

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	Smart Watch
Test Model:	LC31
Sample ID:	HC-C-202507-0084-01-01#
Environmental Conditions	
Temperature:	25℃
Relative Humidity:	55%
Test Voltage:	DC 3.7V
Test Engineer:	Lily Zhang
Note: For a more detailed features description, please refer to the report TBR-C-202507-0084-9 The report only show the worst case data.	

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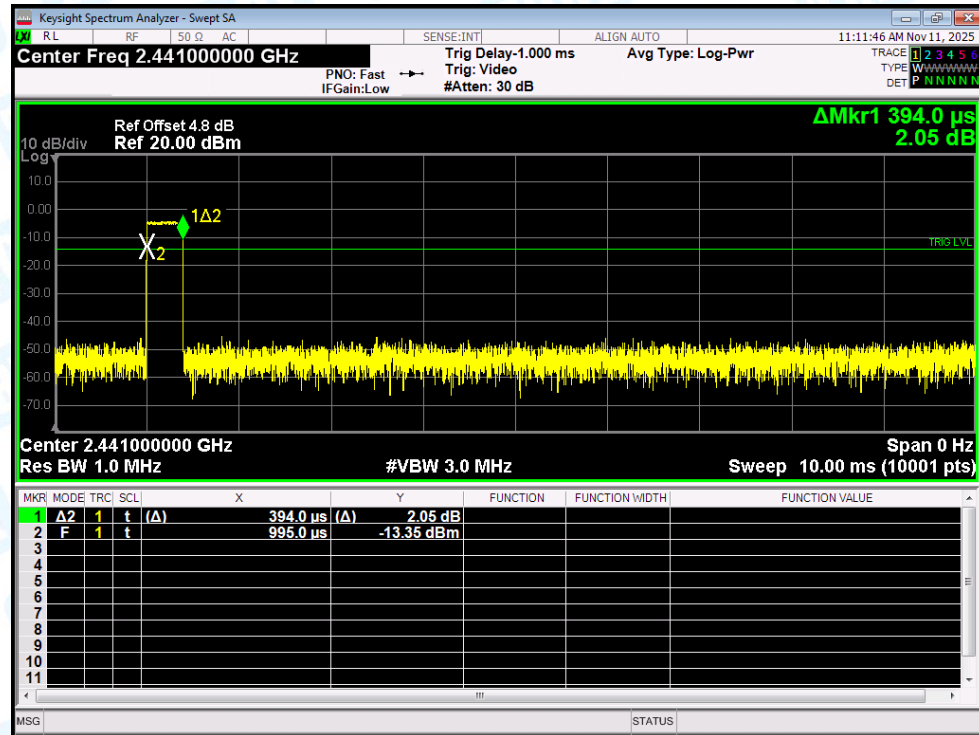
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1.Dwell Time

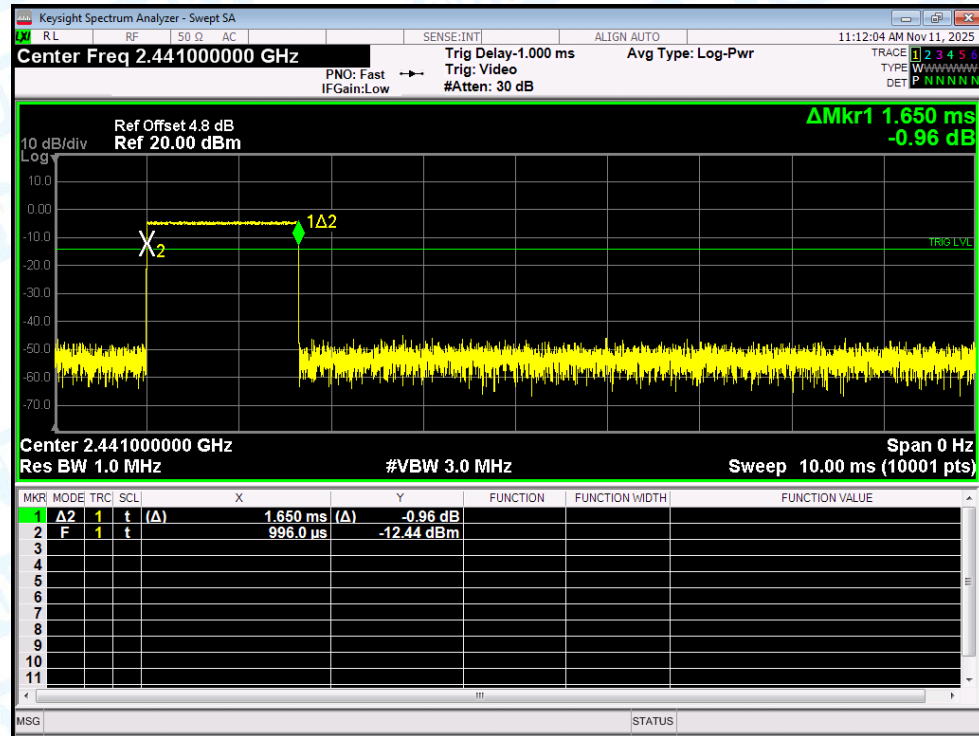
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.394	126.08	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.65	264	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.899	309.227	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.404	129.28	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.656	264.96	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.905	309.867	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.405	129.6	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.655	264.8	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.906	309.973	31600	400	Pass

Test Graphs

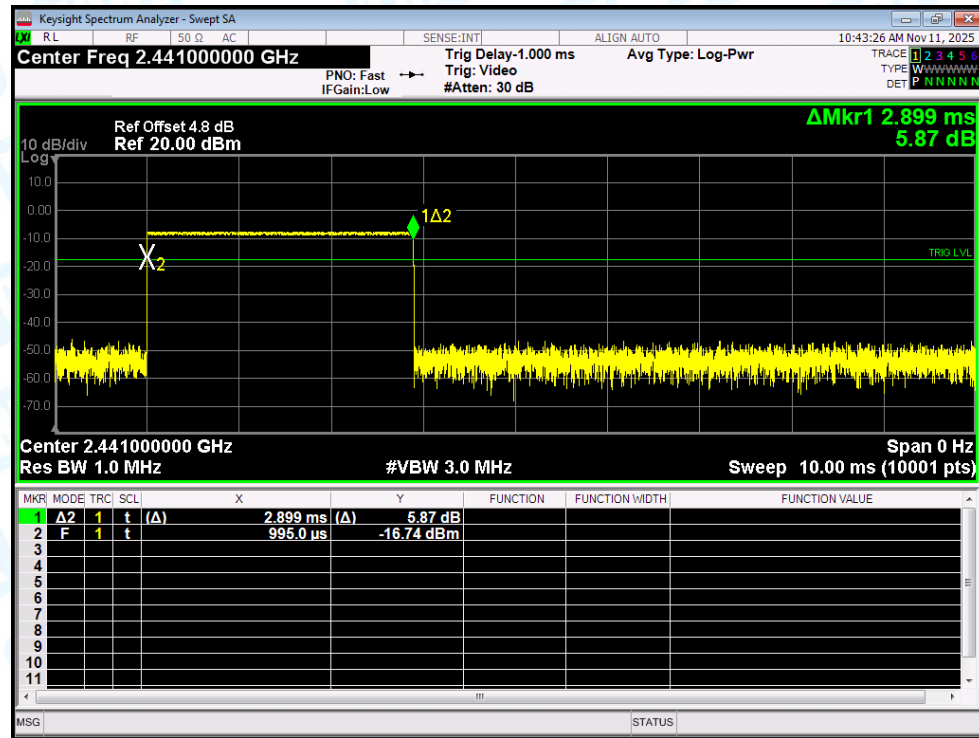
Dwell NVNT 1-DH1 2441MHz Ant1



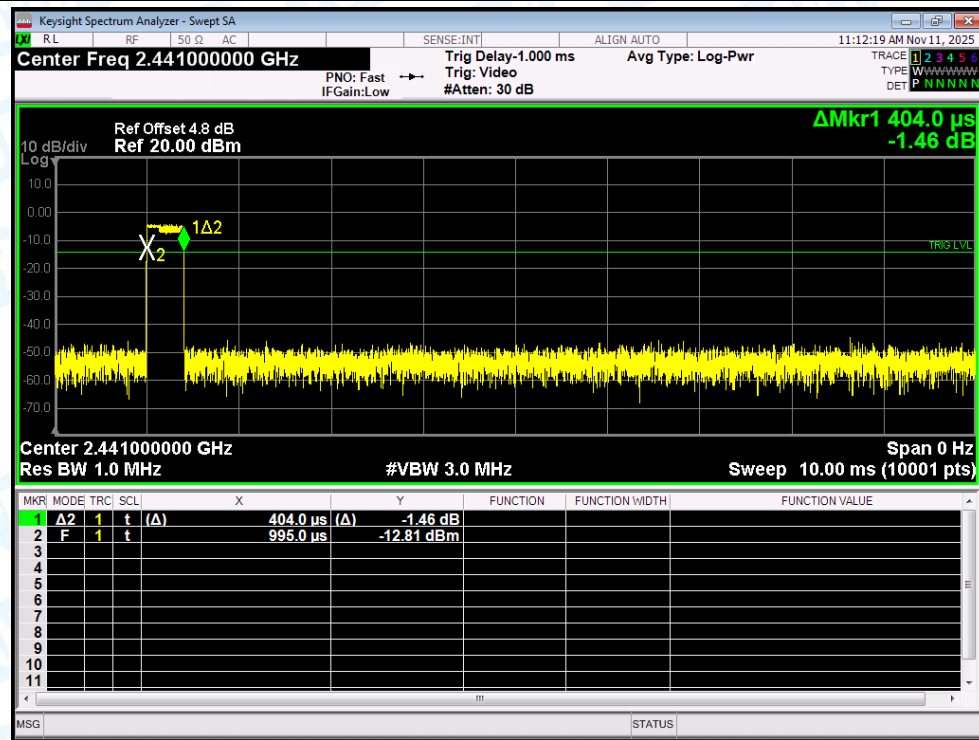
Dwell NVNT 1-DH3 2441MHz Ant1



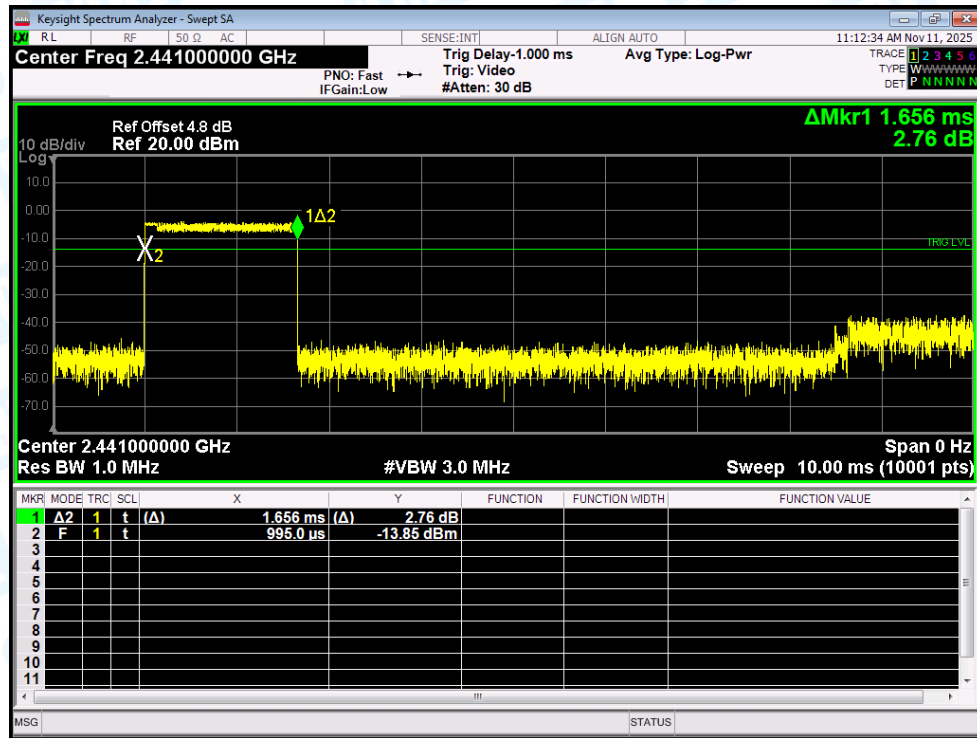
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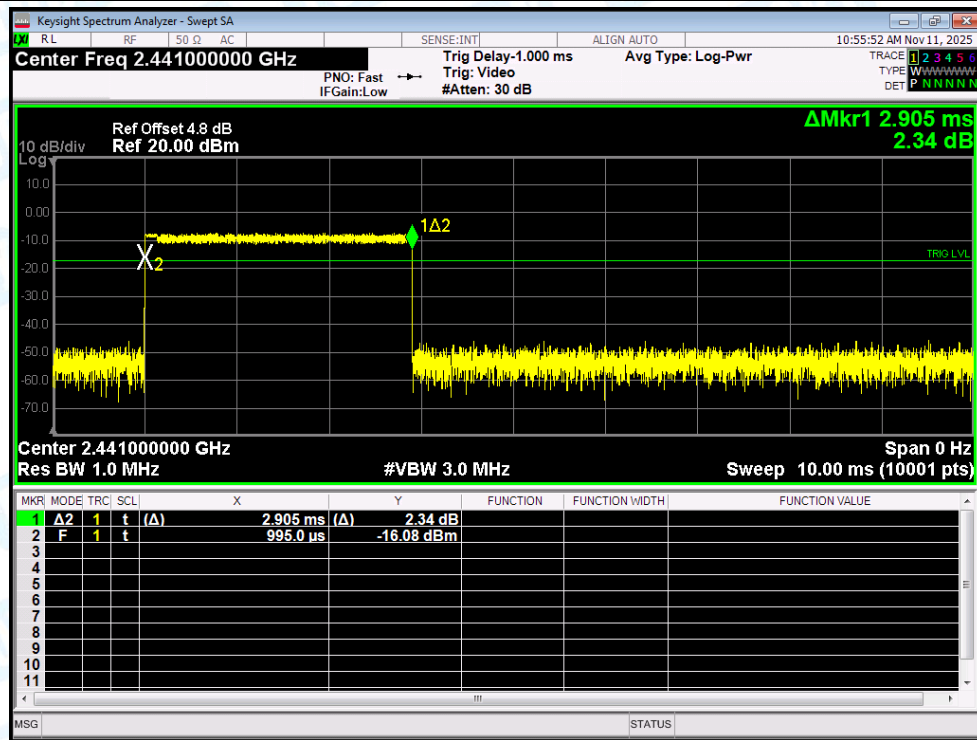
Dwell NVNT 2-DH1 2441MHz Ant1



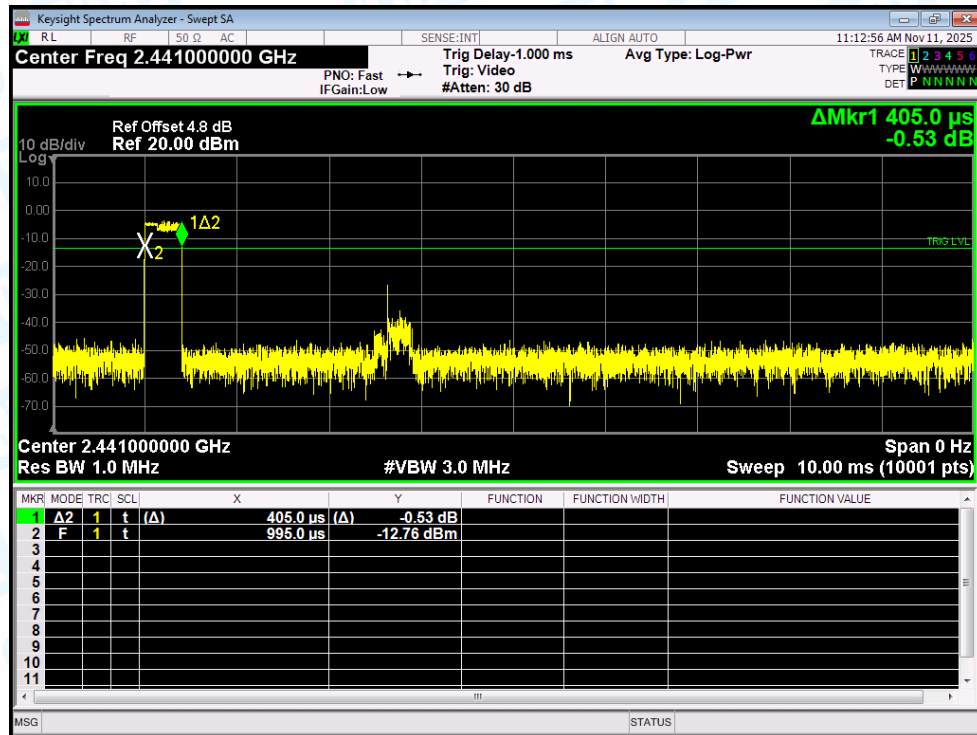
Dwell NVNT 2-DH3 2441MHz Ant1



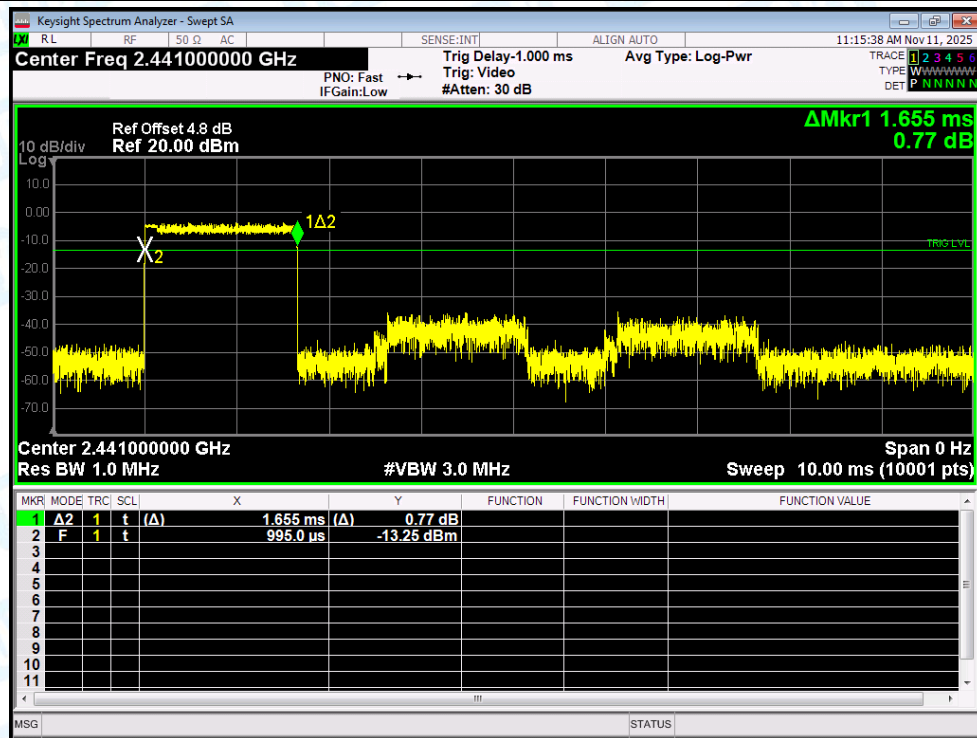
Dwell NVNT 2-DH5 2441MHz Ant1

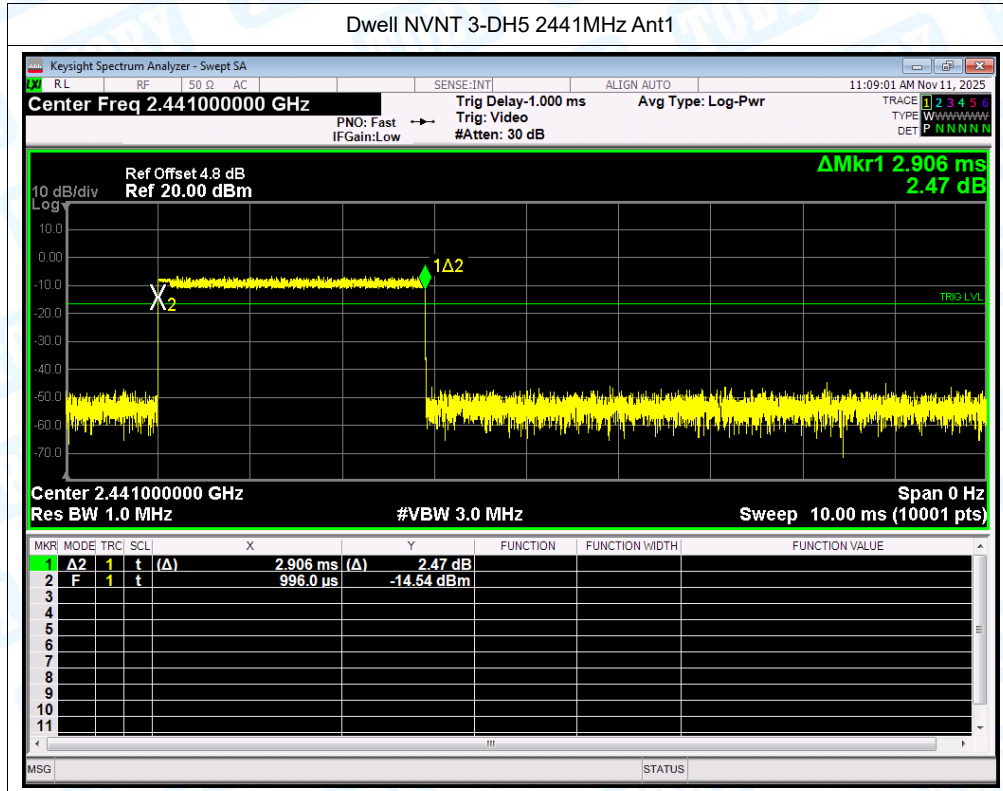


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1



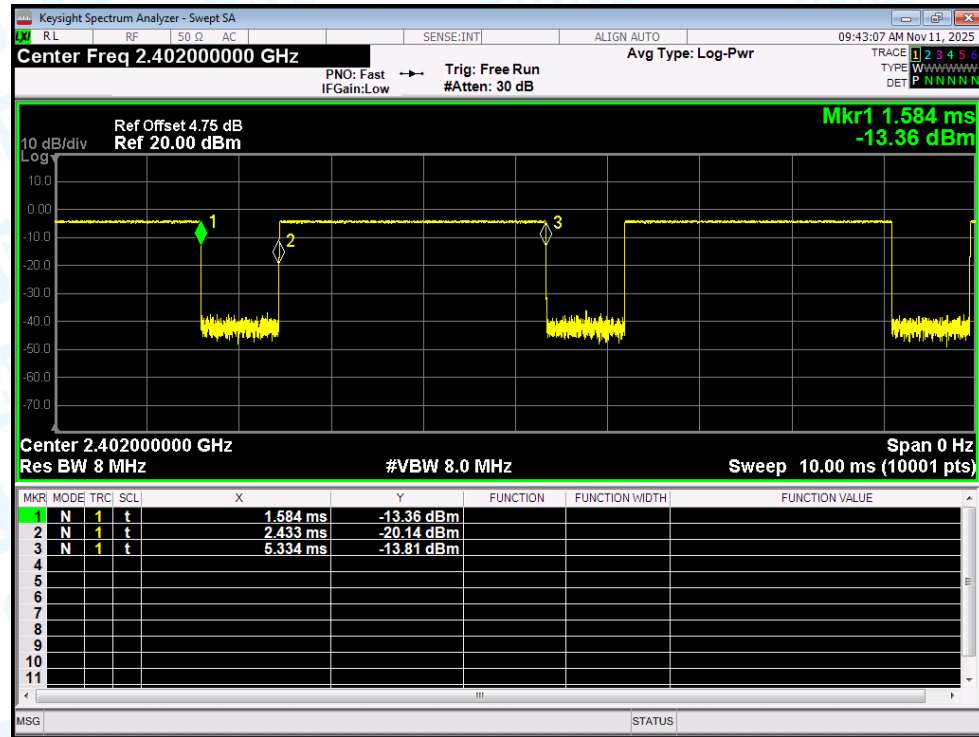


2.Duty Cycle

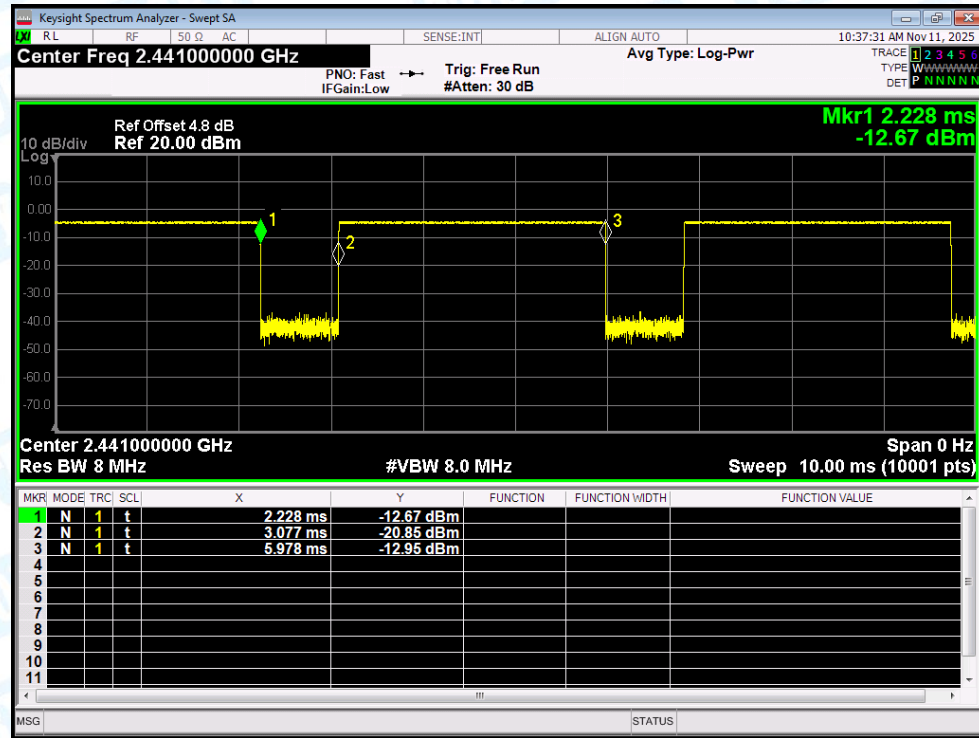
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	77.36	1.11	0.34
NVNT	1-DH5	2441	Ant1	77.36	1.11	0.34
NVNT	1-DH5	2480	Ant1	77.36	1.11	0.34
NVNT	2-DH5	2402	Ant1	77.52	1.11	0.34
NVNT	2-DH5	2441	Ant1	77.55	1.1	0.34
NVNT	2-DH5	2480	Ant1	77.52	1.11	0.34
NVNT	3-DH5	2402	Ant1	77.59	1.1	0.34
NVNT	3-DH5	2441	Ant1	77.59	1.1	0.34
NVNT	3-DH5	2480	Ant1	77.55	1.1	0.34

