

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)	

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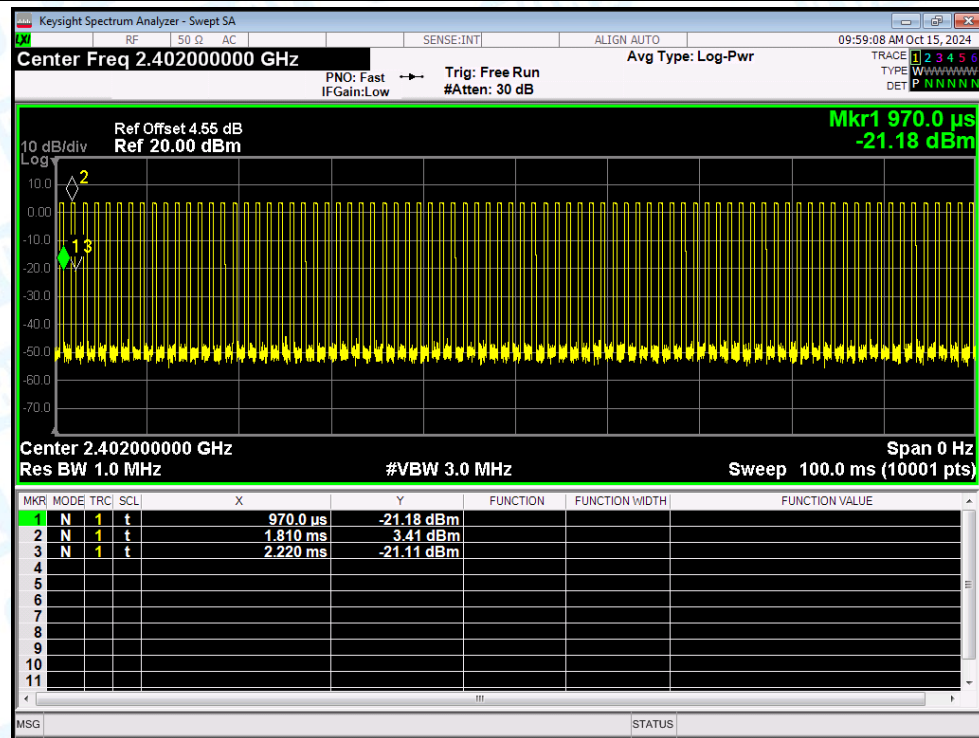
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1.Duty Cycle

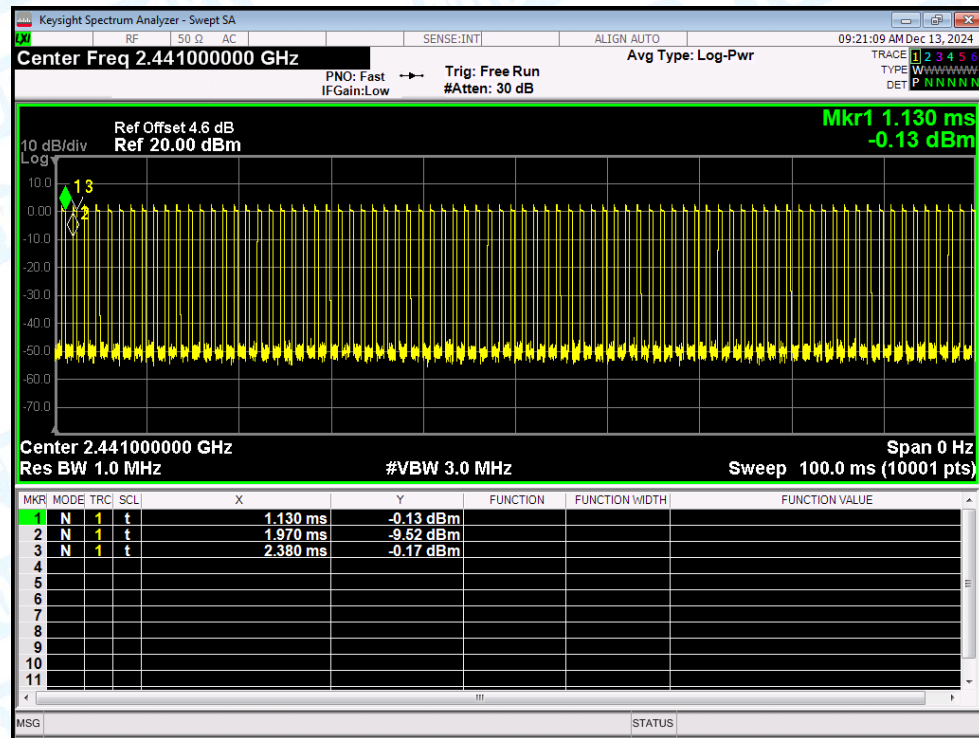
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	32.8	4.84	2.44
NVNT	1-DH1	2441	Ant1	32.8	4.84	2.44
NVNT	1-DH1	2480	Ant1	32.8	4.84	2.44
NVNT	2-DH1	2402	Ant1	33.6	4.74	2.38
NVNT	2-DH1	2441	Ant1	33.6	4.74	2.38
NVNT	2-DH1	2480	Ant1	33.6	4.74	2.38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

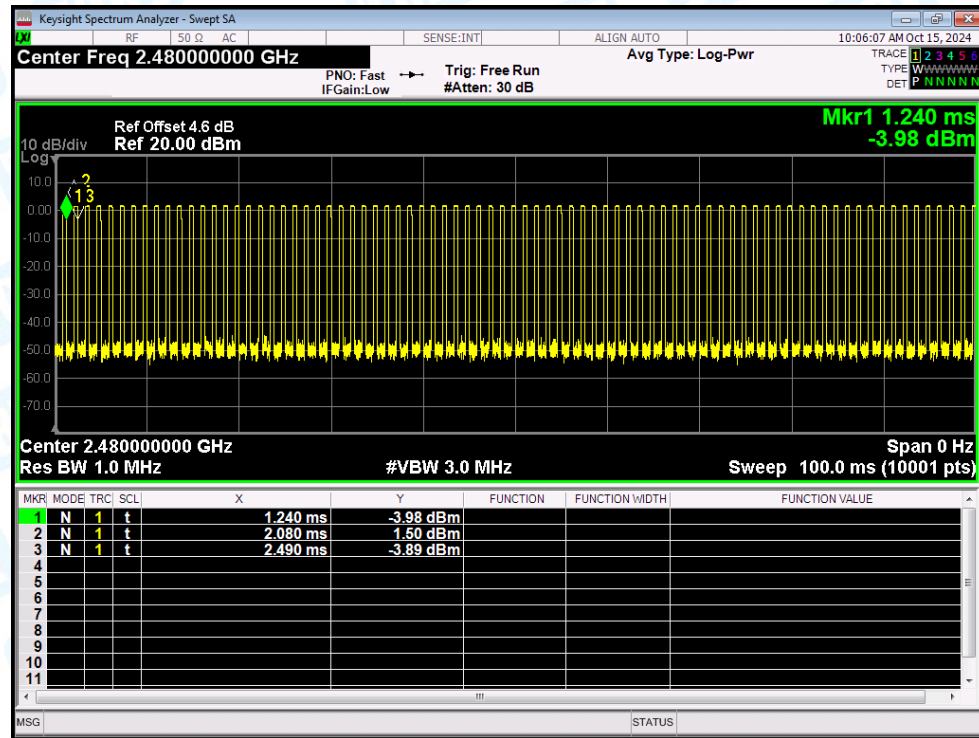
Duty Cycle NVNT 1-DH1 2402MHz Ant1



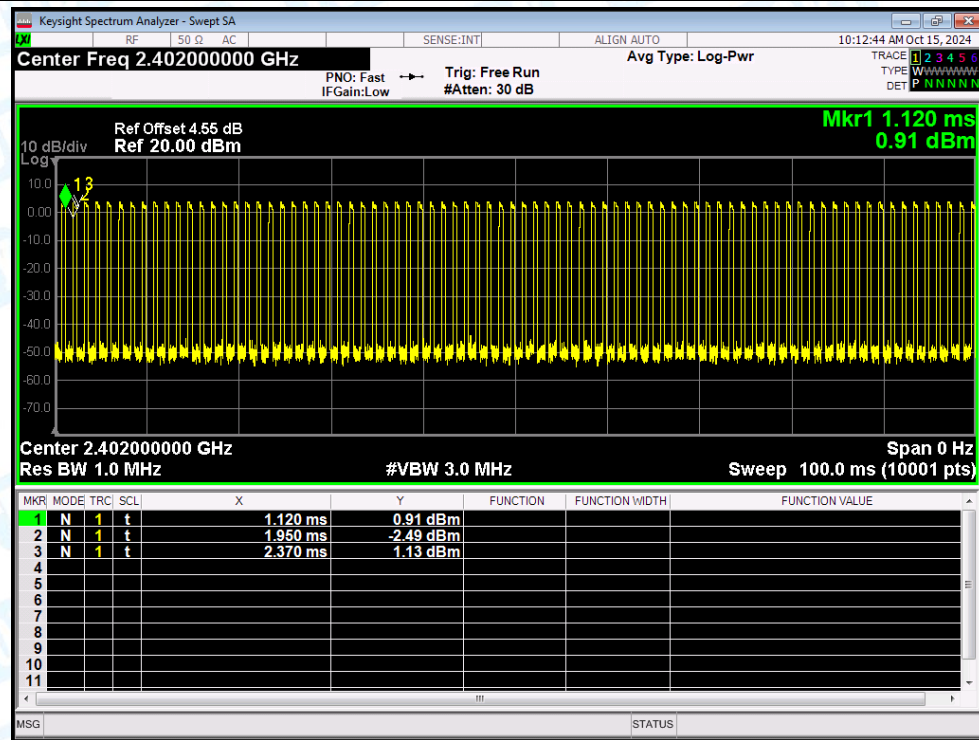
Duty Cycle NVNT 1-DH1 2441MHz Ant1



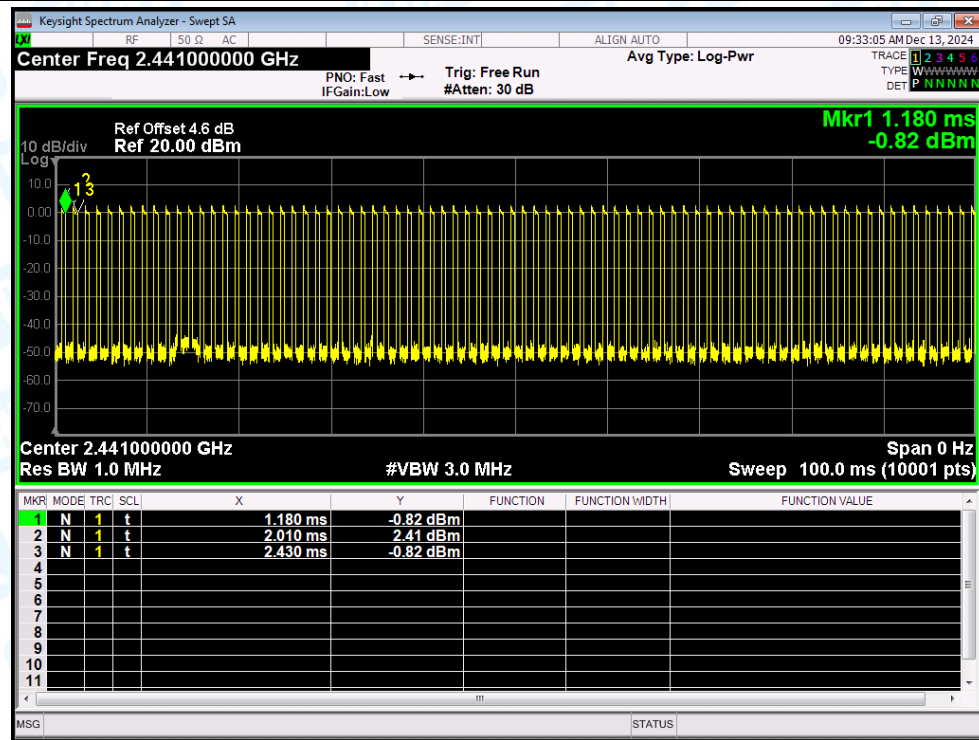
Duty Cycle NVNT 1-DH1 2480MHz Ant1



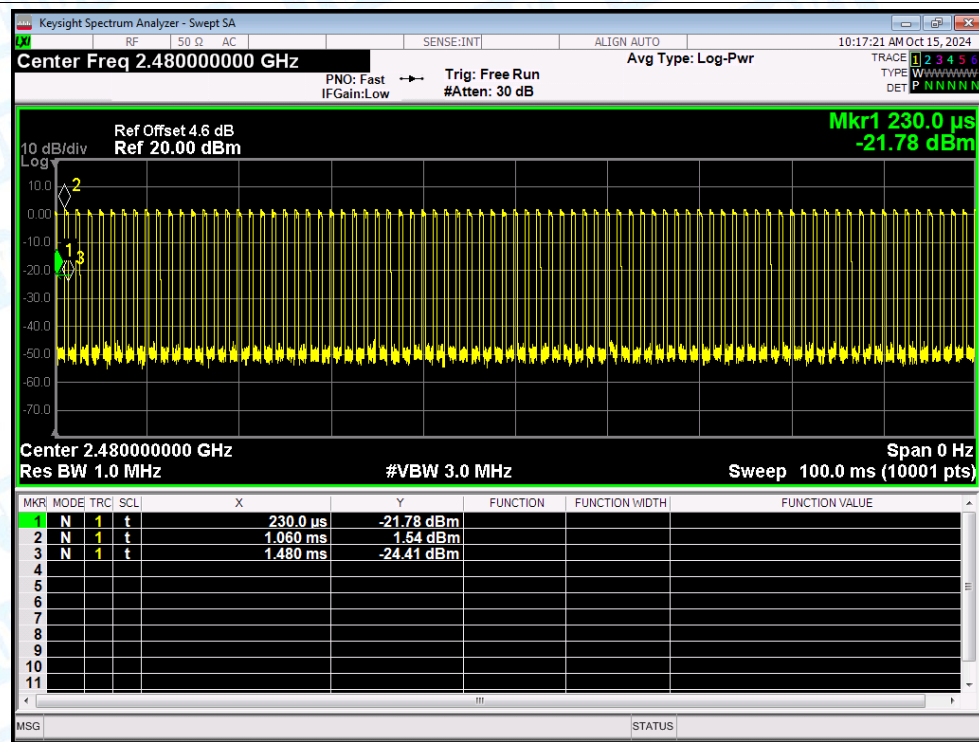
Duty Cycle NVNT 2-DH1 2402MHz Ant1



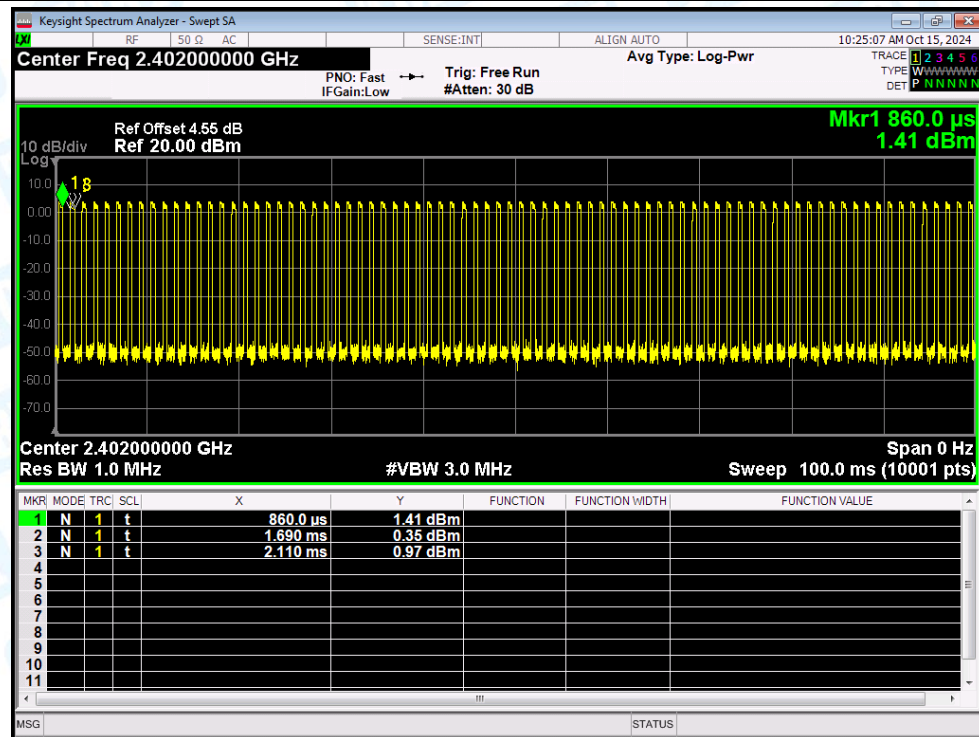
Duty Cycle NVNT 2-DH1 2441MHz Ant1



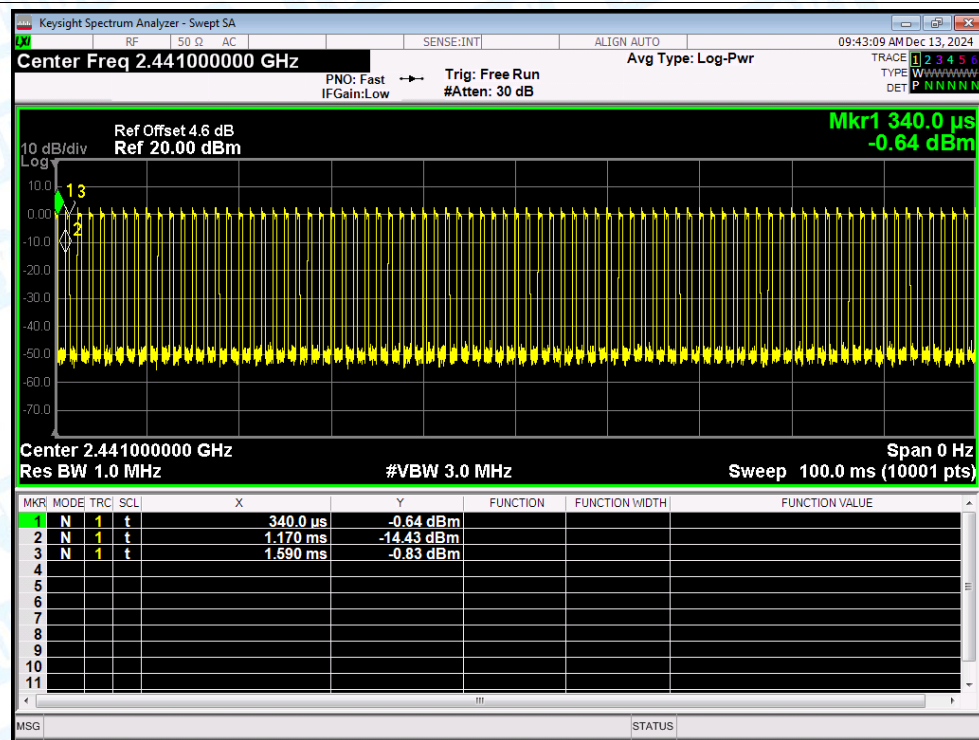
Duty Cycle NVNT 2-DH1 2480MHz Ant1

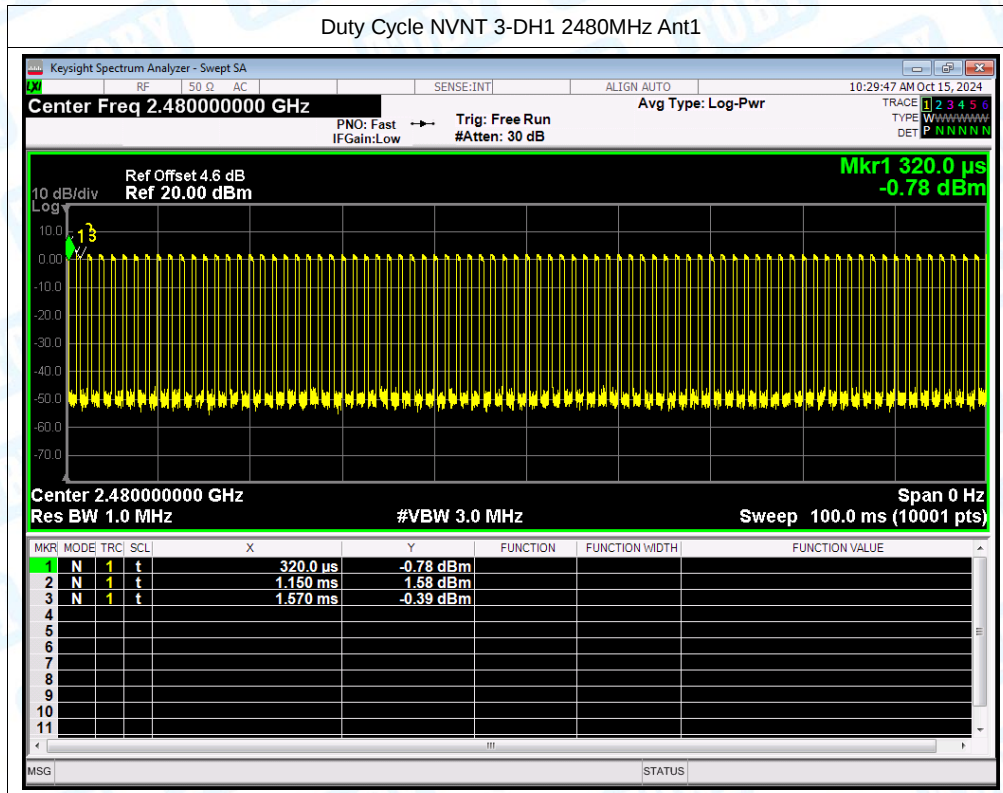


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



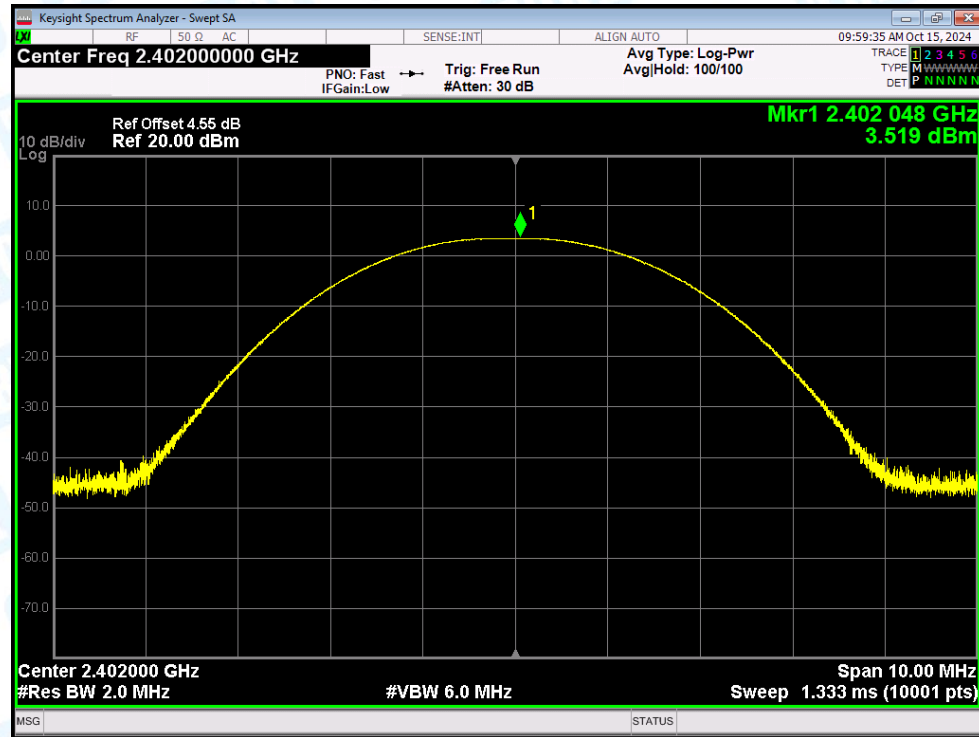


2. Maximum Conducted Output Power

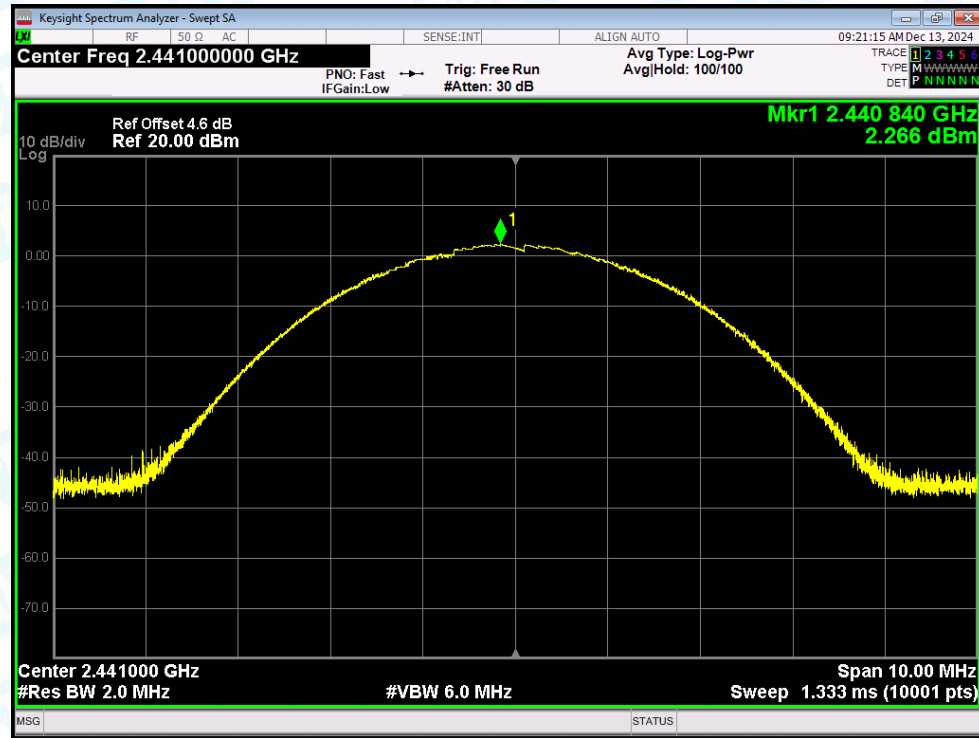
Left headphone						
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	3.519	21	Pass
NVNT	1-DH1	2441	Ant1	2.266	21	Pass
NVNT	1-DH1	2480	Ant1	1.667	21	Pass
NVNT	2-DH1	2402	Ant1	3.615	21	Pass
NVNT	2-DH1	2441	Ant1	2.356	21	Pass
NVNT	2-DH1	2480	Ant1	1.716	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

