

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	Digital Signage
Test Model:	MWE-CS01
Sample ID:	HC-C-202412-0086-01-02#
Environmental Conditions	
Temperature:	24.5℃
Relative Humidity:	47%
Test Voltage:	AC 120V/60Hz
Test Engineer:	Rick Chen
Note: For a more detailed features description, please refer to the report TBR-C-202412-0086-81 The report only show the worst case data.	

Contents

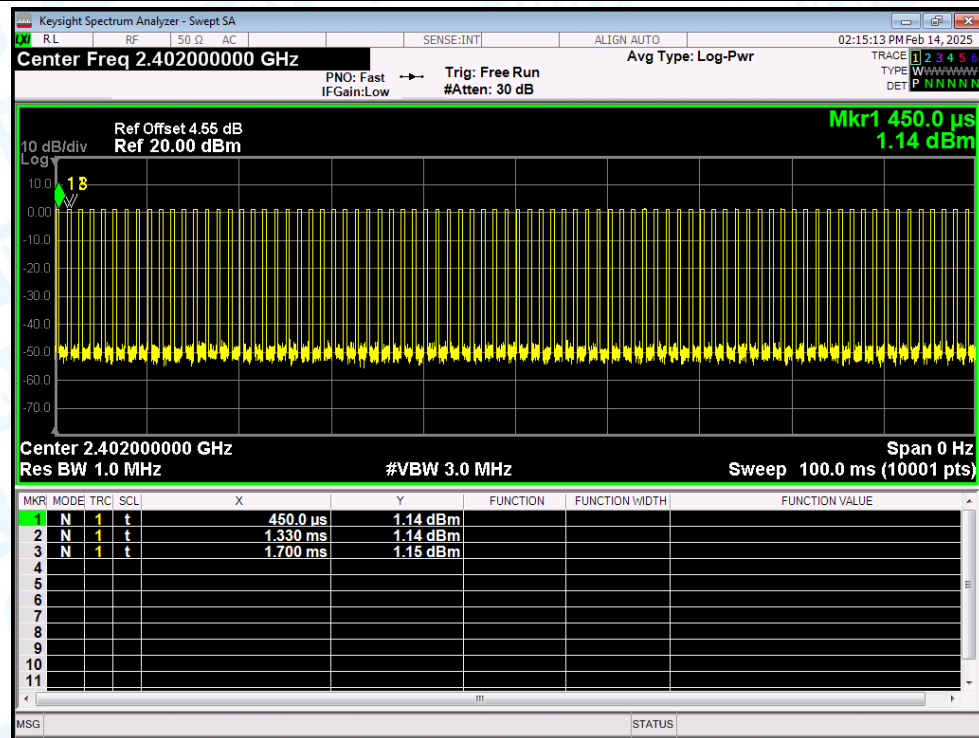
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1.Duty Cycle

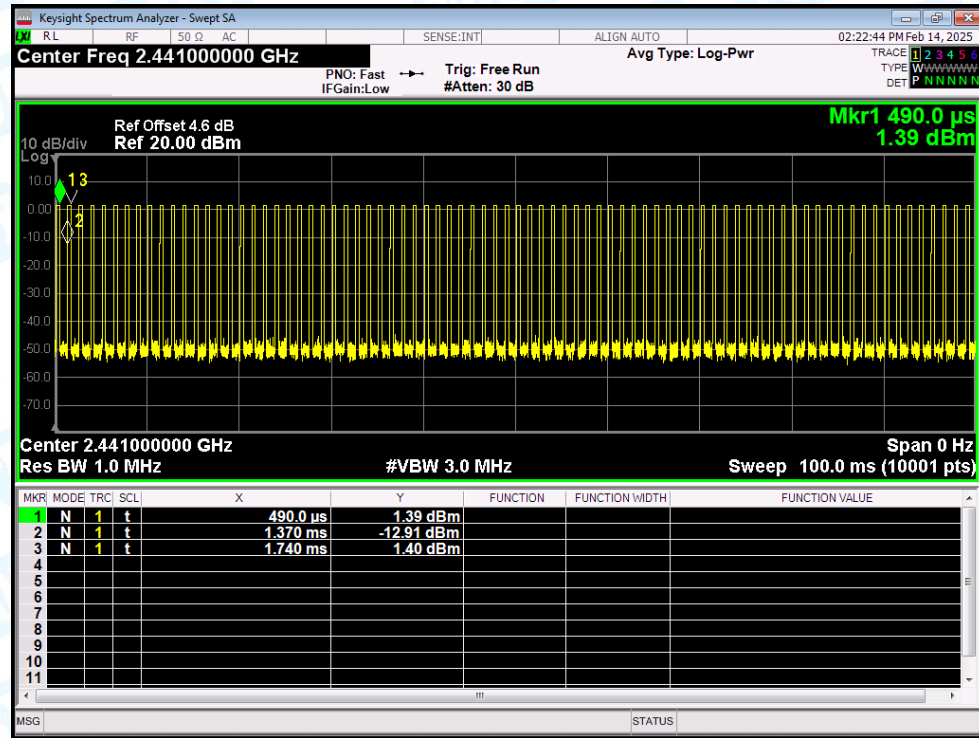
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	29.6	5.29	2.7
NVNT	1-DH1	2441	Ant1	29.6	5.29	2.7
NVNT	1-DH1	2480	Ant1	29.6	5.29	2.7
NVNT	2-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2441	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2480	Ant1	30.4	5.17	2.63
NVNT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

Test Graphs

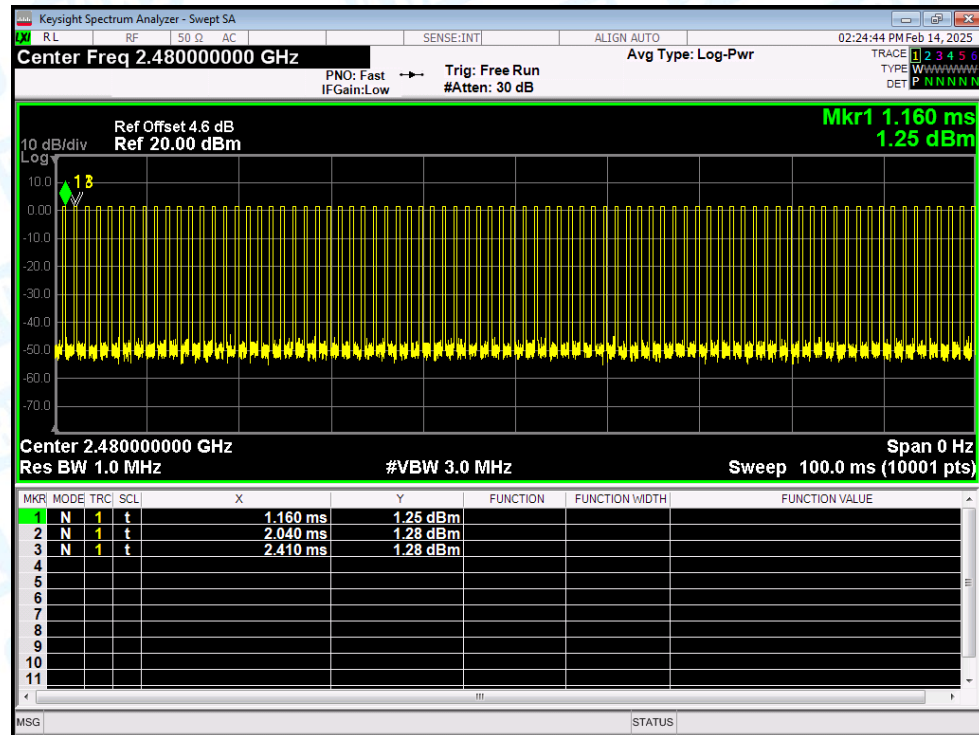
Duty Cycle NVNT 1-DH1 2402MHz Ant1



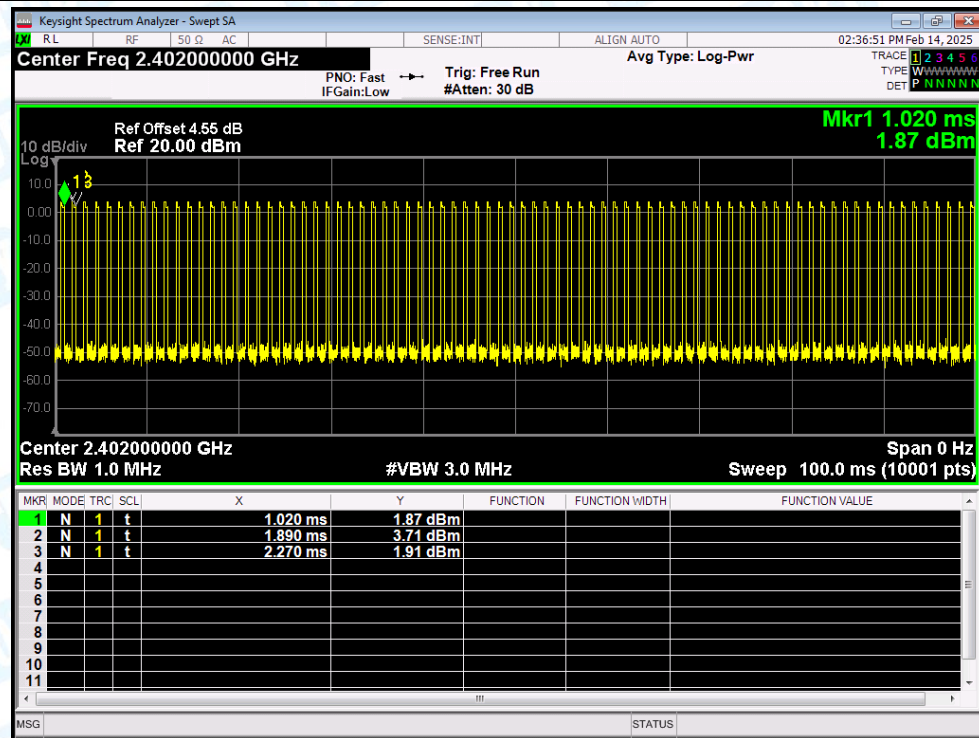
Duty Cycle NVNT 1-DH1 2441MHz Ant1



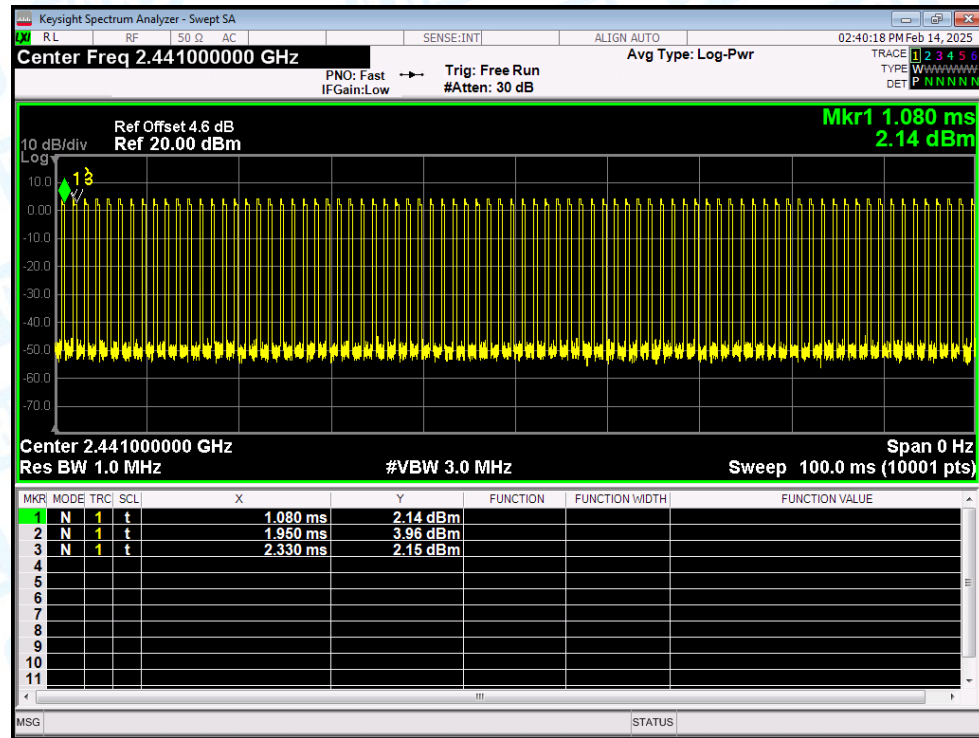
Duty Cycle NVNT 1-DH1 2480MHz Ant1



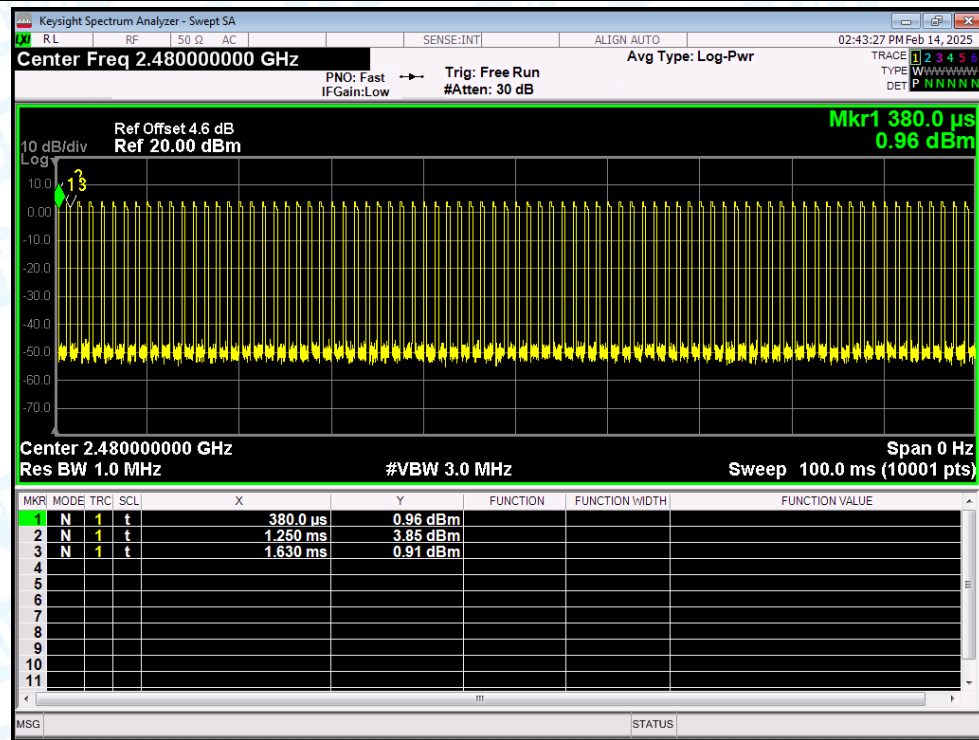
Duty Cycle NVNT 2-DH1 2402MHz Ant1



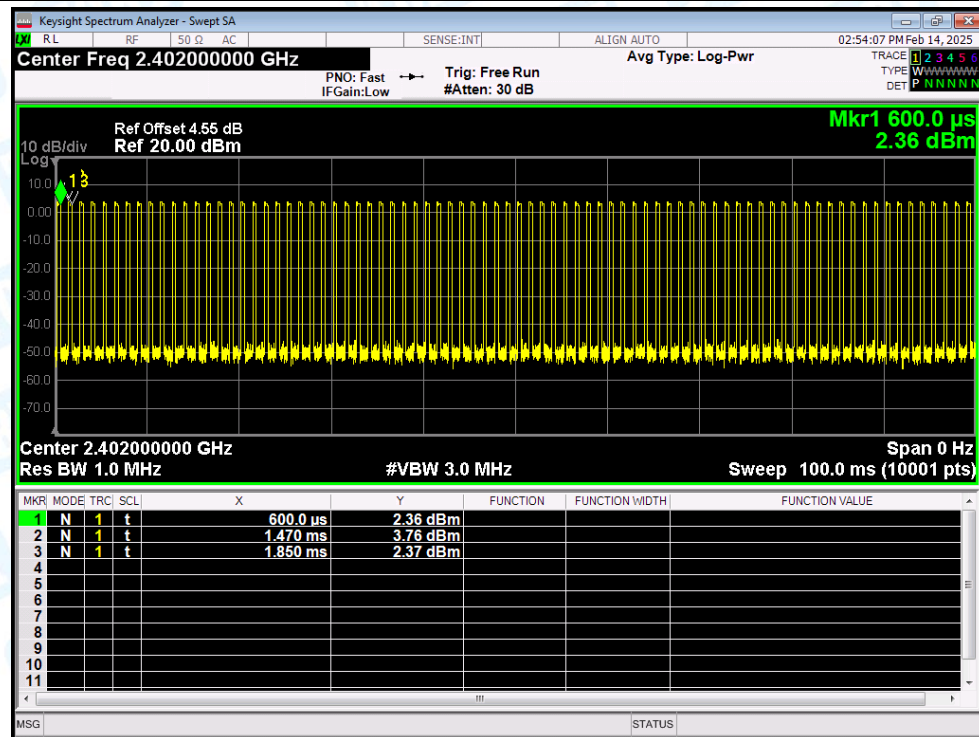
Duty Cycle NVNT 2-DH1 2441MHz Ant1



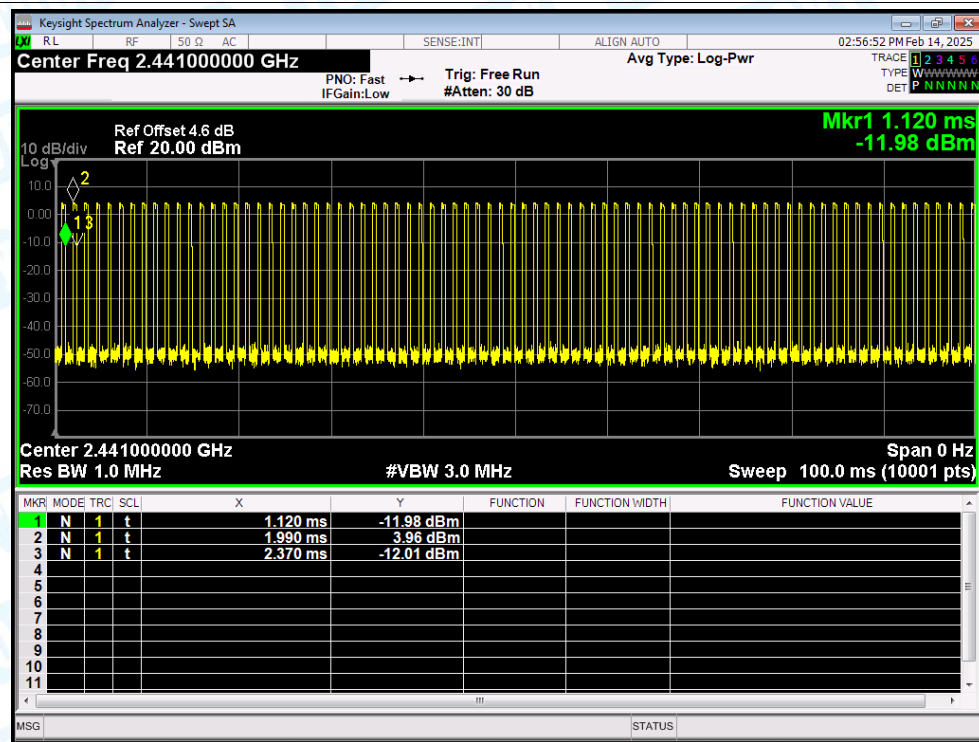
Duty Cycle NVNT 2-DH1 2480MHz Ant1

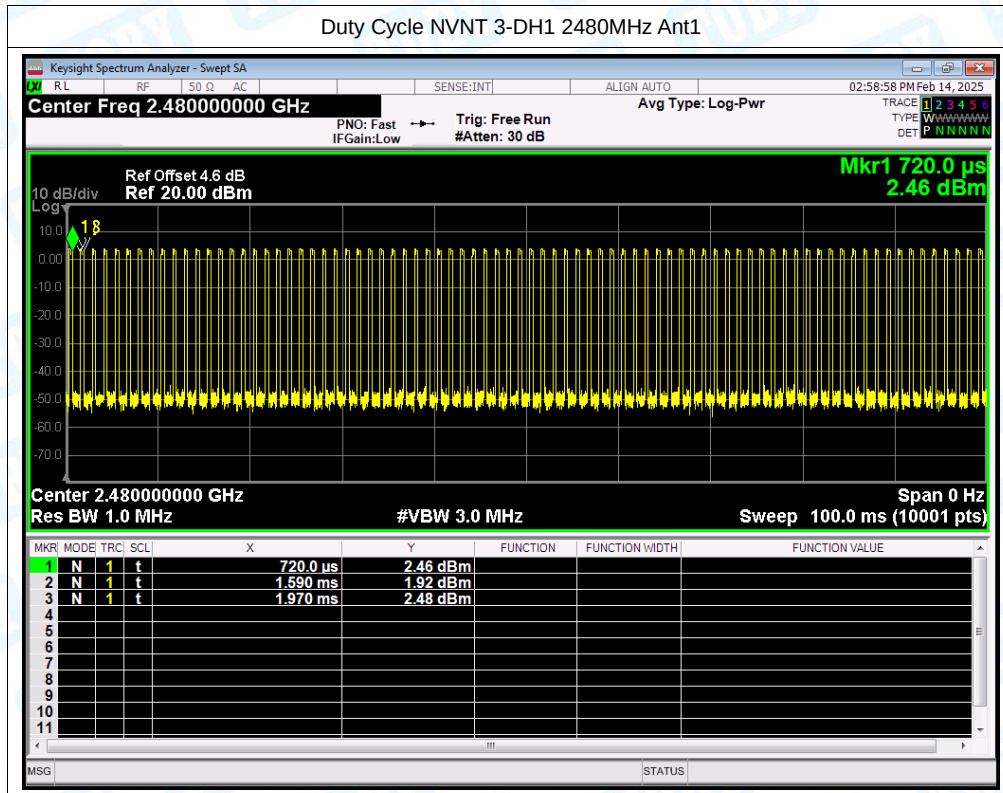


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



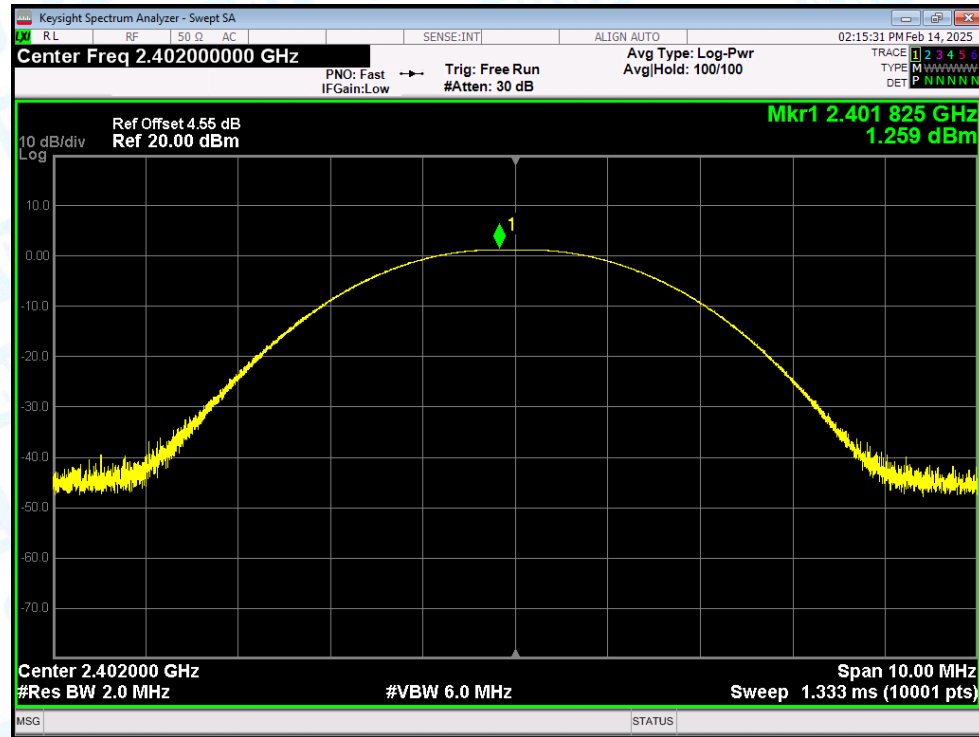


2.Maximum Conducted Output Power

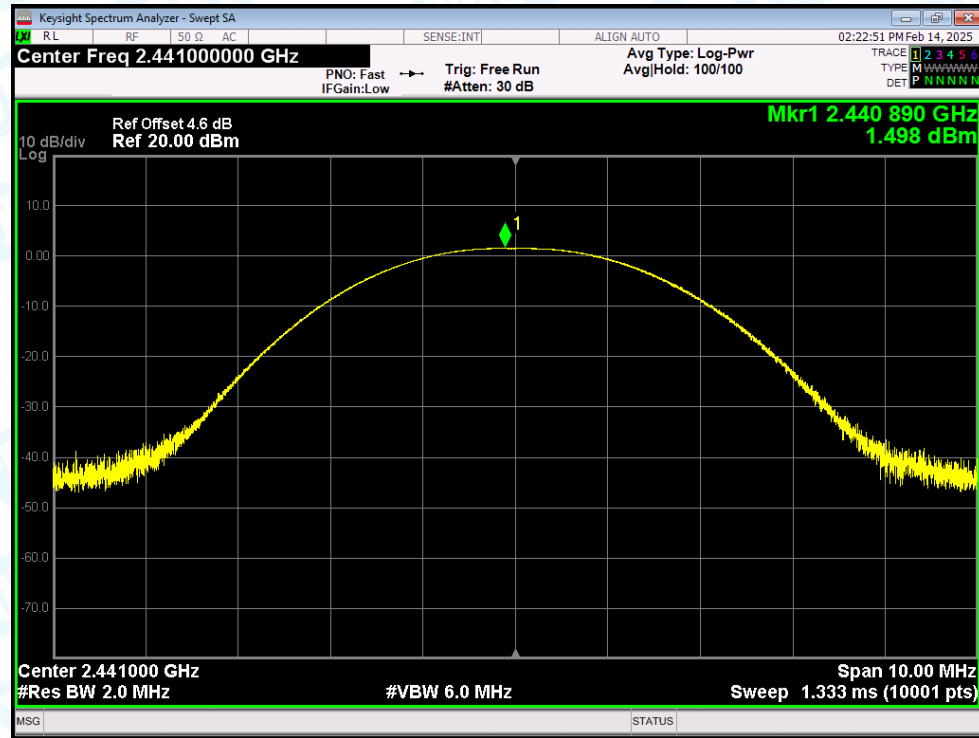
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	1.259	21	Pass
NVNT	1-DH1	2441	Ant1	1.498	21	Pass
NVNT	1-DH1	2480	Ant1	1.386	21	Pass
NVNT	2-DH1	2402	Ant1	3.8	21	Pass
NVNT	2-DH1	2441	Ant1	4.024	21	Pass
NVNT	2-DH1	2480	Ant1	3.931	21	Pass
NVNT	3-DH1	2402	Ant1	3.832	21	Pass
NVNT	3-DH1	2441	Ant1	4.048	21	Pass
NVNT	3-DH1	2480	Ant1	3.937	21	Pass

