

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	Smart Watch
Test Model:	AK73
Sample ID:	HC-C-202411-0227-01-01
Environmental Conditions	
Temperature:	25.6℃
Relative Humidity:	48.6%
Test Voltage:	DC 3.8V
Test Engineer:	Rick.Chen
Note: For a more detailed features description, please refer to the report TBR-C-202411-0227-1 The report only show the worst case data.	

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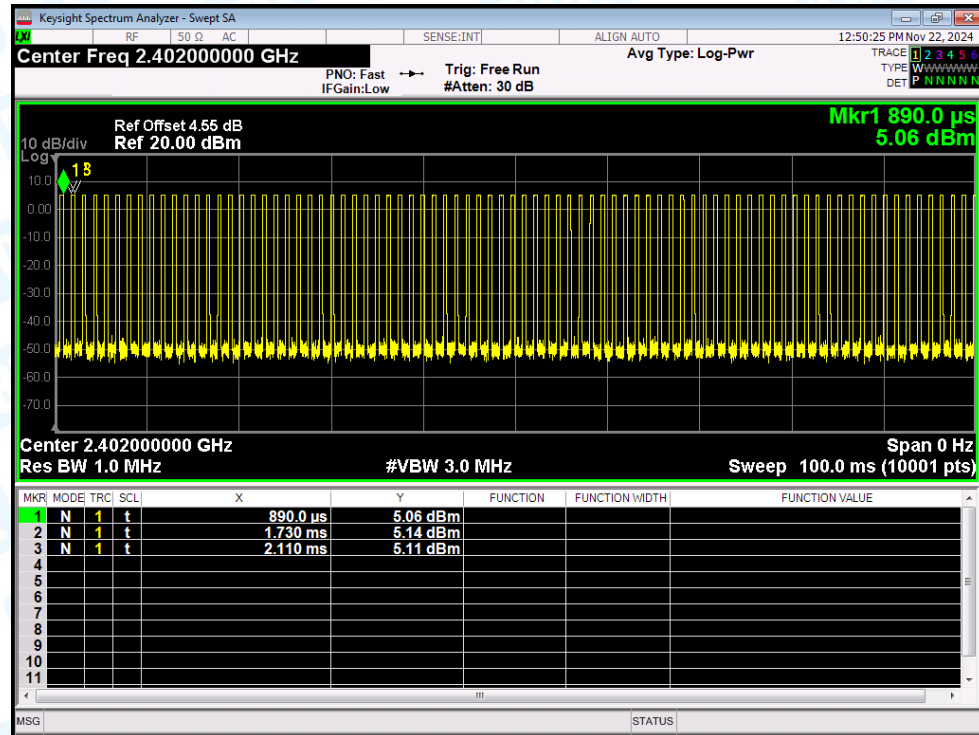
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1. Duty Cycle

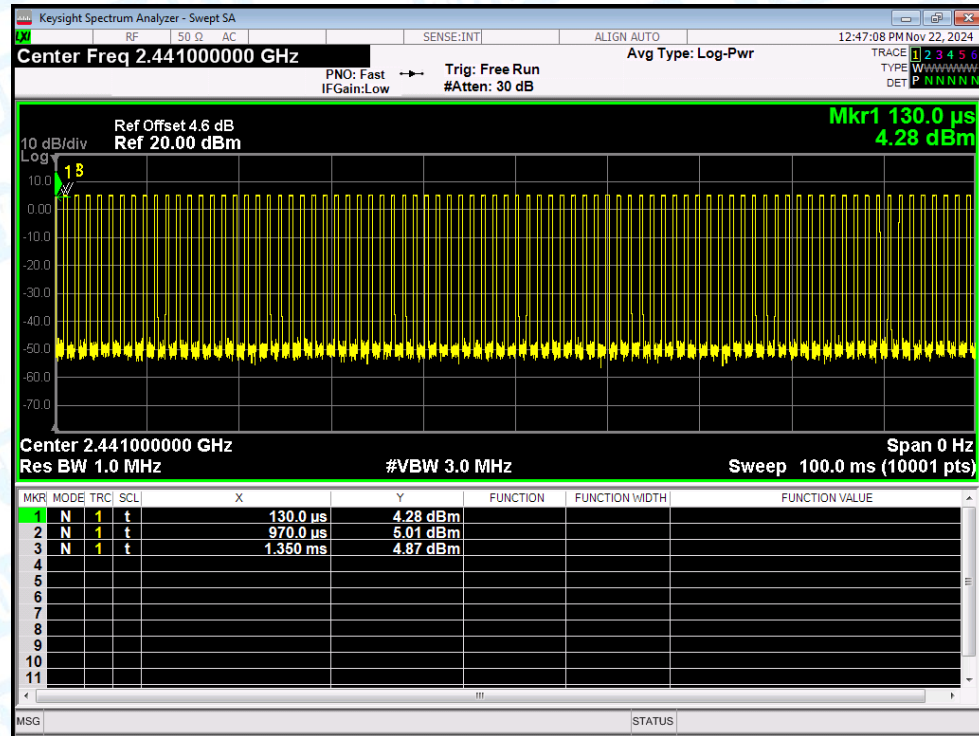
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	31.15	5.07	2.63
NVNT	1-DH1	2441	Ant1	31.15	5.07	2.63
NVNT	1-DH1	2480	Ant1	31.15	5.07	2.63
NVNT	2-DH1	2402	Ant1	31.71	4.99	2.56
NVNT	2-DH1	2441	Ant1	31.71	4.99	2.56
NVNT	2-DH1	2480	Ant1	31.71	4.99	2.56
NVNT	3-DH1	2402	Ant1	31.71	4.99	2.56
NVNT	3-DH1	2441	Ant1	30.89	5.1	2.63
NVNT	3-DH1	2480	Ant1	31.45	5.02	2.56

Test Graphs

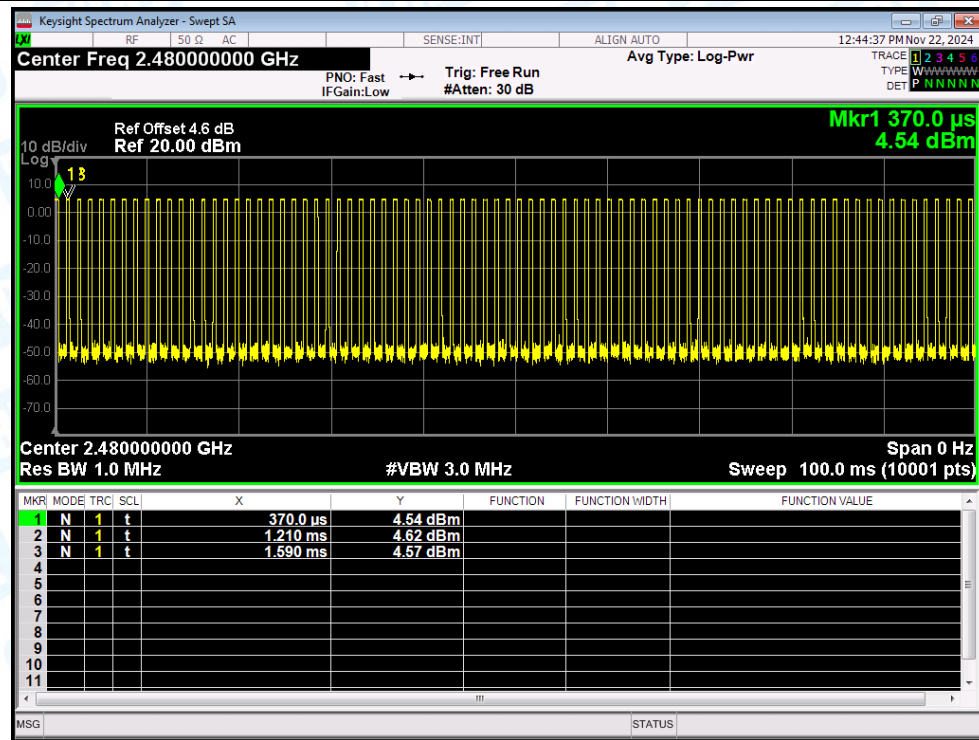
Duty Cycle NVNT 1-DH1 2402MHz Ant1



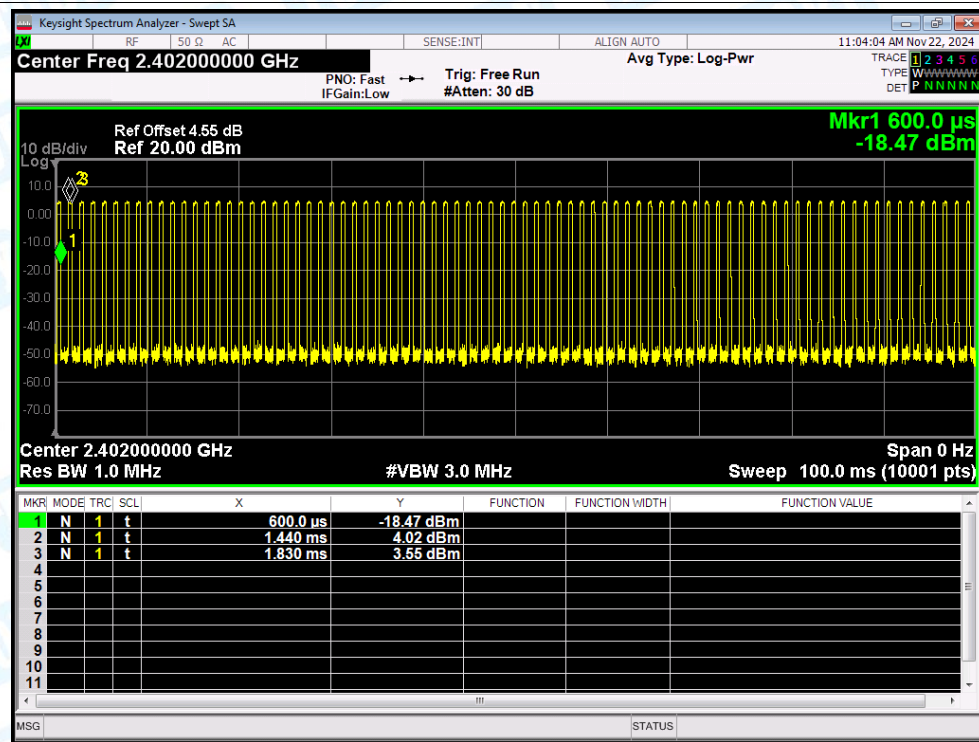
Duty Cycle NVNT 1-DH1 2441MHz Ant1



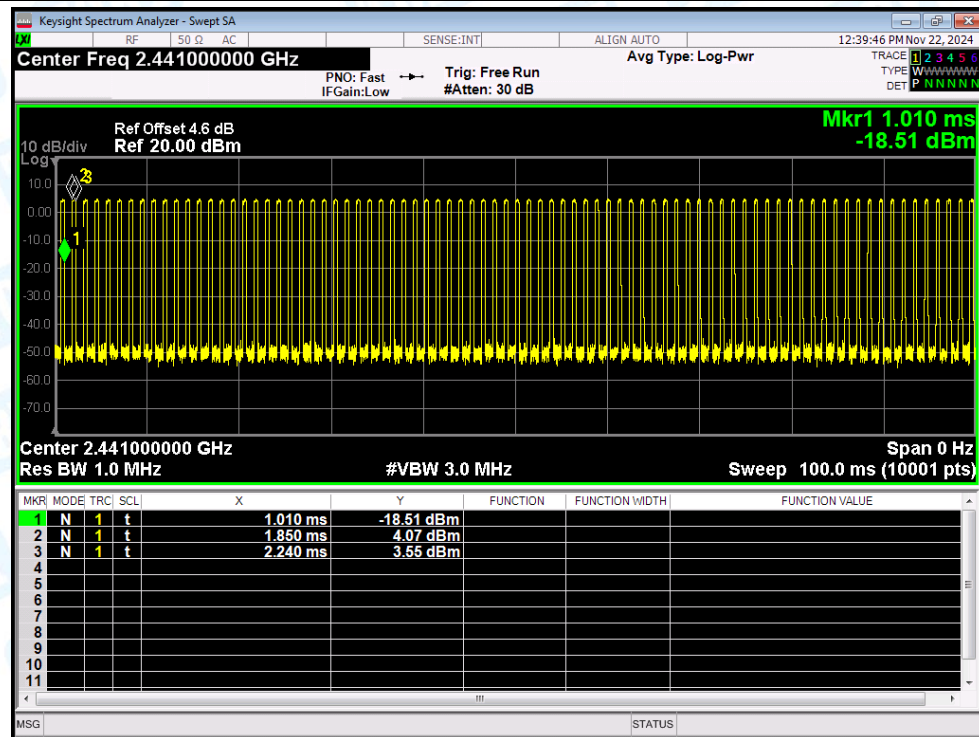
Duty Cycle NVNT 1-DH1 2480MHz Ant1



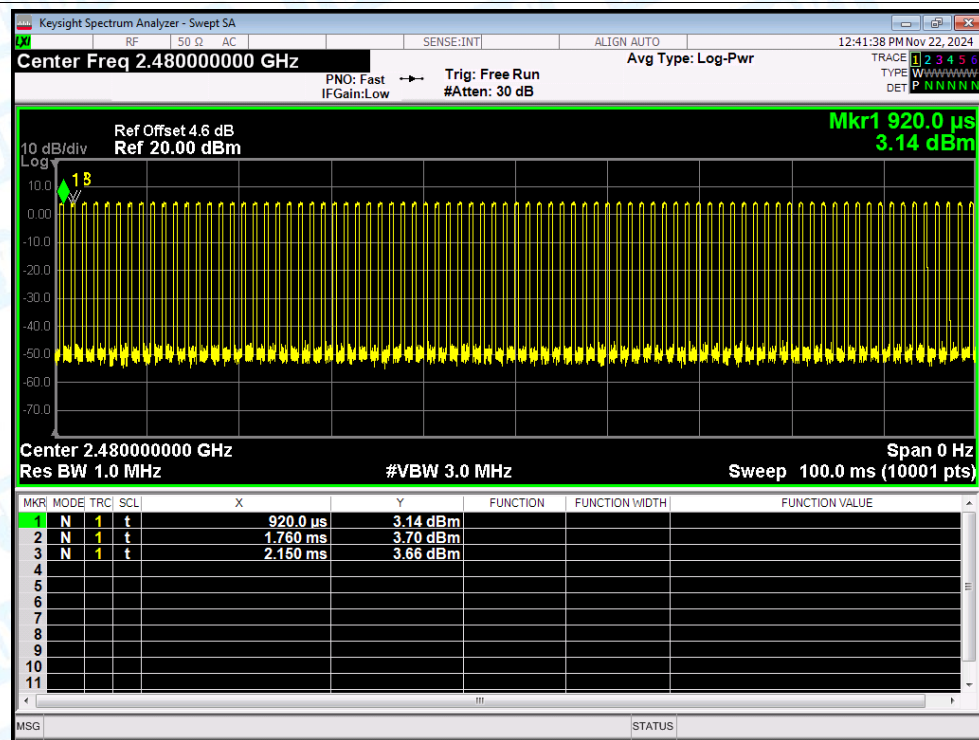
Duty Cycle NVNT 2-DH1 2402MHz Ant1



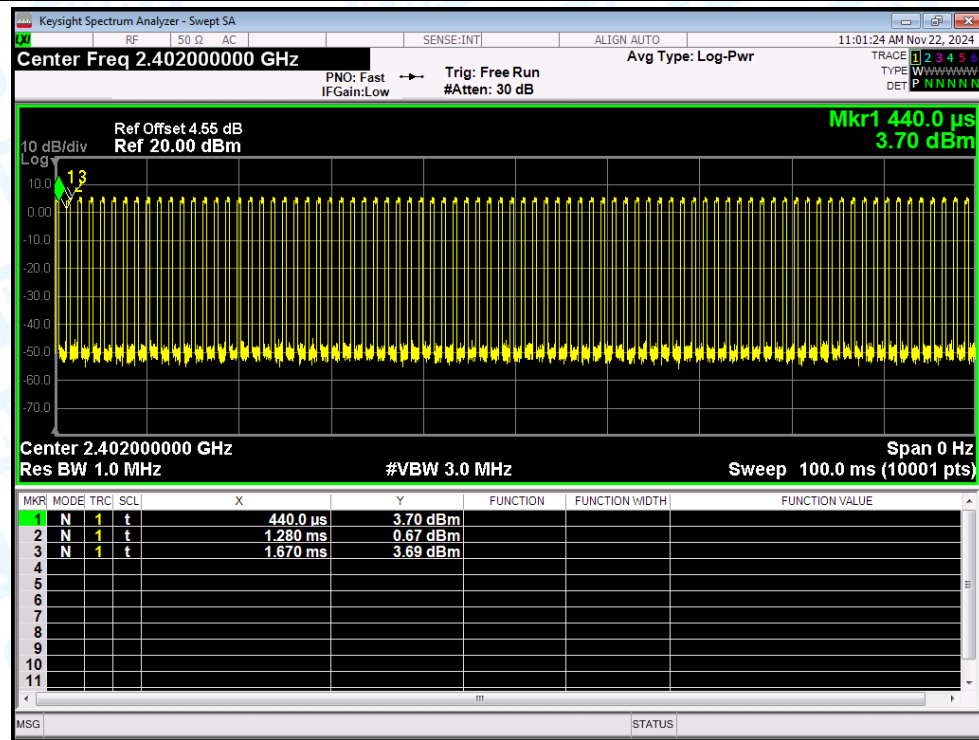
Duty Cycle NVNT 2-DH1 2441MHz Ant1



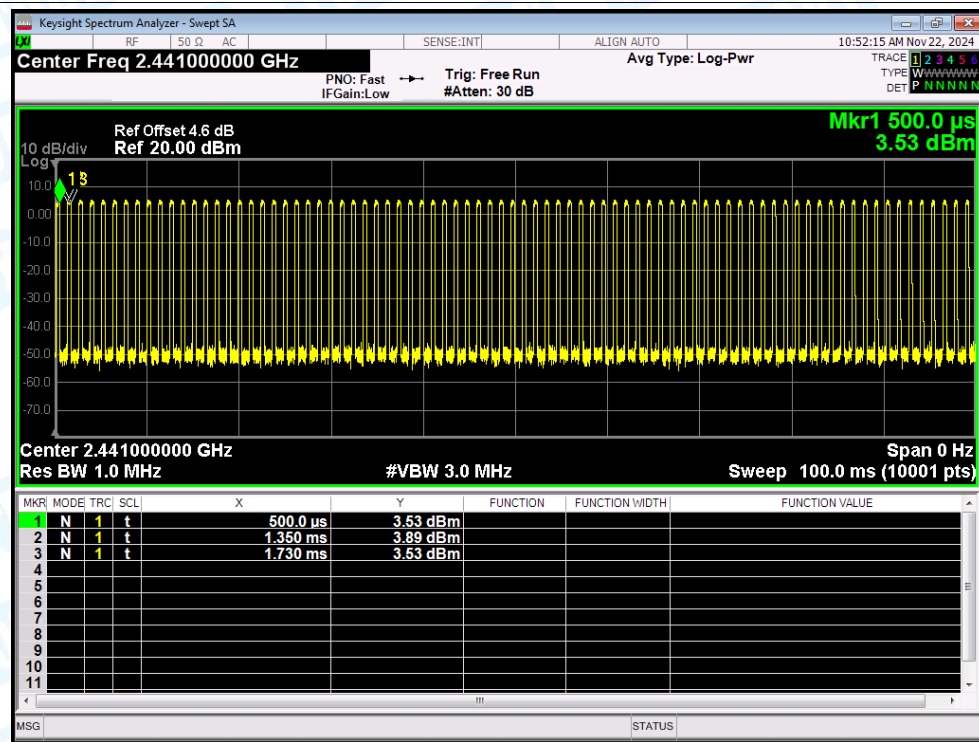
Duty Cycle NVNT 2-DH1 2480MHz Ant1

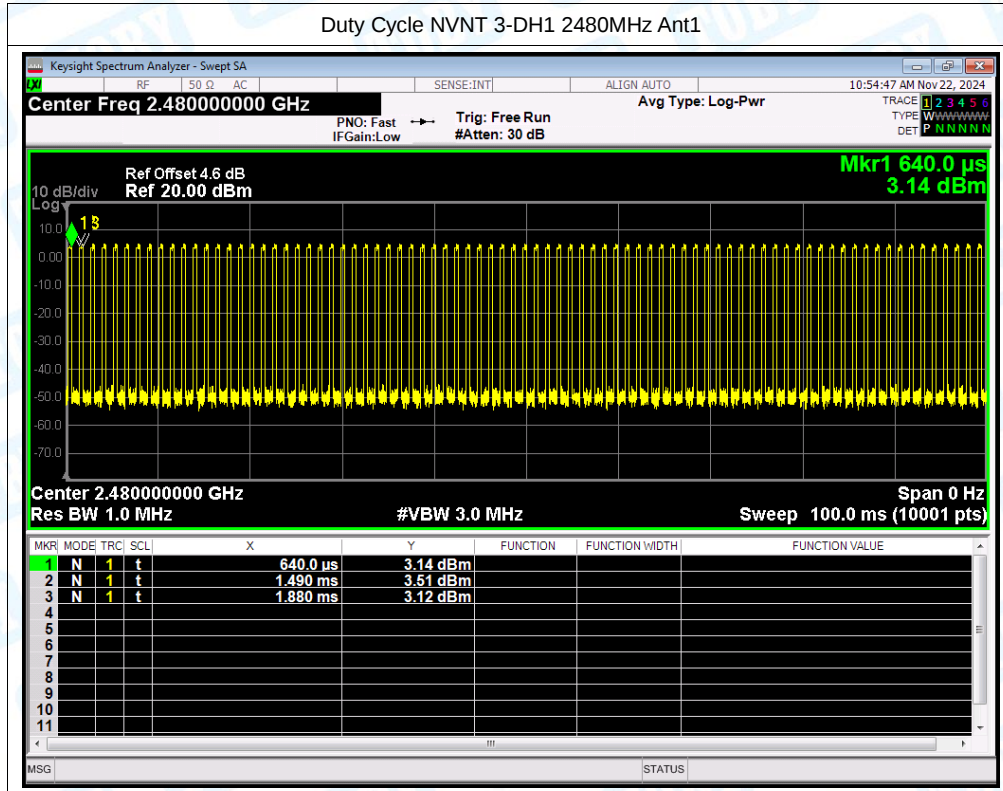


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



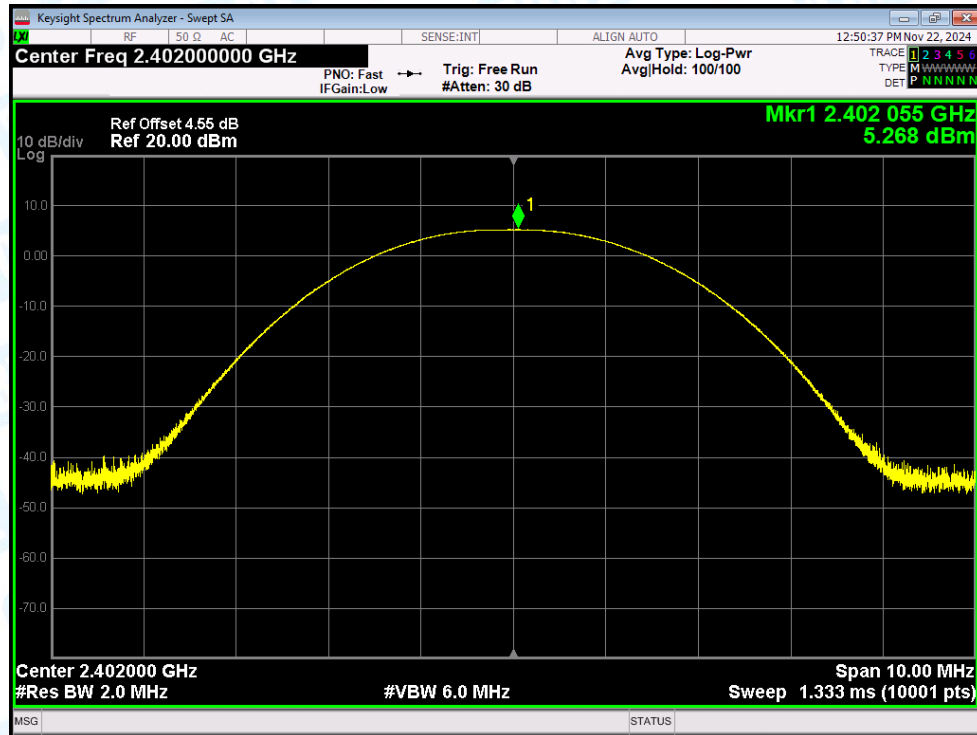


2. Maximum Conducted Output Power

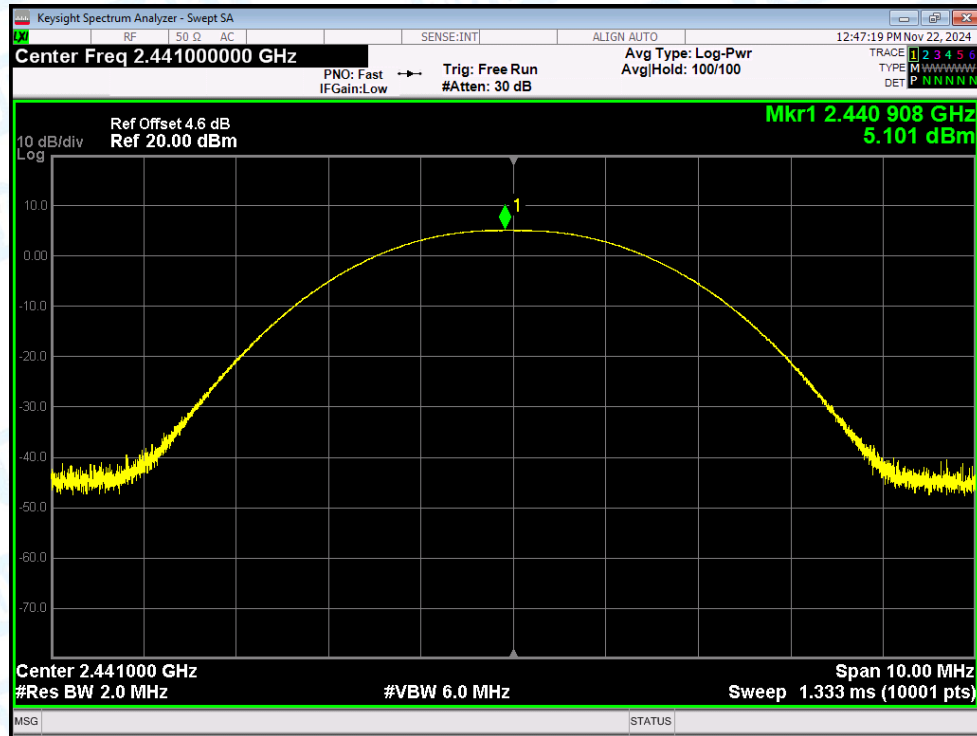
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	5.268	21	Pass
NVNT	1-DH1	2441	Ant1	5.101	21	Pass
NVNT	1-DH1	2480	Ant1	4.718	21	Pass
NVNT	2-DH1	2402	Ant1	5.302	21	Pass
NVNT	2-DH1	2441	Ant1	5.32	21	Pass
NVNT	2-DH1	2480	Ant1	4.956	21	Pass
NVNT	3-DH1	2402	Ant1	5.748	21	Pass
NVNT	3-DH1	2441	Ant1	5.601	21	Pass
NVNT	3-DH1	2480	Ant1	5.119	21	Pass

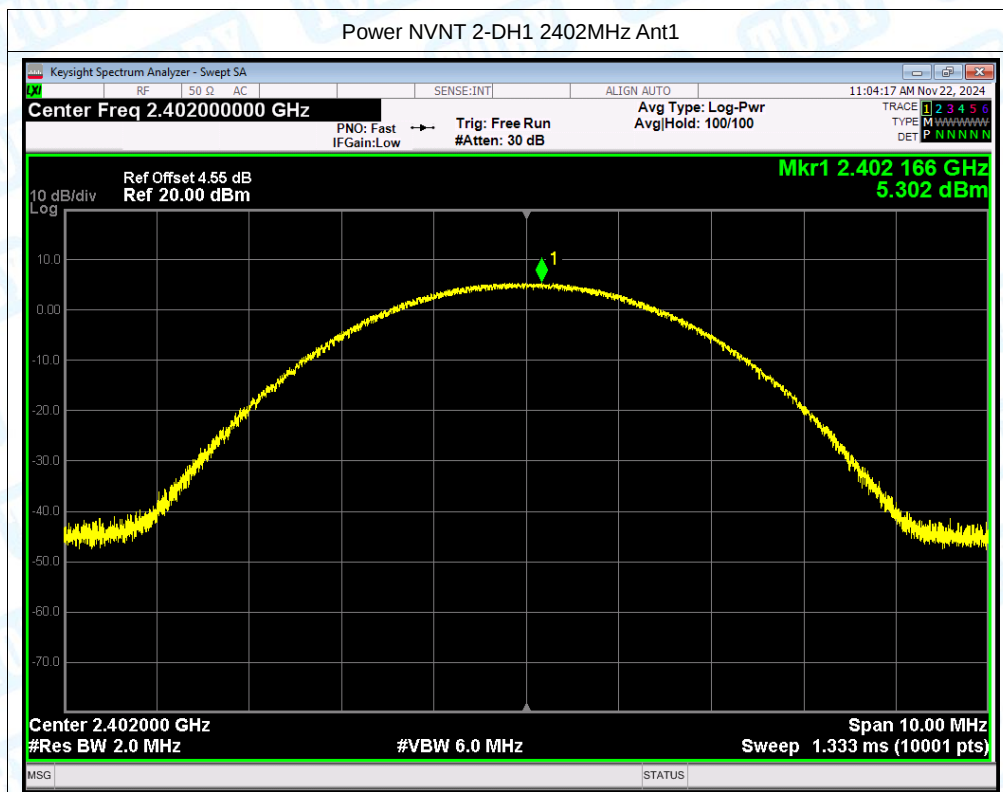
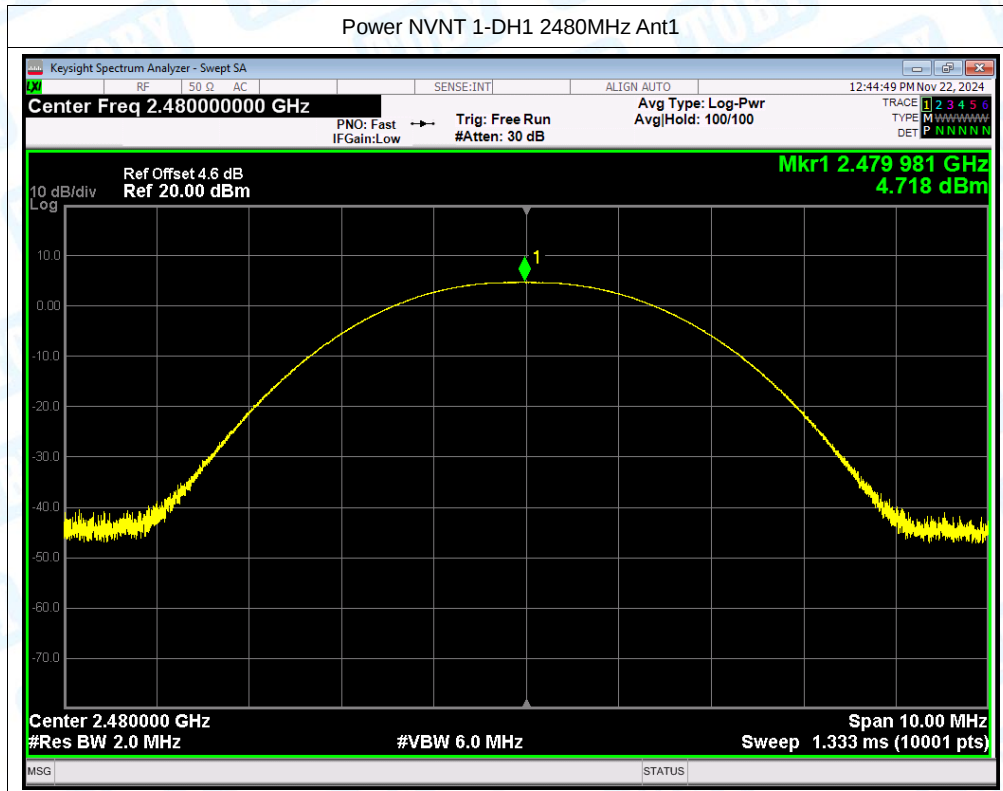
Test Graphs

