

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	Smart Watch
Test Model:	KC98
Sample ID:	HC-C-202506-0201-01-01#
Environmental Conditions	
Temperature:	25℃
Relative Humidity:	55%
Test Voltage:	DC 5V
Test Engineer:	Gold Zhang
Note: For a more detailed features description, please refer to the report TBR-C-202506-0201-91 The report only show the worst case data.	

Contents

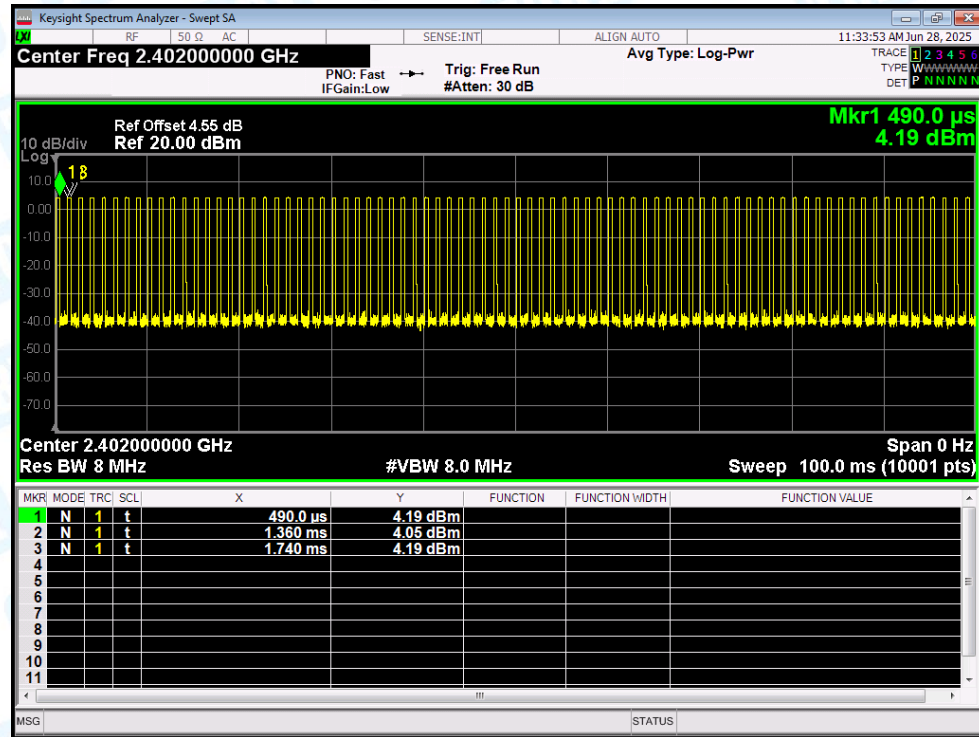
1.Duty Cycle.....	3
2.Maximum Conducted Output Power.....	9
3.-20dB Bandwidth.....	15
4.Occupied Channel Bandwidth.....	21
5.Band Edge.....	27
6.Band Edge(Hopping).....	34
7.Conducted RF Spurious Emission.....	41
8.Restrict Band.....	51
9.Carrier Frequencies Separation.....	58
10.Number of Hopping Channel.....	61
11.Dwell Time.....	64

1. Duty Cycle

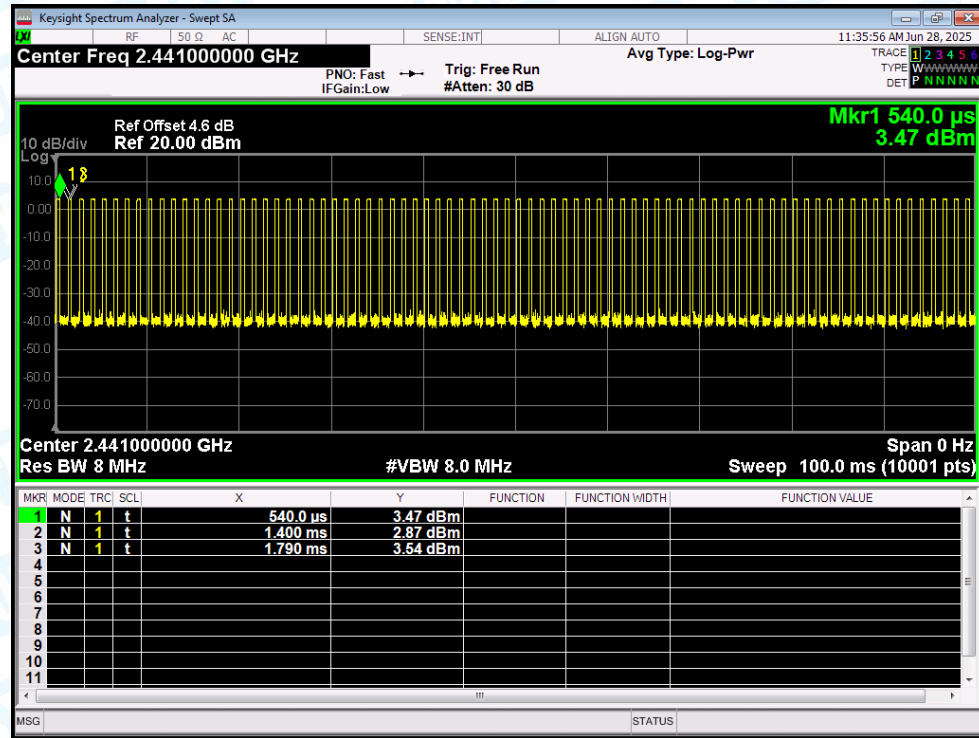
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	1-DH1	2480	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2402	Ant1	32	4.95	2.5
NVNT	2-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2480	Ant1	32	4.95	2.5
NVNT	3-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	3-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	3-DH1	2480	Ant1	32	4.95	2.5

Test Graphs

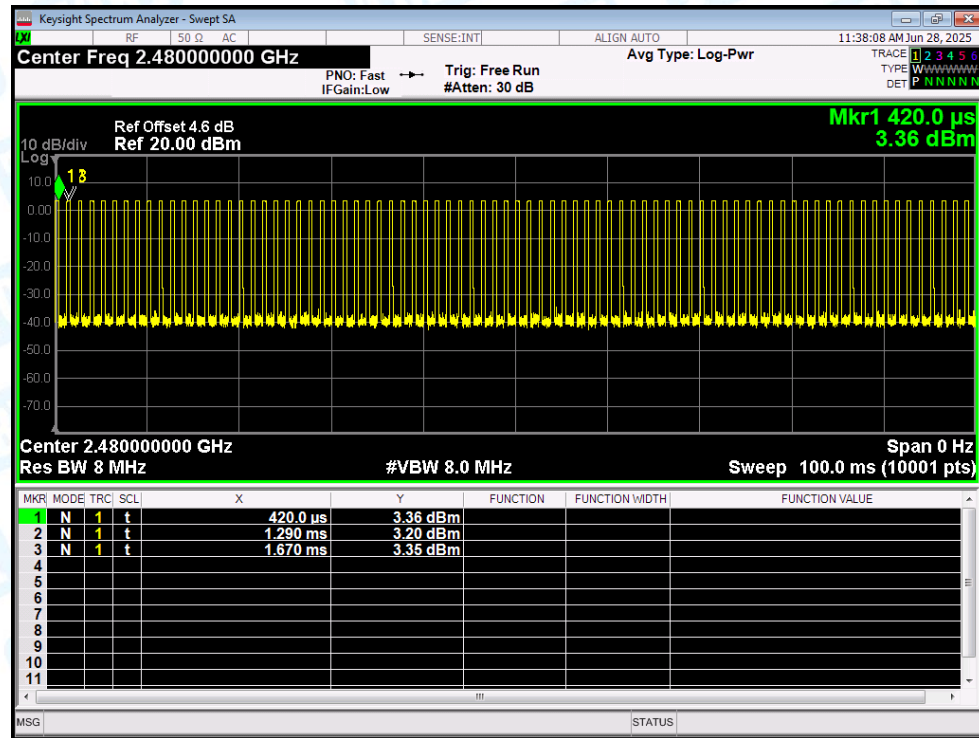
Duty Cycle NVNT 1-DH1 2402MHz Ant1



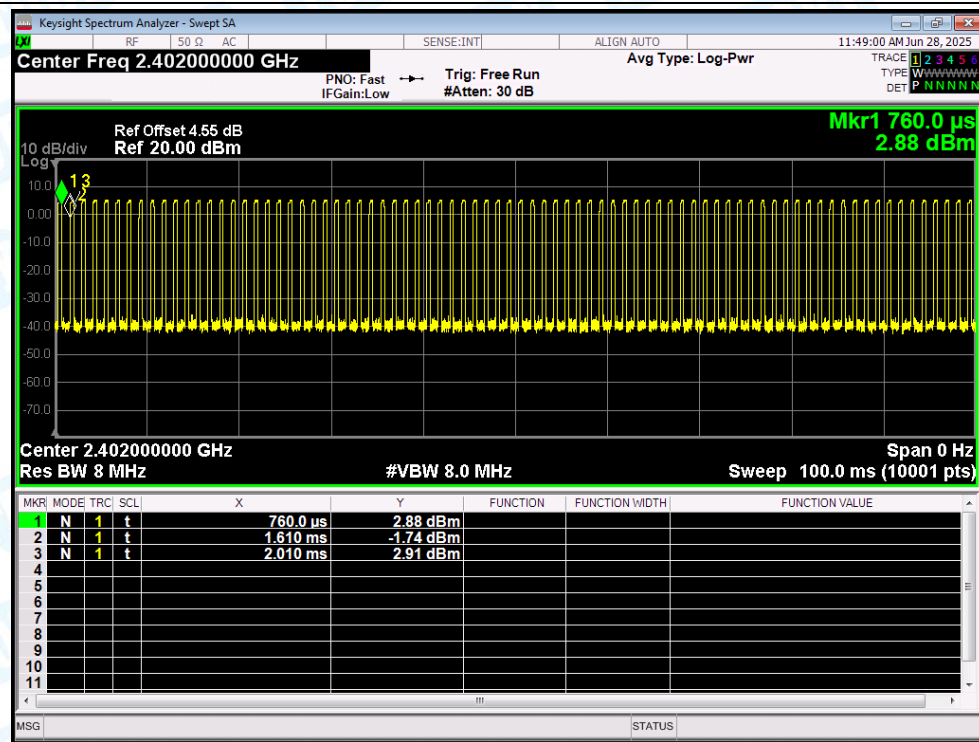
Duty Cycle NVNT 1-DH1 2441MHz Ant1



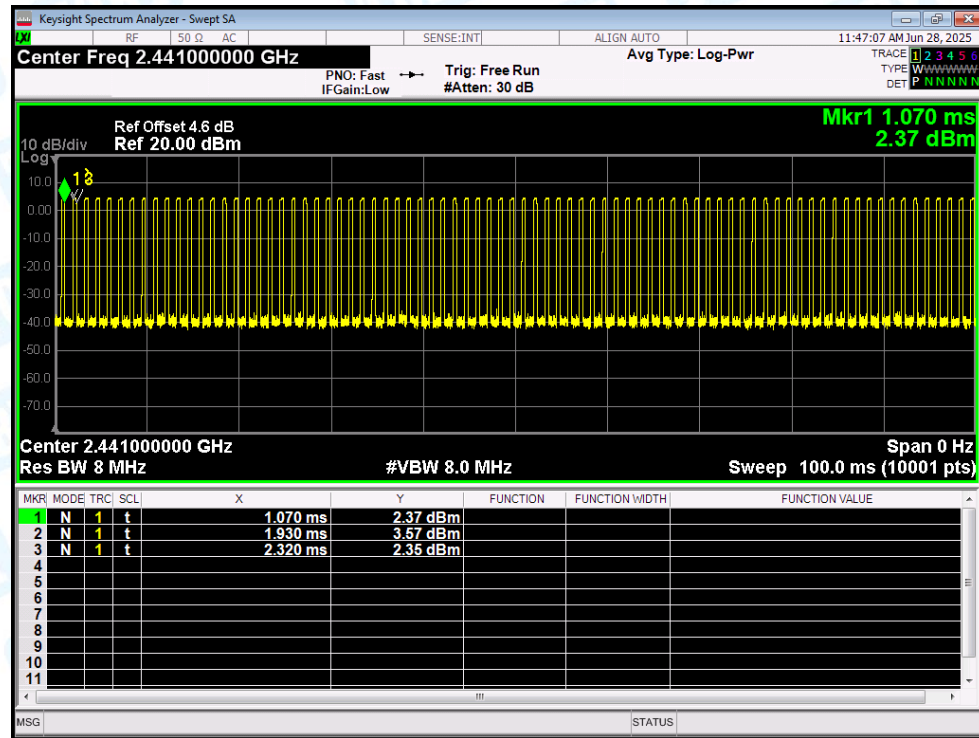
Duty Cycle NVNT 1-DH1 2480MHz Ant1



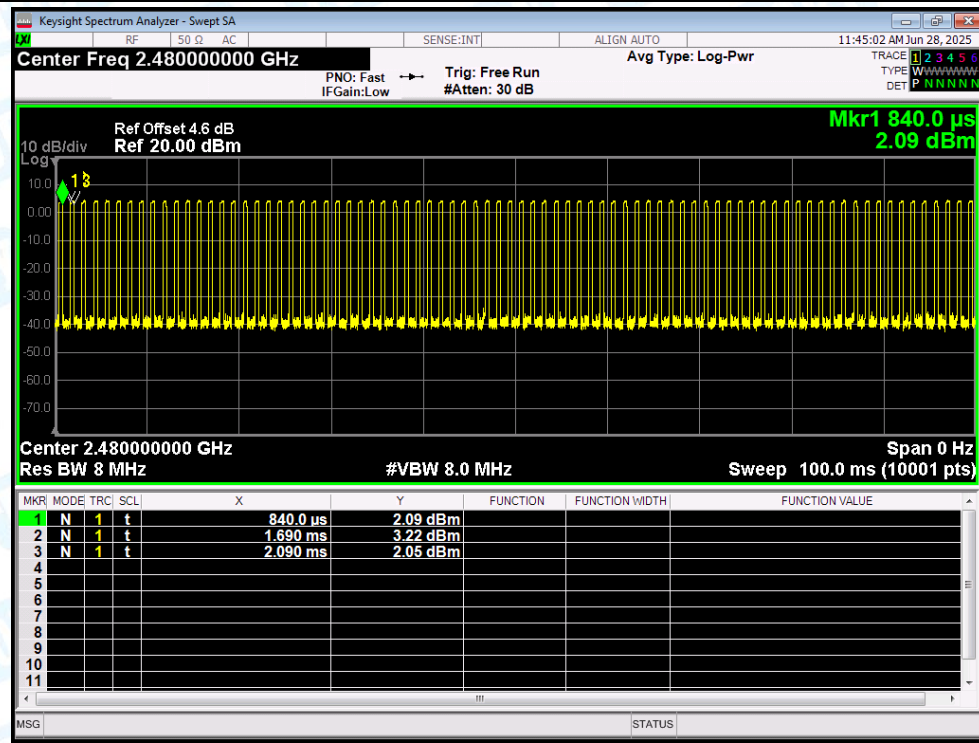
Duty Cycle NVNT 2-DH1 2402MHz Ant1



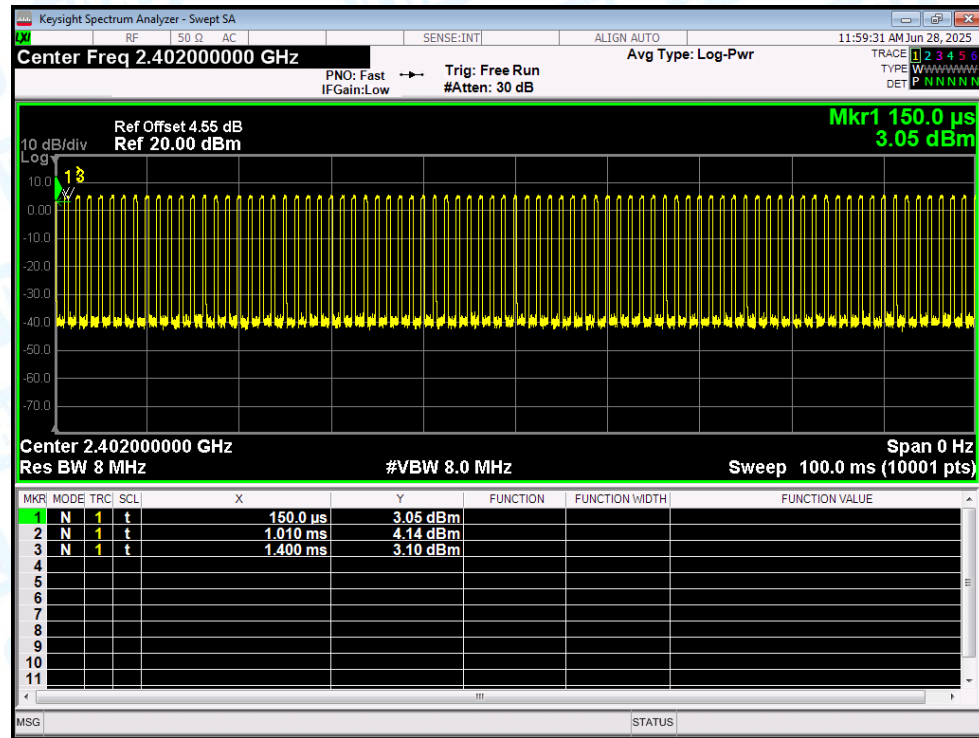
Duty Cycle NVNT 2-DH1 2441MHz Ant1



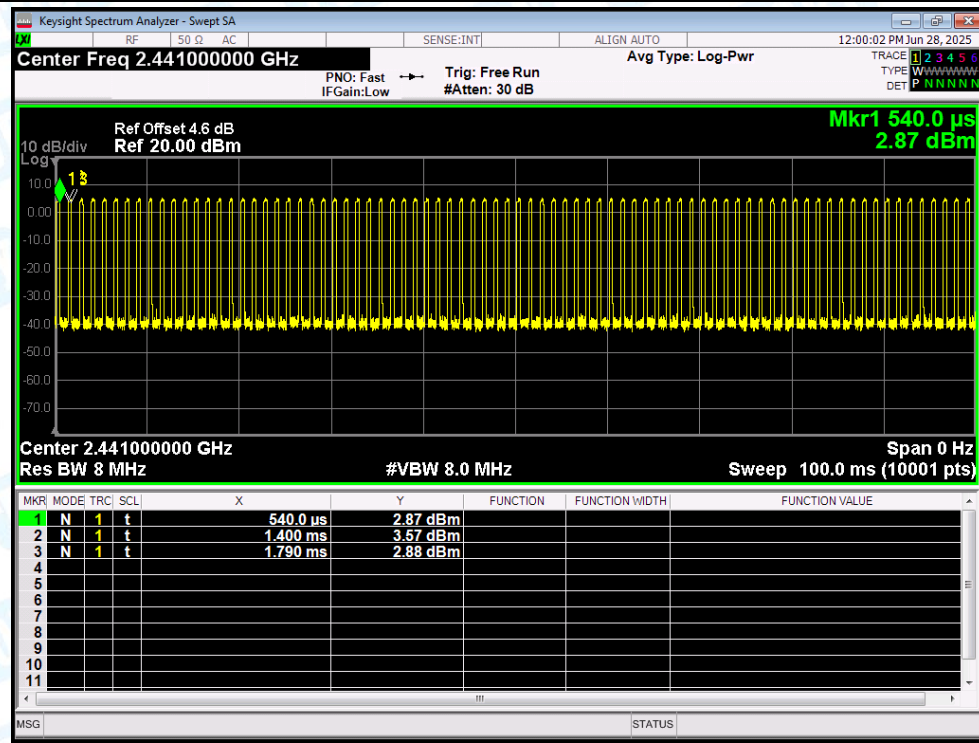
Duty Cycle NVNT 2-DH1 2480MHz Ant1

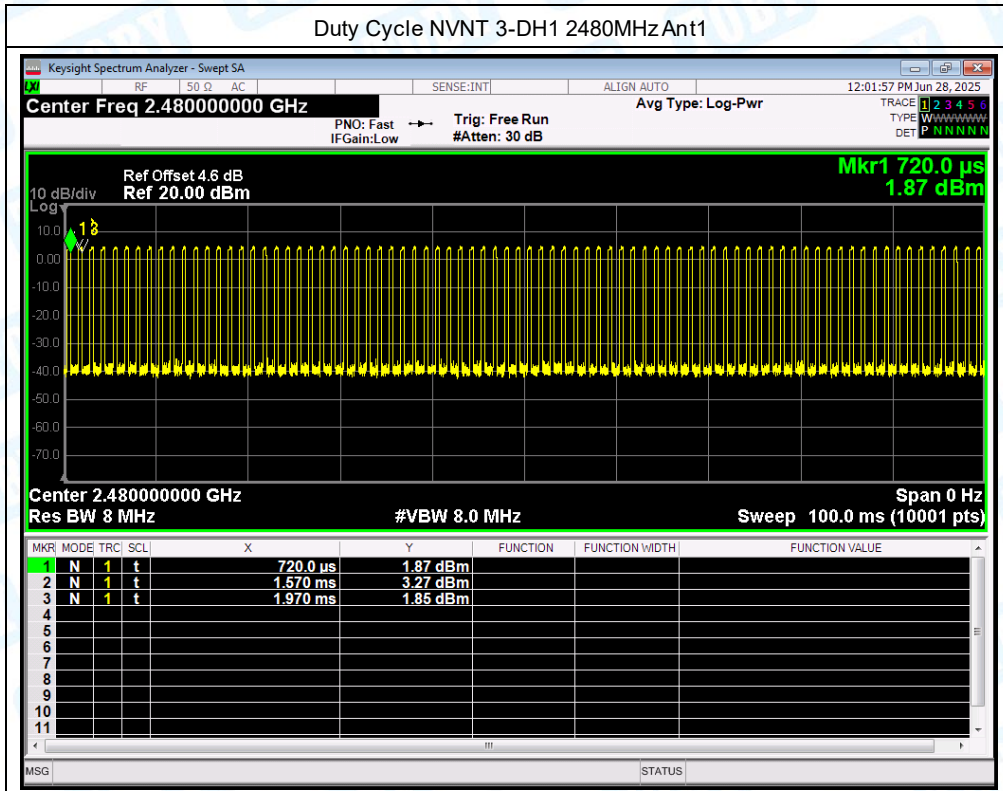


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



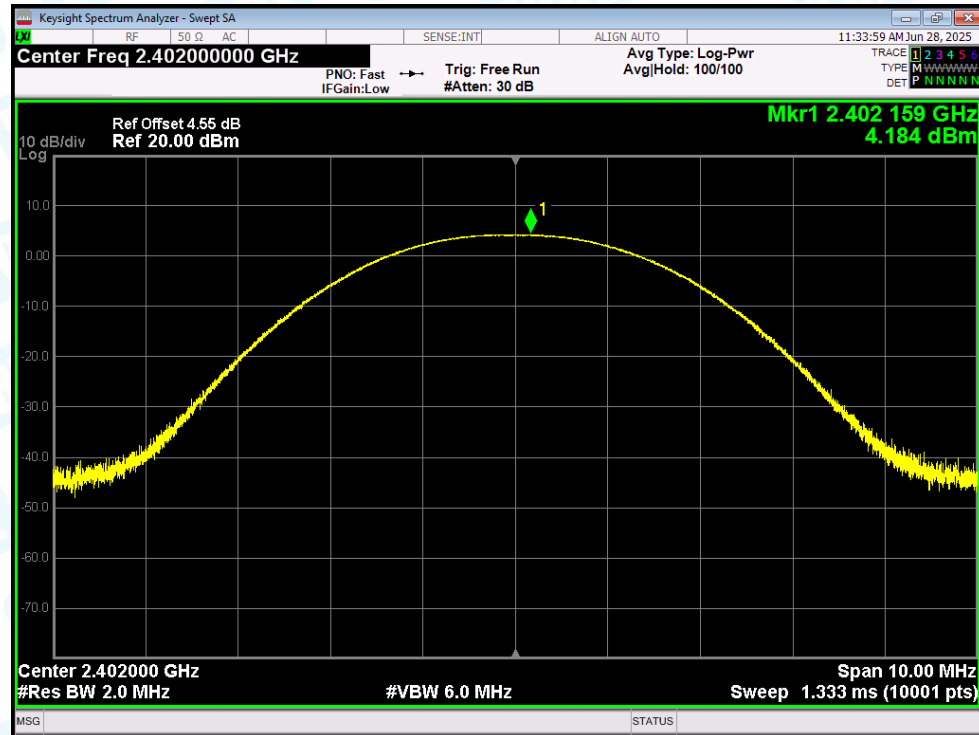


2.Maximum Conducted Output Power

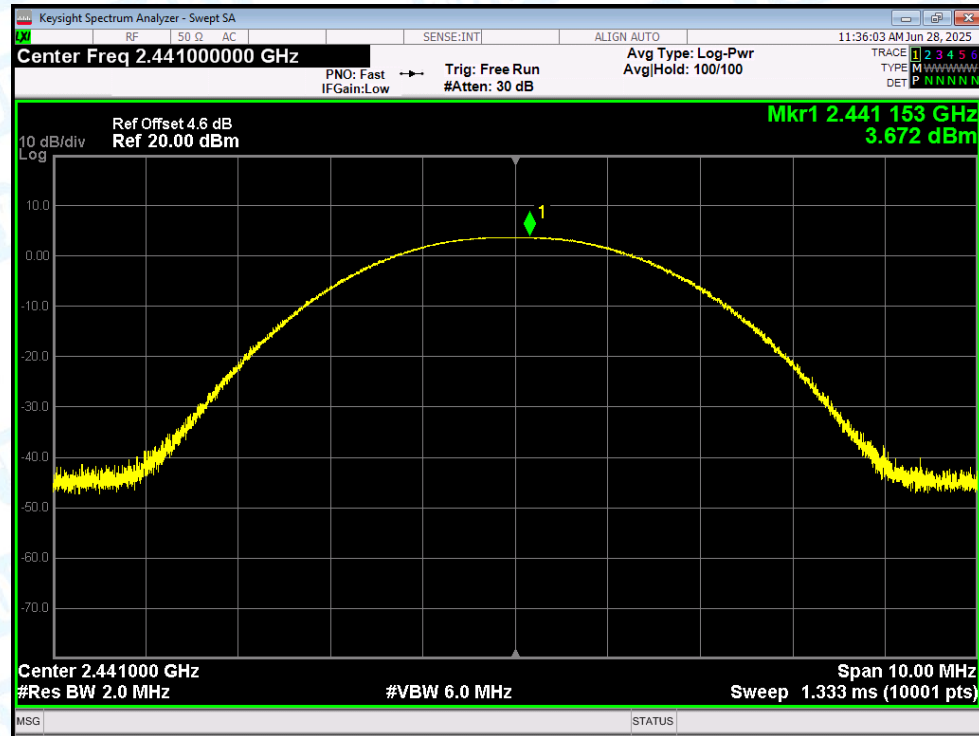
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	4.184	21	Pass
NVNT	1-DH1	2441	Ant1	3.672	21	Pass
NVNT	1-DH1	2480	Ant1	3.373	21	Pass
NVNT	2-DH1	2402	Ant1	4.984	21	Pass
NVNT	2-DH1	2441	Ant1	4.389	21	Pass
NVNT	2-DH1	2480	Ant1	4.07	21	Pass
NVNT	3-DH1	2402	Ant1	5.376	21	Pass
NVNT	3-DH1	2441	Ant1	4.826	21	Pass
NVNT	3-DH1	2480	Ant1	4.511	21	Pass

