

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	OWS Bluetooth Earphones
Test Model:	NB99
Sample ID:	HC-C-202410-0025-01-02#
Environmental Conditions	
Temperature:	25℃
Relative Humidity:	55%
Test Voltage:	DC 3.6V
Test Engineer:	Rick chen
Note: For a more detailed features description, please refer to the report TBR-C-202410-0025-2 The report only show the worst case data.(Left Data)	

Contents

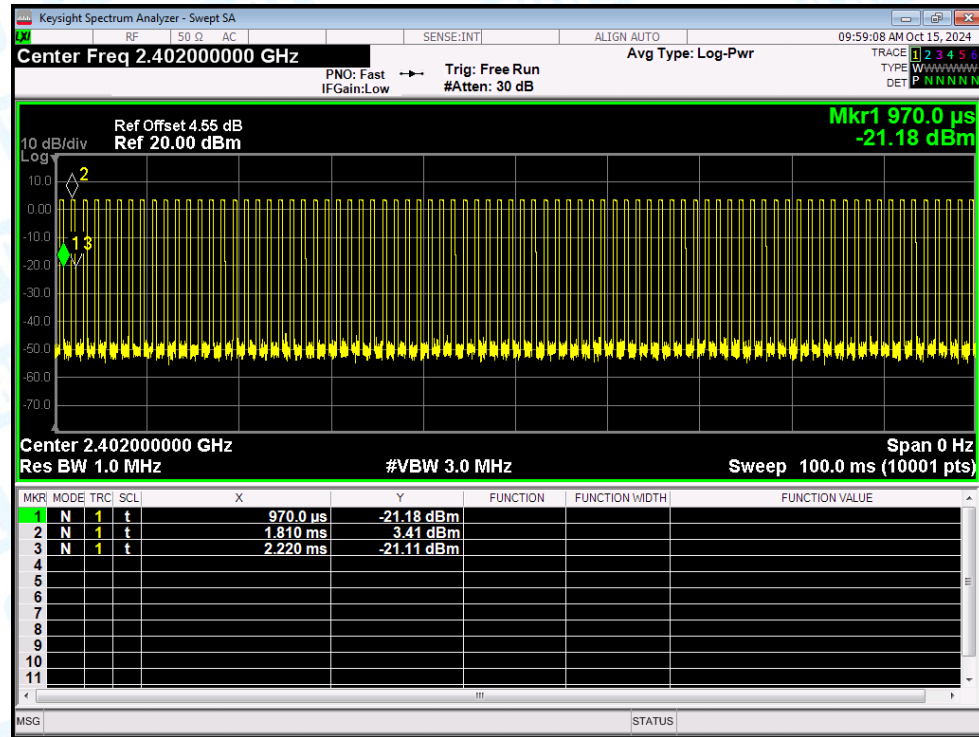
1.Duty Cycle.....	3
2.Maximum Conducted Output Power	9
3.-20dB Bandwidth	20
4.Occupied Channel Bandwidth	26
5.Band Edge	32
6.Band Edge(Hopping).....	39
7.Conducted RF Spurious Emission	46
8.Restrict Band	56
9.Carrier Frequencies Separation	63
10.Number of Hopping Channel	66
11.Dwell Time.....	69

1.Duty Cycle

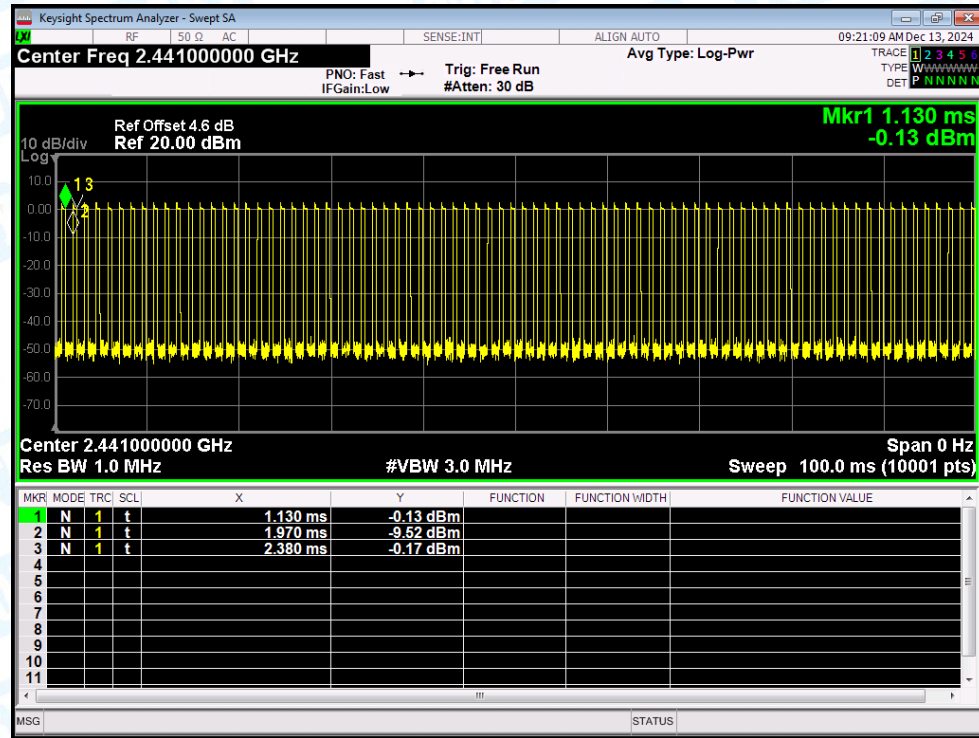
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	32.8	4.84	2.44
NVNT	1-DH1	2441	Ant1	32.8	4.84	2.44
NVNT	1-DH1	2480	Ant1	32.8	4.84	2.44
NVNT	2-DH1	2402	Ant1	33.6	4.74	2.38
NVNT	2-DH1	2441	Ant1	33.6	4.74	2.38
NVNT	2-DH1	2480	Ant1	33.6	4.74	2.38
NVNT	3-DH1	2402	Ant1	33.6	4.74	2.38
NVNT	3-DH1	2441	Ant1	33.6	4.74	2.38
NVNT	3-DH1	2480	Ant1	33.6	4.74	2.38

Test Graphs

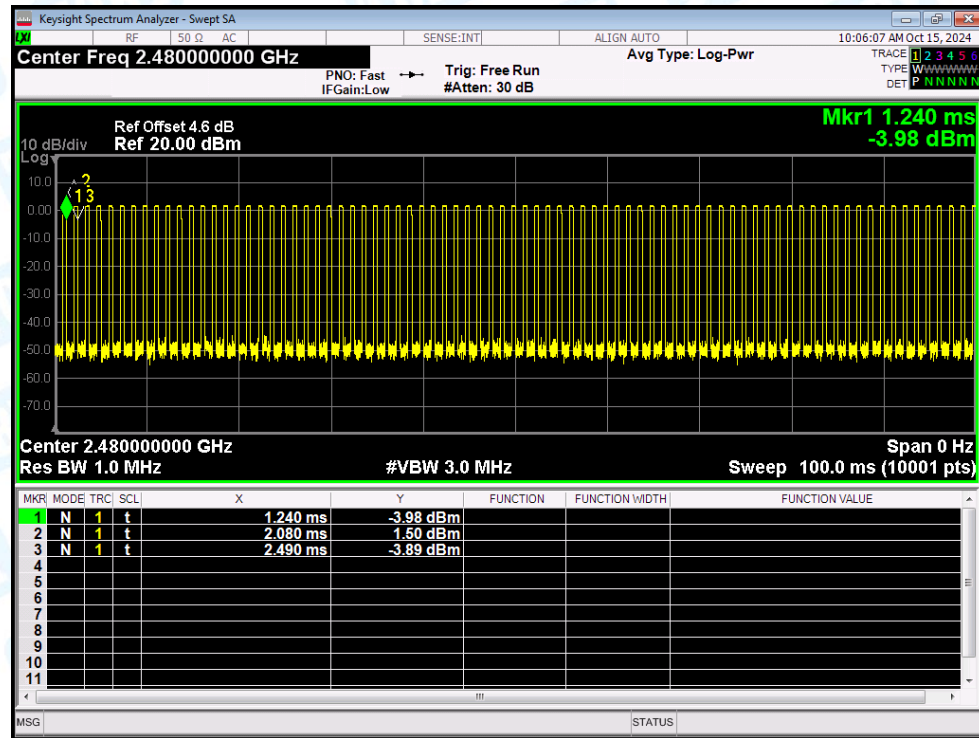
Duty Cycle NVNT 1-DH1 2402MHz Ant1



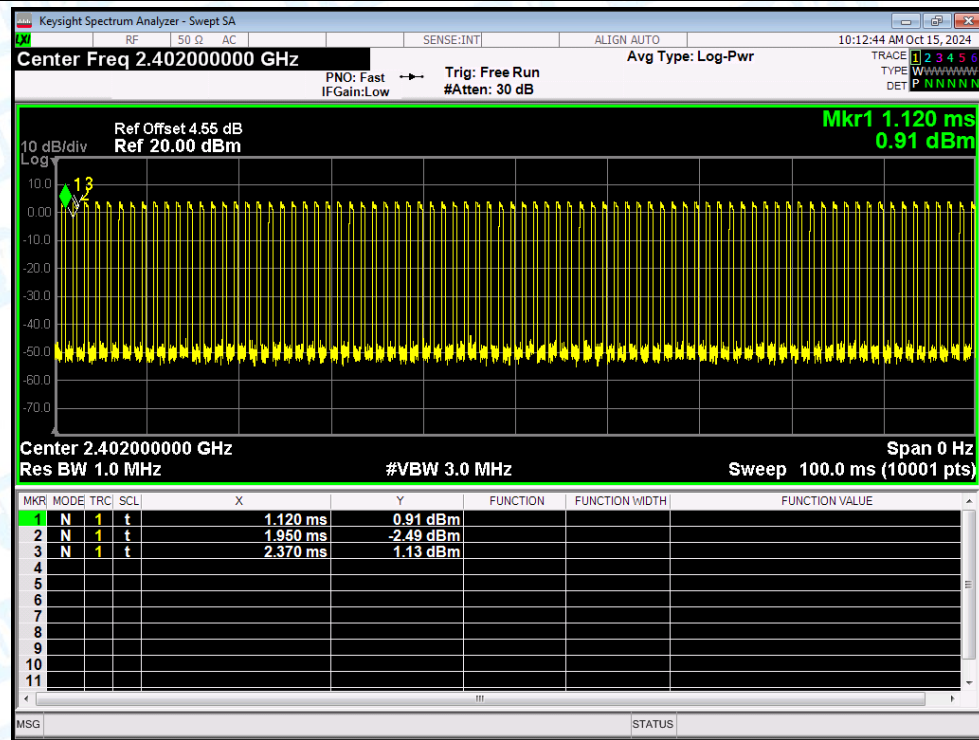
Duty Cycle NVNT 1-DH1 2441MHz Ant1



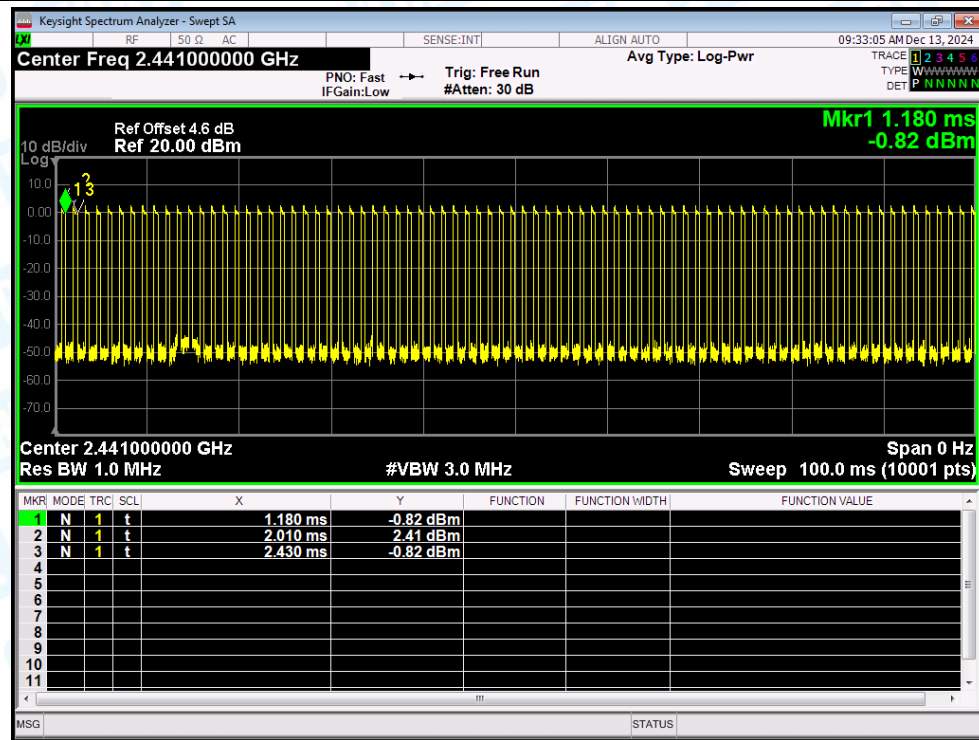
Duty Cycle NVNT 1-DH1 2480MHz Ant1



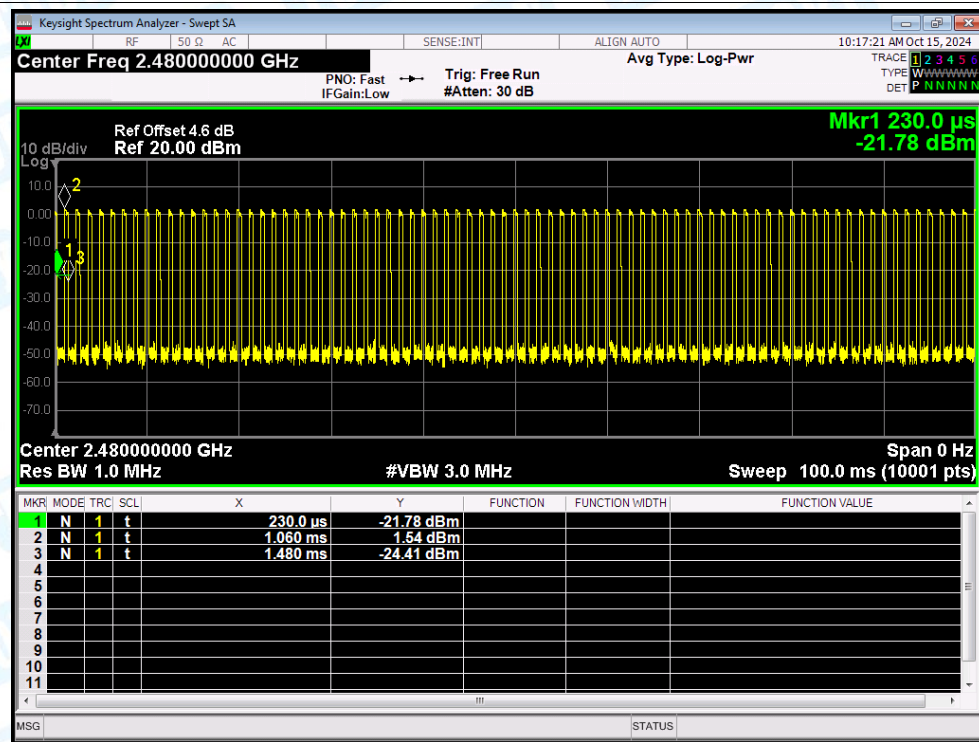
Duty Cycle NVNT 2-DH1 2402MHz Ant1



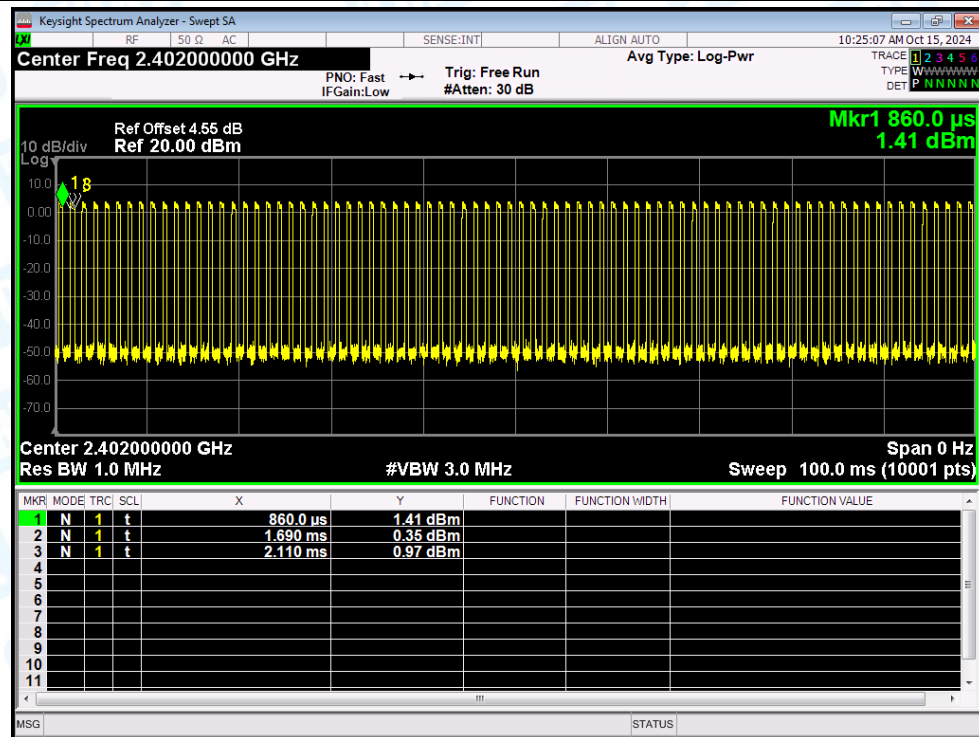
Duty Cycle NVNT 2-DH1 2441MHz Ant1



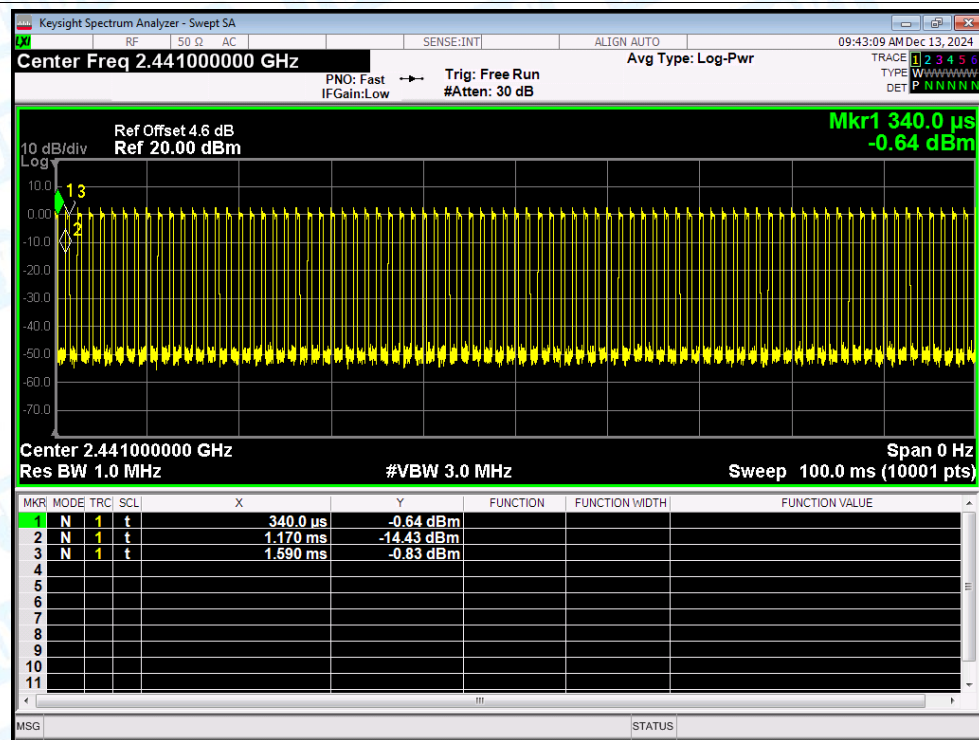
Duty Cycle NVNT 2-DH1 2480MHz Ant1

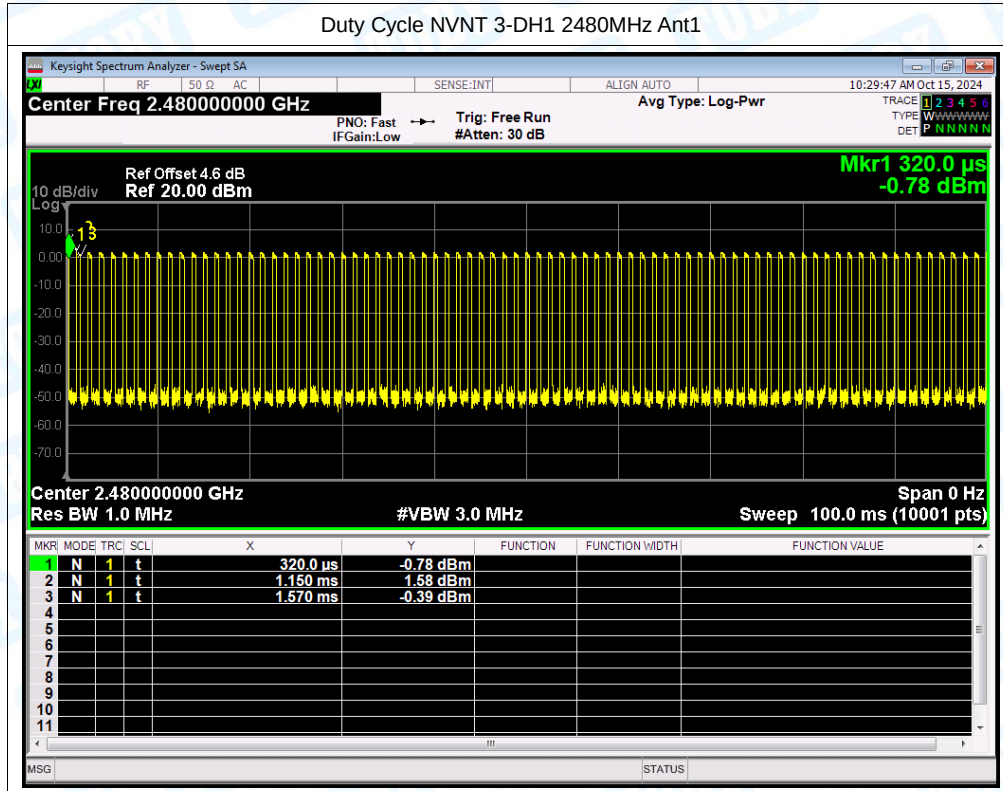


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



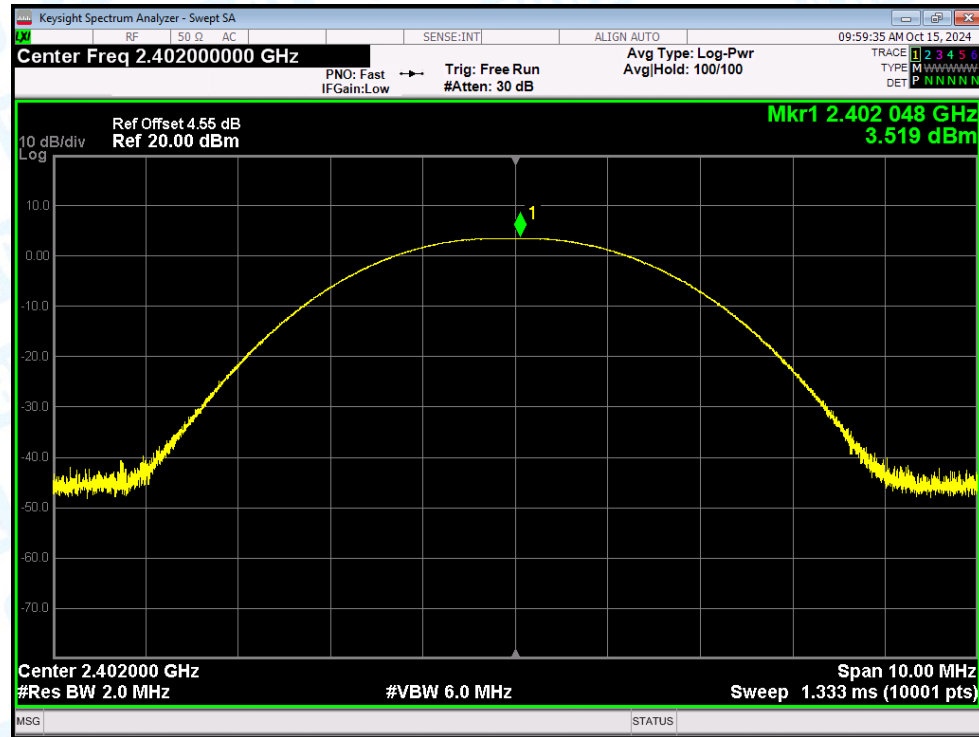


2.Maximum Conducted Output Power

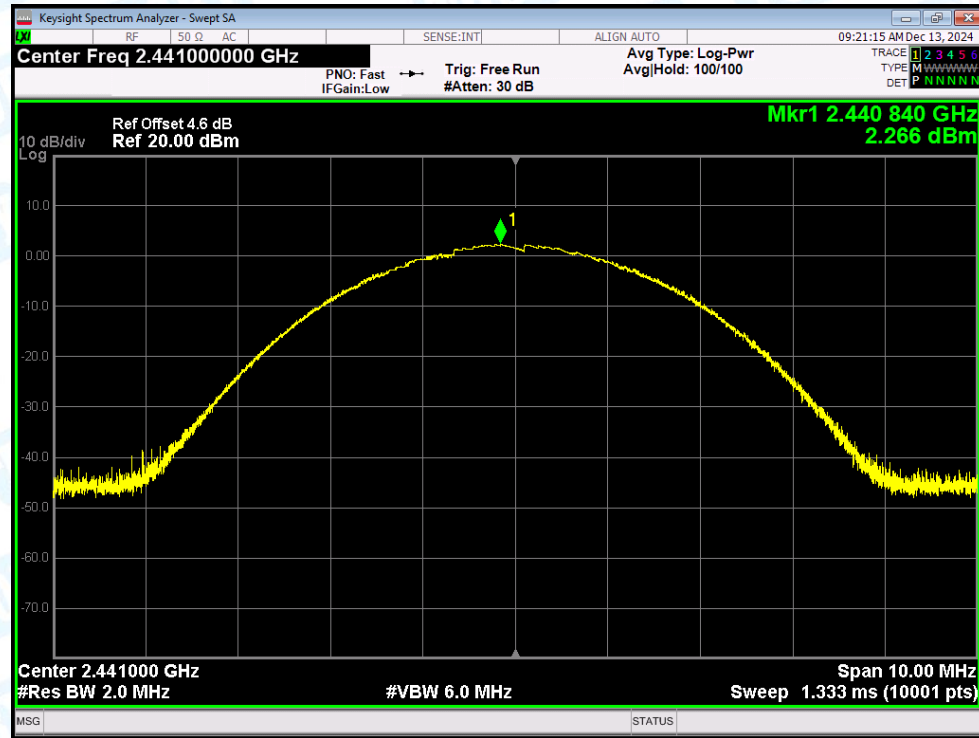
Left headphone						
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	3.519	21	Pass
NVNT	1-DH1	2441	Ant1	2.266	21	Pass
NVNT	1-DH1	2480	Ant1	1.667	21	Pass
NVNT	2-DH1	2402	Ant1	3.615	21	Pass
NVNT	2-DH1	2441	Ant1	2.356	21	Pass
NVNT	2-DH1	2480	Ant1	1.716	21	Pass
NVNT	3-DH1	2402	Ant1	3.654	21	Pass
NVNT	3-DH1	2441	Ant1	2.53	21	Pass
NVNT	3-DH1	2480	Ant1	1.767	21	Pass
Right earphone						
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	1.917	21	Pass
NVNT	1-DH1	2441	Ant1	2.128	21	Pass
NVNT	1-DH1	2480	Ant1	1.328	21	Pass
NVNT	2-DH1	2402	Ant1	2.239	21	Pass
NVNT	2-DH1	2441	Ant1	2.126	21	Pass
NVNT	2-DH1	2480	Ant1	1.526	21	Pass
NVNT	3-DH1	2402	Ant1	2.858	21	Pass
NVNT	3-DH1	2441	Ant1	1.957	21	Pass
NVNT	3-DH1	2480	Ant1	1.43	21	Pass