Power NVNT 1-DH1 2402MHz Ant1

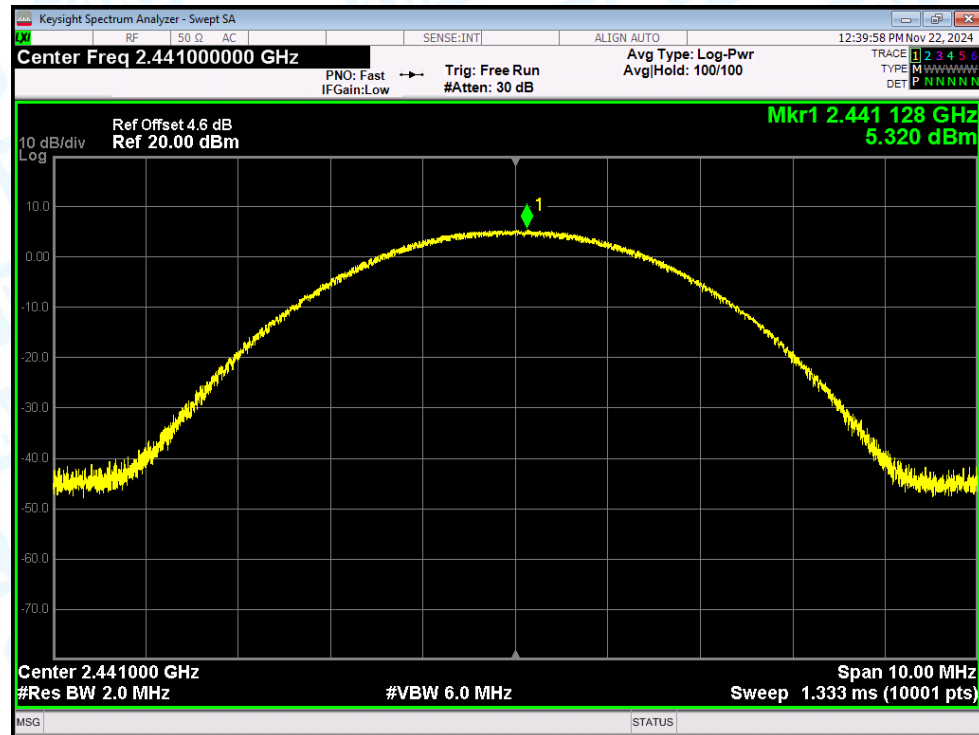


Power NVNT 1-DH1 2441MHz Ant1

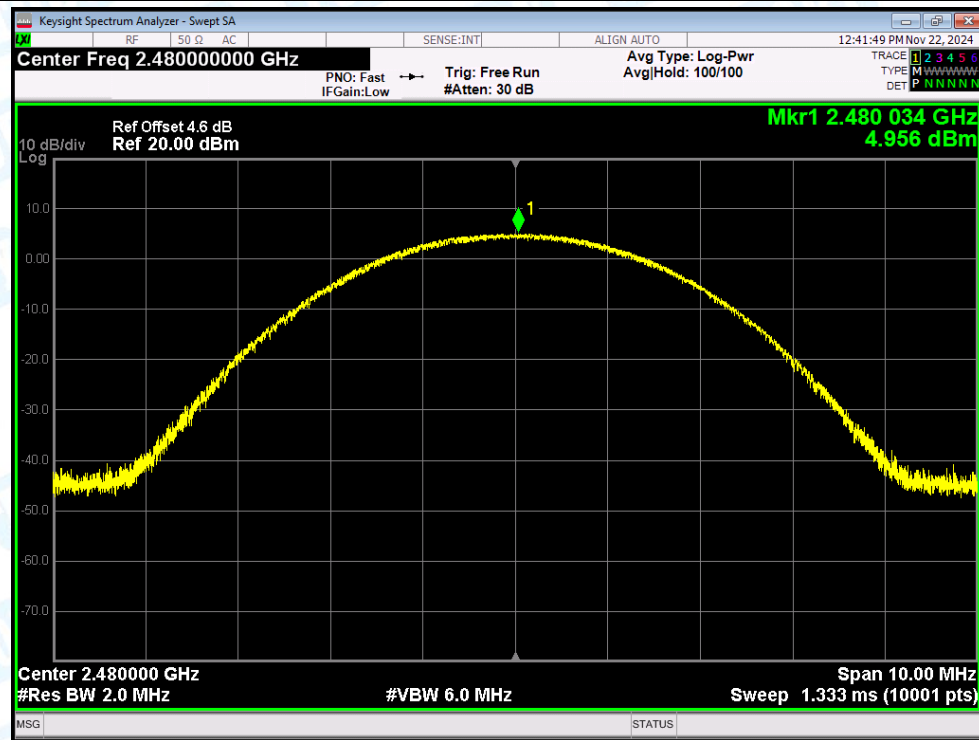




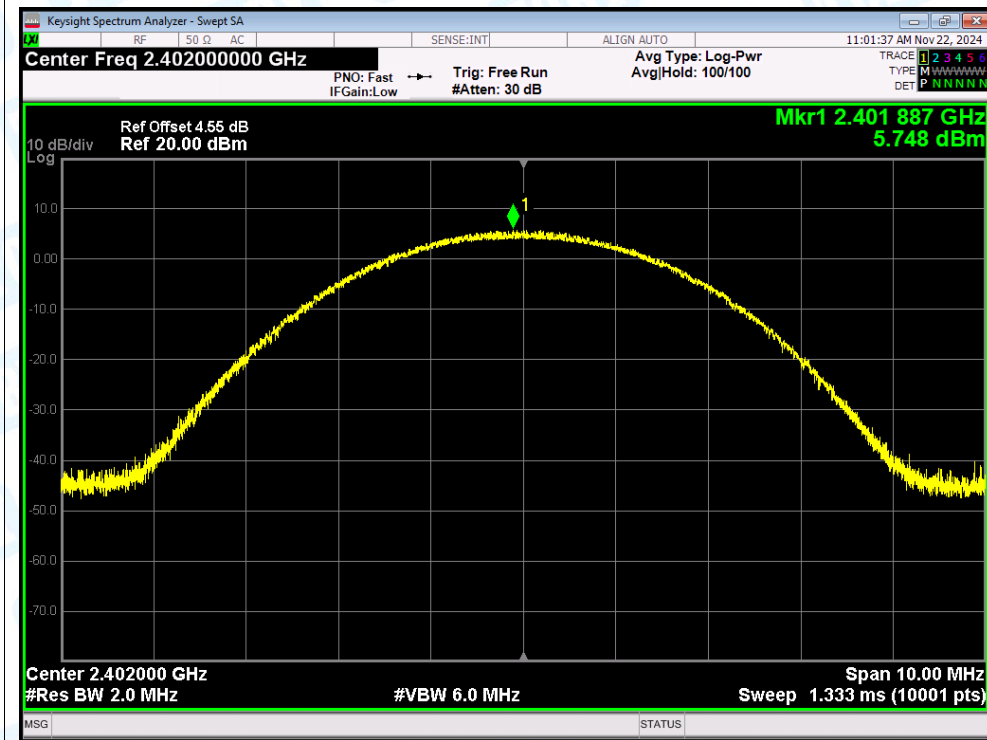
Power NVNT 2-DH1 2441MHz Ant1



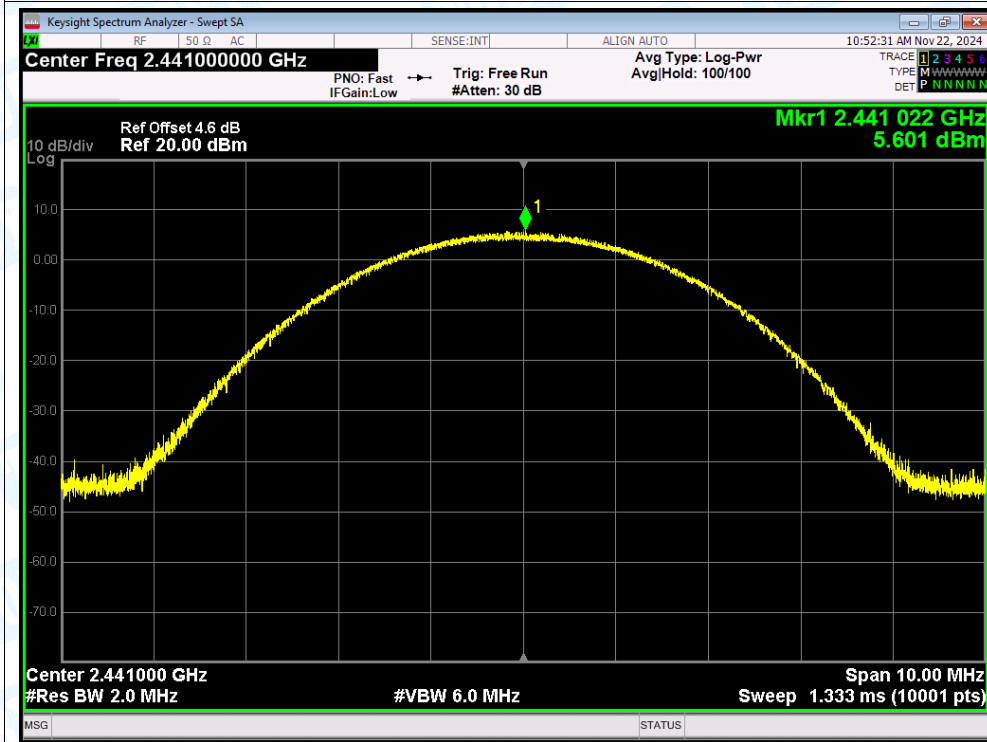
Power NVNT 2-DH1 2480MHz Ant1

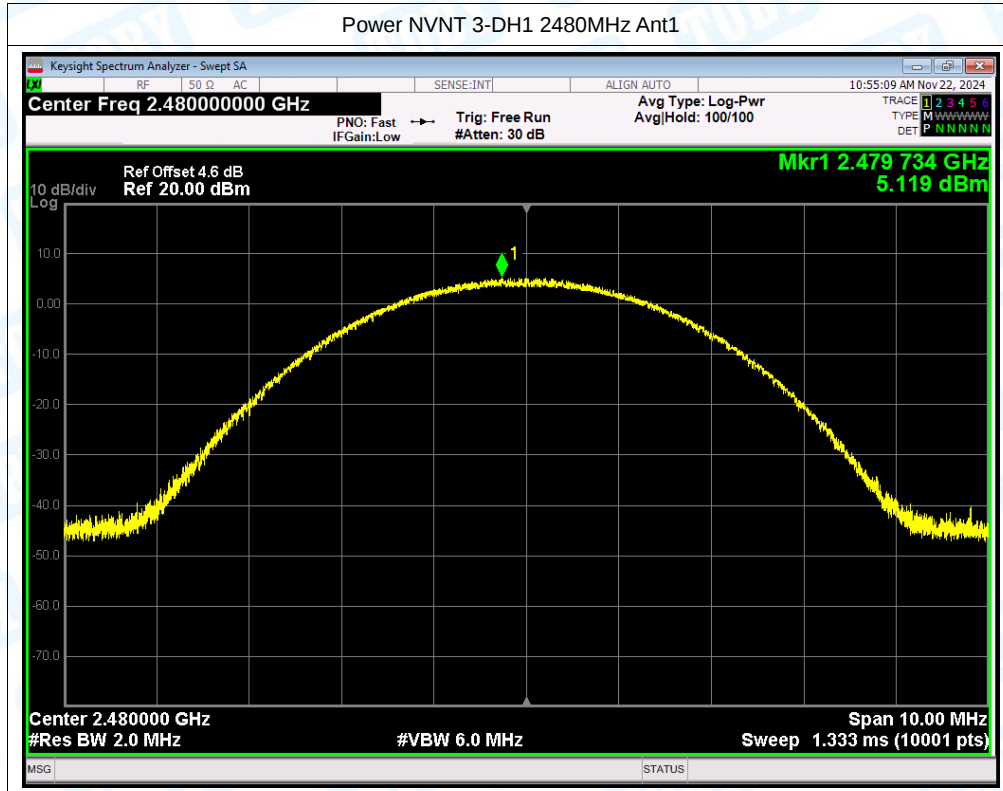


Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



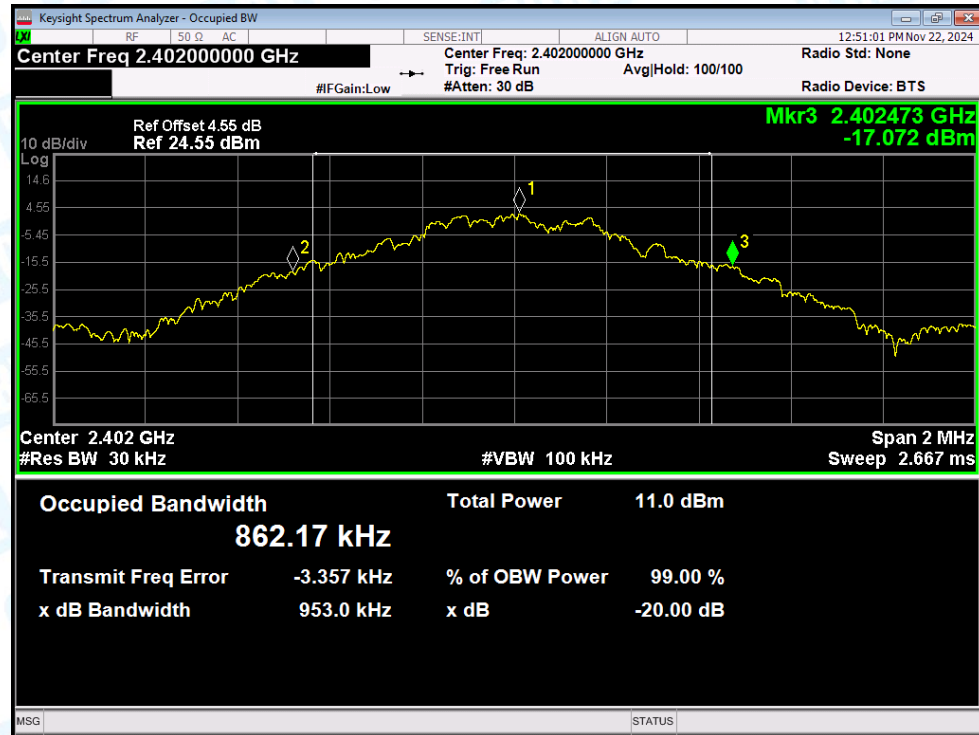


3. -20dB Bandwidth

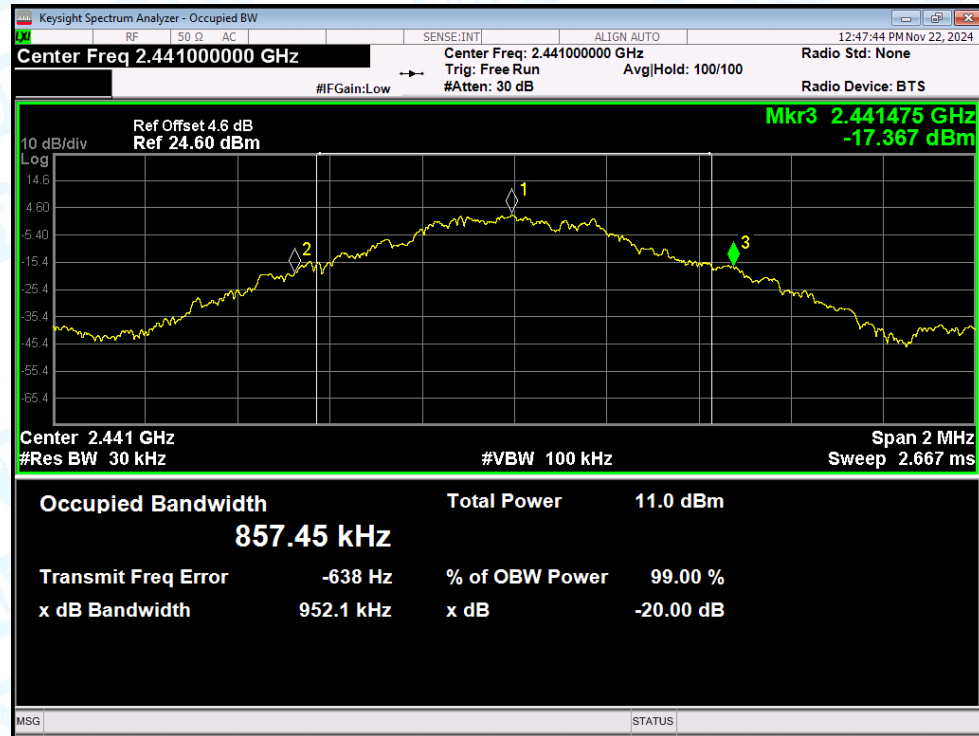
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.95	0	Pass
NVNT	1-DH1	2441	Ant1	0.95	0	Pass
NVNT	1-DH1	2480	Ant1	0.94	0	Pass
NVNT	2-DH1	2402	Ant1	1.28	0	Pass
NVNT	2-DH1	2441	Ant1	1.24	0	Pass
NVNT	2-DH1	2480	Ant1	1.26	0	Pass
NVNT	3-DH1	2402	Ant1	1.21	0	Pass
NVNT	3-DH1	2441	Ant1	1.21	0	Pass
NVNT	3-DH1	2480	Ant1	1.22	0	Pass

Test Graphs

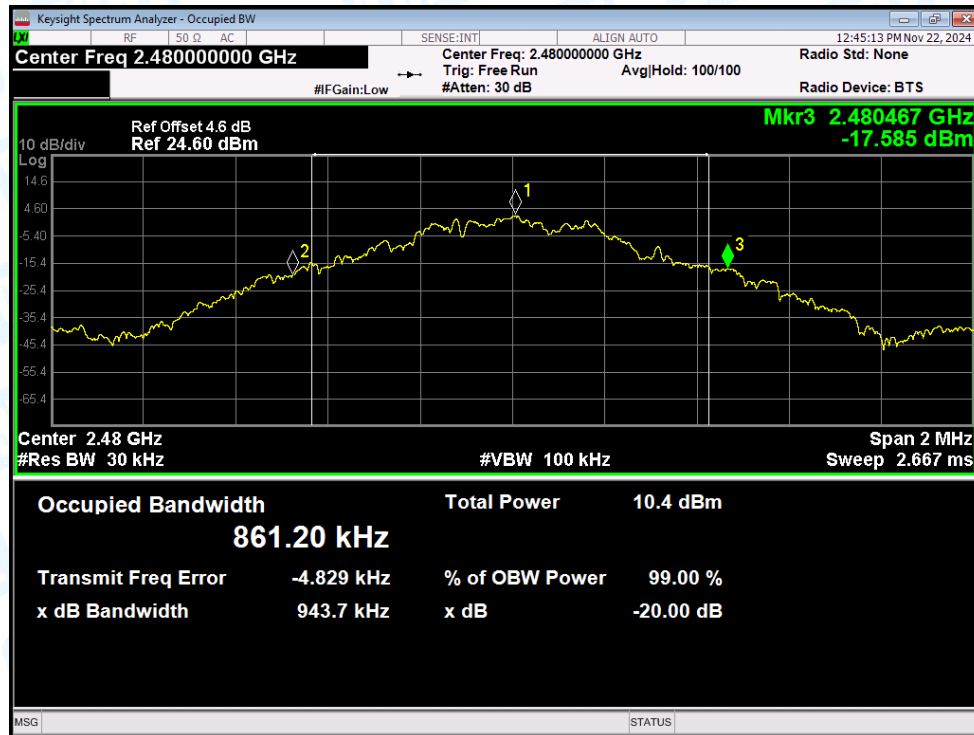
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



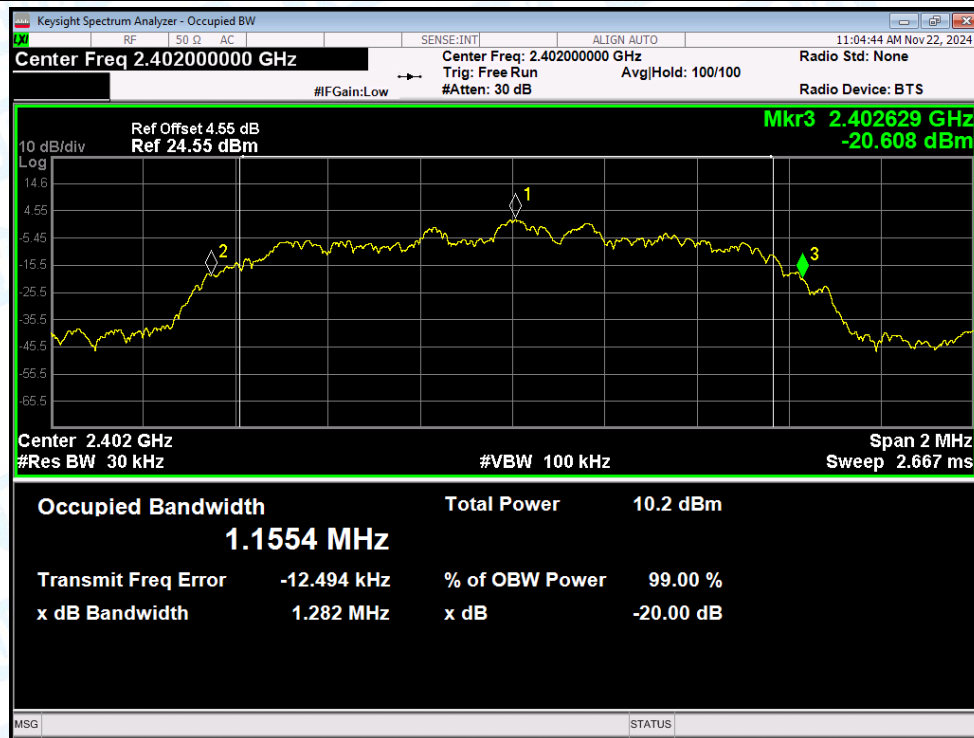
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



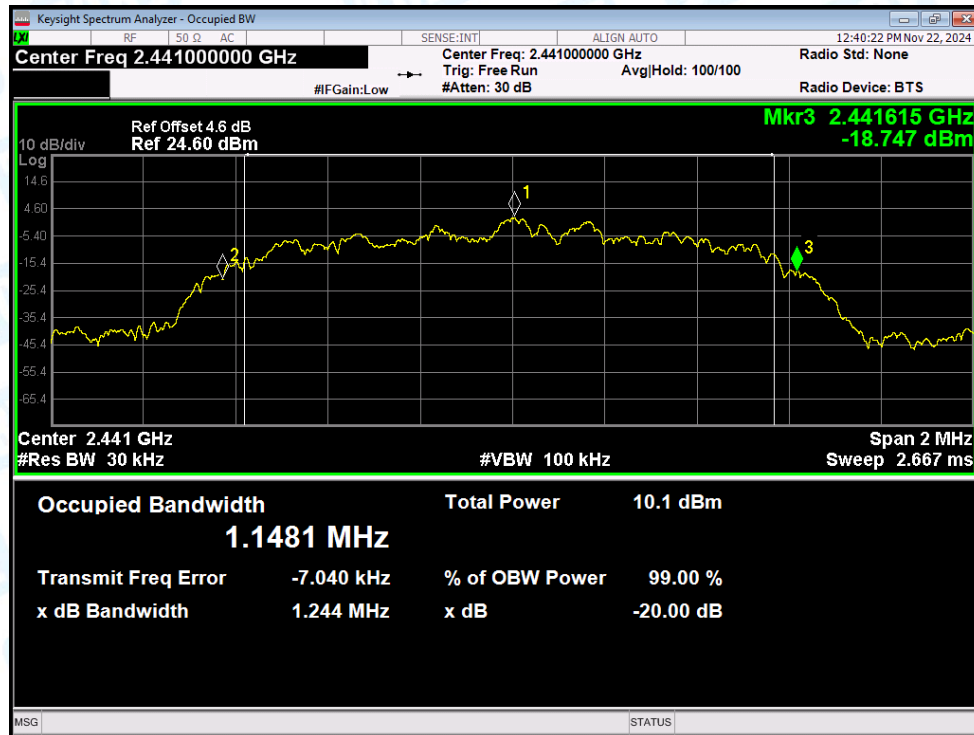
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



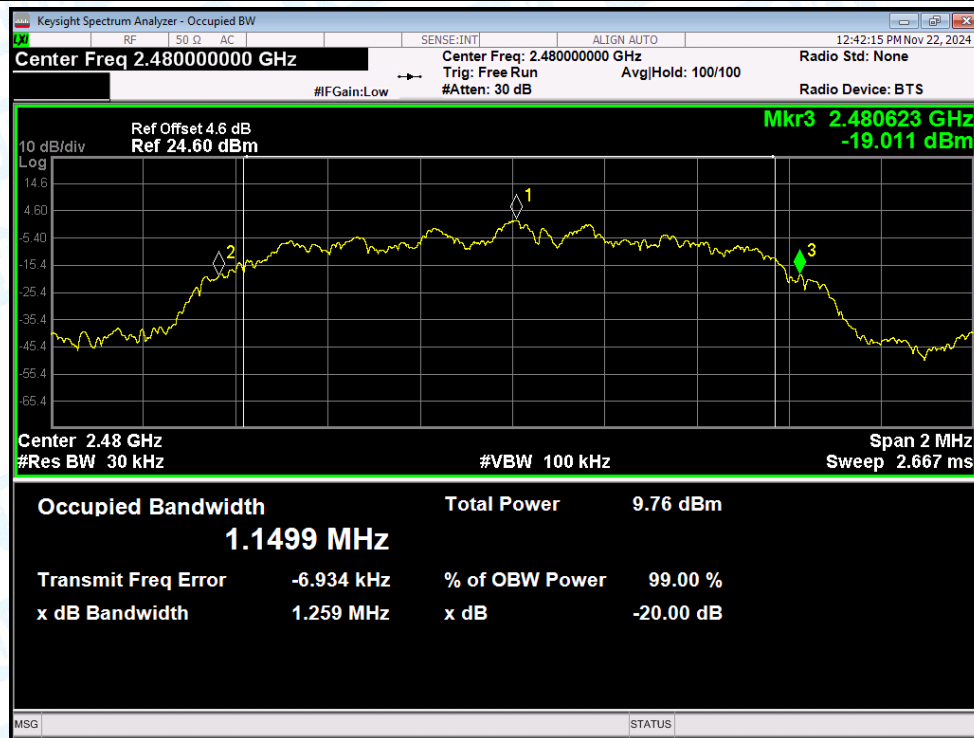
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



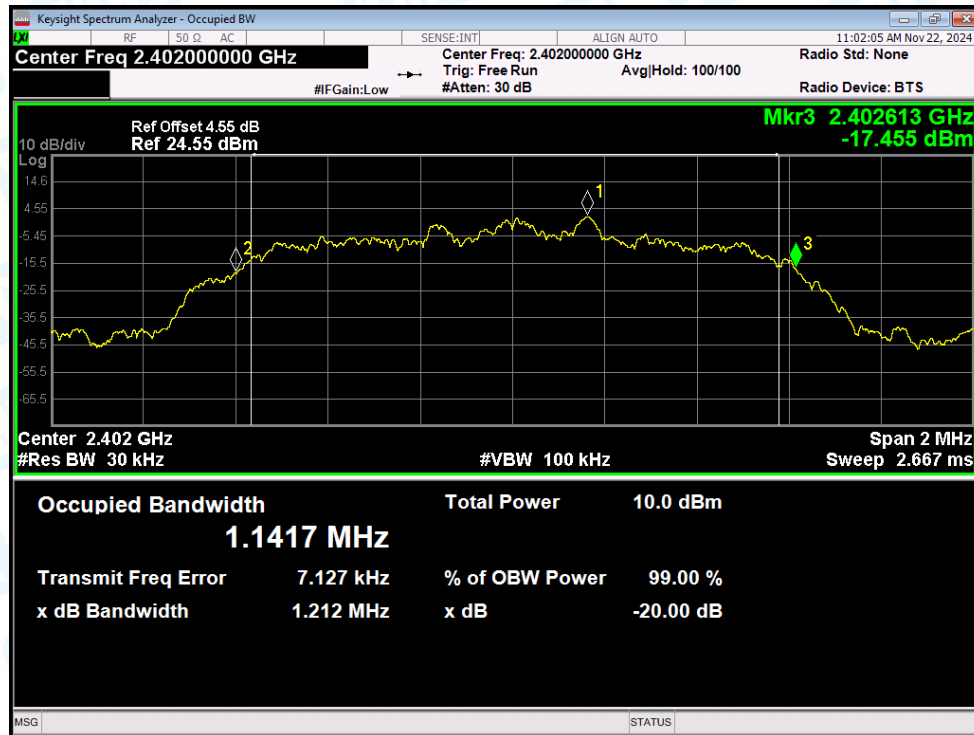
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



