

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	smart watch
Test Model:	Y15
Sample ID:	HC-C-202409-0251-01-01
Environmental Conditions	
Temperature:	24.6℃
Relative Humidity:	52.6%
Test Voltage:	DC 3.7V
Test Engineer:	Rich Chen
Note: For a more detailed features description, please refer to the report TBR-C-202409-0251-6 The report only show the worst case data.	

Contents

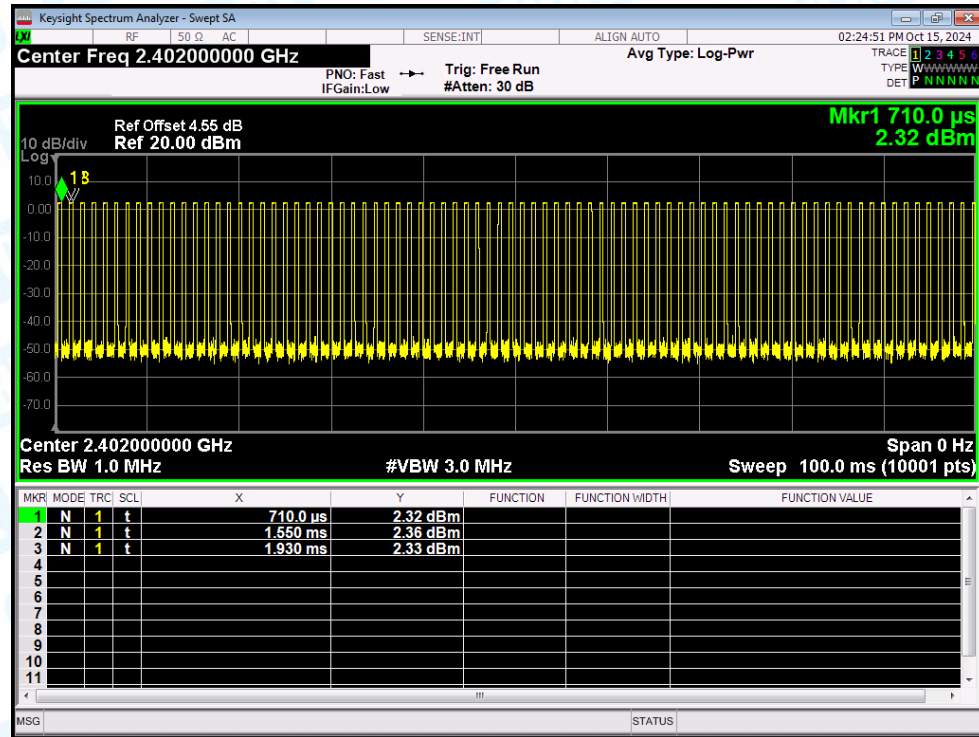
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1. Duty Cycle

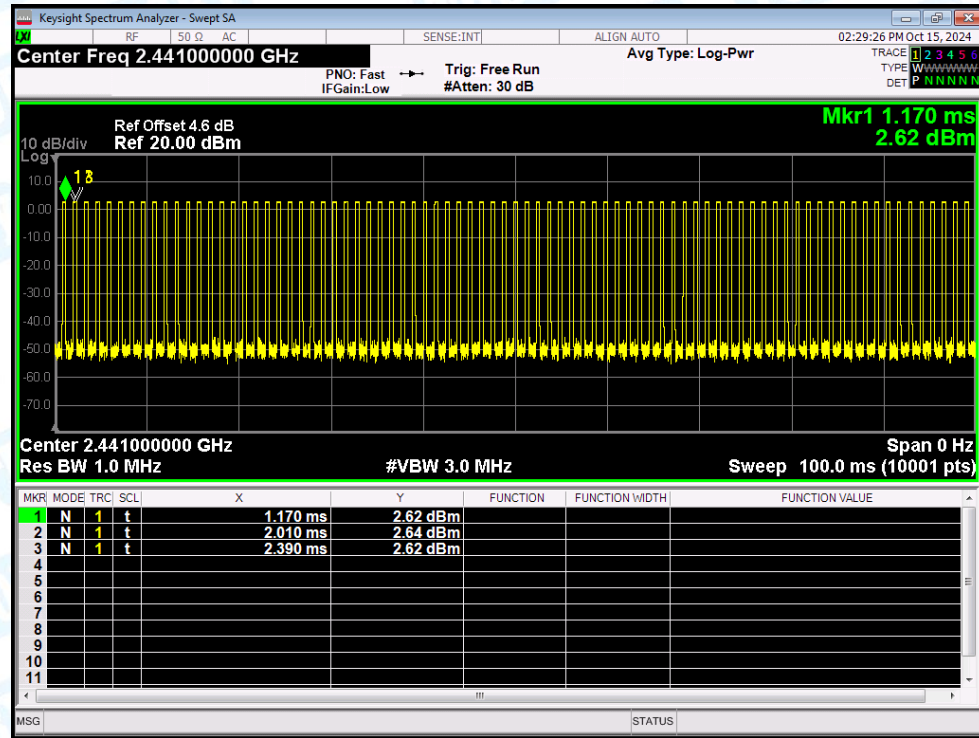
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	31.15	5.07	2.63
NVNT	1-DH1	2441	Ant1	31.15	5.07	2.63
NVNT	1-DH1	2480	Ant1	30.89	5.1	2.63
NVNT	2-DH1	2402	Ant1	31.45	5.02	2.56
NVNT	2-DH1	2441	Ant1	31.45	5.02	2.56
NVNT	2-DH1	2480	Ant1	31.71	4.99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

Test Graphs

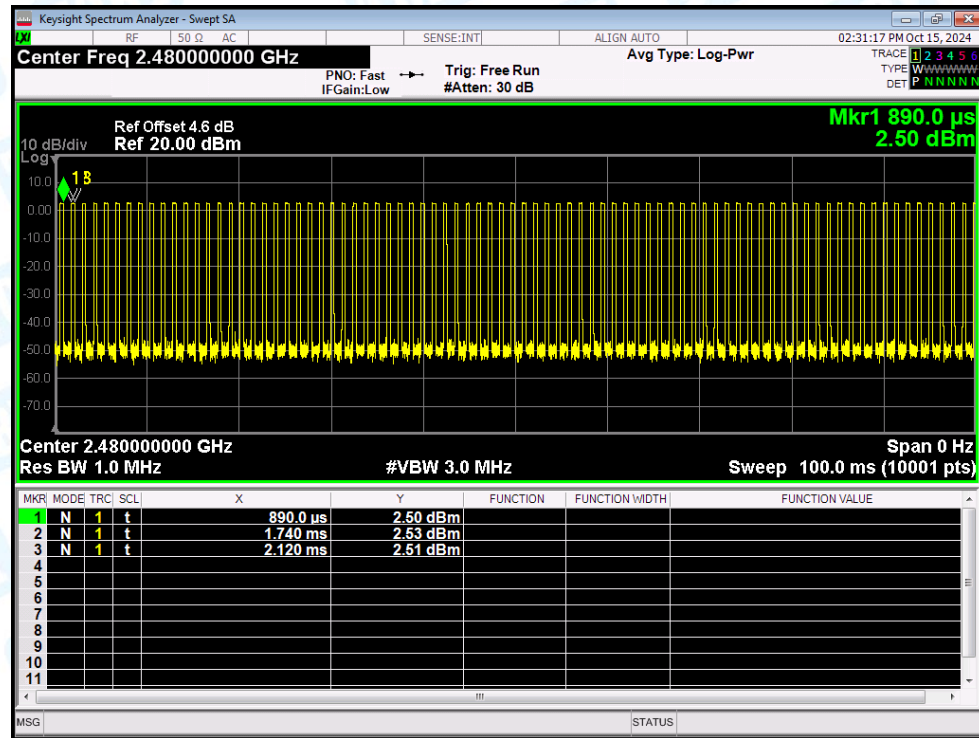
Duty Cycle NVNT 1-DH1 2402MHz Ant1



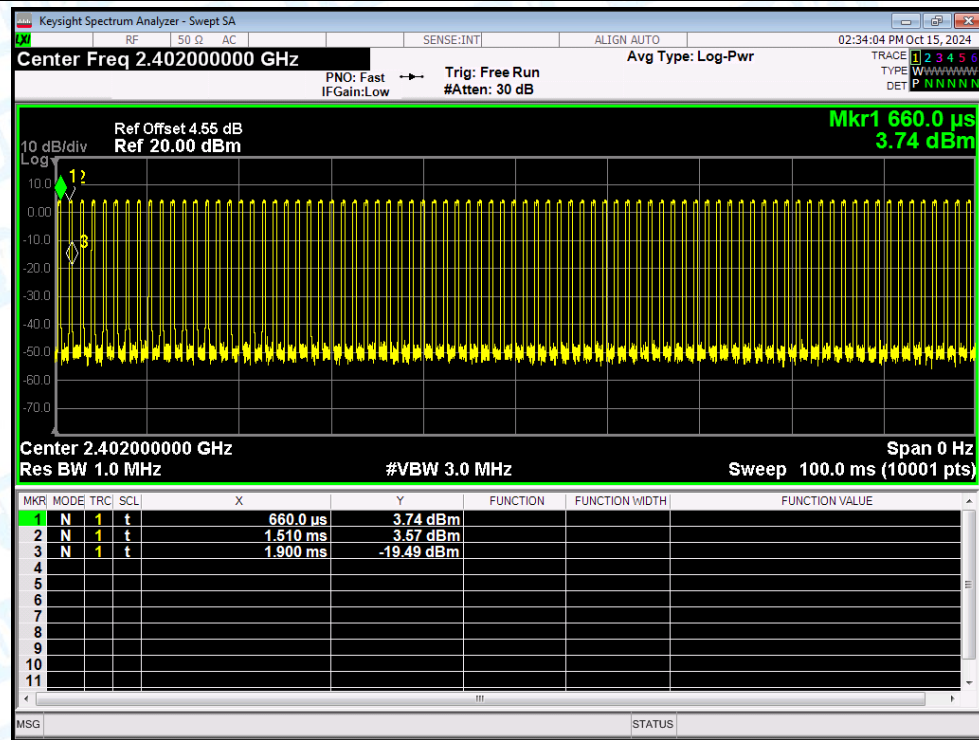
Duty Cycle NVNT 1-DH1 2441MHz Ant1



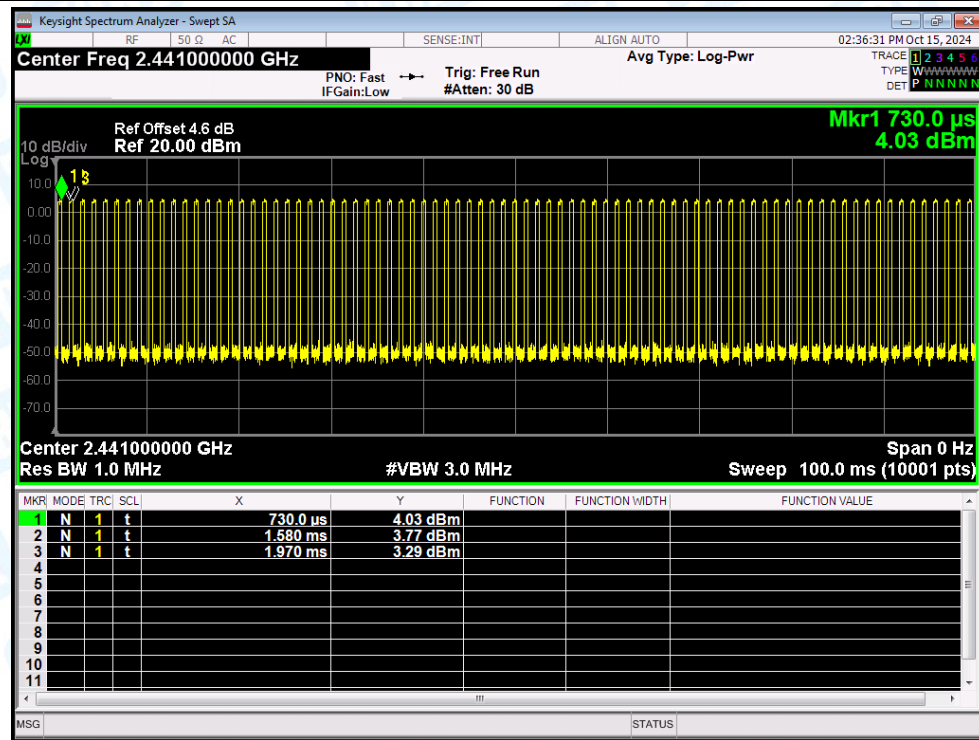
Duty Cycle NVNT 1-DH1 2480MHz Ant1



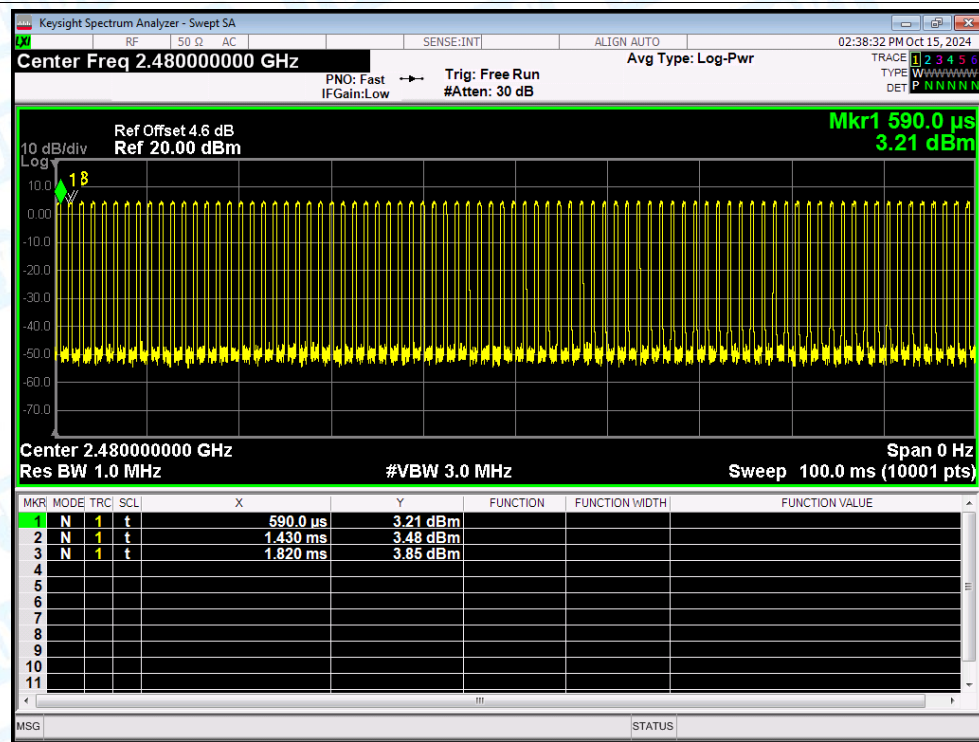
Duty Cycle NVNT 2-DH1 2402MHz Ant1



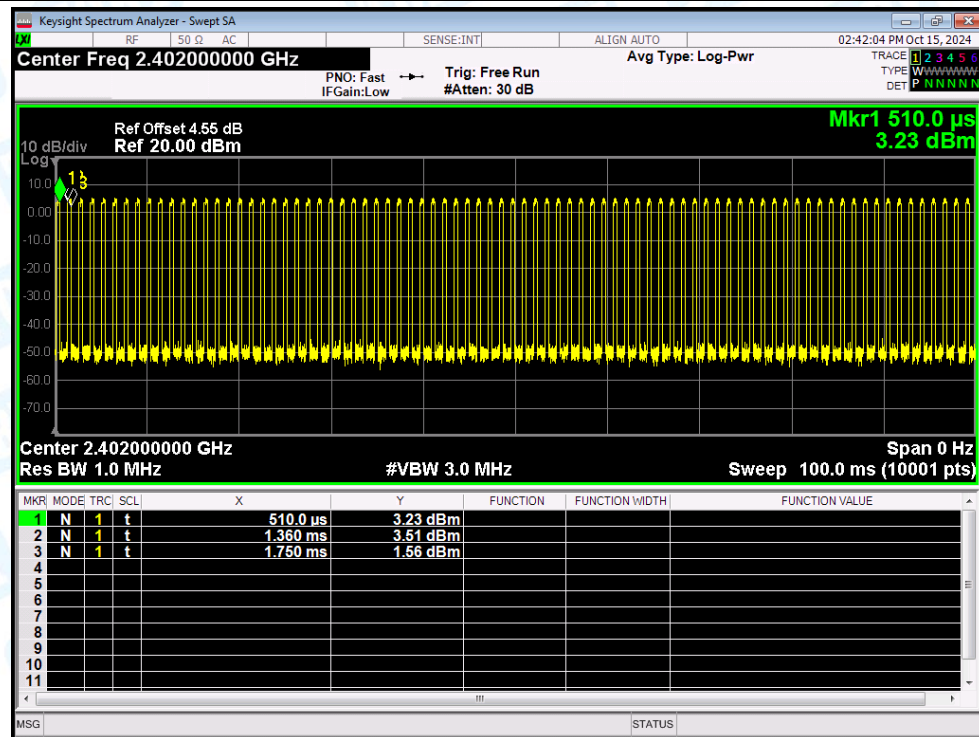
Duty Cycle NVNT 2-DH1 2441MHz Ant1



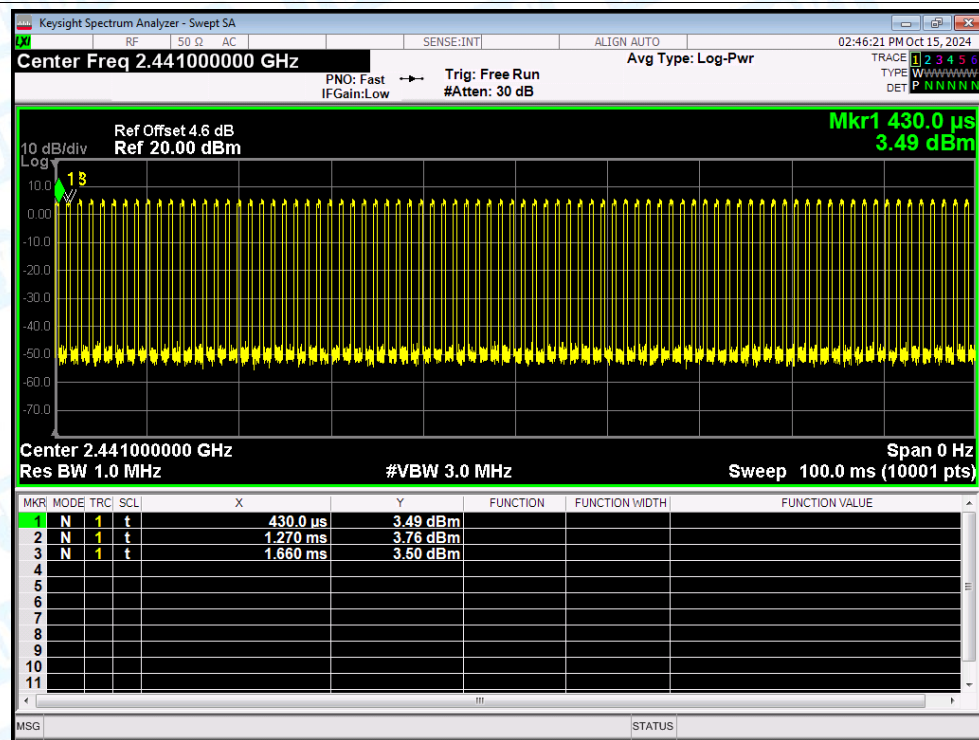
Duty Cycle NVNT 2-DH1 2480MHz Ant1

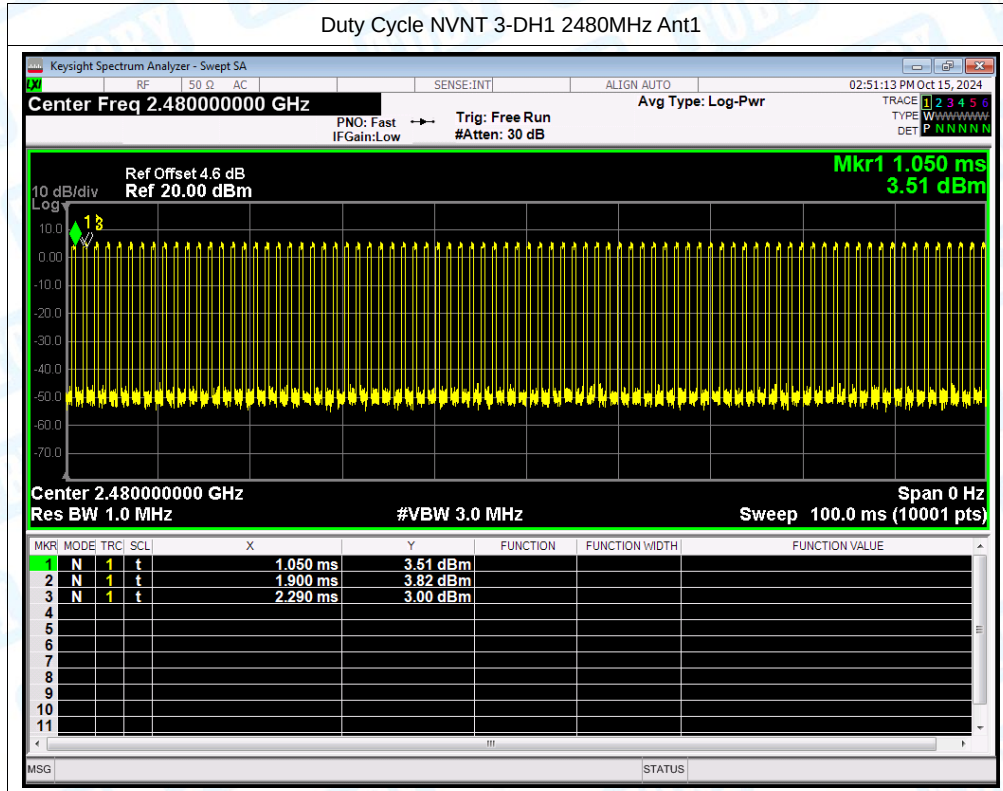


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



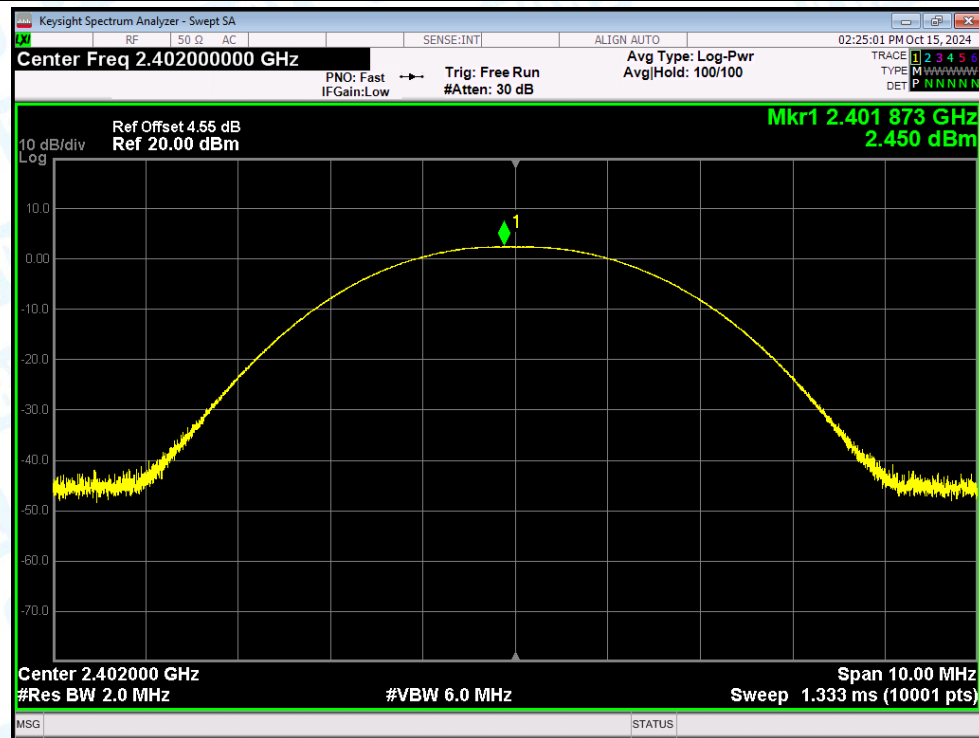


2. Maximum Conducted Output Power

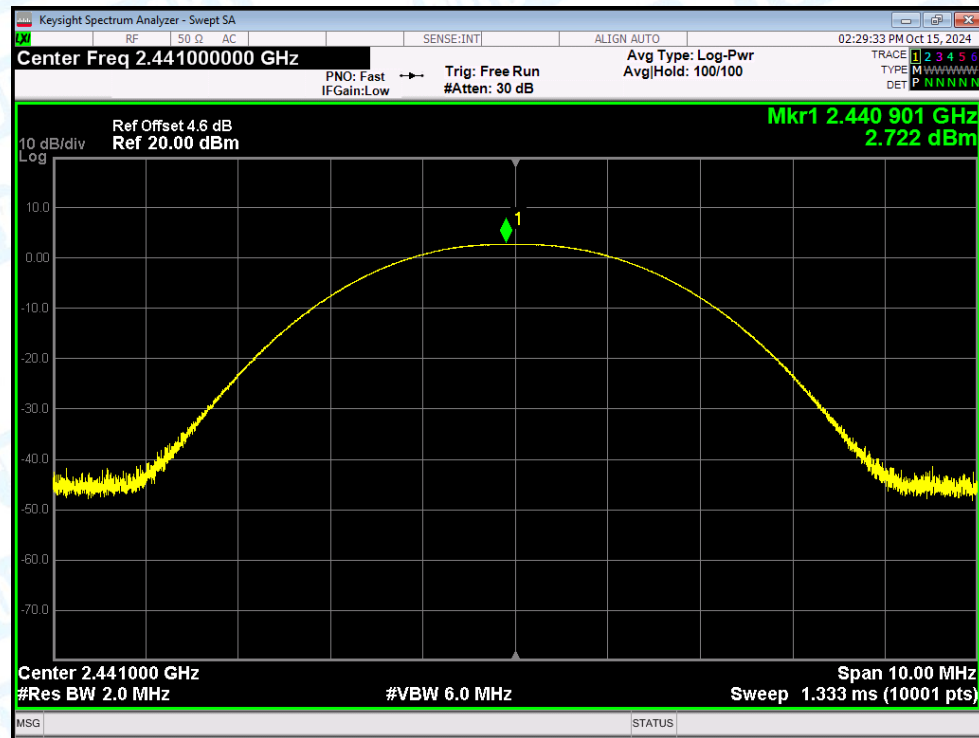
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	2.45	21	Pass
NVNT	1-DH1	2441	Ant1	2.722	21	Pass
NVNT	1-DH1	2480	Ant1	2.65	21	Pass
NVNT	2-DH1	2402	Ant1	5.031	21	Pass
NVNT	2-DH1	2441	Ant1	5.269	21	Pass
NVNT	2-DH1	2480	Ant1	5.216	21	Pass
NVNT	3-DH1	2402	Ant1	5.528	21	Pass
NVNT	3-DH1	2441	Ant1	5.799	21	Pass
NVNT	3-DH1	2480	Ant1	5.858	21	Pass

