

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	smart watch
Test Model:	K67
Sample ID:	HC-C-202409-0168-01-02#
Environmental Conditions	
Temperature:	25℃
Relative Humidity:	55%
Test Voltage:	DC 3.8V
Test Engineer:	Rick chen
Note: For a more detailed features description, please refer to the report TBR-C-202409-0168-2 The report only show the worst case data.	

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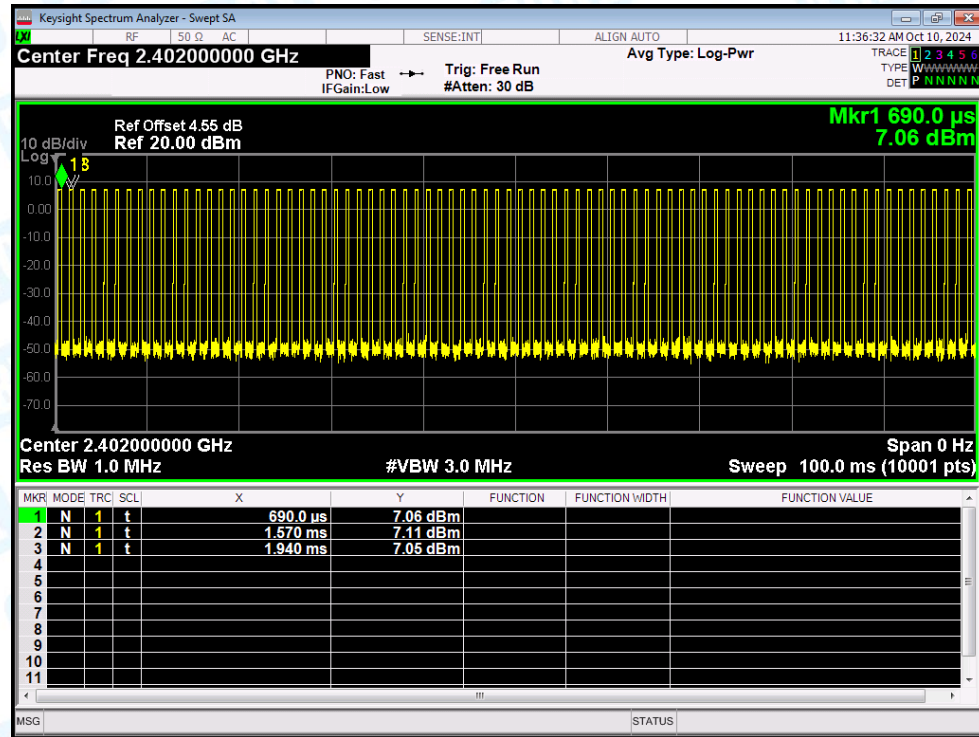
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1.Duty Cycle

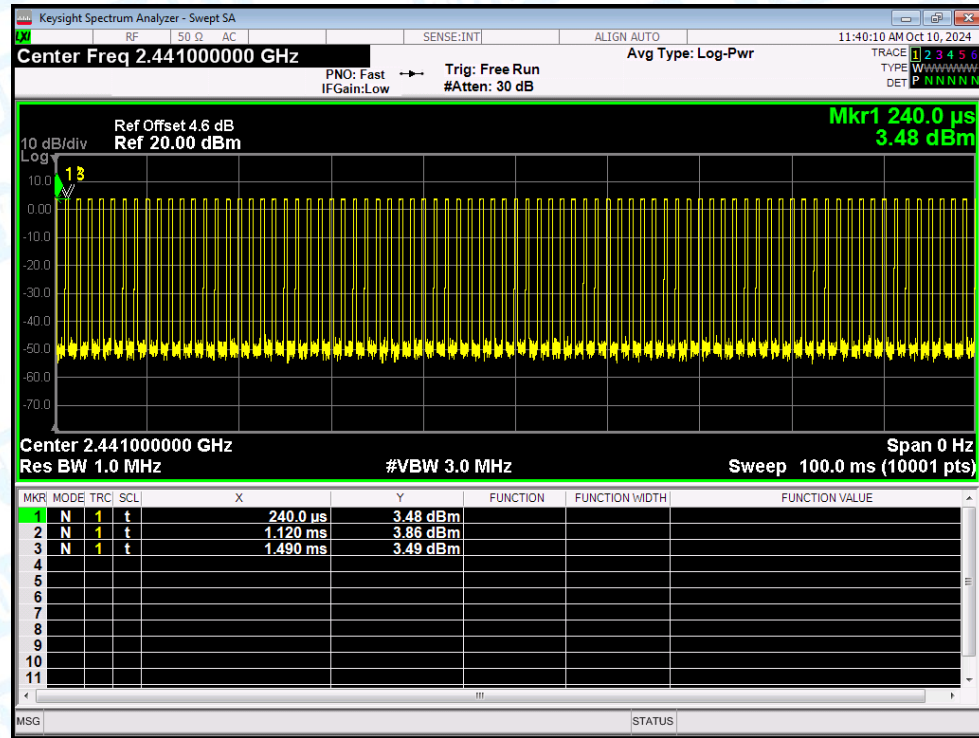
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	29.6	5.29	2.7
NVNT	1-DH1	2441	Ant1	29.6	5.29	2.7
NVNT	1-DH1	2480	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2441	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2480	Ant1	30.4	5.17	2.63
NVNT	3-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	3-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	3-DH1	2480	Ant1	30.4	5.17	2.63

Test Graphs

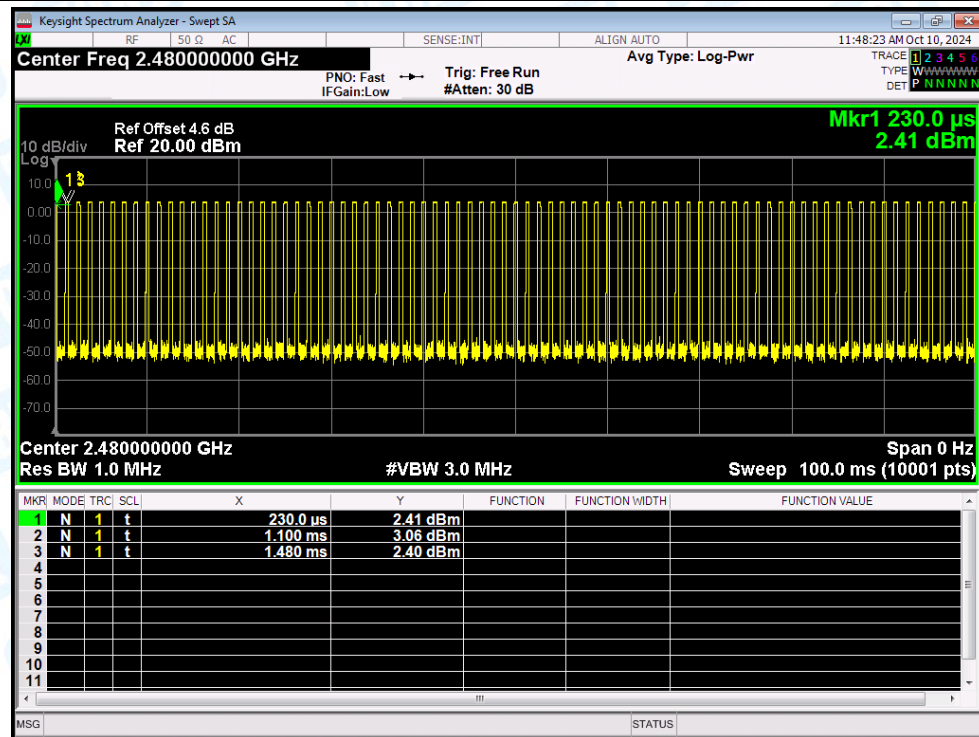
Duty Cycle NVNT 1-DH1 2402MHz Ant1



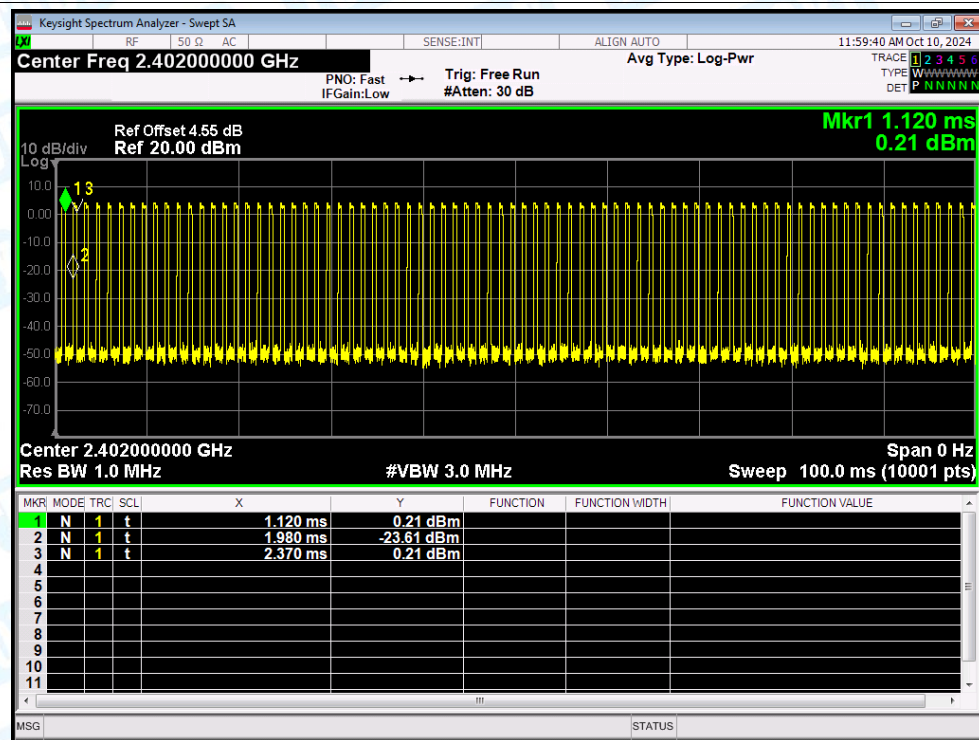
Duty Cycle NVNT 1-DH1 2441MHz Ant1



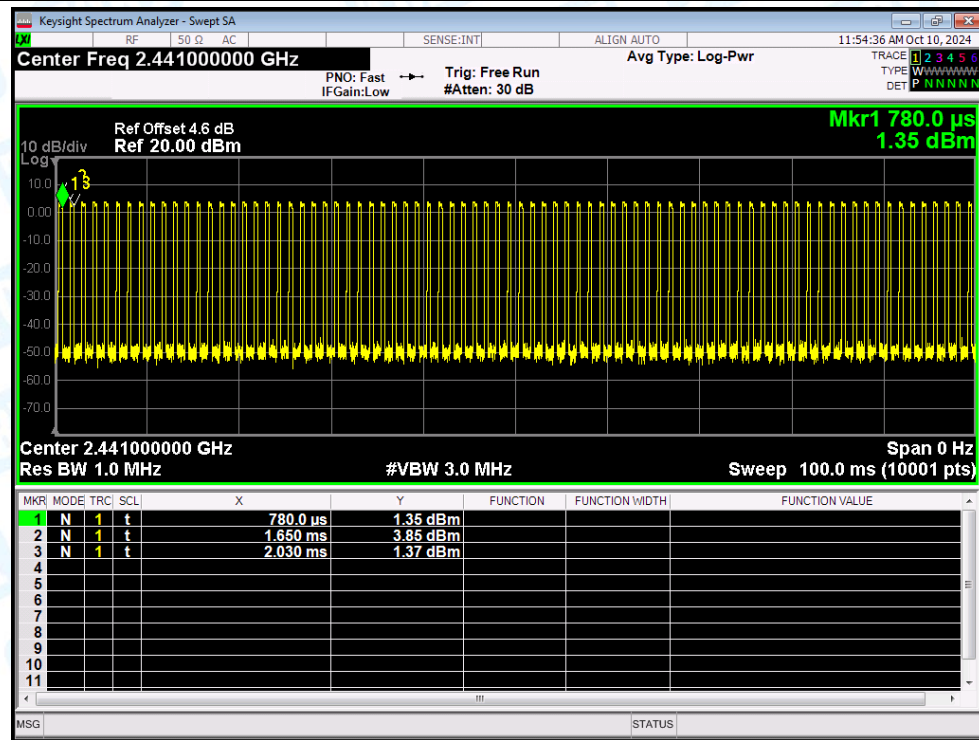
Duty Cycle NVNT 1-DH1 2480MHz Ant1



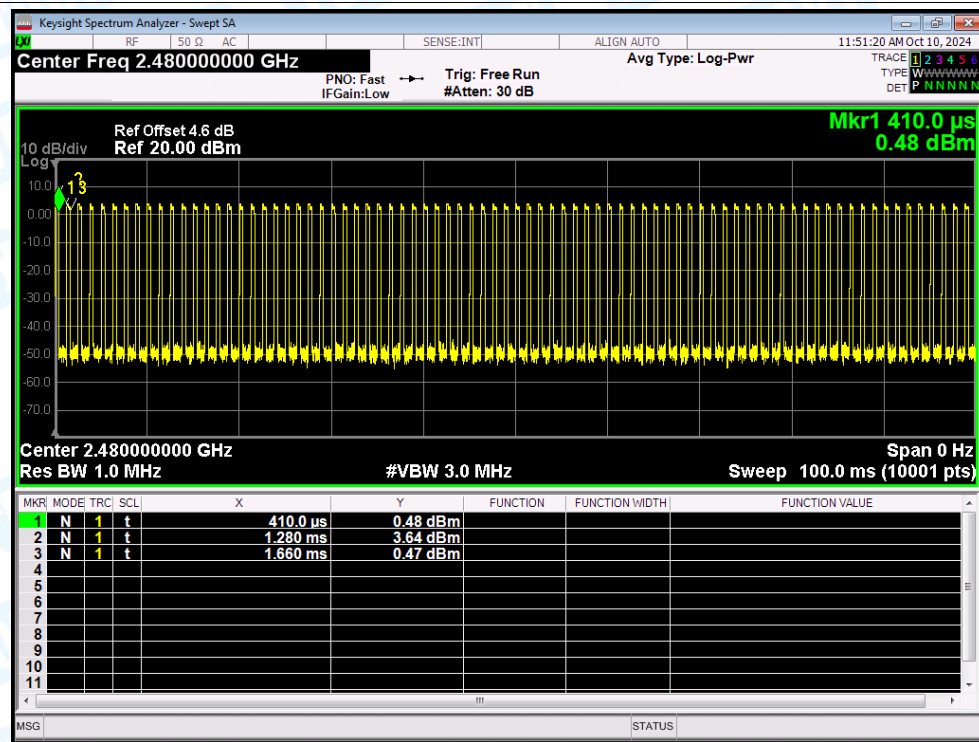
Duty Cycle NVNT 2-DH1 2402MHz Ant1



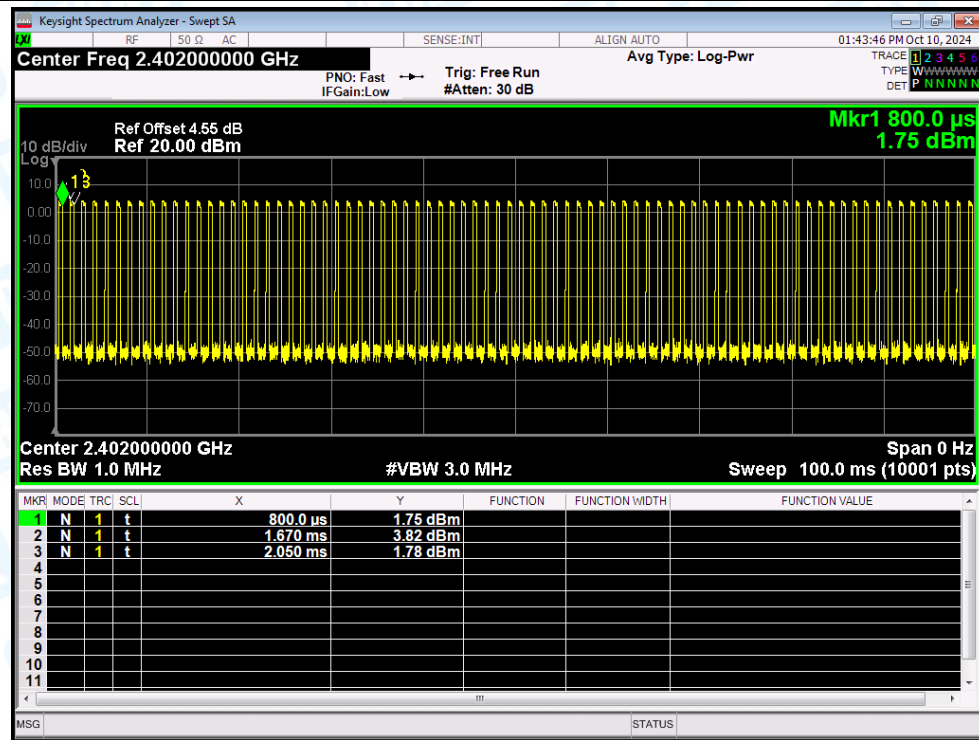
Duty Cycle NVNT 2-DH1 2441MHz Ant1



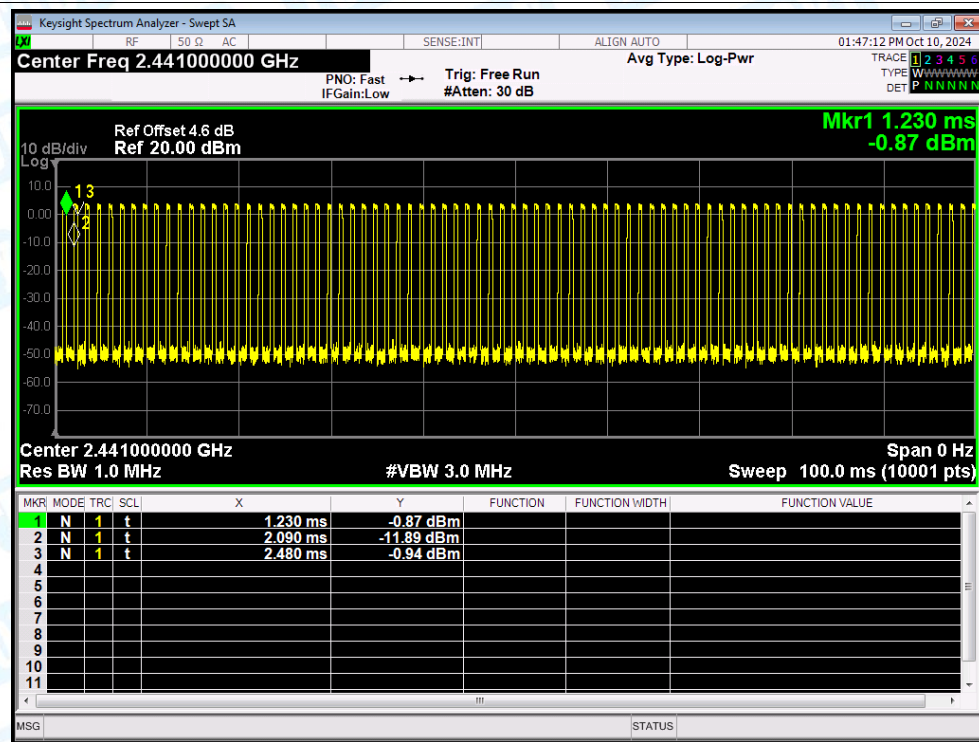
Duty Cycle NVNT 2-DH1 2480MHz Ant1

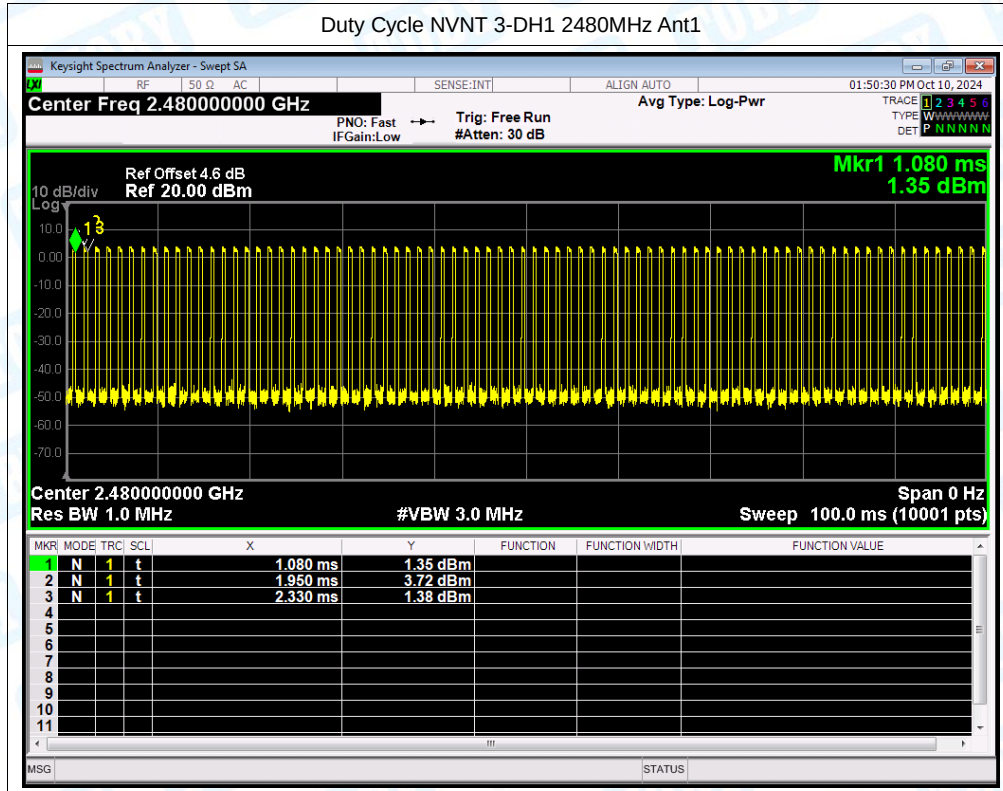


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



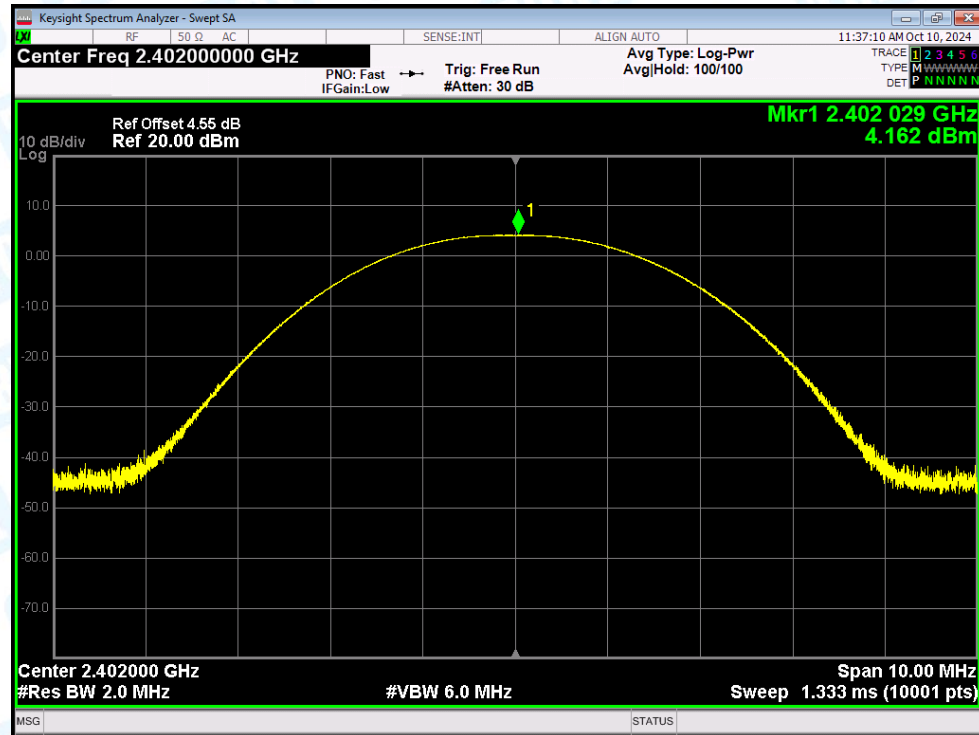


2.Maximum Conducted Output Power

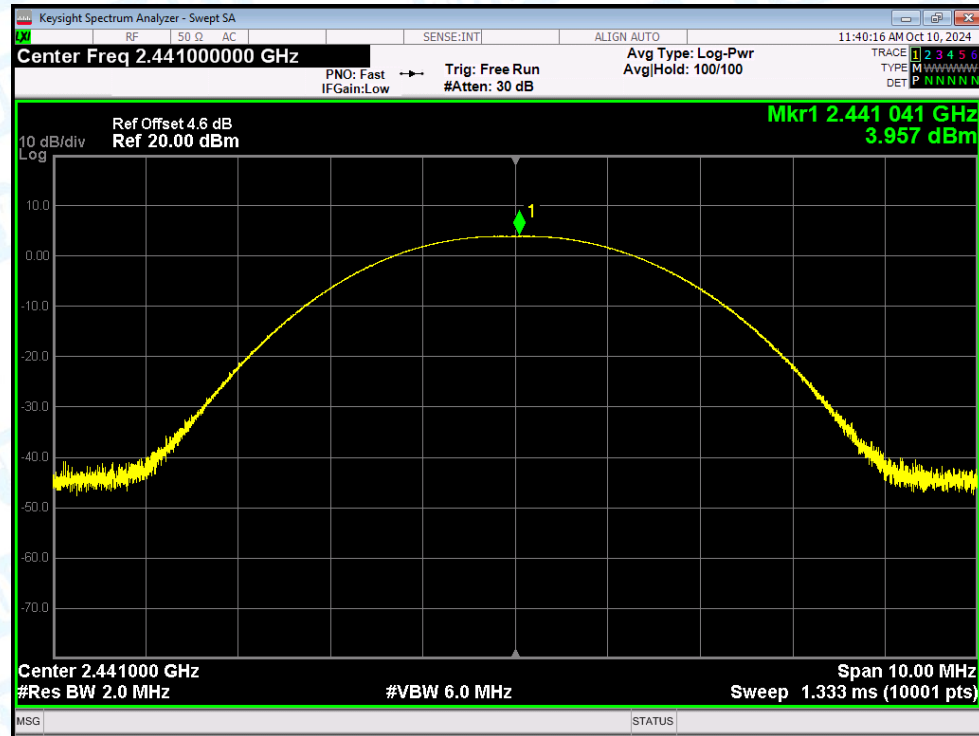
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	4.162	21	Pass
NVNT	1-DH1	2441	Ant1	3.957	21	Pass
NVNT	1-DH1	2480	Ant1	3.796	21	Pass
NVNT	2-DH1	2402	Ant1	4.104	21	Pass
NVNT	2-DH1	2441	Ant1	3.946	21	Pass
NVNT	2-DH1	2480	Ant1	3.804	21	Pass
NVNT	3-DH1	2402	Ant1	4.242	21	Pass
NVNT	3-DH1	2441	Ant1	4.058	21	Pass
NVNT	3-DH1	2480	Ant1	3.918	21	Pass