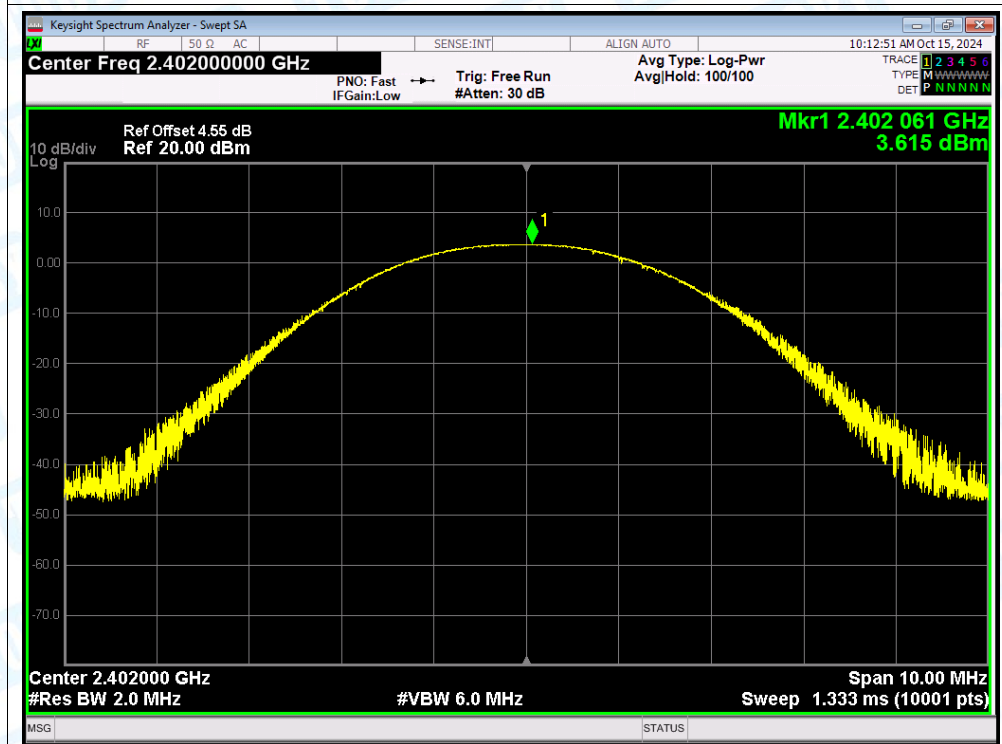
Test Graphs

Power NVNT 1-DH1 2402MHz Ant1

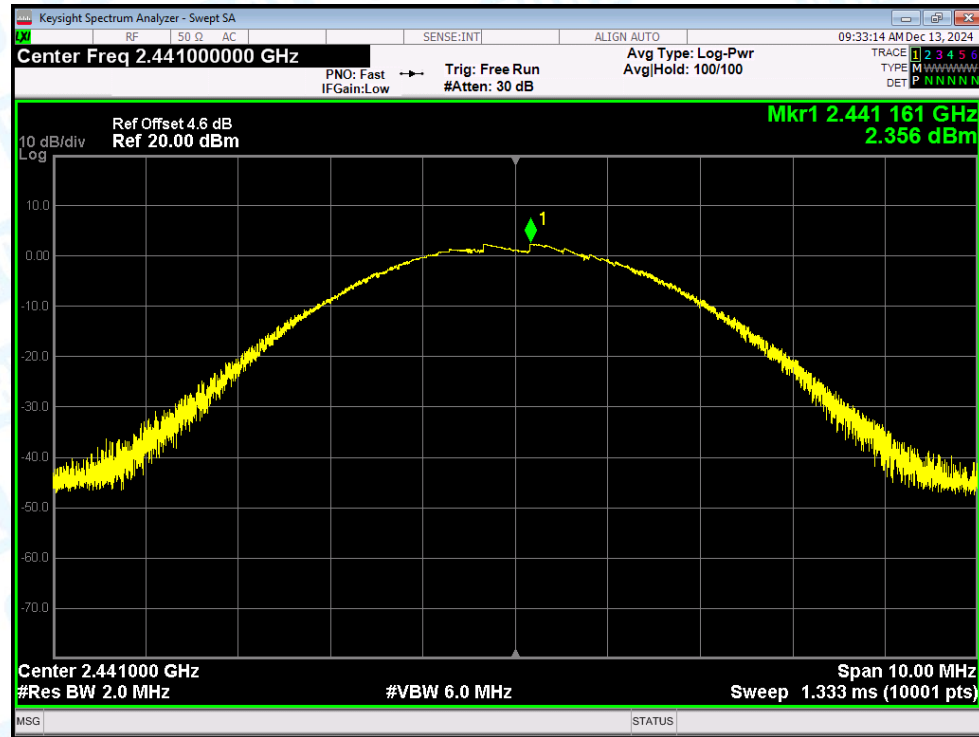


Power NVNT 1-DH1 2441MHz Ant1

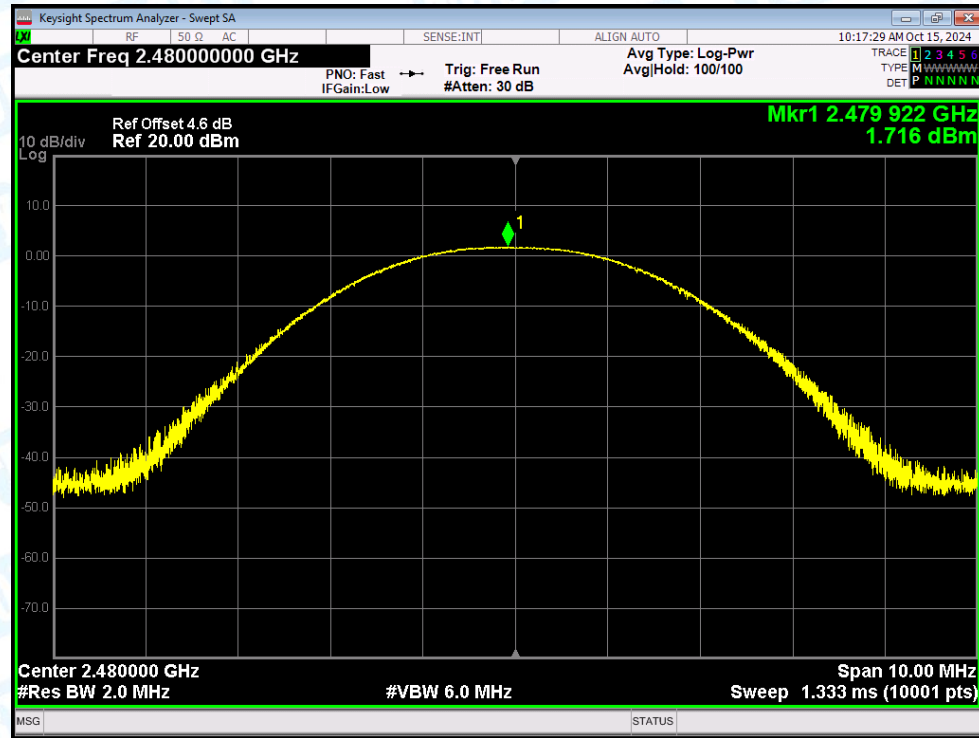




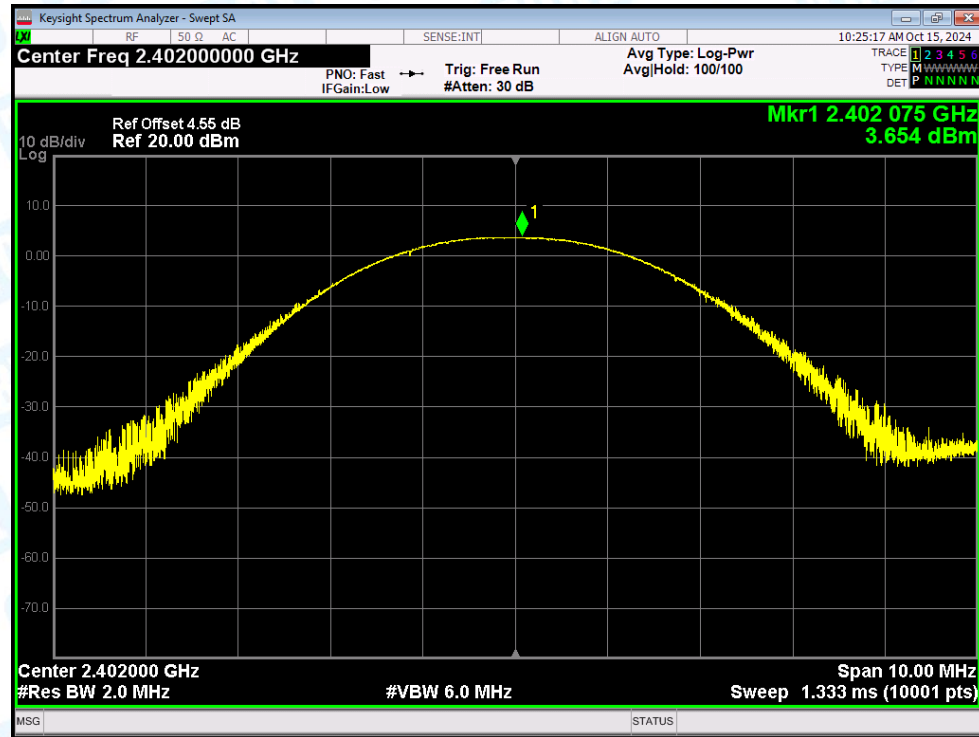
Power NVNT 2-DH1 2441MHz Ant1



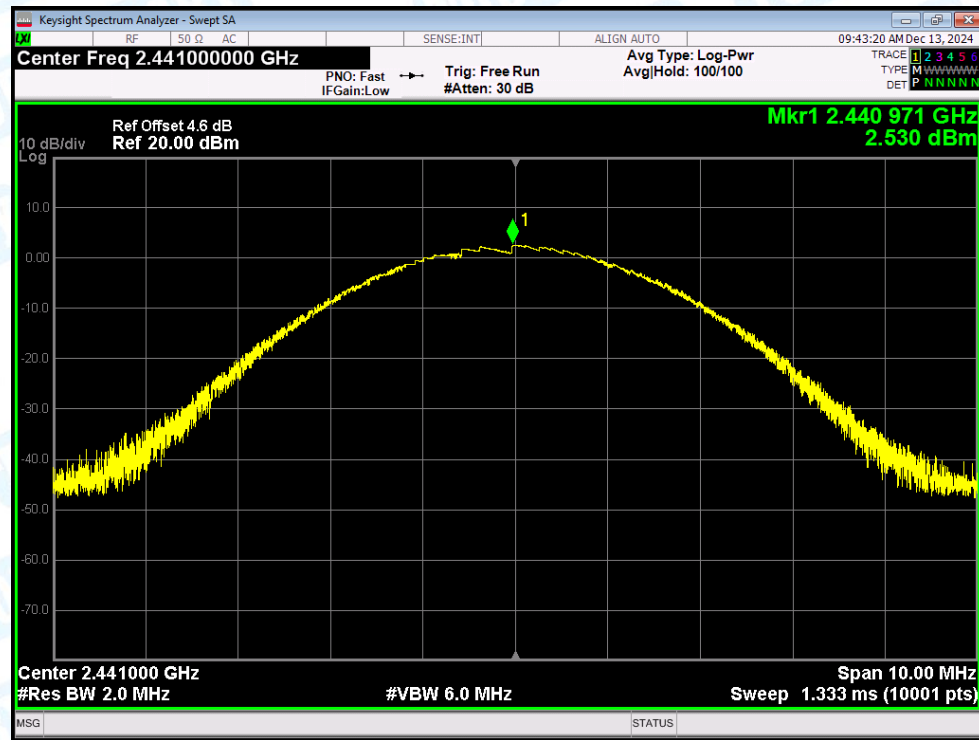
Power NVNT 2-DH1 2480MHz Ant1

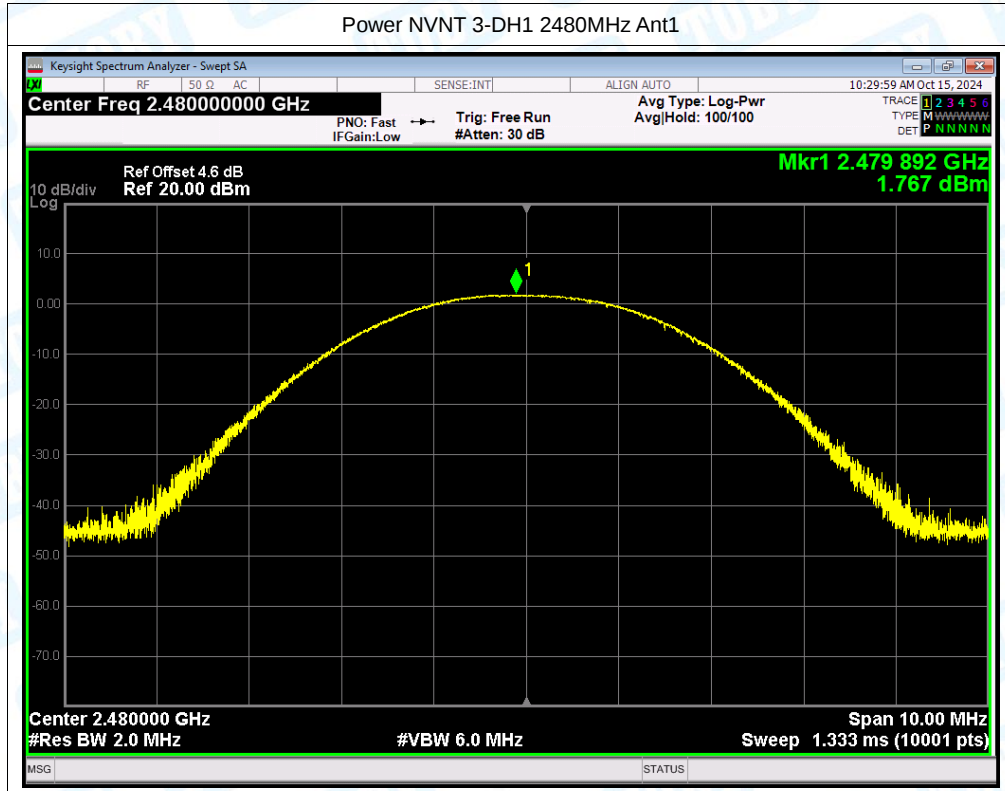


Power NVNT 3-DH1 2402MHz Ant1



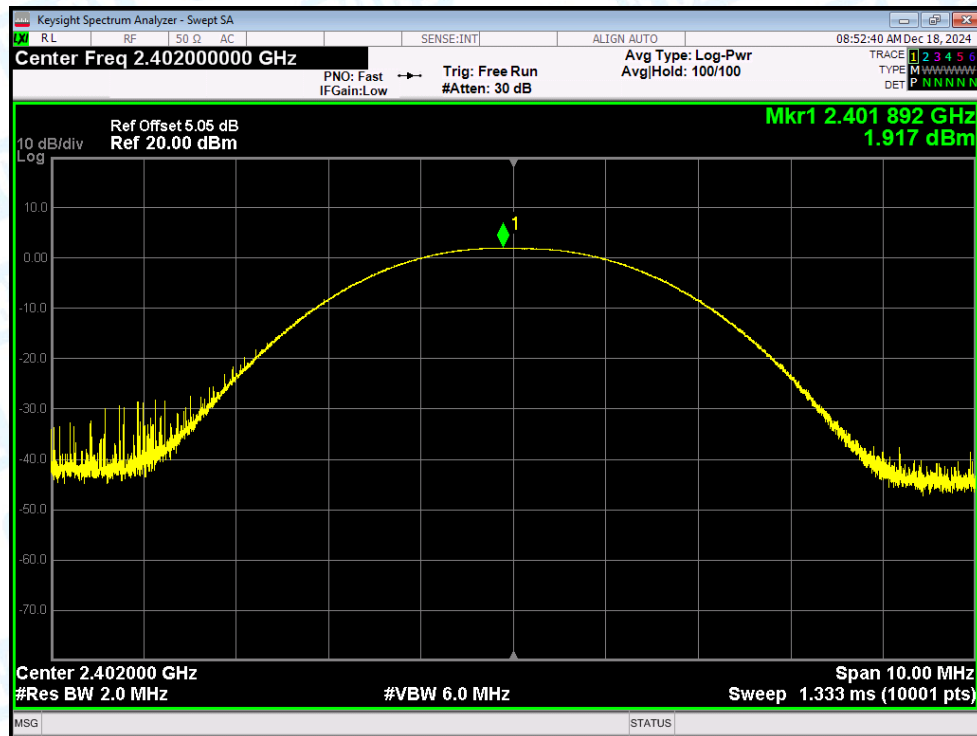
Power NVNT 3-DH1 2441MHz Ant1



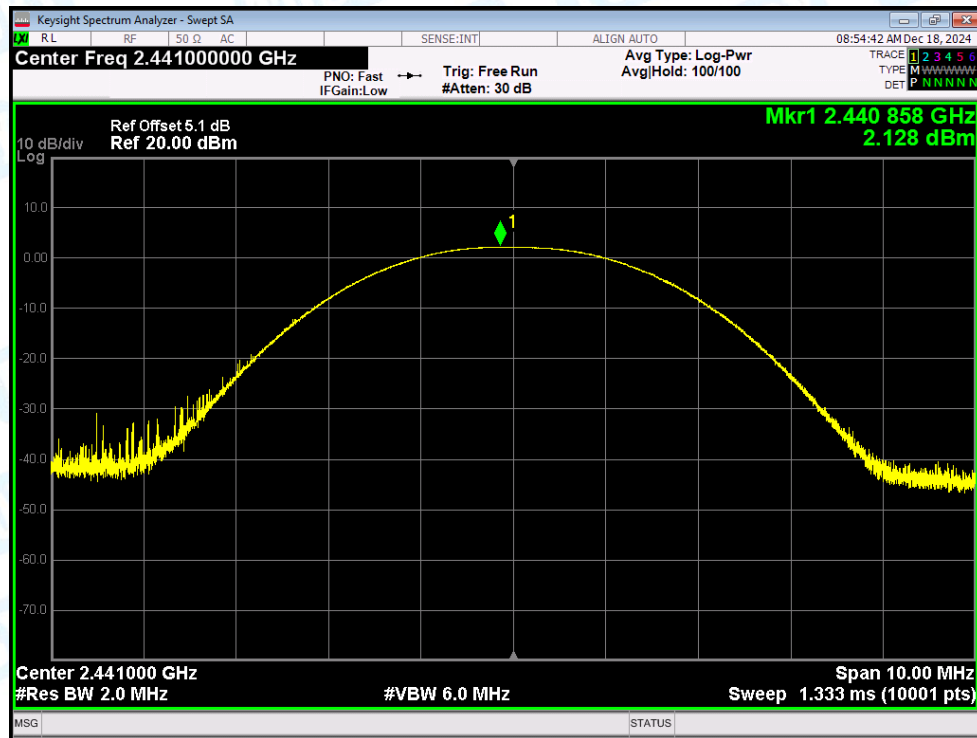


Test Graphs

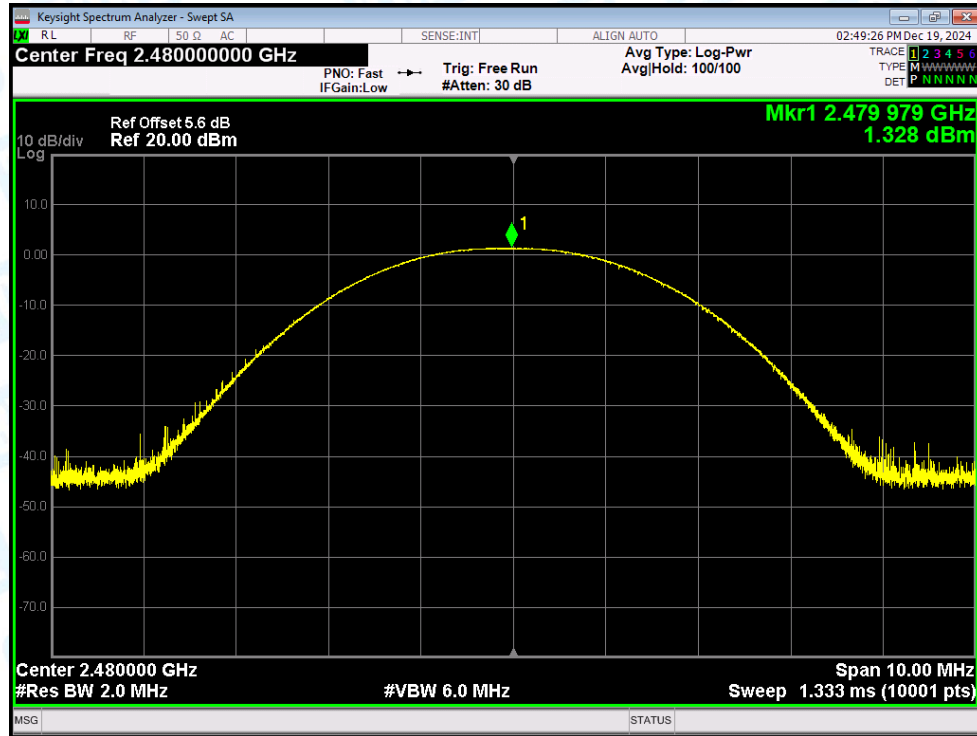
Power NVNT 1-DH1 2402MHz Ant1



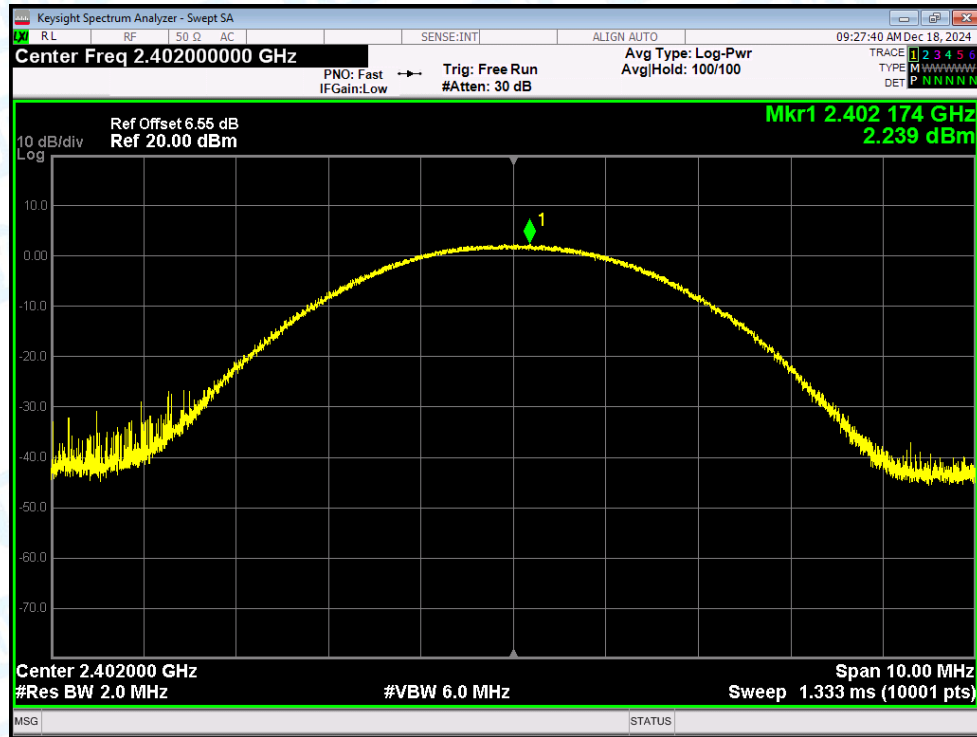
Power NVNT 1-DH1 2441MHz Ant1



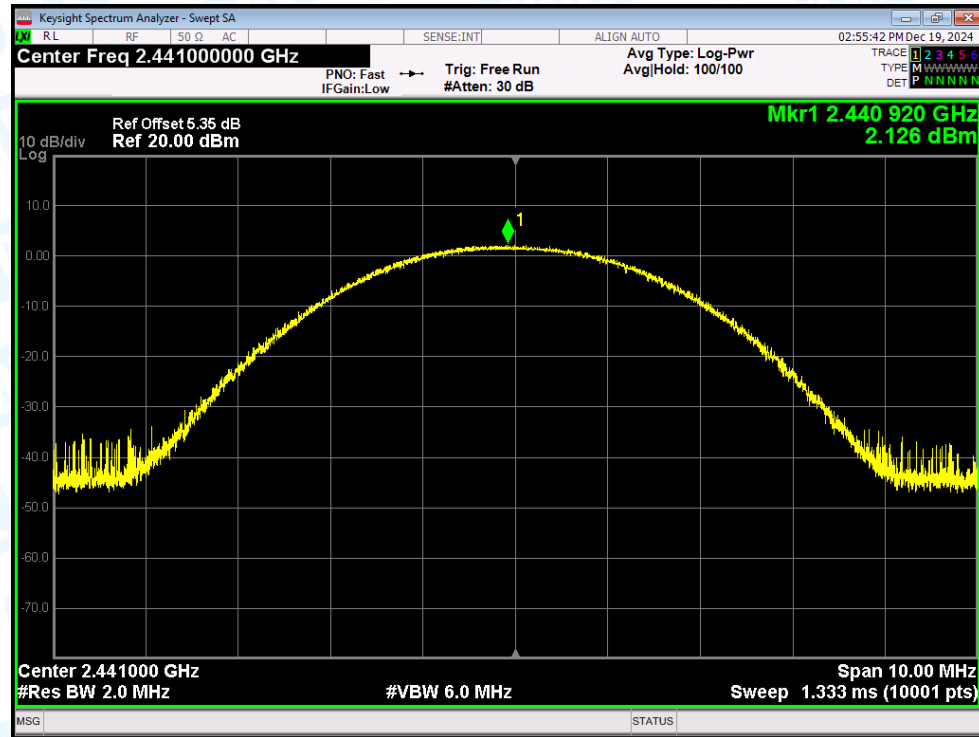
Power NVNT 1-DH1 2480MHz Ant1



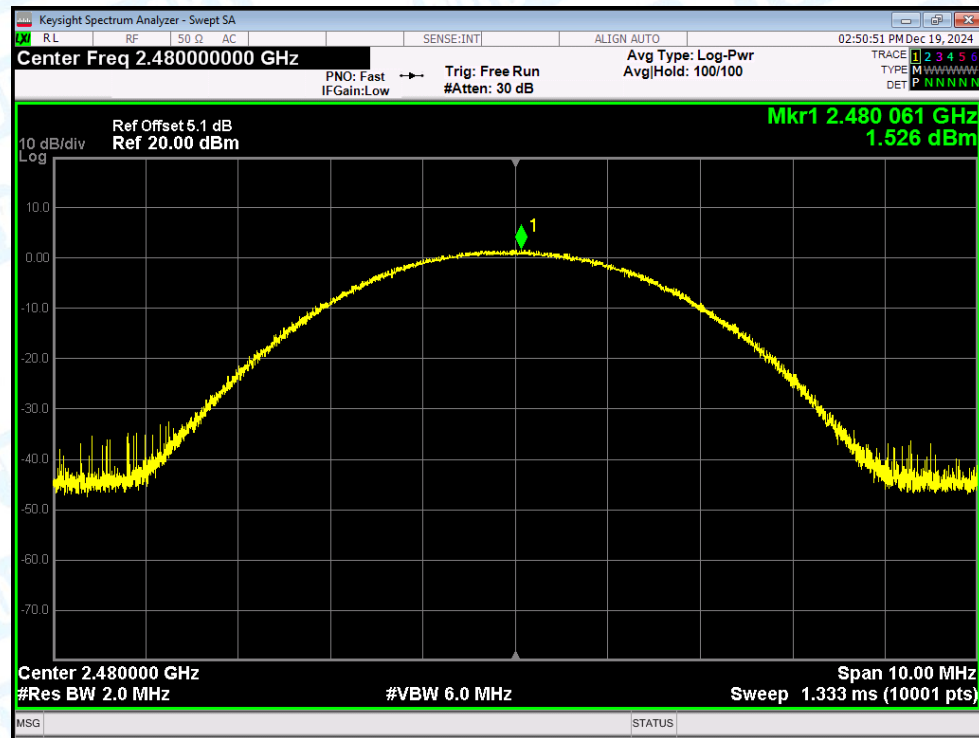
Power NVNT 2-DH1 2402MHz Ant1



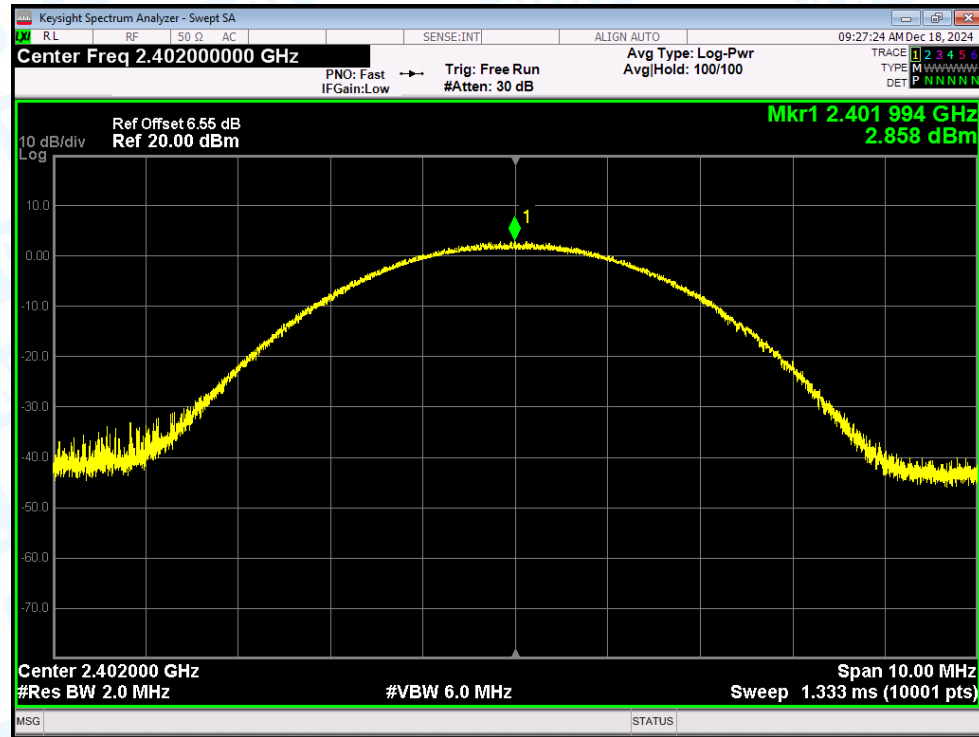
Power NVNT 2-DH1 2441MHz Ant1



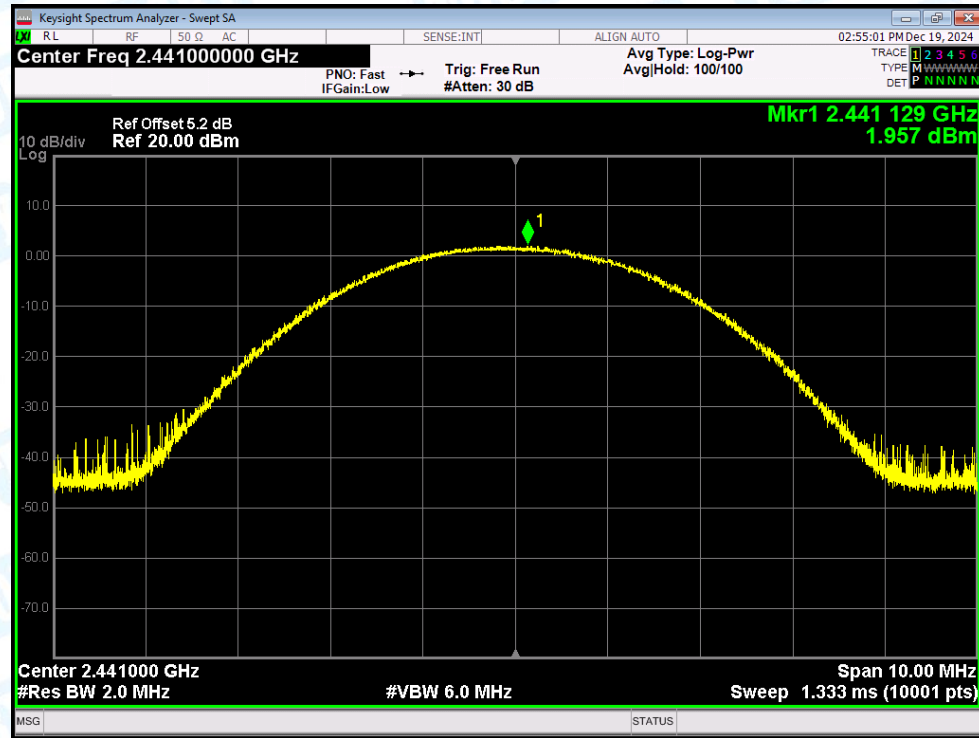
Power NVNT 2-DH1 2480MHz Ant1

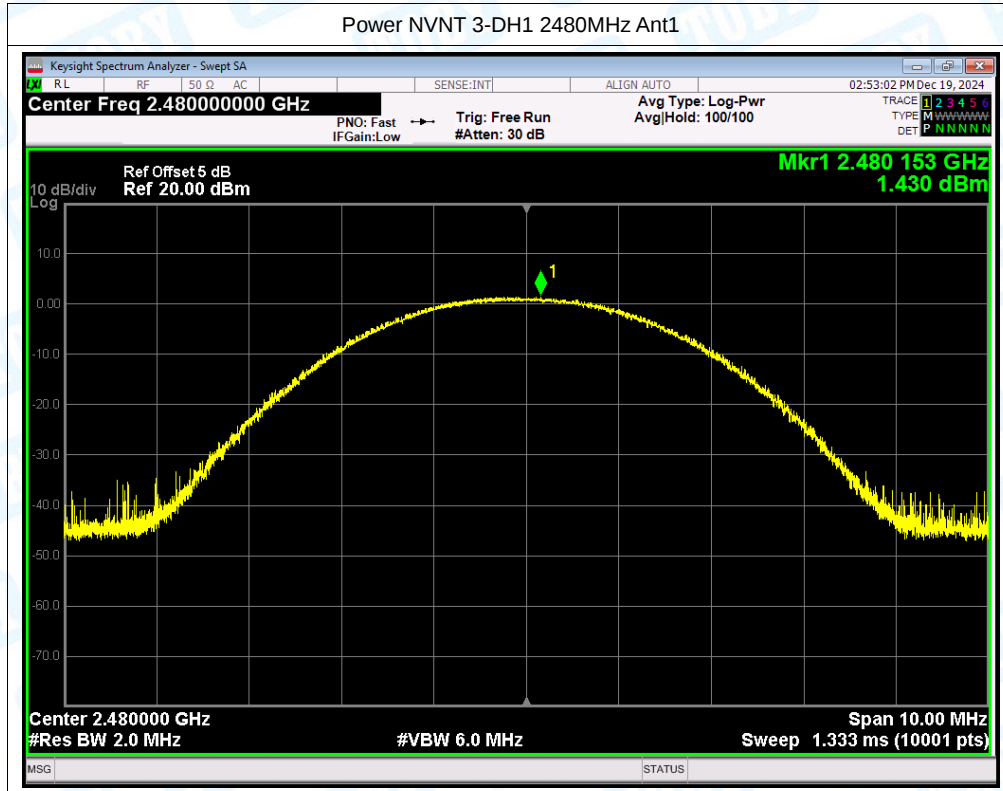


Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



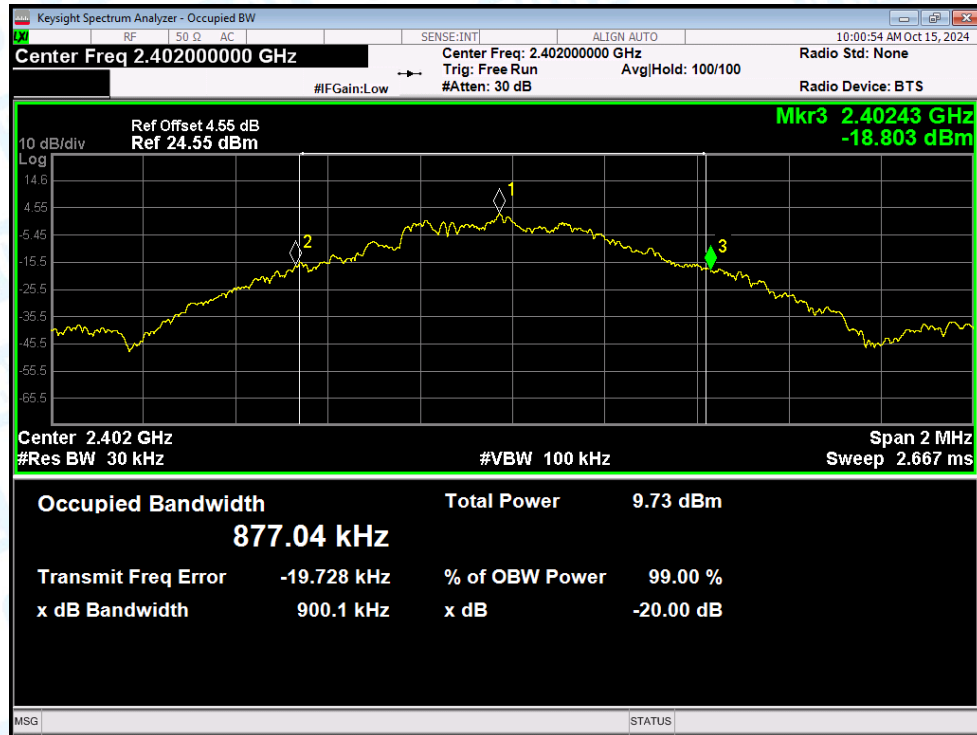


3.-20dB Bandwidth

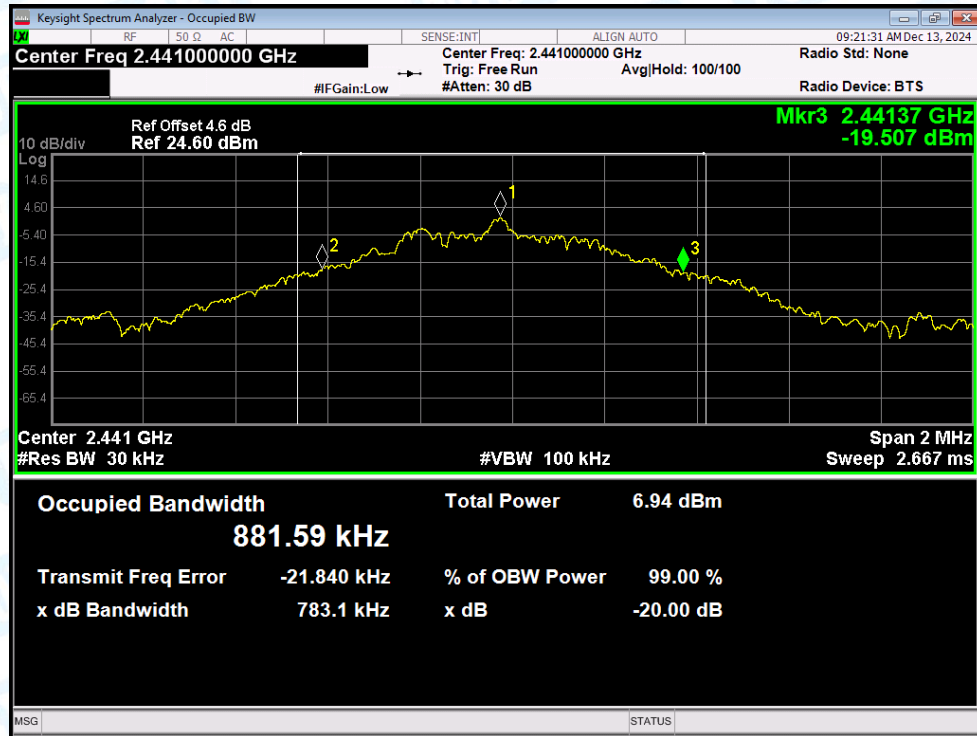
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.9	0	Pass
NVNT	1-DH1	2441	Ant1	0.78	0	Pass