Test Graphs

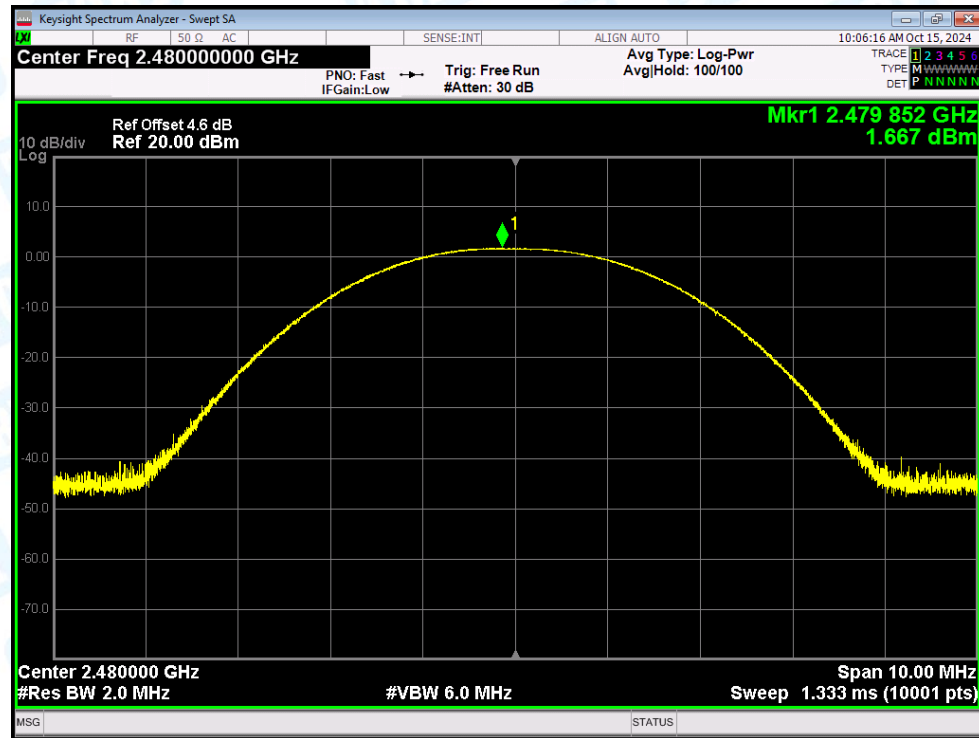
Power NVNT 1-DH1 2402MHz Ant1



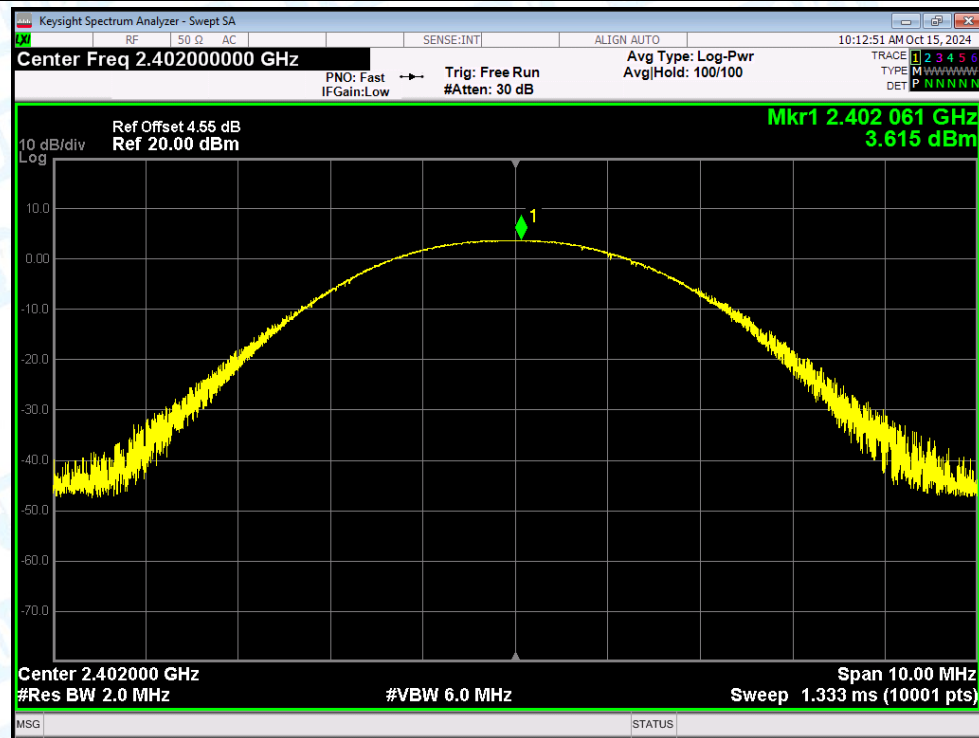
Power NVNT 1-DH1 2441MHz Ant1



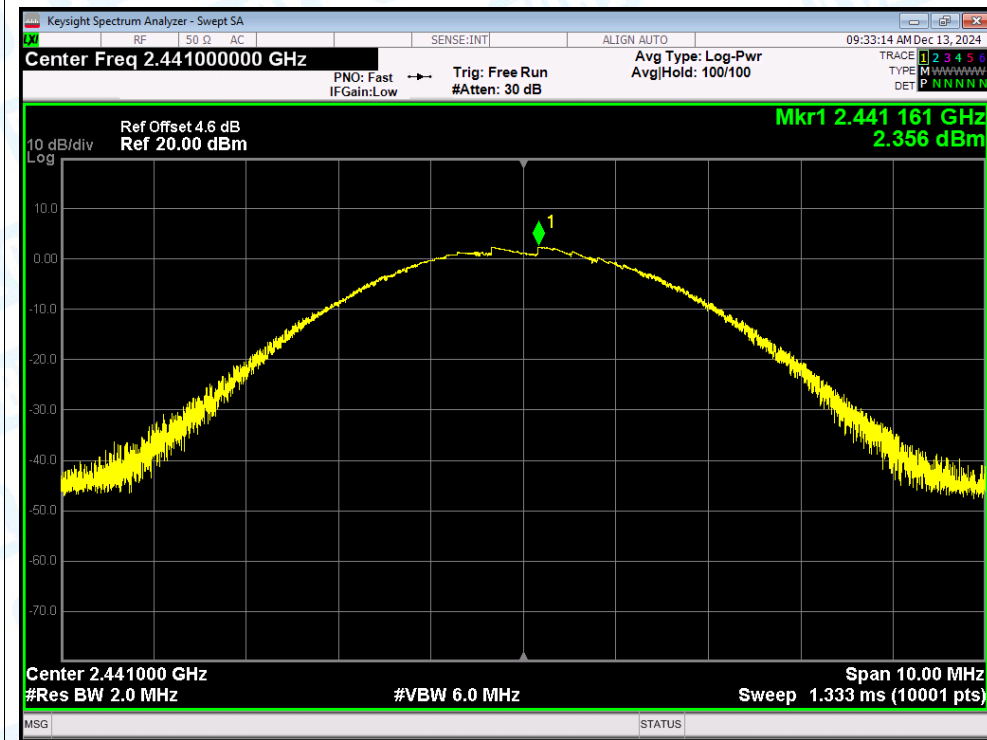
Power NVNT 1-DH1 2480MHz Ant1



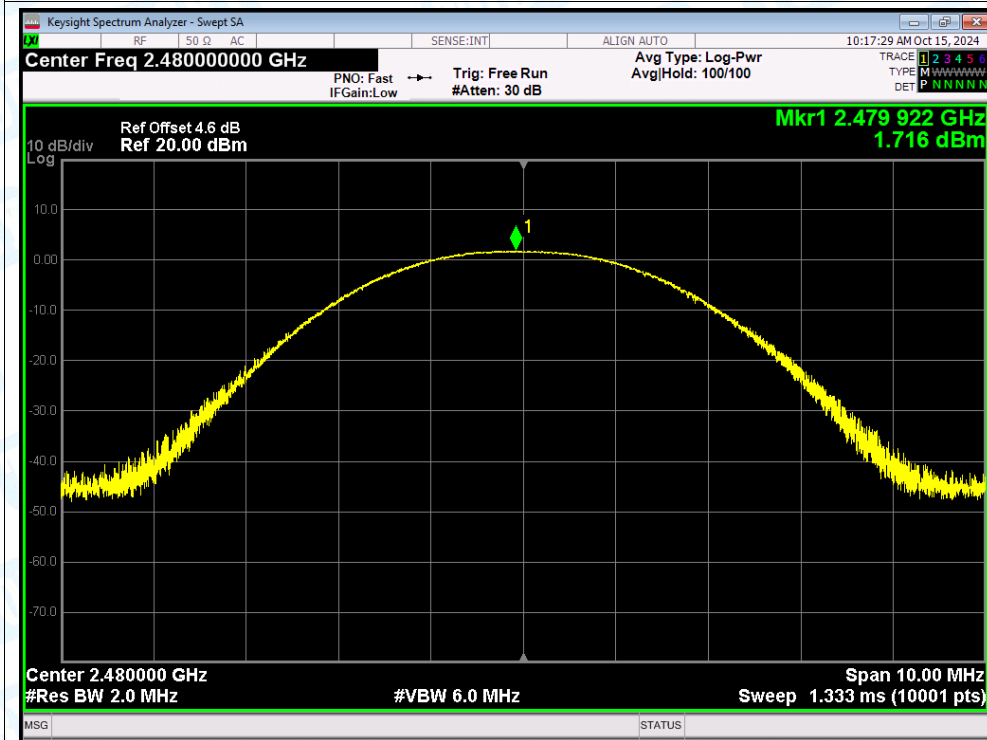
Power NVNT 2-DH1 2402MHz Ant1



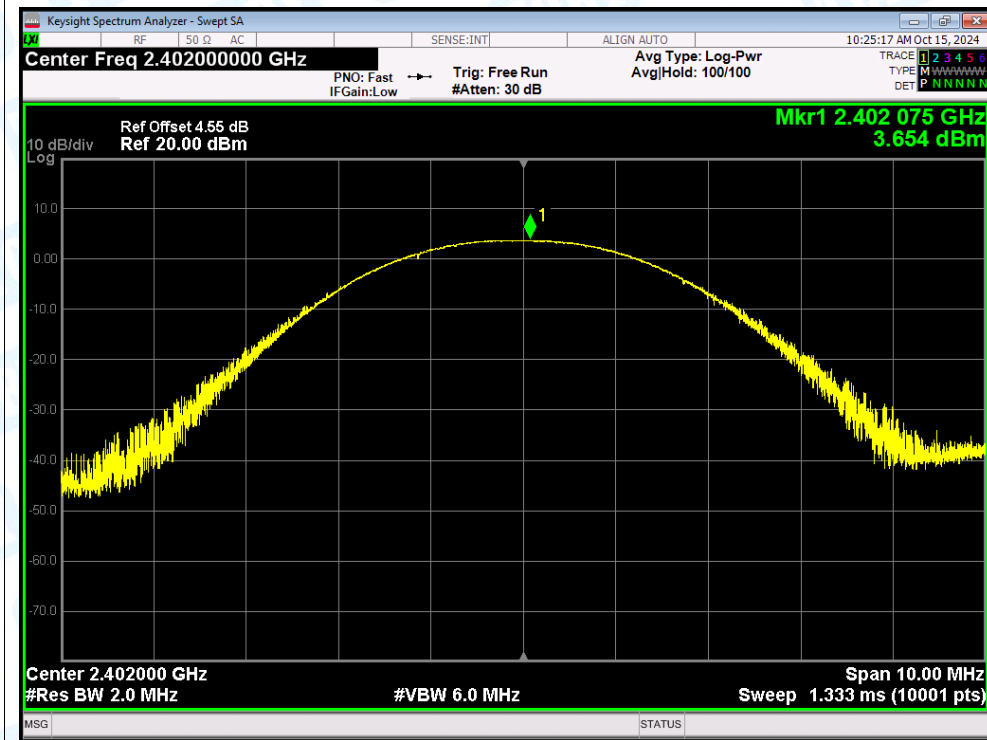
Power NVNT 2-DH1 2441MHz Ant1



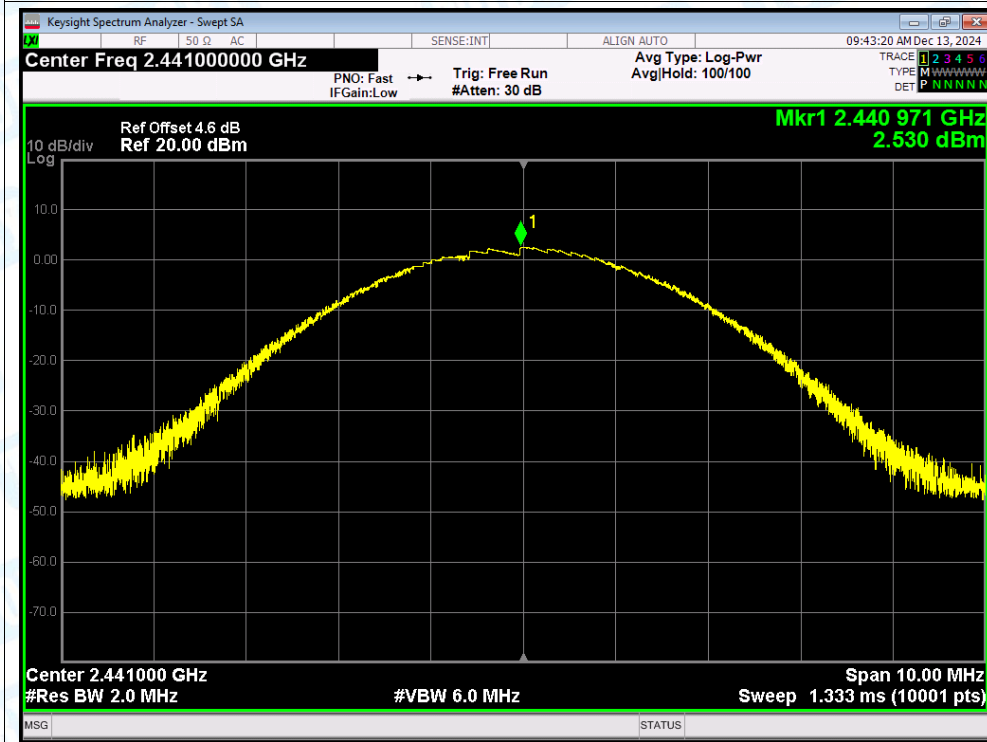
Power NVNT 2-DH1 2480MHz Ant1

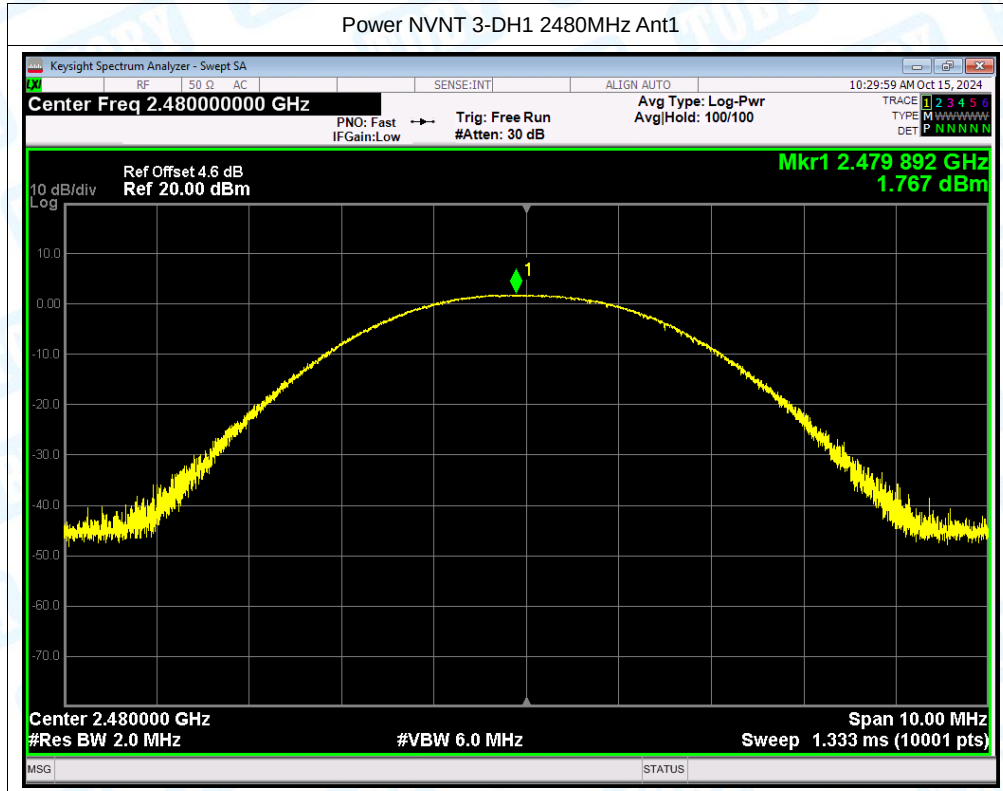


Power NVNT 3-DH1 2402MHz Ant1



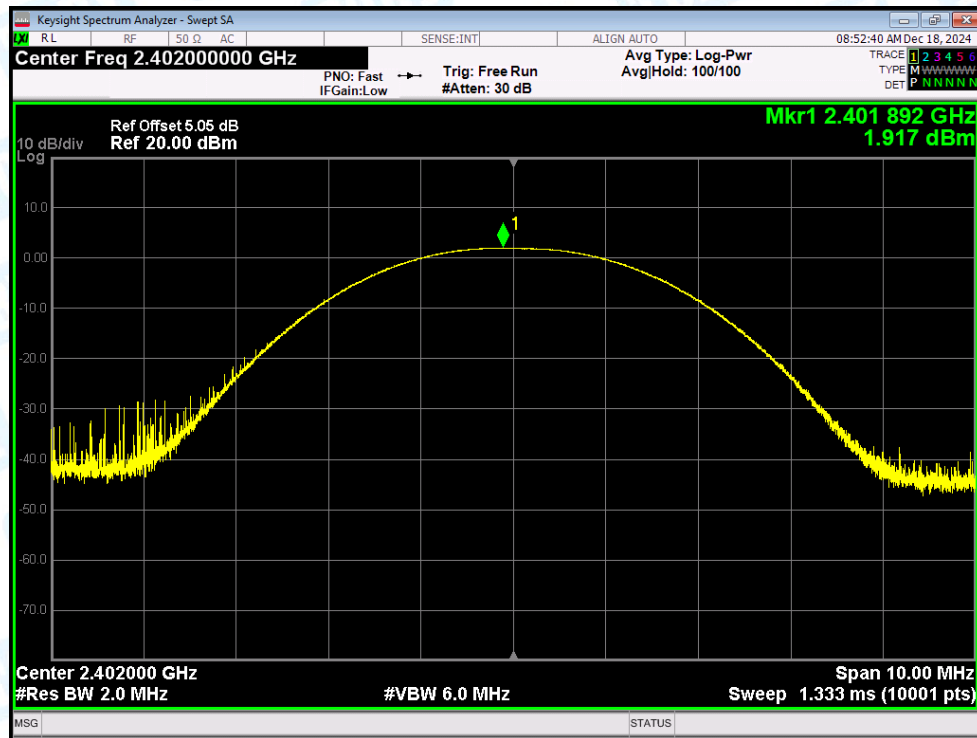
Power NVNT 3-DH1 2441MHz Ant1



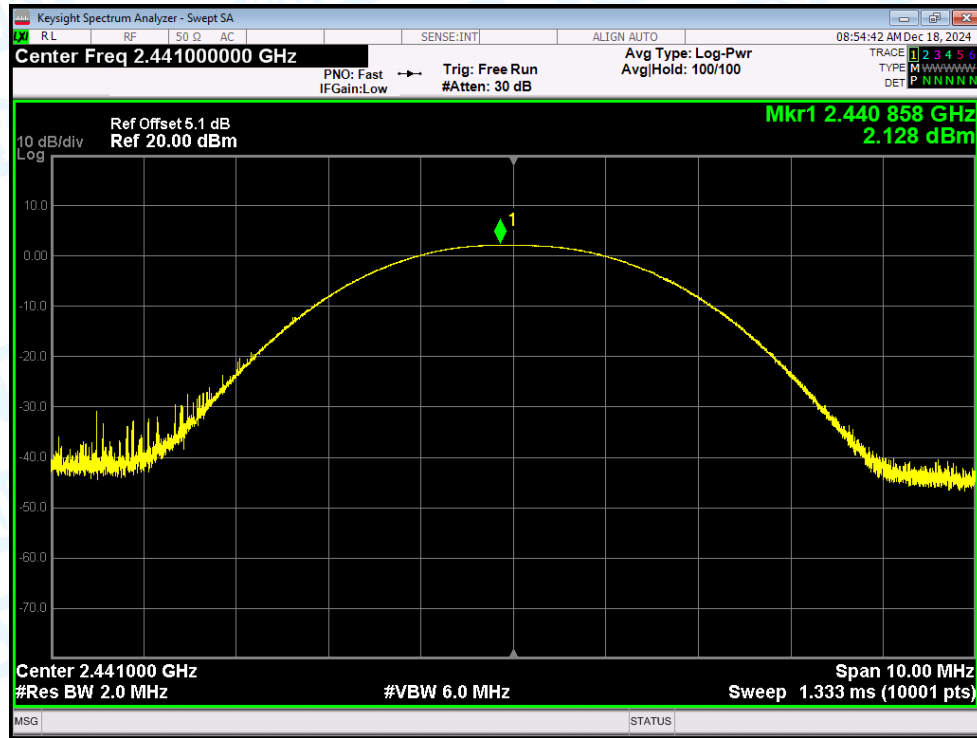


Test Graphs

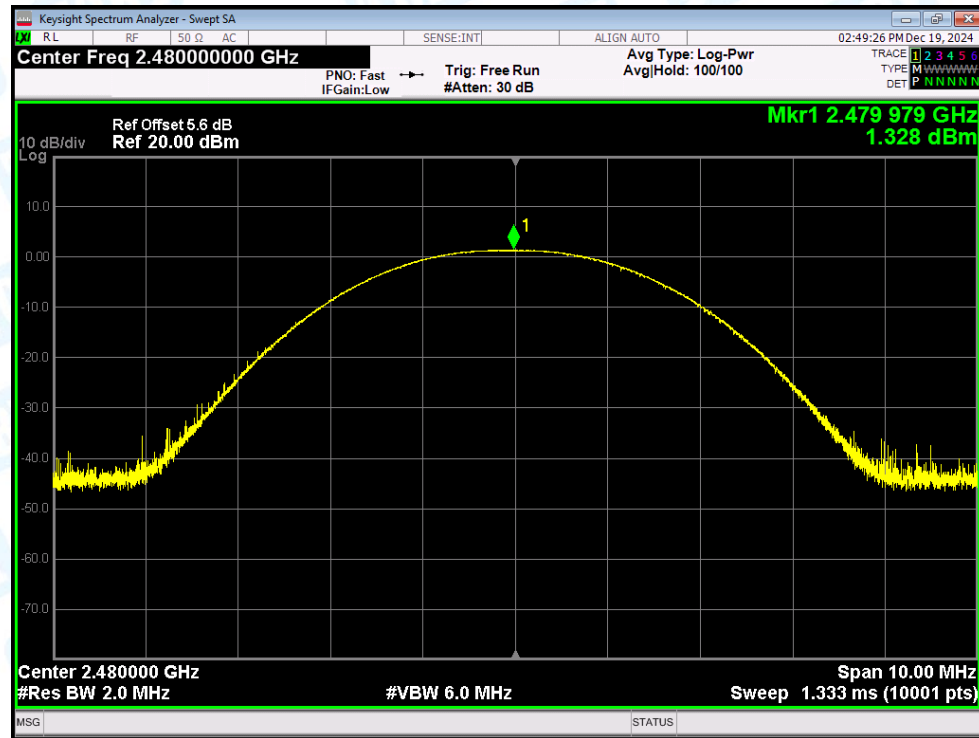
Power NVNT 1-DH1 2402MHz Ant1



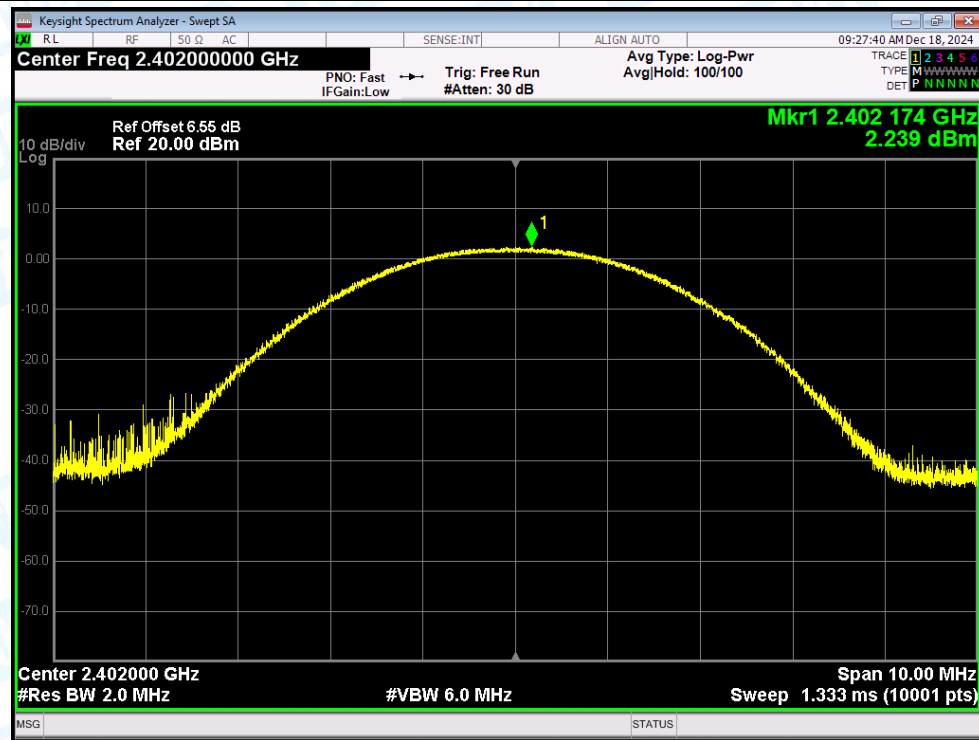
Power NVNT 1-DH1 2441MHz Ant1



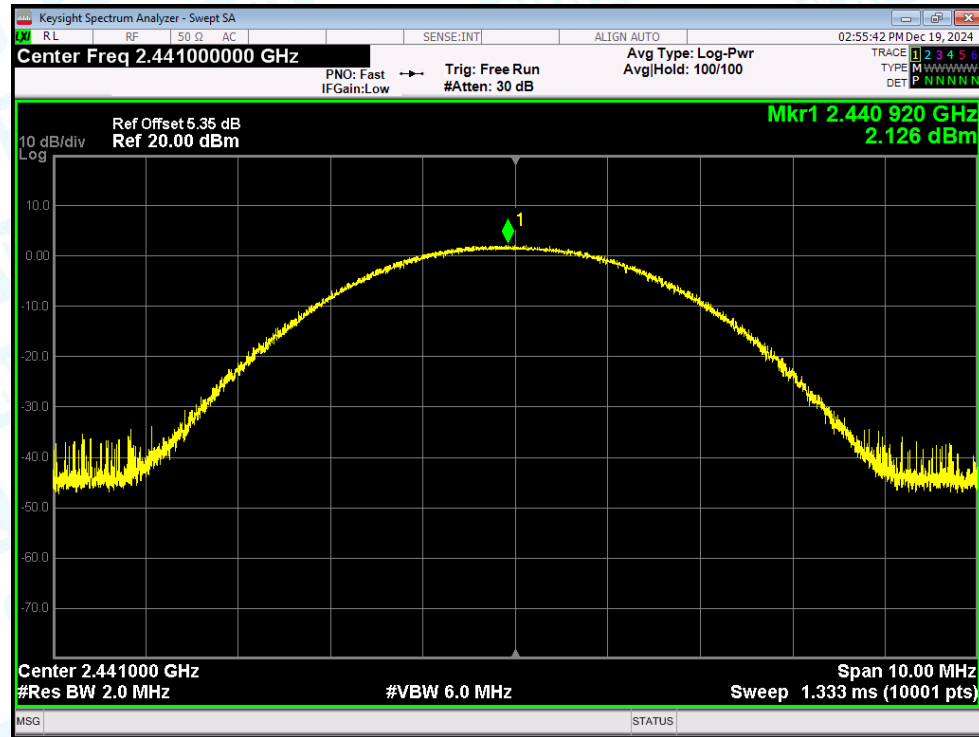
Power NVNT 1-DH1 2480MHz Ant1



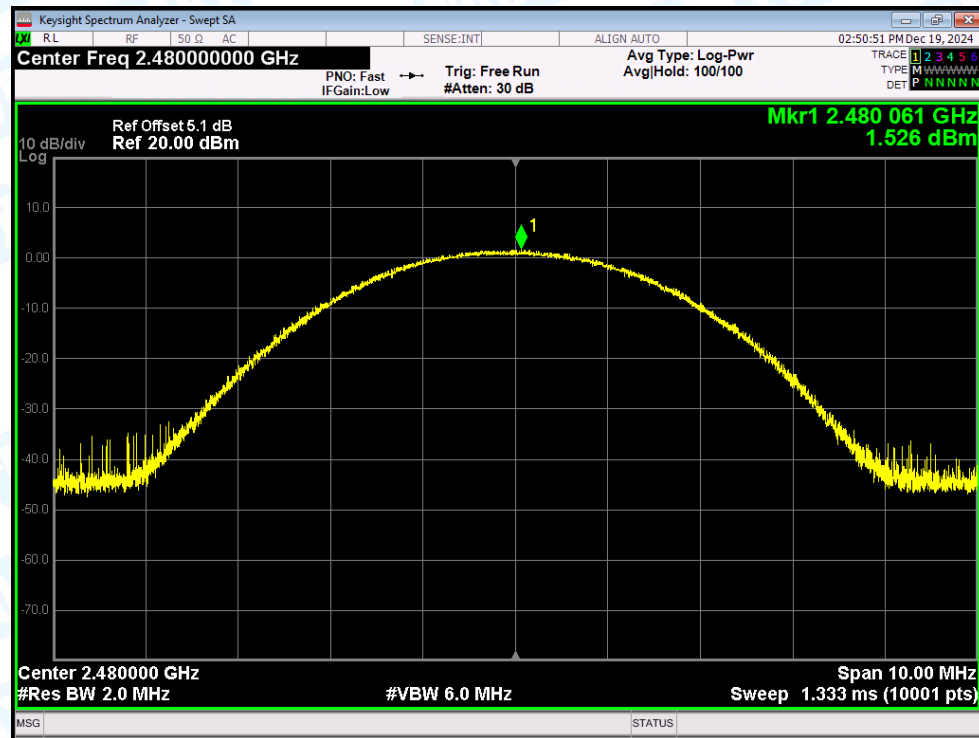
Power NVNT 2-DH1 2402MHz Ant1



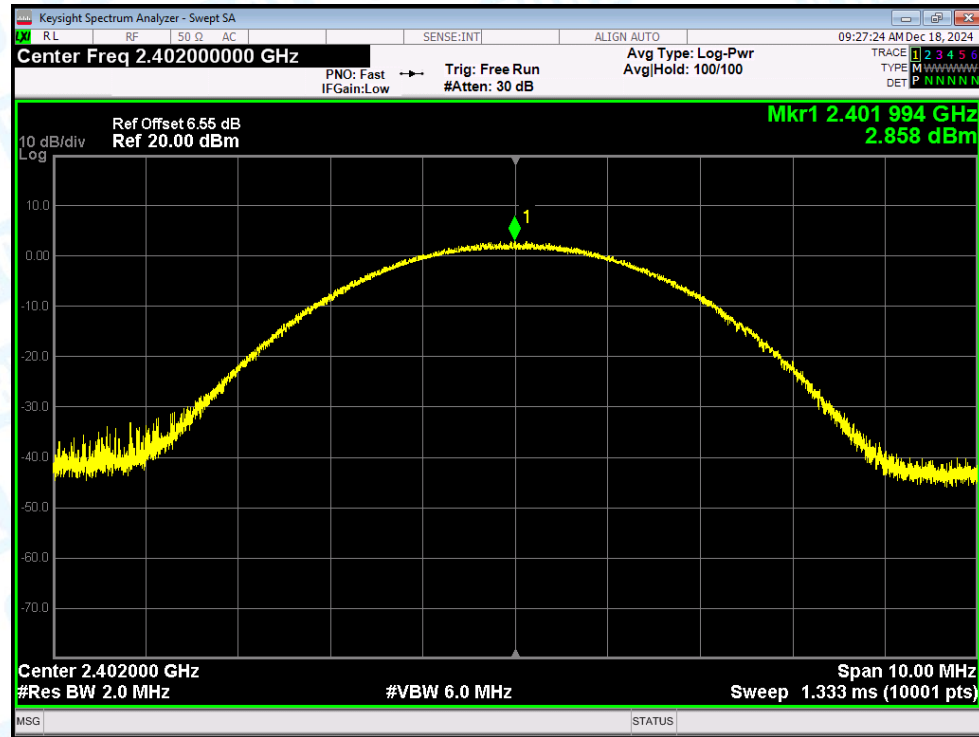
Power NVNT 2-DH1 2441MHz Ant1



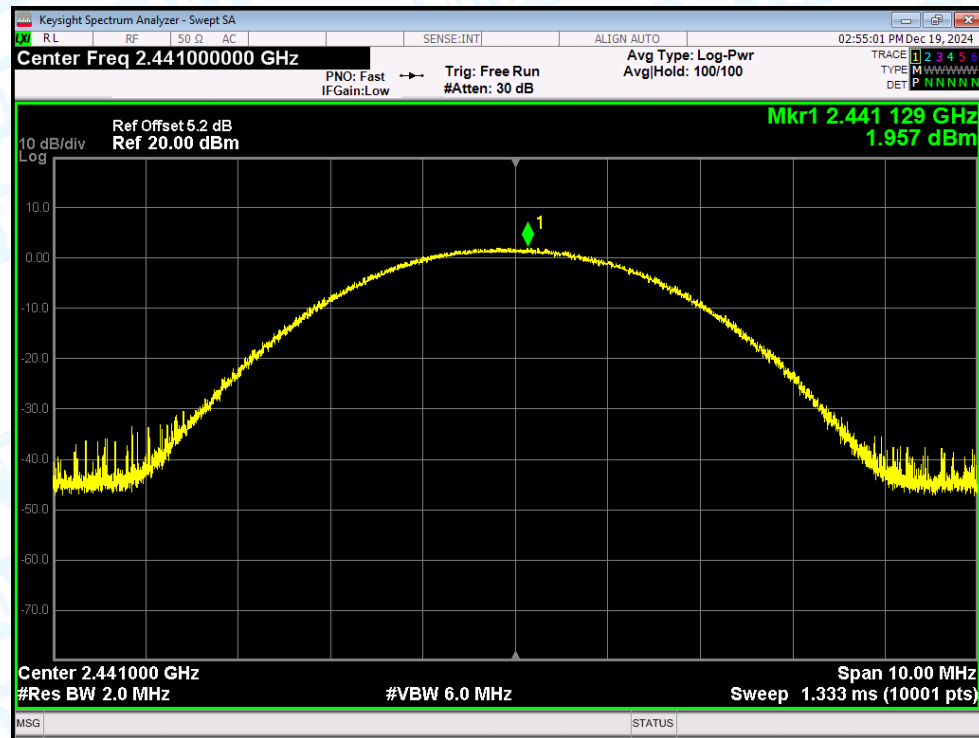
Power NVNT 2-DH1 2480MHz Ant1

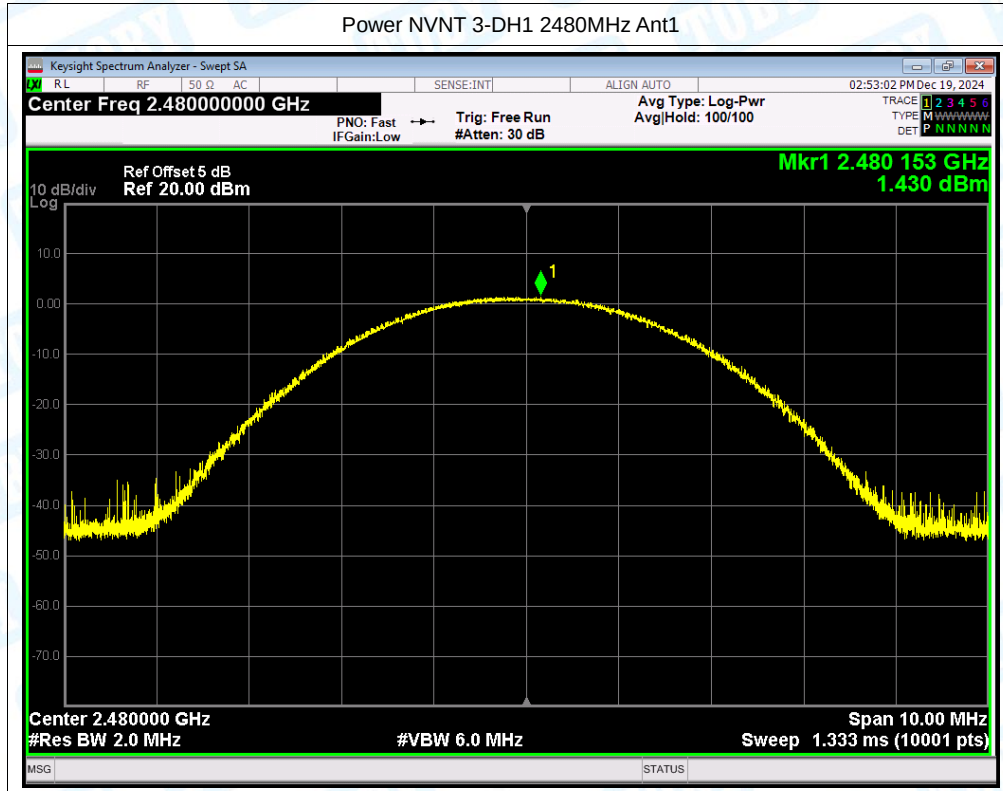


Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



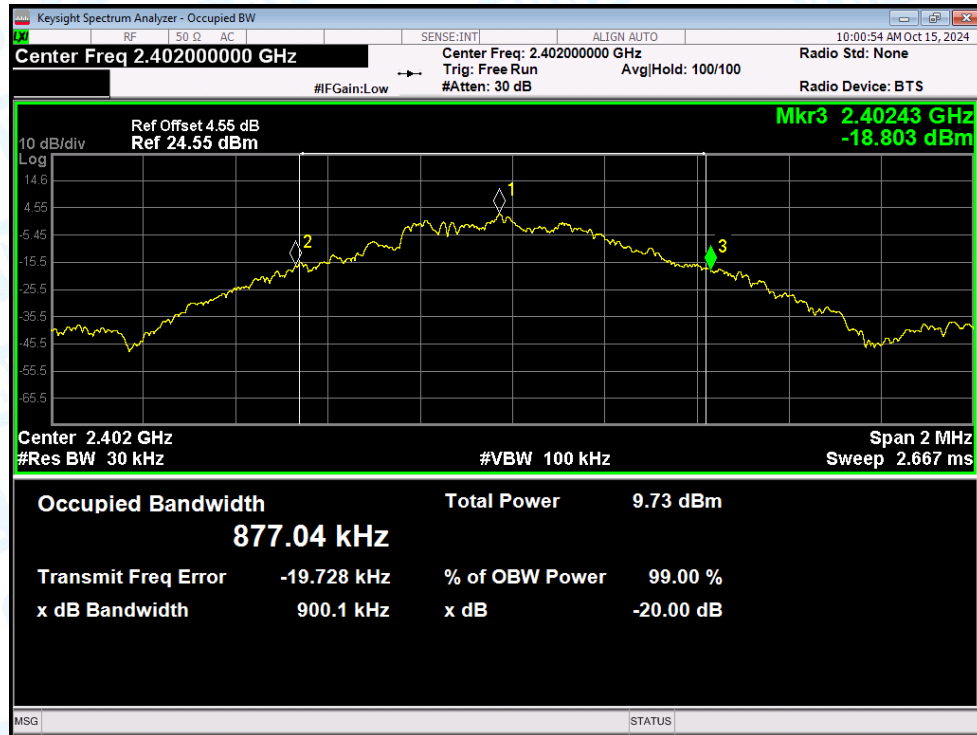


3.-20dB Bandwidth

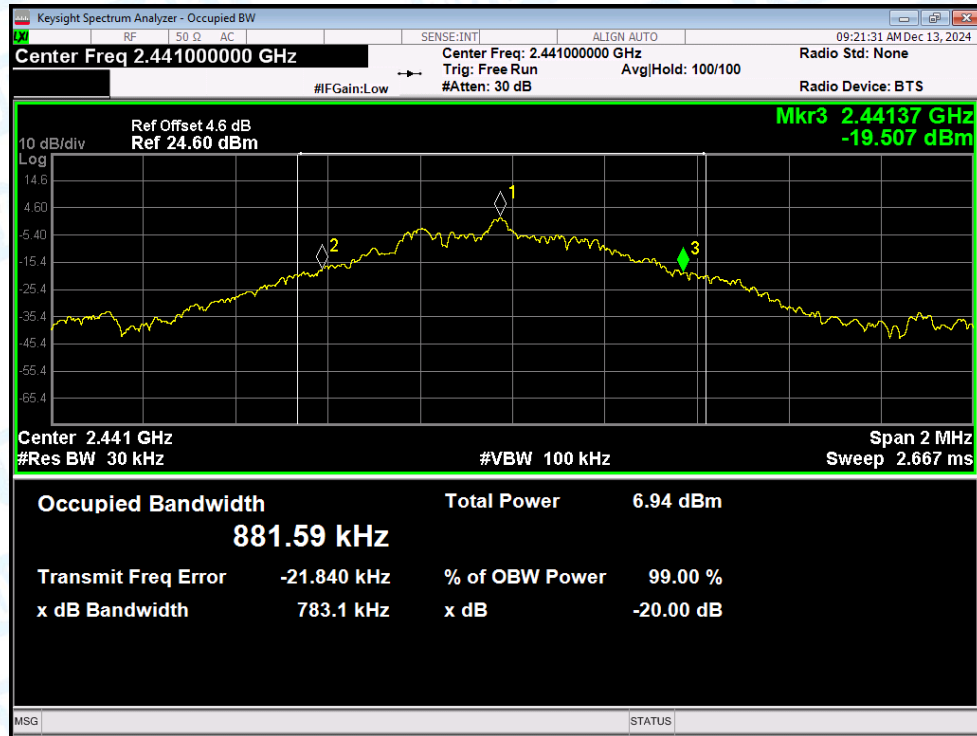
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.9	0	Pass
