

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	2.1 SOUND BAR
Test Model:	4001949
Sample ID:	HC-C-202408-0115-01-02#
Environmental Conditions	
Temperature:	25°C
Relative Humidity:	55%
Test Voltage:	DC 5V
Test Engineer:	Zkn Zhou
Note: For a more detailed features description, please refer to the report TBR-C-202408-0115-5 The report only show the worst case data.	

Contents

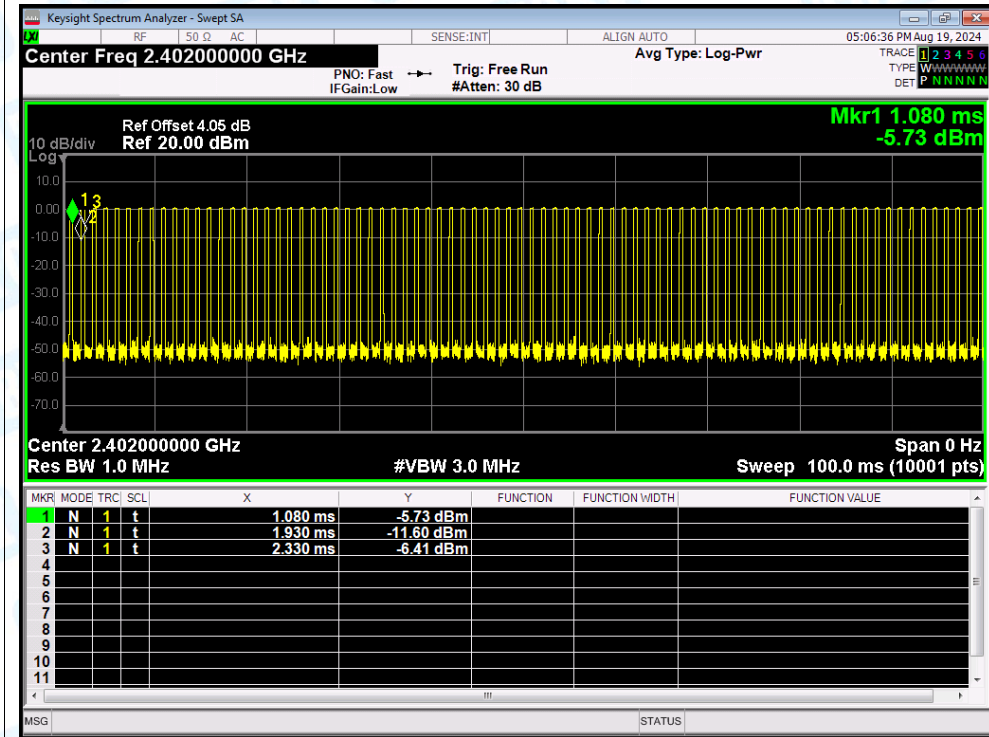
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1. Duty Cycle

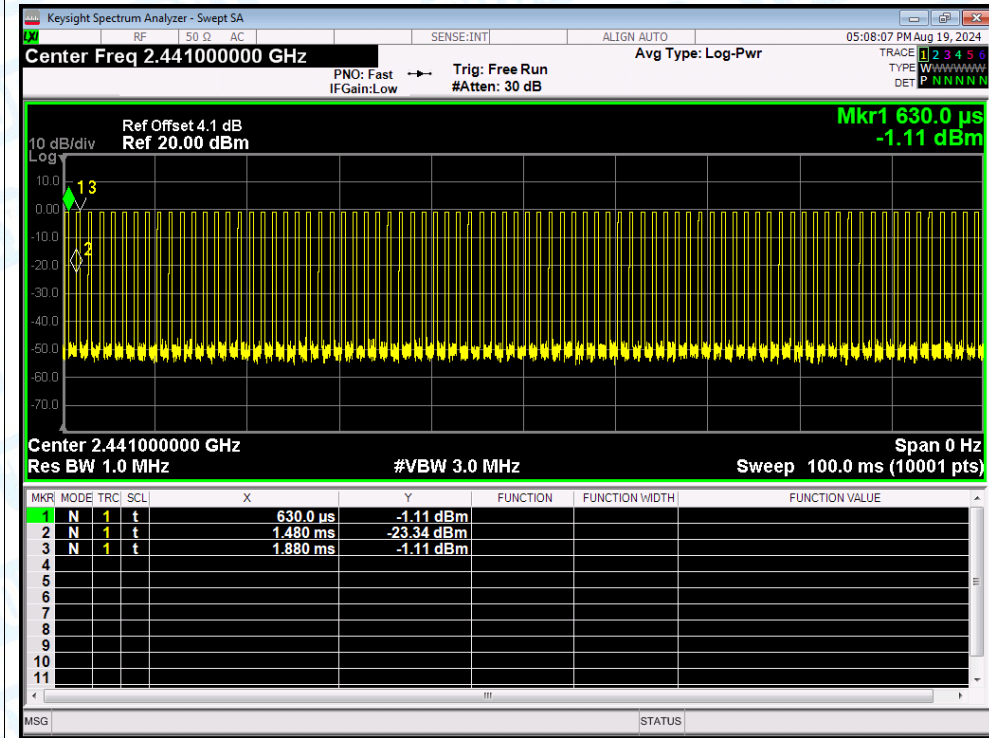
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	32	4.95	2.5
NVNT	1-DH1	2441	Ant1	32	4.95	2.5
NVNT	1-DH1	2480	Ant1	32	4.95	2.5
NVNT	2-DH1	2402	Ant1	32.8	4.84	2.44
NVNT	2-DH1	2441	Ant1	32.8	4.84	2.44
NVNT	2-DH1	2480	Ant1	32	4.95	2.5
NVNT	3-DH1	2402	Ant1	32.8	4.84	2.44
NVNT	3-DH1	2441	Ant1	32.8	4.84	2.44
NVNT	3-DH1	2480	Ant1	32.8	4.84	2.44

Test Graphs

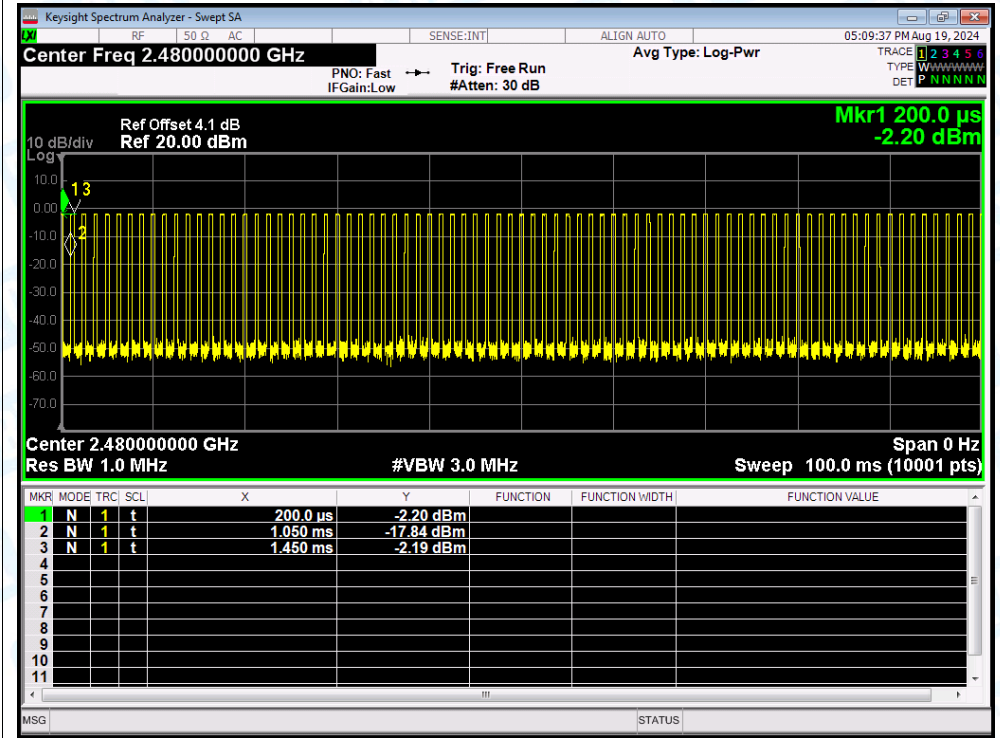
Duty Cycle NVNT 1-DH1 2402MHz Ant1



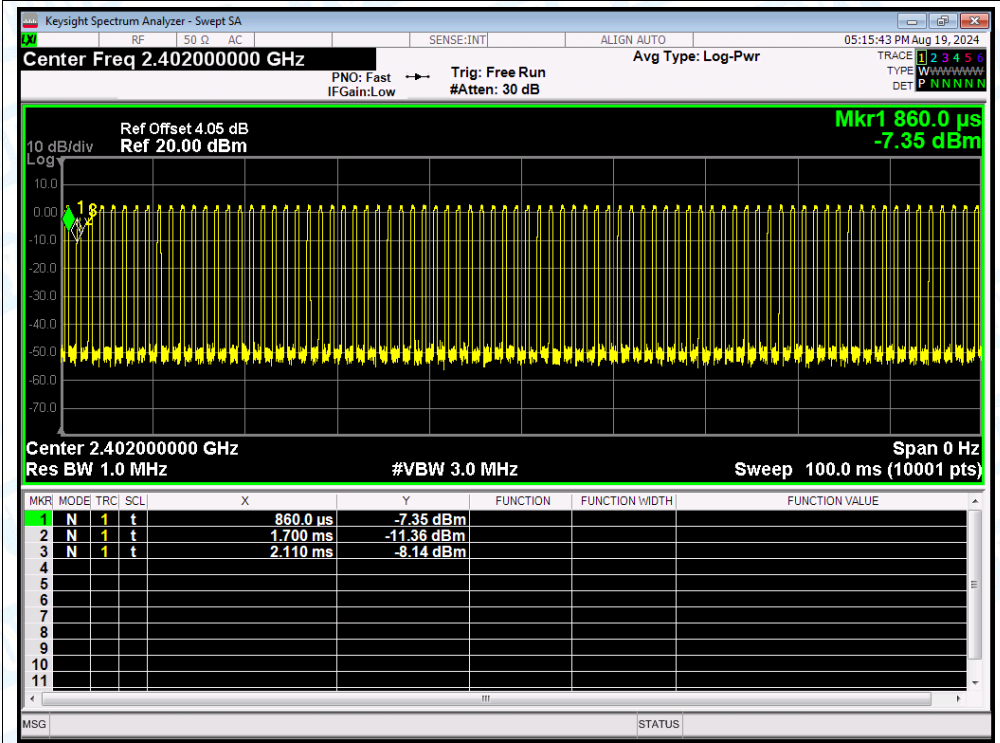
Duty Cycle NVNT 1-DH1 2441MHz Ant1



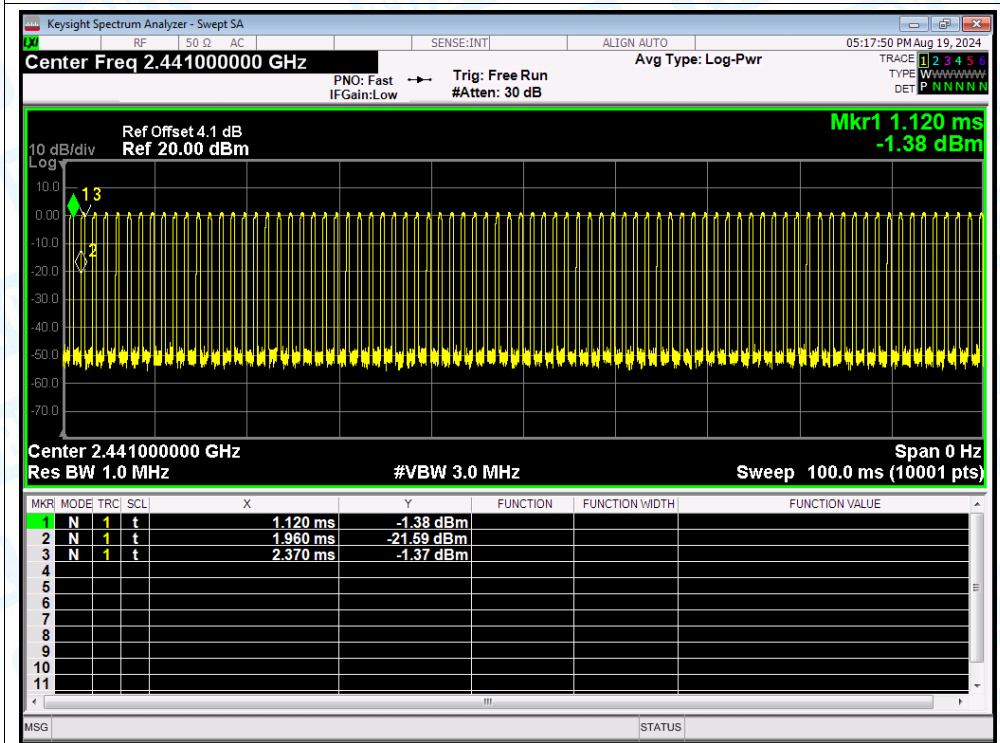
Duty Cycle NVNT 1-DH1 2480MHz Ant1



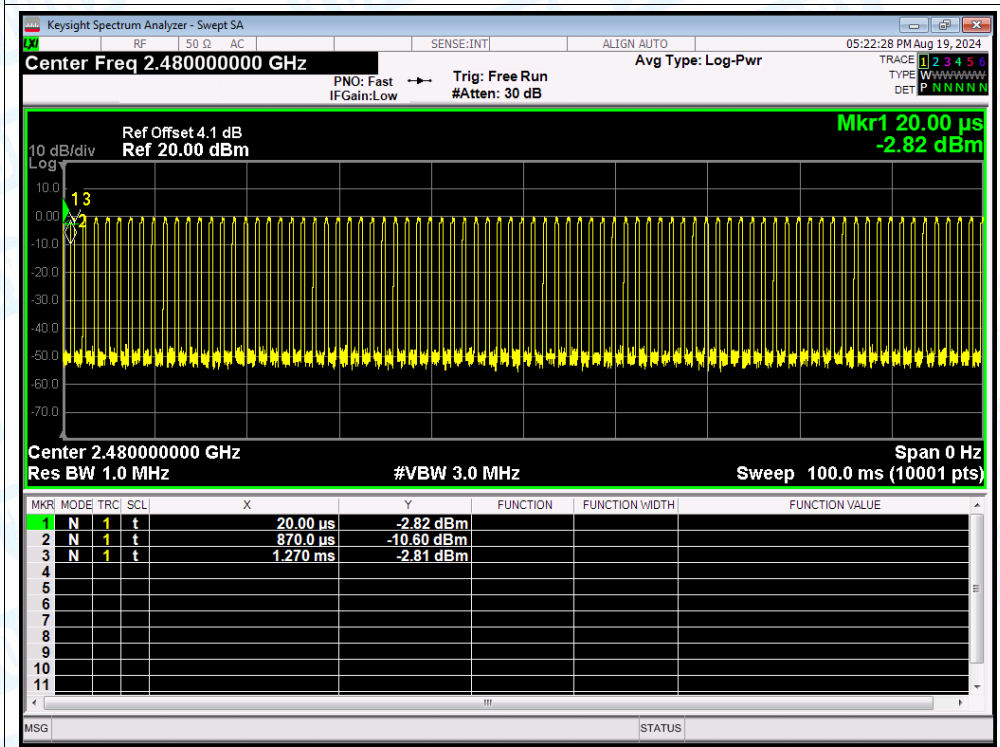
Duty Cycle NVNT 2-DH1 2402MHz Ant1



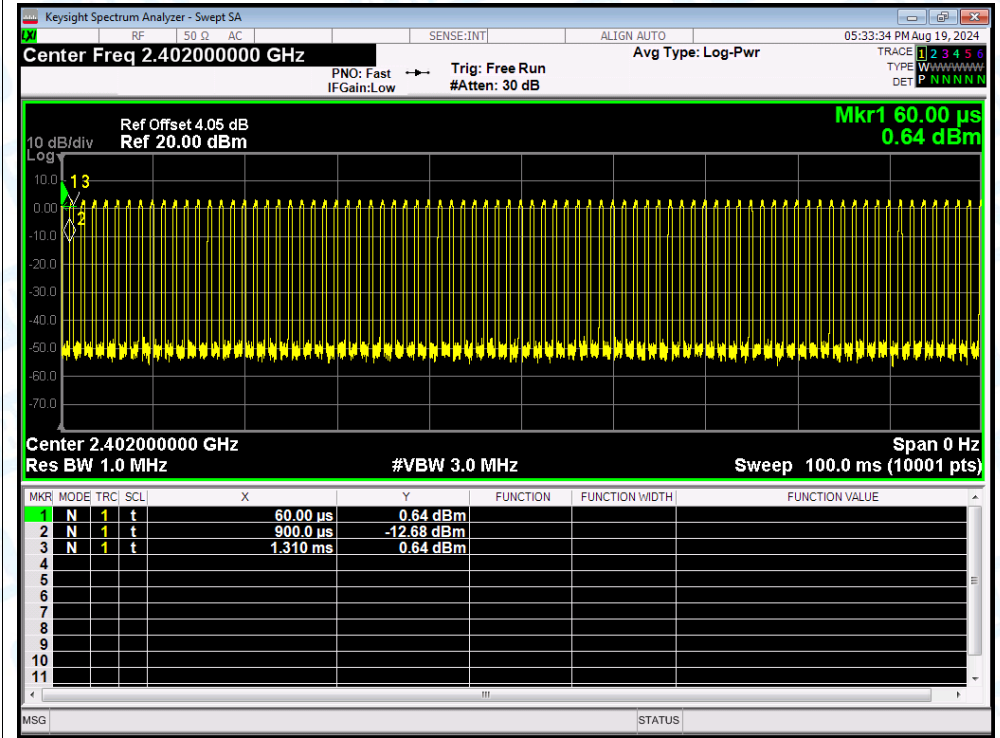
Duty Cycle NVNT 2-DH1 2441MHz Ant1



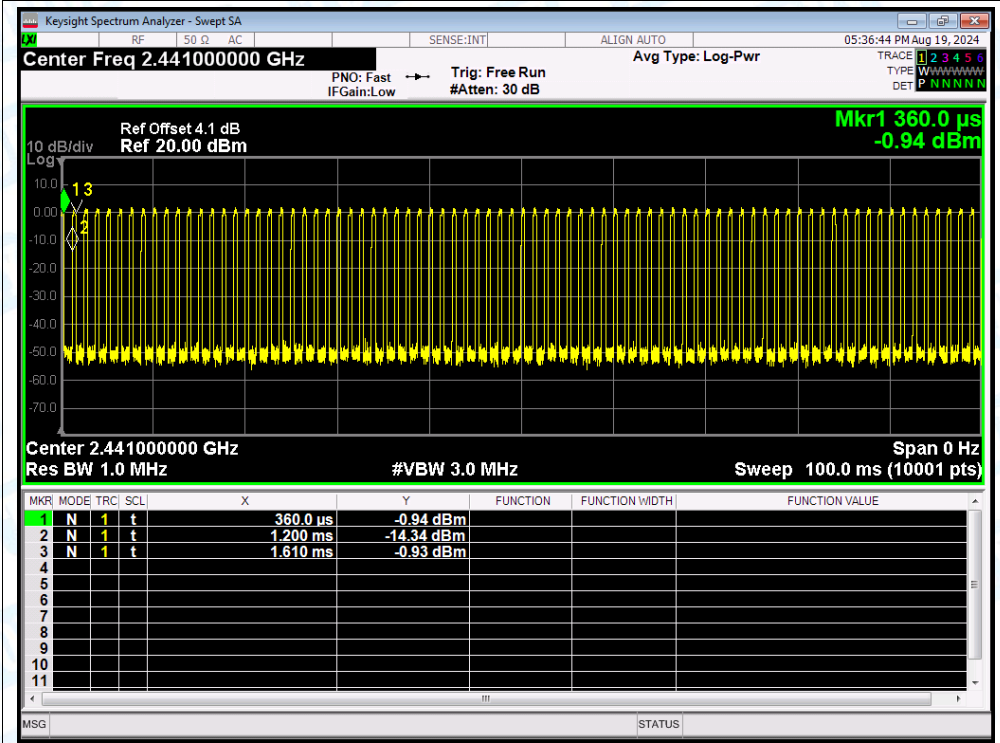
Duty Cycle NVNT 2-DH1 2480MHz Ant1

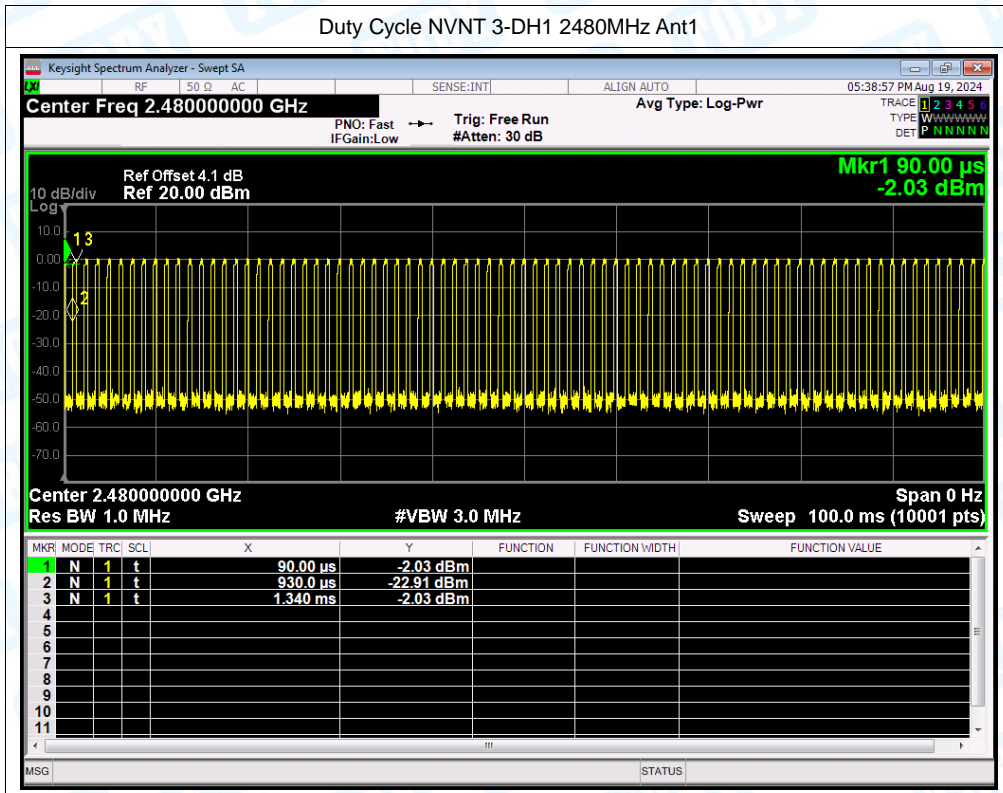


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



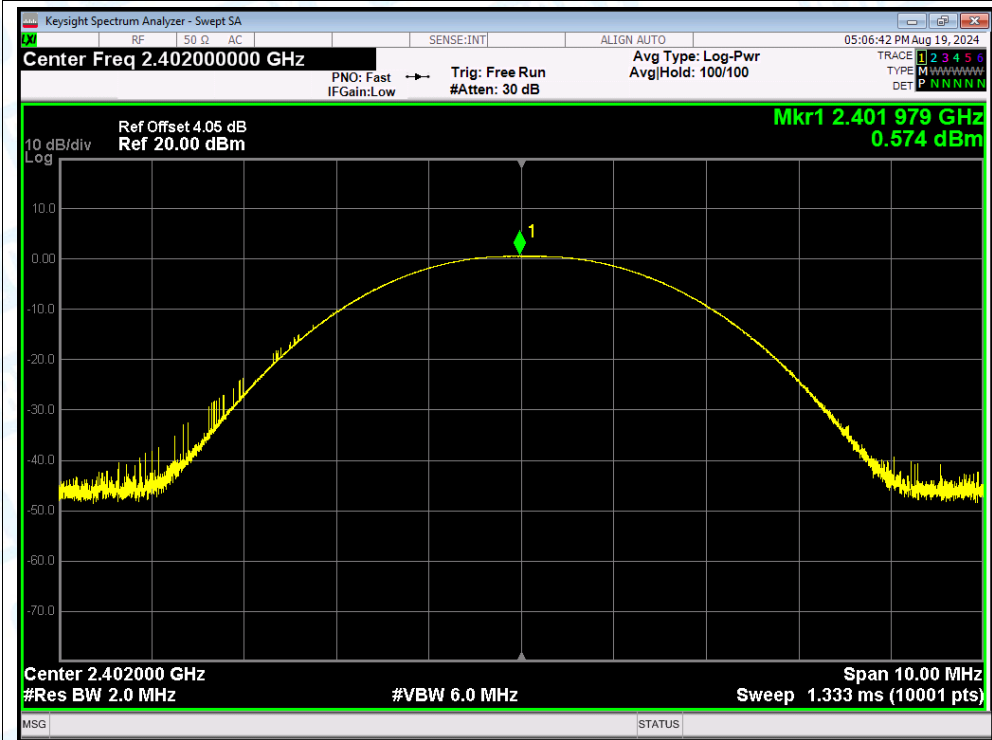


2. Maximum Conducted Output Power

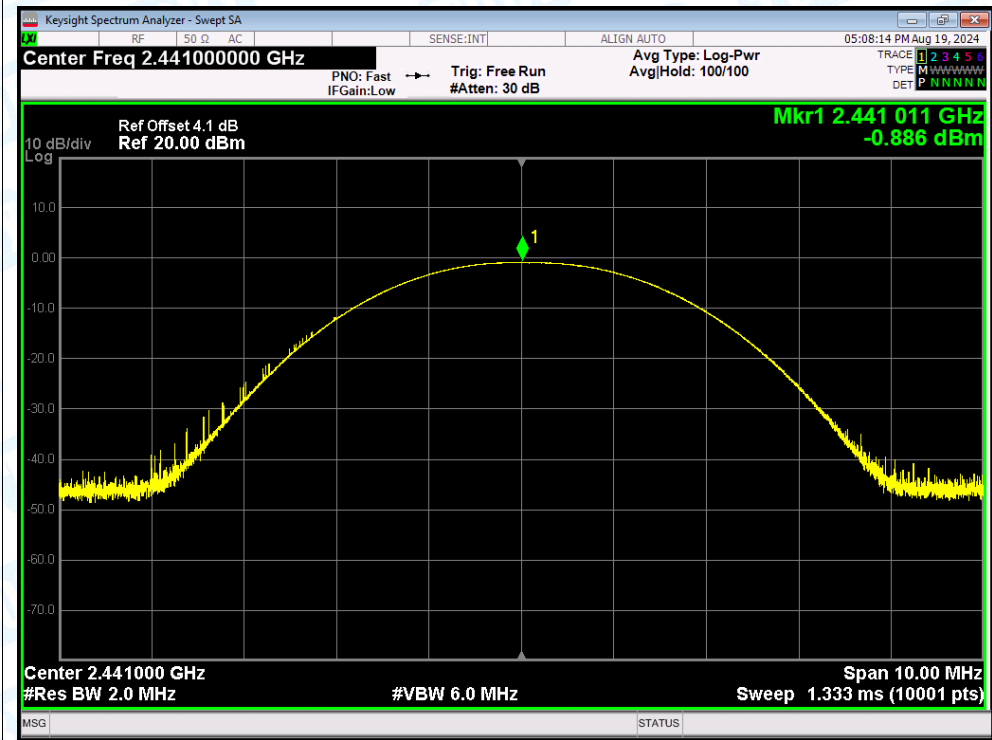
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	0.574	21	Pass
NVNT	1-DH1	2441	Ant1	-0.886	21	Pass
NVNT	1-DH1	2480	Ant1	-2.006	21	Pass
NVNT	2-DH1	2402	Ant1	3.072	21	Pass
NVNT	2-DH1	2441	Ant1	1.569	21	Pass
NVNT	2-DH1	2480	Ant1	0.231	21	Pass
NVNT	3-DH1	2402	Ant1	3.63	21	Pass
NVNT	3-DH1	2441	Ant1	2.114	21	Pass
NVNT	3-DH1	2480	Ant1	1.017	21	Pass

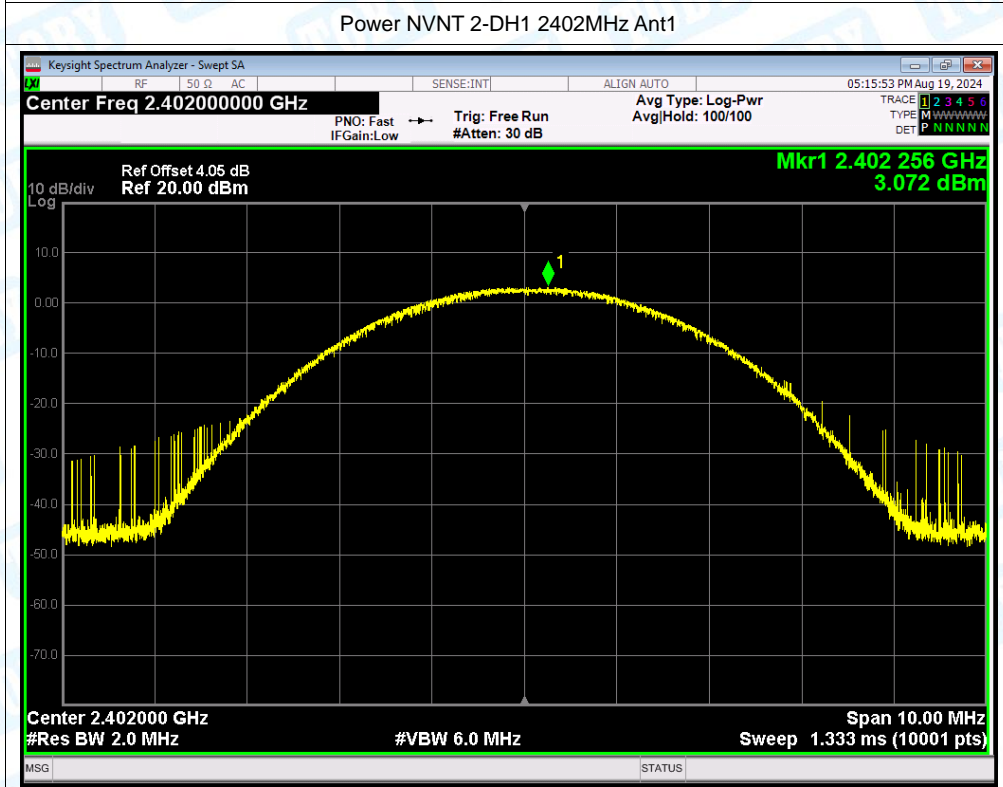
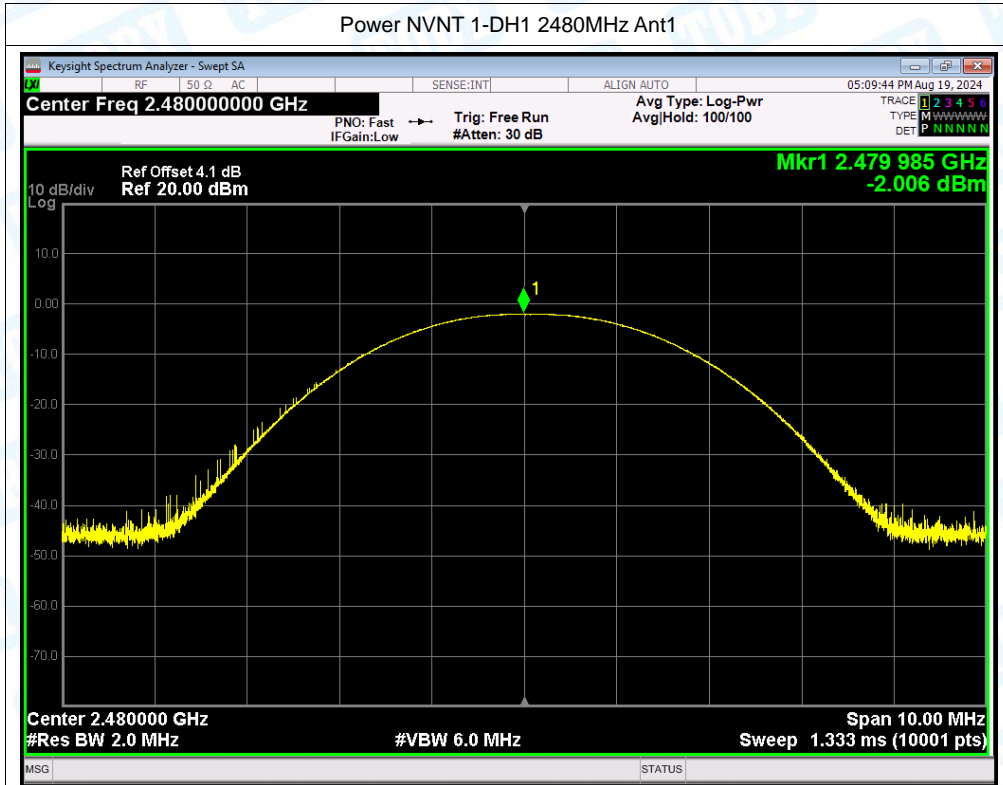
Test Graphs