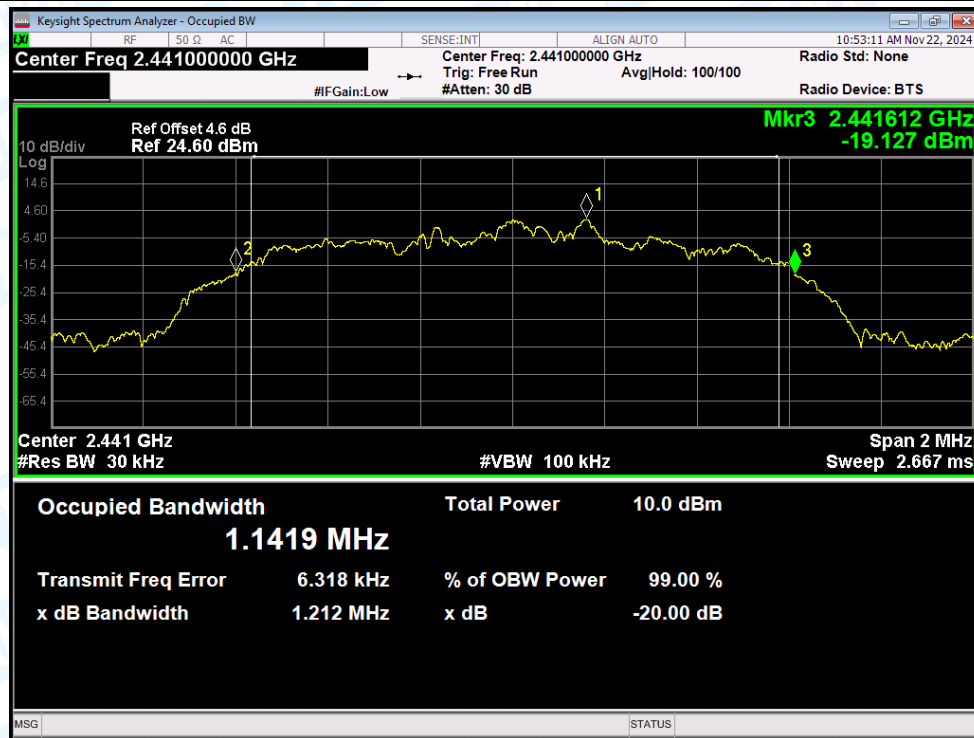
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

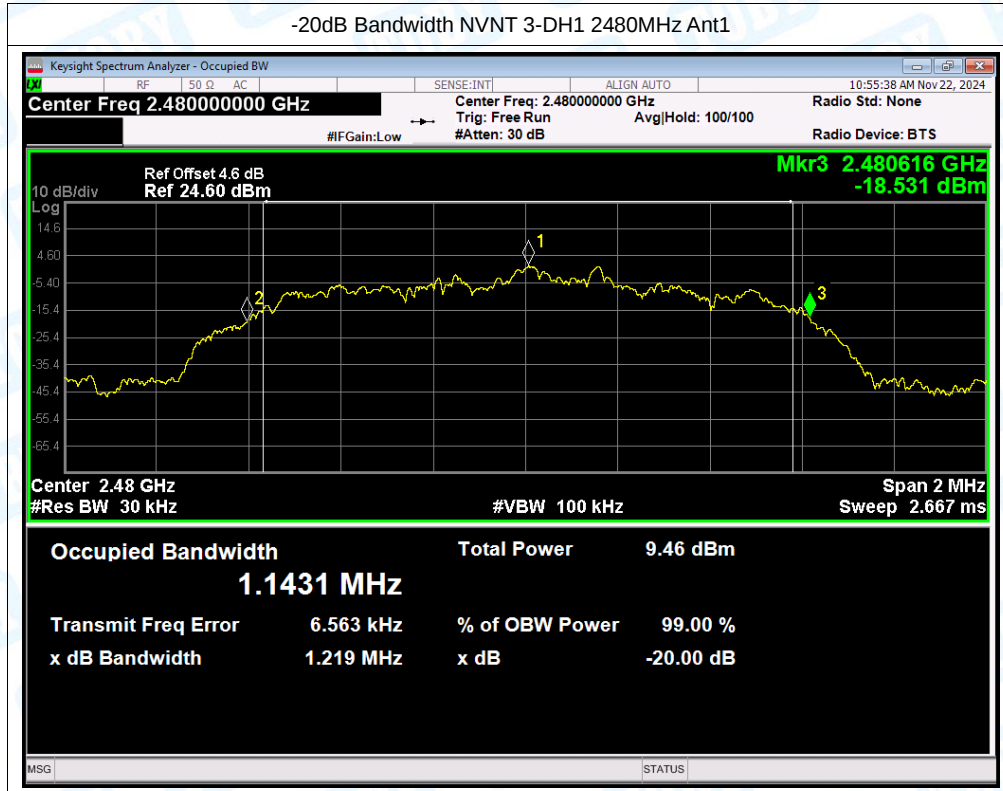


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



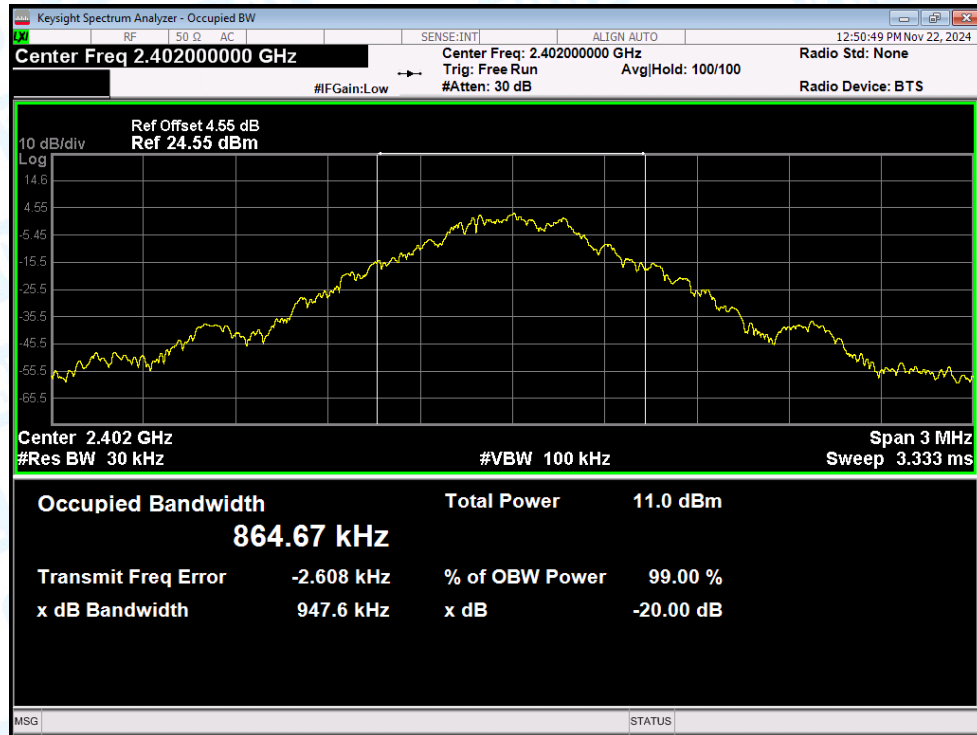


4. Occupied Channel Bandwidth

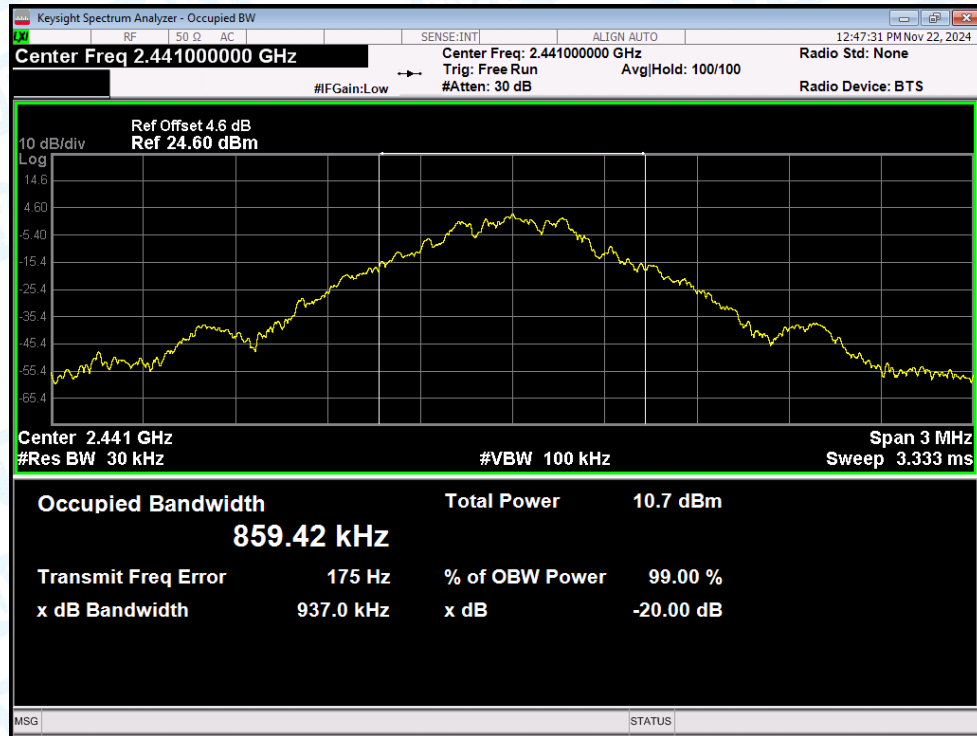
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.865
NVNT	1-DH1	2441	Ant1	0.859
NVNT	1-DH1	2480	Ant1	0.862
NVNT	2-DH1	2402	Ant1	1.161
NVNT	2-DH1	2441	Ant1	1.133
NVNT	2-DH1	2480	Ant1	1.16
NVNT	3-DH1	2402	Ant1	1.128
NVNT	3-DH1	2441	Ant1	1.139
NVNT	3-DH1	2480	Ant1	1.129

Test Graphs

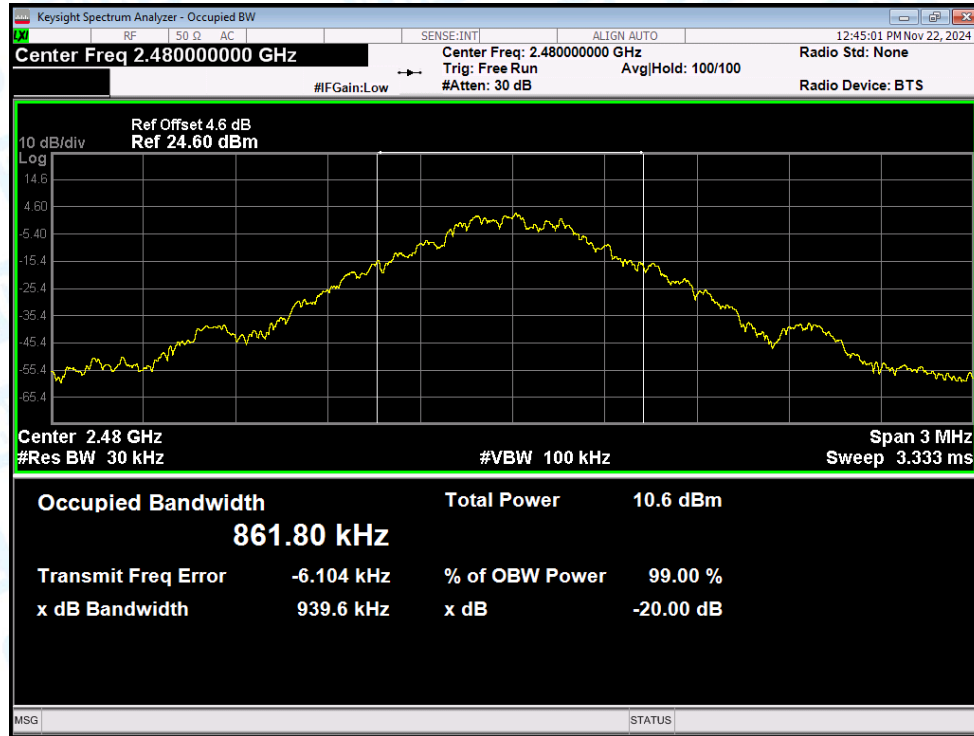
OBW NVNT 1-DH1 2402MHz Ant1



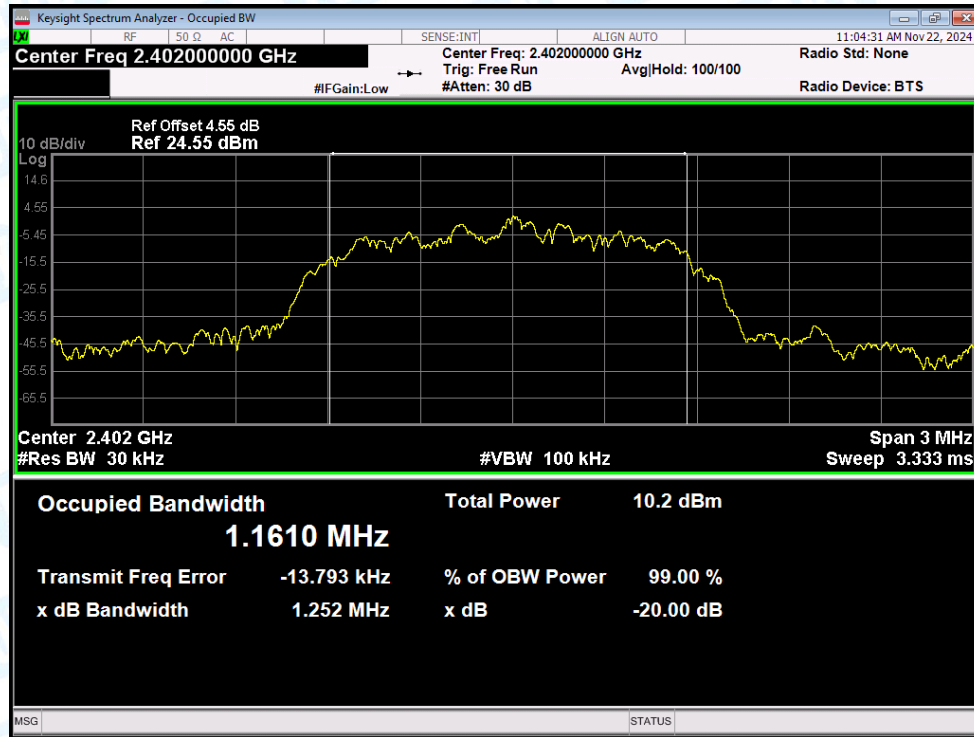
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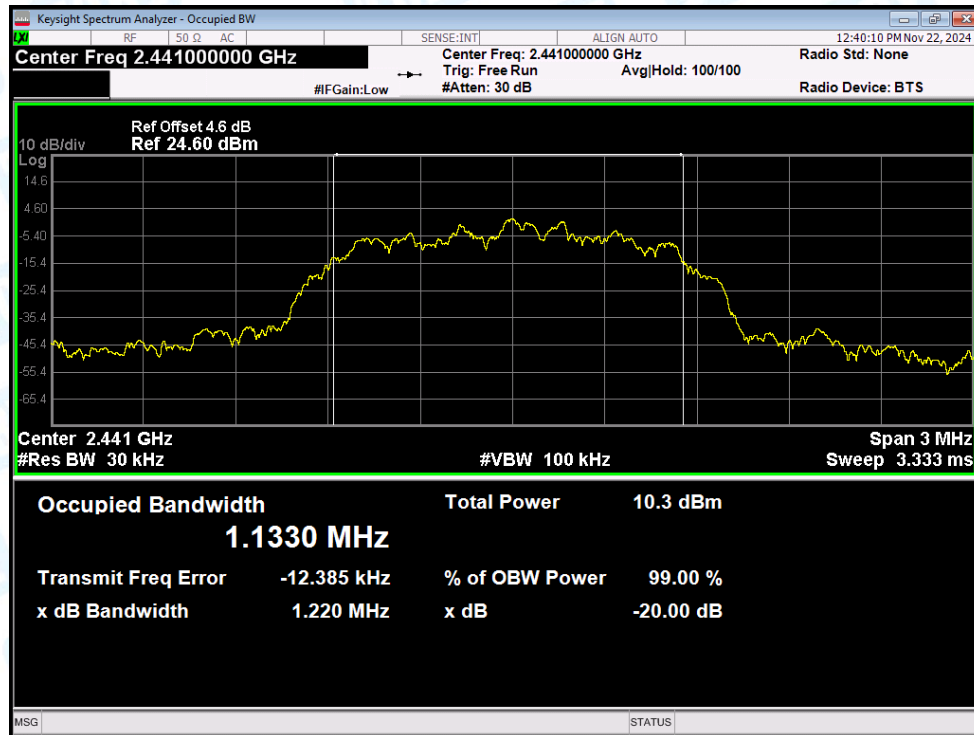
OBW NVNT 1-DH1 2480MHz Ant1



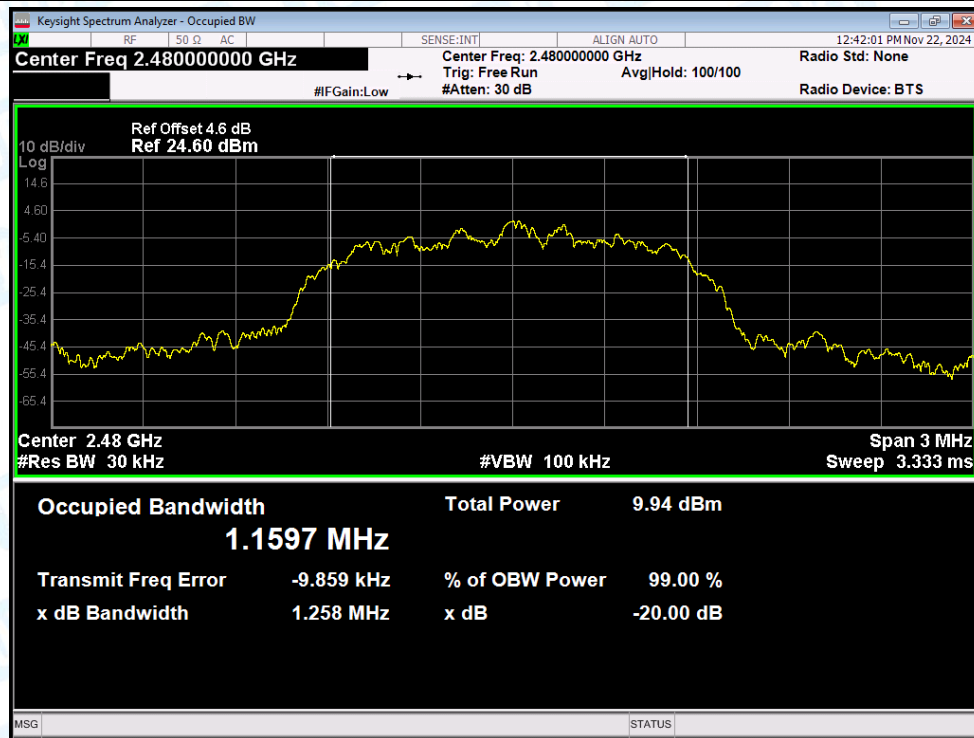
OBW NVNT 2-DH1 2402MHz Ant1



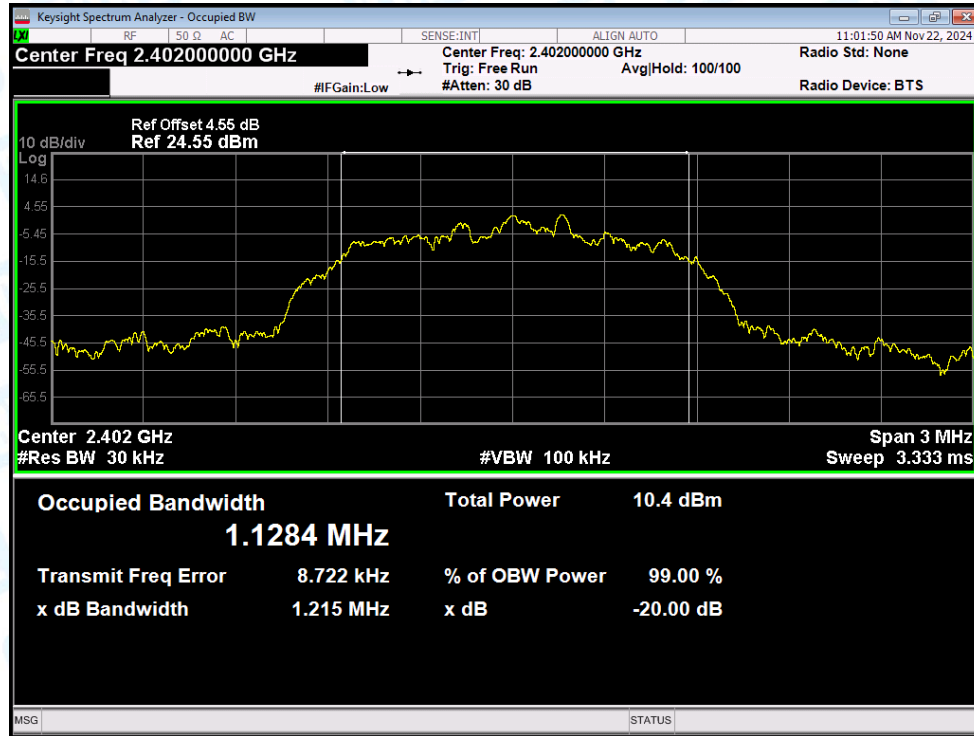
OBW NVNT 2-DH1 2441MHz Ant1



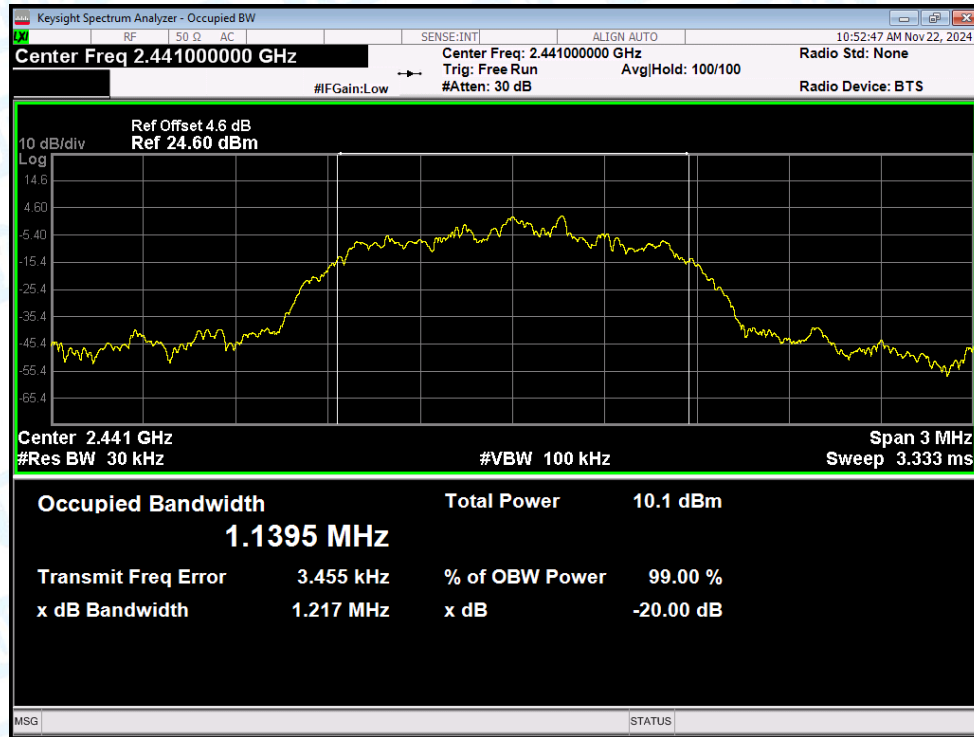
OBW NVNT 2-DH1 2480MHz Ant1

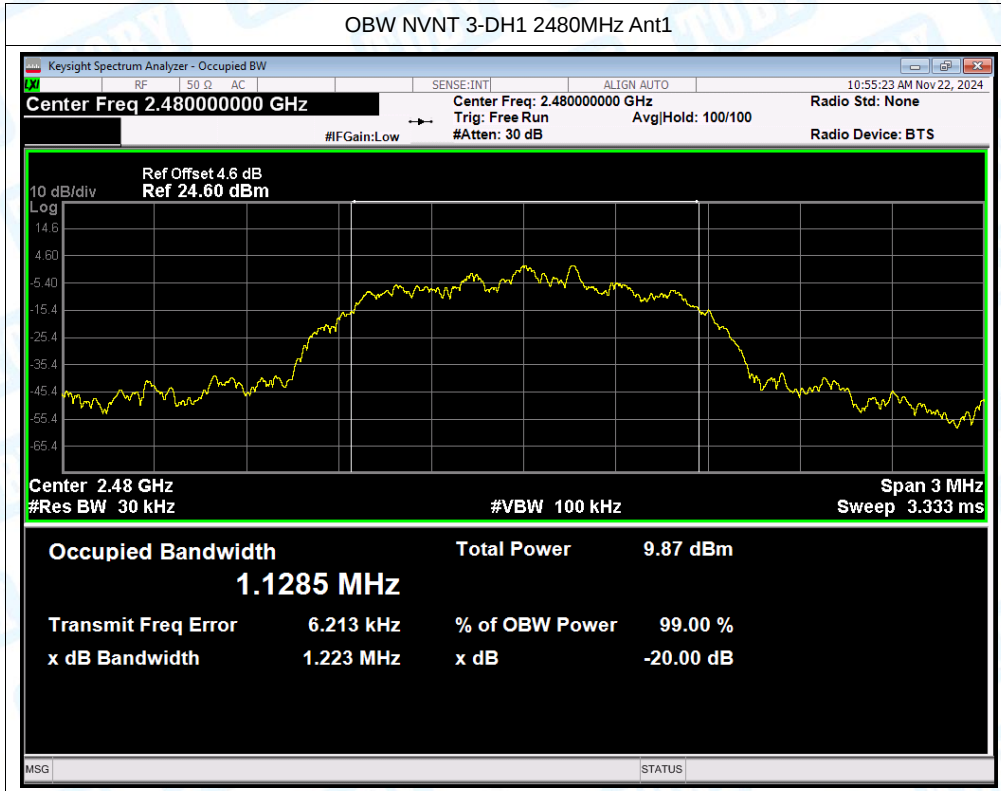


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



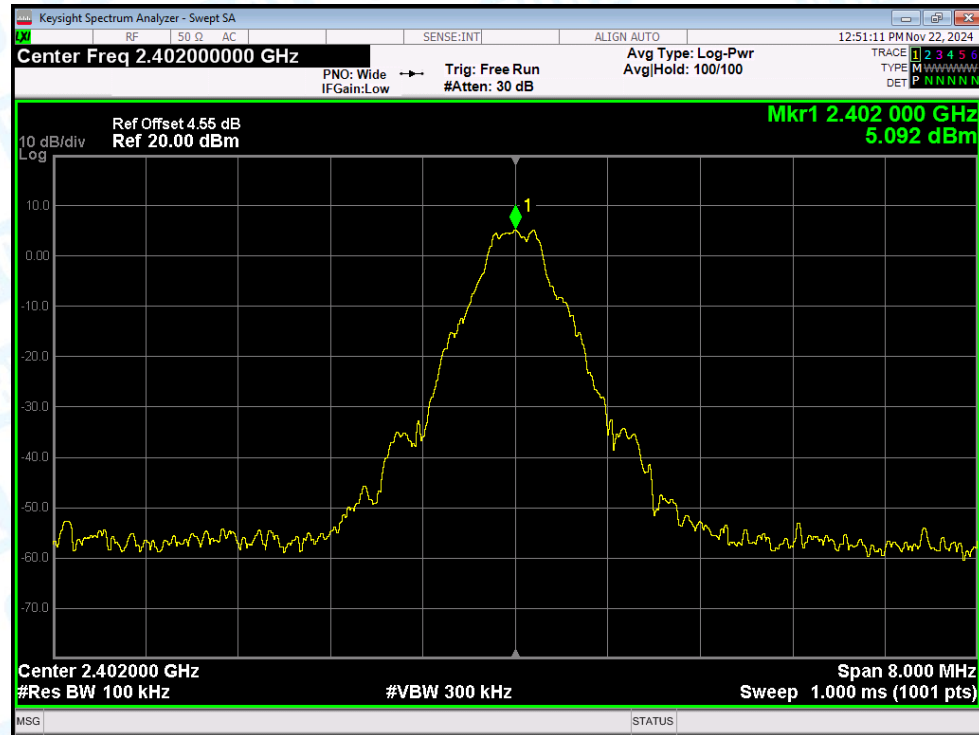


5. Band Edge

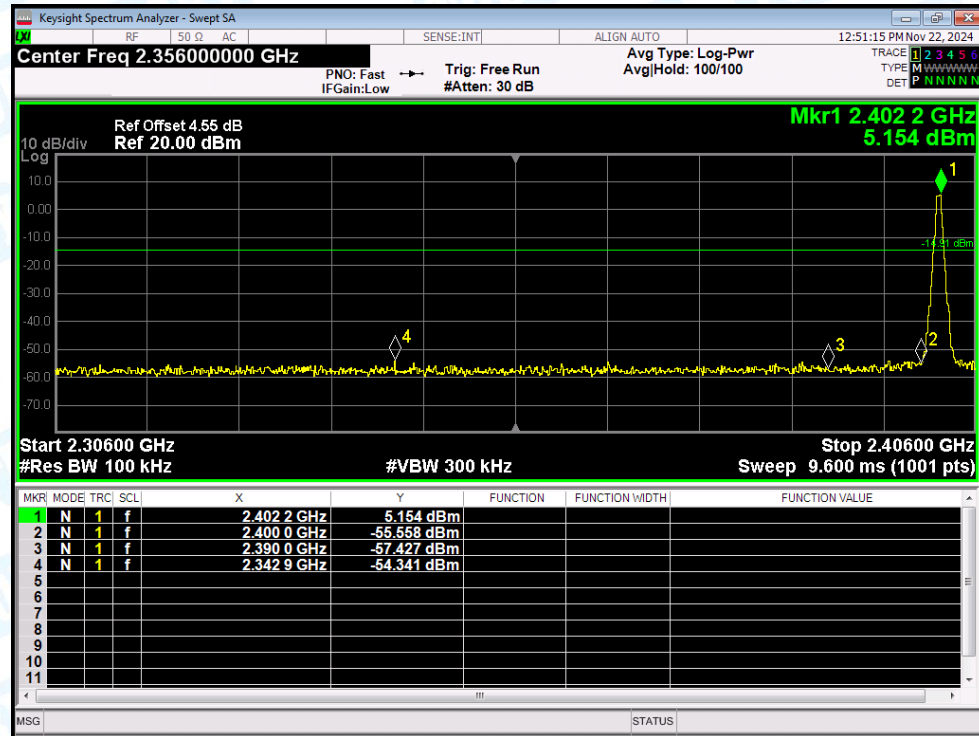
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-59.43	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-58.43	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-58.57	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-57.74	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-58.57	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-57.64	-20	Pass

