

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	Monster Tansmitter & Receiver
Test Model:	BT31C
Sample ID:	HC-C-202502-0022-01-02#
Environmental Conditions	
Temperature:	24.5℃
Relative Humidity:	47%
Test Voltage:	DC 3.7V
Test Engineer:	ZKN Zhou
Note: For a more detailed features description, please refer to the report TBR-C-202502-0022-2 The report only show the worst case data.	

Contents

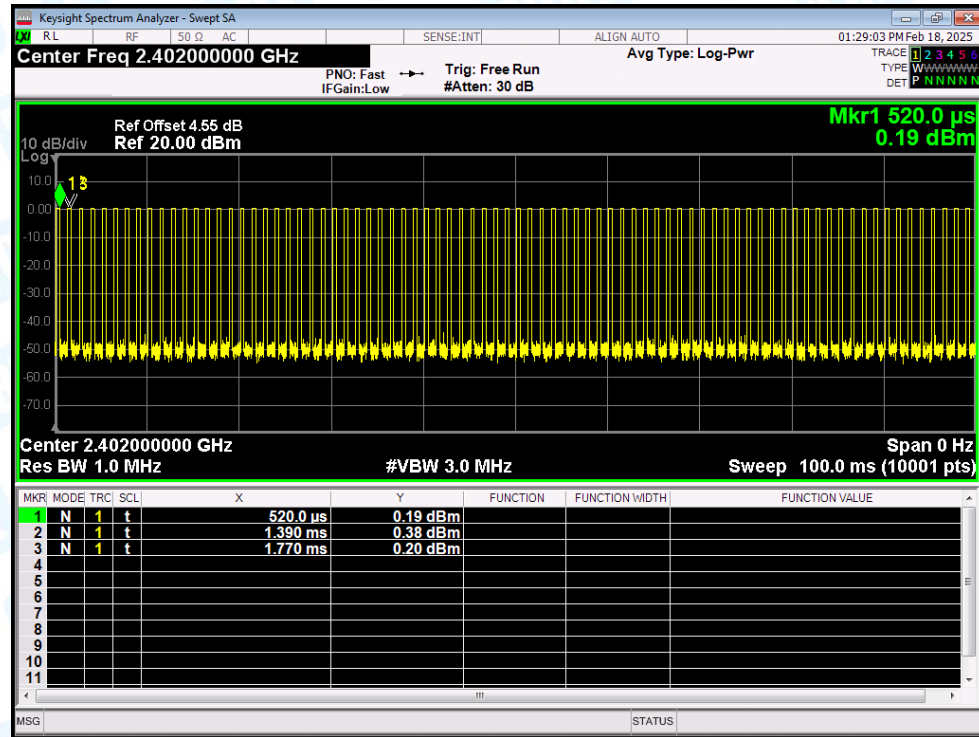
1. Duty Cycle.....	3
2. Maximum Conducted Output Power	7
3. -20dB Bandwidth	13
4. Occupied Channel Bandwidth	17
5. Band Edge	21
6. Band Edge(Hopping).....	26
7. Conducted RF Spurious Emission	31
8. Restrict Band	38
9. Carrier Frequencies Separation.....	43
10. Number of Hopping Channel	45
11. Dwell Time.....	47

1. Duty Cycle

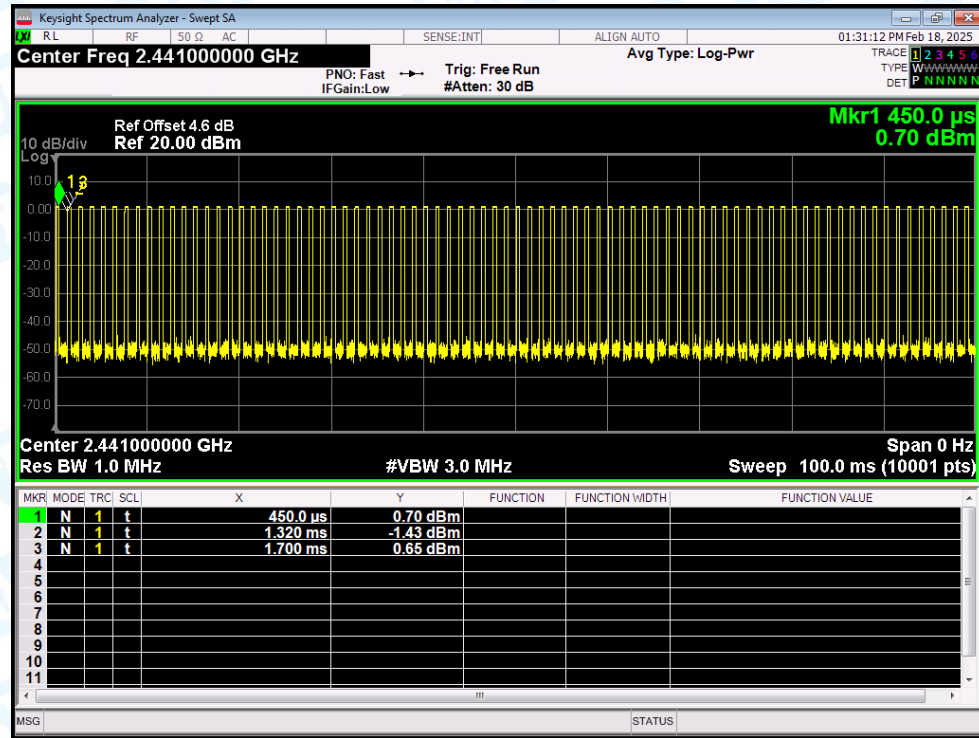
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2441	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2480	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2480	Ant1	31.2	5.06	2.56

Test Graphs

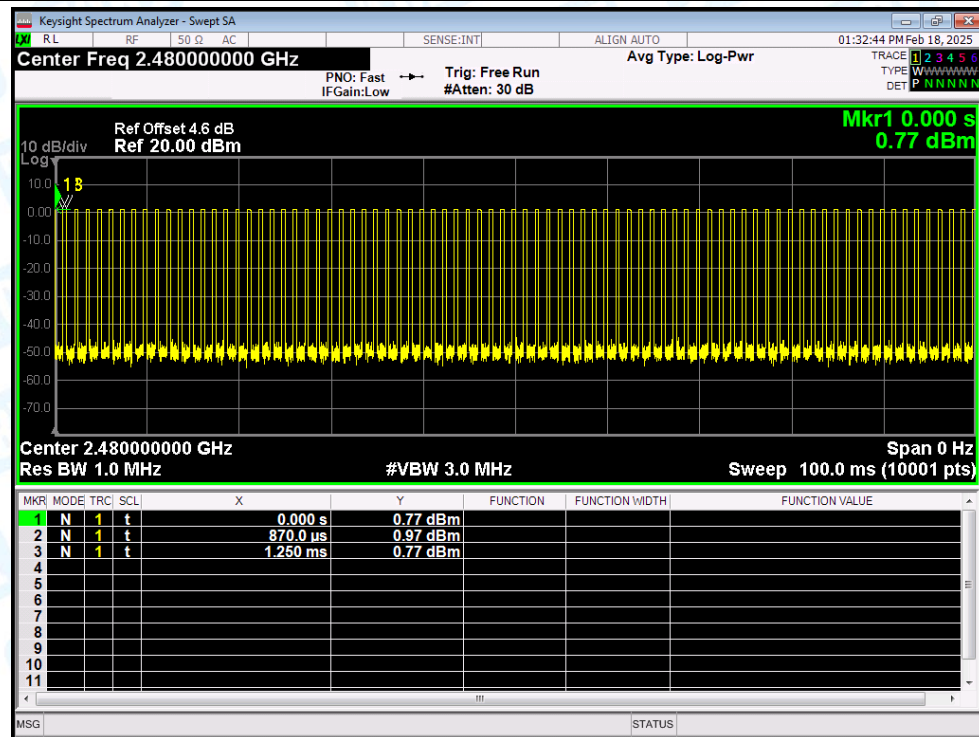
Duty Cycle NVNT 1-DH1 2402MHz Ant1



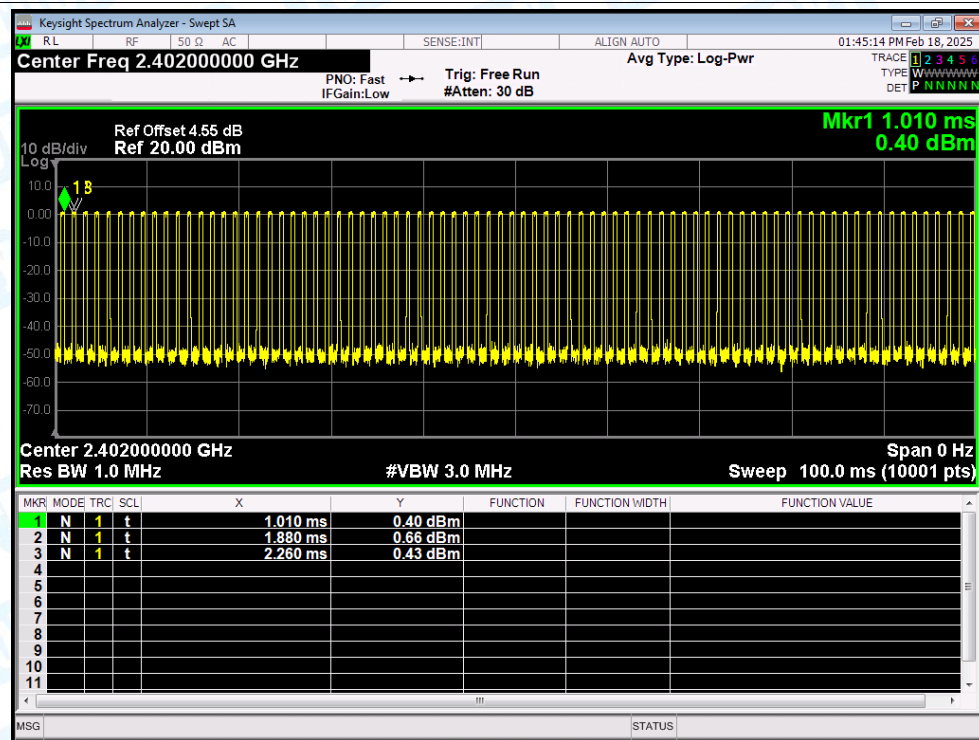
Duty Cycle NVNT 1-DH1 2441MHz Ant1



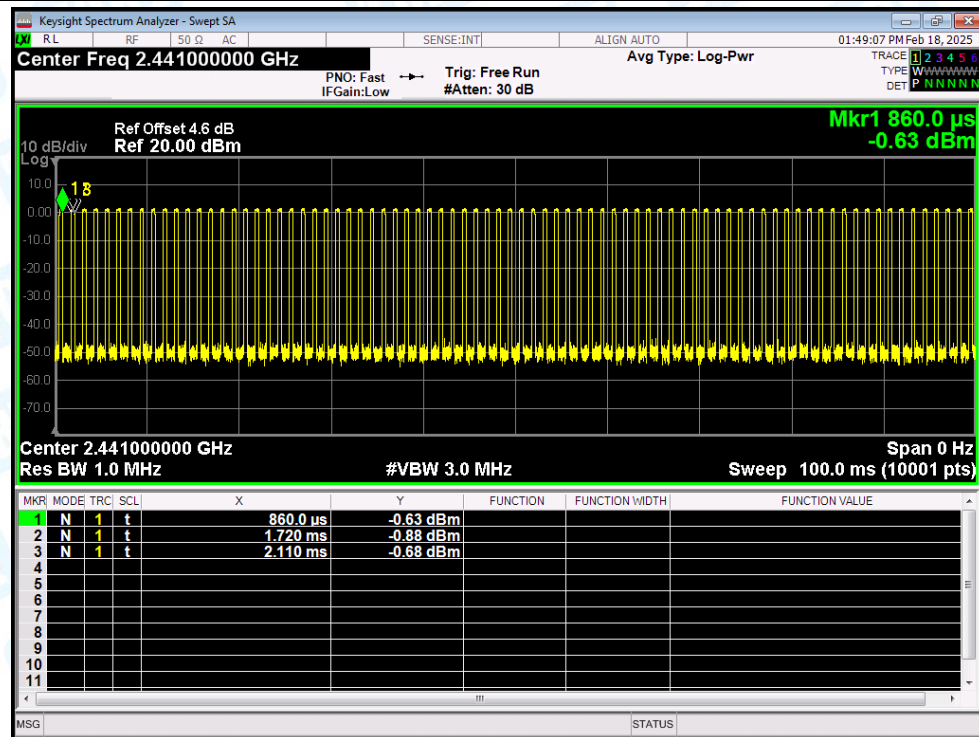
Duty Cycle NVNT 1-DH1 2480MHz Ant1



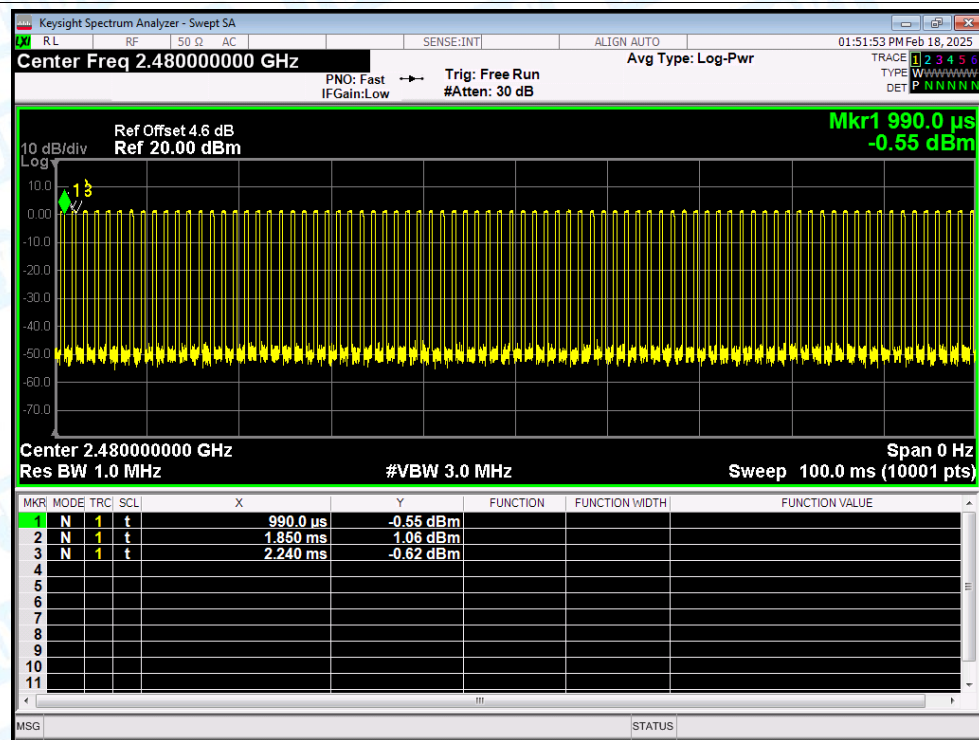
Duty Cycle NVNT 2-DH1 2402MHz Ant1



Duty Cycle NVNT 2-DH1 2441MHz Ant1



Duty Cycle NVNT 2-DH1 2480MHz Ant1

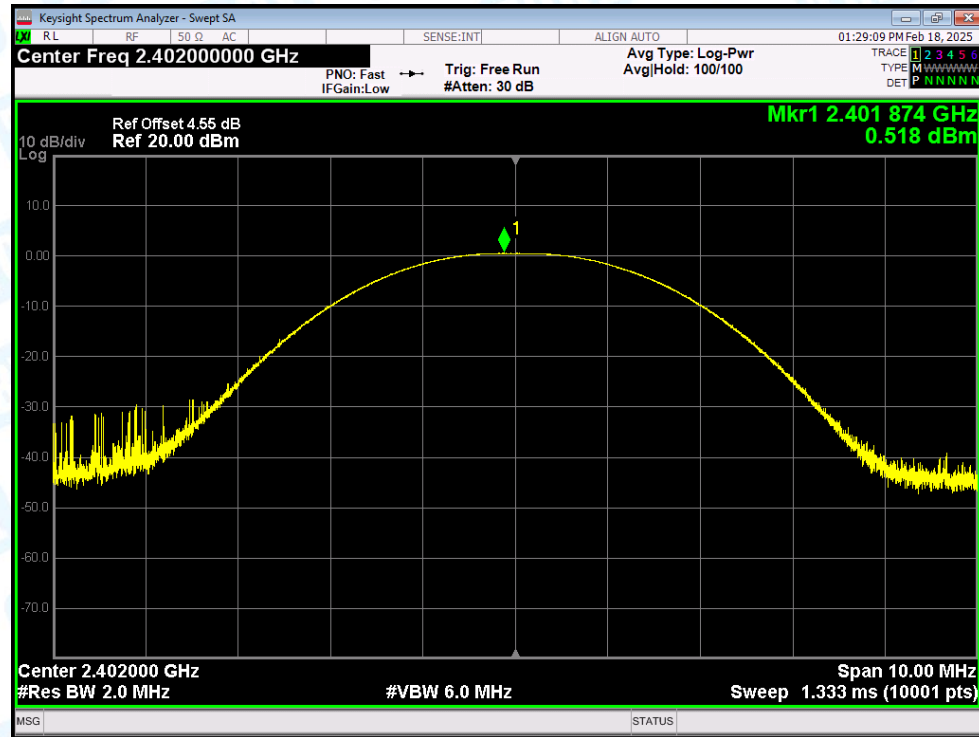


2. Maximum Conducted Output Power

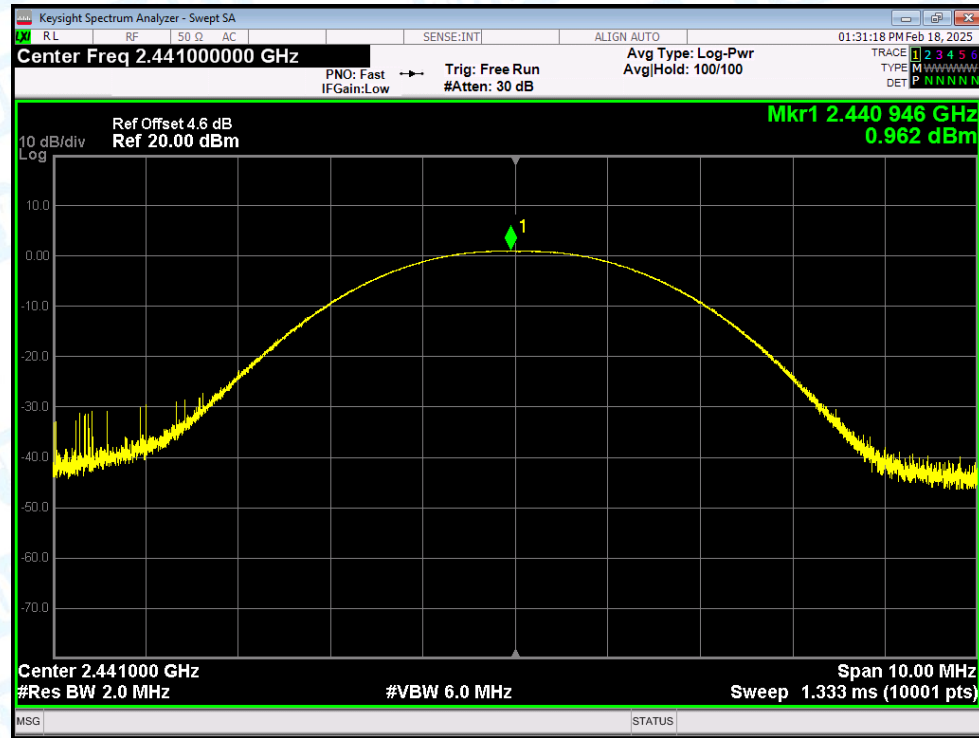
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	0.518	21	Pass
NVNT	1-DH1	2441	Ant1	0.962	21	Pass
NVNT	1-DH1	2480	Ant1	1.066	21	Pass
NVNT	1-DH3	2441	Ant1	1.043	21	Pass
NVNT	1-DH5	2441	Ant1	1.013	21	Pass
NVNT	2-DH1	2402	Ant1	1.57	21	Pass
NVNT	2-DH1	2441	Ant1	1.866	21	Pass
NVNT	2-DH1	2480	Ant1	2.079	21	Pass
NVNT	2-DH3	2441	Ant1	1.955	21	Pass
NVNT	2-DH5	2441	Ant1	1.893	21	Pass

