

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

General Description of EUT	
Product Name:	Smart Watch
Test Model:	KC88
Sample ID:	HC-C-202403-0385-06-2
Environmental Conditions	
Temperature:	24.6°C
Relative Humidity:	46%
Test Voltage:	DC 3.7V
Test Engineer:	ZKN Zhou
Note: For a more detailed features description, please refer to the report TBR-C-202403-0385-81 The report only show the worst case data.	

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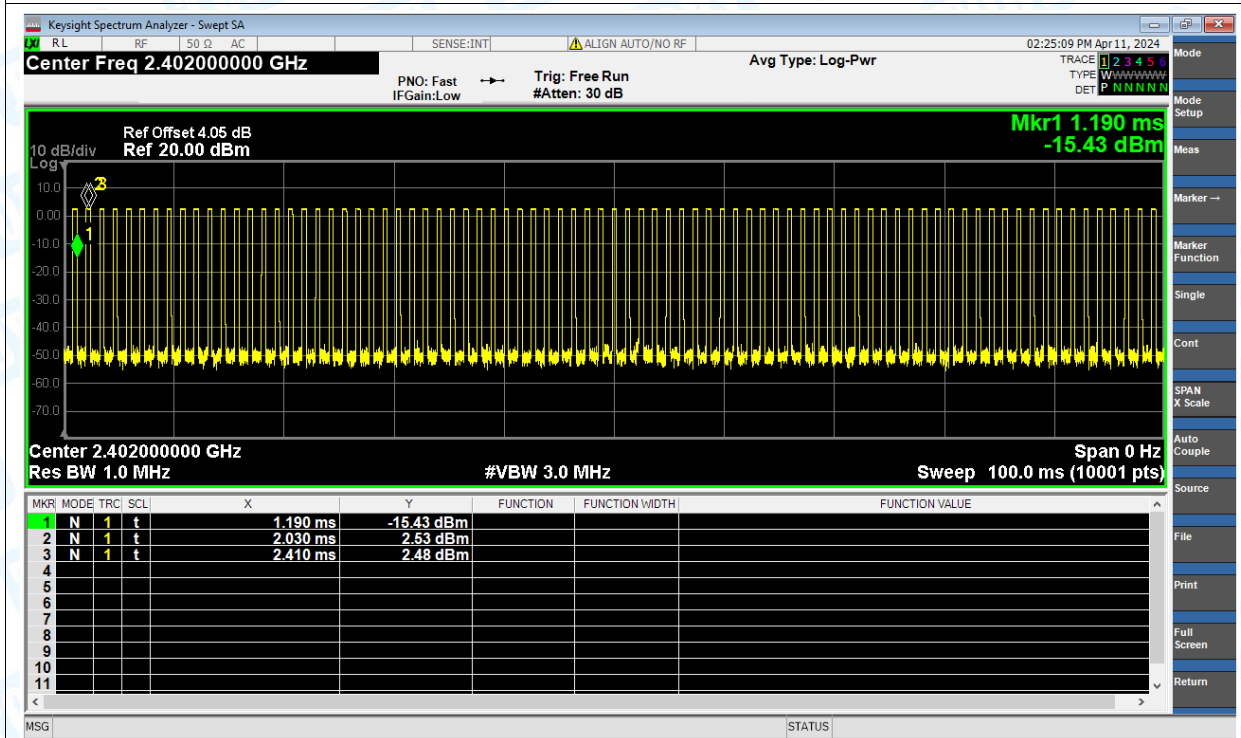
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1. Duty Cycle

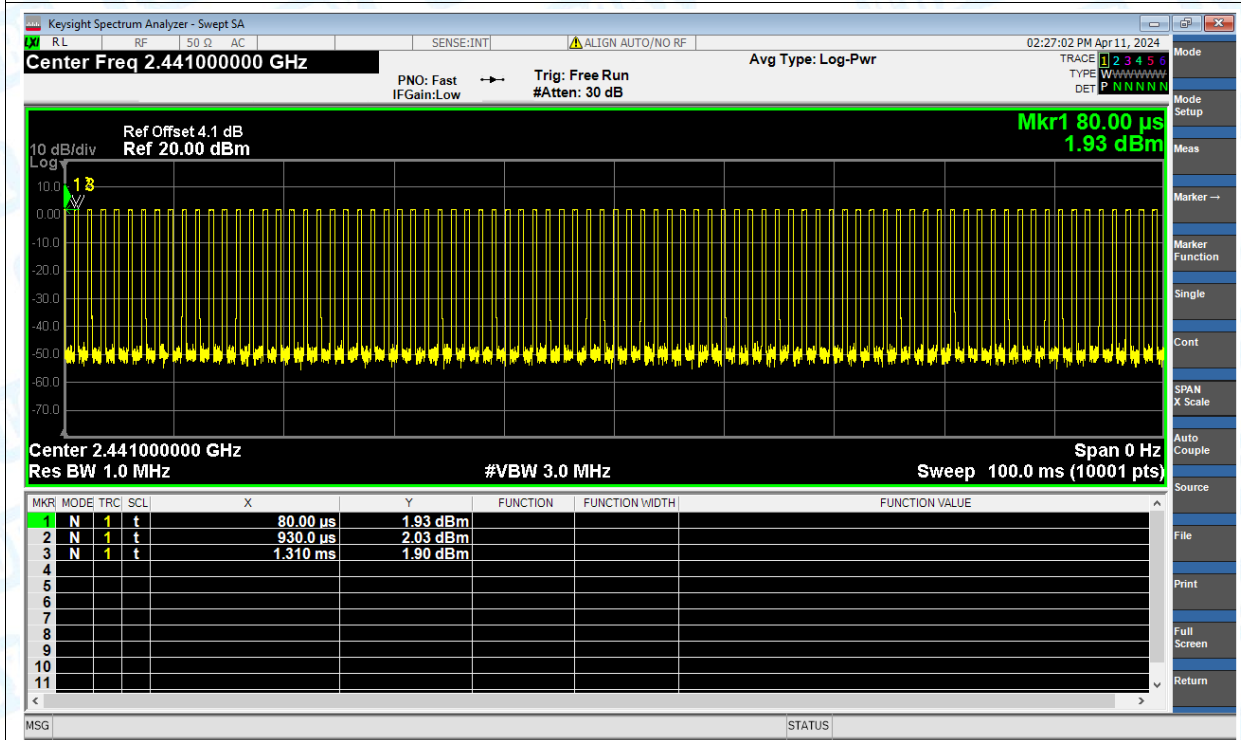
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	31.15	5.07	2.63
NVNT	1-DH1	2441	Ant1	30.89	5.1	2.63
NVNT	1-DH1	2480	Ant1	31.15	5.07	2.63
NVNT	2-DH1	2402	Ant1	31.45	5.02	2.56
NVNT	2-DH1	2441	Ant1	31.71	4.99	2.56
NVNT	2-DH1	2480	Ant1	30.89	5.1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

Test Graphs

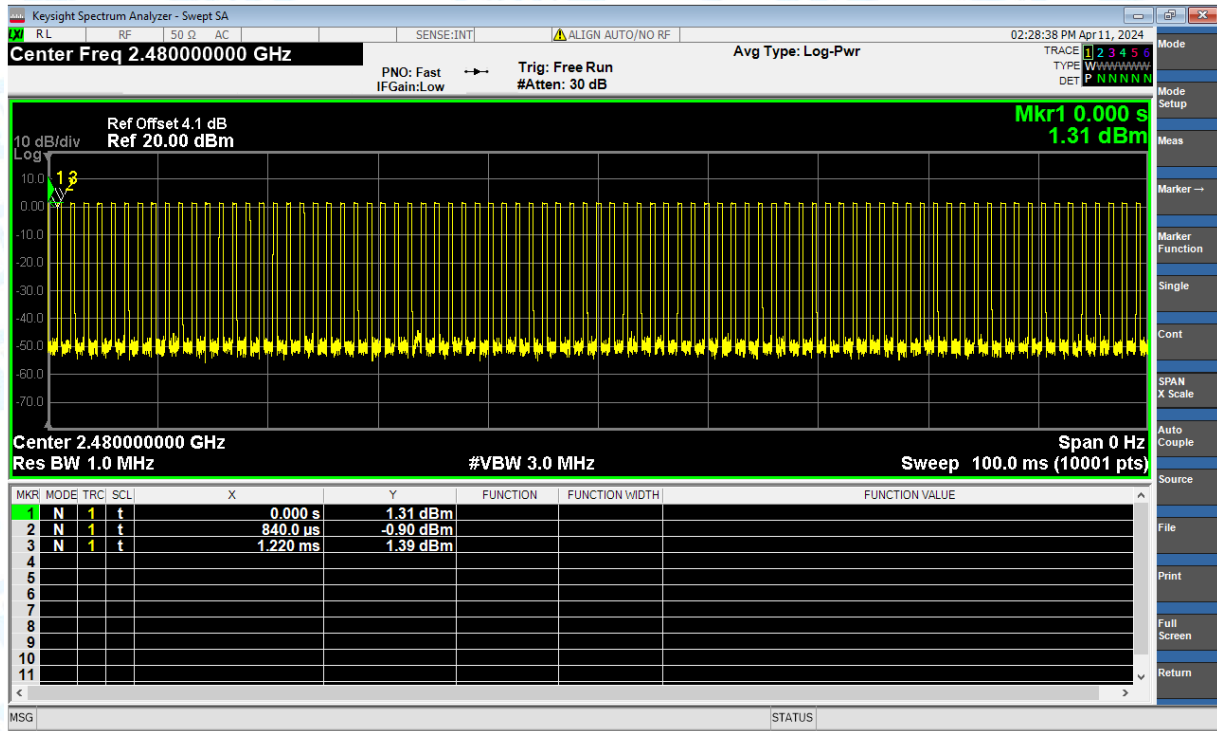
Duty Cycle NVNT 1-DH1 2402MHz Ant1



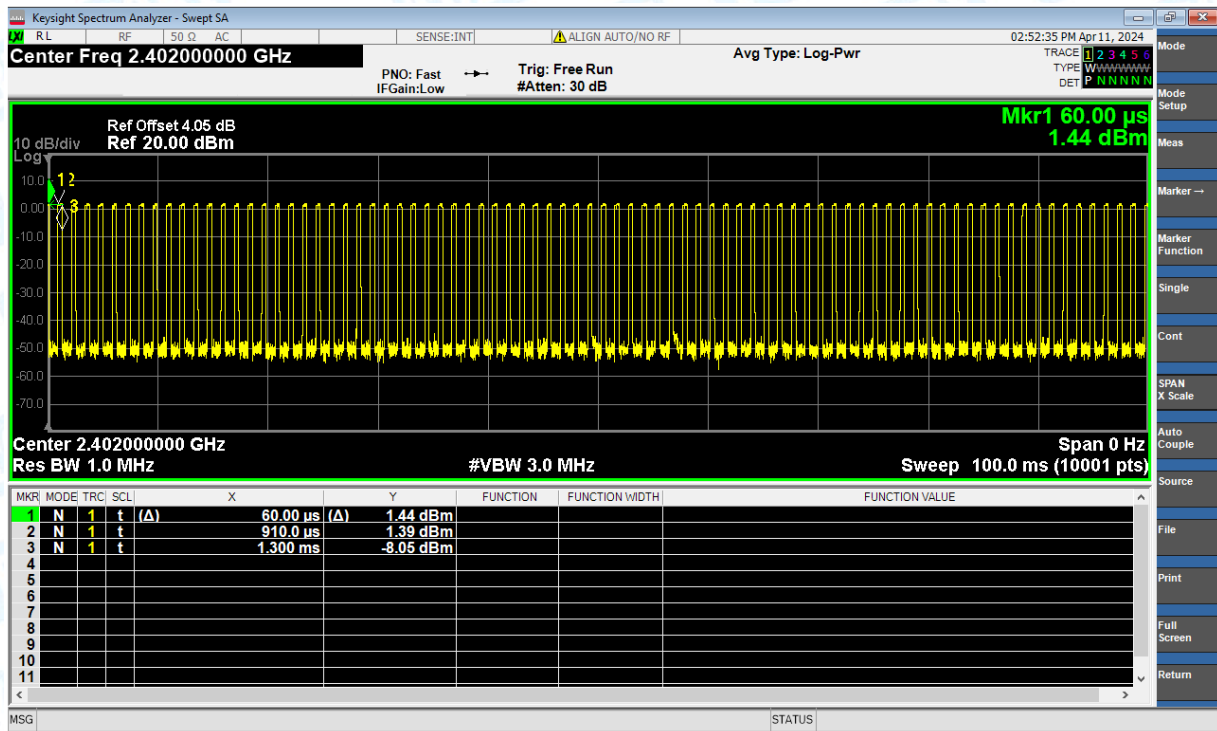
Duty Cycle NVNT 1-DH1 2441MHz Ant1



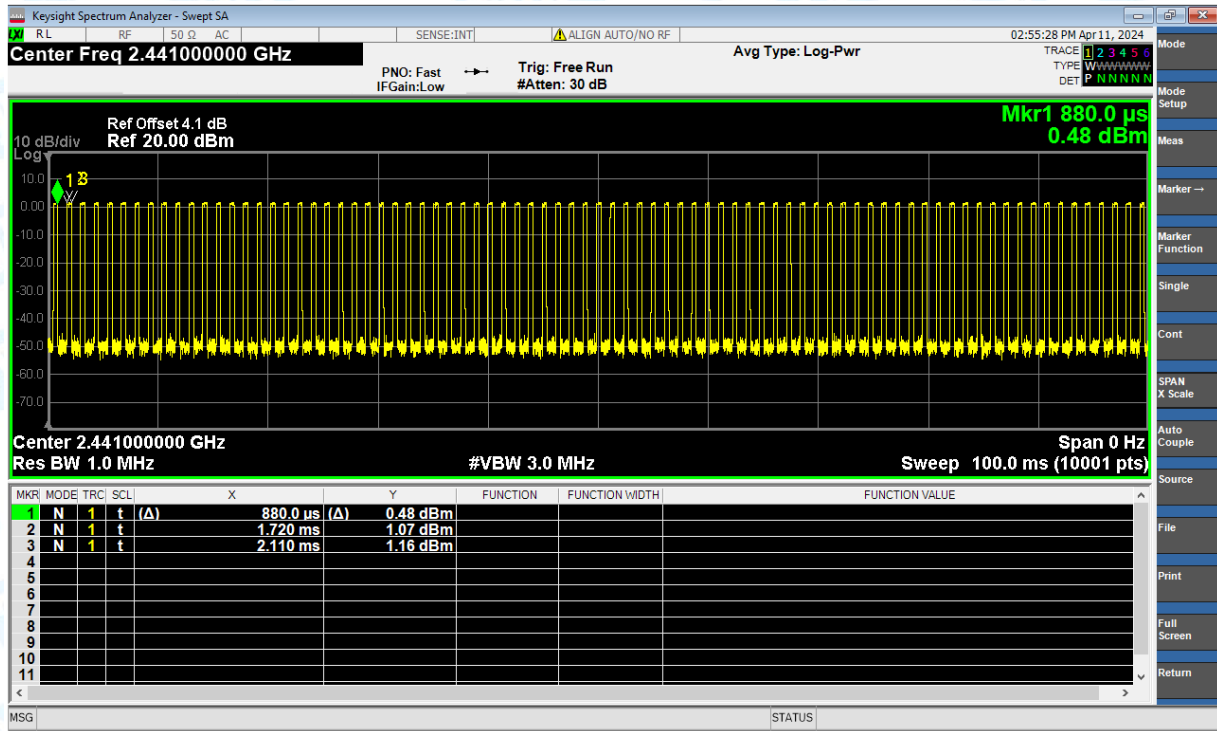
Duty Cycle NVNT 1-DH1 2480MHz Ant1



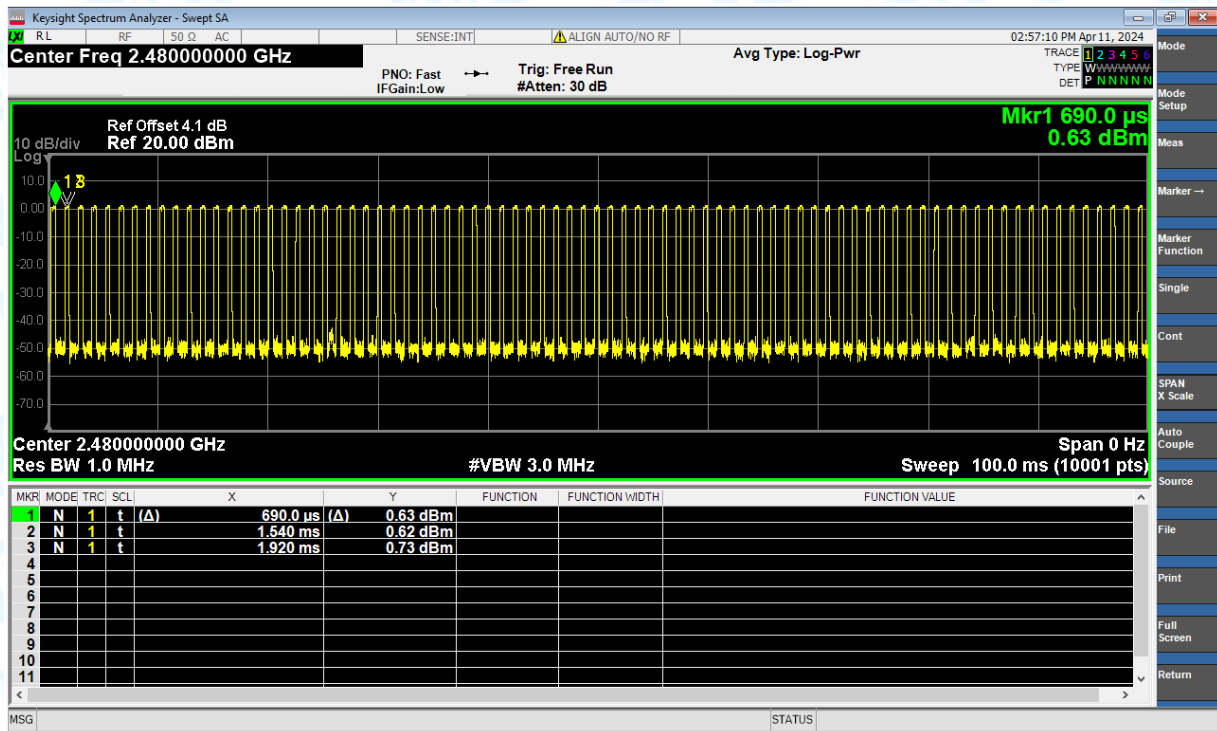
Duty Cycle NVNT 2-DH1 2402MHz Ant1



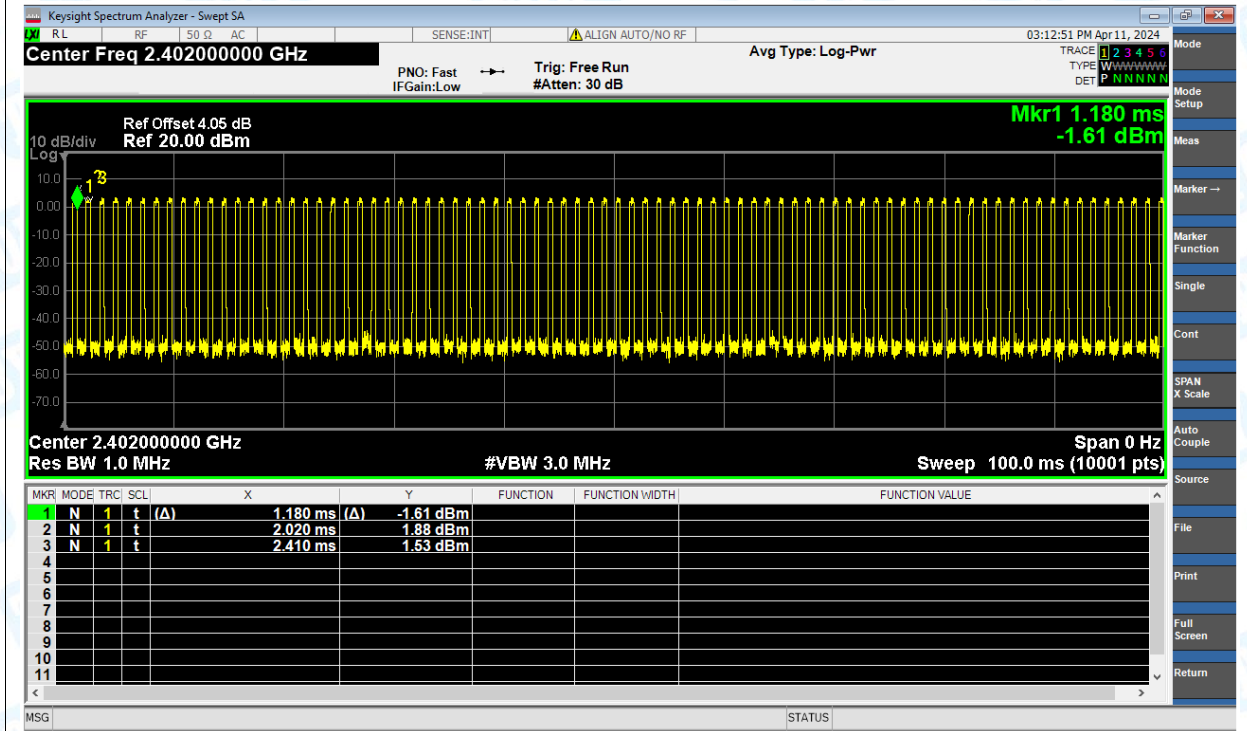
Duty Cycle NVNT 2-DH1 2441MHz Ant1



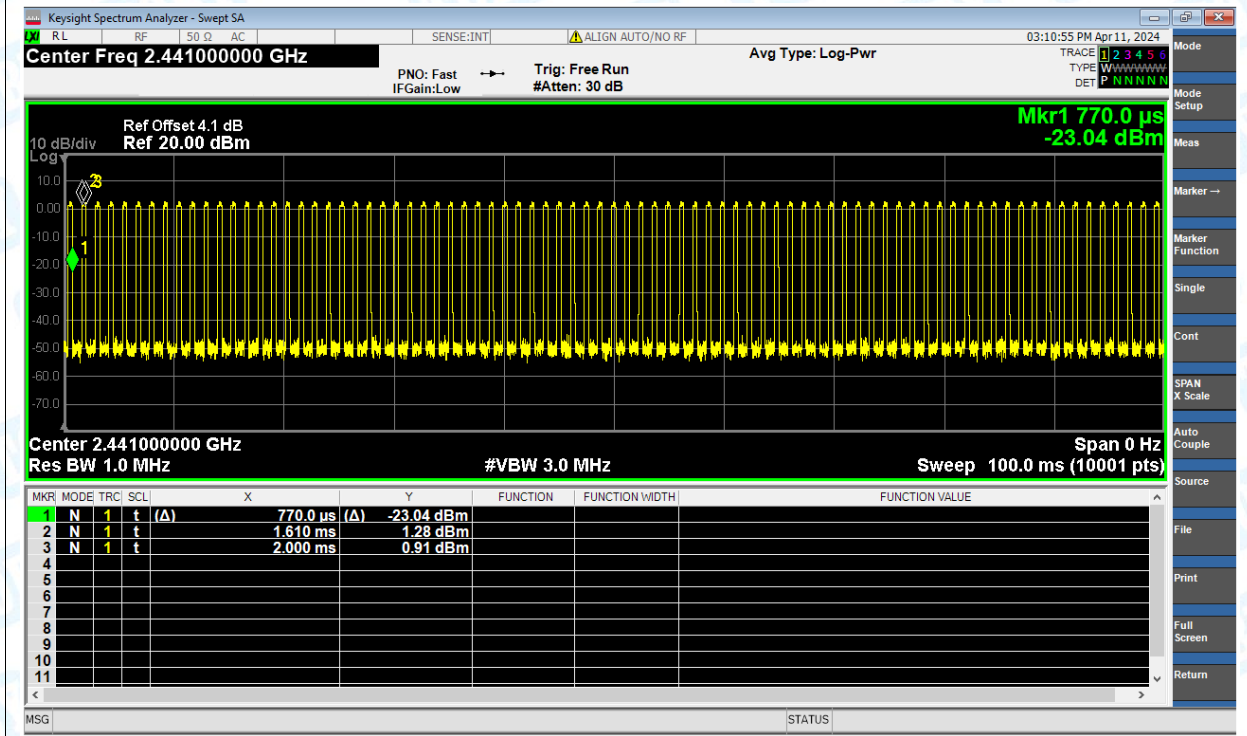
Duty Cycle NVNT 2-DH1 2480MHz Ant1

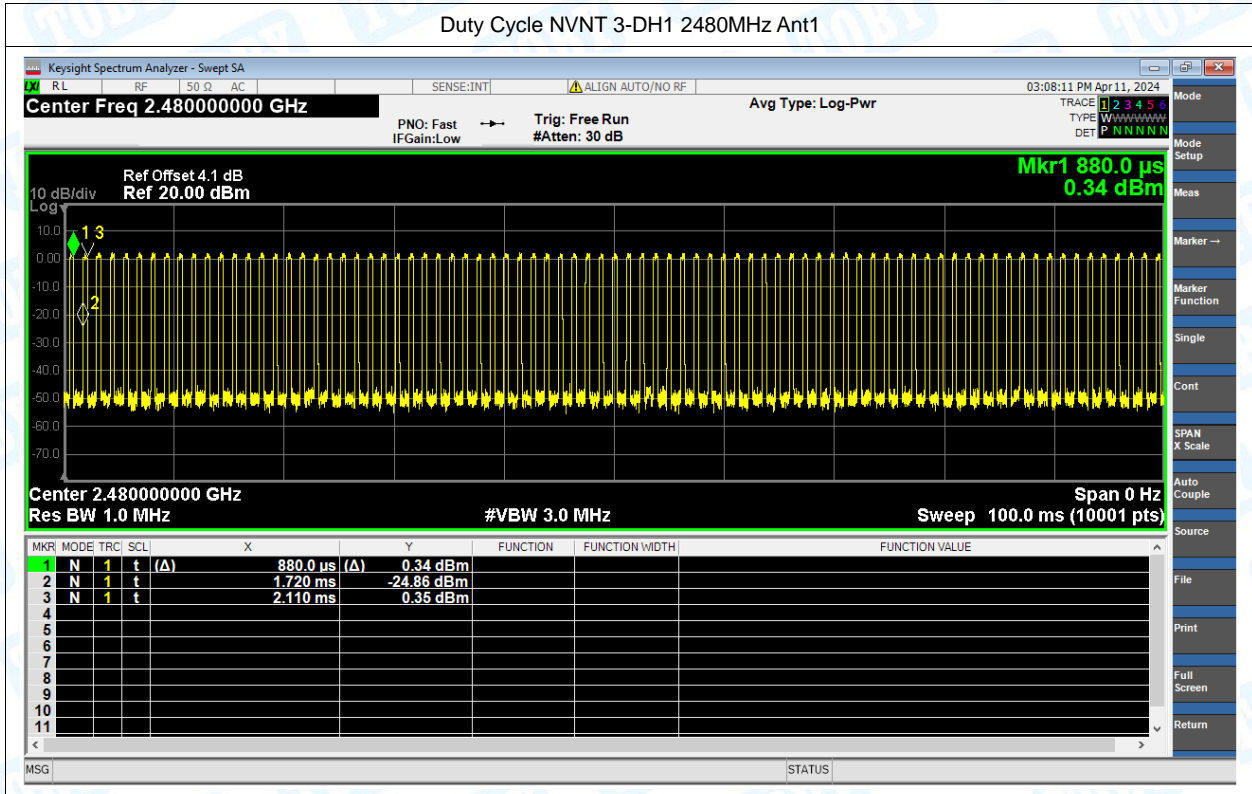


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



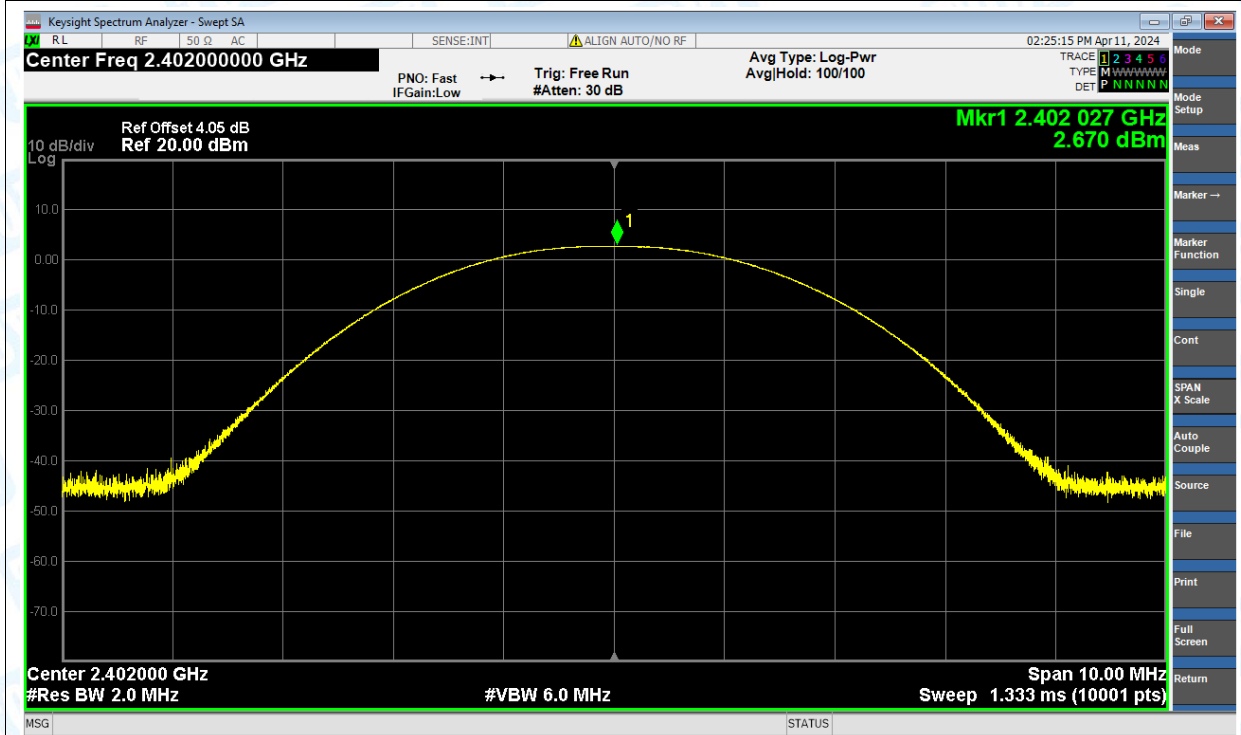


2. Maximum Conducted Output Power

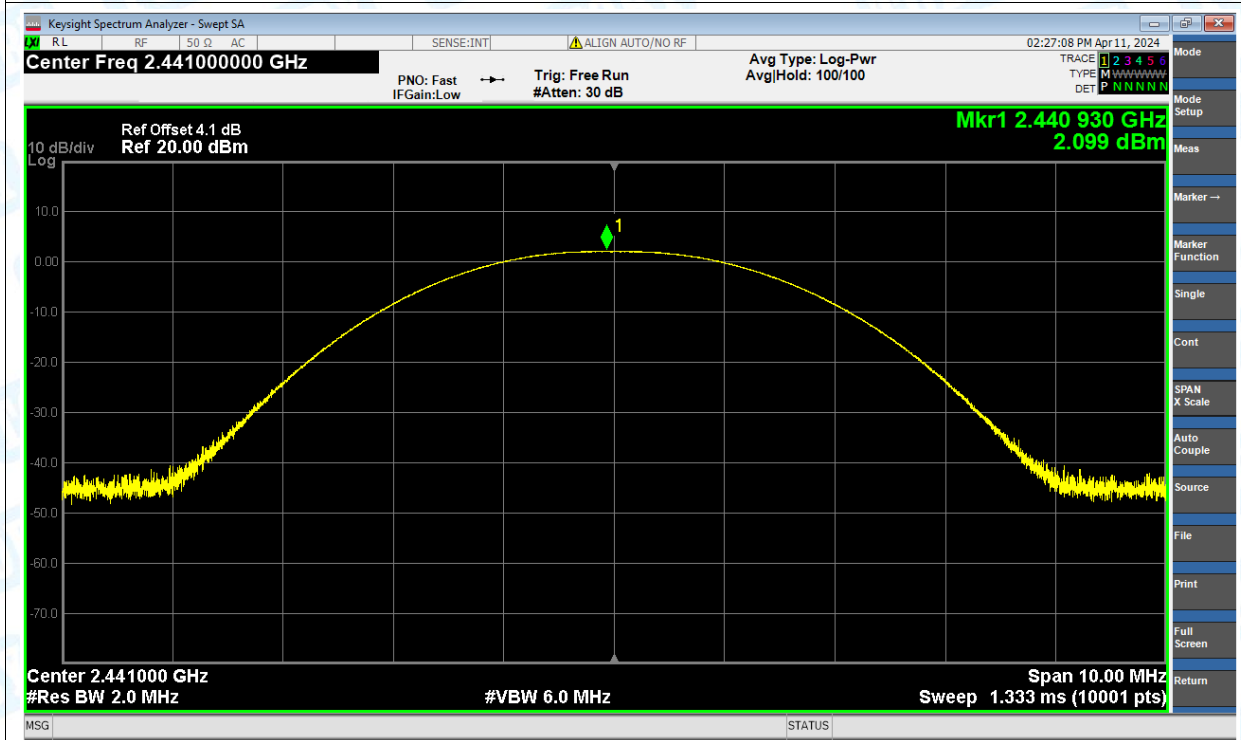
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	2.67	21	Pass
NVNT	1-DH1	2441	Ant1	2.099	21	Pass
NVNT	1-DH1	2480	Ant1	1.53	21	Pass
NVNT	1-DH3	2441	Ant1	2.348	21	Pass
NVNT	1-DH5	2441	Ant1	2.272	21	Pass
NVNT	2-DH1	2402	Ant1	2.614	21	Pass
NVNT	2-DH1	2441	Ant1	2.359	21	Pass
NVNT	2-DH1	2480	Ant1	1.815	21	Pass
NVNT	2-DH3	2441	Ant1	2.627	21	Pass
NVNT	2-DH5	2441	Ant1	2.722	21	Pass
NVNT	3-DH1	2402	Ant1	3.812	21	Pass
NVNT	3-DH1	2441	Ant1	3.154	21	Pass
NVNT	3-DH1	2480	Ant1	2.6	21	Pass
NVNT	3-DH3	2441	Ant1	3.195	21	Pass
NVNT	3-DH5	2441	Ant1	3.188	21	Pass

