

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	Bluetooth Ear Protector
Test Model:	E2
Sample ID:	HC-C-202503-0221-01-02#
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-202503-0221-61 The report only show the worst case data.	

Contents

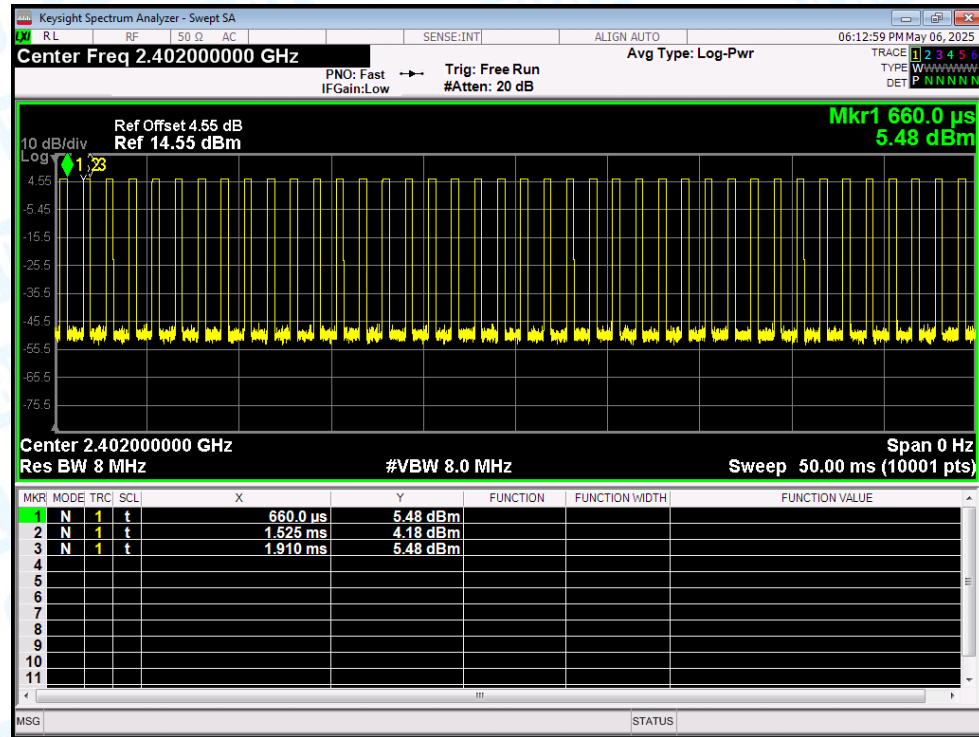
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1.Duty Cycle

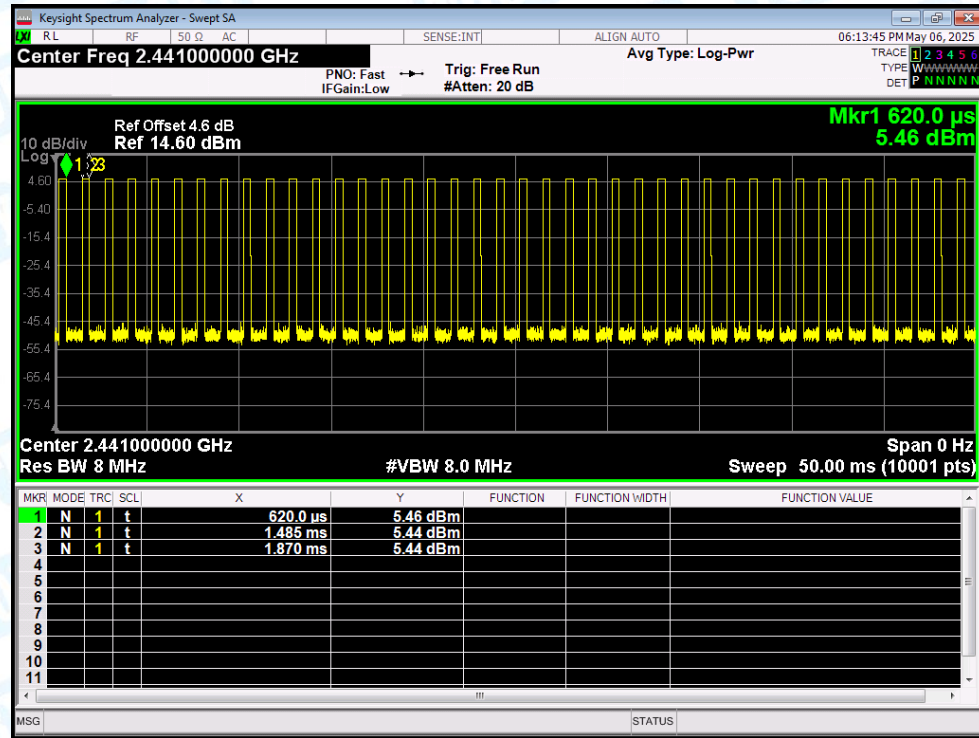
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	30.8	5.11	2.6
NVNT	1-DH1	2441	Ant1	30.8	5.11	2.6
NVNT	1-DH1	2480	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2402	Ant1	31.6	5	2.53
NVNT	2-DH1	2441	Ant1	31.6	5	2.53
NVNT	2-DH1	2480	Ant1	31.6	5	2.53
NVNT	3-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	3-DH1	2441	Ant1	31.6	5	2.53
NVNT	3-DH1	2480	Ant1	31.2	5.06	2.56

Test Graphs

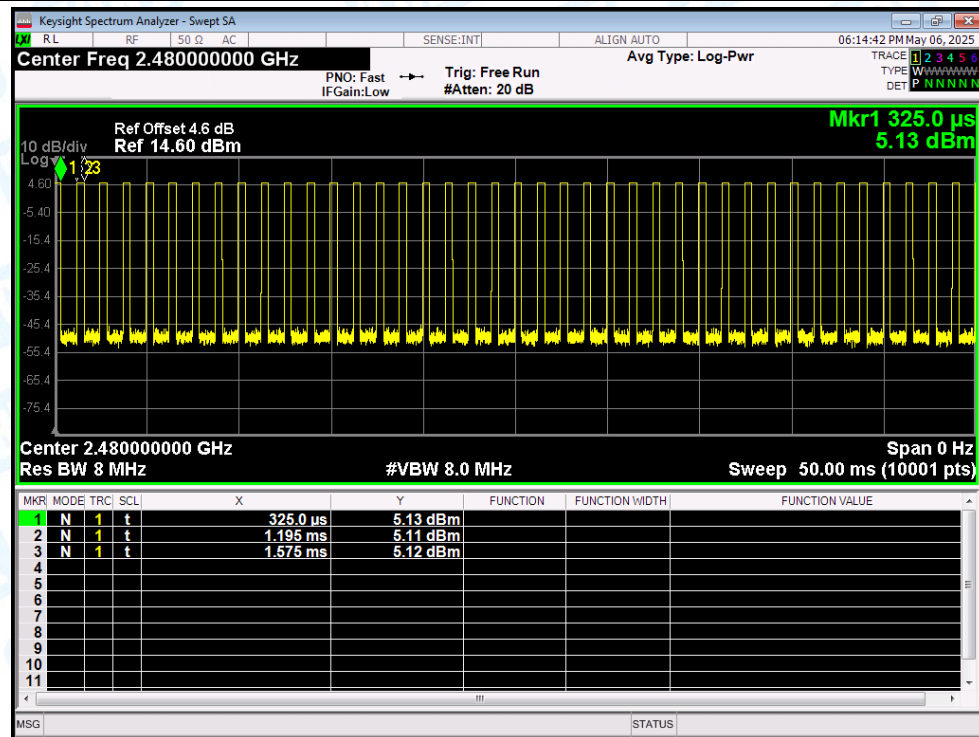
Duty Cycle NVNT 1-DH1 2402MHz Ant1



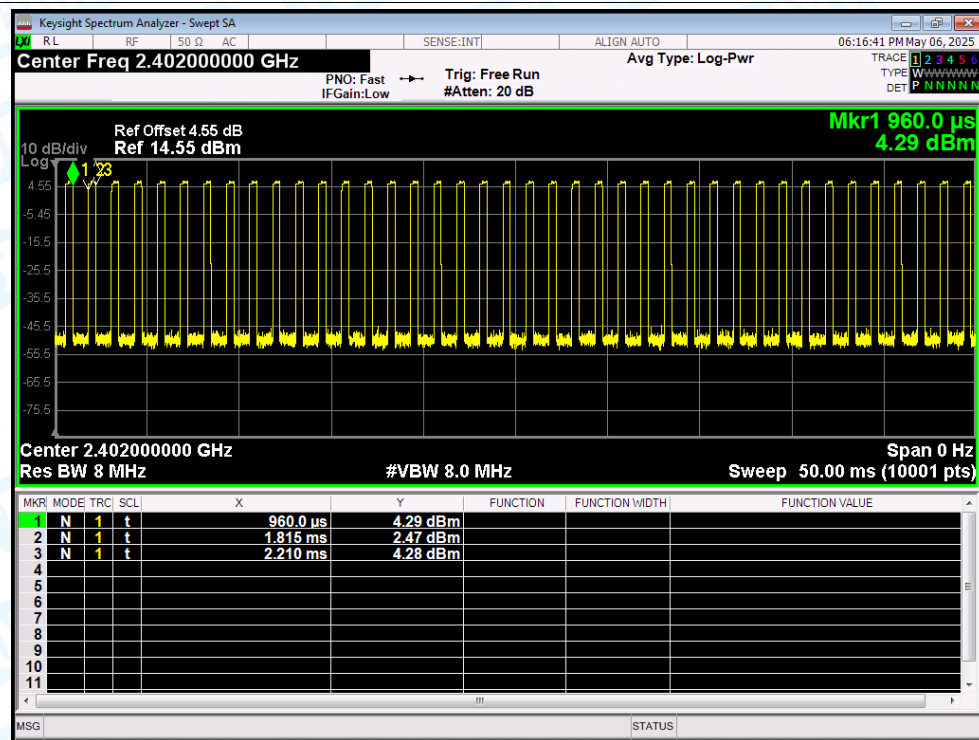
Duty Cycle NVNT 1-DH1 2441MHz Ant1



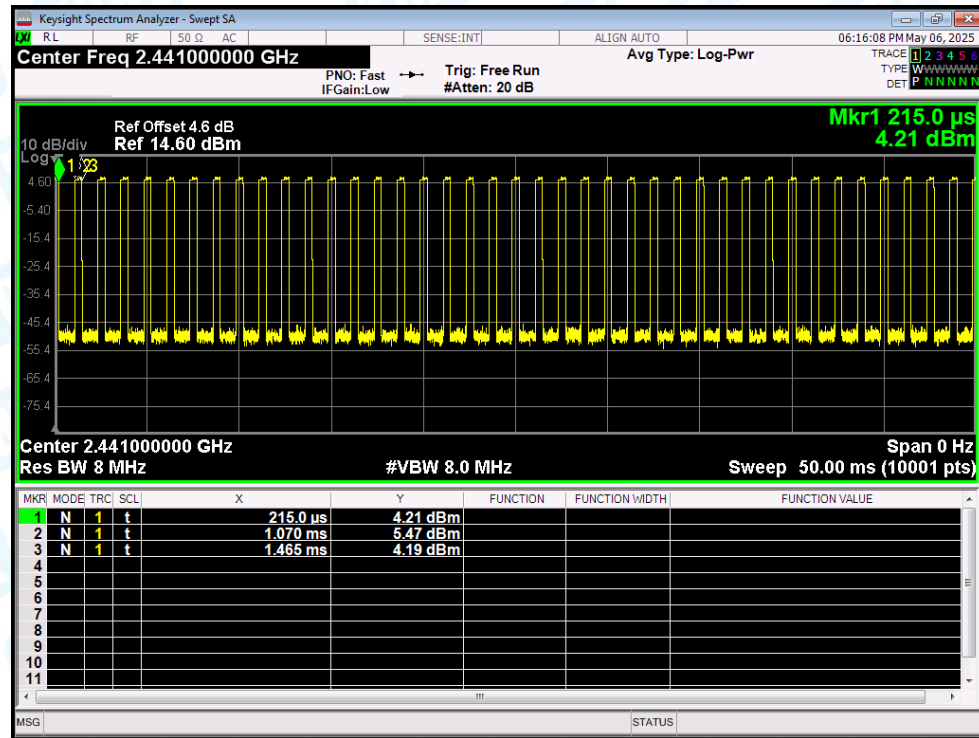
Duty Cycle NVNT 1-DH1 2480MHz Ant1



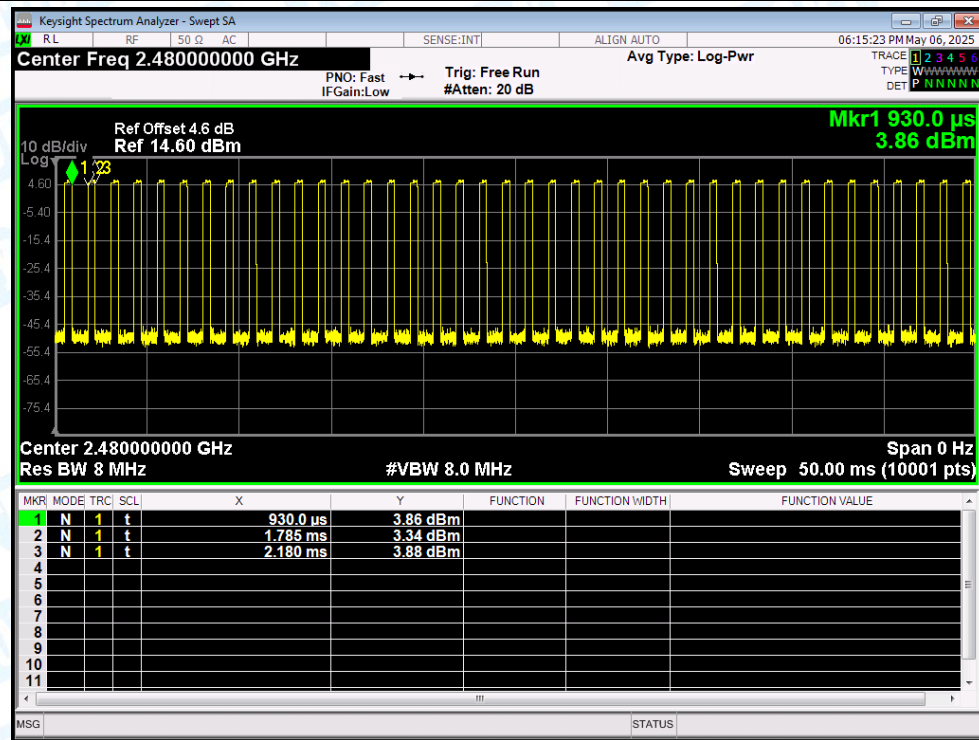
Duty Cycle NVNT 2-DH1 2402MHz Ant1



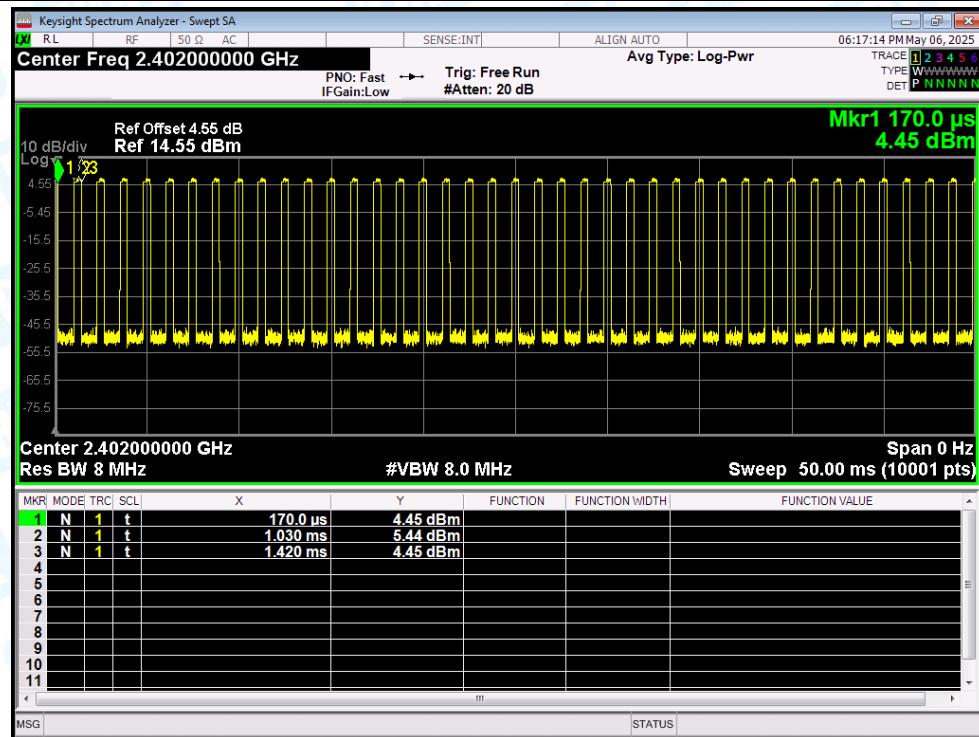
Duty Cycle NVNT 2-DH1 2441MHz Ant1



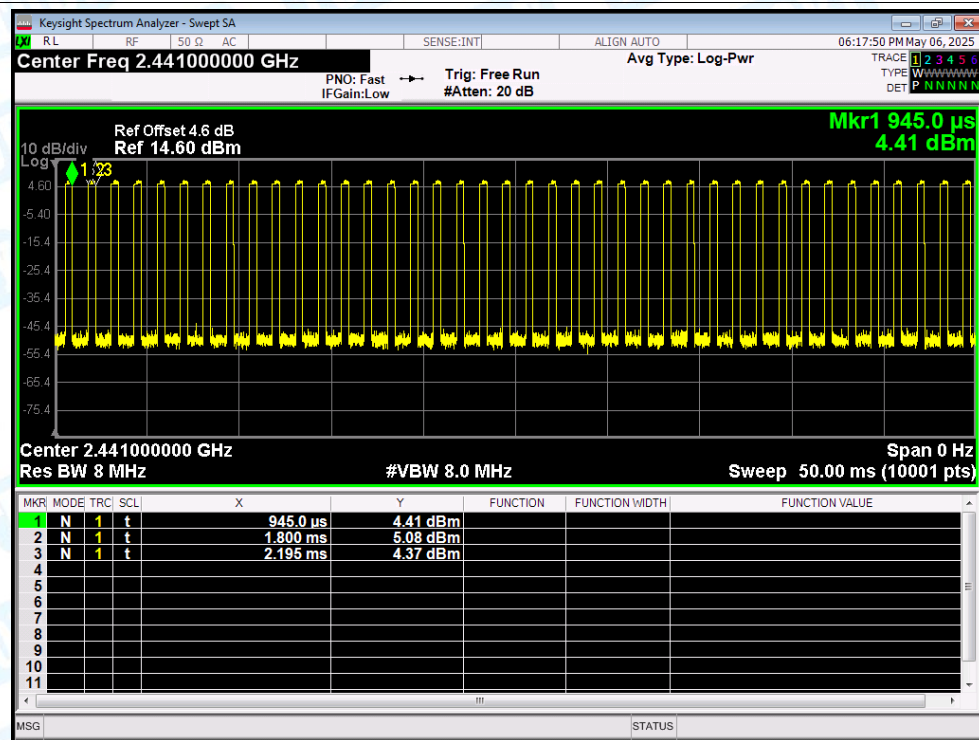
Duty Cycle NVNT 2-DH1 2480MHz Ant1

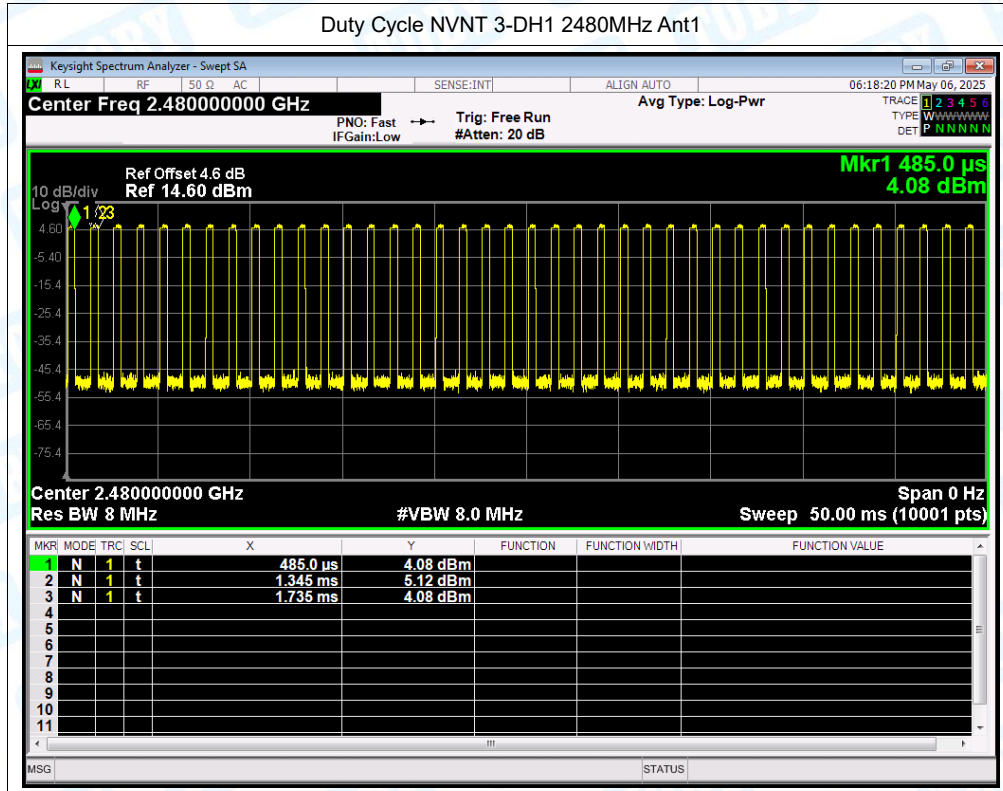


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



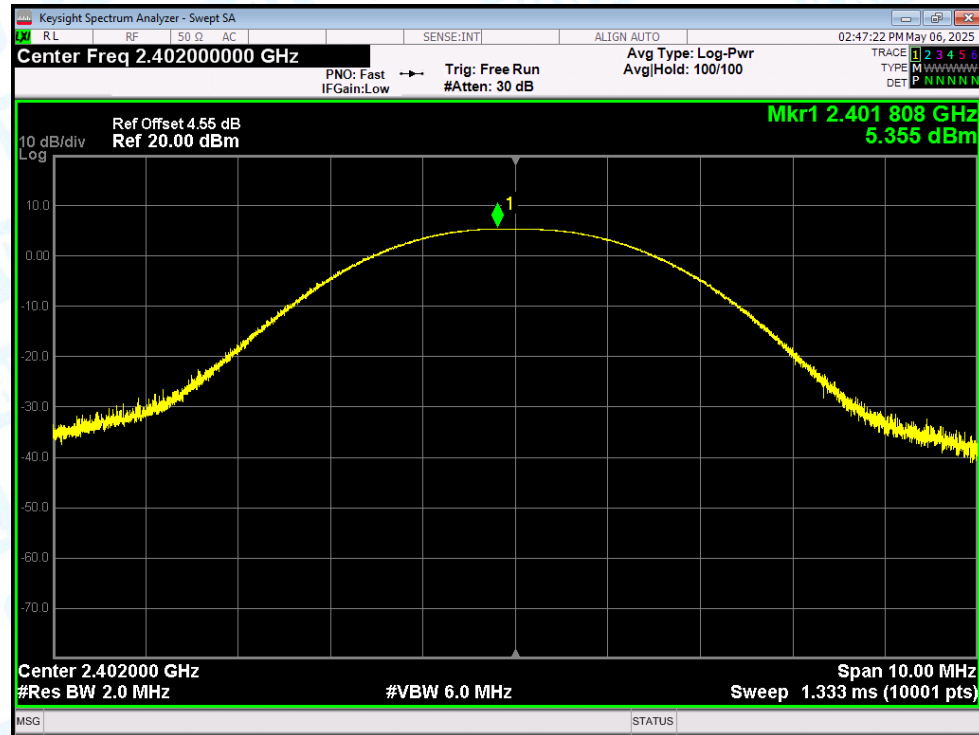


2. Maximum Conducted Output Power

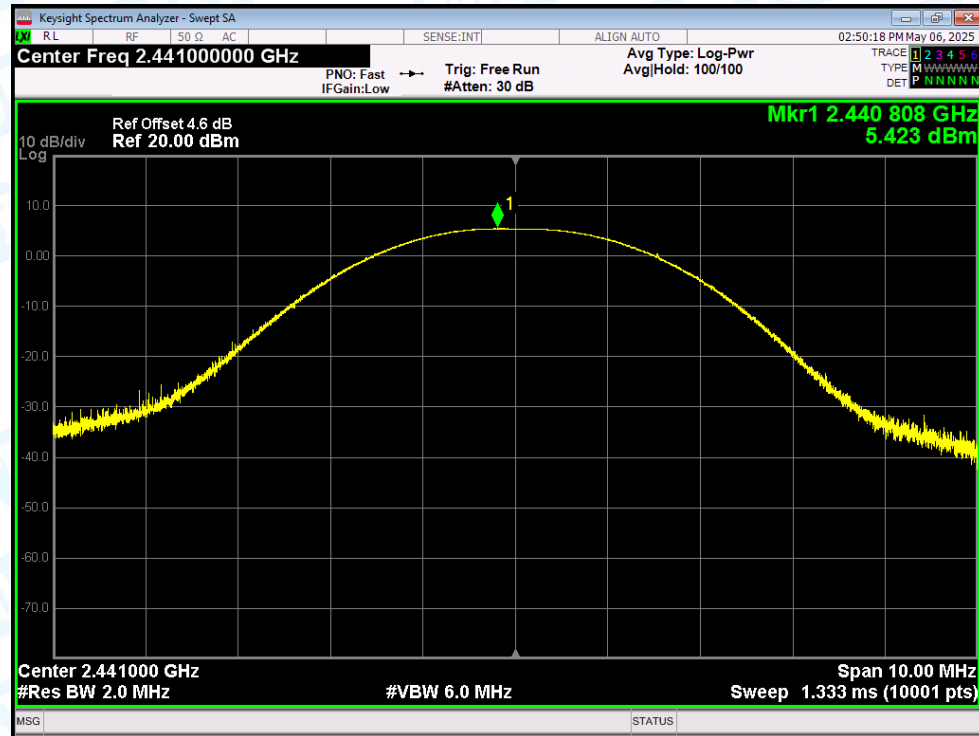
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	5.355	21	Pass
NVNT	1-DH1	2441	Ant1	5.423	21	Pass
NVNT	1-DH1	2480	Ant1	5.096	21	Pass
NVNT	2-DH1	2402	Ant1	6.135	21	Pass
NVNT	2-DH1	2441	Ant1	6.149	21	Pass
NVNT	2-DH1	2480	Ant1	5.829	21	Pass
NVNT	3-DH1	2402	Ant1	6.606	21	Pass
NVNT	3-DH1	2441	Ant1	6.64	21	Pass
NVNT	3-DH1	2480	Ant1	6.352	21	Pass