Test Graphs

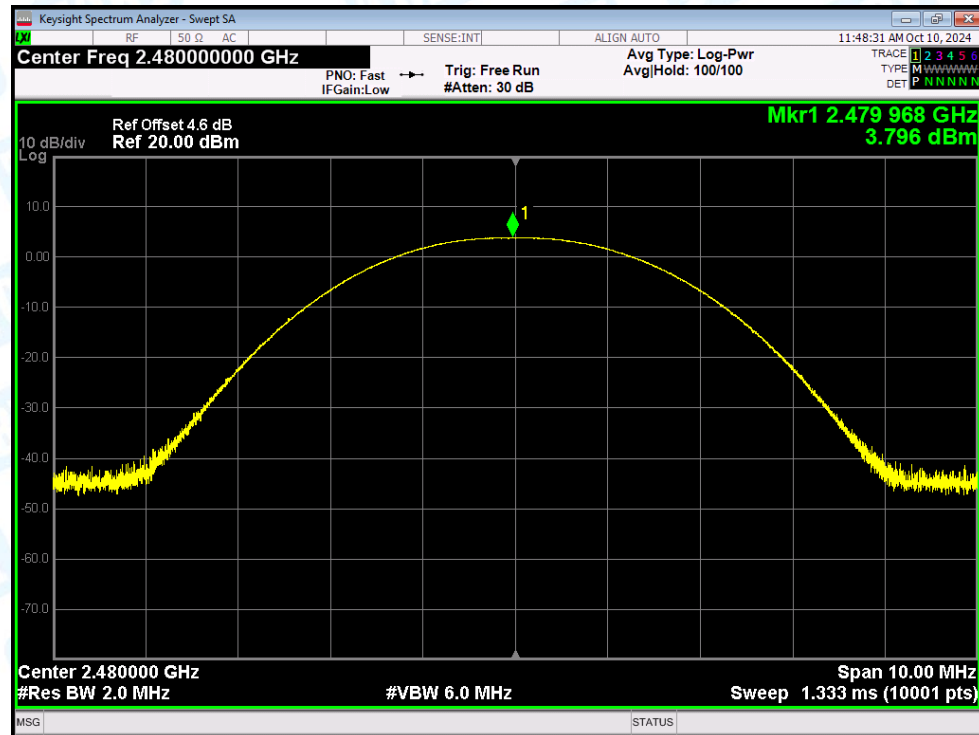
Power NVNT 1-DH1 2402MHz Ant1



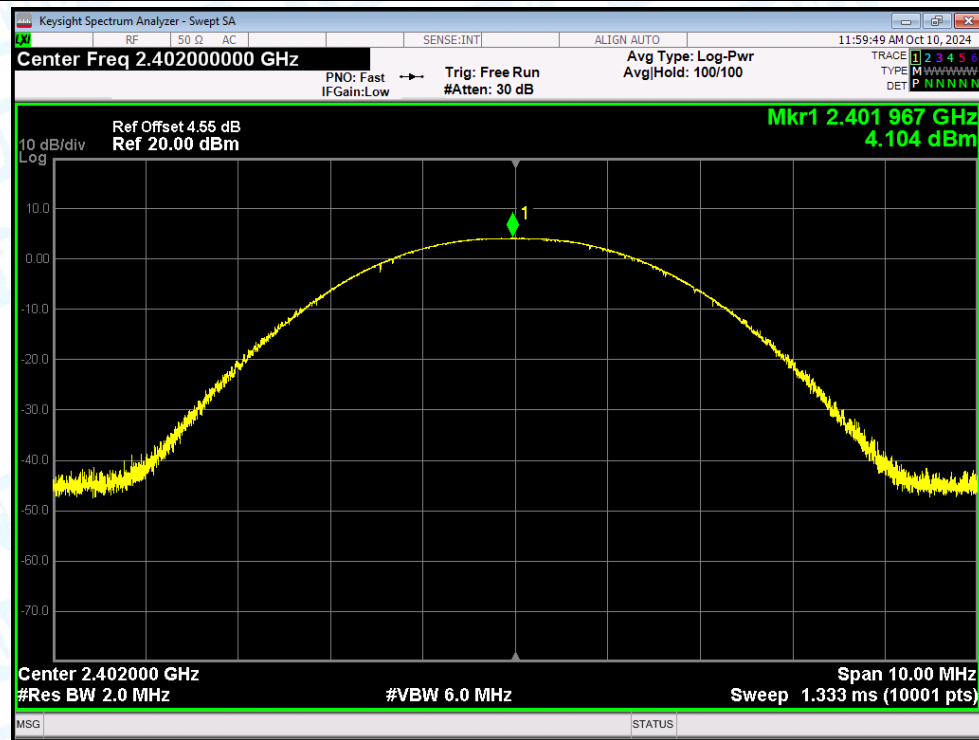
Power NVNT 1-DH1 2441MHz Ant1



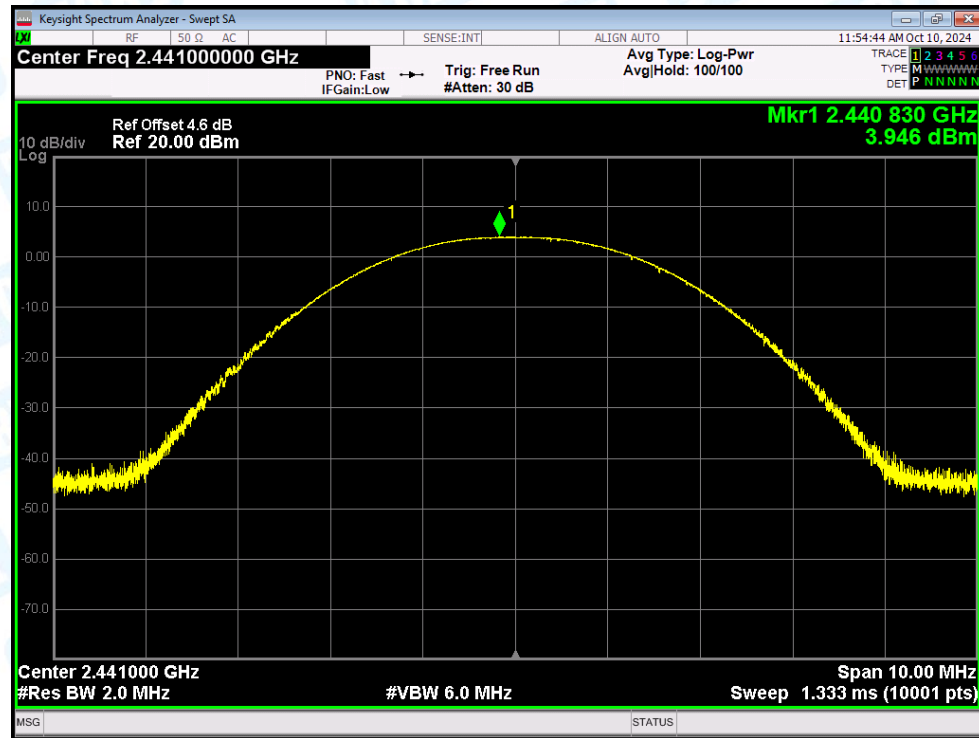
Power NVNT 1-DH1 2480MHz Ant1



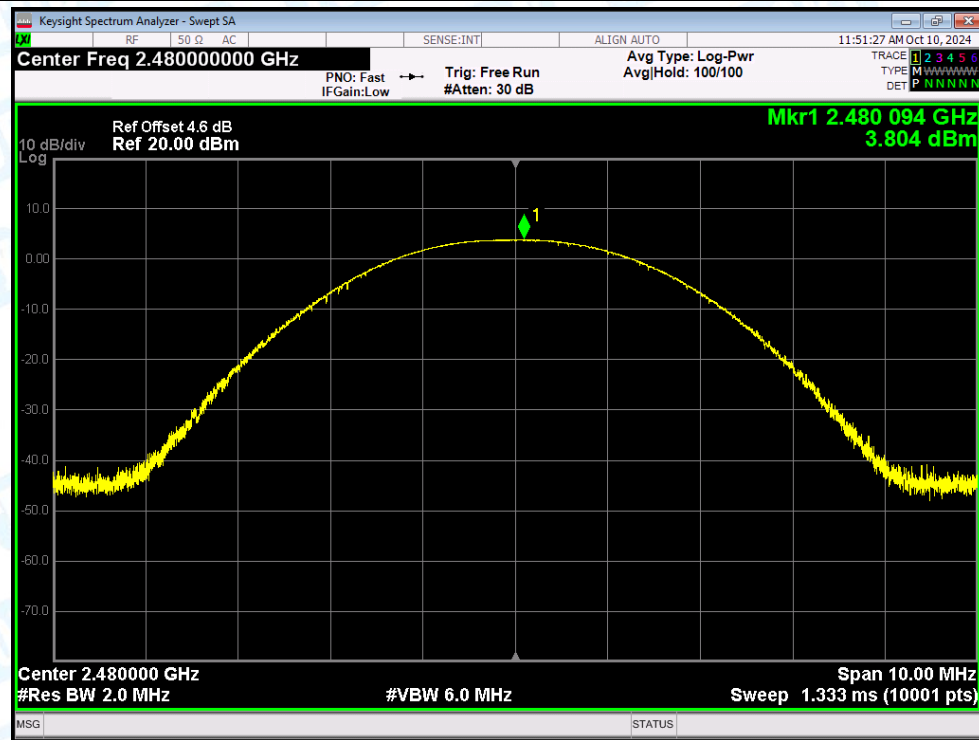
Power NVNT 2-DH1 2402MHz Ant1



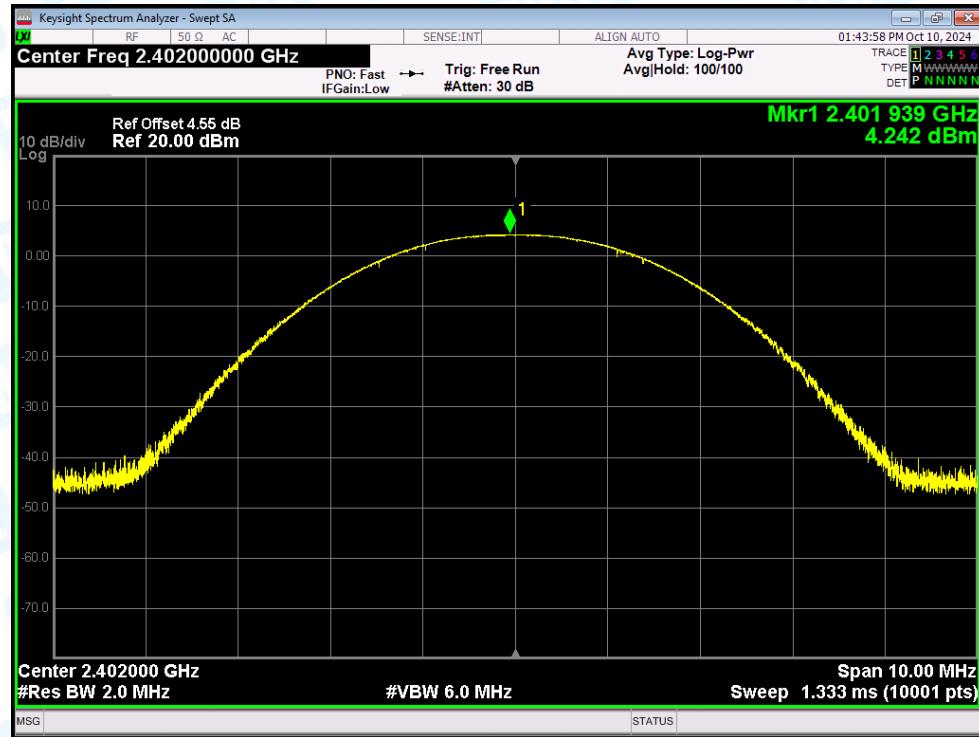
Power NVNT 2-DH1 2441MHz Ant1



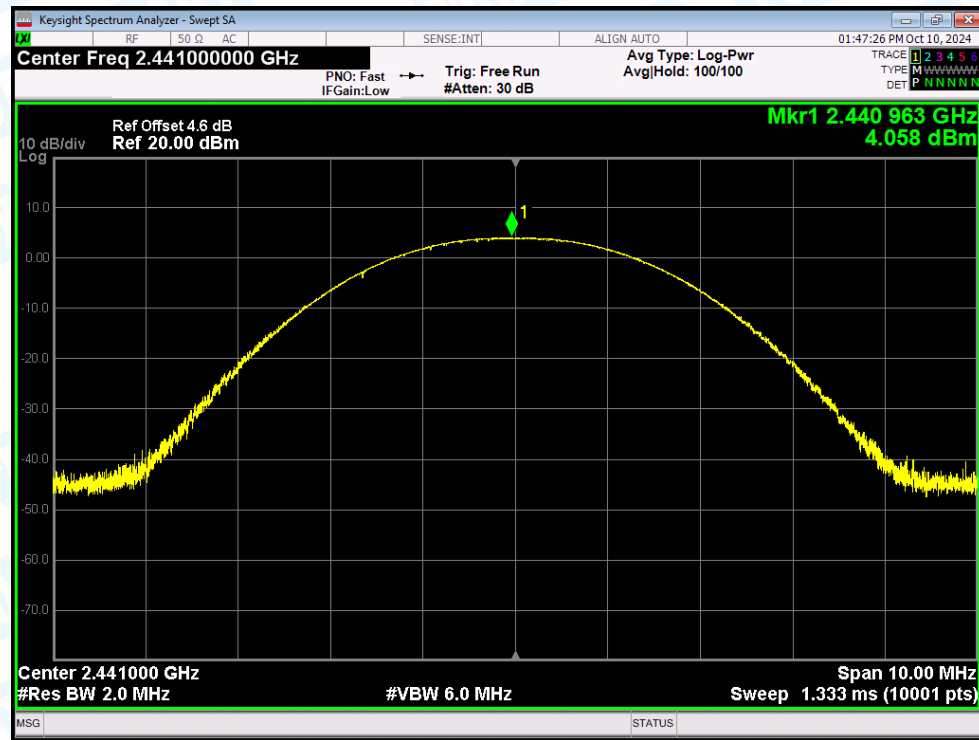
Power NVNT 2-DH1 2480MHz Ant1

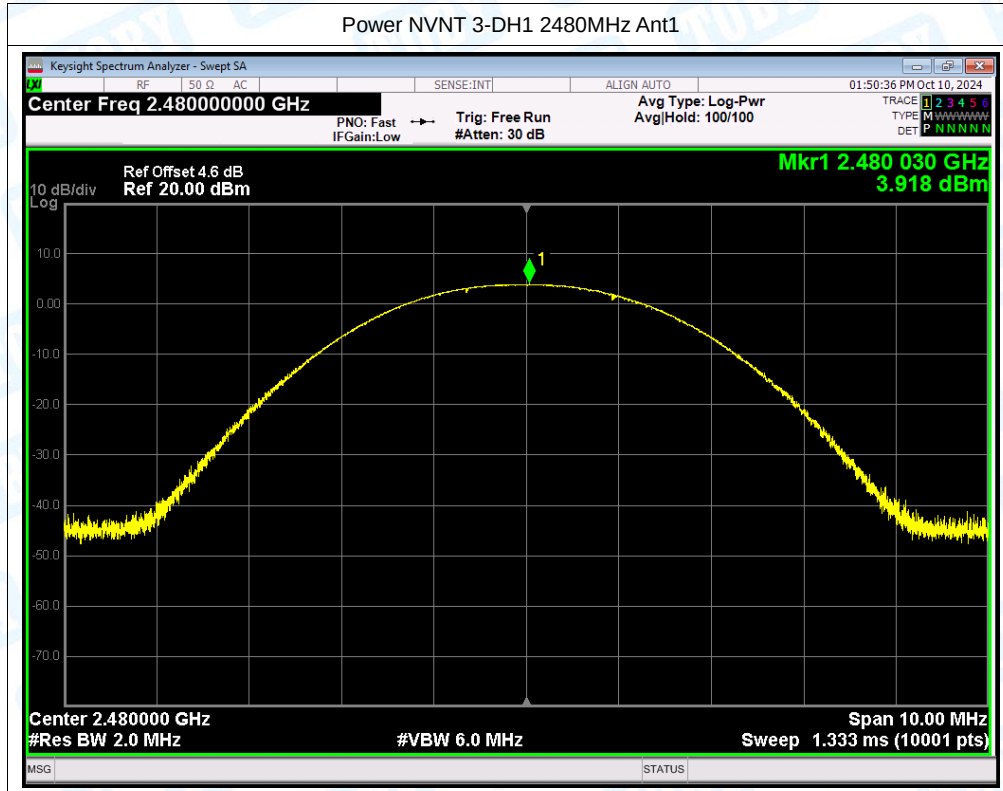


Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



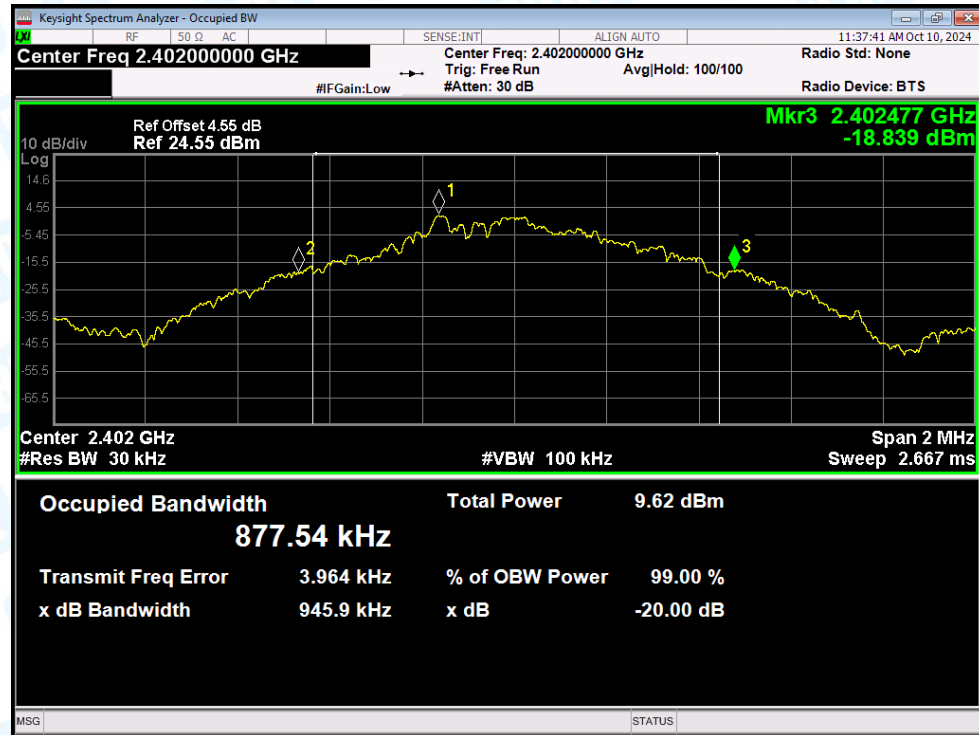


3.-20dB Bandwidth

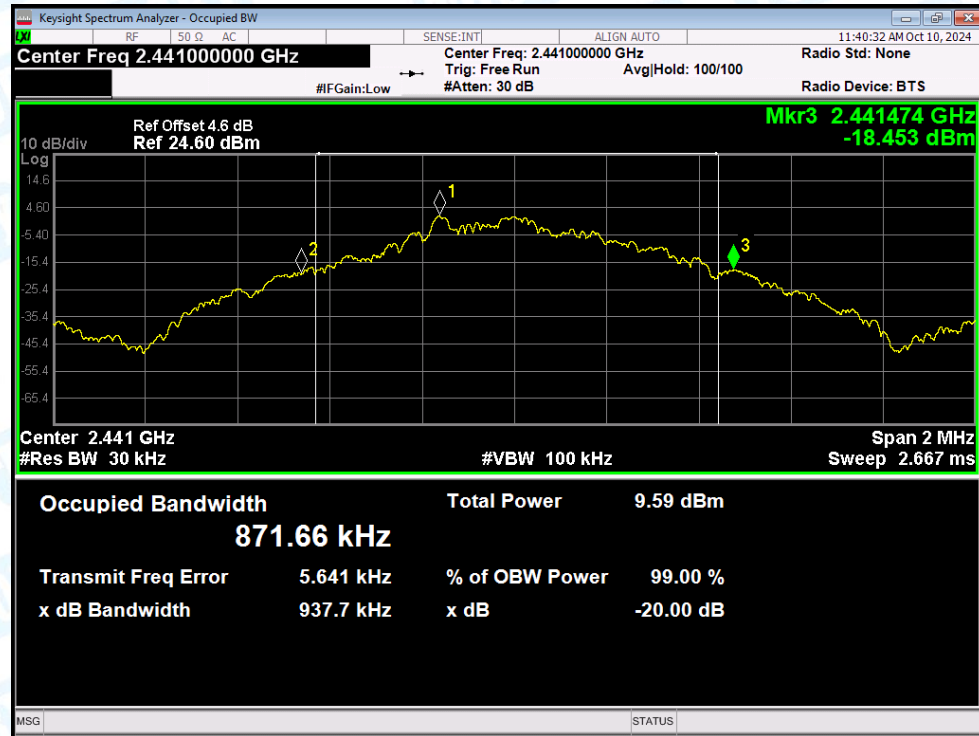
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.95	0	Pass
NVNT	1-DH1	2441	Ant1	0.94	0	Pass
NVNT	1-DH1	2480	Ant1	0.94	0	Pass
NVNT	2-DH1	2402	Ant1	1.21	0	Pass
NVNT	2-DH1	2441	Ant1	1.21	0	Pass
NVNT	2-DH1	2480	Ant1	1.2	0	Pass
NVNT	3-DH1	2402	Ant1	1.21	0	Pass
NVNT	3-DH1	2441	Ant1	1.2	0	Pass
NVNT	3-DH1	2480	Ant1	1.2	0	Pass

Test Graphs

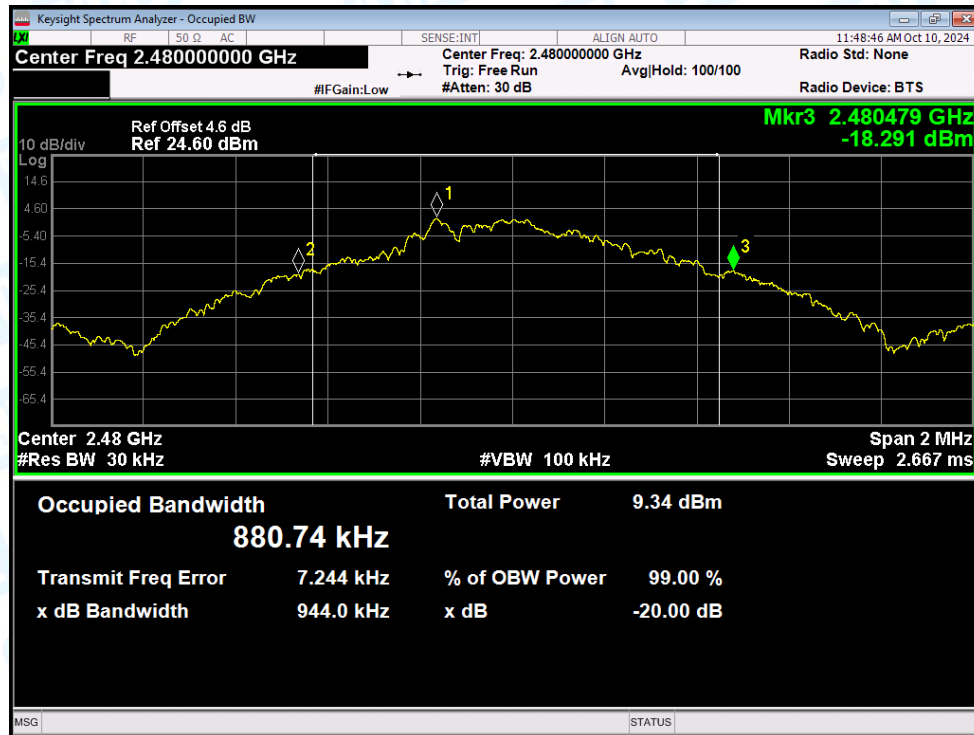
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



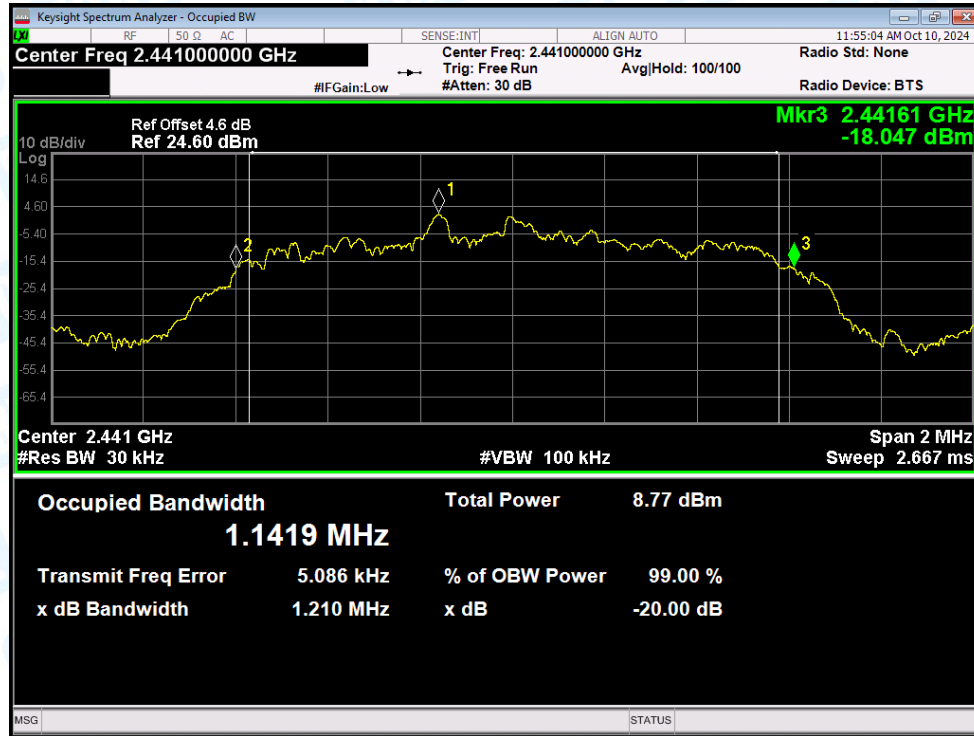
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



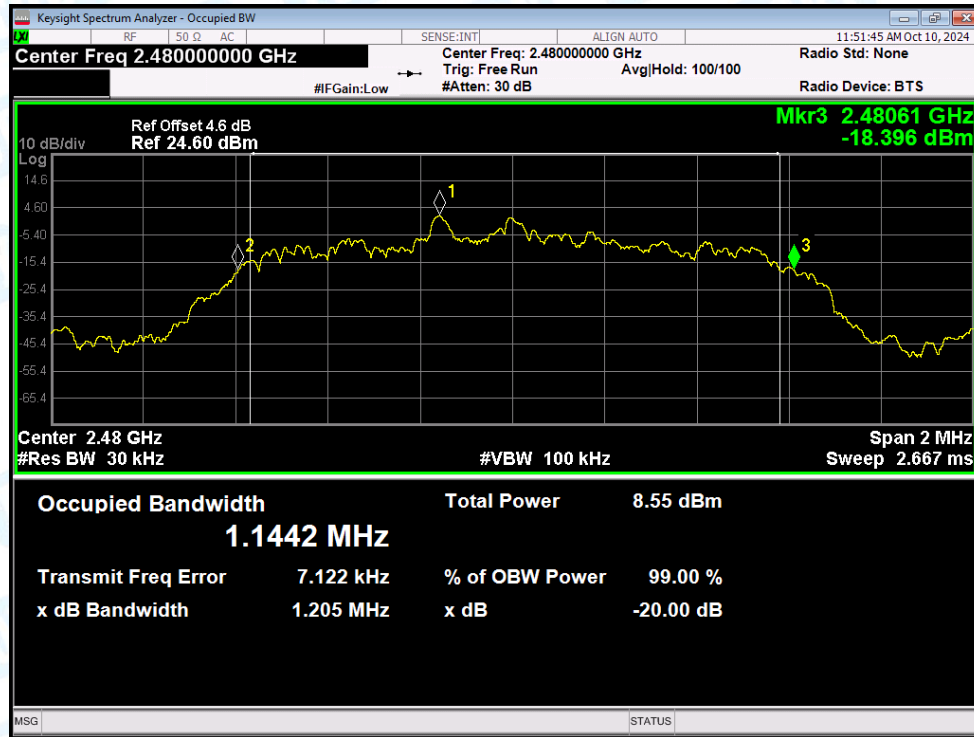
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