NVNT	1-DH1	2480	Ant1	0.96	0	Pass
NVNT	2-DH1	2402	Ant1	1.18	0	Pass
NVNT	2-DH1	2441	Ant1	1.16	0	Pass
NVNT	2-DH1	2480	Ant1	1.18	0	Pass
NVNT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

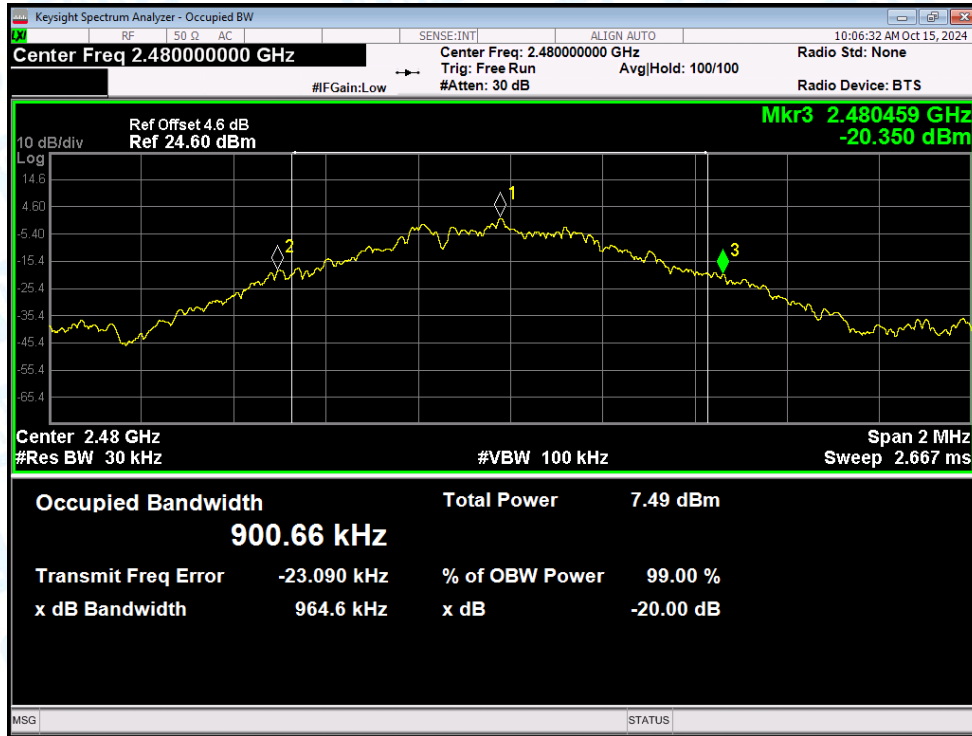
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



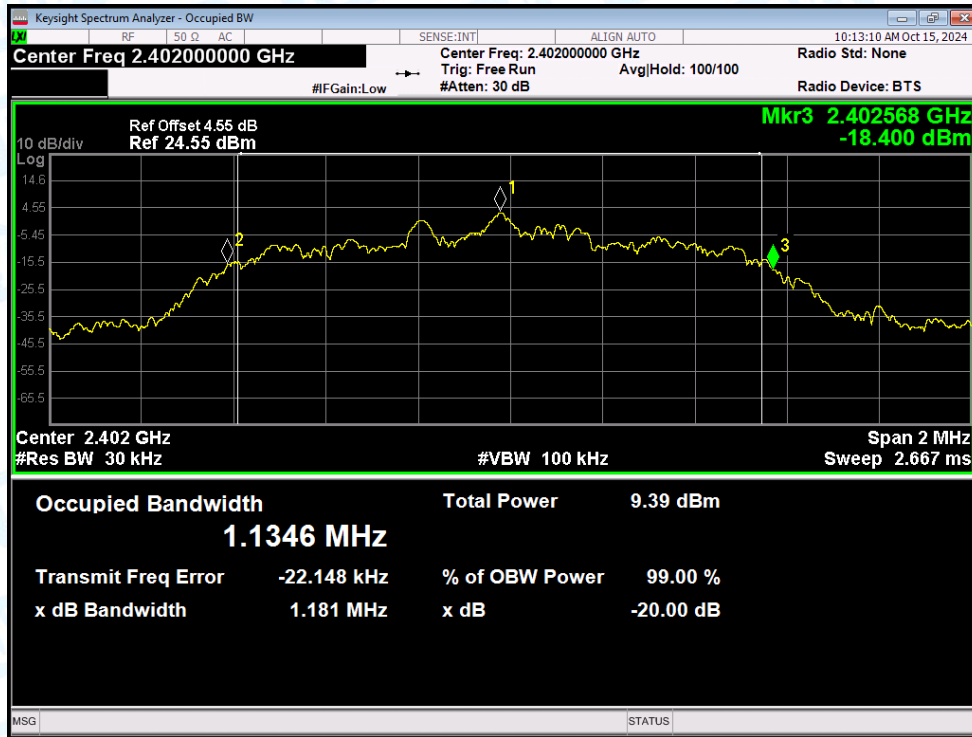
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



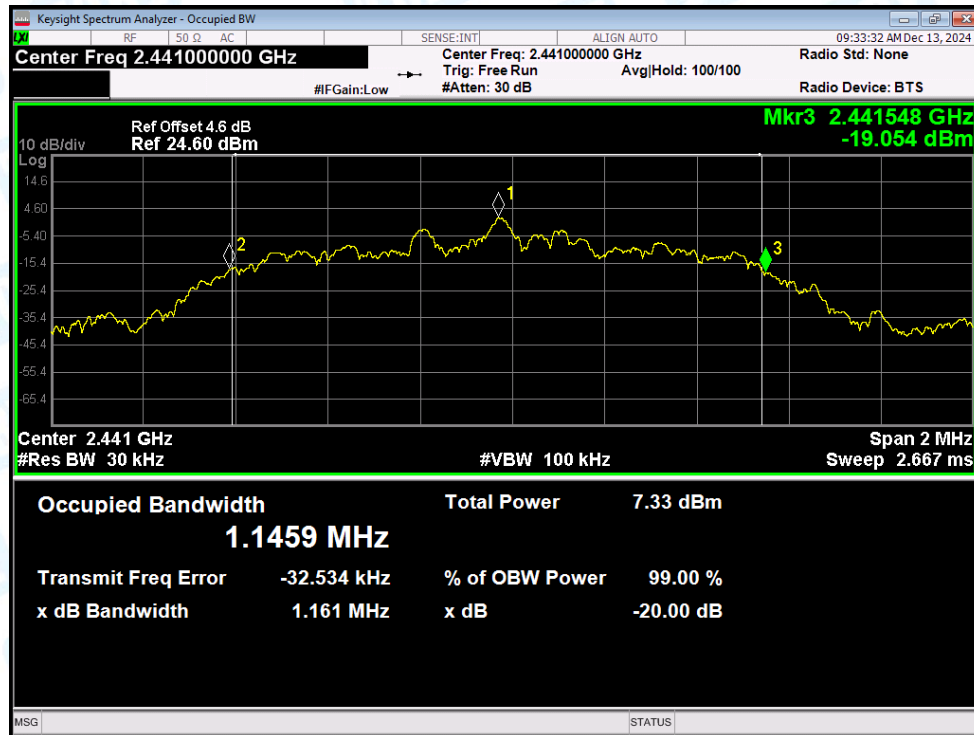
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



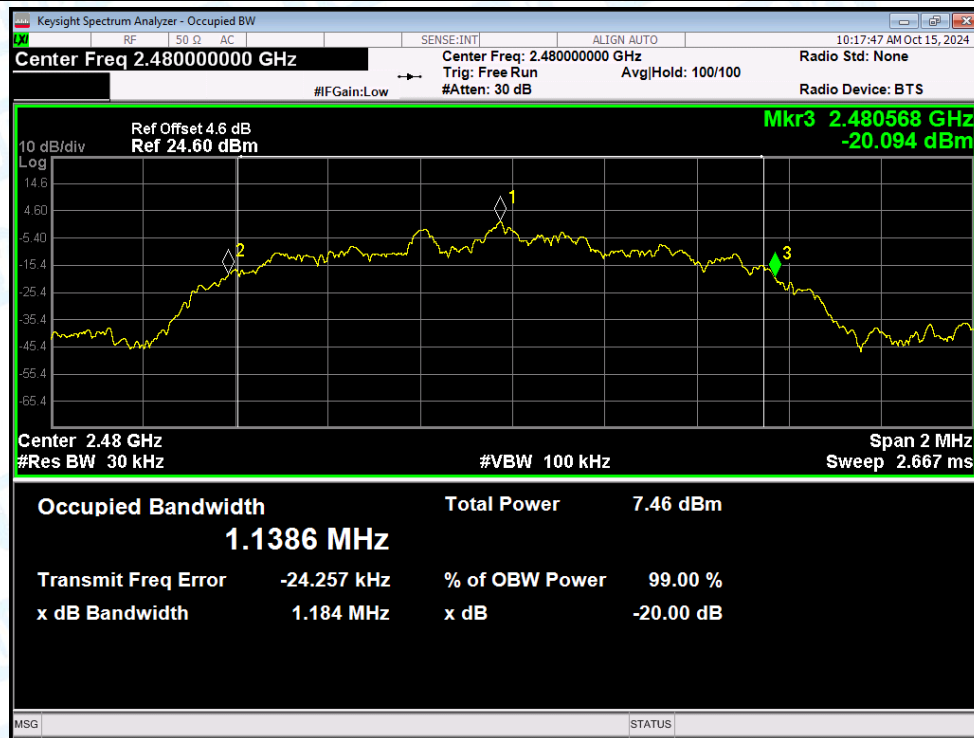
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



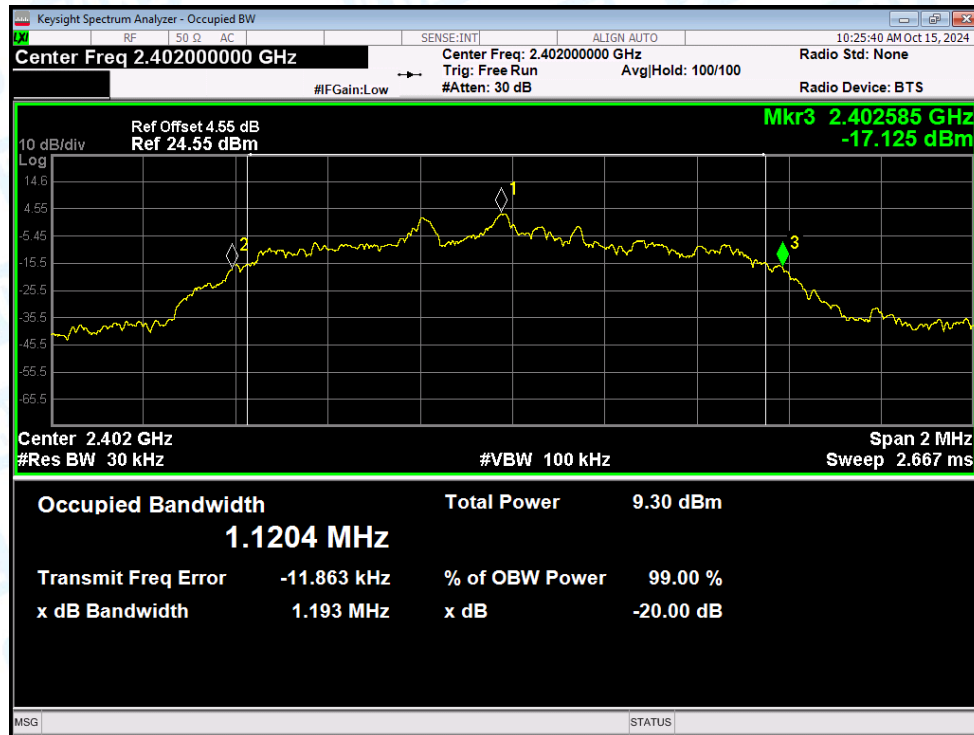
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



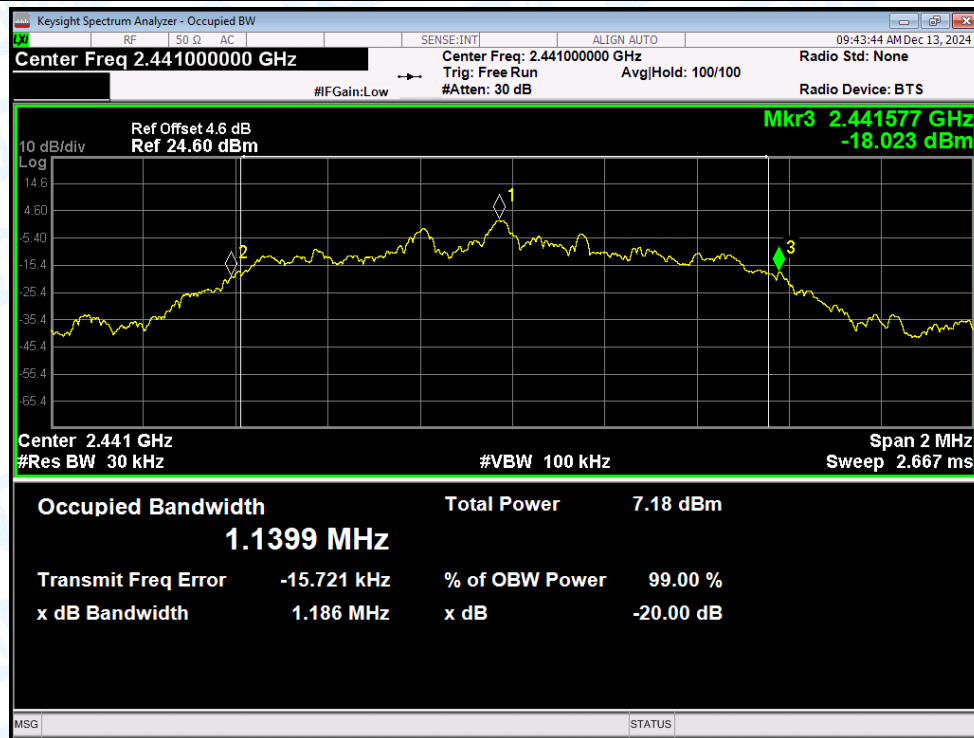
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

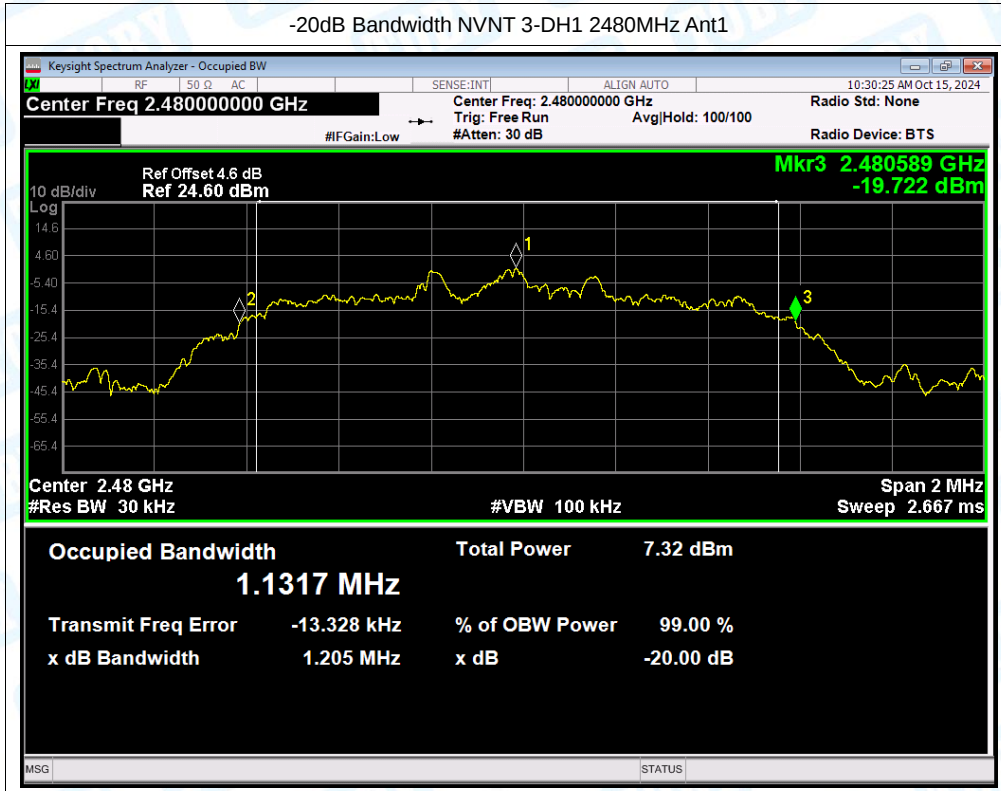


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



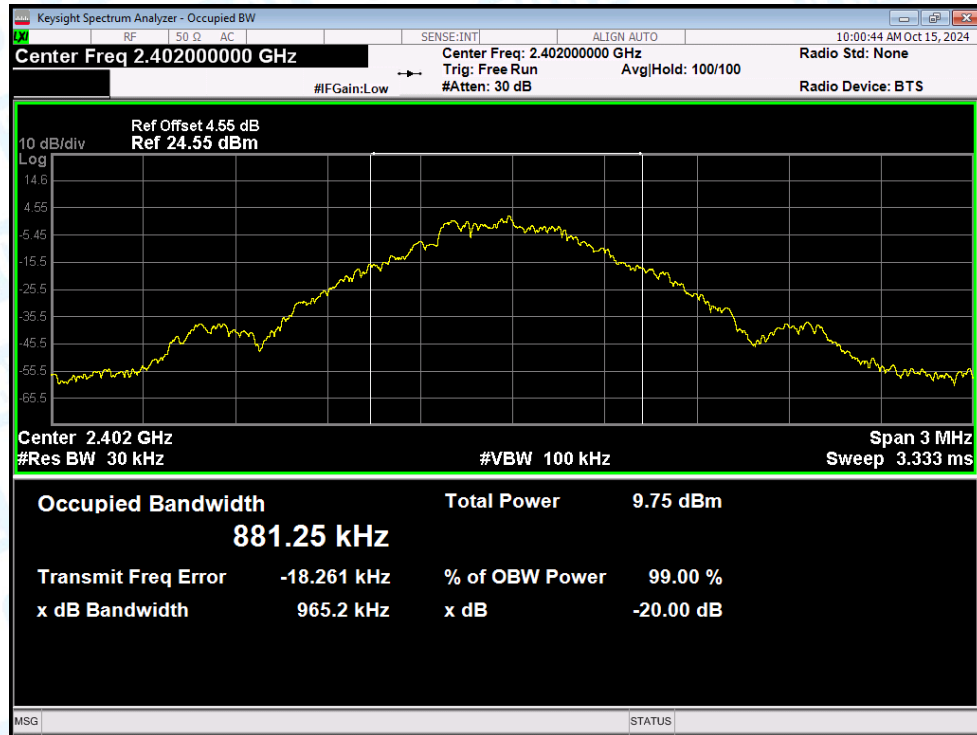


4.Occupied Channel Bandwidth

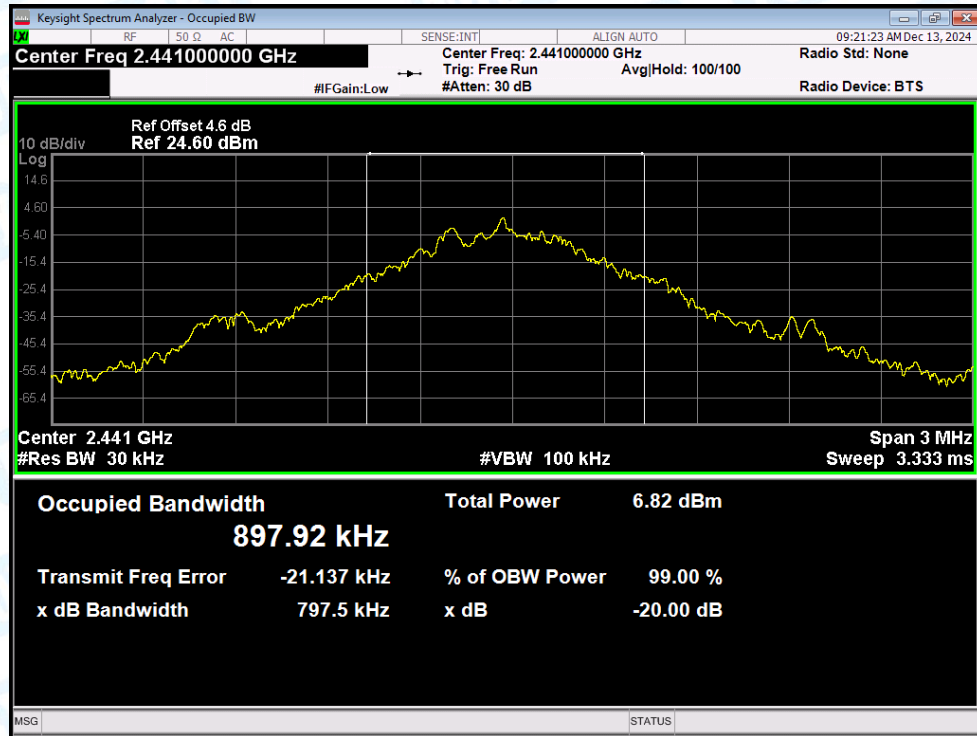
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.881
NVNT	1-DH1	2441	Ant1	0.898
NVNT	1-DH1	2480	Ant1	0.896
NVNT	2-DH1	2402	Ant1	1.137
NVNT	2-DH1	2441	Ant1	1.161
NVNT	2-DH1	2480	Ant1	1.135
NVNT	3-DH1	2402	Ant1	1.122
NVNT	3-DH1	2441	Ant1	1.152
NVNT	3-DH1	2480	Ant1	1.137