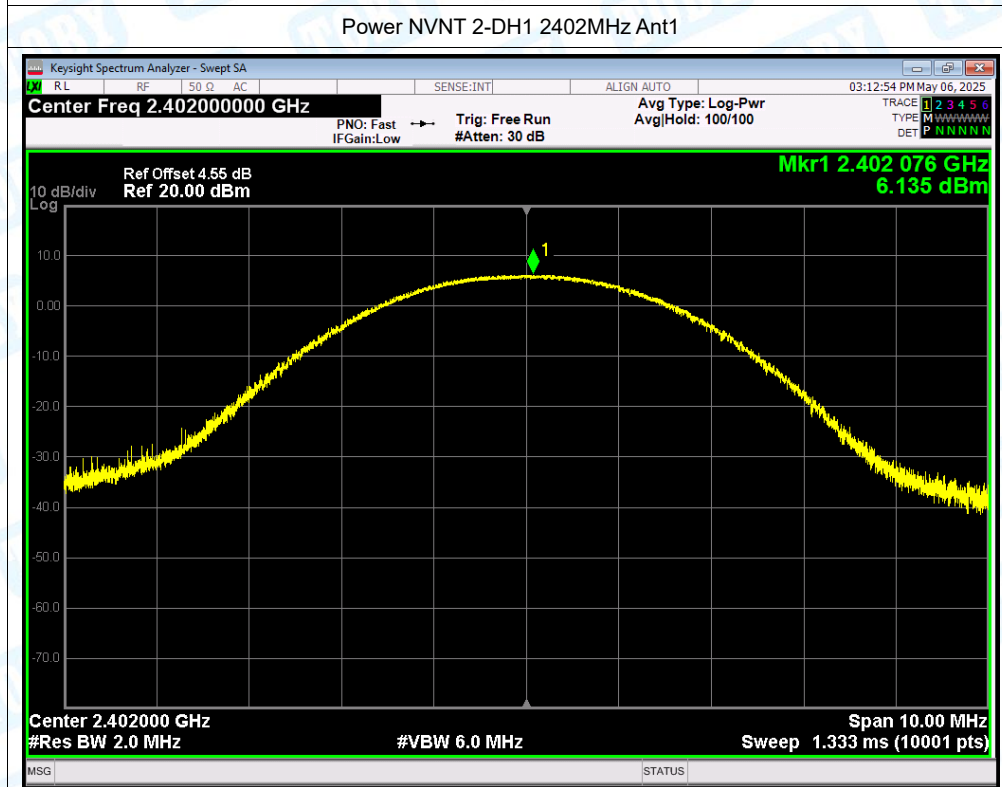
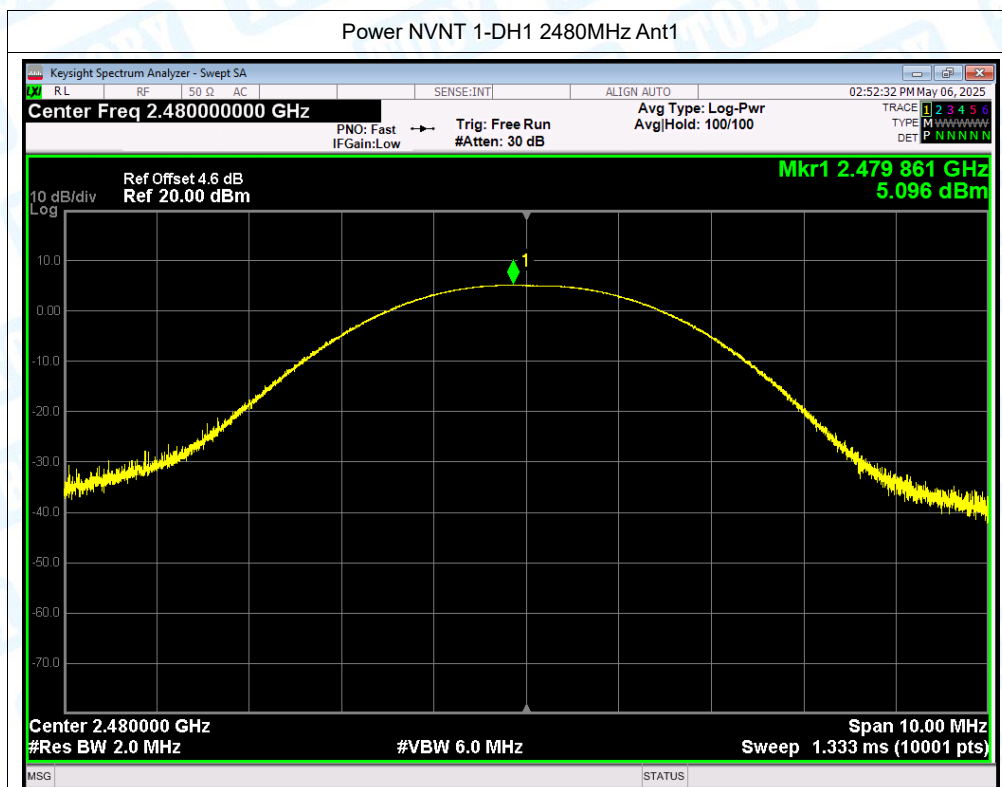
Test Graphs

Power NVNT 1-DH1 2402MHz Ant1

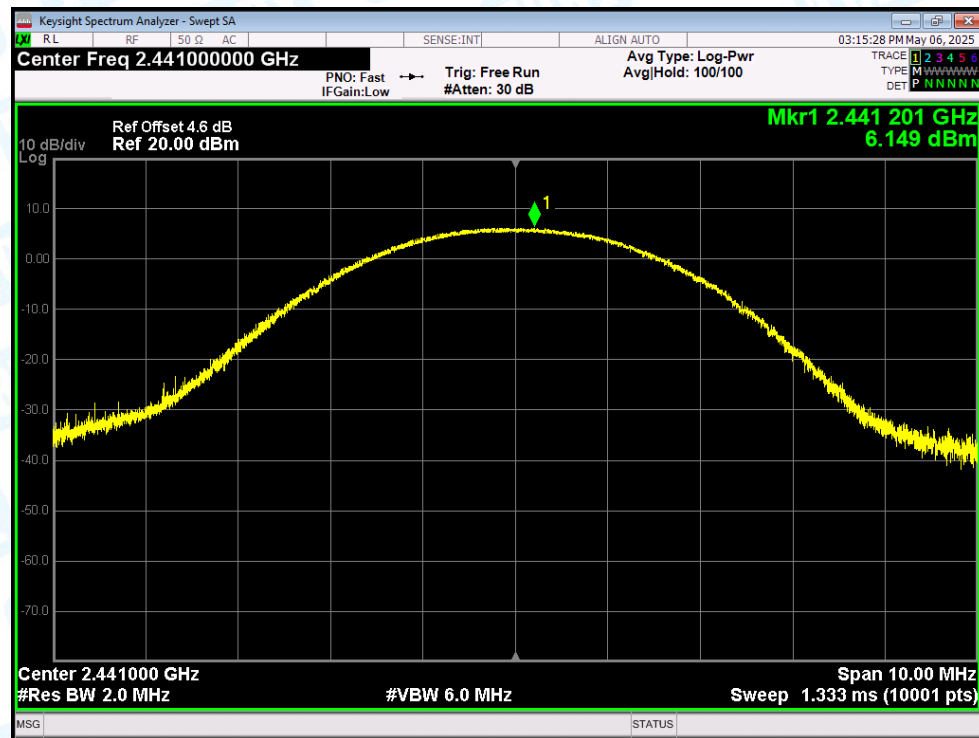


Power NVNT 1-DH1 2441MHz Ant1

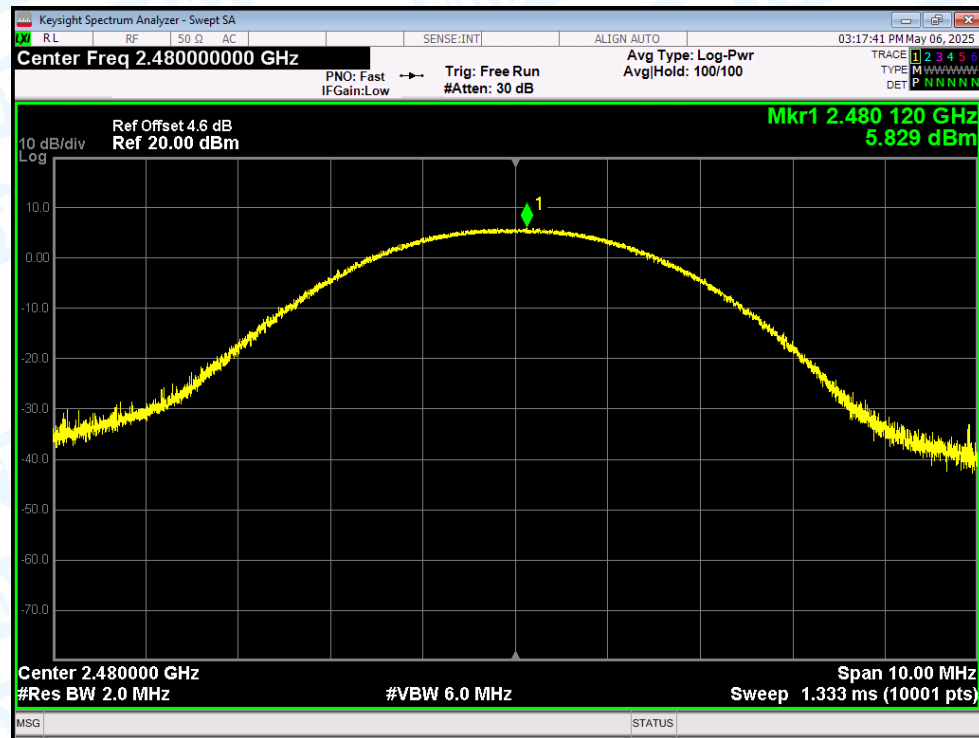




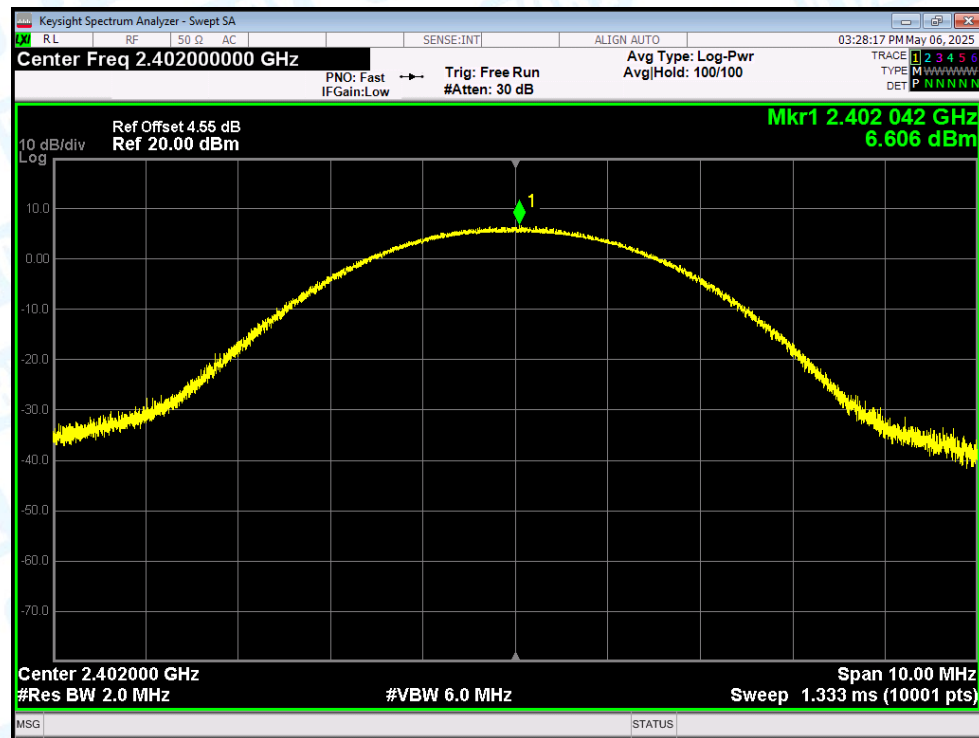
Power NVNT 2-DH1 2441MHz Ant1



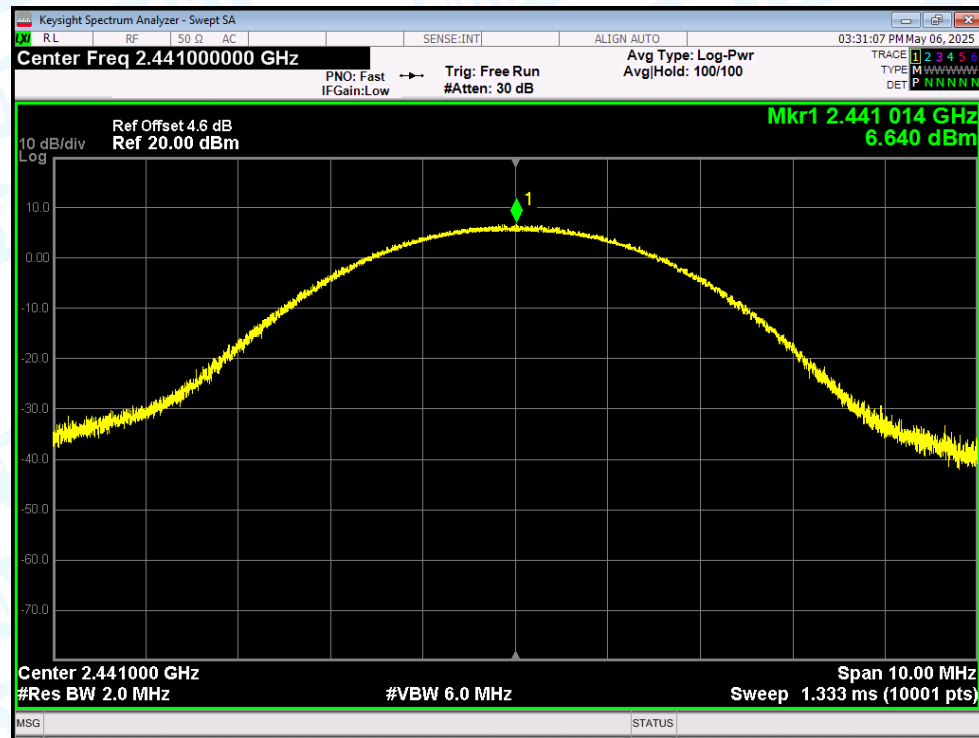
Power NVNT 2-DH1 2480MHz Ant1

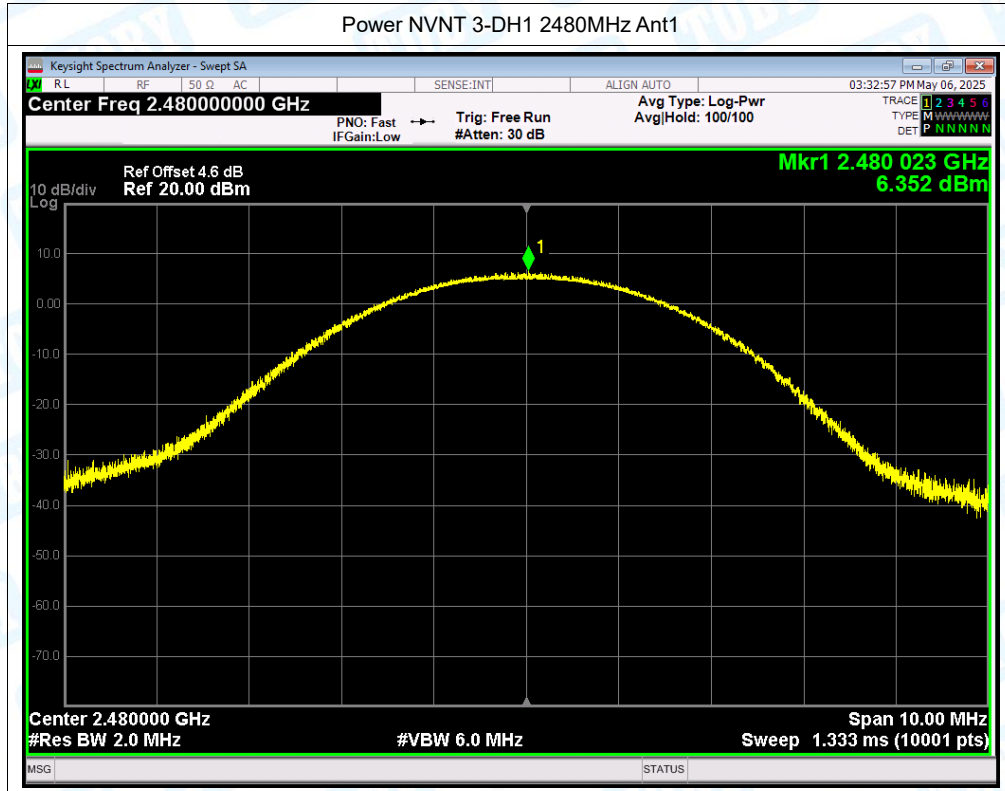


Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



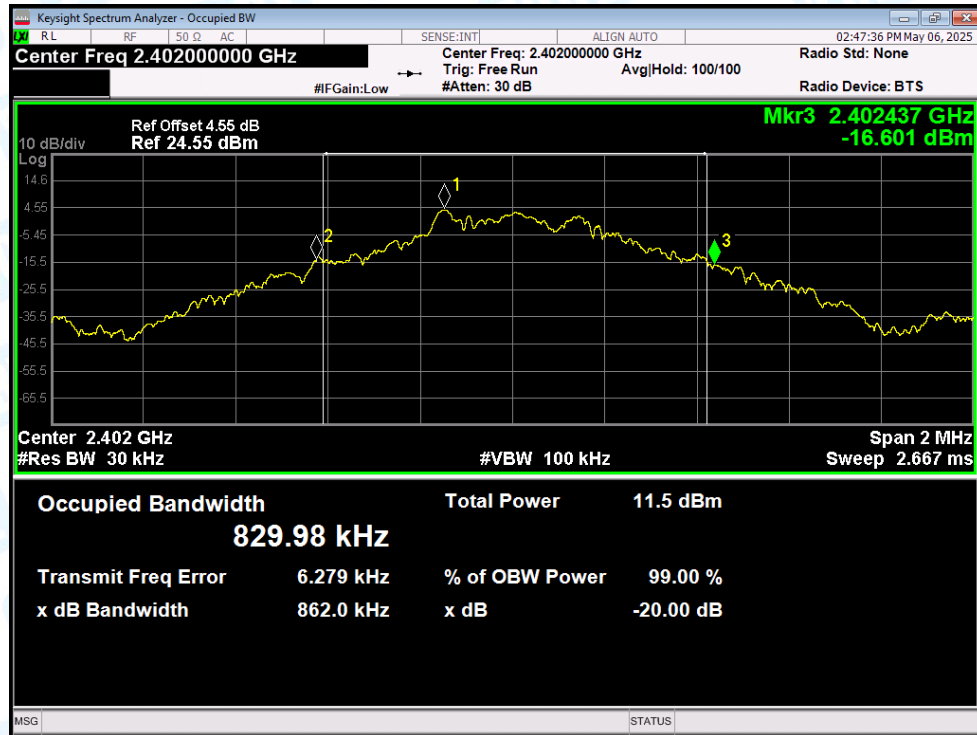


3.-20dB Bandwidth

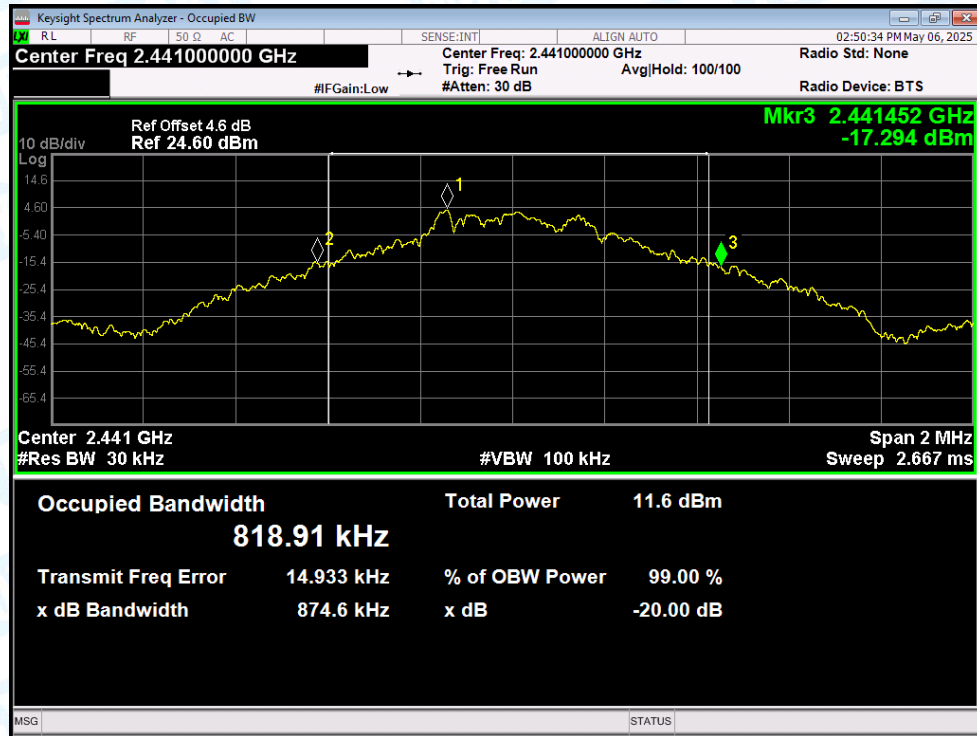
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.86	0	Pass
NVNT	1-DH1	2441	Ant1	0.87	0	Pass
NVNT	1-DH1	2480	Ant1	0.87	0	Pass
NVNT	2-DH1	2402	Ant1	1.23	0	Pass
NVNT	2-DH1	2441	Ant1	1.25	0	Pass
NVNT	2-DH1	2480	Ant1	1.23	0	Pass
NVNT	3-DH1	2402	Ant1	1.23	0	Pass
NVNT	3-DH1	2441	Ant1	1.22	0	Pass
NVNT	3-DH1	2480	Ant1	1.24	0	Pass

Test Graphs

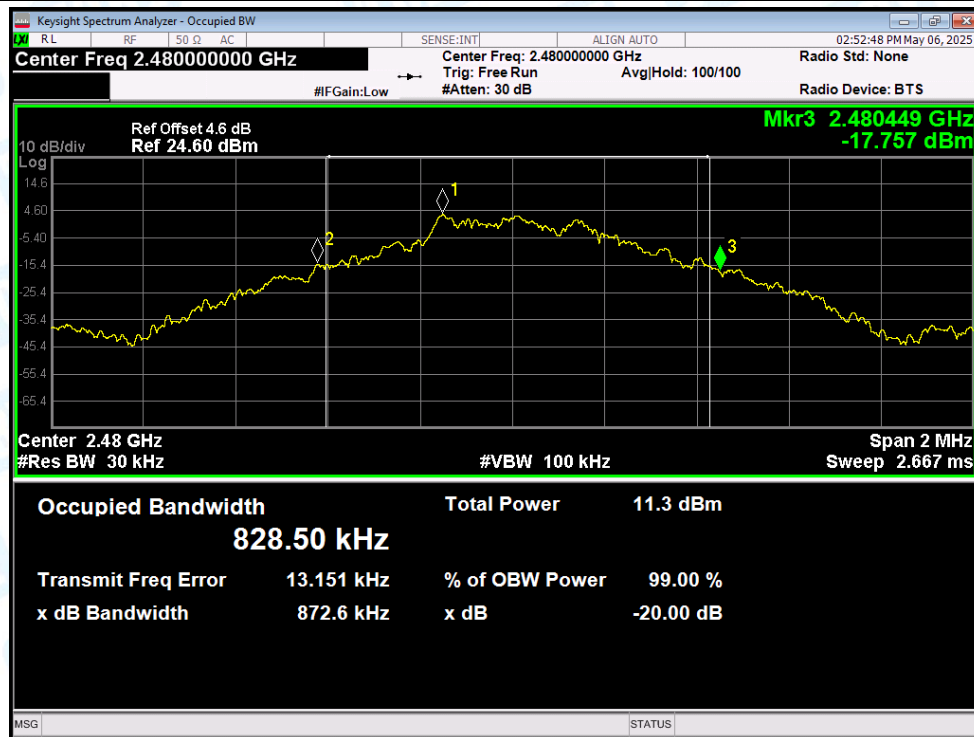
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



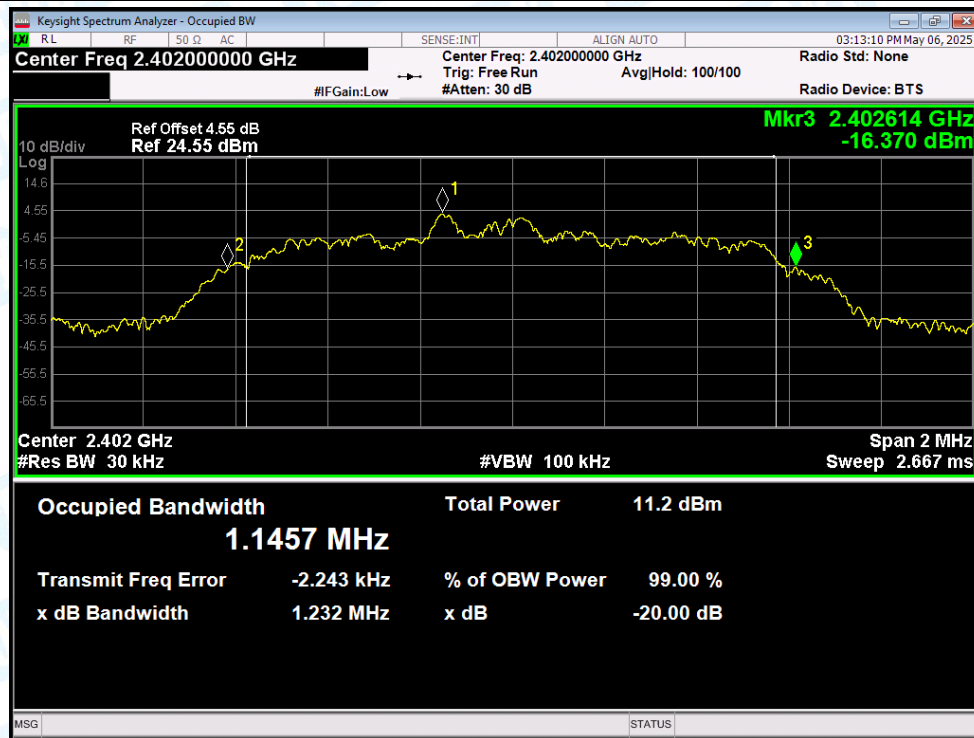
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



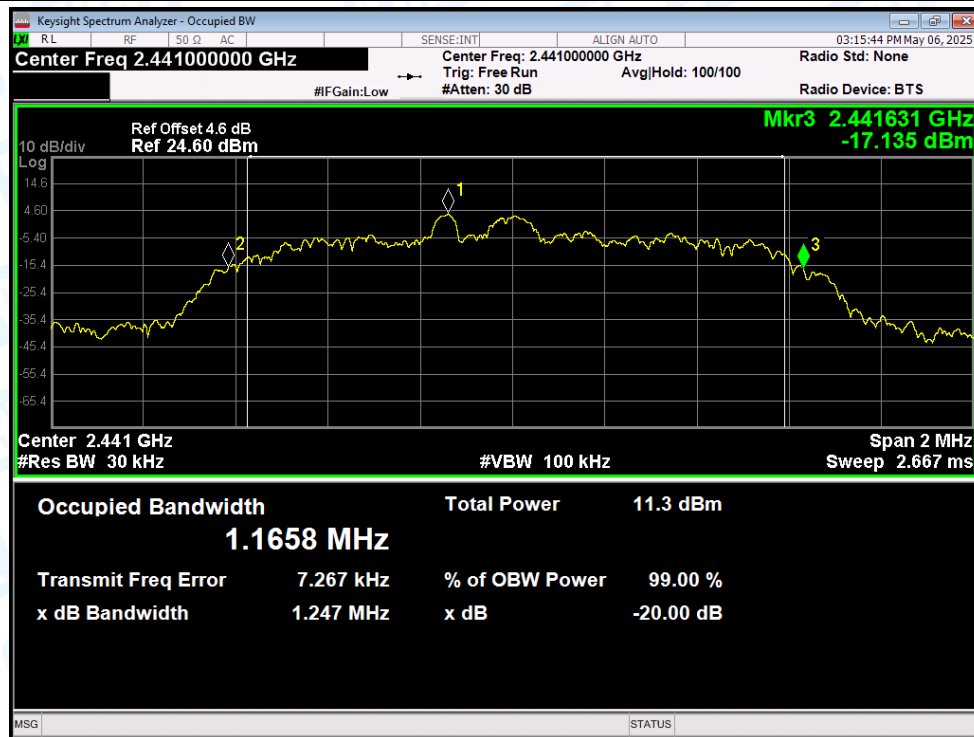
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