Test Graphs

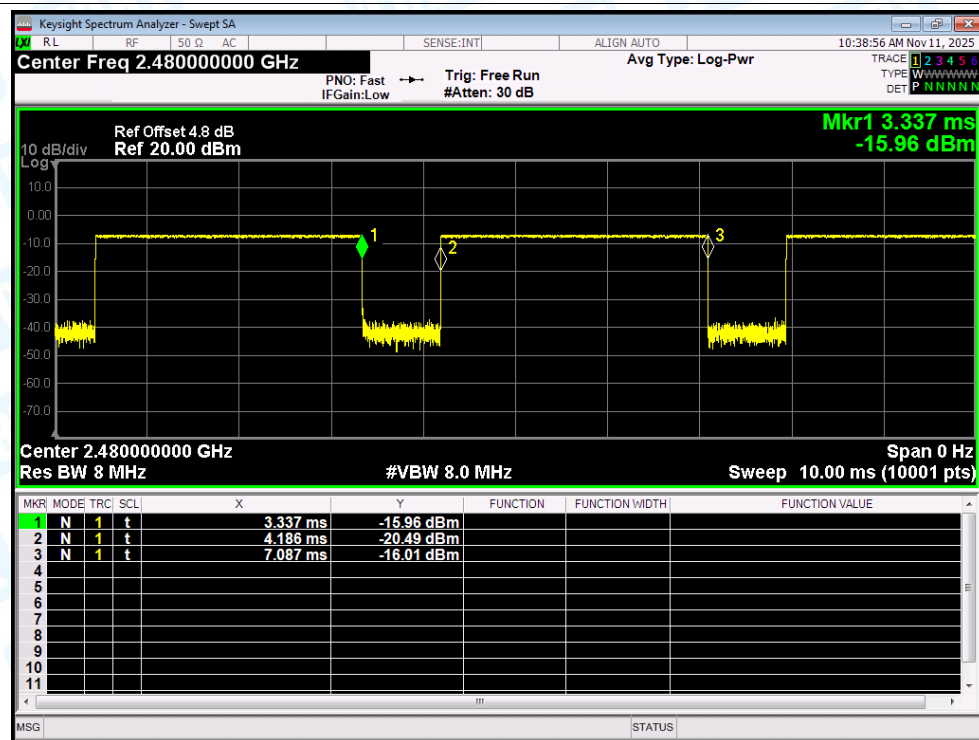
Duty Cycle NVNT 1-DH5 2402MHz Ant1



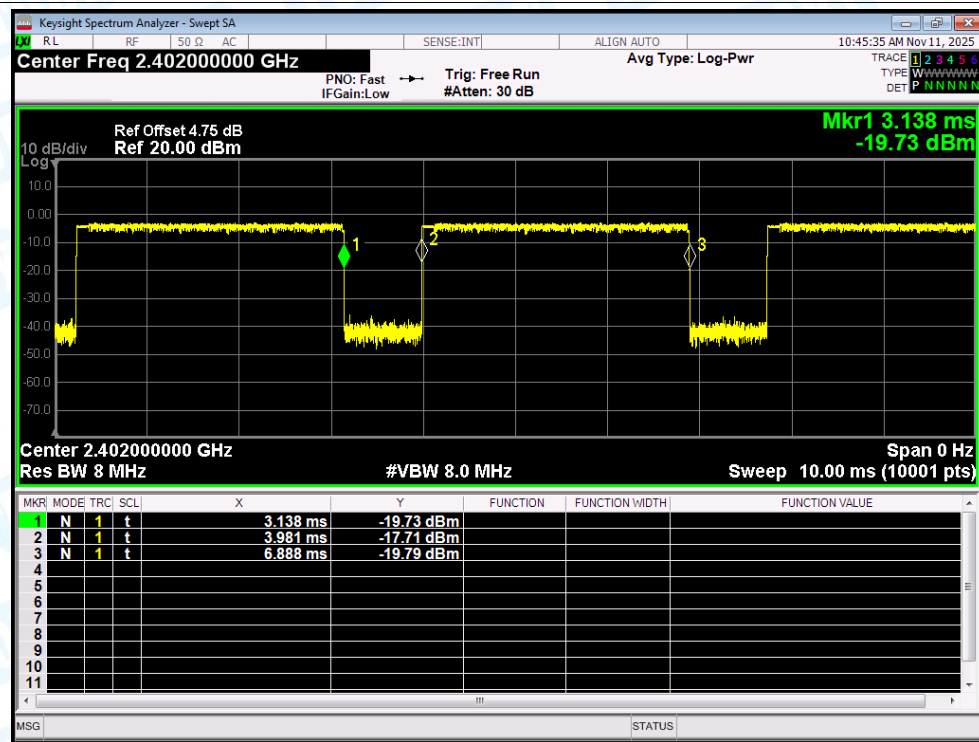
Duty Cycle NVNT 1-DH5 2441MHz Ant1



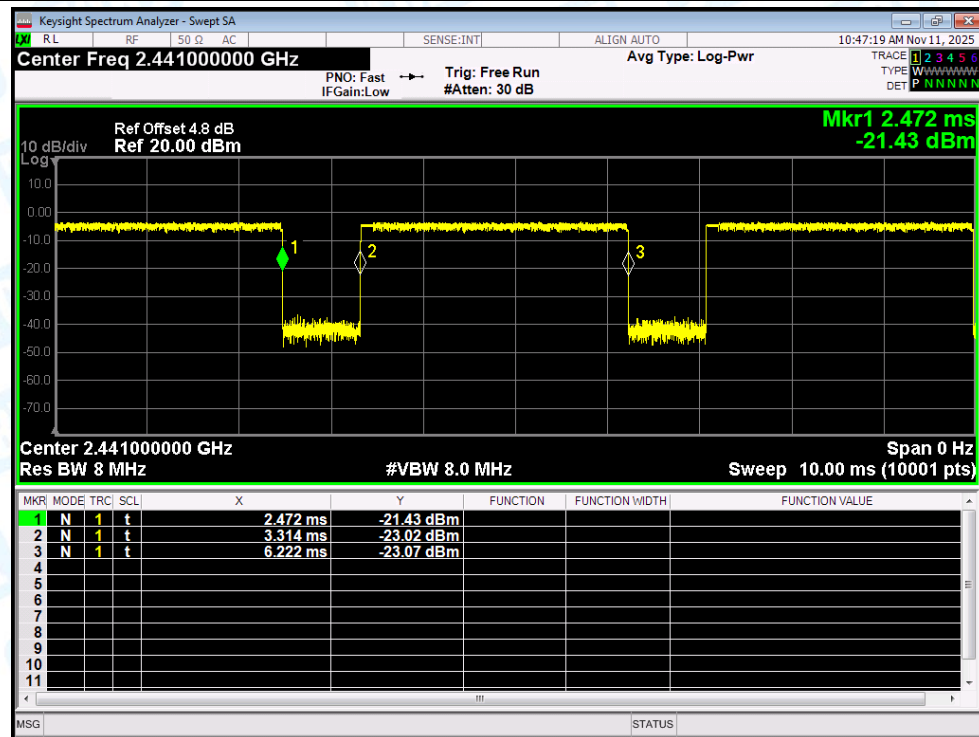
Duty Cycle NVNT 1-DH5 2480MHz Ant1



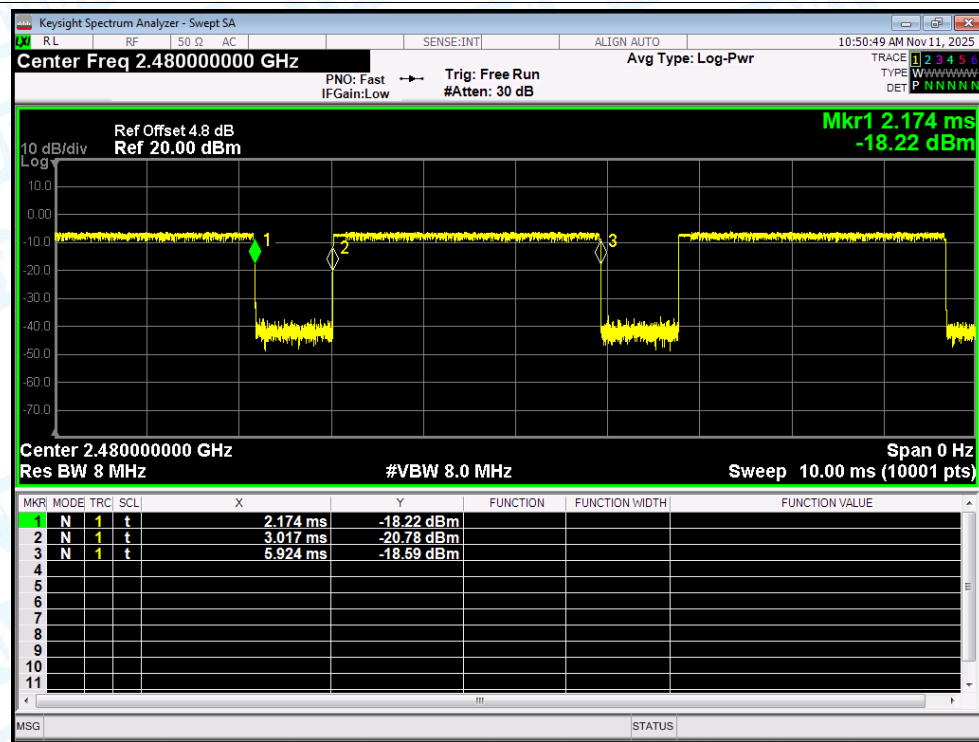
Duty Cycle NVNT 2-DH5 2402MHz Ant1



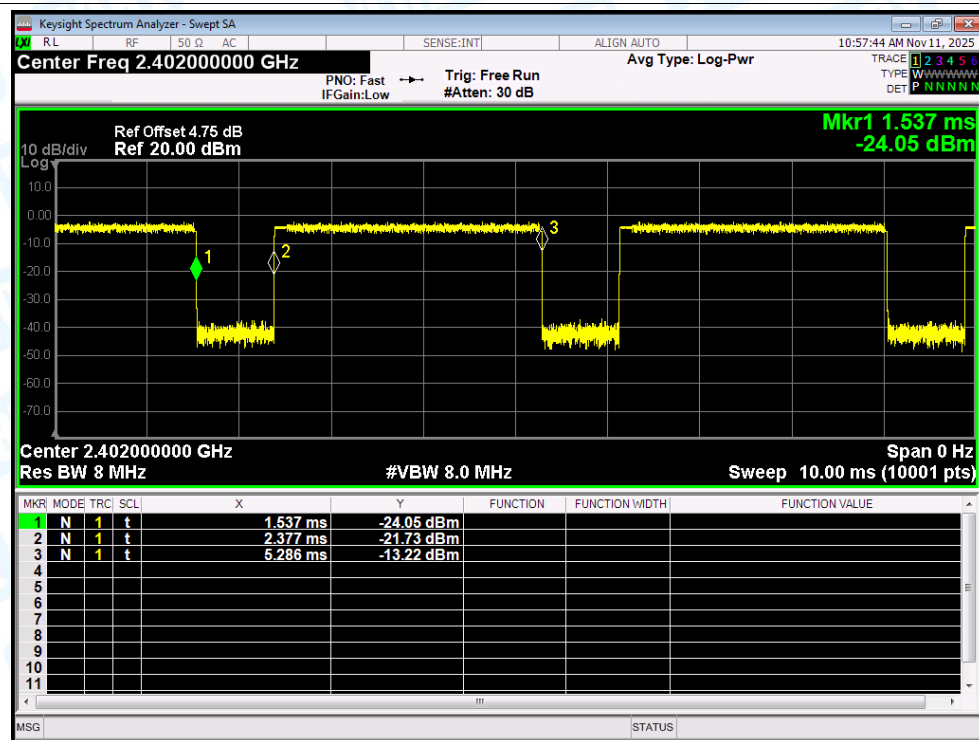
Duty Cycle NVNT 2-DH5 2441MHz Ant1



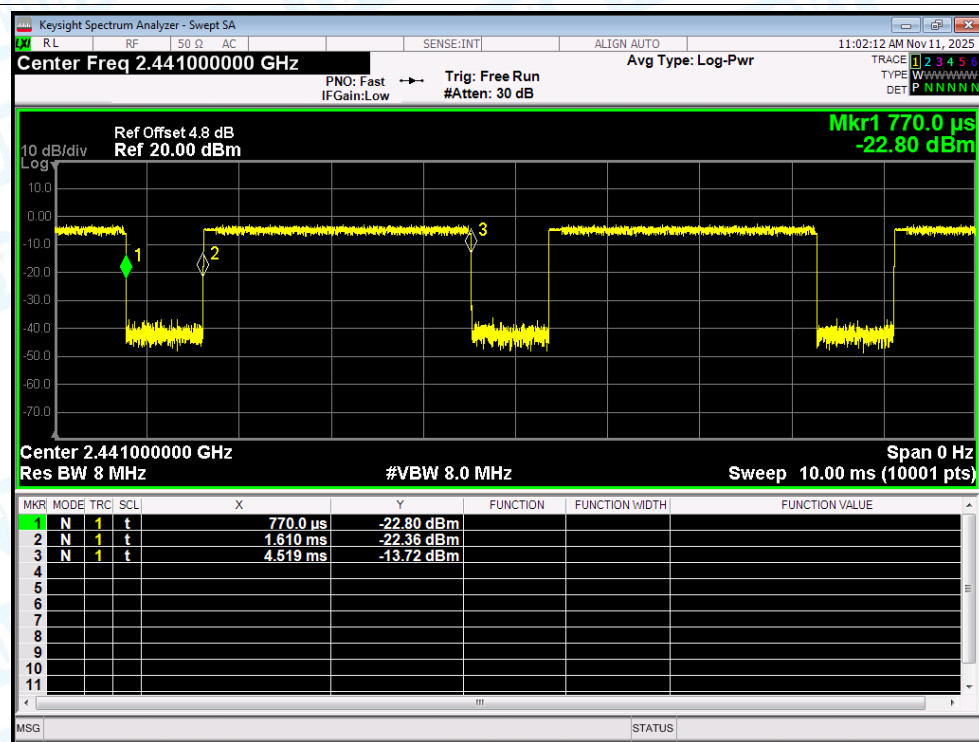
Duty Cycle NVNT 2-DH5 2480MHz Ant1

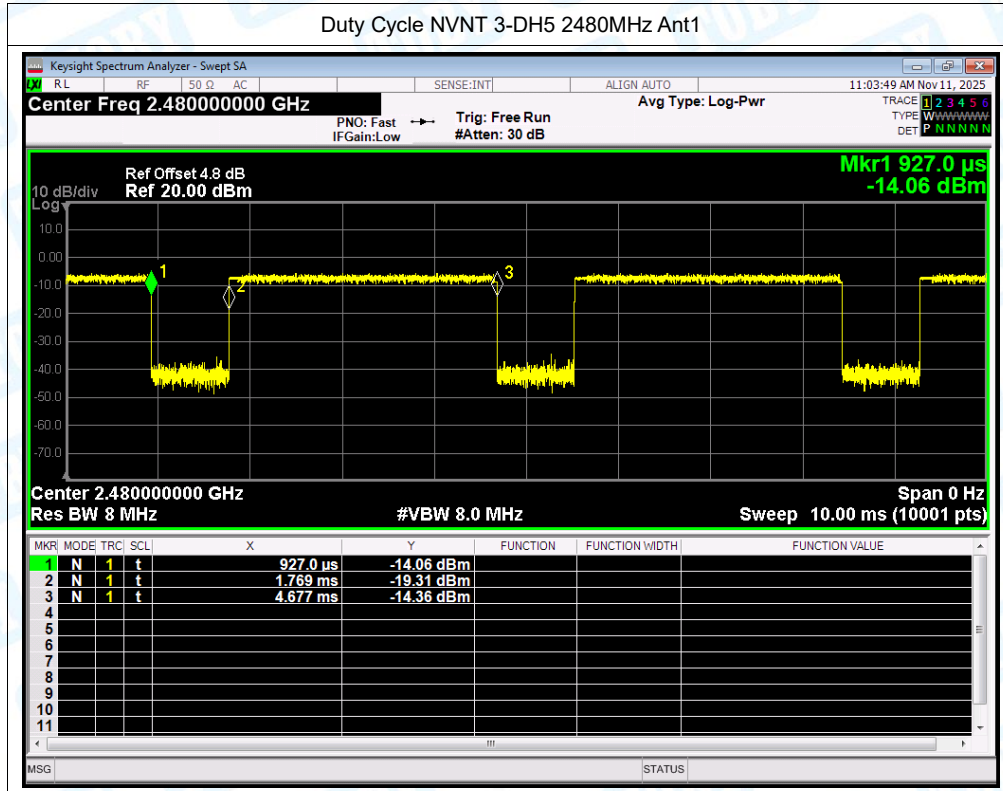


Duty Cycle NVNT 3-DH5 2402MHz Ant1



Duty Cycle NVNT 3-DH5 2441MHz Ant1



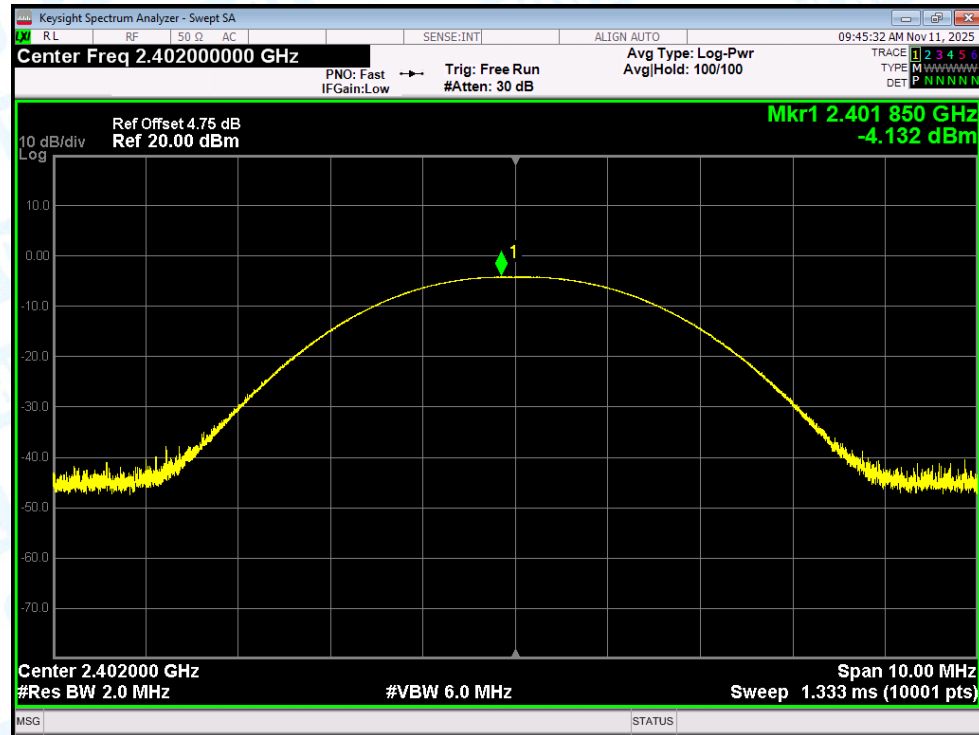


3.Maximum Conducted Output Power

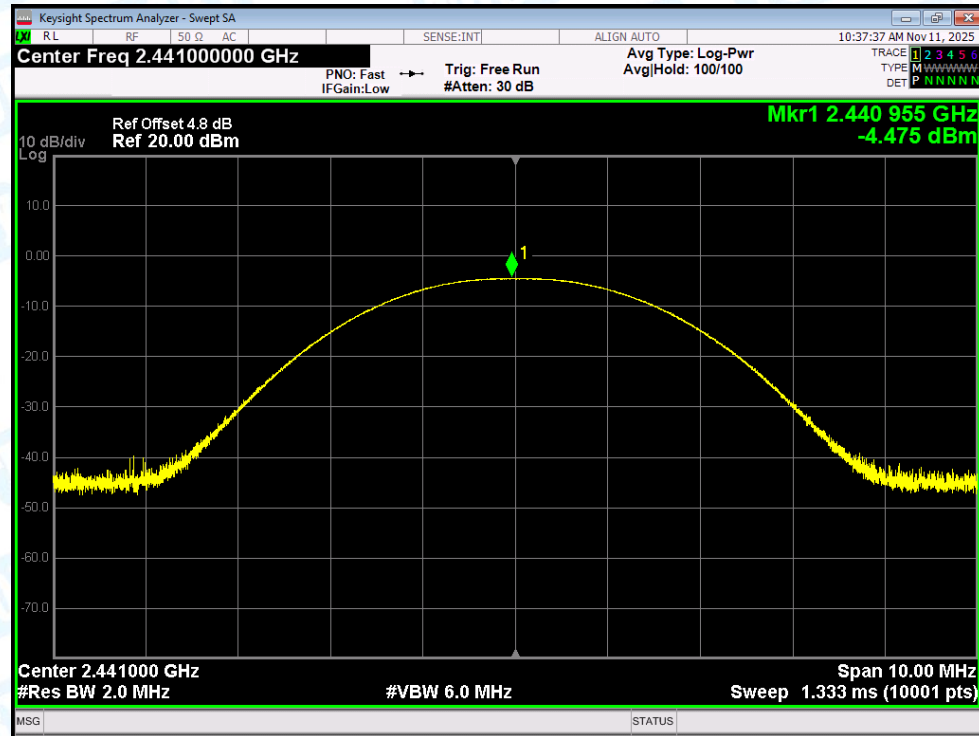
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	-4.132	21	Pass
NVNT	1-DH5	2441	Ant1	-4.475	21	Pass
NVNT	1-DH5	2480	Ant1	-7.144	21	Pass
NVNT	2-DH5	2402	Ant1	-3.232	21	Pass
NVNT	2-DH5	2441	Ant1	-3.679	21	Pass
NVNT	2-DH5	2480	Ant1	-6.471	21	Pass
NVNT	3-DH5	2402	Ant1	-2.588	21	Pass
NVNT	3-DH5	2441	Ant1	-3.007	21	Pass
NVNT	3-DH5	2480	Ant1	-5.78	21	Pass

