

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	Smart Watch
Test Model:	KC93
Sample ID:	HC-C-202506-0120-01-01
Environmental Conditions	
Temperature:	25.6℃
Relative Humidity:	52.6%
Test Voltage:	DC 3.8V
Test Engineer:	Lily zhang
Note: For a more detailed features description, please refer to the report TBR-C-202506-0120-18 The report only show the worst case data.	

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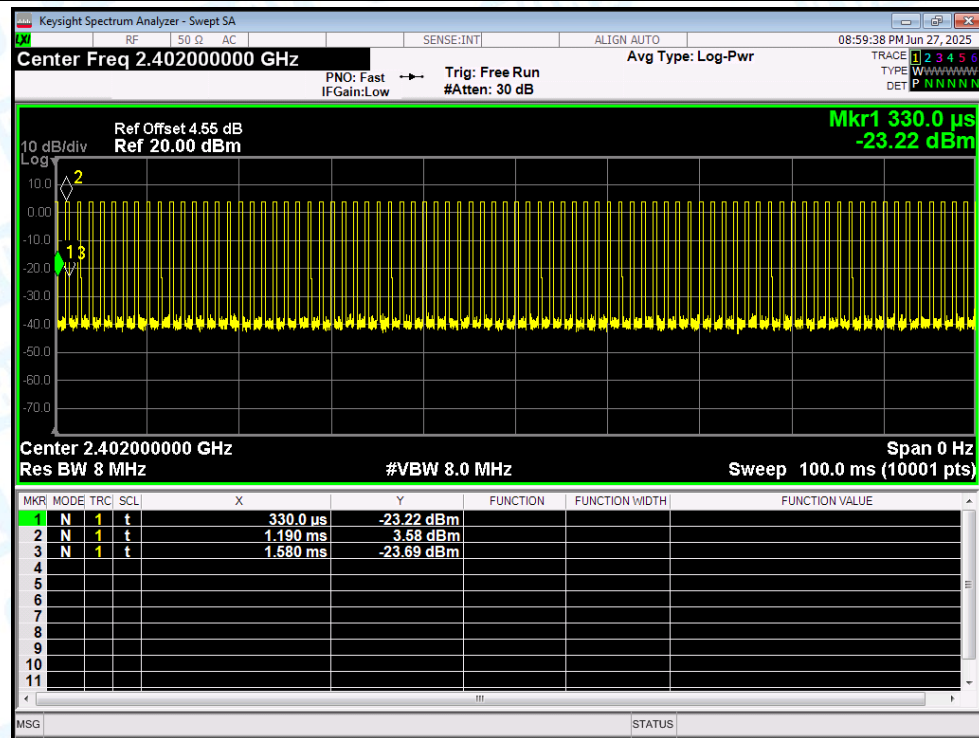
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1. Duty Cycle

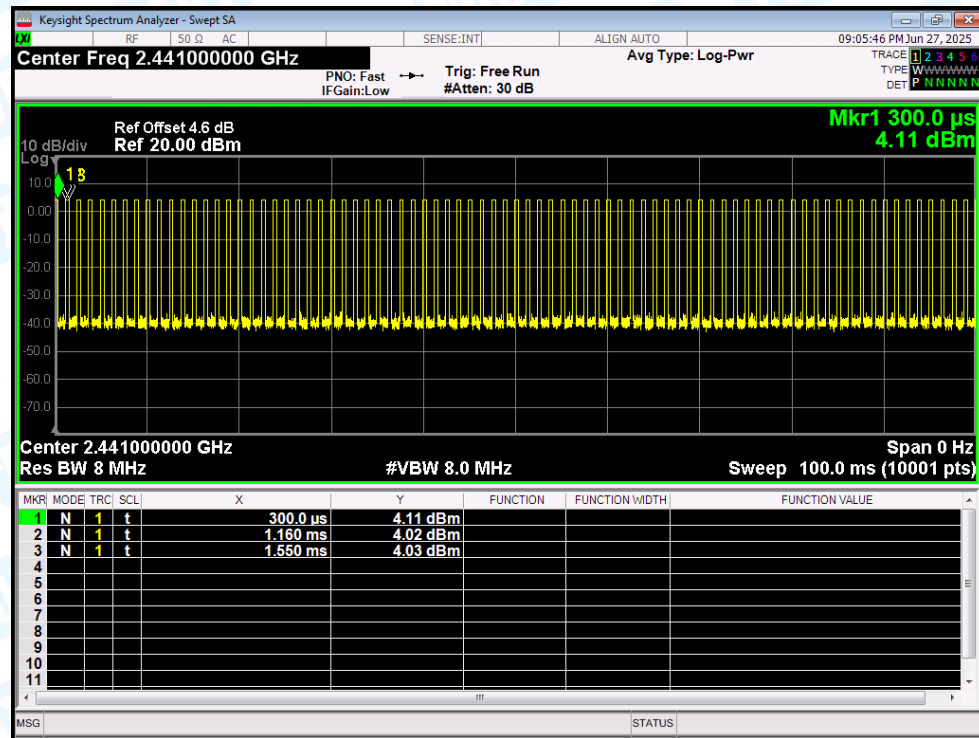
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	1-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	1-DH1	2480	Ant1	30.95	5.09	2.56
NVNT	2-DH1	2402	Ant1	32	4.95	2.5
NVNT	2-DH1	2441	Ant1	32	4.95	2.5
NVNT	2-DH1	2480	Ant1	31.2	5.06	2.56
NVNT	3-DH1	2402	Ant1	32	4.95	2.5
NVNT	3-DH1	2441	Ant1	32	4.95	2.5
NVNT	3-DH1	2480	Ant1	32	4.95	2.5

Test Graphs

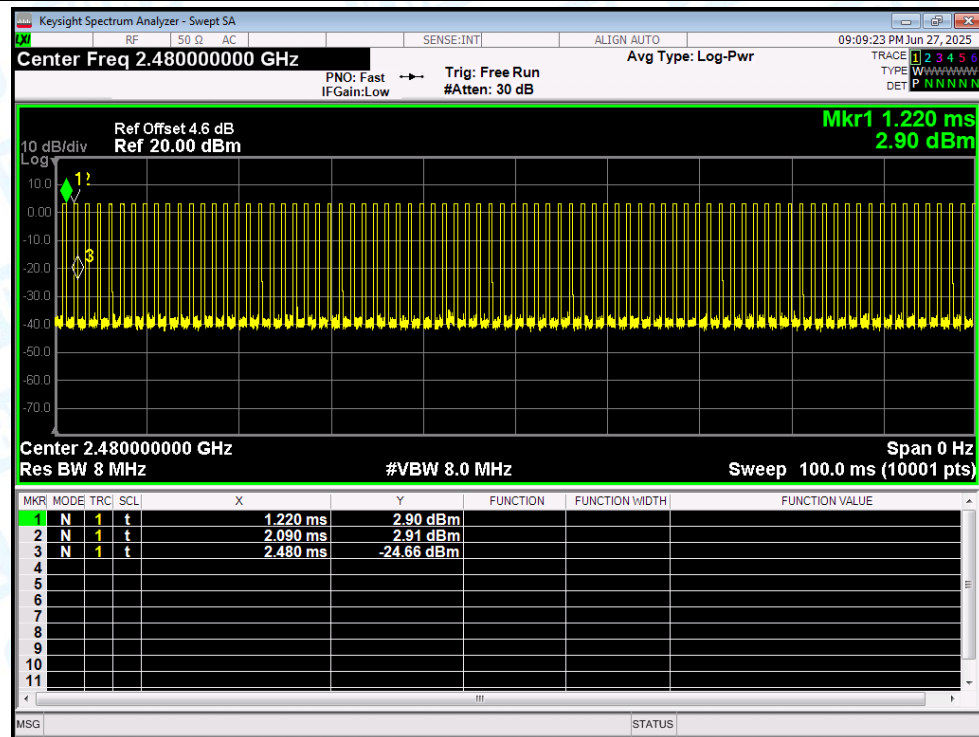
Duty Cycle NVNT 1-DH1 2402MHz Ant1



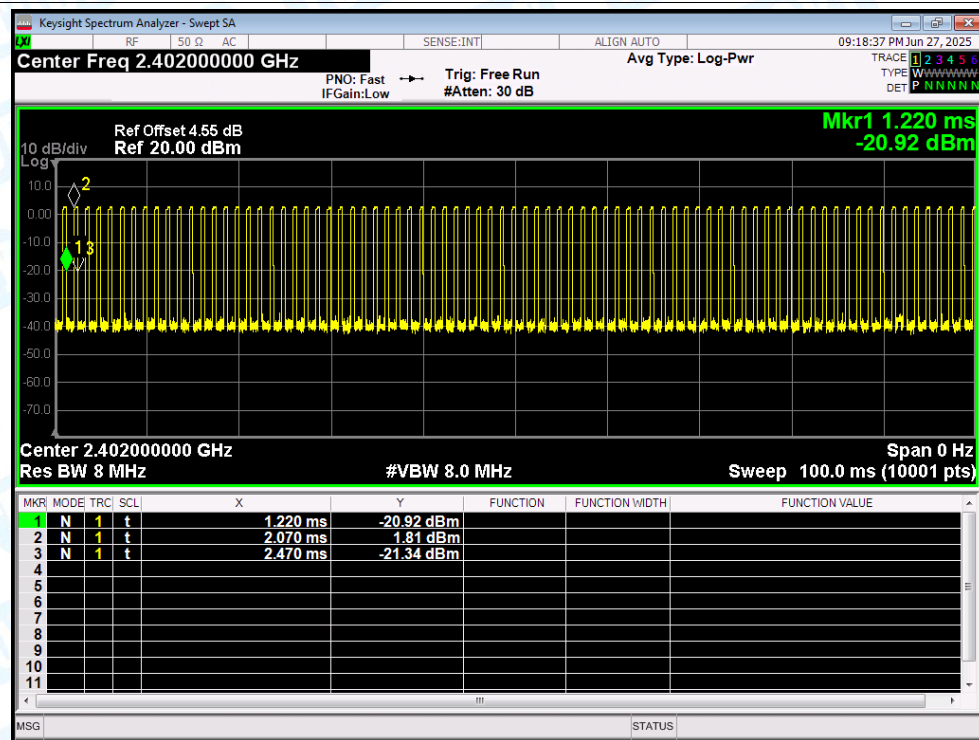
Duty Cycle NVNT 1-DH1 2441MHz Ant1



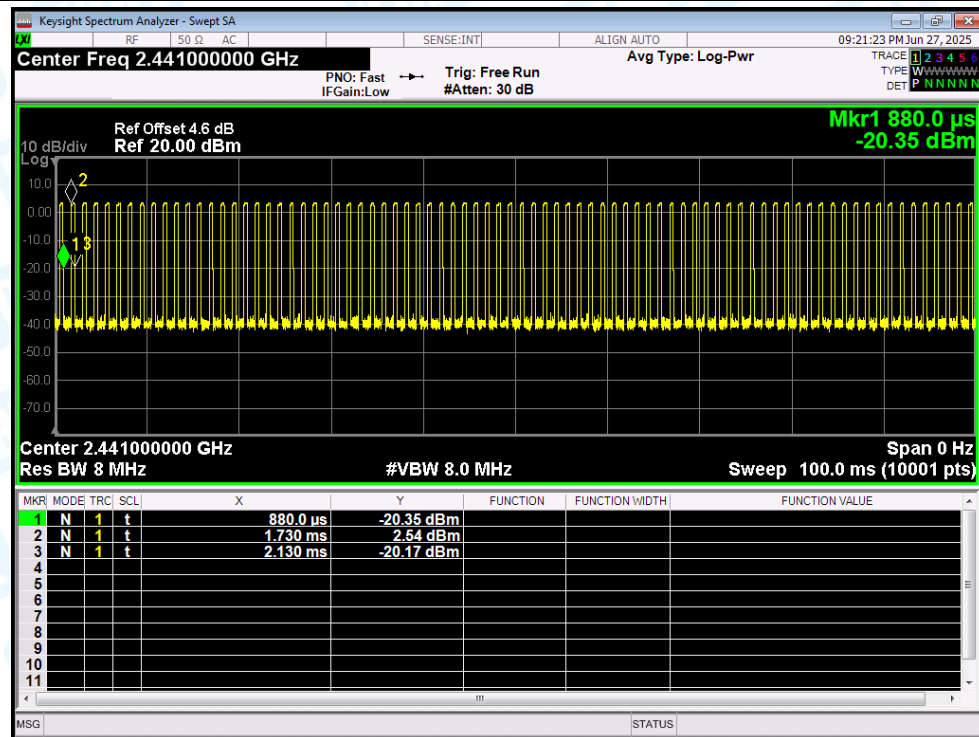
Duty Cycle NVNT 1-DH1 2480MHz Ant1



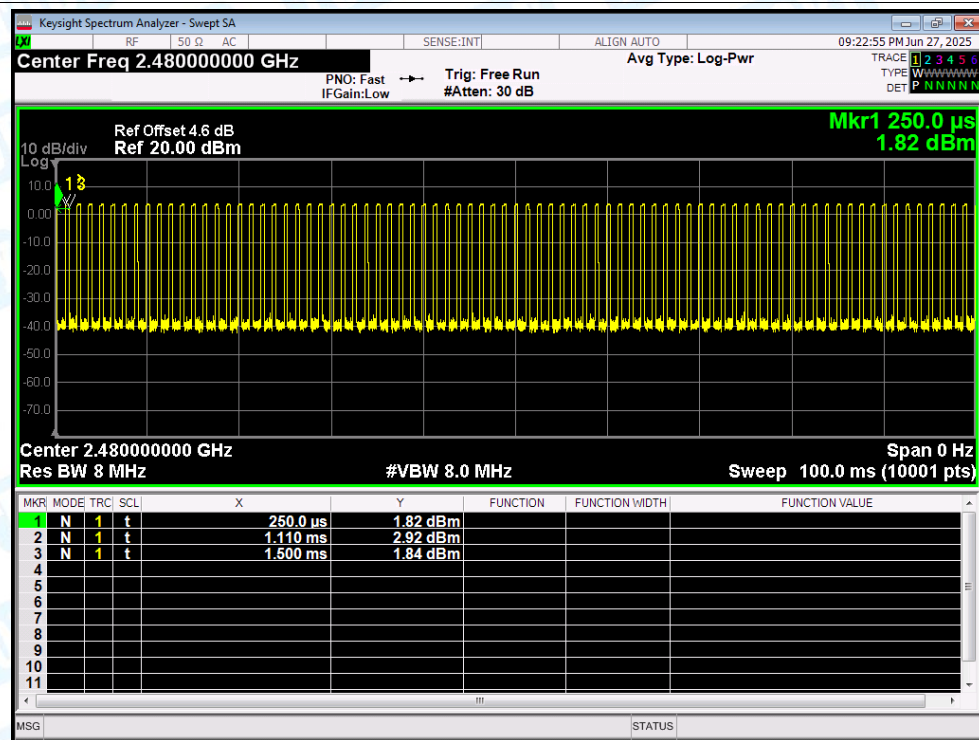
Duty Cycle NVNT 2-DH1 2402MHz Ant1



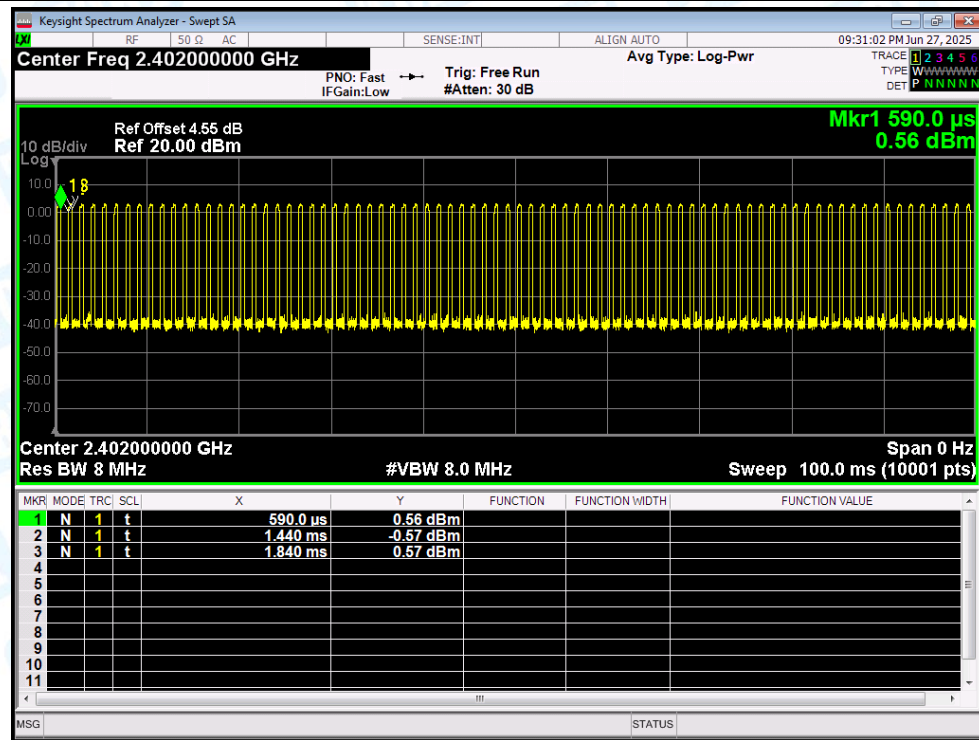
Duty Cycle NVNT 2-DH1 2441MHz Ant1



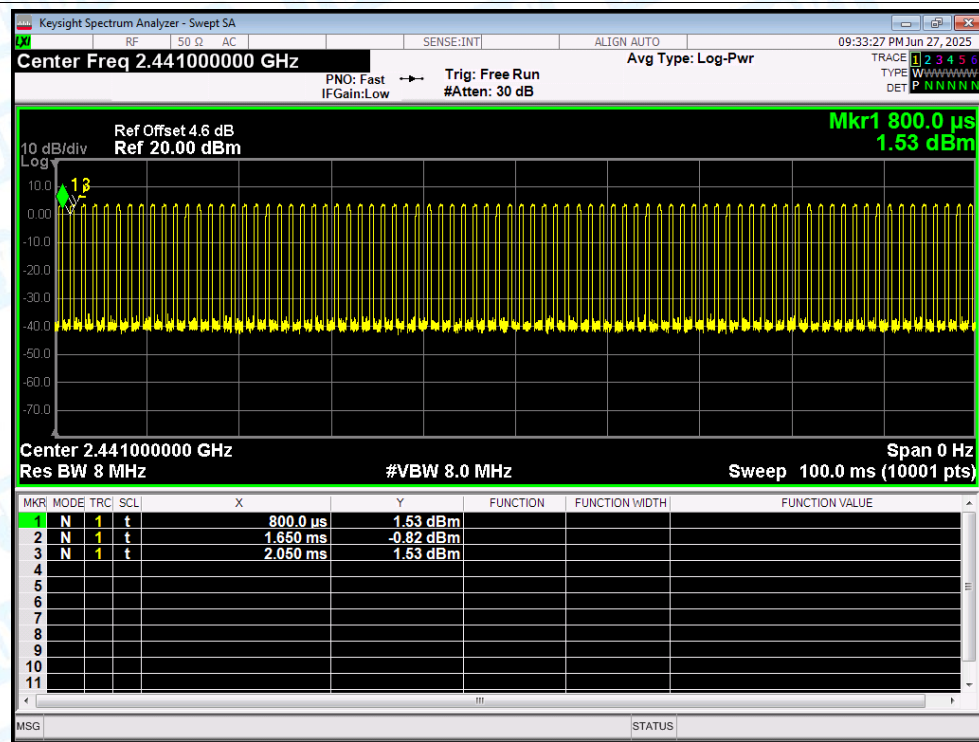
Duty Cycle NVNT 2-DH1 2480MHz Ant1

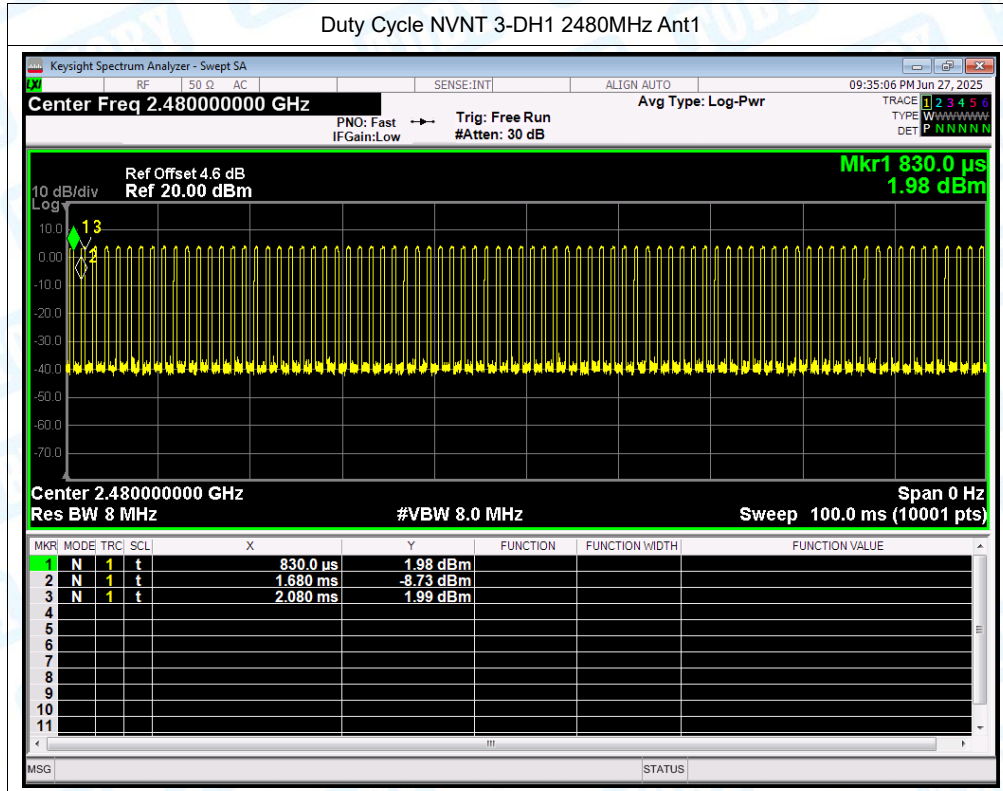


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



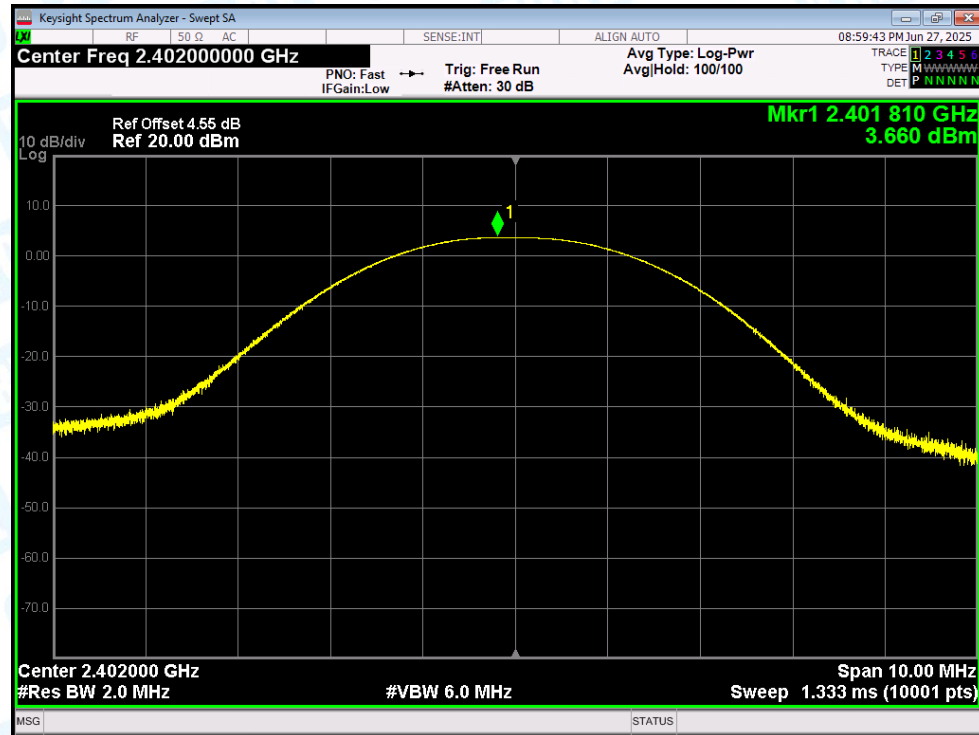


2. Maximum Conducted Output Power

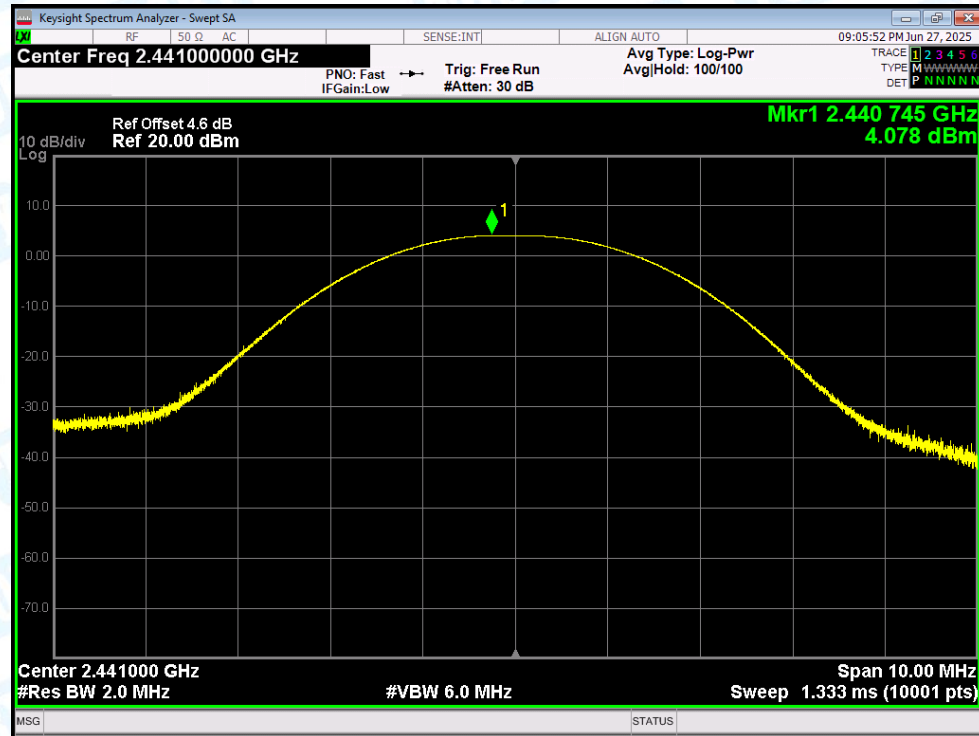
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	3.66	21	Pass
NVNT	1-DH1	2441	Ant1	4.078	21	Pass
NVNT	1-DH1	2480	Ant1	2.943	21	Pass
NVNT	2-DH1	2402	Ant1	2.531	21	Pass
NVNT	2-DH1	2441	Ant1	3.175	21	Pass
NVNT	2-DH1	2480	Ant1	3.544	21	Pass
NVNT	3-DH1	2402	Ant1	3.063	21	Pass
NVNT	3-DH1	2441	Ant1	3.685	21	Pass
NVNT	3-DH1	2480	Ant1	3.912	21	Pass