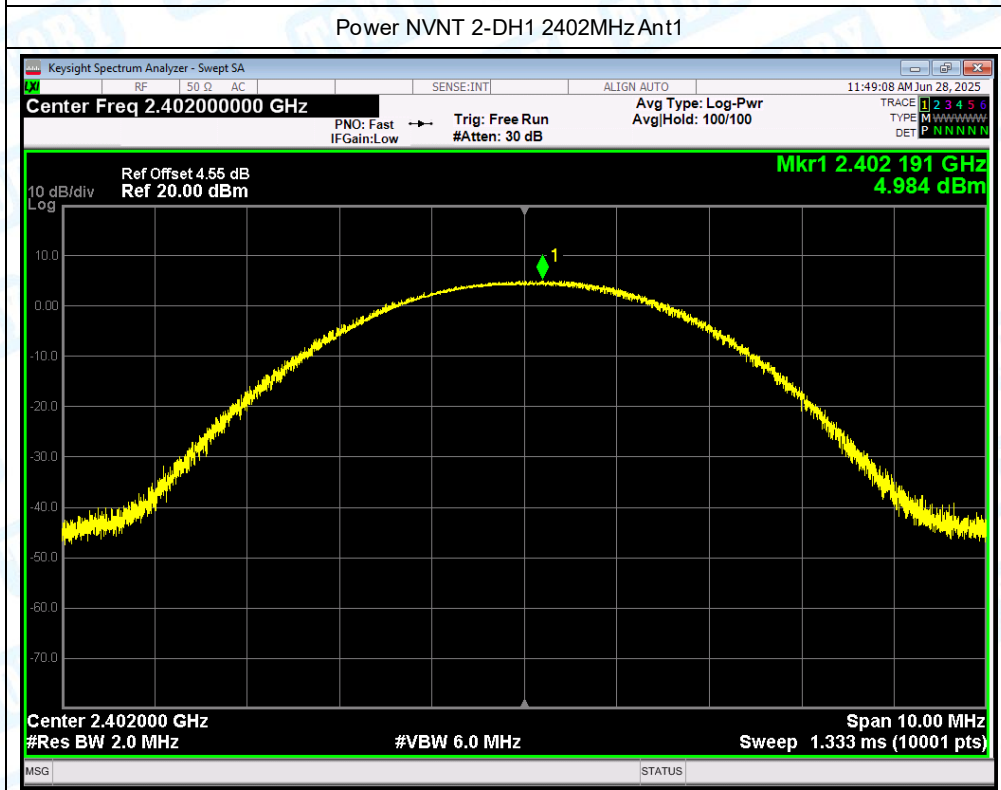
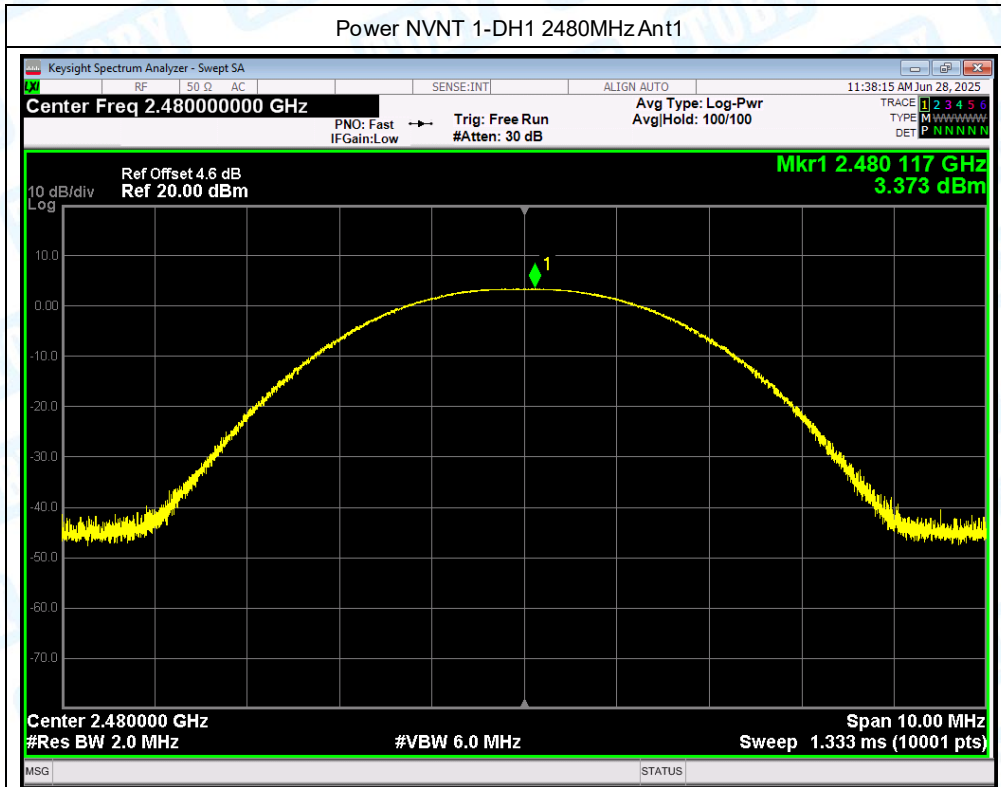
Test Graphs

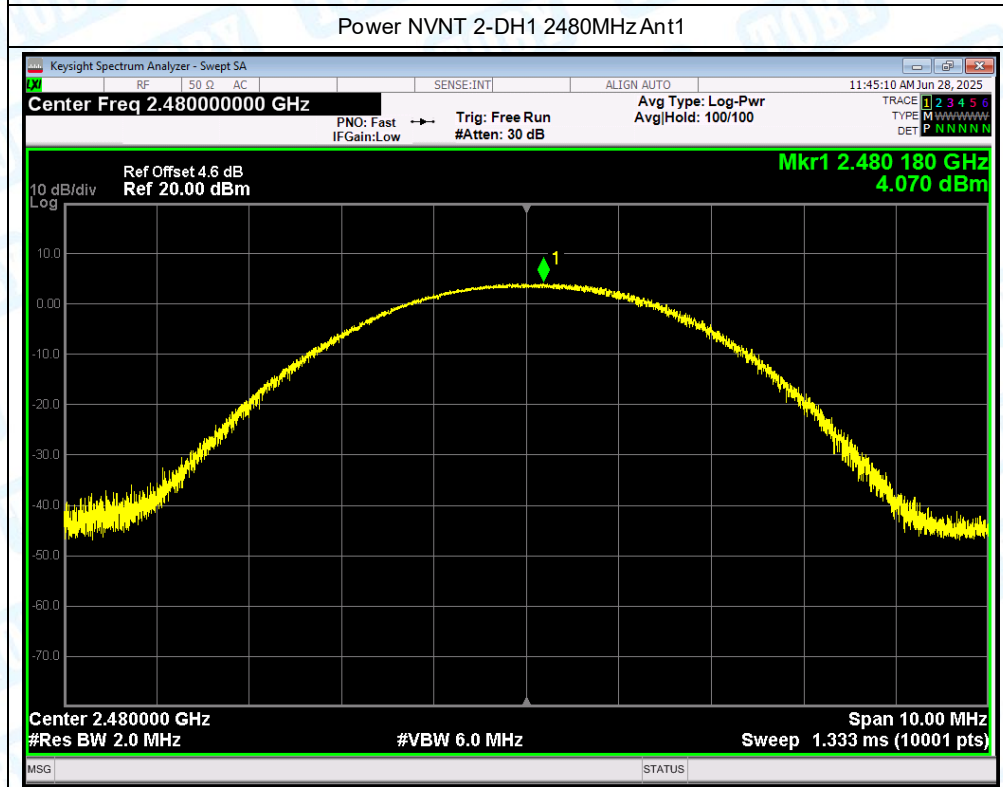
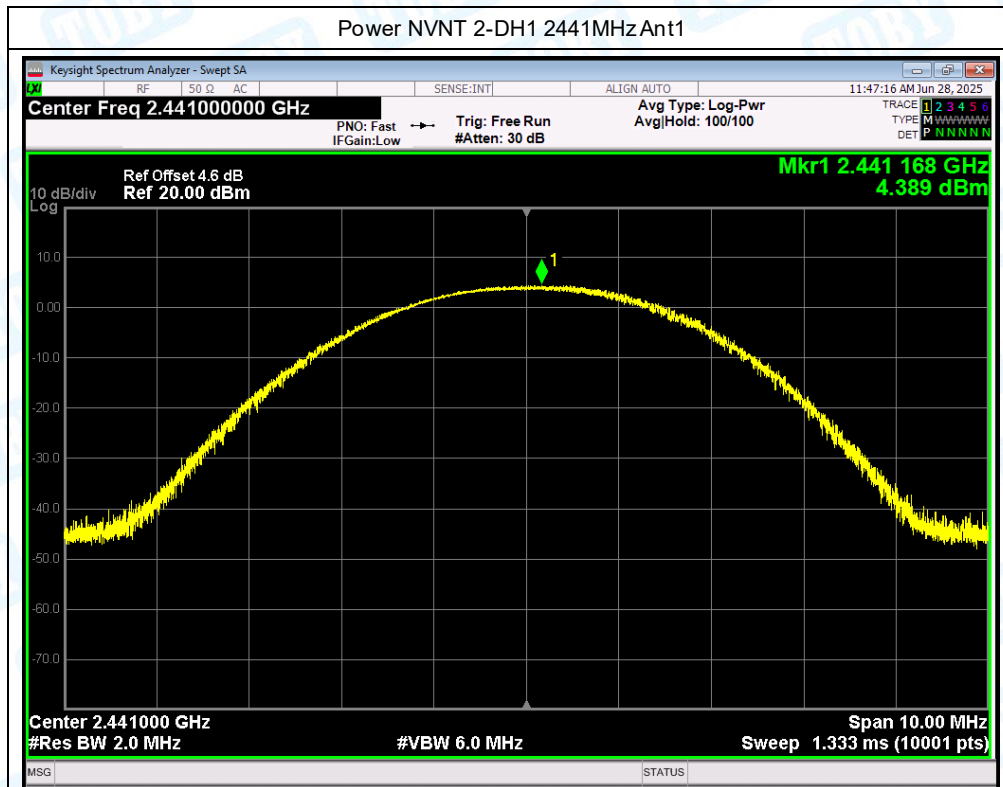
Power NVNT 1-DH1 2402MHz Ant1

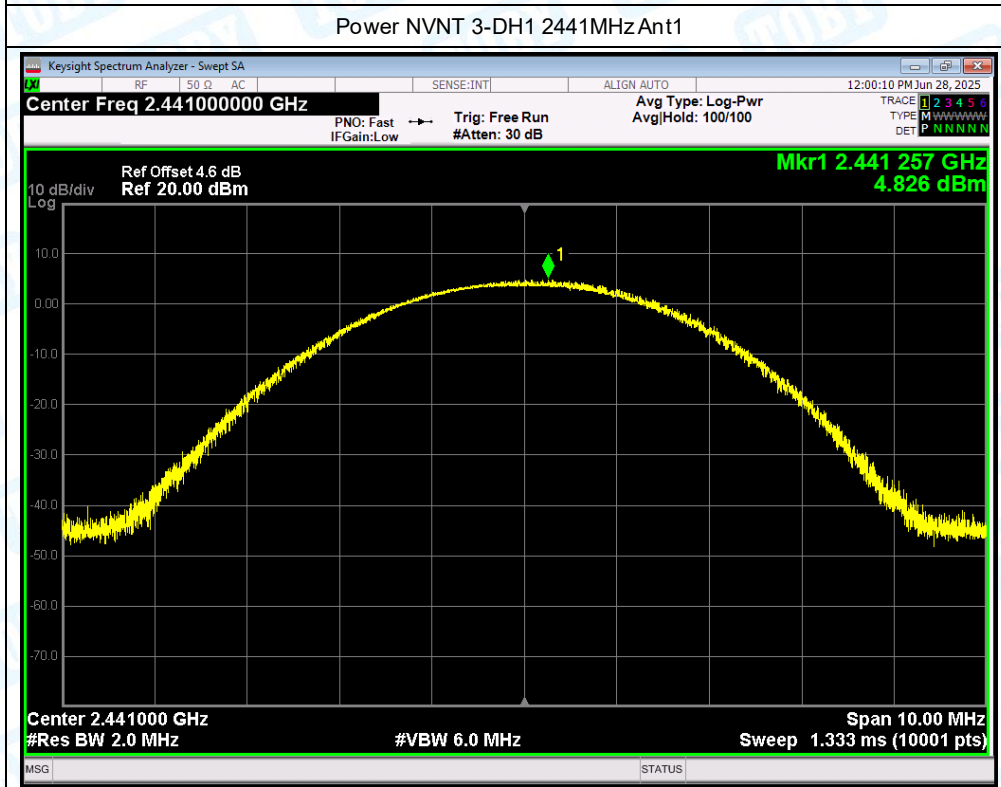
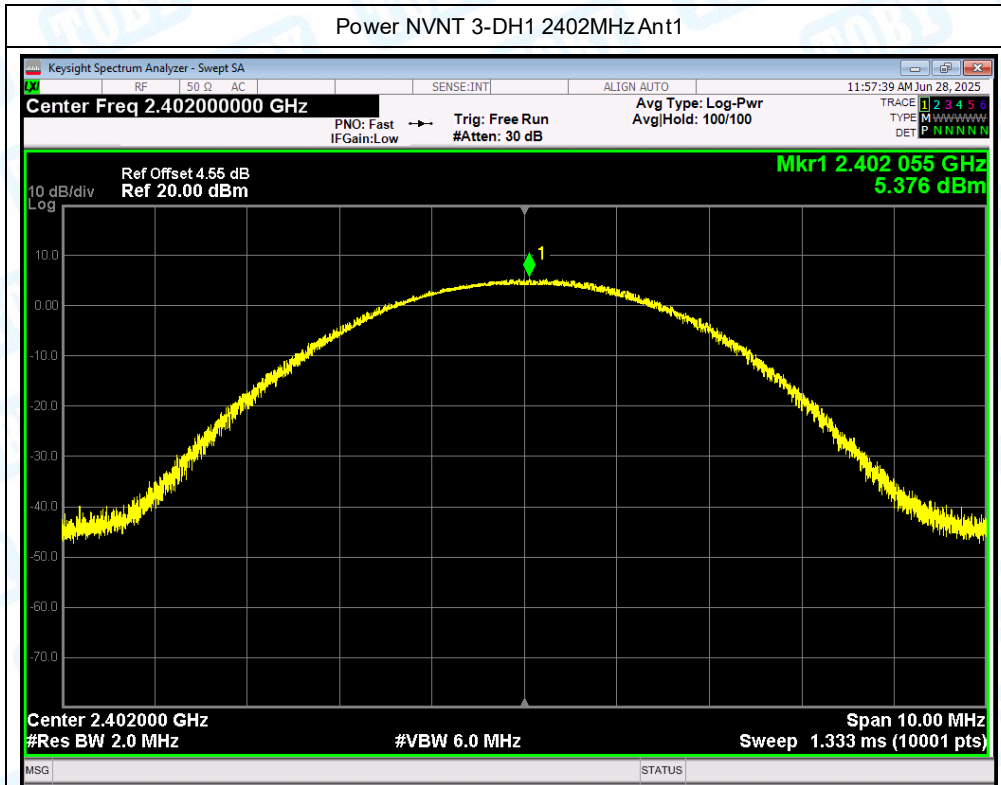


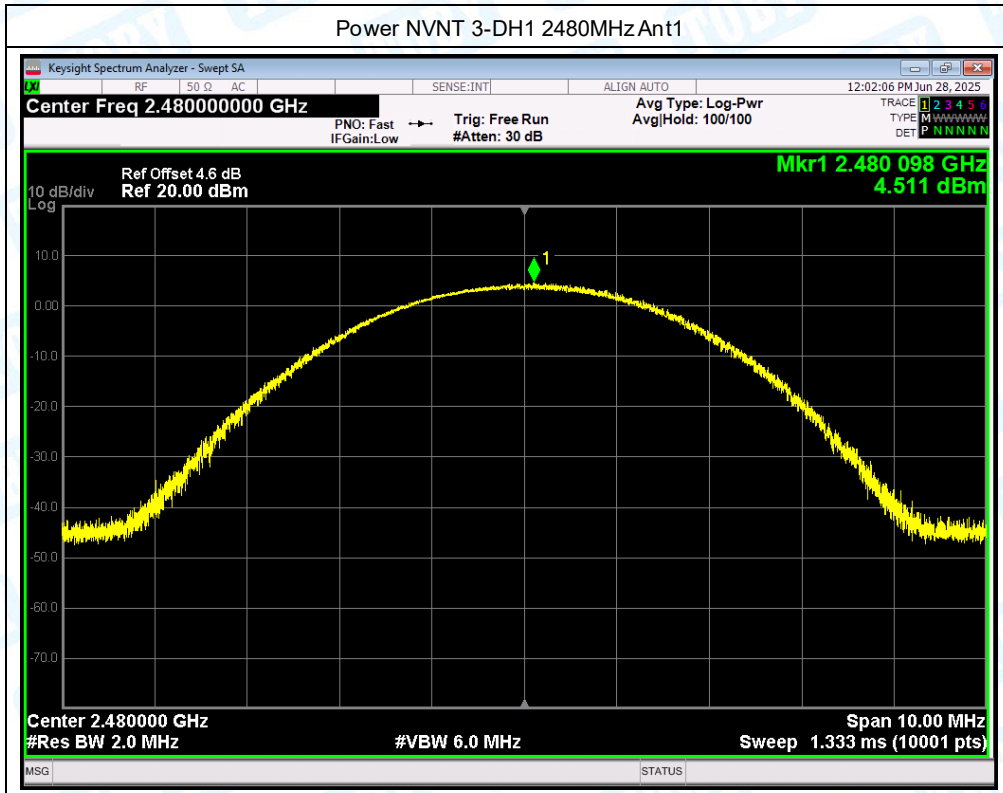
Power NVNT 1-DH1 2441MHz Ant1











3.-20dB Bandwidth

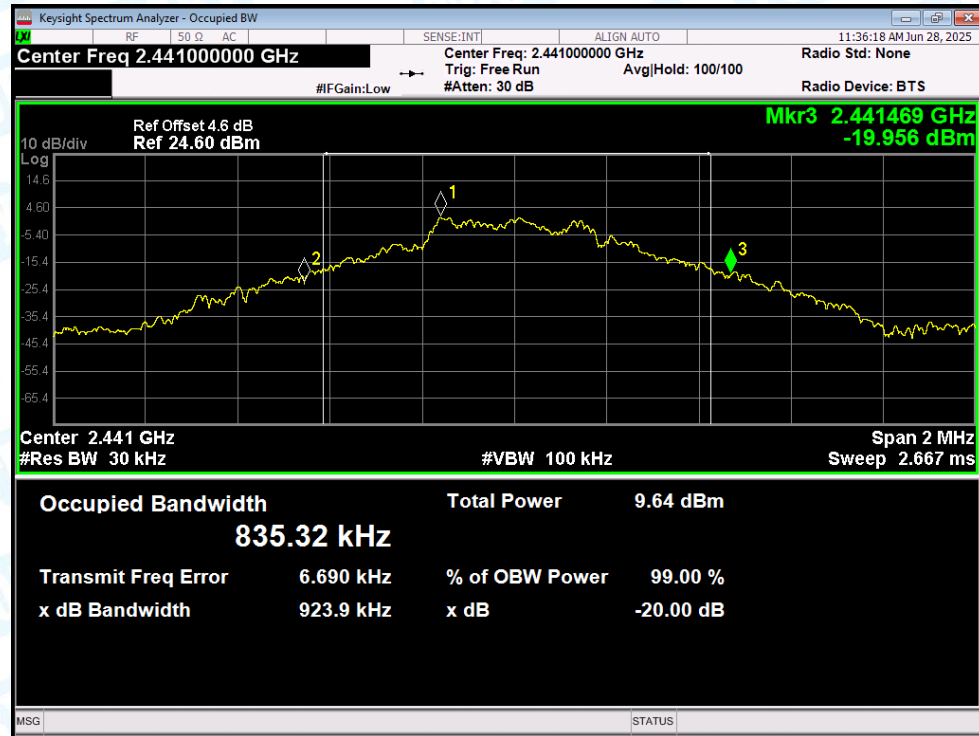
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.87	Pass
NVNT	1-DH1	2441	Ant1	0.92	Pass
NVNT	1-DH1	2480	Ant1	0.88	Pass
NVNT	2-DH1	2402	Ant1	1.27	Pass
NVNT	2-DH1	2441	Ant1	1.23	Pass
NVNT	2-DH1	2480	Ant1	1.25	Pass
NVNT	3-DH1	2402	Ant1	1.29	Pass
NVNT	3-DH1	2441	Ant1	1.3	Pass
NVNT	3-DH1	2480	Ant1	1.3	Pass

Test Graphs

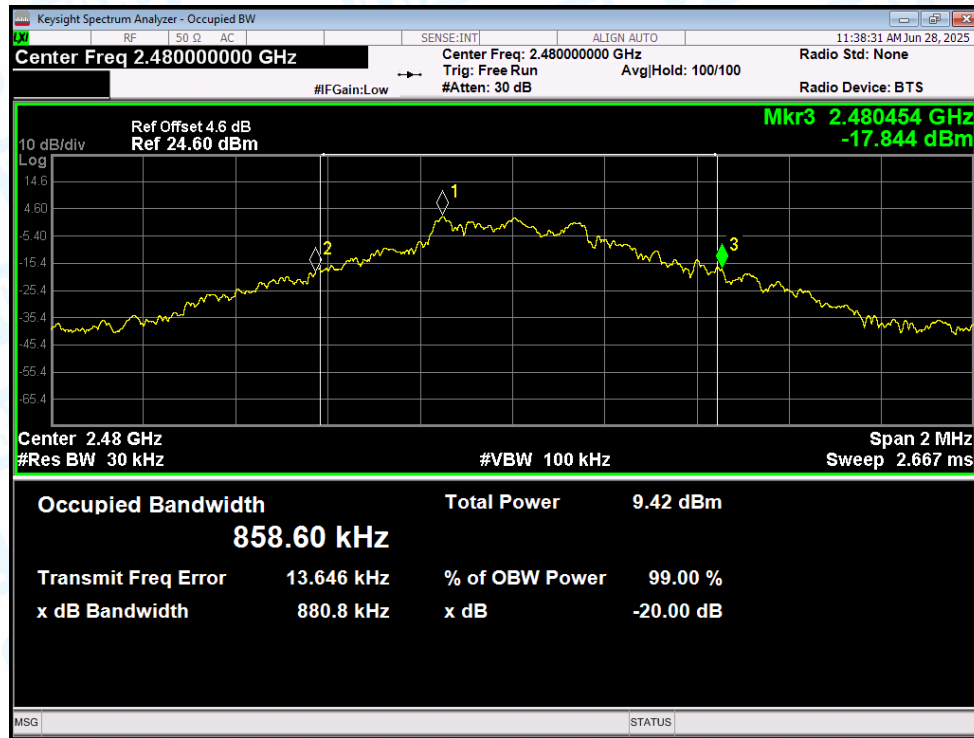
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



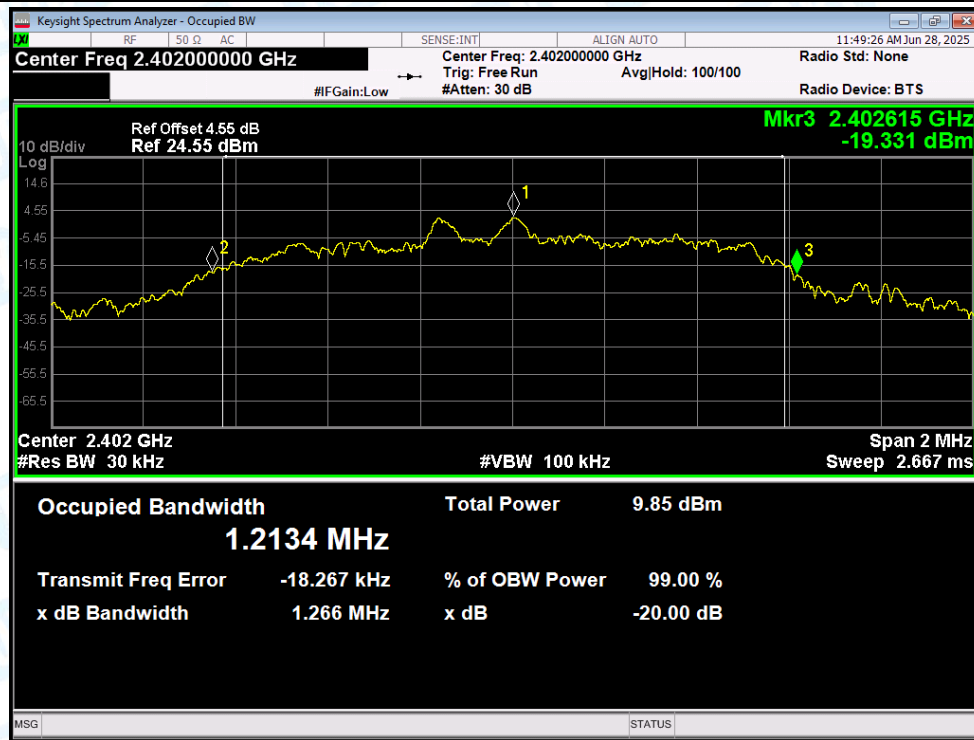
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



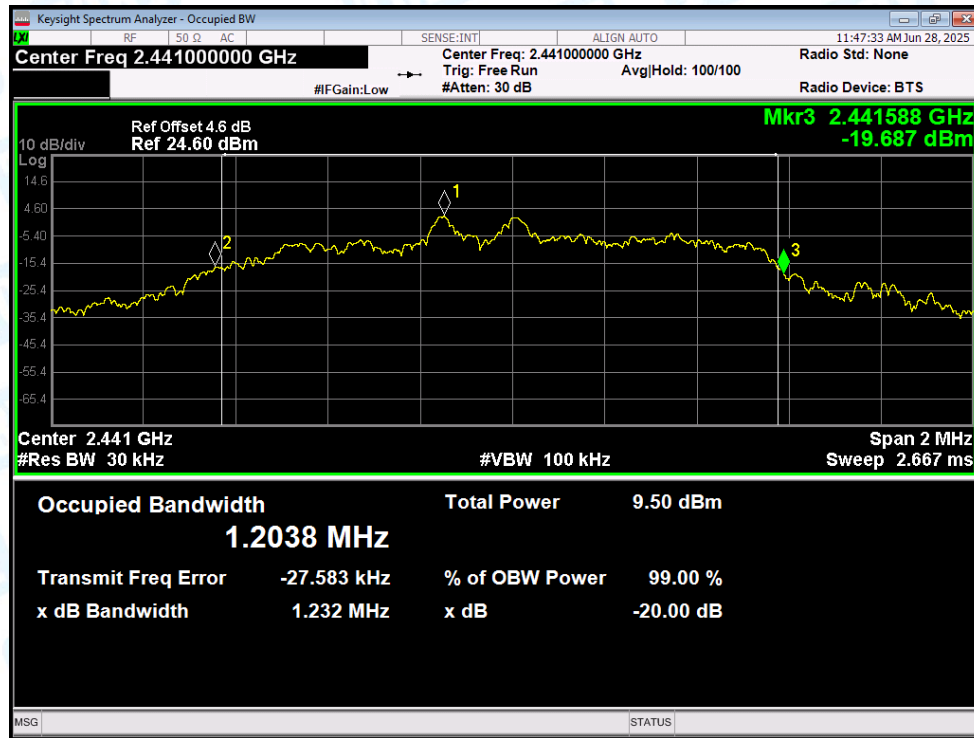
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



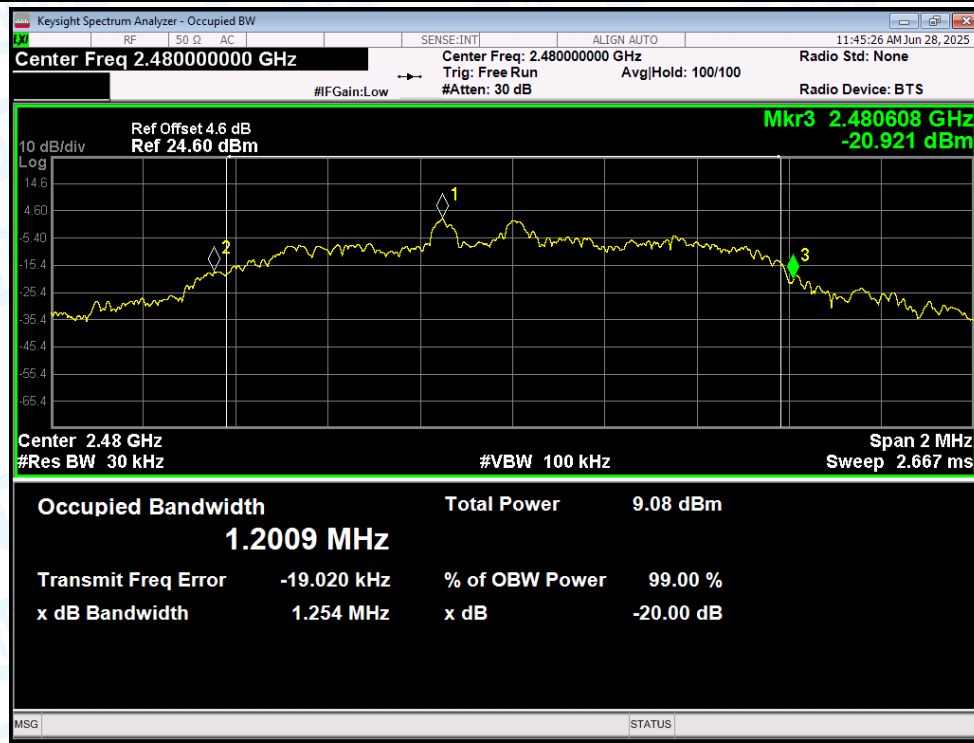
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



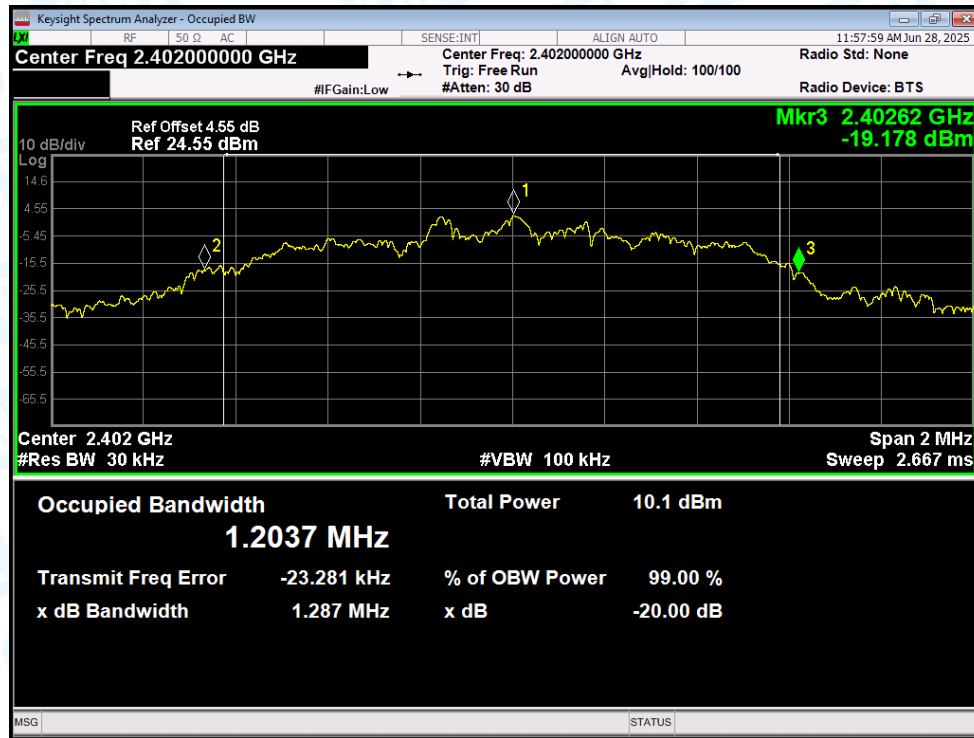
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