Test Graphs

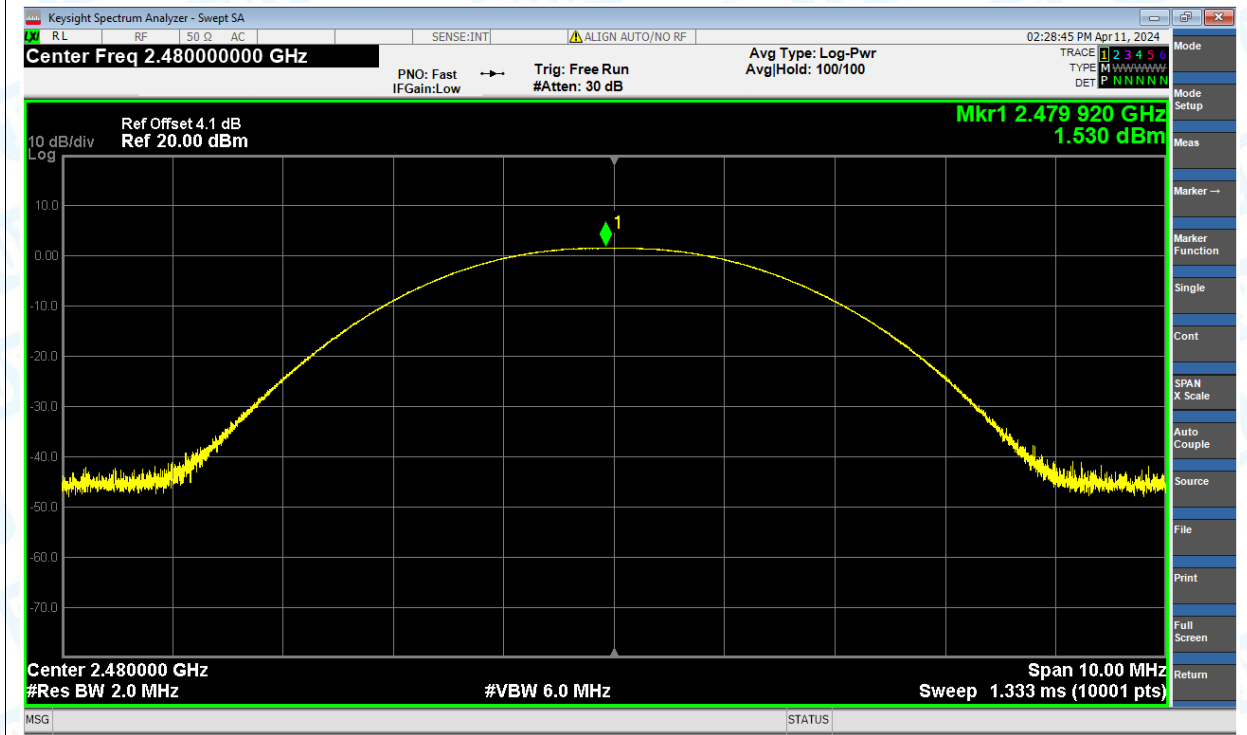
Power NVNT 1-DH1 2402MHz Ant1



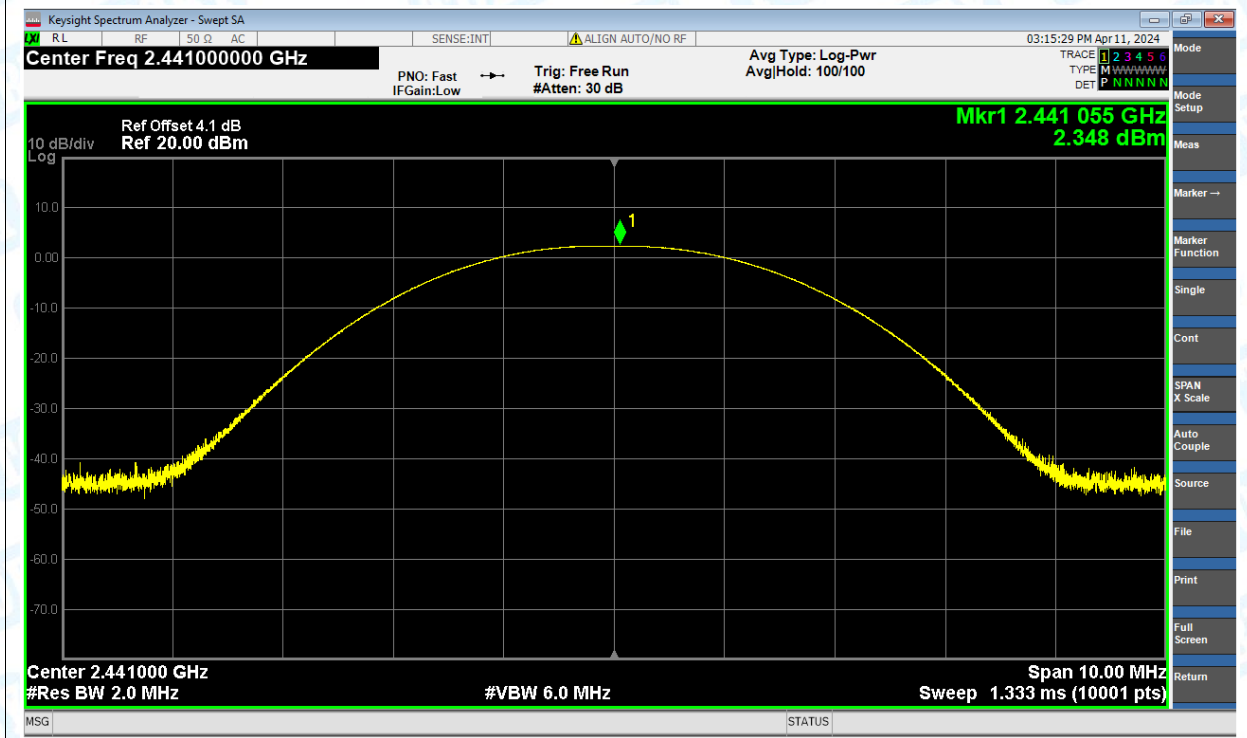
Power NVNT 1-DH1 2441MHz Ant1



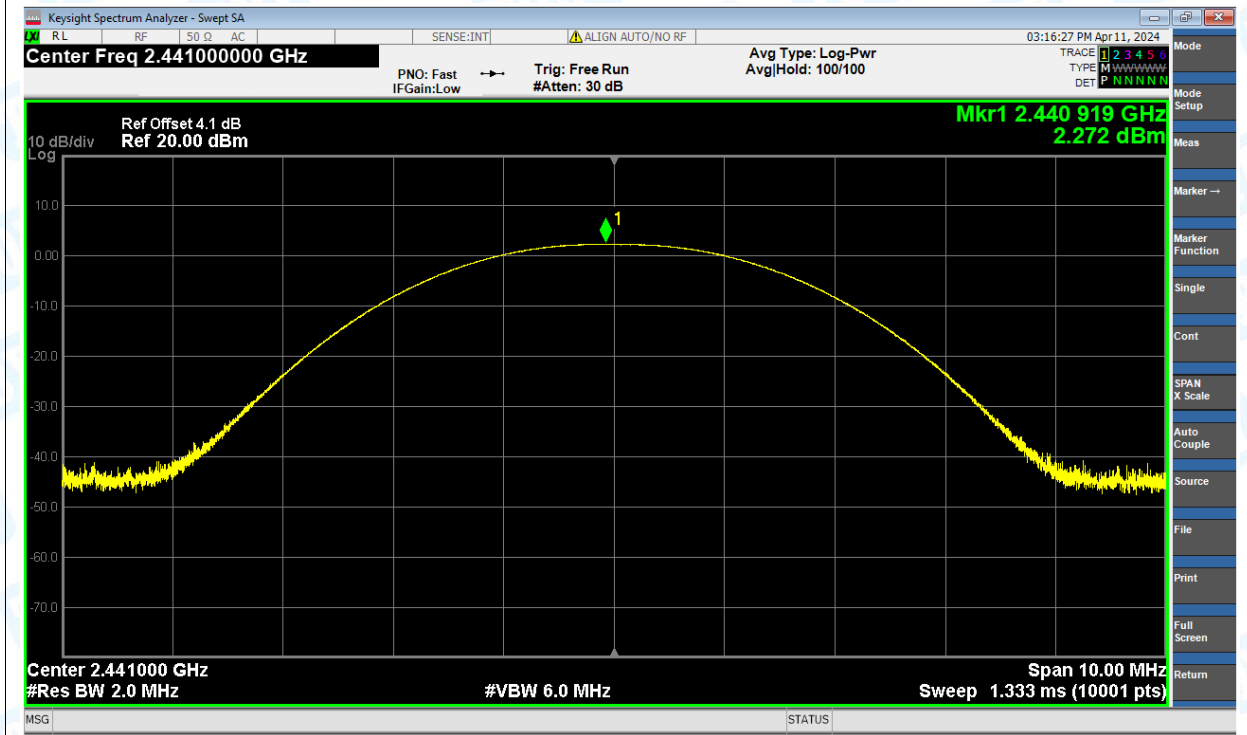
Power NVNT 1-DH1 2480MHz Ant1



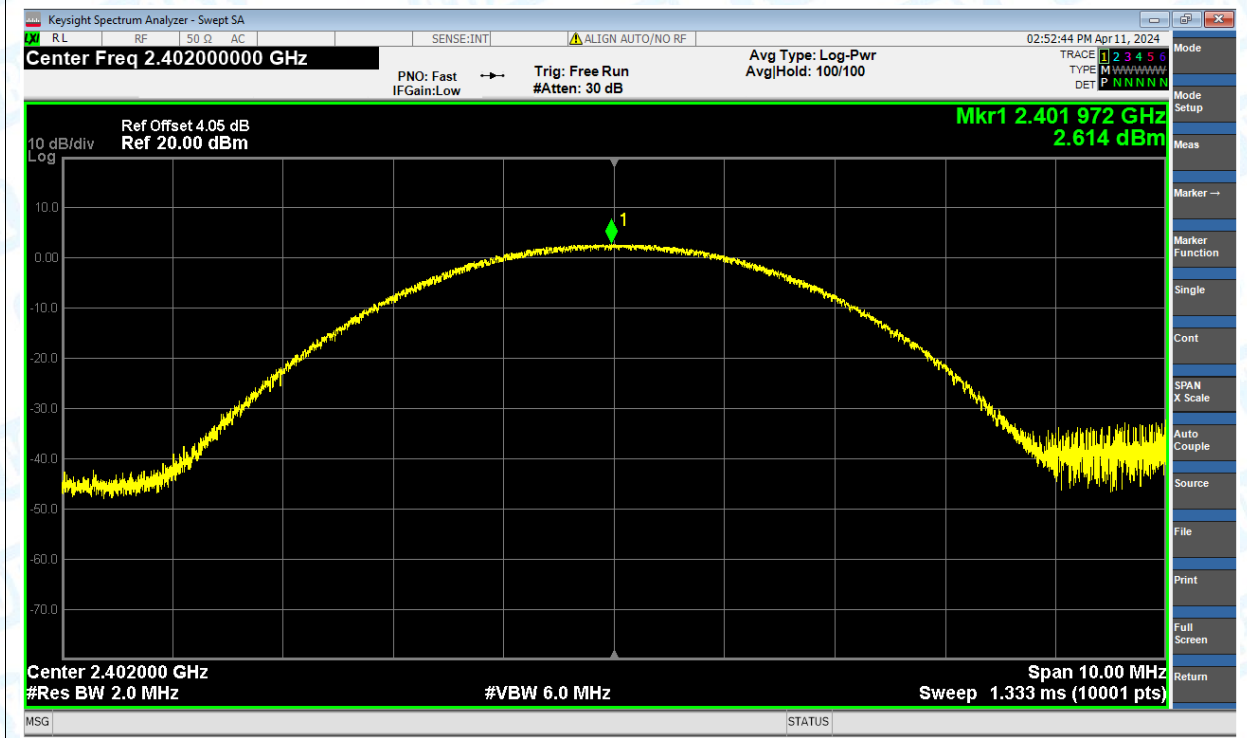
Power NVNT 1-DH3 2441MHz Ant1



Power NVNT 1-DH5 2441MHz Ant1



Power NVNT 2-DH1 2402MHz Ant1



Power NVNT 2-DH1 2441MHz Ant1



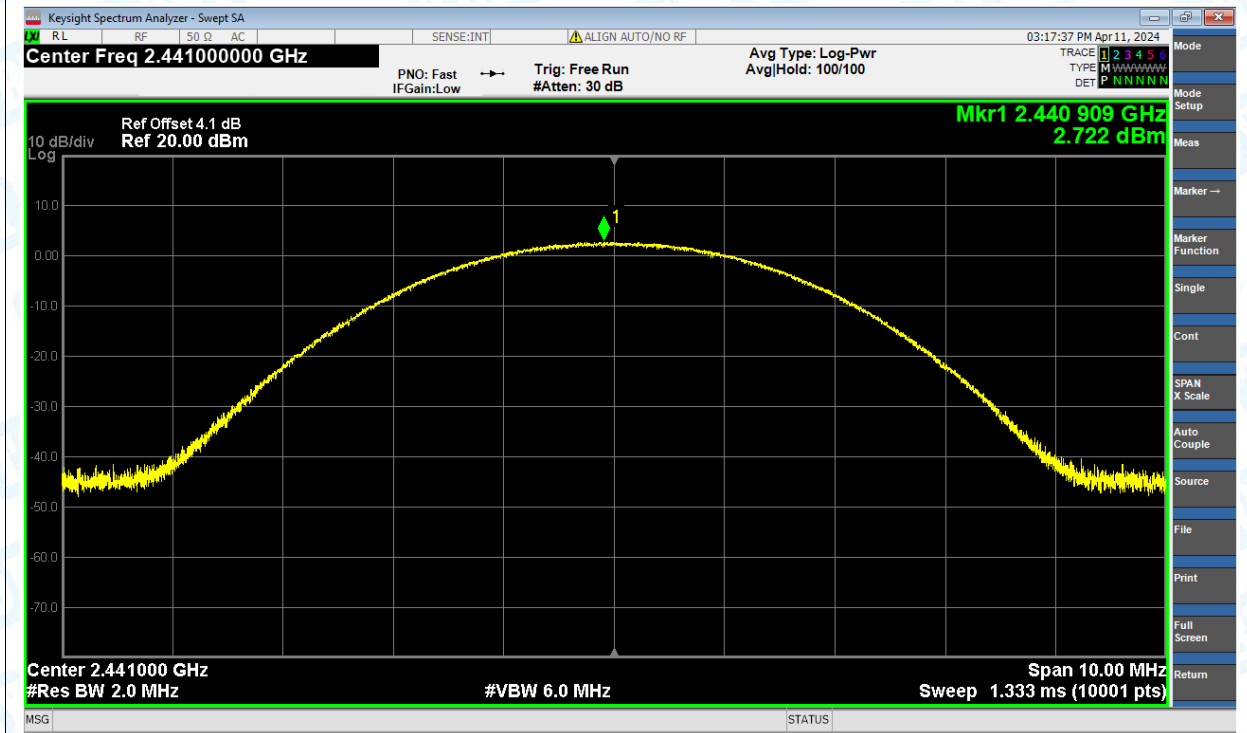
Power NVNT 2-DH1 2480MHz Ant1



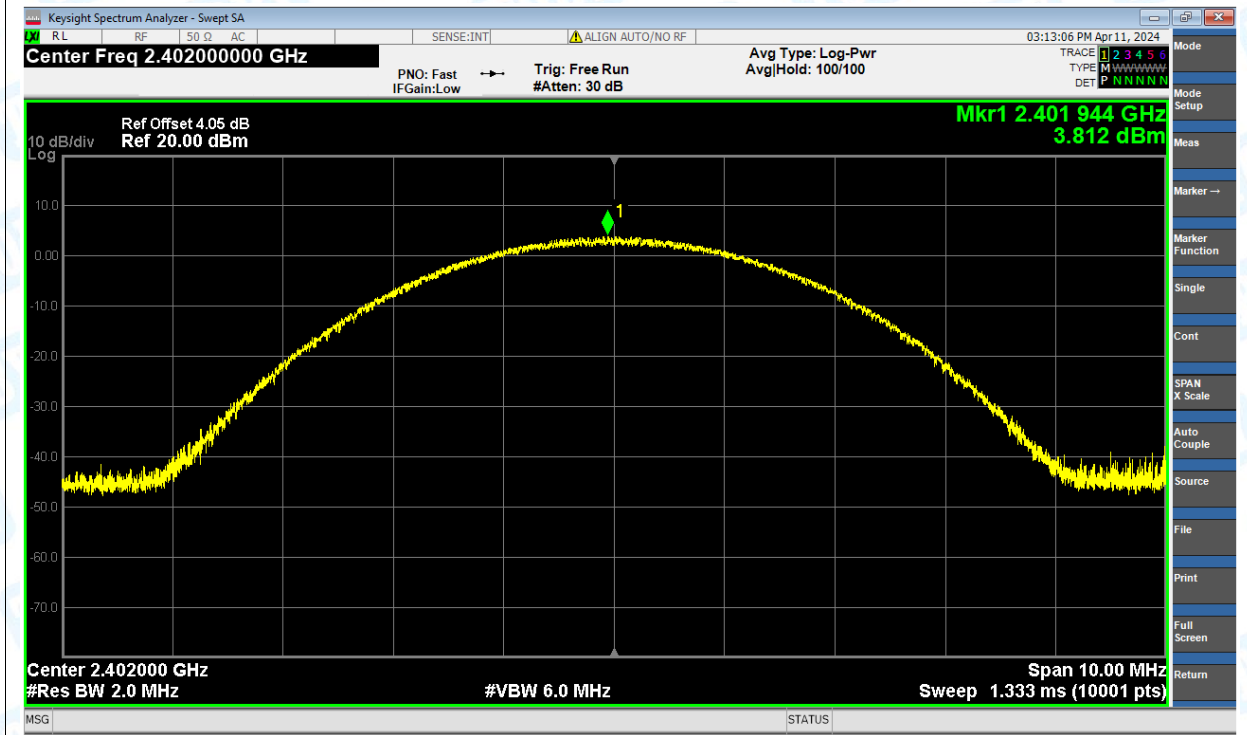
Power NVNT 2-DH3 2441MHz Ant1



Power NVNT 2-DH5 2441MHz Ant1



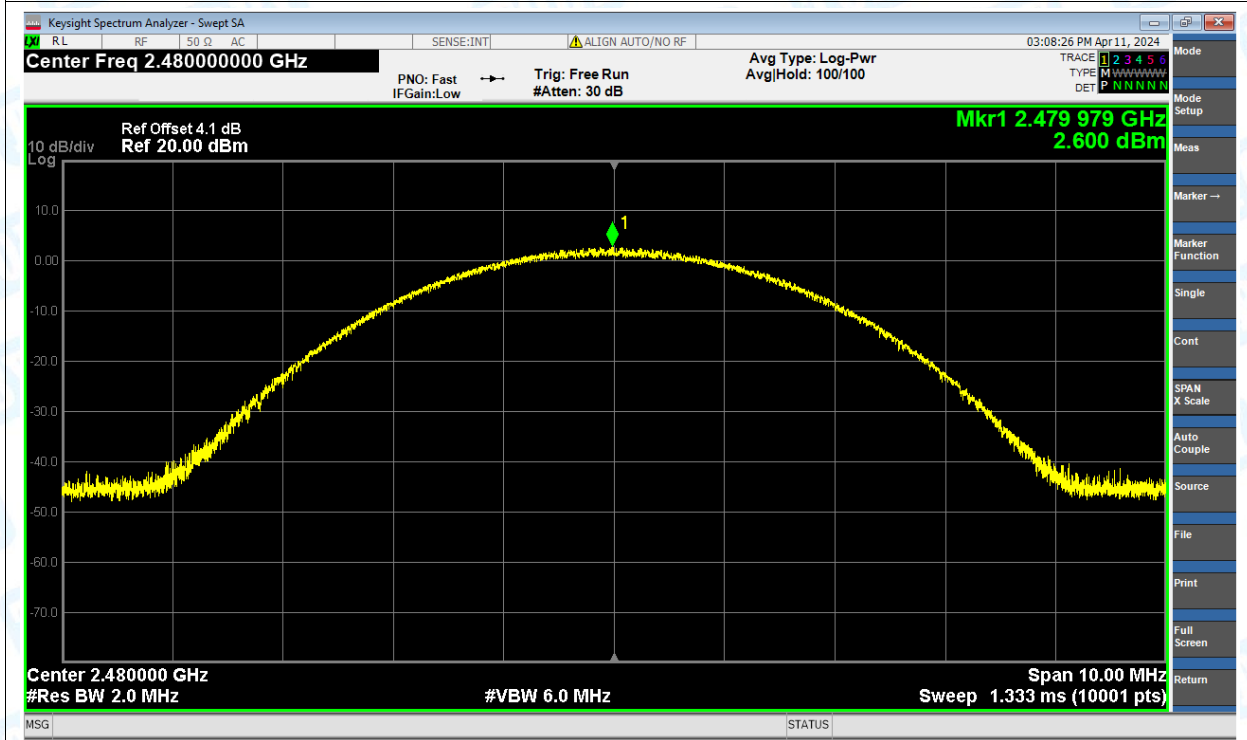
Power NVNT 3-DH1 2402MHz Ant1



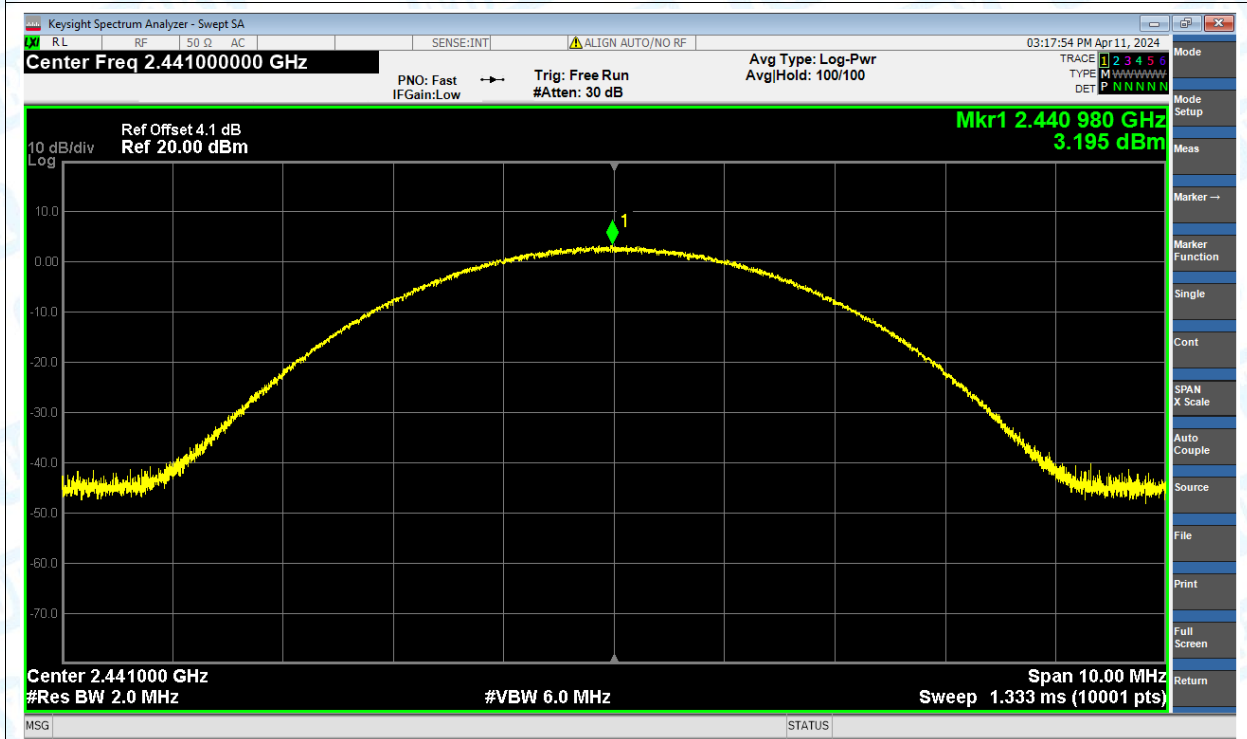
Power NVNT 3-DH1 2441MHz Ant1

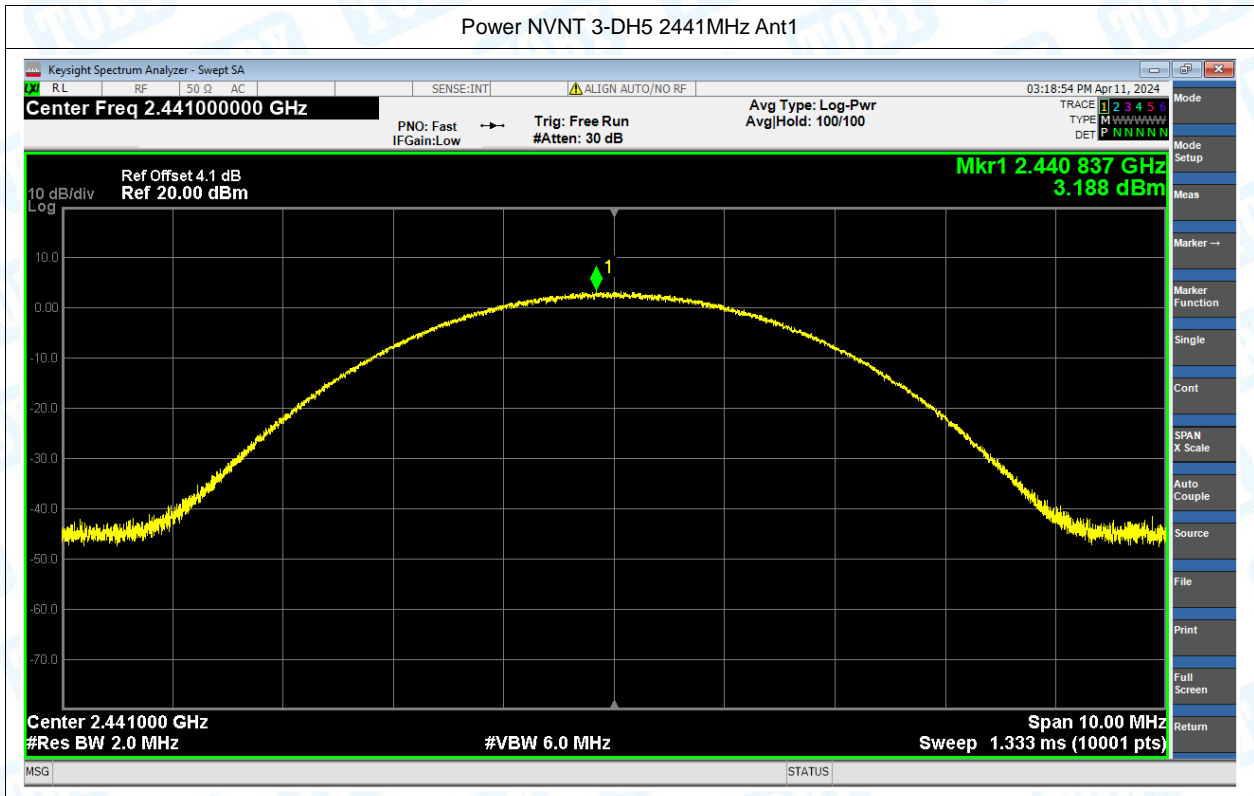


Power NVNT 3-DH1 2480MHz Ant1



Power NVNT 3-DH3 2441MHz Ant1



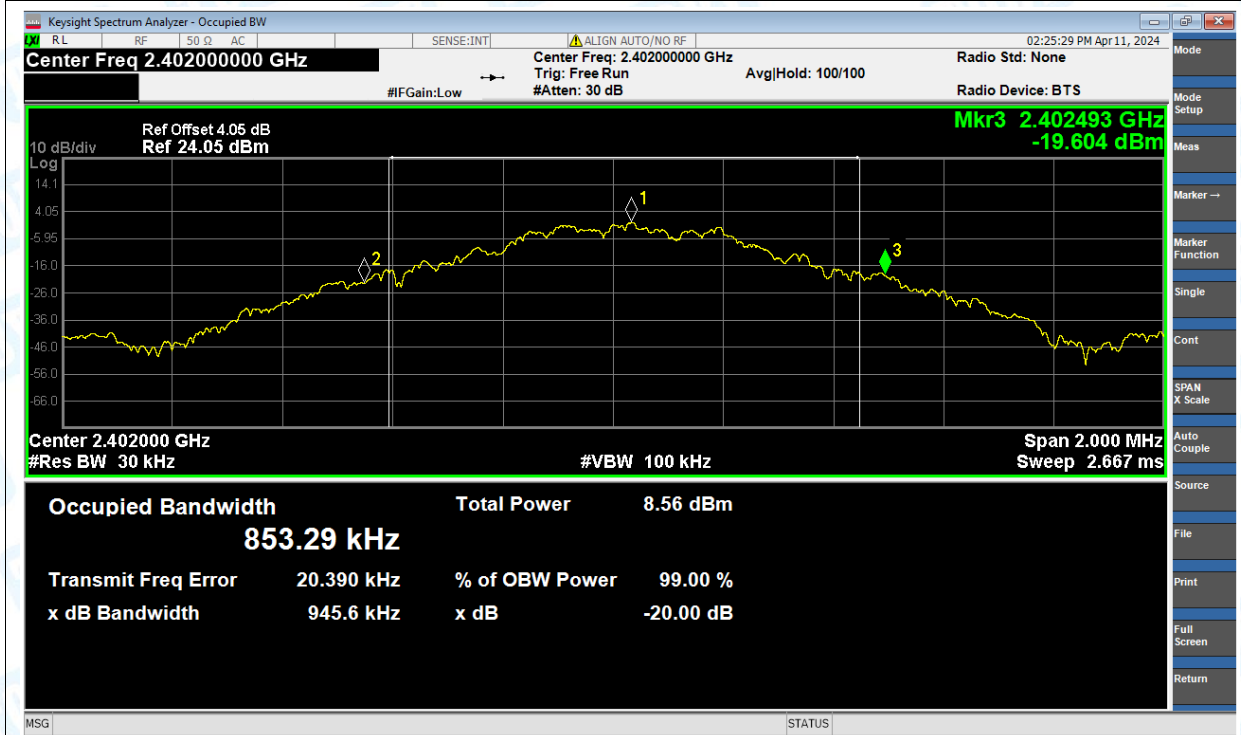


3. -20dB Bandwidth

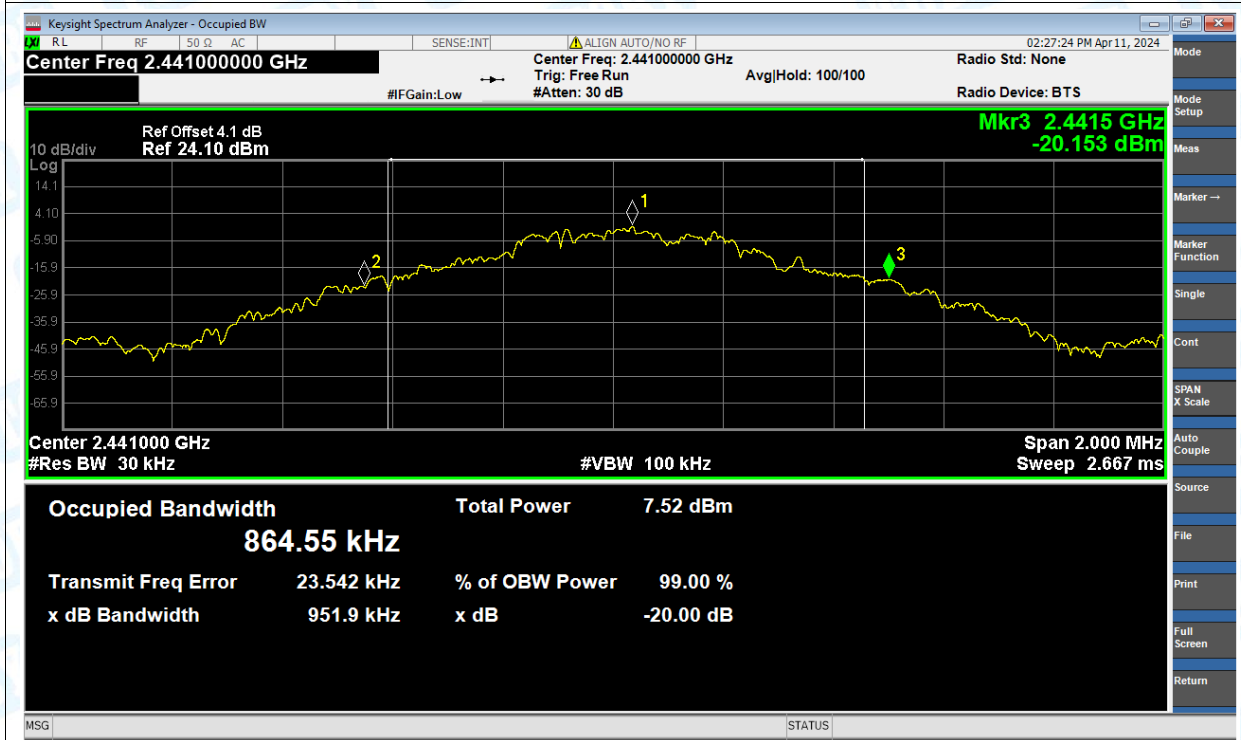
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.95	0	Pass
NVNT	1-DH1	2441	Ant1	0.95	0	Pass
NVNT	1-DH1	2480	Ant1	0.94	0	Pass
NVNT	2-DH1	2402	Ant1	1.28	0	Pass
NVNT	2-DH1	2441	Ant1	1.3	0	Pass
NVNT	2-DH1	2480	Ant1	1.25	0	Pass
NVNT	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

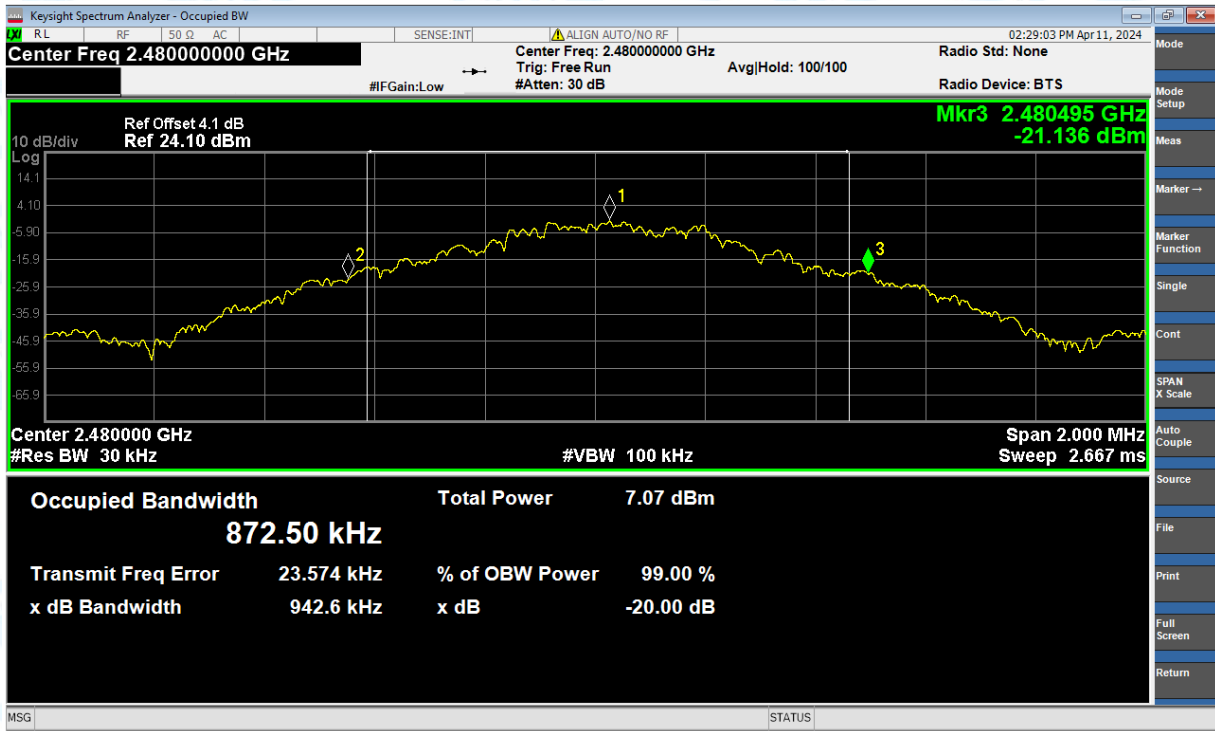
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



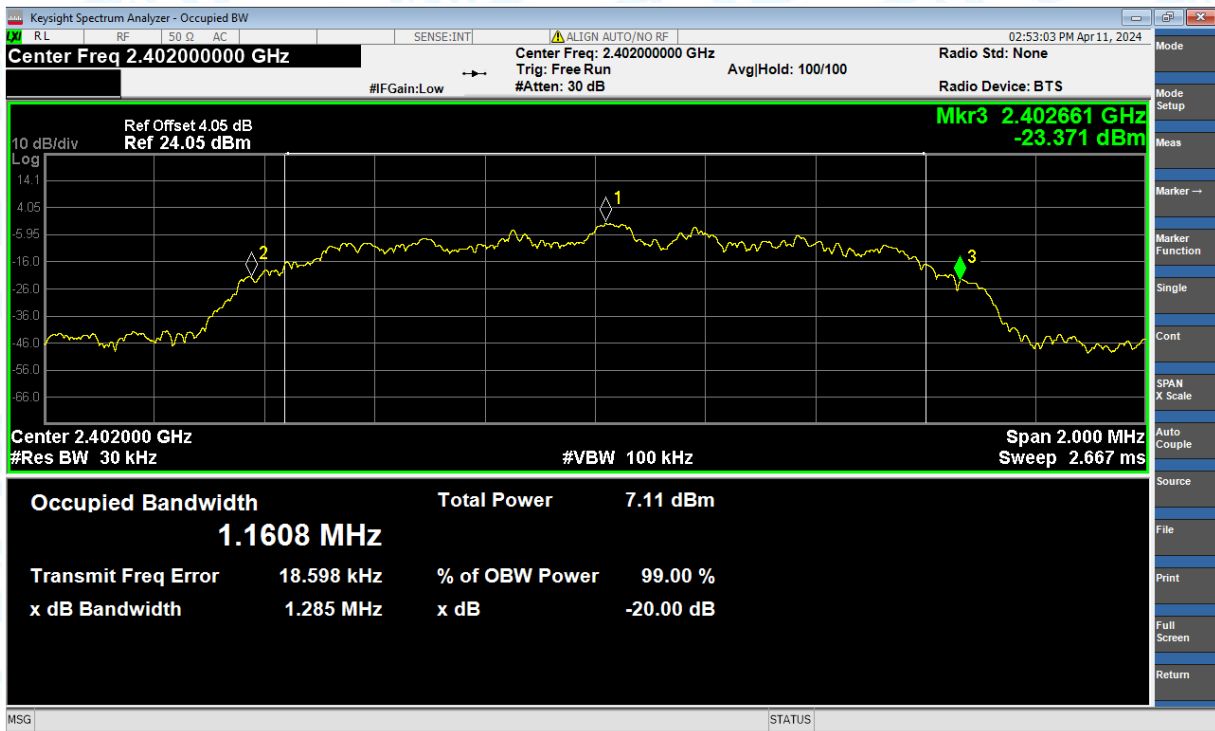
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