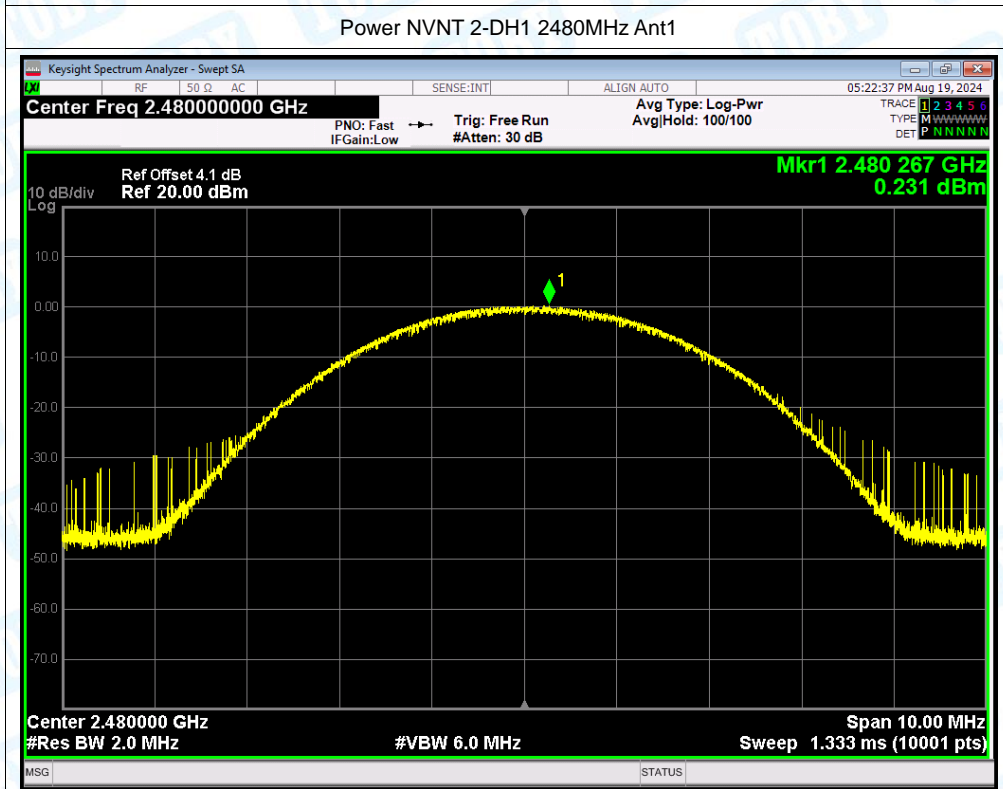
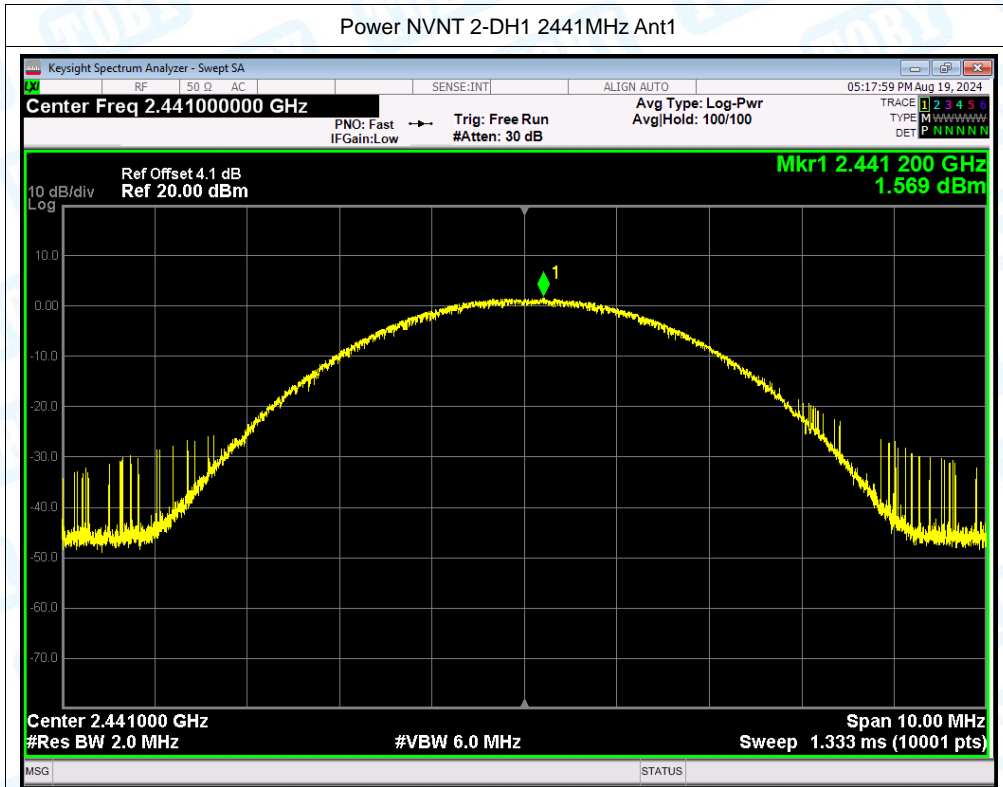
Power NVNT 1-DH1 2402MHz Ant1

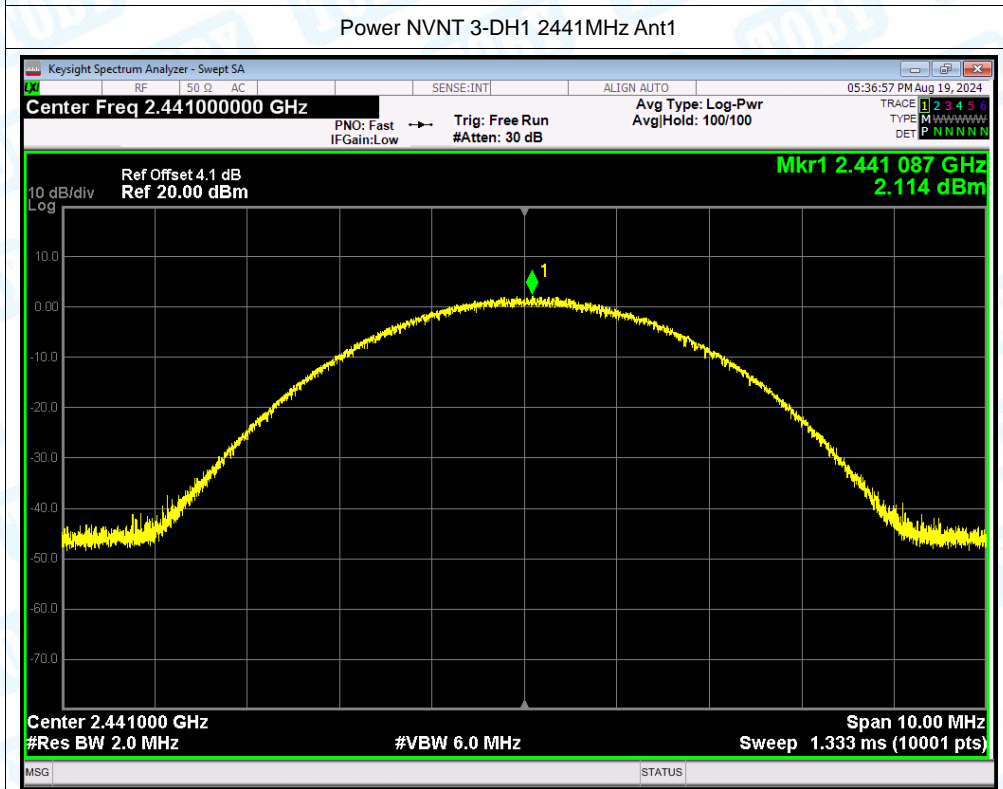
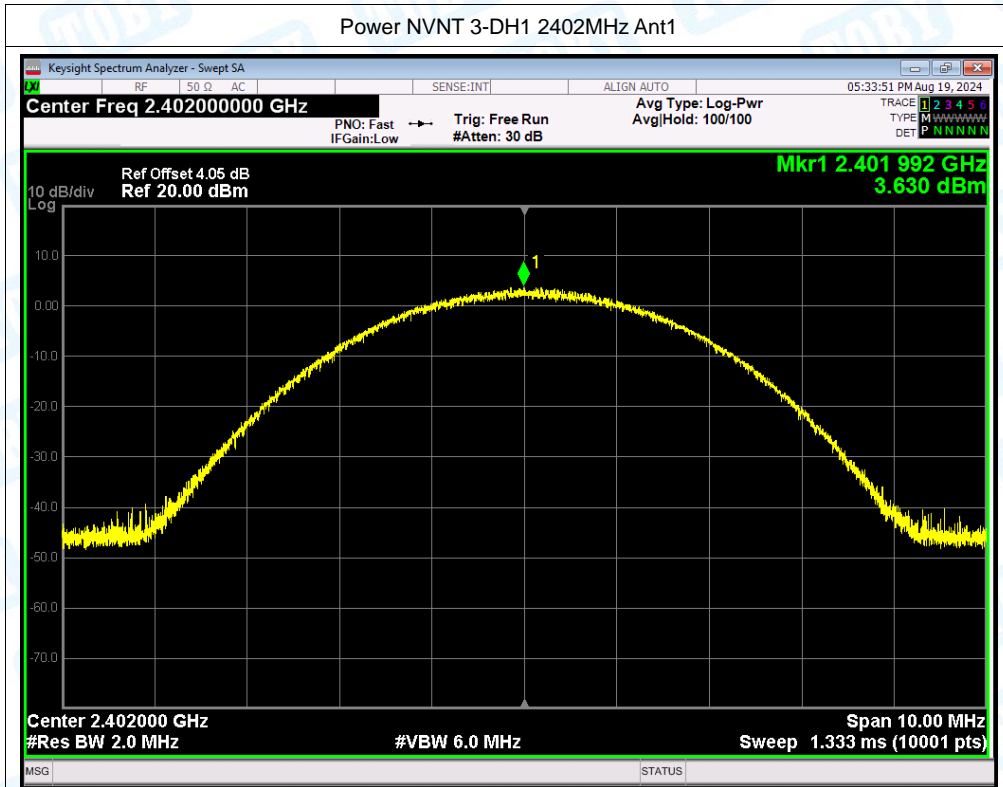


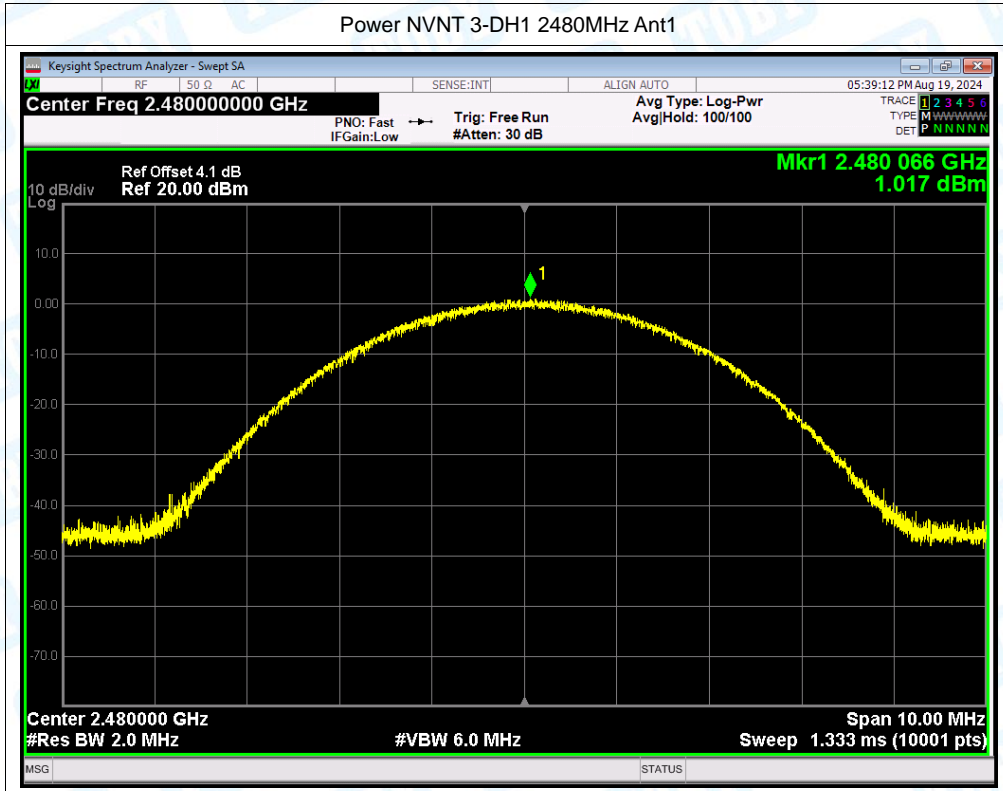
Power NVNT 1-DH1 2441MHz Ant1









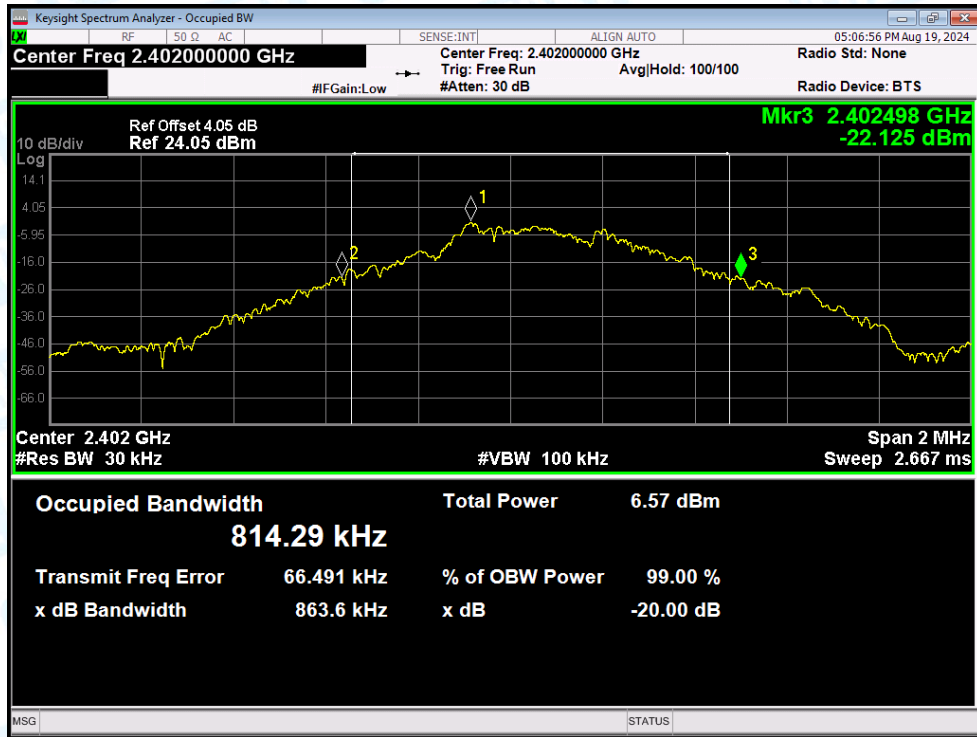


3.-20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.86	0	Pass
NVNT	1-DH1	2441	Ant1	0.88	0	Pass
NVNT	1-DH1	2480	Ant1	0.88	0	Pass
NVNT	2-DH1	2402	Ant1	1.25	0	Pass
NVNT	2-DH1	2441	Ant1	1.26	0	Pass
NVNT	2-DH1	2480	Ant1	1.29	0	Pass
NVNT	3-DH1	2402	Ant1	1.24	0	Pass
NVNT	3-DH1	2441	Ant1	1.25	0	Pass
NVNT	3-DH1	2480	Ant1	1.22	0	Pass

Test Graphs

-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



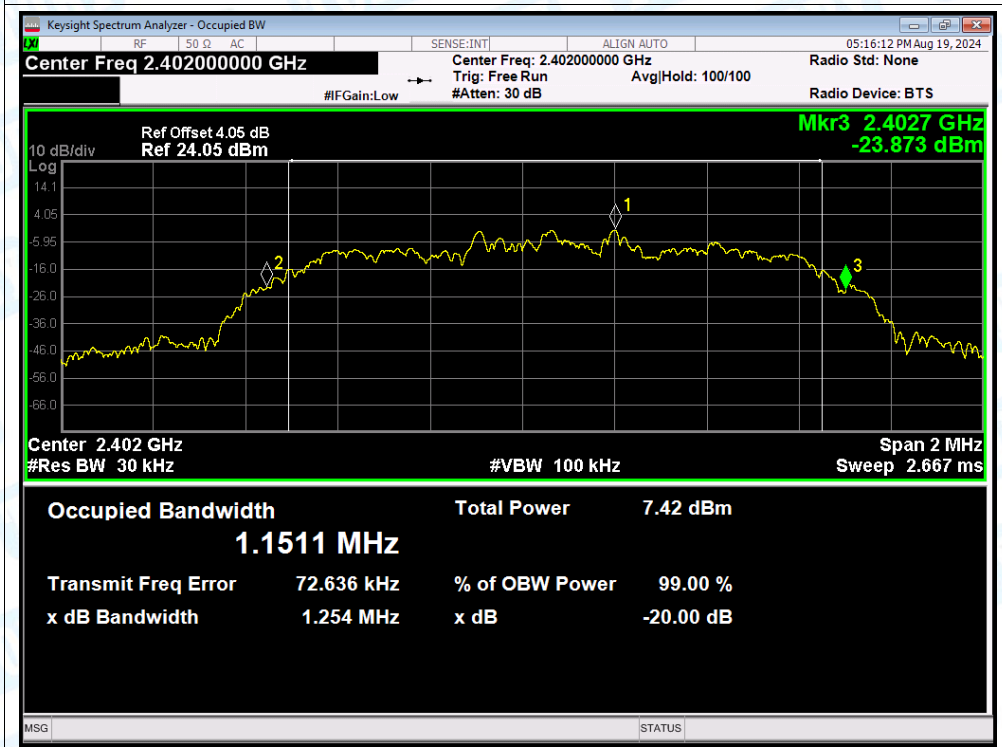
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



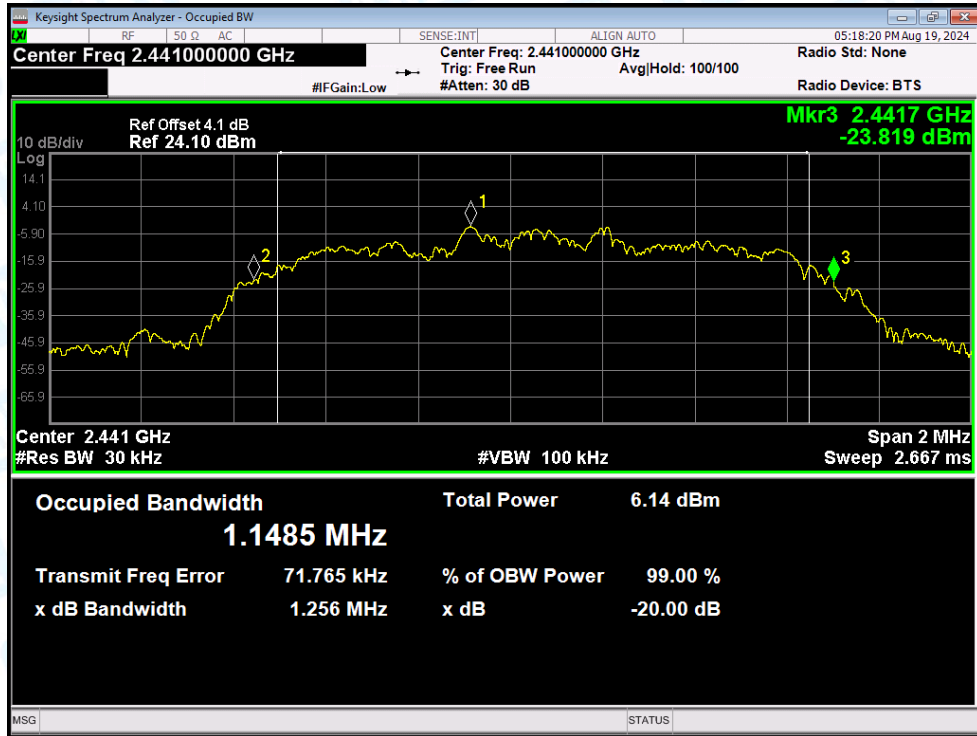
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



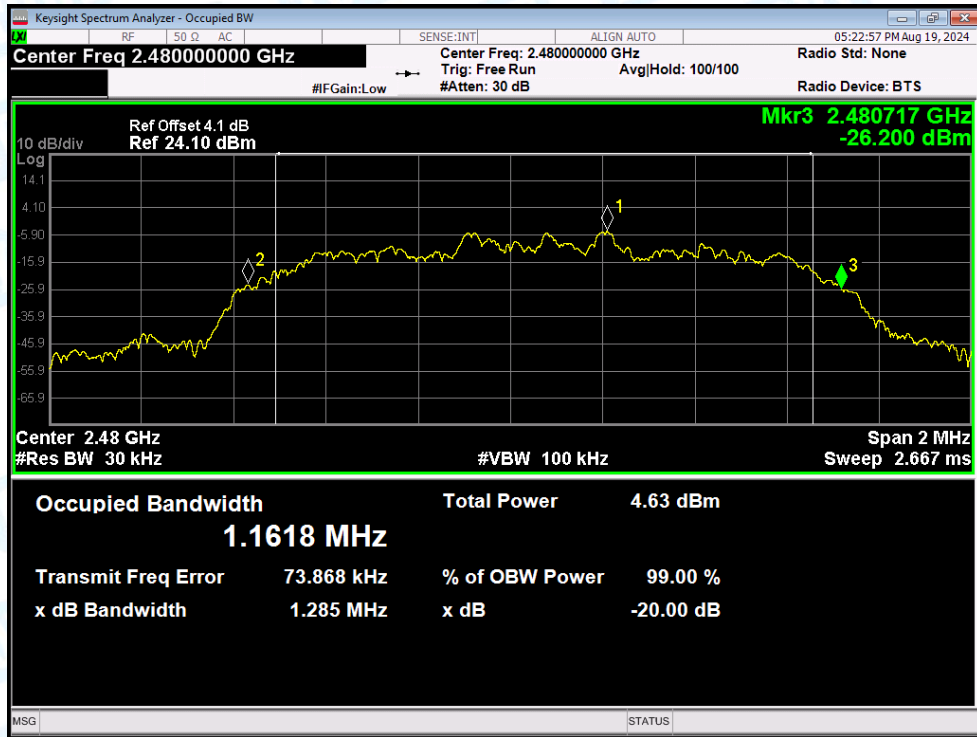
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



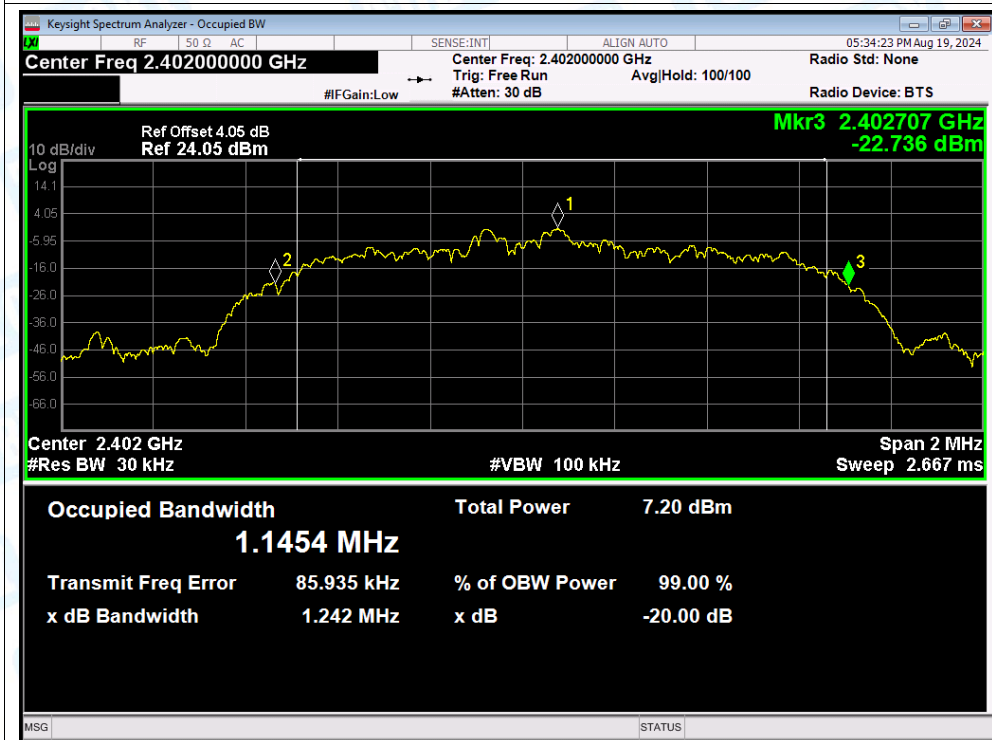
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



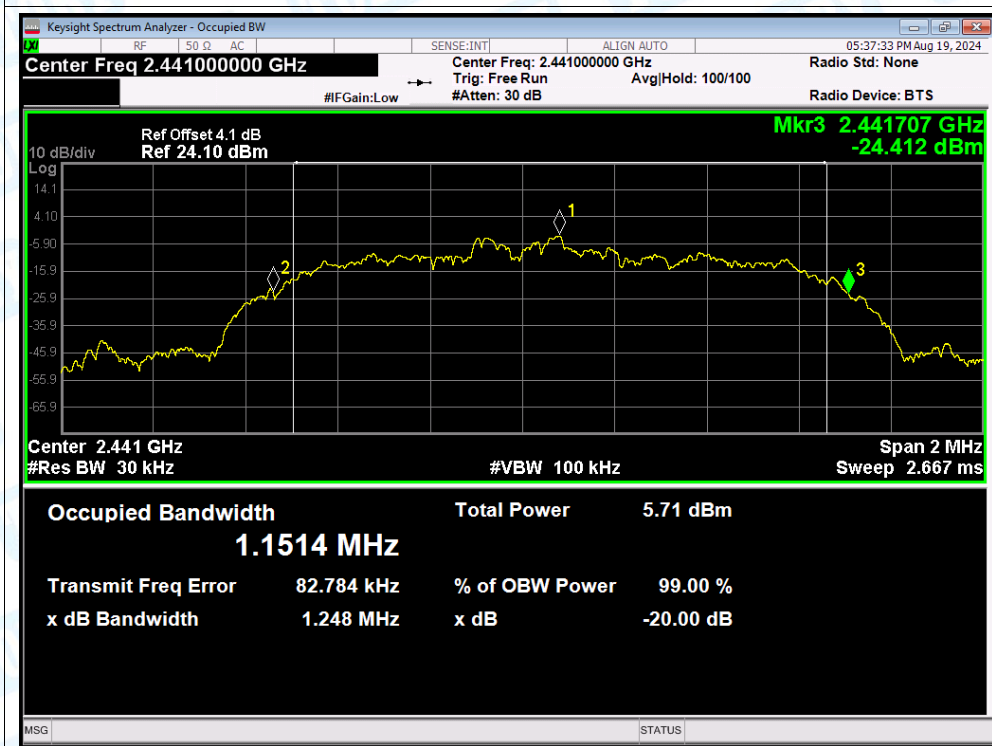
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