Test Graphs

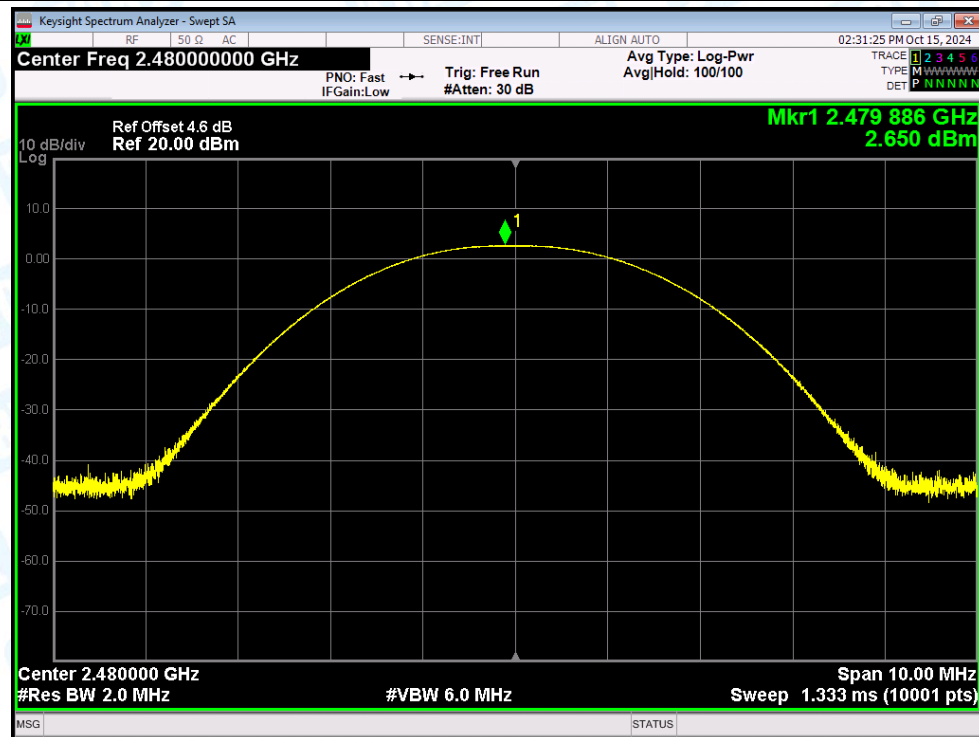
Power NVNT 1-DH1 2402MHz Ant1



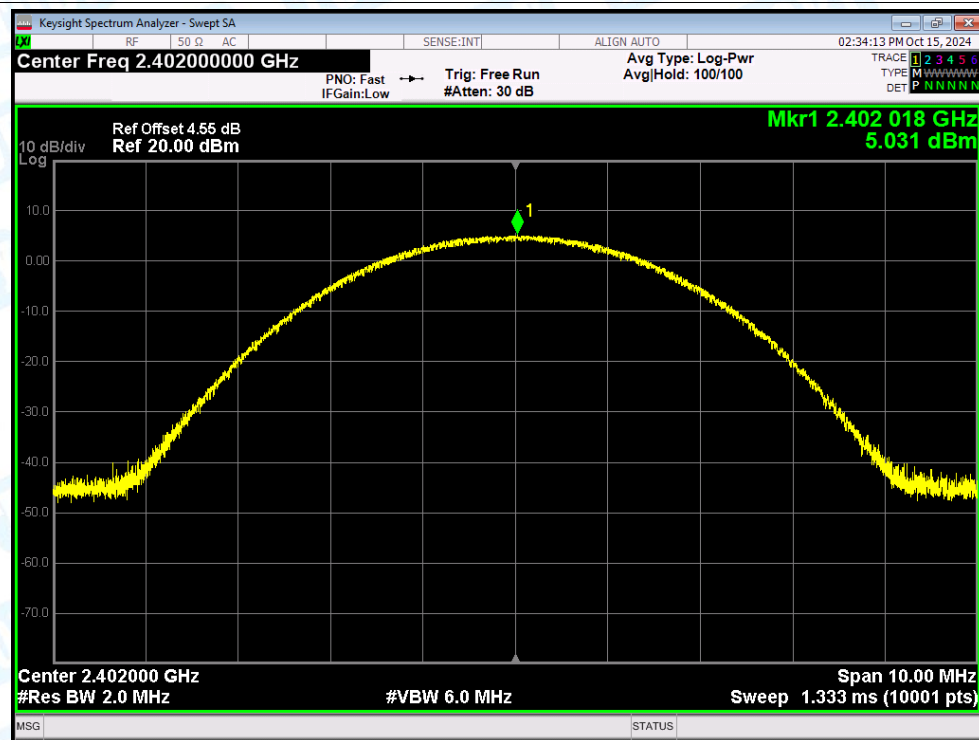
Power NVNT 1-DH1 2441MHz Ant1



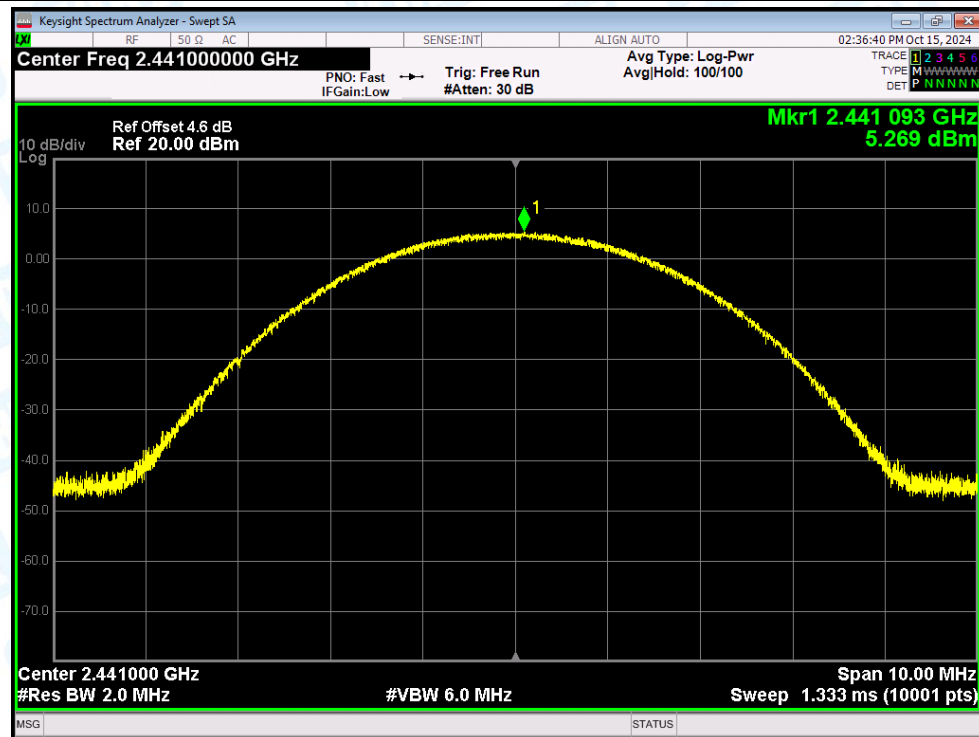
Power NVNT 1-DH1 2480MHz Ant1



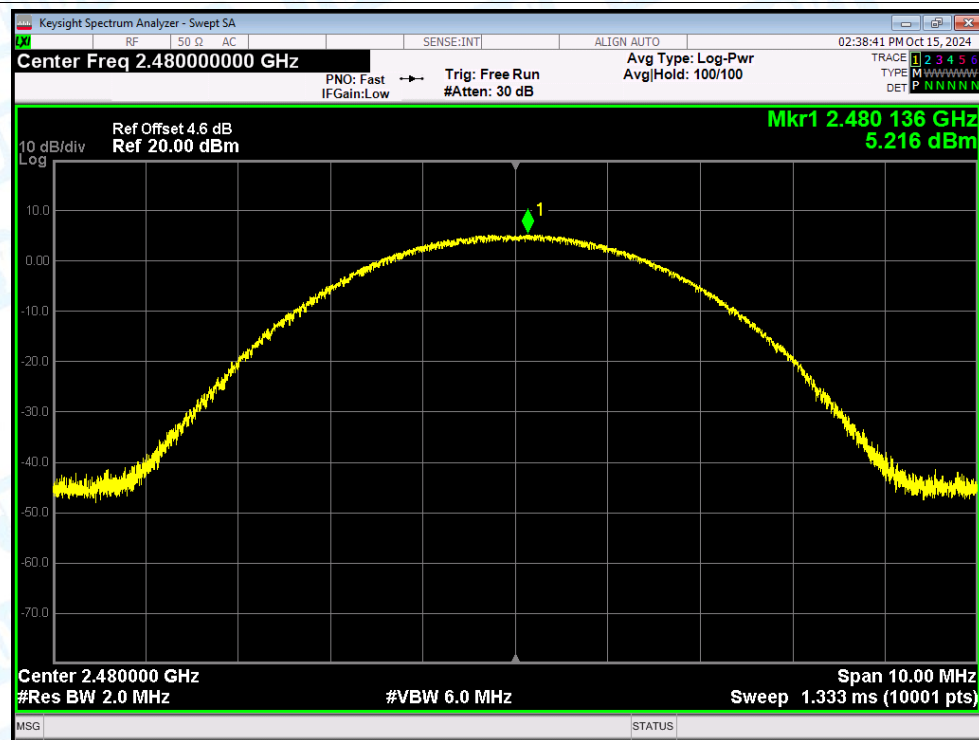
Power NVNT 2-DH1 2402MHz Ant1



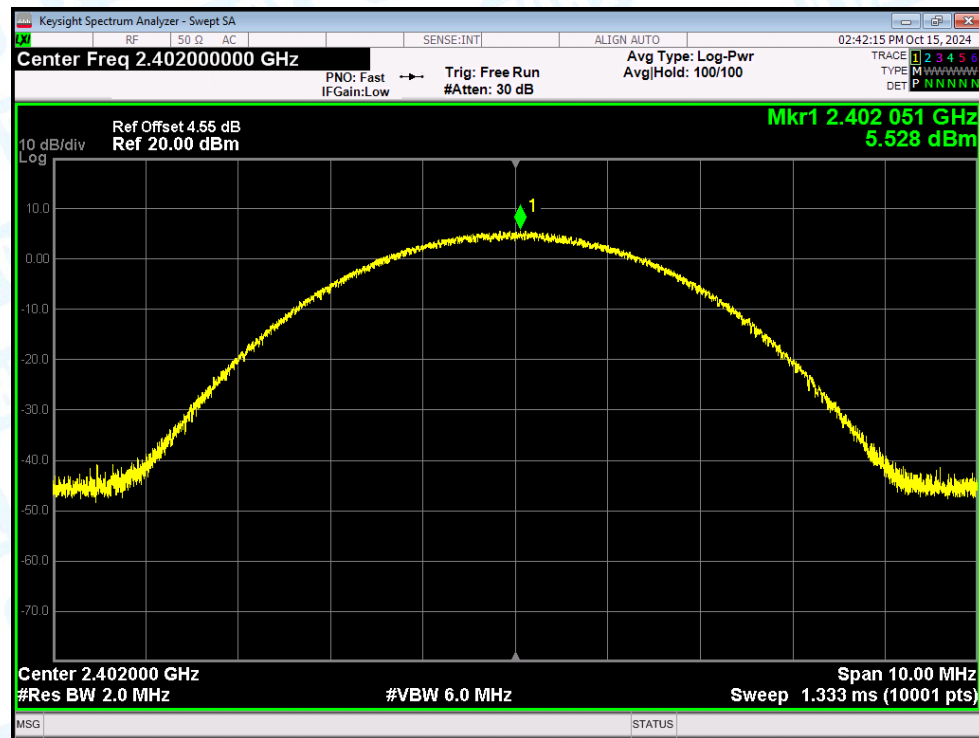
Power NVNT 2-DH1 2441MHz Ant1



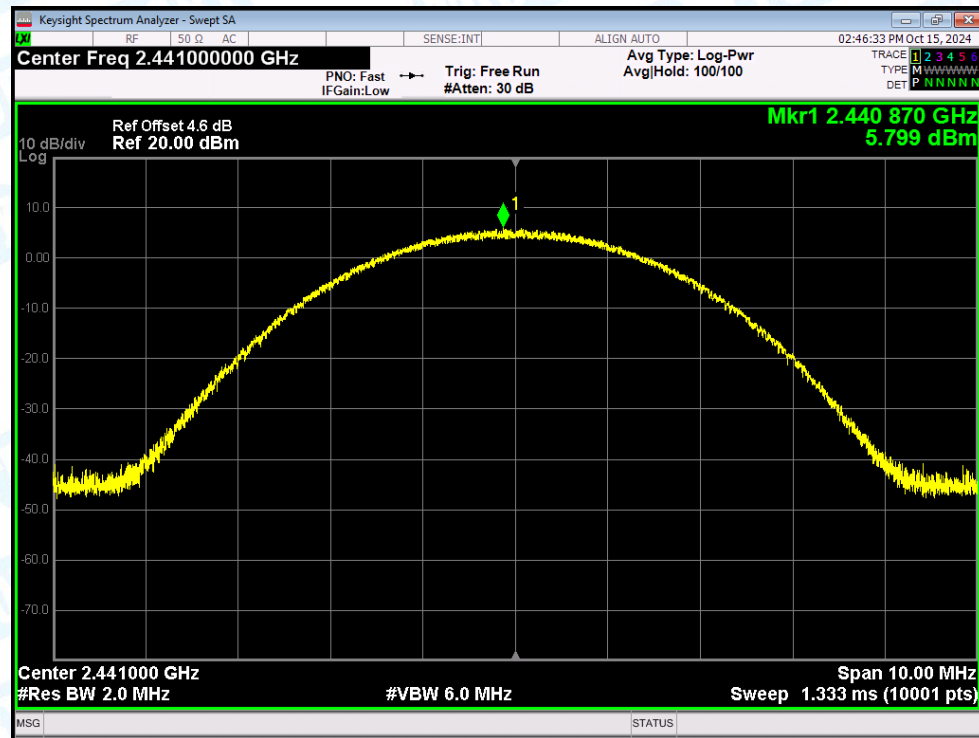
Power NVNT 2-DH1 2480MHz Ant1

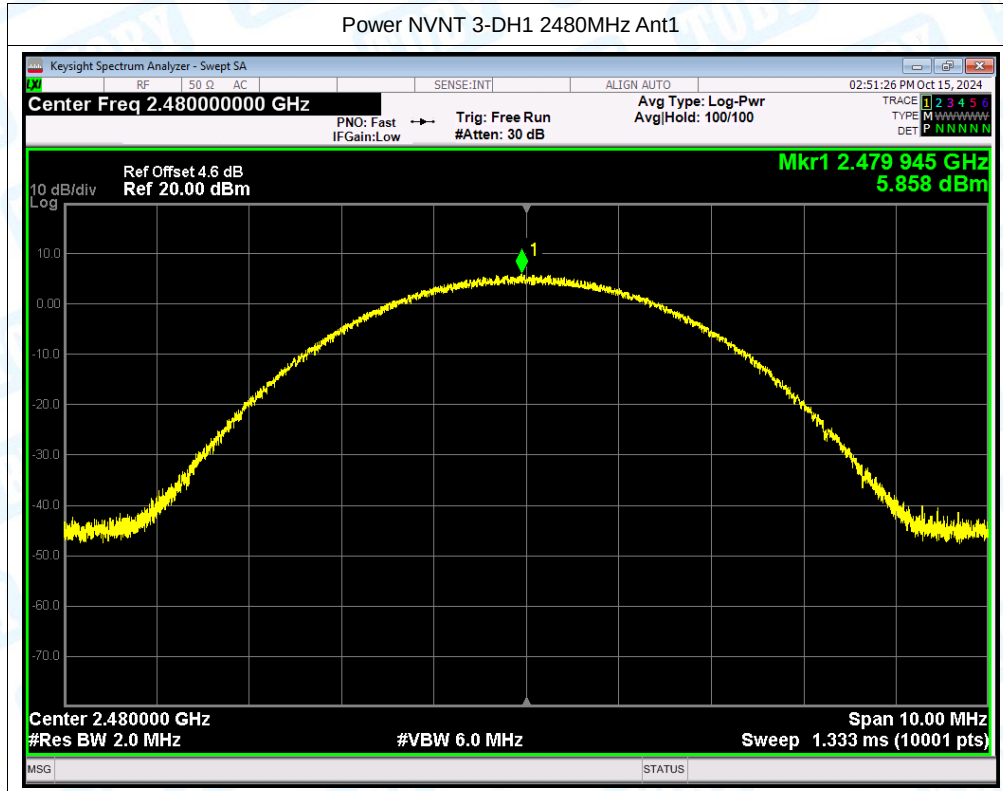


Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



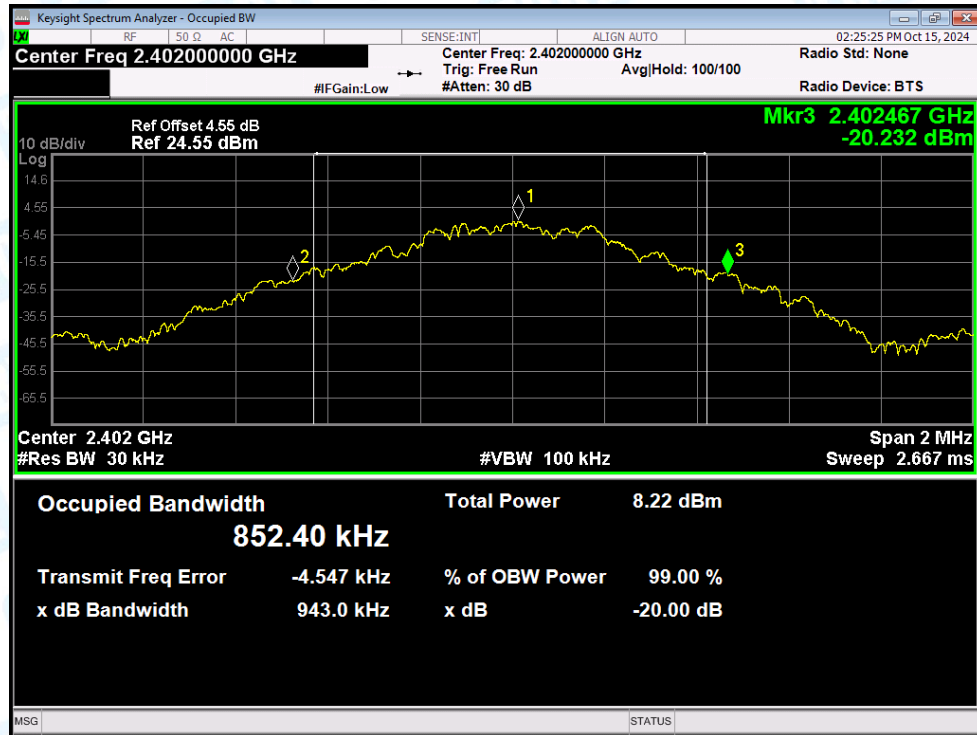


3. -20dB Bandwidth

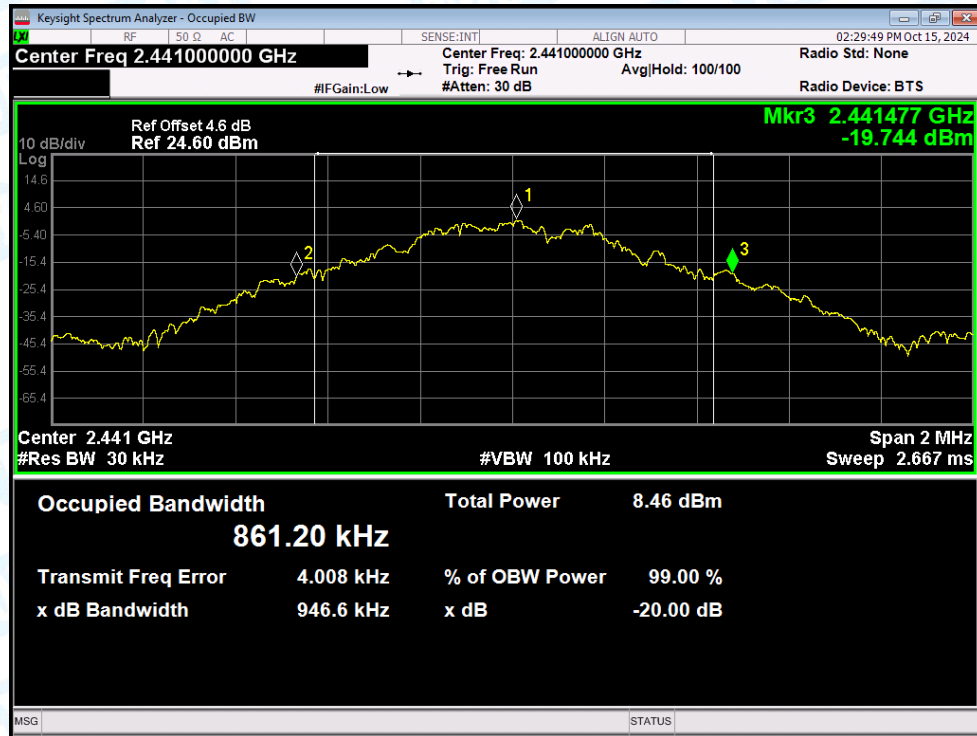
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.94	0	Pass
NVNT	1-DH1	2441	Ant1	0.95	0	Pass
NVNT	1-DH1	2480	Ant1	0.95	0	Pass
NVNT	2-DH1	2402	Ant1	1.25	0	Pass
NVNT	2-DH1	2441	Ant1	1.23	0	Pass
NVNT	2-DH1	2480	Ant1	1.25	0	Pass
NVNT	3-DH1	2402	Ant1	1.22	0	Pass
NVNT	3-DH1	2441	Ant1	1.21	0	Pass
NVNT	3-DH1	2480	Ant1	1.21	0	Pass

Test Graphs

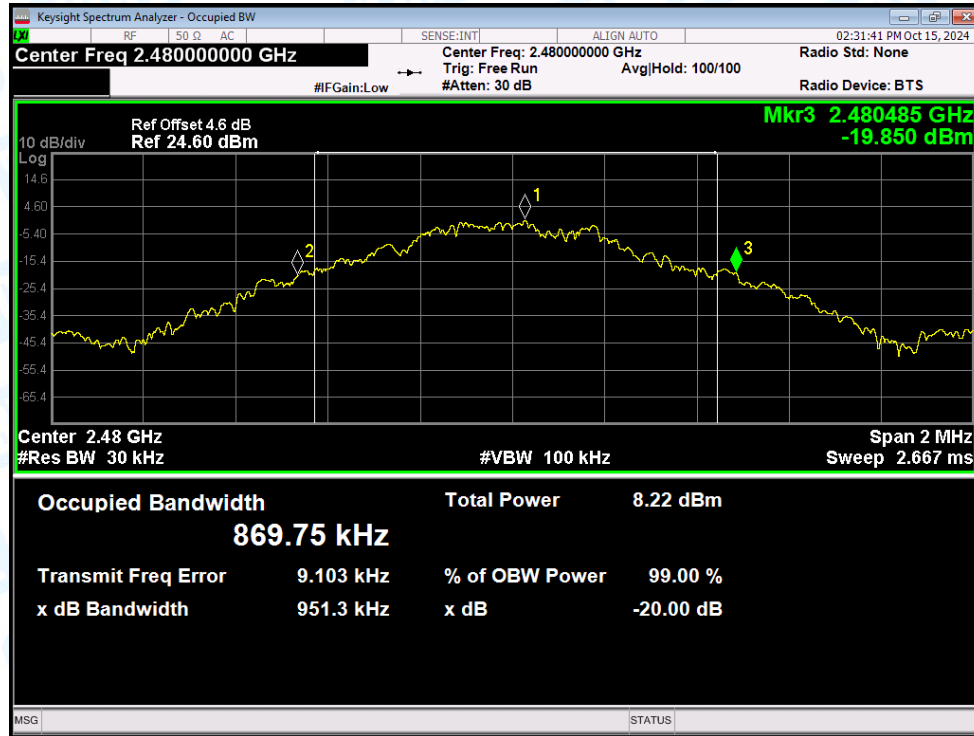
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



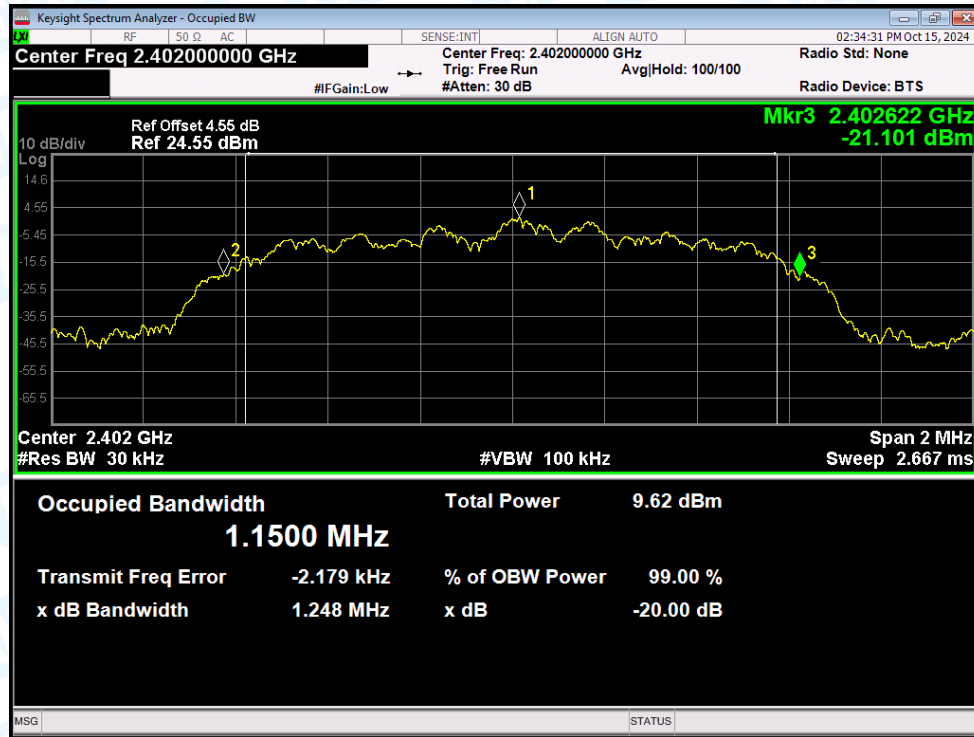
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



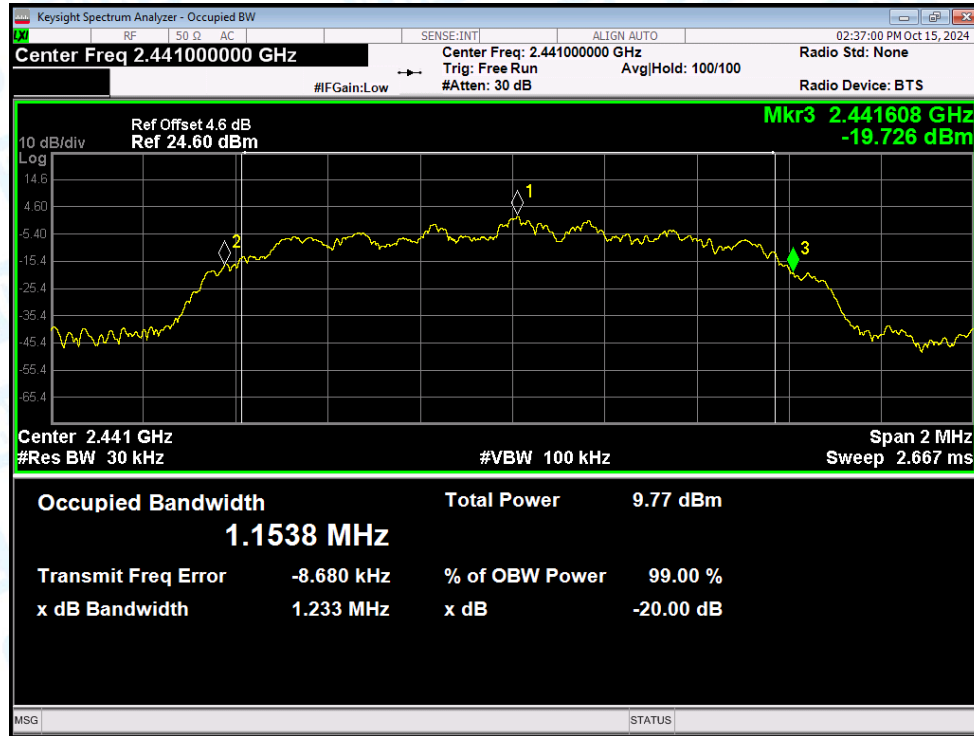
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



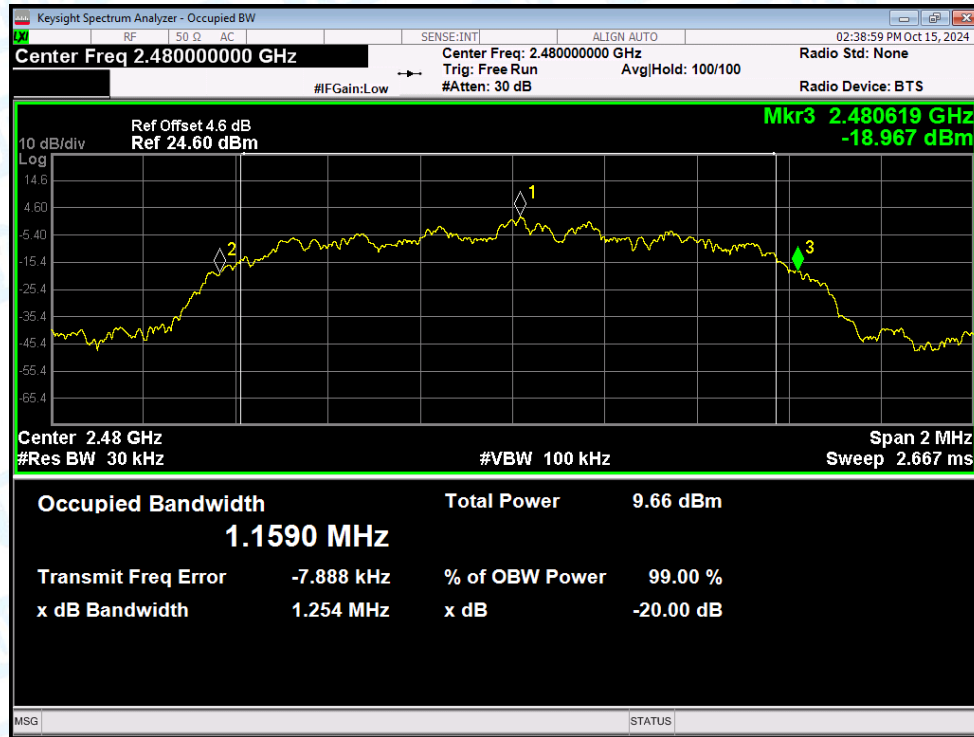
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