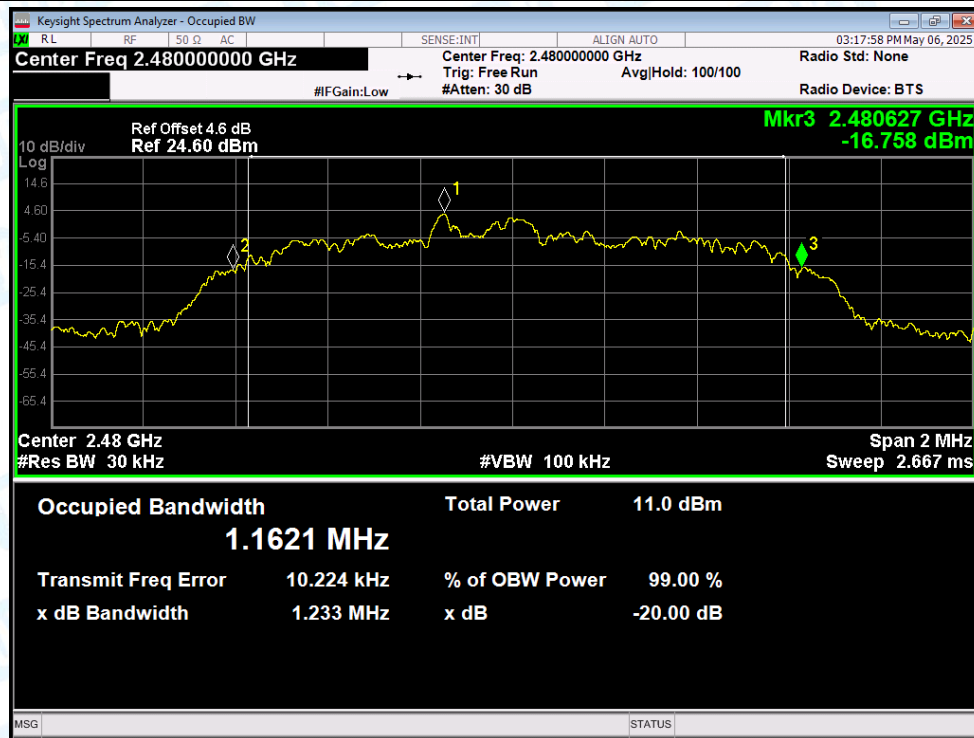
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



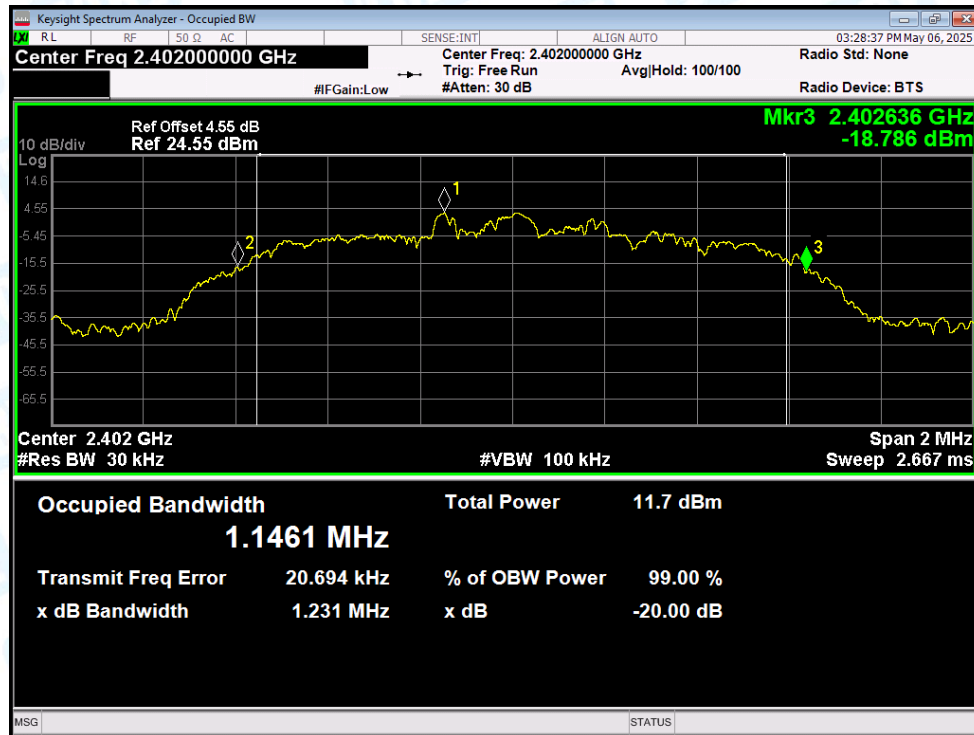
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



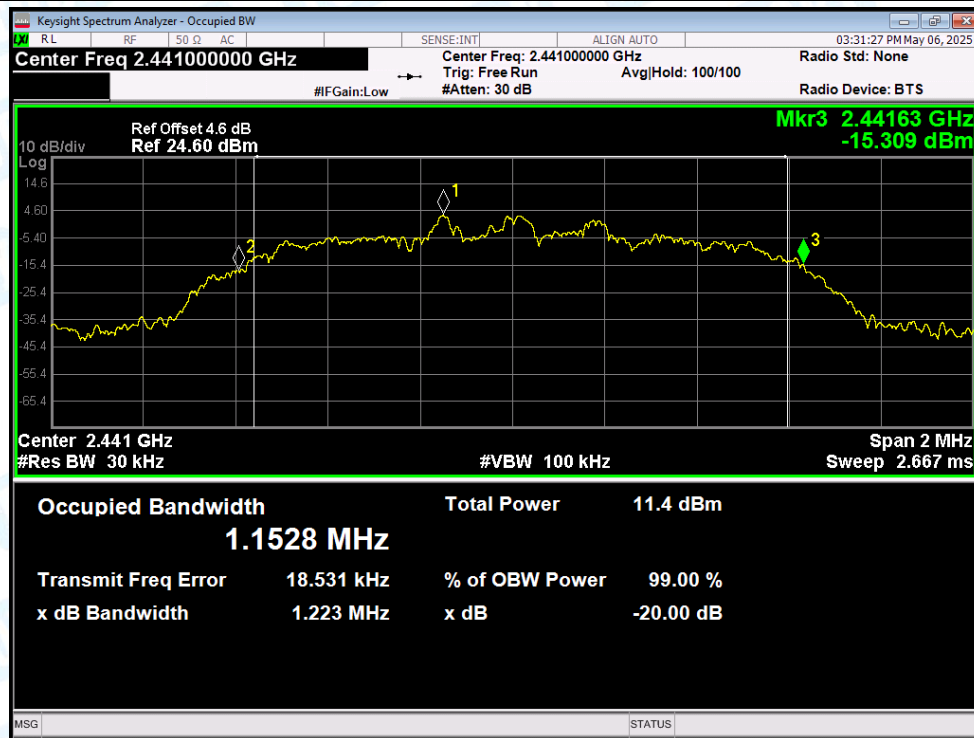
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

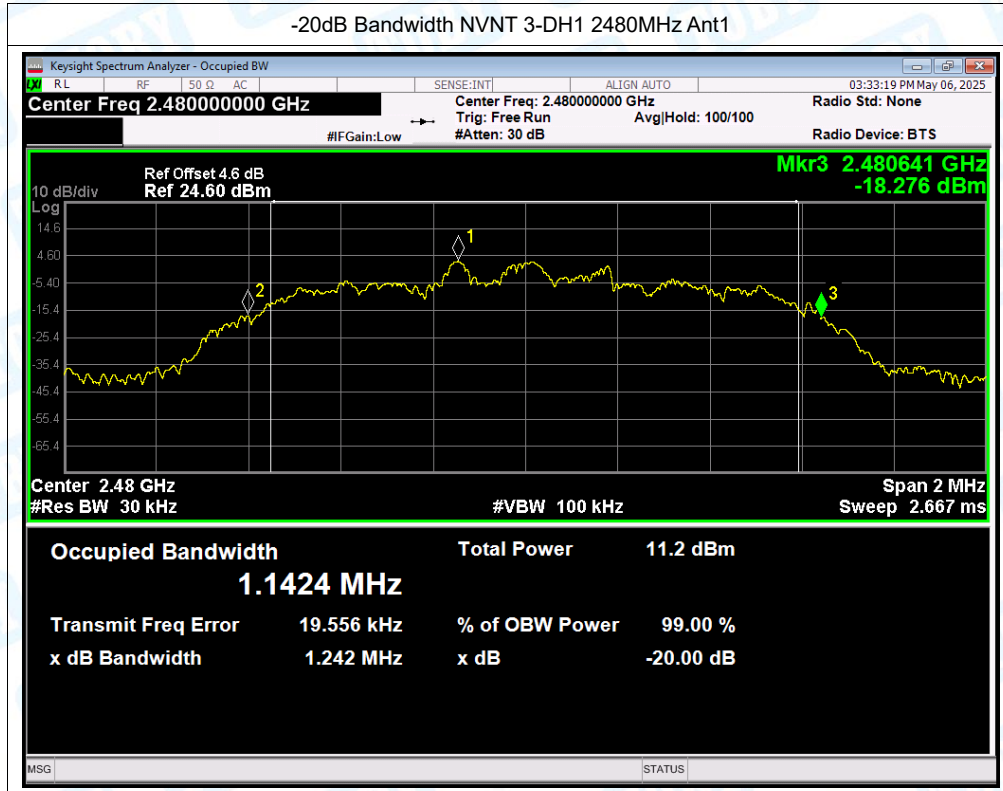


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



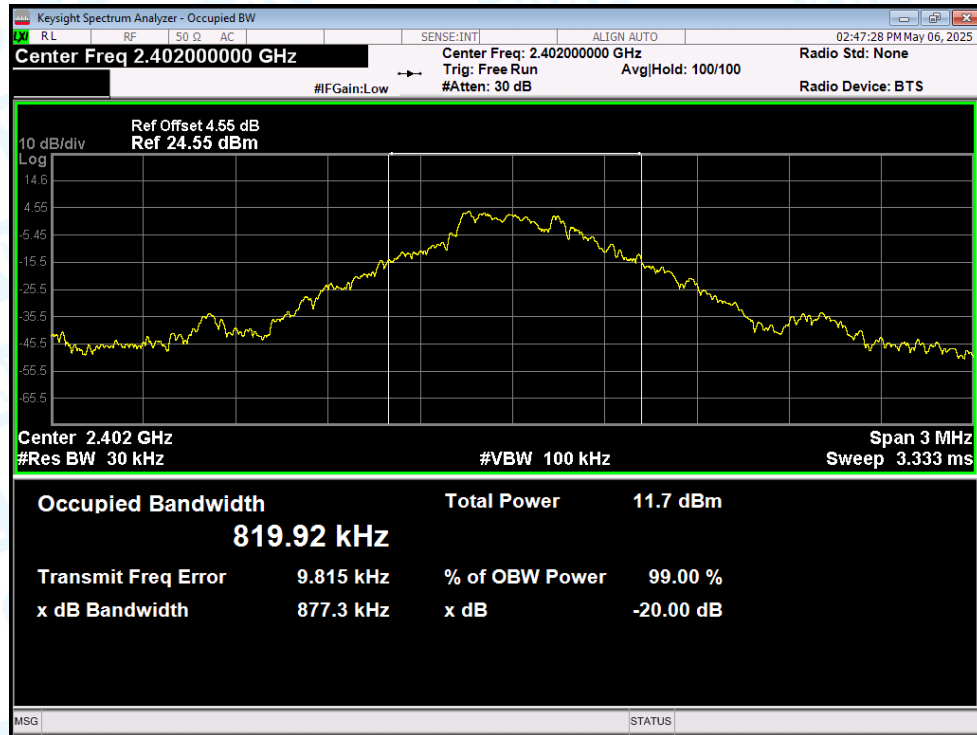


4.Occupied Channel Bandwidth

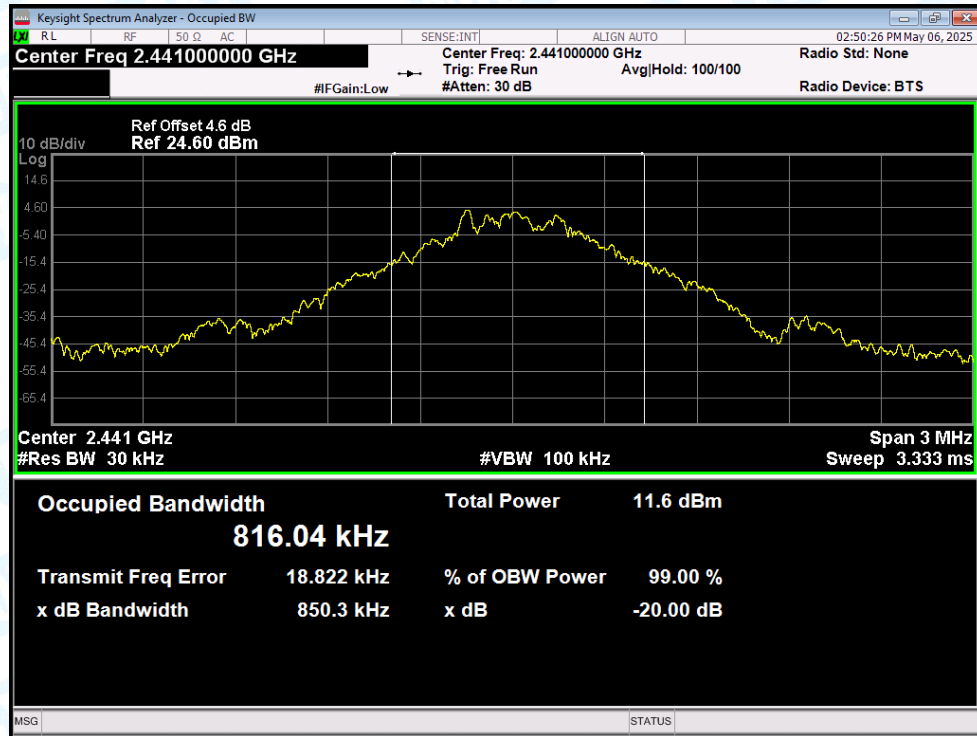
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.82
NVNT	1-DH1	2441	Ant1	0.816
NVNT	1-DH1	2480	Ant1	0.833
NVNT	2-DH1	2402	Ant1	1.171
NVNT	2-DH1	2441	Ant1	1.157
NVNT	2-DH1	2480	Ant1	1.176
NVNT	3-DH1	2402	Ant1	1.153
NVNT	3-DH1	2441	Ant1	1.156
NVNT	3-DH1	2480	Ant1	1.148