Test Graphs

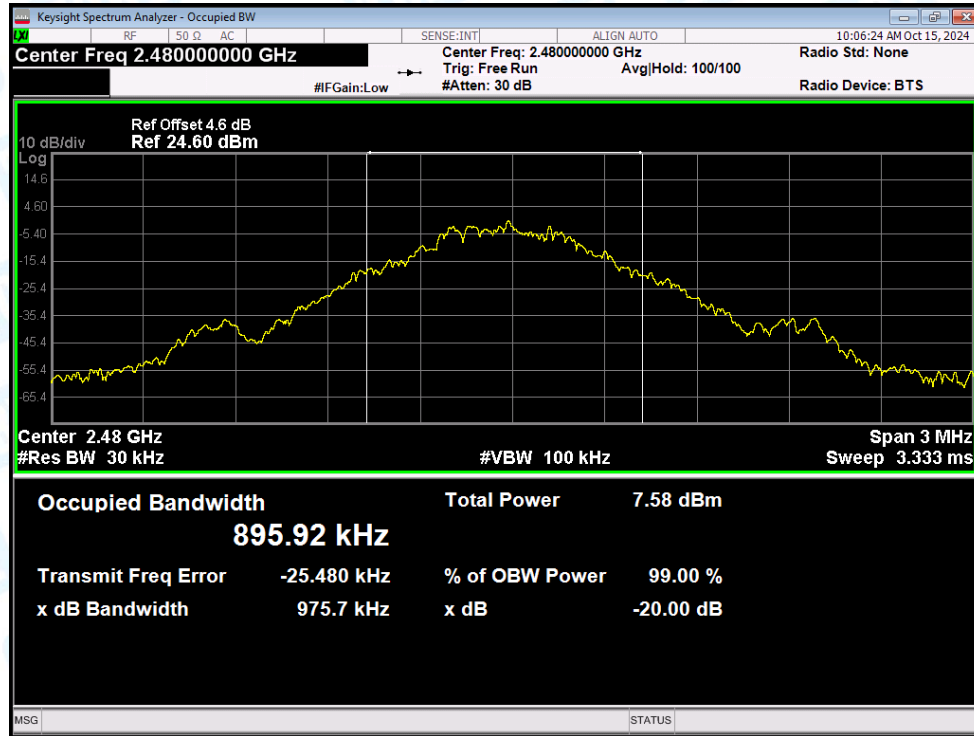
OBW NVNT 1-DH1 2402MHz Ant1



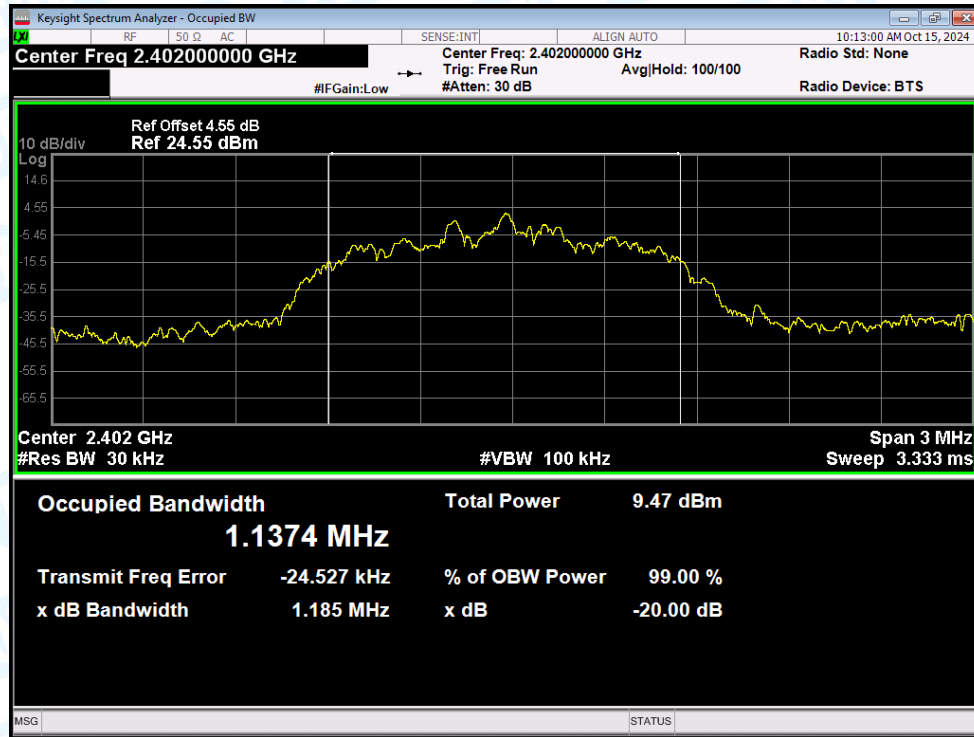
OBW NVNT 1-DH1 2441MHz Ant1



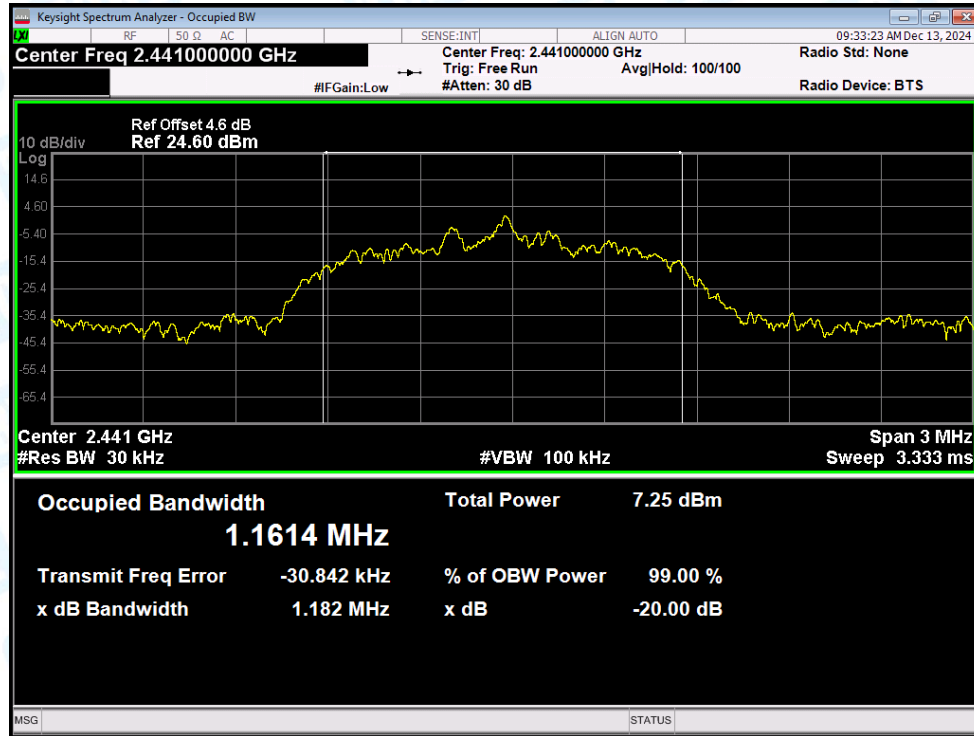
OBW NVNT 1-DH1 2480MHz Ant1



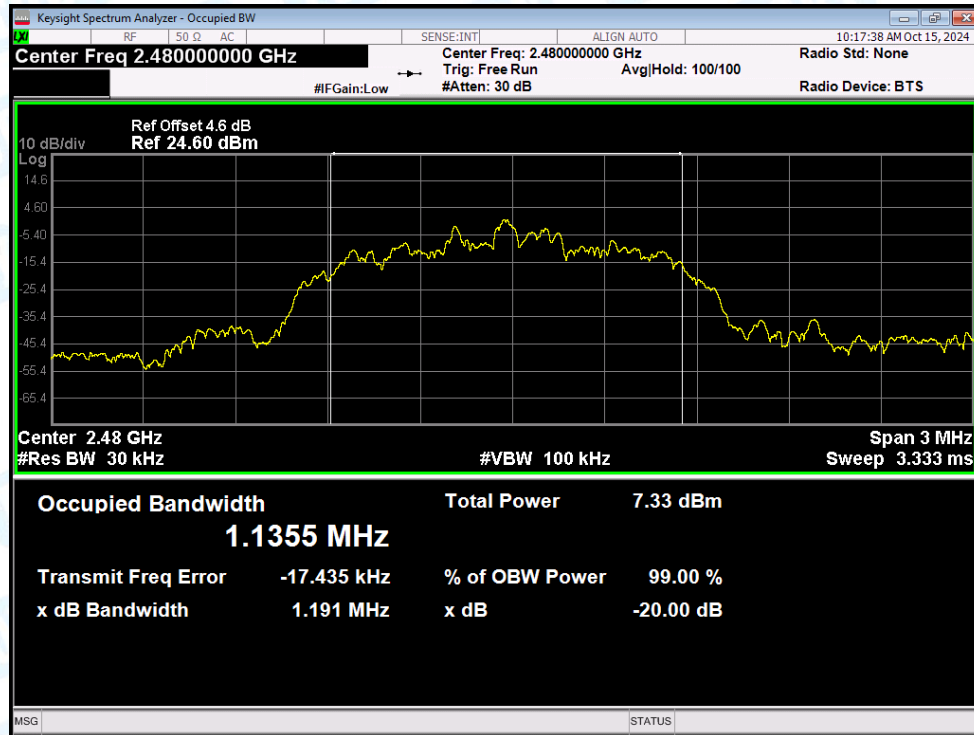
OBW NVNT 2-DH1 2402MHz Ant1



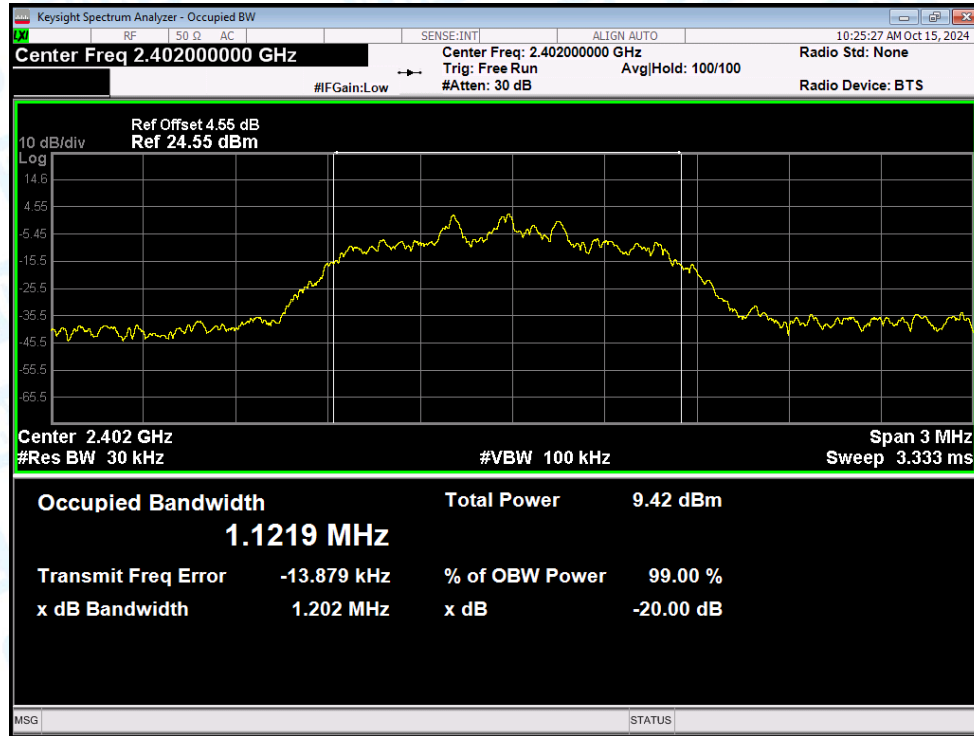
OBW NVNT 2-DH1 2441MHz Ant1



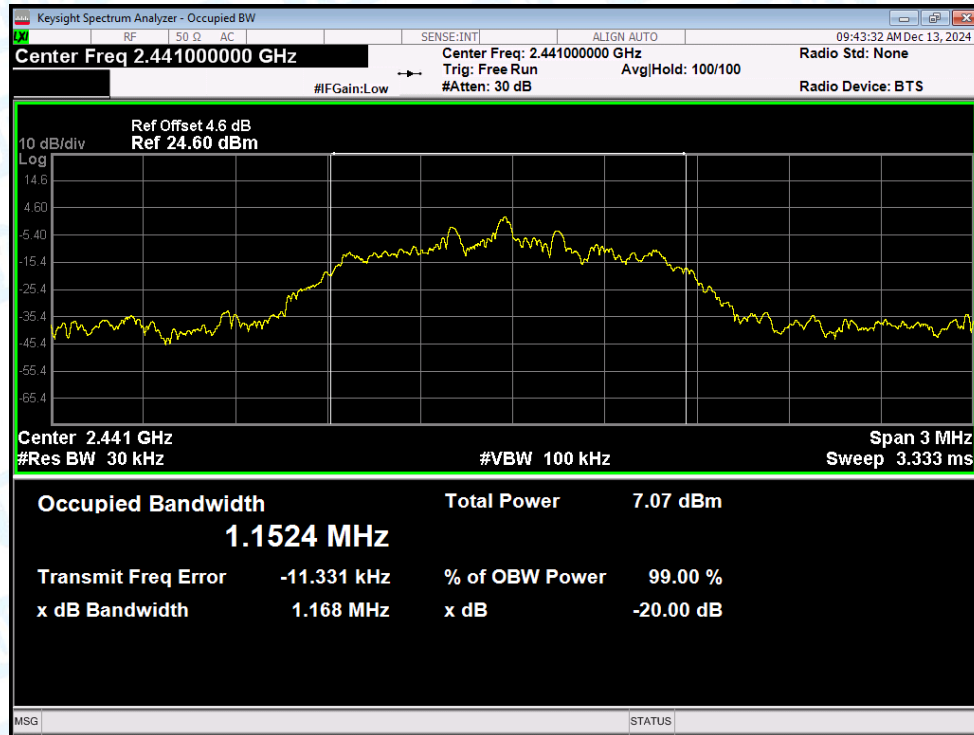
OBW NVNT 2-DH1 2480MHz Ant1

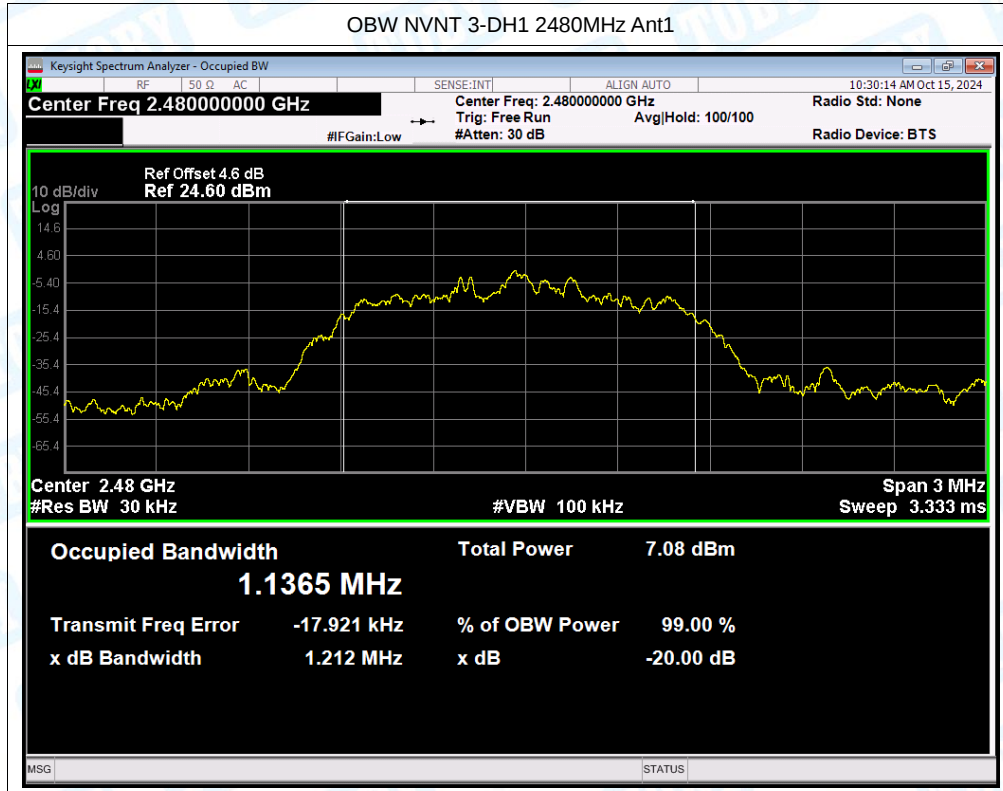


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



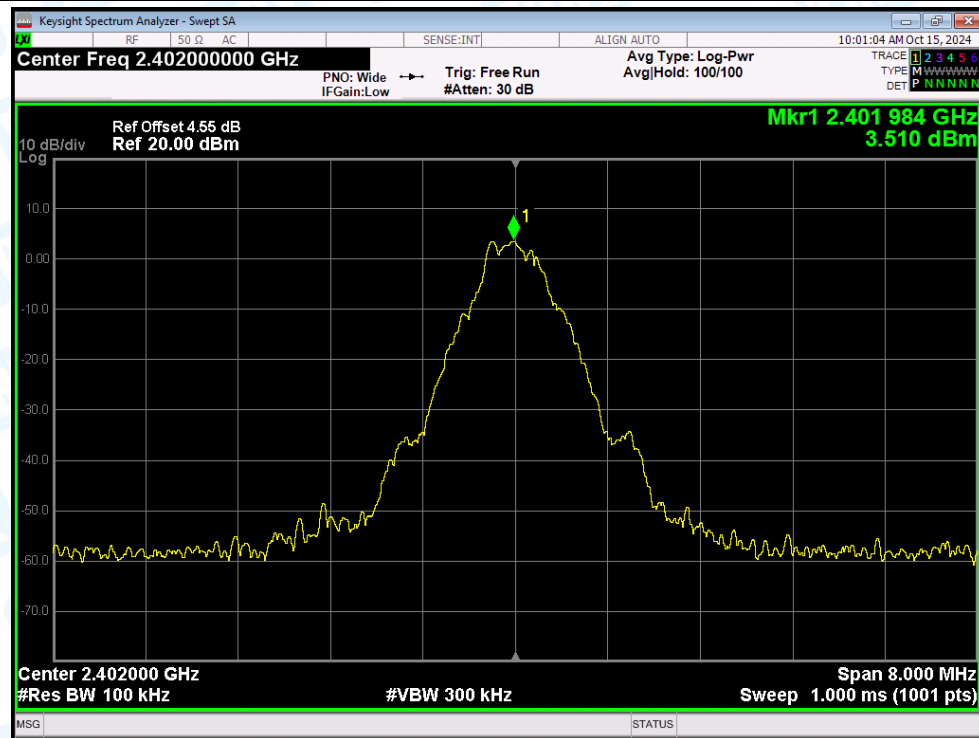


5.Band Edge

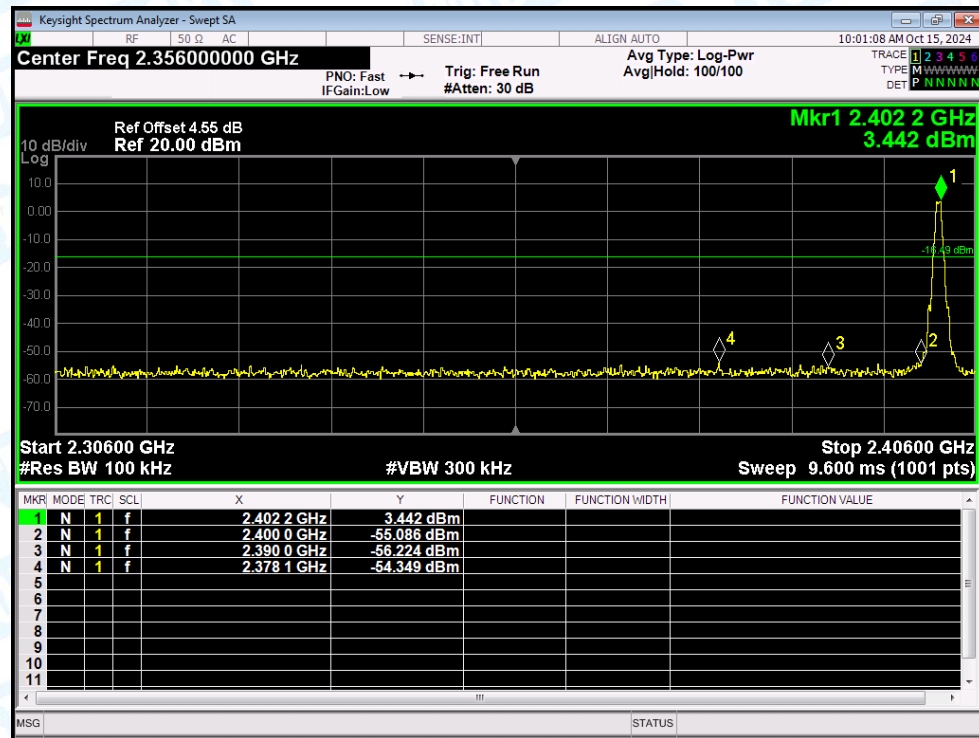
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-57.86	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-56.43	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-58.18	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-56	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping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

Test Graphs

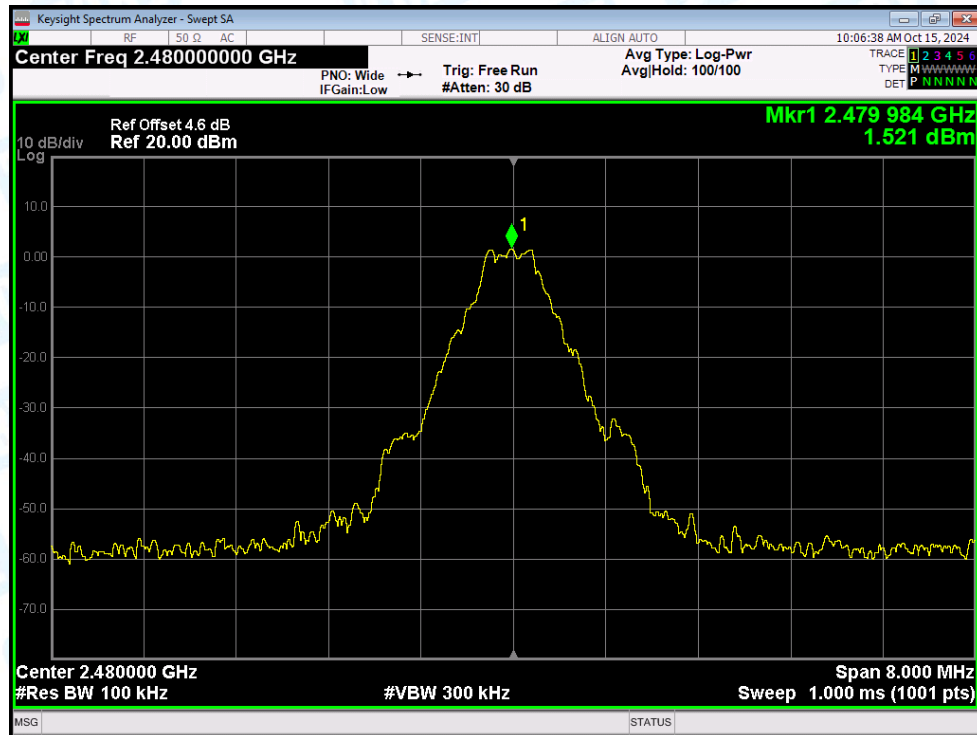
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



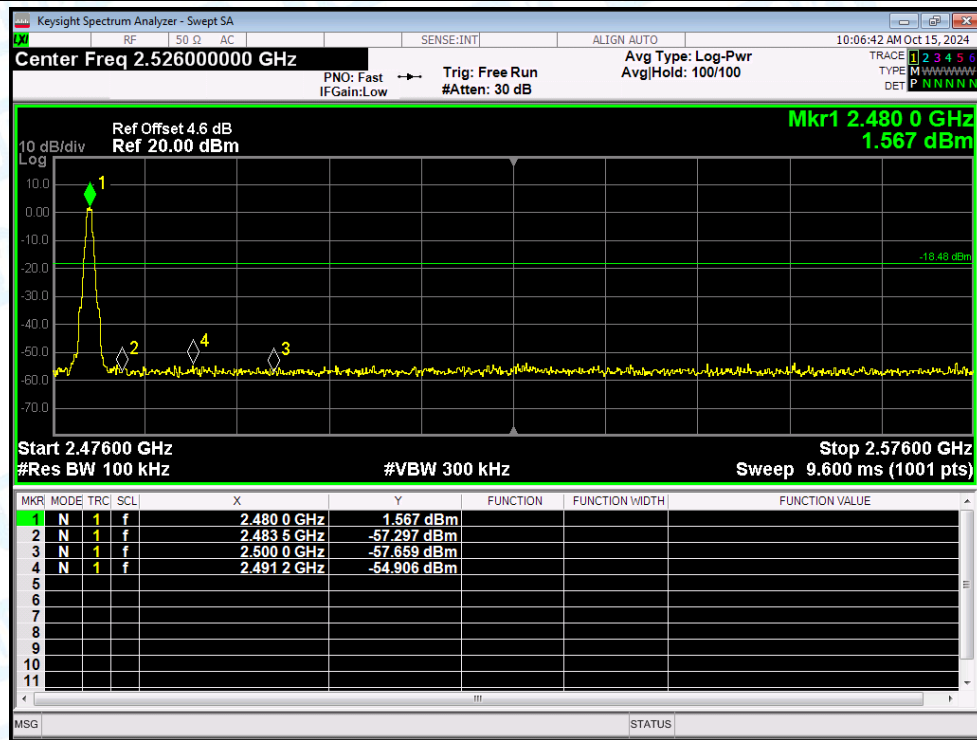
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission

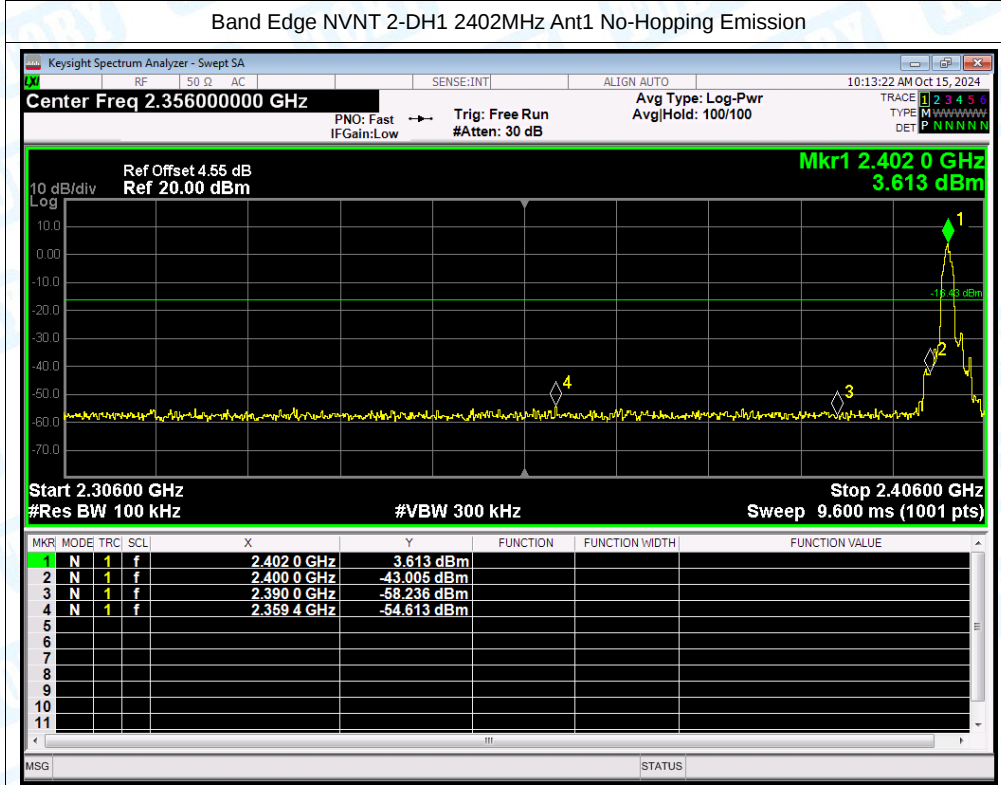
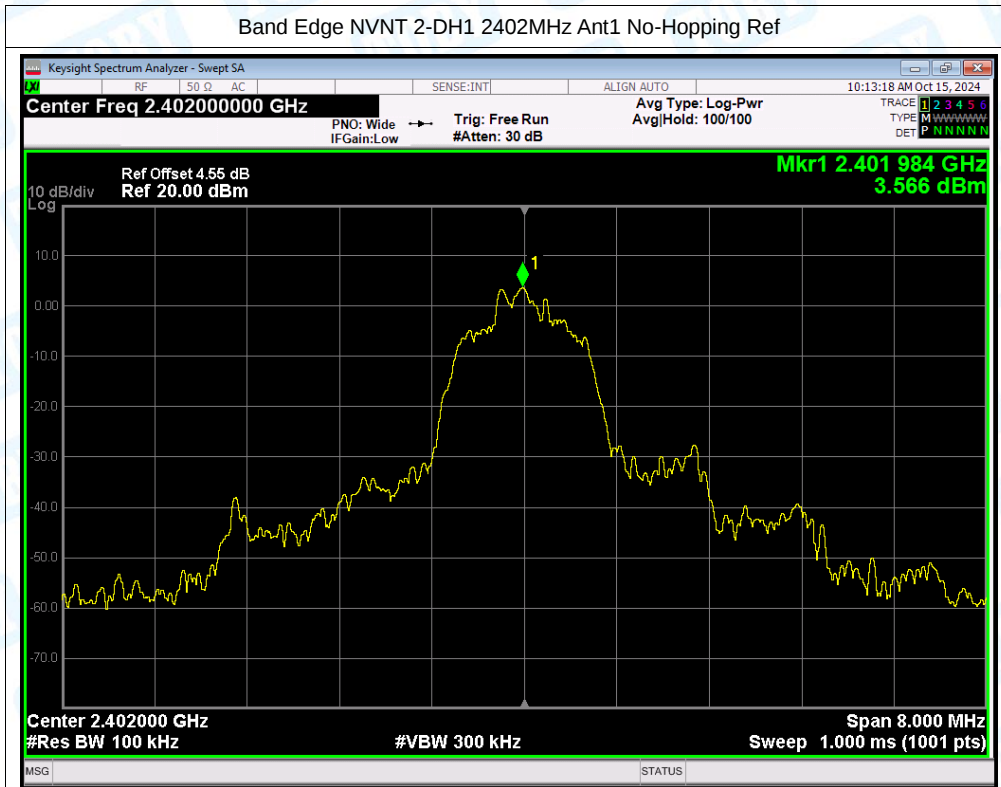


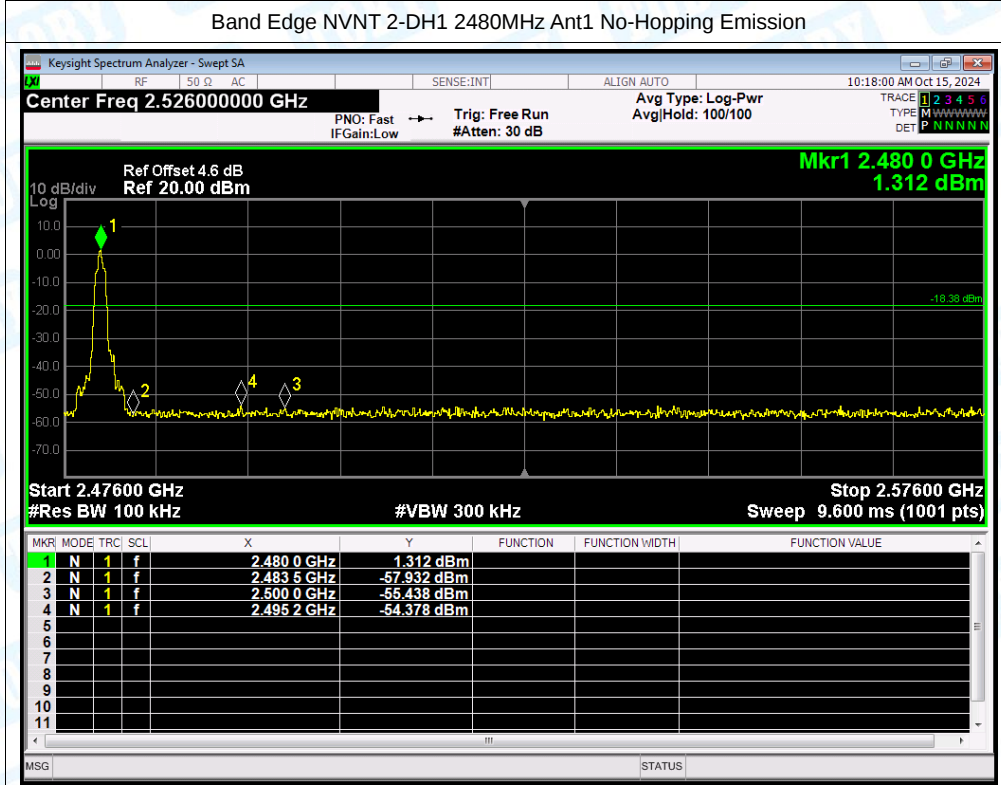
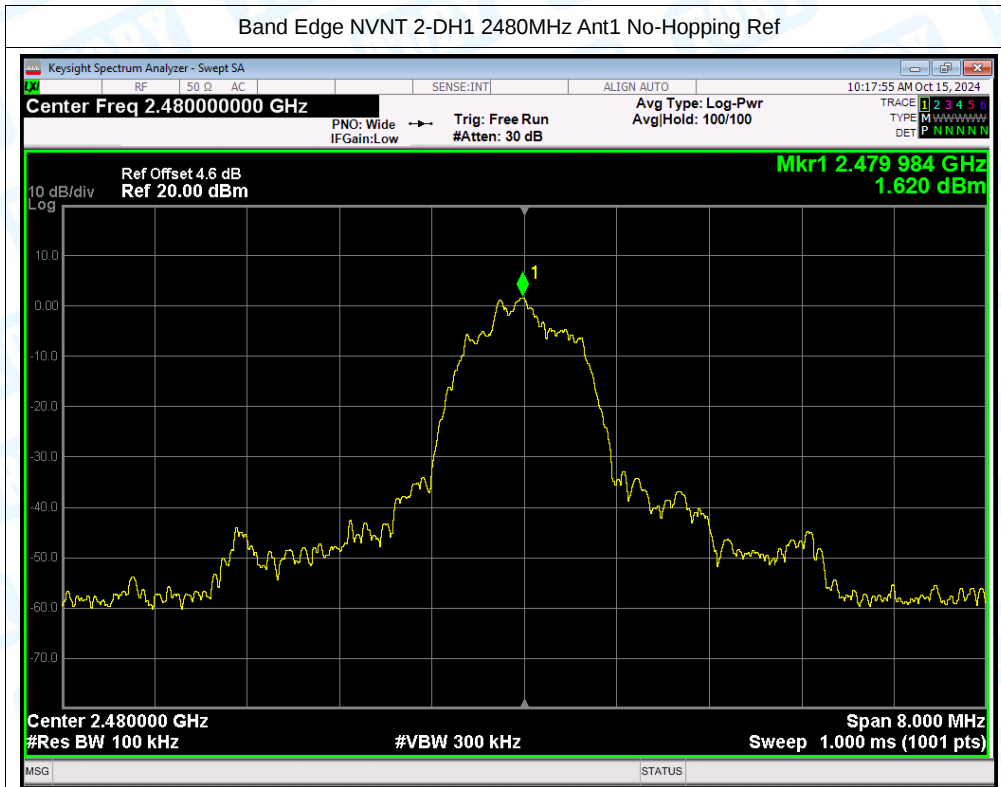
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref

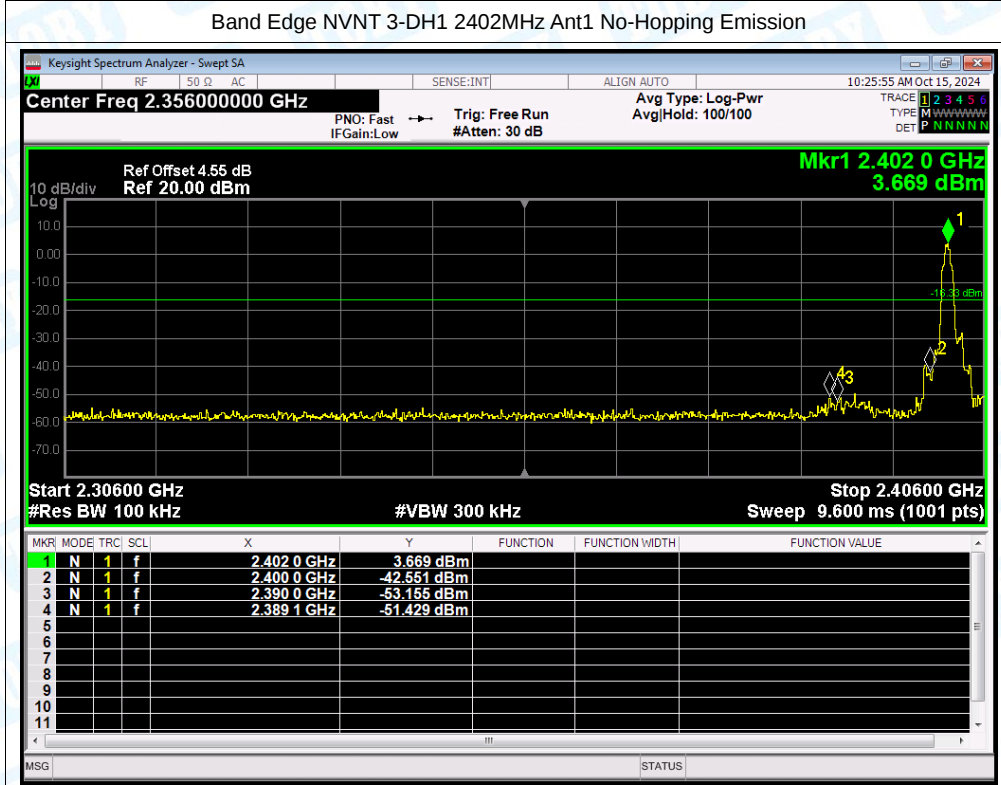


Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission





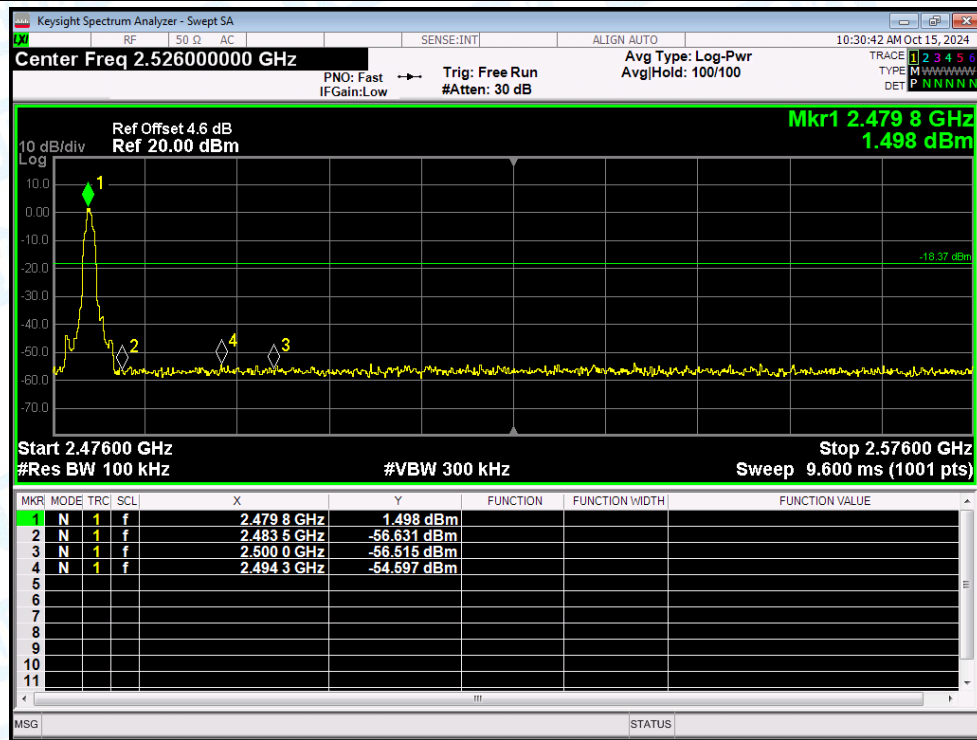




Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Ref



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



6.Band Edge(Hopping)

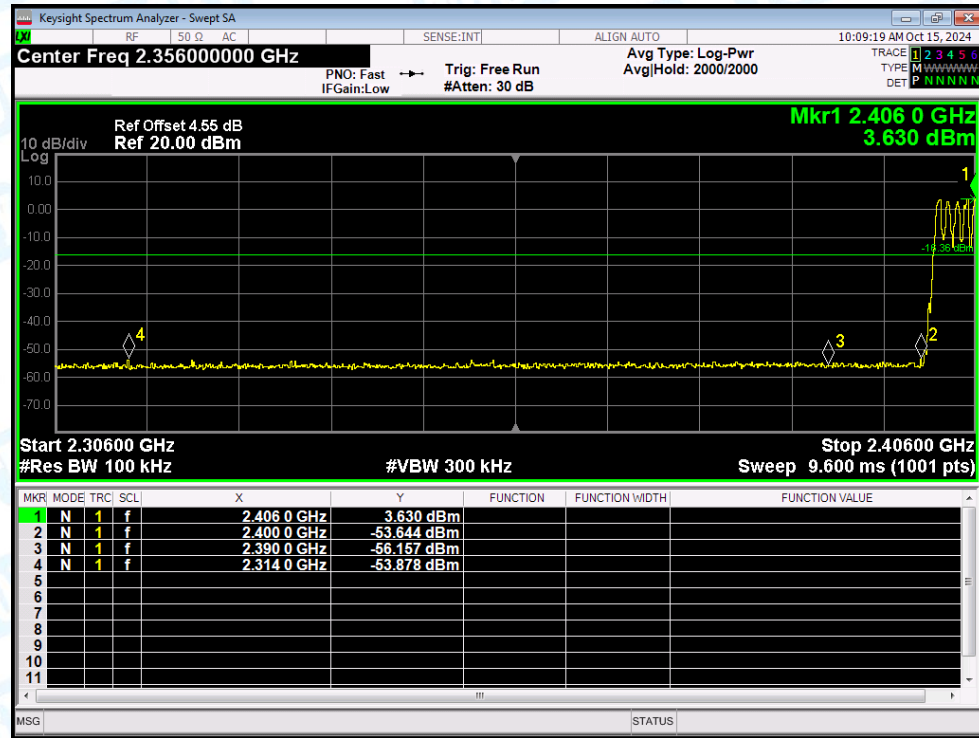
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-57.52	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-55.66	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-55.16	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-55.01	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-57.61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

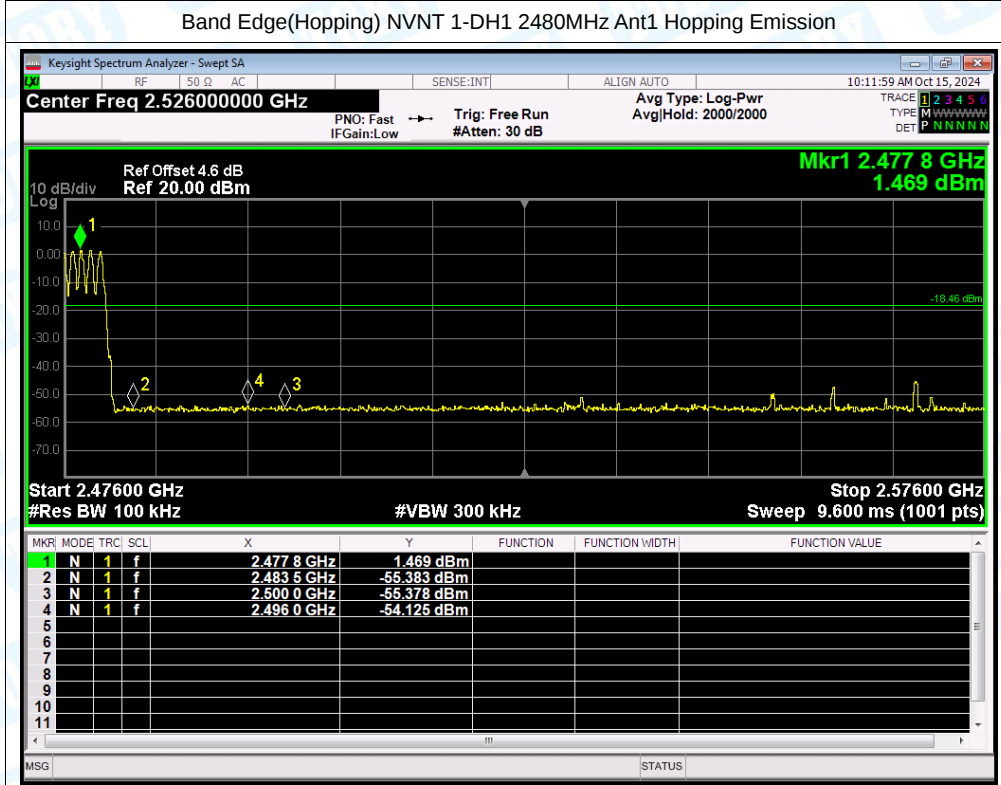
Test Graphs

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



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

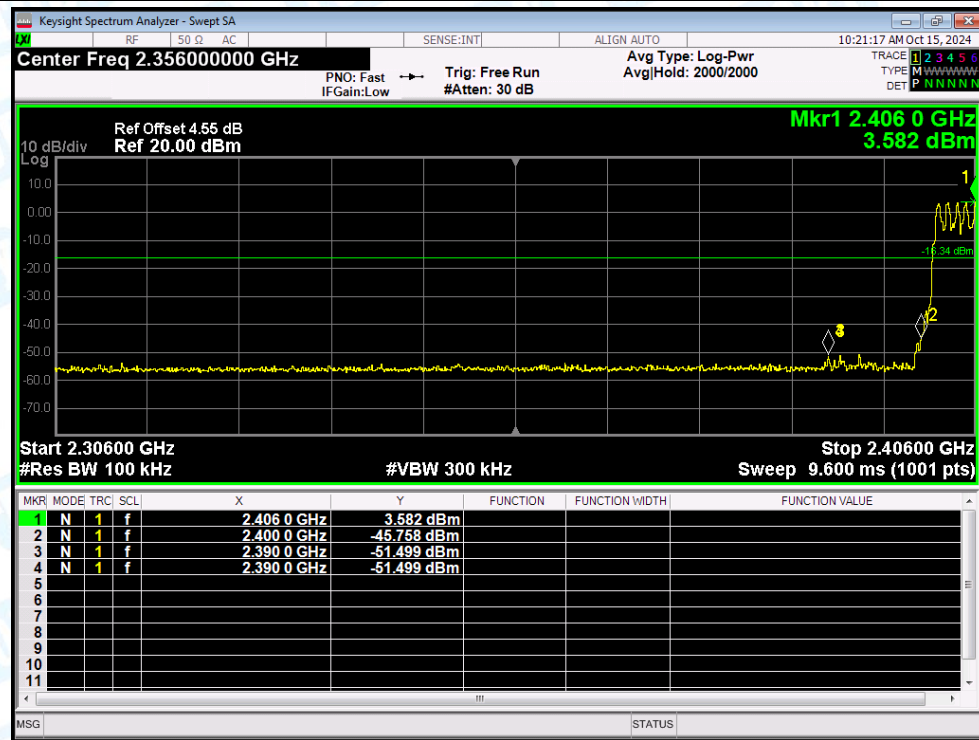


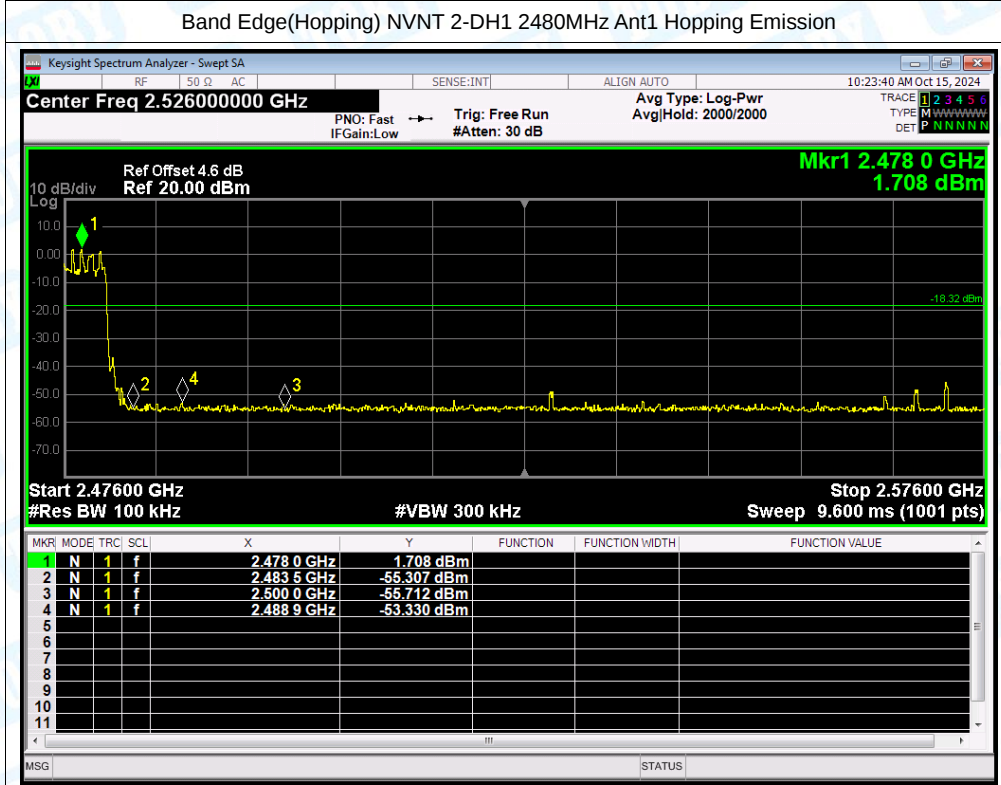


Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref



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

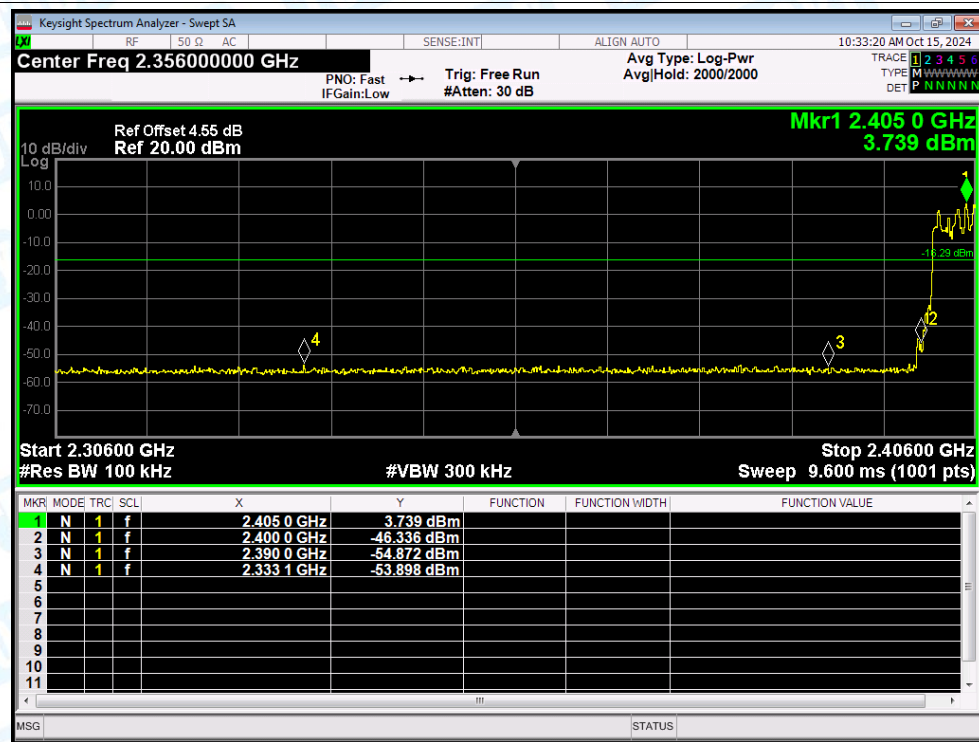


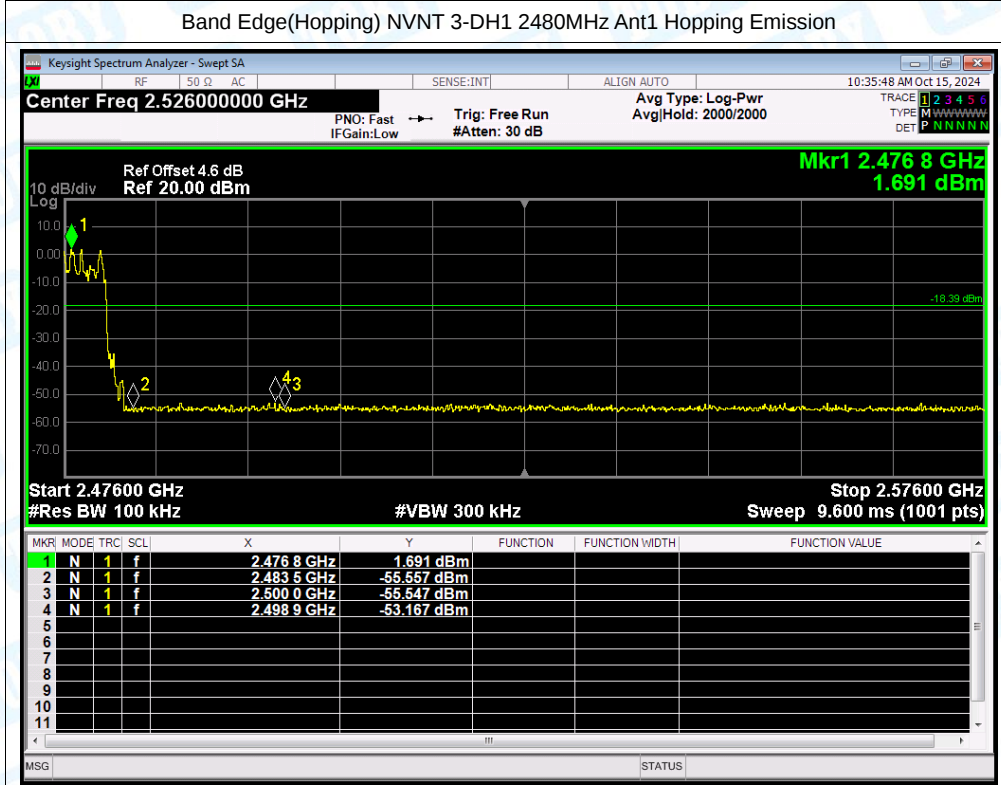


Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



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



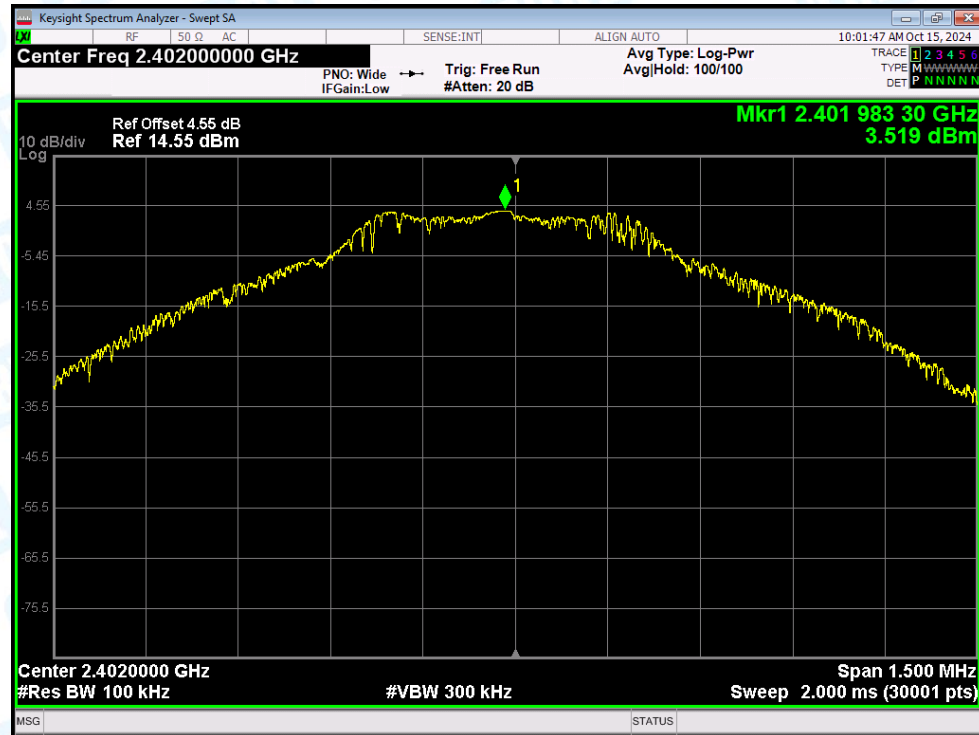


7. Conducted RF Spurious Emission

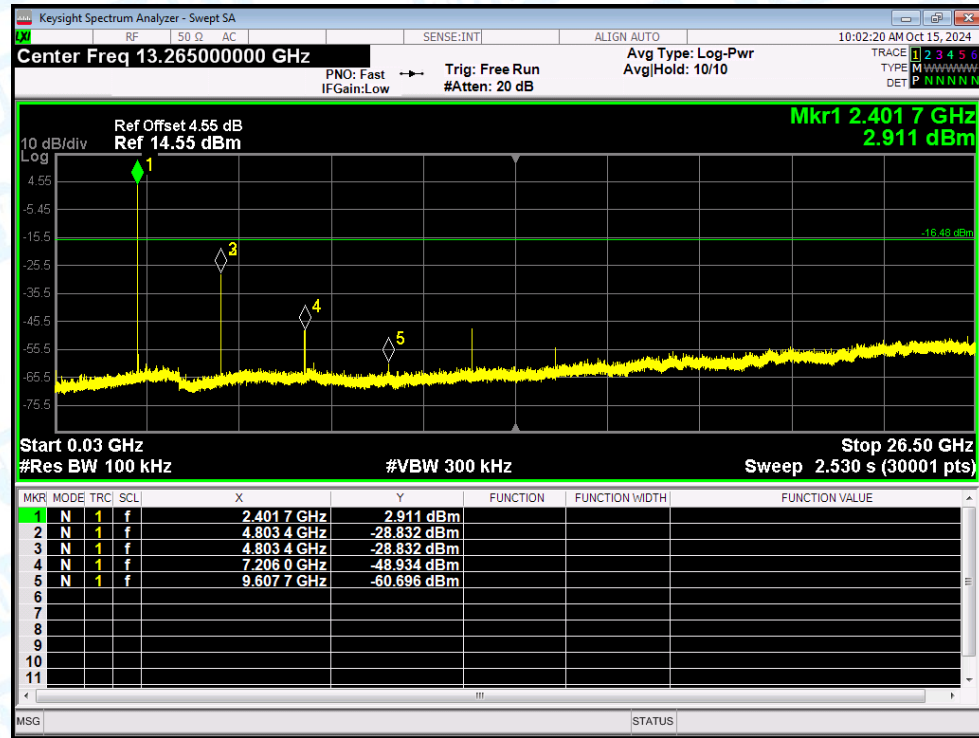
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-32.35	-20	Pass
NVNT	1-DH1	2441	Ant1	-34.68	-20	Pass
NVNT	1-DH1	2480	Ant1	-42.48	-20	Pass
NVNT	2-DH1	2402	Ant1	-34.3	-20	Pass
NVNT	2-DH1	2441	Ant1	-35.45	-20	Pass
NVNT	2-DH1	2480	Ant1	-33.82	-20	Pass
NVNT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

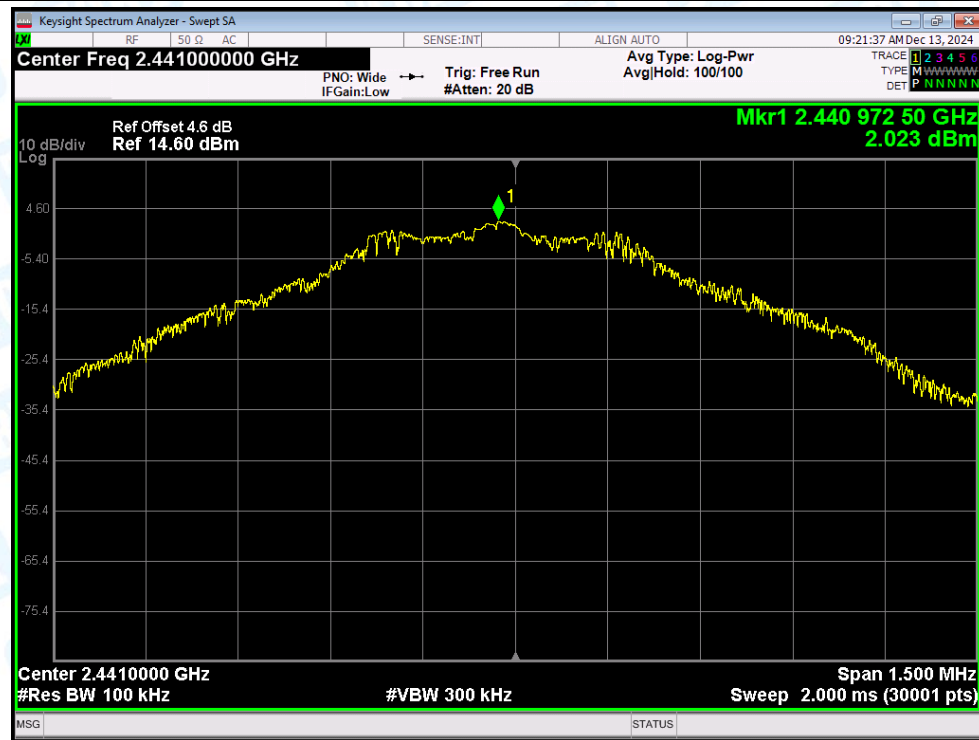
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



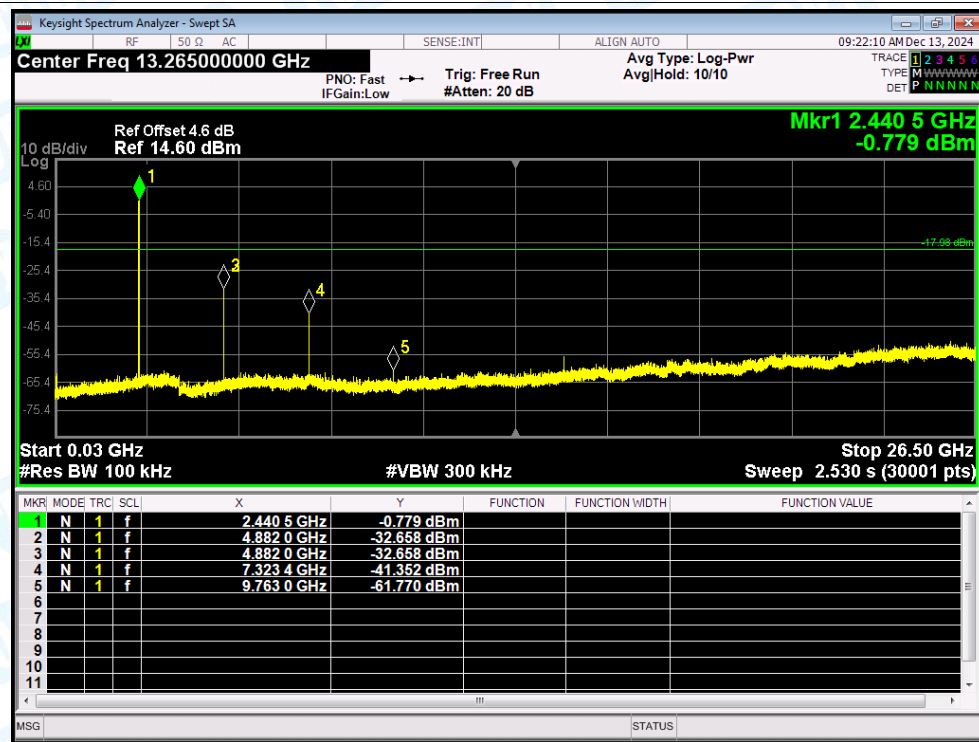
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



