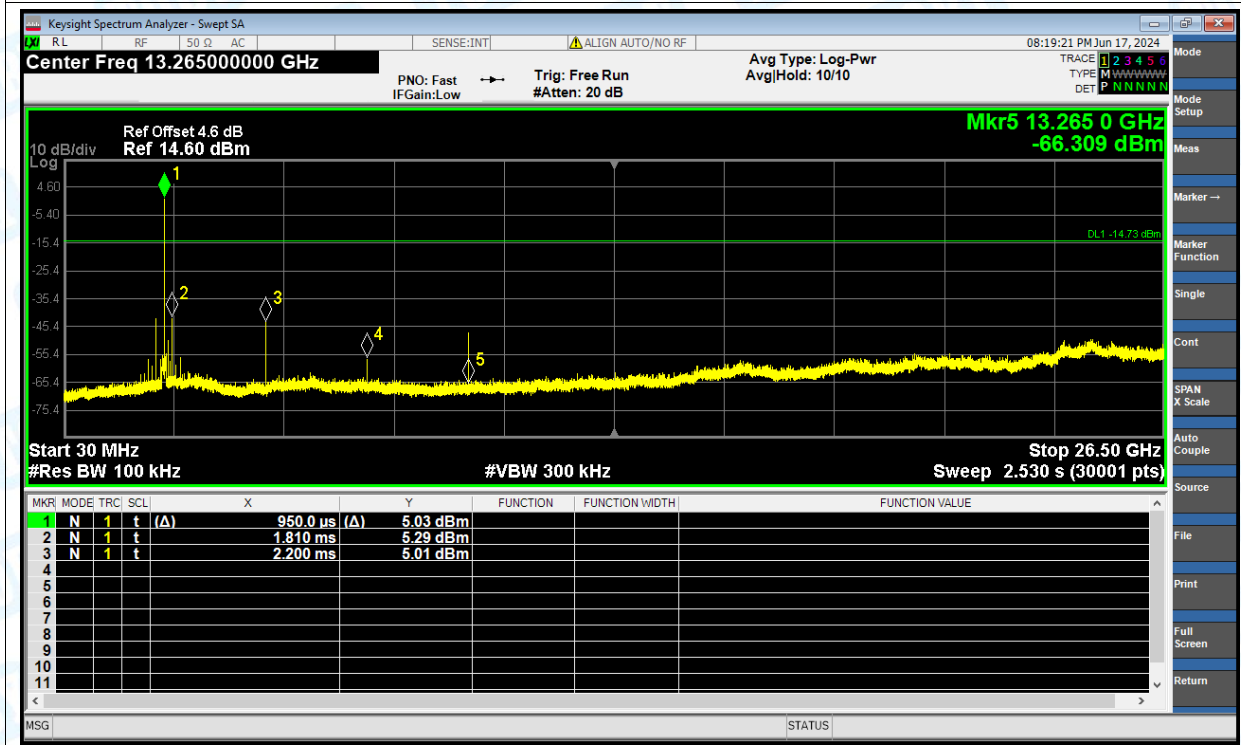
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



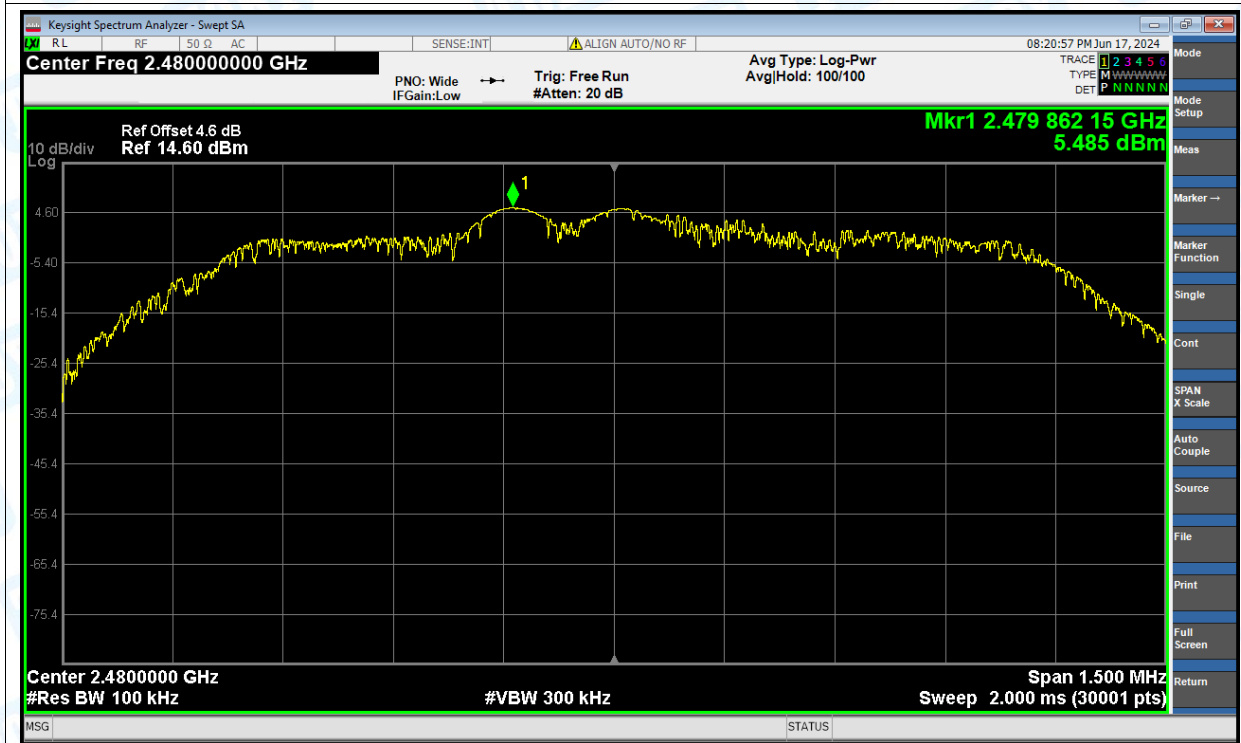
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



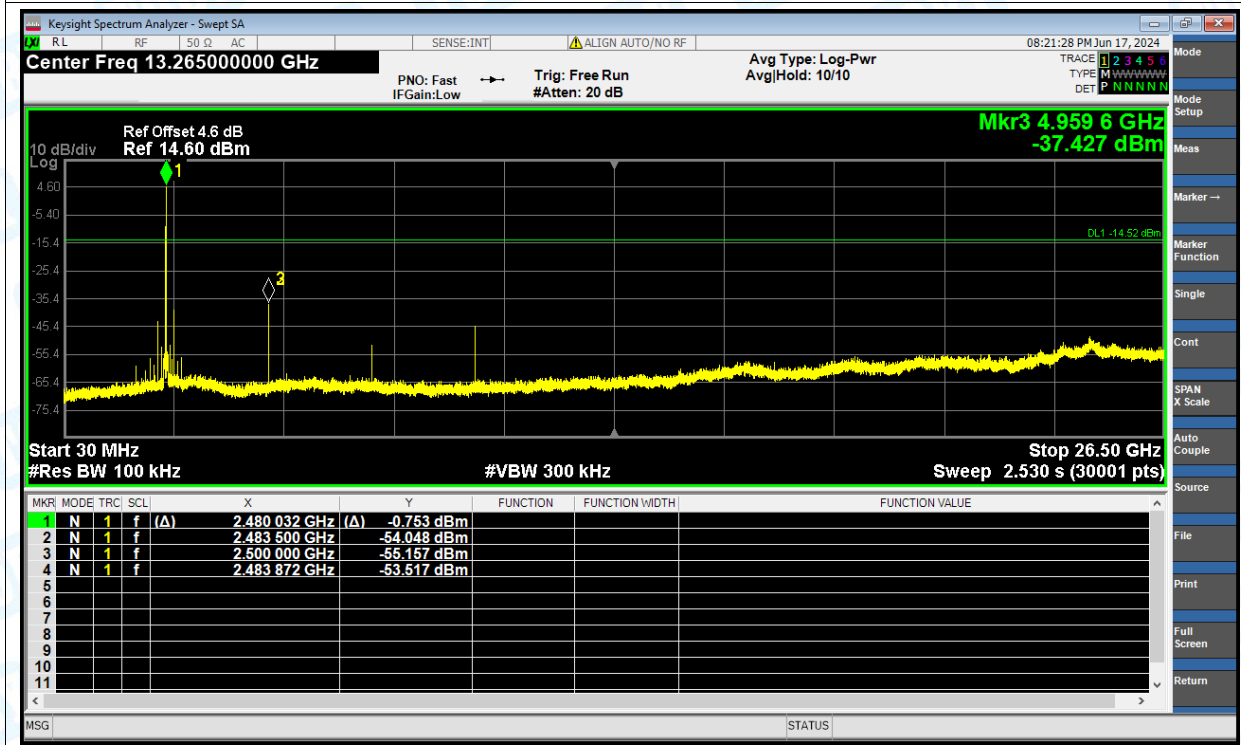
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission

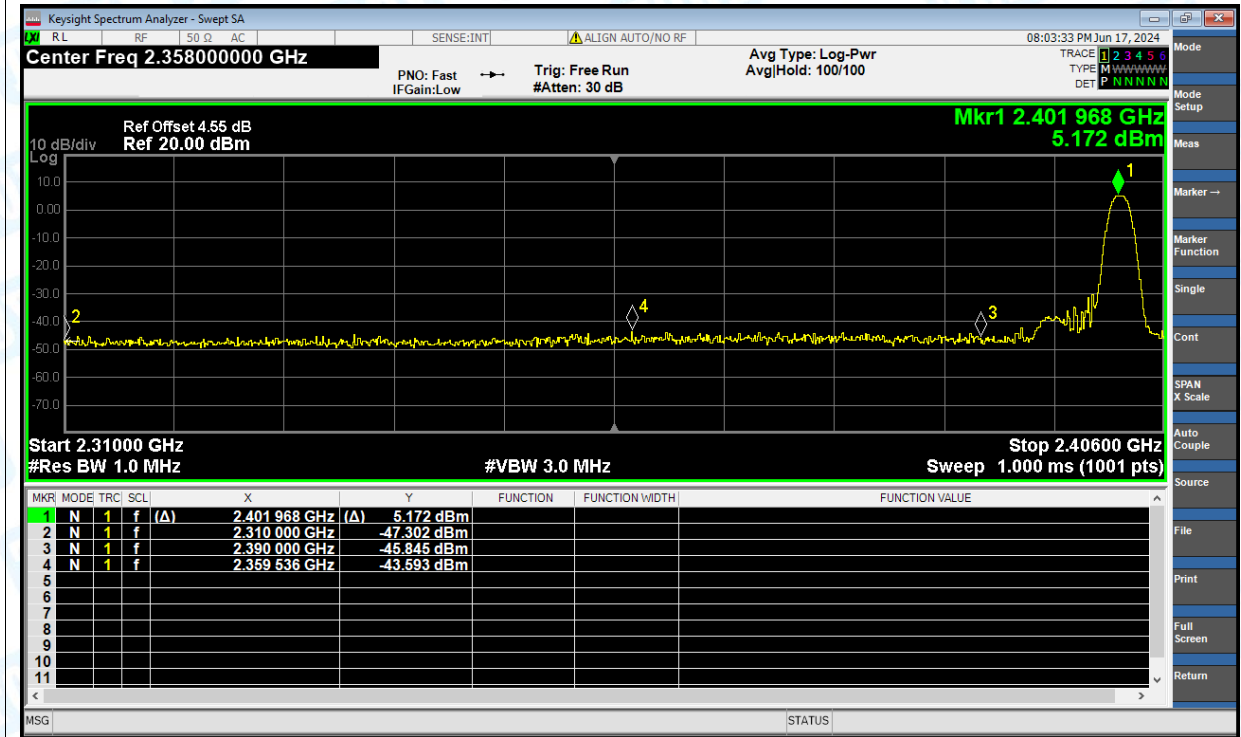


8. Restrict Band

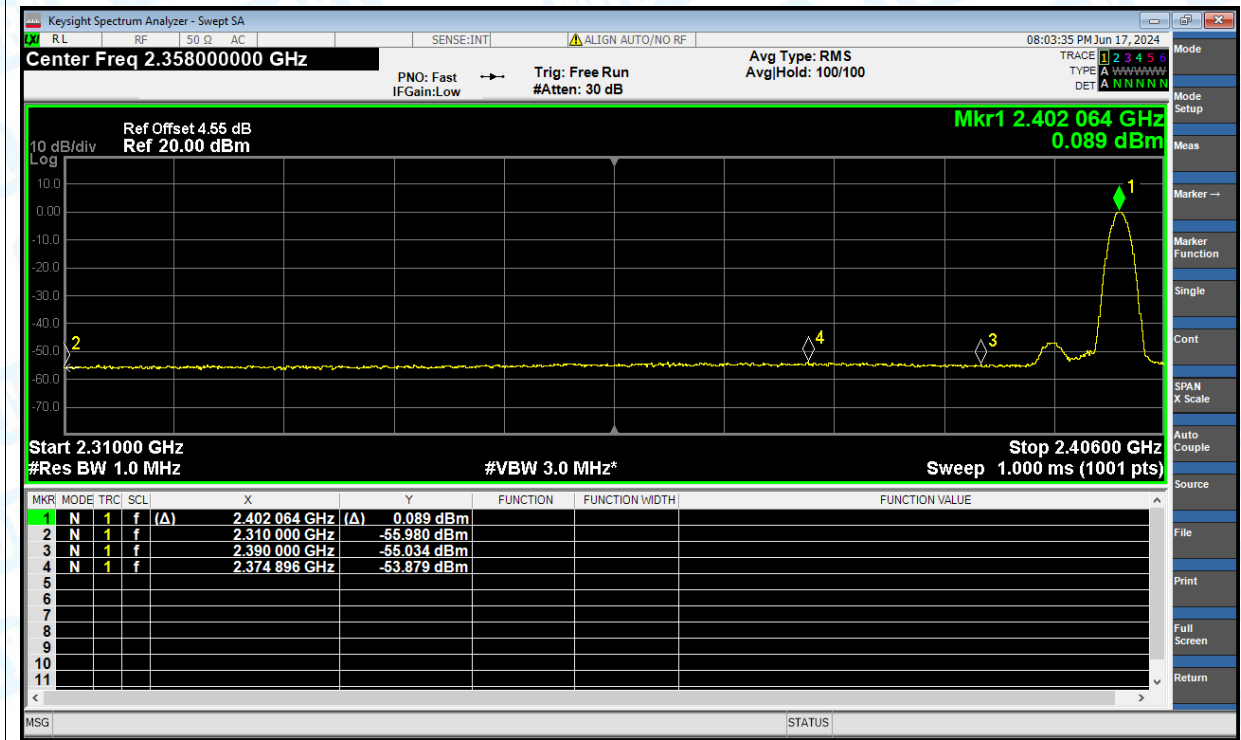
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-47.3	2	-	49.96	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-55.98	2	5.06	46.34	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2359.536	-43.59	2	-	53.67	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2374.896	-53.88	2	5.06	48.44	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-45.85	2	-	51.41	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-55.03	2	5.06	47.29	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-45.35	2	-	51.91	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-53.78	2	5.17	48.65	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2498.368	-42.9	2	-	54.36	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.632	-53.17	2	5.17	49.26	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-45.95	2	-	51.31	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-54.46	2	5.17	47.97	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-47.91	2	-	49.35	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-55.38	2	5.06	46.94	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2369.424	-42.25	2	-	55.01	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2389.296	-54.06	2	5.06	48.26	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-46.66	2	-	50.6	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-54.82	2	5.06	47.5	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-45	2	-	52.26	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-54.05	2	5.06	48.27	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2485.216	-41.87	2	-	55.39	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.872	-53.52	2	5.06	48.8	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-47.26	2	-	50	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.16	2	5.06	47.16	Average	54	Pass