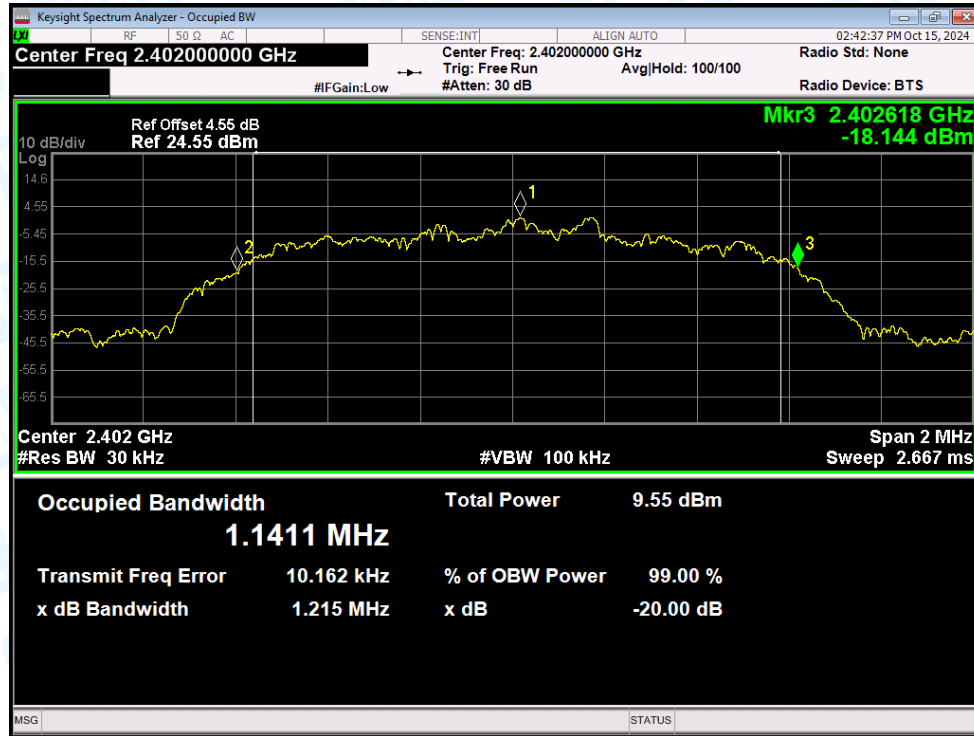
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



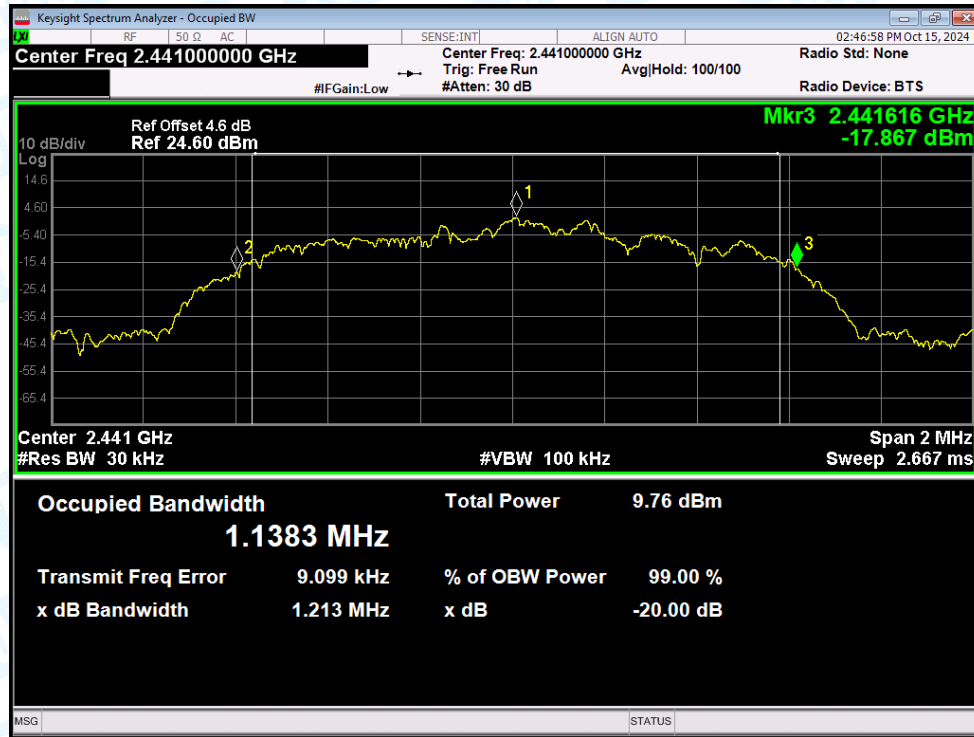
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

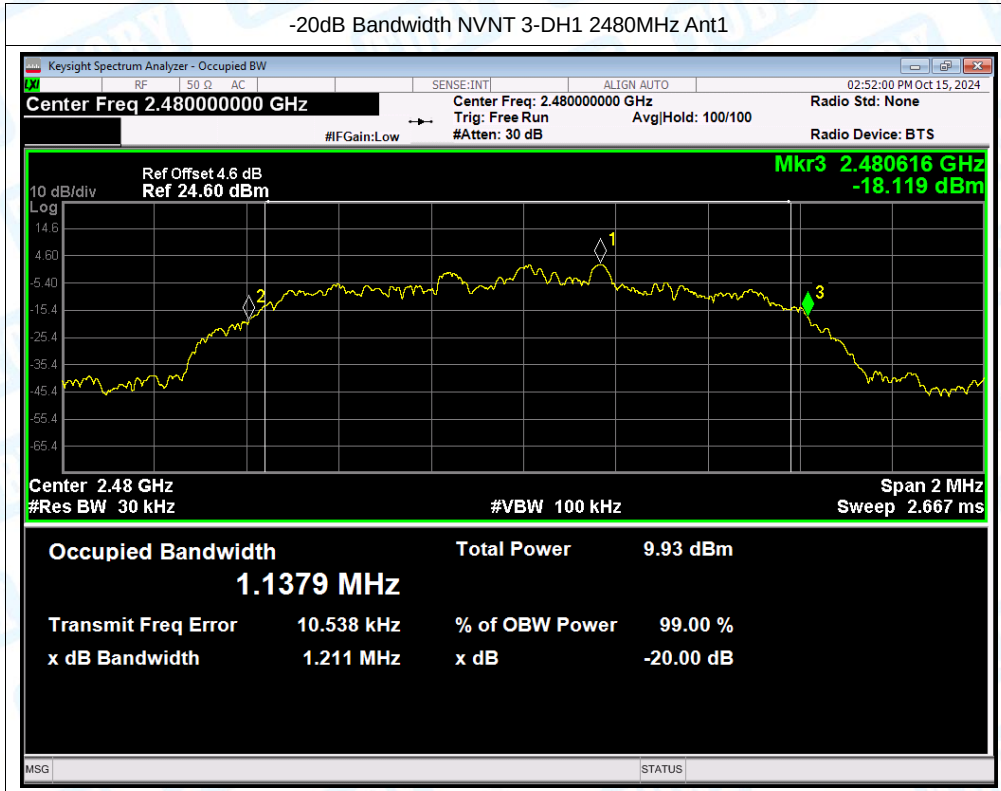


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



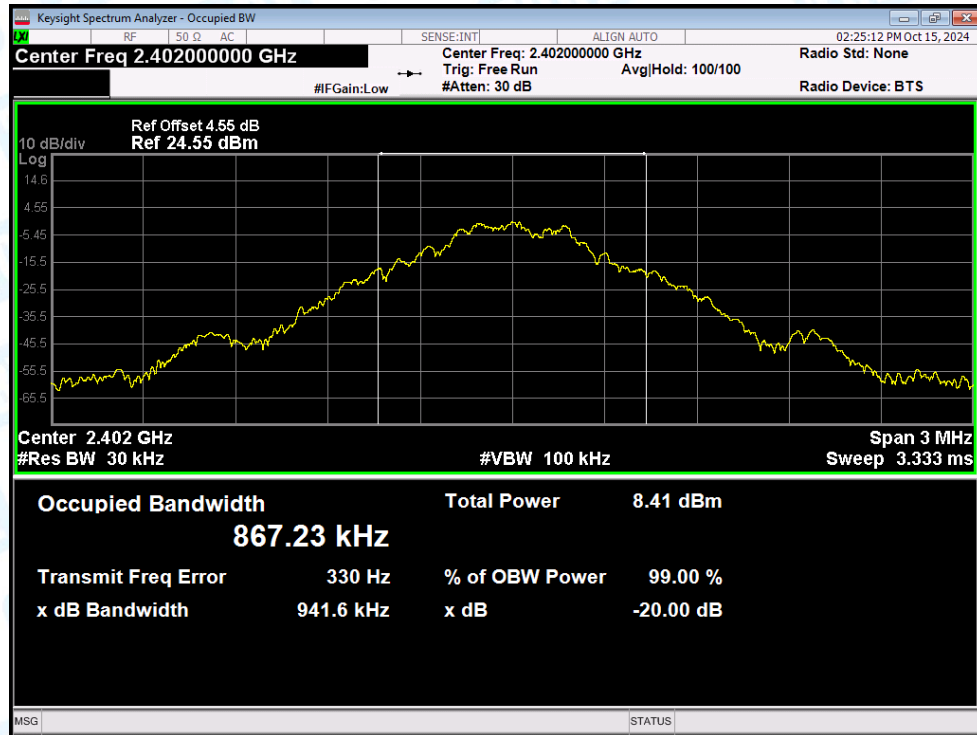


4. Occupied Channel Bandwidth

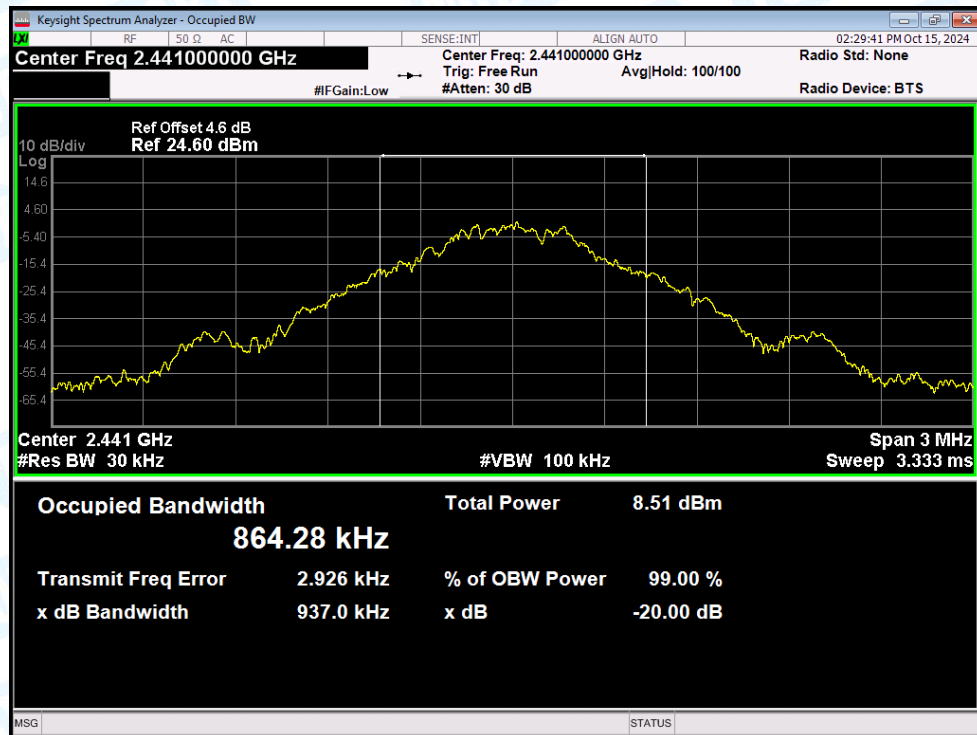
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.867
NVNT	1-DH1	2441	Ant1	0.864
NVNT	1-DH1	2480	Ant1	0.856
NVNT	2-DH1	2402	Ant1	1.153
NVNT	2-DH1	2441	Ant1	1.161
NVNT	2-DH1	2480	Ant1	1.158
NVNT	3-DH1	2402	Ant1	1.13
NVNT	3-DH1	2441	Ant1	1.146
NVNT	3-DH1	2480	Ant1	1.127

Test Graphs

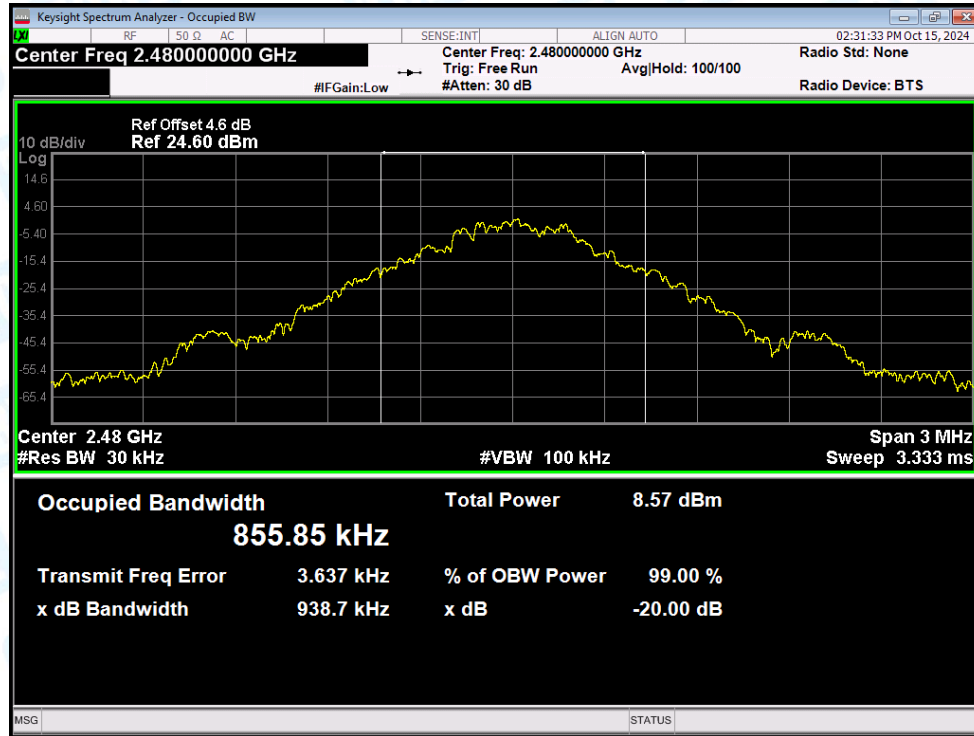
OBW NVNT 1-DH1 2402MHz Ant1



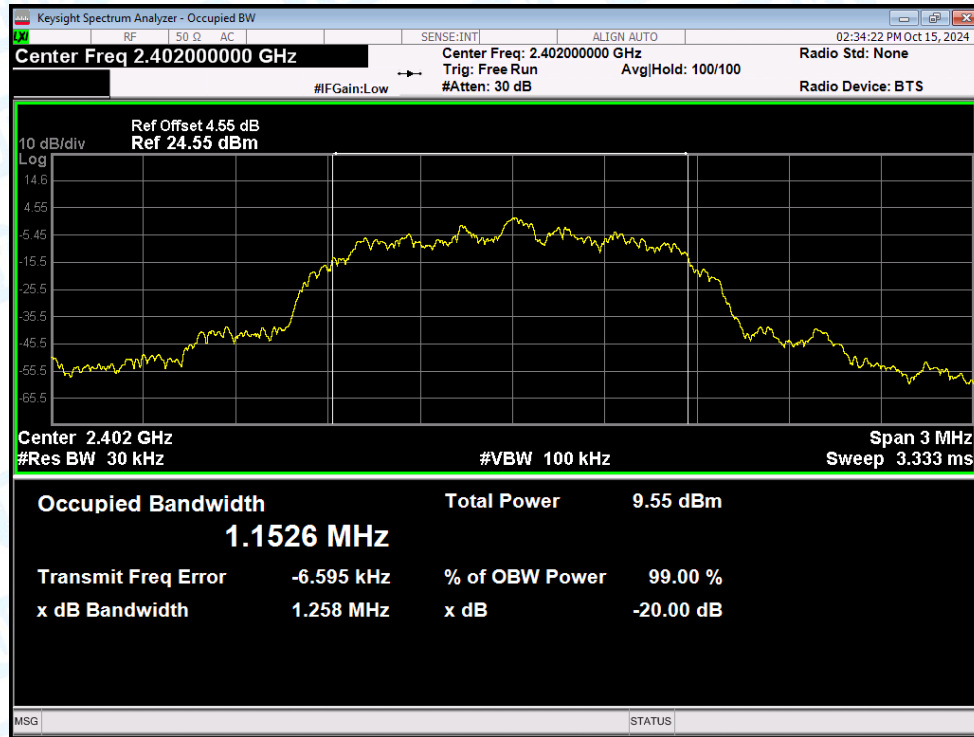
OBW NVNT 1-DH1 2441MHz Ant1



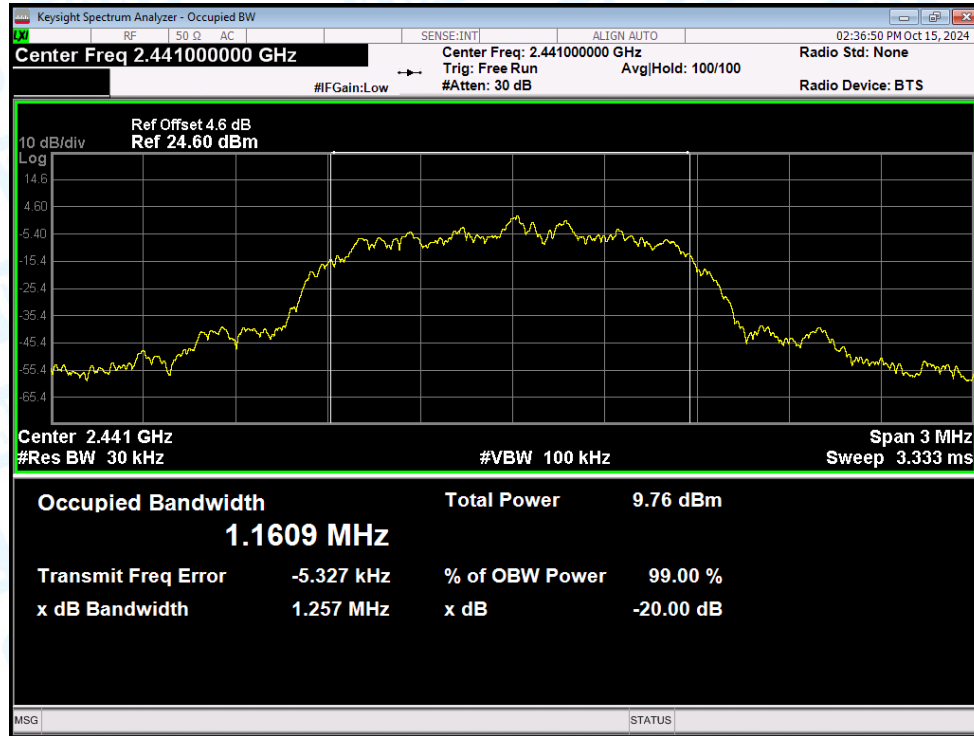
OBW NVNT 1-DH1 2480MHz Ant1



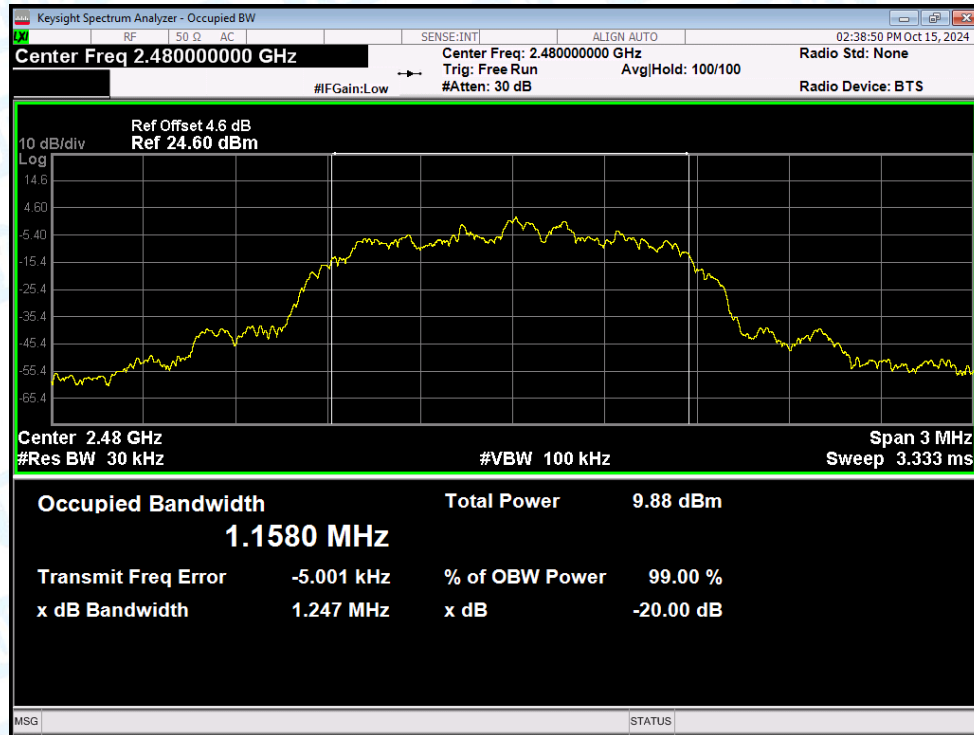
OBW NVNT 2-DH1 2402MHz Ant1



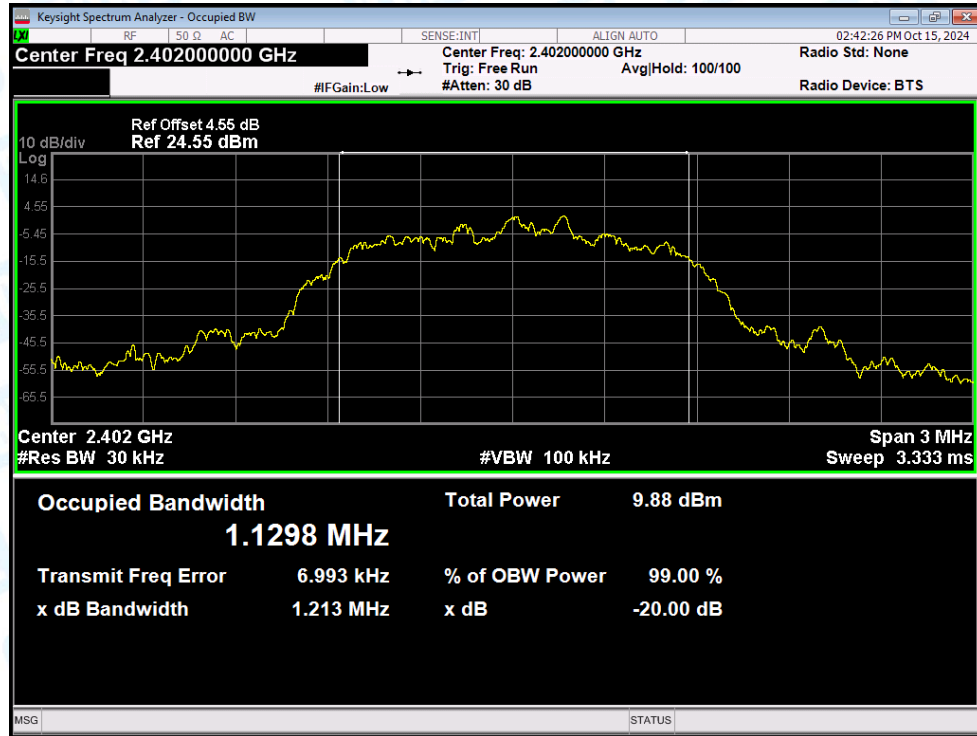
OBW NVNT 2-DH1 2441MHz Ant1



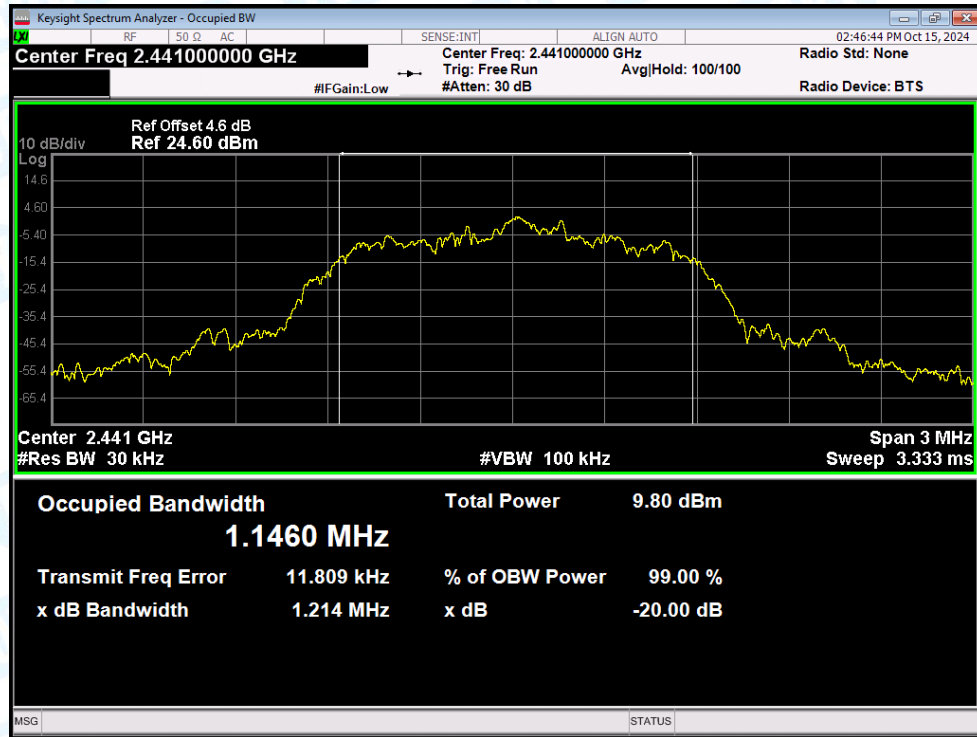
OBW NVNT 2-DH1 2480MHz Ant1



OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1

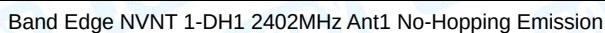




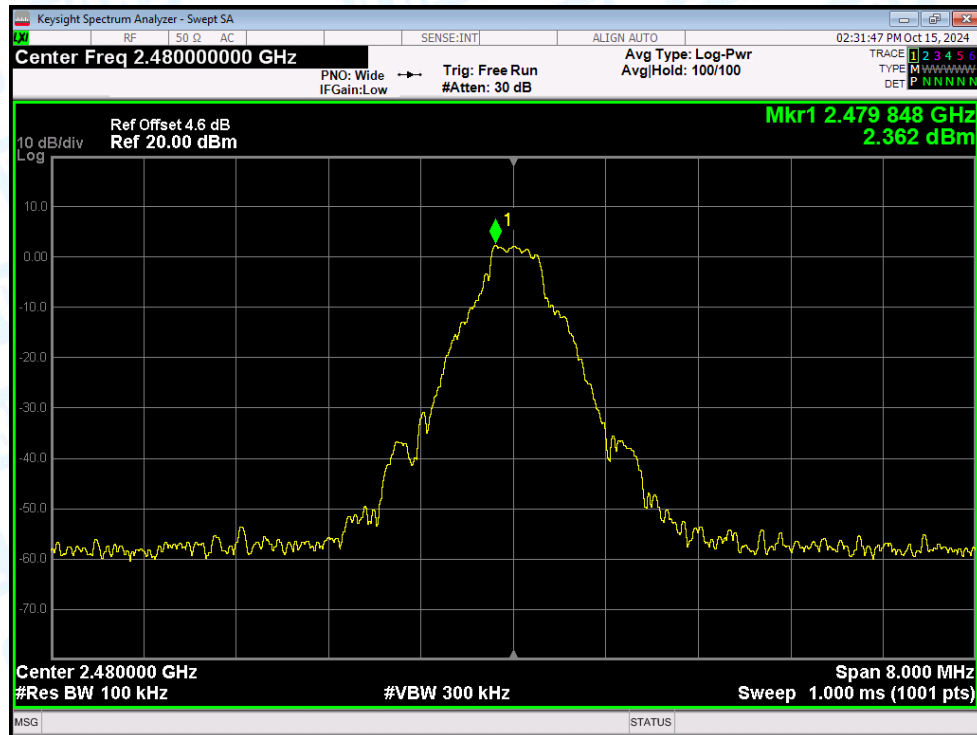
5. Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-56.67	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-57.27	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-58.29	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-58.43	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-57.94	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-58.13	-20	Pass

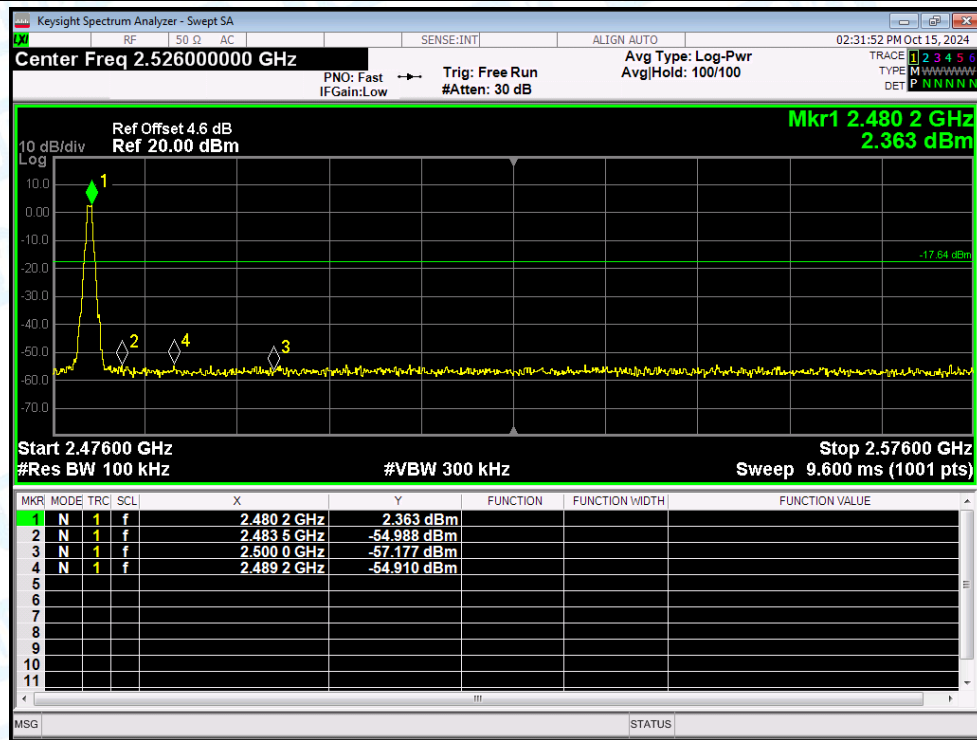
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



