

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

General Description of EUT	
Product Name:	Smart watch
Test Model:	DW01-SC
Sample ID:	202402-0010-4-2#
Environmental Conditions	
Temperature:	25°C
Relative Humidity:	55%
Test Voltage:	DC 3.8V
Test Engineer:	Mike Yan
Note: For a more detailed features description, please refer to the report TBR-C-202402-0010-81 The report only show the worst case data.	

Contents

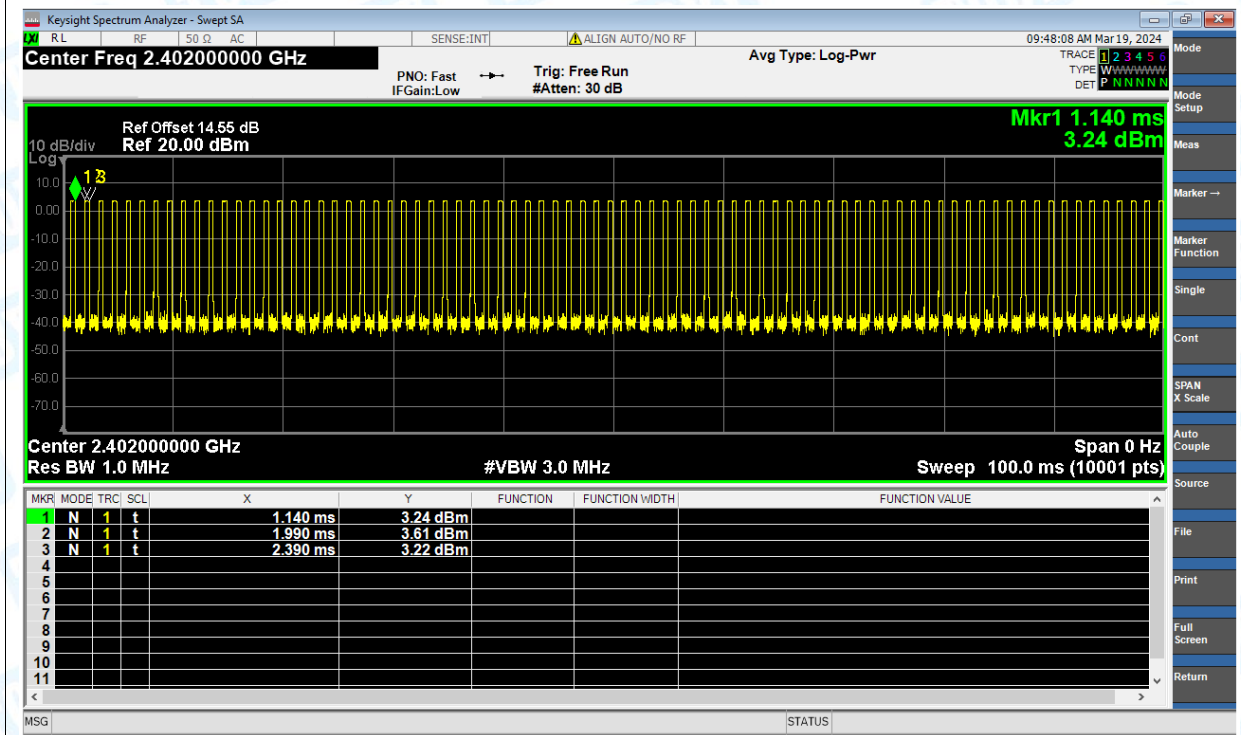
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1. Duty Cycle

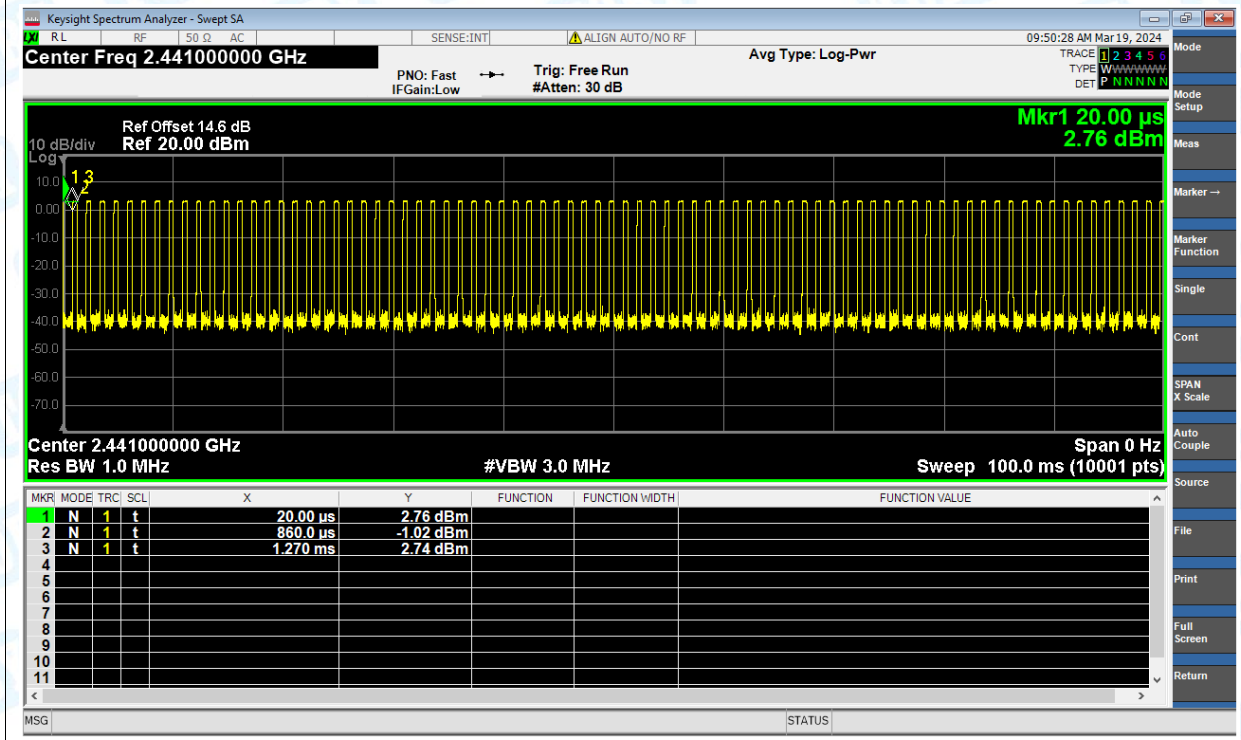
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	32	4.95	2.5
NVNT	1-DH1	2441	Ant1	32.8	4.84	2.44
NVNT	1-DH1	2480	Ant1	32.8	4.84	2.44
NVNT	2-DH1	2402	Ant1	32	4.95	2.5
NVNT	2-DH1	2441	Ant1	32	4.95	2.5
NVNT	2-DH1	2480	Ant1	32	4.95	2.5
NVNT	3-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	3-DH1	2441	Ant1	32	4.95	2.5
NVNT	3-DH1	2480	Ant1	31.2	5.06	2.56

Test Graphs

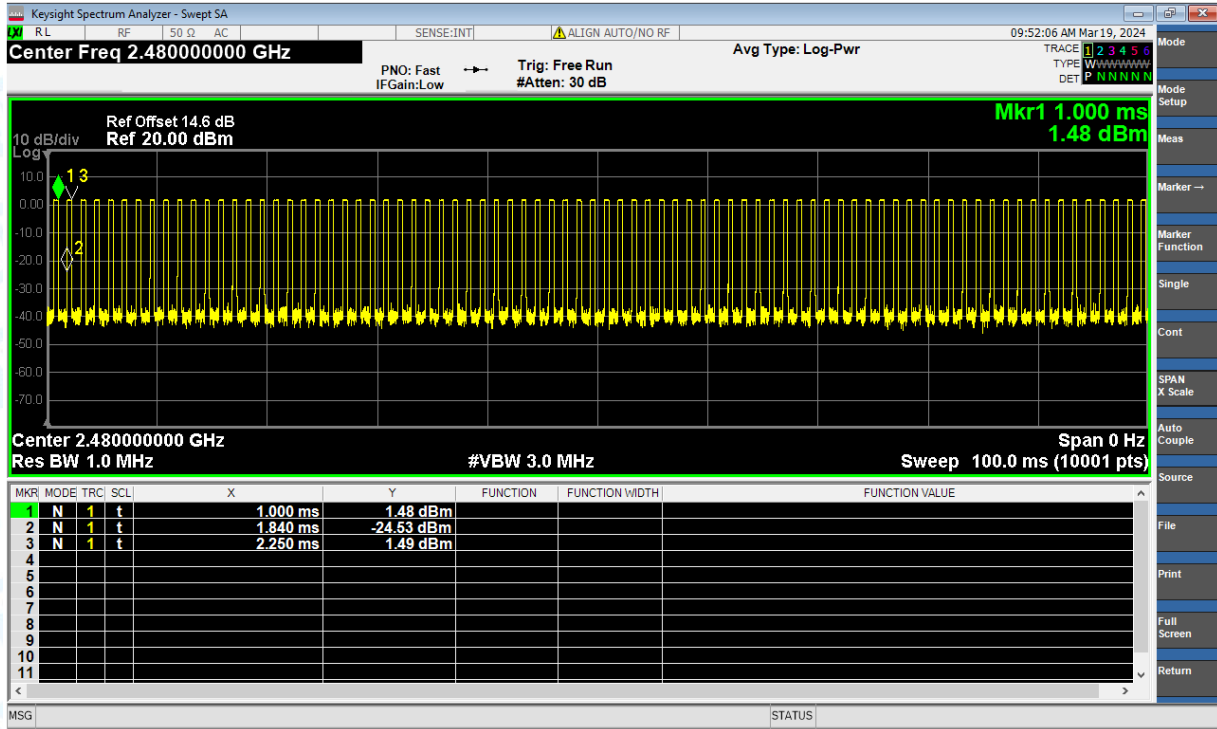
Duty Cycle NVNT 1-DH1 2402MHz Ant1



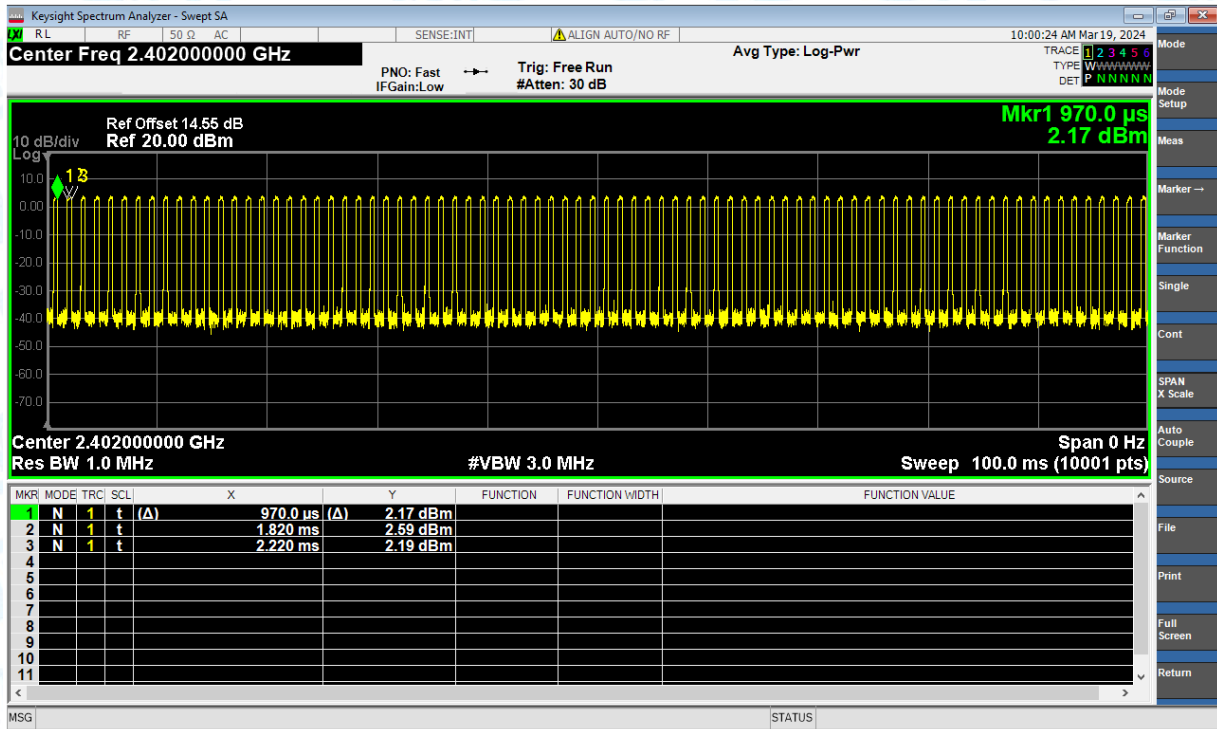
Duty Cycle NVNT 1-DH1 2441MHz Ant1



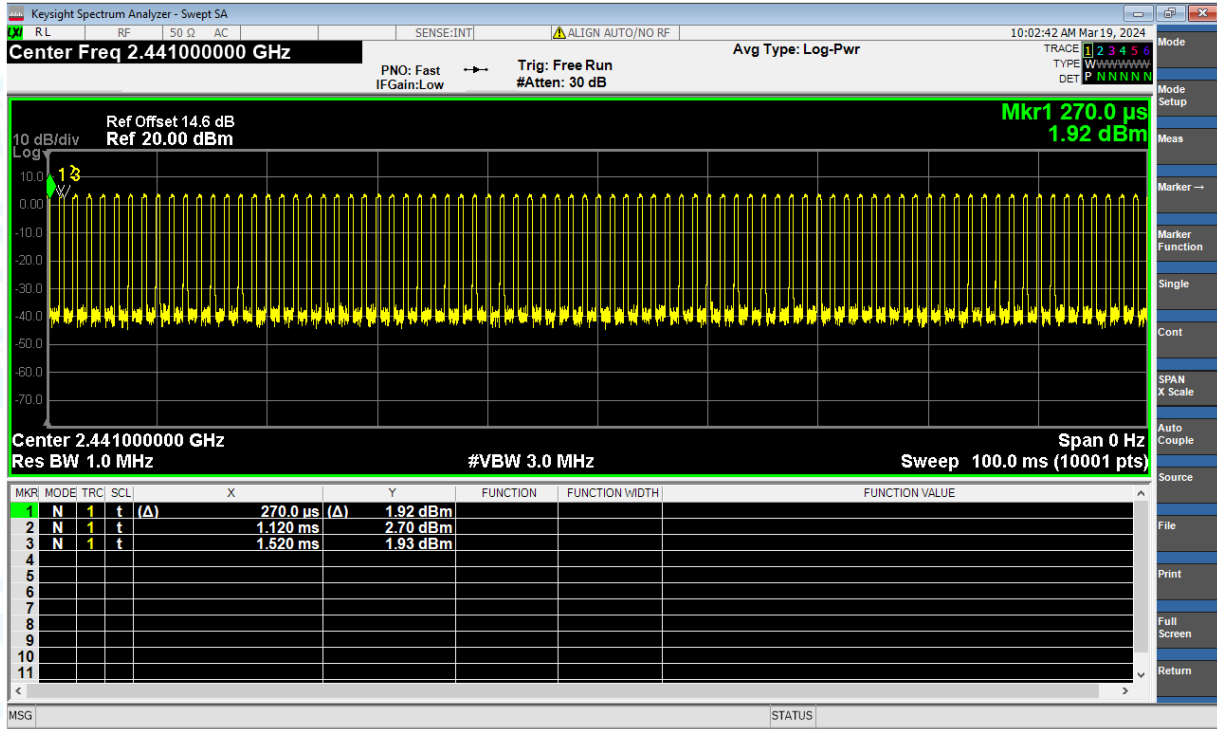
Duty Cycle NVNT 1-DH1 2480MHz Ant1



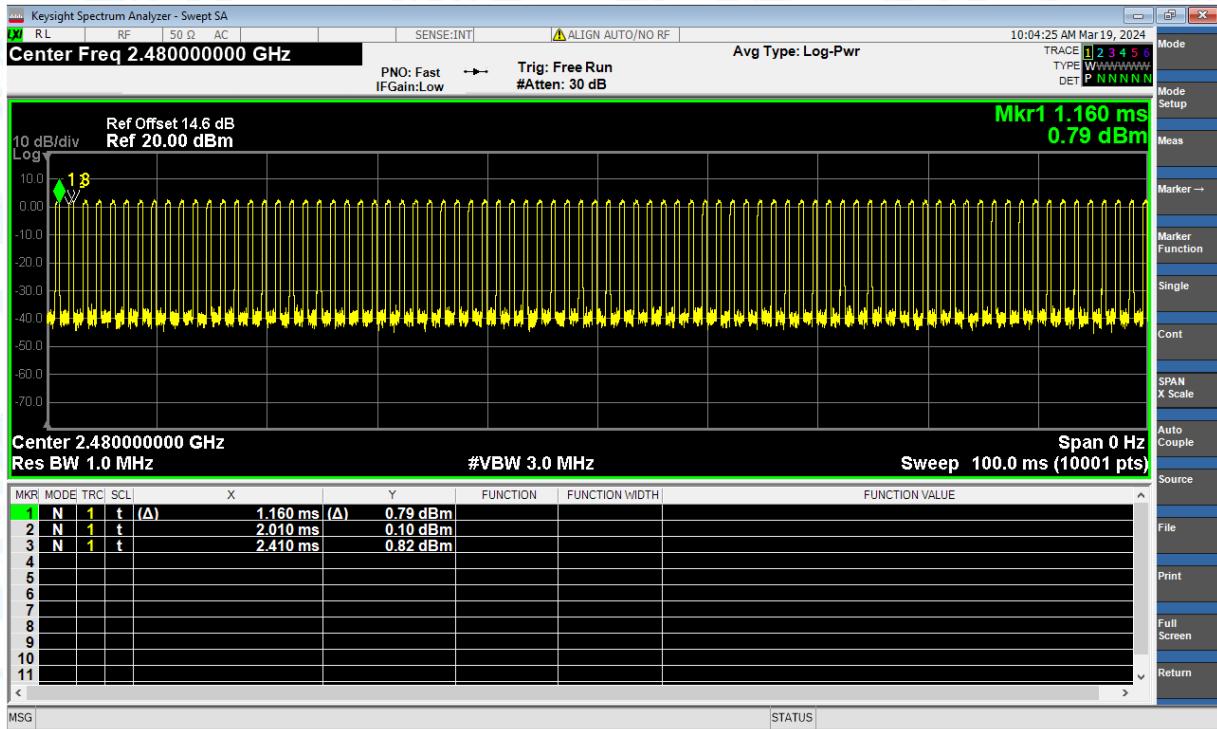
Duty Cycle NVNT 2-DH1 2402MHz Ant1



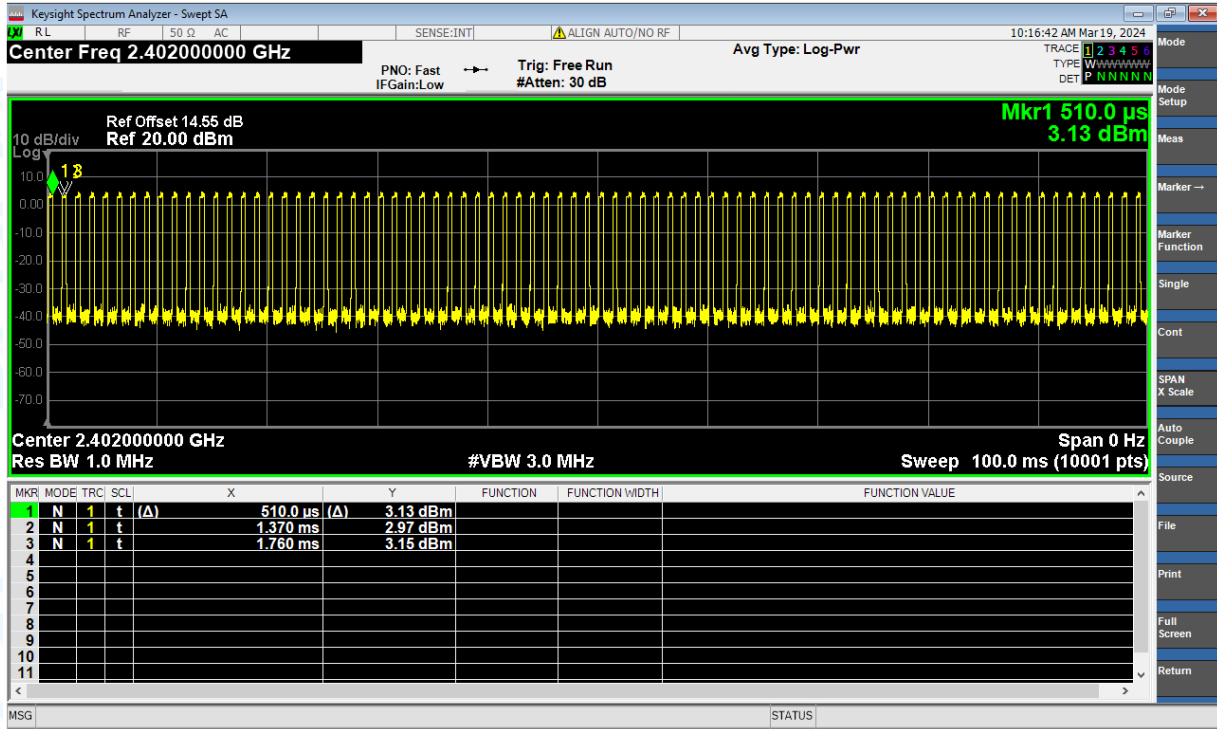
Duty Cycle NVNT 2-DH1 2441MHz Ant1



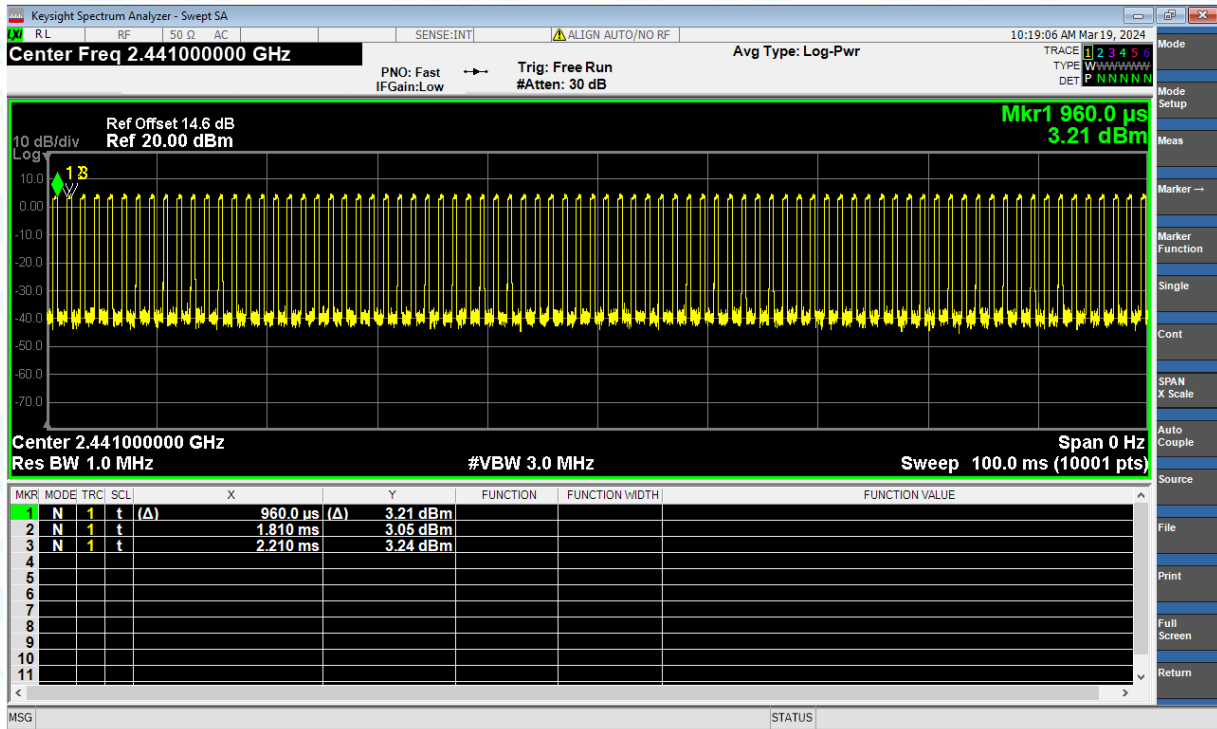
Duty Cycle NVNT 2-DH1 2480MHz Ant1

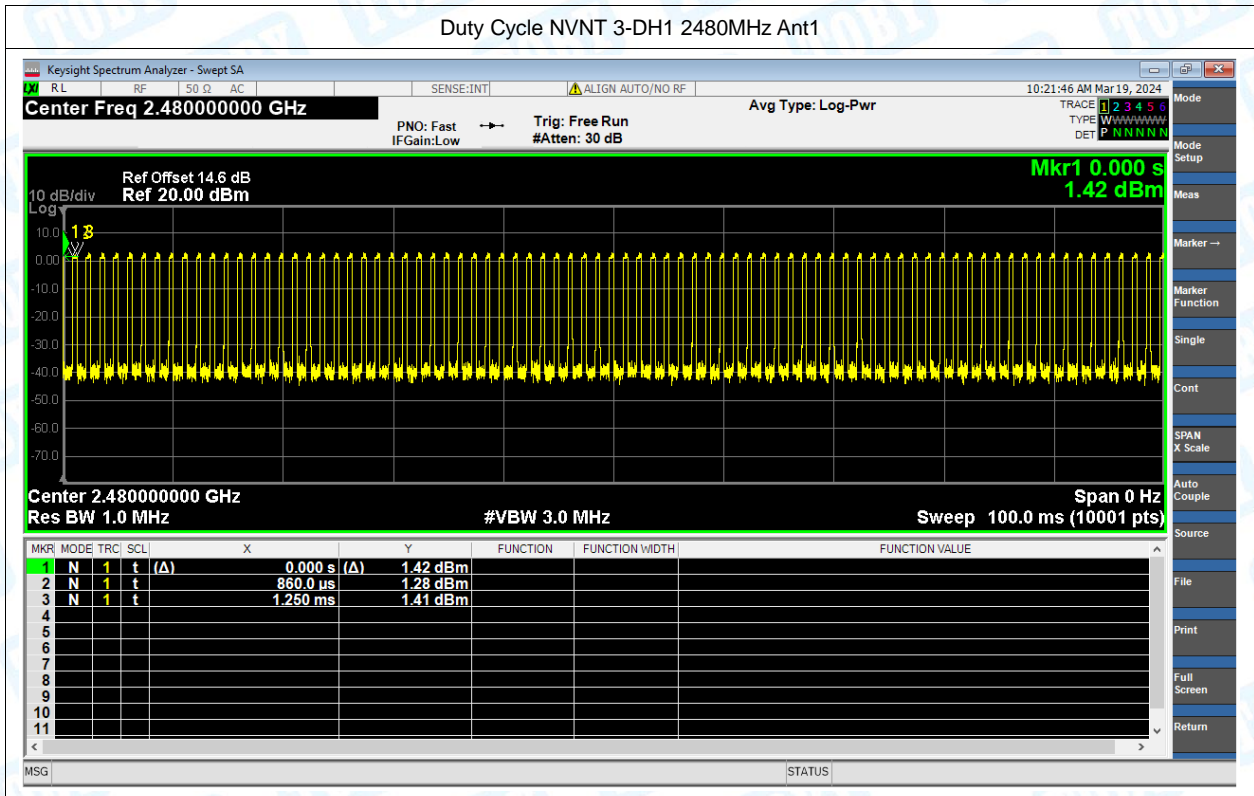


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



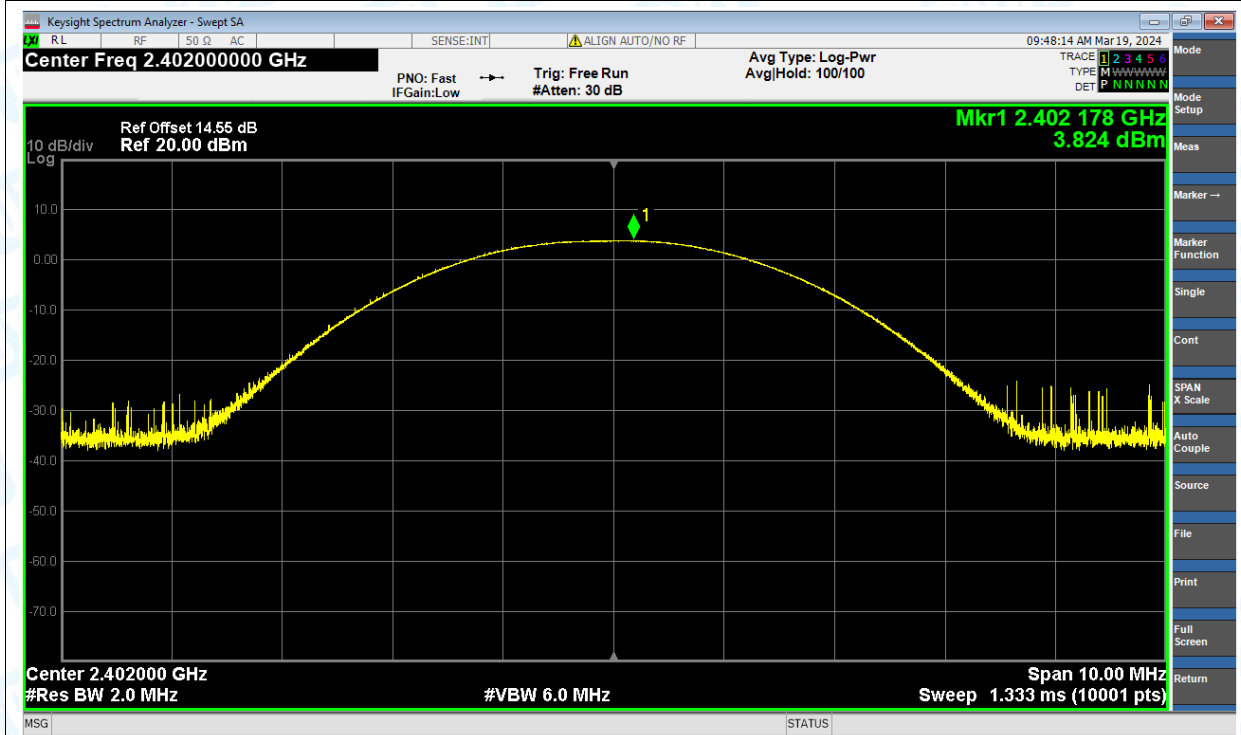


2. Maximum Conducted Output Power

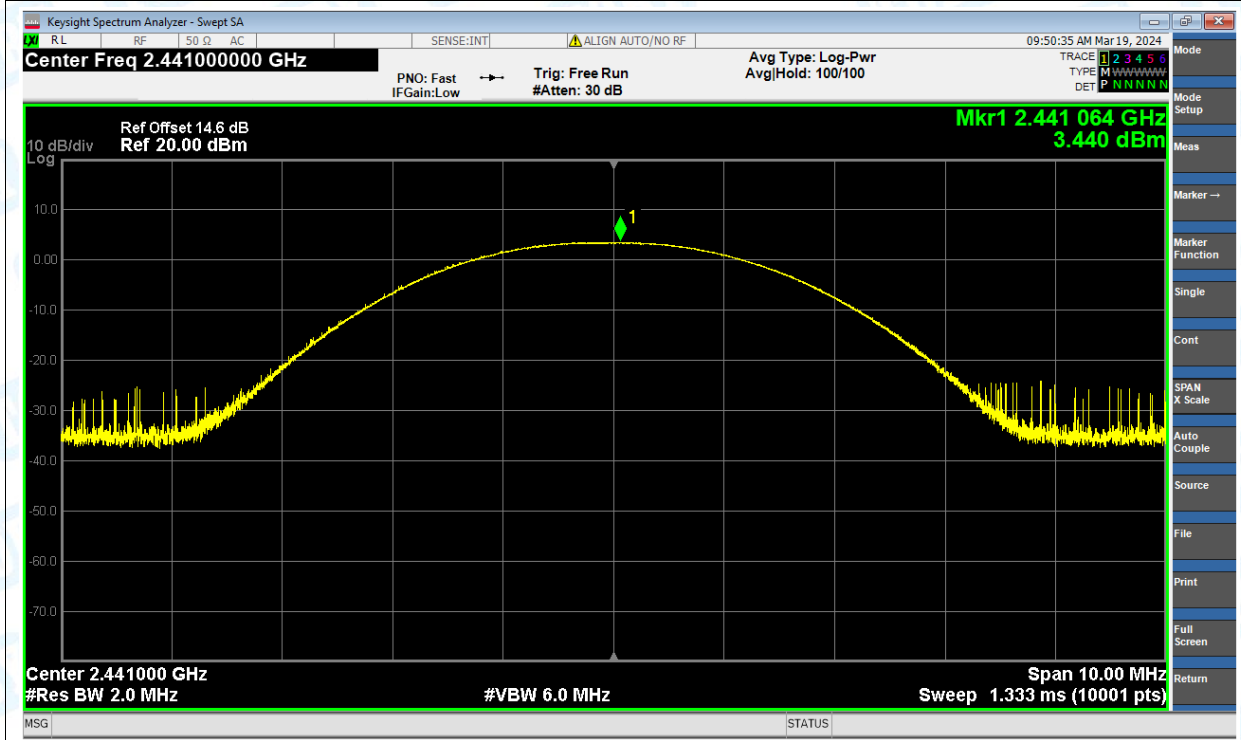
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	3.824	21	Pass
NVNT	1-DH1	2441	Ant1	3.44	21	Pass
NVNT	1-DH1	2480	Ant1	2.022	21	Pass
NVNT	2-DH1	2402	Ant1	4.588	21	Pass
NVNT	2-DH1	2441	Ant1	4.643	21	Pass
NVNT	2-DH1	2480	Ant1	3.222	21	Pass
NVNT	3-DH1	2402	Ant1	5.076	21	Pass
NVNT	3-DH1	2441	Ant1	5.261	21	Pass
NVNT	3-DH1	2480	Ant1	3.437	21	Pass