Test Graphs

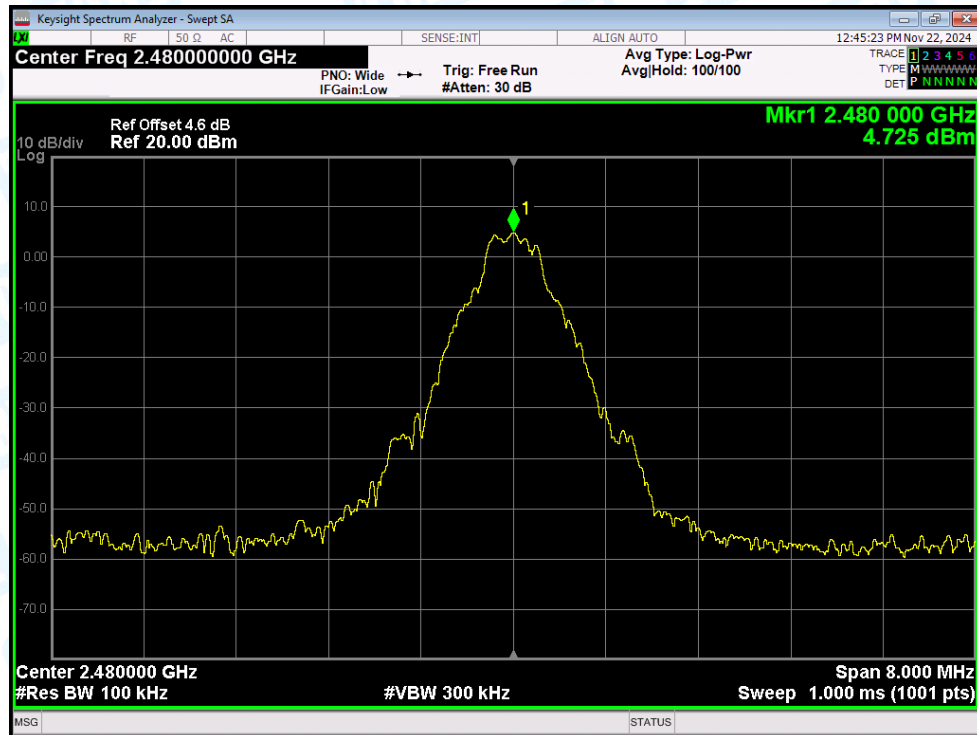
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



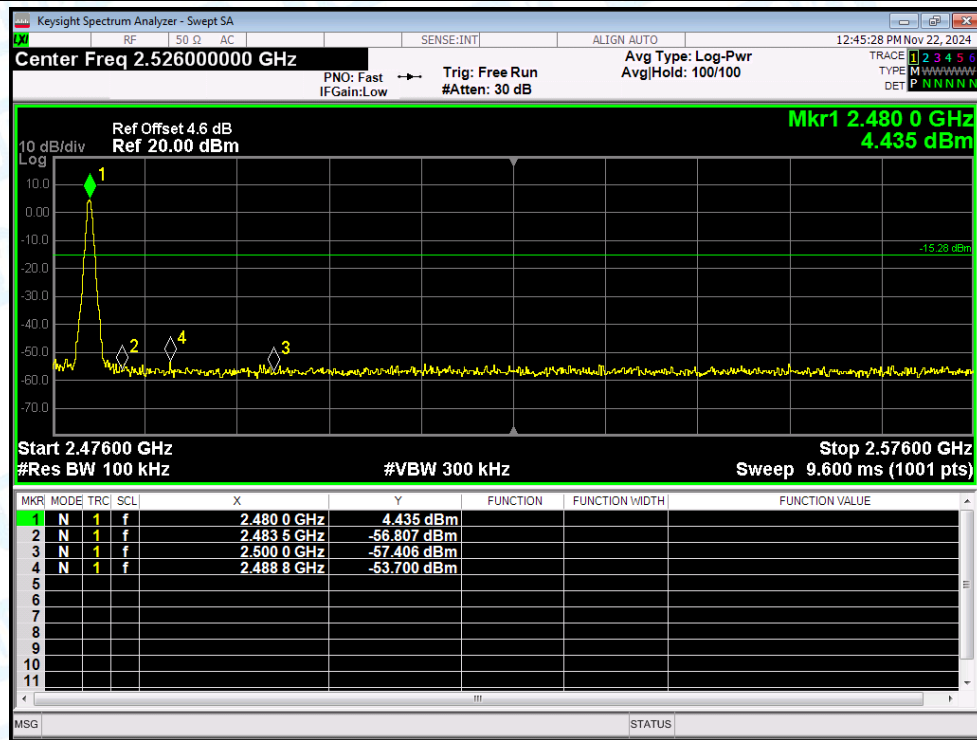
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



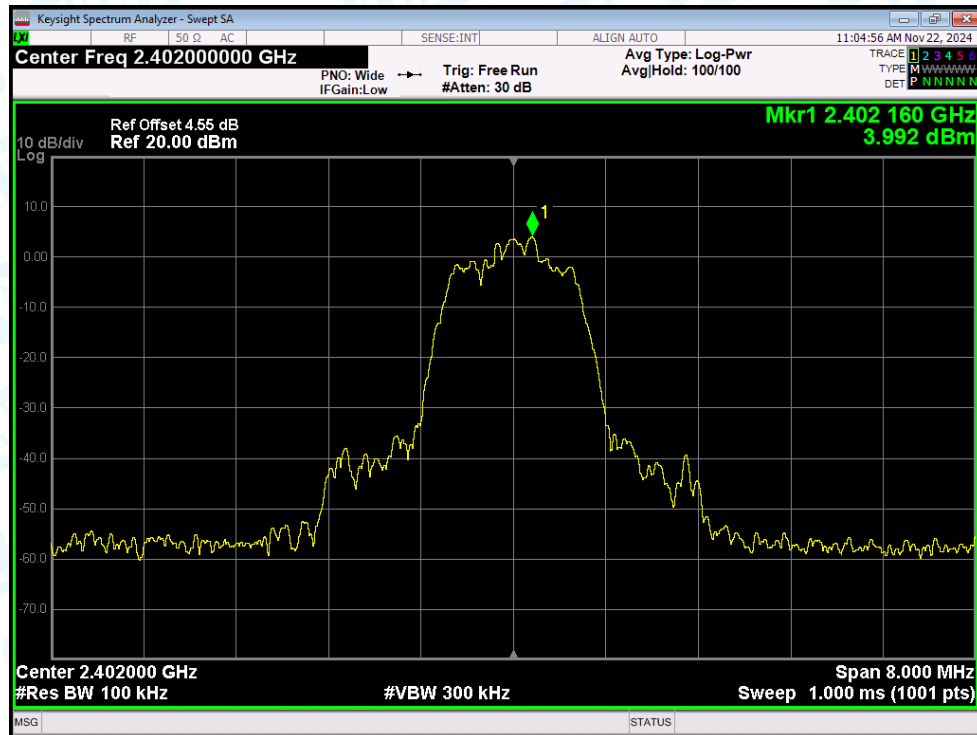
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



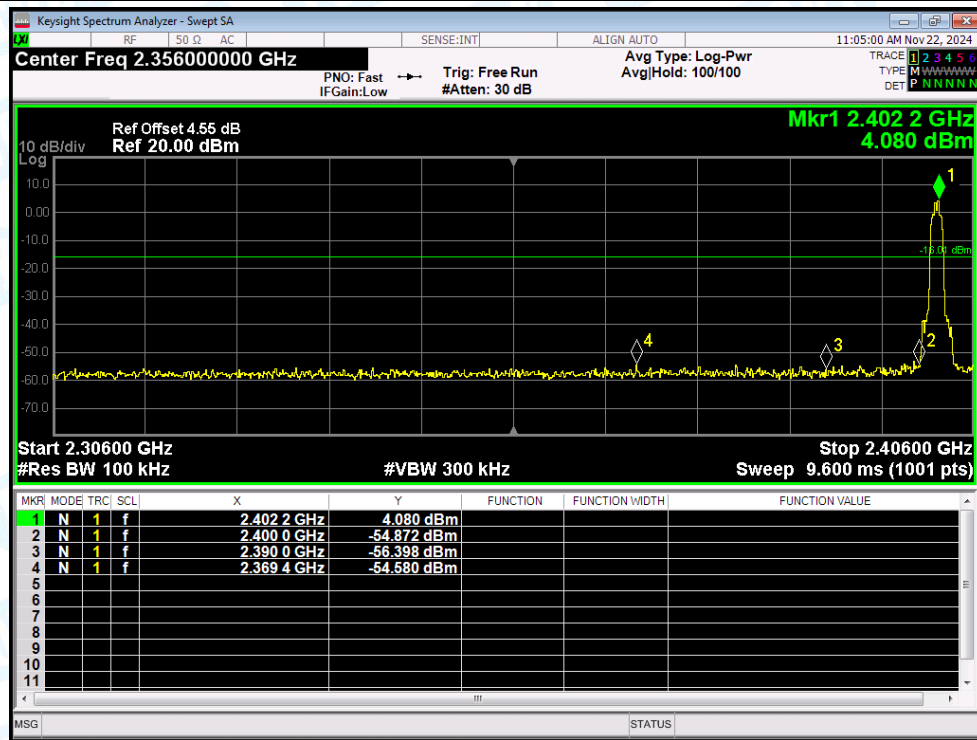
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



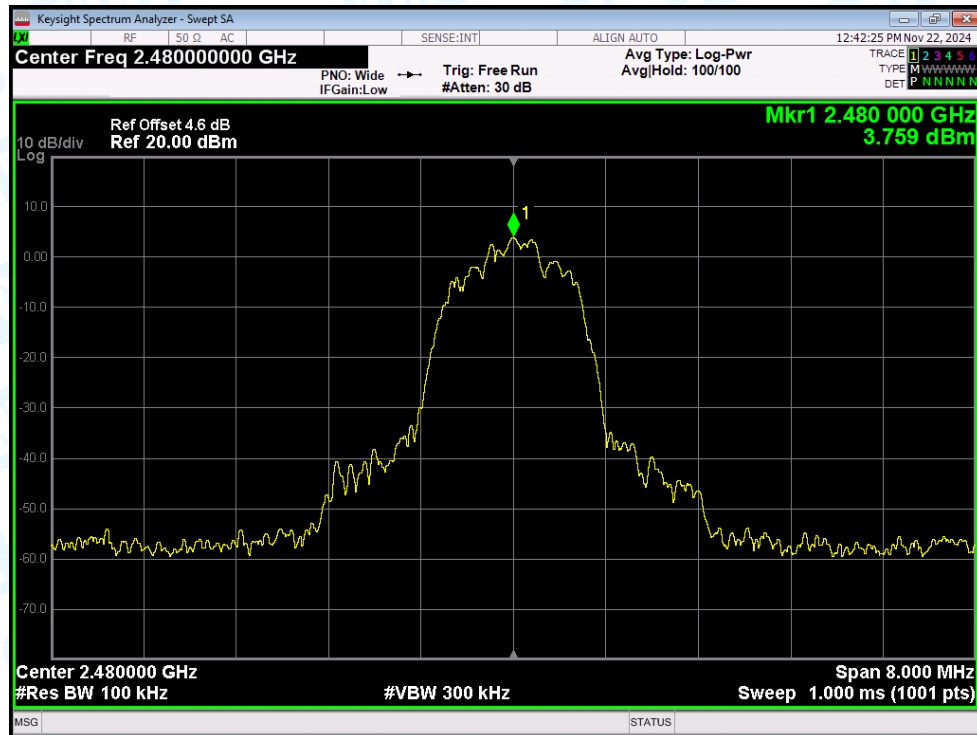
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



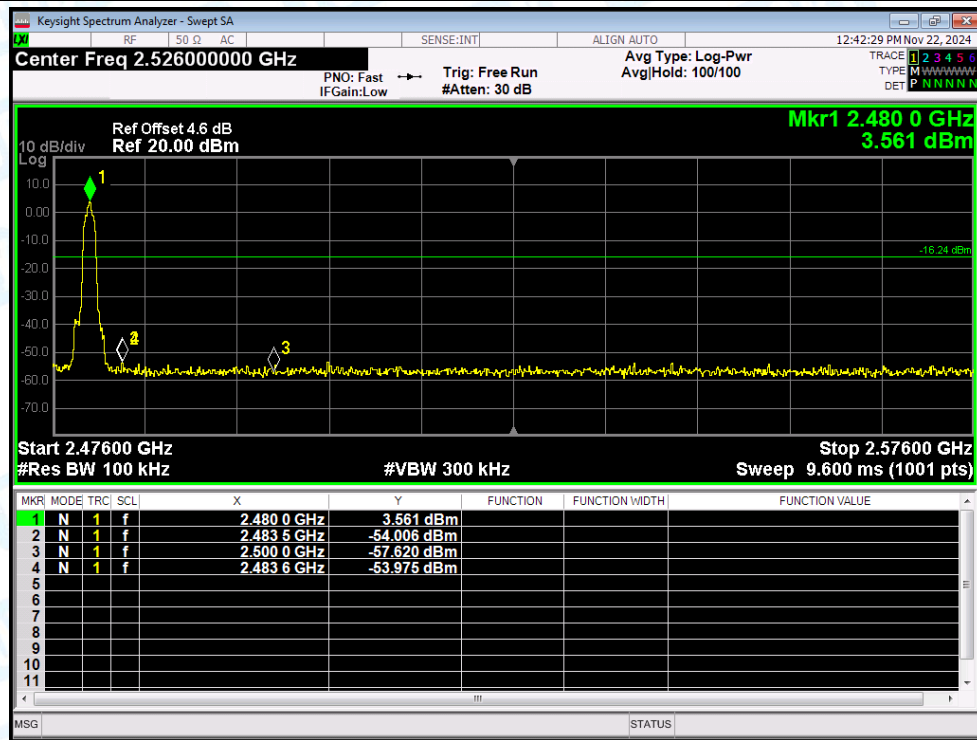
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



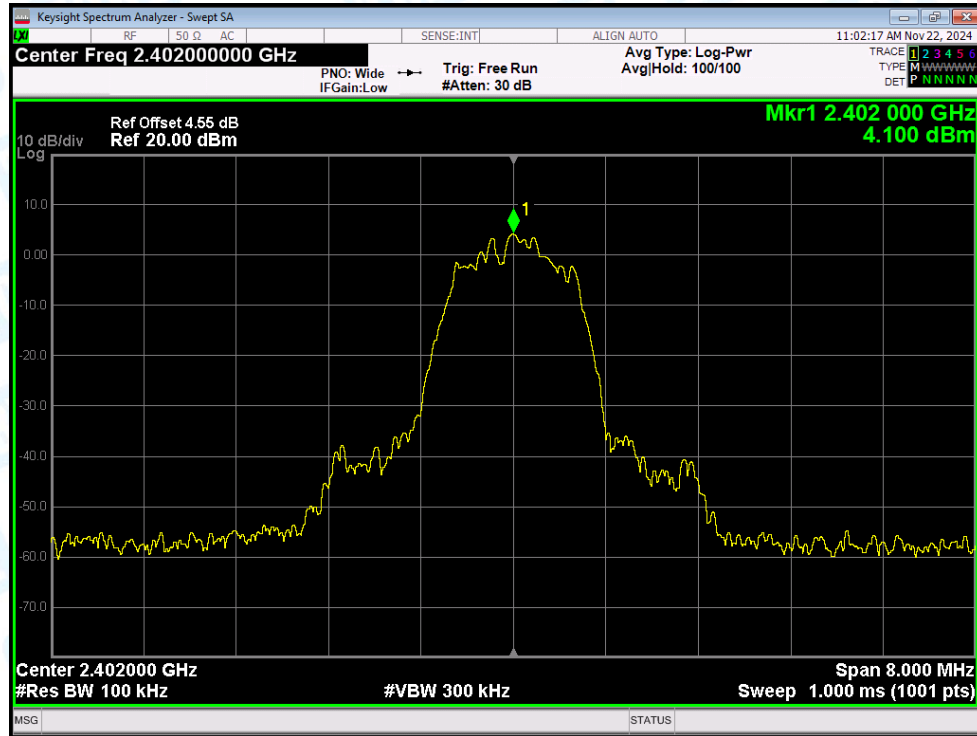
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



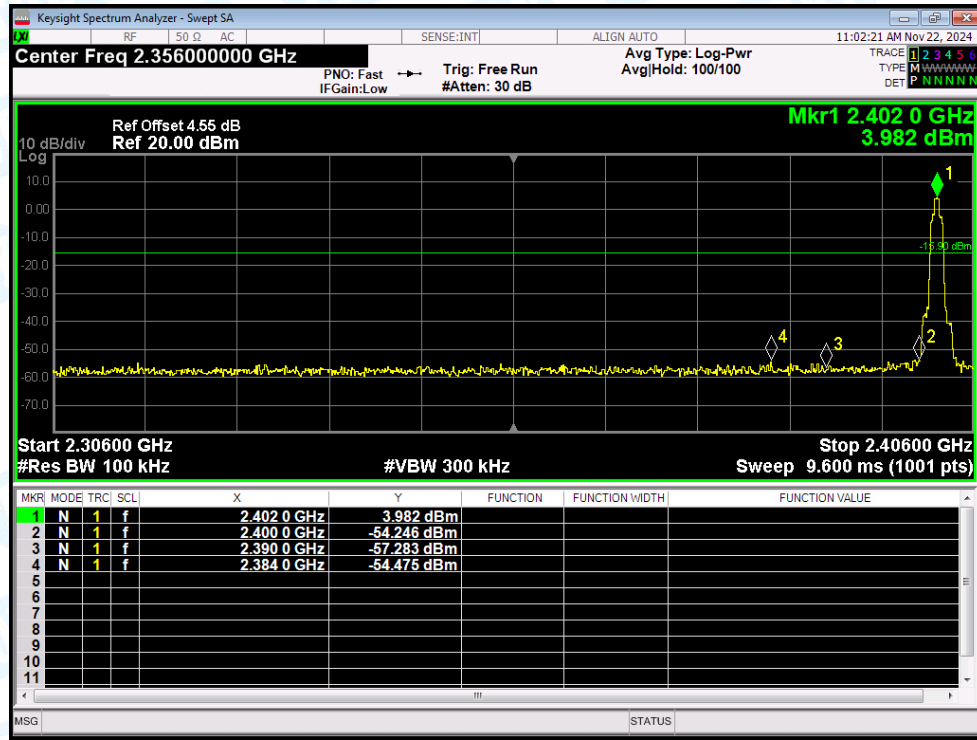
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



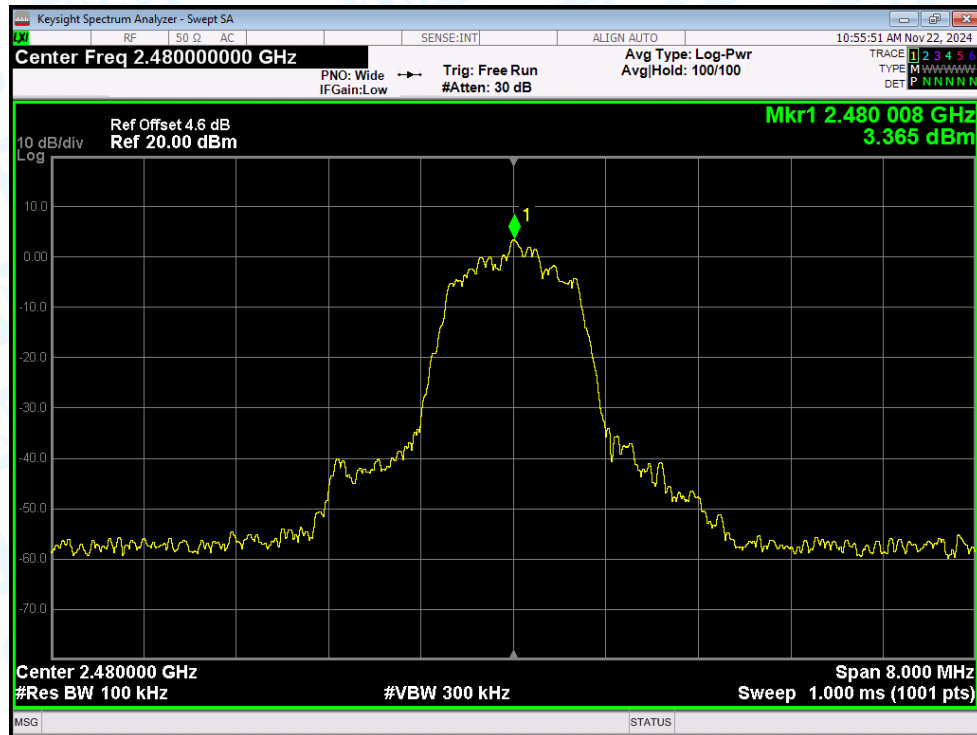
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



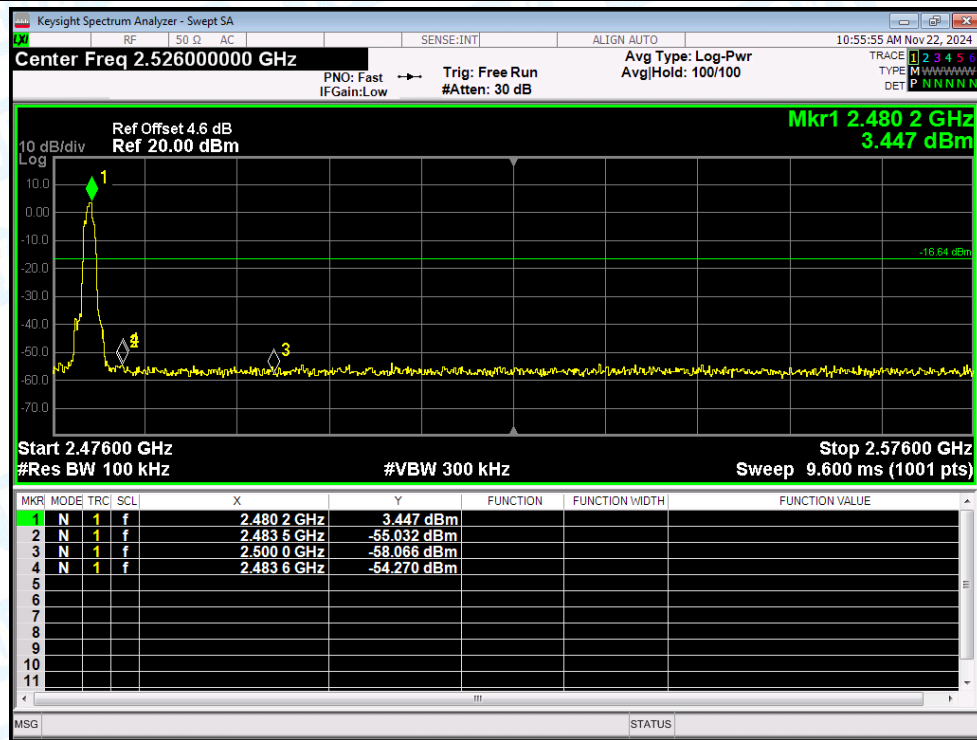
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



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



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

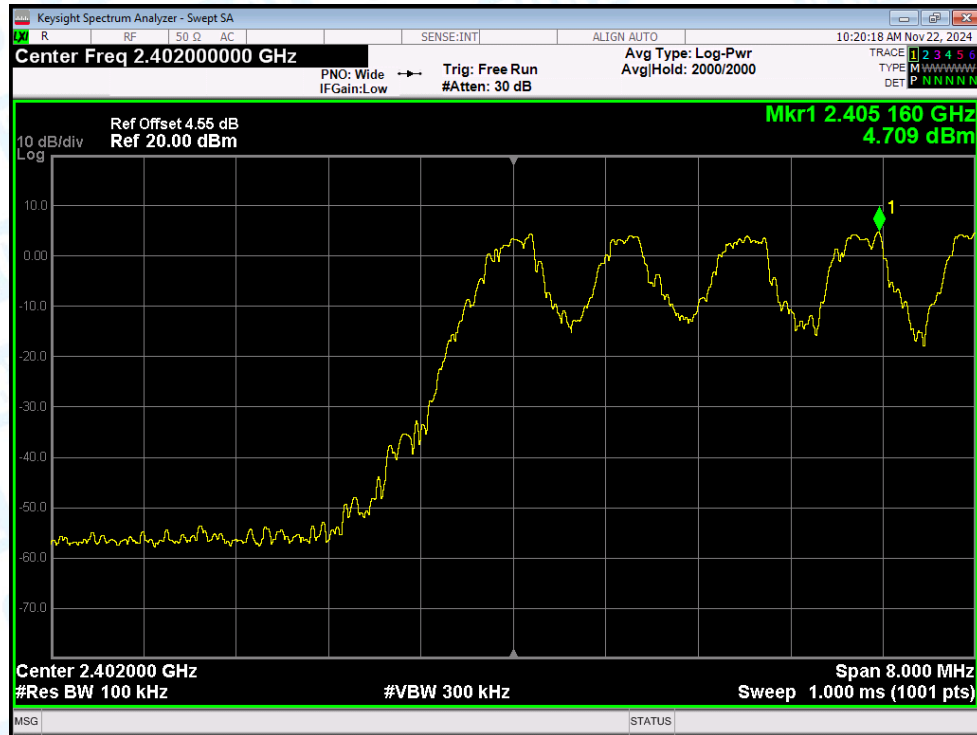


6. Band Edge(Hopping)

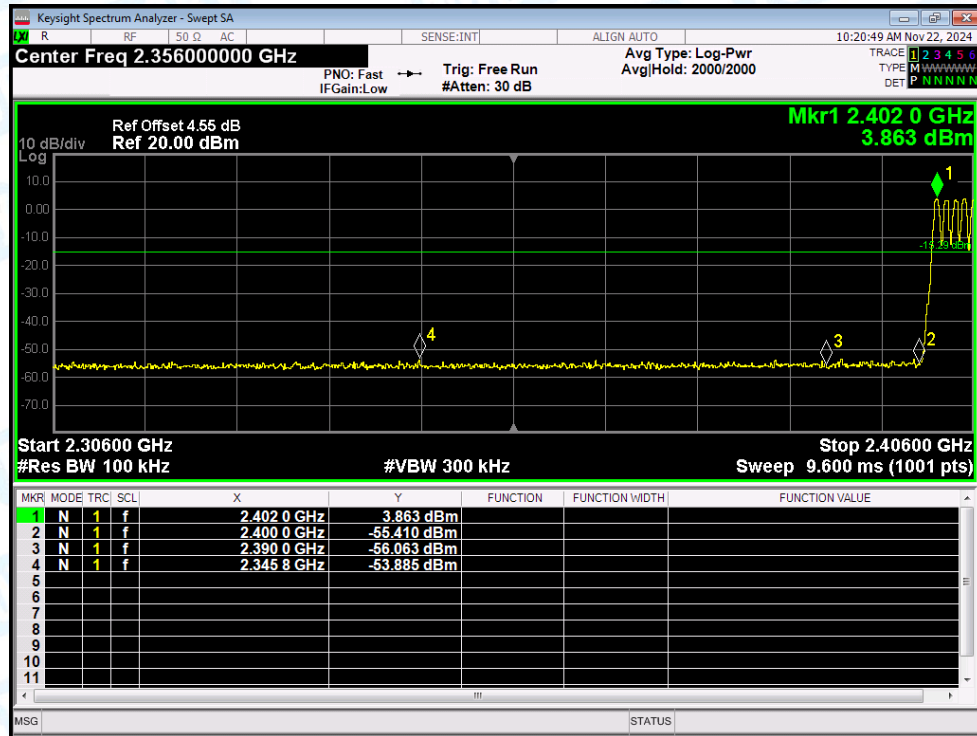
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-58.59	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-58.36	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-57.82	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-57.3	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-57.45	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-56.88	-20	Pass