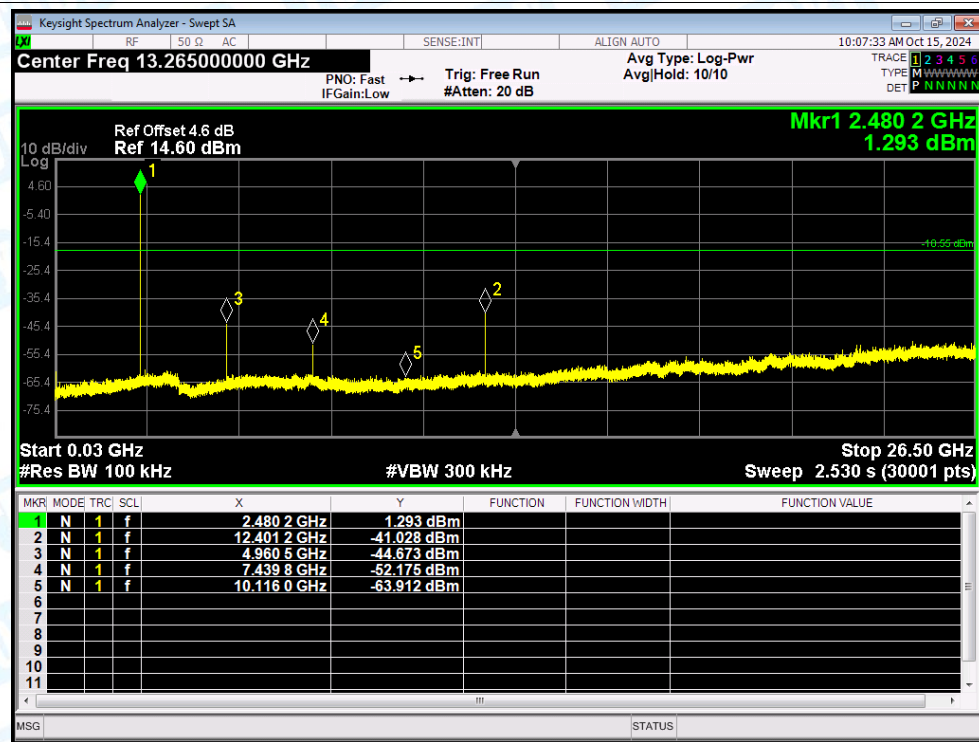
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



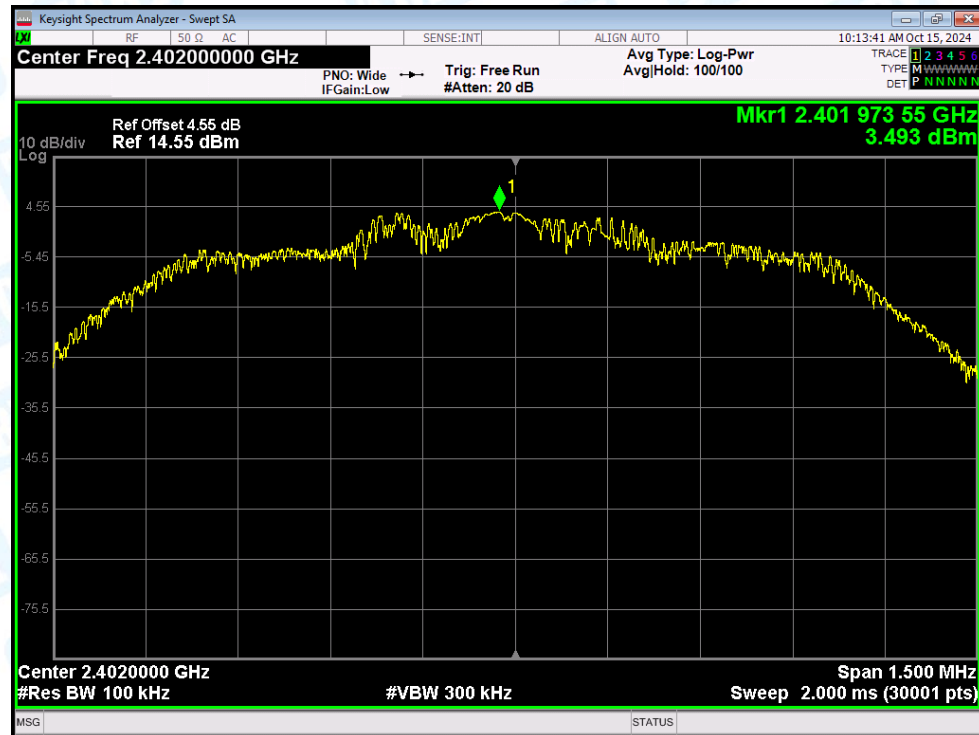
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



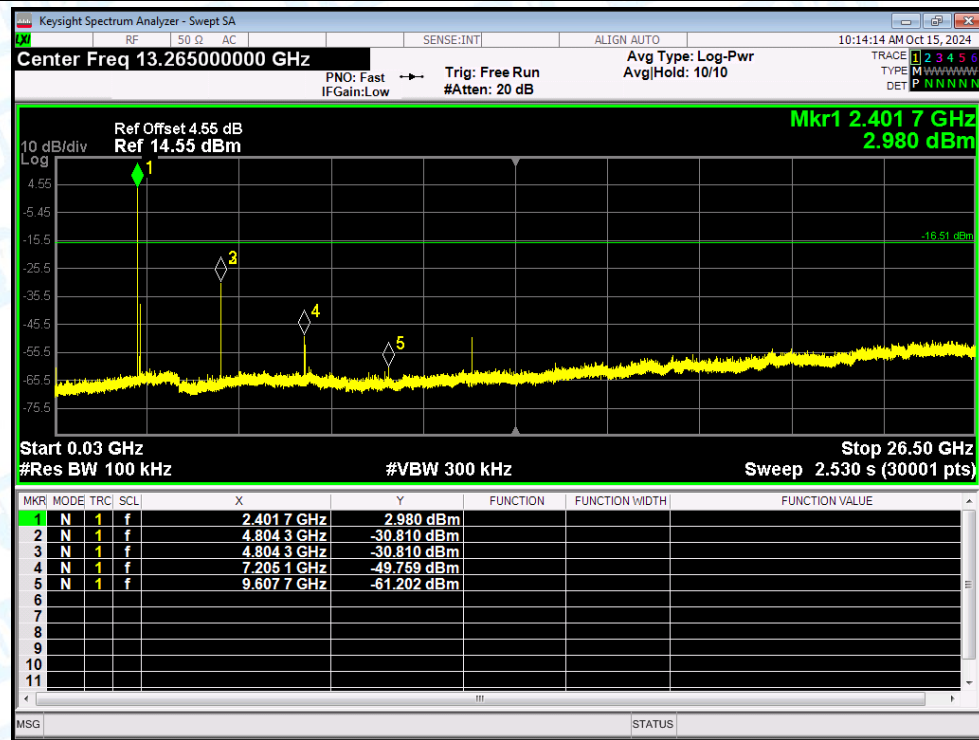
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



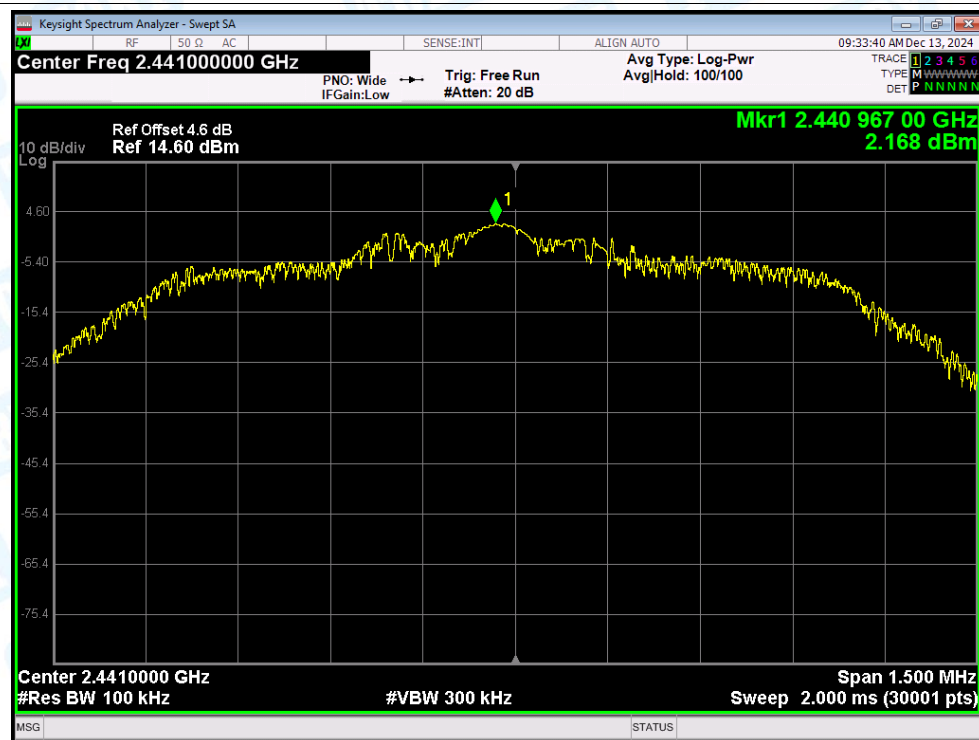
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



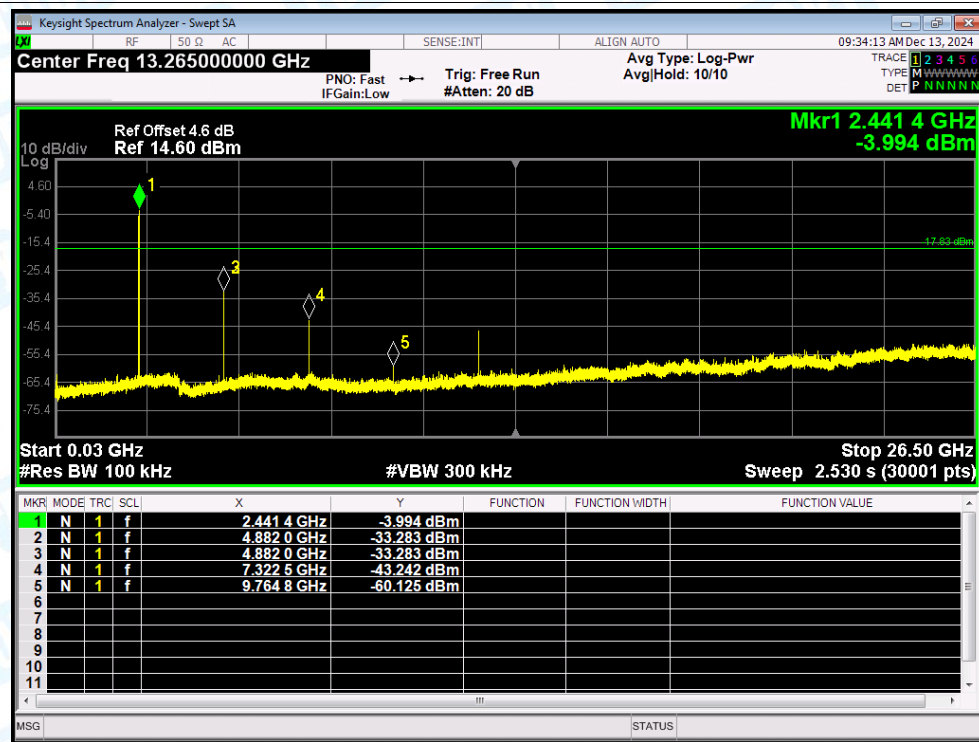
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



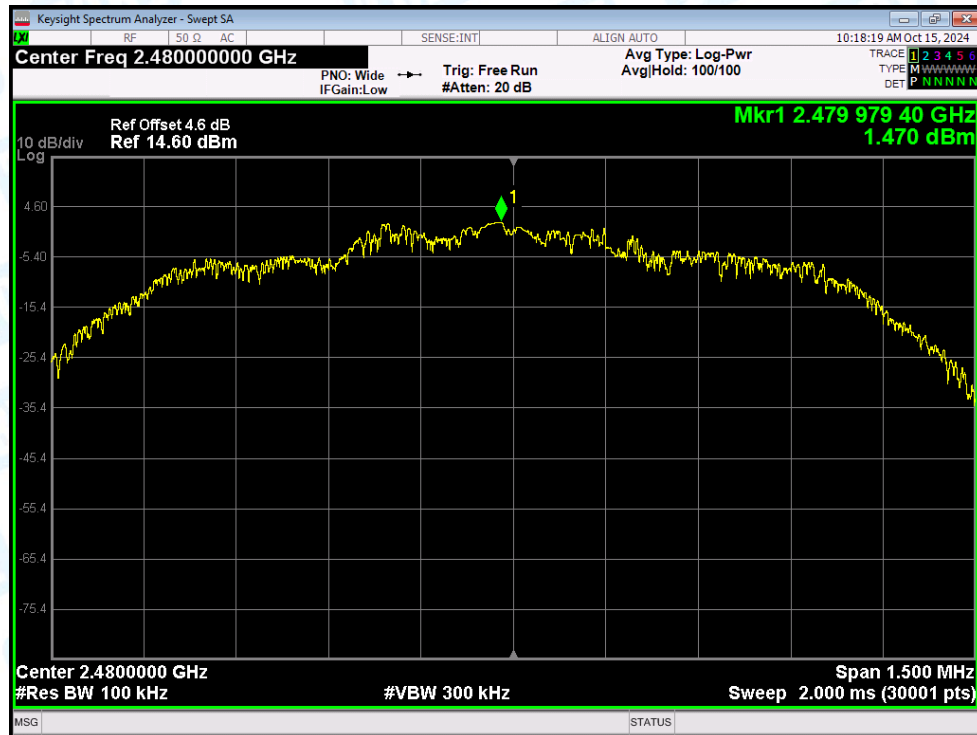
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



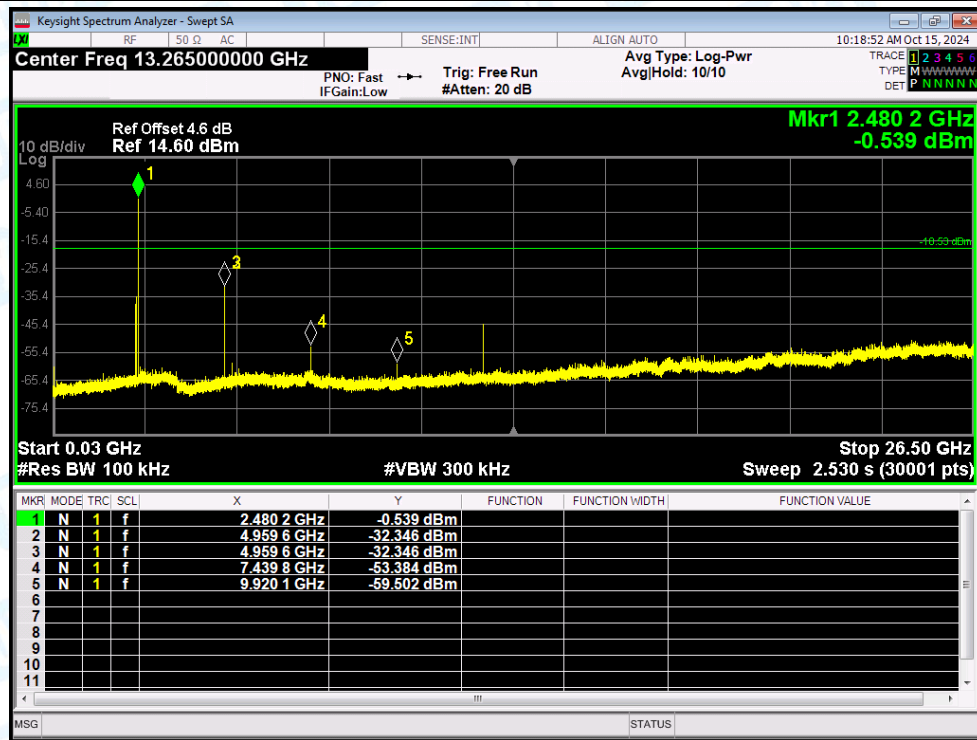
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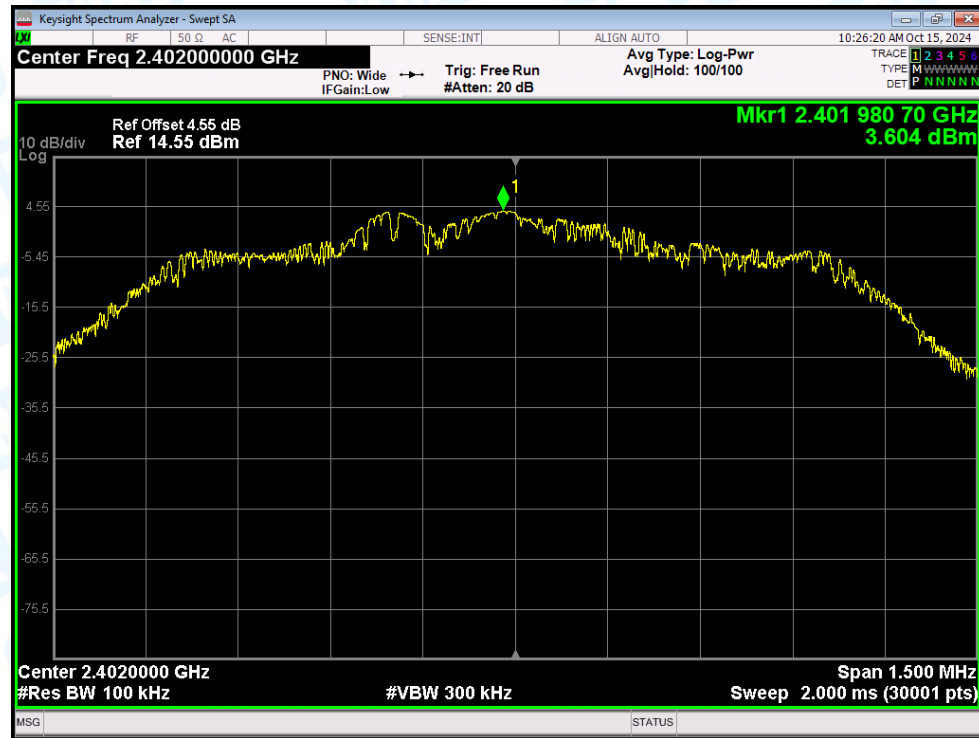
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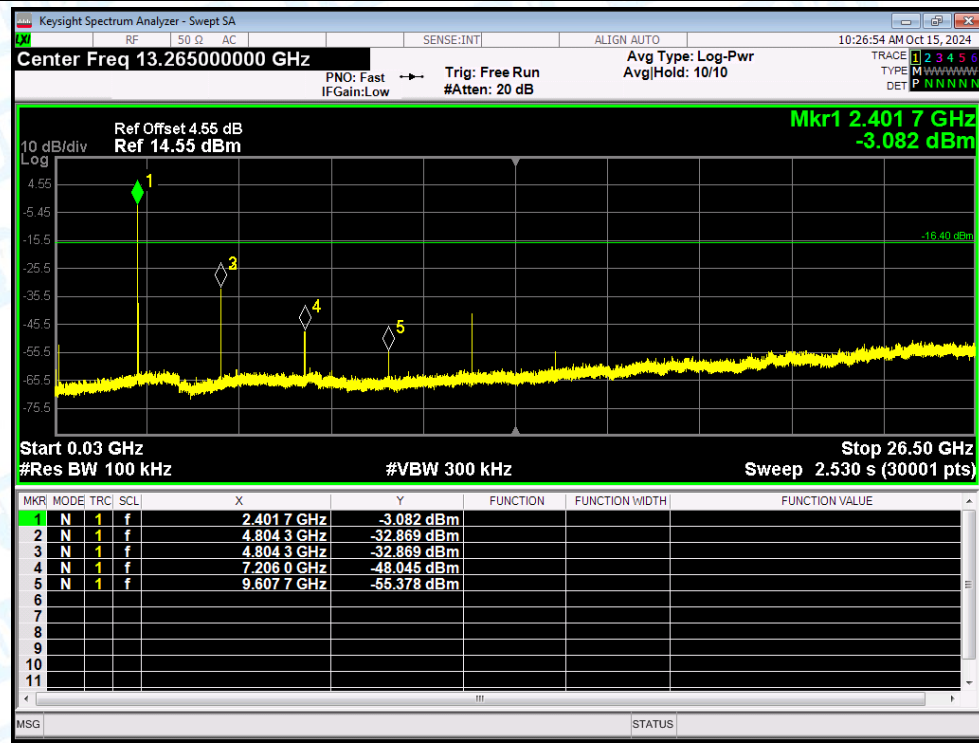
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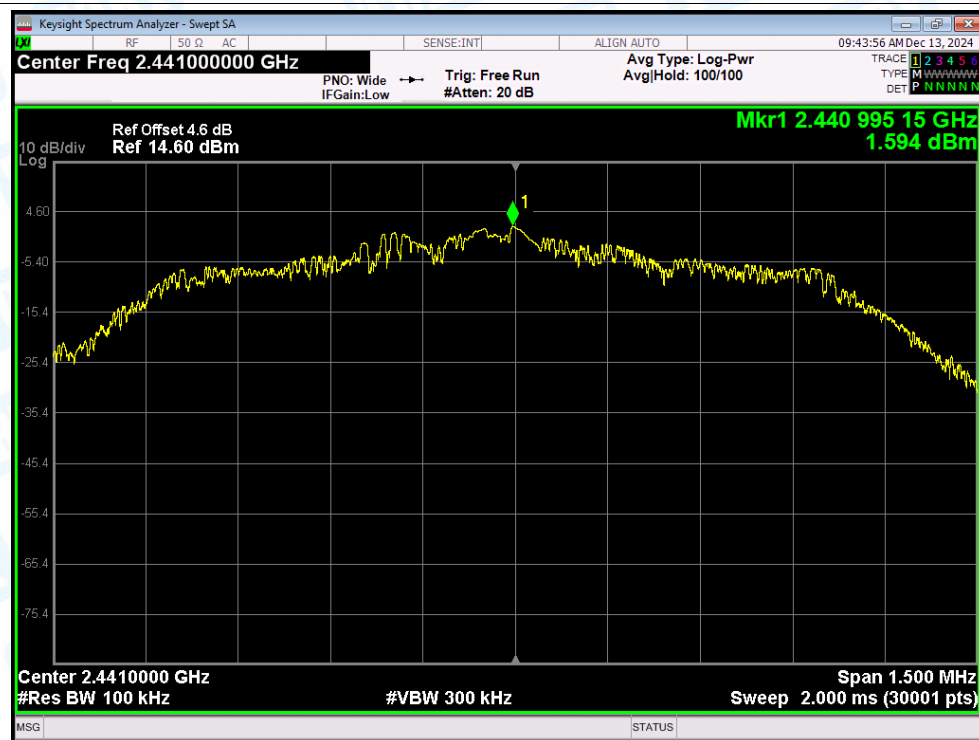
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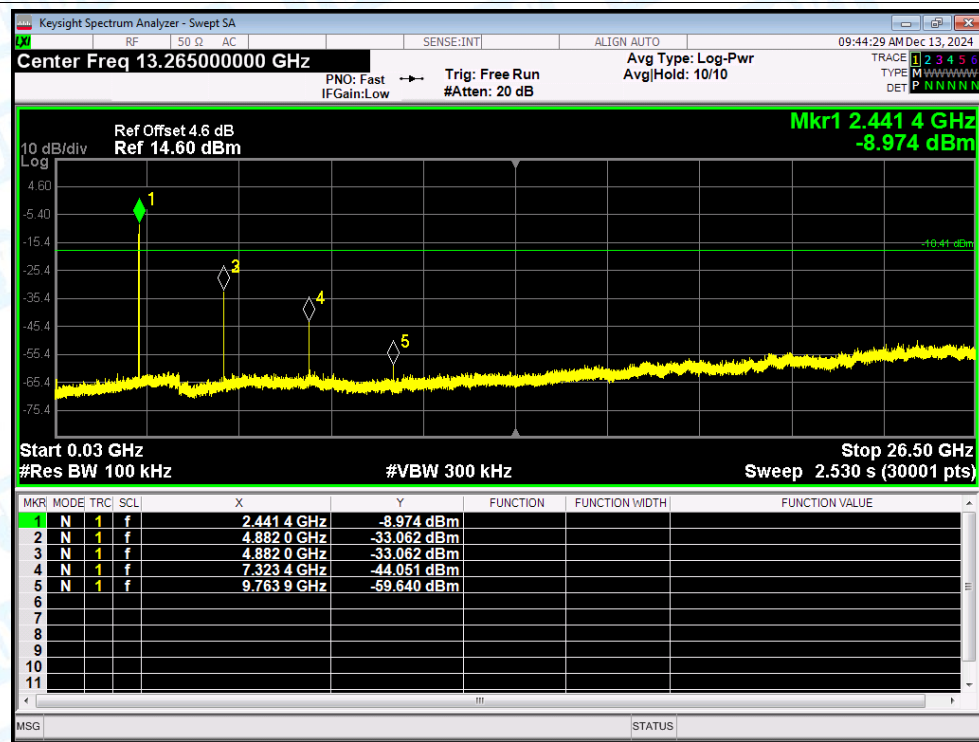
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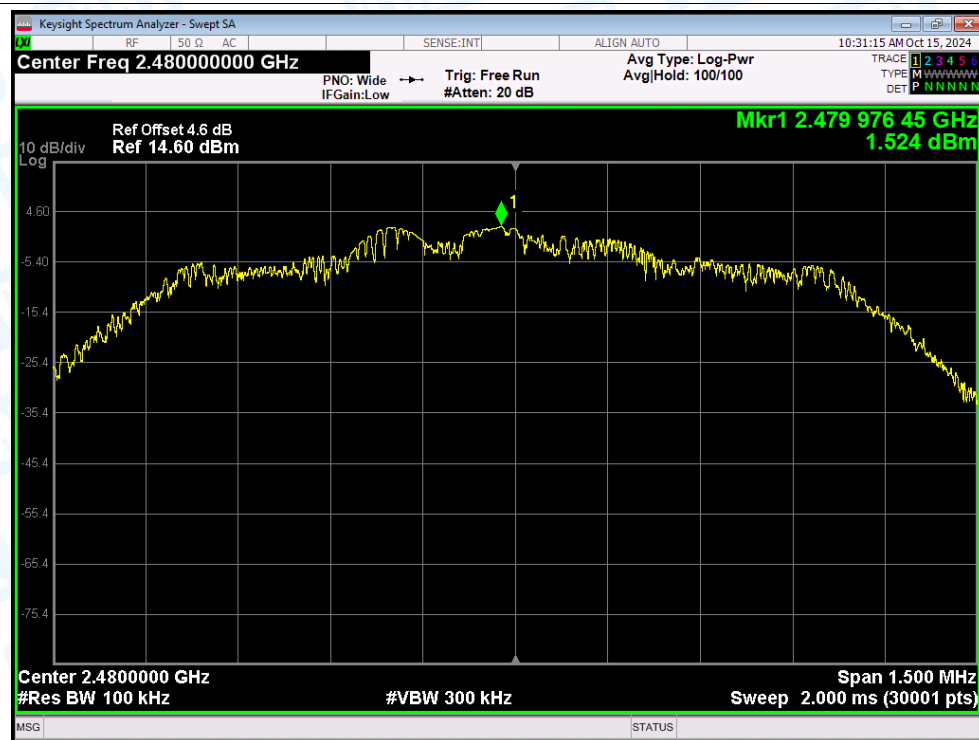
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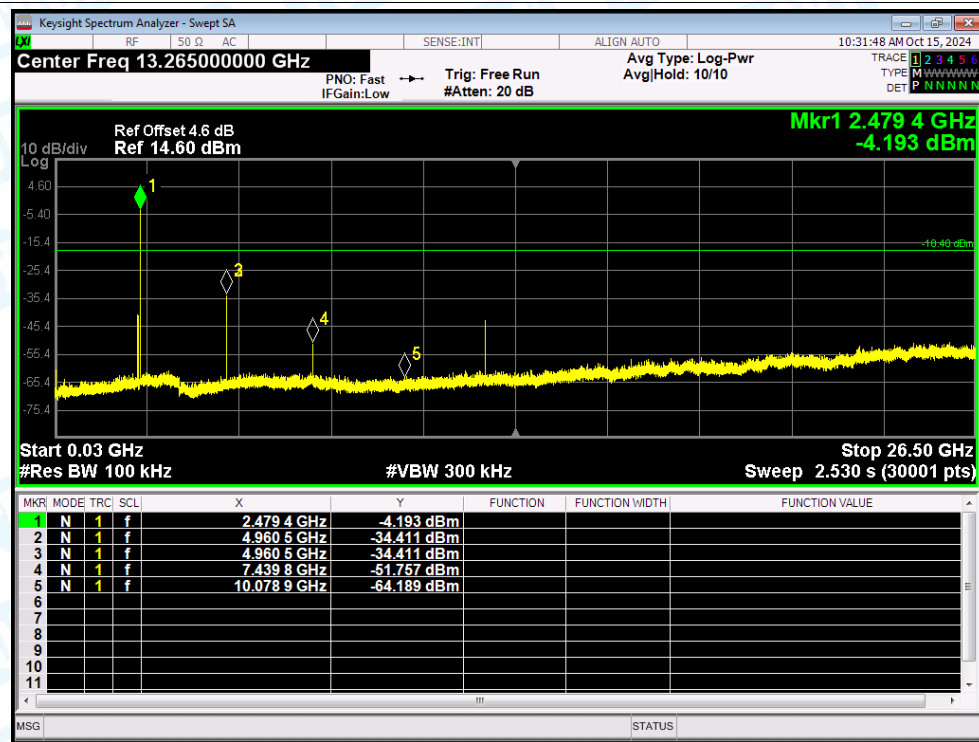
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