Test Graphs

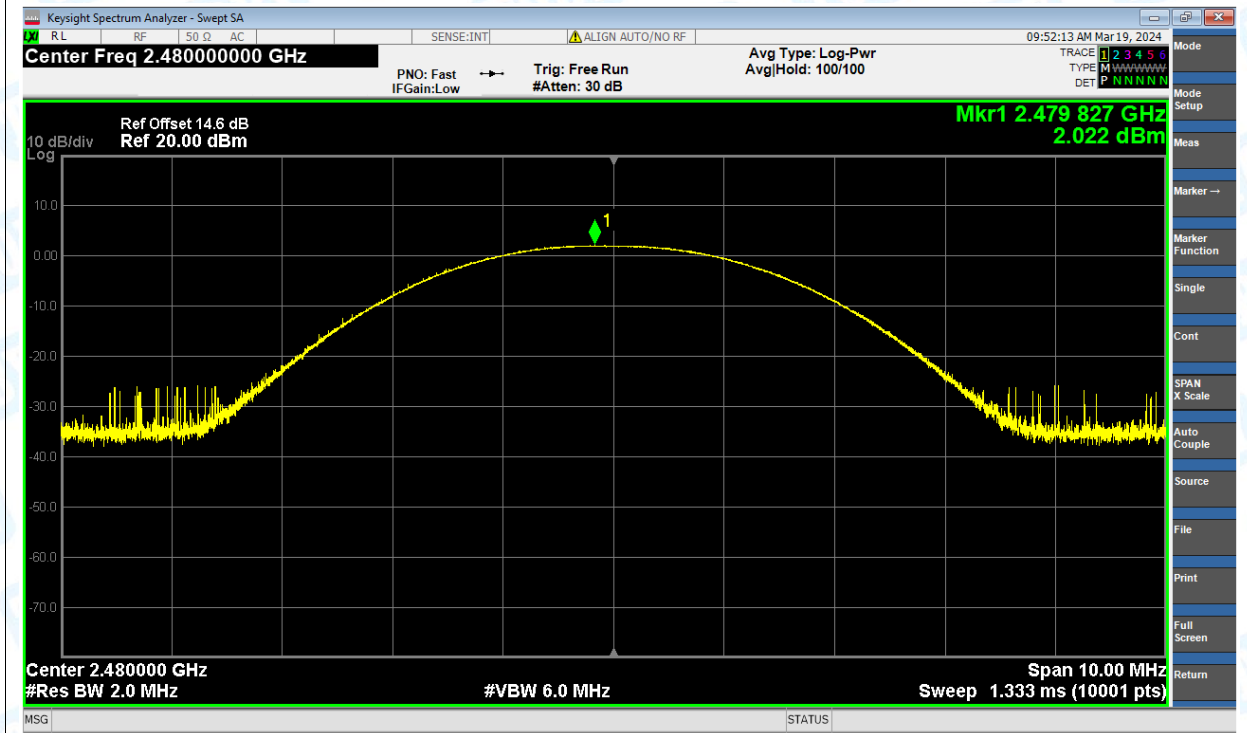
Power NVNT 1-DH1 2402MHz Ant1



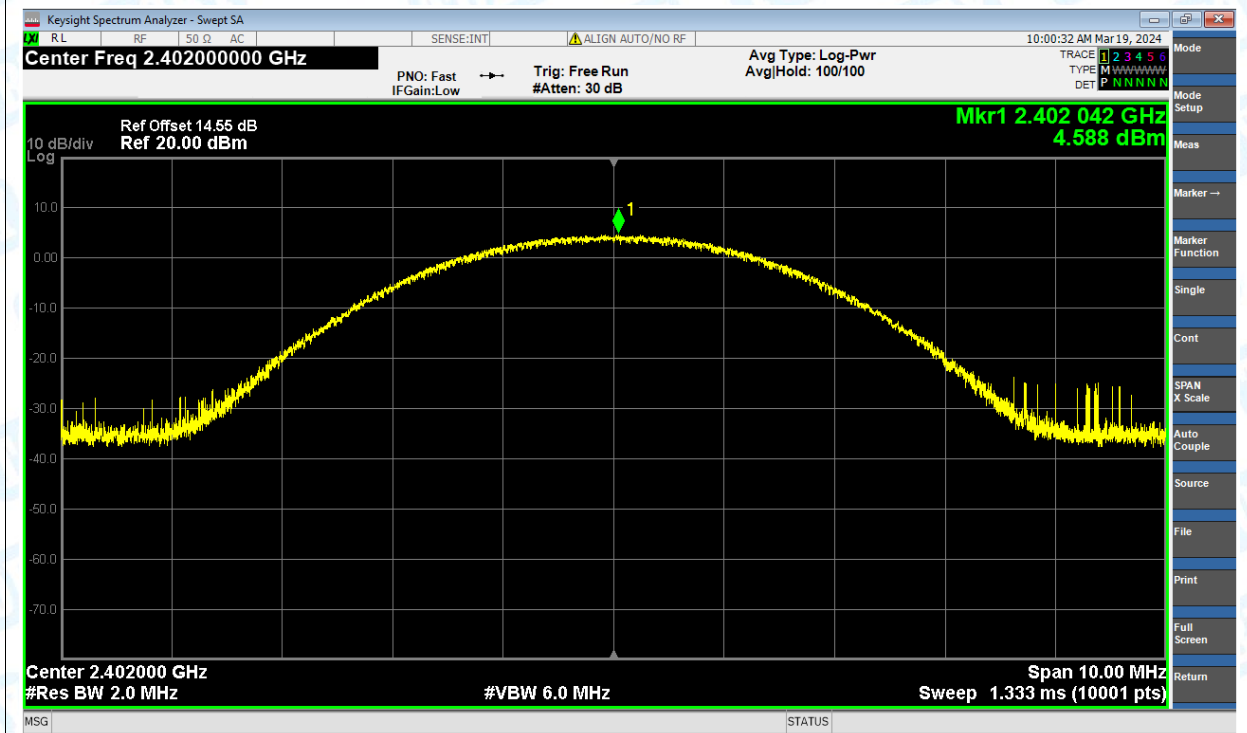
Power NVNT 1-DH1 2441MHz Ant1



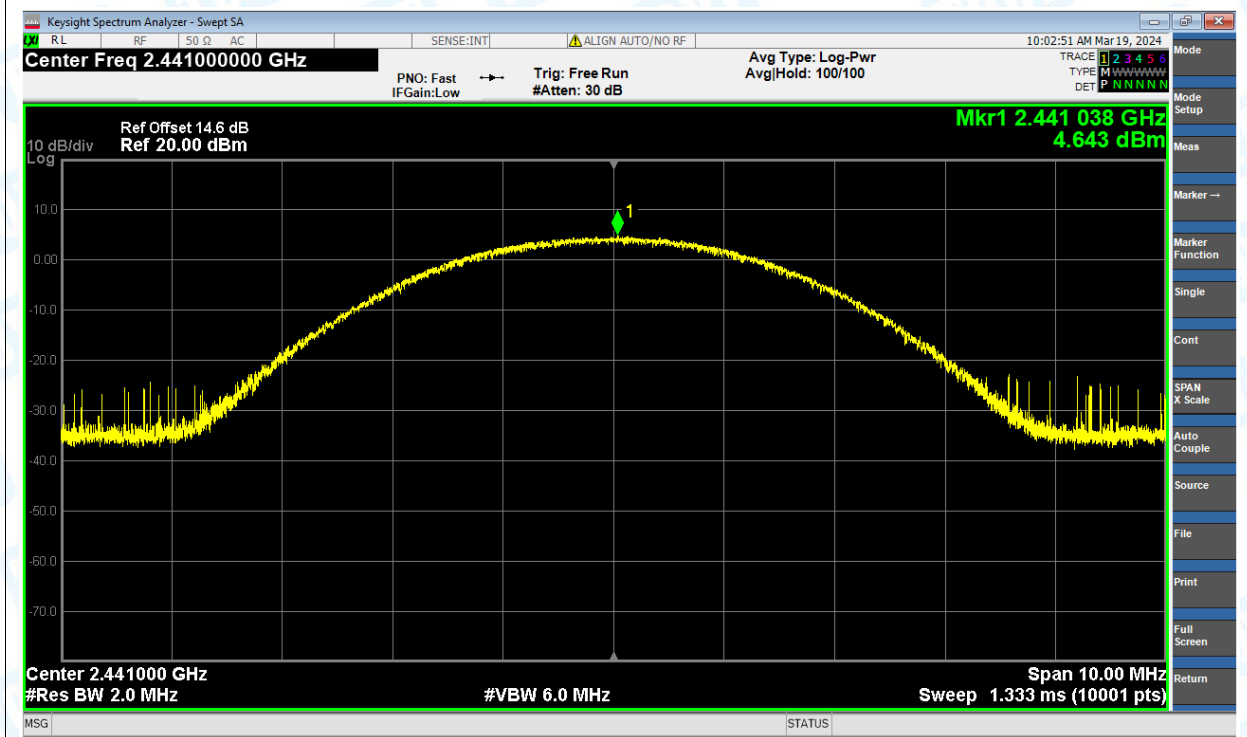
Power NVNT 1-DH1 2480MHz Ant1



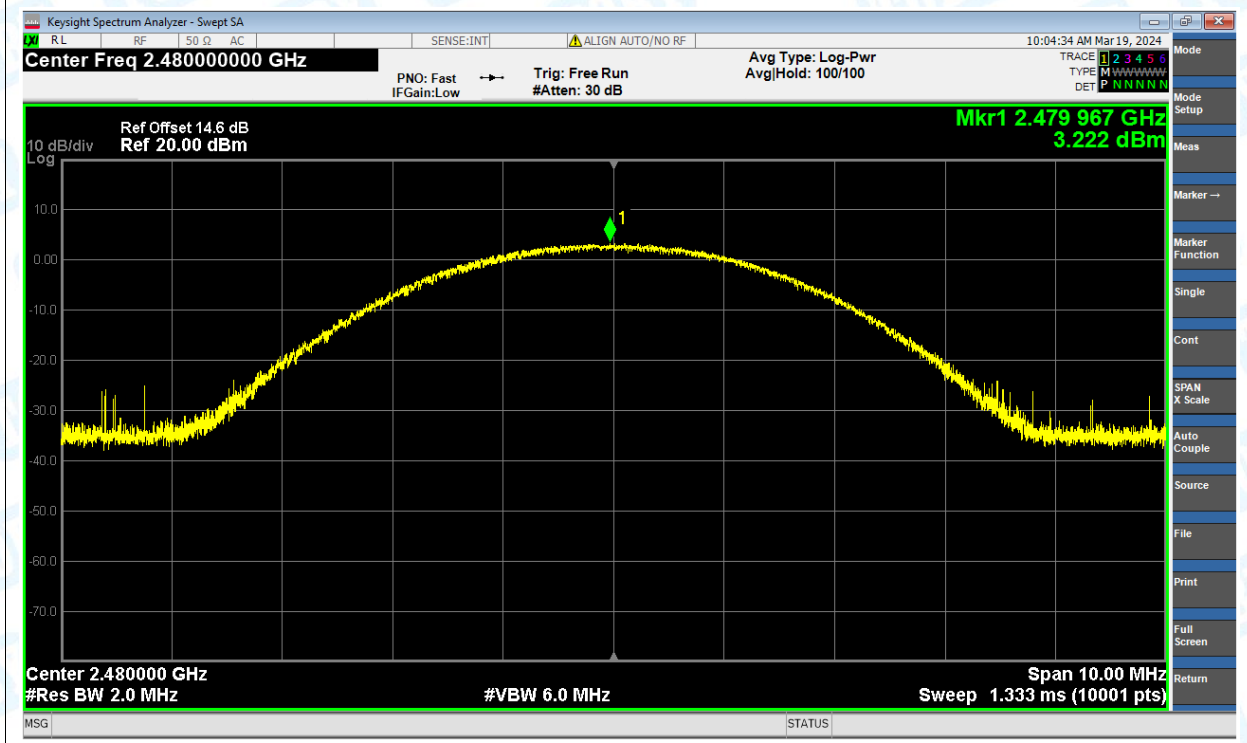
Power NVNT 2-DH1 2402MHz Ant1



Power NVNT 2-DH1 2441MHz Ant1



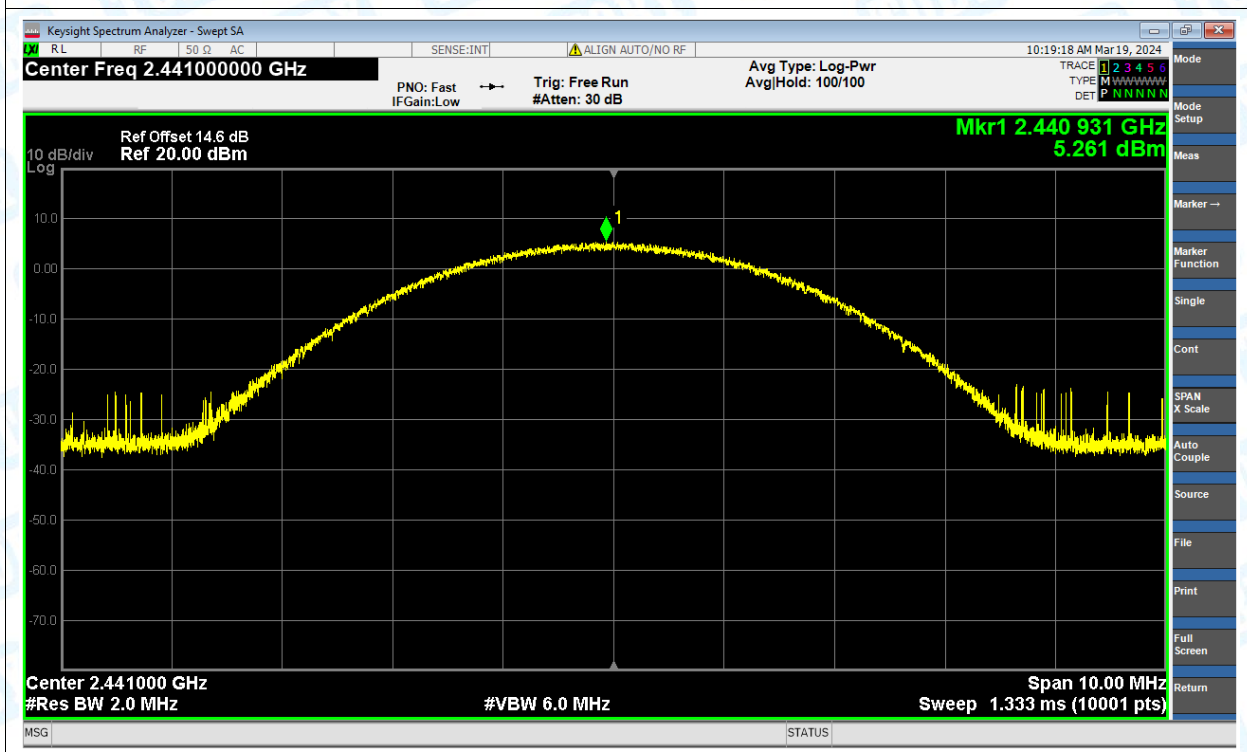
Power NVNT 2-DH1 2480MHz Ant1

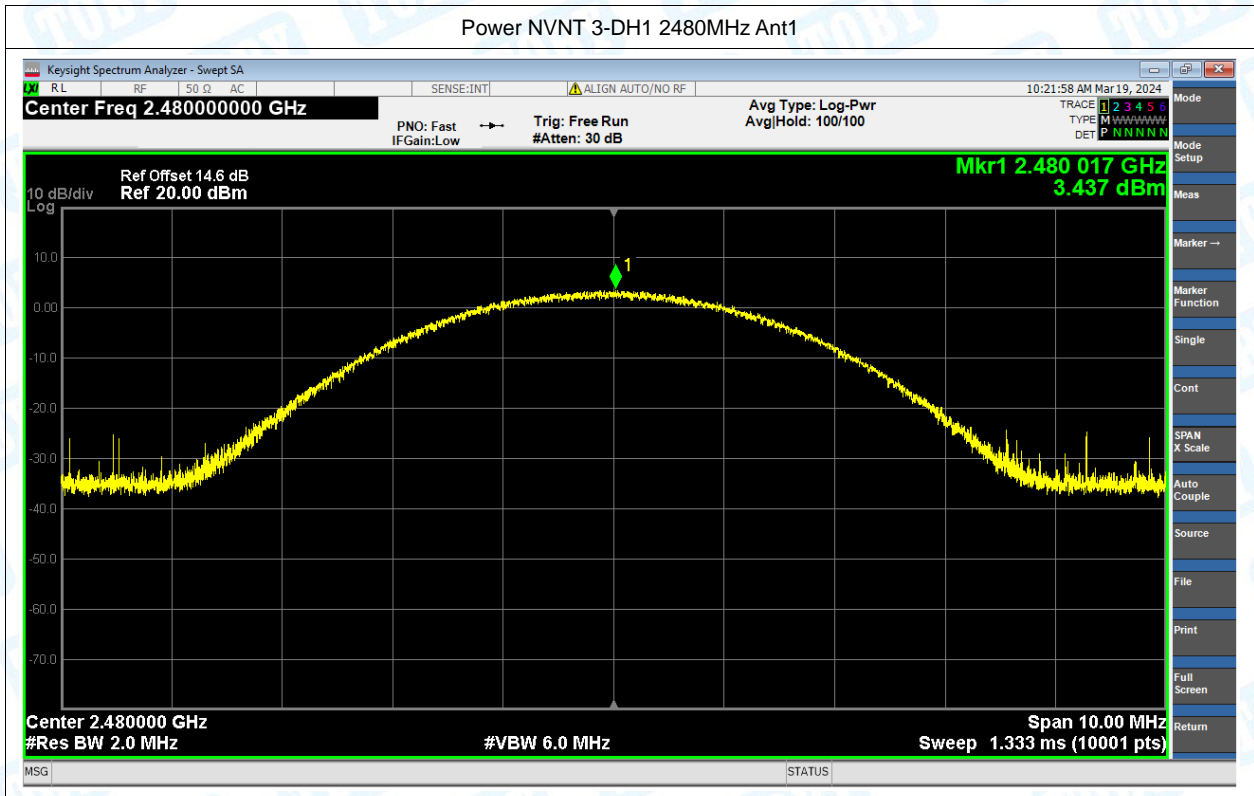


Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1





3. -20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.93	0	Pass
NVNT	1-DH1	2441	Ant1	0.93	0	Pass
NVNT	1-DH1	2480	Ant1	0.94	0	Pass
NVNT	2-DH1	2402	Ant1	1.27	0	Pass
NVNT	2-DH1	2441	Ant1	1.26	0	Pass
NVNT	2-DH1	2480	Ant1	1.25	0	Pass
NVNT	3-DH1	2402	Ant1	1.26	0	Pass
NVNT	3-DH1	2441	Ant1	1.25	0	Pass
NVNT	3-DH1	2480	Ant1	1.26	0	Pass

Test Graphs

-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



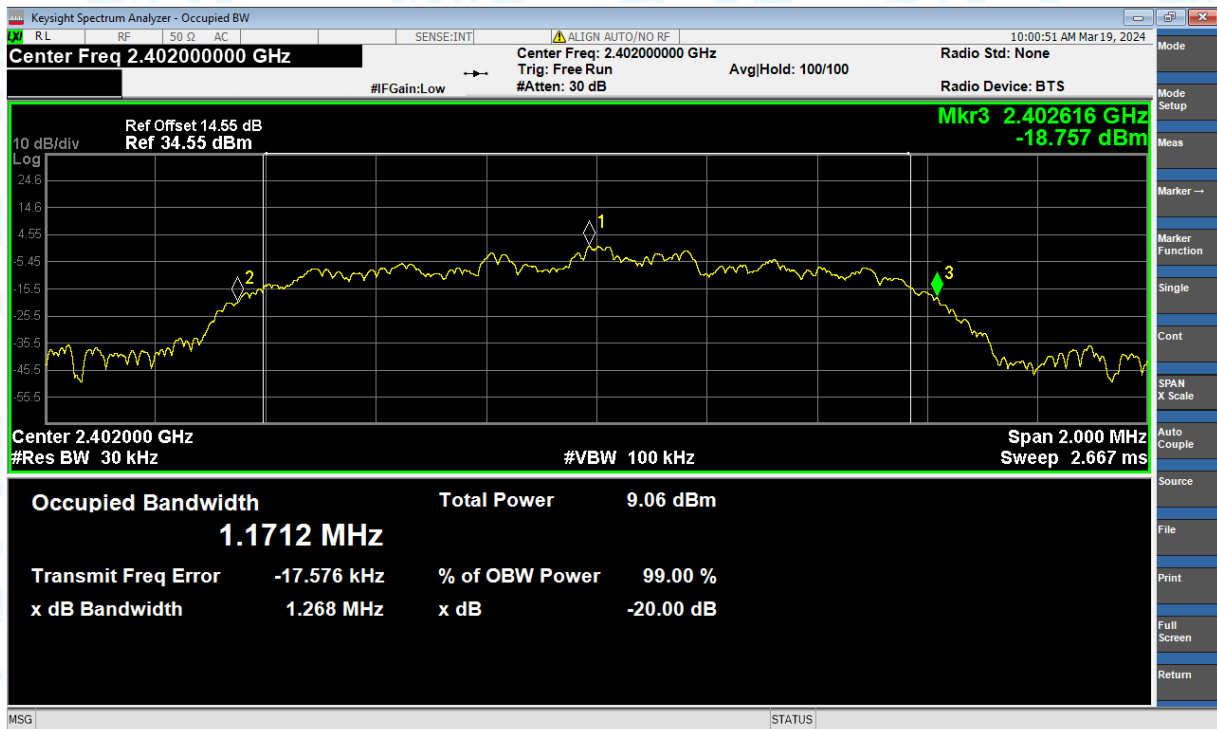
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



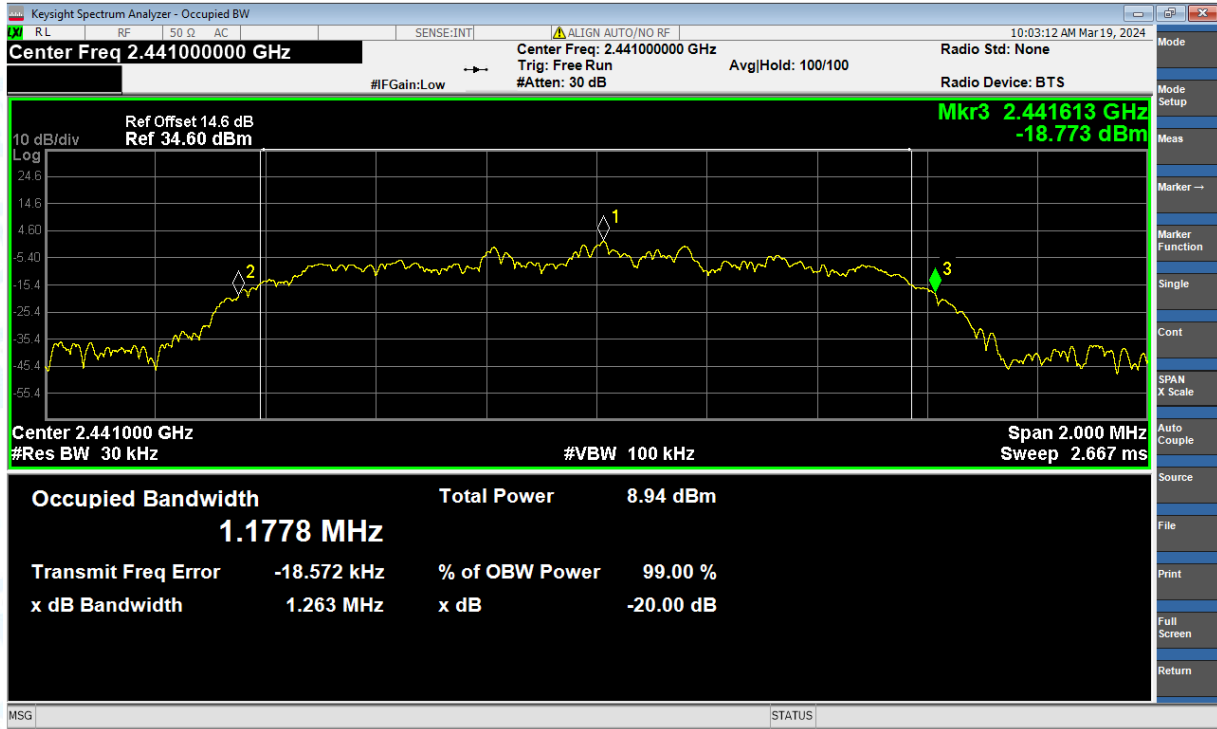
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



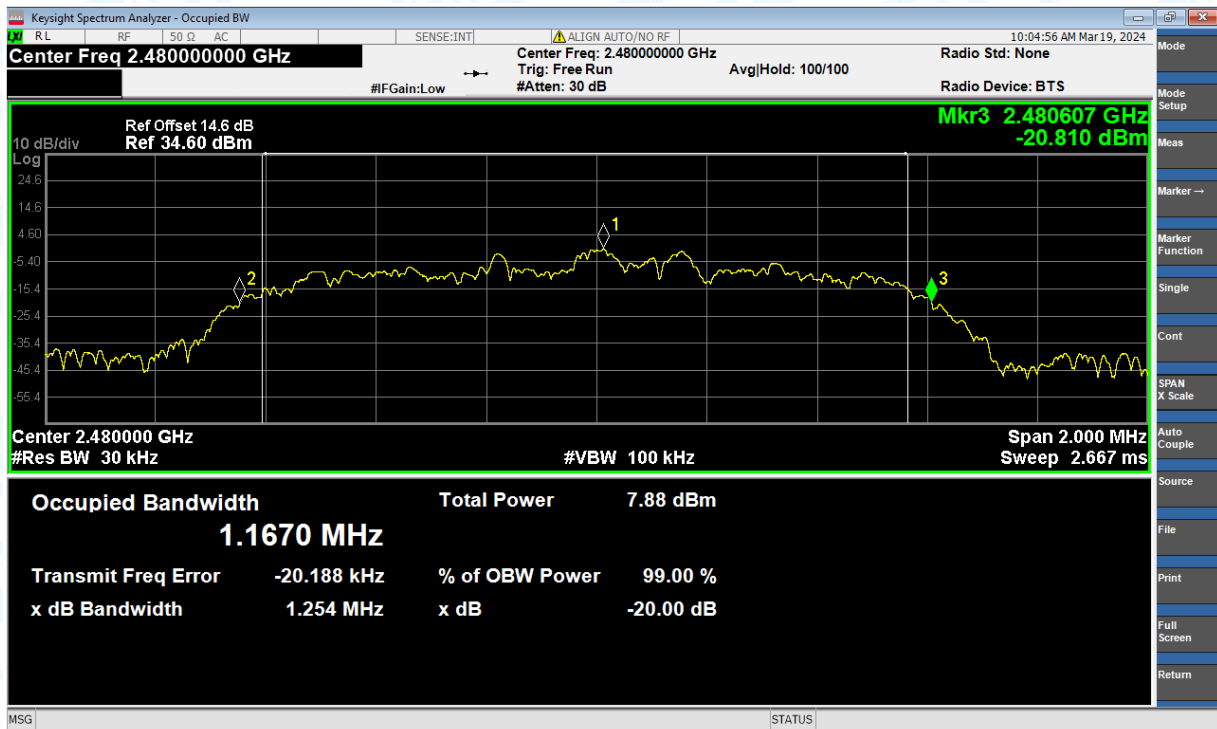
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



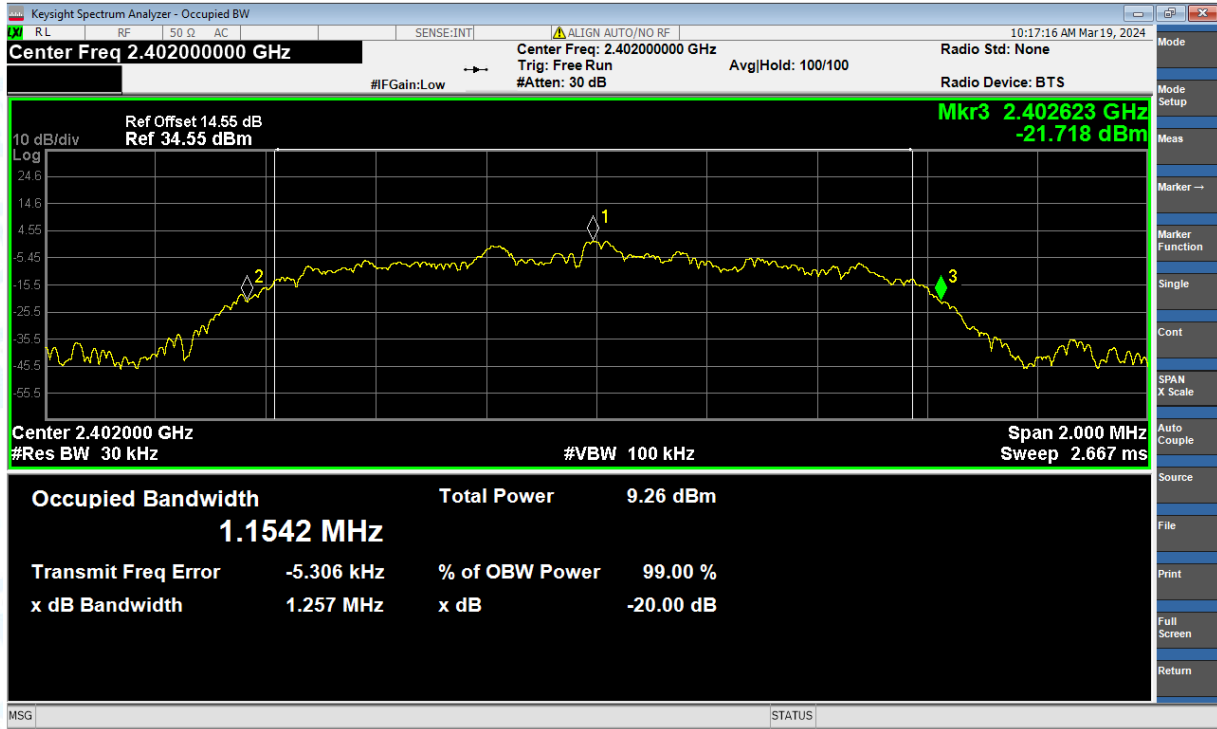
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



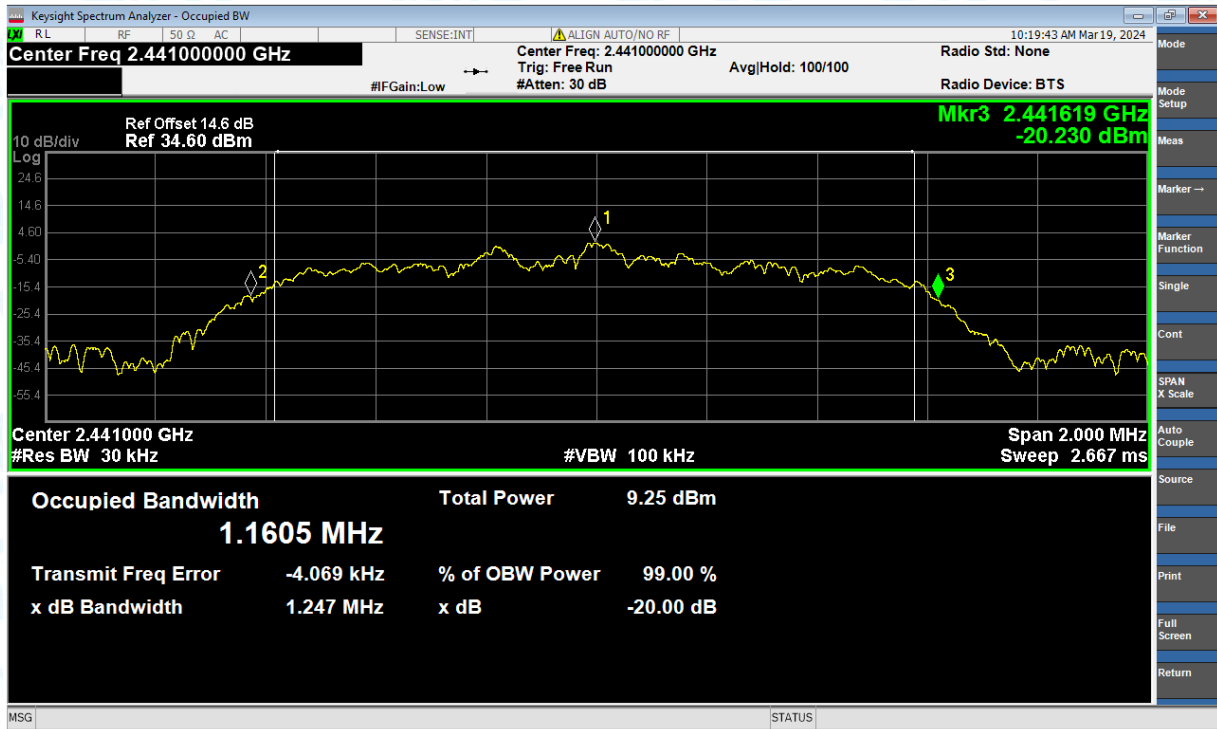
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

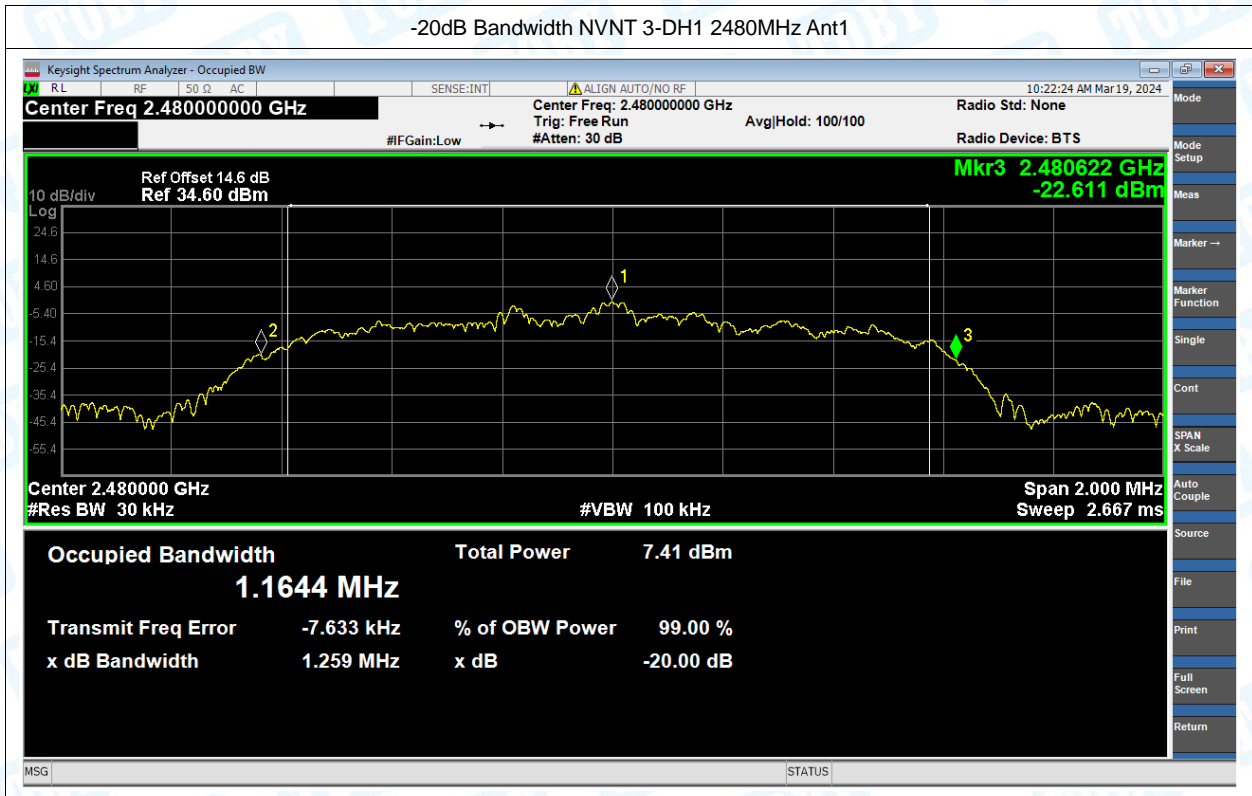


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



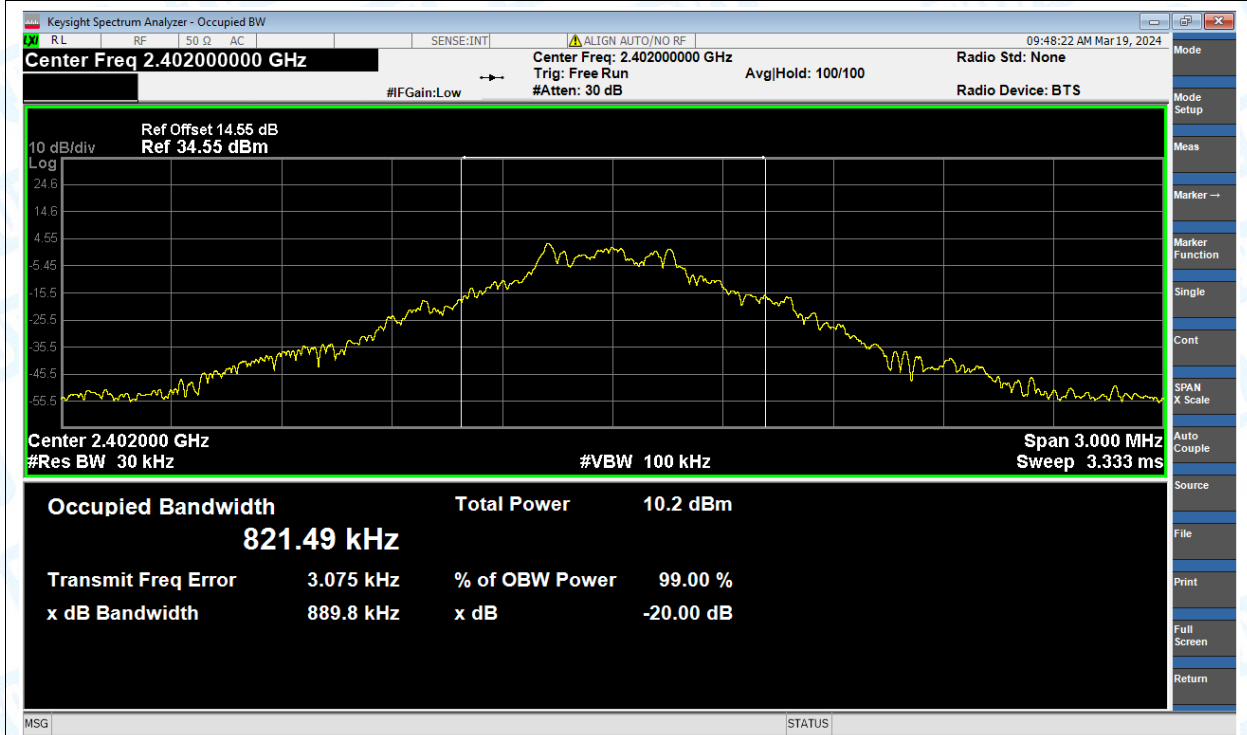


4. Occupied Channel Bandwidth

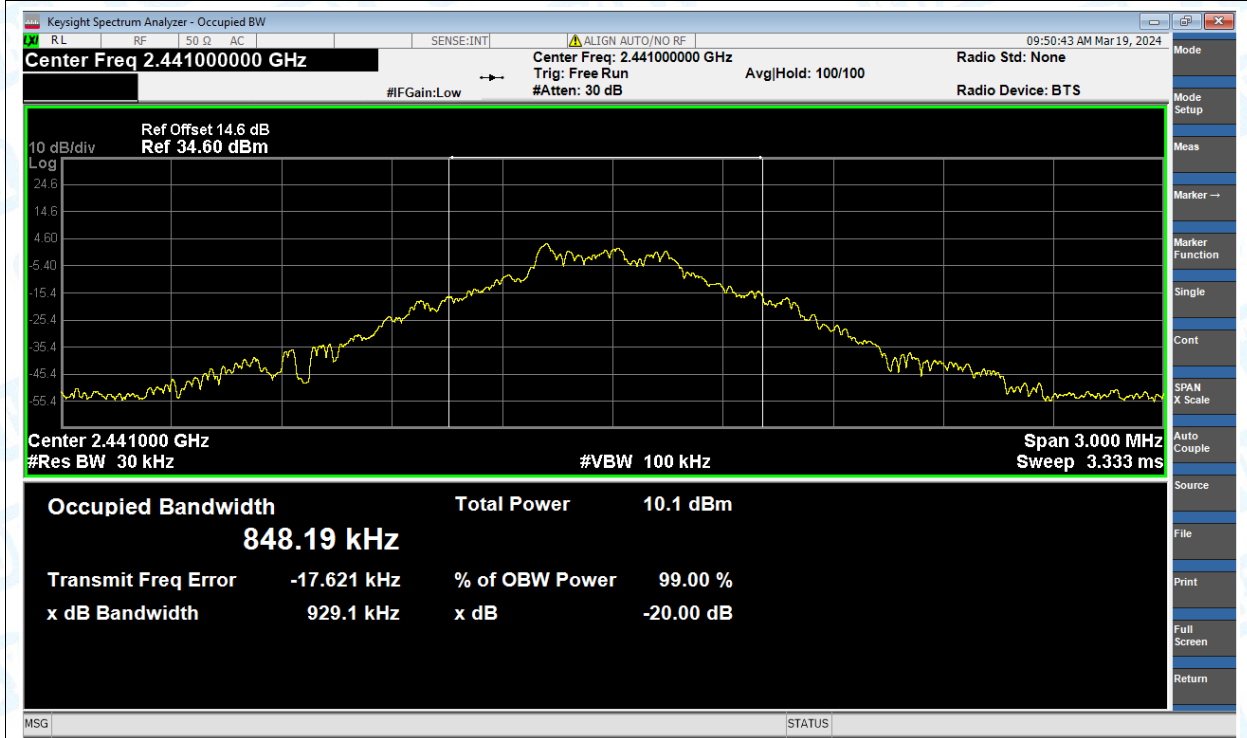
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.821
NVNT	1-DH1	2441	Ant1	0.848
NVNT	1-DH1	2480	Ant1	0.839
NVNT	2-DH1	2402	Ant1	1.173
NVNT	2-DH1	2441	Ant1	1.167
NVNT	2-DH1	2480	Ant1	1.165
NVNT	3-DH1	2402	Ant1	1.156
NVNT	3-DH1	2441	Ant1	1.158
NVNT	3-DH1	2480	Ant1	1.159

