

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	Bluetooth TWS headsets
Test Model:	T15
Sample ID:	HC-C-202502-0088-01-02#
Environmental Conditions	
Temperature:	25℃
Relative Humidity:	55%
Test Voltage:	DC 3.7V
Test Engineer:	Lily Zhang
Note: For a more detailed features description, please refer to the report TBR-C-202502-0088-3 The report only show the worst case data.	

Contents

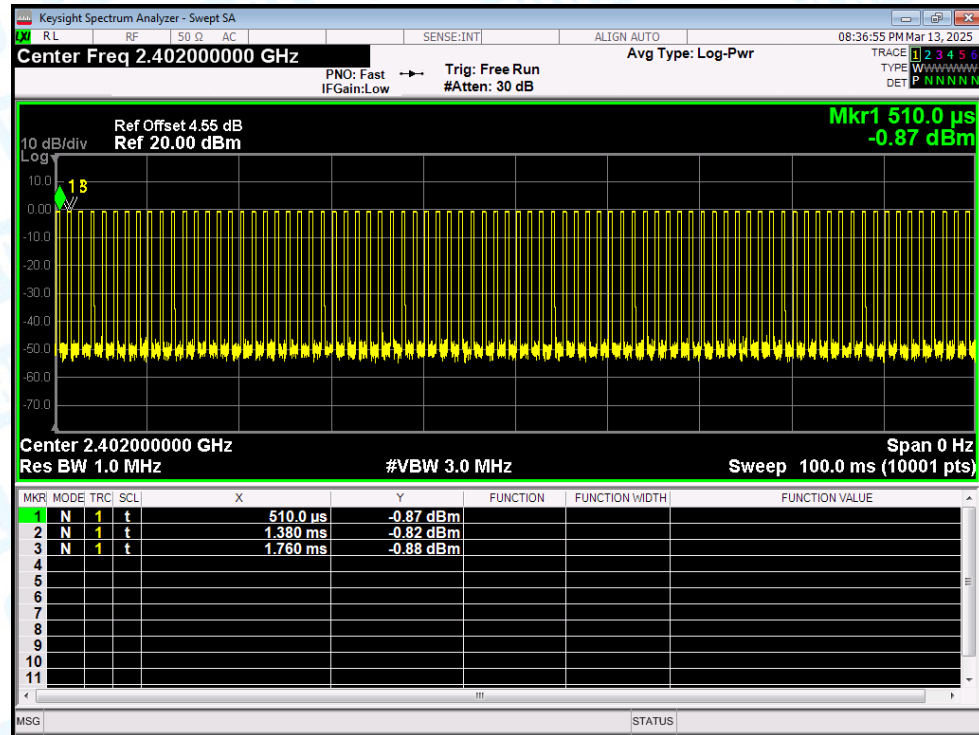
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1.Duty Cycle

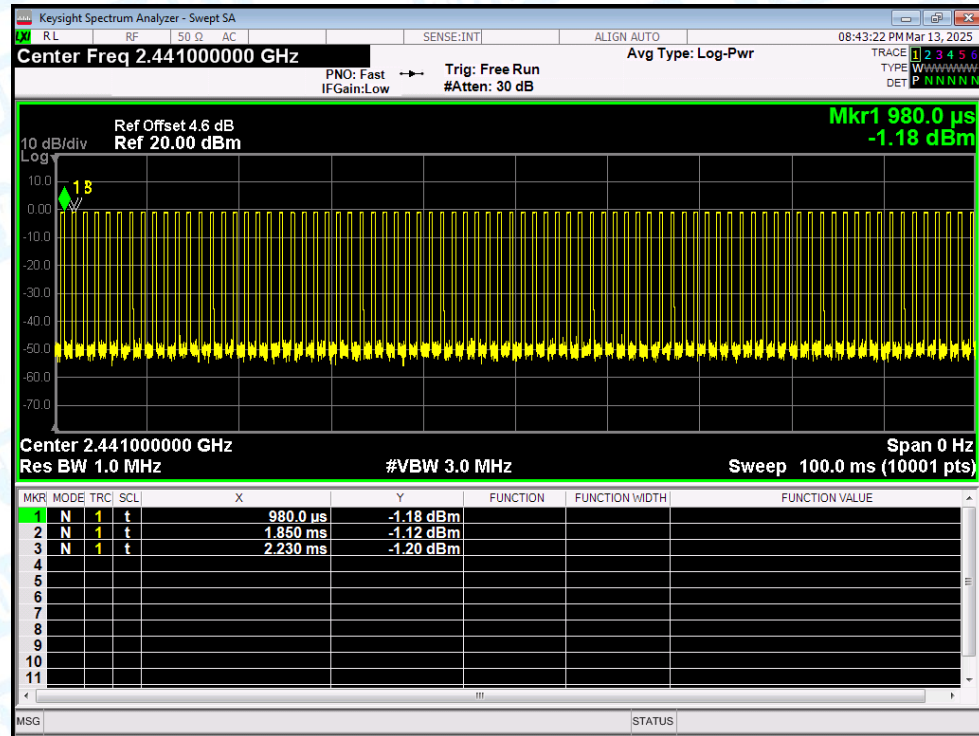
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2441	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2480	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2441	Ant1	32	4.95	2.5
NVNT	2-DH1	2480	Ant1	31.2	5.06	2.56

Test Graphs

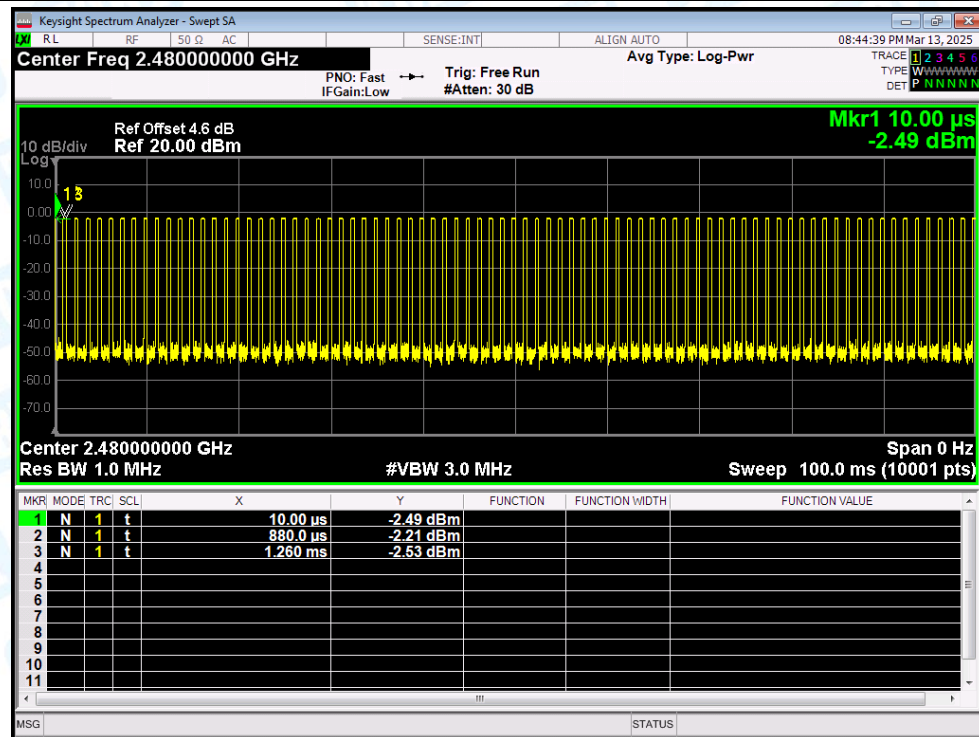
Duty Cycle NVNT 1-DH1 2402MHz Ant1



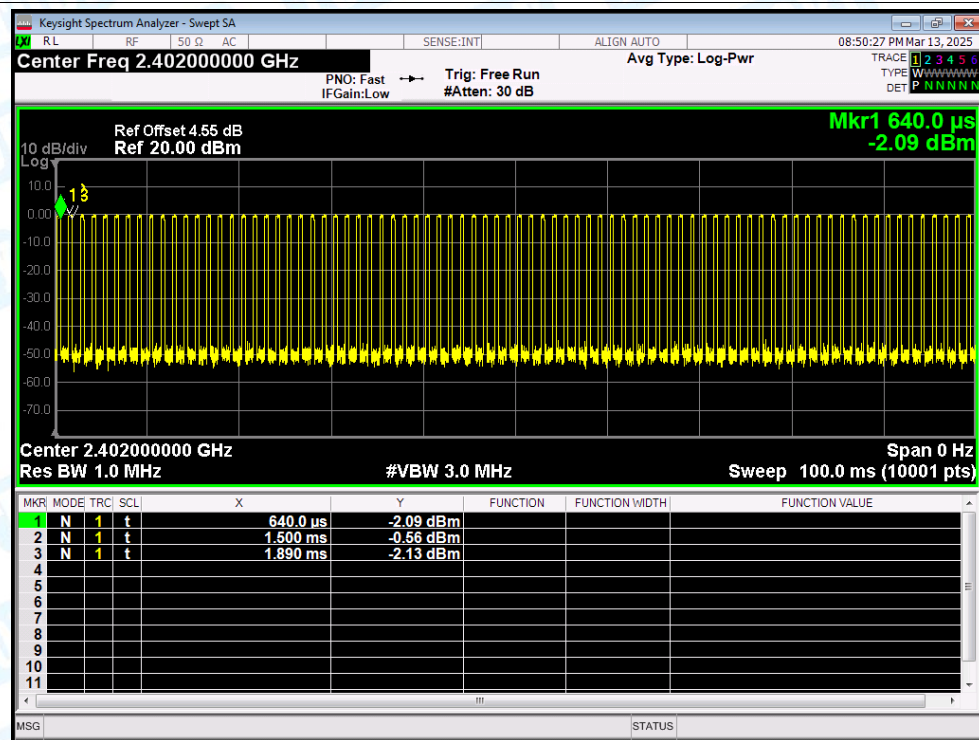
Duty Cycle NVNT 1-DH1 2441MHz Ant1



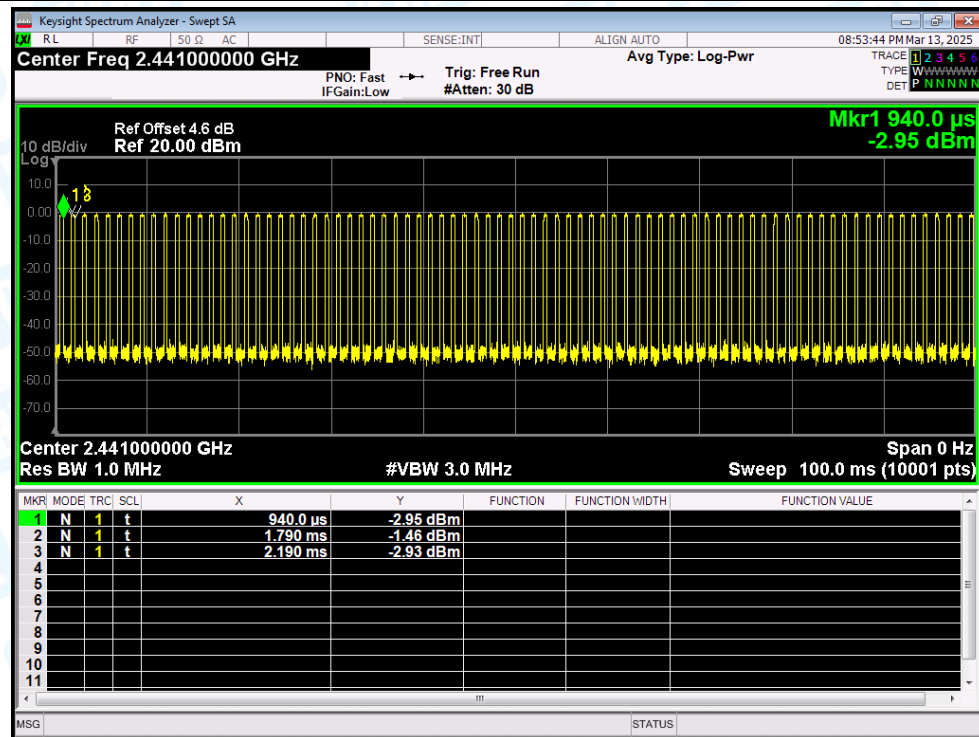
Duty Cycle NVNT 1-DH1 2480MHz Ant1



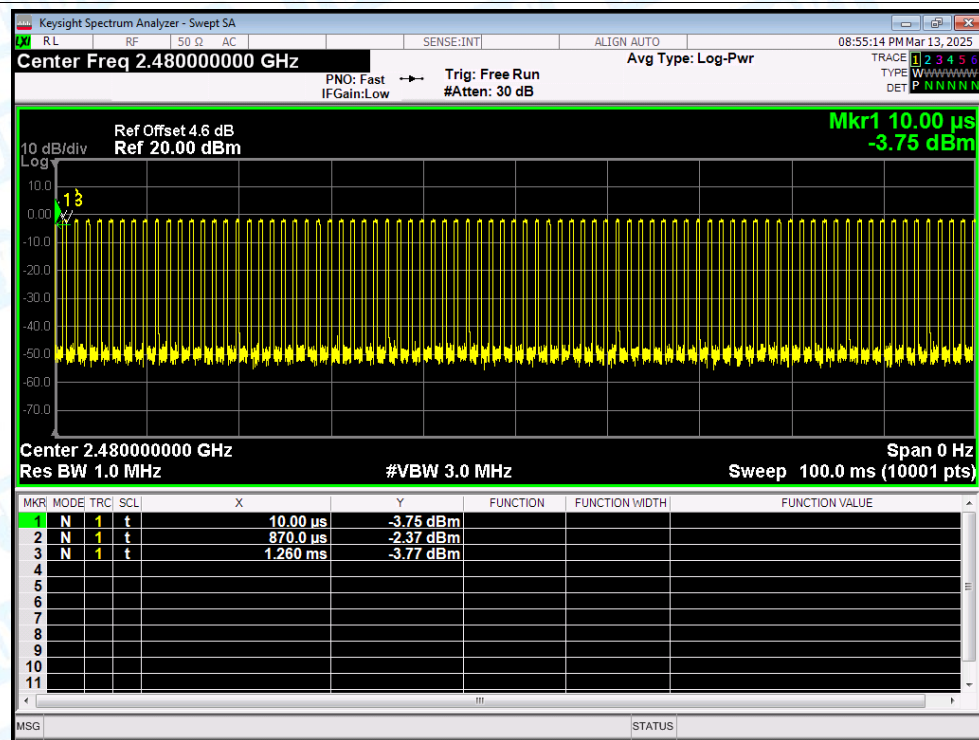
Duty Cycle NVNT 2-DH1 2402MHz Ant1



Duty Cycle NVNT 2-DH1 2441MHz Ant1



Duty Cycle NVNT 2-DH1 2480MHz Ant1

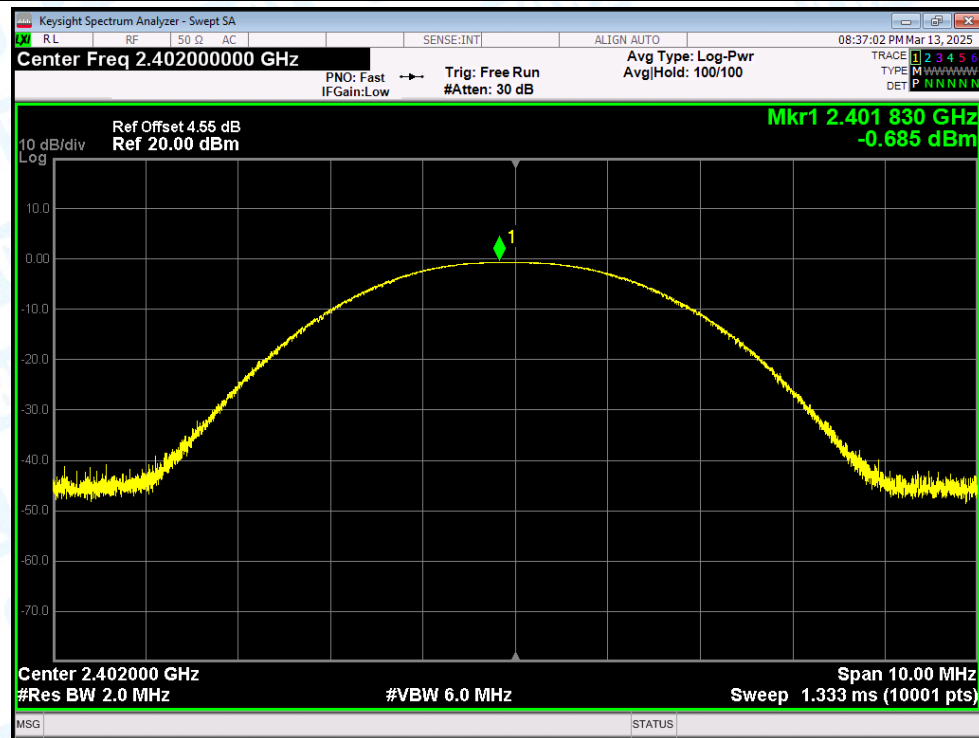


2.Maximum Conducted Output Power

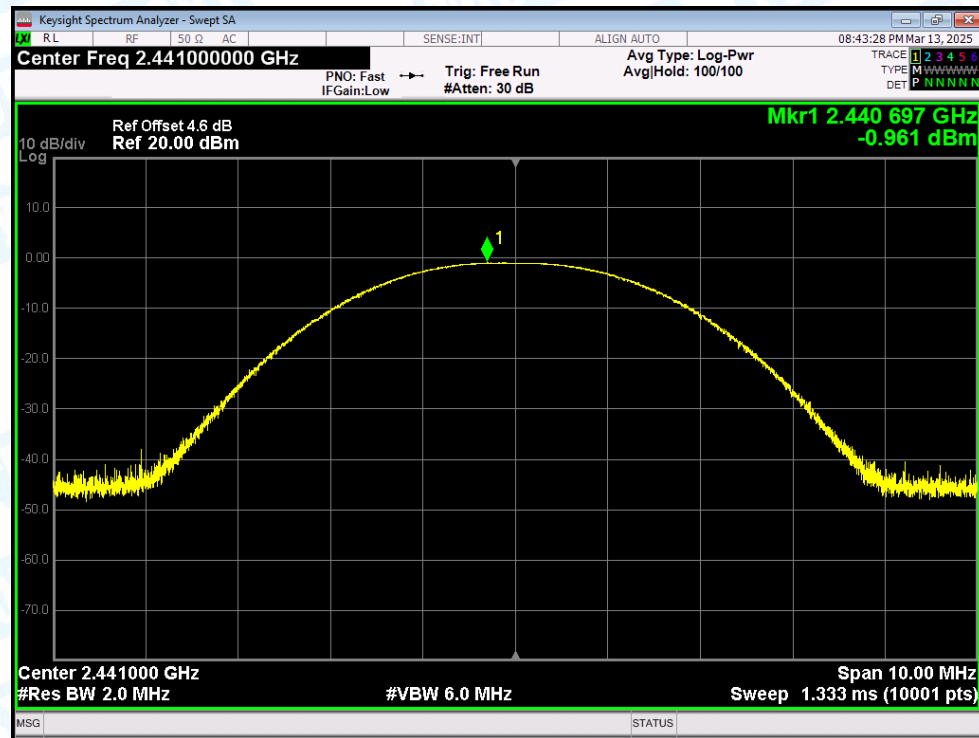
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	-0.685	21	Pass
NVNT	1-DH1	2441	Ant1	-0.961	21	Pass
NVNT	1-DH1	2480	Ant1	-2.082	21	Pass
NVNT	1-DH3	2441	Ant1	-1.098	21	Pass
NVNT	1-DH5	2441	Ant1	-1.259	21	Pass
NVNT	2-DH1	2402	Ant1	0.422	21	Pass
NVNT	2-DH1	2441	Ant1	-0.098	21	Pass
NVNT	2-DH1	2480	Ant1	-1.293	21	Pass
NVNT	2-DH3	2441	Ant1	-0.322	21	Pass
NVNT	2-DH5	2441	Ant1	-0.343	21	Pass