Test Graphs

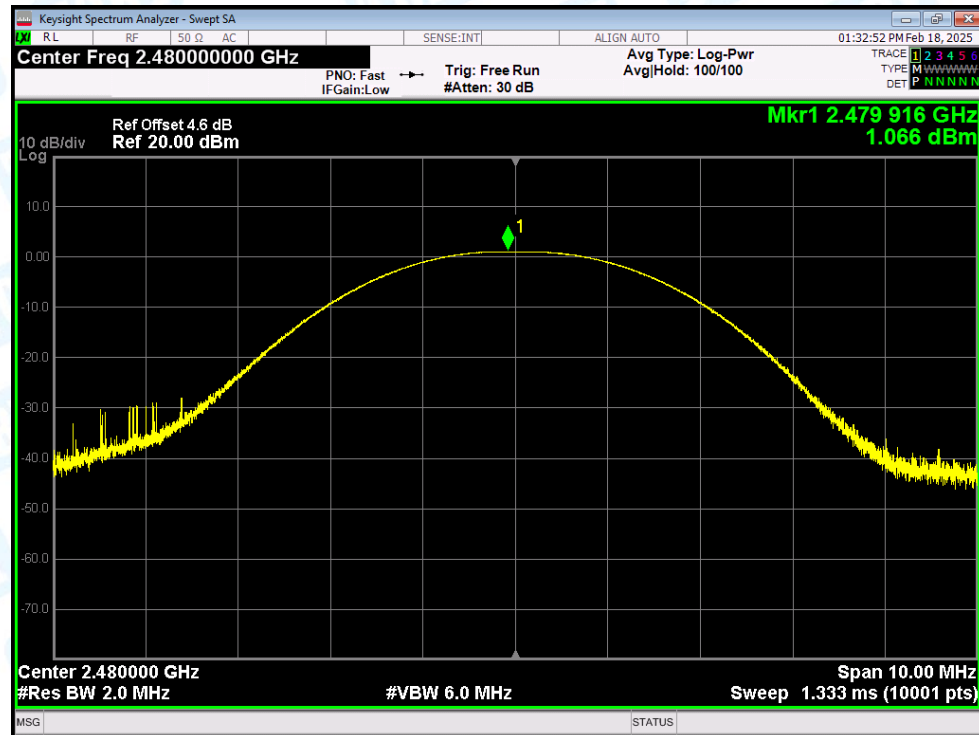
Power NVNT 1-DH1 2402MHz Ant1



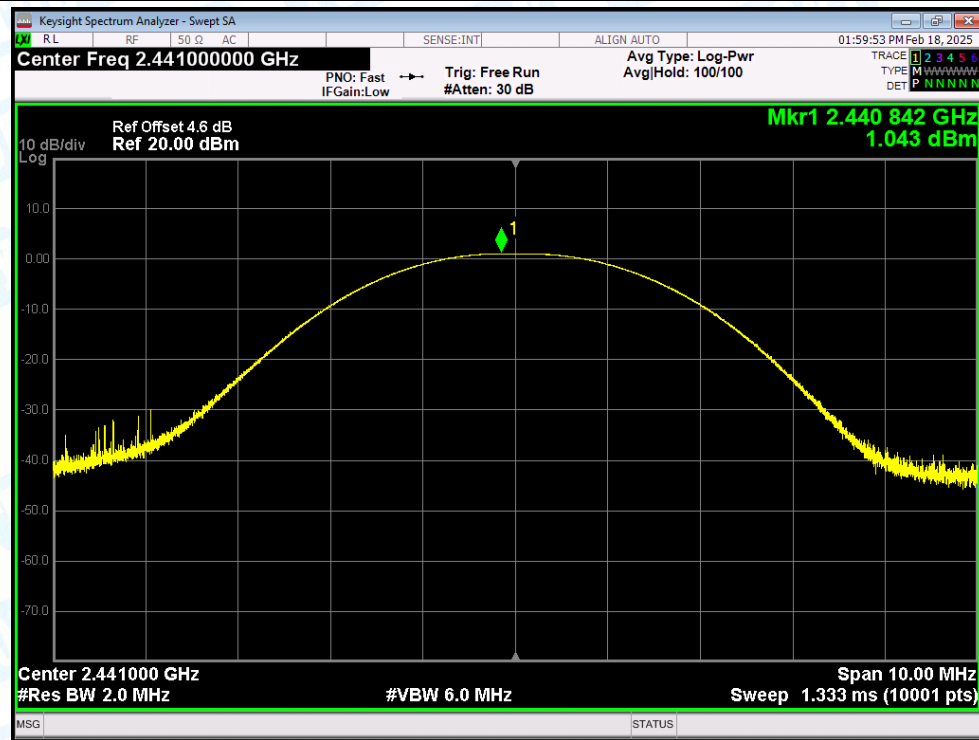
Power NVNT 1-DH1 2441MHz Ant1



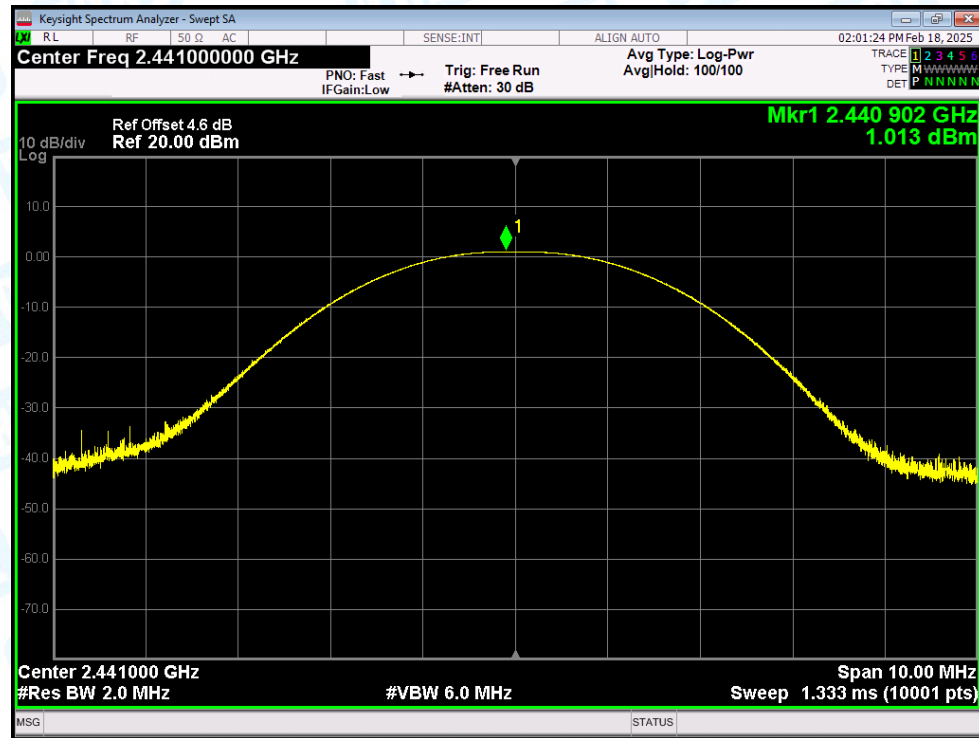
Power NVNT 1-DH1 2480MHz Ant1



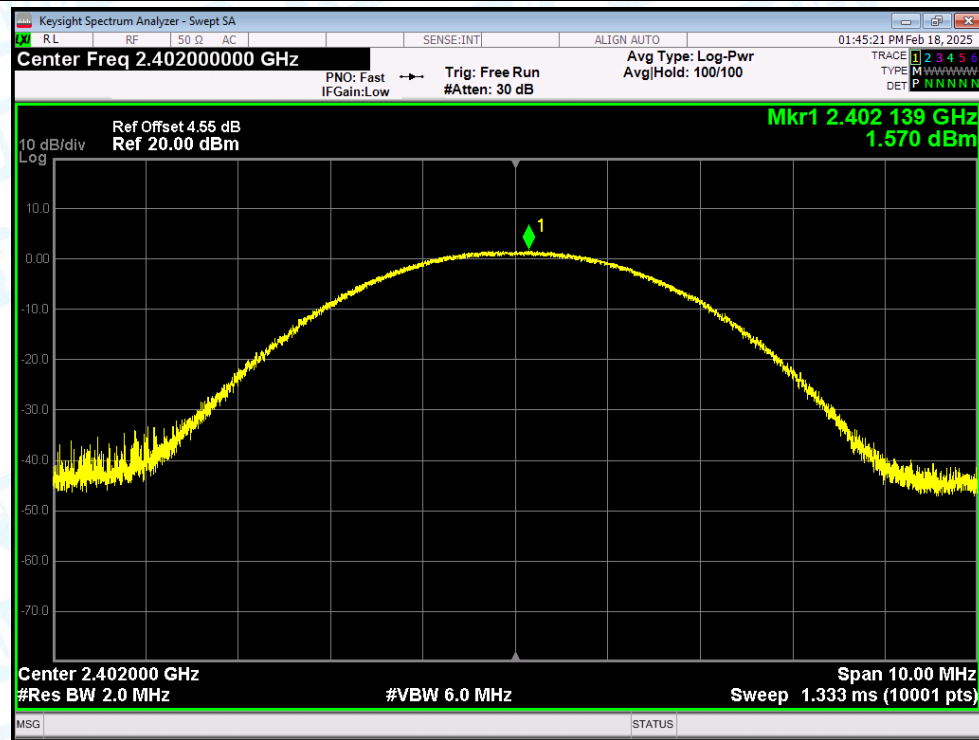
Power NVNT 1-DH3 2441MHz Ant1



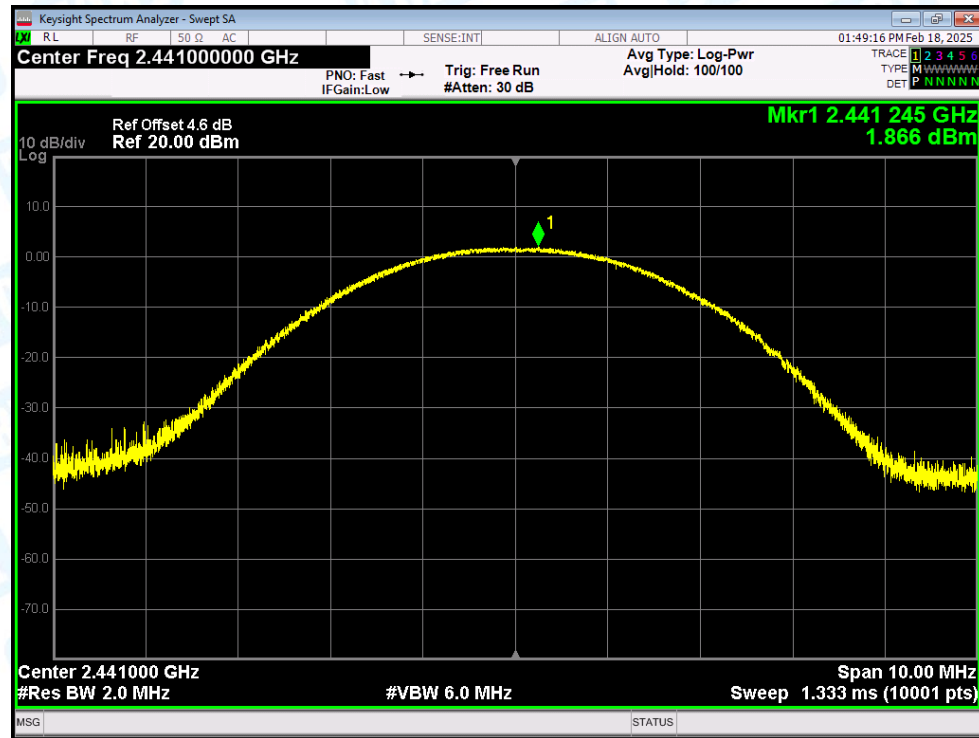
Power NVNT 1-DH5 2441MHz Ant1



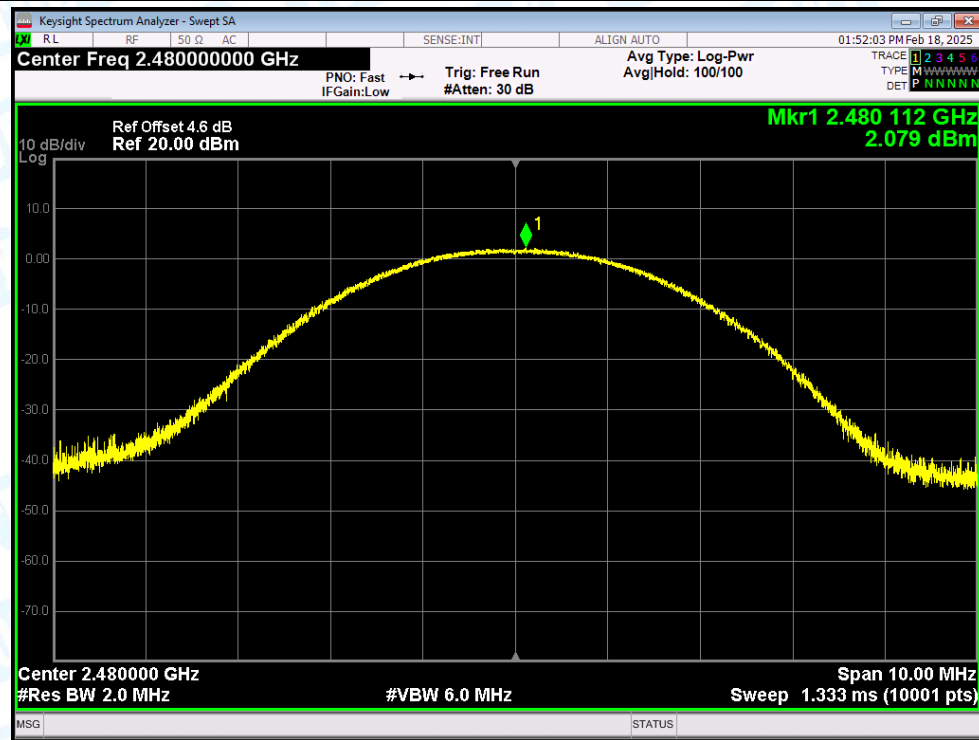
Power NVNT 2-DH1 2402MHz Ant1



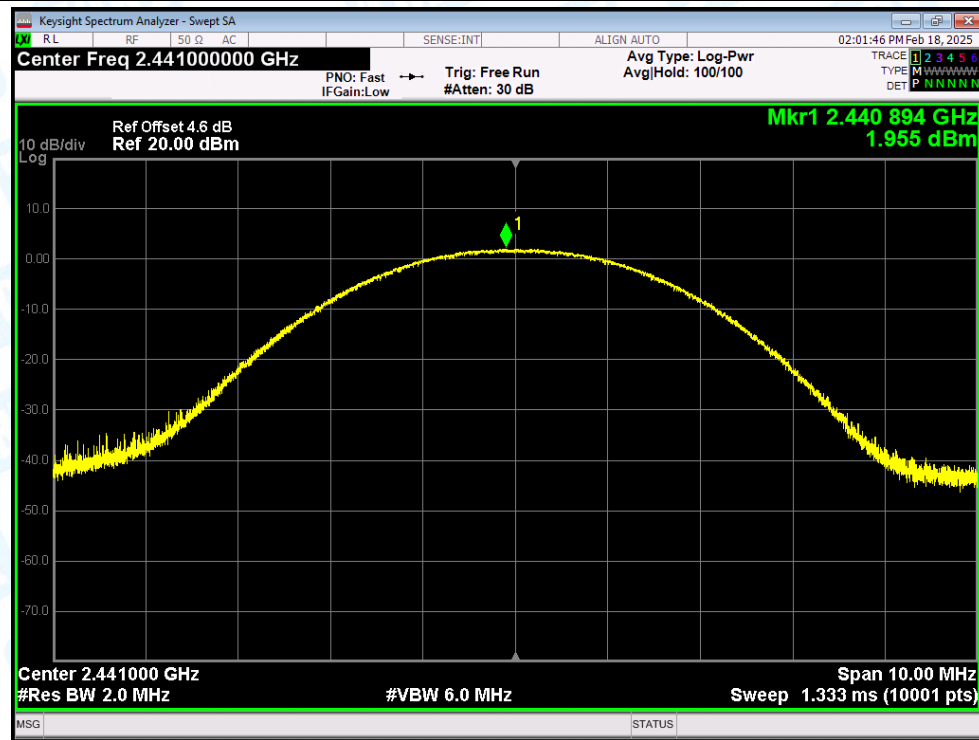
Power NVNT 2-DH1 2441MHz Ant1



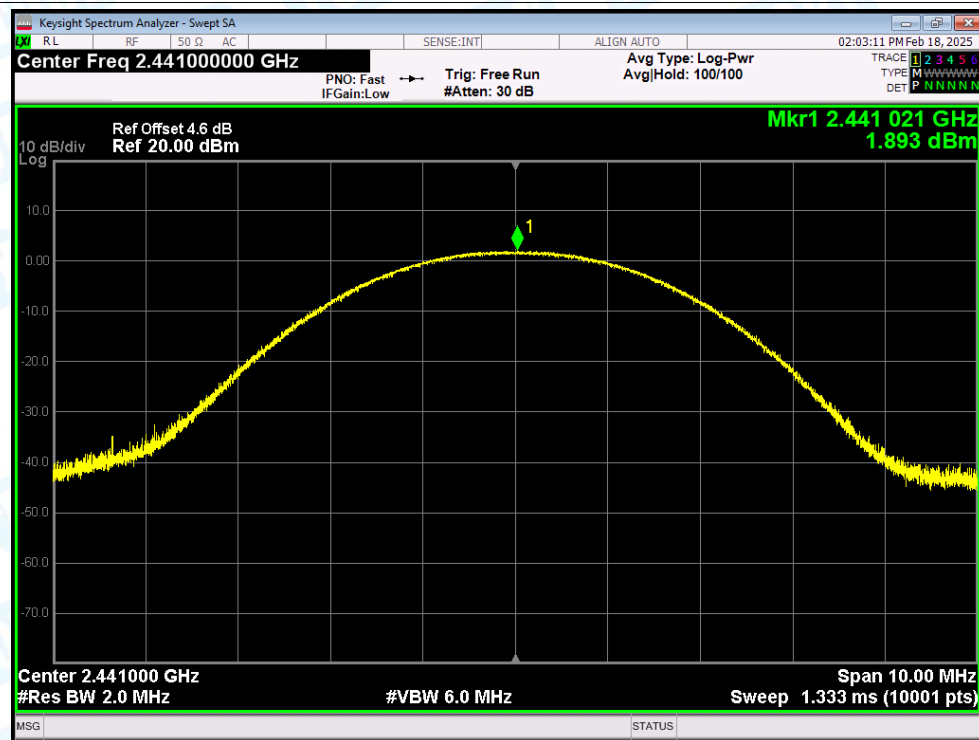
Power NVNT 2-DH1 2480MHz Ant1



Power NVNT 2-DH3 2441MHz Ant1



Power NVNT 2-DH5 2441MHz Ant1

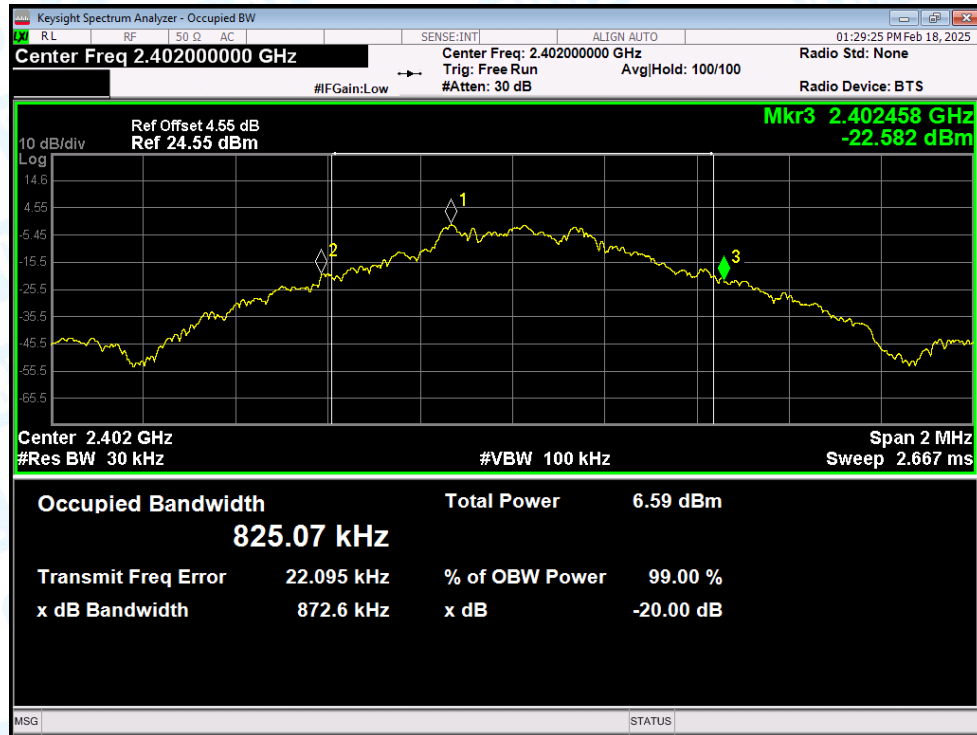


3. -20dB Bandwidth

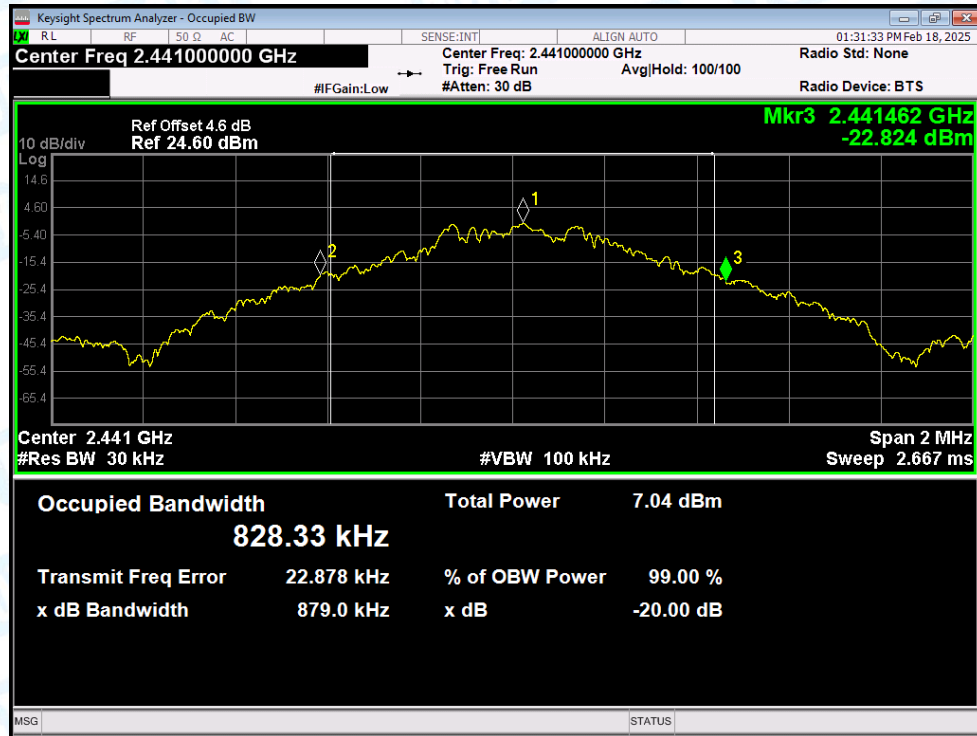
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.87	0	Pass
NVNT	1-DH1	2441	Ant1	0.88	0	Pass