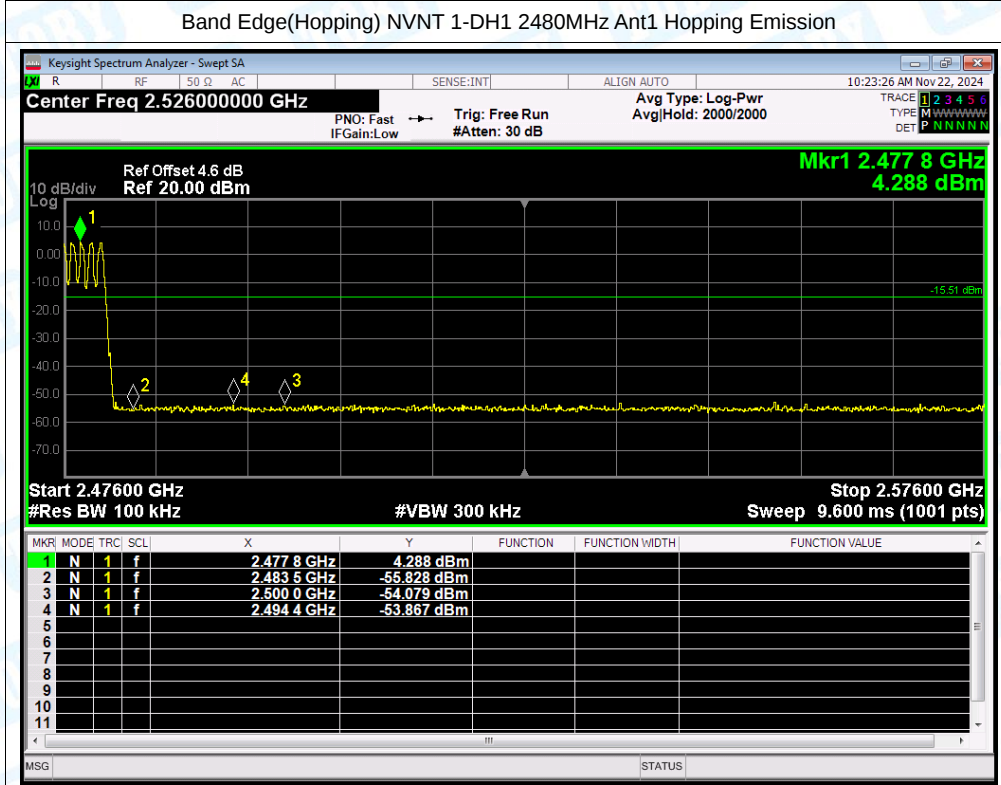
Test Graphs

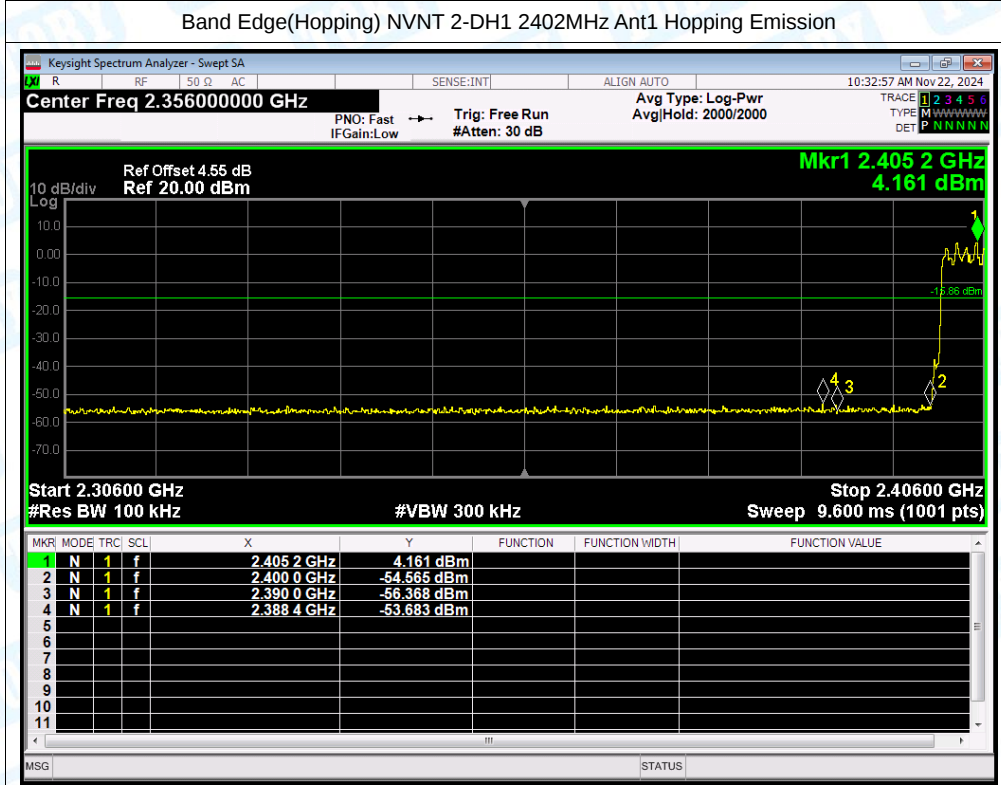
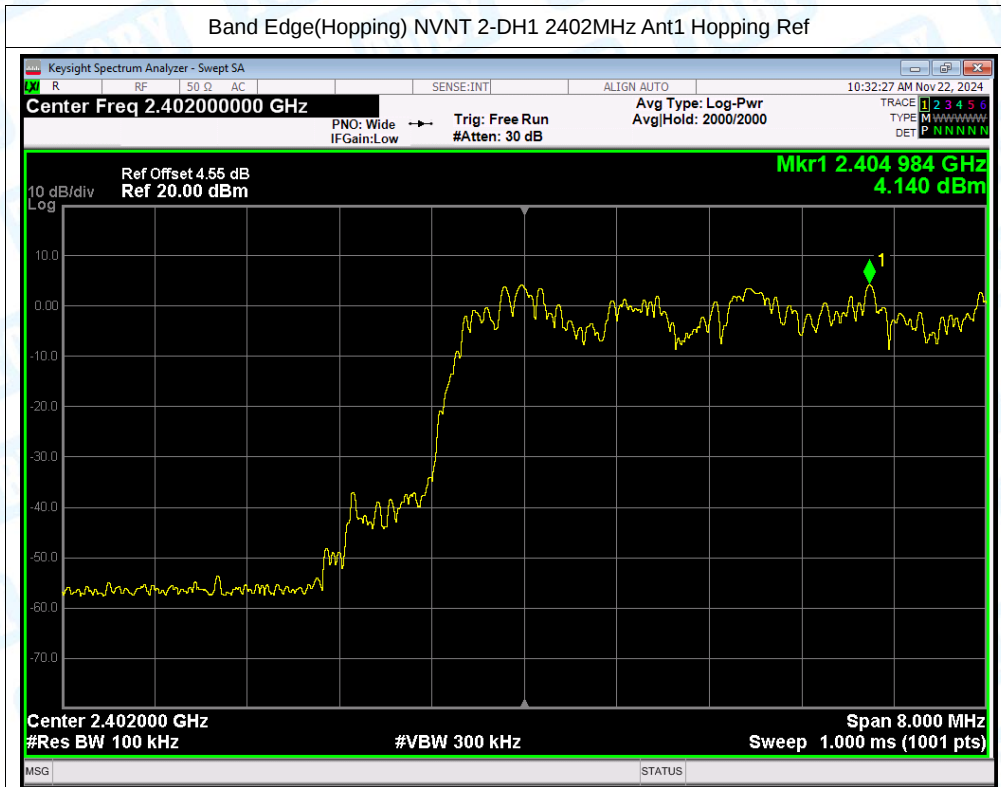
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref

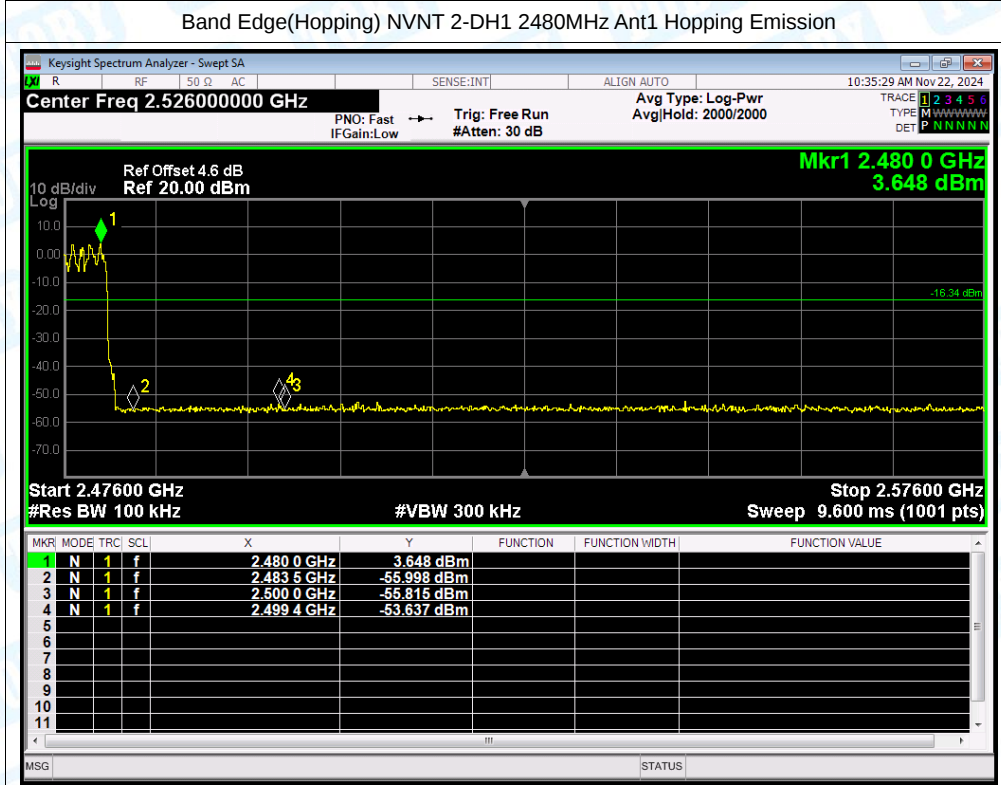
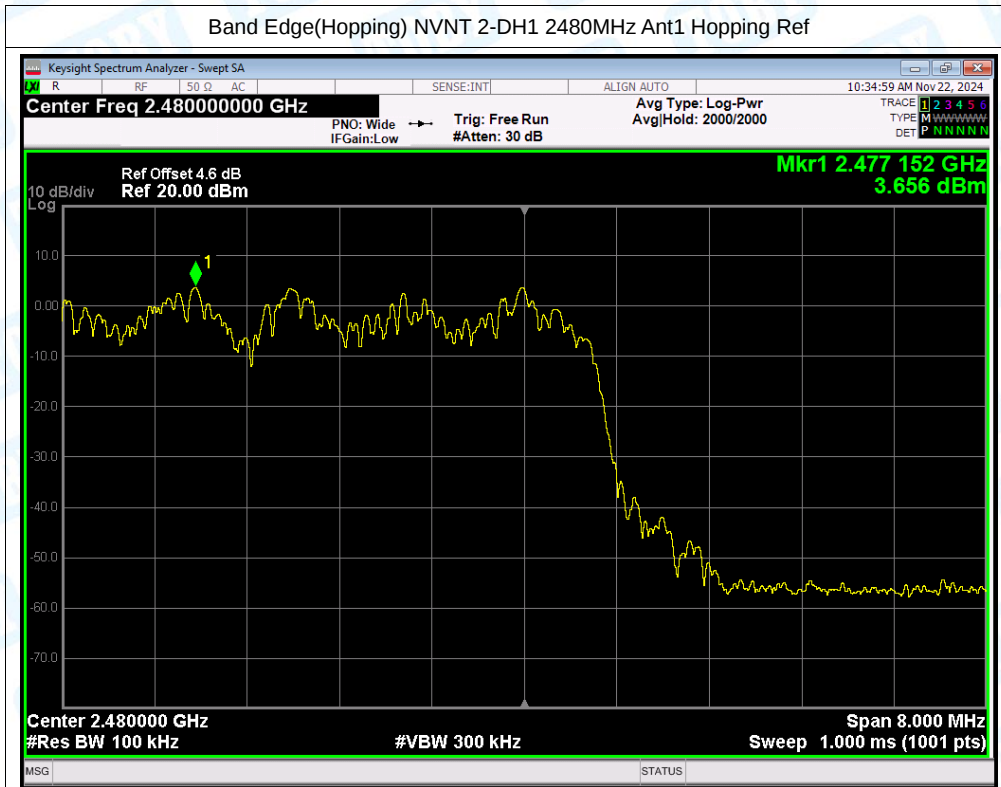


Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission

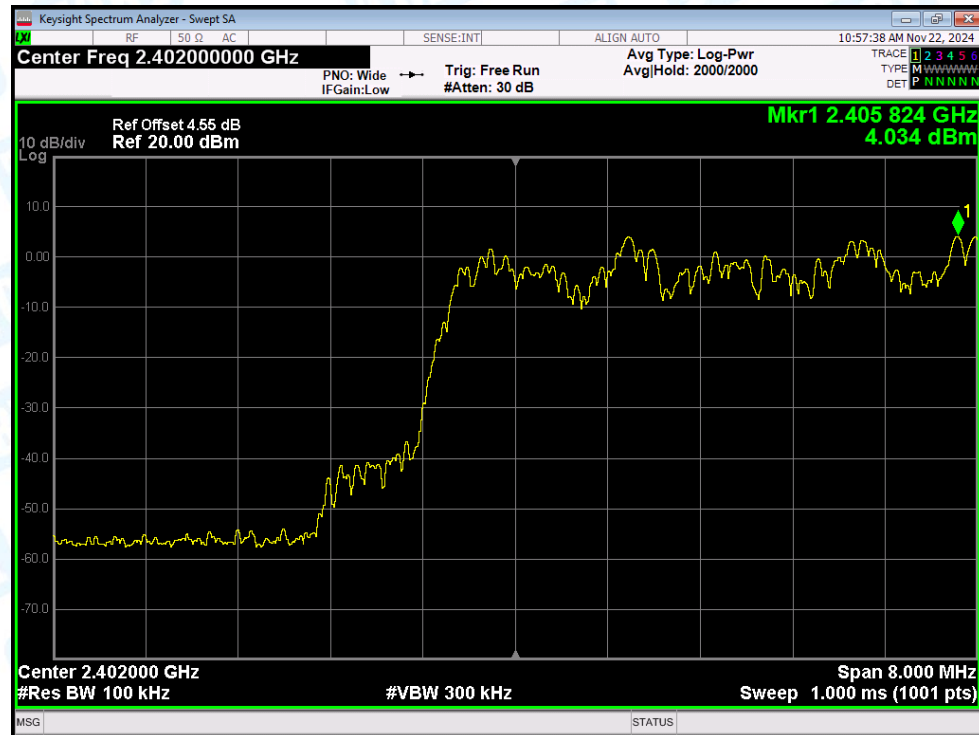




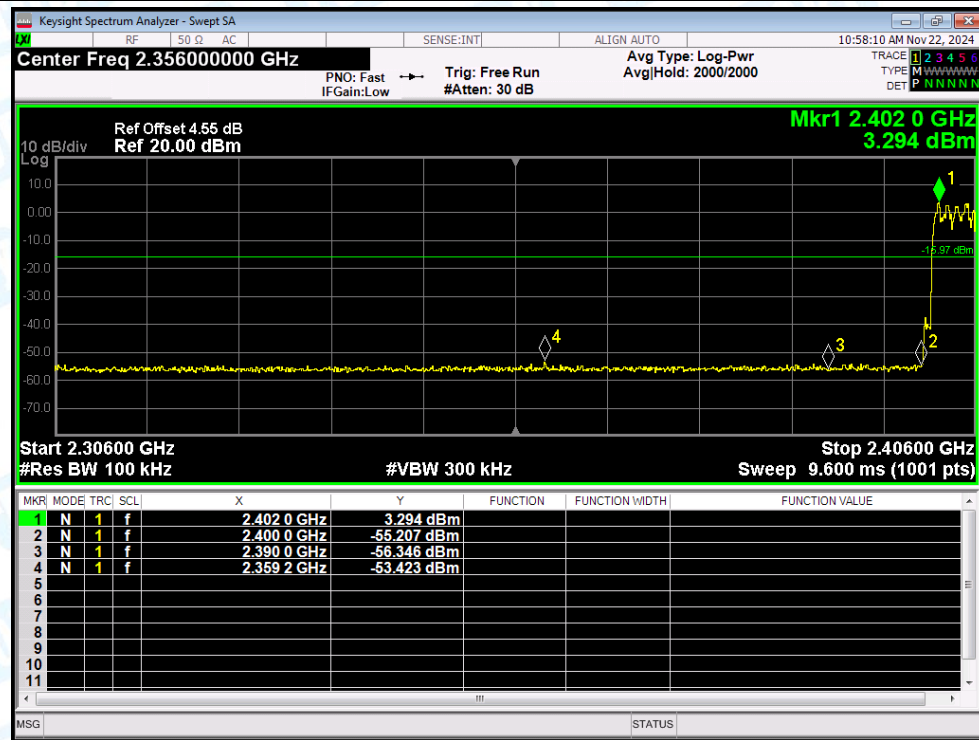


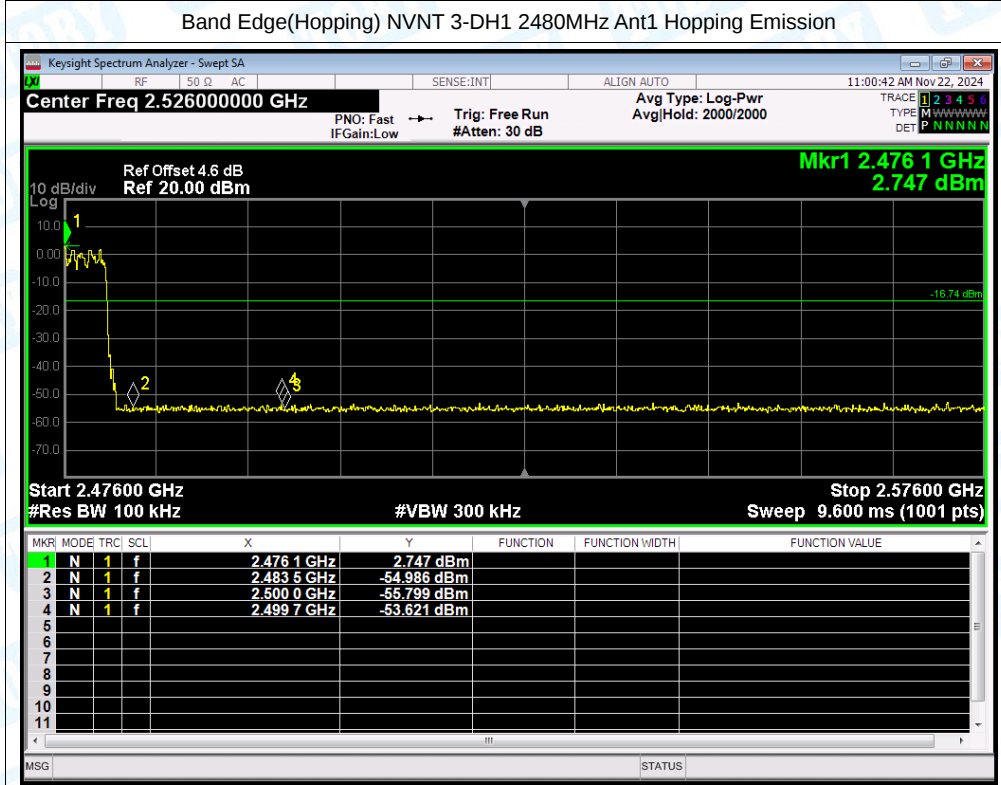


Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



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



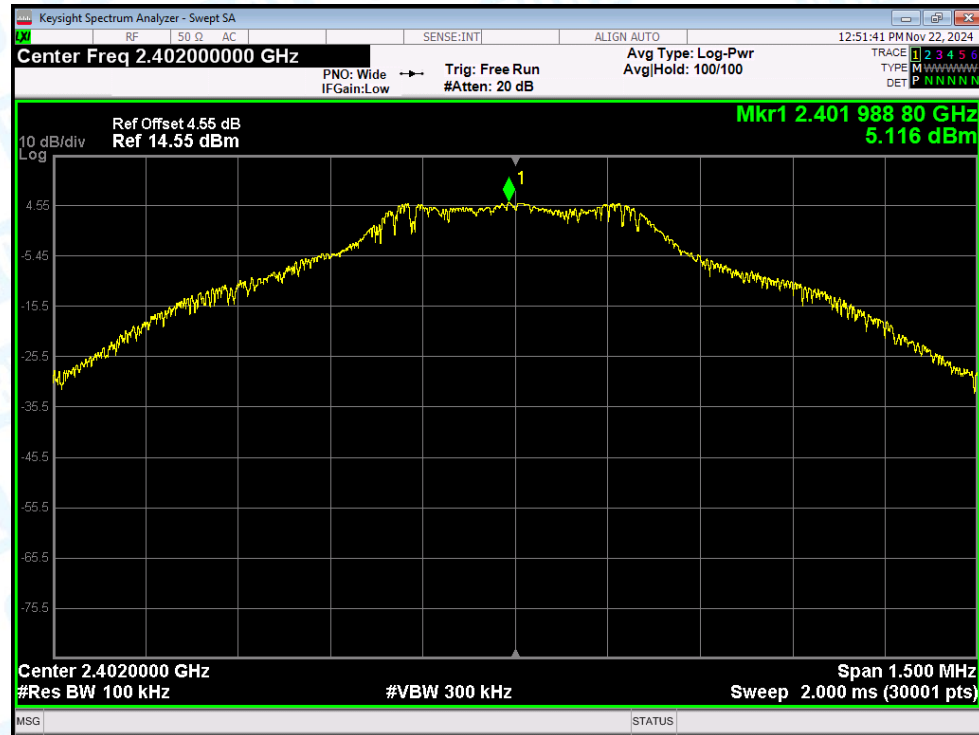


7. Conducted RF Spurious Emission

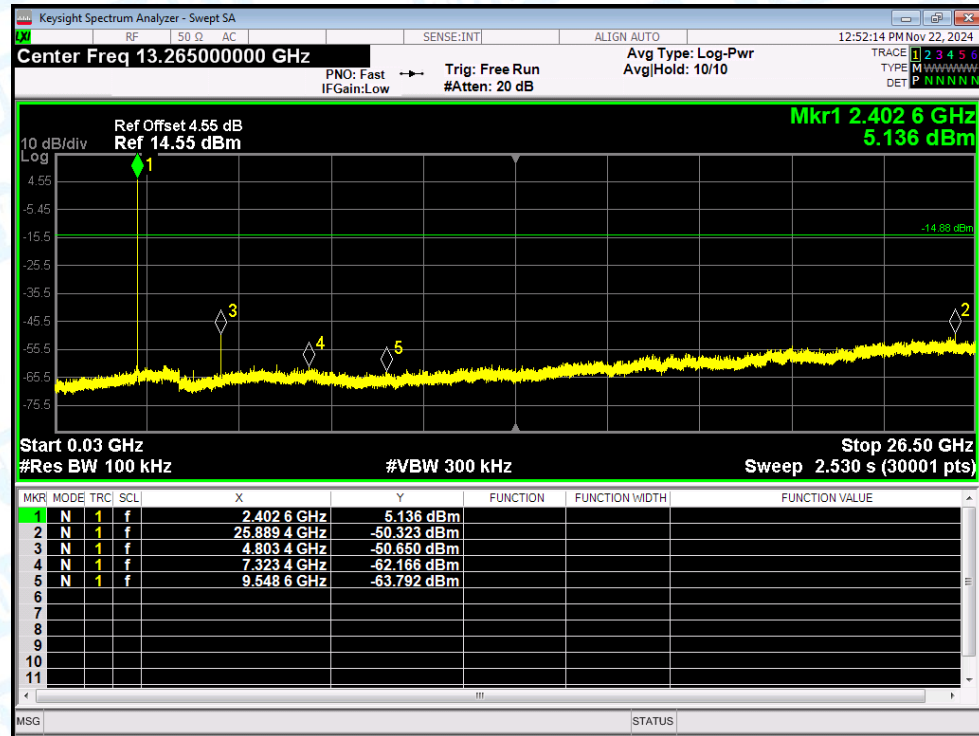
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-55.44	-20	Pass
NVNT	1-DH1	2441	Ant1	-56.22	-20	Pass
NVNT	1-DH1	2480	Ant1	-54.31	-20	Pass
NVNT	2-DH1	2402	Ant1	-54.38	-20	Pass
NVNT	2-DH1	2441	Ant1	-54.84	-20	Pass
NVNT	2-DH1	2480	Ant1	-55.27	-20	Pass
NVNT	3-DH1	2402	Ant1	-55.24	-20	Pass
NVNT	3-DH1	2441	Ant1	-55.16	-20	Pass
NVNT	3-DH1	2480	Ant1	-54.25	-20	Pass

Test Graphs

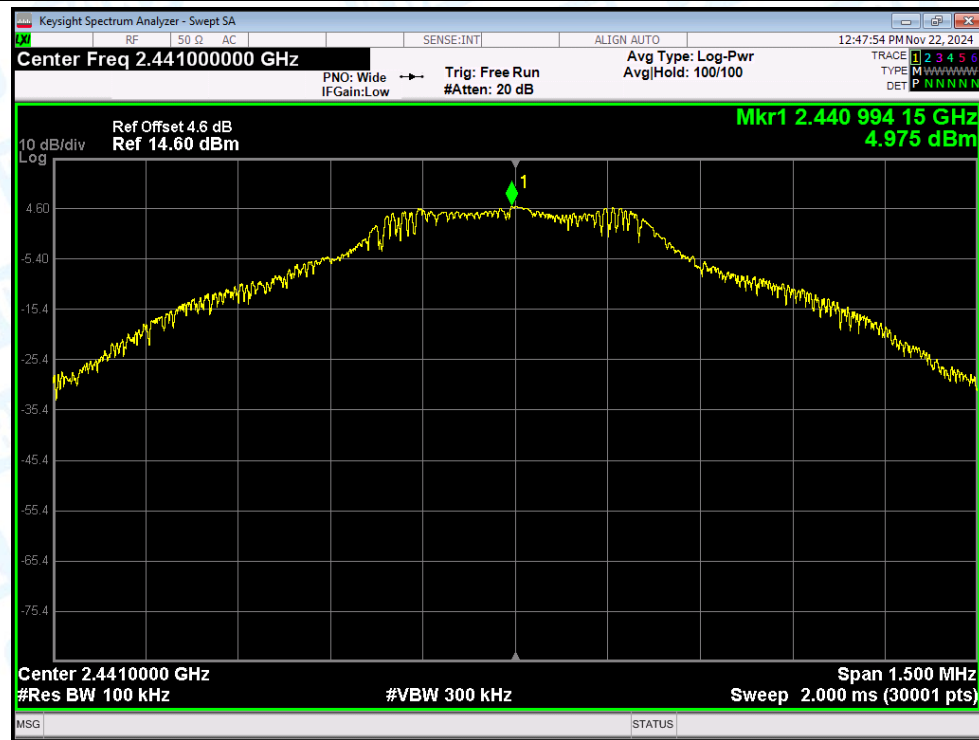
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



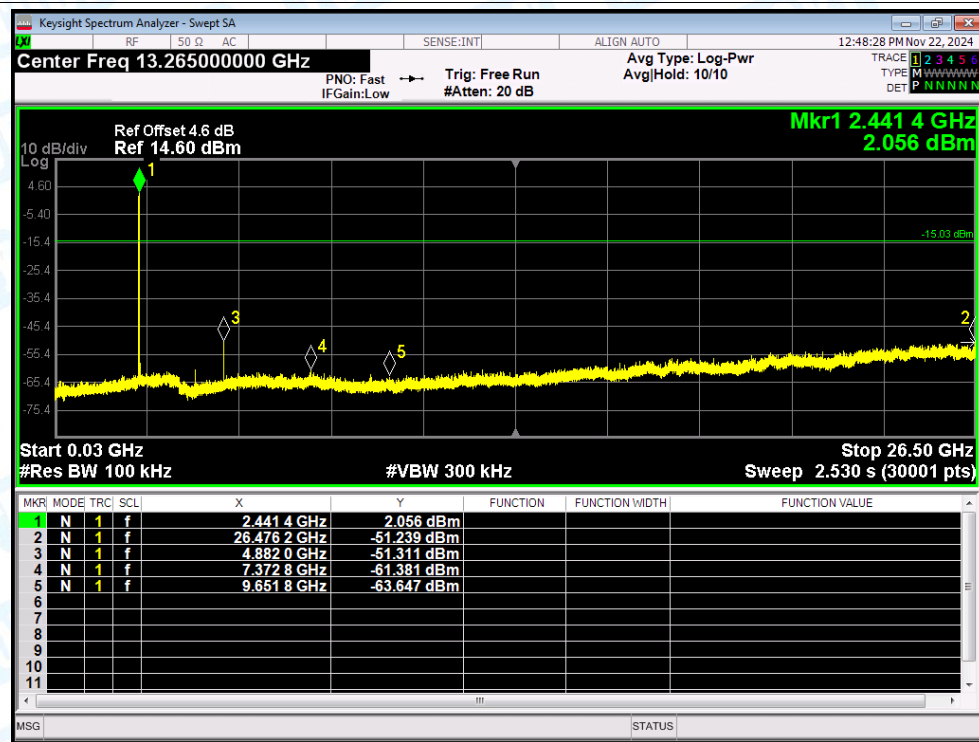
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



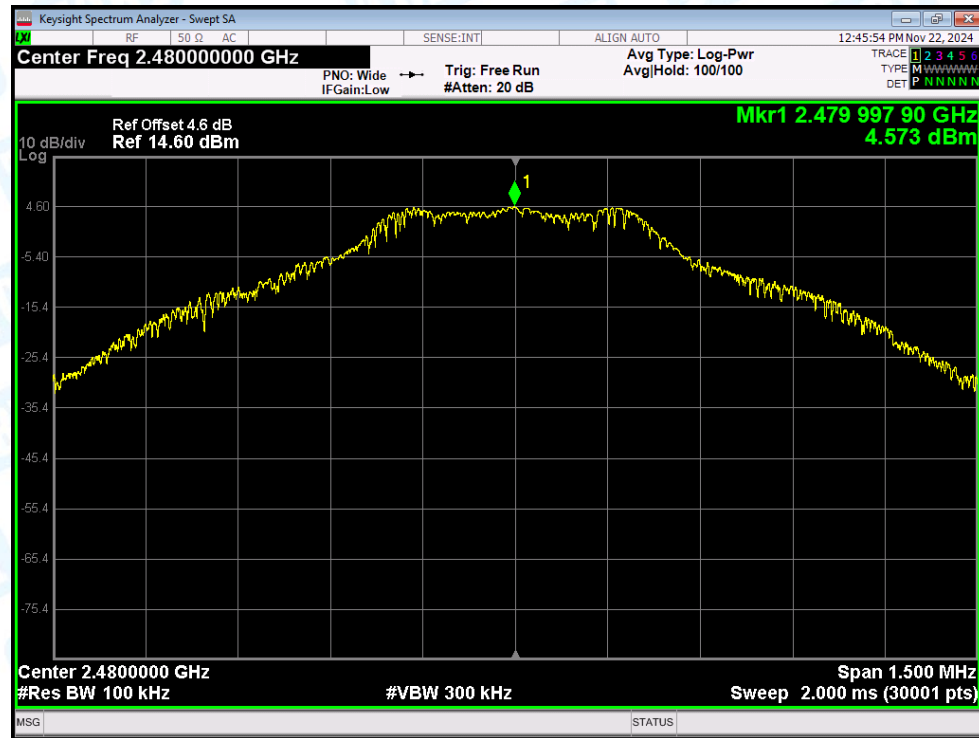
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



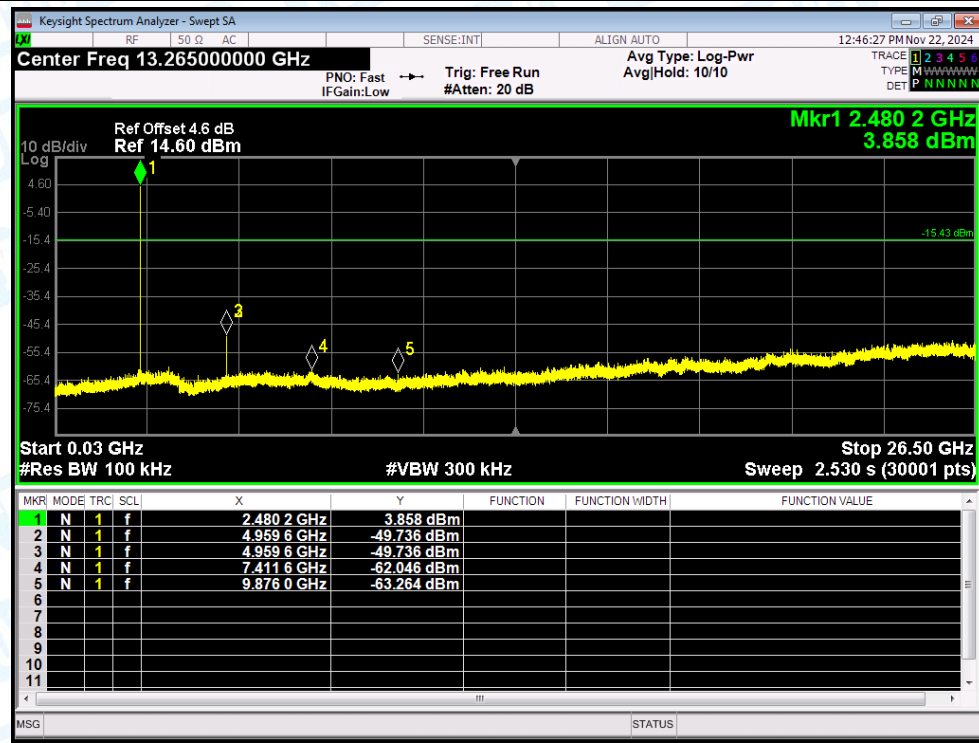
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