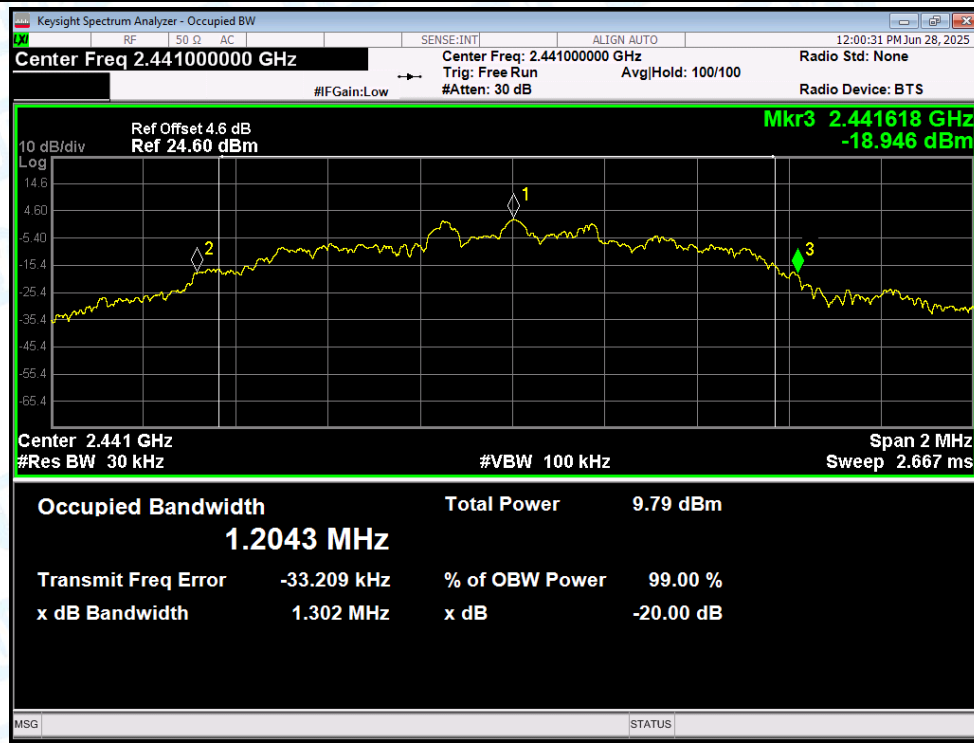
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

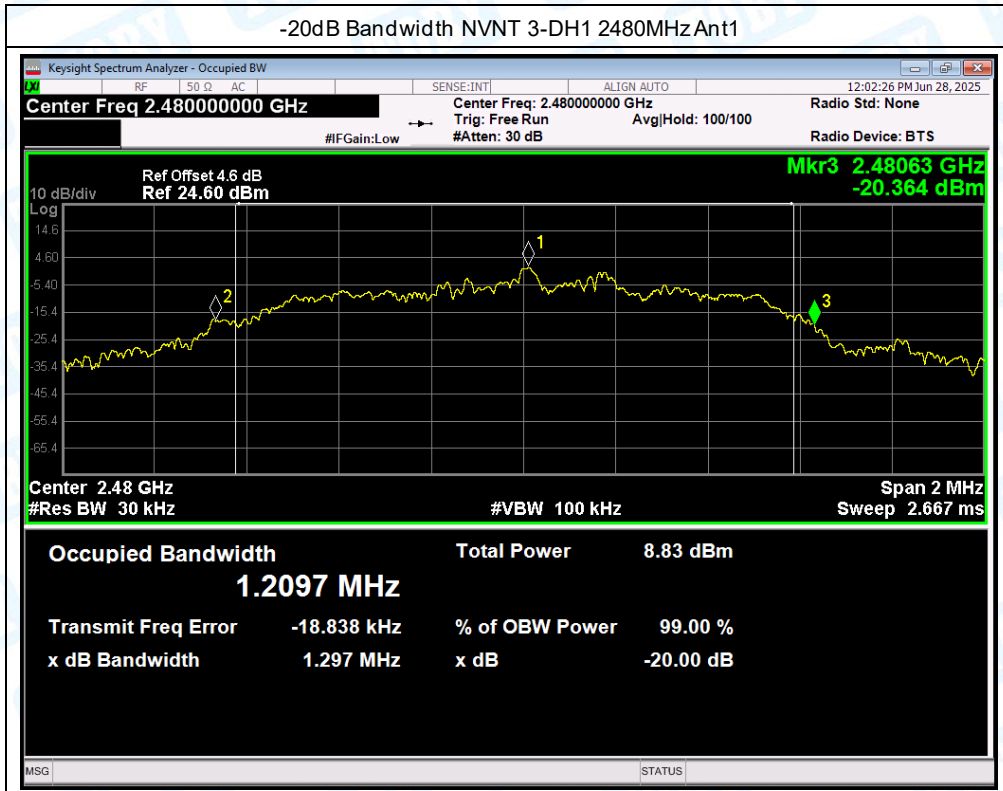


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



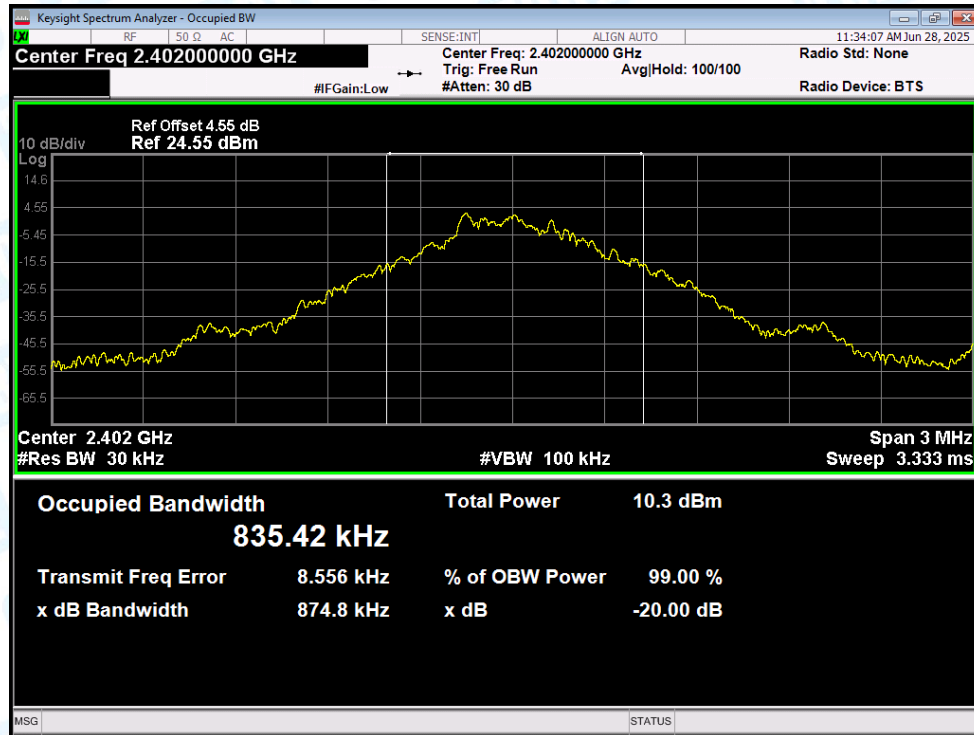


4.Occupied Channel Bandwidth

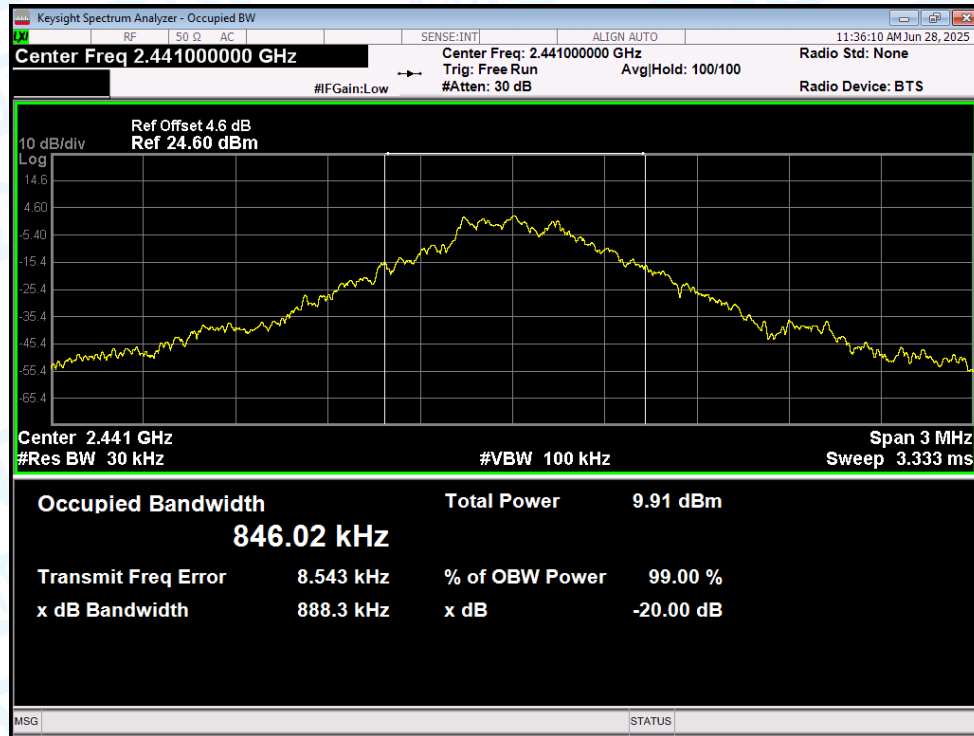
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.835
NVNT	1-DH1	2441	Ant1	0.846
NVNT	1-DH1	2480	Ant1	0.874
NVNT	2-DH1	2402	Ant1	1.206
NVNT	2-DH1	2441	Ant1	1.225
NVNT	2-DH1	2480	Ant1	1.213
NVNT	3-DH1	2402	Ant1	1.21
NVNT	3-DH1	2441	Ant1	1.214
NVNT	3-DH1	2480	Ant1	1.229

Test Graphs

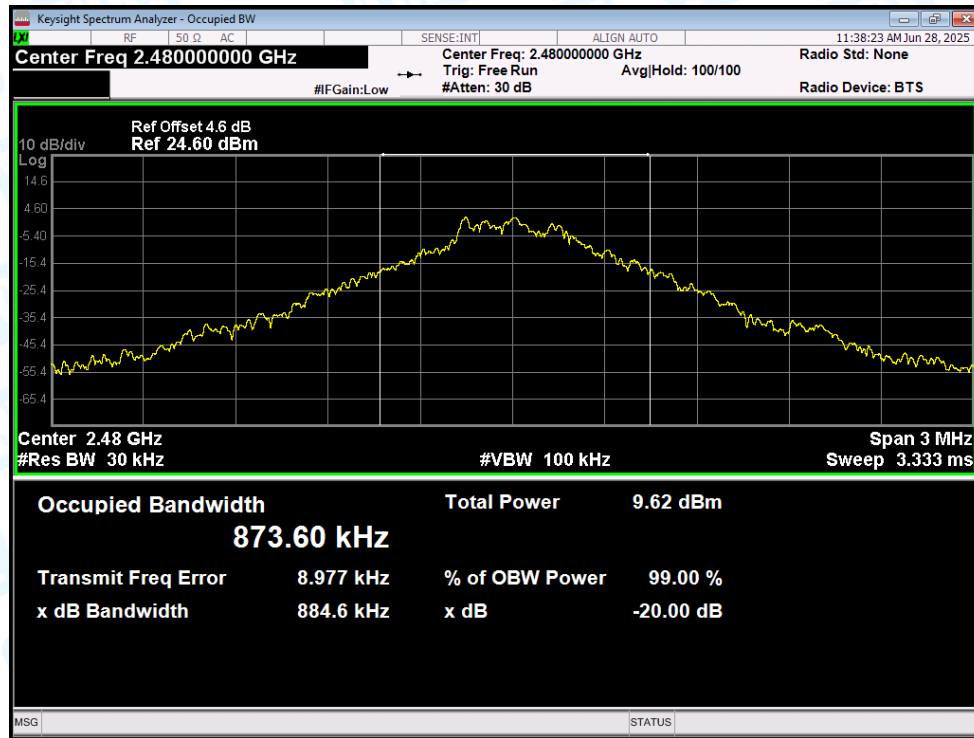
OBW NVNT 1-DH1 2402MHz Ant1



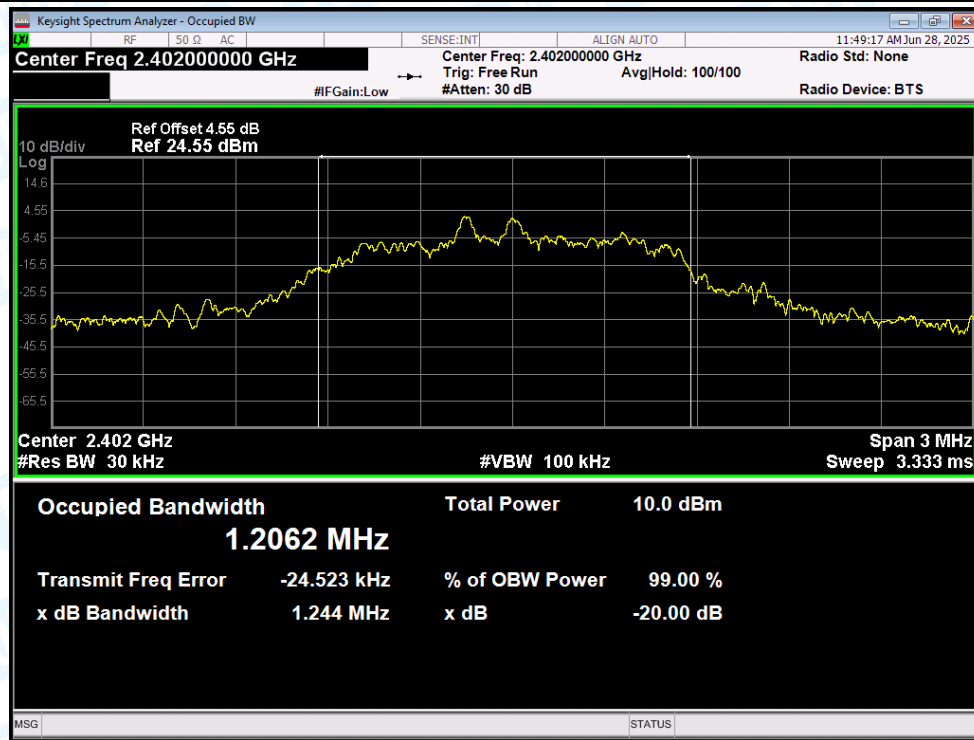
OBW NVNT 1-DH1 2441MHz Ant1



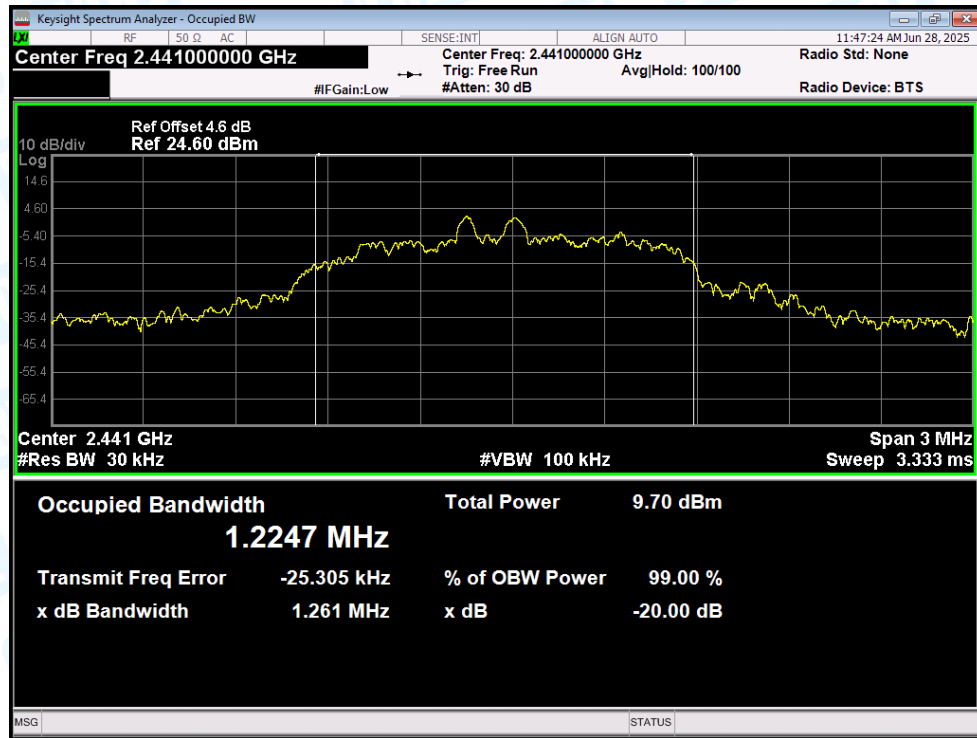
OBW NVNT 1-DH1 2480MHz Ant1



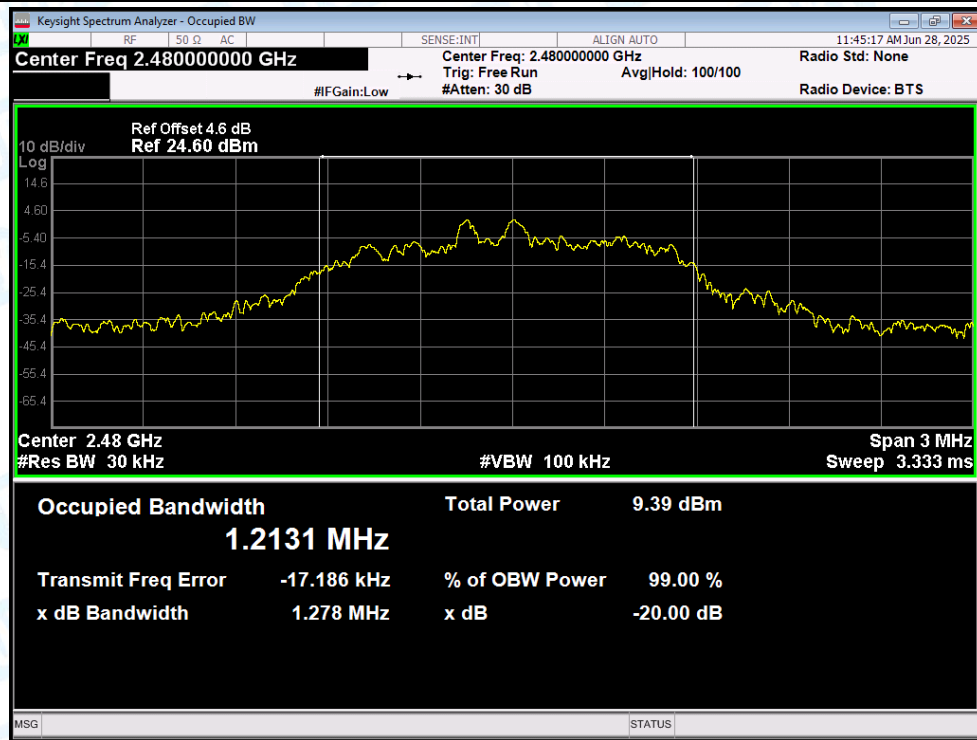
OBW NVNT 2-DH1 2402MHz Ant1



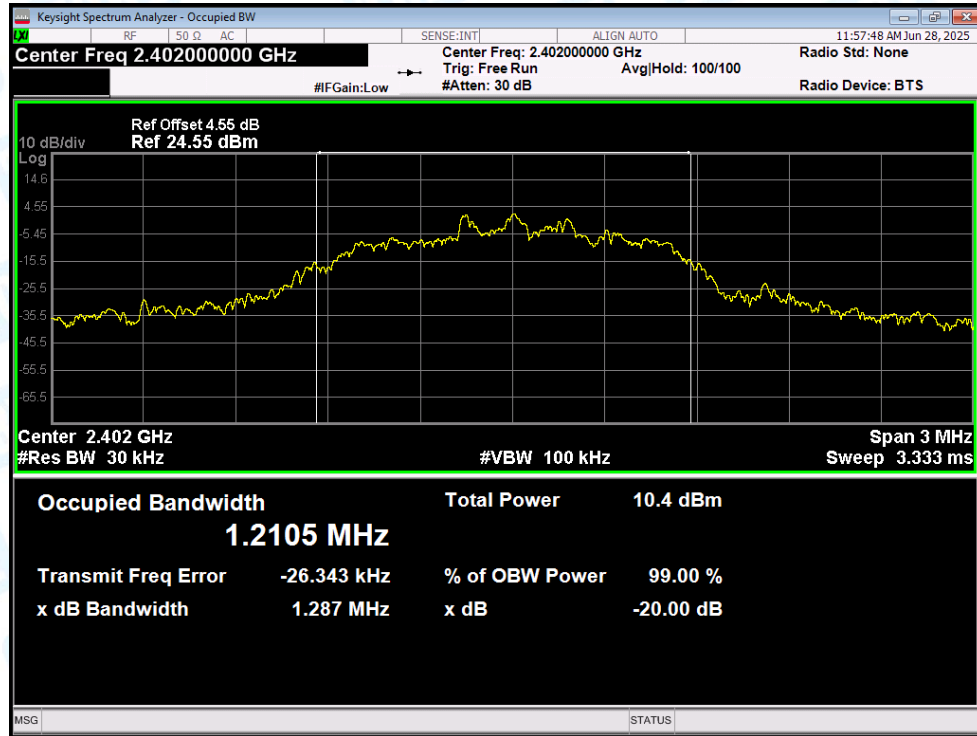
OBW NVNT 2-DH1 2441MHz Ant1



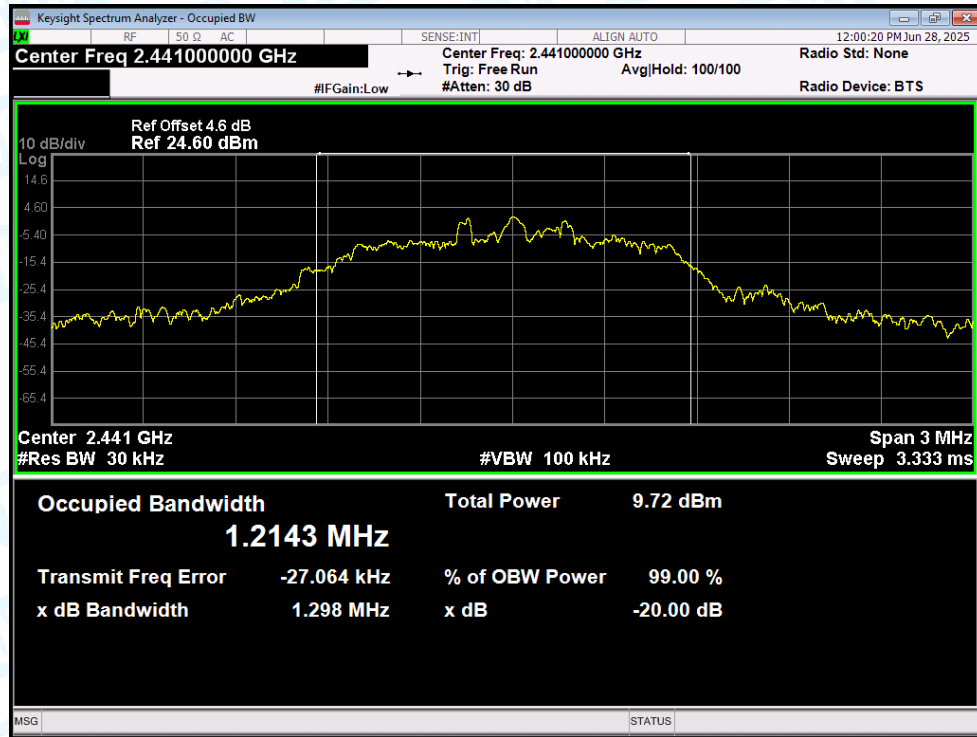
OBW NVNT 2-DH1 2480MHz Ant1

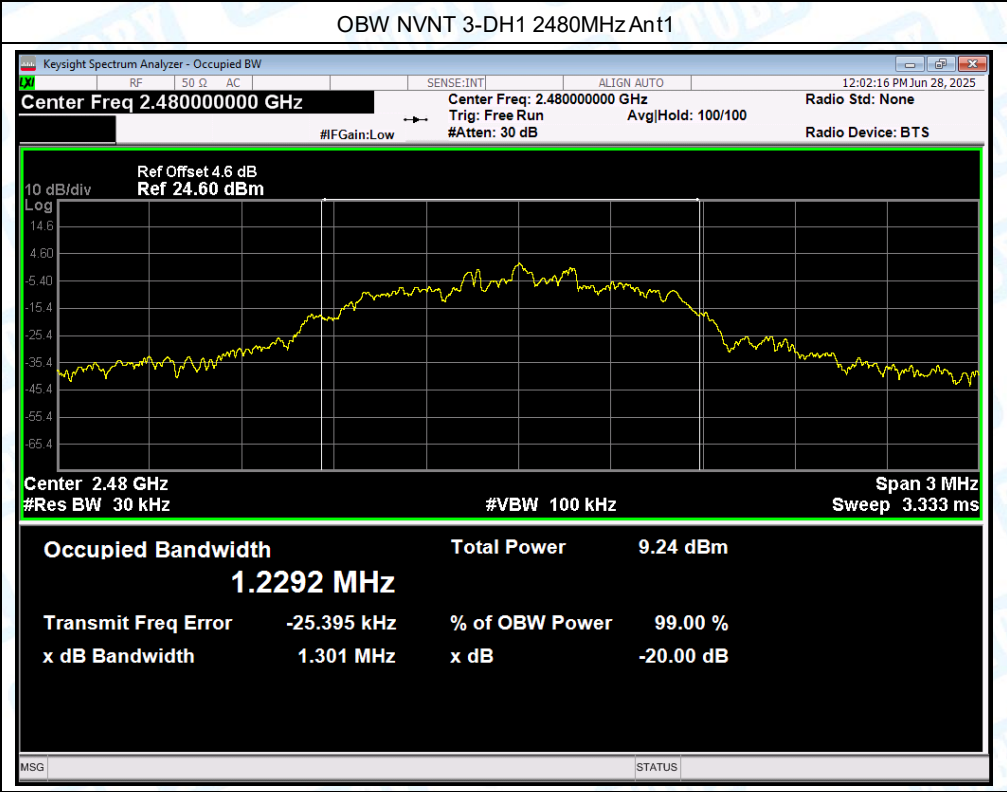


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1





5.Band Edge

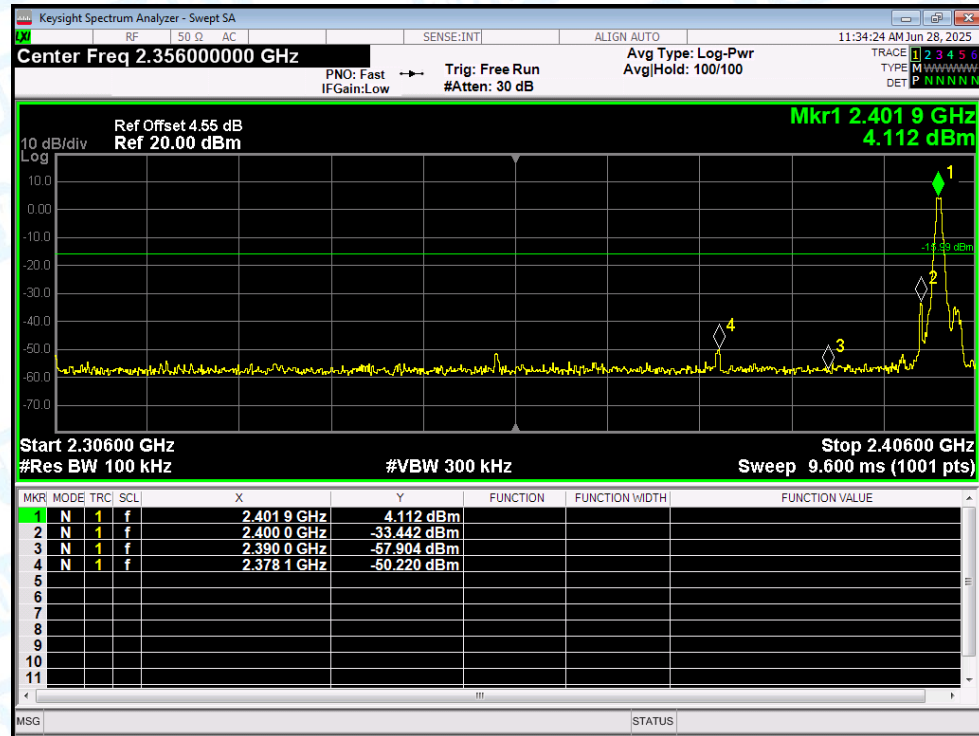
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-54.24	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-57.75	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-56.08	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-57.6	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-55.27	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-56.92	-20	Pass