Test Graphs

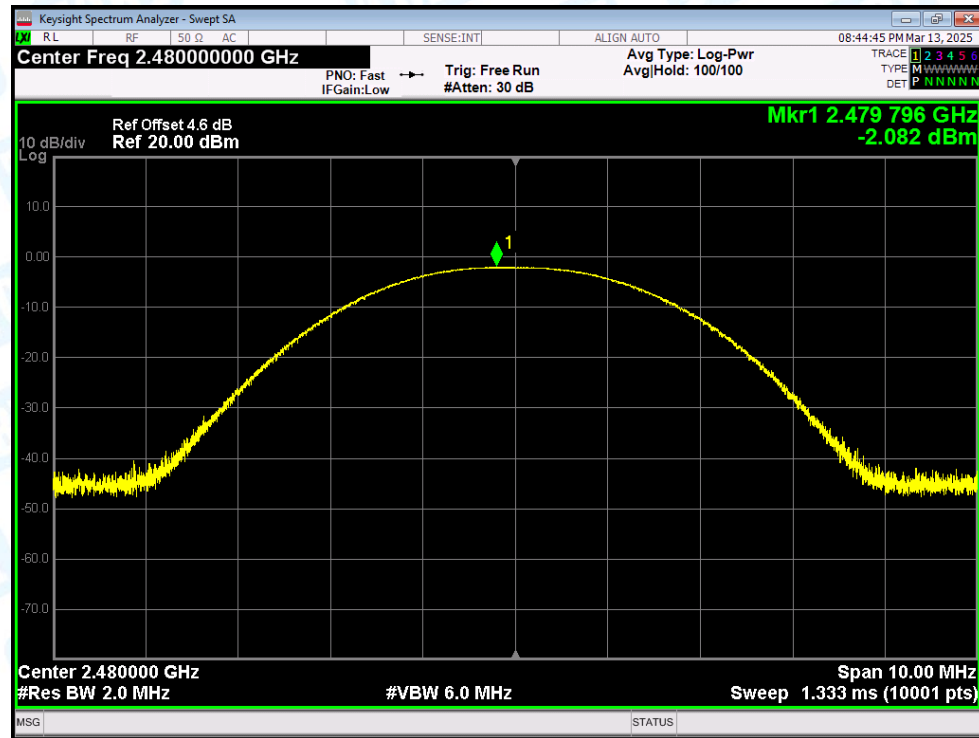
Power NVNT 1-DH1 2402MHz Ant1



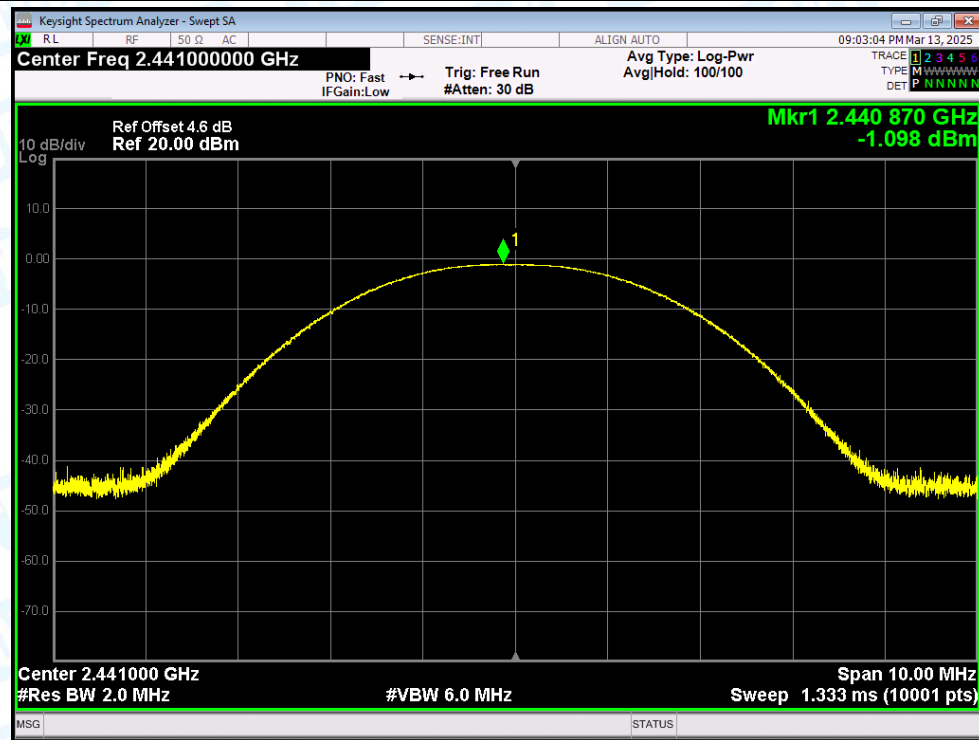
Power NVNT 1-DH1 2441MHz Ant1



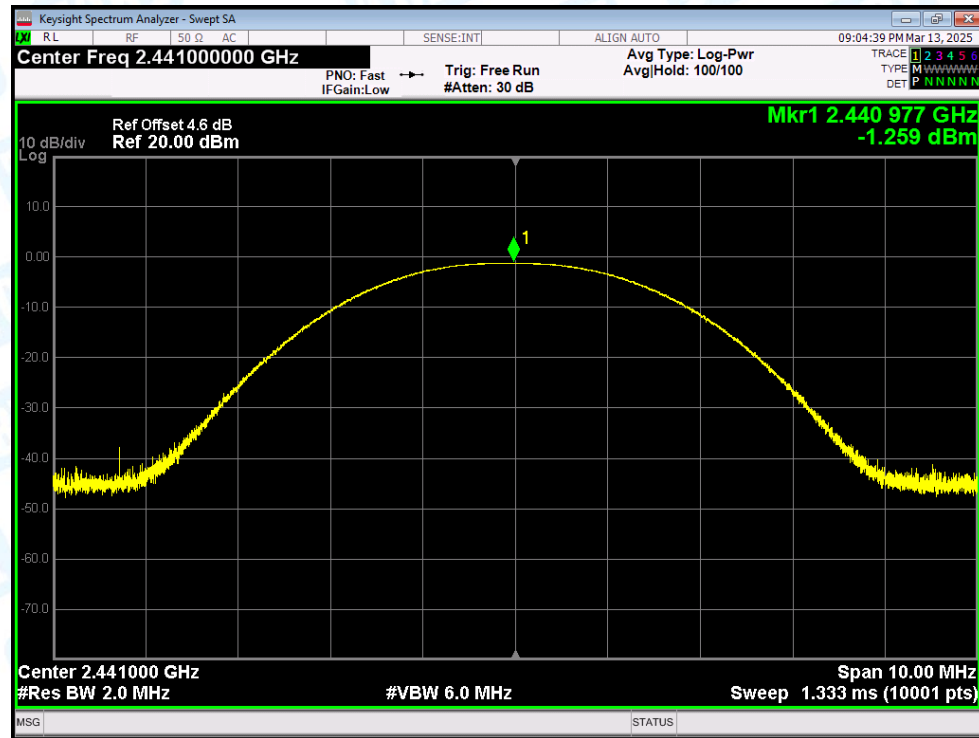
Power NVNT 1-DH1 2480MHz Ant1



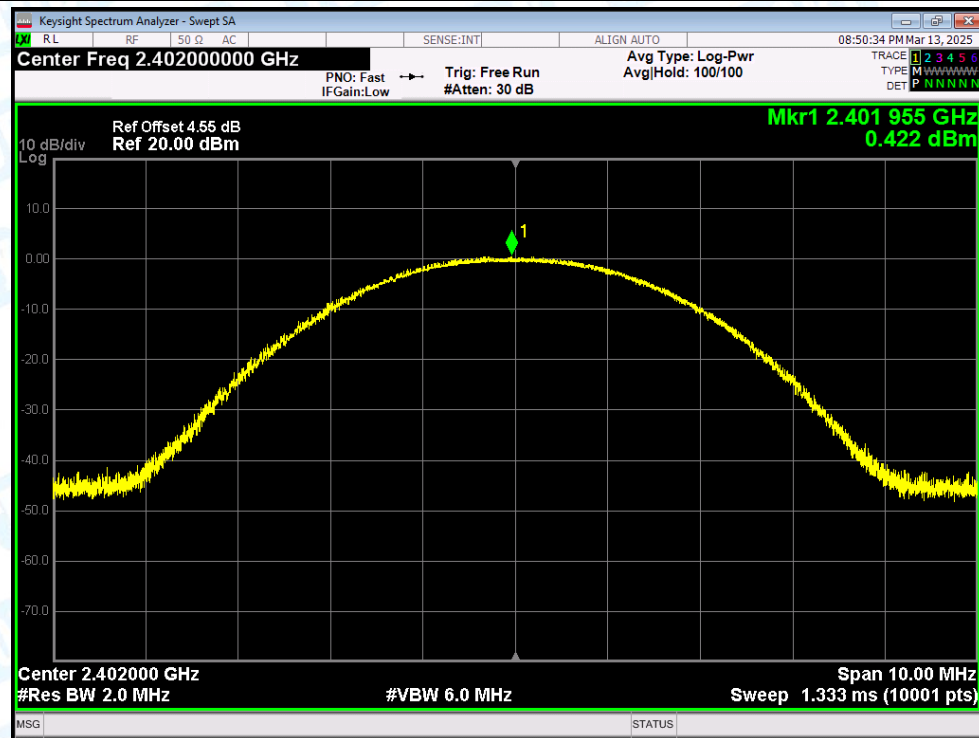
Power NVNT 1-DH3 2441MHz Ant1



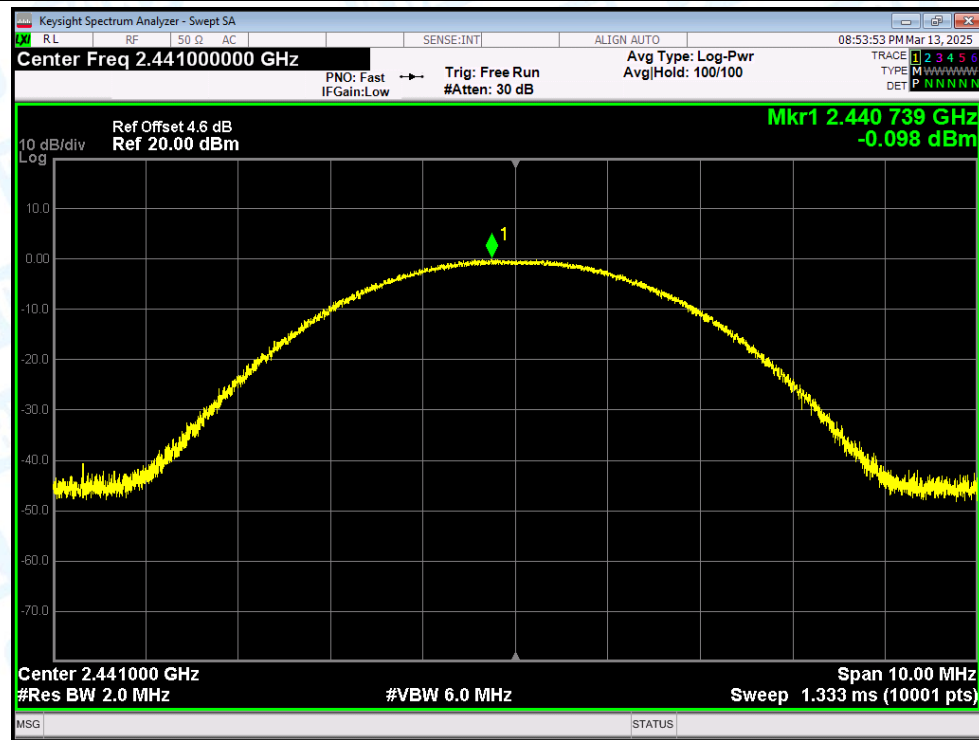
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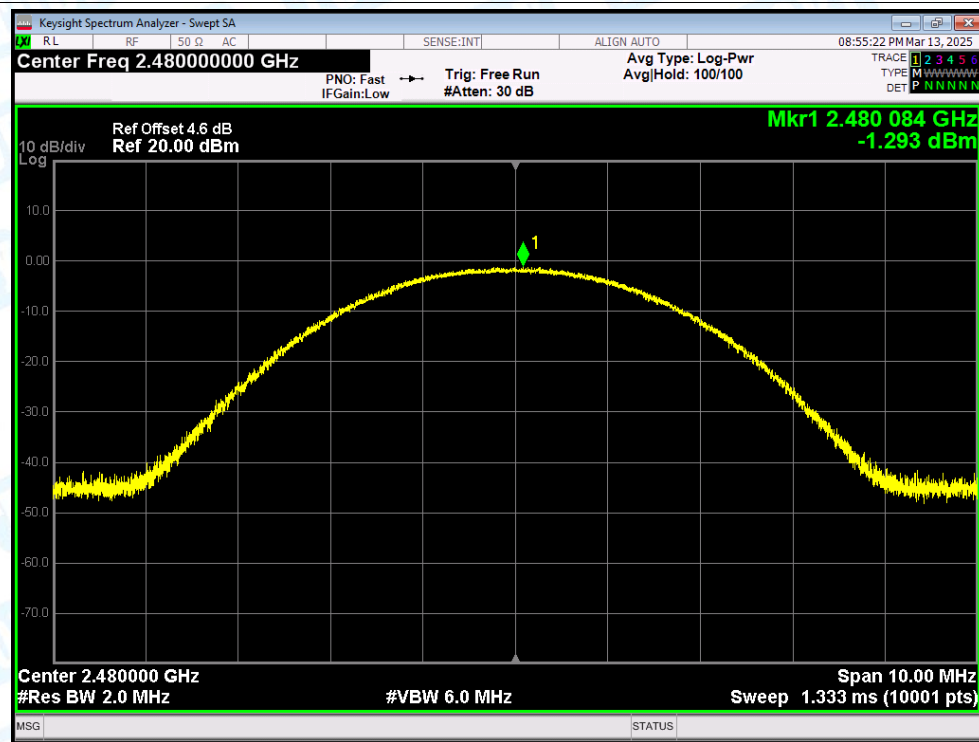
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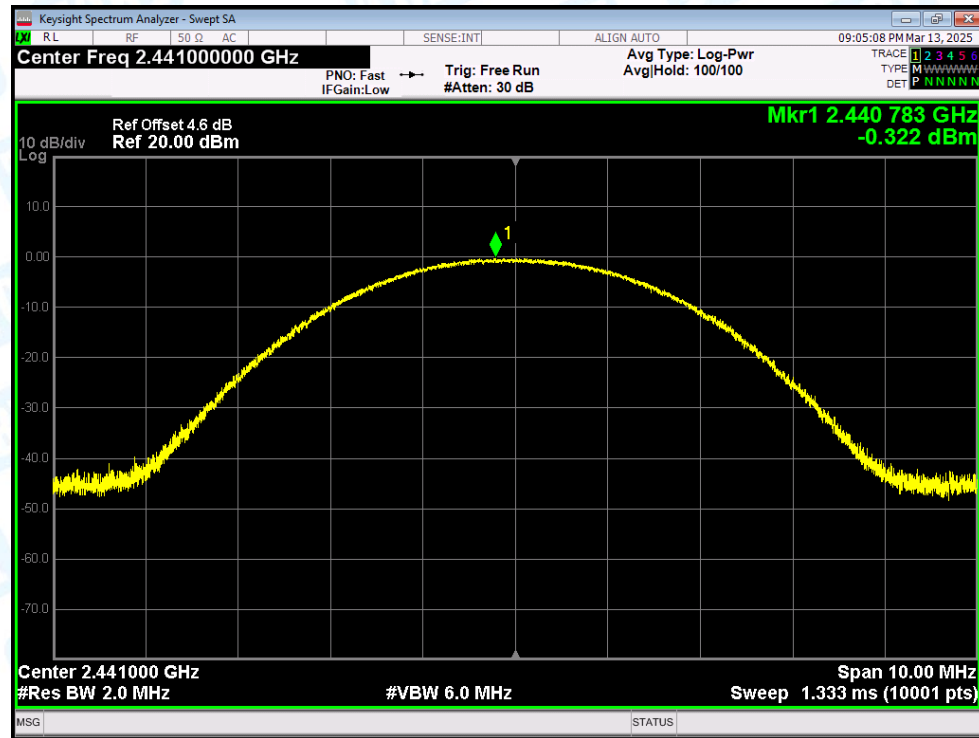
Power NVNT 2-DH1 2441MHz Ant1



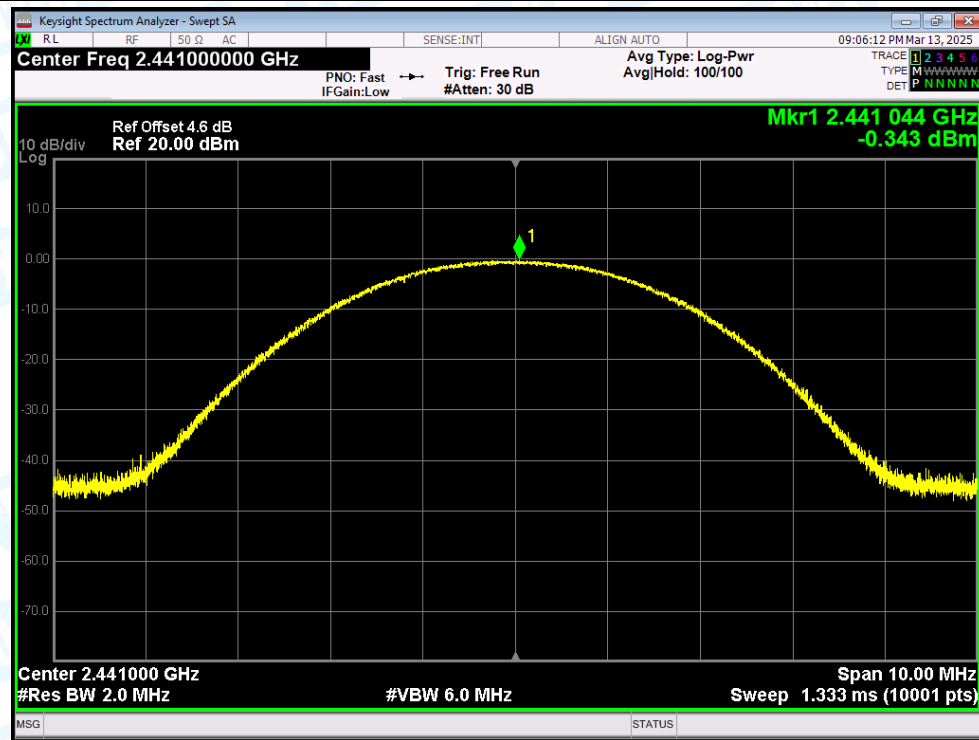
Power NVNT 2-DH1 2480MHz Ant1



Power NVNT 2-DH3 2441MHz Ant1



Power NVNT 2-DH5 2441MHz Ant1

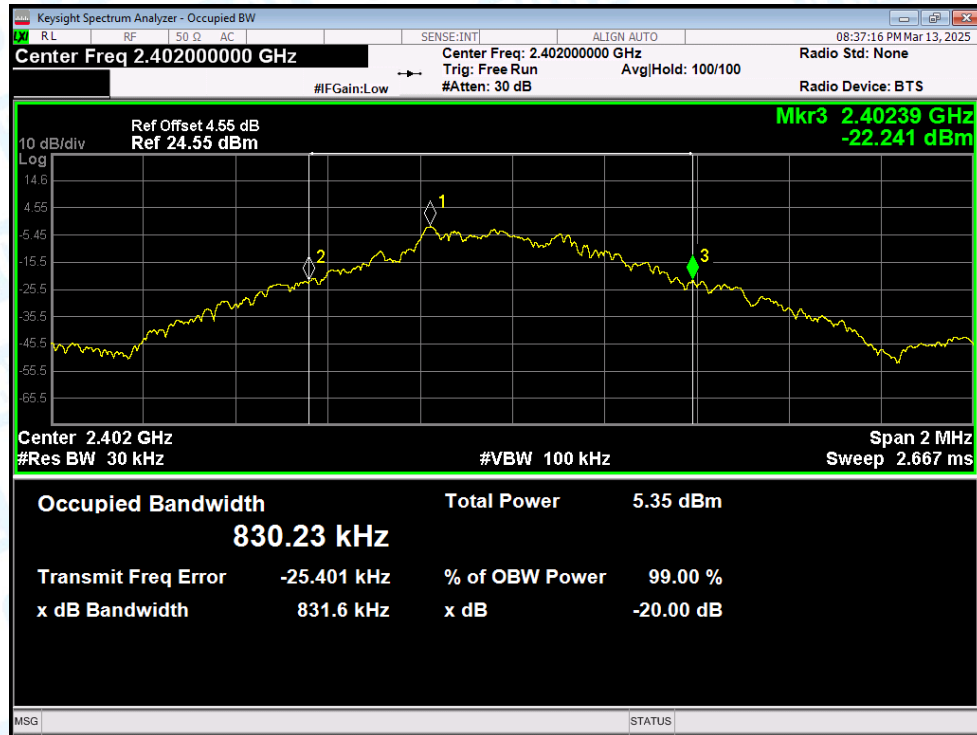


3.-20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.83	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	1.24	0	Pass
NVNT	2-DH1	2441	Ant1	1.25	0	Pass
NVNT	2-DH1	2480	Ant1	1.23	0	Pass