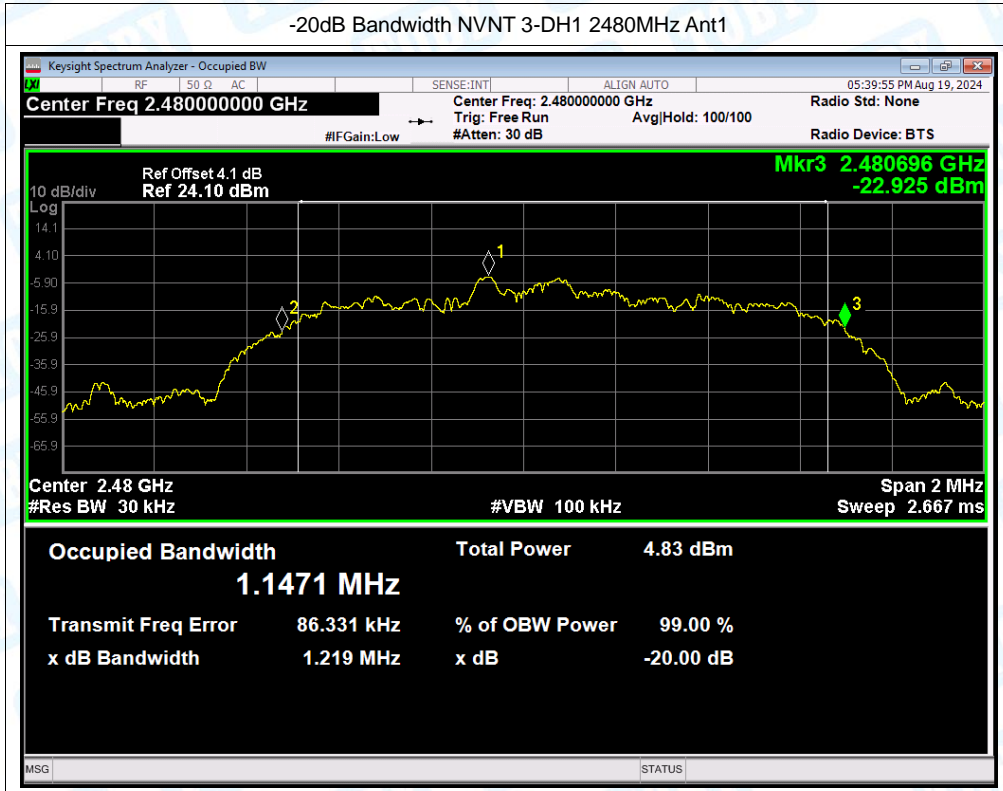


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



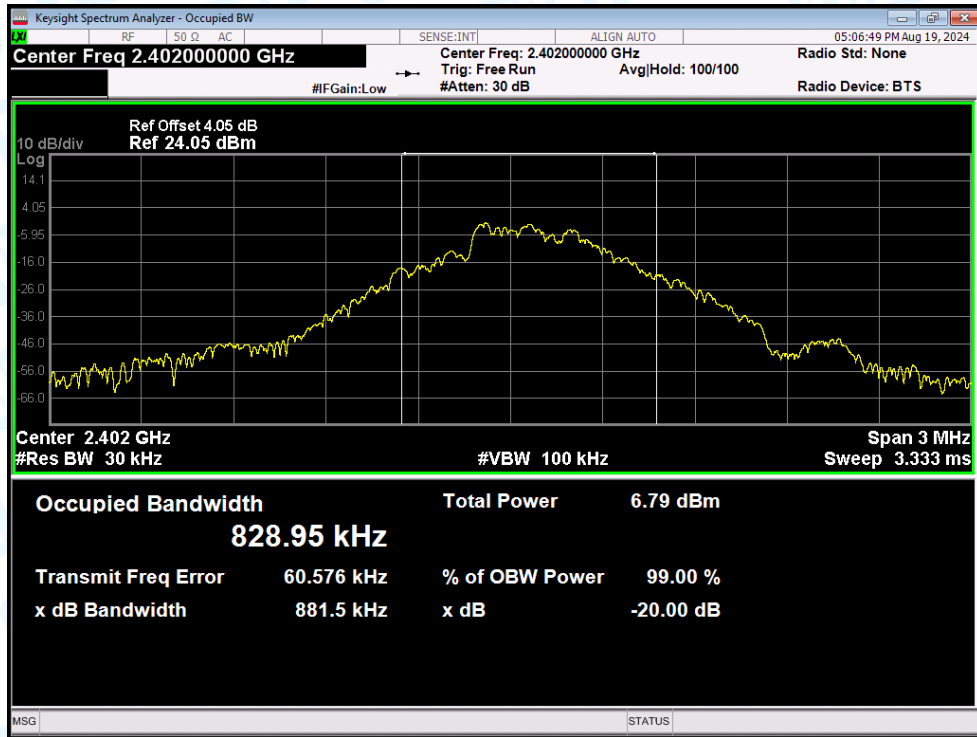


4.Occupied Channel Bandwidth

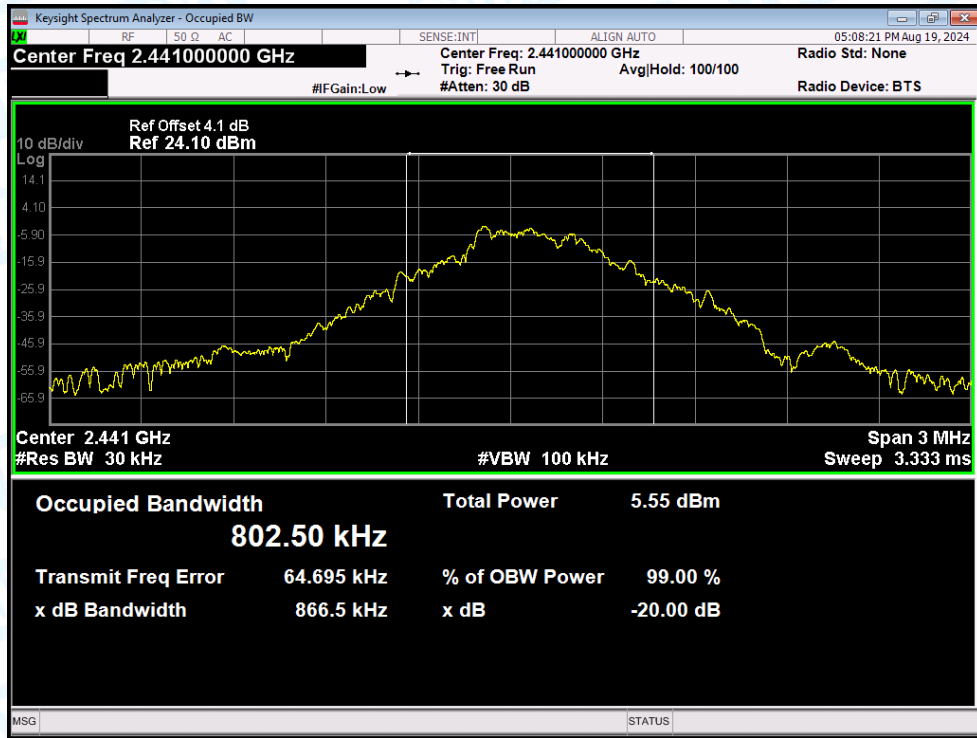
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.829
NVNT	1-DH1	2441	Ant1	0.802
NVNT	1-DH1	2480	Ant1	0.843
NVNT	2-DH1	2402	Ant1	1.144
NVNT	2-DH1	2441	Ant1	1.155
NVNT	2-DH1	2480	Ant1	1.157
NVNT	3-DH1	2402	Ant1	1.143
NVNT	3-DH1	2441	Ant1	1.143
NVNT	3-DH1	2480	Ant1	1.142

Test Graphs

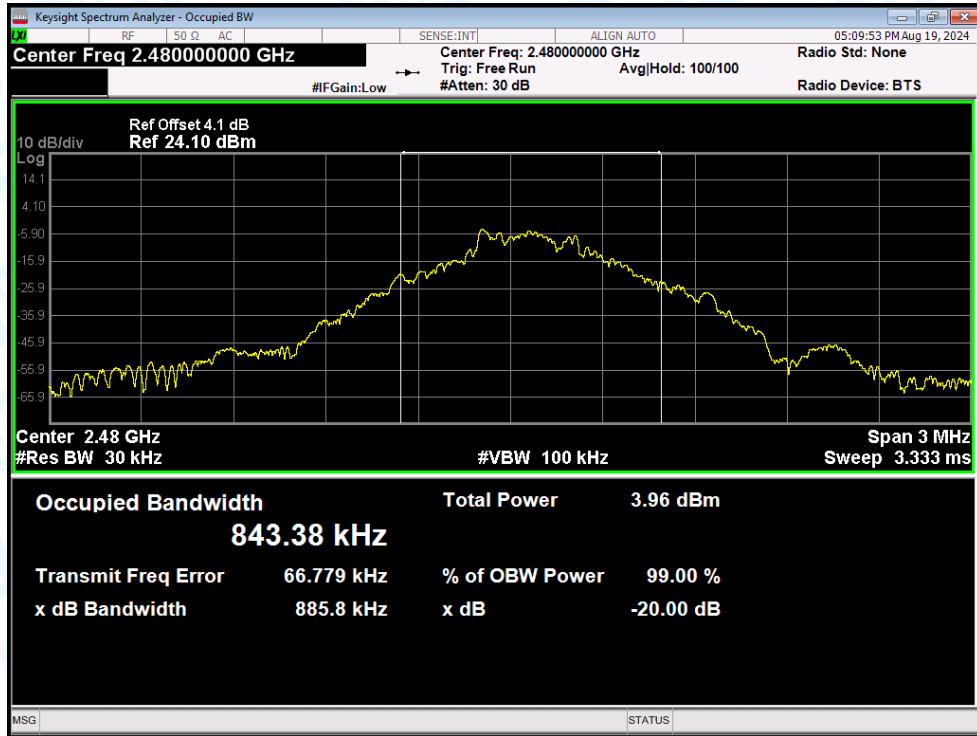
OBW NVNT 1-DH1 2402MHz Ant1



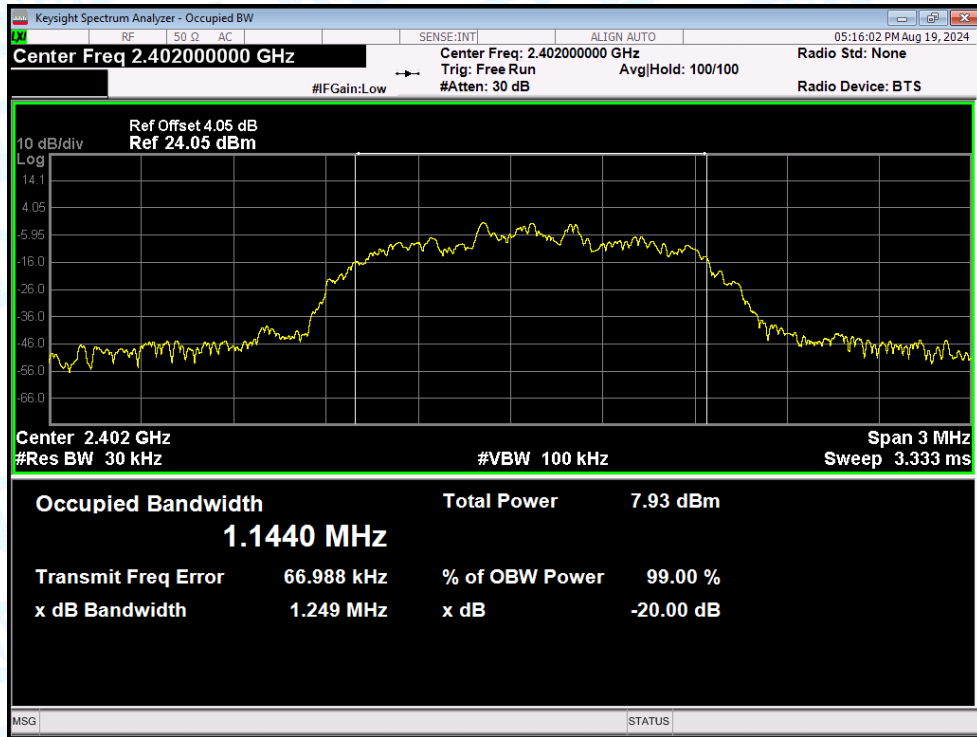
OBW NVNT 1-DH1 2441MHz Ant1

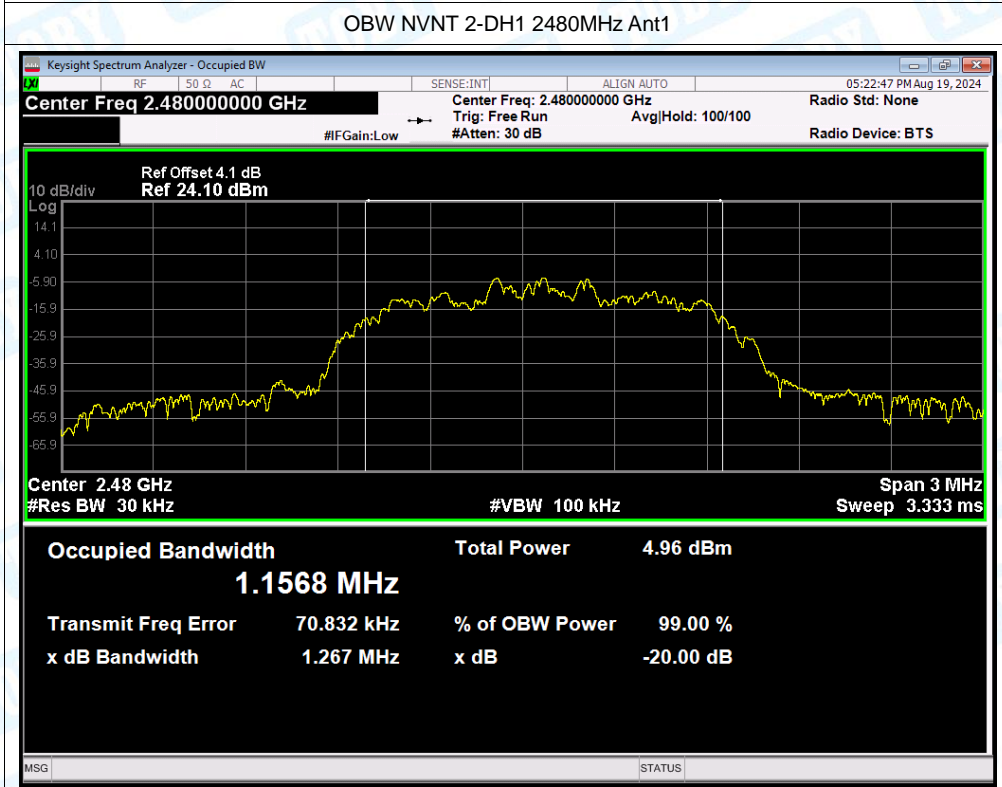
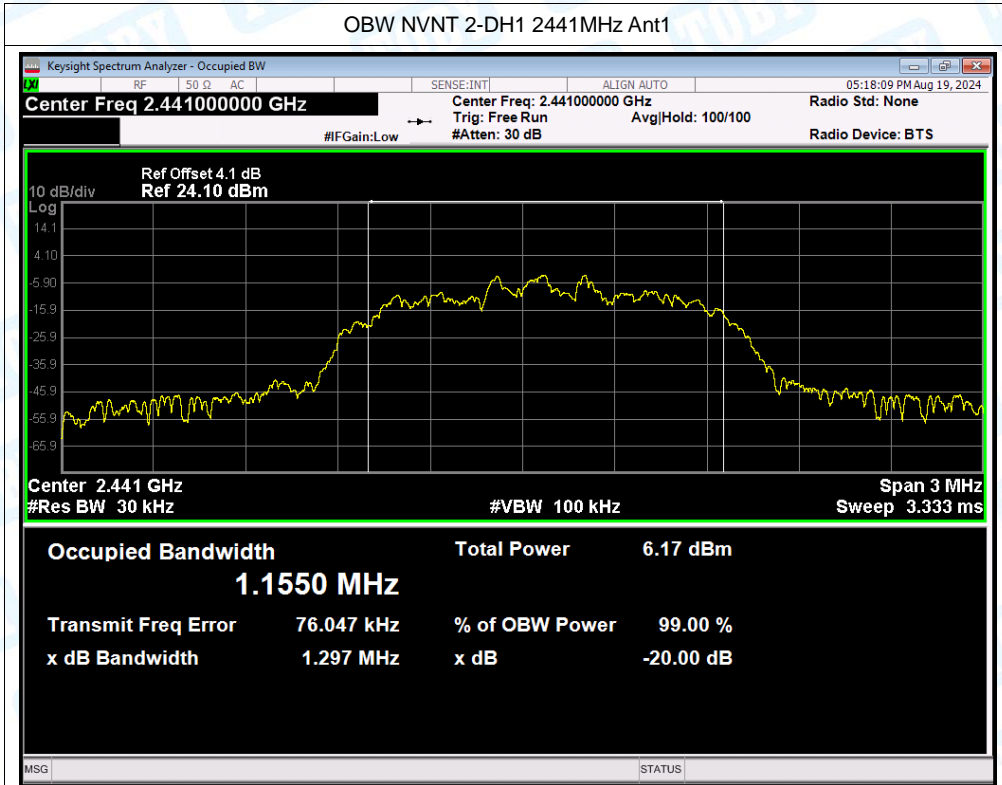


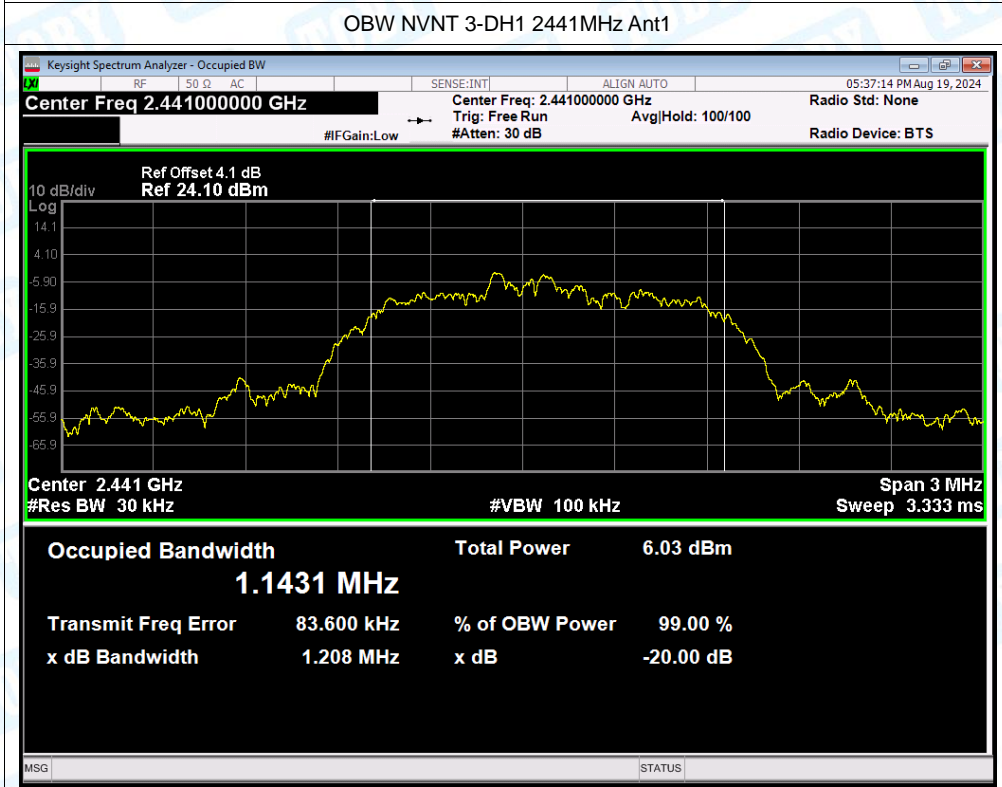
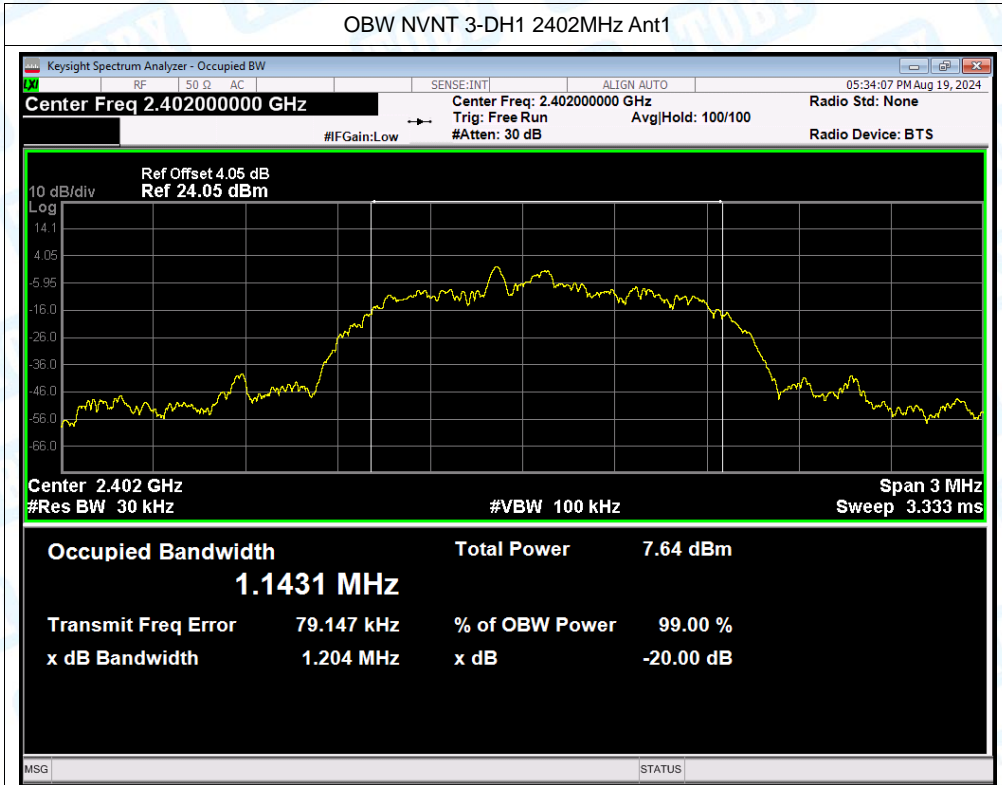
OBW NVNT 1-DH1 2480MHz Ant1

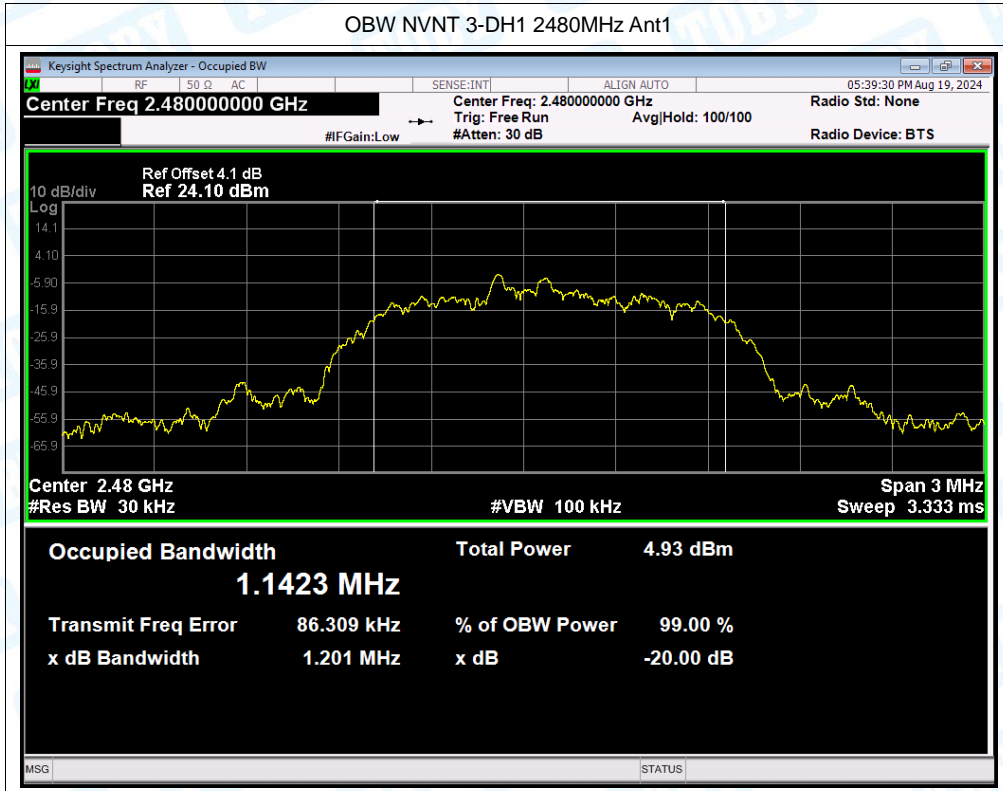


OBW NVNT 2-DH1 2402MHz Ant1







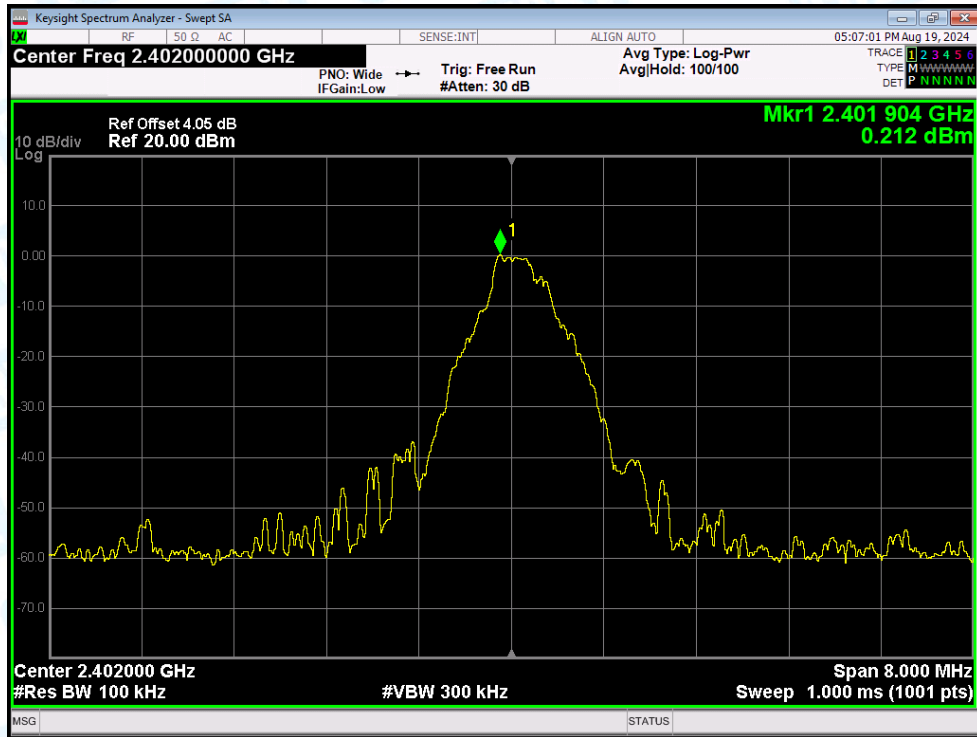


5.Band Edge

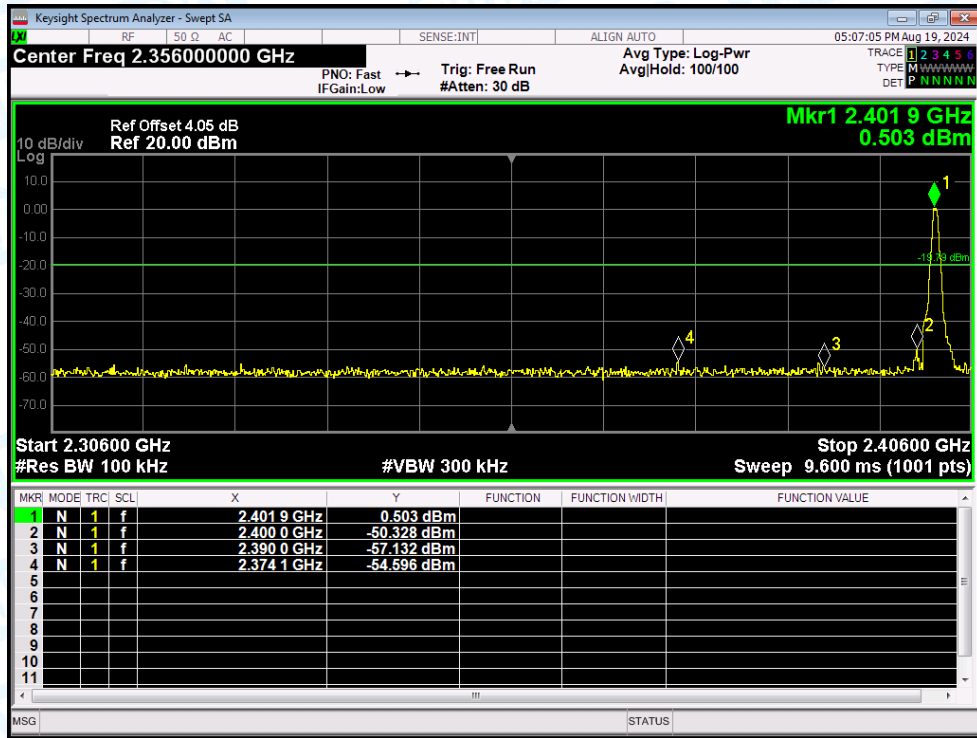
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-54.81	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-52.87	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-55.57	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-51.18	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-55.58	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-53.19	-20	Pass

Test Graphs

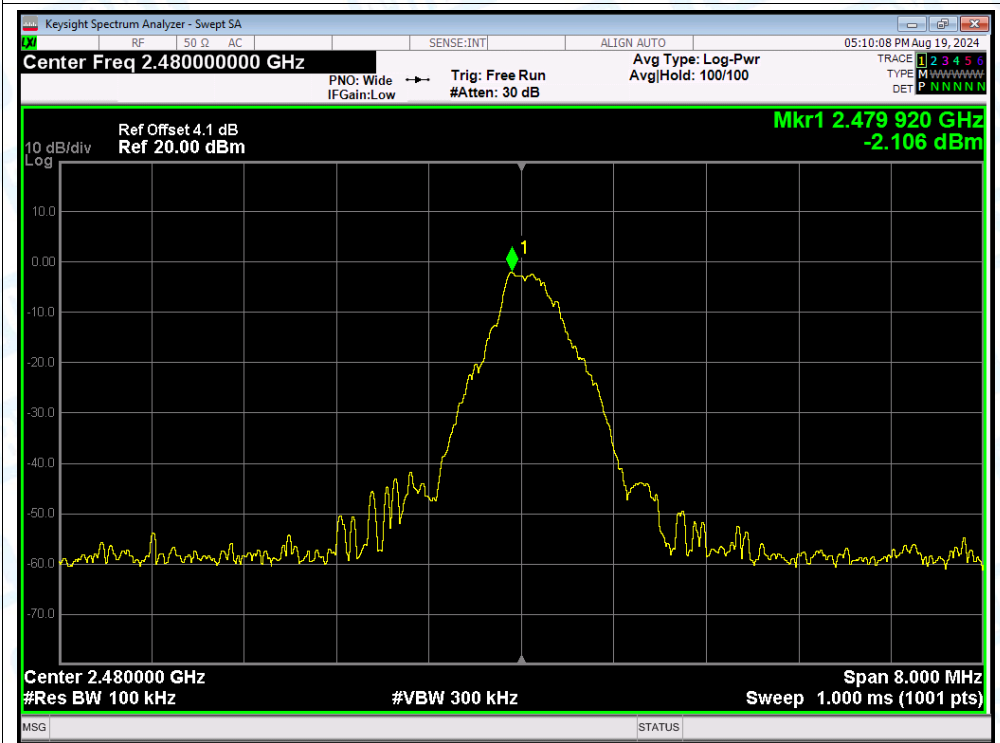
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