Test Graphs

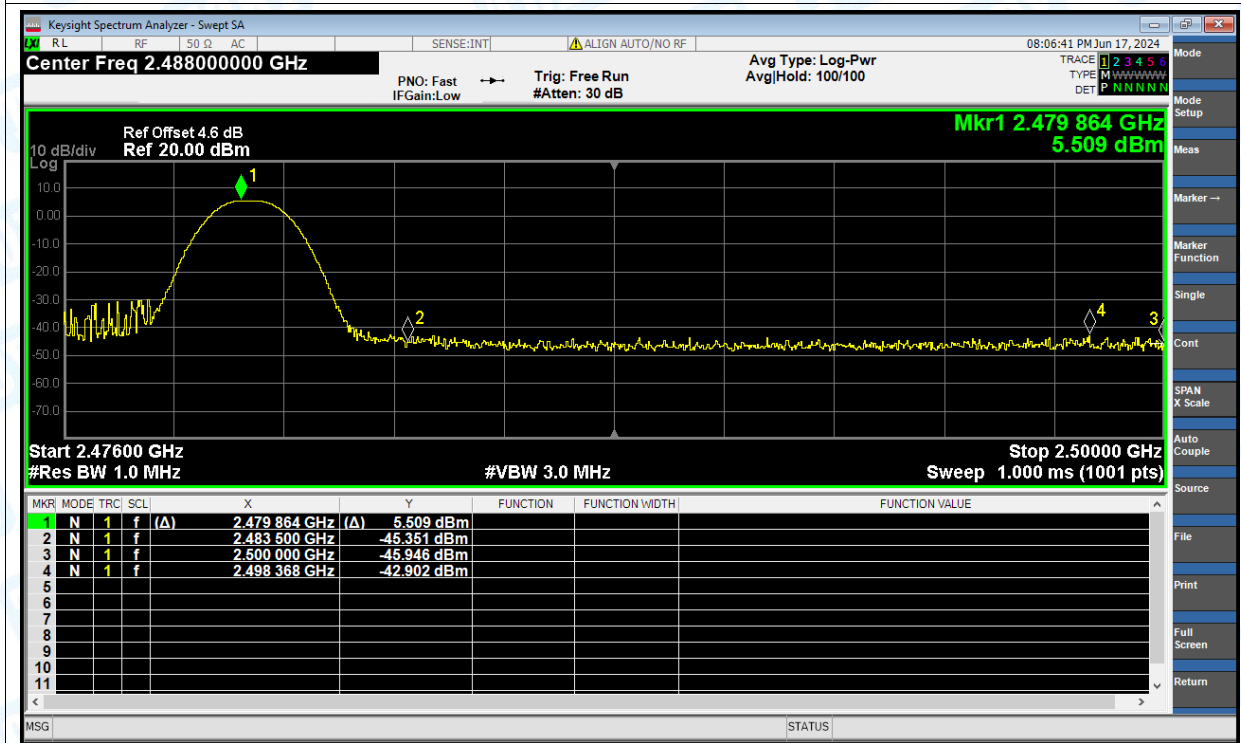
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



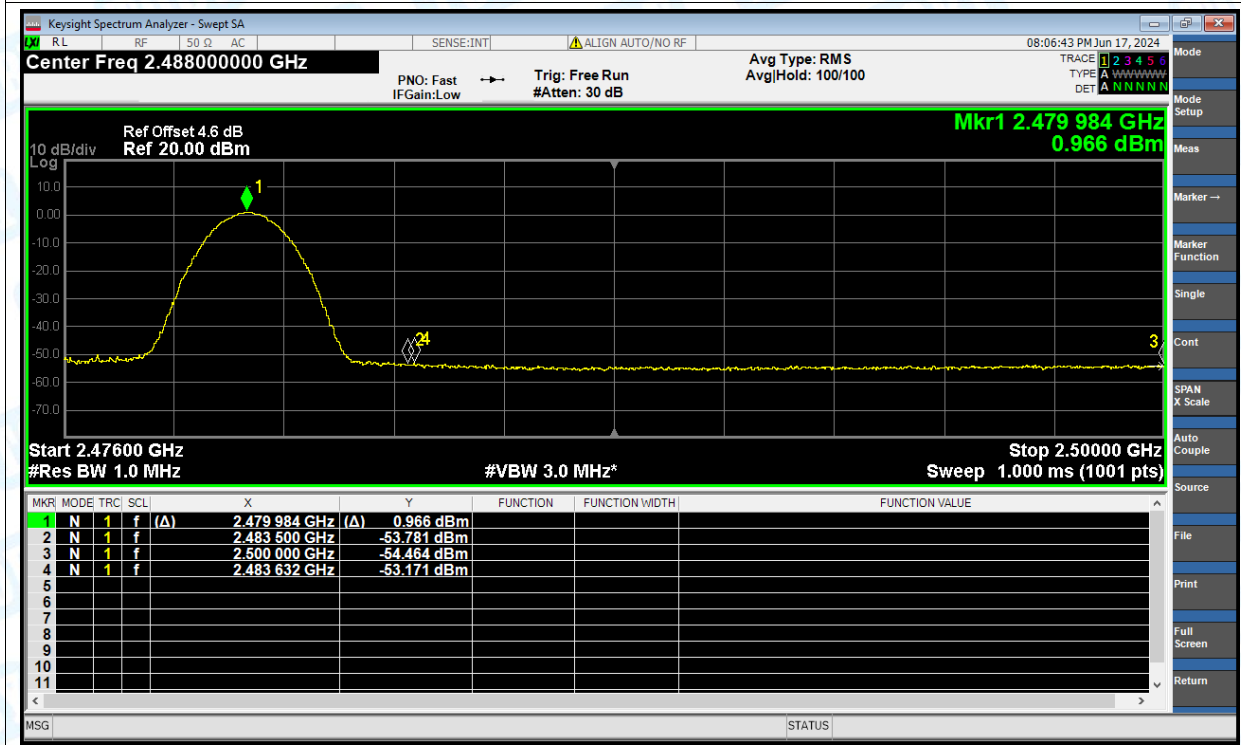
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