NVNT	1-DH1	2441	Ant1	0.78	0	Pass
NVNT	1-DH1	2480	Ant1	0.96	0	Pass
NVNT	2-DH1	2402	Ant1	1.18	0	Pass
NVNT	2-DH1	2441	Ant1	1.16	0	Pass
NVNT	2-DH1	2480	Ant1	1.18	0	Pass
NVNT	3-DH1	2402	Ant1	1.19	0	Pass
NVNT	3-DH1	2441	Ant1	1.19	0	Pass
NVNT	3-DH1	2480	Ant1	1.2	0	Pass

Test Graphs

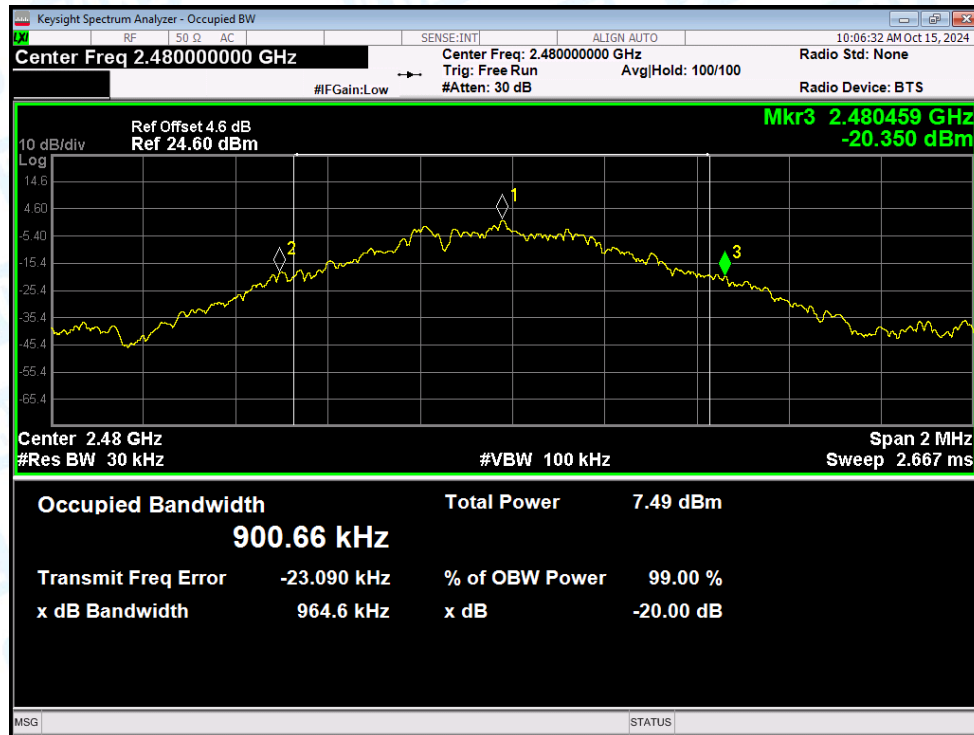
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



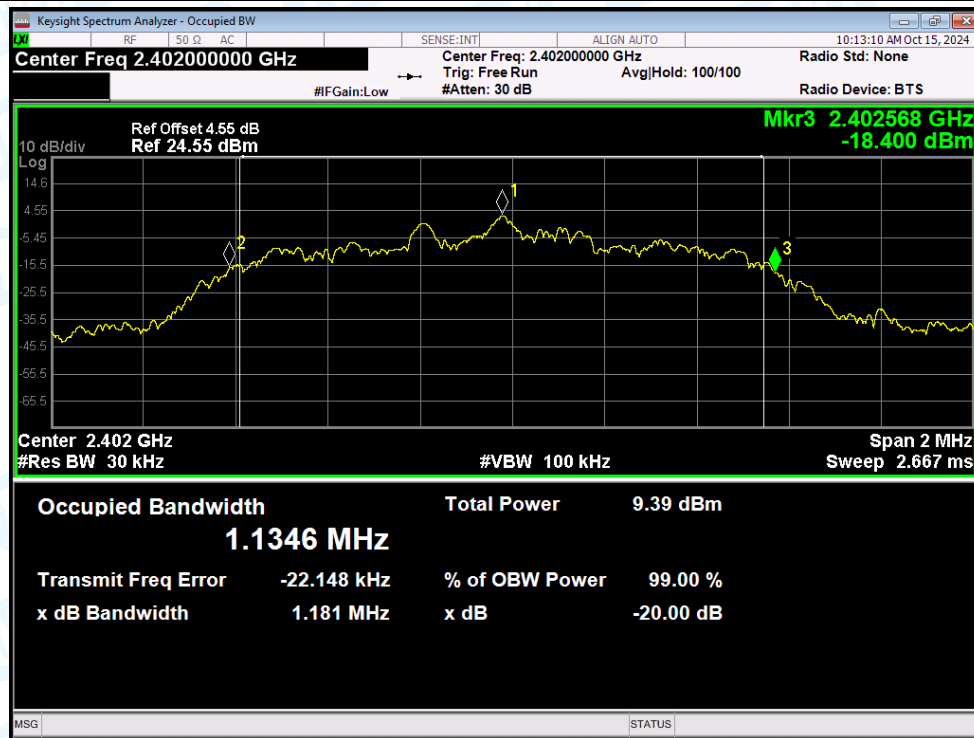
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



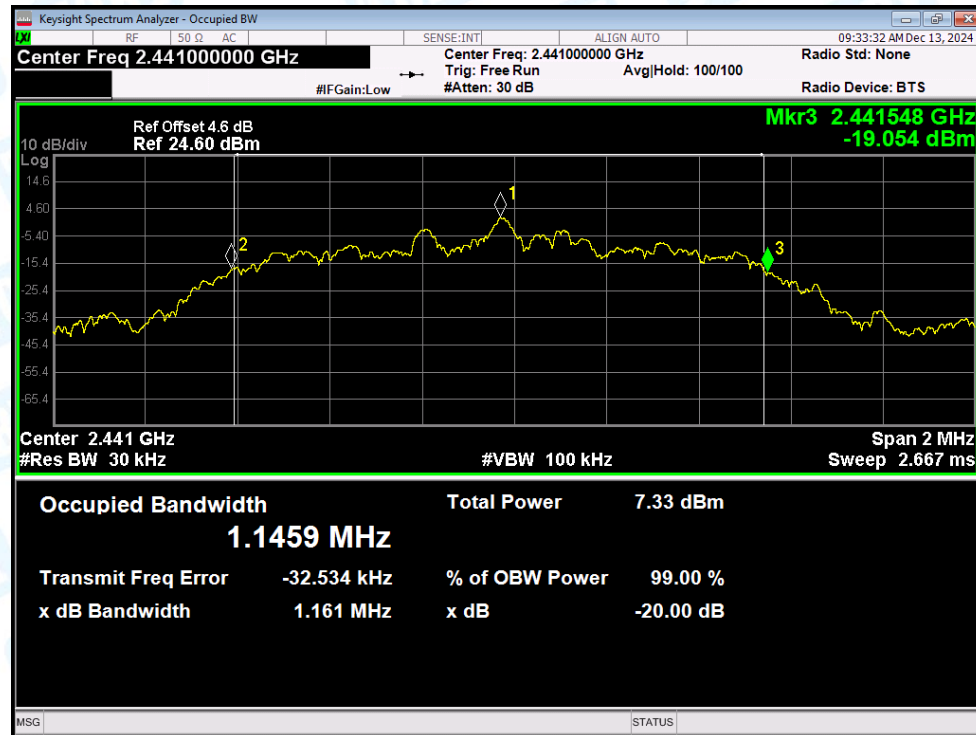
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



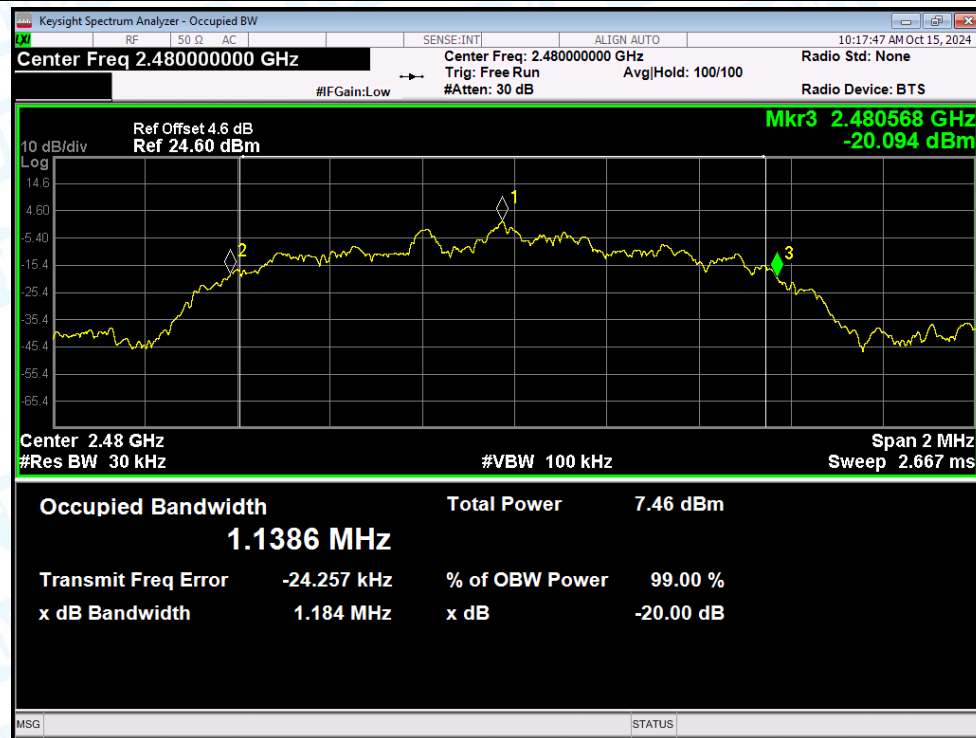
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



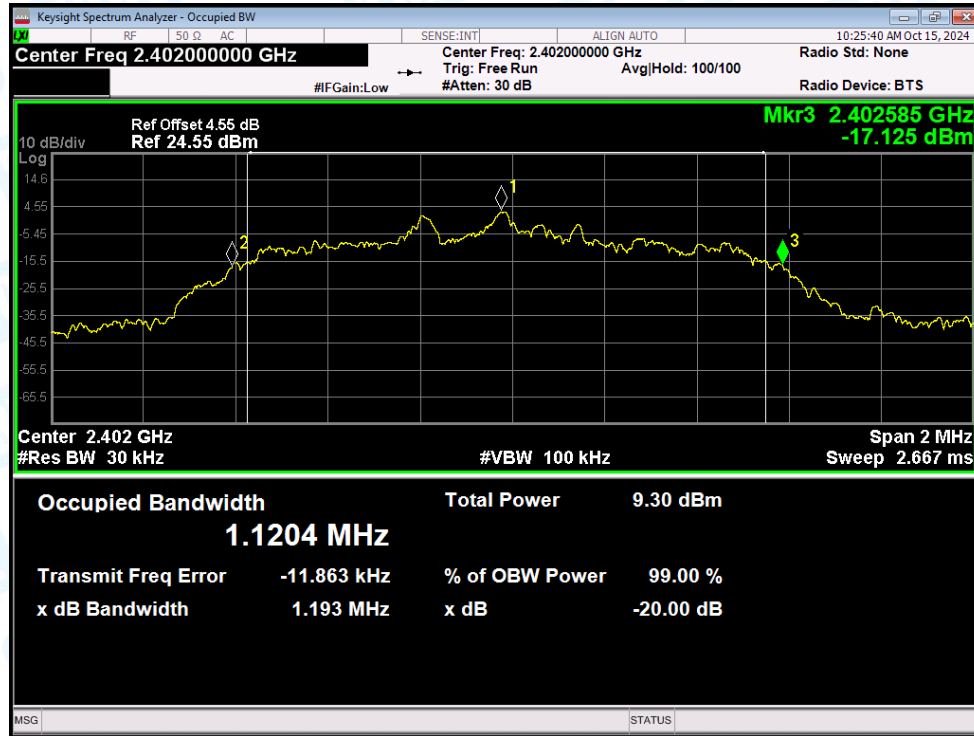
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



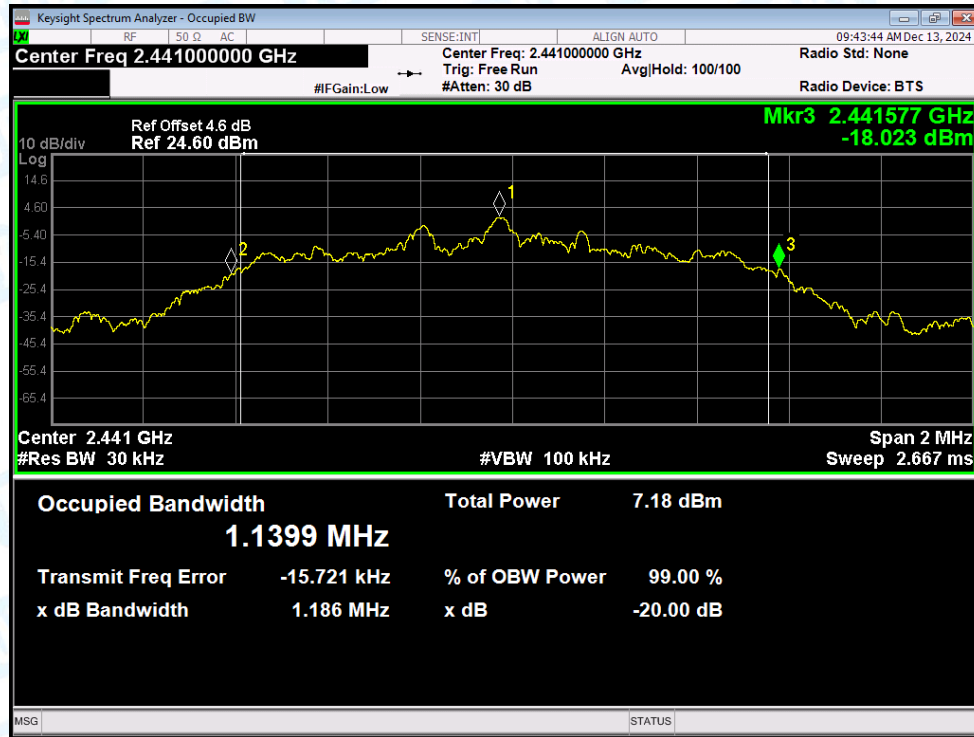
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

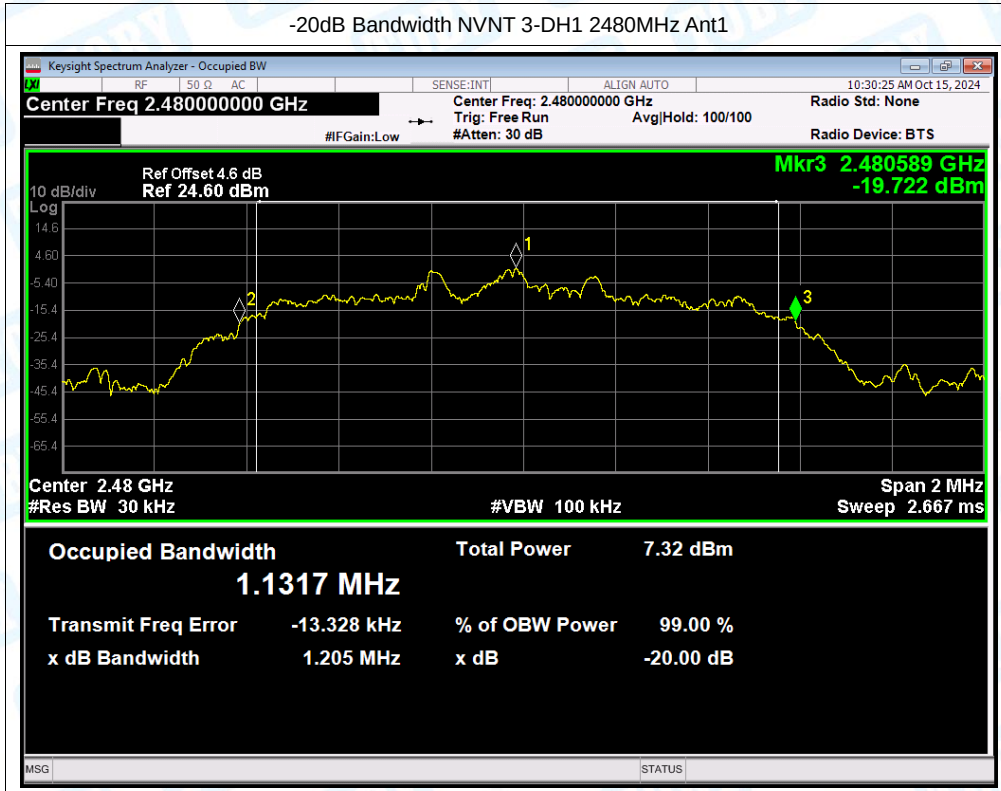


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



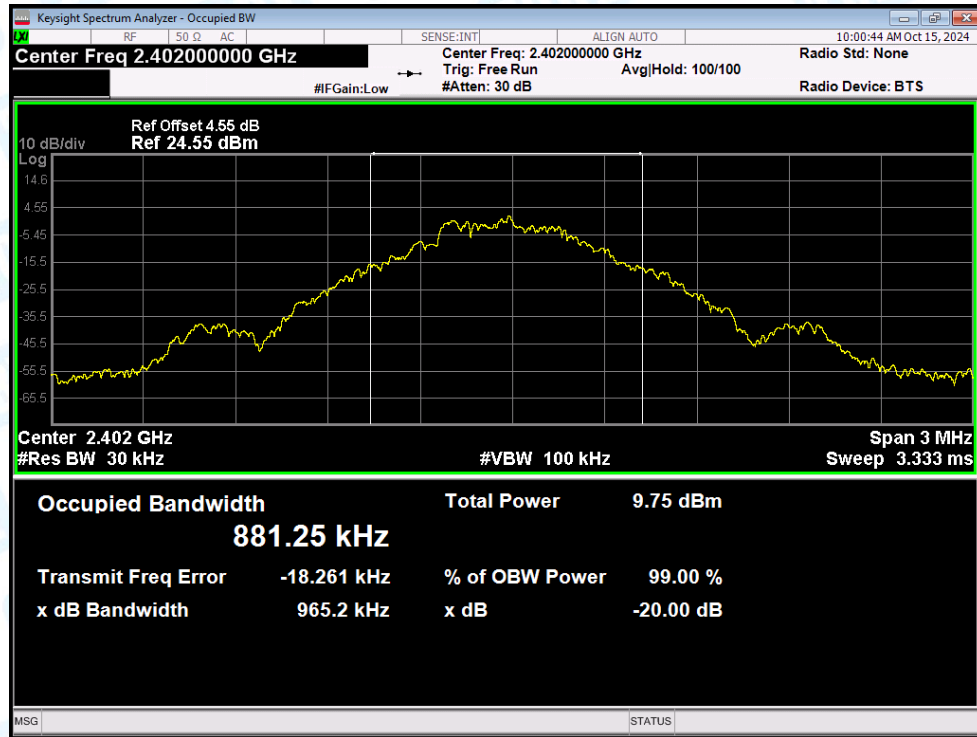


4.Occupied Channel Bandwidth

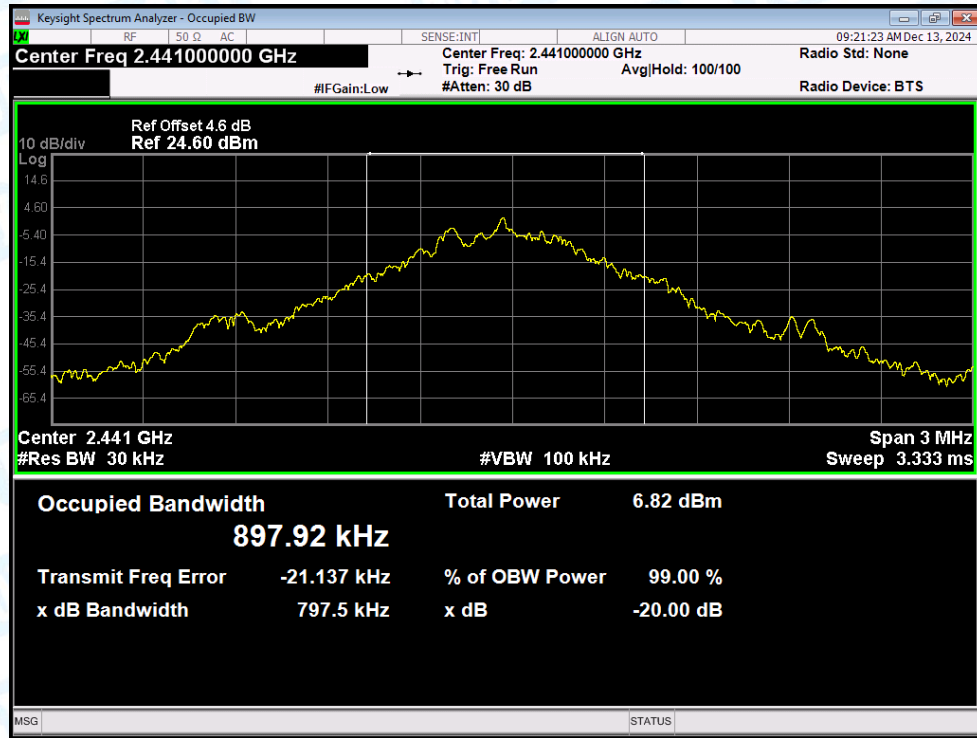
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.881
NVNT	1-DH1	2441	Ant1	0.898
NVNT	1-DH1	2480	Ant1	0.896
NVNT	2-DH1	2402	Ant1	1.137
NVNT	2-DH1	2441	Ant1	1.161
NVNT	2-DH1	2480	Ant1	1.135
NVNT	3-DH1	2402	Ant1	1.122
NVNT	3-DH1	2441	Ant1	1.152
NVNT	3-DH1	2480	Ant1	1.137