NVNT	1-DH1	2480	Ant1	0.85	0	Pass
NVNT	2-DH1	2402	Ant1	1.26	0	Pass
NVNT	2-DH1	2441	Ant1	1.25	0	Pass
NVNT	2-DH1	2480	Ant1	1.22	0	Pass

Test Graphs

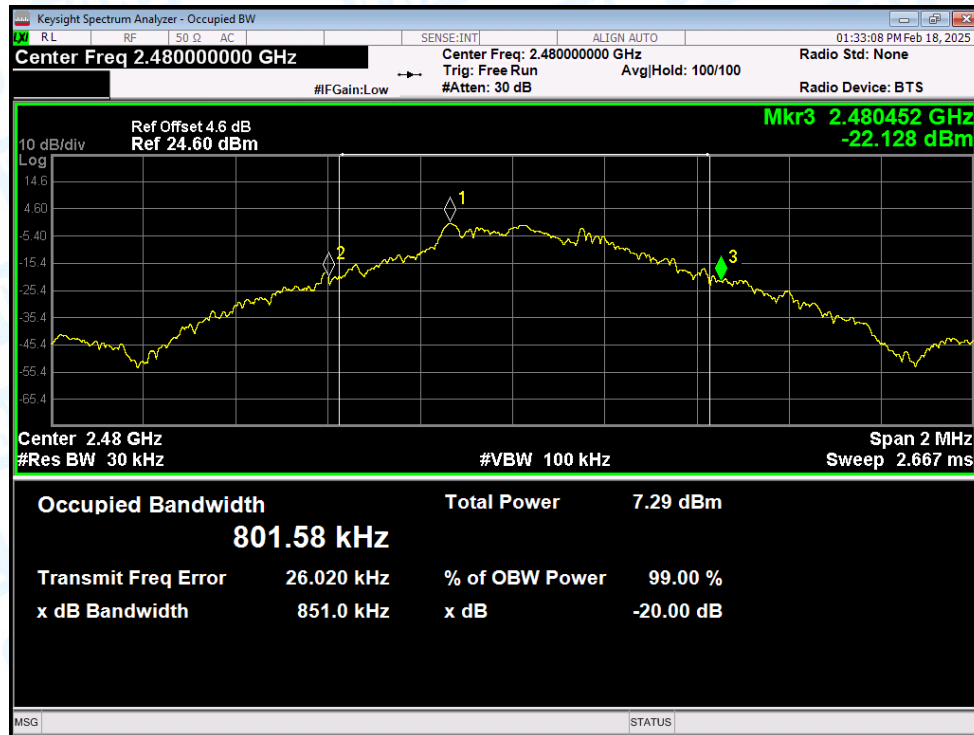
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



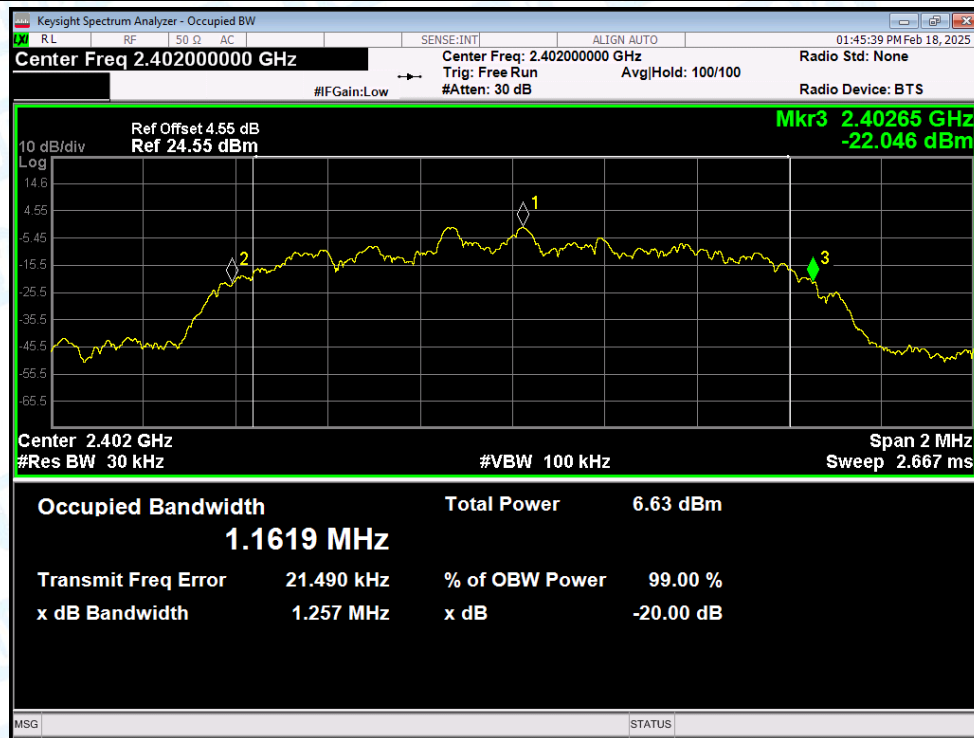
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



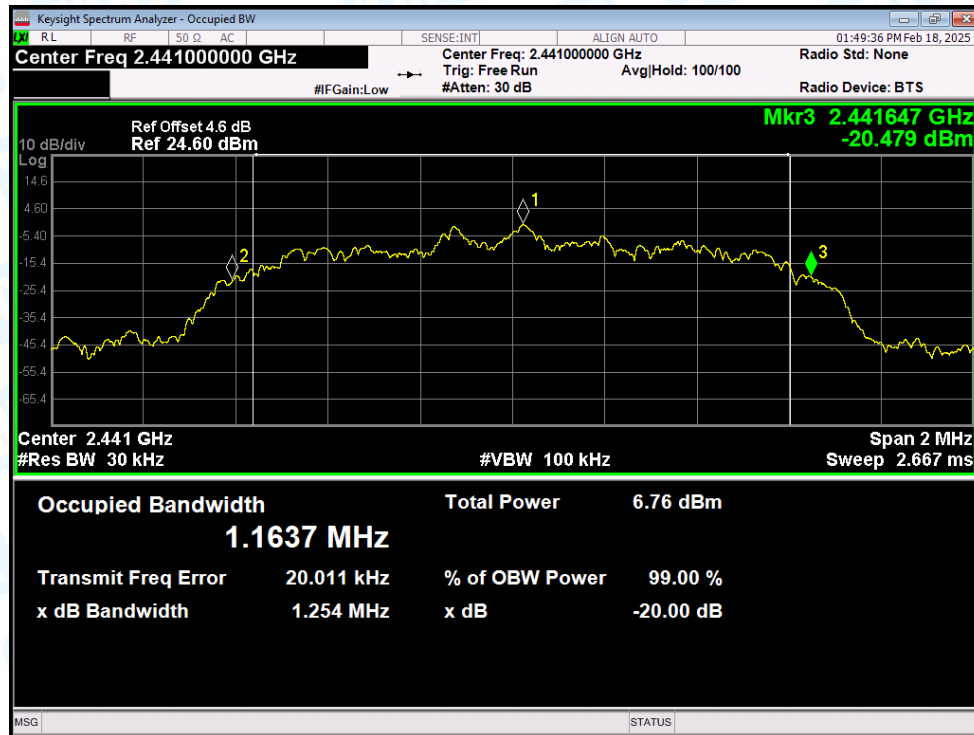
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



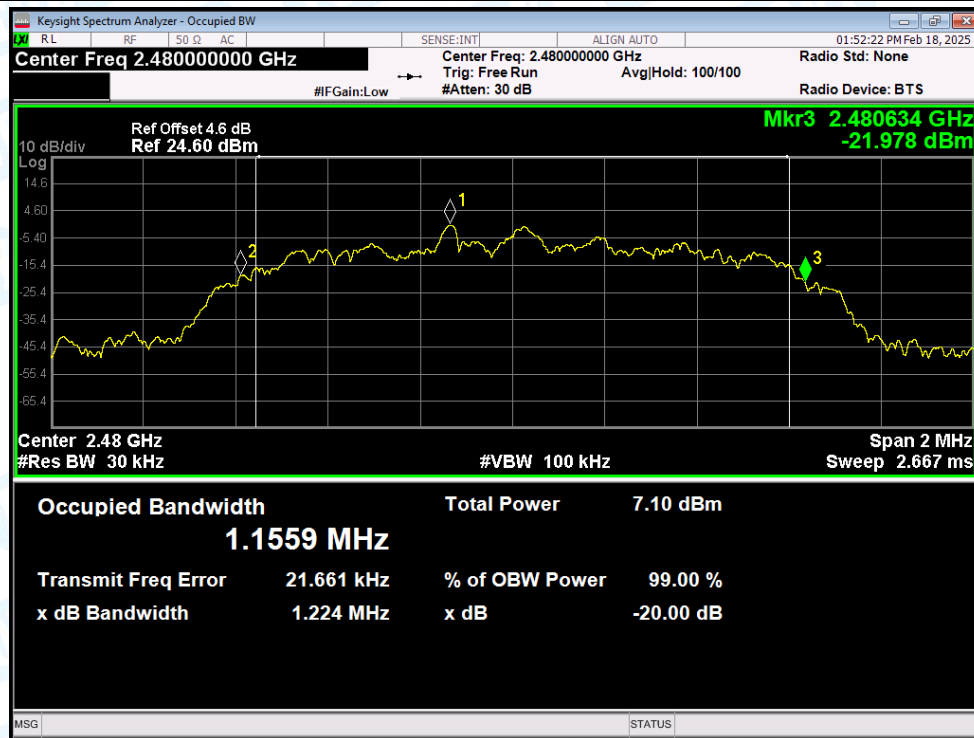
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

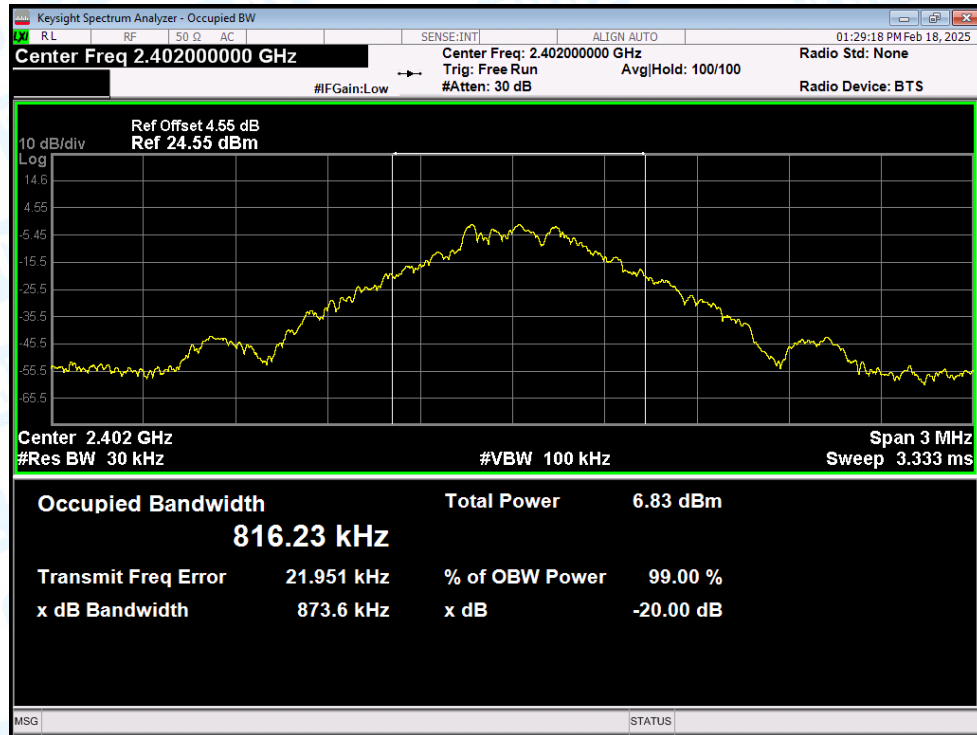


4. Occupied Channel Bandwidth

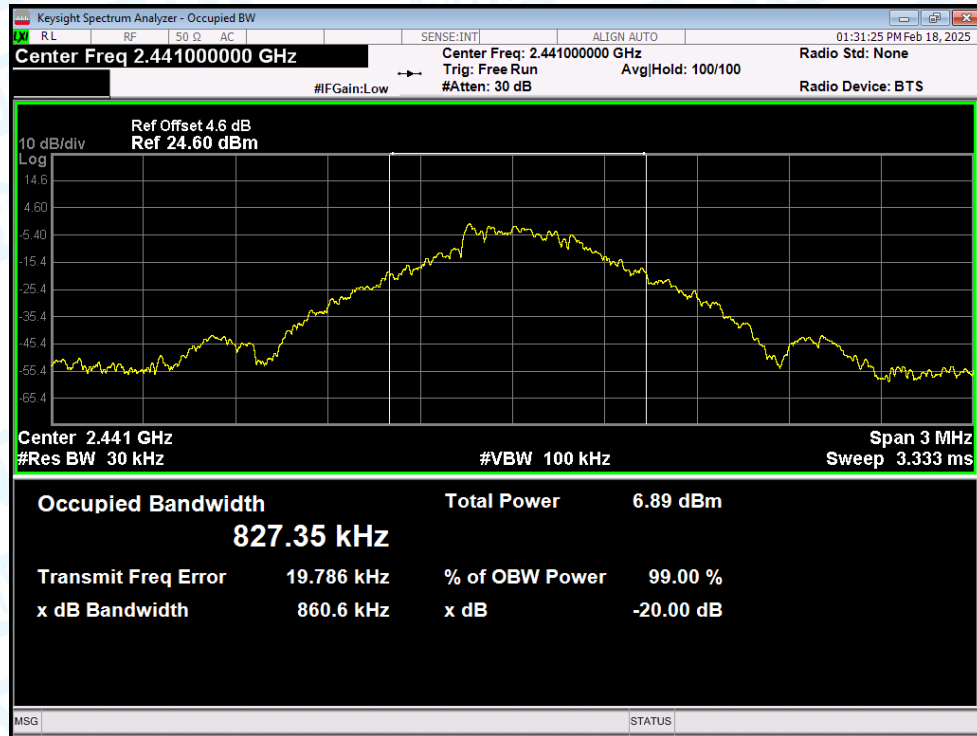
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.816
NVNT	1-DH1	2441	Ant1	0.827
NVNT	1-DH1	2480	Ant1	0.798
NVNT	2-DH1	2402	Ant1	1.165
NVNT	2-DH1	2441	Ant1	1.158
NVNT	2-DH1	2480	Ant1	1.139