Test Graphs

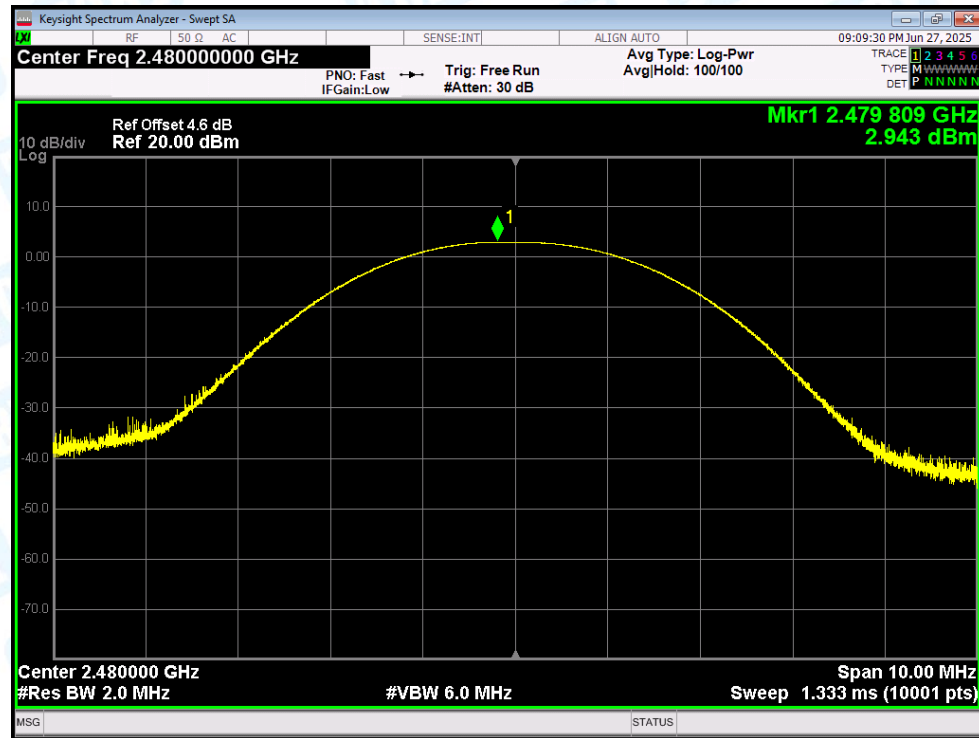
Power NVNT 1-DH1 2402MHz Ant1



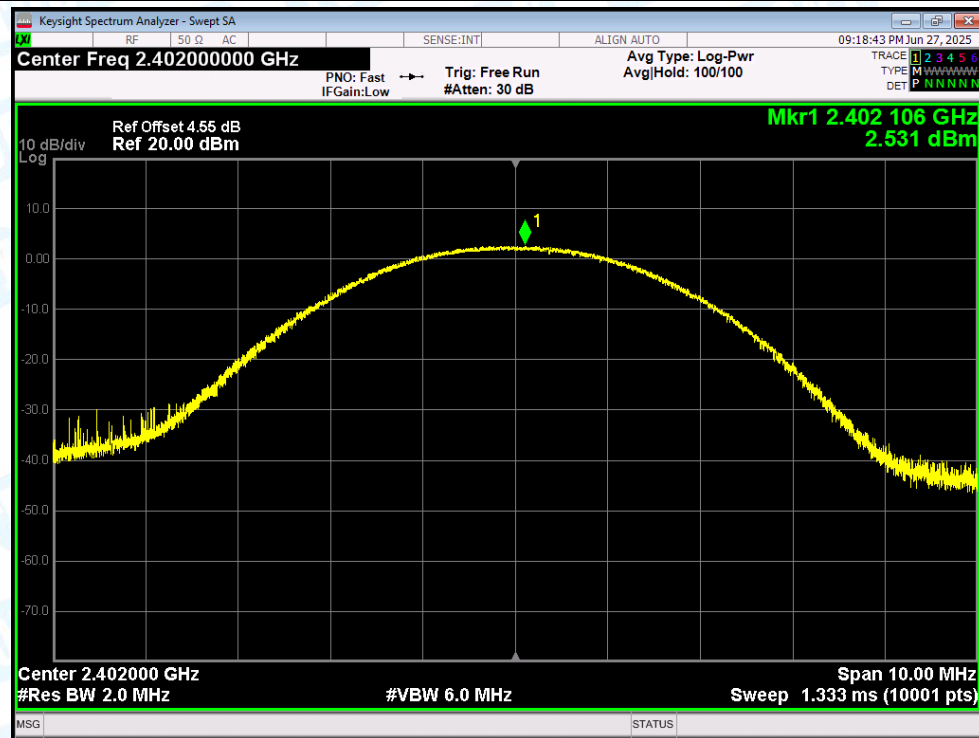
Power NVNT 1-DH1 2441MHz Ant1



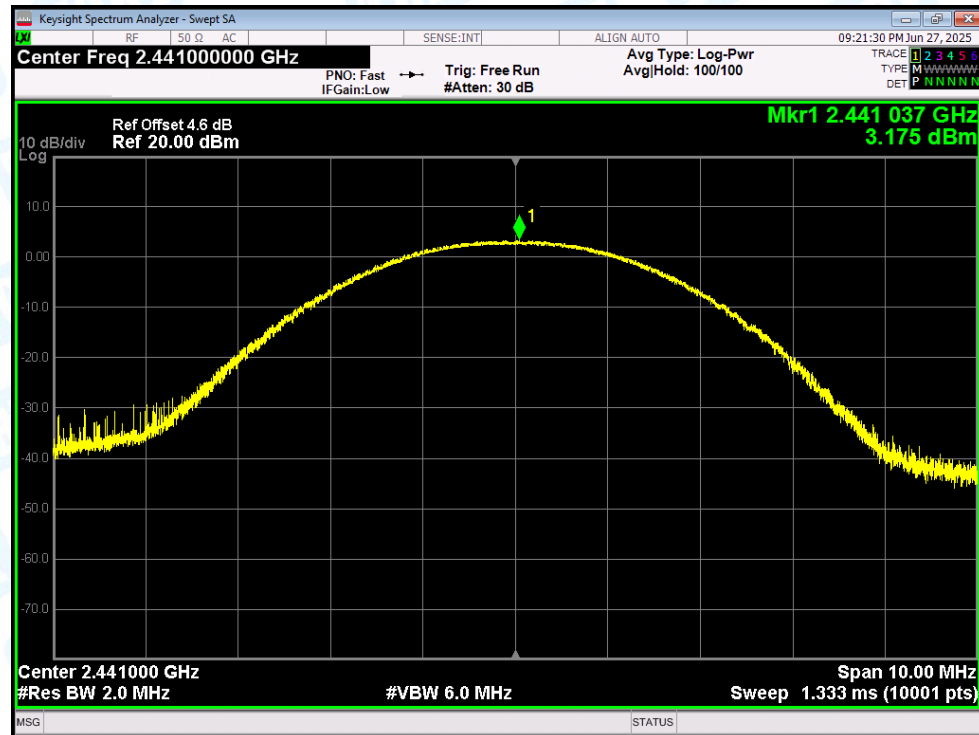
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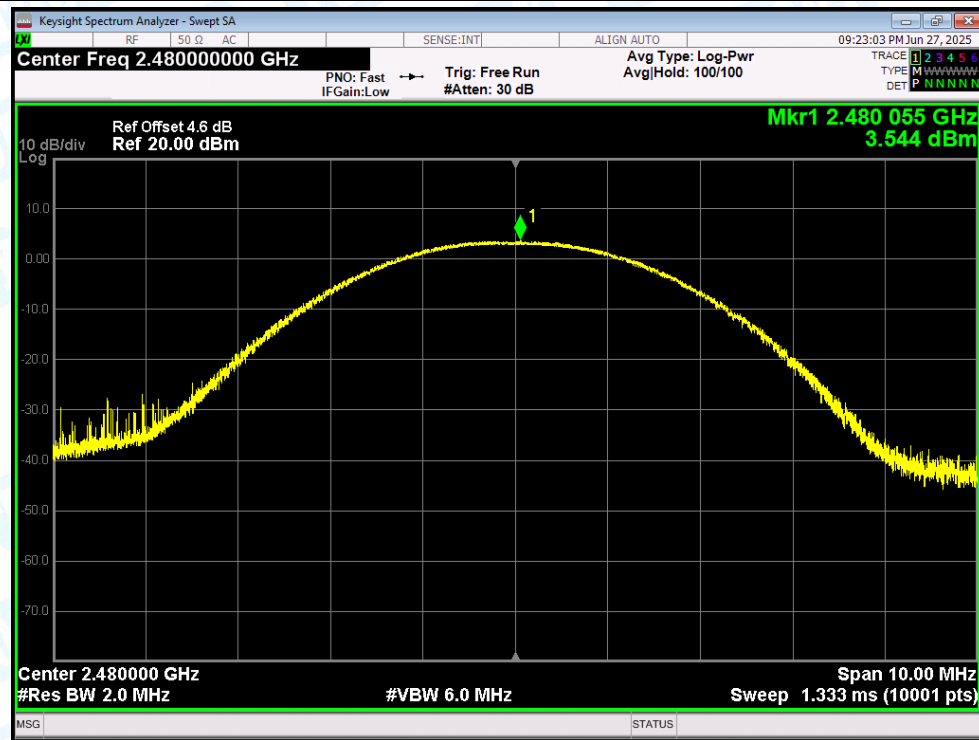
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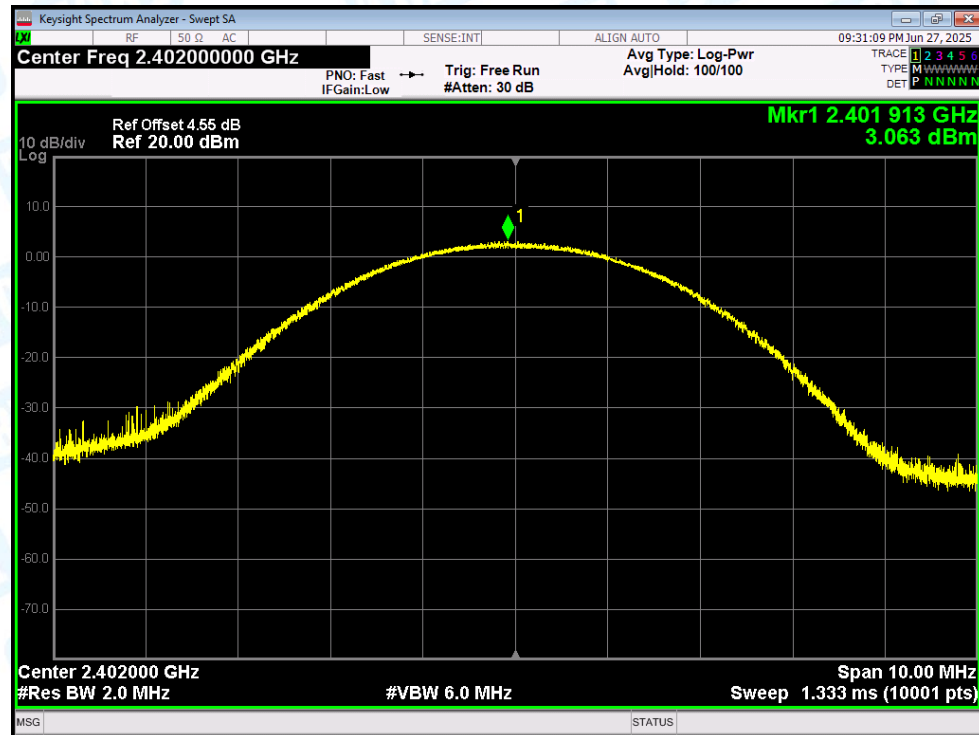
Power NVNT 2-DH1 2441MHz Ant1



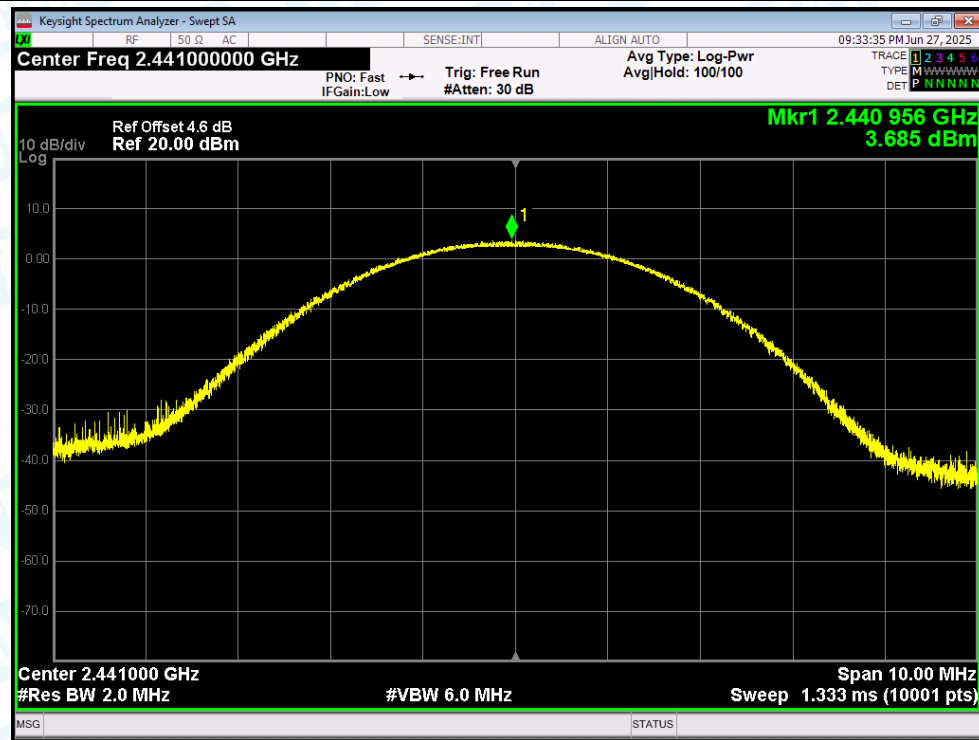
Power NVNT 2-DH1 2480MHz Ant1

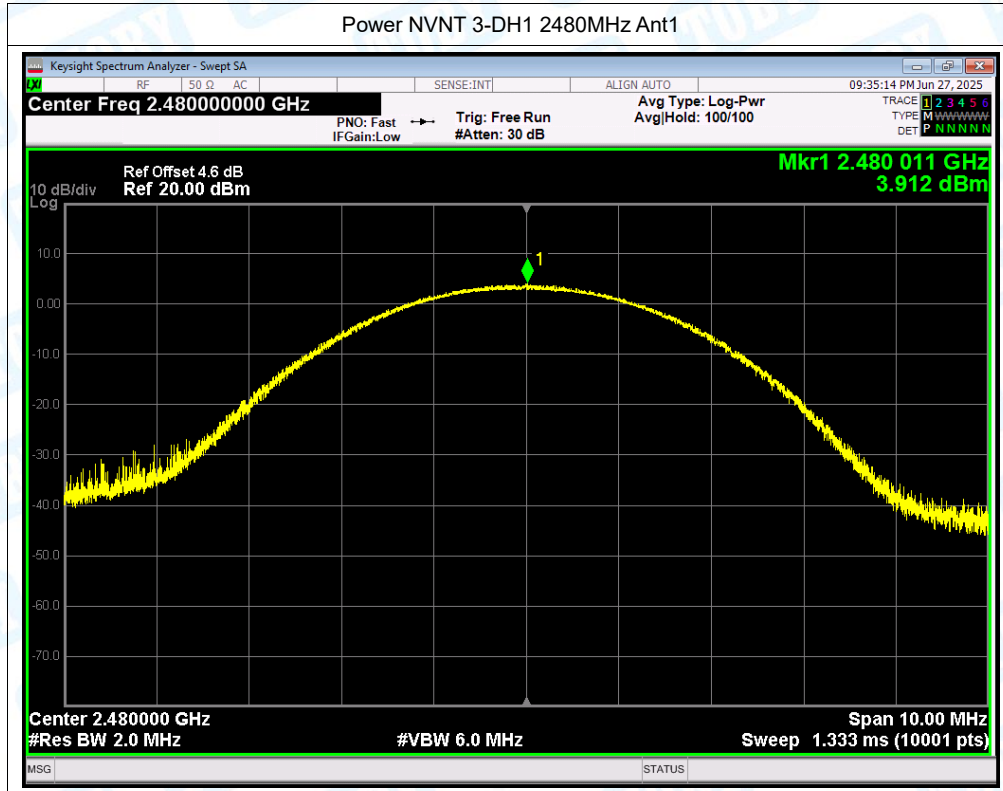


Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



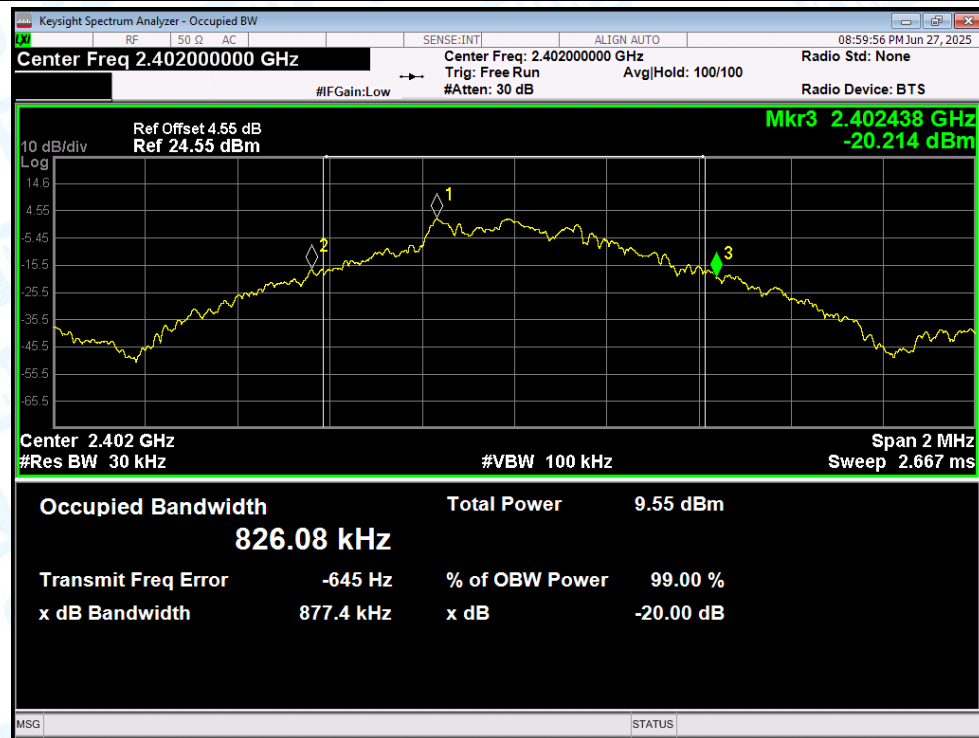


3. -20dB Bandwidth

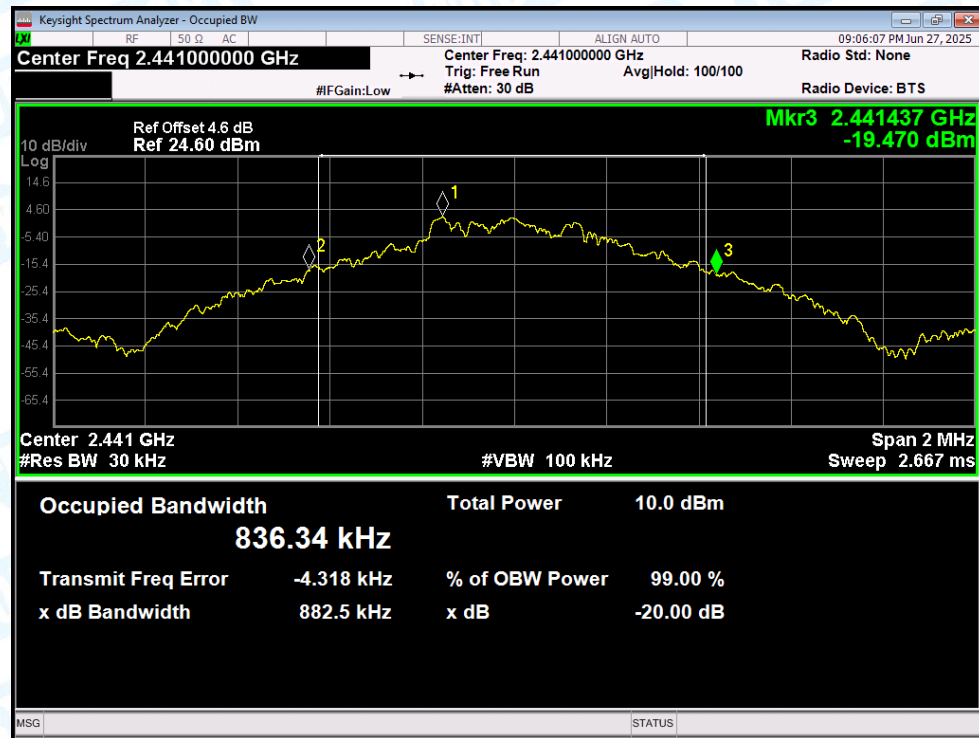
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.88	/	Pass
NVNT	1-DH1	2441	Ant1	0.88	/	Pass
NVNT	1-DH1	2480	Ant1	0.88	/	Pass
NVNT	2-DH1	2402	Ant1	1.22	/	Pass
NVNT	2-DH1	2441	Ant1	1.2	/	Pass
NVNT	2-DH1	2480	Ant1	1.22	/	Pass
NVNT	3-DH1	2402	Ant1	1.25	/	Pass
NVNT	3-DH1	2441	Ant1	1.25	/	Pass
NVNT	3-DH1	2480	Ant1	1.25	/	Pass

Test Graphs

-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



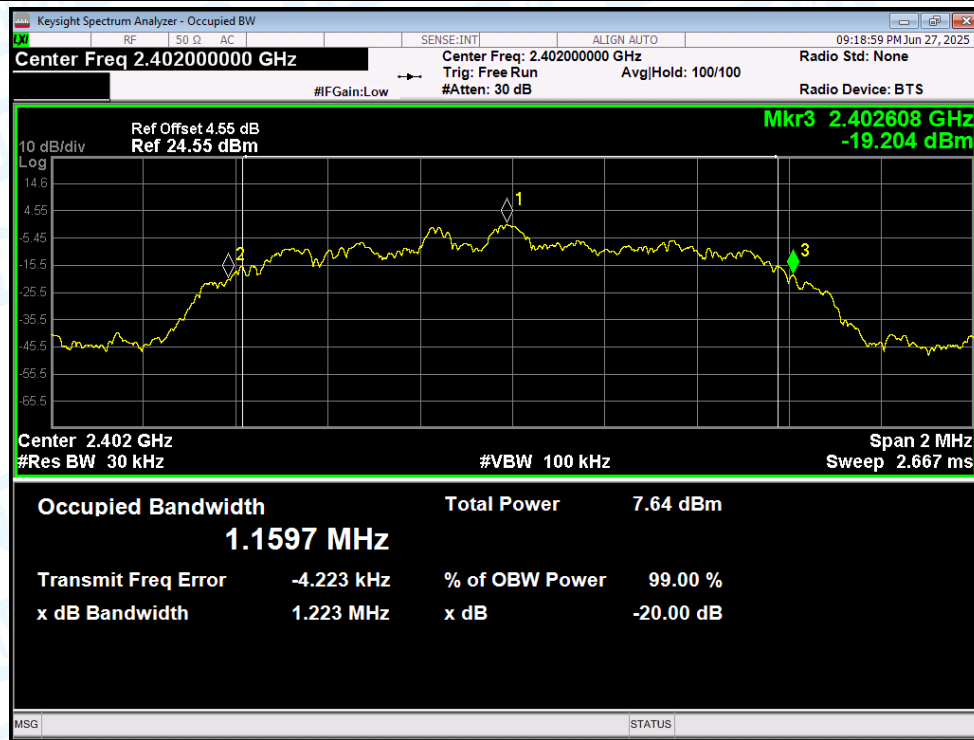
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



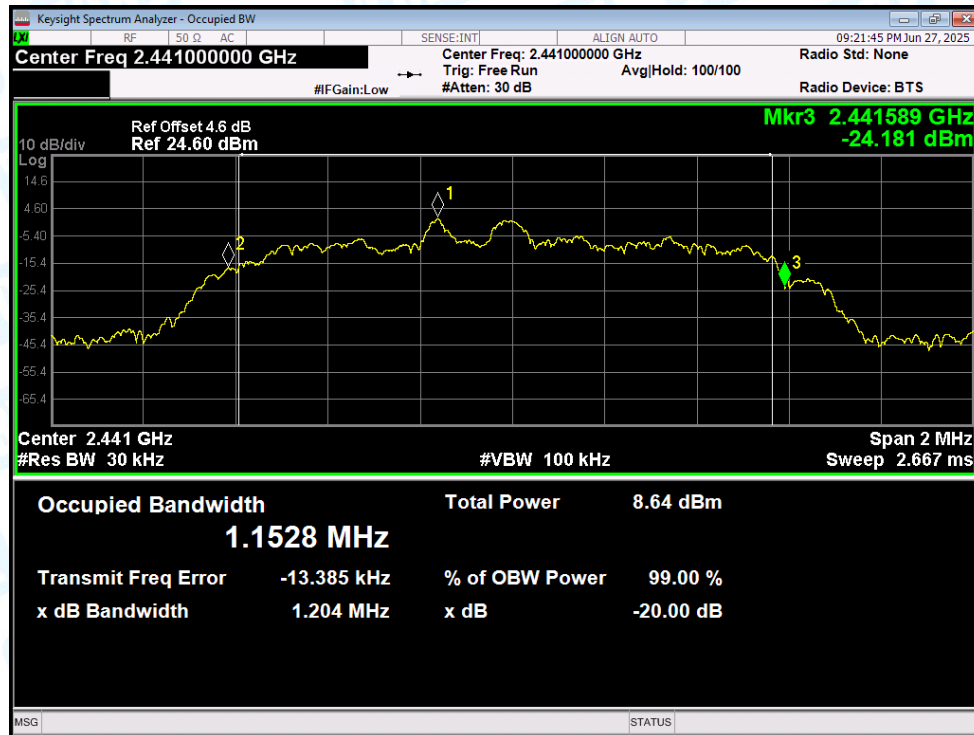
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



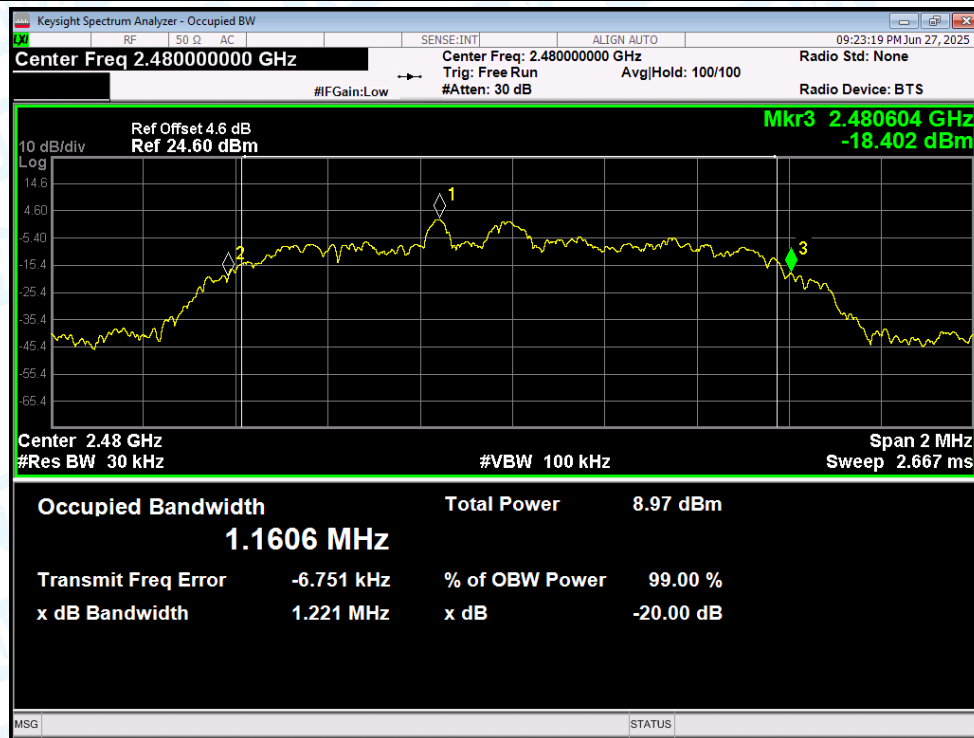
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



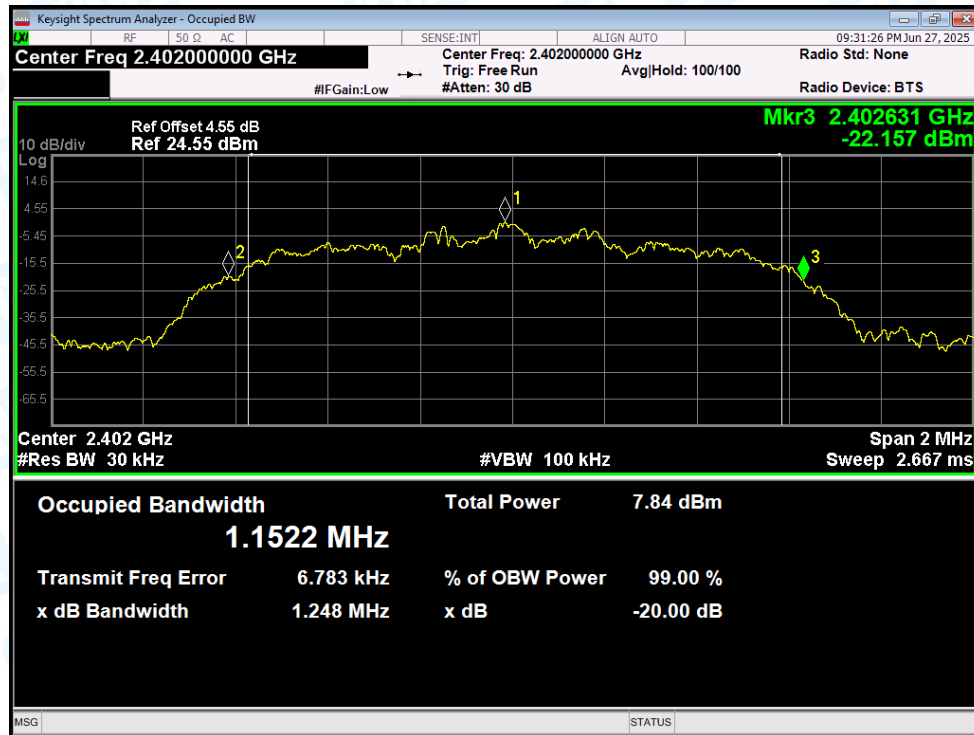
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



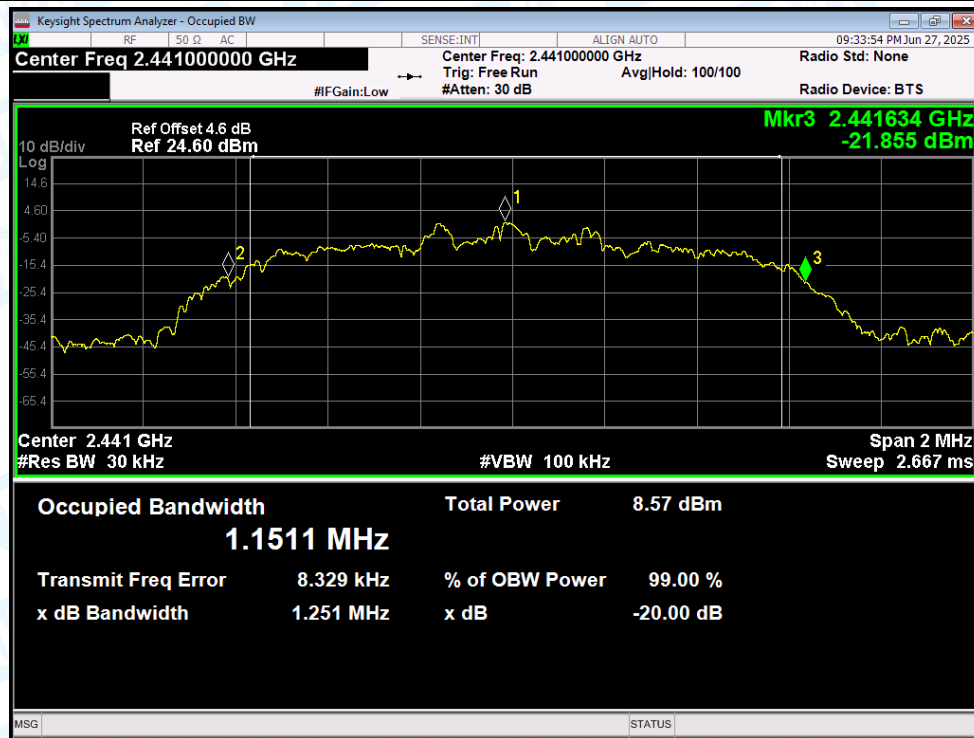
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