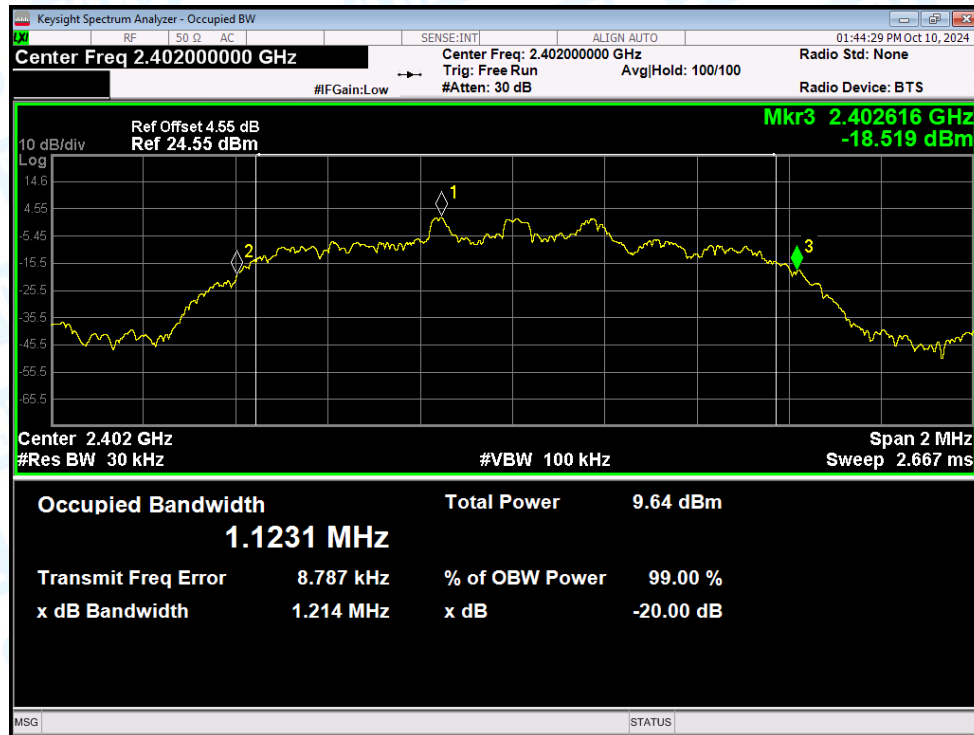
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



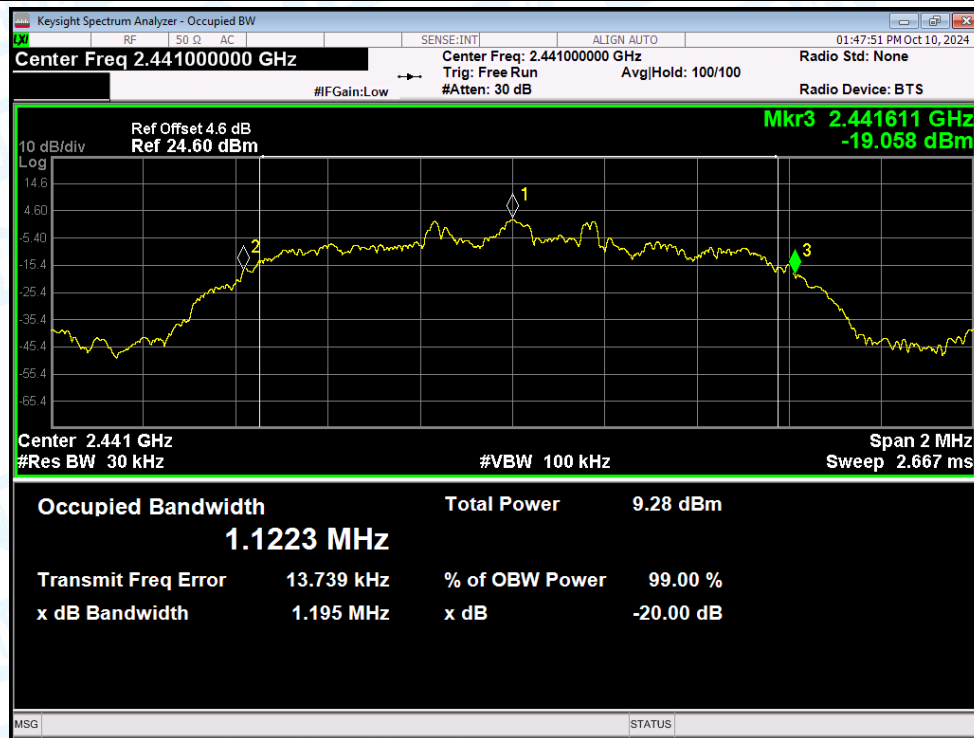
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

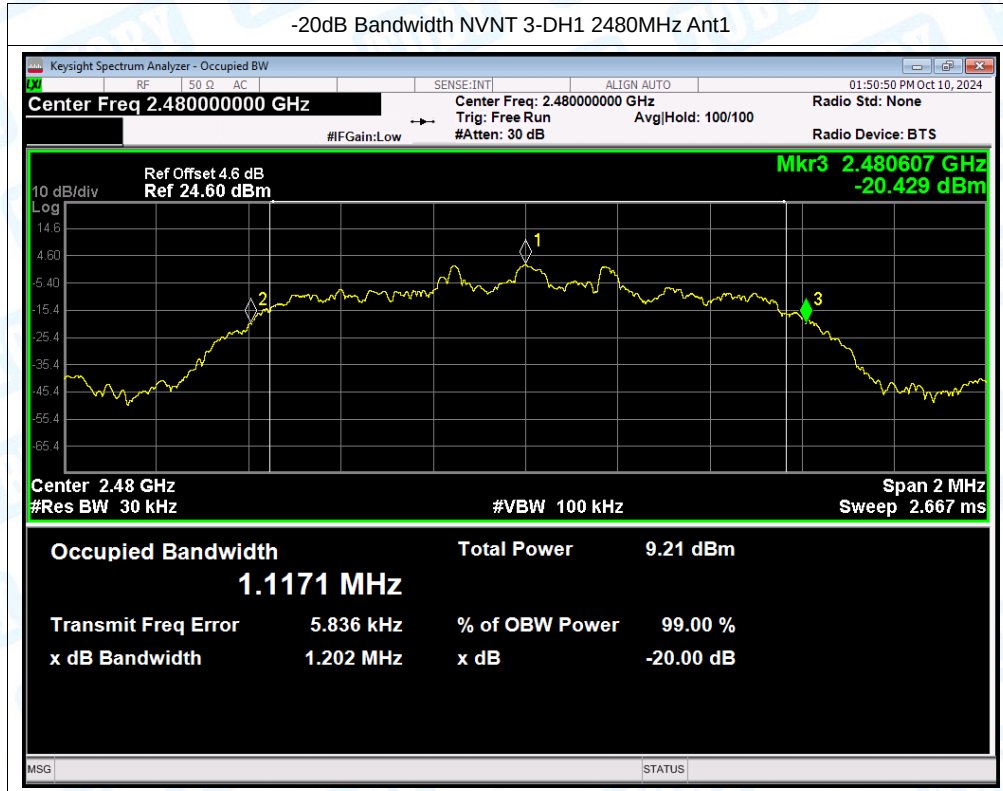


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



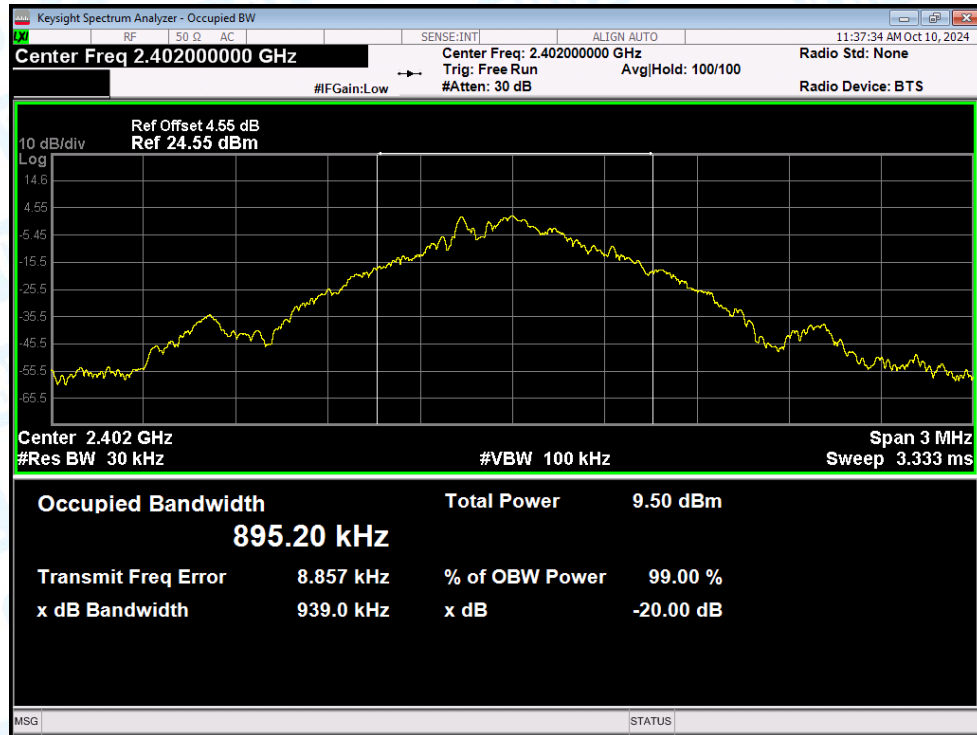


4.Occupied Channel Bandwidth

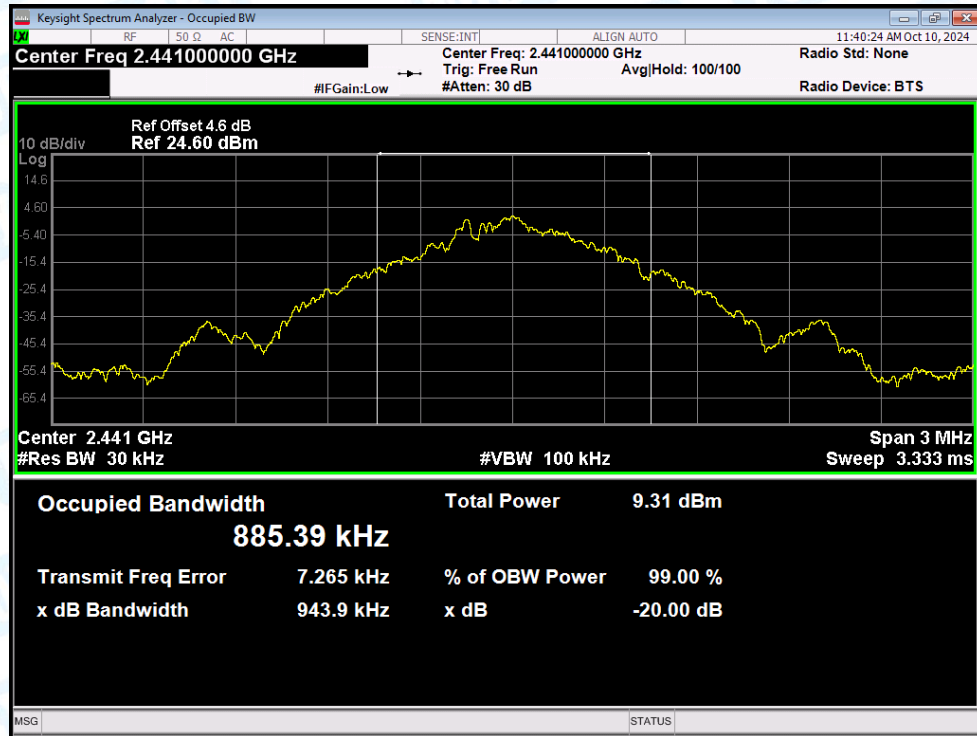
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.895
NVNT	1-DH1	2441	Ant1	0.885
NVNT	1-DH1	2480	Ant1	0.89
NVNT	2-DH1	2402	Ant1	1.115
NVNT	2-DH1	2441	Ant1	1.15
NVNT	2-DH1	2480	Ant1	1.136
NVNT	3-DH1	2402	Ant1	1.114
NVNT	3-DH1	2441	Ant1	1.118
NVNT	3-DH1	2480	Ant1	1.121