Test Graphs

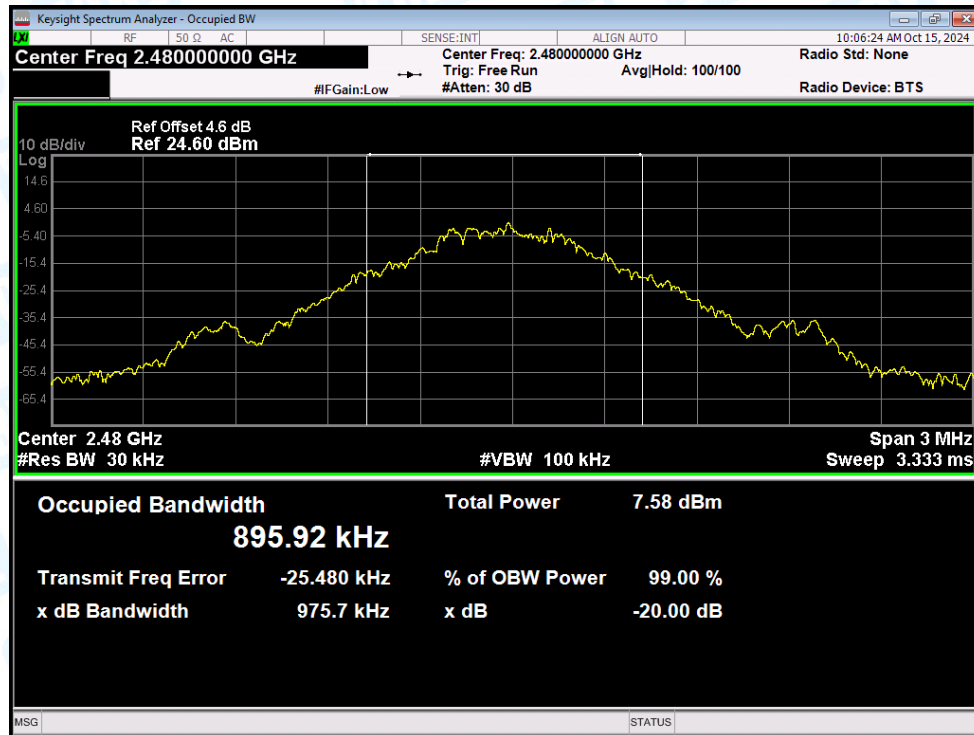
OBW NVNT 1-DH1 2402MHz Ant1



OBW NVNT 1-DH1 2441MHz Ant1



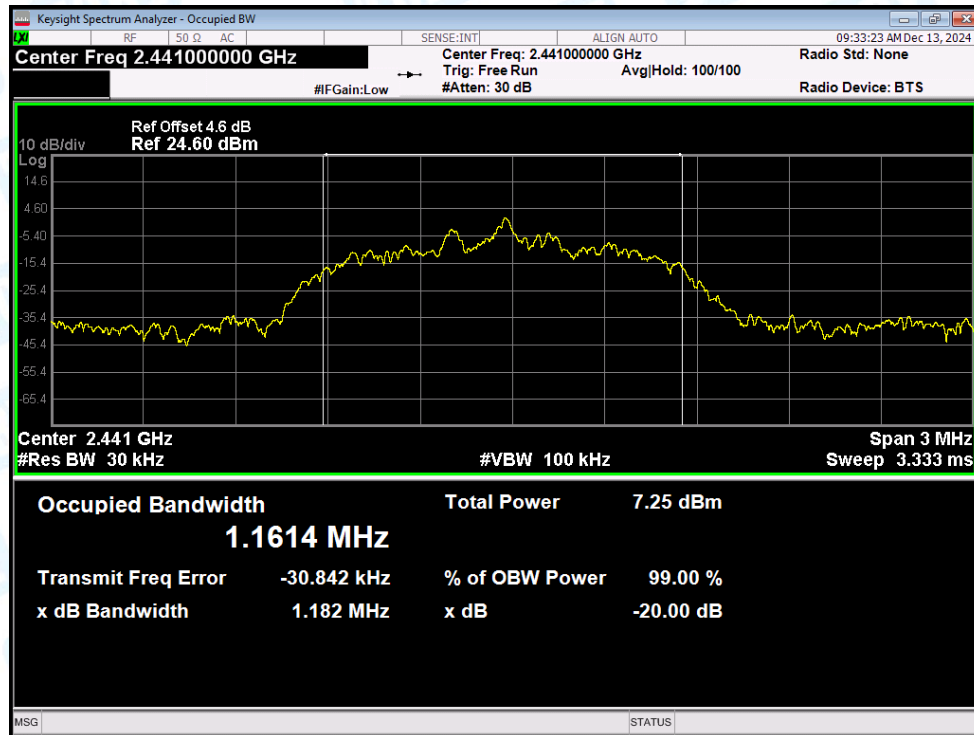
OBW NVNT 1-DH1 2480MHz Ant1



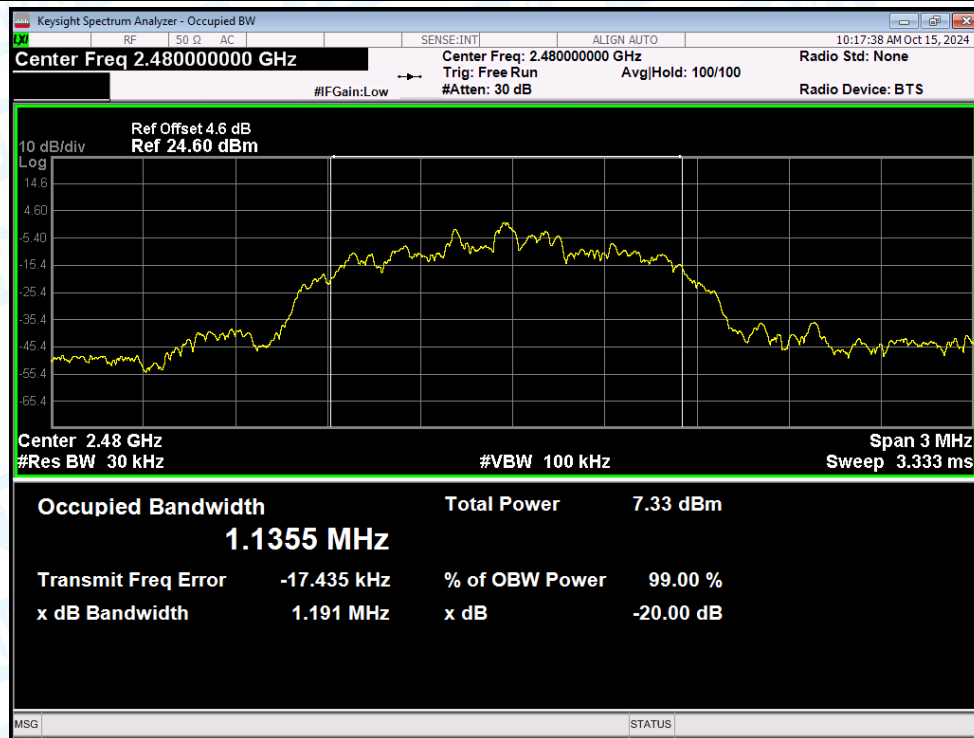
OBW NVNT 2-DH1 2402MHz Ant1



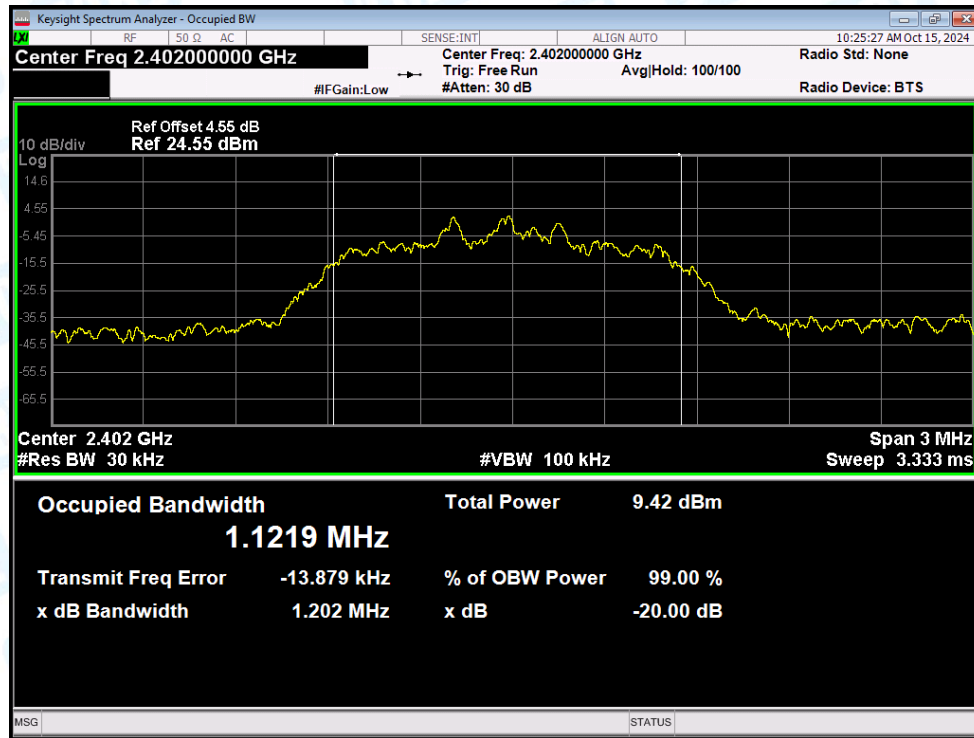
OBW NVNT 2-DH1 2441MHz Ant1



OBW NVNT 2-DH1 2480MHz Ant1

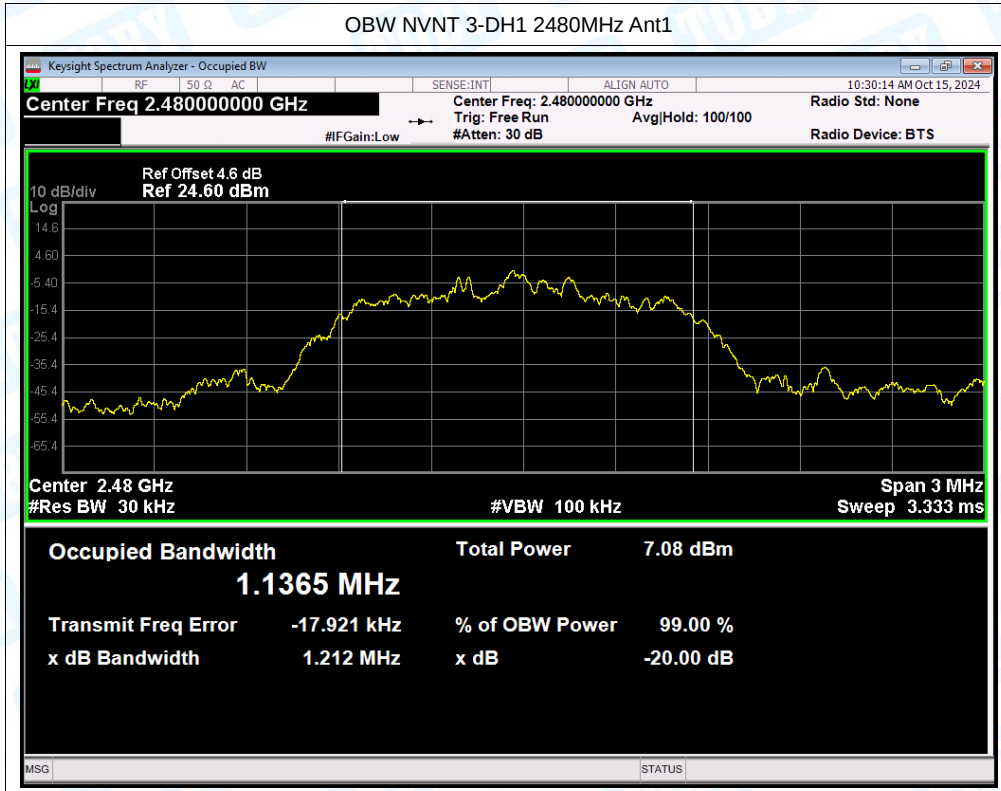


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



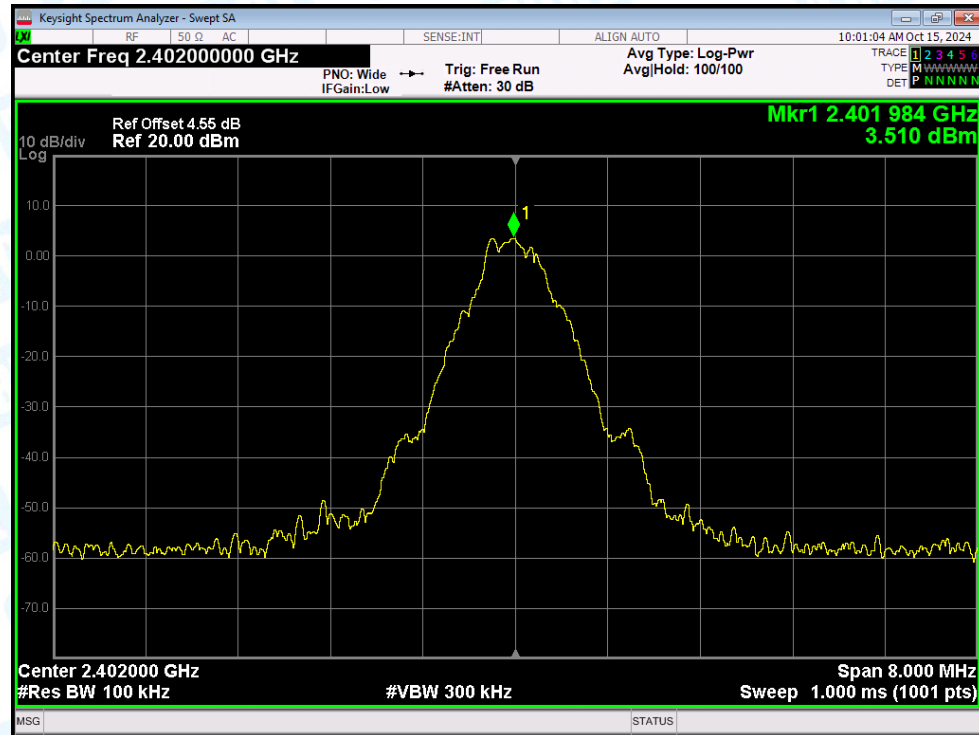


5.Band Edge

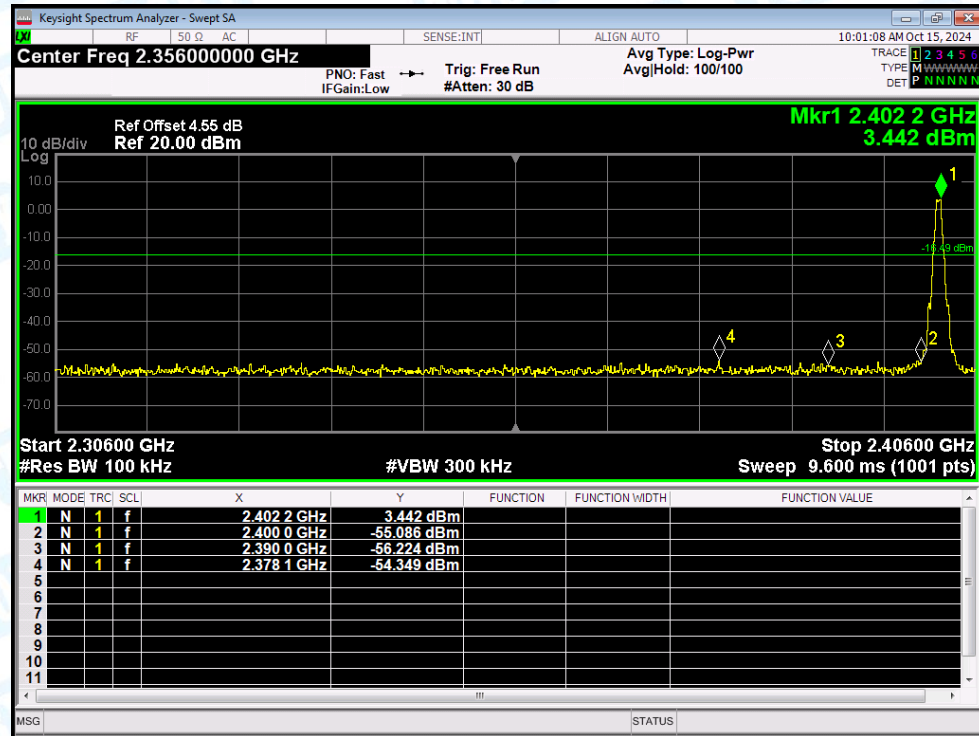
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-57.86	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-56.43	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-58.18	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-56	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-55.1	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-56.23	-20	Pass

Test Graphs

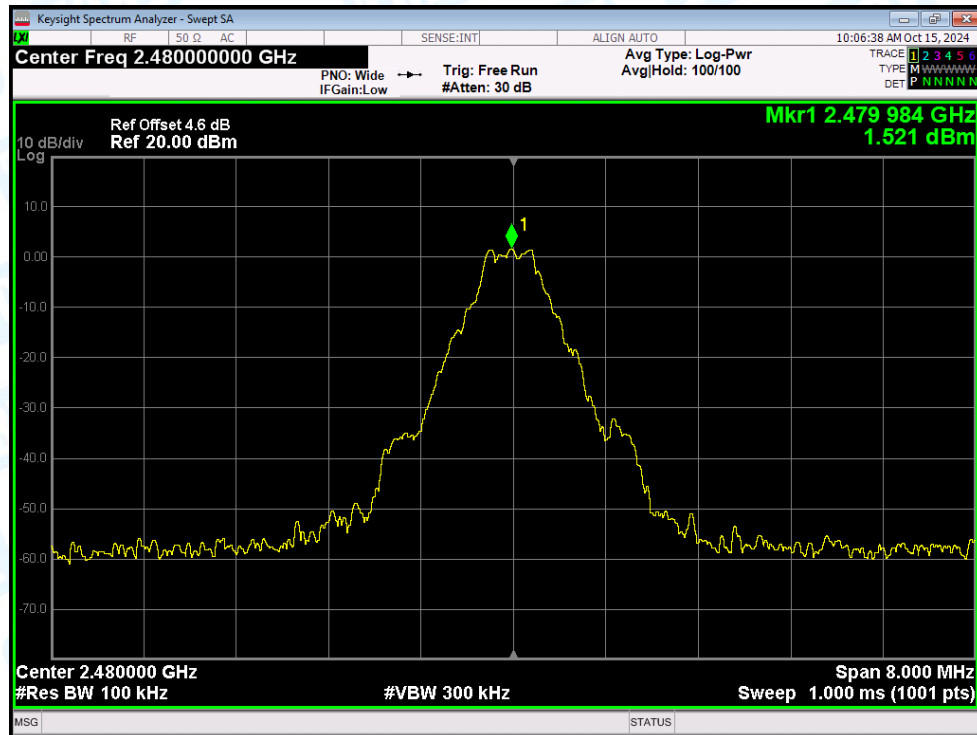
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



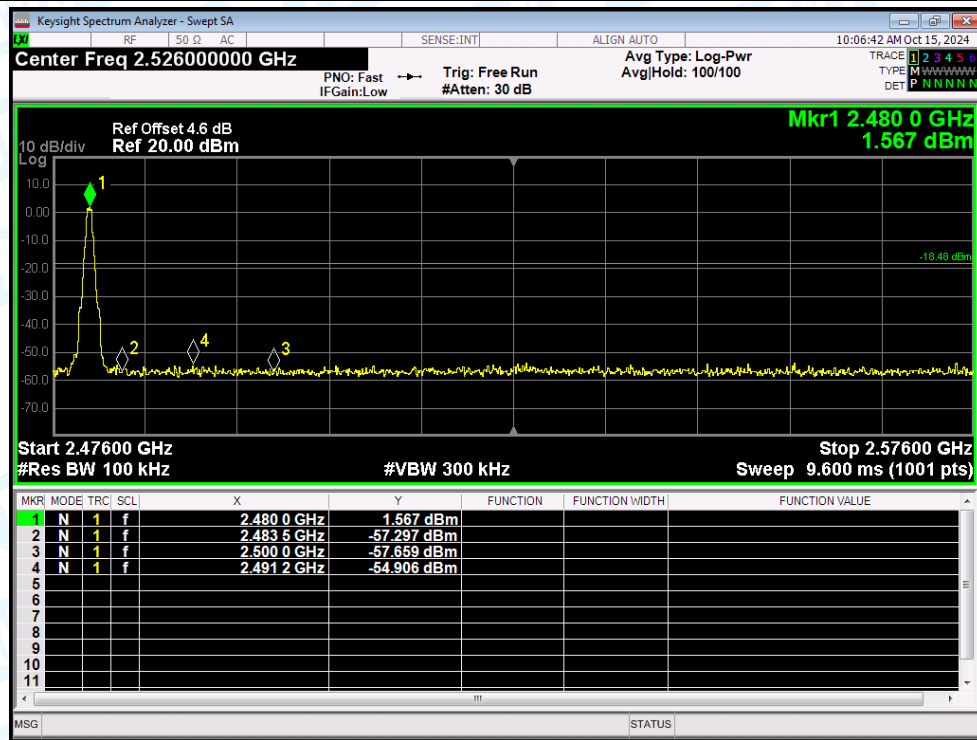
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



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



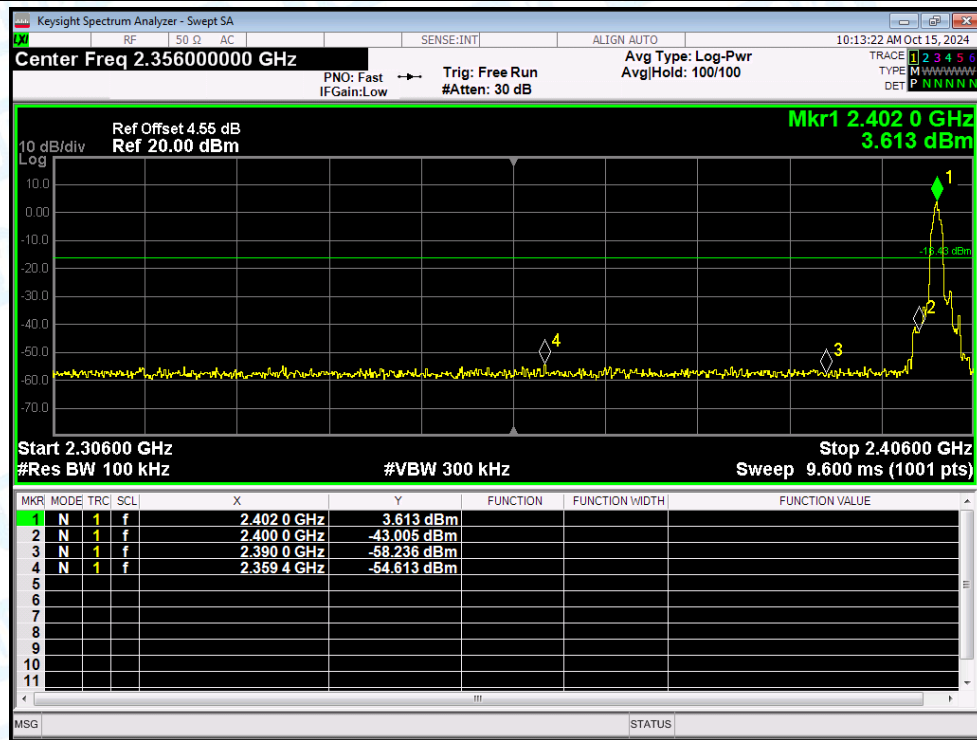
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



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



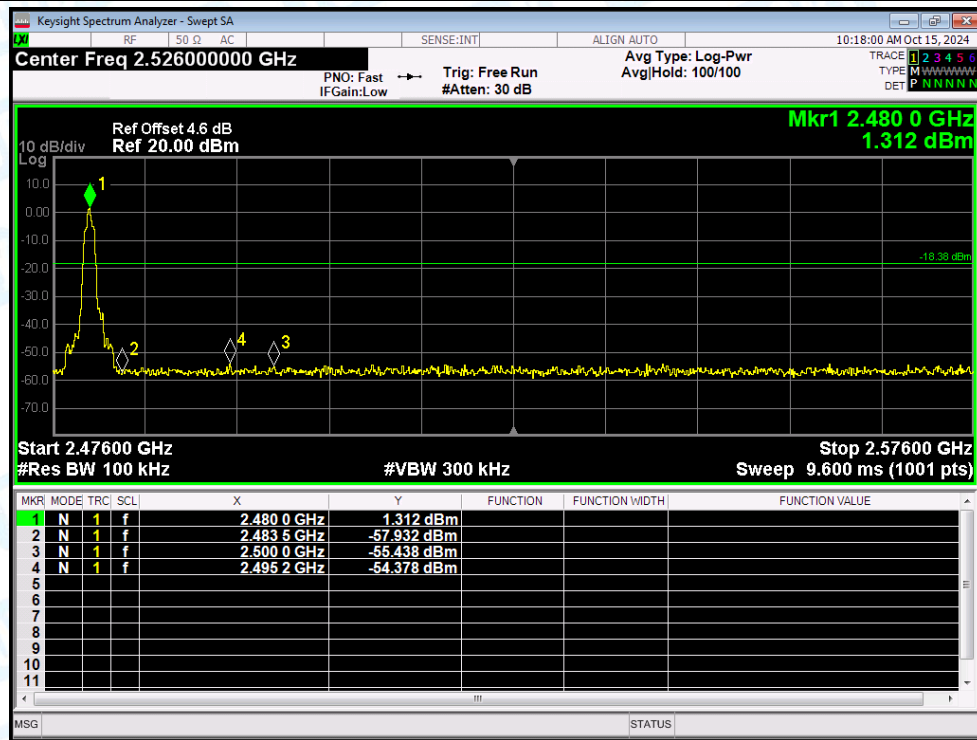
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission

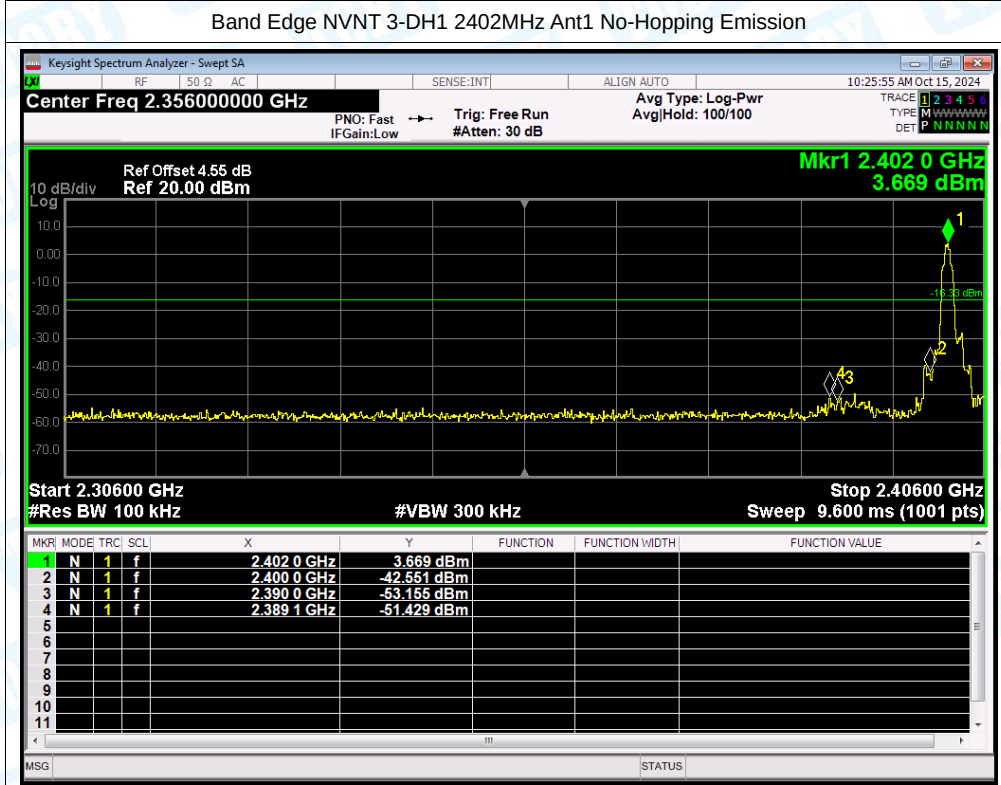


Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



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

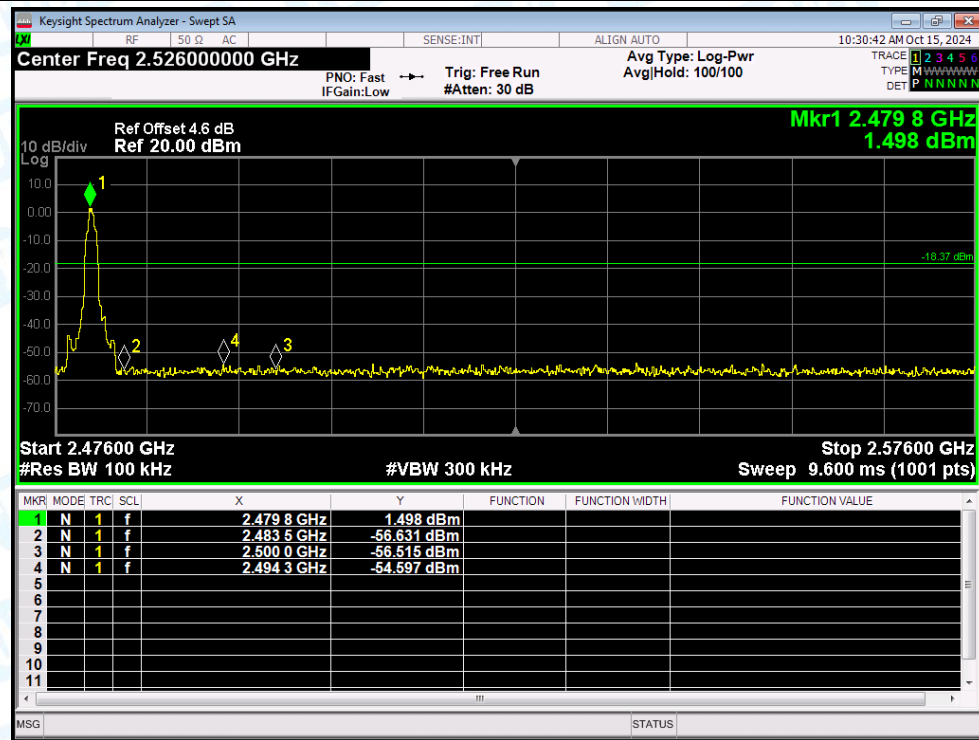




Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Ref



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



6.Band Edge(Hopping)