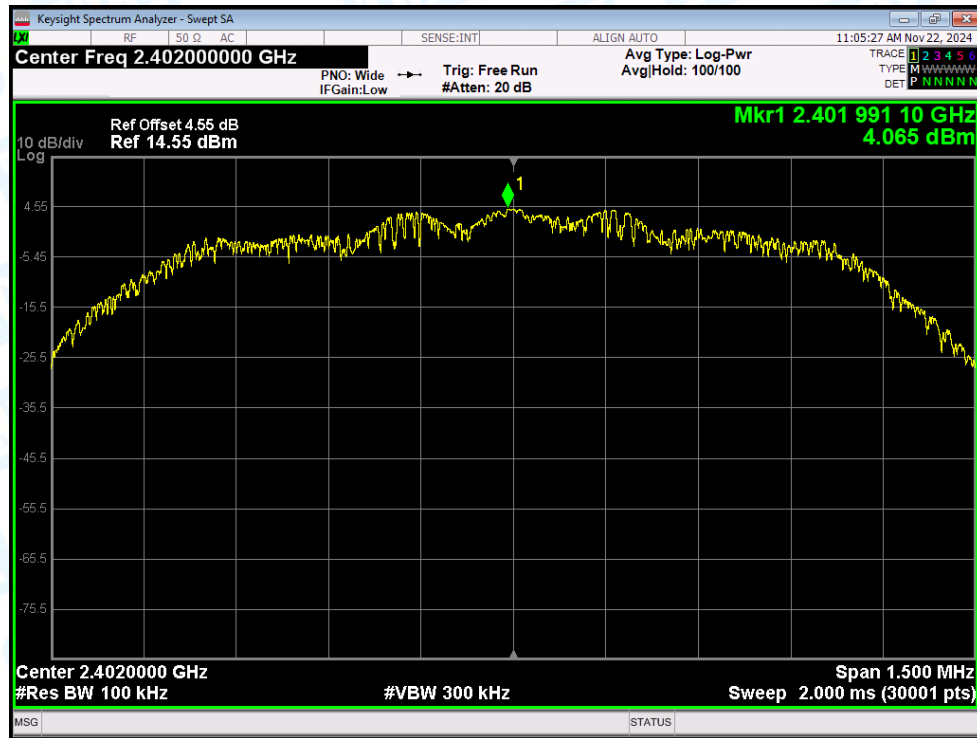
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



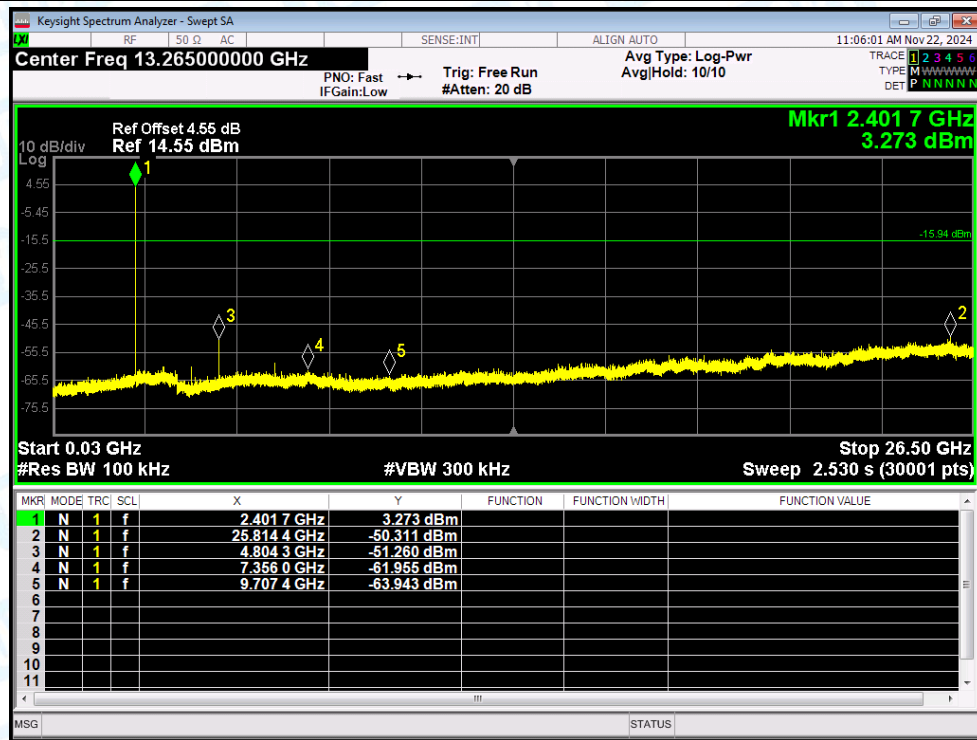
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



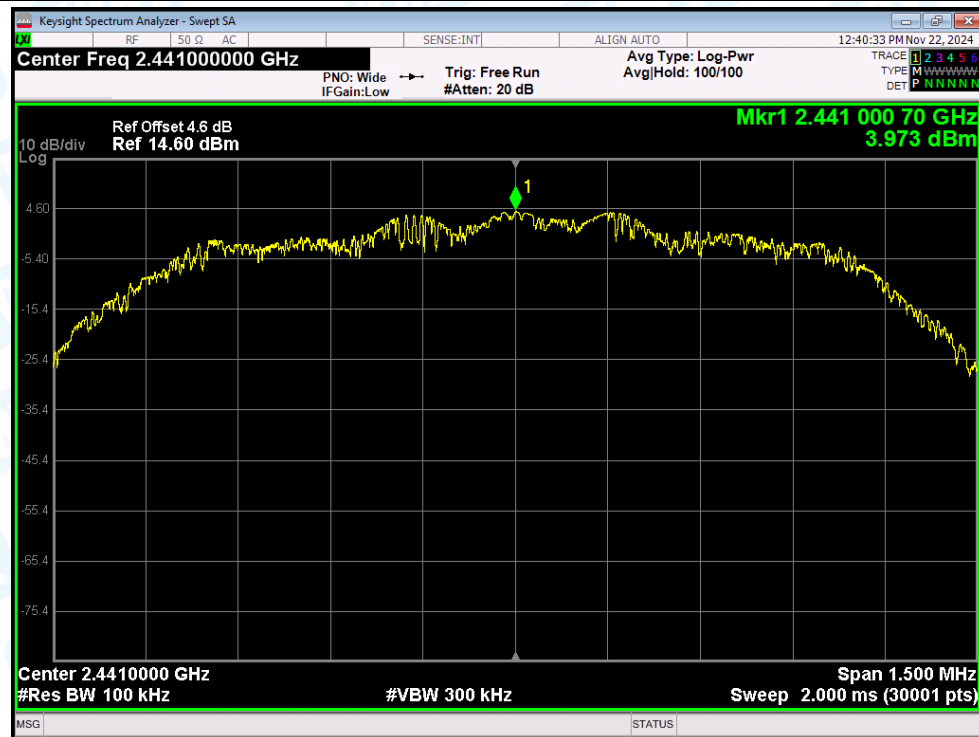
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



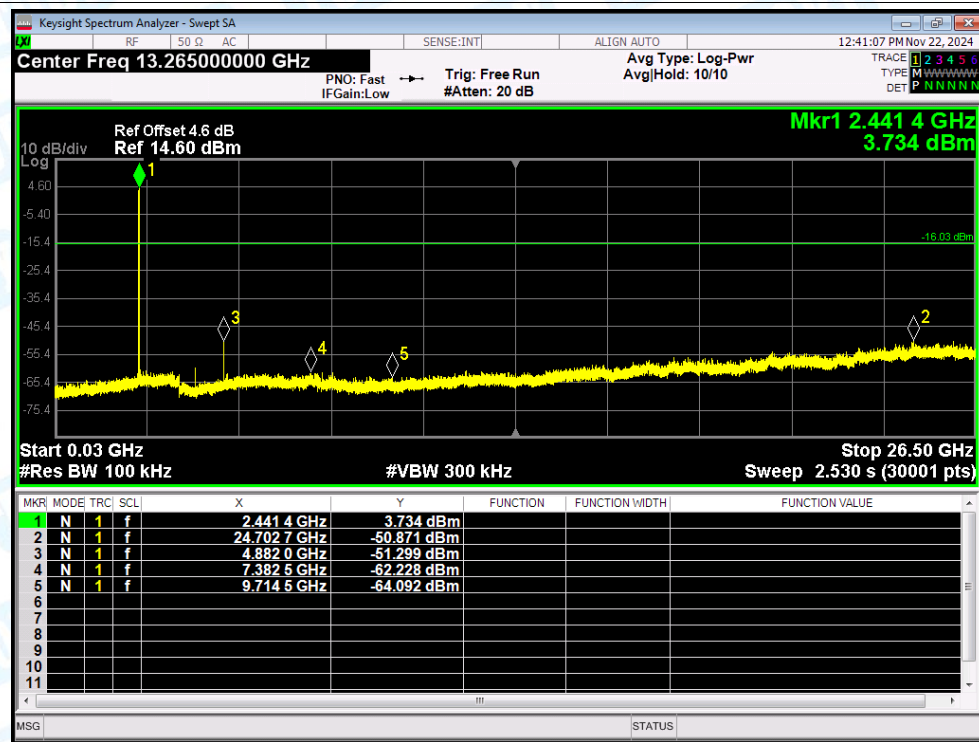
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



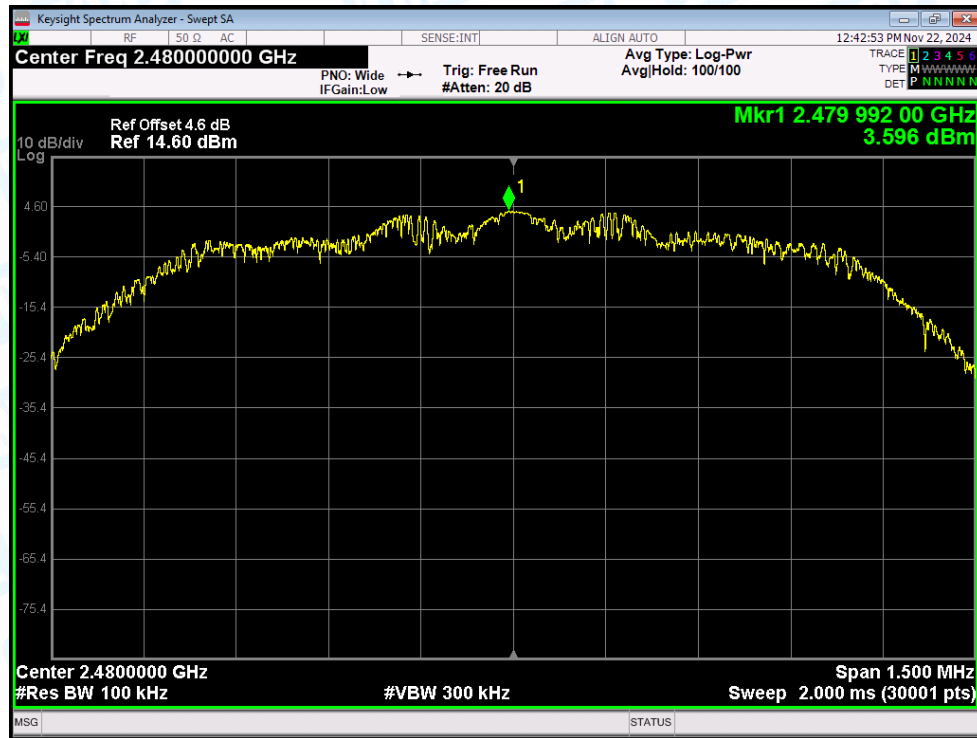
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



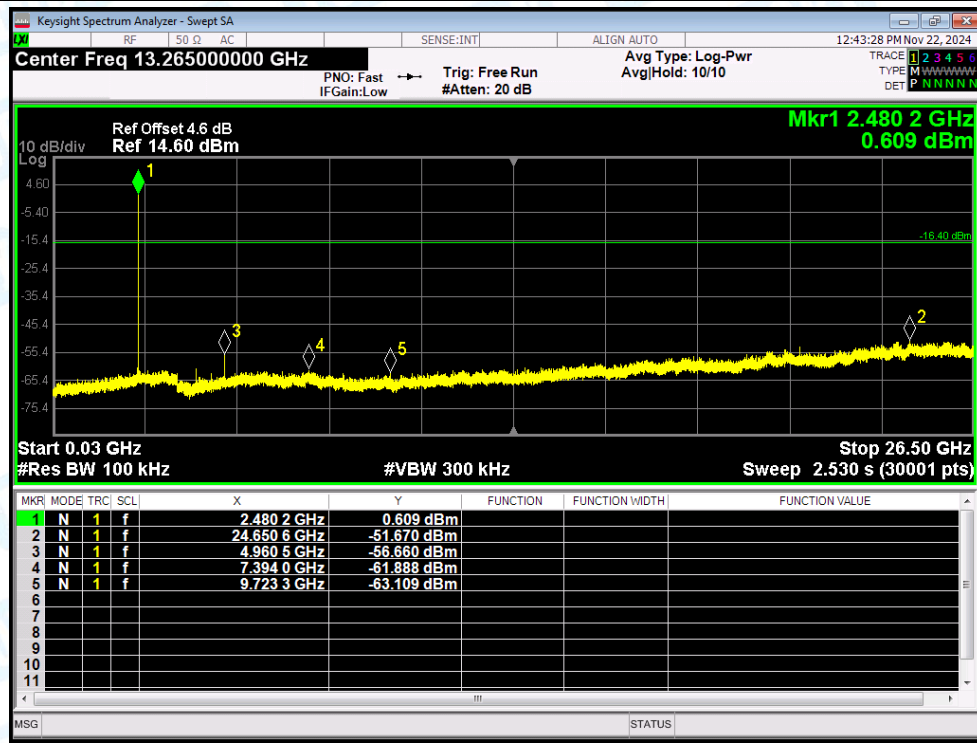
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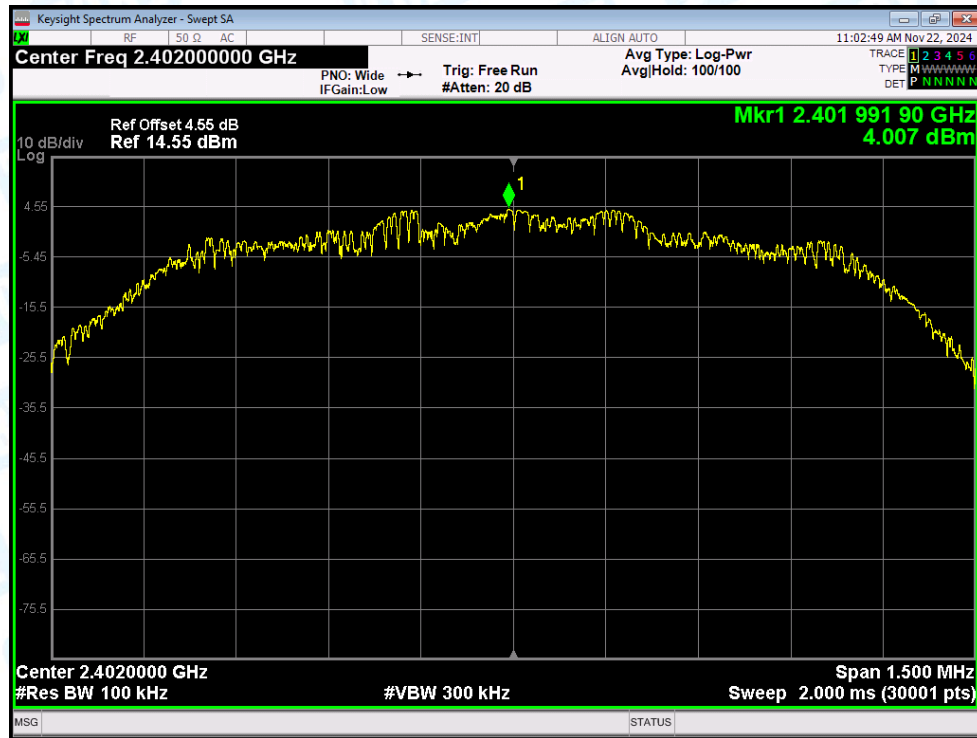
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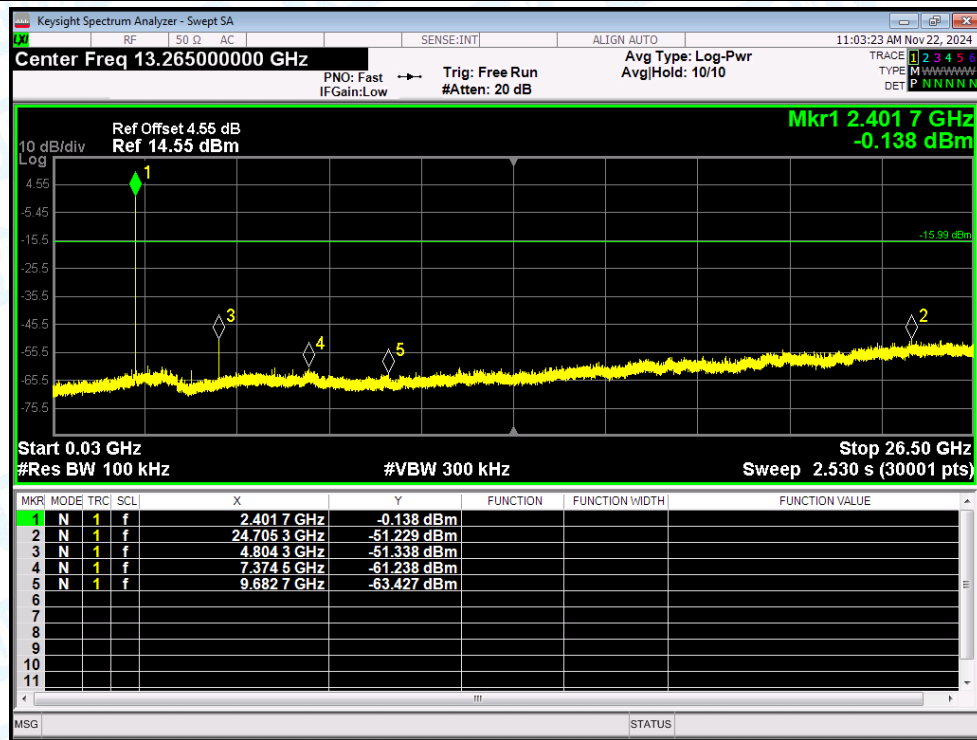
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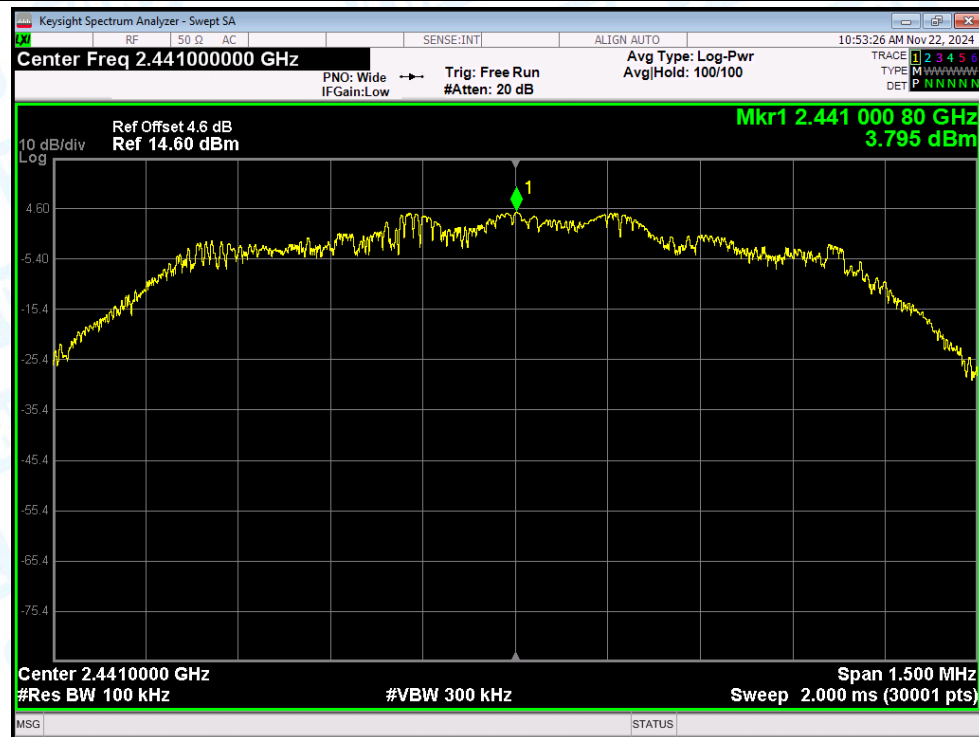
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



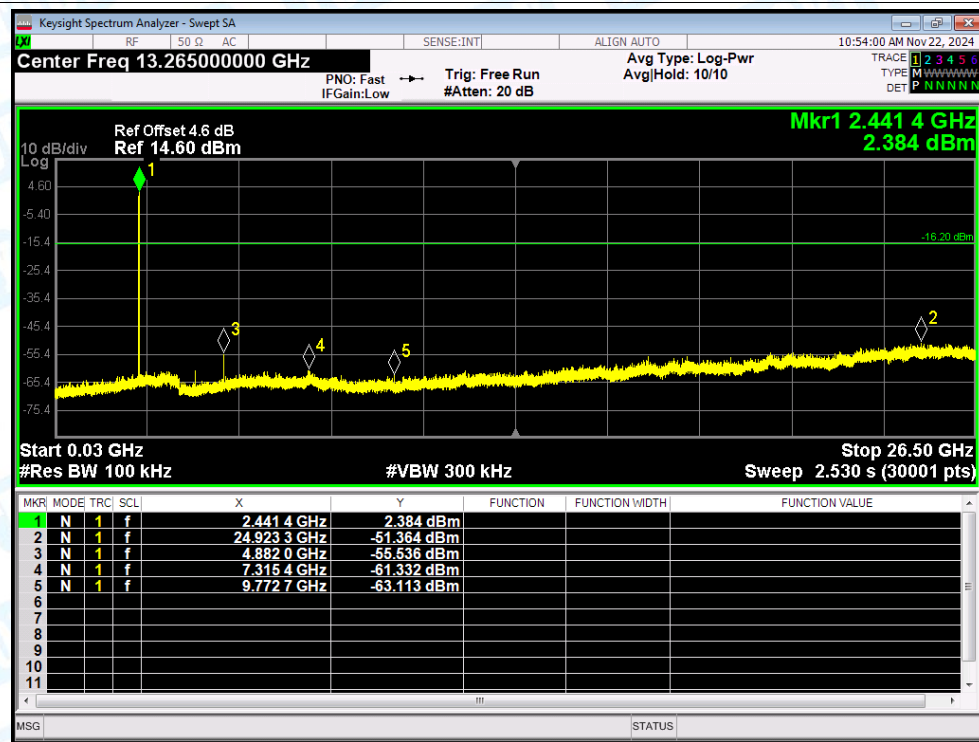
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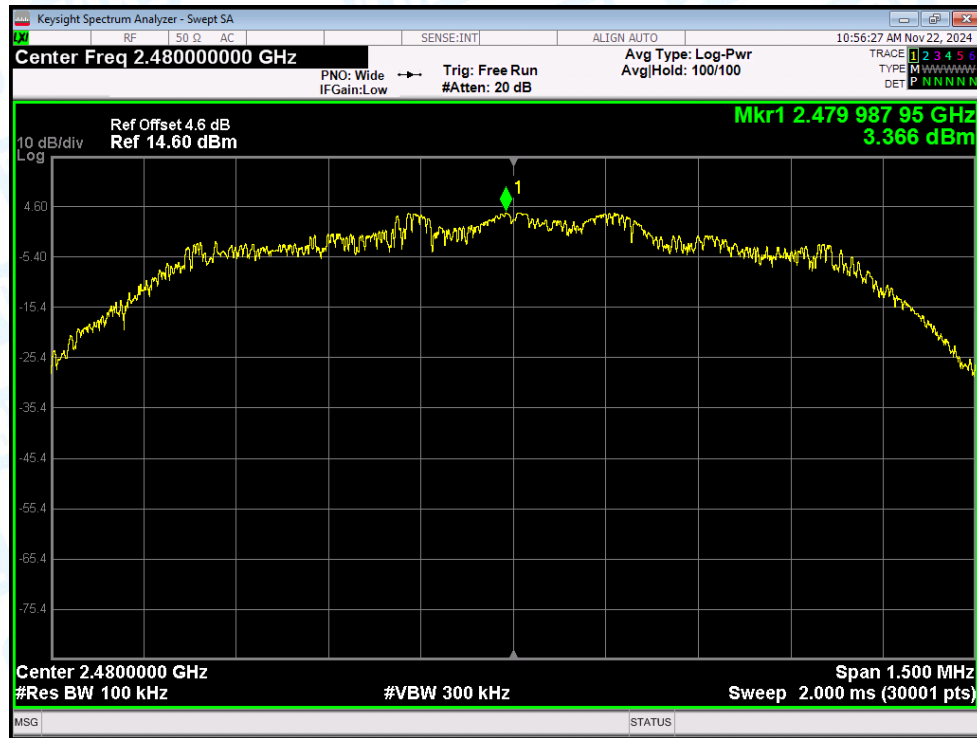
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



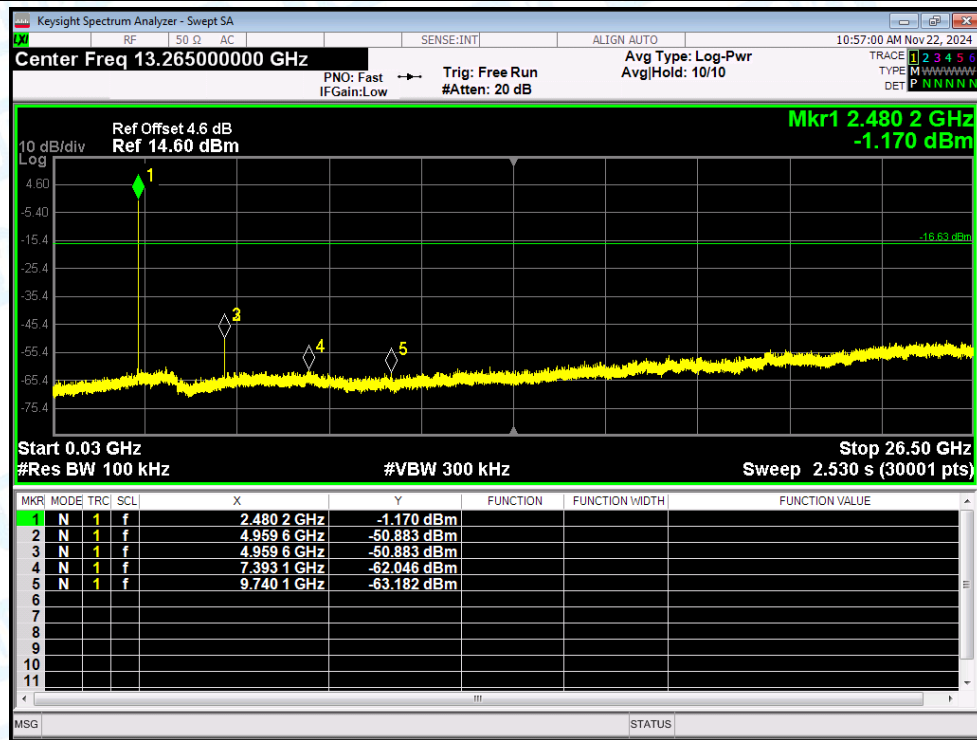
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

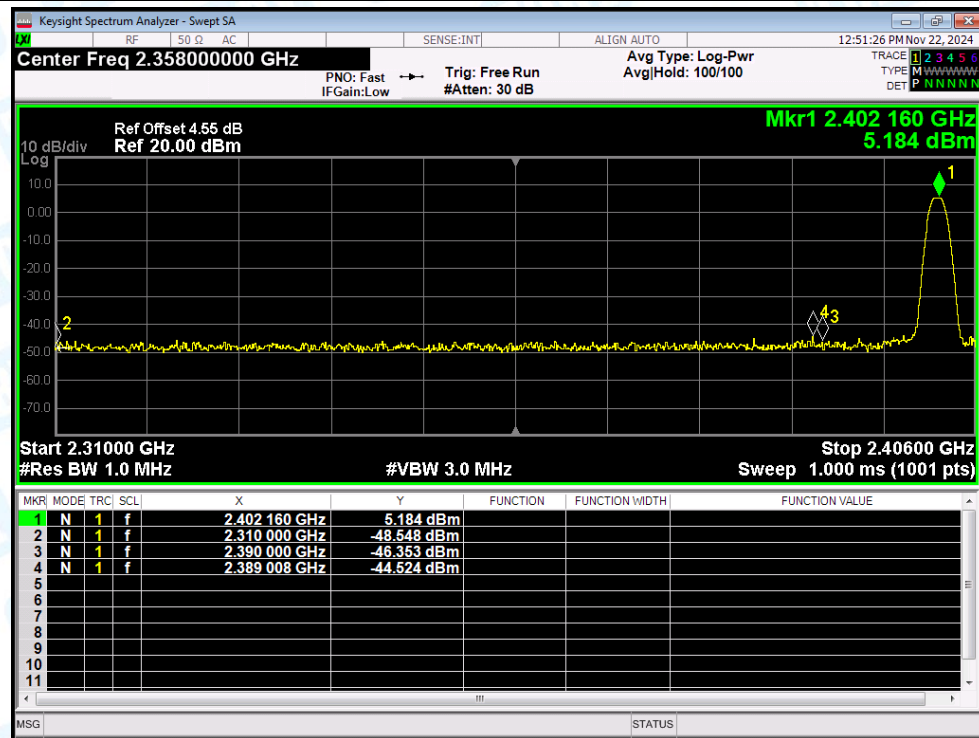


8. Restrict Band

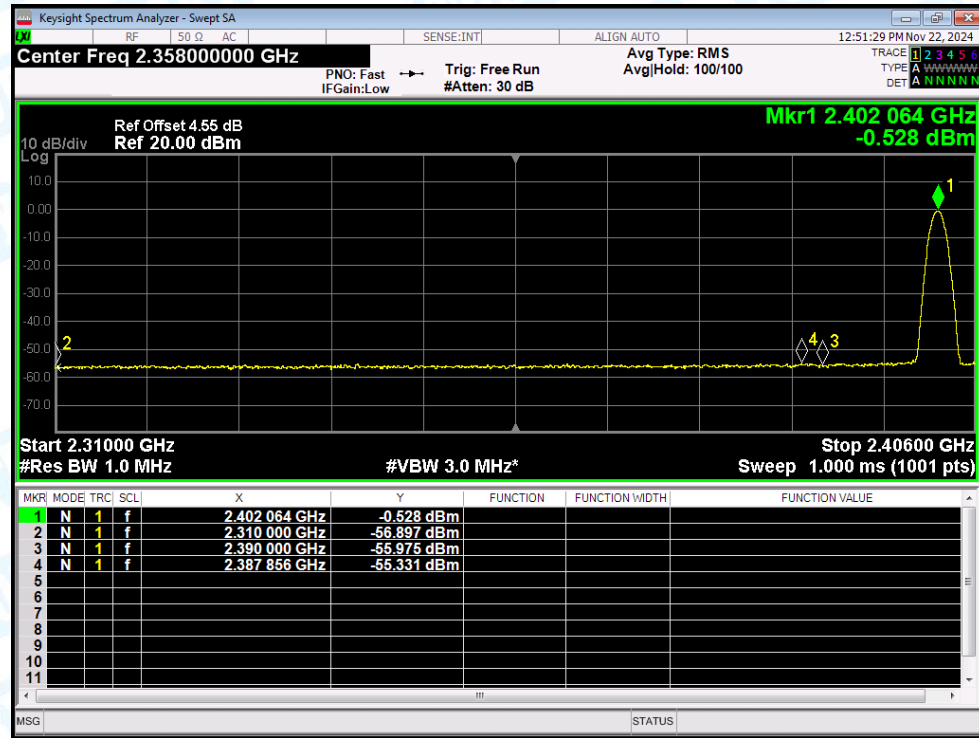
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-48.55	2	-	48.71	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.9	2	5.07	45.43	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2389.008	-44.52	2	-	52.74	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2387.856	-55.33	2	5.07	47	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-46.35	2	-	50.91	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-55.98	2	5.07	46.35	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-46.65	2	-	50.61	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-54.93	2	5.07	47.4	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2484.616	-43.35	2	-	53.91	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2488.024	-54.59	2	5.07	47.74	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-48.25	2	-	49.01	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-55.41	2	5.07	46.92	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-48.55	2	-	48.71	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.9	2	4.99	45.35	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2327.664	-44.85	2	-	52.41	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2379.024	-55.26	2	4.99	46.99	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-48.59	2	-	48.67	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-56.4	2	4.99	45.85	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-46.15	2	-	51.11	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-55.21	2	4.99	47.04	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.776	-44.35	2	-	52.91	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2485.456	-54.57	2	4.99	47.68	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-47.82	2	-	49.44	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.47	2	4.99	46.78	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-49.15	2	-	48.11	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.61	2	4.99	45.64	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2331.12	-45.32	2	-	51.94	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2389.776	-55.17	2	4.99	47.08	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-47.77	2	-	49.49	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-55.94	2	4.99	46.31	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-45.43	2	-	51.83	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-54.83	2	5.02	47.45	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2490.424	-44.57	2	-	52.69	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2492.704	-54.26	2	5.02	48.02	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-47.62	2	-	49.64	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.26	2	5.02	47.02	Average	54	Pass