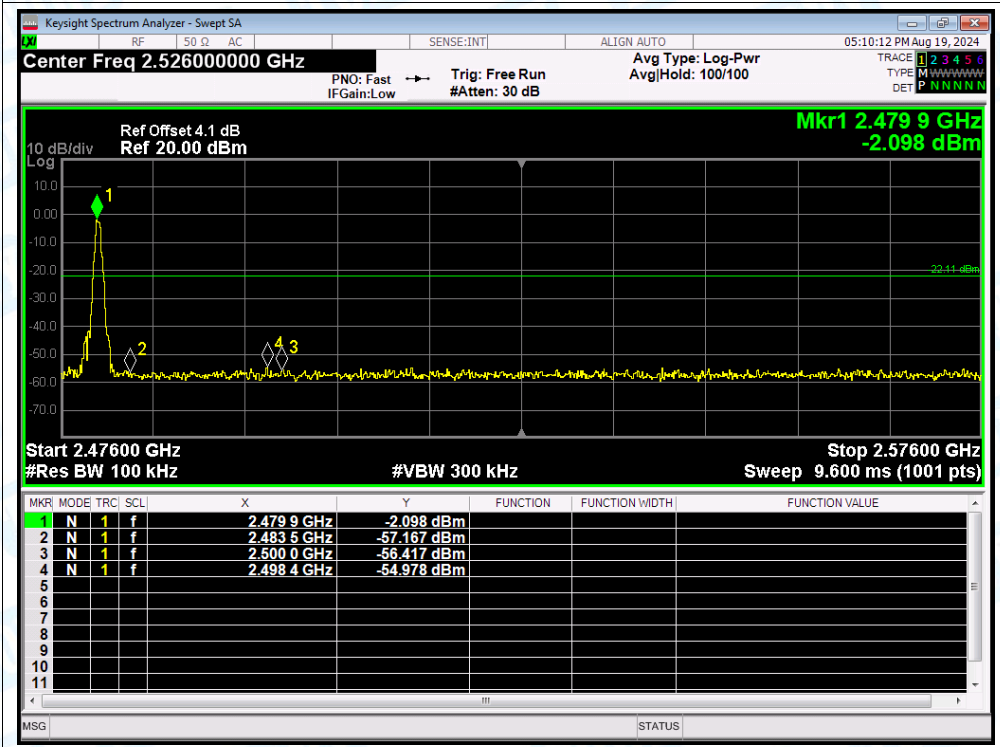
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



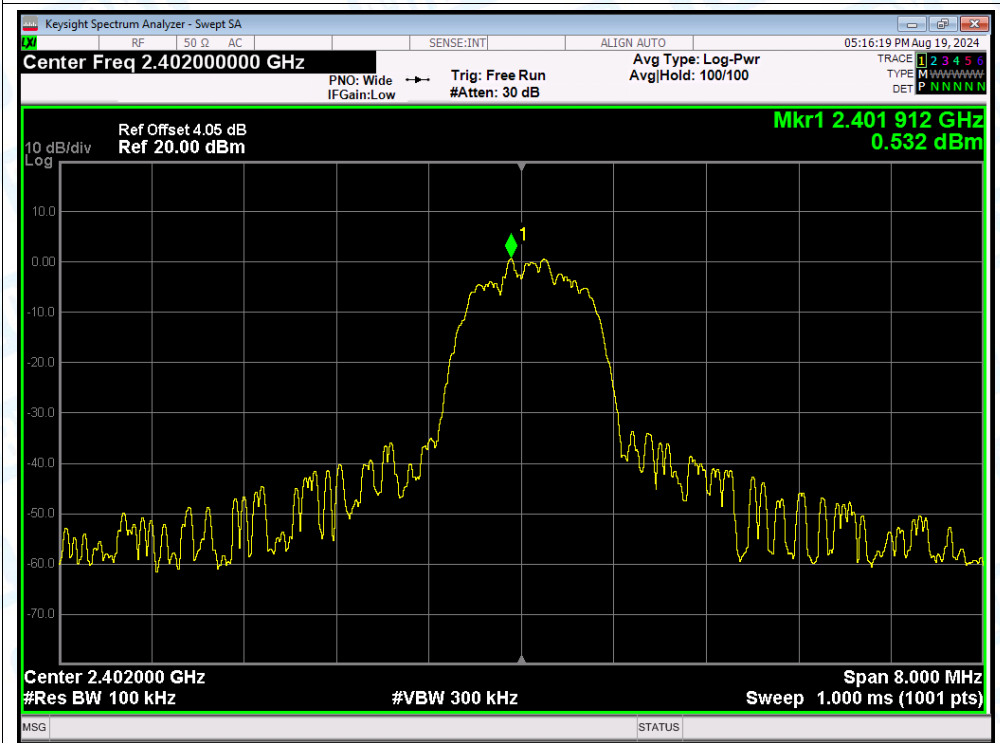
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



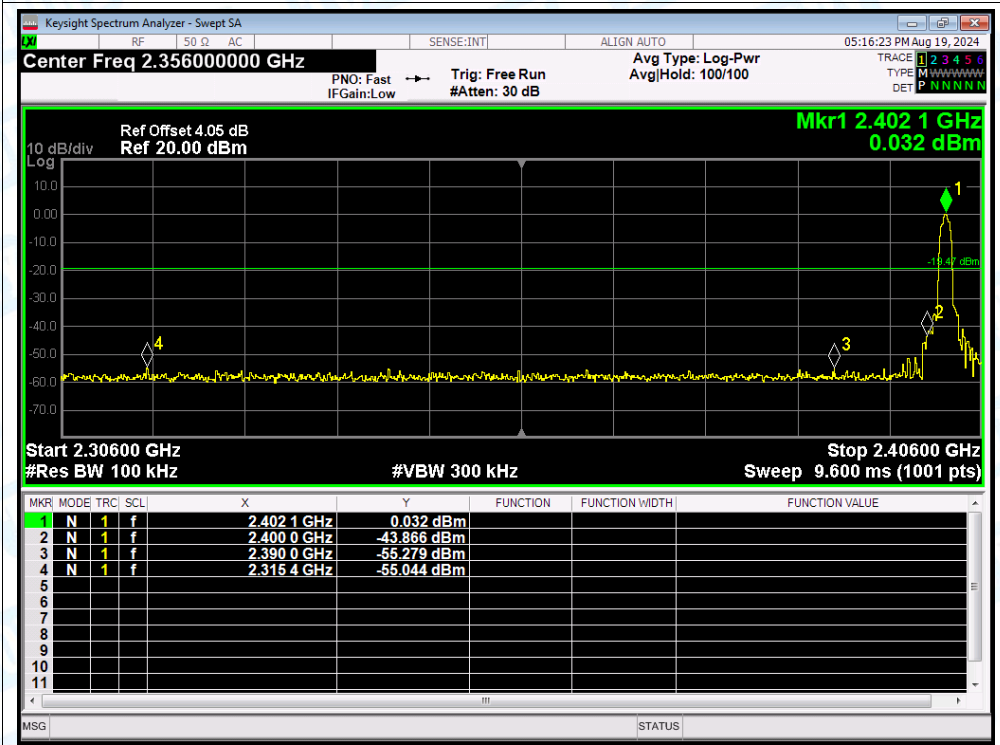
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission

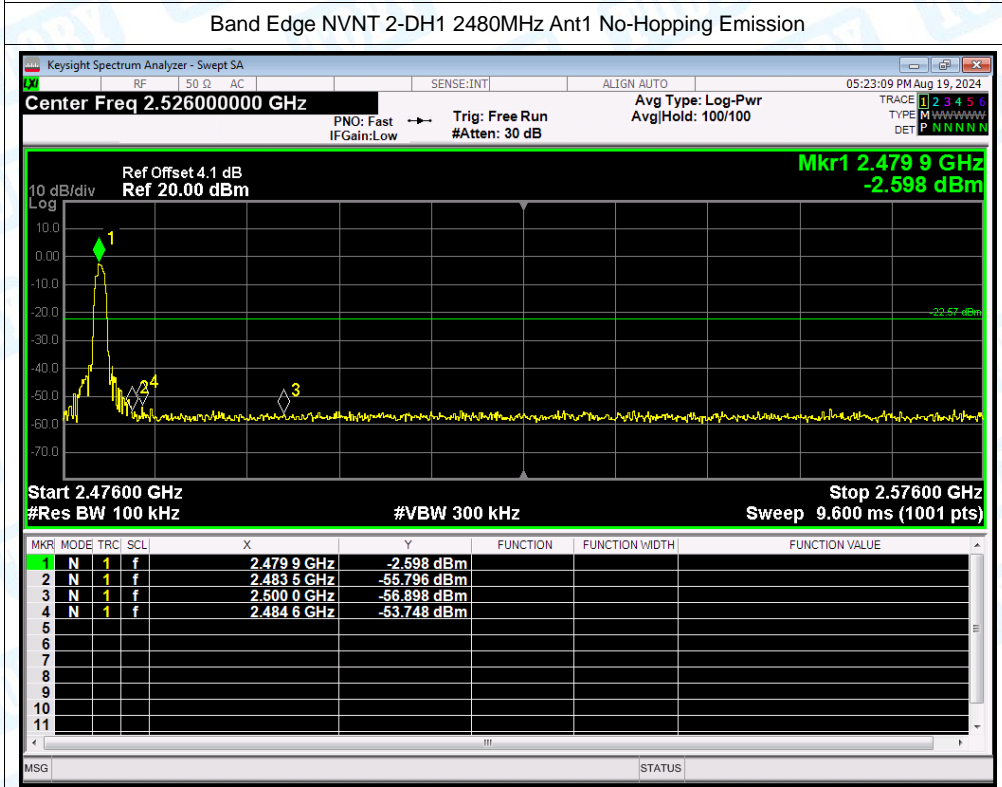
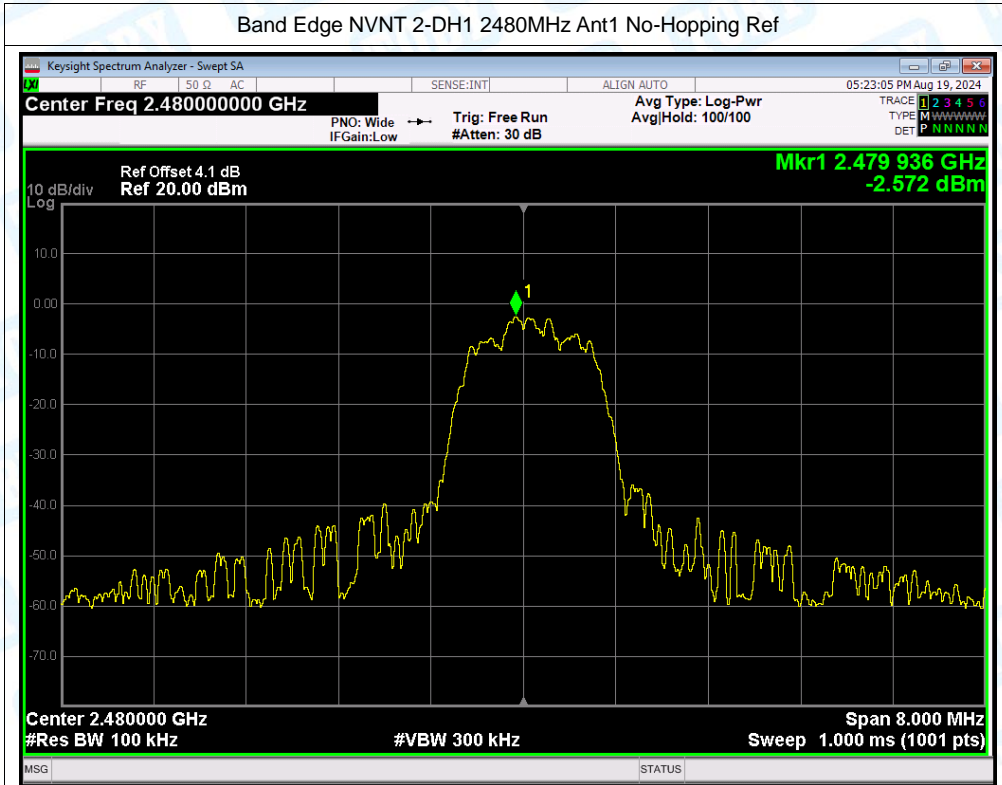


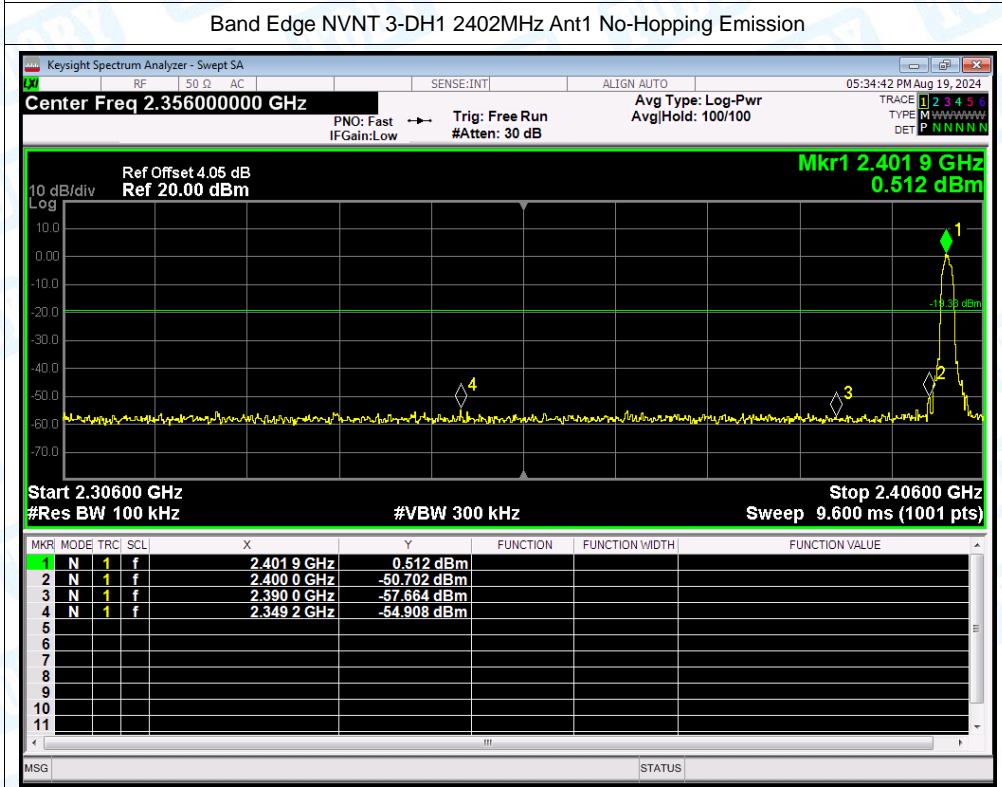
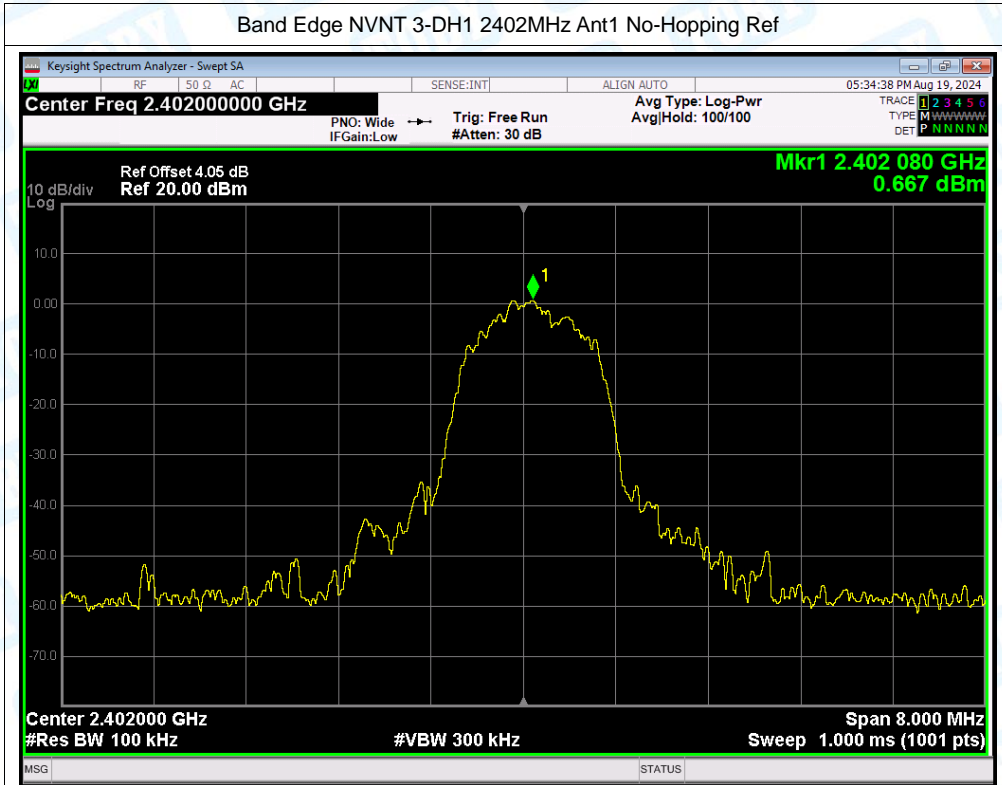
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



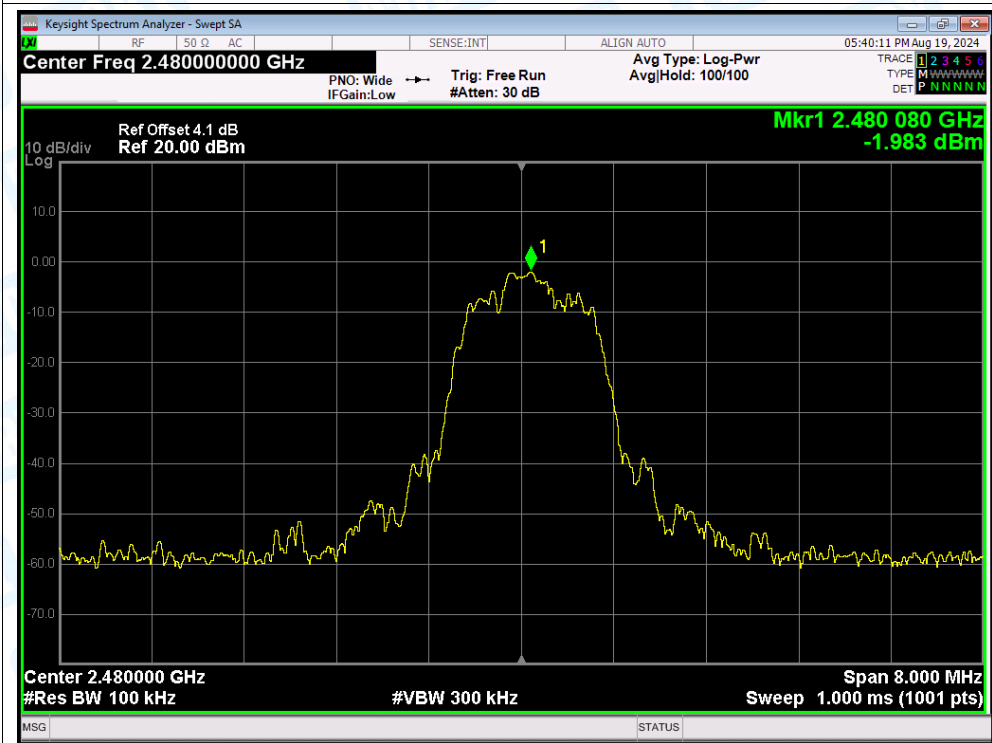
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



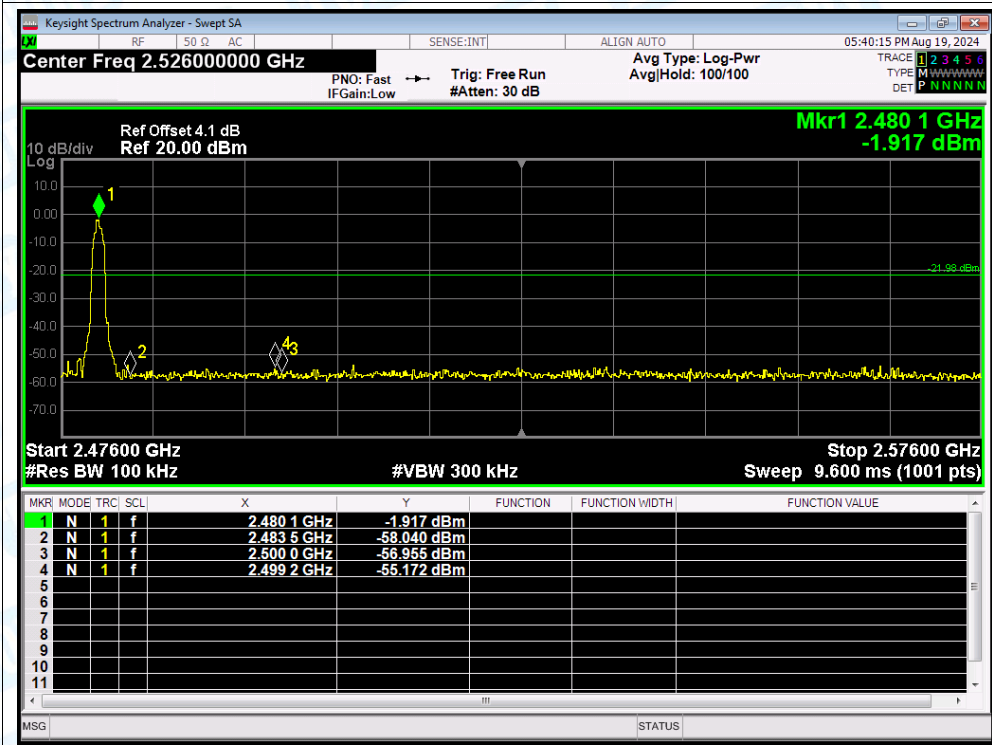




Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Ref



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

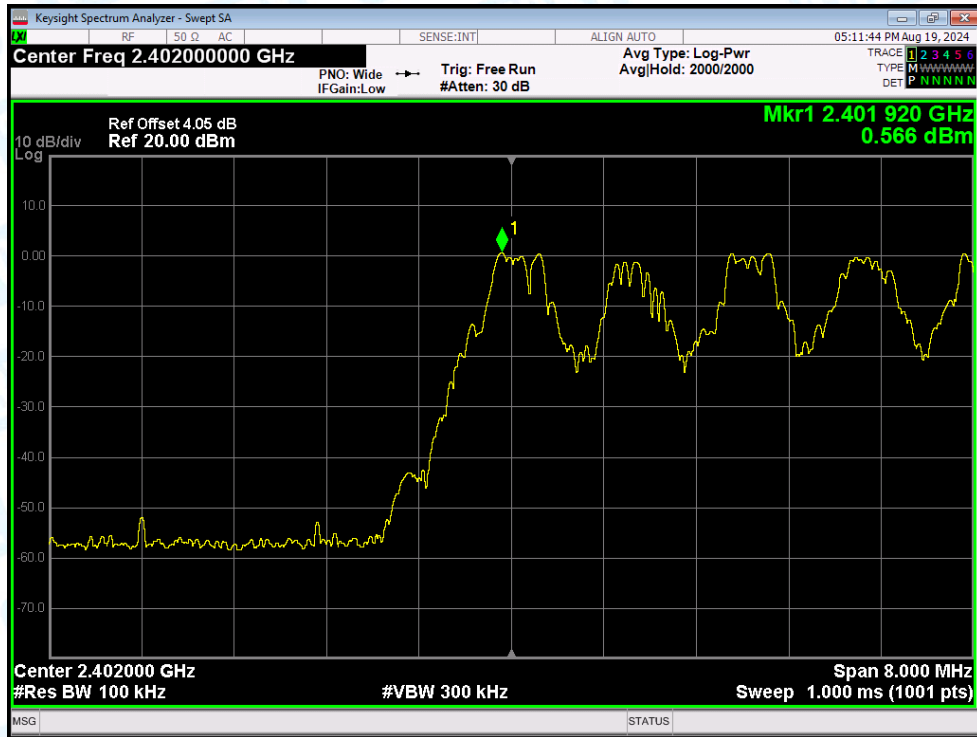


6. Band Edge(Hopping)

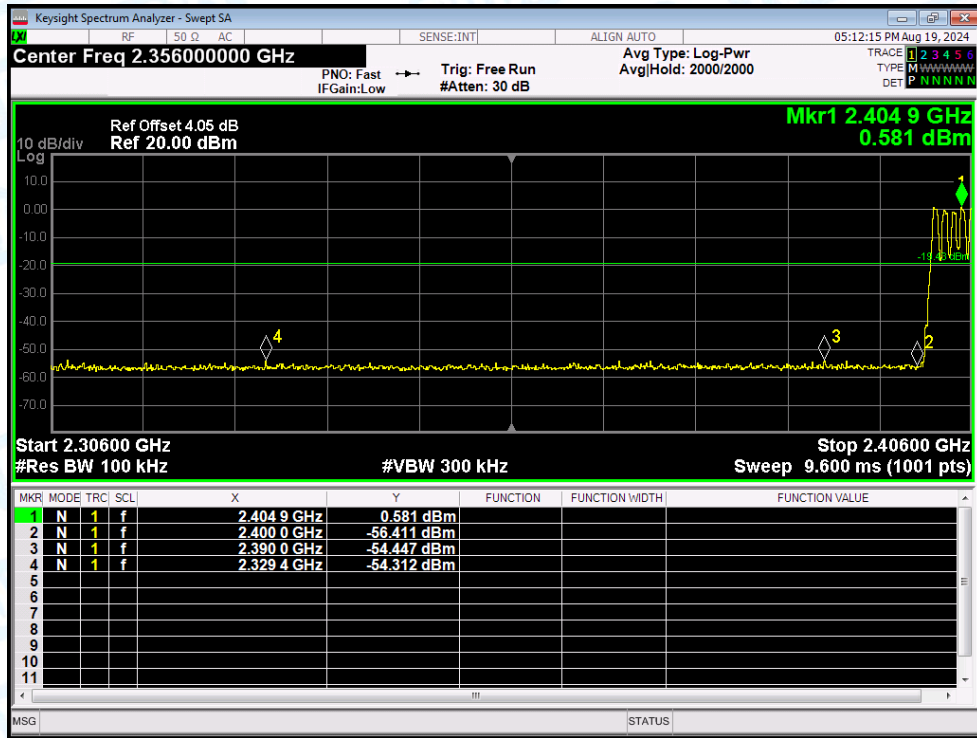
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-54.88	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-51.52	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-54.36	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-51.25	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-55.01	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-52.08	-20	Pass

Test Graphs

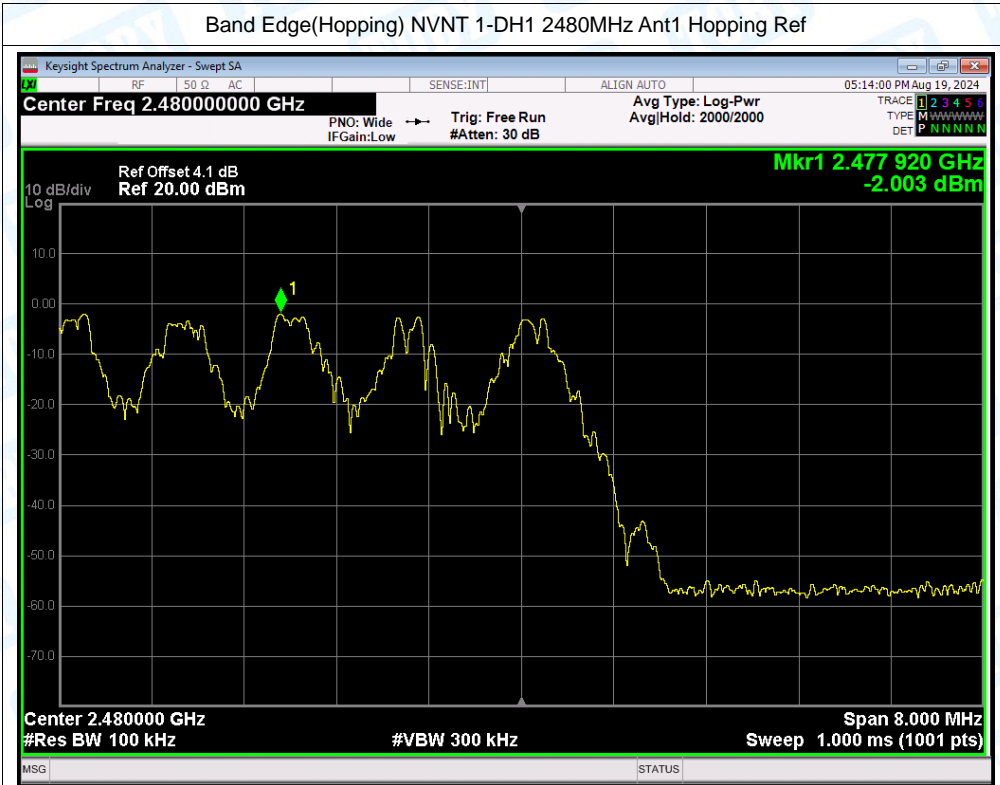
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref



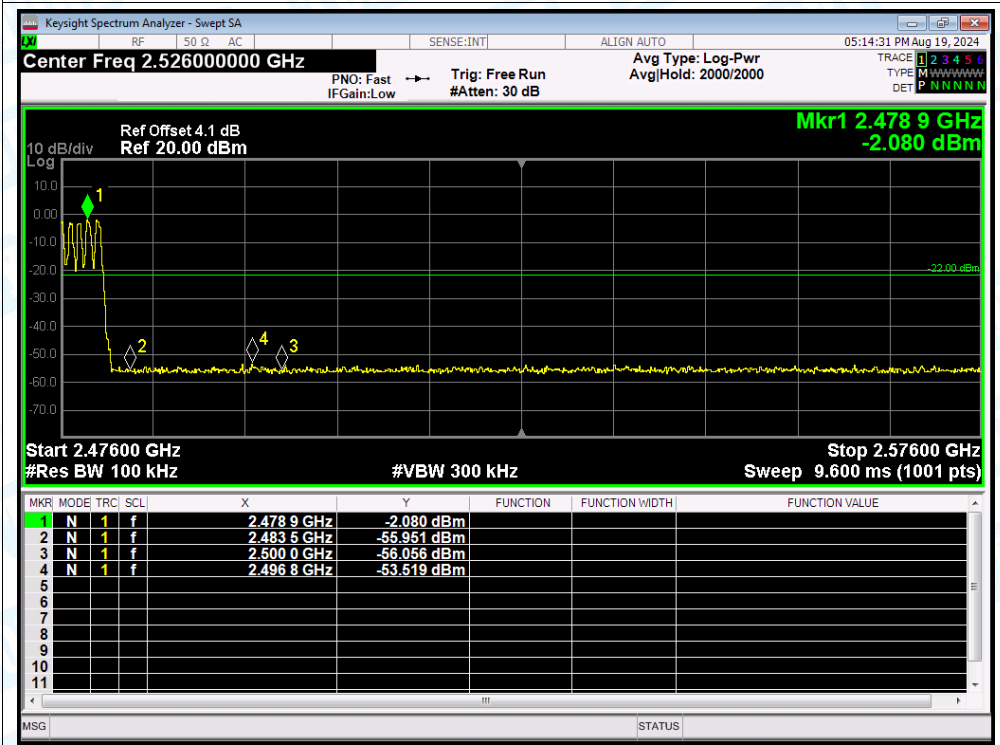
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