Test Graphs

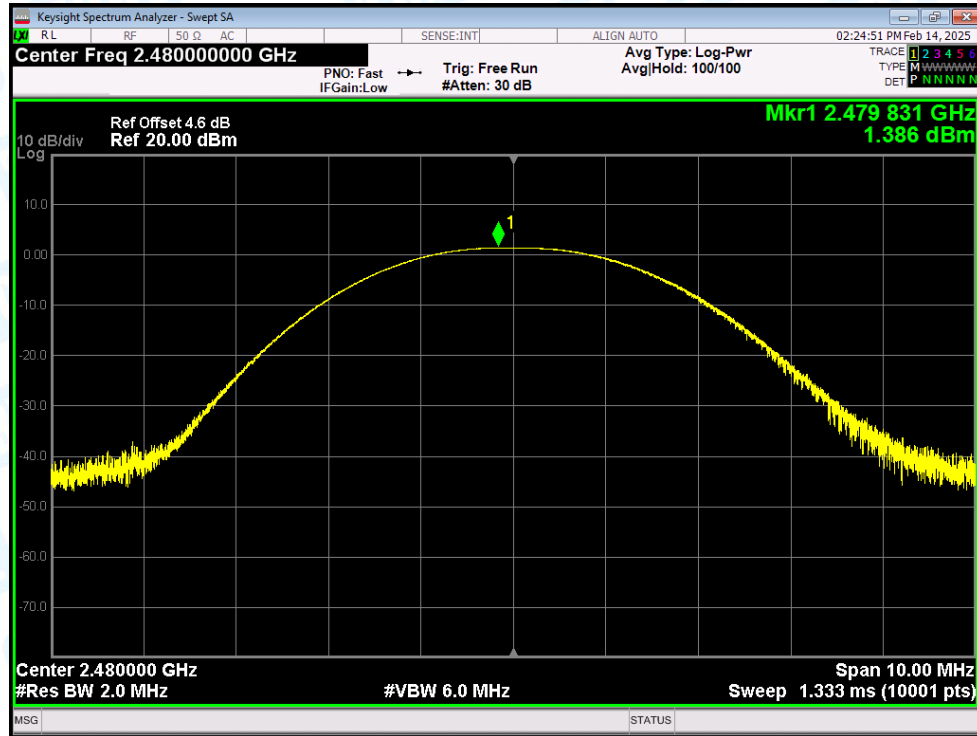
Power NVNT 1-DH1 2402MHz Ant1



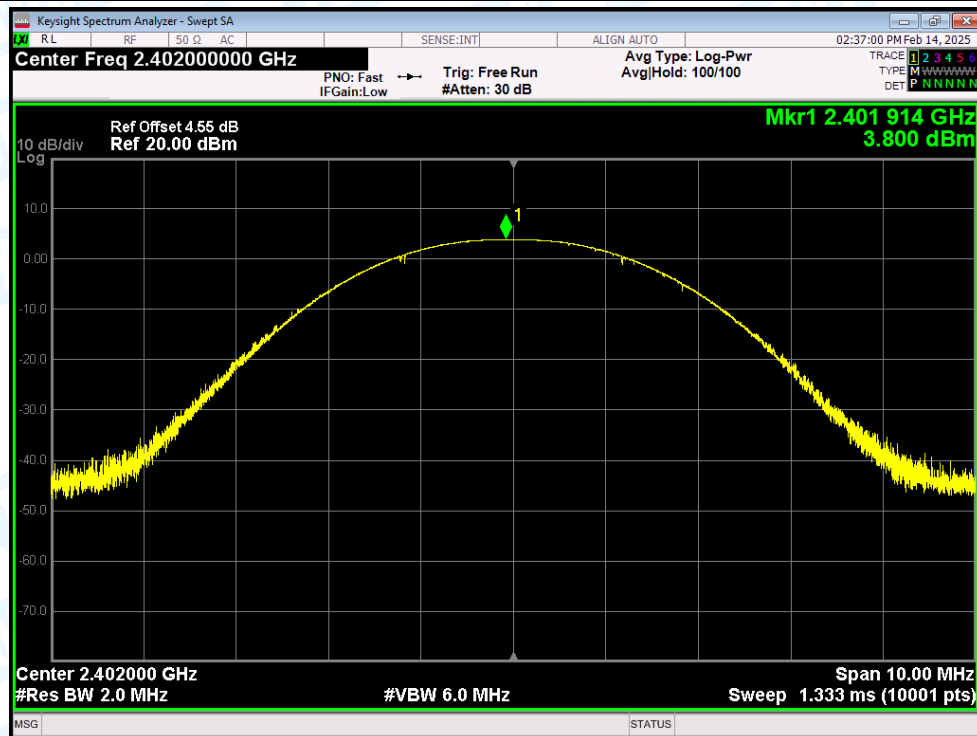
Power NVNT 1-DH1 2441MHz Ant1



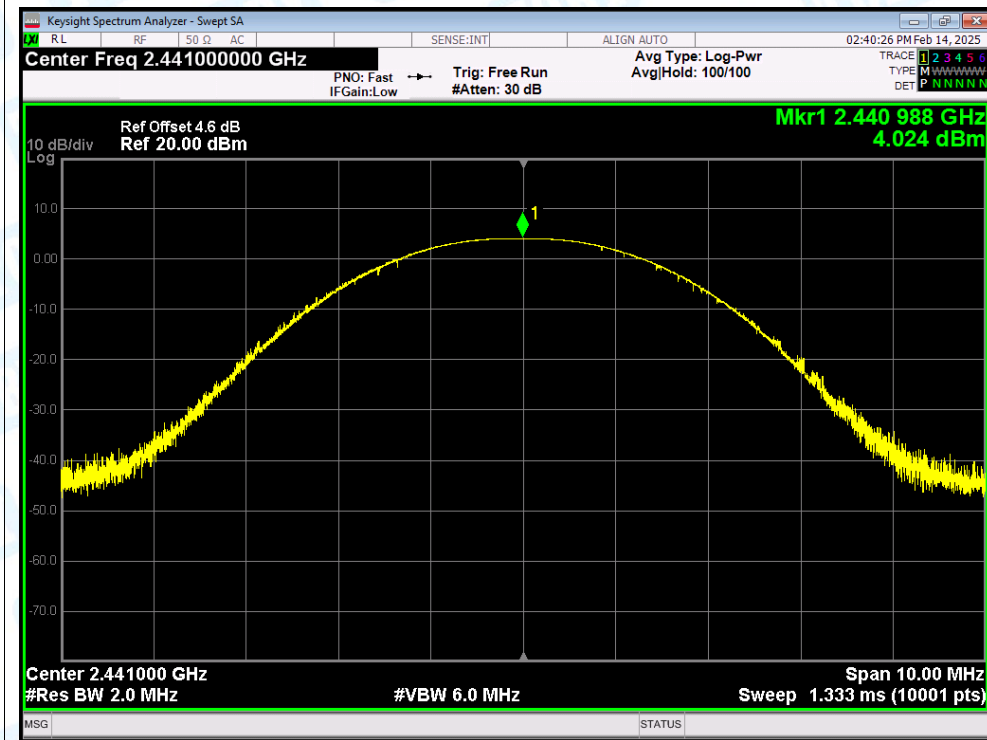
Power NVNT 1-DH1 2480MHz Ant1



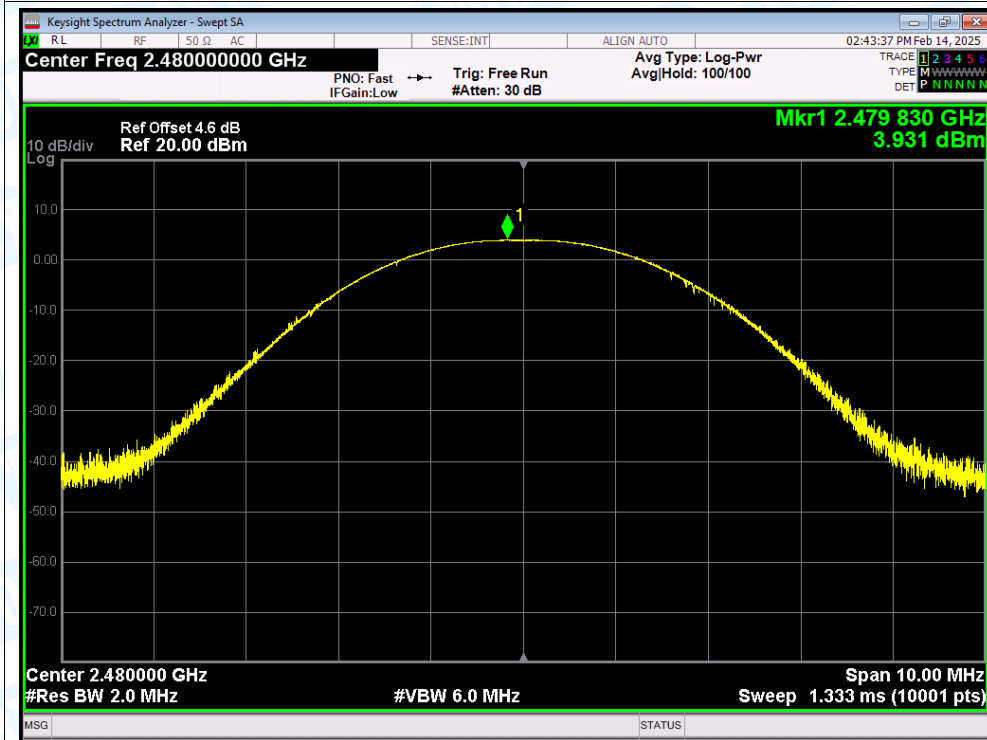
Power NVNT 2-DH1 2402MHz Ant1



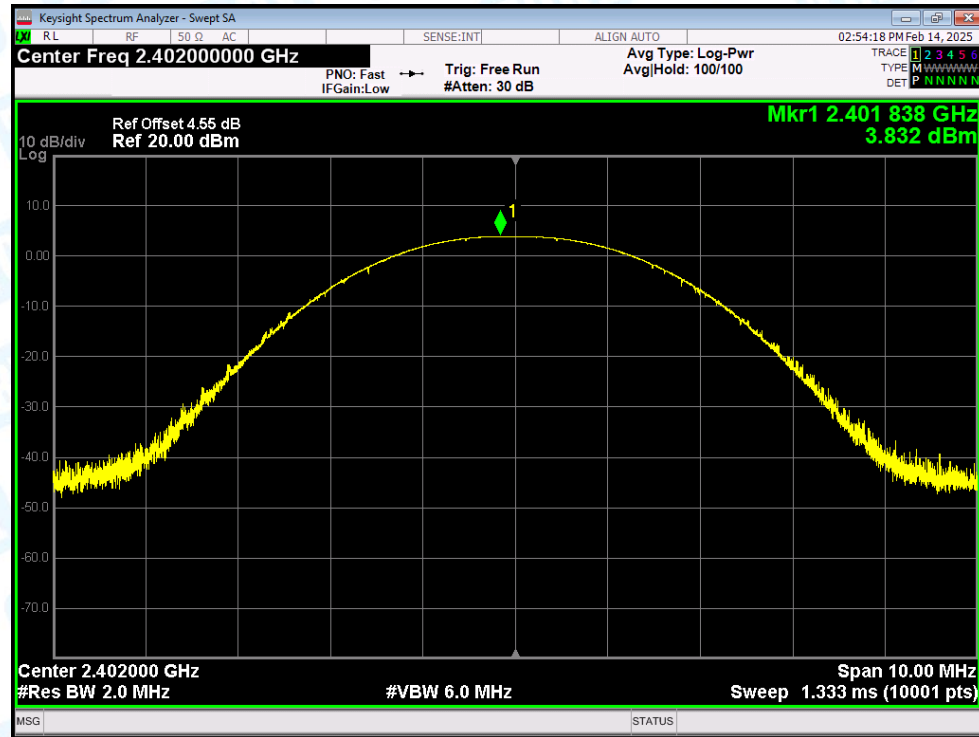
Power NVNT 2-DH1 2441MHz Ant1



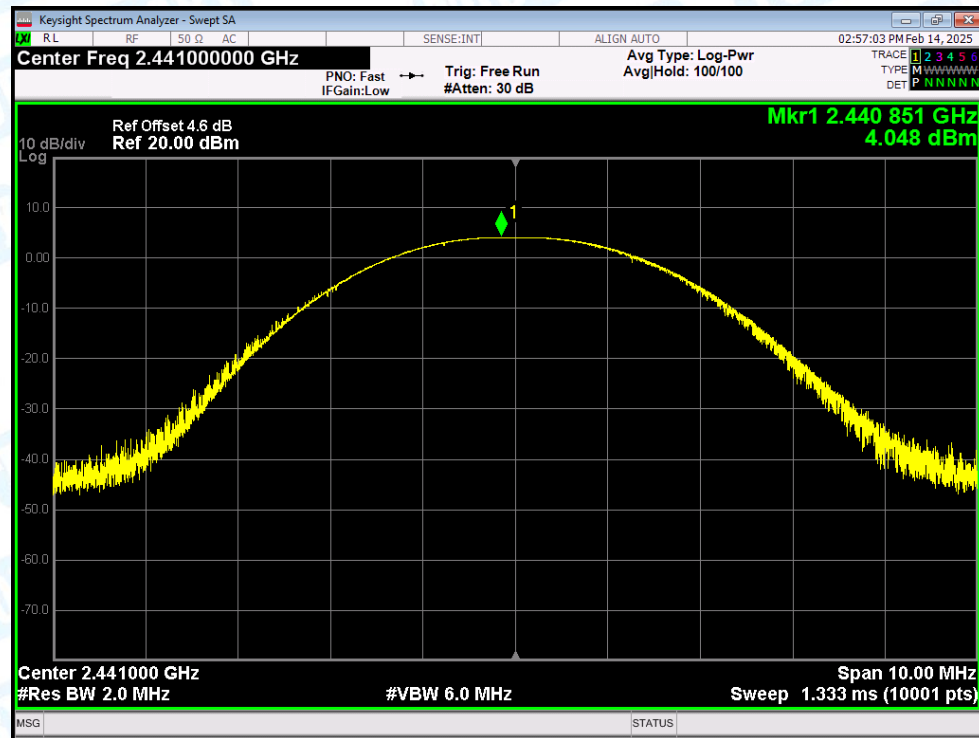
Power NVNT 2-DH1 2480MHz Ant1

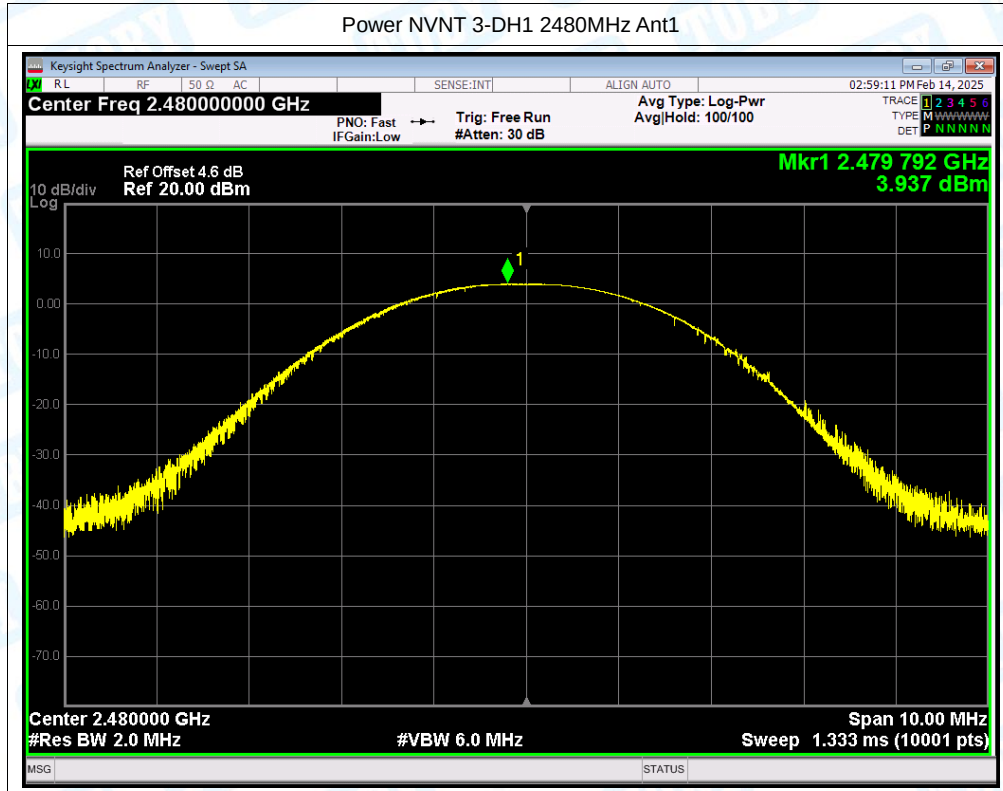


Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



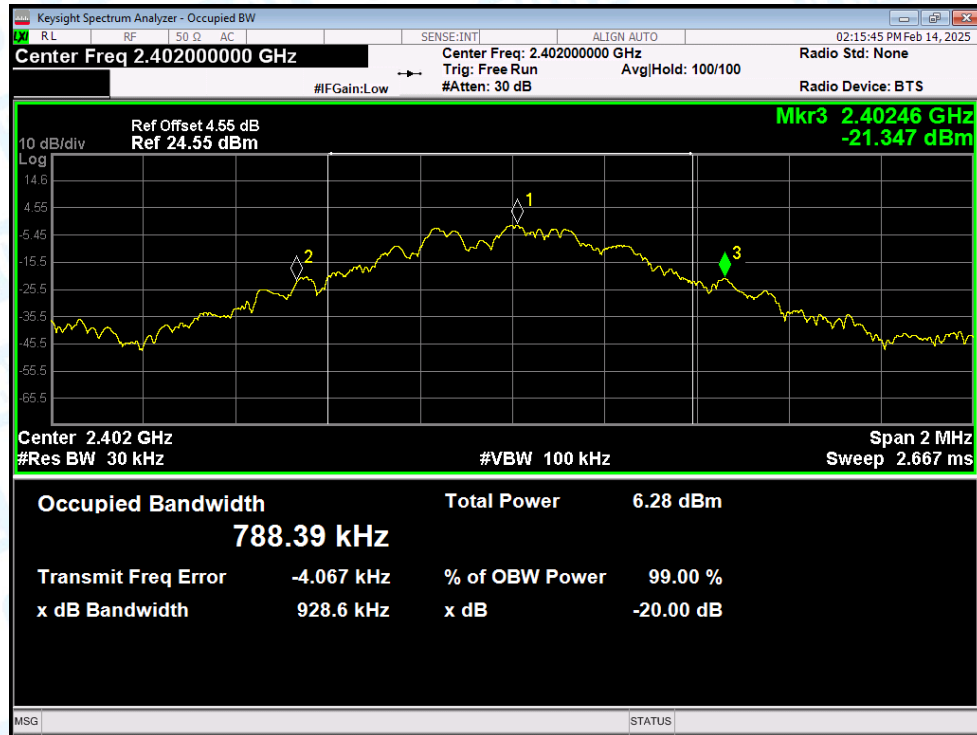


3.-20dB Bandwidth

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	0.85	0	Pass
NVNT	1-DH1	2480	Ant1	0.93	0	Pass
NVNT	2-DH1	2402	Ant1	1.28	0	Pass
NVNT	2-DH1	2441	Ant1	1.28	0	Pass
NVNT	2-DH1	2480	Ant1	1.28	0	Pass
NVNT	3-DH1	2402	Ant1	1.2	0	Pass
NVNT	3-DH1	2441	Ant1	1.2	0	Pass
NVNT	3-DH1	2480	Ant1	1.21	0	Pass

Test Graphs

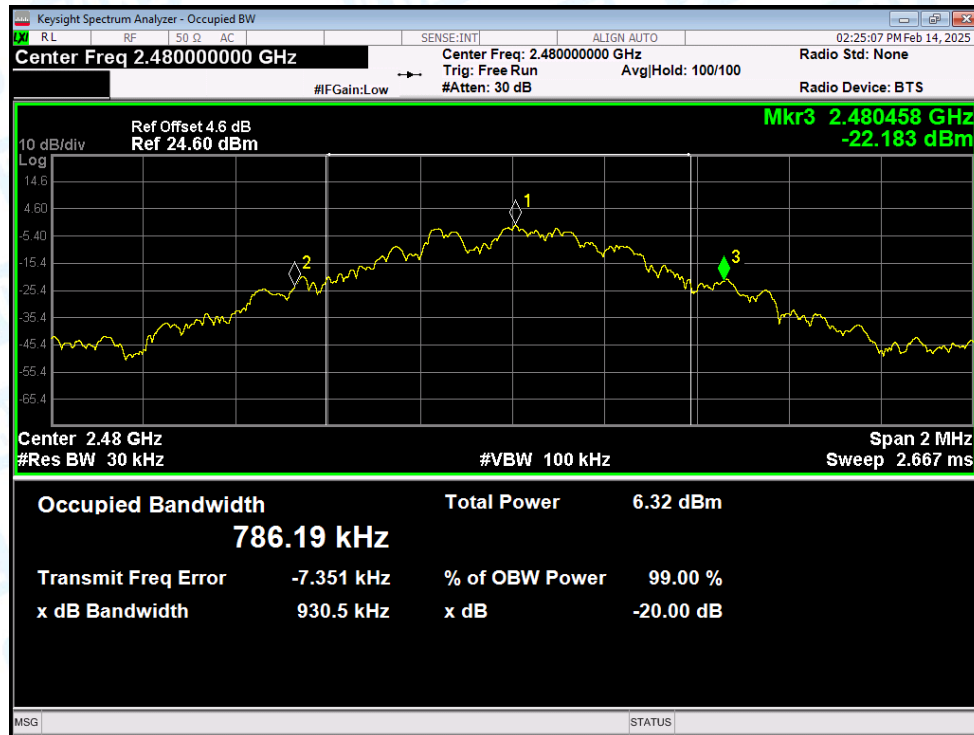
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



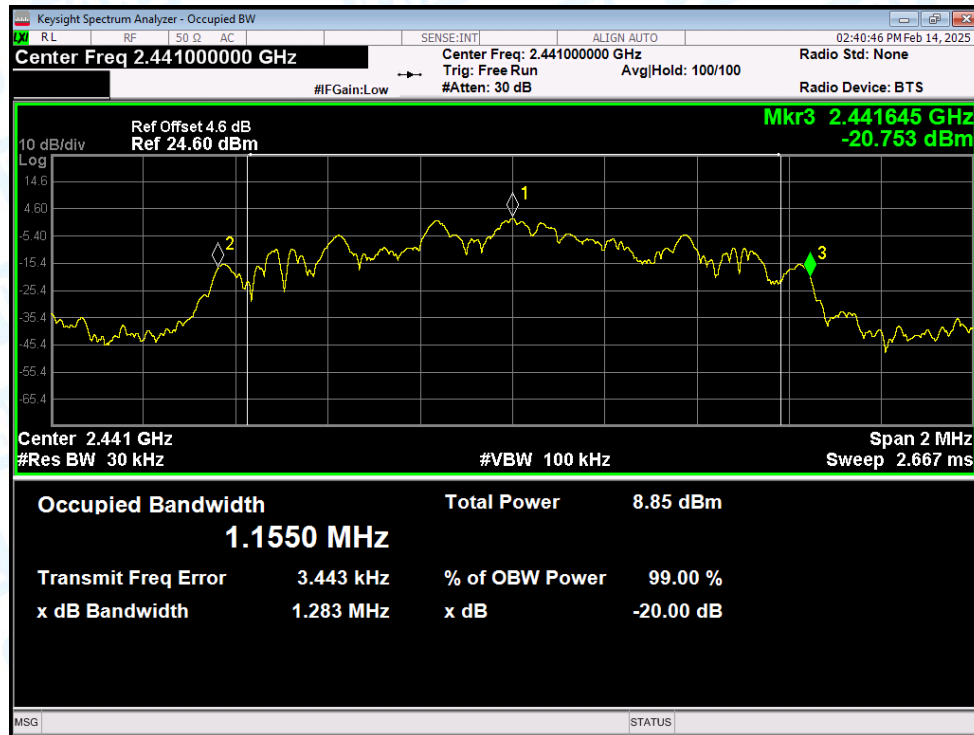
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



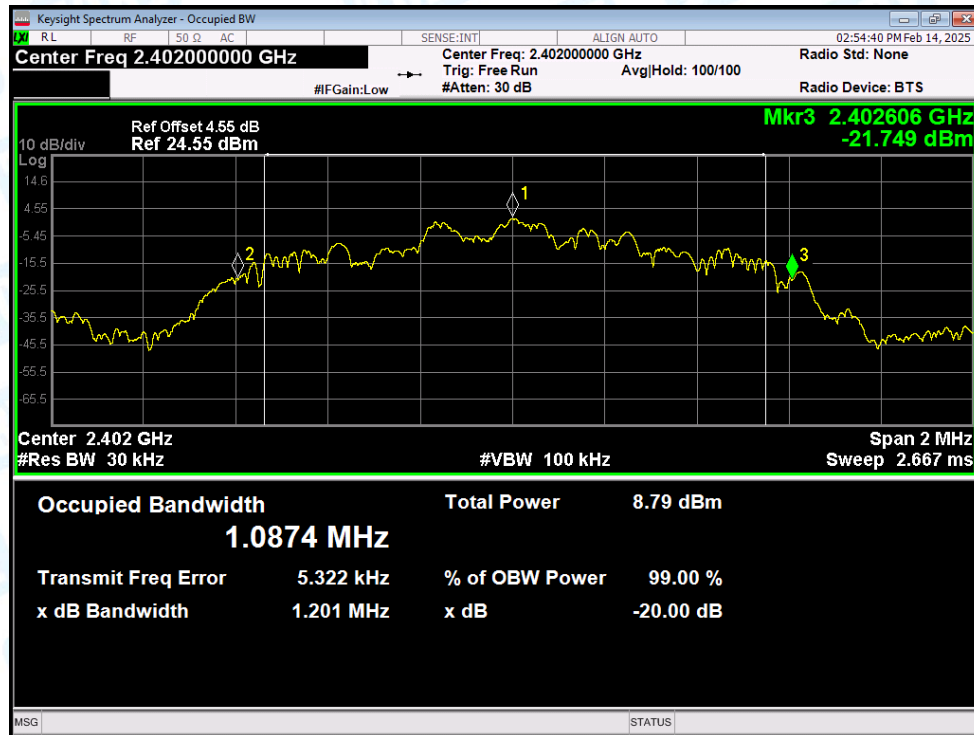
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