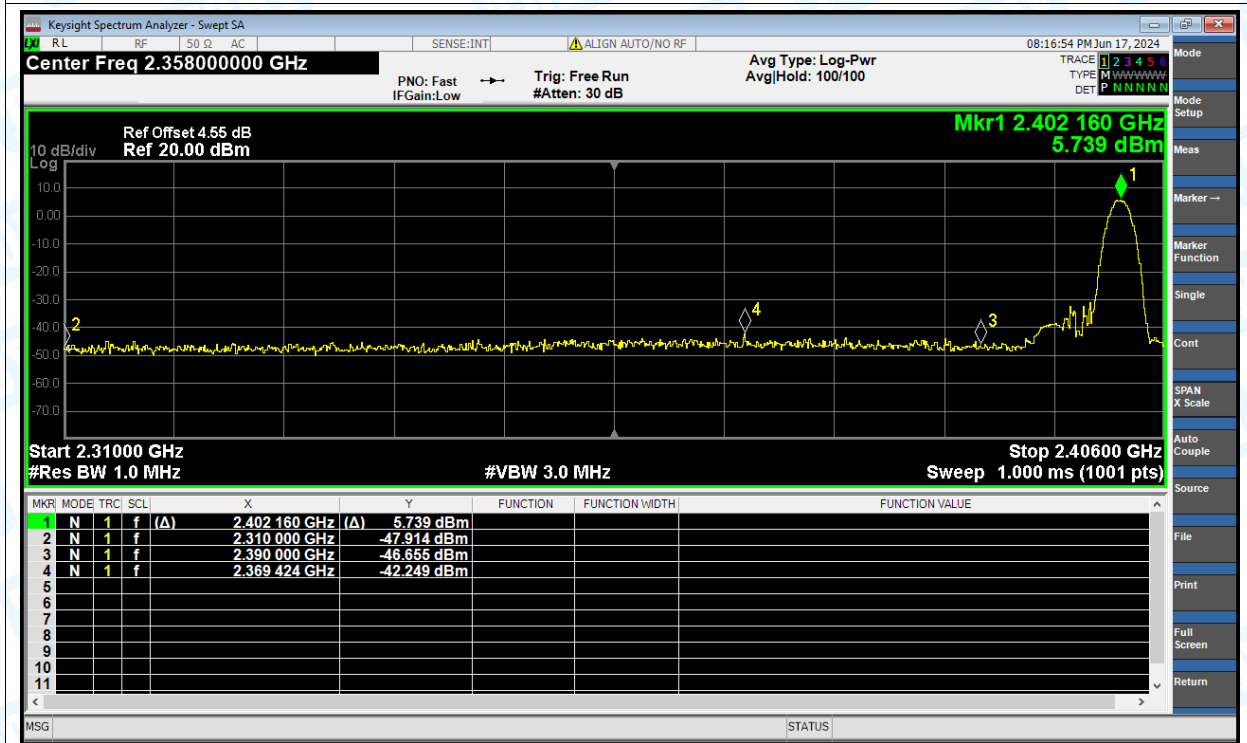
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



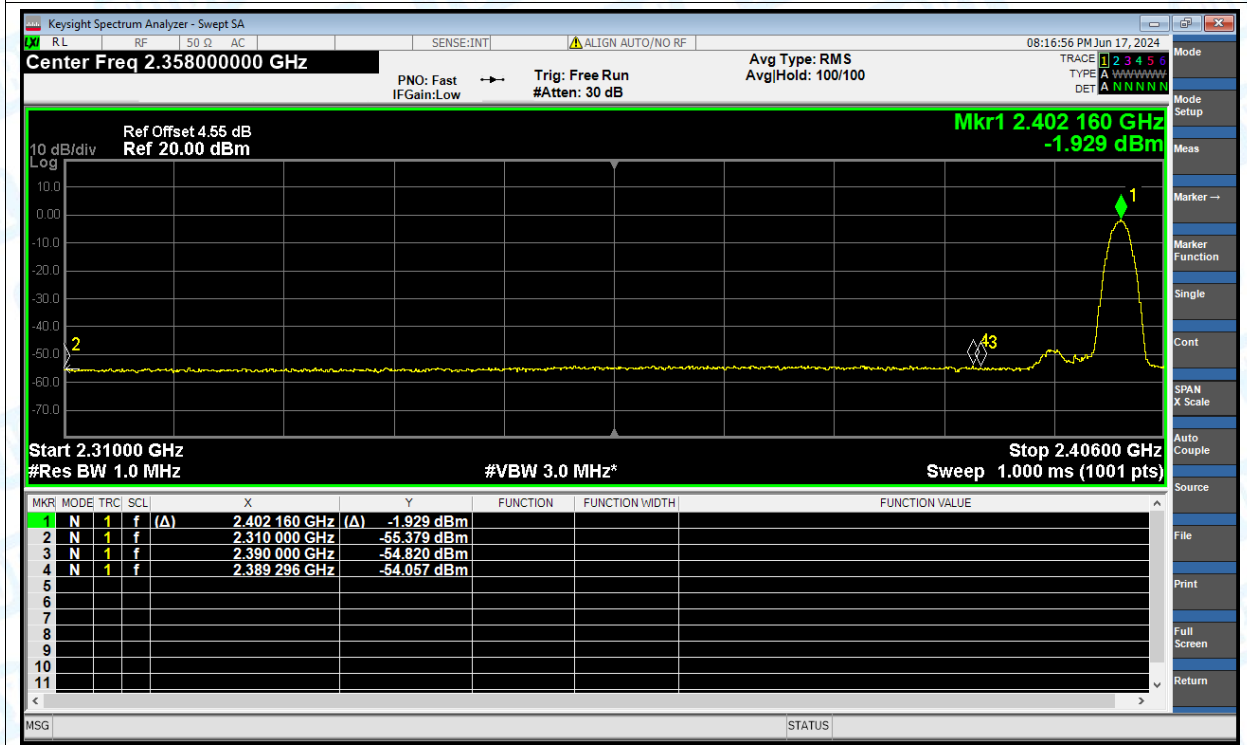
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



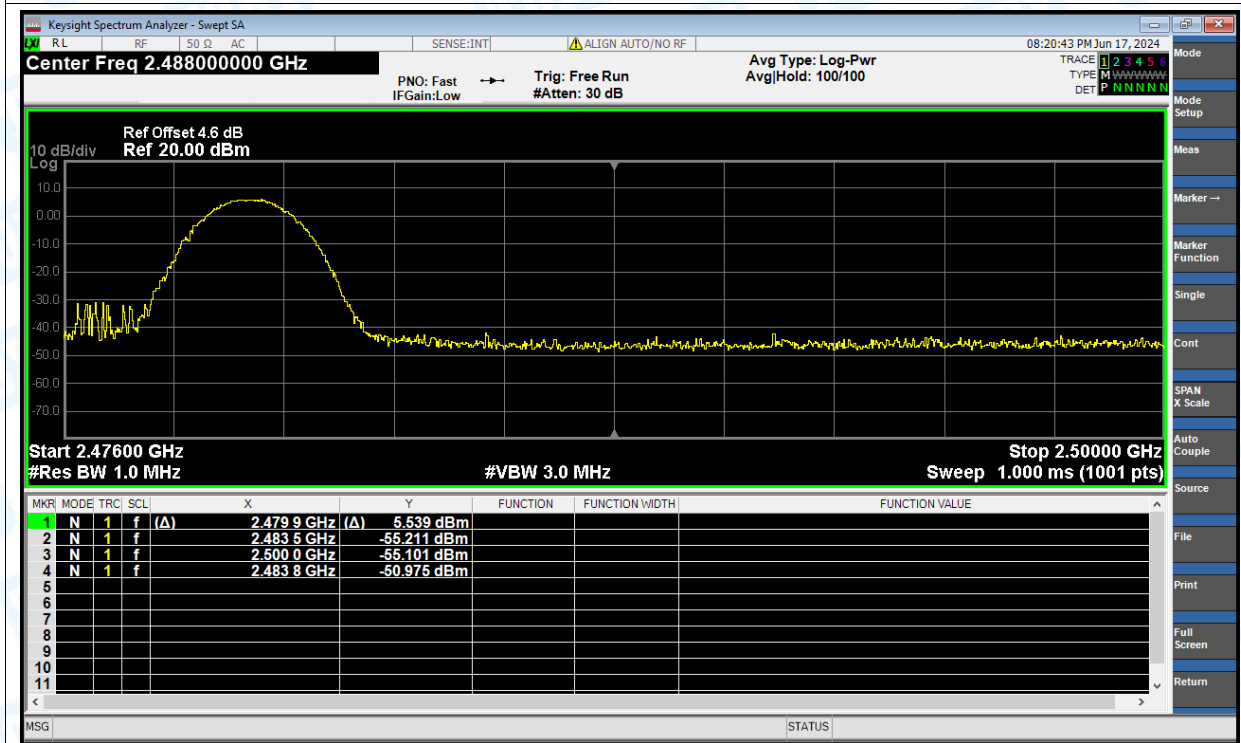
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