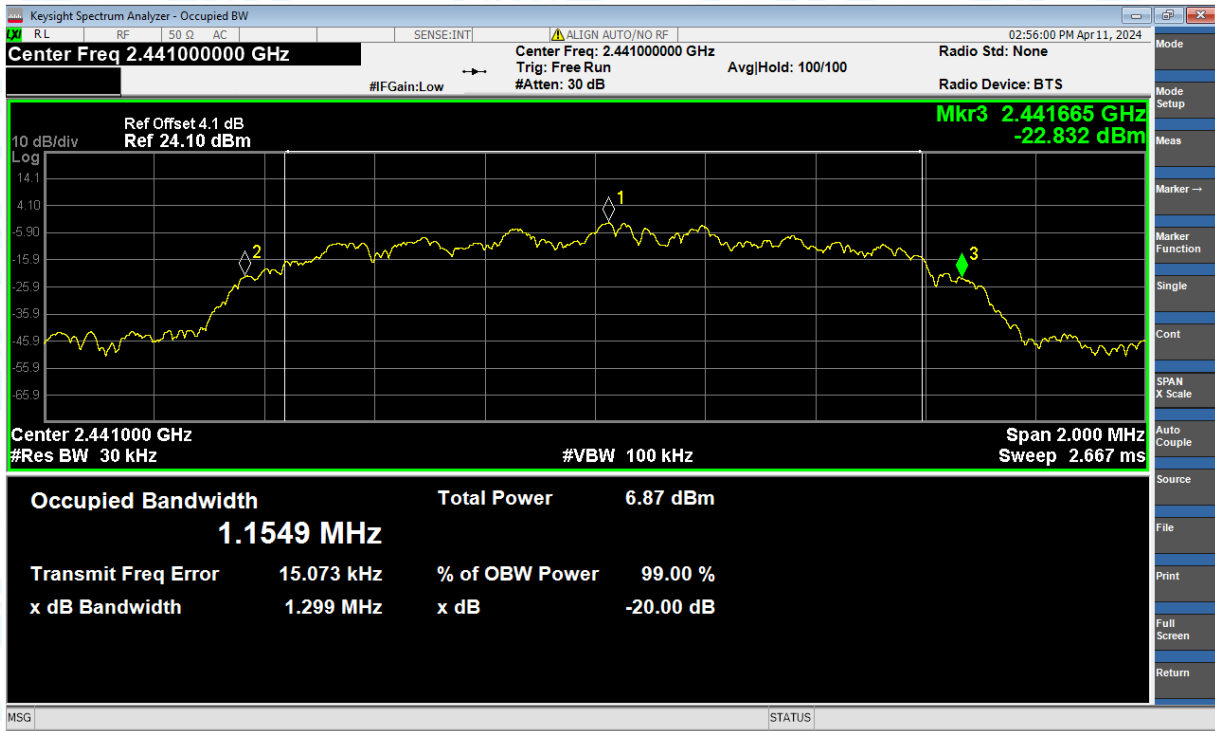
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



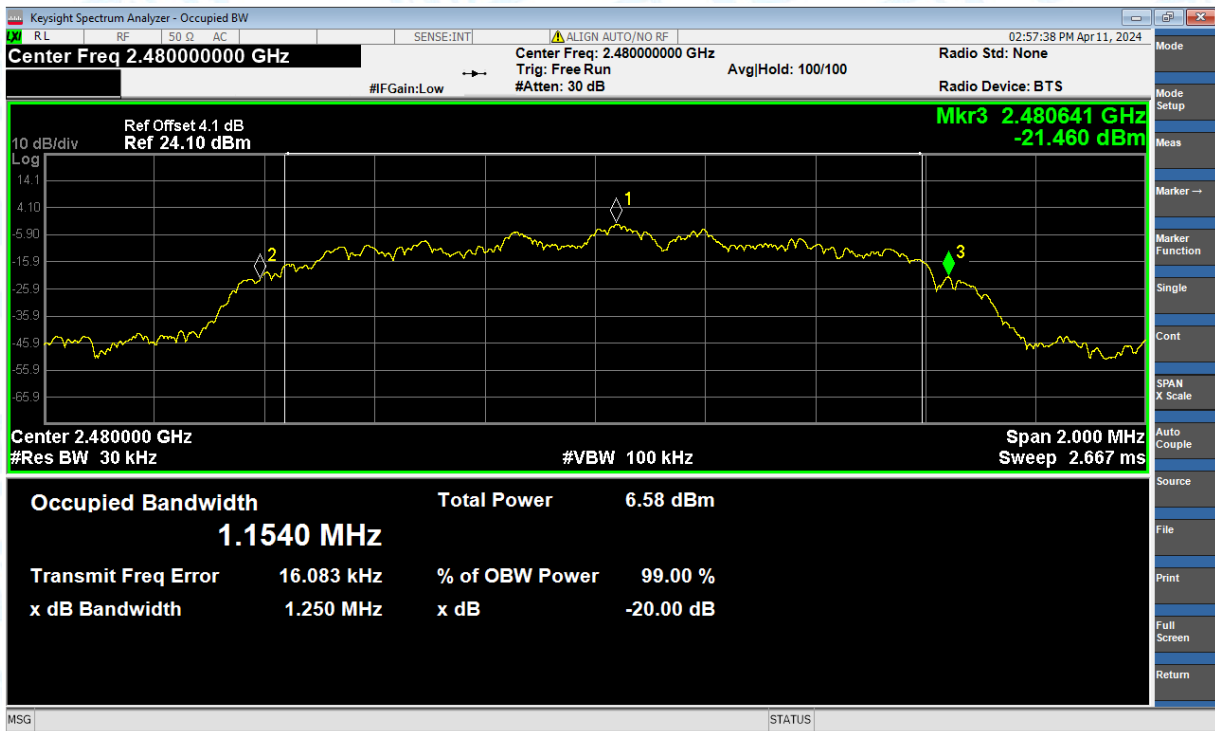
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



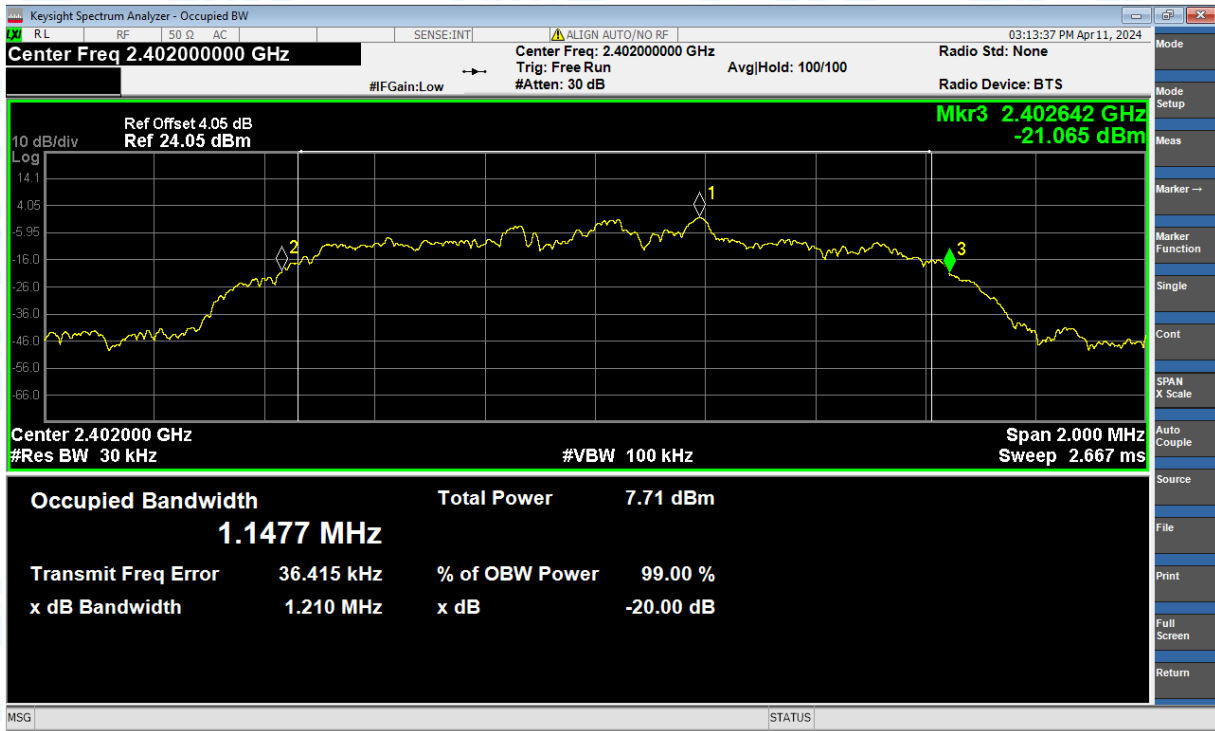
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



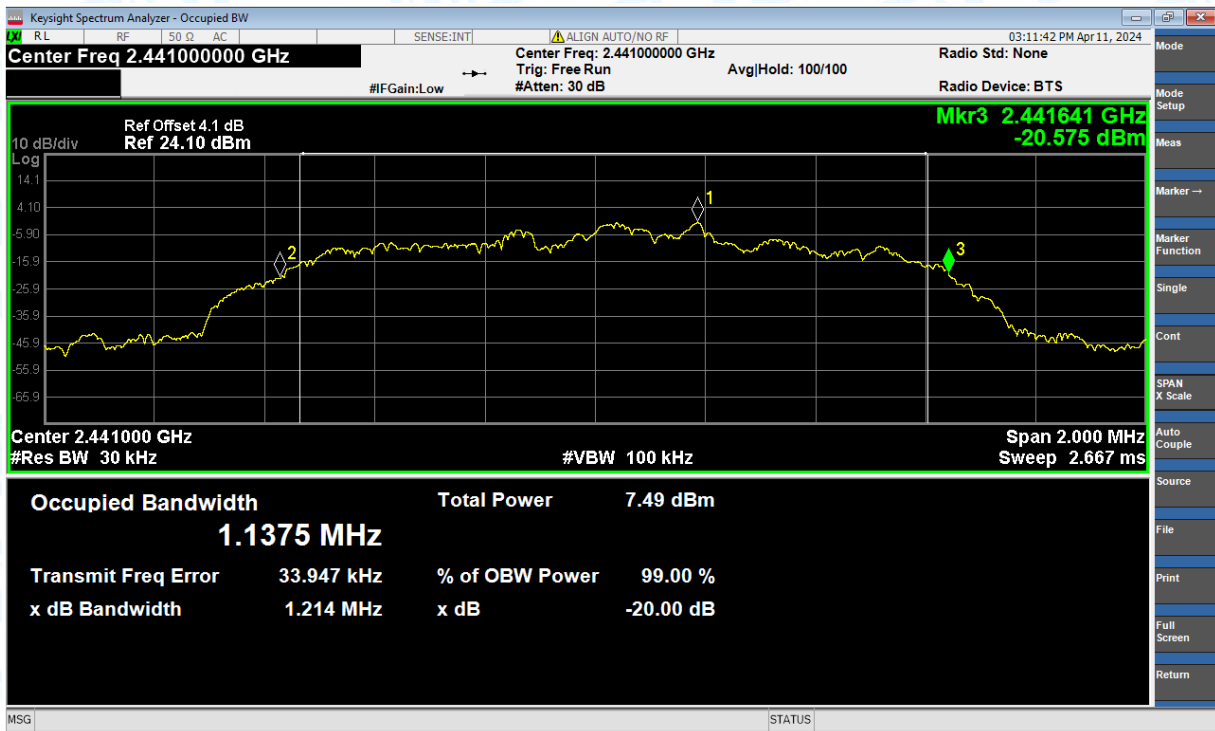
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

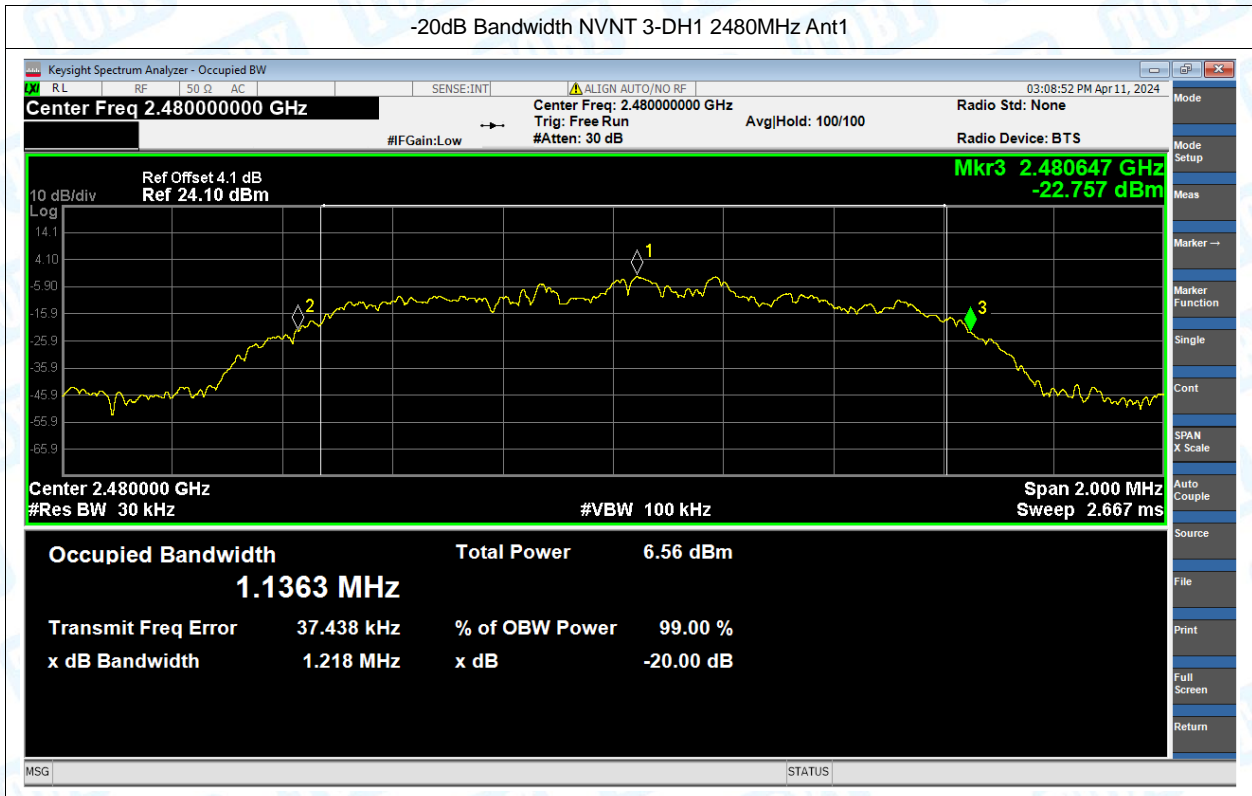


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



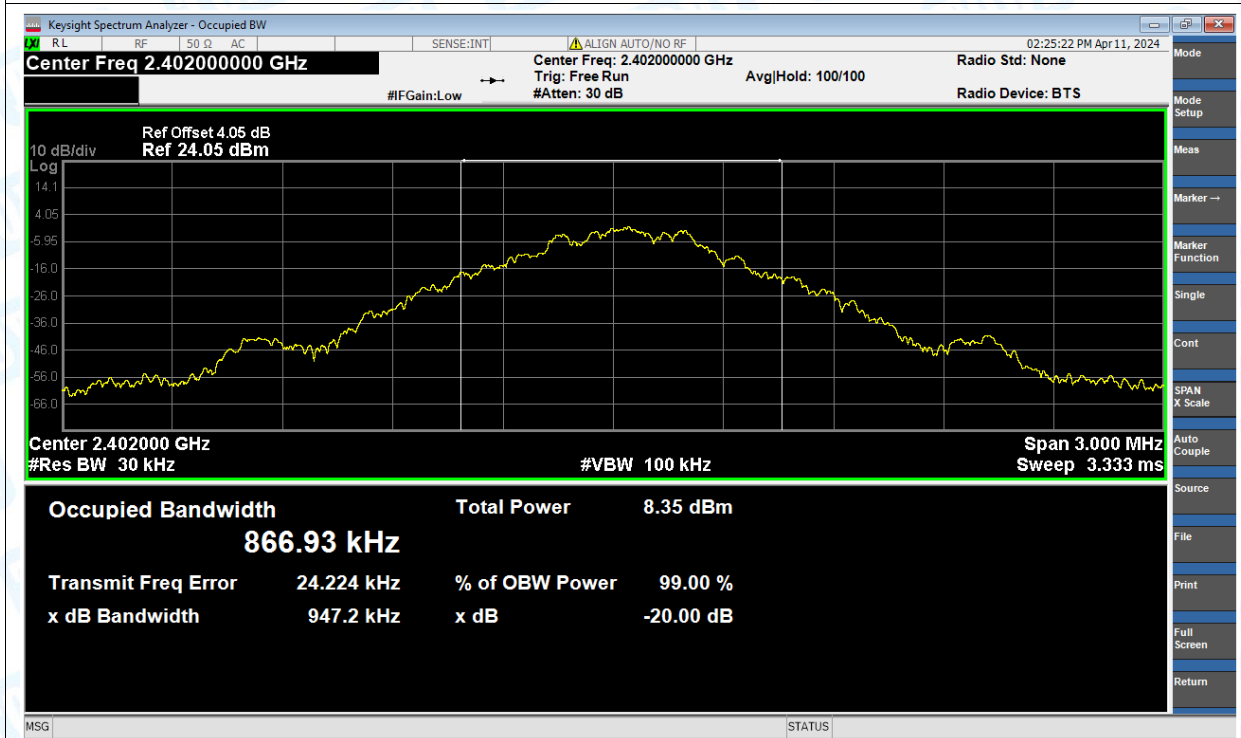


4. Occupied Channel Bandwidth

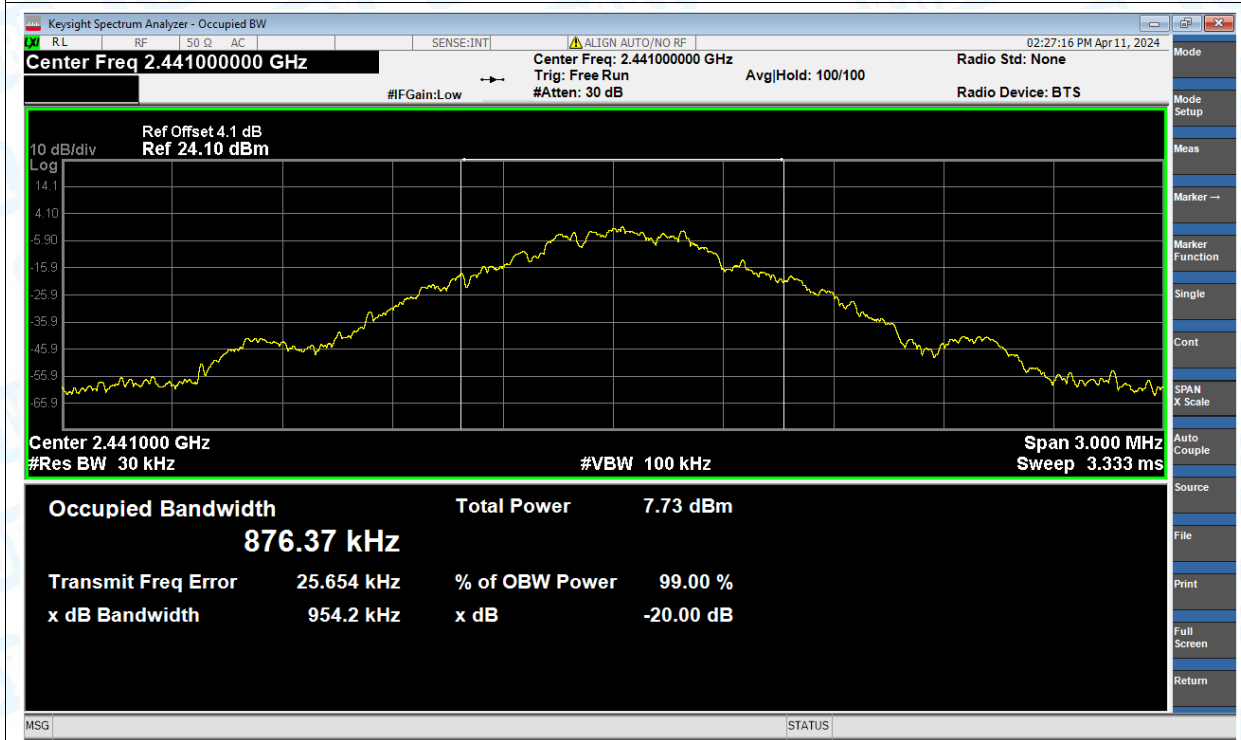
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.867
NVNT	1-DH1	2441	Ant1	0.876
NVNT	1-DH1	2480	Ant1	0.874
NVNT	2-DH1	2402	Ant1	1.167
NVNT	2-DH1	2441	Ant1	1.127
NVNT	2-DH1	2480	Ant1	1.153
NVNT	3-DH1	2402	Ant1	1.139
NVNT	3-DH1	2441	Ant1	1.123
NVNT	3-DH1	2480	Ant1	1.125