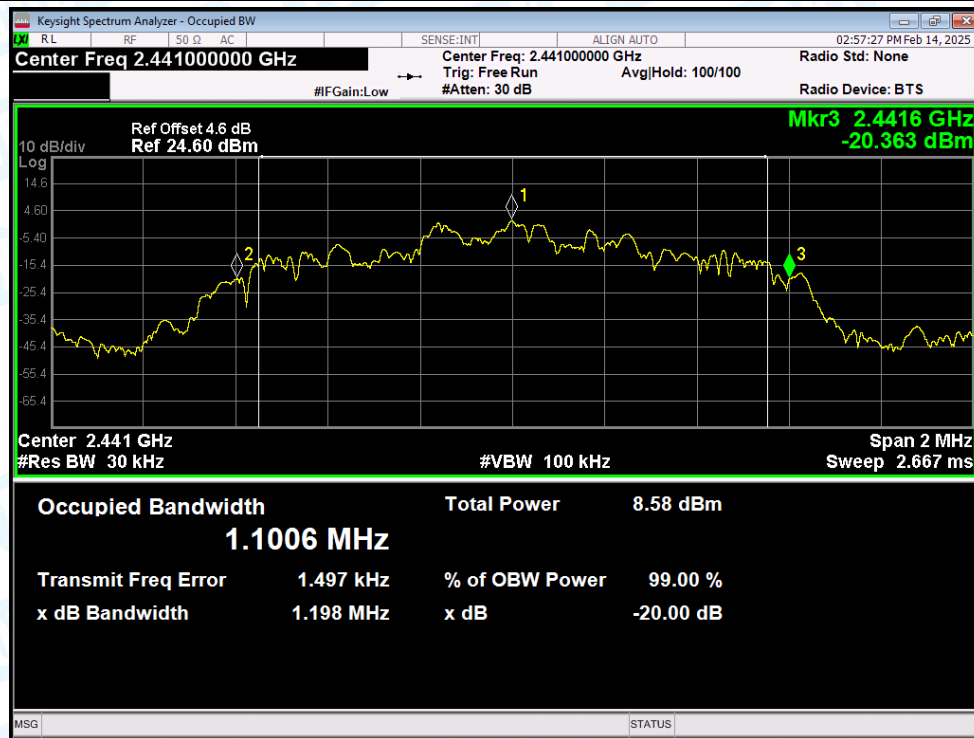
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

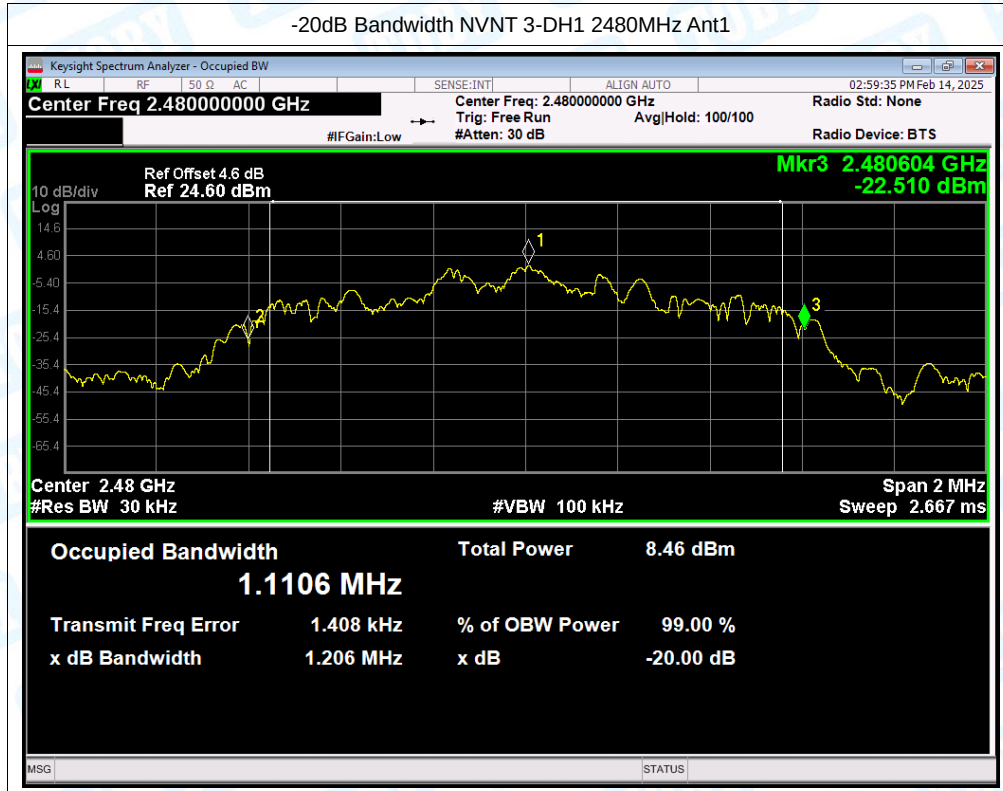


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



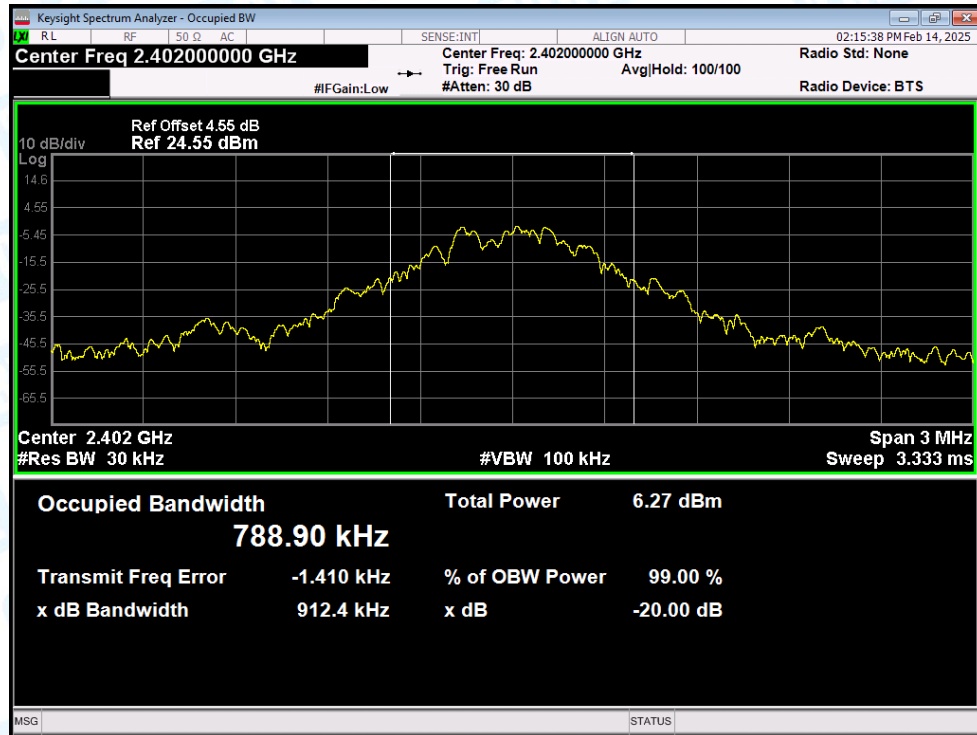


4.Occupied Channel Bandwidth

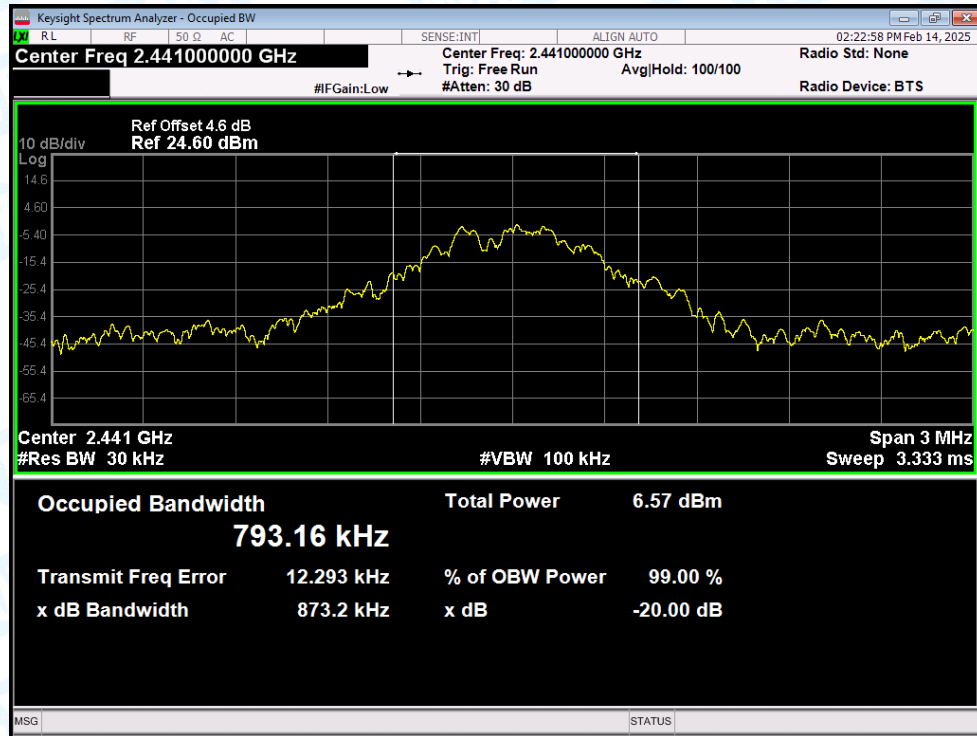
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.789
NVNT	1-DH1	2441	Ant1	0.793
NVNT	1-DH1	2480	Ant1	0.79
NVNT	2-DH1	2402	Ant1	1.189
NVNT	2-DH1	2441	Ant1	1.14
NVNT	2-DH1	2480	Ant1	1.171
NVNT	3-DH1	2402	Ant1	1.106
NVNT	3-DH1	2441	Ant1	1.111
NVNT	3-DH1	2480	Ant1	1.093