Test Graphs

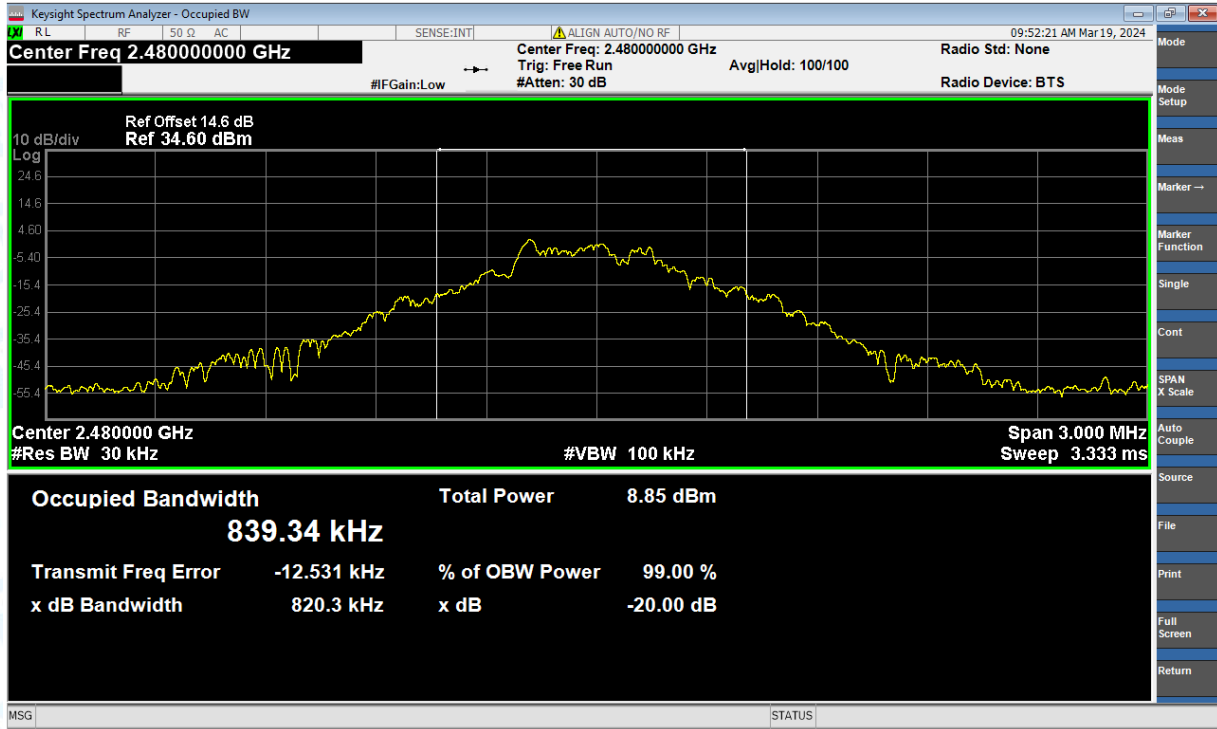
OBW NVNT 1-DH1 2402MHz Ant1



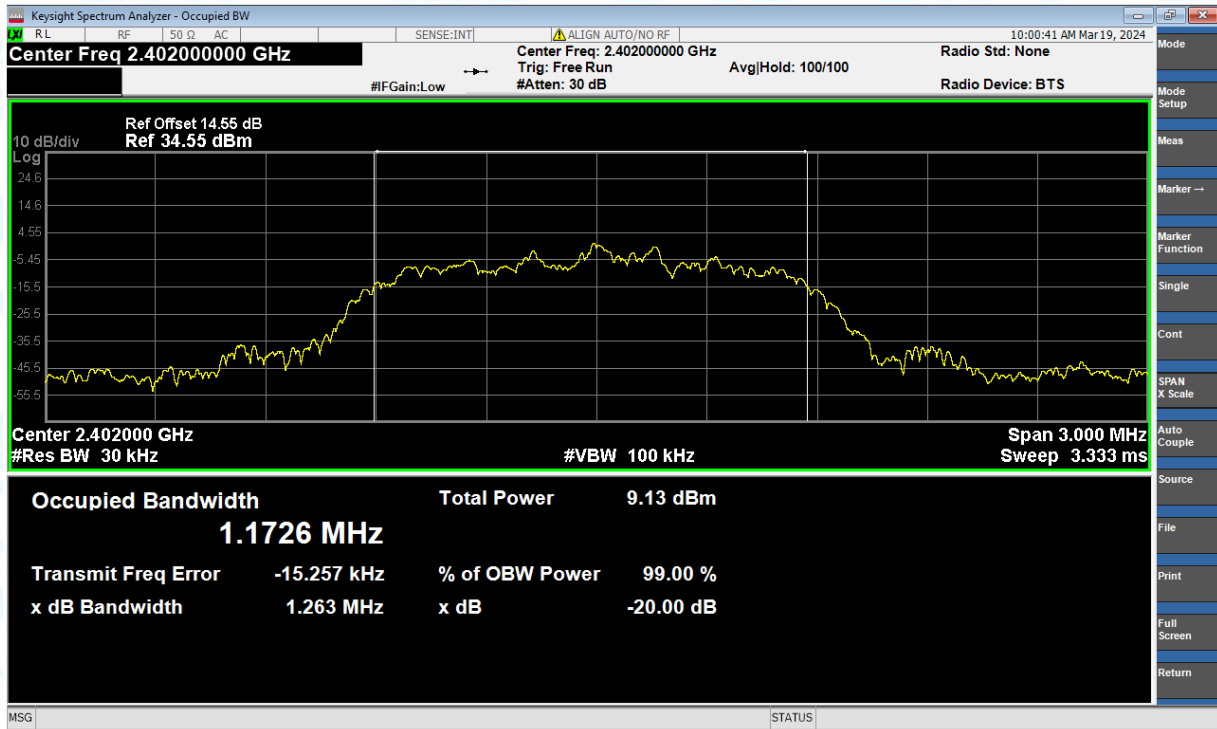
OBW NVNT 1-DH1 2441MHz Ant1



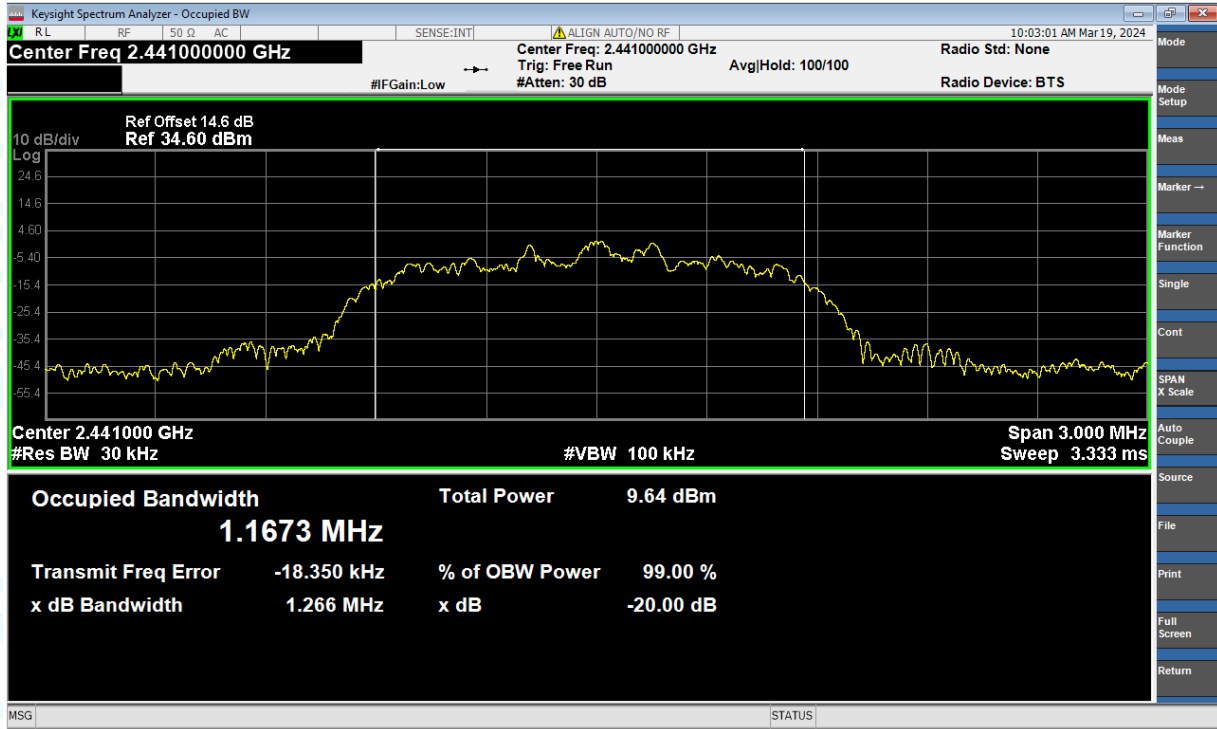
OBW NVNT 1-DH1 2480MHz Ant1



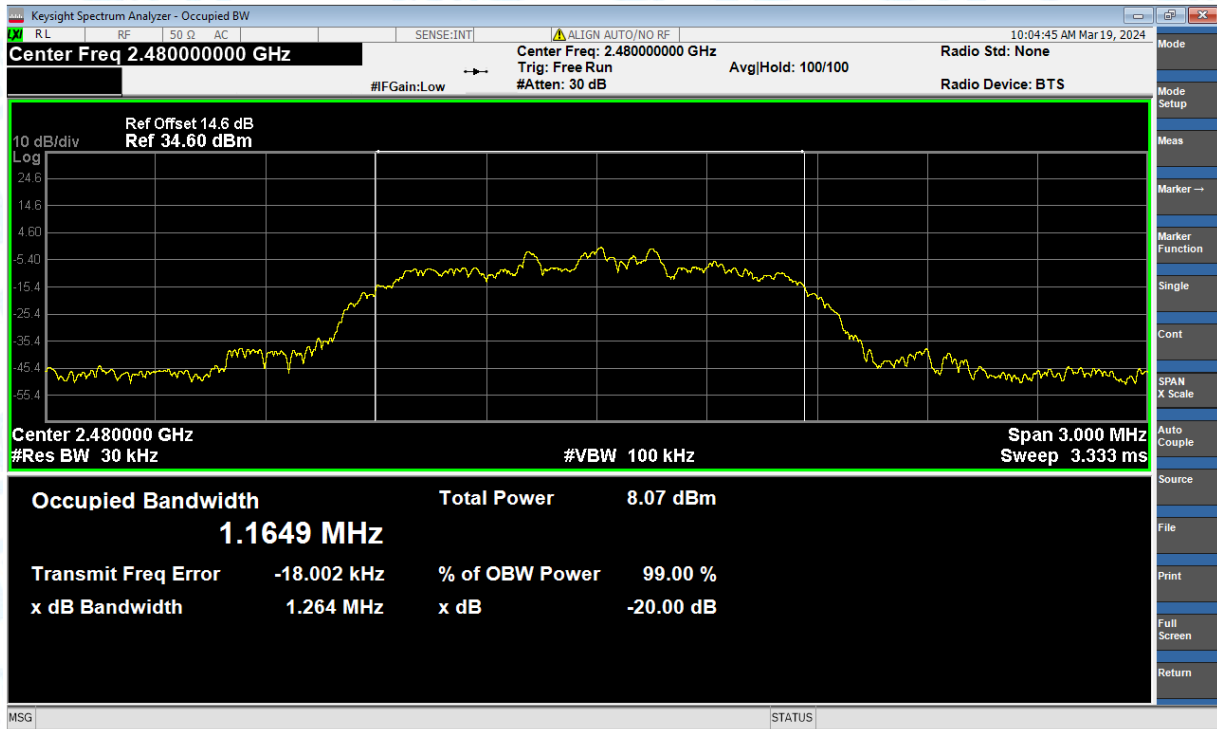
OBW NVNT 2-DH1 2402MHz Ant1



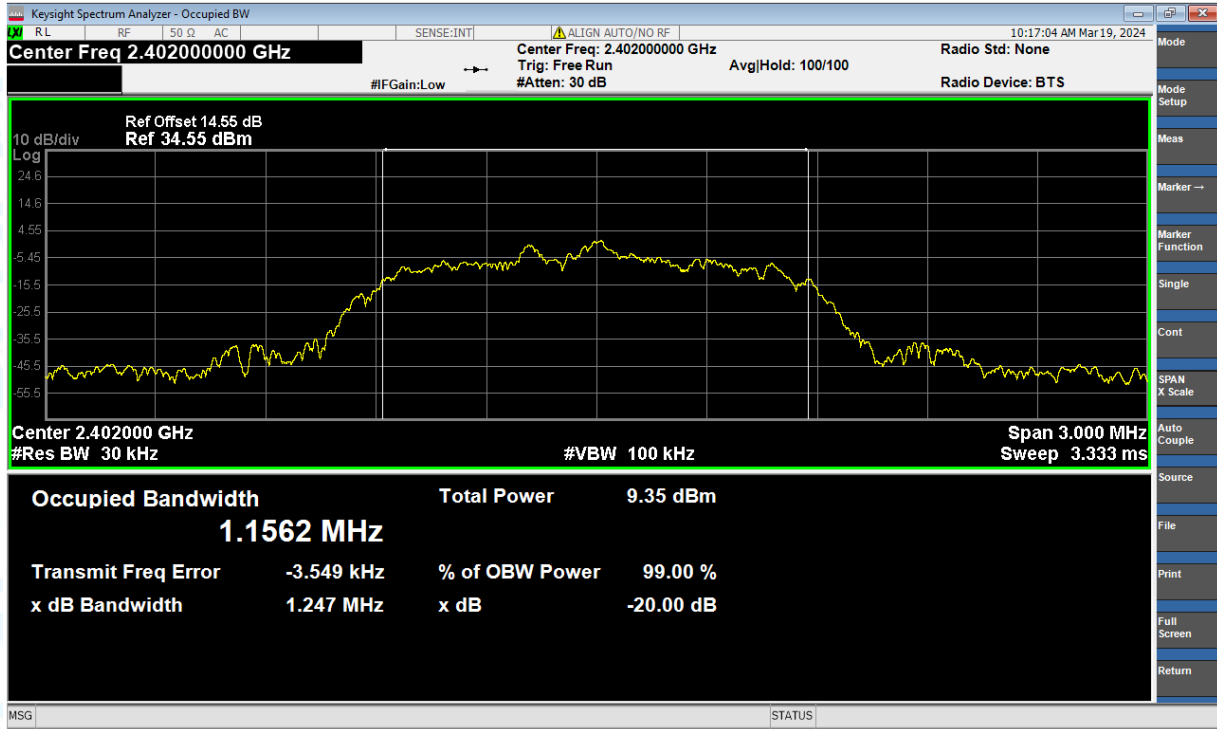
OBW NVNT 2-DH1 2441MHz Ant1



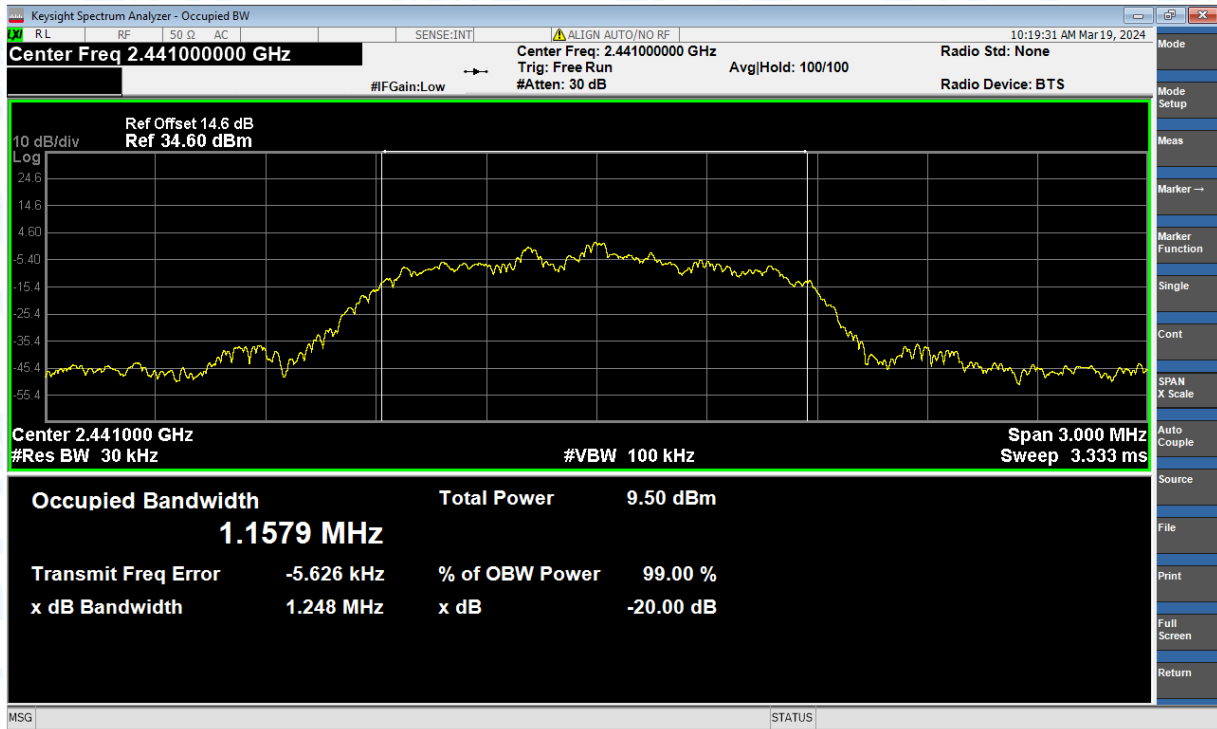
OBW NVNT 2-DH1 2480MHz Ant1

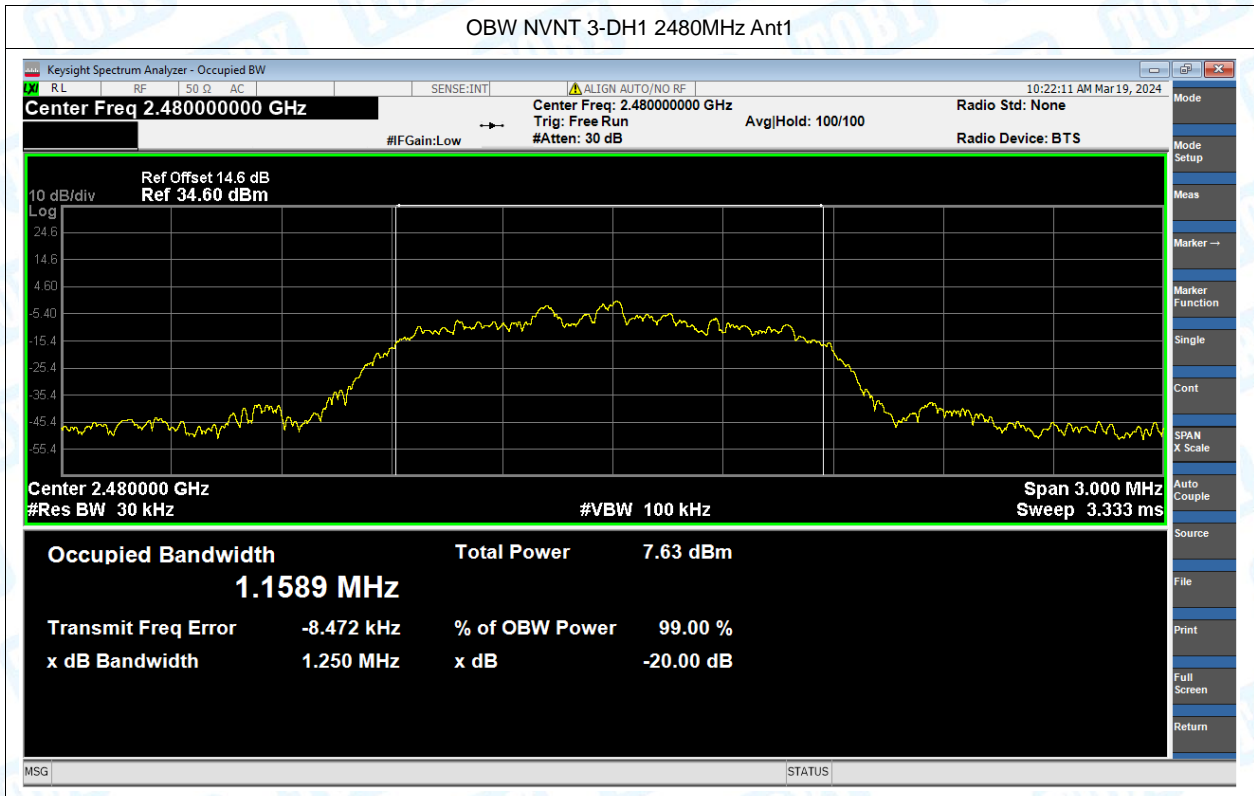


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



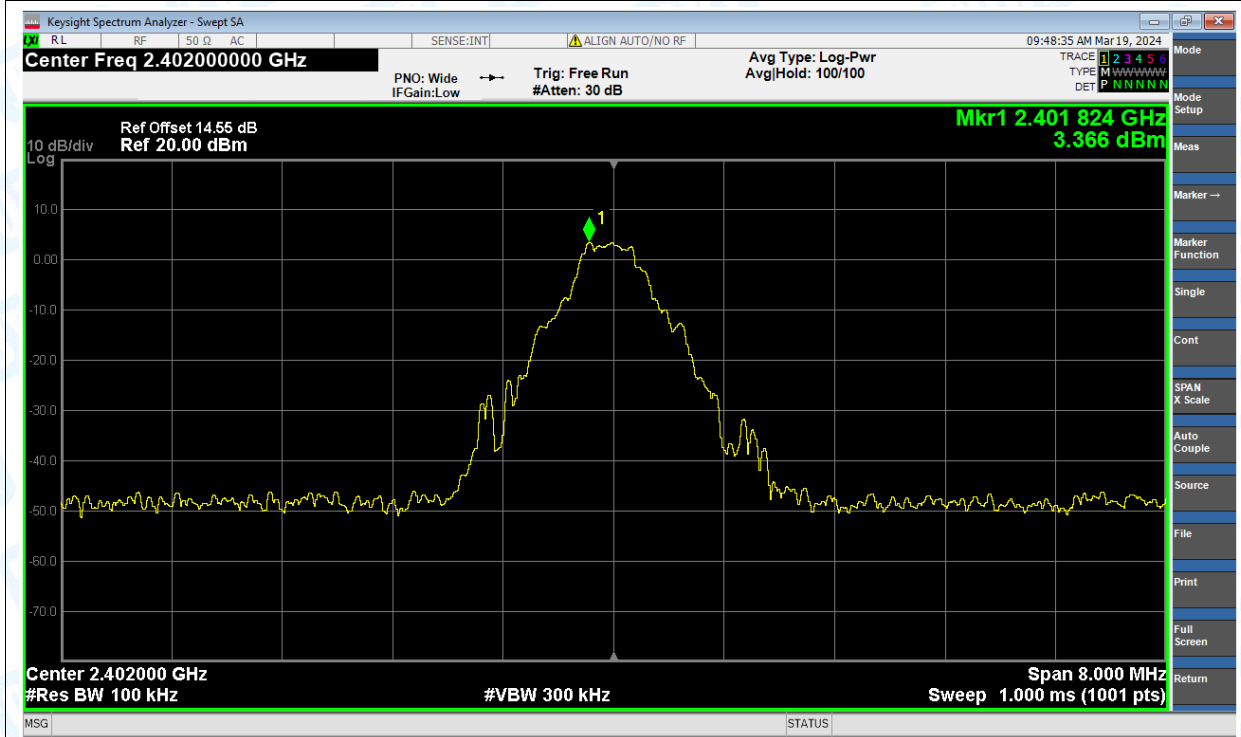


5. Band Edge

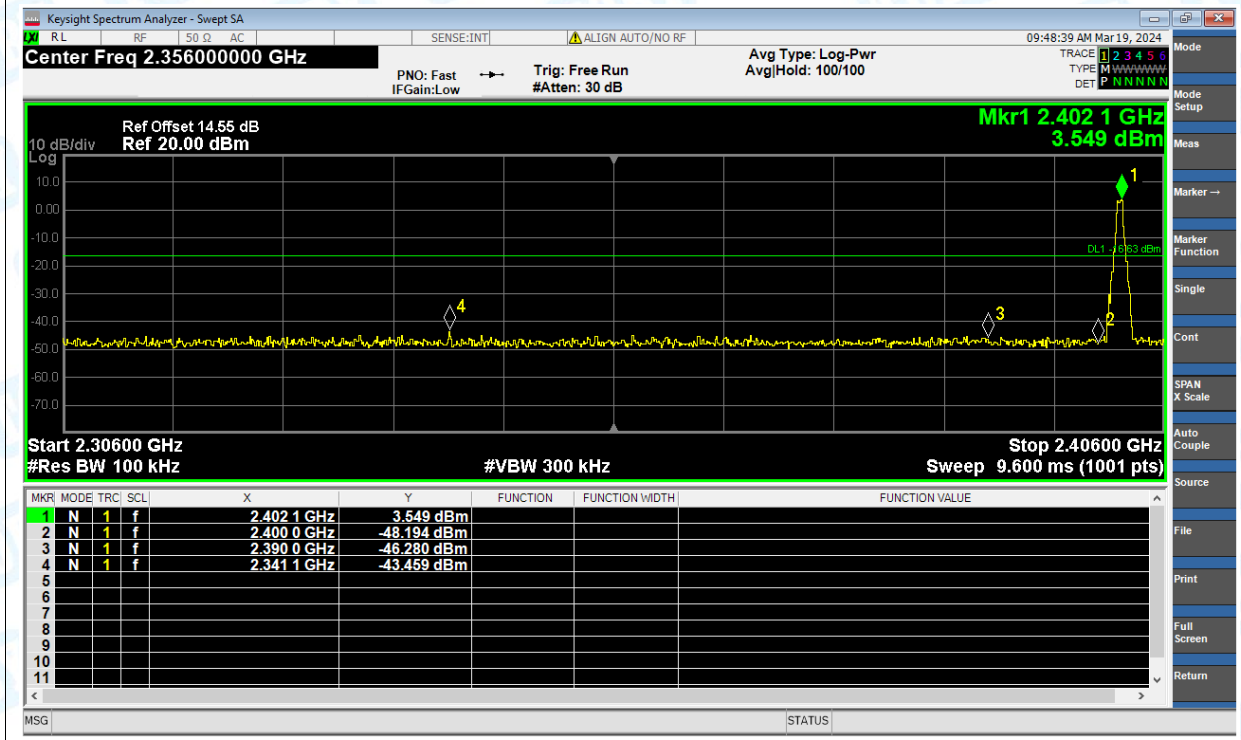
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-46.83	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-45.9	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-46.96	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-45.8	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-46.57	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-45.5	-20	Pass

Test Graphs

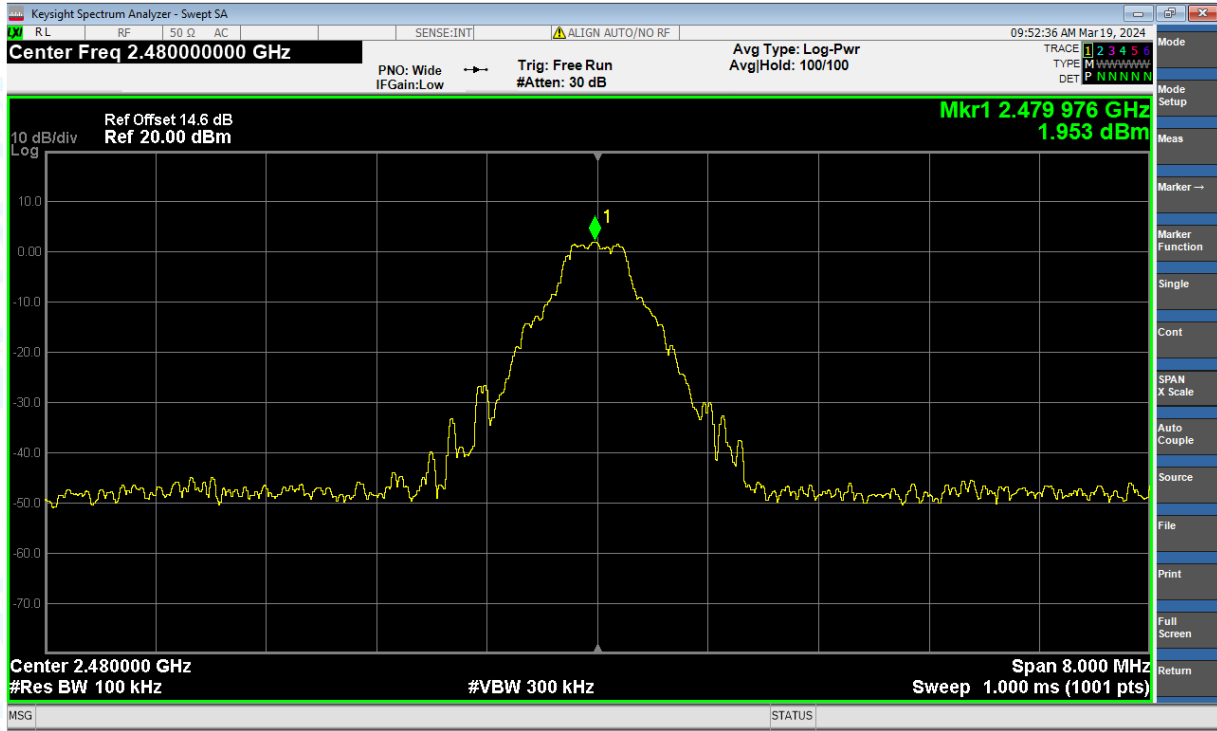
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



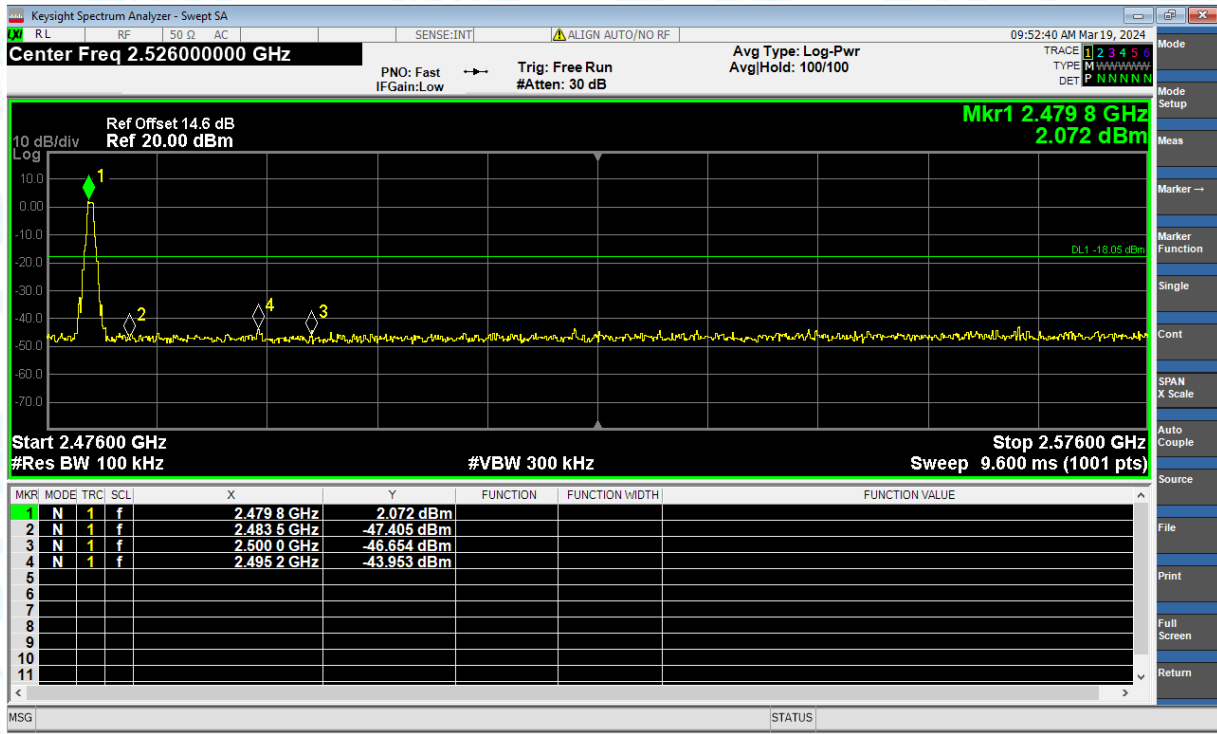
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