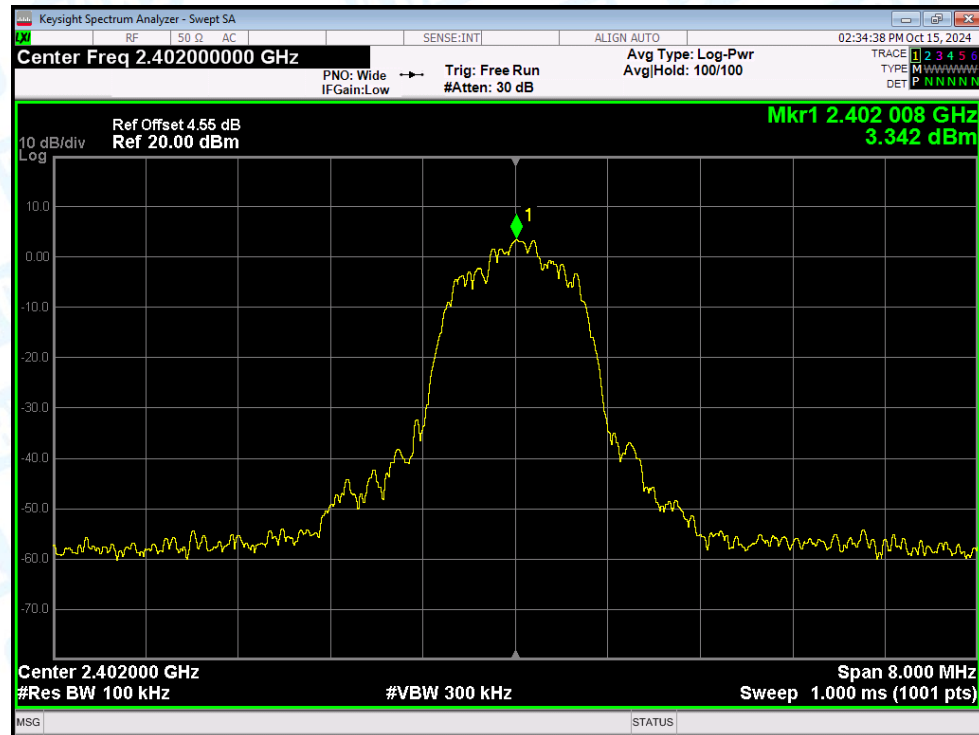
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



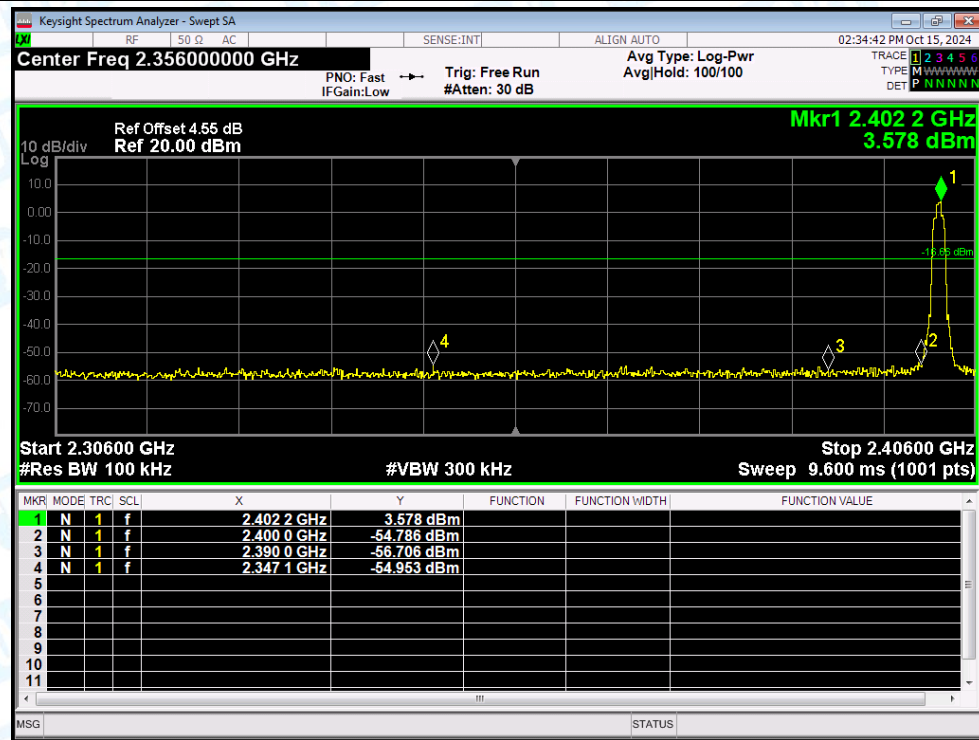
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



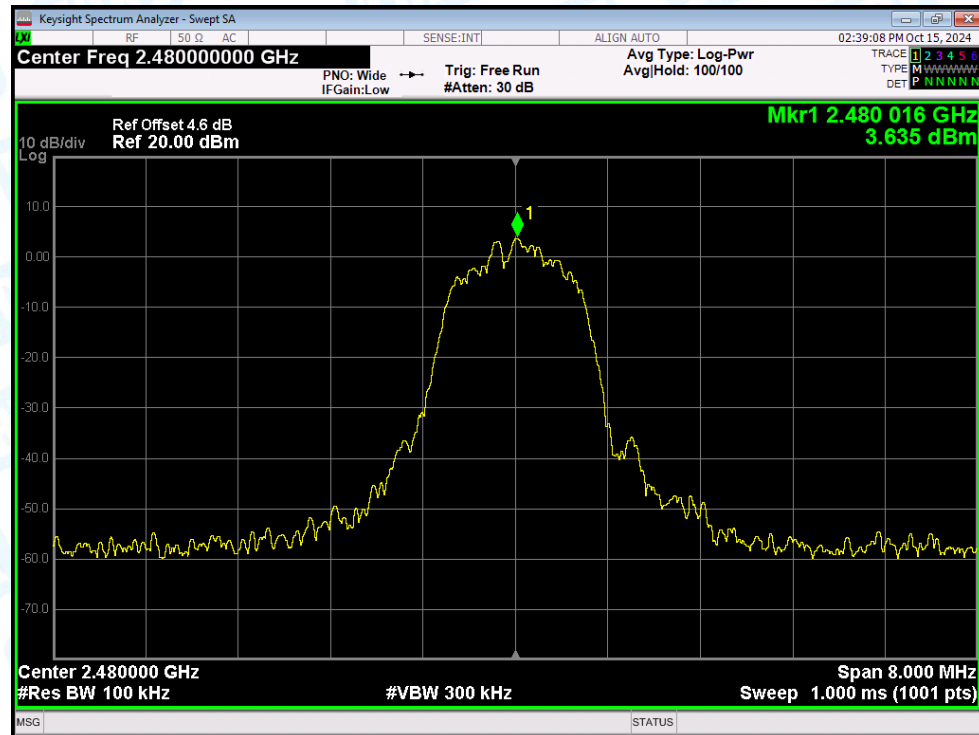
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



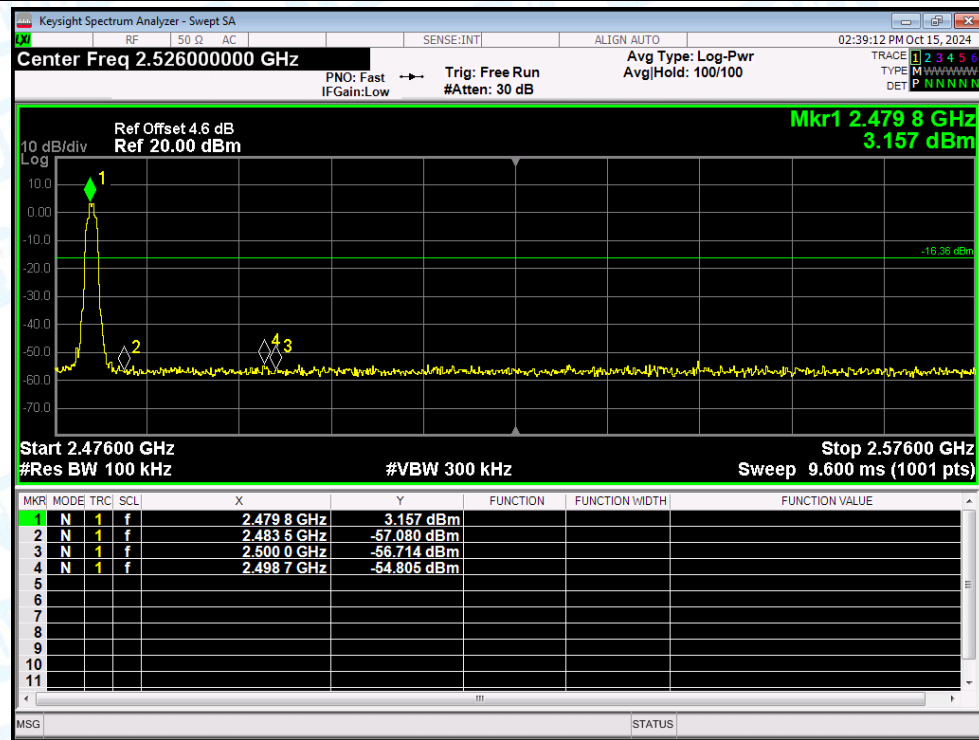
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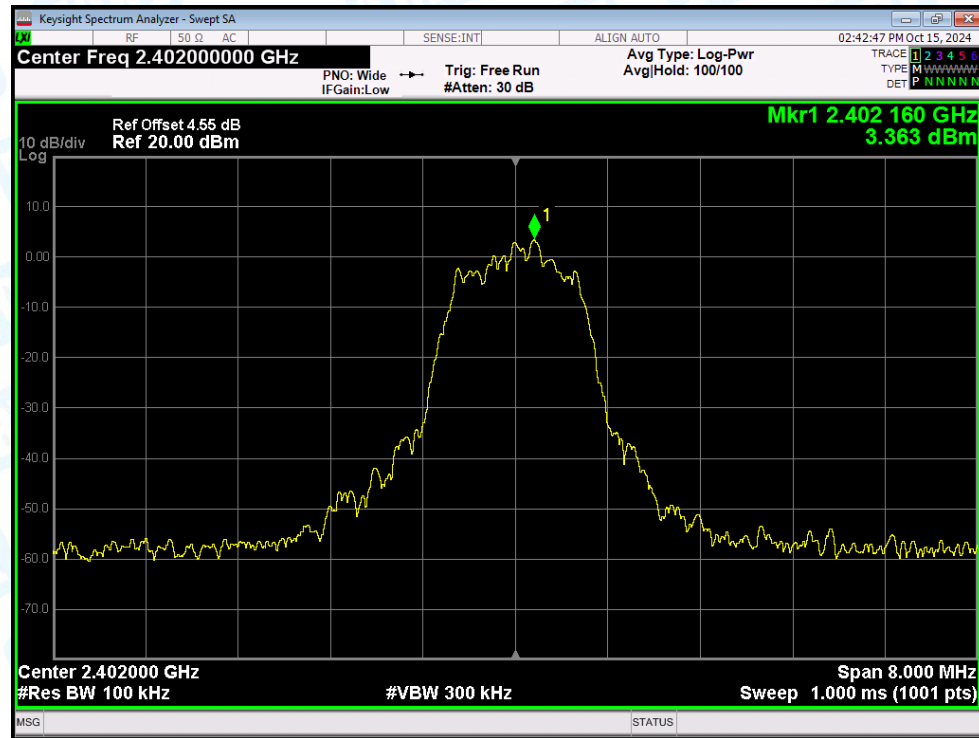
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



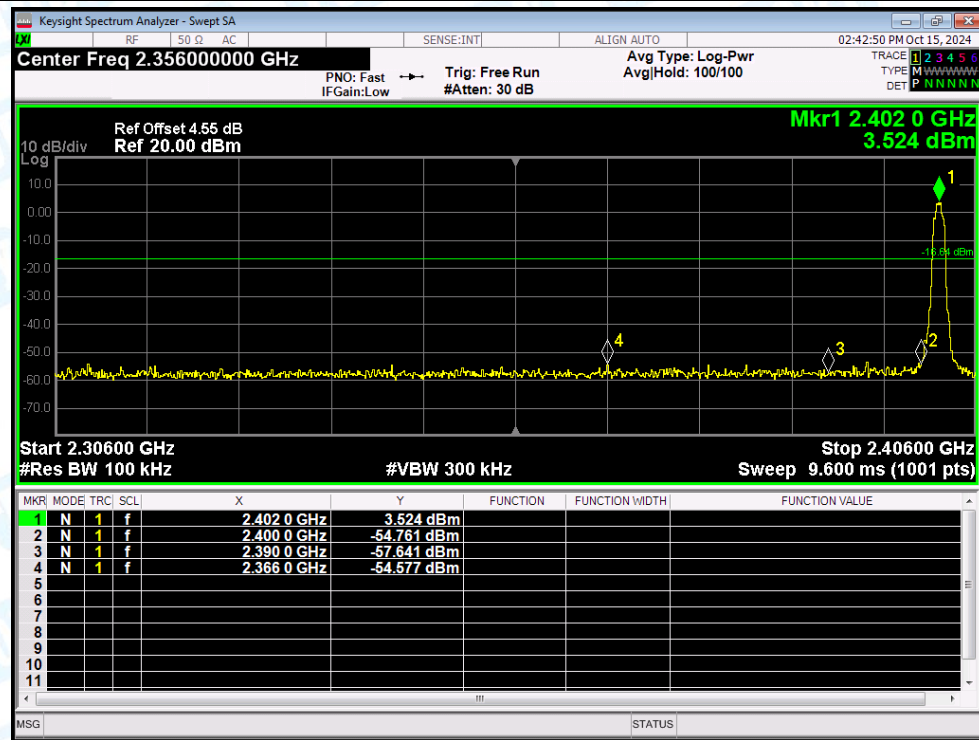
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



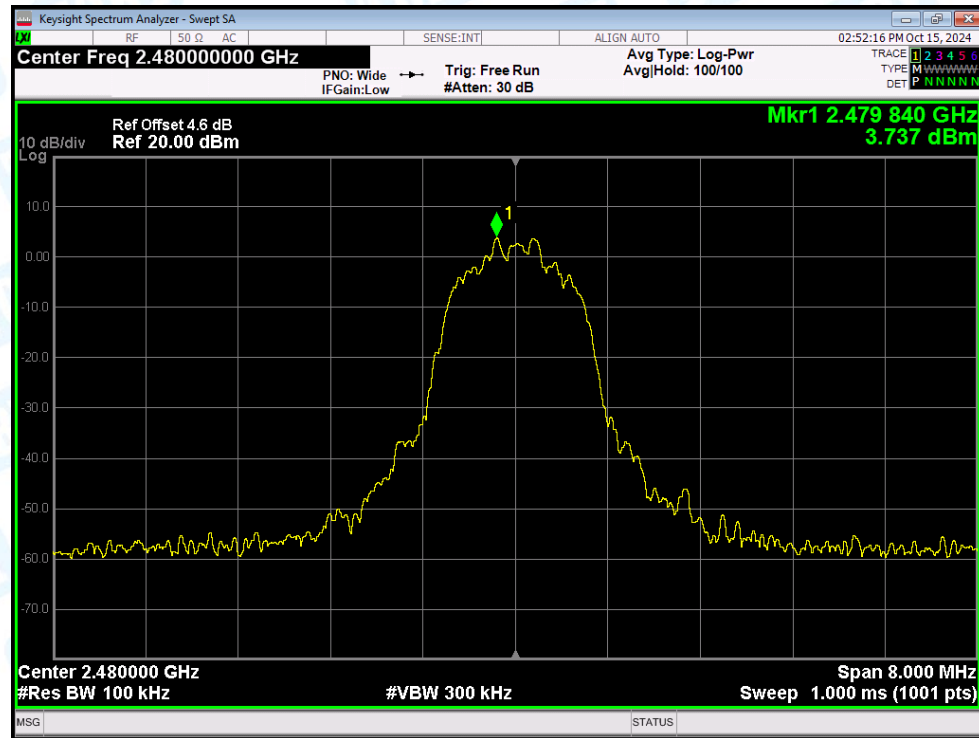
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



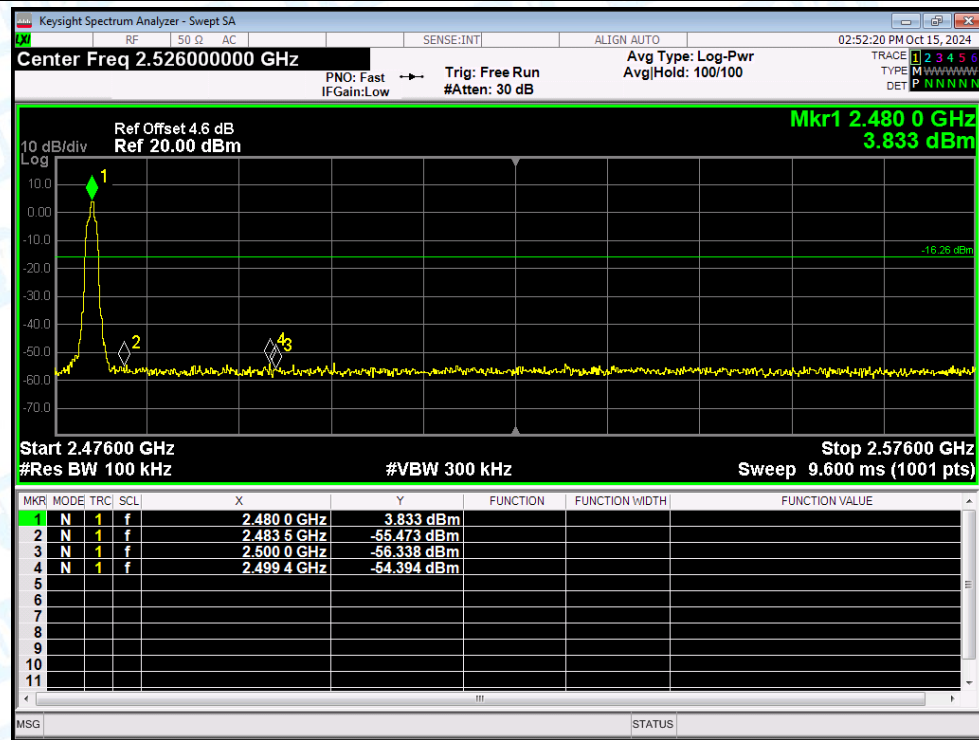
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



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



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



6. Band Edge(Hopping)

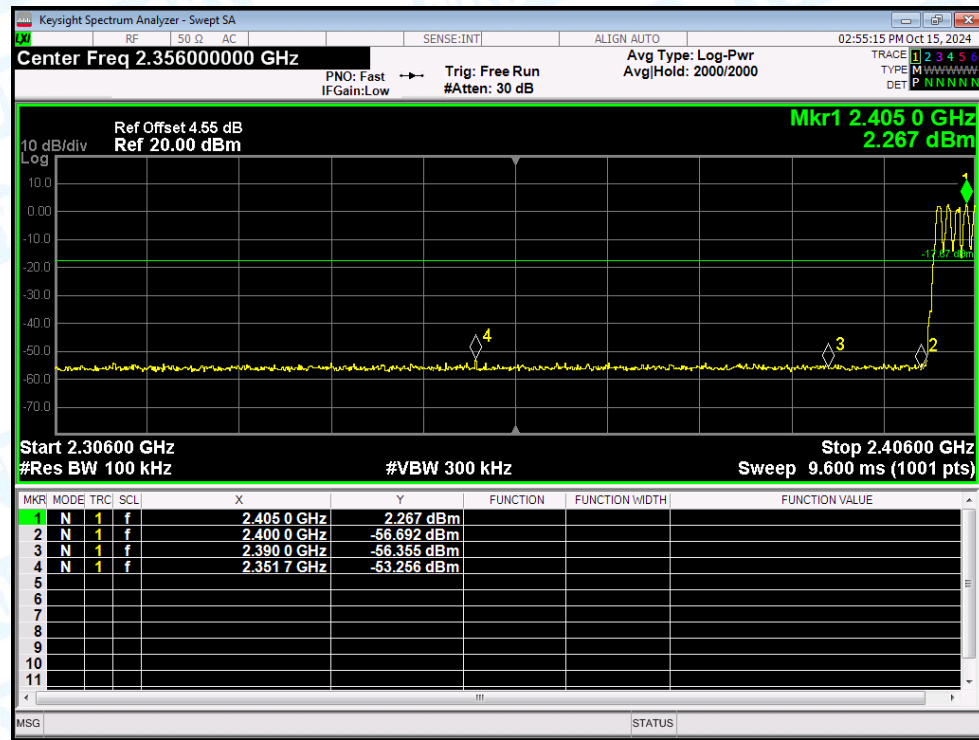
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-55.59	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-55.73	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-56.74	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-57.47	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-57.48	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-57.15	-20	Pass

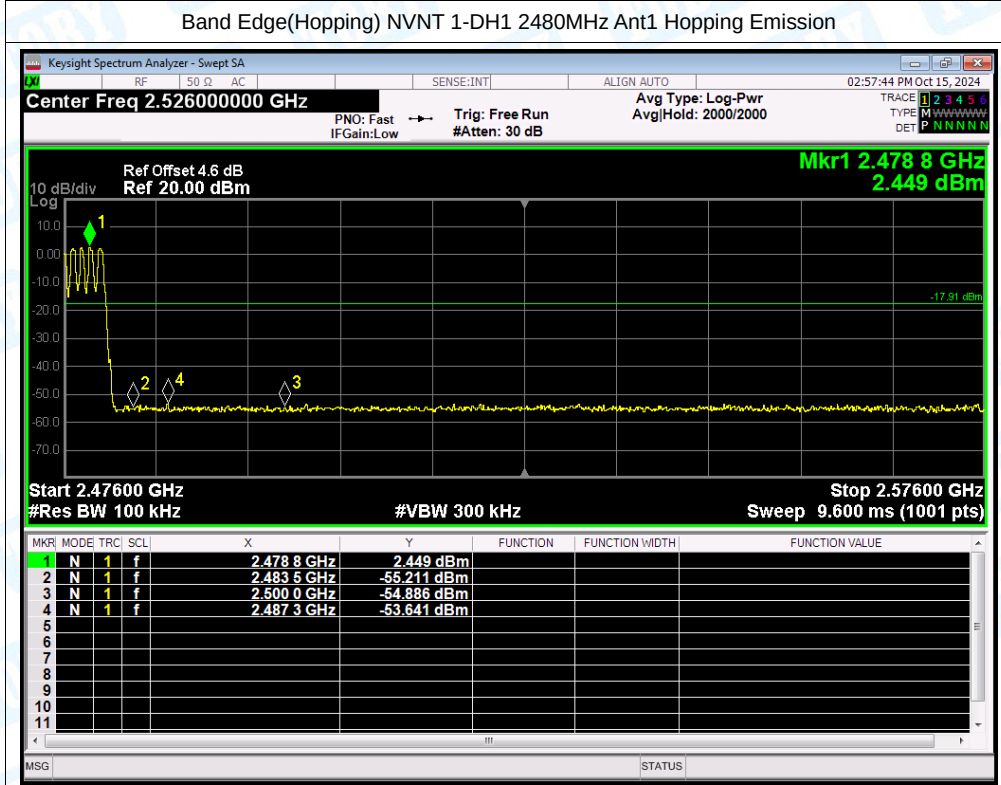
Test Graphs

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



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

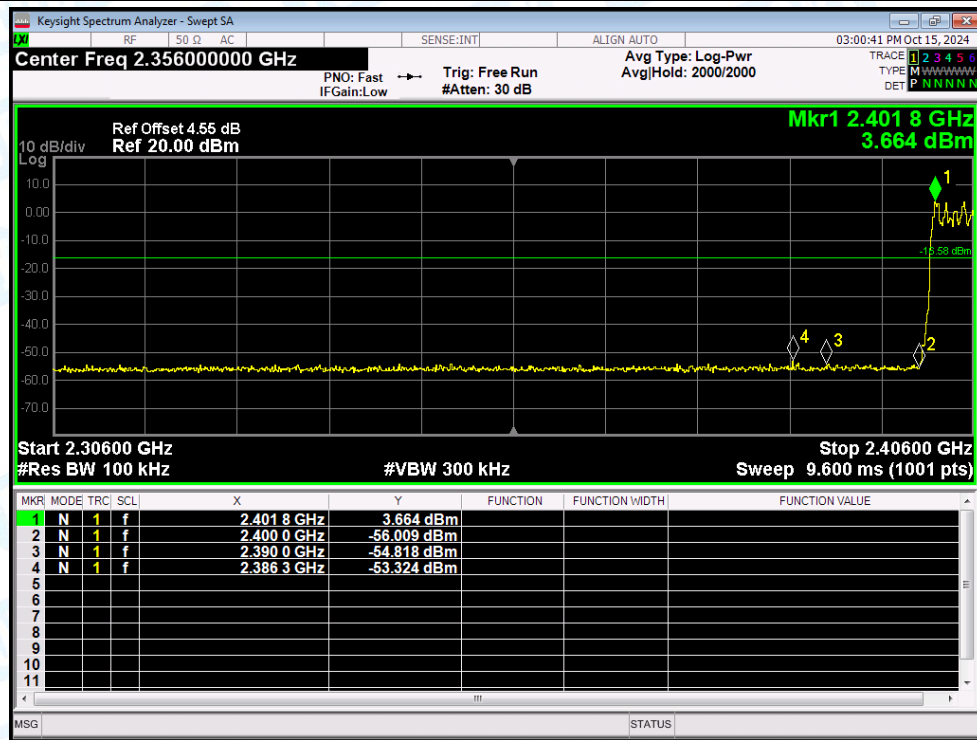


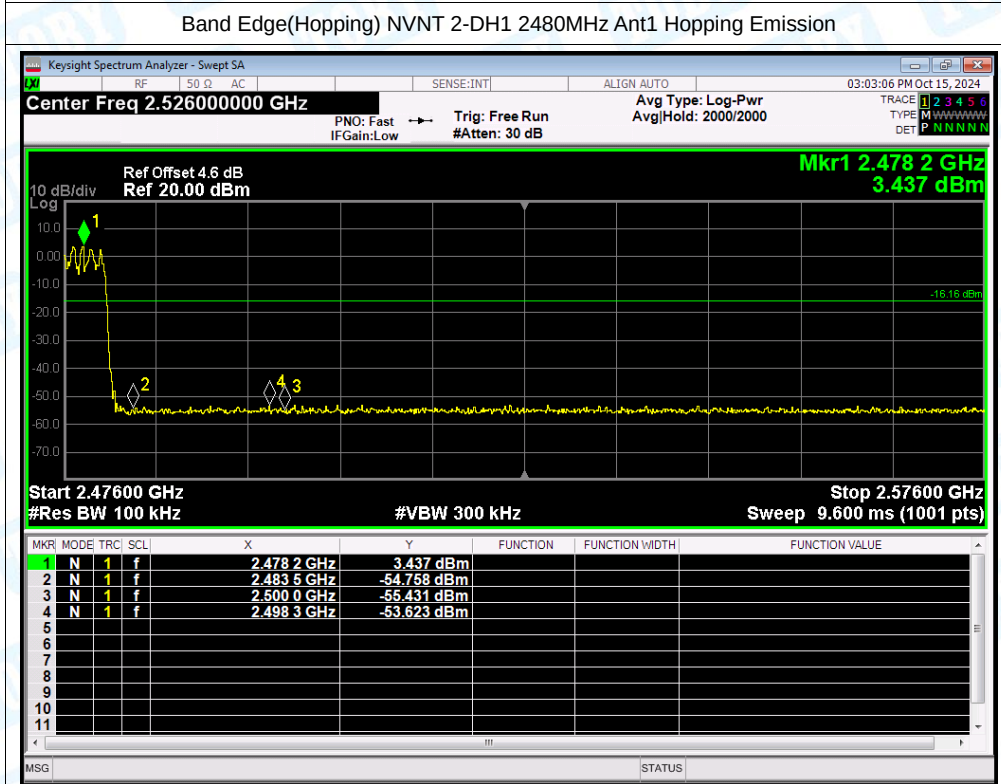
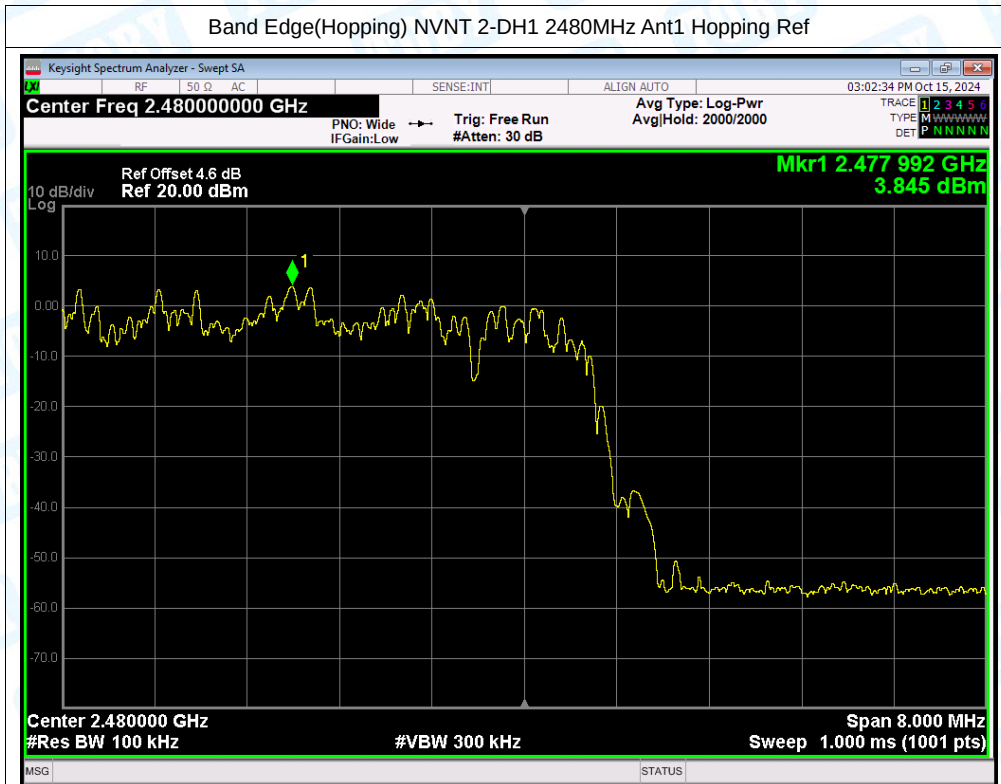


Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref

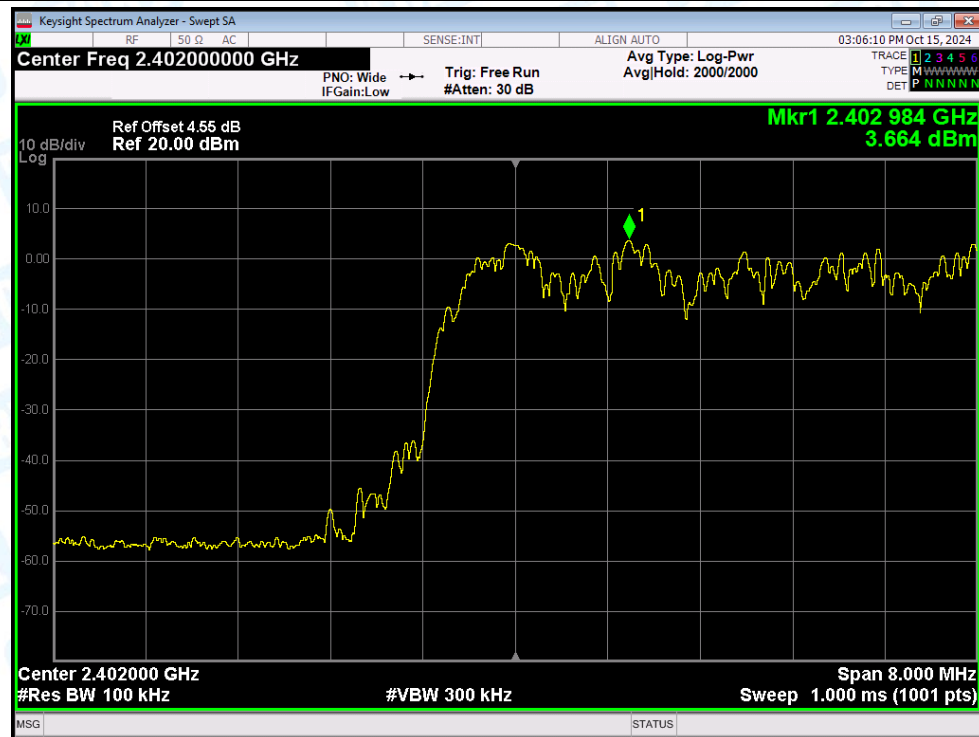


Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission

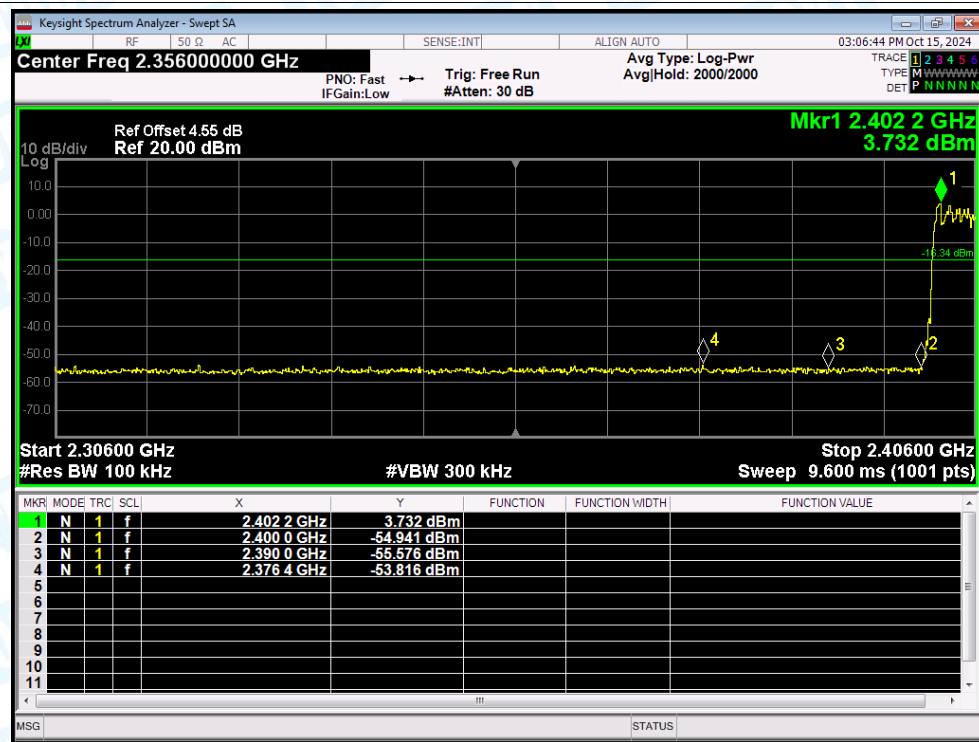




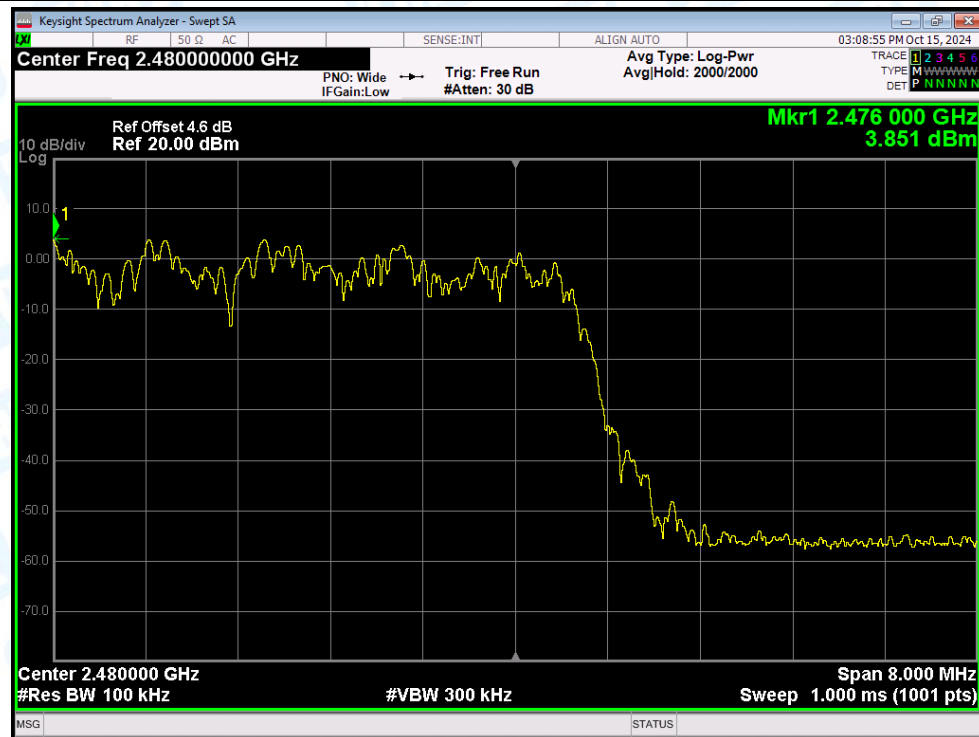
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



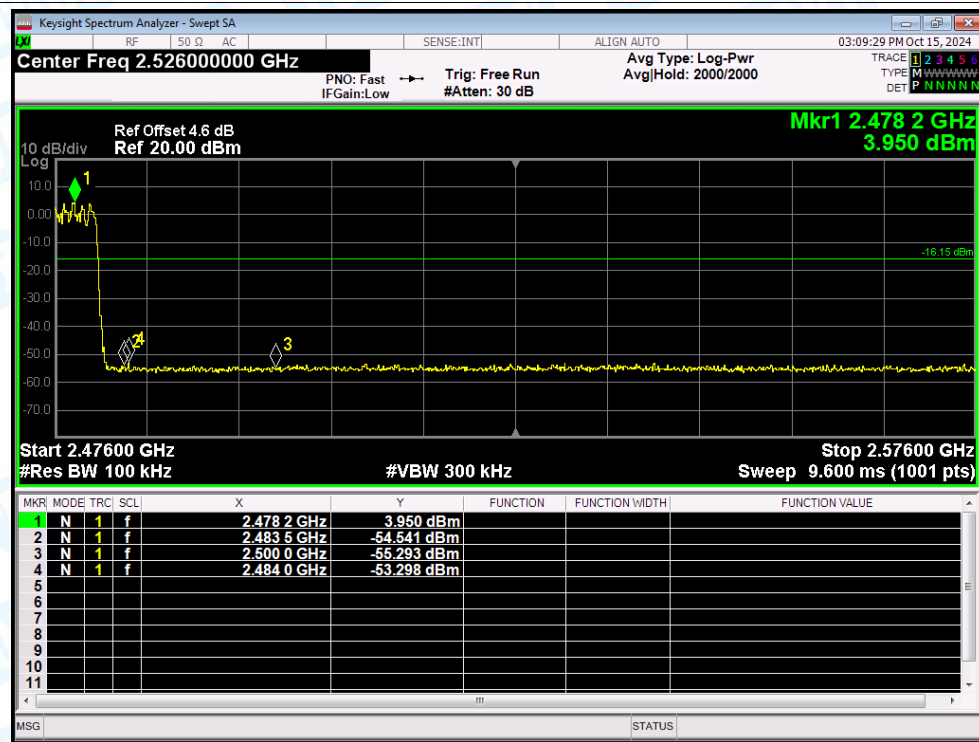
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



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



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

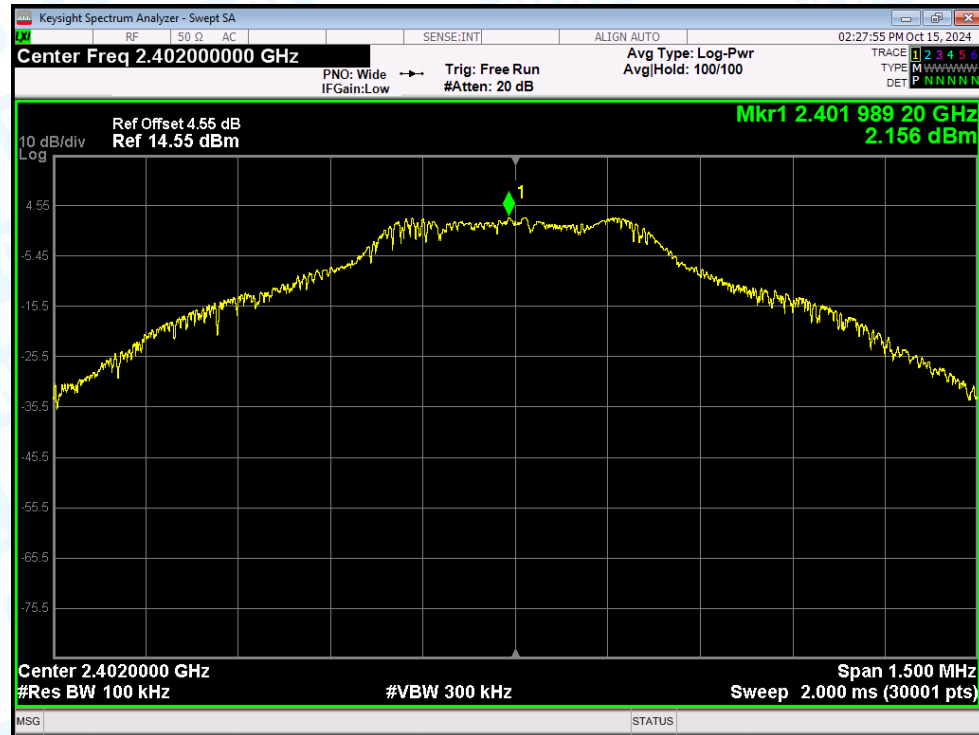


7. Conducted RF Spurious Emission

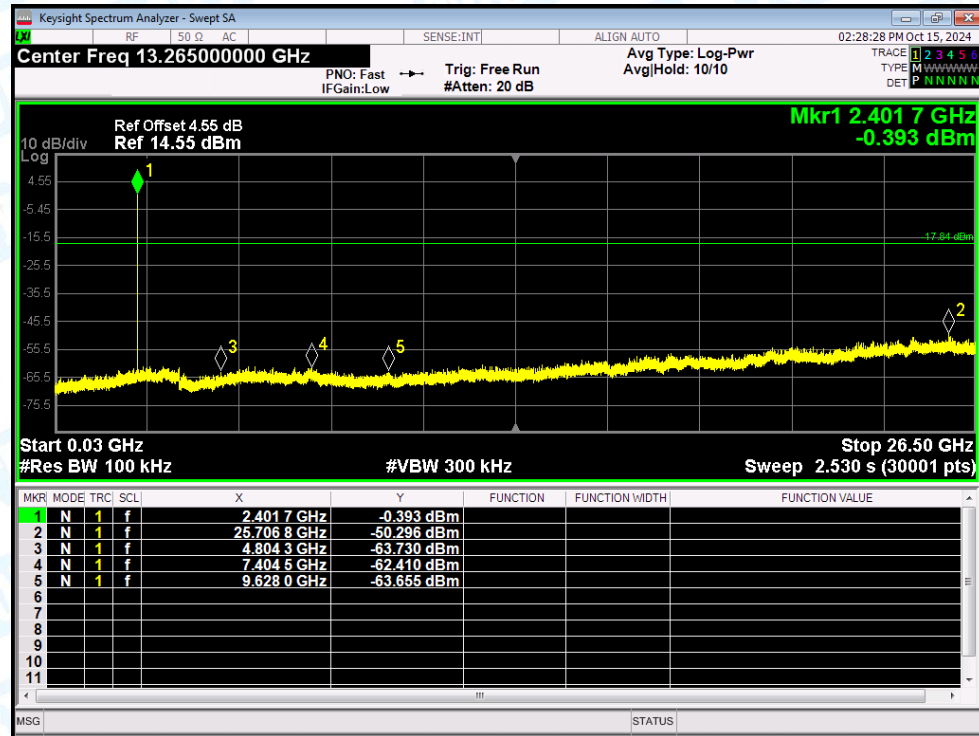
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-52.46	-20	Pass
NVNT	1-DH1	2441	Ant1	-53.76	-20	Pass
NVNT	1-DH1	2480	Ant1	-52.92	-20	Pass
NVNT	2-DH1	2402	Ant1	-54.95	-20	Pass
NVNT	2-DH1	2441	Ant1	-54.78	-20	Pass
NVNT	2-DH1	2480	Ant1	-54.87	-20	Pass
NVNT	3-DH1	2402	Ant1	-54.25	-20	Pass
NVNT	3-DH1	2441	Ant1	-54.59	-20	Pass
NVNT	3-DH1	2480	Ant1	-54.79	-20	Pass

Test Graphs

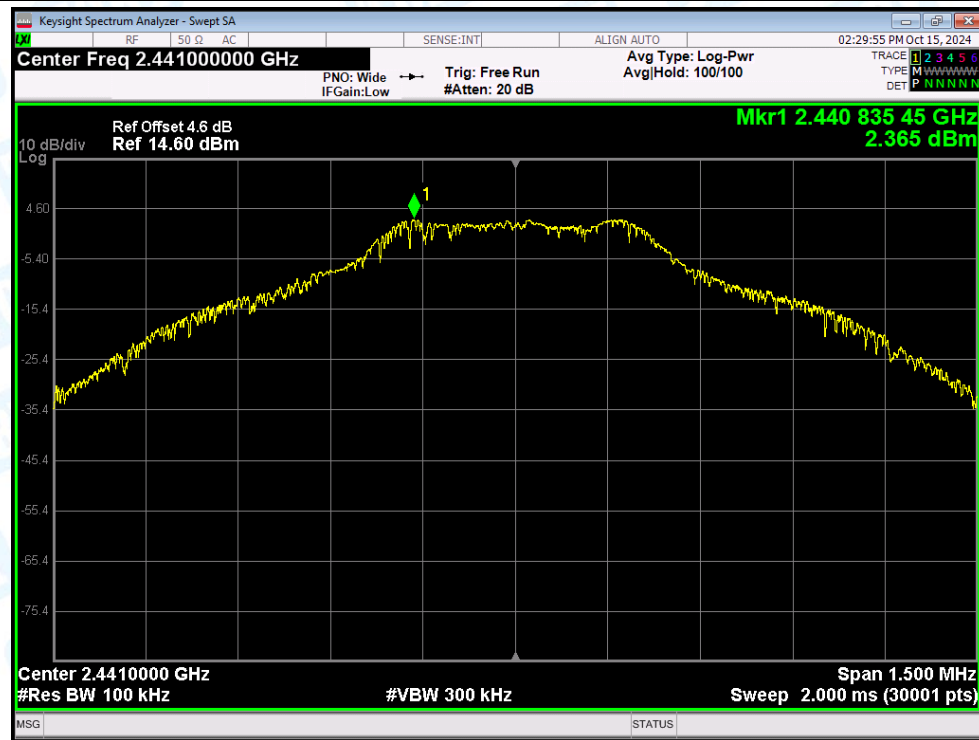
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



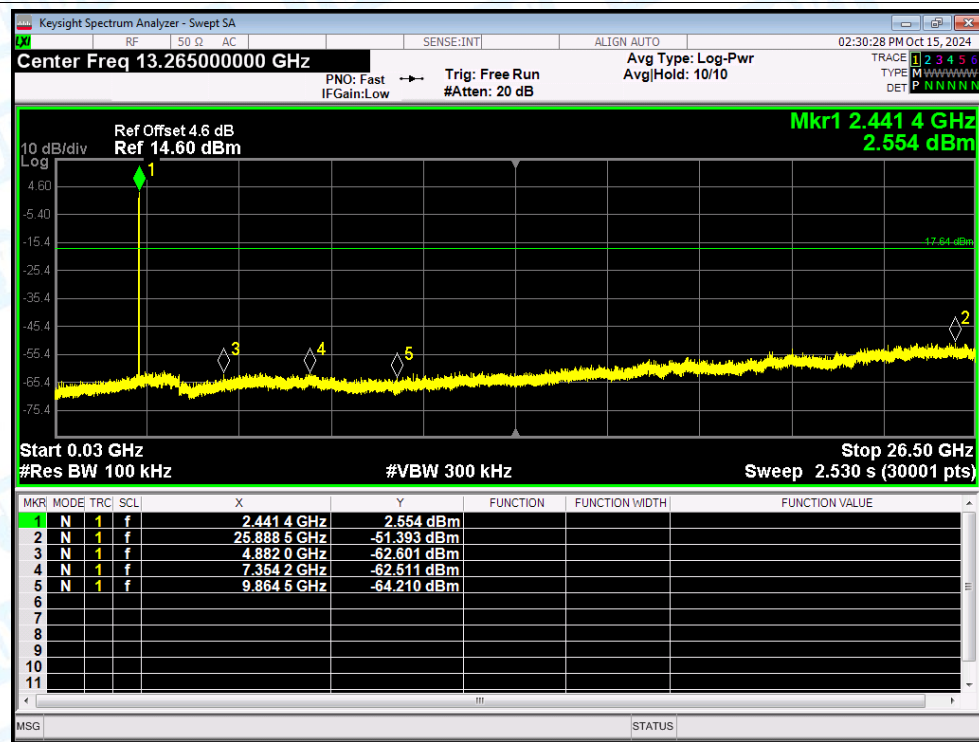
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



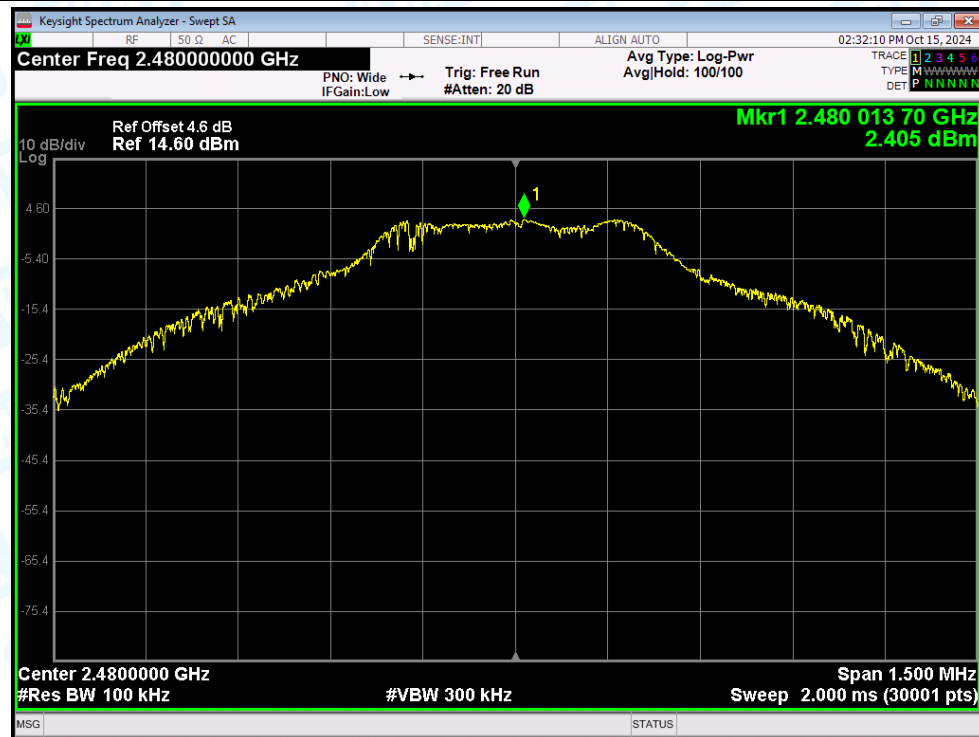
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



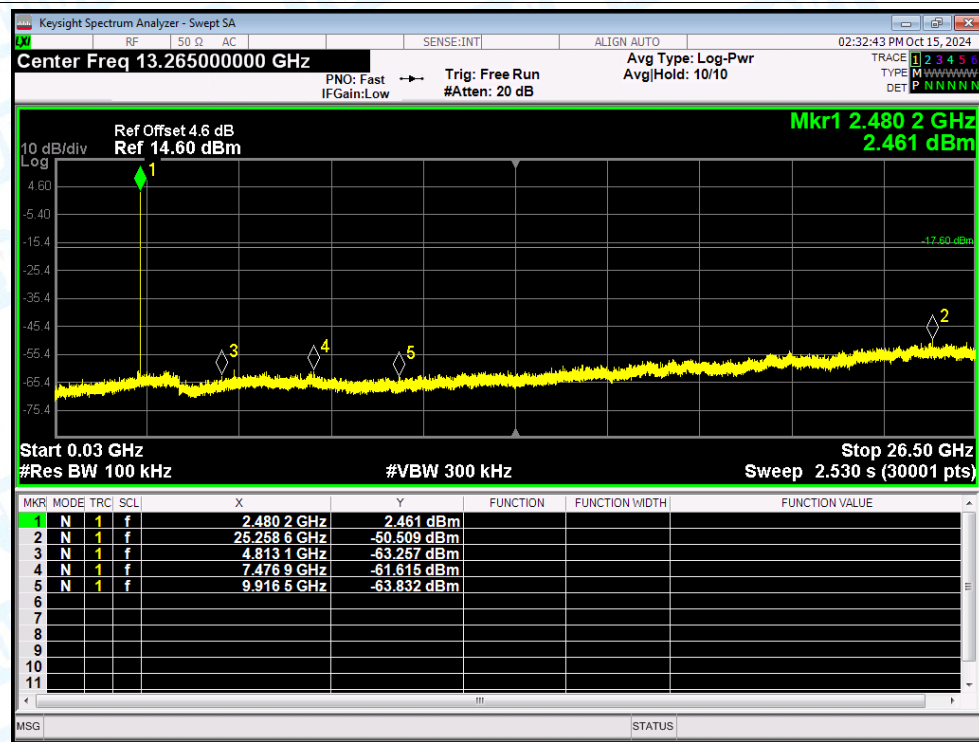
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



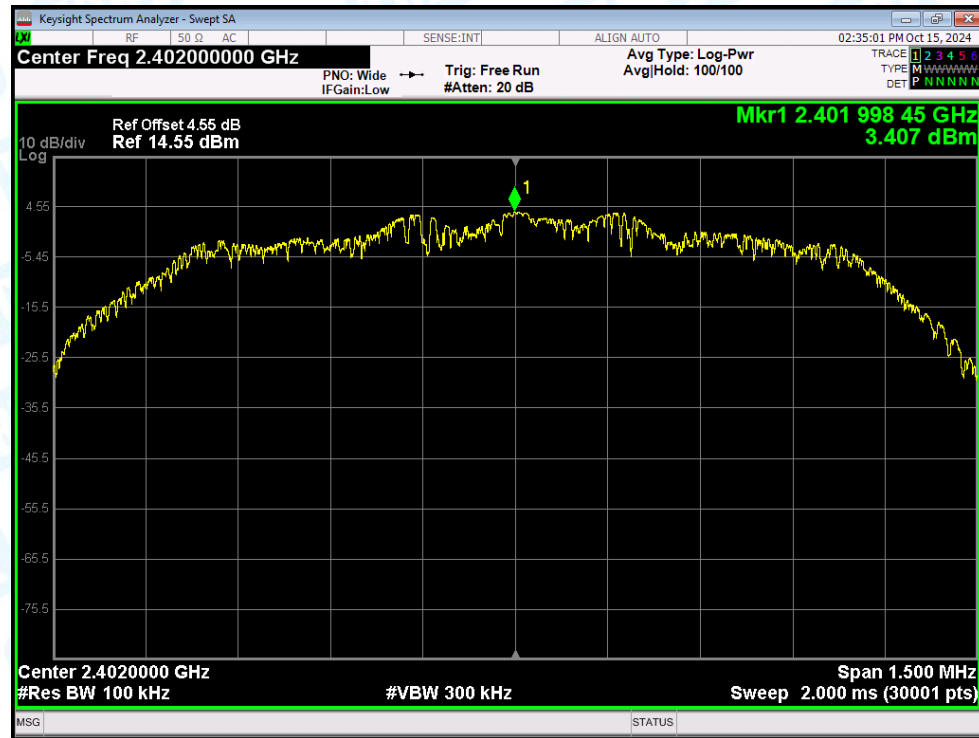
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



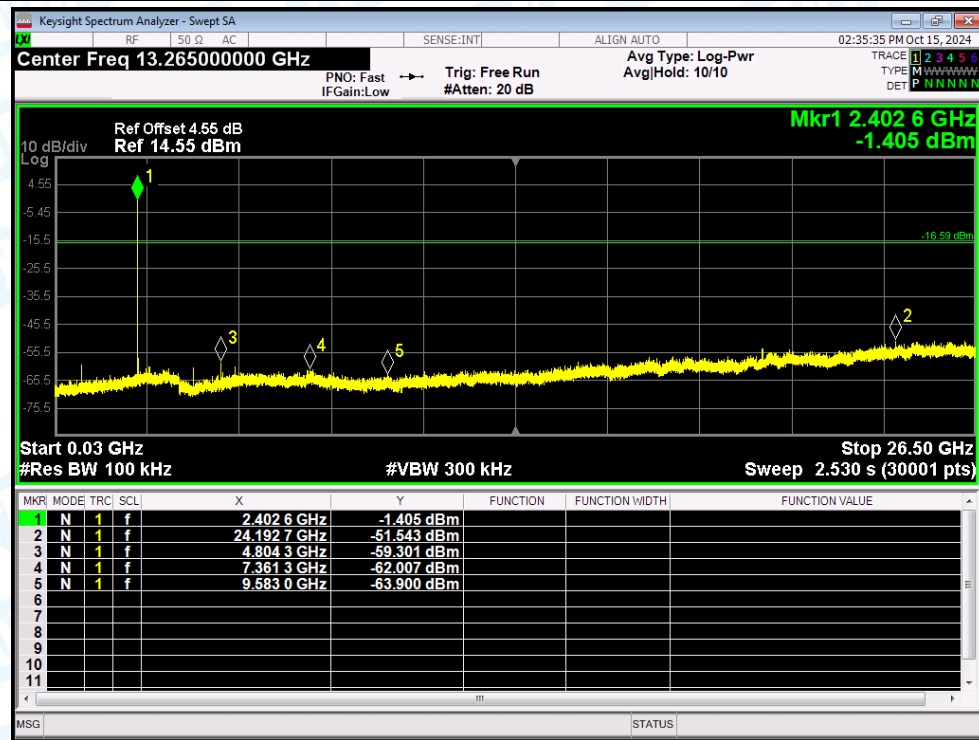
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