Test Graphs

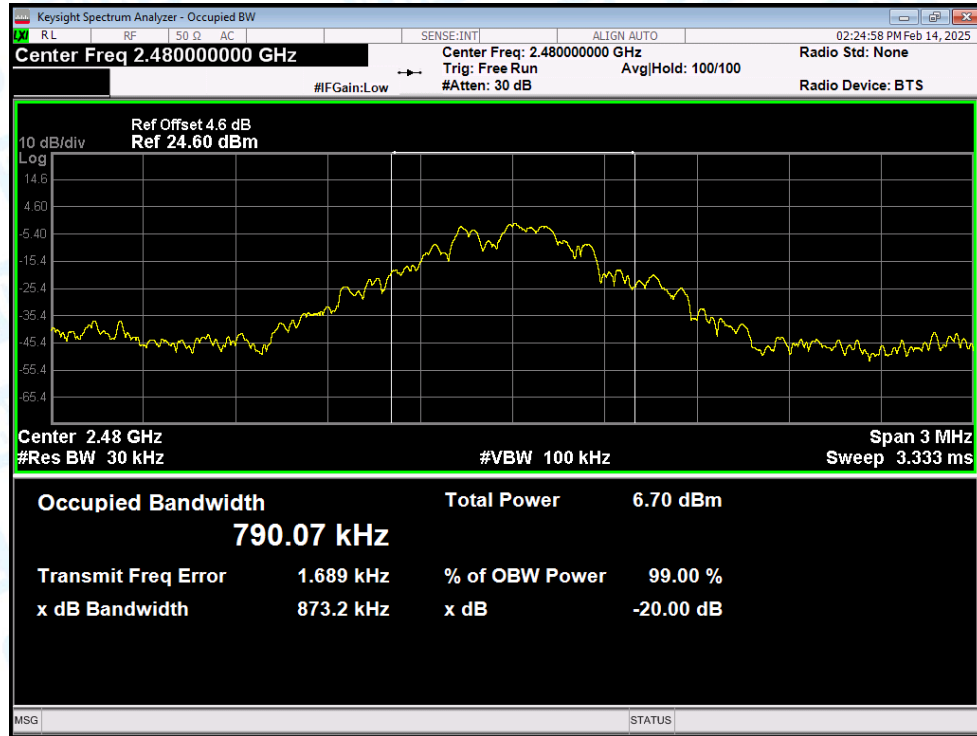
OBW NVNT 1-DH1 2402MHz Ant1



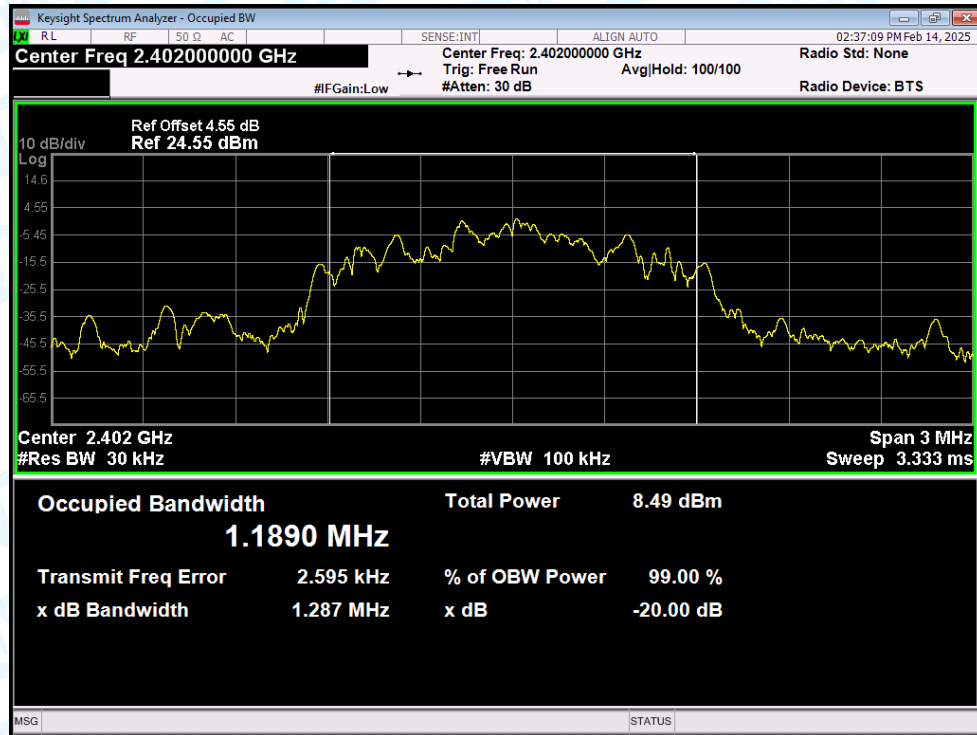
OBW NVNT 1-DH1 2441MHz Ant1



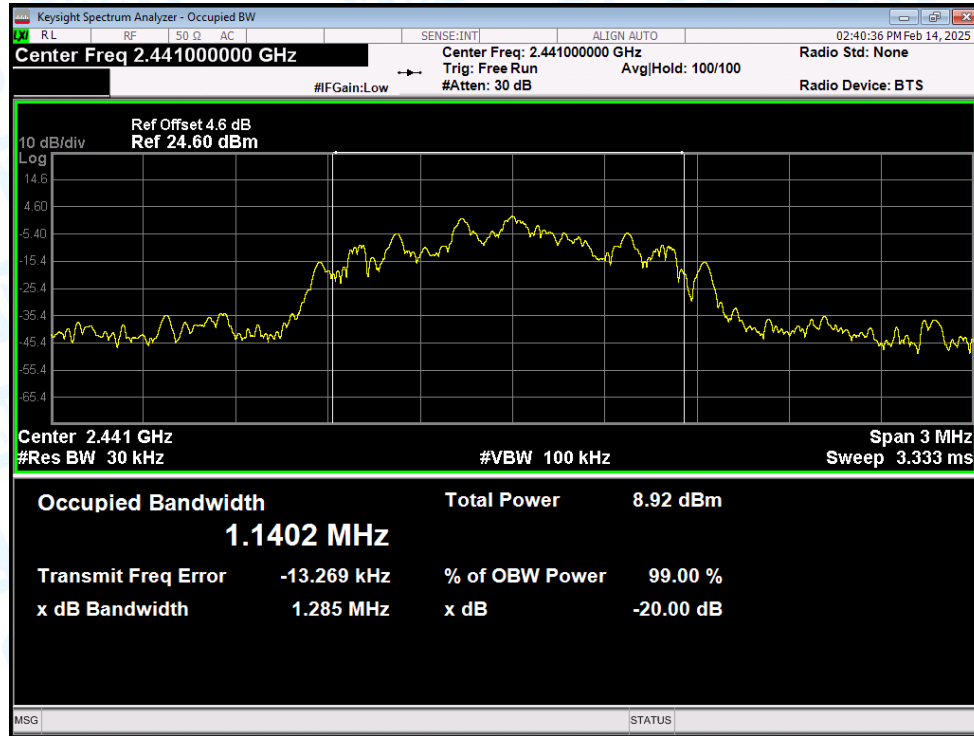
OBW NVNT 1-DH1 2480MHz Ant1



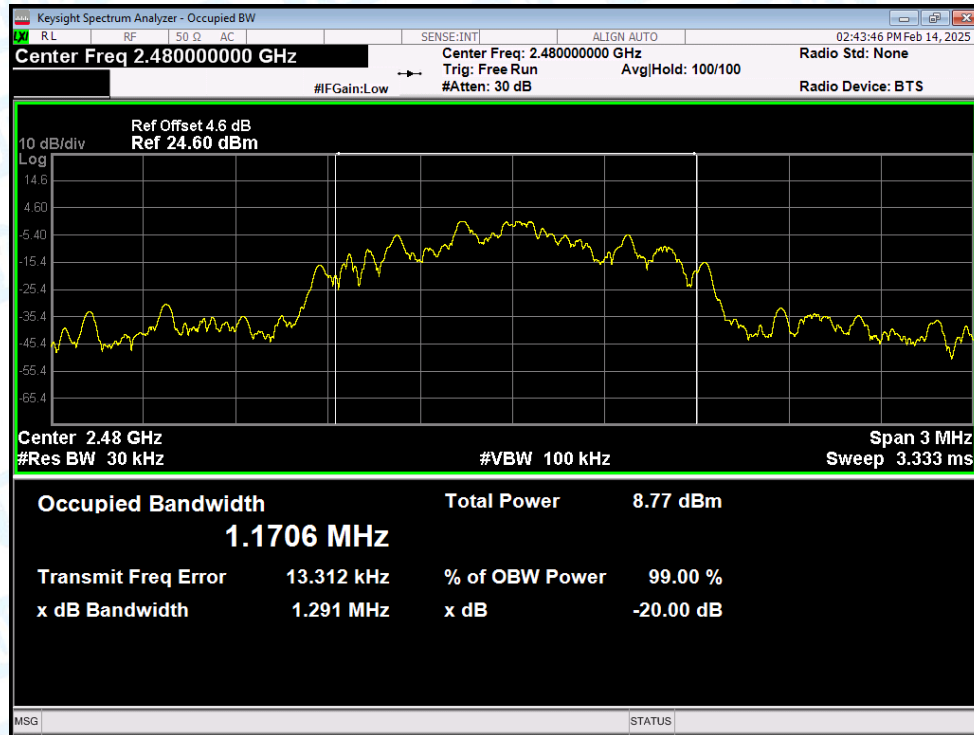
OBW NVNT 2-DH1 2402MHz Ant1



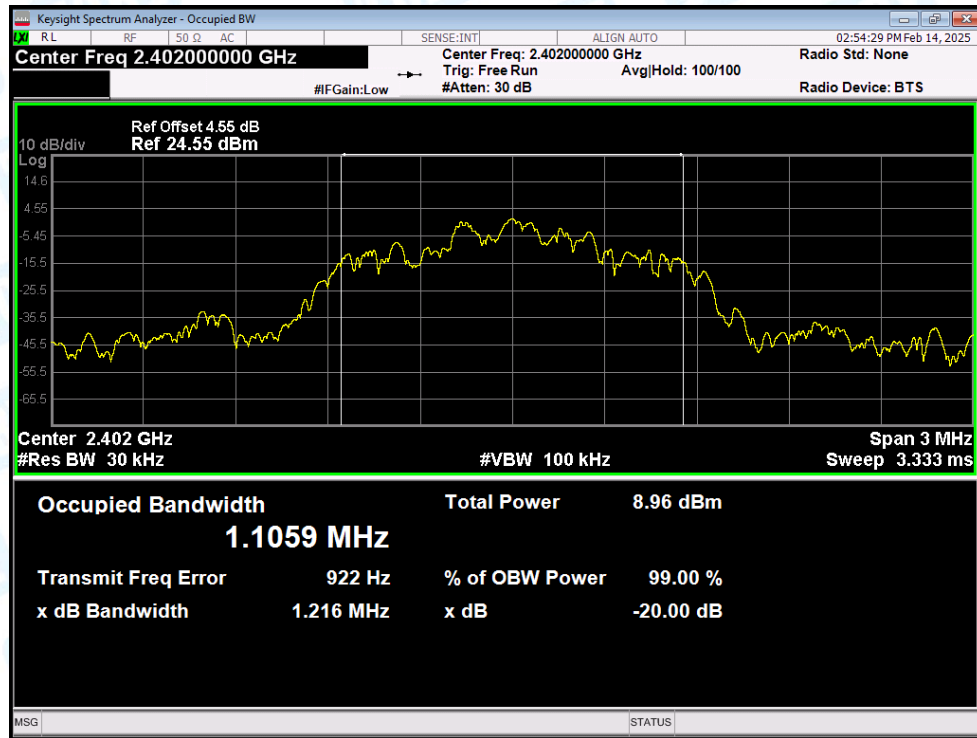
OBW NVNT 2-DH1 2441MHz Ant1



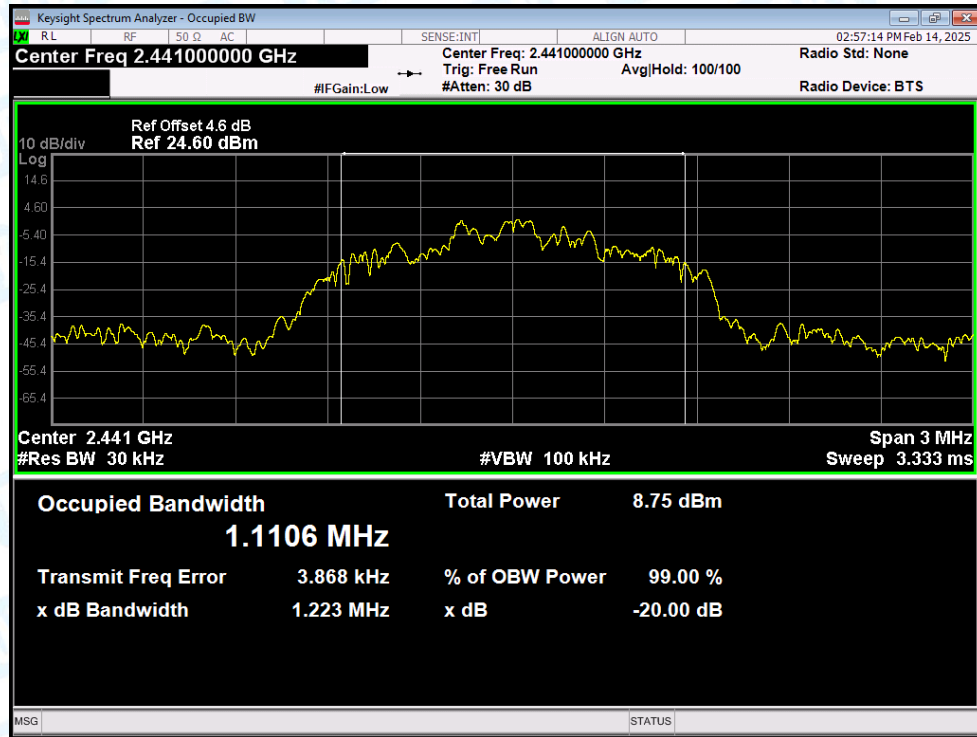
OBW NVNT 2-DH1 2480MHz Ant1

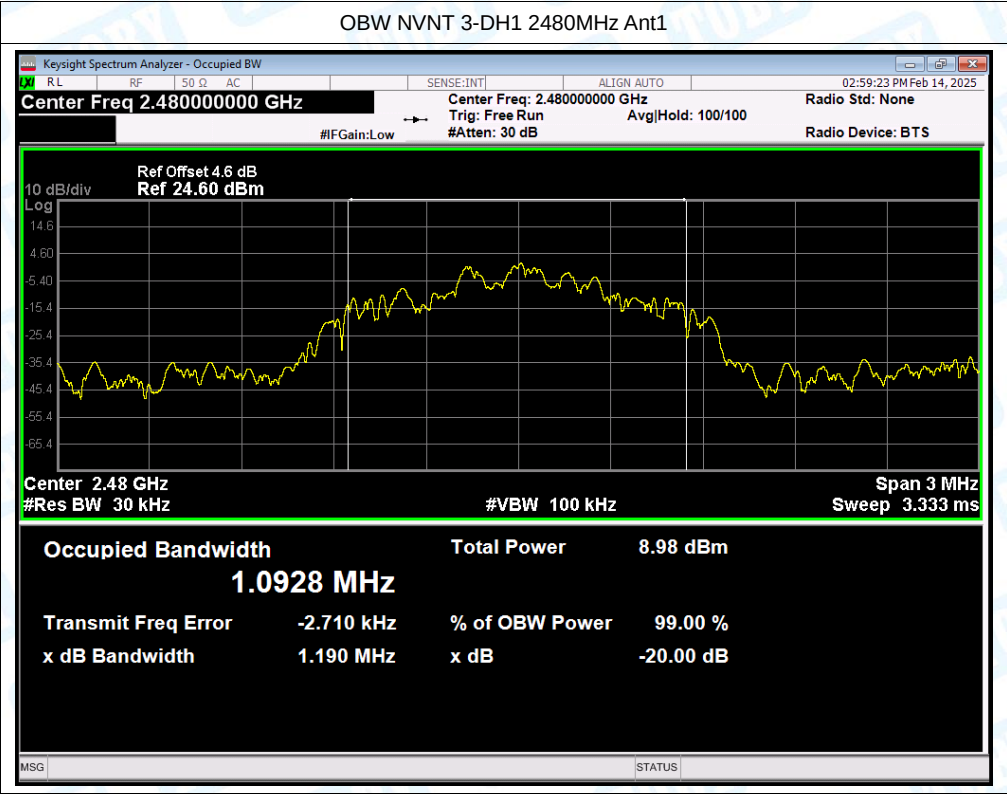


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



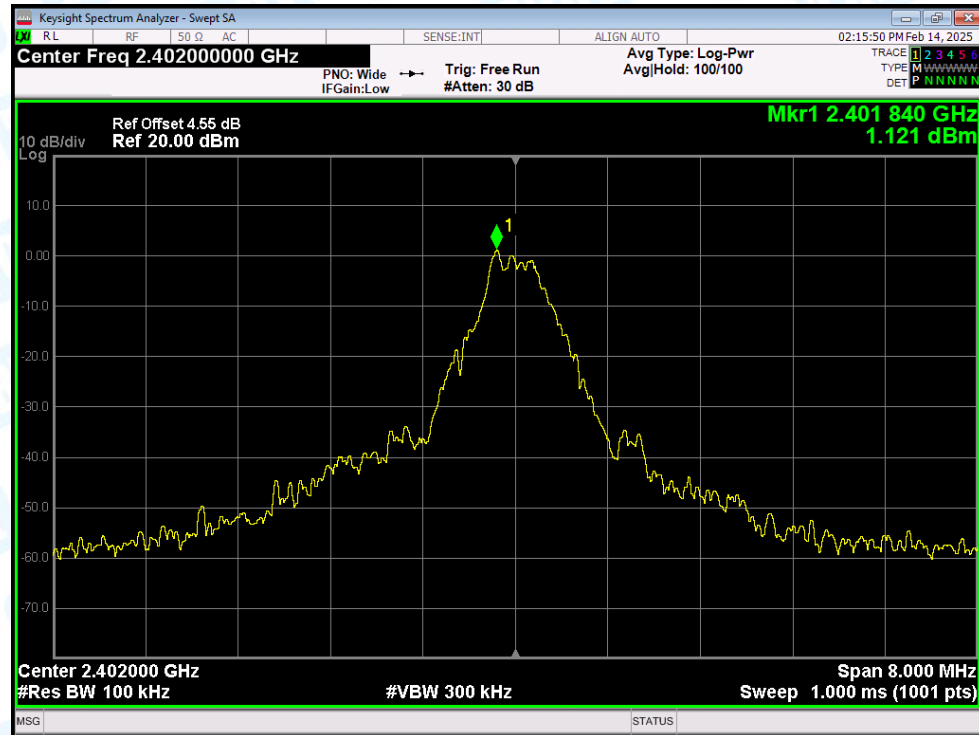


5.Band Edge

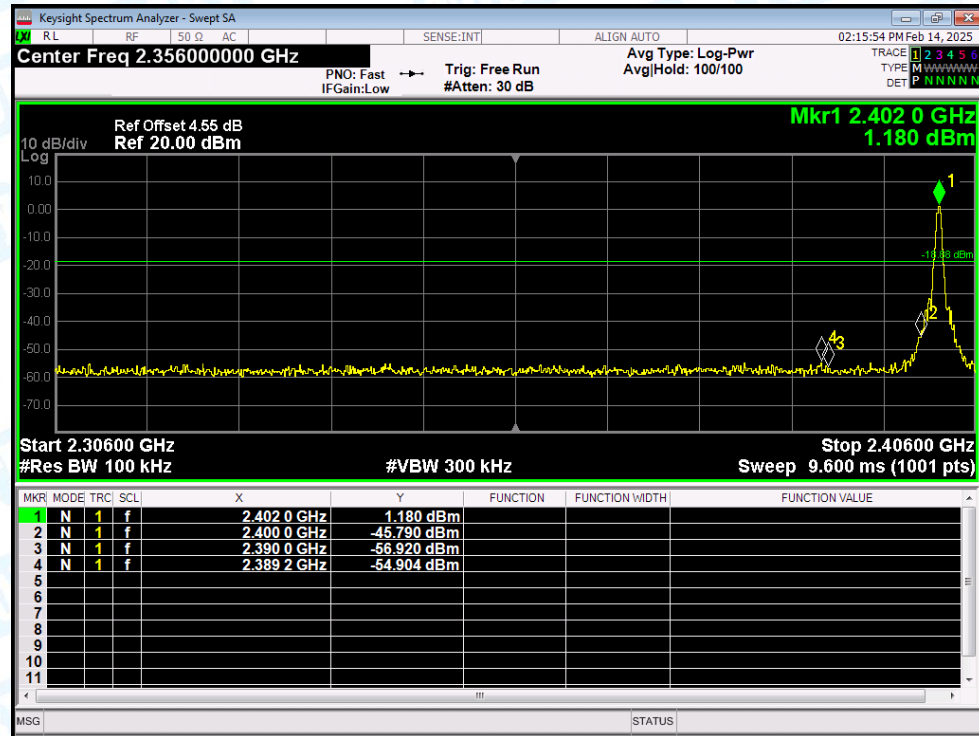
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-56.02	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-51.13	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-57.61	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-56.71	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-58.73	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-57.28	-20	Pass

Test Graphs

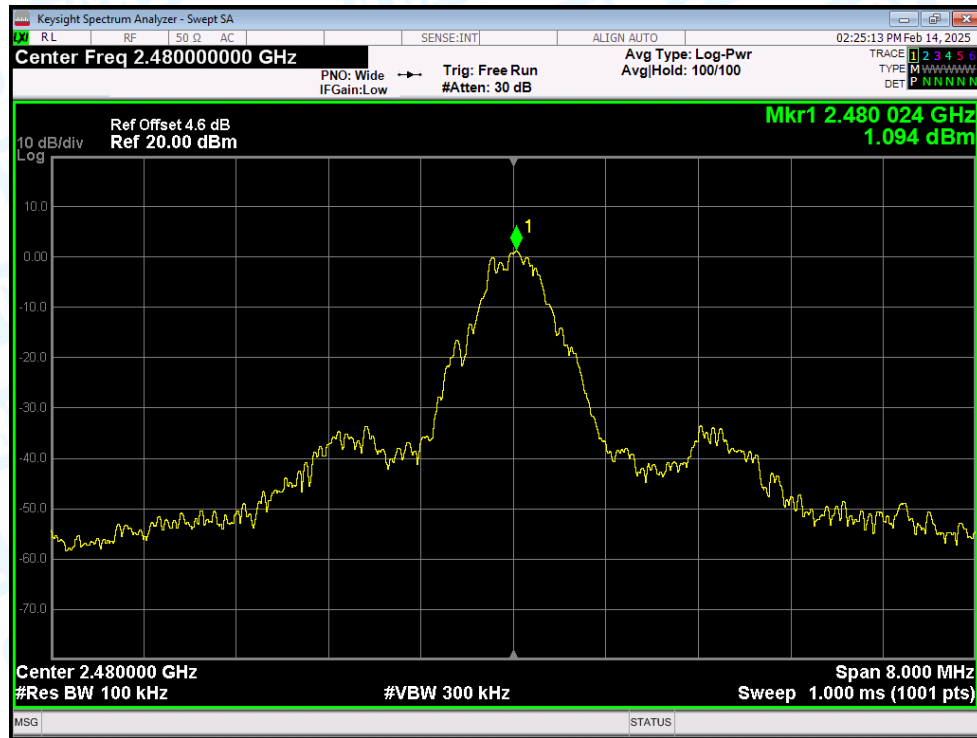
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



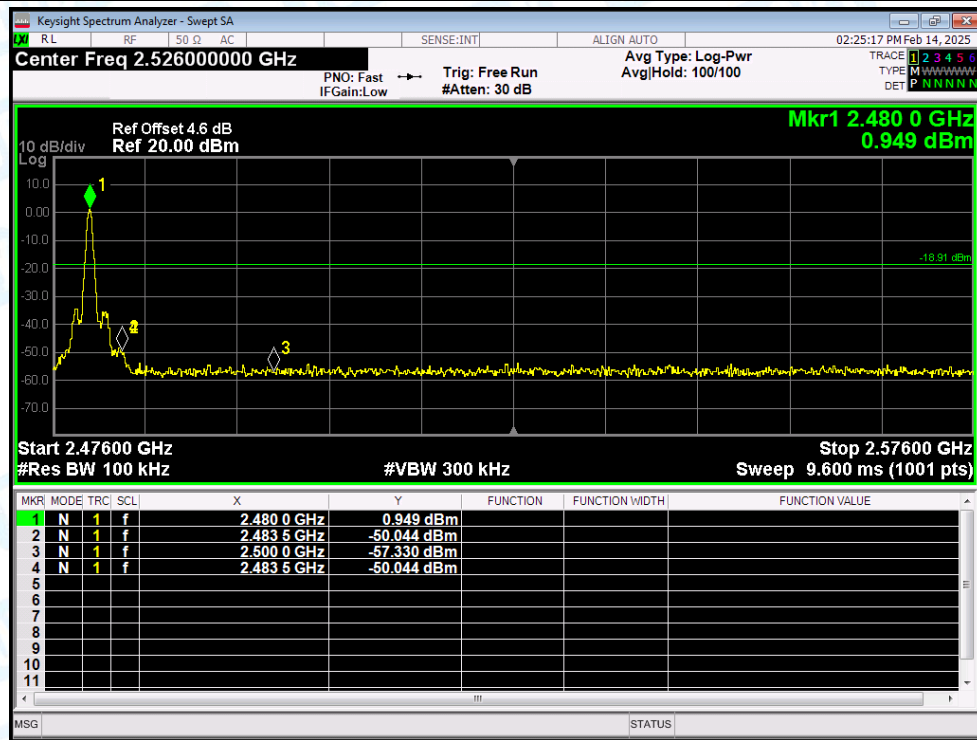
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission

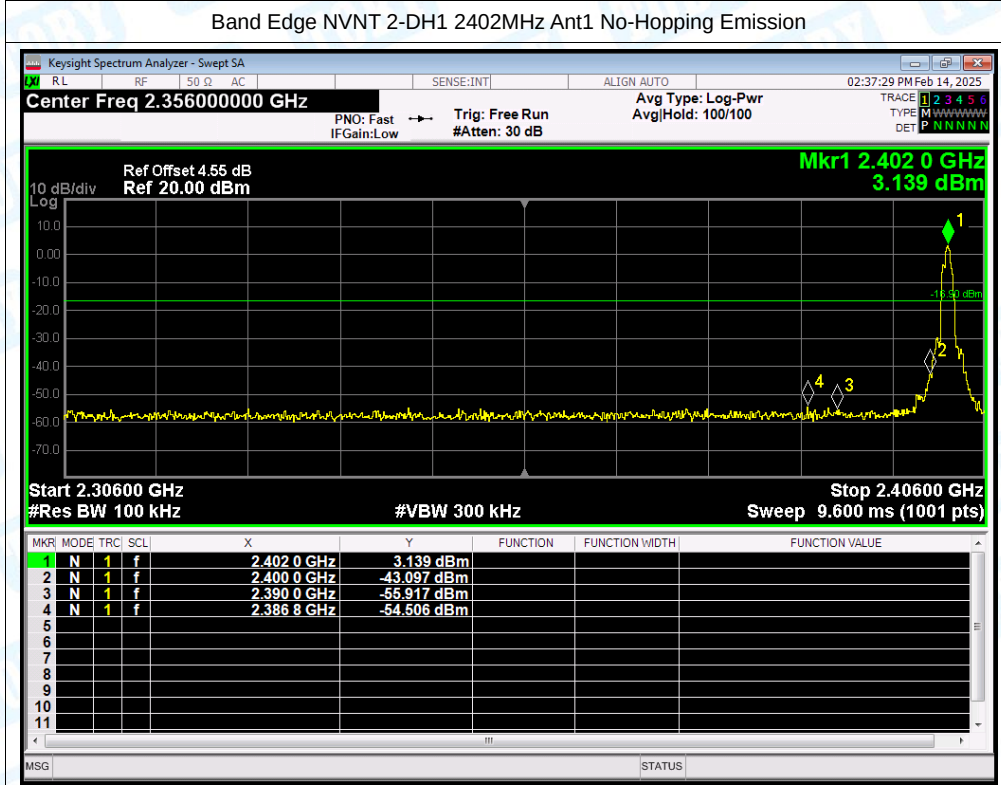


Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



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

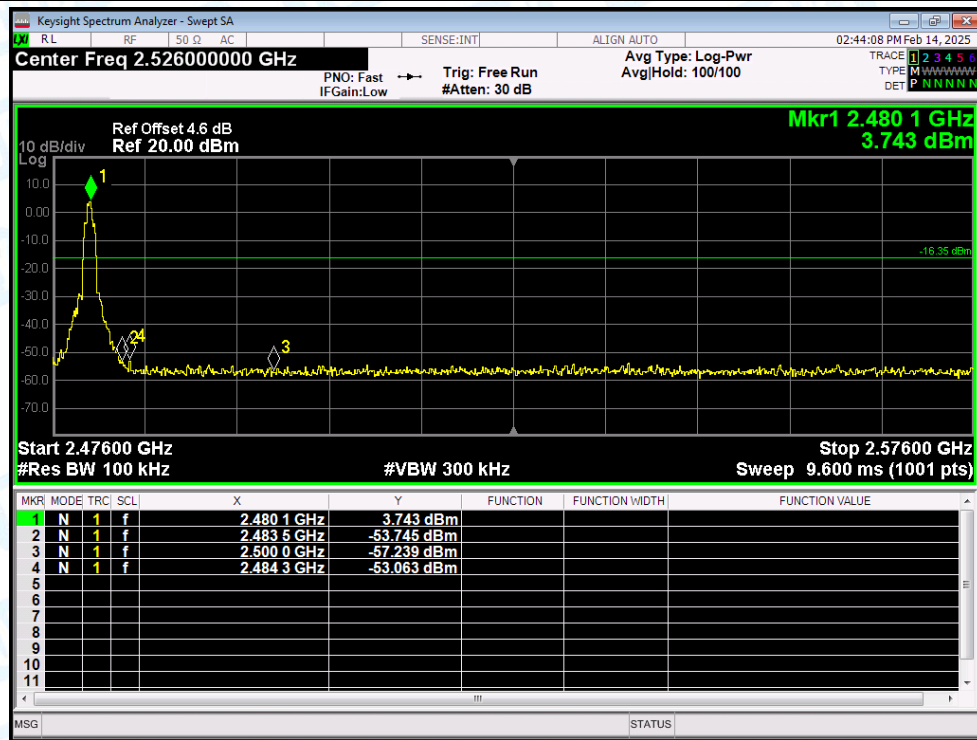




Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



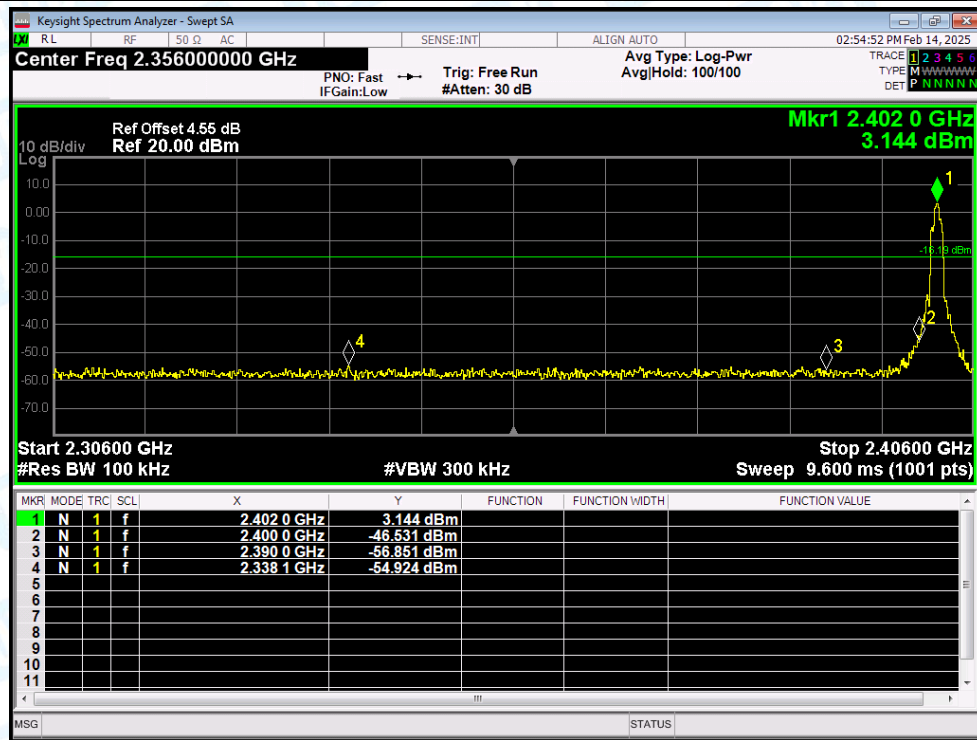
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



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



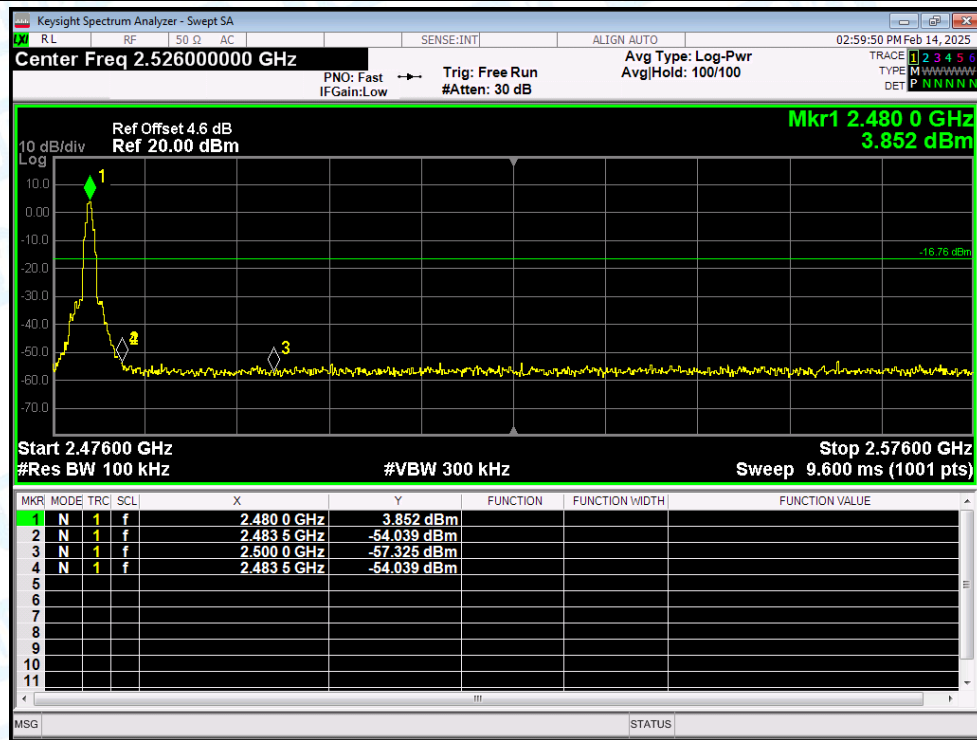
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



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



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

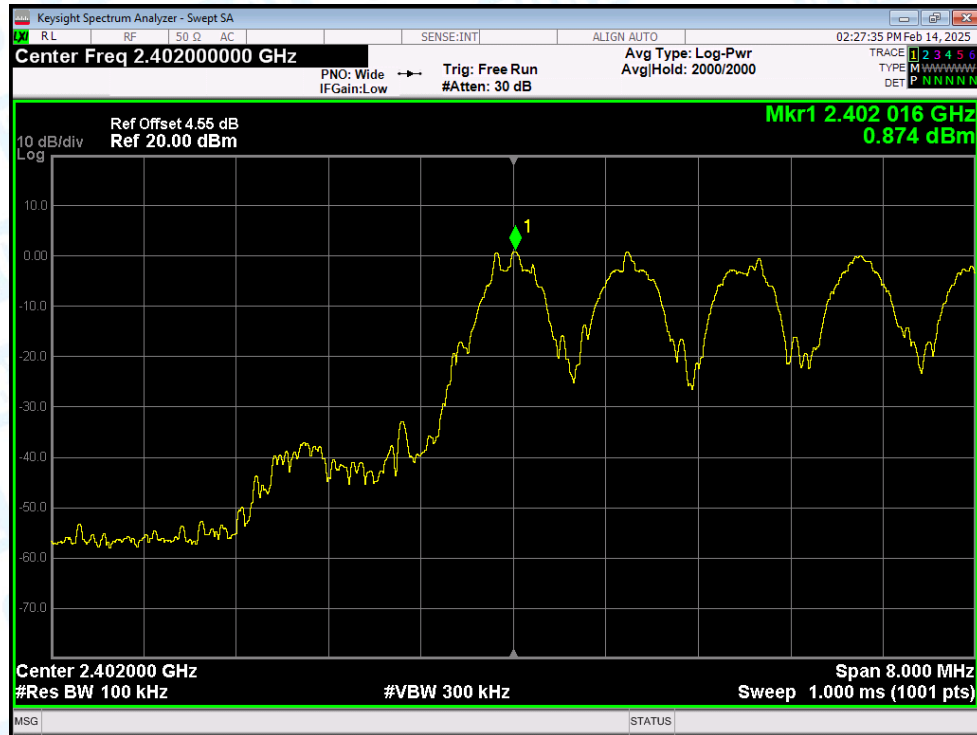


6.Band Edge(Hopping)

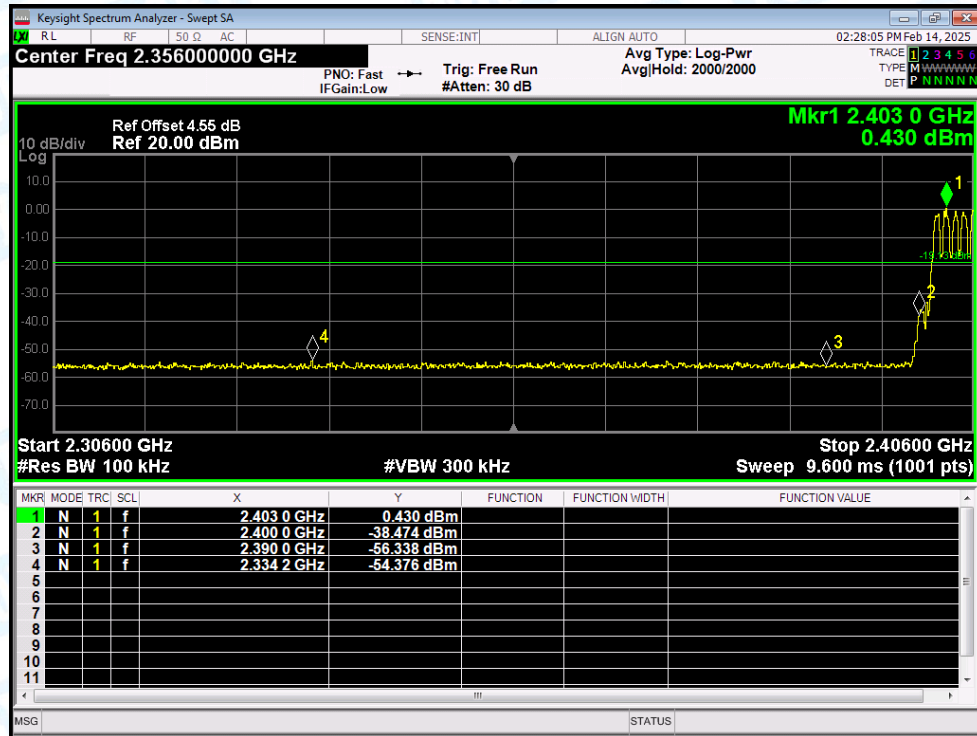
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-55.25	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-55.07	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-56.98	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-56.51	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-57.28	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-55.71	-20	Pass

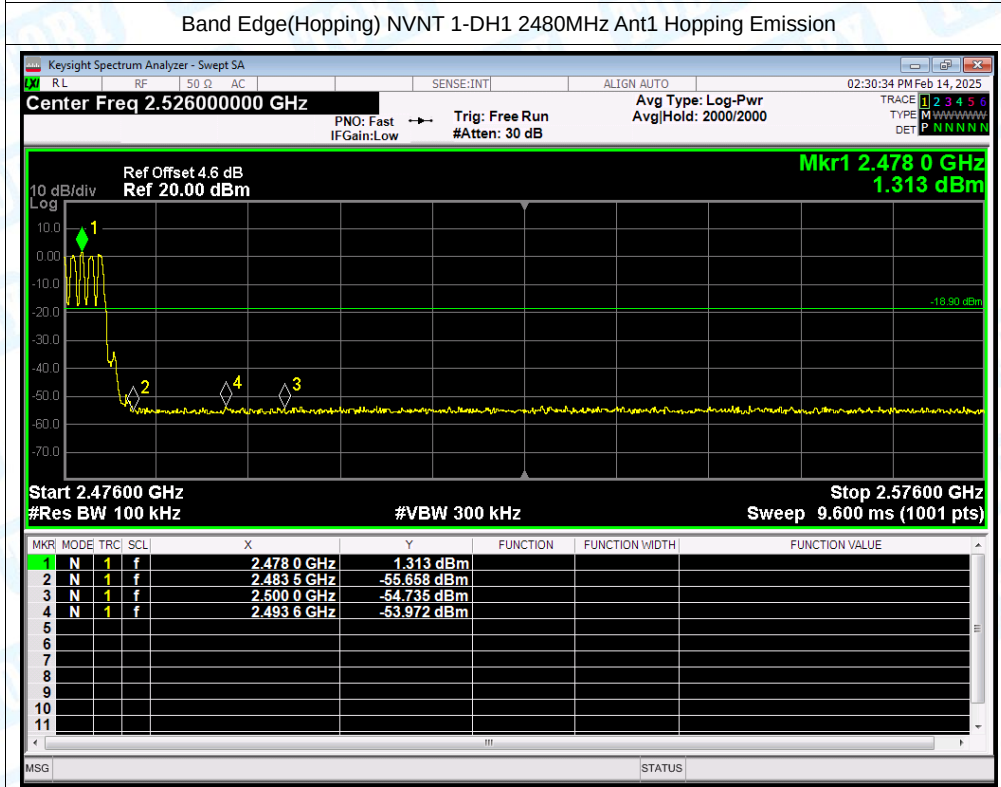
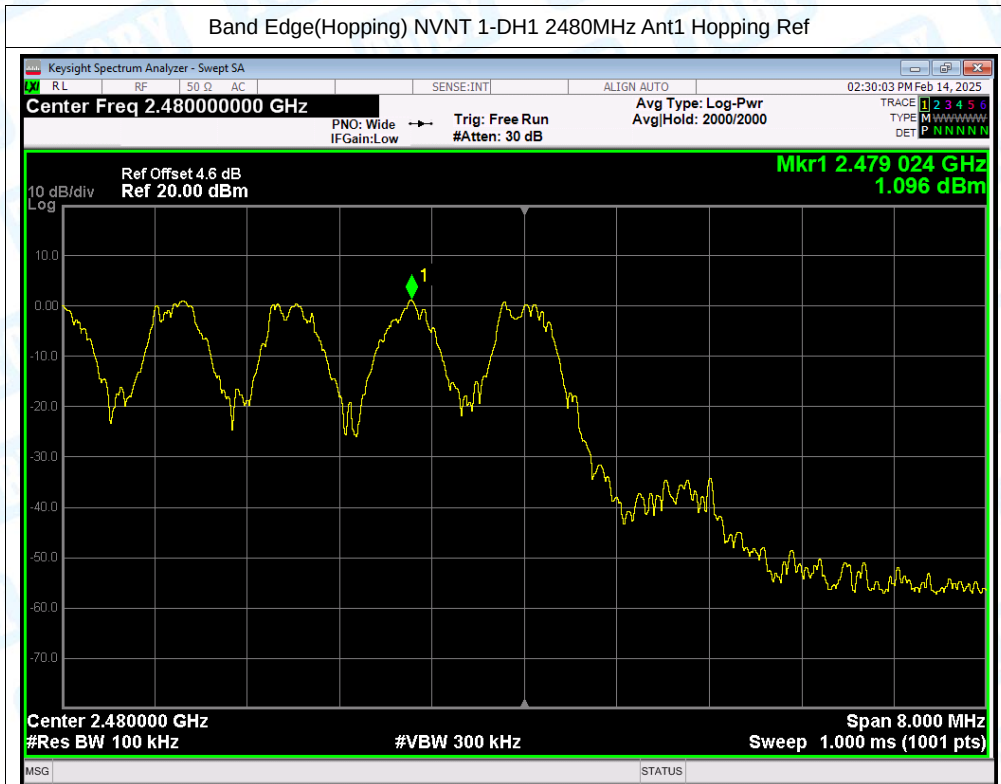
Test Graphs