Test Graphs

-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



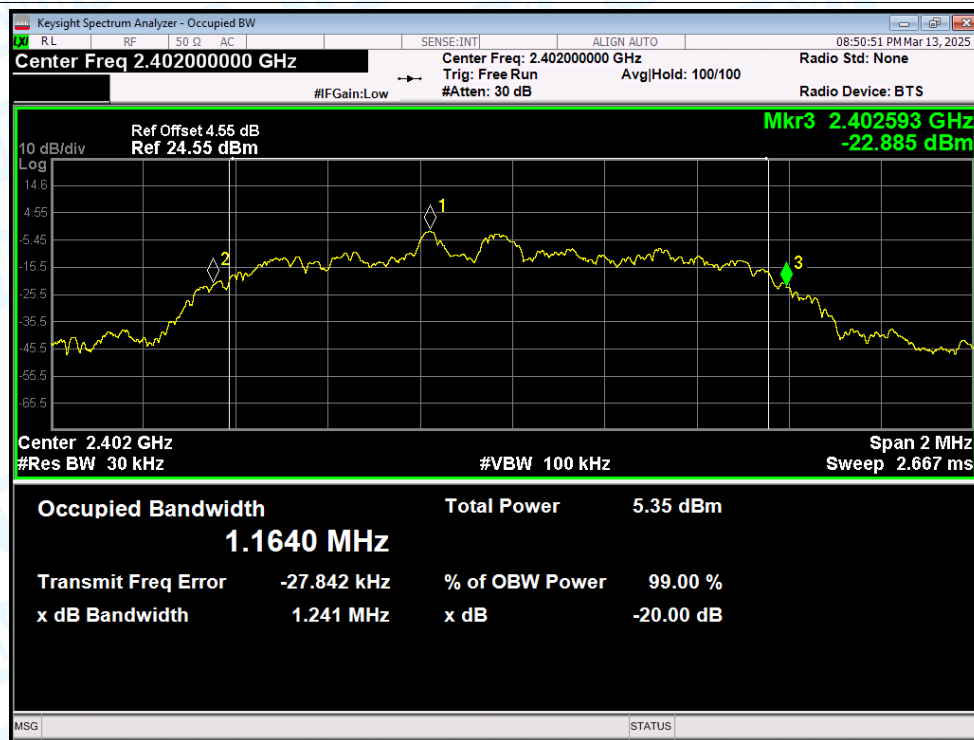
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



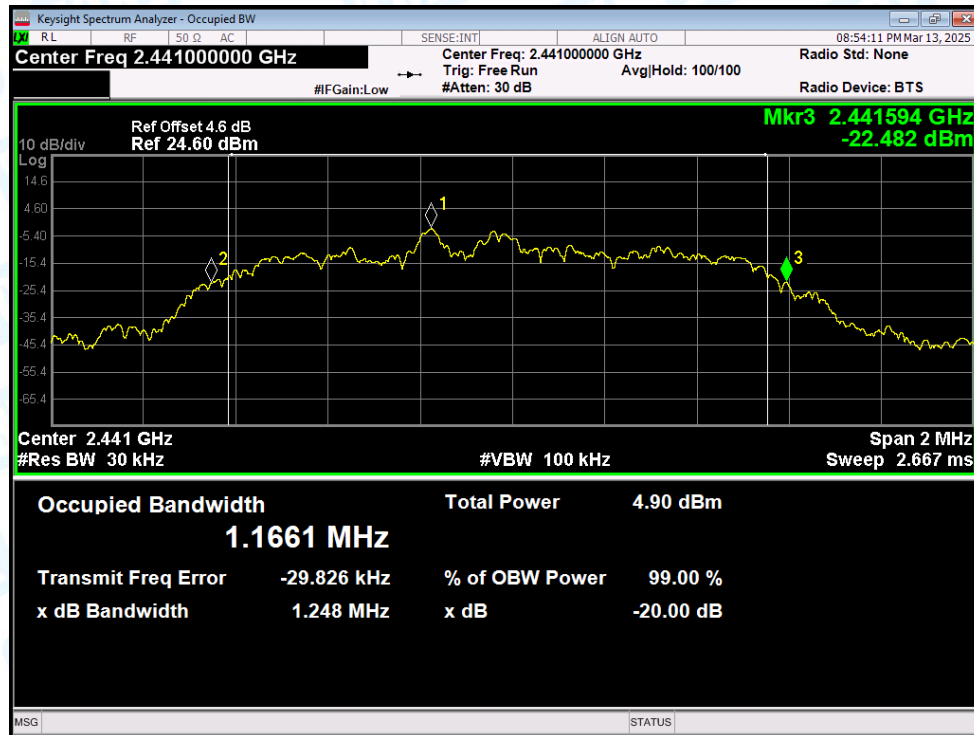
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



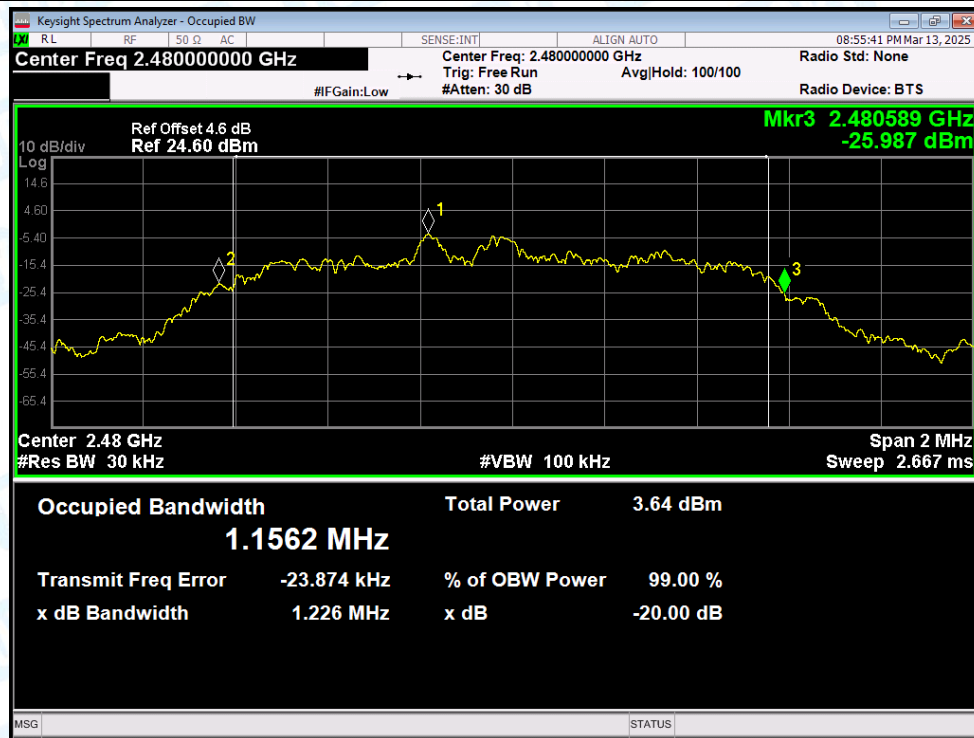
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

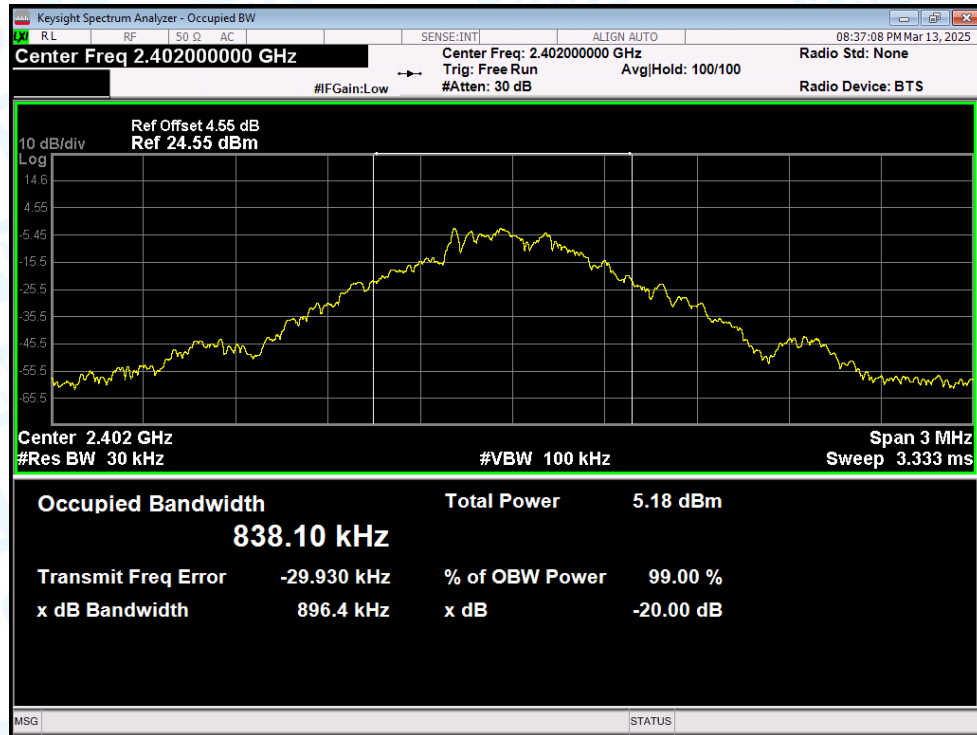


4.Occupied Channel Bandwidth

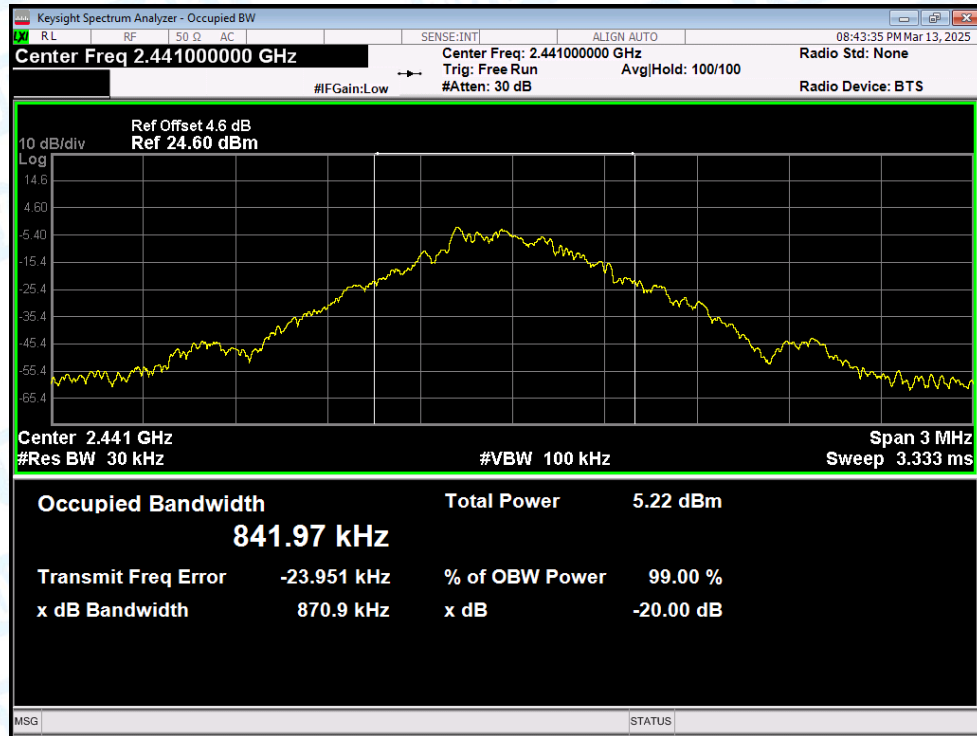
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.838
NVNT	1-DH1	2441	Ant1	0.842
NVNT	1-DH1	2480	Ant1	0.85
NVNT	2-DH1	2402	Ant1	1.154
NVNT	2-DH1	2441	Ant1	1.165
NVNT	2-DH1	2480	Ant1	1.139