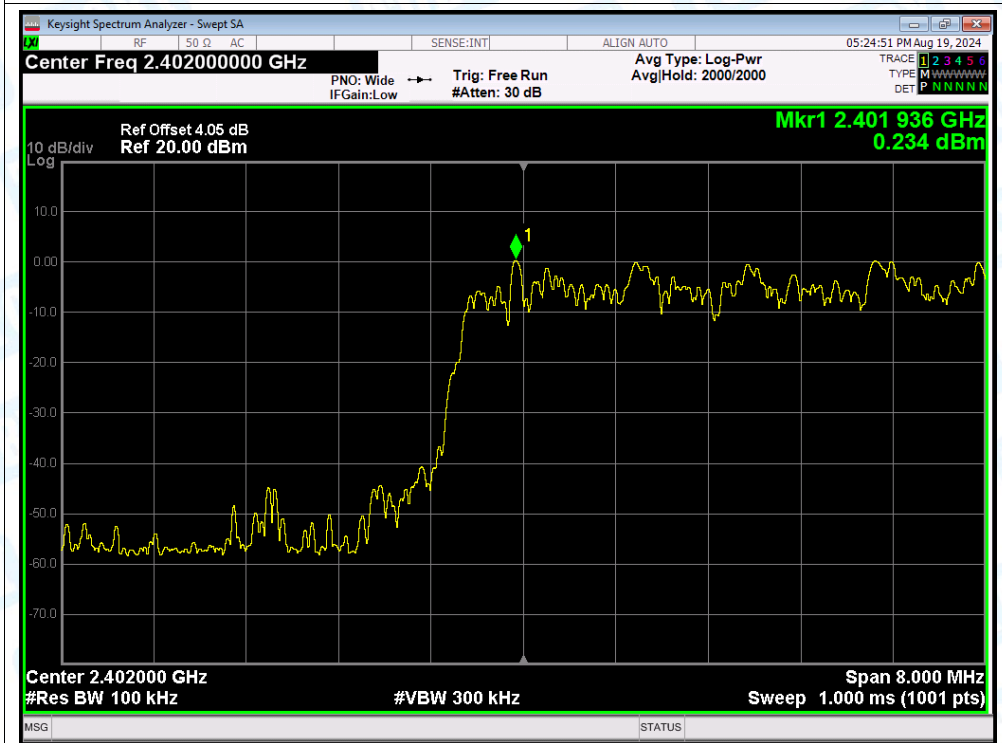
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref



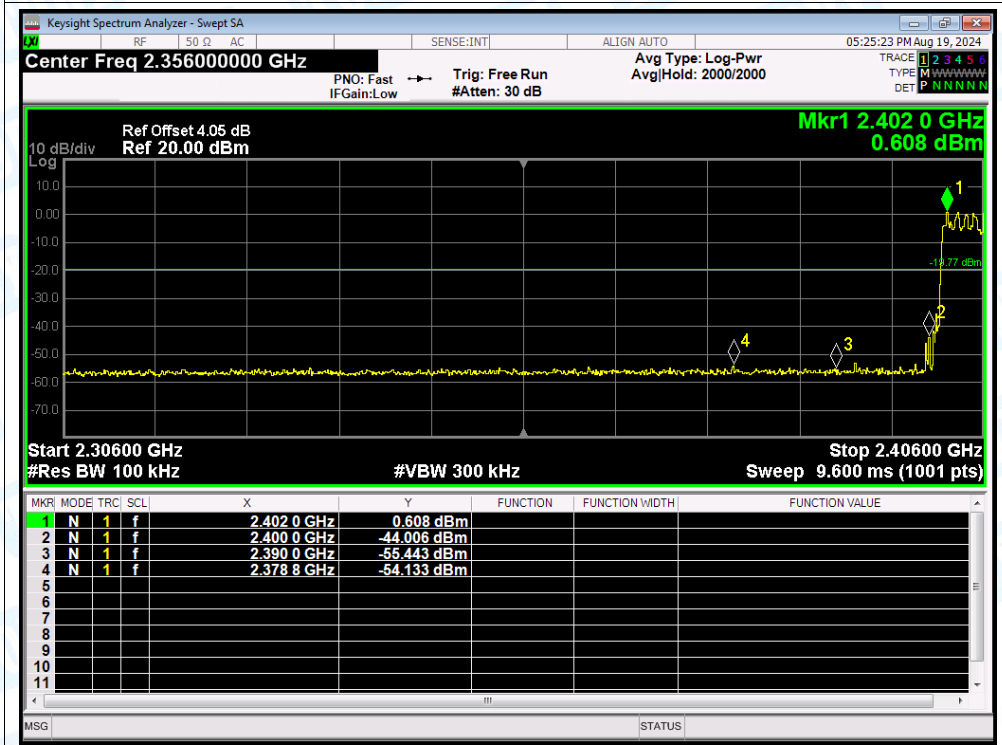
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



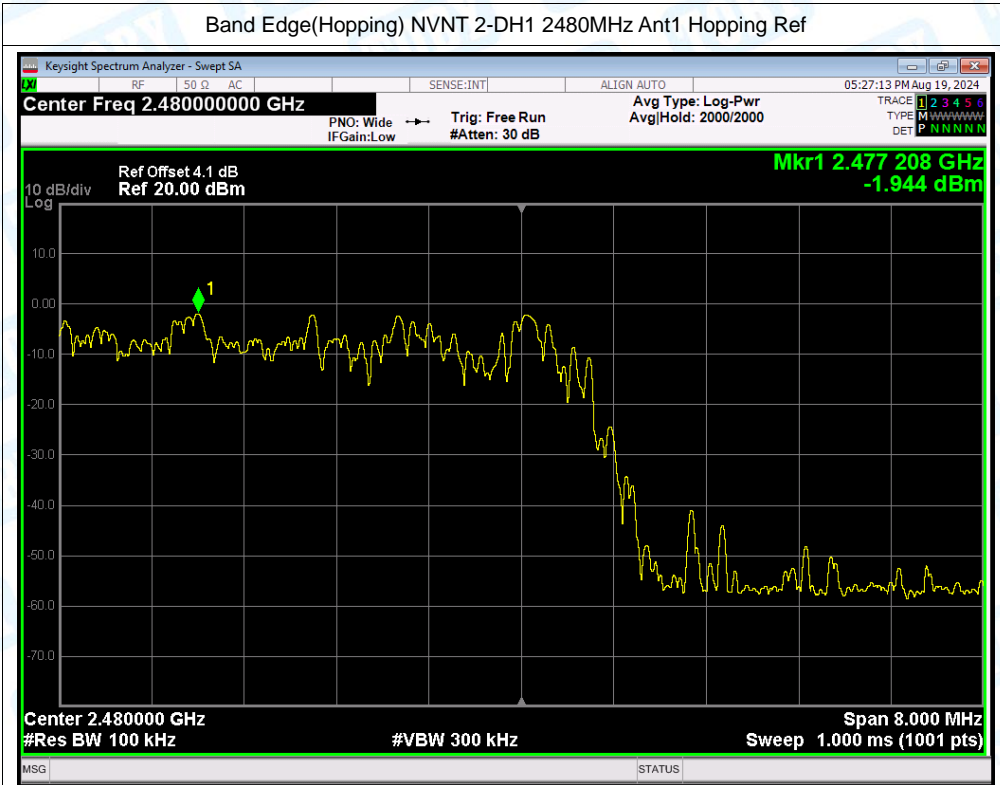
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref



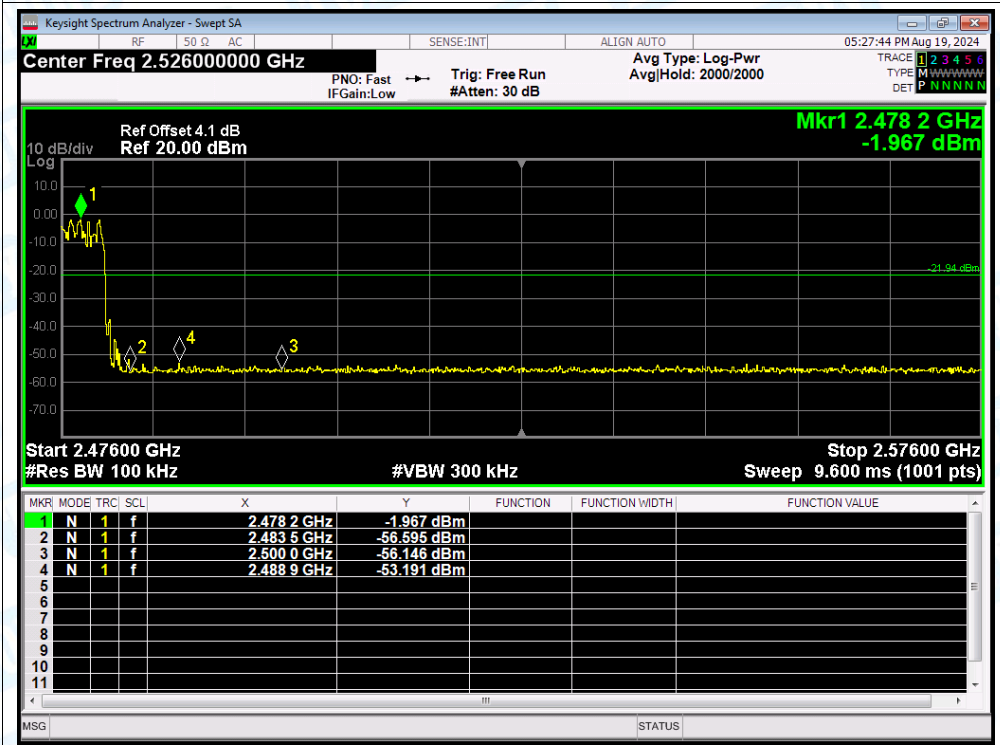
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



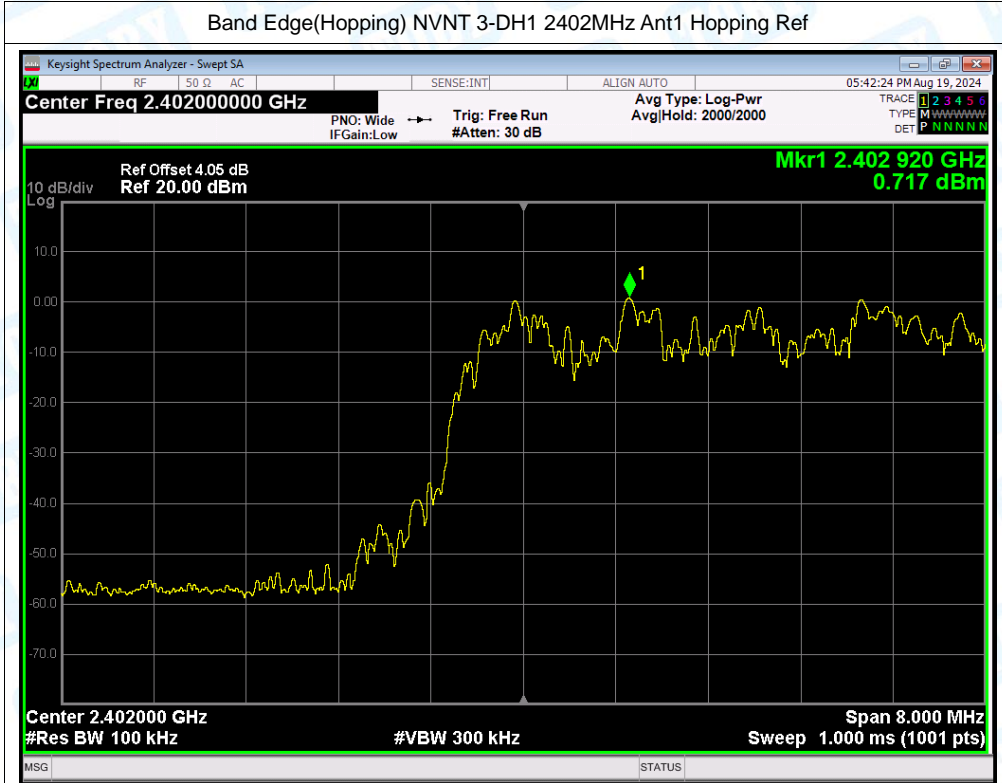
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref



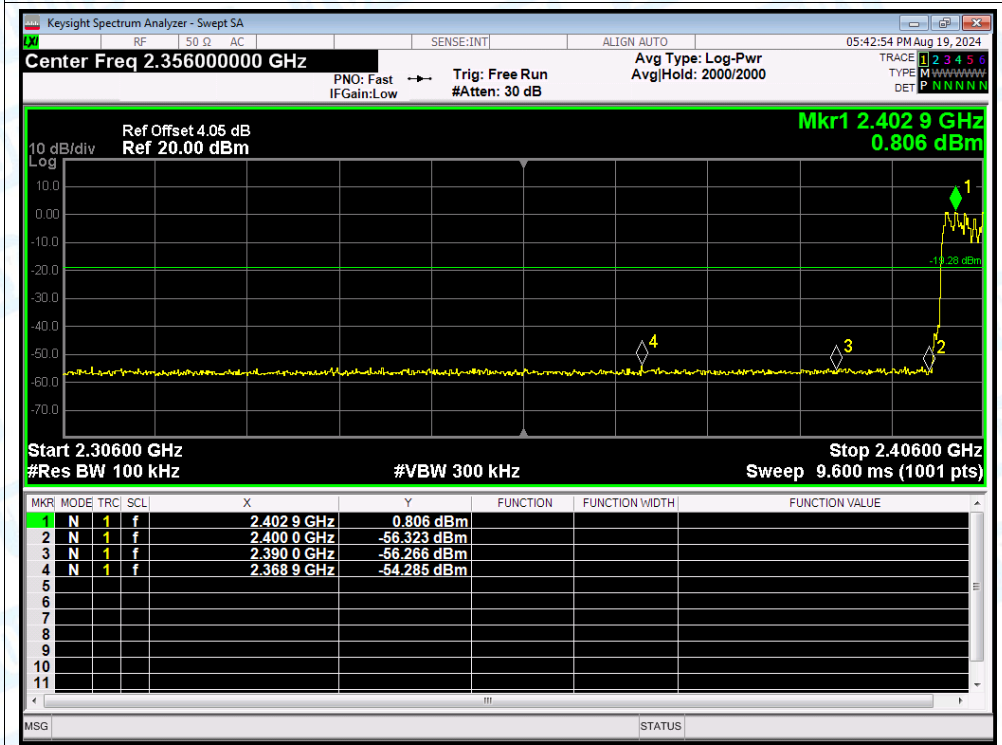
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission

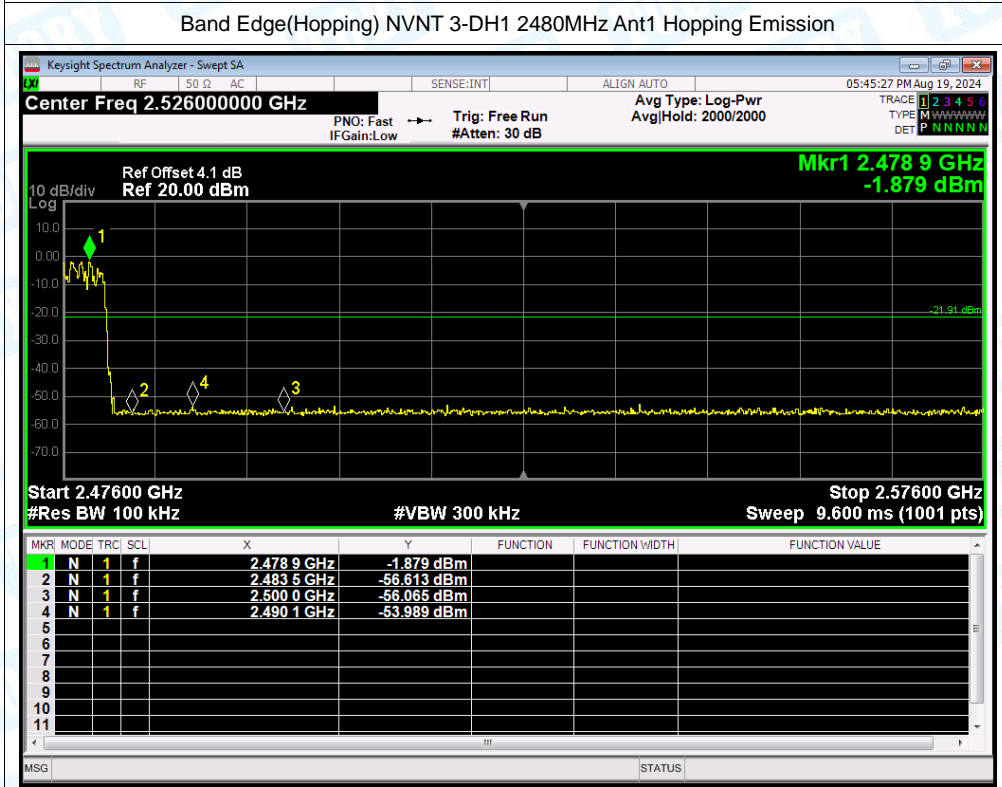


Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



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



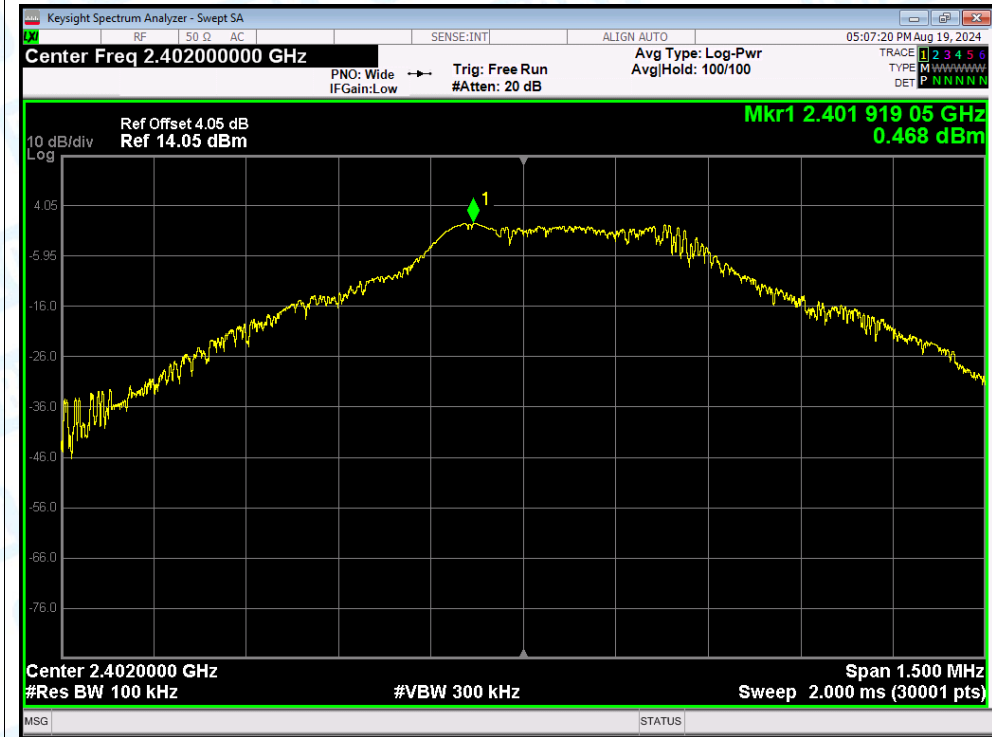


7. Conducted RF Spurious Emission

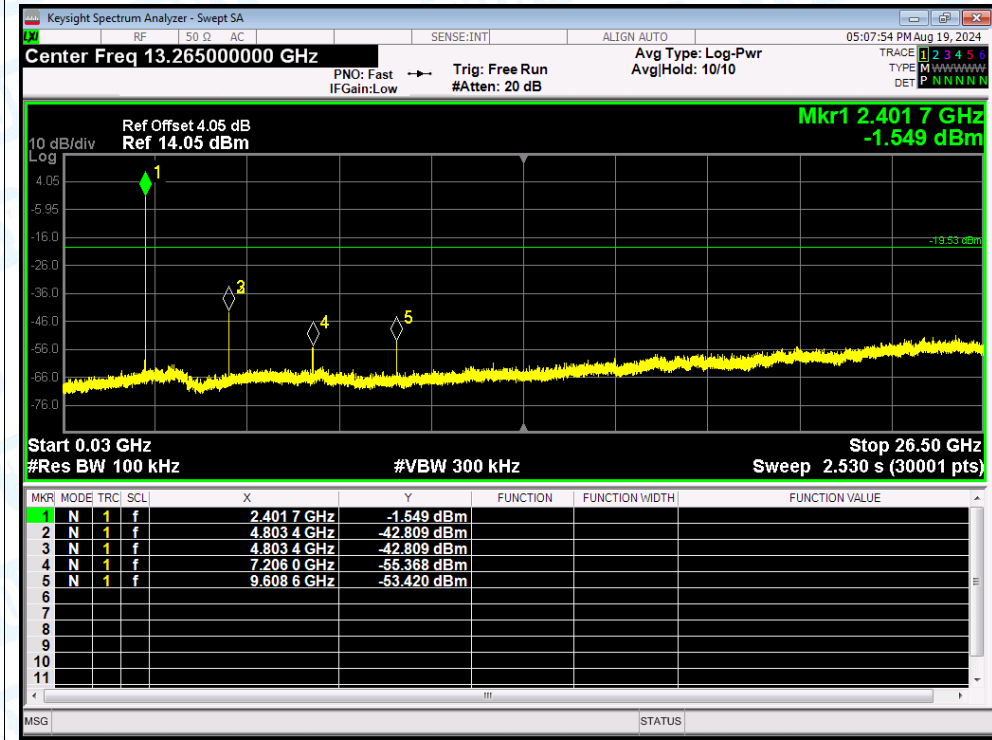
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-43.28	-20	Pass
NVNT	1-DH1	2441	Ant1	-50.24	-20	Pass
NVNT	1-DH1	2480	Ant1	-50.04	-20	Pass
NVNT	2-DH1	2402	Ant1	-44.02	-20	Pass
NVNT	2-DH1	2441	Ant1	-49.41	-20	Pass
NVNT	2-DH1	2480	Ant1	-48.44	-20	Pass
NVNT	3-DH1	2402	Ant1	-43.37	-20	Pass
NVNT	3-DH1	2441	Ant1	-47.86	-20	Pass
NVNT	3-DH1	2480	Ant1	-48.2	-20	Pass

Test Graphs

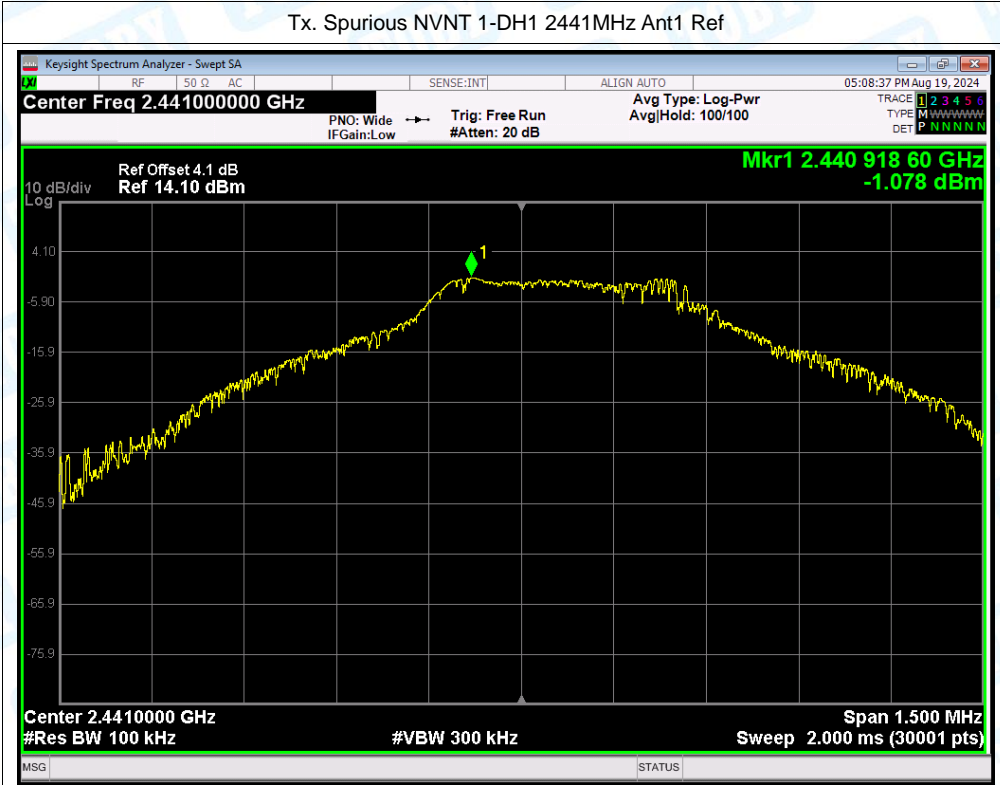
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



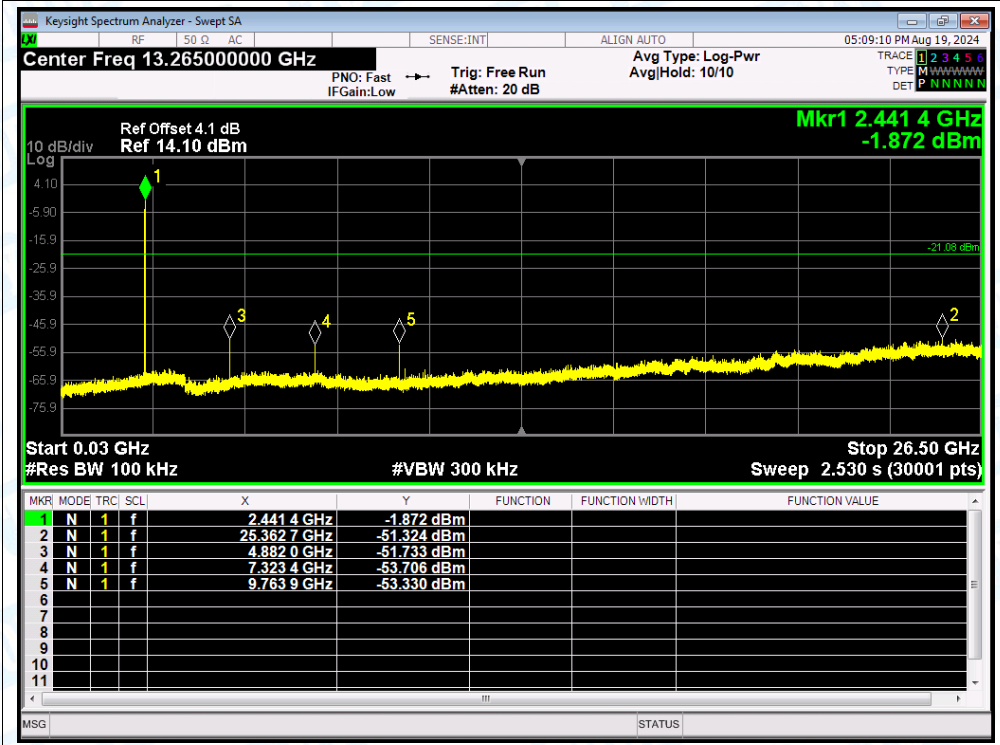
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



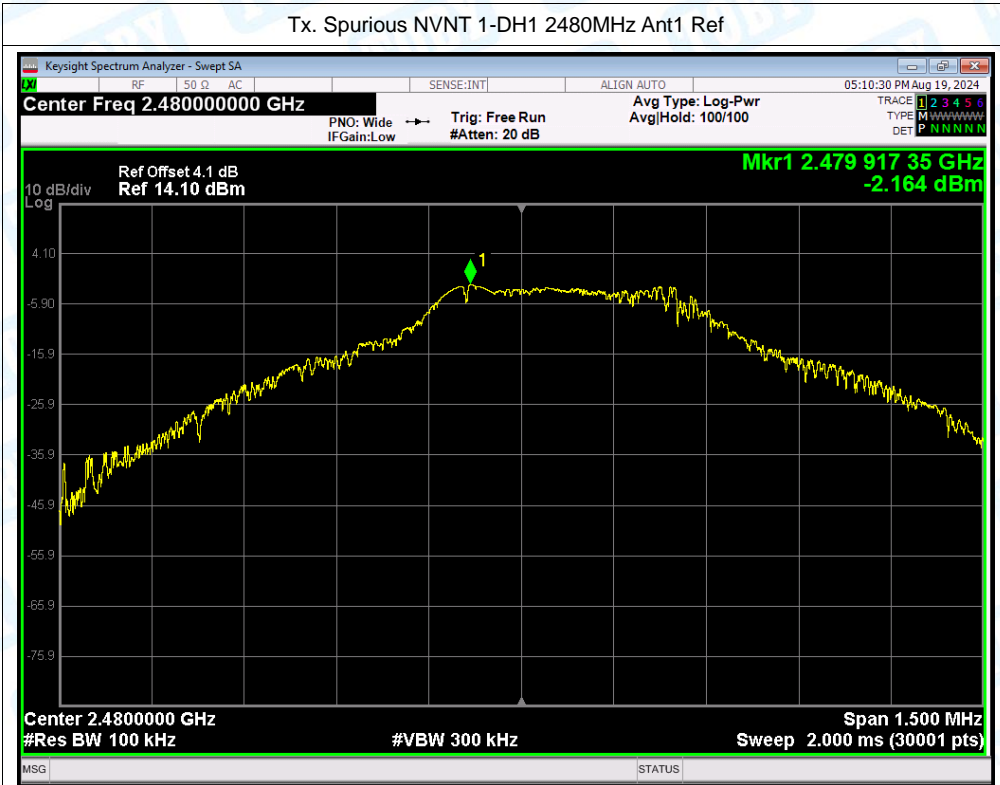
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