Test Graphs

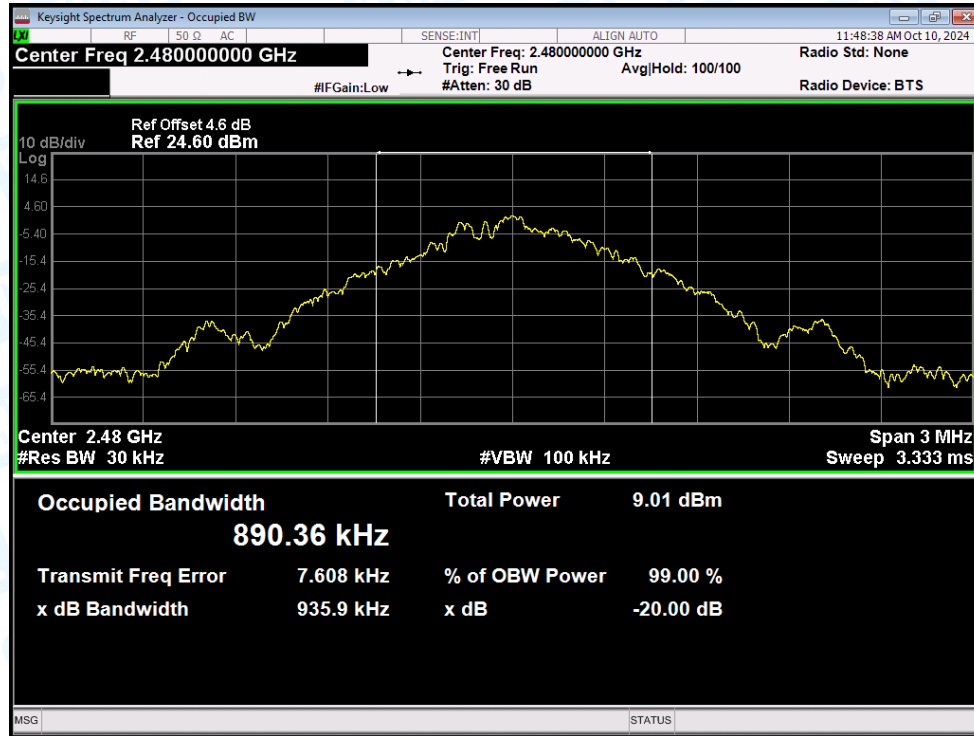
OBW NVNT 1-DH1 2402MHz Ant1



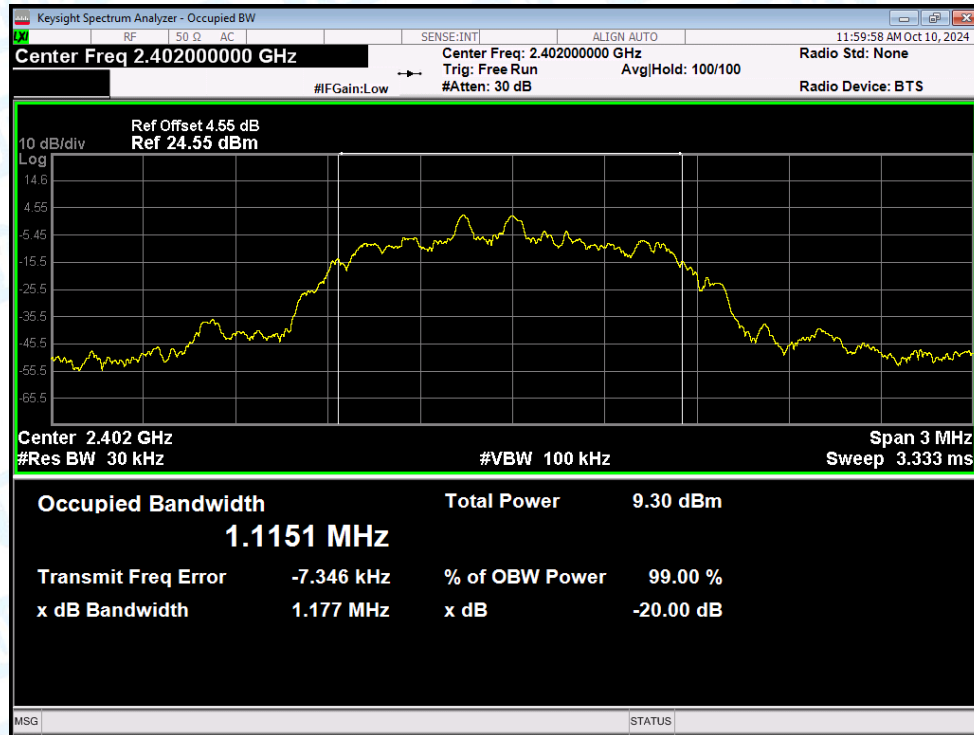
OBW NVNT 1-DH1 2441MHz Ant1



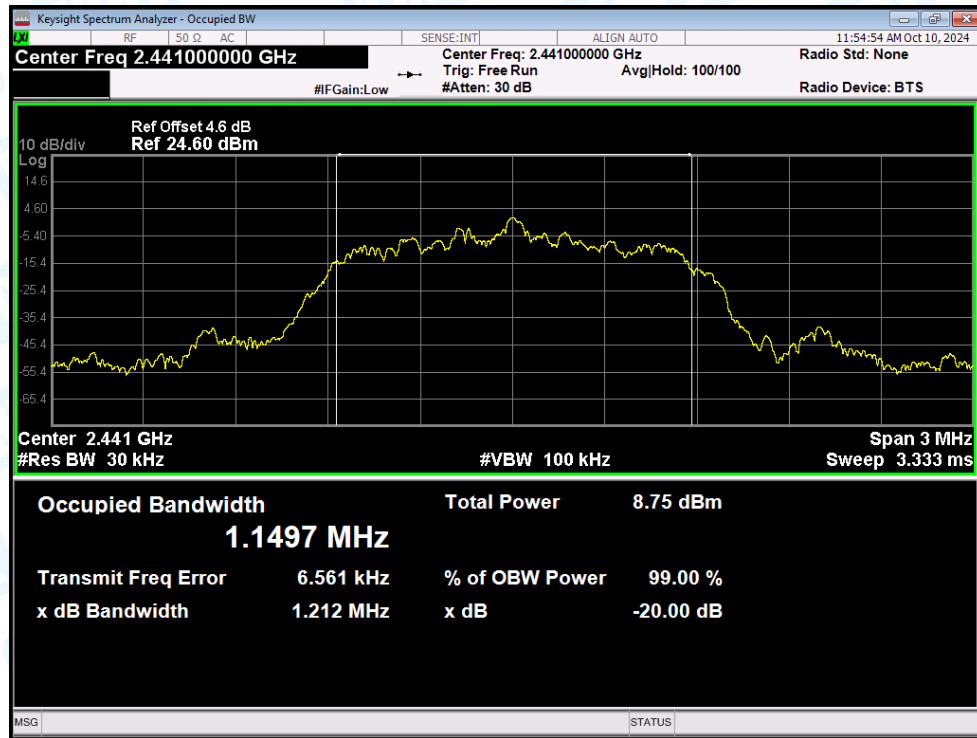
OBW NVNT 1-DH1 2480MHz Ant1



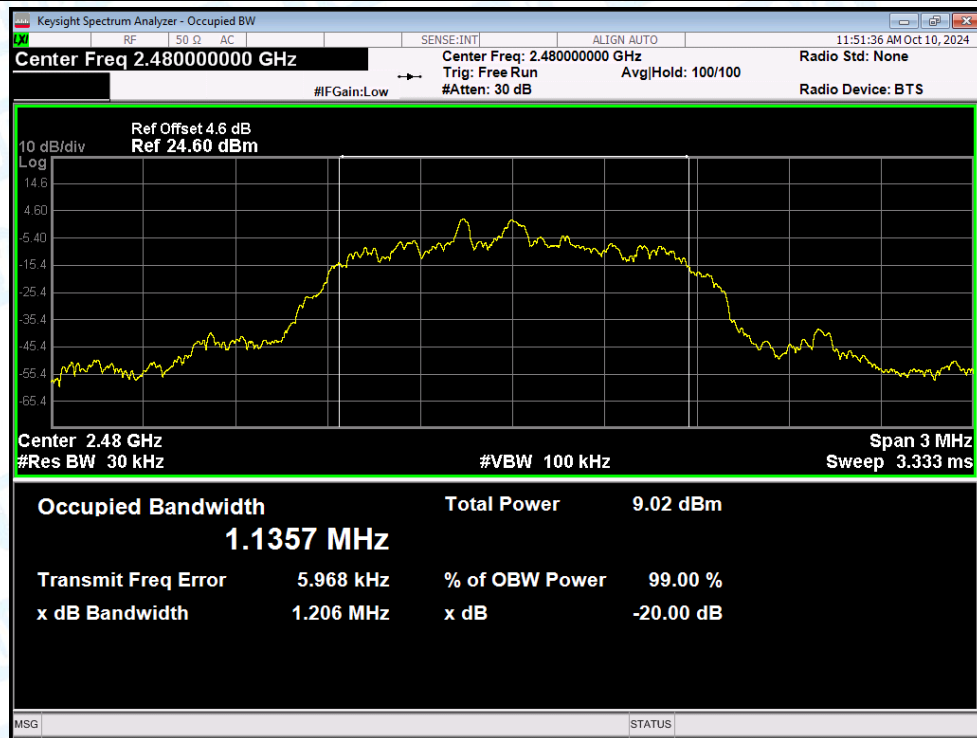
OBW NVNT 2-DH1 2402MHz Ant1



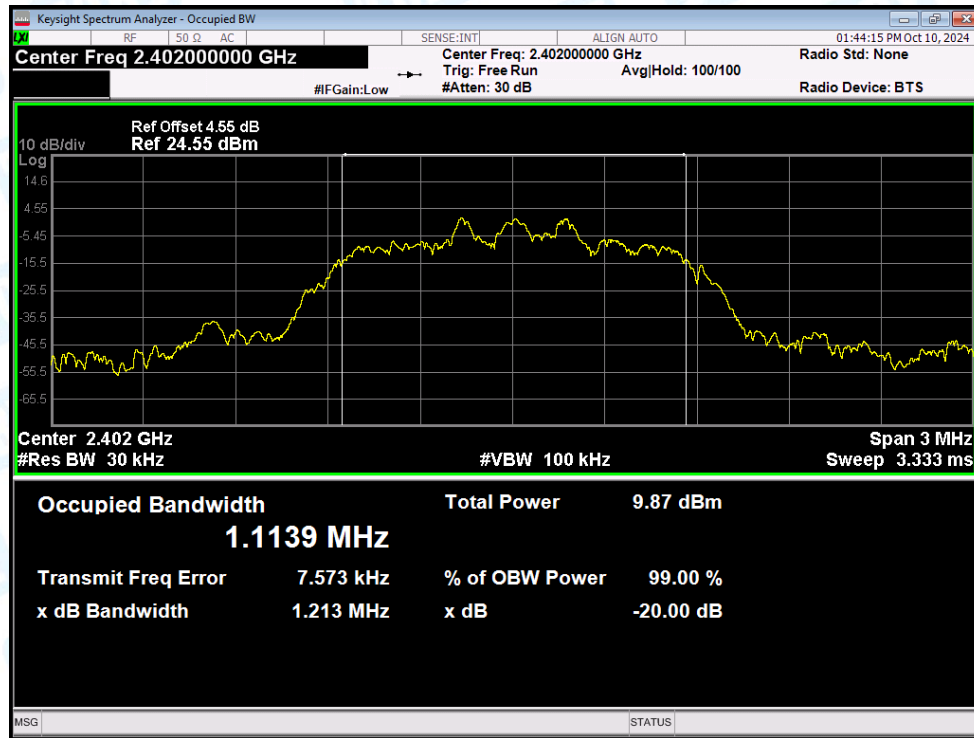
OBW NVNT 2-DH1 2441MHz Ant1



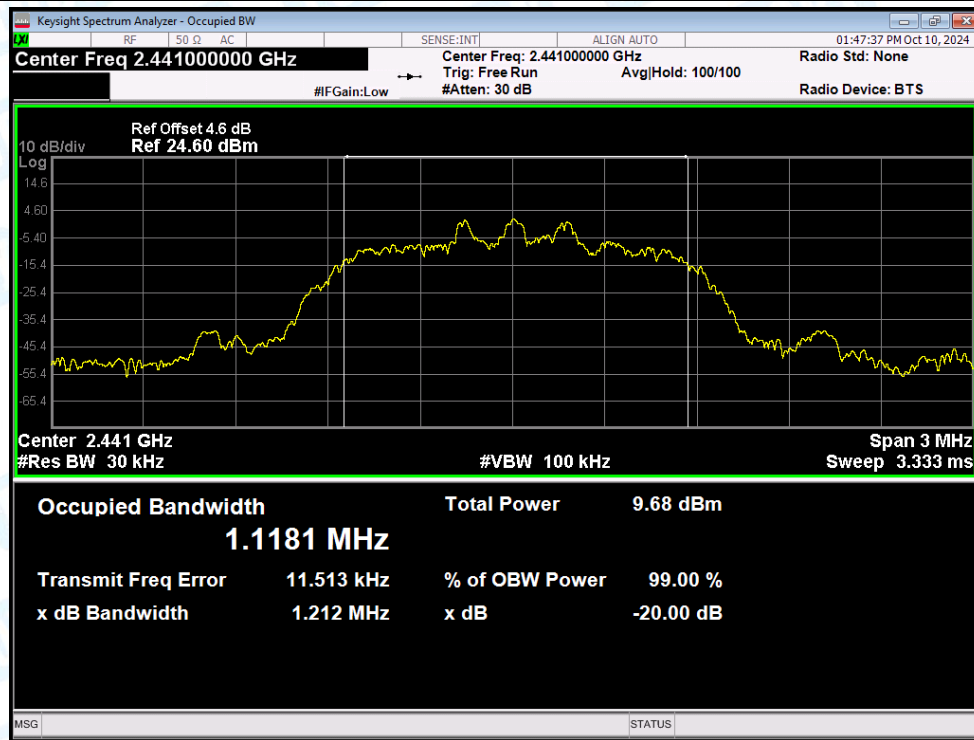
OBW NVNT 2-DH1 2480MHz Ant1

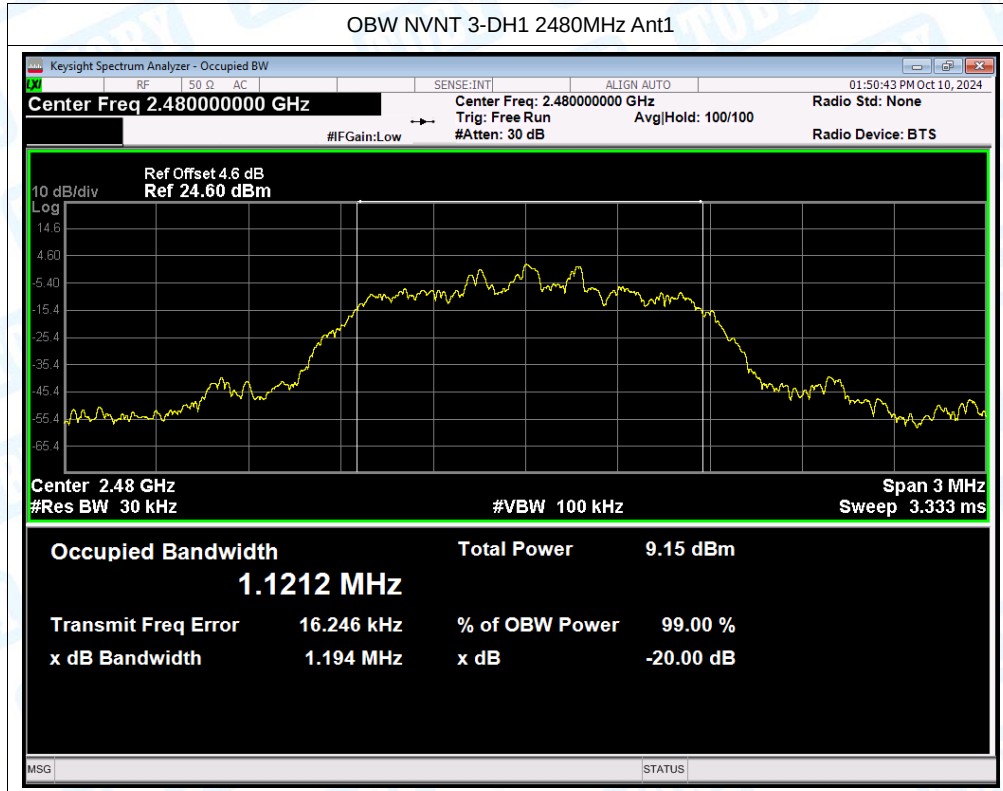


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



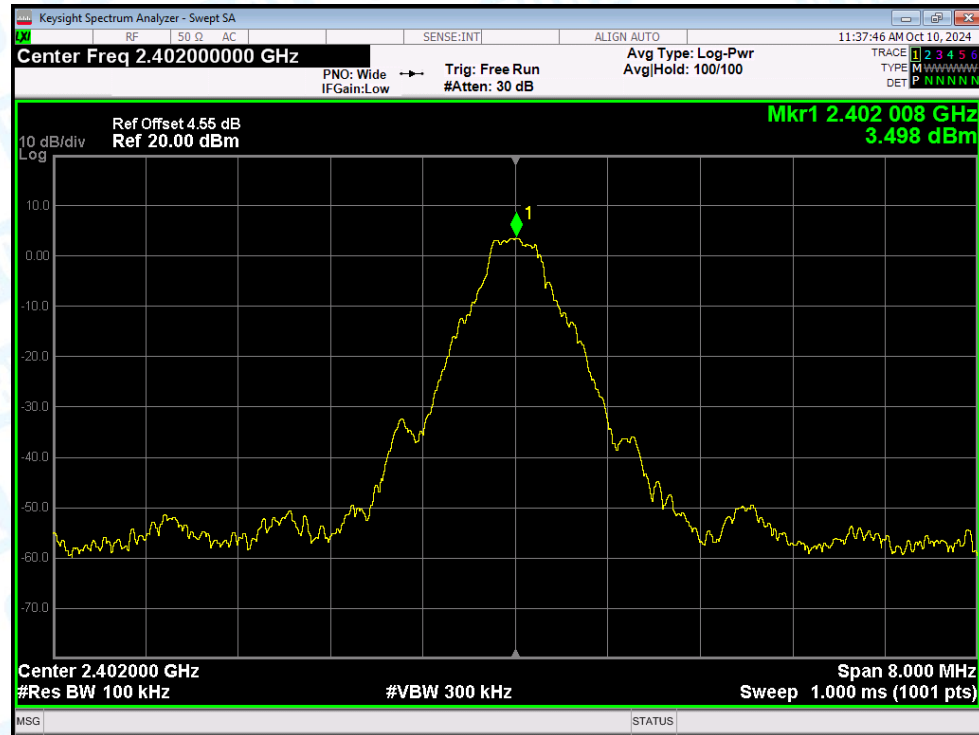


5.Band Edge

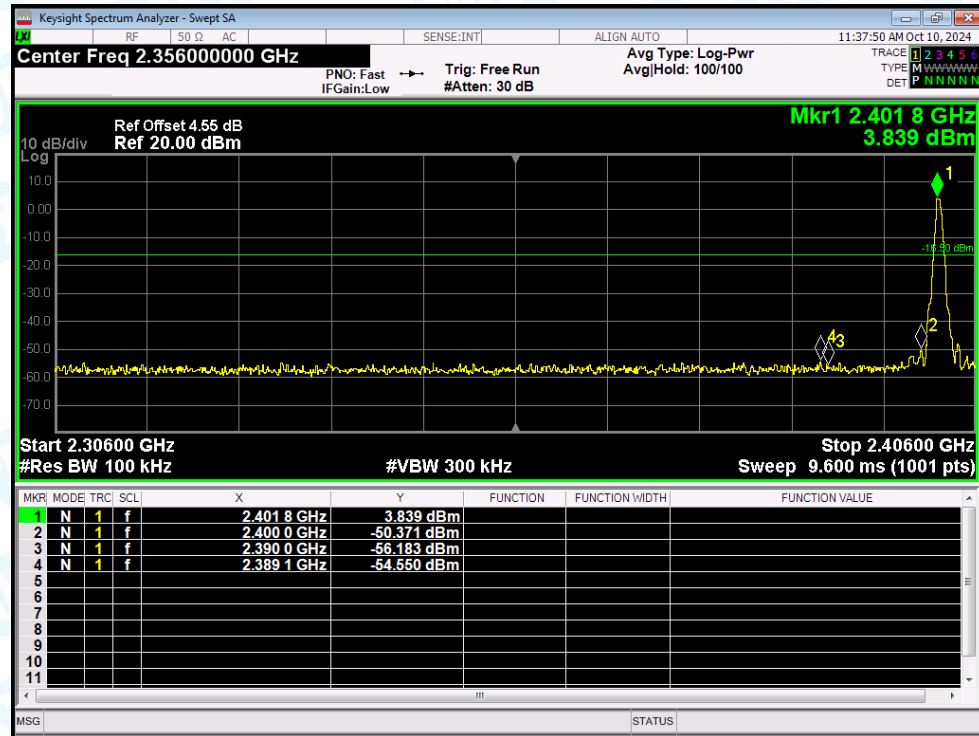
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-58.05	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-56.42	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-57.58	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-57.74	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-57.95	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-57.47	-20	Pass

Test Graphs

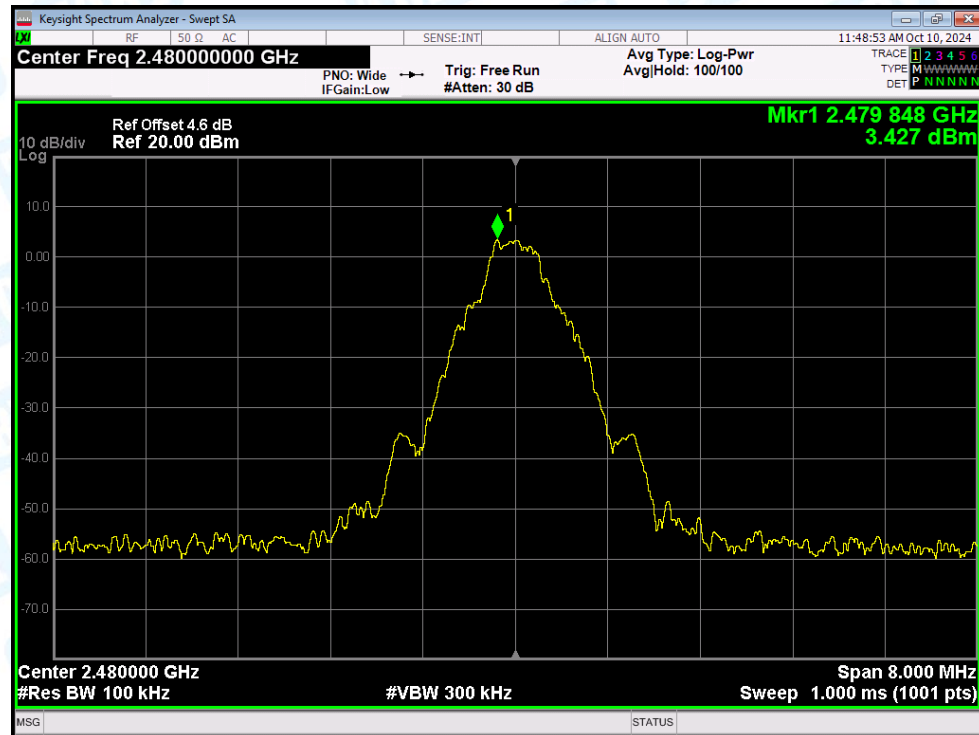
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



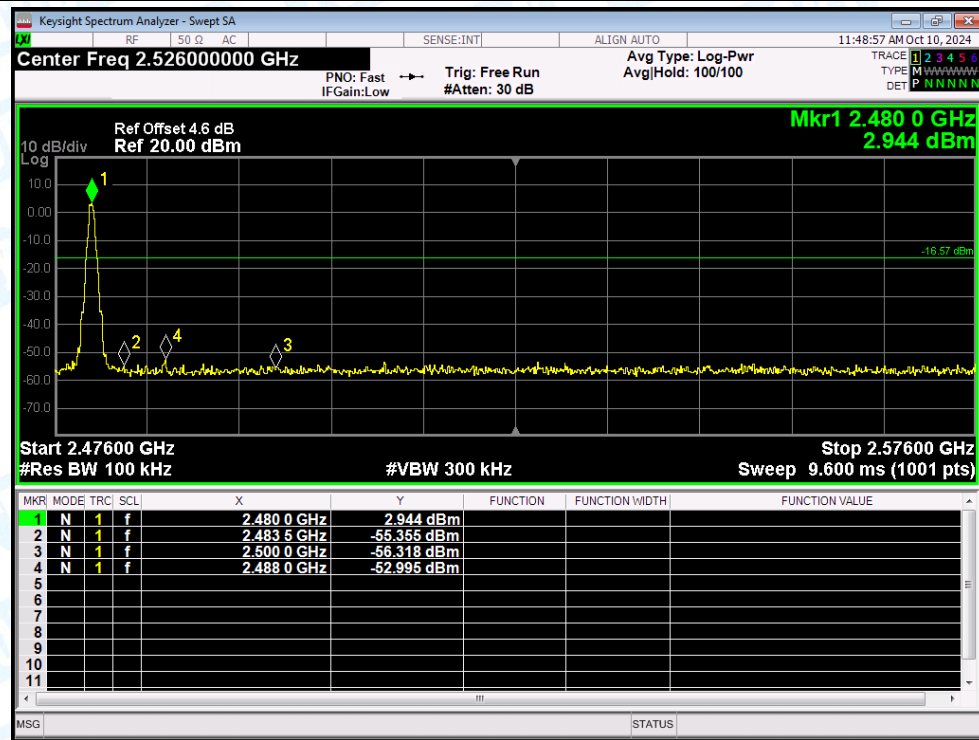
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



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



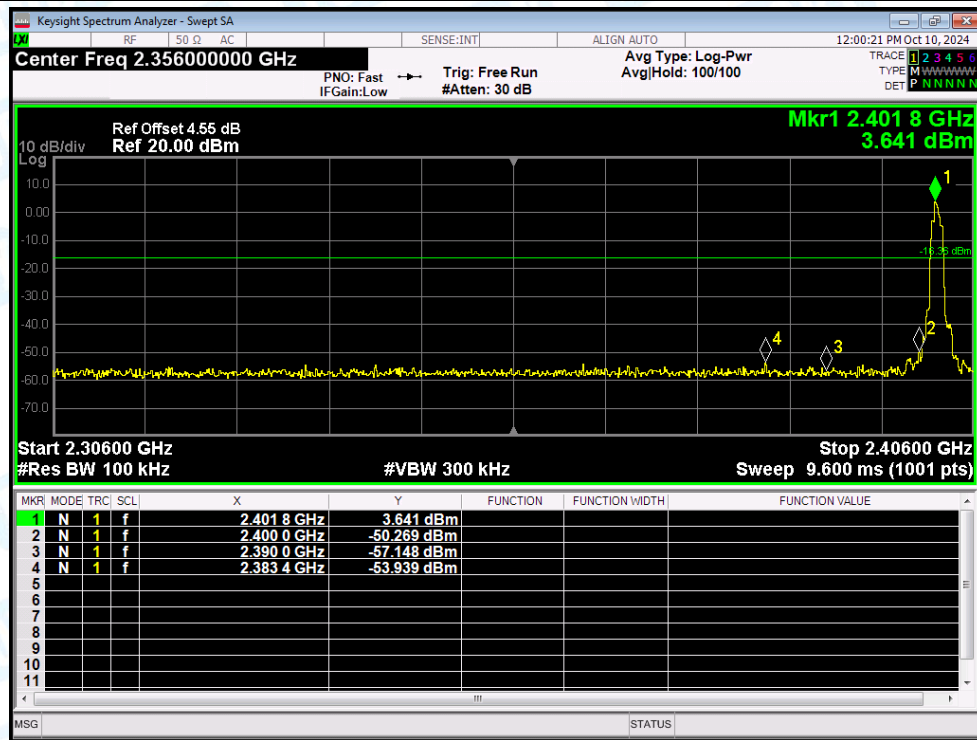
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



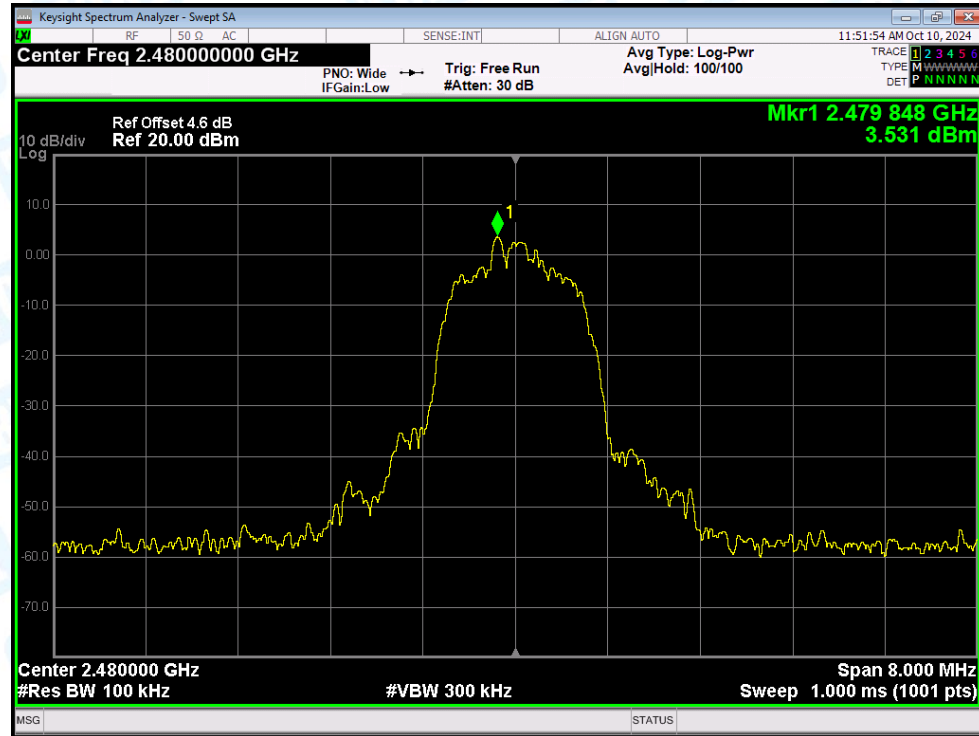
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



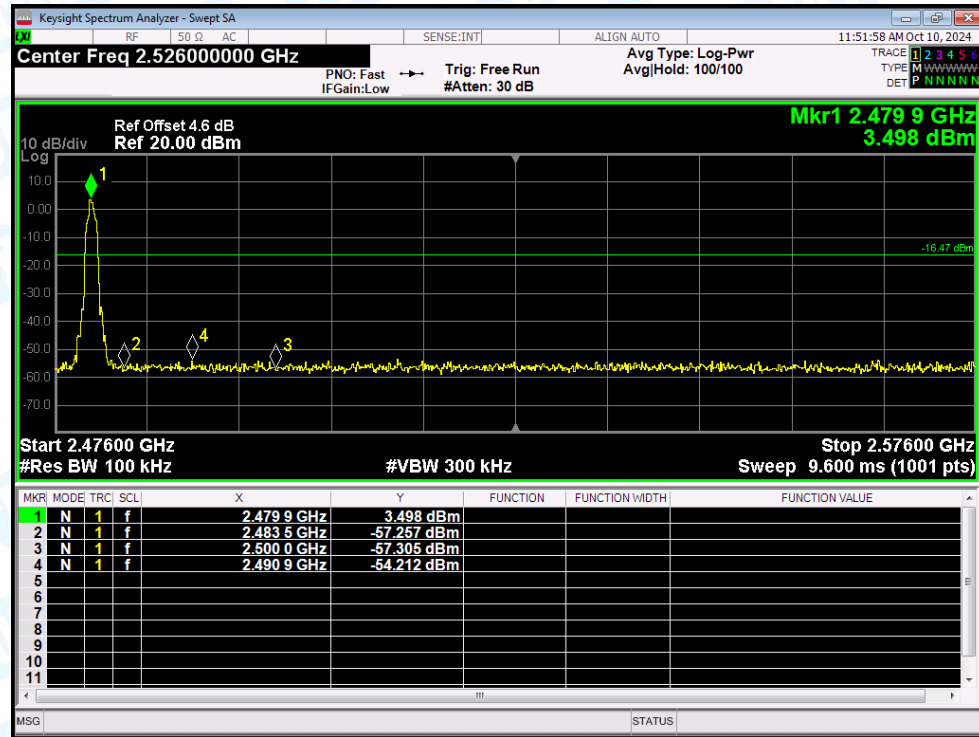
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



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



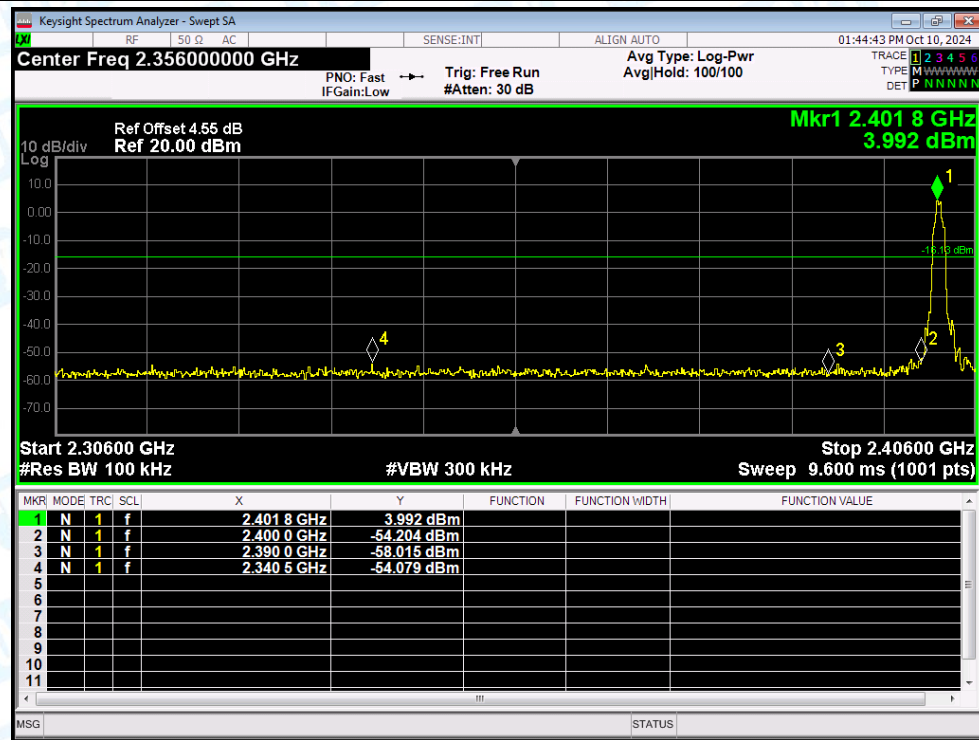
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



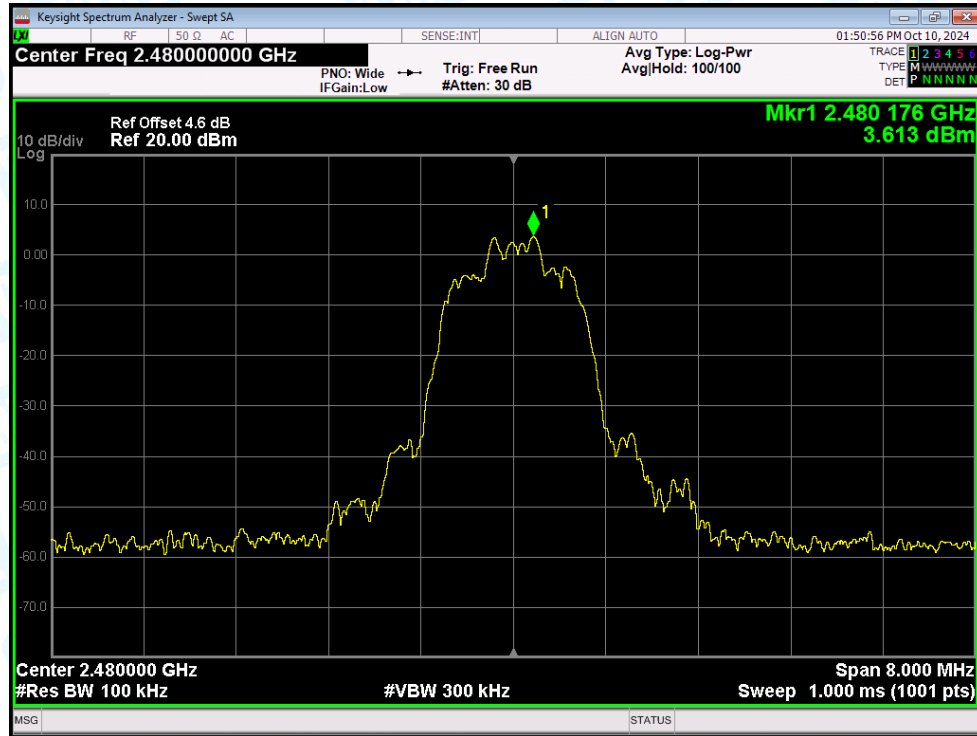
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



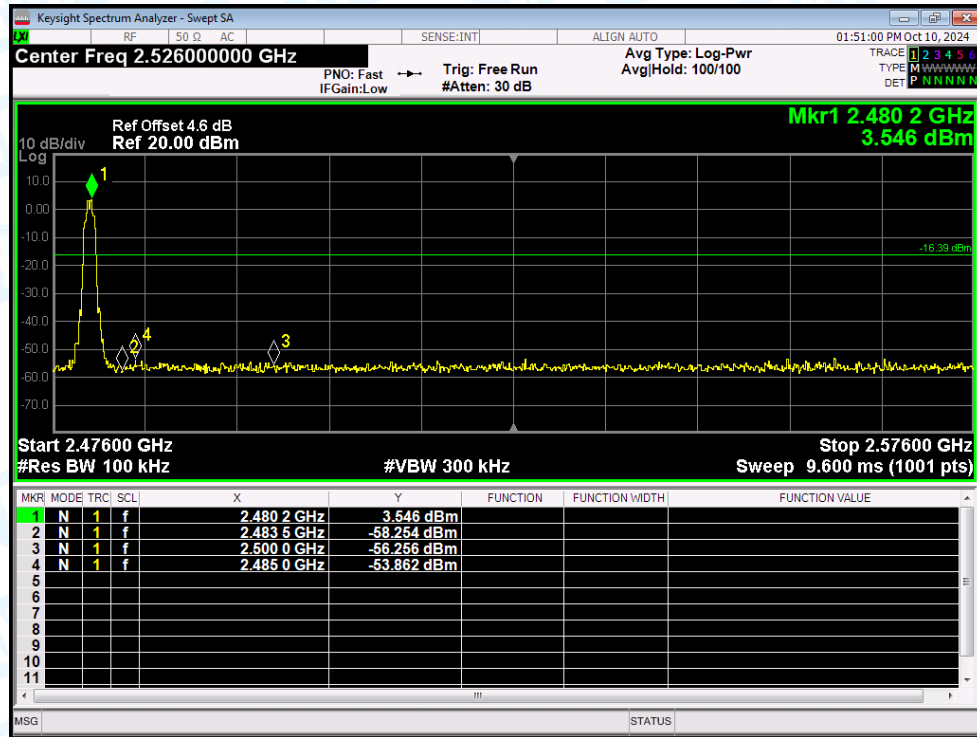
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



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



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

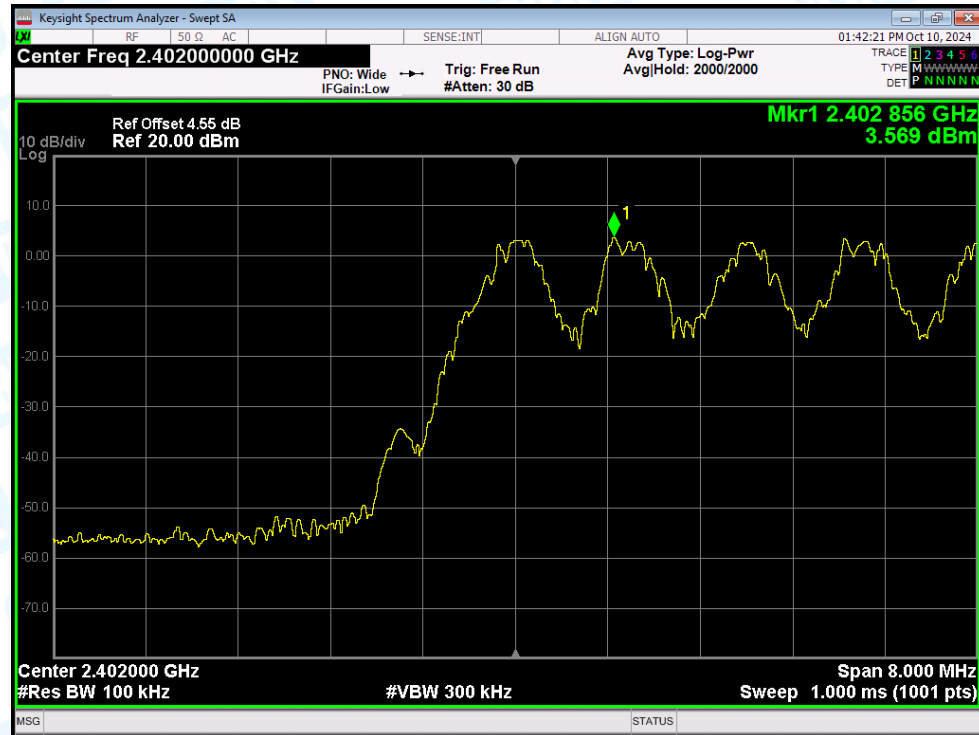


6. Band Edge(Hopping)

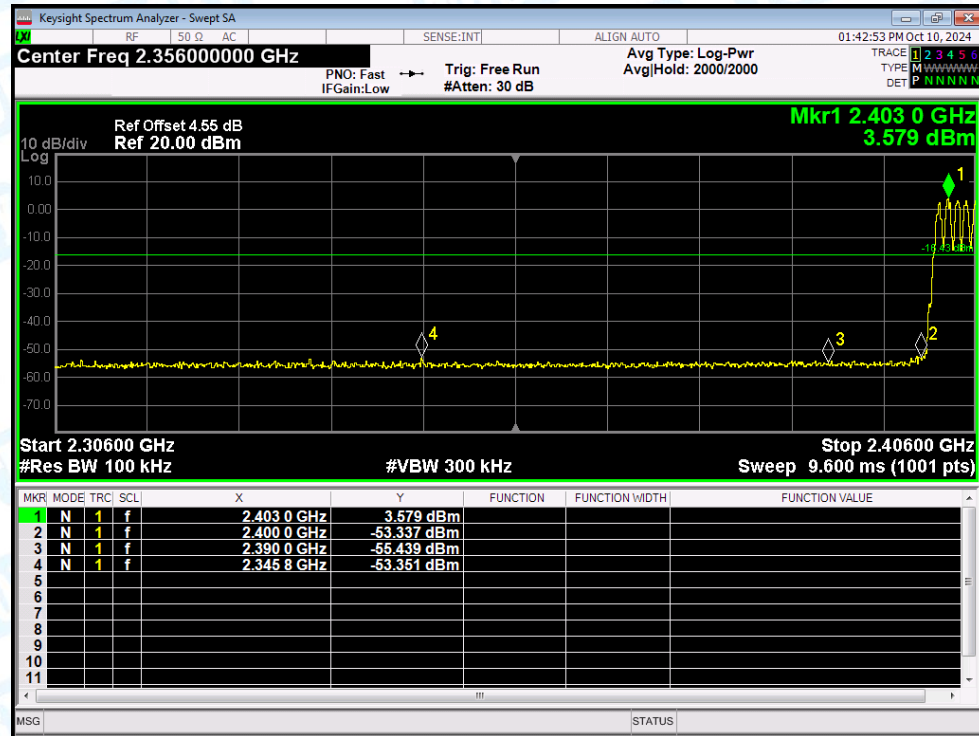
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-56.92	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-56.47	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-57.15	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-56.55	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-56.7	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-56.59	-20	Pass