Test Graphs

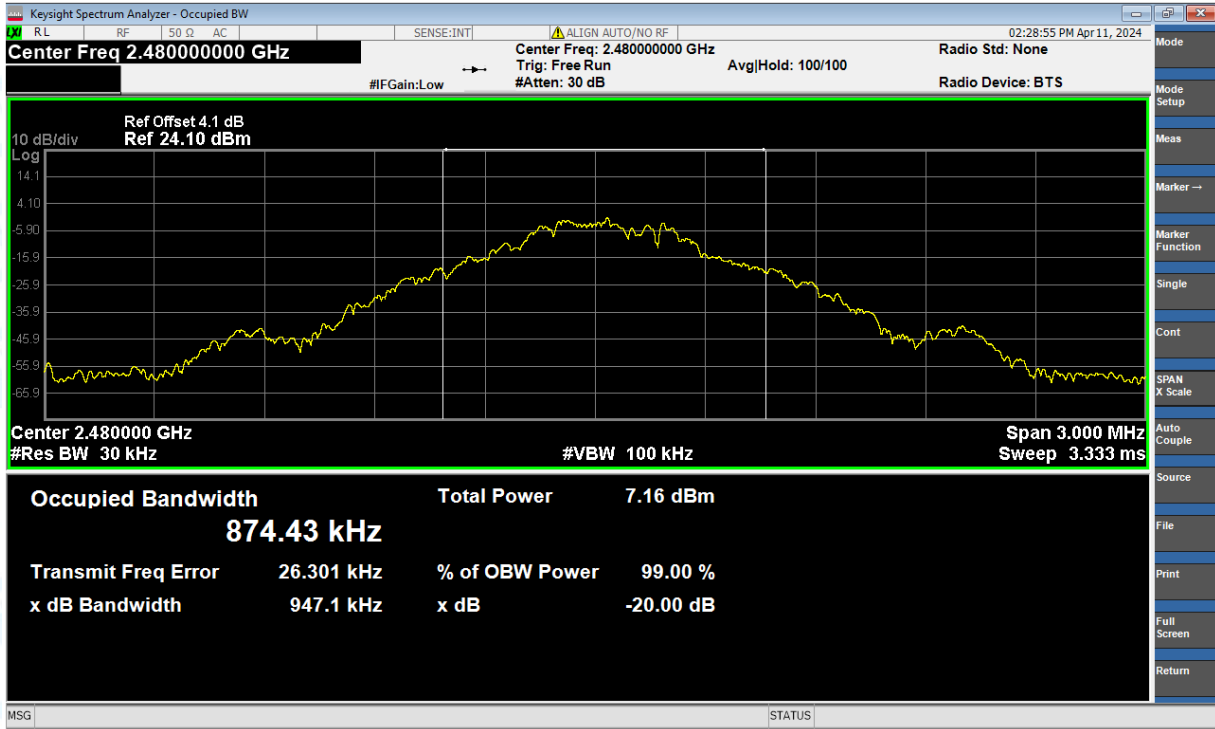
OBW NVNT 1-DH1 2402MHz Ant1



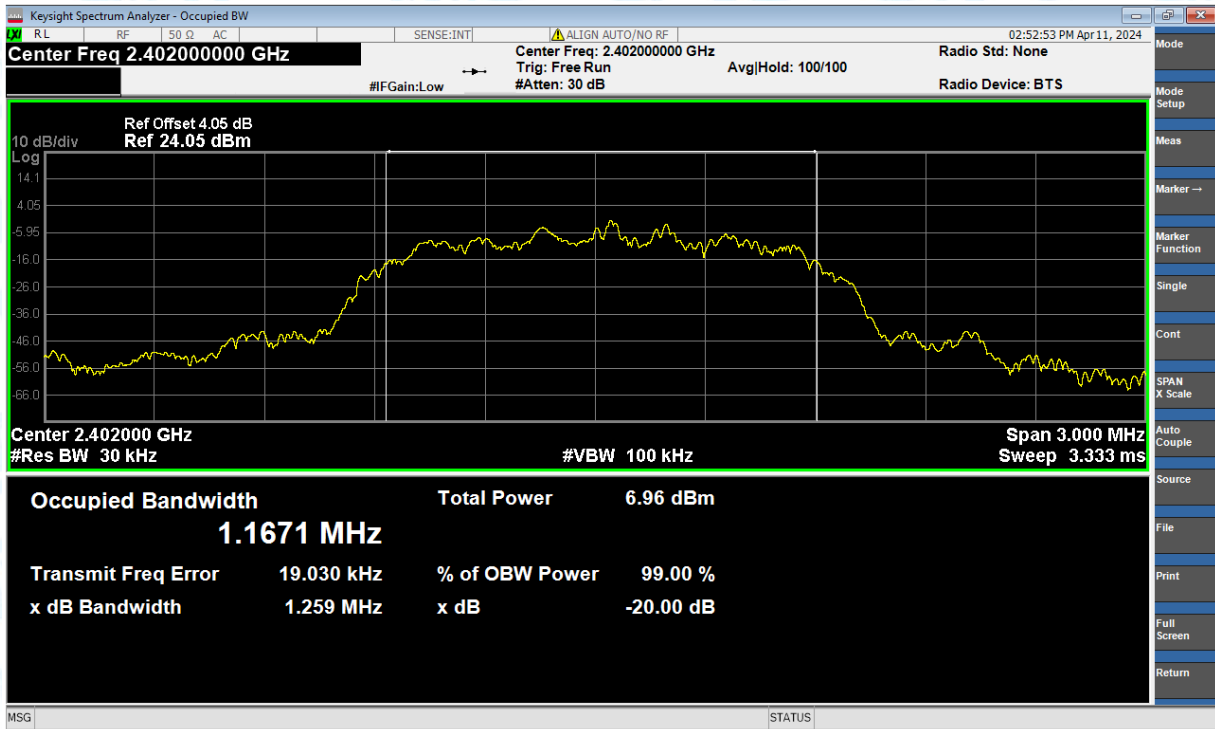
OBW NVNT 1-DH1 2441MHz Ant1



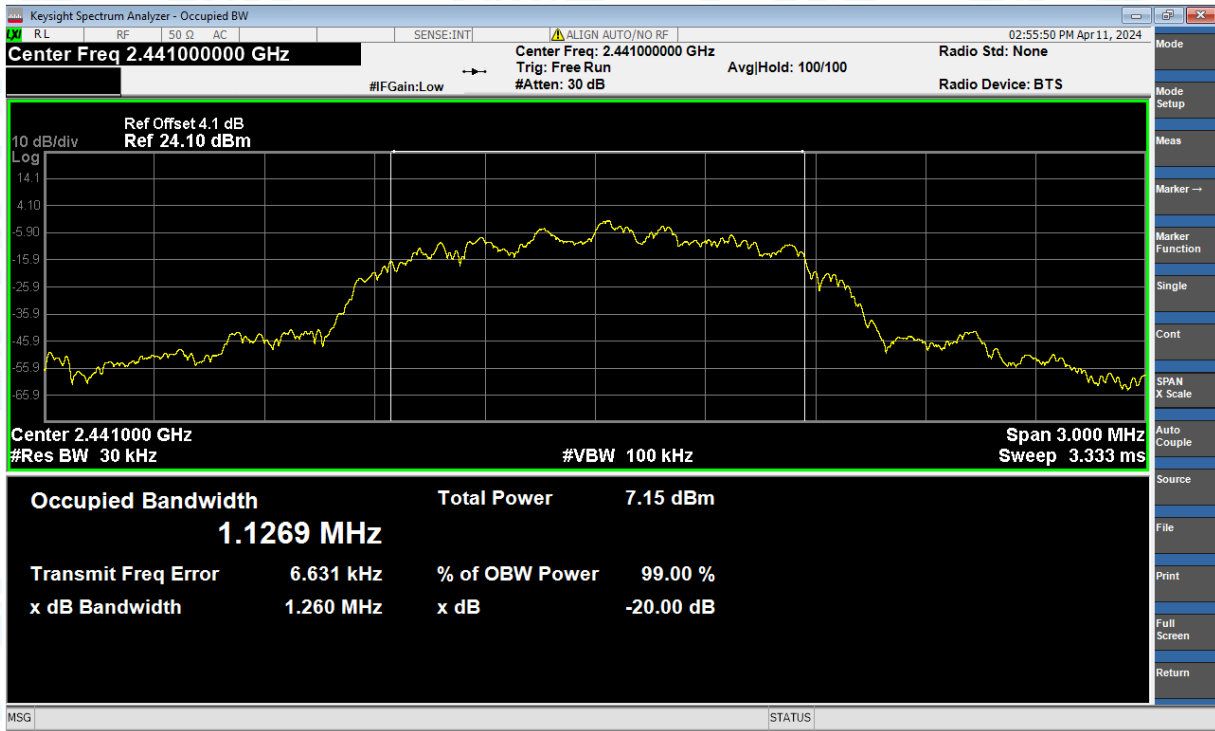
OBW NVNT 1-DH1 2480MHz Ant1



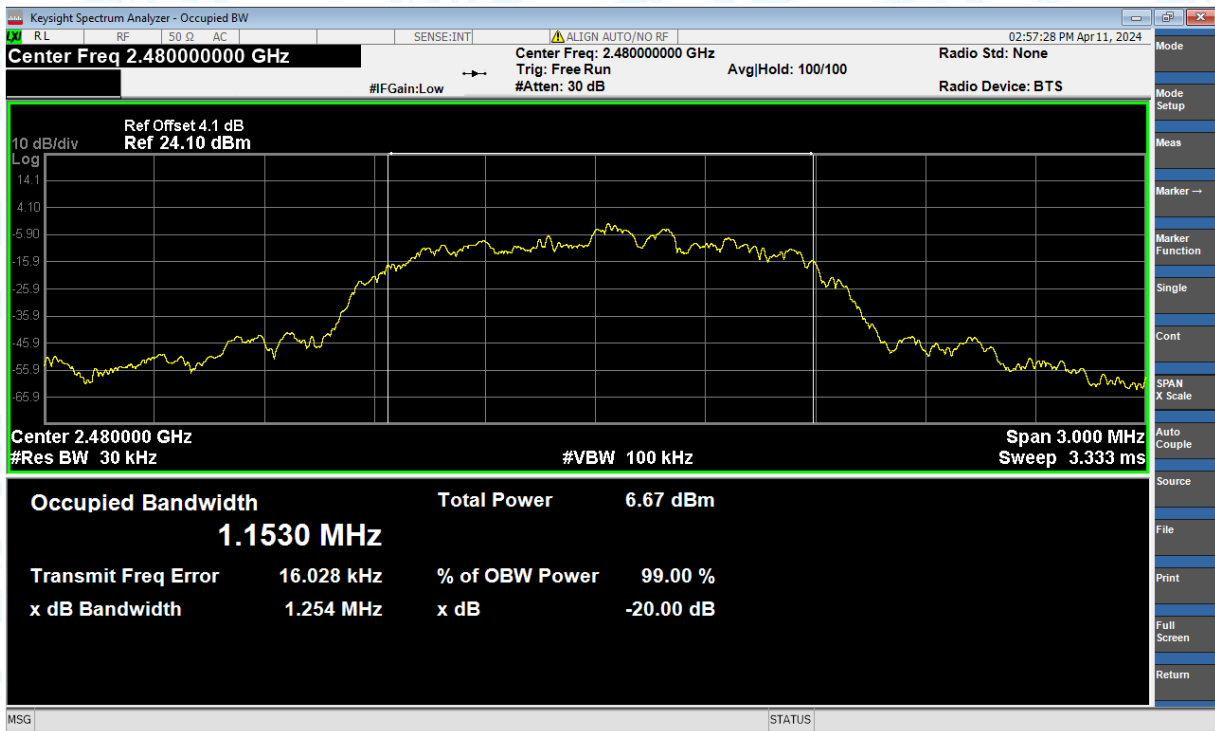
OBW NVNT 2-DH1 2402MHz Ant1



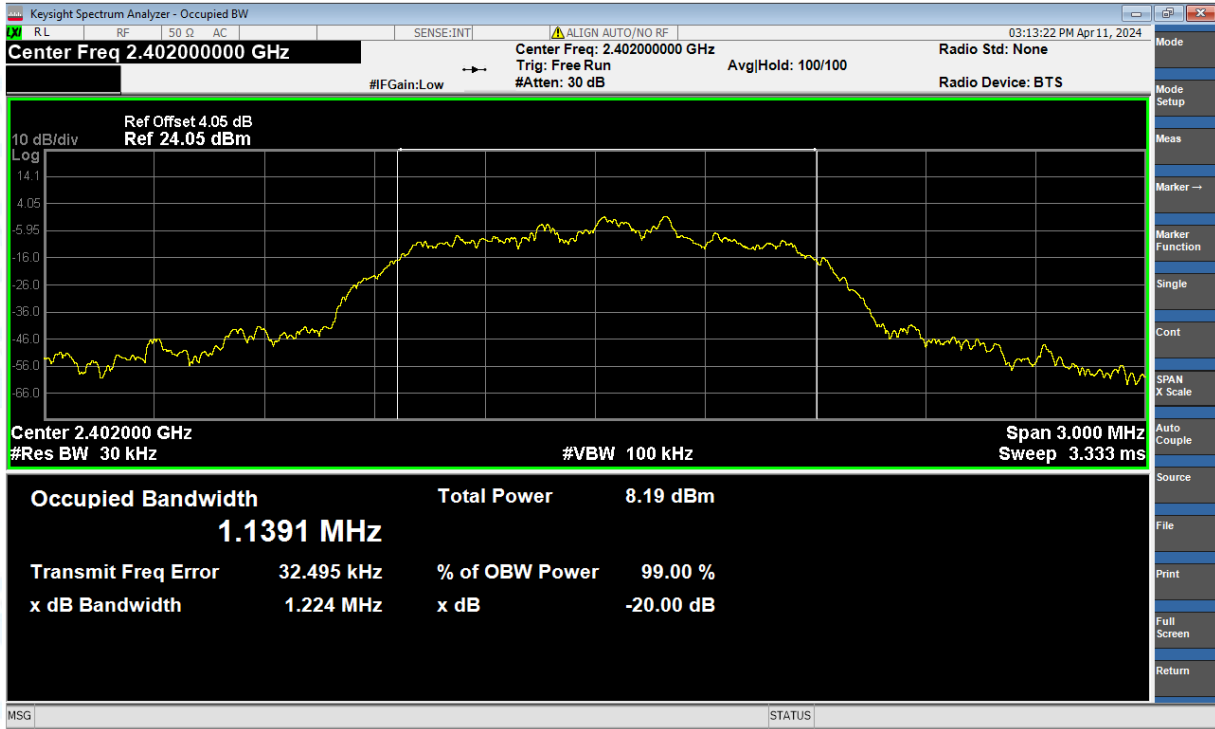
OBW NVNT 2-DH1 2441MHz Ant1



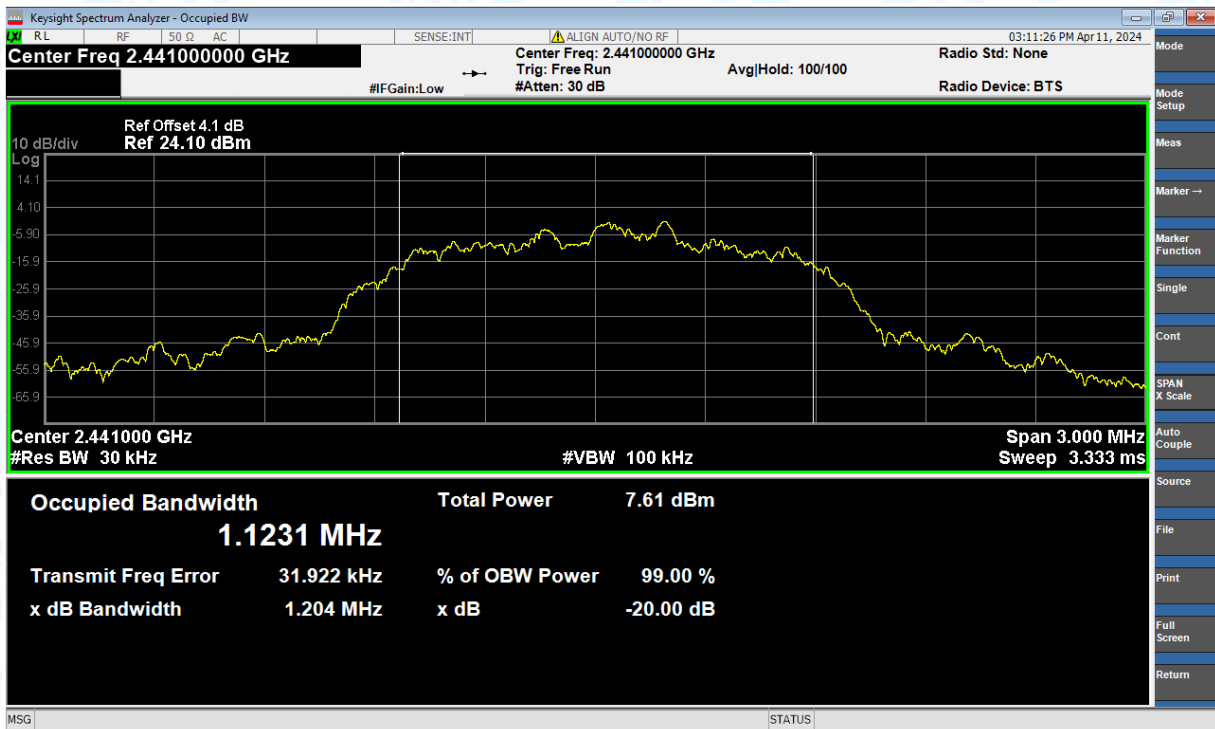
OBW NVNT 2-DH1 2480MHz Ant1

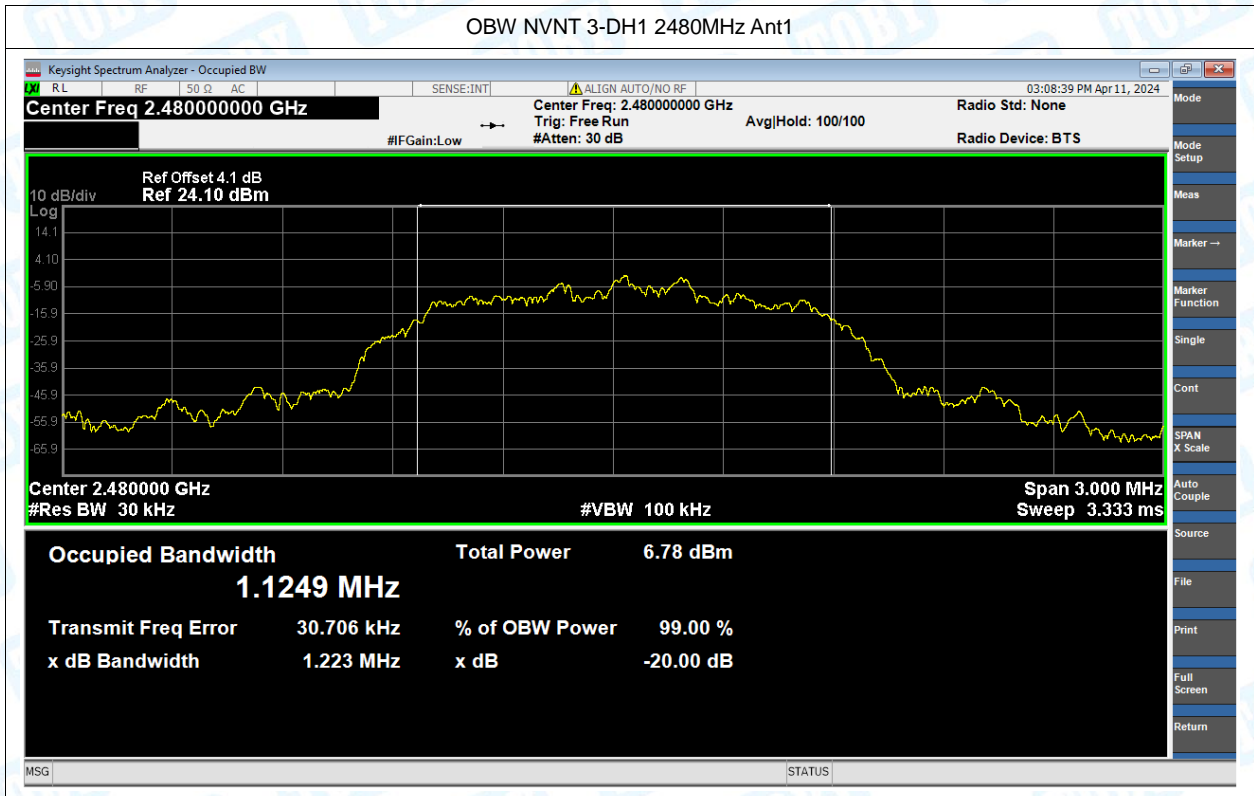


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



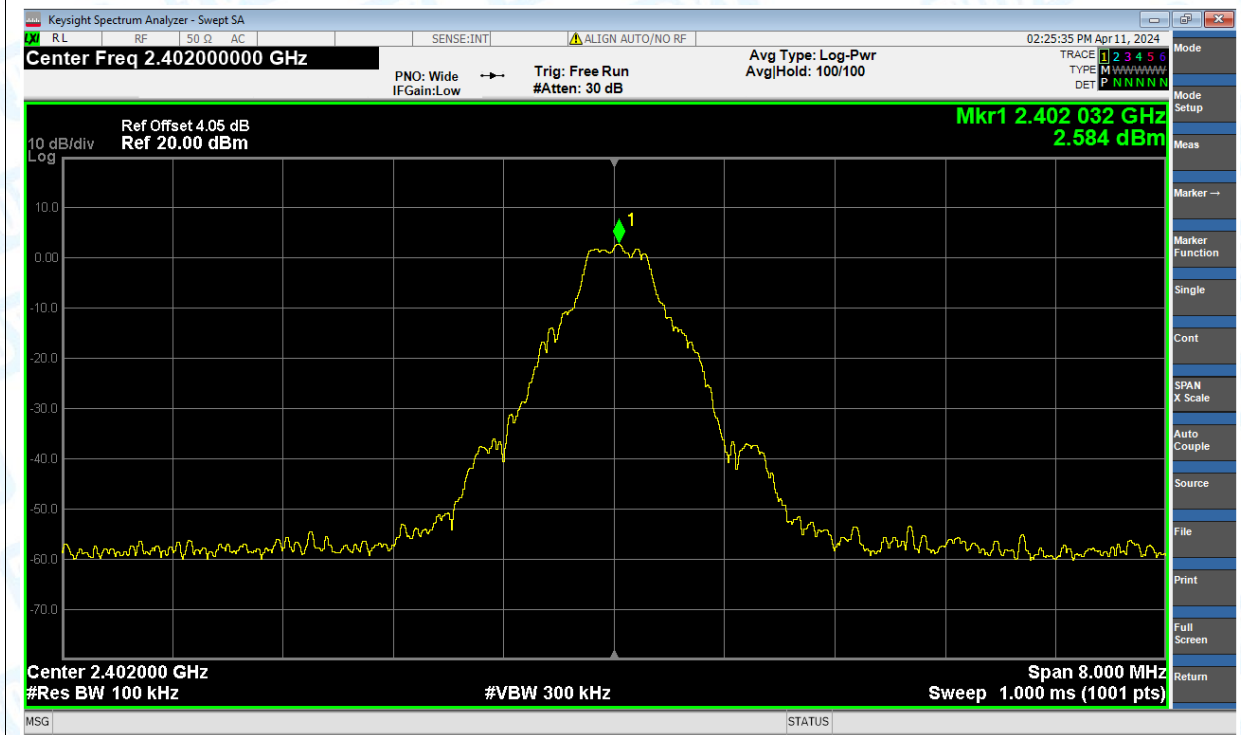


5. Band Edge

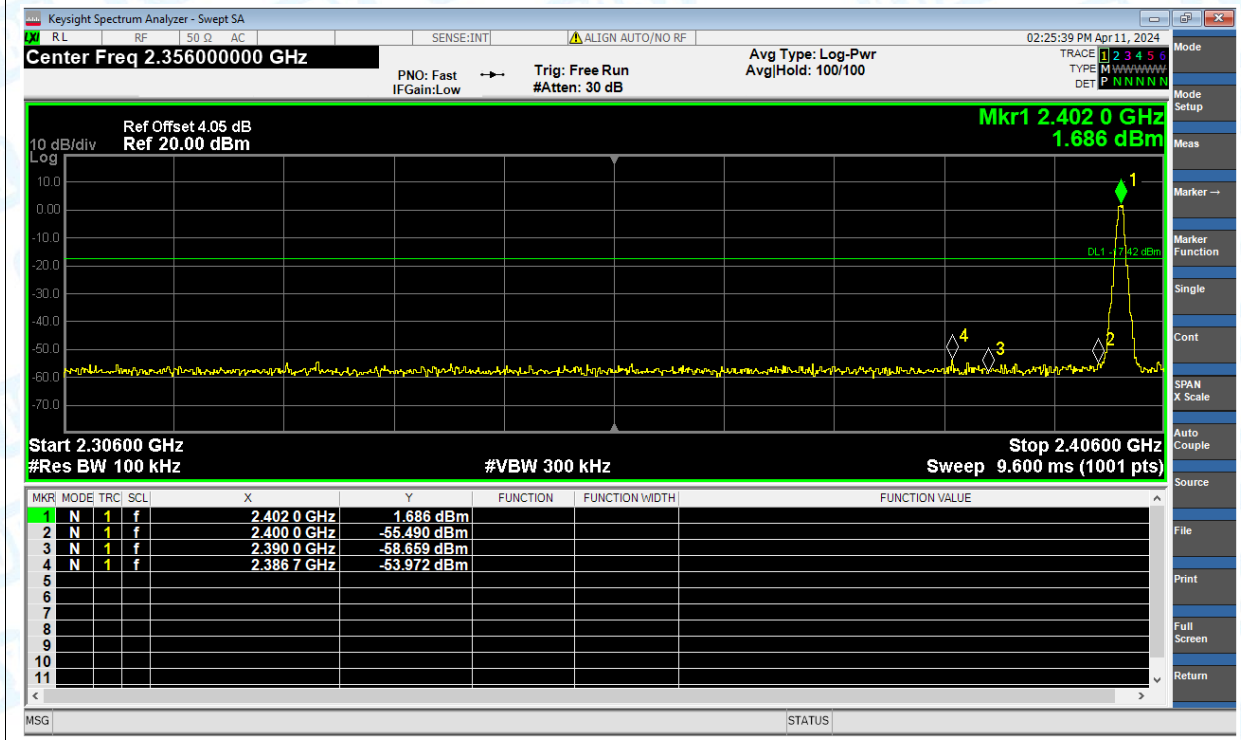
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-56.55	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-56.22	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-56.05	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-55.73	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-56.89	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-55.55	-20	Pass

Test Graphs

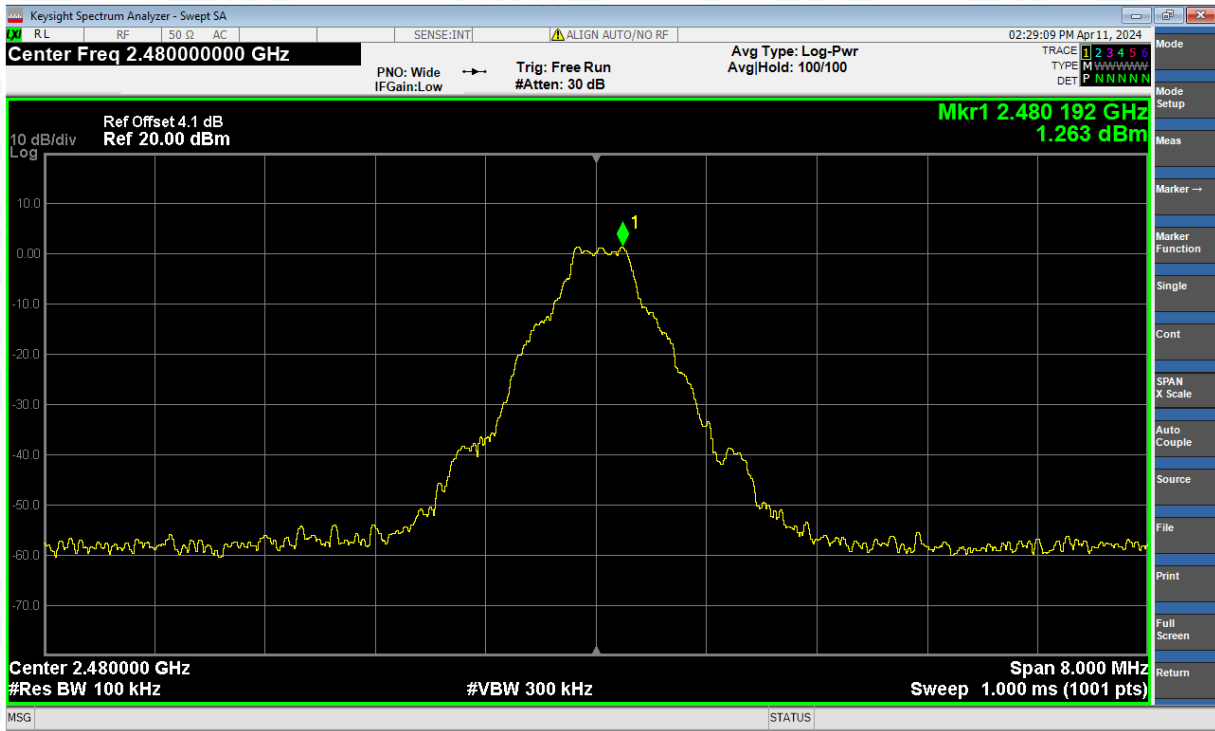
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



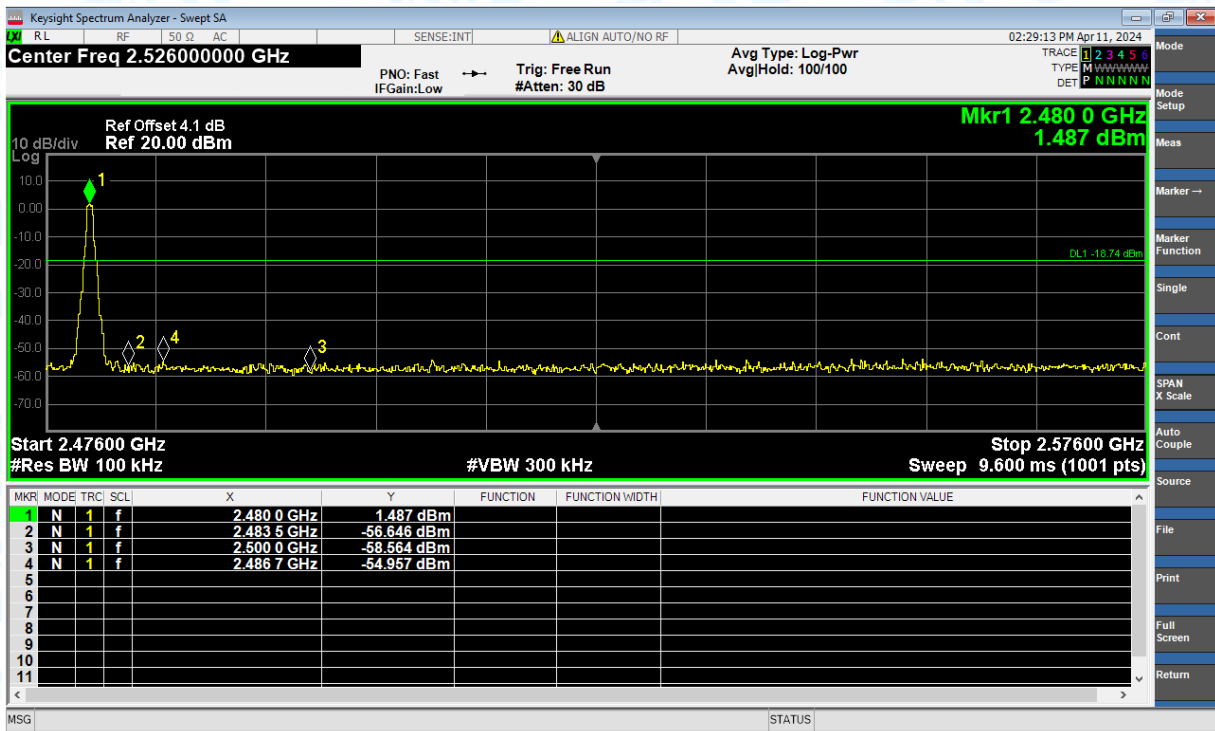
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission

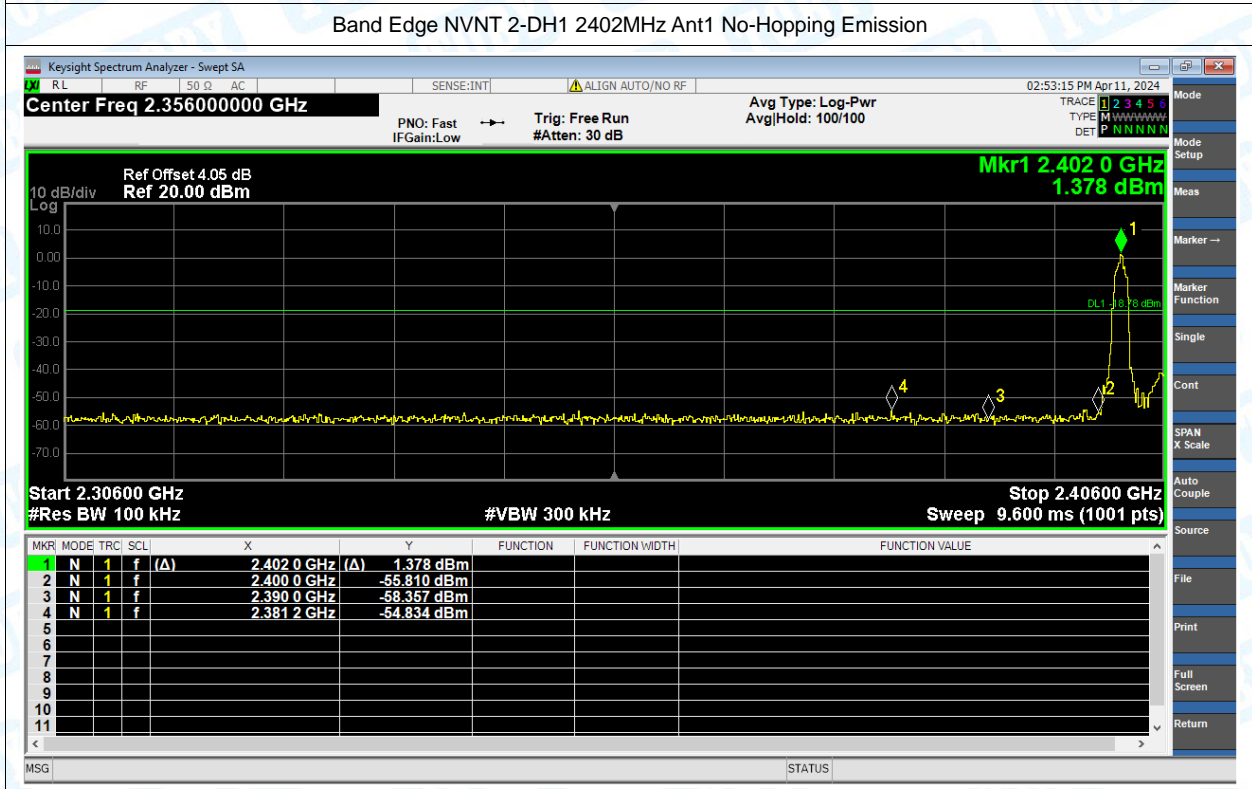
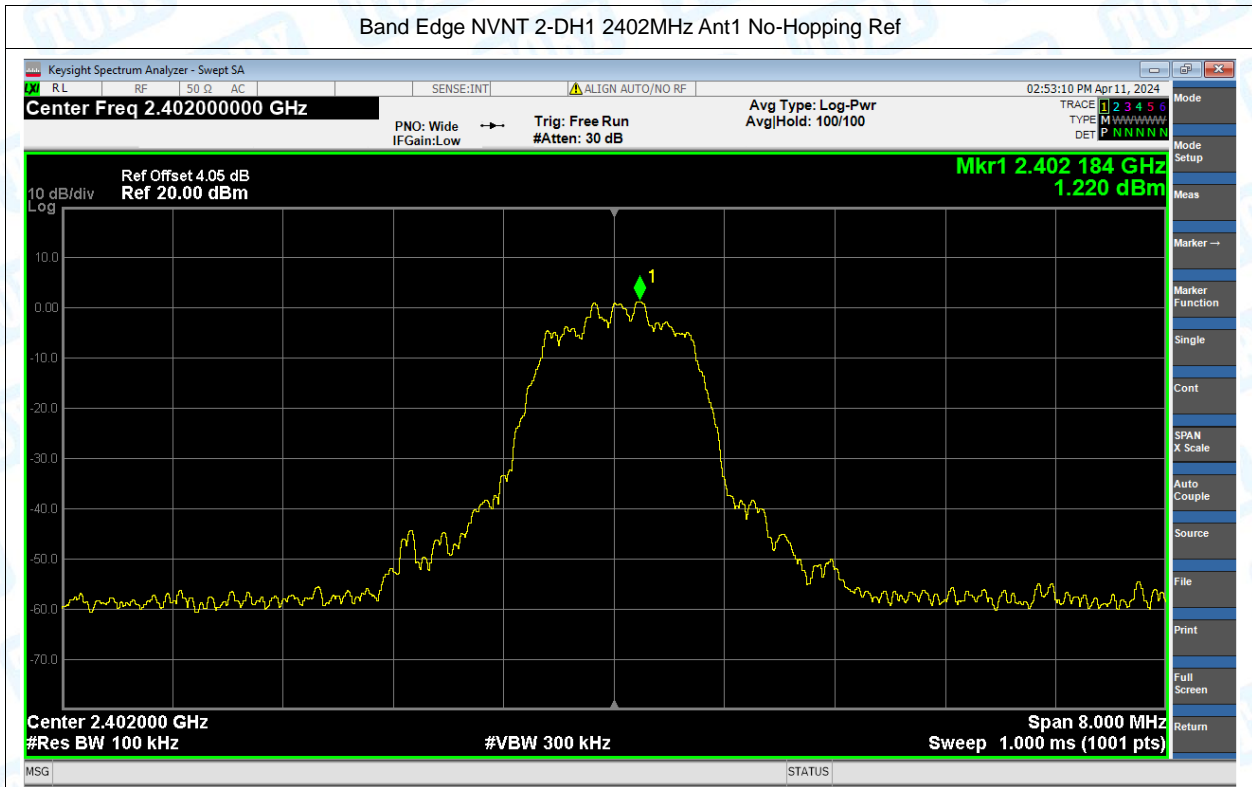


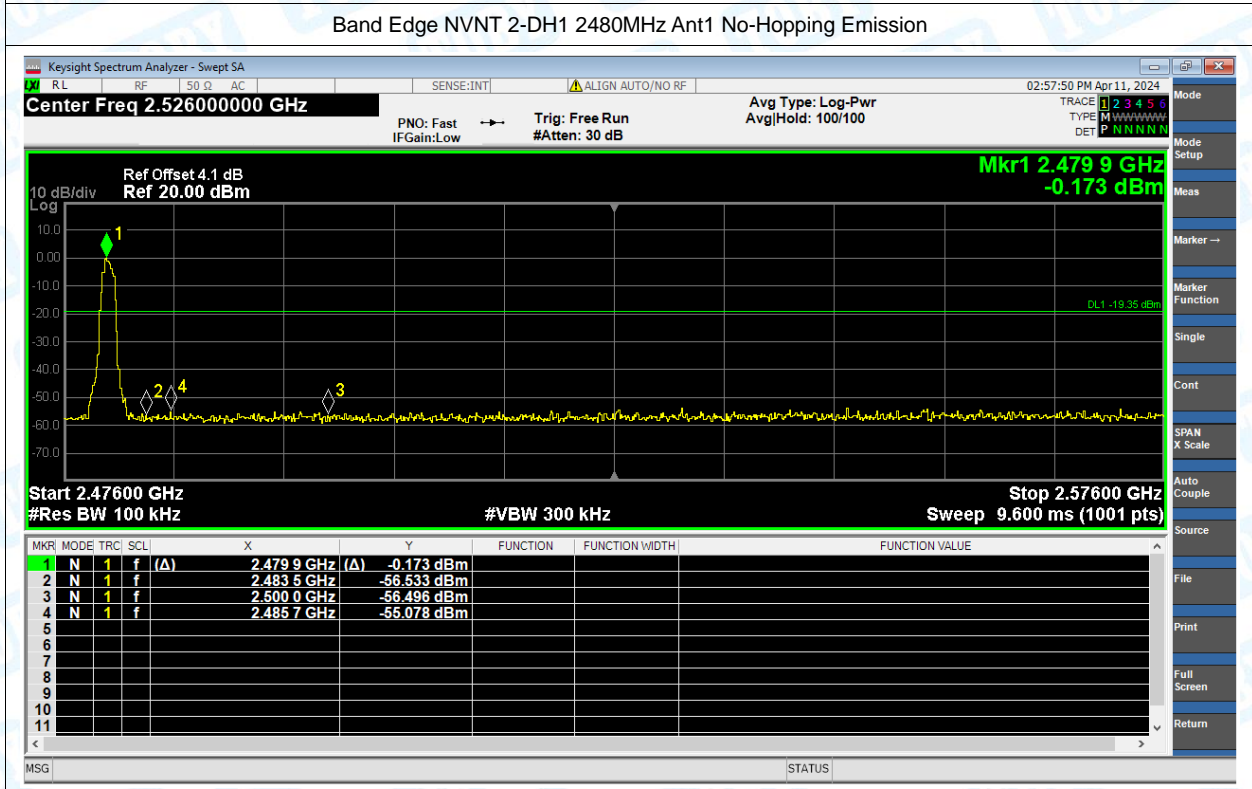
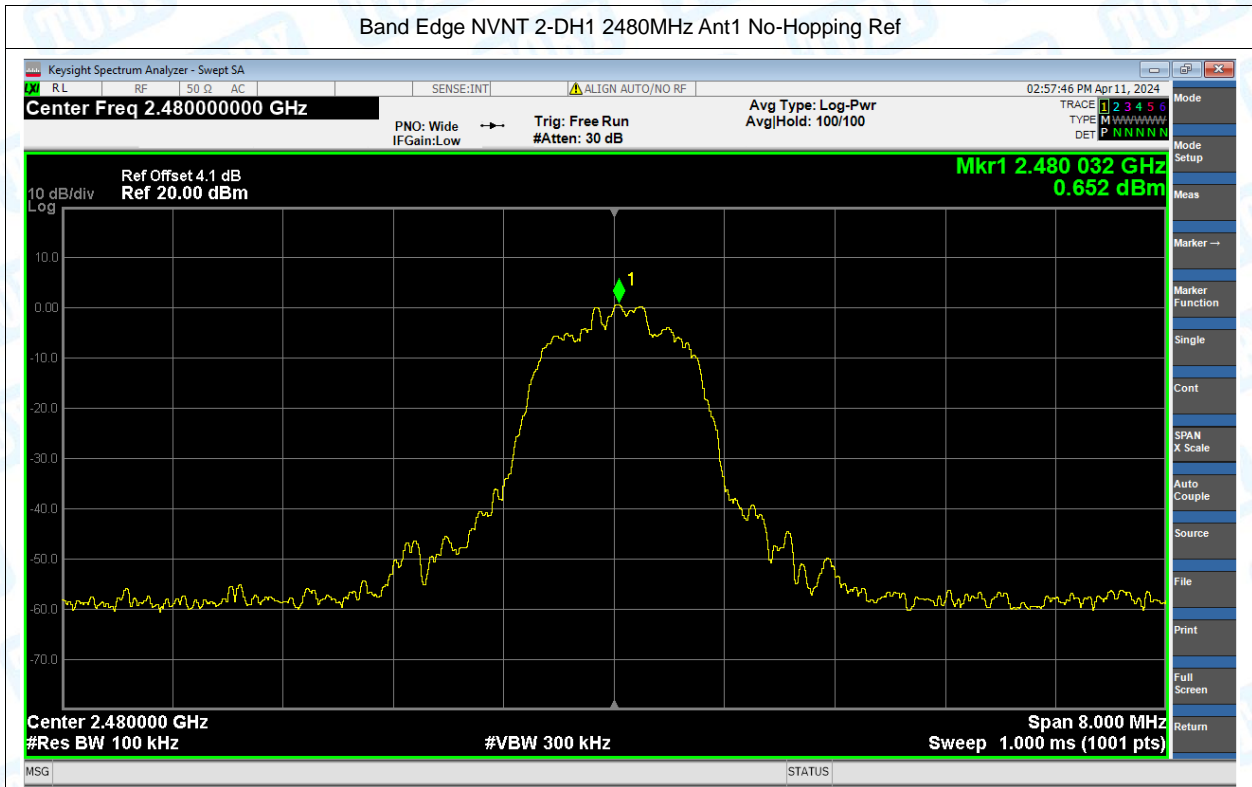
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref

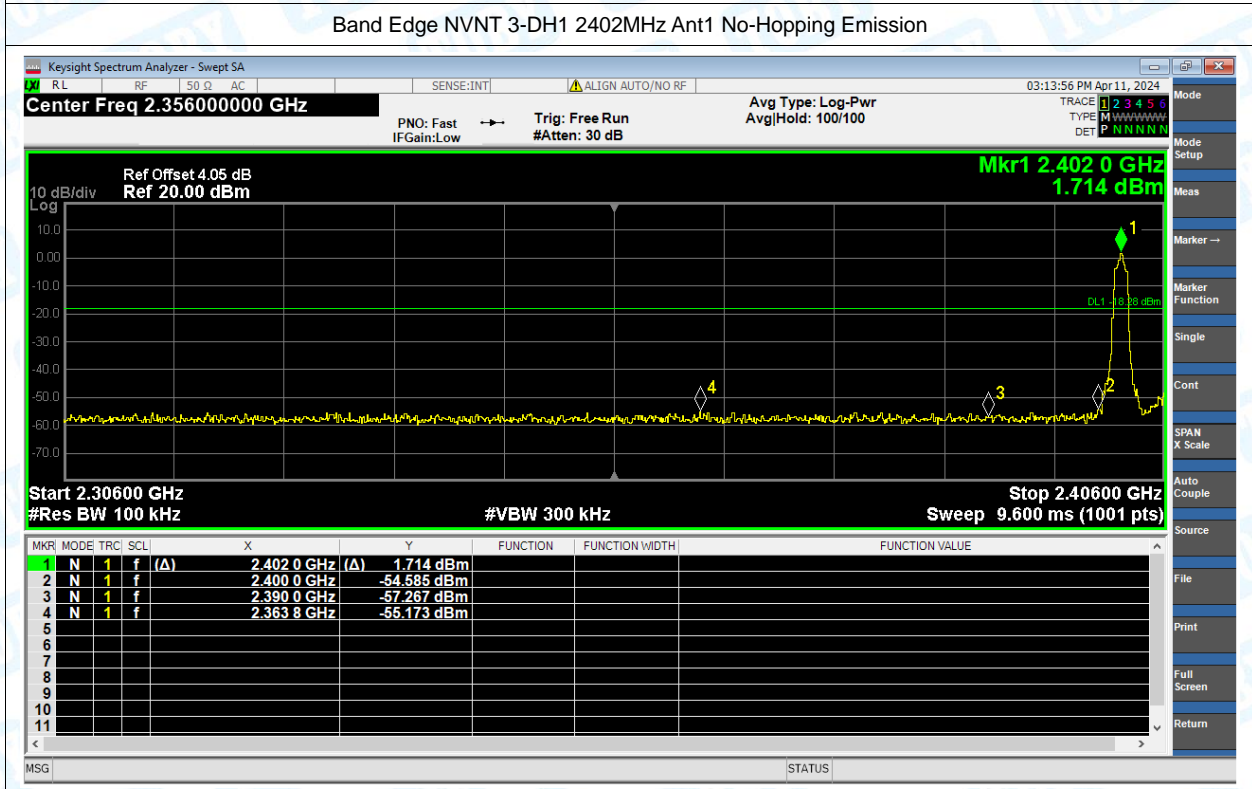
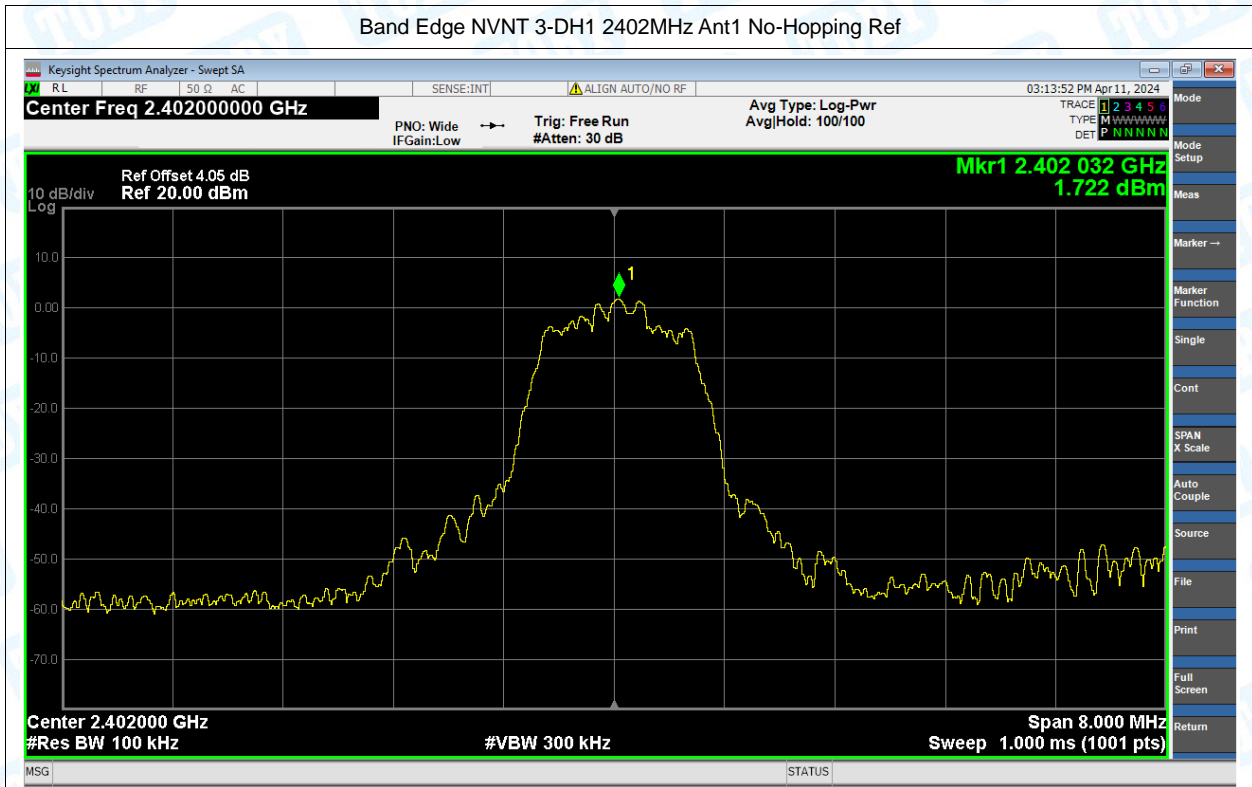


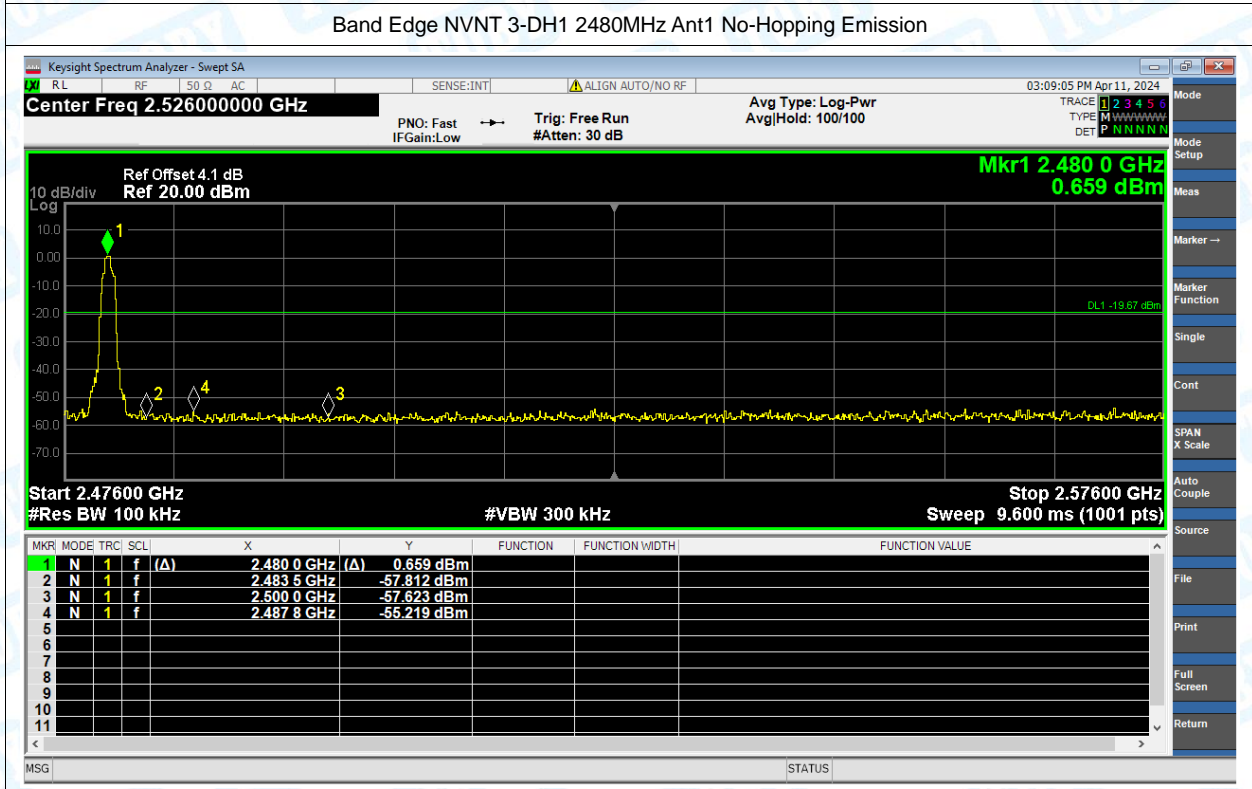
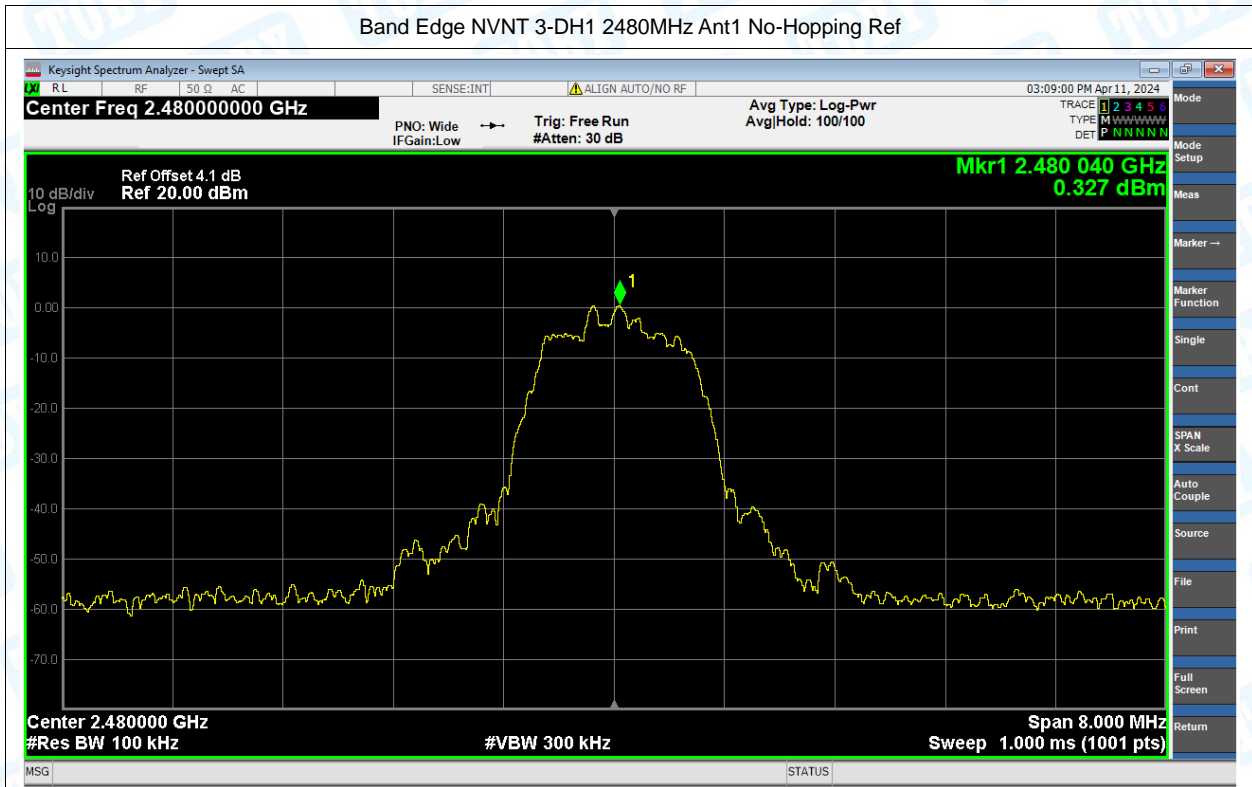
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission









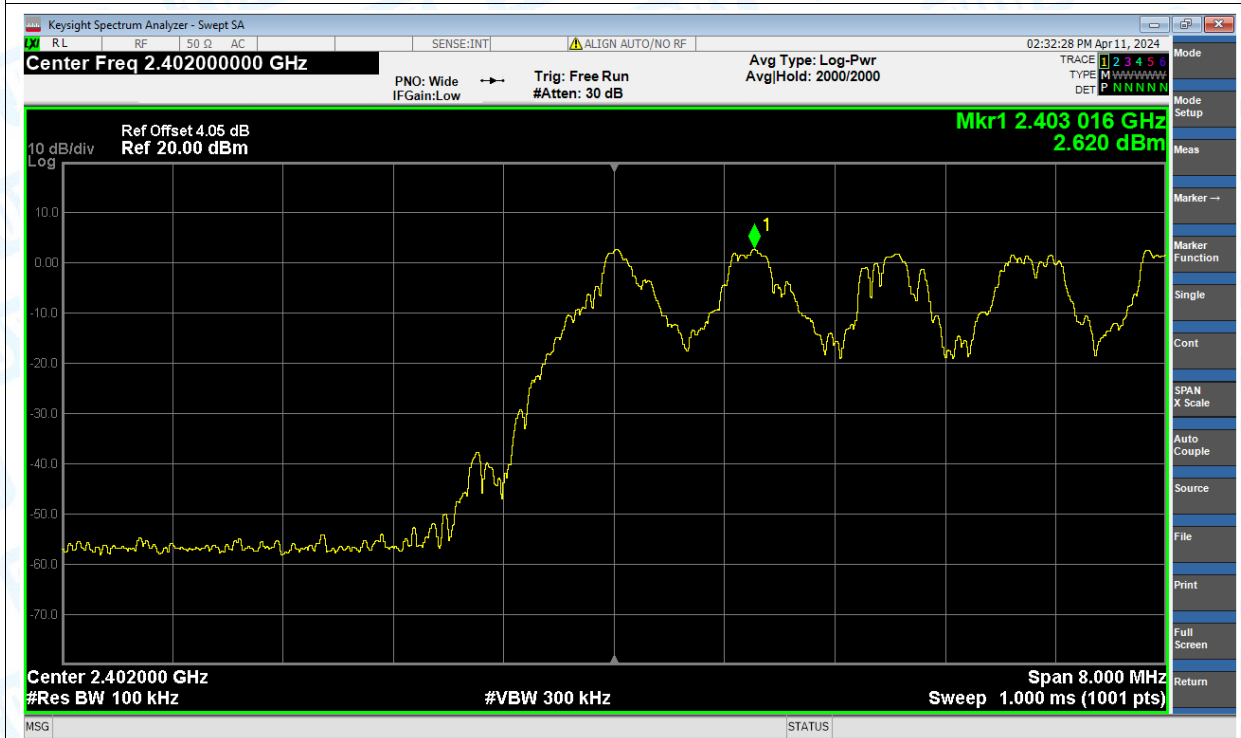


6. Band Edge(Hopping)

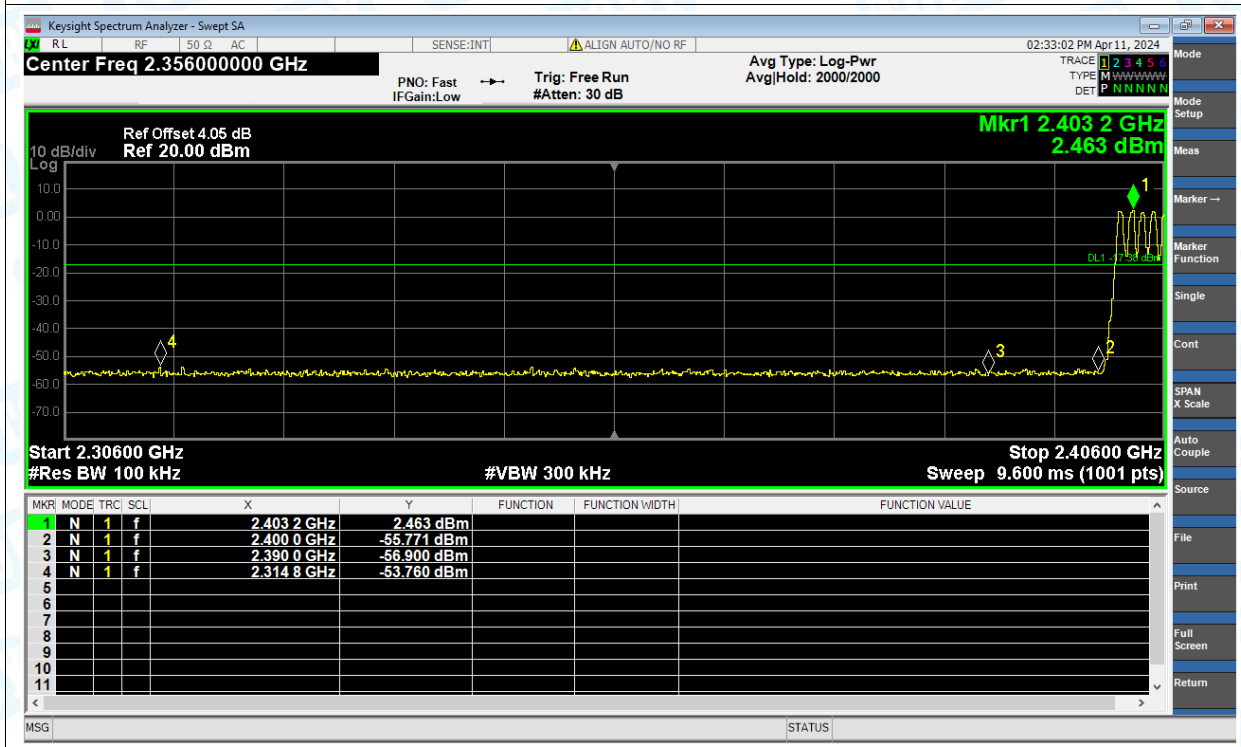
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-56.38	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-54.89	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-54.88	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-53.6	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-56	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-54.53	-20	Pass

Test Graphs

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



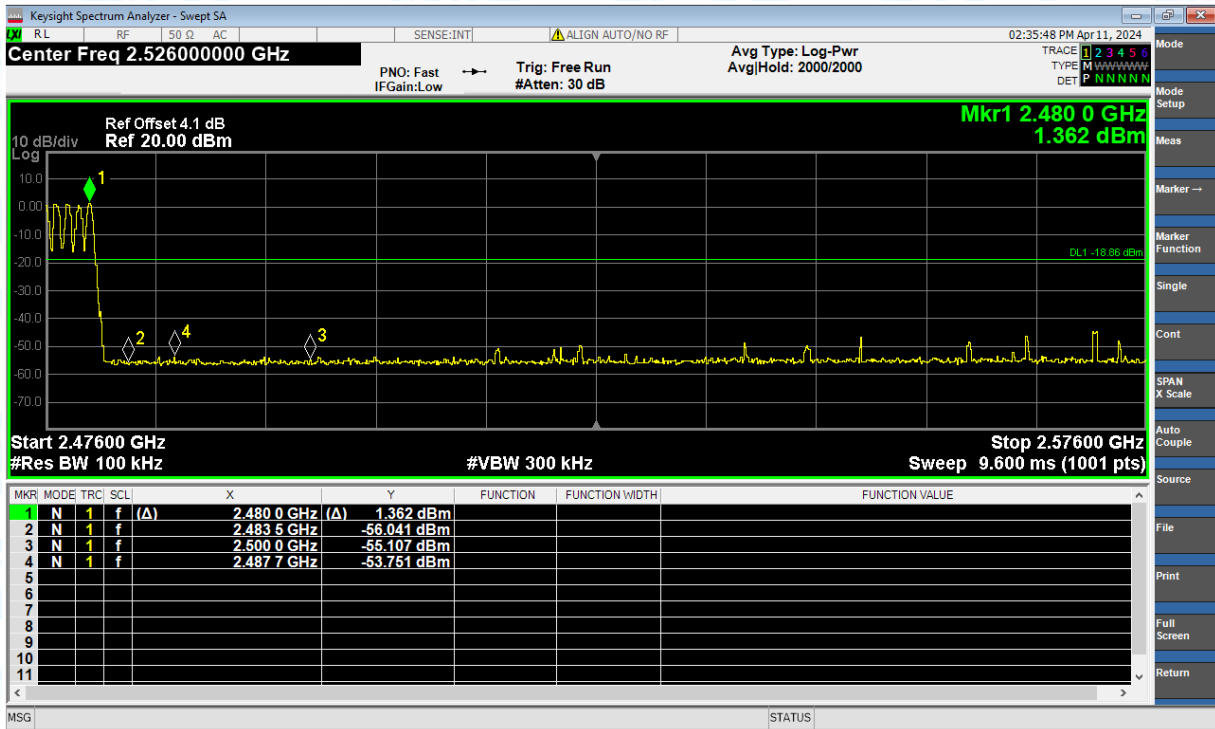
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



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



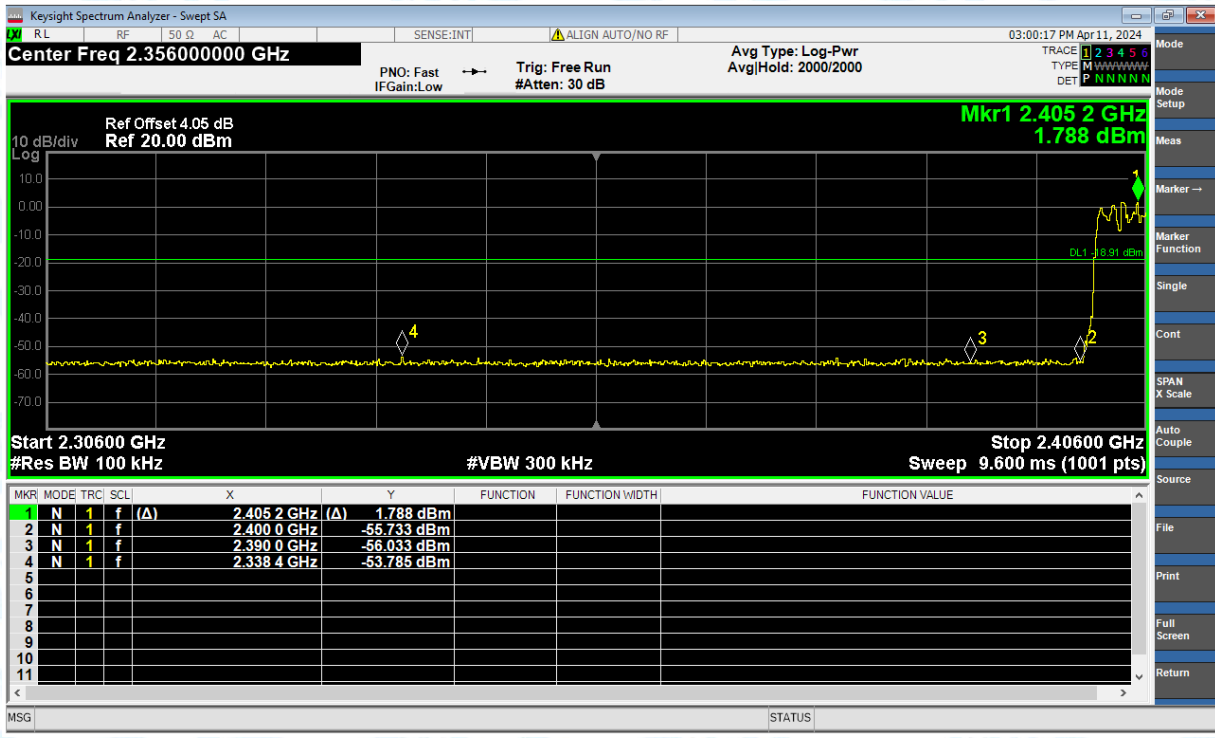
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



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



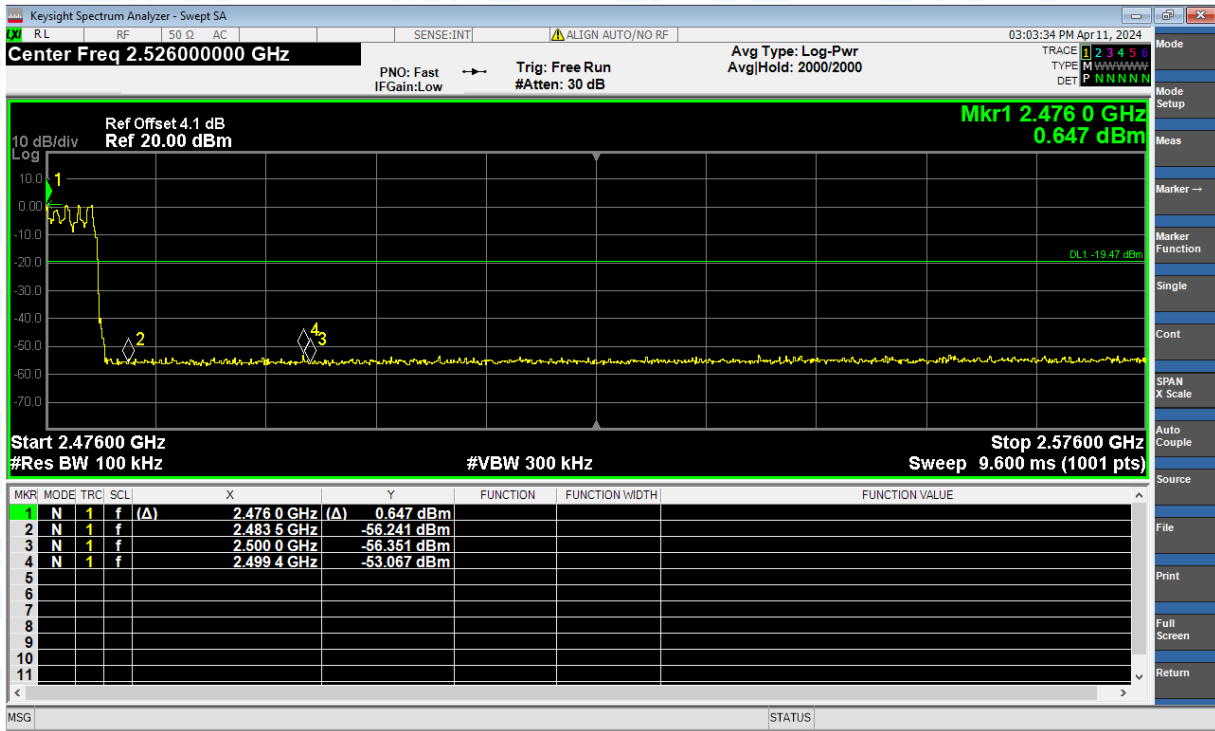
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



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



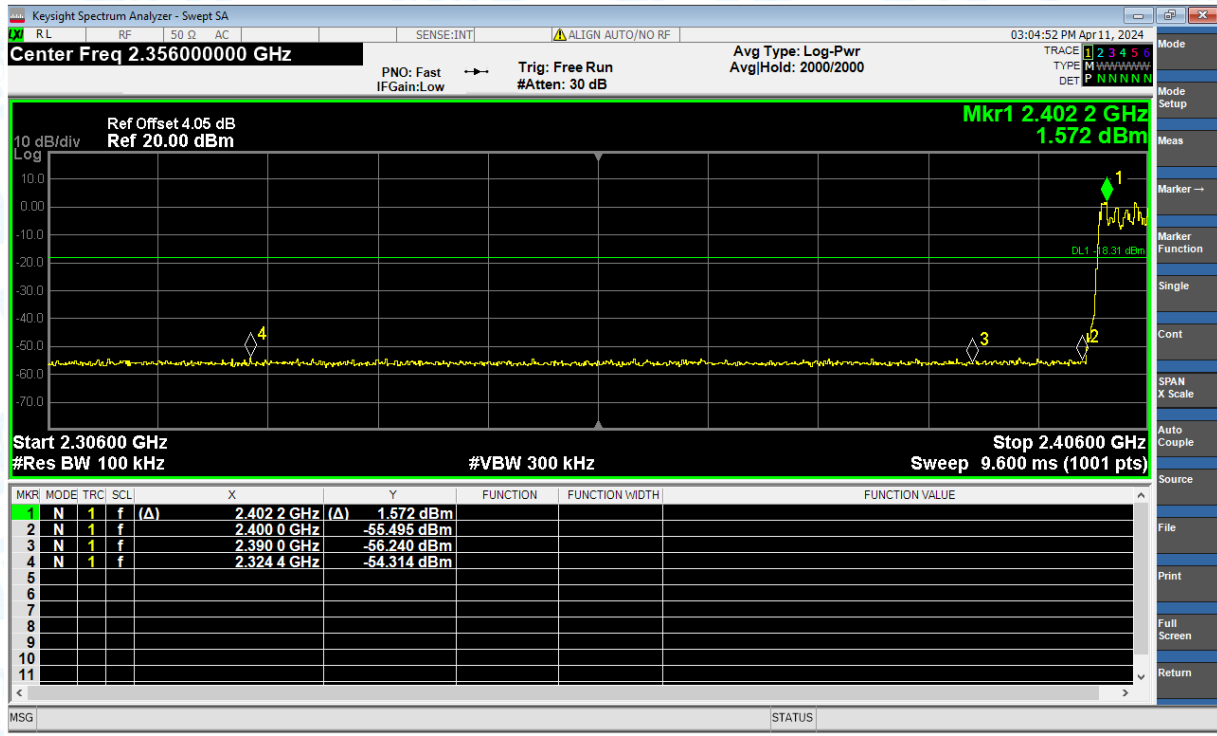
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission



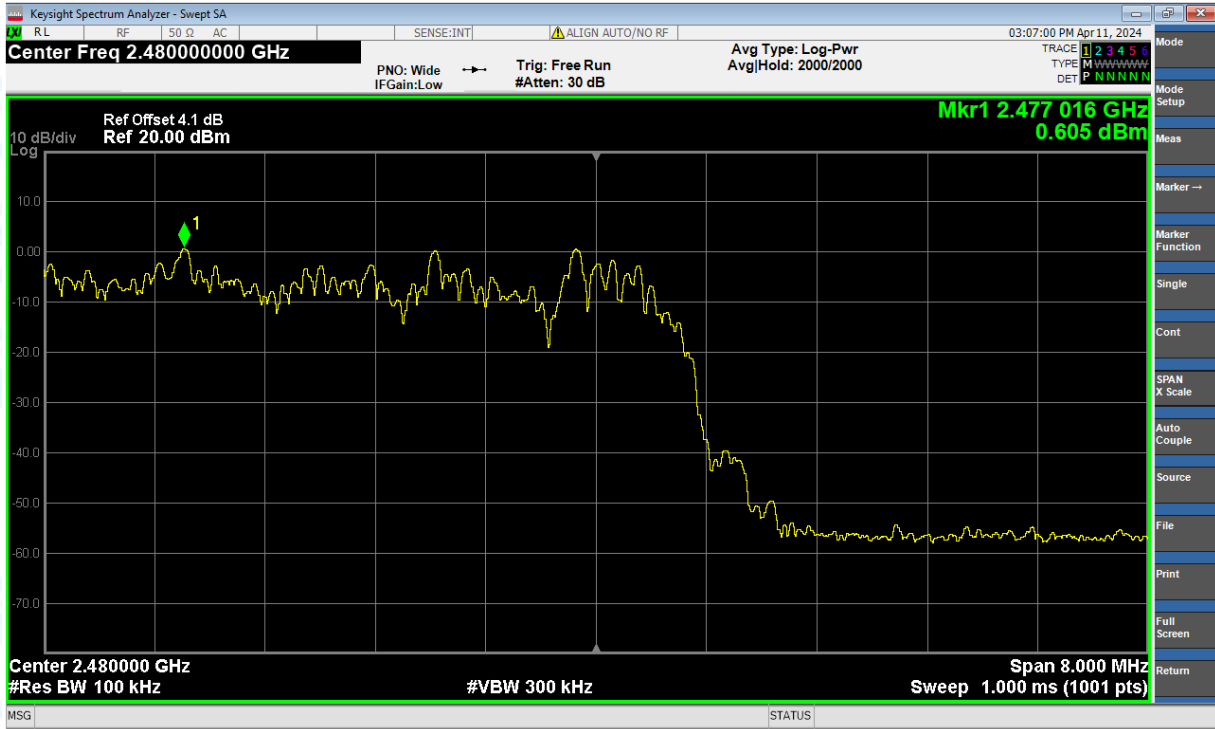
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



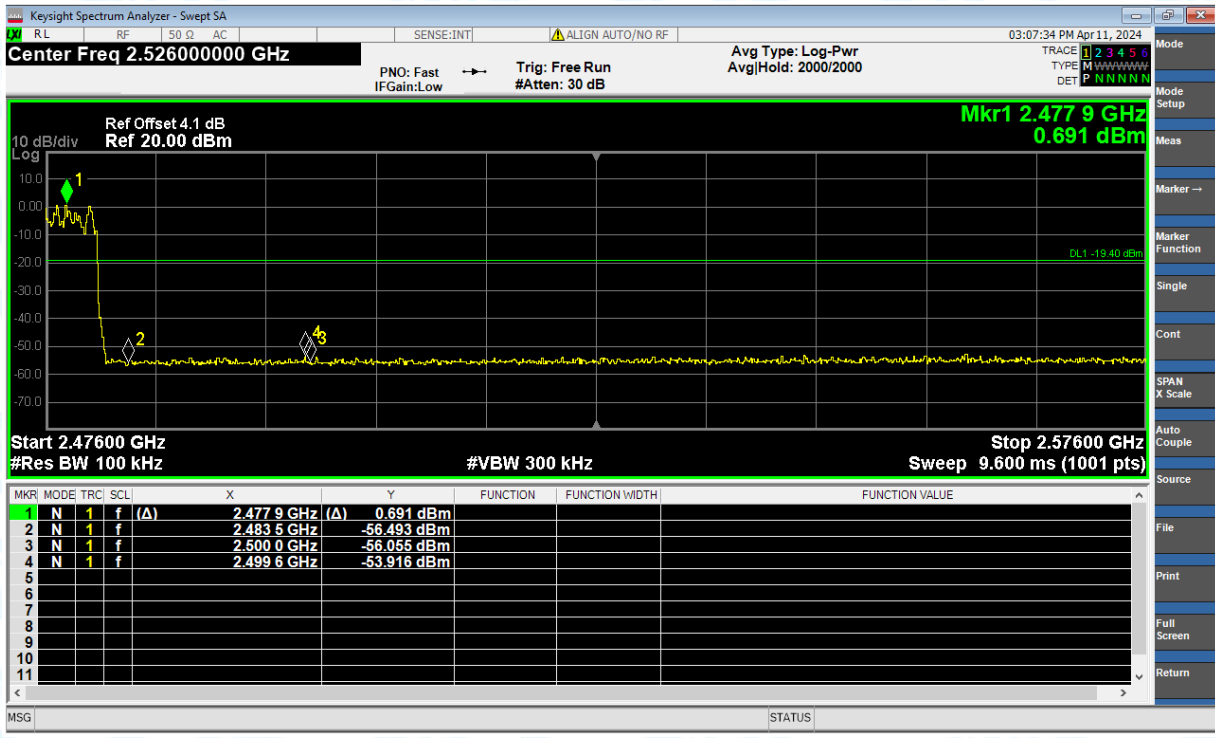
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



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



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

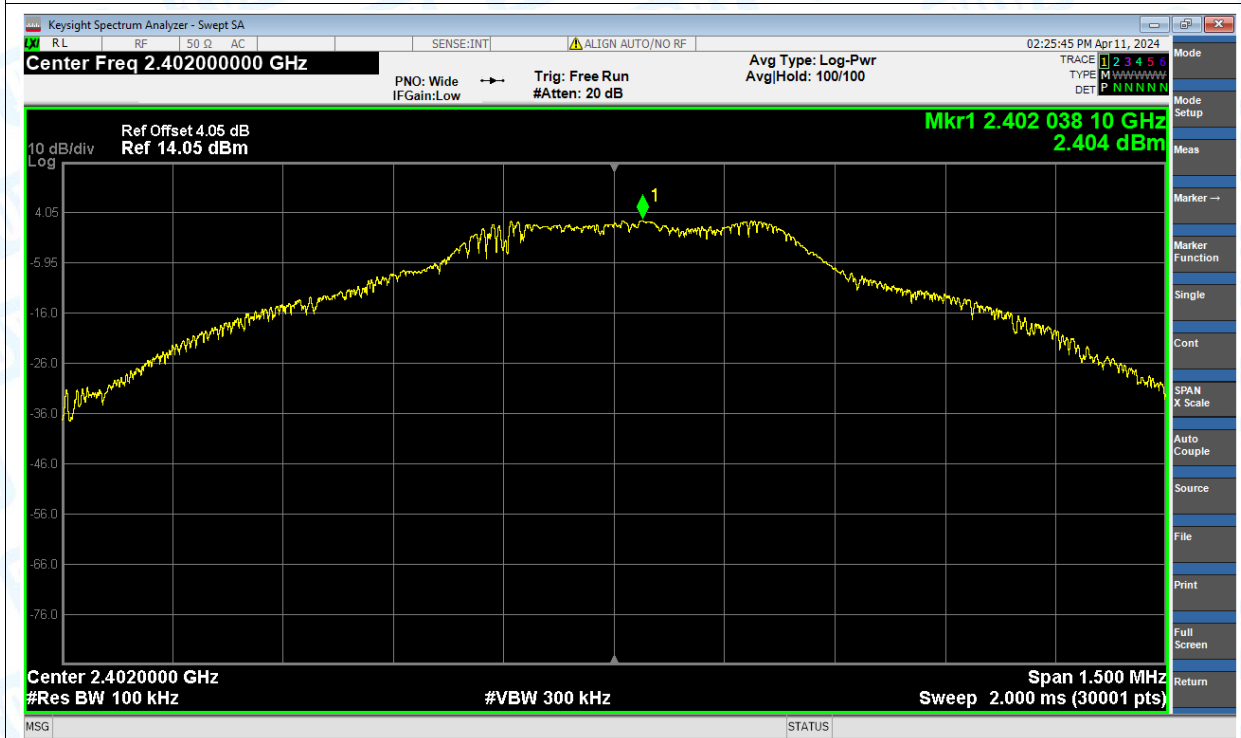


7. Conducted RF Spurious Emission

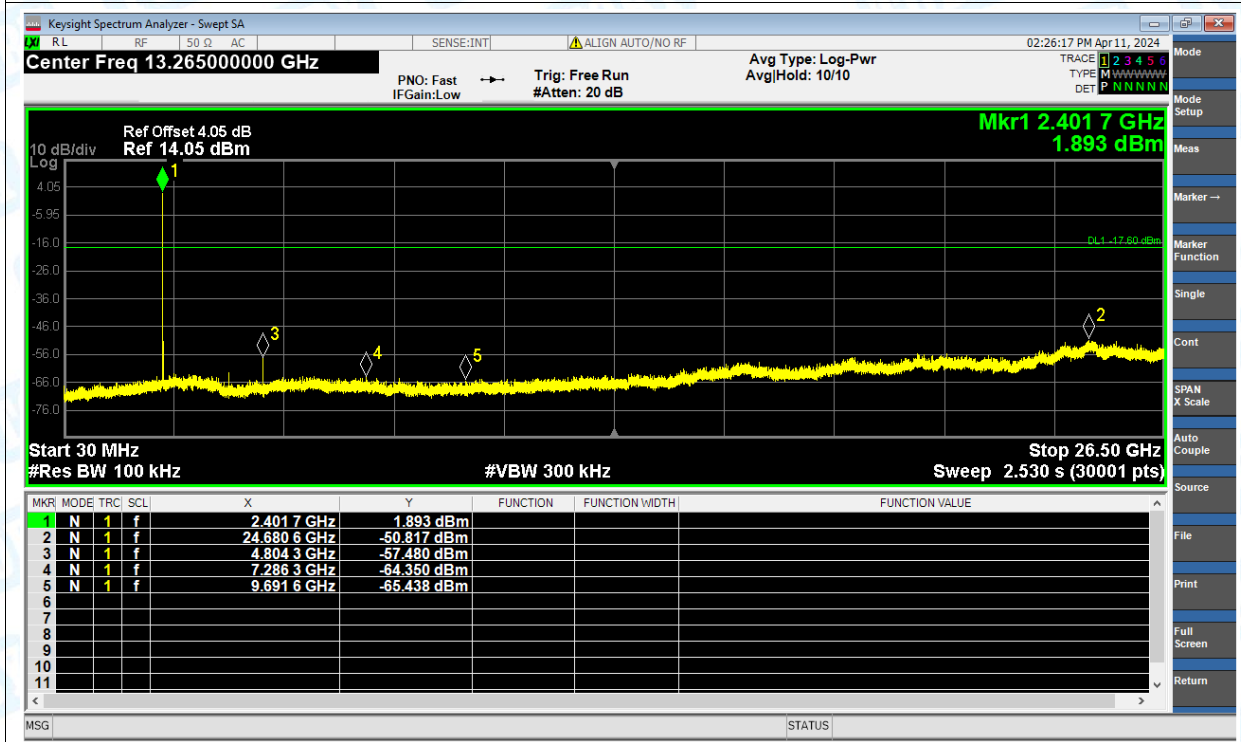
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-53.22	-20	Pass
NVNT	1-DH1	2441	Ant1	-51.13	-20	Pass
NVNT	1-DH1	2480	Ant1	-51.11	-20	Pass
NVNT	2-DH1	2402	Ant1	-51.17	-20	Pass
NVNT	2-DH1	2441	Ant1	-51.21	-20	Pass
NVNT	2-DH1	2480	Ant1	-50.23	-20	Pass
NVNT	3-DH1	2402	Ant1	-51.82	-20	Pass
NVNT	3-DH1	2441	Ant1	-51.22	-20	Pass
NVNT	3-DH1	2480	Ant1	-50.74	-20	Pass

Test Graphs

Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



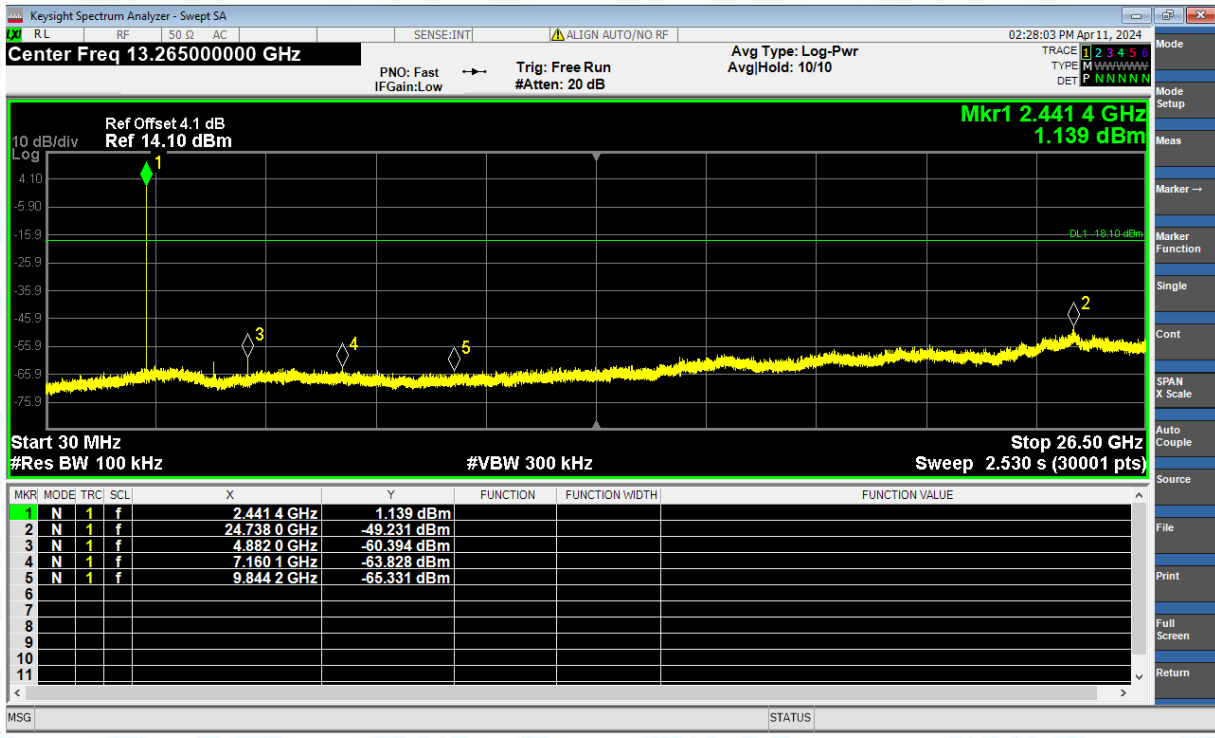
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



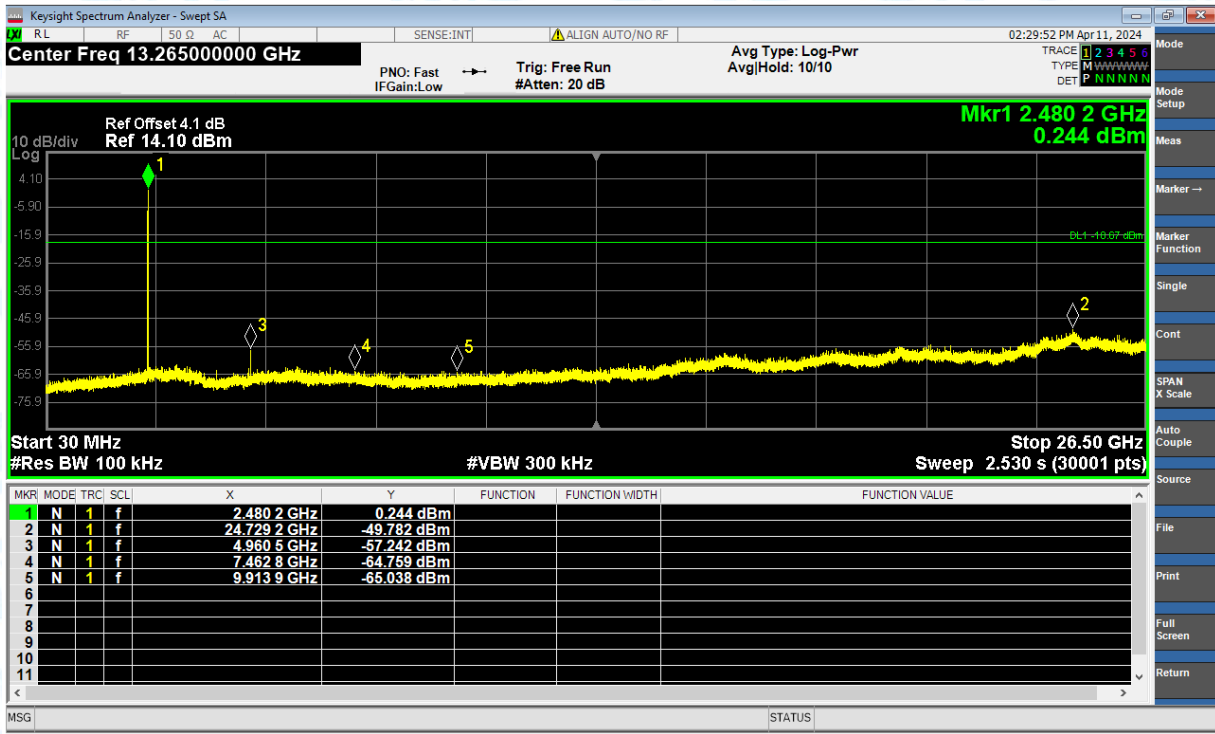
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