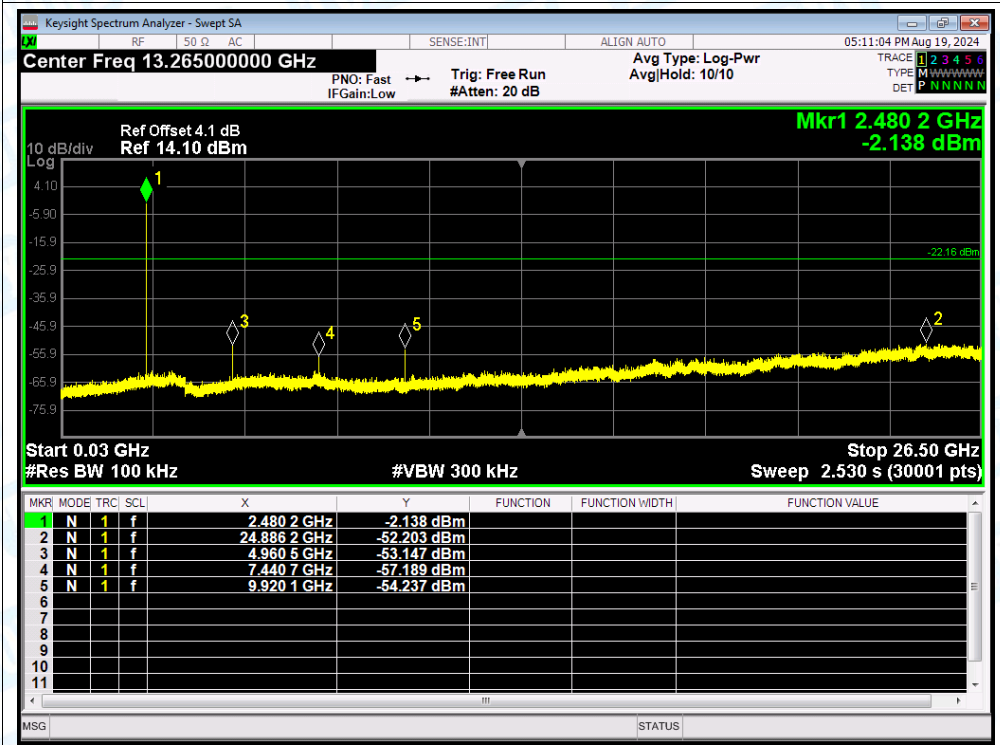
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



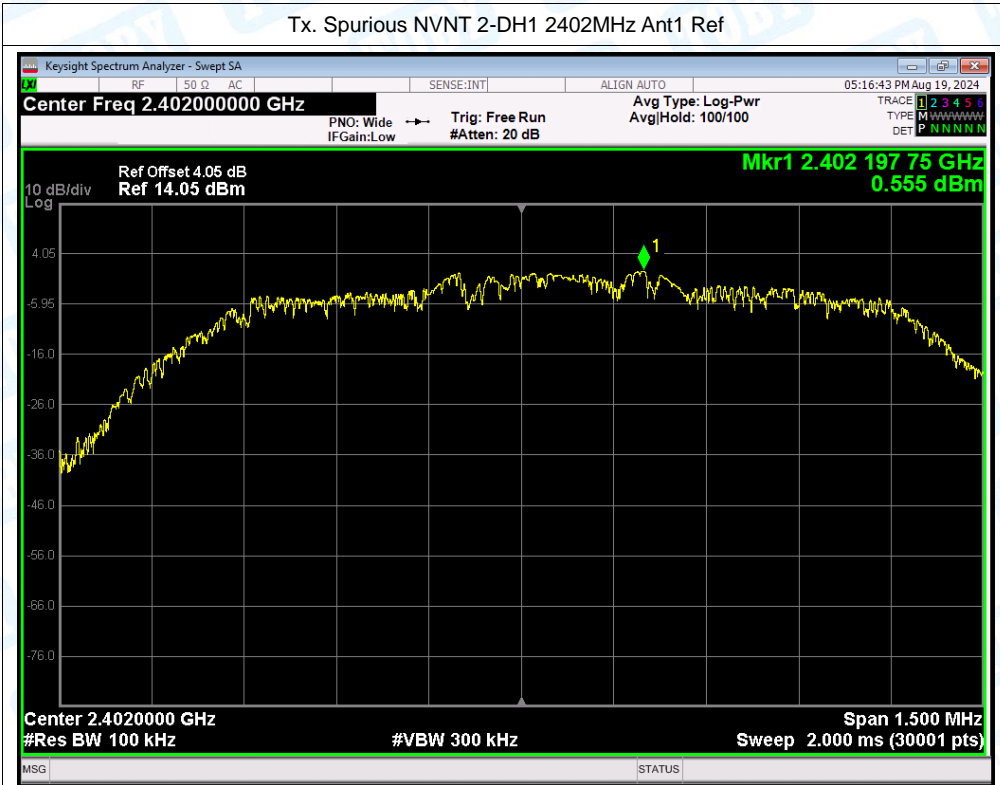
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



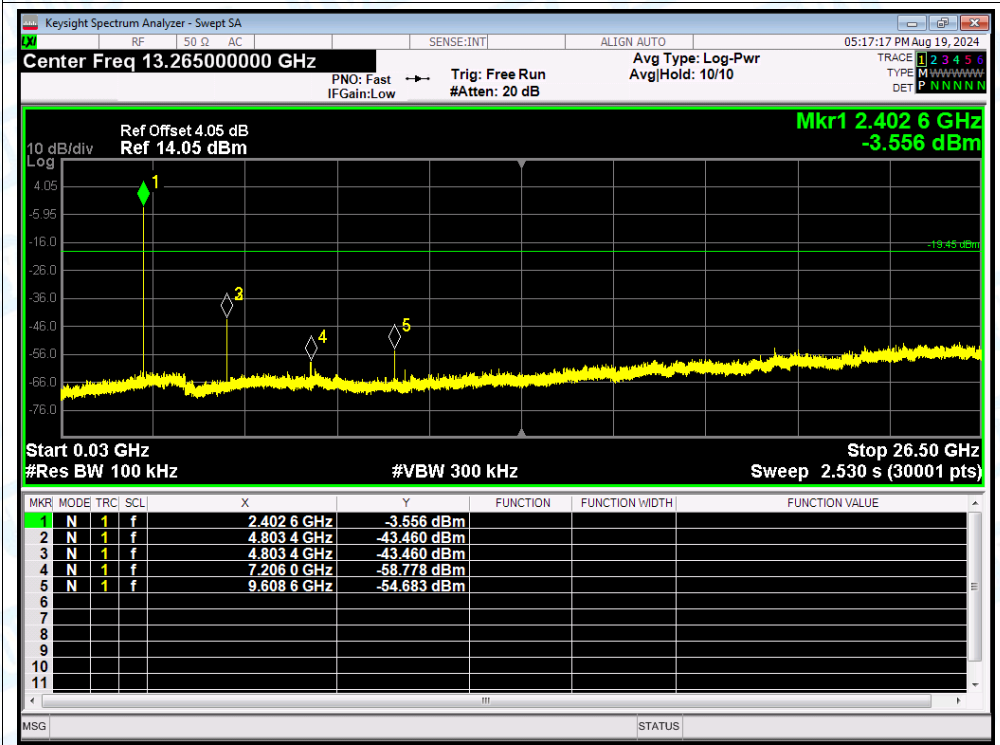
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



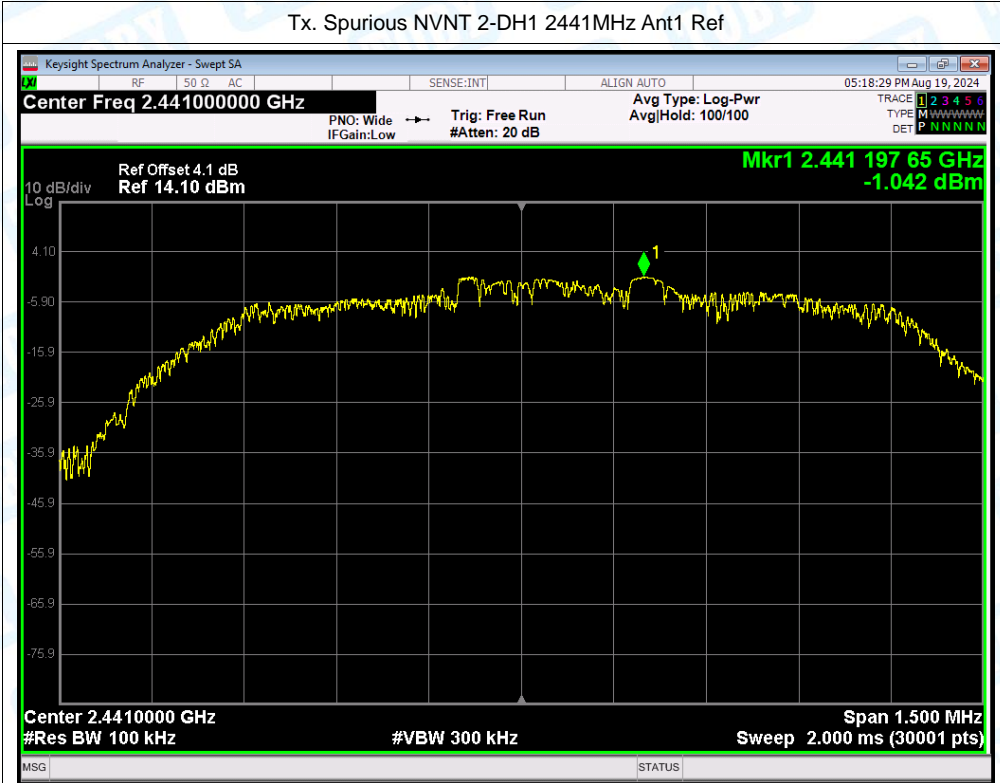
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



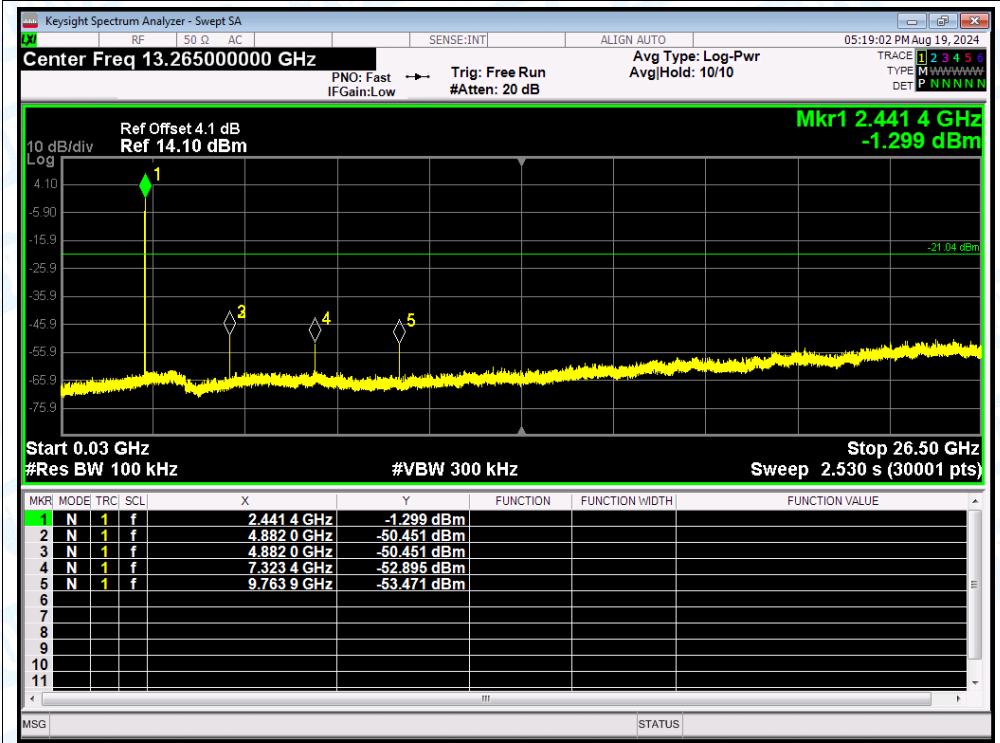
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



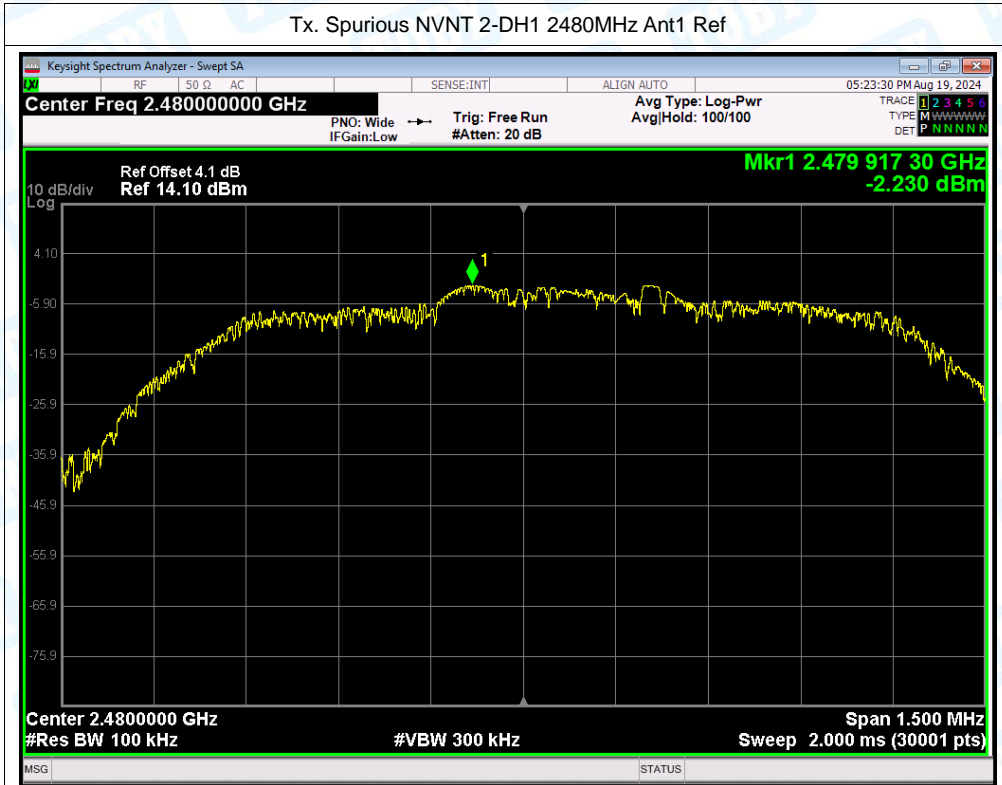
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



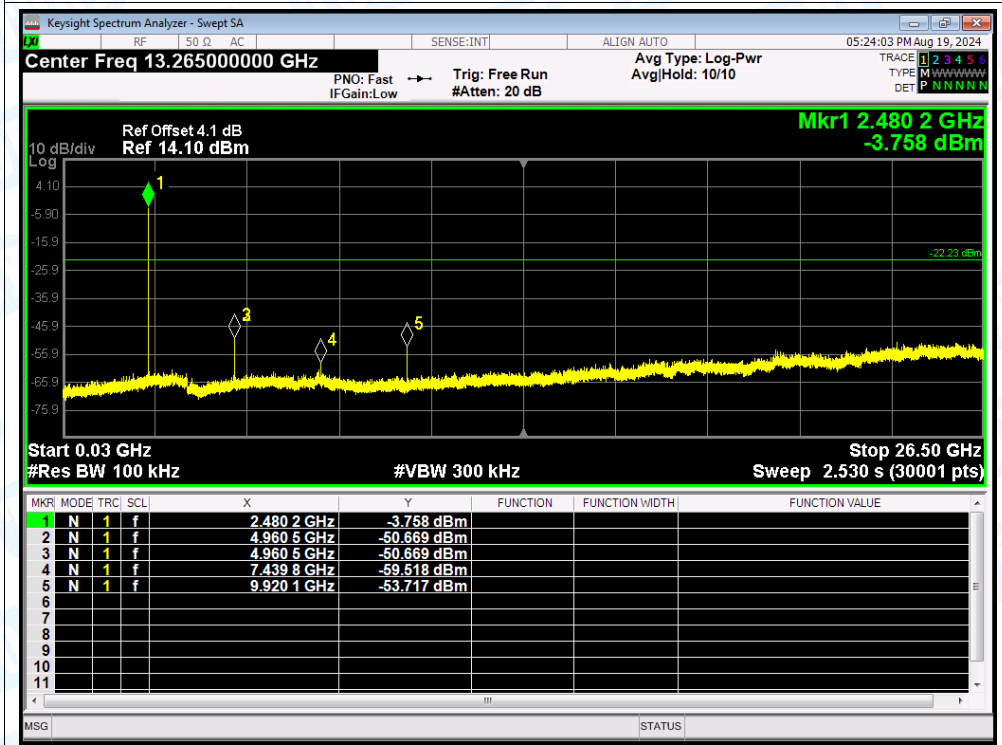
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



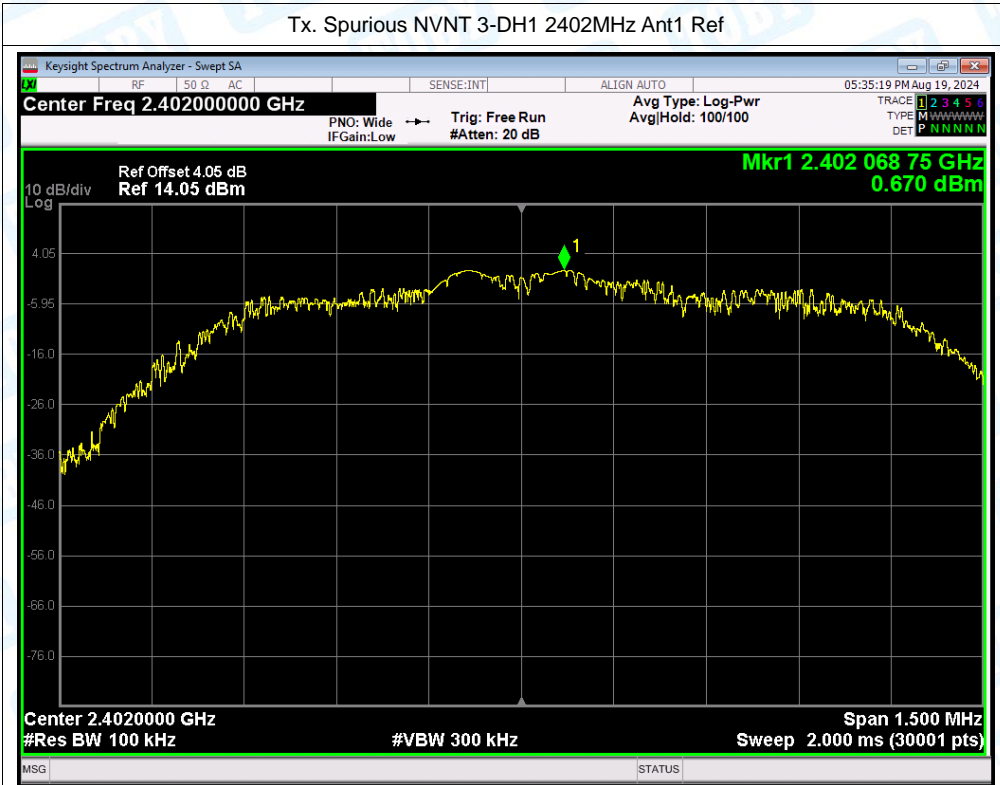
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



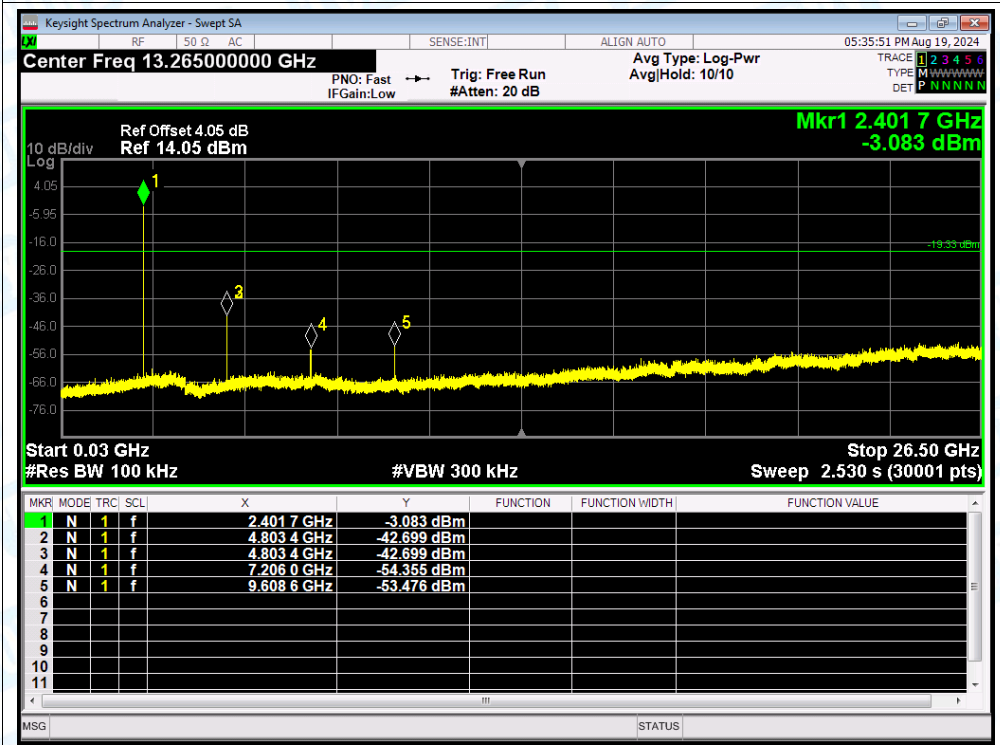
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



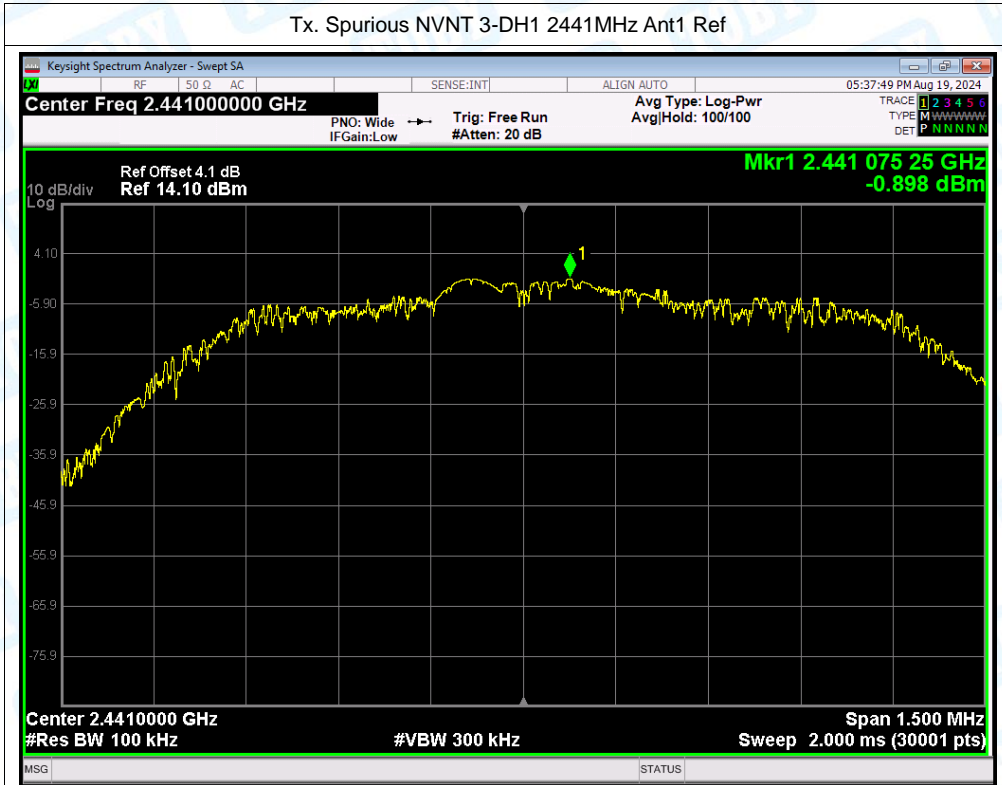
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



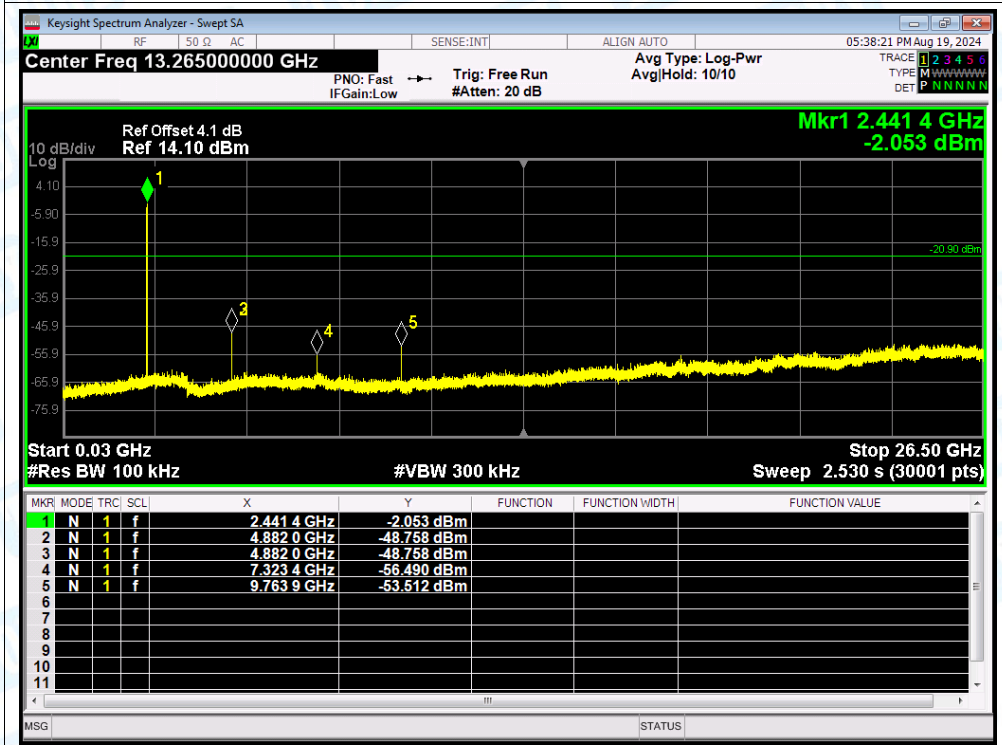
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



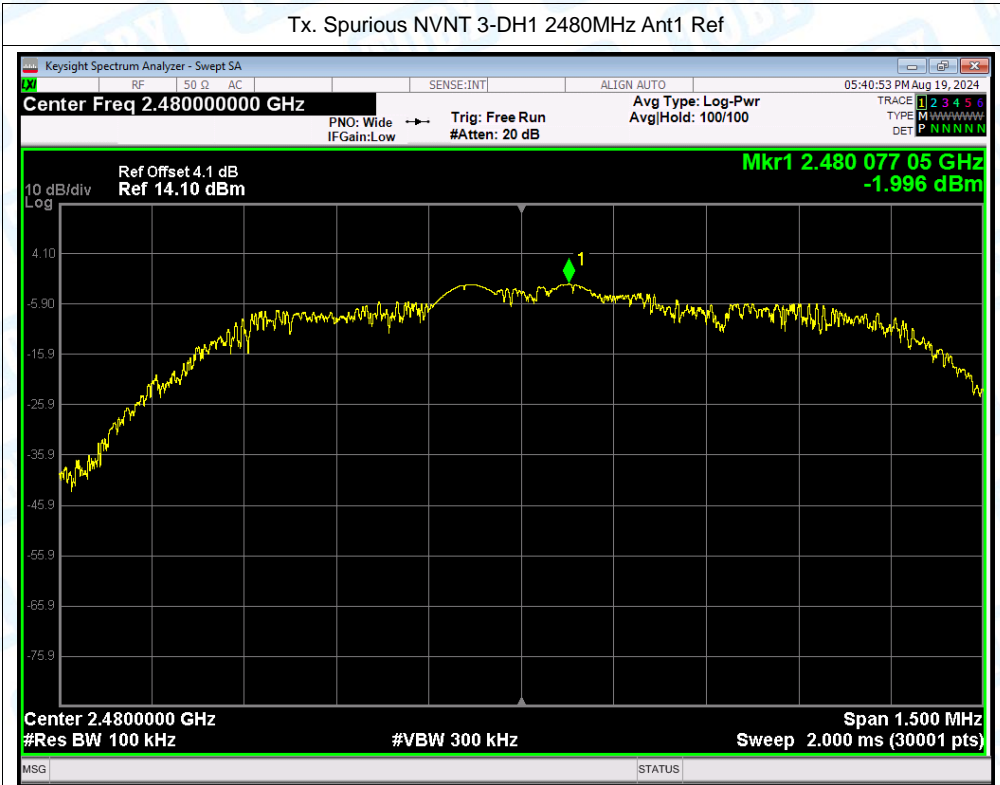
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



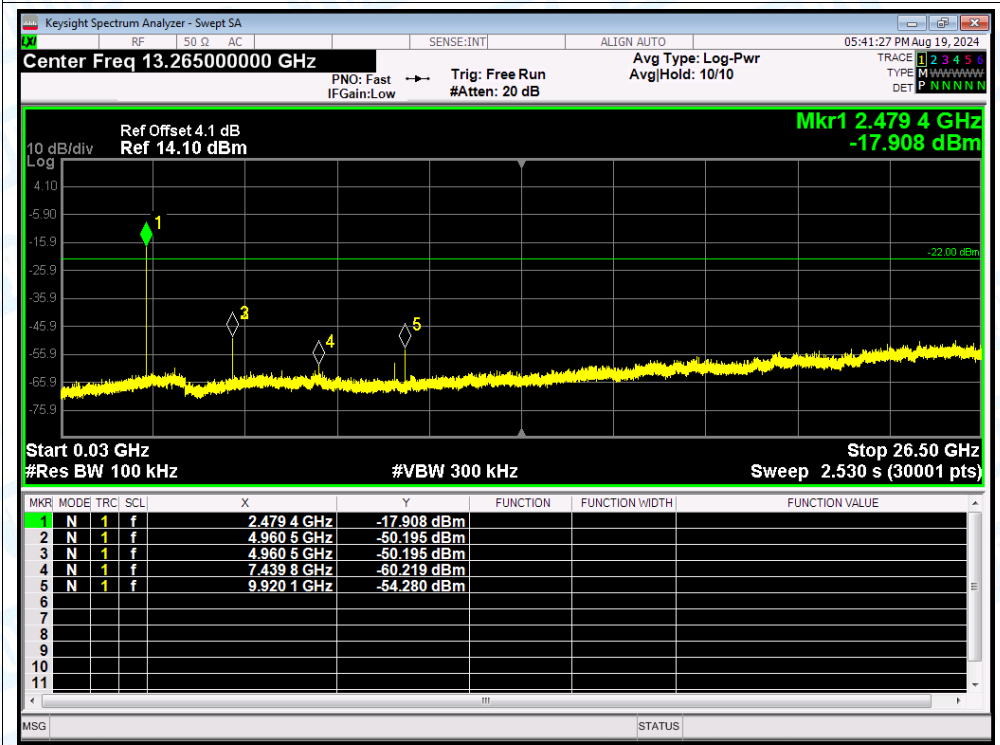
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