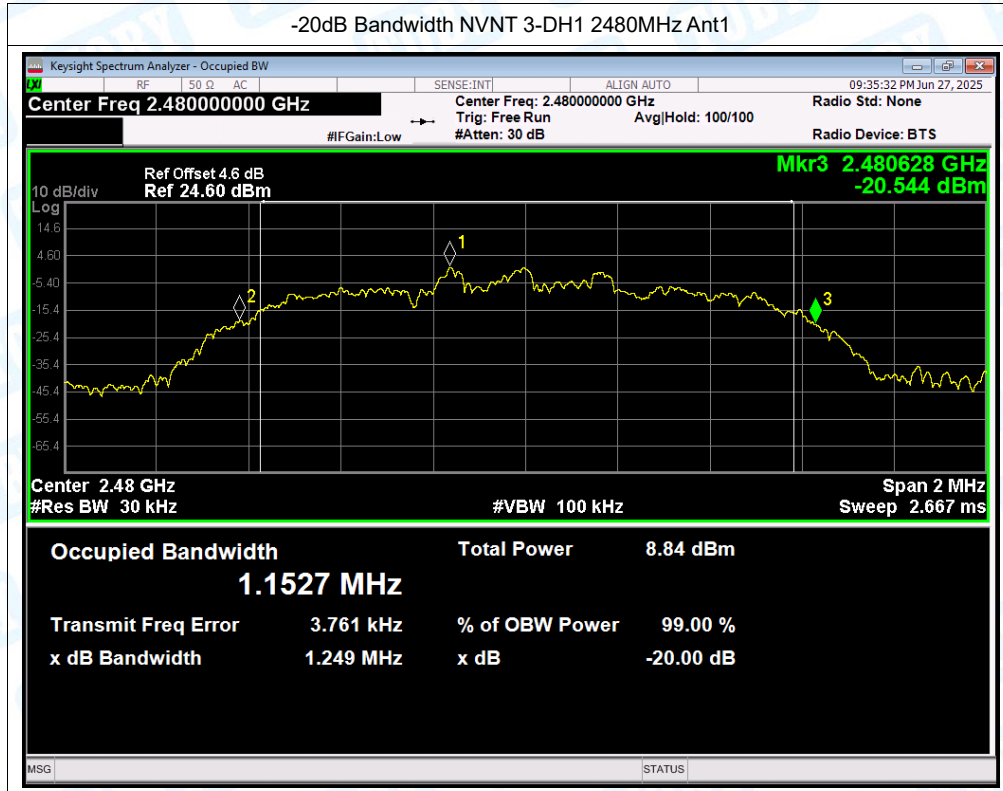


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



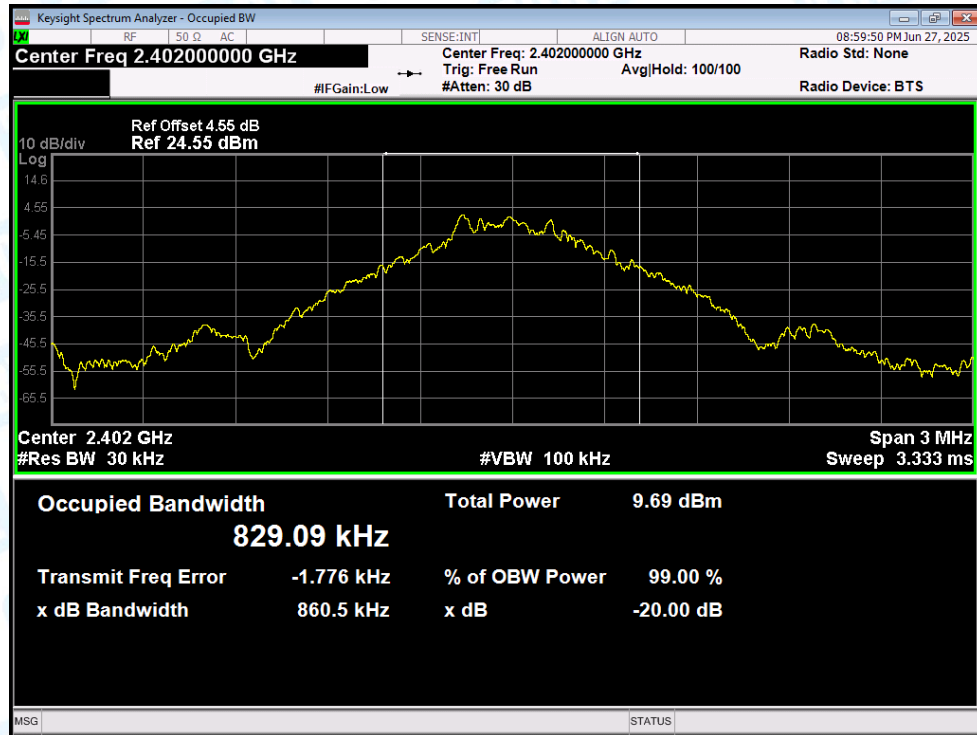


4. Occupied Channel Bandwidth

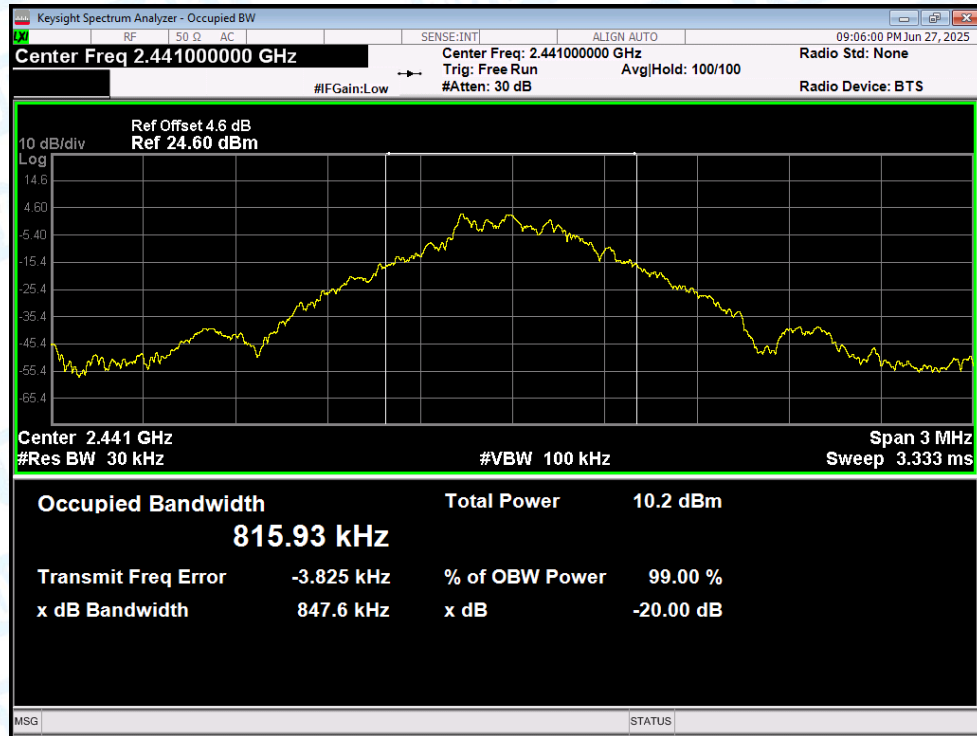
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.829
NVNT	1-DH1	2441	Ant1	0.816
NVNT	1-DH1	2480	Ant1	0.837
NVNT	2-DH1	2402	Ant1	1.163
NVNT	2-DH1	2441	Ant1	1.162
NVNT	2-DH1	2480	Ant1	1.174
NVNT	3-DH1	2402	Ant1	1.152
NVNT	3-DH1	2441	Ant1	1.148
NVNT	3-DH1	2480	Ant1	1.162

Test Graphs

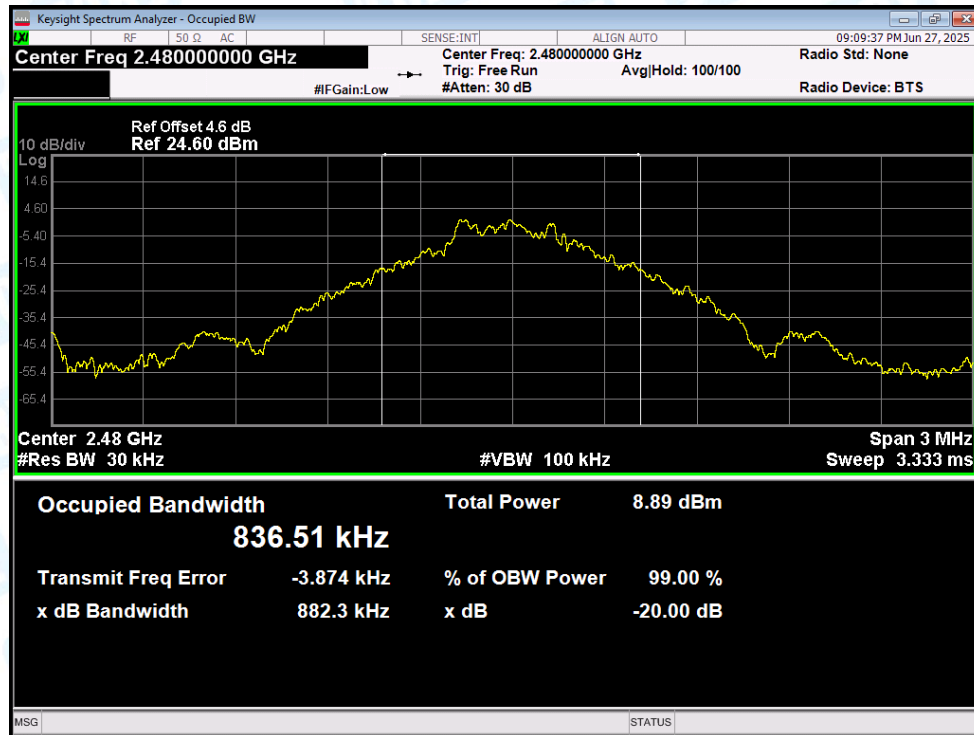
OBW NVNT 1-DH1 2402MHz Ant1



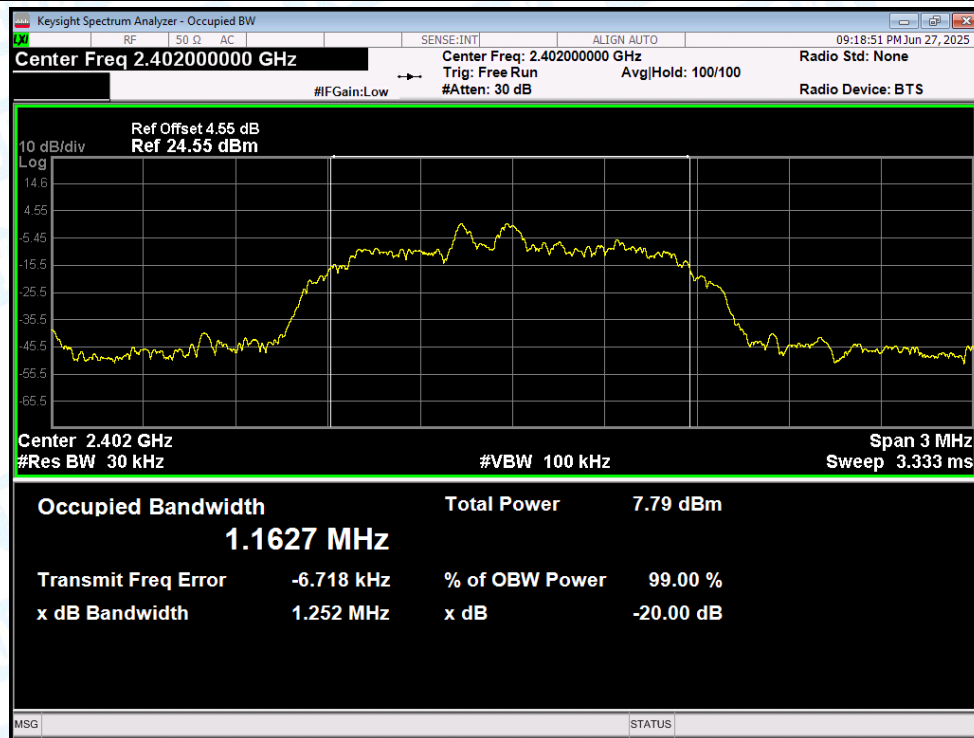
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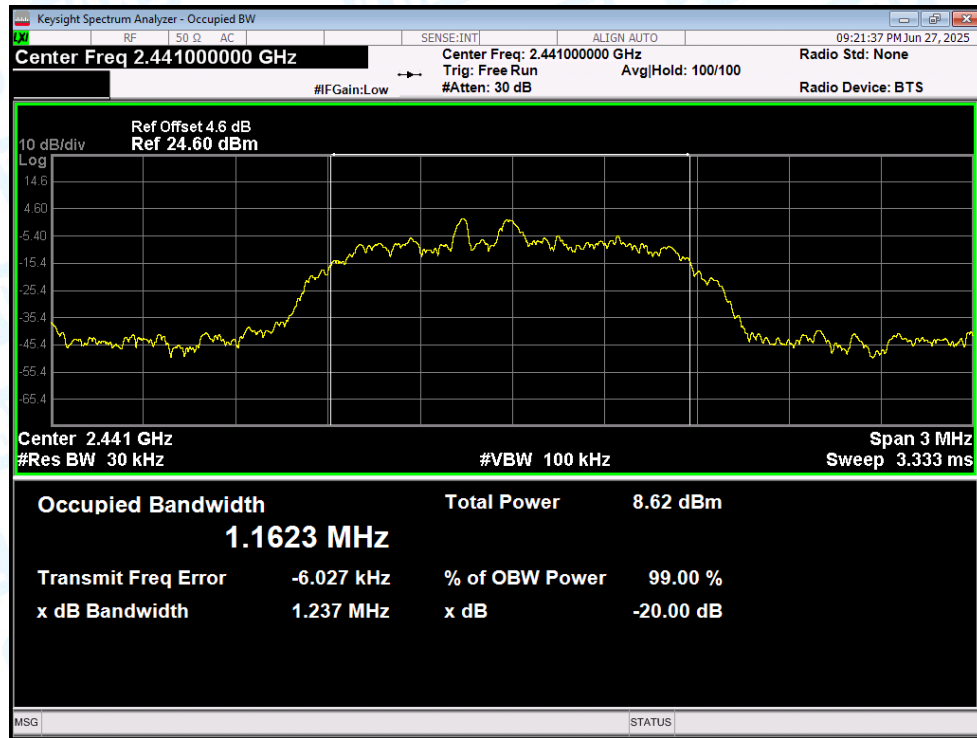
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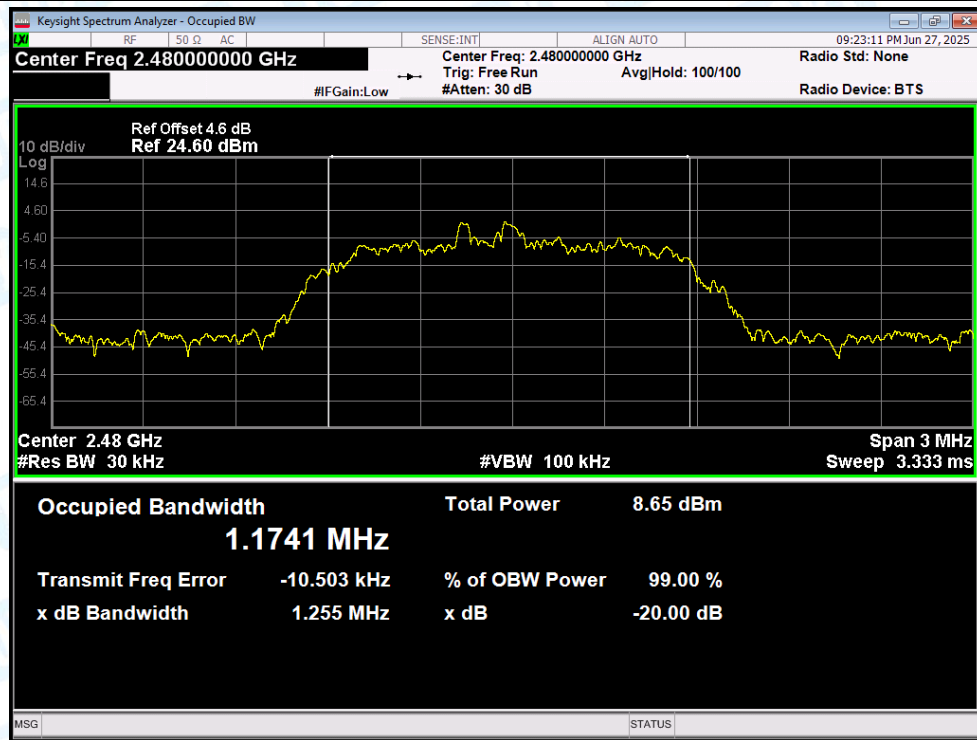
OBW NVNT 2-DH1 2402MHz Ant1



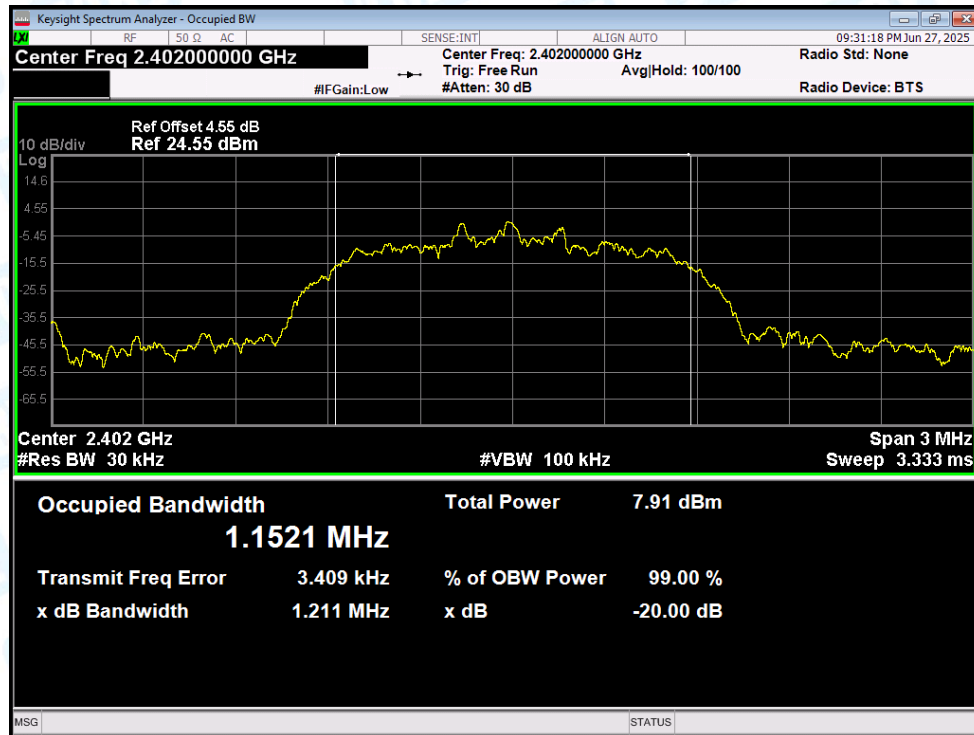
OBW NVNT 2-DH1 2441MHz Ant1



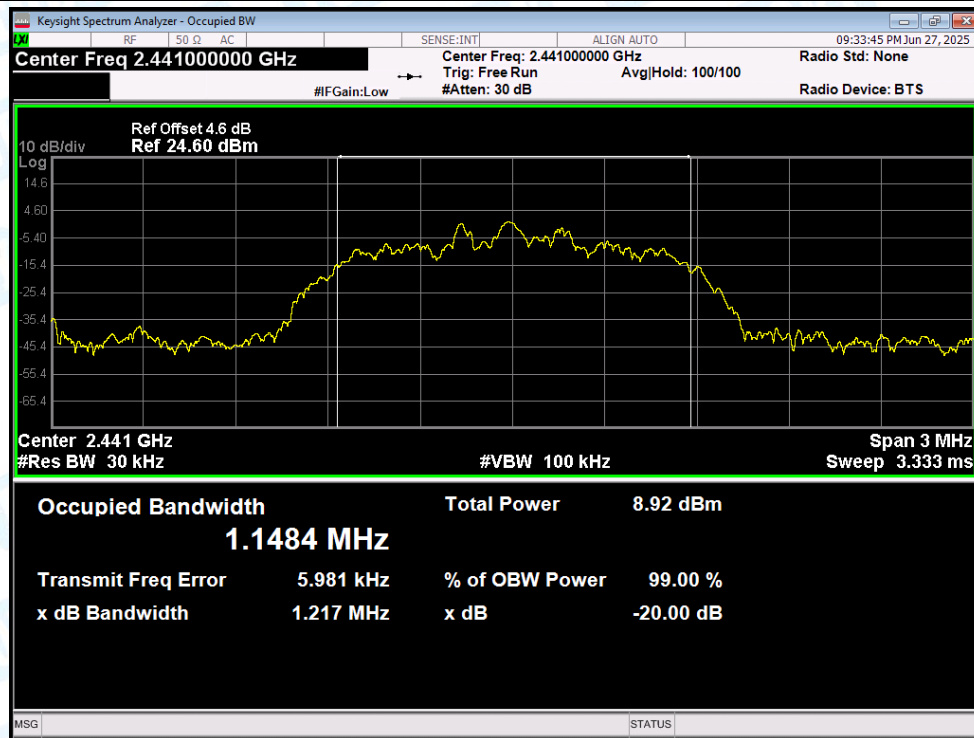
OBW NVNT 2-DH1 2480MHz Ant1

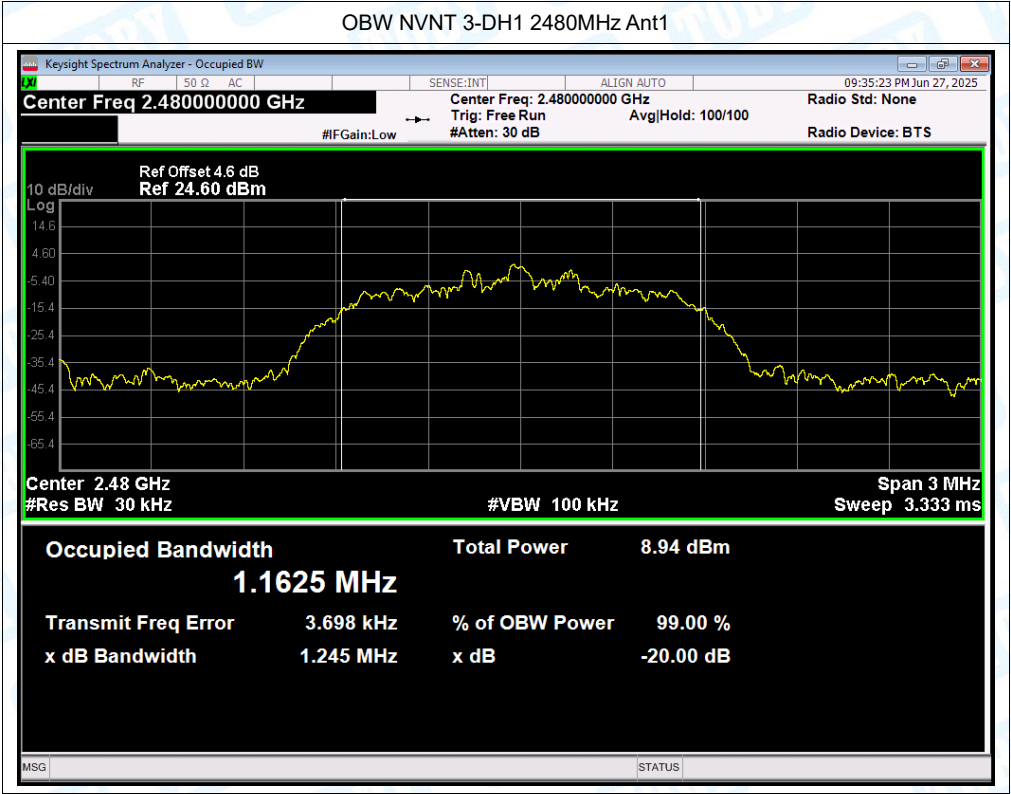


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



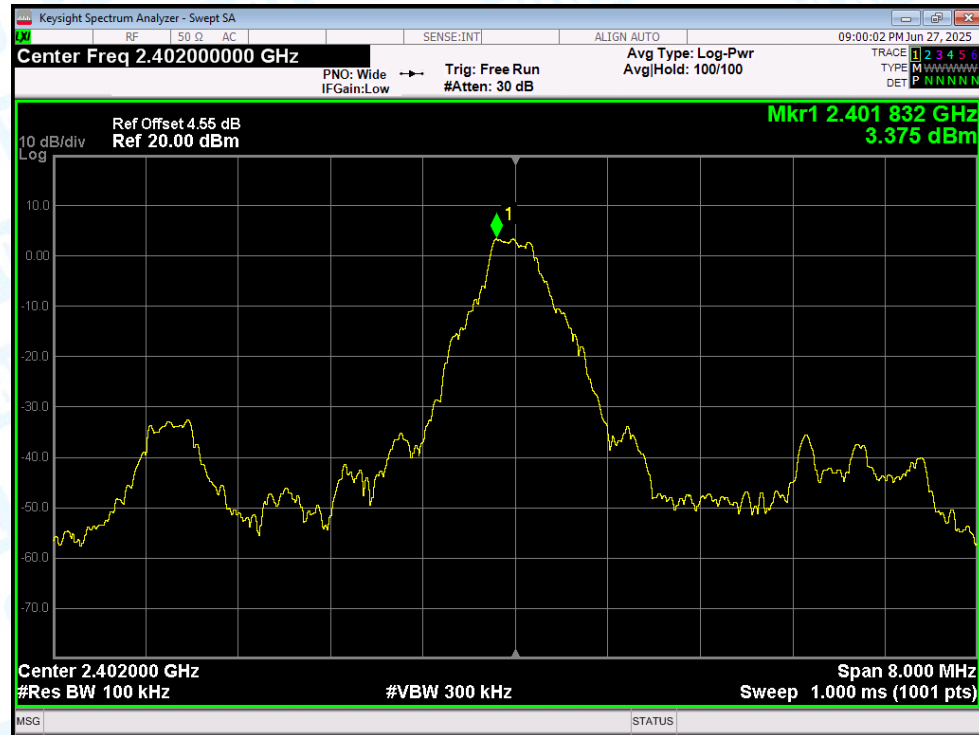


5. Band Edge

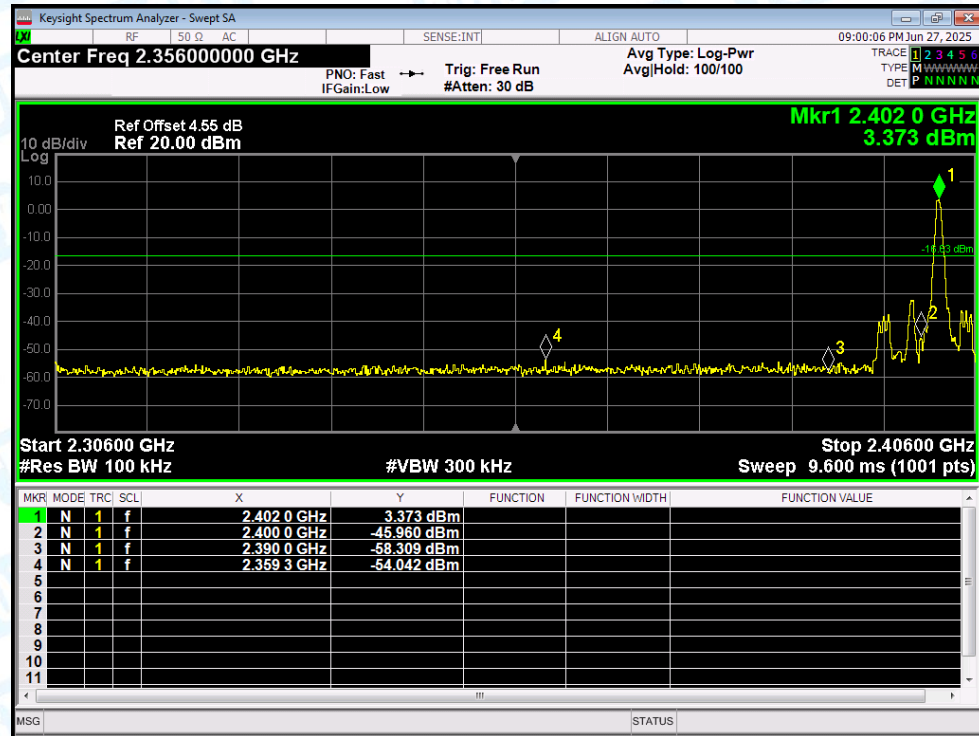
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-57.42	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-48.66	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-56.61	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-52.74	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-55.33	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-50.84	-20	Pass