Test Graphs

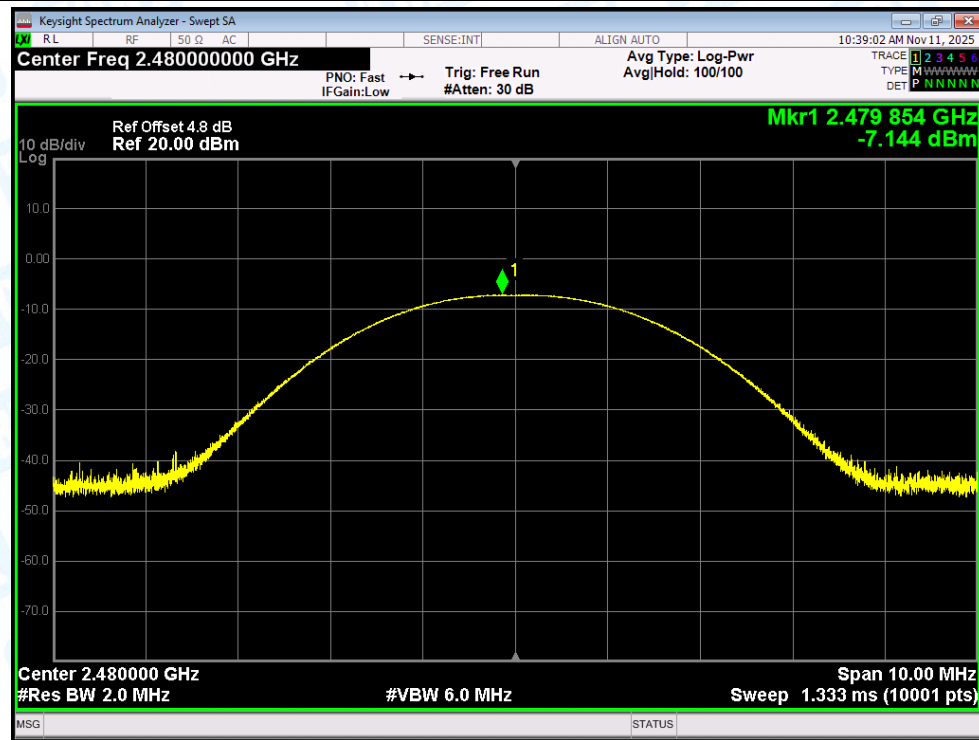
Power NVNT 1-DH5 2402MHz Ant1



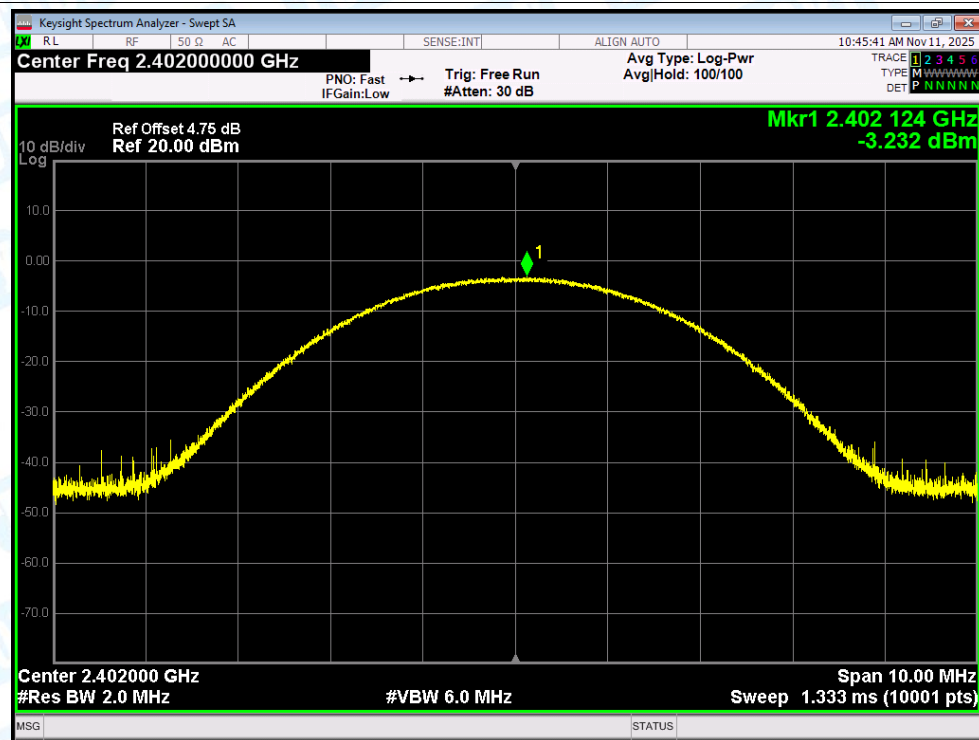
Power NVNT 1-DH5 2441MHz Ant1



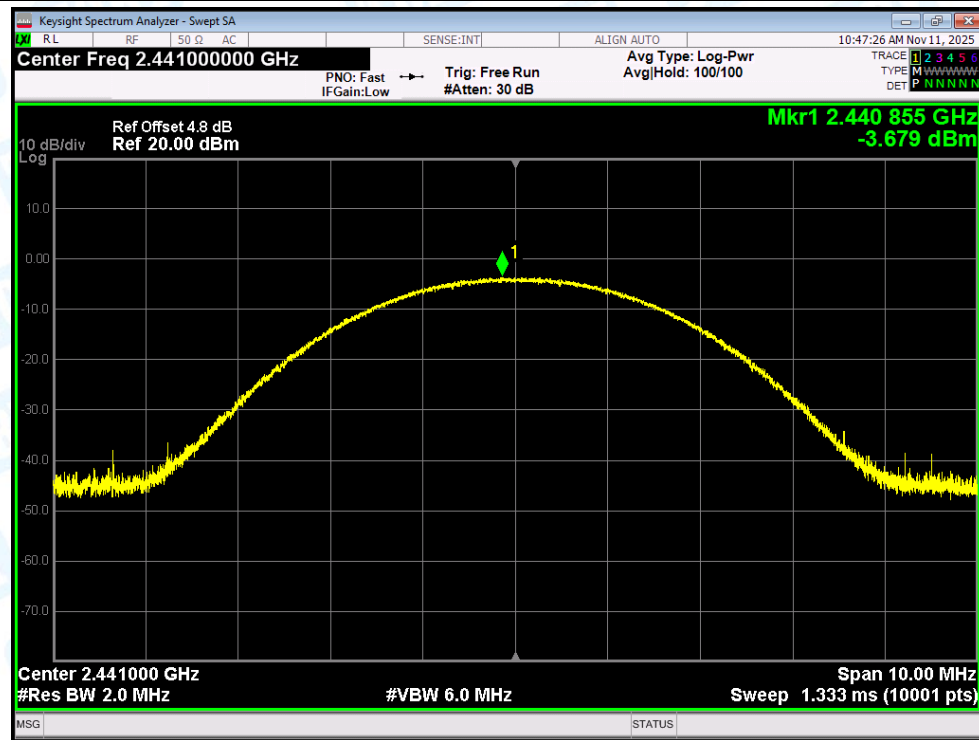
Power NVNT 1-DH5 2480MHz Ant1



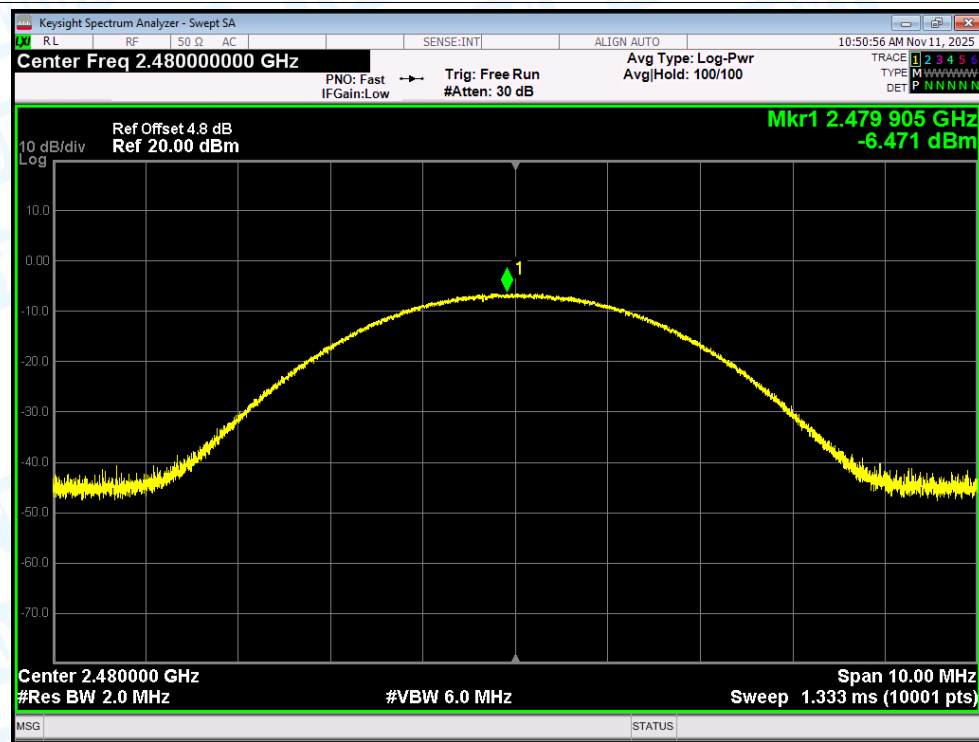
Power NVNT 2-DH5 2402MHz Ant1



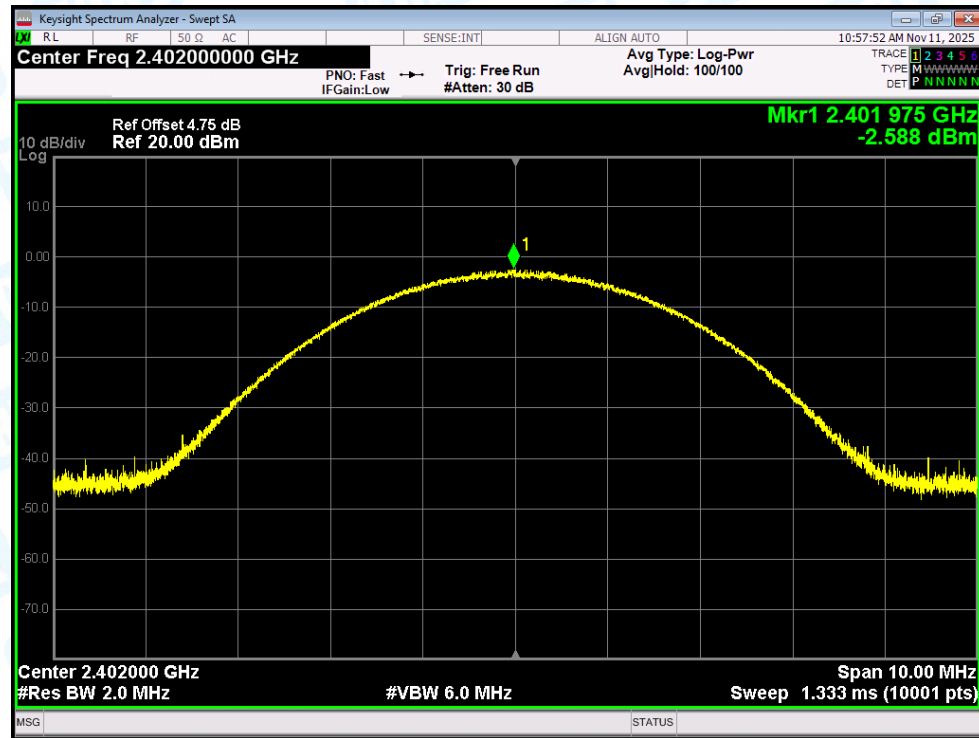
Power NVNT 2-DH5 2441MHz Ant1



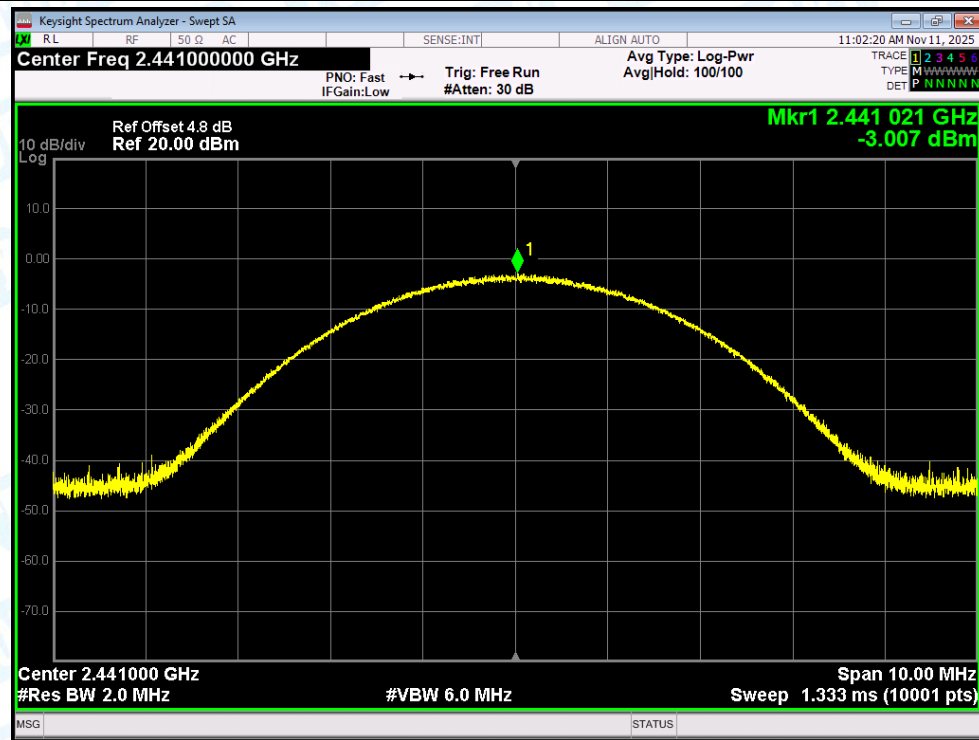
Power NVNT 2-DH5 2480MHz Ant1

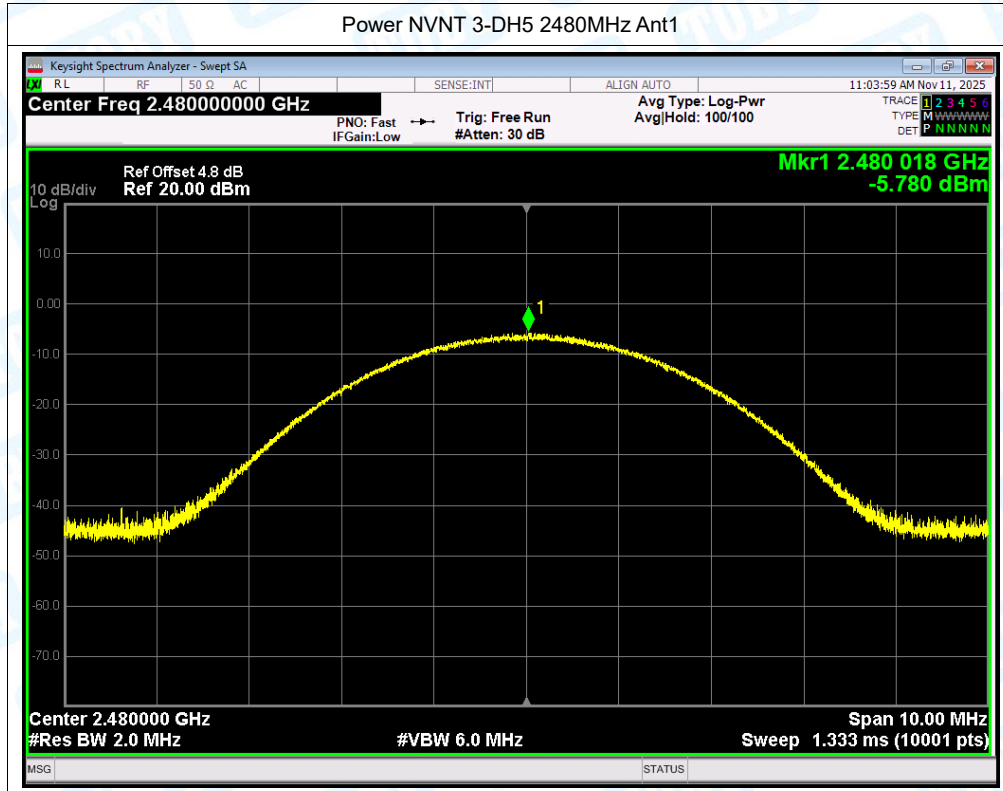


Power NVNT 3-DH5 2402MHz Ant1



Power NVNT 3-DH5 2441MHz Ant1



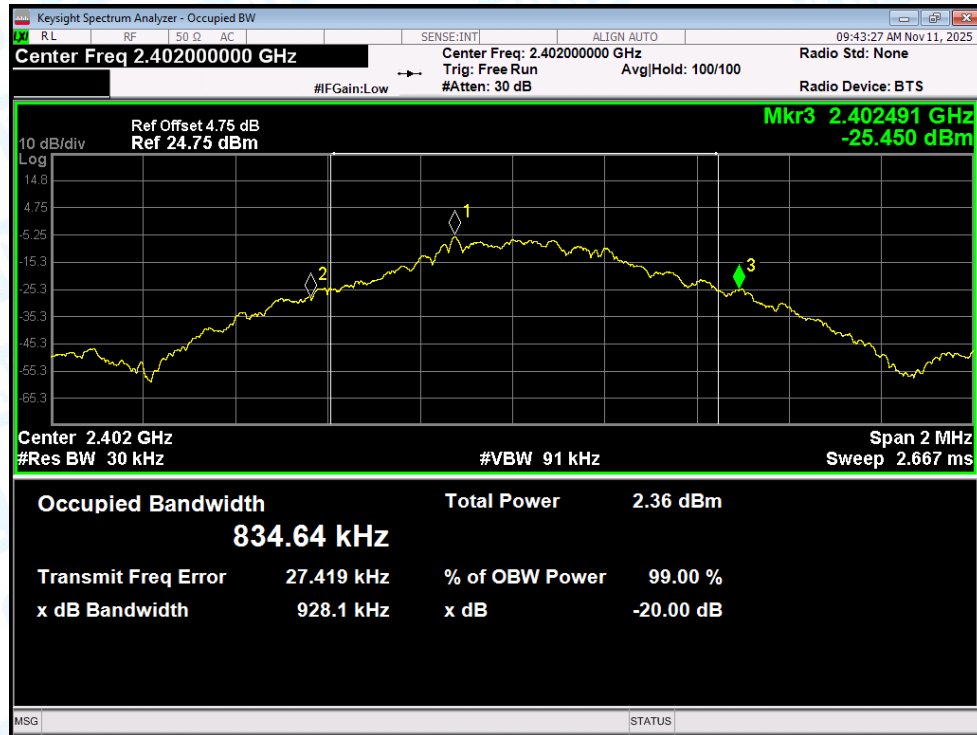


4.-20dB Bandwidth

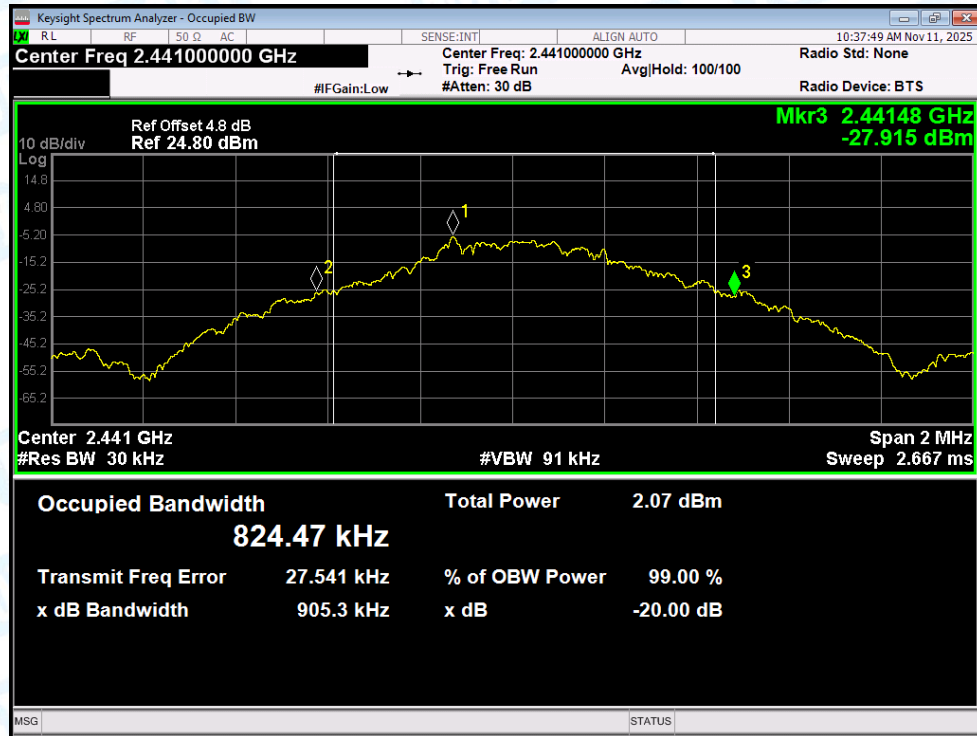
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.93	Pass
NVNT	1-DH5	2441	Ant1	0.91	Pass
NVNT	1-DH5	2480	Ant1	0.92	Pass
NVNT	2-DH5	2402	Ant1	1.29	Pass
NVNT	2-DH5	2441	Ant1	1.28	Pass
NVNT	2-DH5	2480	Ant1	1.3	Pass
NVNT	3-DH5	2402	Ant1	1.26	Pass
NVNT	3-DH5	2441	Ant1	1.26	Pass
NVNT	3-DH5	2480	Ant1	1.28	Pass

Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



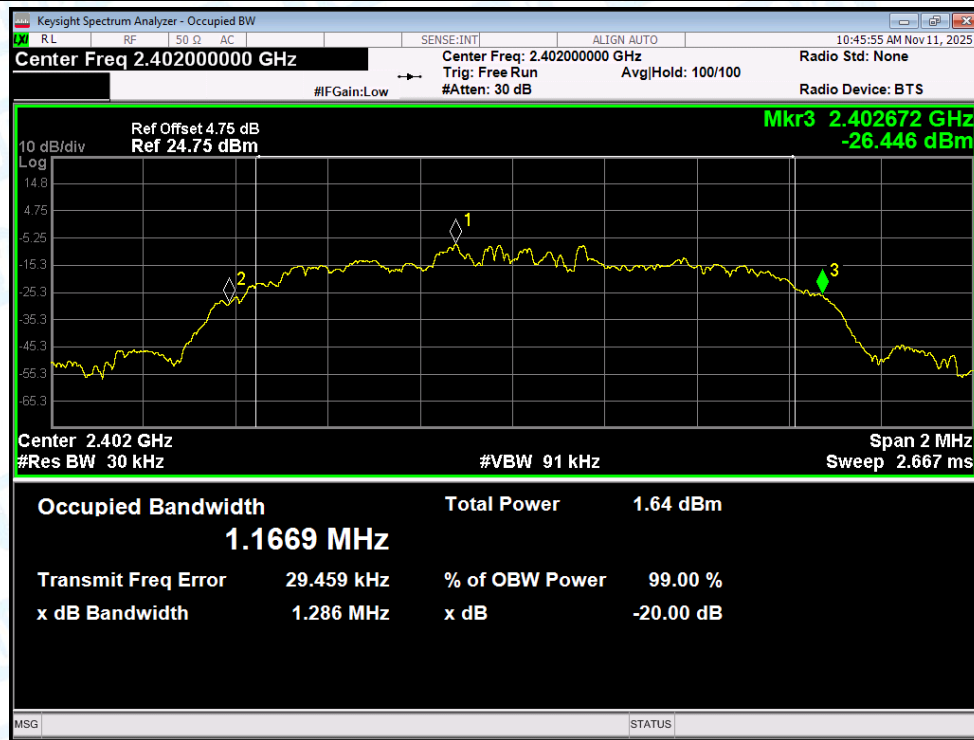
-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



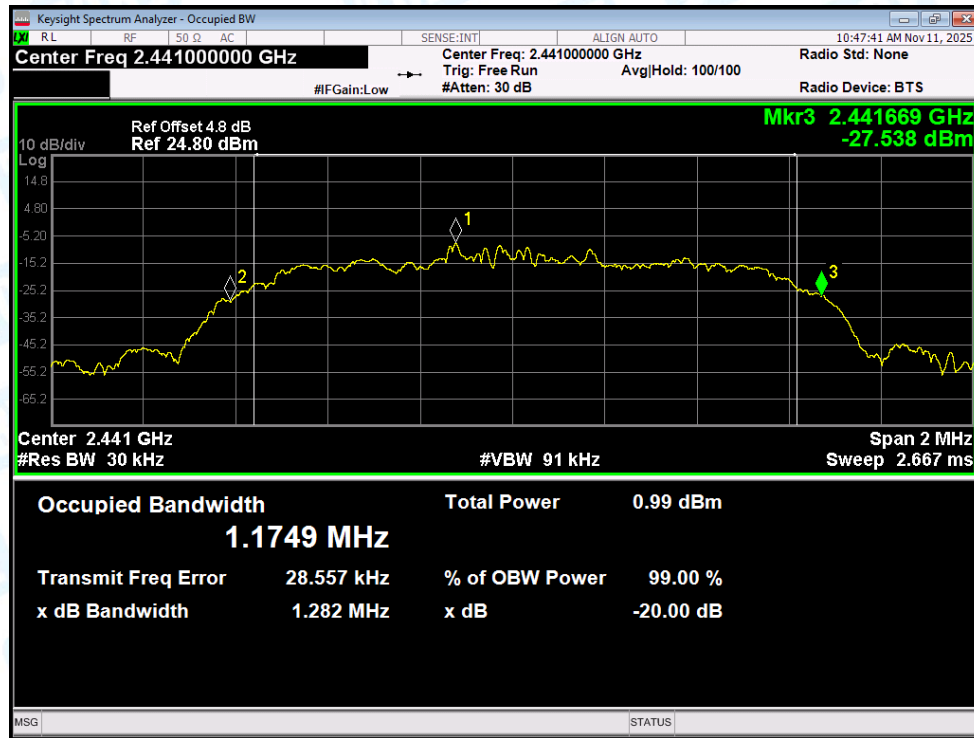
-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



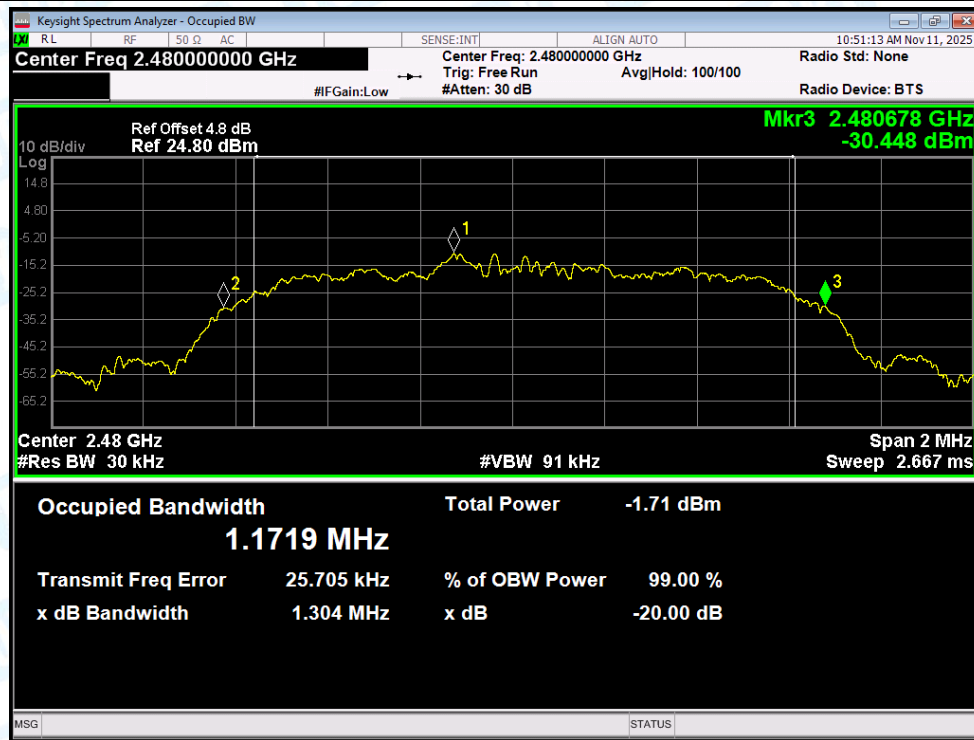
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



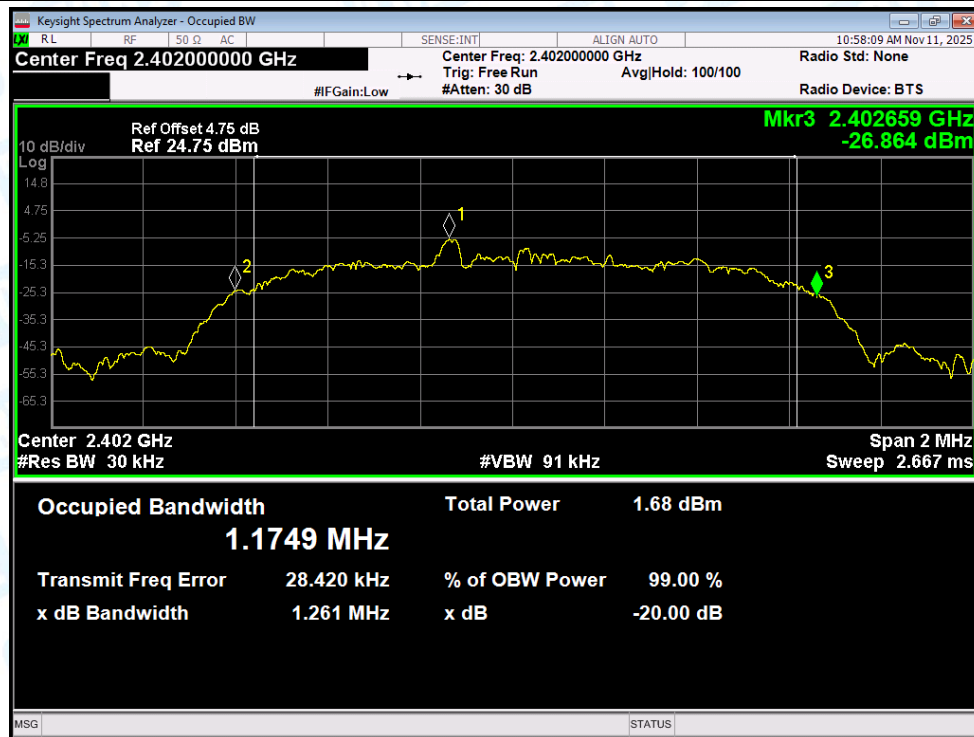
-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



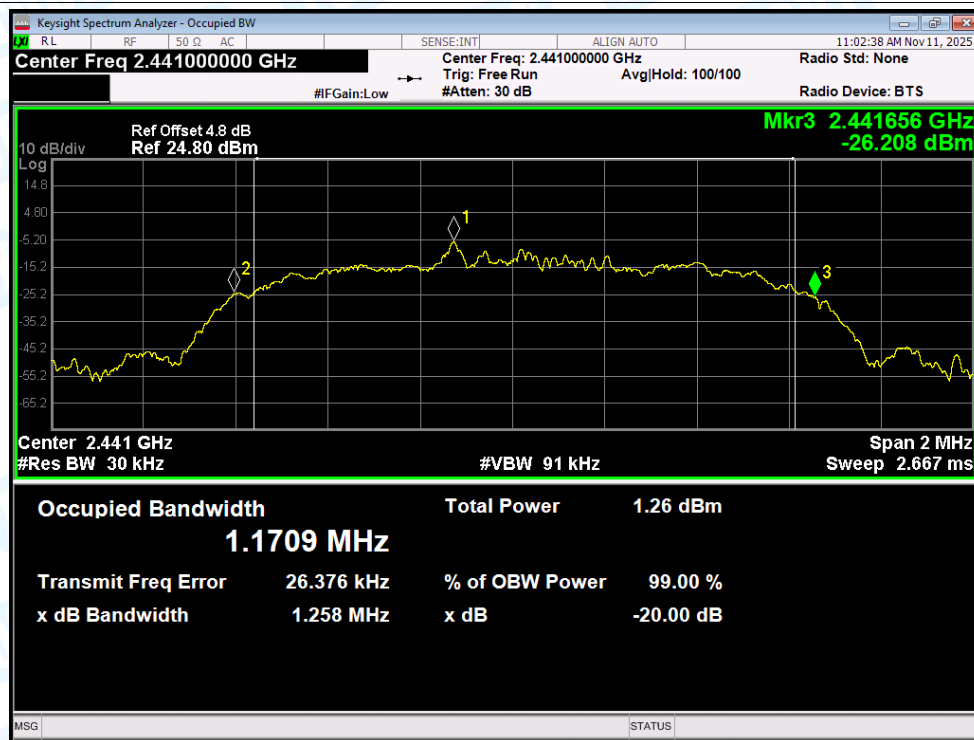
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

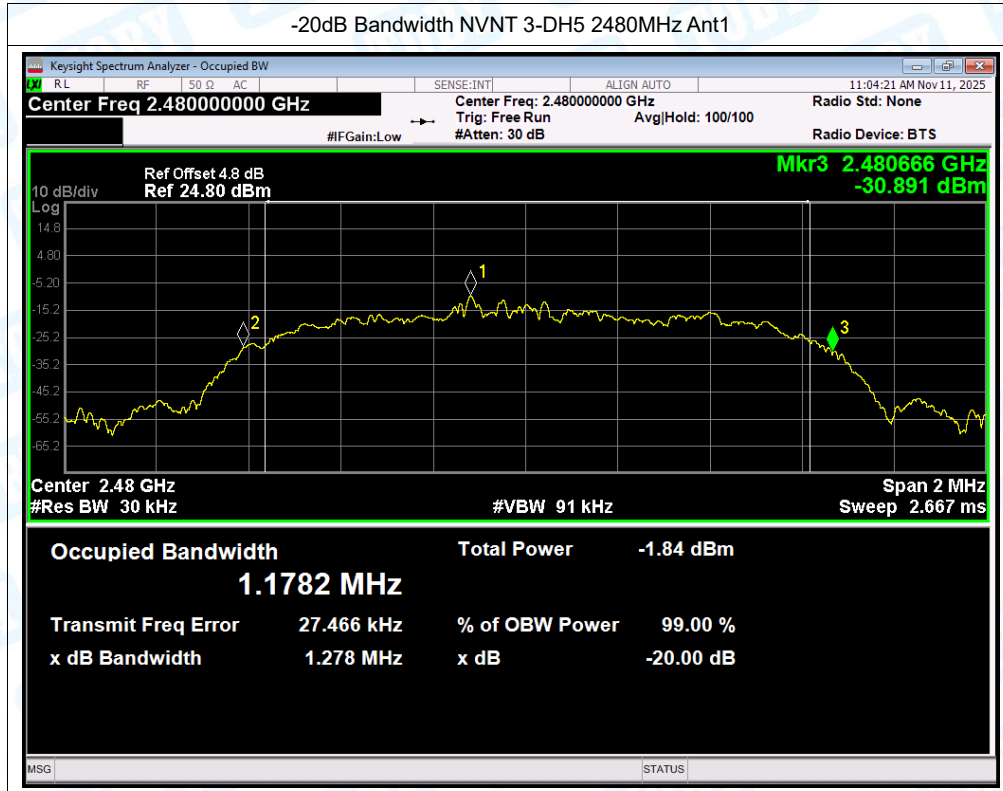


-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



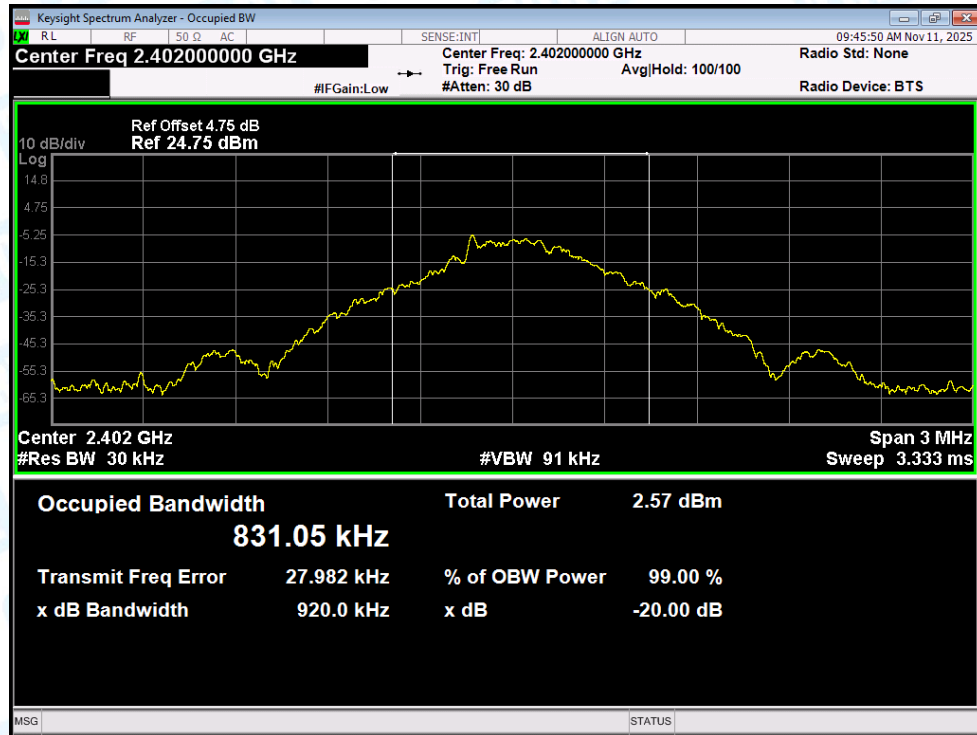


5.Occupied Channel Bandwidth

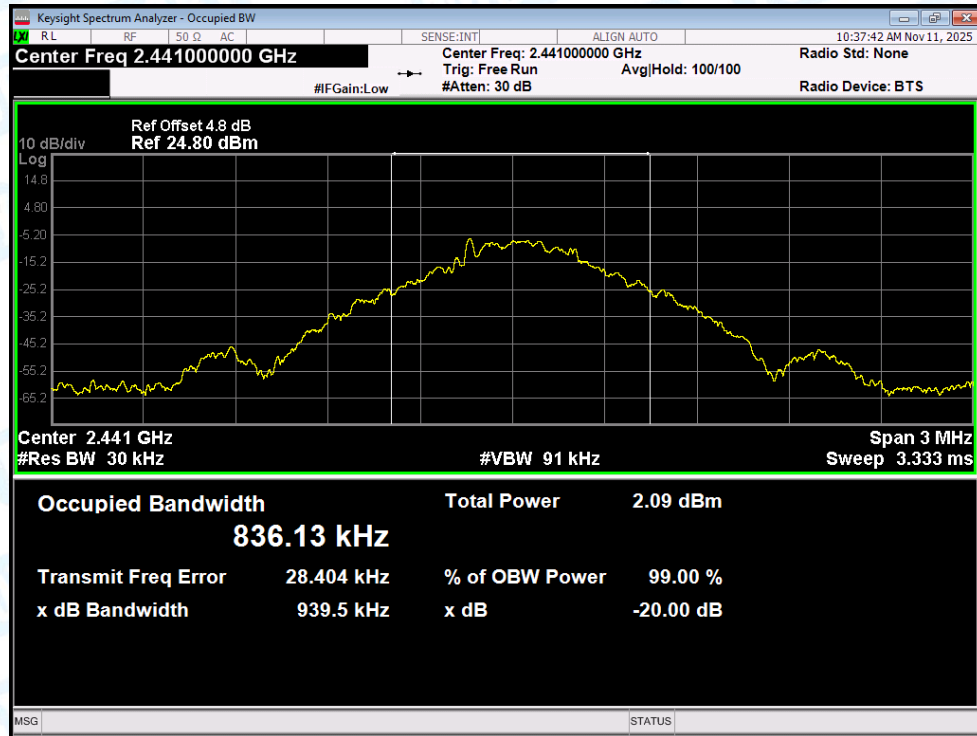
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH5	2402	Ant1	0.831
NVNT	1-DH5	2441	Ant1	0.836
NVNT	1-DH5	2480	Ant1	0.842
NVNT	2-DH5	2402	Ant1	1.173
NVNT	2-DH5	2441	Ant1	1.168
NVNT	2-DH5	2480	Ant1	1.175
NVNT	3-DH5	2402	Ant1	1.164
NVNT	3-DH5	2441	Ant1	1.183
NVNT	3-DH5	2480	Ant1	1.179