Test Graphs

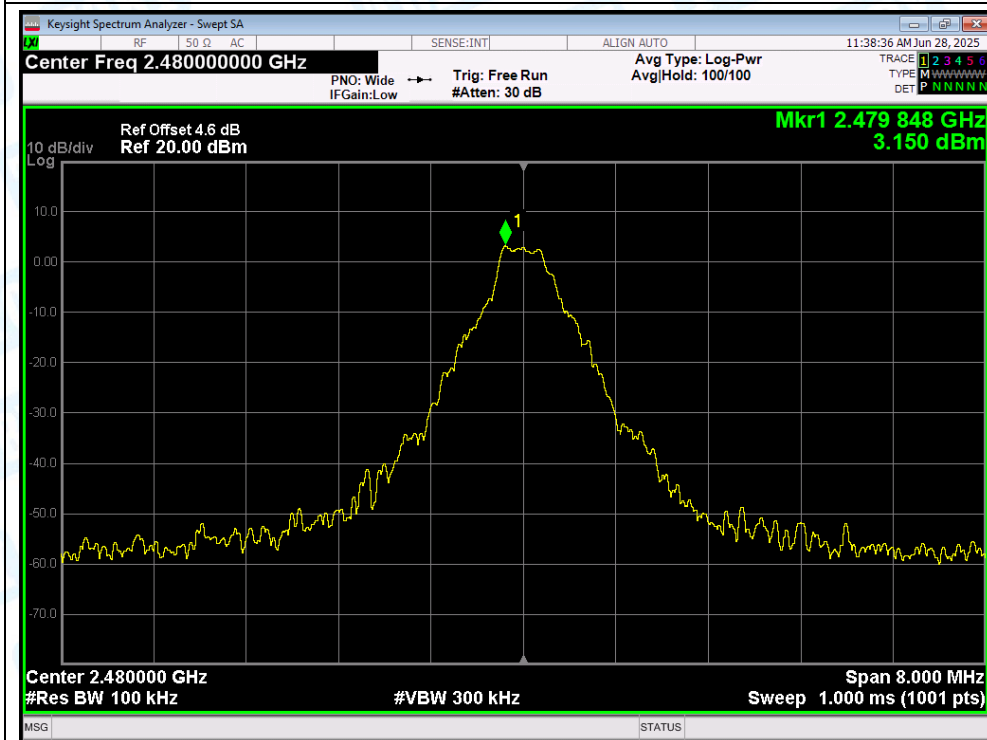
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



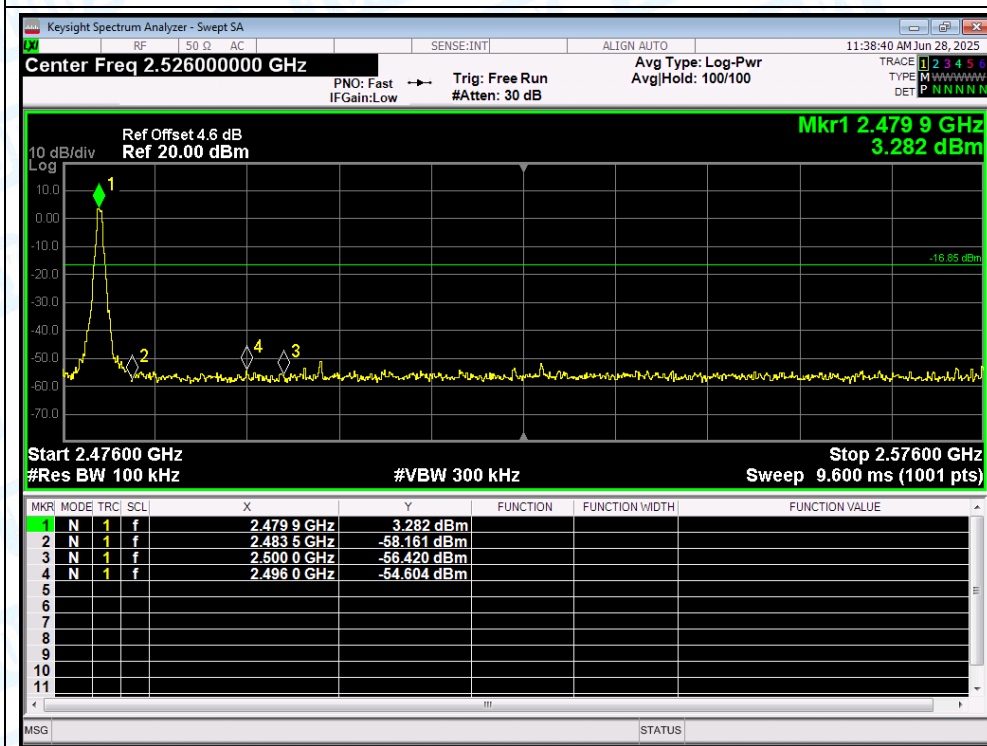
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



Band Edge NVNT 1-DH1 2480MHzAnt1 No-Hopping Ref



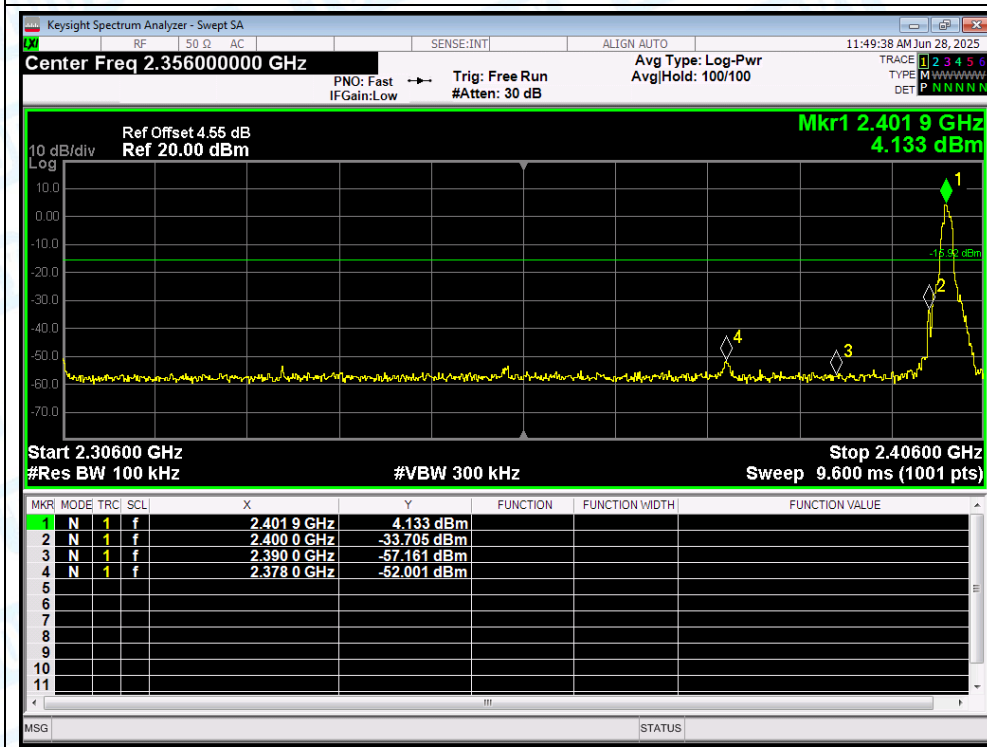
Band Edge NVNT 1-DH1 2480MHzAnt1 No-Hopping Emission



Band Edge NVNT 2-DH1 2402MHzAnt1 No-Hopping Ref



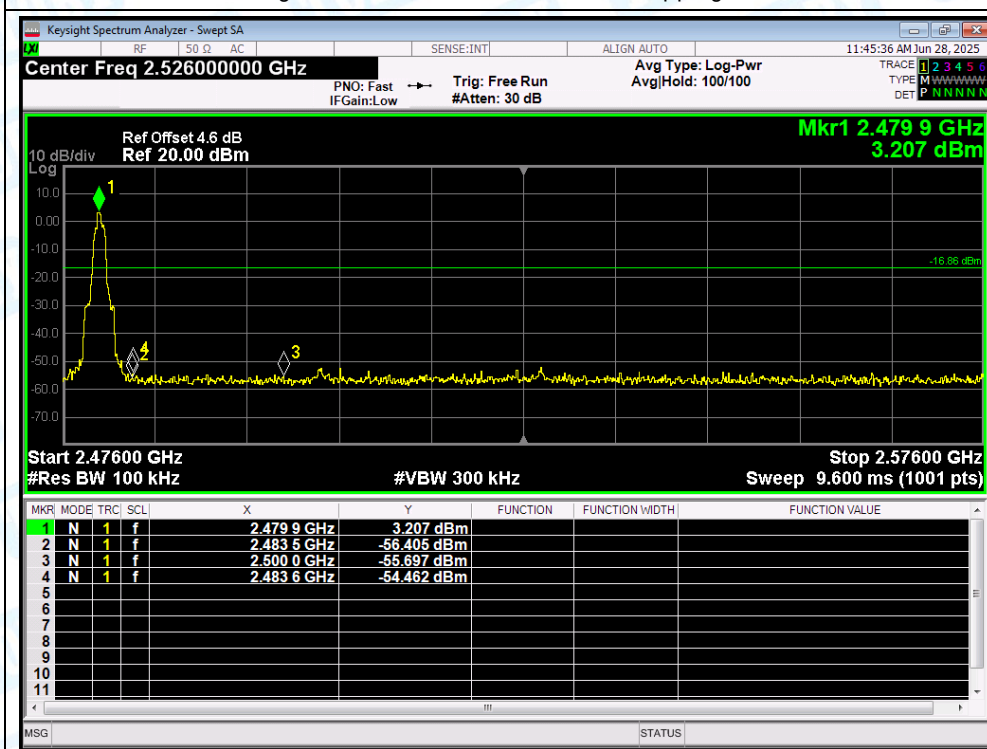
Band Edge NVNT 2-DH1 2402MHzAnt1 No-Hopping Emission



Band Edge NVNT 2-DH1 2480MHzAnt1 No-Hopping Ref



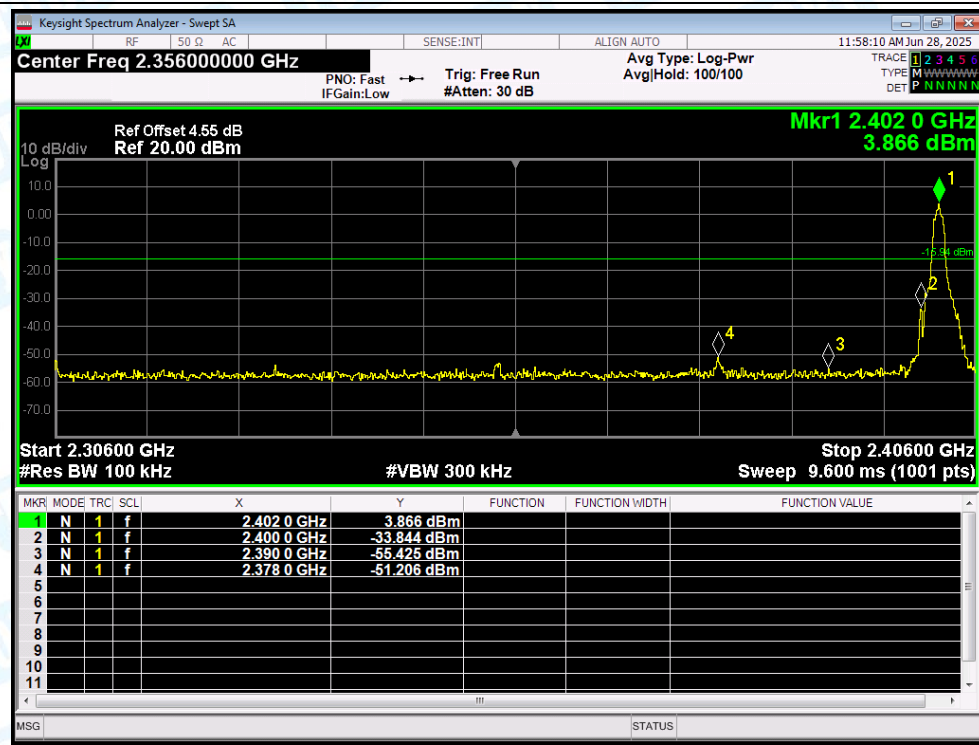
Band Edge NVNT 2-DH1 2480MHzAnt1 No-Hopping Emission



Band Edge NVNT 3-DH1 2402MHzAnt1 No-Hopping Ref



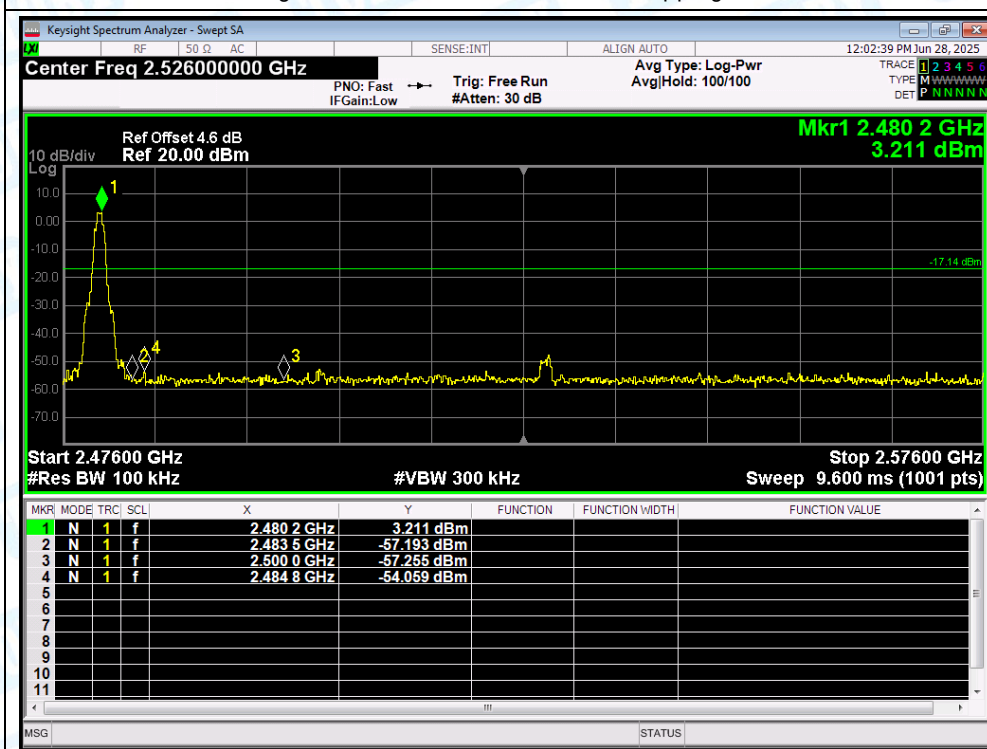
Band Edge NVNT 3-DH1 2402MHzAnt1 No-Hopping Emission



Band Edge NVNT 3-DH1 2480MHzAnt1 No-Hopping Ref



Band Edge NVNT 3-DH1 2480MHzAnt1 No-Hopping Emission



6. Band Edge(Hopping)

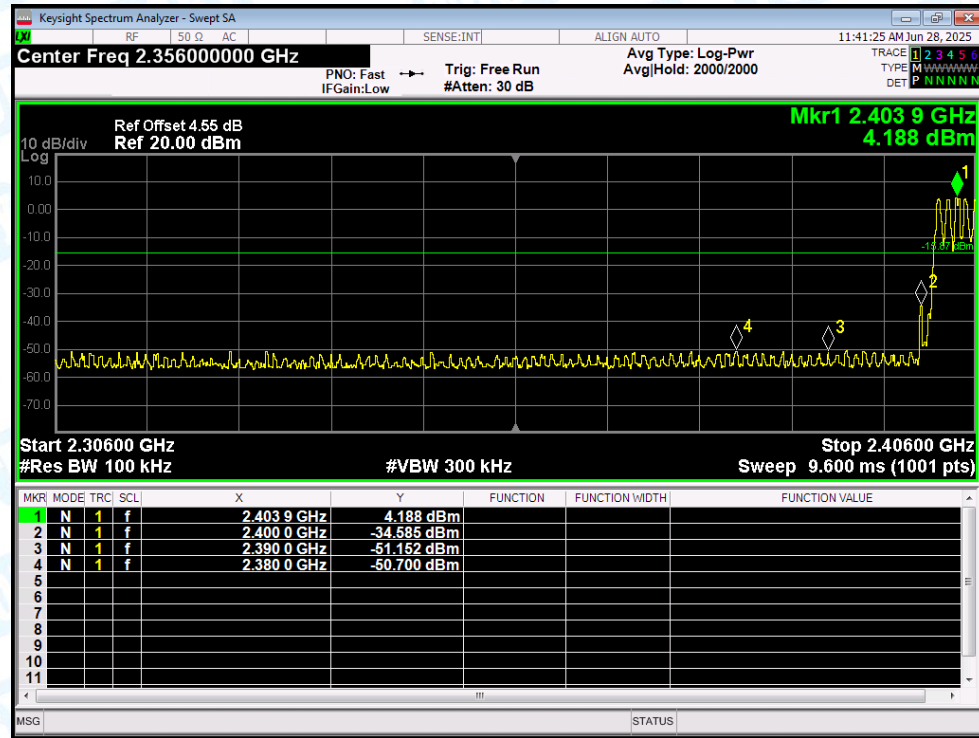
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-54.84	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-53.29	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-54.12	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-53.92	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-54.12	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-52.98	-20	Pass

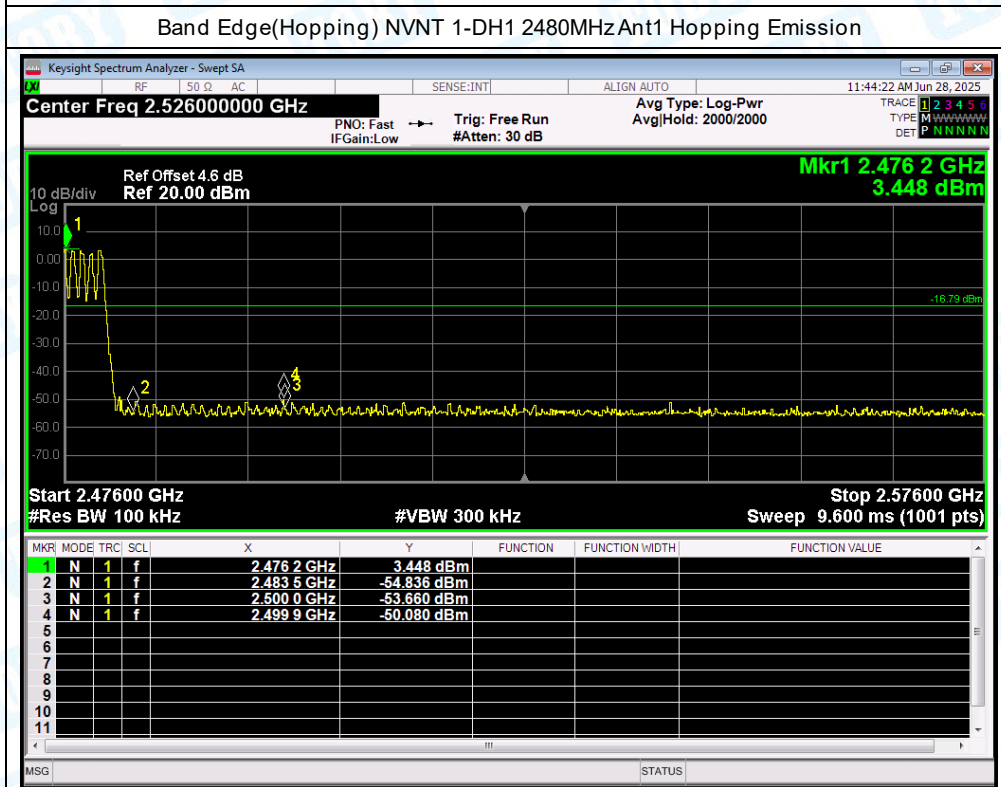
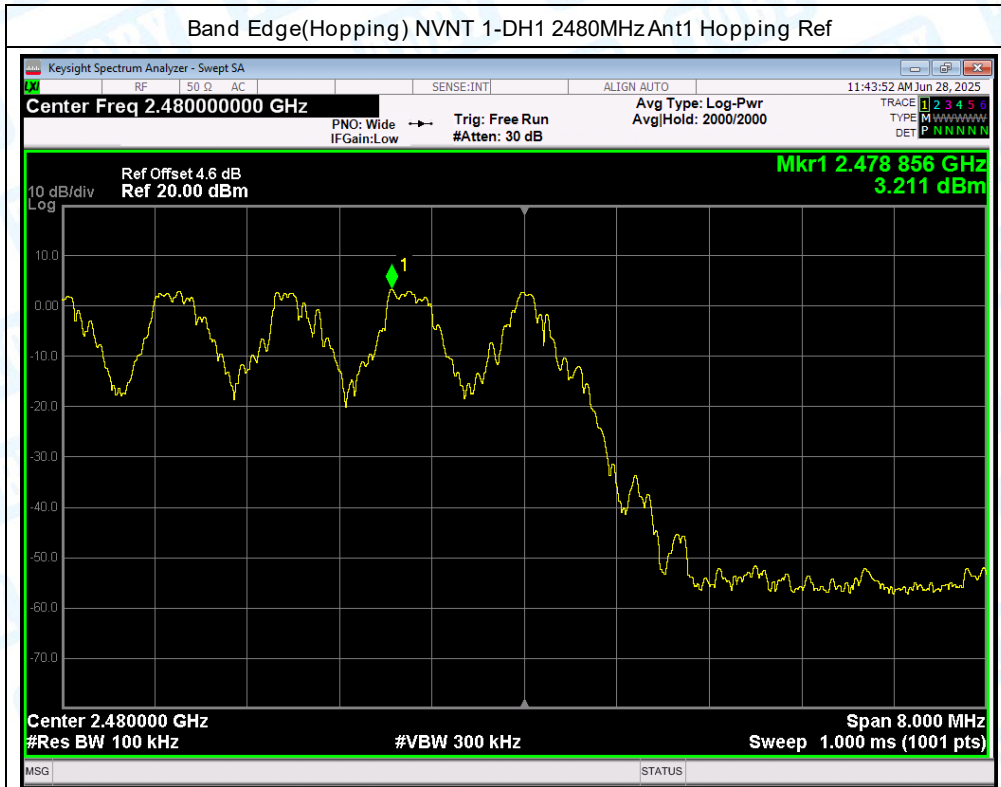
Test Graphs

Band Edge(Hopping) NVNT 1-DH1 2402MHzAnt1 Hopping Ref

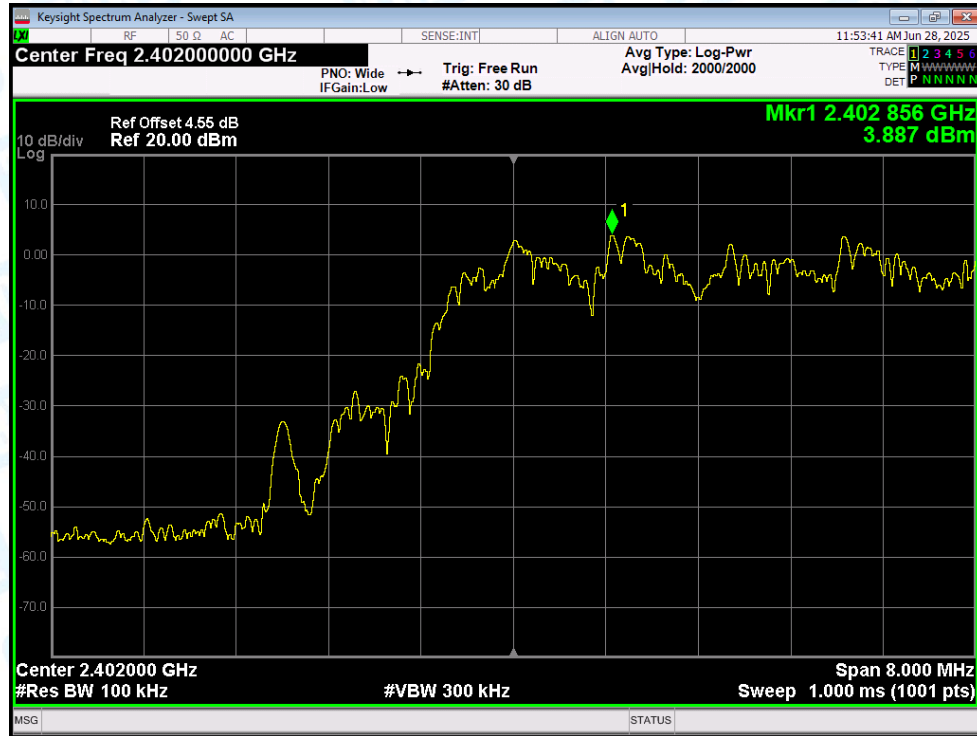


Band Edge(Hopping) NVNT 1-DH1 2402MHzAnt1 Hopping Emission

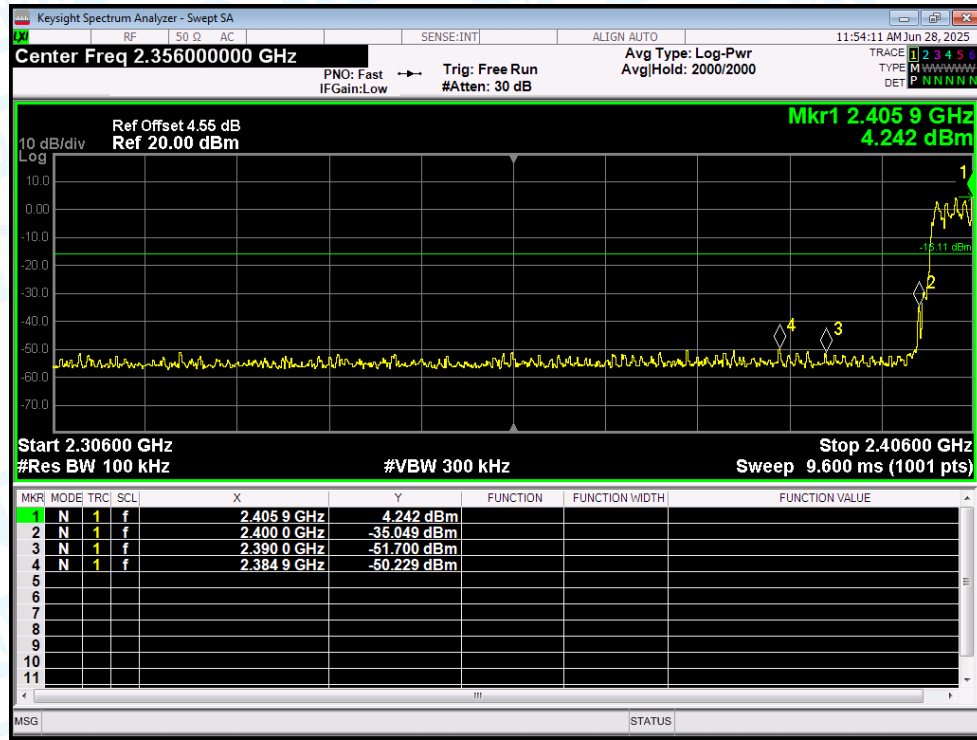


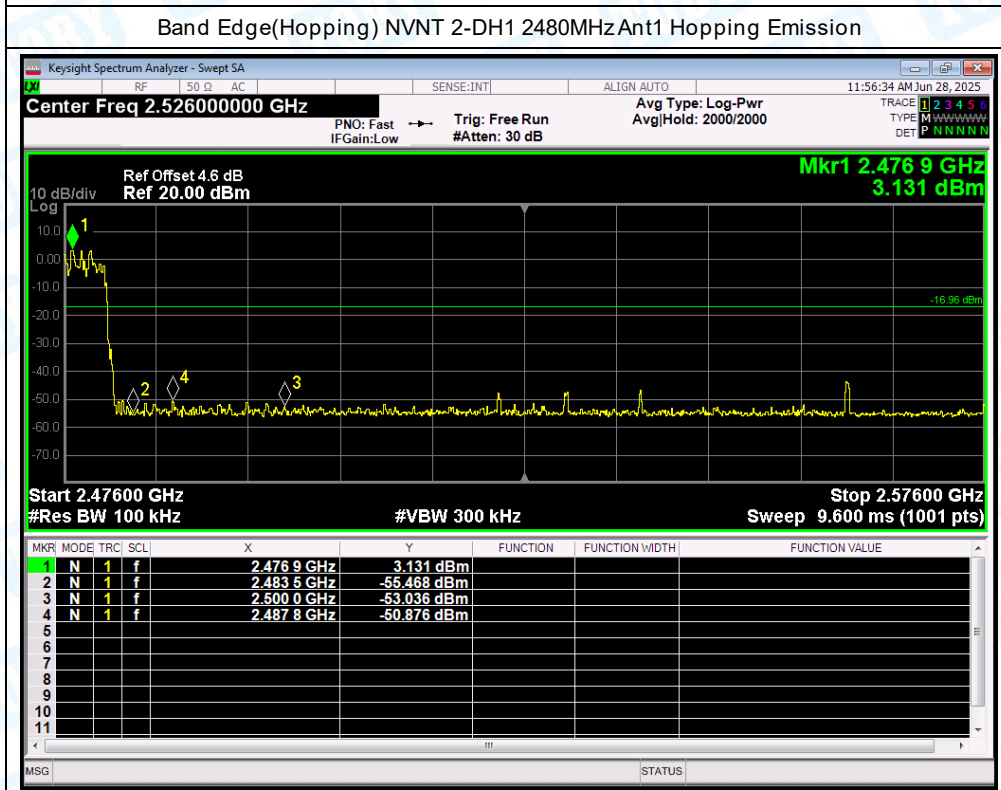
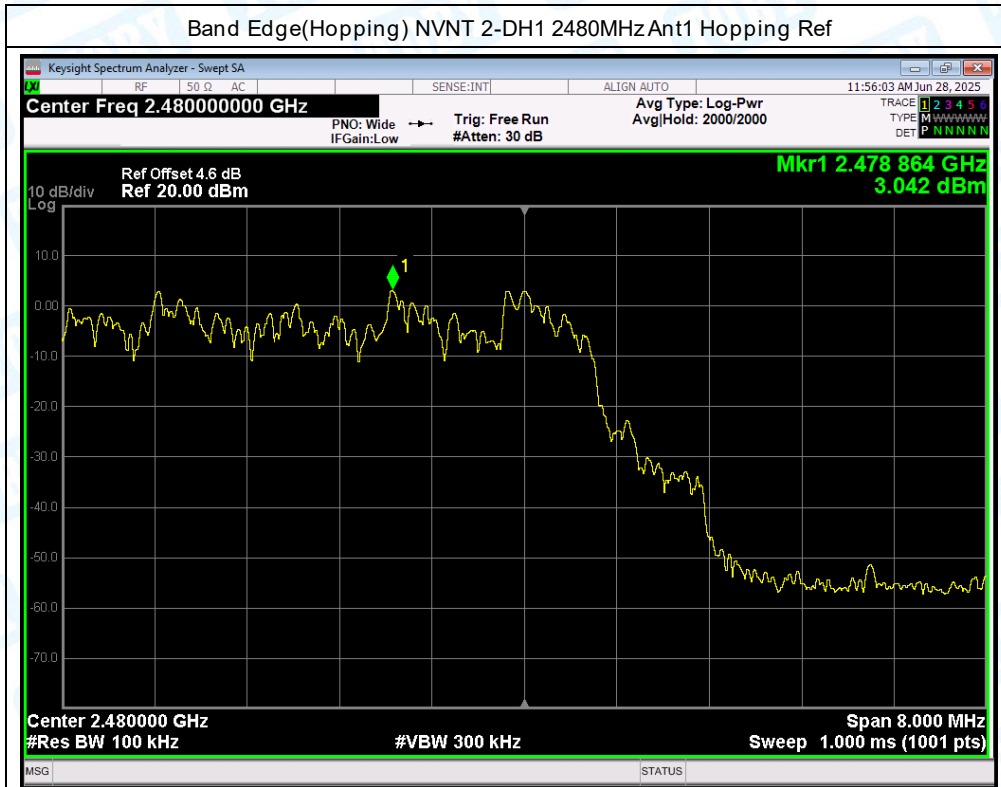