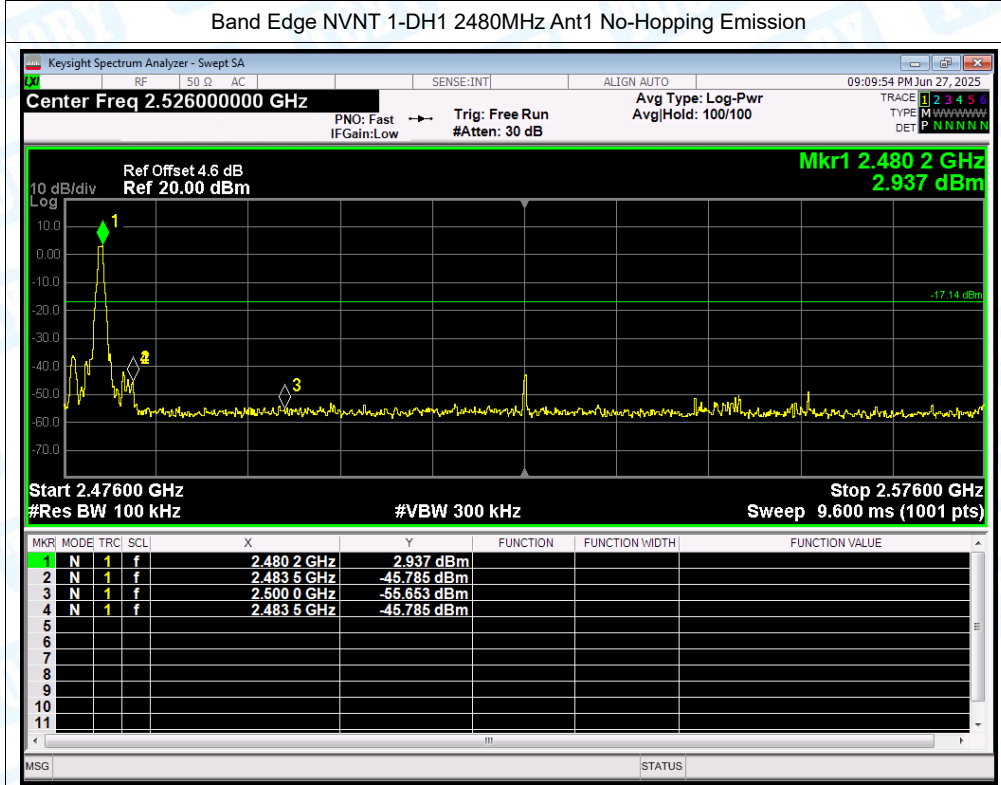
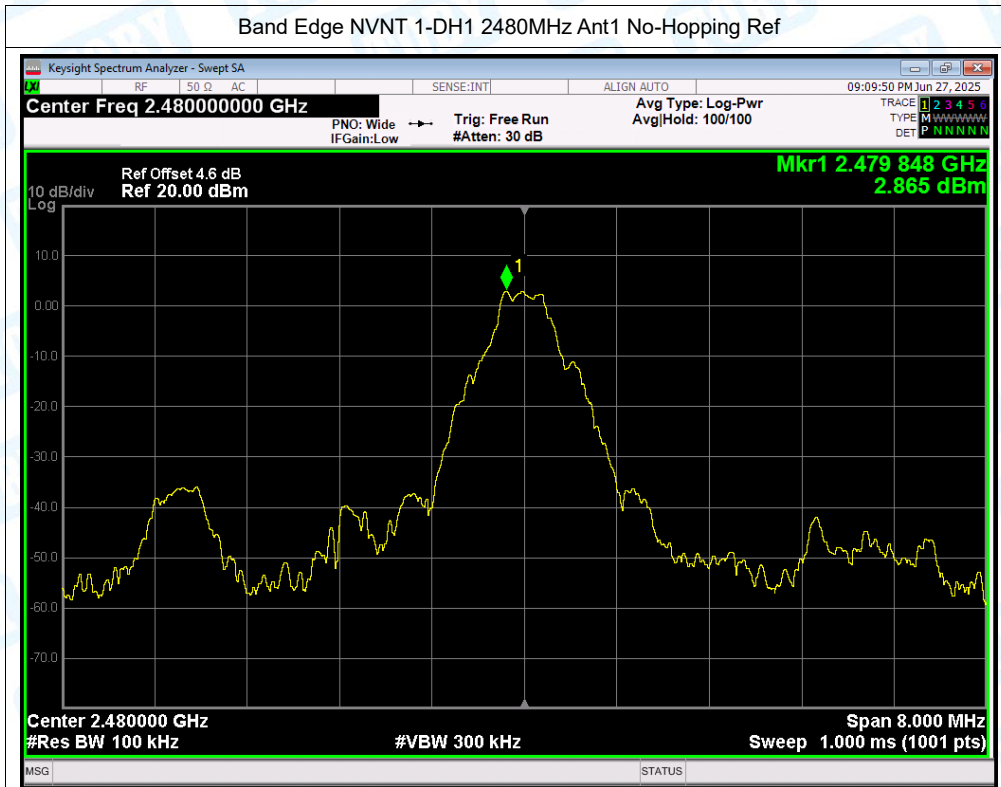
Test Graphs

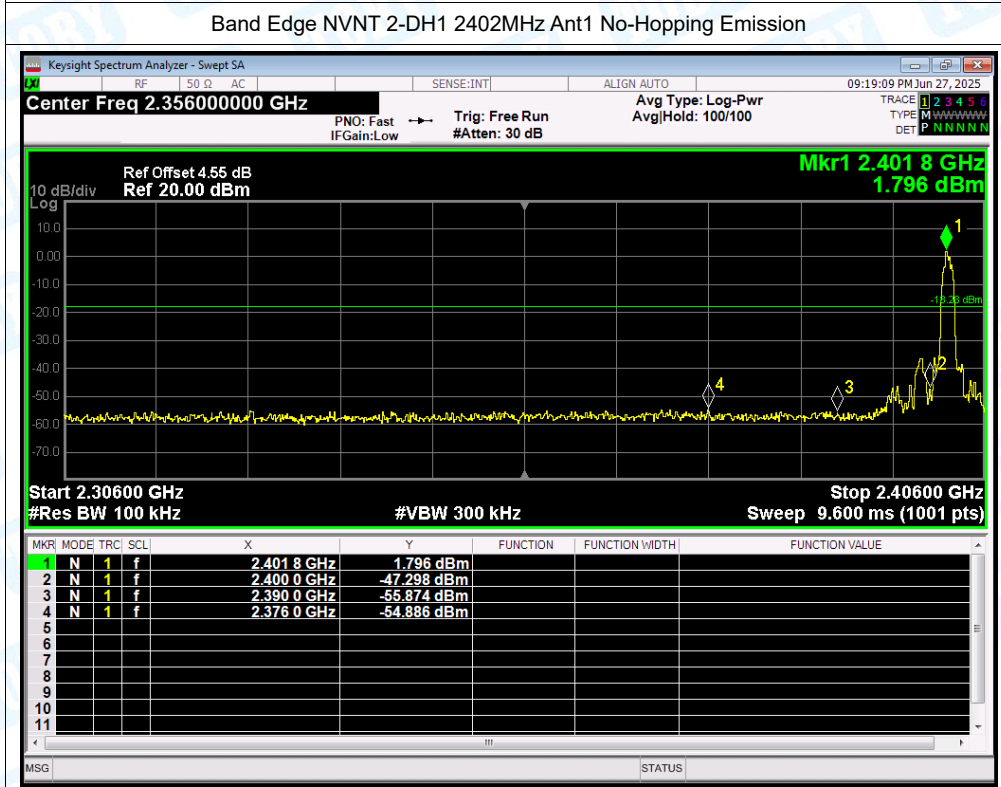
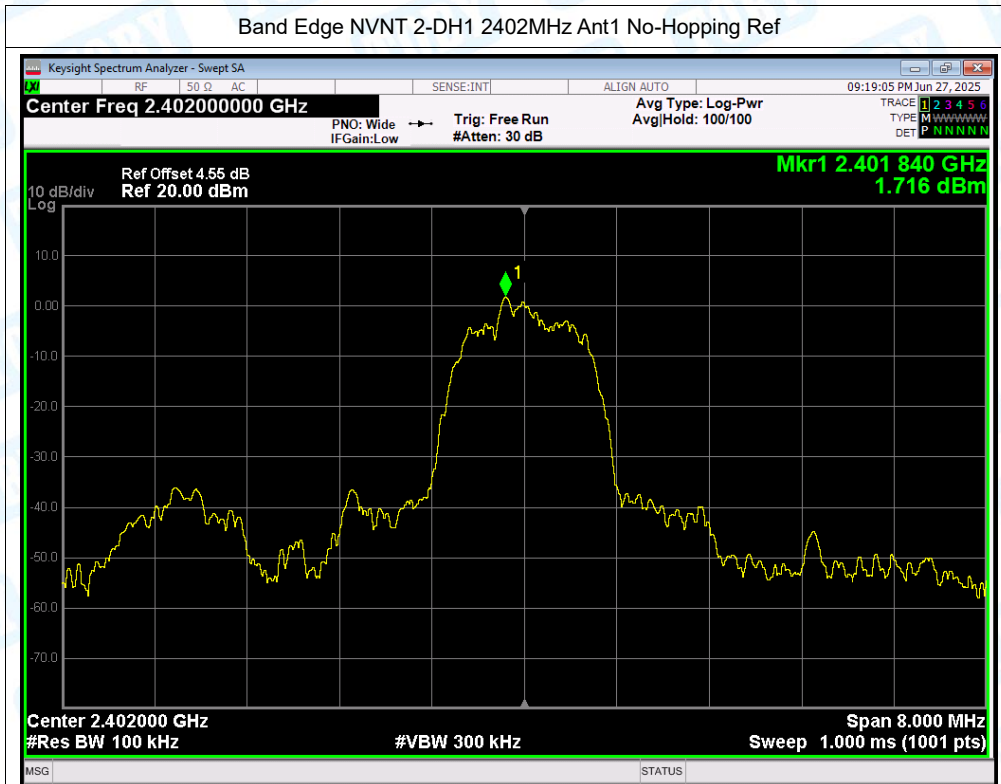
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref

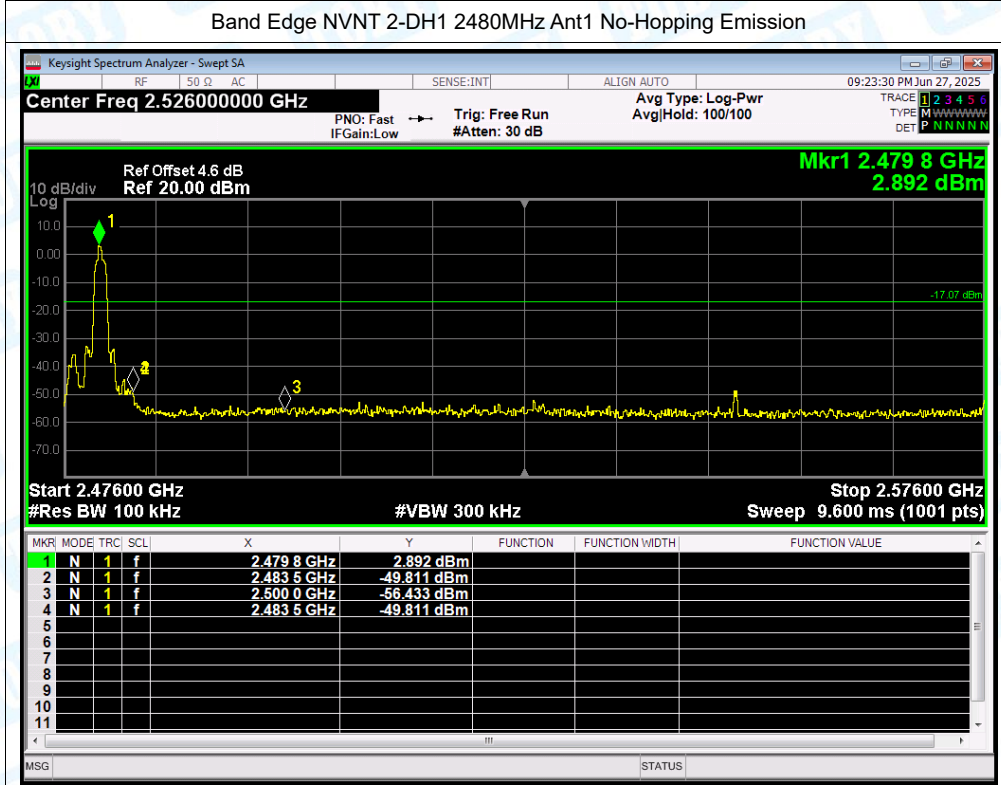
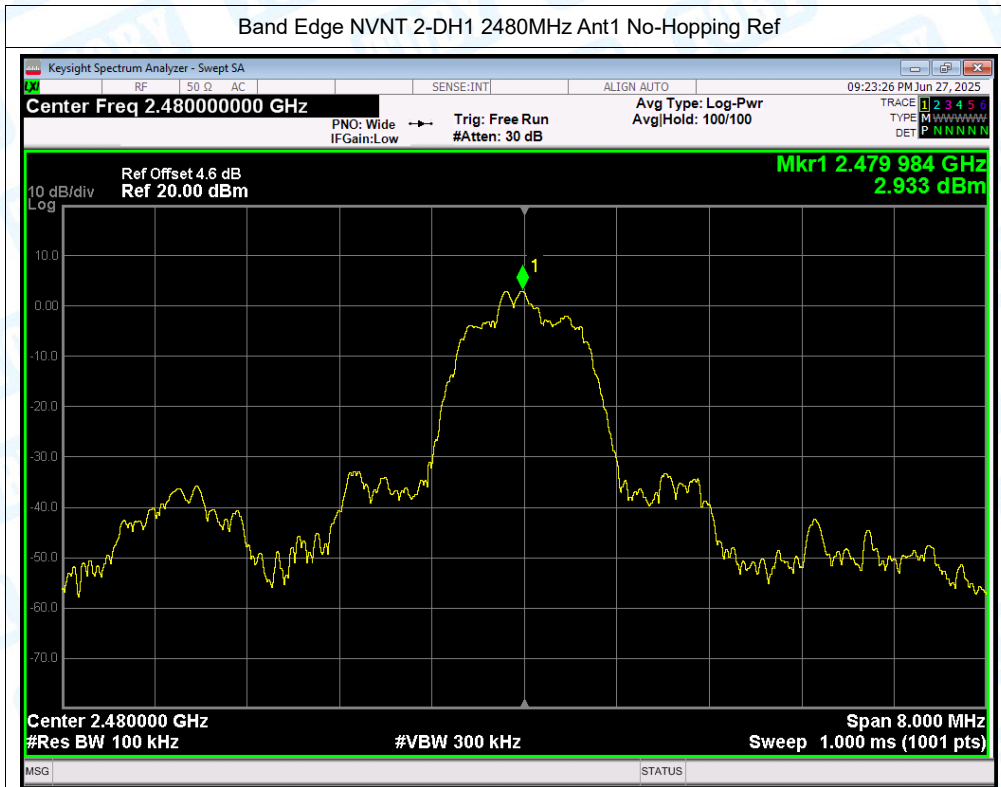


Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission





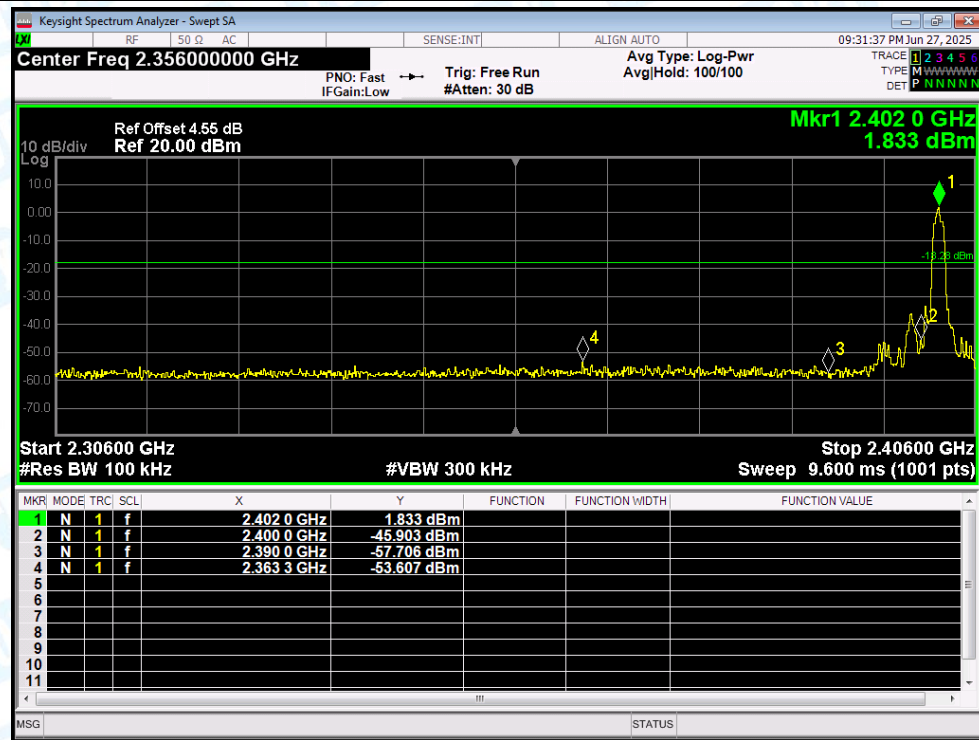


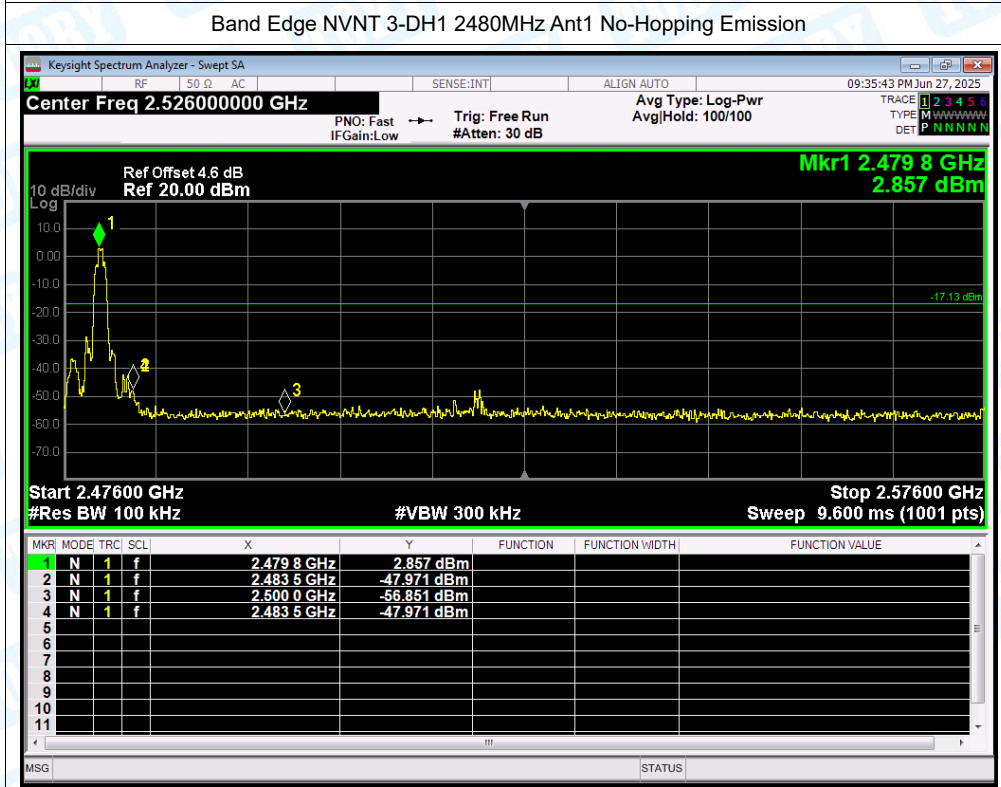
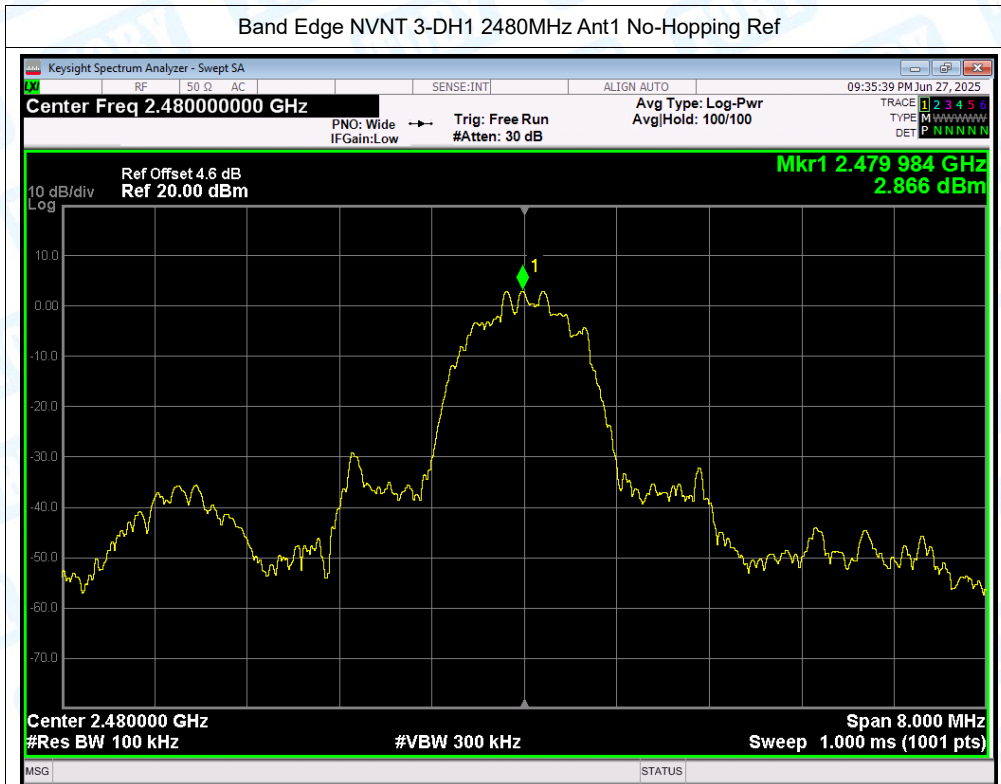


Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



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





6. Band Edge(Hopping)

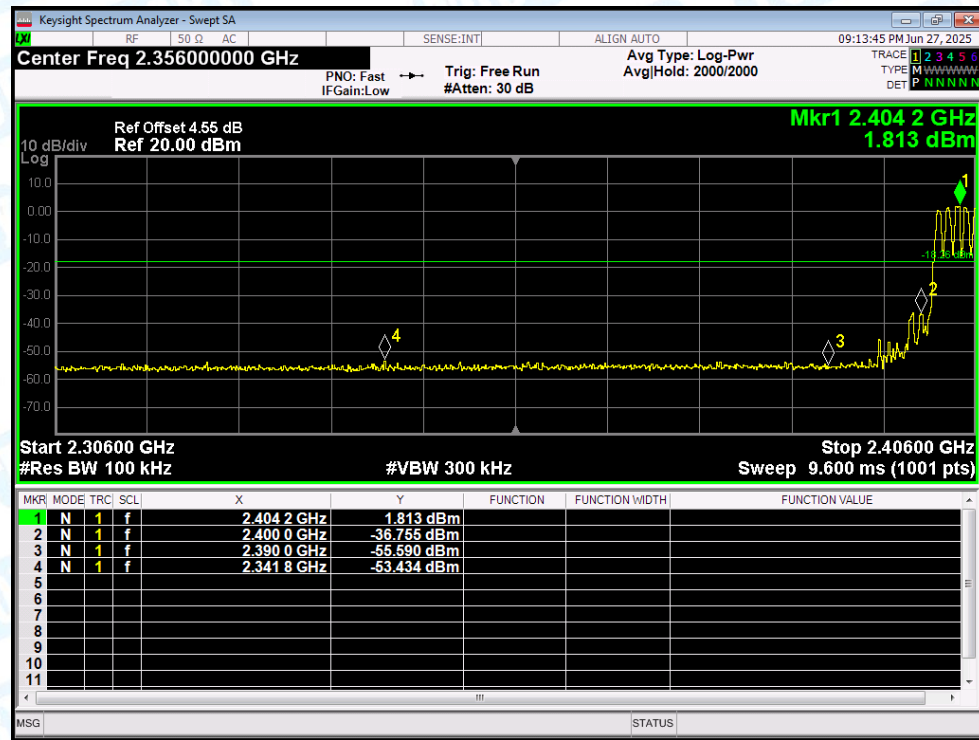
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-55.17	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-49.52	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-55.02	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-53.91	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-54.88	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-50.26	-20	Pass

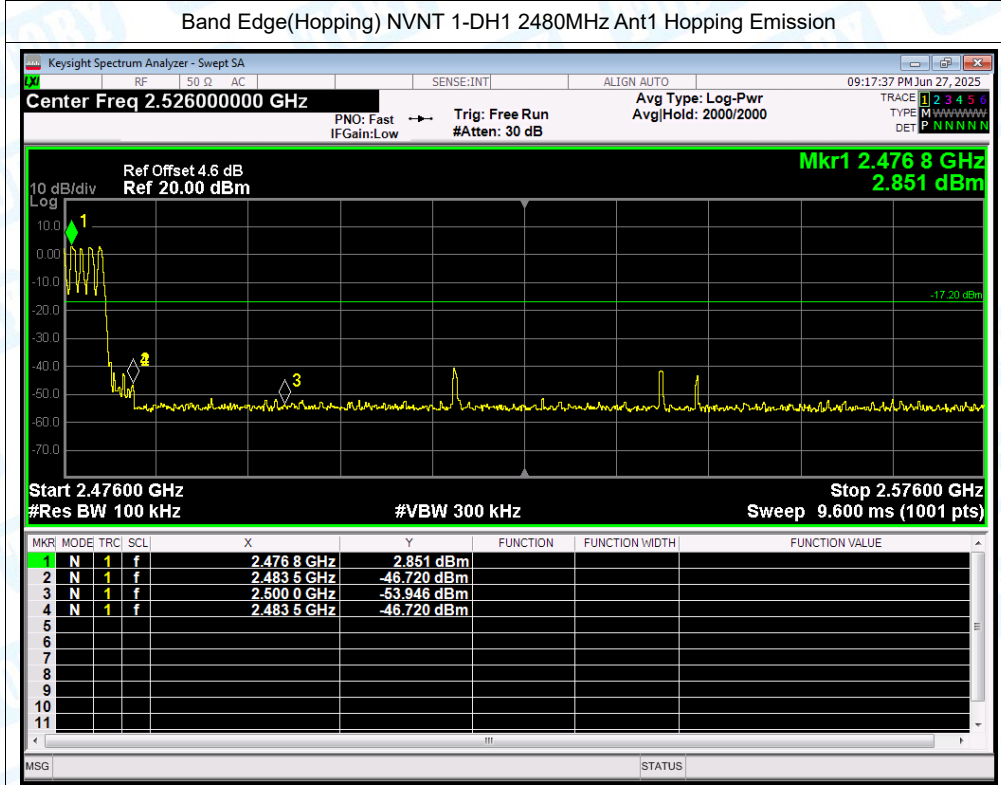
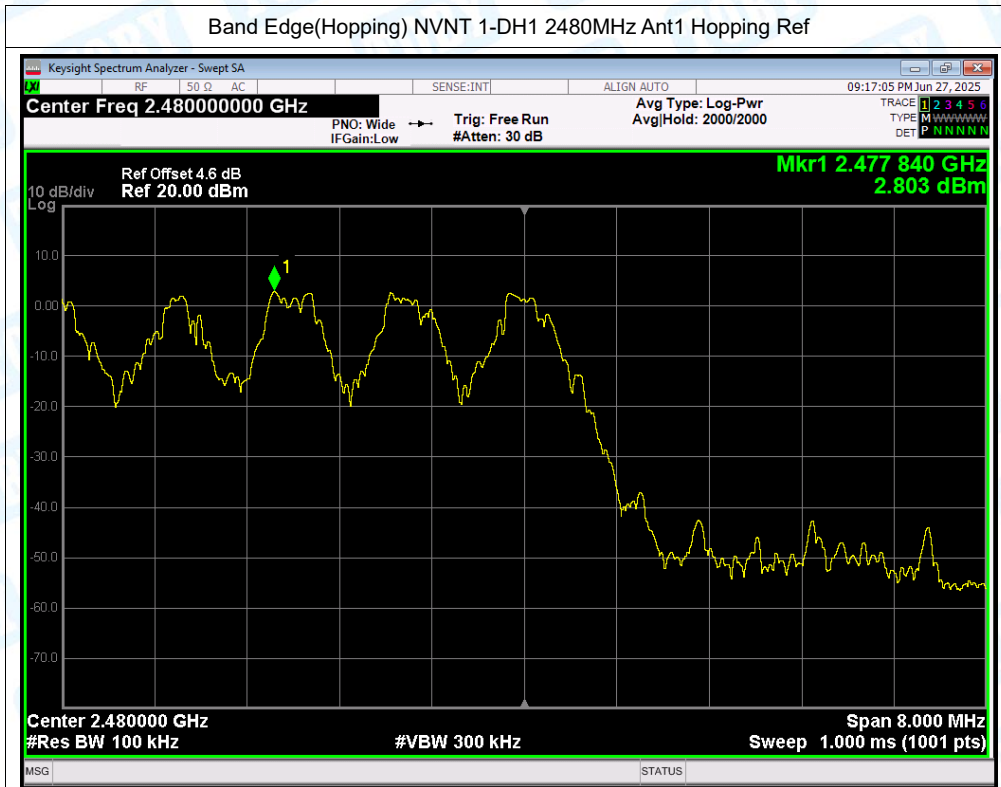
Test Graphs