Test Graphs

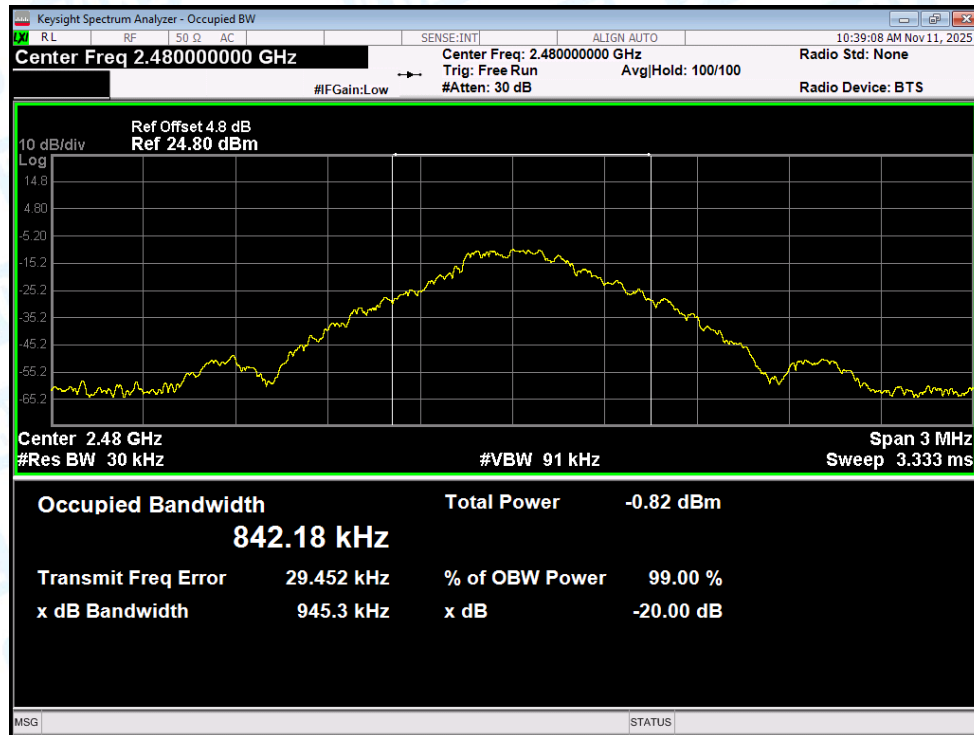
OBW NVNT 1-DH5 2402MHz Ant1



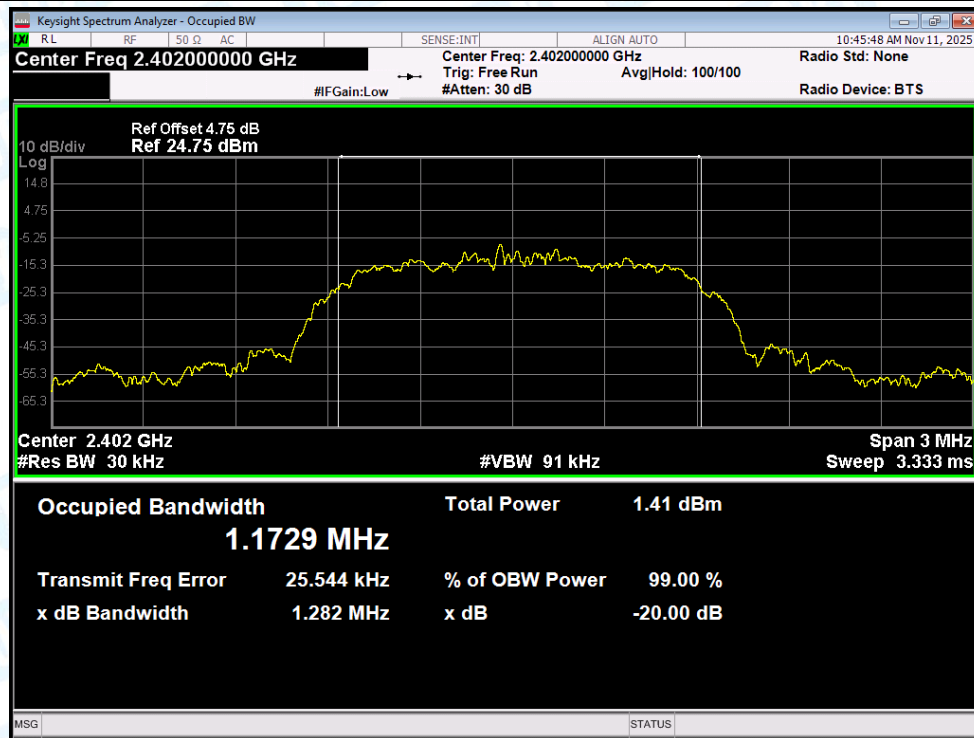
OBW NVNT 1-DH5 2441MHz Ant1



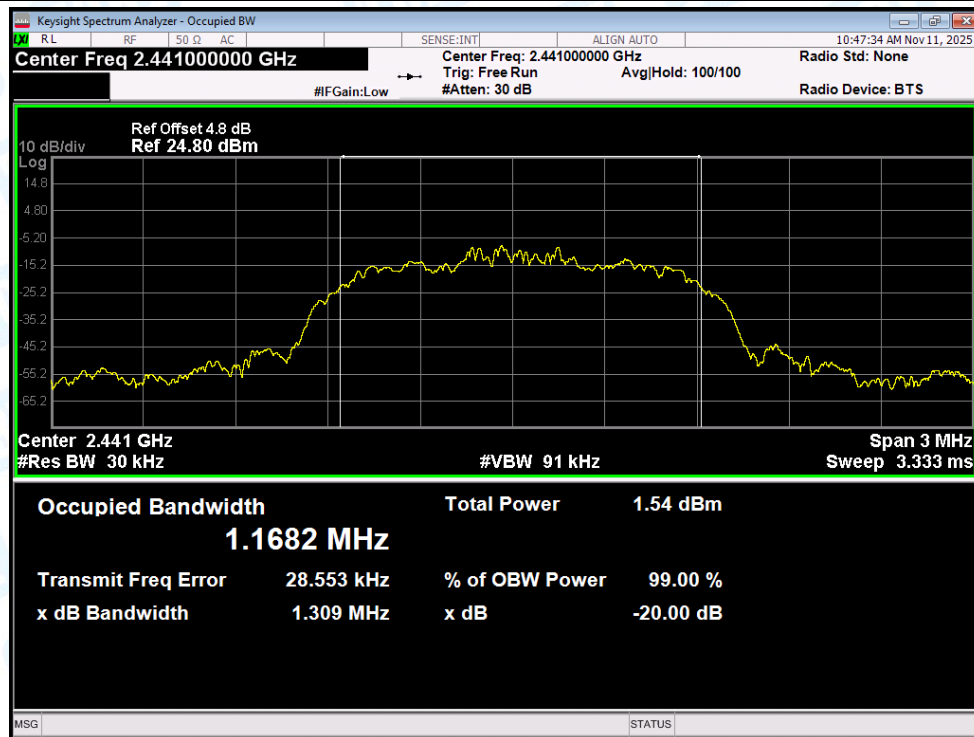
OBW NVNT 1-DH5 2480MHz Ant1



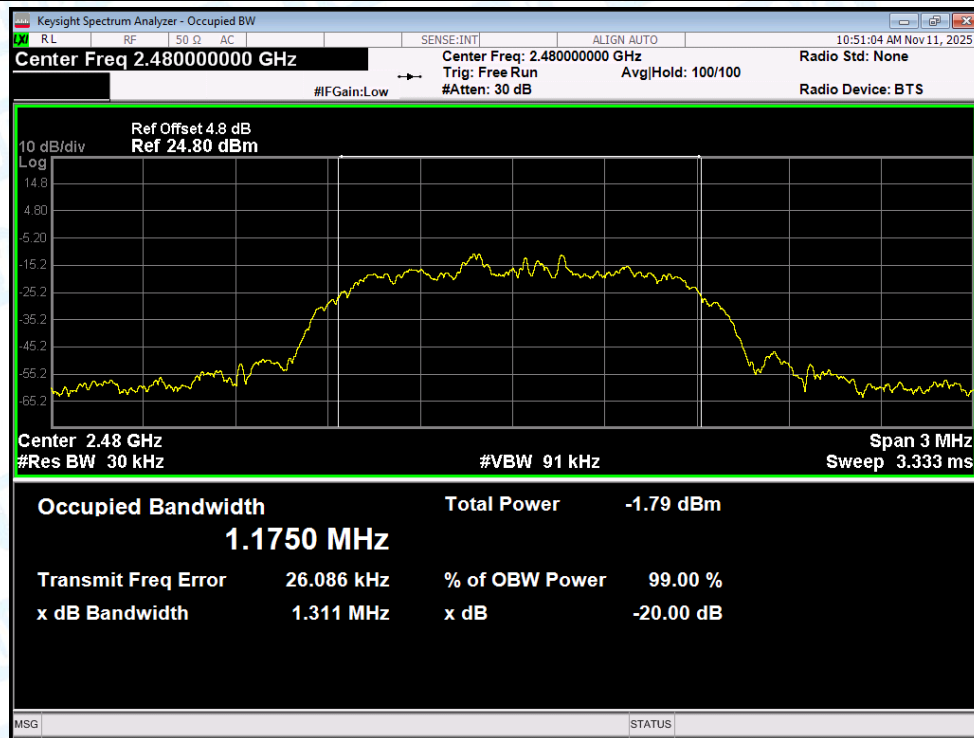
OBW NVNT 2-DH5 2402MHz Ant1



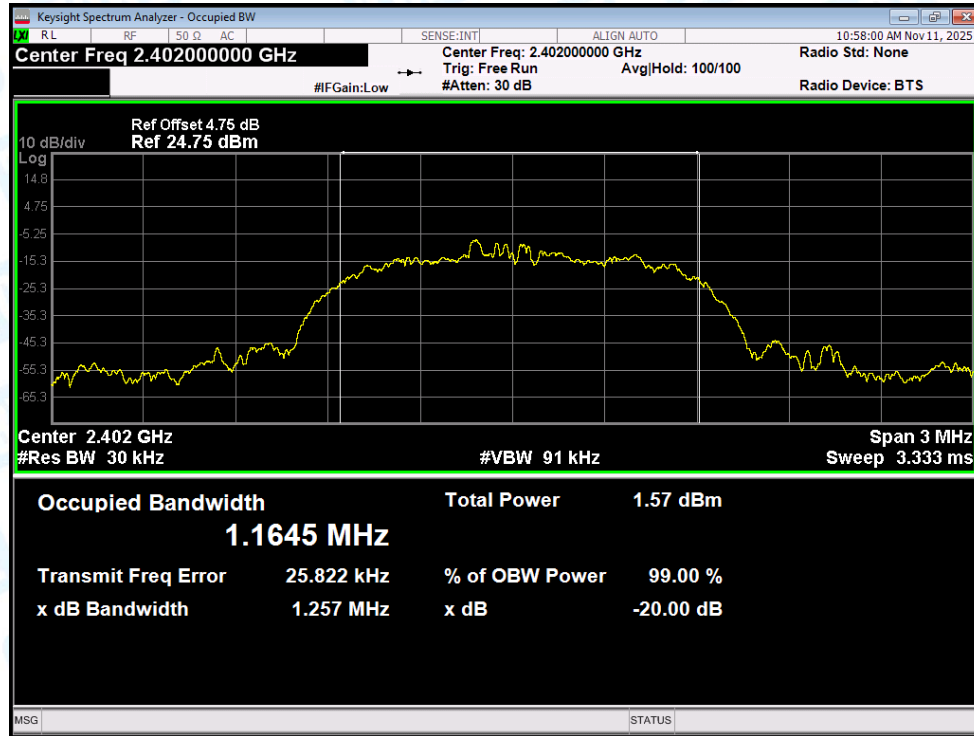
OBW NVNT 2-DH5 2441MHz Ant1



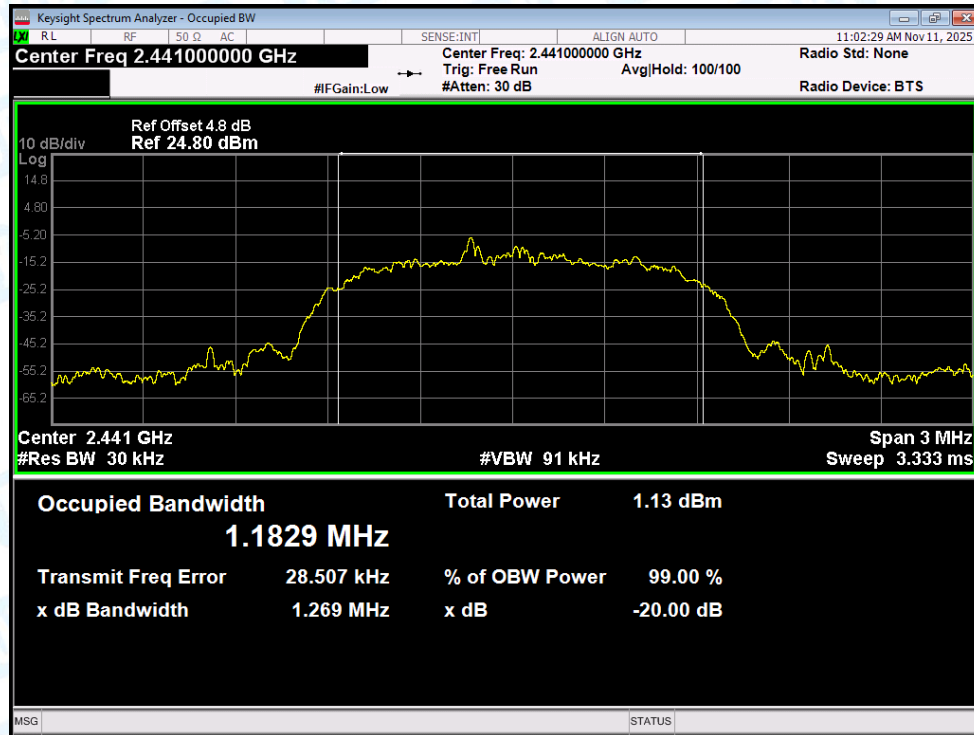
OBW NVNT 2-DH5 2480MHz Ant1

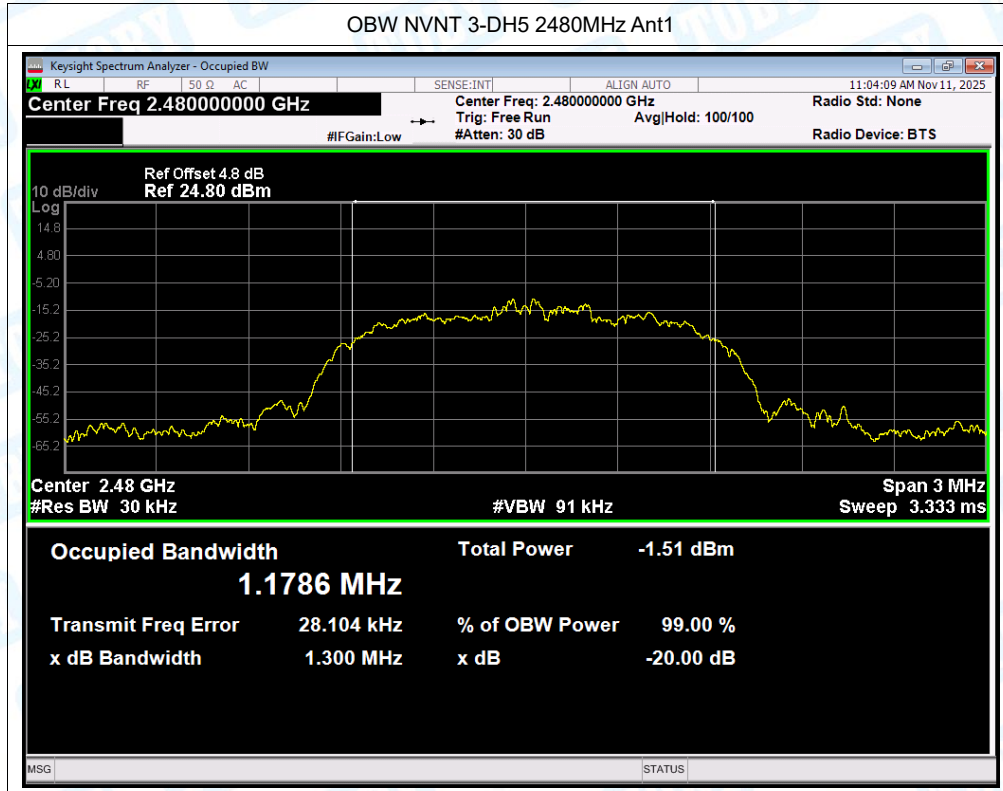


OBW NVNT 3-DH5 2402MHz Ant1



OBW NVNT 3-DH5 2441MHz Ant1



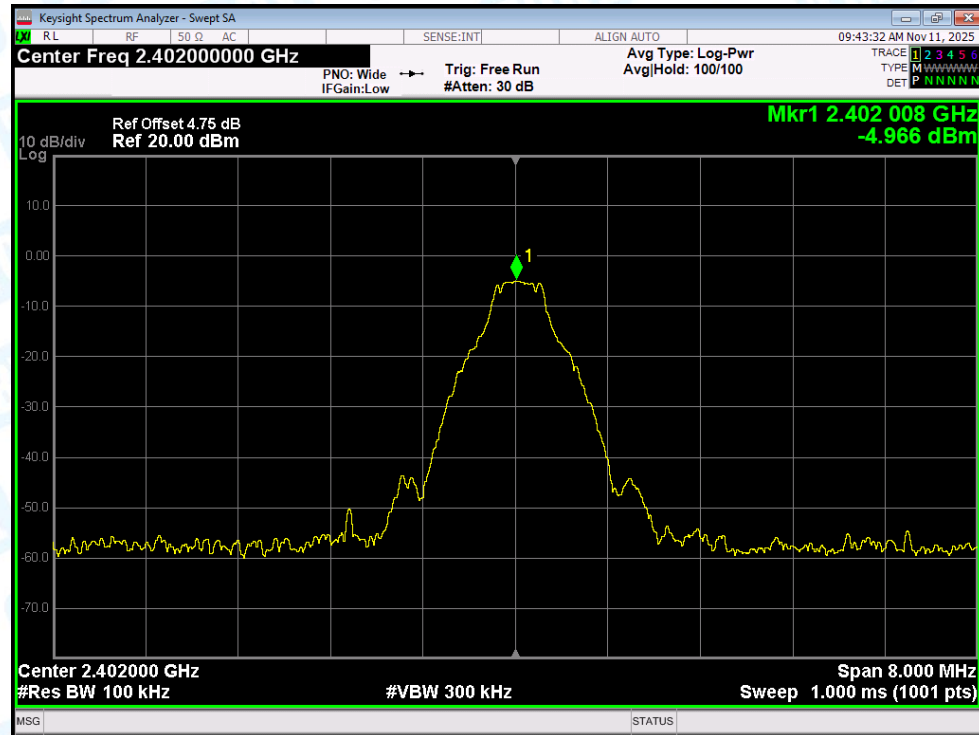


6.Band Edge

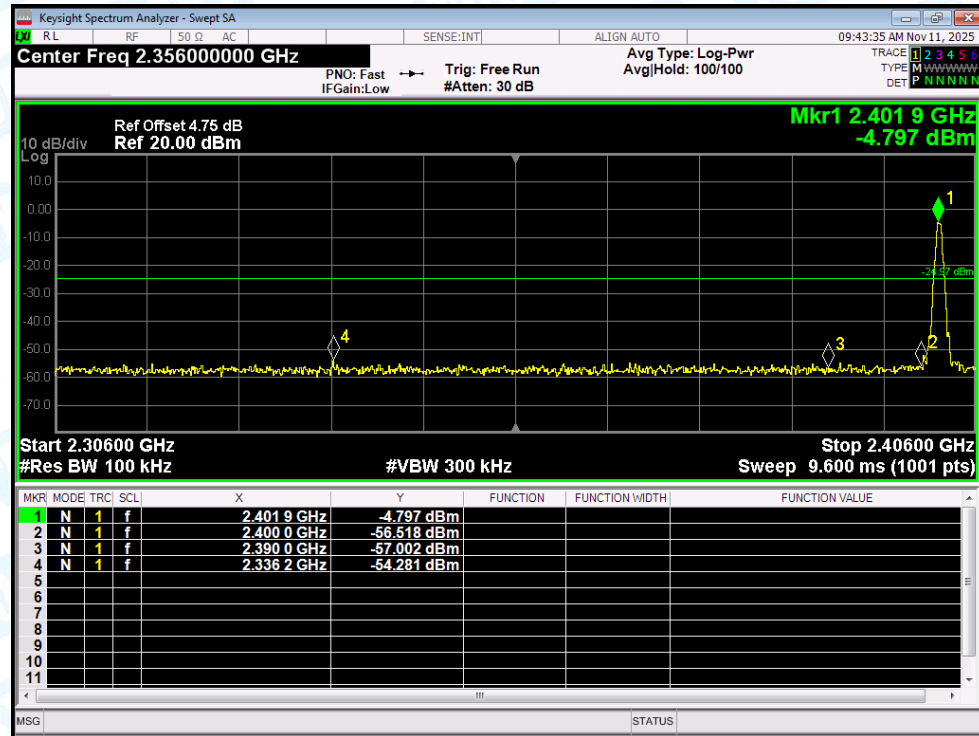
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-49.31	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-47.05	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-50.16	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-46.77	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-47.71	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-47.26	-20	Pass

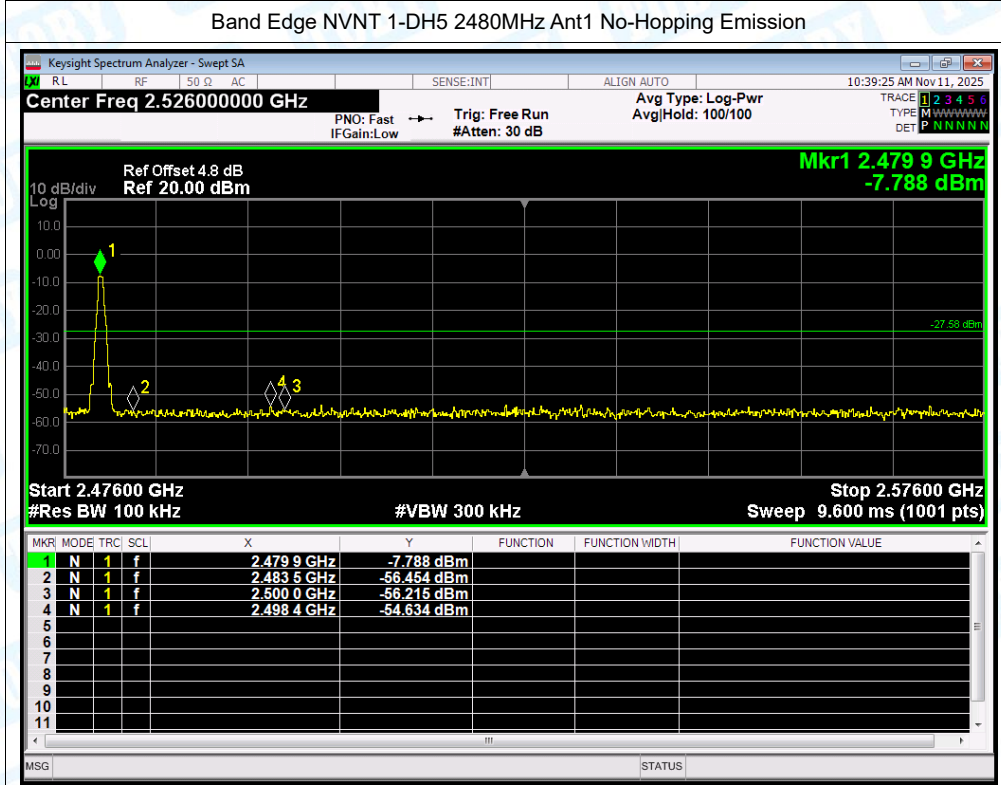
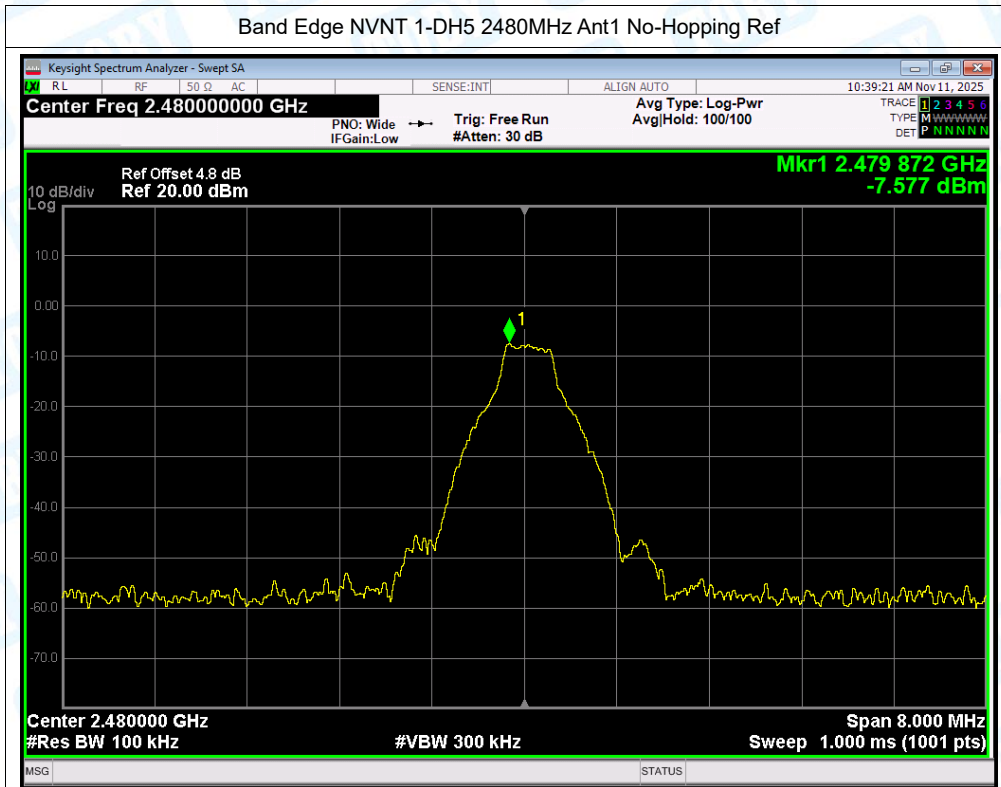
Test Graphs

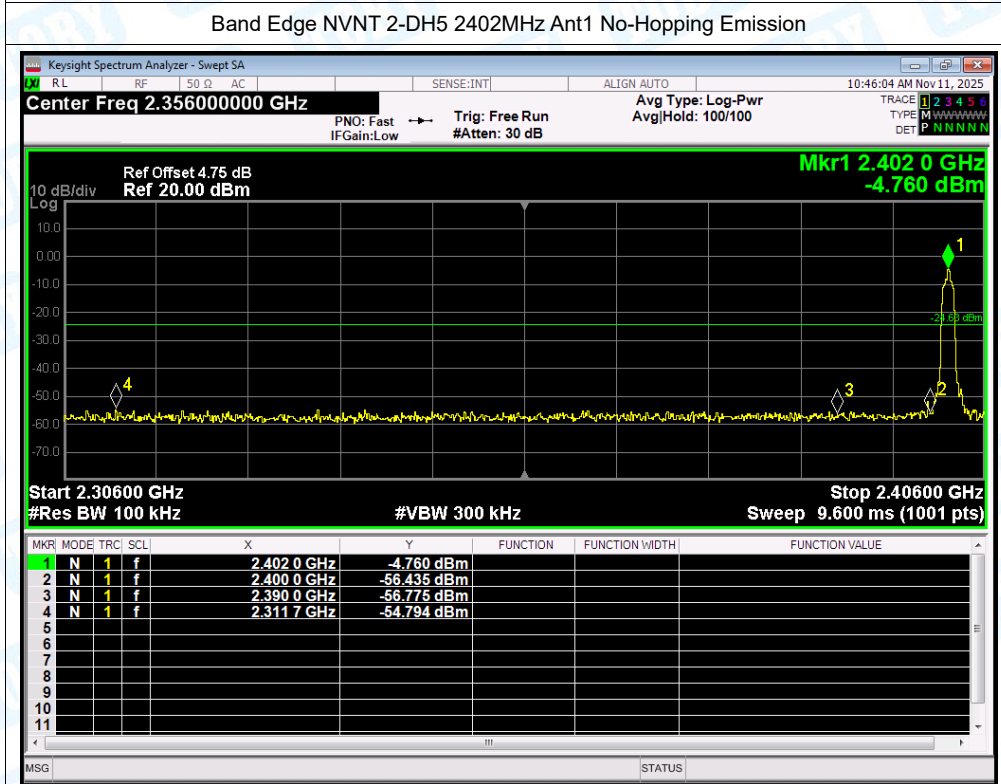
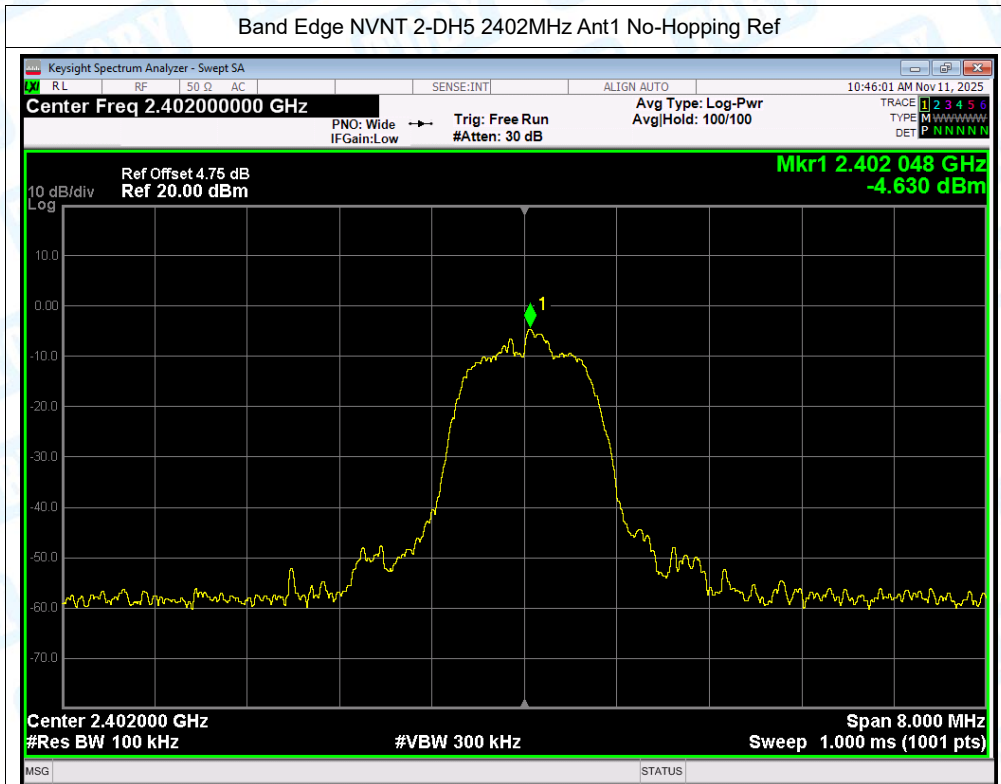
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



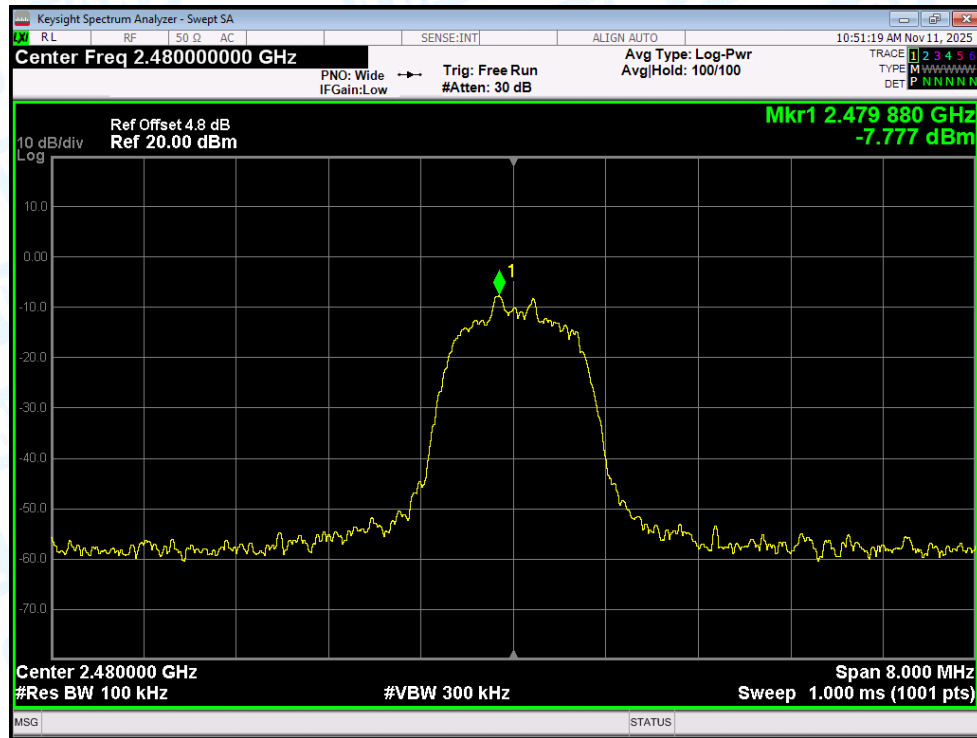
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