Test Graphs

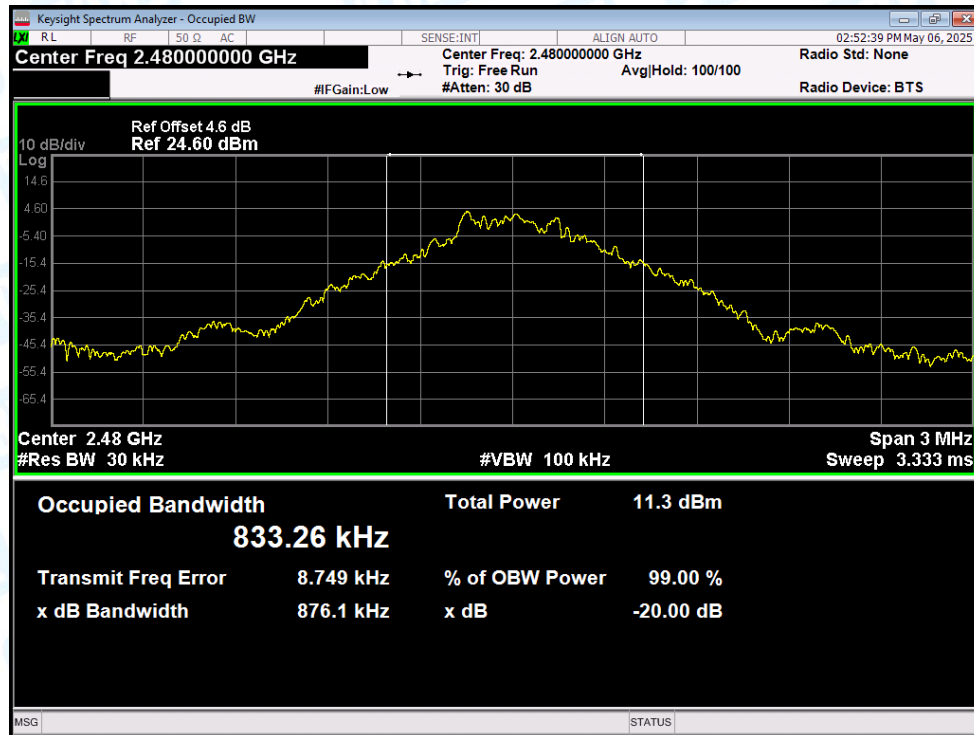
OBW NVNT 1-DH1 2402MHz Ant1



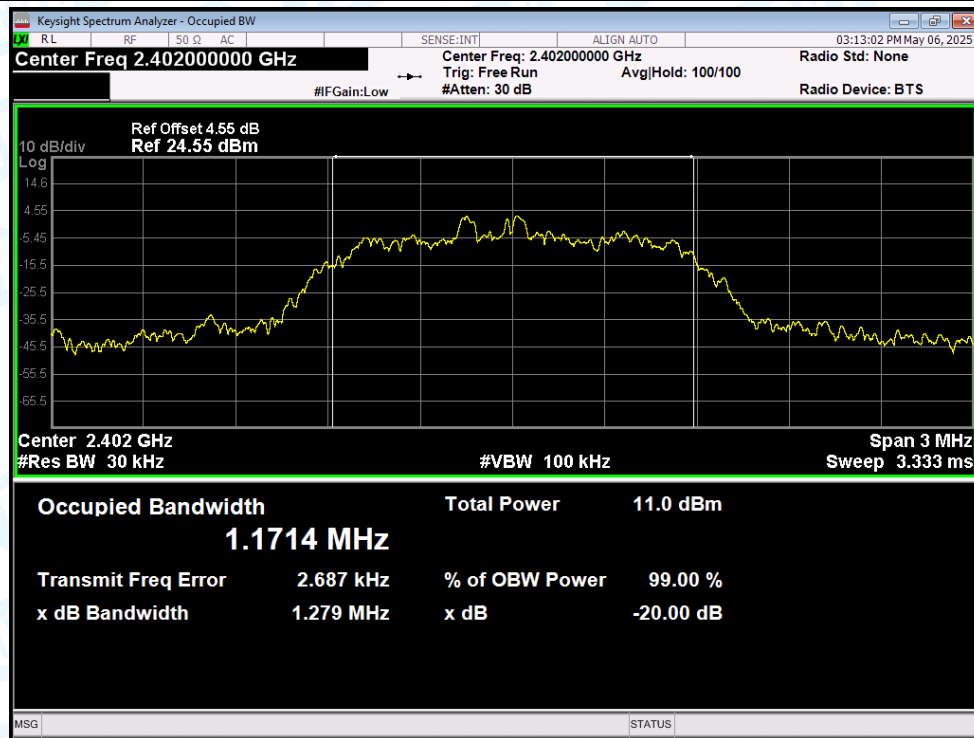
OBW NVNT 1-DH1 2441MHz Ant1



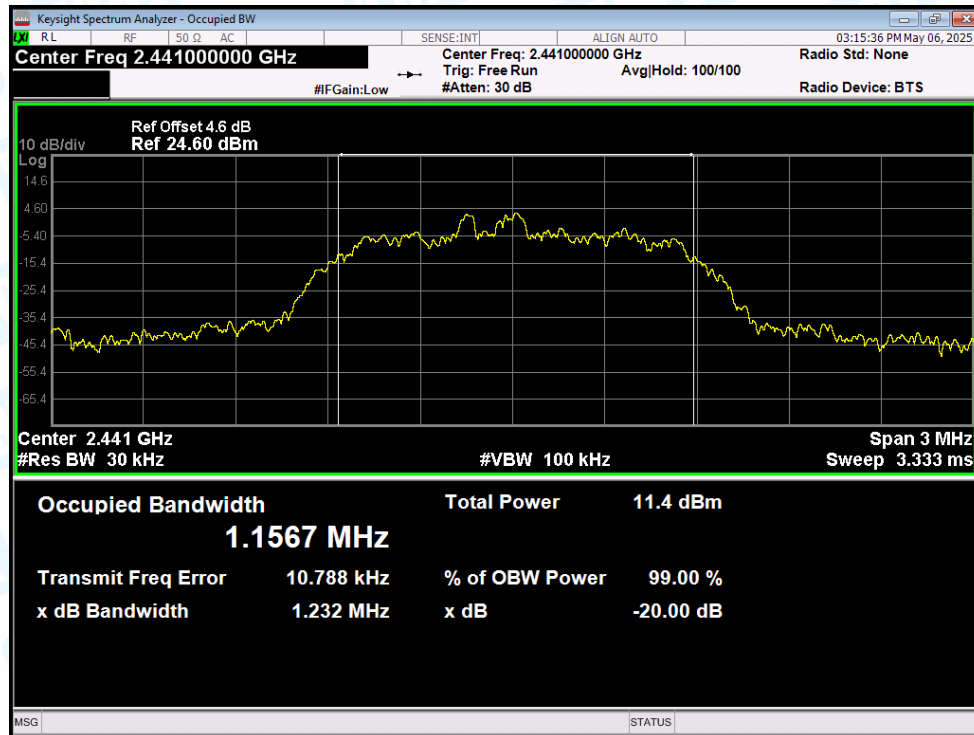
OBW NVNT 1-DH1 2480MHz Ant1



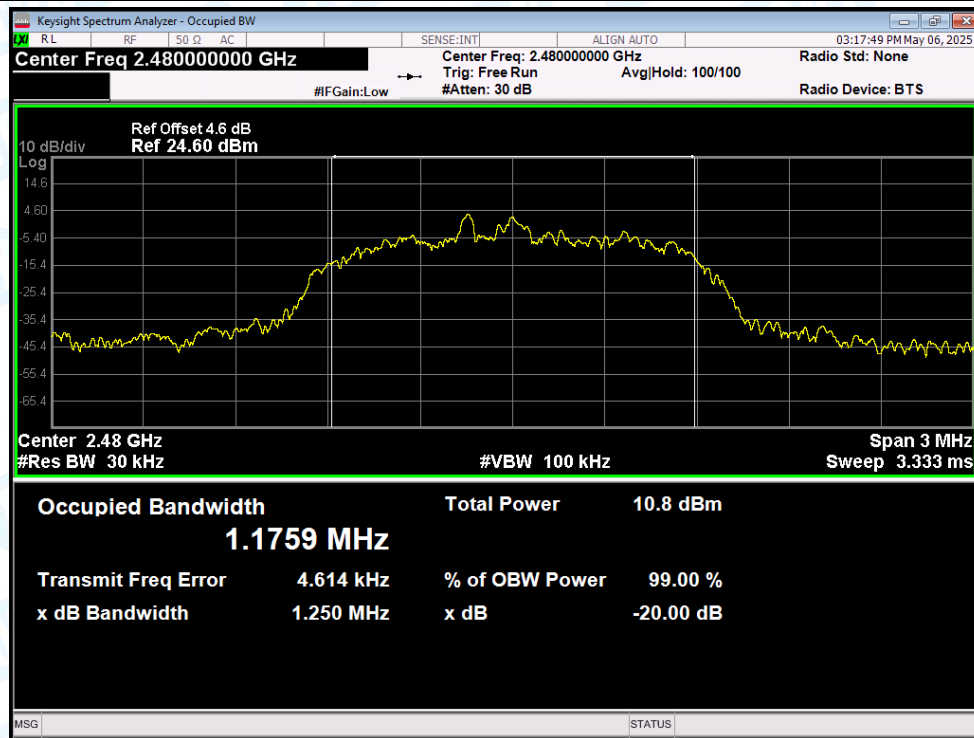
OBW NVNT 2-DH1 2402MHz Ant1



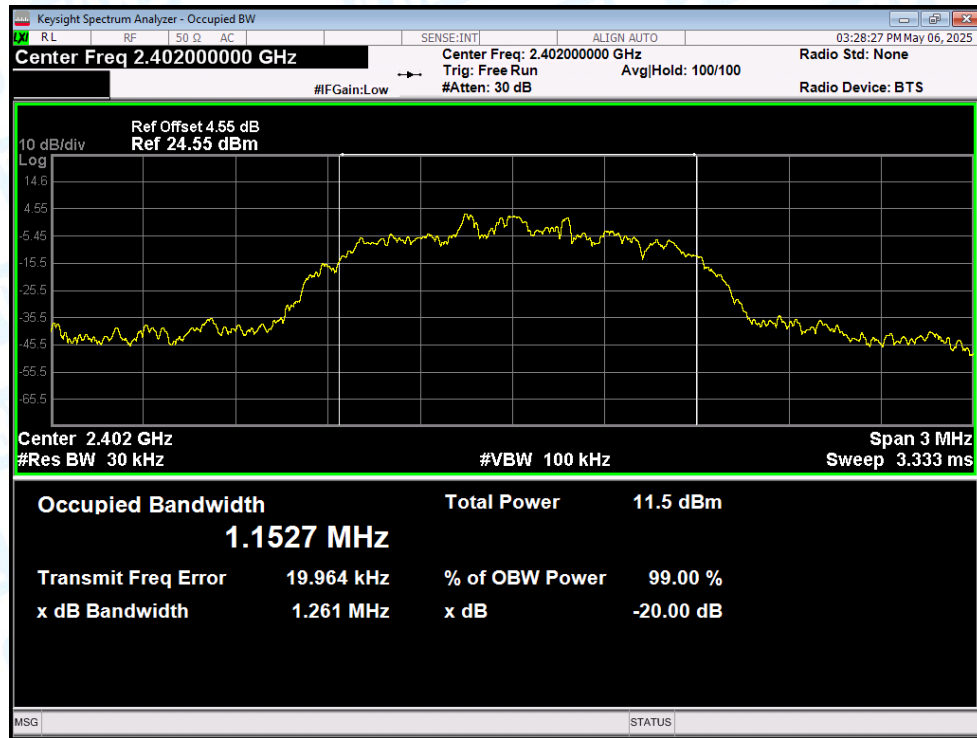
OBW NVNT 2-DH1 2441MHz Ant1



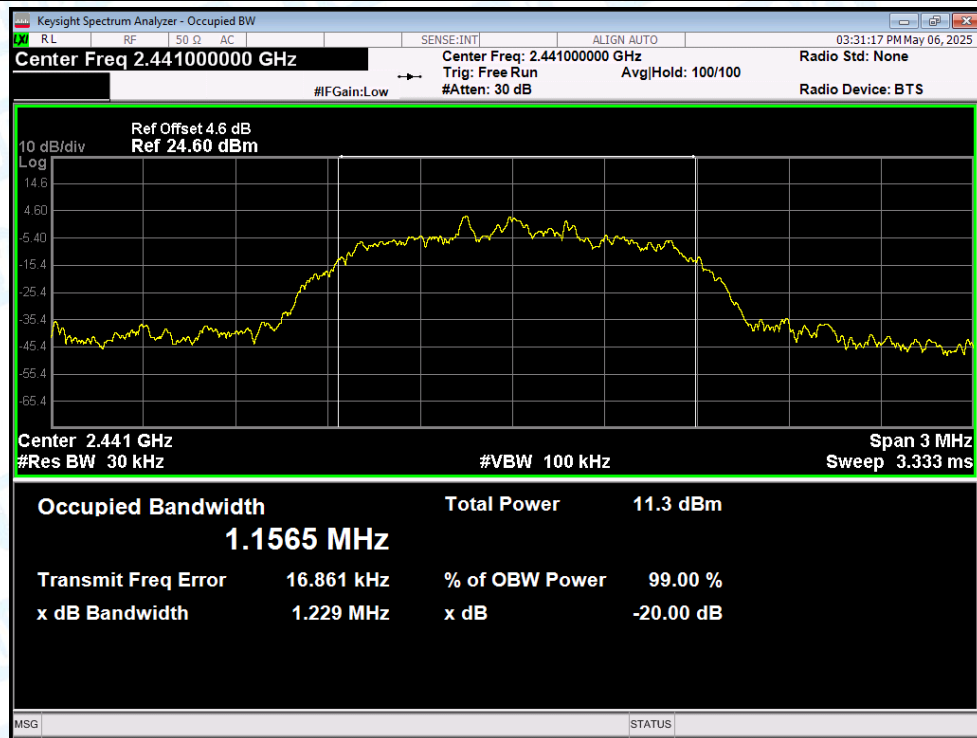
OBW NVNT 2-DH1 2480MHz Ant1

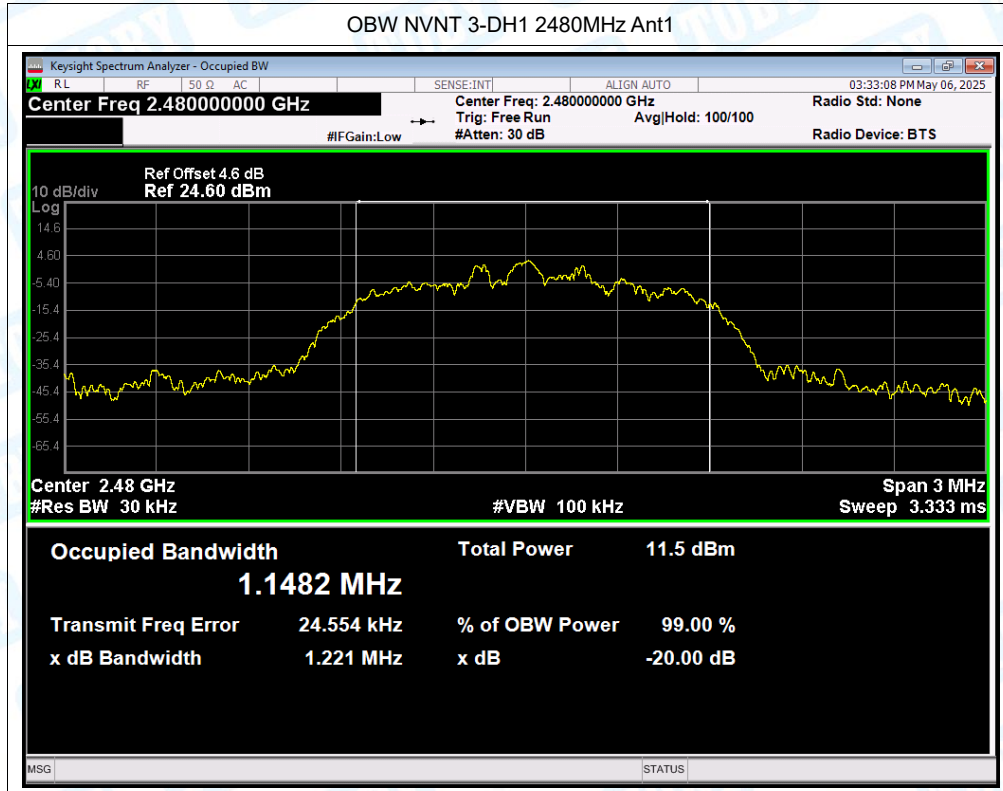


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



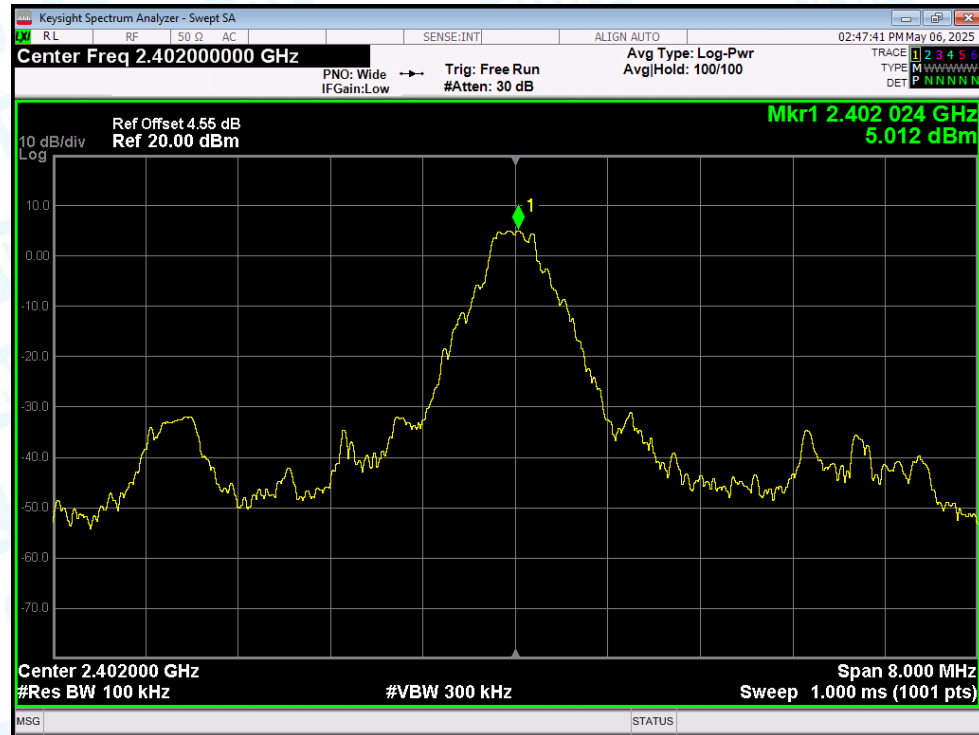


5.Band Edge

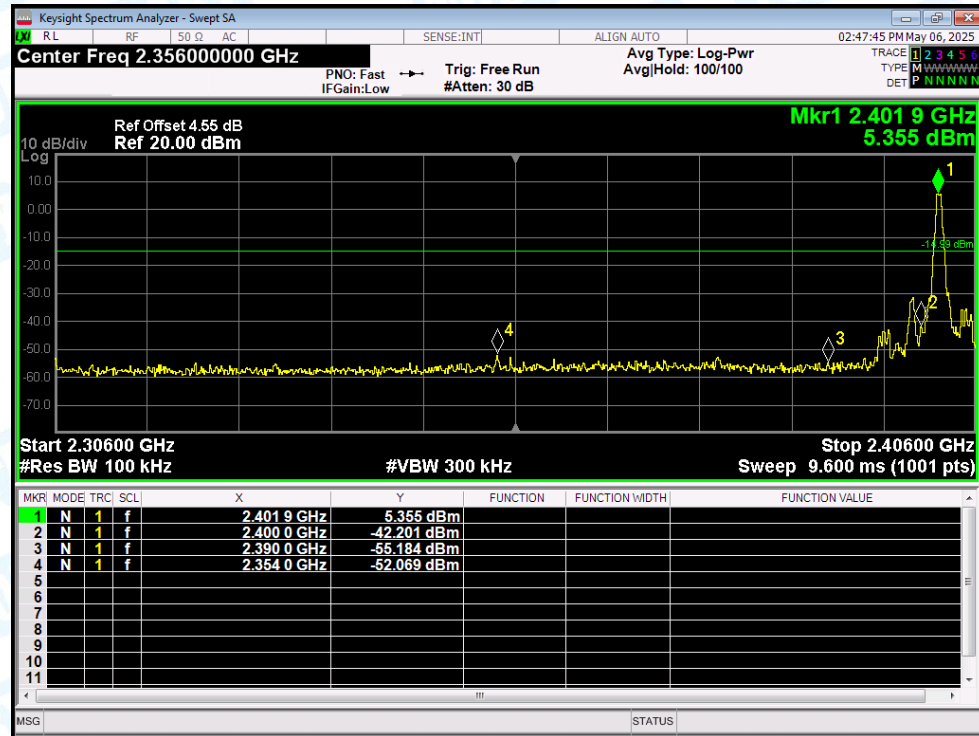
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-57.08	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-45.61	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-57.64	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-47.77	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-56.52	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-44.01	-20	Pass

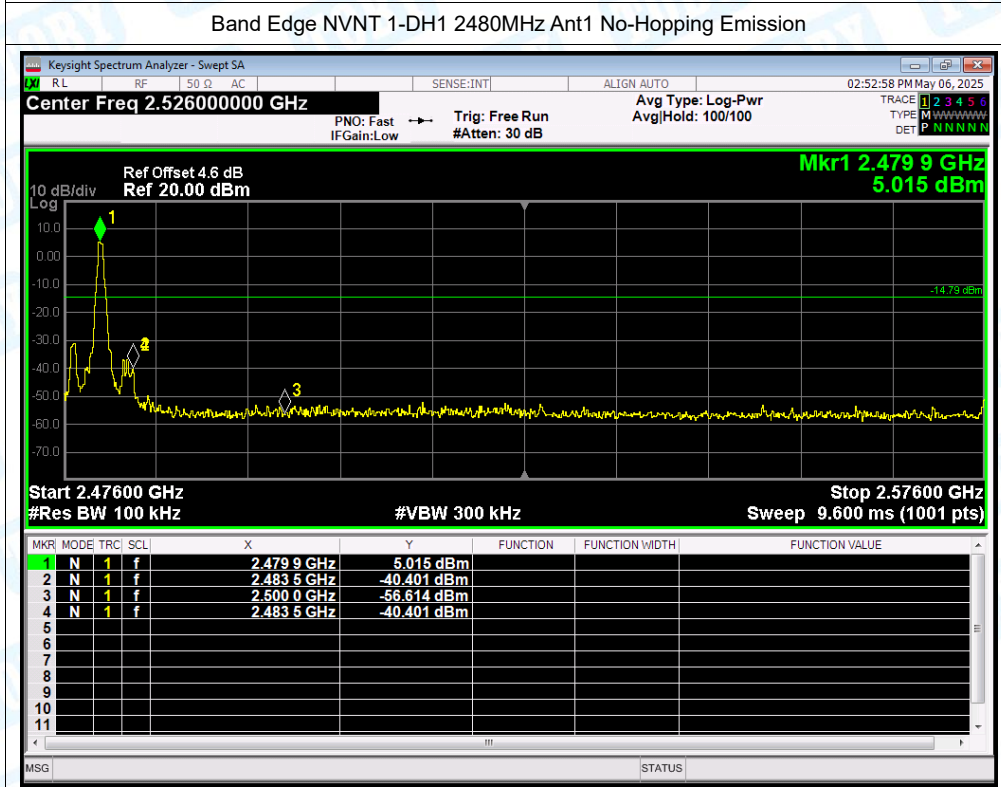
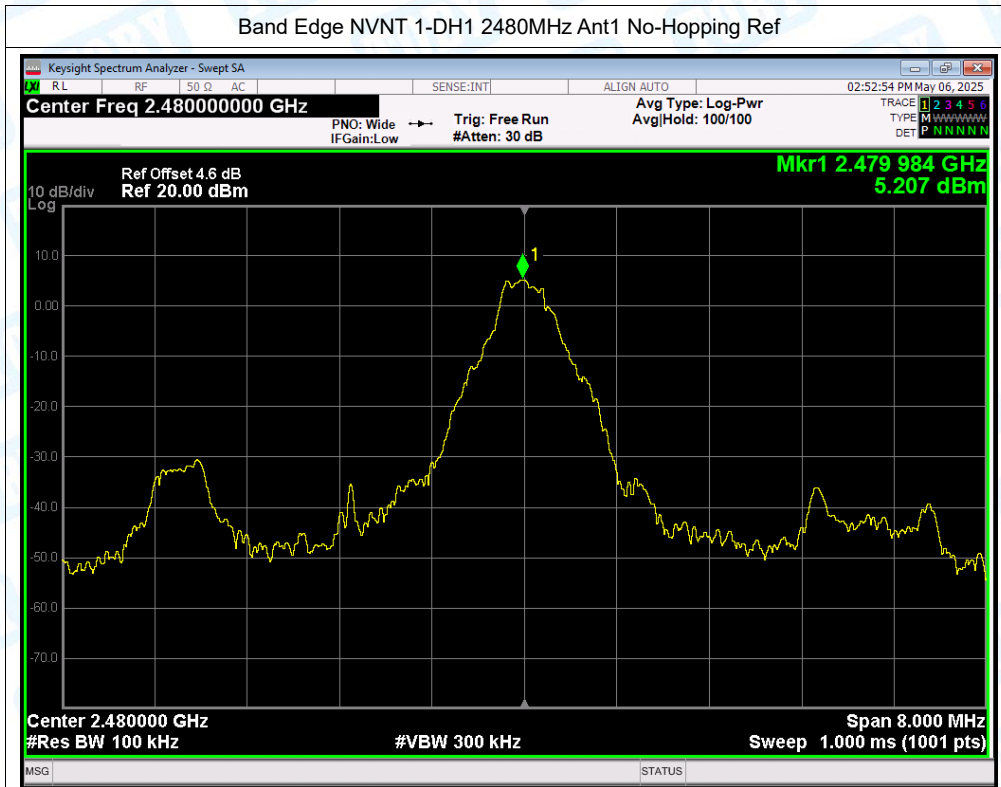
Test Graphs

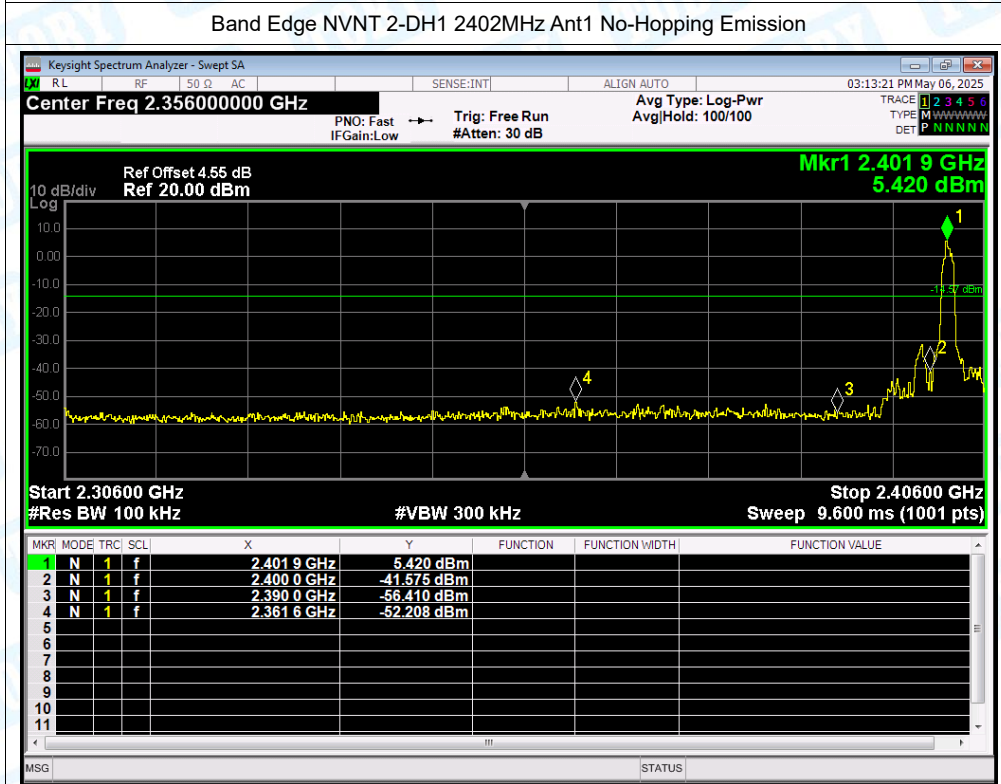
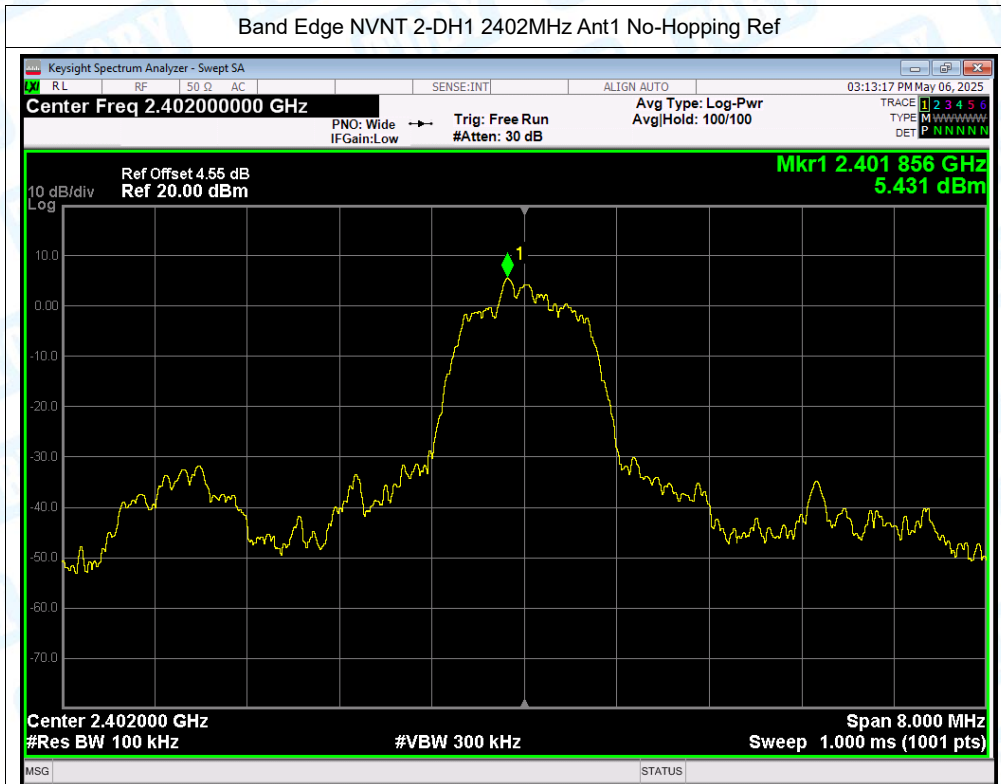
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref

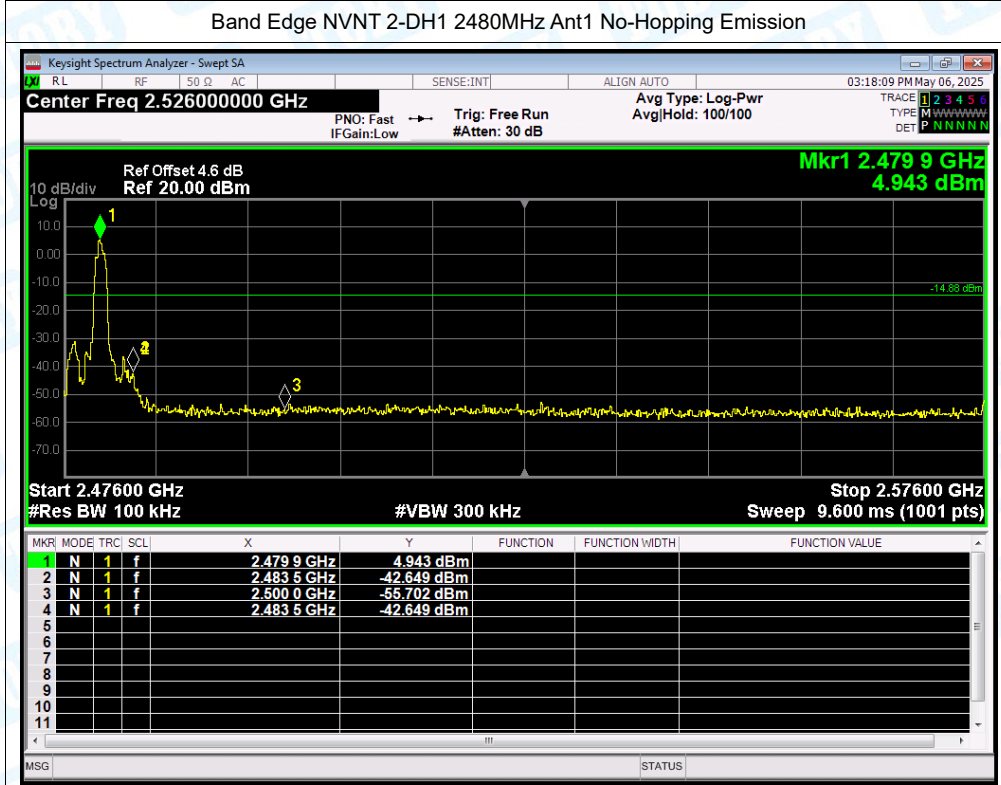


Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission





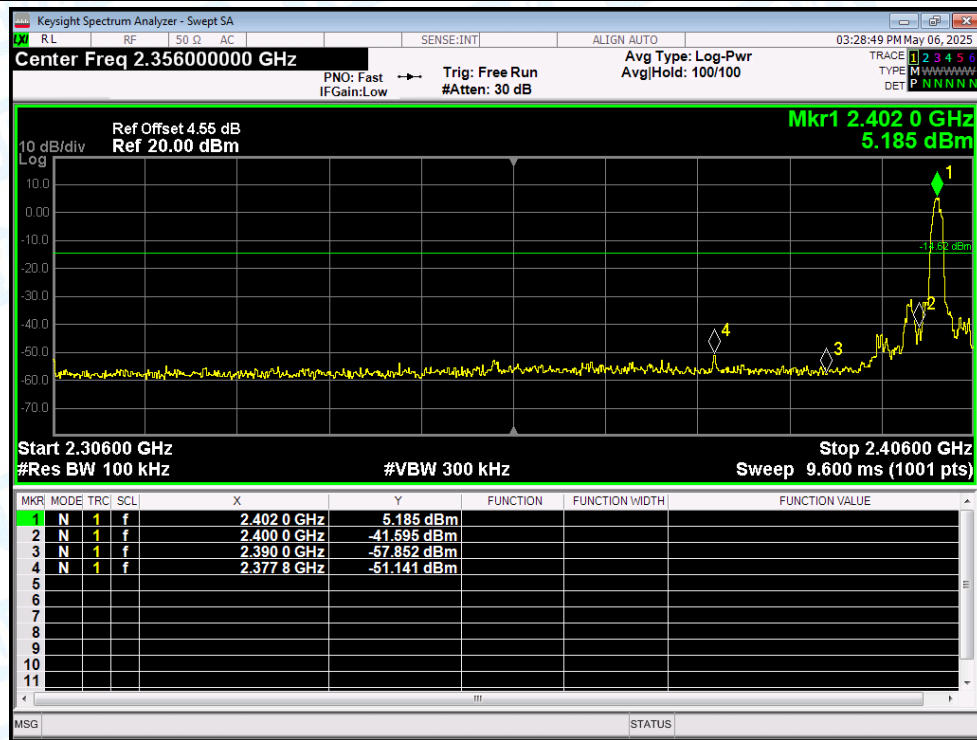


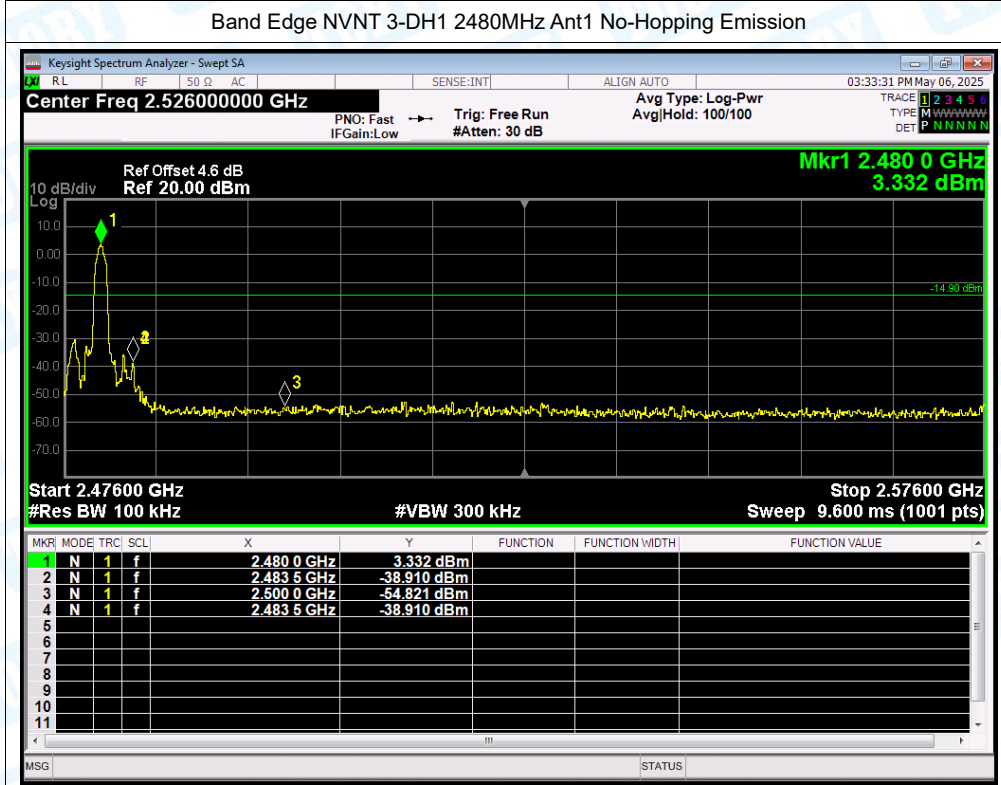
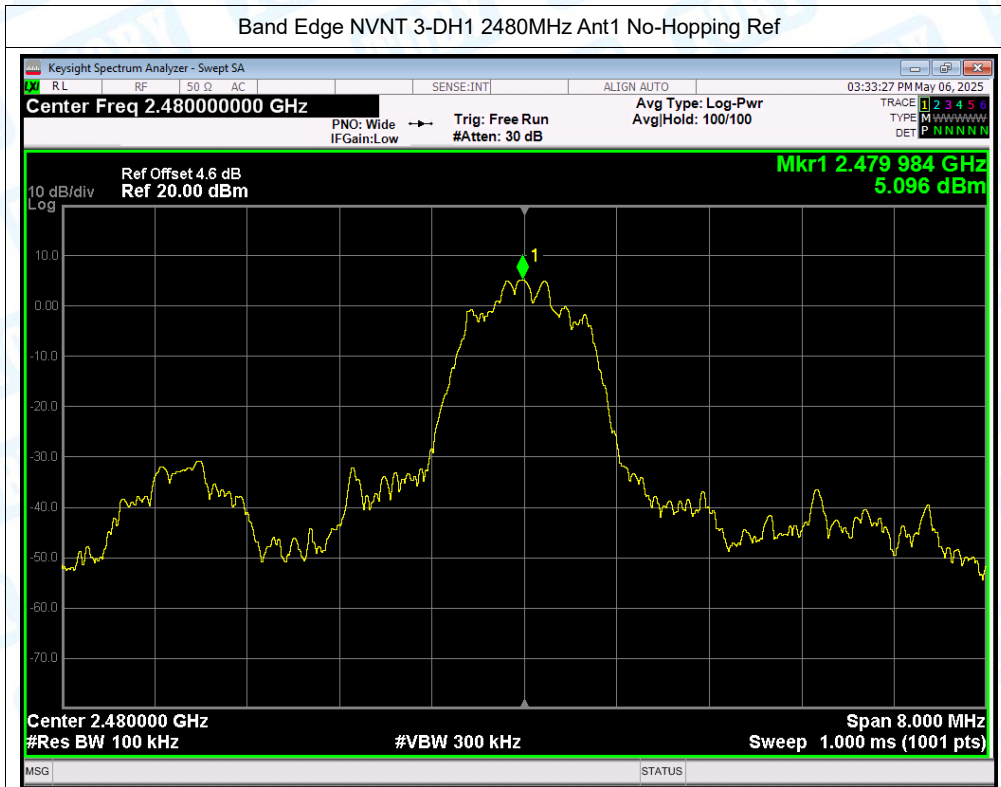


Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



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





6. Band Edge(Hopping)

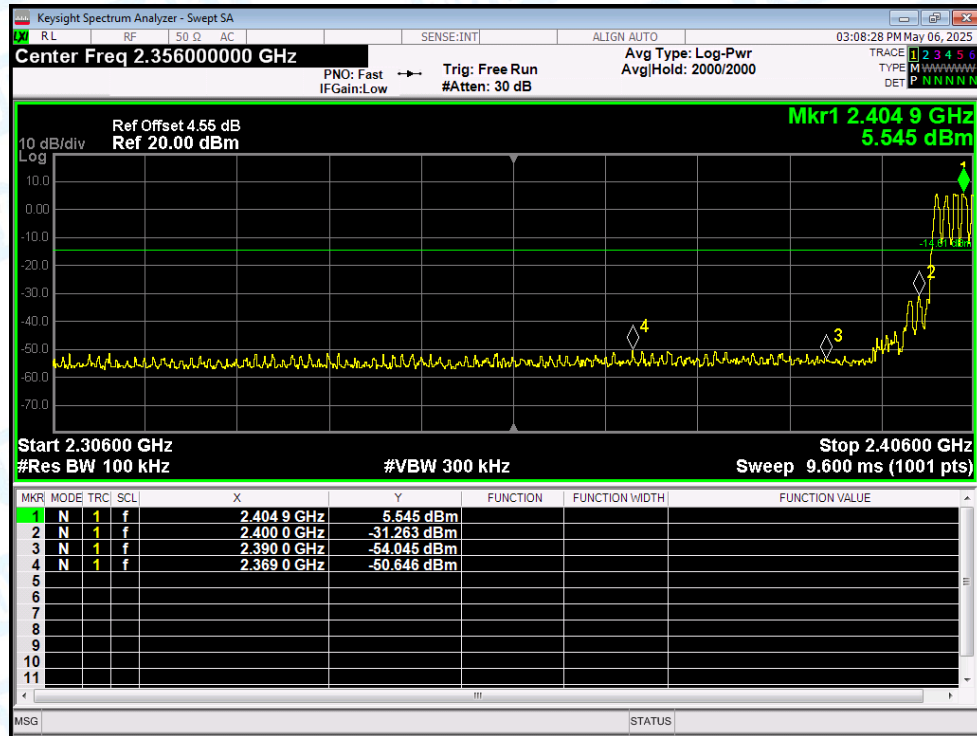
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-56.04	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-46.02	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-56.28	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-48.69	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-55.65	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-47.14	-20	Pass