Test Graphs

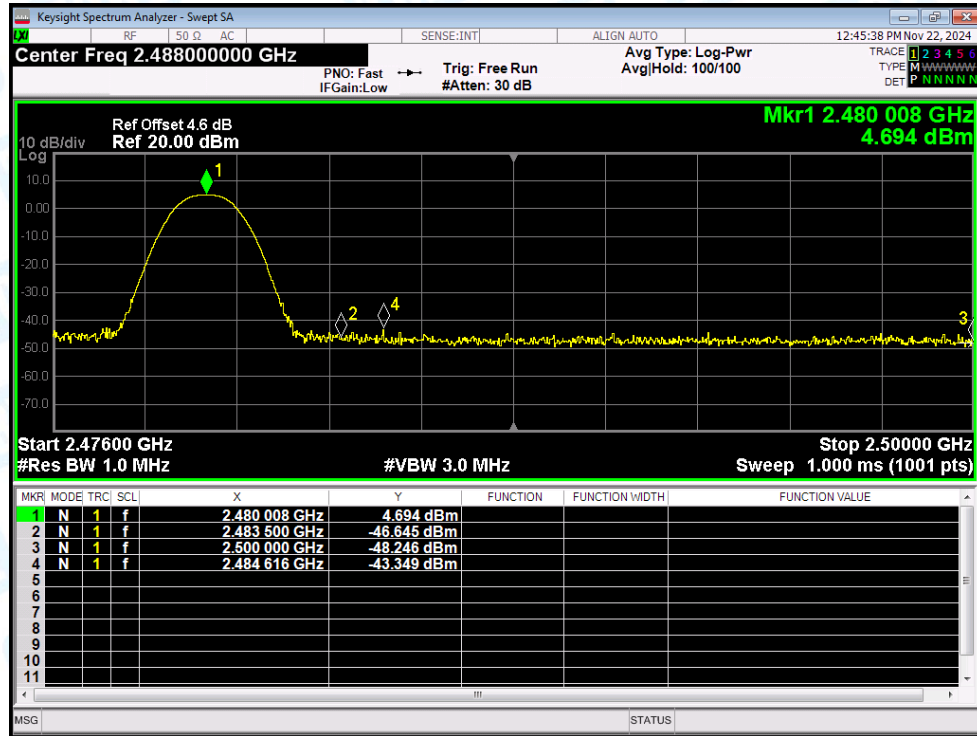
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



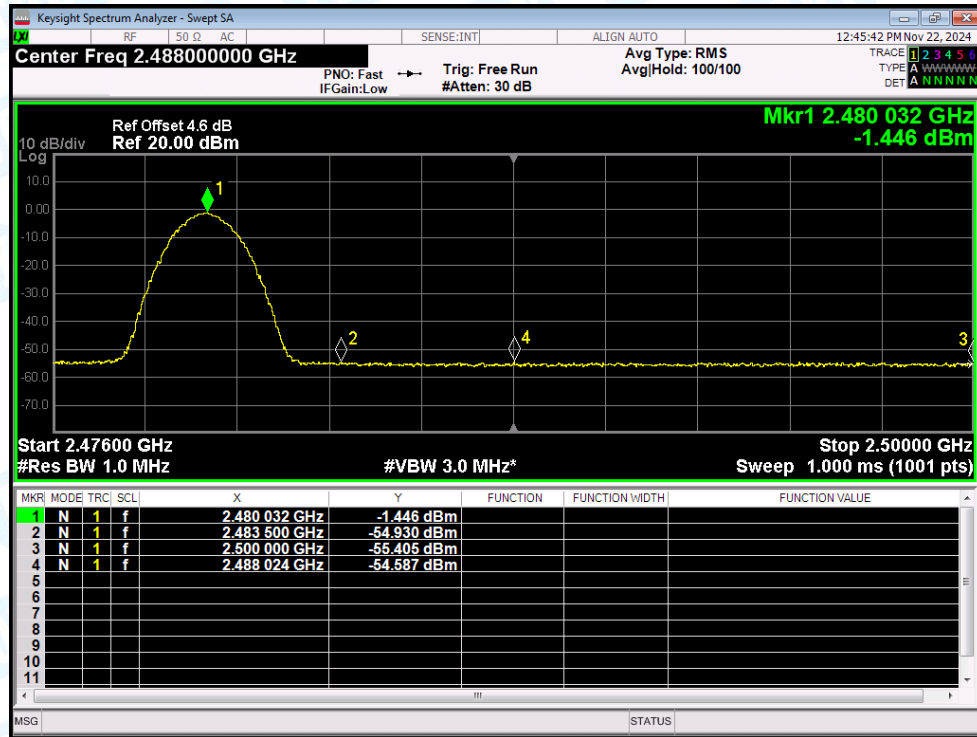
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



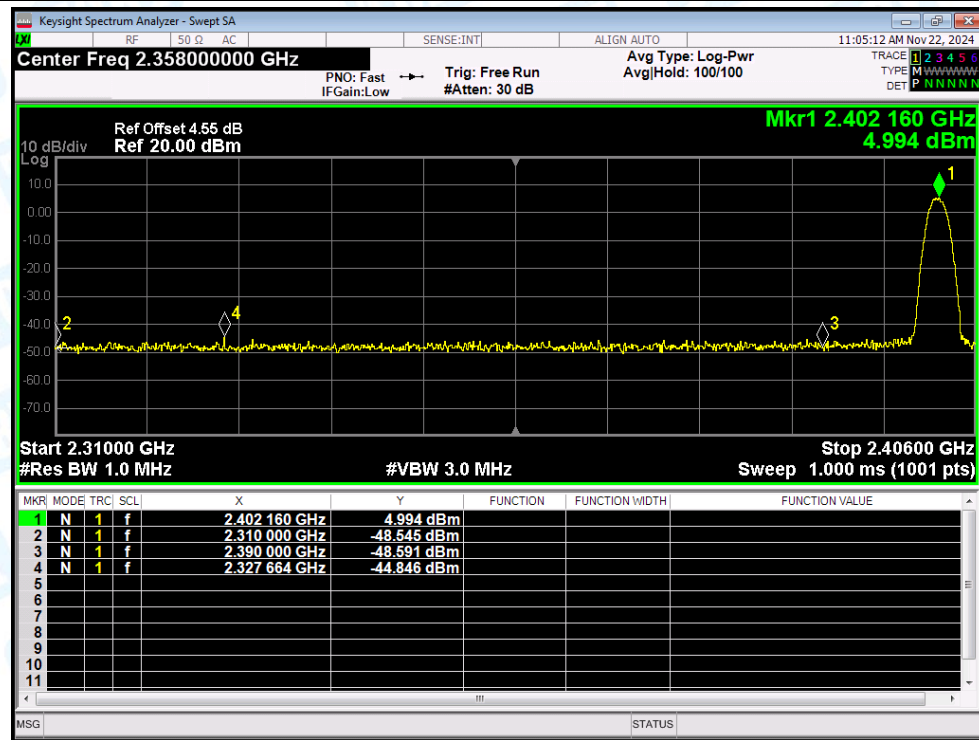
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



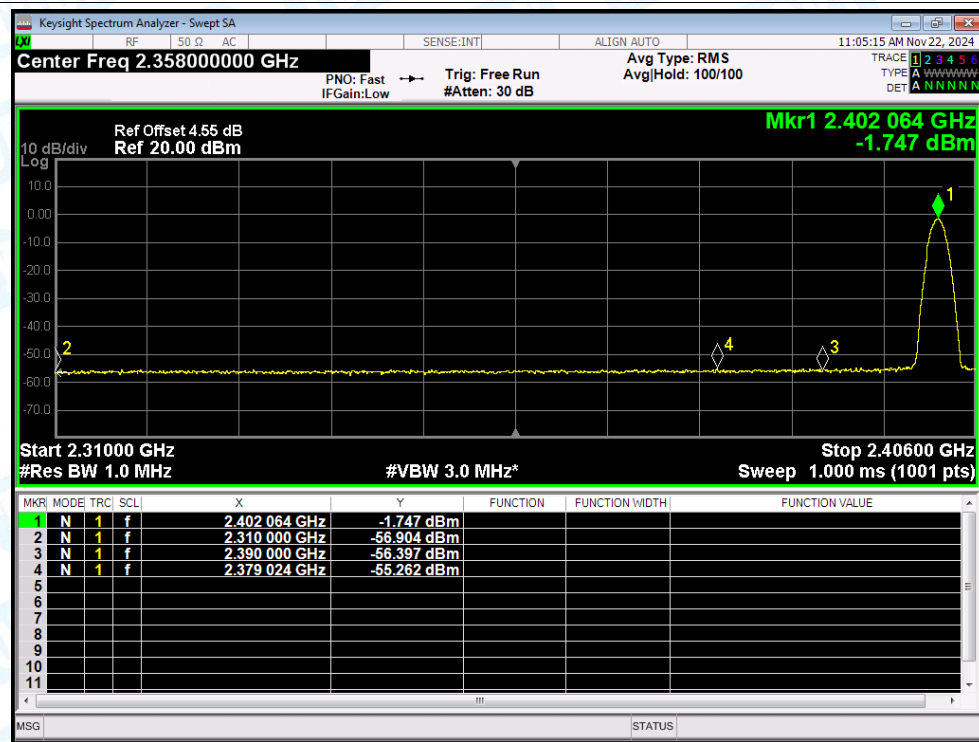
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



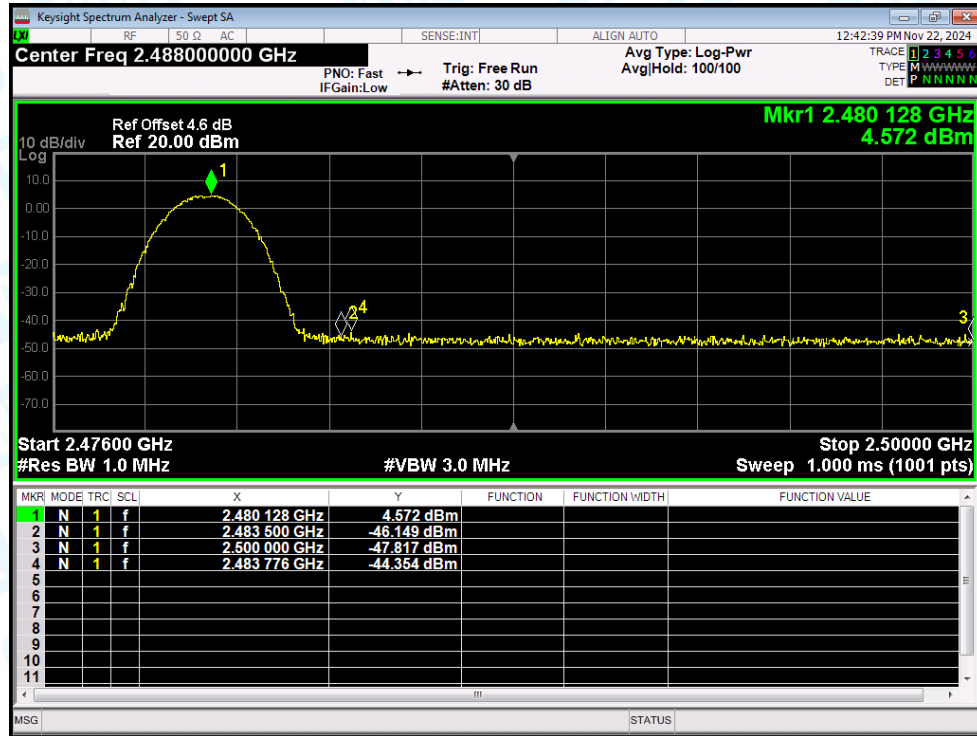
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



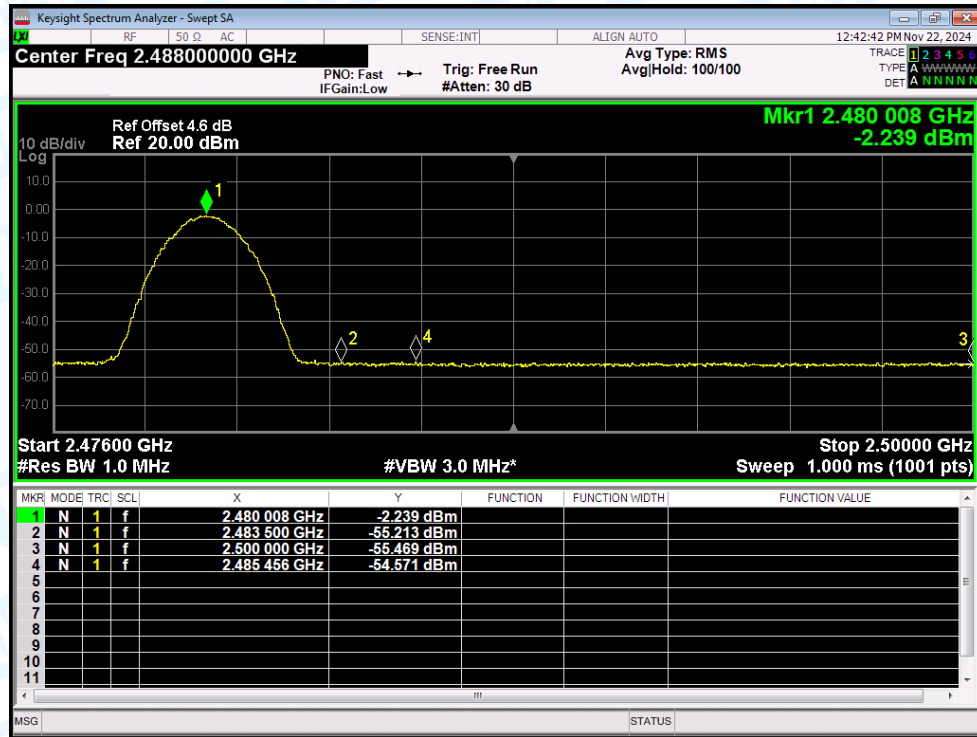
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



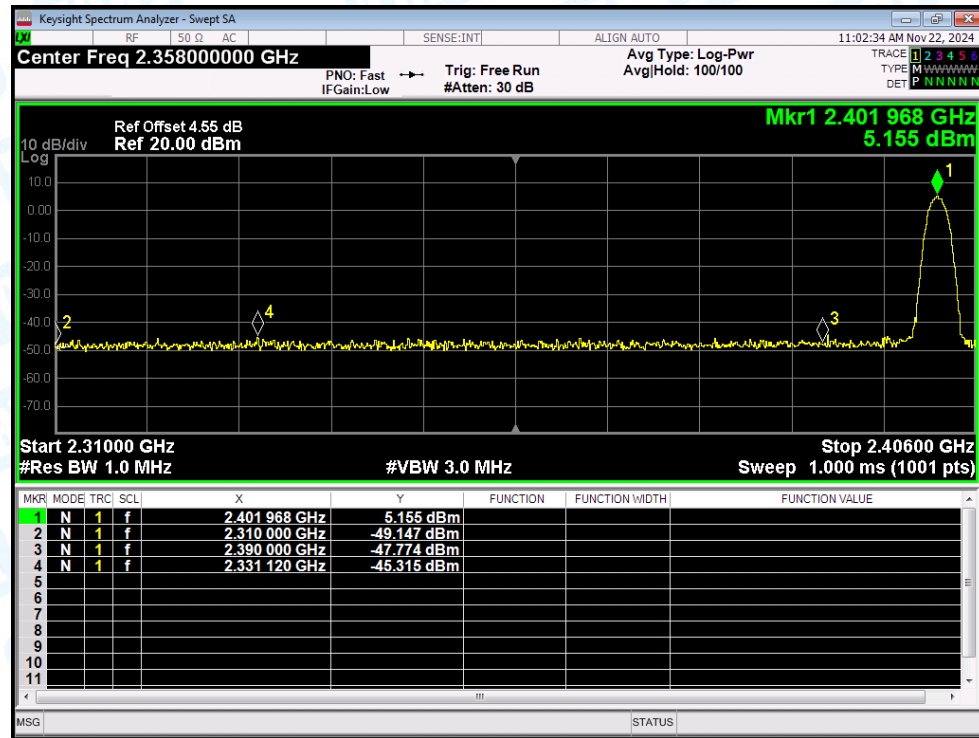
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



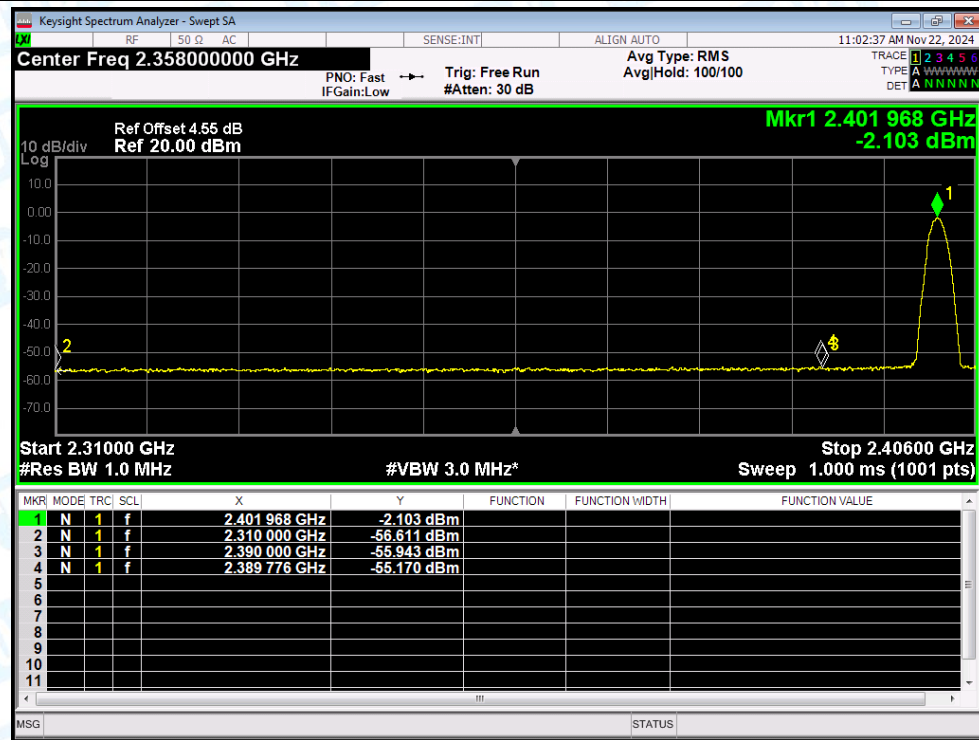
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



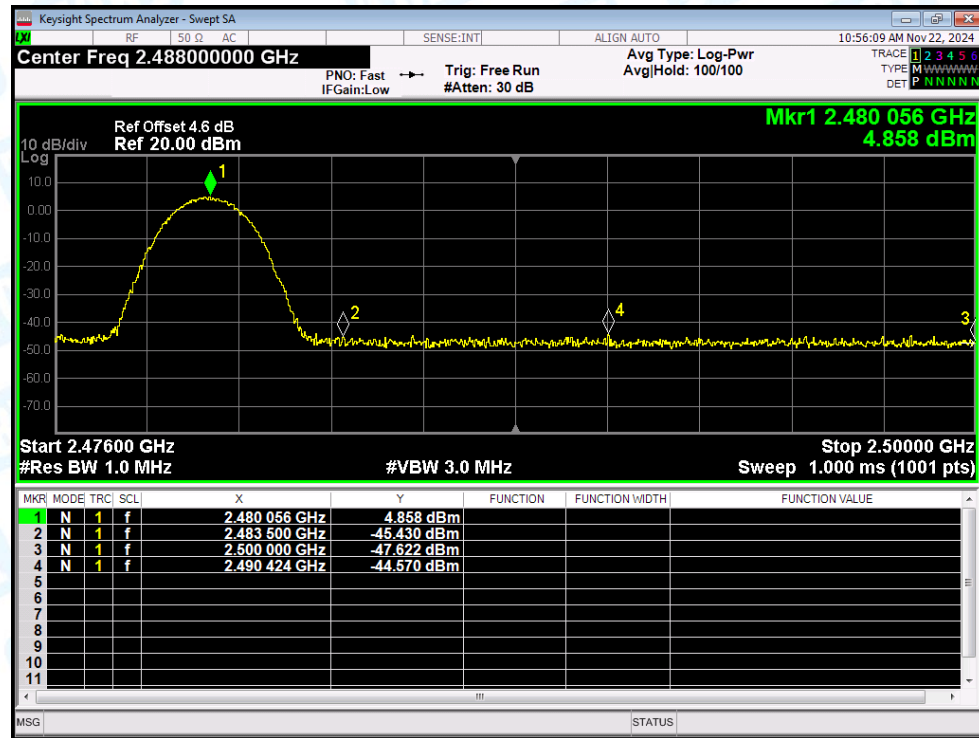
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



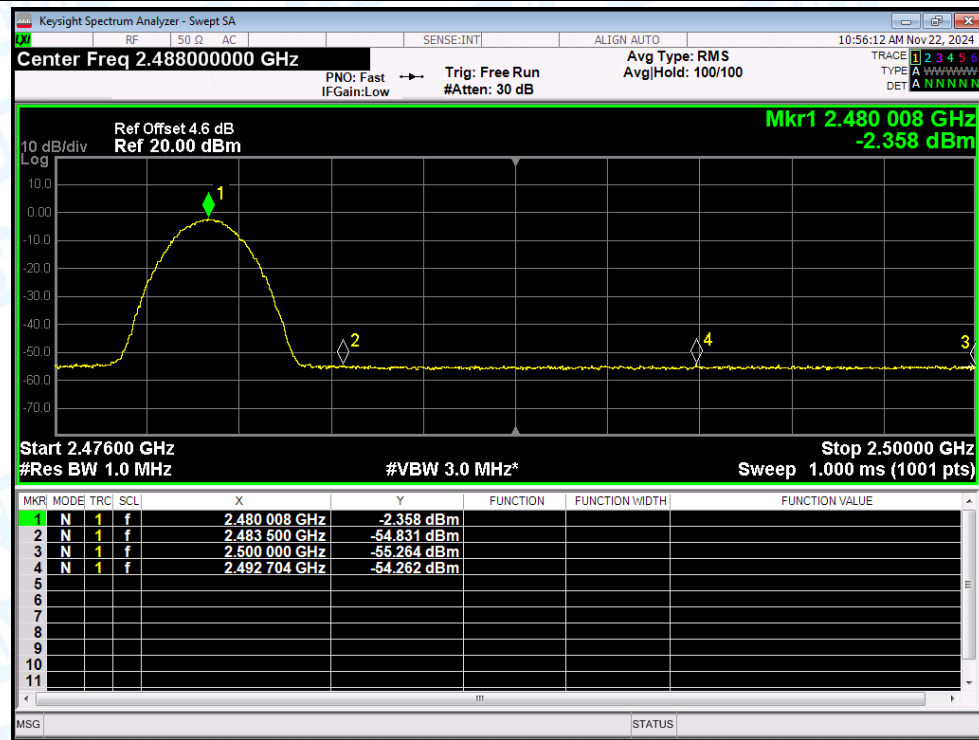
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

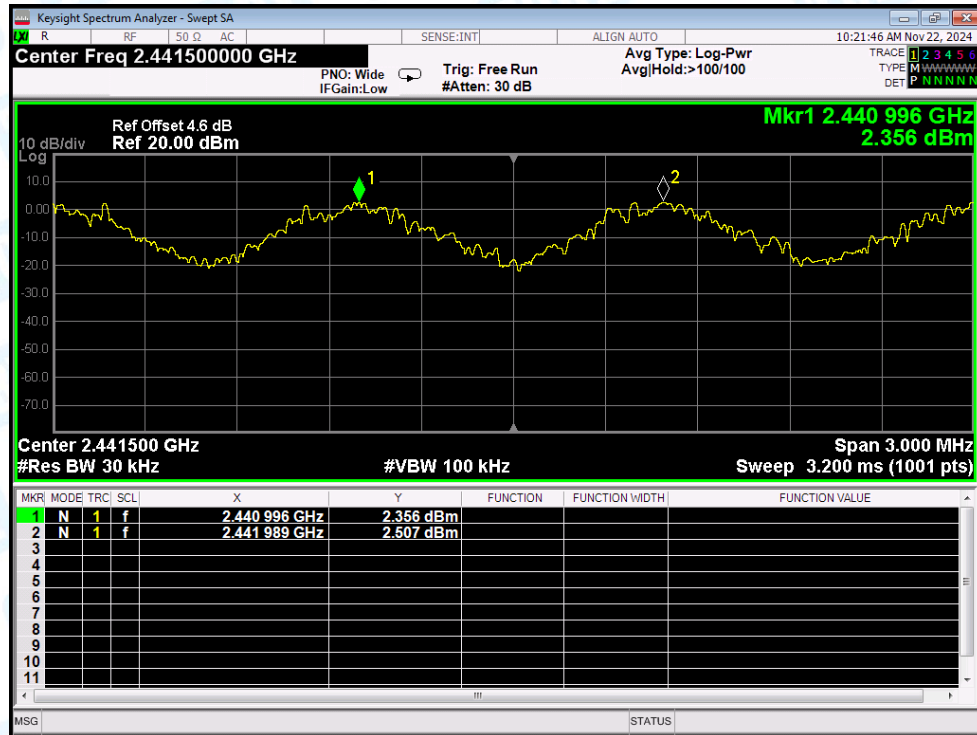


9. Carrier Frequencies Separation

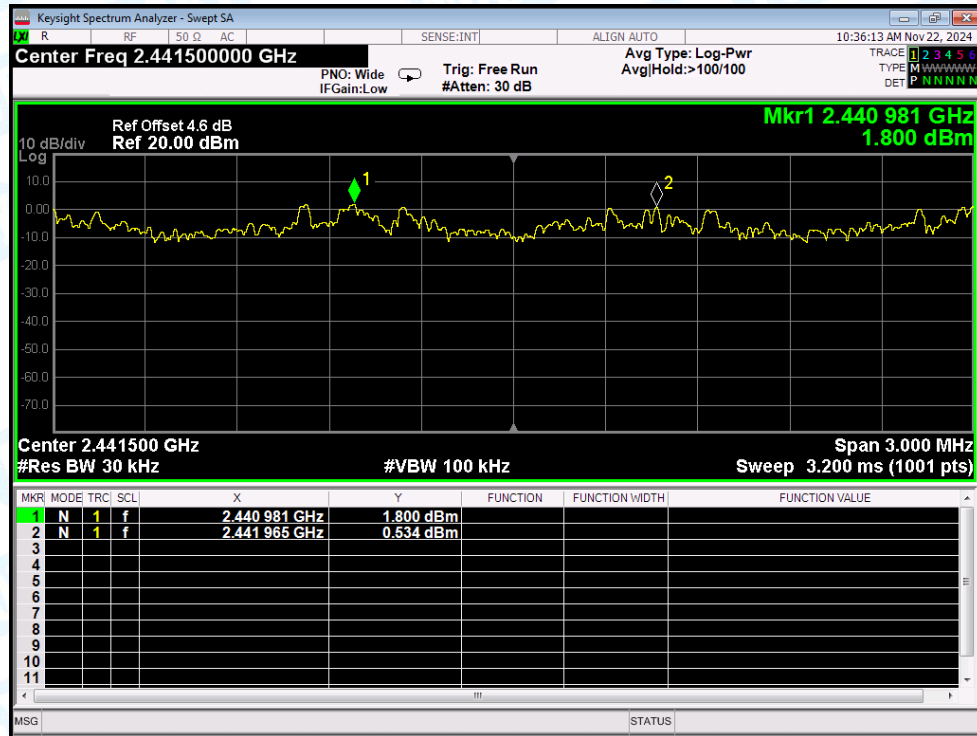
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.996	2441.989	0.993	0.64	Pass
NVNT	2-DH1	Ant1	2440.981	2441.965	0.984	0.913	Pass
NVNT	3-DH1	Ant1	2440.984	2442.145	1.161	0.807	Pass