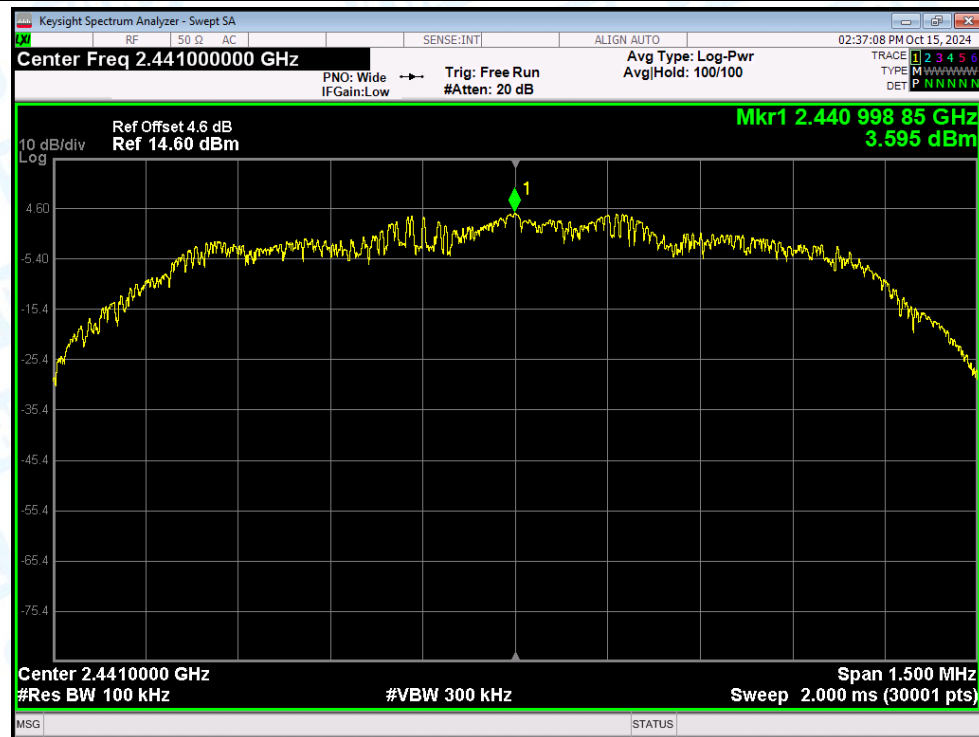
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



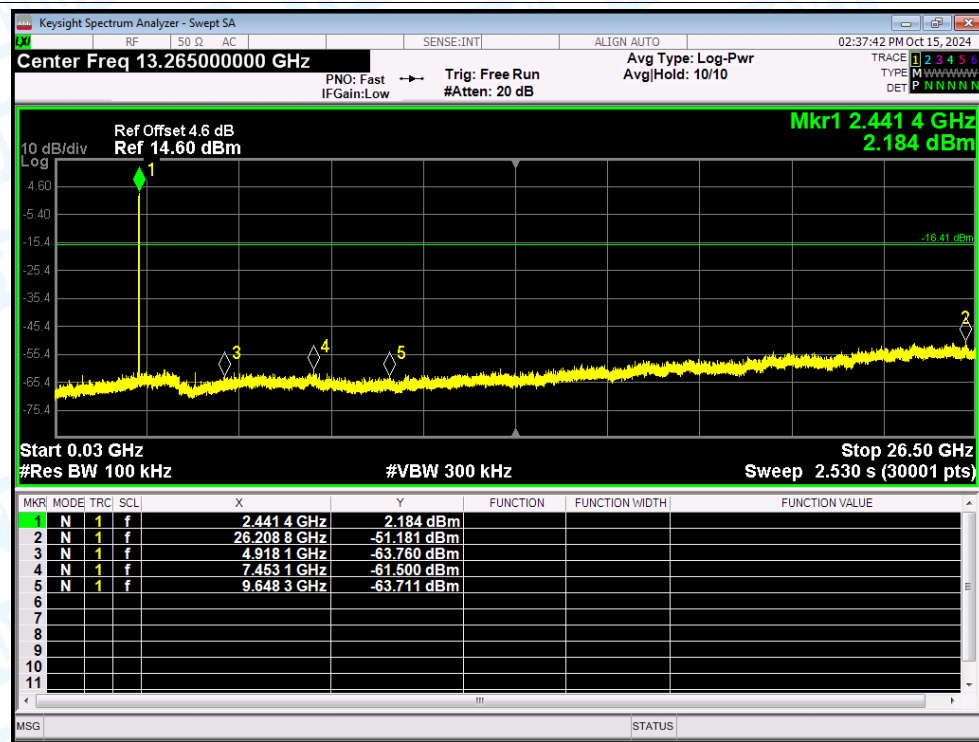
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



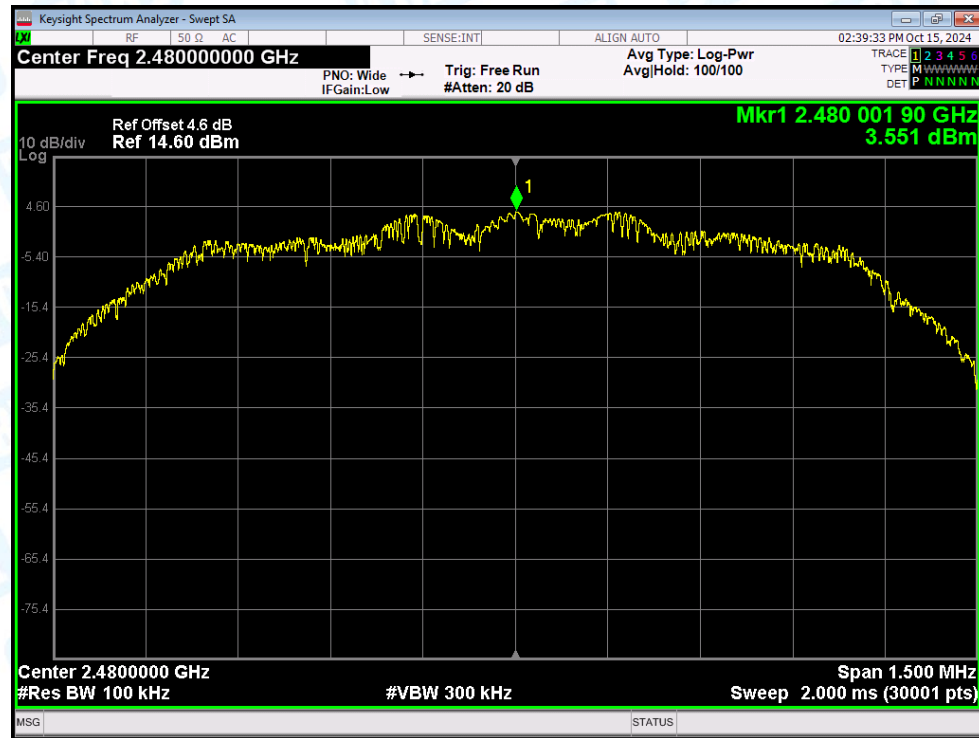
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



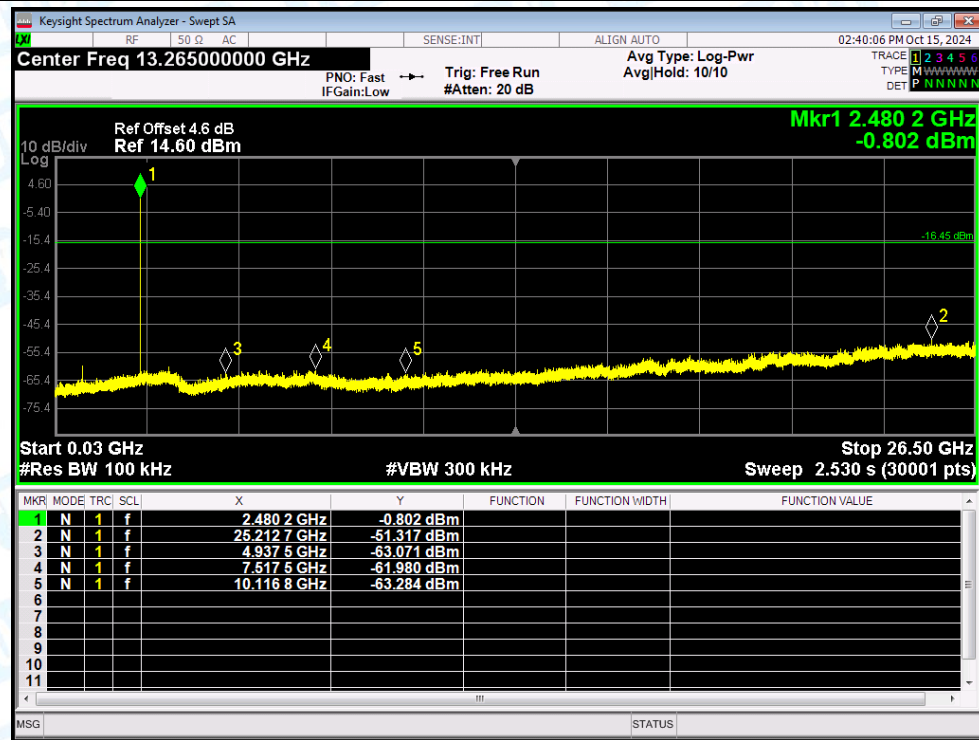
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



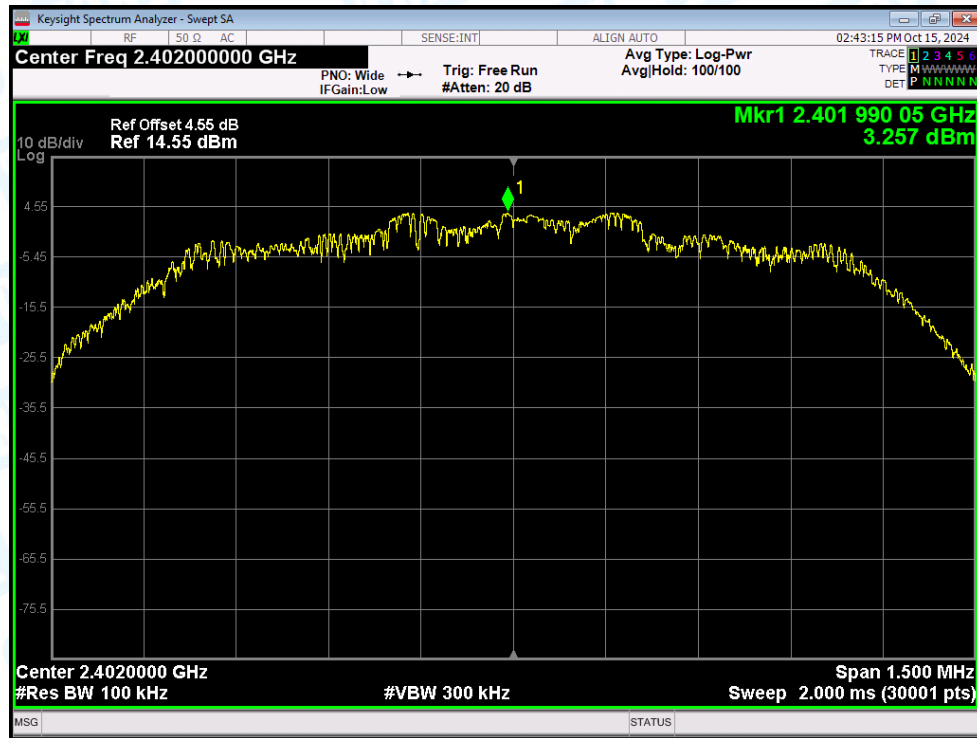
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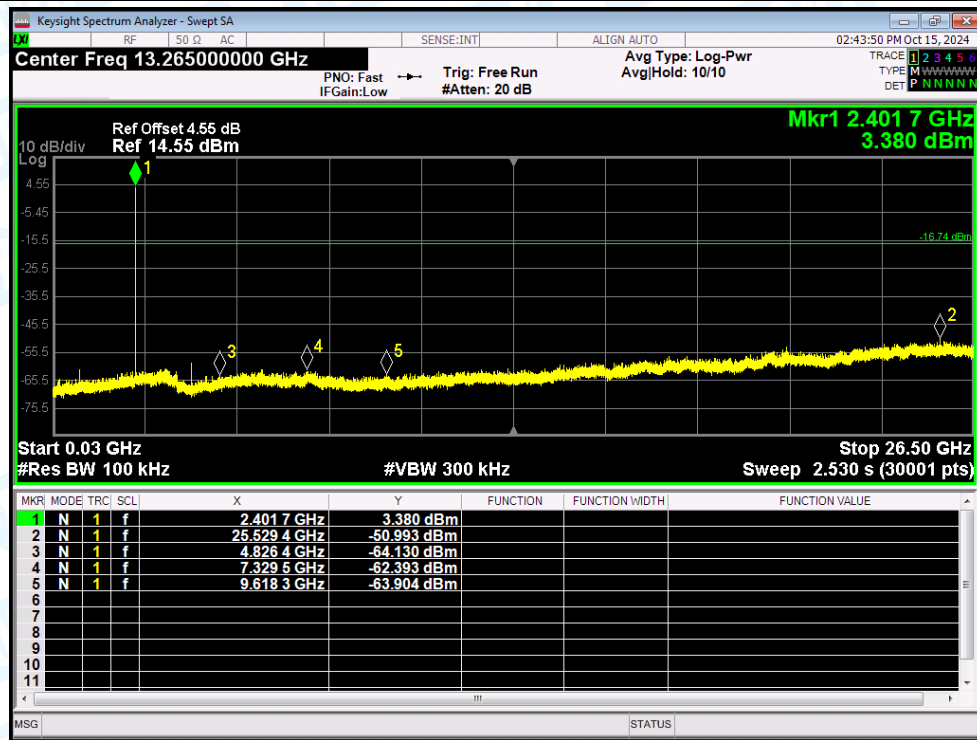
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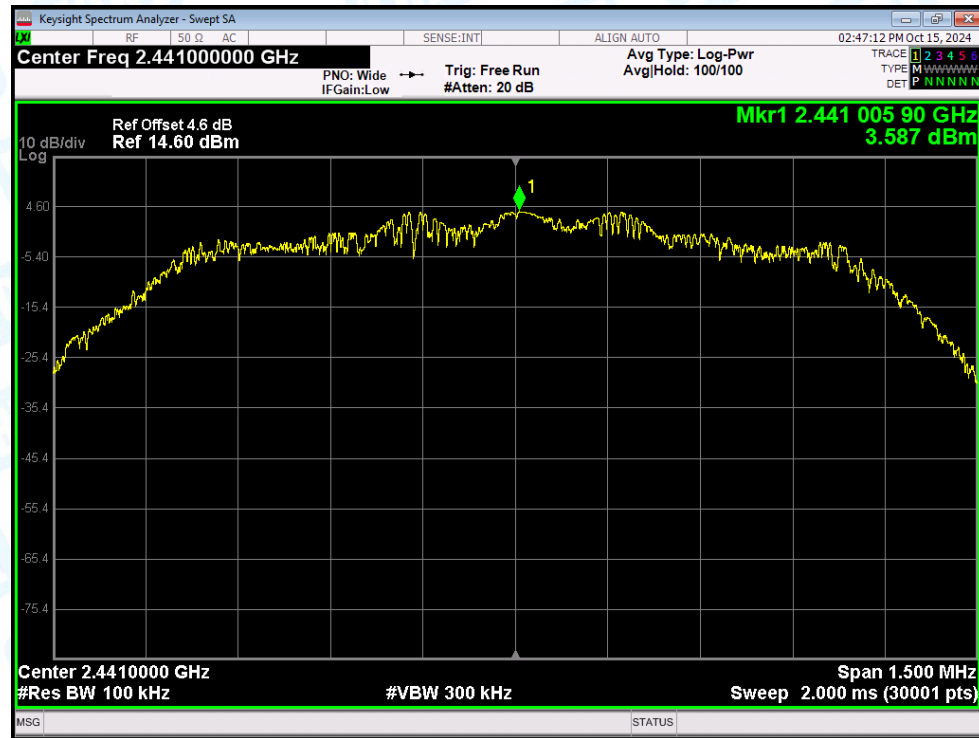
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



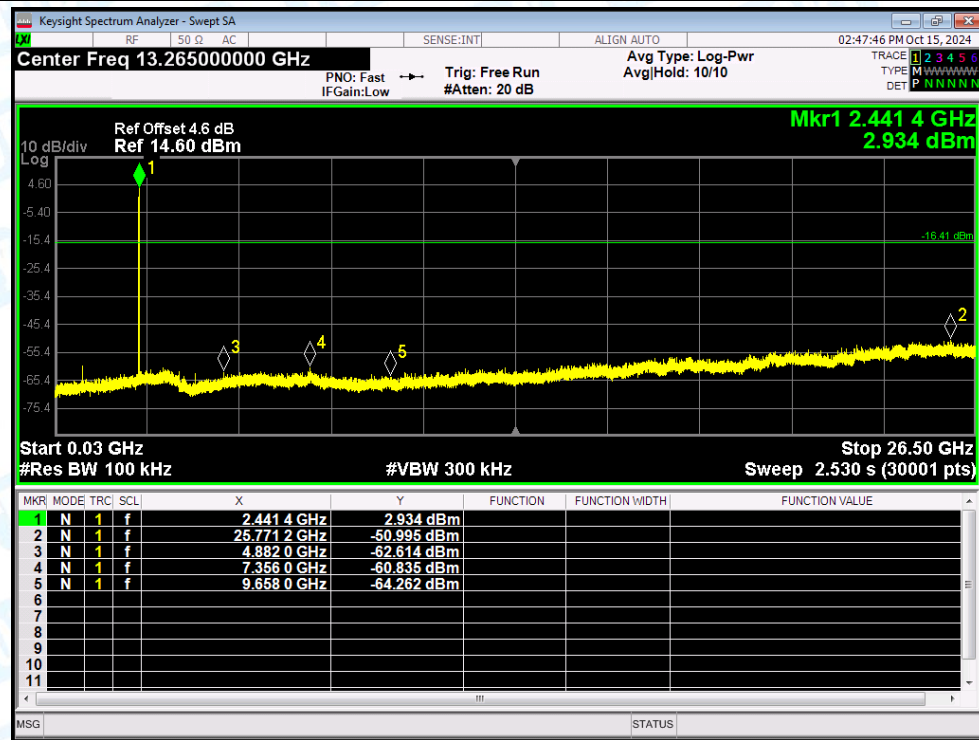
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



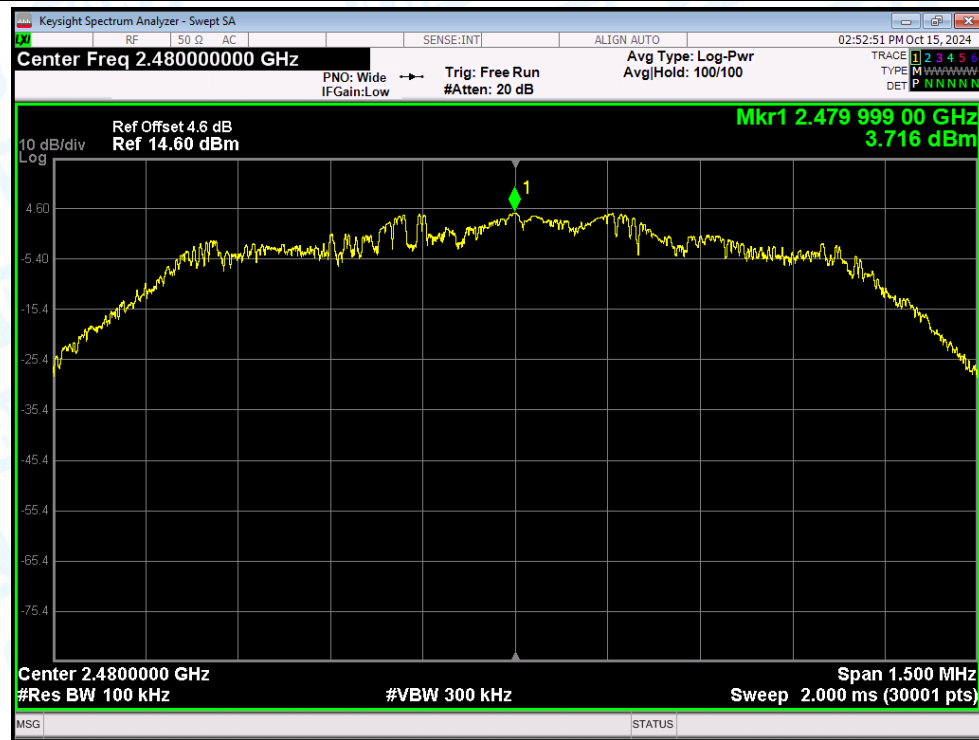
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



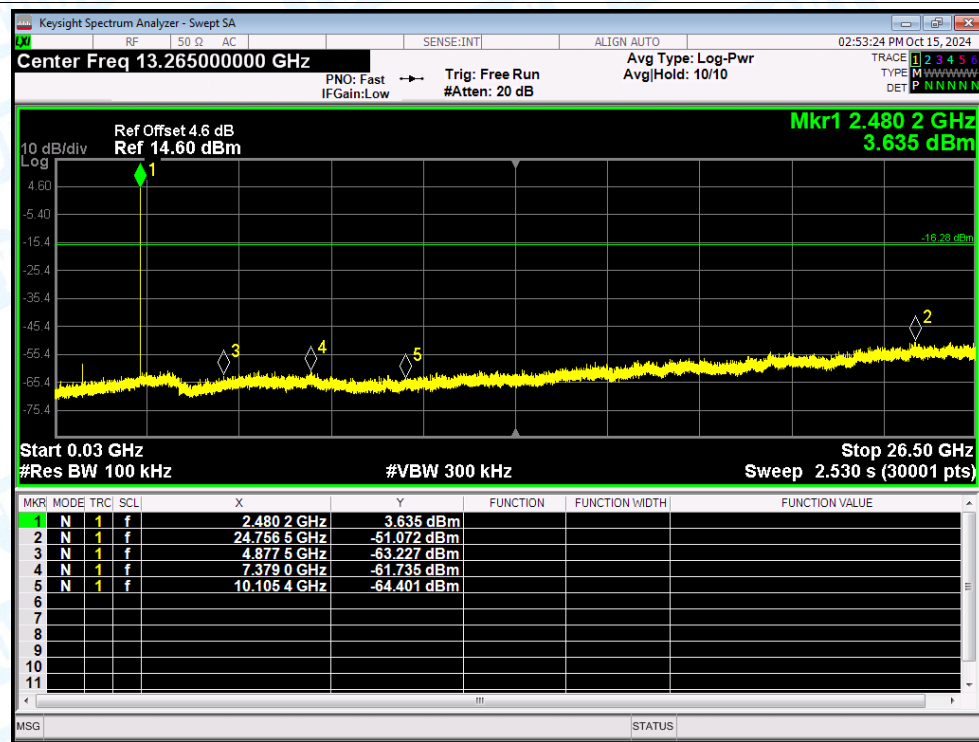
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

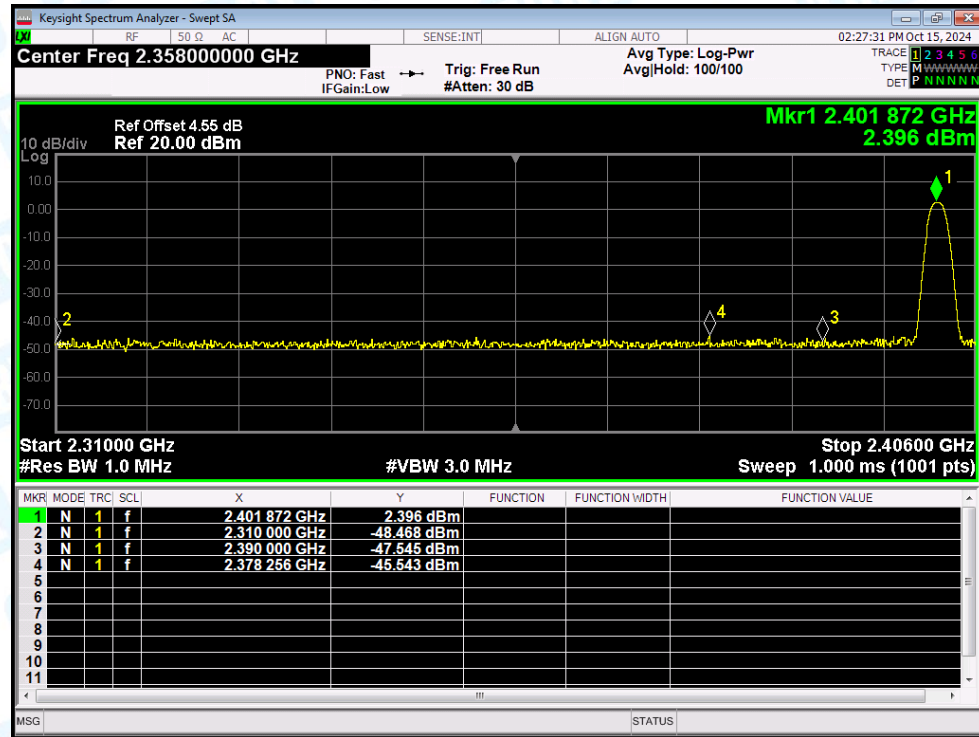


8. Restrict Band

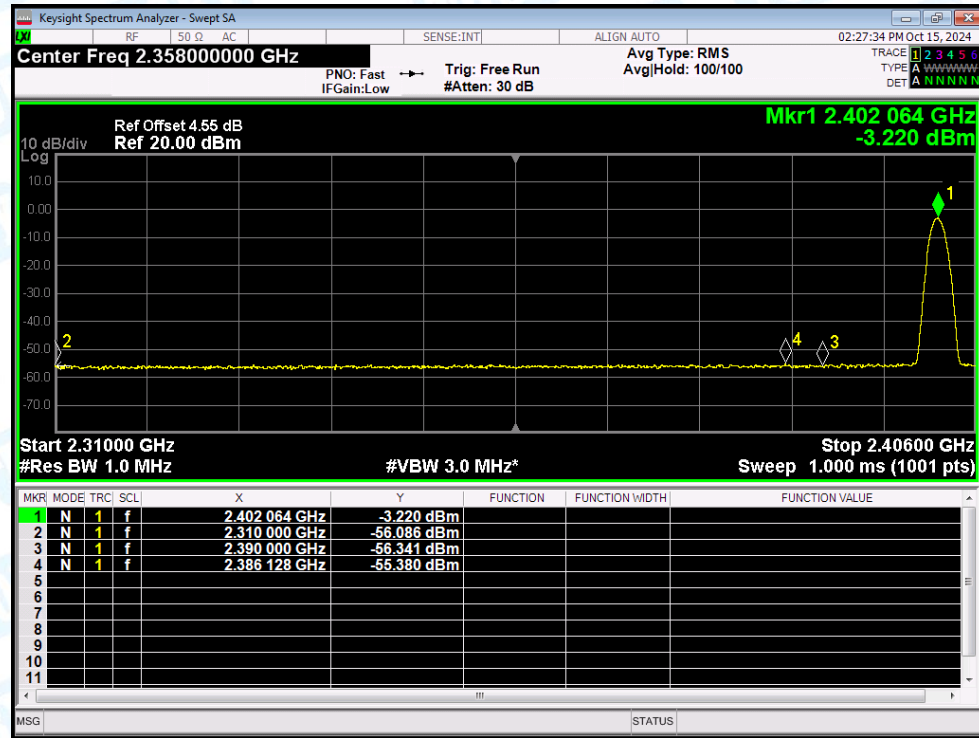
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-48.47	2	-	48.79	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.09	2	5.07	41.17	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2378.256	-45.54	2	-	51.72	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2386.128	-55.38	2	5.07	41.88	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-47.55	2	-	49.71	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-56.34	2	5.07	40.92	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-48.98	2	-	48.28	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-55.44	2	5.1	46.92	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2493.136	-44.08	2	-	53.18	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2486.296	-54.8	2	5.1	47.56	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-48.74	2	-	48.52	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-55.47	2	5.1	46.89	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-48.18	2	-	49.08	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-55.98	2	5.02	46.3	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2360.304	-44.75	2	-	52.51	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2386.896	-55.33	2	5.02	46.95	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-46.49	2	-	50.77	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-56.35	2	5.02	45.93	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-45.7	2	-	51.56	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-55.78	2	4.99	46.47	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2493.808	-44.69	2	-	52.57	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2492.608	-54.65	2	4.99	47.6	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-47.3	2	-	49.96	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.64	2	4.99	46.61	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-48.86	2	-	48.4	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.57	2	5.02	45.71	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2341.008	-45.02	2	-	52.24	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2371.536	-55.44	2	5.02	46.84	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-48.64	2	-	48.62	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-55.71	2	5.02	46.57	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-45.1	2	-	52.16	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-55.2	2	5.02	47.08	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2484.544	-43.91	2	-	53.35	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2496.544	-54.67	2	5.02	47.61	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-48.18	2	-	49.08	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.48	2	5.02	46.8	Average	54	Pass