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



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

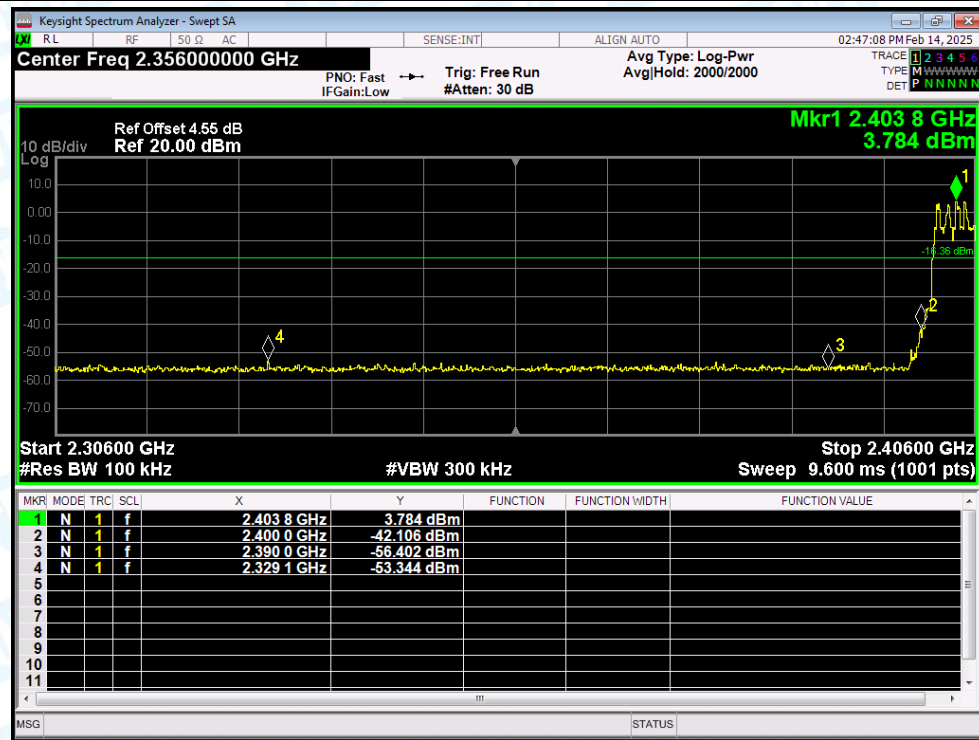


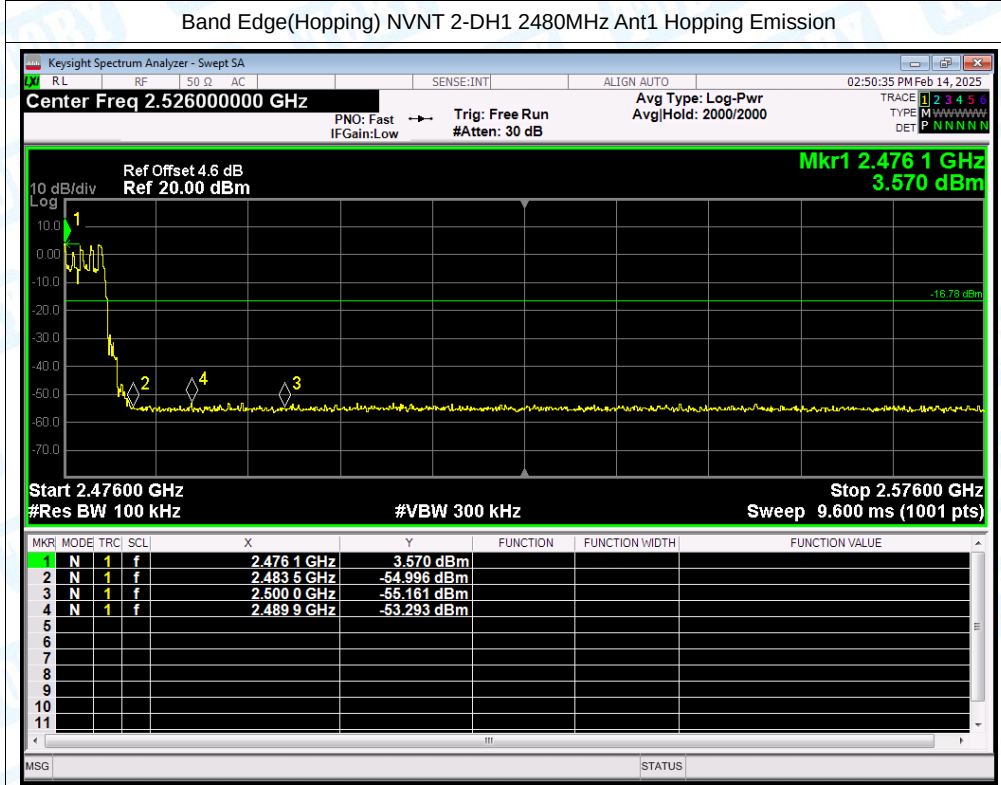


Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref



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

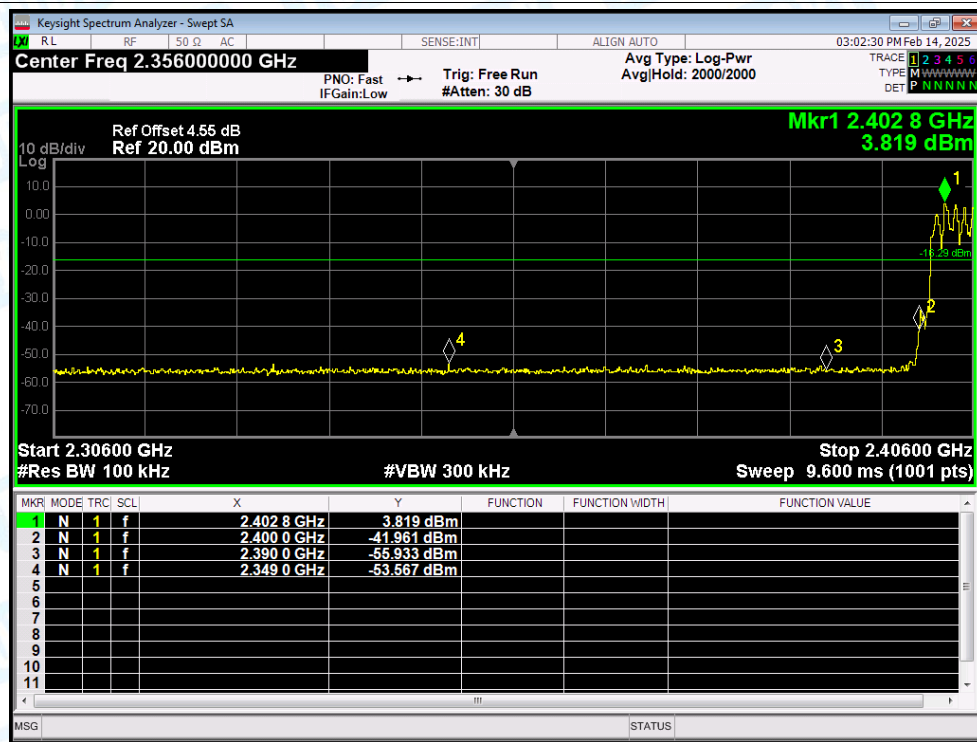


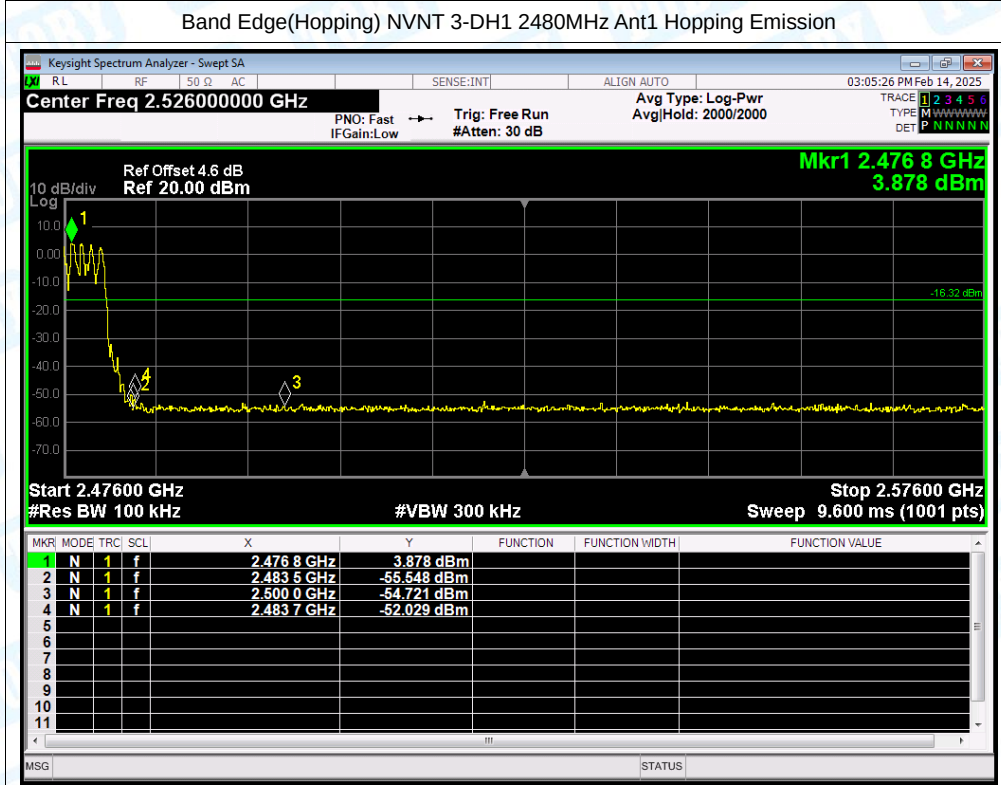


Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



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



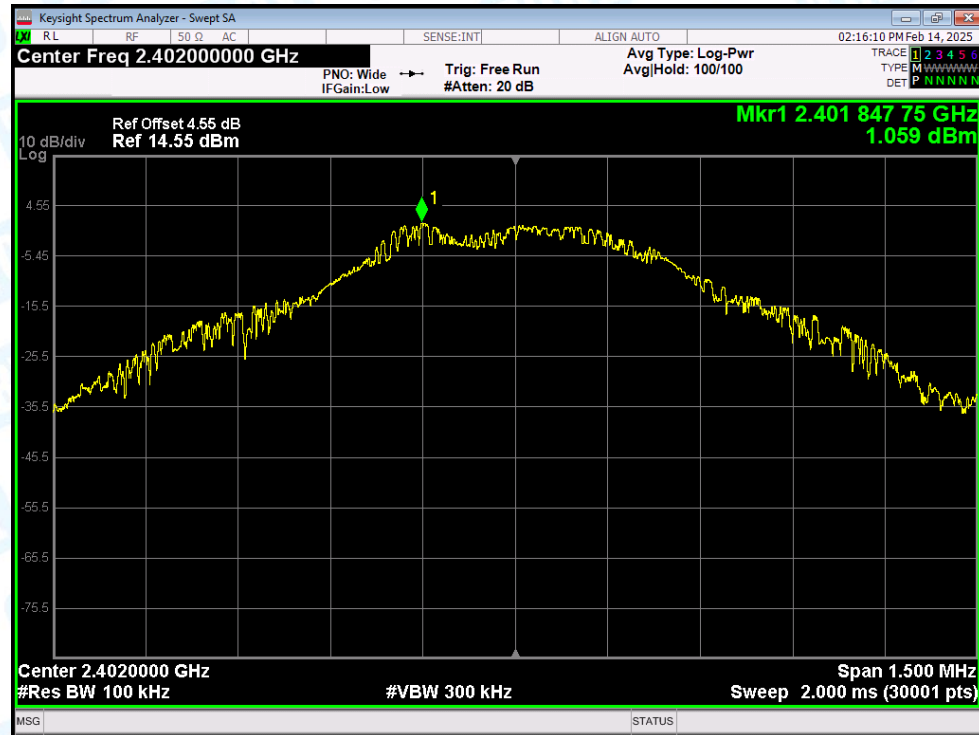


7. Conducted RF Spurious Emission

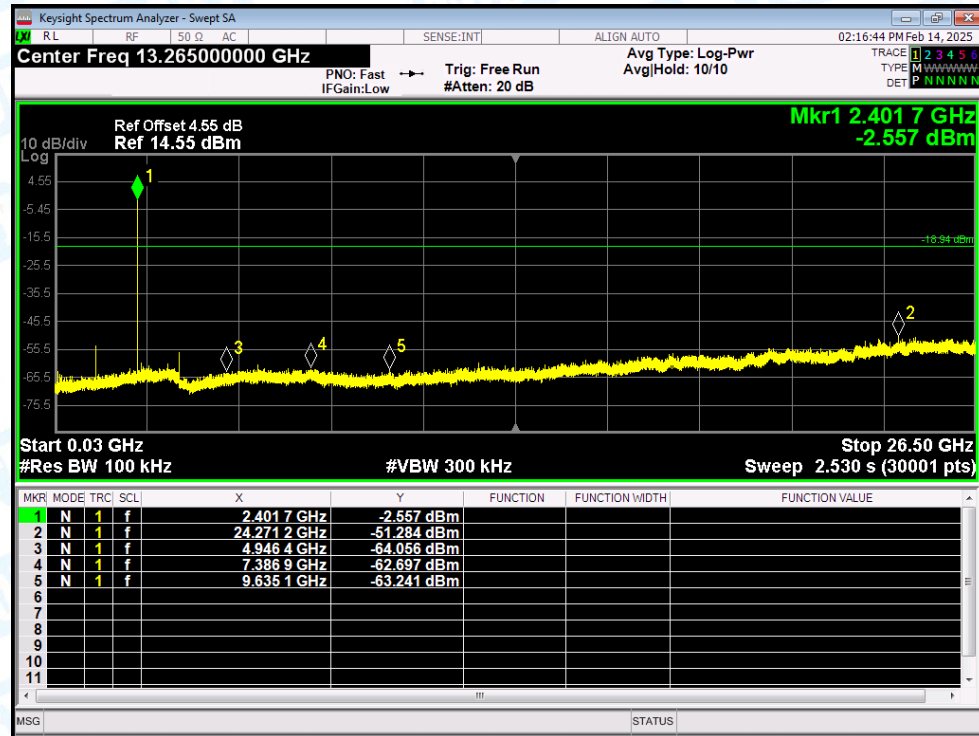
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-52.34	-20	Pass
NVNT	1-DH1	2441	Ant1	-52.23	-20	Pass
NVNT	1-DH1	2480	Ant1	-52.2	-20	Pass
NVNT	2-DH1	2402	Ant1	-54.37	-20	Pass
NVNT	2-DH1	2441	Ant1	-54.66	-20	Pass
NVNT	2-DH1	2480	Ant1	-54.02	-20	Pass
NVNT	3-DH1	2402	Ant1	-54.61	-20	Pass
NVNT	3-DH1	2441	Ant1	-55.12	-20	Pass
NVNT	3-DH1	2480	Ant1	-53.72	-20	Pass

Test Graphs

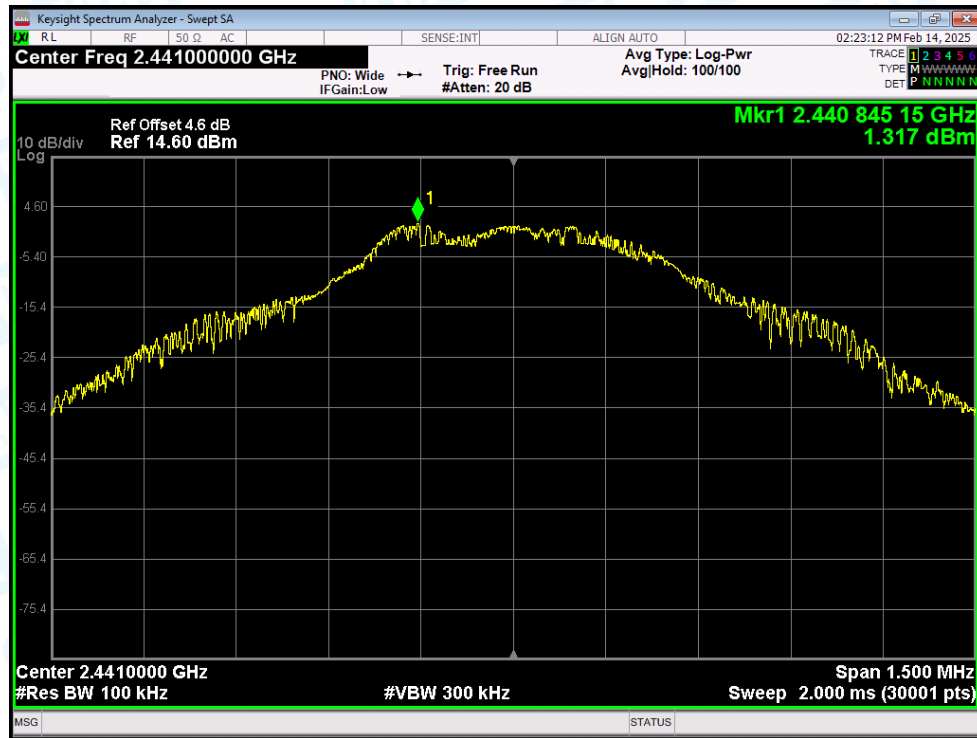
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



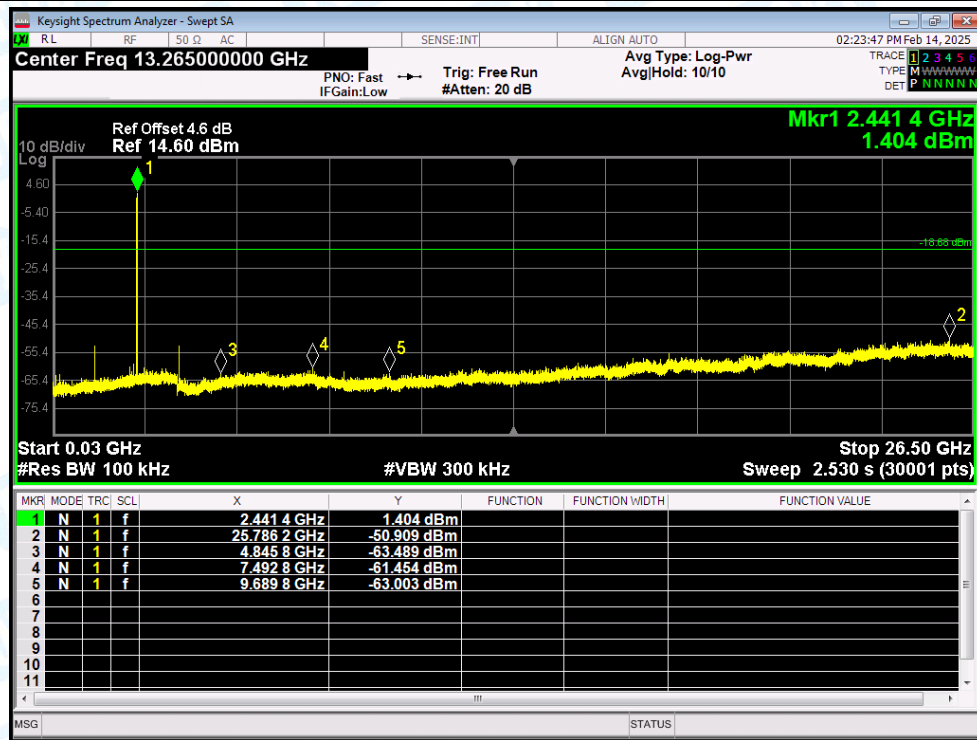
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



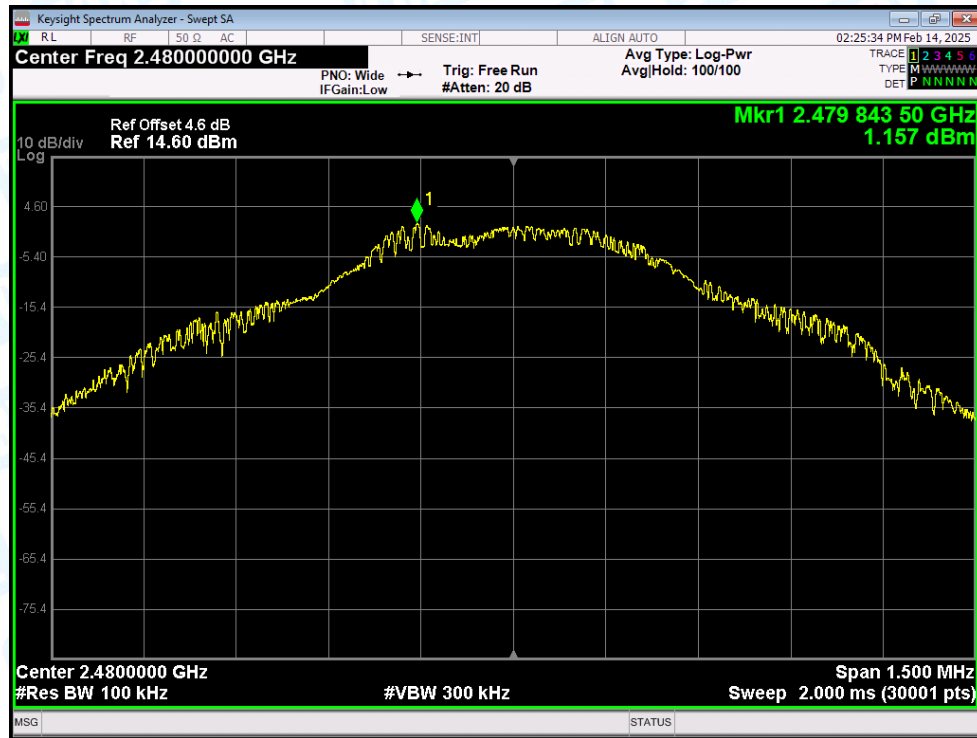
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



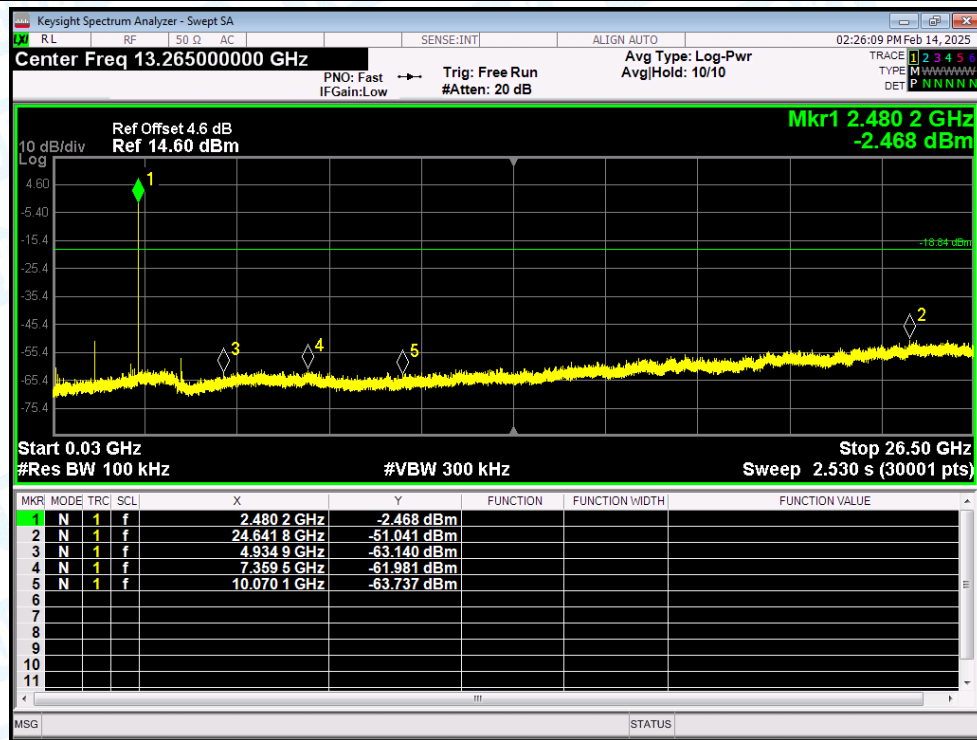
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