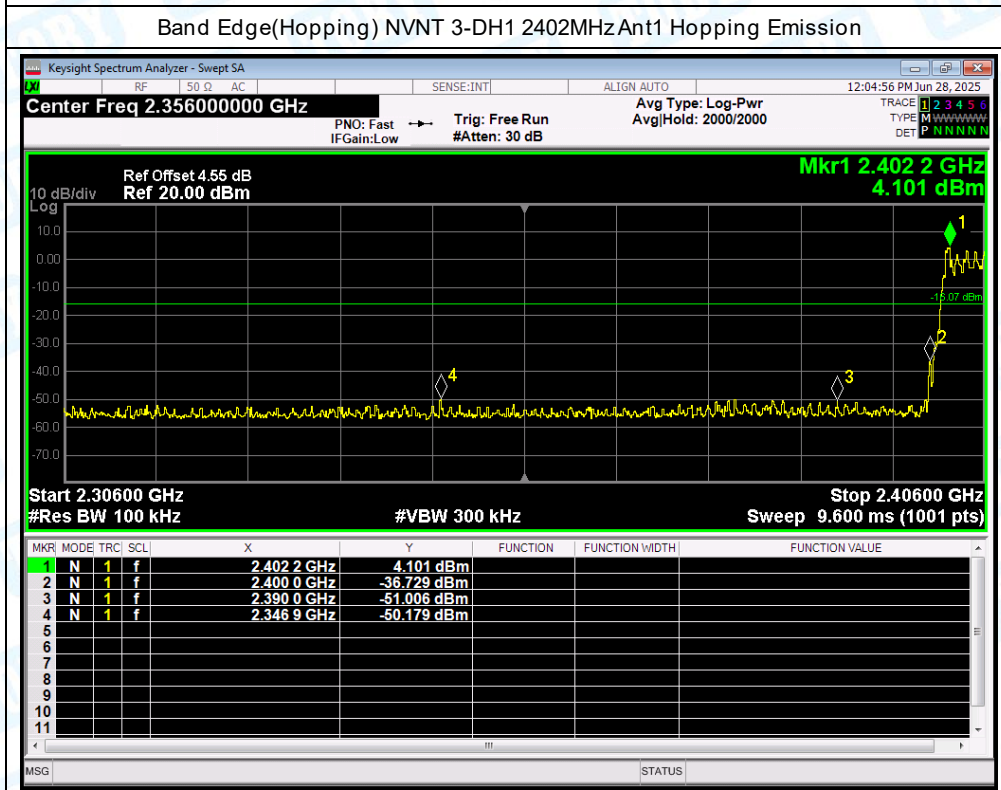
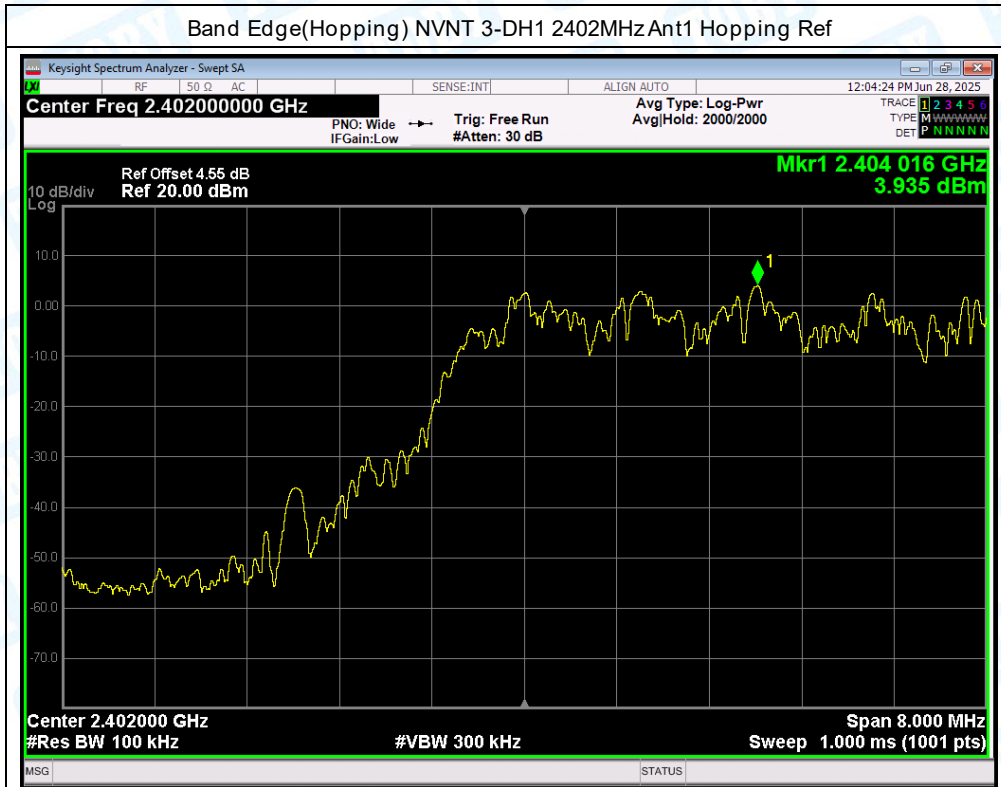
Band Edge(Hopping) NVNT 2-DH1 2402MHzAnt1 Hopping Ref

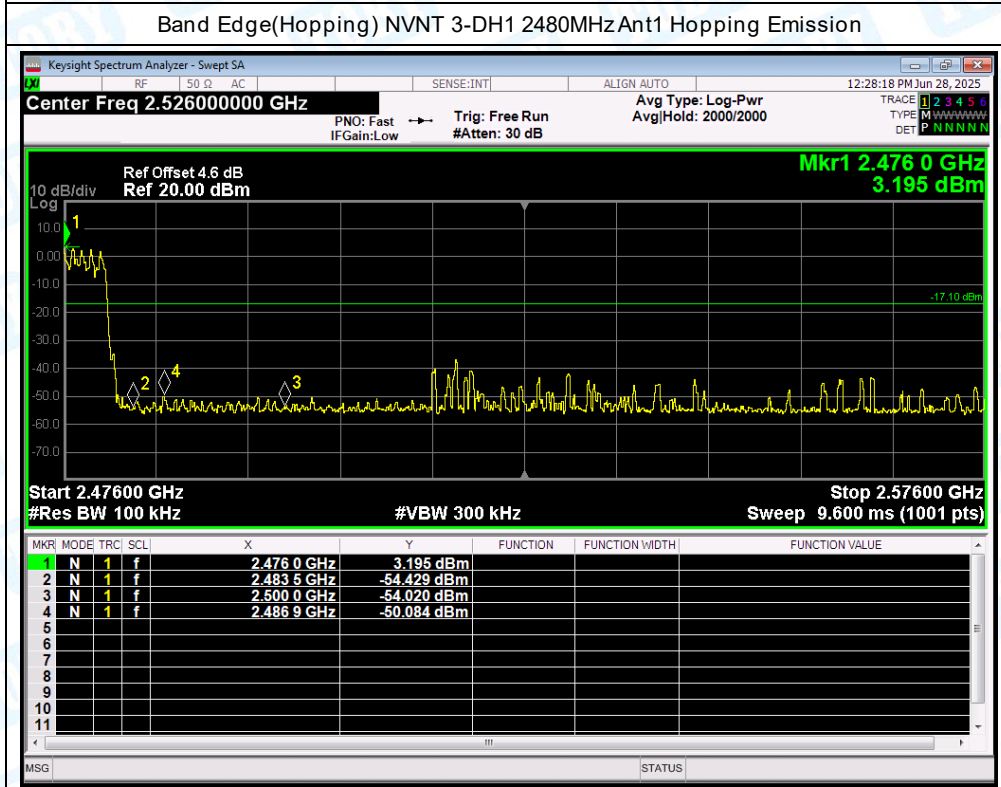
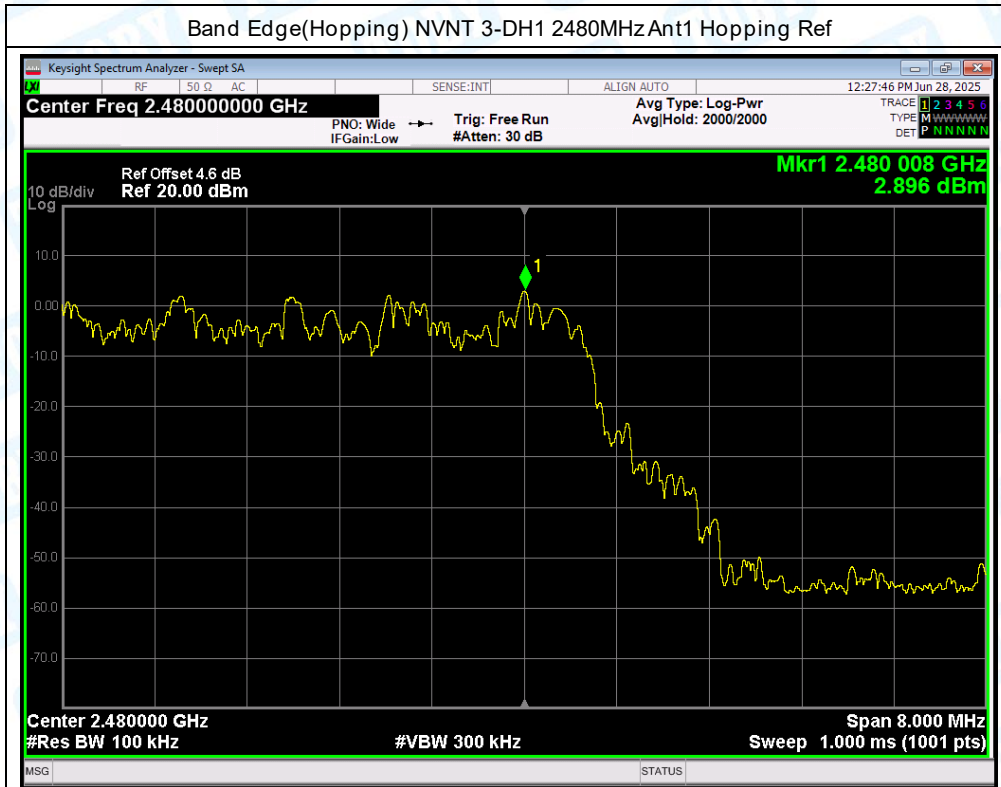


Band Edge(Hopping) NVNT 2-DH1 2402MHzAnt1 Hopping Emission







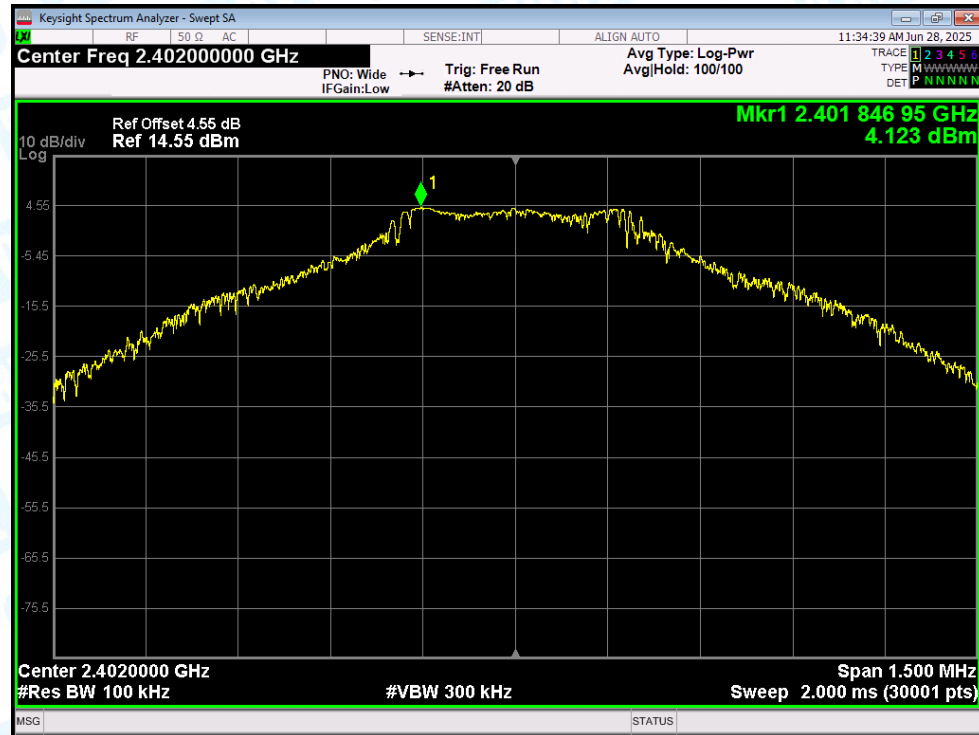


7. Conducted RF Spurious Emission

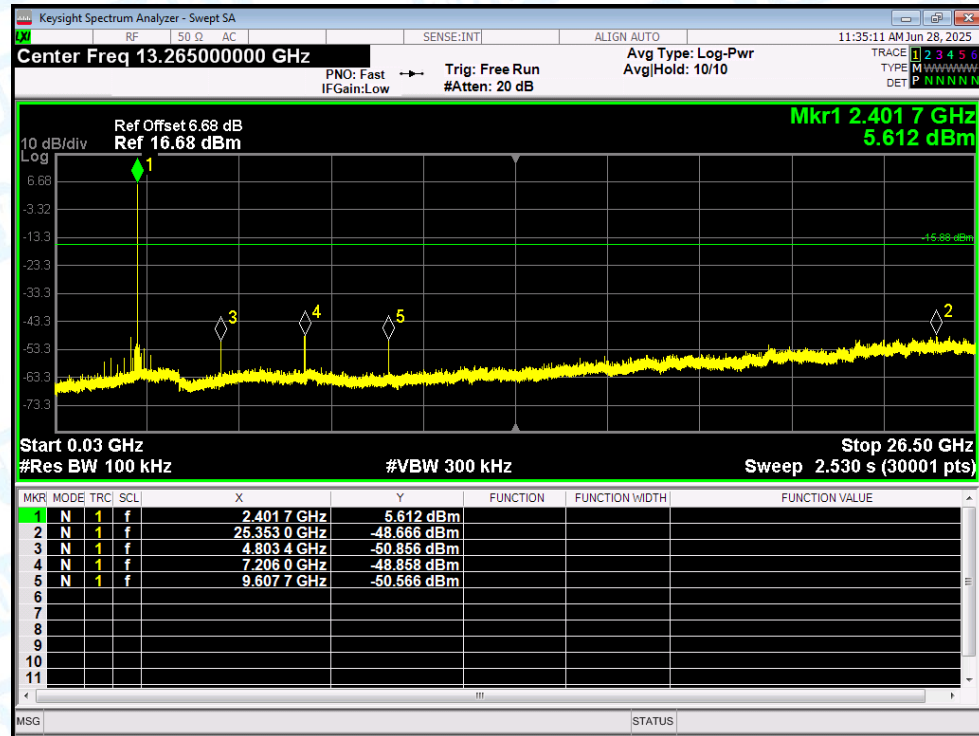
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-52.79	-20	Pass
NVNT	1-DH1	2441	Ant1	-47.62	-20	Pass
NVNT	1-DH1	2480	Ant1	-51.61	-20	Pass
NVNT	2-DH1	2402	Ant1	-53.21	-20	Pass
NVNT	2-DH1	2441	Ant1	-52.49	-20	Pass
NVNT	2-DH1	2480	Ant1	-52.24	-20	Pass
NVNT	3-DH1	2402	Ant1	-51.66	-20	Pass
NVNT	3-DH1	2441	Ant1	-52	-20	Pass
NVNT	3-DH1	2480	Ant1	-51.66	-20	Pass

Test Graphs

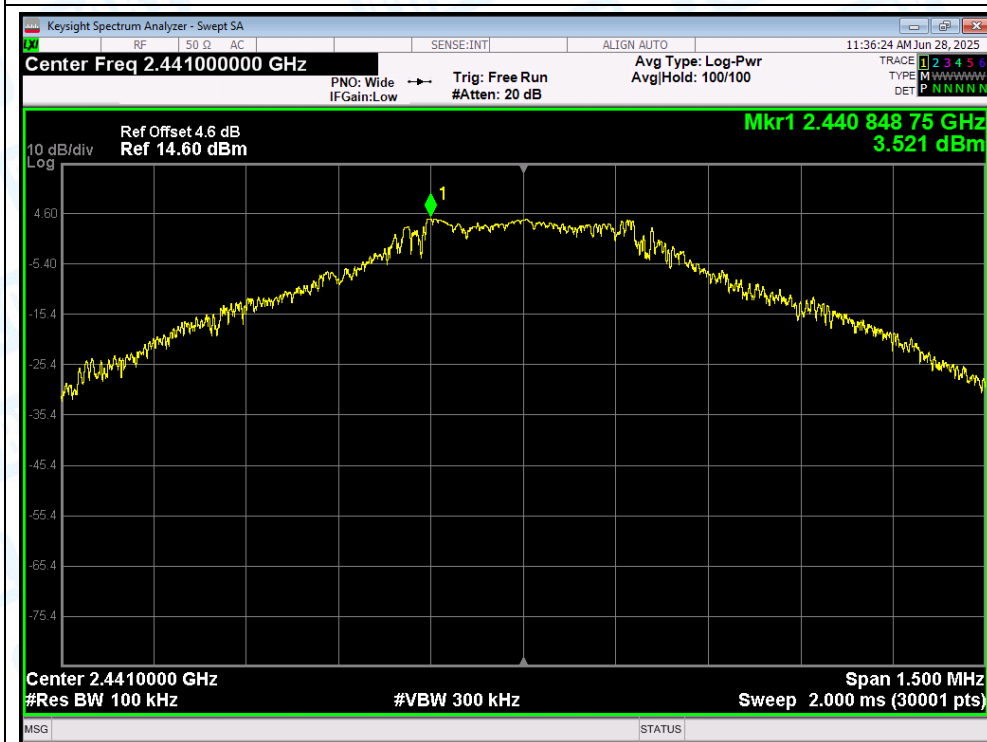
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



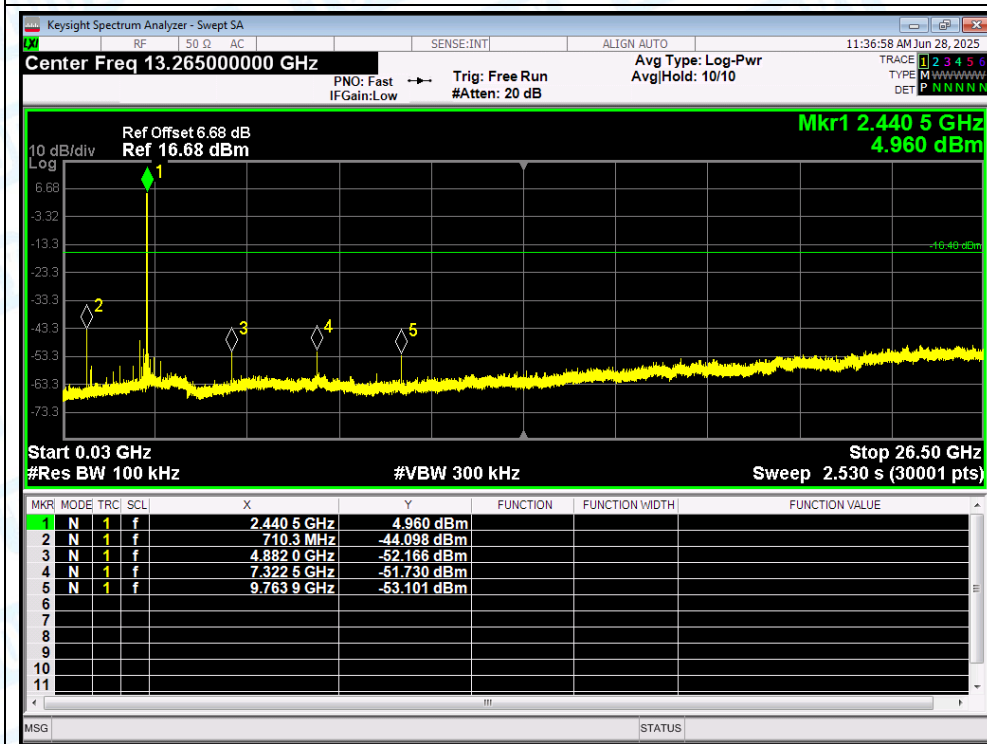
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



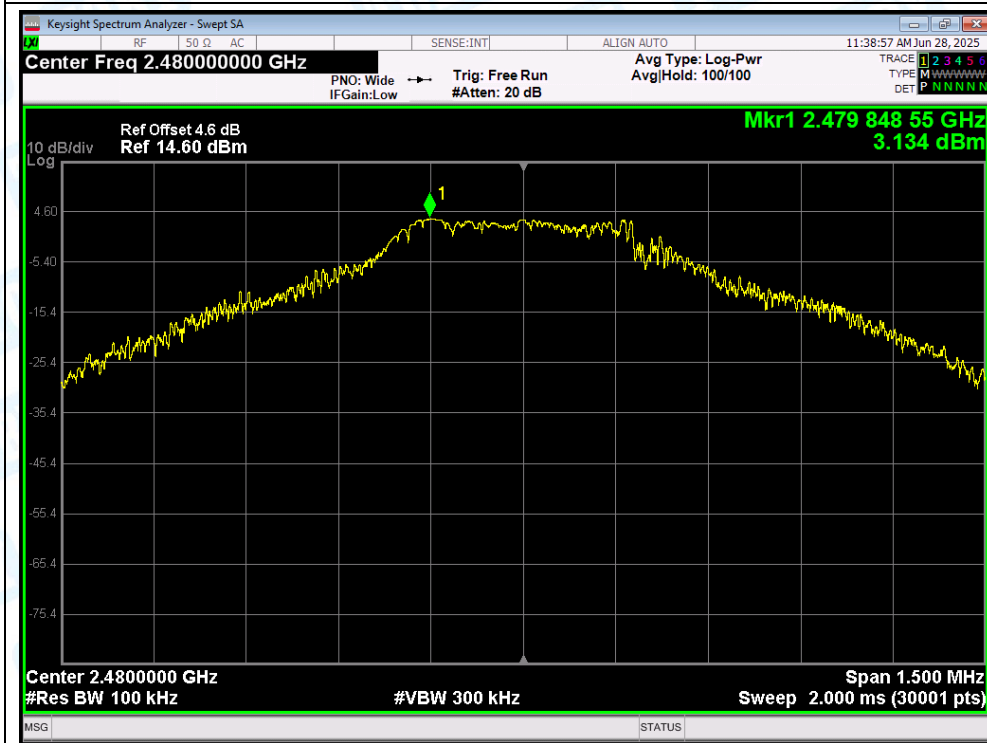
Tx. Spurious NVNT 1-DH1 2441MHzAnt1 Ref



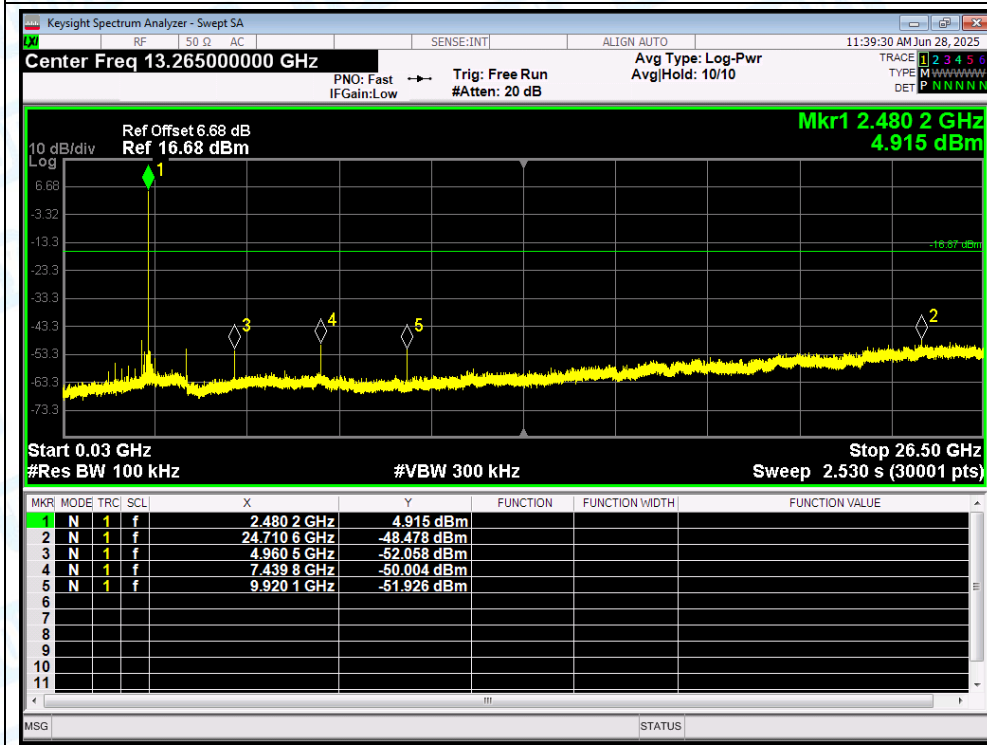
Tx. Spurious NVNT 1-DH1 2441MHzAnt1 Emission



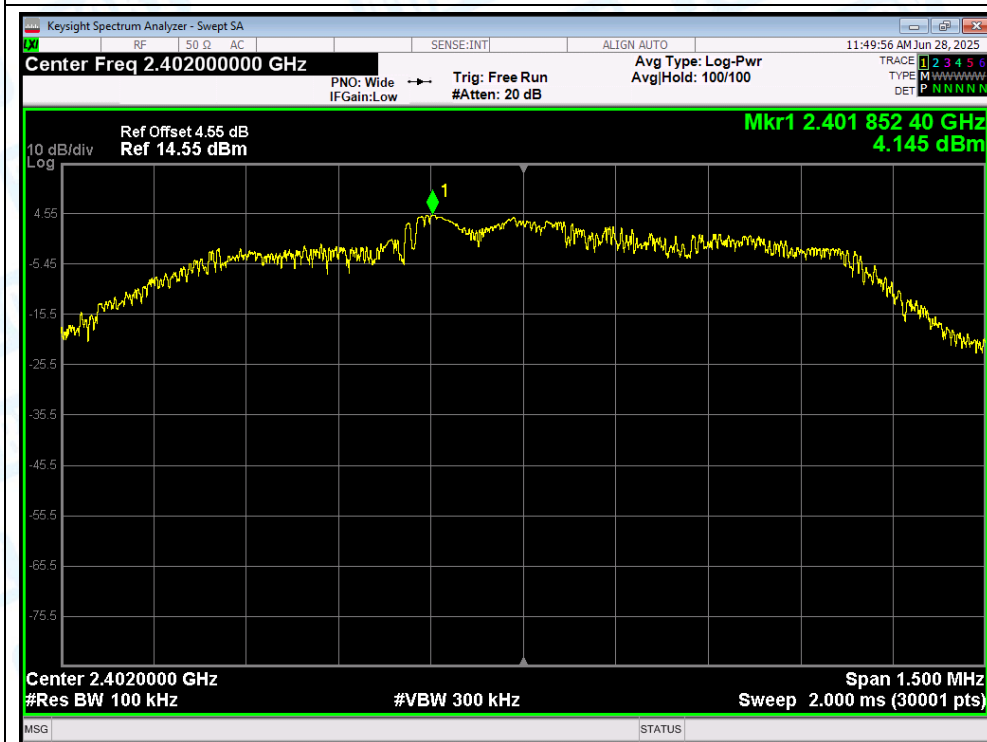
Tx. Spurious NVNT 1-DH1 2480MHzAnt1 Ref



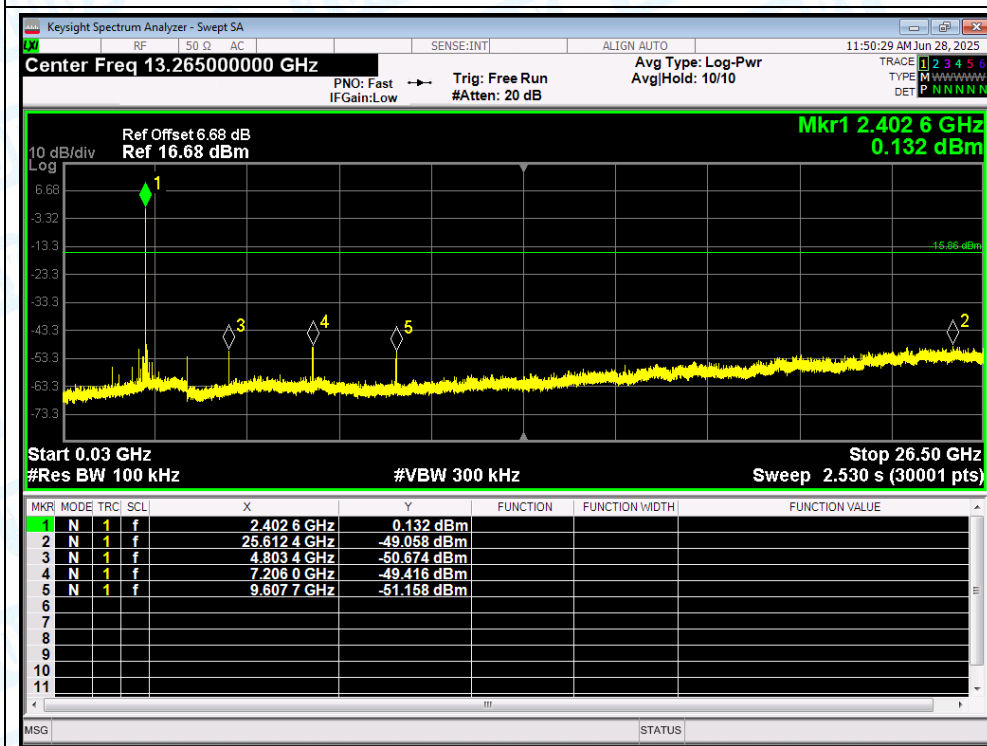
Tx. Spurious NVNT 1-DH1 2480MHzAnt1 Emission