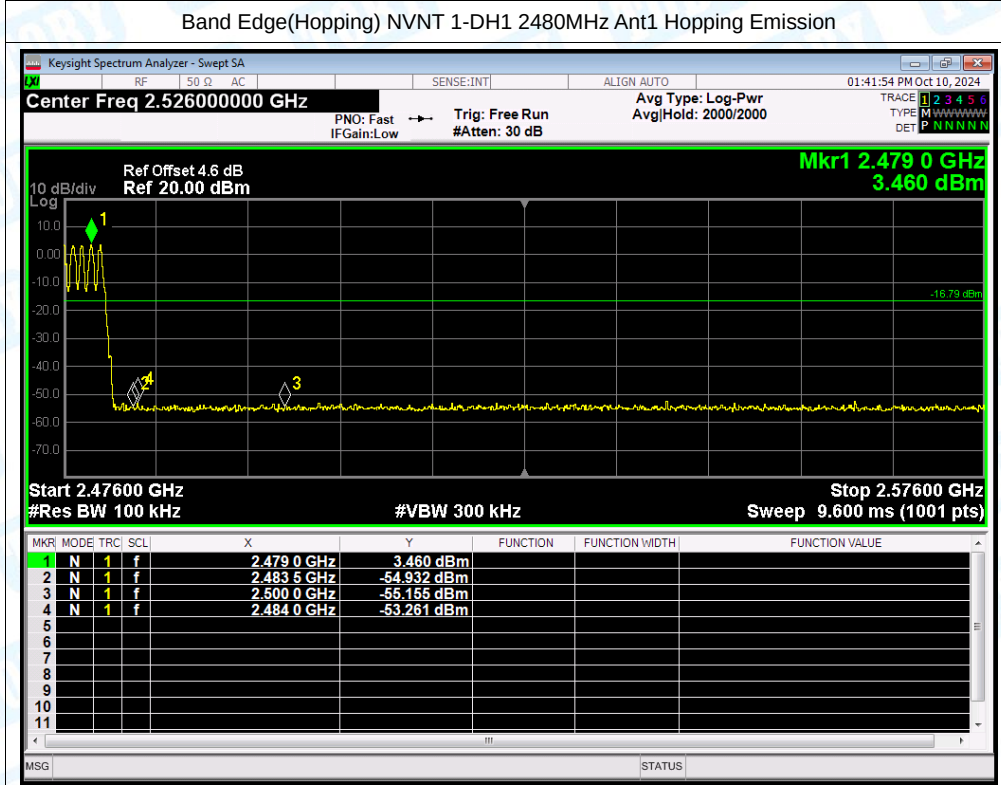
Test Graphs

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



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

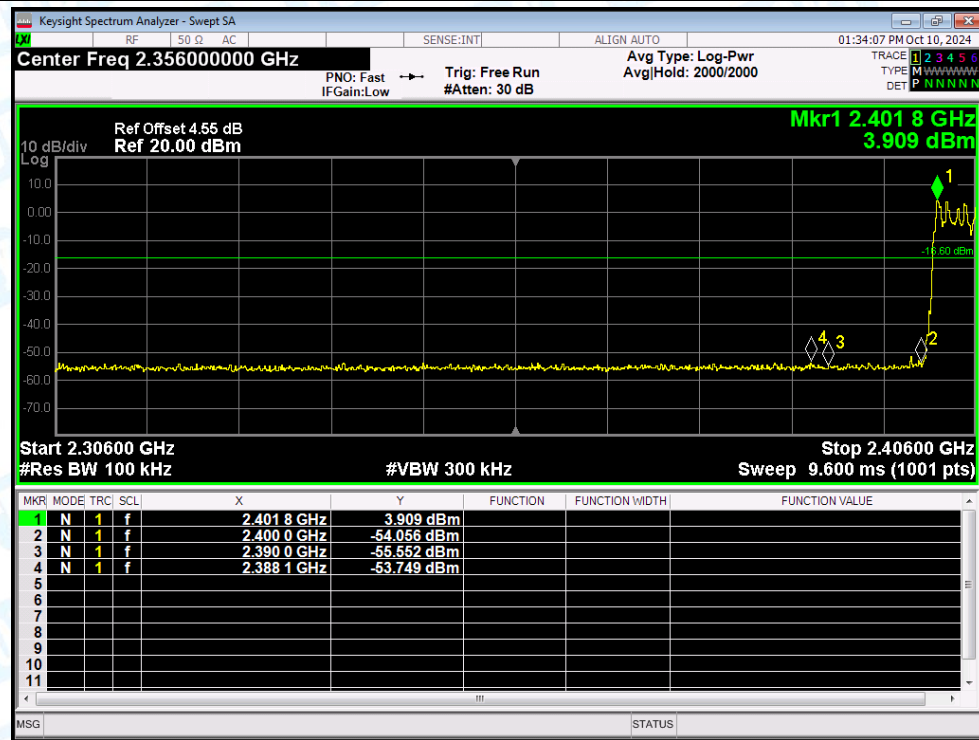




Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref



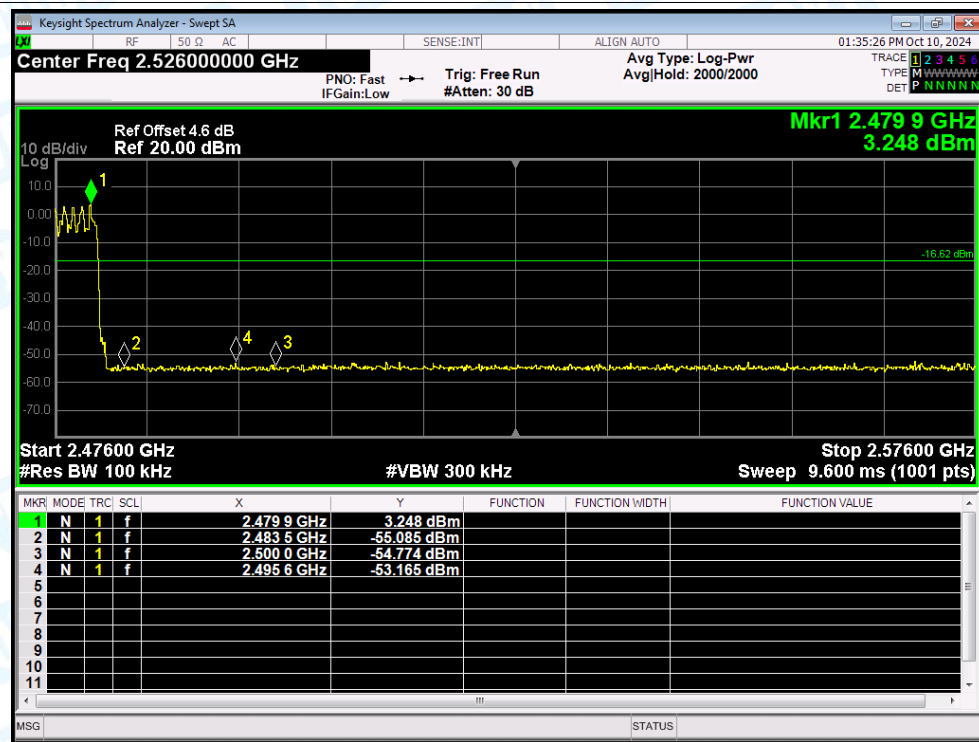
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



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



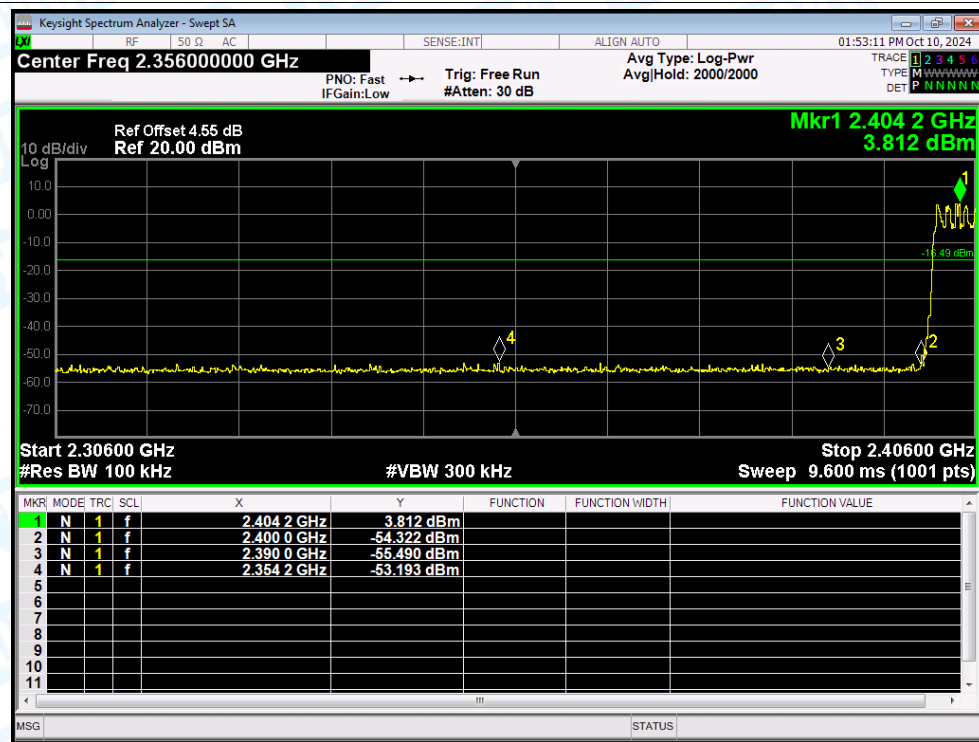
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission

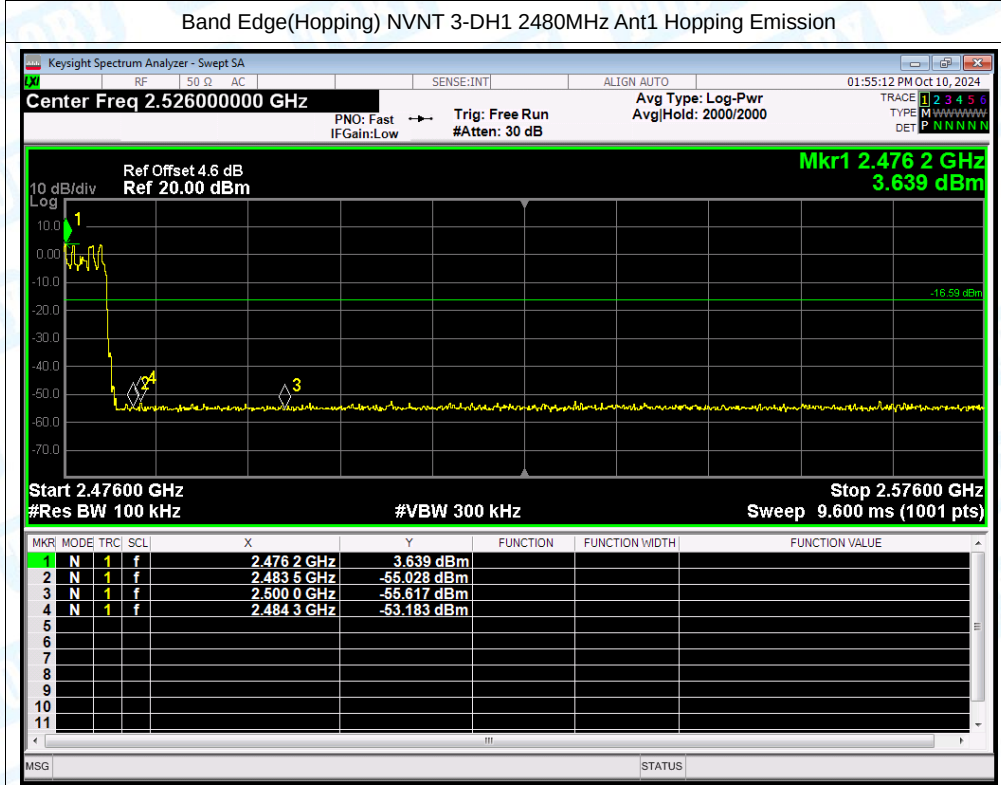


Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



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





7. Conducted RF Spurious Emission

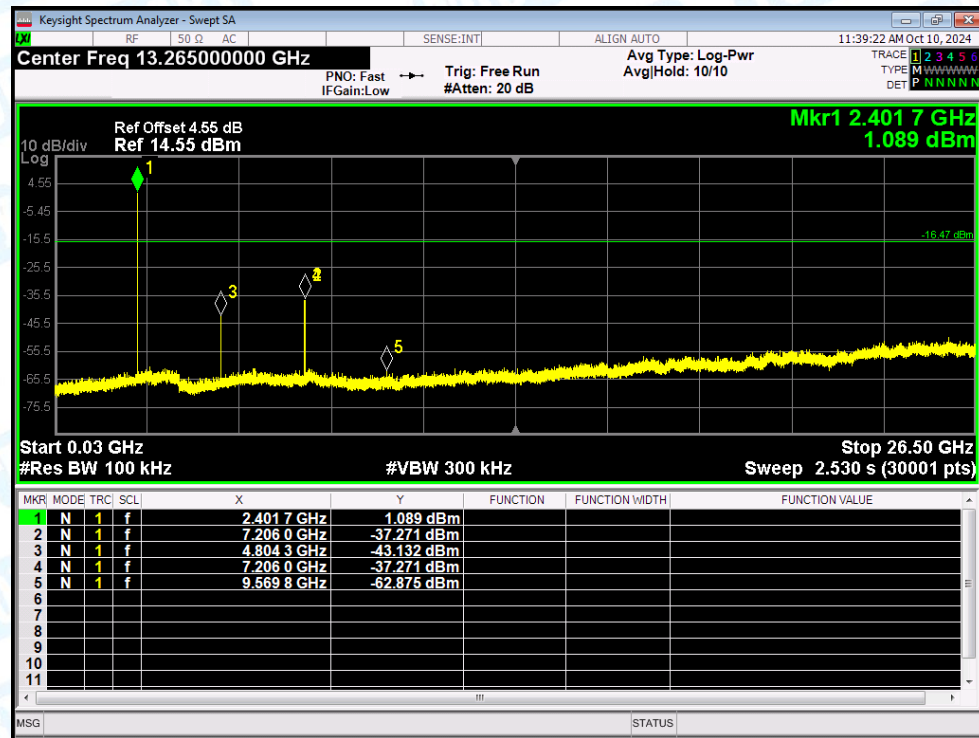
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-40.8	-20	Pass
NVNT	1-DH1	2441	Ant1	-41.67	-20	Pass
NVNT	1-DH1	2480	Ant1	-43.73	-20	Pass
NVNT	2-DH1	2402	Ant1	-42.81	-20	Pass
NVNT	2-DH1	2441	Ant1	-44.14	-20	Pass
NVNT	2-DH1	2480	Ant1	-46.22	-20	Pass
NVNT	3-DH1	2402	Ant1	-42.65	-20	Pass
NVNT	3-DH1	2441	Ant1	-38.32	-20	Pass
NVNT	3-DH1	2480	Ant1	-42.75	-20	Pass

Test Graphs

Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



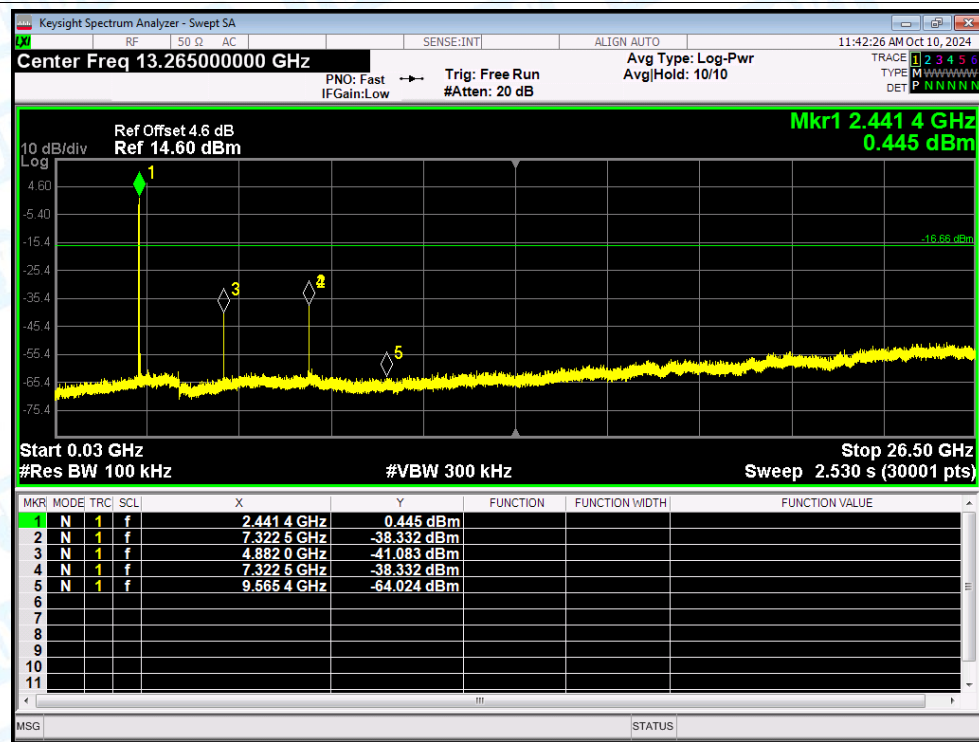
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



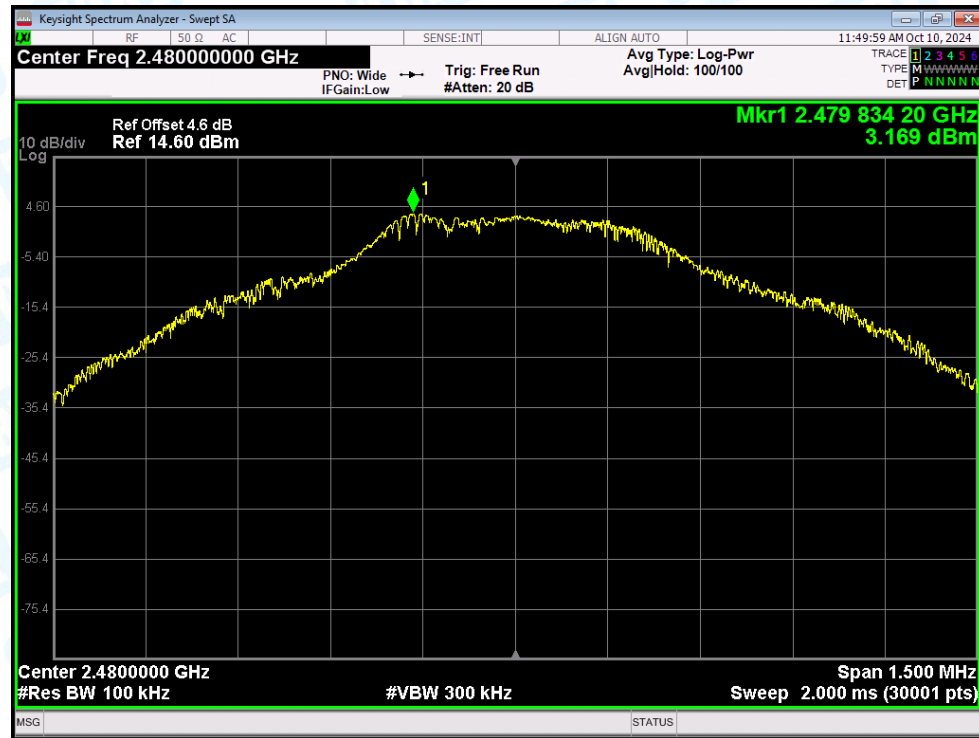
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



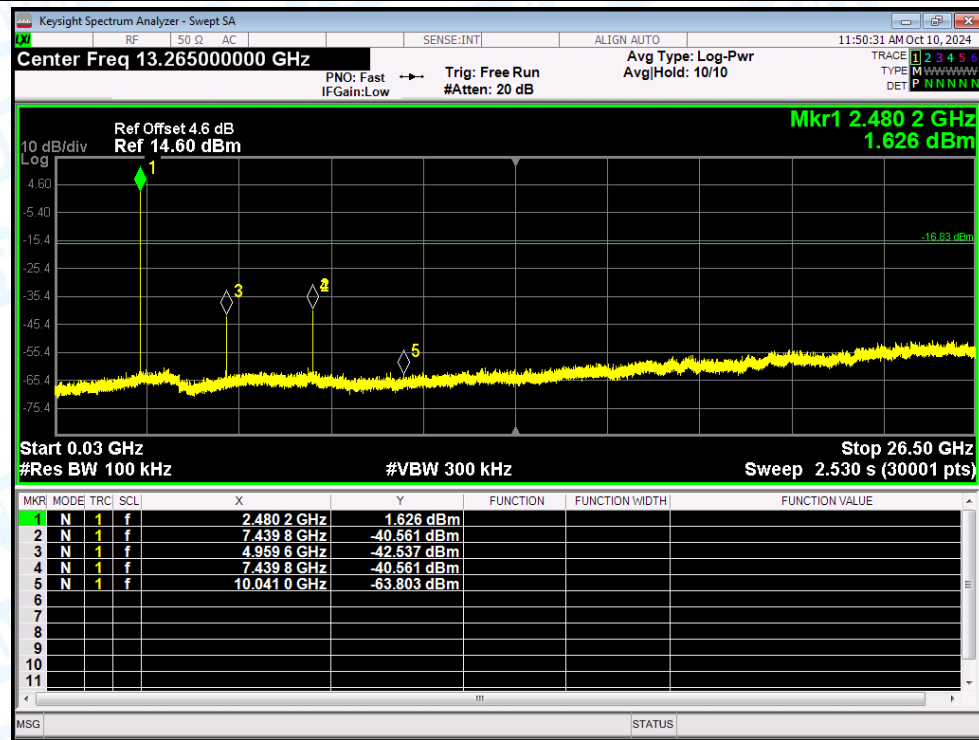
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



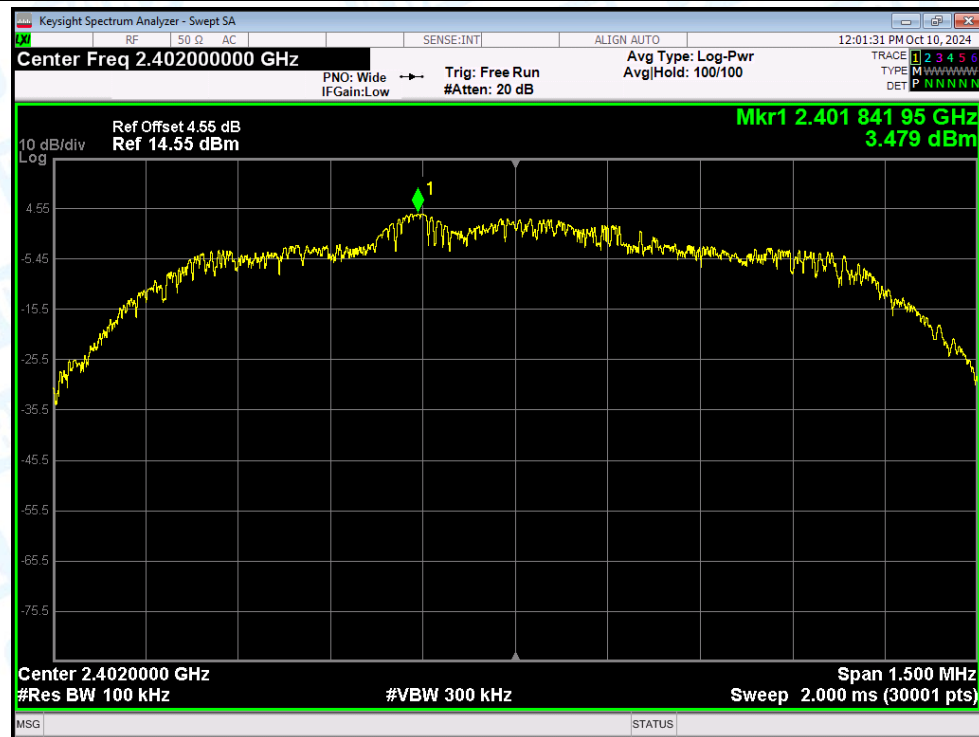
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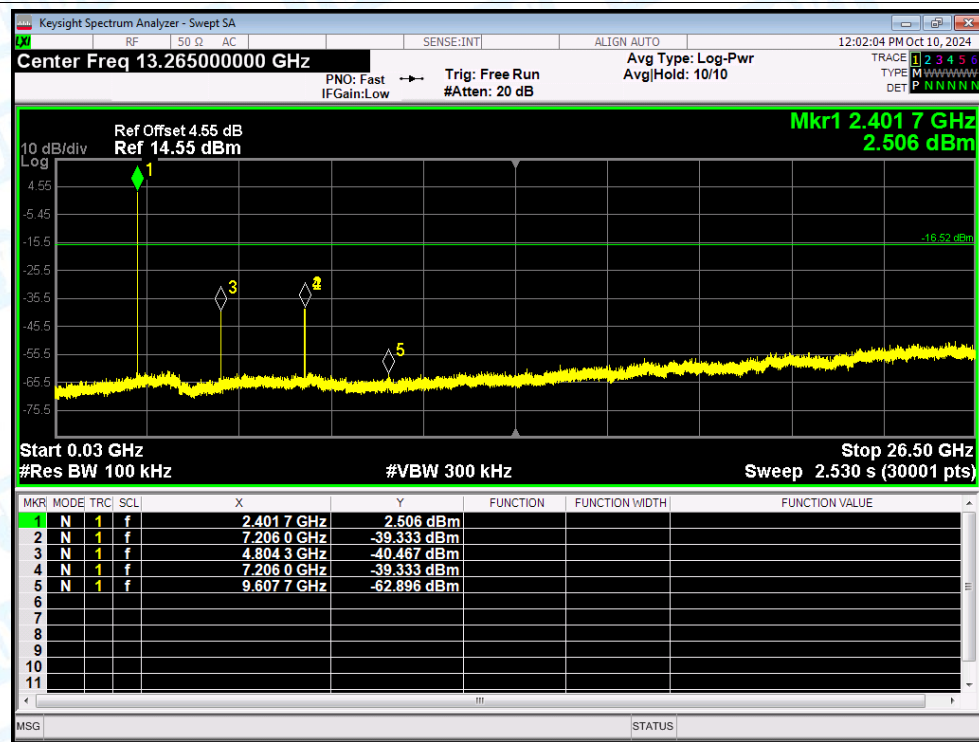
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