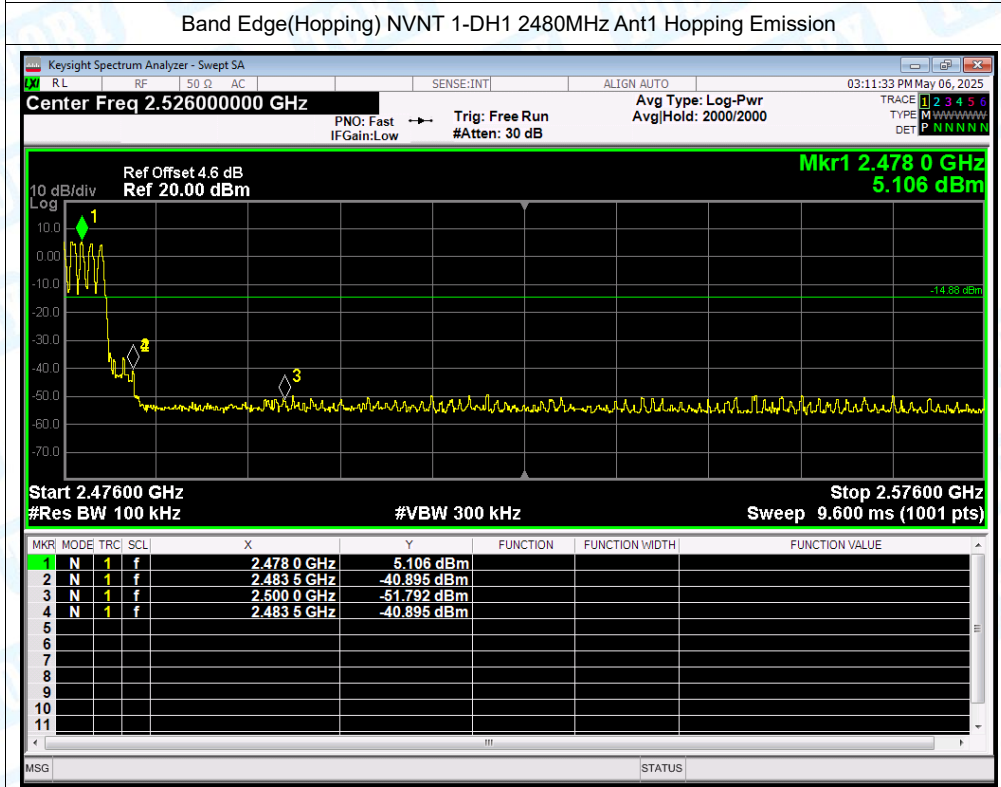
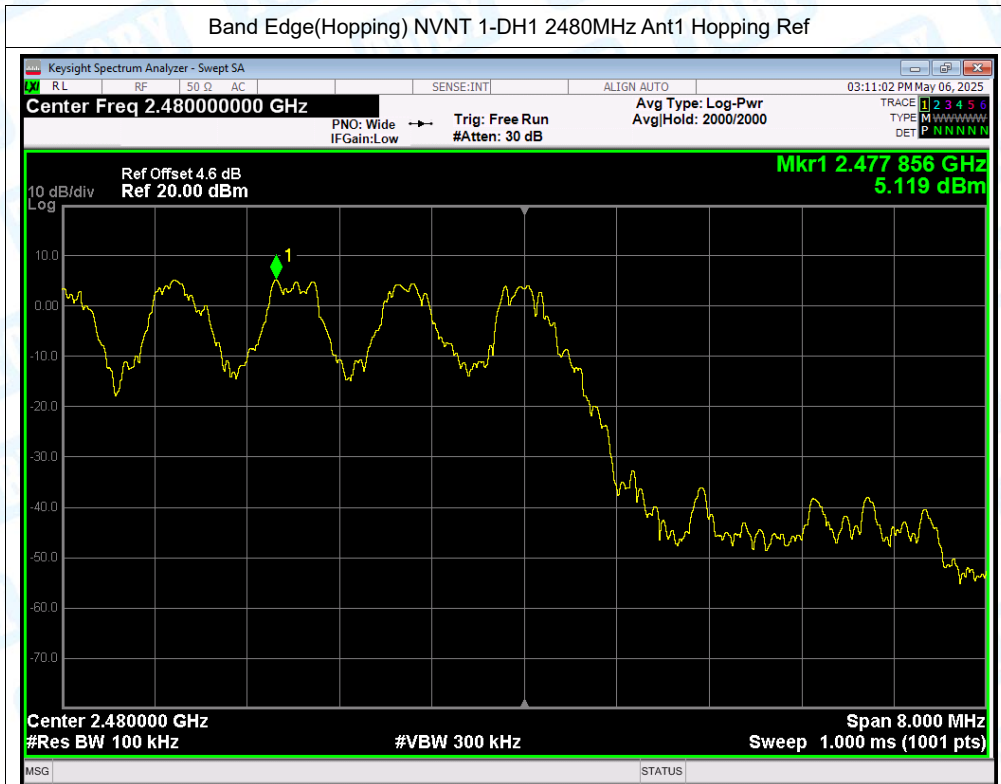
Test Graphs

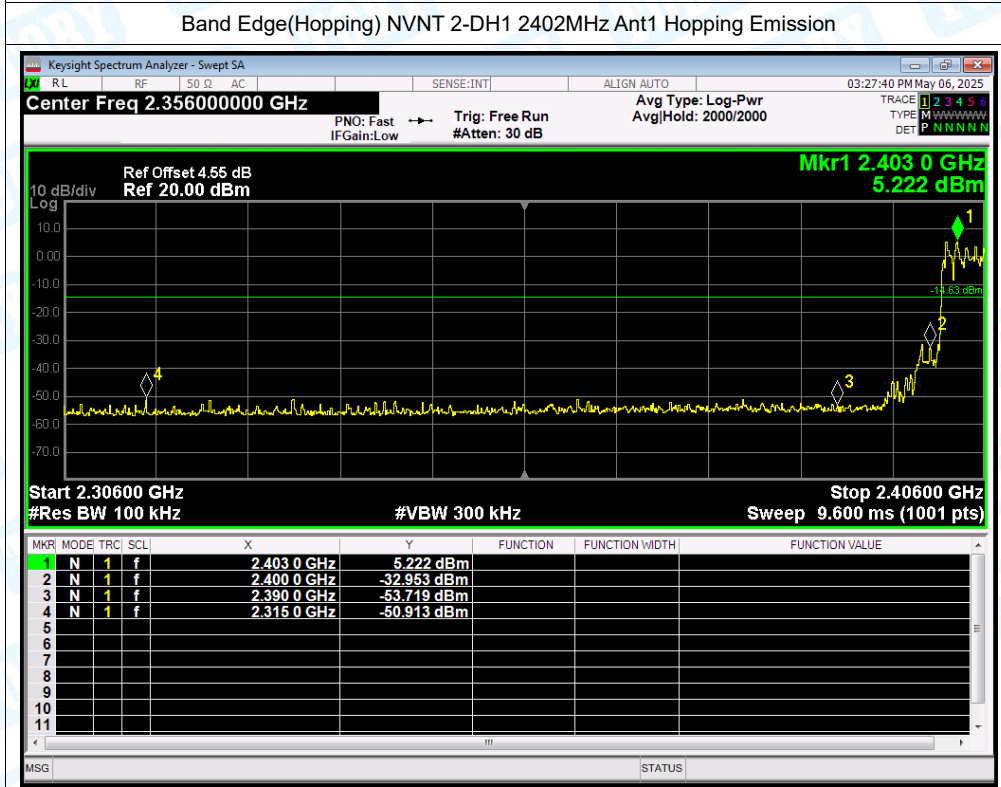
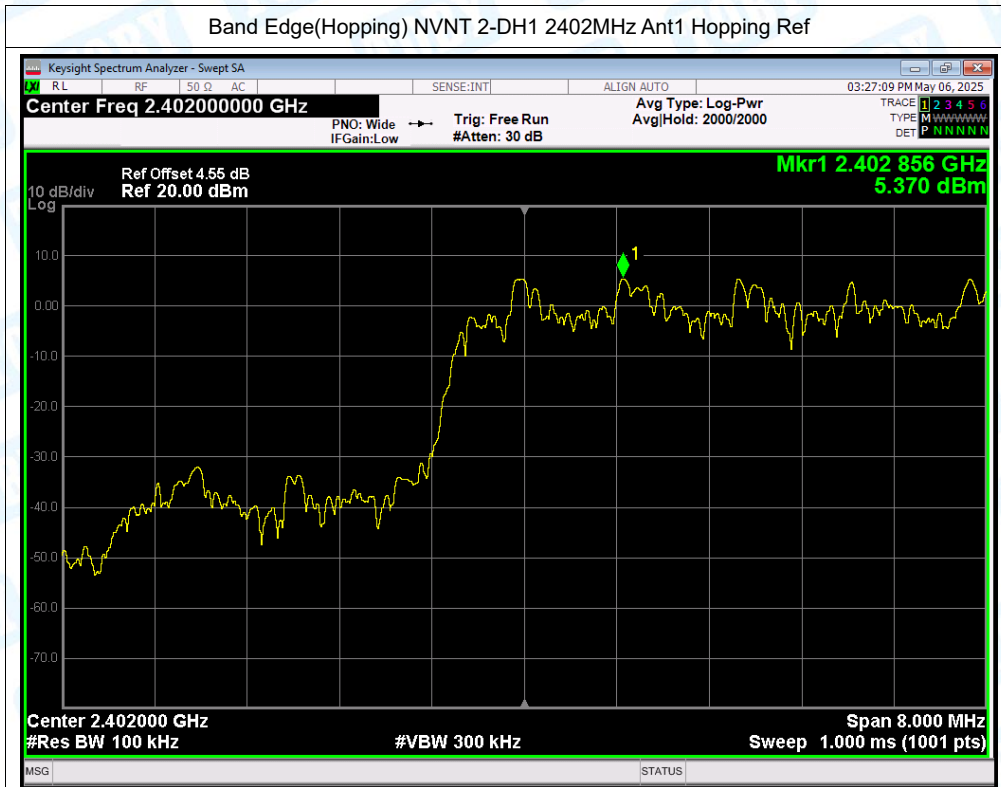
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref

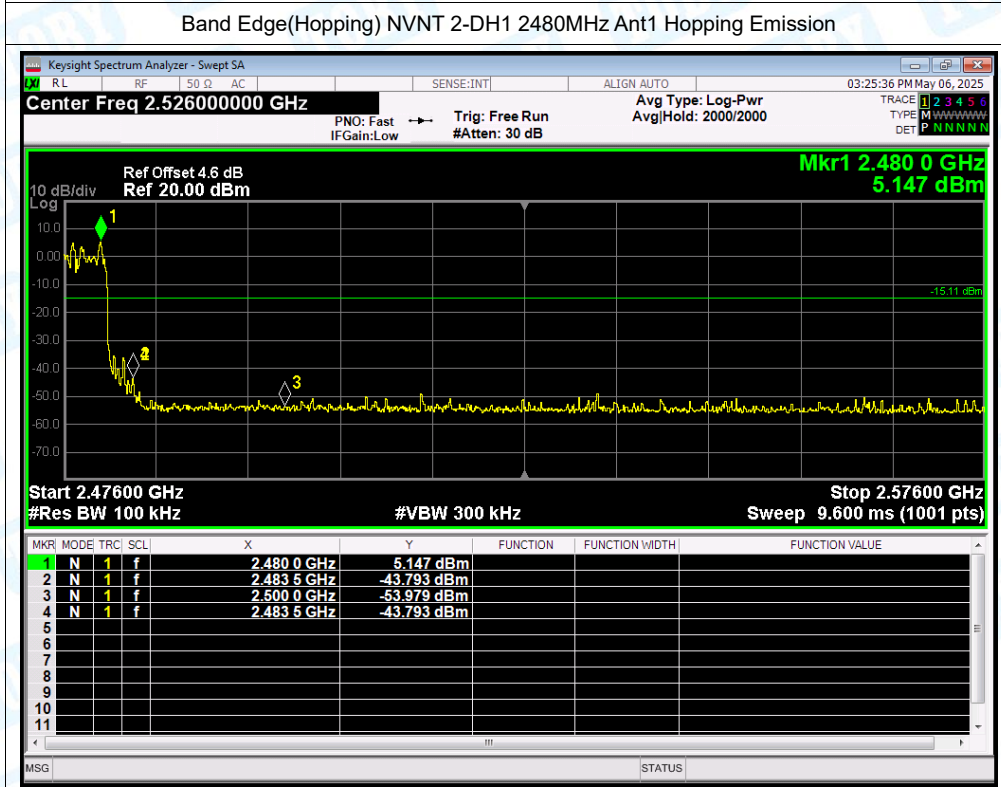
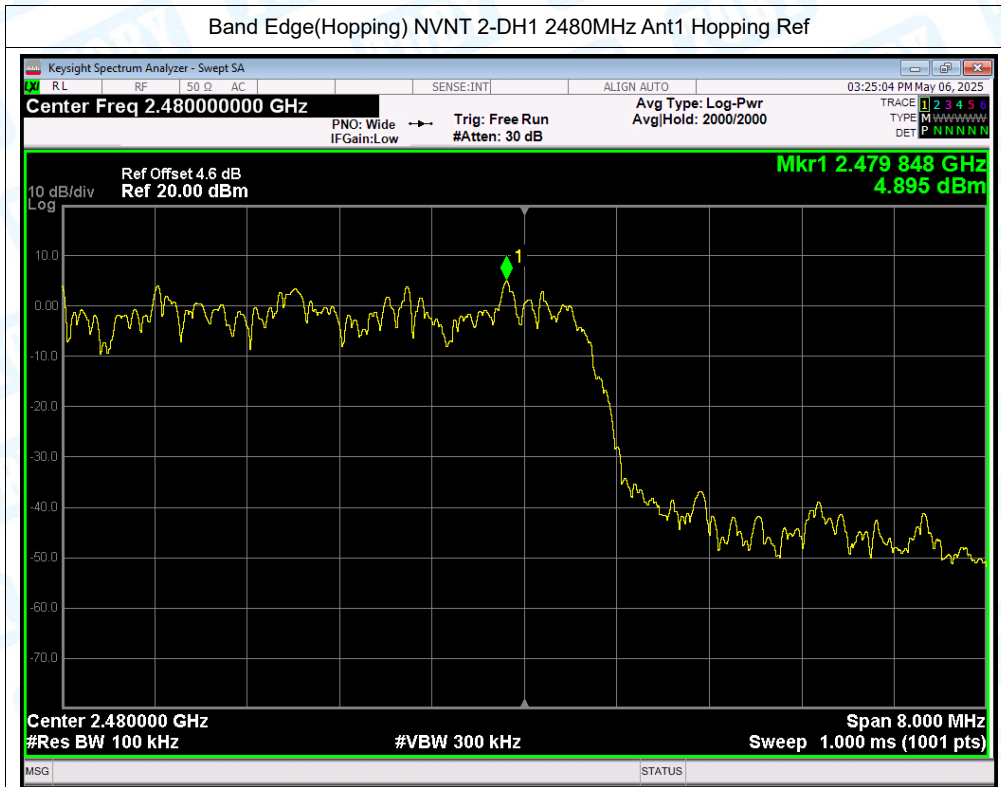


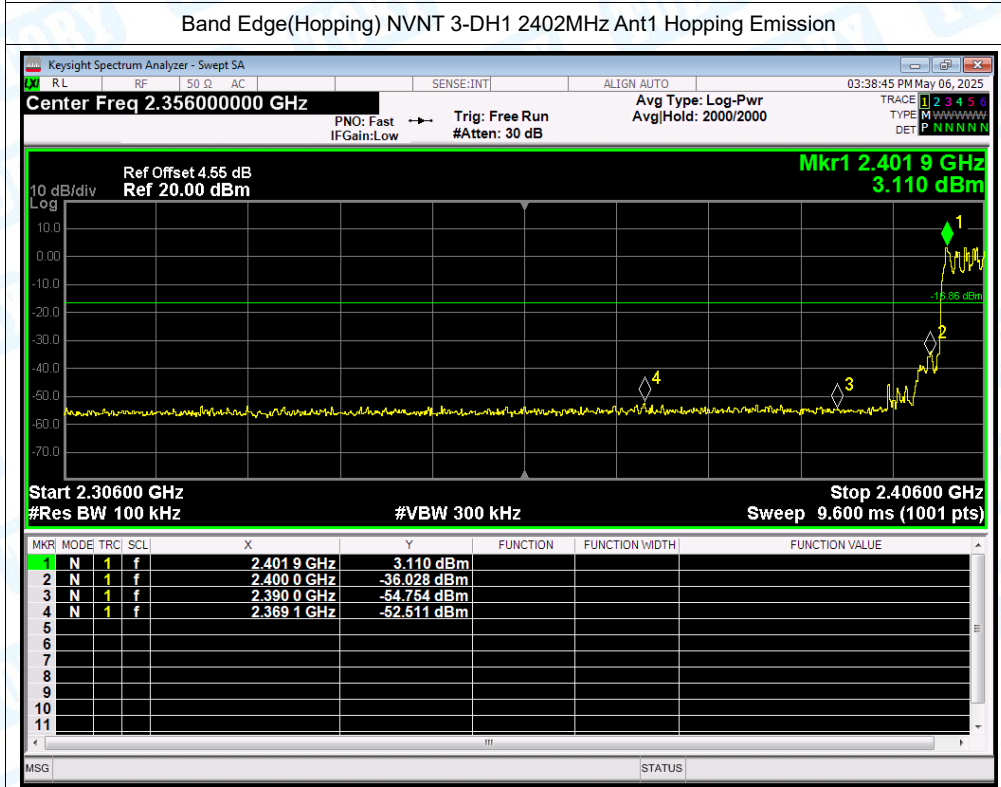
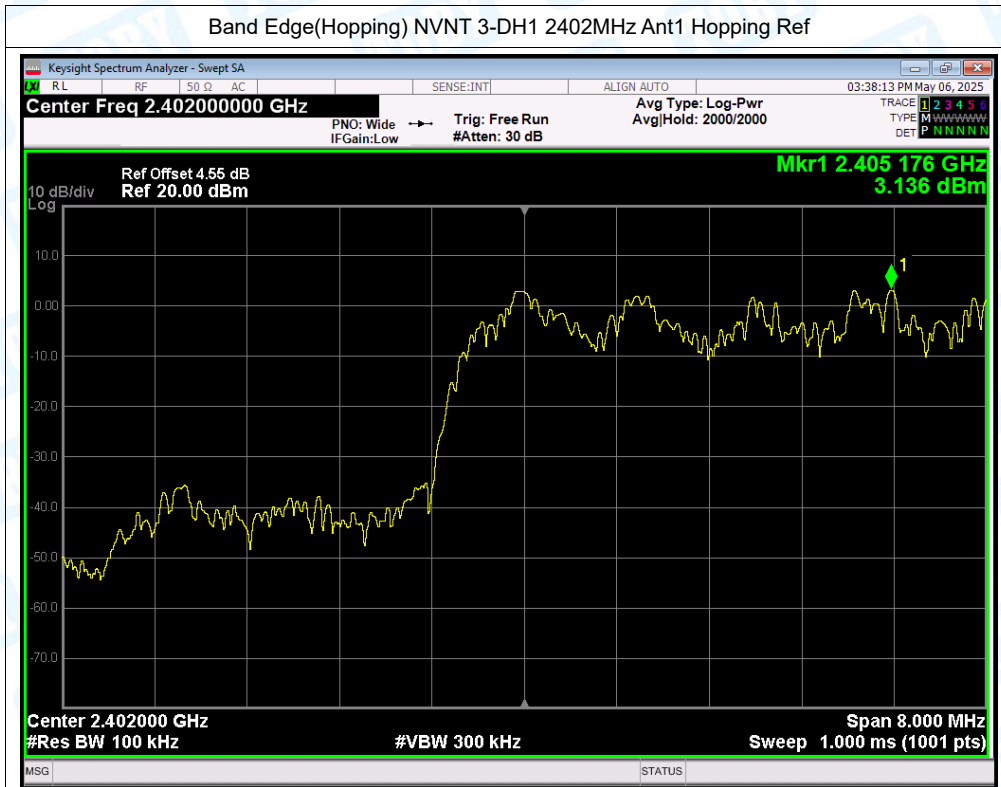
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission

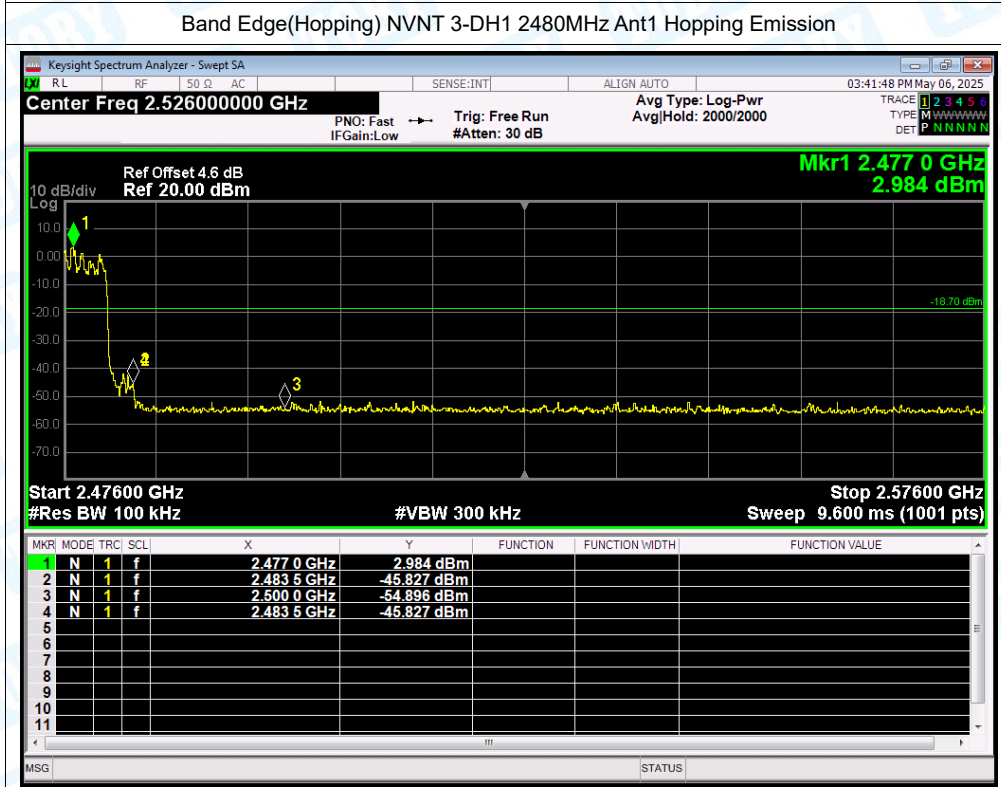
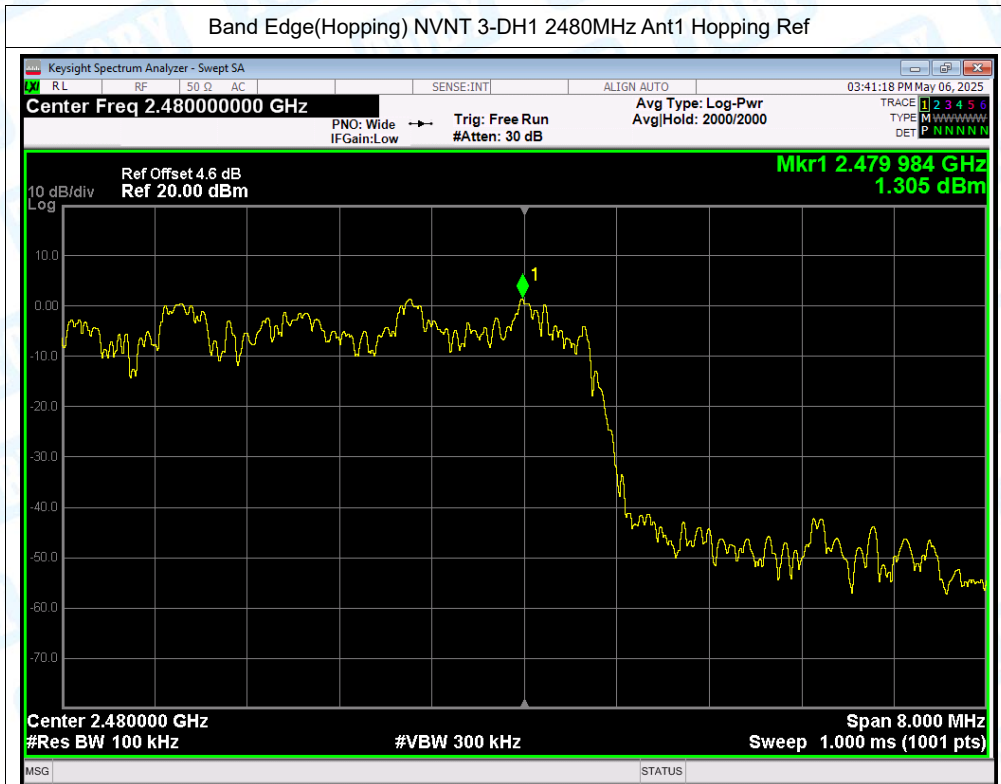