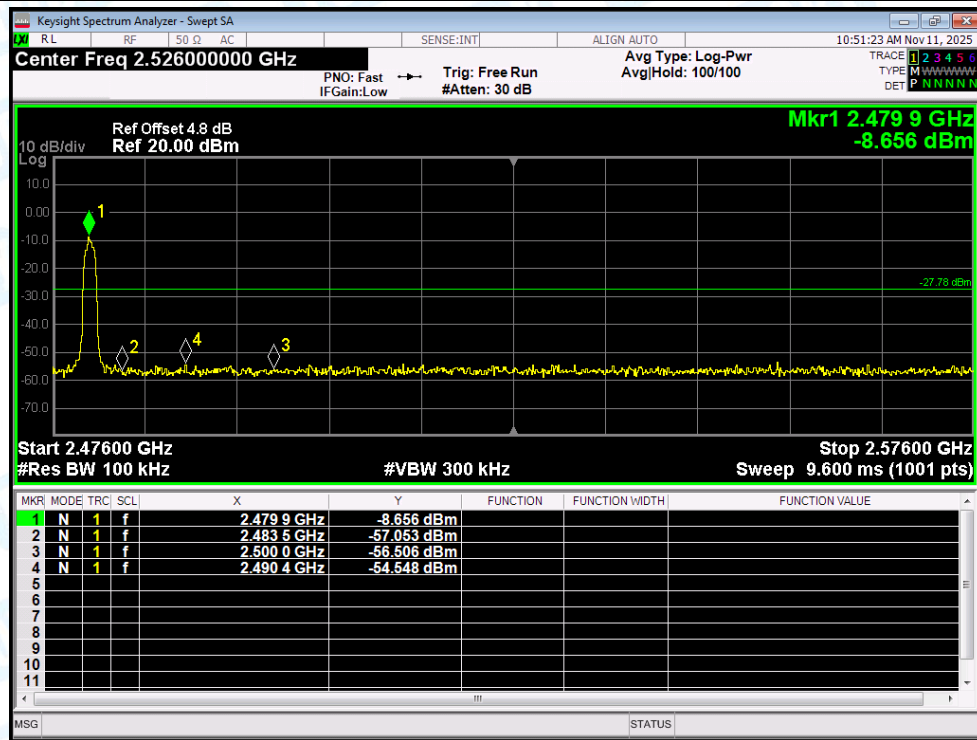




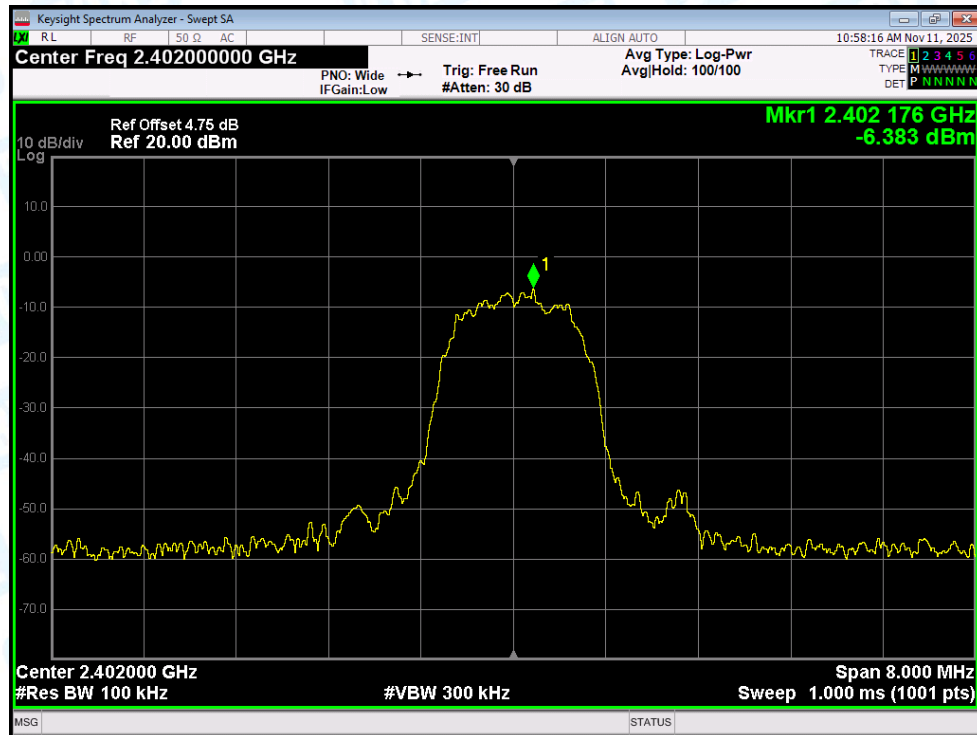
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



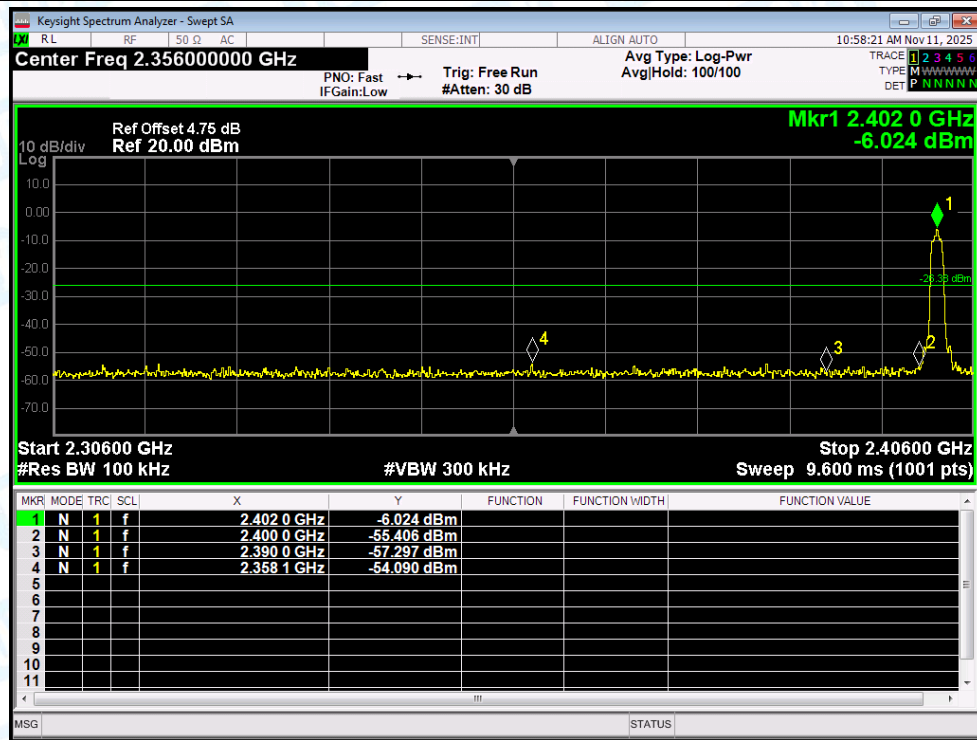
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission

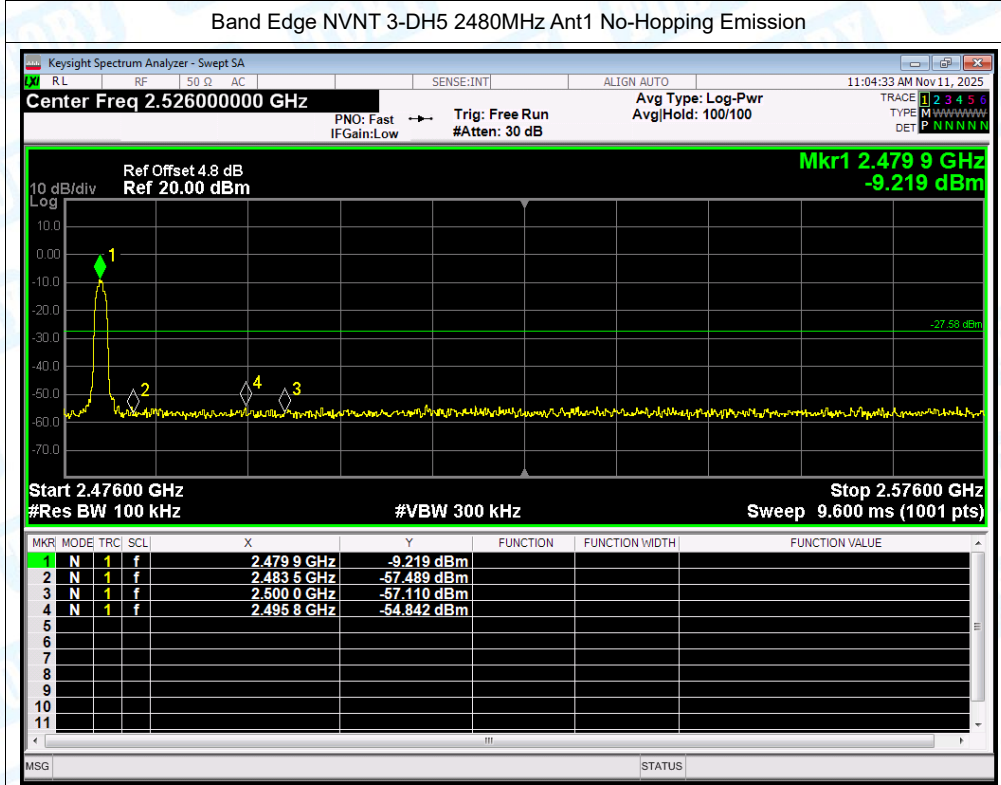
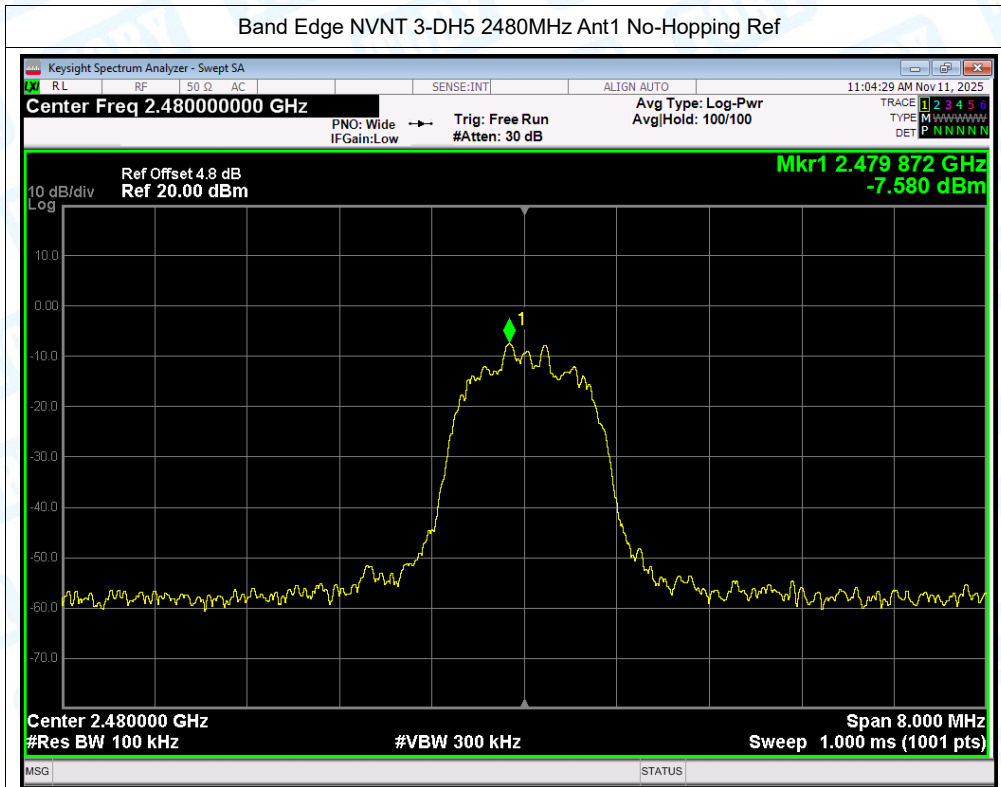


Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref



Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission



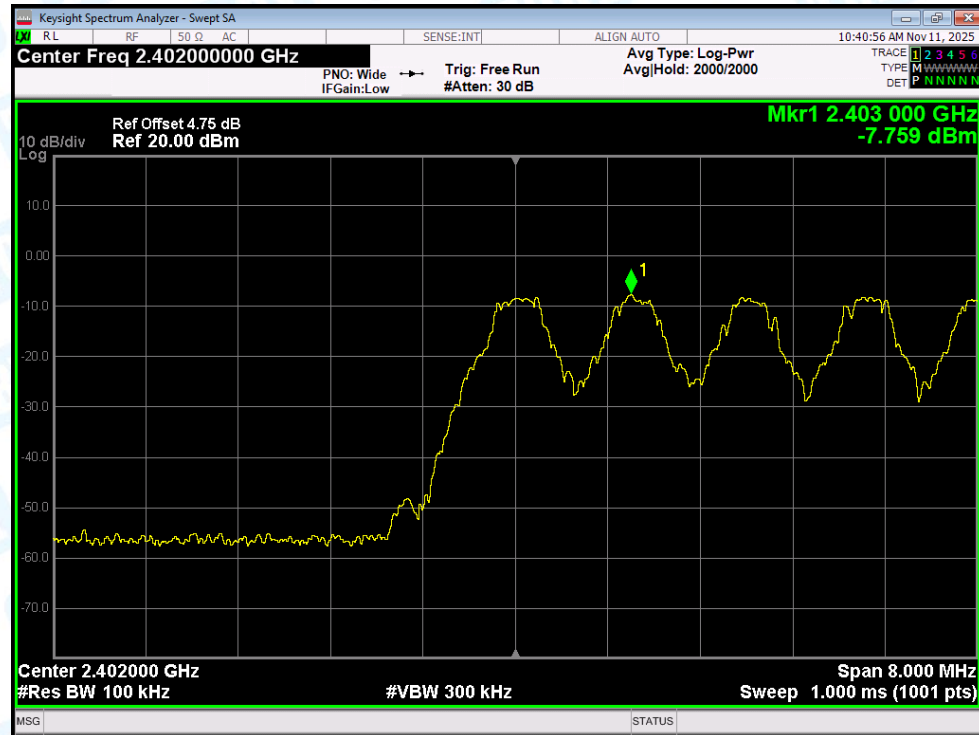


7. Band Edge(Hopping)

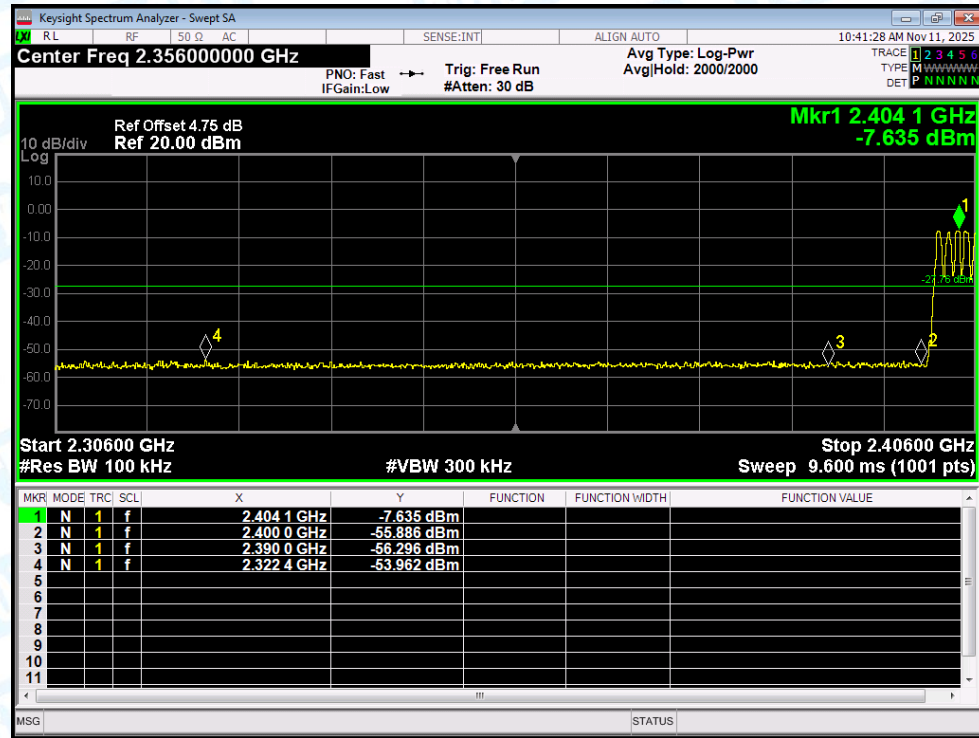
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-46.2	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-46.37	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-45.74	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-45.4	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-46.29	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-44.77	-20	Pass

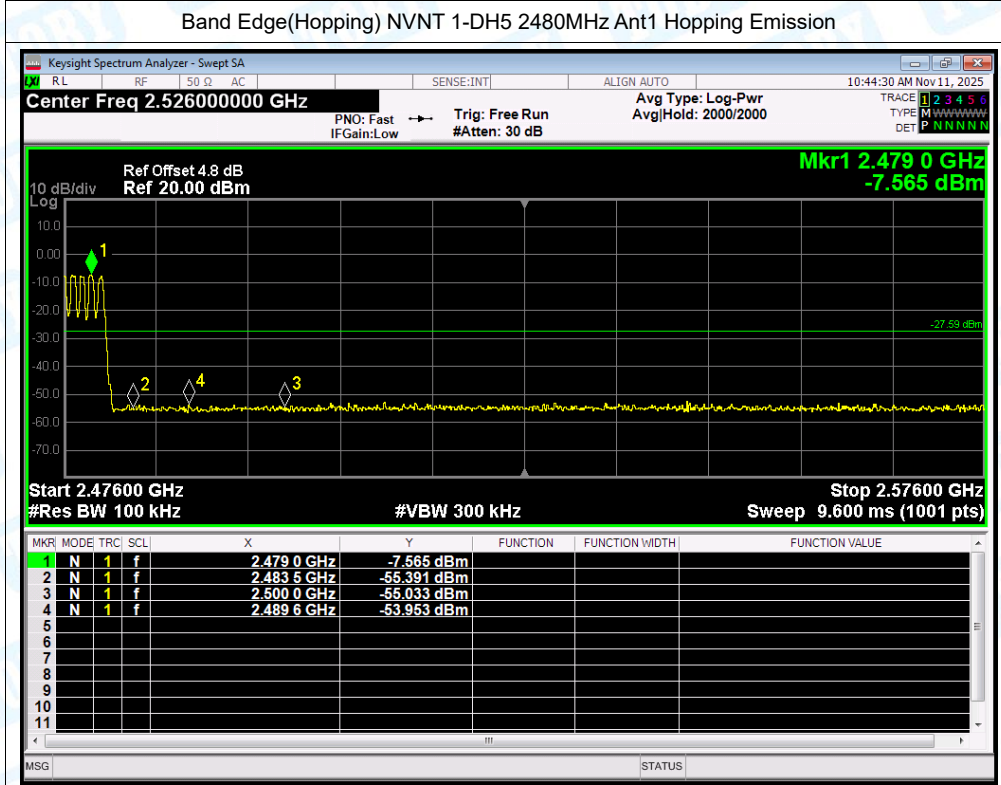
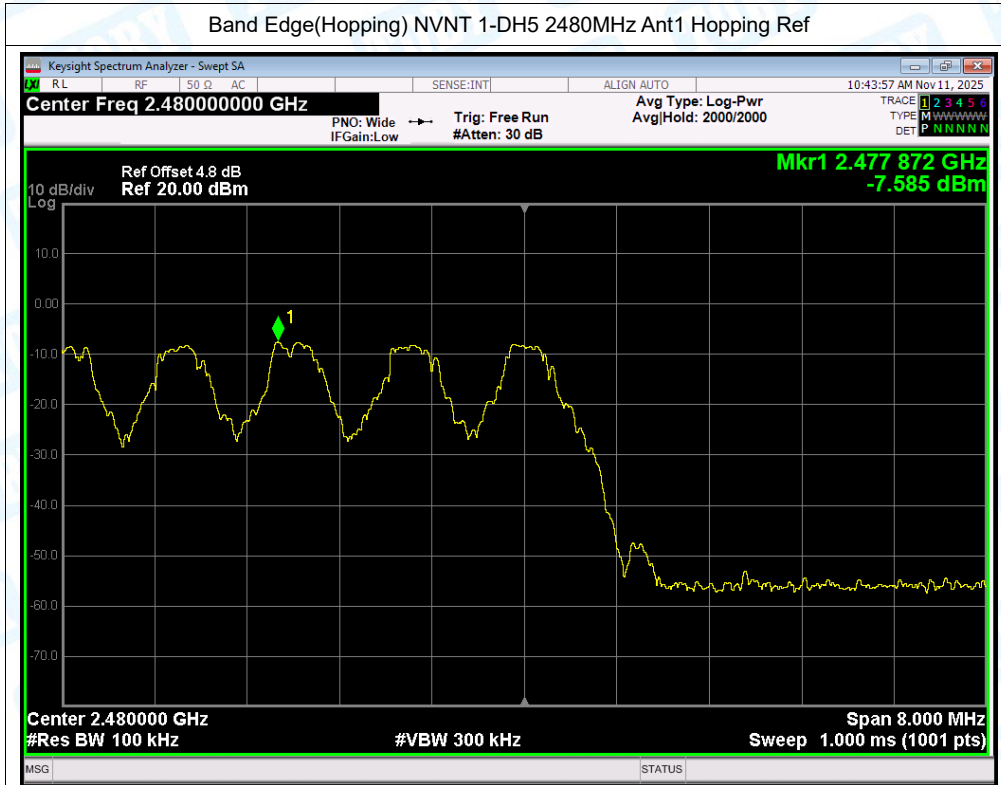
Test Graphs

Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref

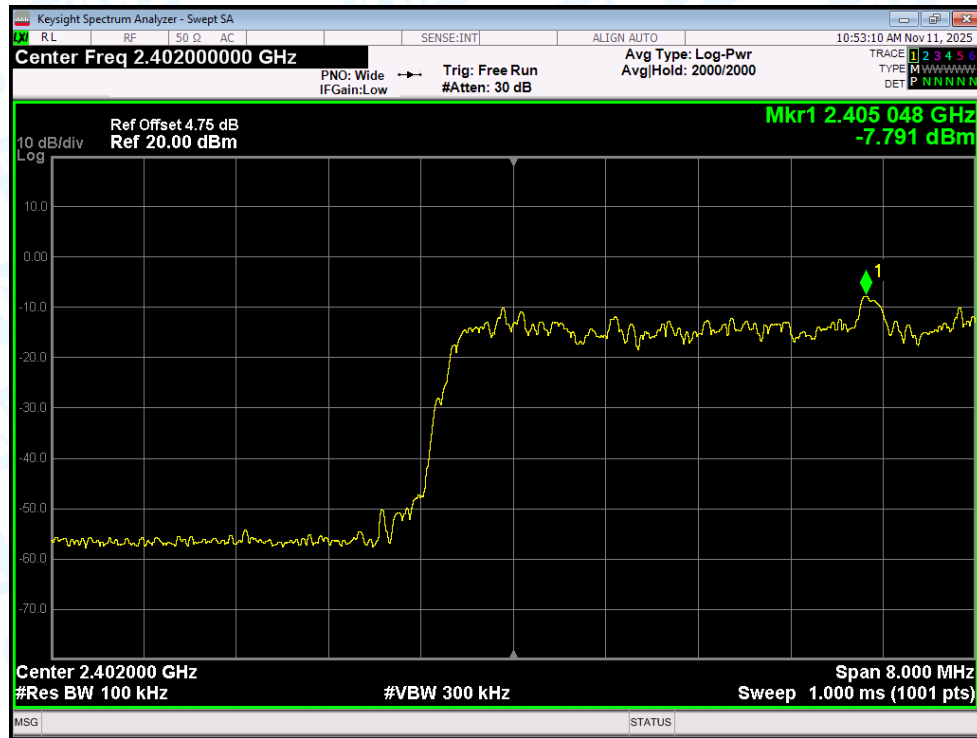


Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission

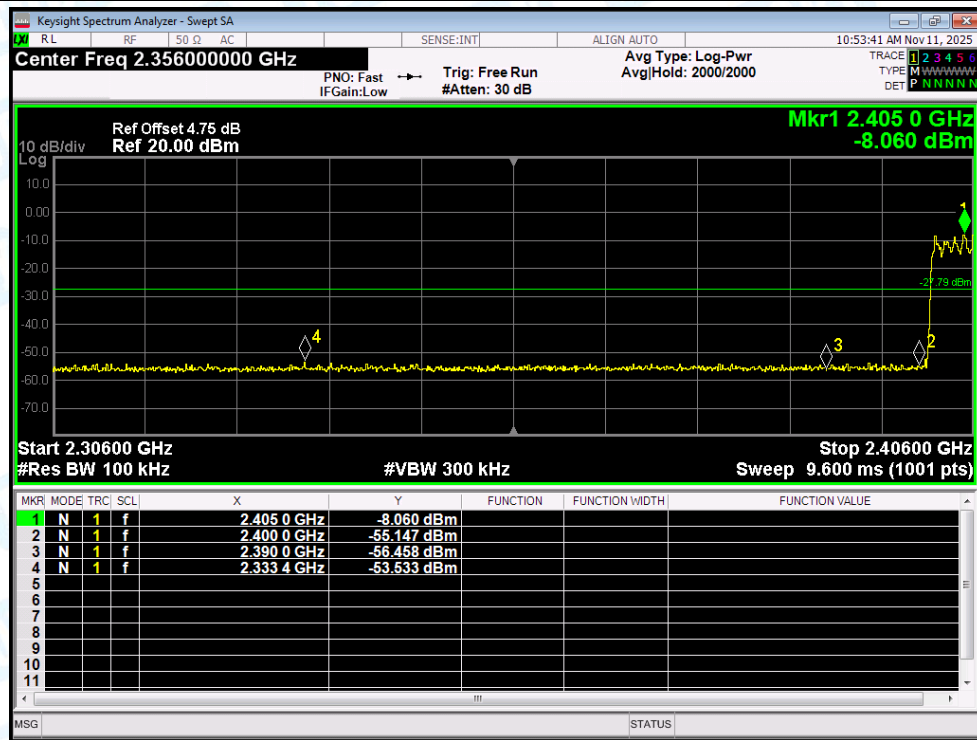


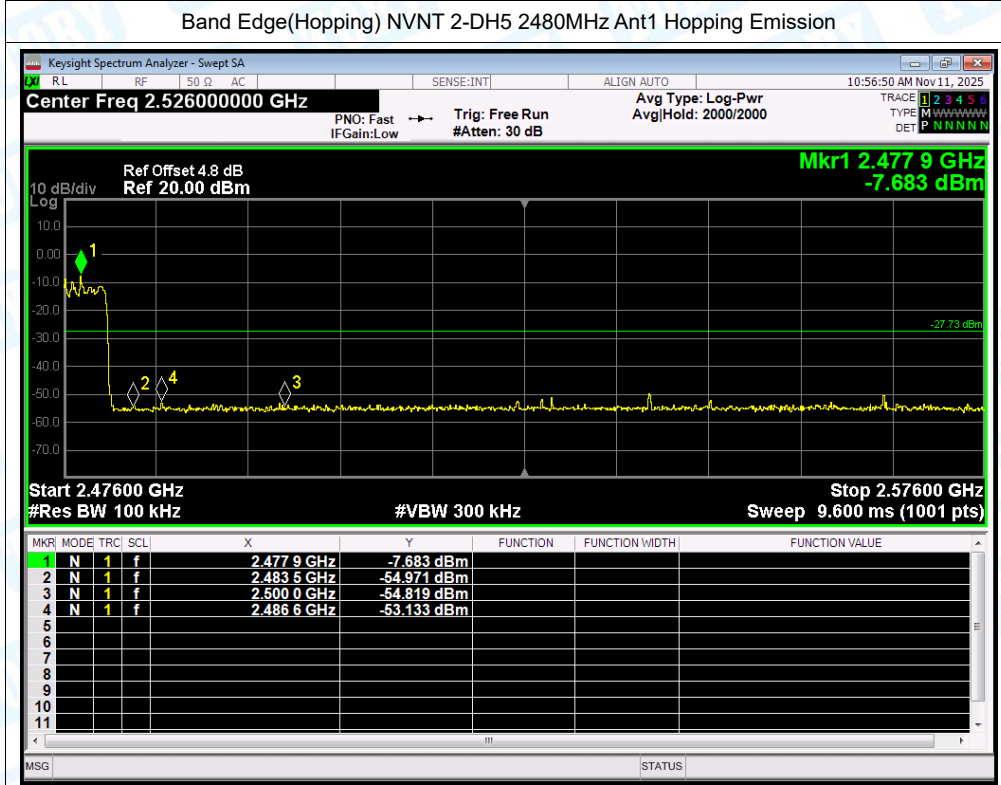
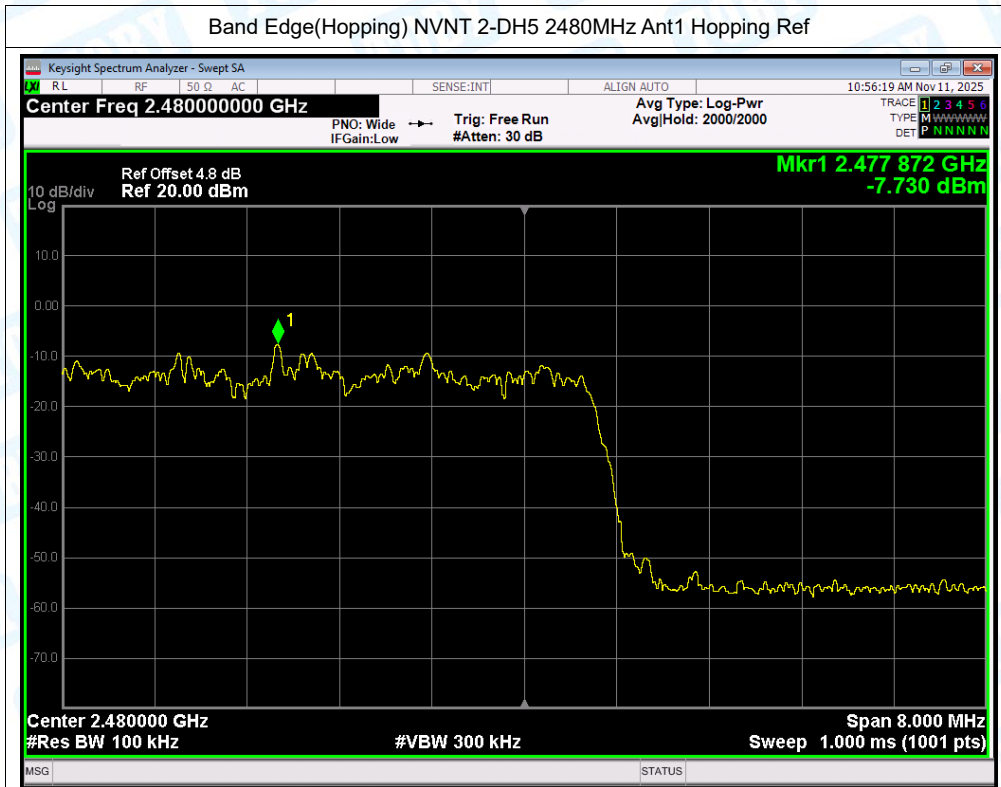