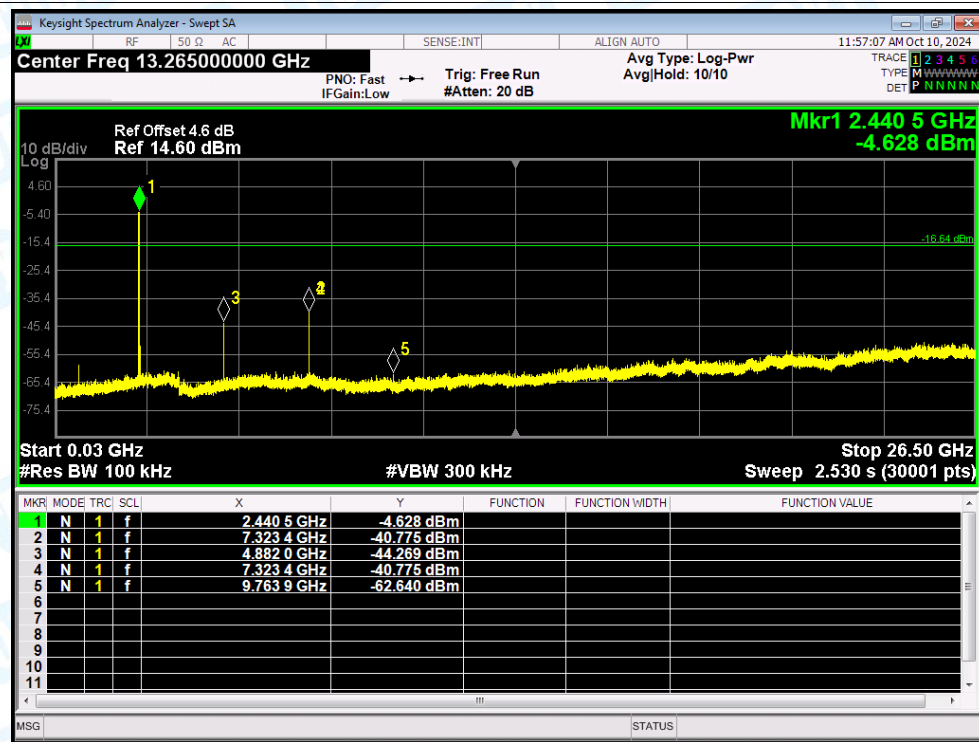
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



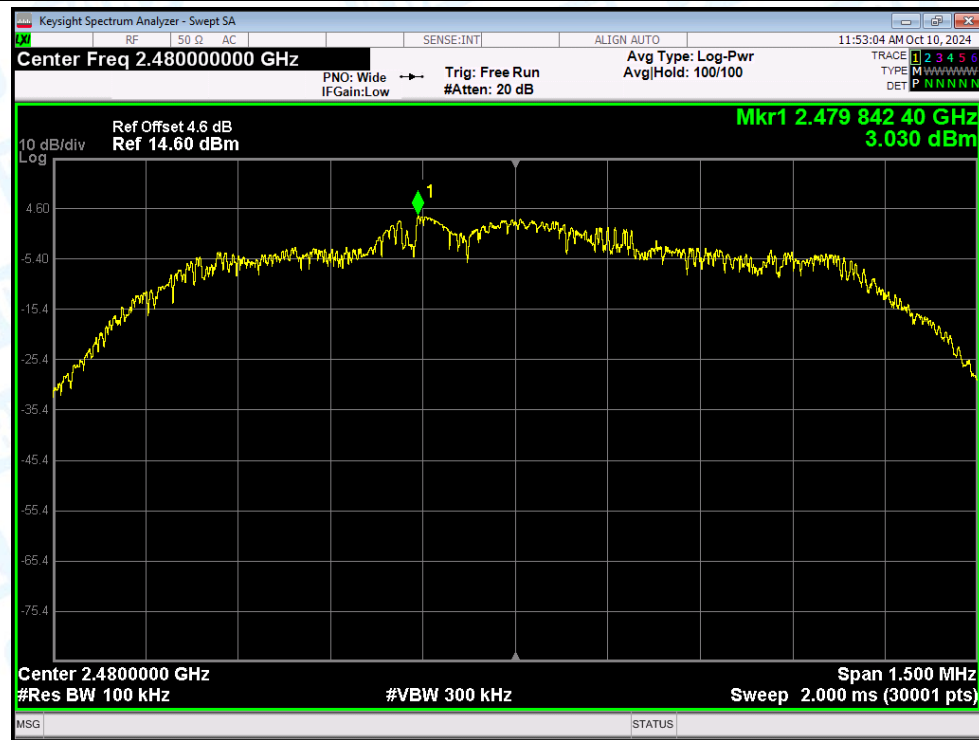
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



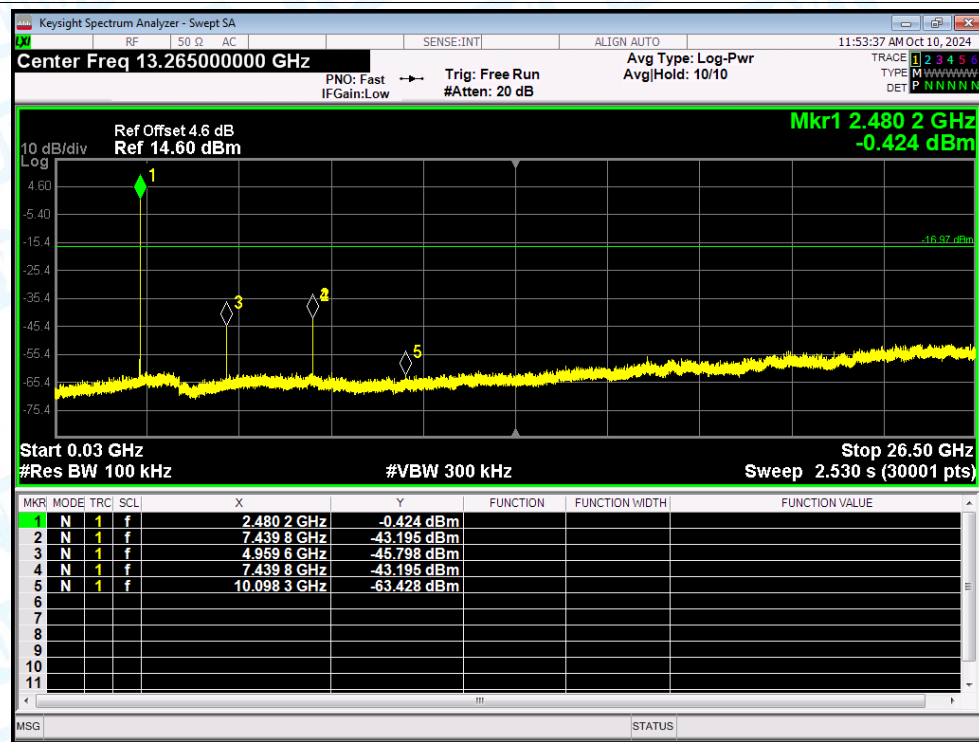
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



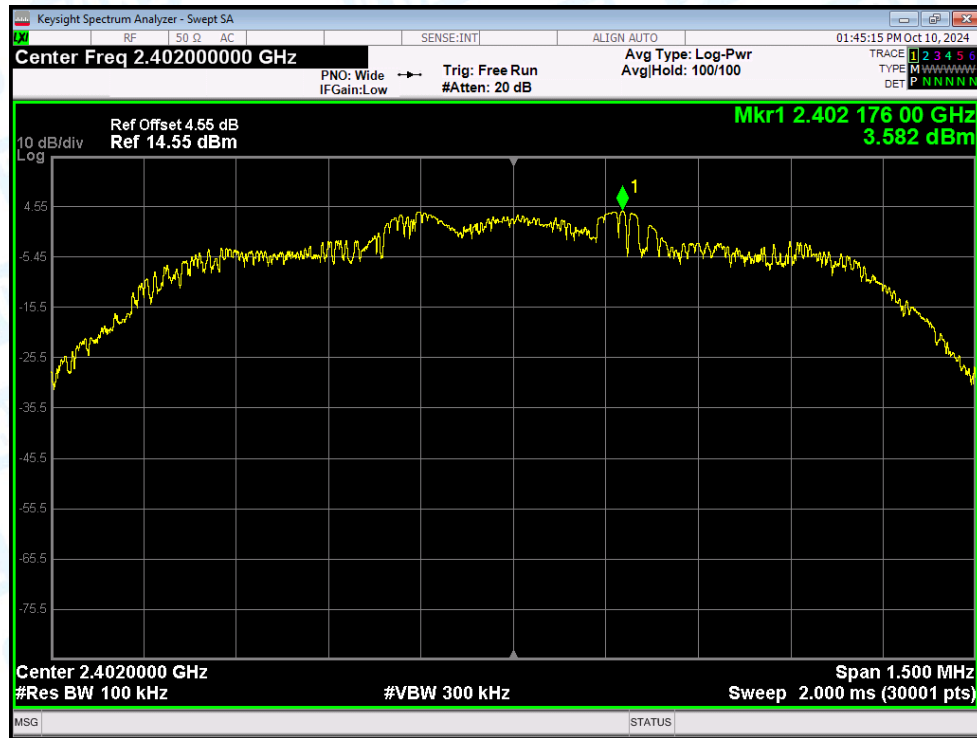
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



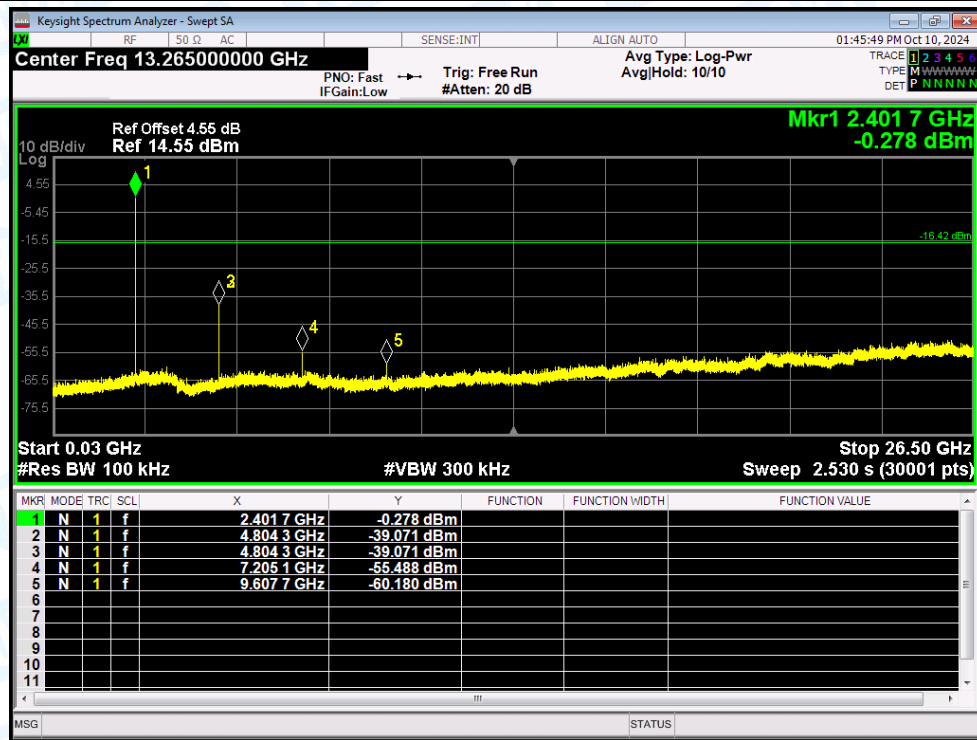
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



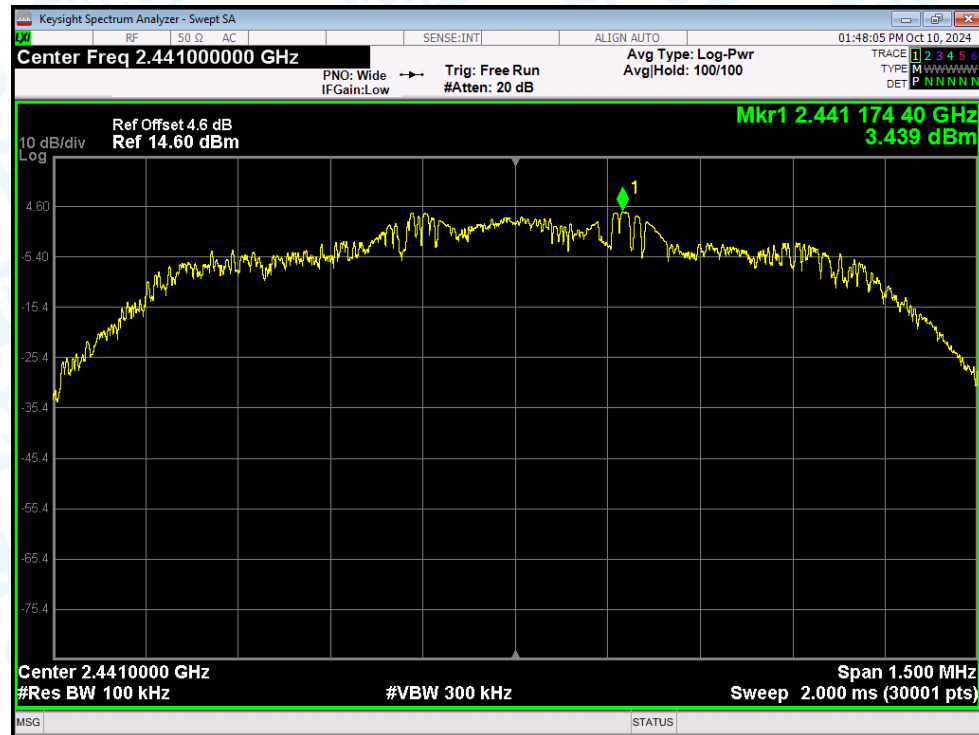
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



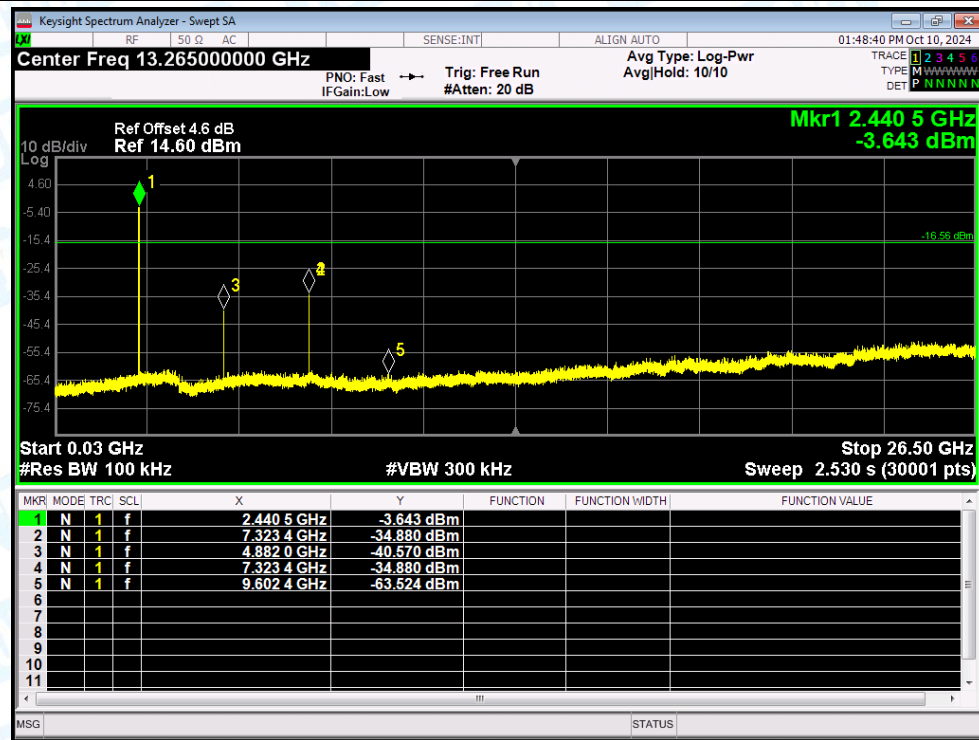
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



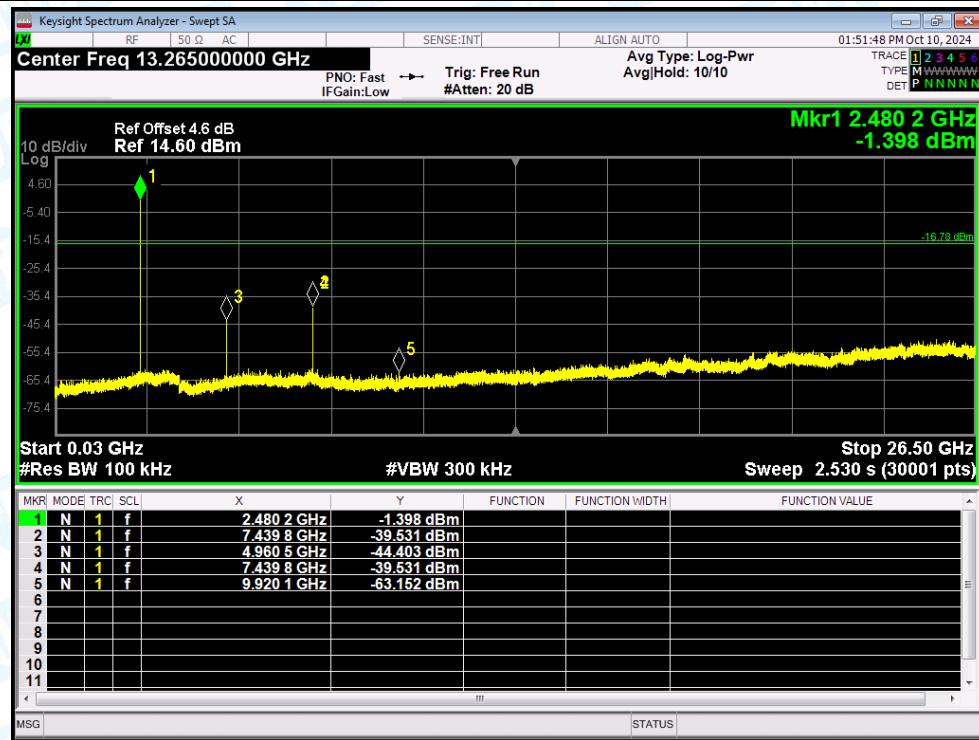
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

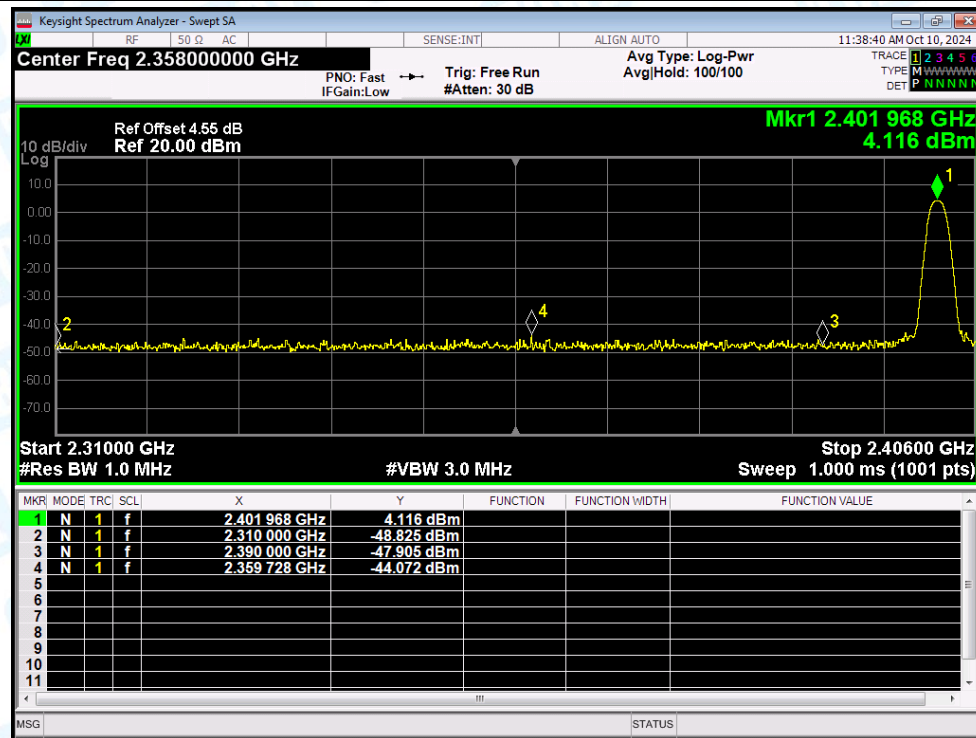


8.Restrict Band

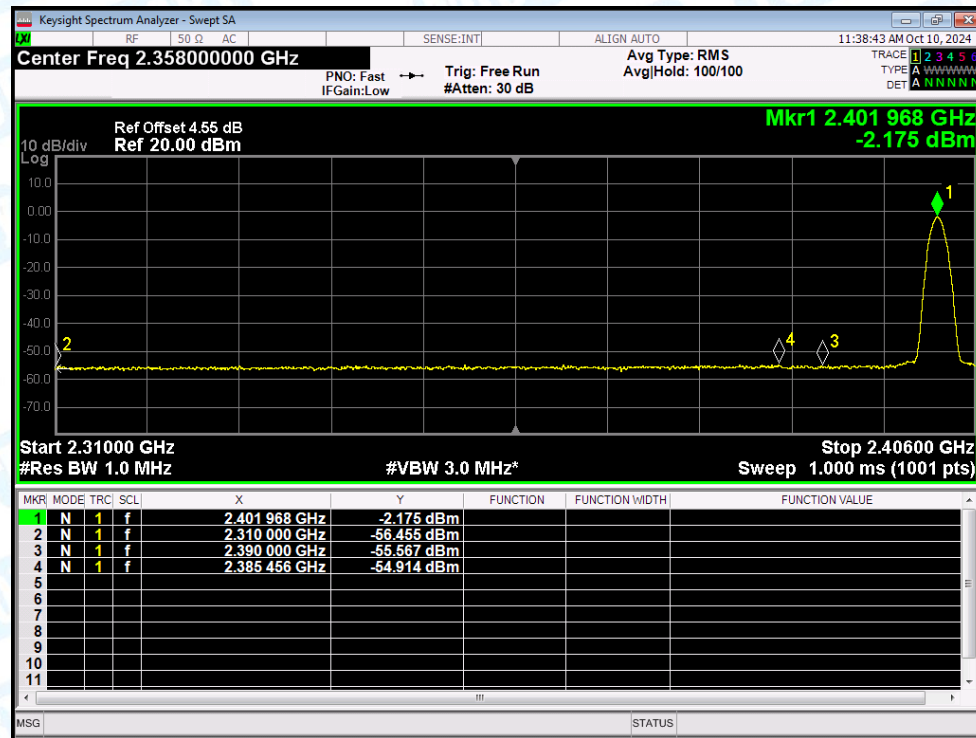
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-48.83	2	-	48.43	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.46	2	5.29	46.09	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2359.728	-44.07	2	-	53.19	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2385.456	-54.91	2	5.29	47.64	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-47.91	2	-	49.35	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-55.57	2	5.29	46.98	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-46.15	2	-	51.11	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-54.98	2	5.17	47.45	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.68	-44.47	2	-	52.79	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.68	-54.27	2	5.17	48.16	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-44.66	2	-	52.6	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-55.25	2	5.17	47.18	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-47.39	2	-	49.87	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.24	2	5.06	46.08	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2361.456	-44.71	2	-	52.55	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2365.104	-55.1	2	5.06	47.22	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-48.62	2	-	48.64	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-55.53	2	5.06	46.79	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-46.46	2	-	50.8	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-54.89	2	5.17	47.54	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.608	-44.03	2	-	53.23	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2499.112	-54.31	2	5.17	48.12	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-47.44	2	-	49.82	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-54.82	2	5.17	47.61	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-48.49	2	-	48.77	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.09	2	5.17	46.34	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2354.544	-43.96	2	-	53.3	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2378.064	-54.98	2	5.17	47.45	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-48.22	2	-	49.04	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-55.48	2	5.17	46.95	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-46.94	2	-	50.32	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-55.04	2	5.17	47.39	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2492.44	-43.49	2	-	53.77	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2485.216	-54.47	2	5.17	47.96	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-47.53	2	-	49.73	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-54.91	2	5.17	47.52	Average	54	Pass

Test Graphs

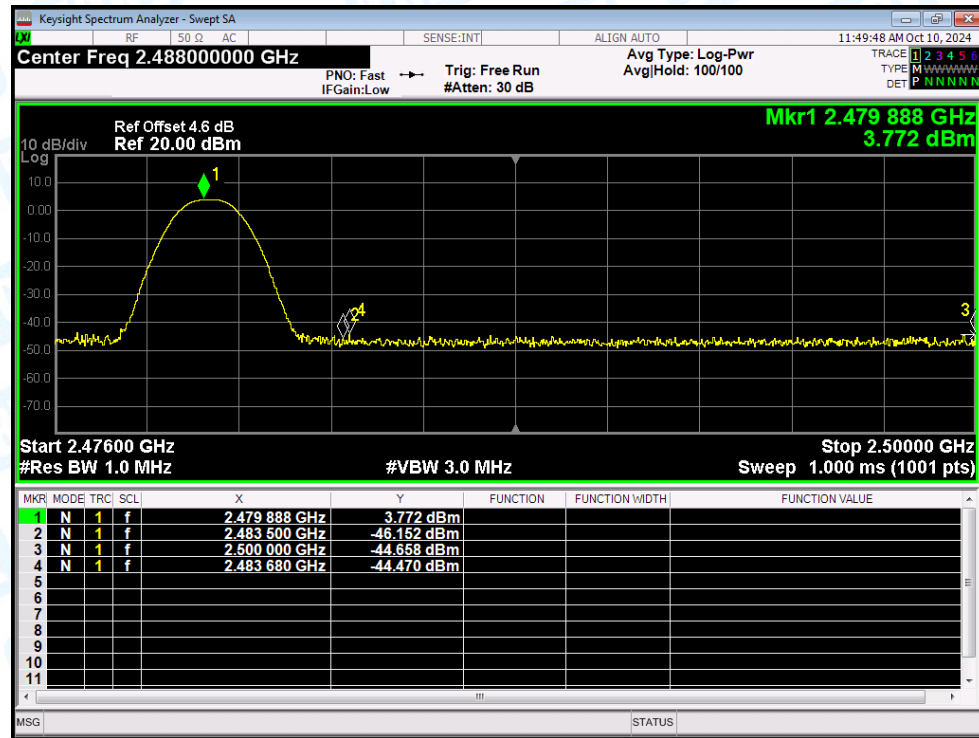
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