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

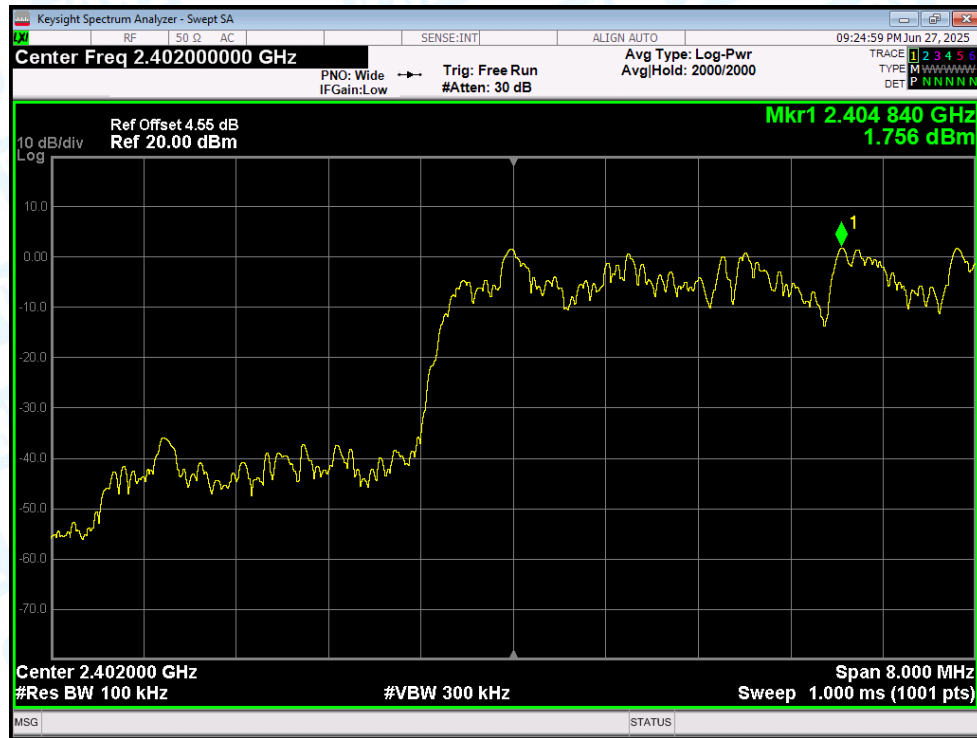


Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission

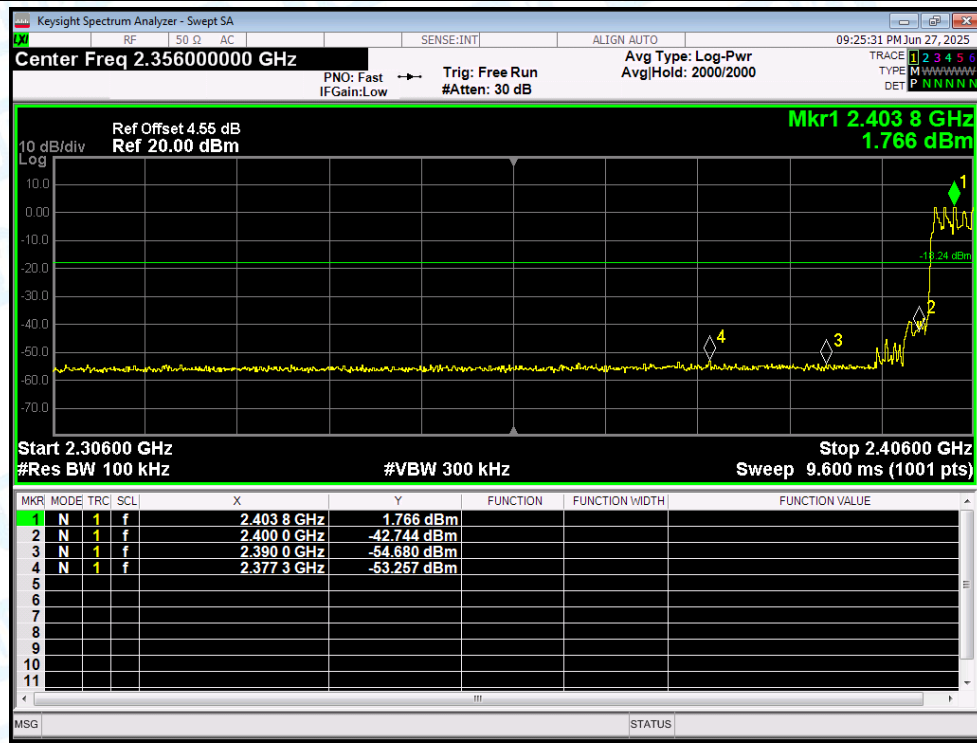


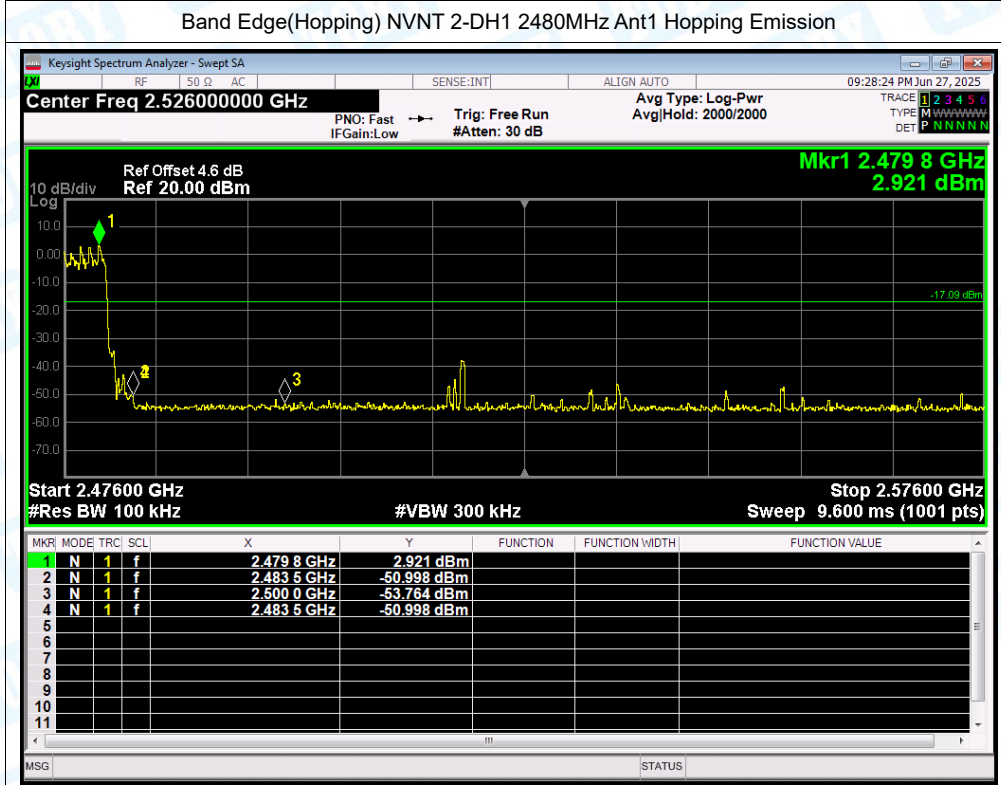


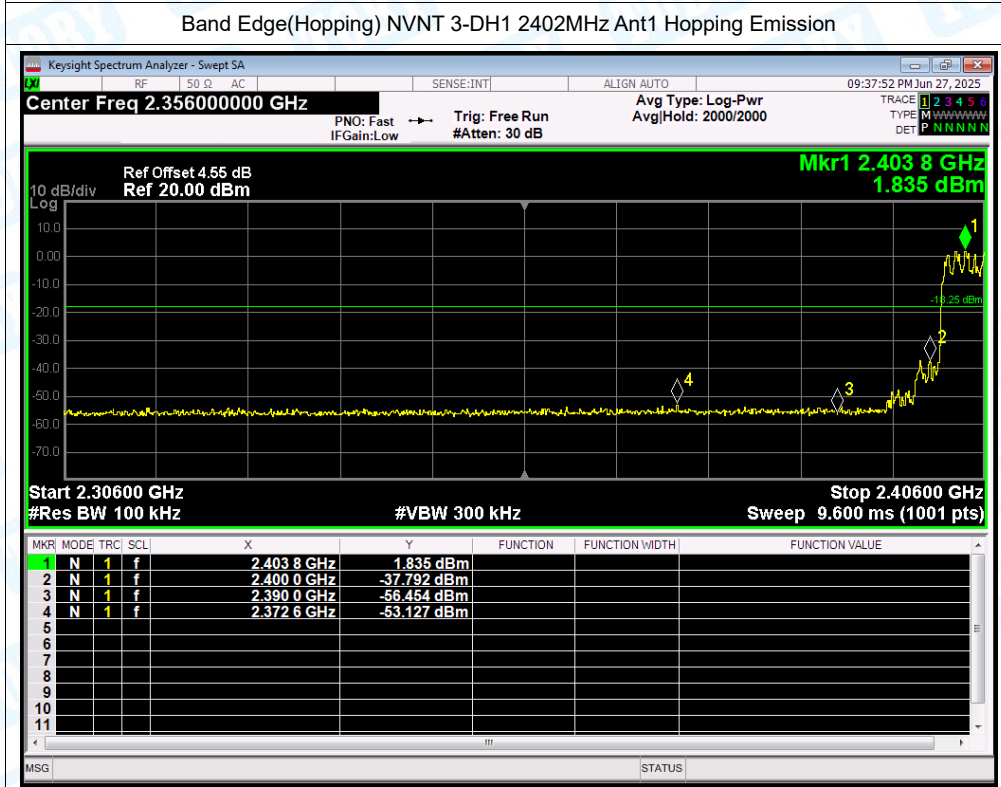
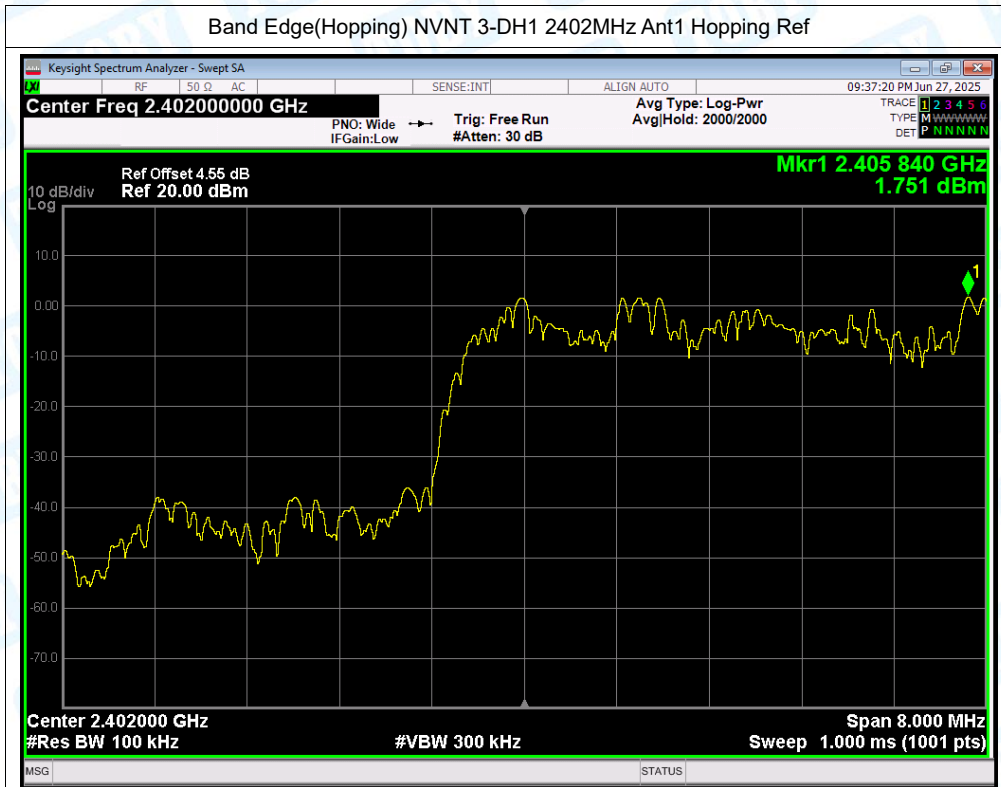
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref

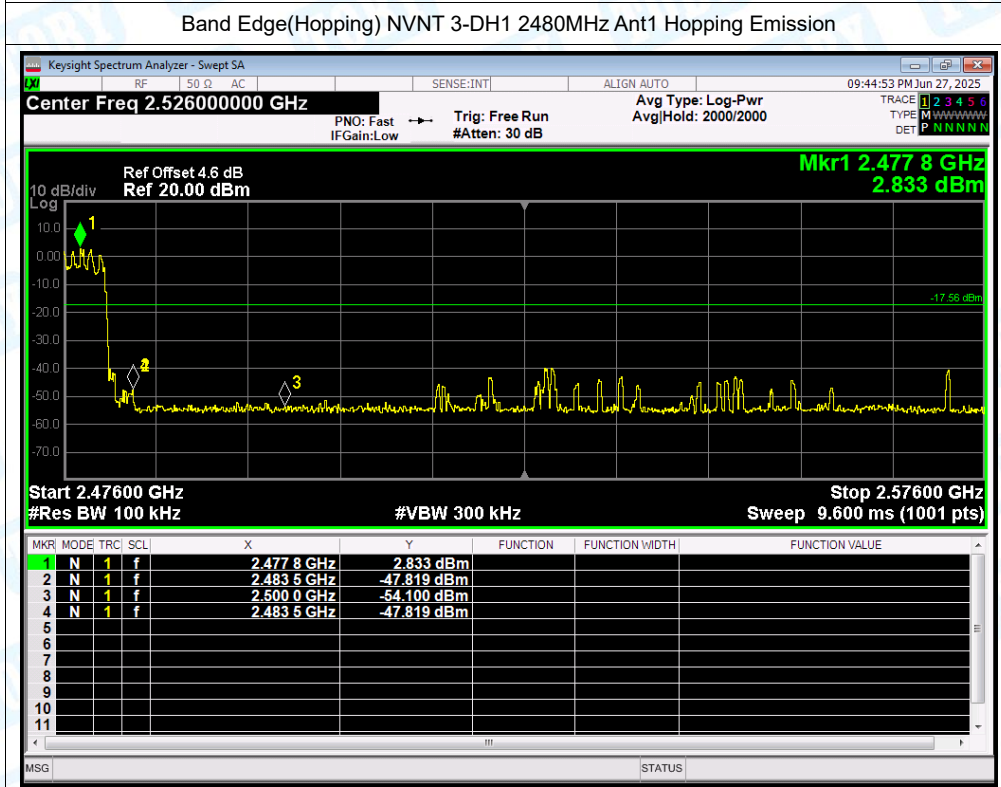


Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission







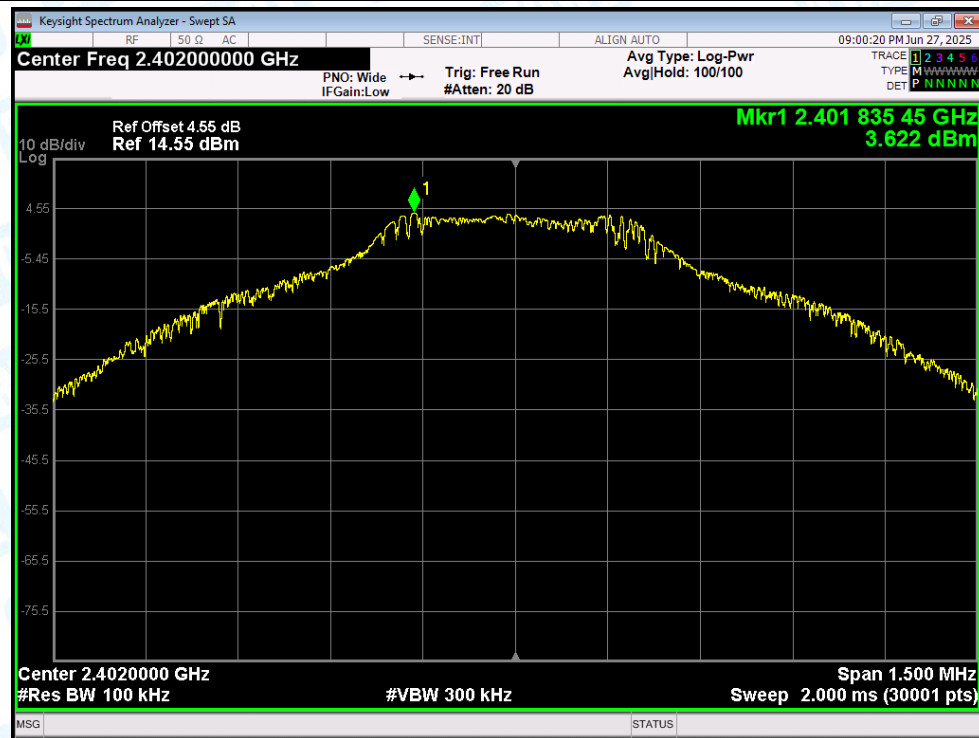


7. Conducted RF Spurious Emission

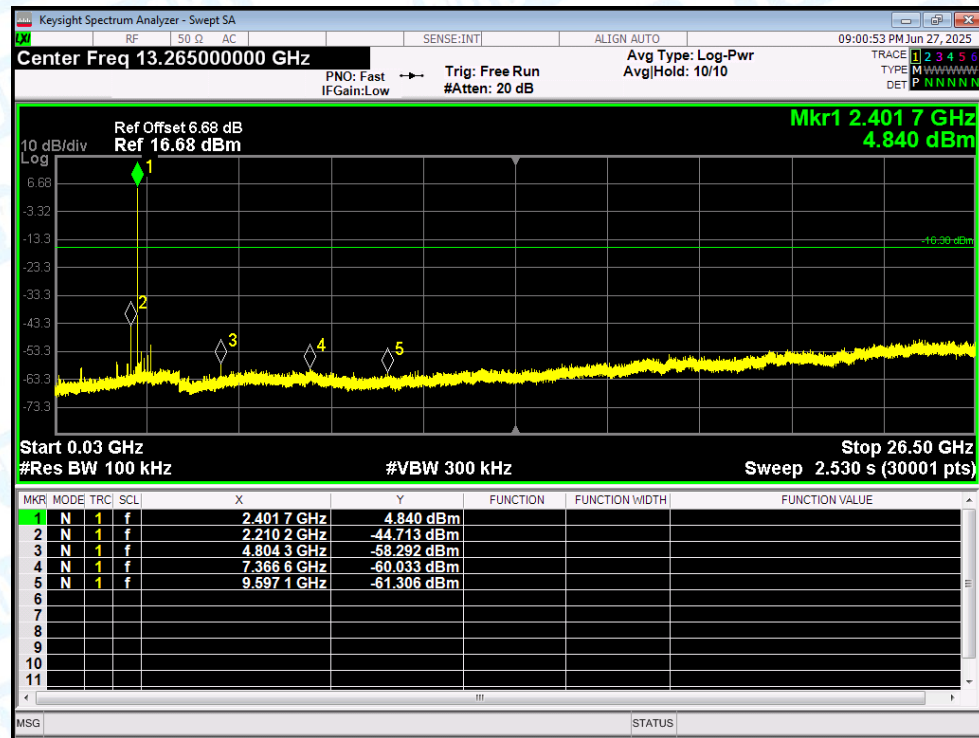
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-48.33	-20	Pass
NVNT	1-DH1	2441	Ant1	-46.25	-20	Pass
NVNT	1-DH1	2480	Ant1	-45.48	-20	Pass
NVNT	2-DH1	2402	Ant1	-44.6	-20	Pass
NVNT	2-DH1	2441	Ant1	-44.49	-20	Pass
NVNT	2-DH1	2480	Ant1	-45.71	-20	Pass
NVNT	3-DH1	2402	Ant1	-42.19	-20	Pass
NVNT	3-DH1	2441	Ant1	-47.52	-20	Pass
NVNT	3-DH1	2480	Ant1	-46.24	-20	Pass

Test Graphs

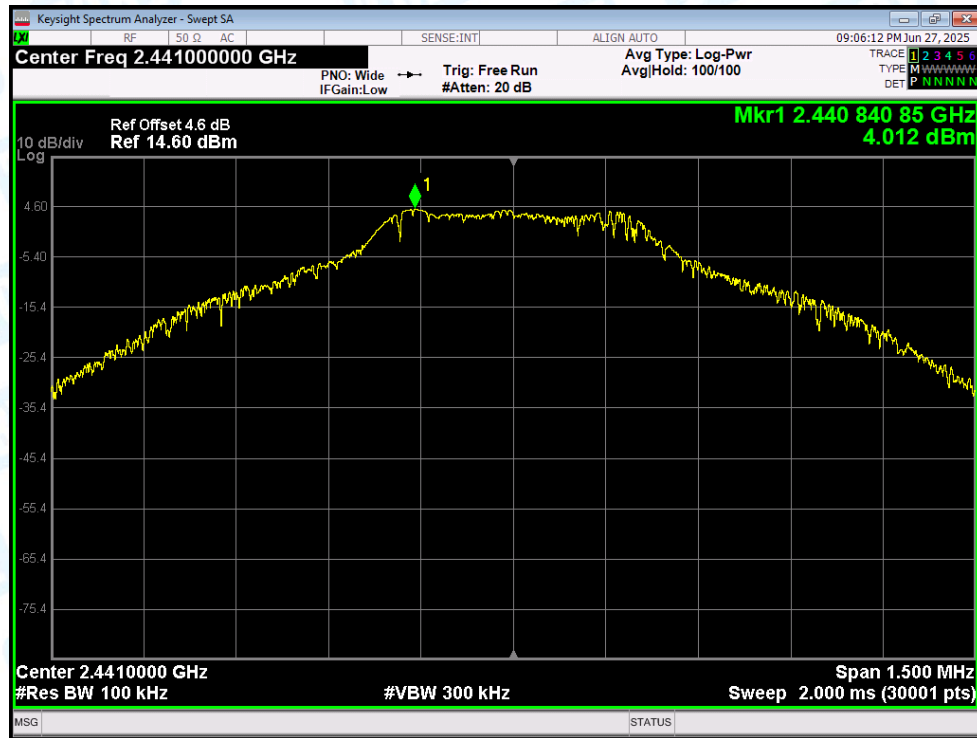
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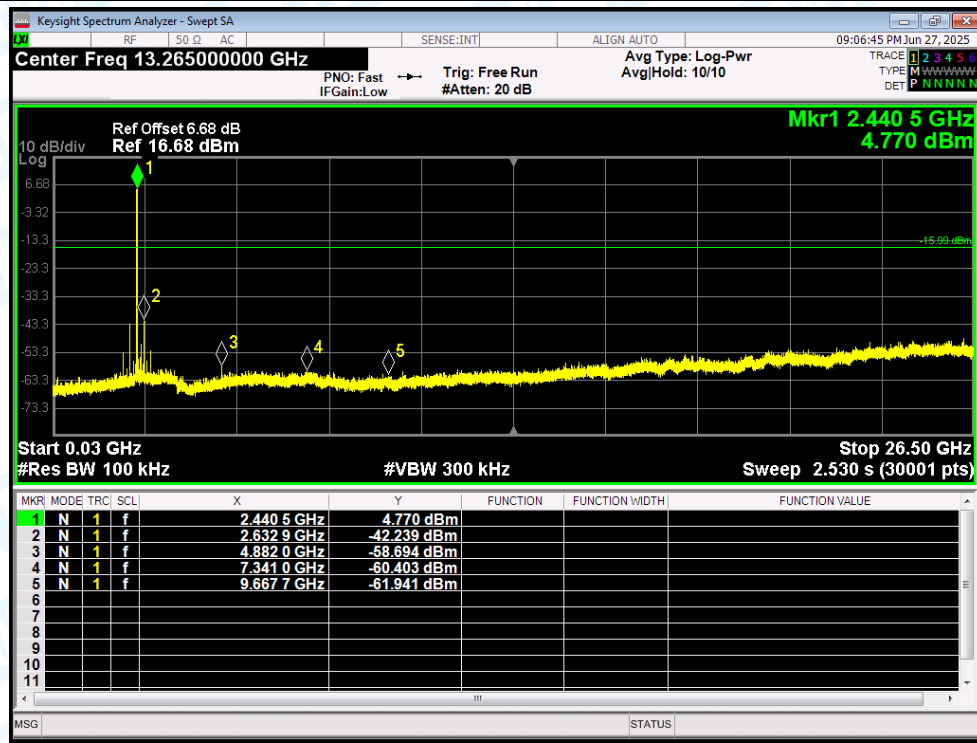
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



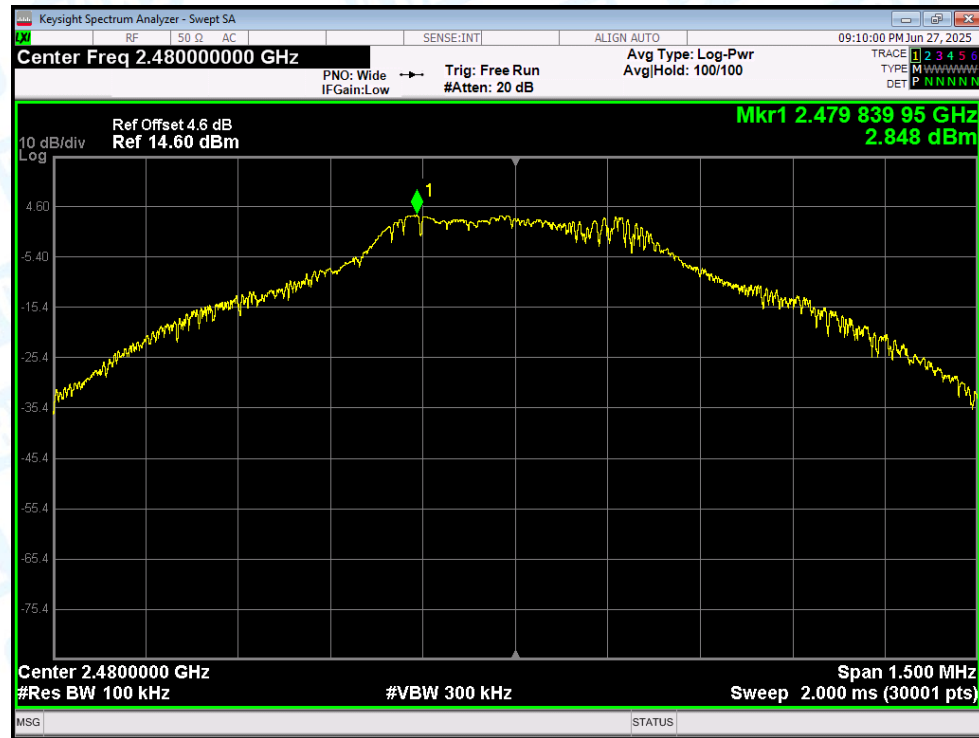
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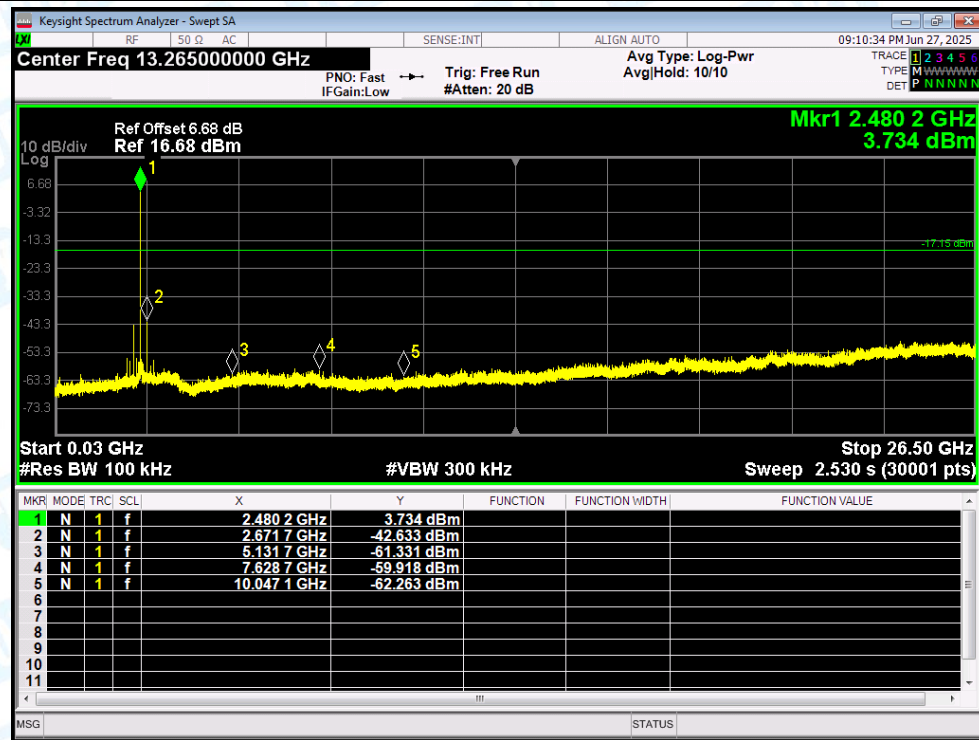
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