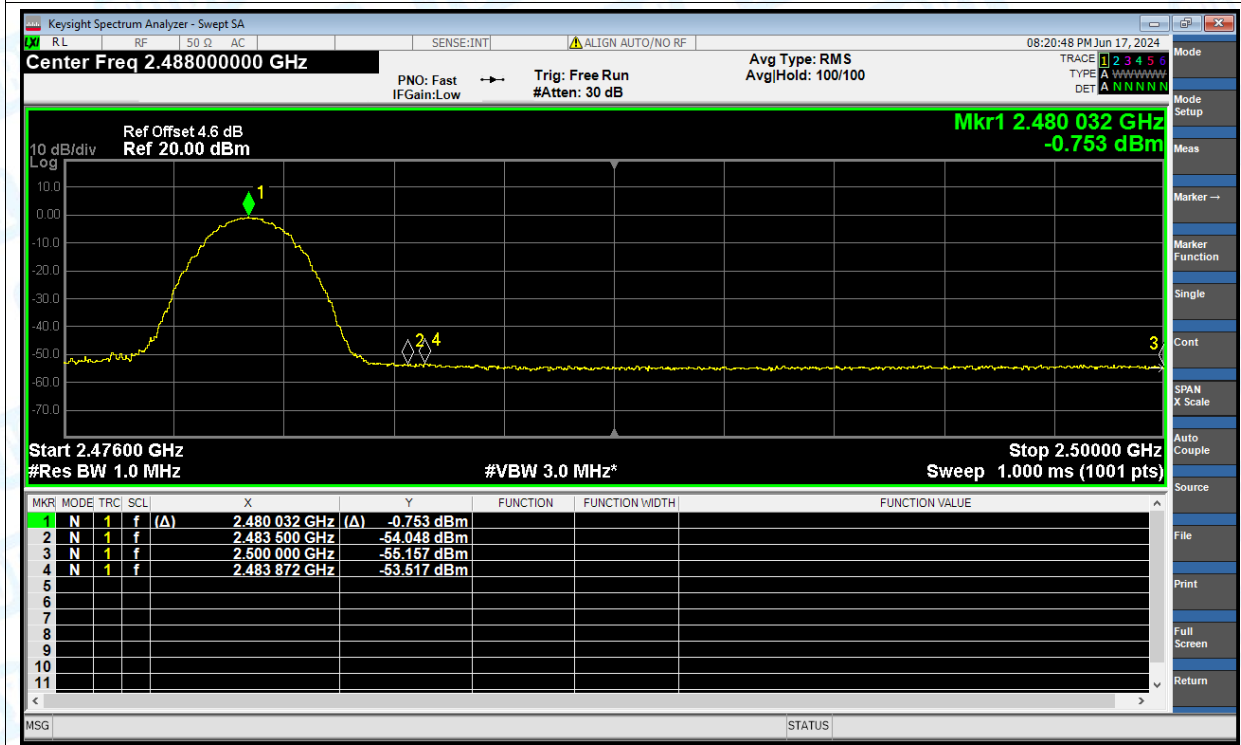
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



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



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



9. Carrier Frequencies Separation

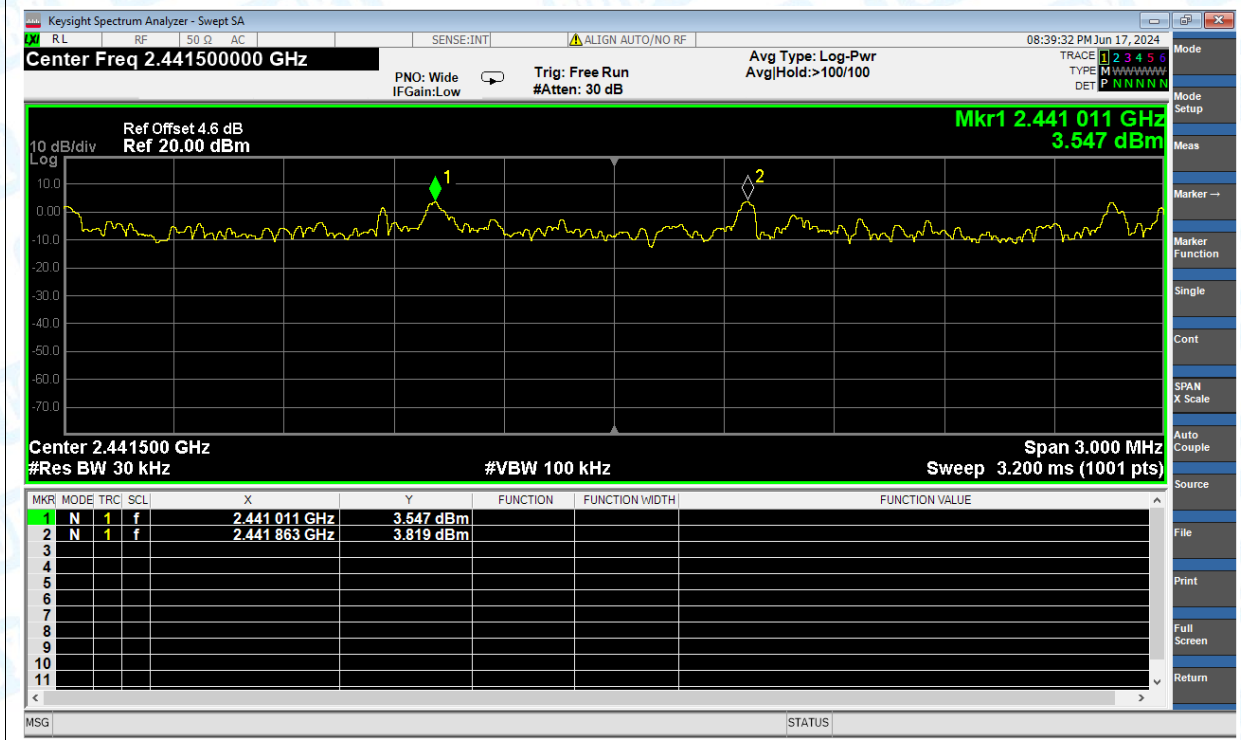
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.858	2441.863	1.005	0.573	Pass
NVNT	2-DH1	Ant1	2441.011	2441.863	0.852	0.833	Pass

Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1

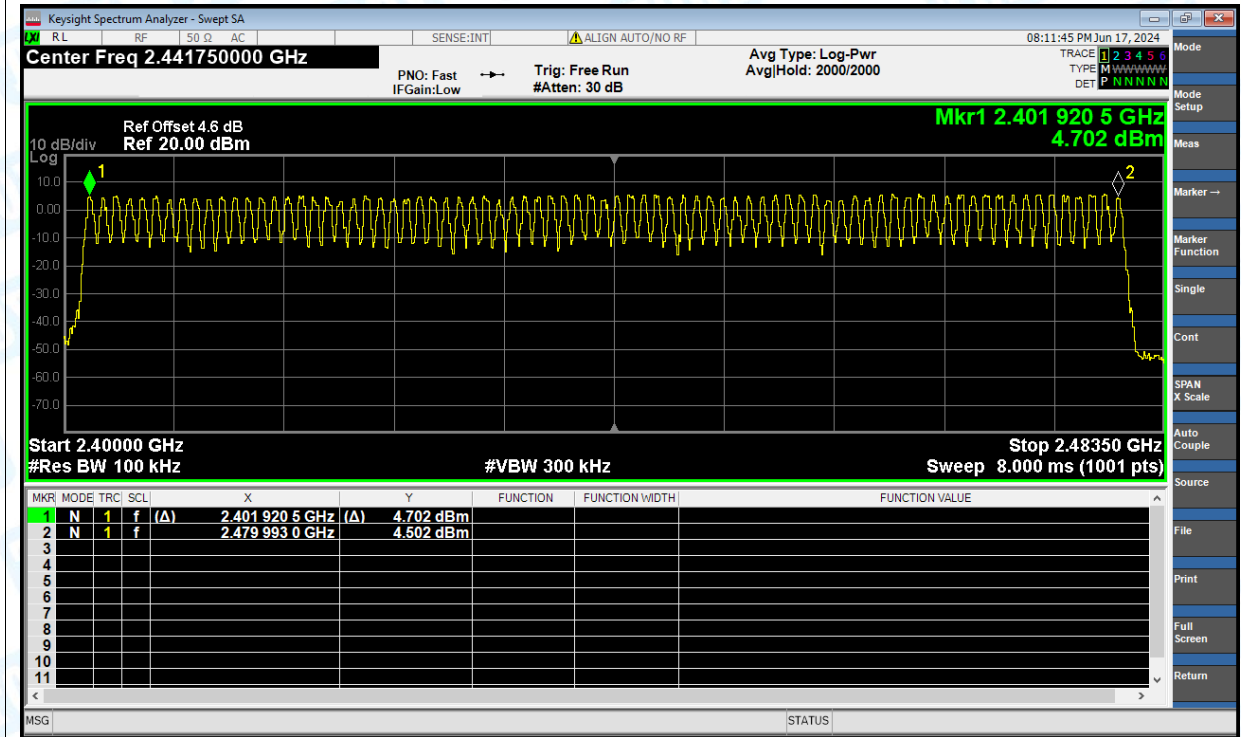


10. Number of Hopping Channel

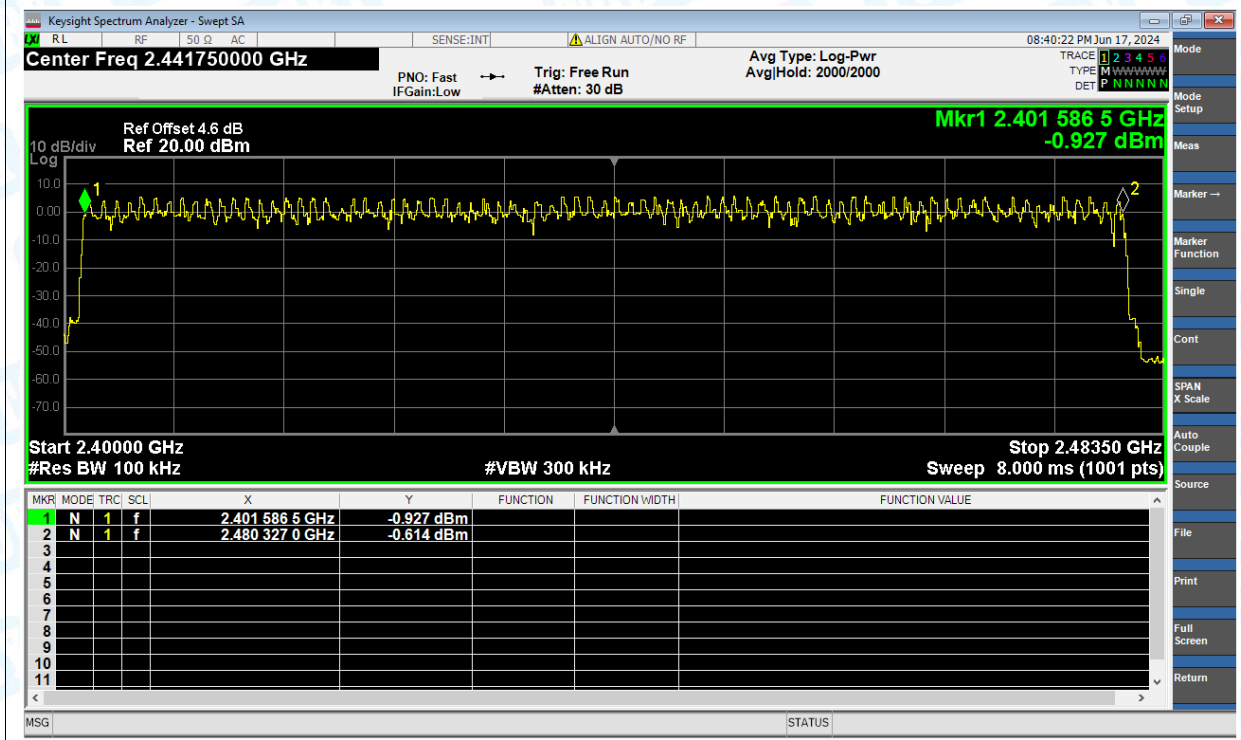
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass

Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1

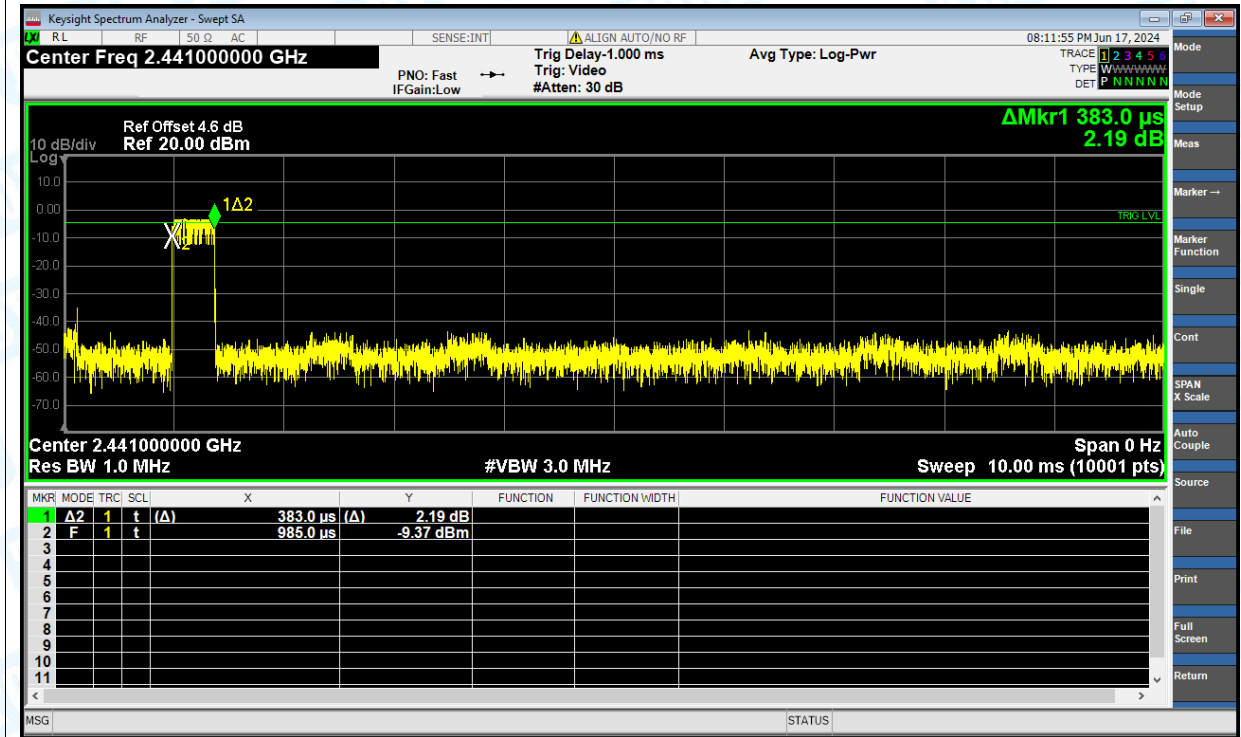


11. Dwell Time

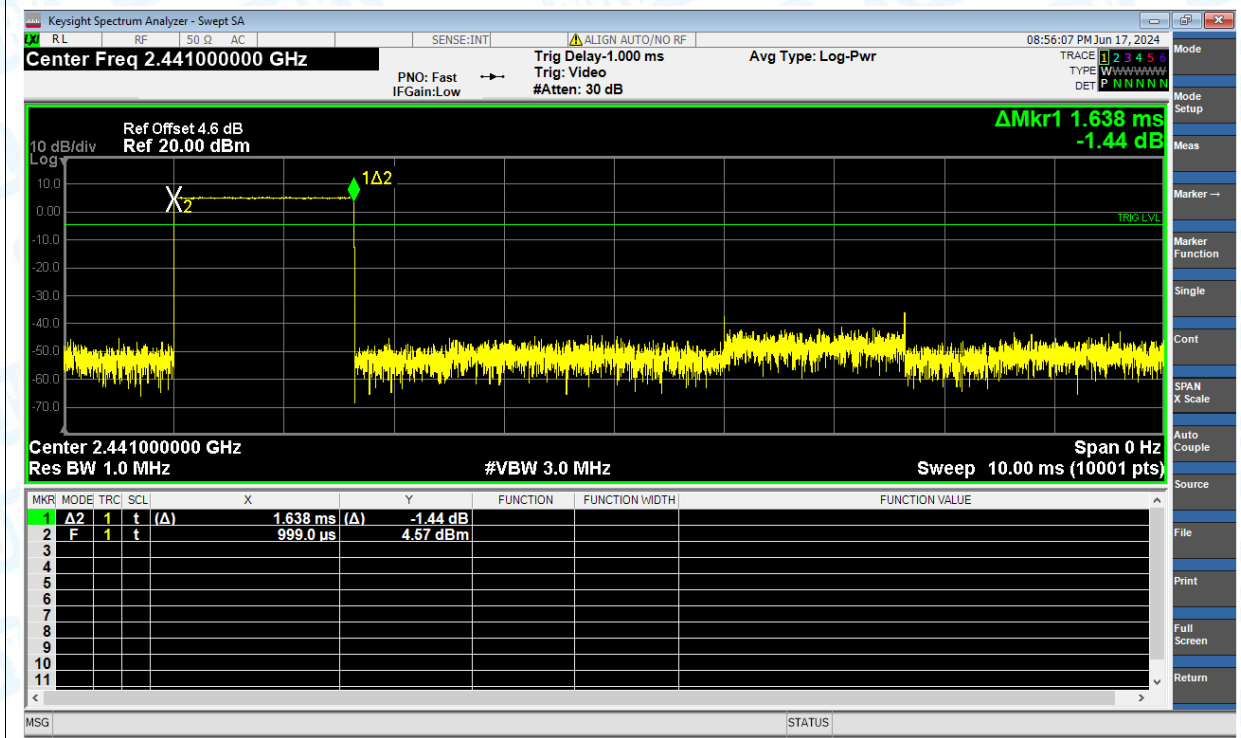
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.383	122.56	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.638	262.08	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.887	307.947	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.393	125.76	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.645	263.2	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.893	308.587	31600	400	Pass