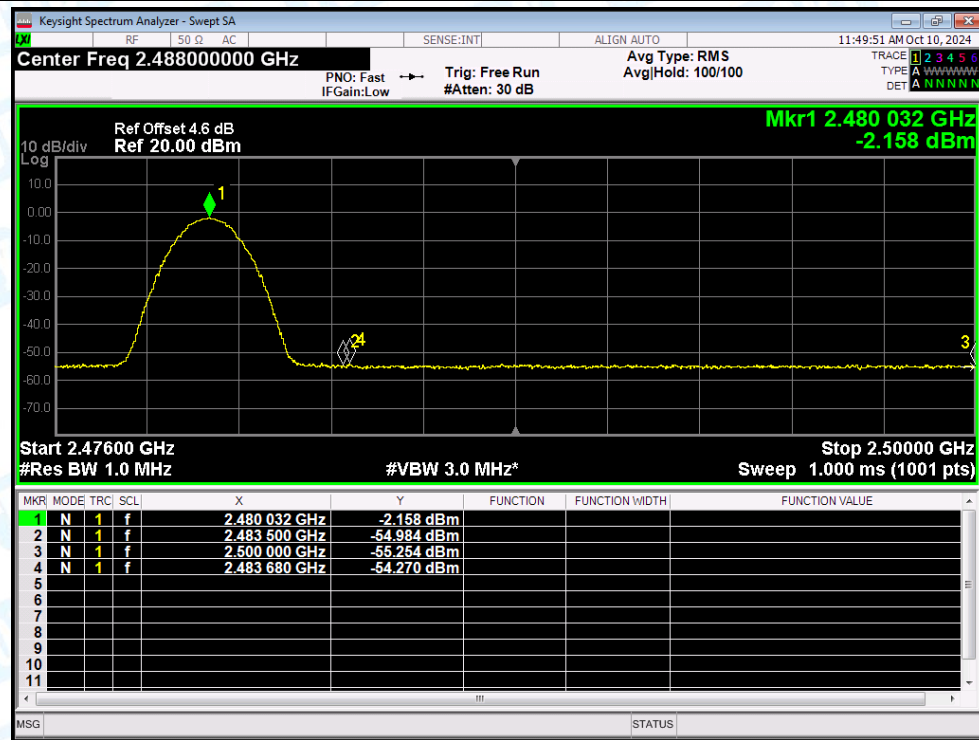
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



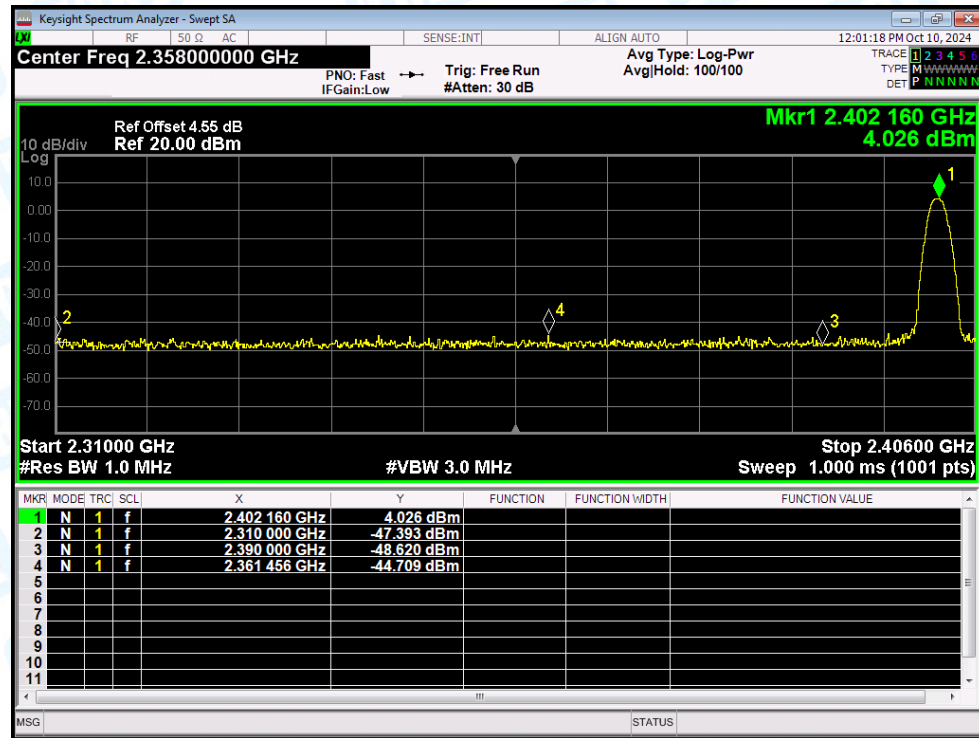
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



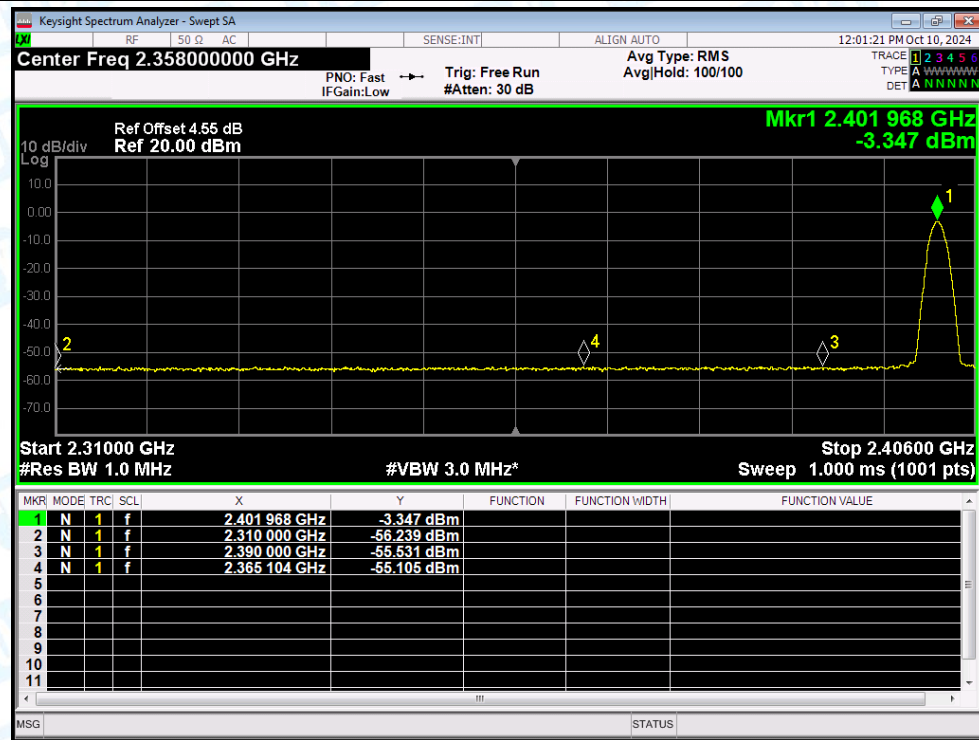
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



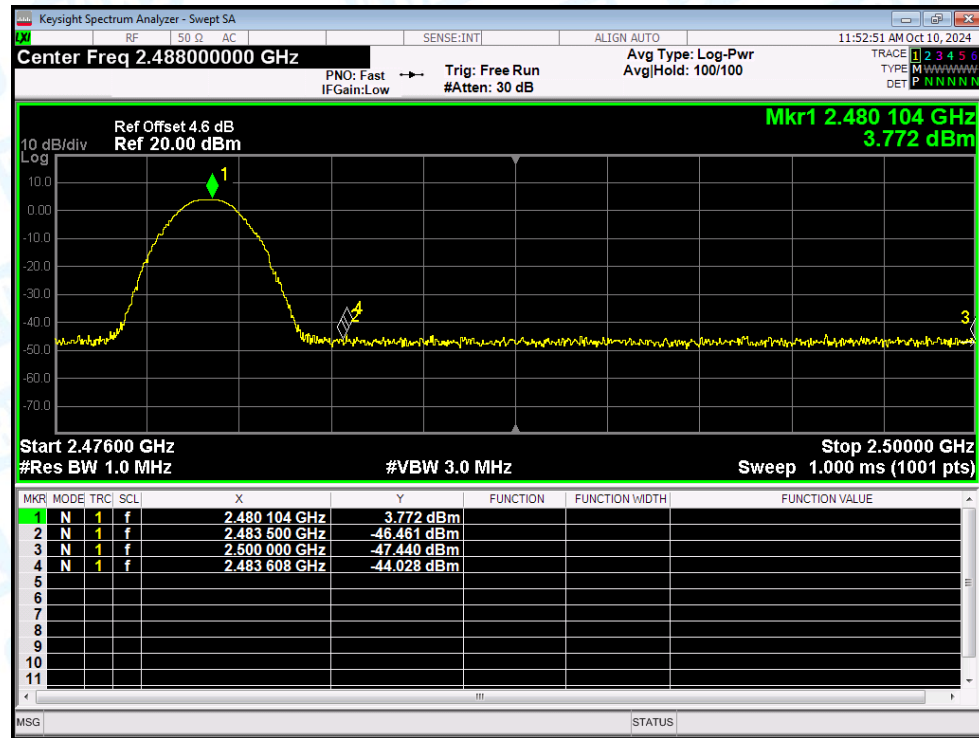
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



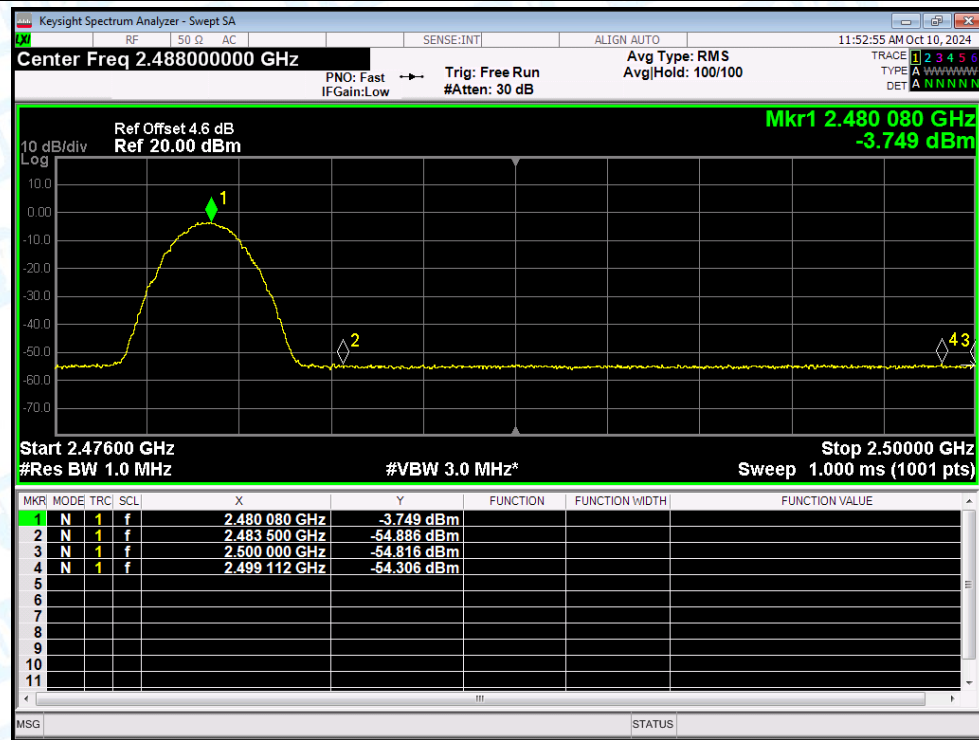
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



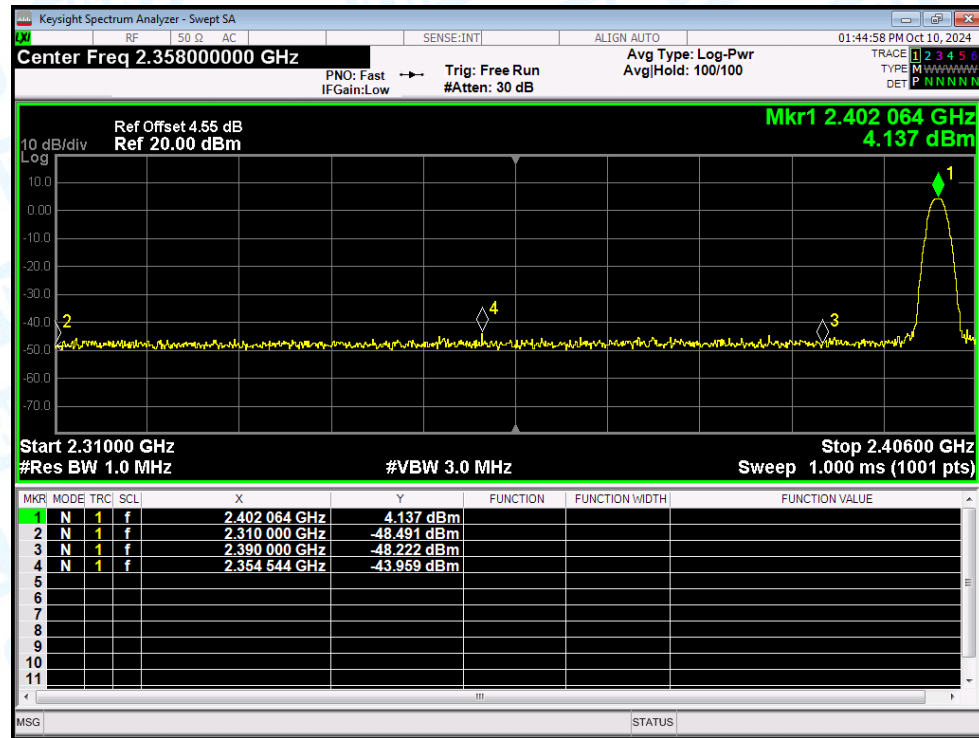
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



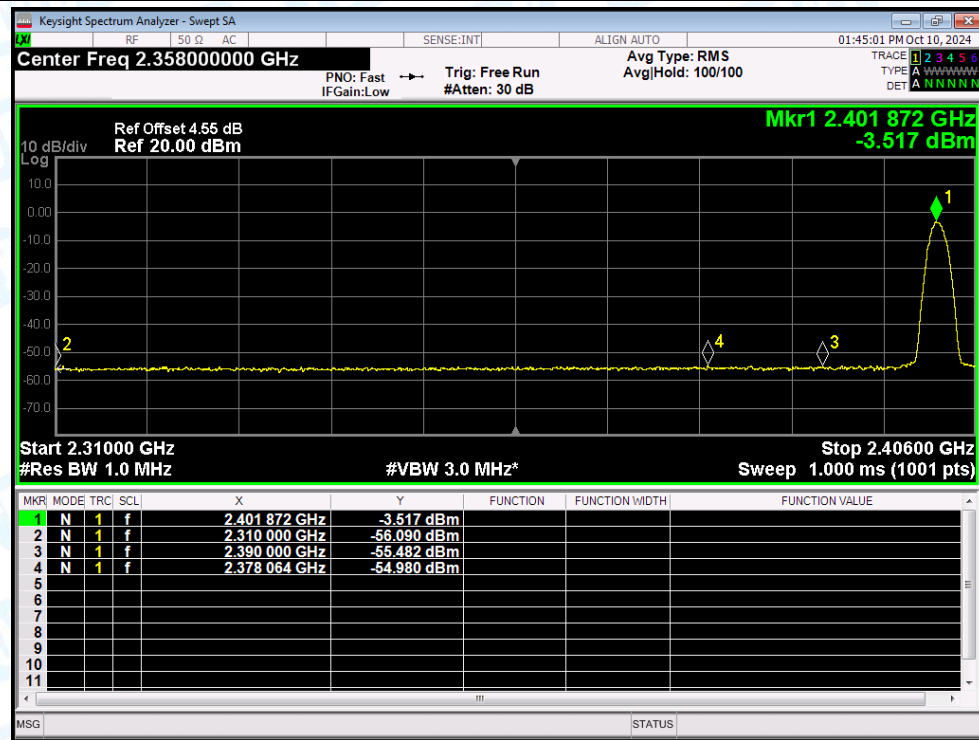
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



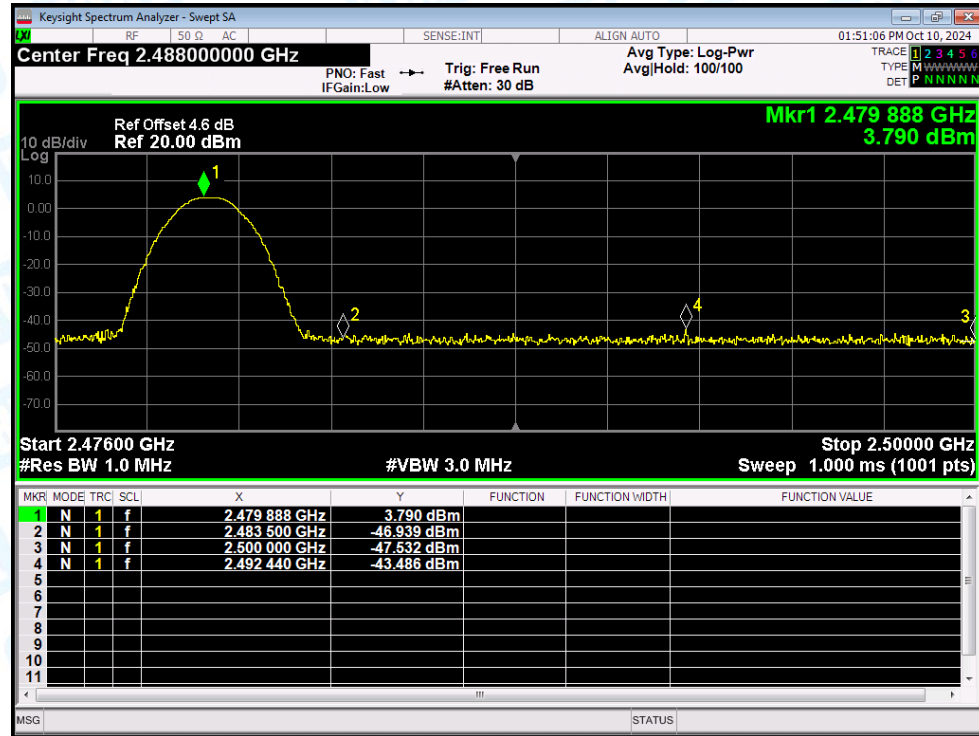
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



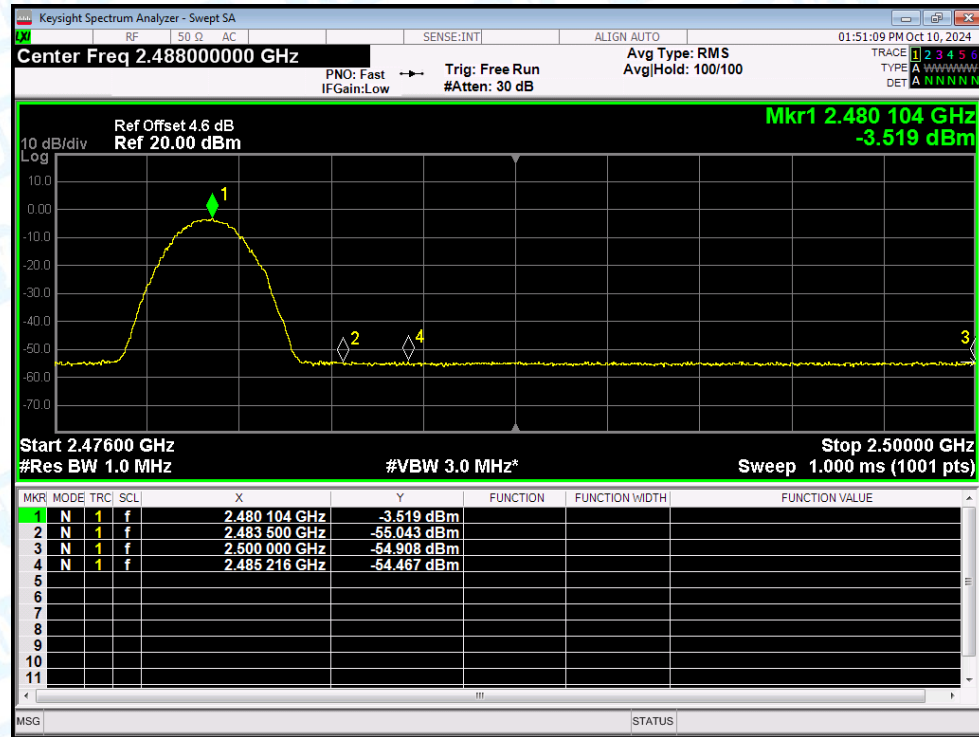
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

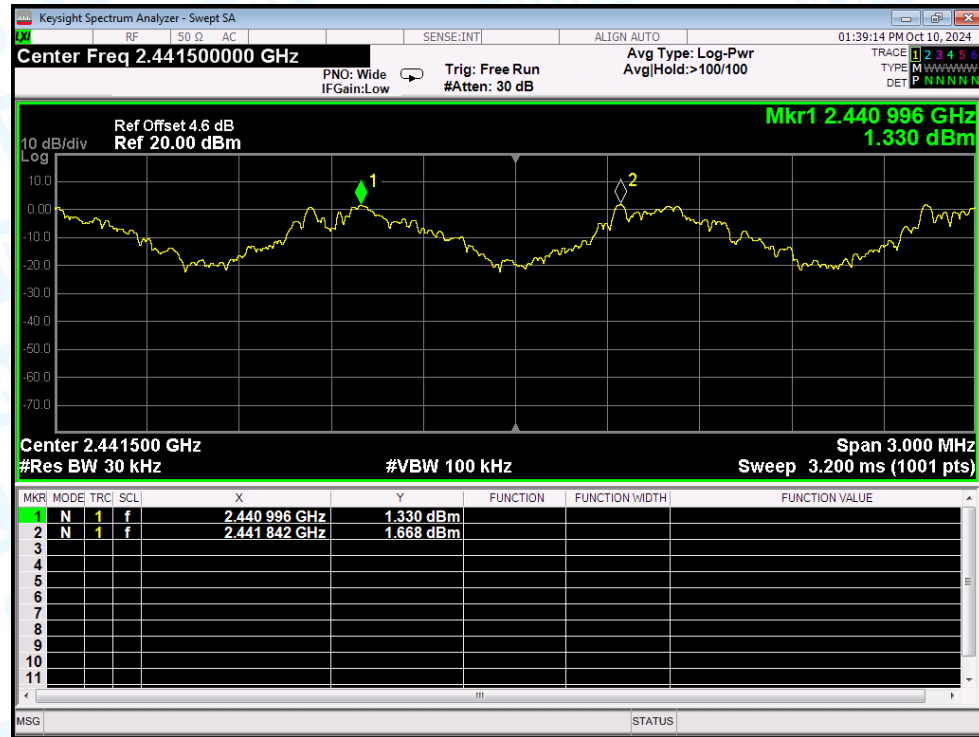


9.Carrier Frequencies Separation

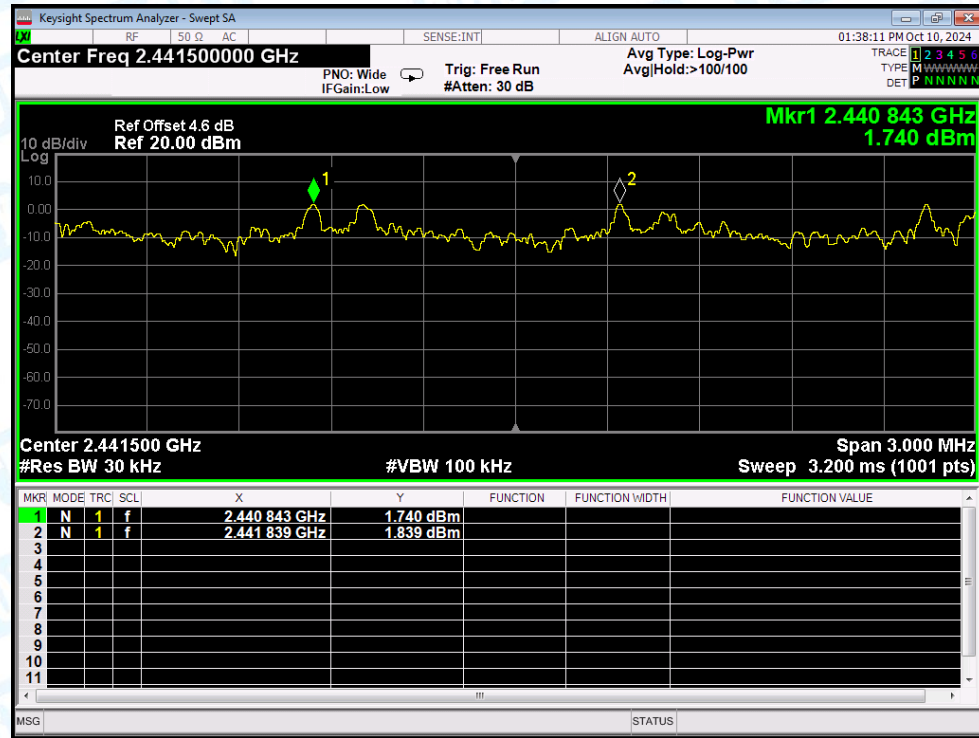
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.996	2441.842	0.846	0.627	Pass
NVNT	2-DH1	Ant1	2440.843	2441.839	0.996	0.807	Pass
NVNT	3-DH1	Ant1	2440.84	2441.998	1.158	0.025	Pass

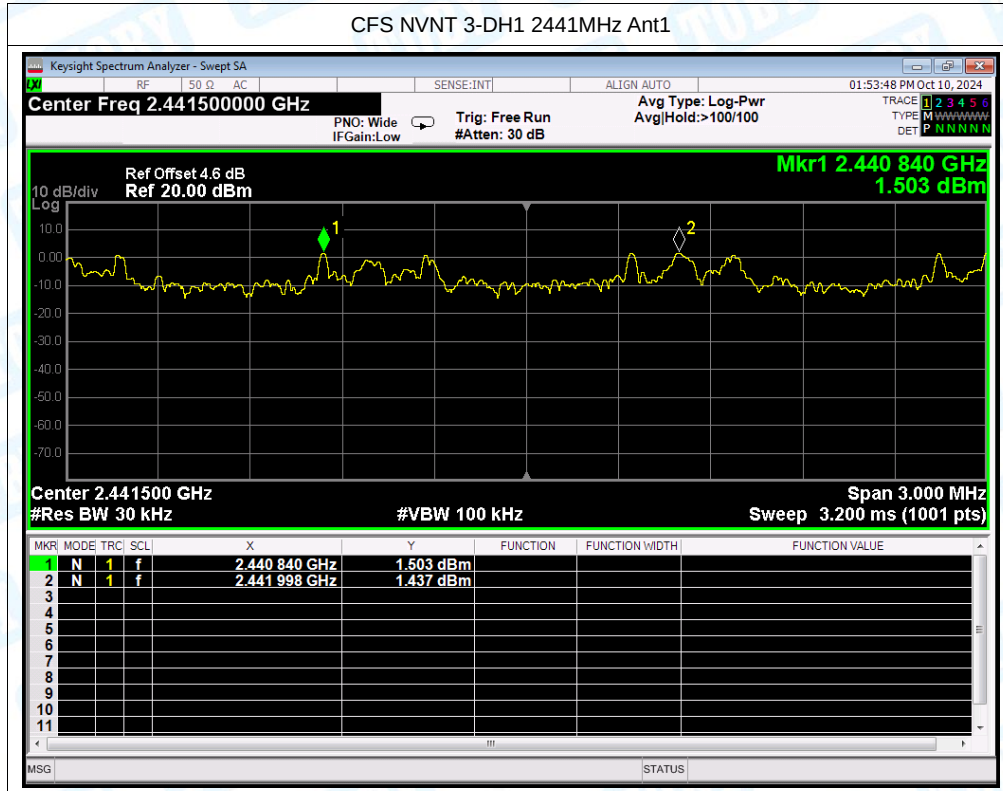
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