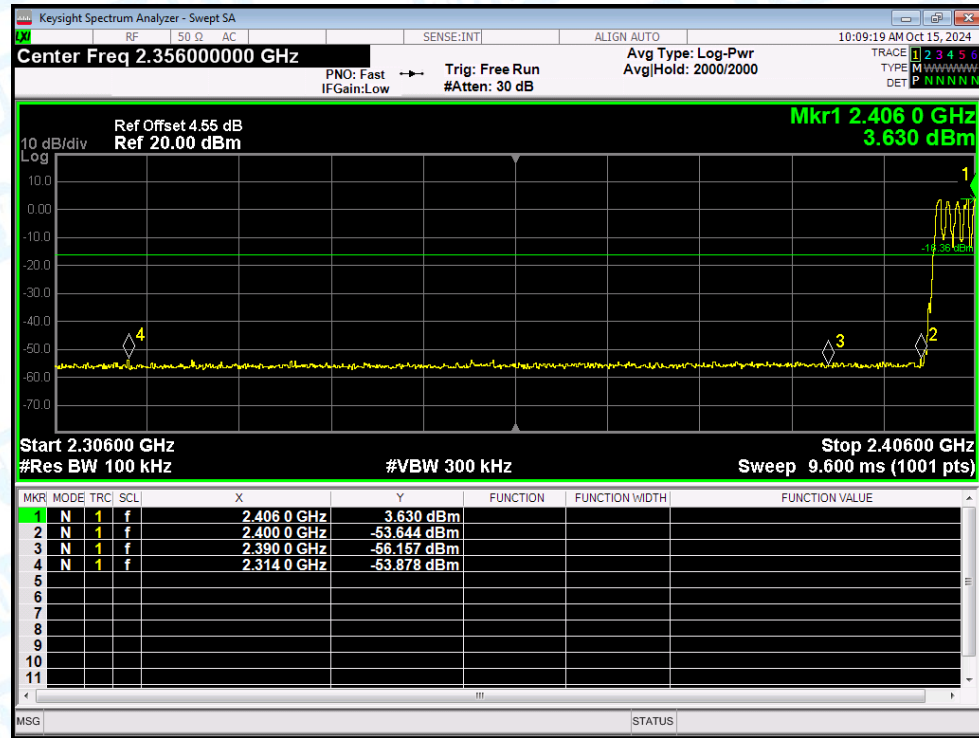
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-57.52	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-55.66	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-55.16	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-55.01	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-57.61	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-54.78	-20	Pass

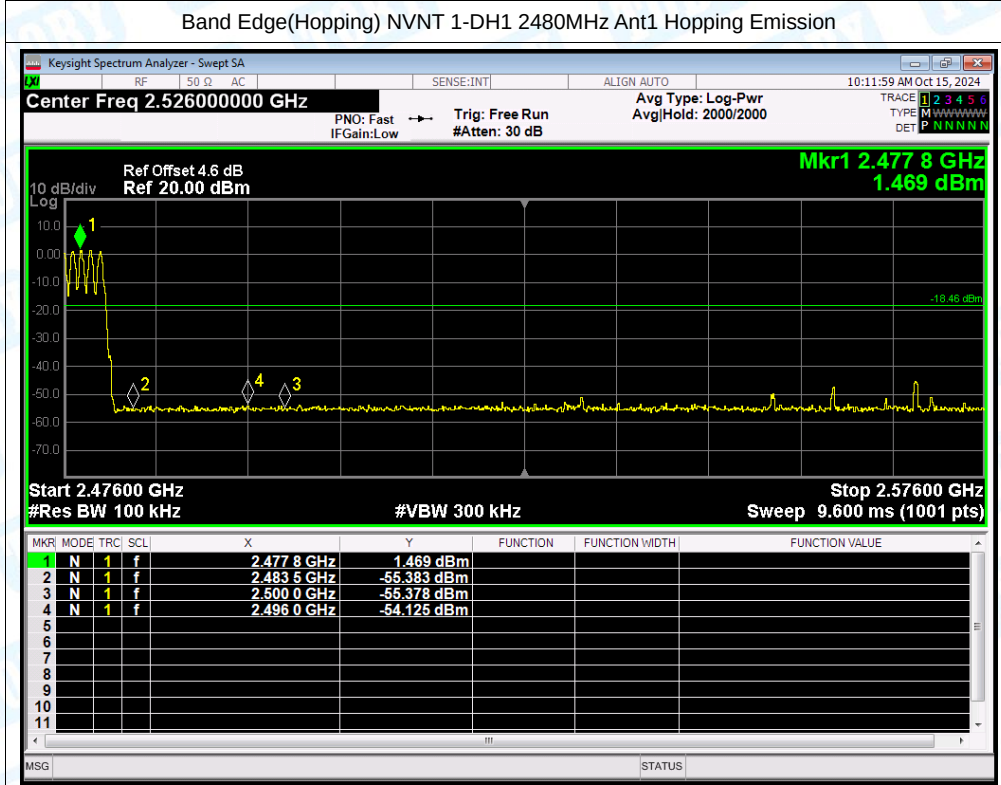
Test Graphs

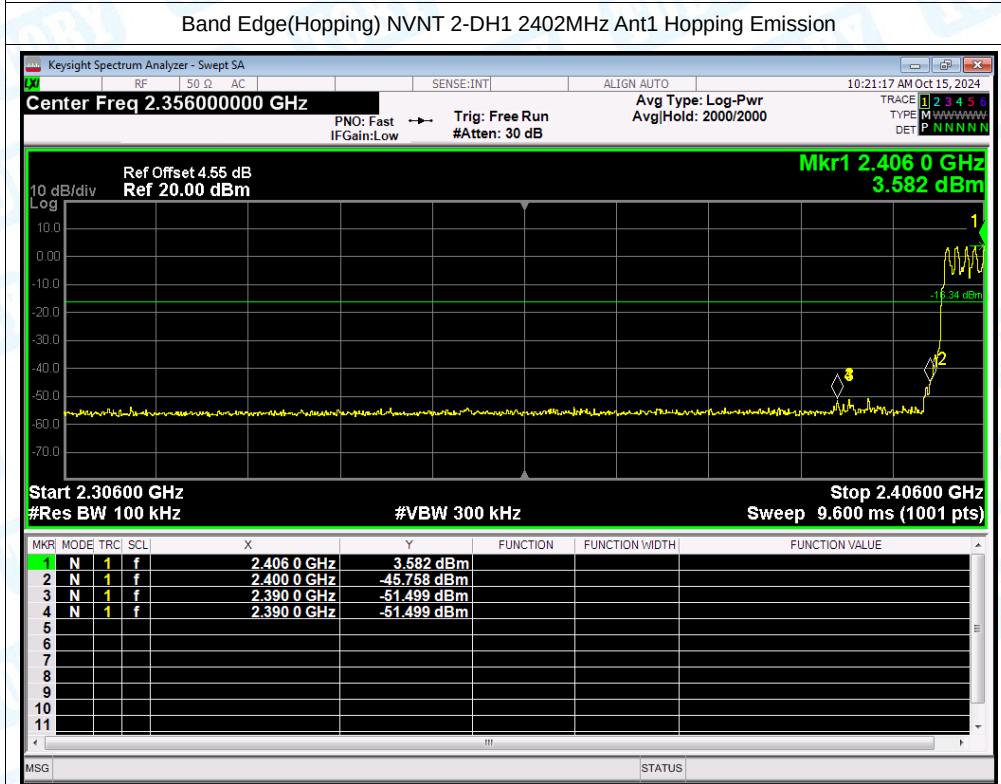
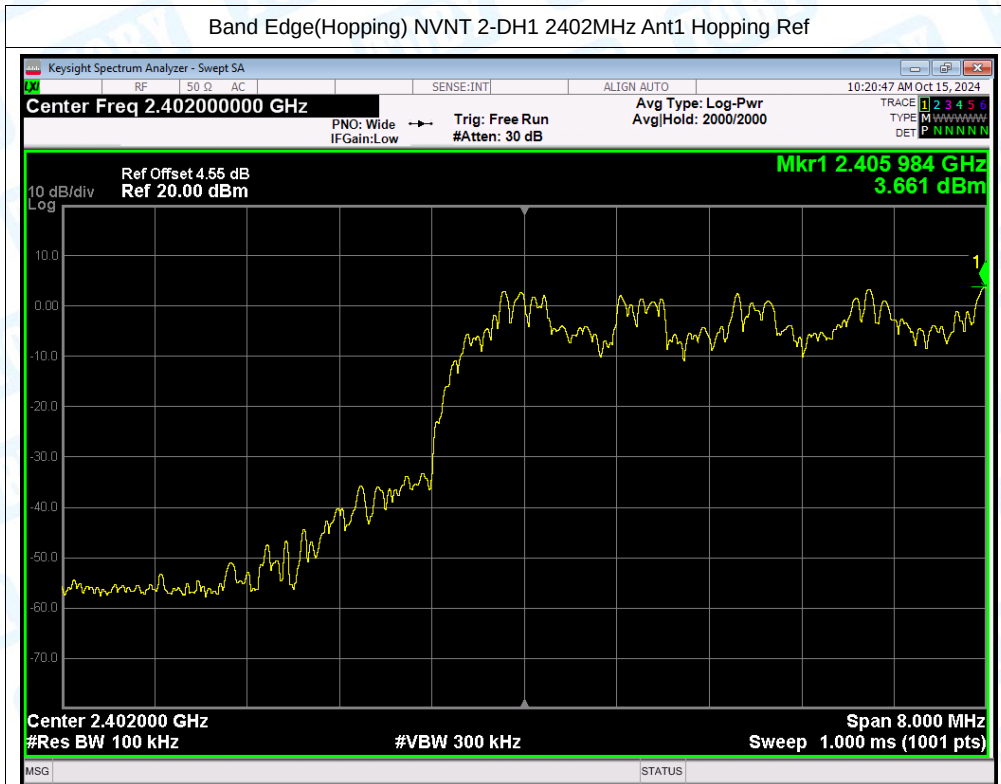
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref



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



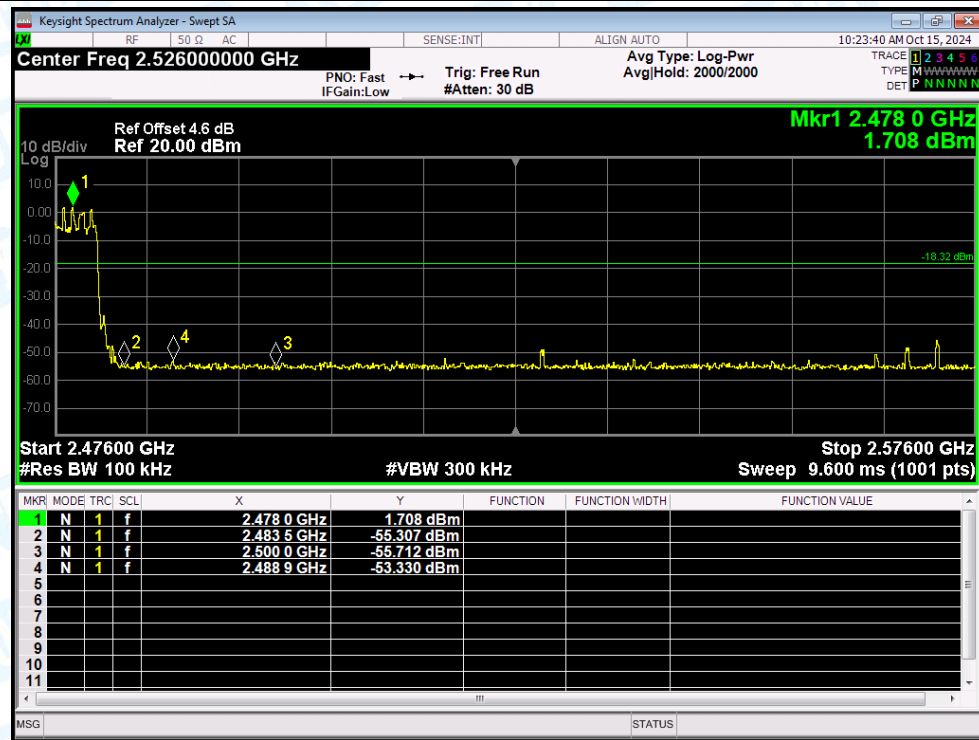




Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref



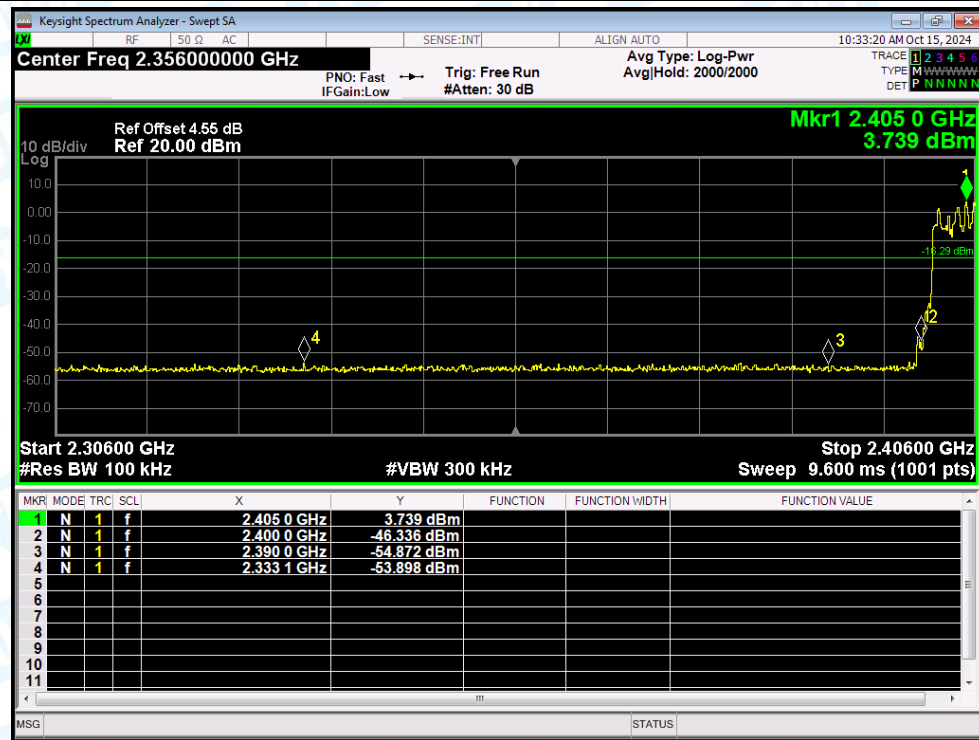
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission

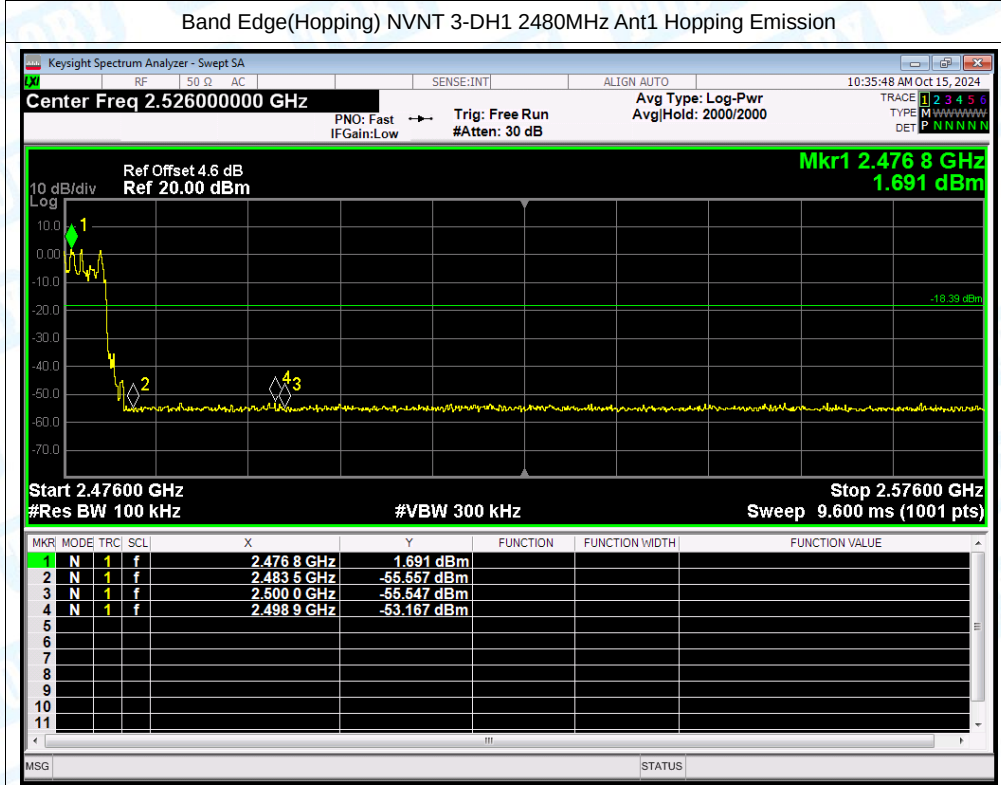


Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



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



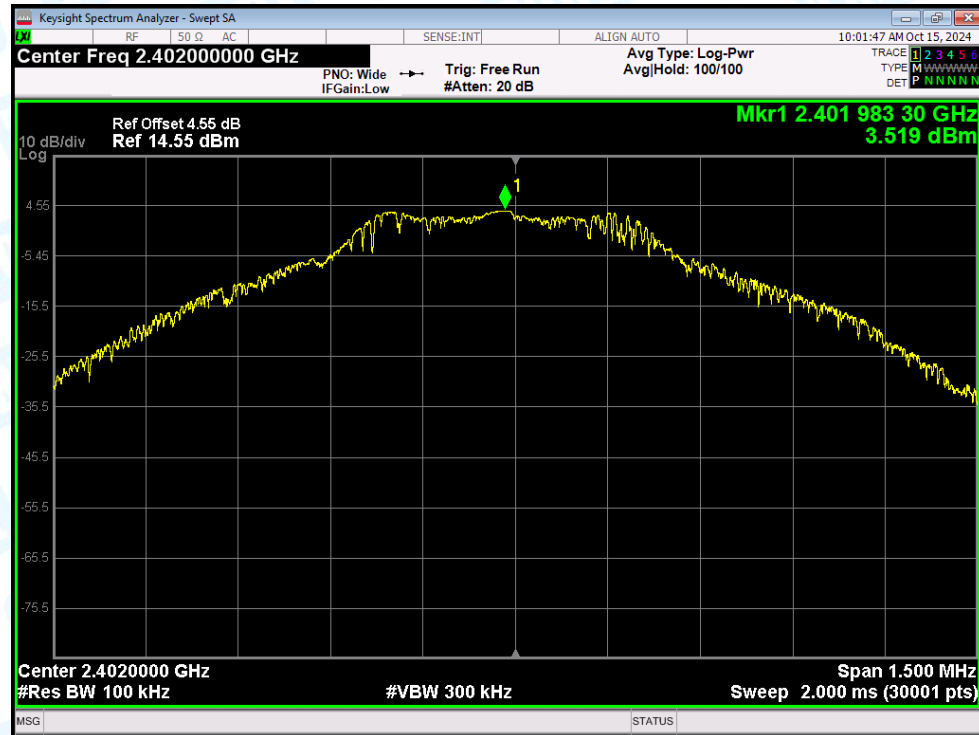


7. Conducted RF Spurious Emission

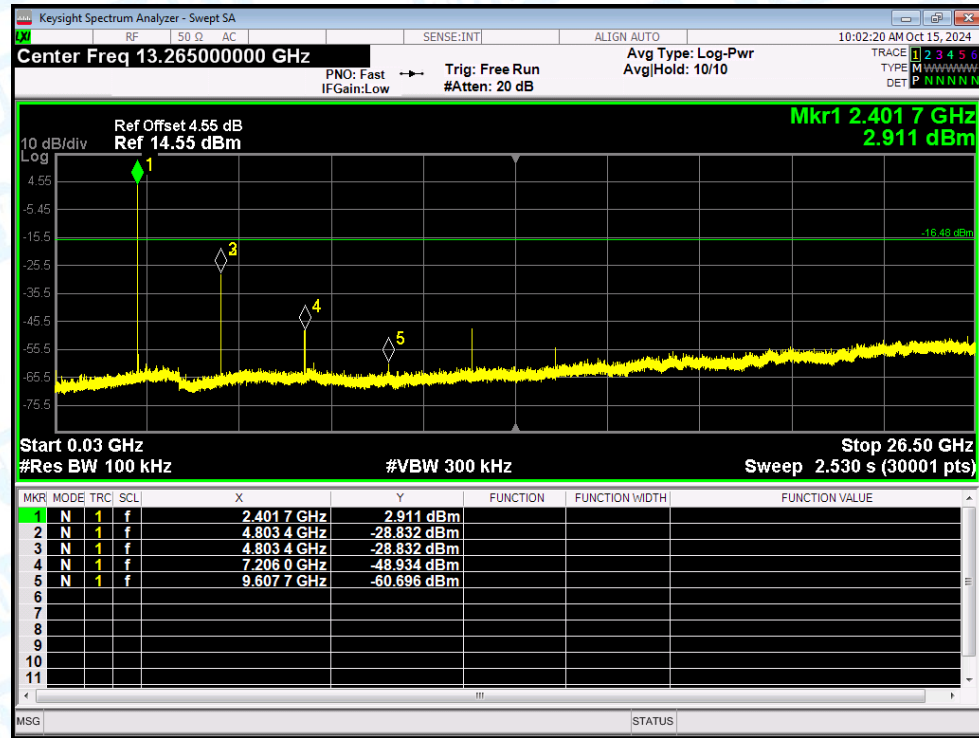
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-32.35	-20	Pass
NVNT	1-DH1	2441	Ant1	-34.68	-20	Pass
NVNT	1-DH1	2480	Ant1	-42.48	-20	Pass
NVNT	2-DH1	2402	Ant1	-34.3	-20	Pass
NVNT	2-DH1	2441	Ant1	-35.45	-20	Pass
NVNT	2-DH1	2480	Ant1	-33.82	-20	Pass
NVNT	3-DH1	2402	Ant1	-36.47	-20	Pass
NVNT	3-DH1	2441	Ant1	-34.65	-20	Pass
NVNT	3-DH1	2480	Ant1	-35.93	-20	Pass

Test Graphs

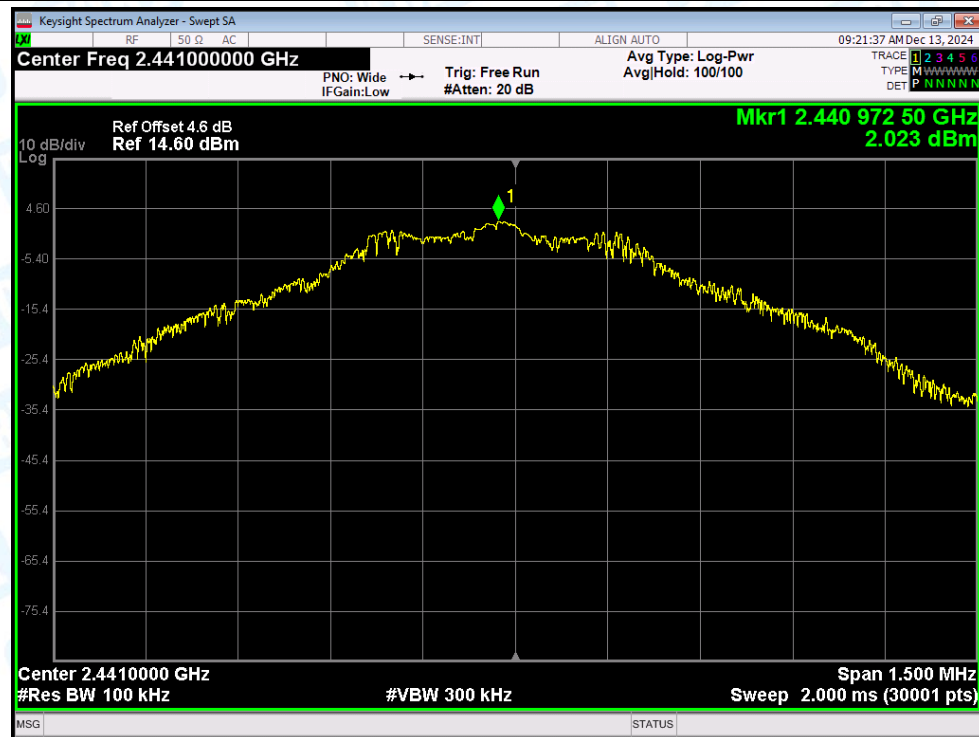
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



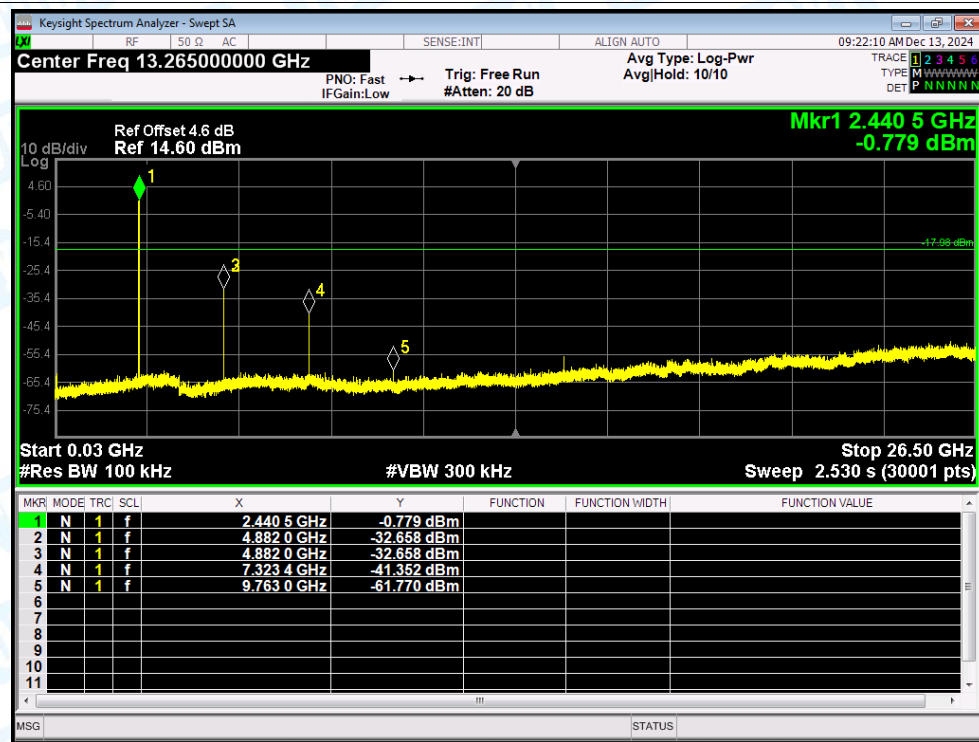
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



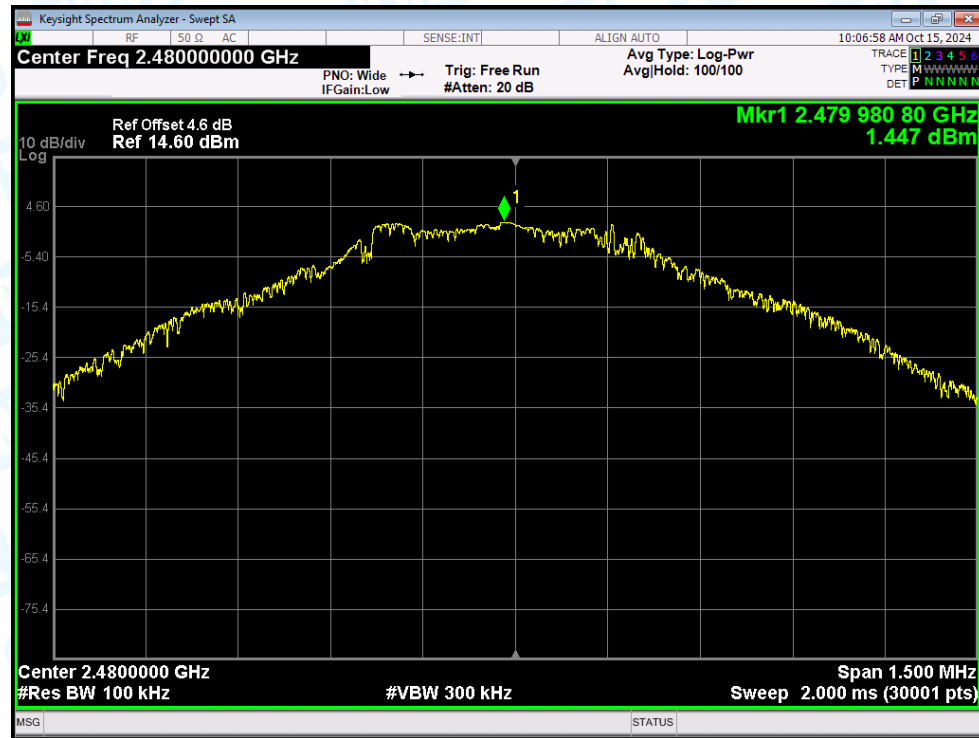
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