Test Graphs

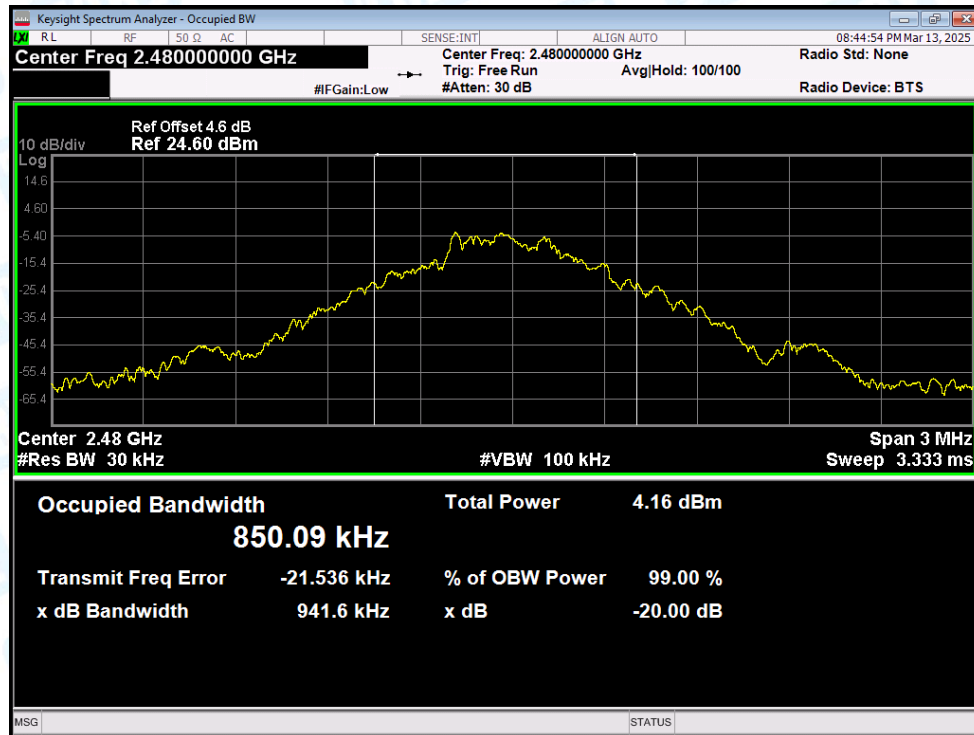
OBW NVNT 1-DH1 2402MHz Ant1



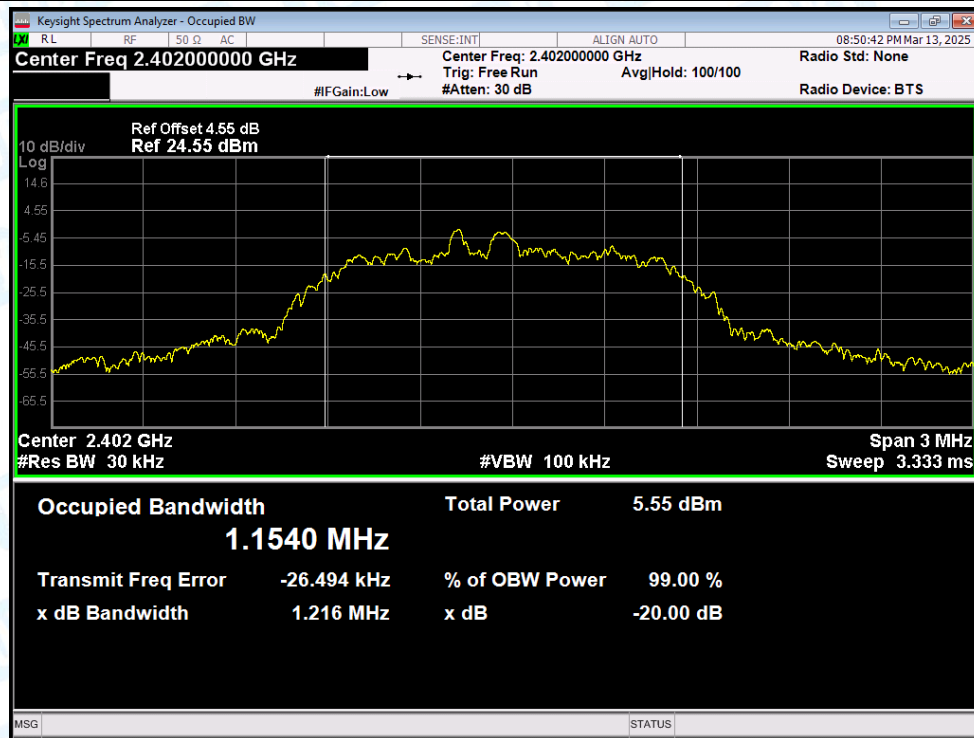
OBW NVNT 1-DH1 2441MHz Ant1



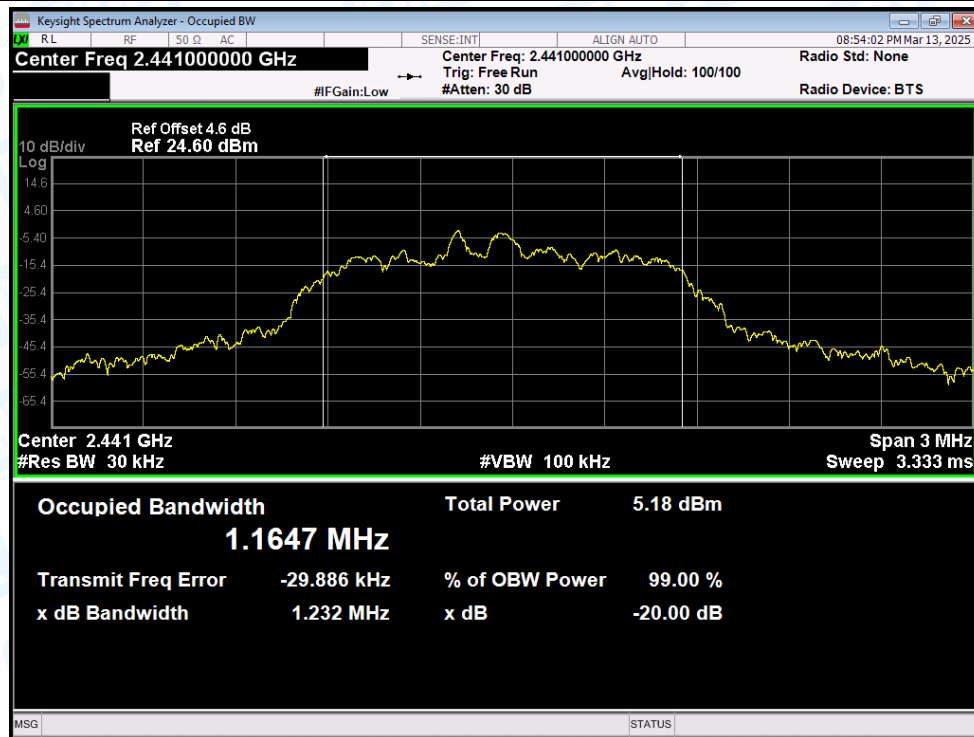
OBW NVNT 1-DH1 2480MHz Ant1



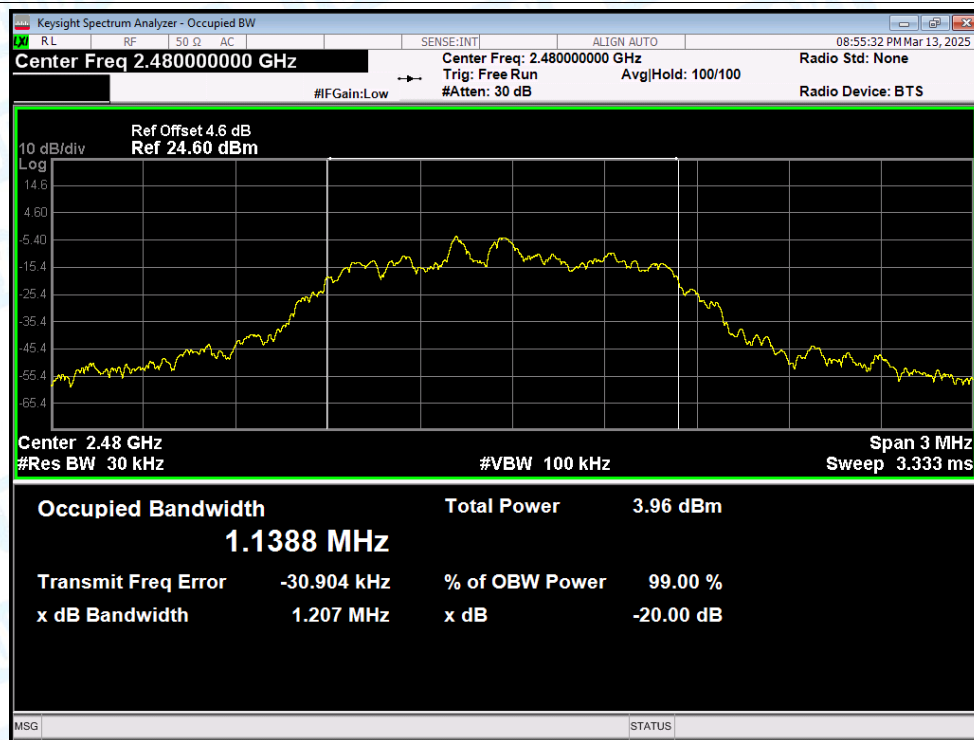
OBW NVNT 2-DH1 2402MHz Ant1



OBW NVNT 2-DH1 2441MHz Ant1



OBW NVNT 2-DH1 2480MHz Ant1

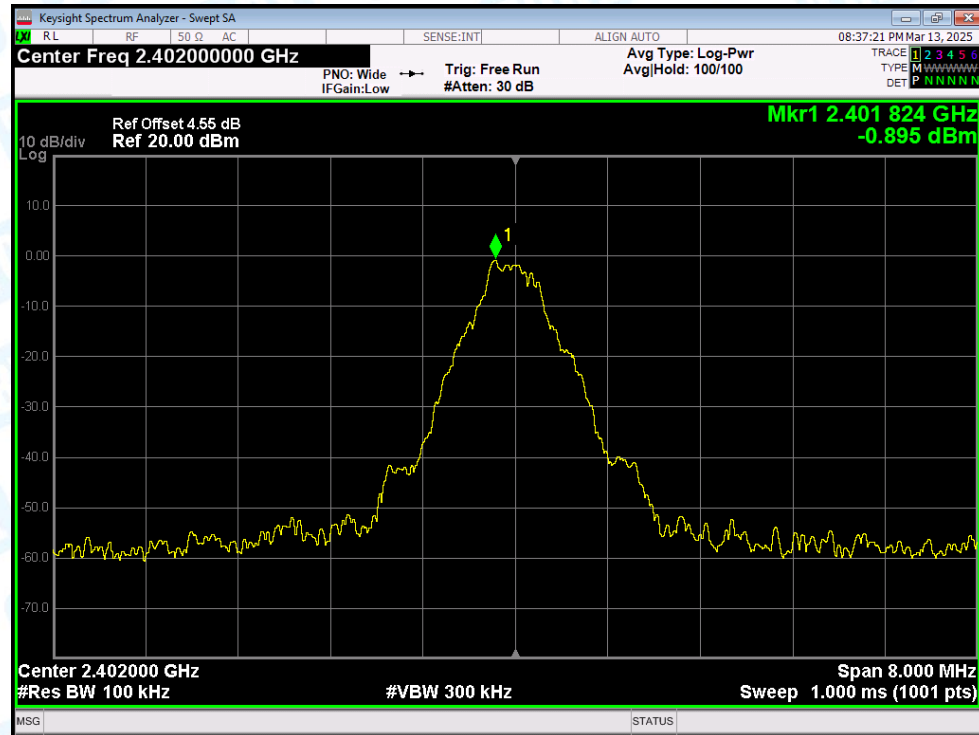


5.Band Edge

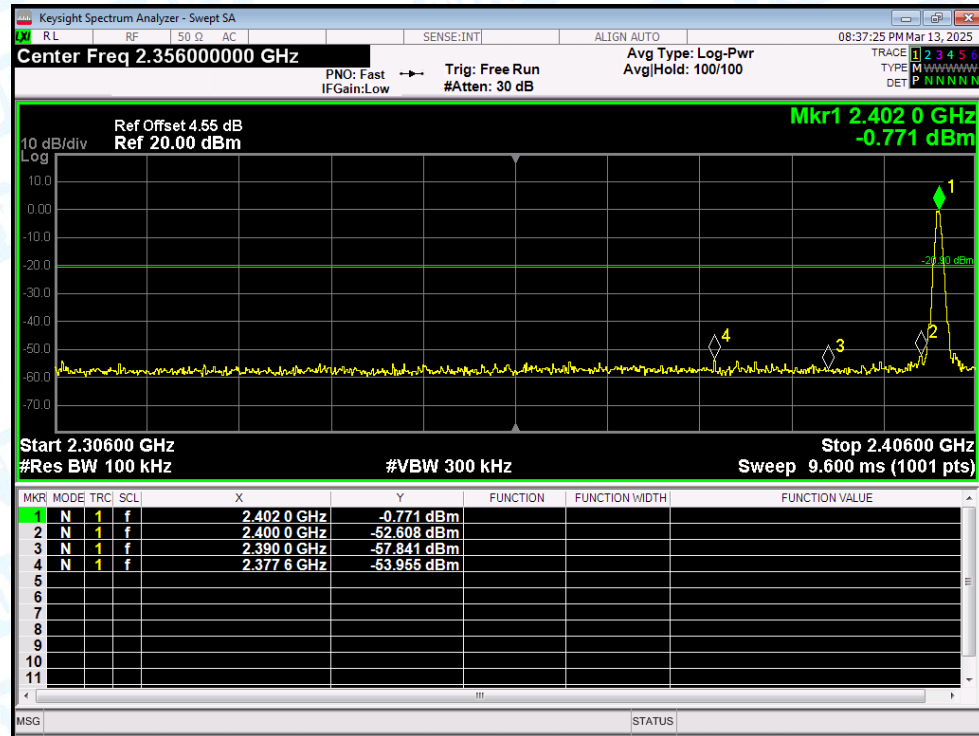
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-53.06	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-52.5	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-53.91	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-50.6	-20	Pass

Test Graphs

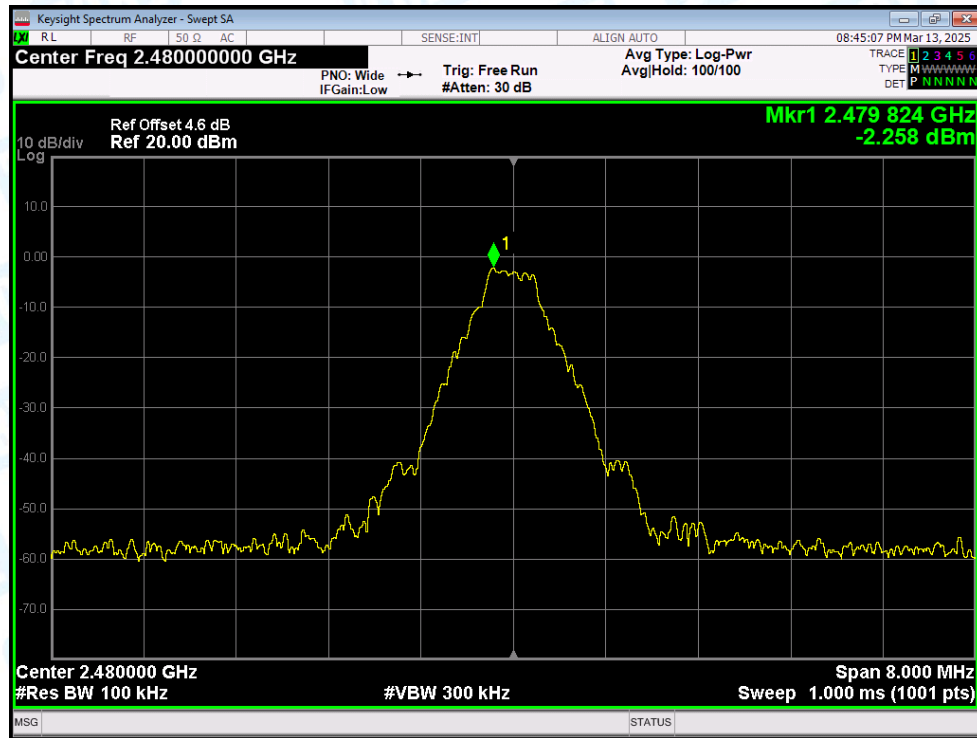
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



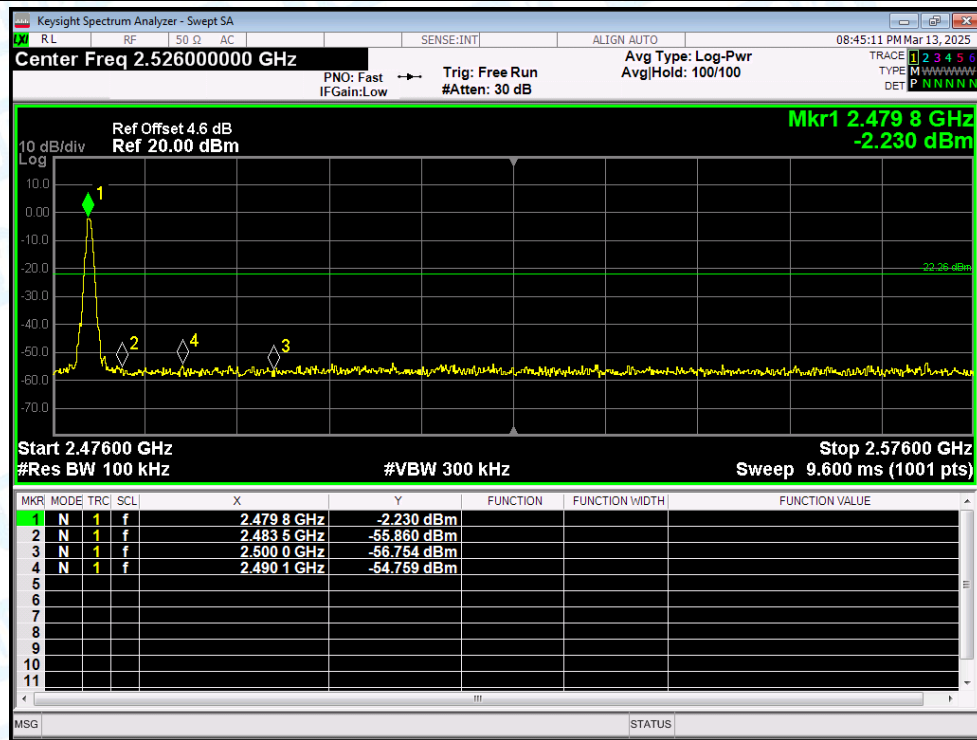
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



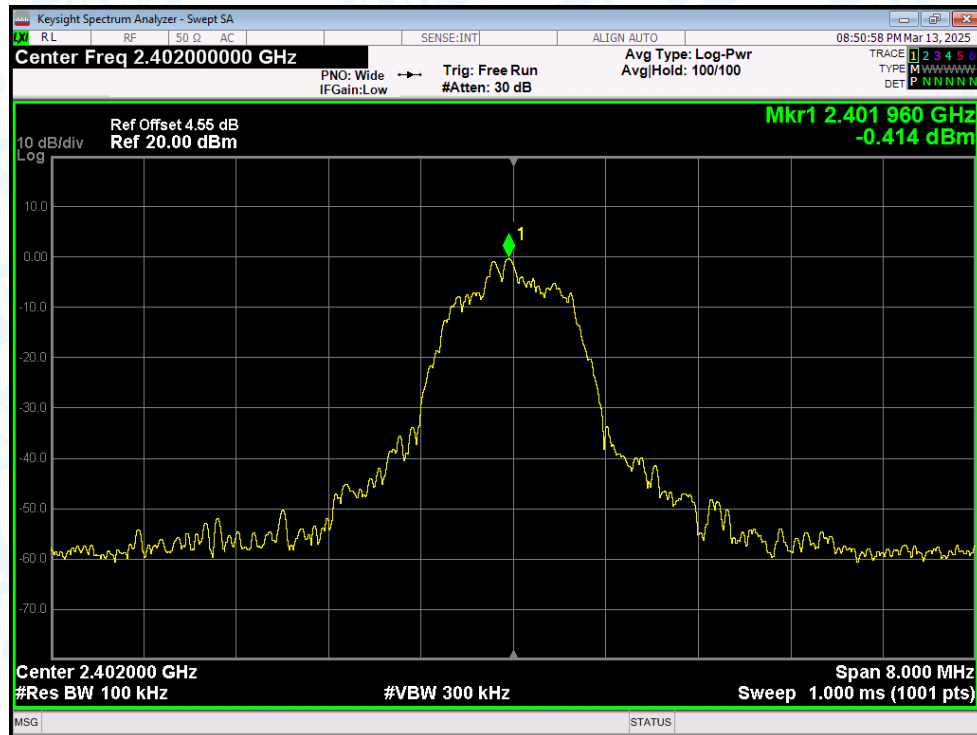
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



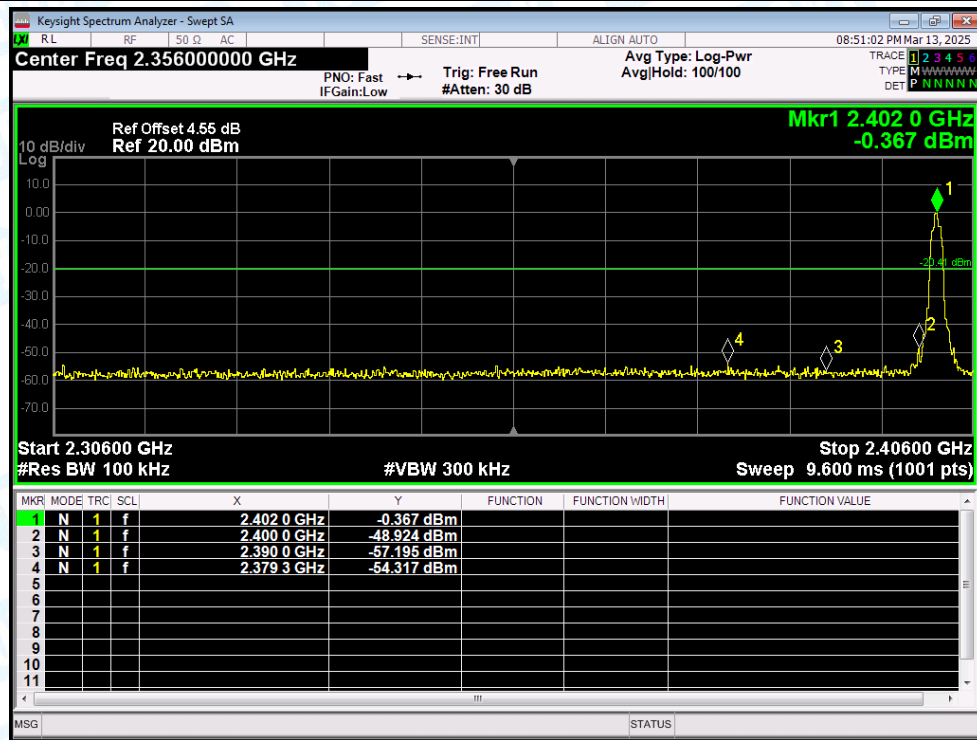
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



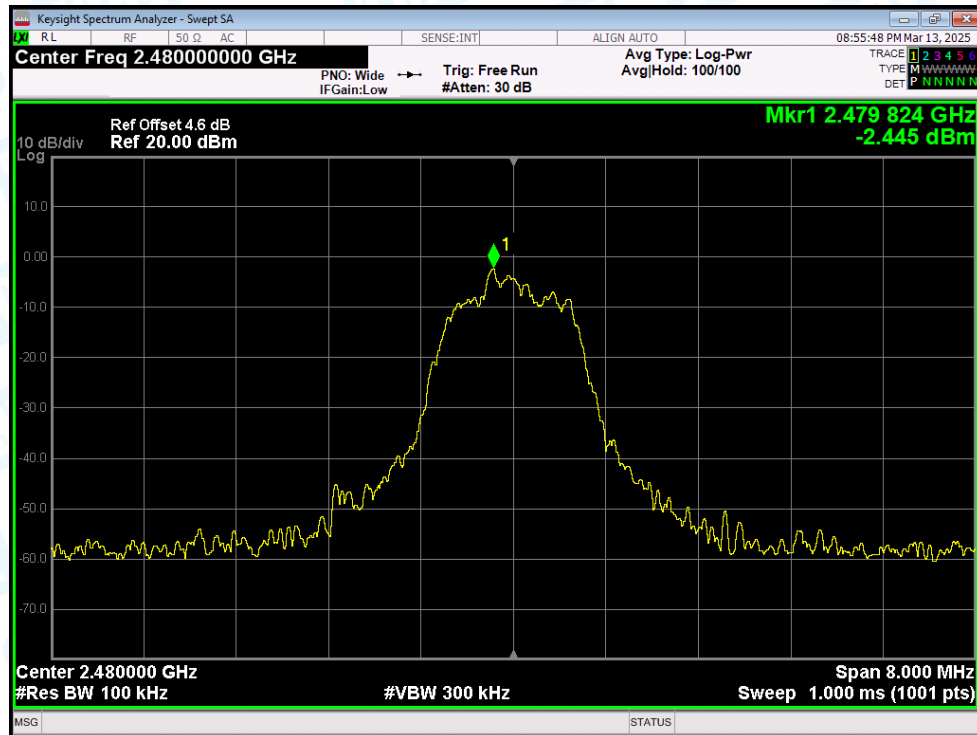
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



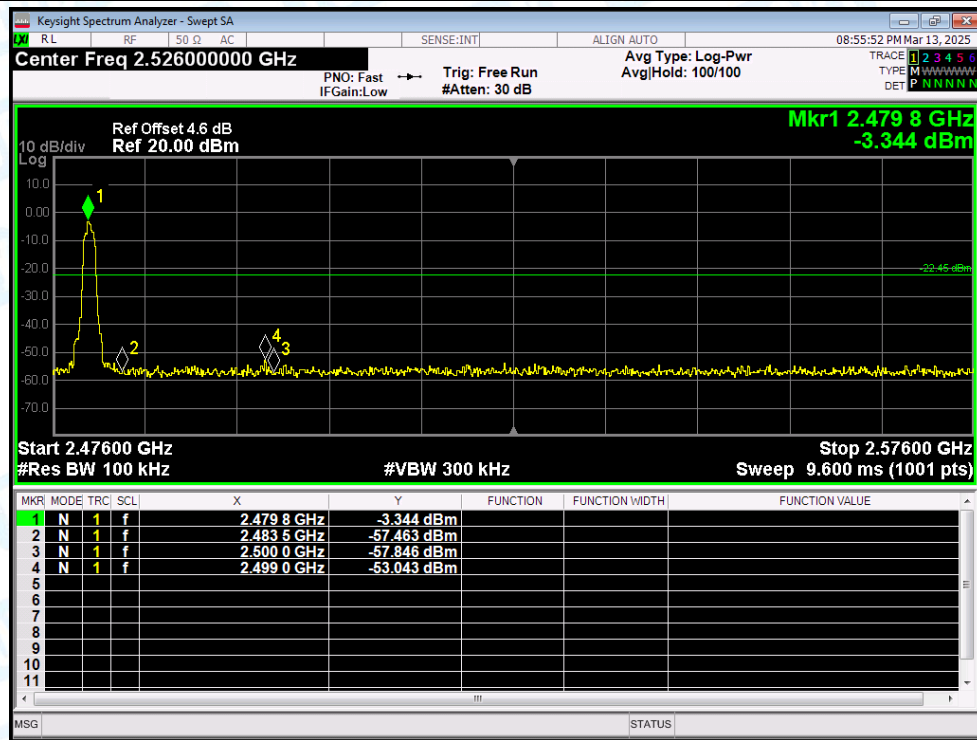
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