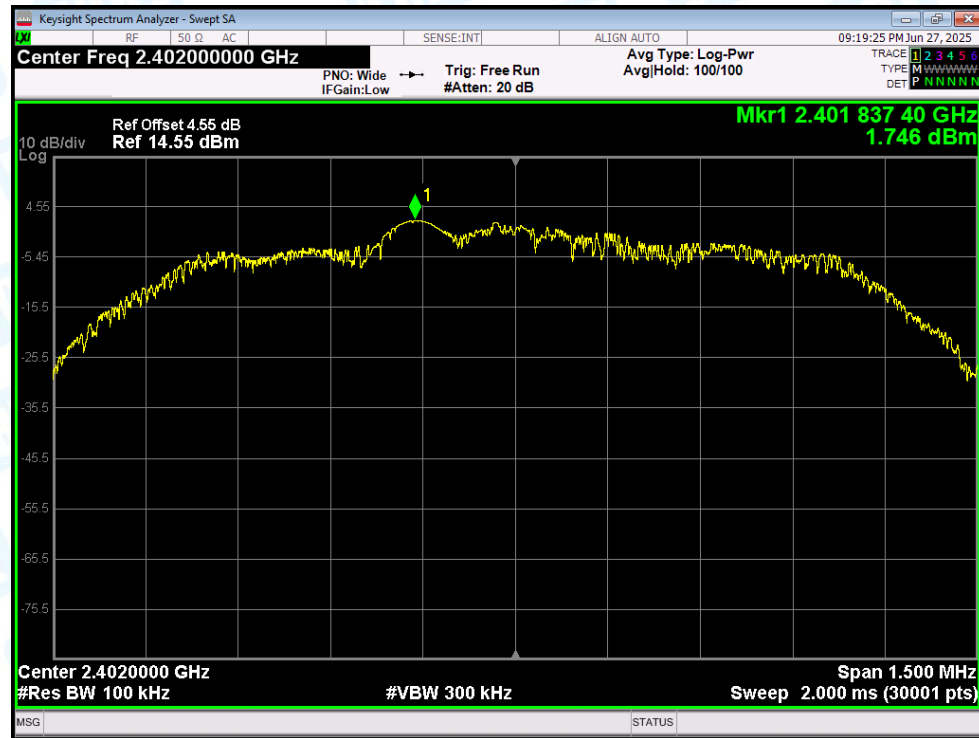
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



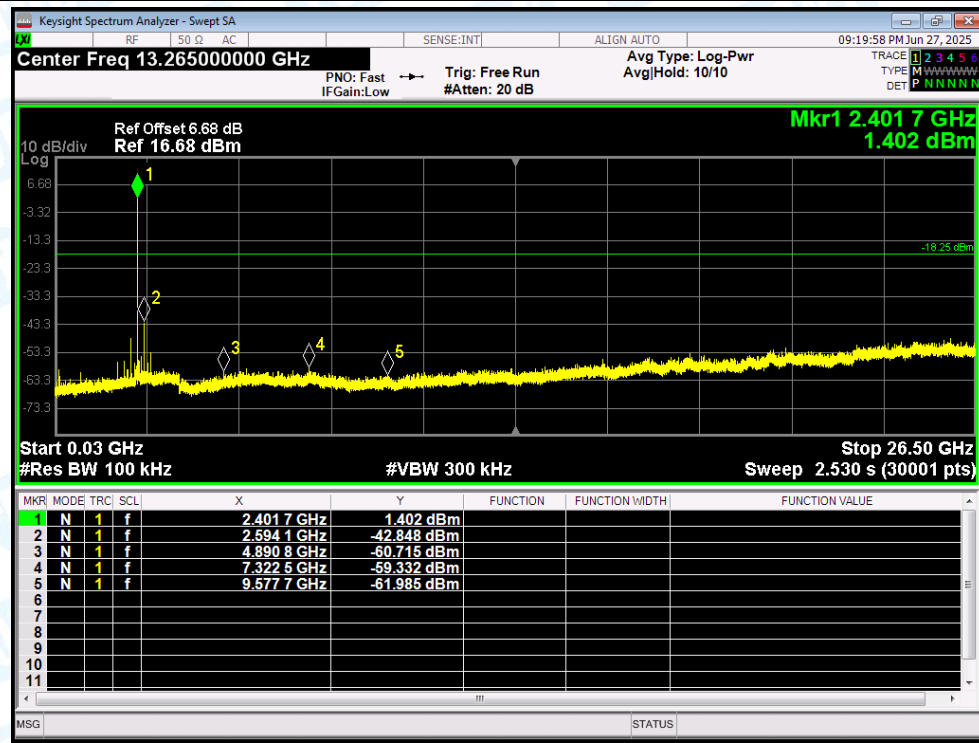
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



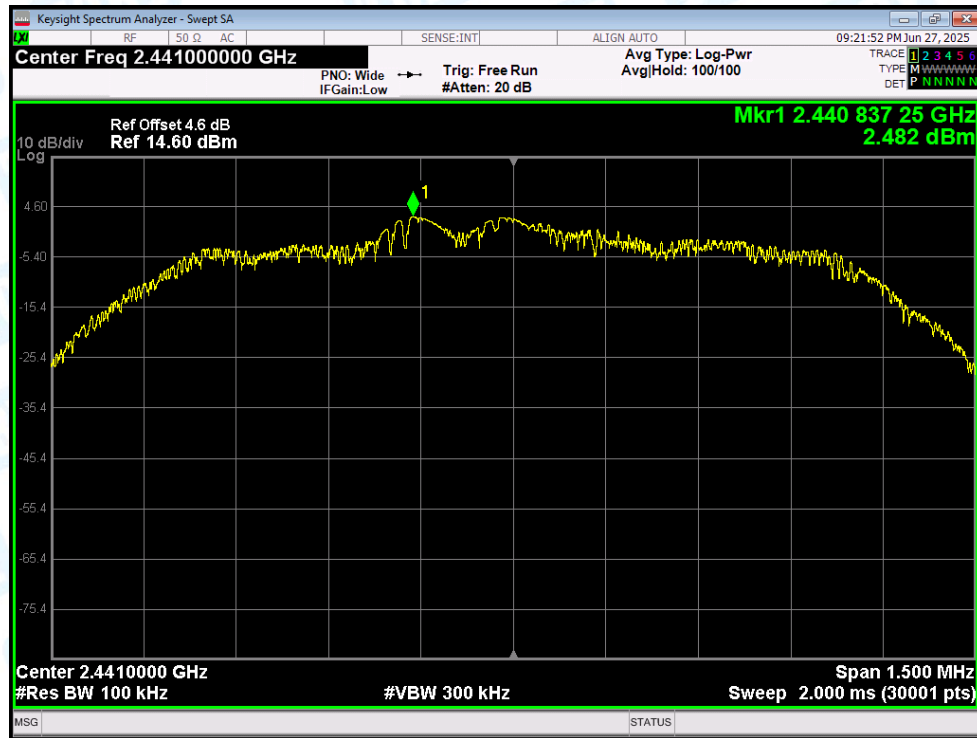
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



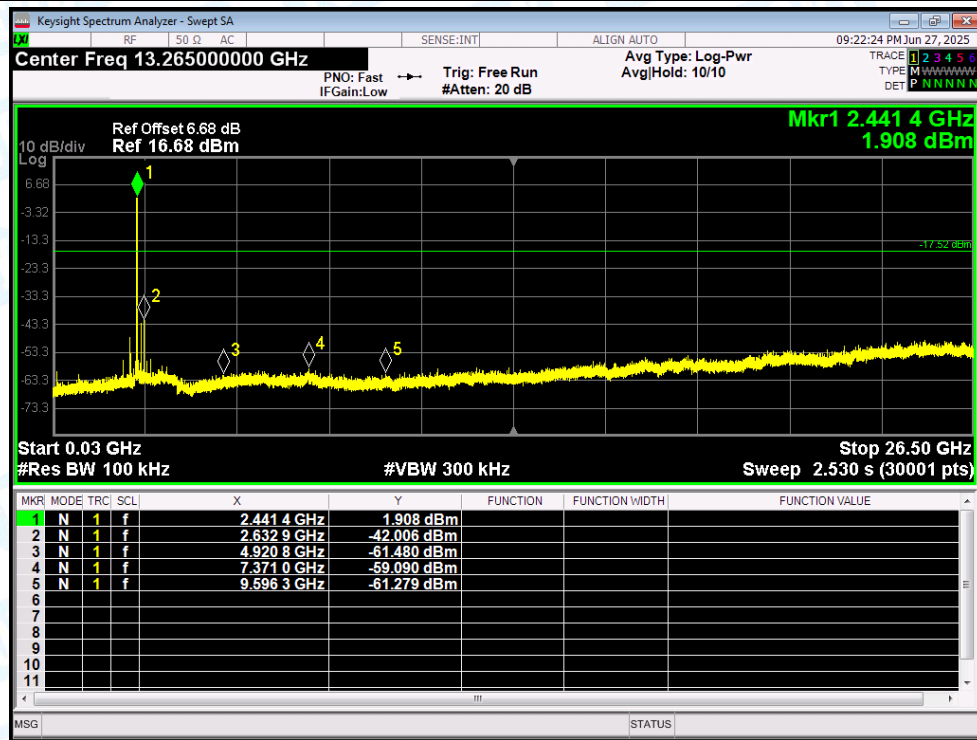
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



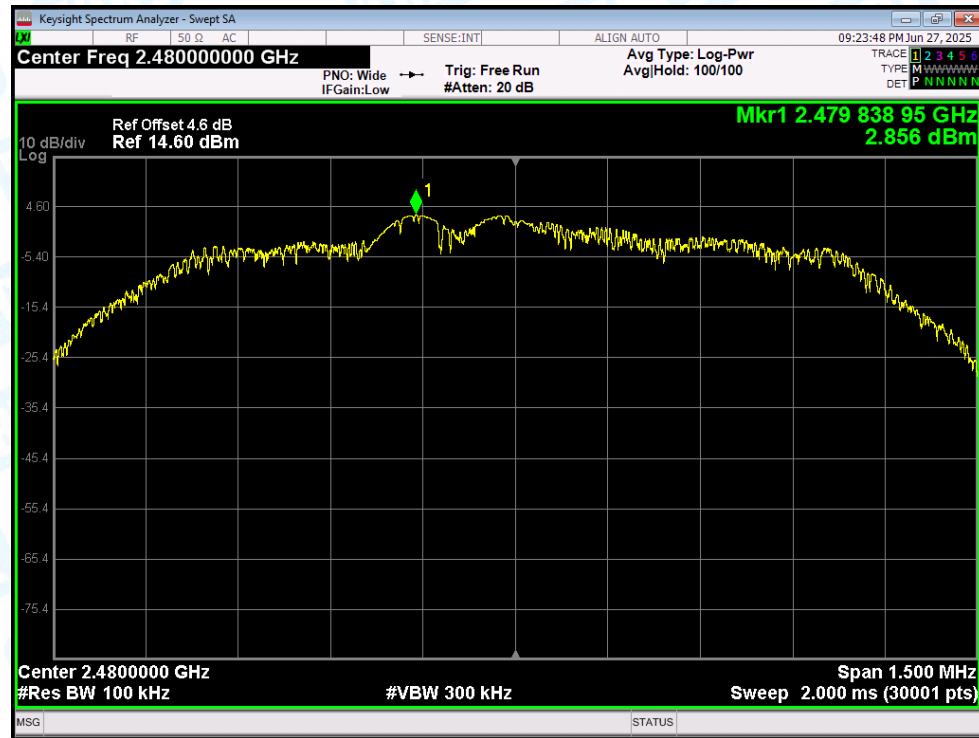
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



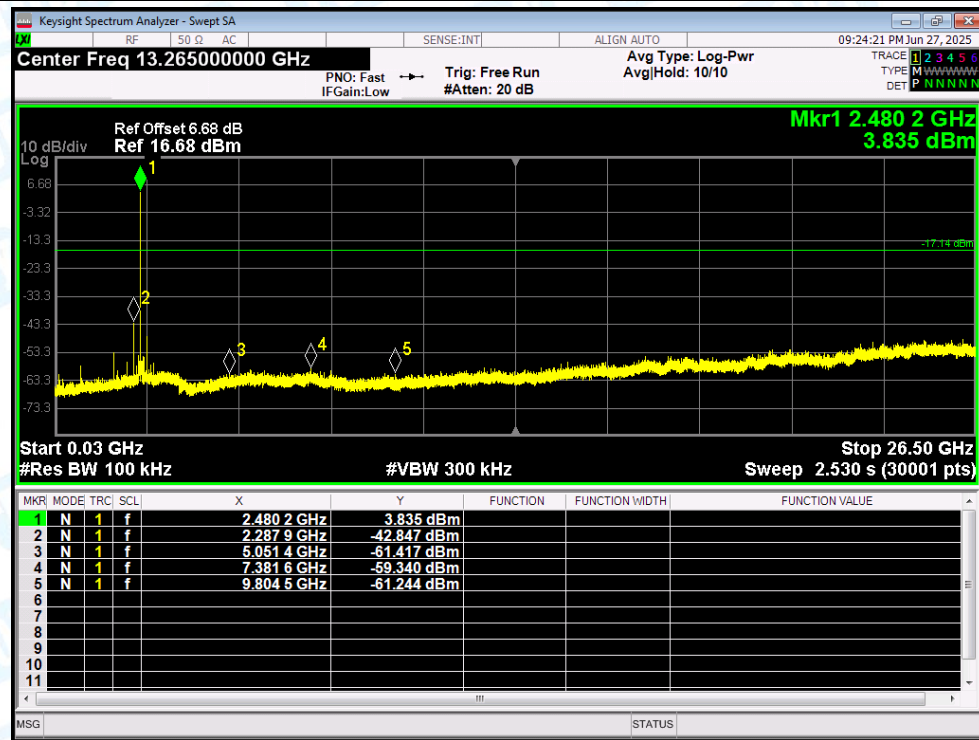
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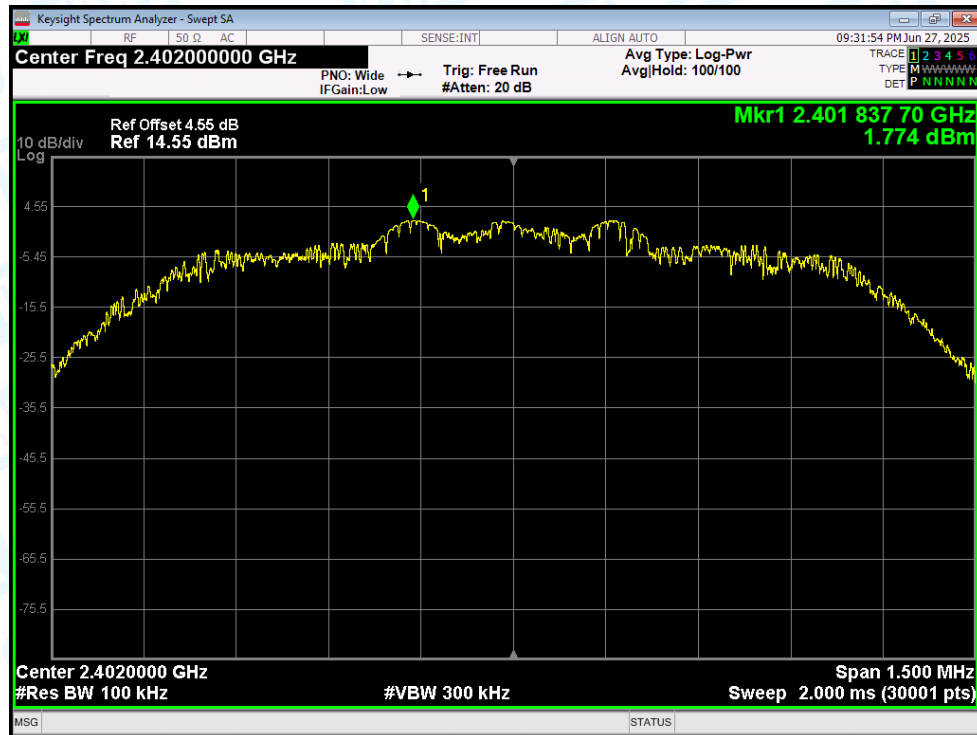
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



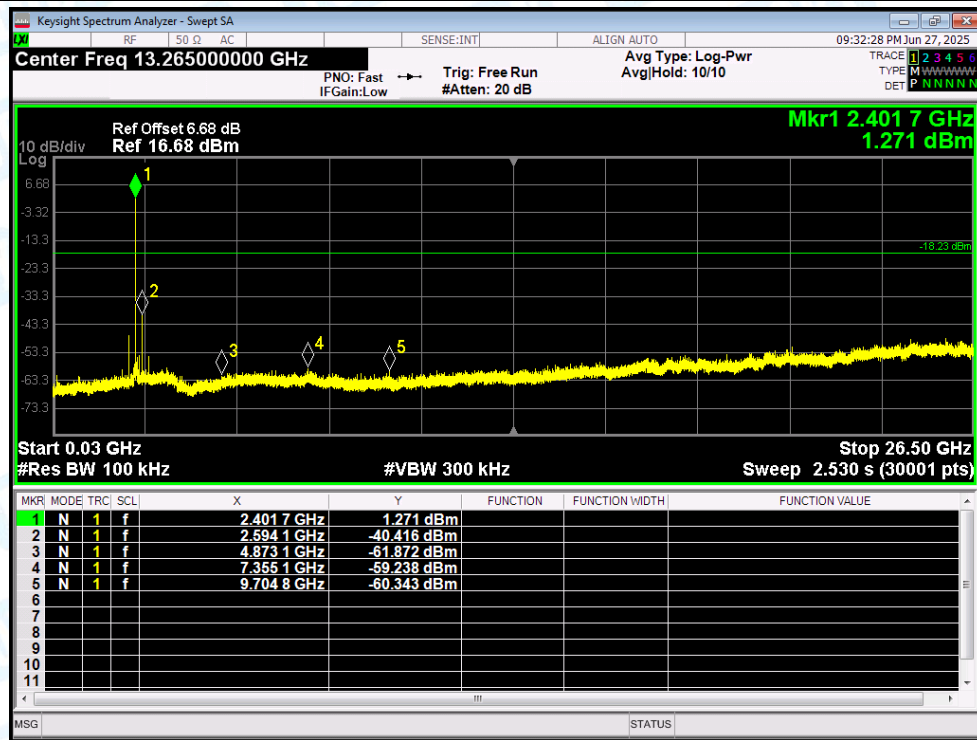
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



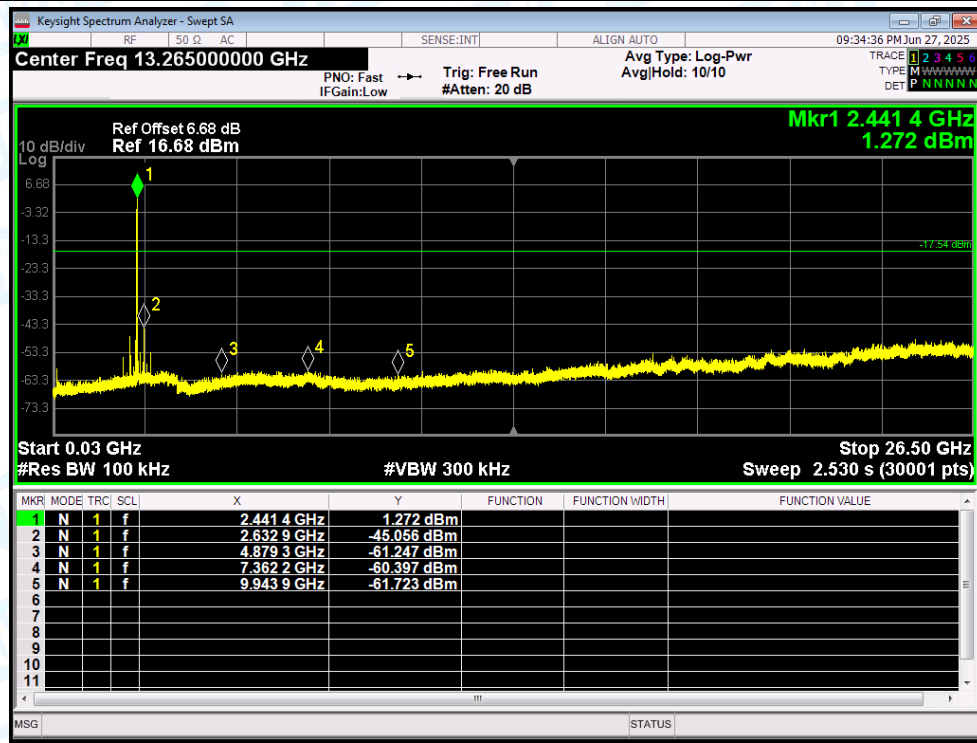
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



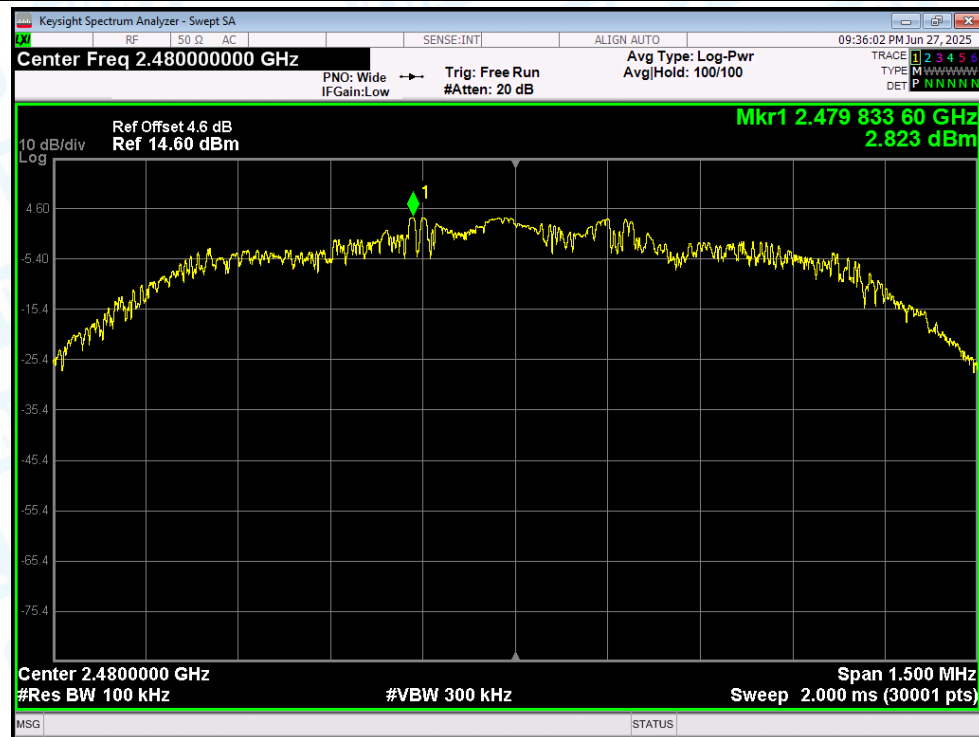
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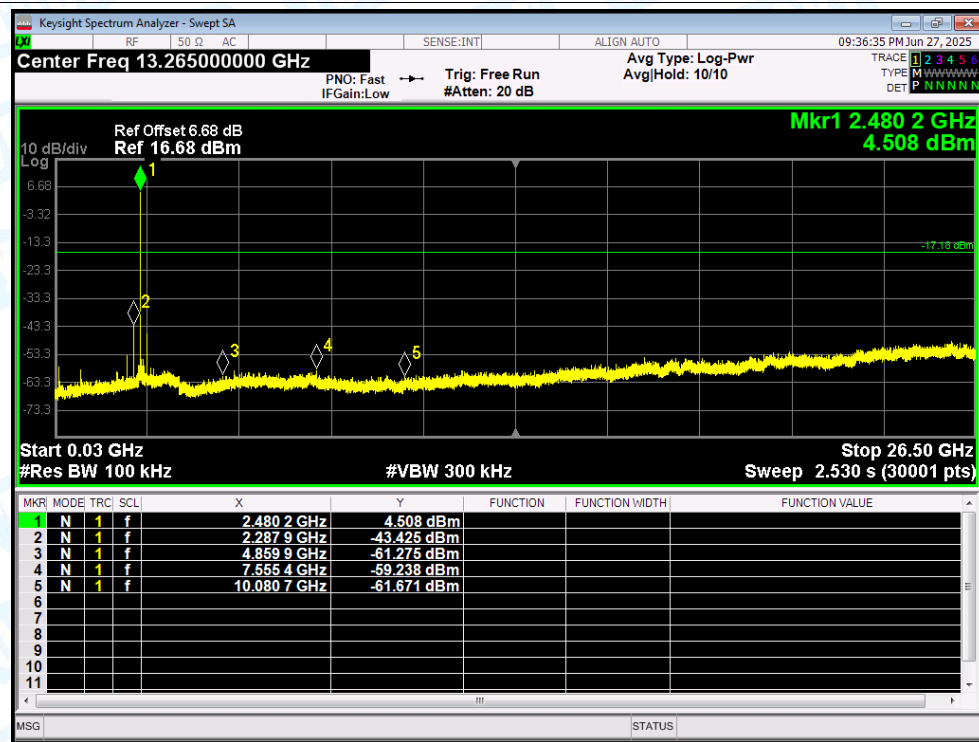
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

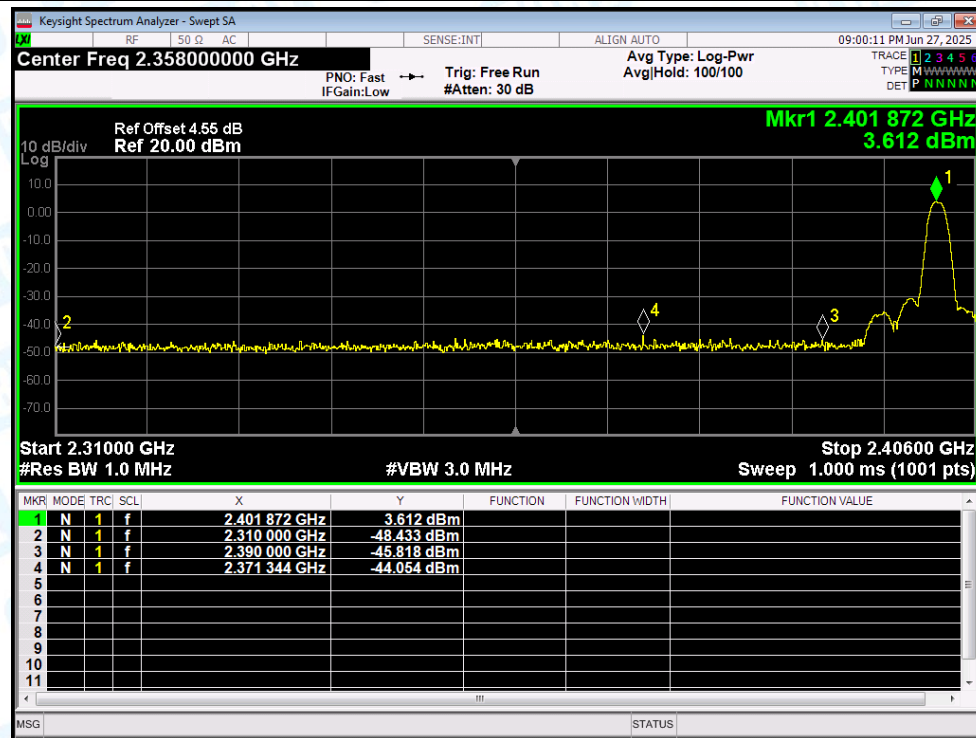


8. Restrict Band

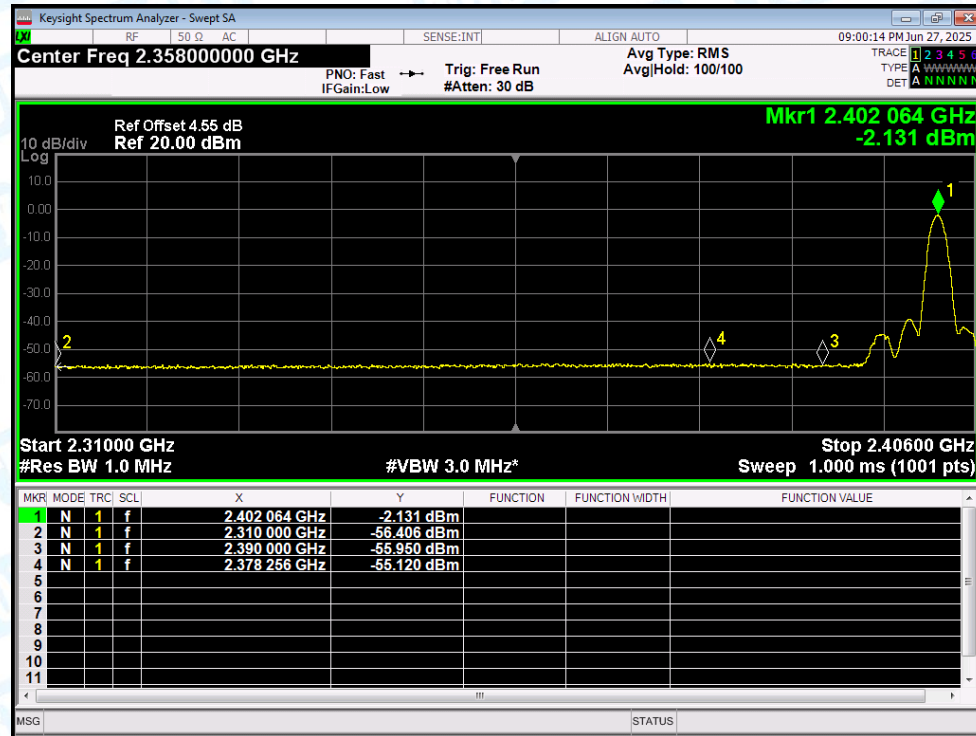
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-48.43	2	-	48.83	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.41	2	5.06	45.91	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2371.344	-44.05	2	-	53.21	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2378.256	-55.12	2	5.06	47.2	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-45.82	2	-	51.44	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-55.95	2	5.06	46.37	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-39.91	2	-	57.35	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-51.12	2	5.06	51.2	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.512	-39.91	2	-	57.35	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.608	-51.05	2	5.06	51.27	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-47	2	-	50.26	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-54.98	2	5.06	47.34	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-48.81	2	-	48.45	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.25	2	4.95	45.96	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2386.032	-44.49	2	-	52.77	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2366.736	-54.97	2	4.95	47.24	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-48.46	2	-	48.8	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-55.47	2	4.95	46.74	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-40.13	2	-	57.13	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-51.28	2	5.06	51.04	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.512	-40.13	2	-	57.13	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.512	-51.28	2	5.06	51.04	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-48.77	2	-	48.49	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.07	2	5.06	47.25	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-48.69	2	-	48.57	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.86	2	4.95	45.35	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2365.968	-43.94	2	-	53.32	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2368.464	-54.98	2	4.95	47.23	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-47.03	2	-	50.23	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-55.84	2	4.95	46.37	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-41.43	2	-	55.83	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-51.86	2	4.95	50.35	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.56	-40.51	2	-	56.75	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.536	-51.12	2	4.95	51.09	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-45.42	2	-	51.84	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.15	2	4.95	47.06	Average	54	Pass