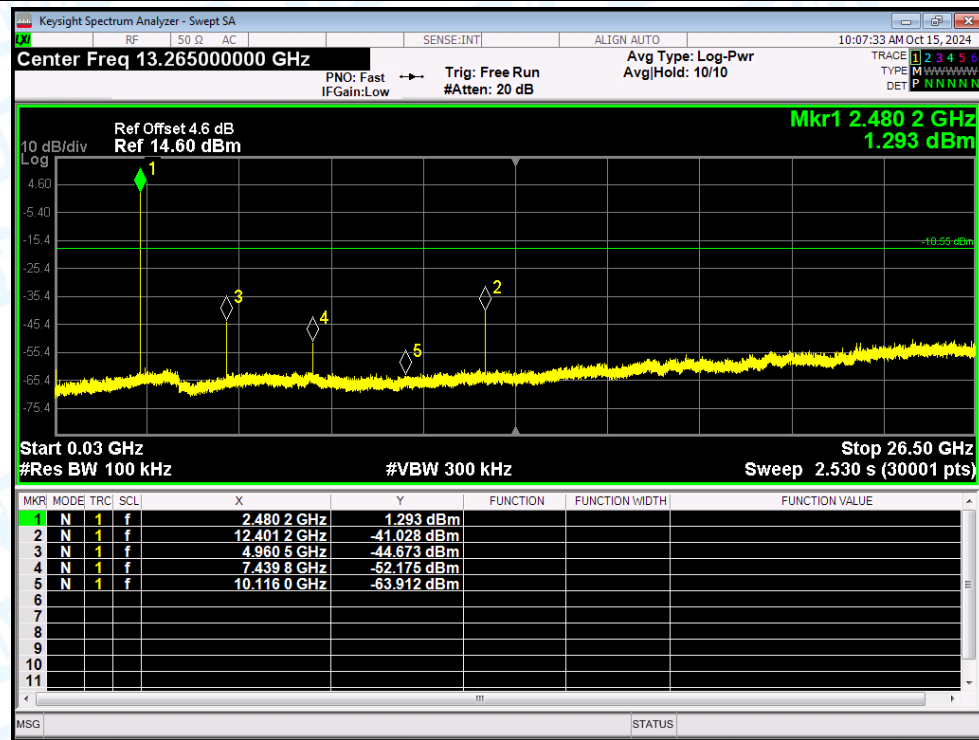
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



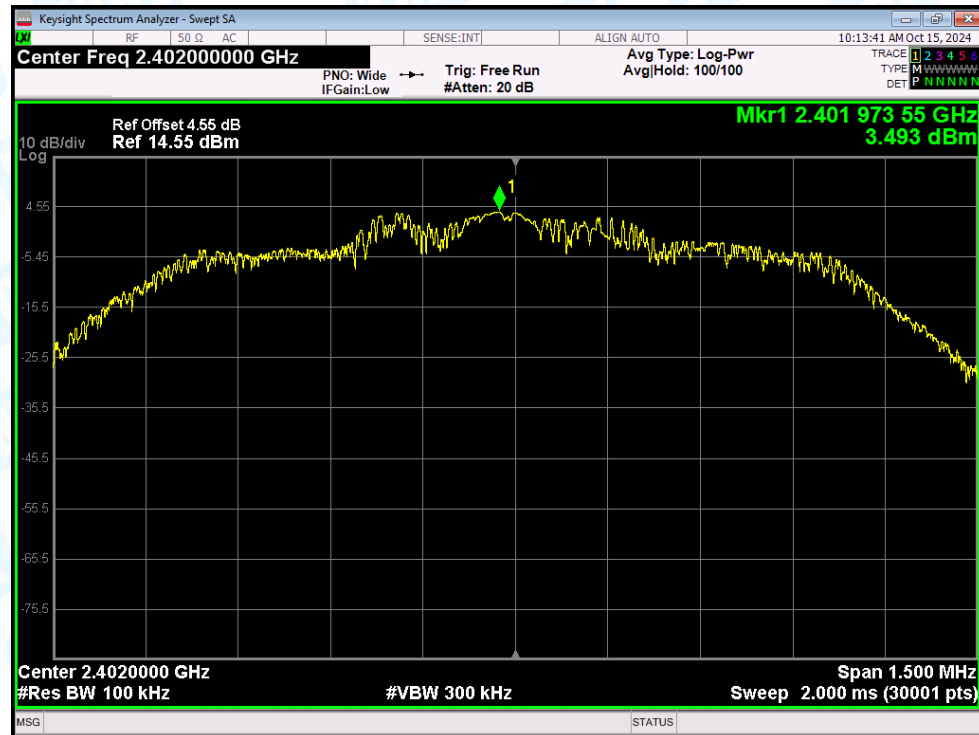
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



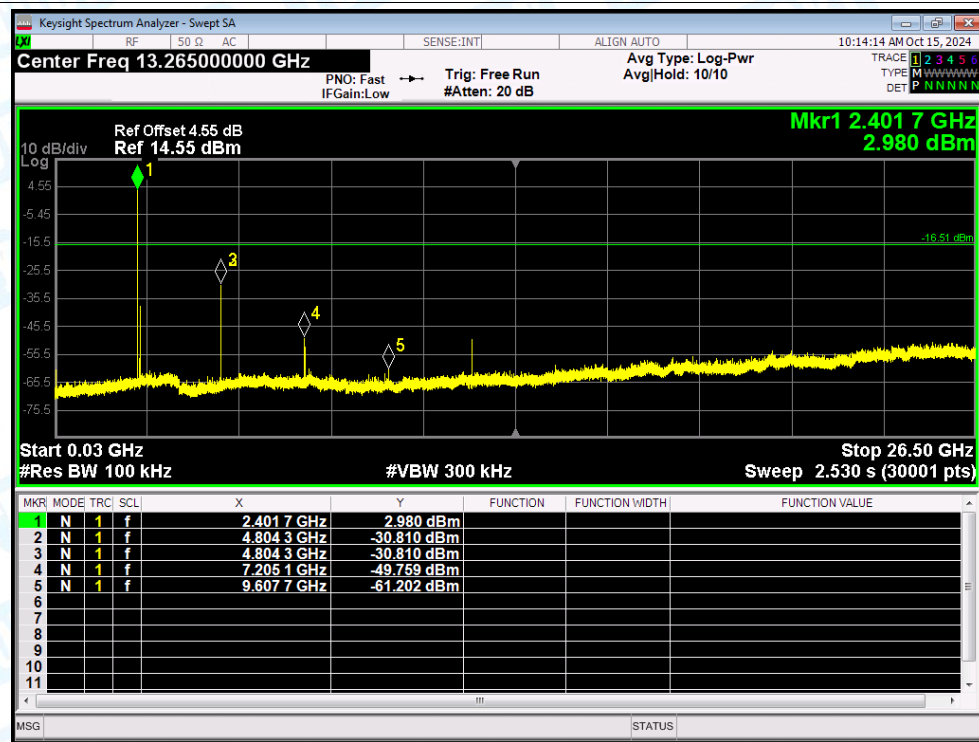
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



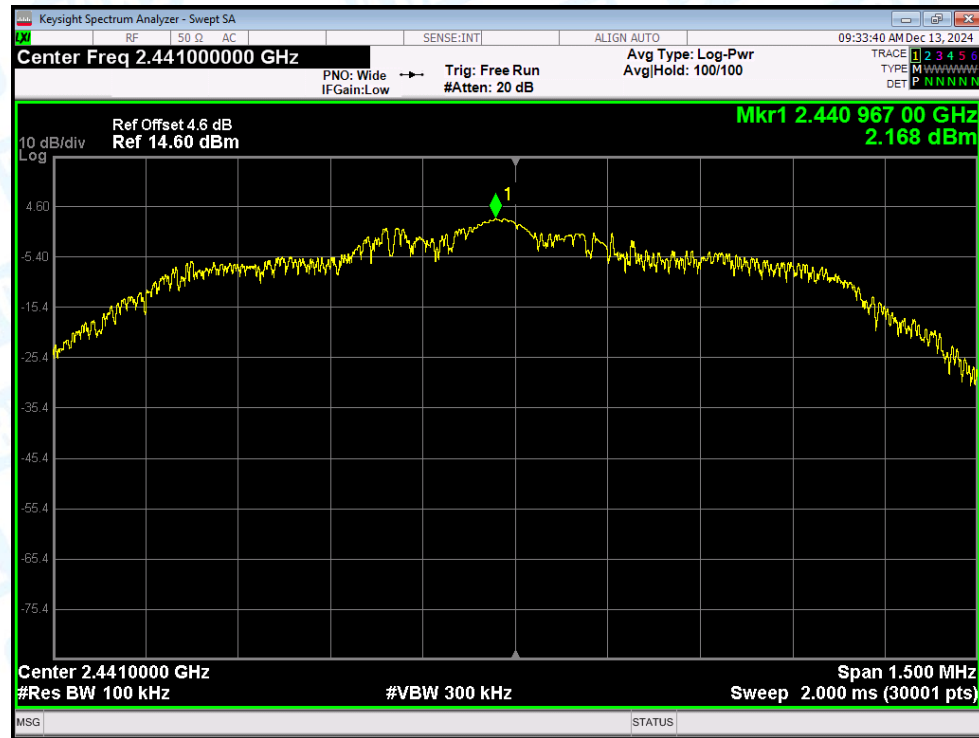
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



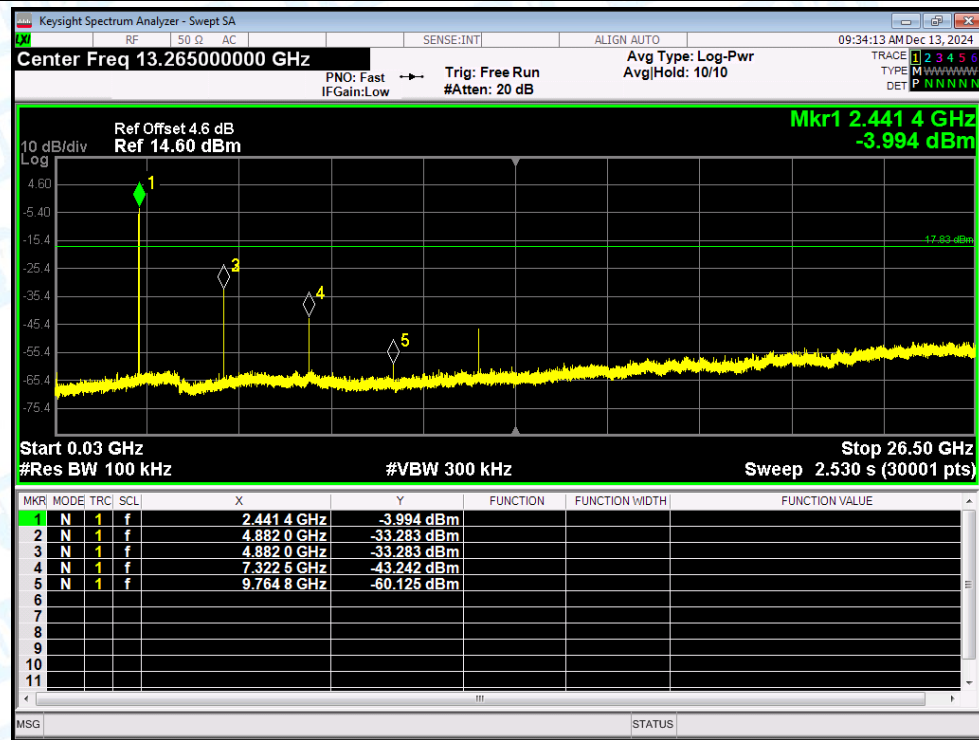
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



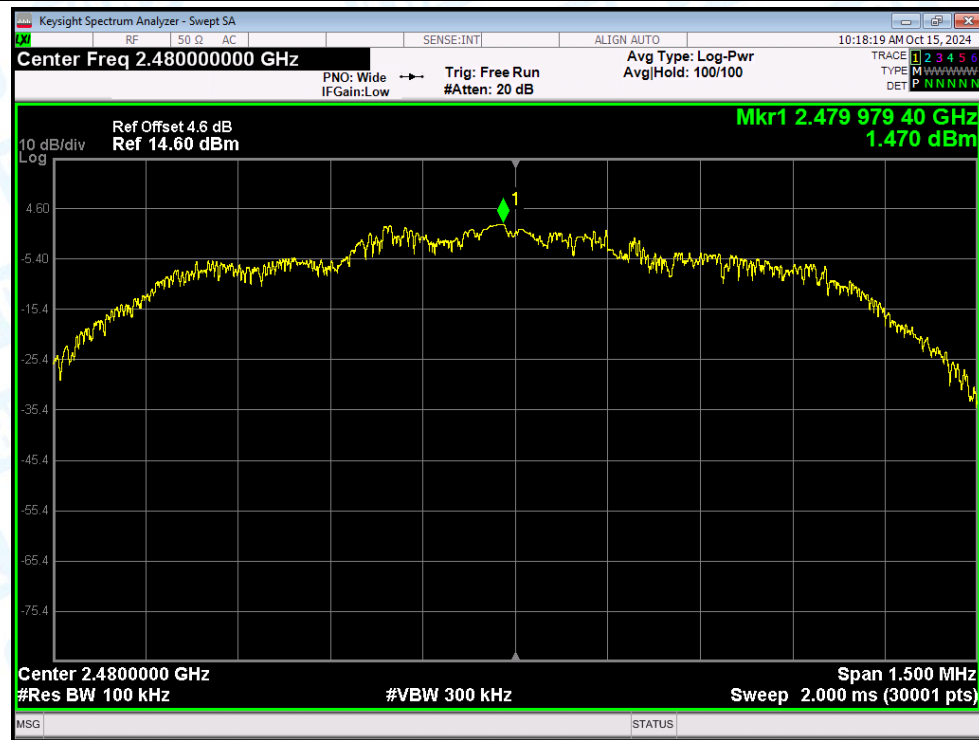
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



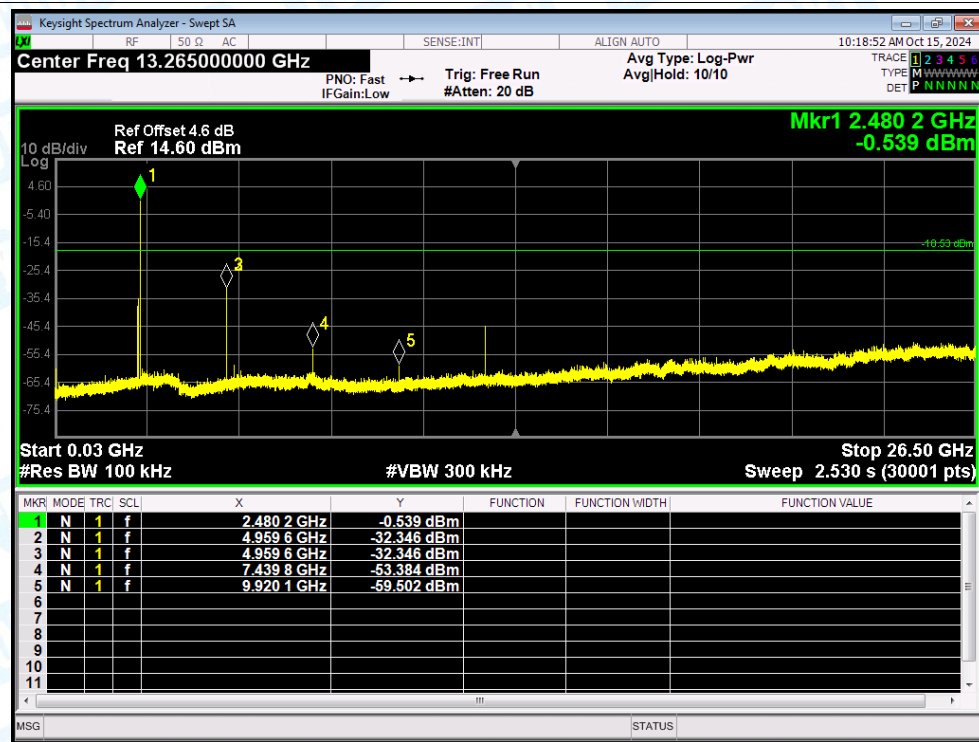
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



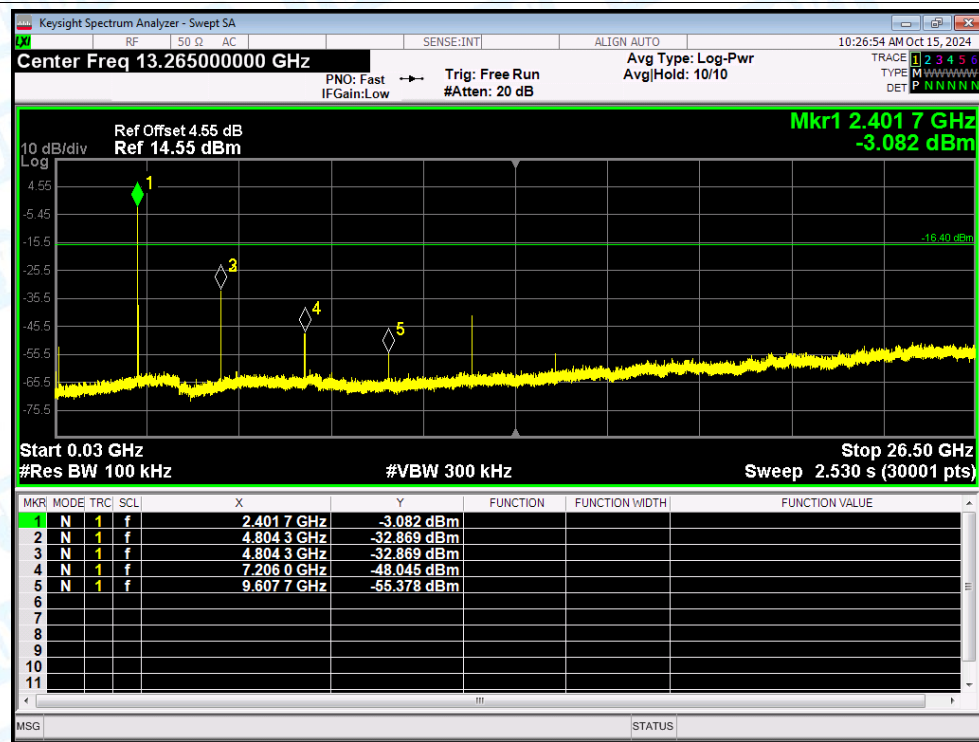
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



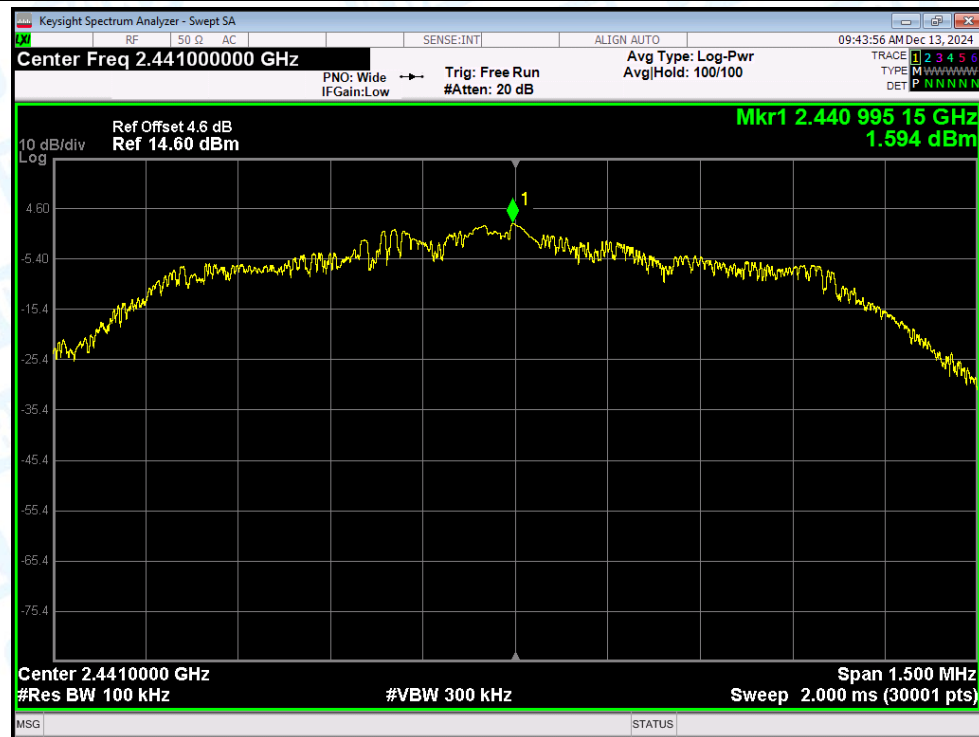
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



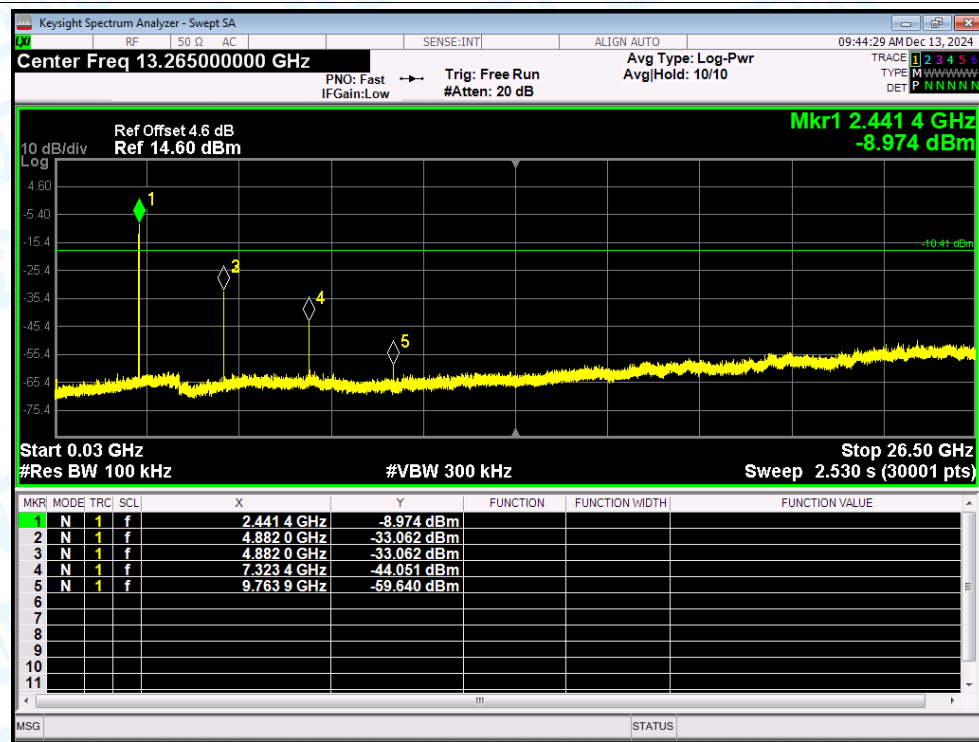
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



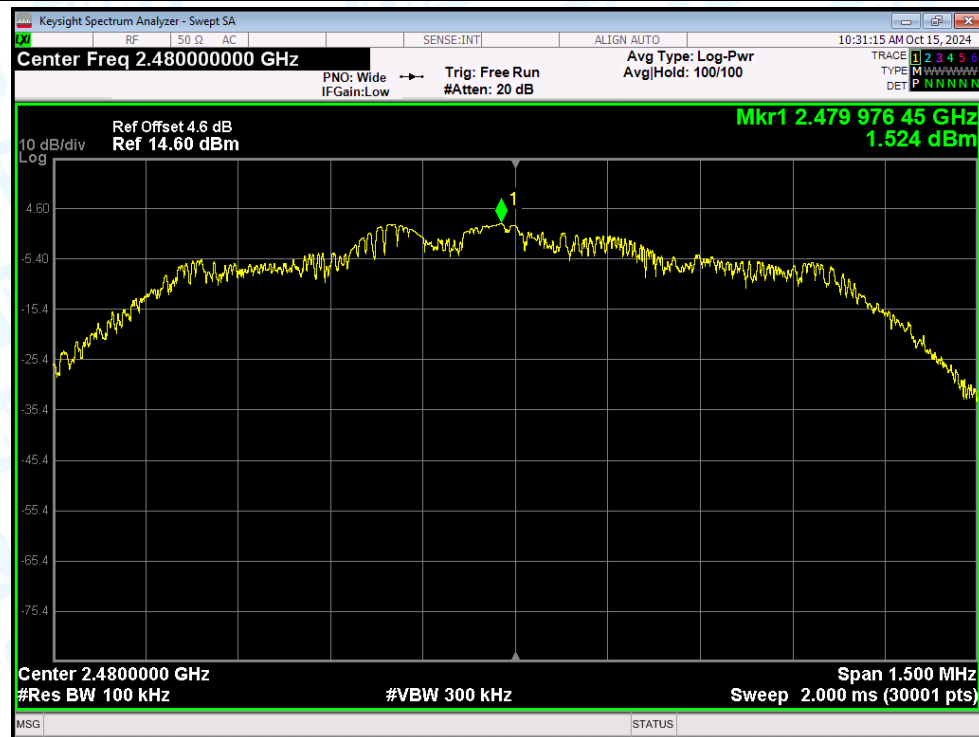
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



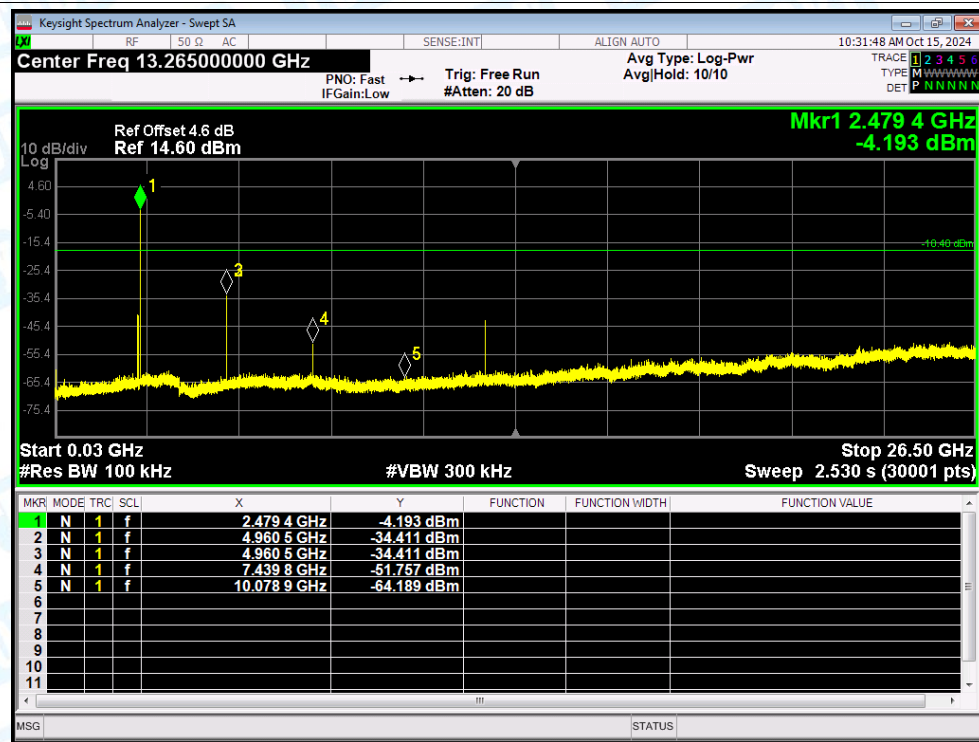
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

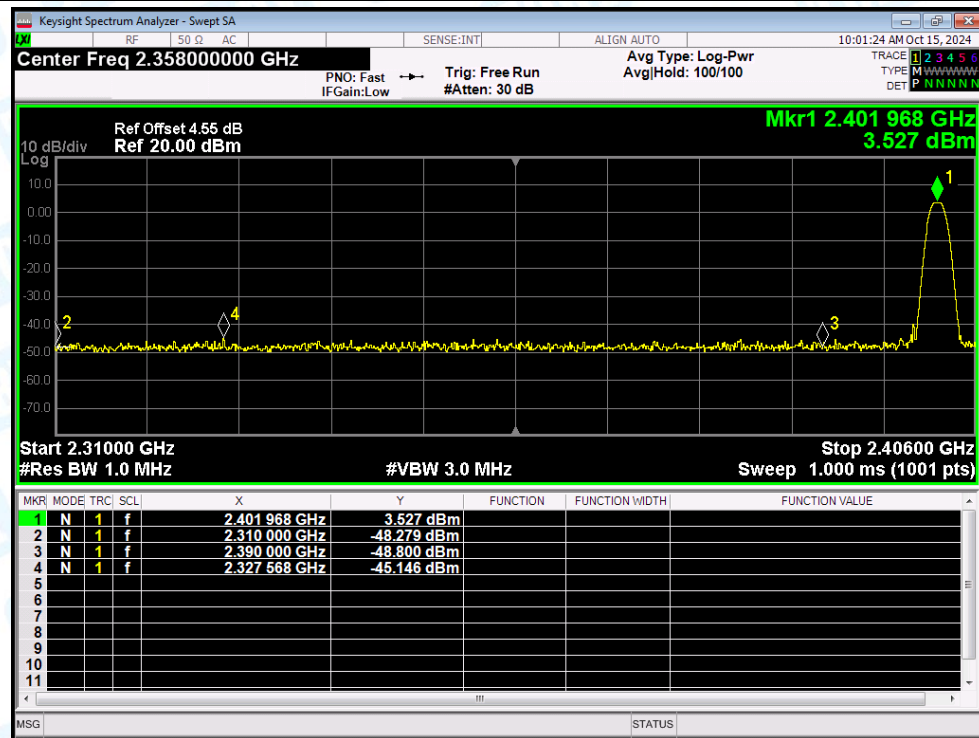


8.Restrict Band

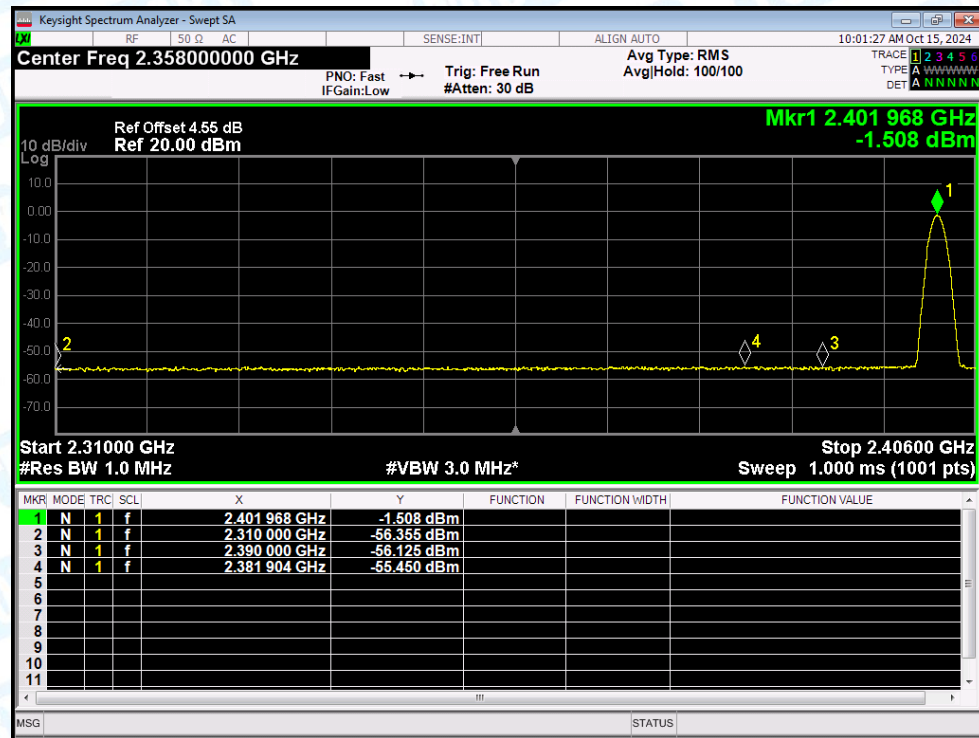
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-48.28	2	-	48.98	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.36	2	4.84	45.74	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2327.568	-45.15	2	-	52.11	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2381.904	-55.45	2	4.84	46.65	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-48.8	2	-	48.46	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-56.13	2	4.84	45.97	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-47.42	2	-	49.84	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-55.12	2	4.84	46.98	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2489.368	-44.69	2	-	52.57	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.68	-54.27	2	4.84	47.83	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-47.09	2	-	50.17	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-55.39	2	4.84	46.71	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-49.84	2	-	47.42	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.29	2	4.74	45.71	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2382.672	-45.05	2	-	52.21	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2349.072	-55.35	2	4.74	46.65	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-46.95	2	-	50.31	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-56.09	2	4.74	45.91	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-46.38	2	-	50.88	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-55.97	2	4.74	46.03	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2486.344	-45.1	2	-	52.16	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2498.728	-54.72	2	4.74	47.28	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-47.31	2	-	49.95	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.62	2	4.74	46.38	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-49.18	2	-	48.08	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.51	2	4.74	45.49	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2388.72	-44.94	2	-	52.32	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2389.584	-54.77	2	4.74	47.23	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-45.44	2	-	51.82	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-55.4	2	4.74	46.6	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-46.47	2	-	50.79	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-55.66	2	4.74	46.34	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2494.552	-44.22	2	-	53.04	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2493.784	-54.72	2	4.74	47.28	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-47.94	2	-	49.32	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.38	2	4.74	46.62	Average	54	Pass