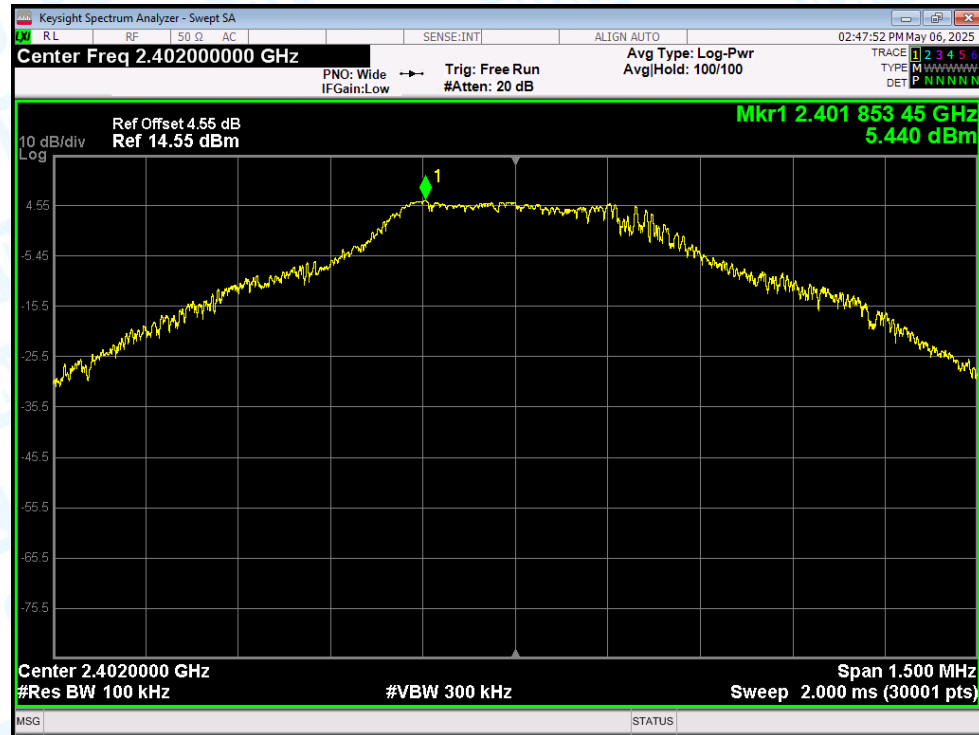


7. Conducted RF Spurious Emission

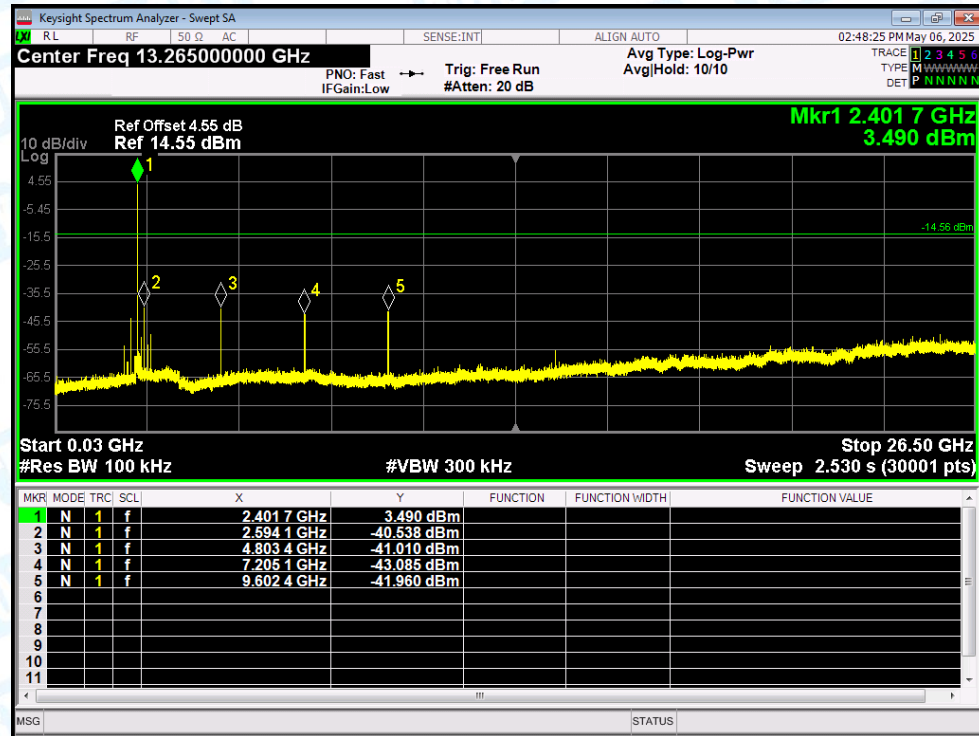
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-45.98	-20	Pass
NVNT	1-DH1	2441	Ant1	-45.73	-20	Pass
NVNT	1-DH1	2480	Ant1	-39.39	-20	Pass
NVNT	2-DH1	2402	Ant1	-46.37	-20	Pass
NVNT	2-DH1	2441	Ant1	-44.54	-20	Pass
NVNT	2-DH1	2480	Ant1	-40.47	-20	Pass
NVNT	3-DH1	2402	Ant1	-46.18	-20	Pass
NVNT	3-DH1	2441	Ant1	-43.99	-20	Pass
NVNT	3-DH1	2480	Ant1	-40.76	-20	Pass

Test Graphs

Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



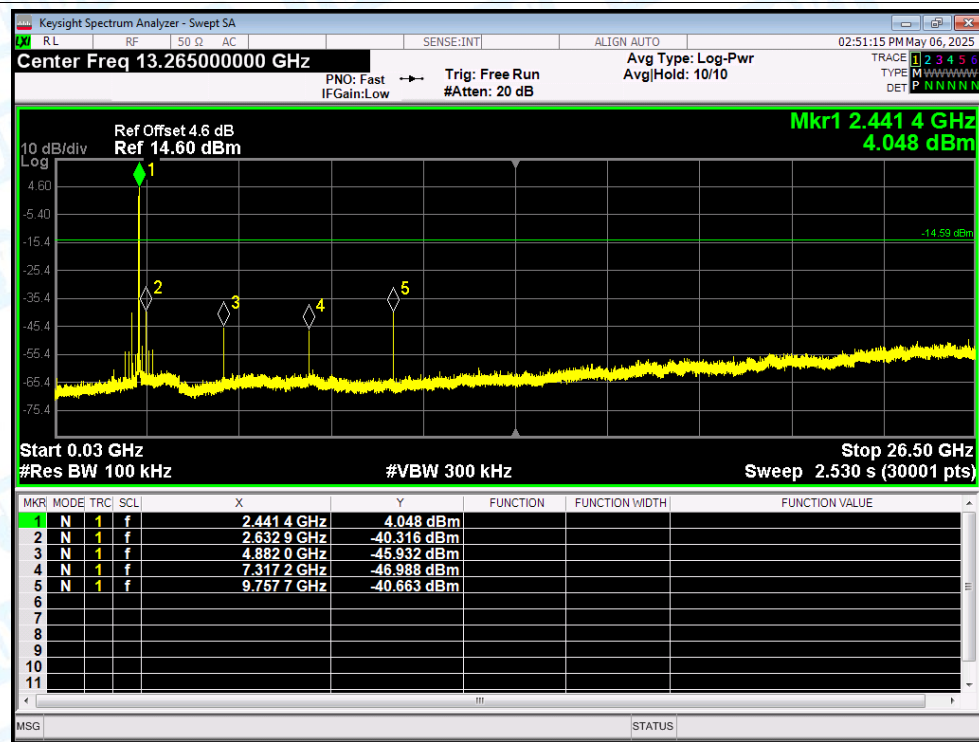
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



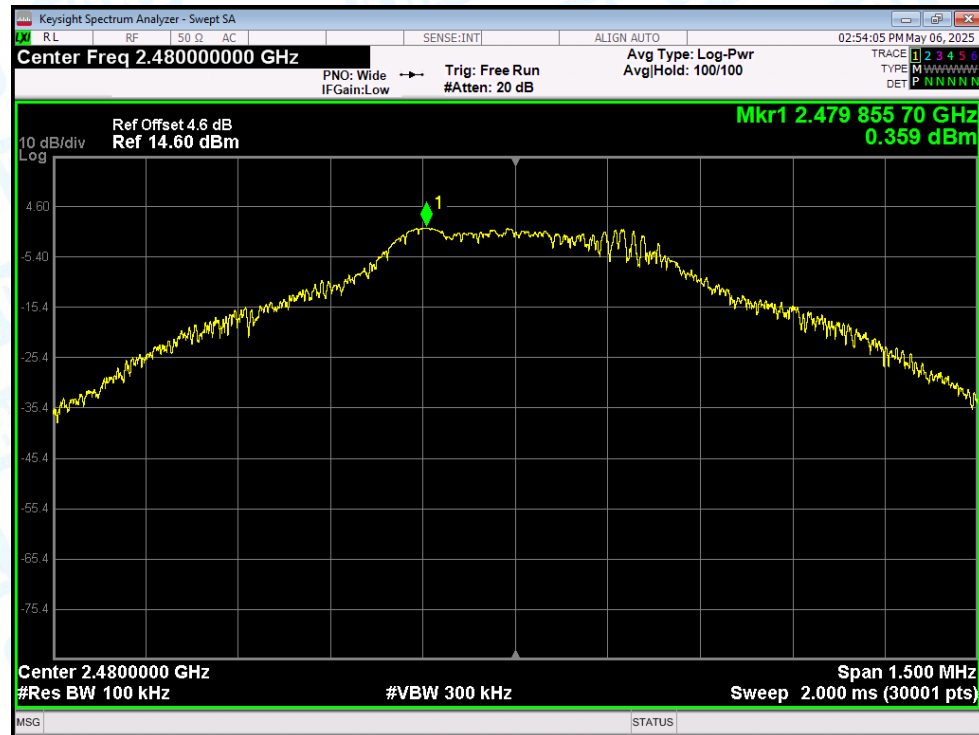
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



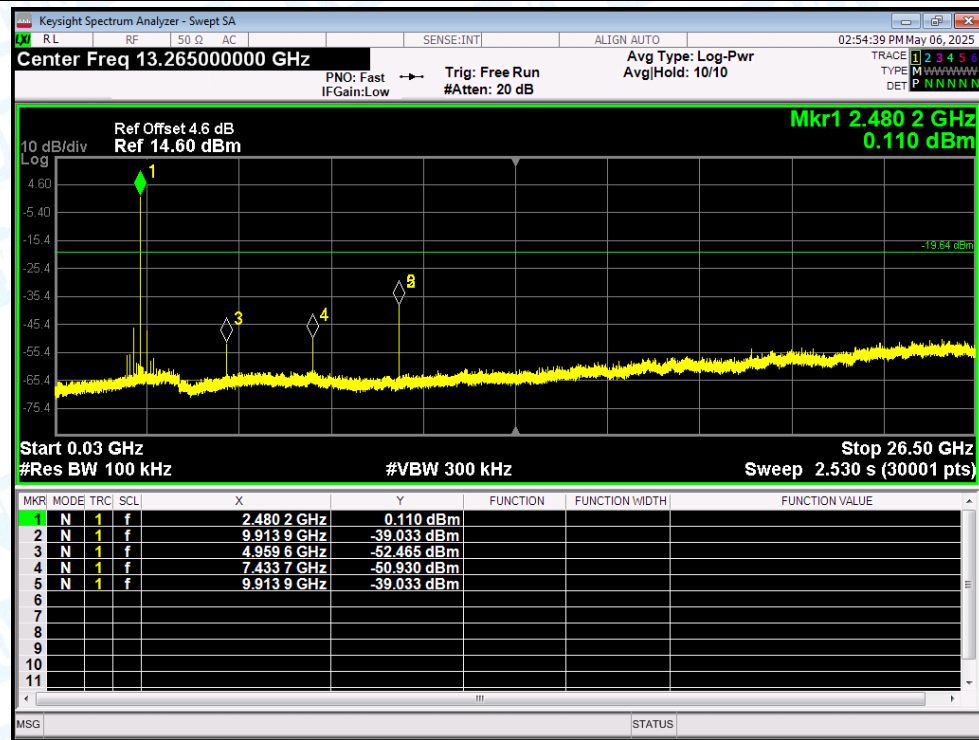
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



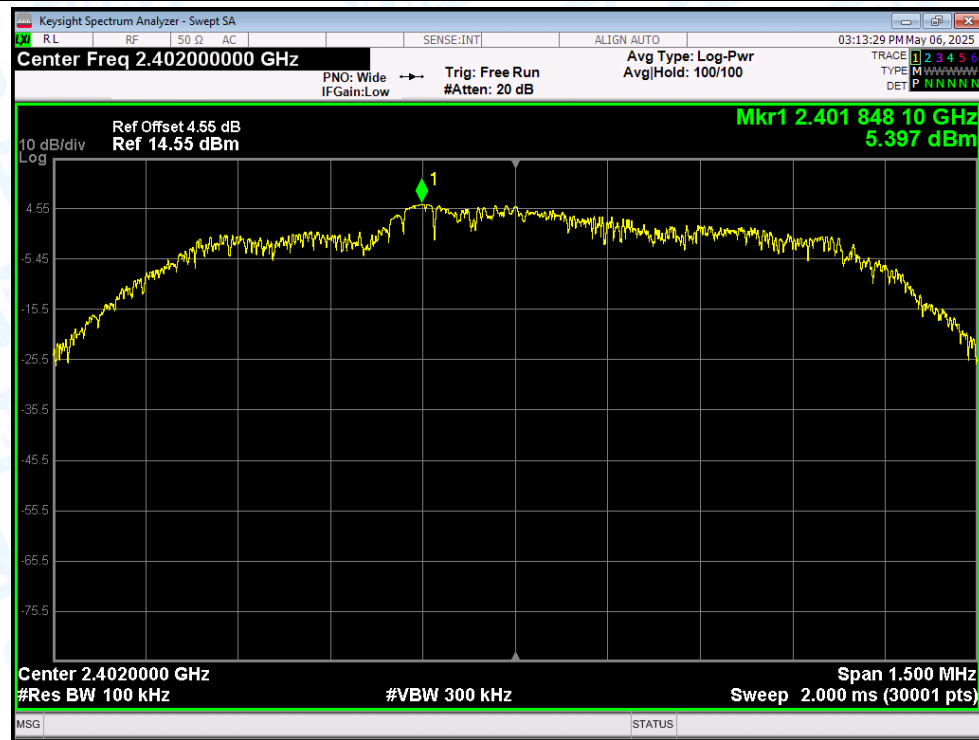
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



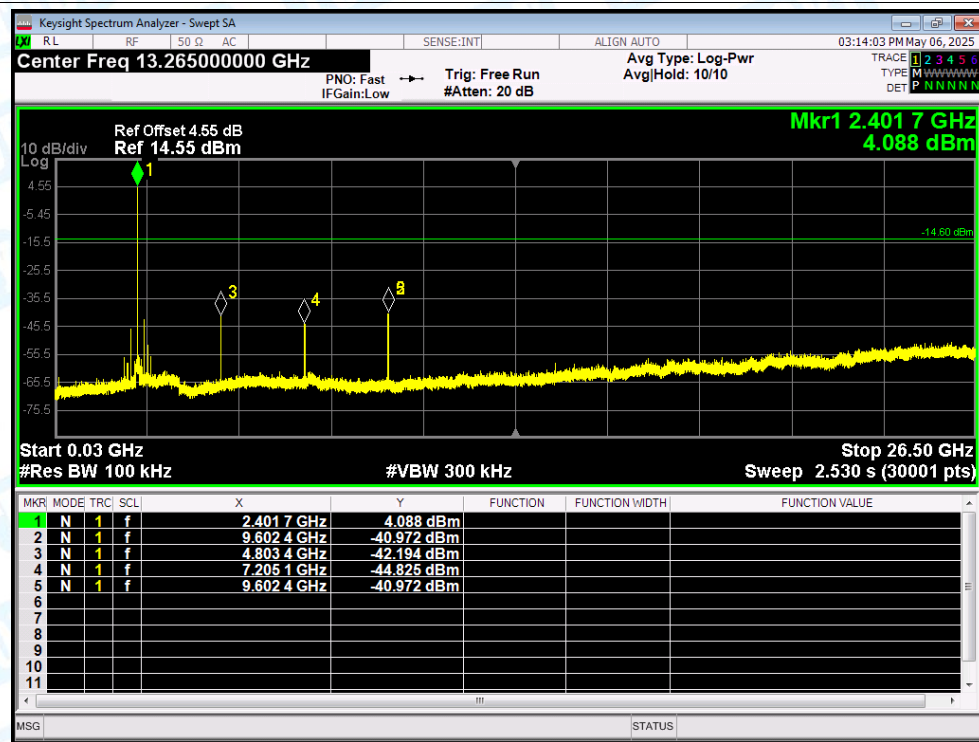
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



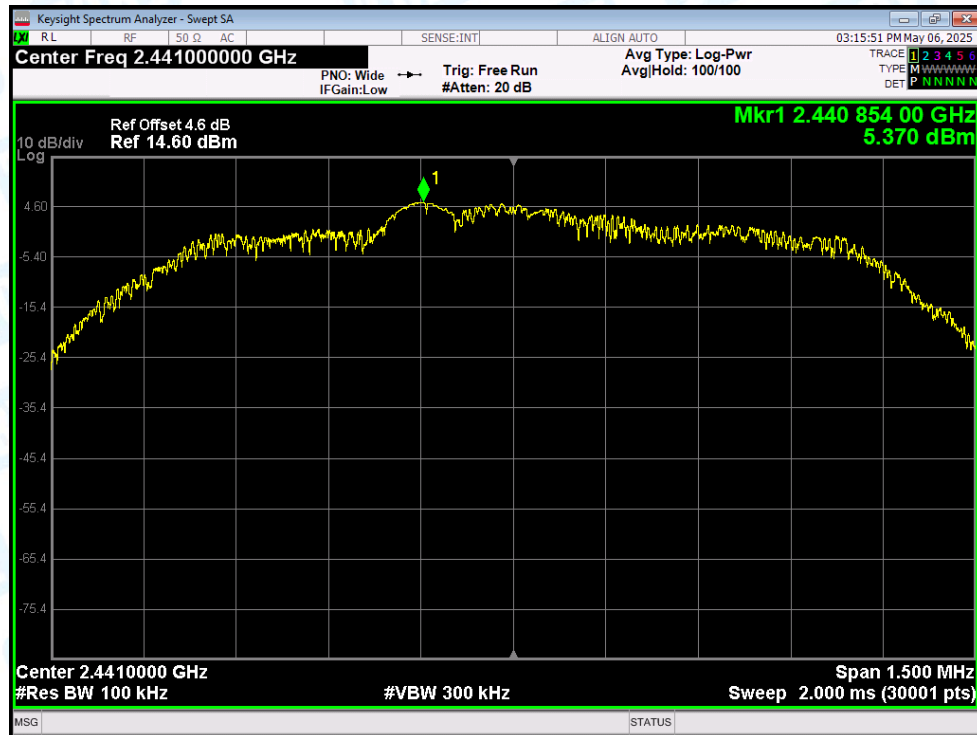
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



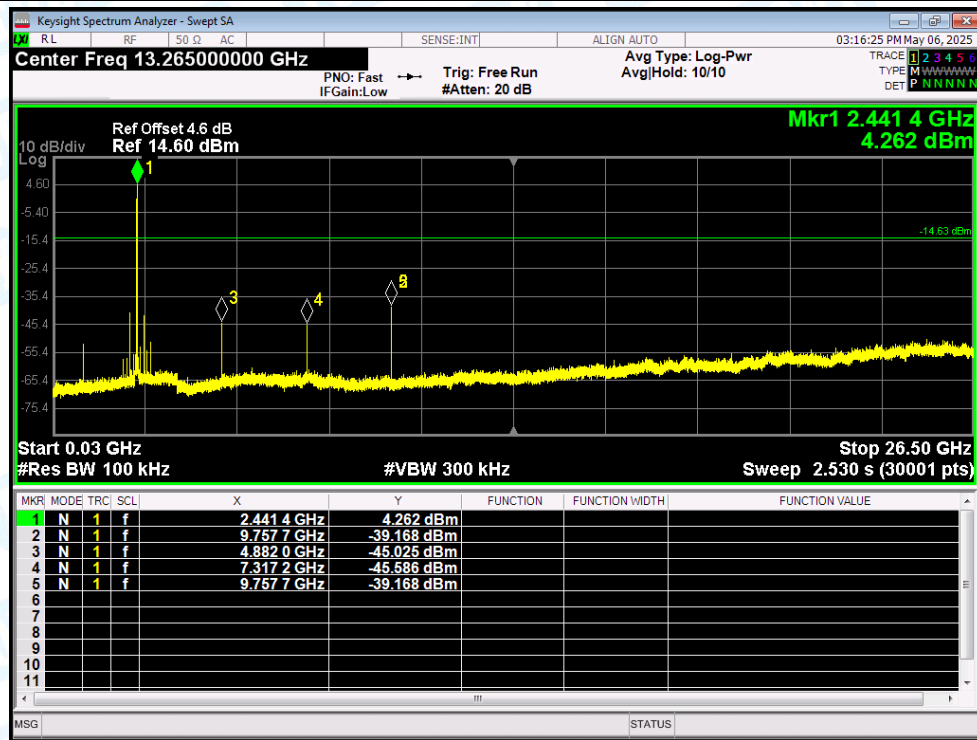
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



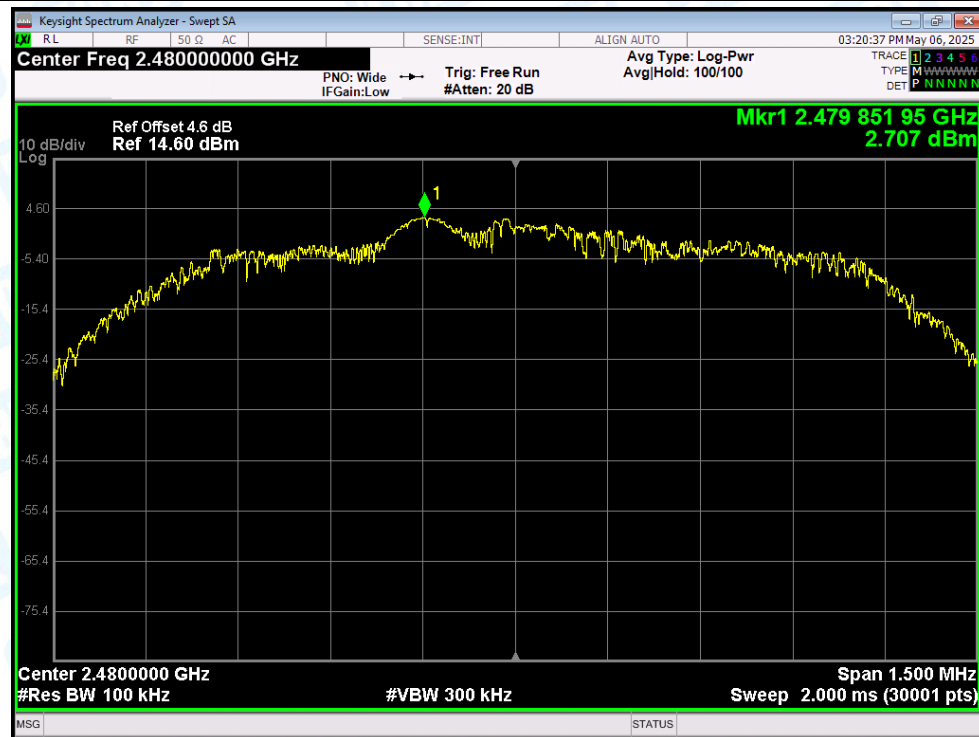
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



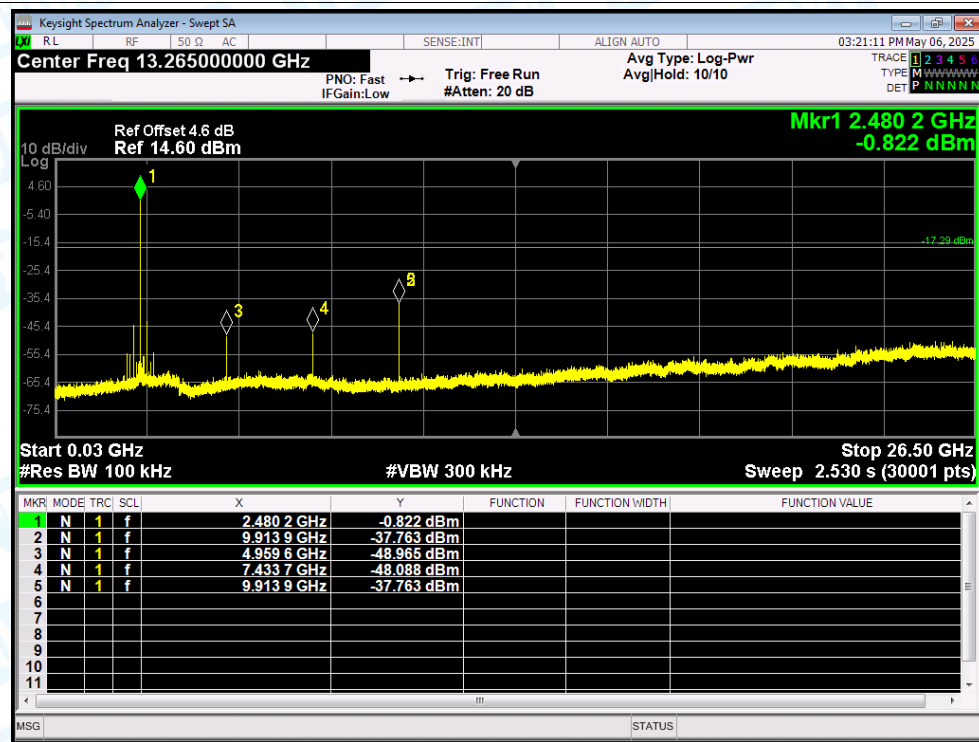
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



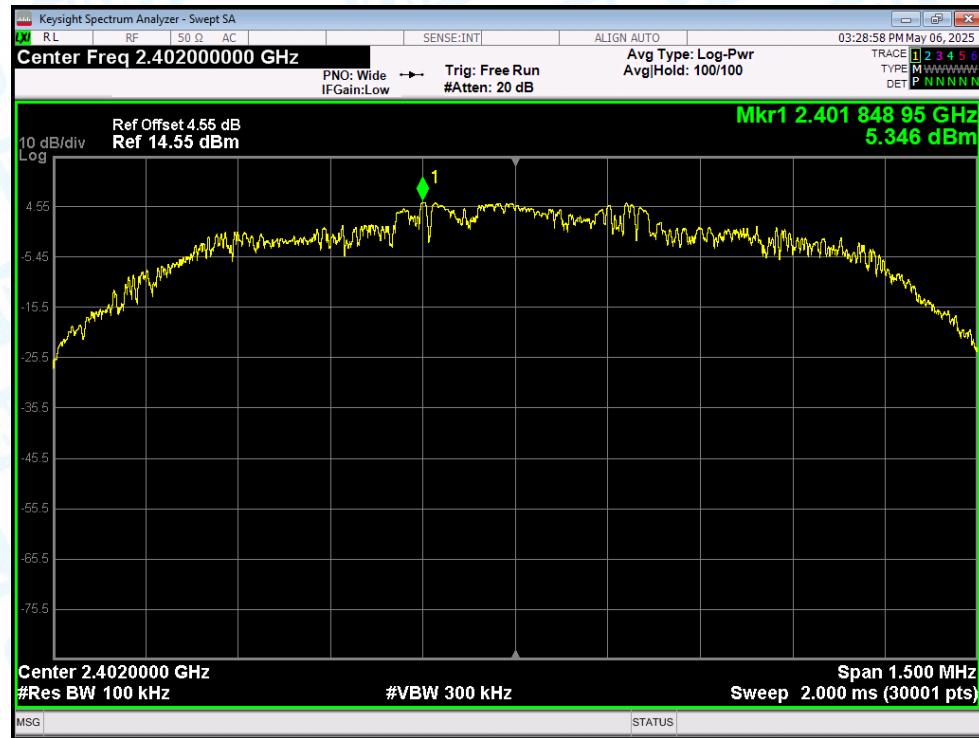
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



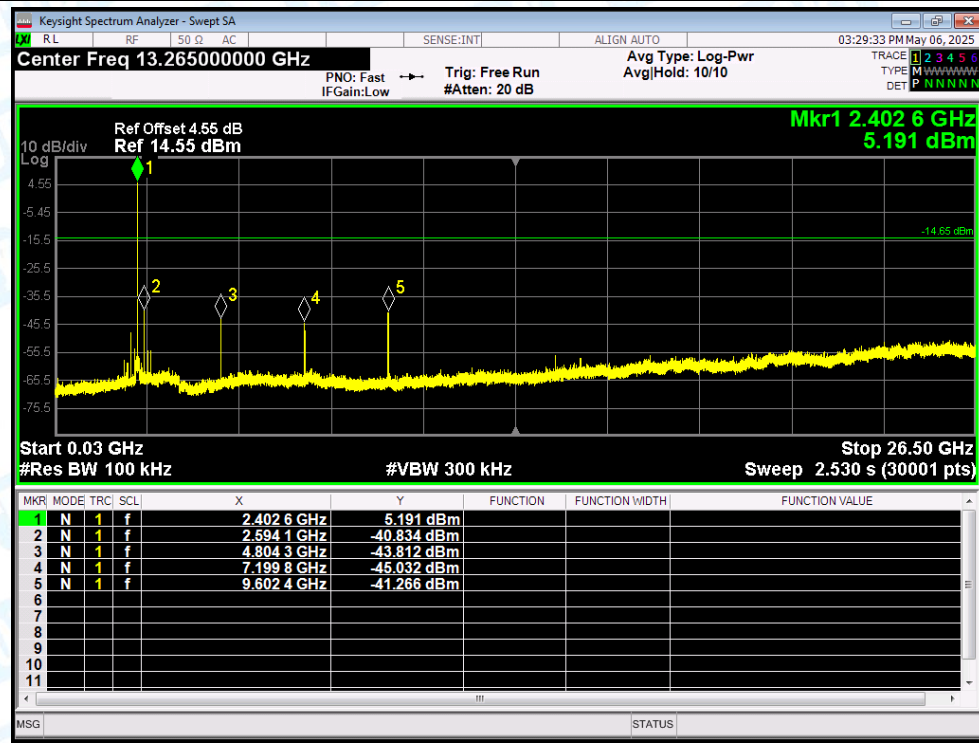
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