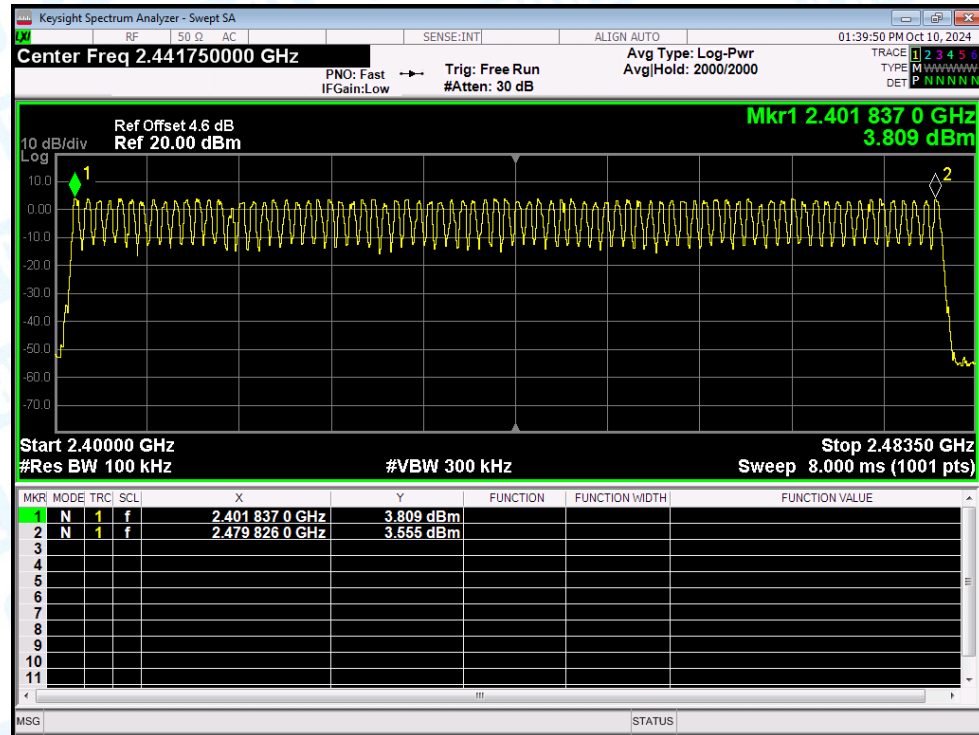


10.Number of Hopping Channel

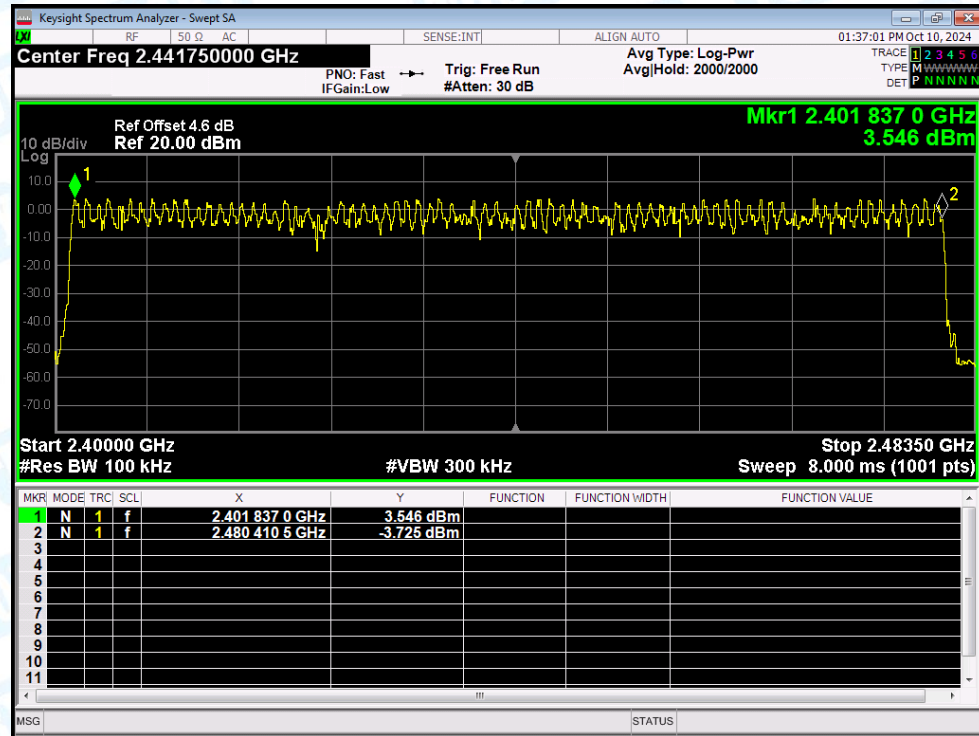
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

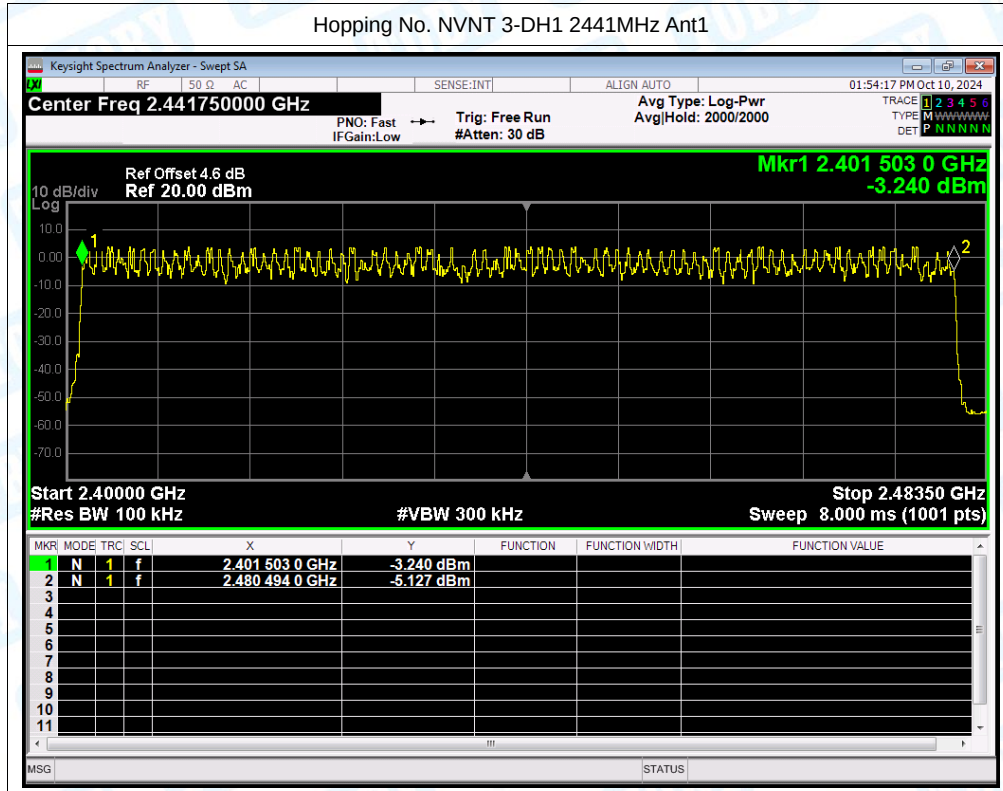
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



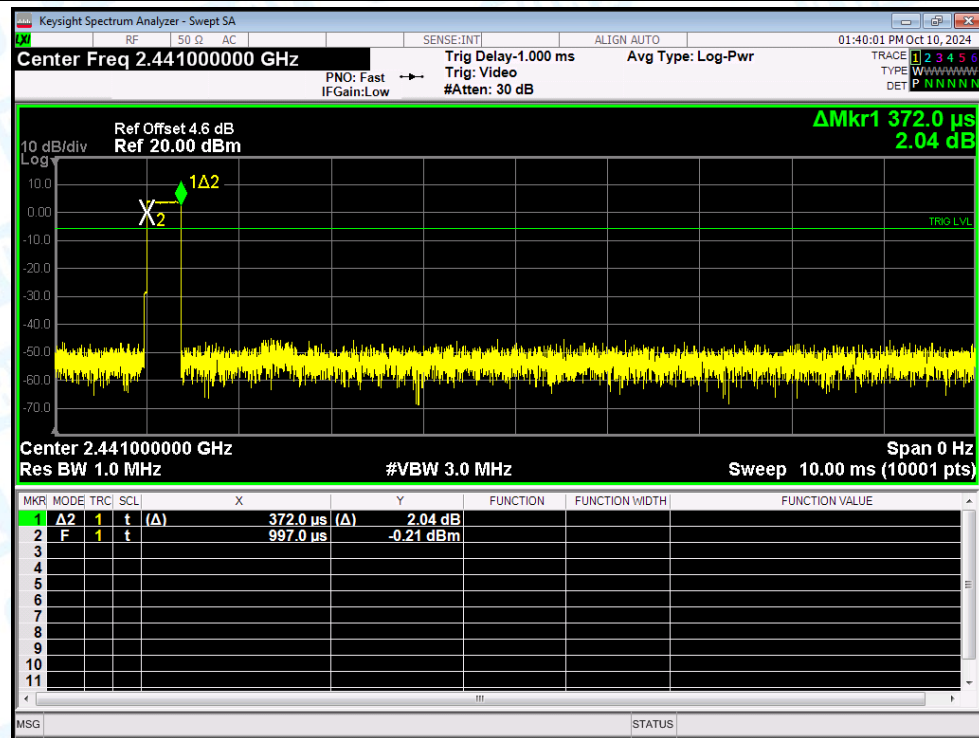


11.Dwell Time

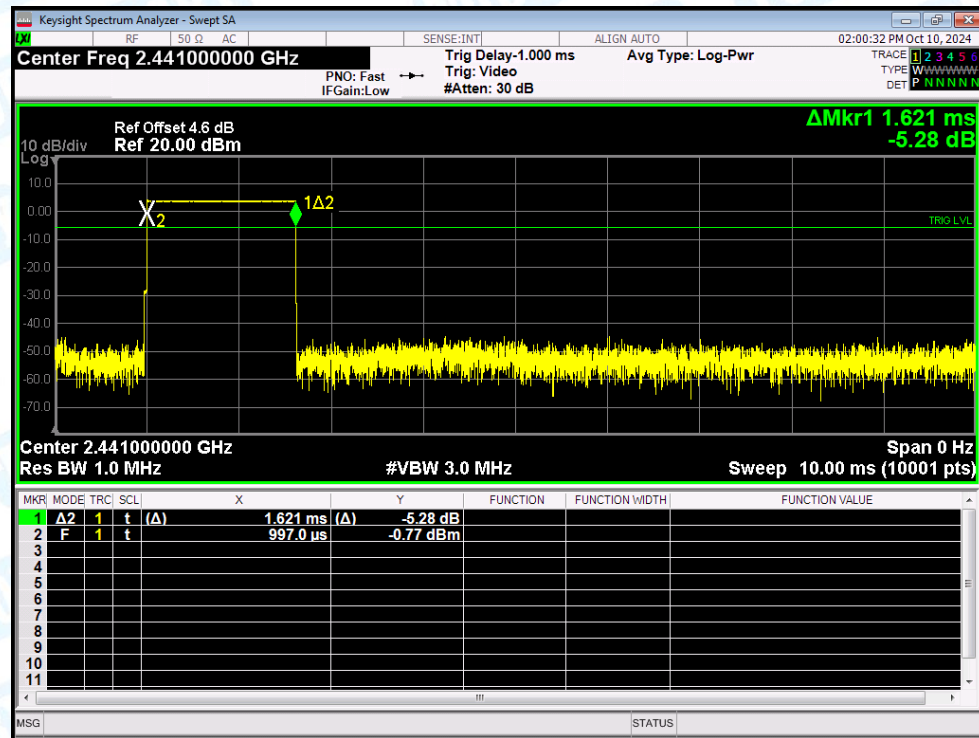
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.372	119.04	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.621	259.36	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.869	306.027	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.38	121.6	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.633	261.28	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.88	307.2	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.38	121.6	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.631	260.96	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.881	307.307	31600	400	Pass

Test Graphs

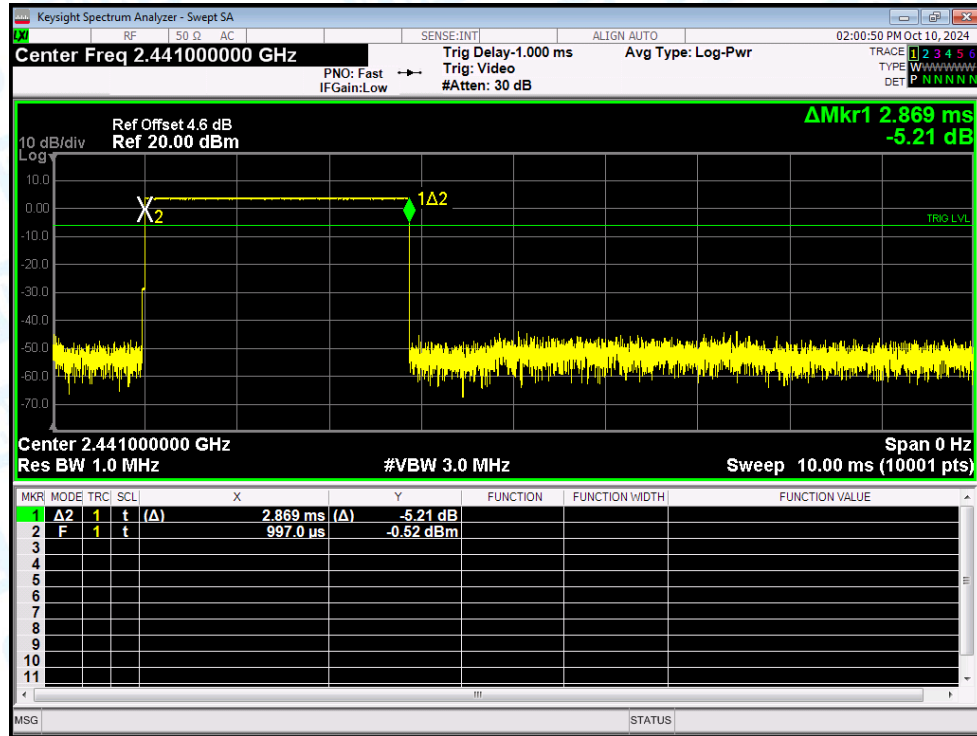
Dwell NVNT 1-DH1 2441MHz Ant1



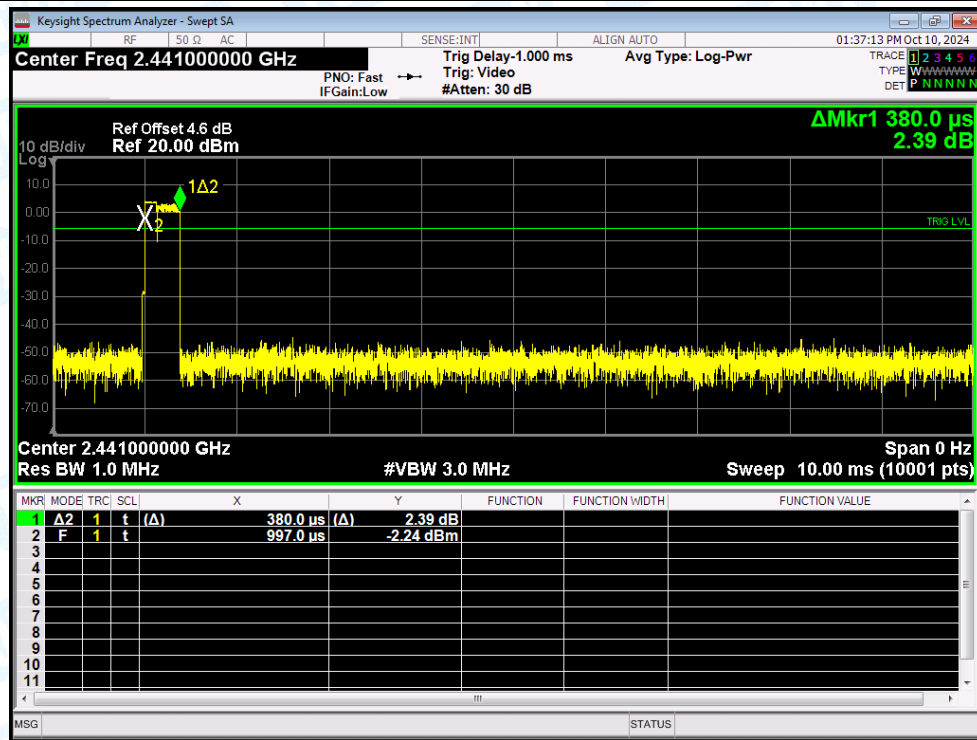
Dwell NVNT 1-DH3 2441MHz Ant1



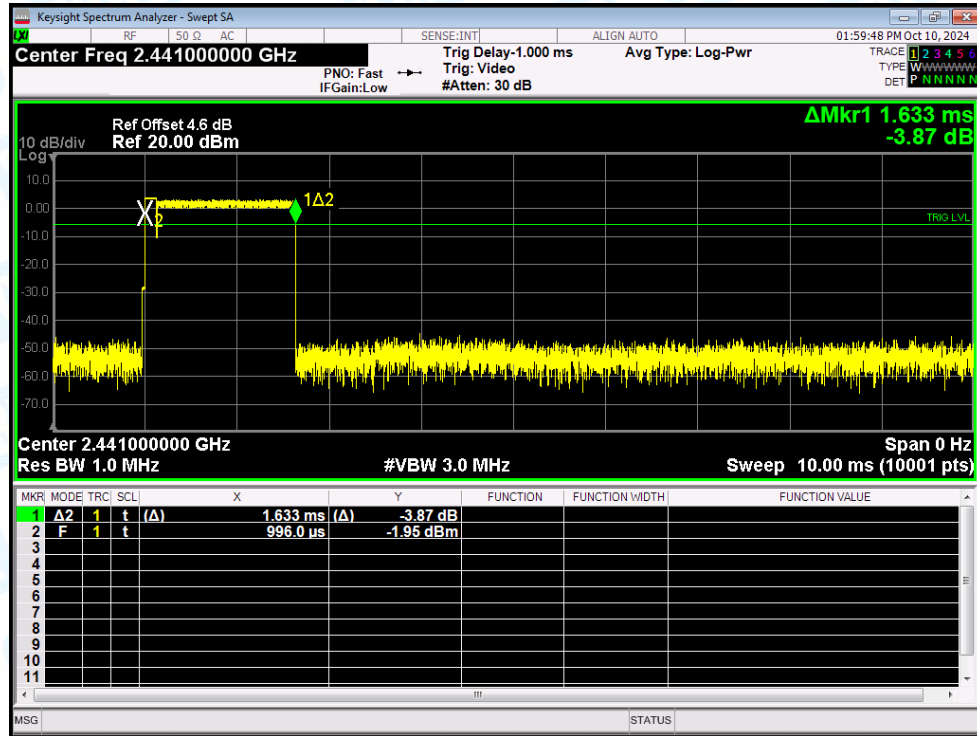
Dwell NVNT 1-DH5 2441MHz Ant1



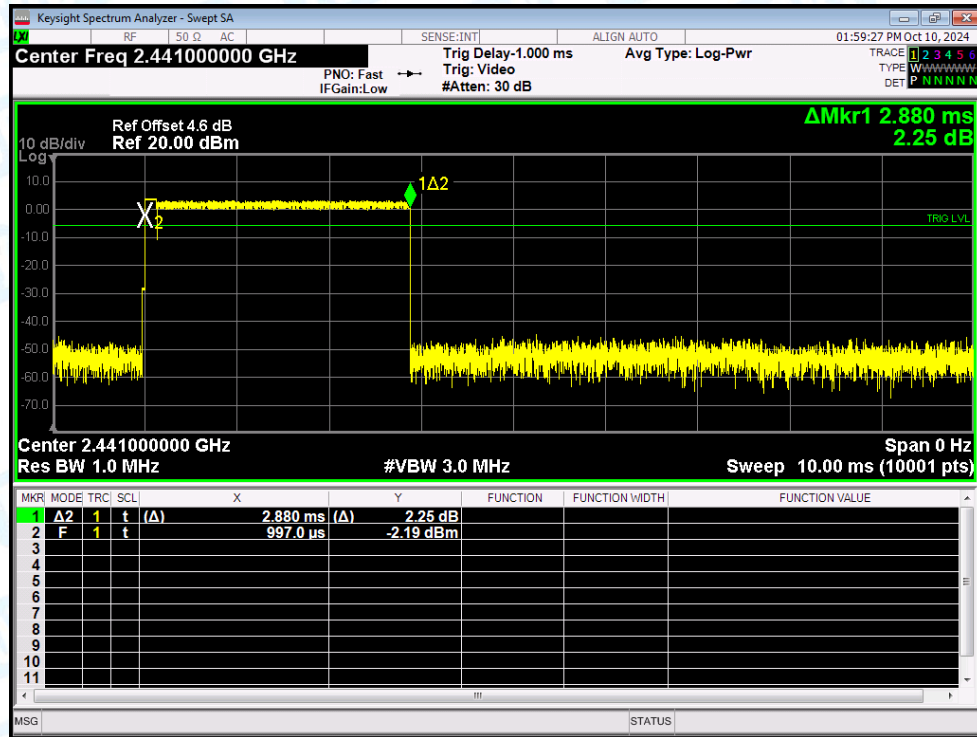
Dwell NVNT 2-DH1 2441MHz Ant1



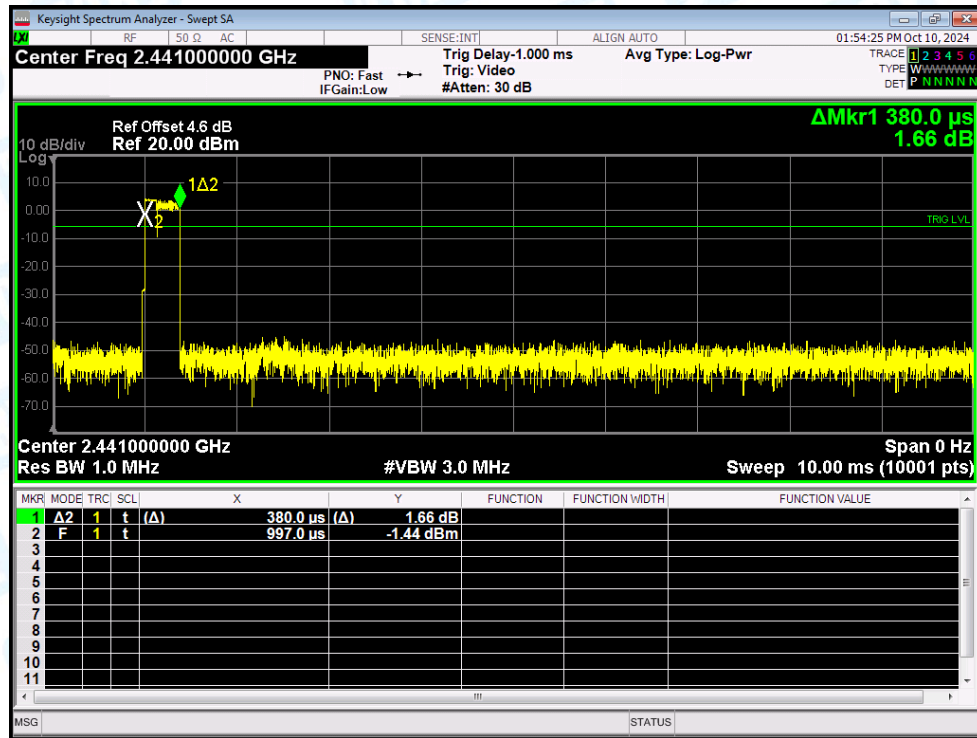
Dwell NVNT 2-DH3 2441MHz Ant1



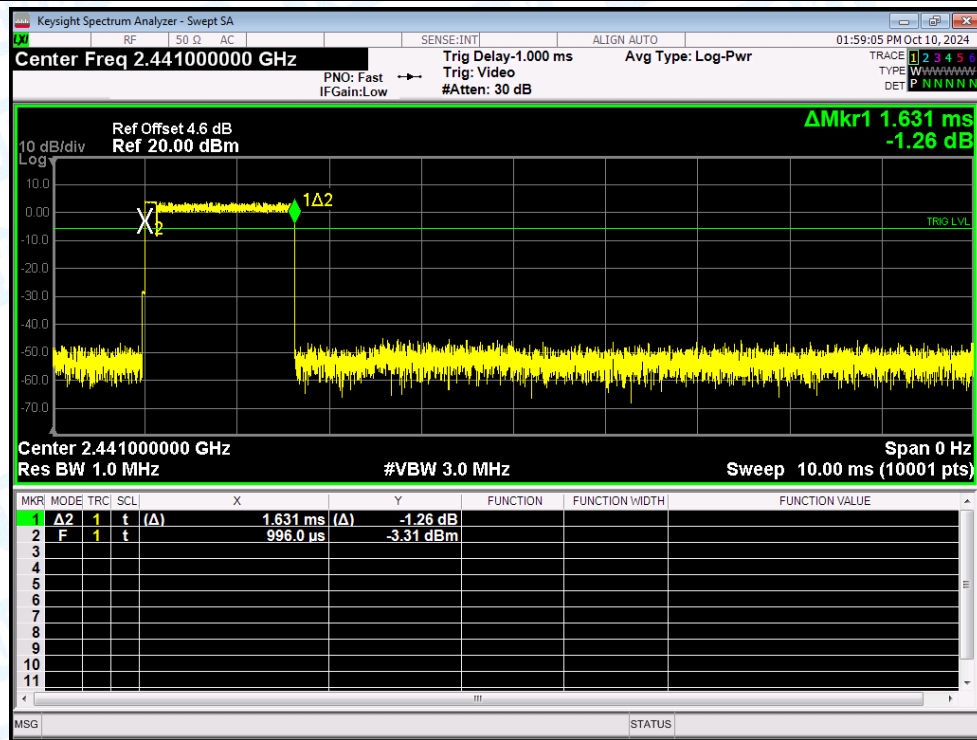
Dwell NVNT 2-DH5 2441MHz Ant1

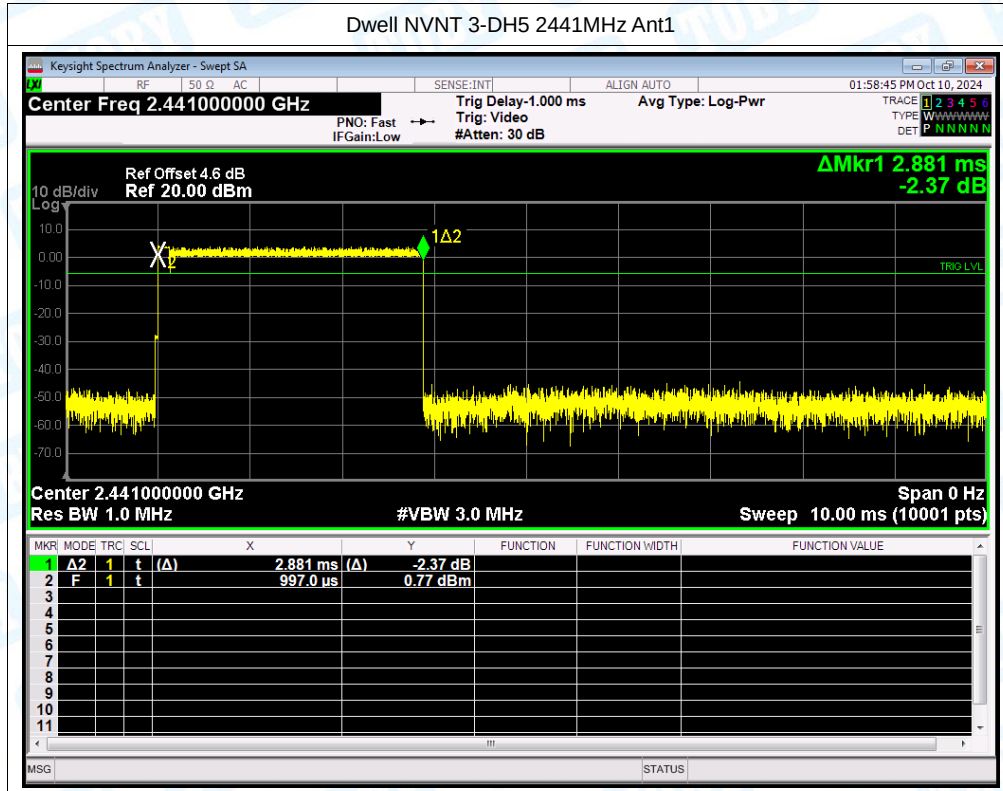


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





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