Test Graphs

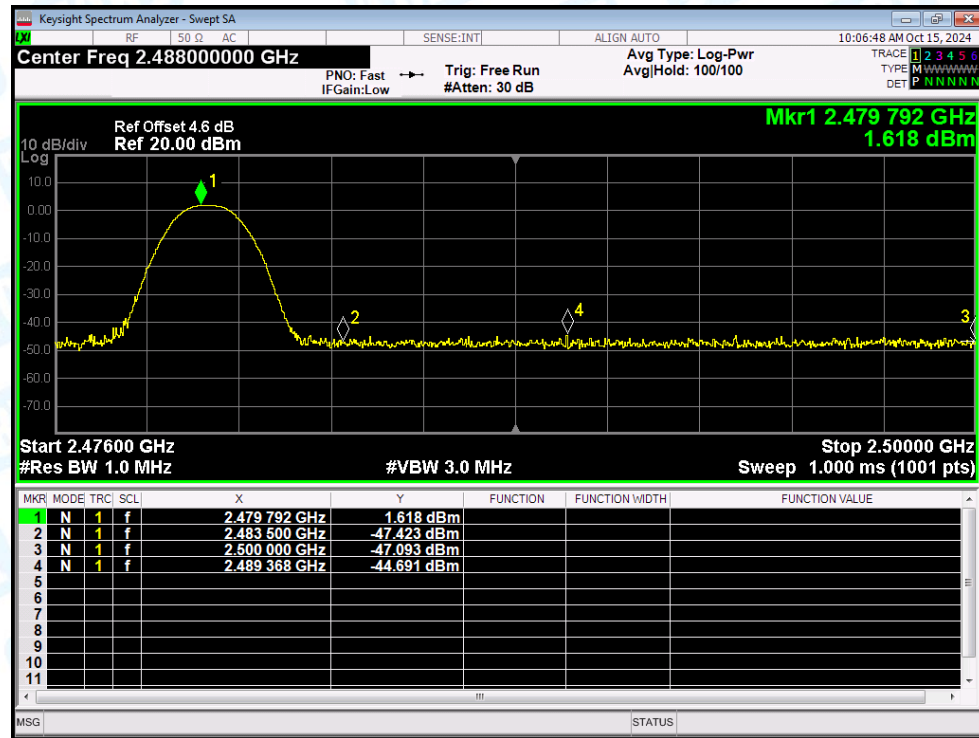
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



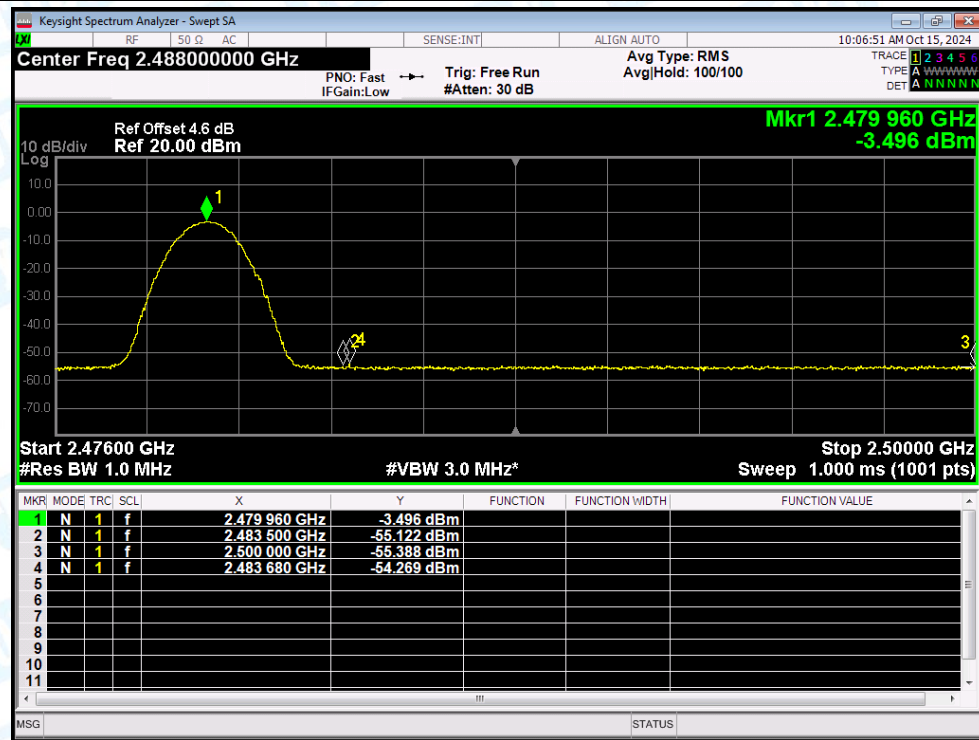
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



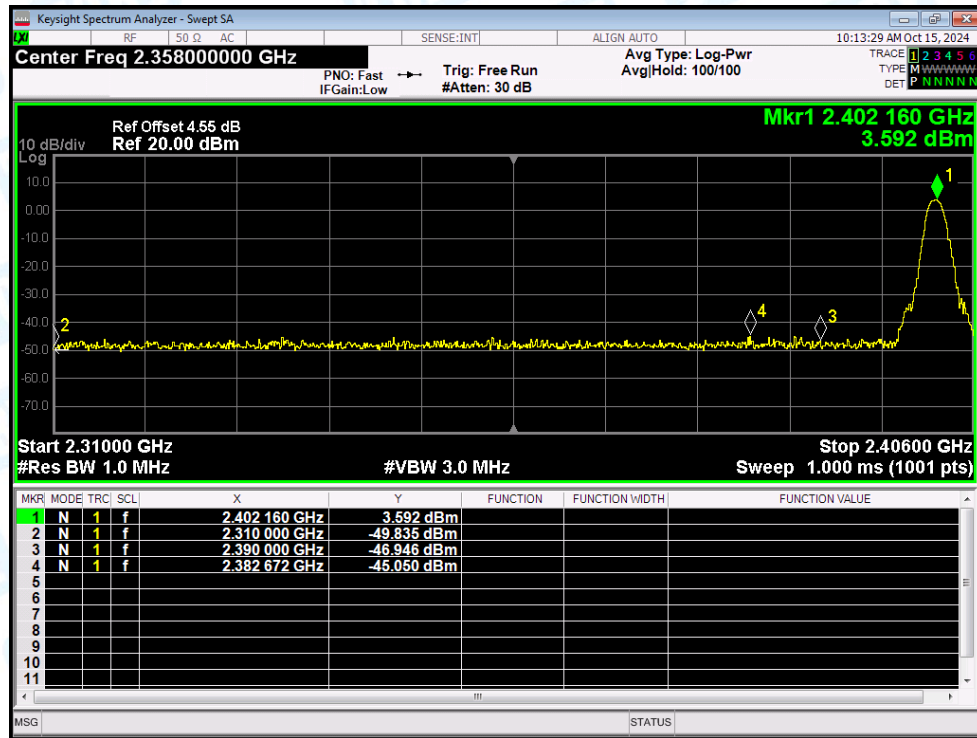
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



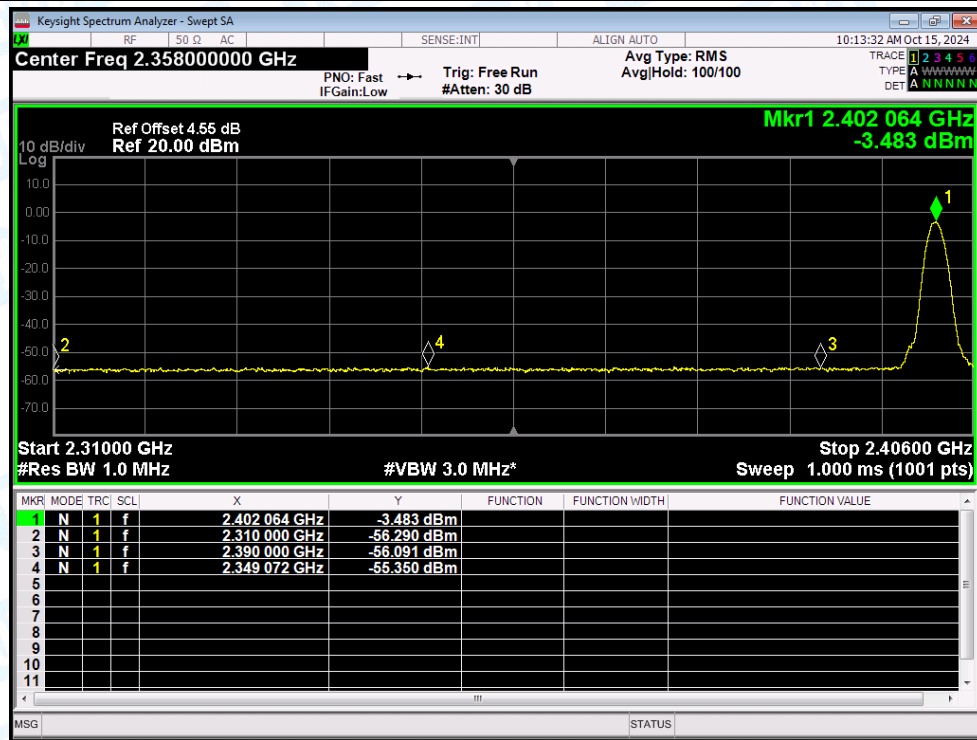
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



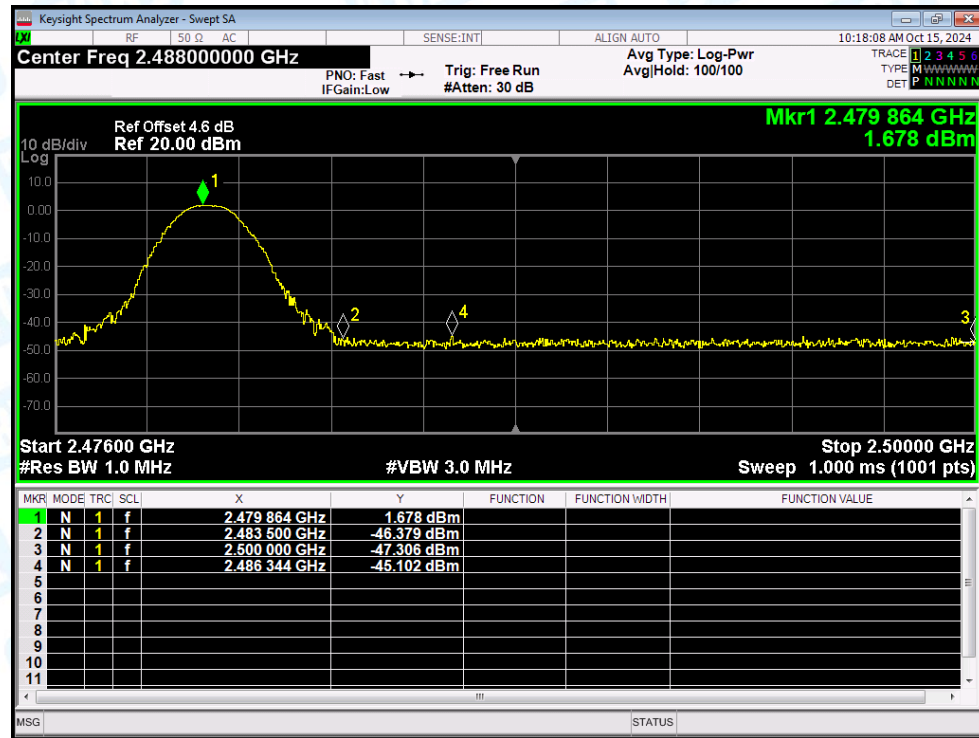
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



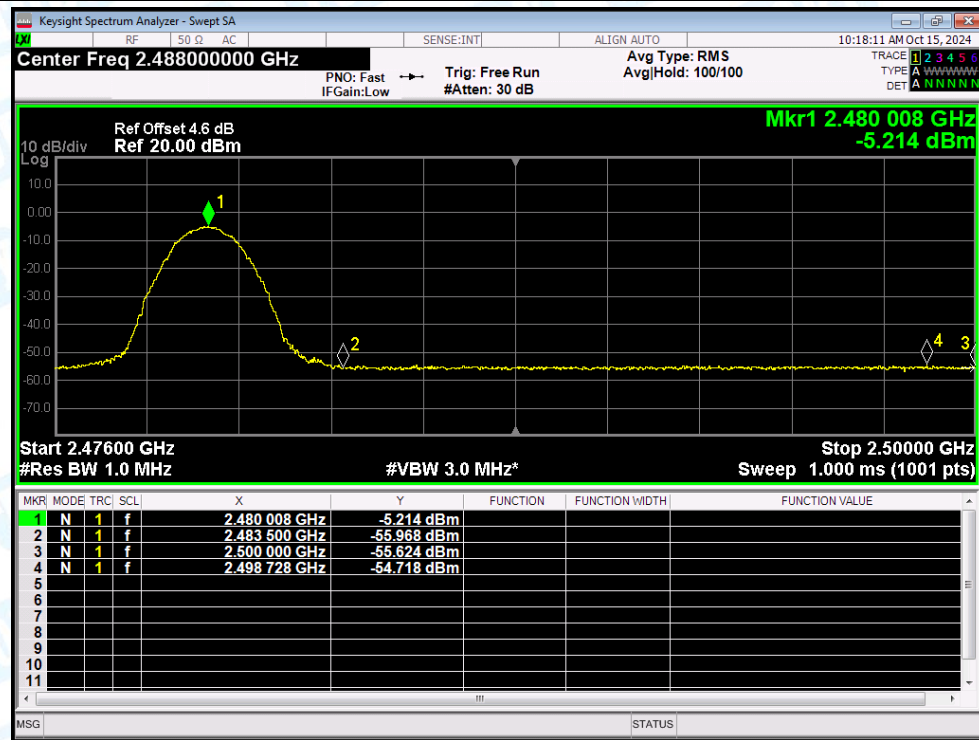
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



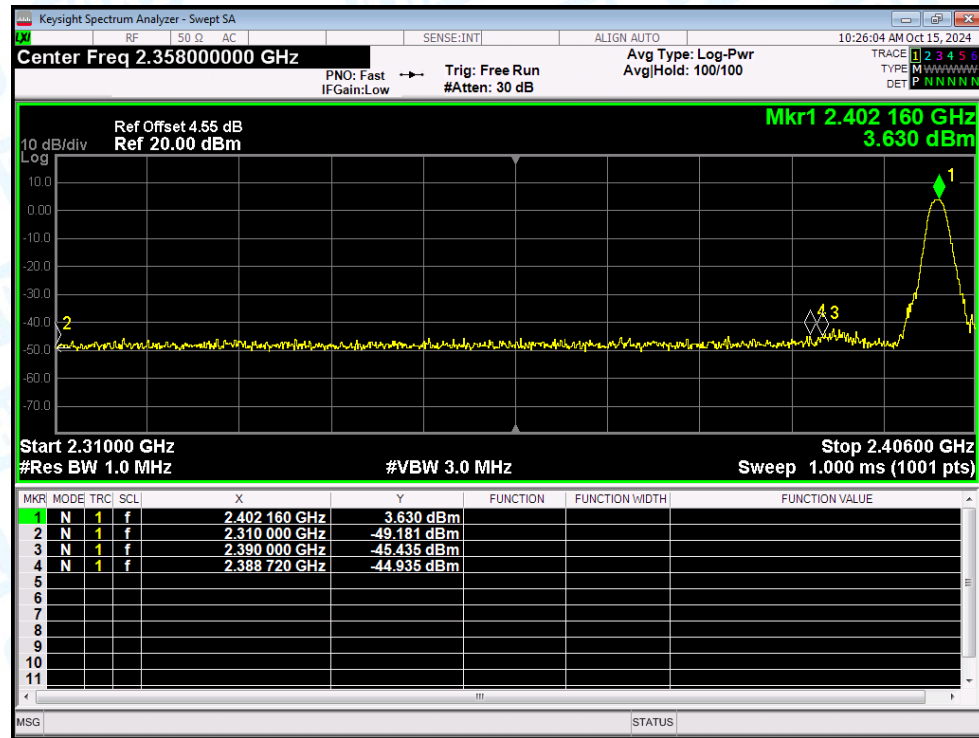
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



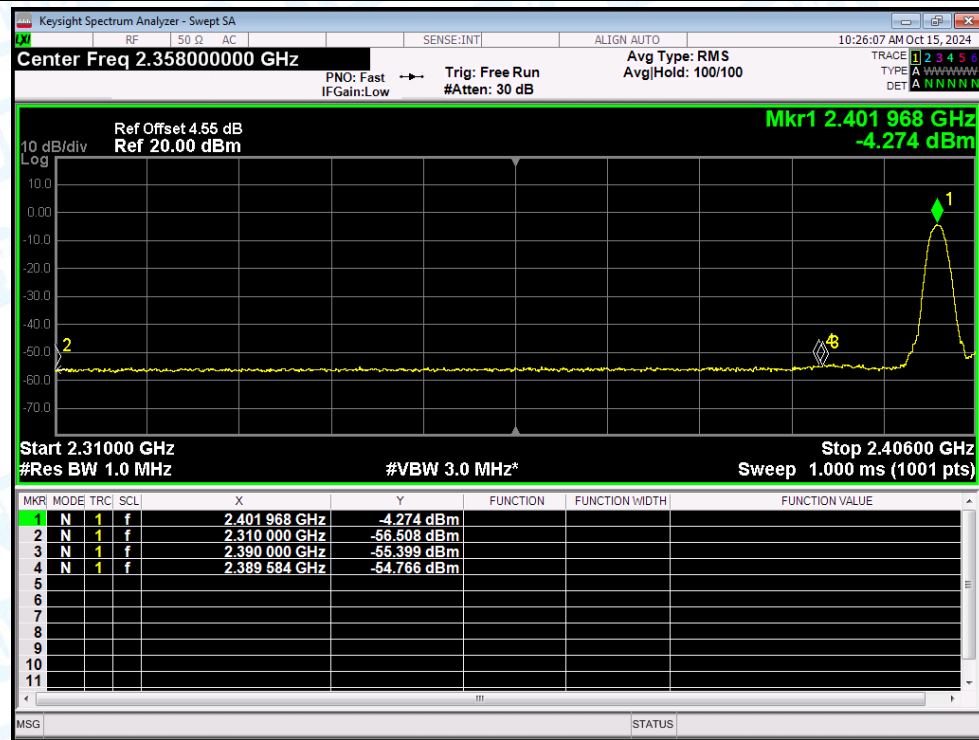
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



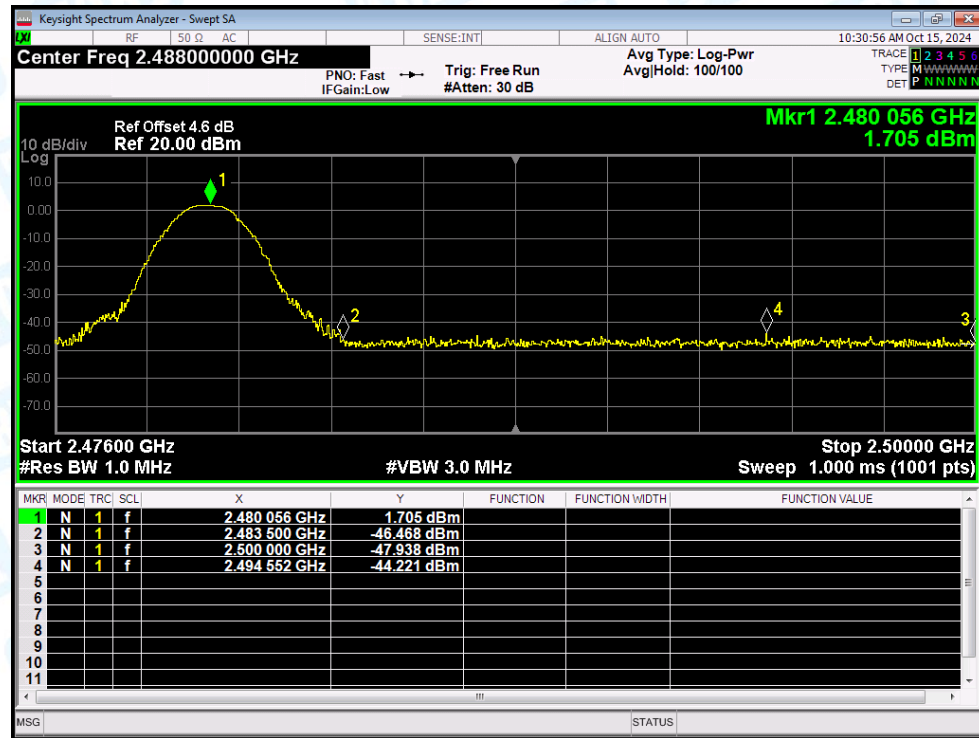
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



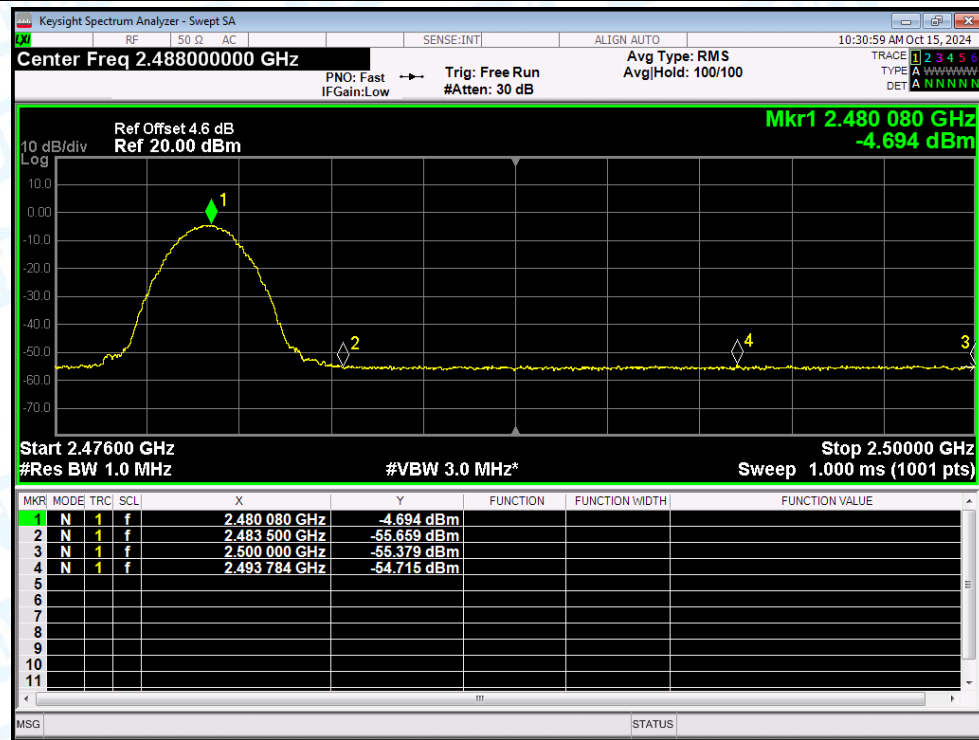
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

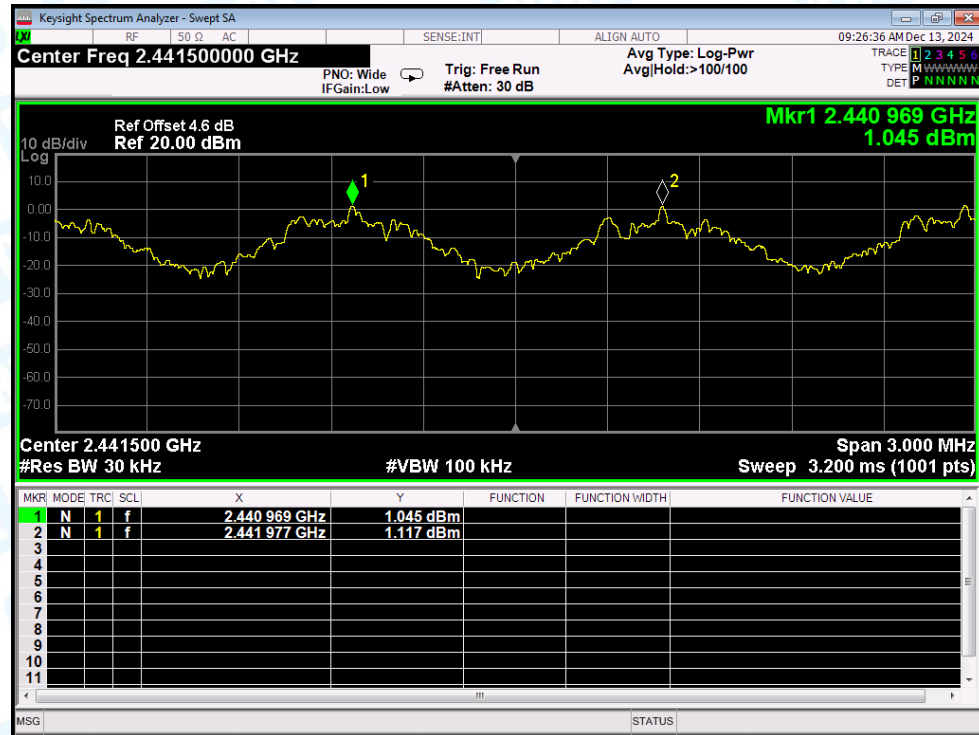


9.Carrier Frequencies Separation

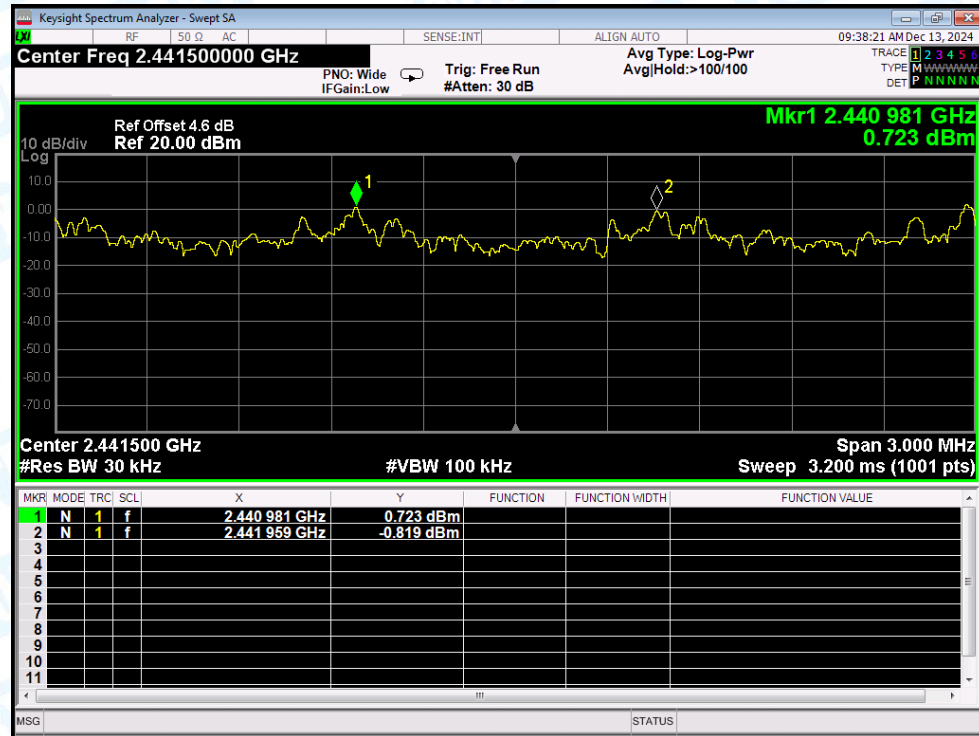
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.969	2441.977	1.008	0.52	Pass
NVNT	2-DH1	Ant1	2440.981	2441.959	0.978	0.773	Pass
NVNT	3-DH1	Ant1	2440.972	2441.971	0.999	0.793	Pass