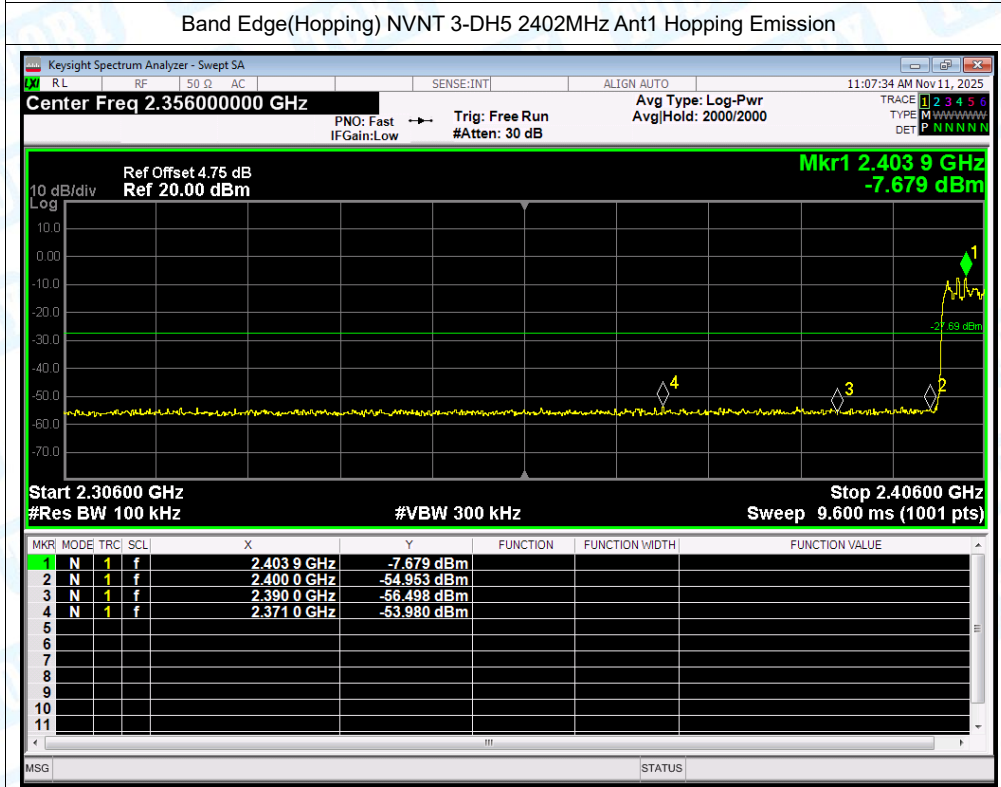
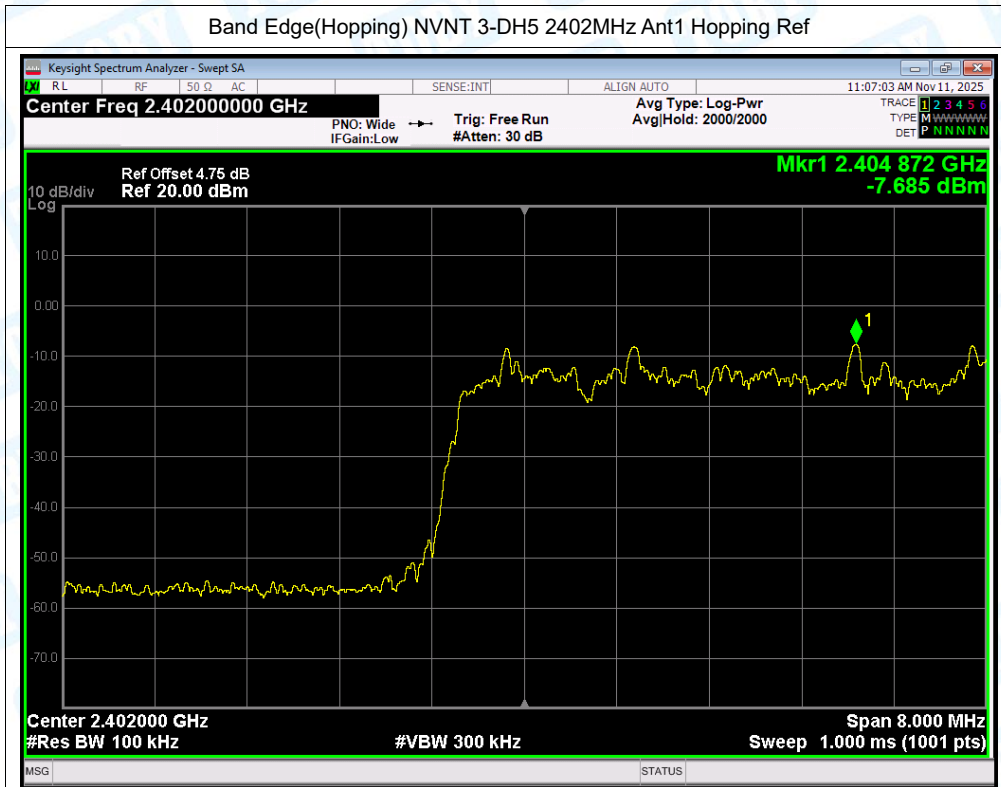
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref

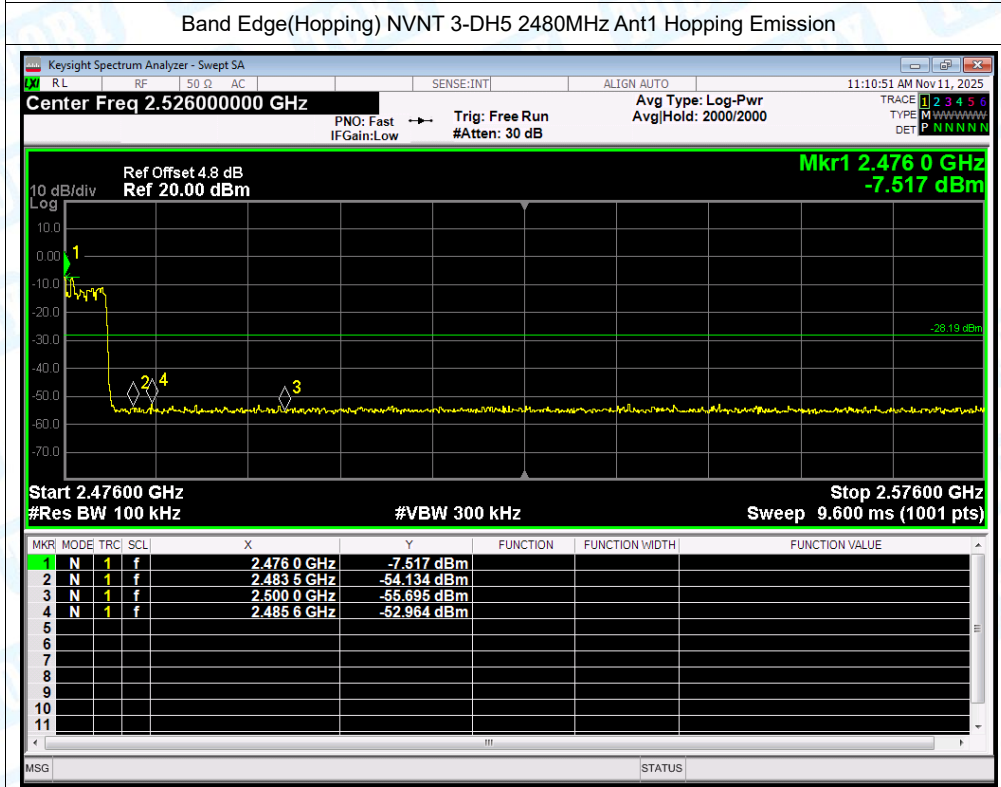
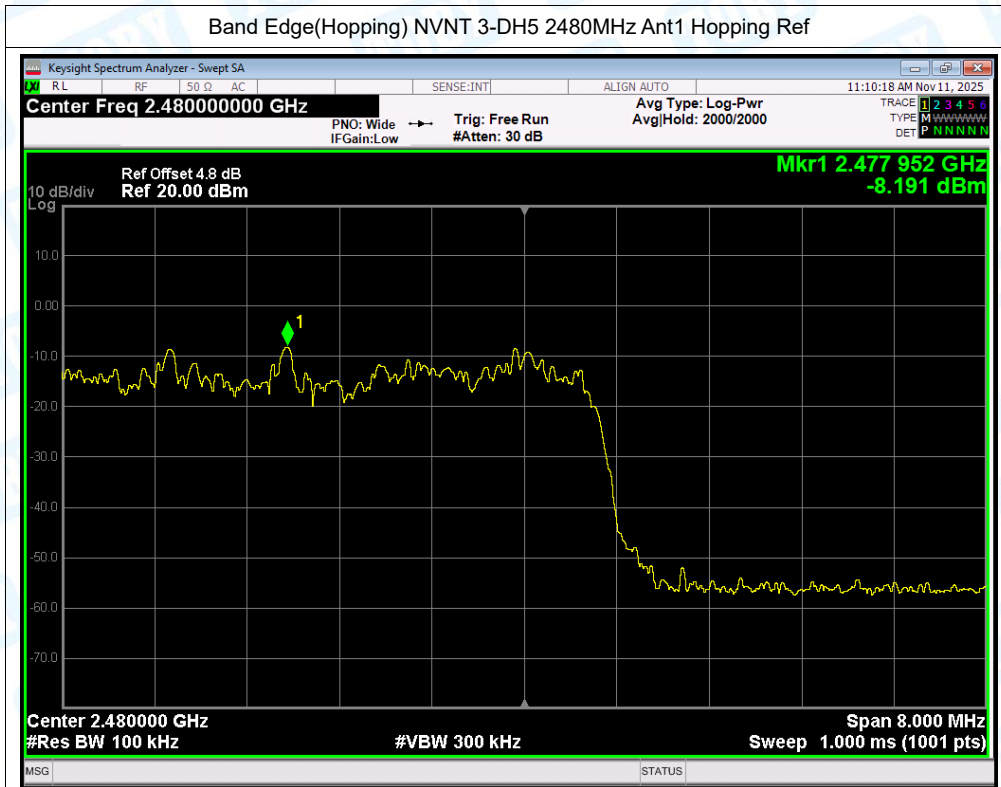


Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission







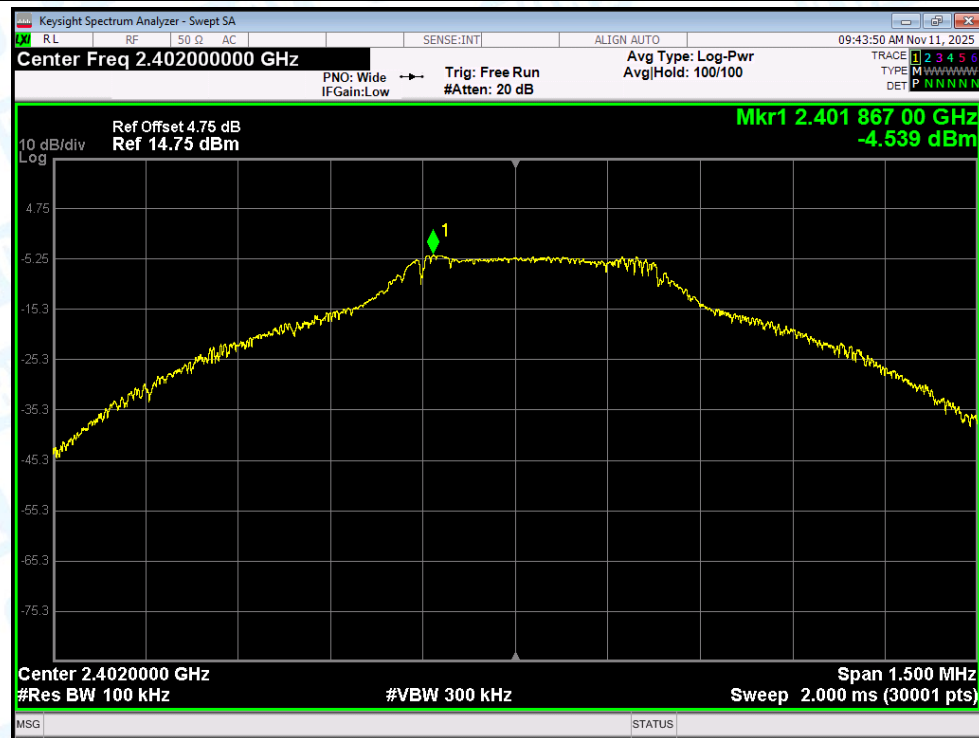


8. Conducted RF Spurious Emission

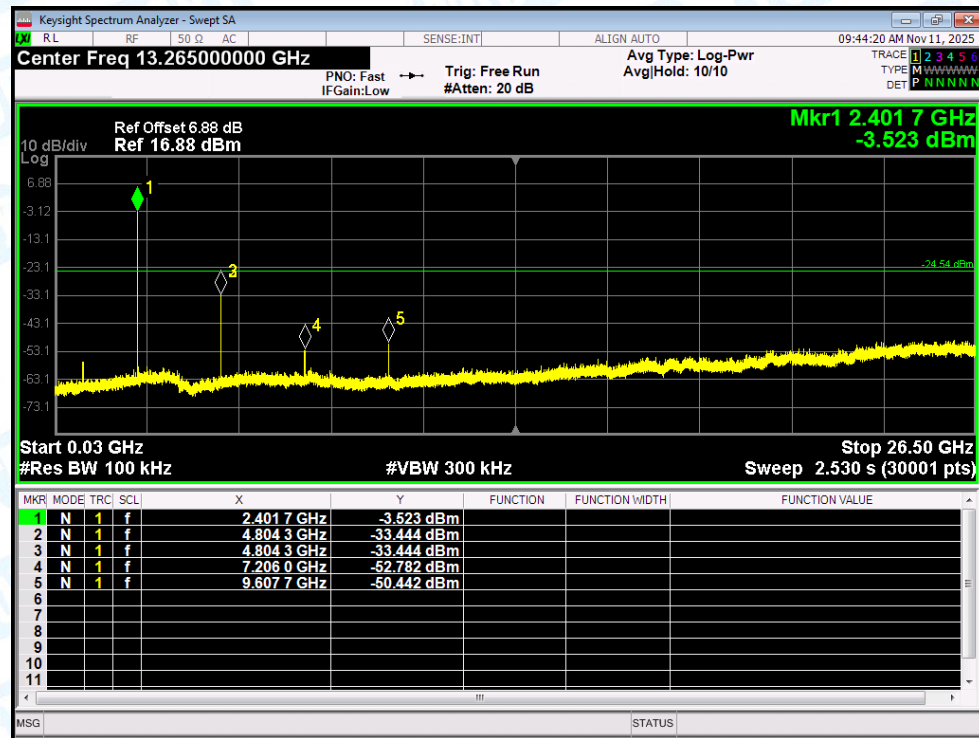
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-28.9	-20	Pass
NVNT	1-DH5	2441	Ant1	-27.45	-20	Pass
NVNT	1-DH5	2480	Ant1	-27.29	-20	Pass
NVNT	2-DH5	2402	Ant1	-28.61	-20	Pass
NVNT	2-DH5	2441	Ant1	-29.84	-20	Pass
NVNT	2-DH5	2480	Ant1	-34.04	-20	Pass
NVNT	3-DH5	2402	Ant1	-32.25	-20	Pass
NVNT	3-DH5	2441	Ant1	-26.82	-20	Pass
NVNT	3-DH5	2480	Ant1	-28.9	-20	Pass

Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



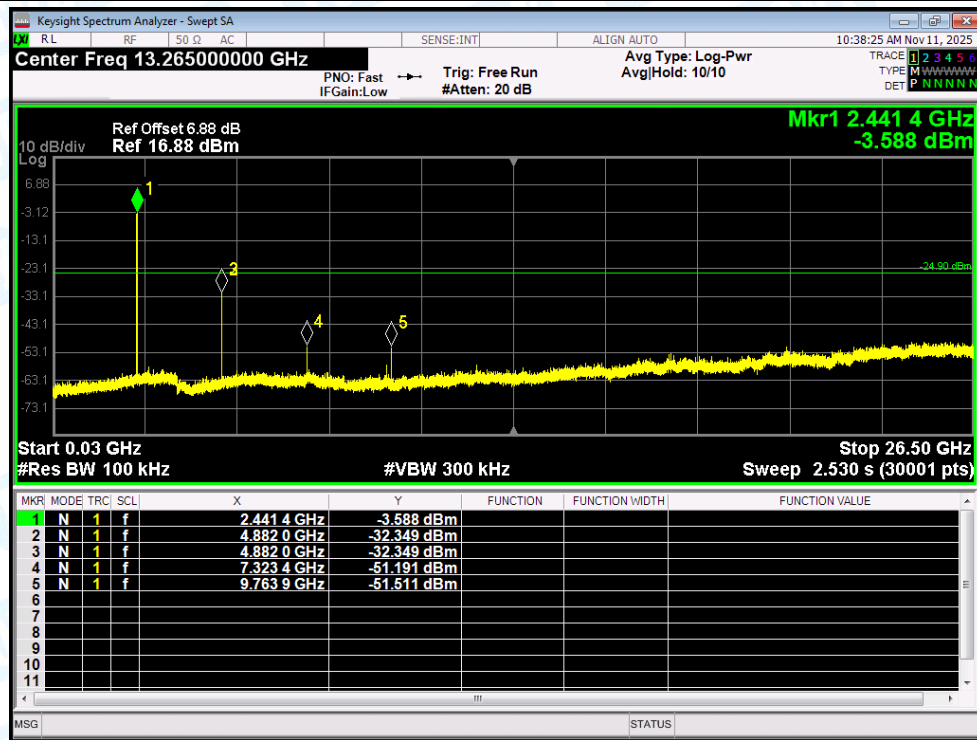
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



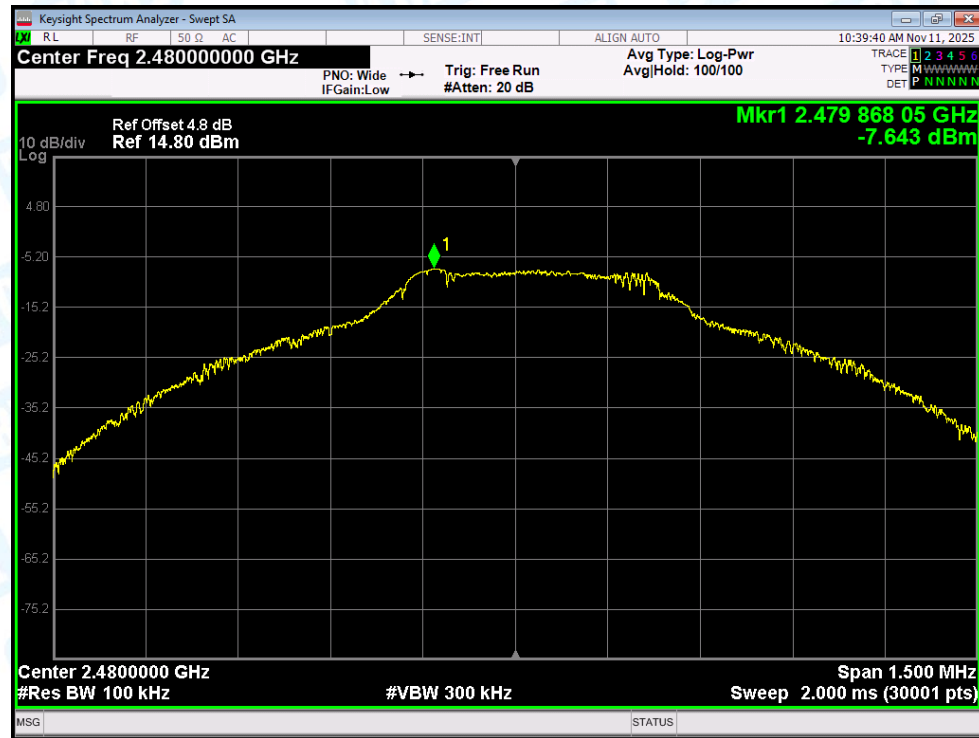
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



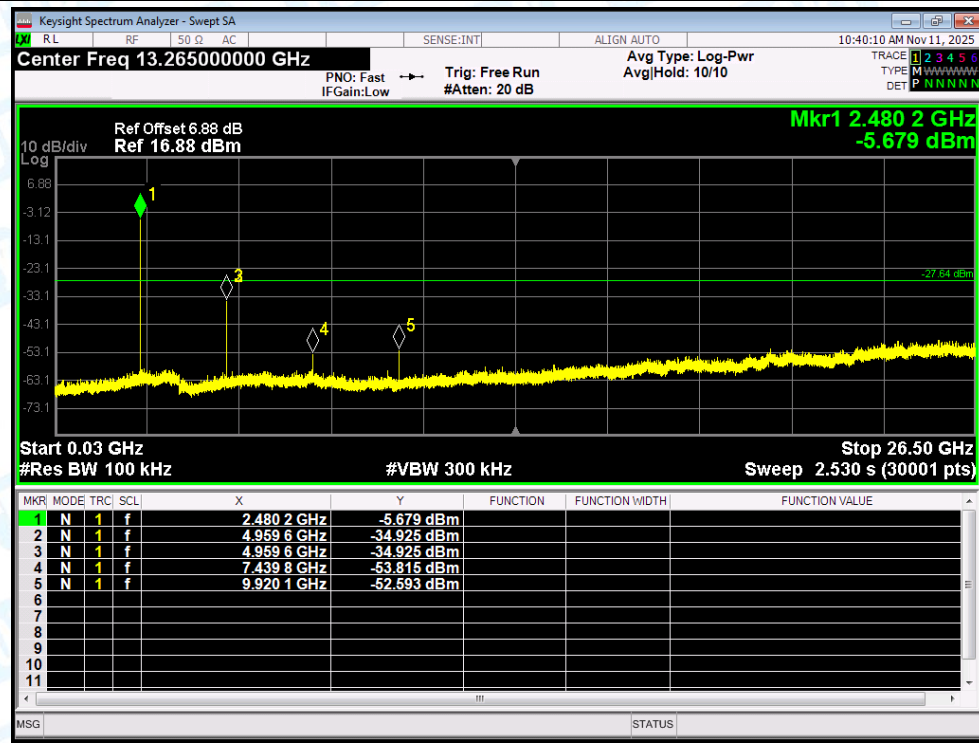
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



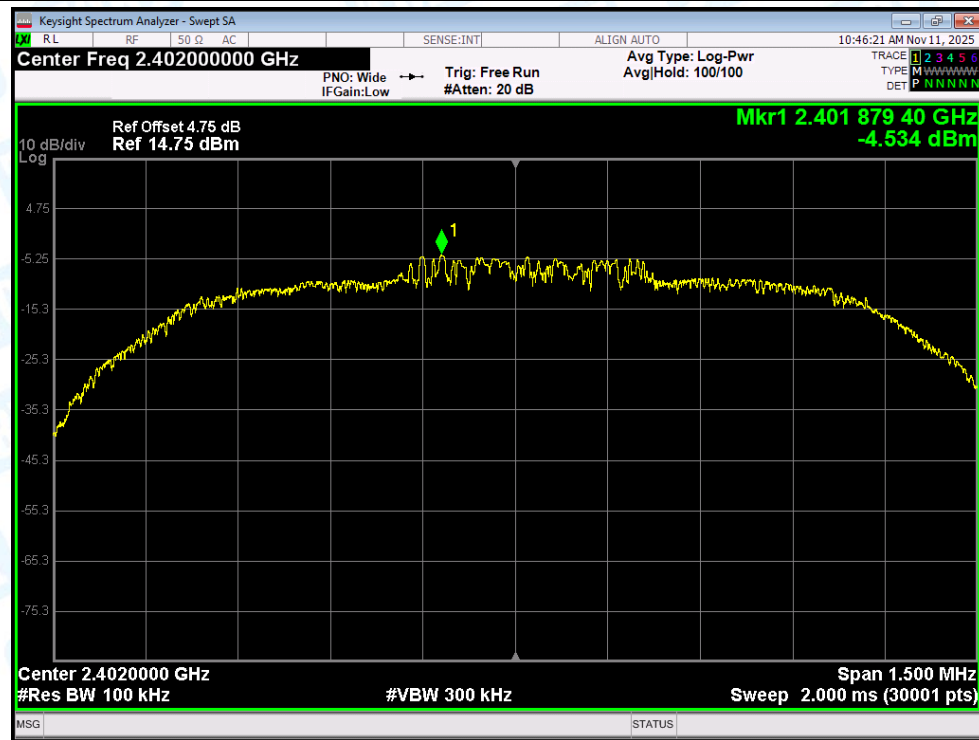
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



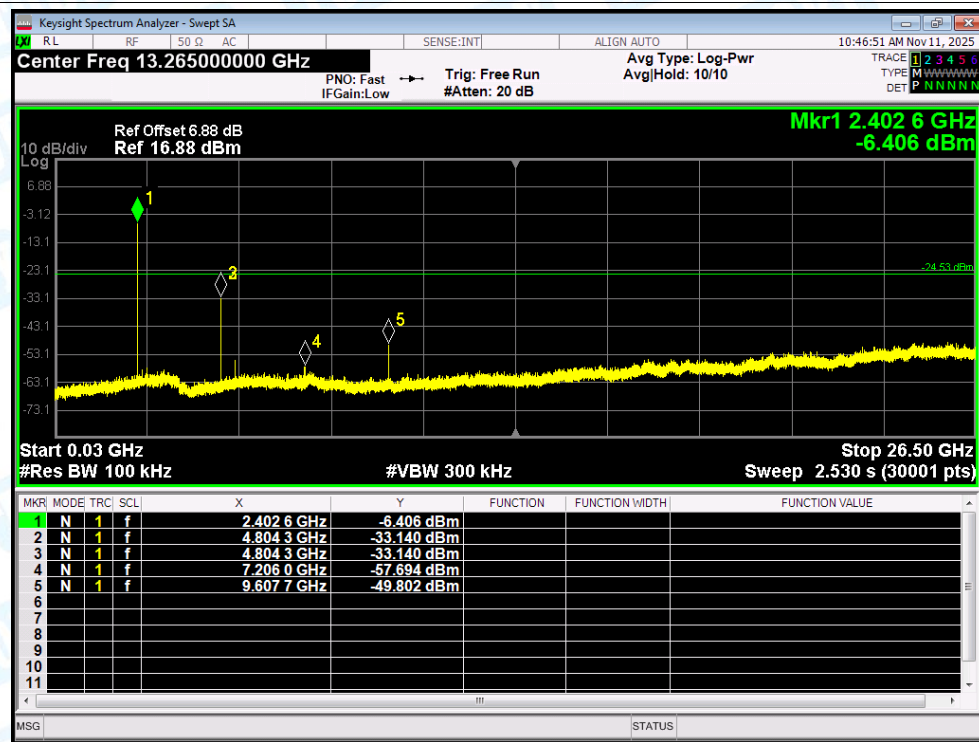
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



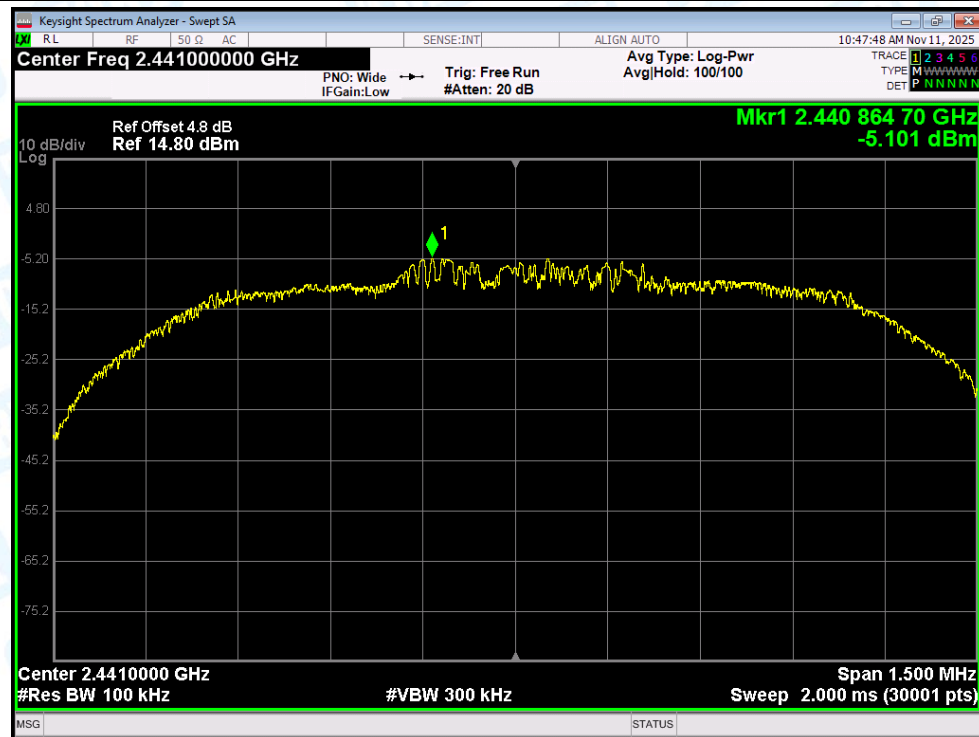
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