Test Graphs

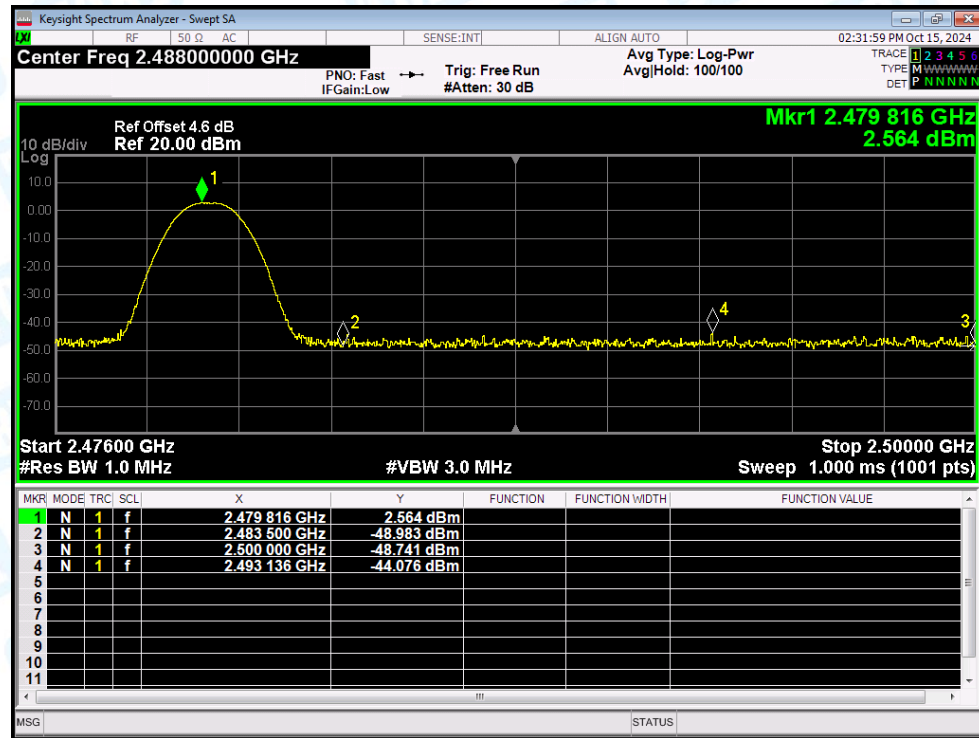
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



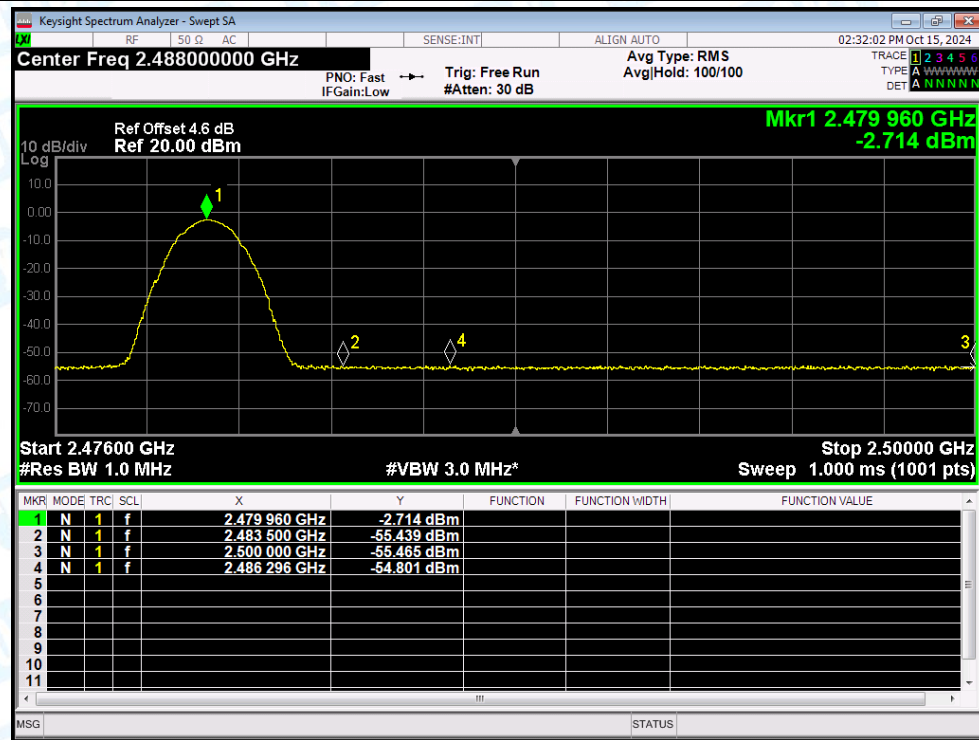
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



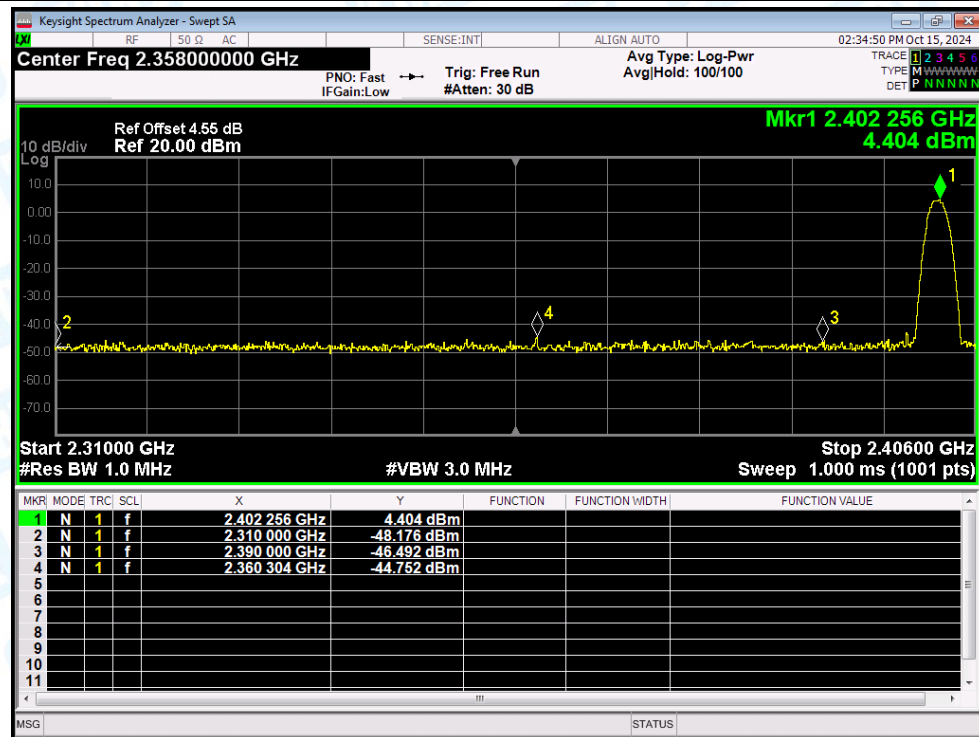
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



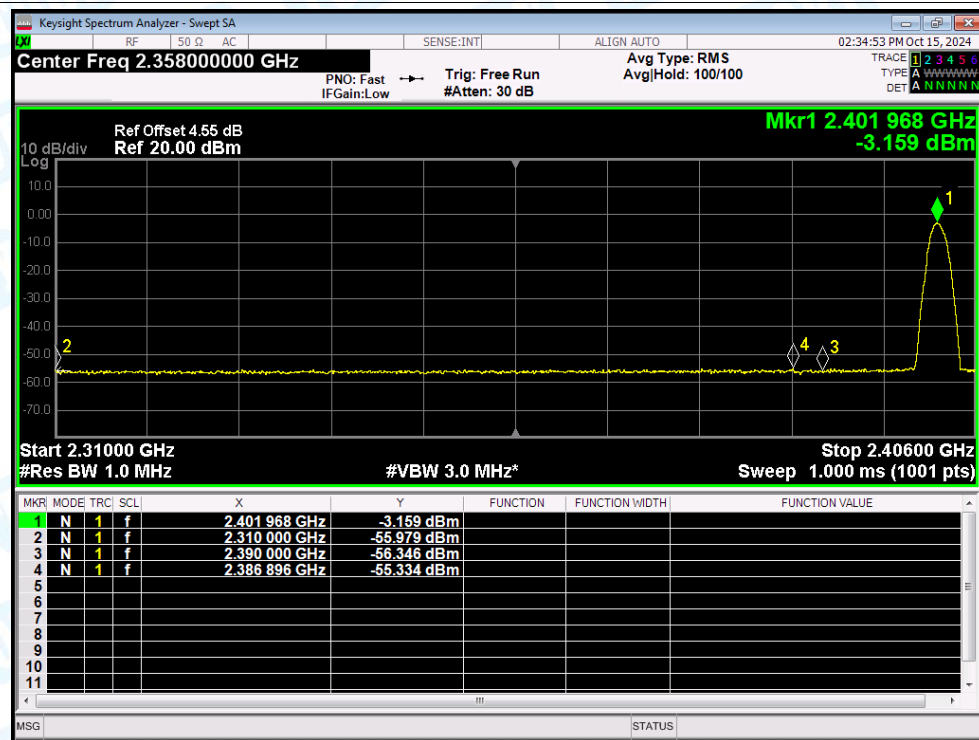
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



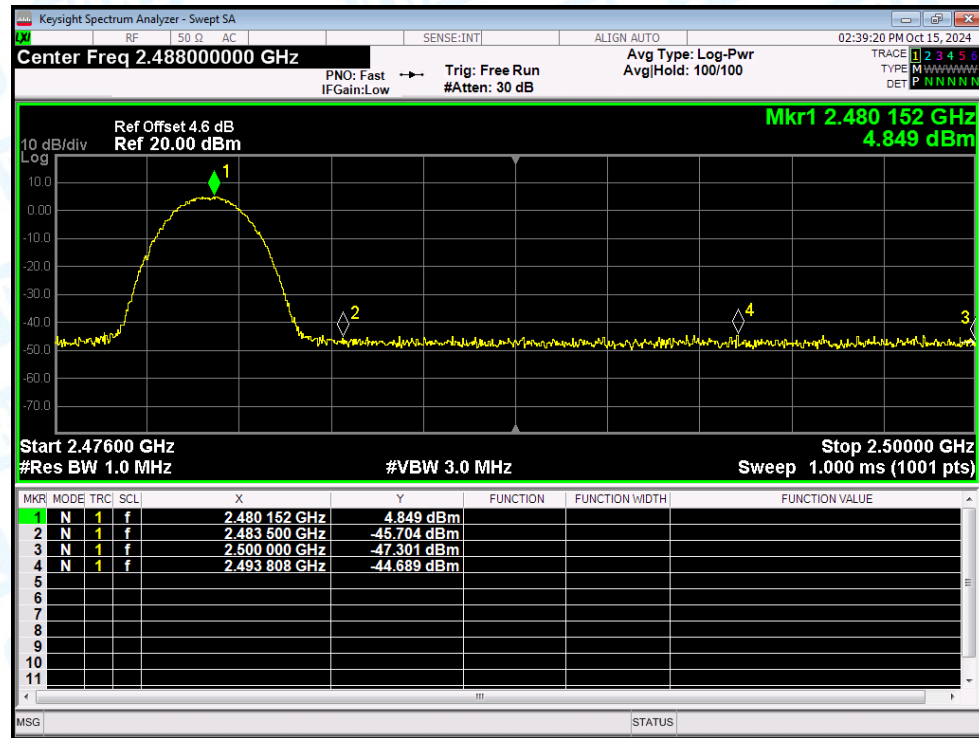
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



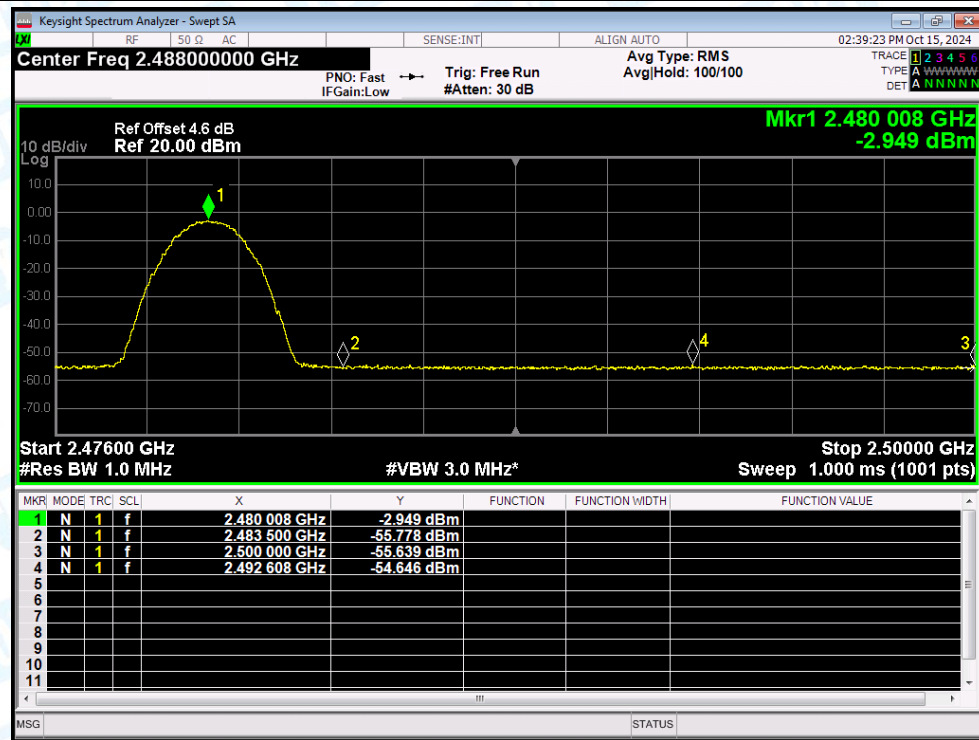
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



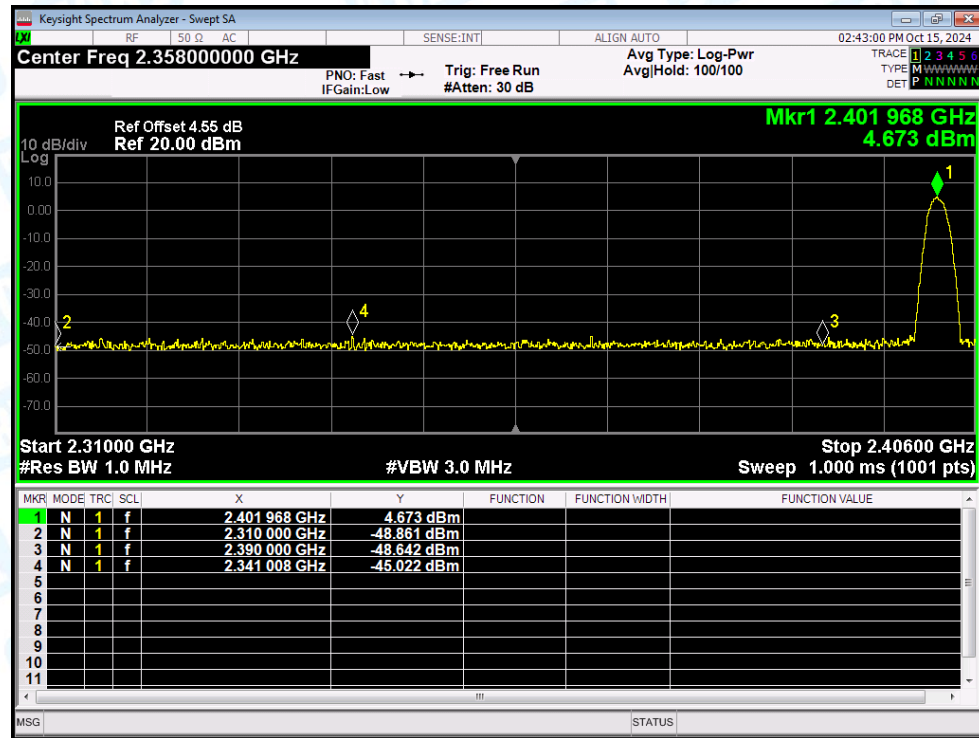
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



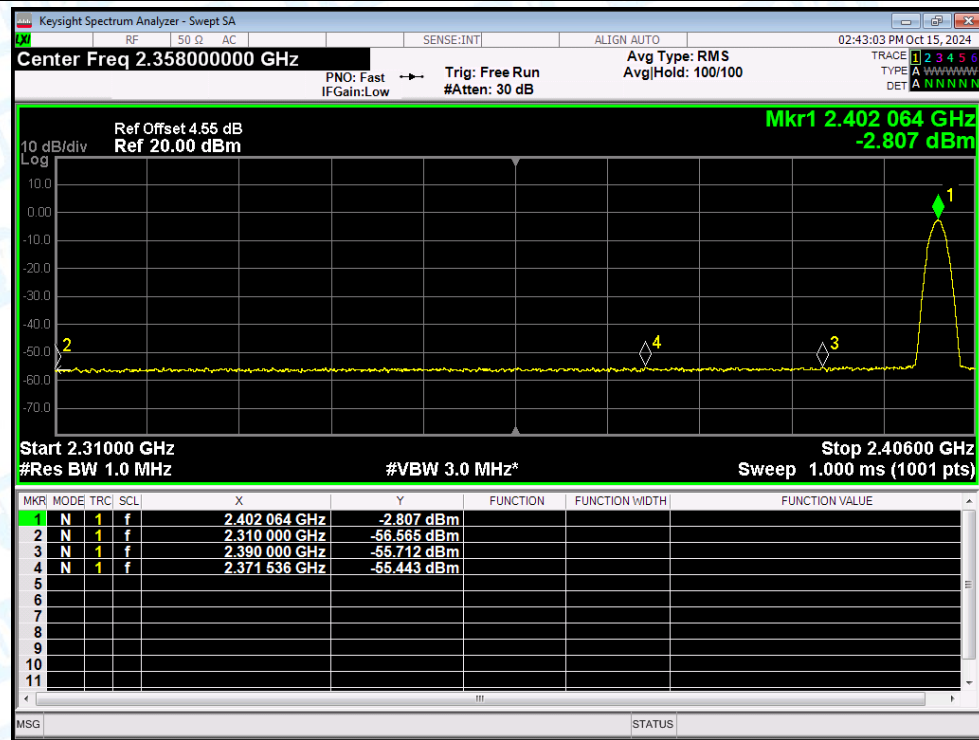
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



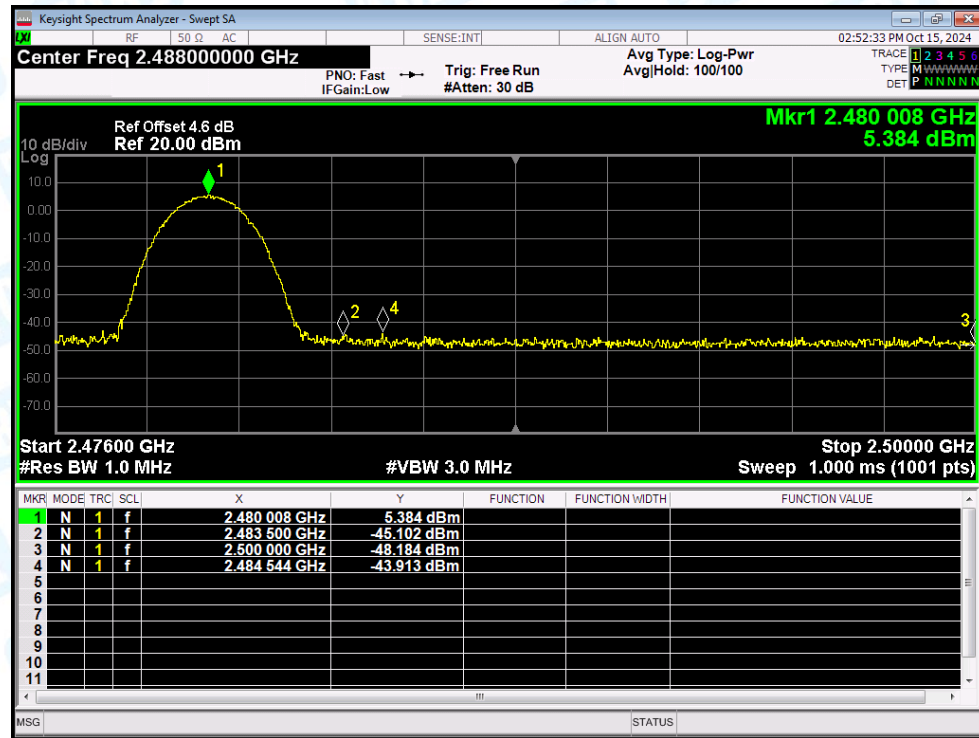
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



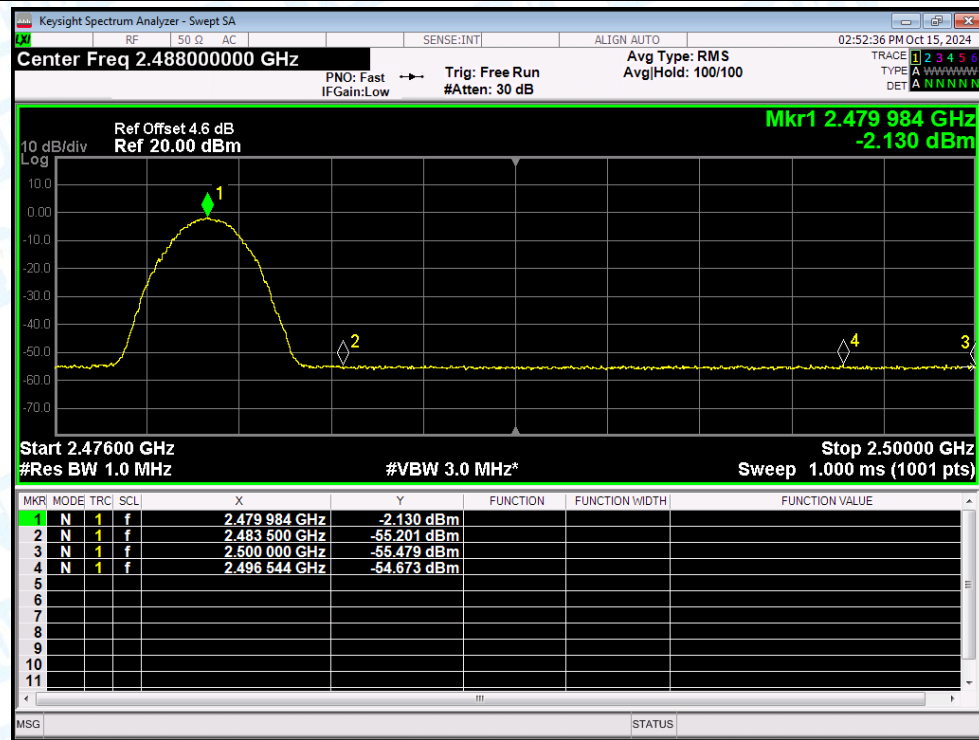
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

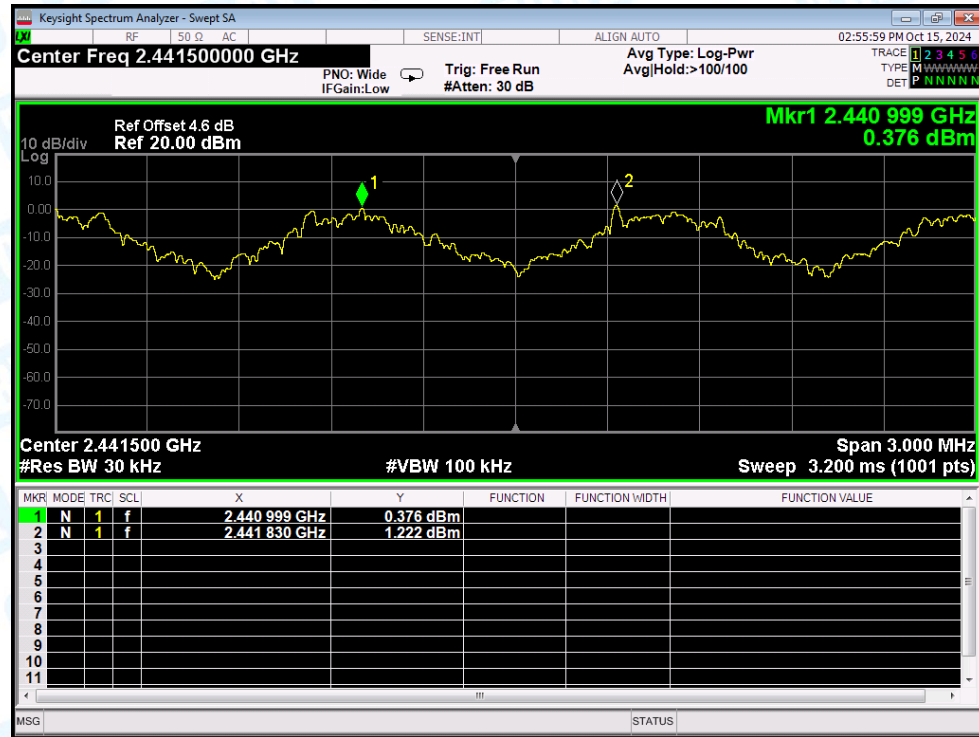


9. Carrier Frequencies Separation

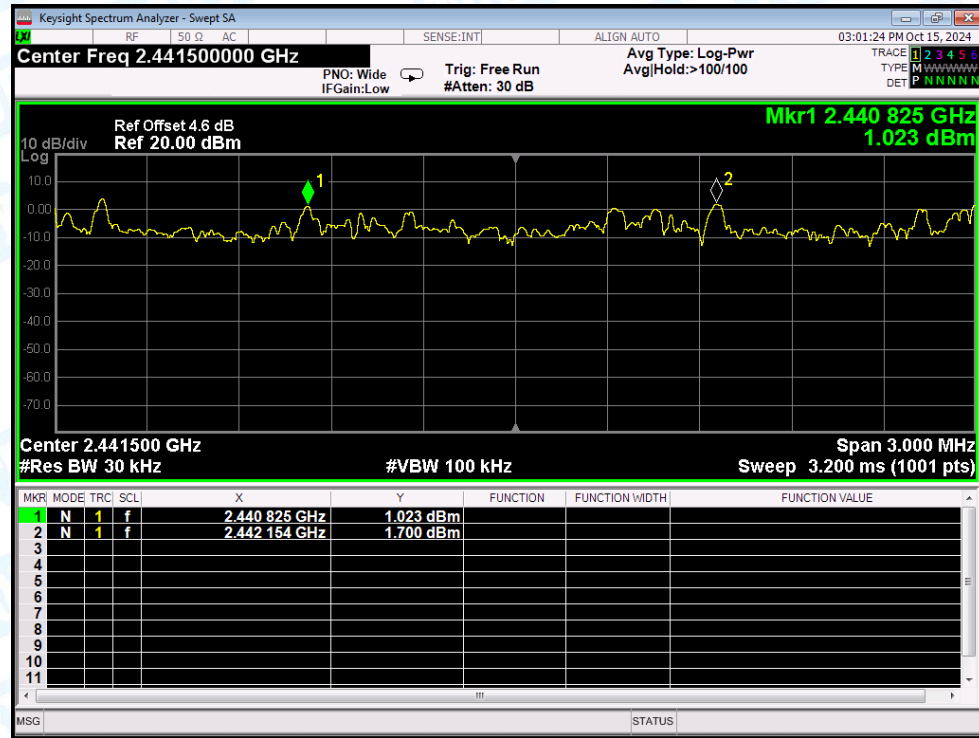
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.999	2441.83	0.831	0.633	Pass
NVNT	2-DH1	Ant1	2440.825	2442.154	1.329	0.82	Pass
NVNT	3-DH1	Ant1	2440.828	2442.154	1.326	0.807	Pass

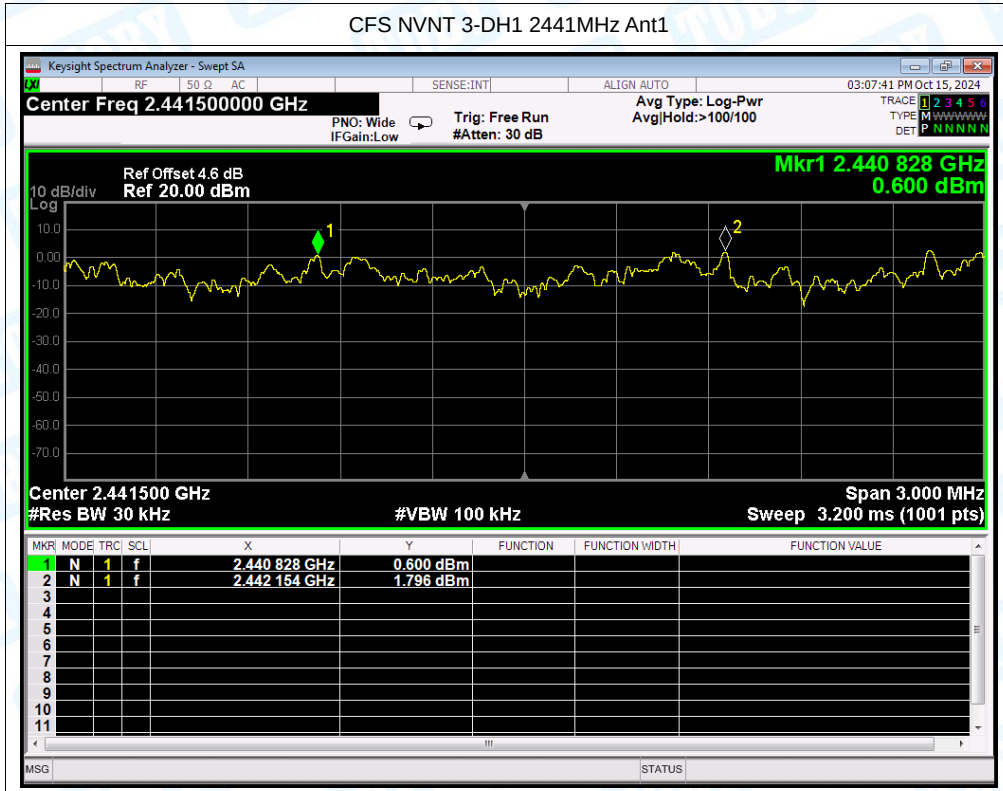
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