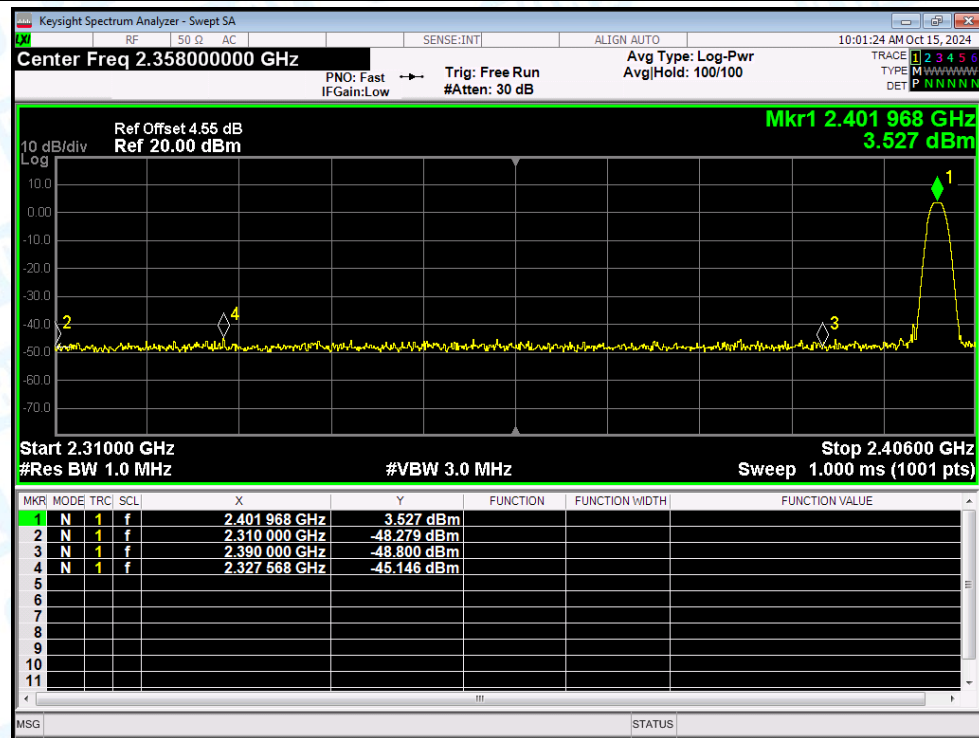


8.Restrict Band

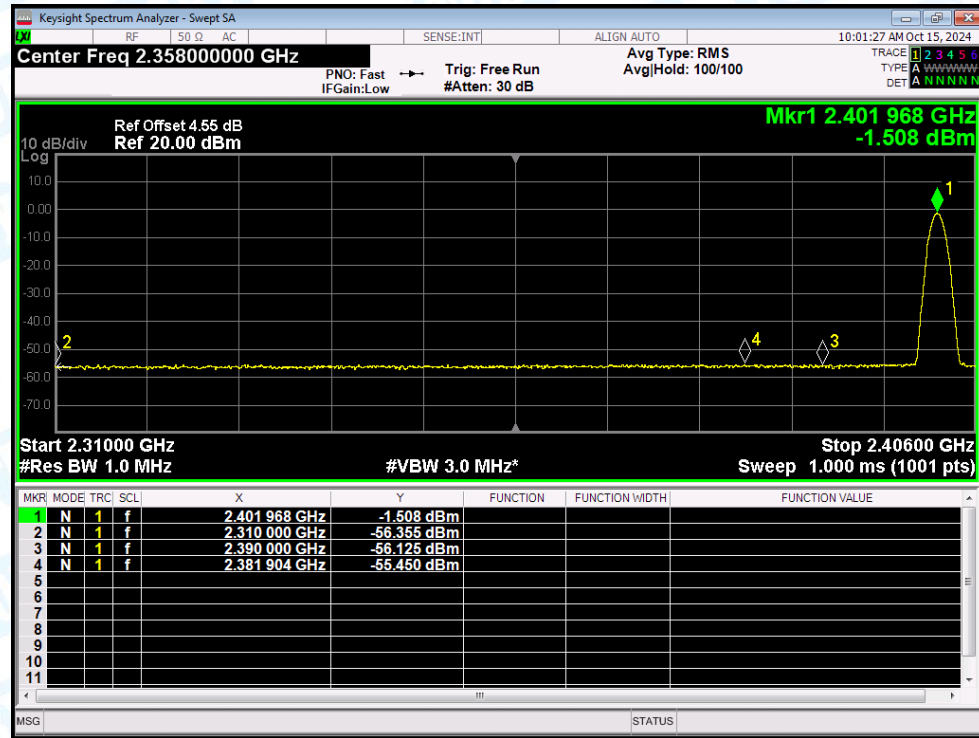
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-48.28	2	-	48.98	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.36	2	4.84	45.74	Average	54	Pass
NVNT	1-DH1	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

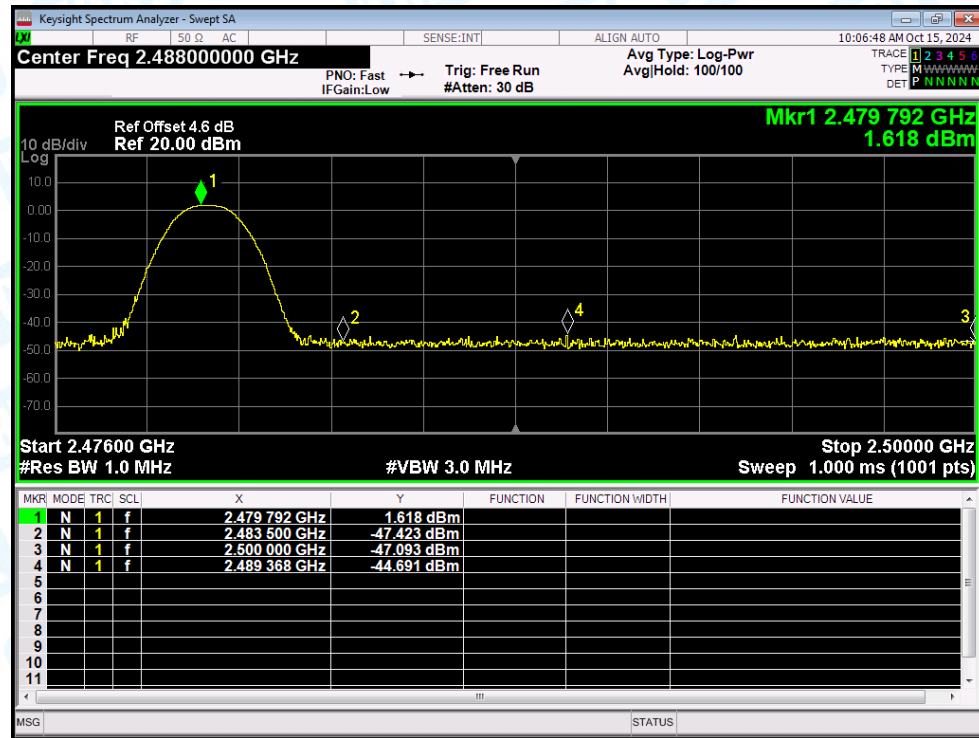
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



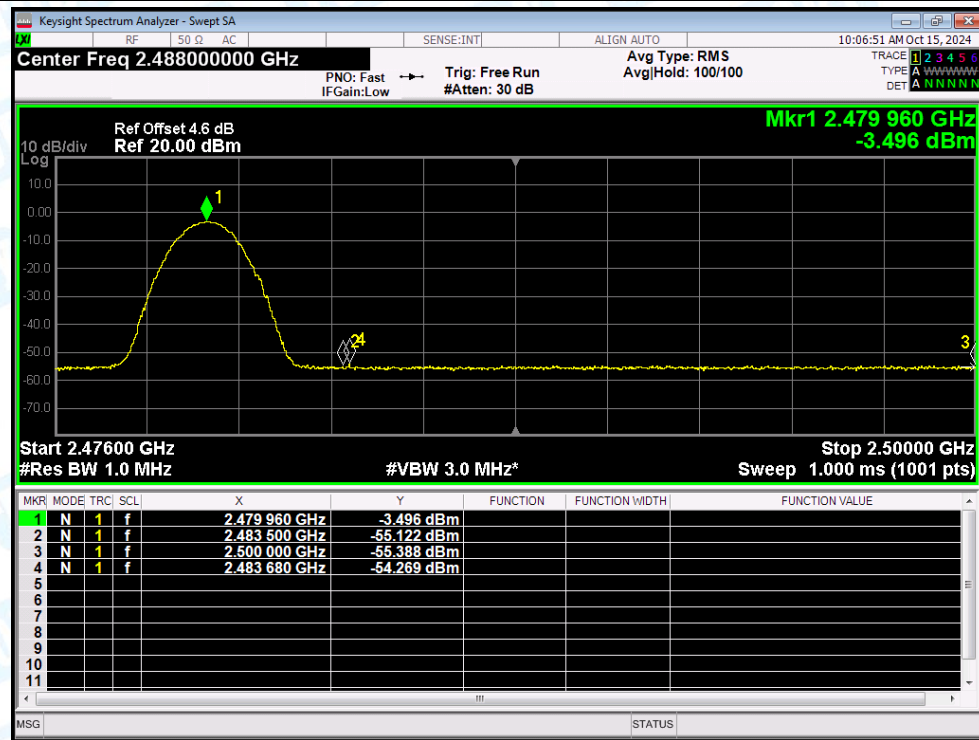
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



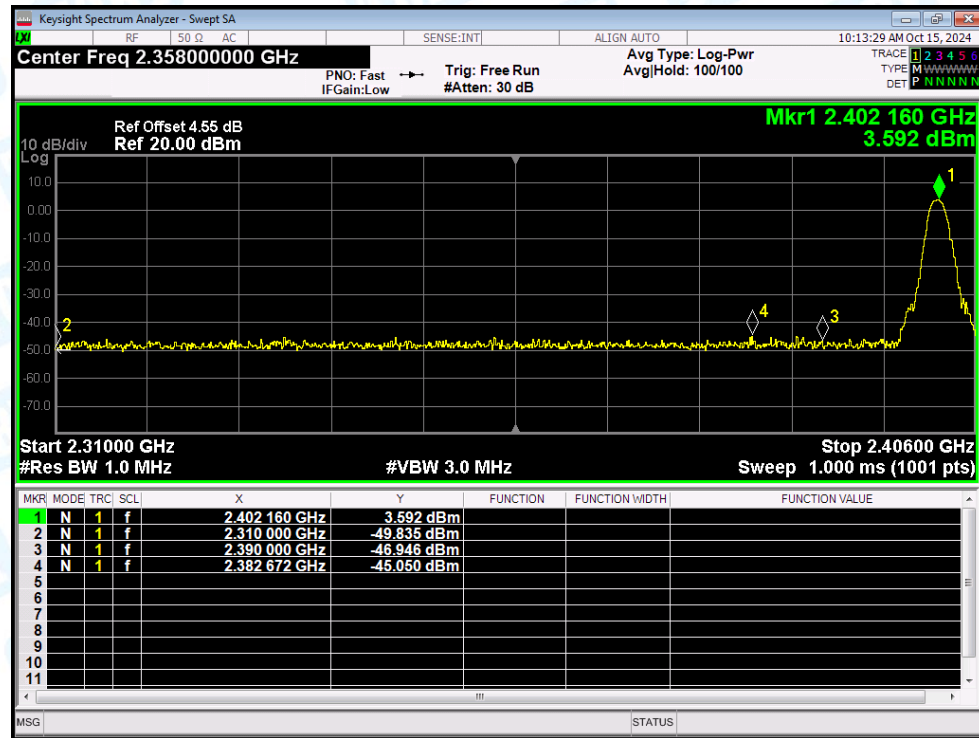
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



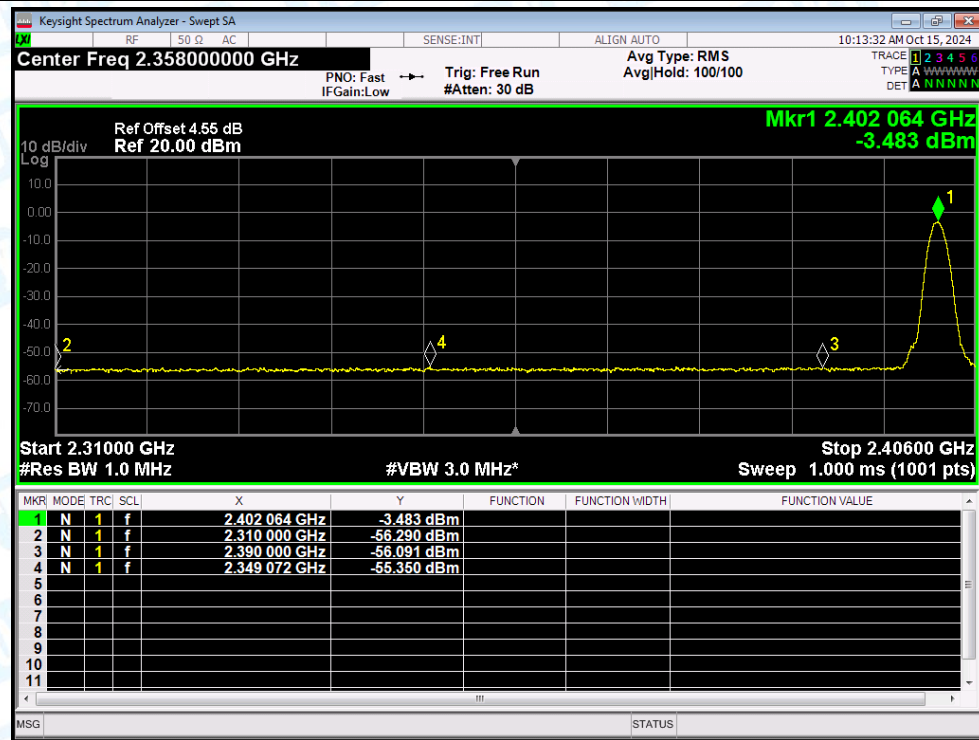
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



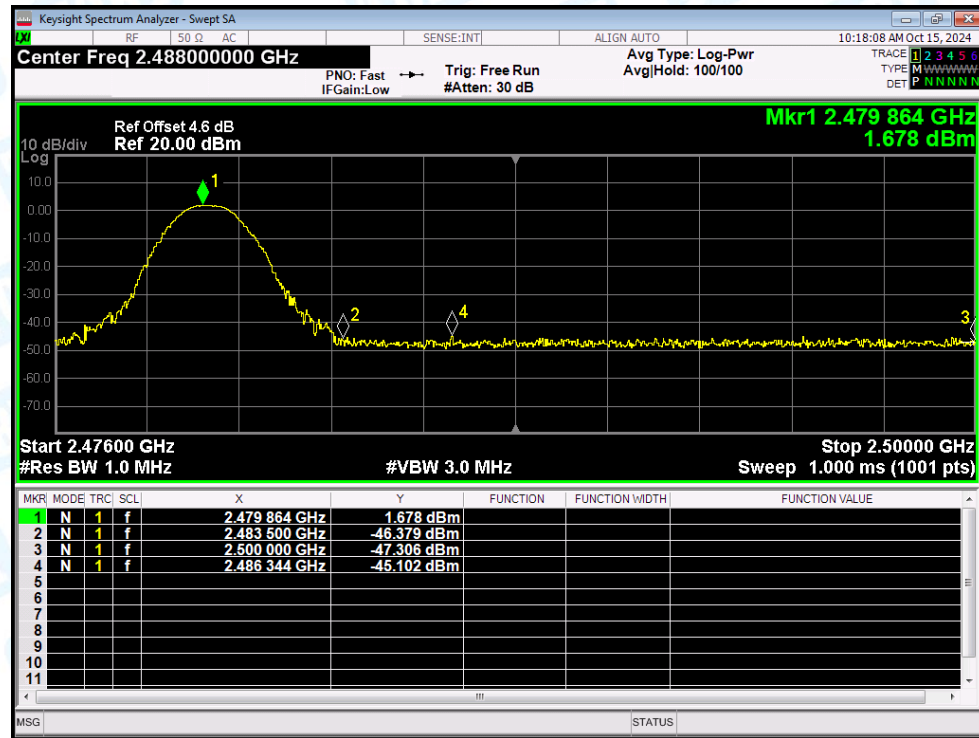
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



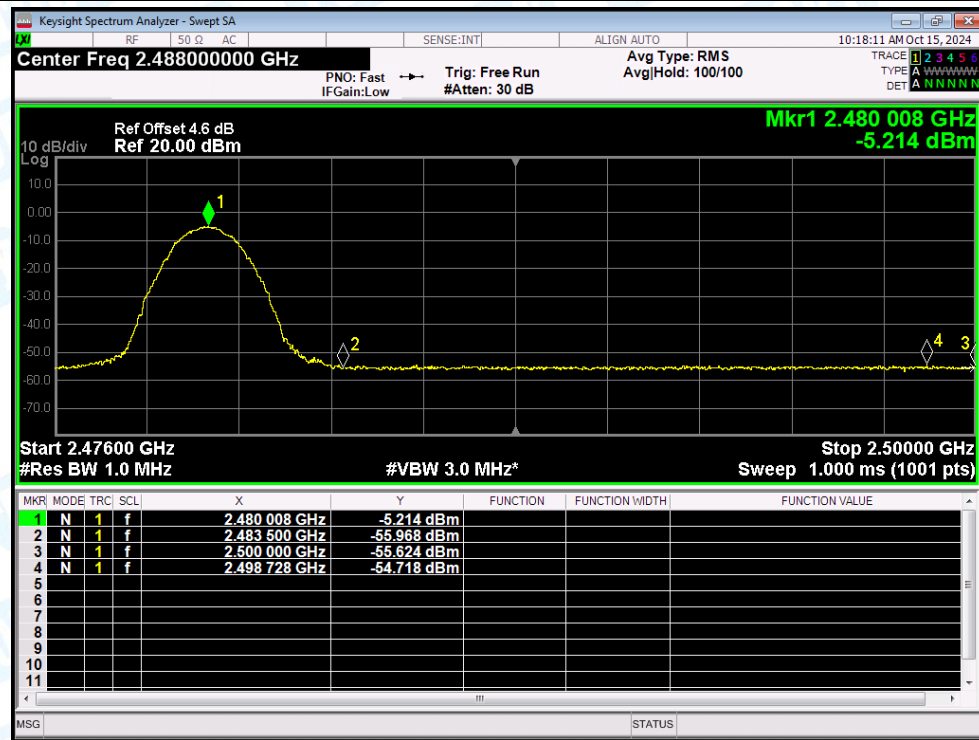
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



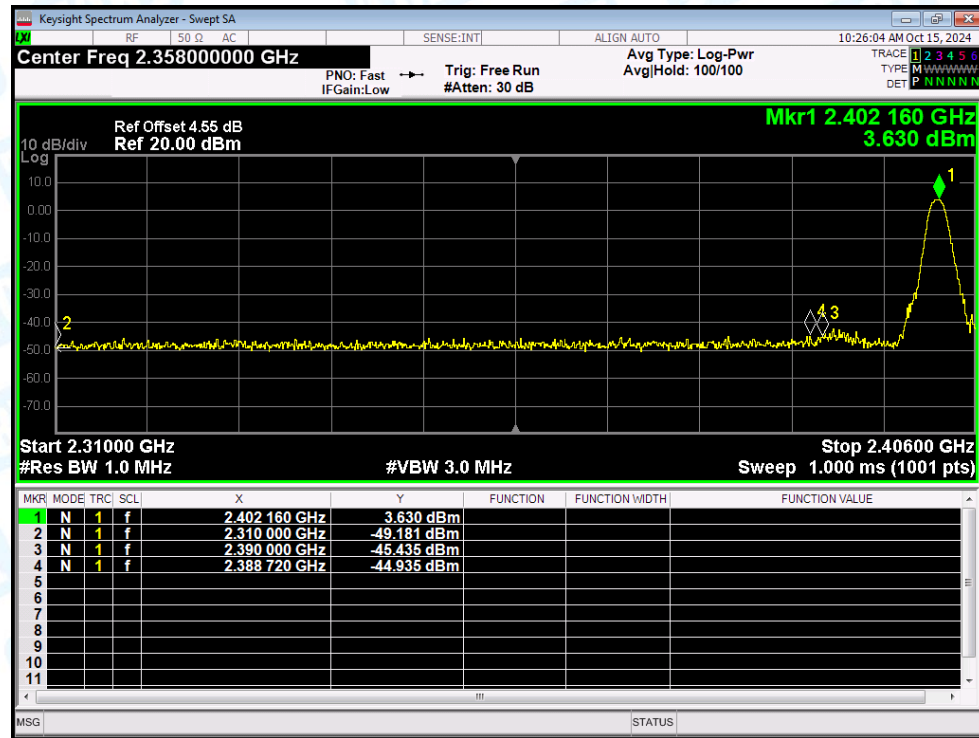
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



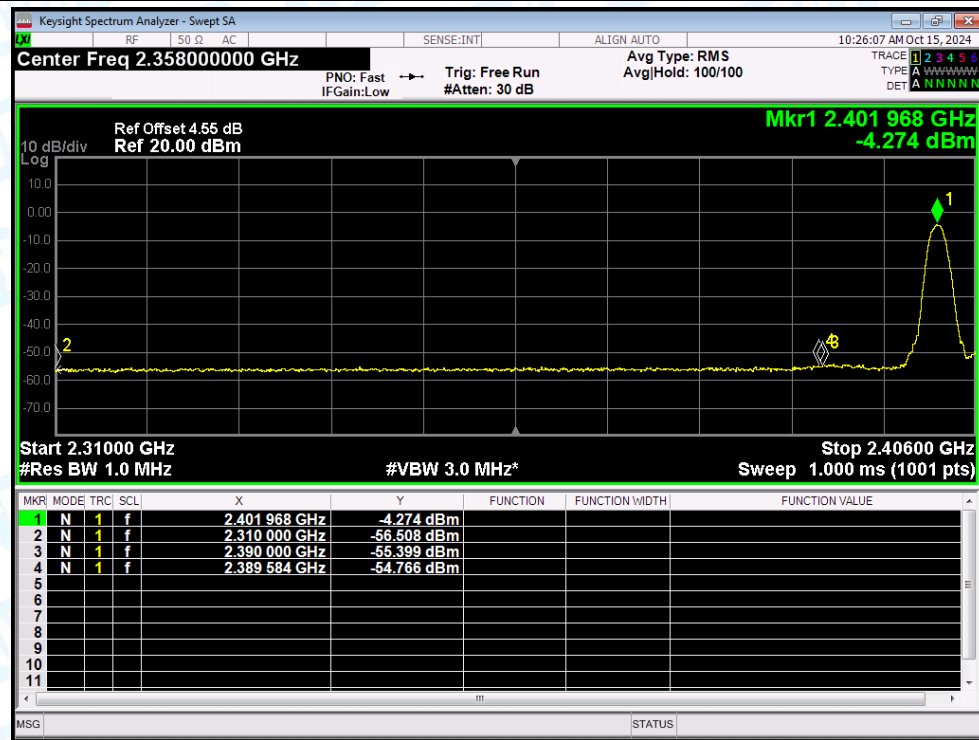
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



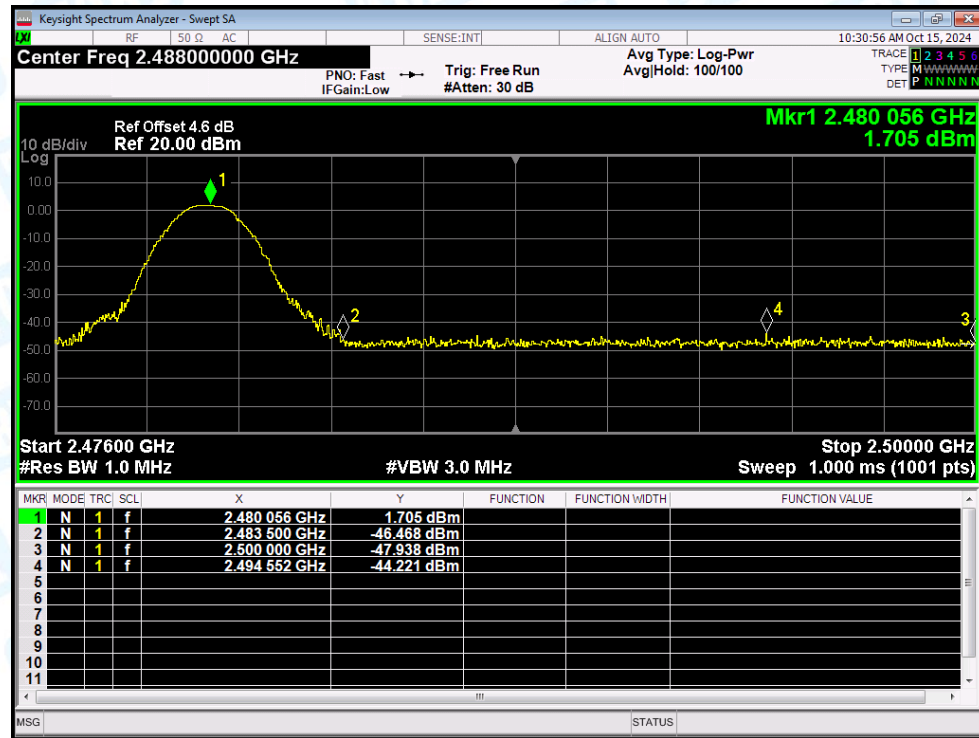
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



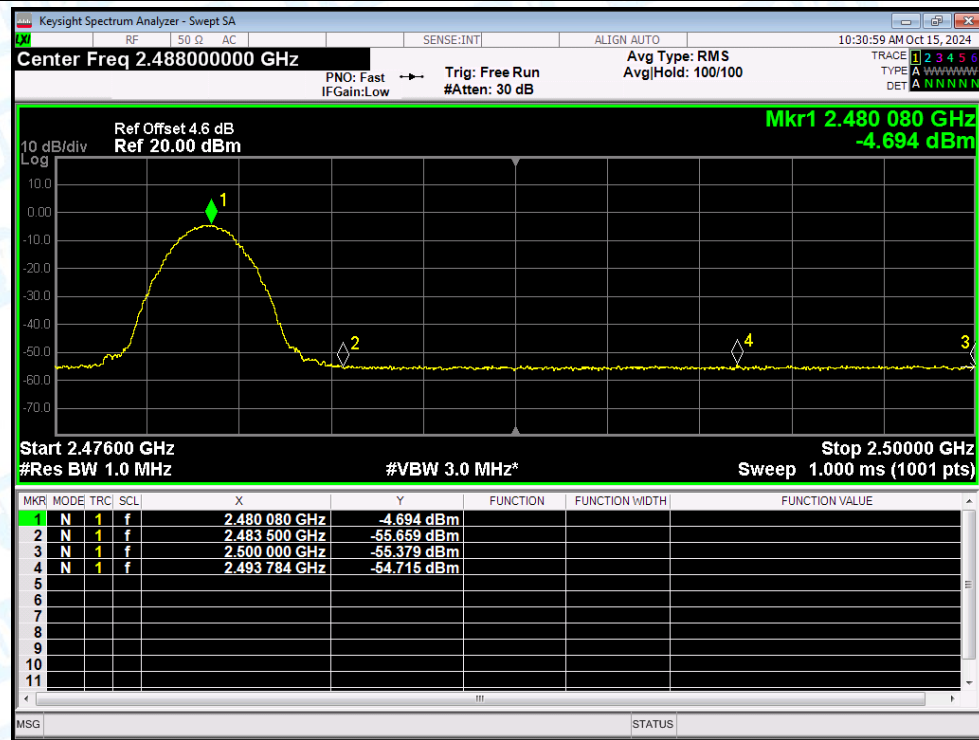
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

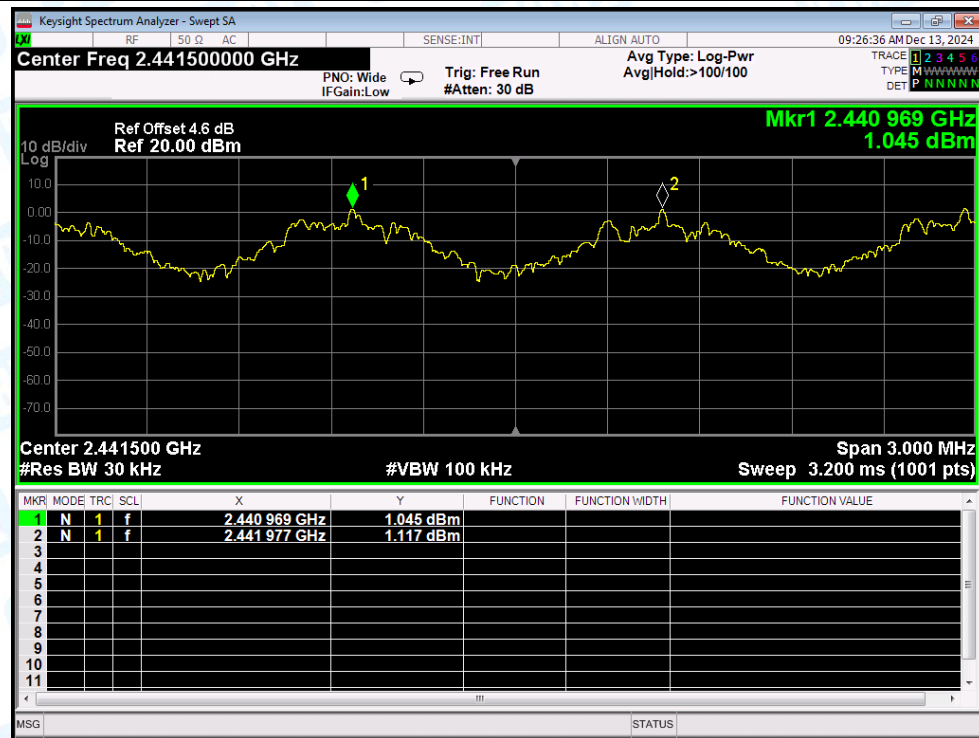


9.Carrier Frequencies Separation

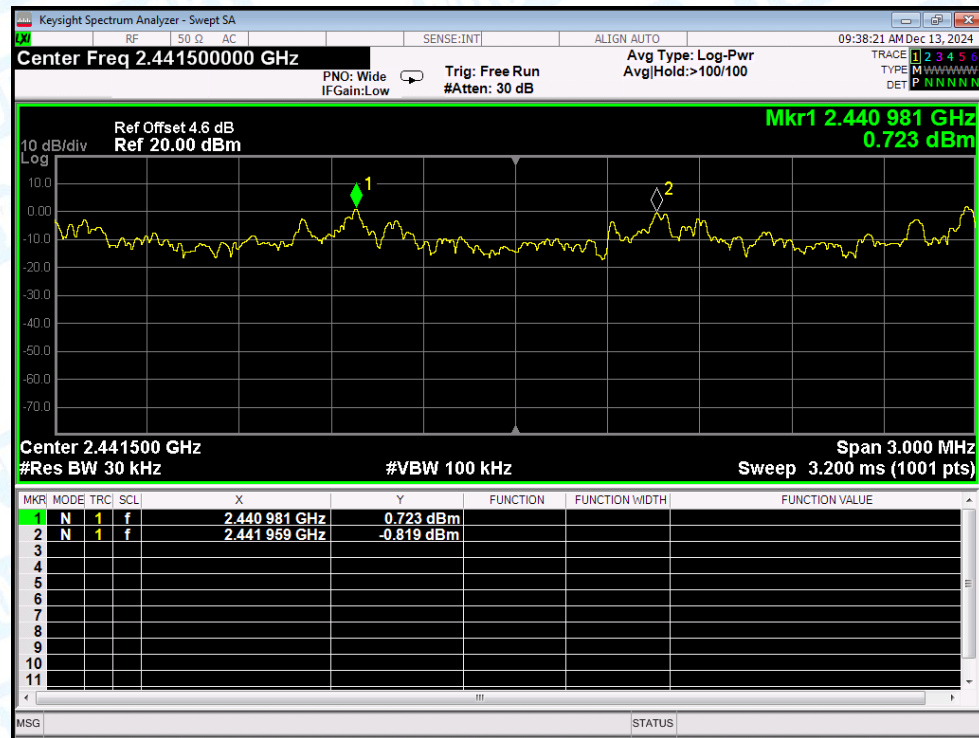
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.969	2441.977	1.008	0.52	Pass
NVNT	2-DH1	Ant1	2440.981	2441.959	0.978	0.773	Pass
NVNT	3-DH1	Ant1	2440.972	2441.971	0.999	0.793	Pass