Test Graphs

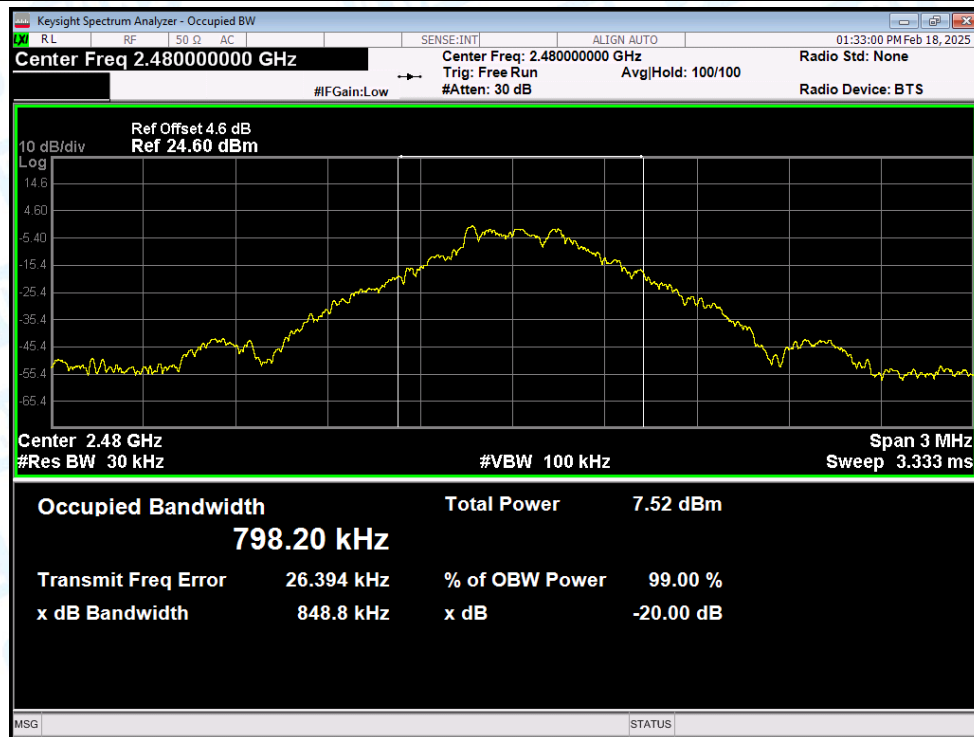
OBW NVNT 1-DH1 2402MHz Ant1



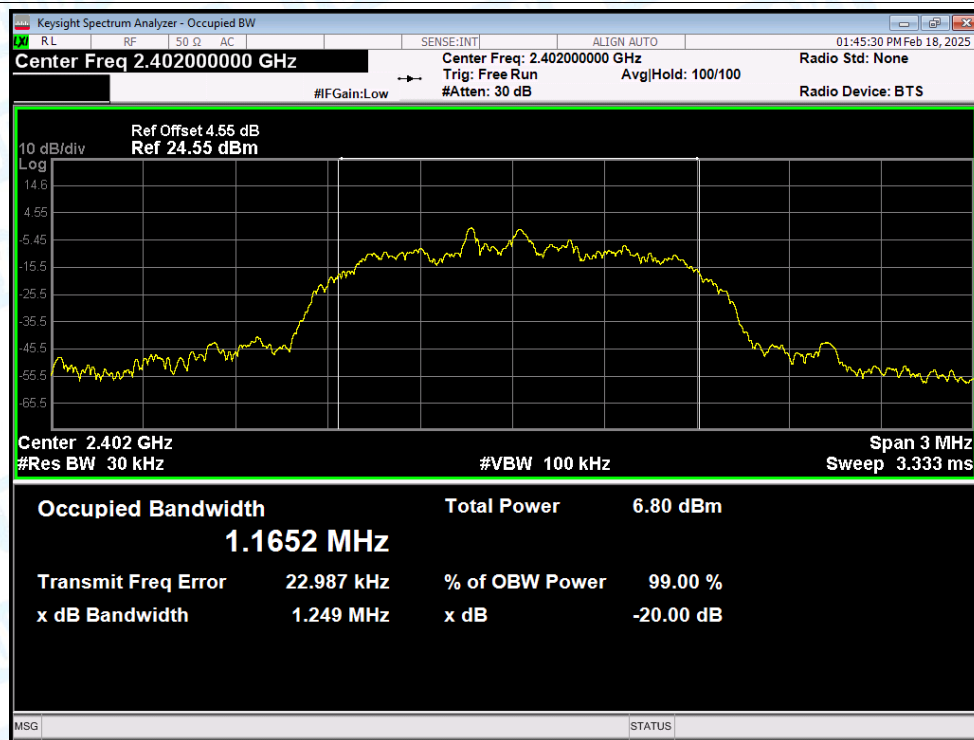
OBW NVNT 1-DH1 2441MHz Ant1



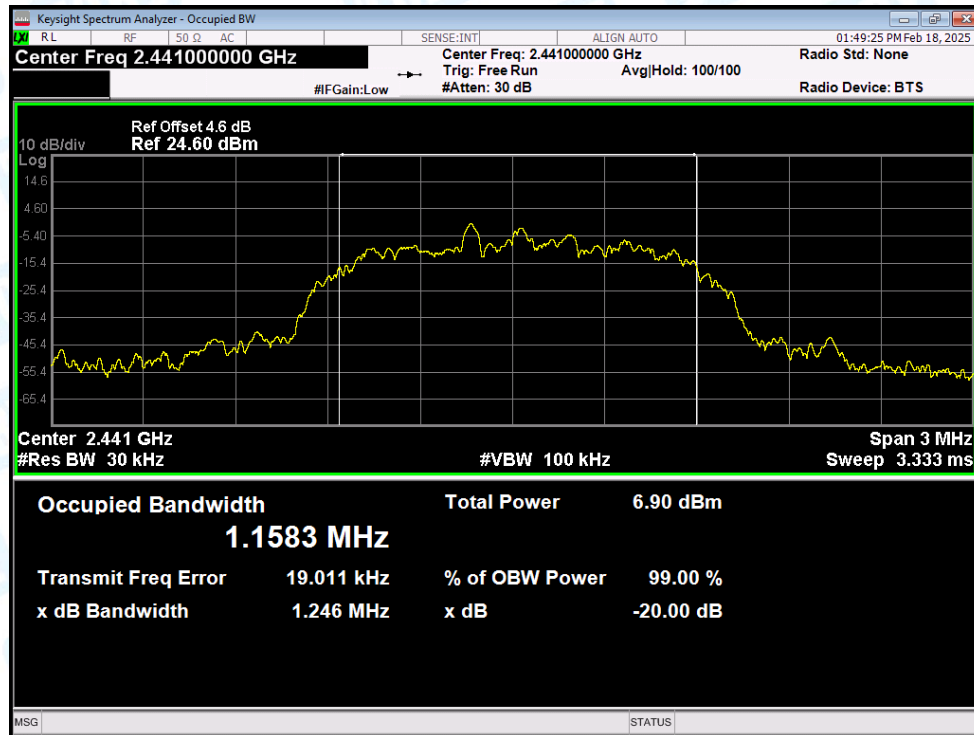
OBW NVNT 1-DH1 2480MHz Ant1



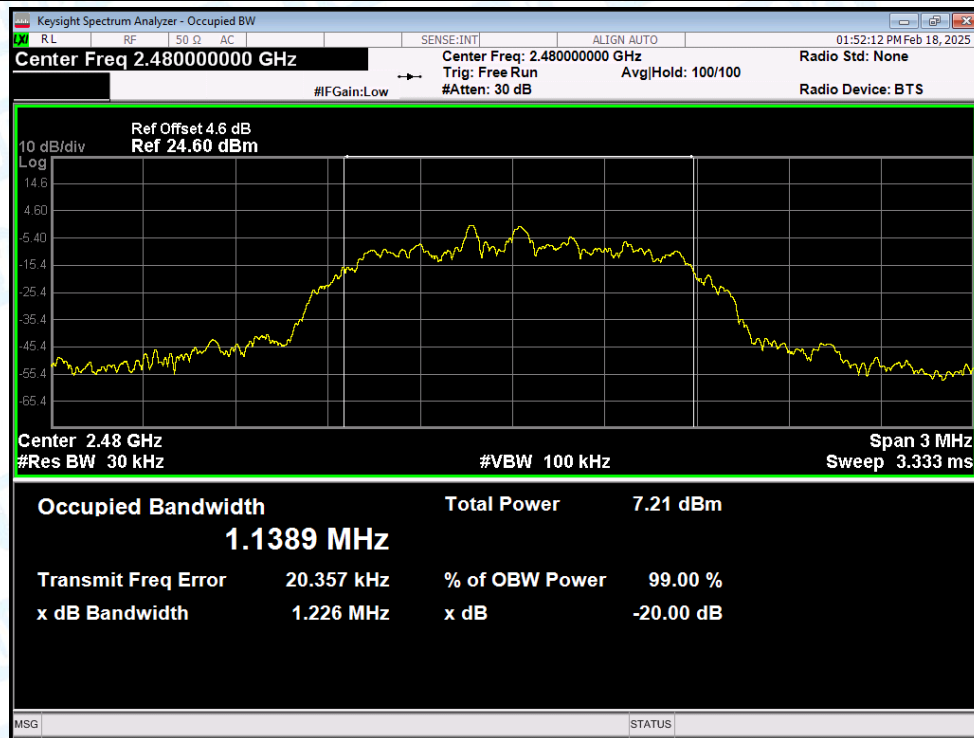
OBW NVNT 2-DH1 2402MHz Ant1



OBW NVNT 2-DH1 2441MHz Ant1



OBW NVNT 2-DH1 2480MHz Ant1

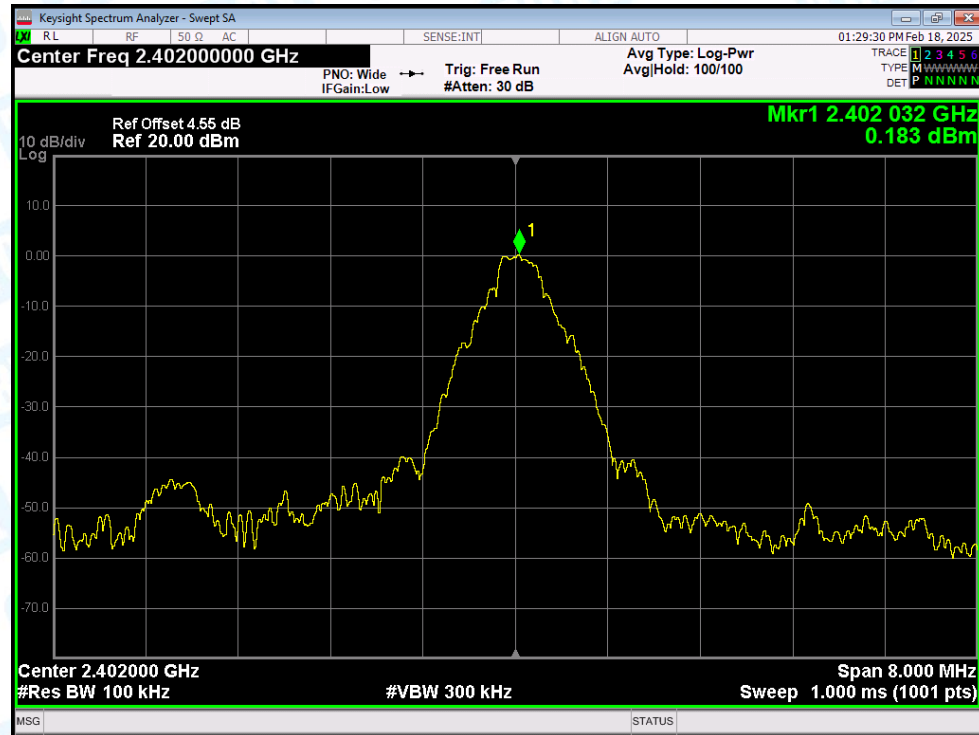


5. Band Edge

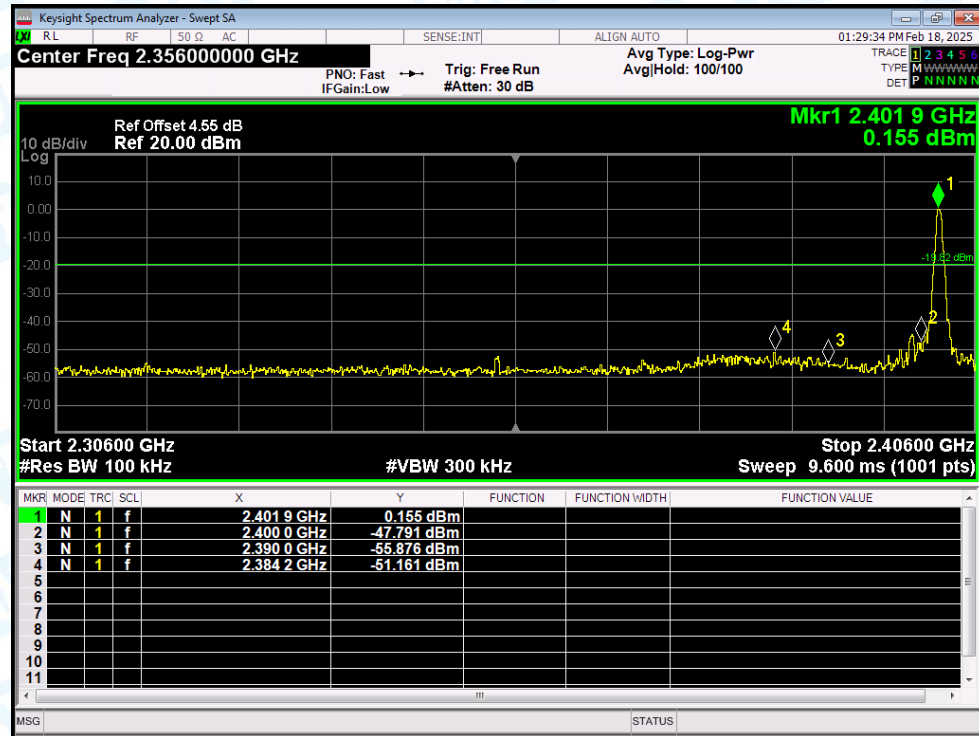
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-51.34	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-48.31	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-51.09	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-49.88	-20	Pass

Test Graphs

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



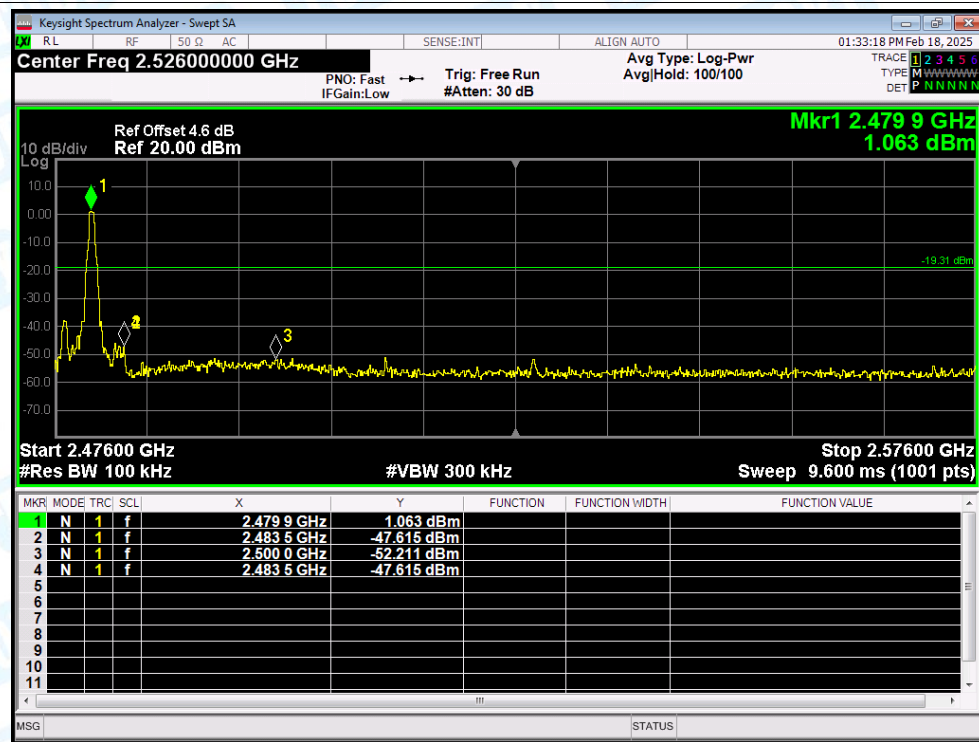
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



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



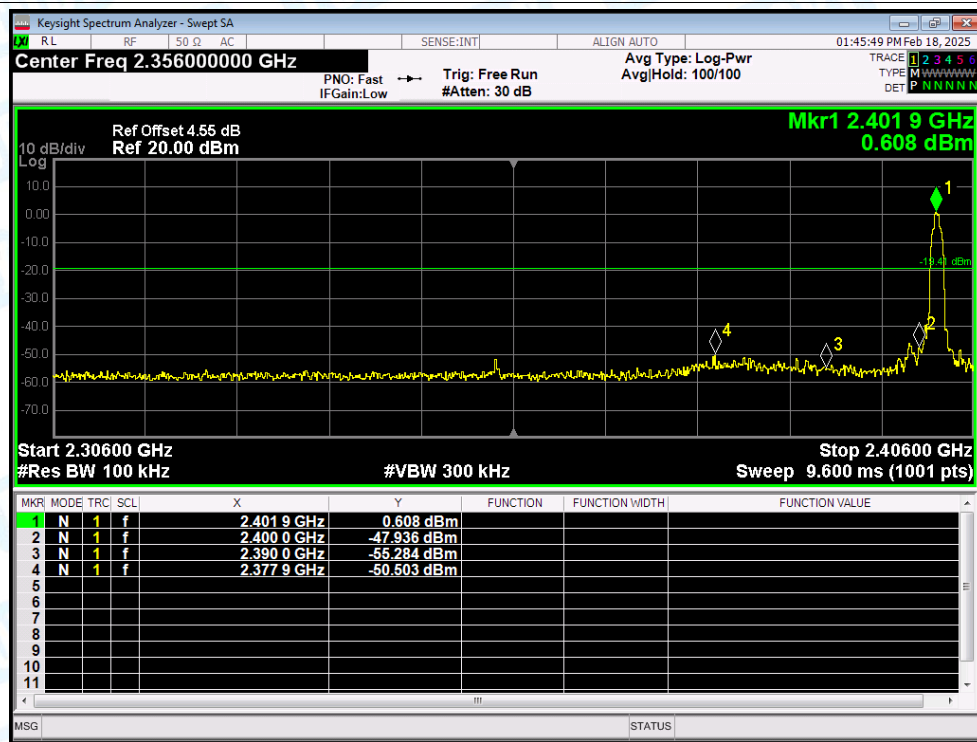
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