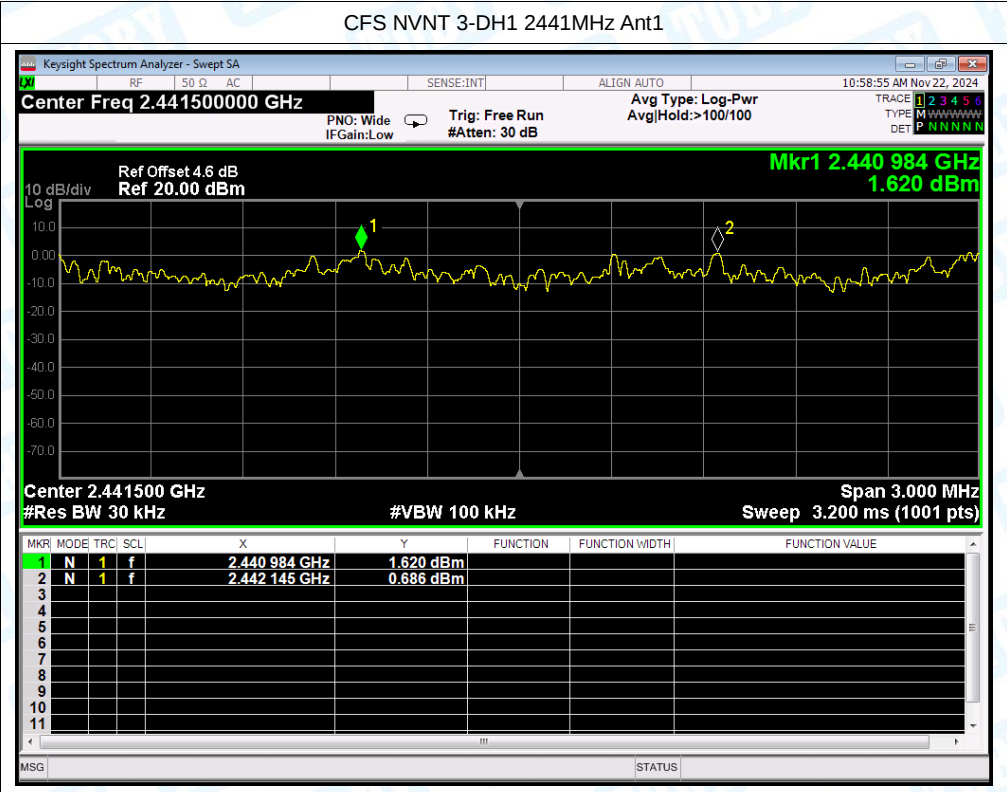
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



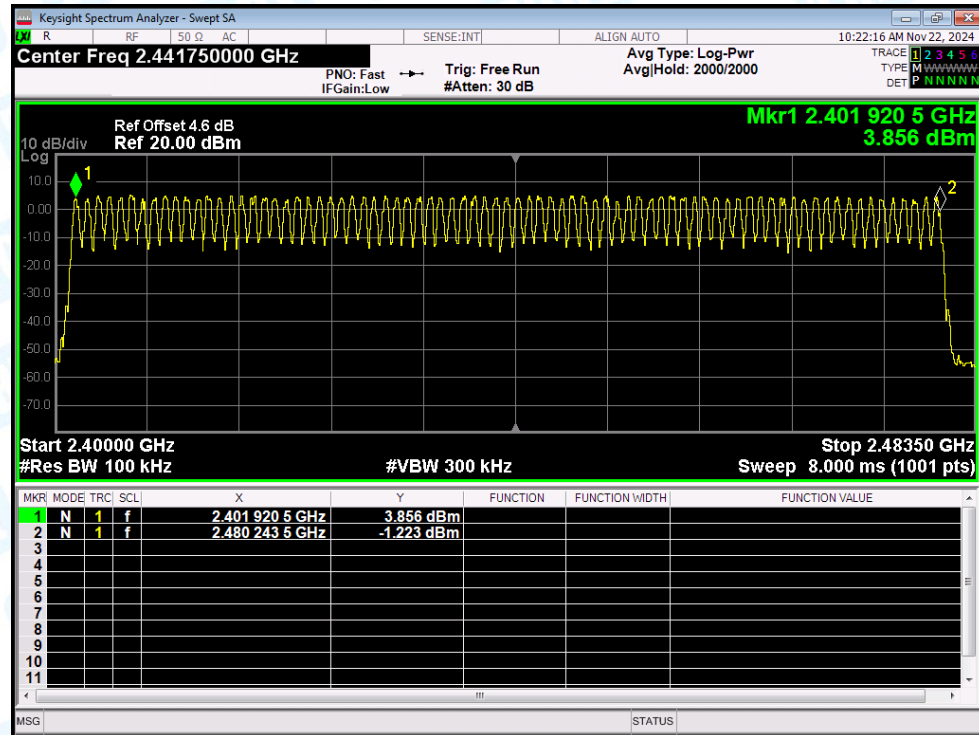


10. Number of Hopping Channel

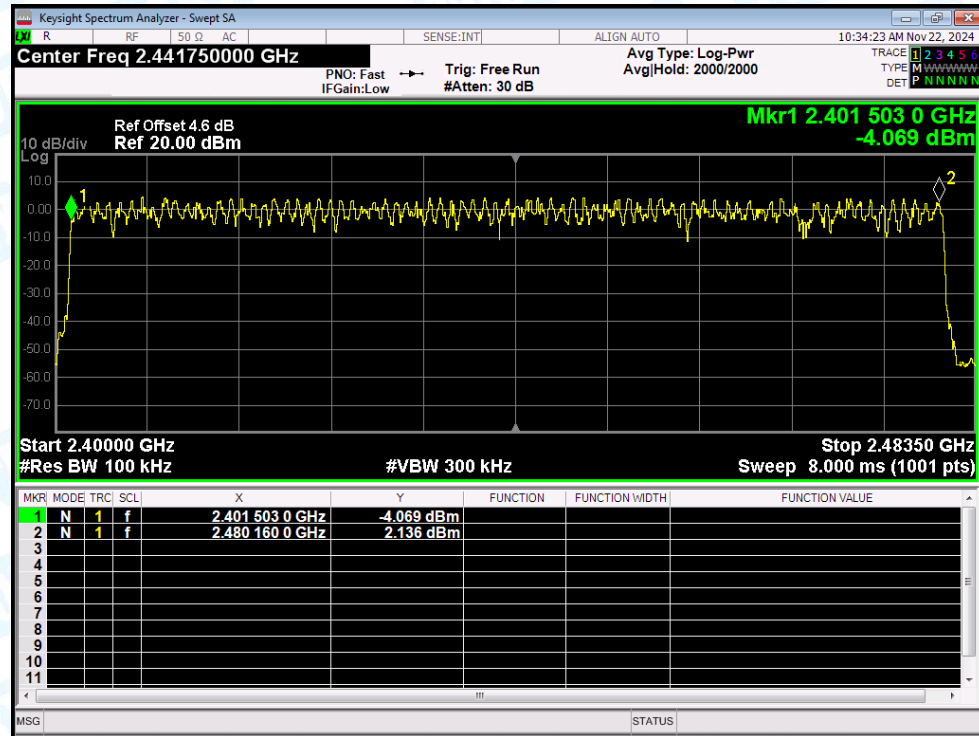
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

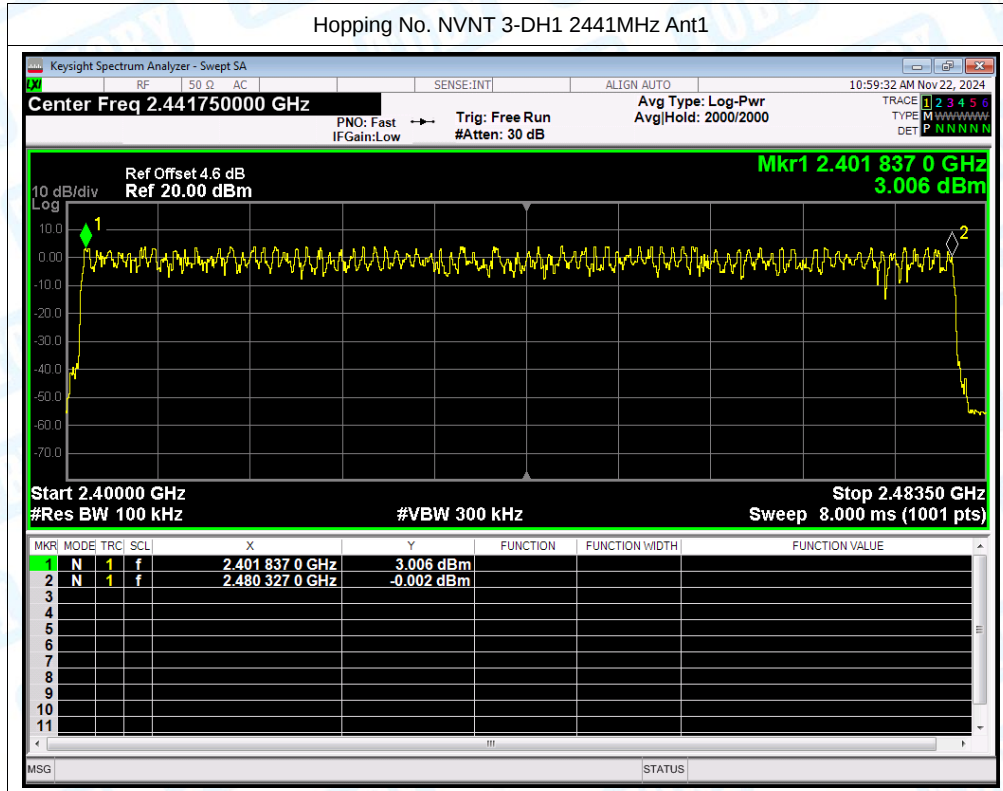
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



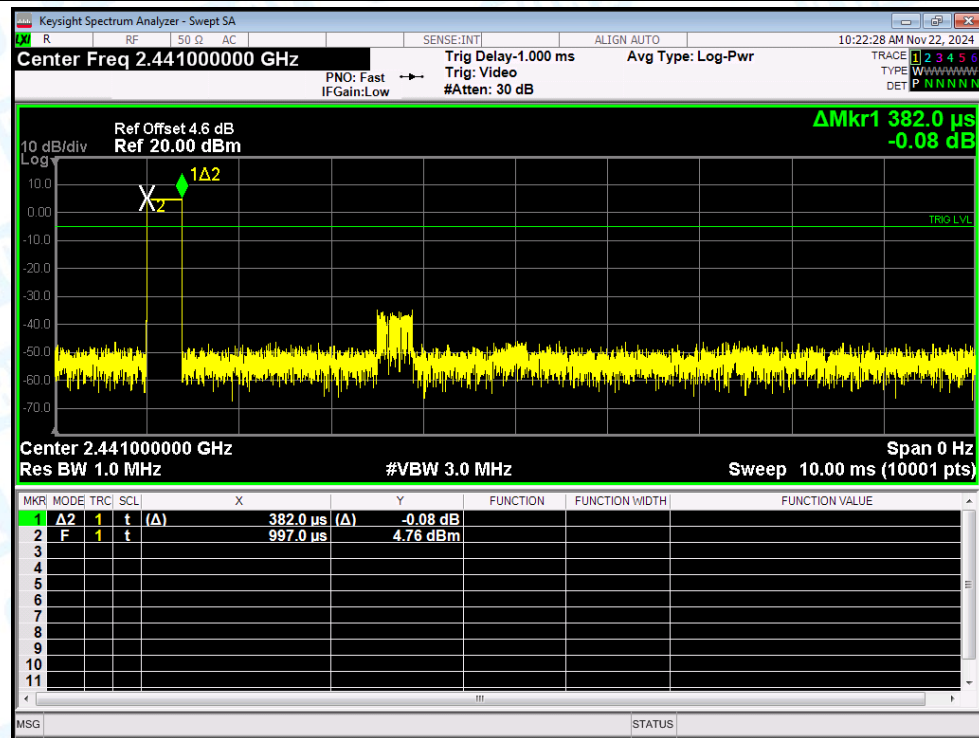


11.Dwell Time

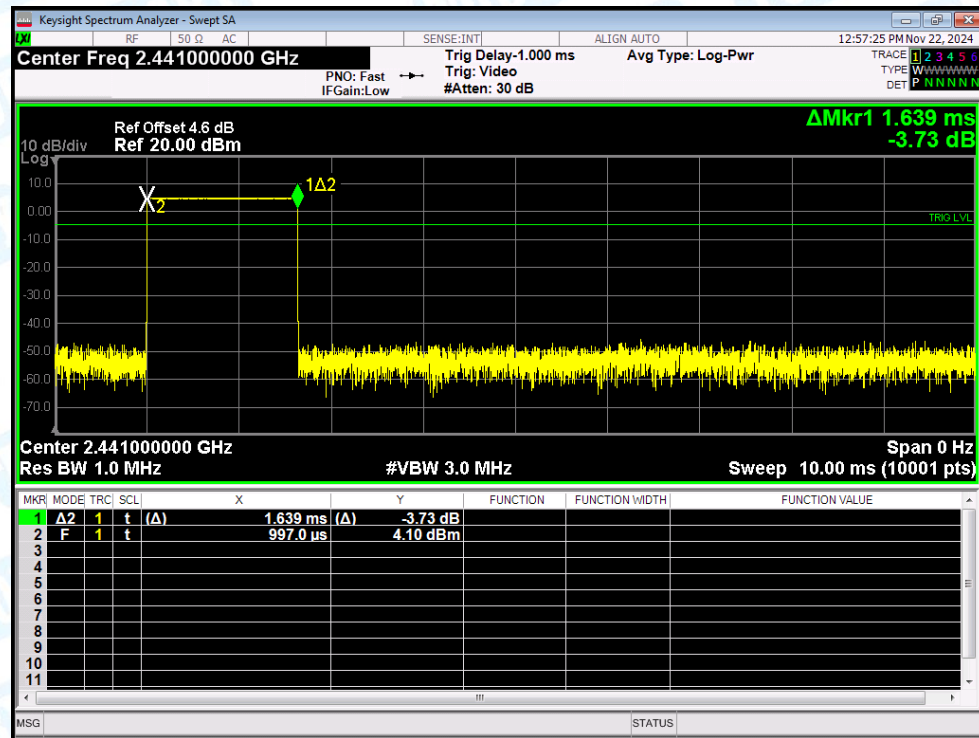
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.382	122.24	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.639	262.24	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.887	307.947	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.391	125.12	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.644	263.04	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.891	308.373	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.391	125.12	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.643	262.88	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.893	308.587	31600	400	Pass

Test Graphs

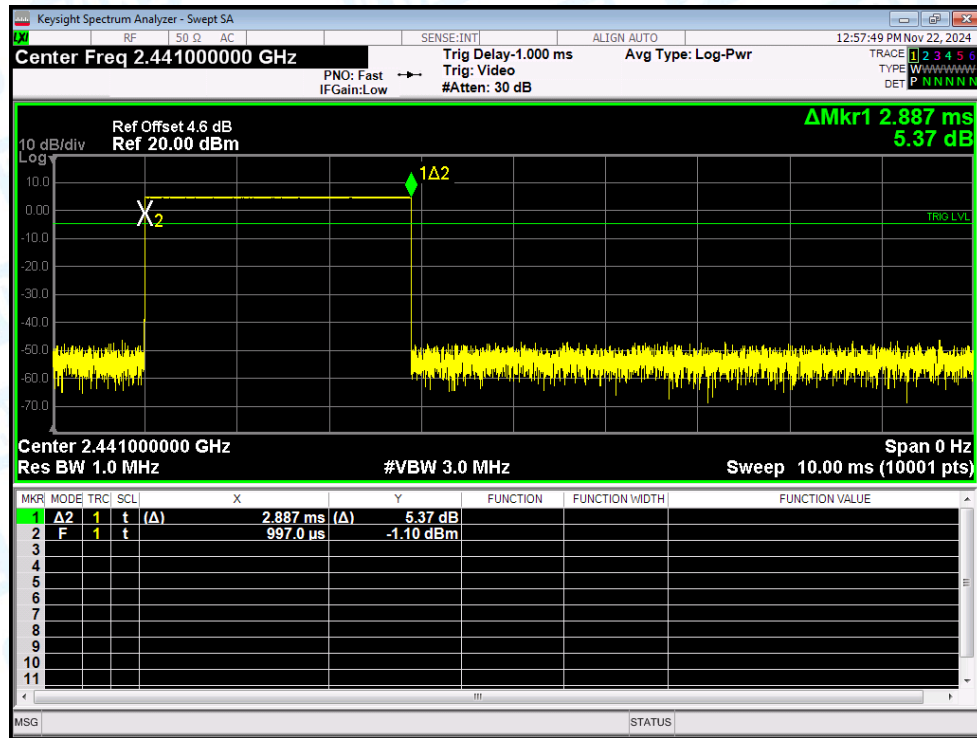
Dwell NVNT 1-DH1 2441MHz Ant1



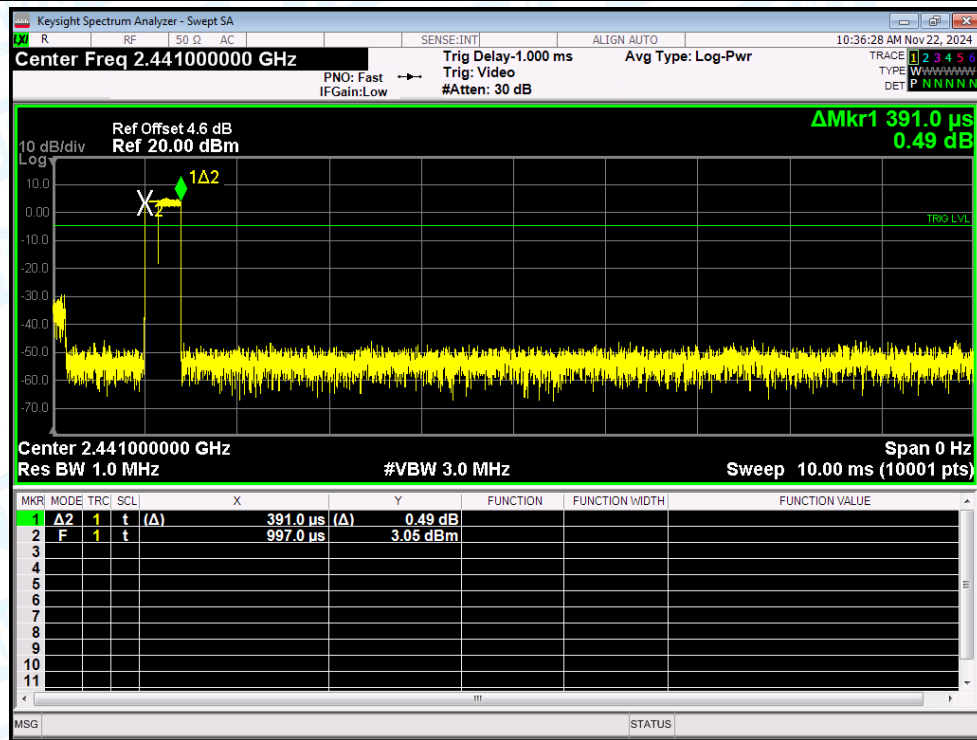
Dwell NVNT 1-DH3 2441MHz Ant1



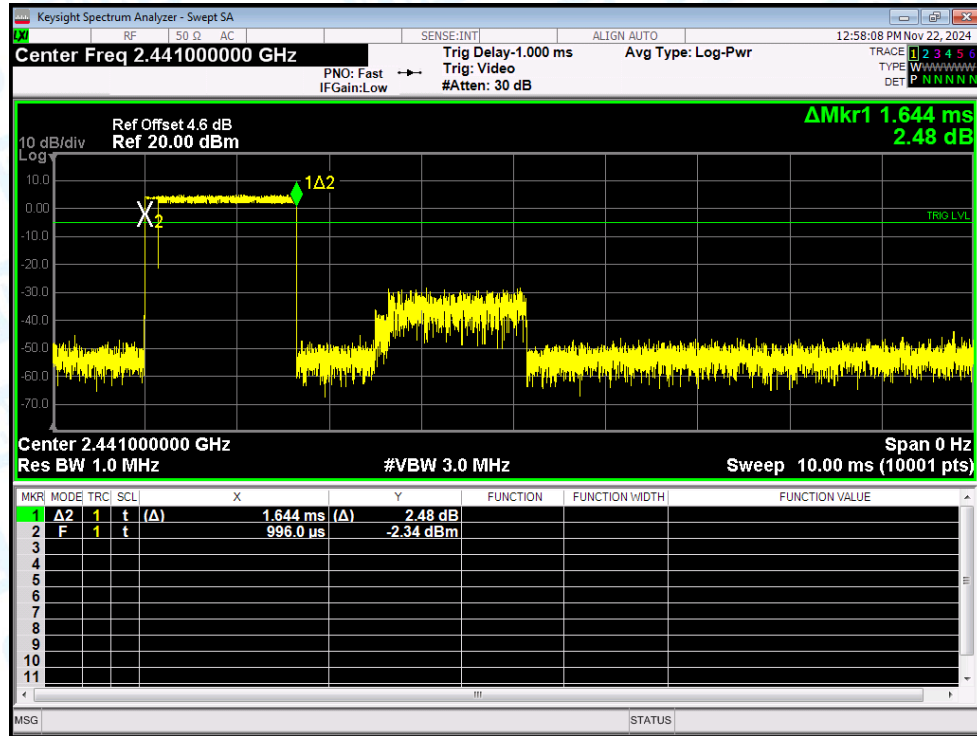
Dwell NVNT 1-DH5 2441MHz Ant1



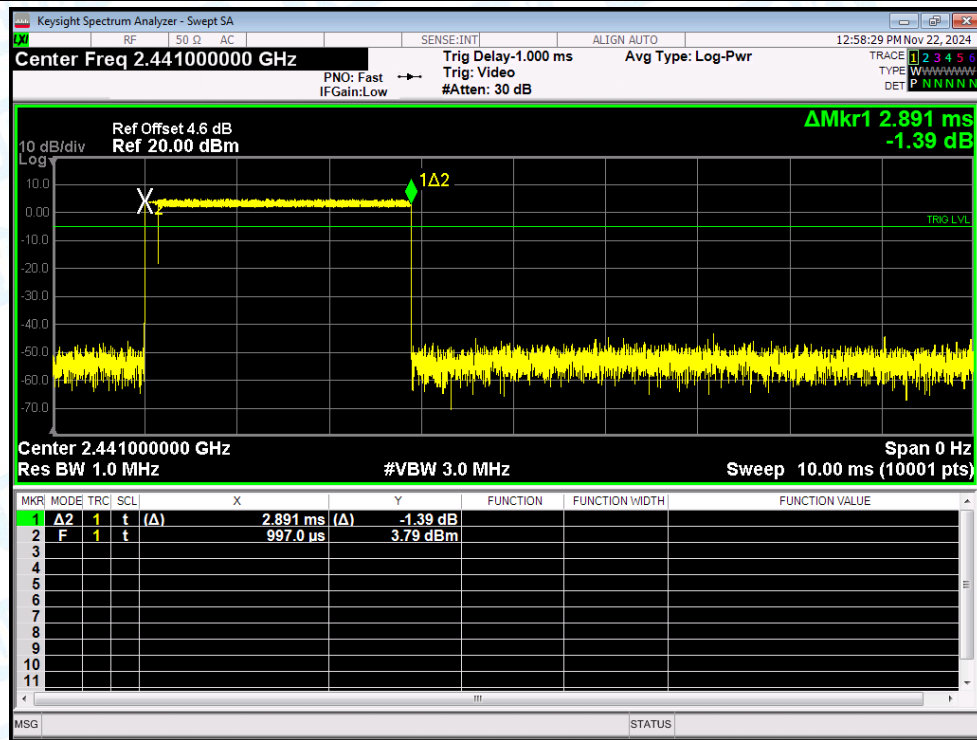
Dwell NVNT 2-DH1 2441MHz Ant1



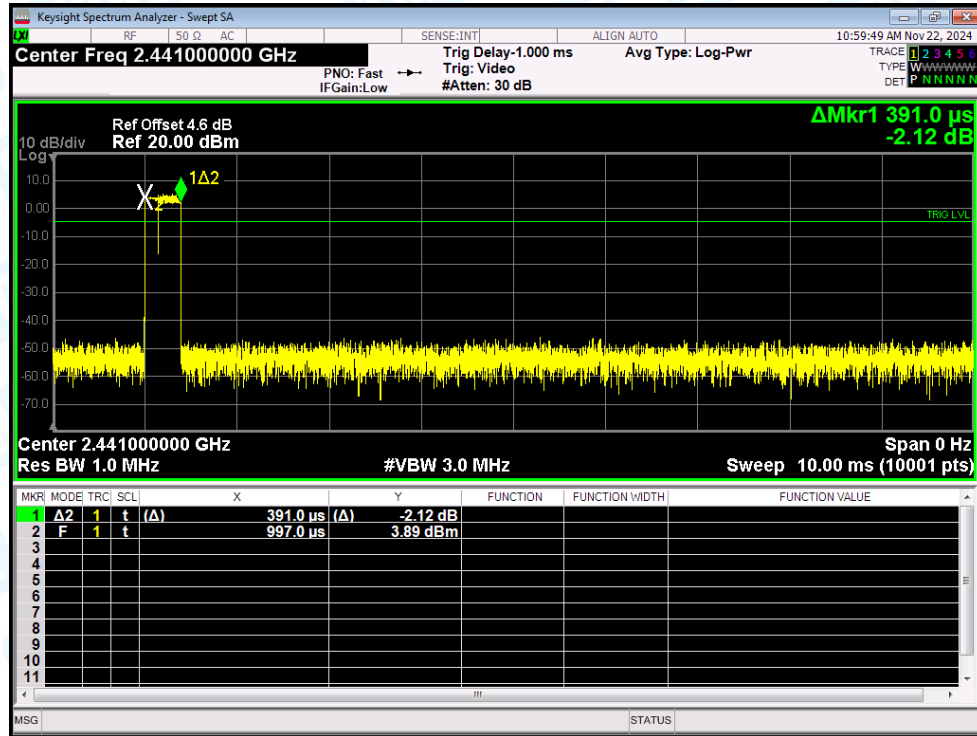
Dwell NVNT 2-DH3 2441MHz Ant1



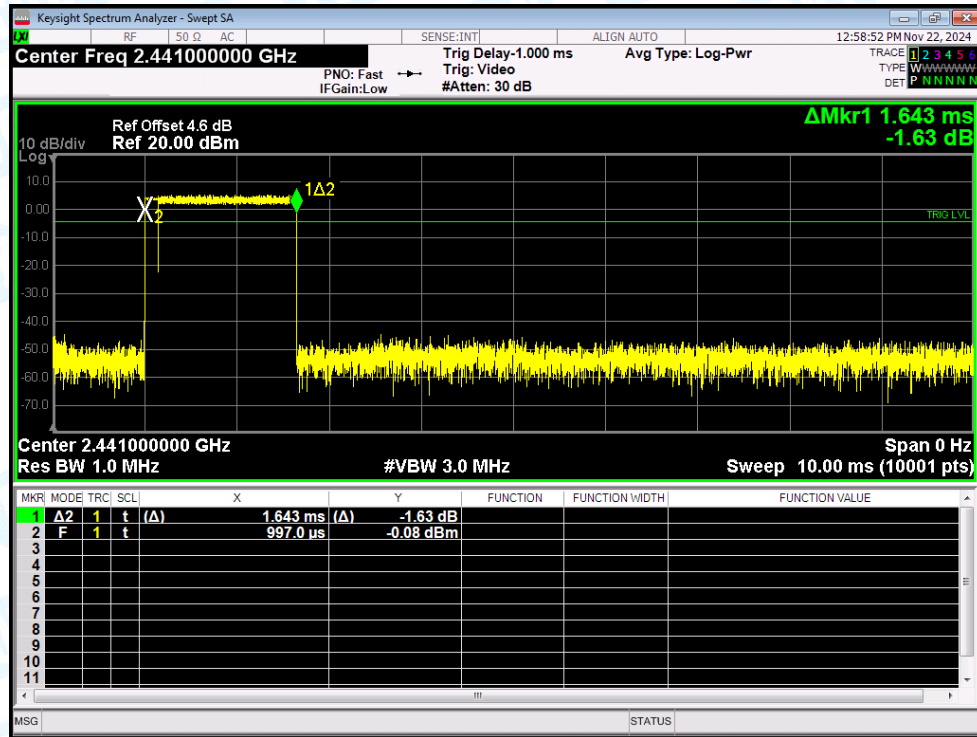
Dwell NVNT 2-DH5 2441MHz Ant1

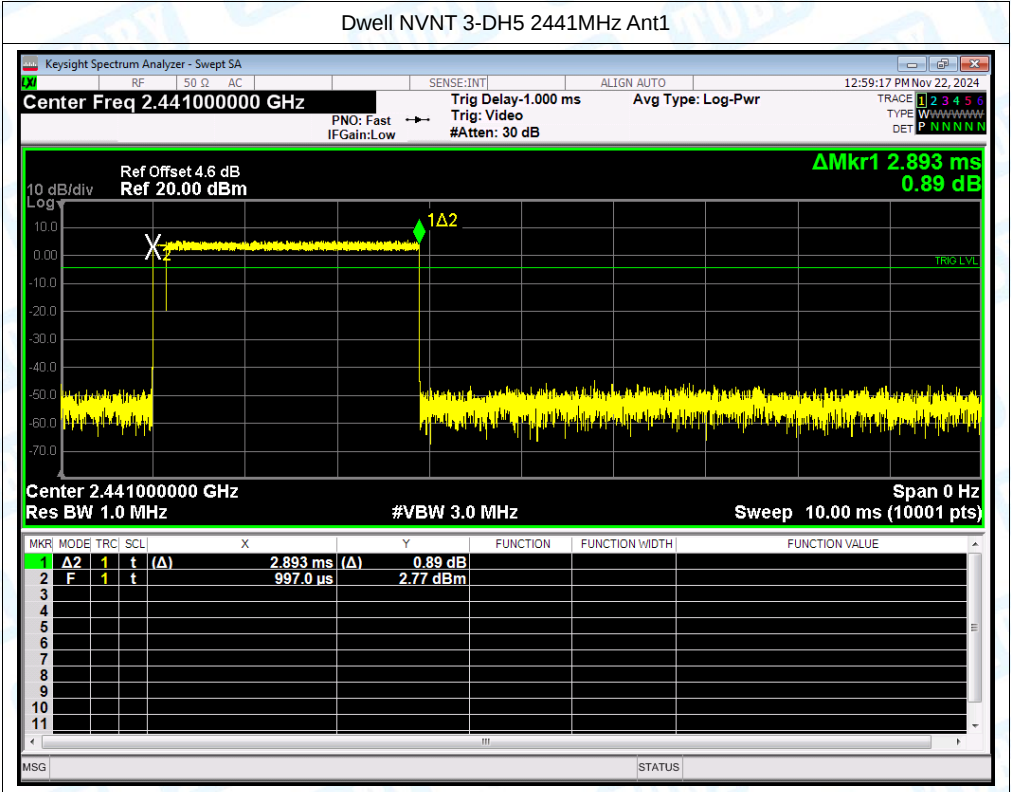


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





---- END OF REPORT ----