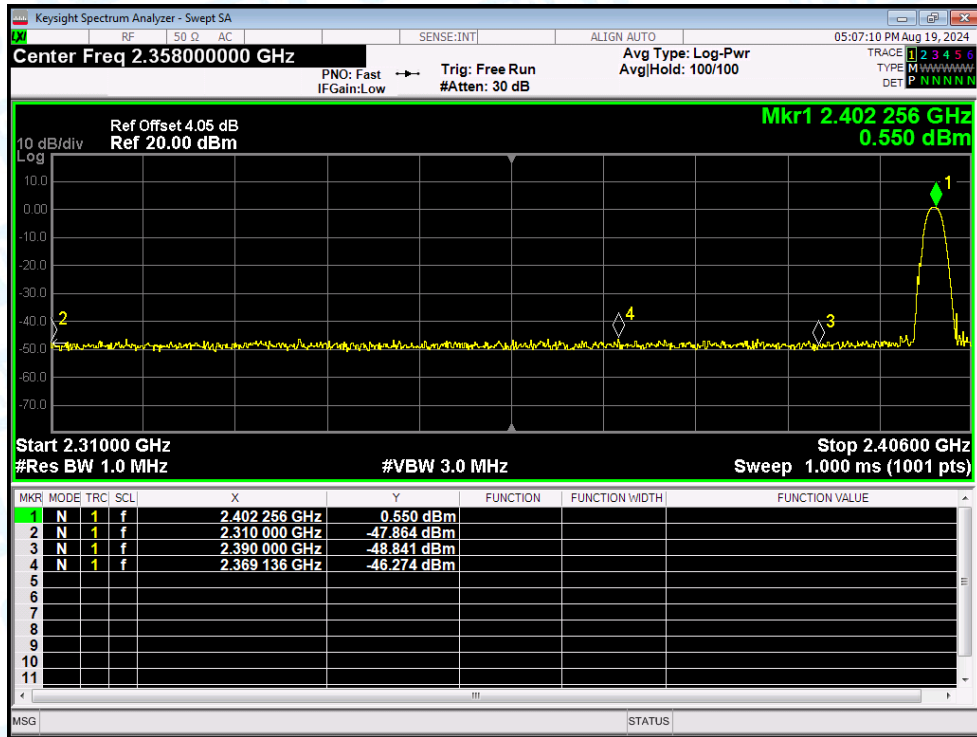


8.Restrict Band

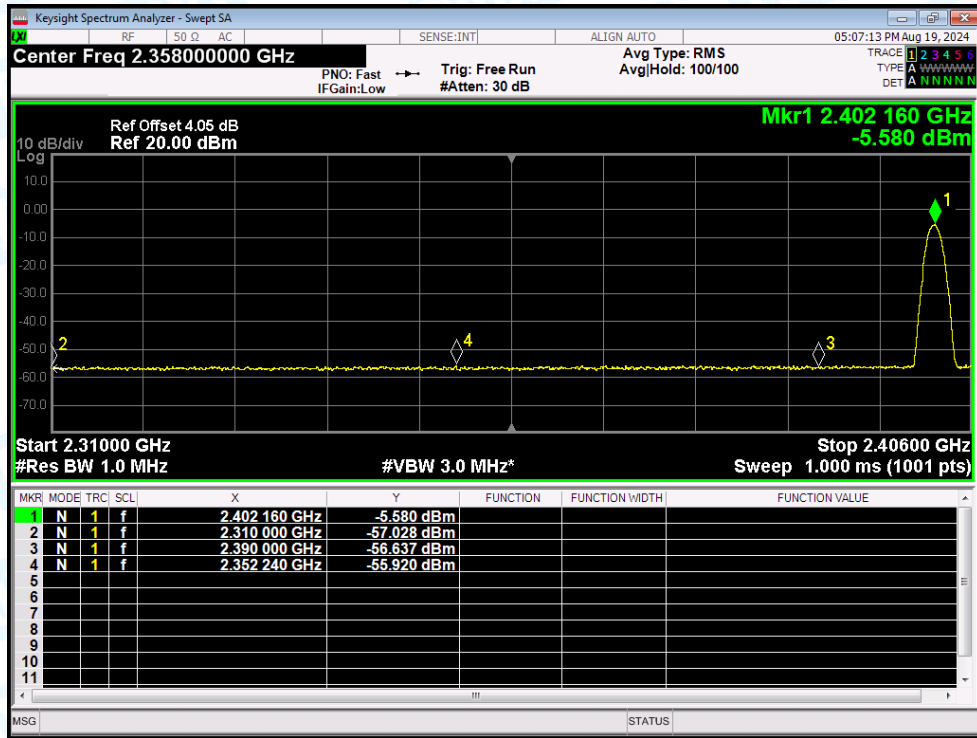
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-47.86	2	-	49.4	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-57.03	2	4.95	45.18	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2369.136	-46.27	2	-	50.99	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2352.24	-55.92	2	4.95	46.29	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-48.84	2	-	48.42	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-56.64	2	4.95	45.57	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-48.35	2	-	48.91	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-56.25	2	4.95	45.96	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2497.528	-45.2	2	-	52.06	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2490.376	-55.17	2	4.95	47.04	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-48.16	2	-	49.1	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-56.2	2	4.95	46.01	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-49.69	2	-	47.57	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.94	2	4.84	45.16	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2356.656	-45.96	2	-	51.3	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2380.08	-55.84	2	4.84	46.26	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-47.09	2	-	50.17	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-56.2	2	4.84	45.9	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-48.5	2	-	48.76	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-55.9	2	4.95	46.31	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.872	-36.55	2	-	60.71	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.992	-54.57	2	4.95	47.64	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-48.59	2	-	48.67	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-56.79	2	4.95	45.42	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-47.2	2	-	50.06	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.95	2	4.84	45.15	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2346.384	-46.1	2	-	51.16	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2375.856	-55.93	2	4.84	46.17	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-48.56	2	-	48.7	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-56.68	2	4.84	45.42	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-47.33	2	-	49.93	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-55.61	2	4.84	46.49	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2485.576	-45.14	2	-	52.12	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2495.92	-55.04	2	4.84	47.06	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-47.01	2	-	50.25	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.78	2	4.84	46.32	Average	54	Pass

Test Graphs

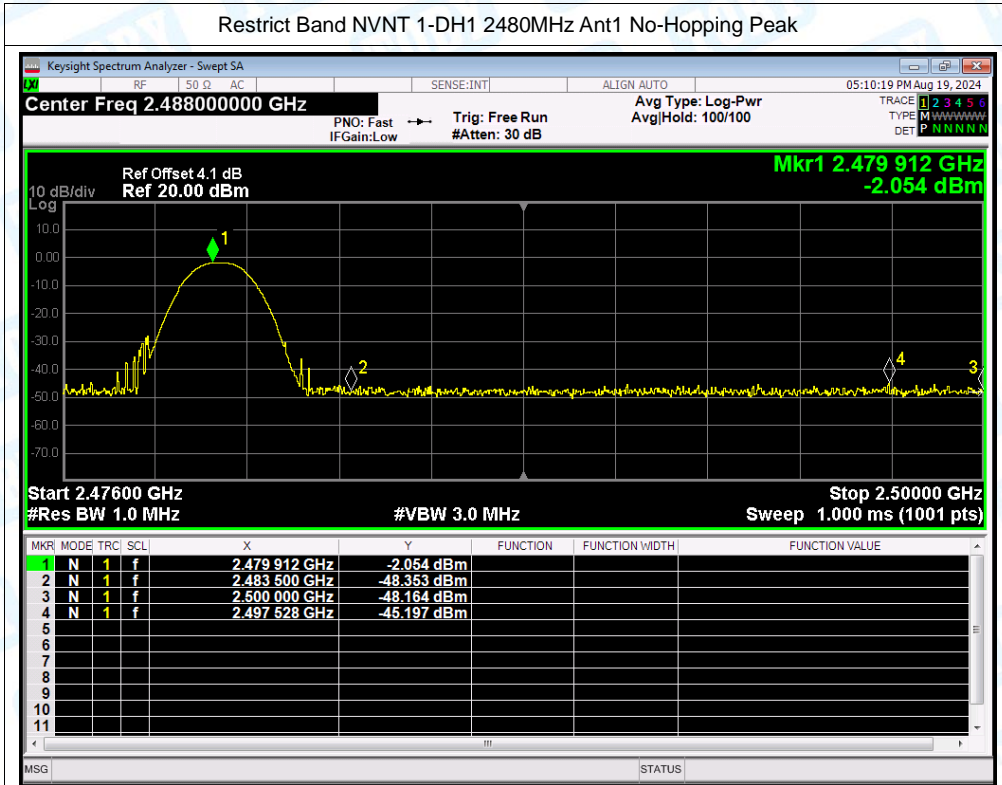
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



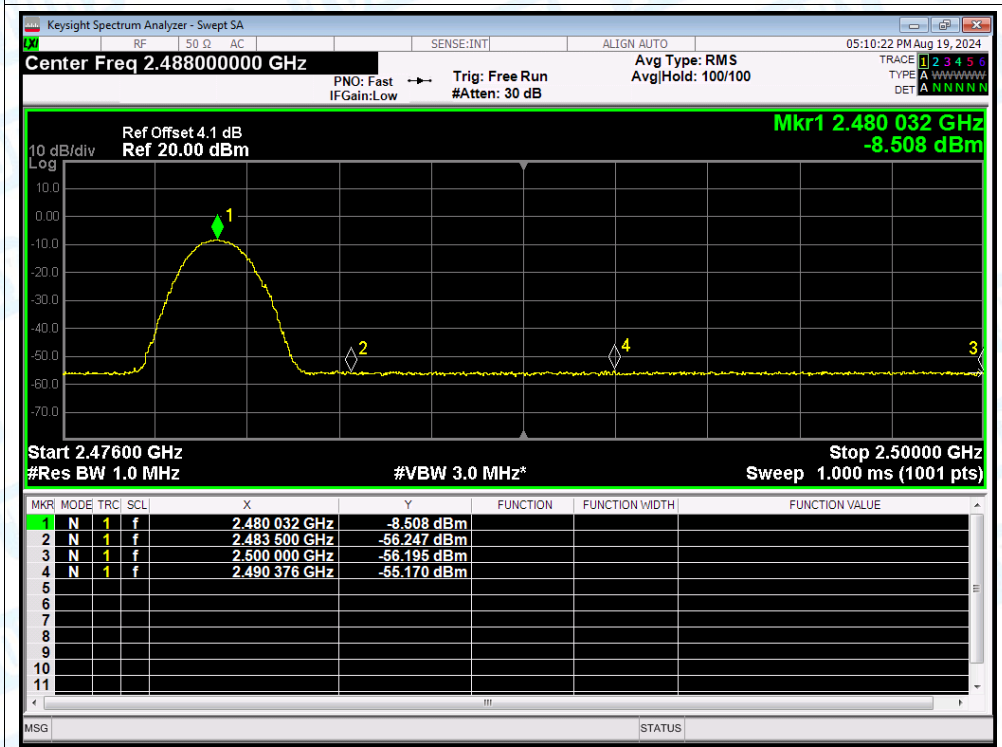
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



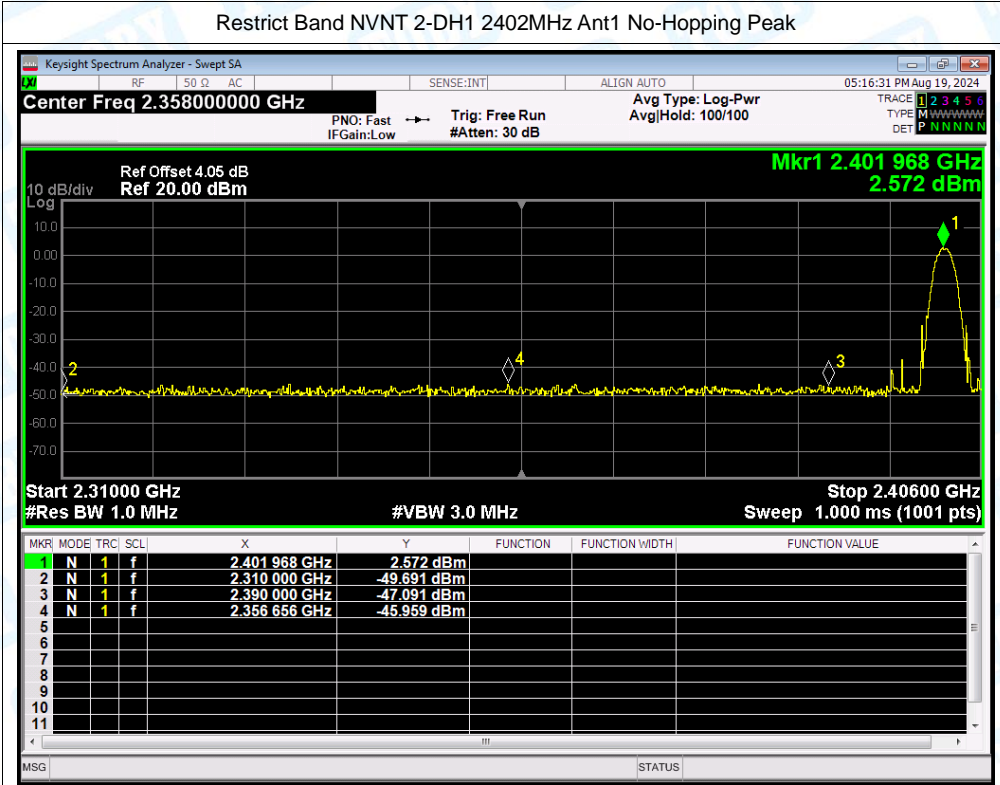
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



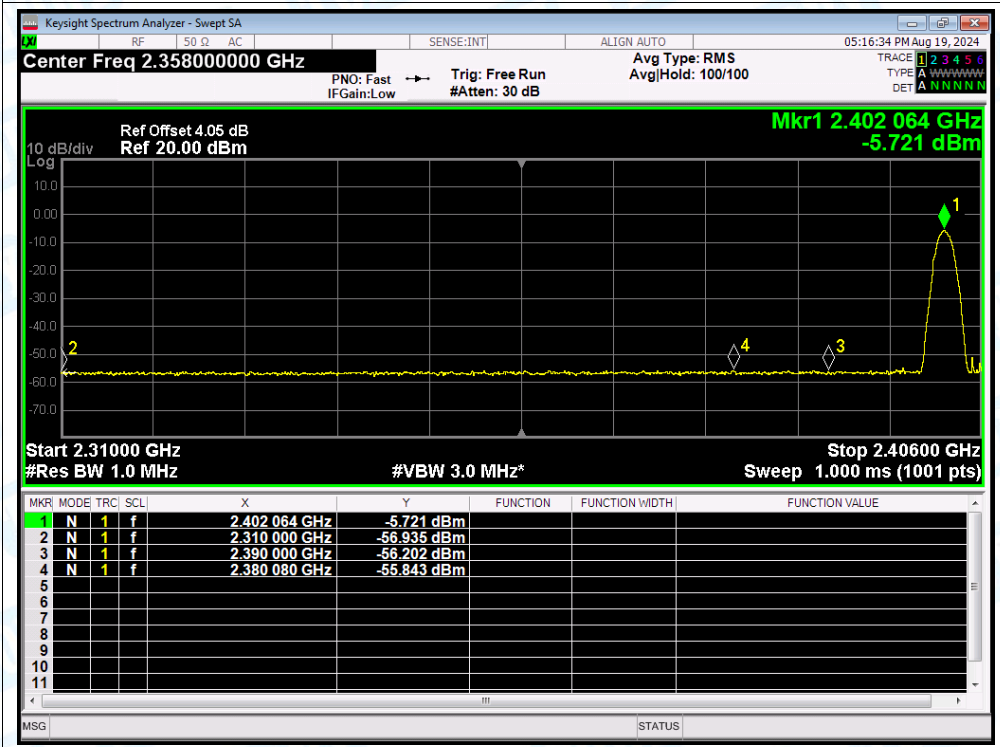
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



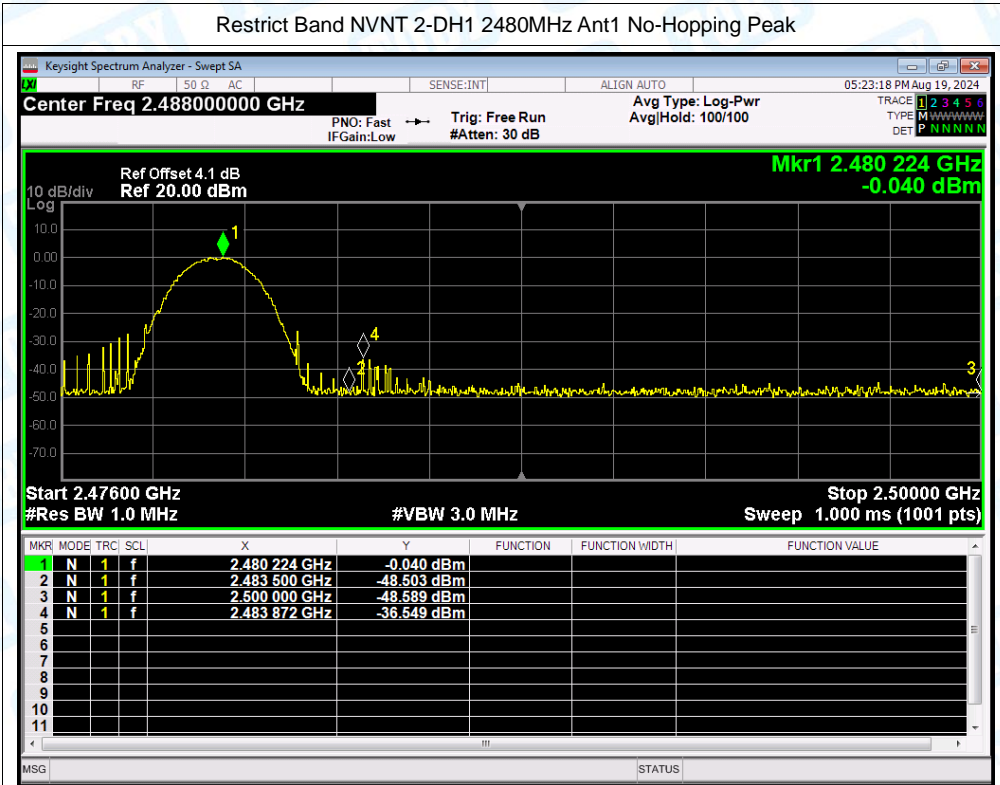
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



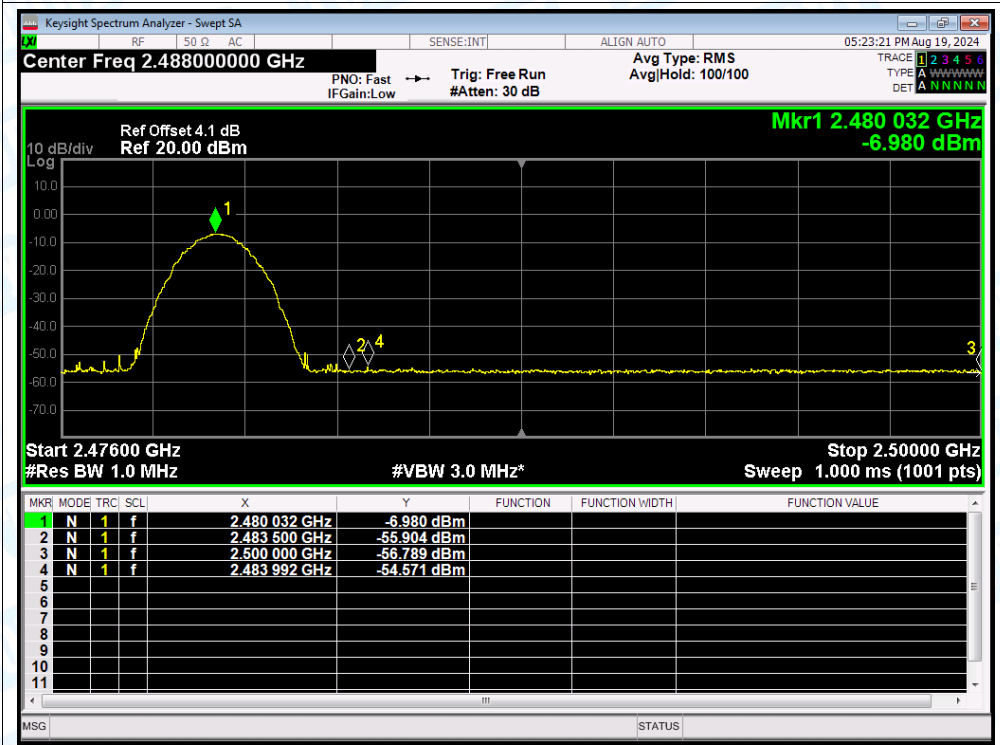
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



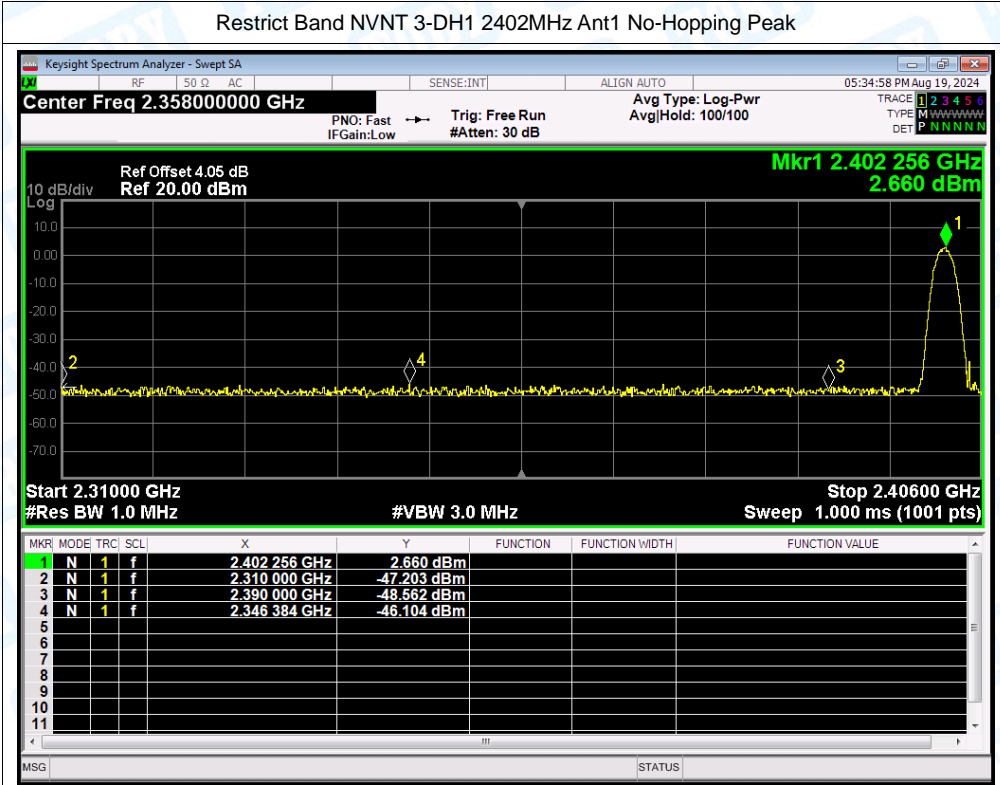
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



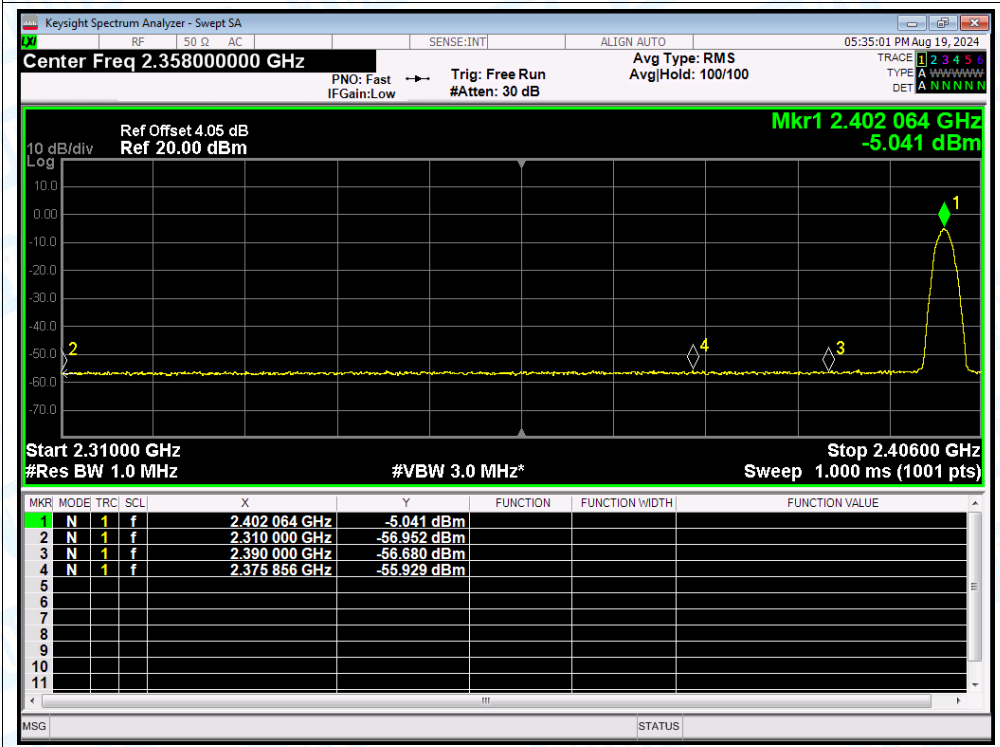
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



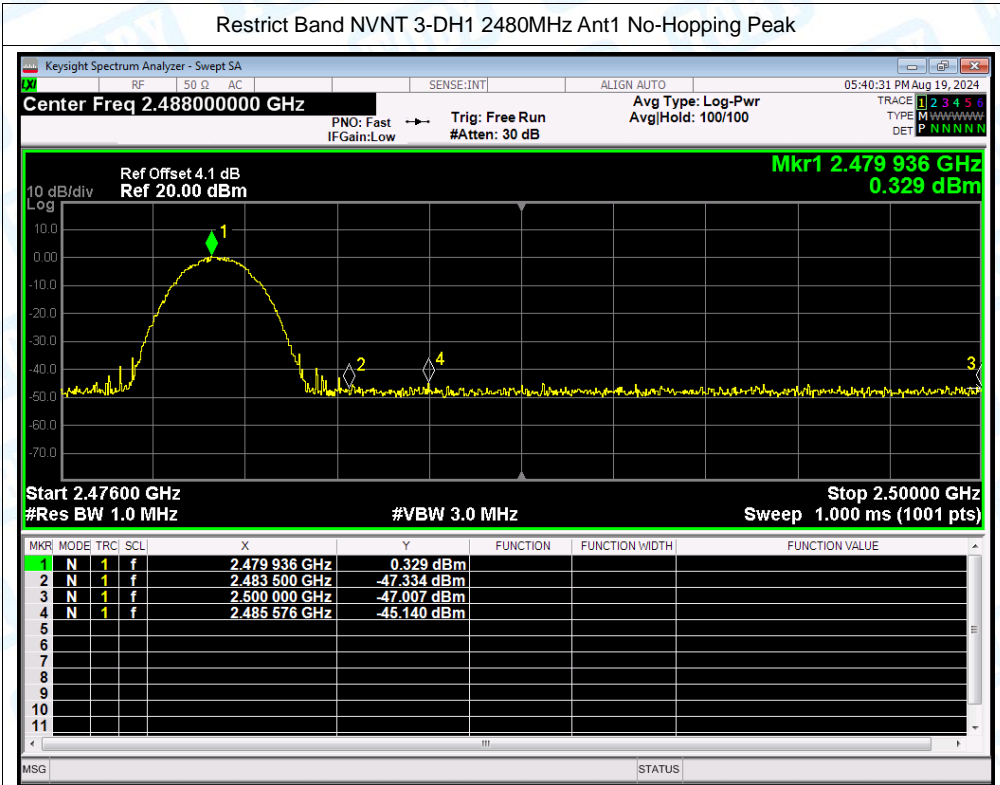
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



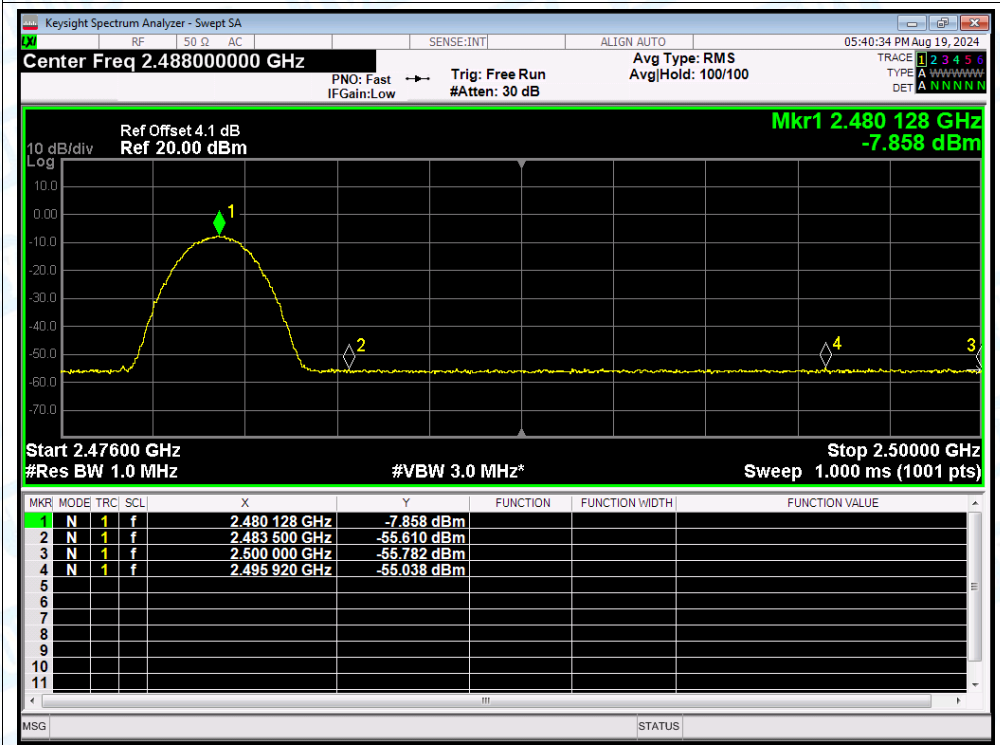
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