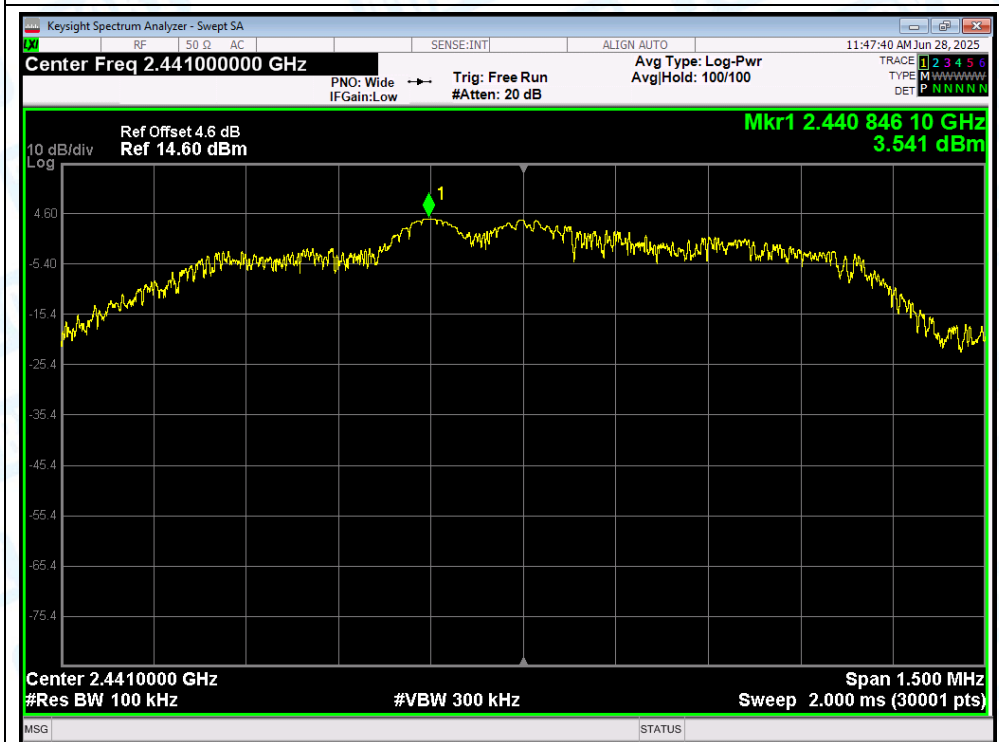
Tx. Spurious NVNT 2-DH1 2402MHzAnt1 Ref



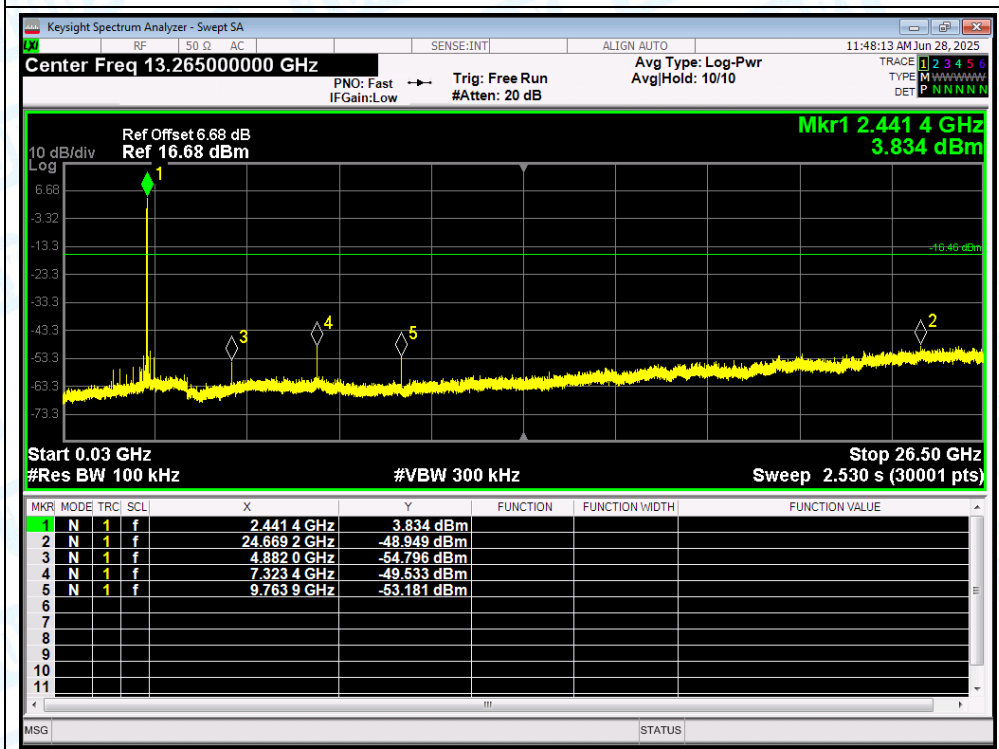
Tx. Spurious NVNT 2-DH1 2402MHzAnt1 Emission



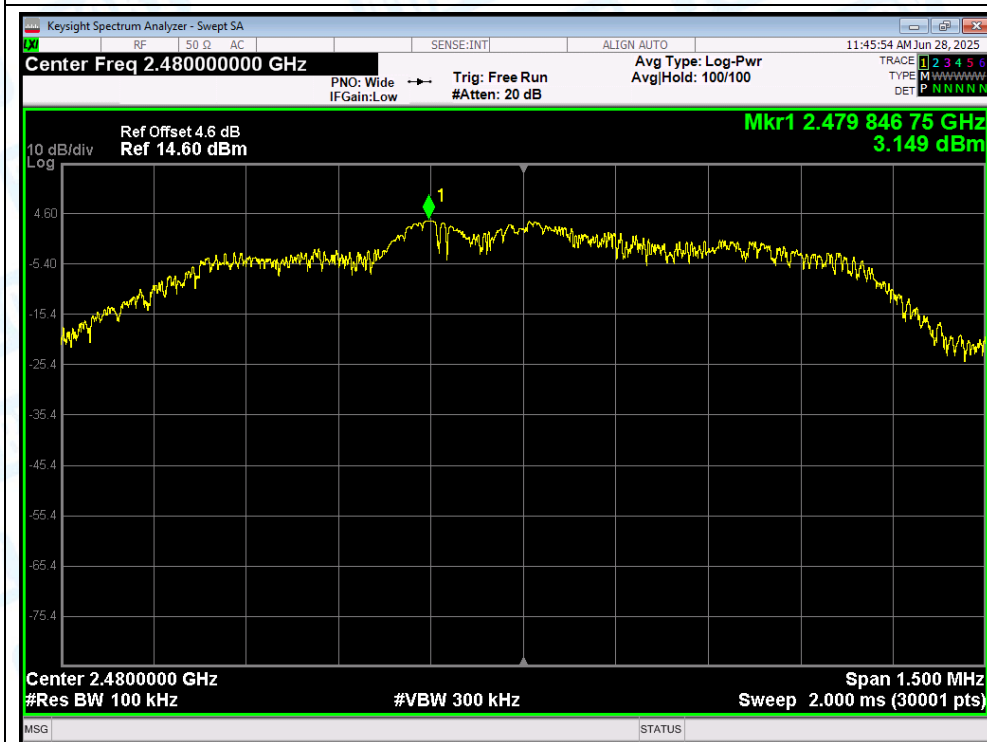
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



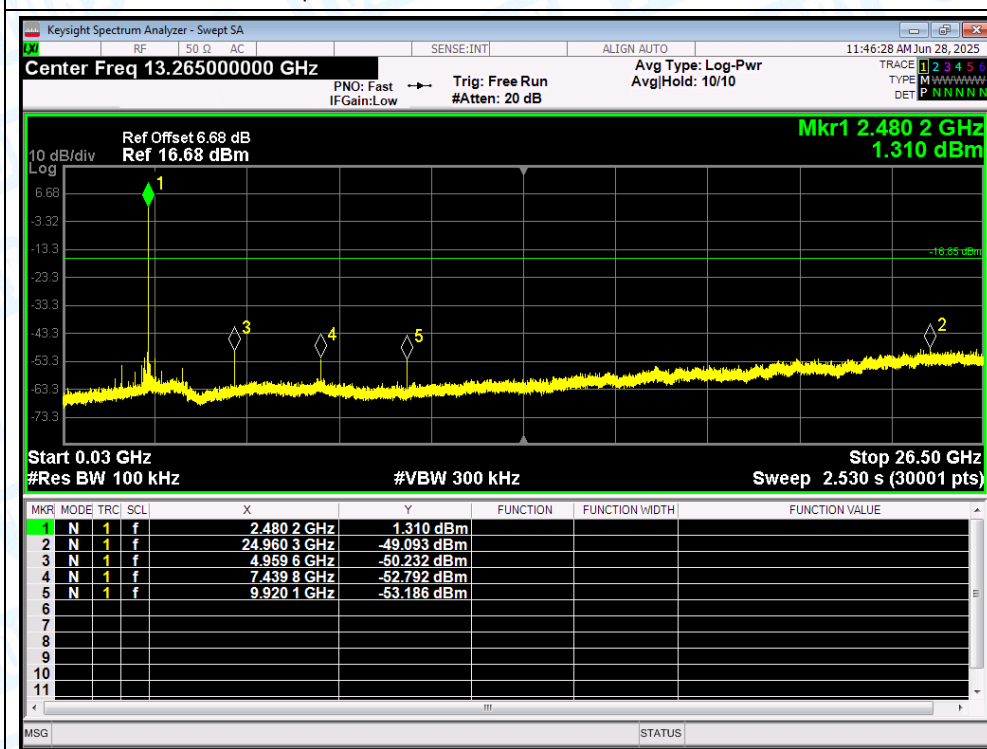
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



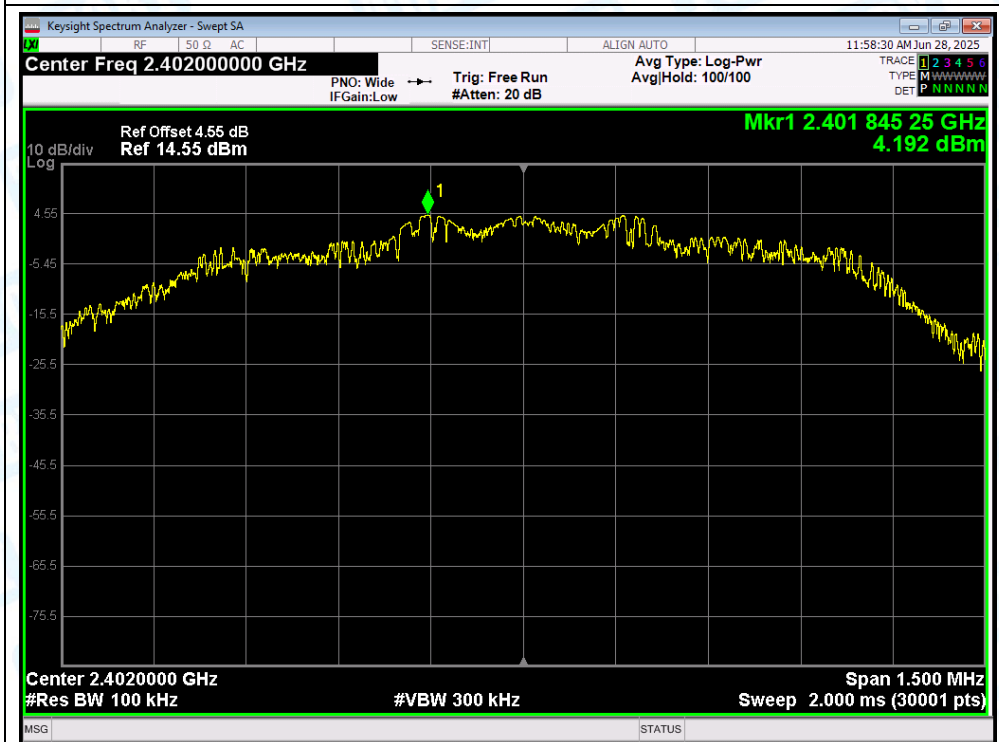
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



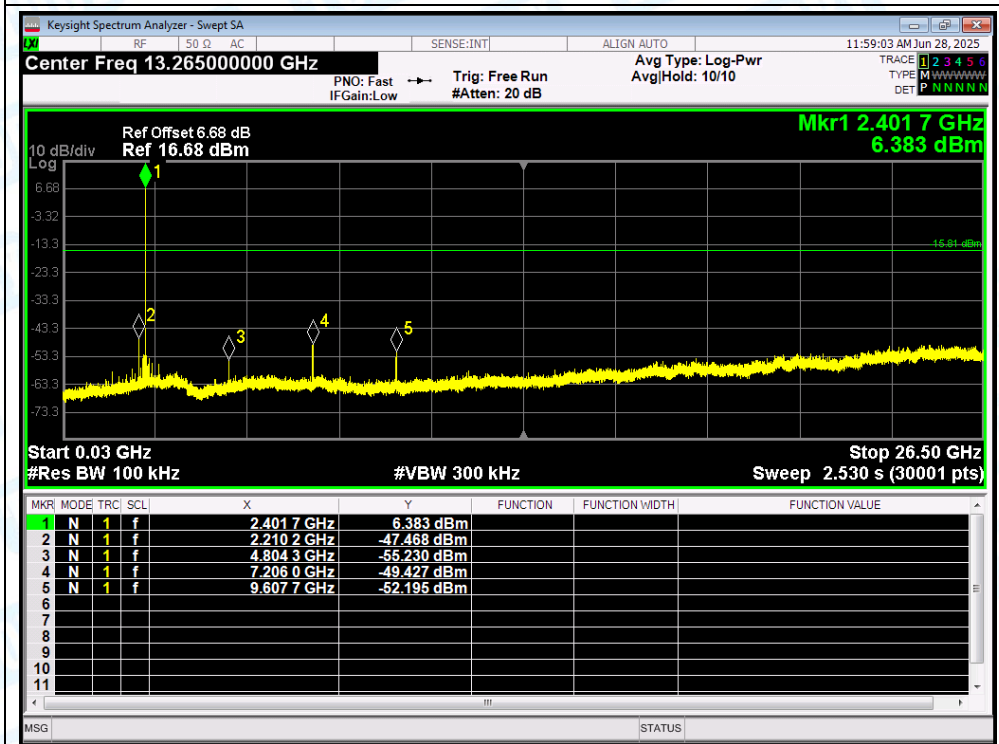
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



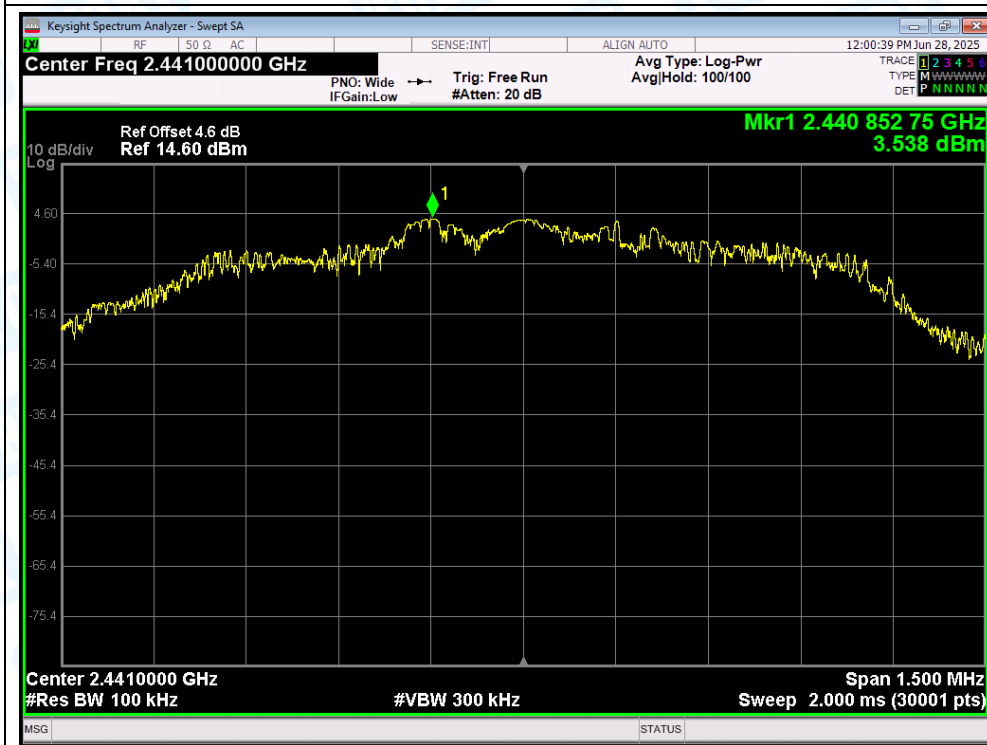
Tx. Spurious NVNT 3-DH1 2402MHzAnt1 Ref



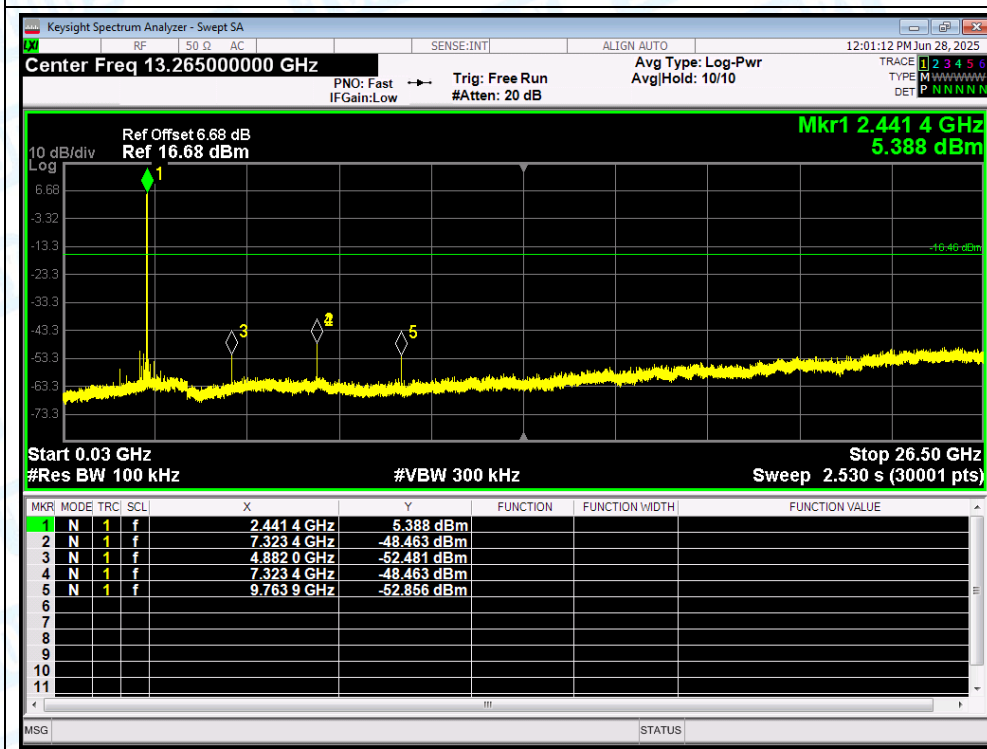
Tx. Spurious NVNT 3-DH1 2402MHzAnt1 Emission



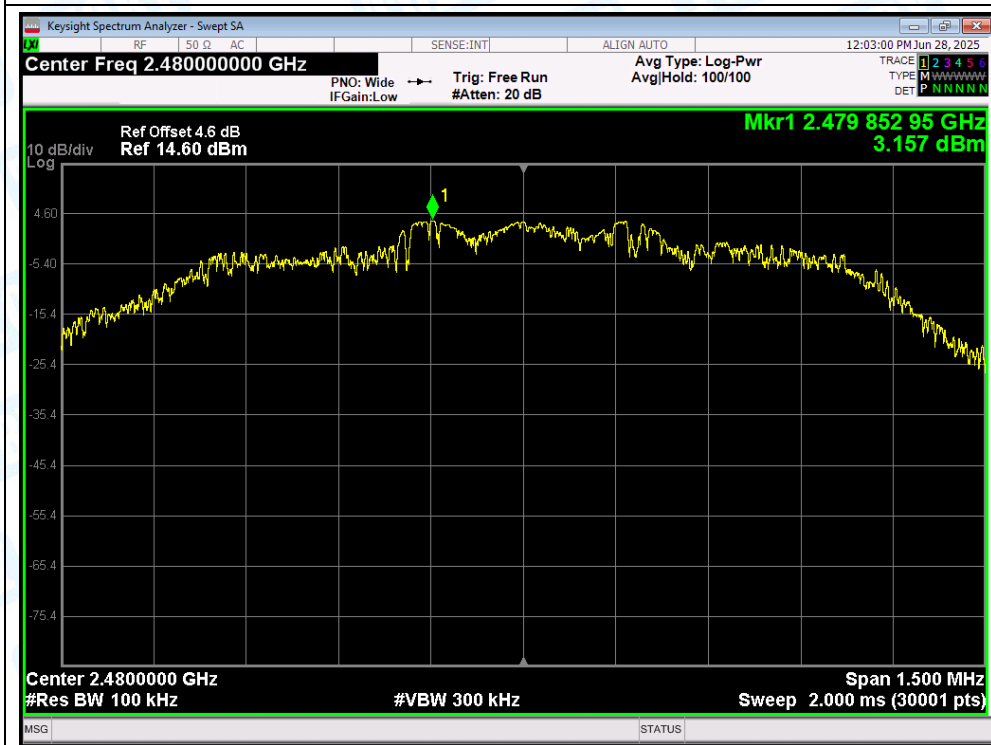
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



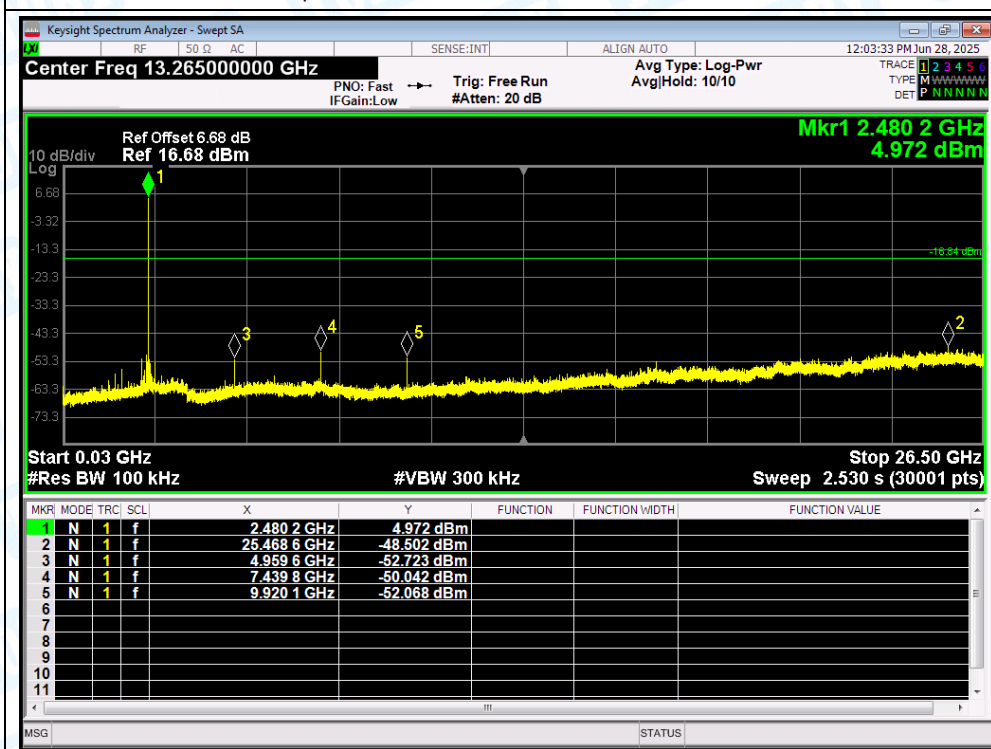
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

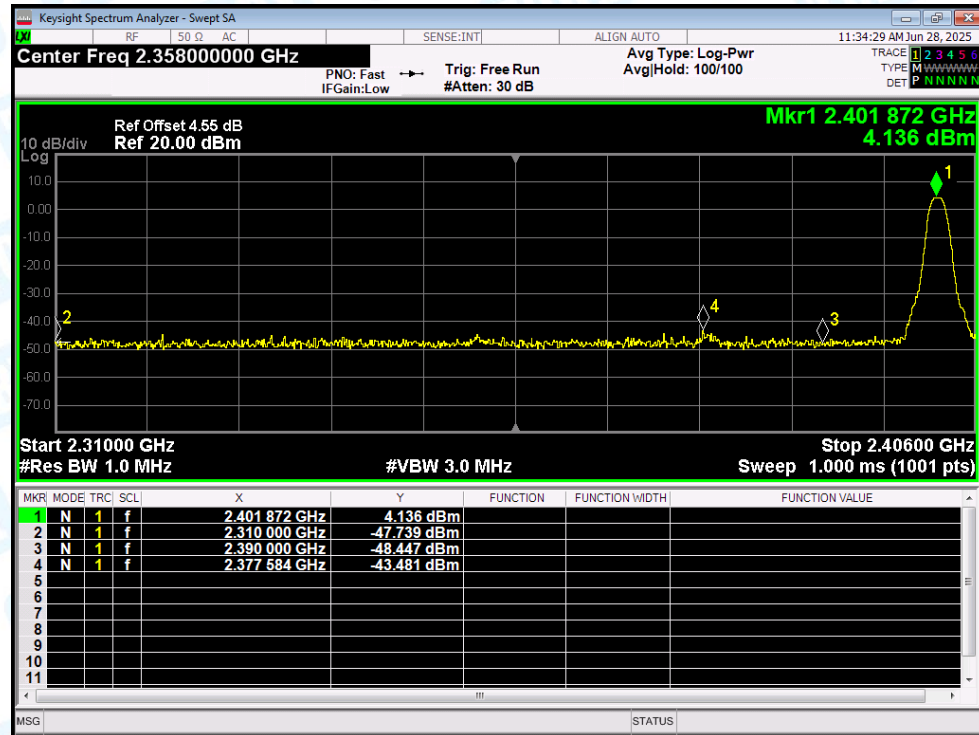


8.Restrict Band

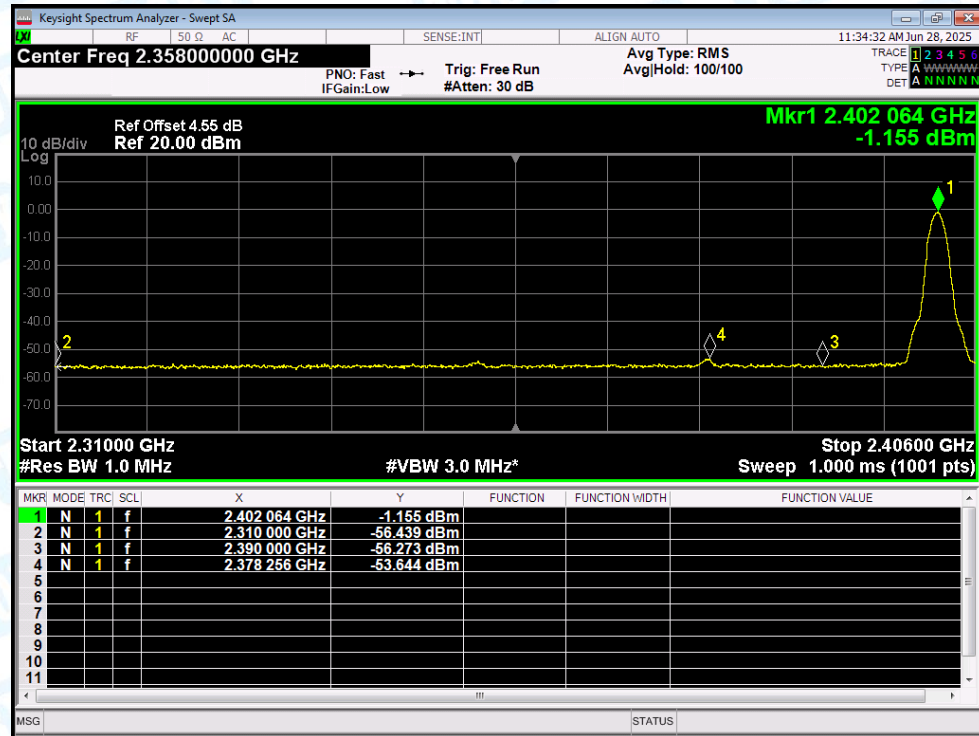
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-47.74	2	-	49.52	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.44	2	5.17	45.99	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2377.584	-43.48	2	-	53.78	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2378.256	-53.64	2	5.17	48.79	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-48.45	2	-	48.81	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-56.27	2	5.17	46.16	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-47.34	2	-	49.92	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-54.55	2	5.17	47.88	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.56	-43.77	2	-	53.49	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.512	-54.55	2	5.17	47.88	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-46.46	2	-	50.8	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-55.18	2	5.17	47.25	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-48.33	2	-	48.93	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-55.53	2	4.95	46.68	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2377.872	-43.52	2	-	53.74	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2377.872	-53.71	2	4.95	48.5	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-46.69	2	-	50.57	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-56.55	2	4.95	45.66	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-47.59	2	-	49.67	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-54.59	2	4.95	47.62	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2488.912	-44.51	2	-	52.75	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.512	-54.59	2	4.95	47.62	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-47.68	2	-	49.58	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-54.83	2	4.95	47.38	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-48.05	2	-	49.21	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.58	2	4.95	45.63	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2378.256	-44.12	2	-	53.14	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2378.256	-54.25	2	4.95	47.96	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-48.16	2	-	49.1	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-55.72	2	4.95	46.49	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-47.92	2	-	49.34	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-55.1	2	4.95	47.11	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2497.216	-44.94	2	-	52.32	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2499.904	-54.45	2	4.95	47.76	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-48.17	2	-	49.09	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.48	2	4.95	46.73	Average	54	Pass