Test Graphs

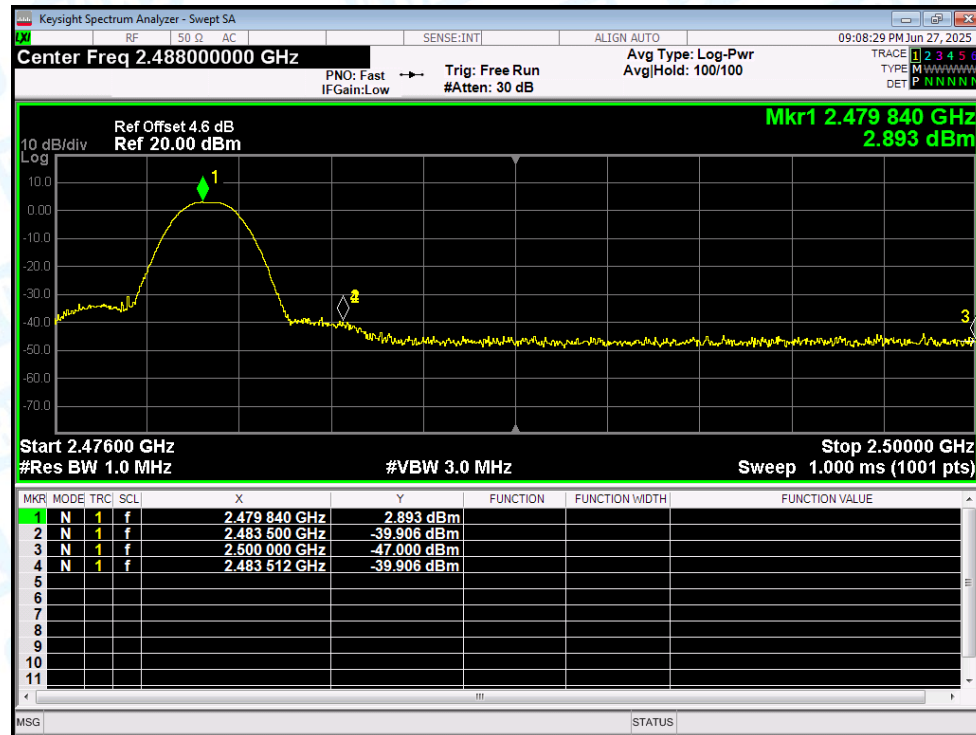
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



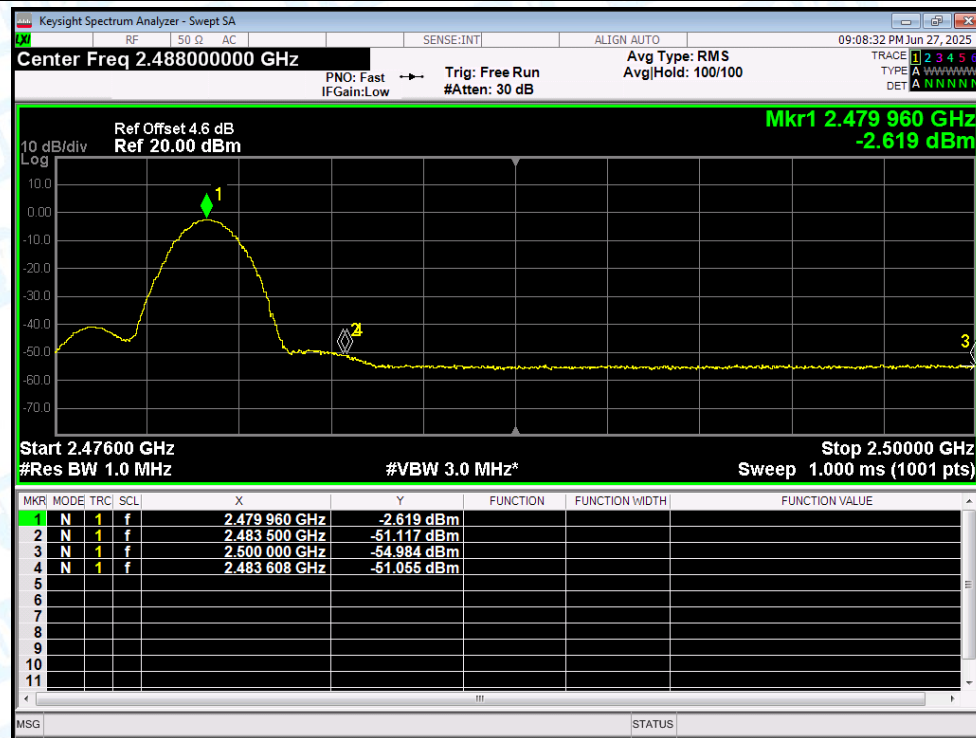
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



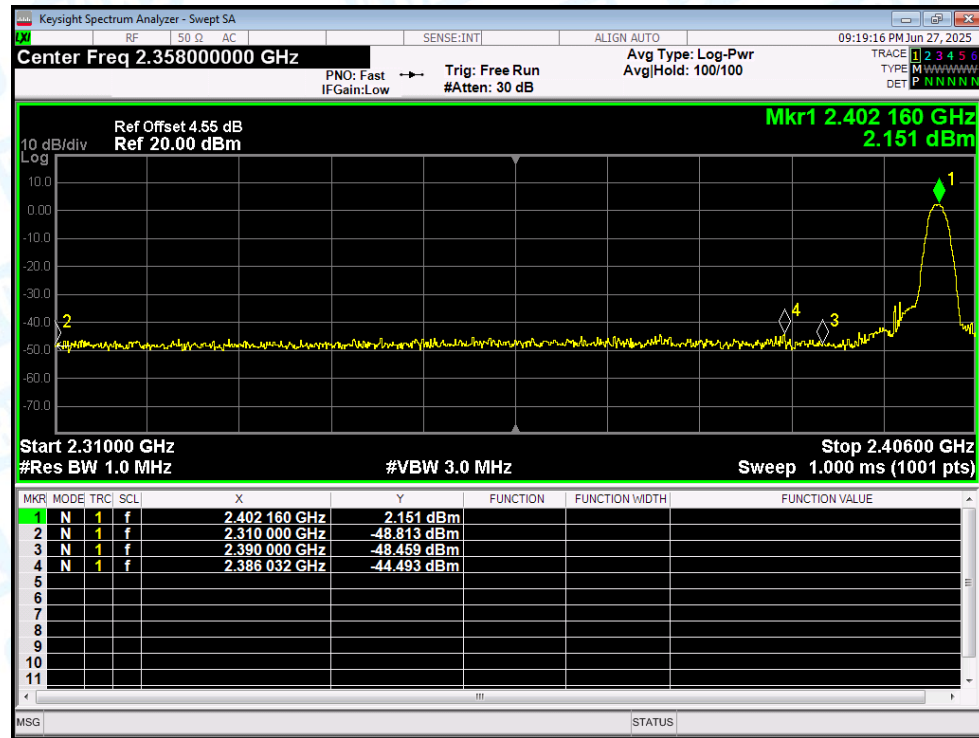
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



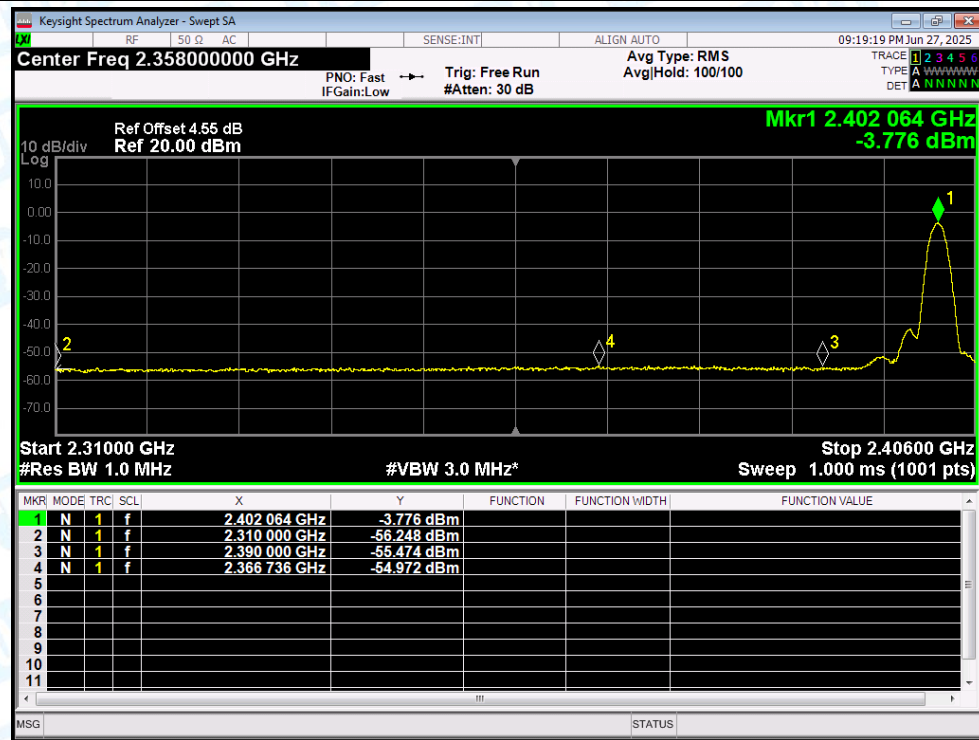
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



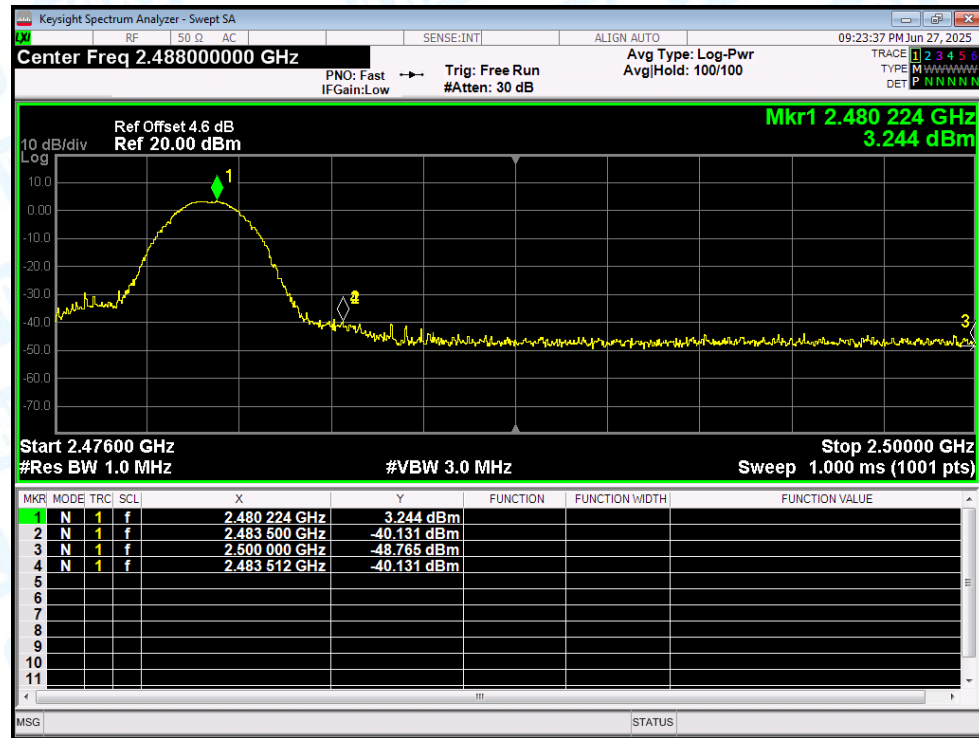
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



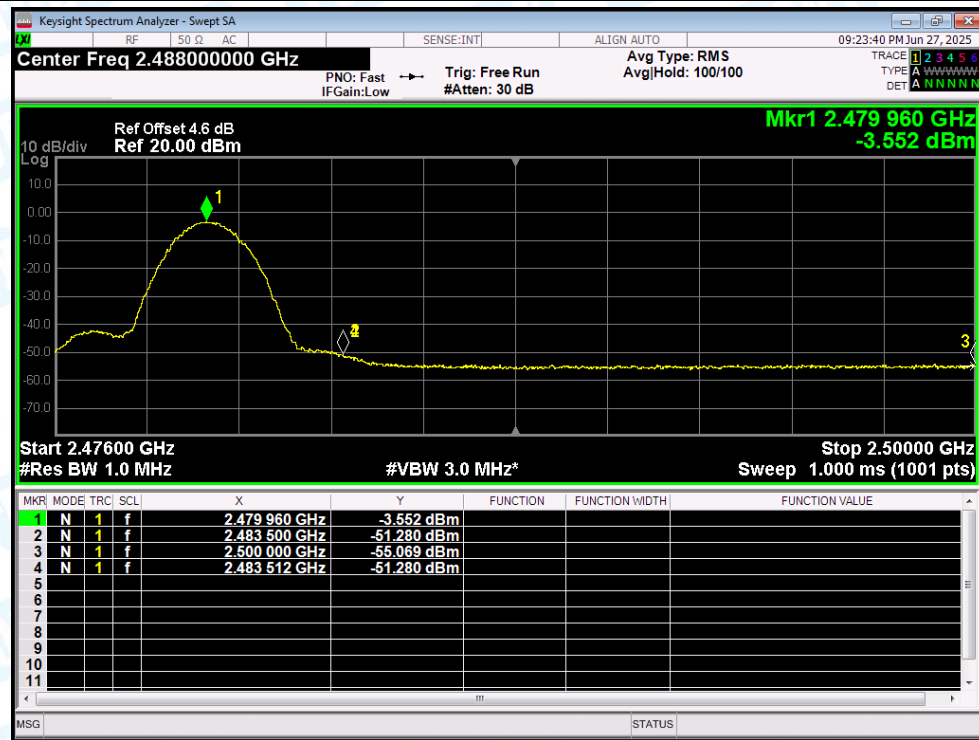
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



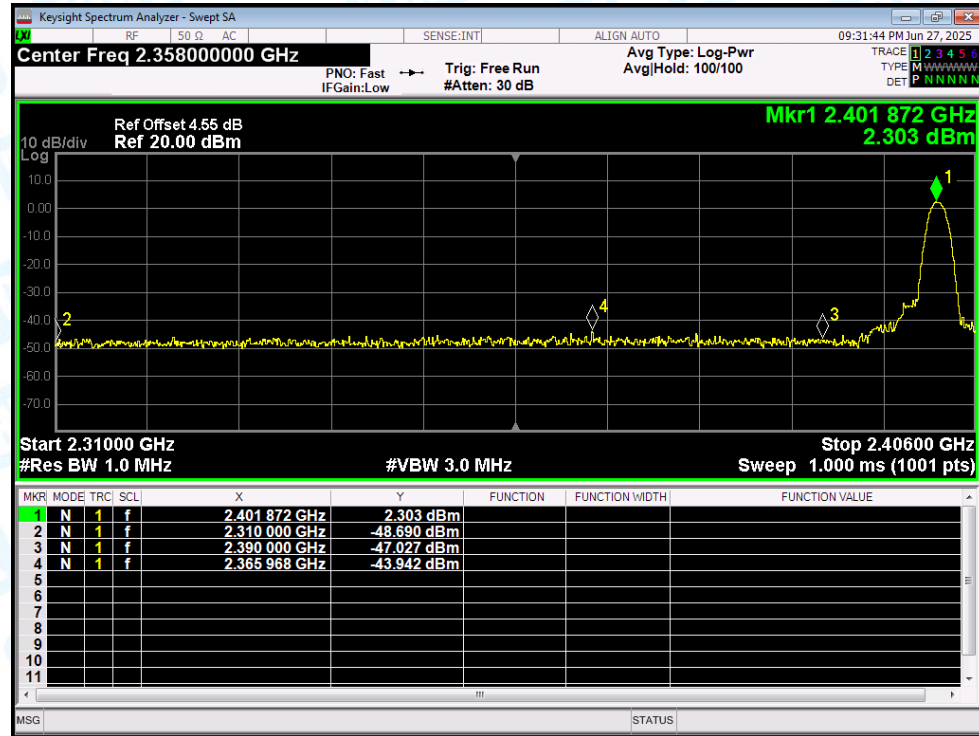
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



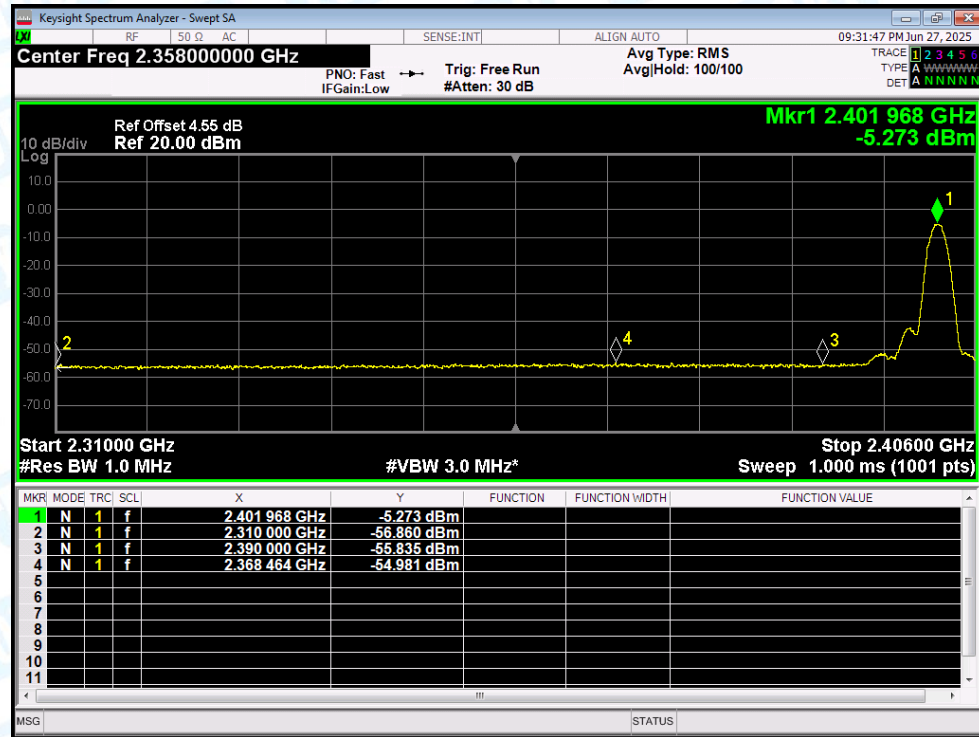
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



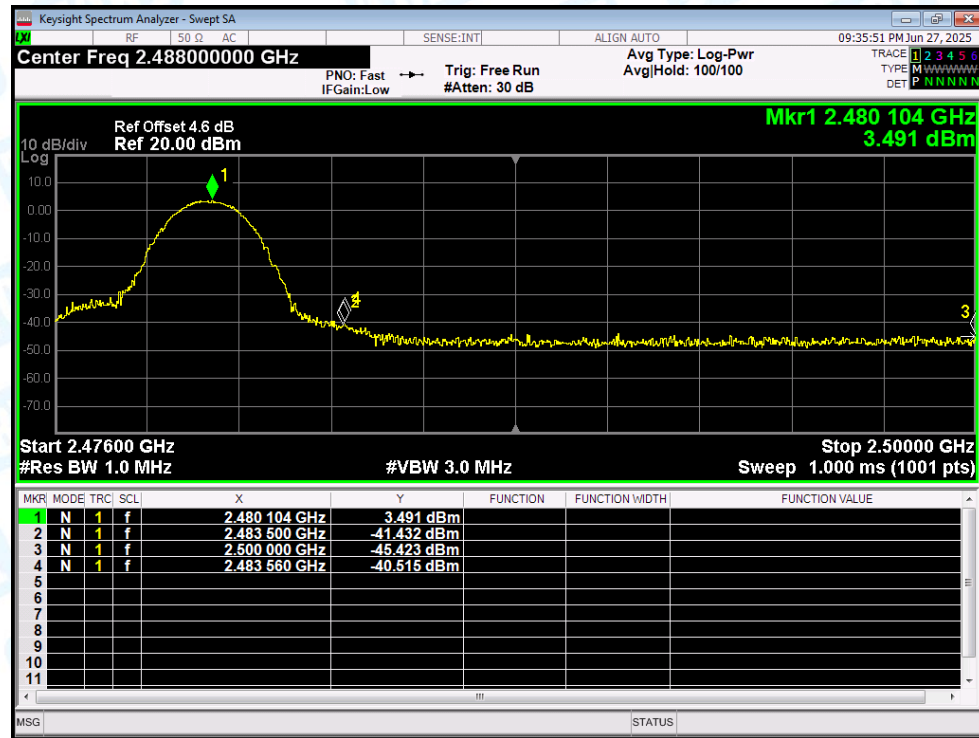
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



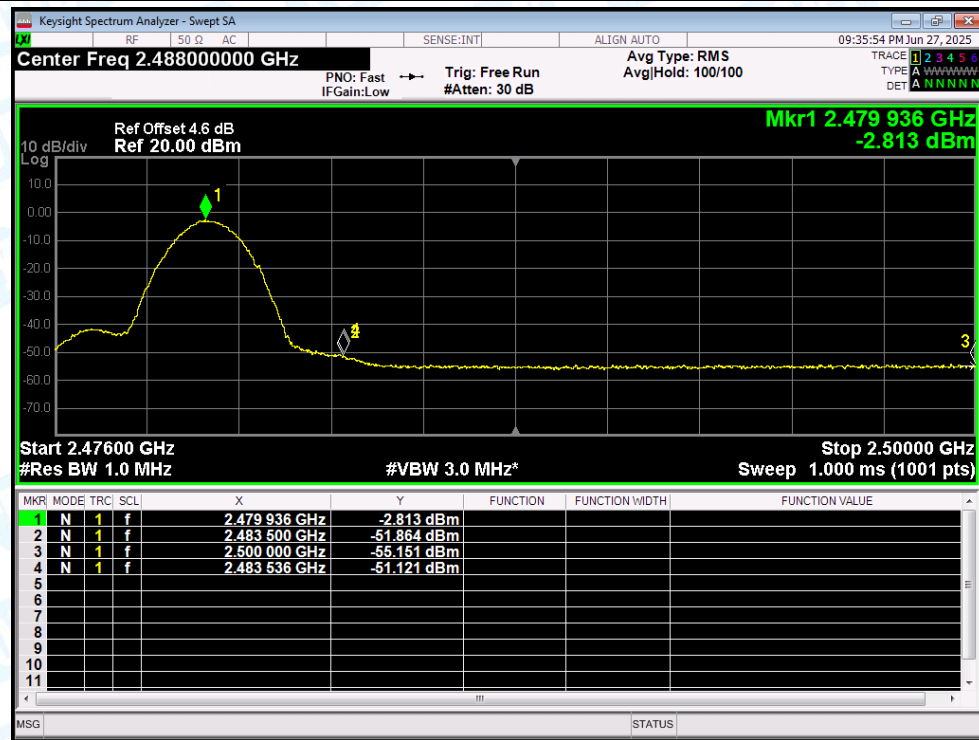
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

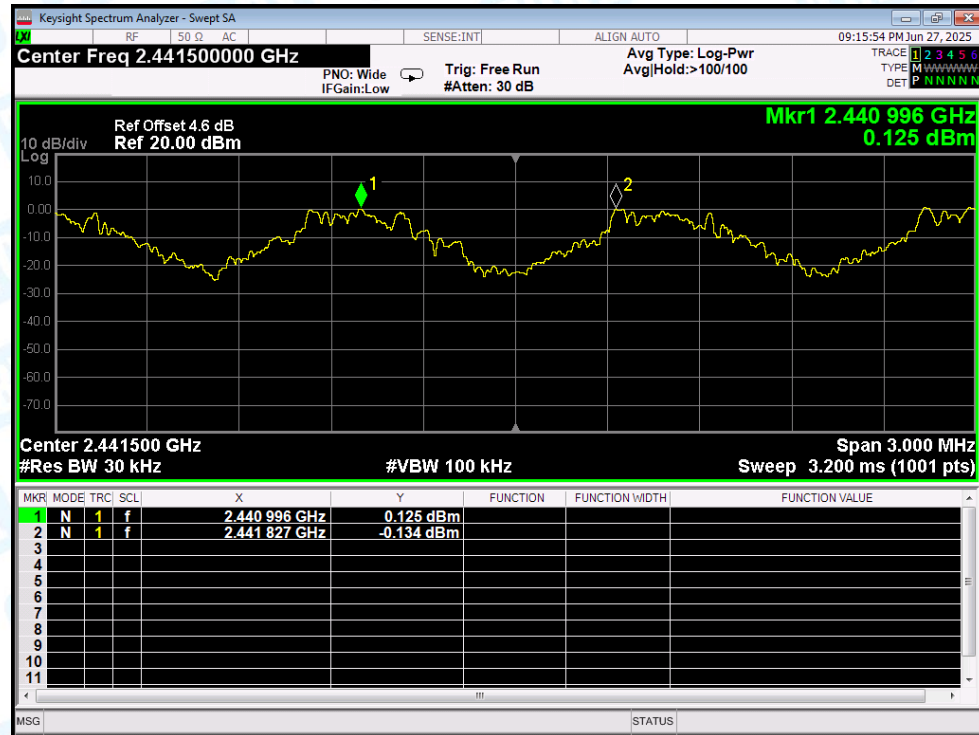


9. Carrier Frequencies Separation

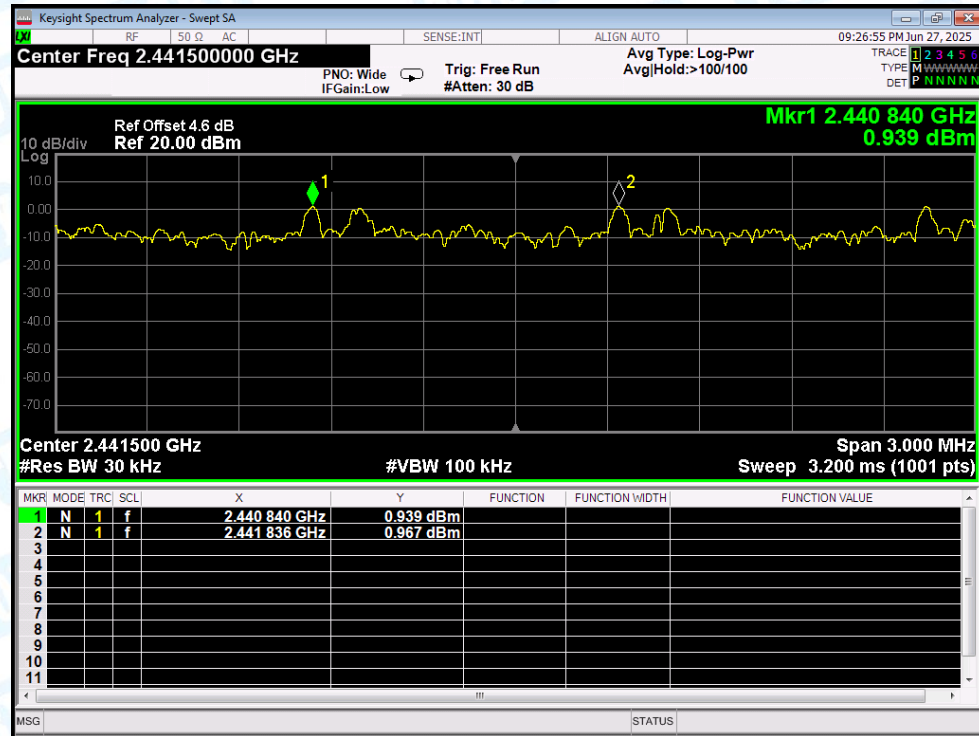
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.996	2441.827	0.831	0.587	Pass
NVNT	2-DH1	Ant1	2440.84	2441.836	0.996	0.8	Pass
NVNT	3-DH1	Ant1	2440.978	2441.998	1.02	0.833	Pass