Test Graphs

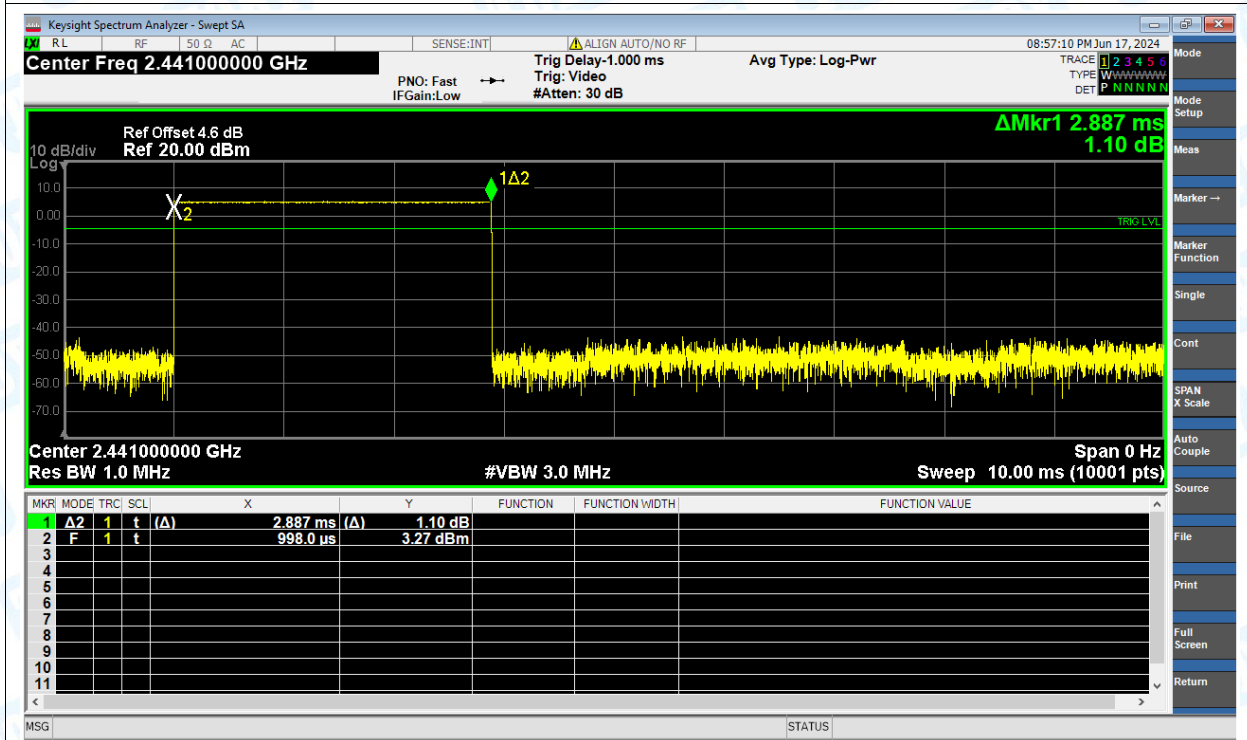
Dwell NVNT 1-DH1 2441MHz Ant1



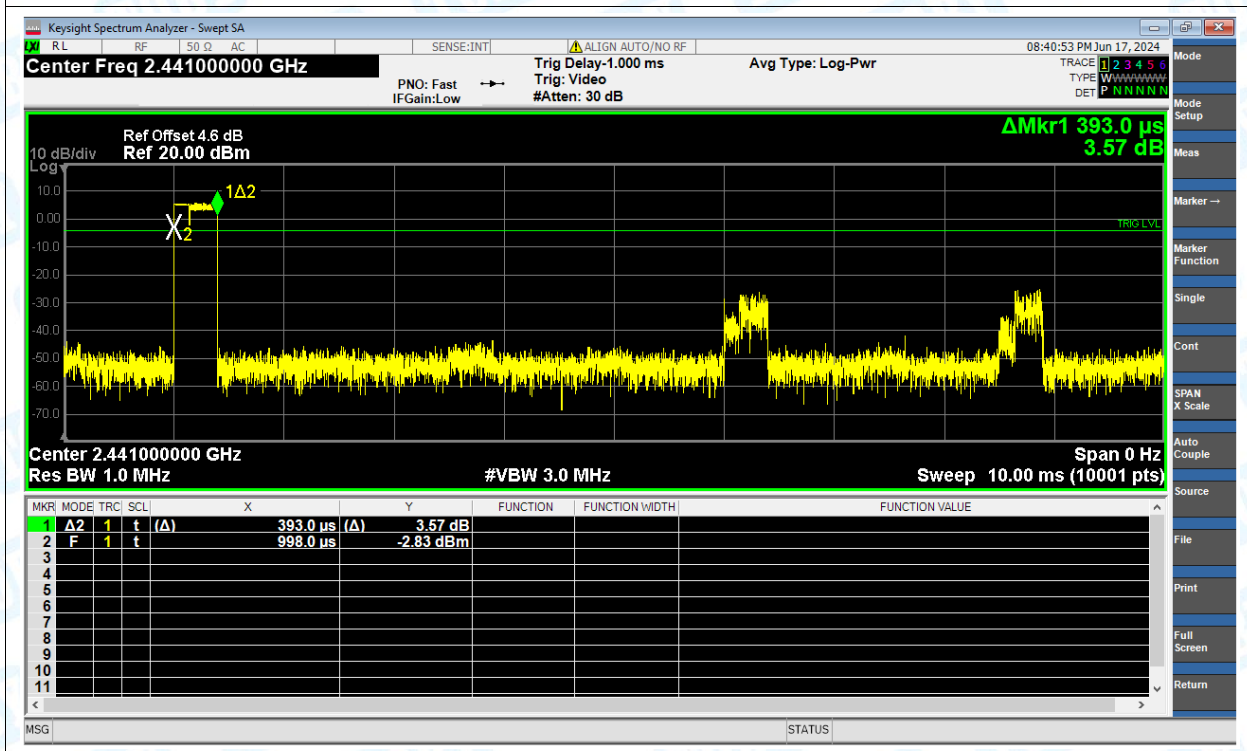
Dwell NVNT 1-DH3 2441MHz Ant1

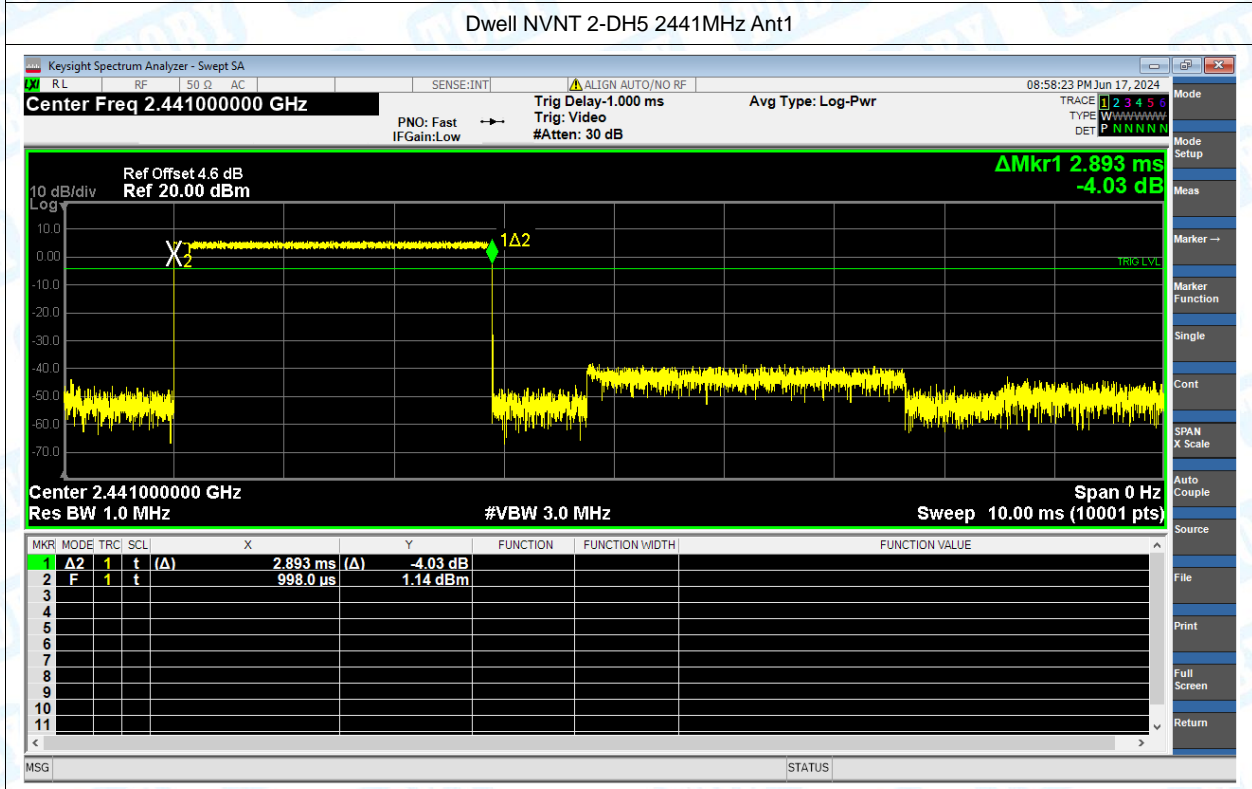
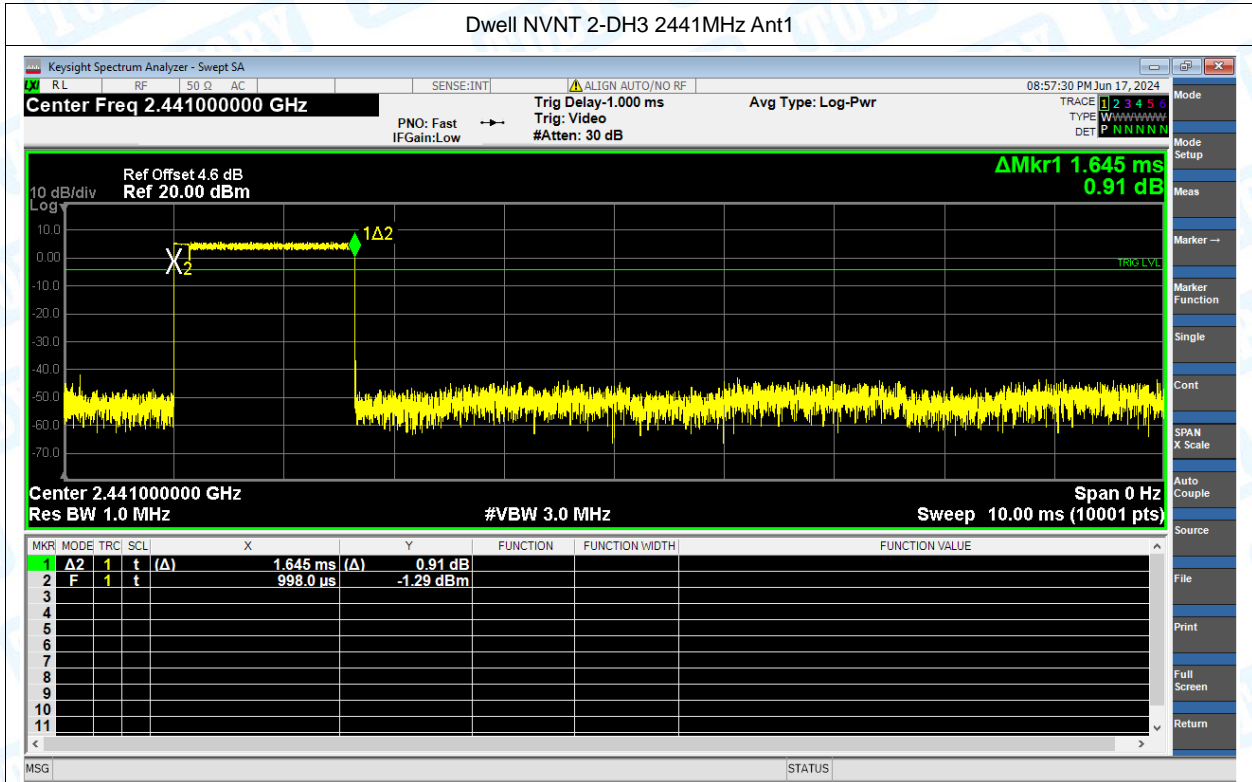


Dwell NVNT 1-DH5 2441MHz Ant1



Dwell NVNT 2-DH1 2441MHz Ant1





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