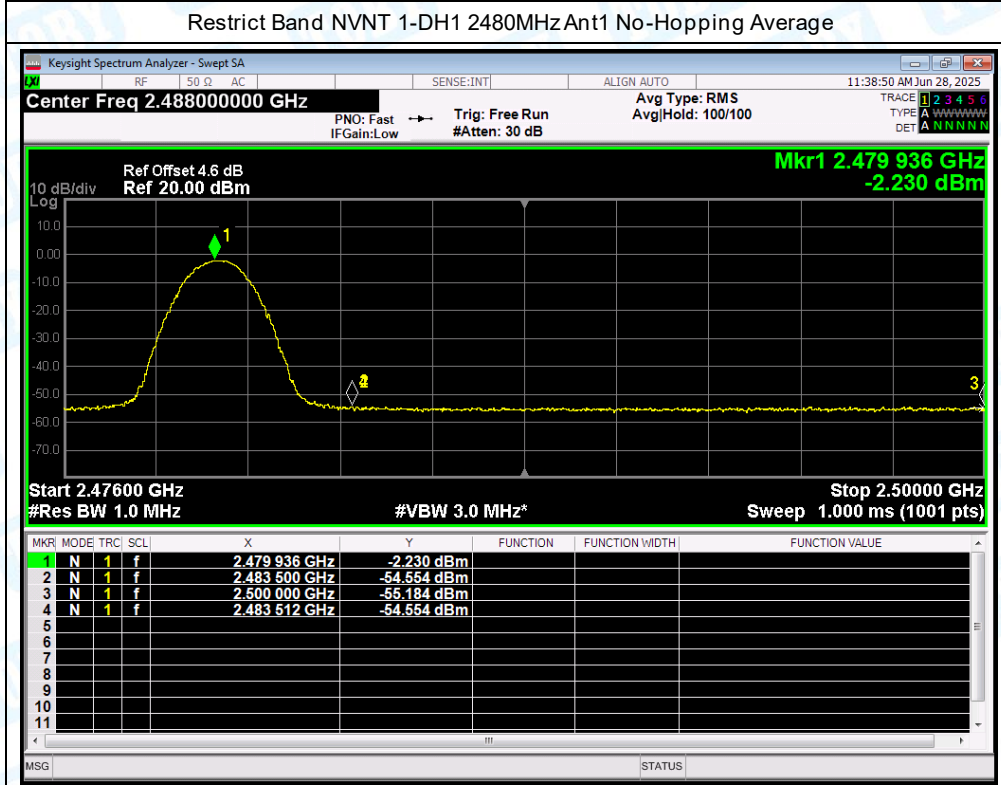
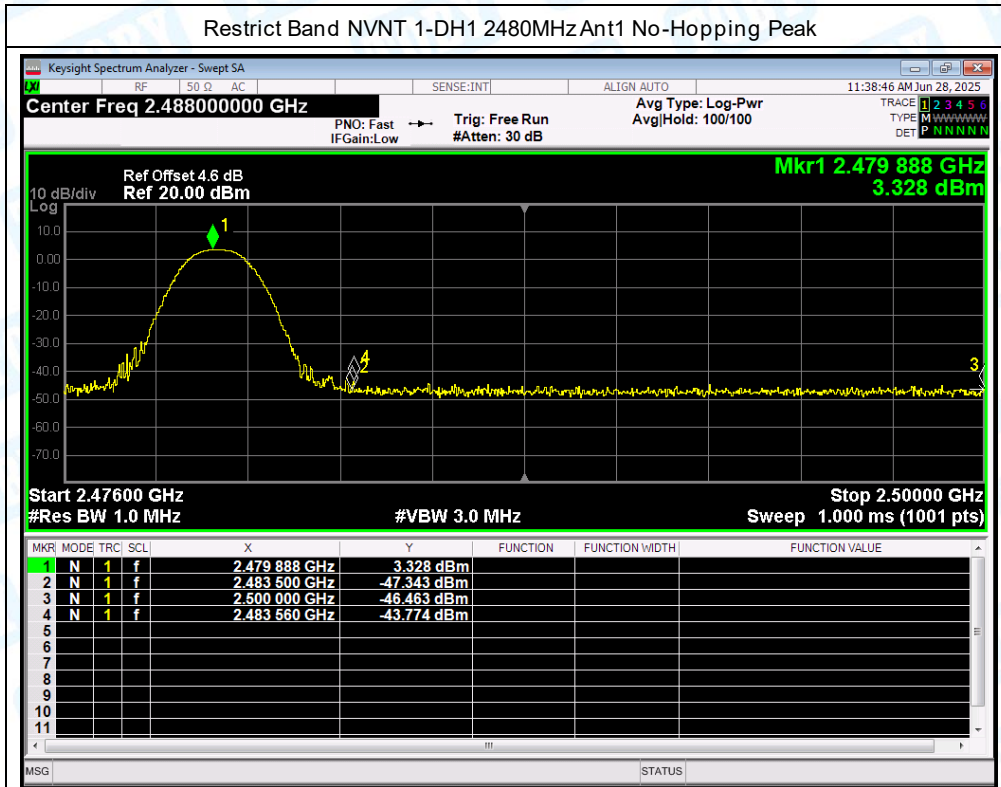
Test Graphs

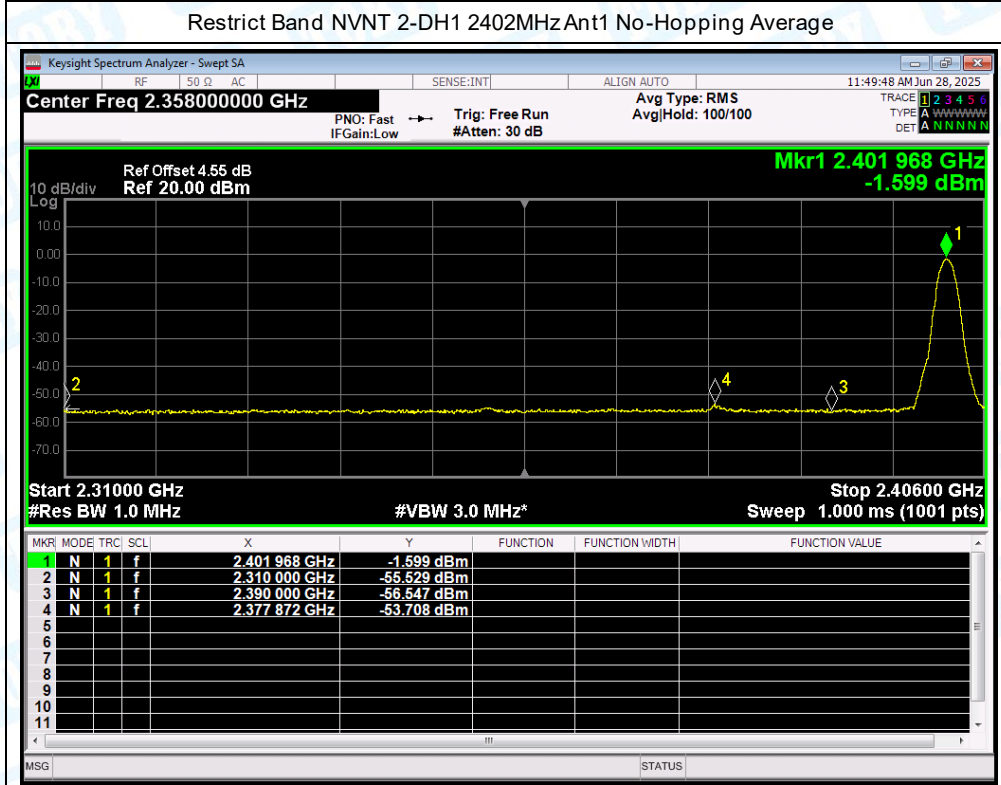
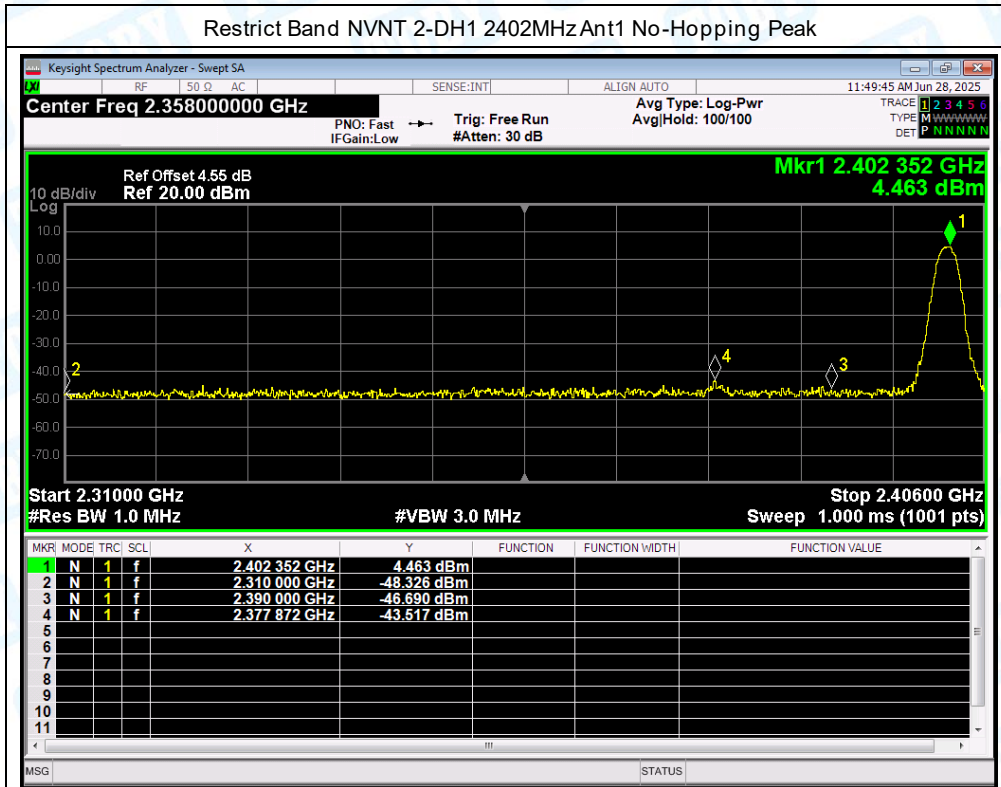
Restrict Band NVNT 1-DH1 2402MHzAnt1 No-Hopping Peak

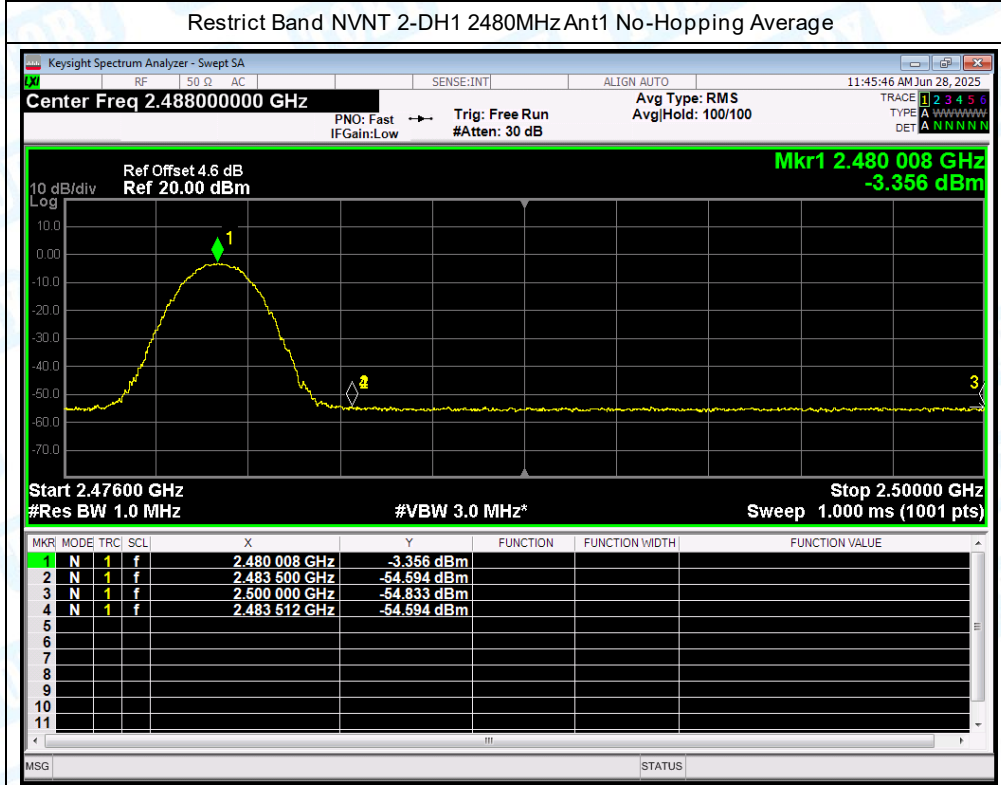
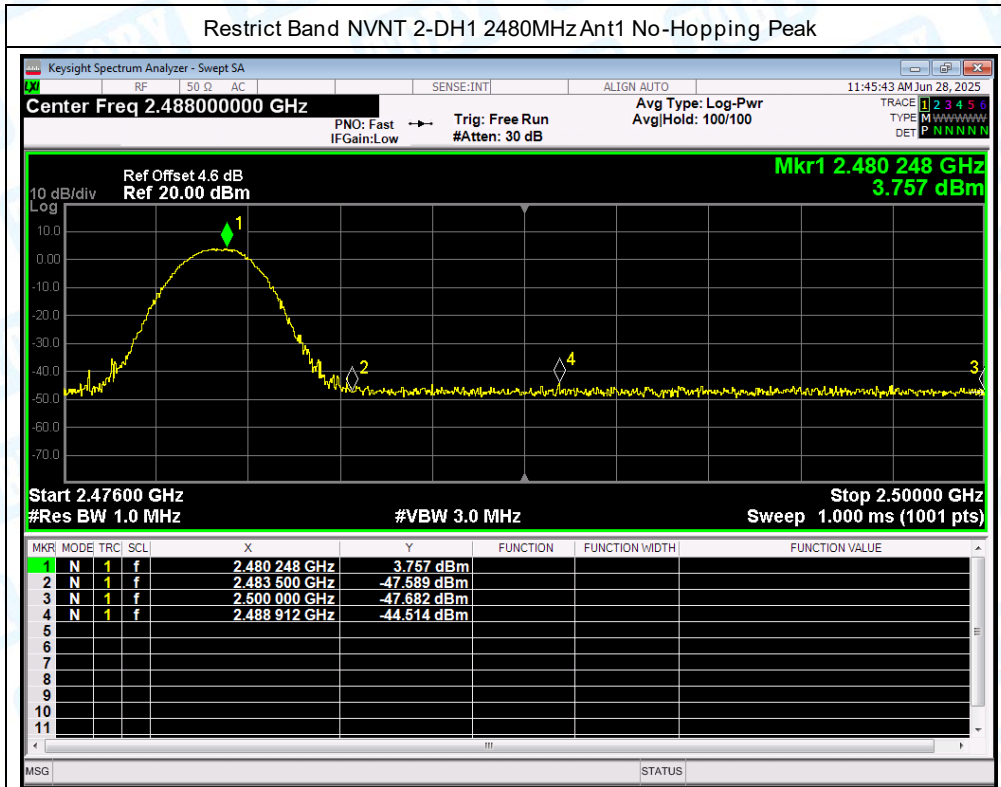


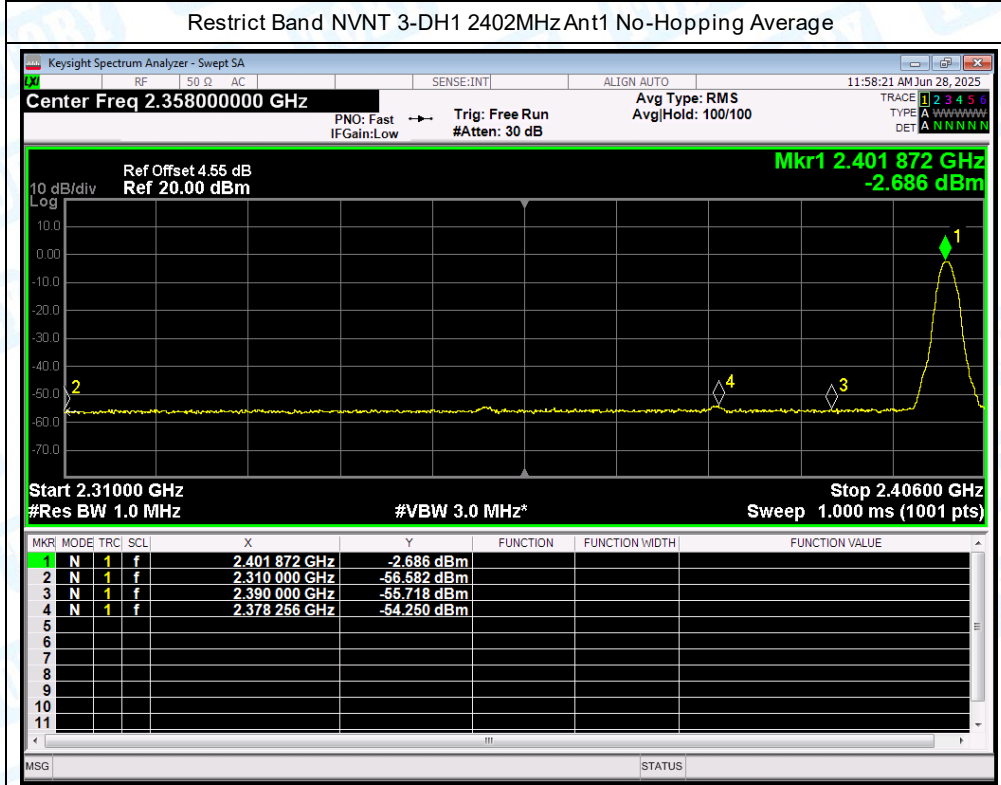
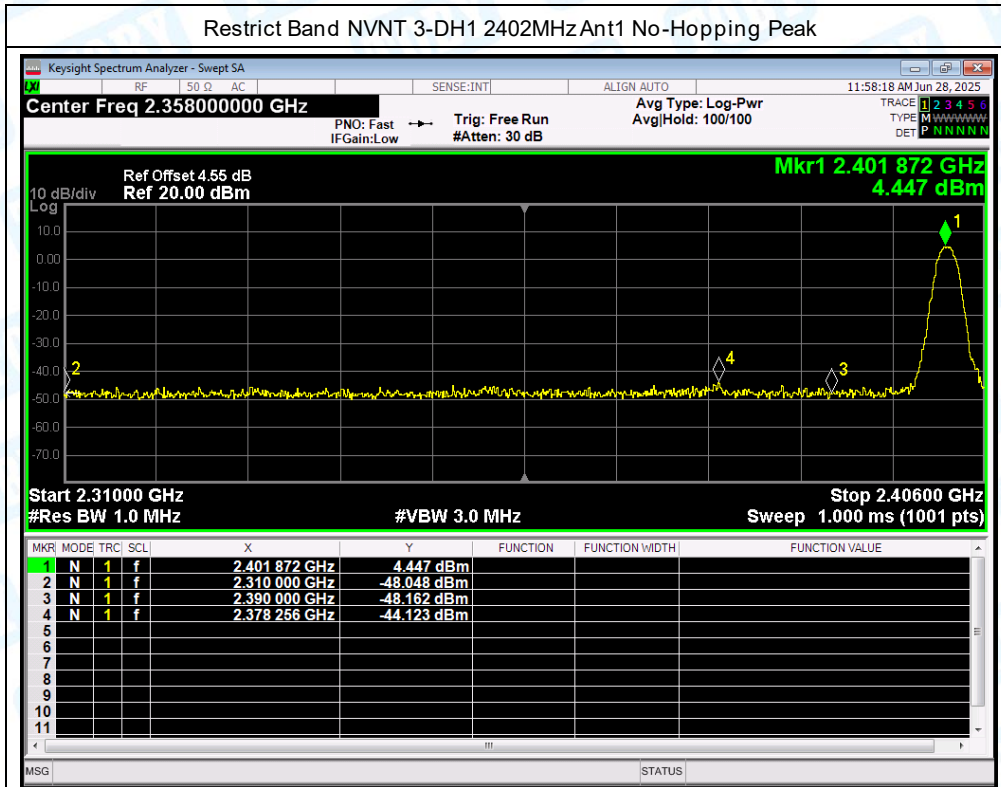
Restrict Band NVNT 1-DH1 2402MHzAnt1 No-Hopping Average

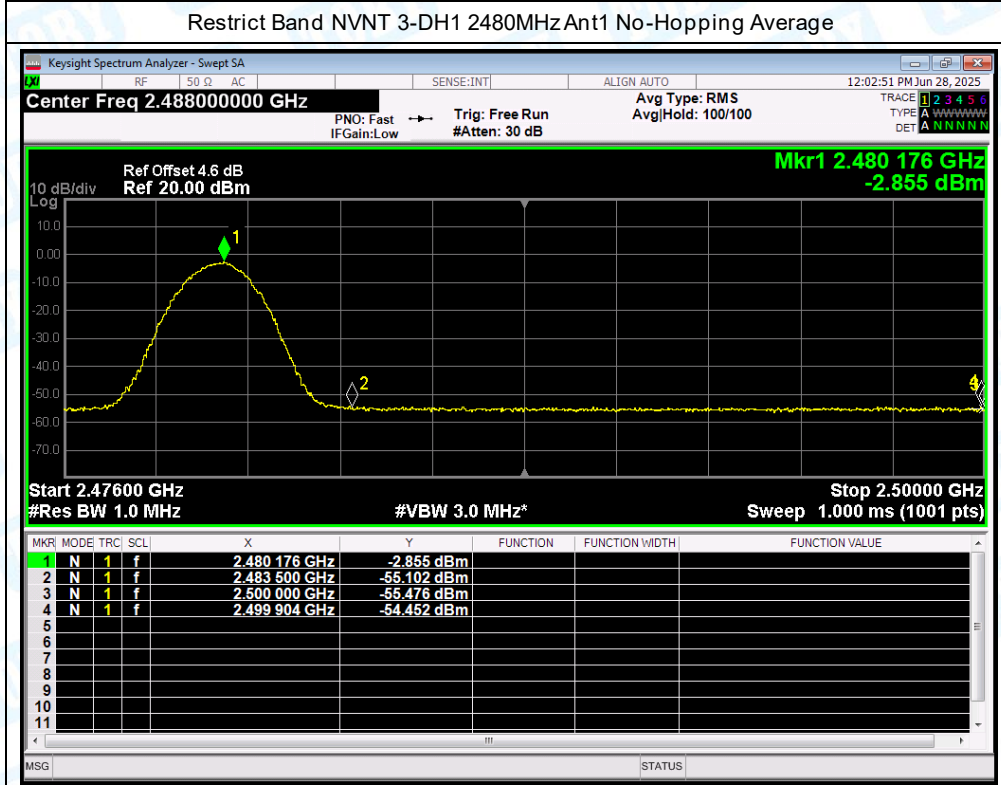
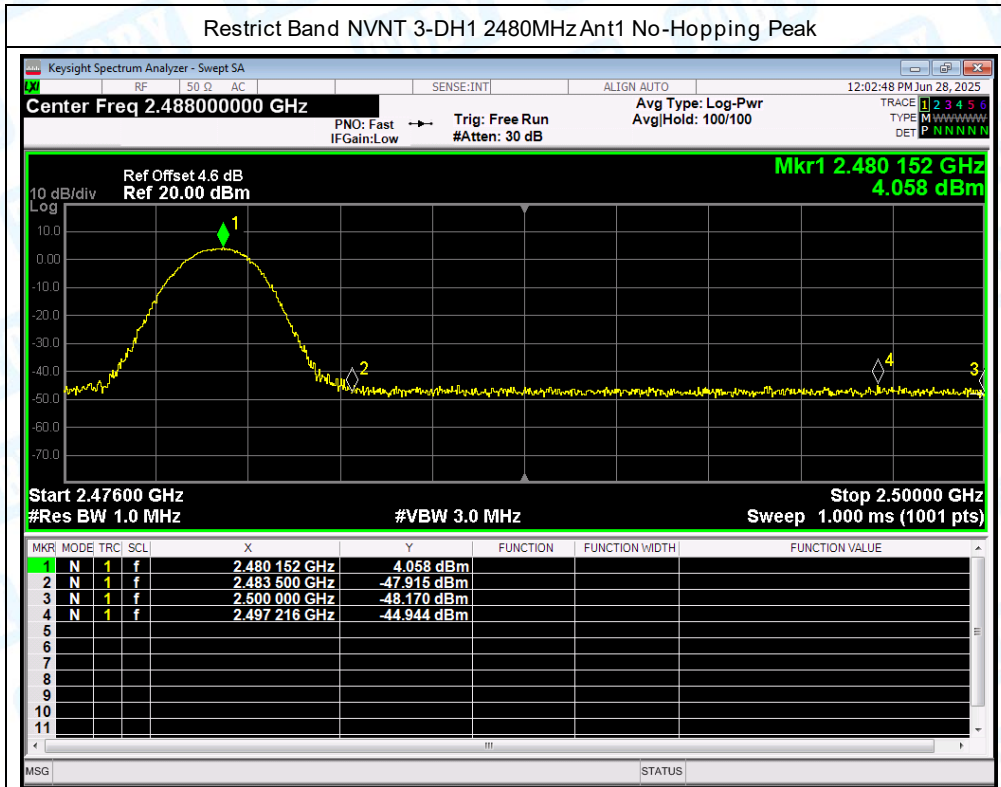










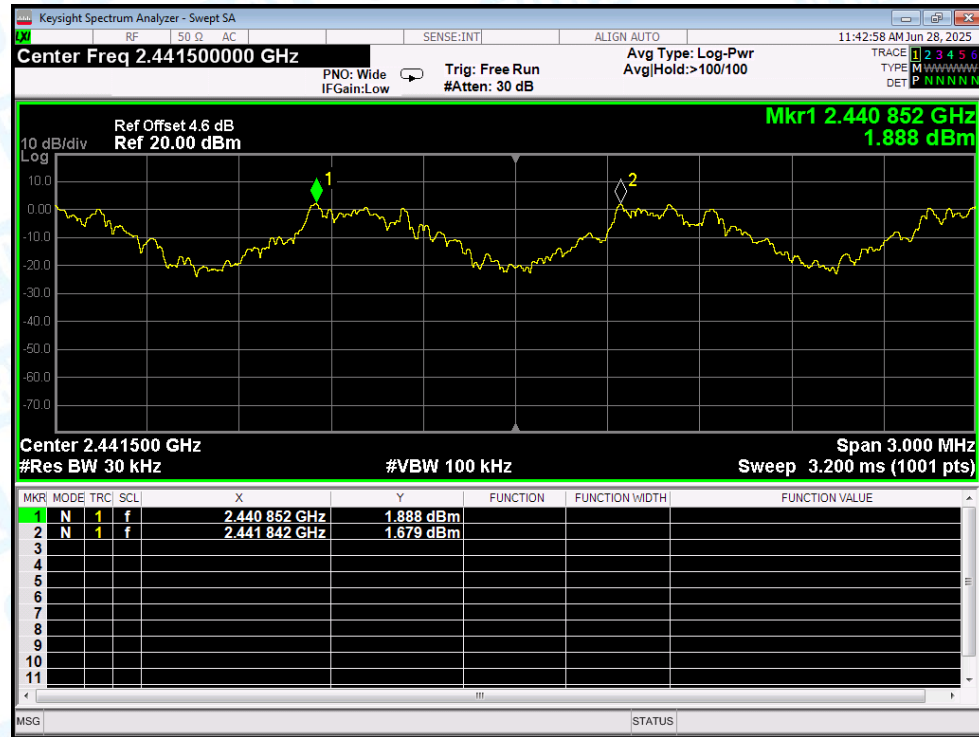


9. Carrier Frequencies Separation

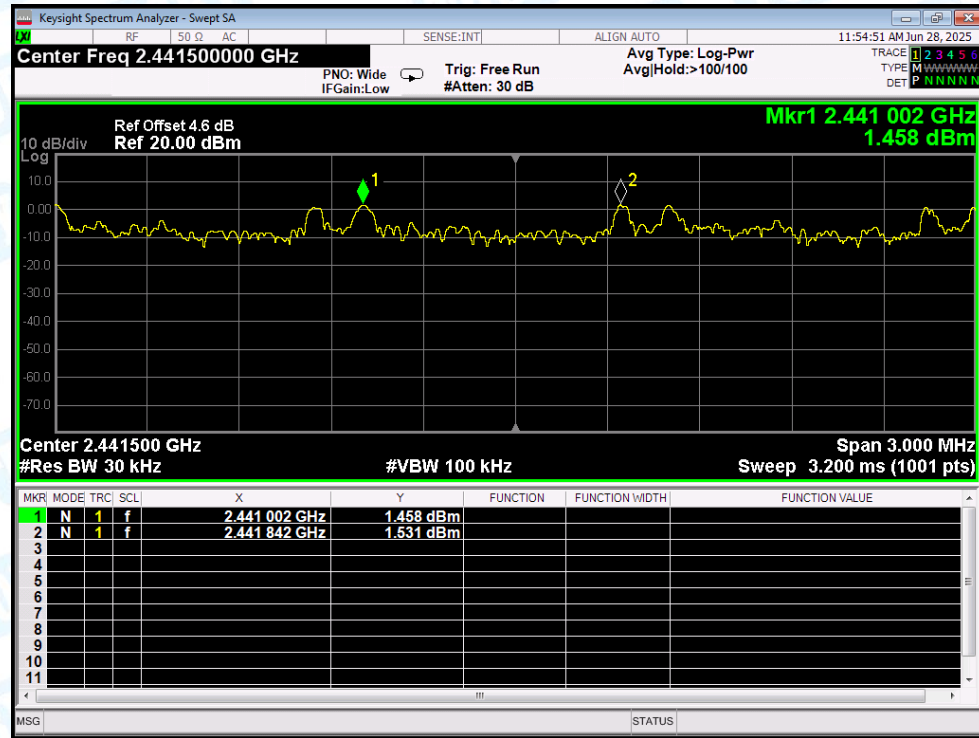
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.852	2441.842	0.99	0.613	Pass
NVNT	2-DH1	Ant1	2441.002	2441.842	0.84	0.82	Pass
NVNT	3-DH1	Ant1	2440.843	2442.004	1.161	0.867	Pass