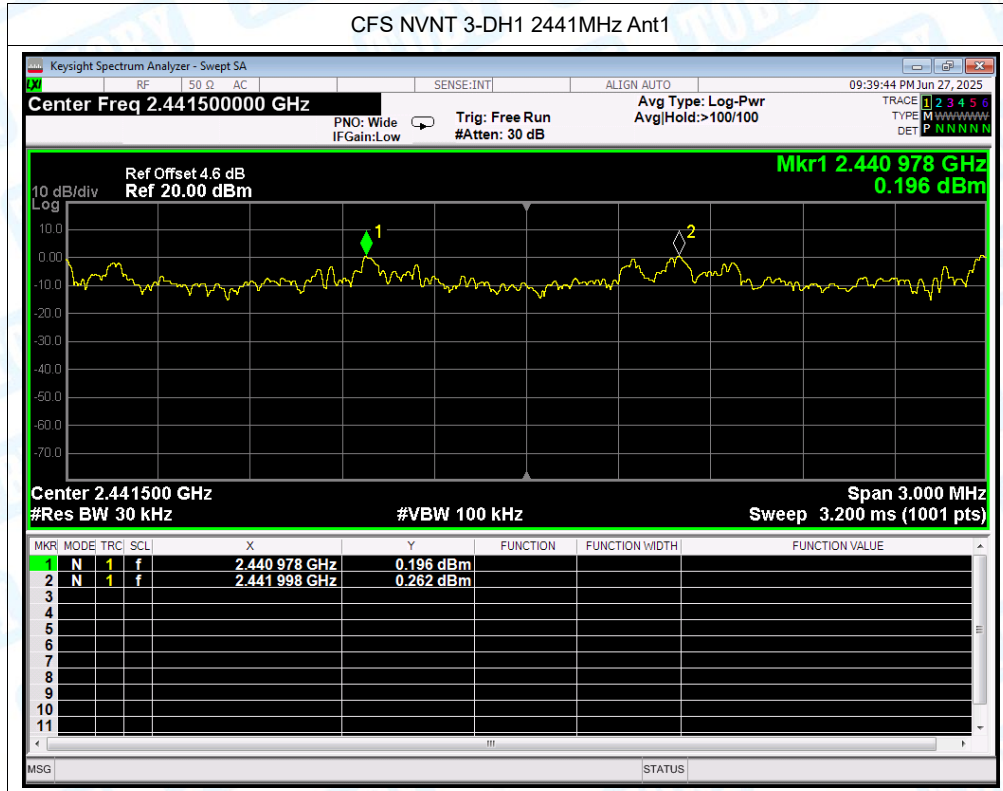
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



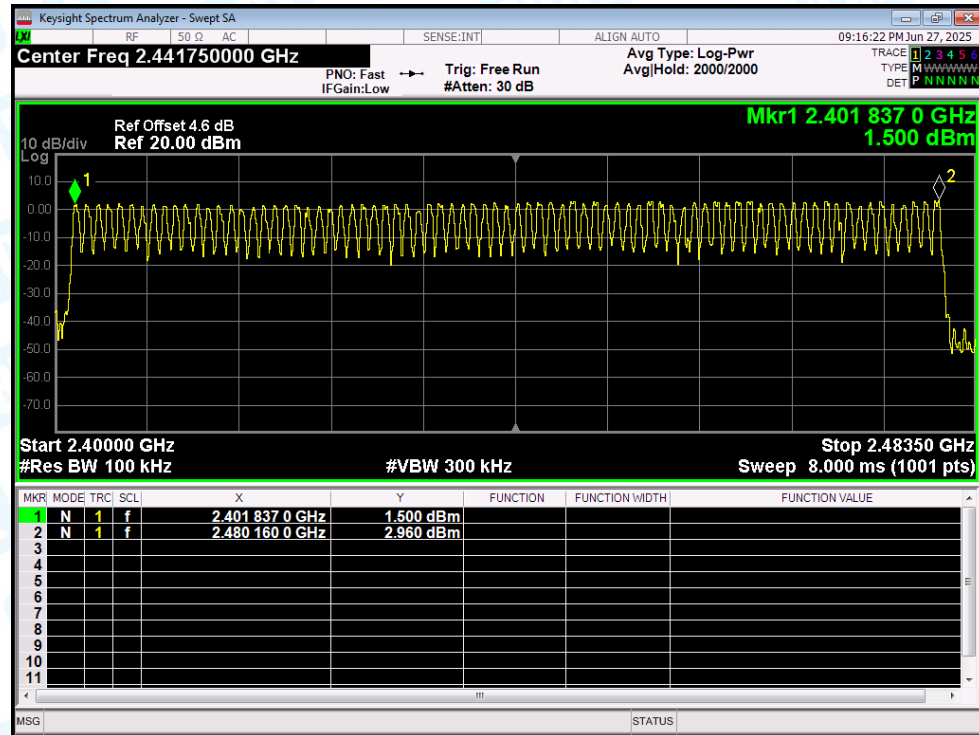


10. Number of Hopping Channel

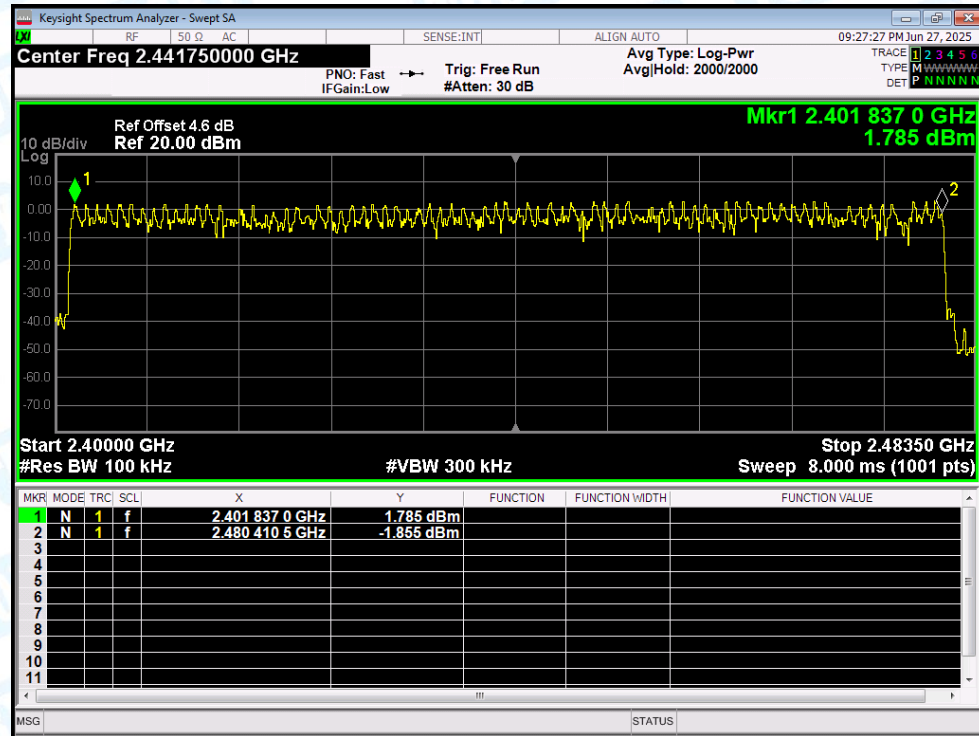
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

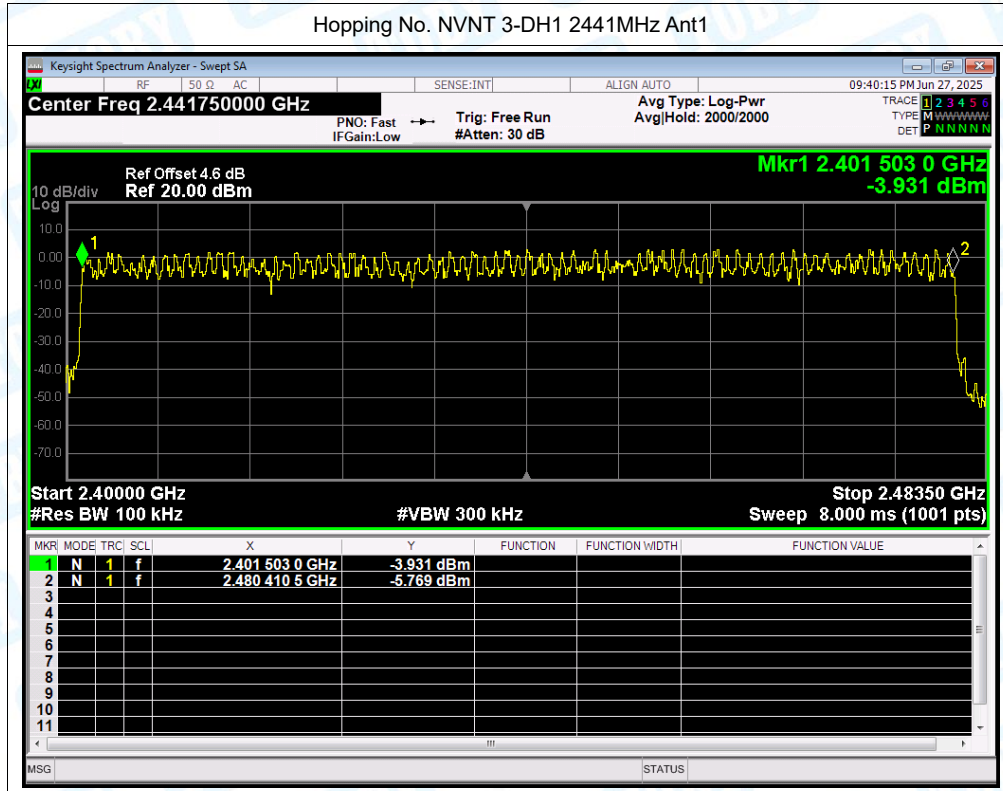
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



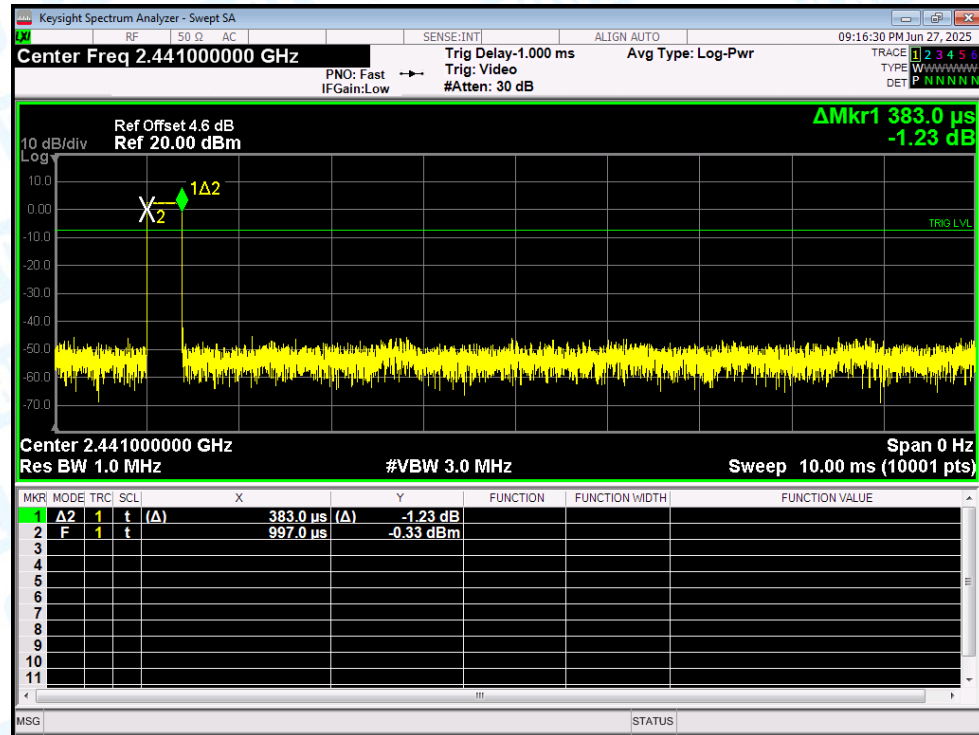


11. Dwell Time

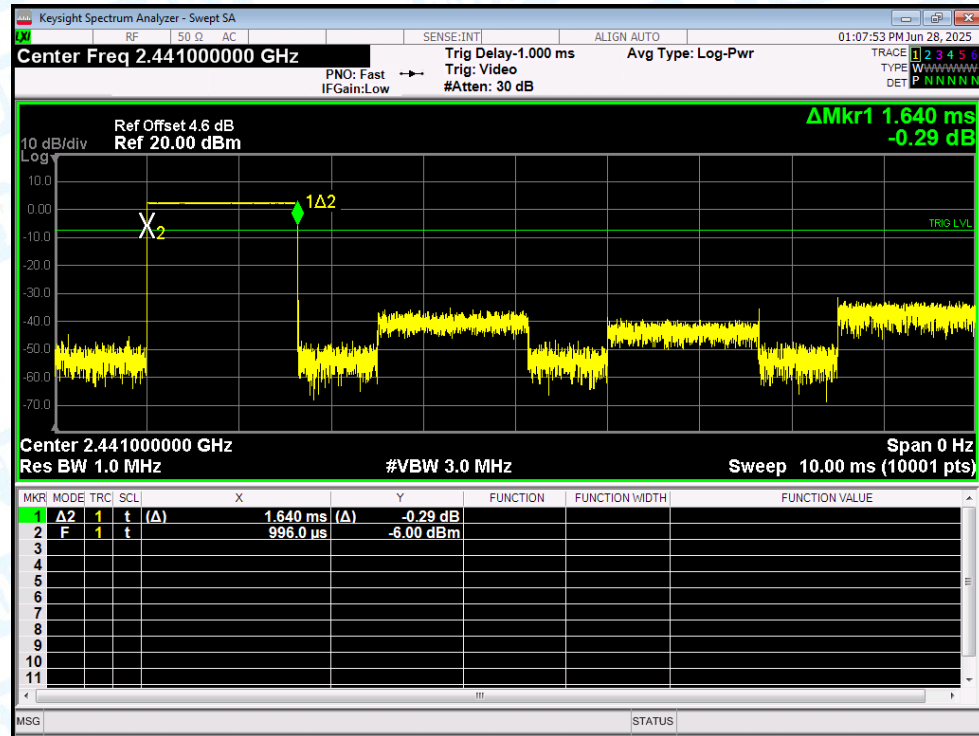
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.383	122.56	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.64	262.4	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.887	307.947	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.392	125.44	31600	400	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

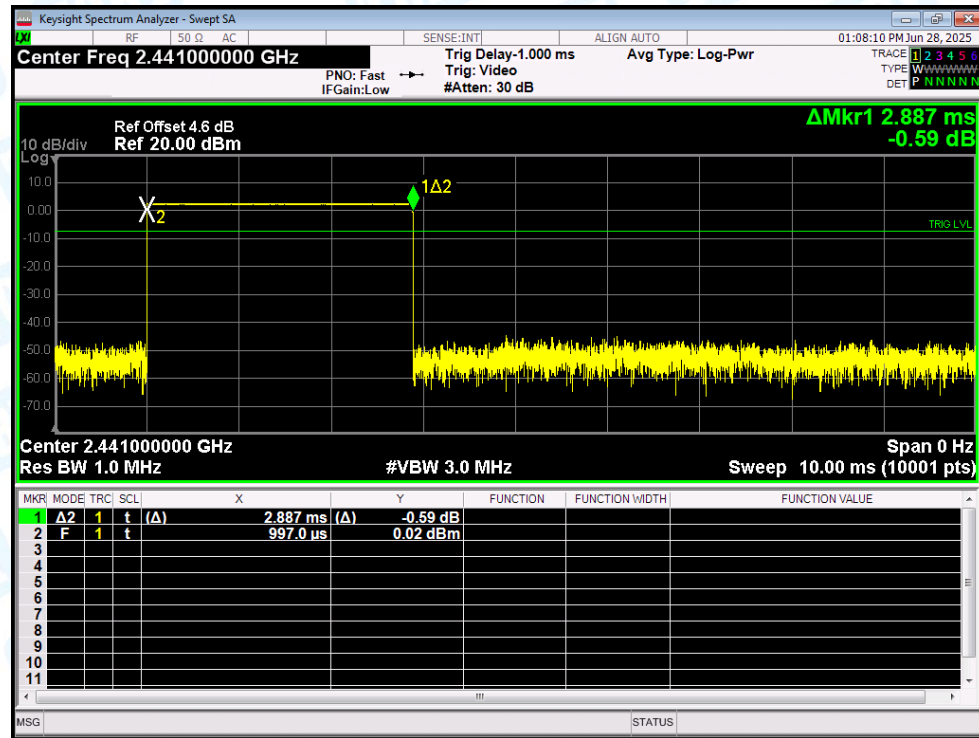
Dwell NVNT 1-DH1 2441MHz Ant1



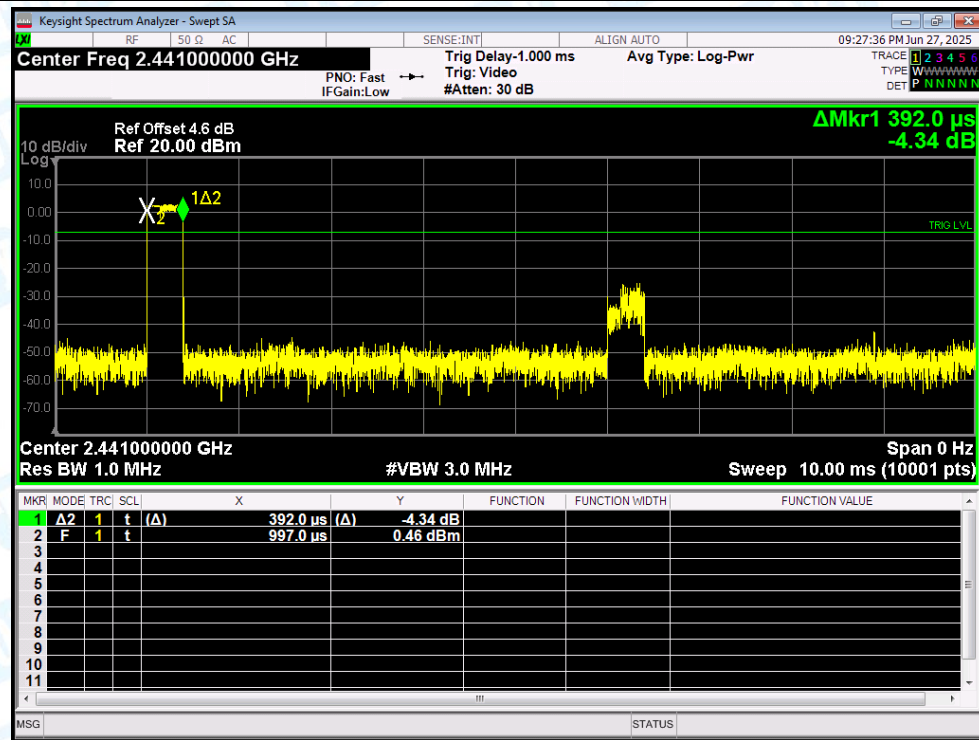
Dwell NVNT 1-DH3 2441MHz Ant1



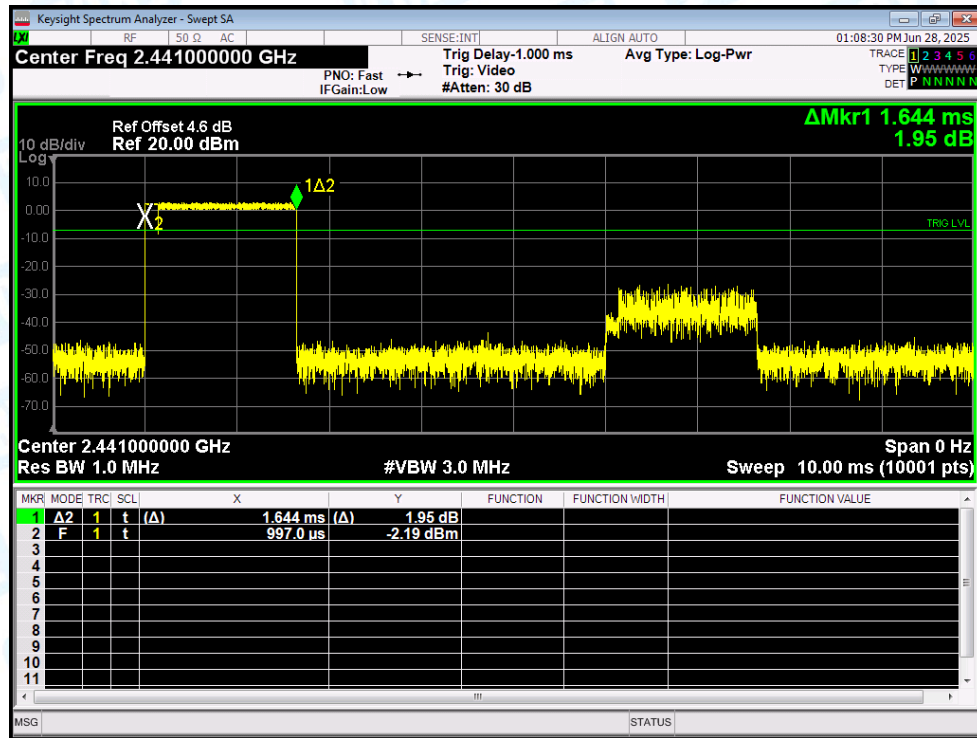
Dwell NVNT 1-DH5 2441MHz Ant1



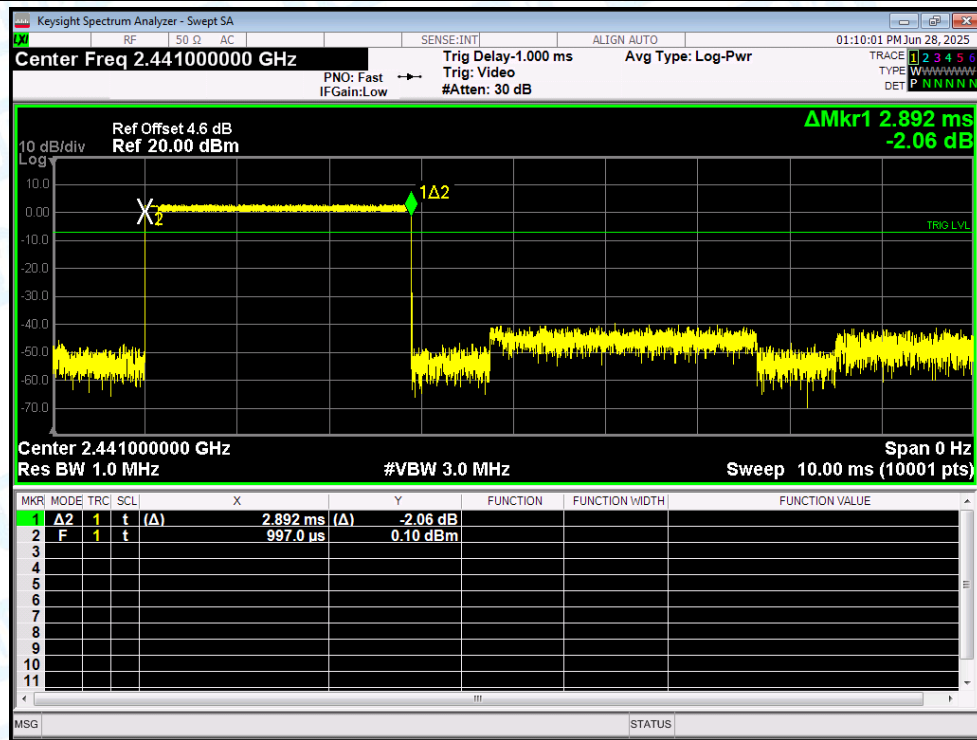
Dwell NVNT 2-DH1 2441MHz Ant1



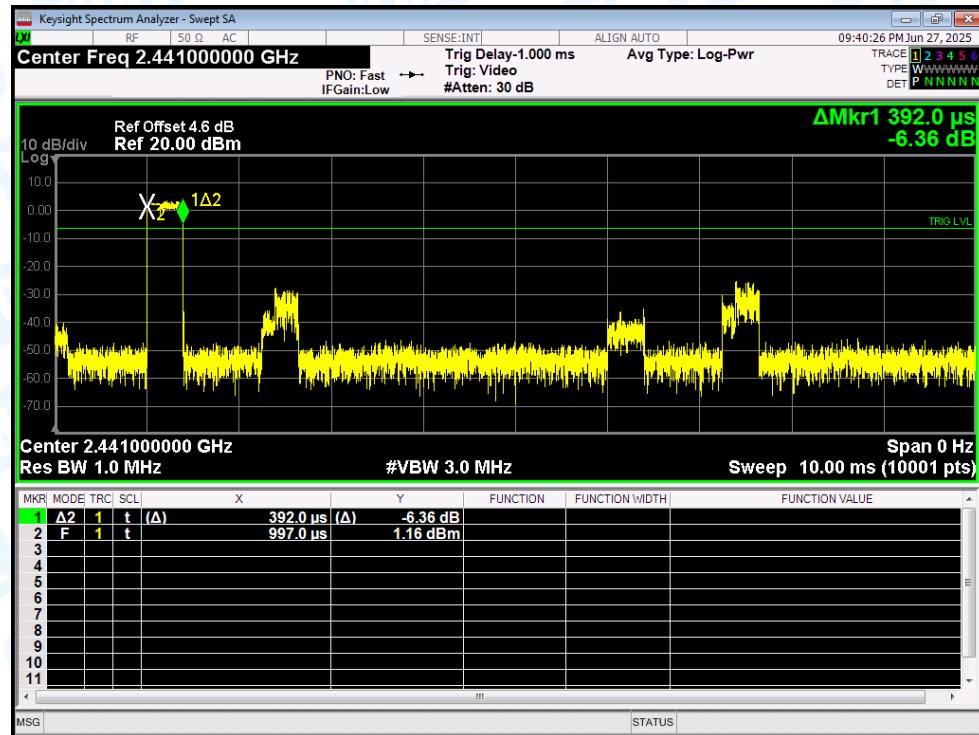
Dwell NVNT 2-DH3 2441MHz Ant1



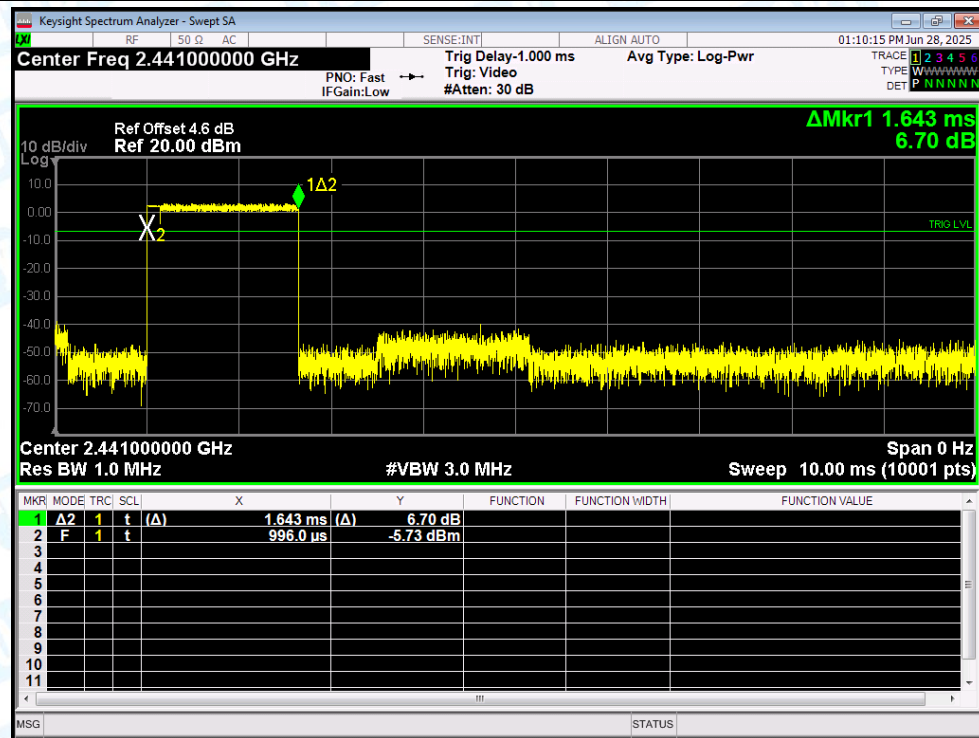
Dwell NVNT 2-DH5 2441MHz Ant1

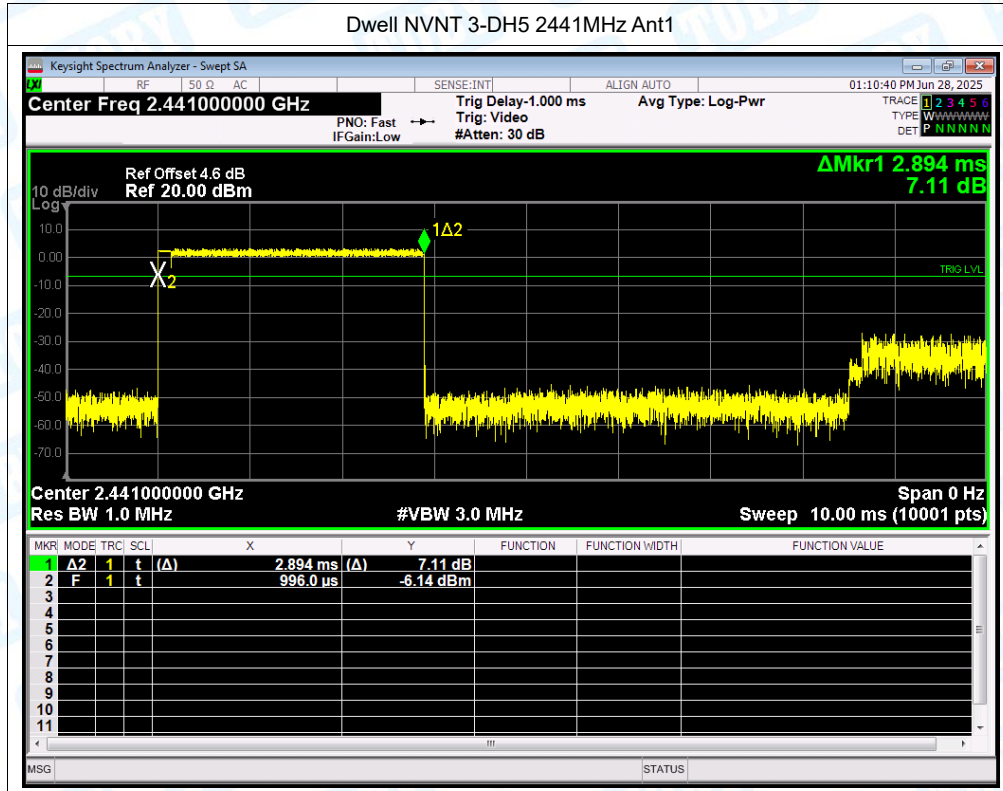


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





--- END OF REPORT ---