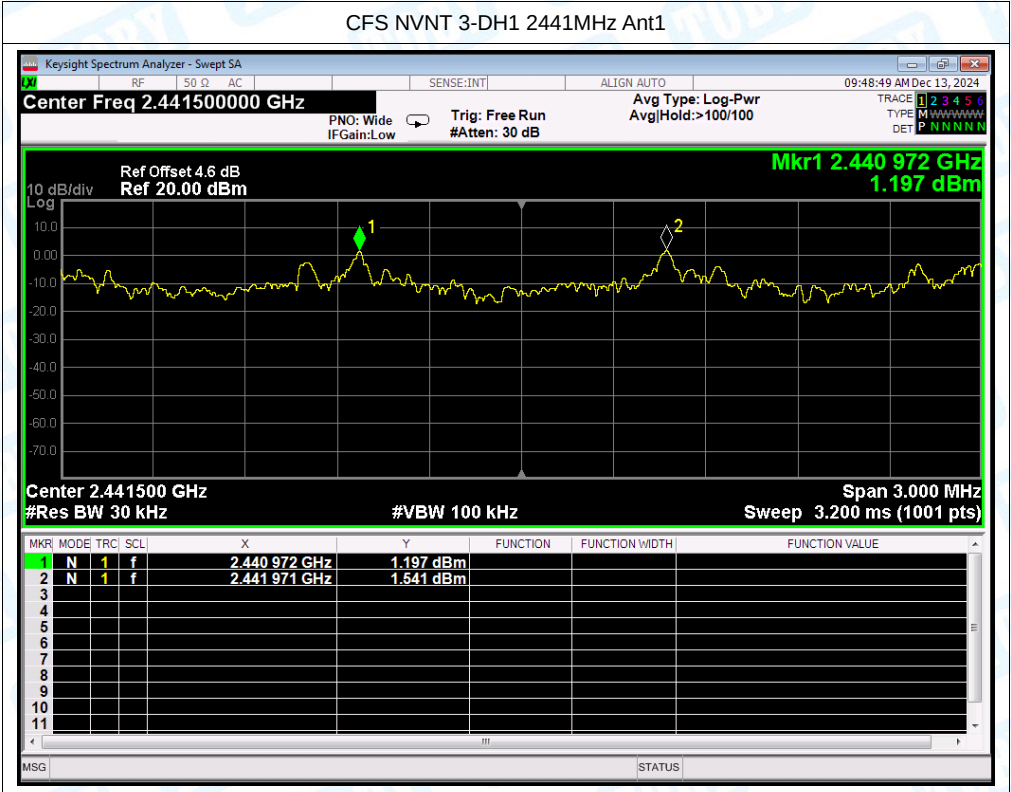
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



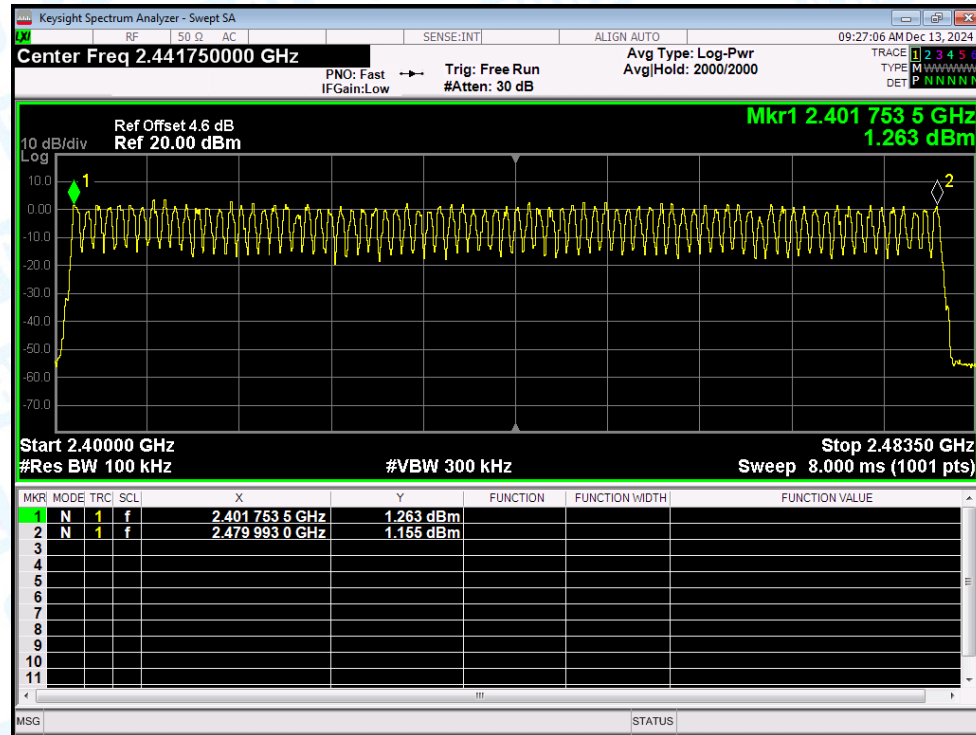


10.Number of Hopping Channel

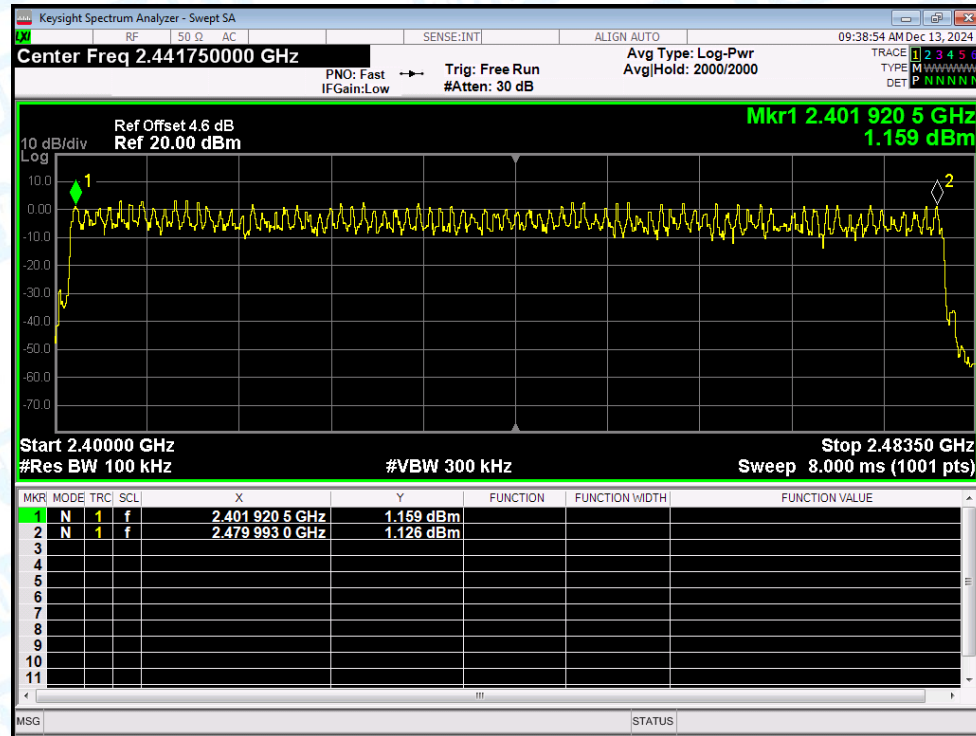
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

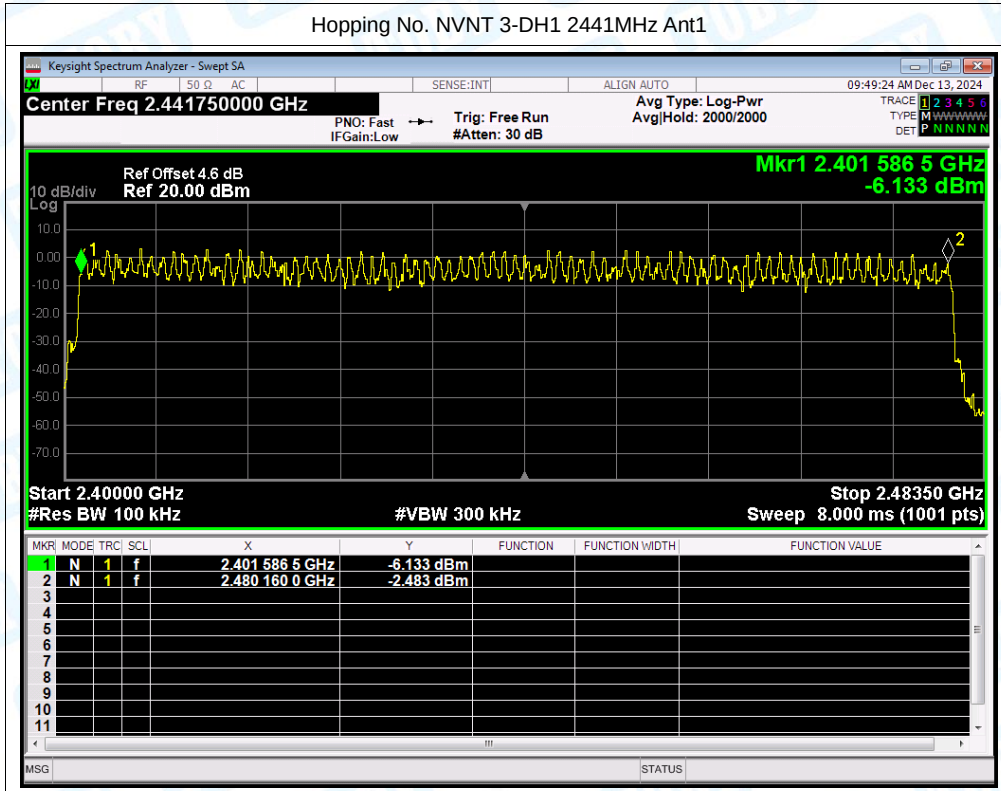
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



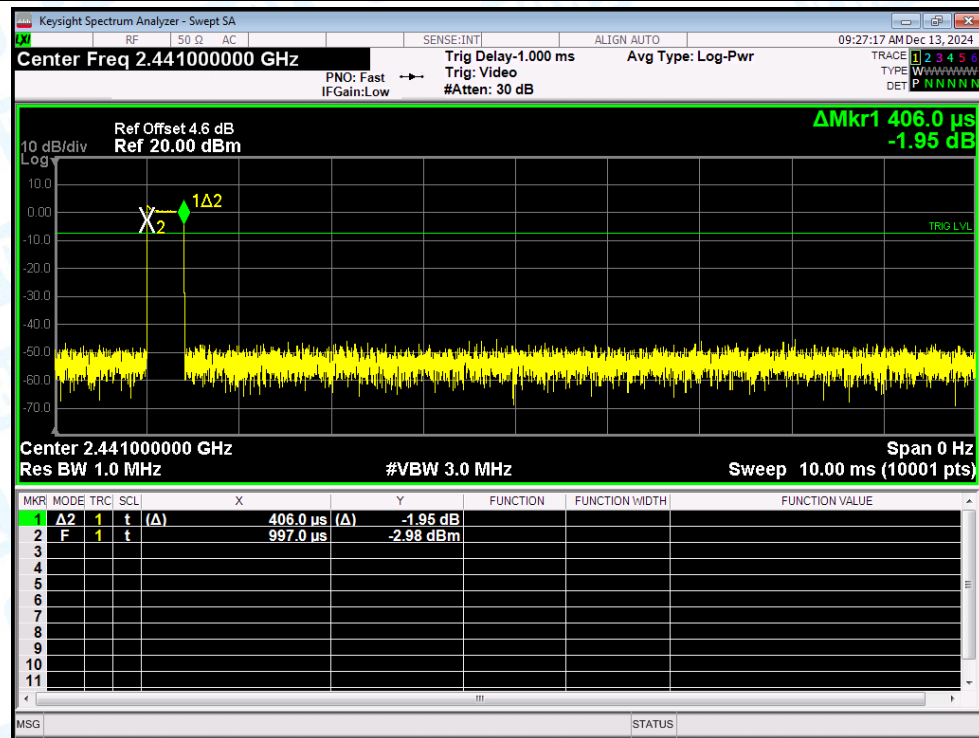


11.Dwell Time

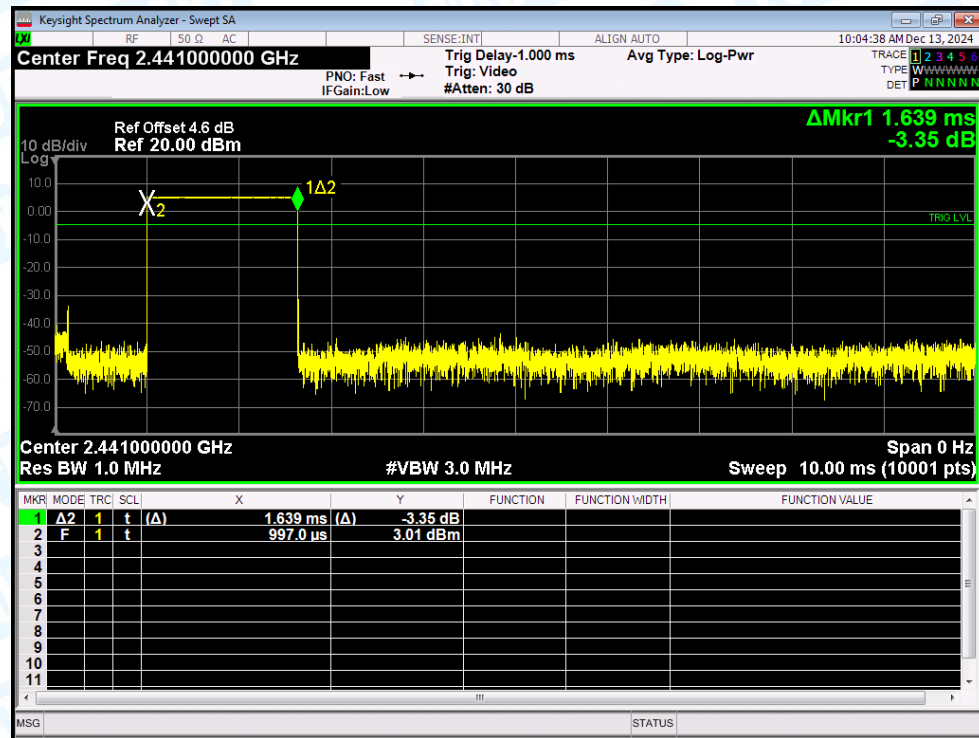
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.406	129.92	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.639	262.24	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.887	307.947	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.416	133.12	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.644	263.04	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.892	308.48	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.416	133.12	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.643	262.88	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.894	308.693	31600	400	Pass

Test Graphs

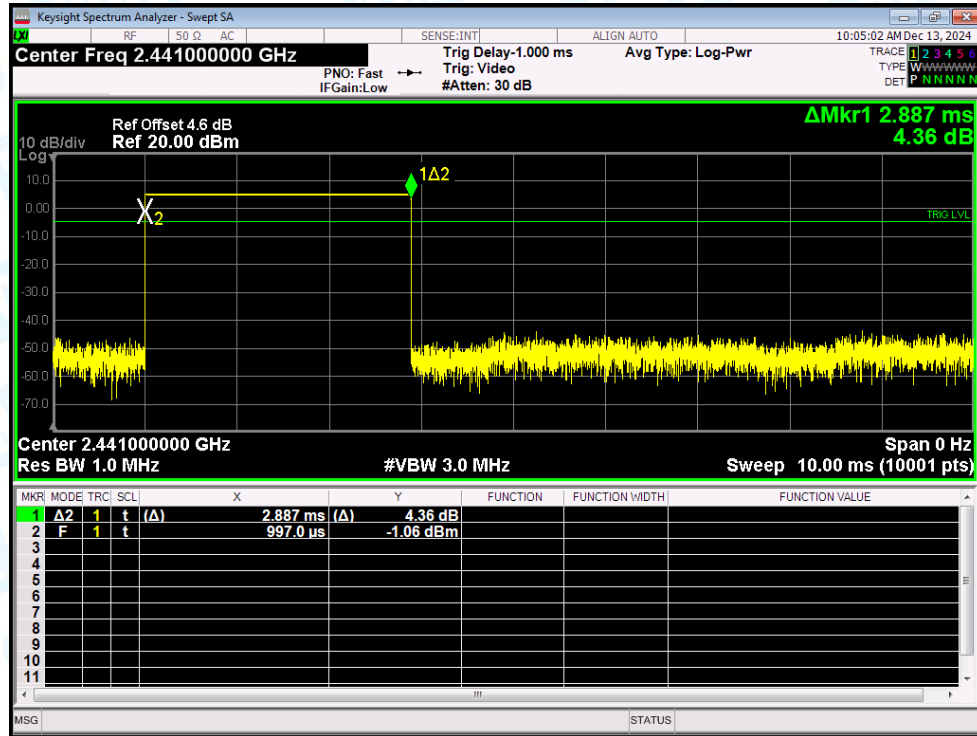
Dwell NVNT 1-DH1 2441MHz Ant1



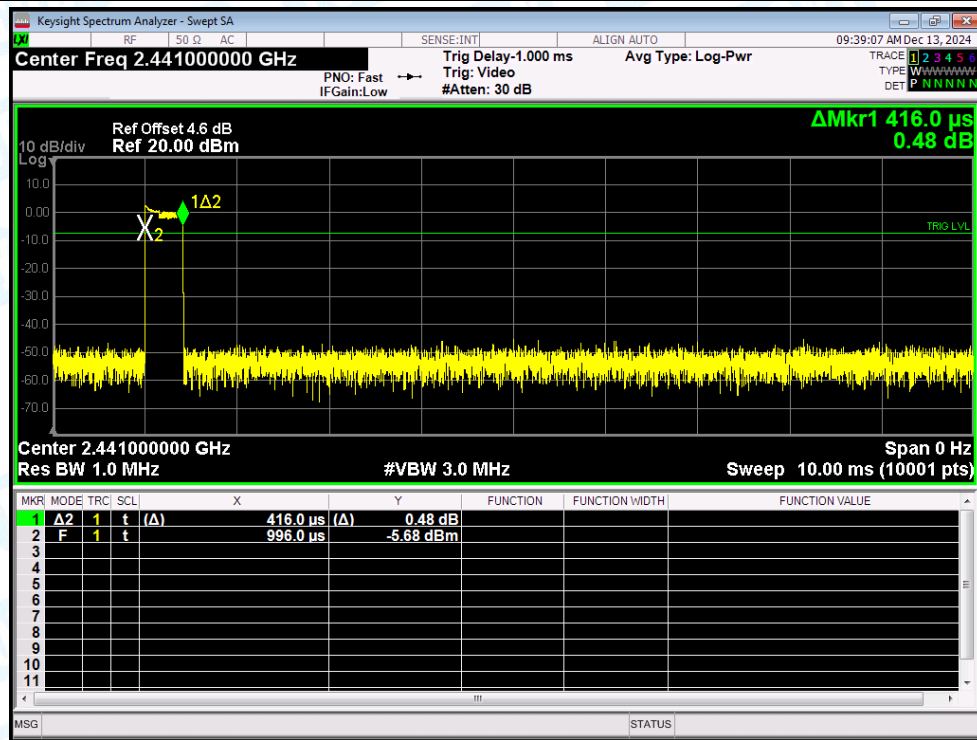
Dwell NVNT 1-DH3 2441MHz Ant1



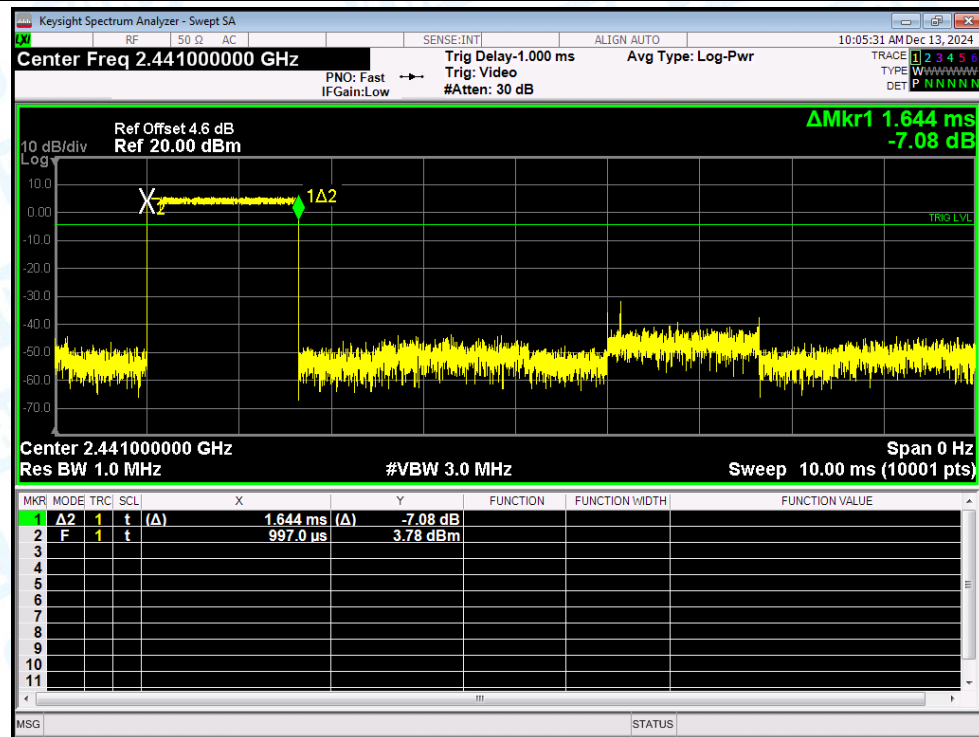
Dwell NVNT 1-DH5 2441MHz Ant1



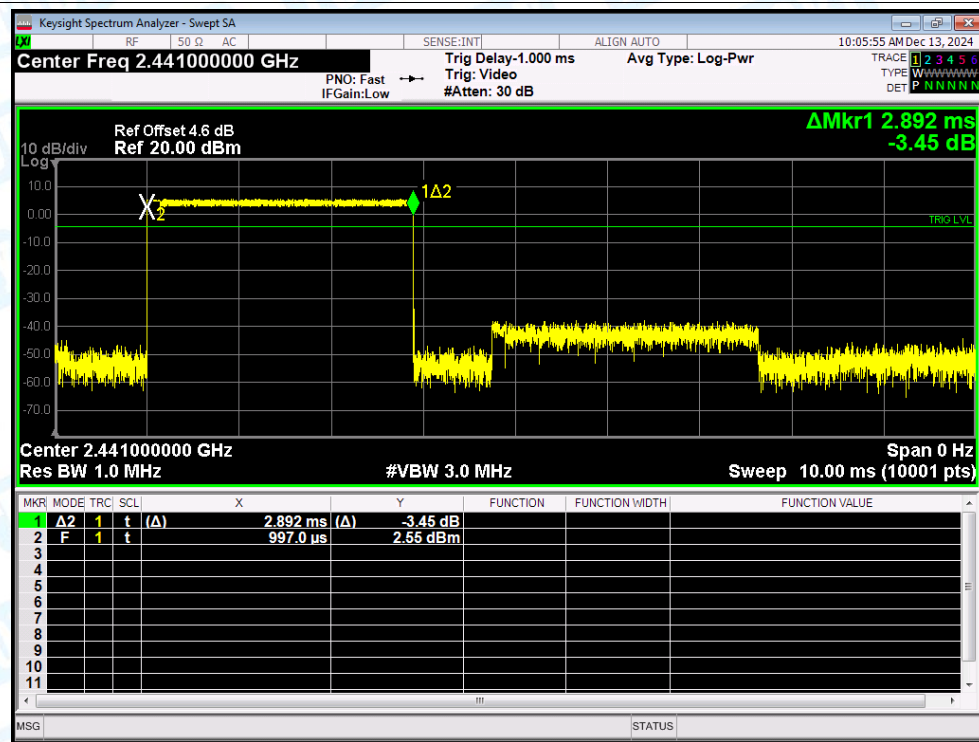
Dwell NVNT 2-DH1 2441MHz Ant1



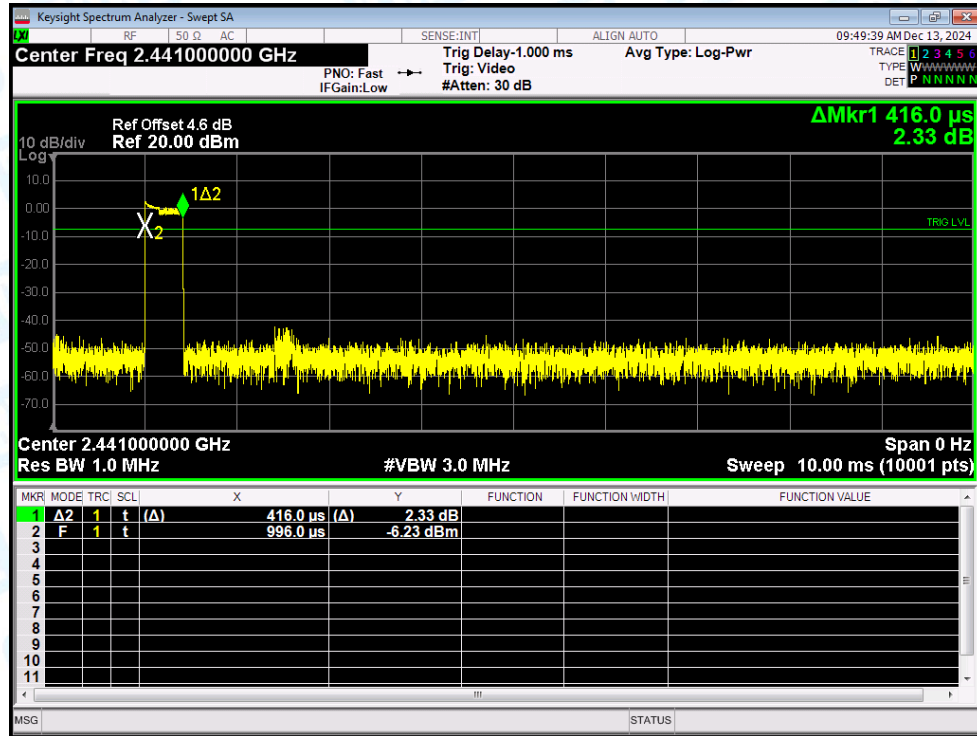
Dwell NVNT 2-DH3 2441MHz Ant1



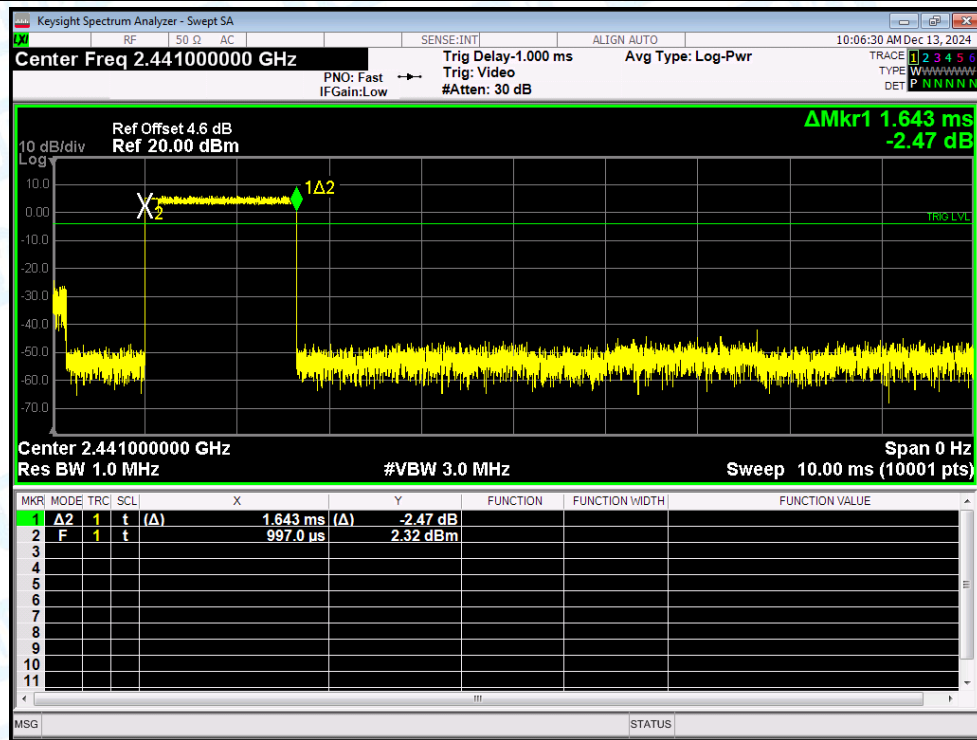
Dwell NVNT 2-DH5 2441MHz Ant1

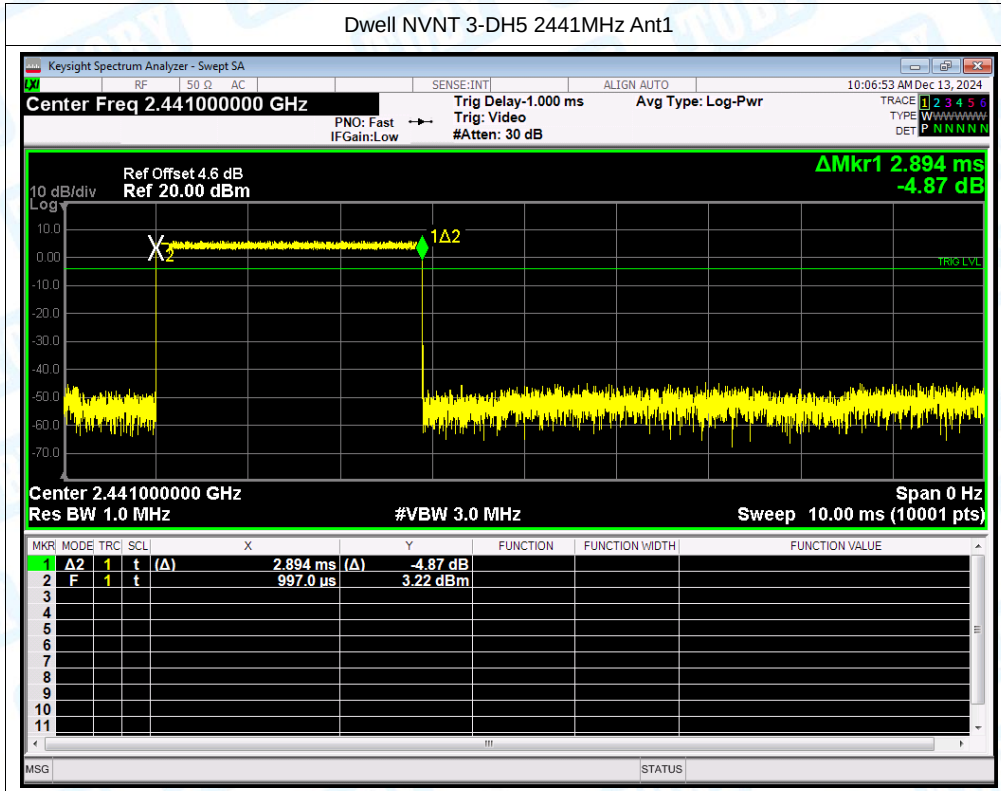


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





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