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



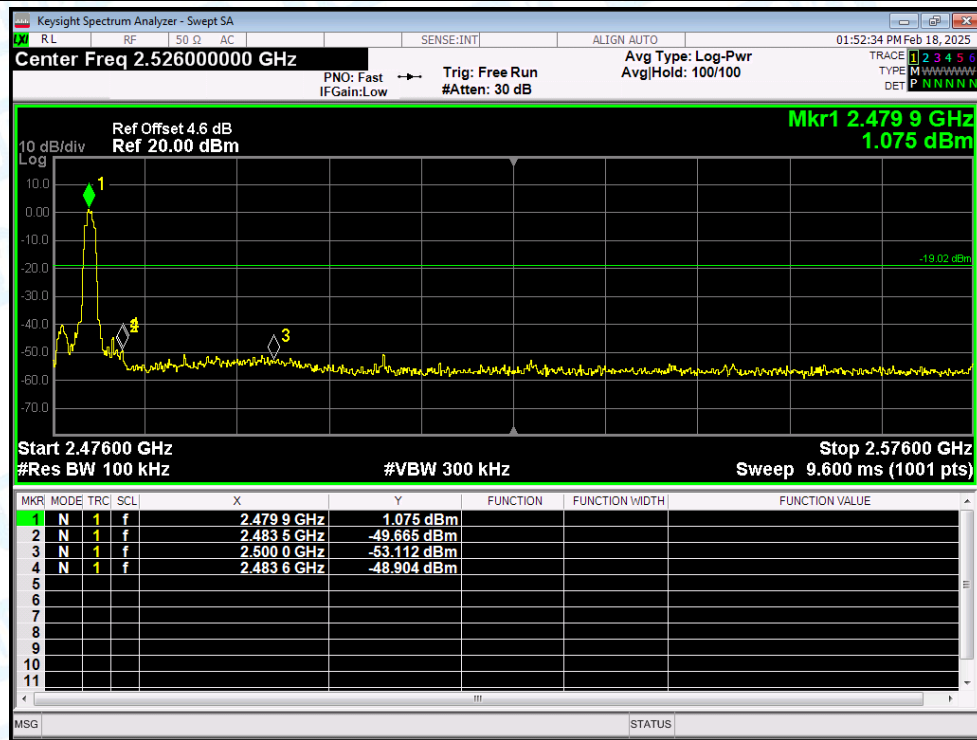
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



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



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

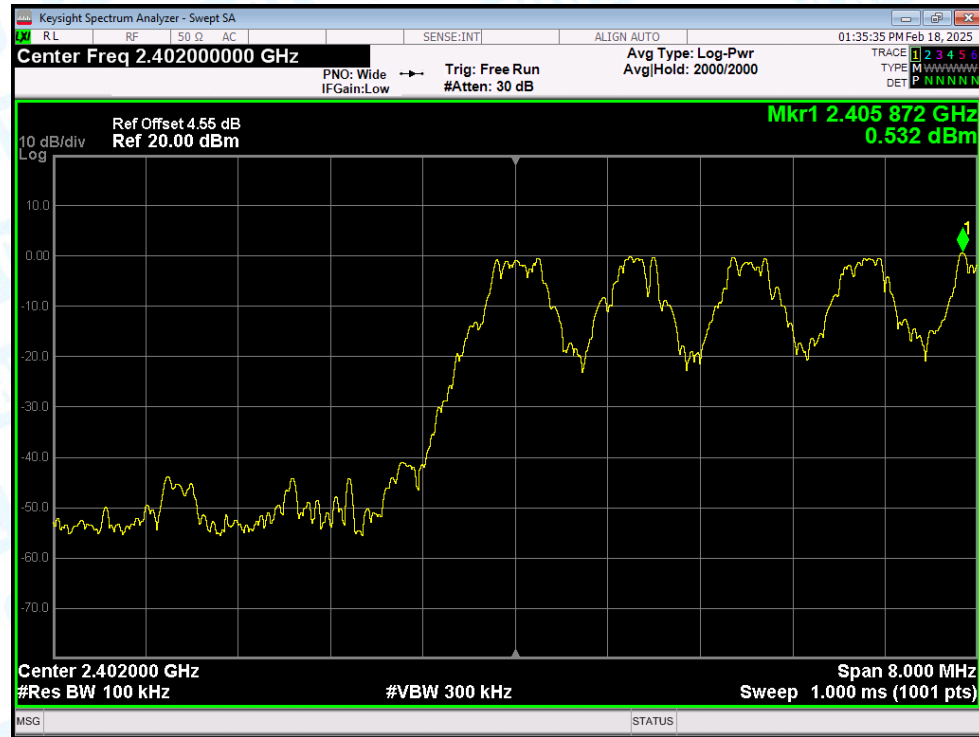


6. Band Edge(Hopping)

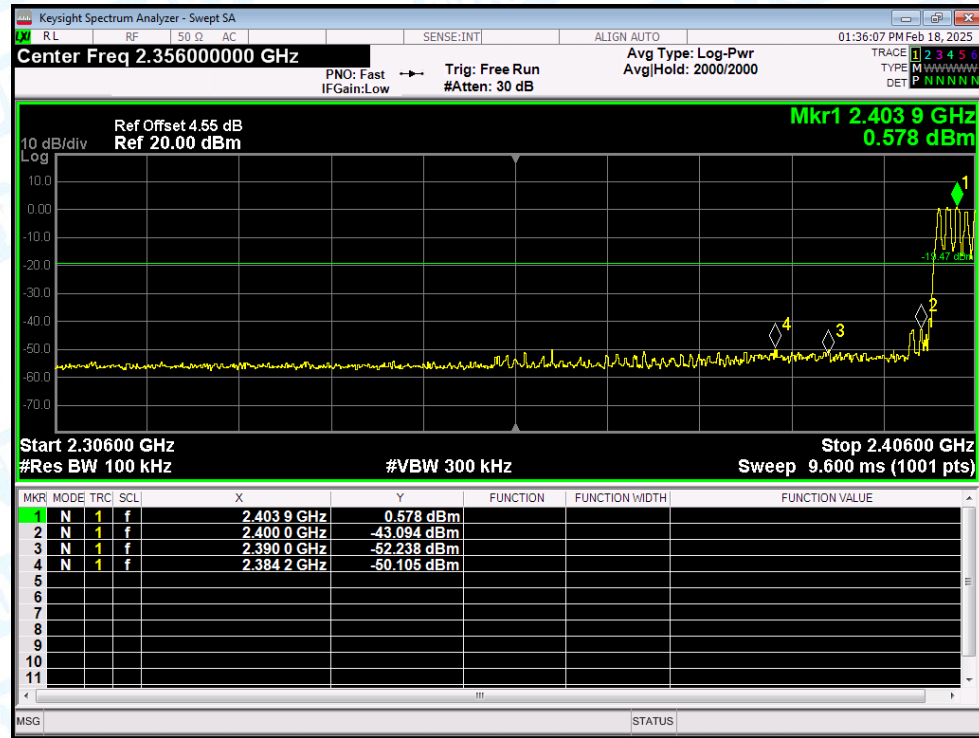
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-50.63	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-50.69	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-50.38	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-50.77	-20	Pass

Test Graphs

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



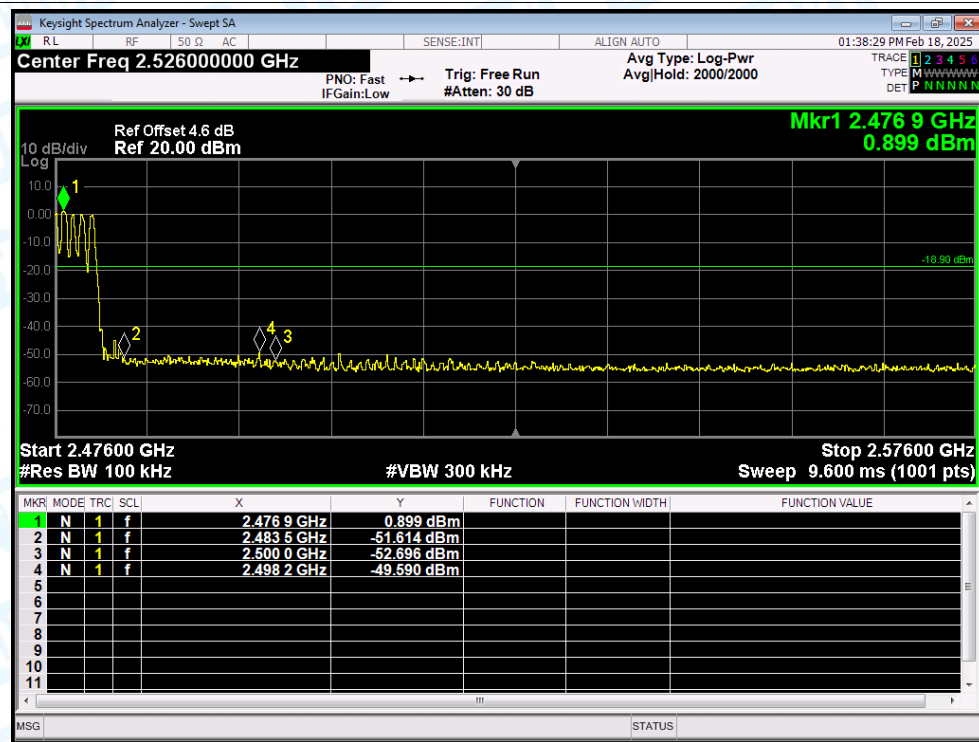
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref



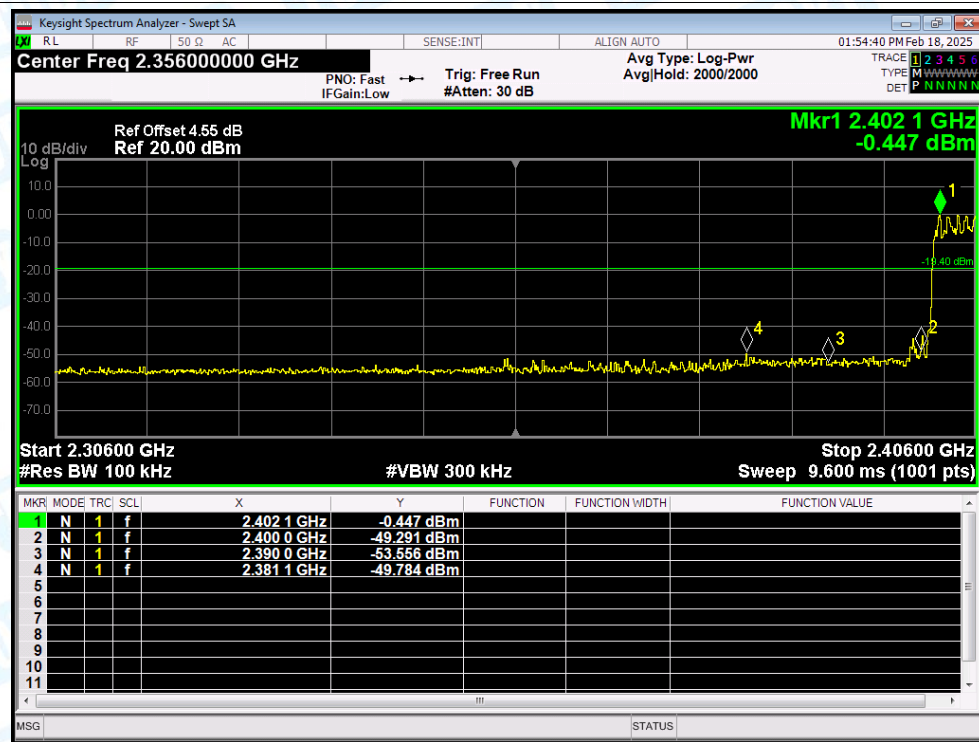
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



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



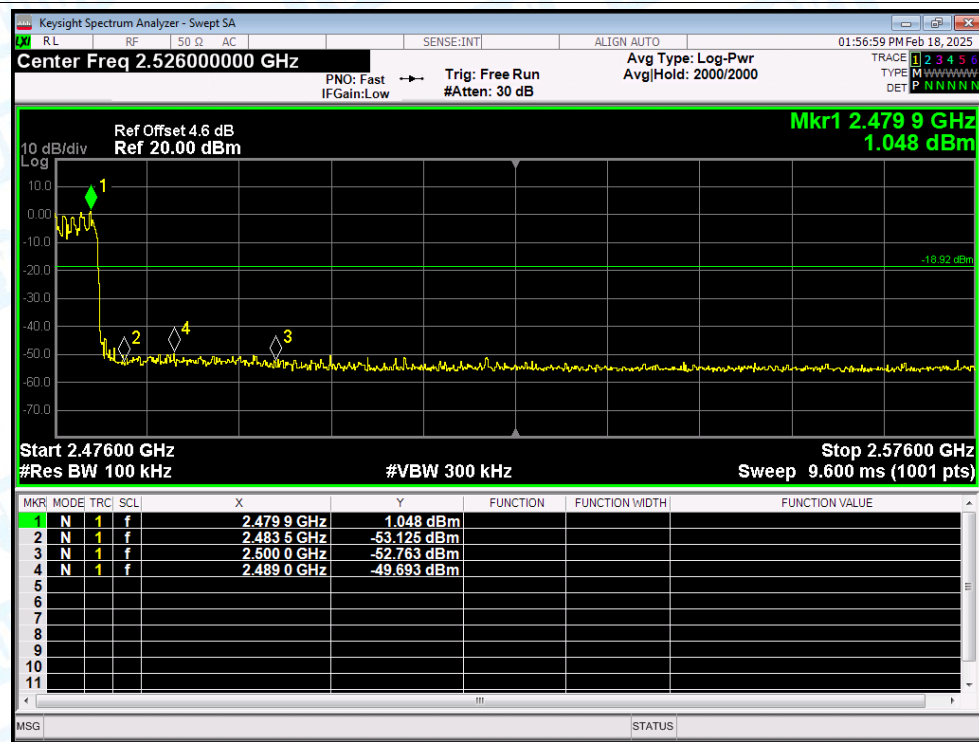
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission

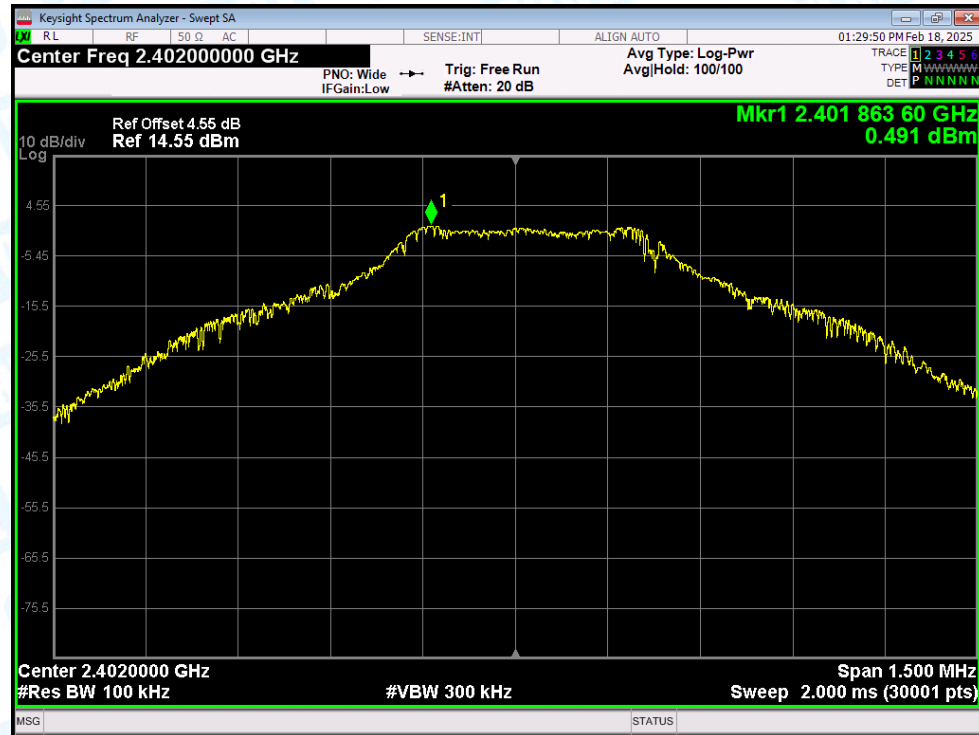


7. Conducted RF Spurious Emission

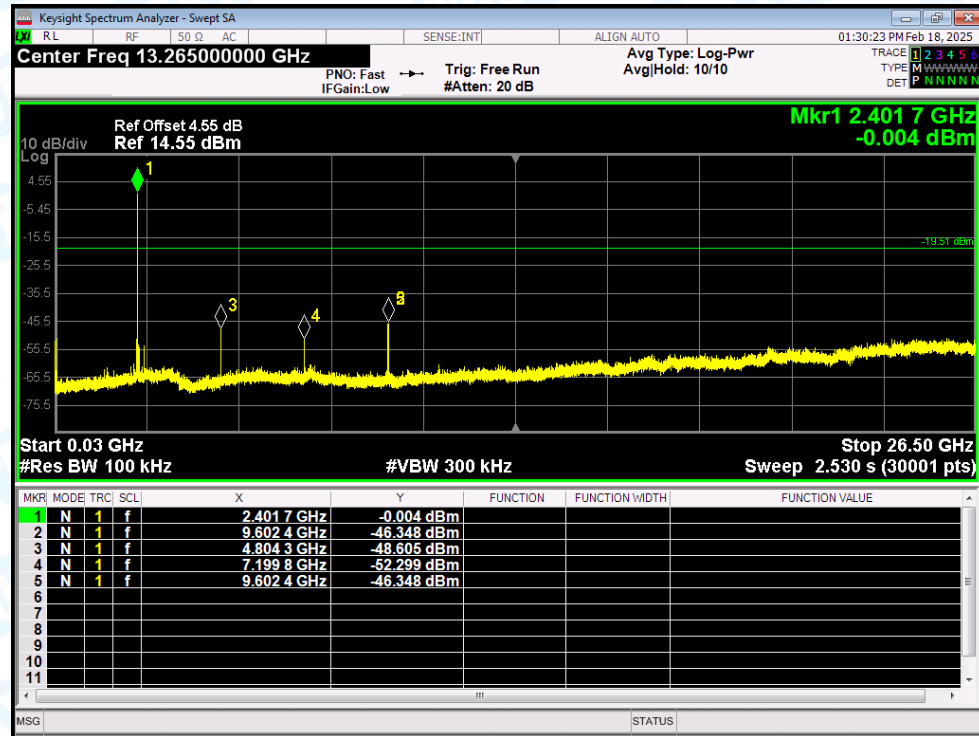
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-46.84	-20	Pass
NVNT	1-DH1	2441	Ant1	-46.94	-20	Pass
NVNT	1-DH1	2480	Ant1	-46.07	-20	Pass
NVNT	2-DH1	2402	Ant1	-46.23	-20	Pass
NVNT	2-DH1	2441	Ant1	-46.05	-20	Pass
NVNT	2-DH1	2480	Ant1	-45.87	-20	Pass