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



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

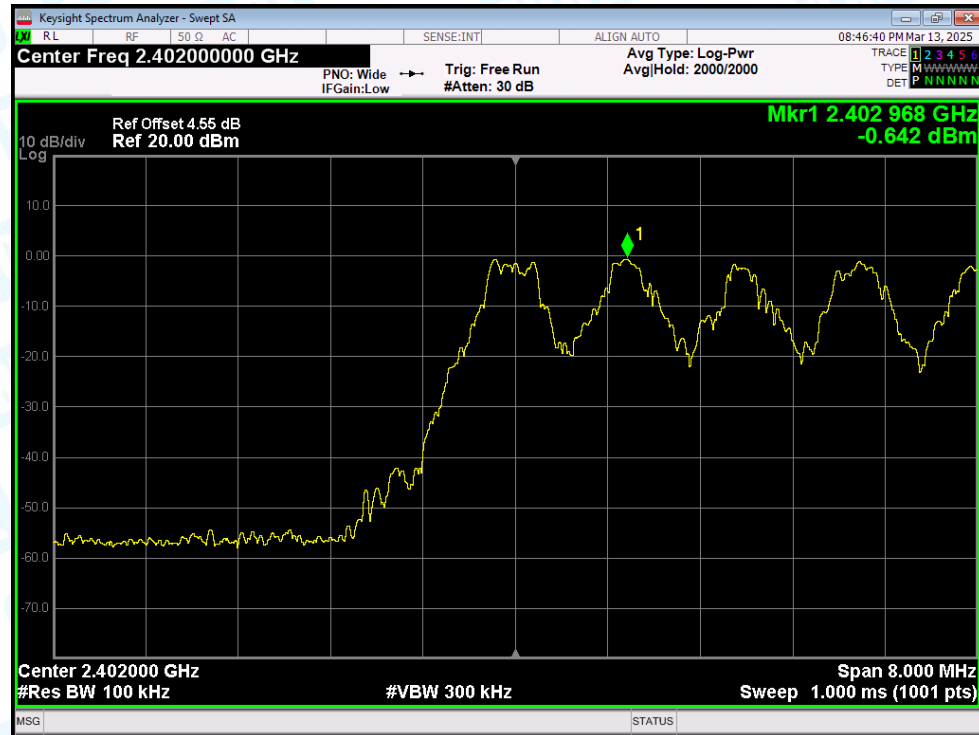


6. Band Edge(Hopping)

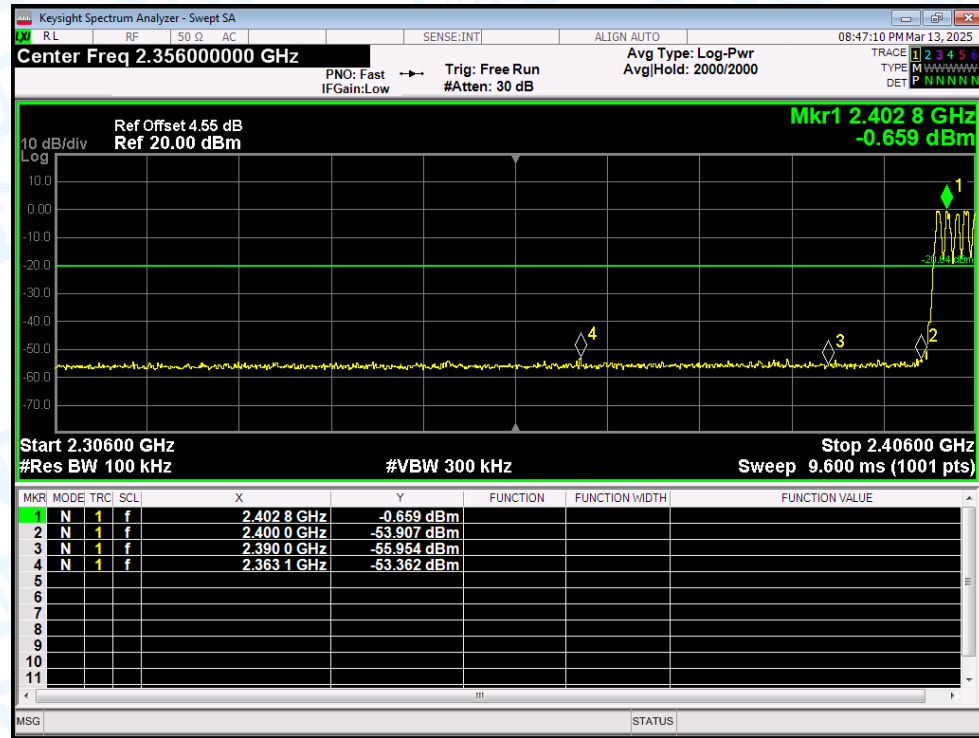
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-52.72	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-51.64	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-52.78	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-50.26	-20	Pass

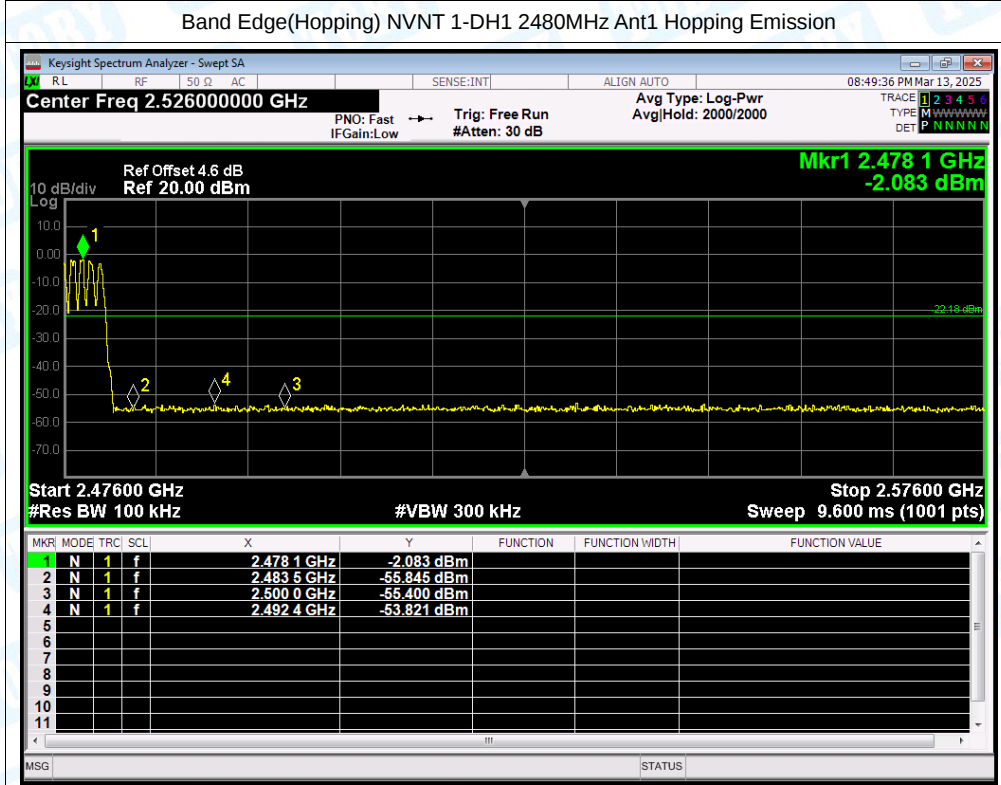
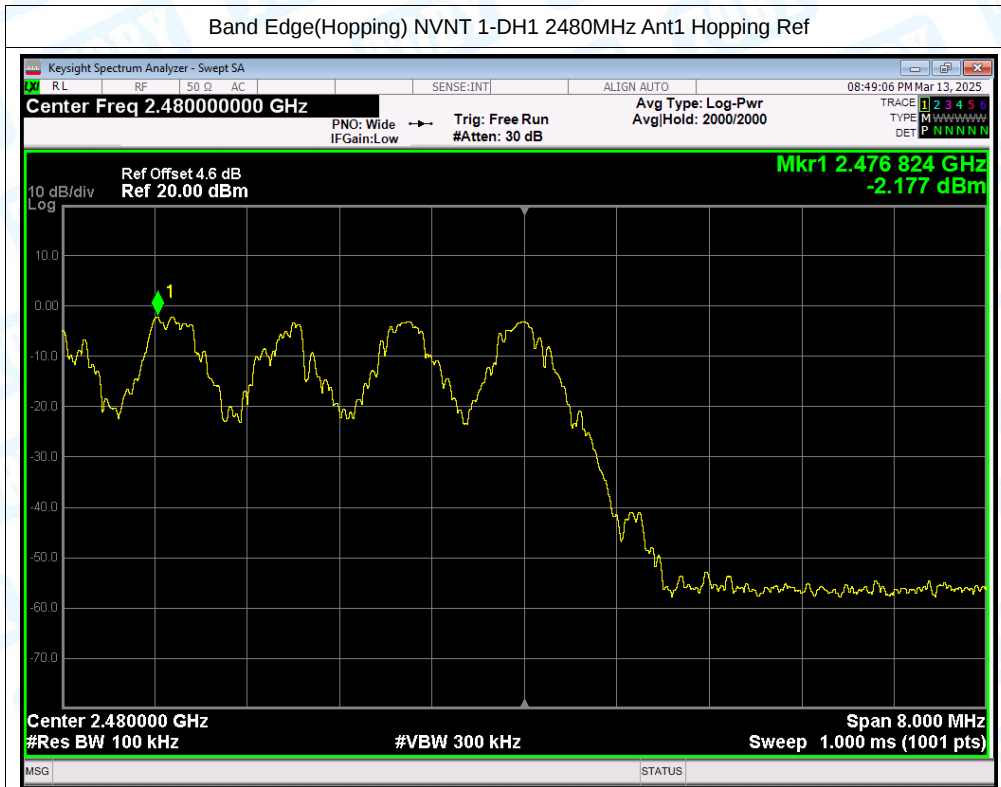
Test Graphs

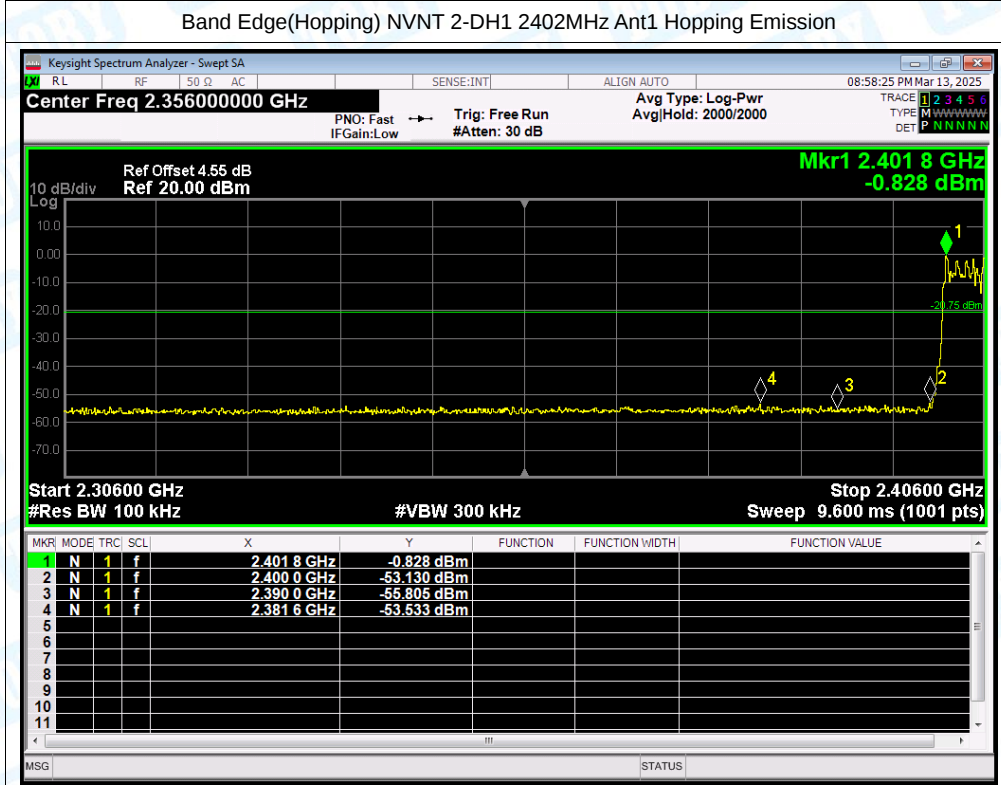
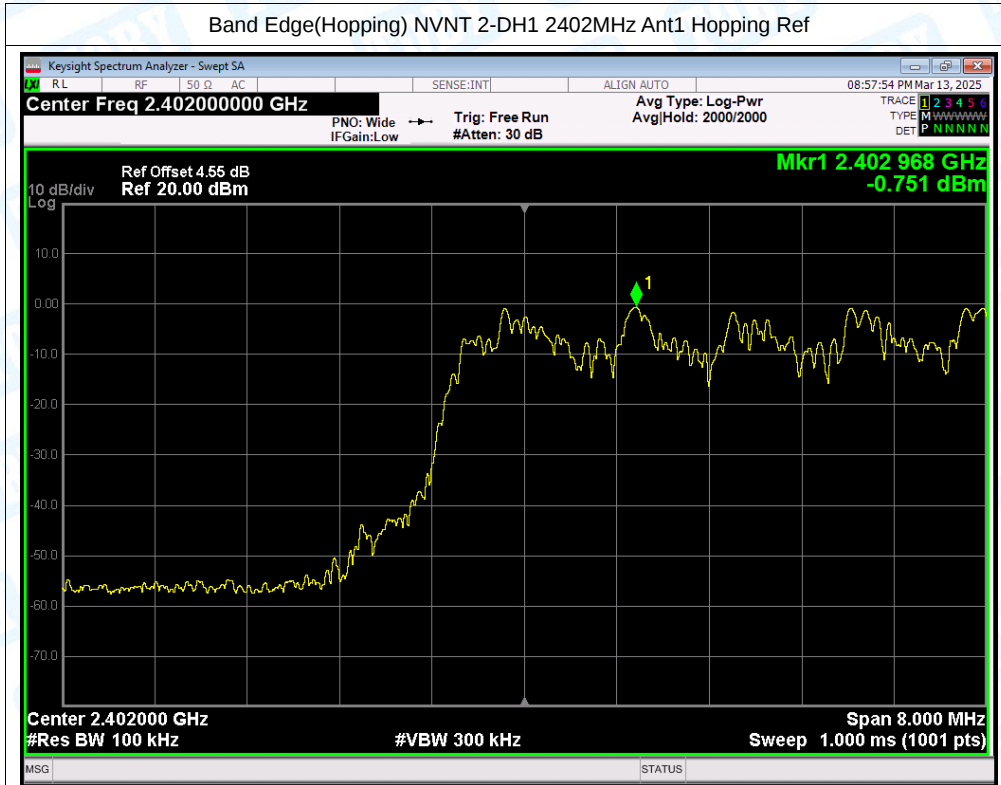
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref

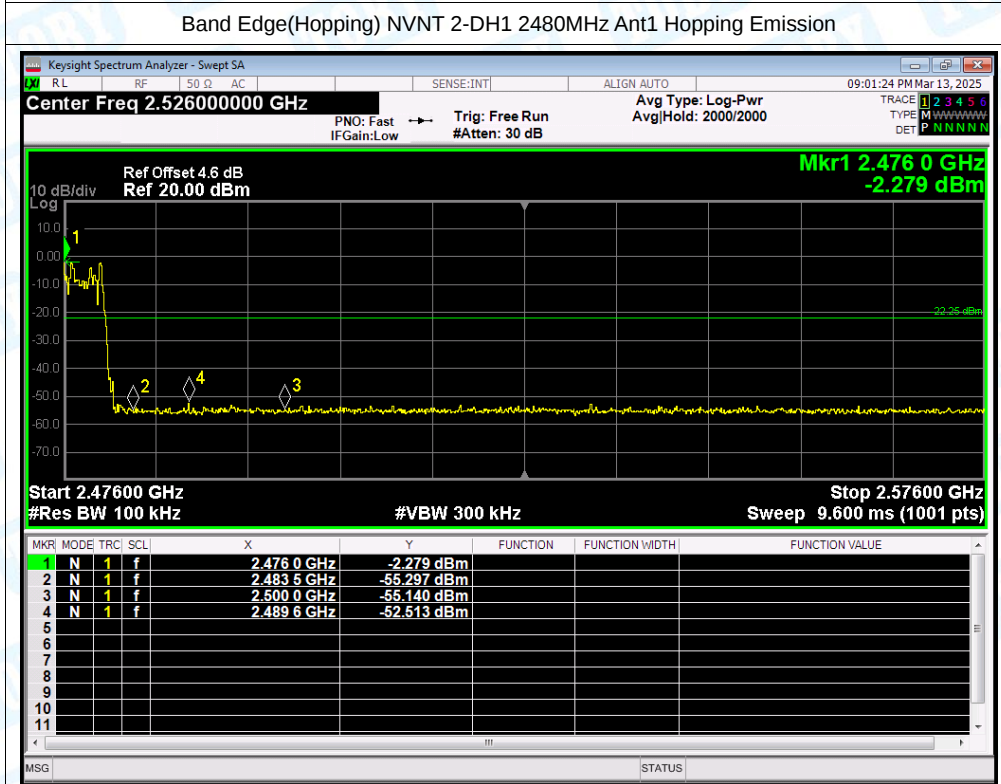


Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission







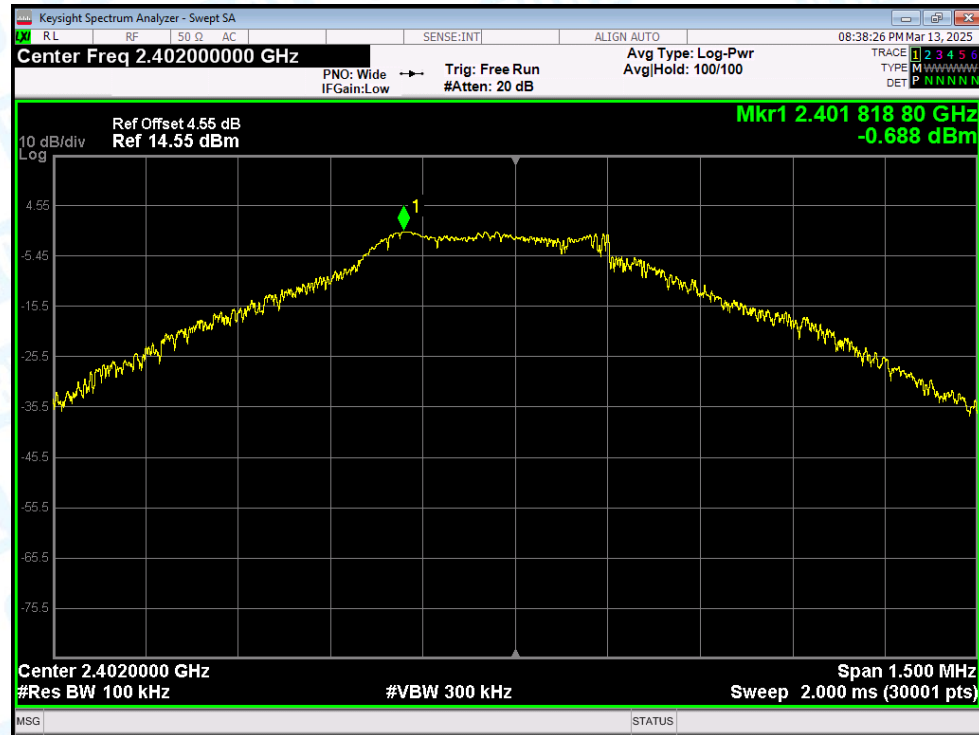


7. Conducted RF Spurious Emission

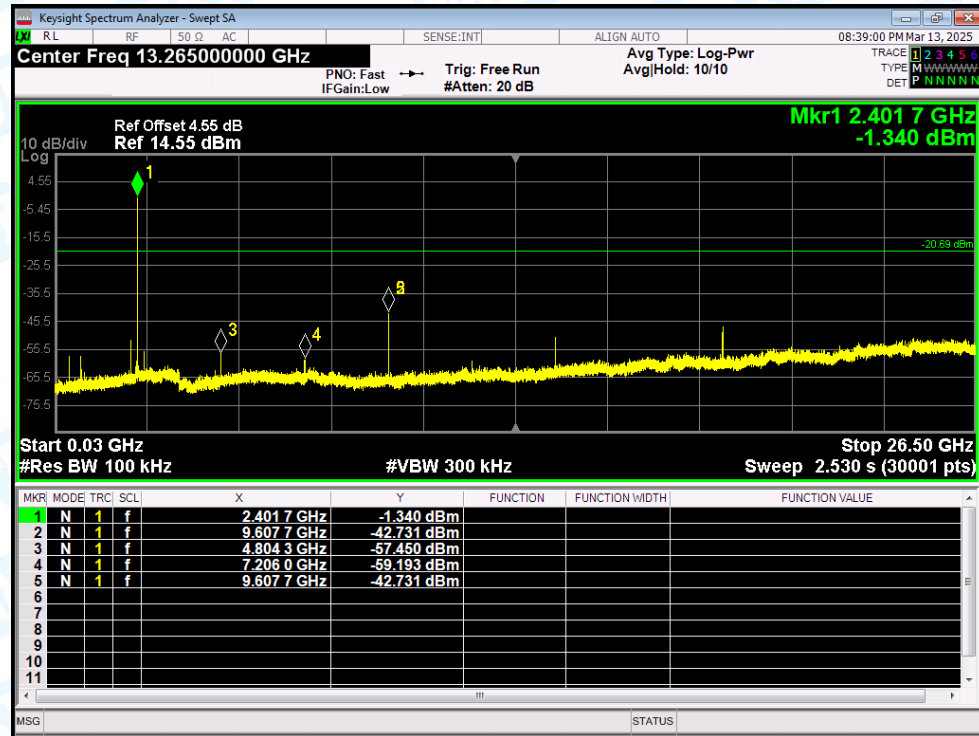
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-42.04	-20	Pass
NVNT	1-DH1	2441	Ant1	-38.55	-20	Pass
NVNT	1-DH1	2480	Ant1	-35.41	-20	Pass
NVNT	2-DH1	2402	Ant1	-41.64	-20	Pass
NVNT	2-DH1	2441	Ant1	-37.43	-20	Pass
NVNT	2-DH1	2480	Ant1	-35.41	-20	Pass