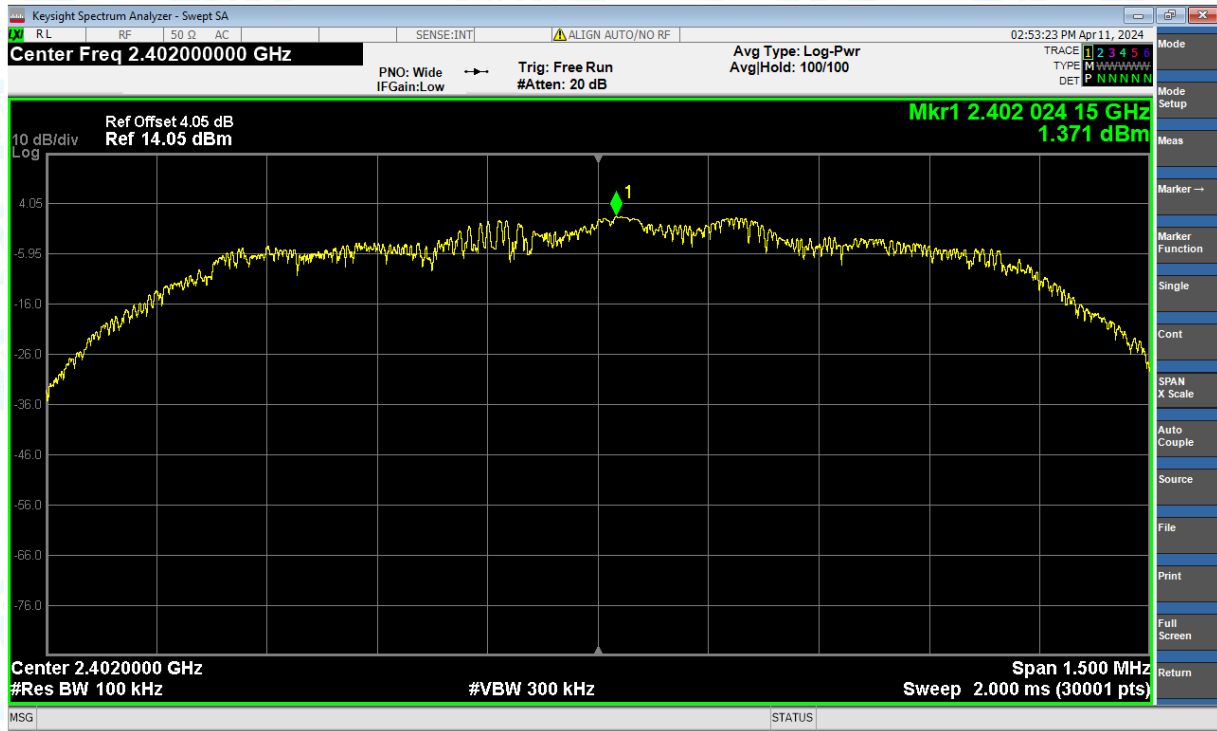
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



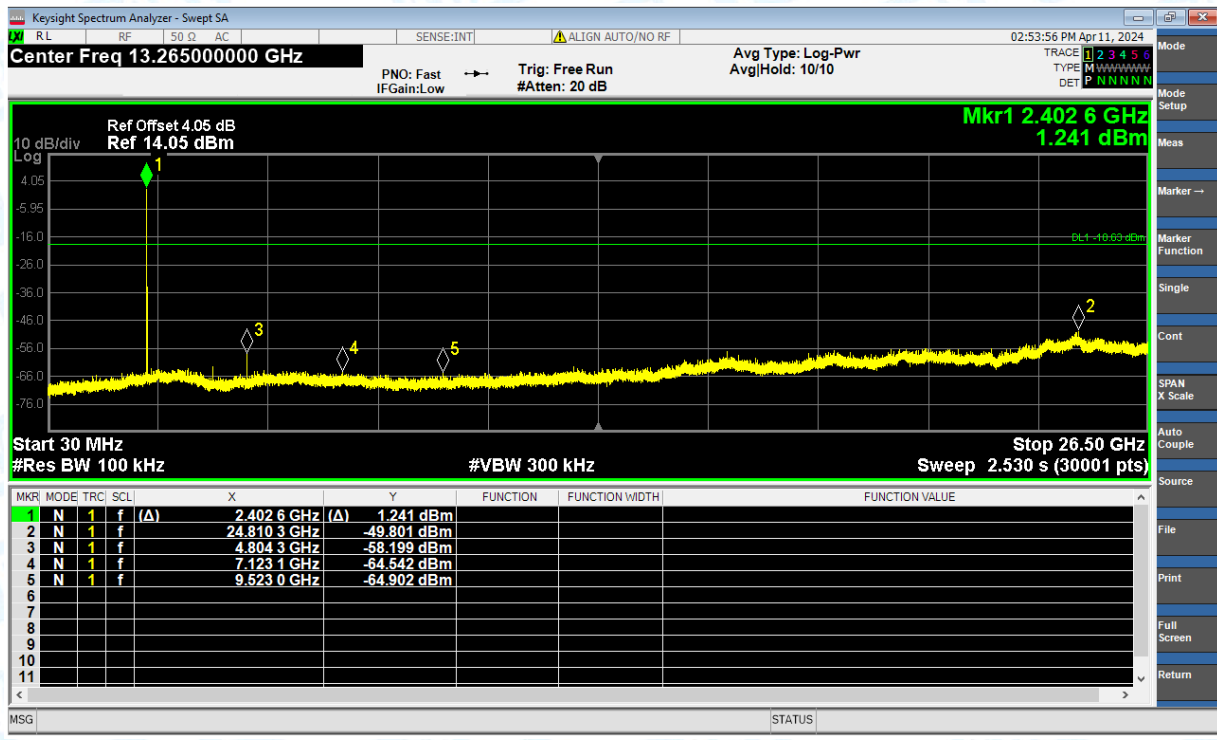
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



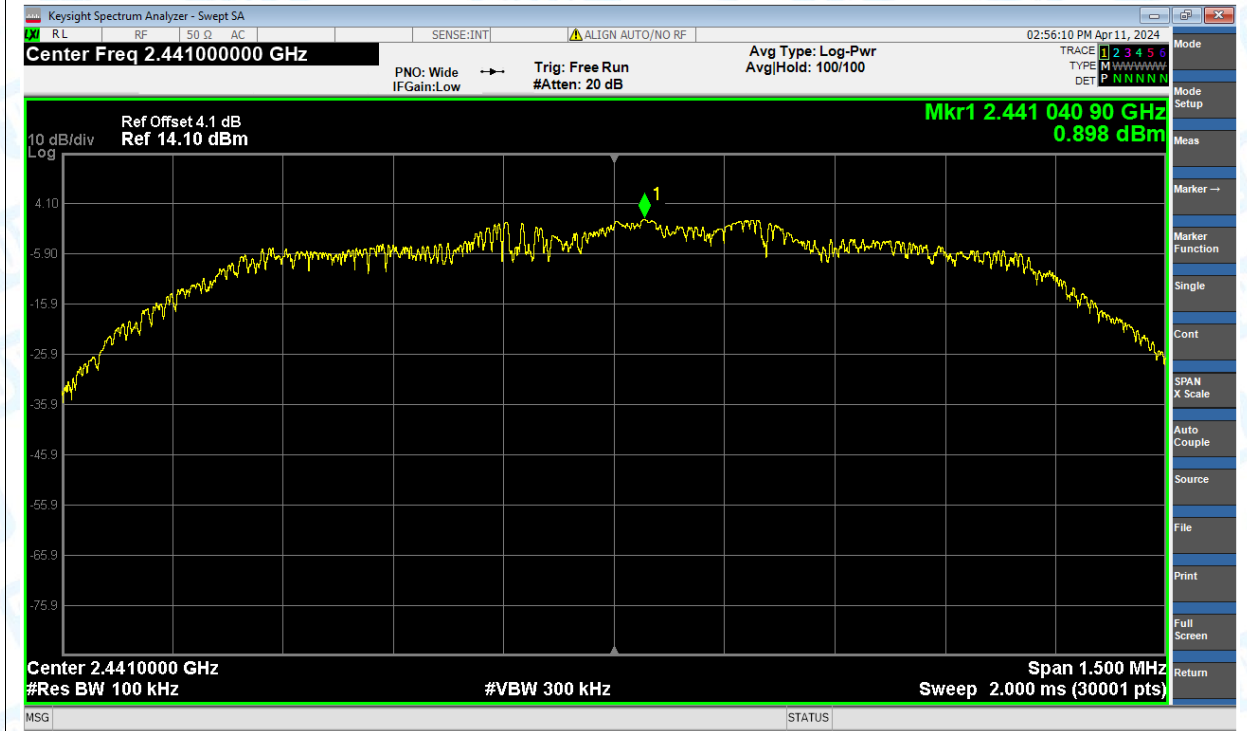
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



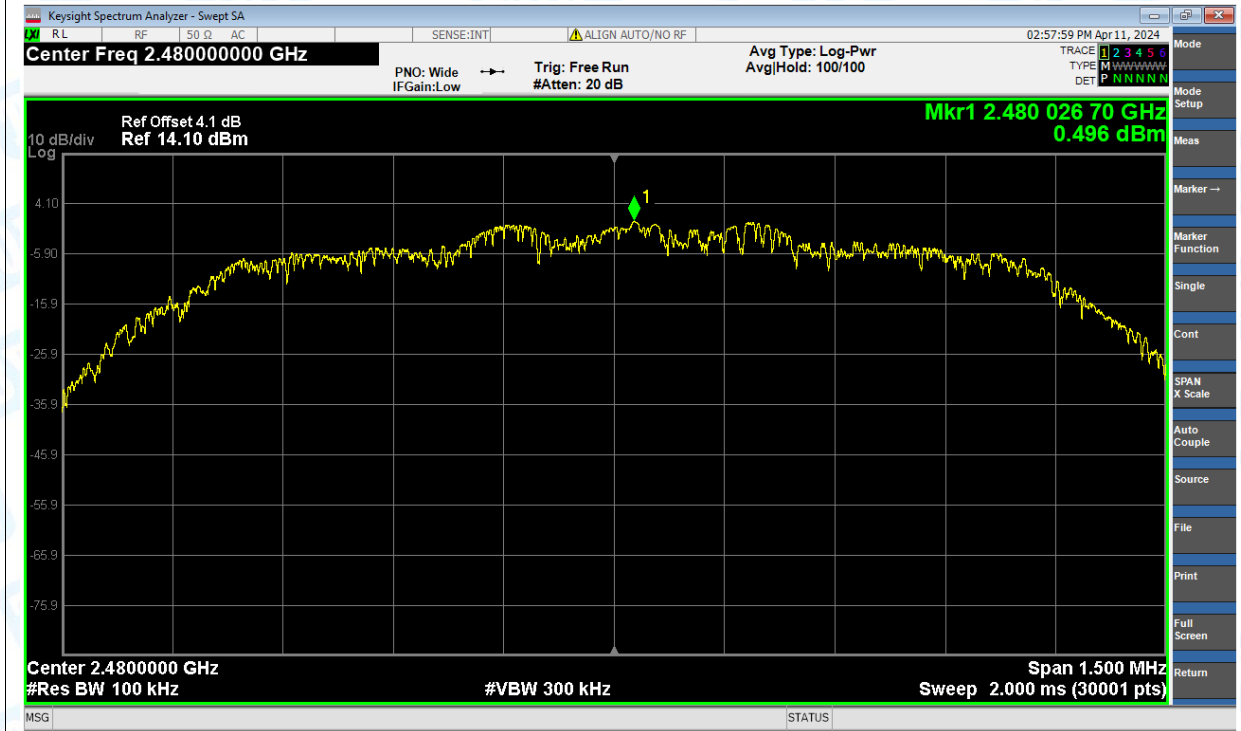
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



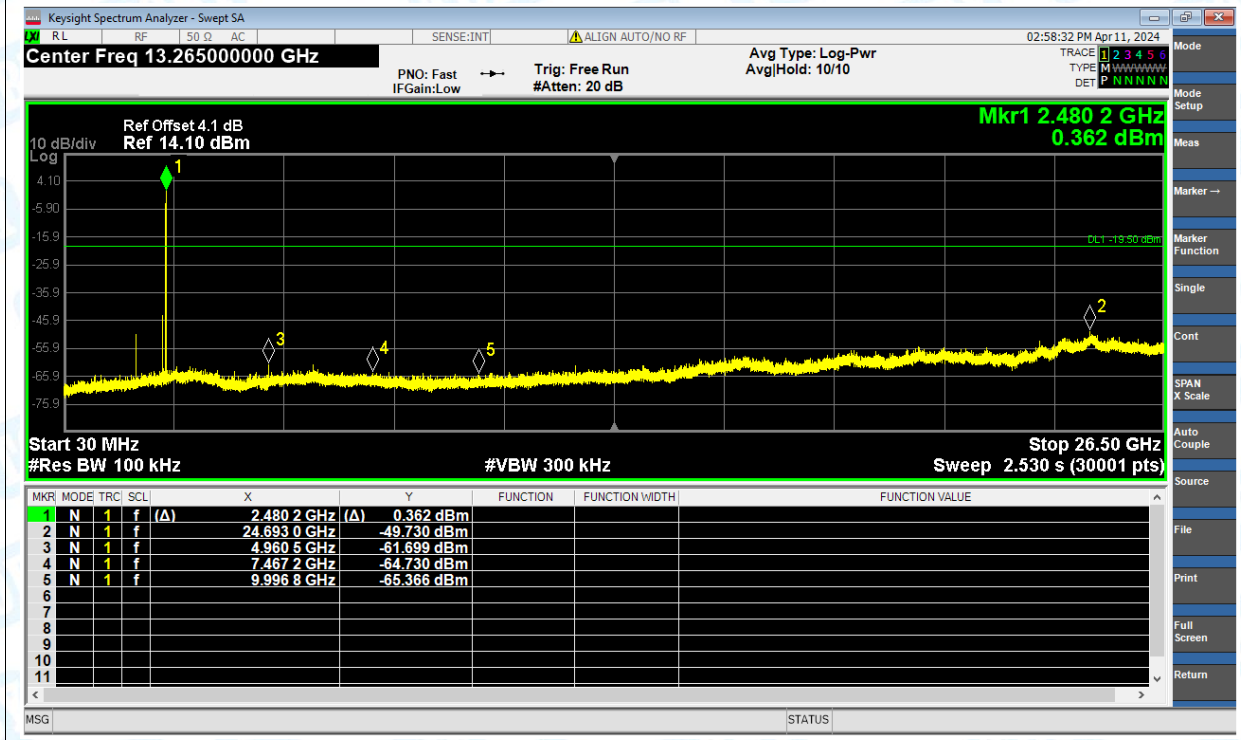
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



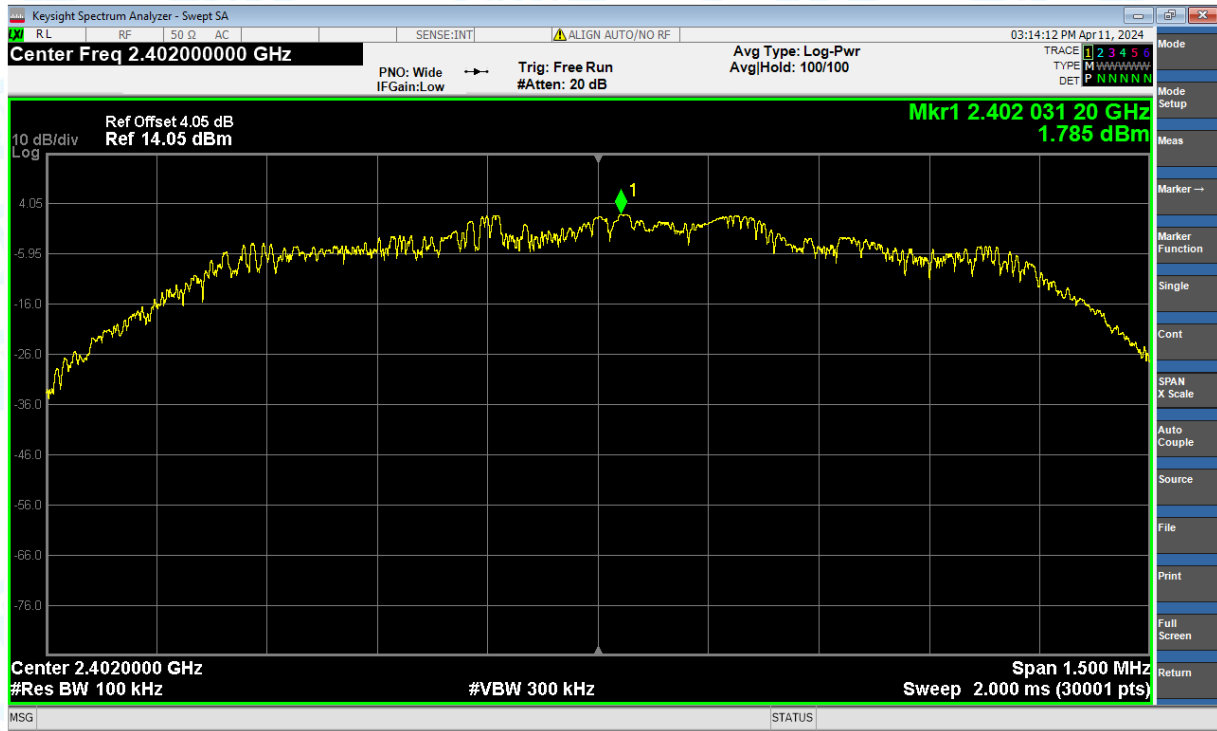
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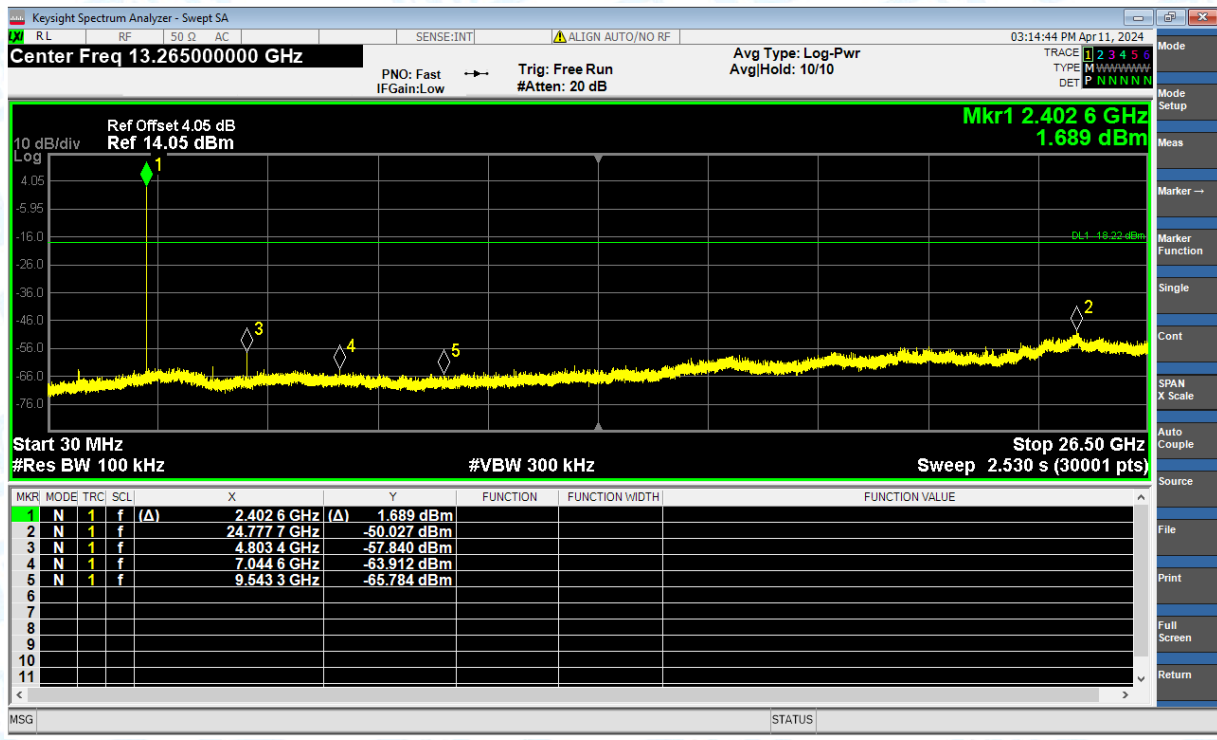
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



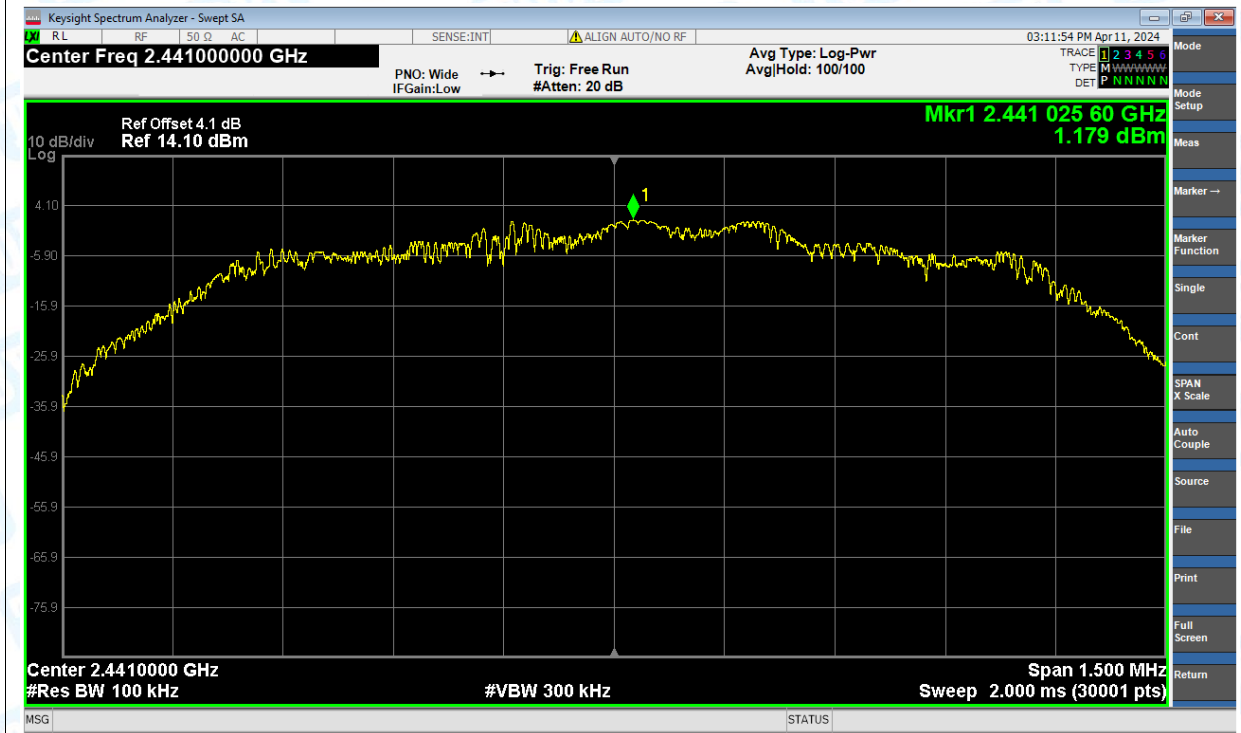
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



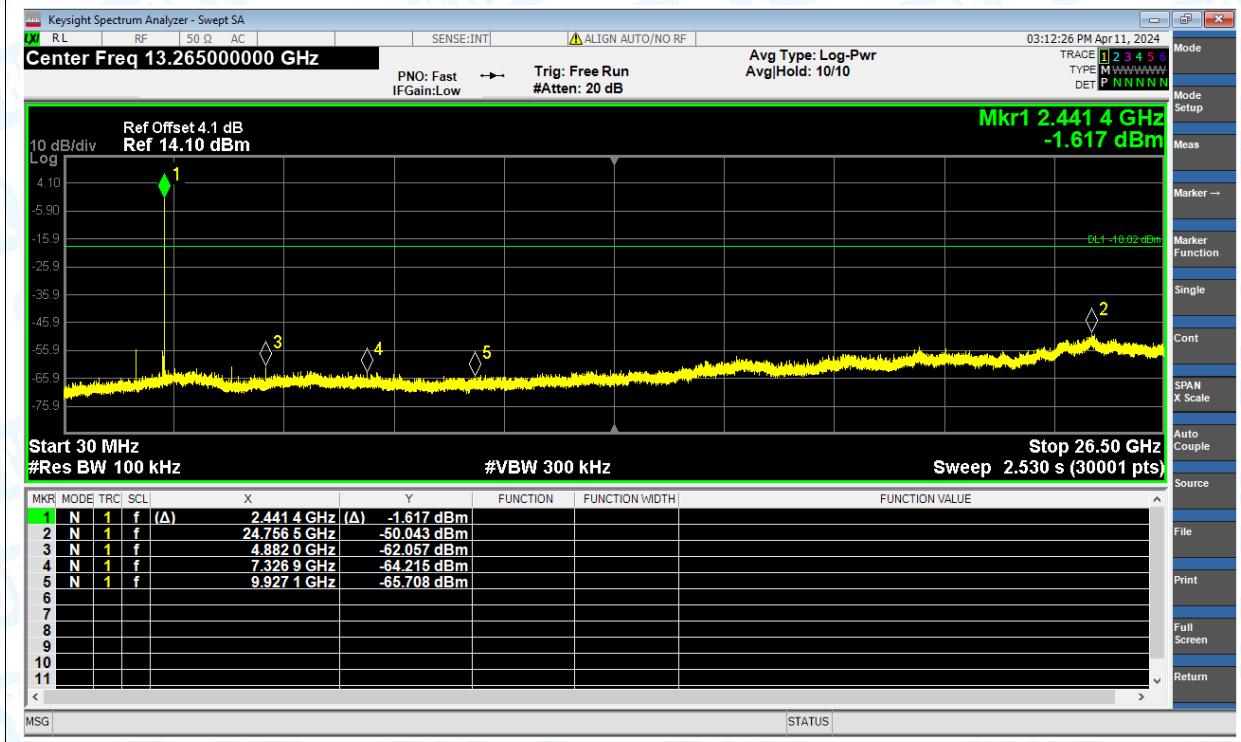
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



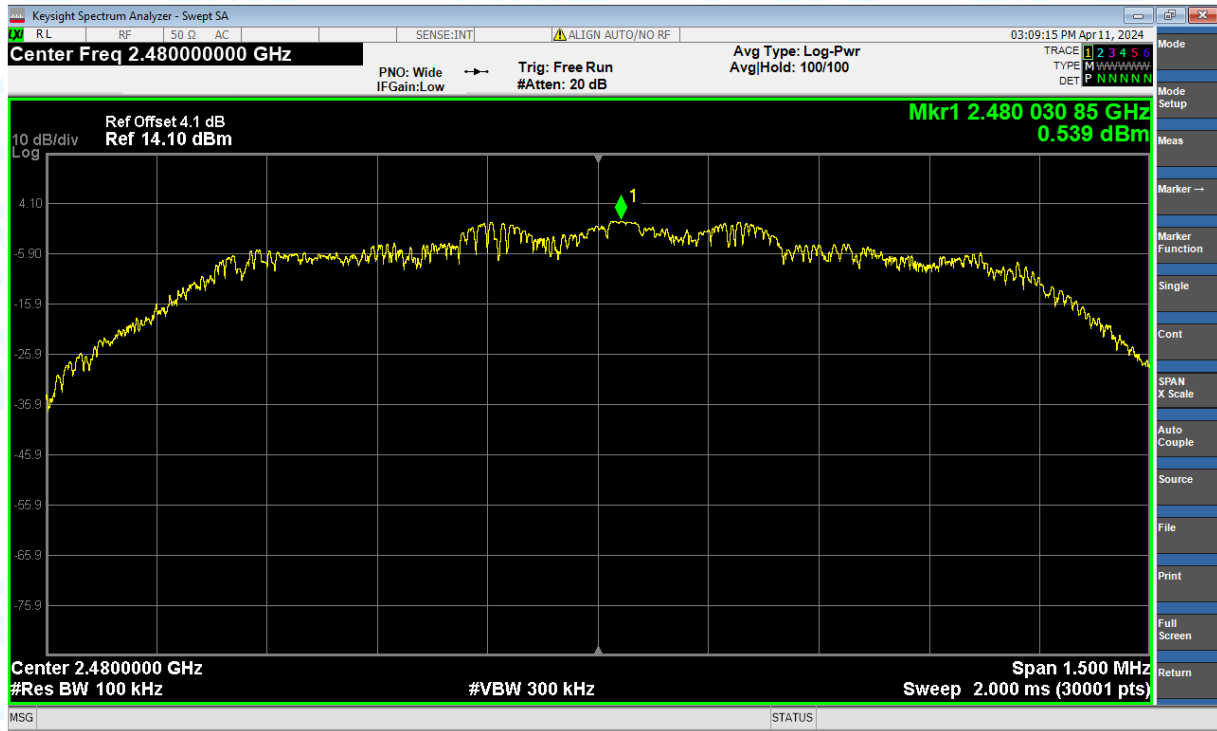
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



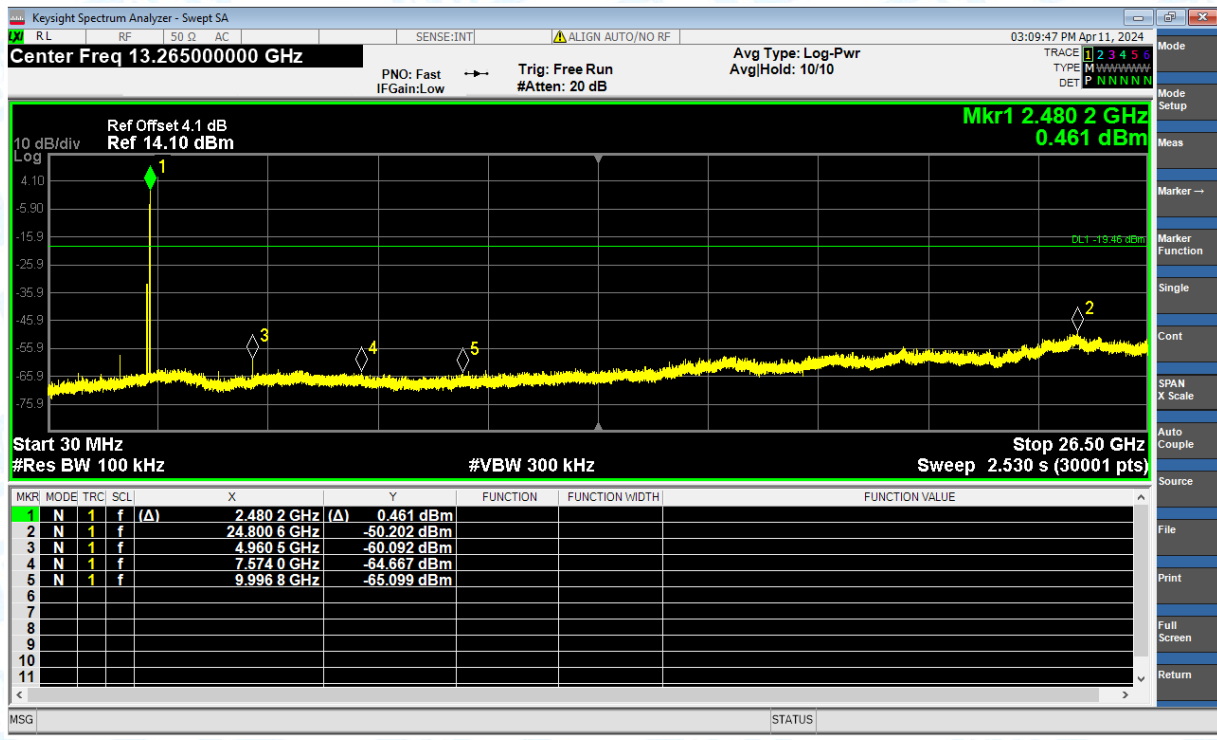
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

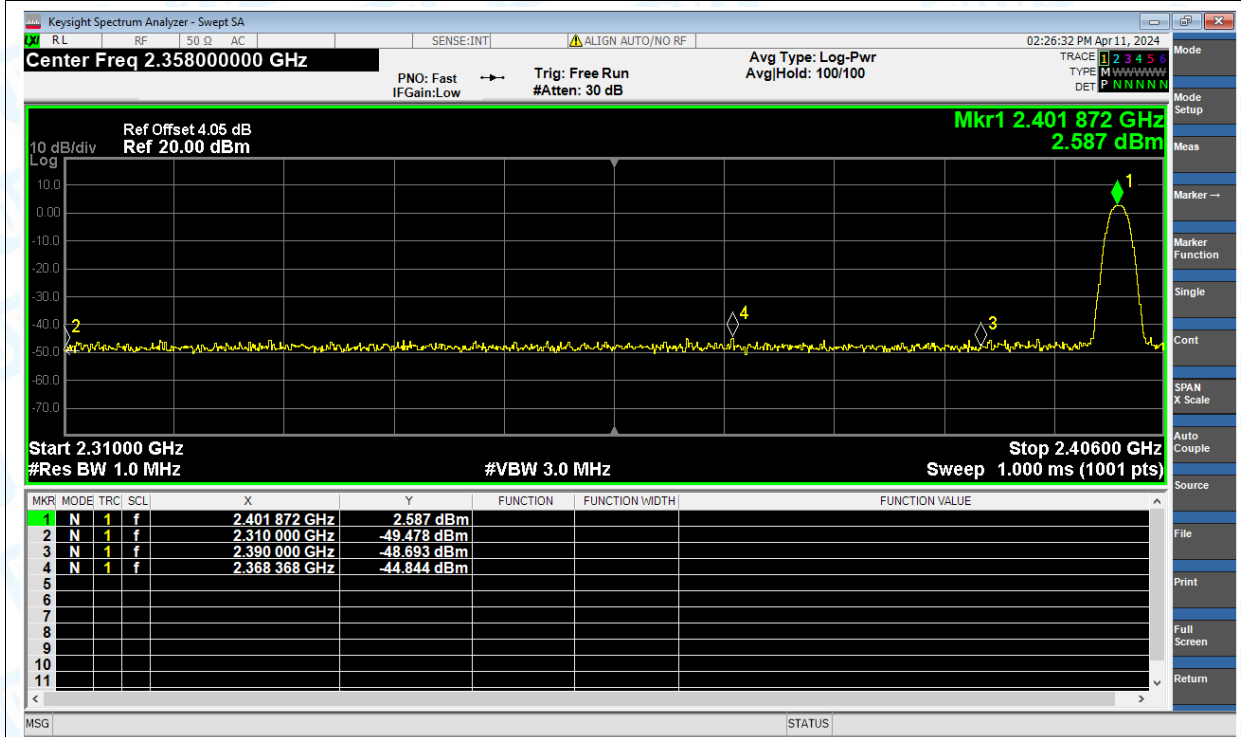


8. Restrict Band

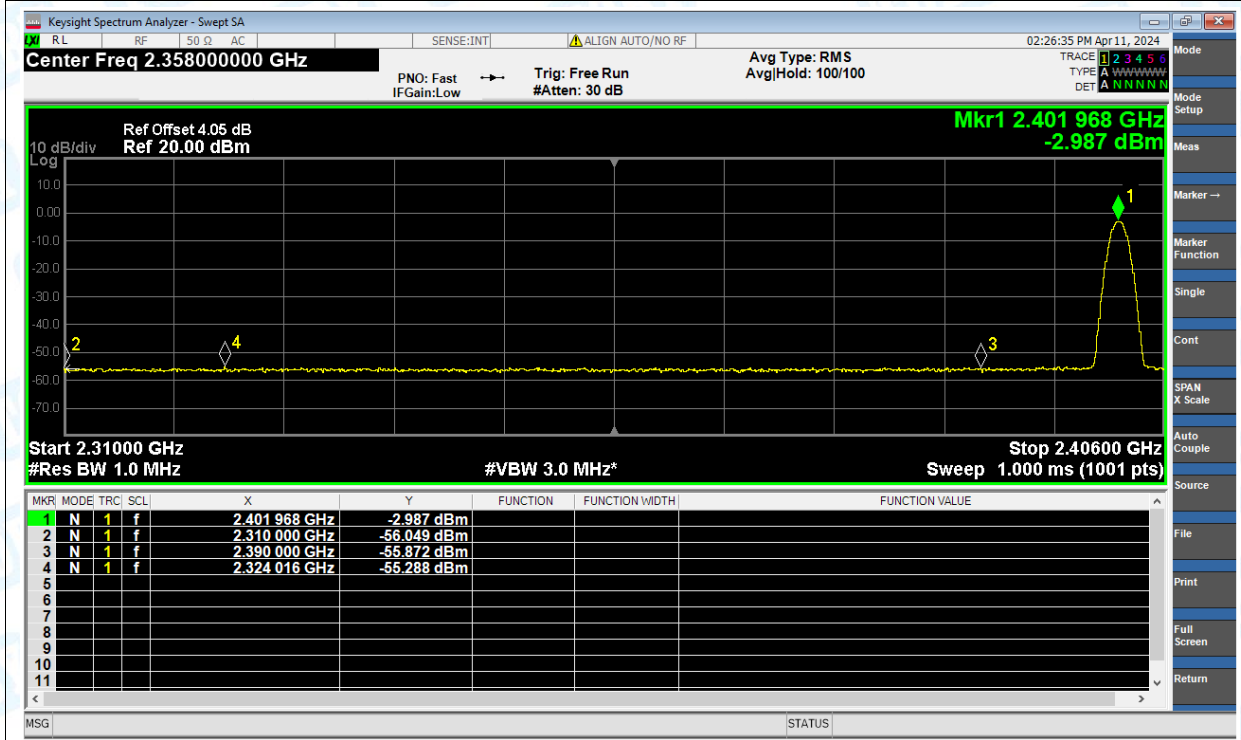
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-49.48	2	-	47.78	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.05	2	5.07	46.28	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2368.368	-44.84	2	-	52.42	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2324.016	-55.29	2	5.07	47.04	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-48.69	2	-	48.57	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-55.87	2	5.07	46.46	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-47.65	2	-	49.61	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-55.27	2	5.07	47.06	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2488.336	-45.51	2	-	51.75	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2484.832	-55.08	2	5.07	47.25	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-46.82	2	-	50.44	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-55.78	2	5.07	46.55	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-52.12	2	-	45.14	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-60.46	2	5.02	41.82	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2378.16	-49.11	2	-	48.15	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2376.144	-59.36	2	5.02	42.92	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-50.91	2	-	46.35	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-59.97	2	5.02	42.31	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-48.29	2	-	48.97	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-55.74	2	5.1	46.62	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2491.288	-45.03	2	-	52.23	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2484.112	-55.16	2	5.1	47.2	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-46.63	2	-	50.63	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.68	2	5.1	46.68	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-47.05	2	-	50.21	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.15	2	4.99	46.1	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2369.808	-45.29	2	-	51.97	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2342.736	-55.34	2	4.99	46.91	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-47.08	2	-	50.18	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-56.53	2	4.99	45.72	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-47.04	2	-	50.22	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-56.03	2	4.99	46.22	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.656	-45.29	2	-	51.97	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2496.832	-54.89	2	4.99	47.36	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-48.17	2	-	49.09	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.5	2	4.99	46.75	Average	54	Pass