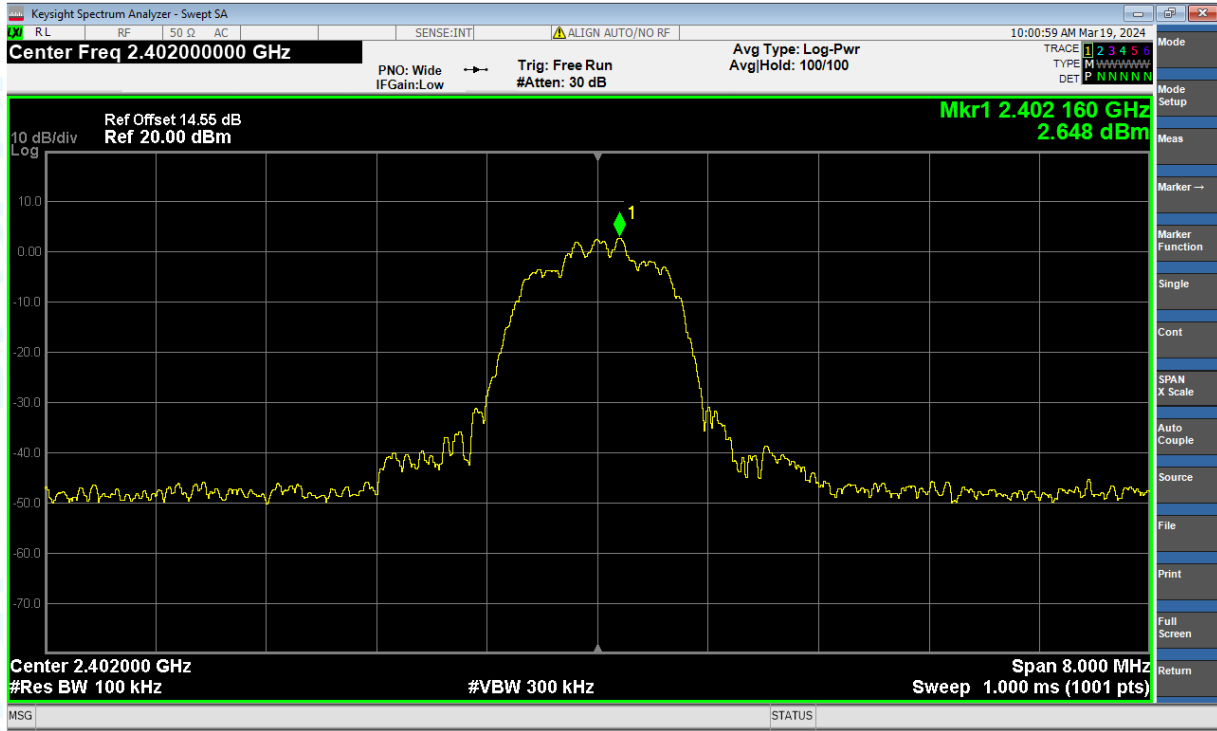
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



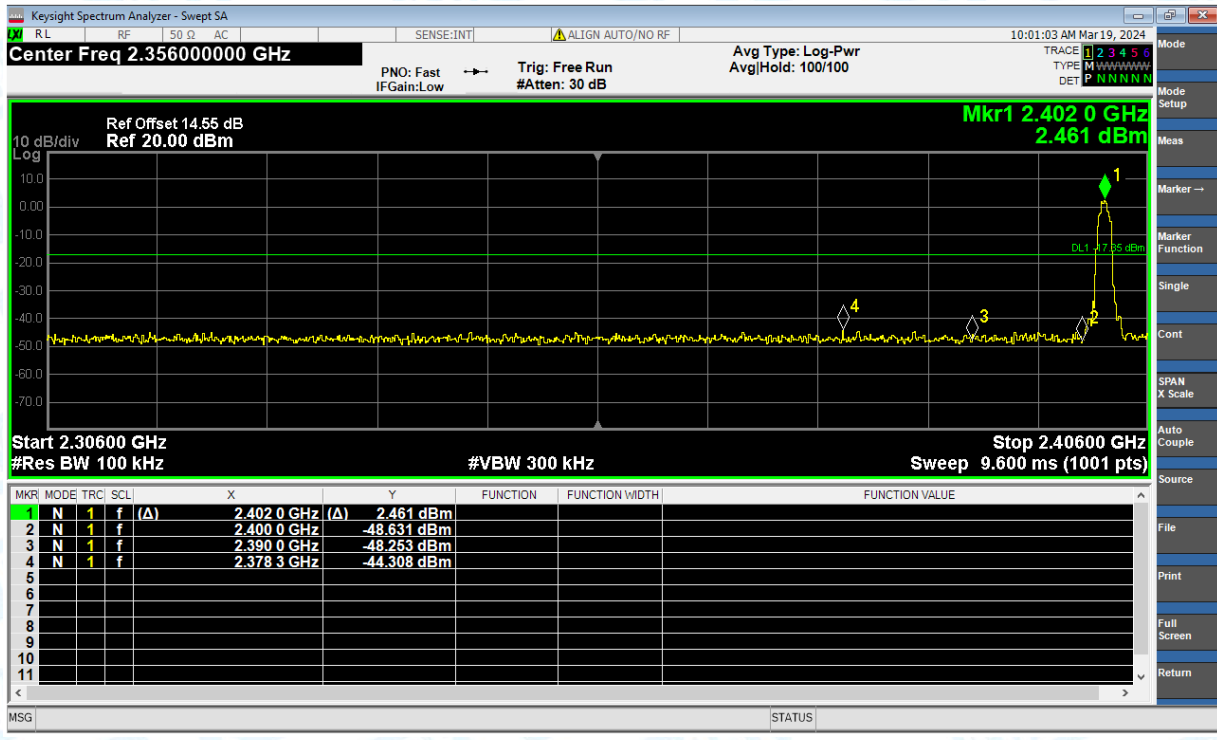
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



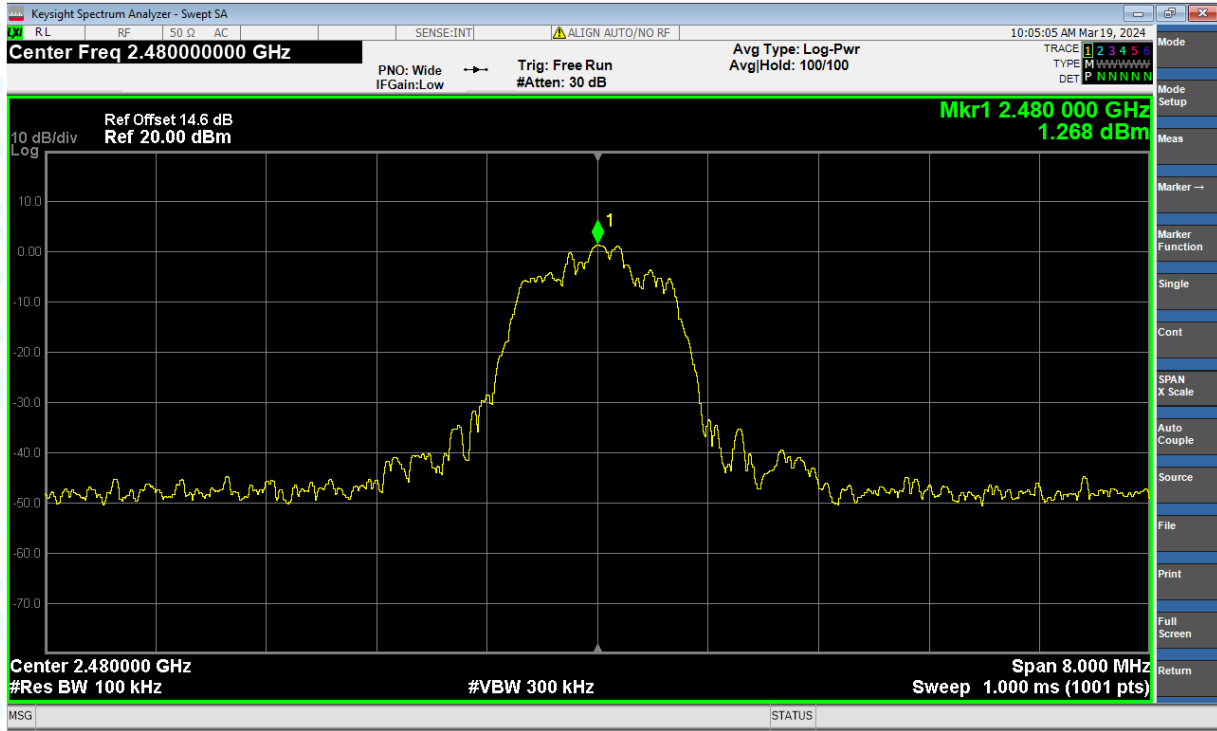
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



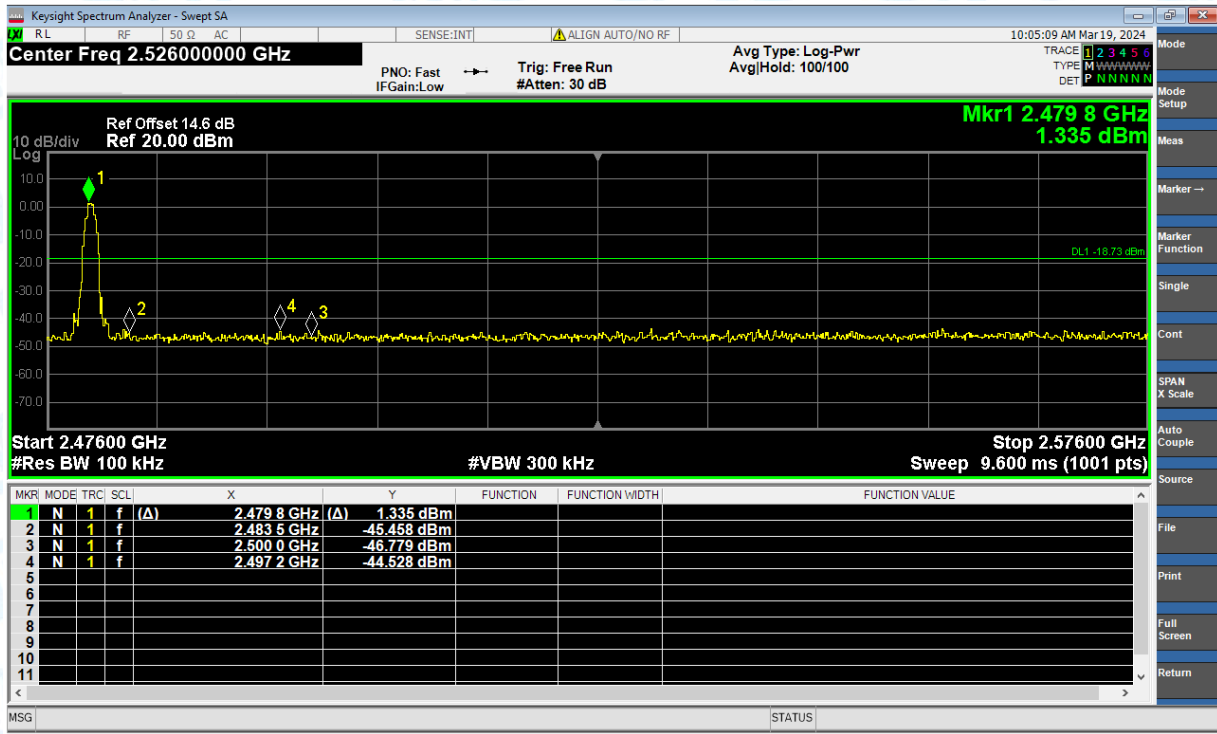
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



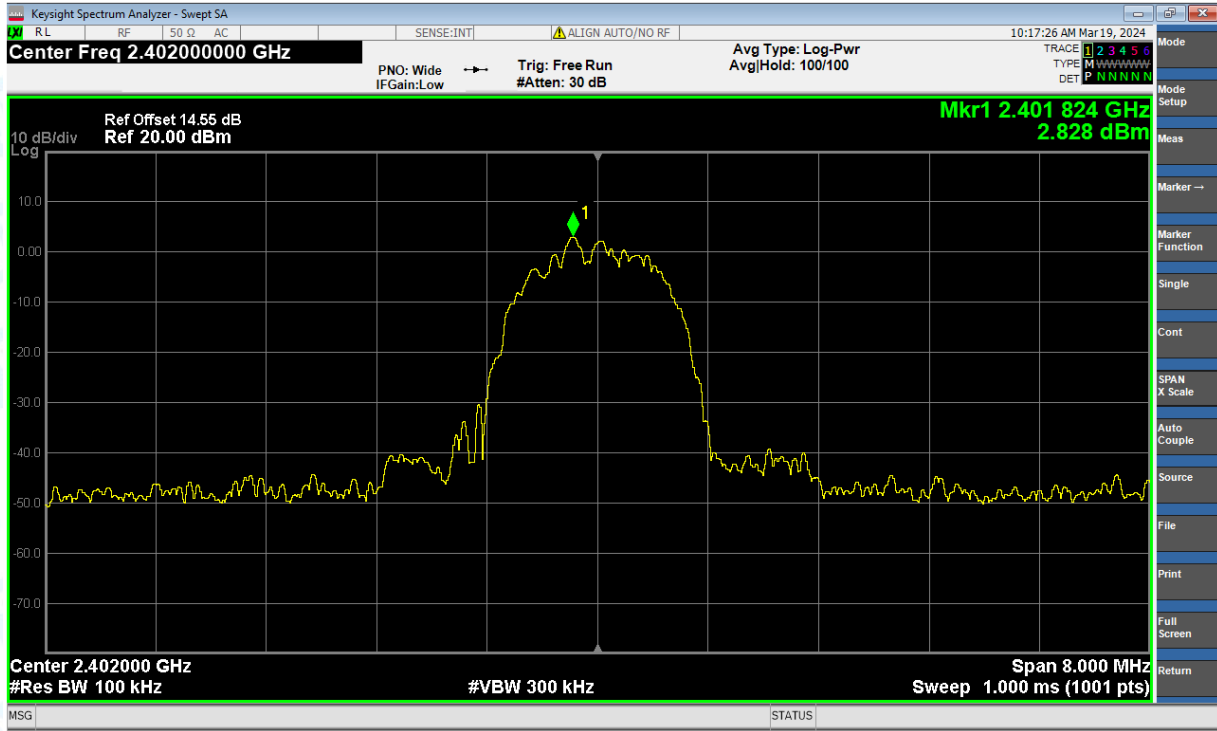
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



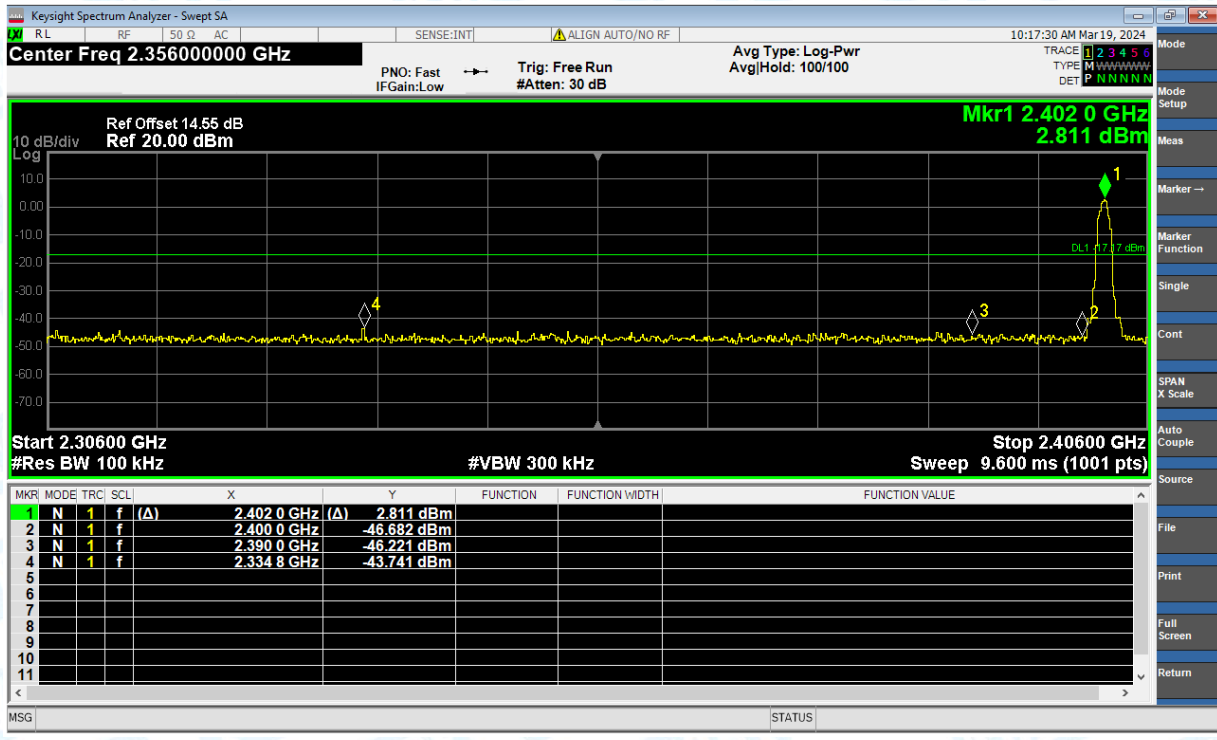
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



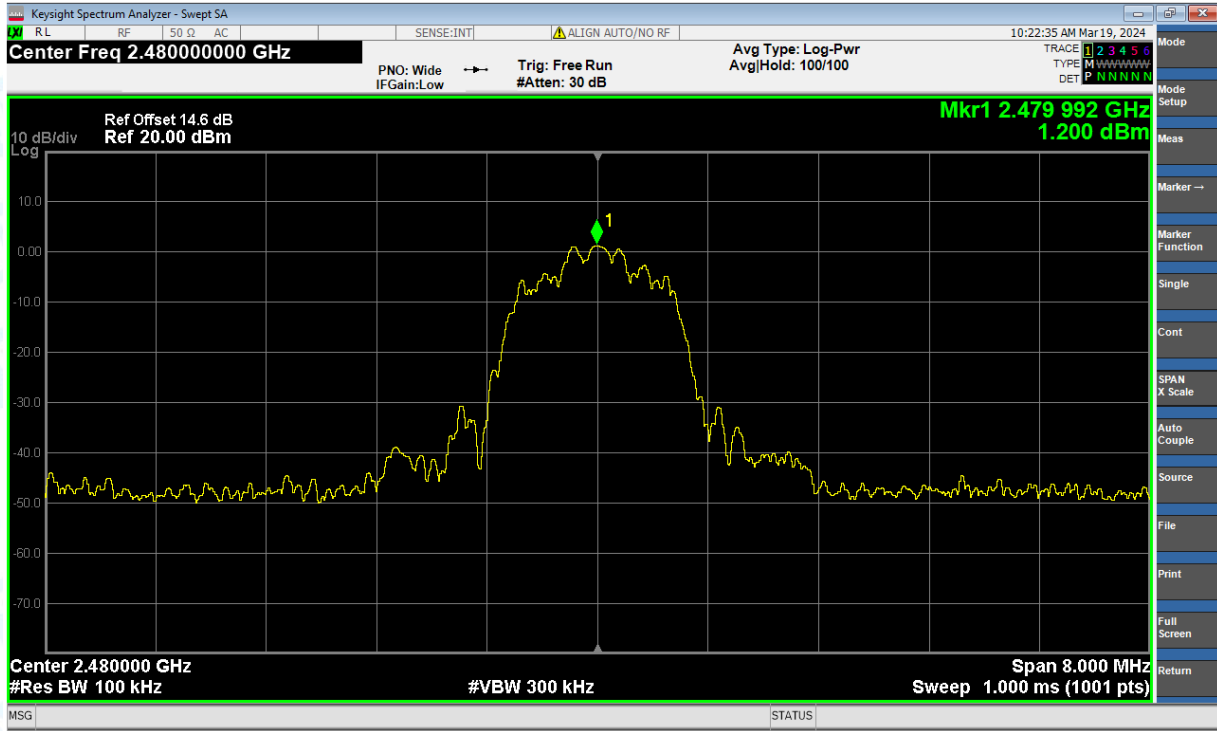
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



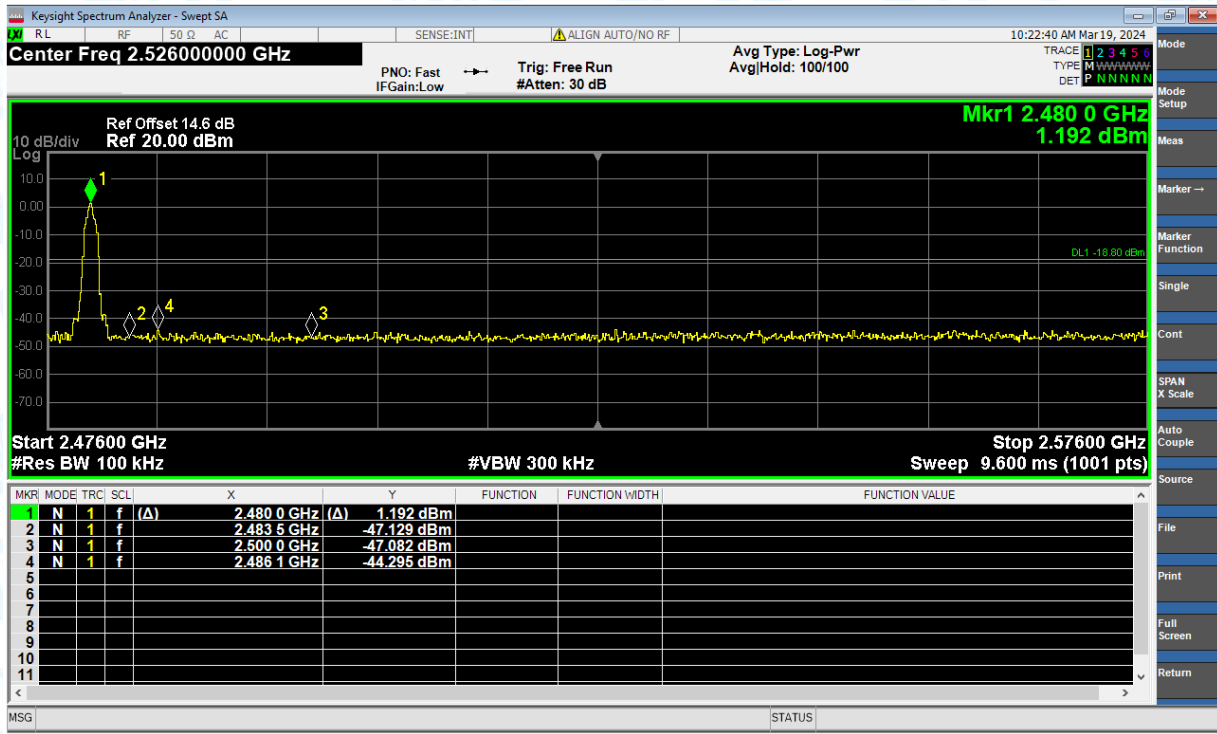
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



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



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

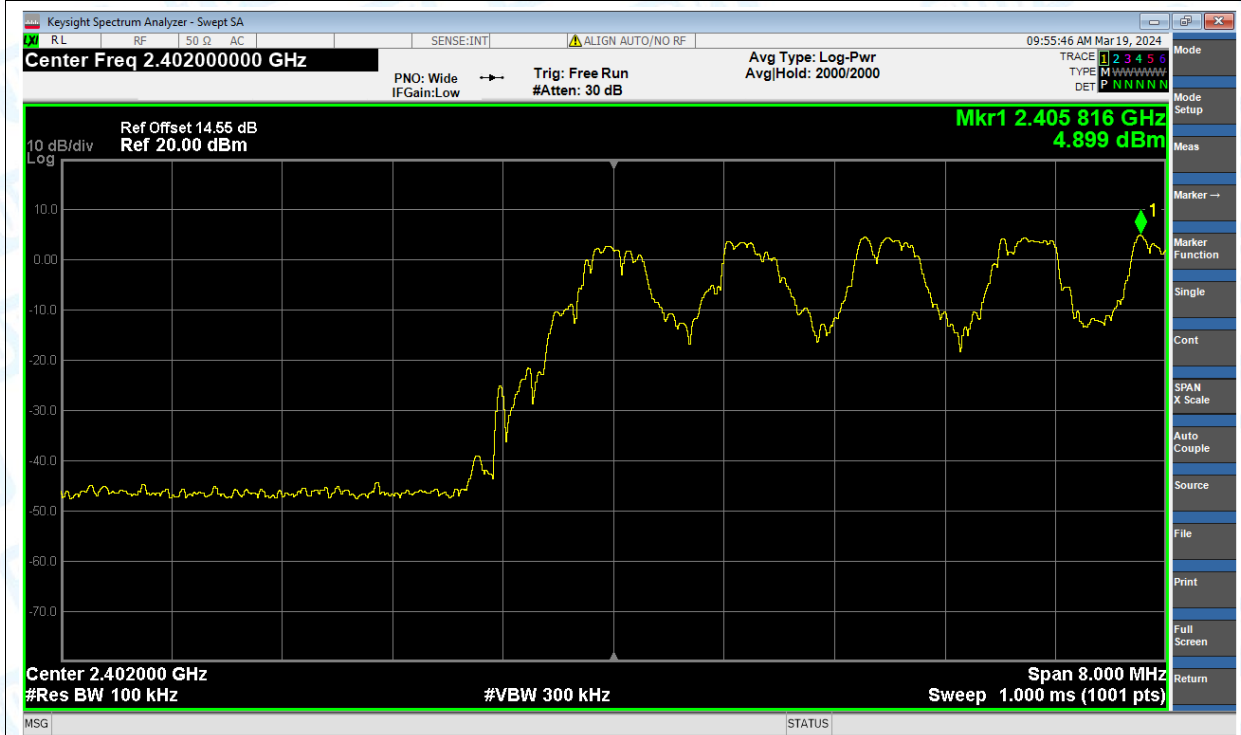


6. Band Edge(Hopping)

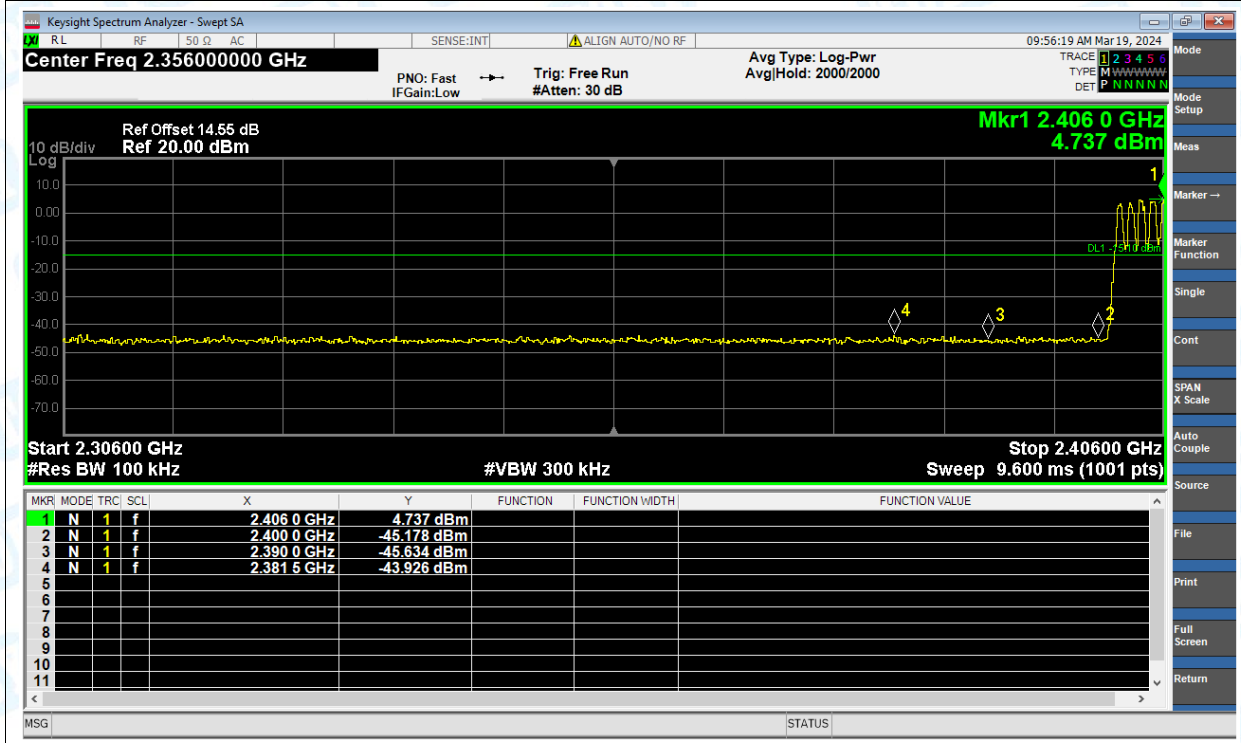
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-48.83	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-46.36	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-47.07	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-44.96	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-46.52	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-44.66	-20	Pass

Test Graphs

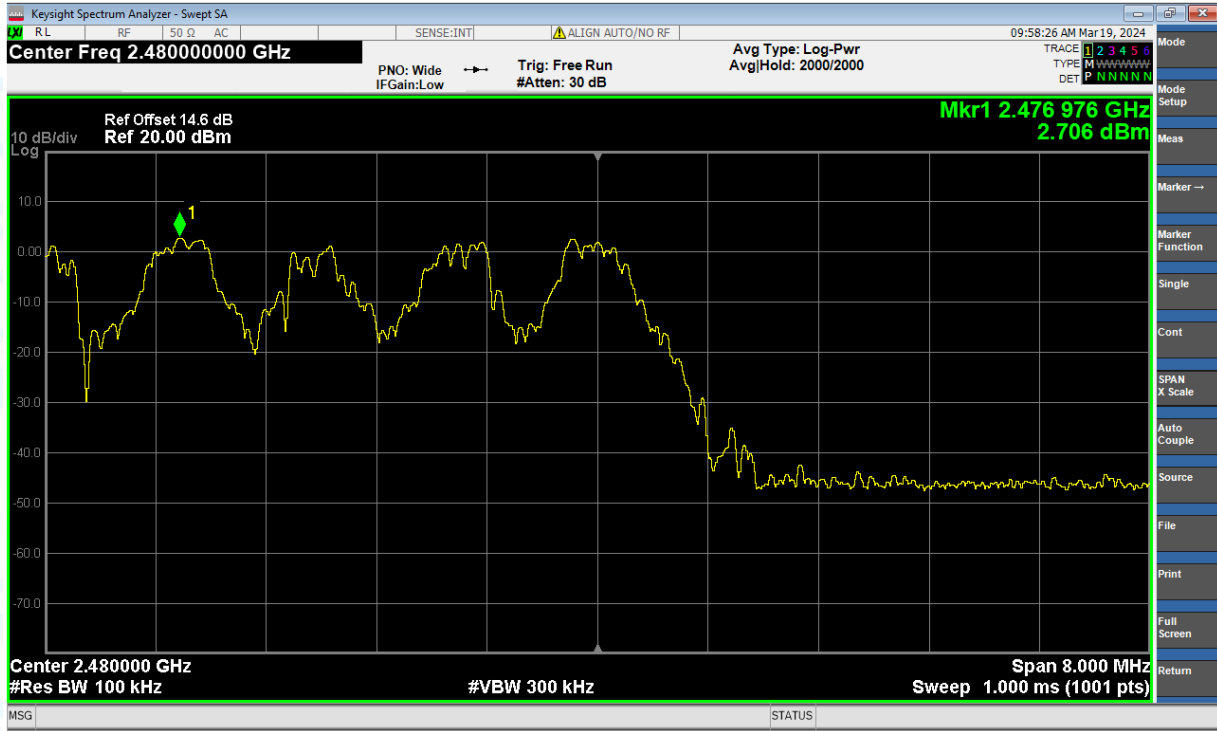
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref



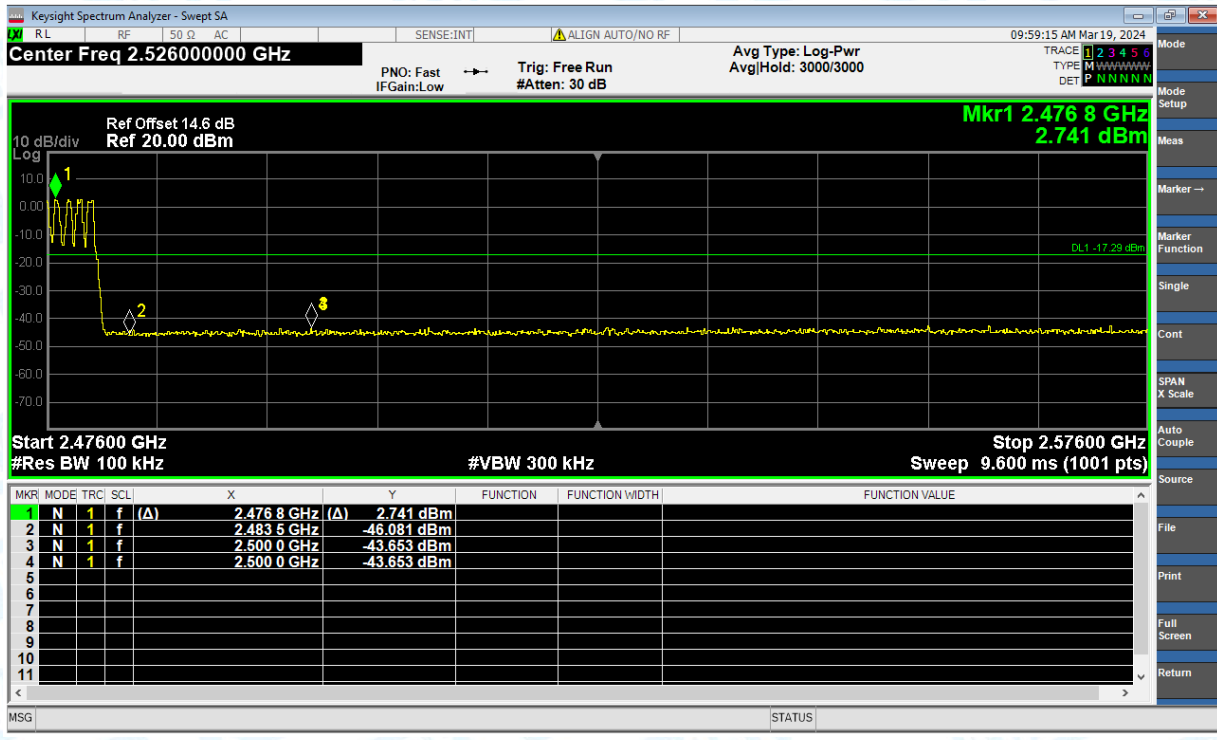
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