Test Graphs

Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



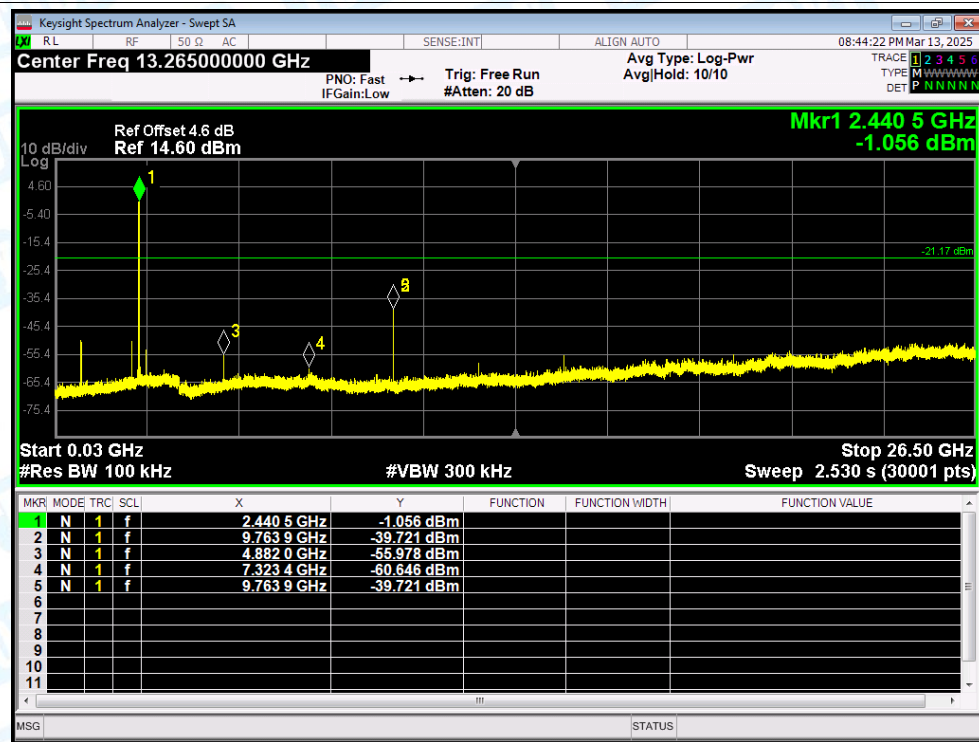
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



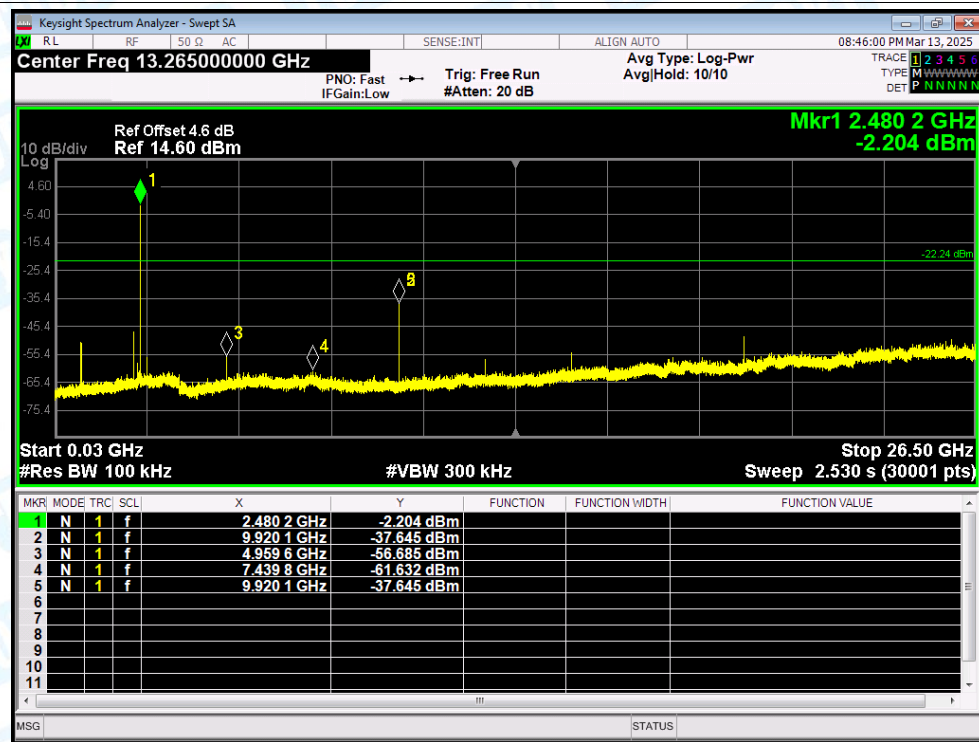
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



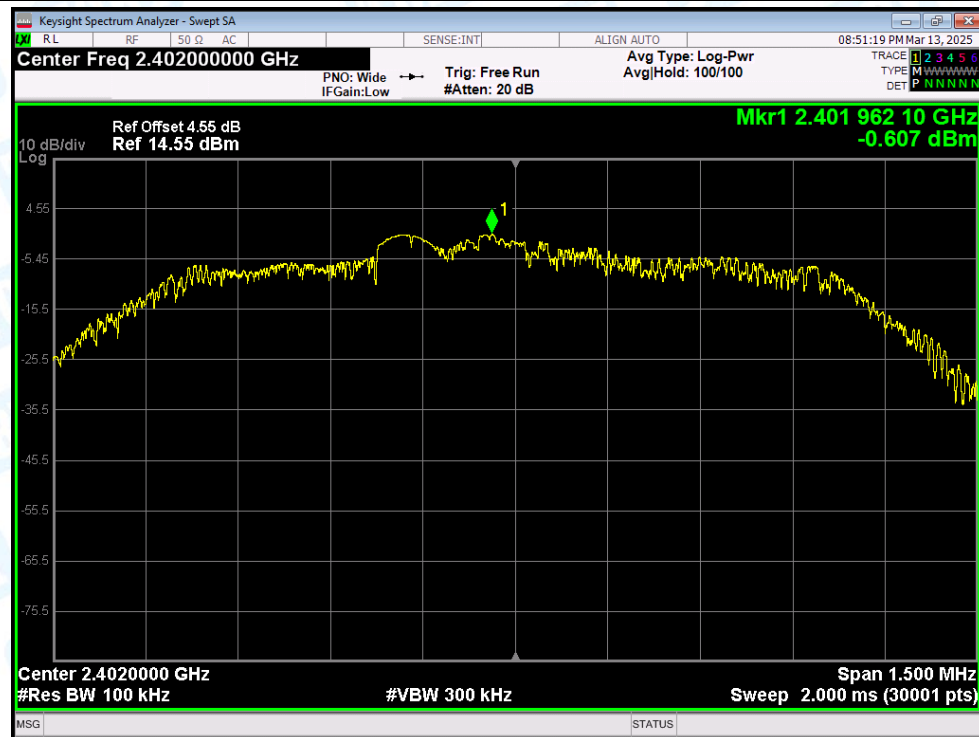
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



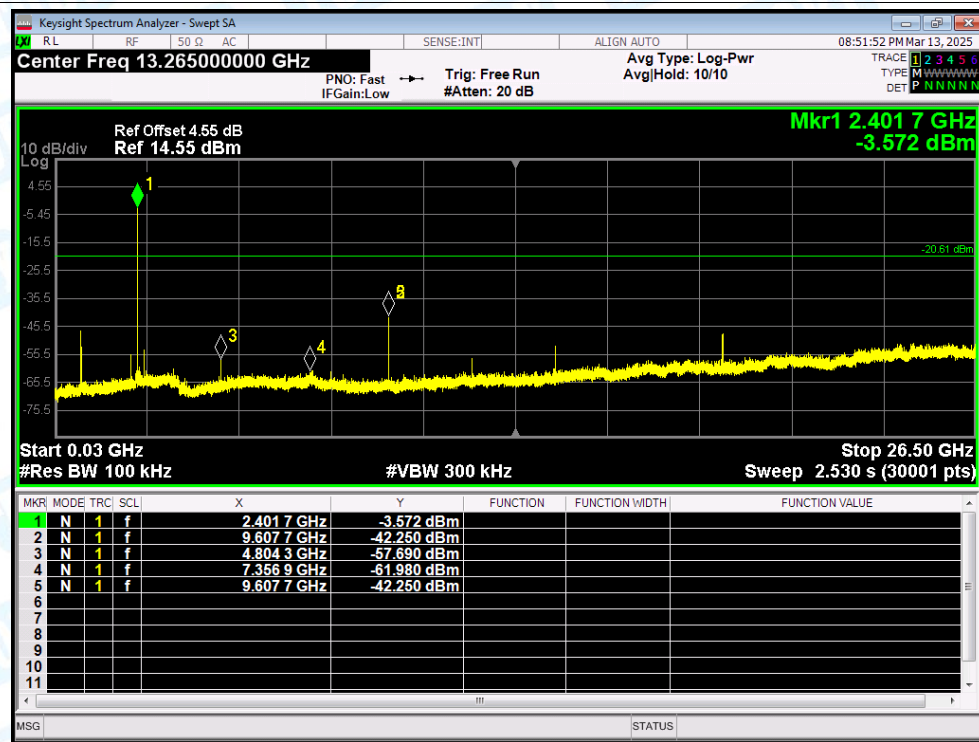
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



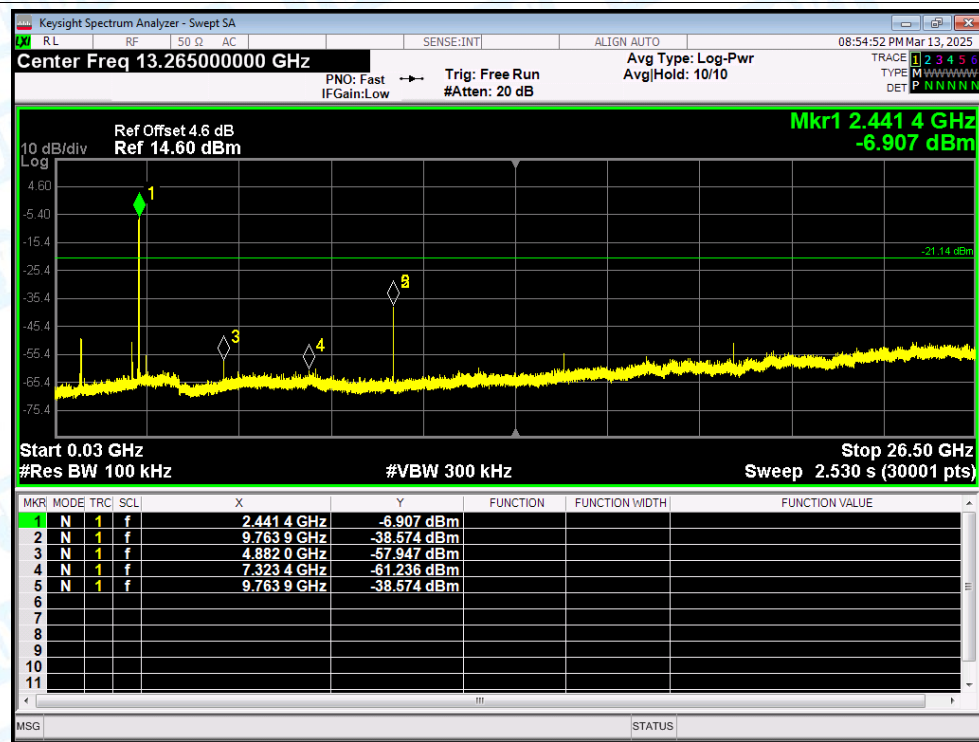
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



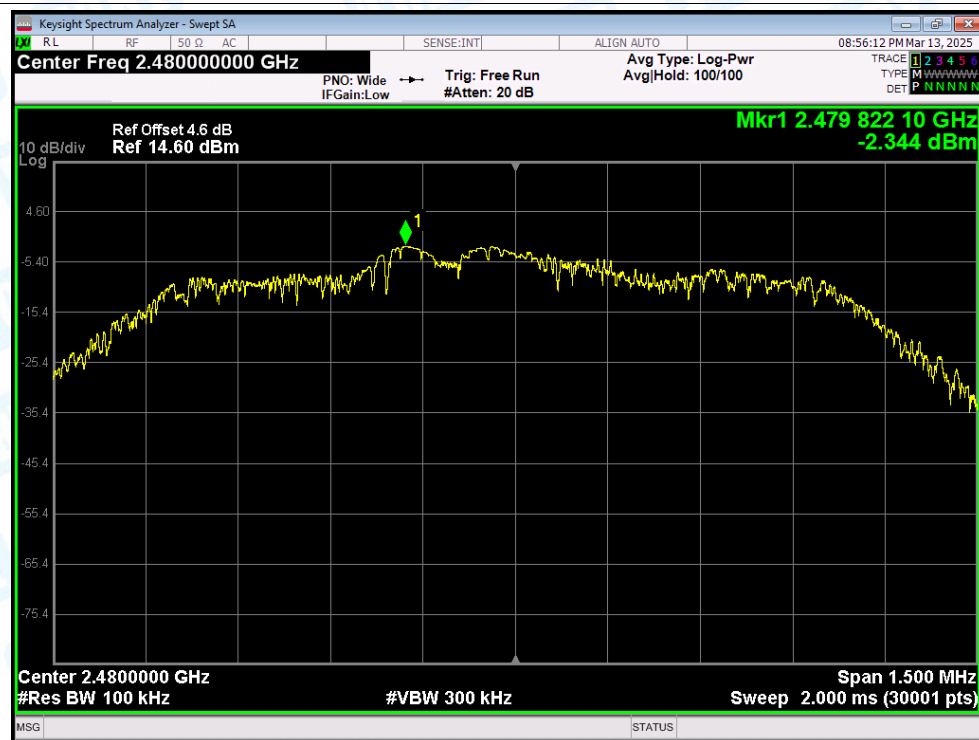
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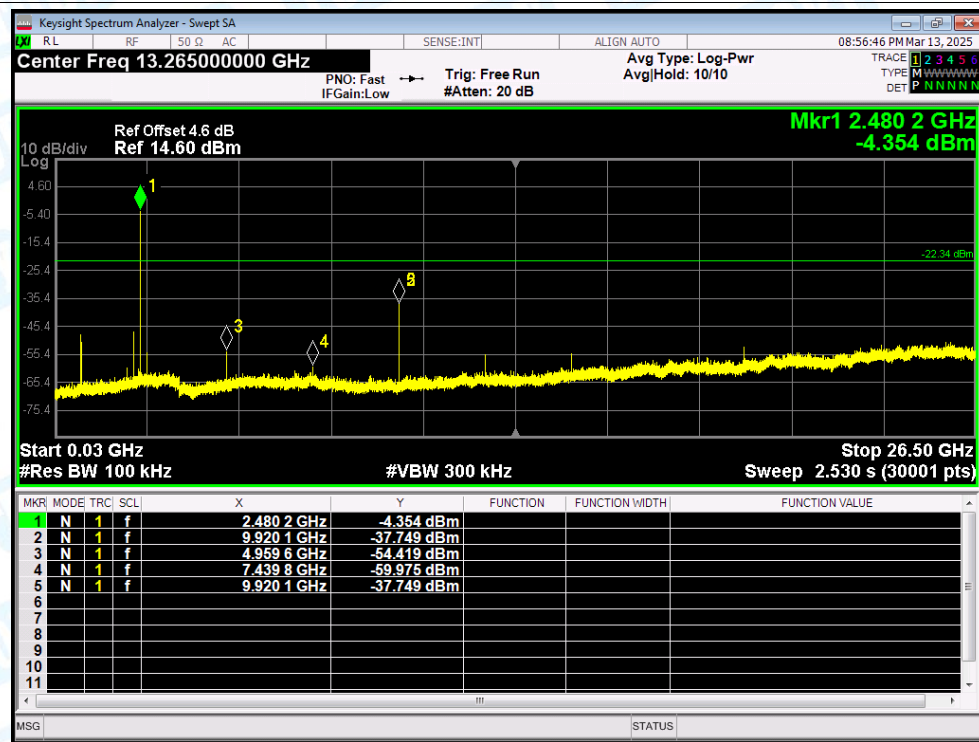
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Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission