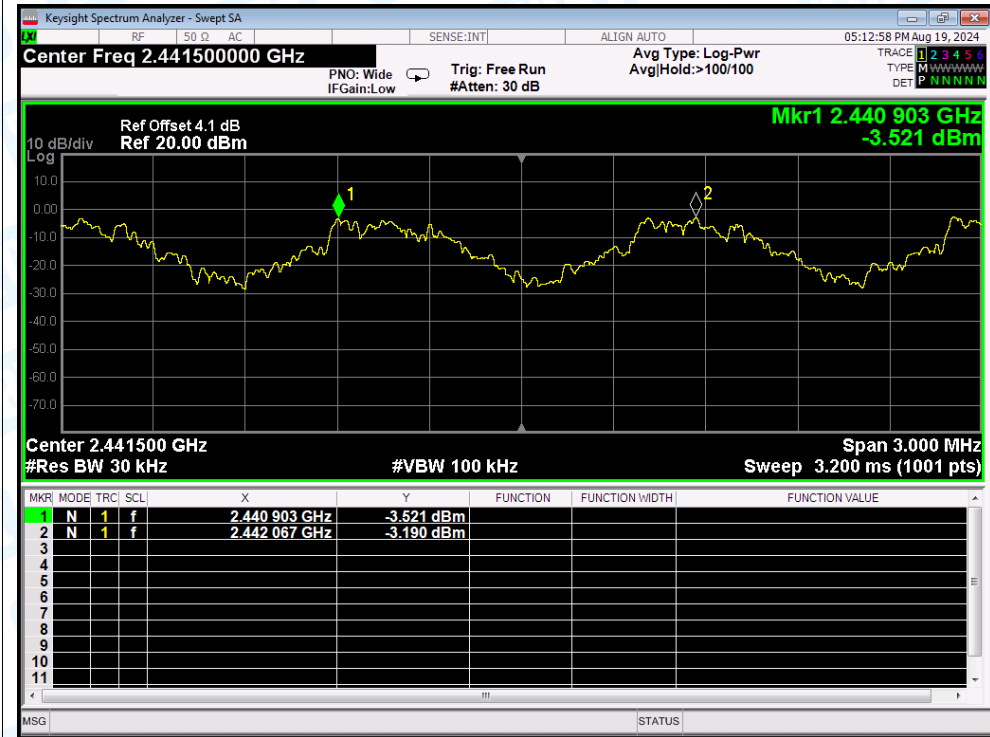


9. Carrier Frequencies Separation

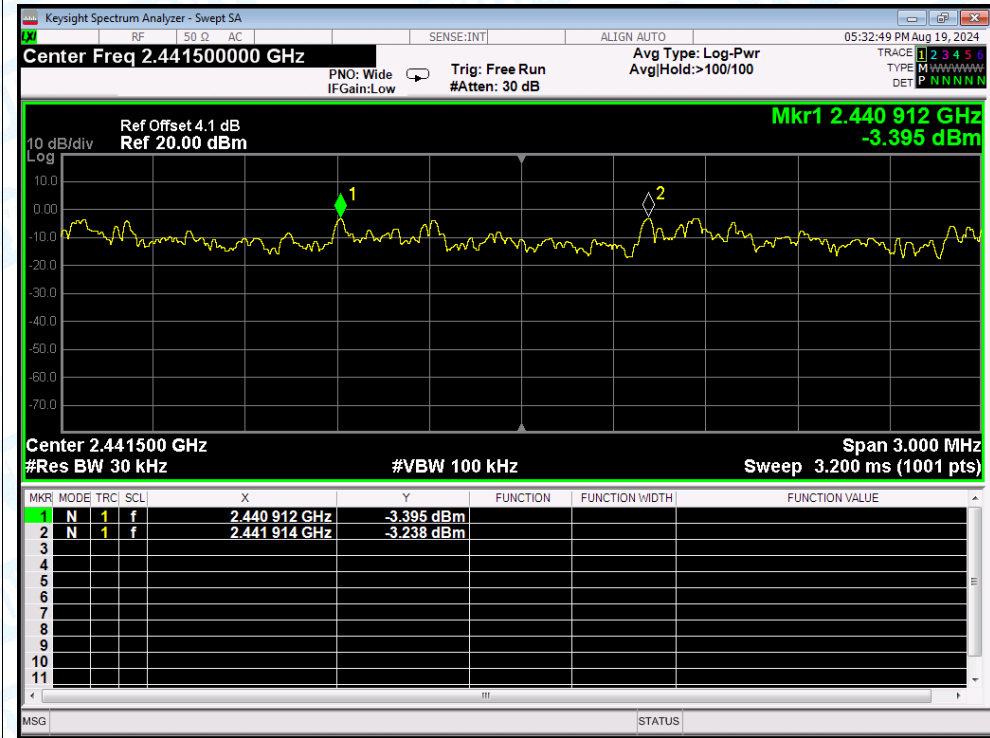
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.903	2442.067	1.164	0.587	Pass
NVNT	2-DH1	Ant1	2440.912	2441.914	1.002	0.84	Pass
NVNT	3-DH1	Ant1	2440.921	2441.92	0.999	0.833	Pass

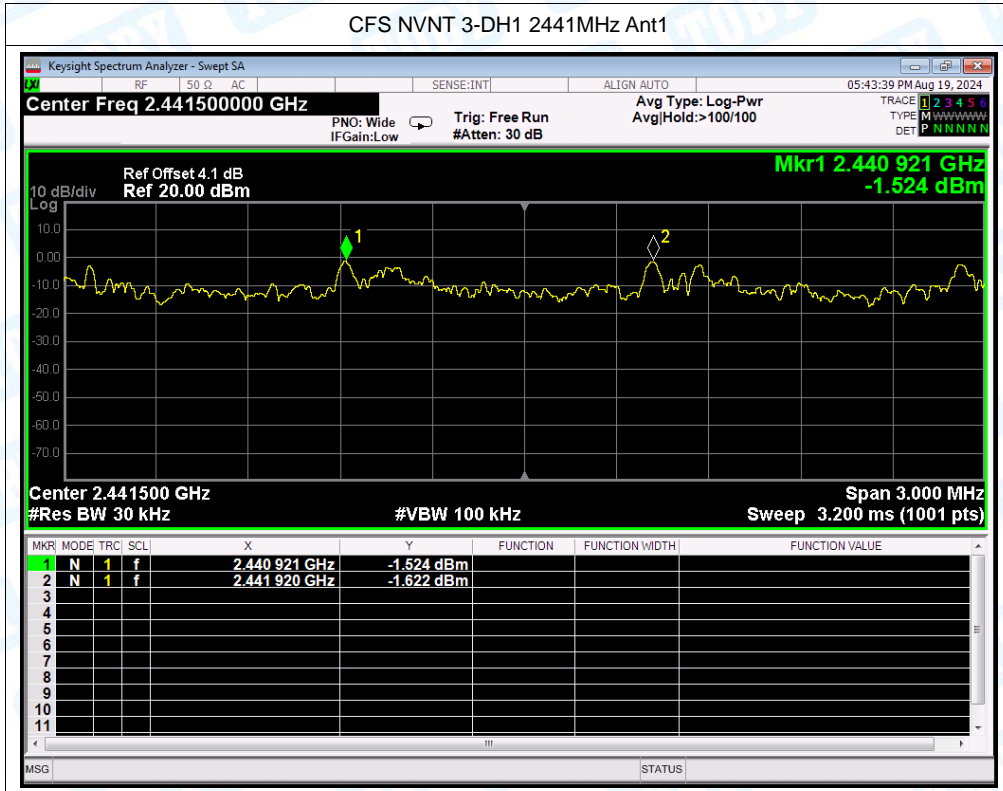
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



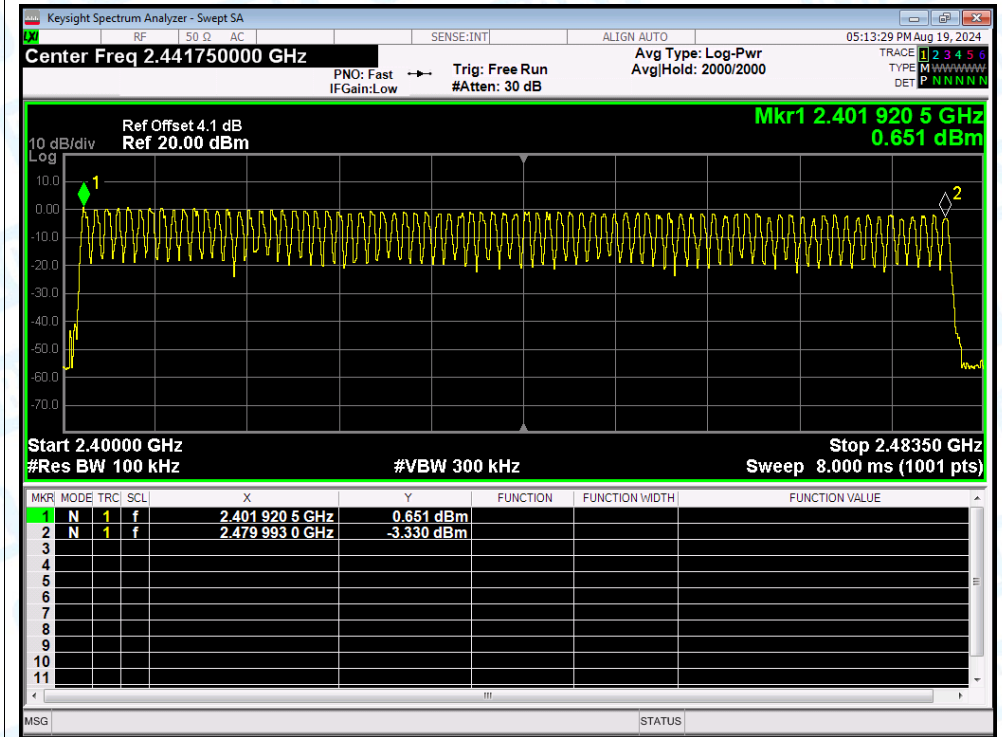


10.Number of Hopping Channel

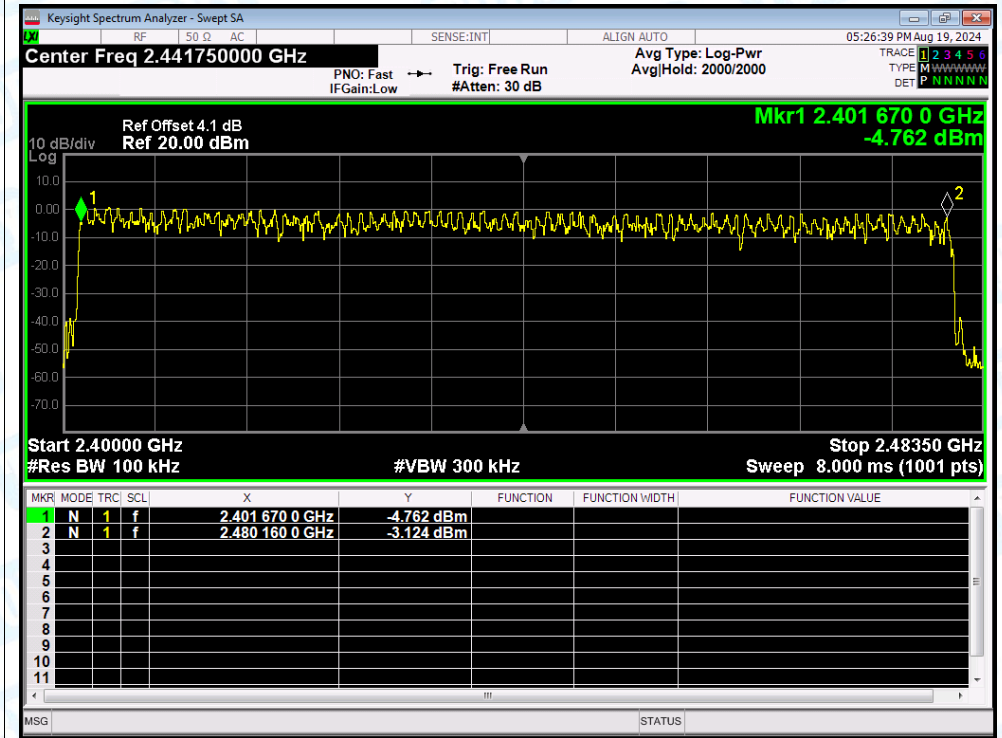
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

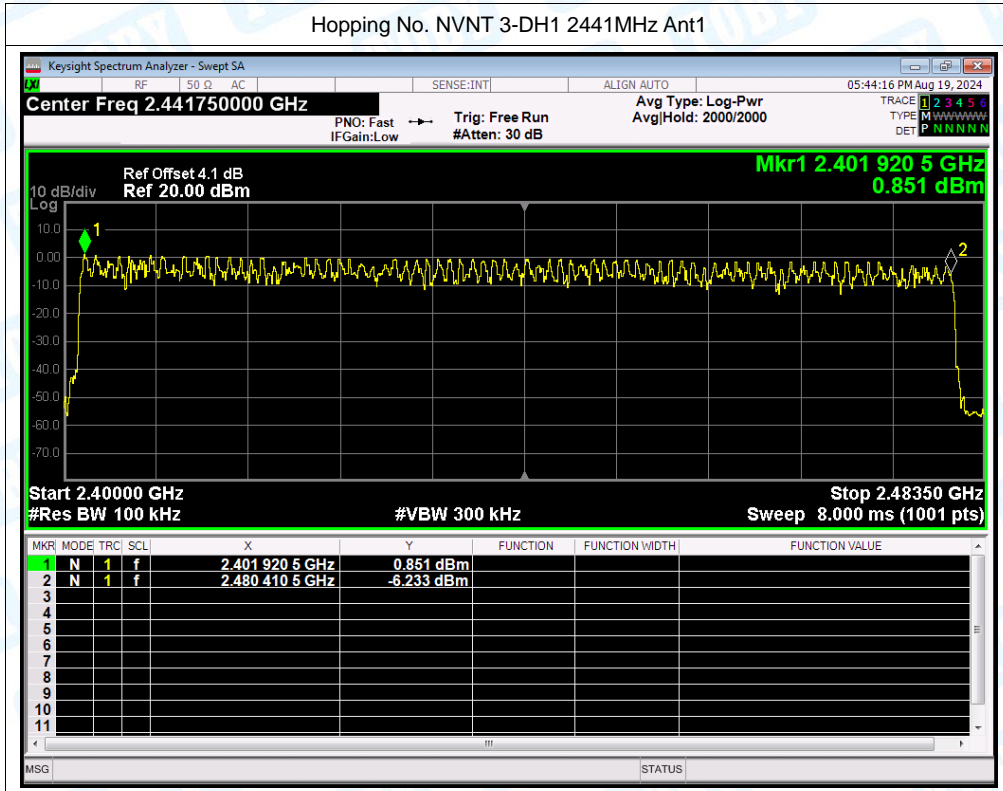
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



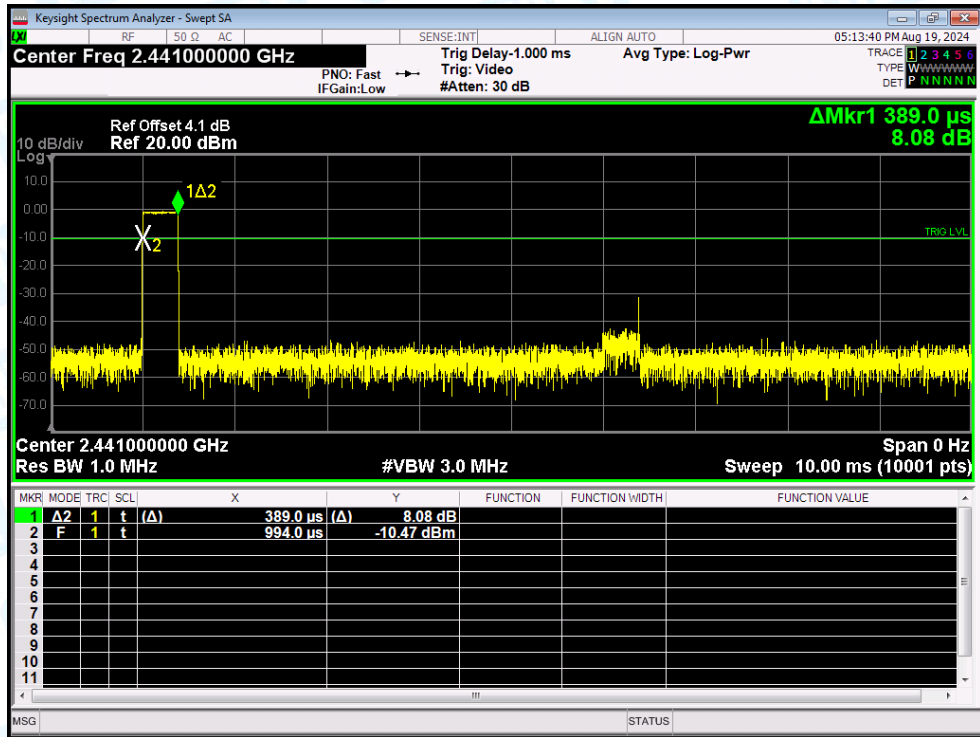


11.Dwell Time

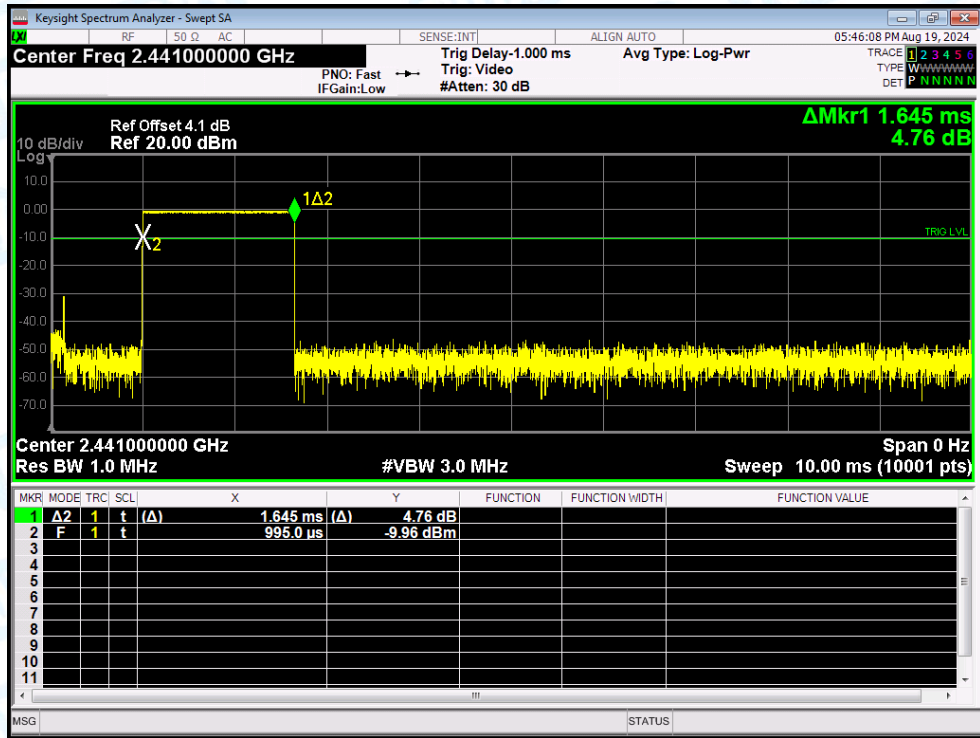
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.389	124.48	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.645	263.2	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.893	308.587	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.397	127.04	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.649	263.84	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.894	308.693	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.399	127.68	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.649	263.84	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.901	309.44	31600	400	Pass

Test Graphs

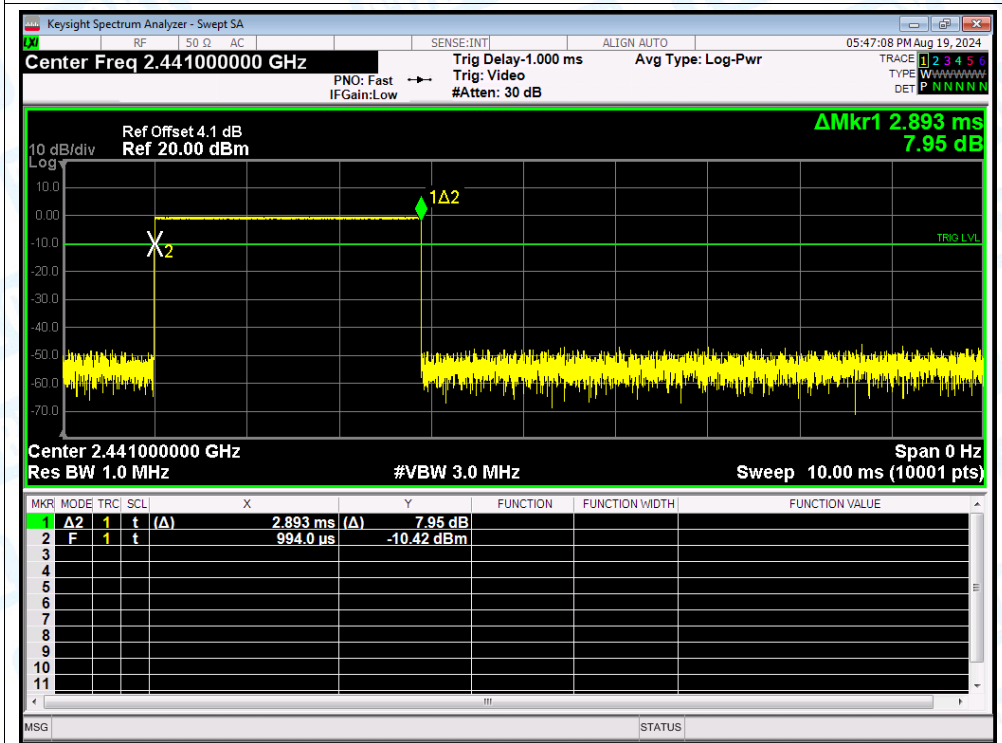
Dwell NVNT 1-DH1 2441MHz Ant1



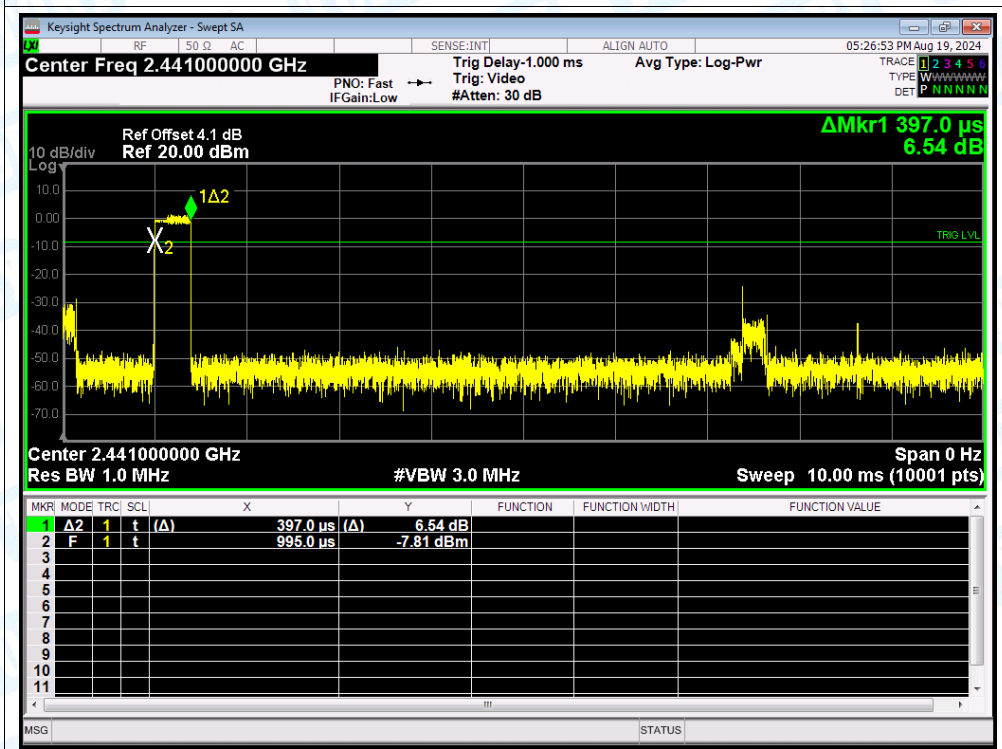
Dwell NVNT 1-DH3 2441MHz Ant1



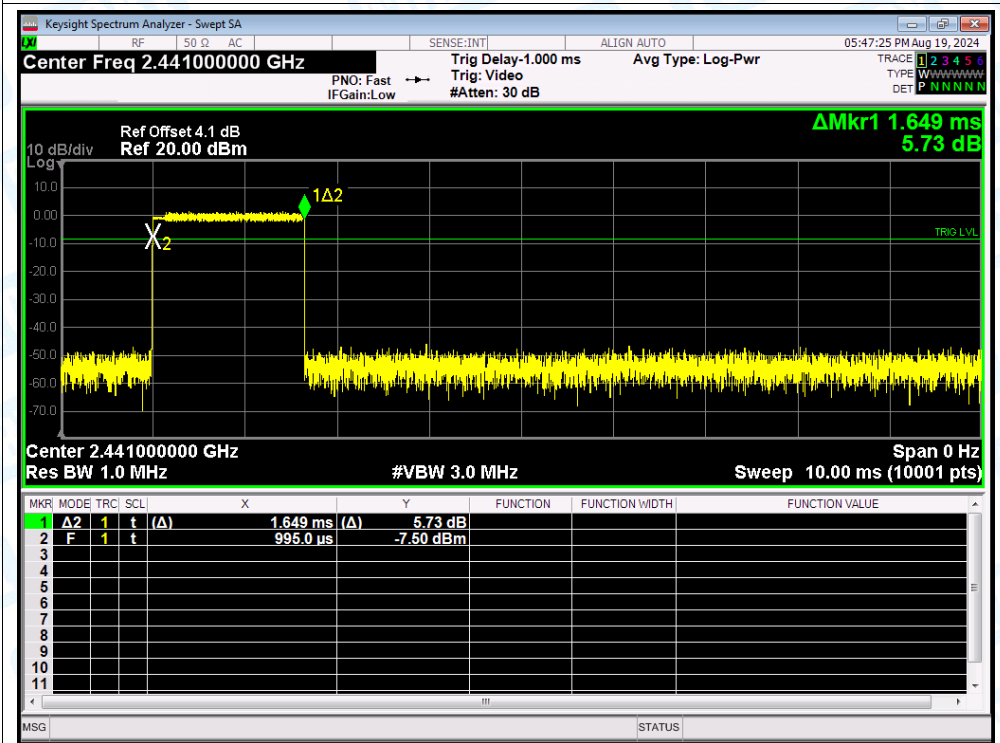
Dwell NVNT 1-DH5 2441MHz Ant1



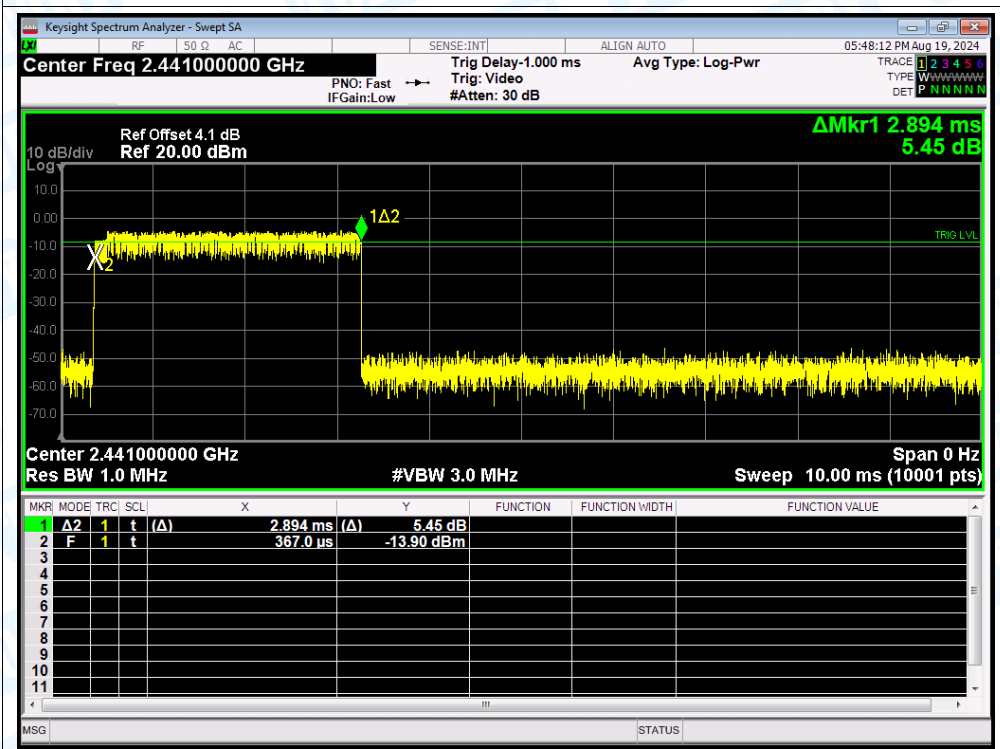
Dwell NVNT 2-DH1 2441MHz Ant1



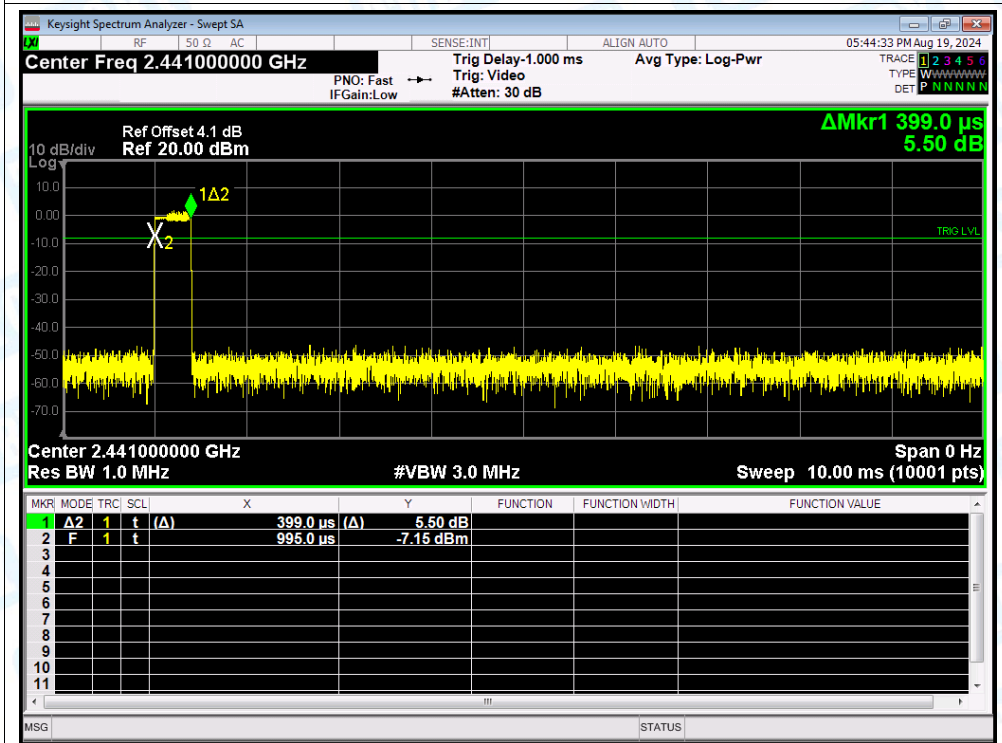
Dwell NVNT 2-DH3 2441MHz Ant1



Dwell NVNT 2-DH5 2441MHz Ant1



Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1