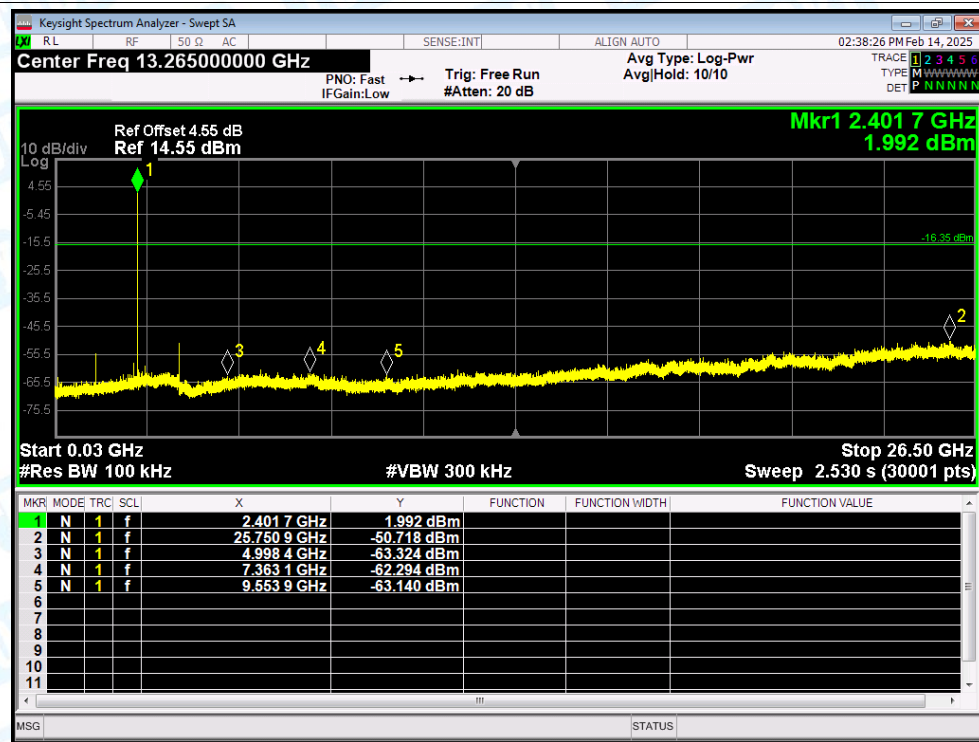
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



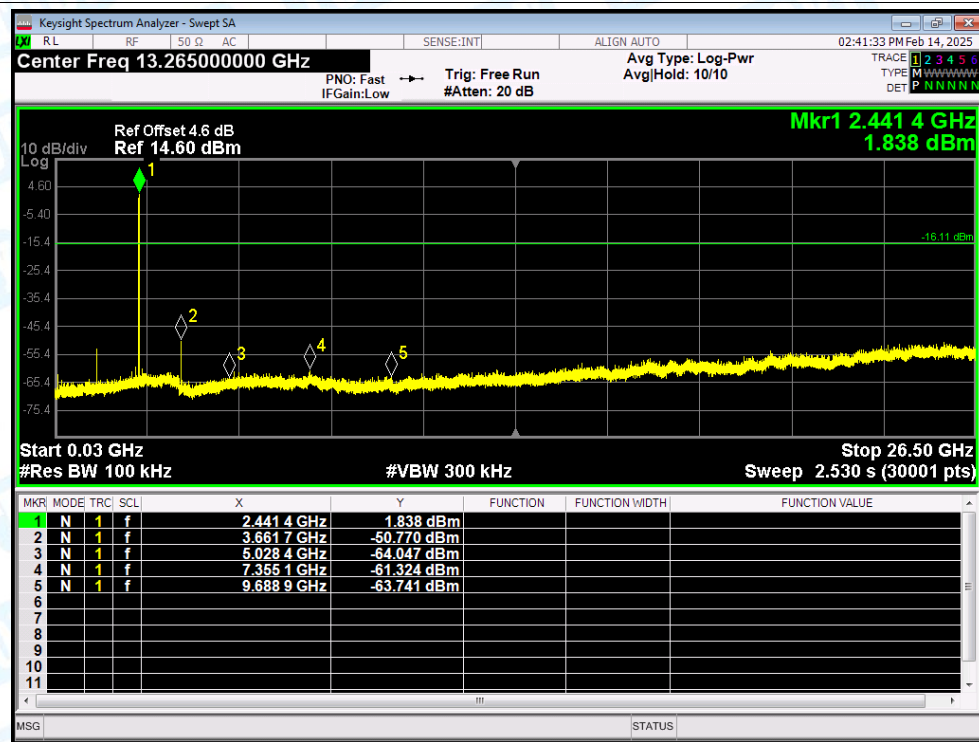
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



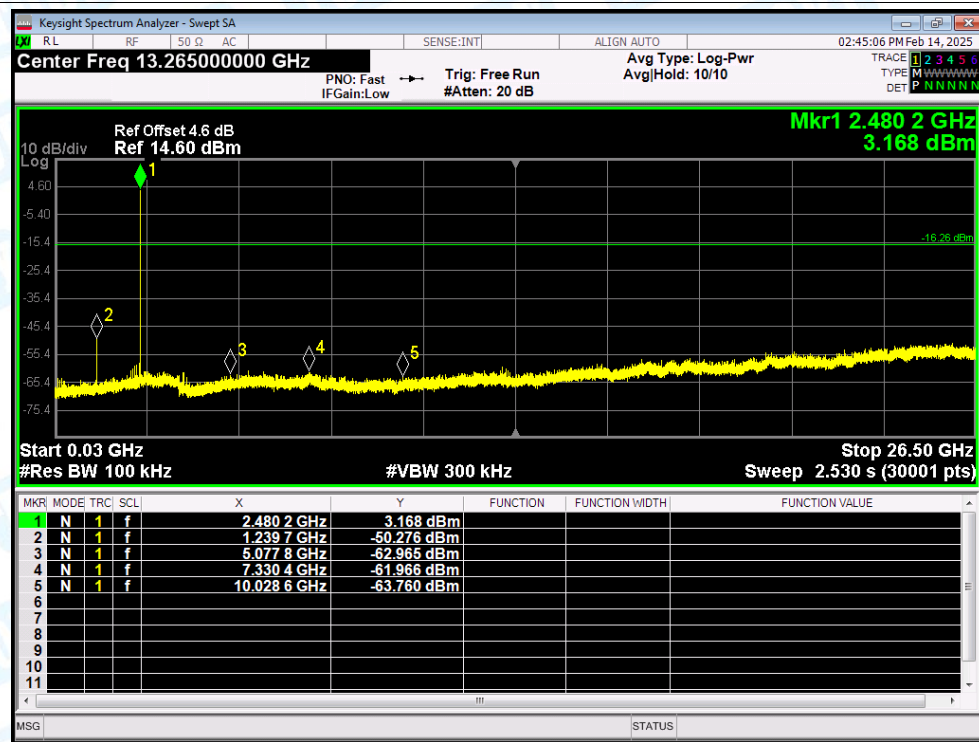
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



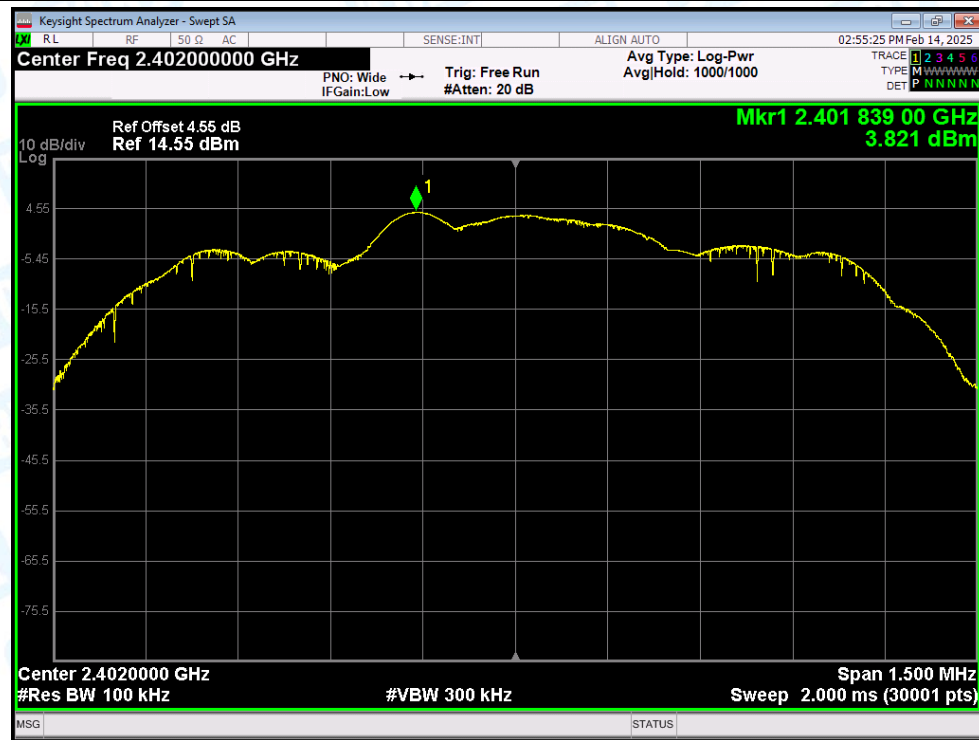
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



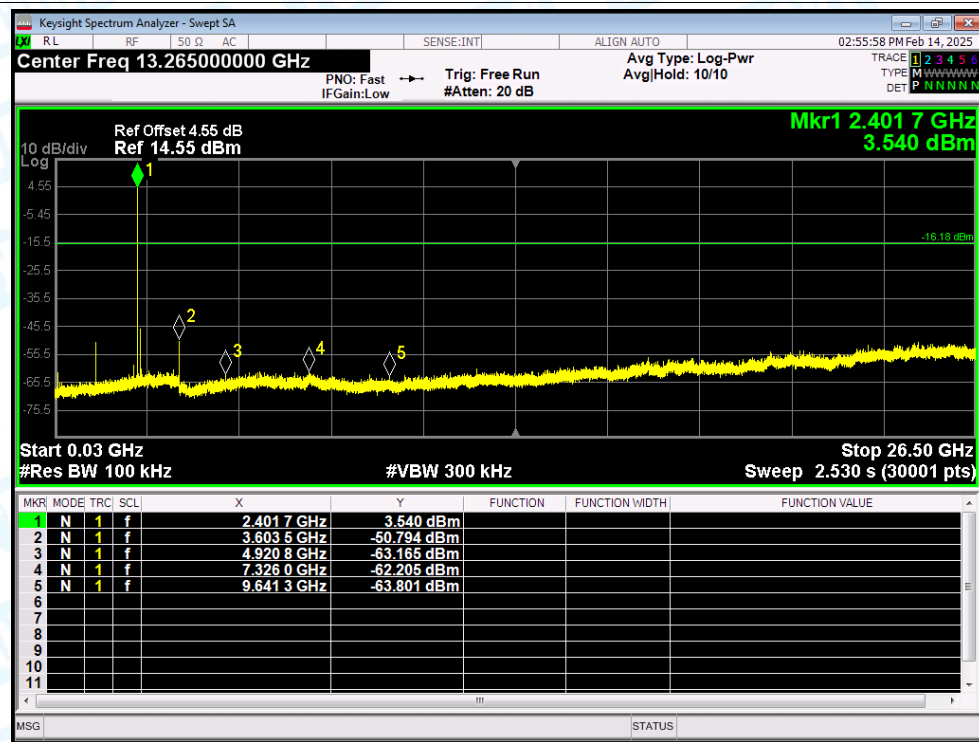
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



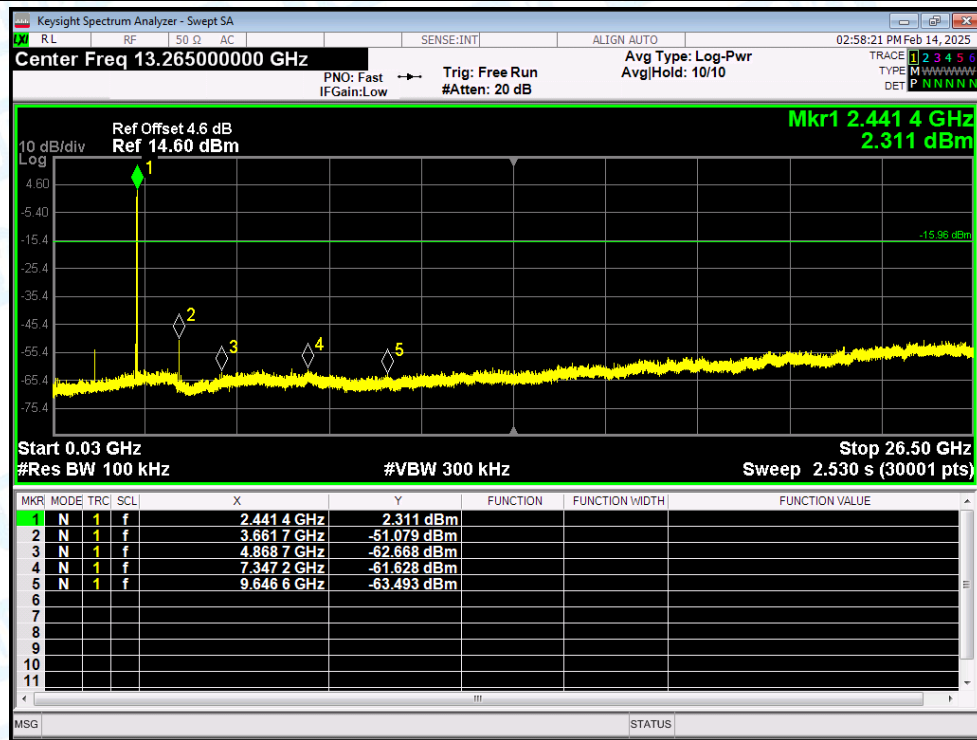
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



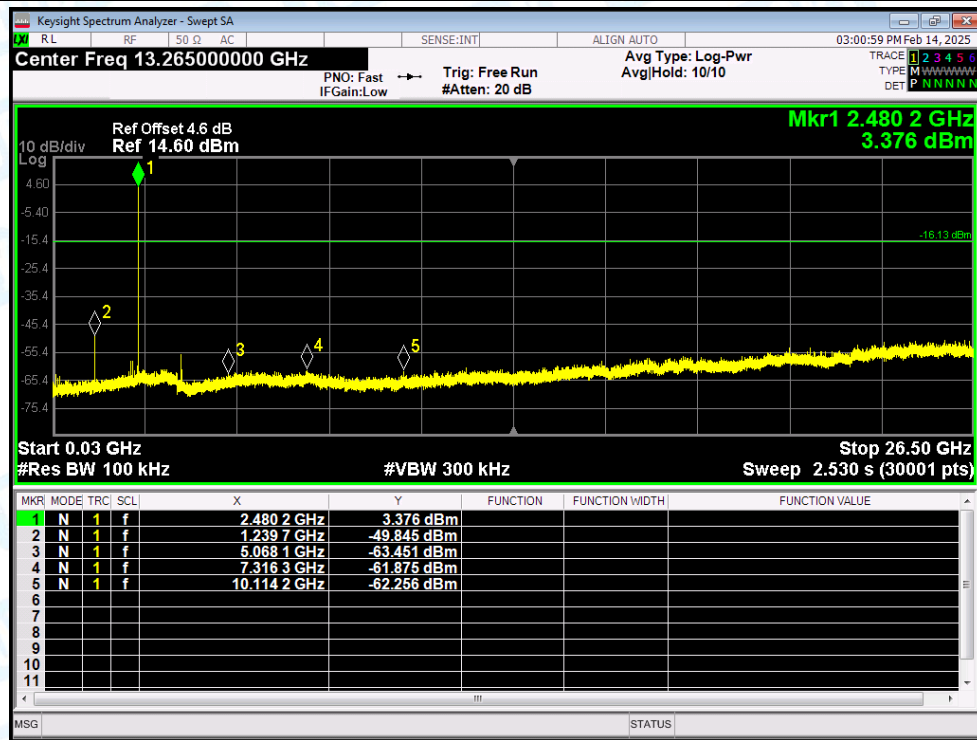
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

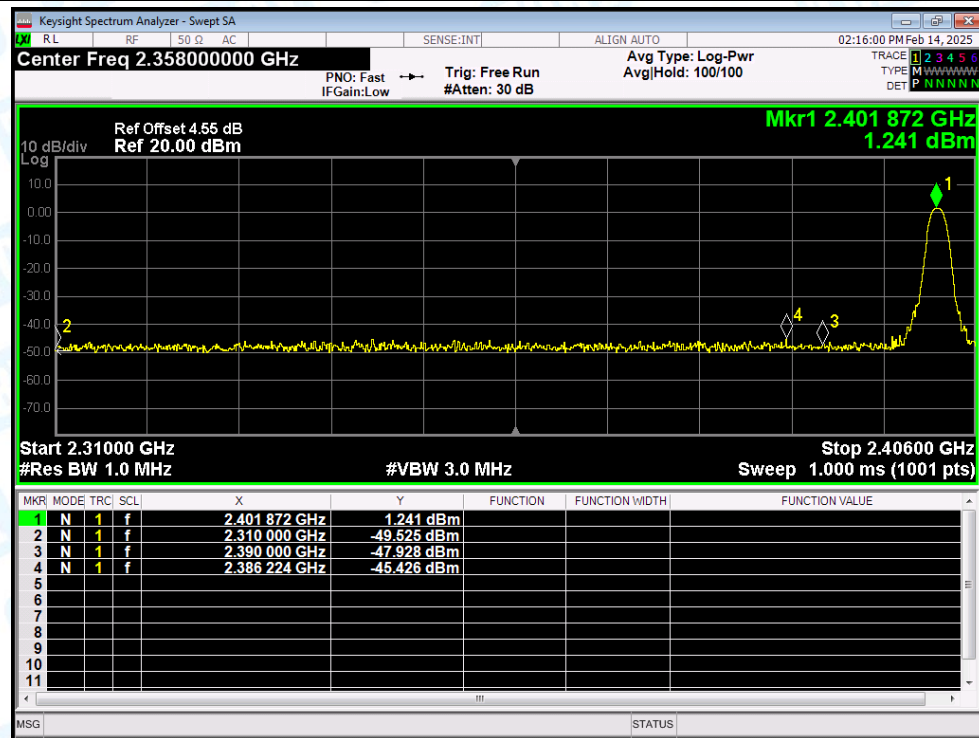


8.Restrict Band

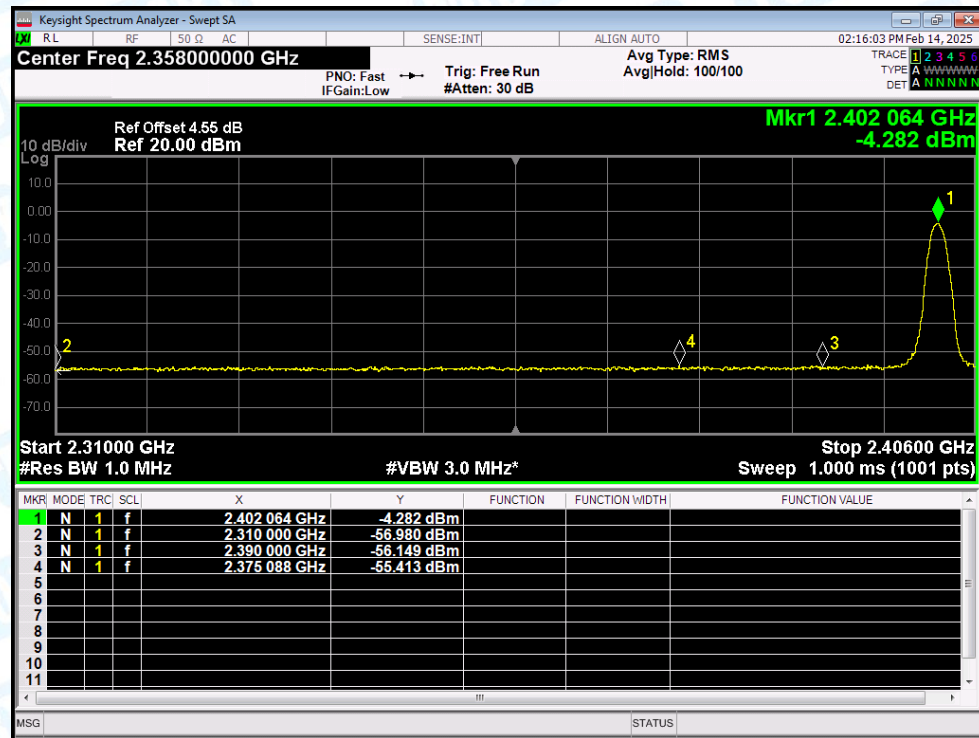
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-49.53	2	-	47.73	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.98	2	5.29	45.57	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2386.224	-45.43	2	-	51.83	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2375.088	-55.41	2	5.29	47.14	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-47.93	2	-	49.33	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-56.15	2	5.29	46.40	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-41.28	2	-	55.98	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-52.96	2	5.29	49.59	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.584	-41.1	2	-	56.16	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.584	-52.79	2	5.29	49.76	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-46.17	2	-	51.09	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-55.39	2	5.29	47.16	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-48.26	2	-	49.00	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.63	2	5.17	45.80	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2365.008	-45.55	2	-	51.71	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2346	-55.24	2	5.17	47.19	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-47.85	2	-	49.41	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-56.13	2	5.17	46.30	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-42.36	2	-	54.90	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-54.3	2	5.17	48.13	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.632	-40.93	2	-	56.33	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2484.064	-53.89	2	5.17	48.54	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-48	2	-	49.26	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.4	2	5.17	47.03	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-48.89	2	-	48.37	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.59	2	5.17	45.84	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2368.752	-45.03	2	-	52.23	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2388.528	-55.2	2	5.17	47.23	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-46.87	2	-	50.39	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-56.03	2	5.17	46.40	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-42.09	2	-	55.17	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-53.53	2	5.17	48.90	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.536	-40.62	2	-	56.64	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.536	-53.33	2	5.17	49.10	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-49.44	2	-	47.82	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.25	2	5.17	47.18	Average	54	Pass

Test Graphs

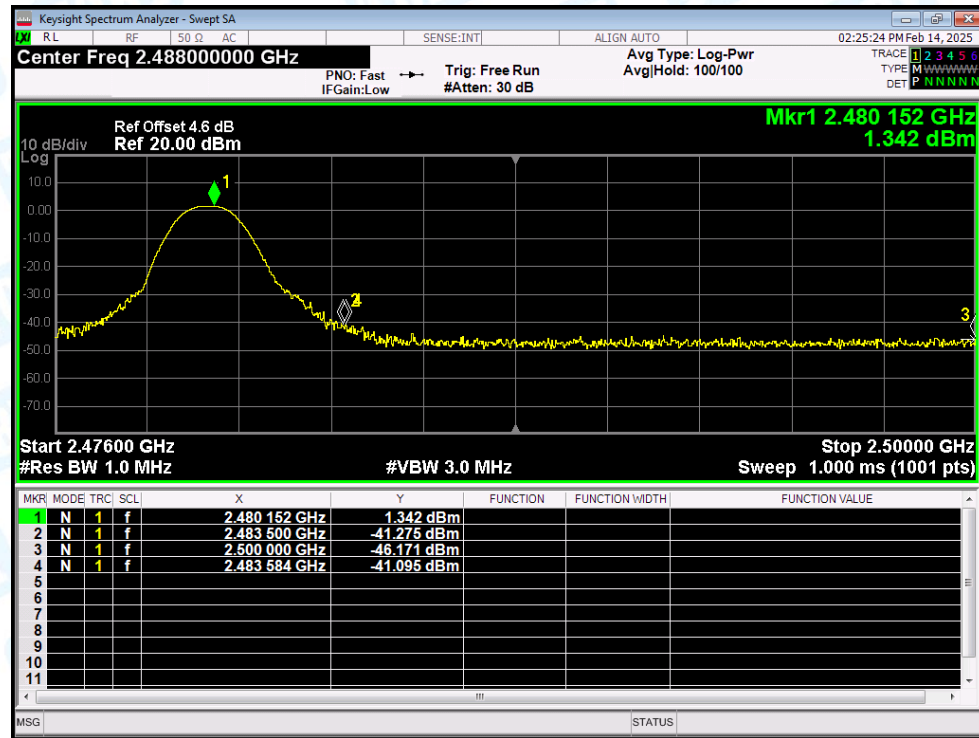
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



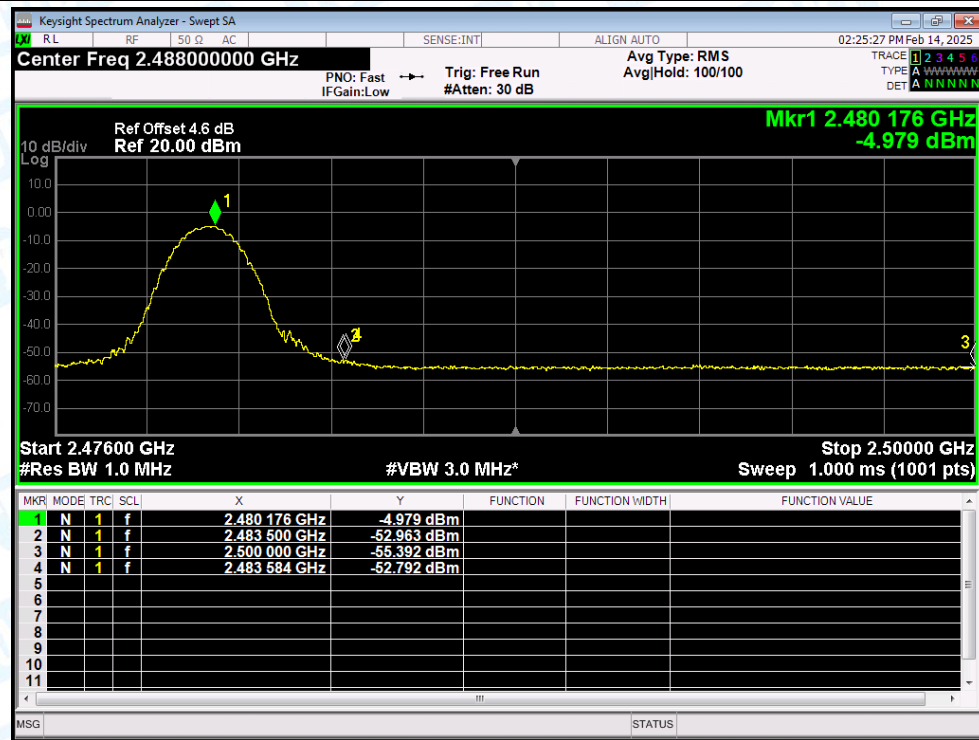
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