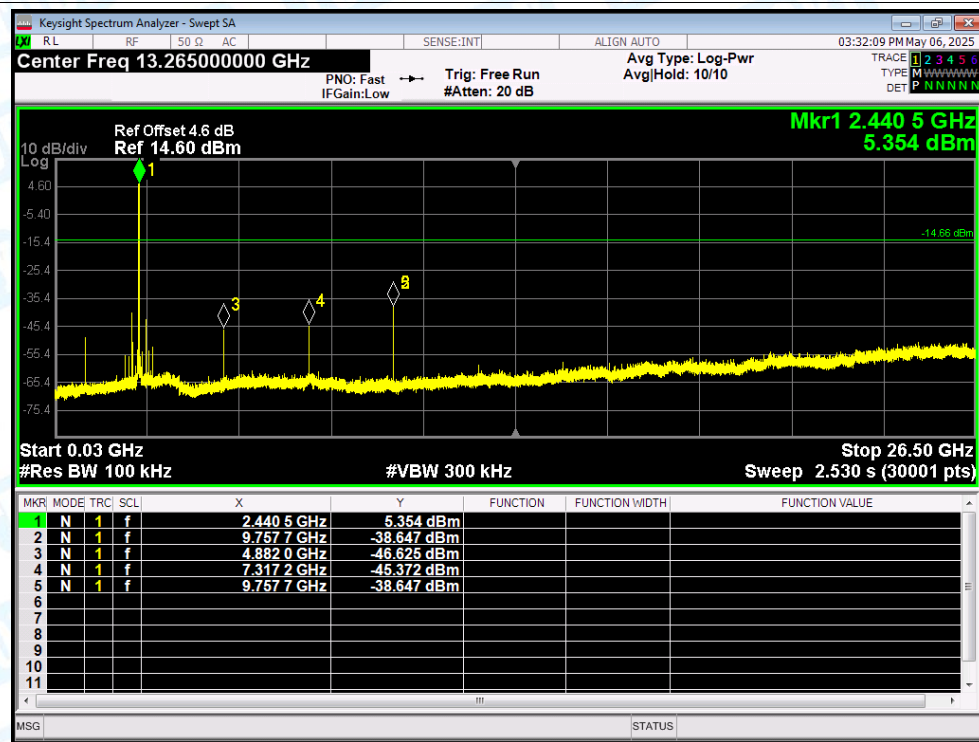
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



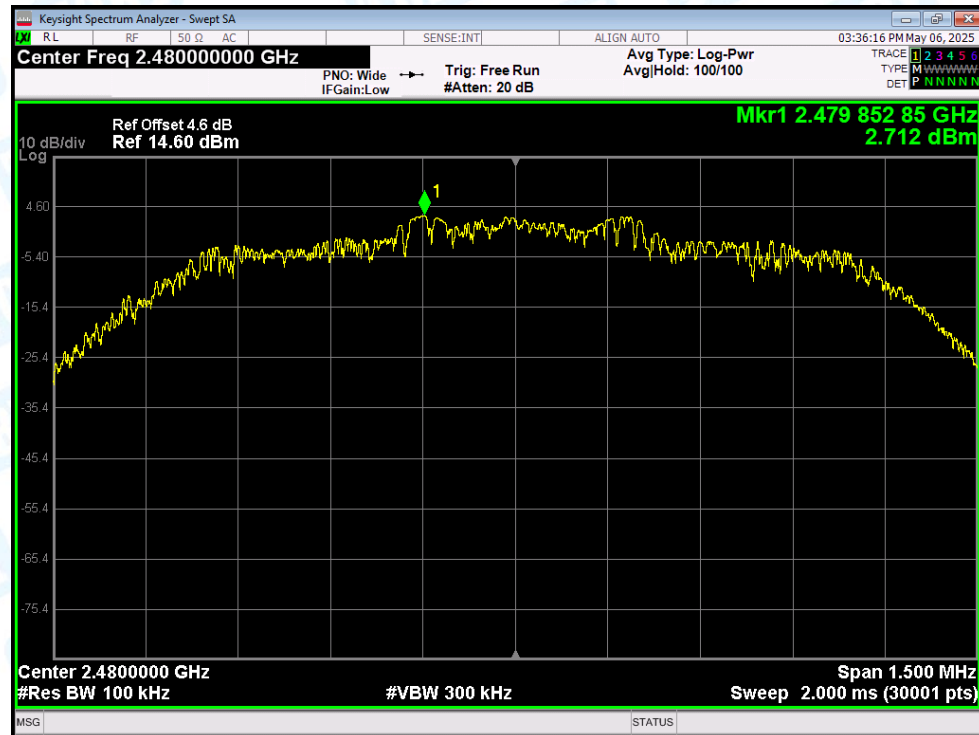
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



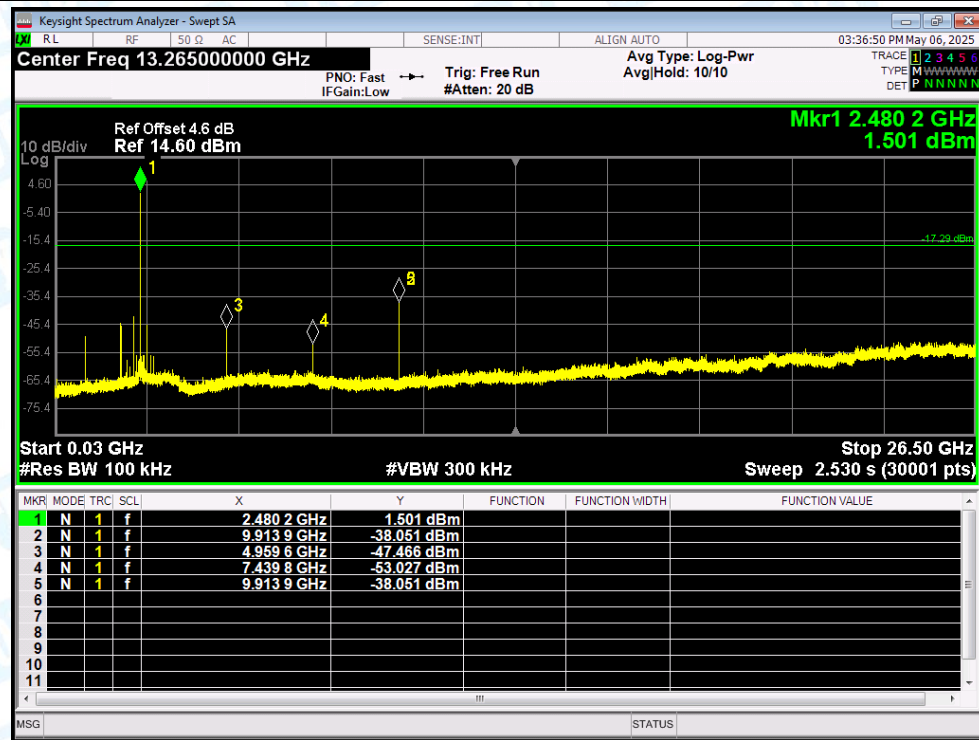
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

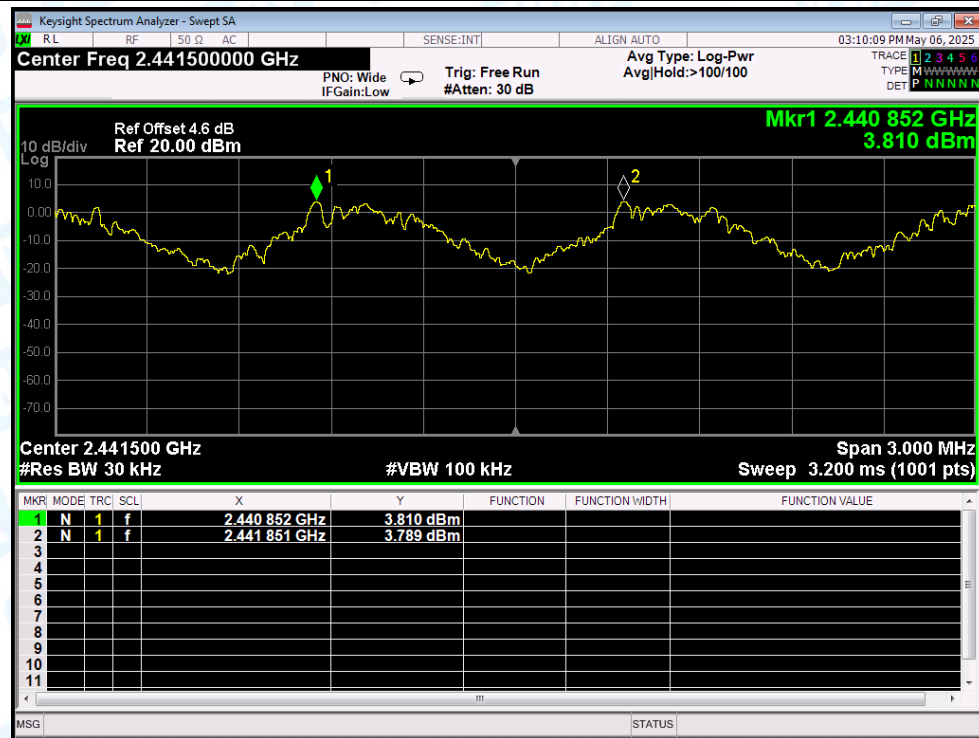


8.Carrier Frequencies Separation

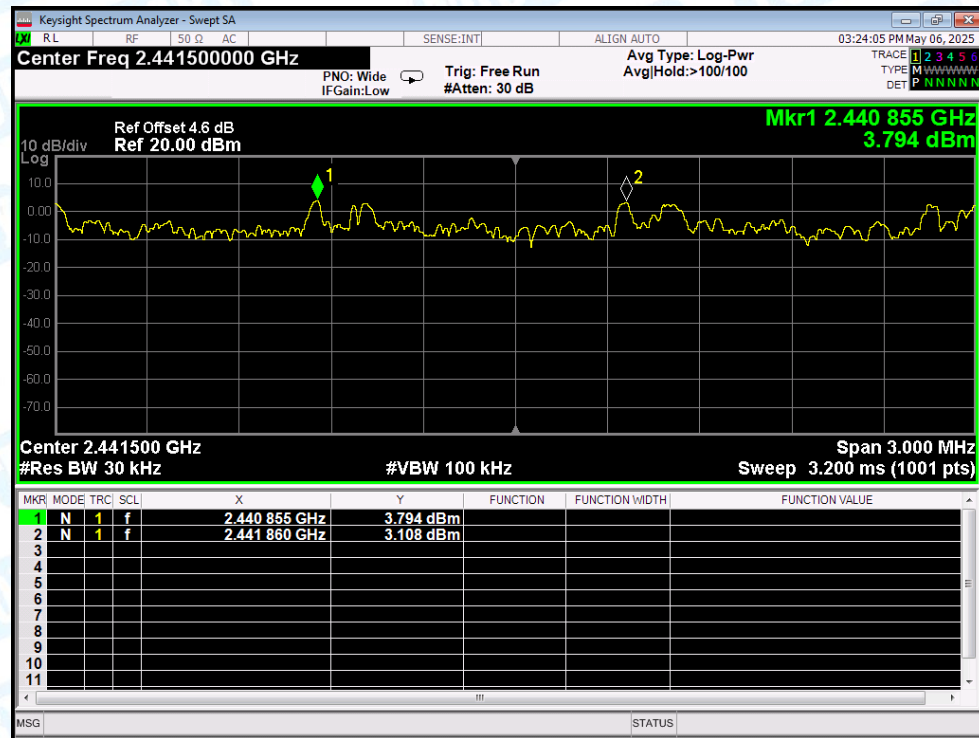
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.852	2441.851	0.999	0.025	Pass
NVNT	2-DH1	Ant1	2440.855	2441.86	1.005	0.833	Pass
NVNT	3-DH1	Ant1	2440.846	2441.857	1.011	0.813	Pass

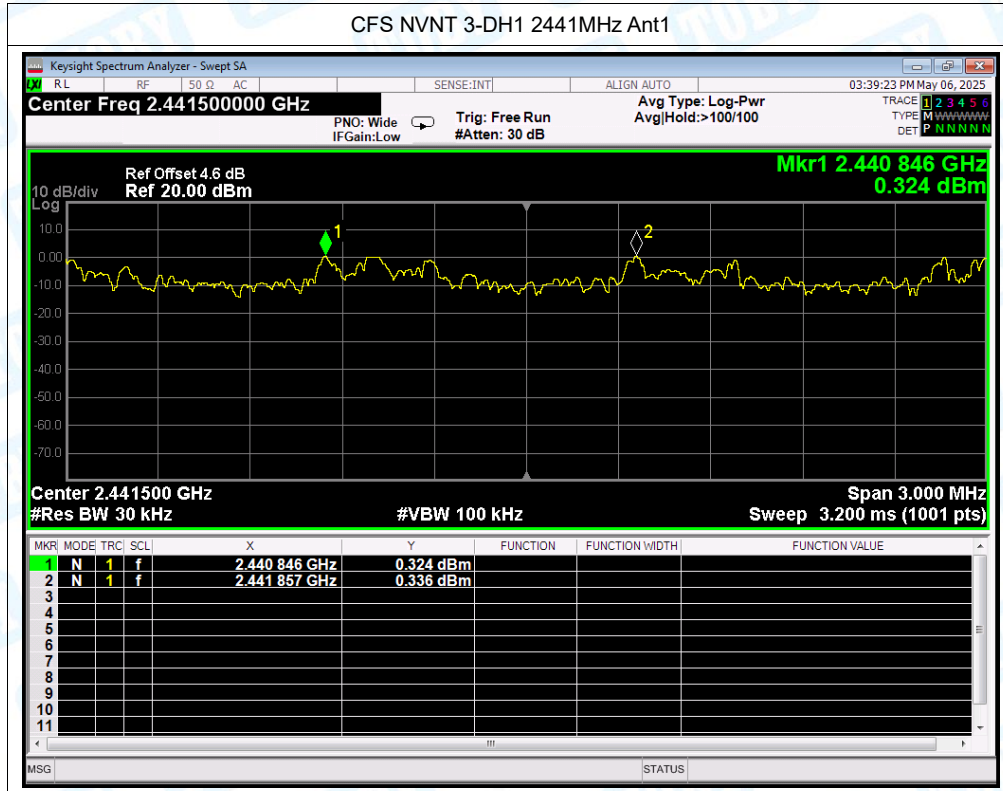
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



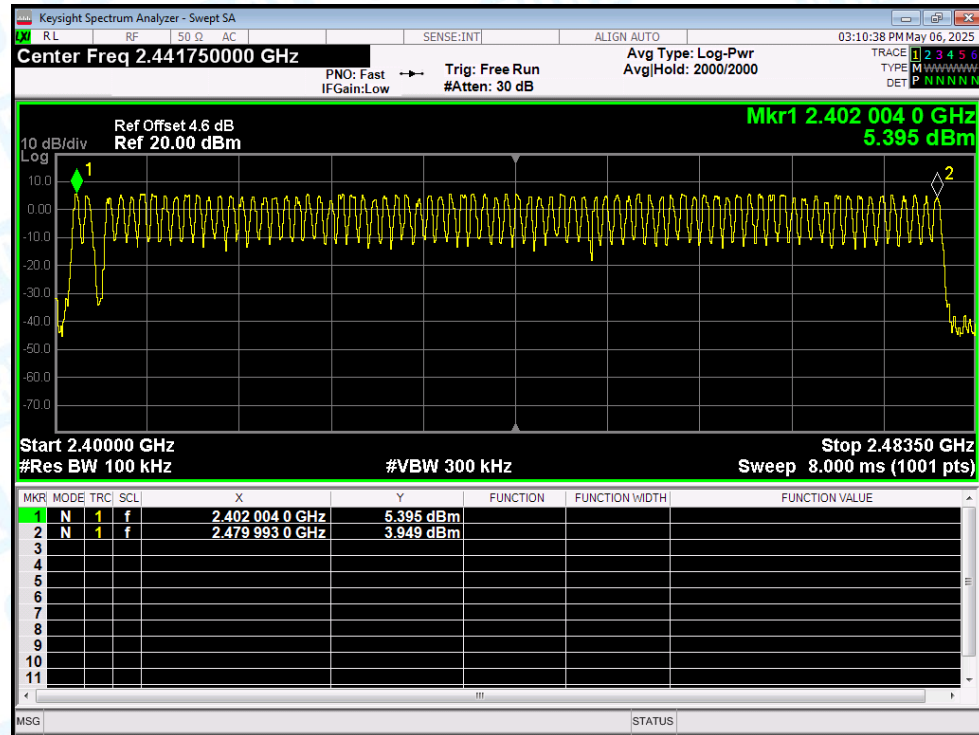


9.Number of Hopping Channel

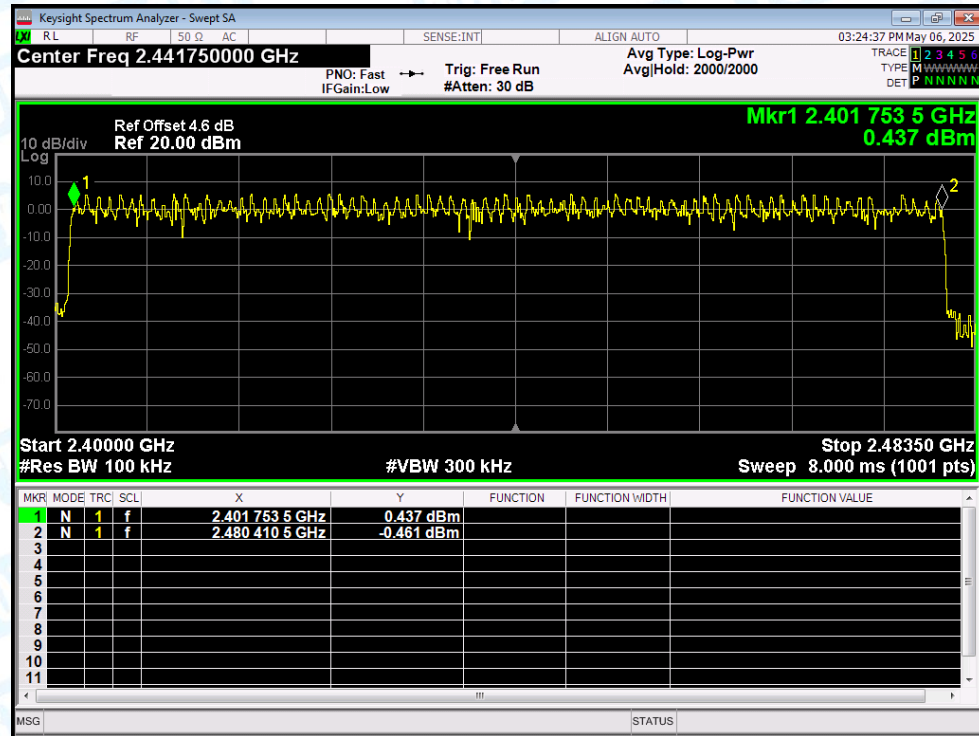
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

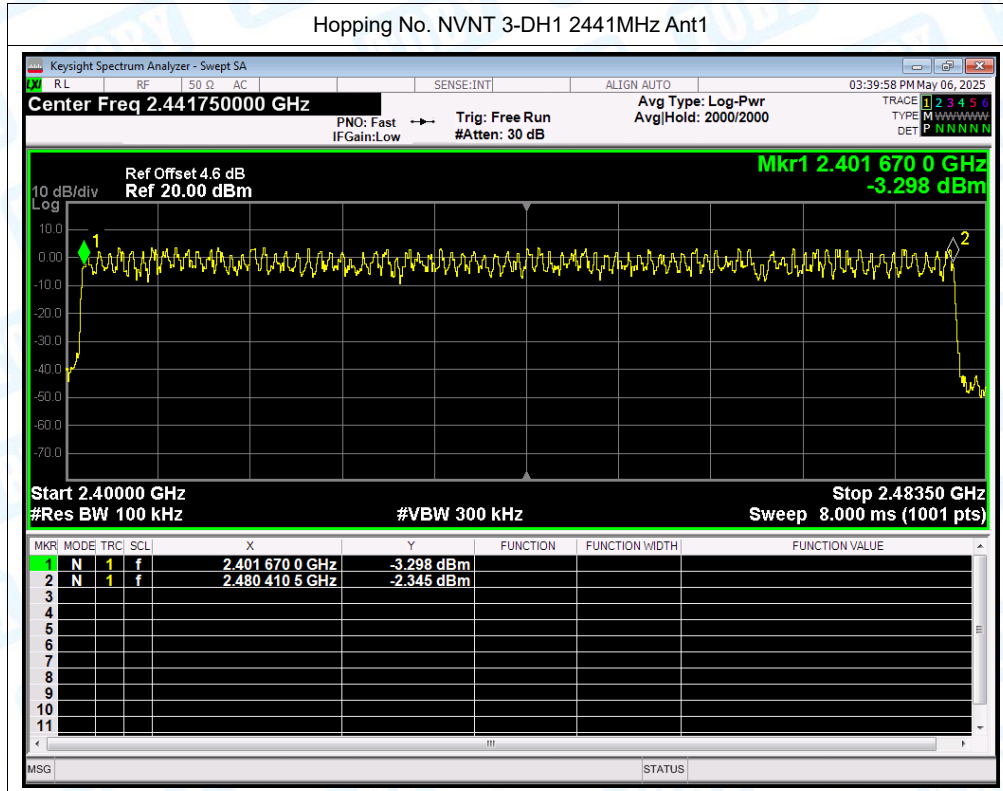
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



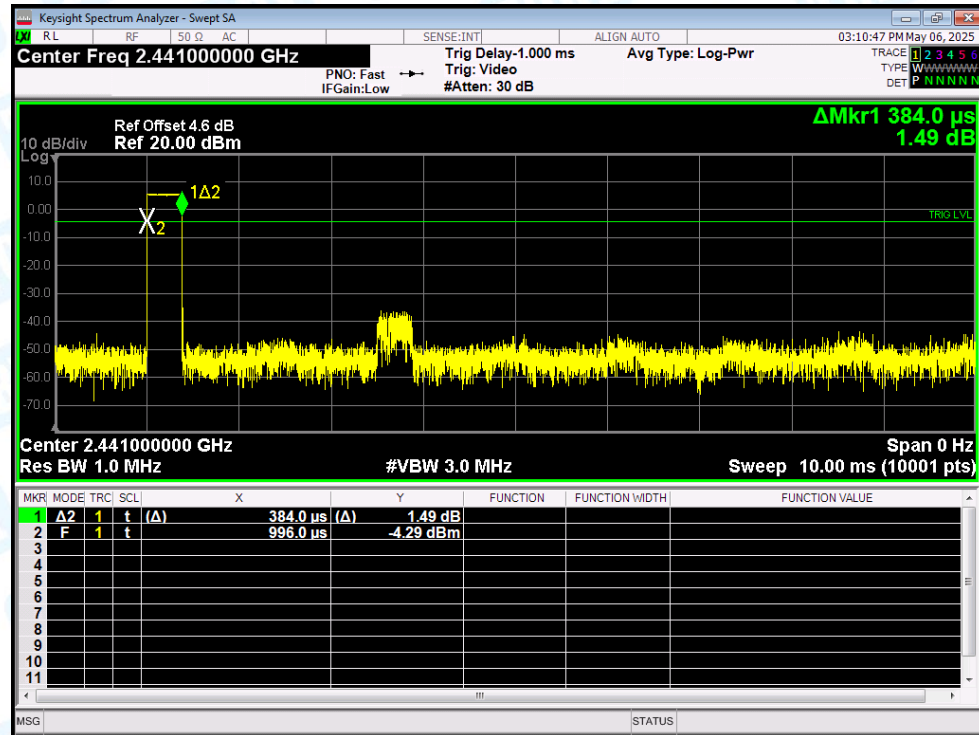


10.Dwell Time

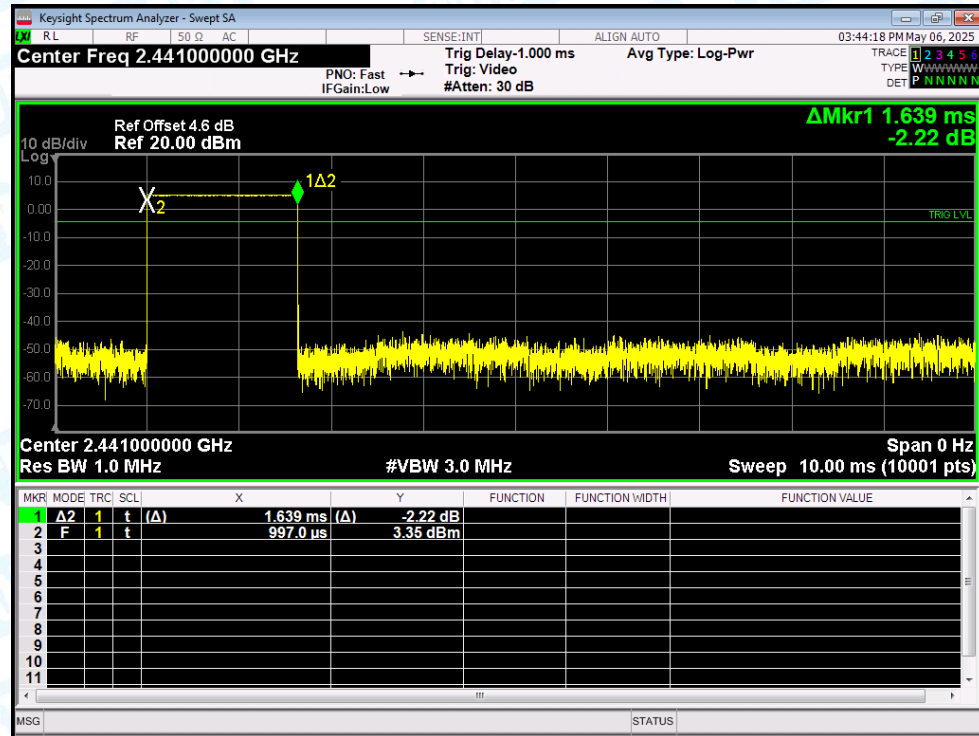
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.384	122.88	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.639	262.24	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.887	307.947	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.392	125.44	31600	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	0.392	125.44	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