Test Graphs

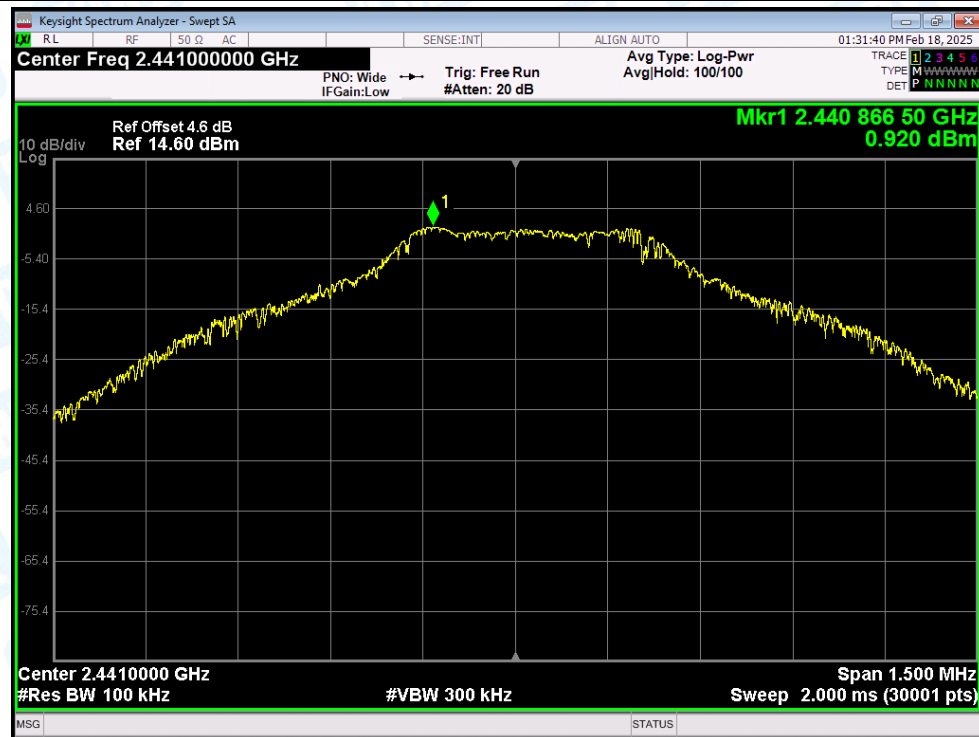
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



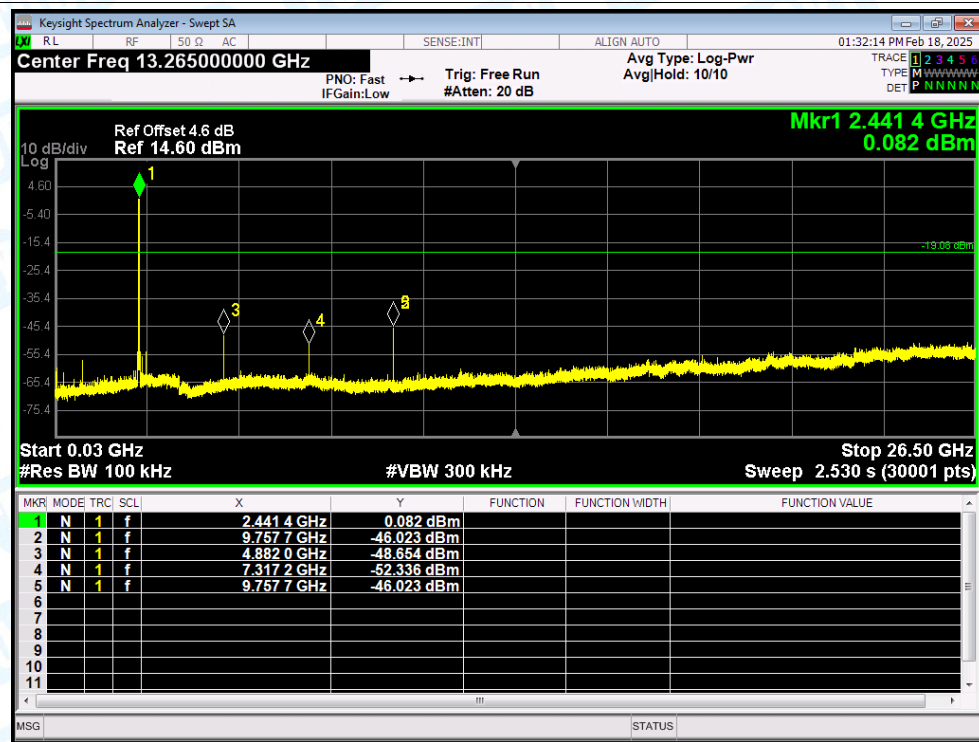
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



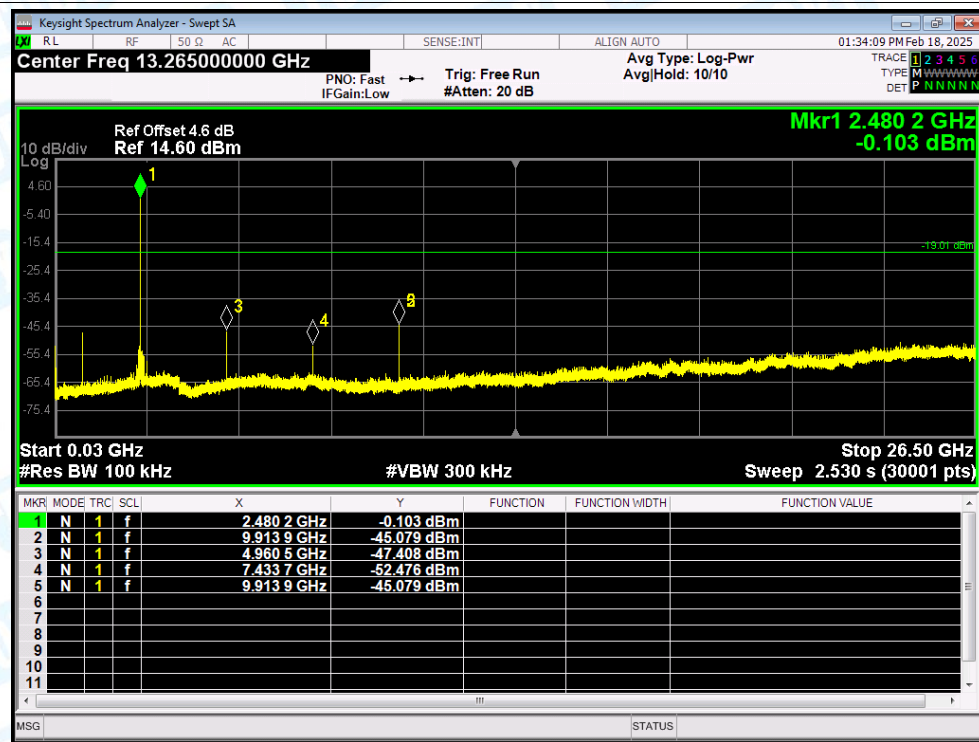
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



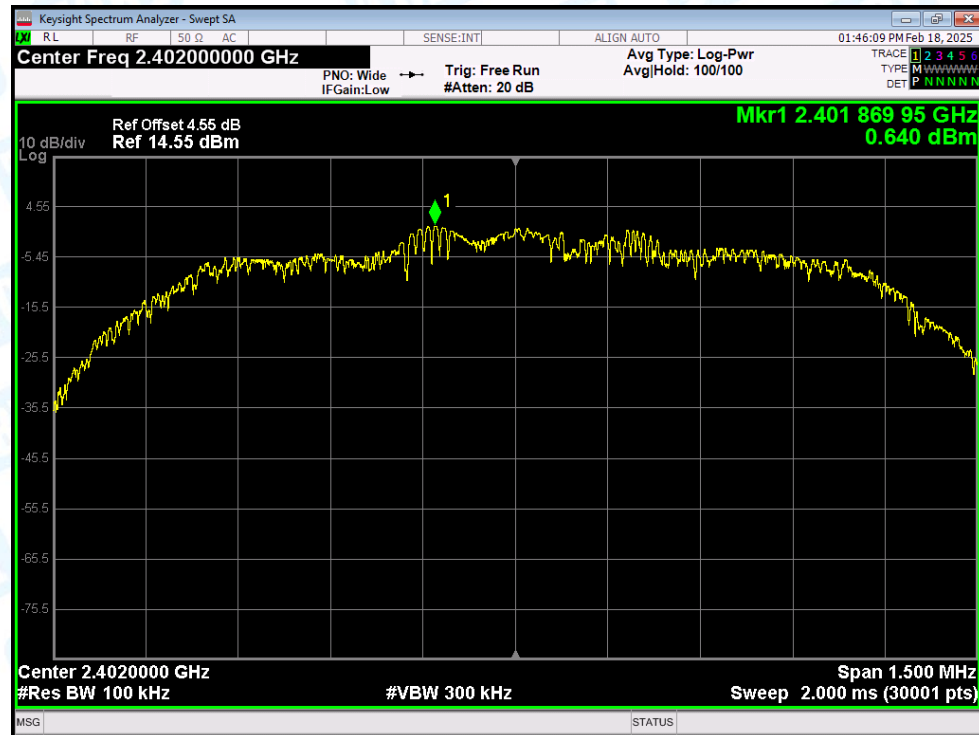
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



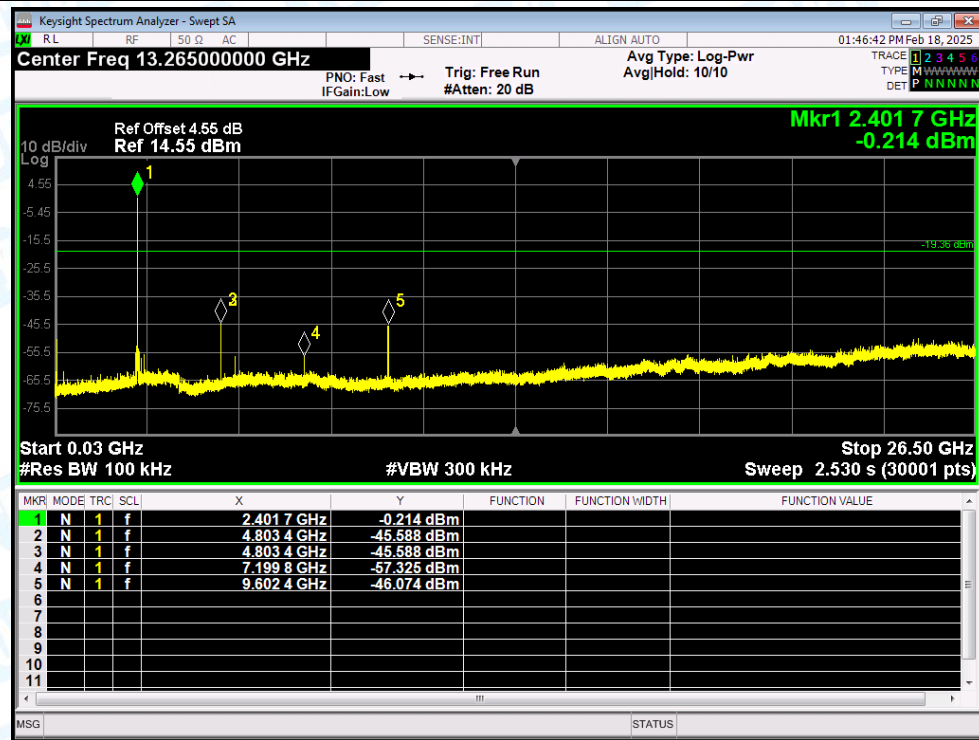
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



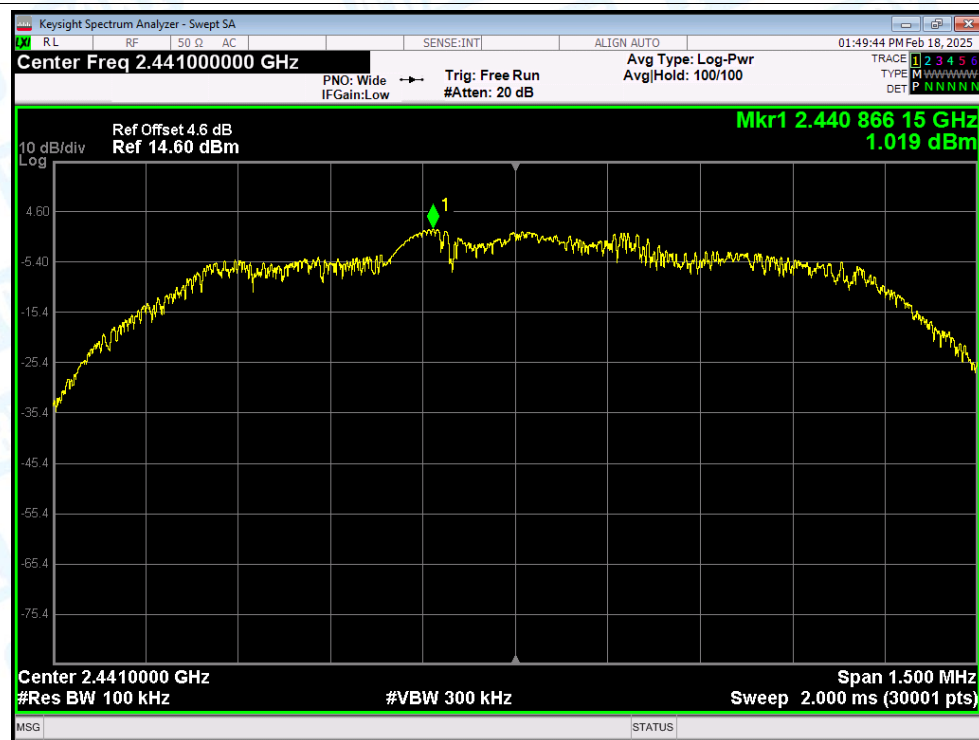
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



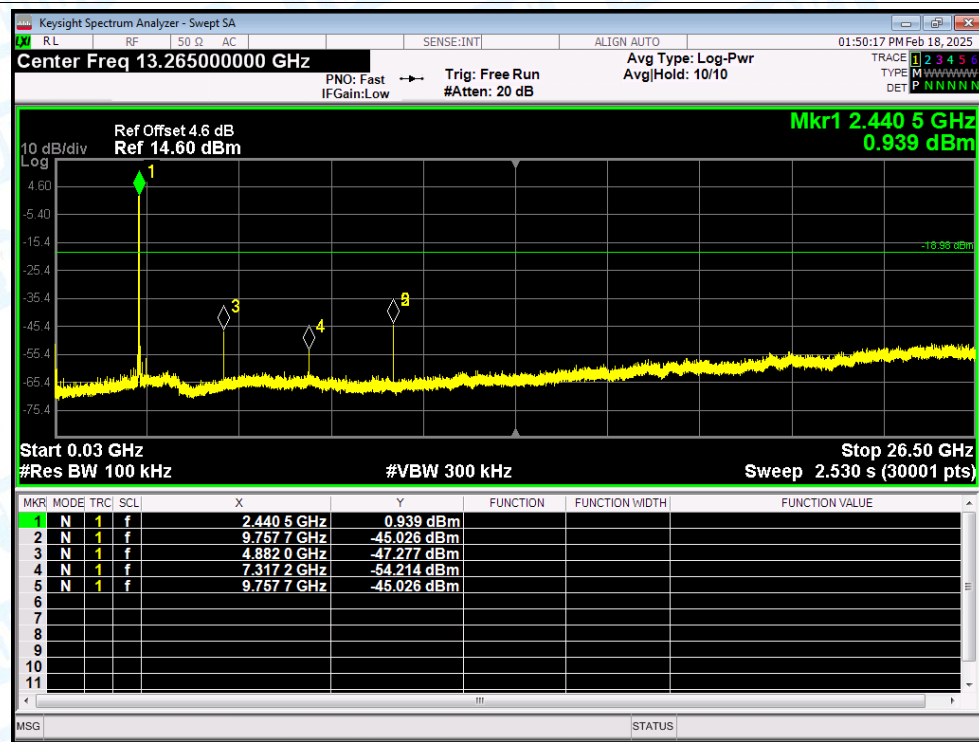
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



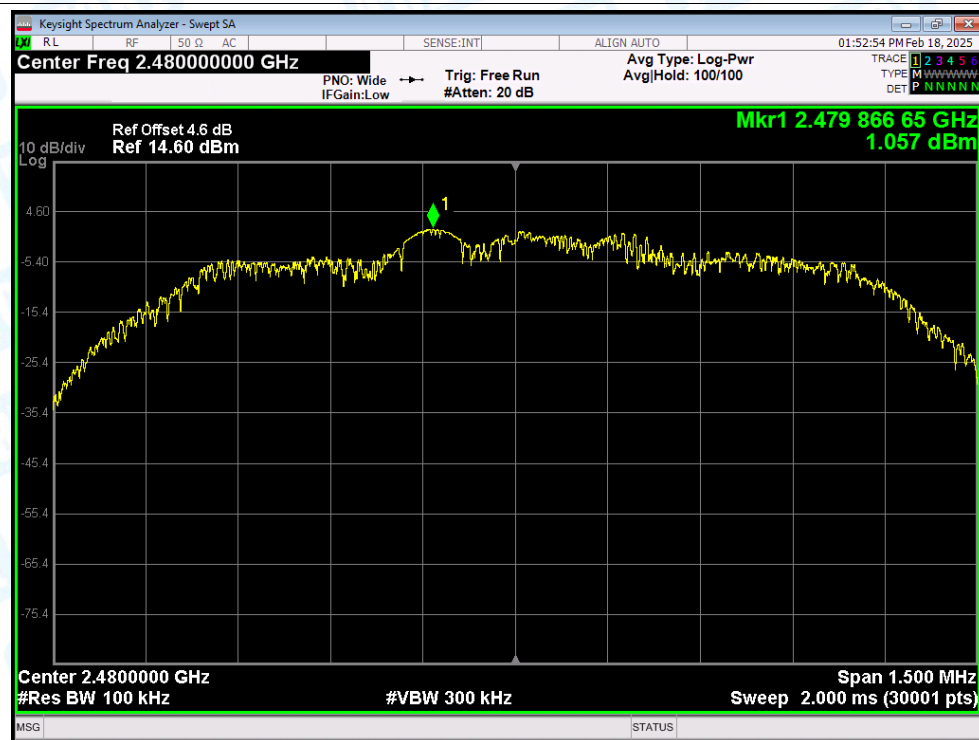
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



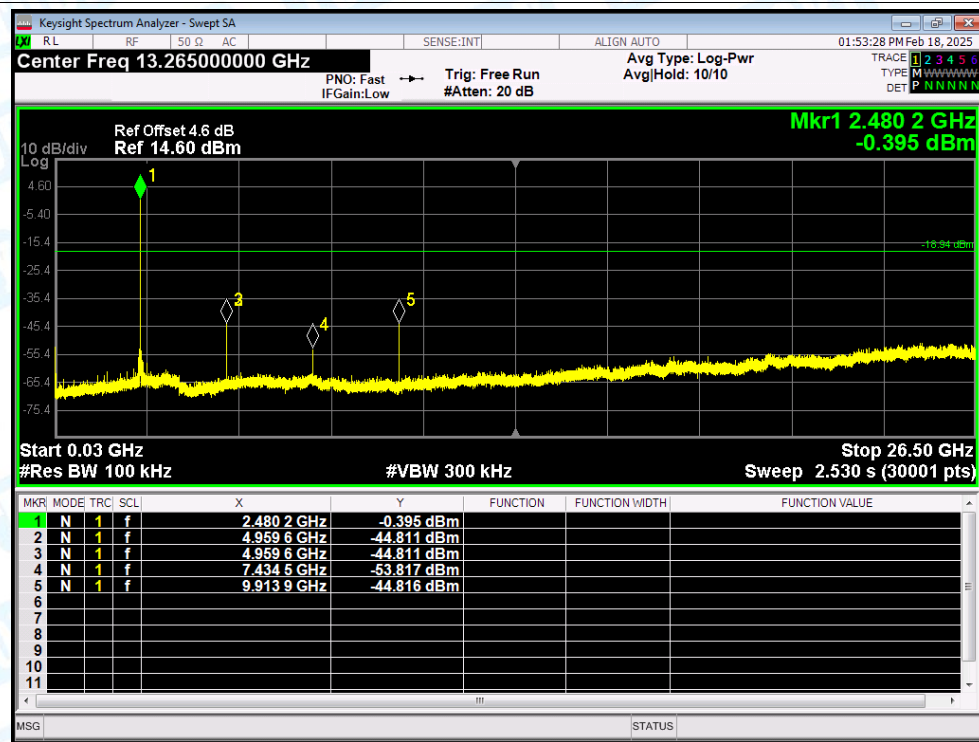
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission