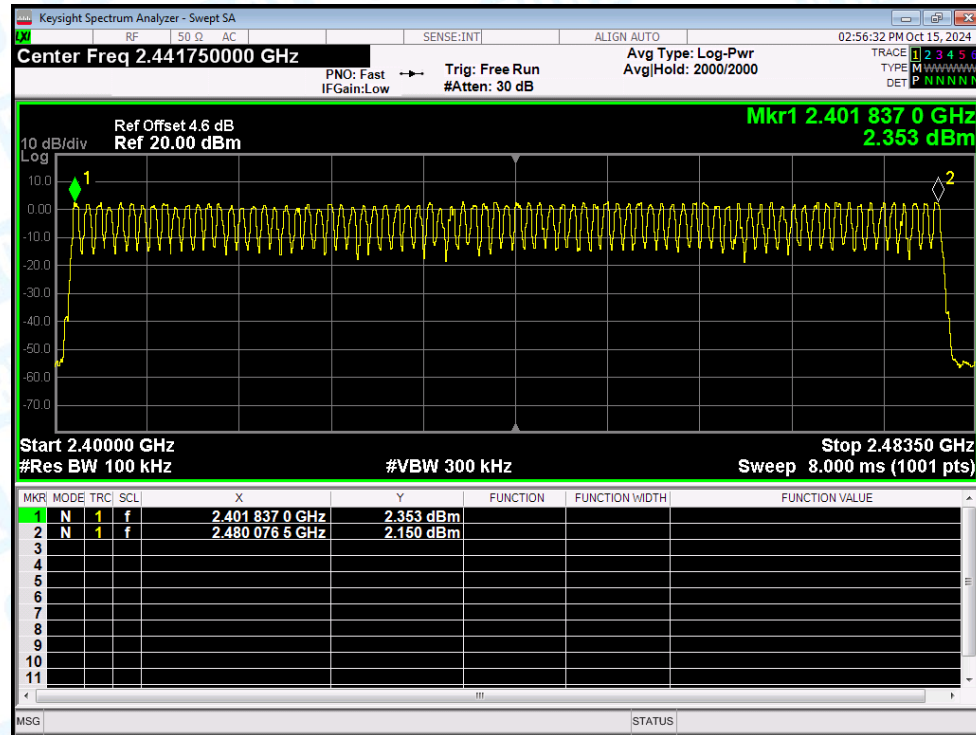


10. Number of Hopping Channel

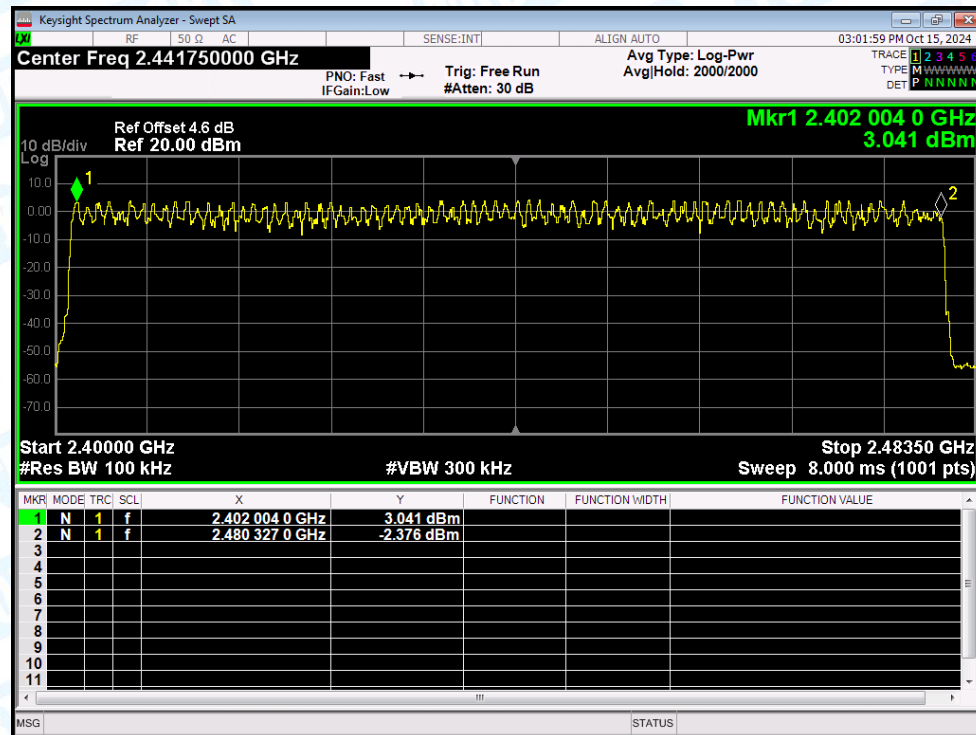
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

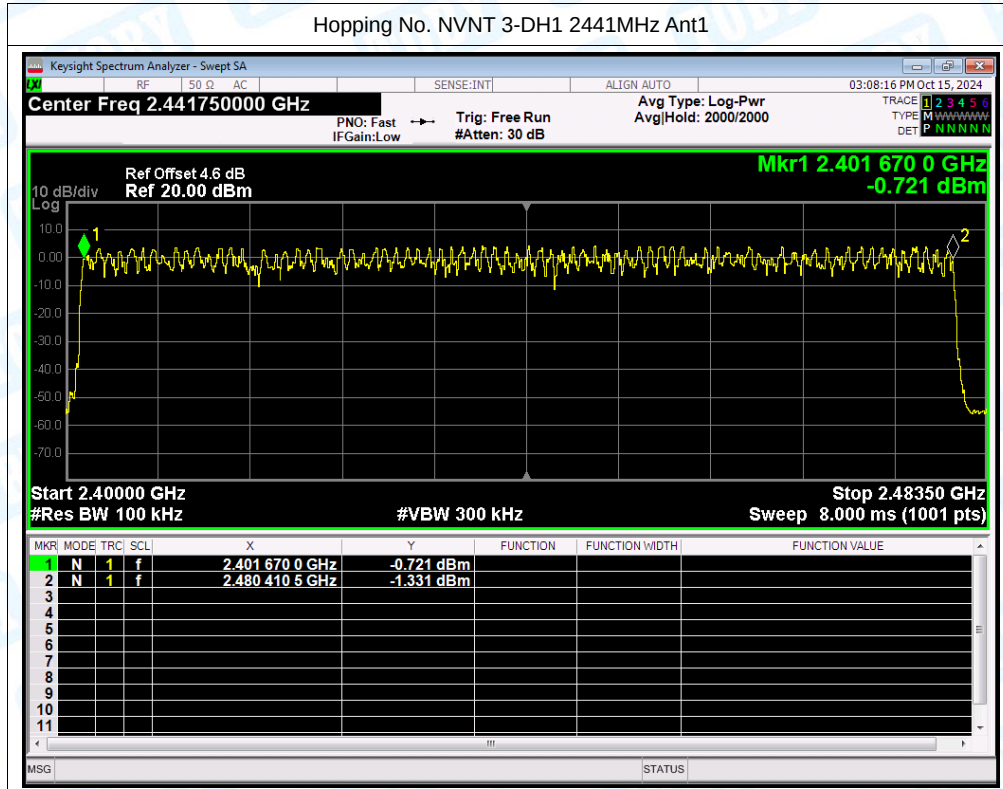
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



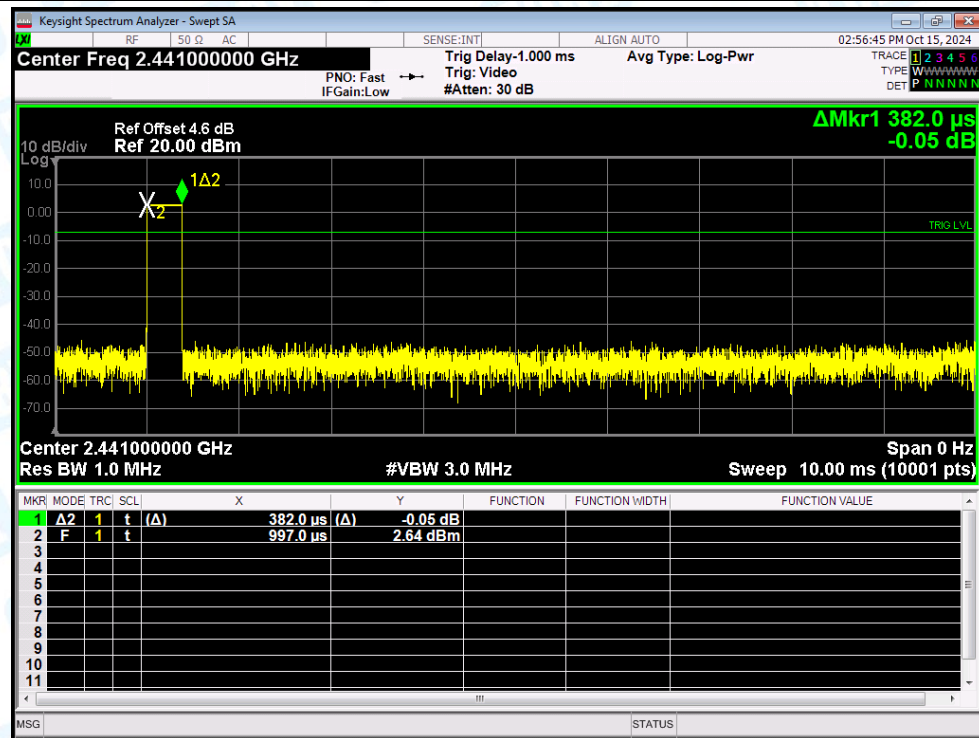


11. Dwell Time

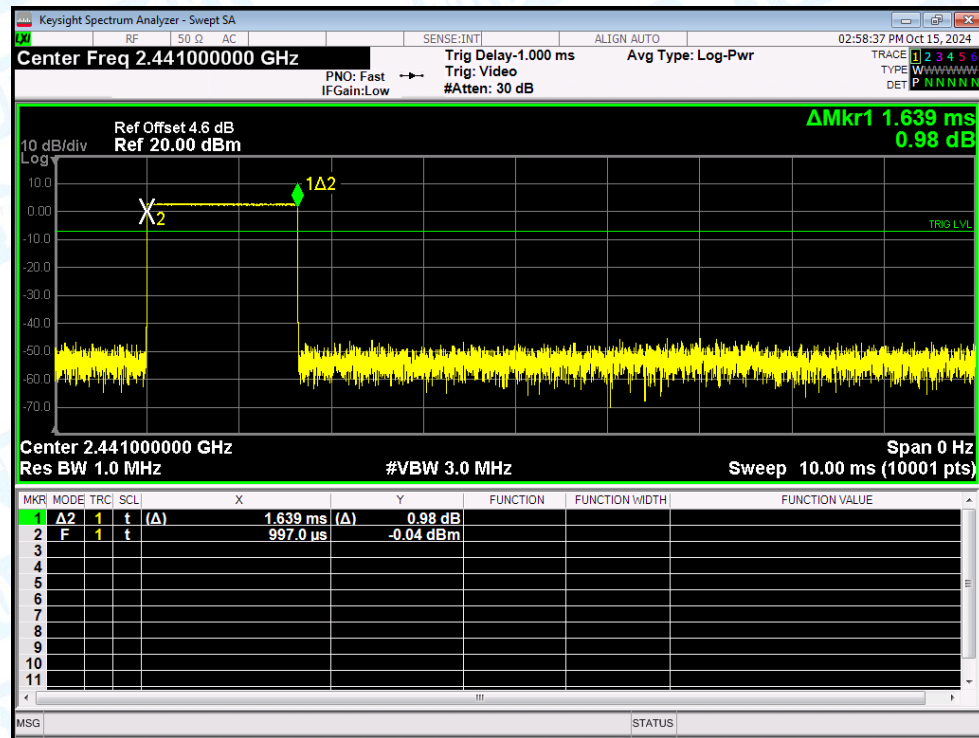
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.382	122.24	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.639	262.24	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.887	307.947	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.391	125.12	31600	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	1.642	262.72	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.893	308.587	31600	400	Pass

Test Graphs

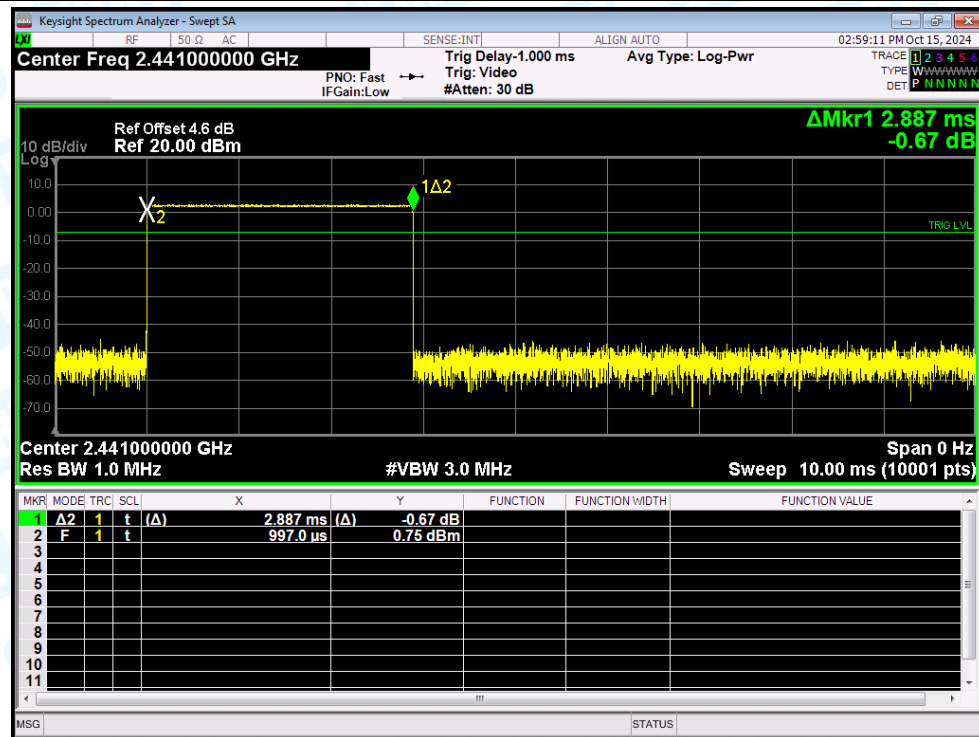
Dwell NVNT 1-DH1 2441MHz Ant1



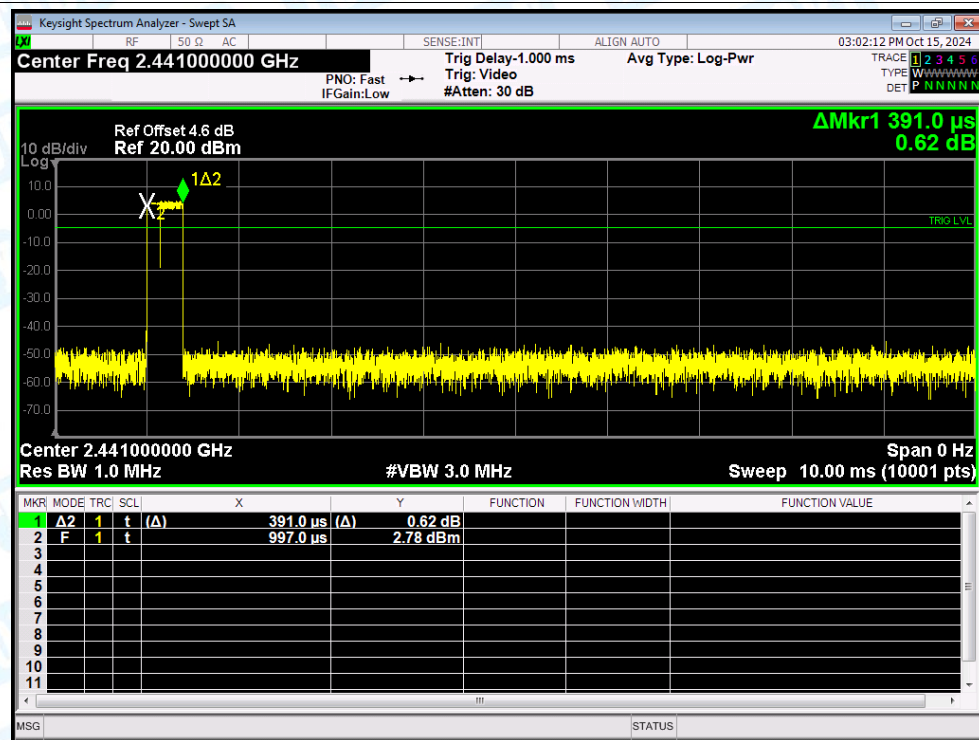
Dwell NVNT 1-DH3 2441MHz Ant1



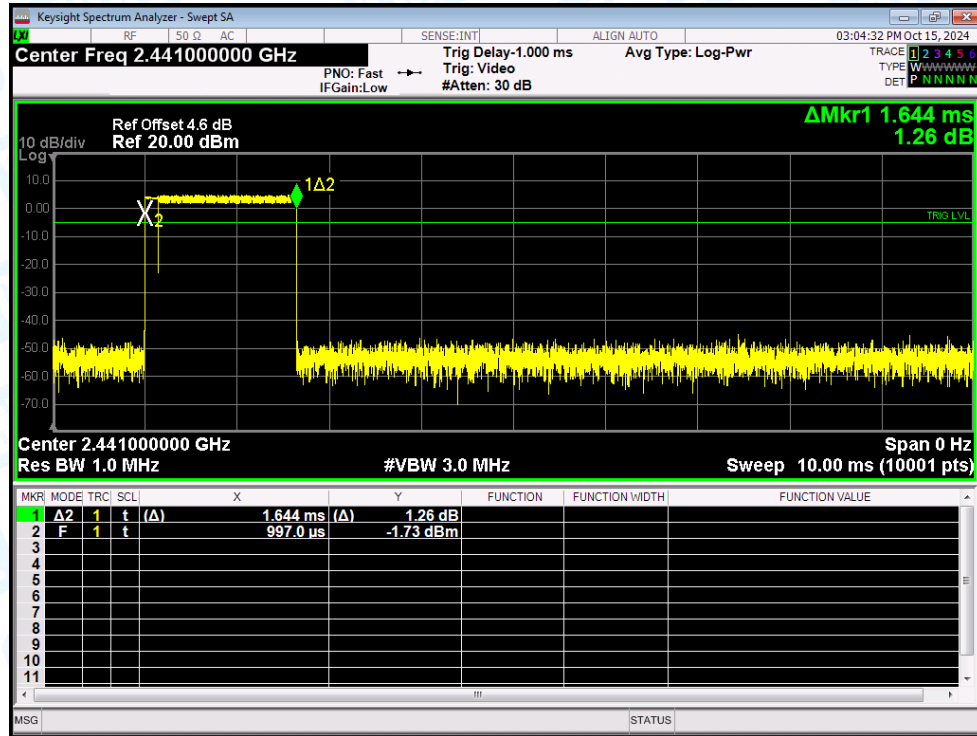
Dwell NVNT 1-DH5 2441MHz Ant1



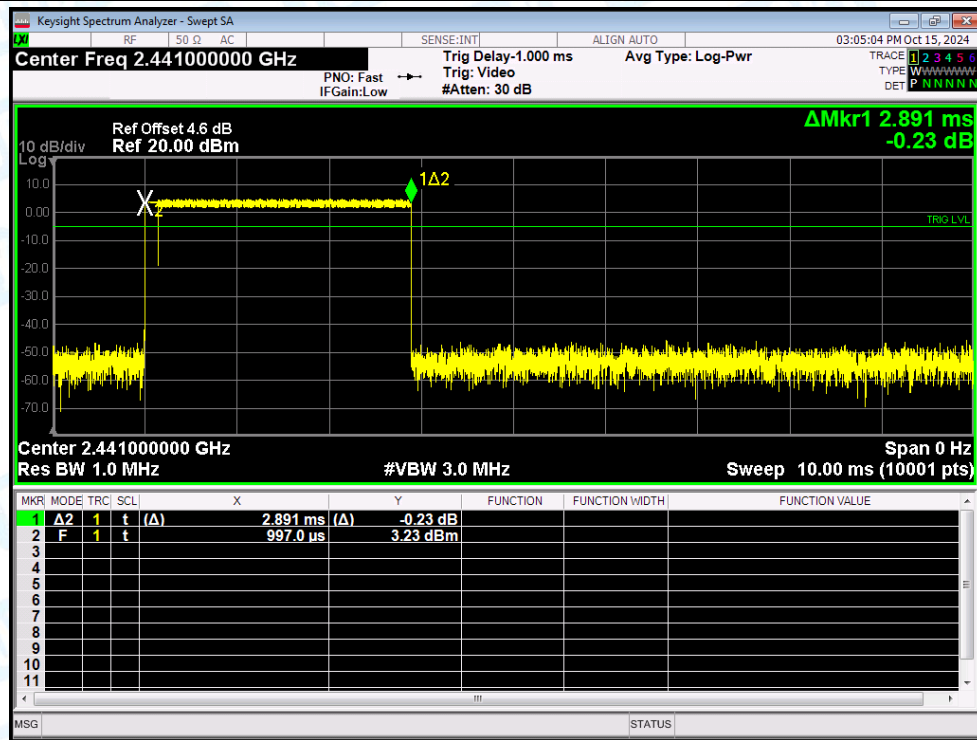
Dwell NVNT 2-DH1 2441MHz Ant1



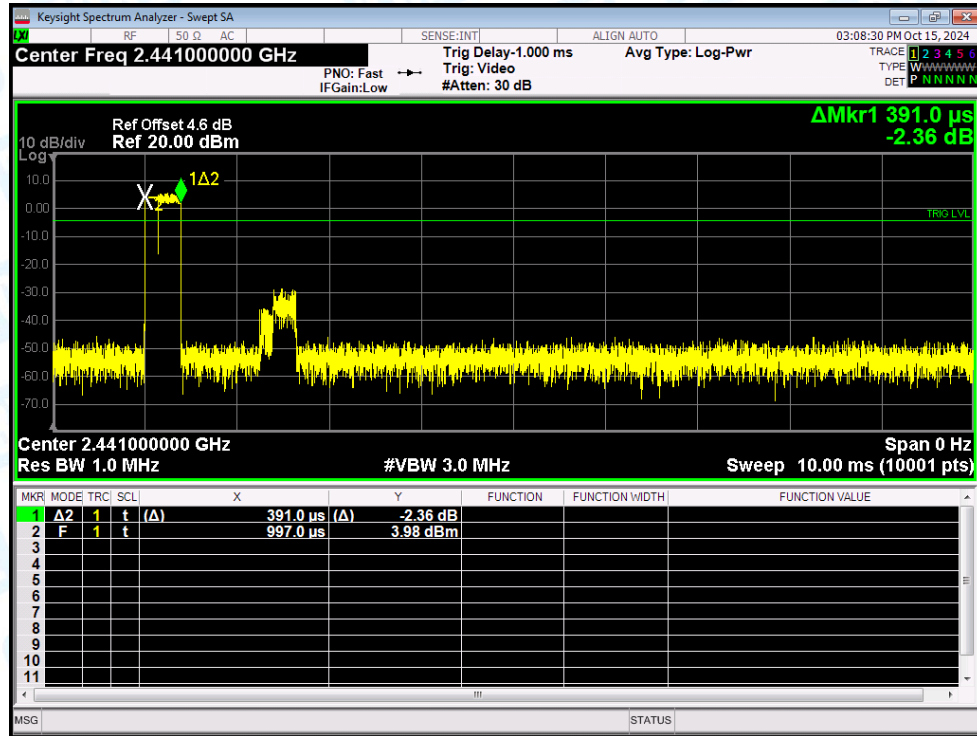
Dwell NVNT 2-DH3 2441MHz Ant1



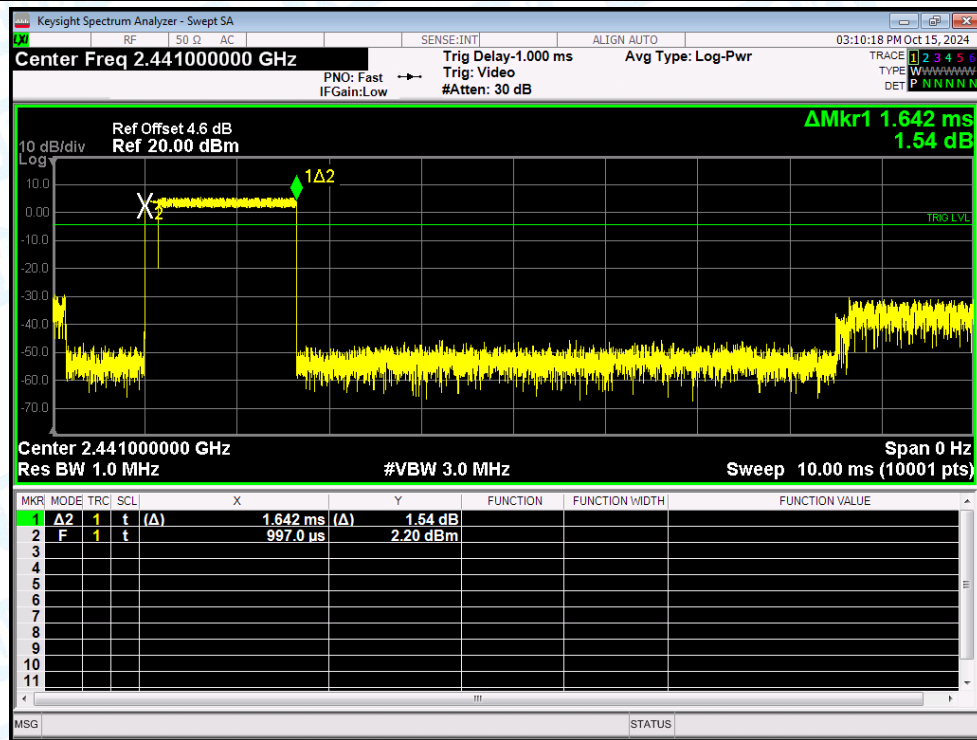
Dwell NVNT 2-DH5 2441MHz Ant1

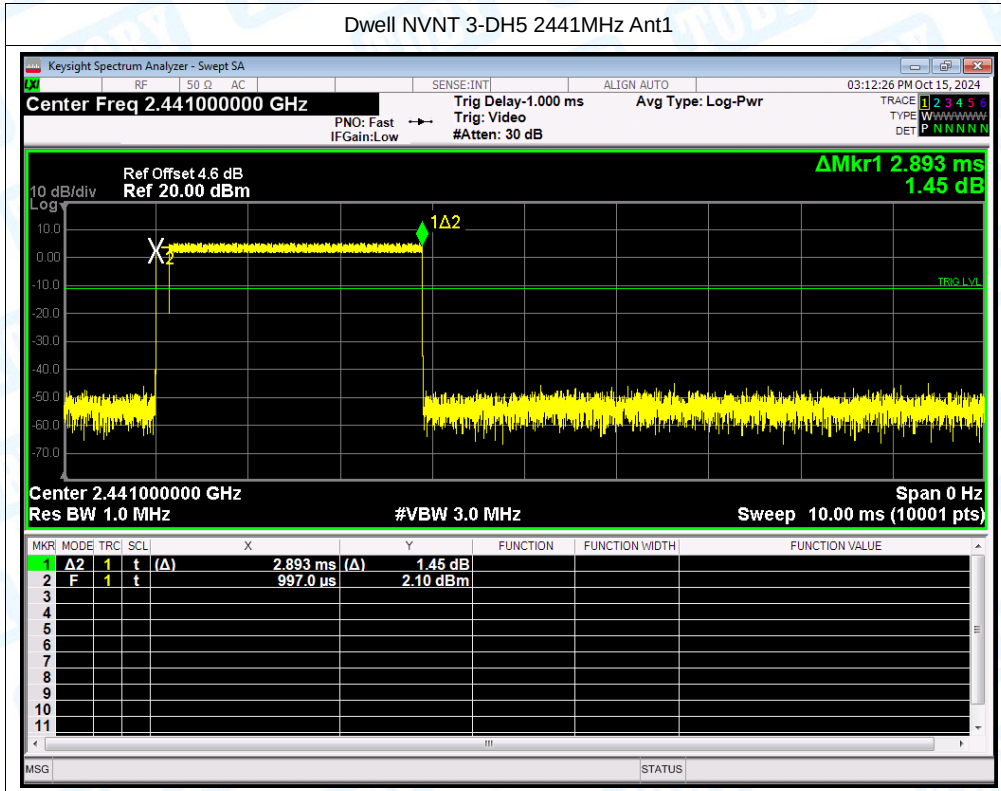


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





----END OF REPORT ----