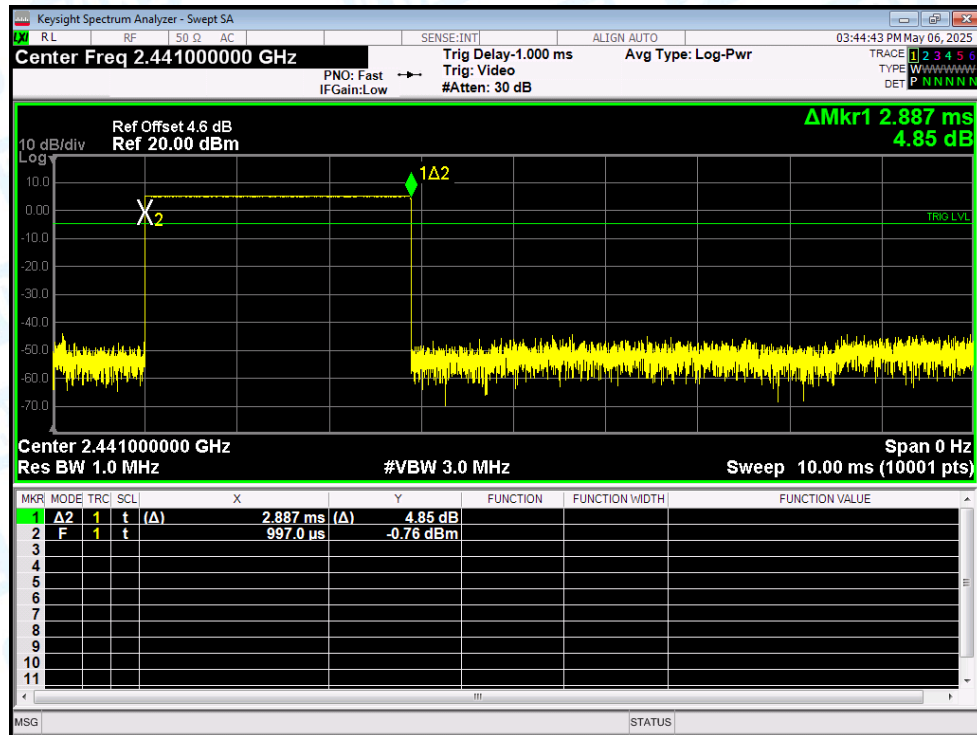
Dwell NVNT 1-DH1 2441MHz Ant1



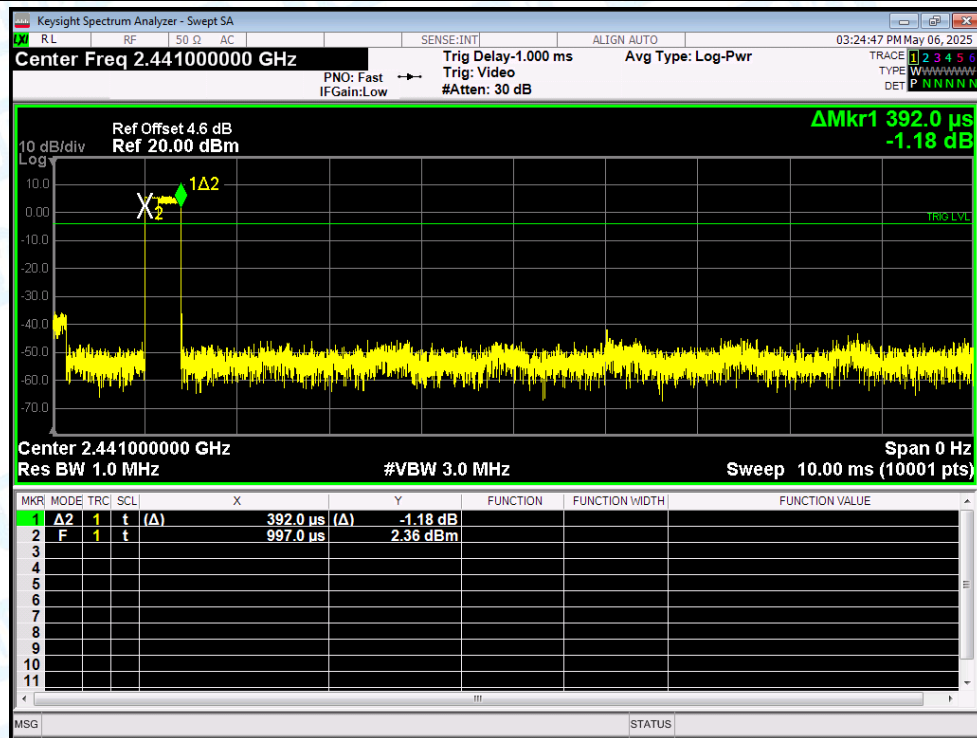
Dwell NVNT 1-DH3 2441MHz Ant1



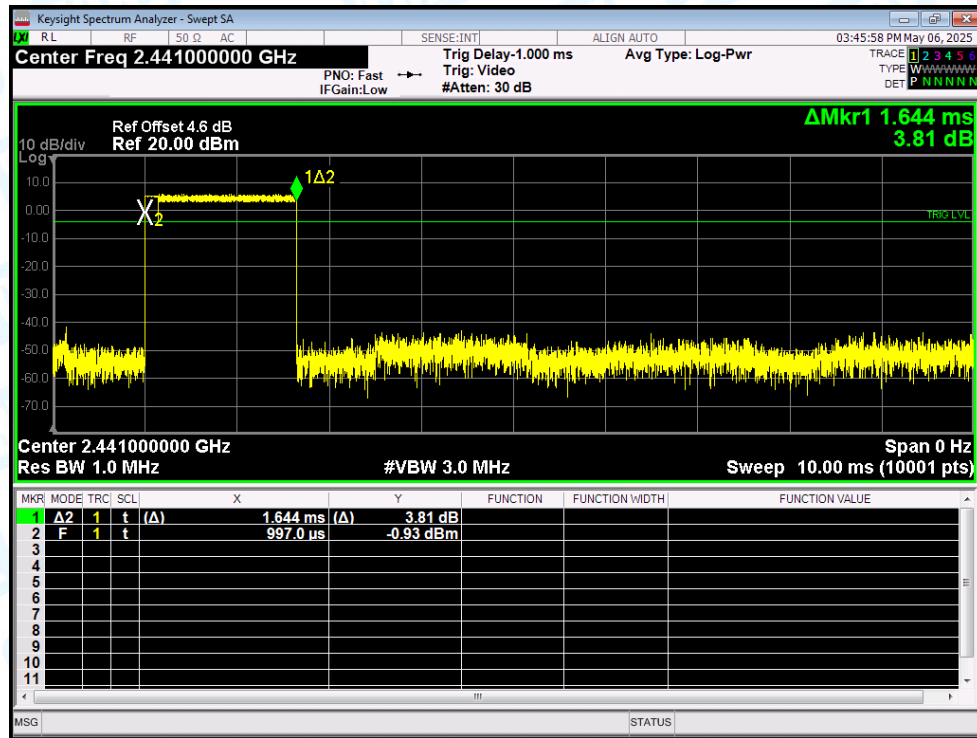
Dwell NVNT 1-DH5 2441MHz Ant1



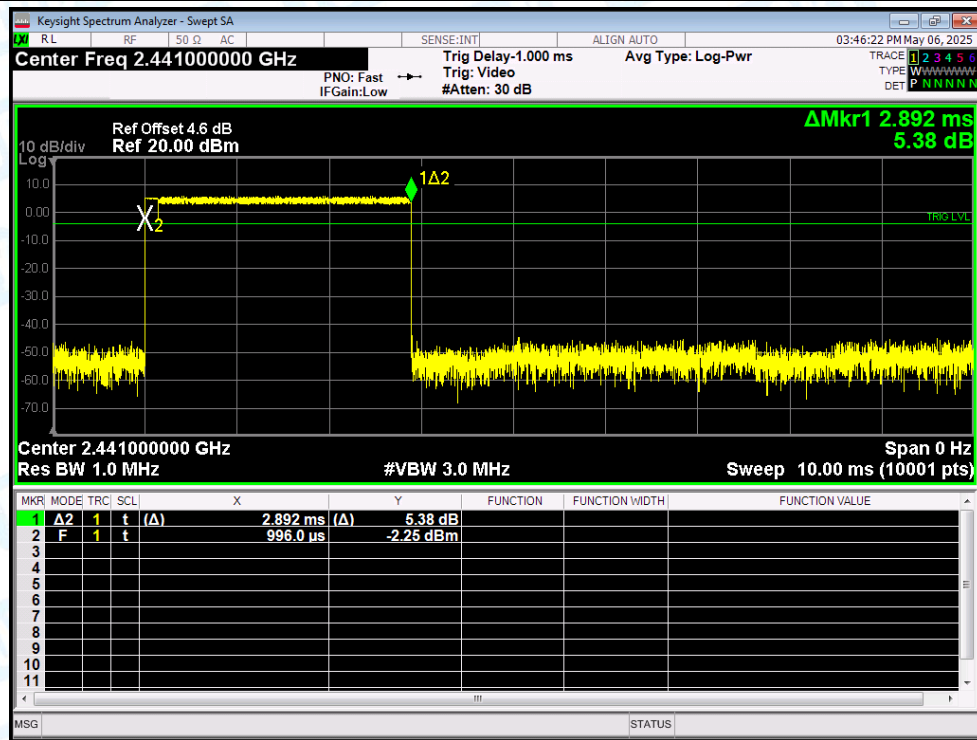
Dwell NVNT 2-DH1 2441MHz Ant1



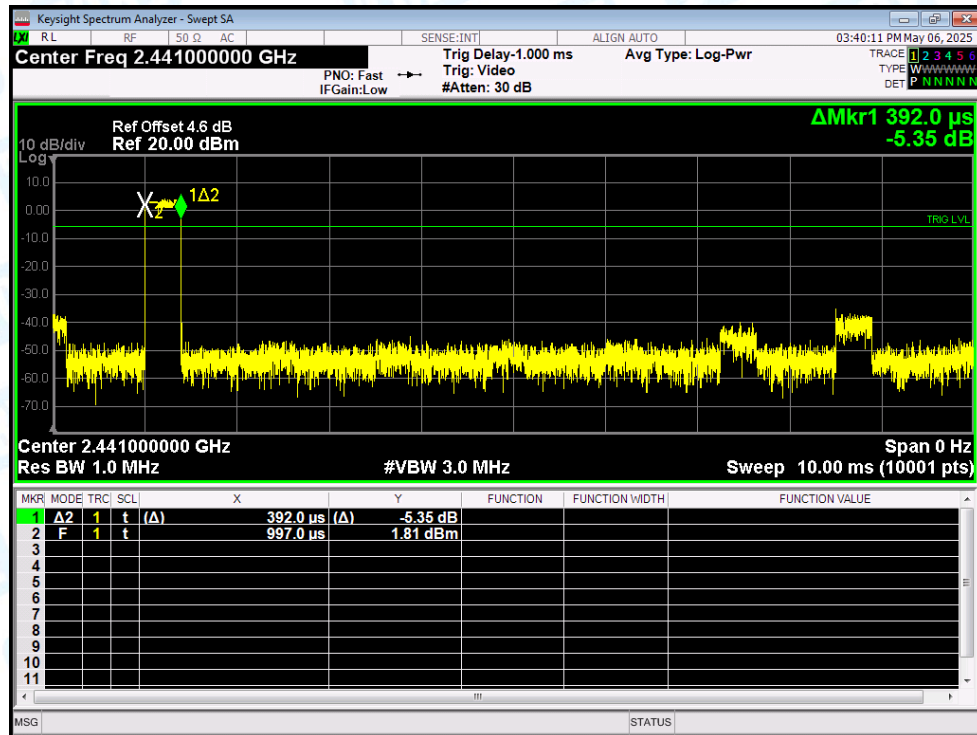
Dwell NVNT 2-DH3 2441MHz Ant1



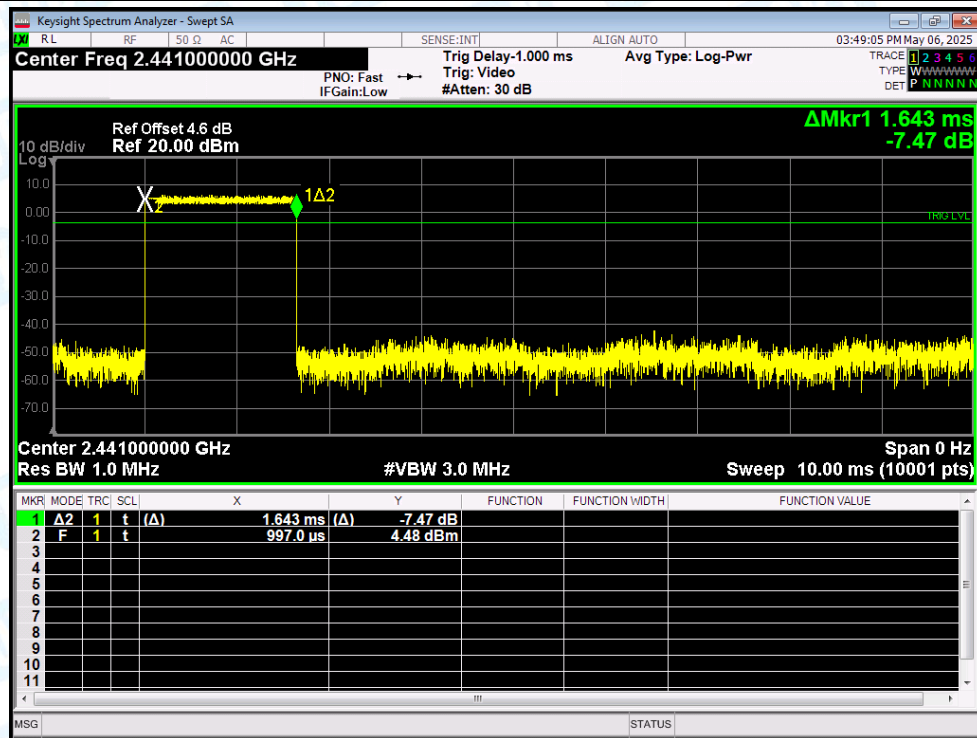
Dwell NVNT 2-DH5 2441MHz Ant1

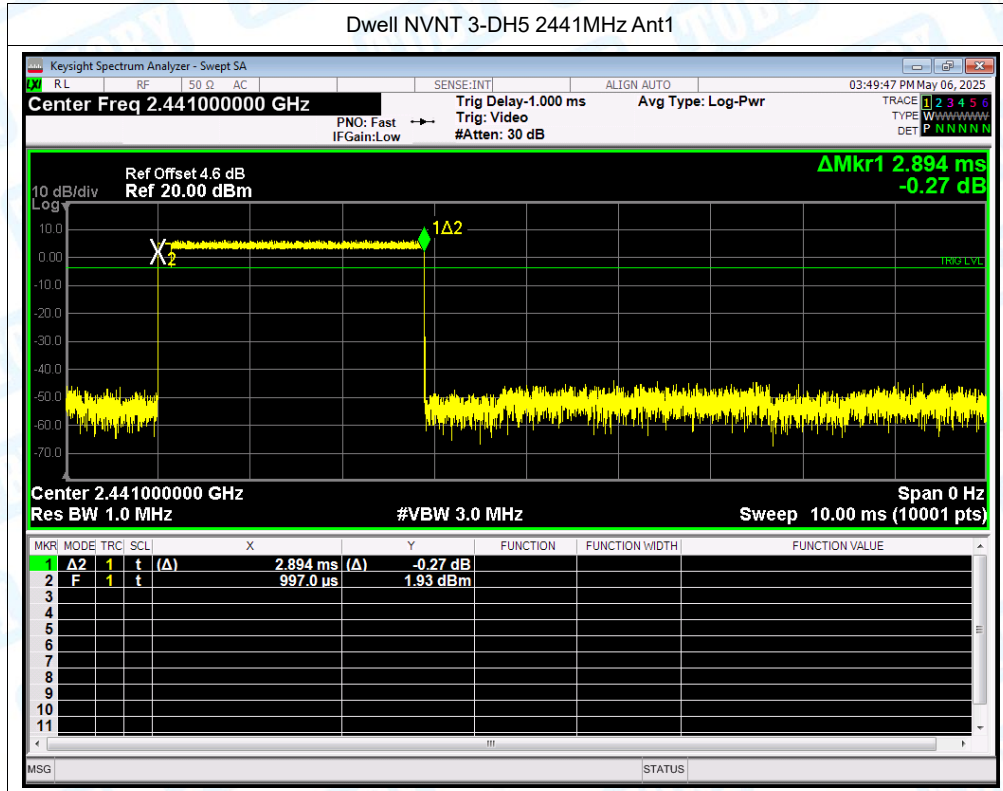


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1



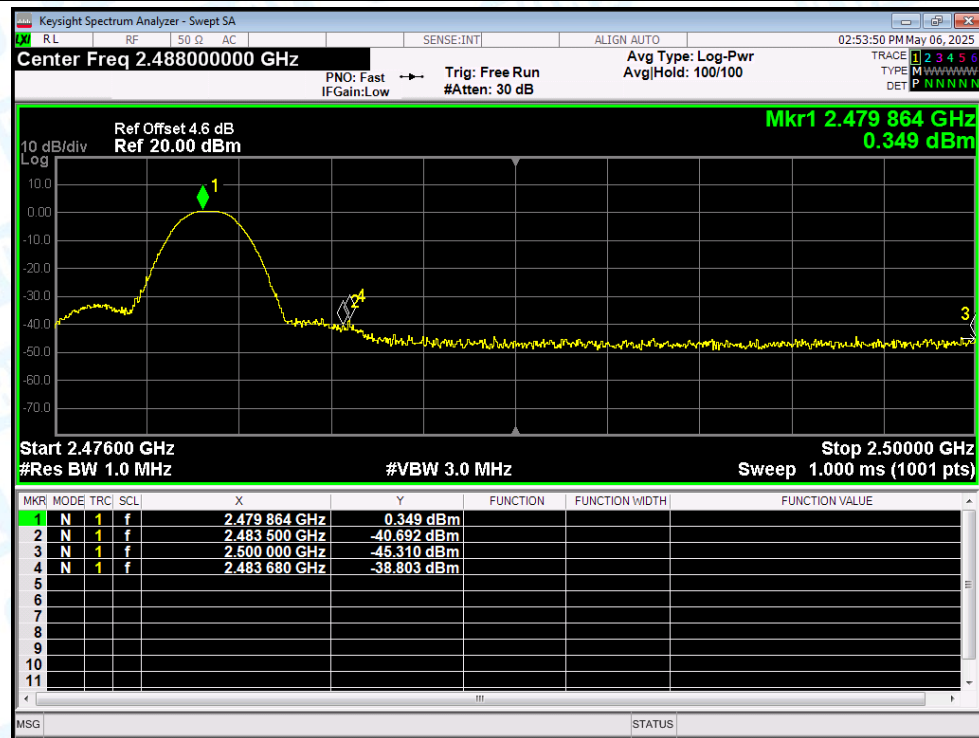


11.Restrict Band

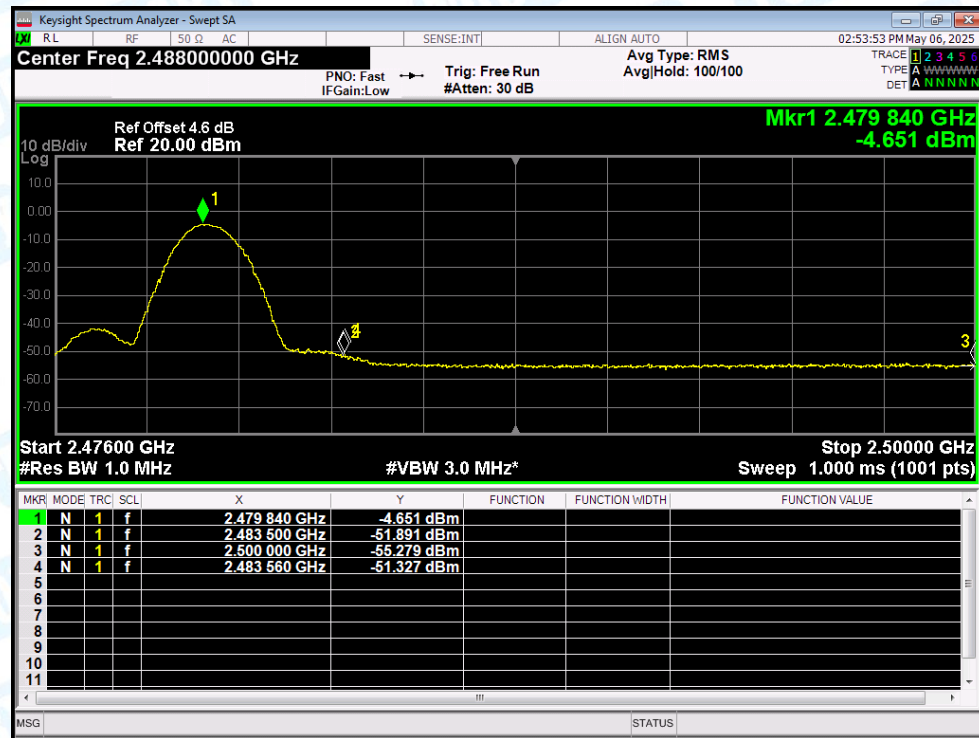
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-40.69	2	-	56.57	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-51.89	2	5.06	50.43	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.68	-38.8	2	-	58.46	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.56	-51.33	2	5.06	50.99	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-45.31	2	-	51.95	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-55.28	2	5.06	47.04	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-37.85	2	-	59.41	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-50.08	2	4.95	52.13	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.608	-36.92	2	-	60.34	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.56	-49.77	2	4.95	52.44	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-47.33	2	-	49.93	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-54.69	2	4.95	47.52	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-38.8	2	-	58.46	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-49.66	2	4.95	52.55	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.608	-36.87	2	-	60.39	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.56	-49.64	2	4.95	52.57	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-47.77	2	-	49.49	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.65	2	4.95	46.56	Average	54	Pass

Test Graphs

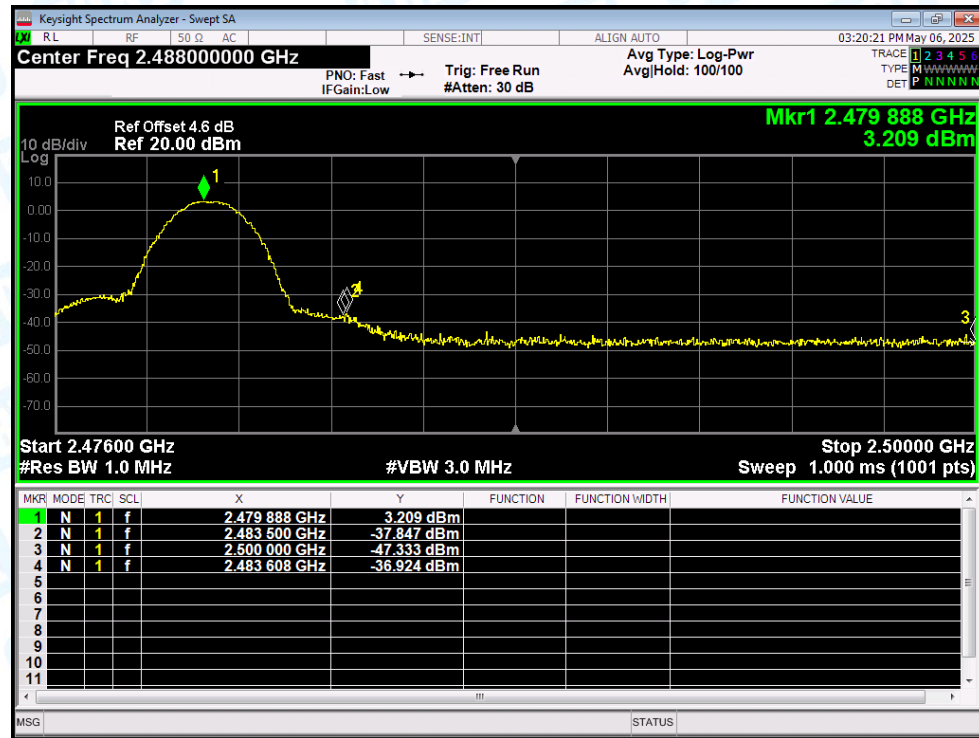
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



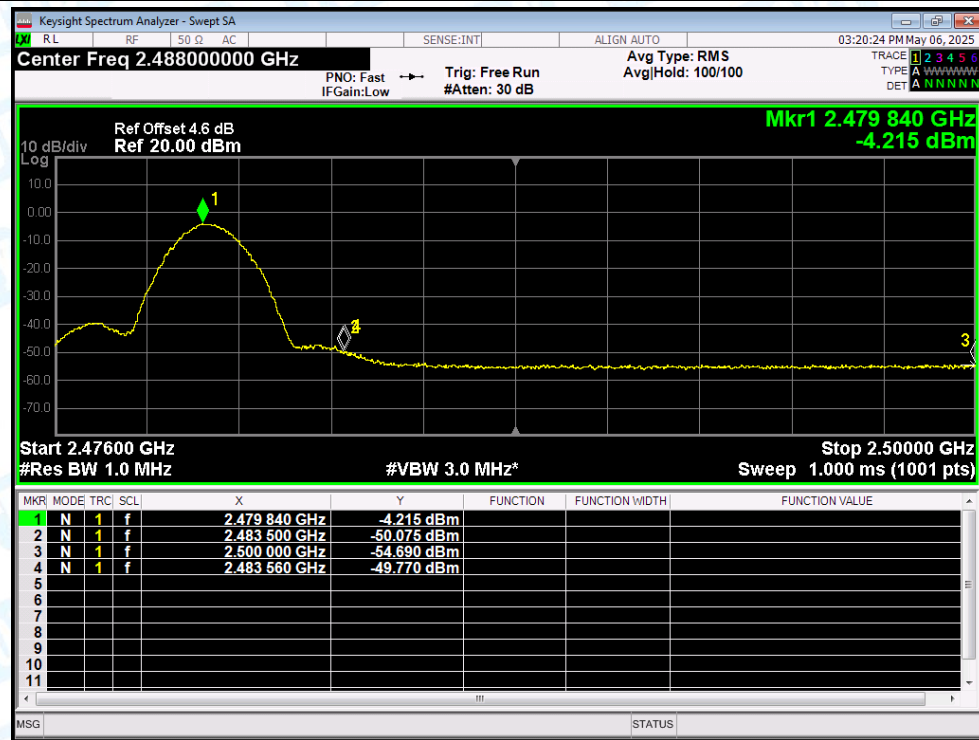
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



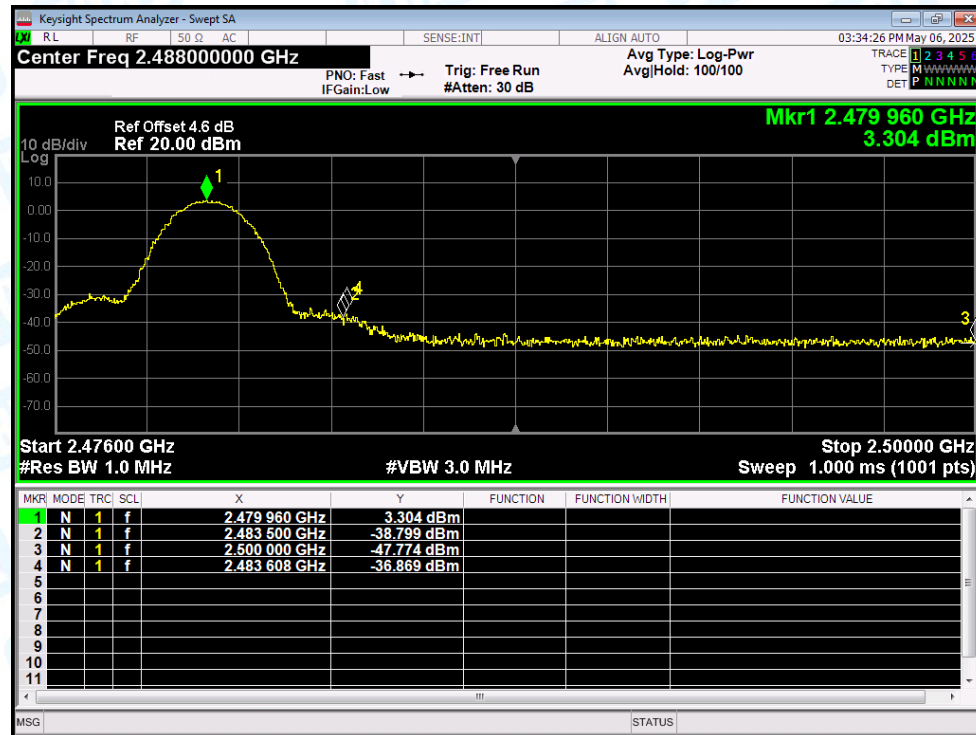
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



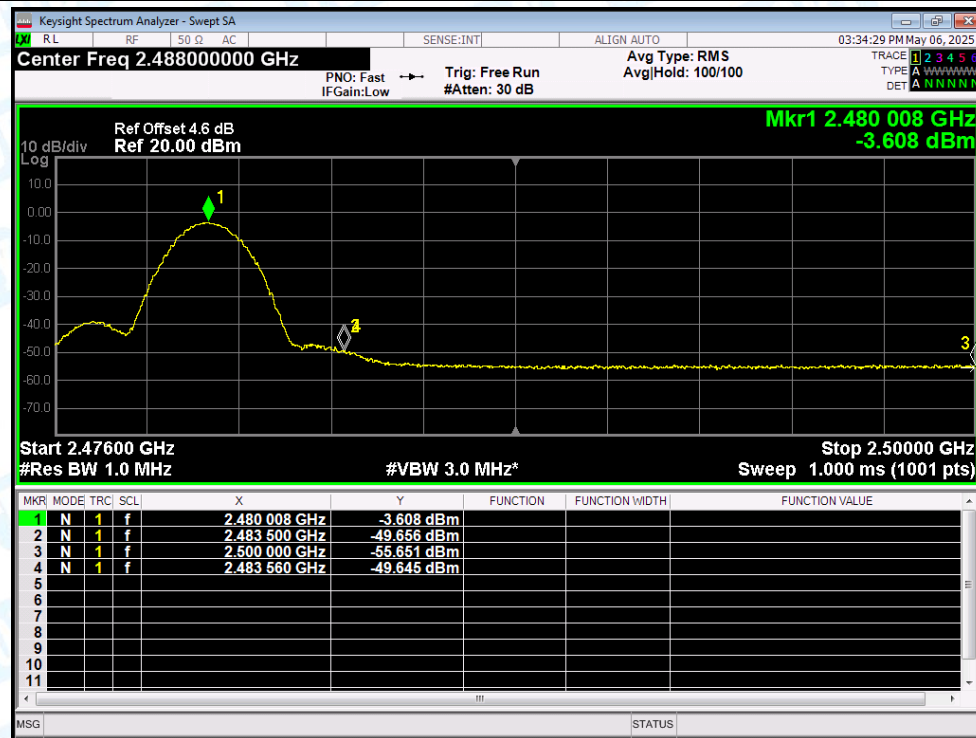
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



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



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



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