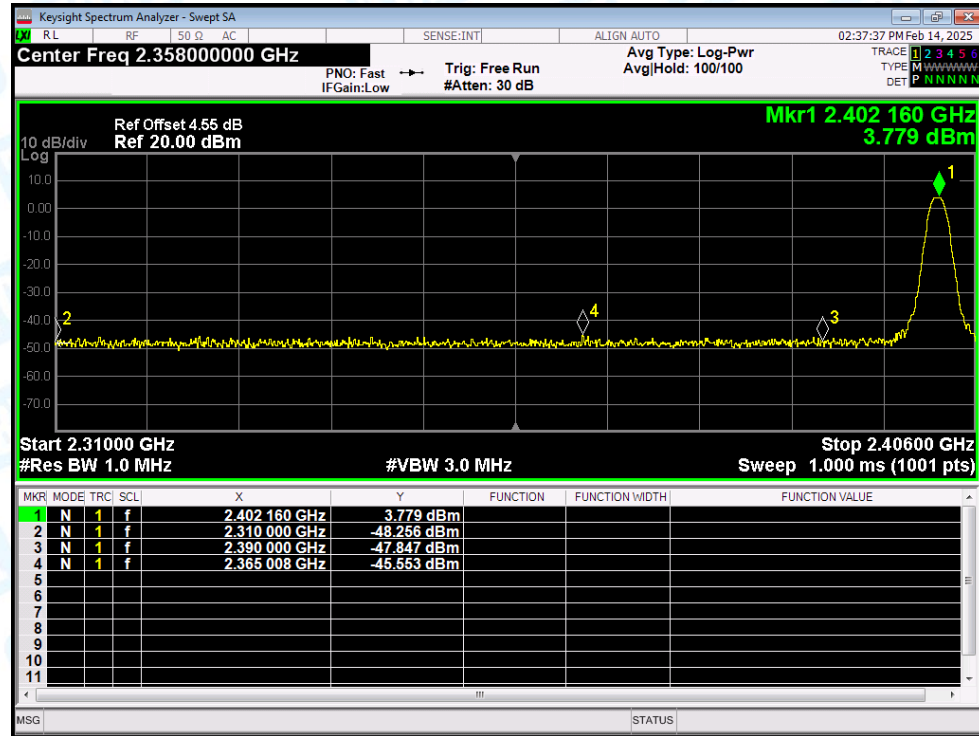
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



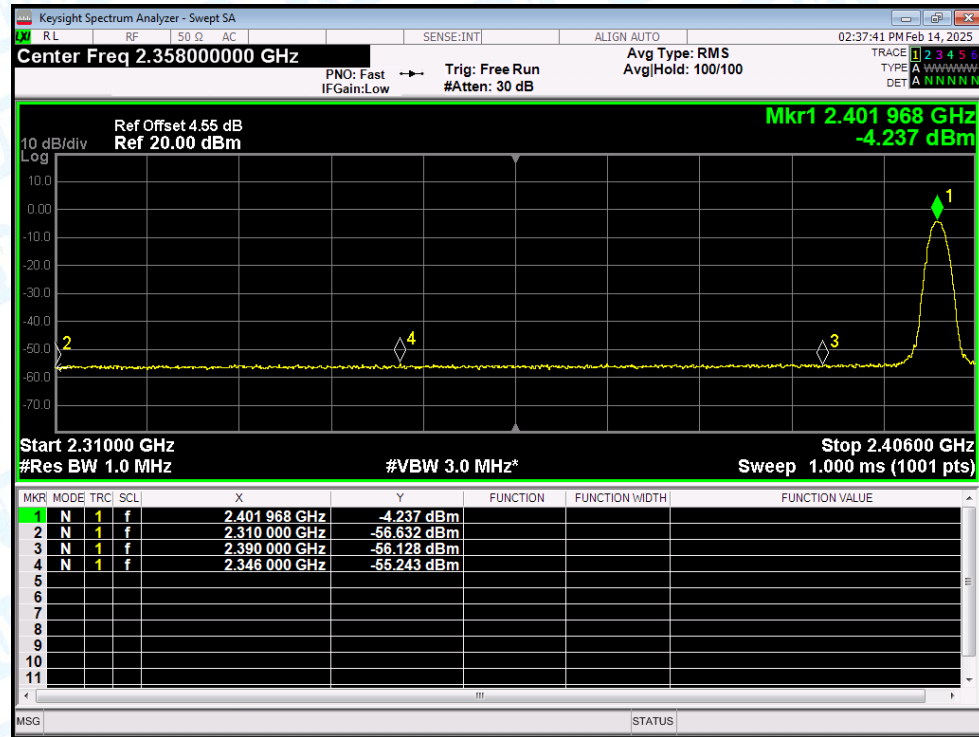
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



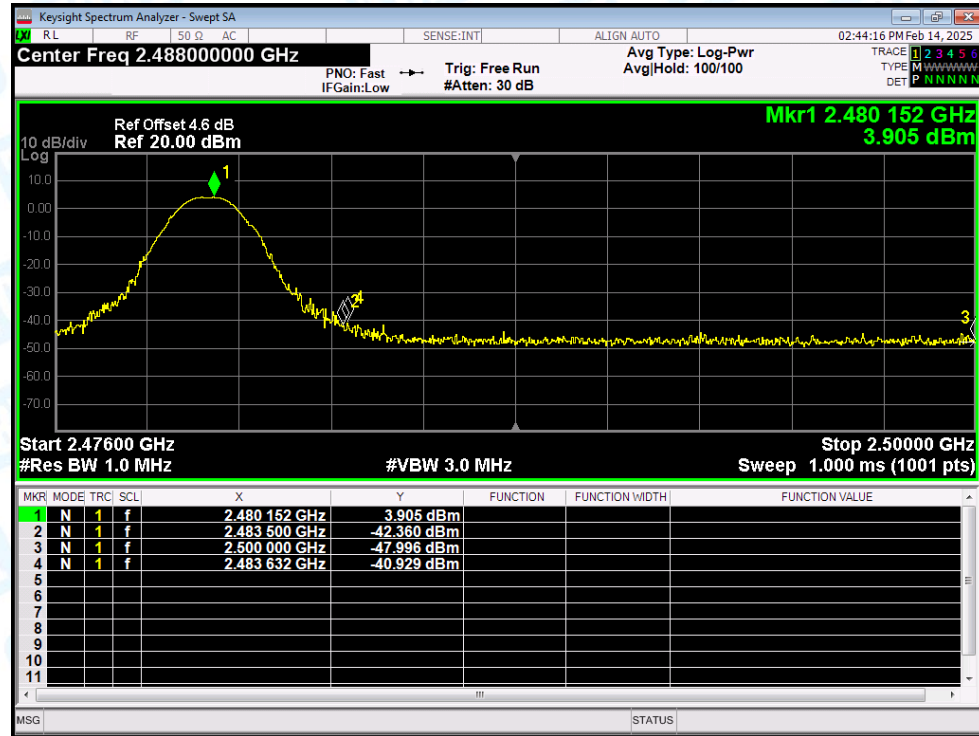
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



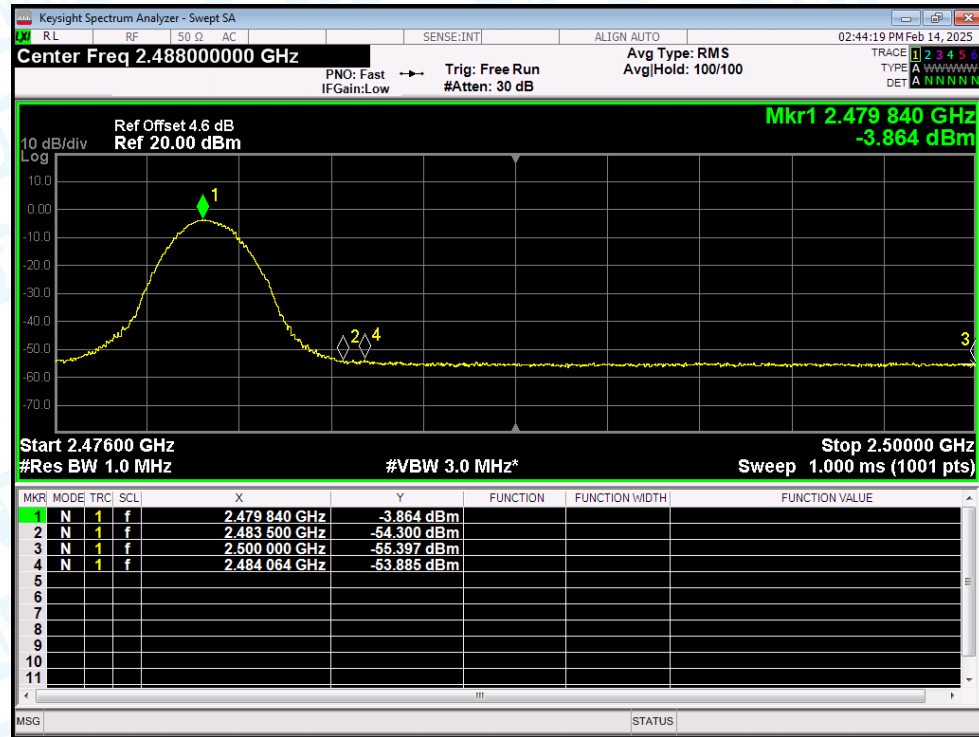
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



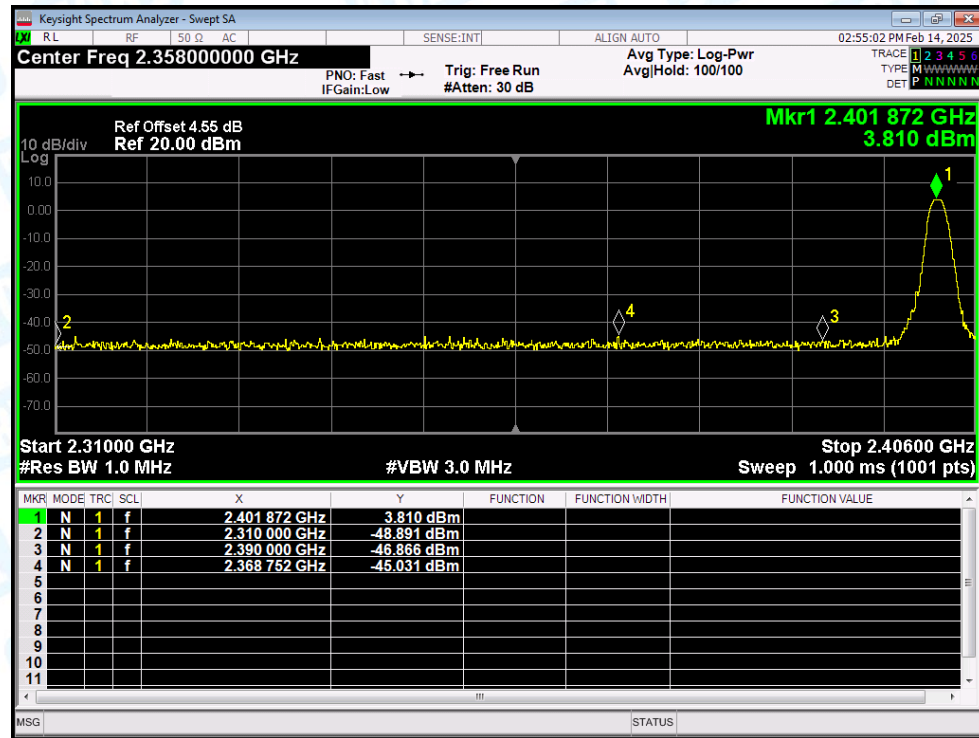
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



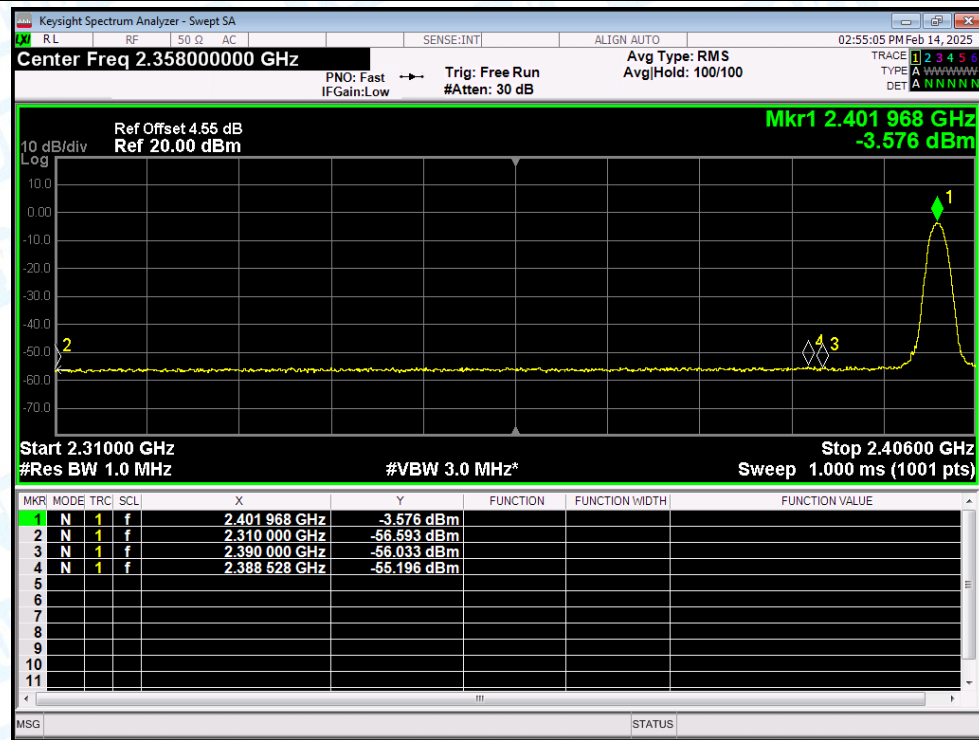
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



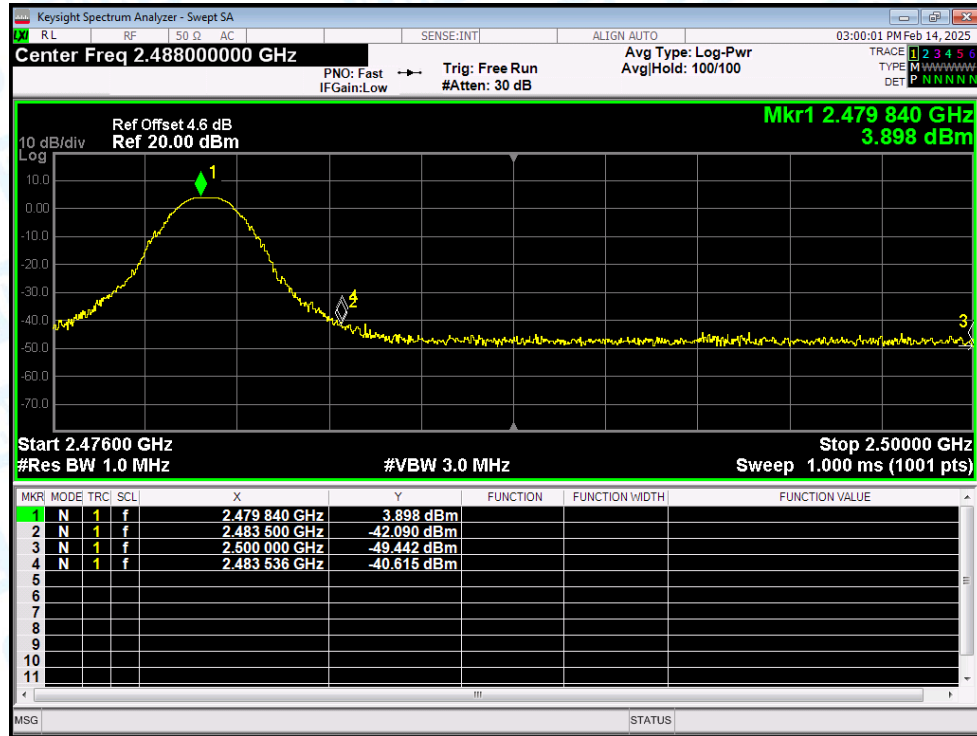
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



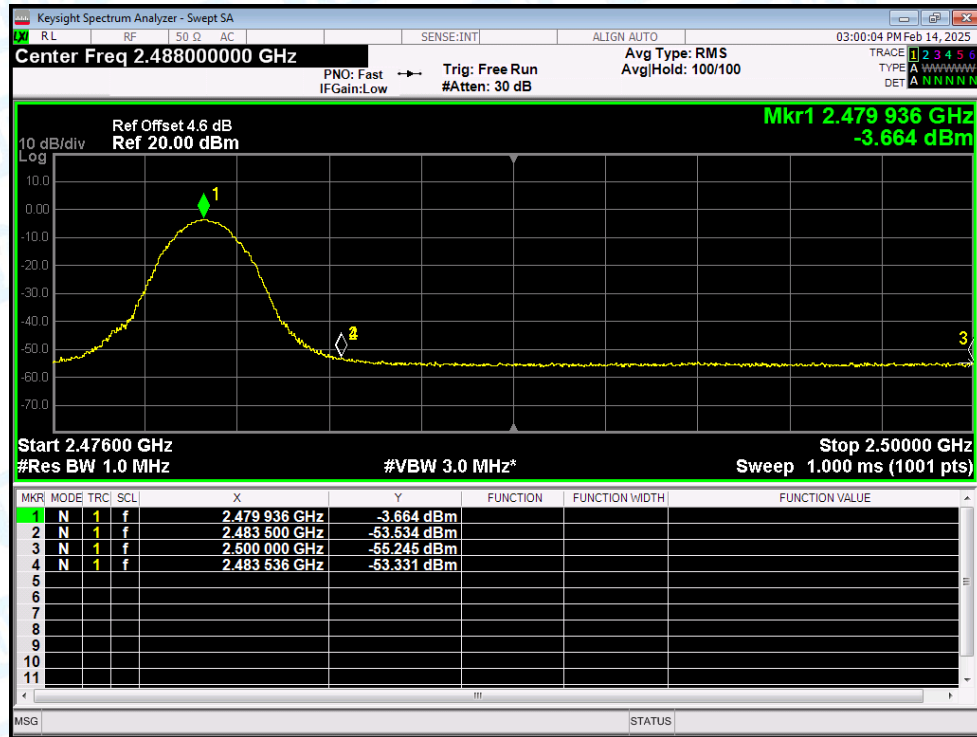
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

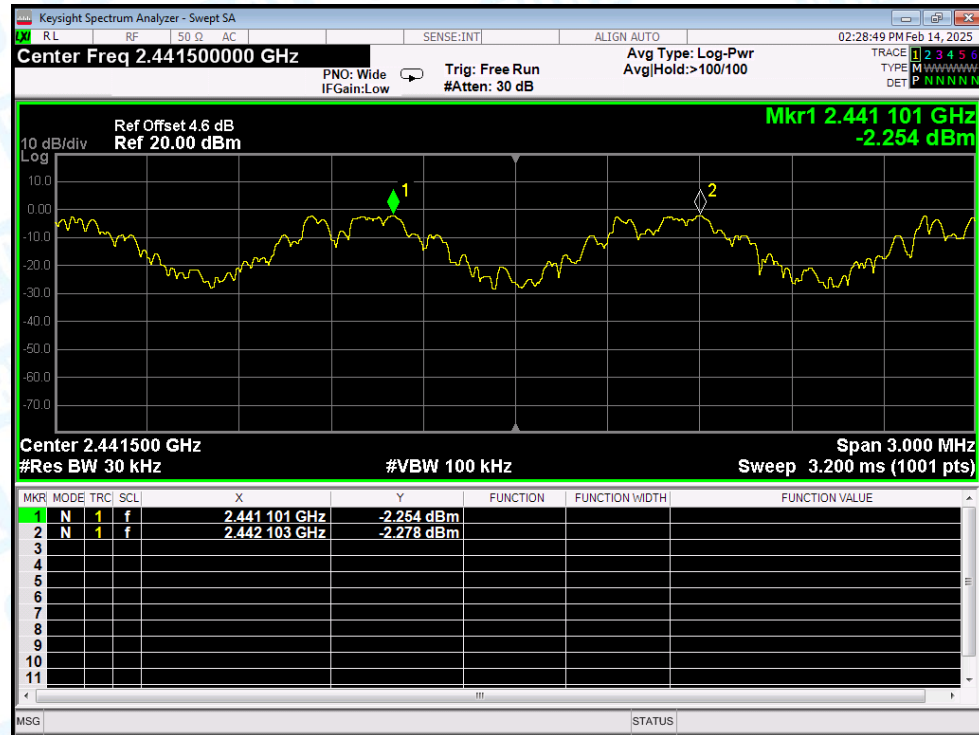


9.Carrier Frequencies Separation

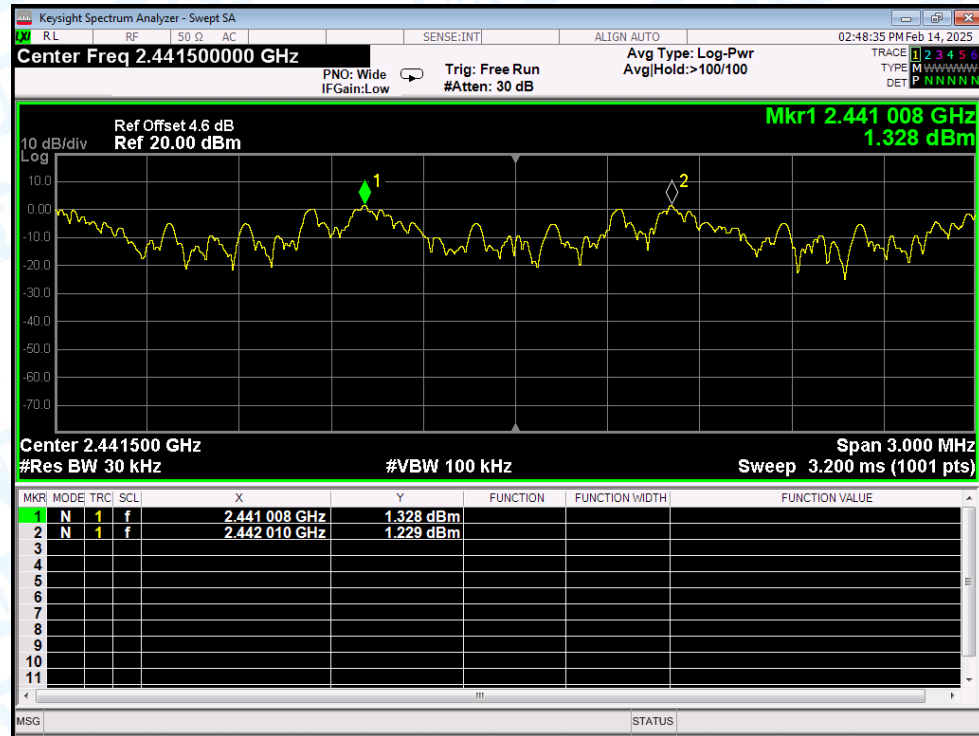
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2441.101	2442.103	1.002	0.567	Pass
NVNT	2-DH1	Ant1	2441.008	2442.01	1.002	0.853	Pass
NVNT	3-DH1	Ant1	2441.002	2442.001	0.999	0.8	Pass

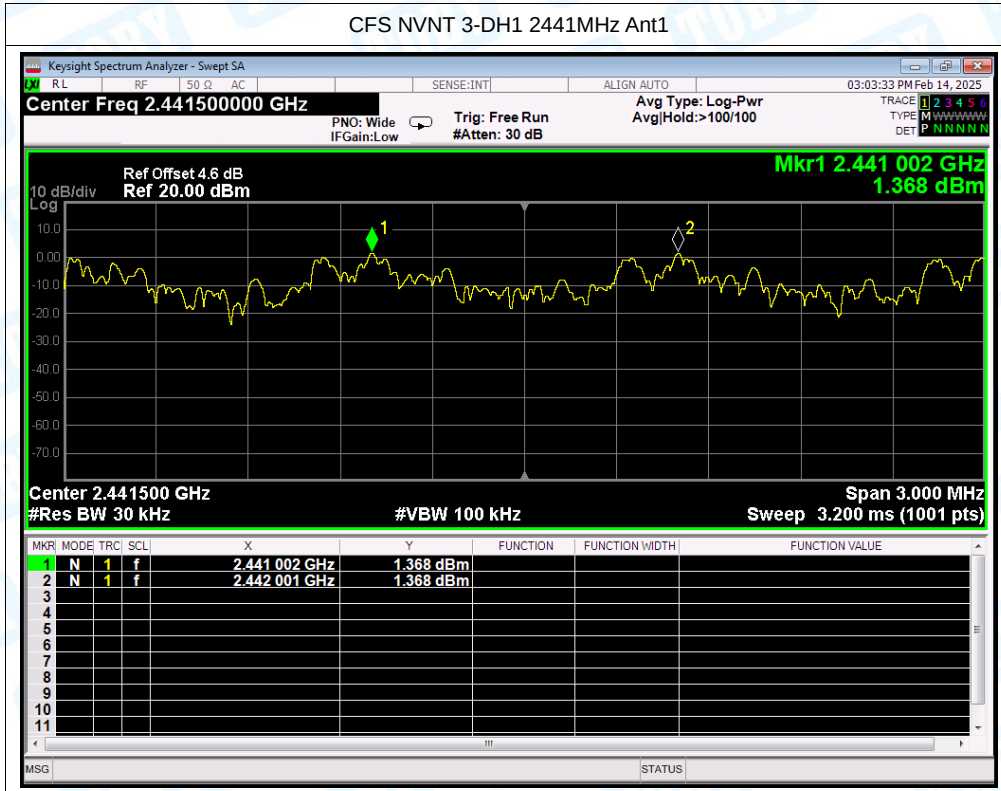
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