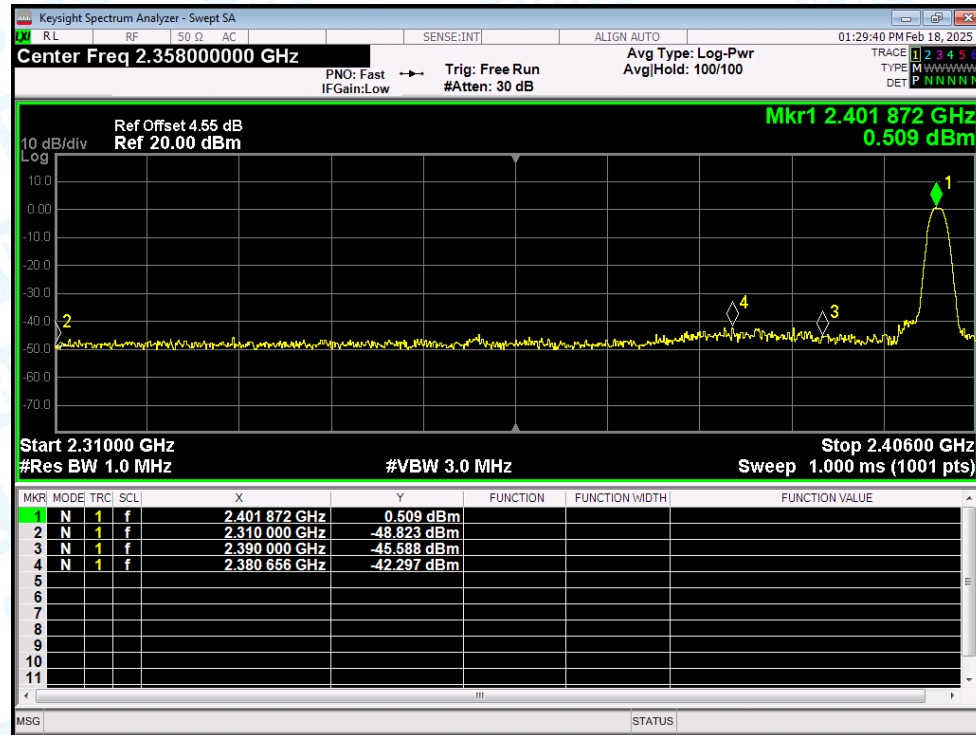


8. Restrict Band

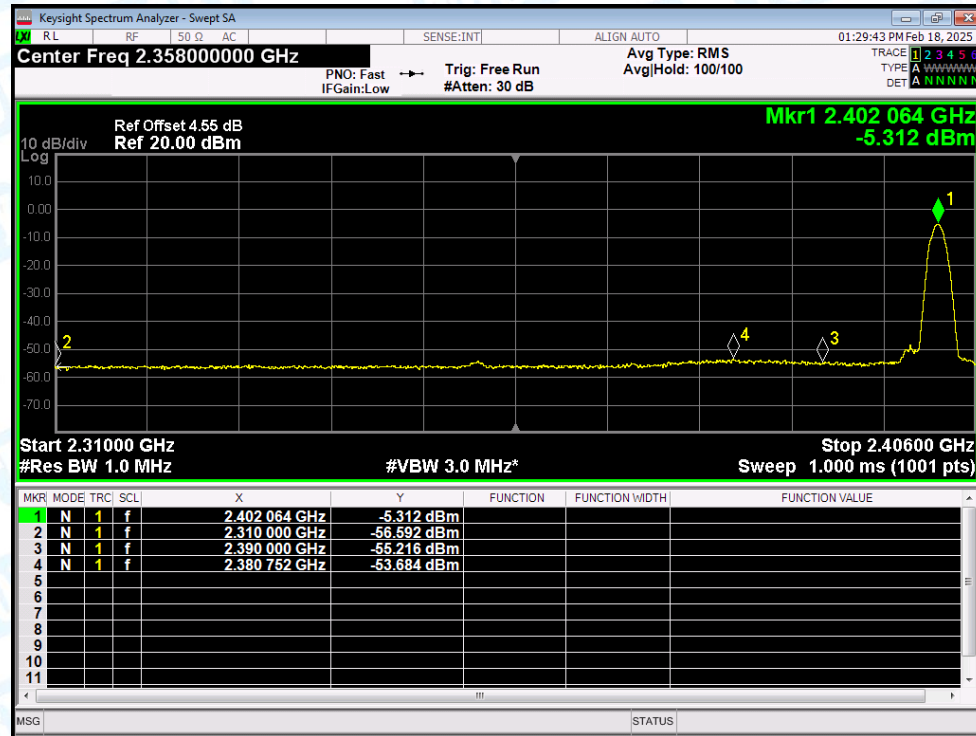
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-48.82	2	-	48.44	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.59	2	5.17	45.84	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2380.656	-42.3	2	-	54.96	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2380.752	-53.68	2	5.17	48.75	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-45.59	2	-	51.67	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-55.22	2	5.17	47.21	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-43.11	2	-	54.15	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-51.82	2	5.17	50.61	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2495.968	-40.44	2	-	56.82	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.512	-51.82	2	5.17	50.61	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-44.14	2	-	53.12	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-52.95	2	5.17	49.48	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-49.32	2	-	47.94	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.55	2	5.17	45.88	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2383.152	-42.14	2	-	55.12	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2378.736	-53.12	2	5.17	49.31	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-46.83	2	-	50.43	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-54.99	2	5.17	47.44	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-40.93	2	-	56.33	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-52.07	2	5.06	50.25	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2496.232	-40.57	2	-	56.69	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.512	-52.07	2	5.06	50.25	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-44.31	2	-	52.95	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-54.05	2	5.06	48.27	Average	54	Pass

Test Graphs

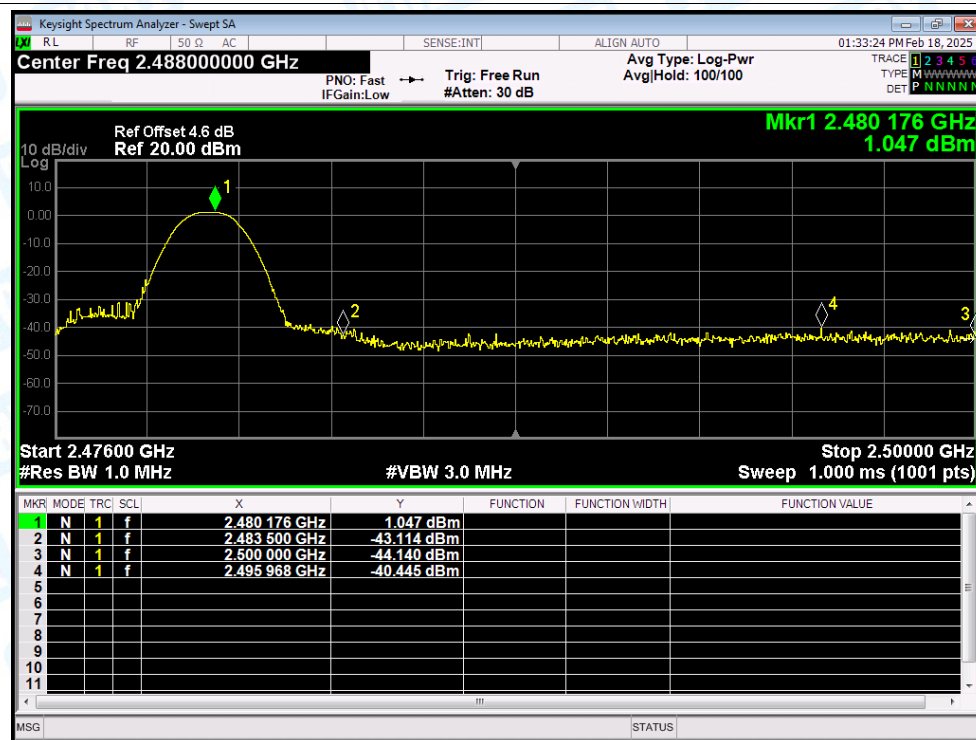
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



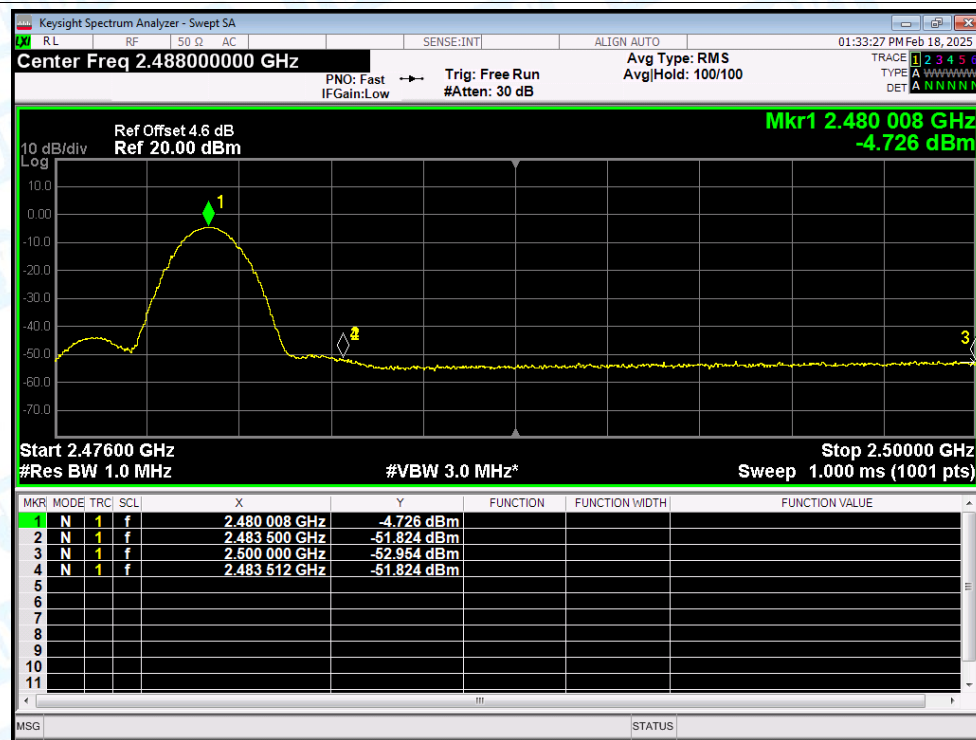
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



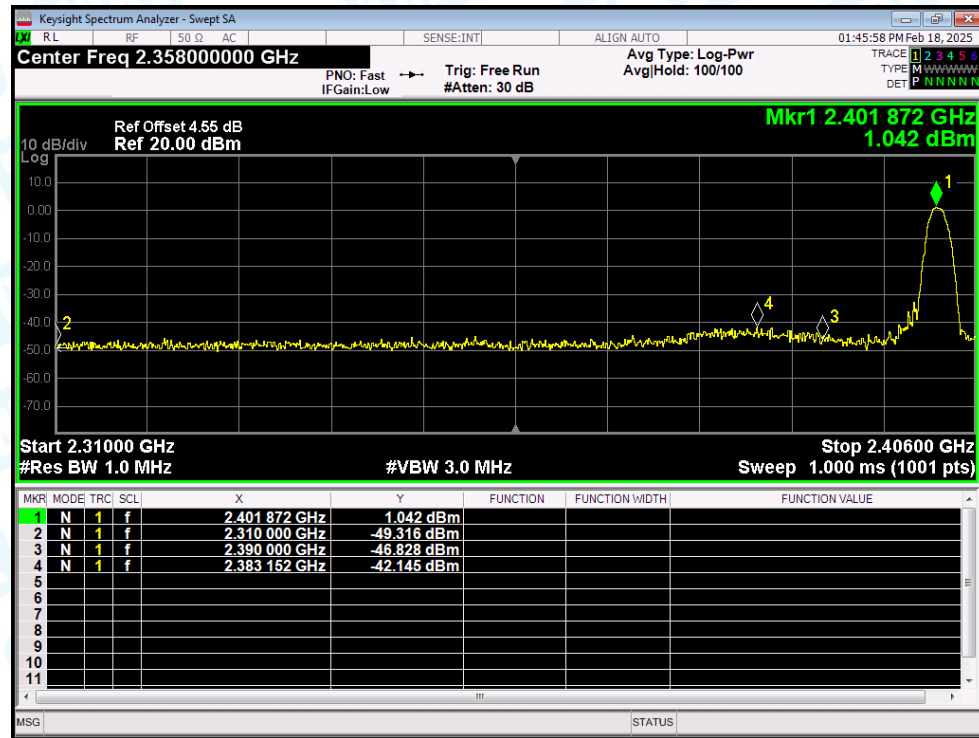
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



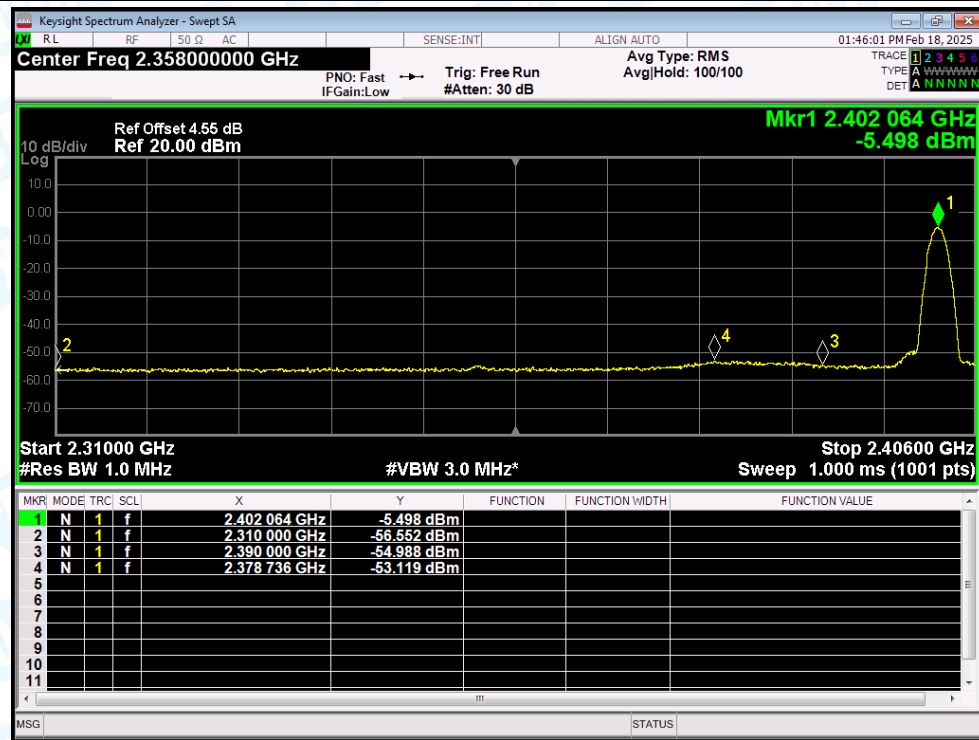
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



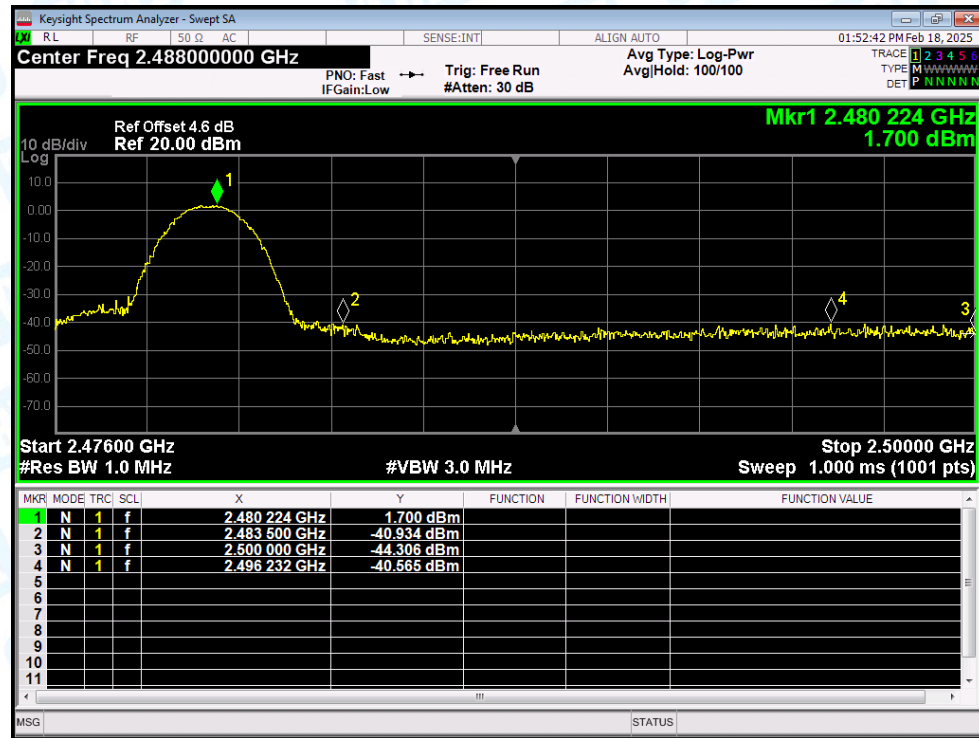
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



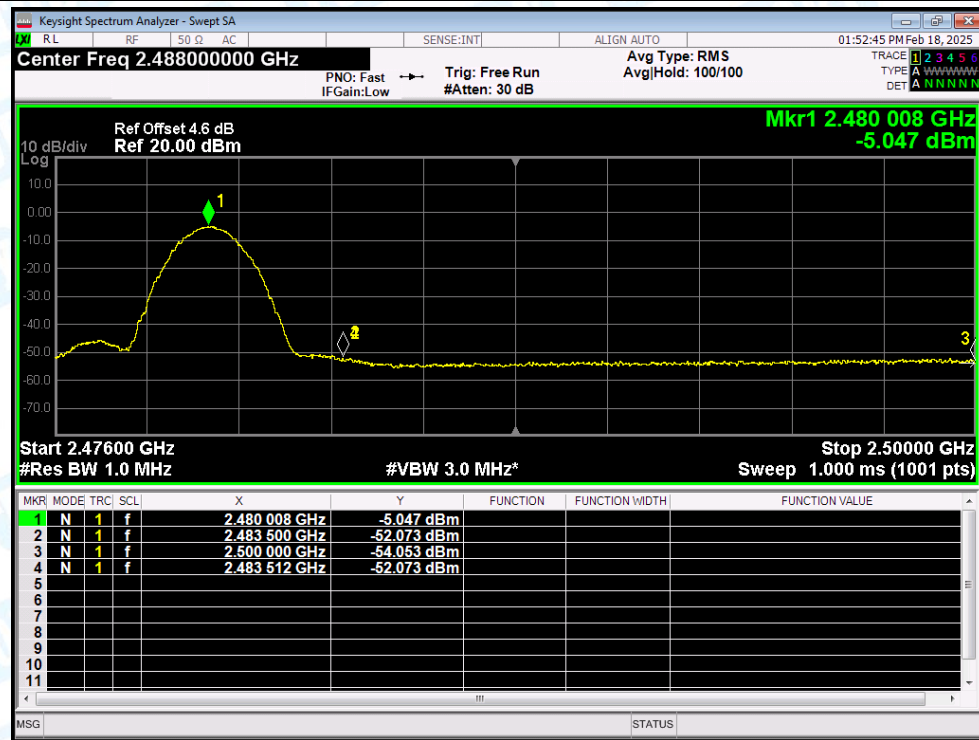
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