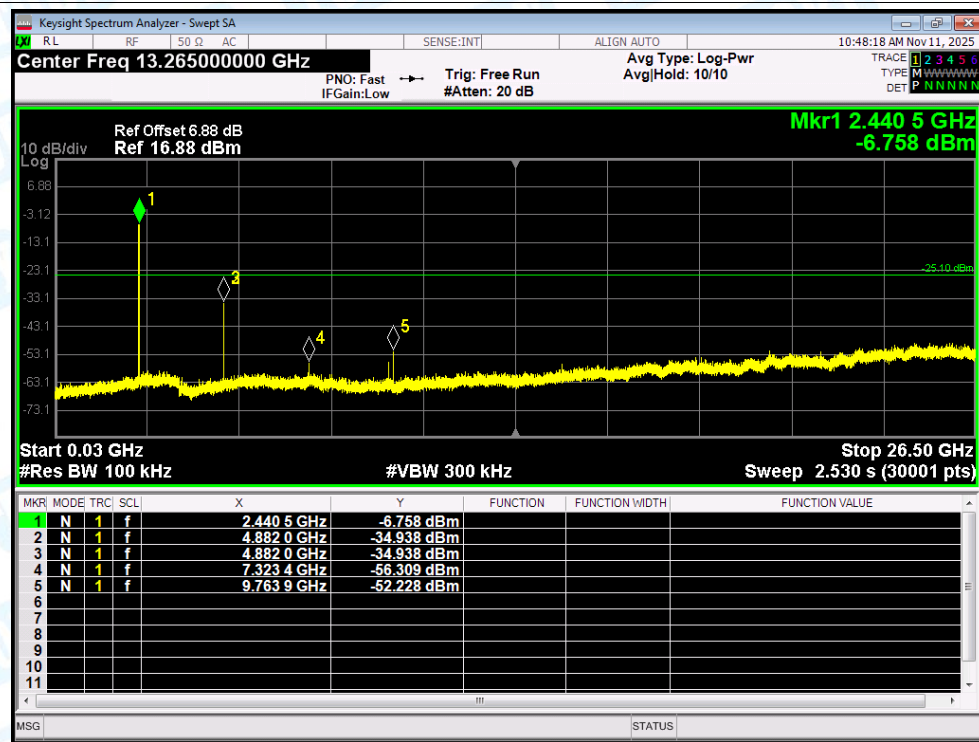
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



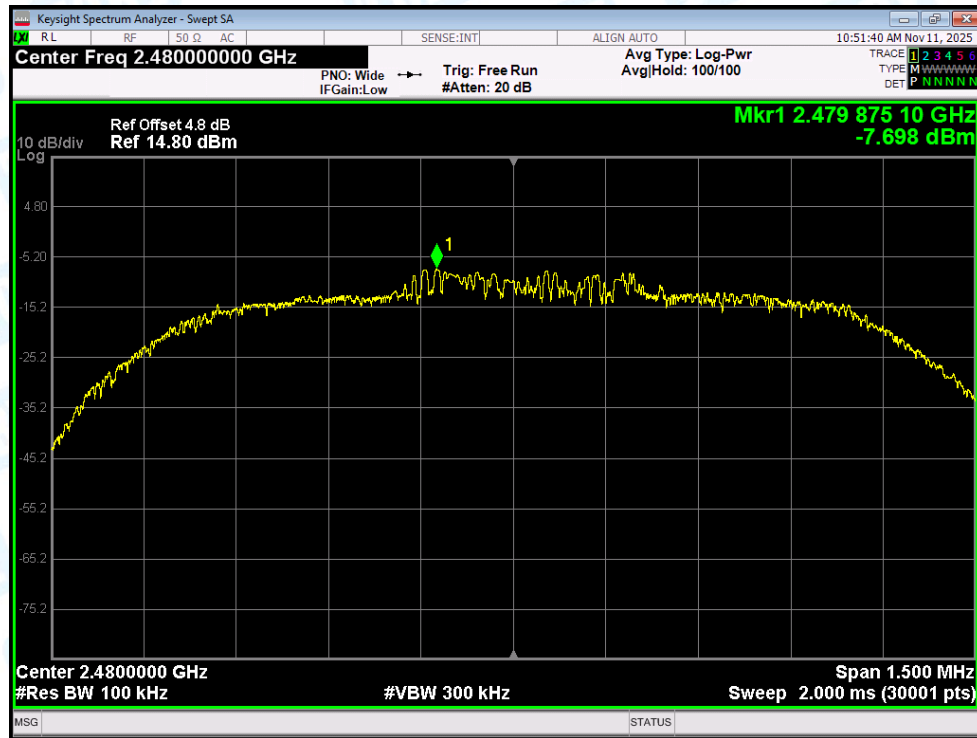
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



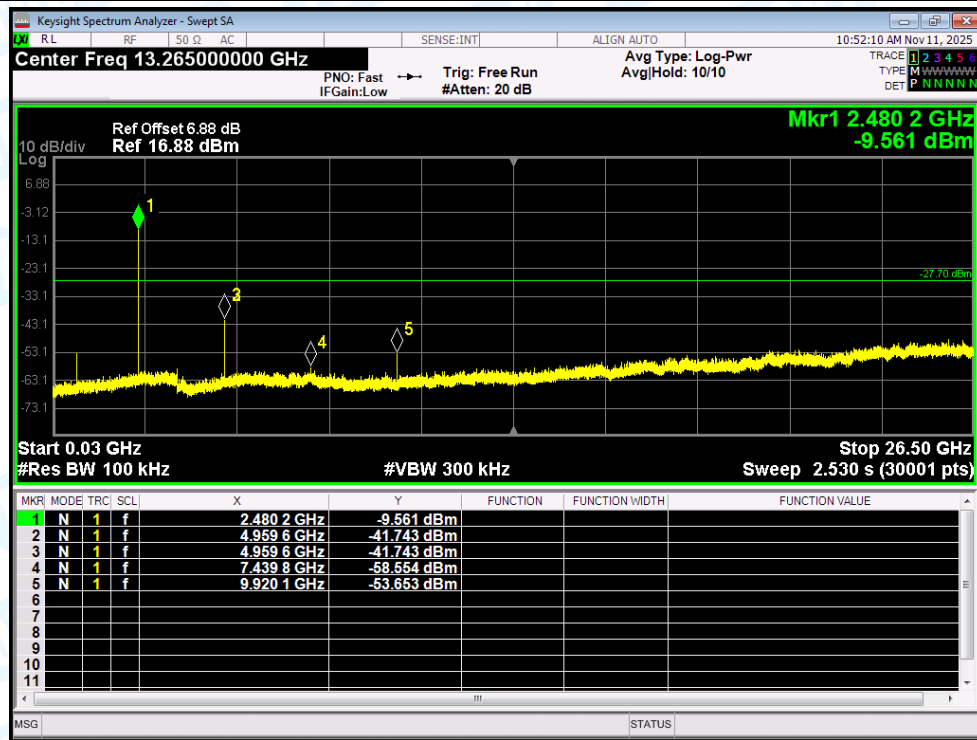
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



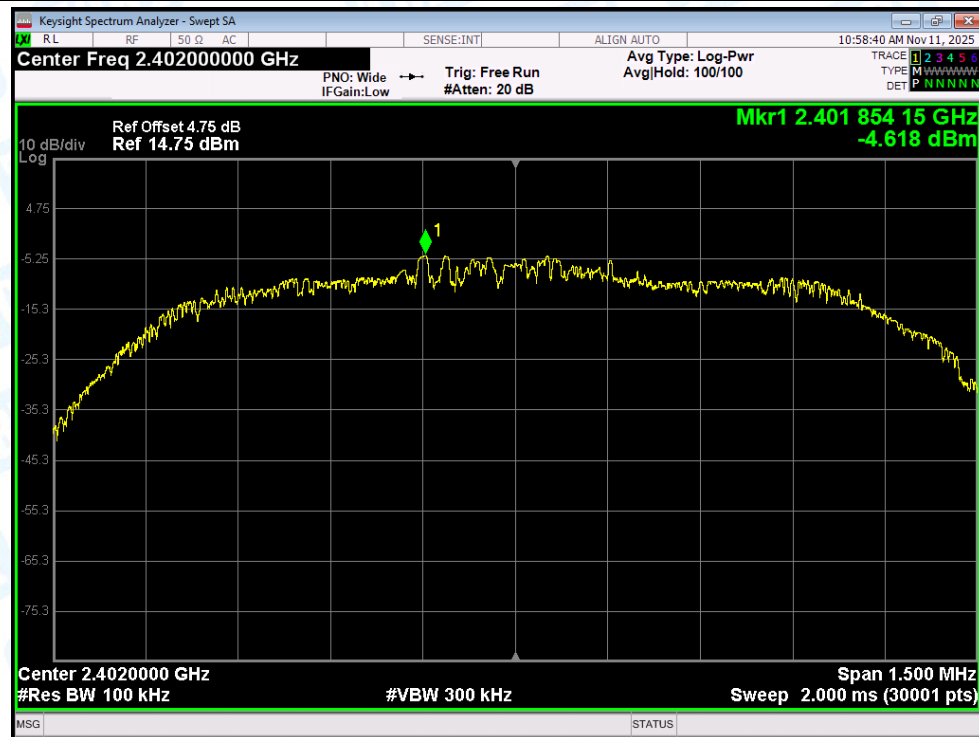
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



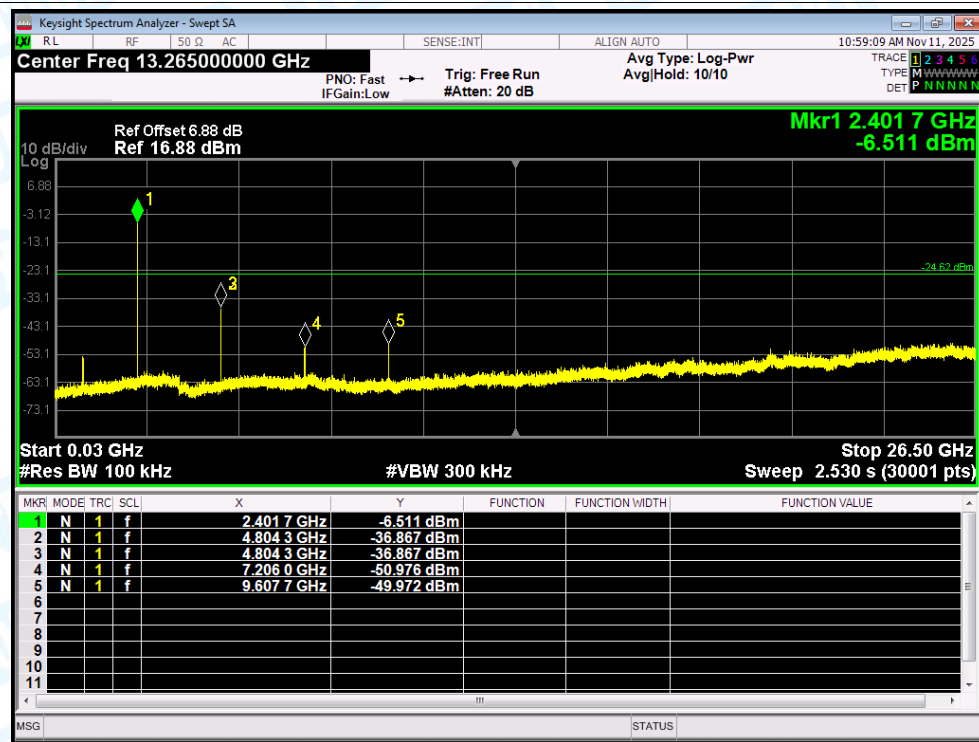
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission



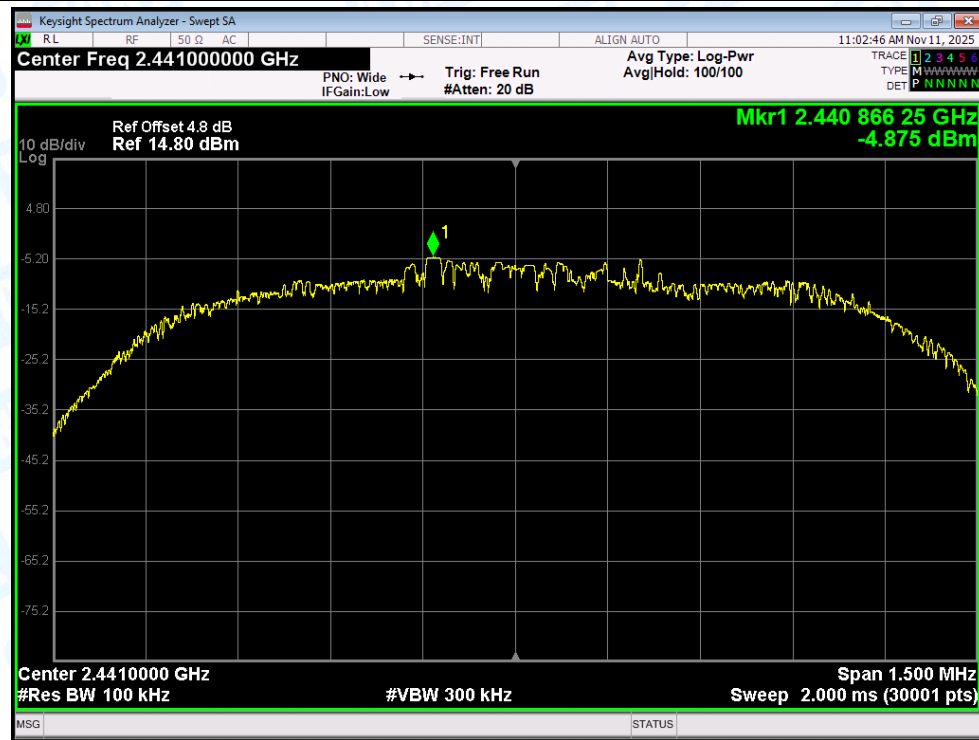
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref



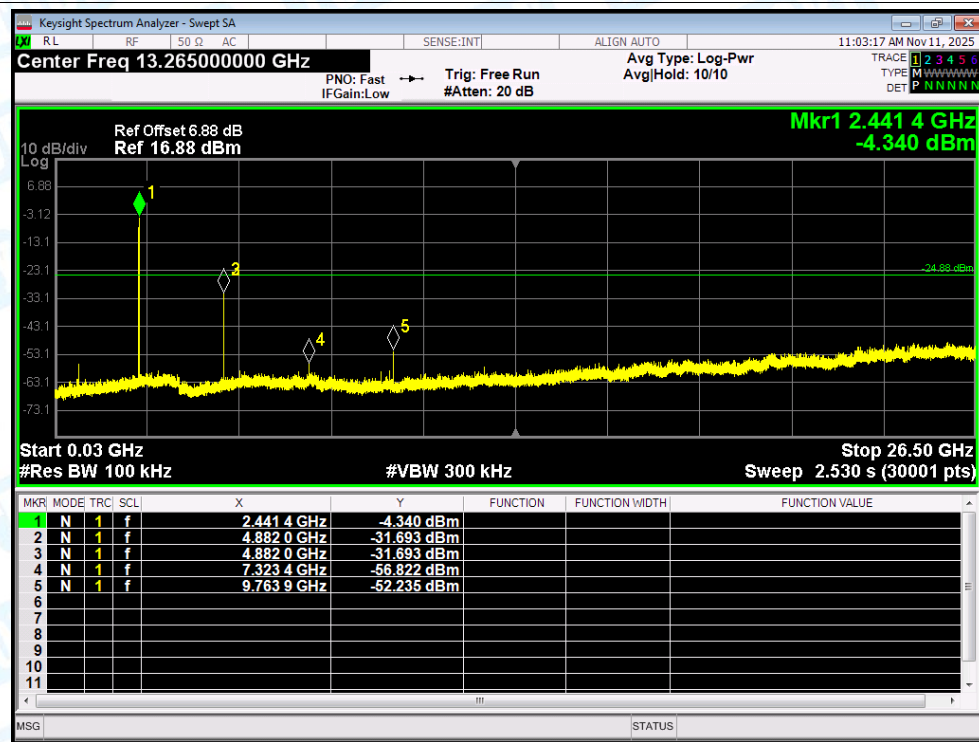
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission



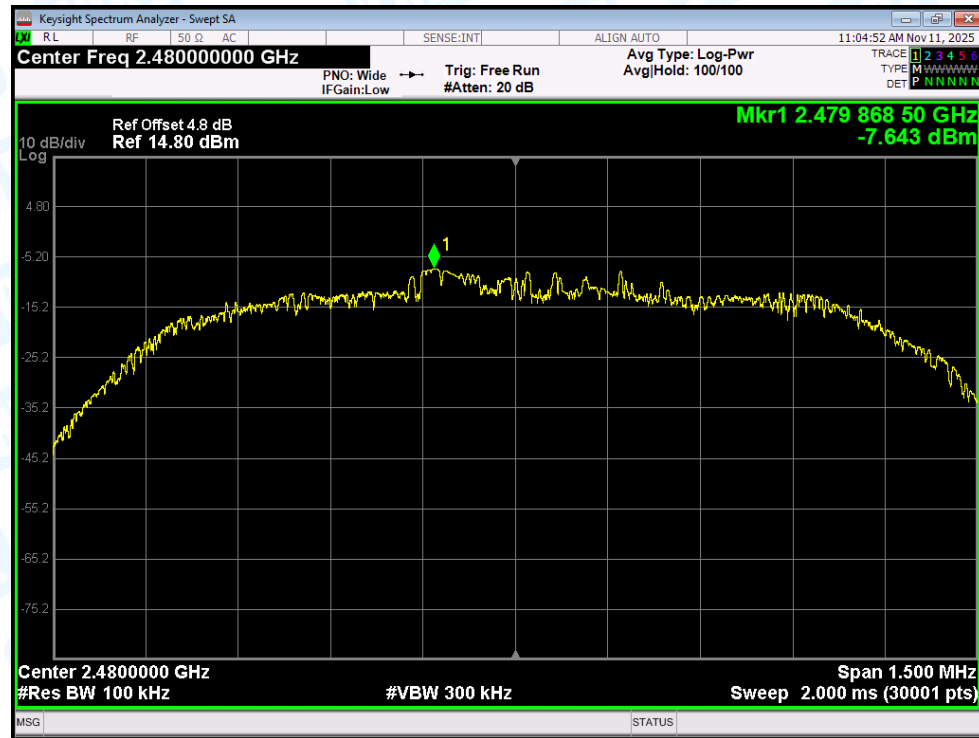
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



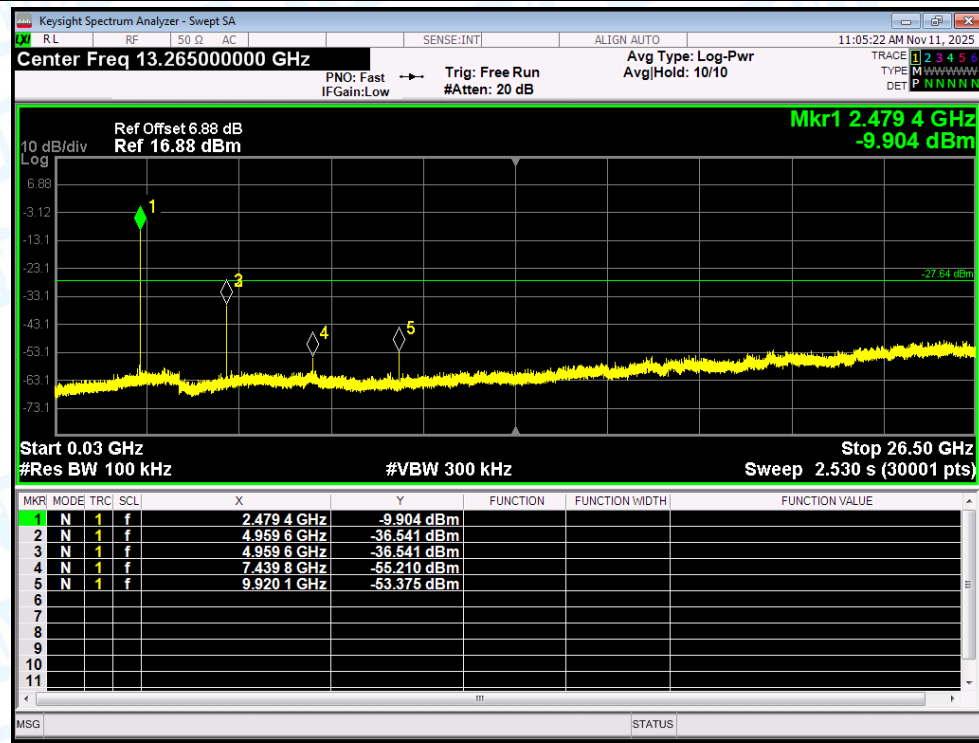
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission

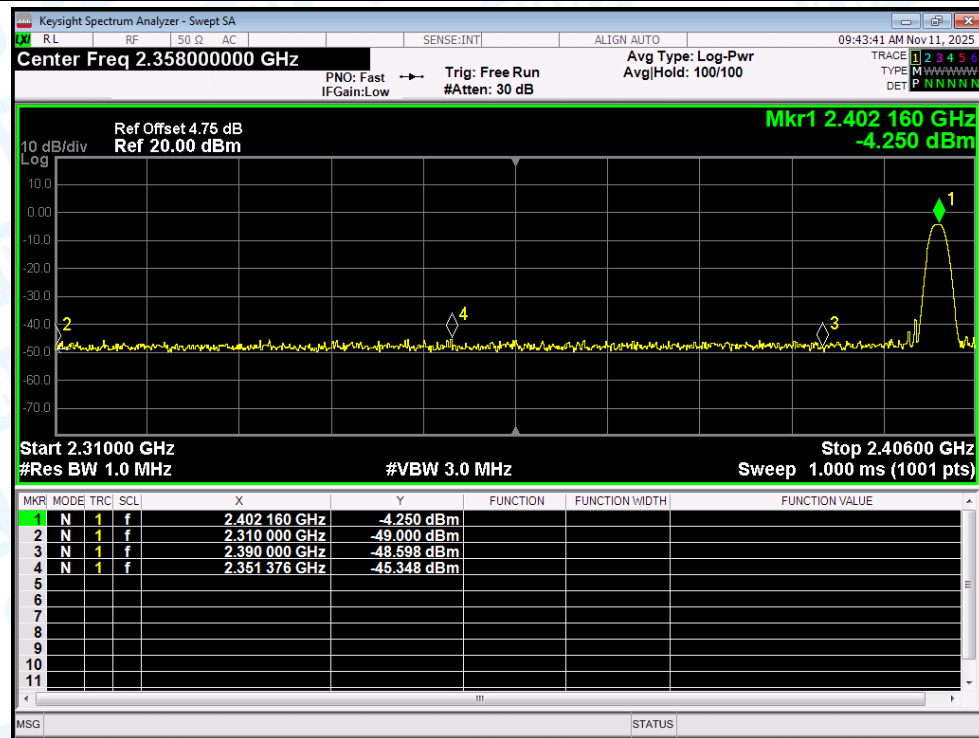


9.Restrict Band

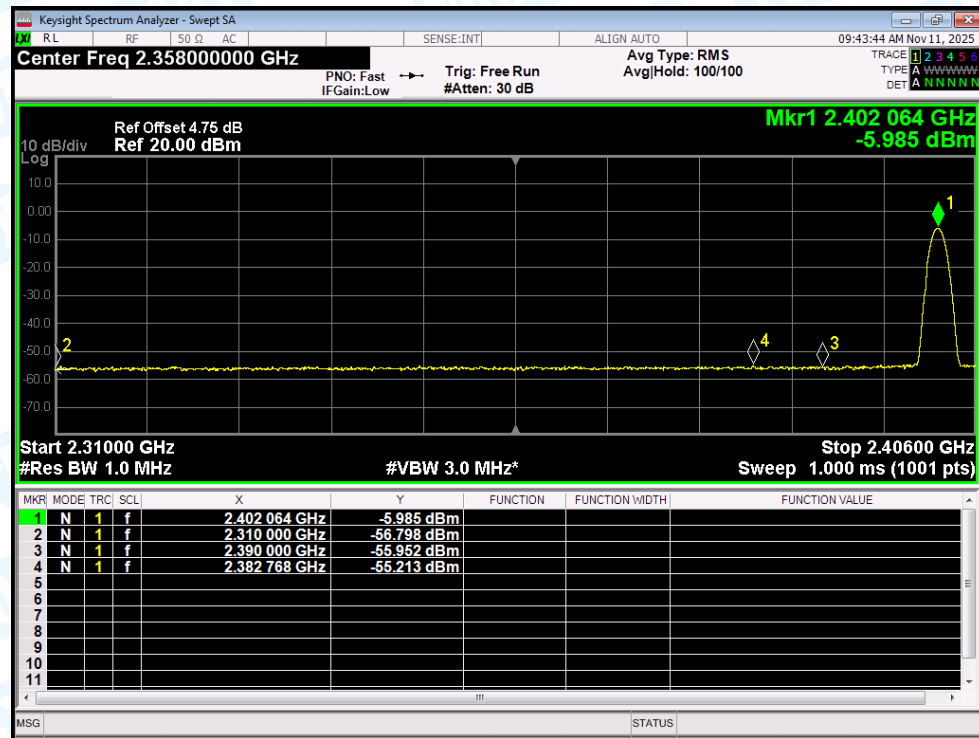
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-49	2	-	48.26	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-56.8	2	1.11	41.57	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2351.376	-45.35	2	-	51.91	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2382.768	-55.21	2	1.11	43.16	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-48.6	2	-	48.66	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-55.95	2	1.11	42.42	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-46.29	2	-	50.97	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-55.1	2	1.11	43.27	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2494.84	-44.49	2	-	52.77	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2486.392	-54.36	2	1.11	44.01	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-47.23	2	-	50.03	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-55.62	2	1.11	42.75	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-48.27	2	-	48.99	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-56.13	2	1.11	42.24	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2375.664	-45.24	2	-	52.02	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2374.128	-55.19	2	1.11	43.18	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-47.71	2	-	49.55	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-56.14	2	1.11	42.23	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-43	2	-	54.26	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-54.93	2	1.11	43.44	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.512	-43	2	-	54.26	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2484.136	-54.57	2	1.11	43.8	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-47.47	2	-	49.79	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-55.47	2	1.11	42.9	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-47.8	2	-	49.46	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-56.68	2	1.1	41.68	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2381.328	-44.71	2	-	52.55	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2368.368	-55.21	2	1.1	43.15	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-47.48	2	-	49.78	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-55.65	2	1.1	42.71	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-46.57	2	-	50.69	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-55.88	2	1.1	42.48	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2485.936	-44.64	2	-	52.62	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2488.096	-54.63	2	1.1	43.73	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-45.7	2	-	51.56	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-55.25	2	1.1	43.11	Average	54	Pass

Test Graphs

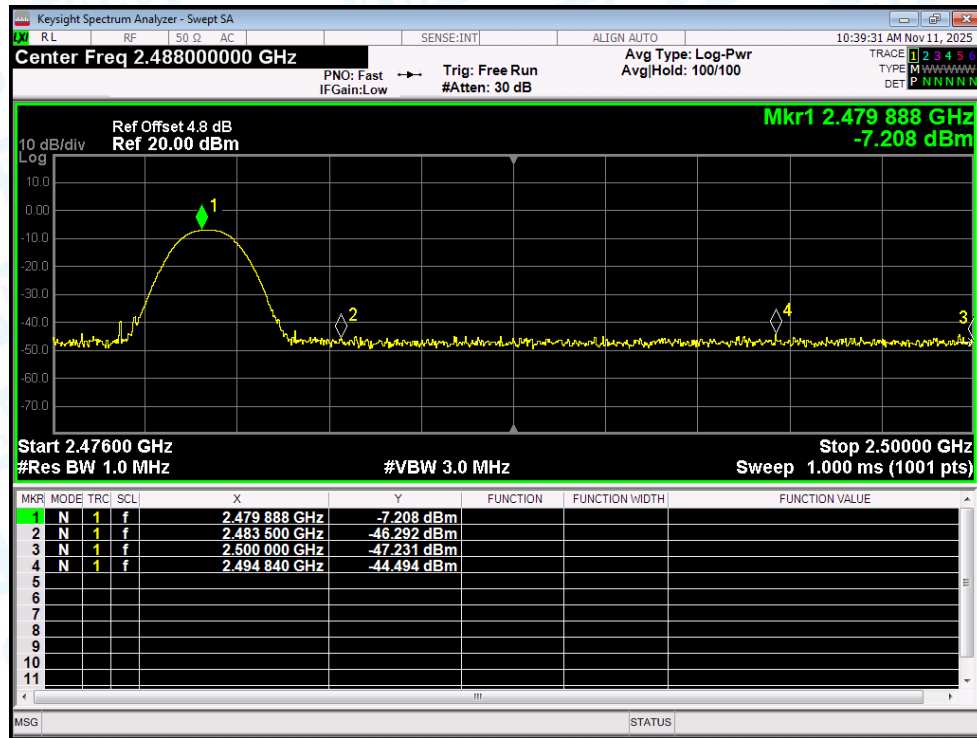
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak



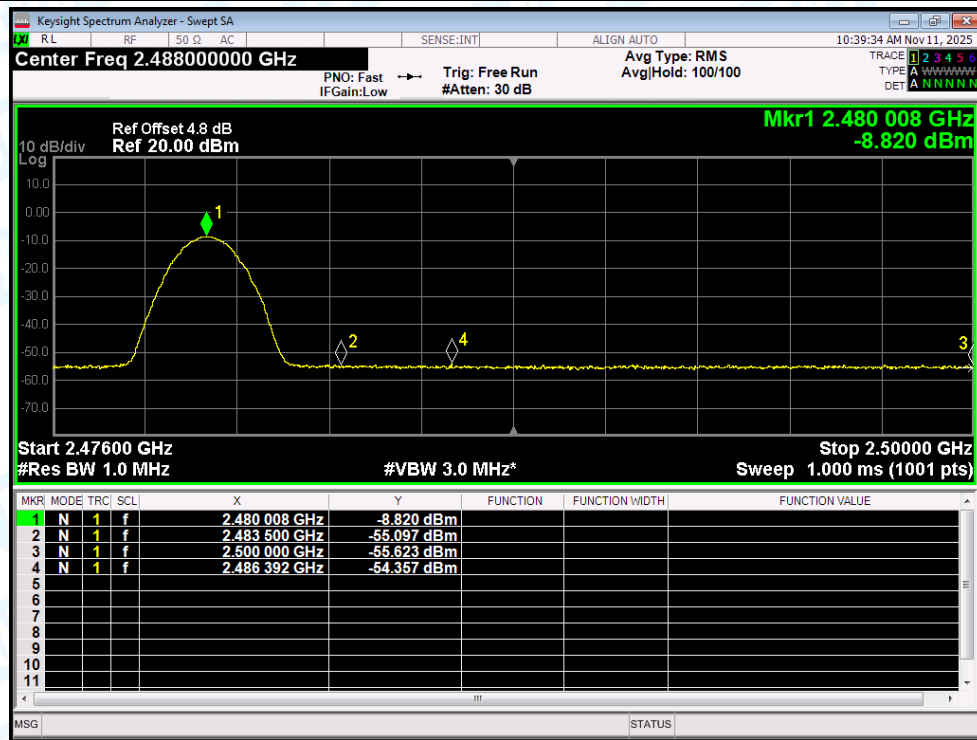
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average