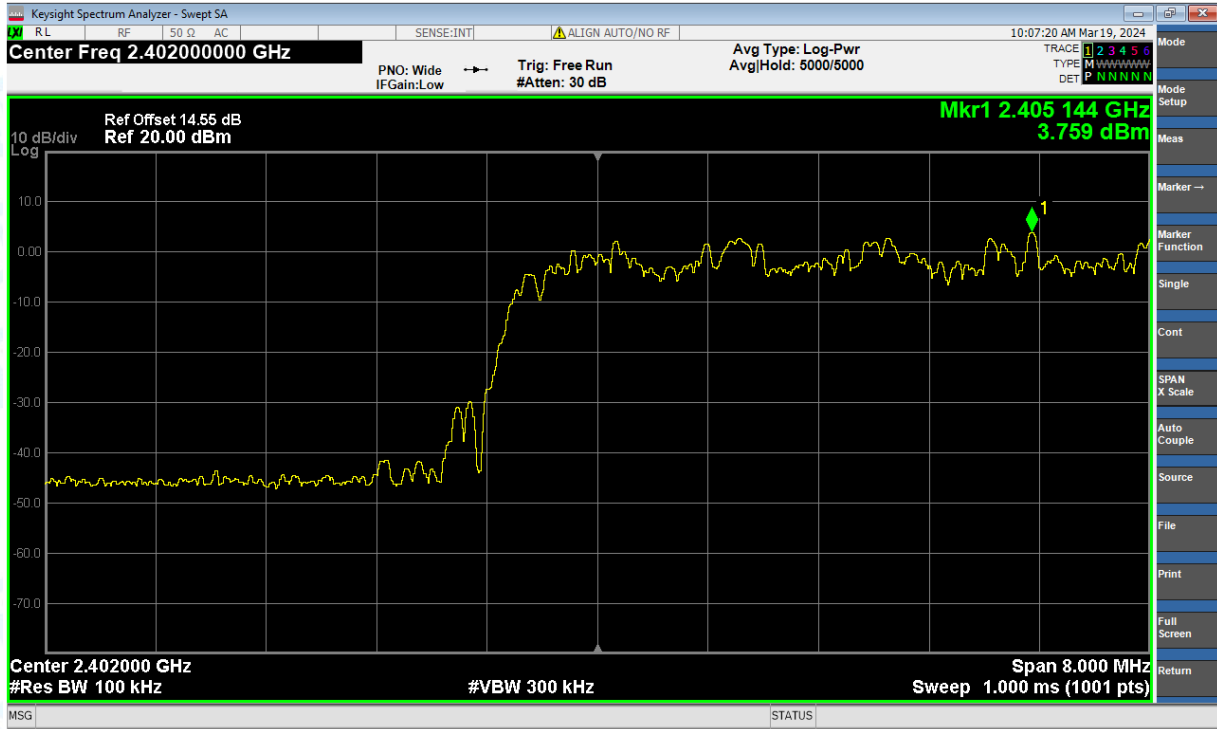
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref



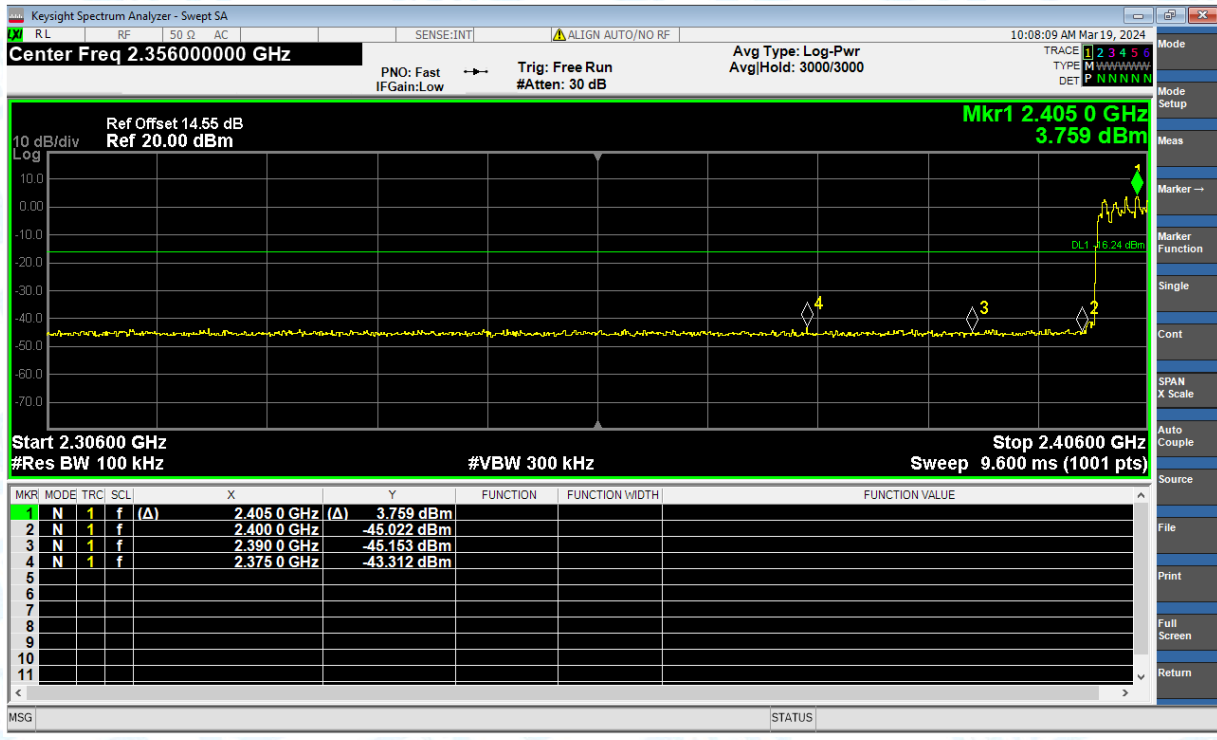
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



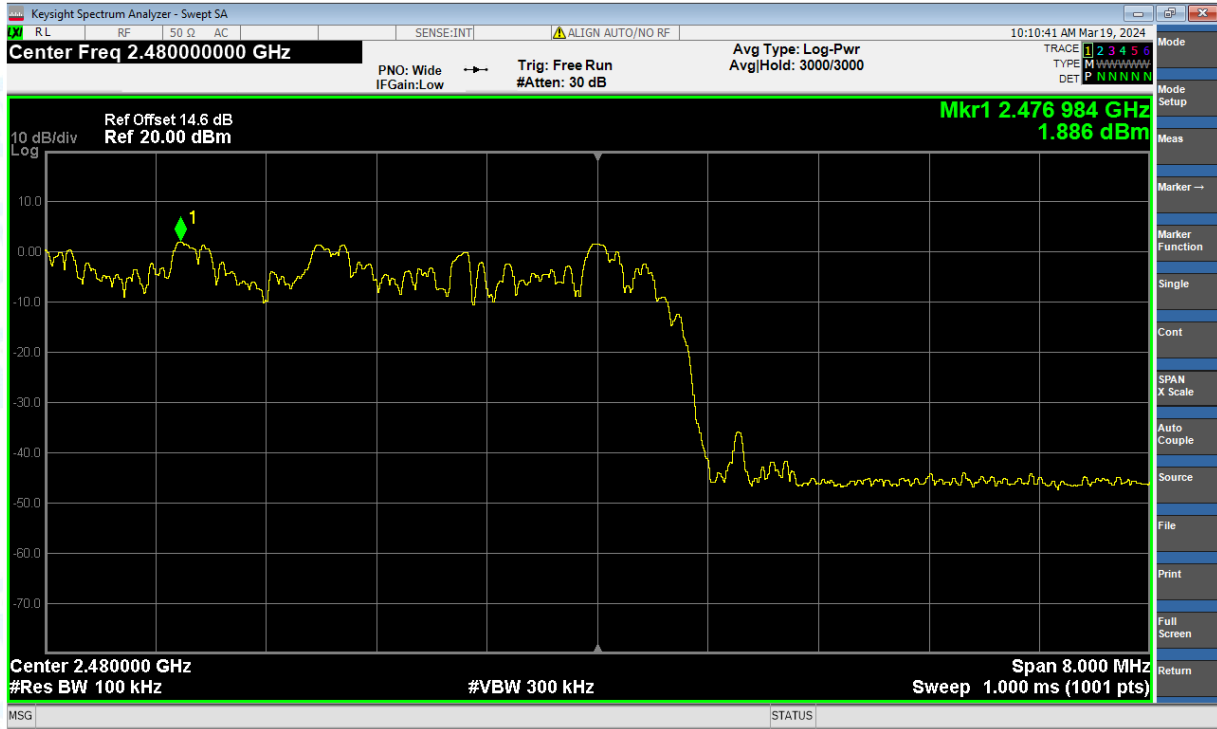
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref



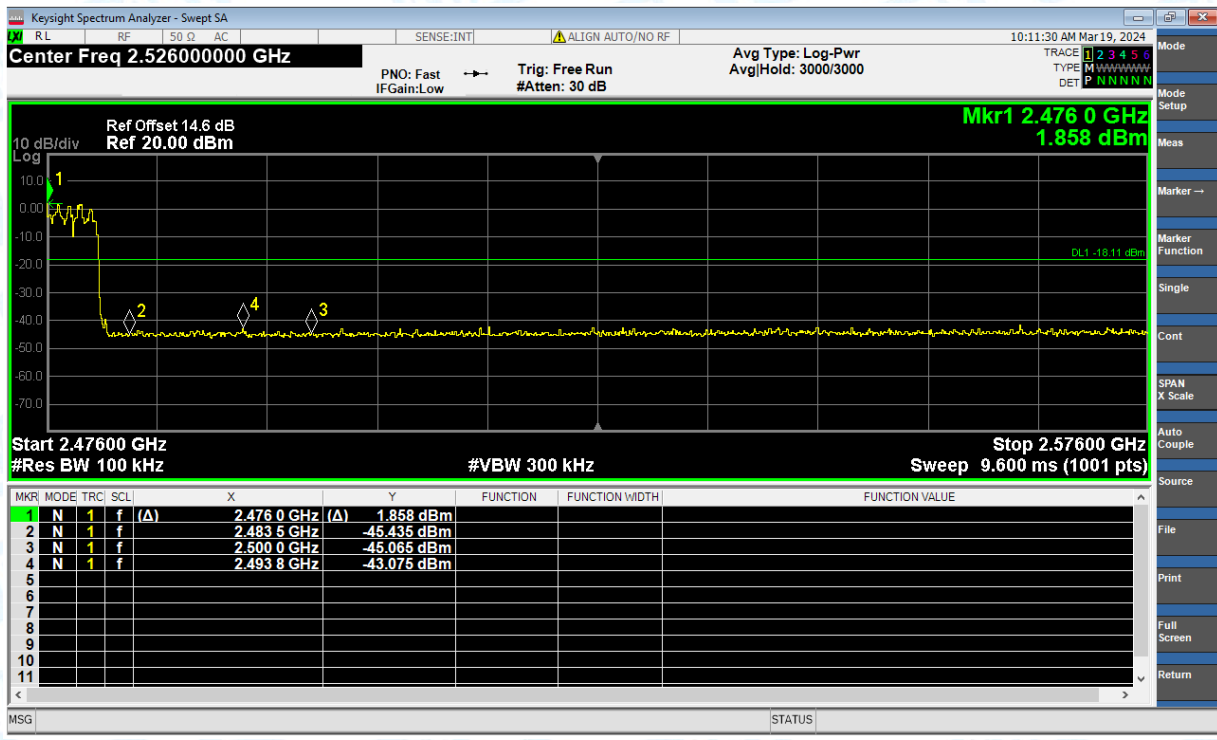
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



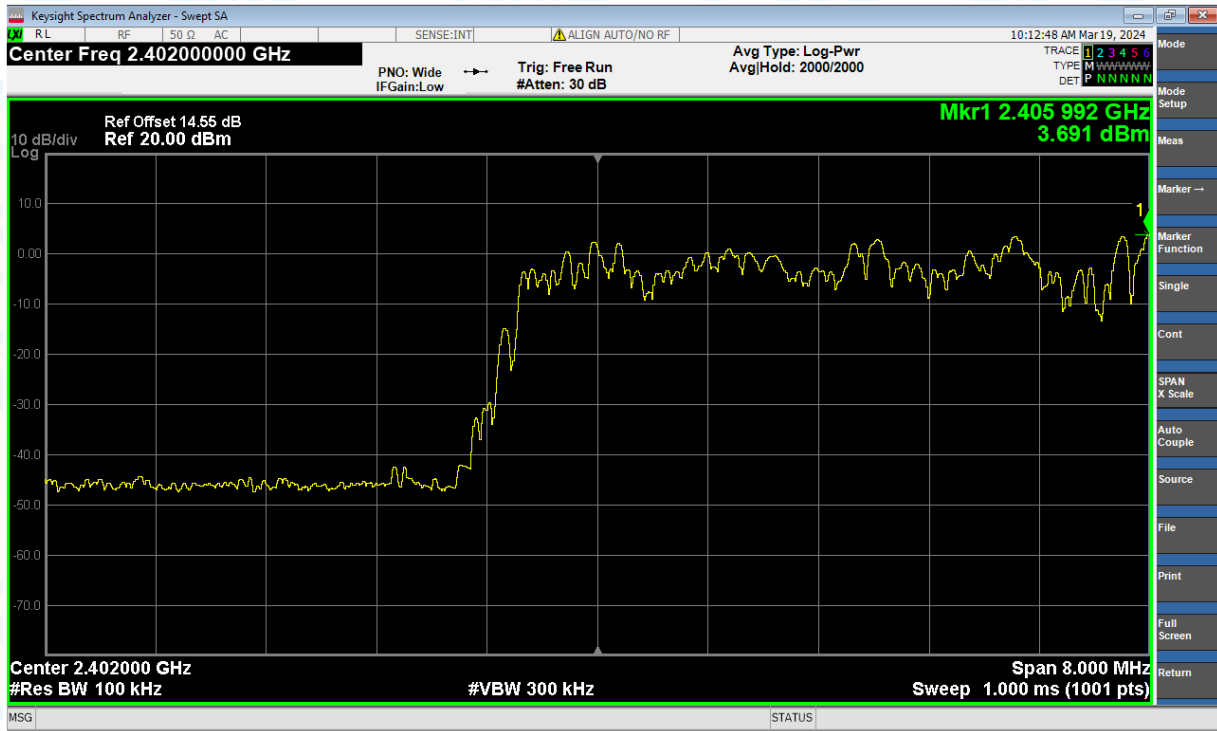
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref



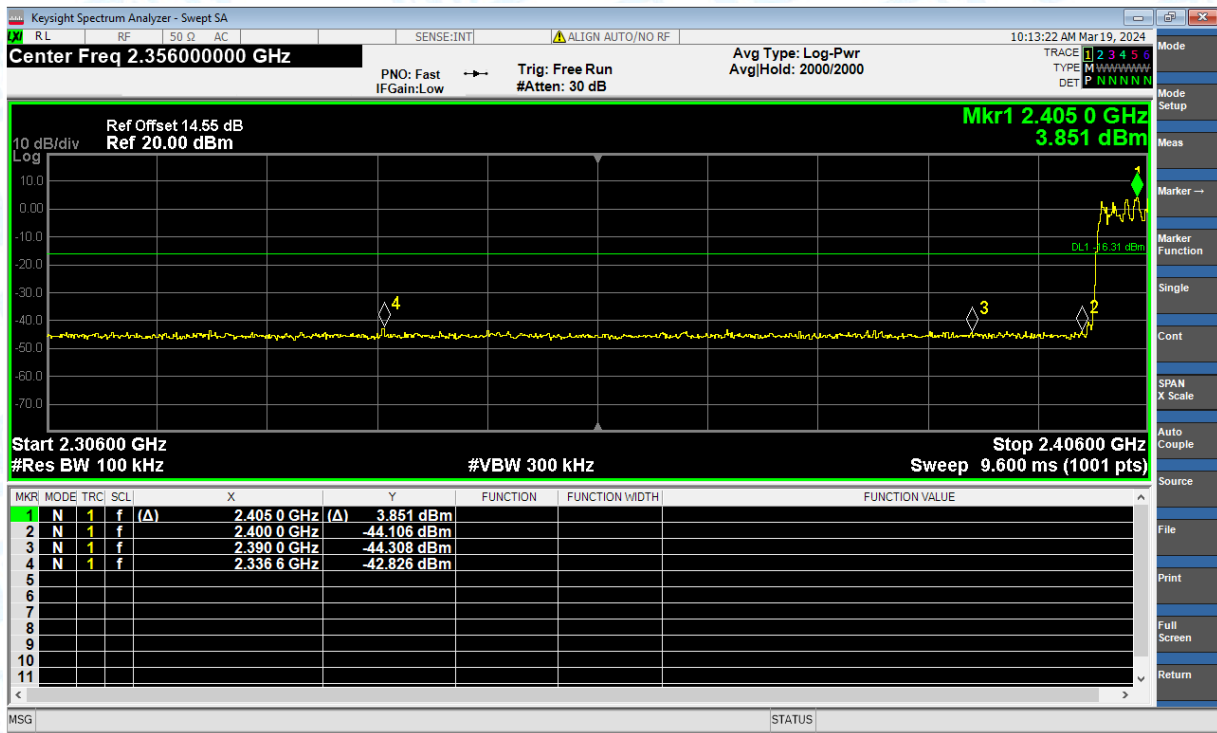
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission



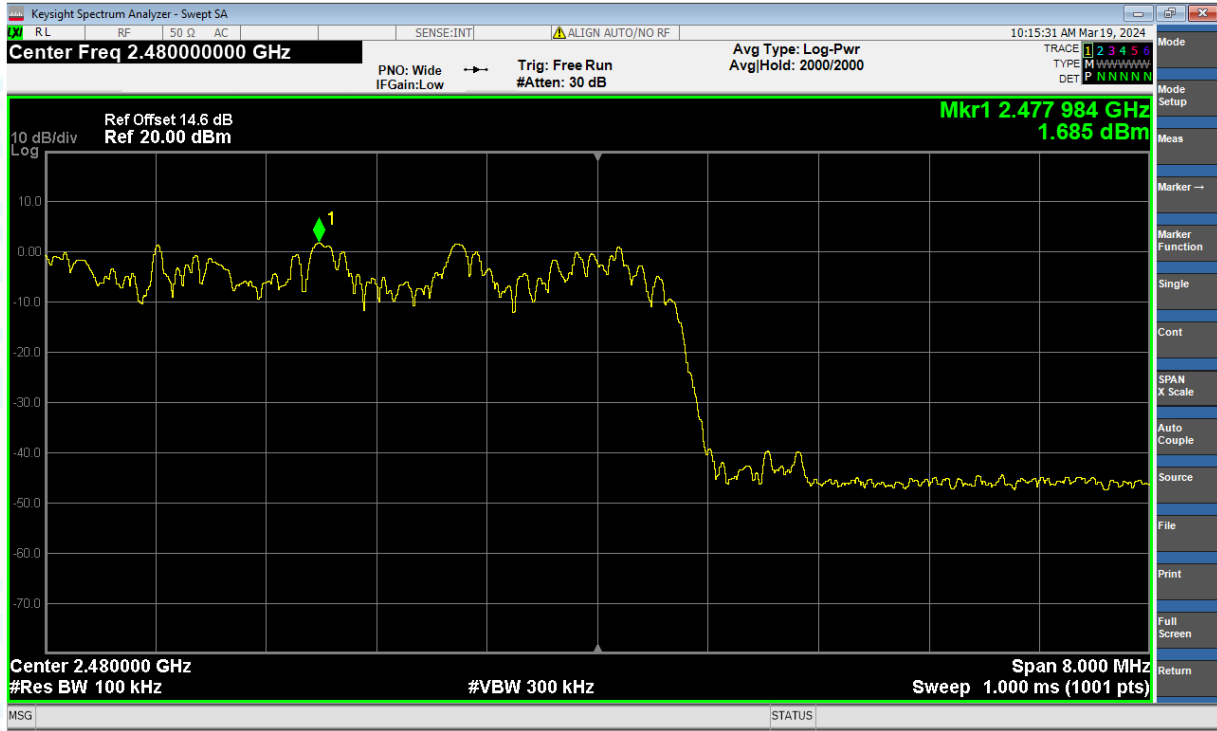
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



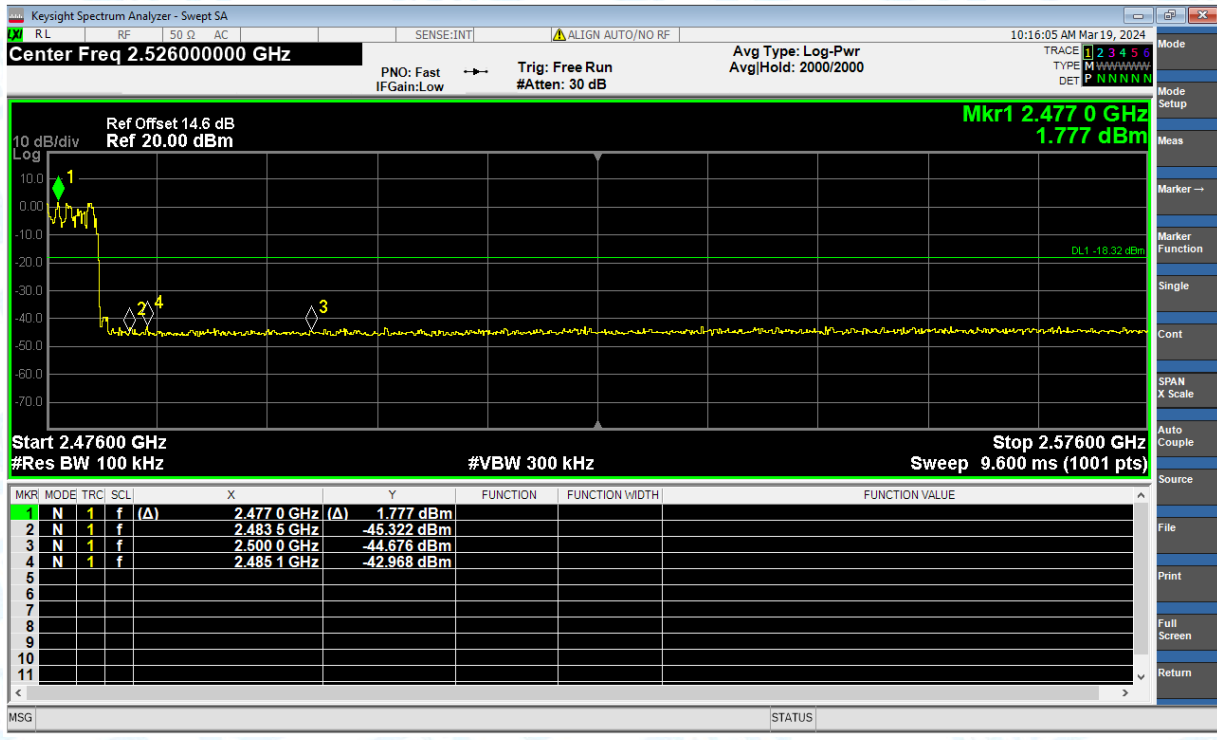
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



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



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

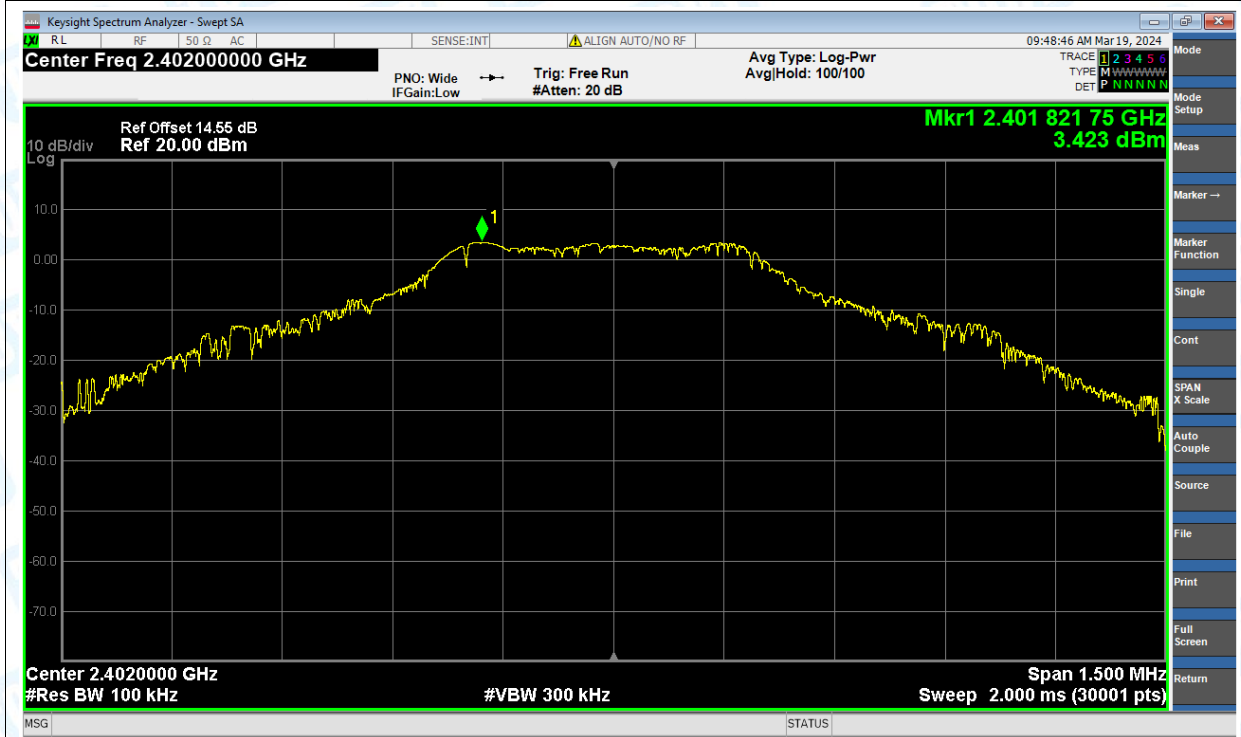


7. Conducted RF Spurious Emission

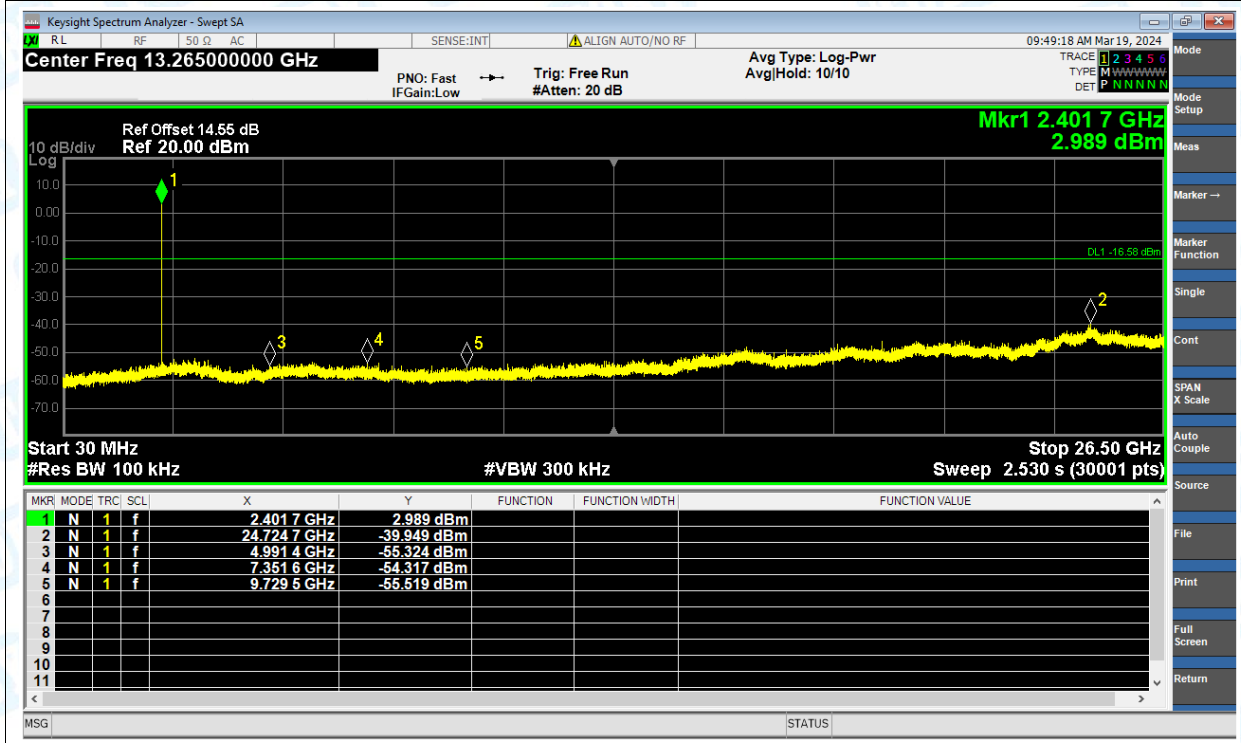
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-43.37	-20	Pass
NVNT	1-DH1	2441	Ant1	-43.78	-20	Pass
NVNT	1-DH1	2480	Ant1	-42.78	-20	Pass
NVNT	2-DH1	2402	Ant1	-43	-20	Pass
NVNT	2-DH1	2441	Ant1	-42.75	-20	Pass
NVNT	2-DH1	2480	Ant1	-41.06	-20	Pass
NVNT	3-DH1	2402	Ant1	-42	-20	Pass
NVNT	3-DH1	2441	Ant1	-43.14	-20	Pass
NVNT	3-DH1	2480	Ant1	-41.28	-20	Pass

Test Graphs

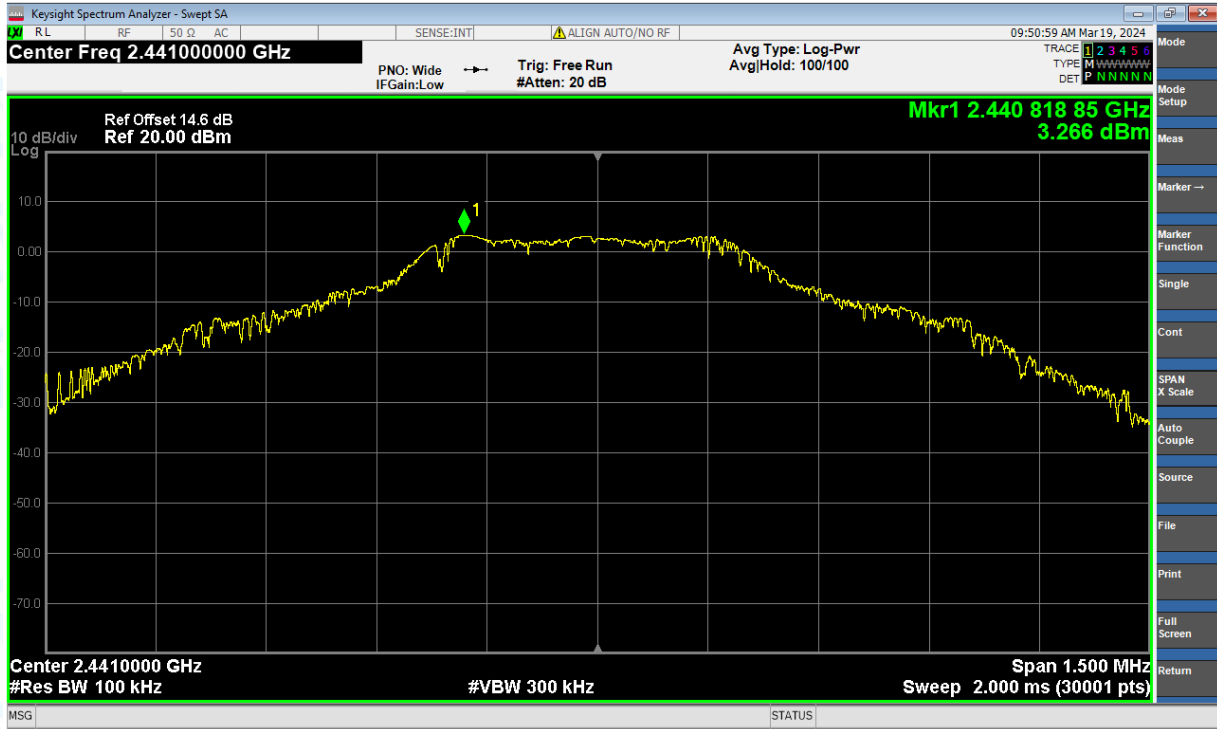
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



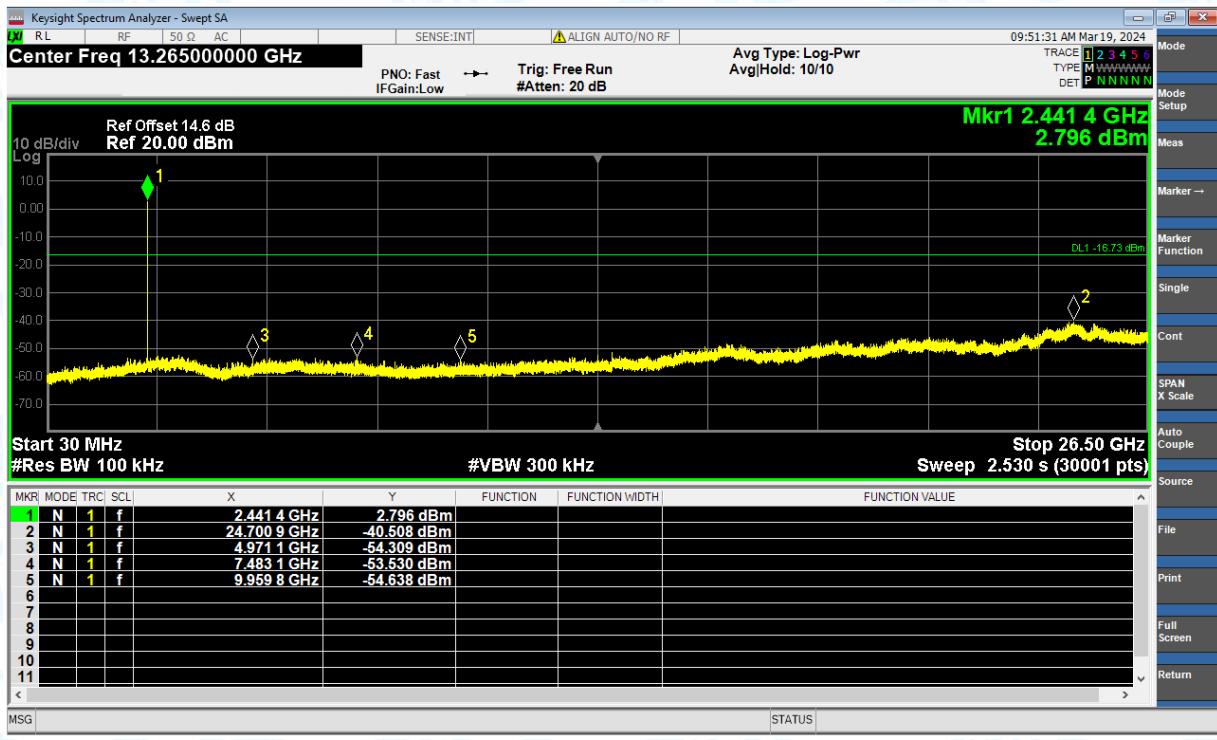
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



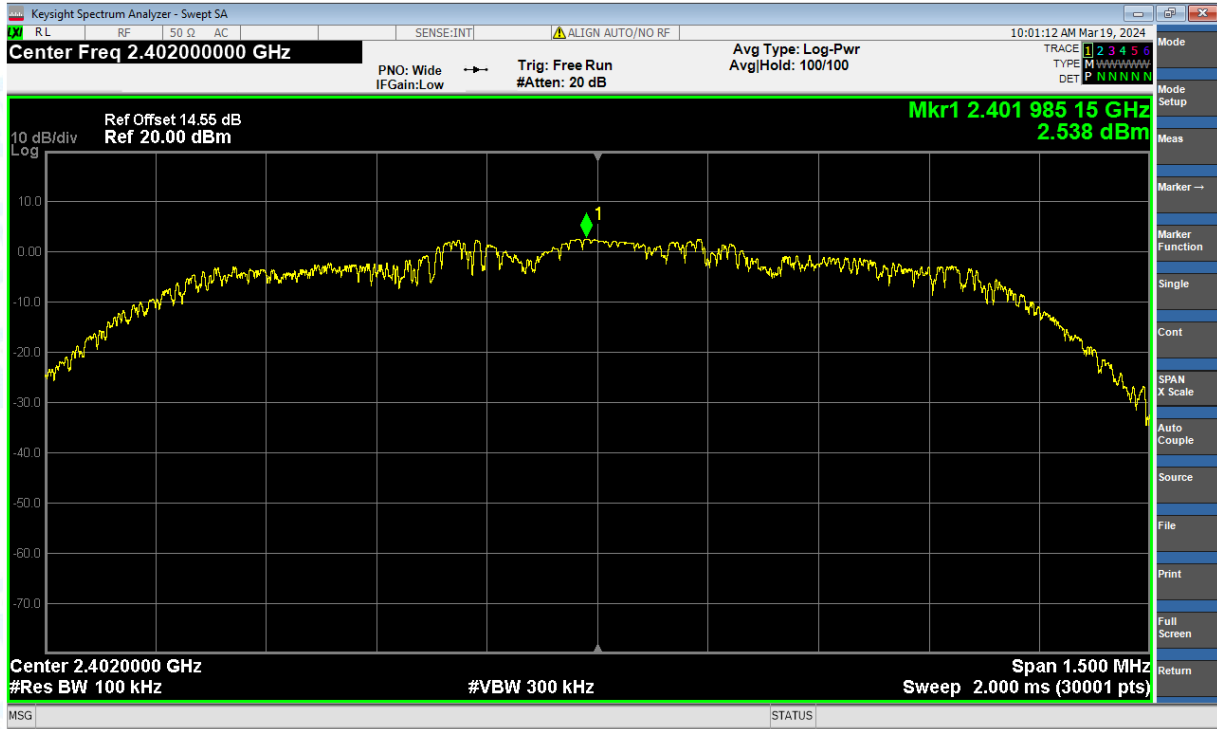
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