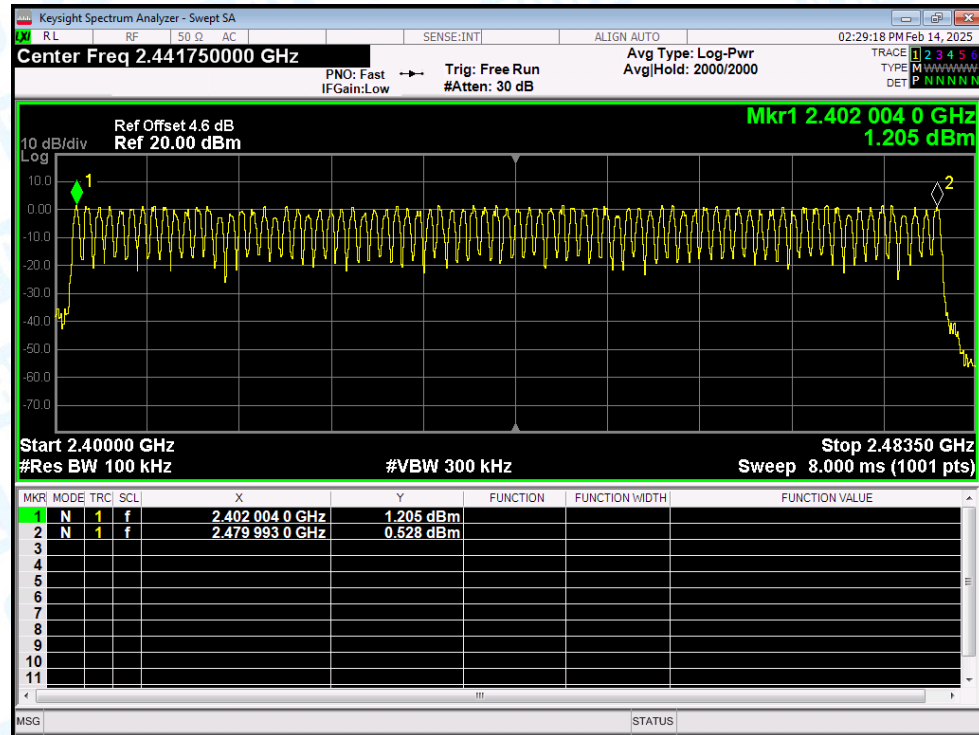


10.Number of Hopping Channel

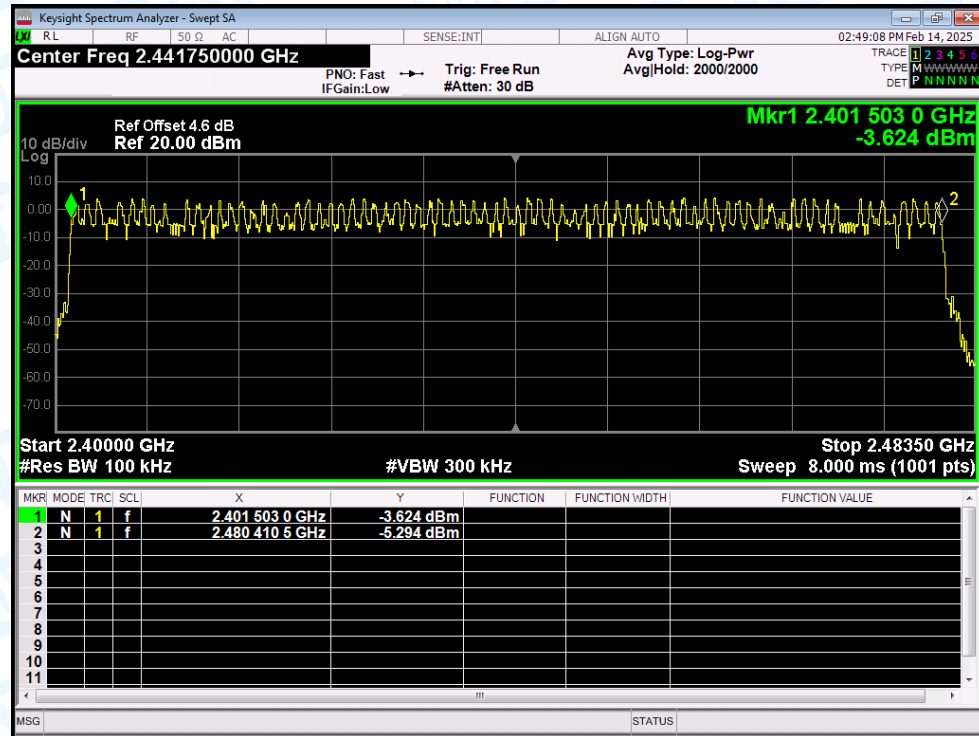
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

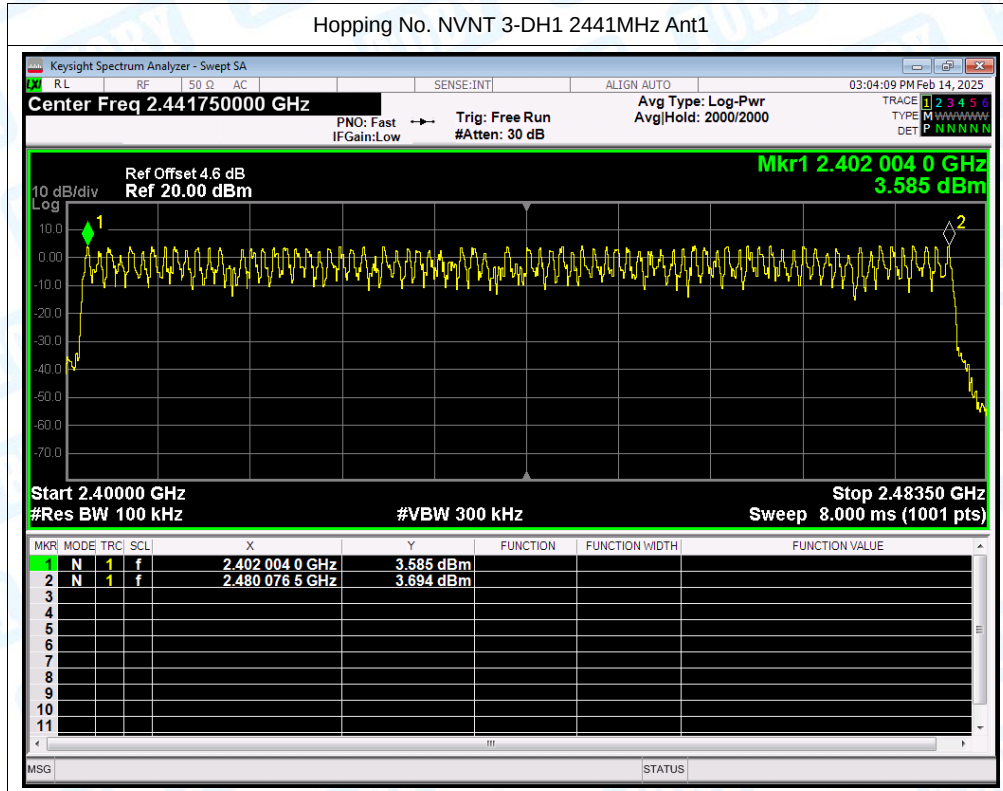
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



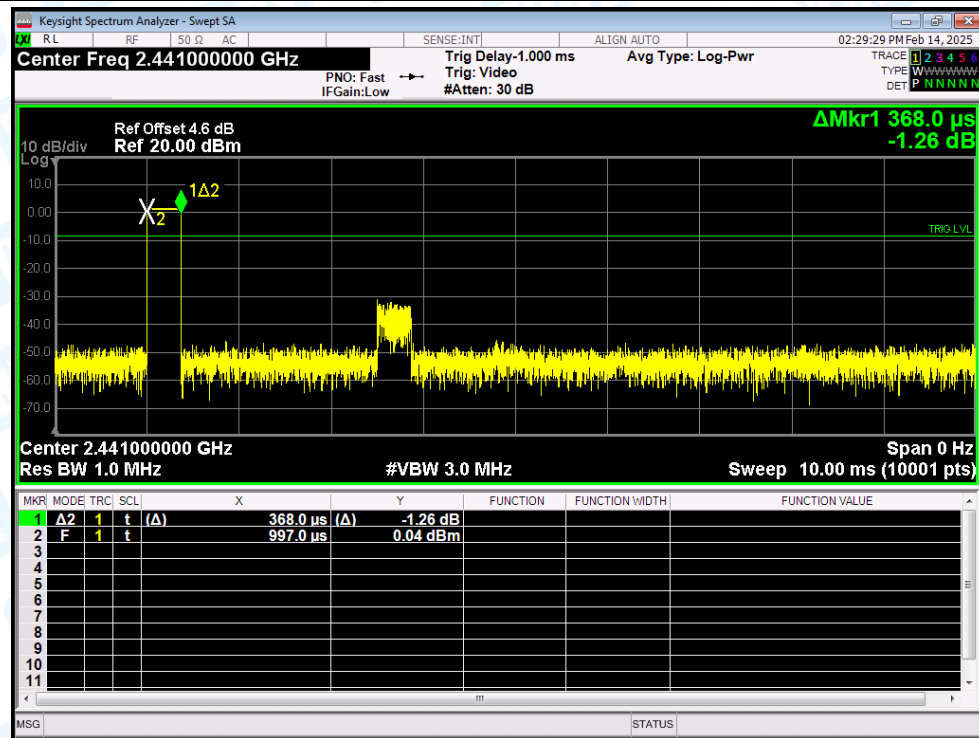


11.Dwell Time

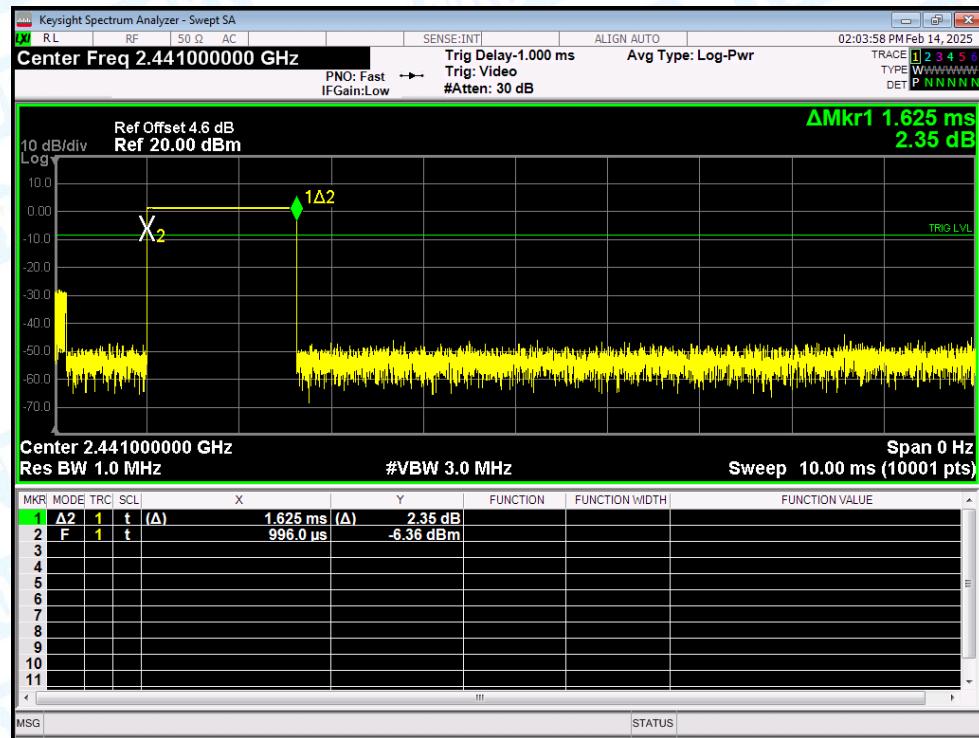
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.368	117.76	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.625	260	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.873	306.453	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.378	120.96	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.63	260.8	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.878	306.987	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.378	120.96	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.629	260.64	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.881	307.307	31600	400	Pass

Test Graphs

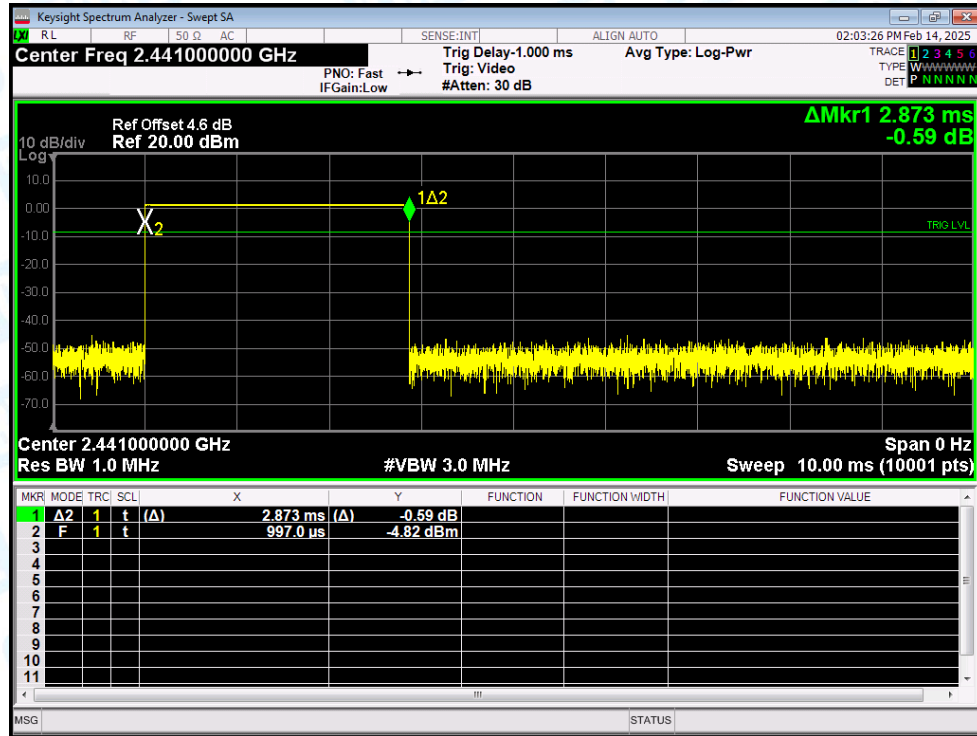
Dwell NVNT 1-DH1 2441MHz Ant1



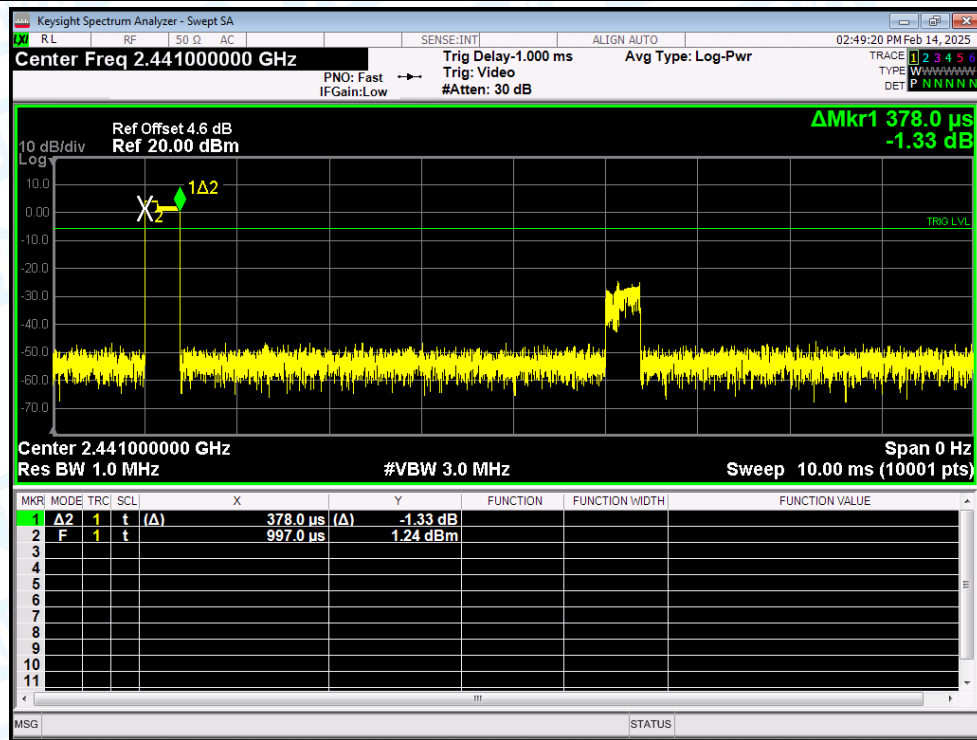
Dwell NVNT 1-DH3 2441MHz Ant1



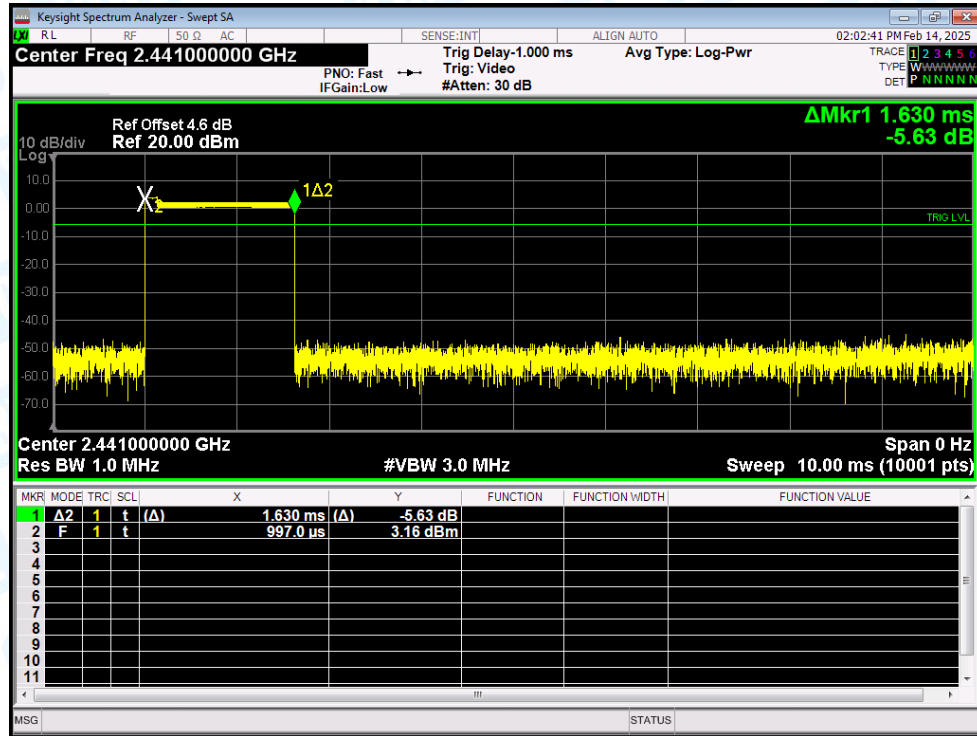
Dwell NVNT 1-DH5 2441MHz Ant1



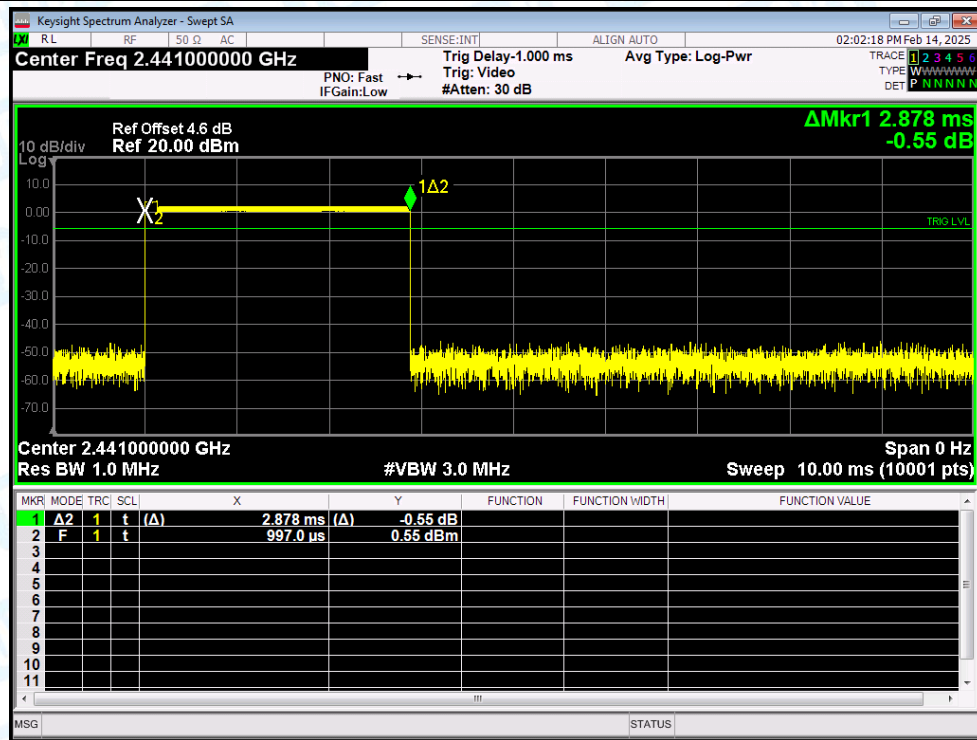
Dwell NVNT 2-DH1 2441MHz Ant1



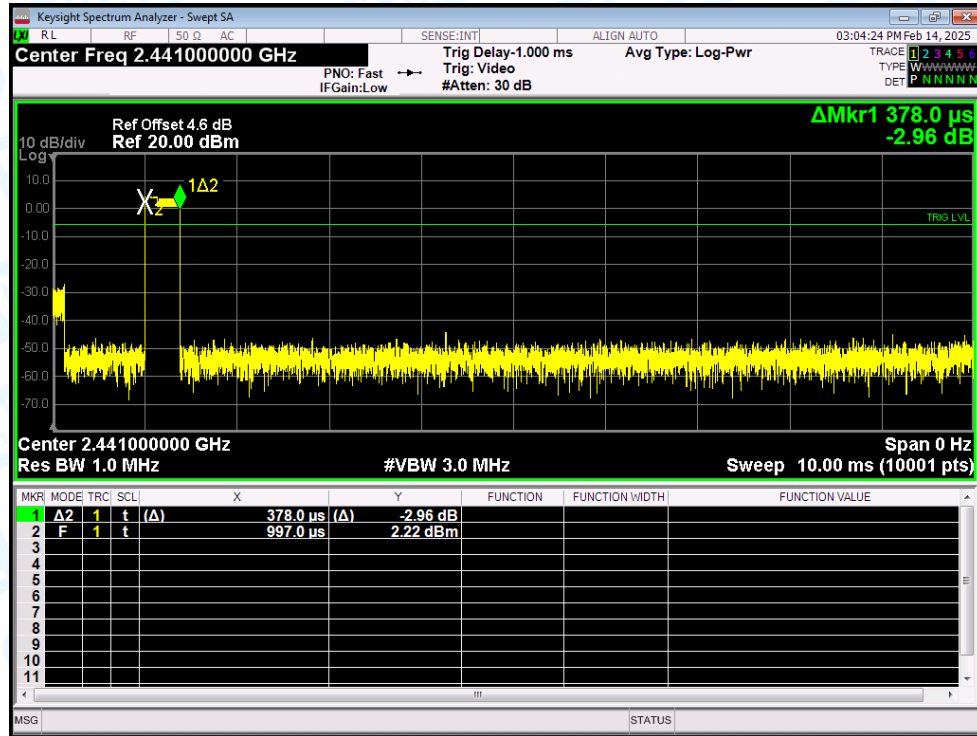
Dwell NVNT 2-DH3 2441MHz Ant1



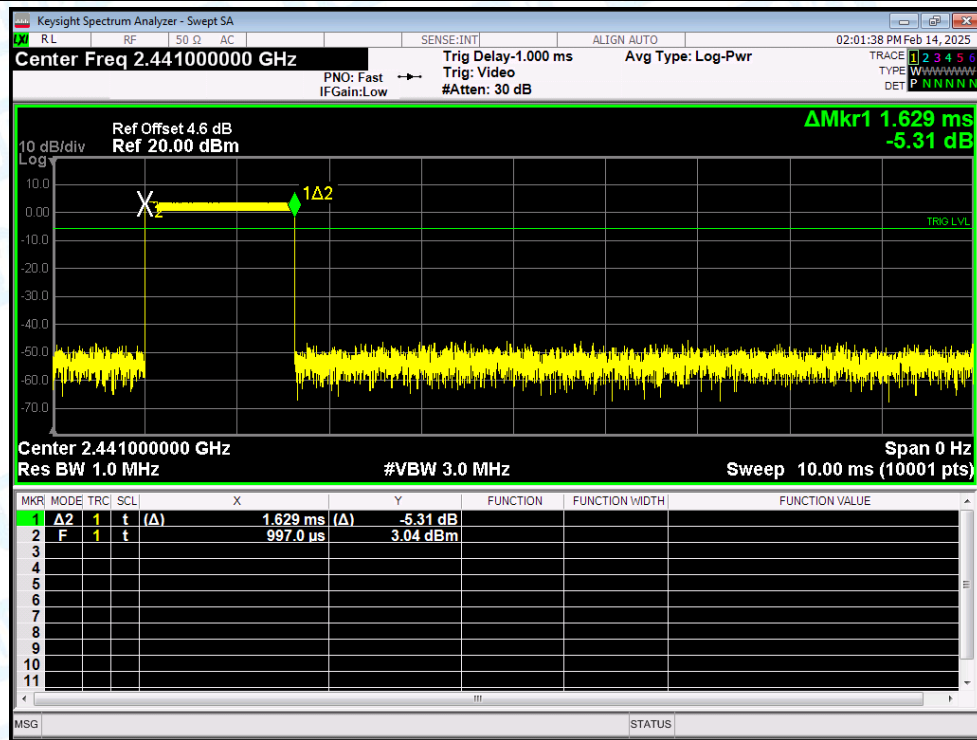
Dwell NVNT 2-DH5 2441MHz Ant1

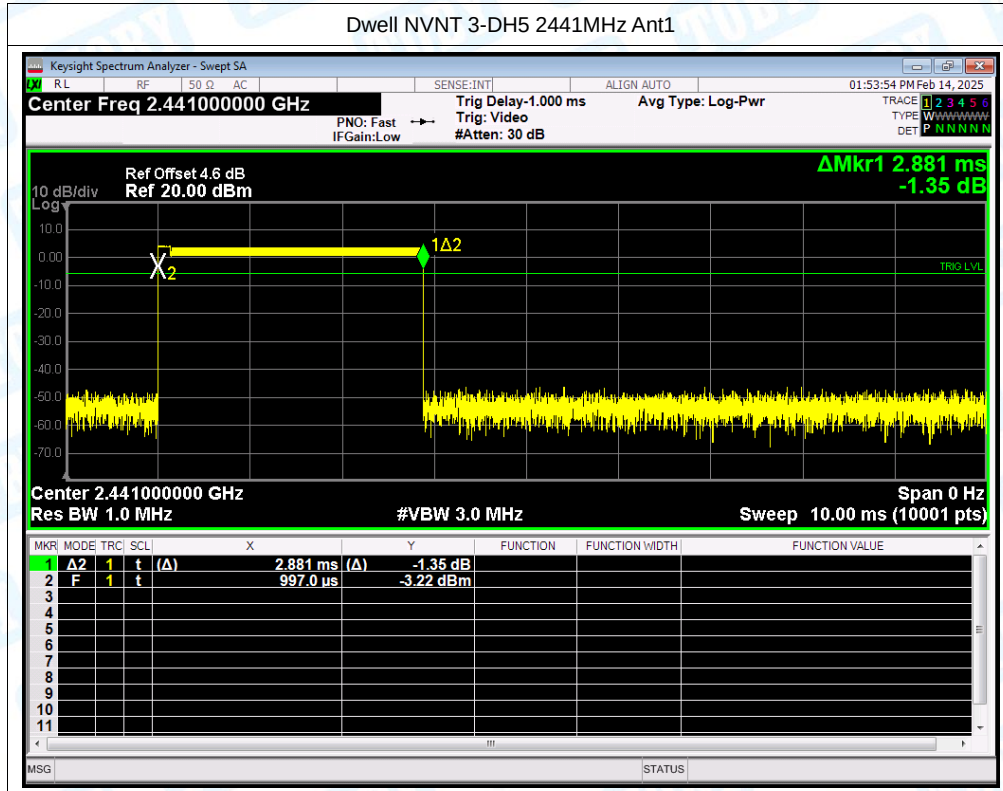


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





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