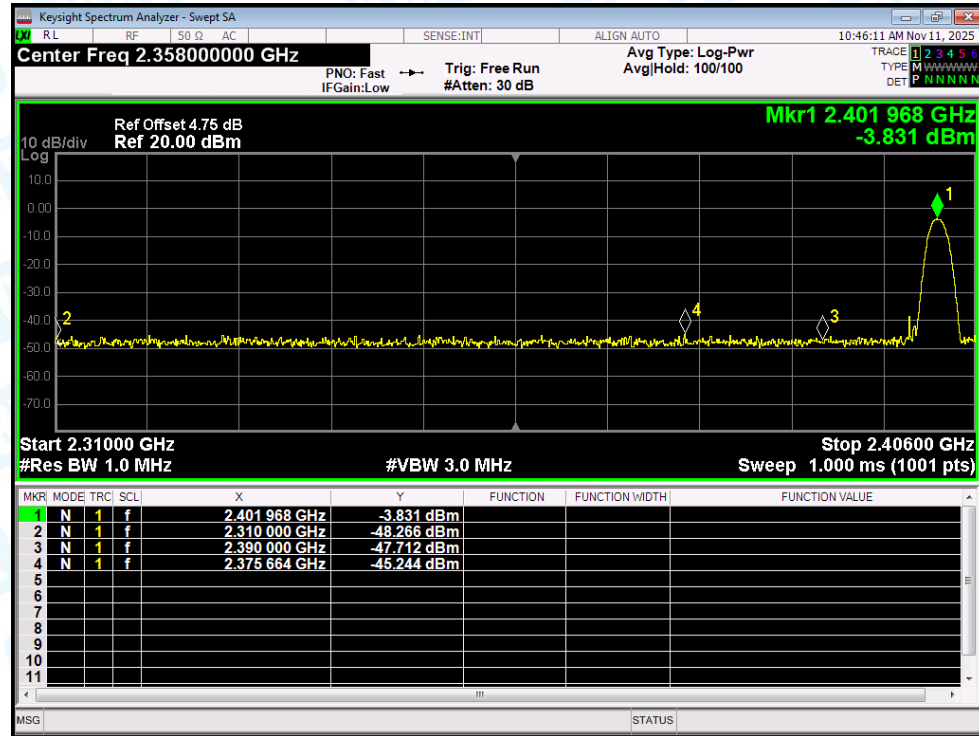
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak



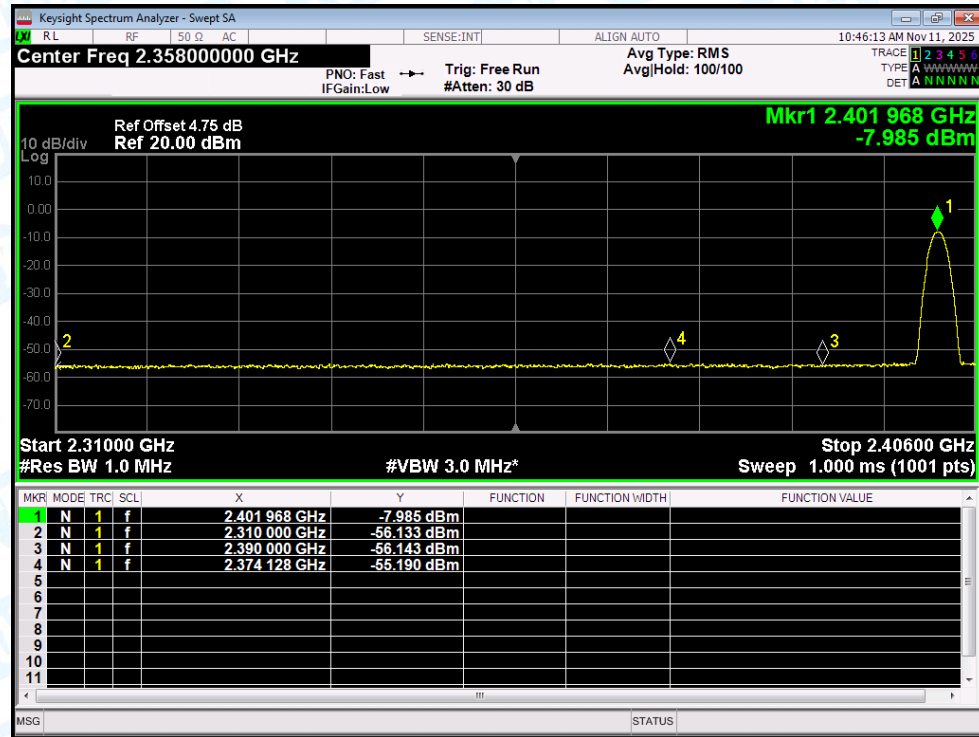
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average



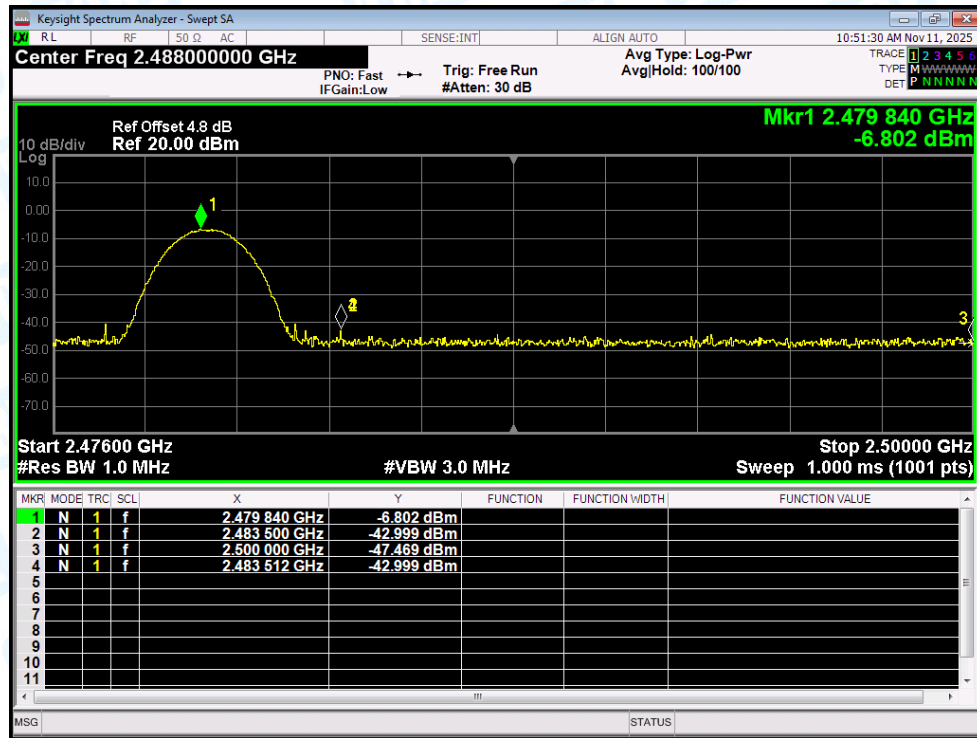
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak



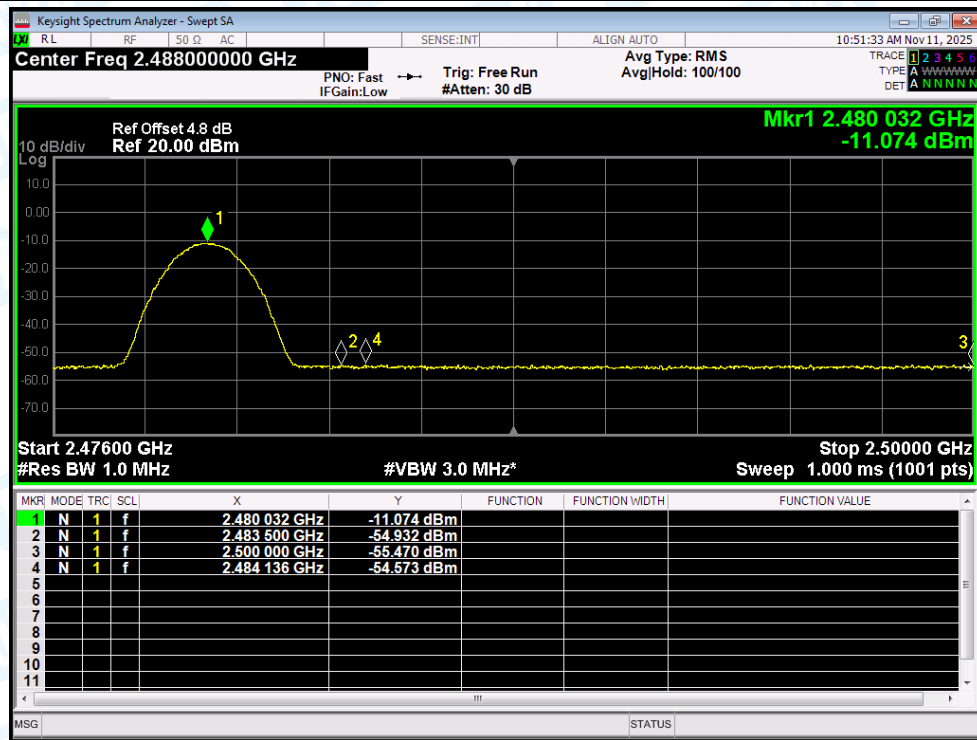
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average



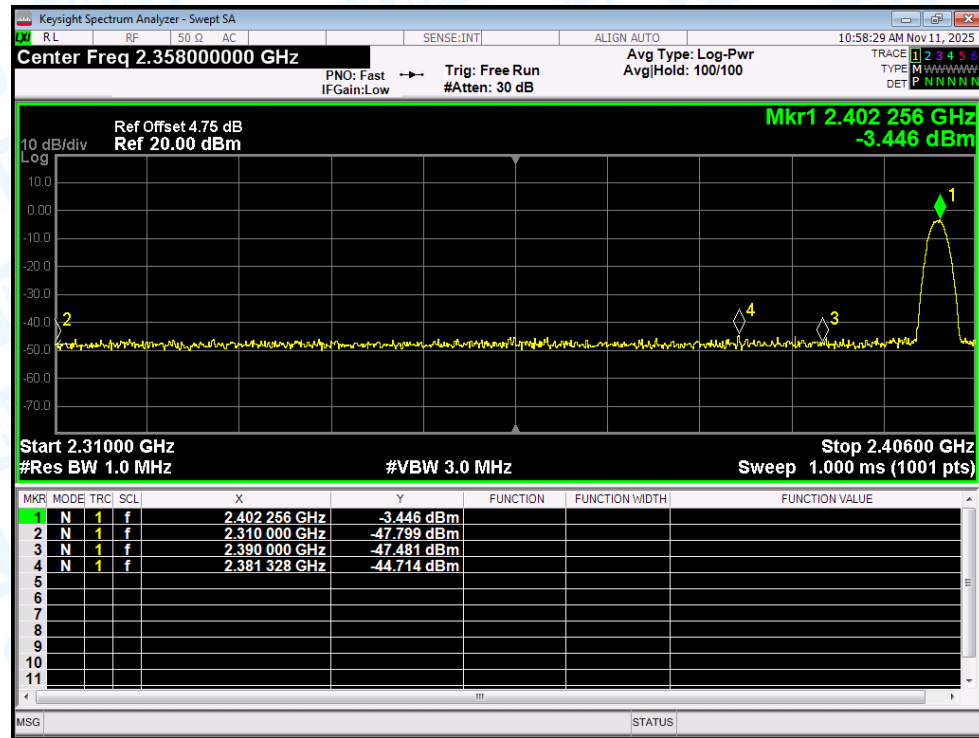
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Peak



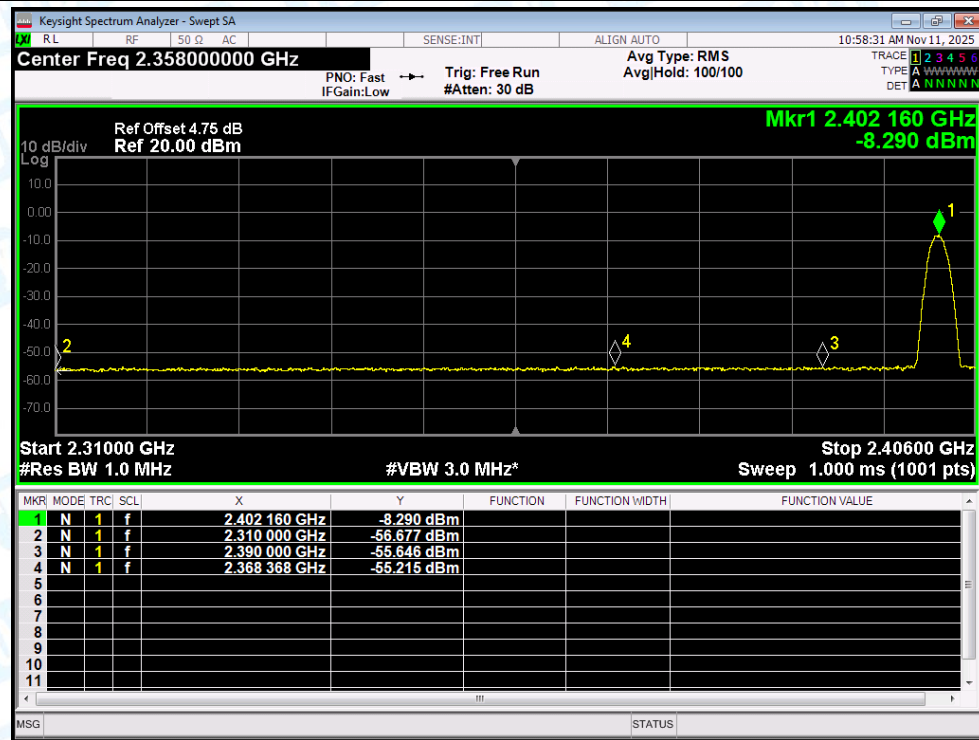
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Average



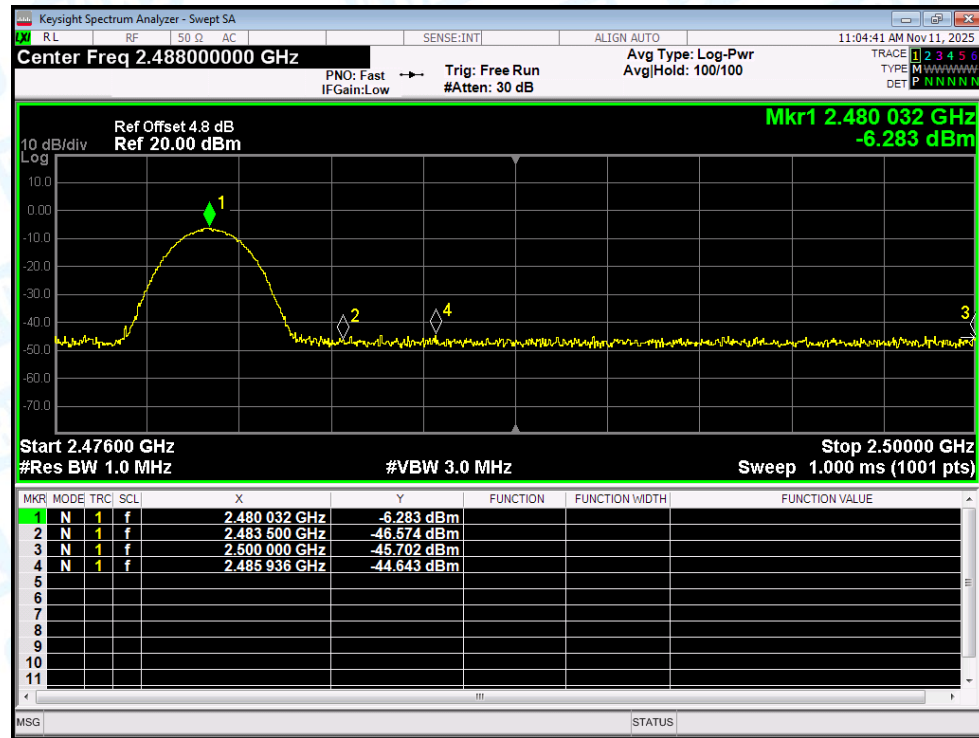
Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Peak



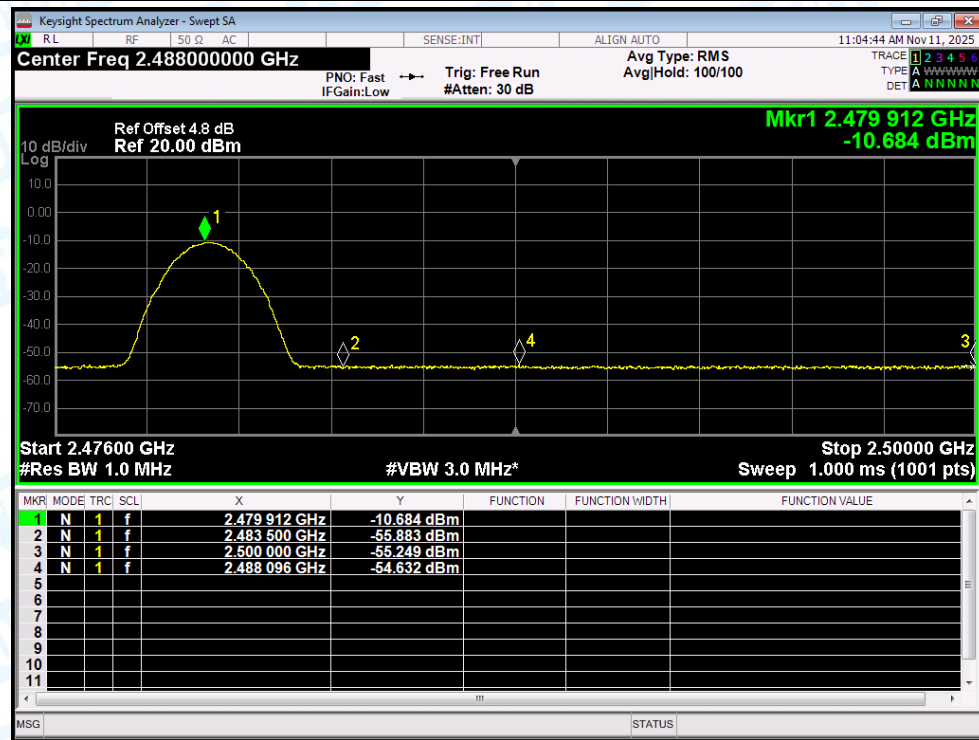
Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Average



Restrict Band NVNT 3-DH5 2480MHz Ant1 No-Hopping Peak



Restrict Band NVNT 3-DH5 2480MHz Ant1 No-Hopping Average

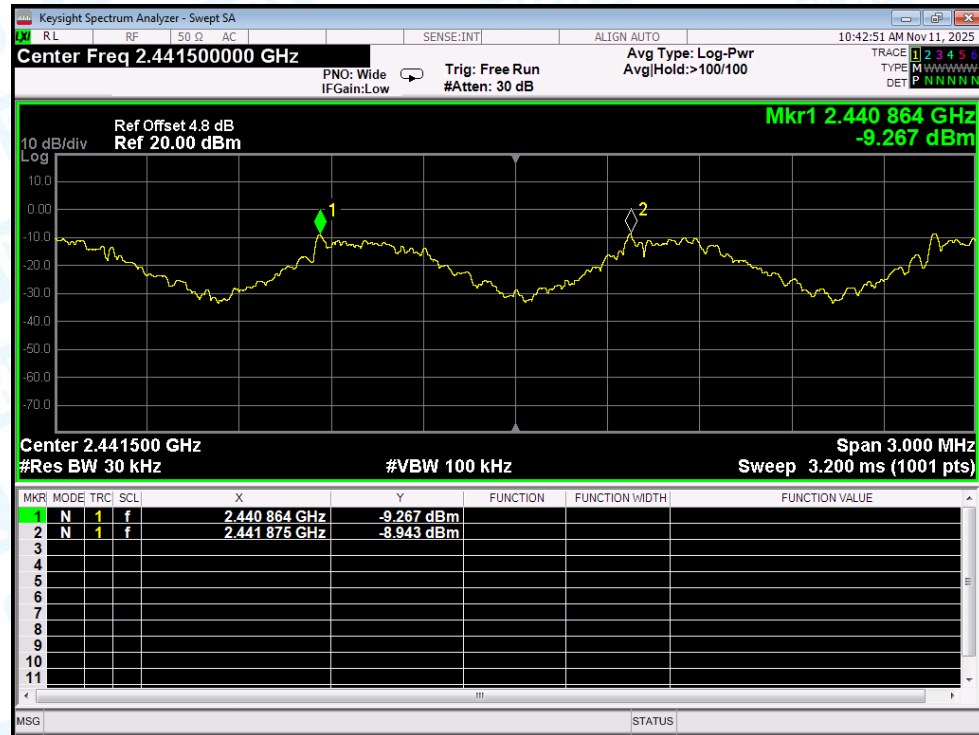


10. Carrier Frequencies Separation

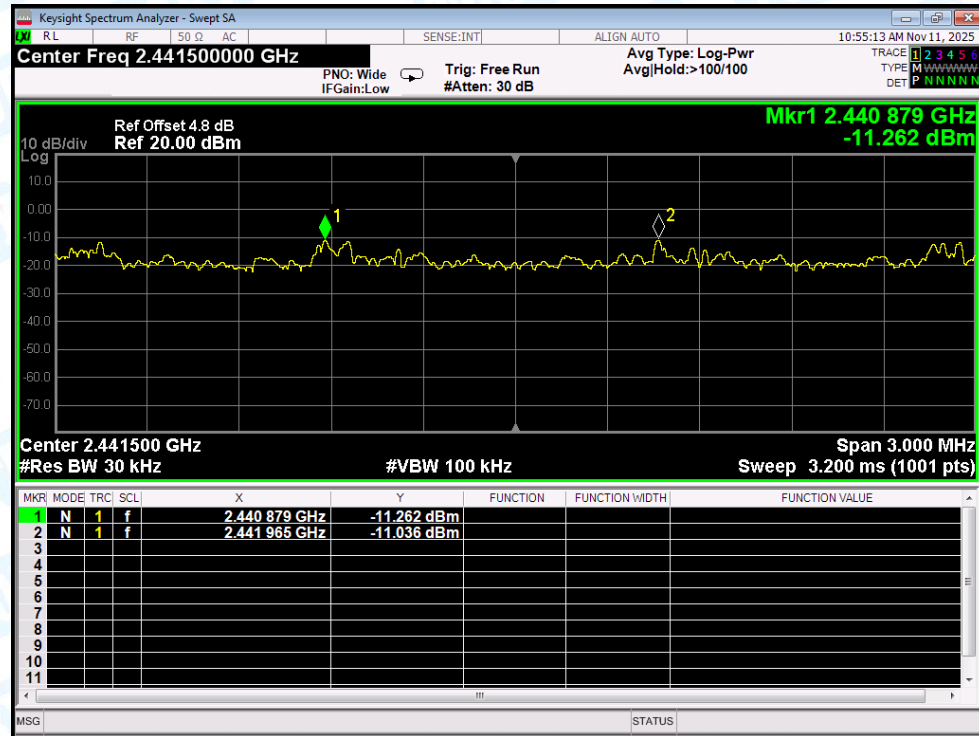
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2440.864	2441.875	1.011	0.607	Pass
NVNT	2-DH5	Ant1	2440.879	2441.965	1.086	0.853	Pass
NVNT	3-DH5	Ant1	2440.867	2442.04	1.173	0.84	Pass

Test Graphs

CFS NVNT 1-DH5 2441MHz Ant1



CFS NVNT 2-DH5 2441MHz Ant1



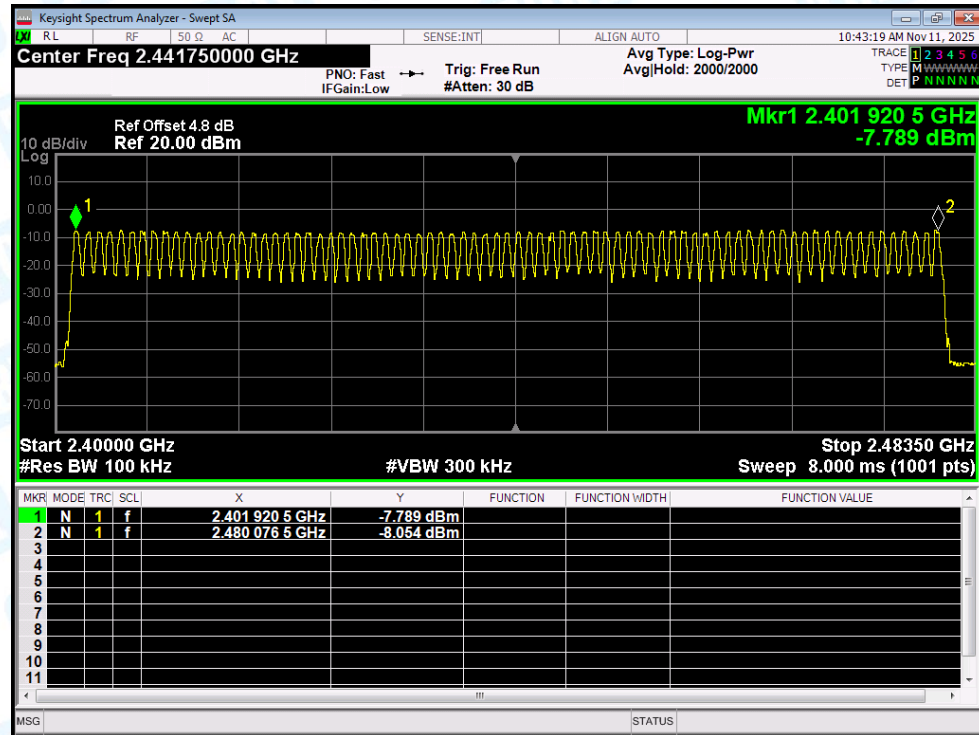


11.Number of Hopping Channel

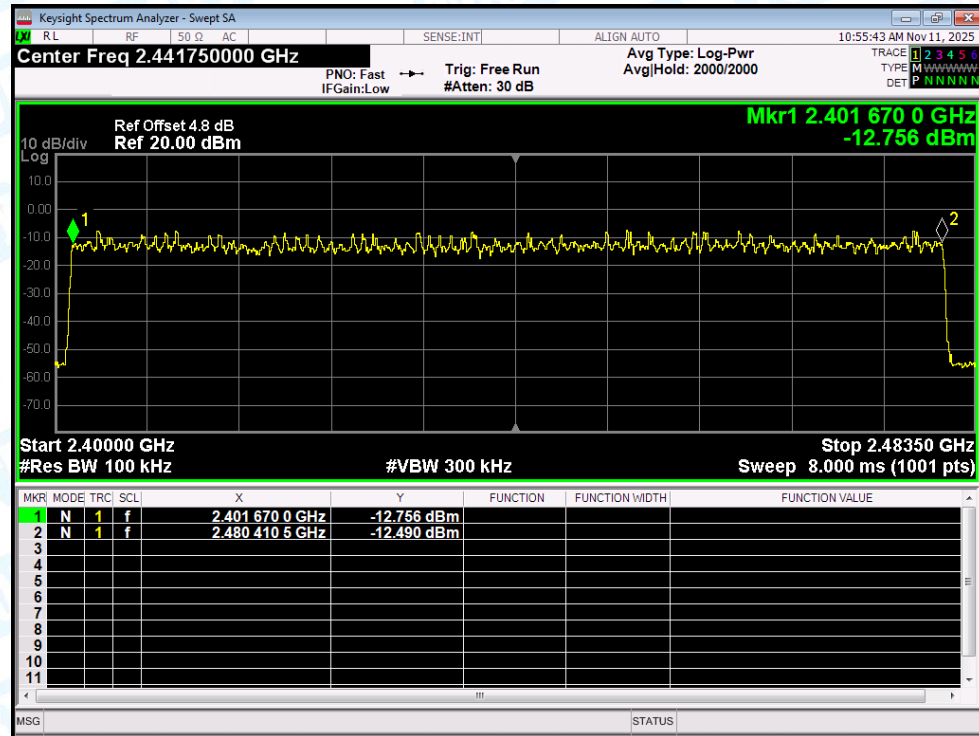
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass

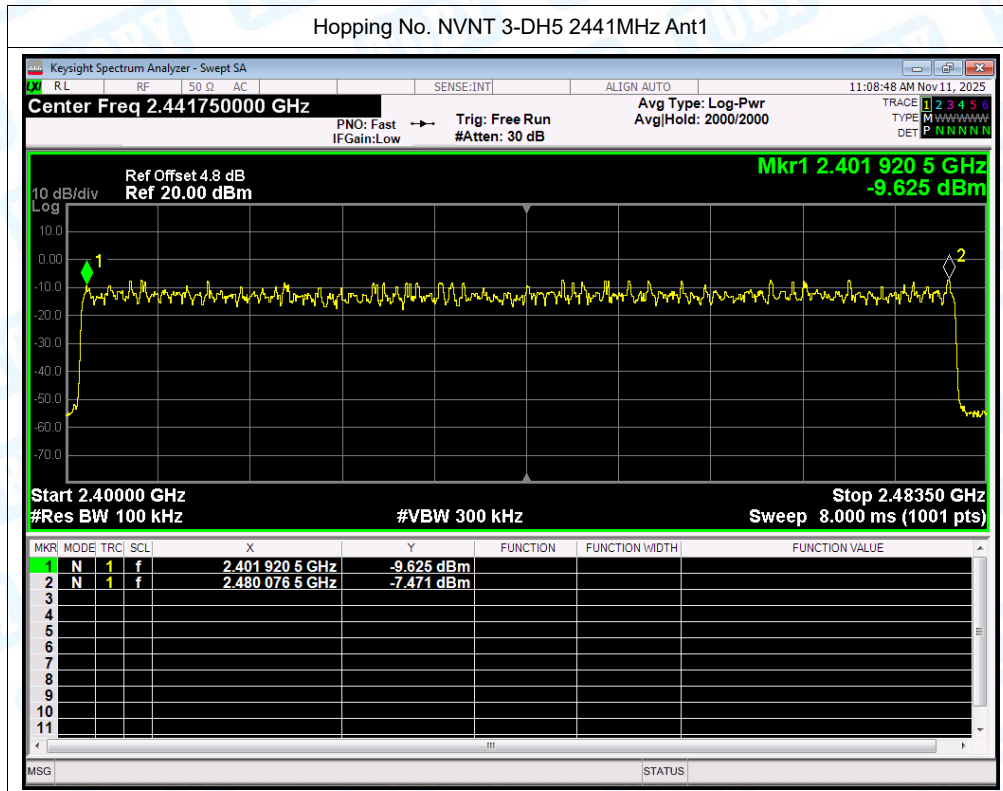
Test Graphs

Hopping No. NVNT 1-DH5 2441MHz Ant1



Hopping No. NVNT 2-DH5 2441MHz Ant1





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