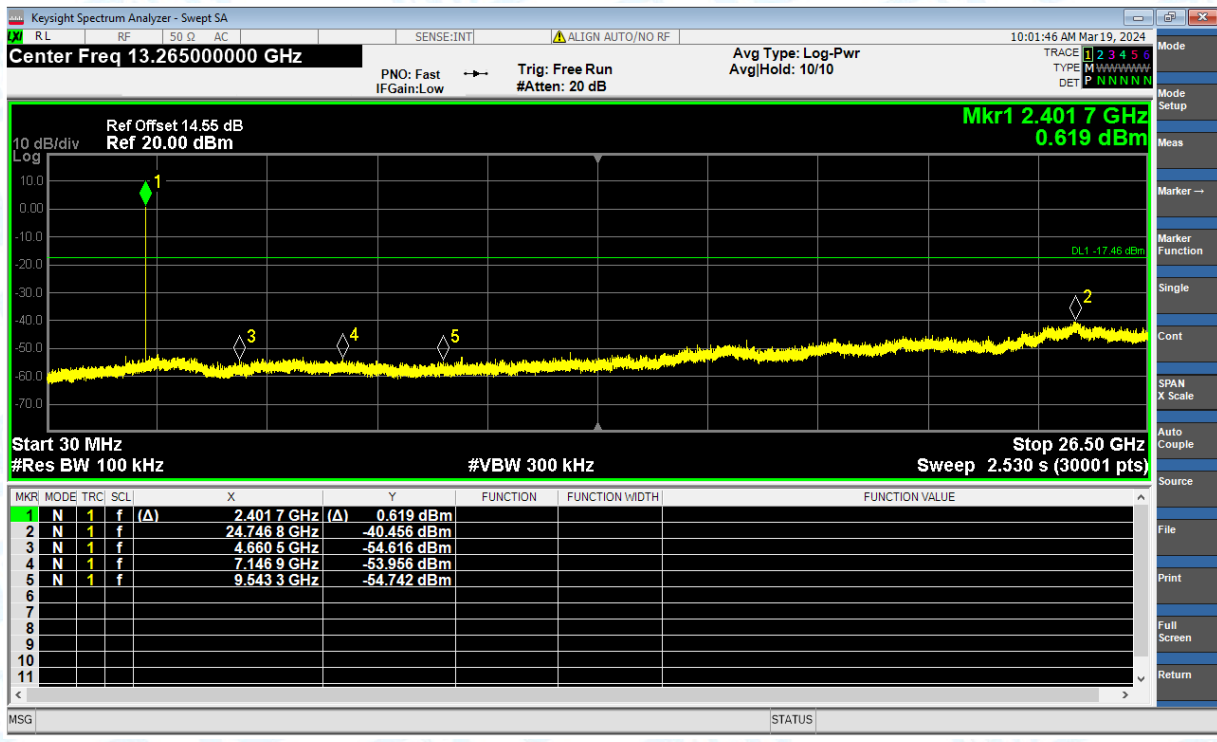
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



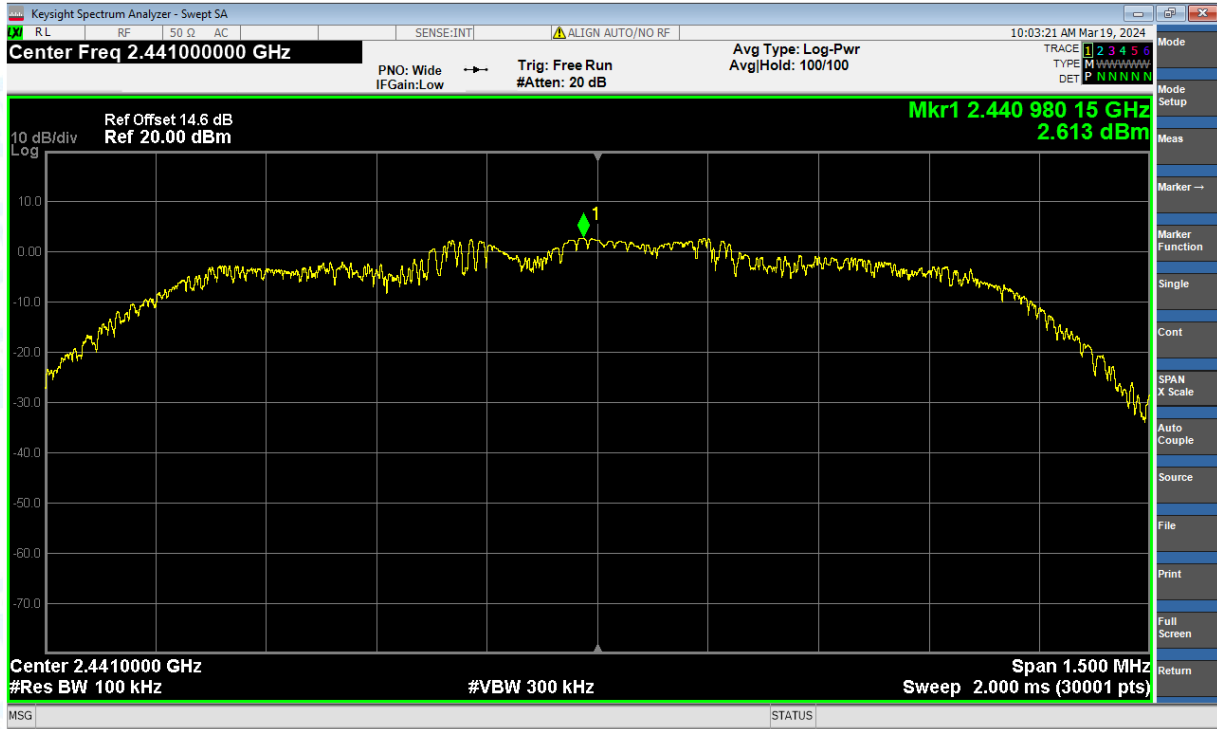
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



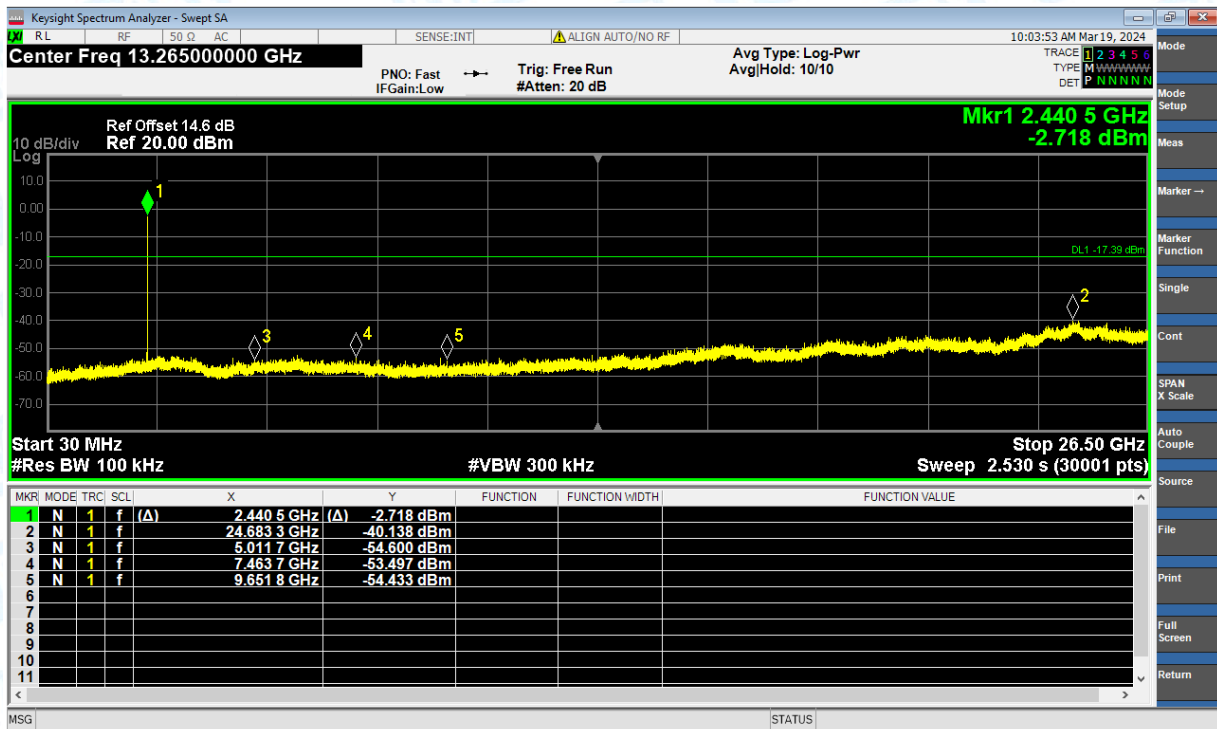
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



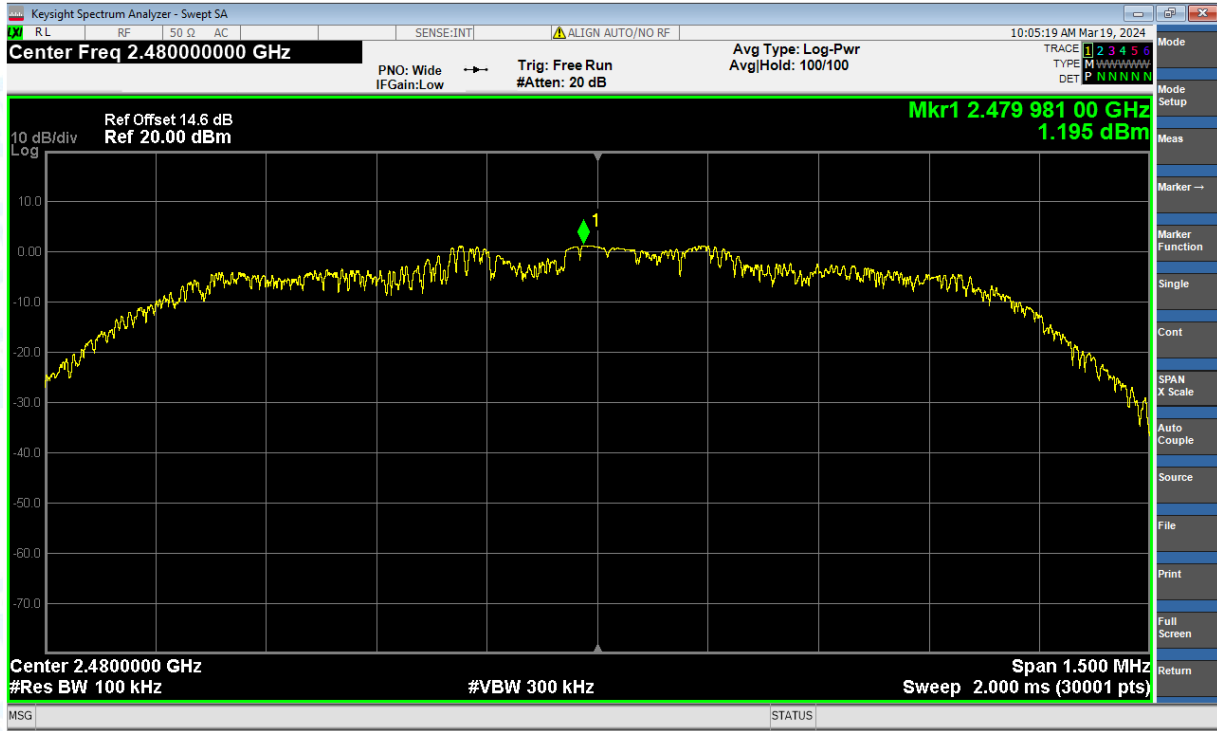
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



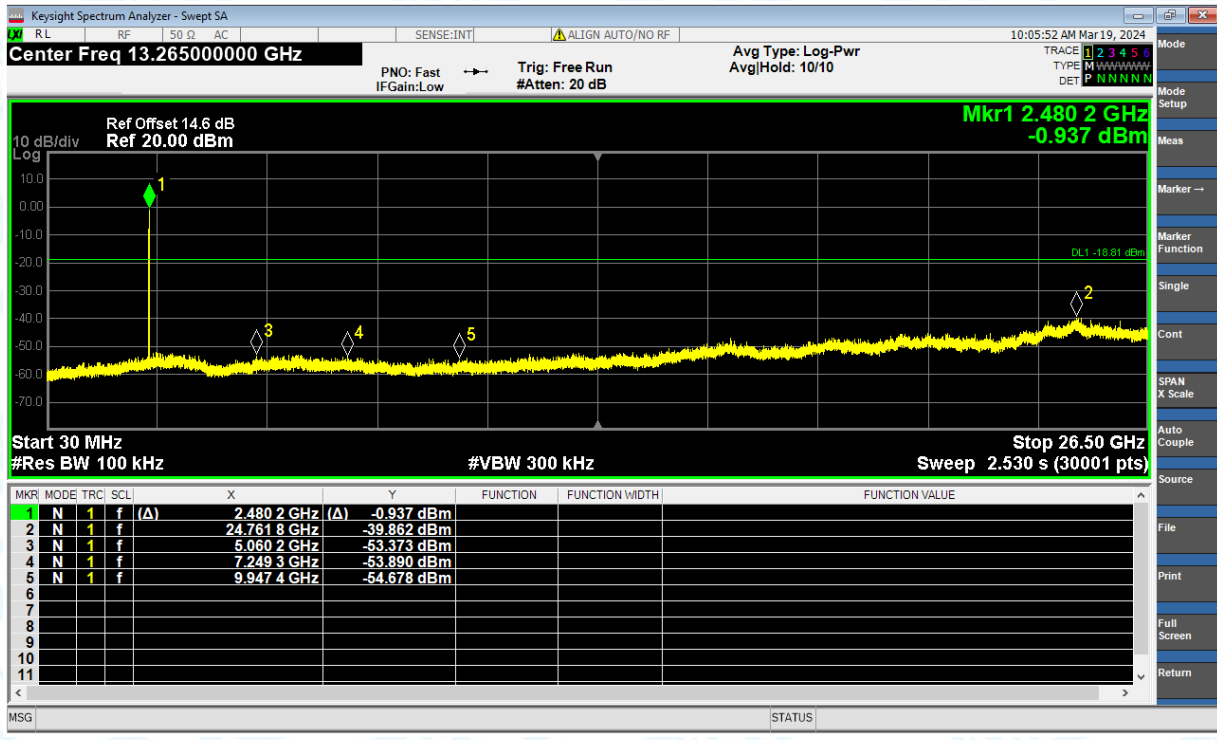
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



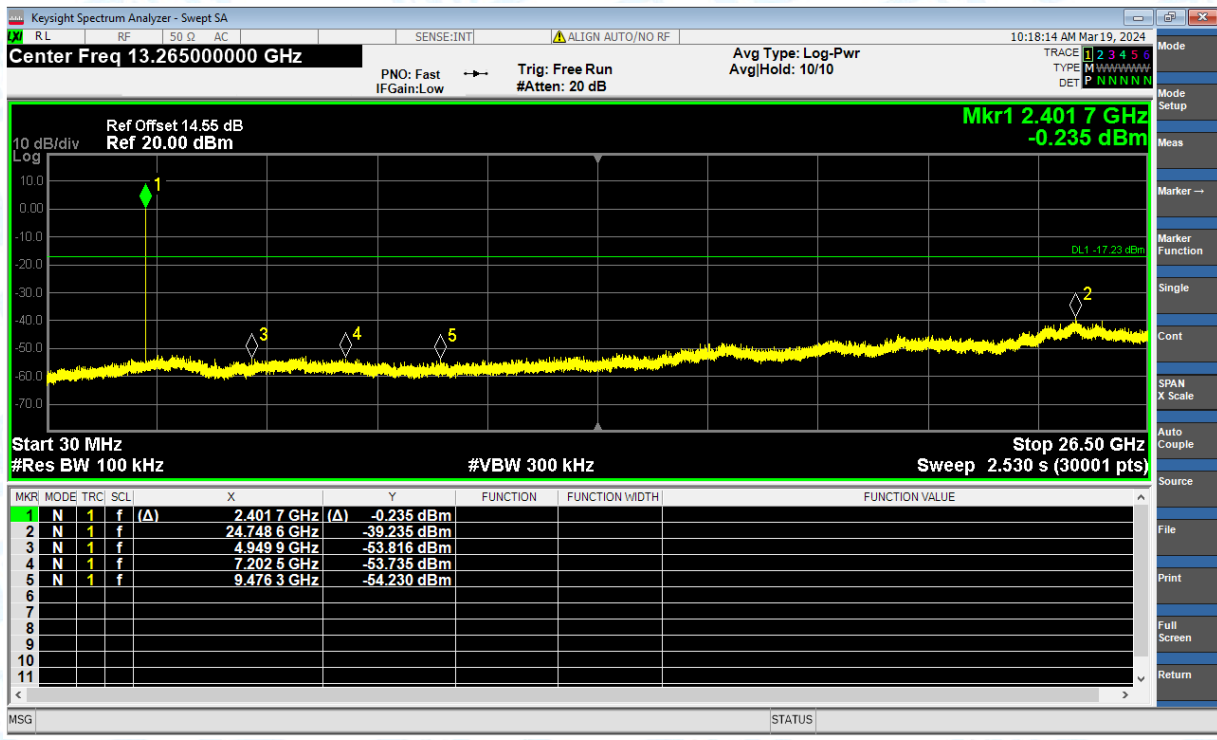
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



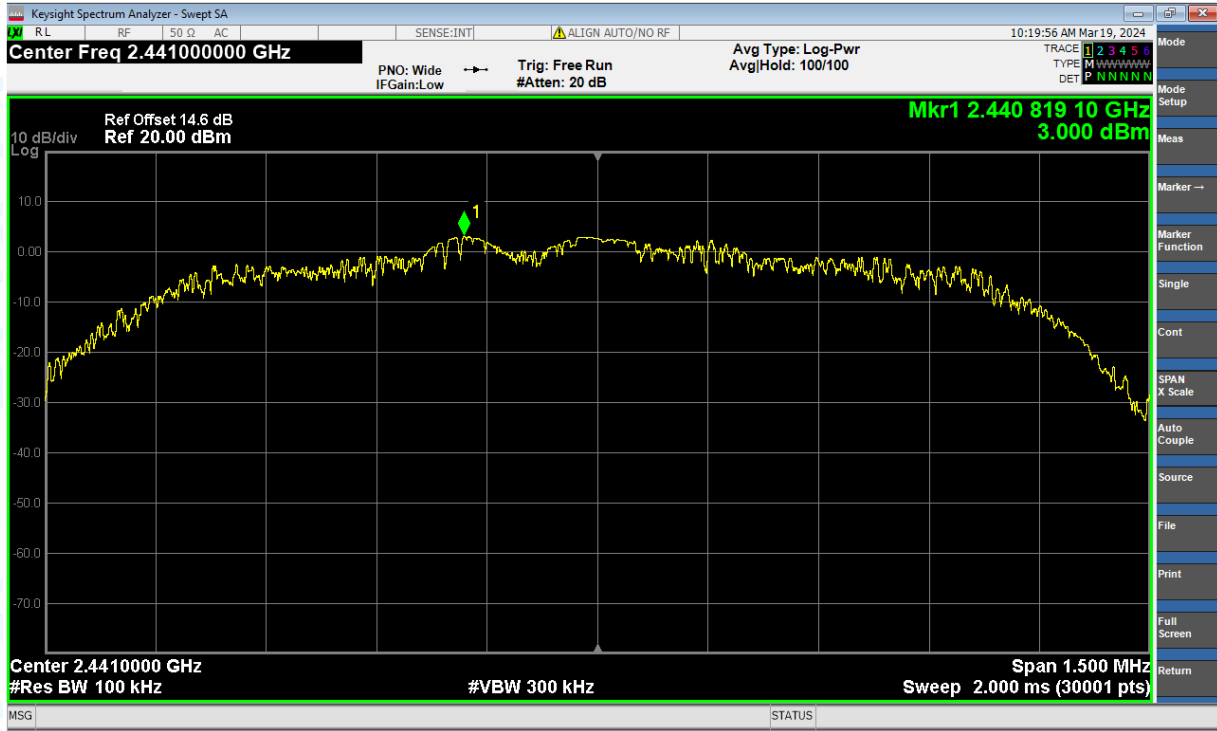
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



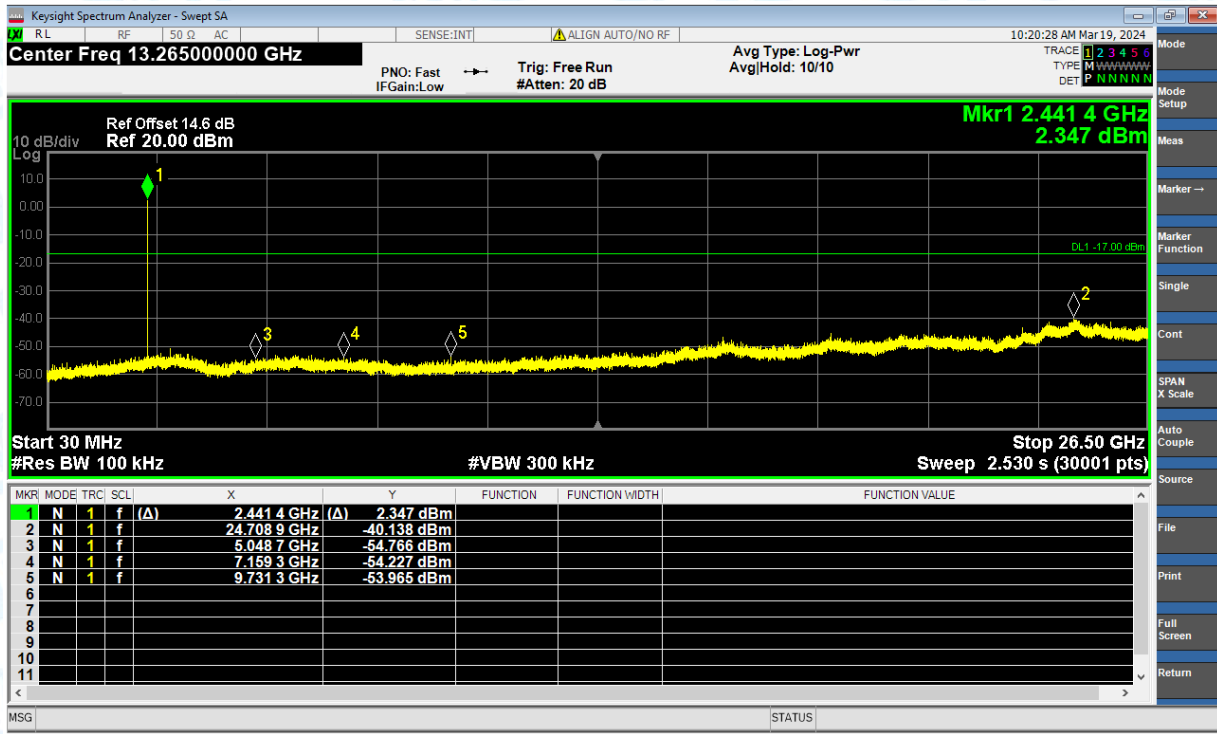
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



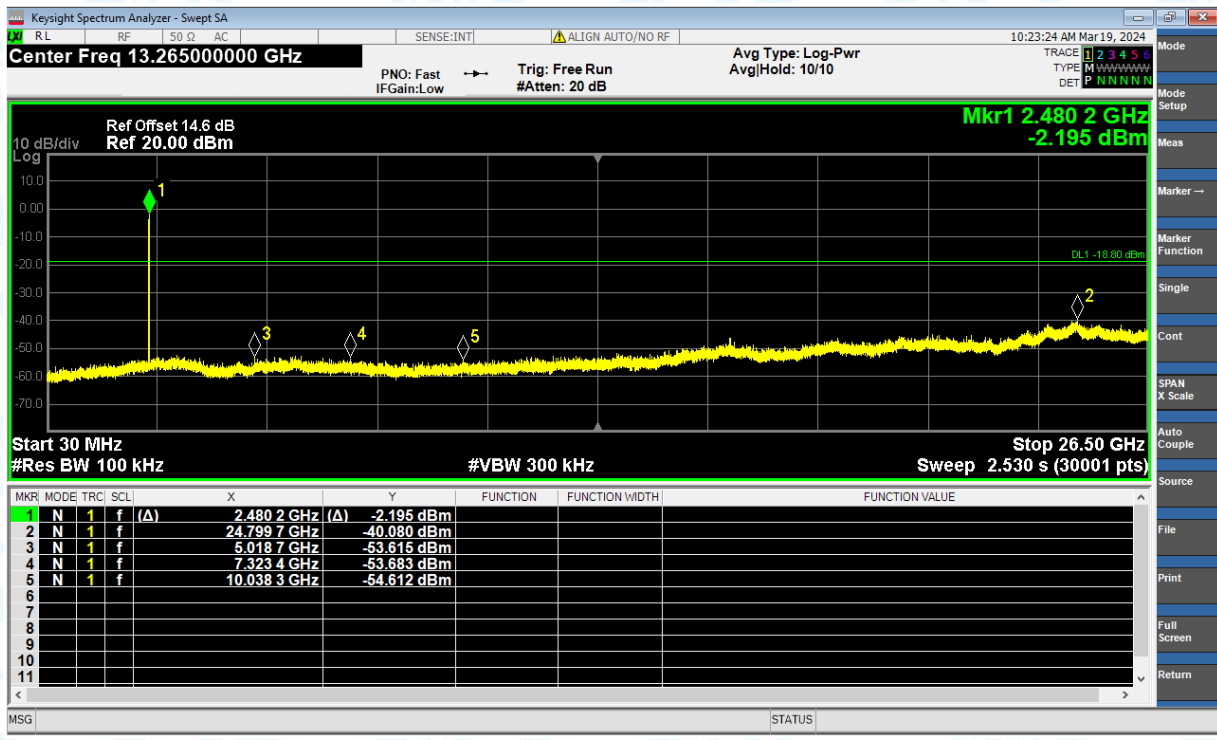
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

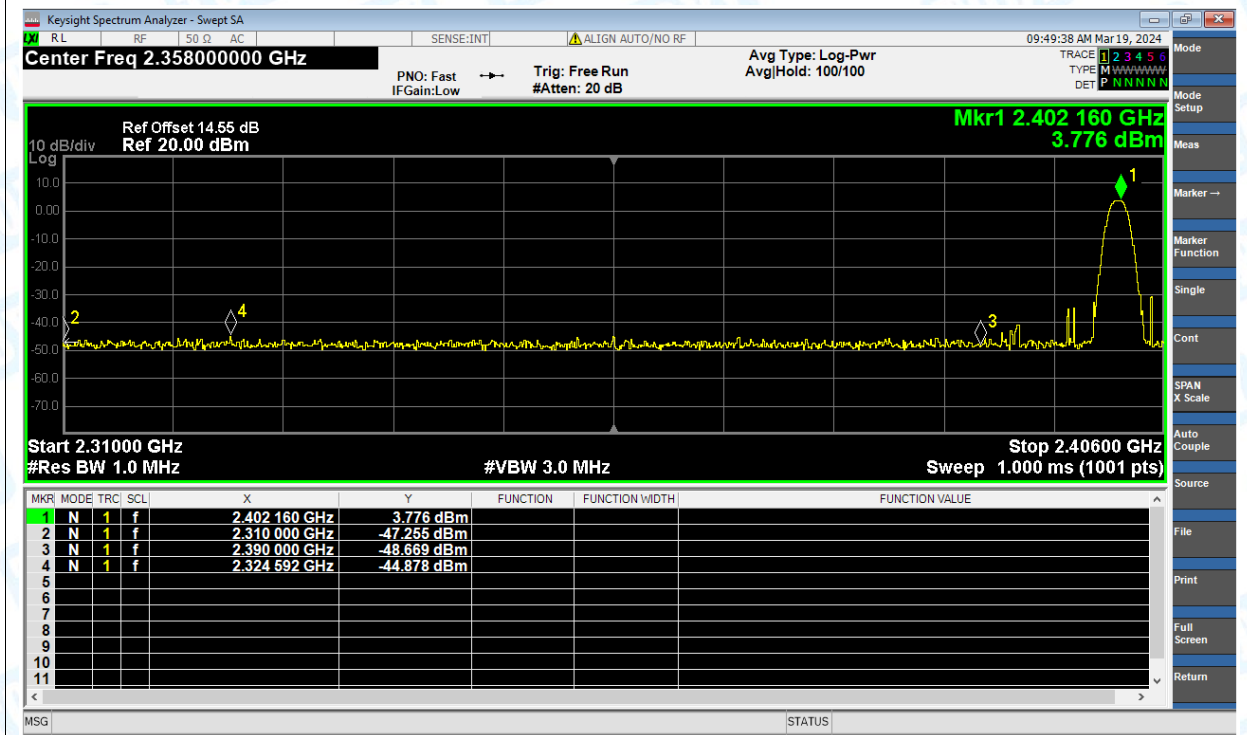


8. Restrict Band

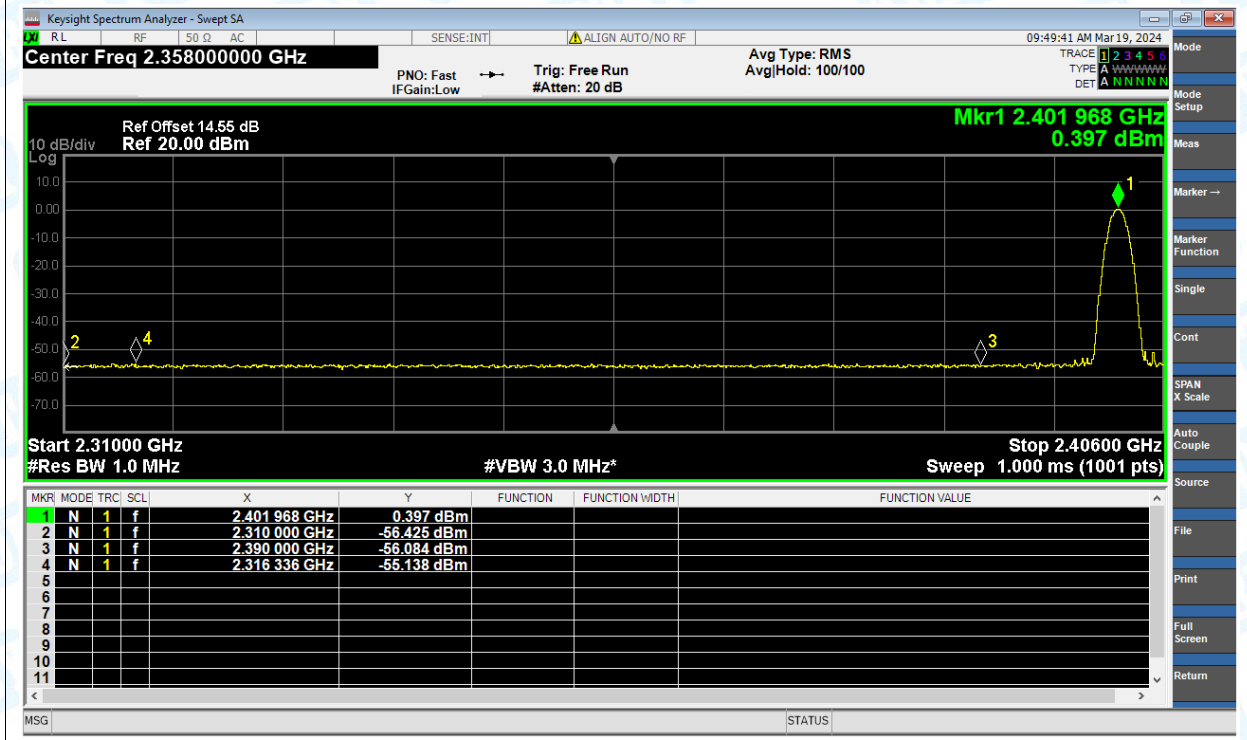
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-47.26	2	-	50	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.43	2	4.95	45.78	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2324.592	-44.88	2	-	52.38	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2316.336	-55.14	2	4.95	47.07	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-48.67	2	-	48.59	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-56.08	2	4.95	46.13	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-46.5	2	-	50.76	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-56.09	2	4.84	46.01	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2484.04	-31.96	2	-	65.3	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2484.16	-52.35	2	4.84	49.75	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-46.04	2	-	51.22	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-55.13	2	4.84	46.97	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-47.92	2	-	49.34	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-55.92	2	4.95	46.29	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2347.536	-44.46	2	-	52.8	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2337.36	-54.98	2	4.95	47.23	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-47.77	2	-	49.49	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-55.61	2	4.95	46.6	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-45.66	2	-	51.6	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-55.25	2	4.95	46.96	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.632	-31.12	2	-	66.14	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2485.816	-52.72	2	4.95	49.49	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-46.35	2	-	50.91	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.48	2	4.95	46.73	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-48.48	2	-	48.78	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-55.56	2	5.06	46.76	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2351.952	-44.68	2	-	52.58	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2387.568	-54.92	2	5.06	47.4	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-47.74	2	-	49.52	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-55.43	2	5.06	46.89	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-47.47	2	-	49.79	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-55.39	2	5.06	46.93	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.92	-32.16	2	-	65.1	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2484.352	-52.41	2	5.06	49.91	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-48.52	2	-	48.74	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.97	2	5.06	46.35	Average	54	Pass

Test Graphs

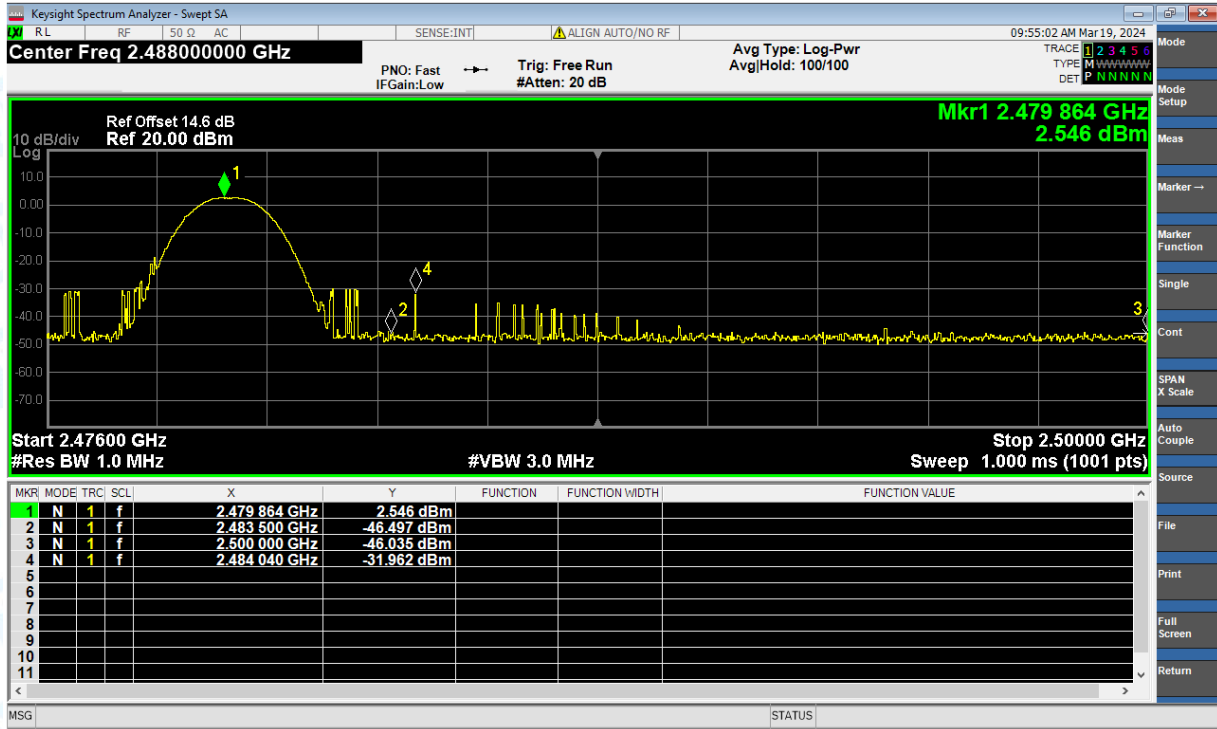
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