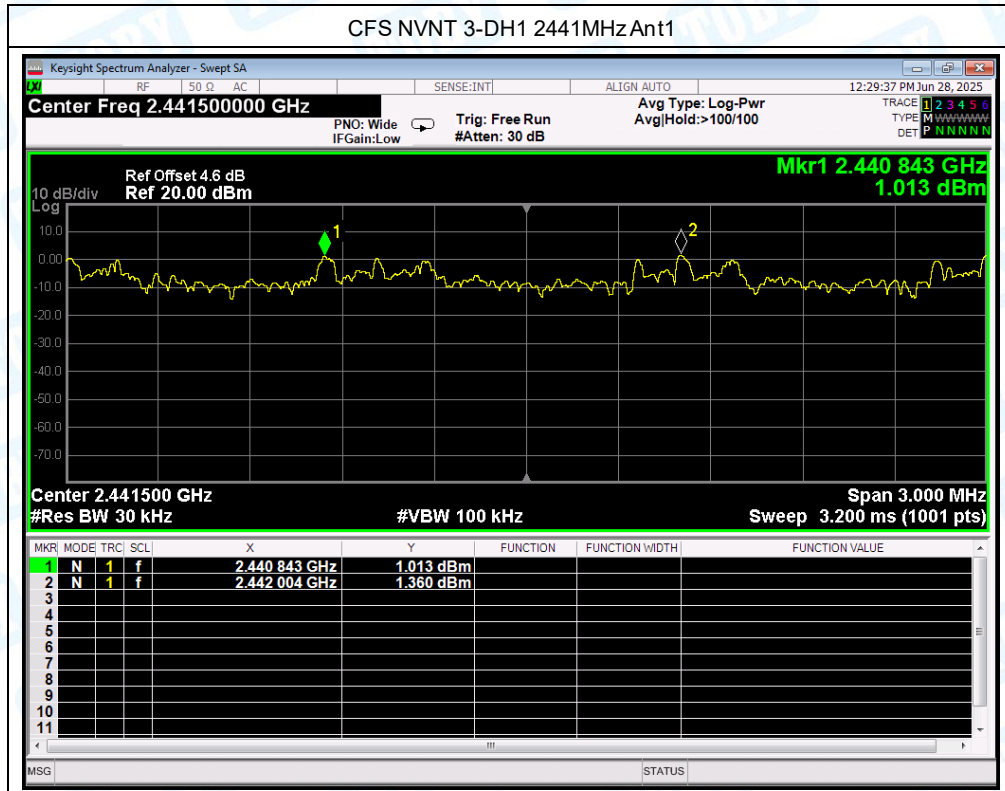
Test Graphs

CFS NVNT 1-DH1 2441MHzAnt1



CFS NVNT 2-DH1 2441MHzAnt1



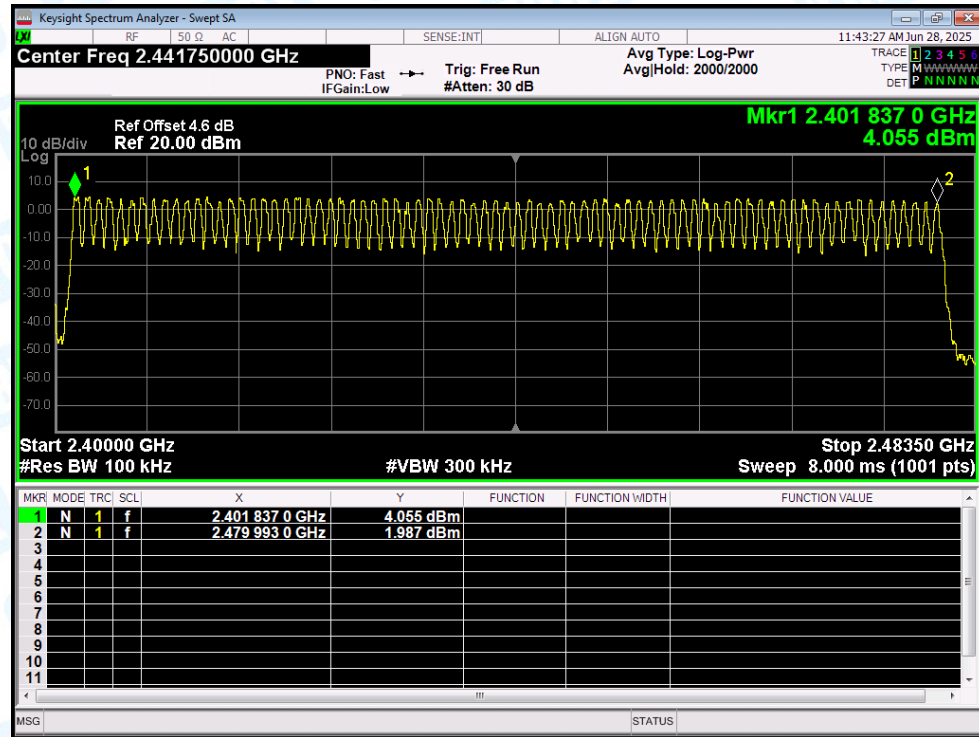


10.Number of Hopping Channel

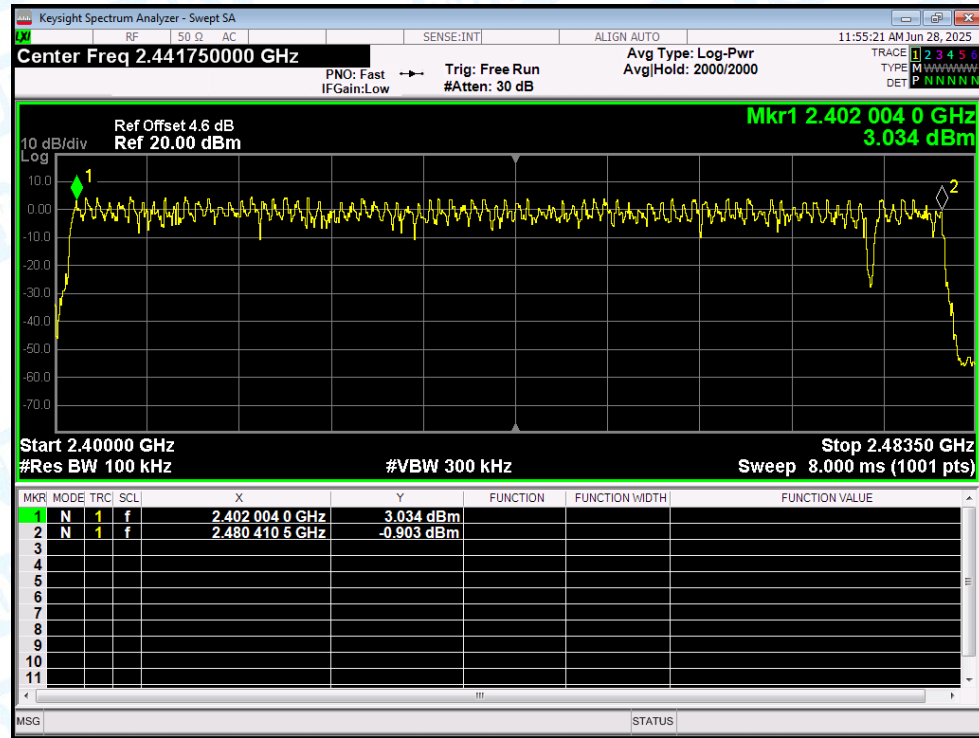
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

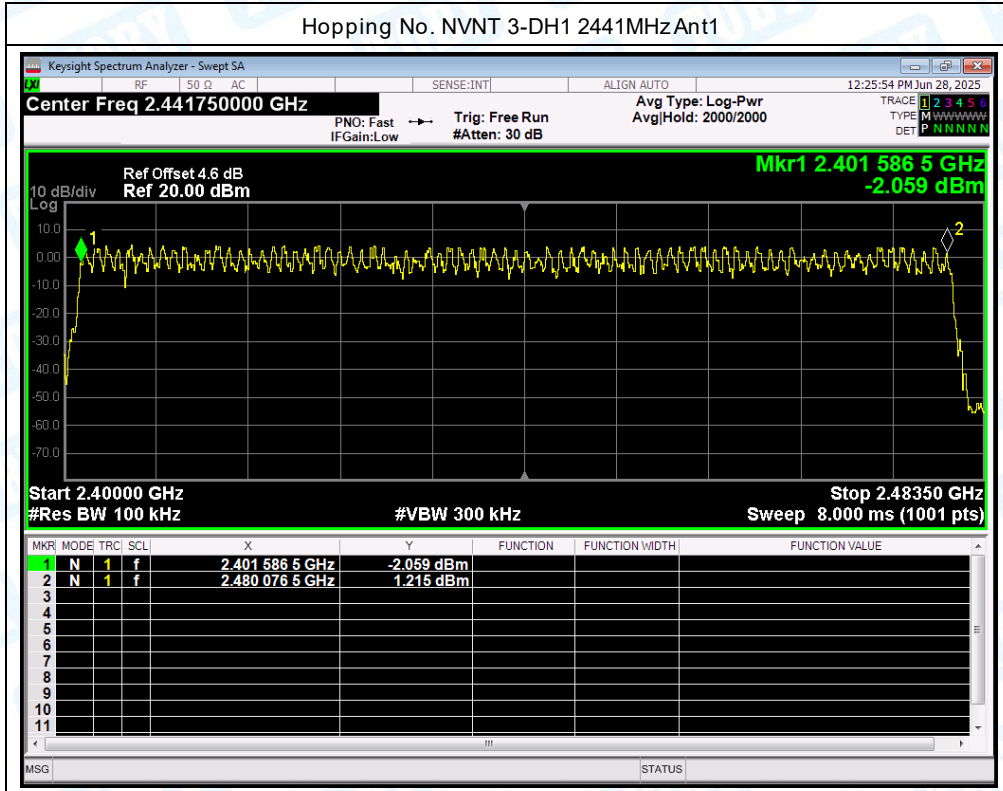
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



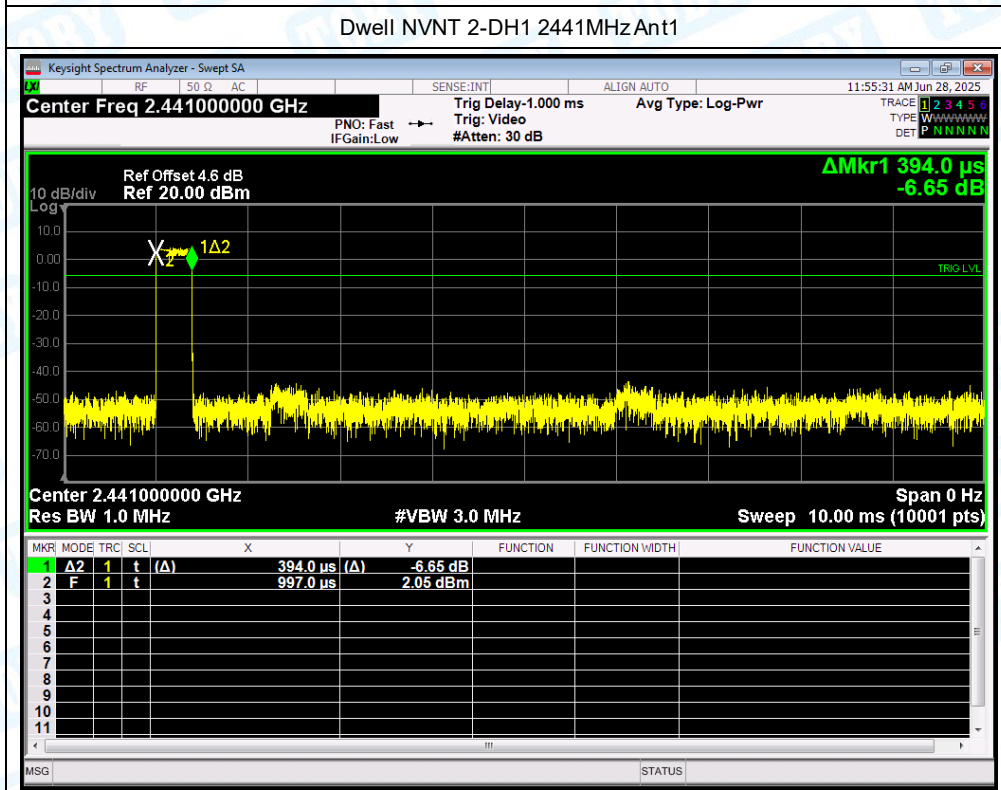
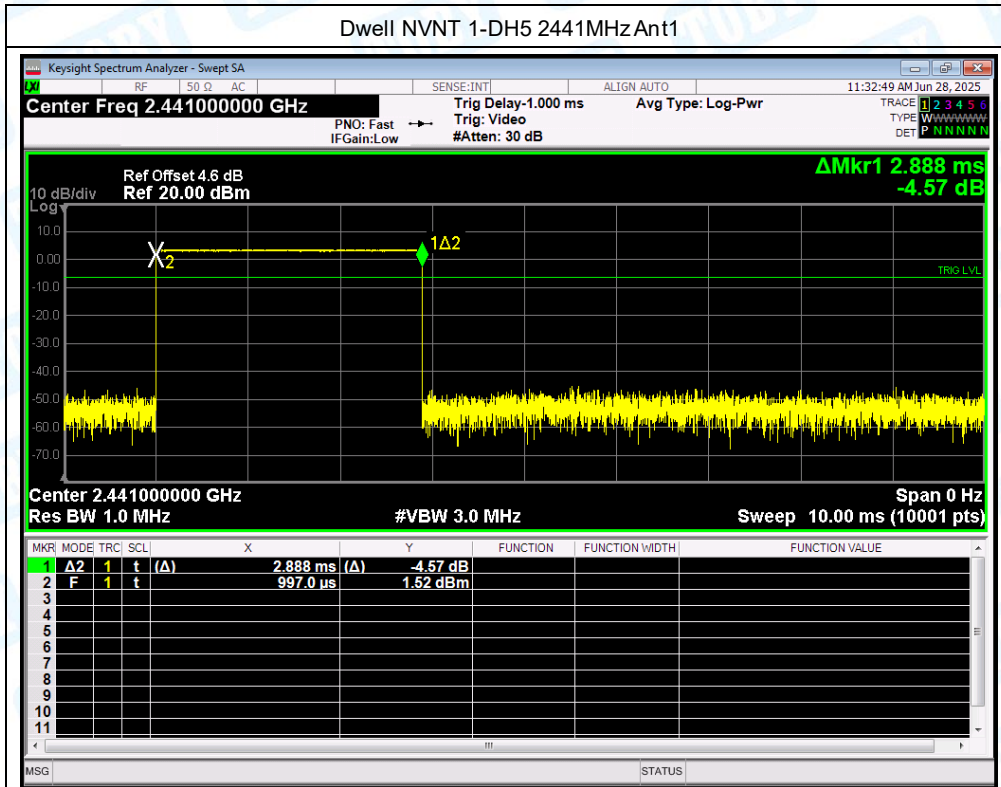
Hopping No. NVNT 2-DH1 2441MHz Ant1



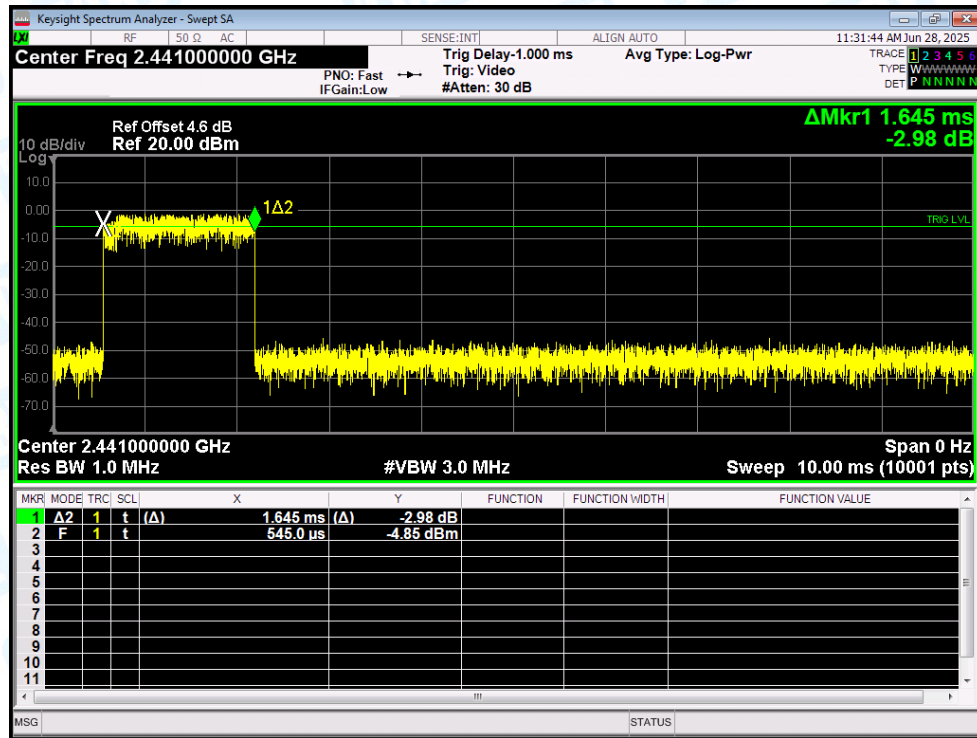


11.Dwell Time

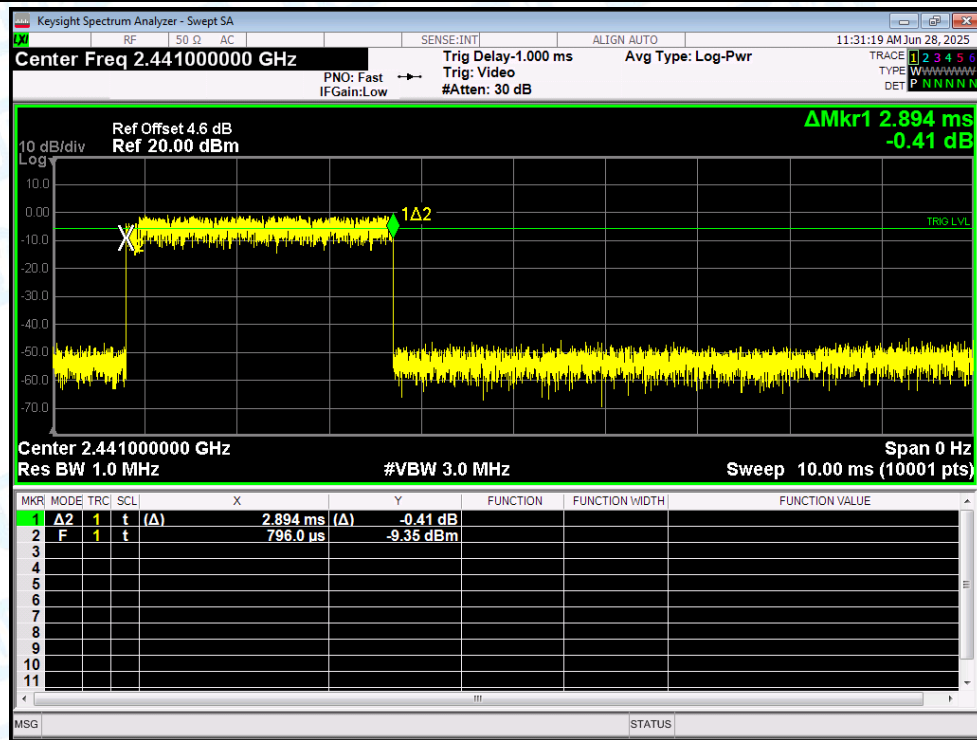
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.384	122.88	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.64	262.4	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.888	308.053	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.394	126.08	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.645	263.2	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.894	308.693	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.394	126.08	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.644	263.04	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.895	308.8	31600	400	Pass

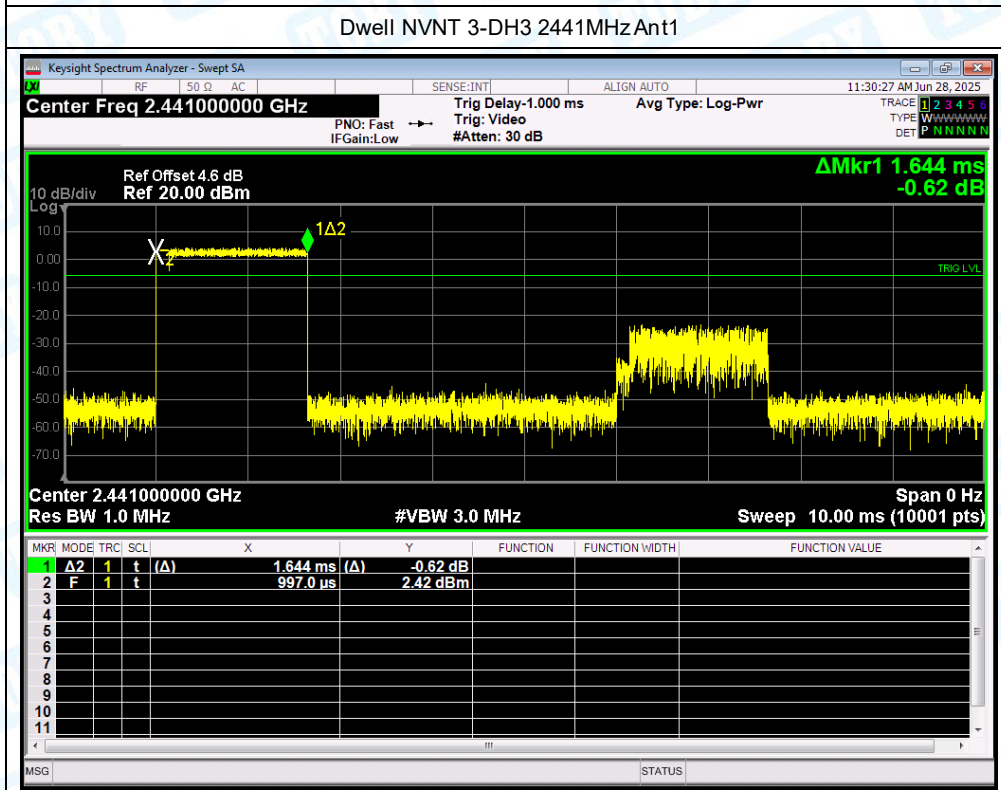
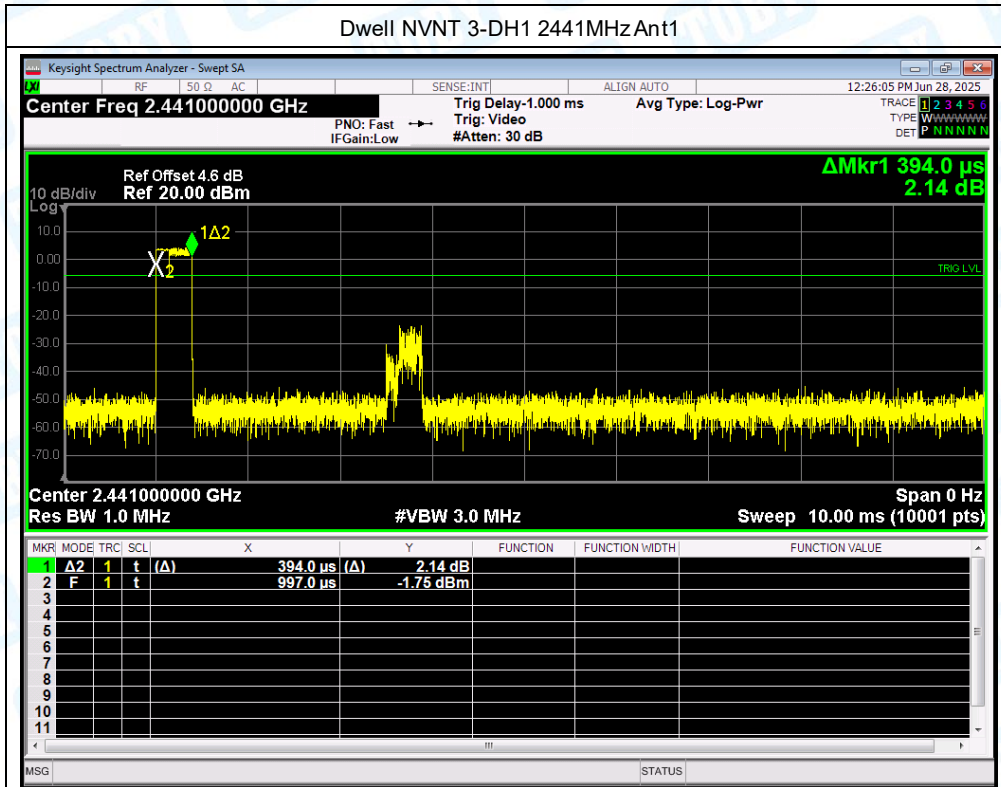


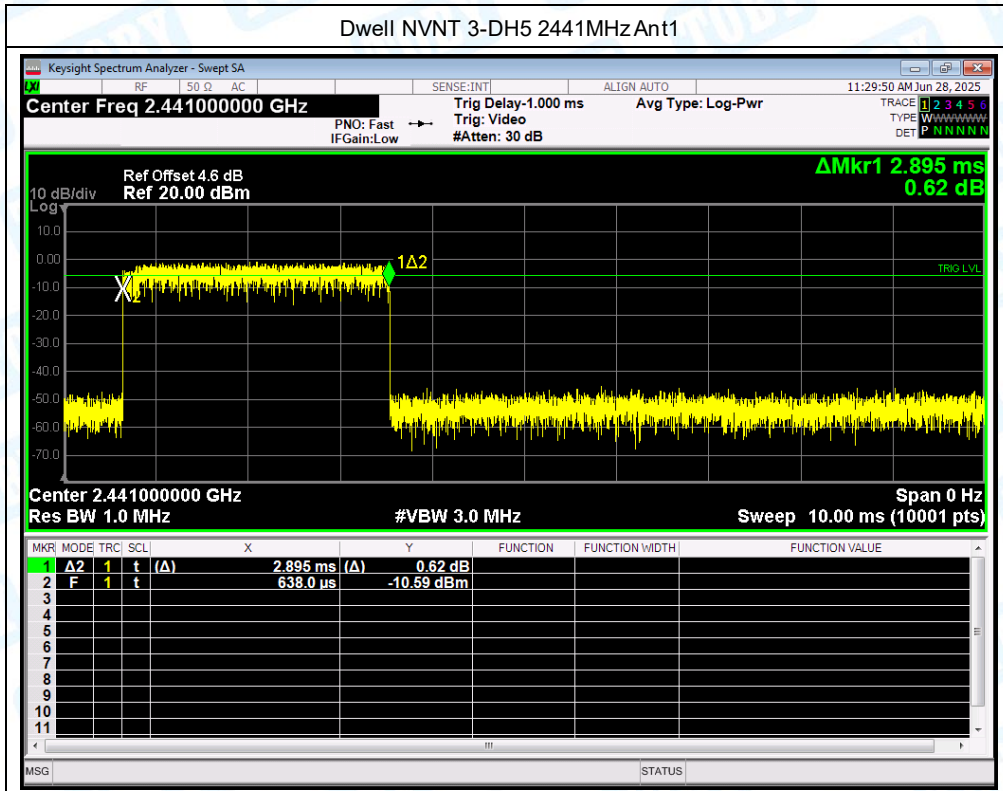
Dwell NVNT 2-DH3 2441MHz Ant1



Dwell NVNT 2-DH5 2441MHz Ant1







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