Test Graphs

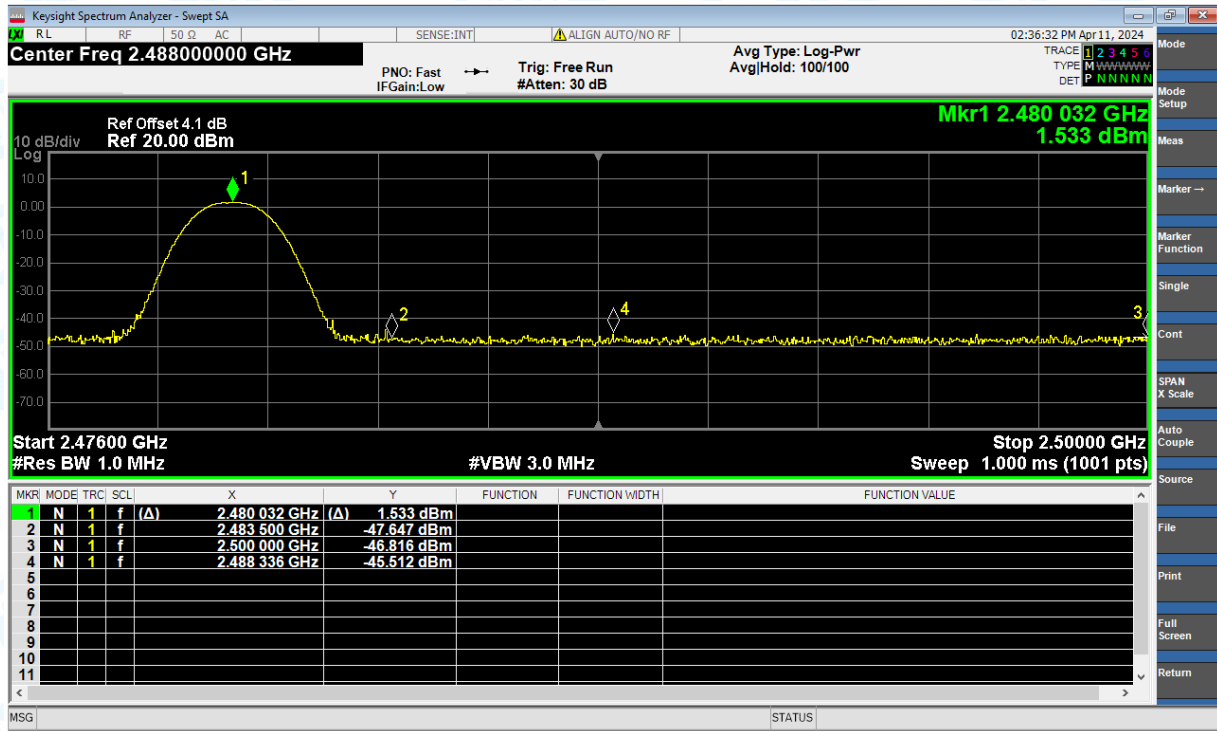
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



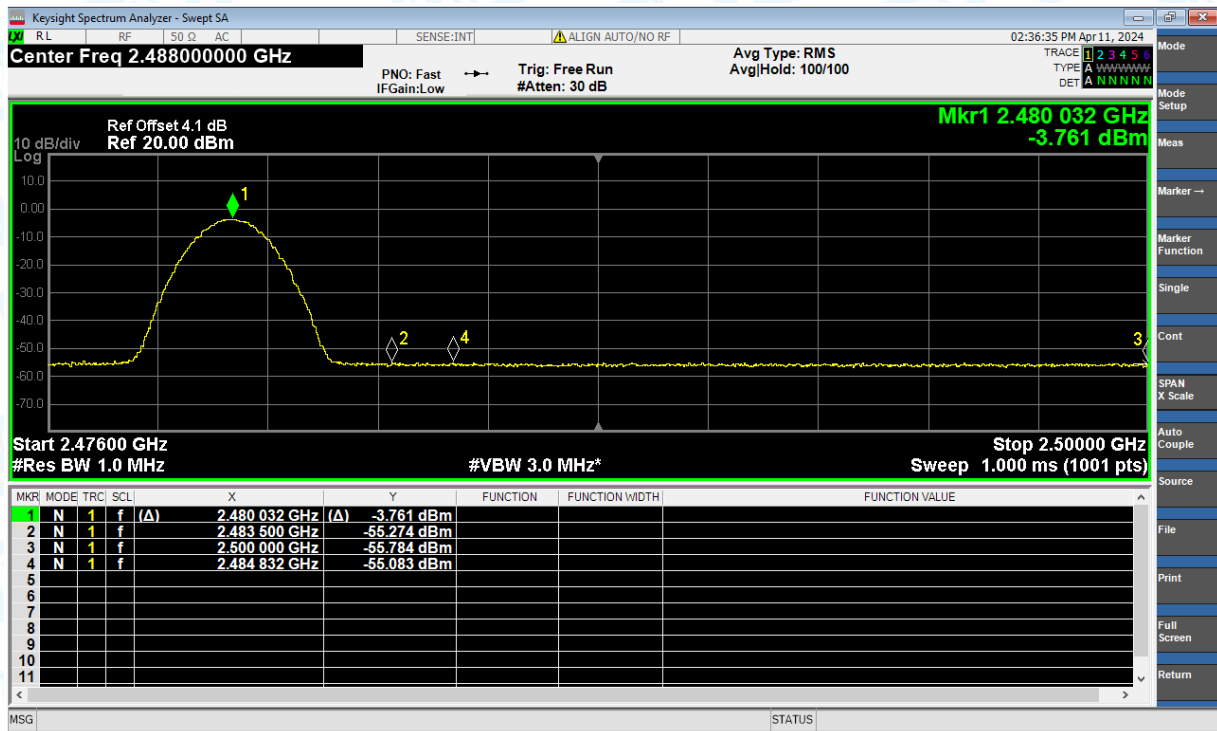
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



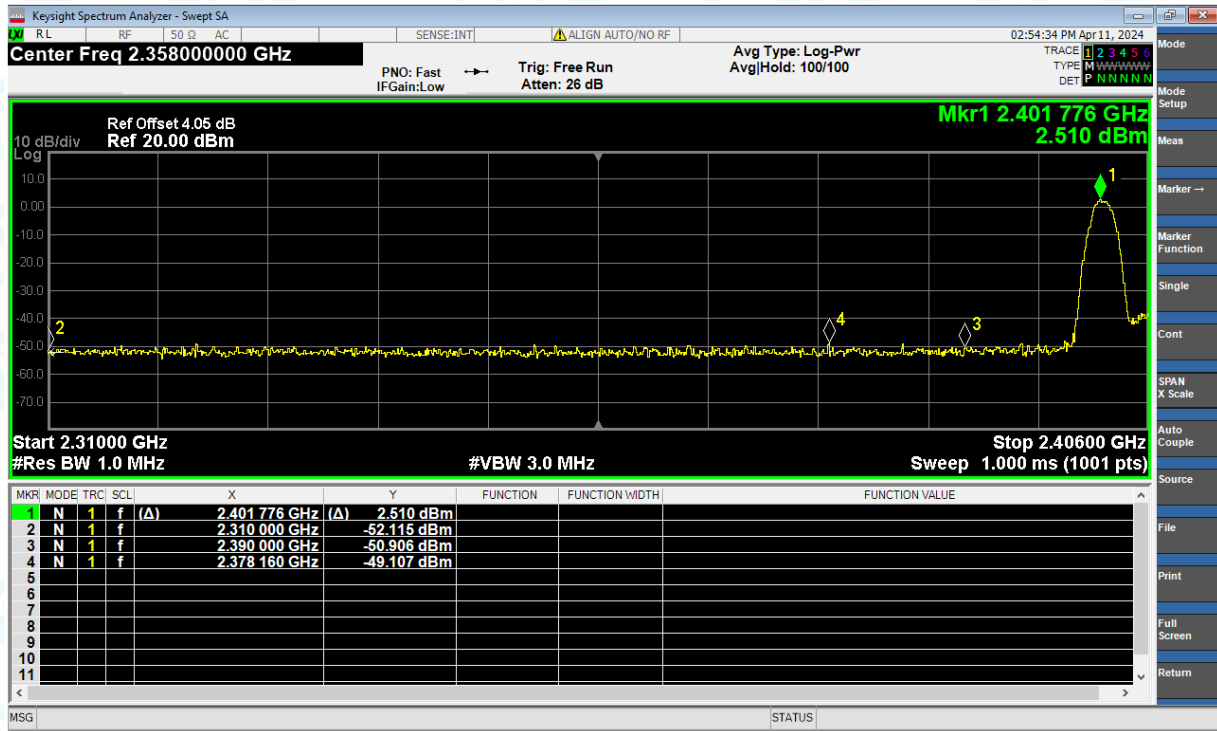
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



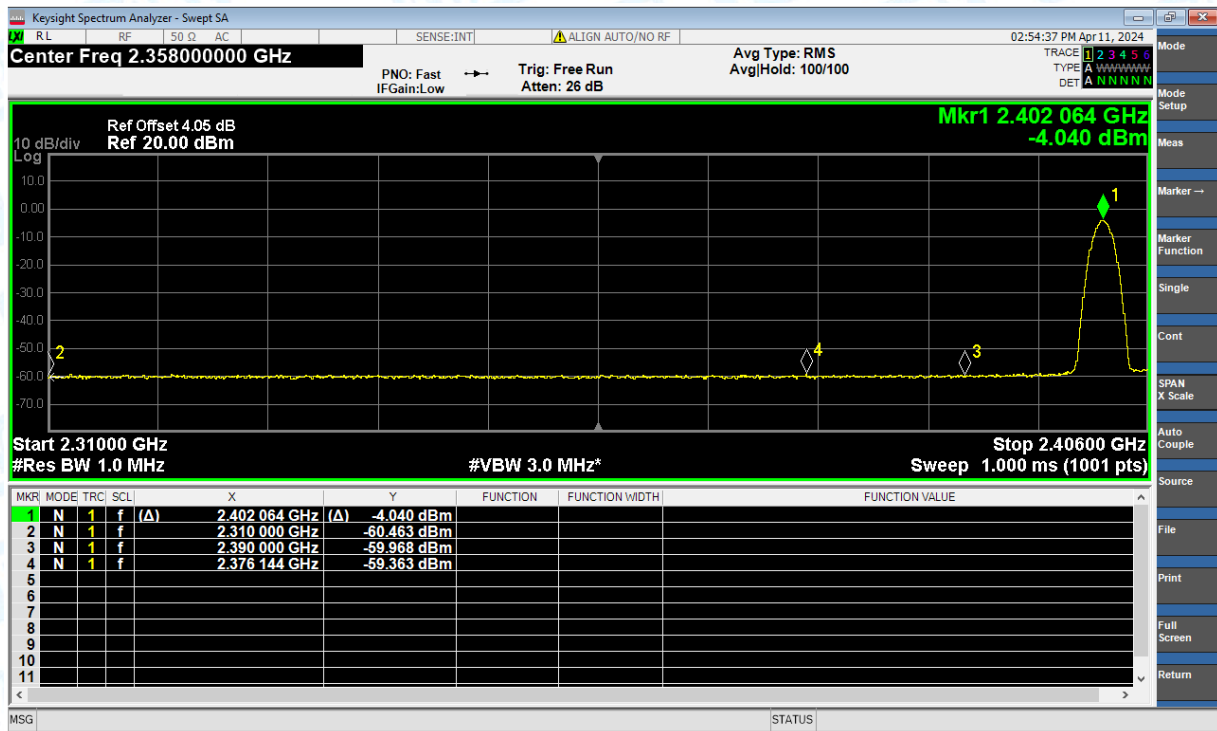
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



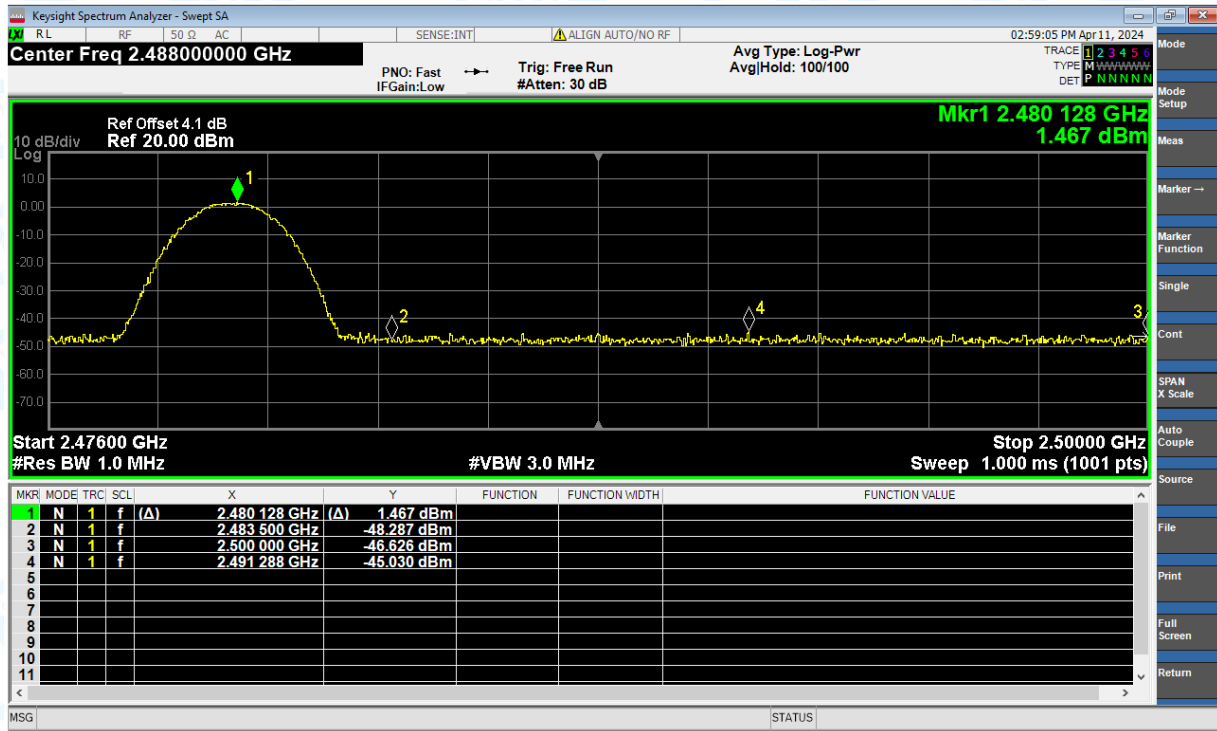
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



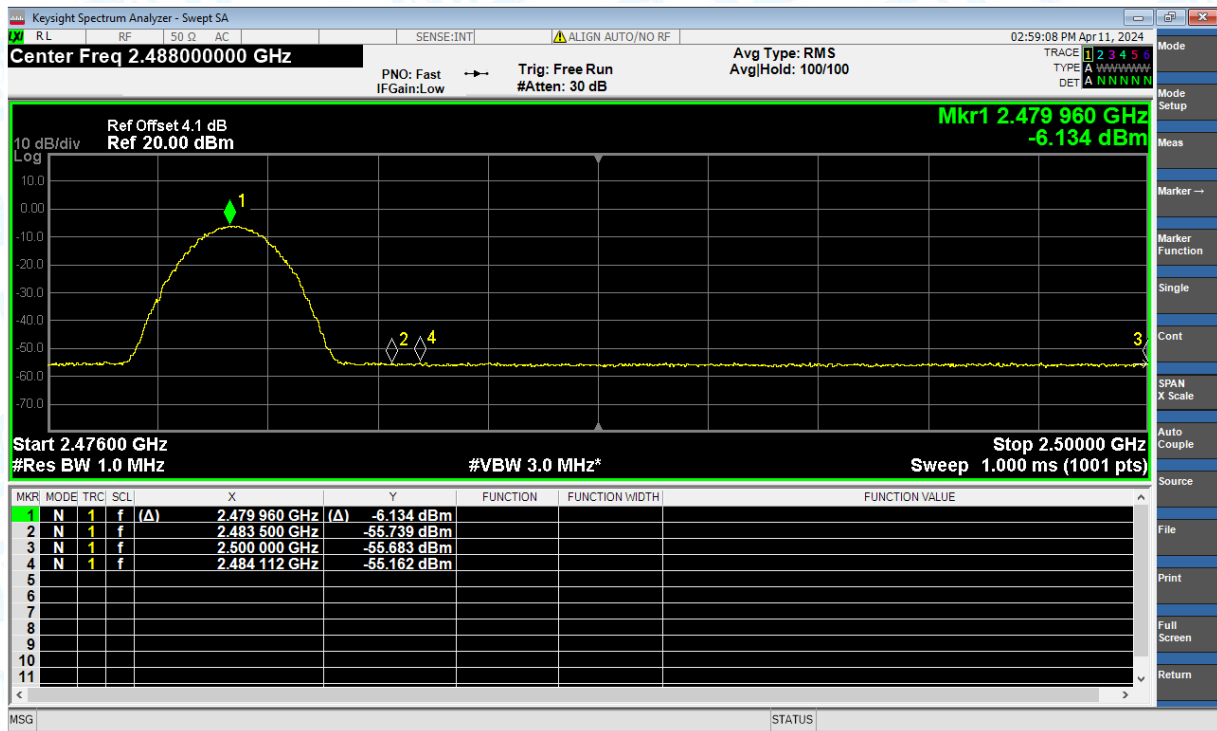
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



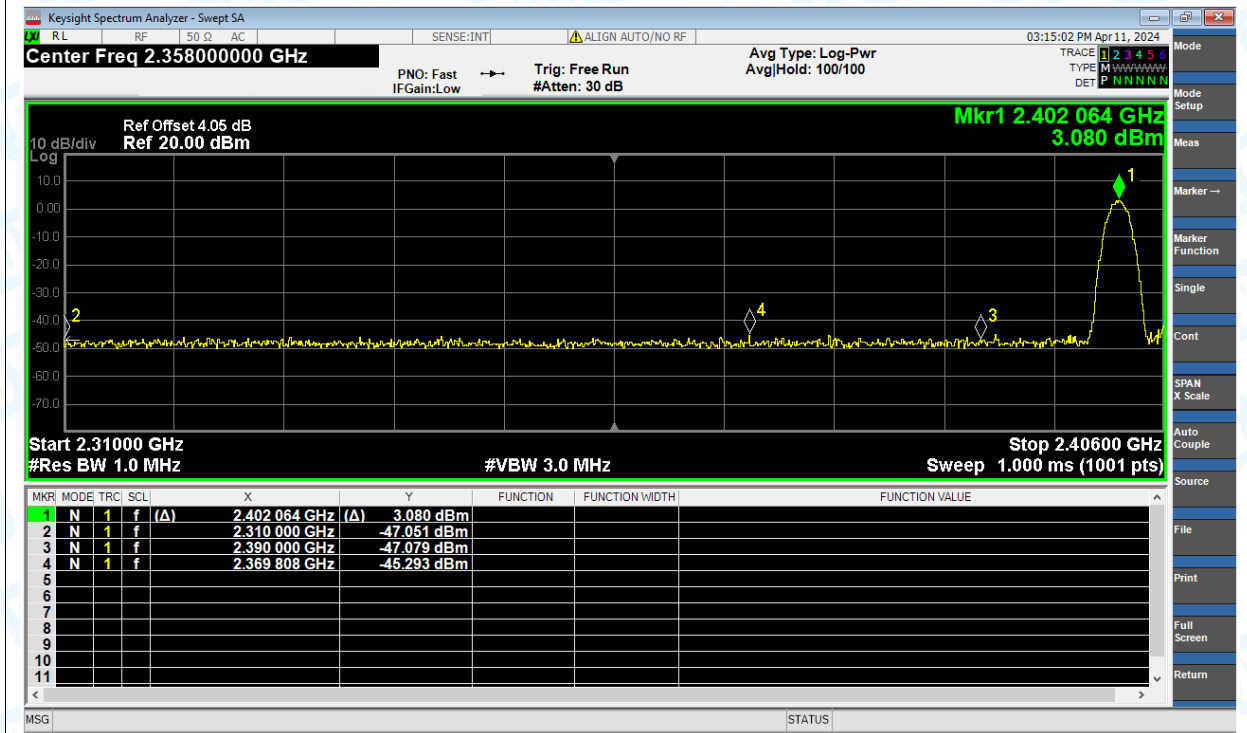
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



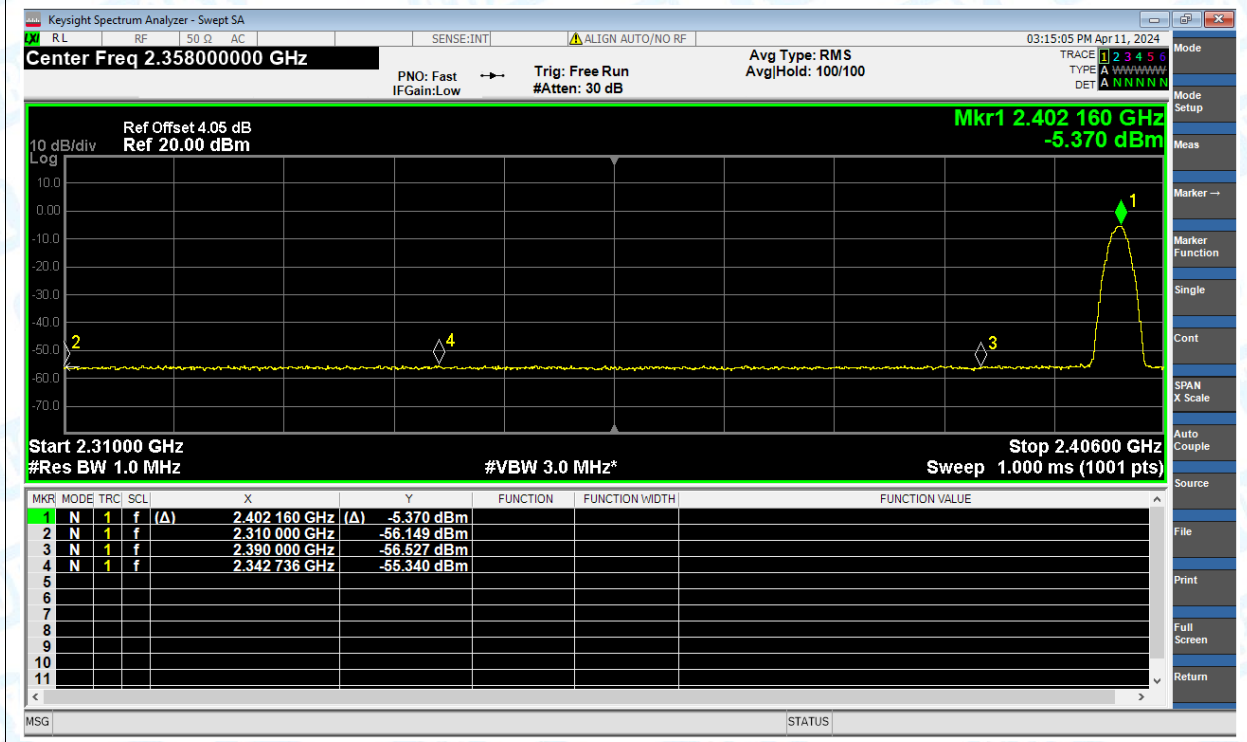
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



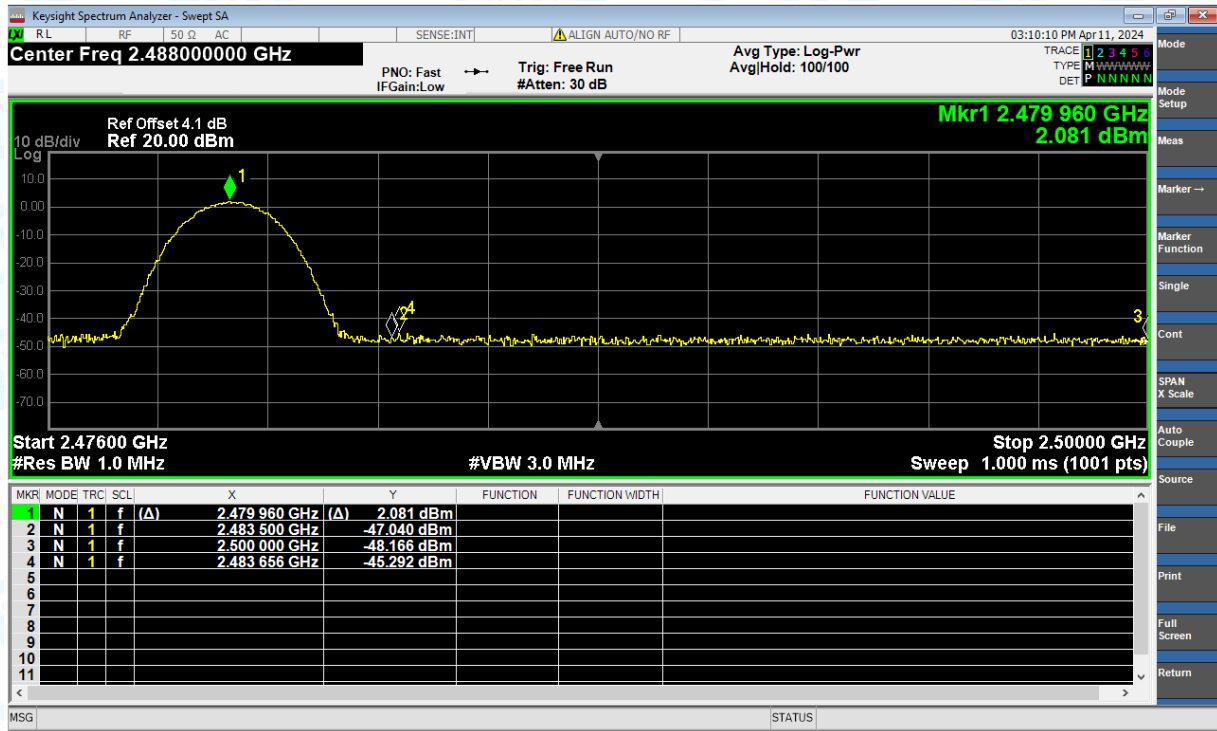
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



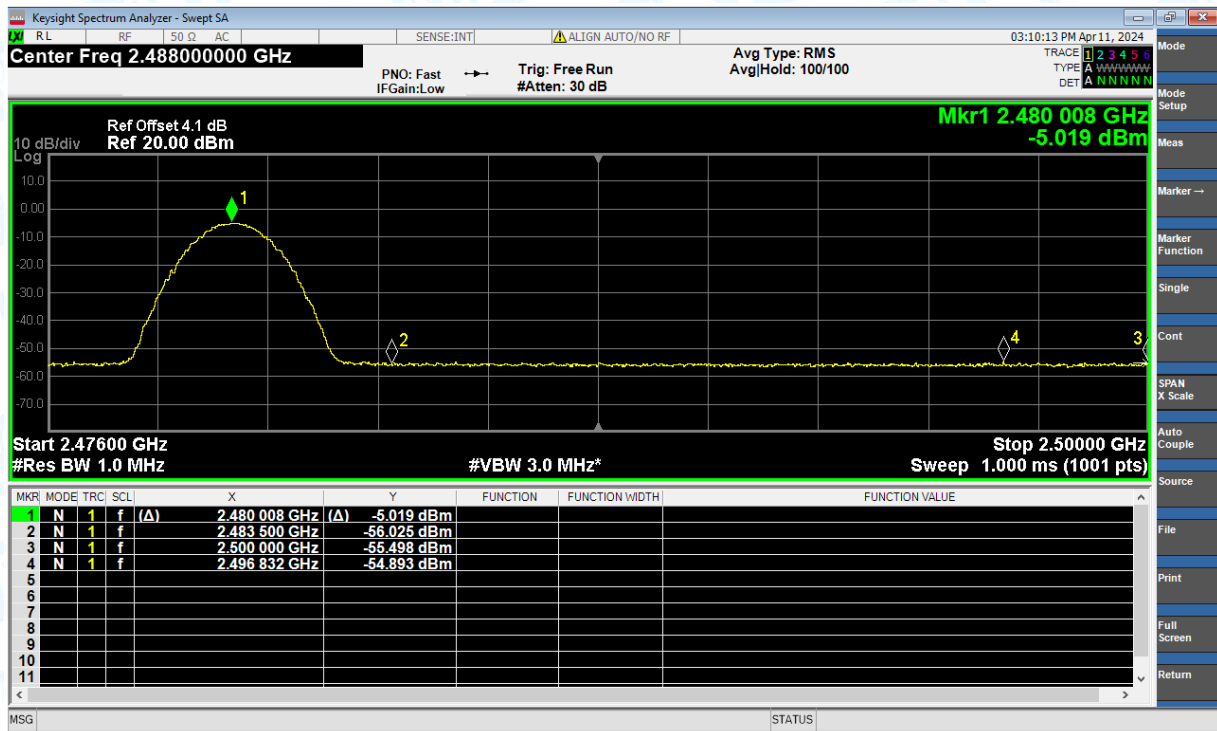
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

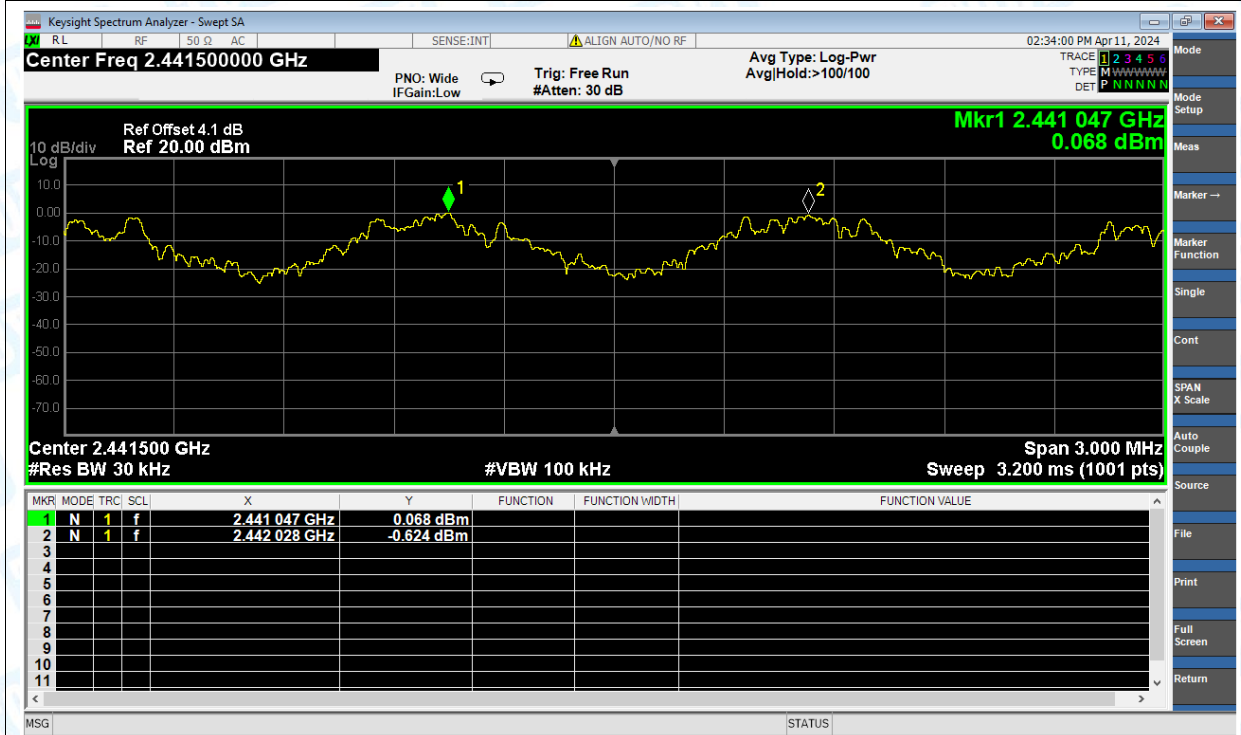


9. Carrier Frequencies Separation

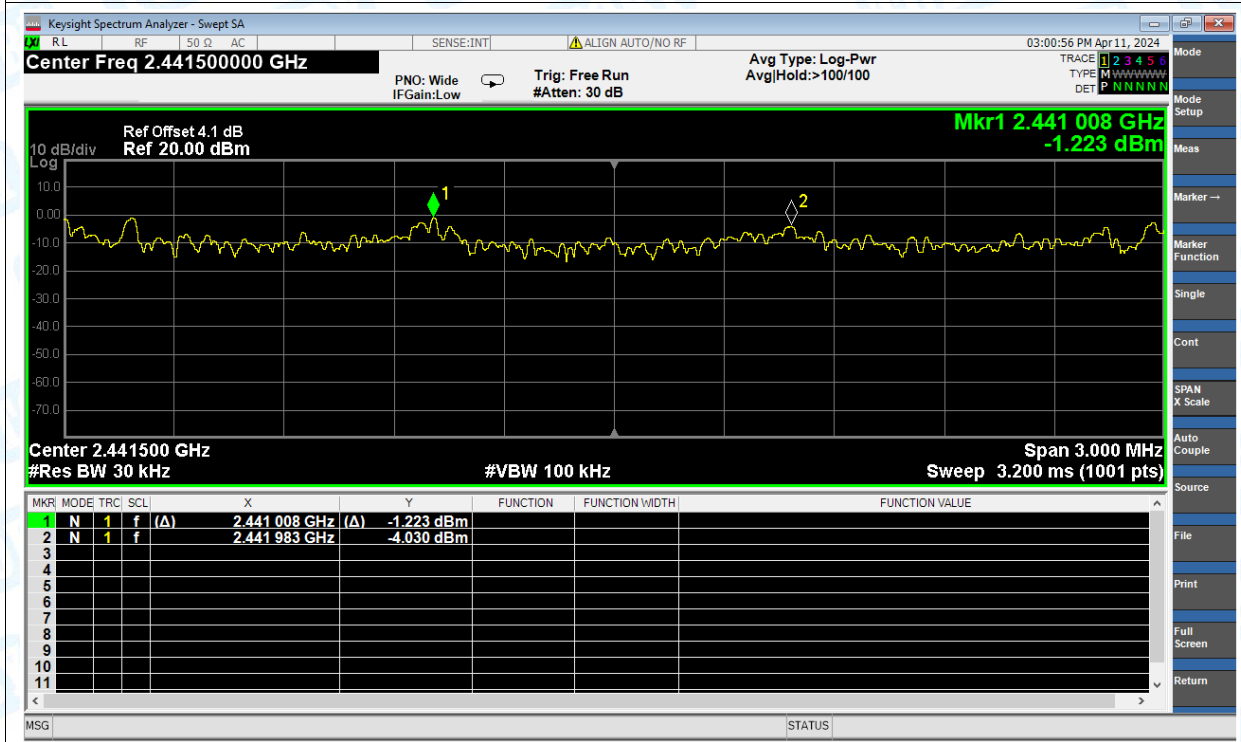
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2441.047	2442.028	0.981	0.633	Pass
NVNT	2-DH1	Ant1	2441.008	2441.983	0.975	0.867	Pass
NVNT	3-DH1	Ant1	2441.014	2441.965	0.951	0.025	Pass