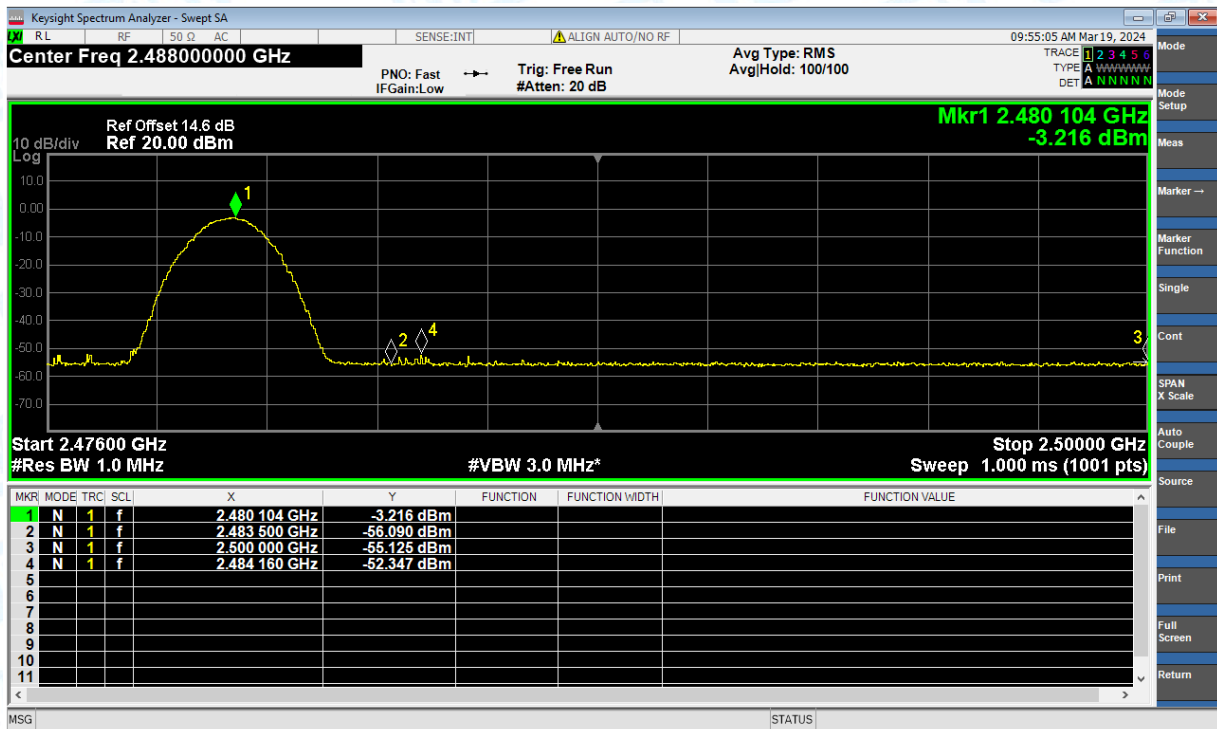
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



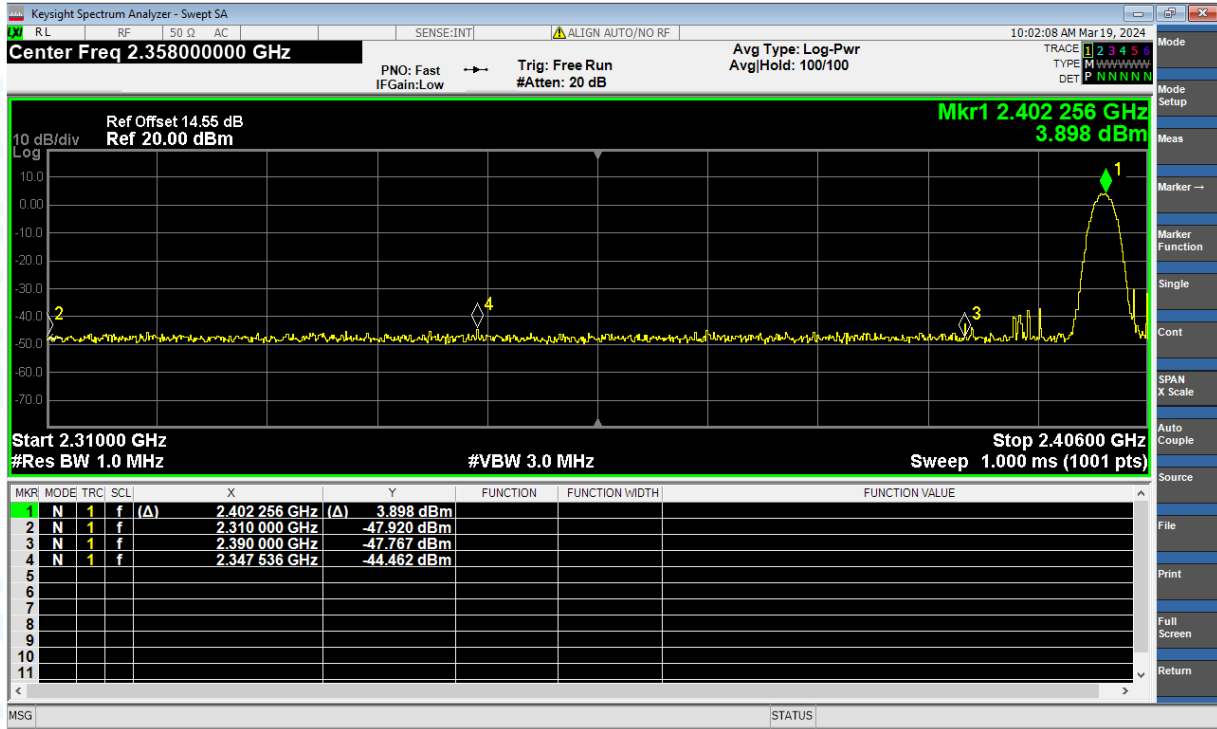
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



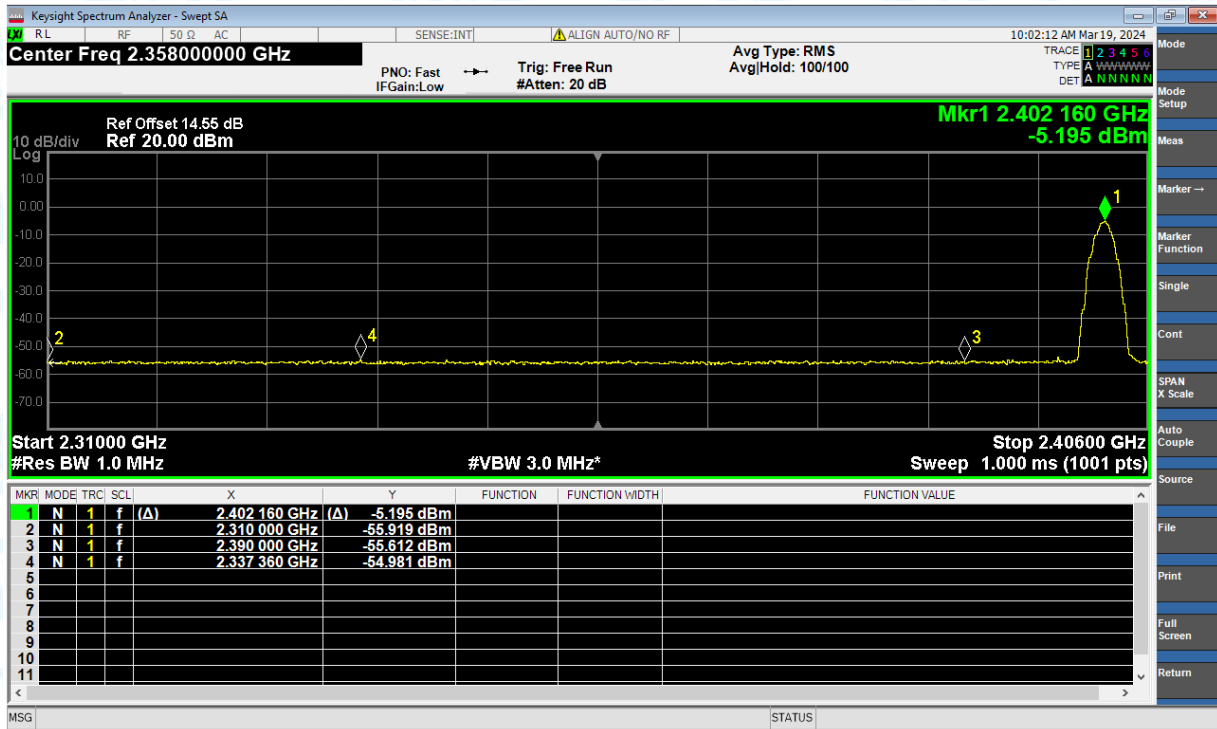
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



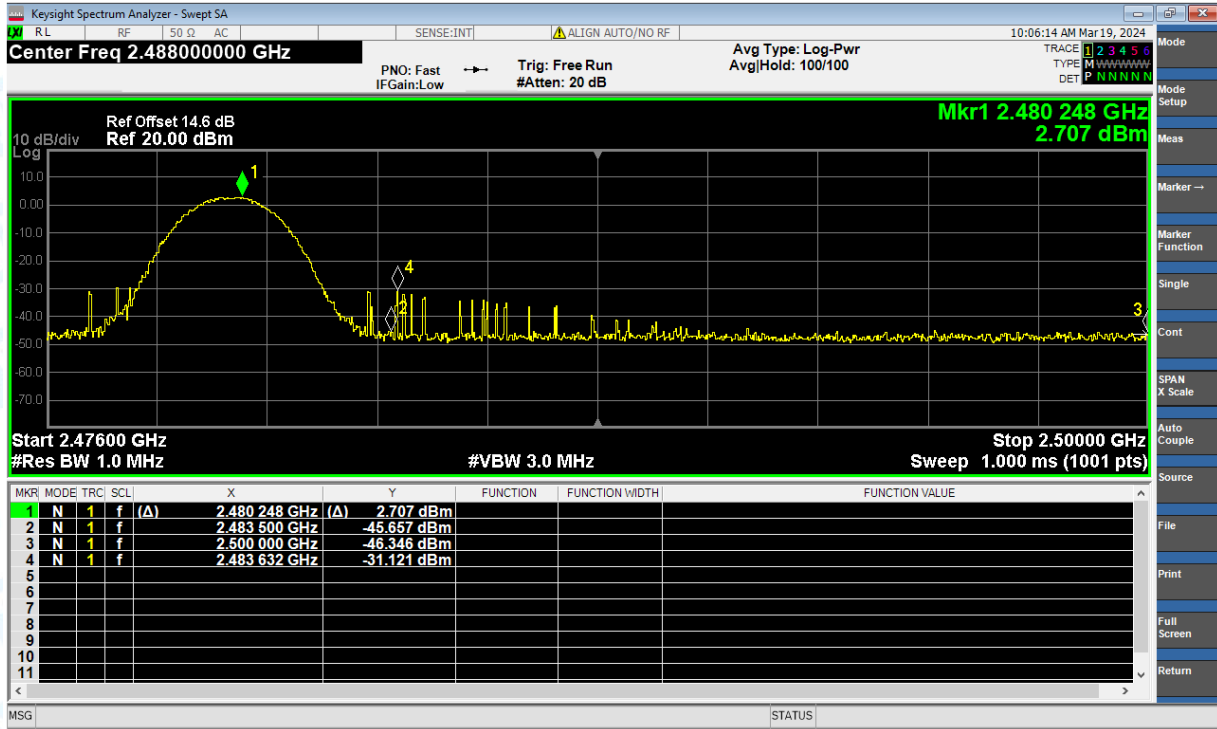
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



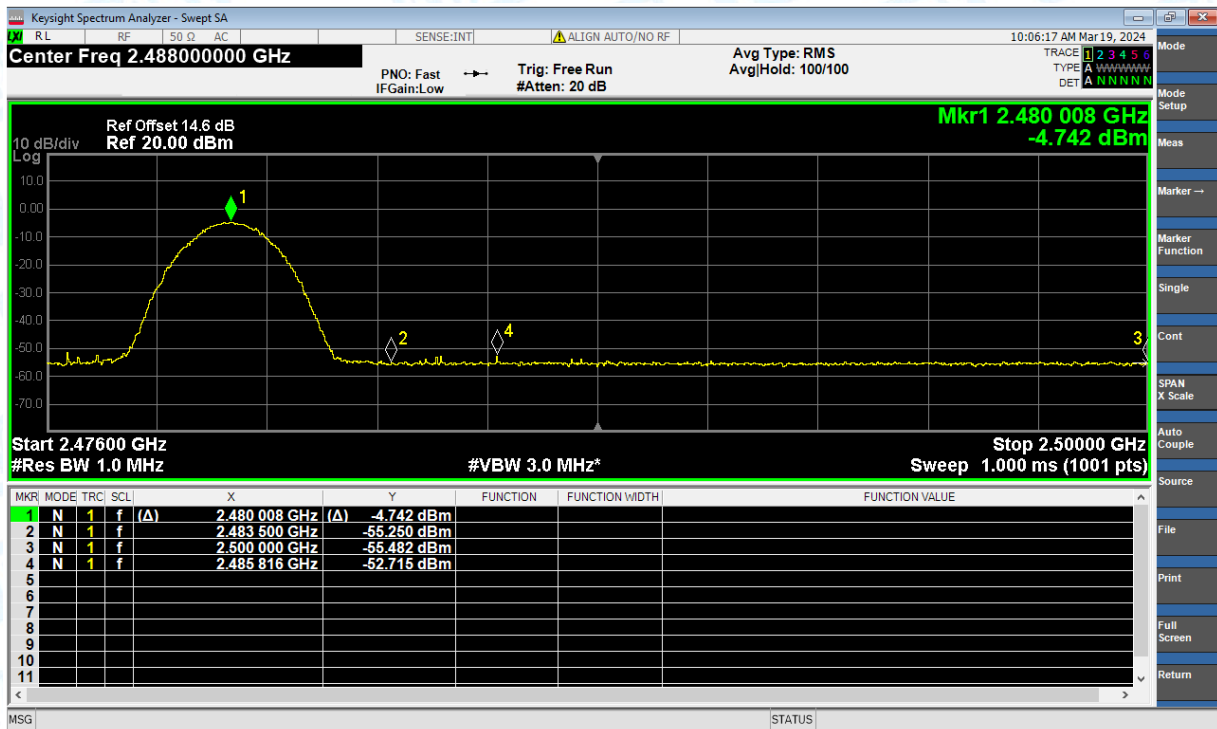
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



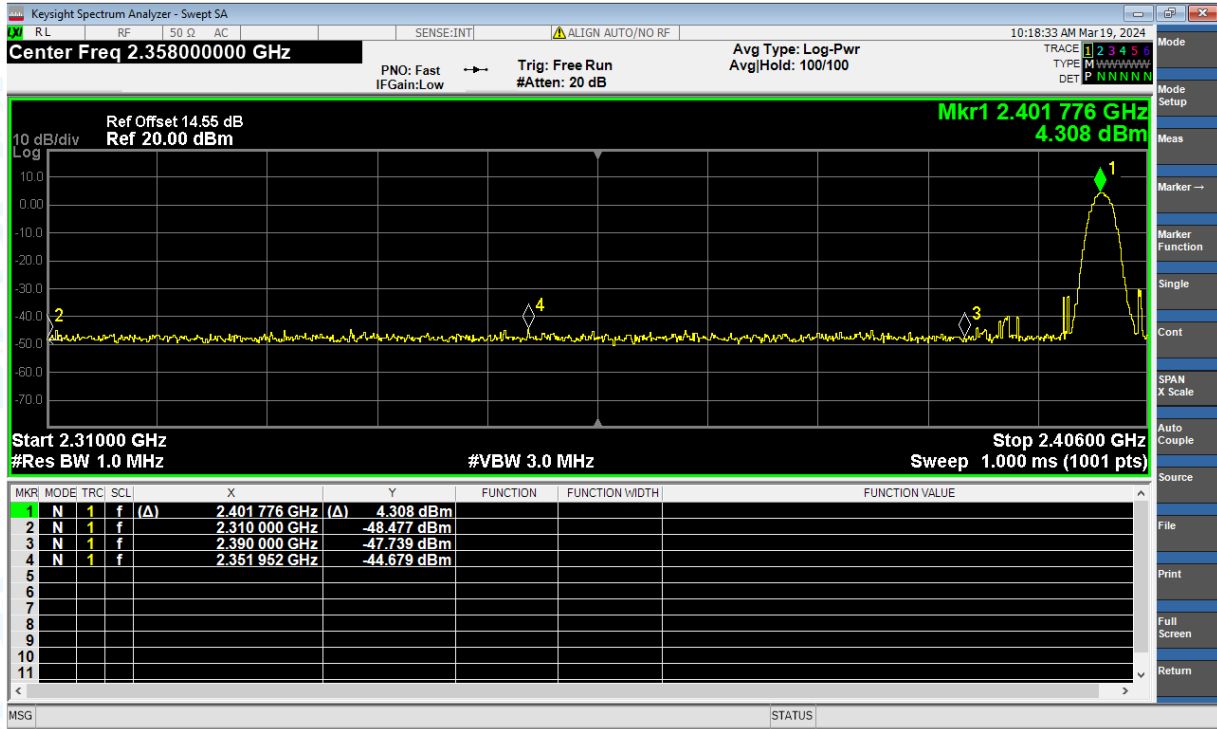
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



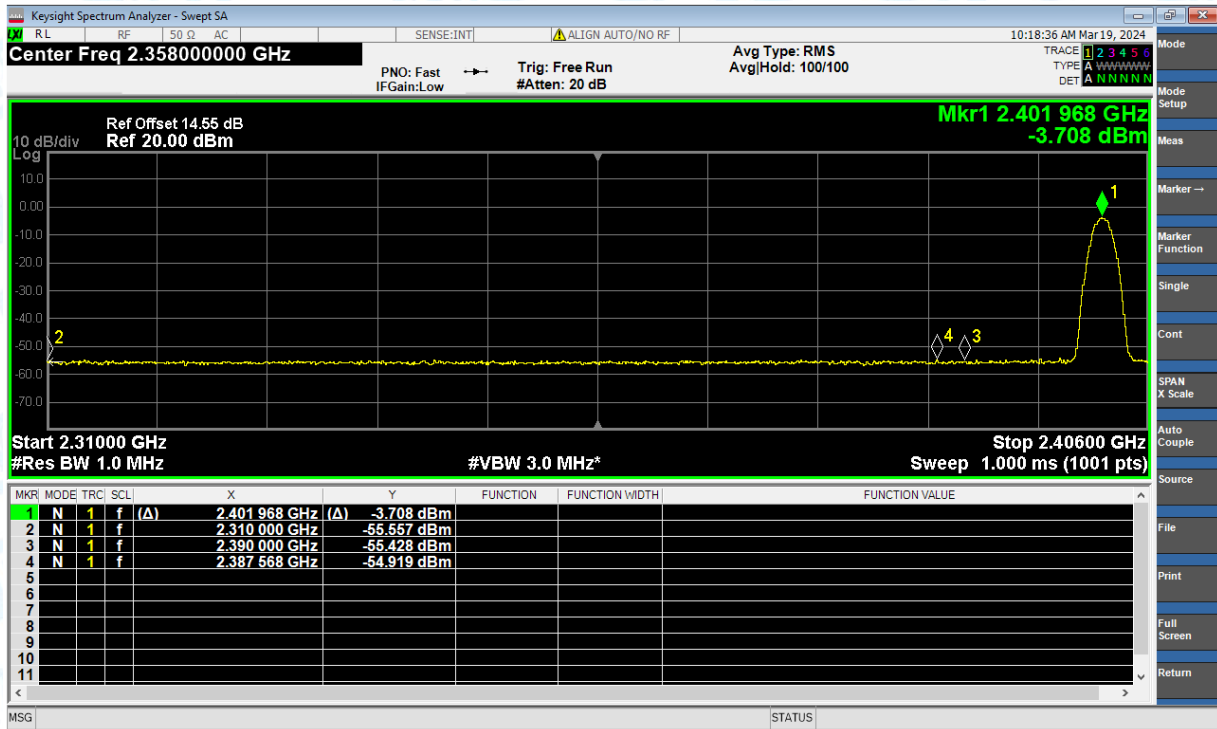
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



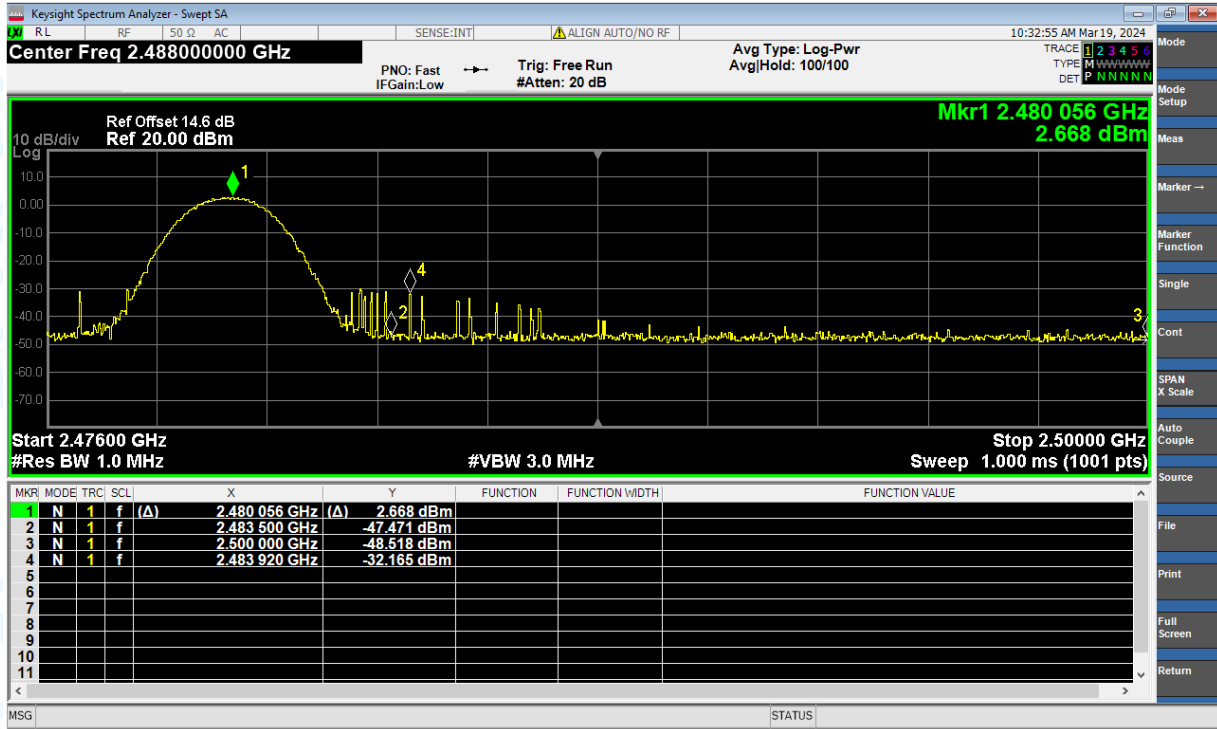
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



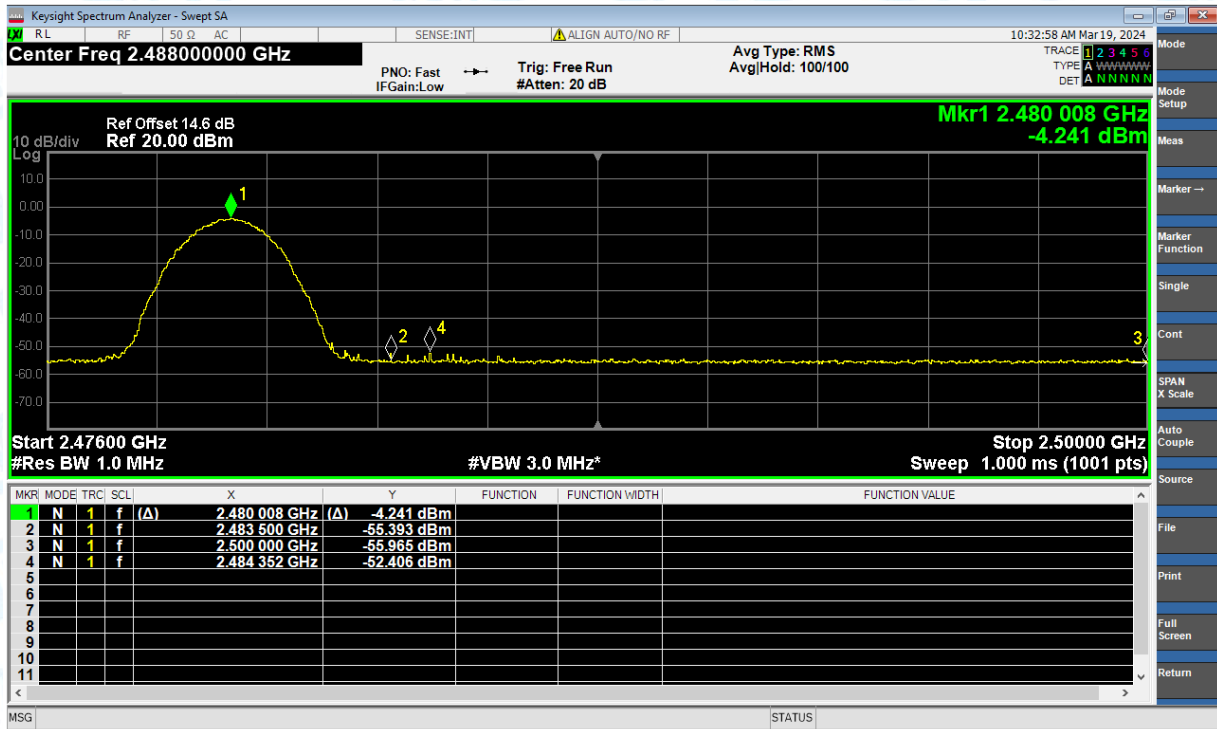
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

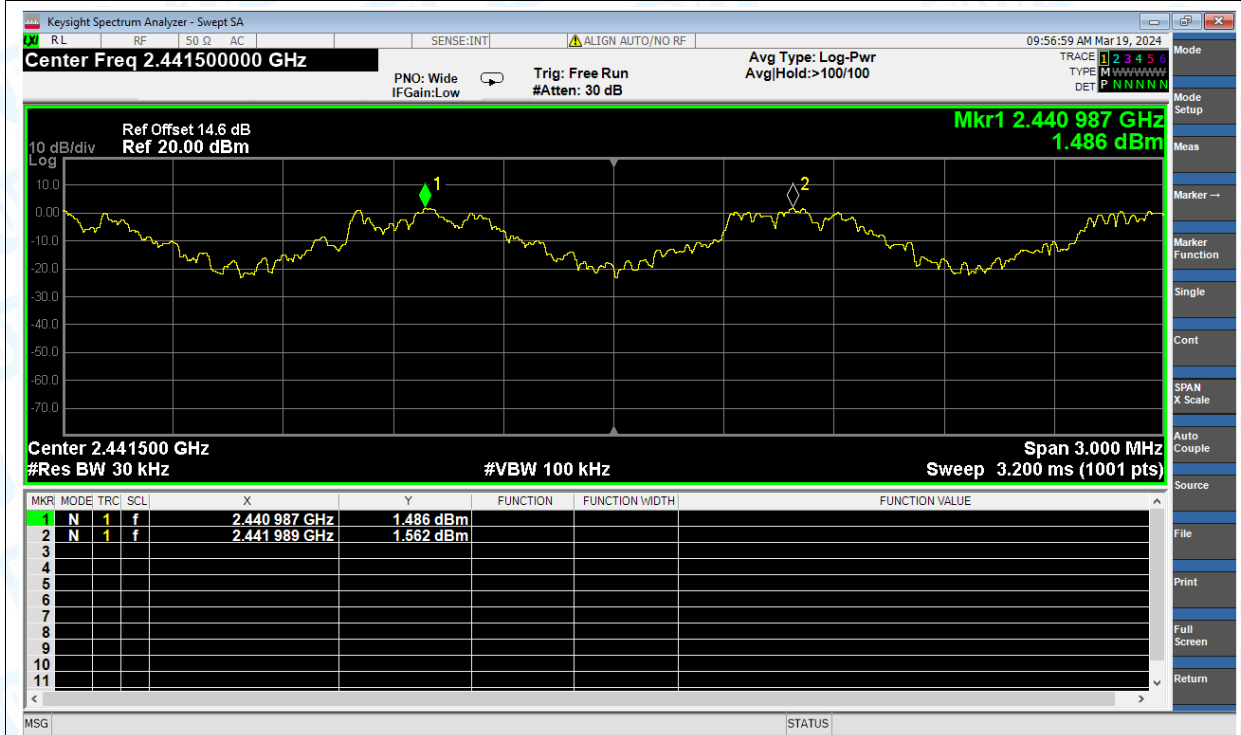


9. Carrier Frequencies Separation

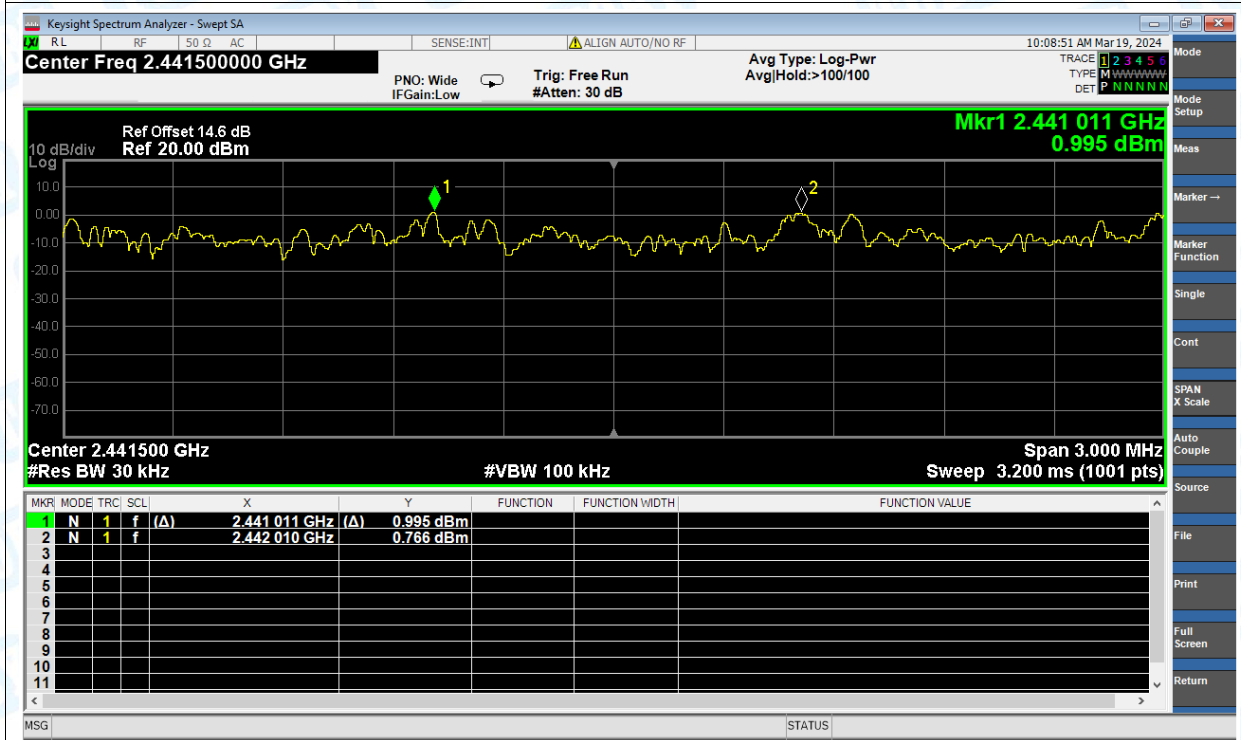
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.987	2441.989	1.002	0.62	Pass
NVNT	2-DH1	Ant1	2441.011	2442.01	0.999	0.84	Pass
NVNT	3-DH1	Ant1	2441.014	2441.818	0.804	0.025	Pass

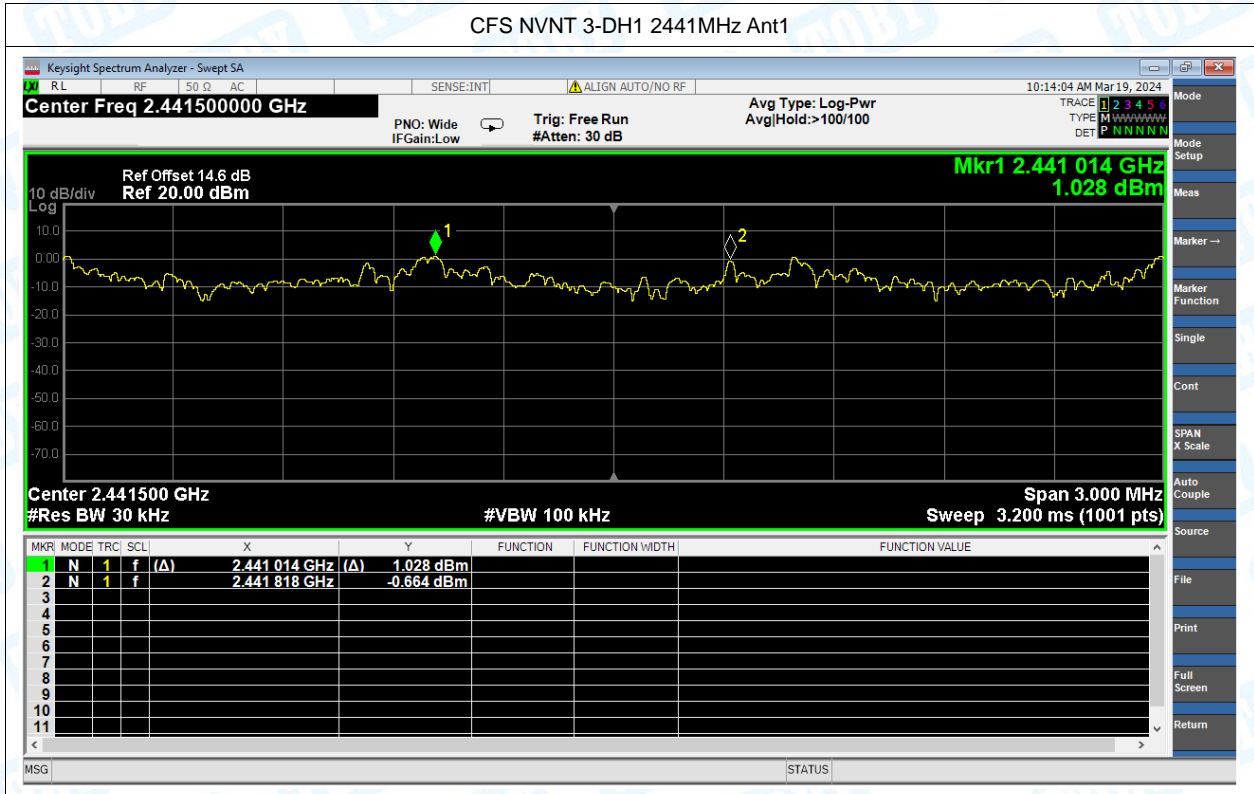
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