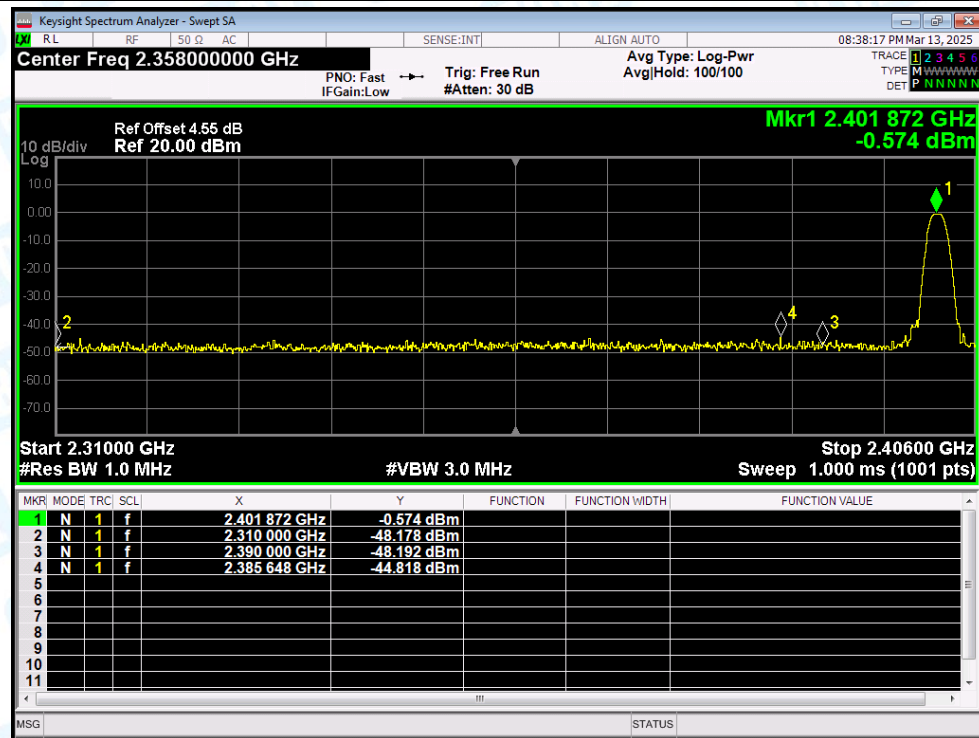


8.Restrict Band

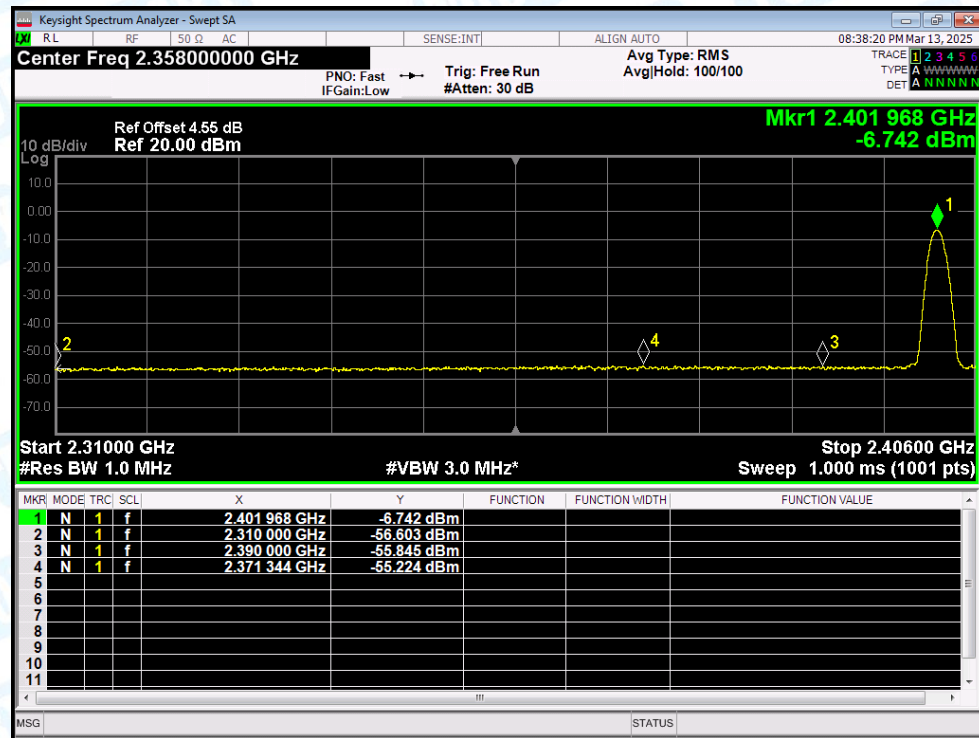
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-48.18	2	-	49.08	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.6	2	5.17	45.83	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2385.648	-44.82	2	-	52.44	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2371.344	-55.22	2	5.17	47.21	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-48.19	2	-	49.07	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-55.85	2	5.17	46.58	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-47.66	2	-	49.6	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-55.29	2	5.17	47.14	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2494.384	-44.77	2	-	52.49	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2499.136	-54.82	2	5.17	47.61	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-48.13	2	-	49.13	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-55.84	2	5.17	46.59	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-47.69	2	-	49.57	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.61	2	5.06	45.71	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2361.552	-45	2	-	52.26	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2383.728	-55.25	2	5.06	47.07	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-46.65	2	-	50.61	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-56.13	2	5.06	46.19	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-48.28	2	-	48.98	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-55.17	2	5.06	47.15	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2487.472	-43.96	2	-	53.3	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2499.448	-54.82	2	5.06	47.5	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-47.58	2	-	49.68	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.74	2	5.06	46.58	Average	54	Pass

Test Graphs

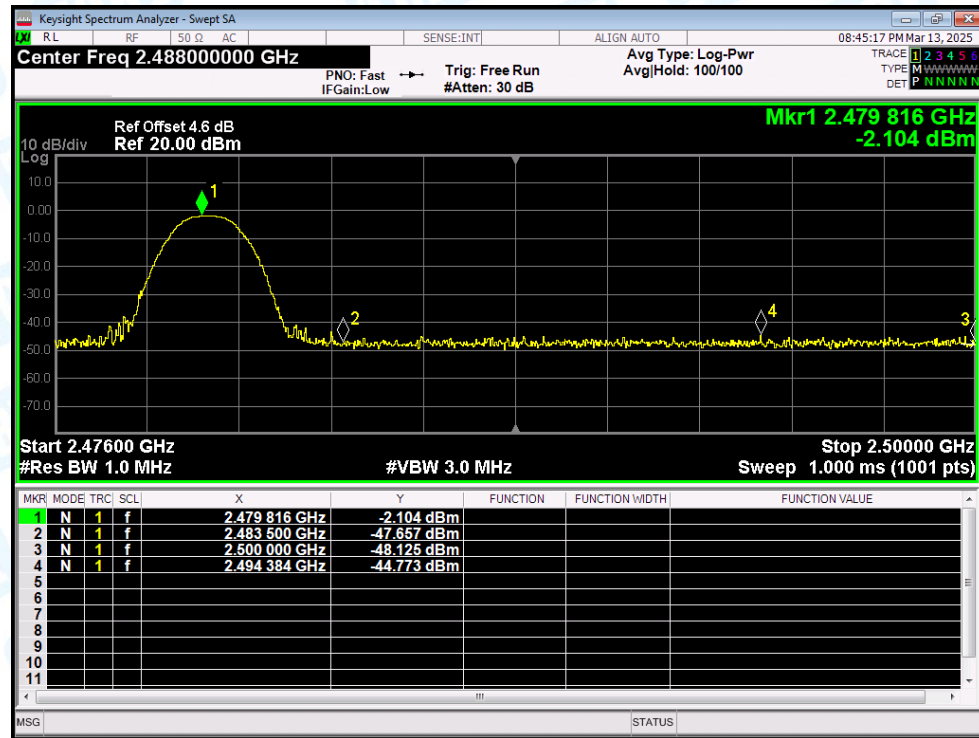
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



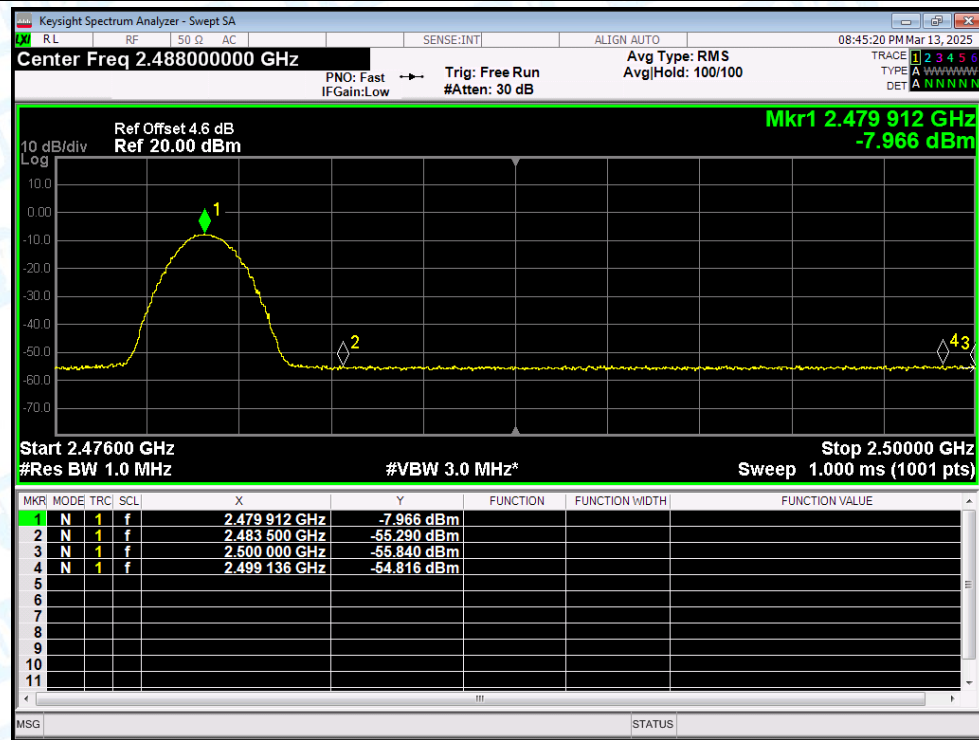
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



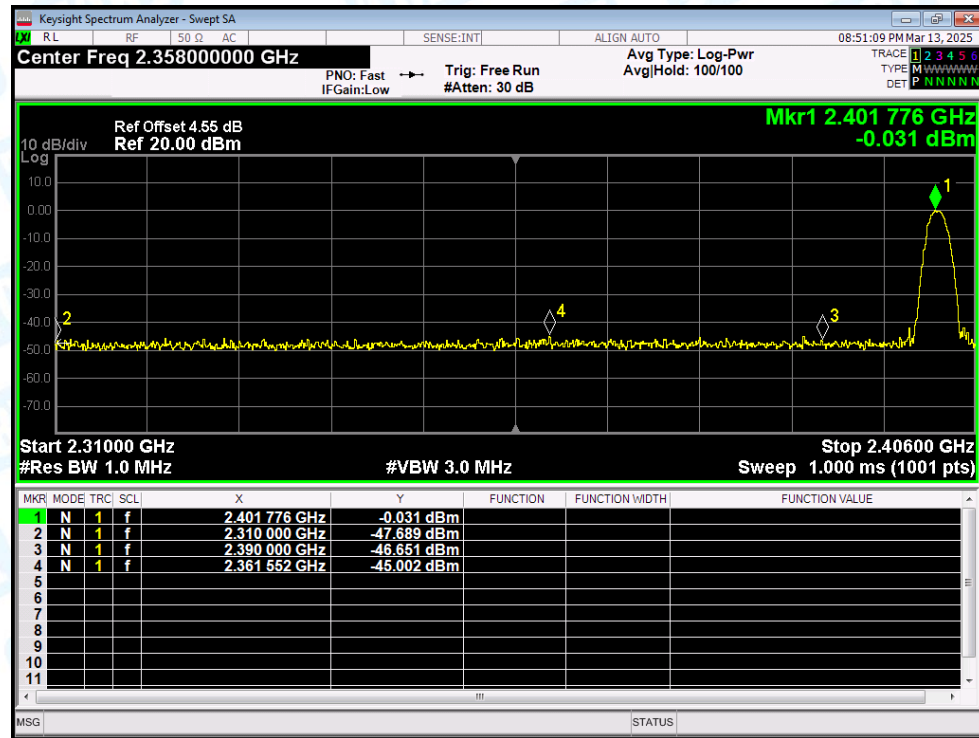
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



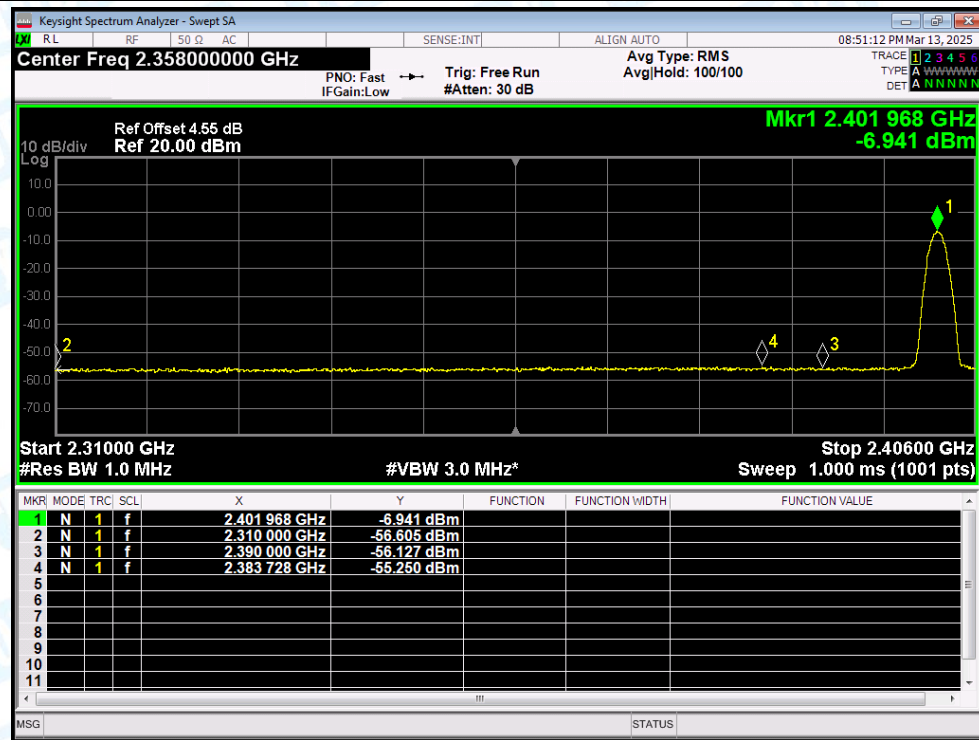
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



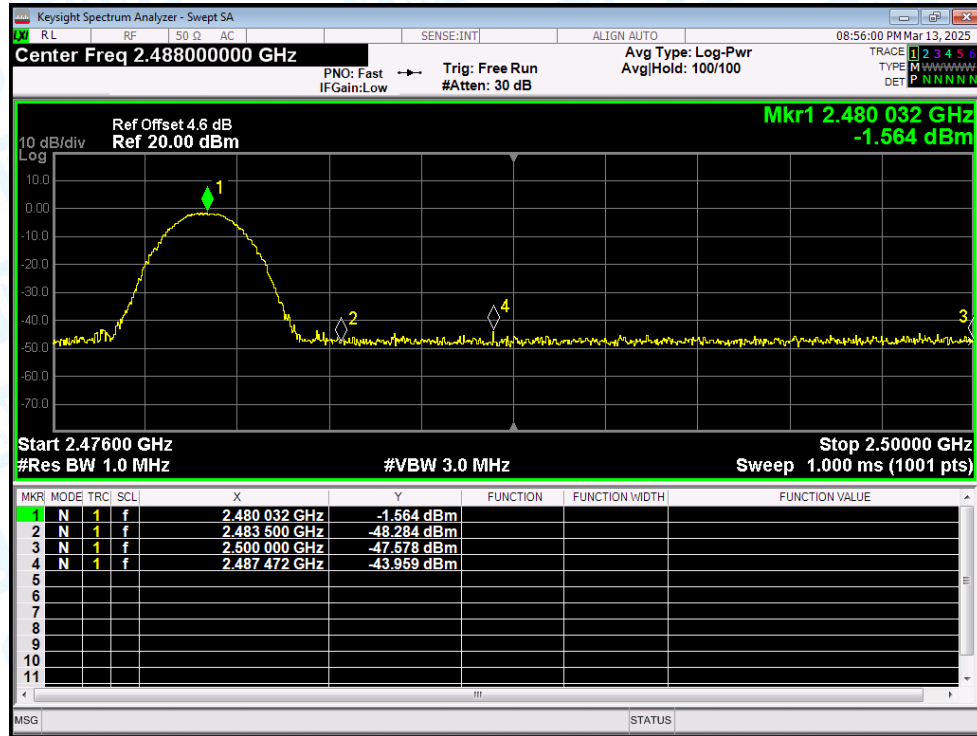
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



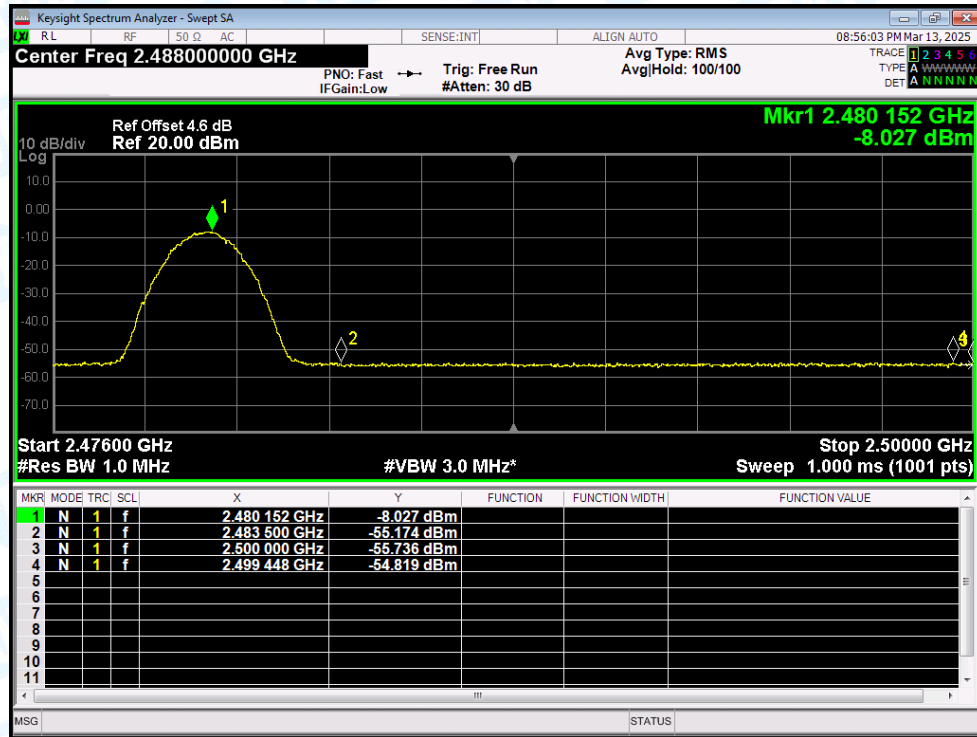
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



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



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

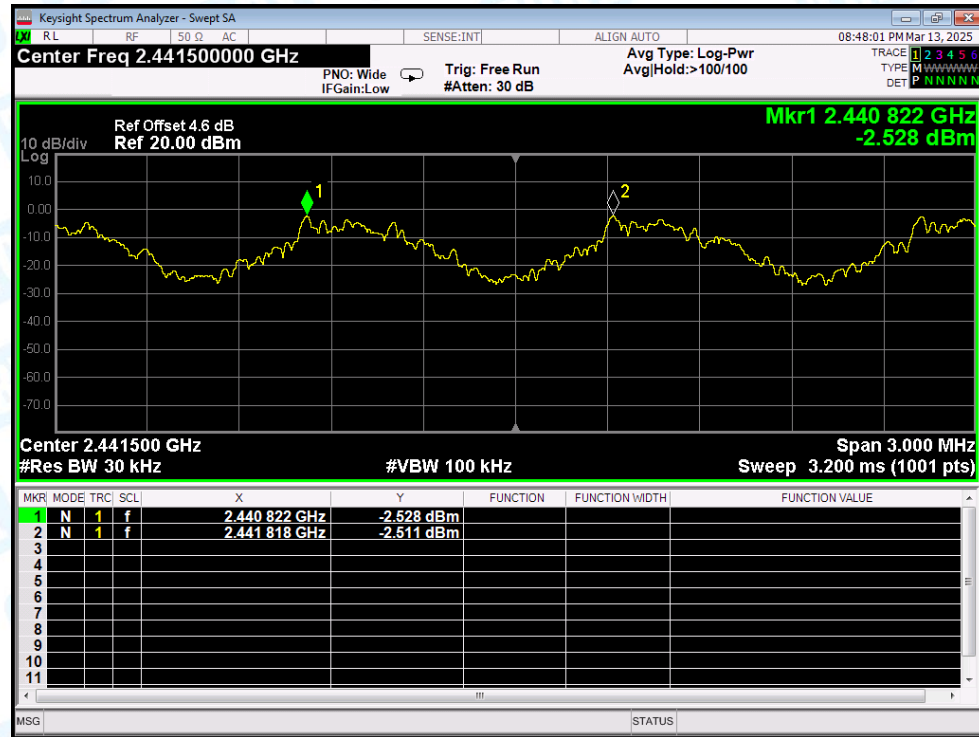


9.Carrier Frequencies Separation

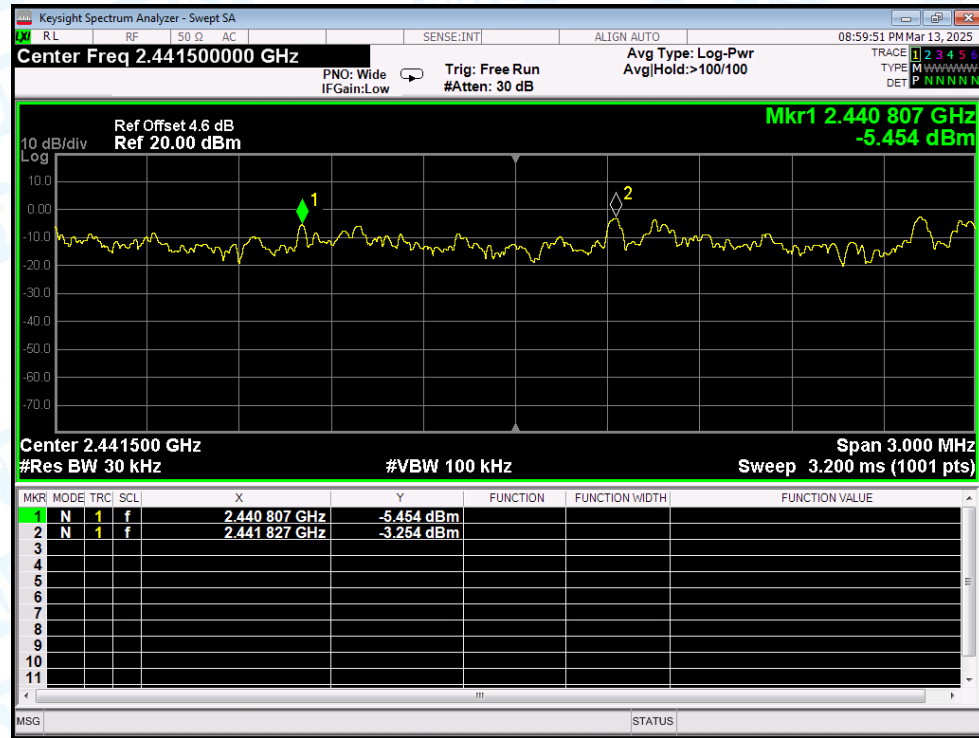
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.822	2441.818	0.996	0.58	Pass
NVNT	2-DH1	Ant1	2440.807	2441.827	1.02	0.833	Pass

Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1

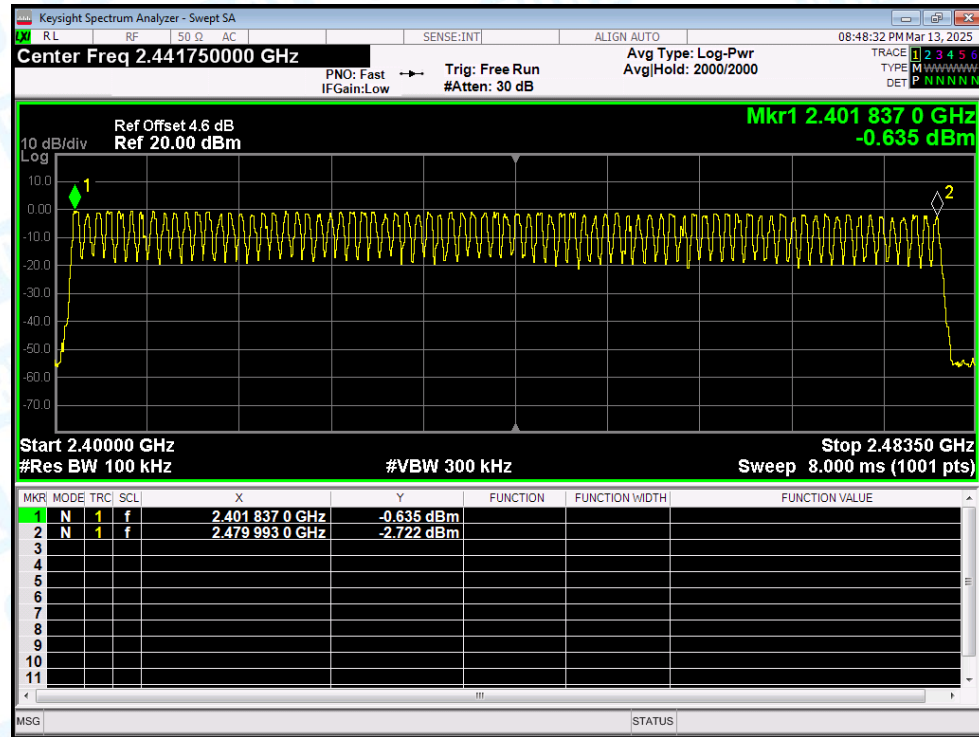


10.Number of Hopping Channel

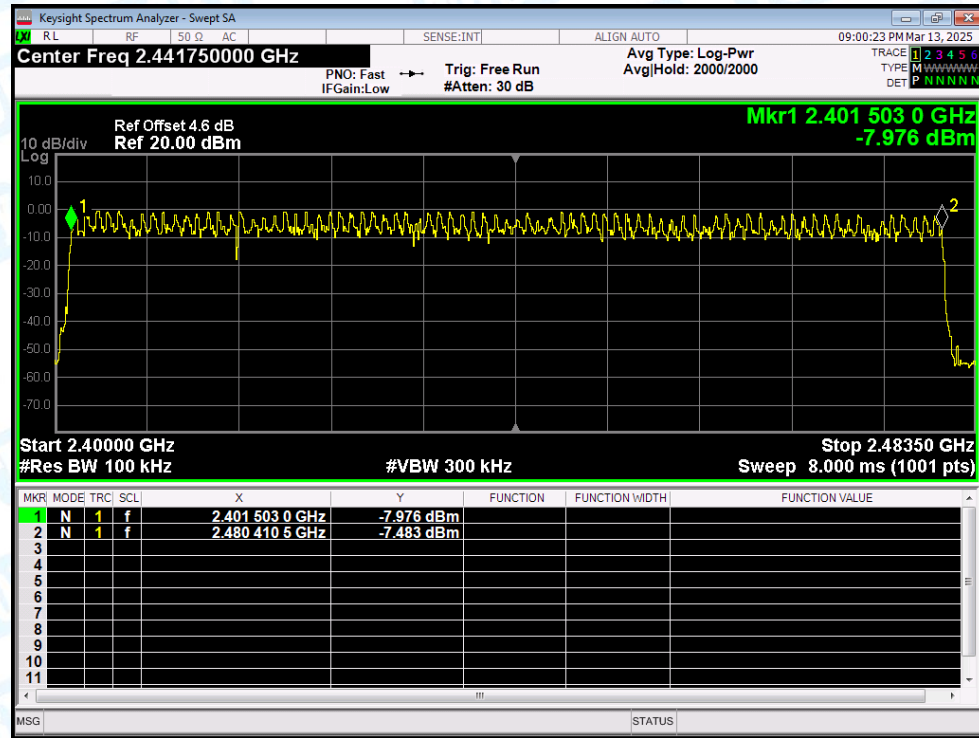
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass

Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1

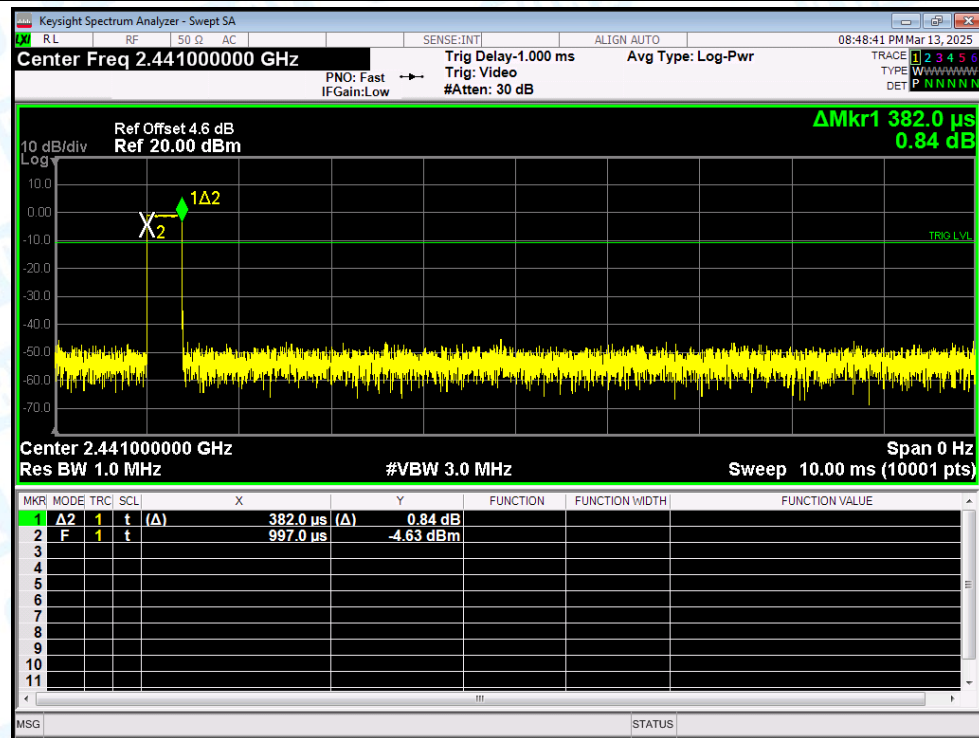


11.Dwell Time

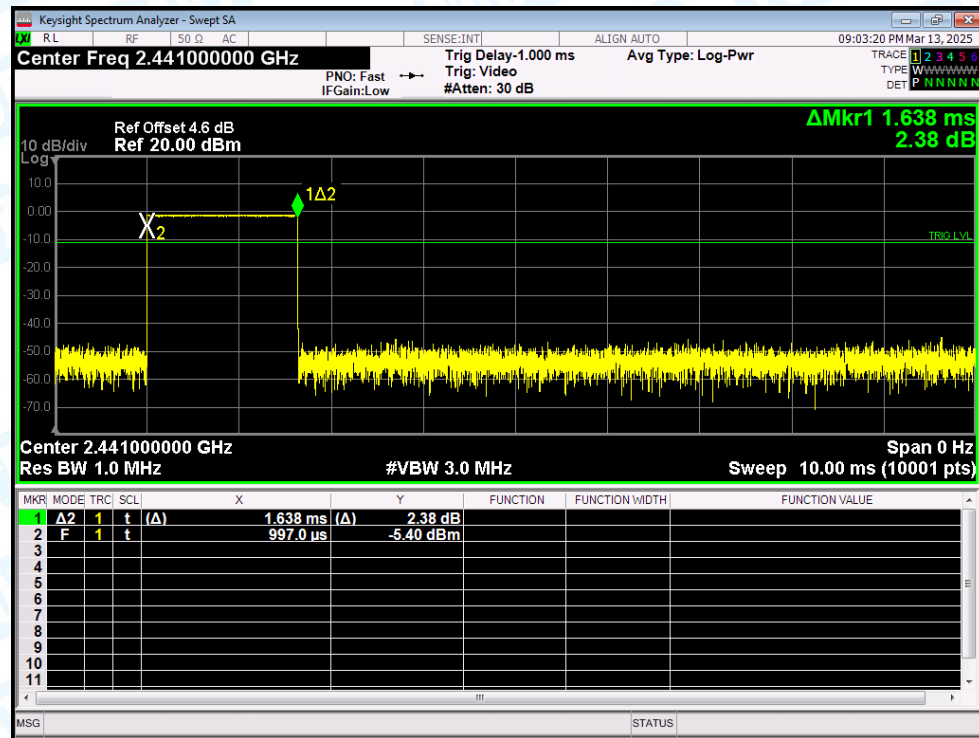
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.382	122.24	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.638	262.08	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.887	307.947	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.392	125.44	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.643	262.88	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.892	308.48	31600	400	Pass

Test Graphs

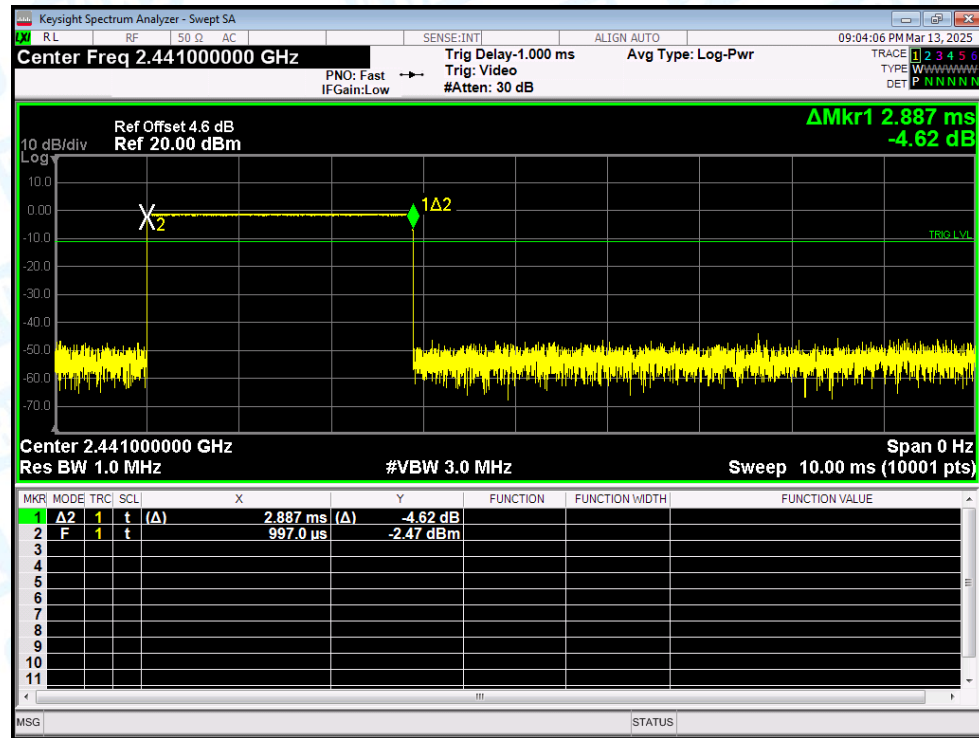
Dwell NVNT 1-DH1 2441MHz Ant1



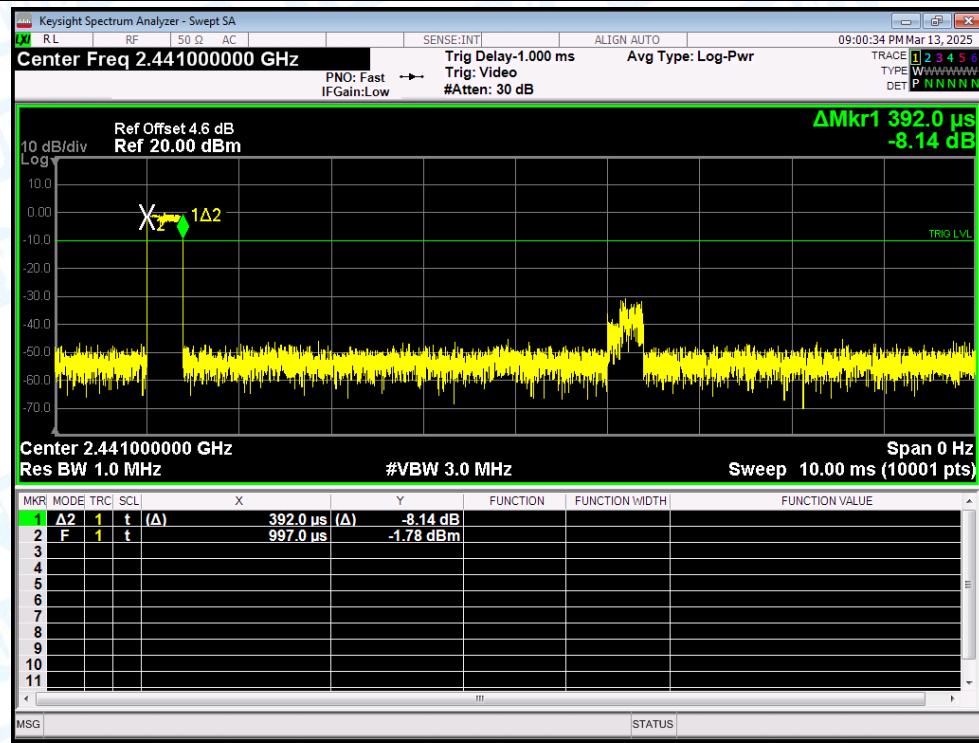
Dwell NVNT 1-DH3 2441MHz Ant1



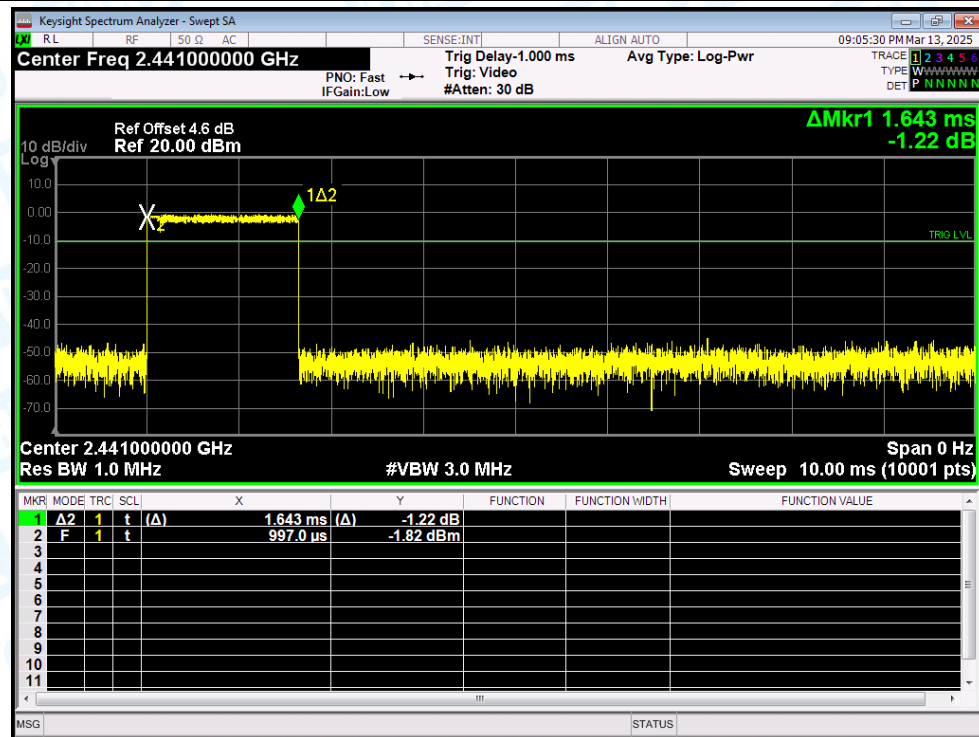
Dwell NVNT 1-DH5 2441MHz Ant1



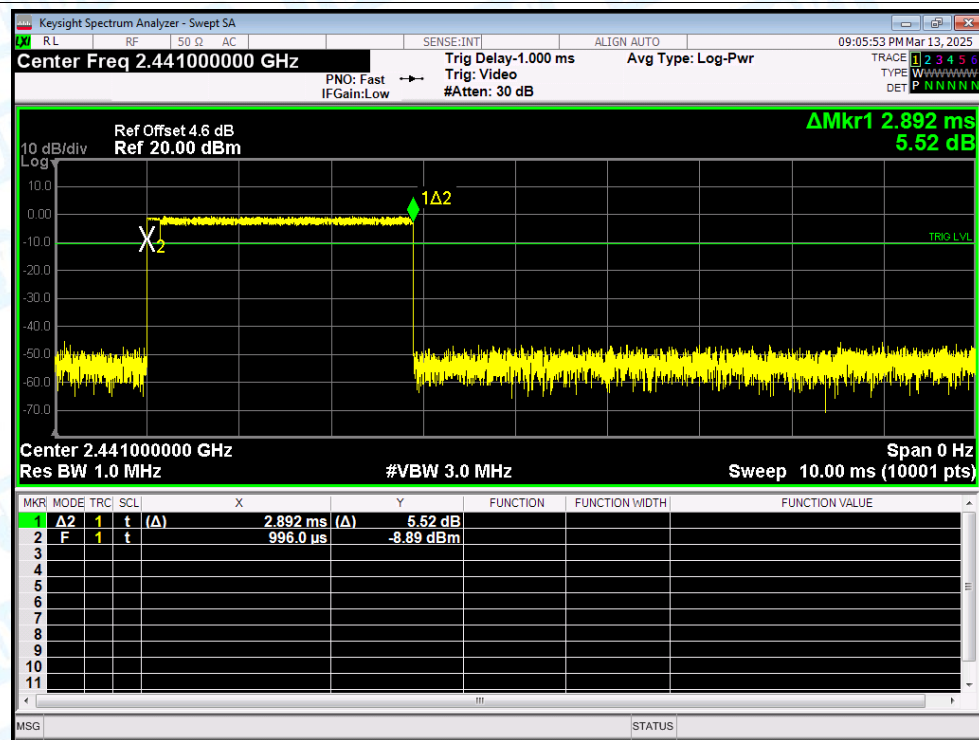
Dwell NVNT 2-DH1 2441MHz Ant1



Dwell NVNT 2-DH3 2441MHz Ant1



Dwell NVNT 2-DH5 2441MHz Ant1



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