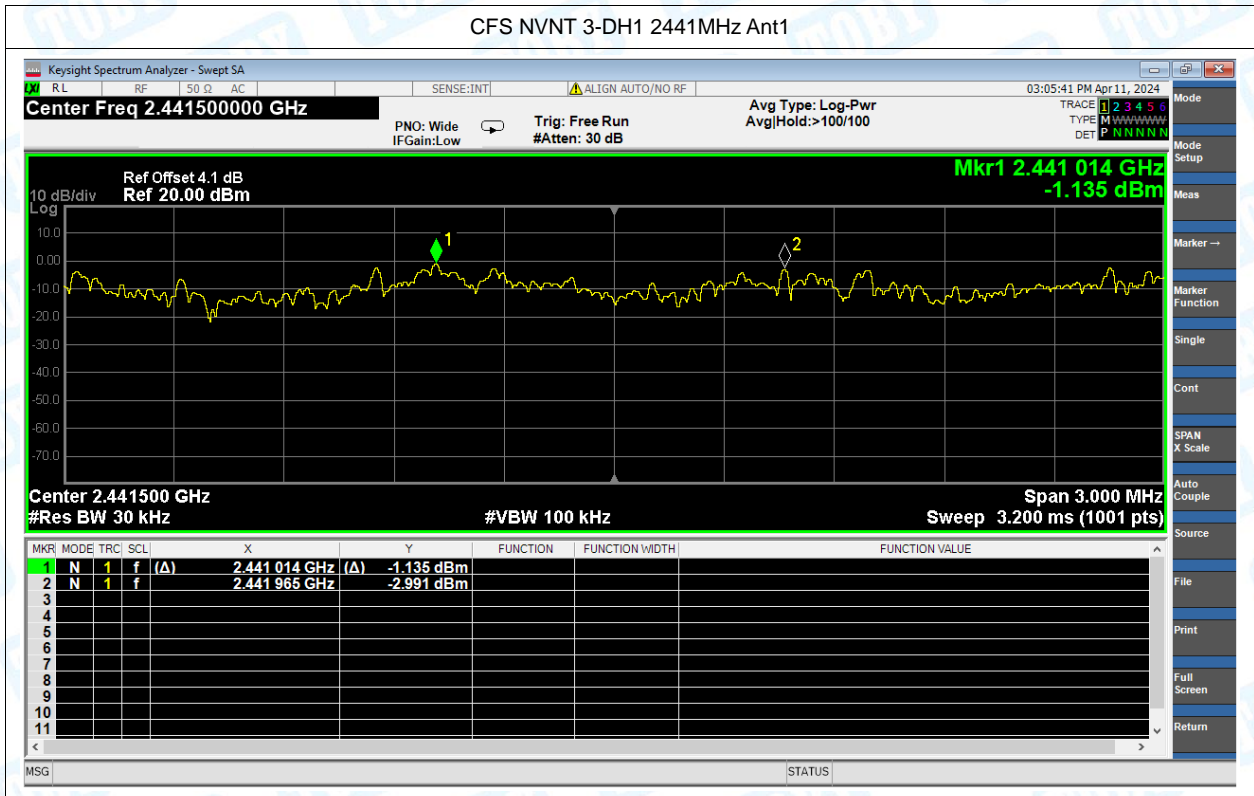
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



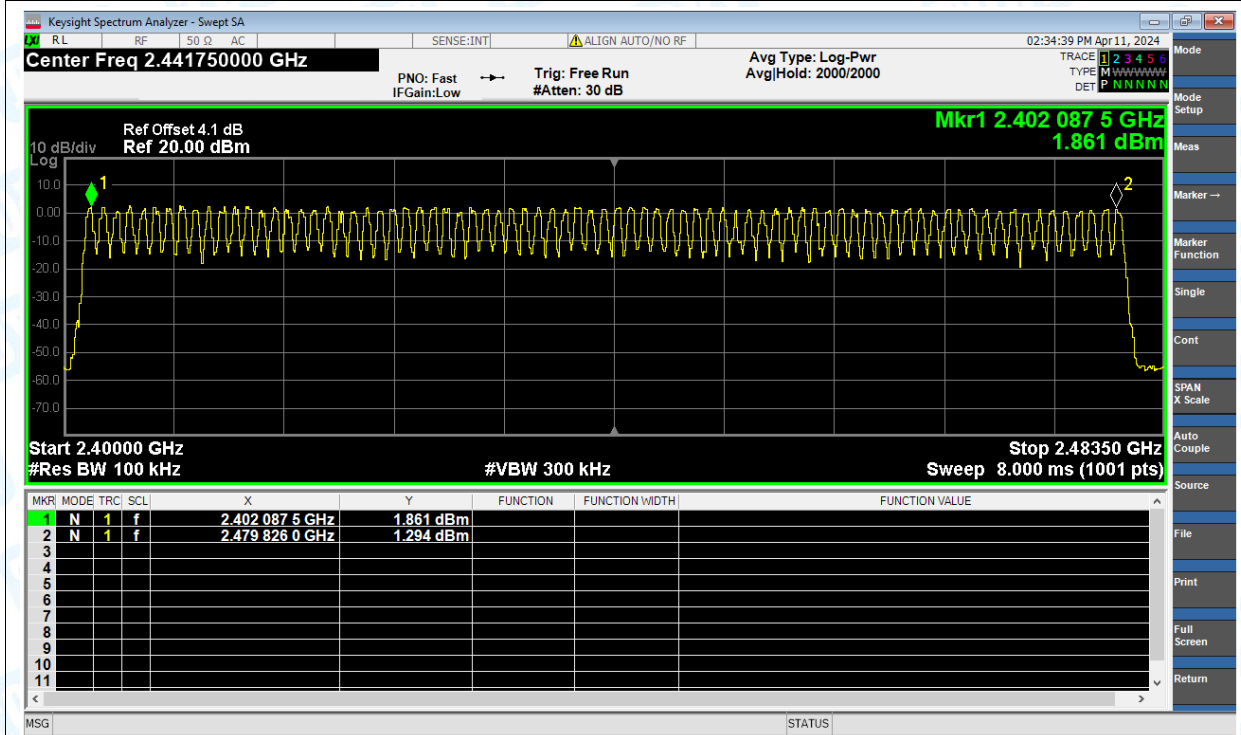


10. Number of Hopping Channel

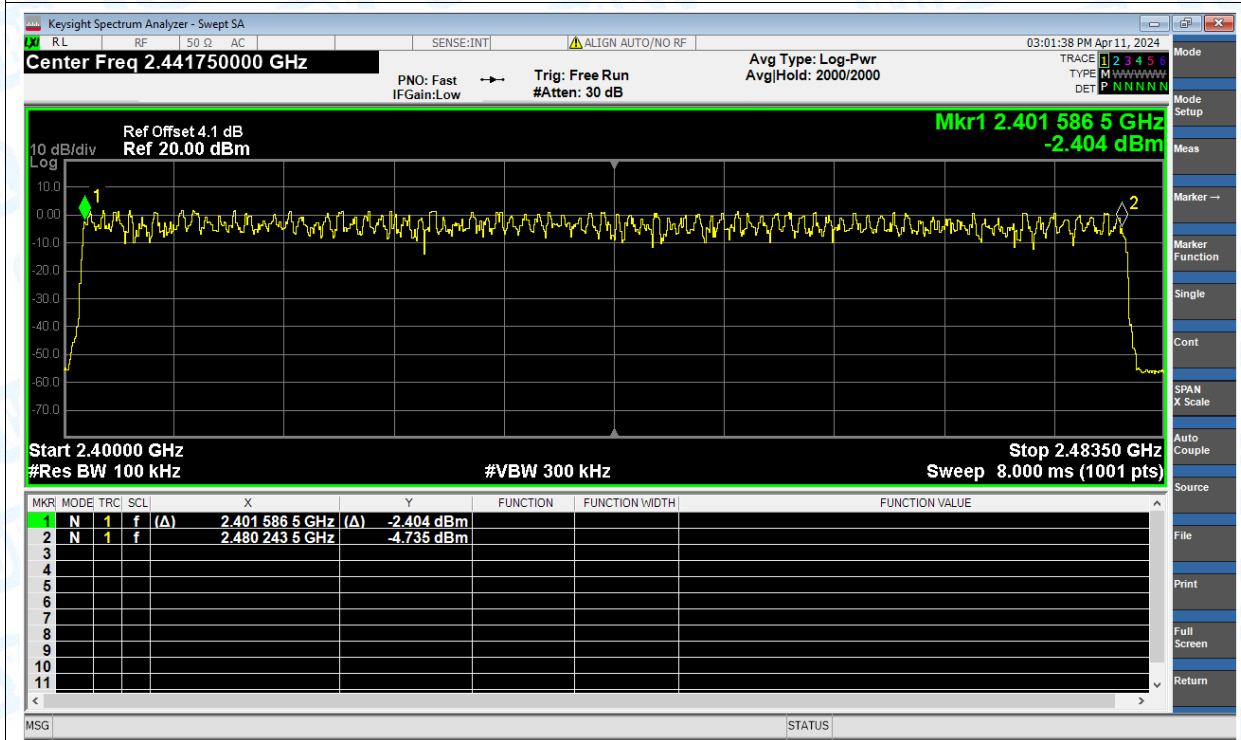
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

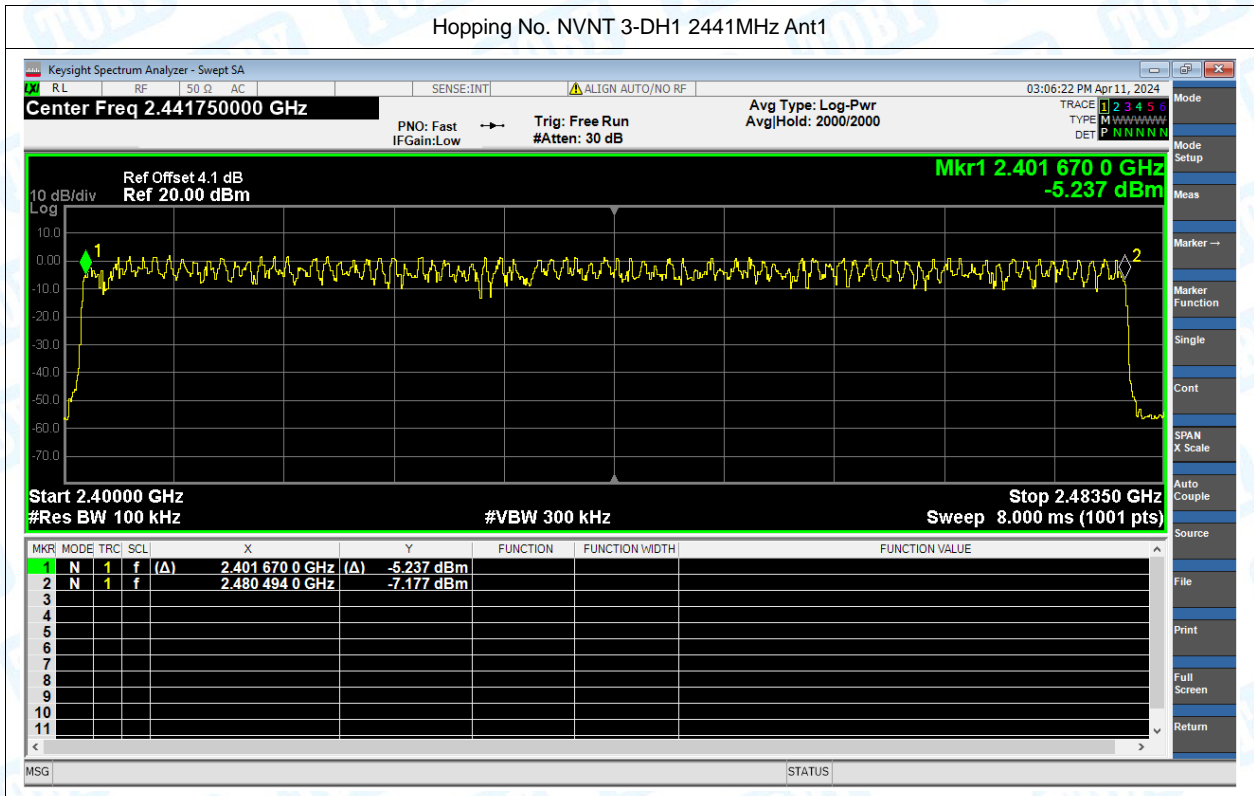
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



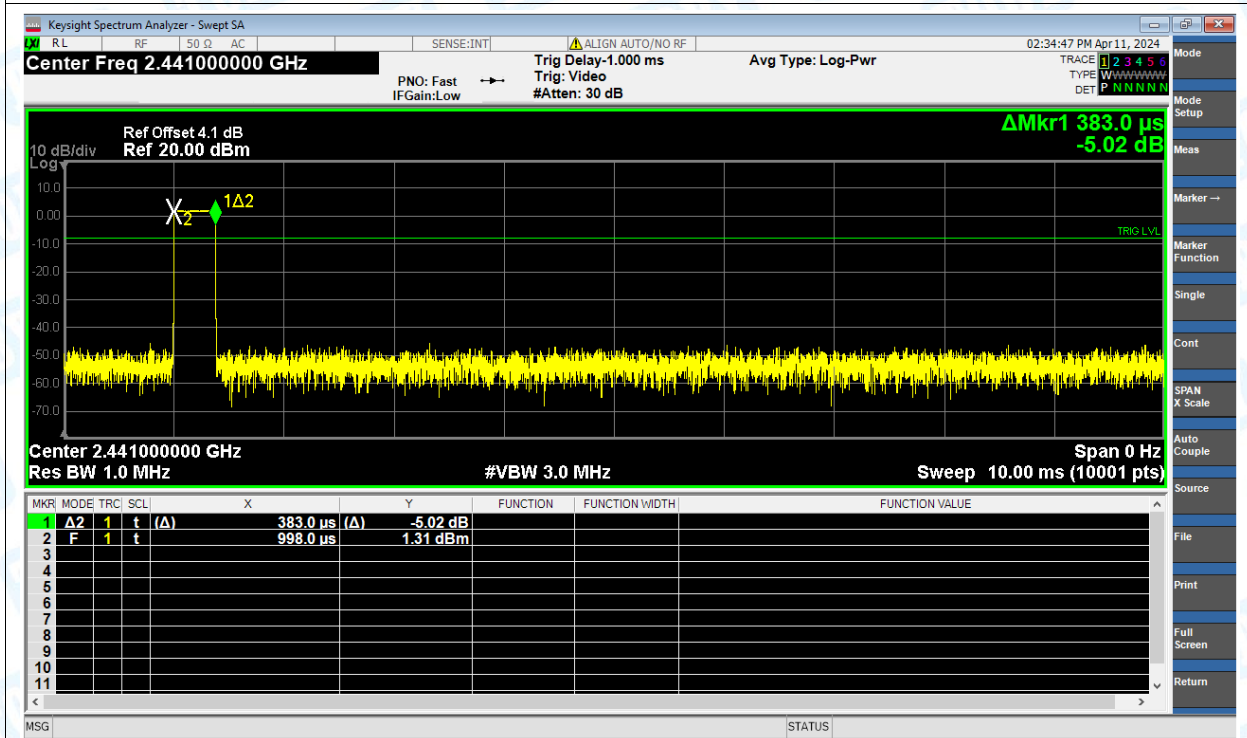


11. Dwell Time

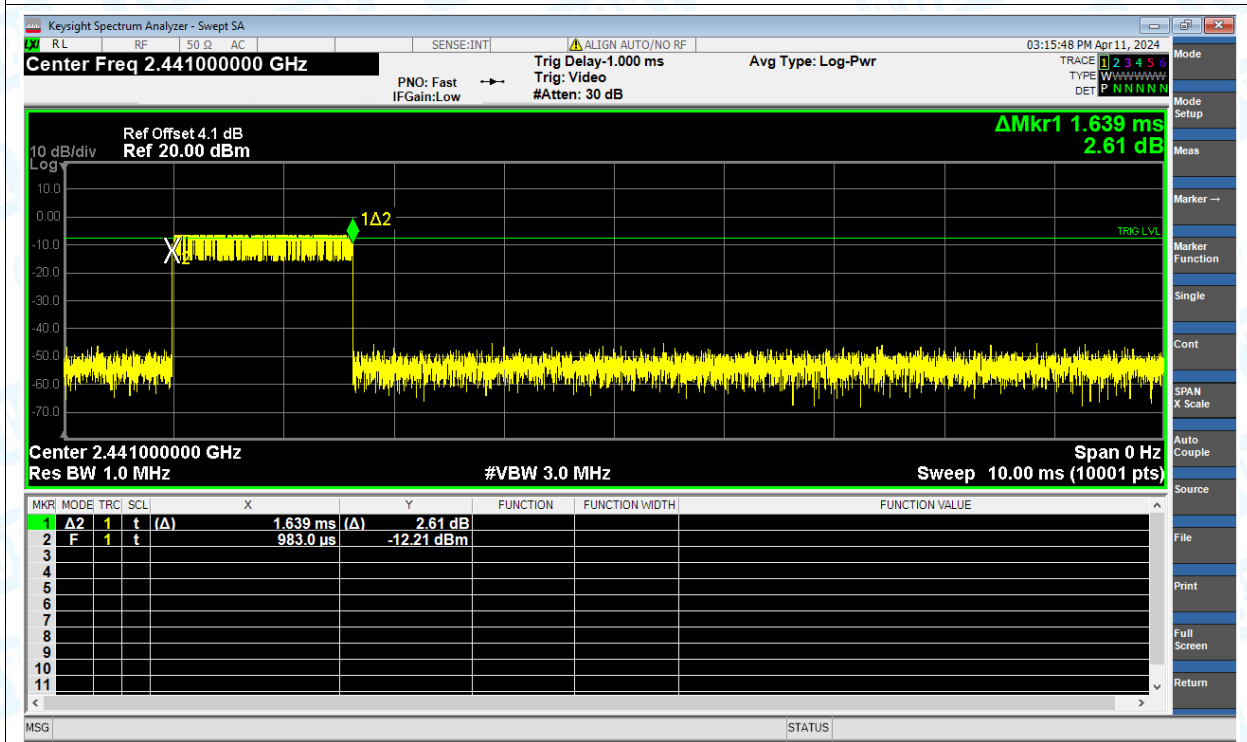
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.383	122.56	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.639	262.24	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.887	307.947	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.392	125.44	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.643	262.88	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

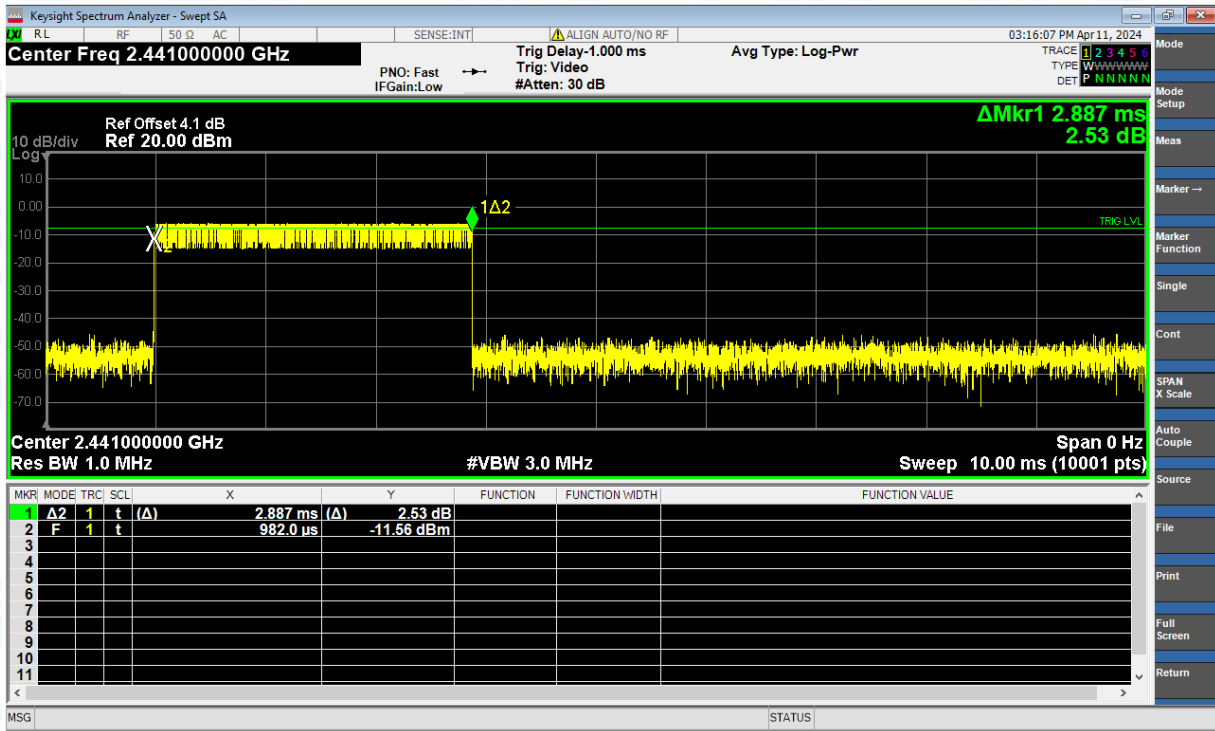
Dwell NVNT 1-DH1 2441MHz Ant1



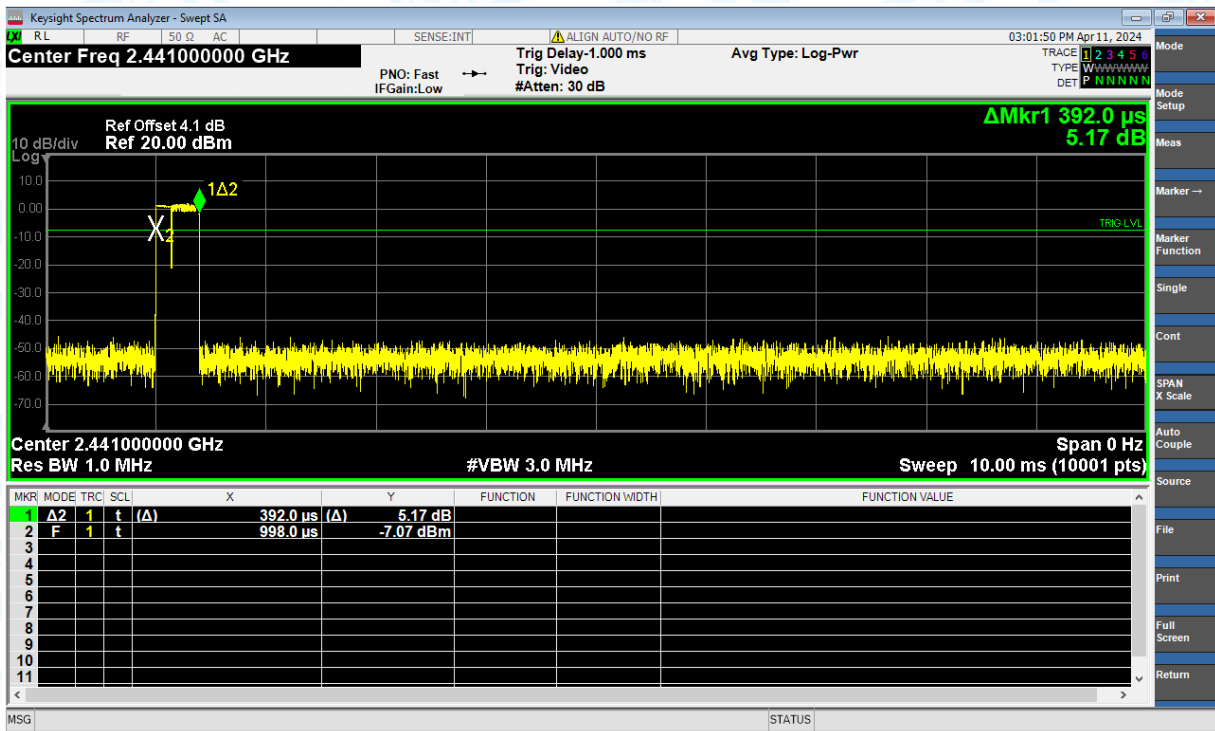
Dwell NVNT 1-DH3 2441MHz Ant1



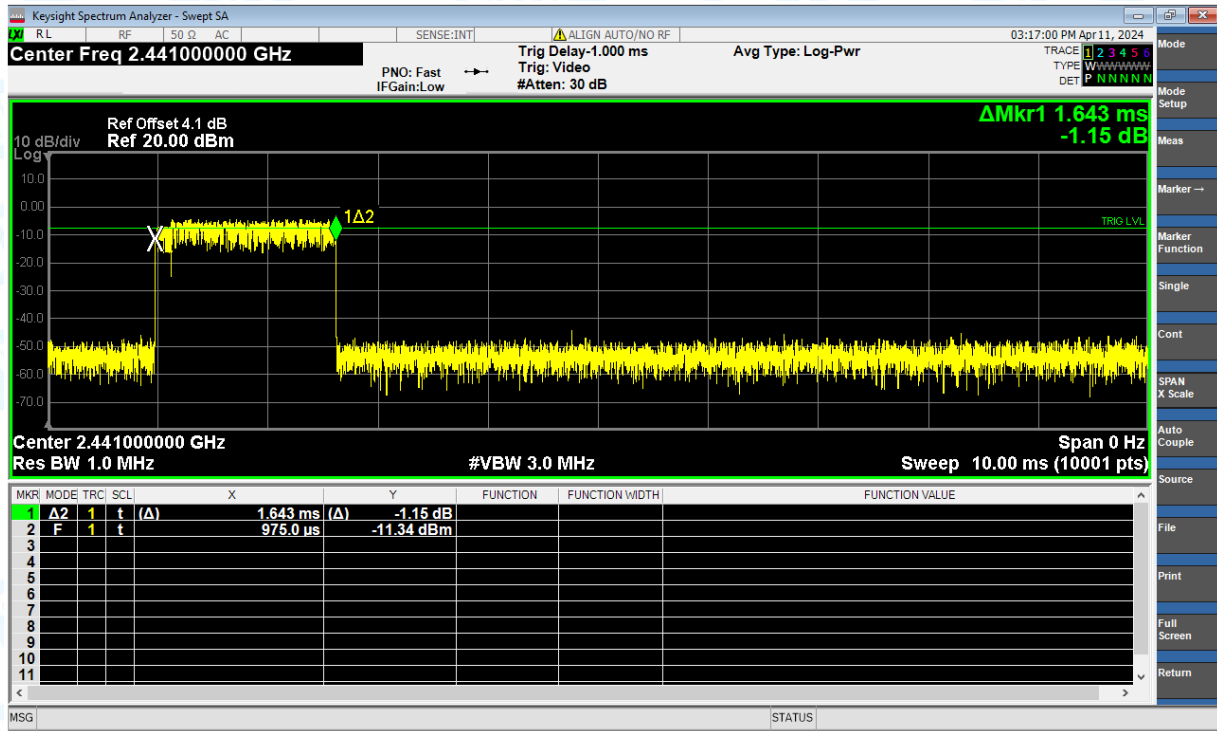
Dwell NVNT 1-DH5 2441MHz Ant1



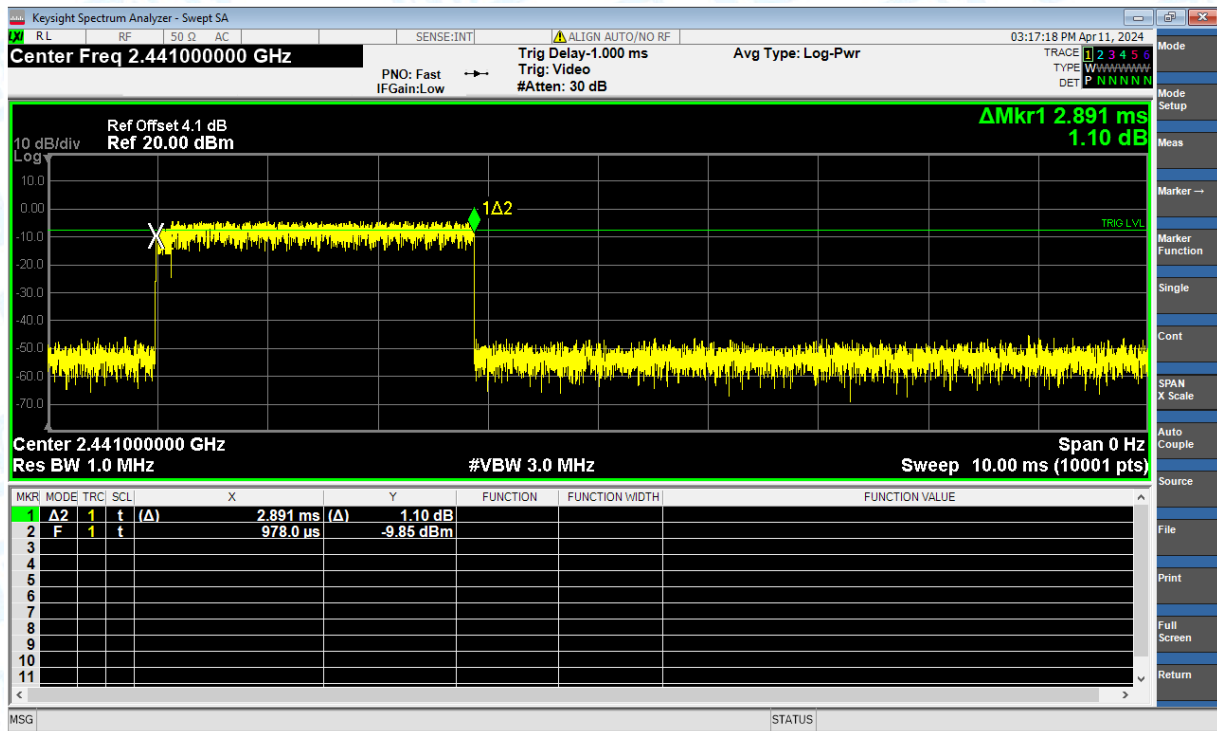
Dwell NVNT 2-DH1 2441MHz Ant1



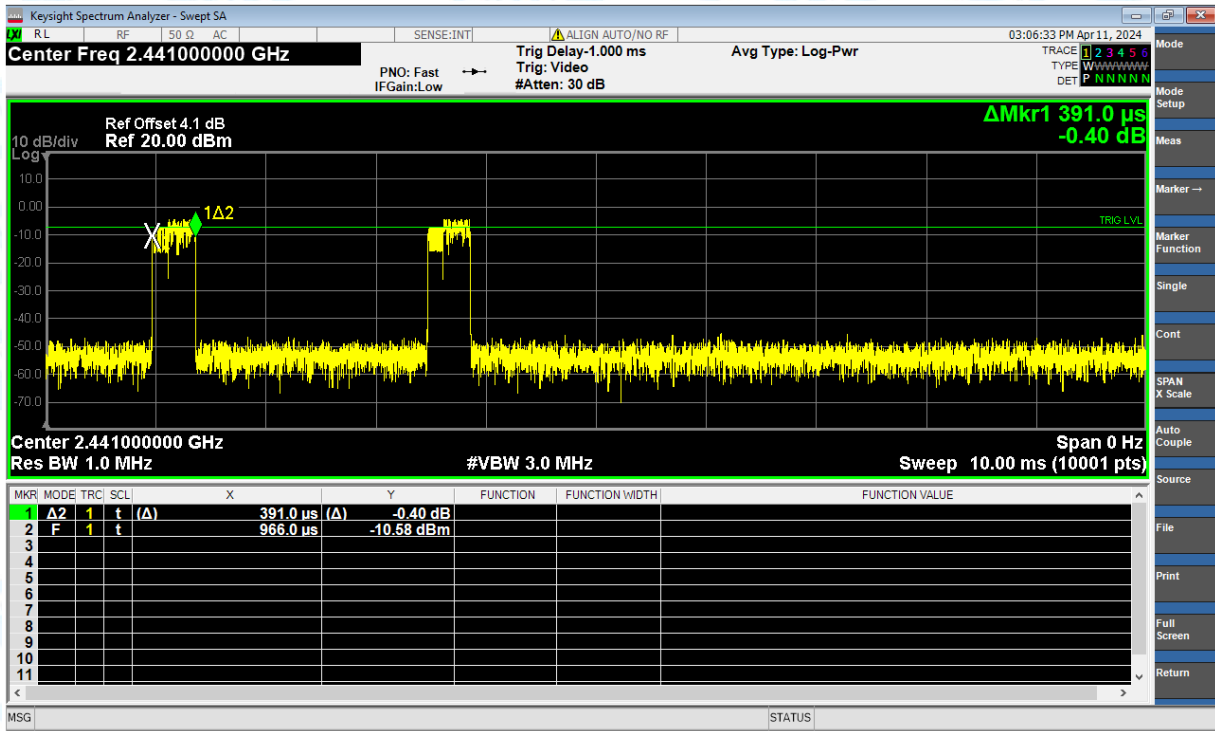
Dwell NVNT 2-DH3 2441MHz Ant1



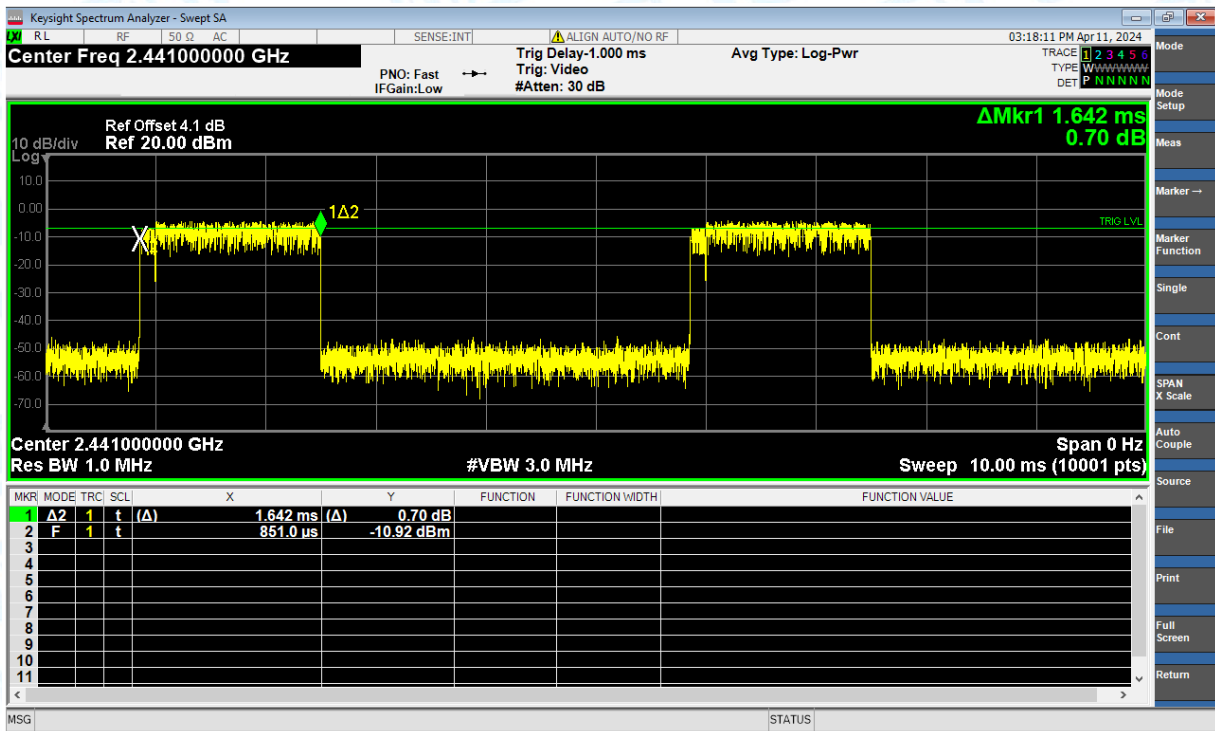
Dwell NVNT 2-DH5 2441MHz Ant1

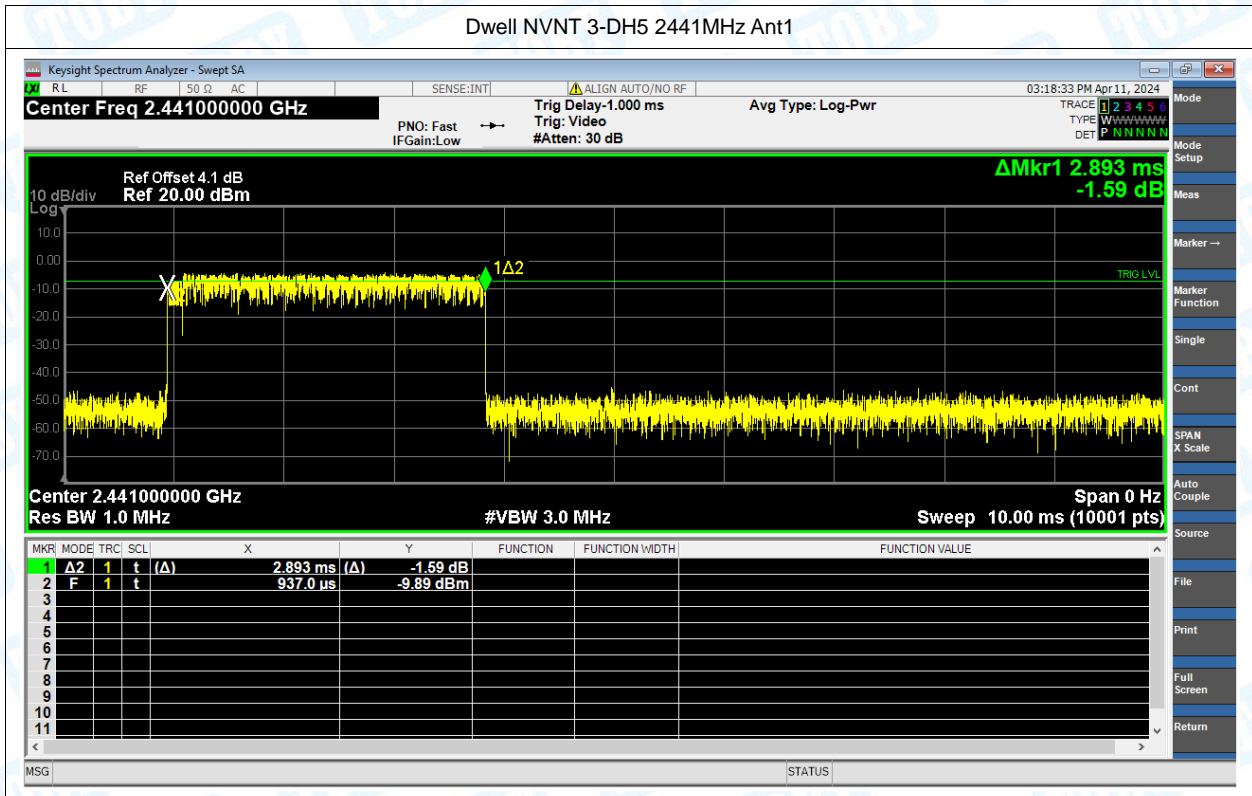


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





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