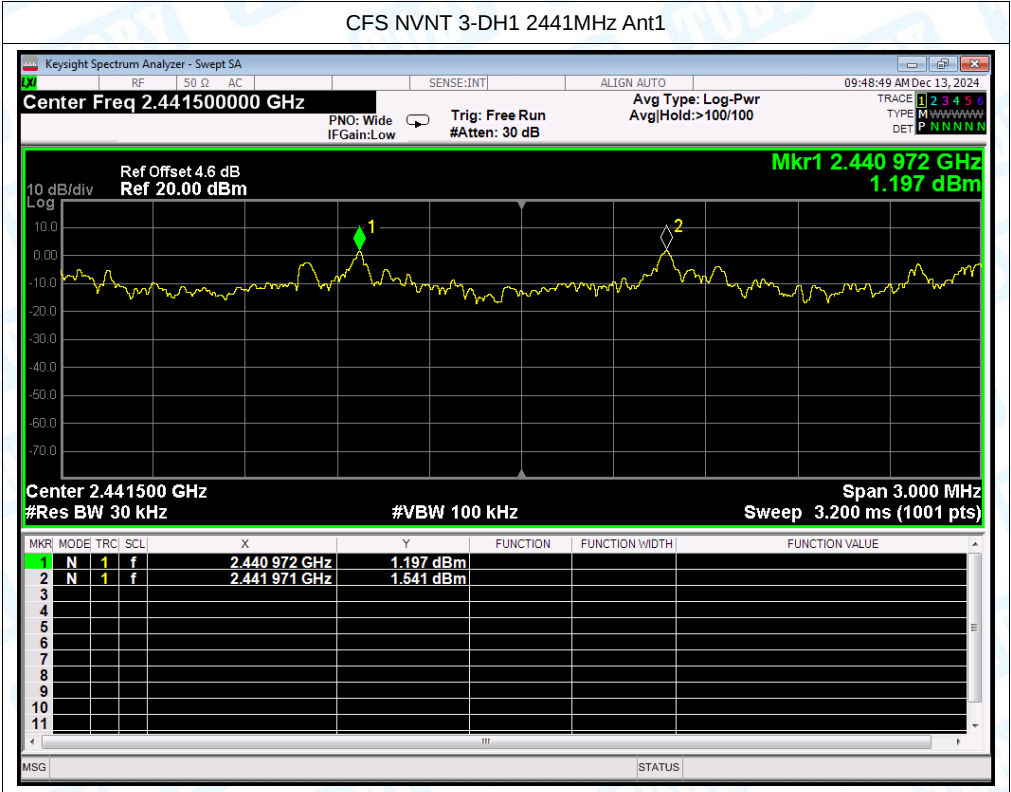
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



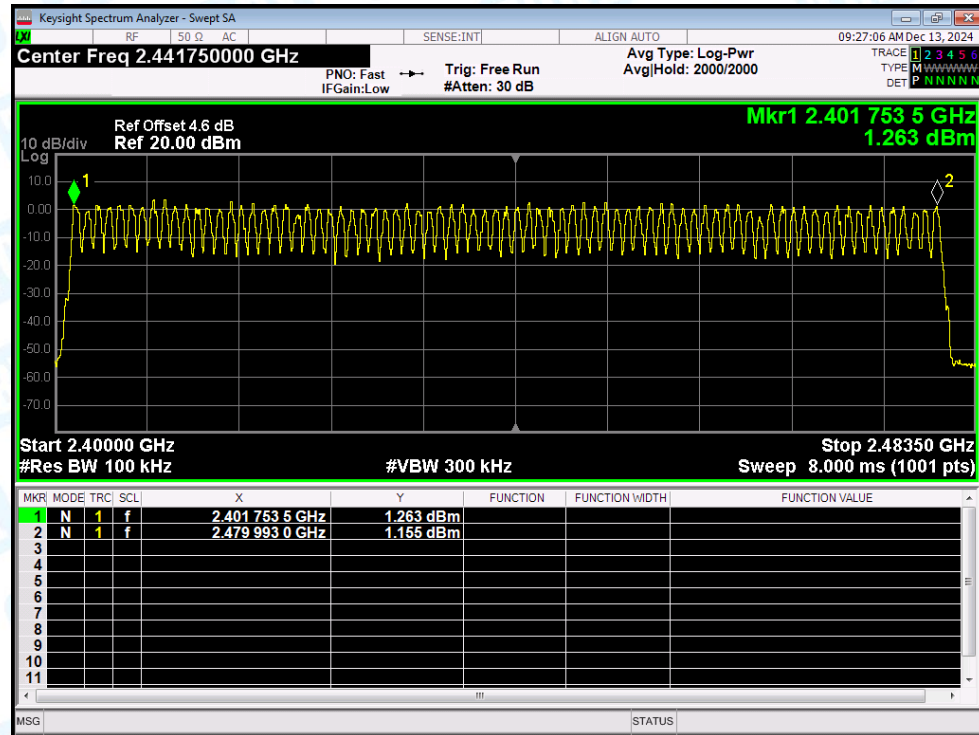


10.Number of Hopping Channel

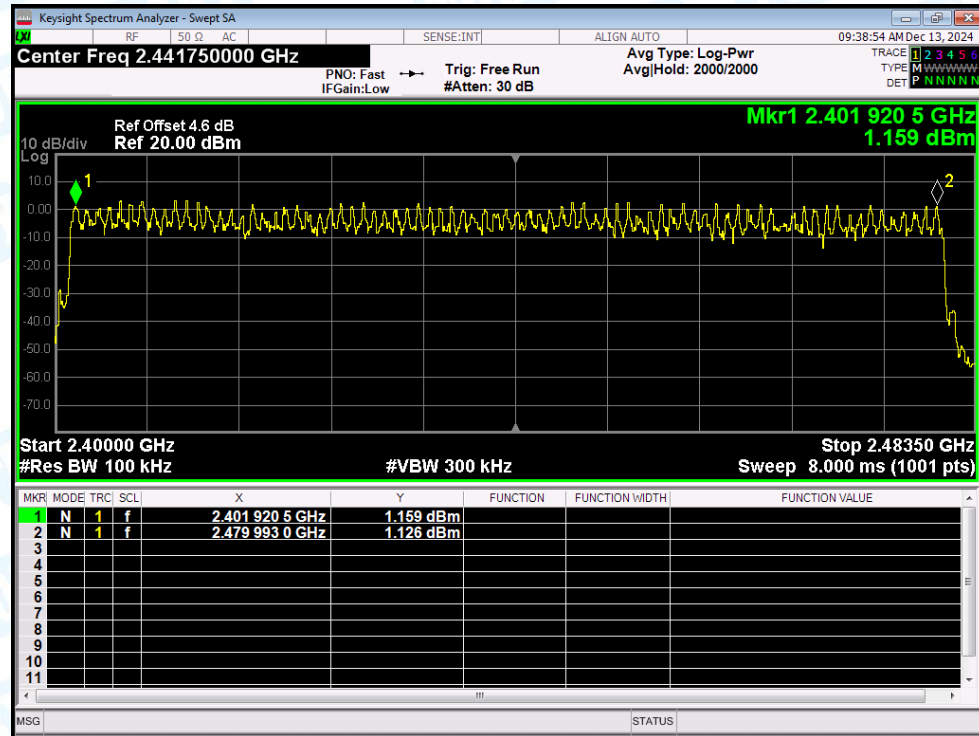
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

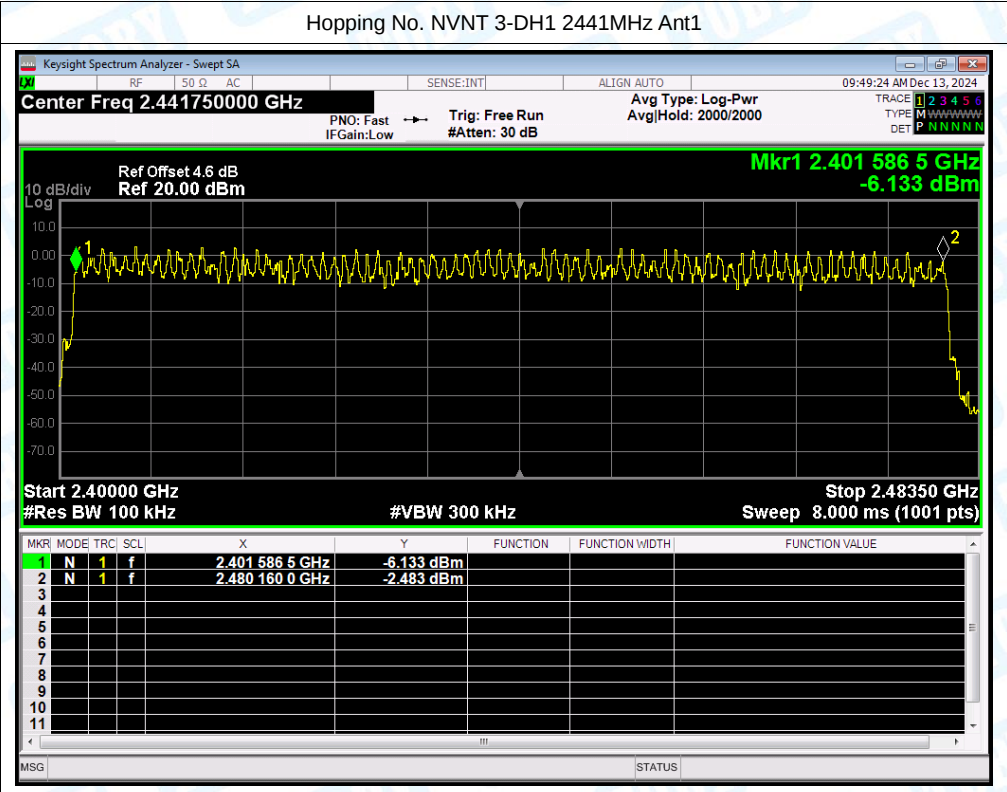
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



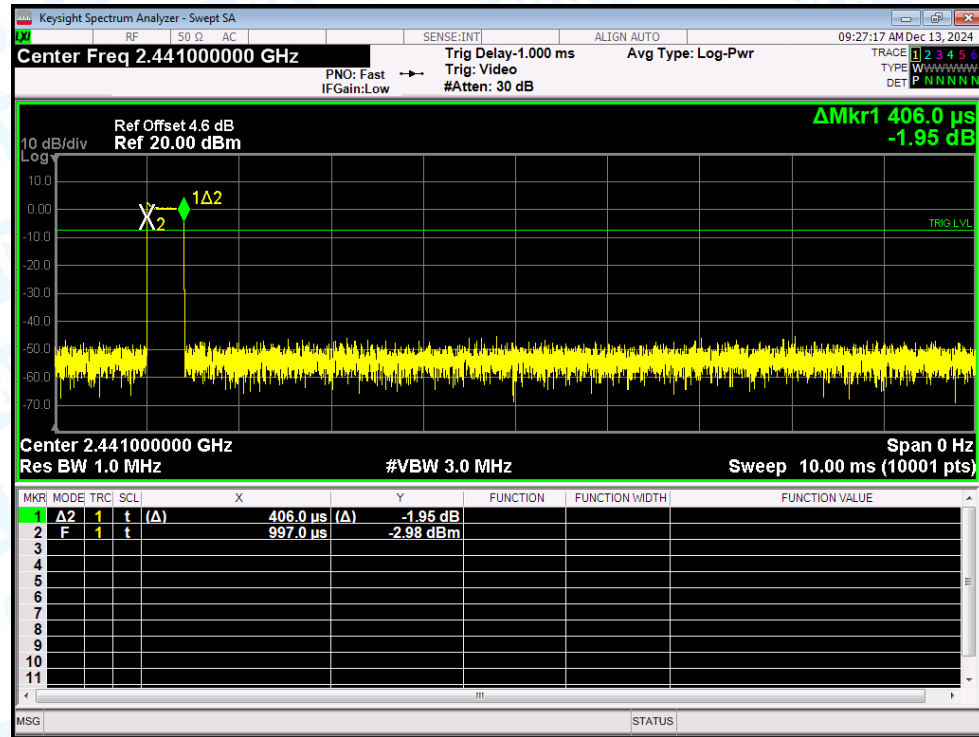


11.Dwell Time

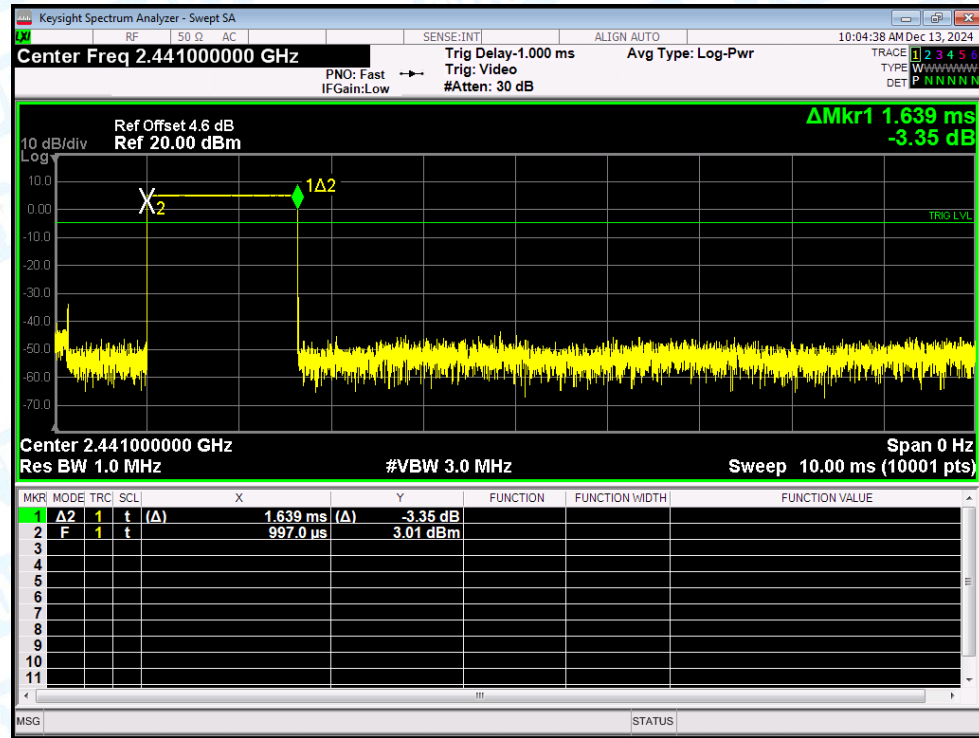
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.406	129.92	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.639	262.24	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.887	307.947	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.416	133.12	31600	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

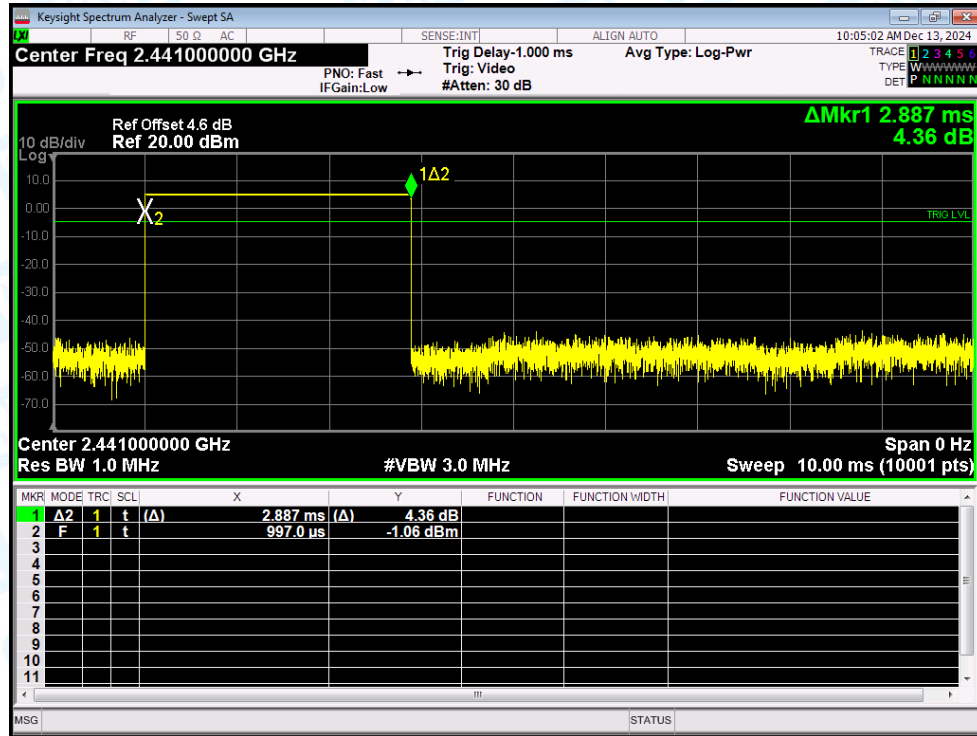
Dwell NVNT 1-DH1 2441MHz Ant1



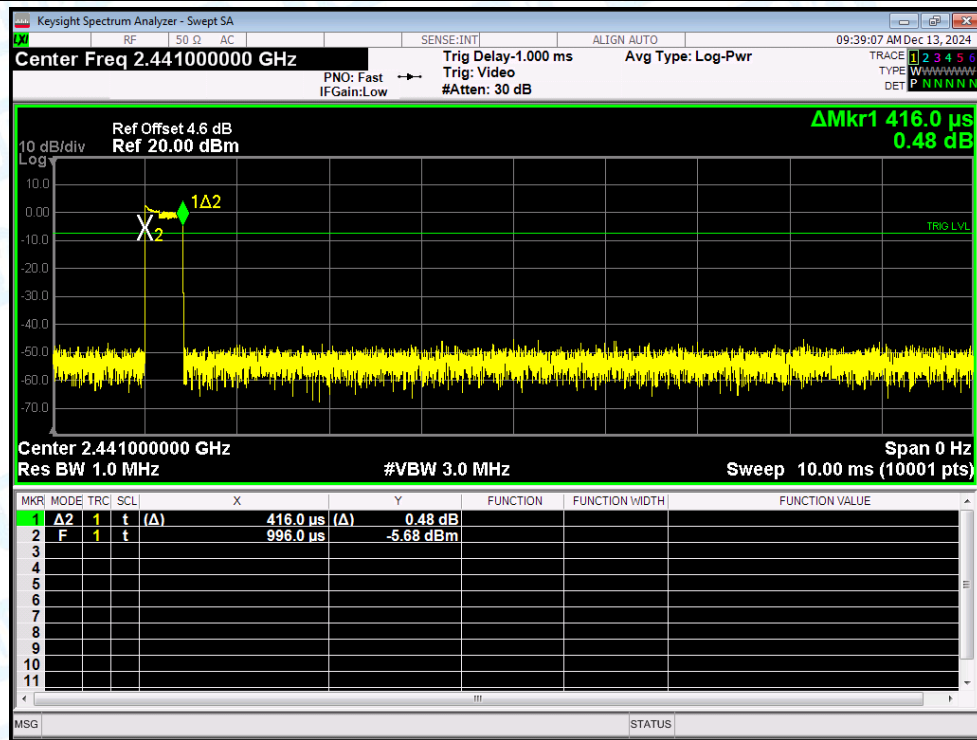
Dwell NVNT 1-DH3 2441MHz Ant1



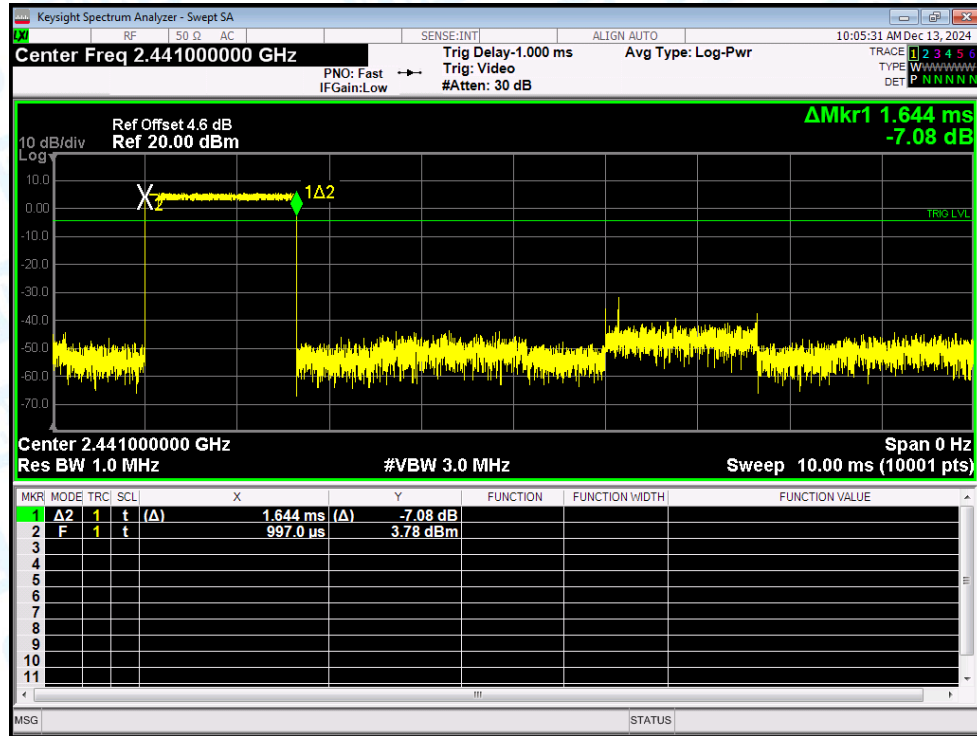
Dwell NVNT 1-DH5 2441MHz Ant1



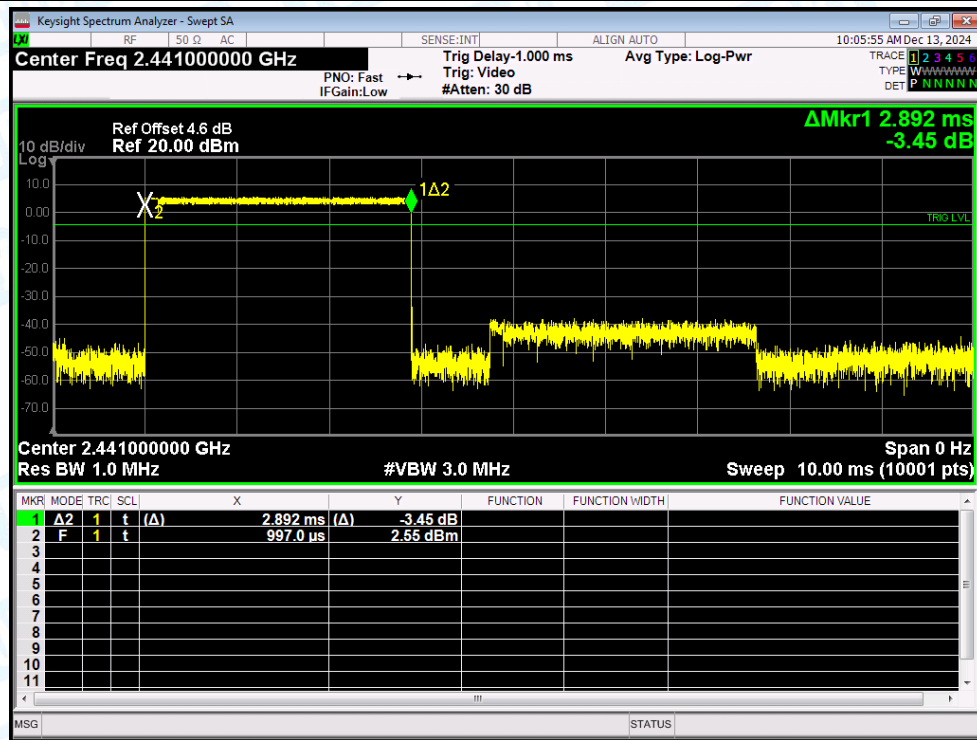
Dwell NVNT 2-DH1 2441MHz Ant1



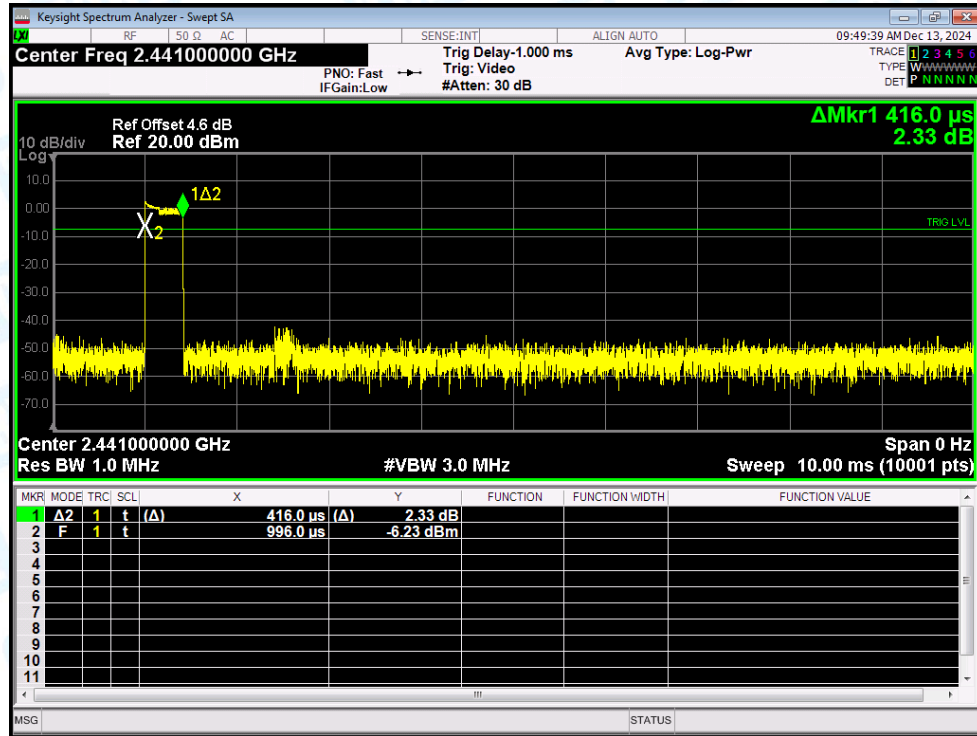
Dwell NVNT 2-DH3 2441MHz Ant1



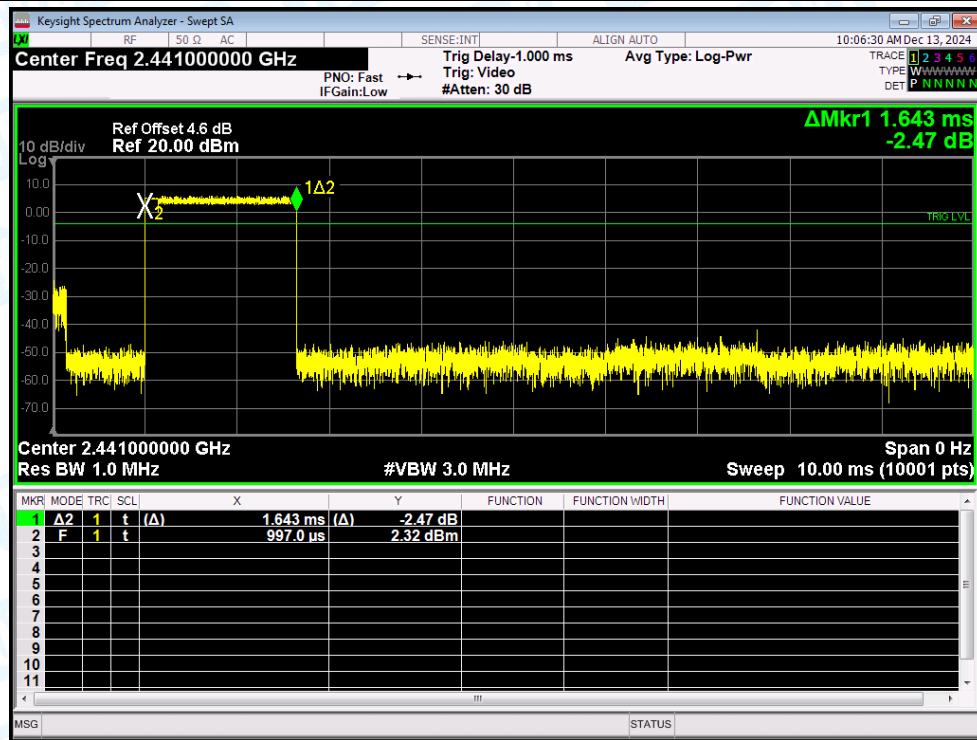
Dwell NVNT 2-DH5 2441MHz Ant1

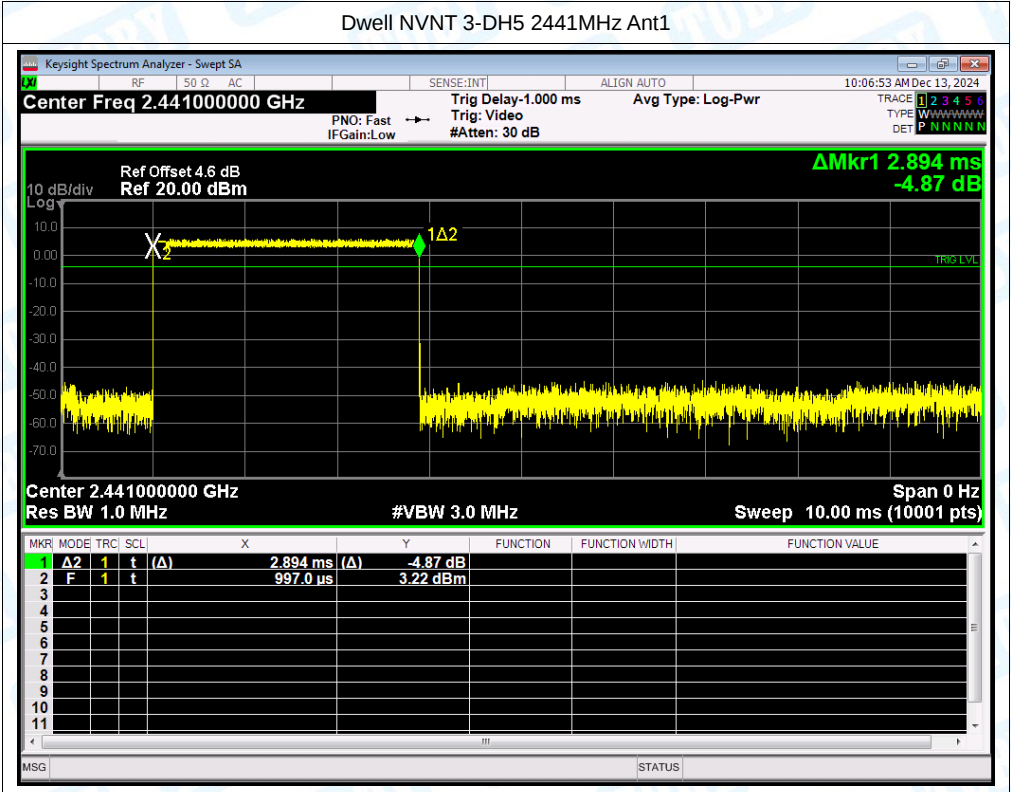


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





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