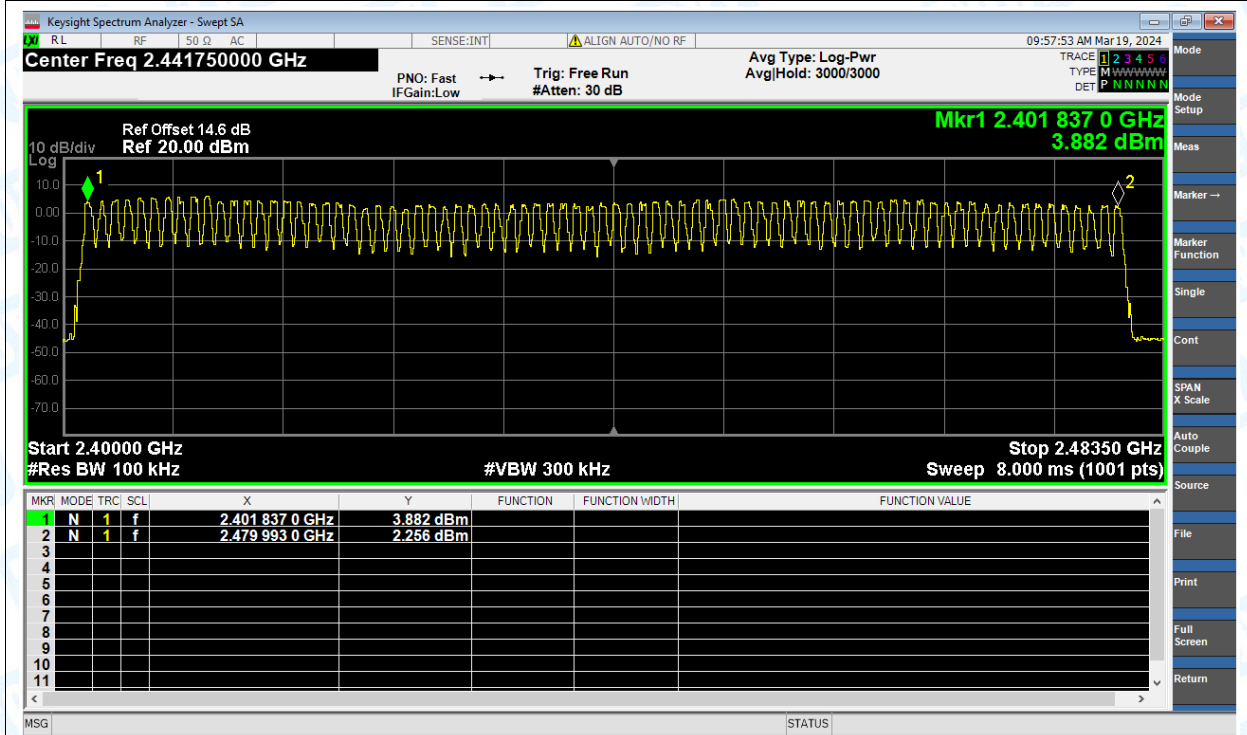


10. Number of Hopping Channel

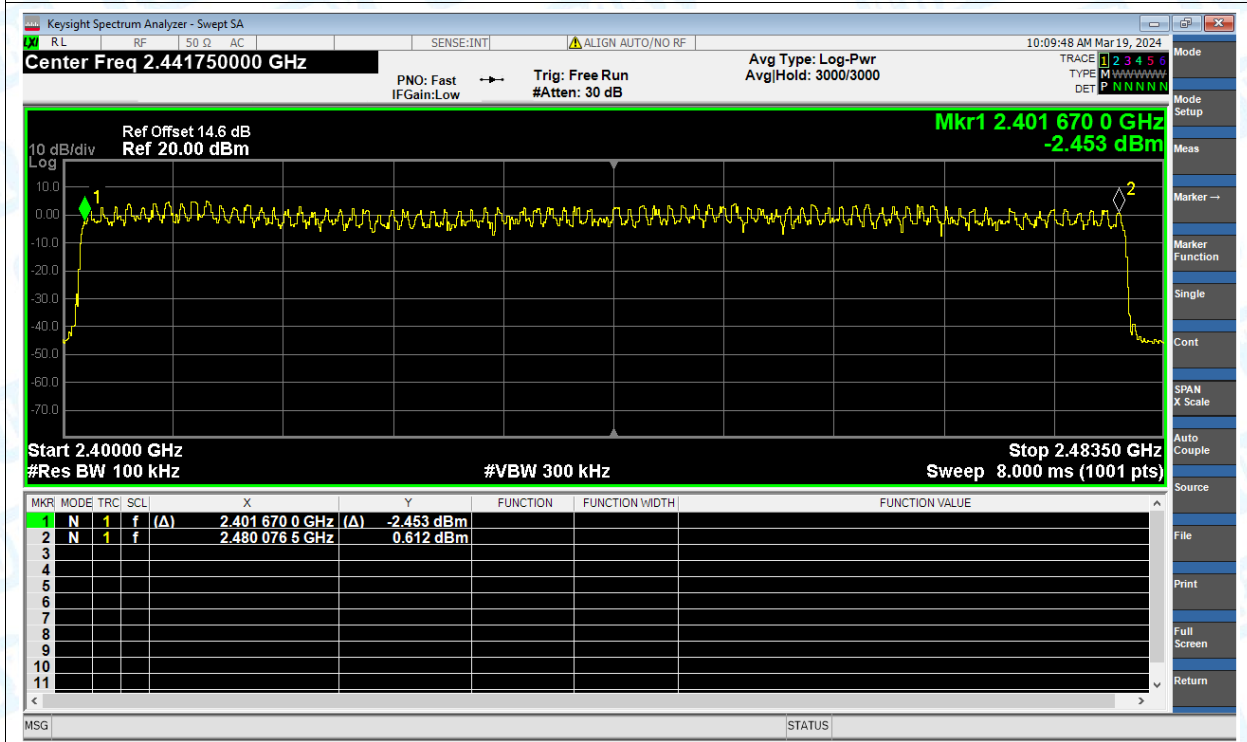
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

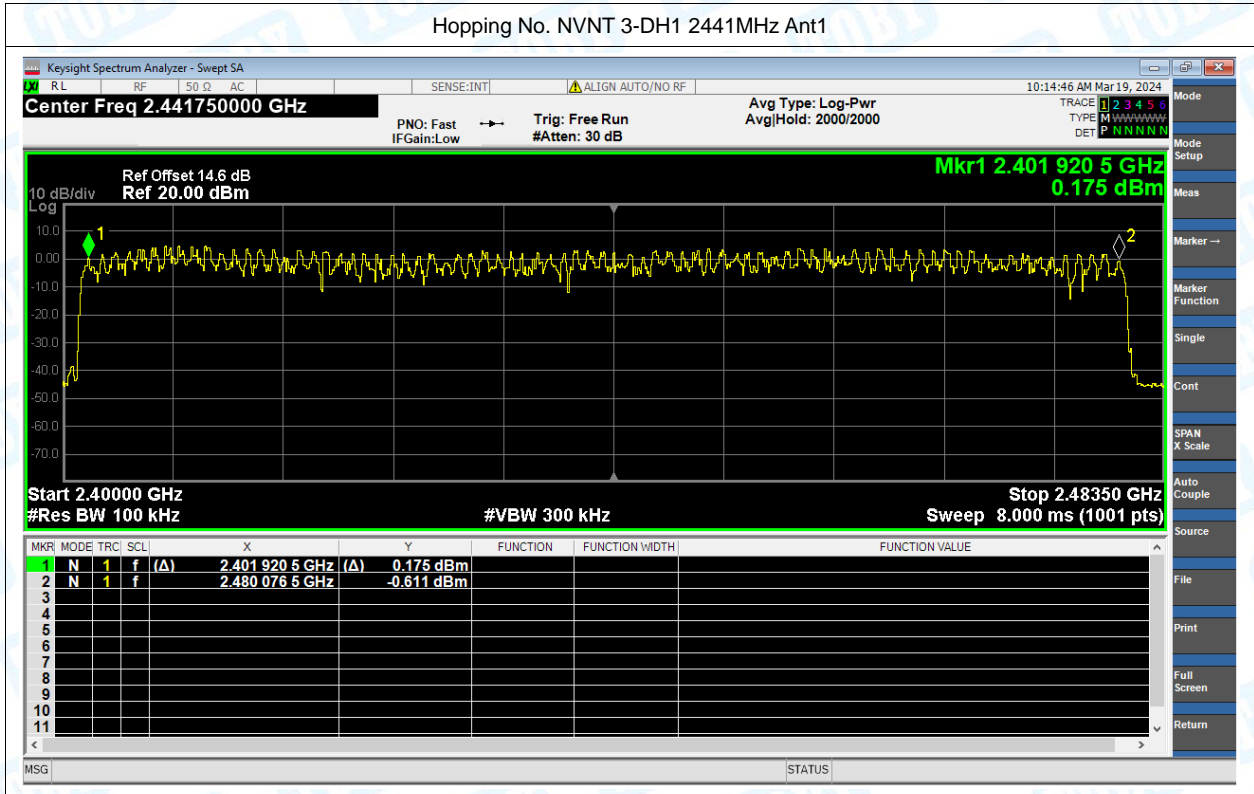
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



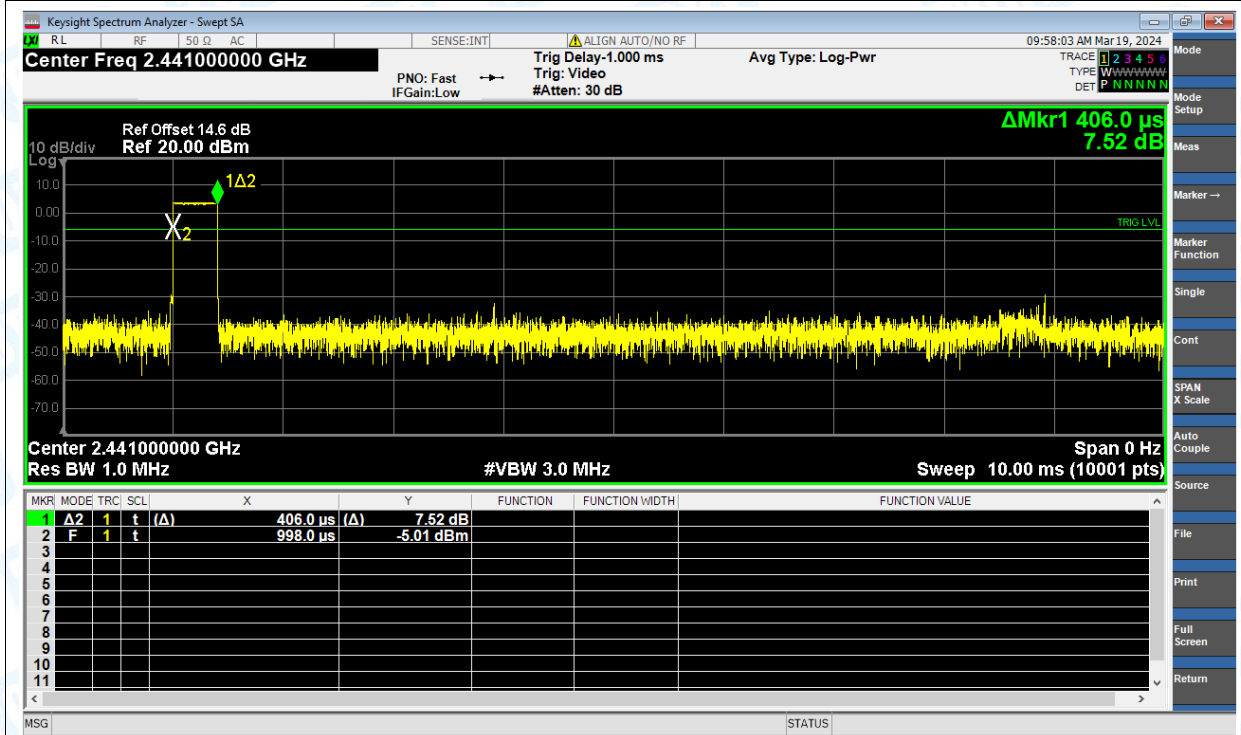


11. Dwell Time

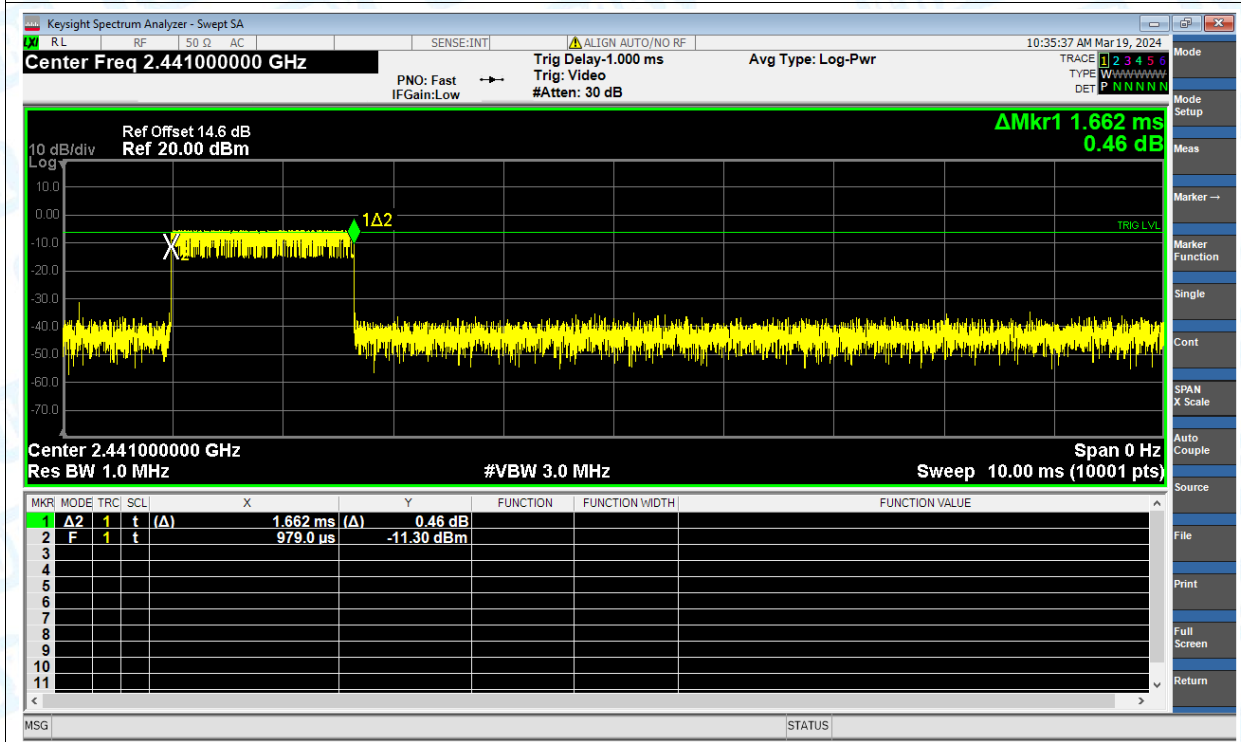
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.406	129.92	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.662	265.92	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.909	310.293	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.398	127.36	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.65	264	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.898	309.12	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.396	126.72	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.646	263.36	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.897	309.013	31600	400	Pass

Test Graphs

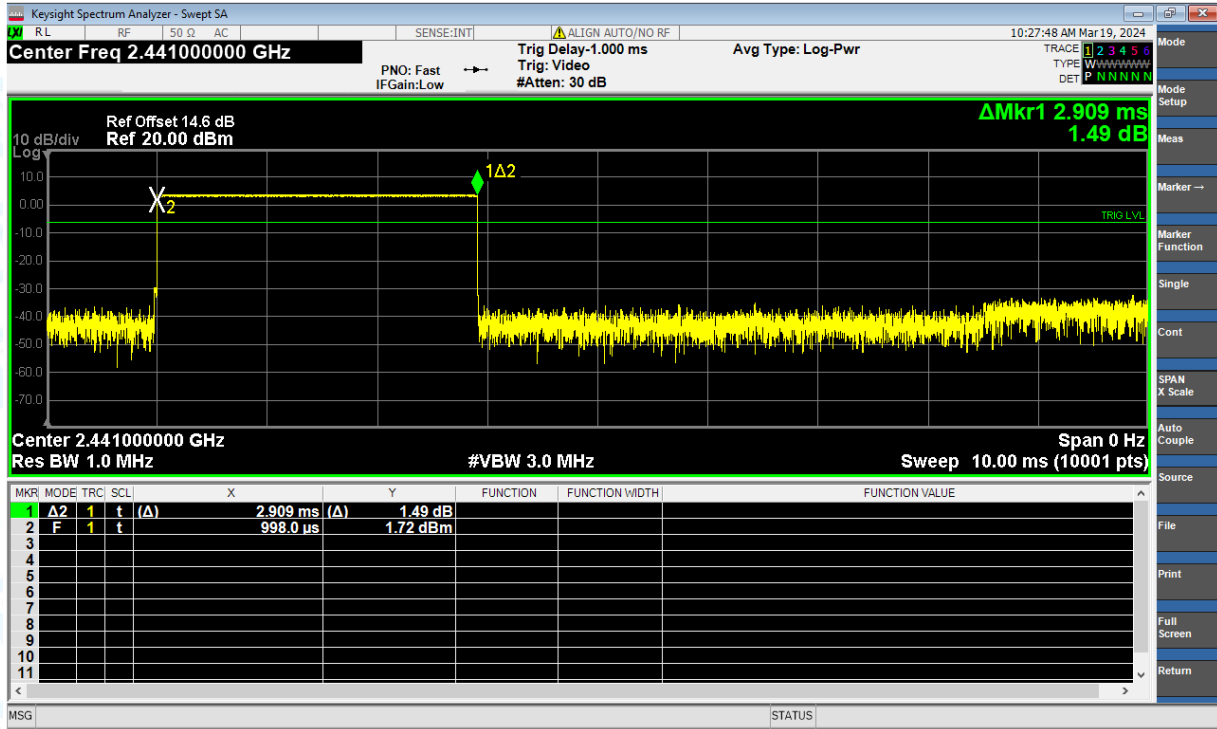
Dwell NVNT 1-DH1 2441MHz Ant1



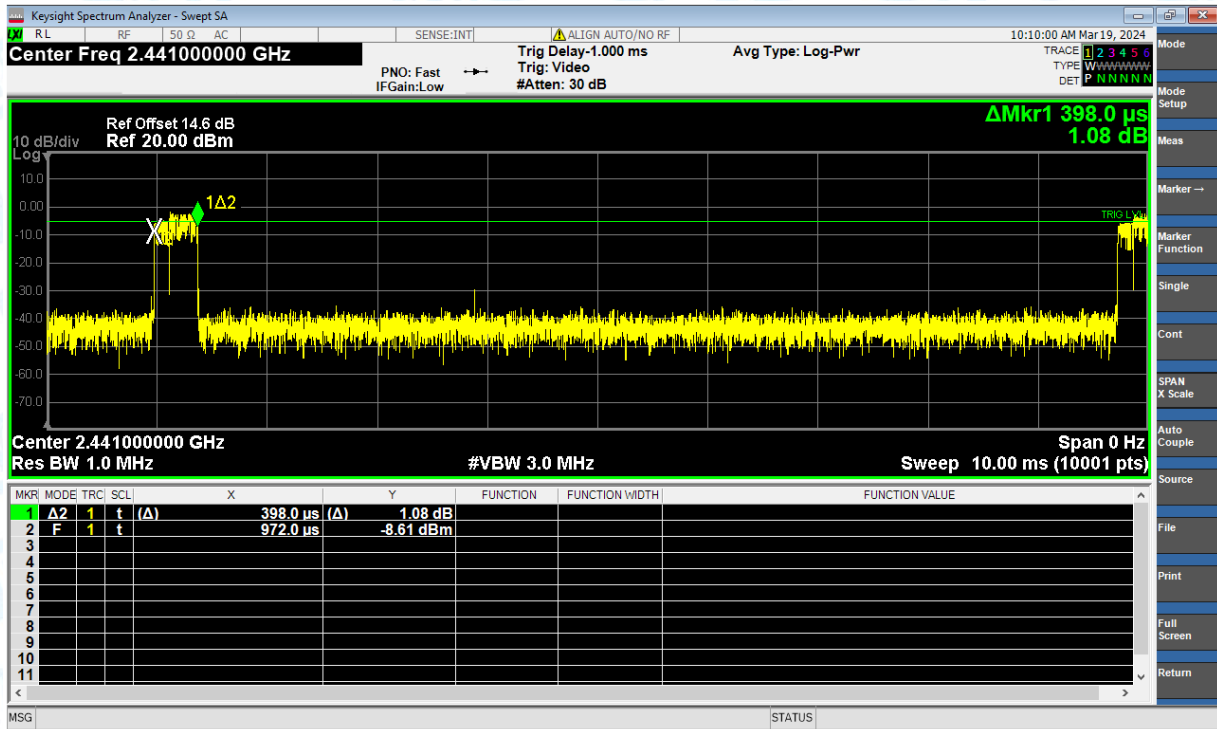
Dwell NVNT 1-DH3 2441MHz Ant1



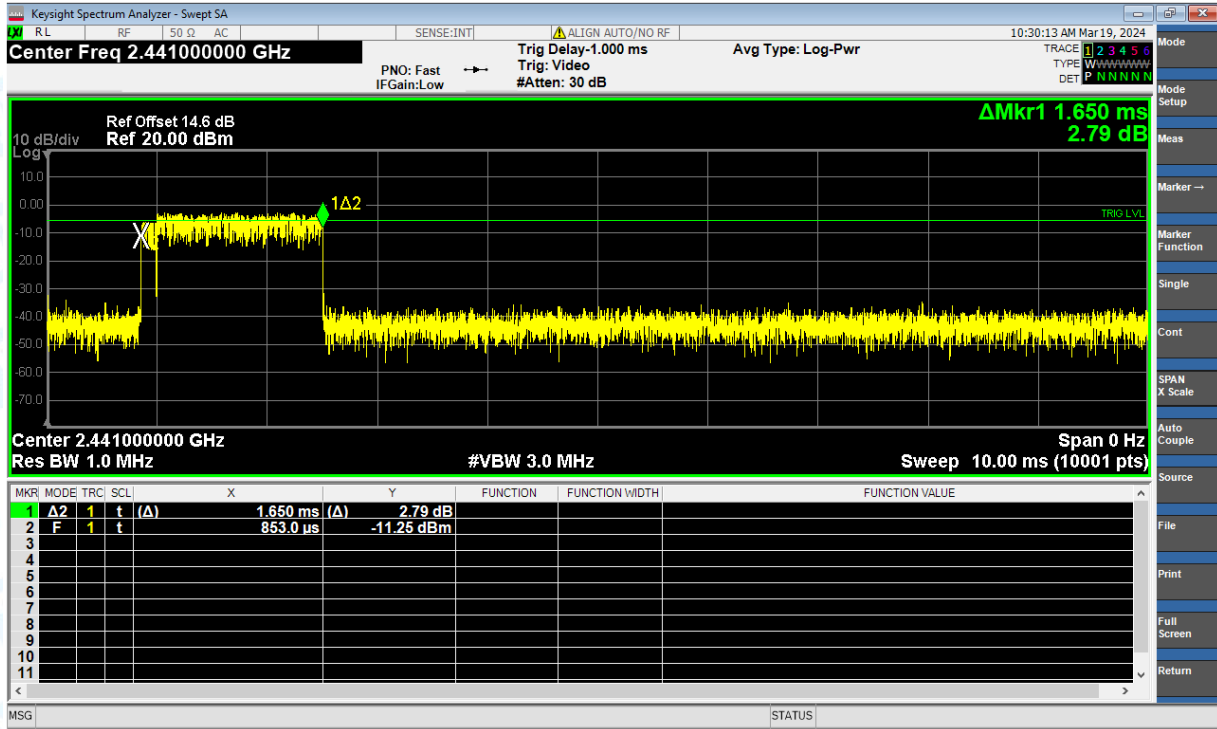
Dwell NVNT 1-DH5 2441MHz Ant1



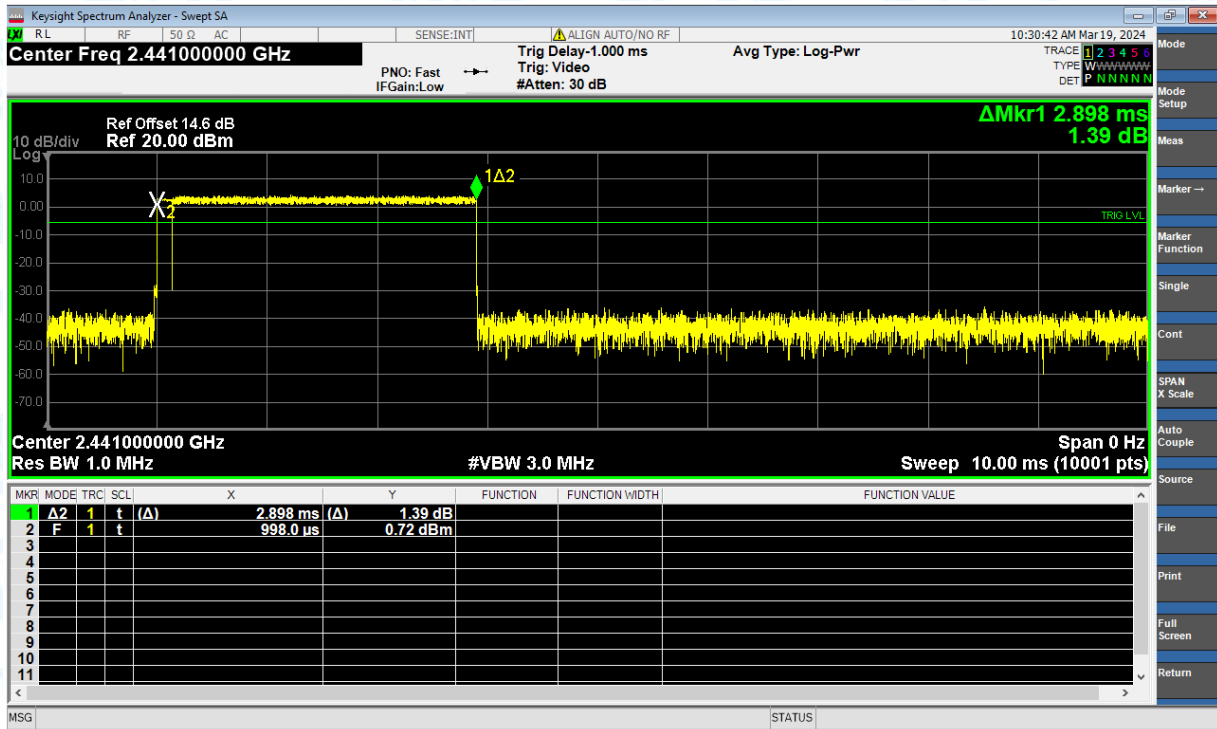
Dwell NVNT 2-DH1 2441MHz Ant1



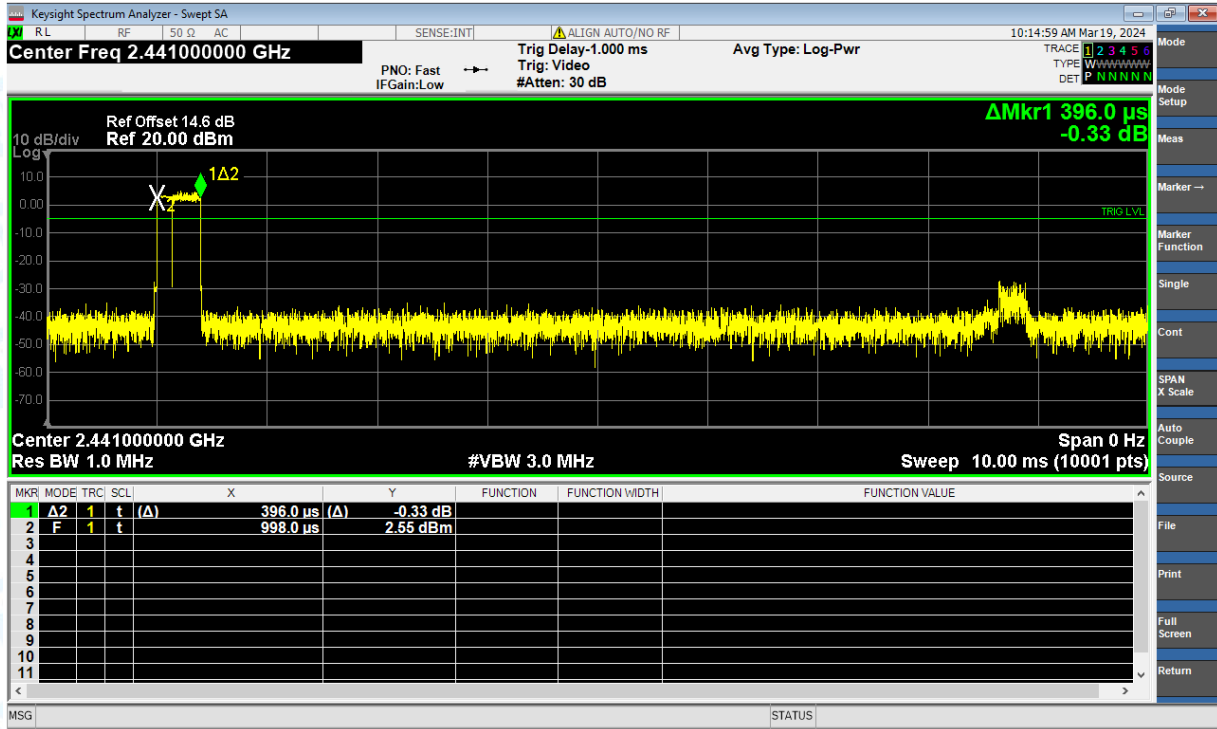
Dwell NVNT 2-DH3 2441MHz Ant1



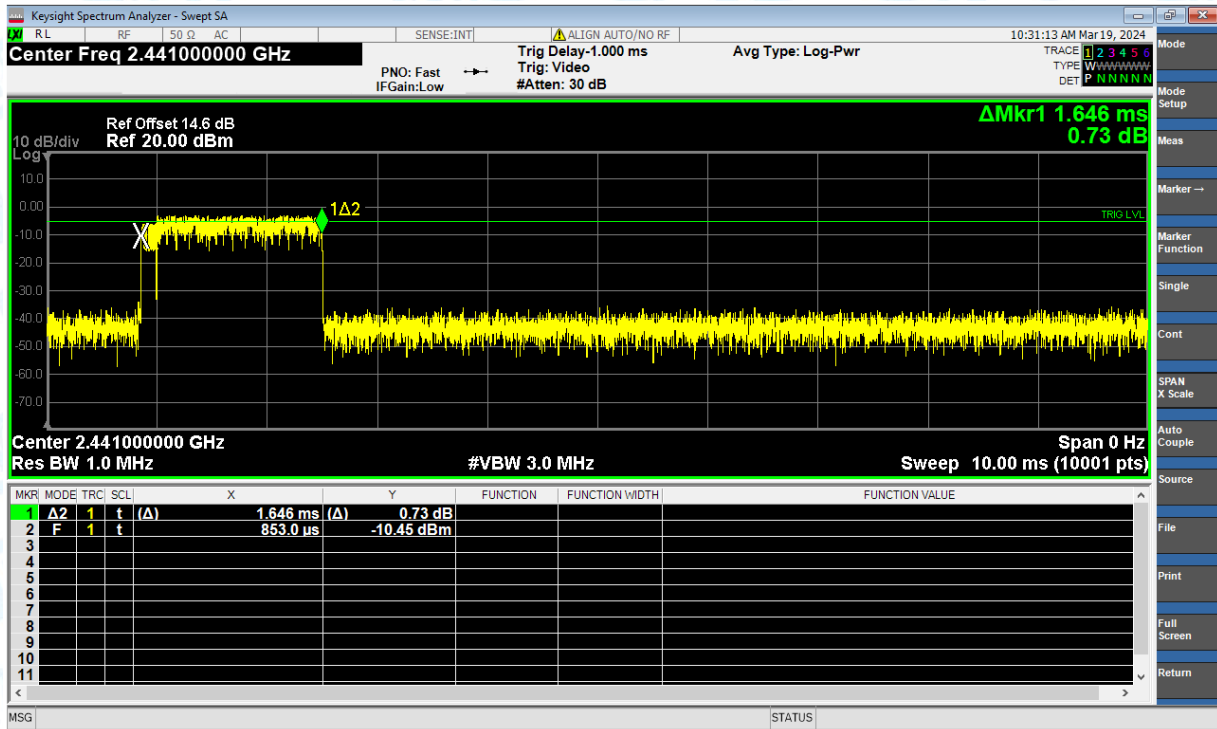
Dwell NVNT 2-DH5 2441MHz Ant1

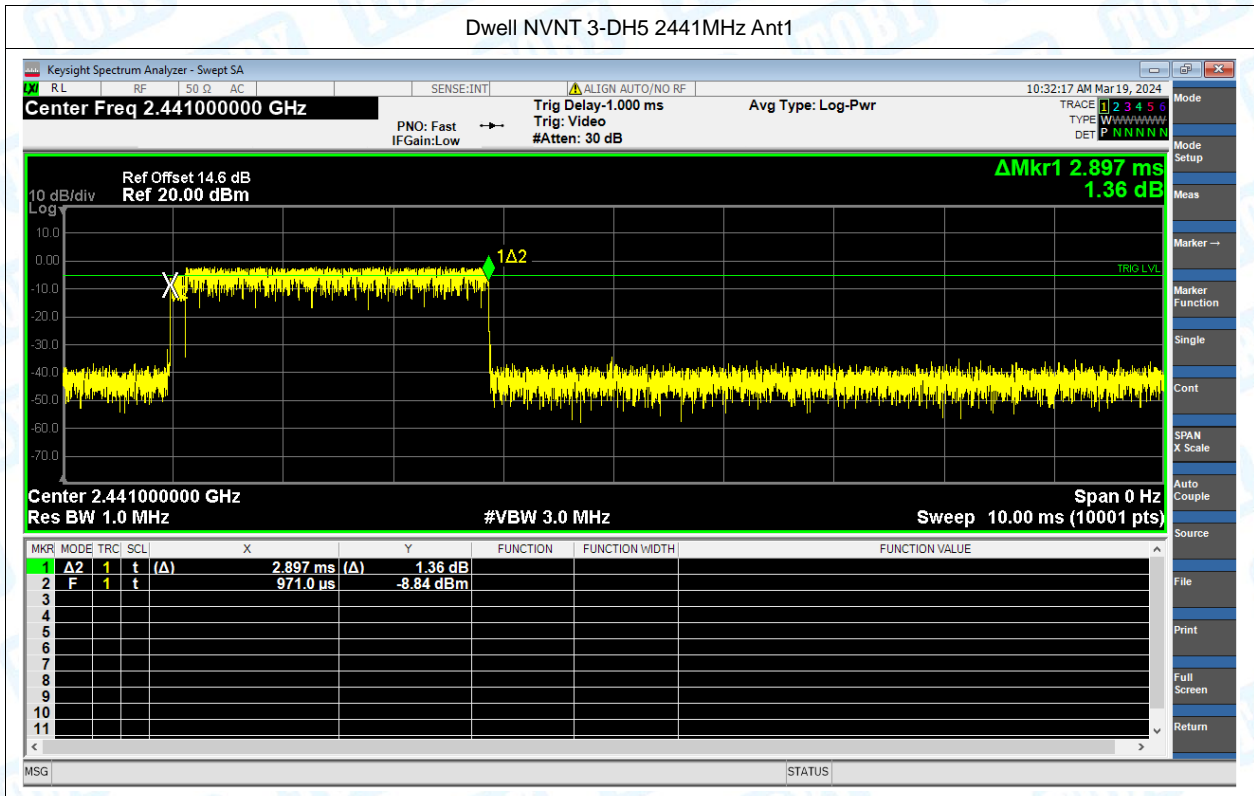


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





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