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



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



9. Carrier Frequencies Separation

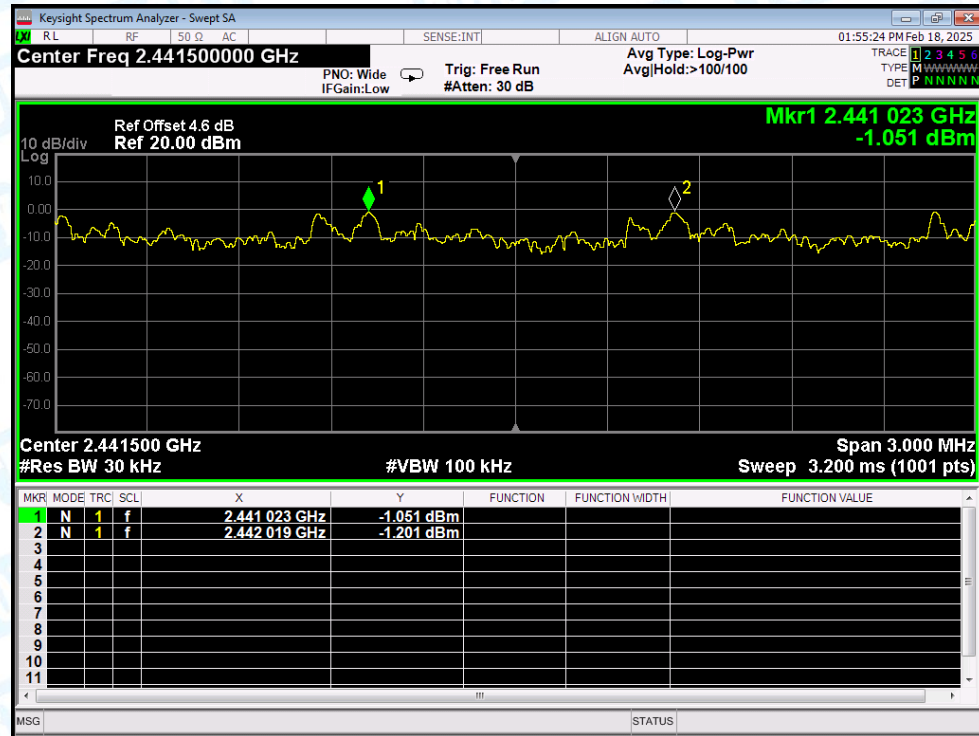
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.861	2441.863	1.002	0.587	Pass
NVNT	2-DH1	Ant1	2441.023	2442.019	0.996	0.833	Pass

Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1

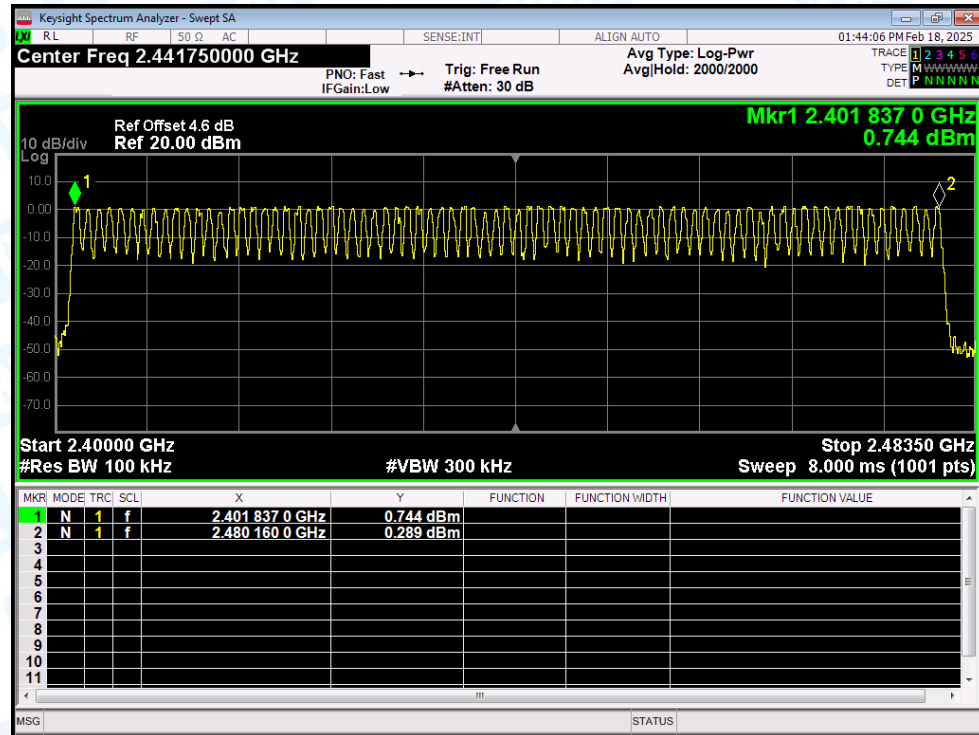


10. Number of Hopping Channel

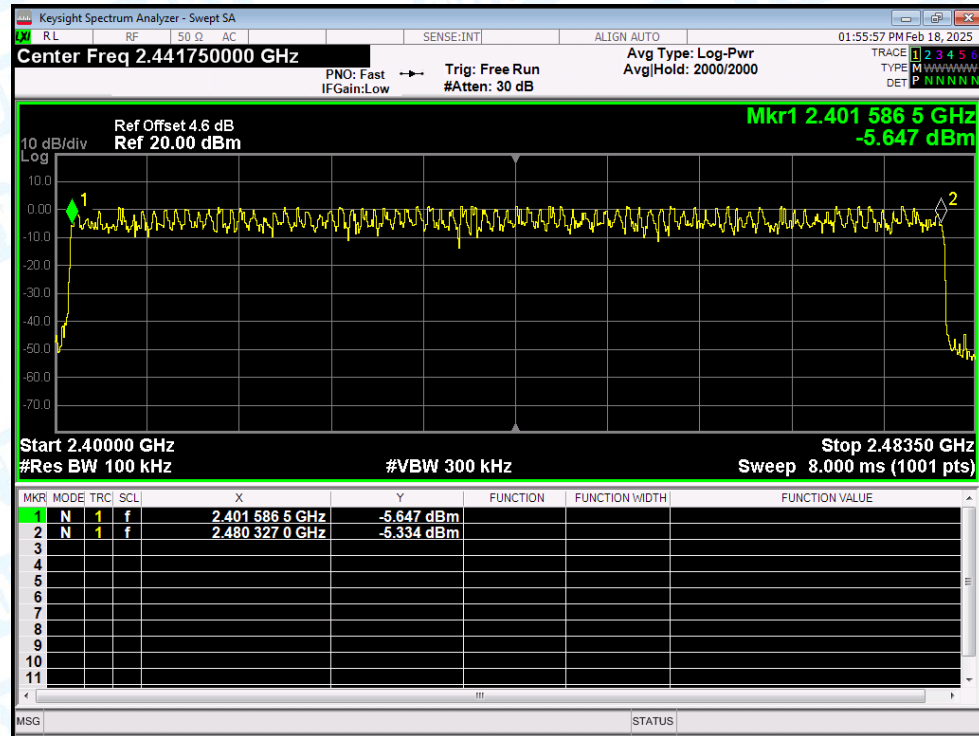
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass

Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1

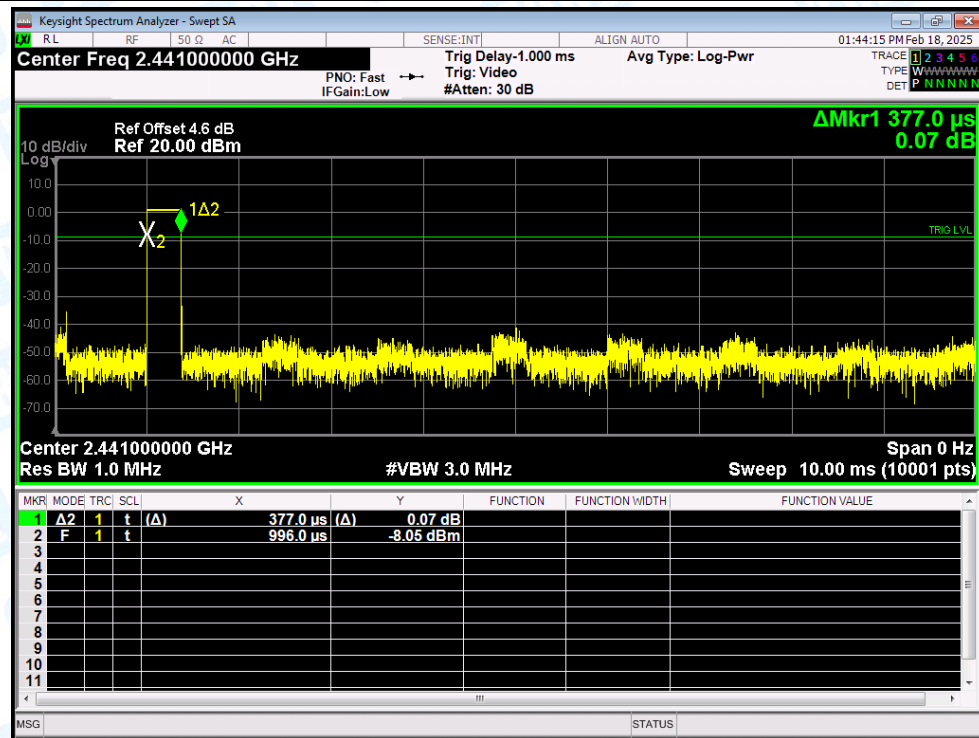


11. Dwell Time

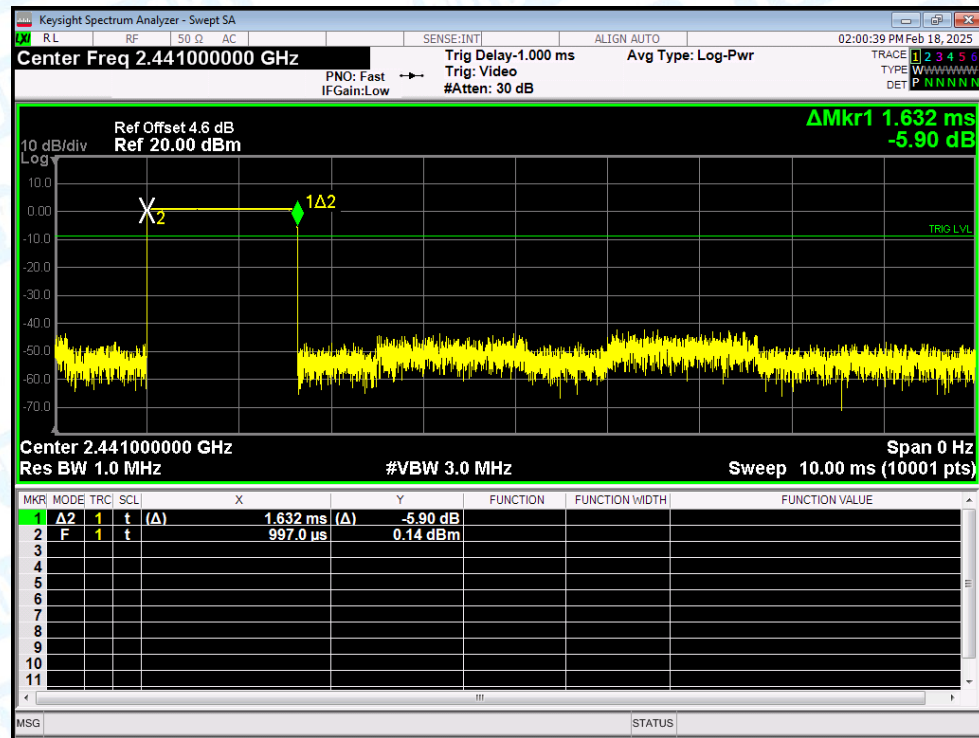
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.377	120.64	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.632	261.12	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.88	307.2	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.386	123.52	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.638	262.08	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.886	307.84	31600	400	Pass

Test Graphs

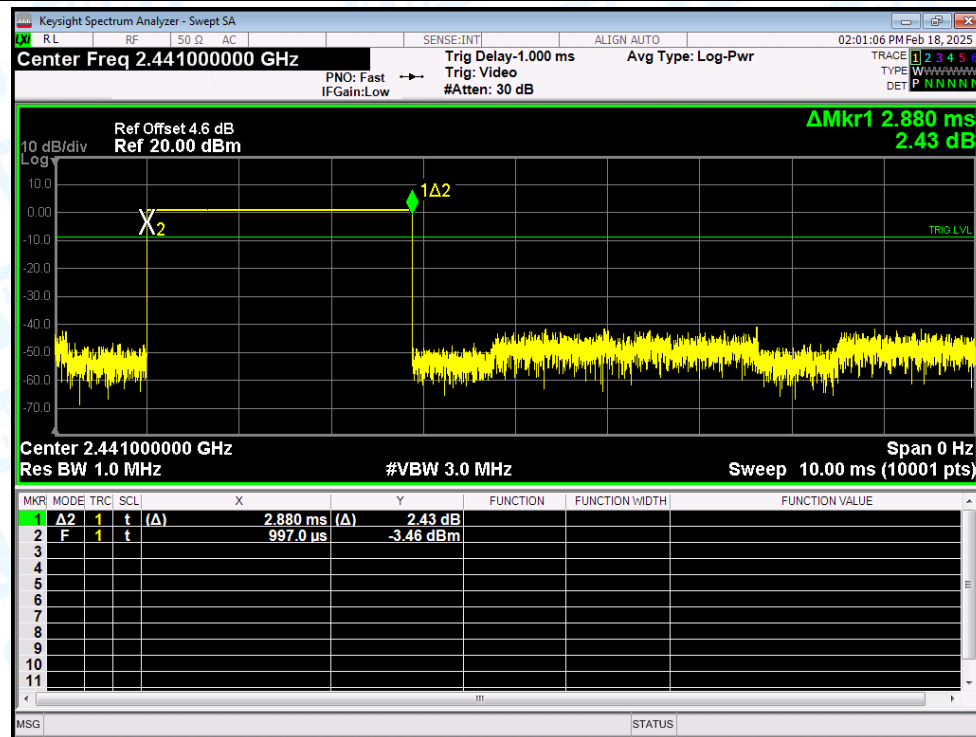
Dwell NVNT 1-DH1 2441MHz Ant1



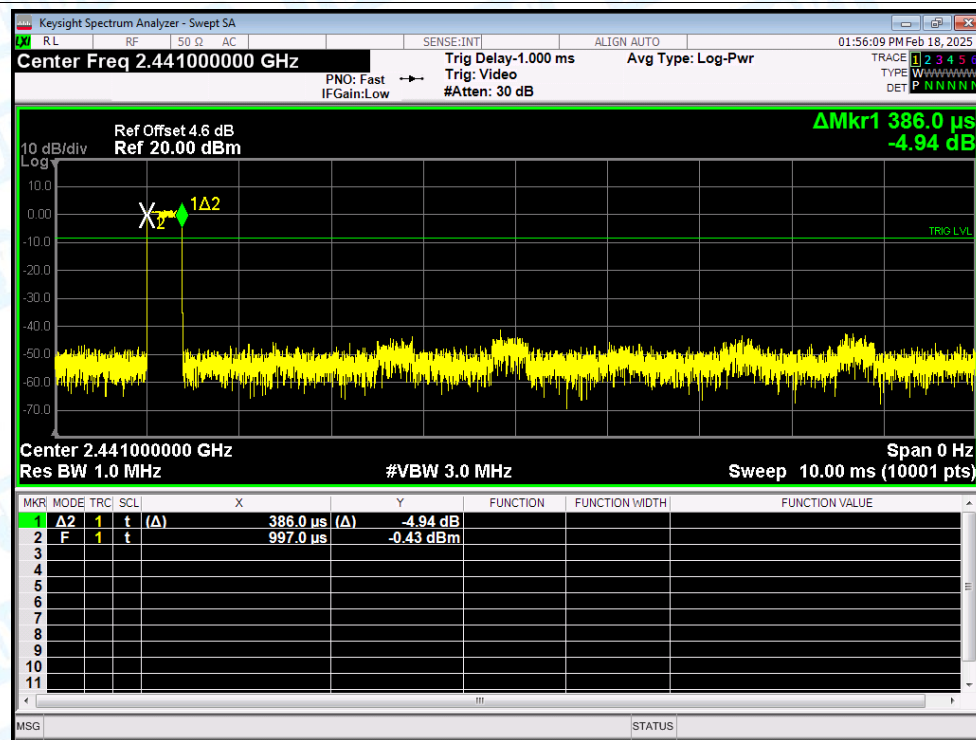
Dwell NVNT 1-DH3 2441MHz Ant1



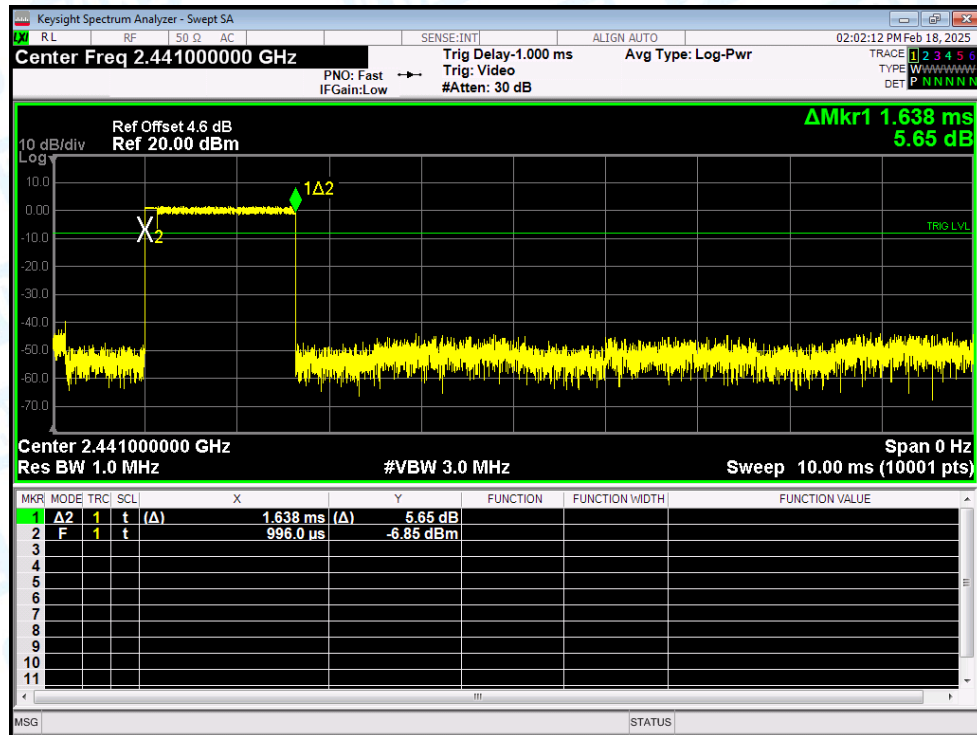
Dwell NVNT 1-DH5 2441MHz Ant1



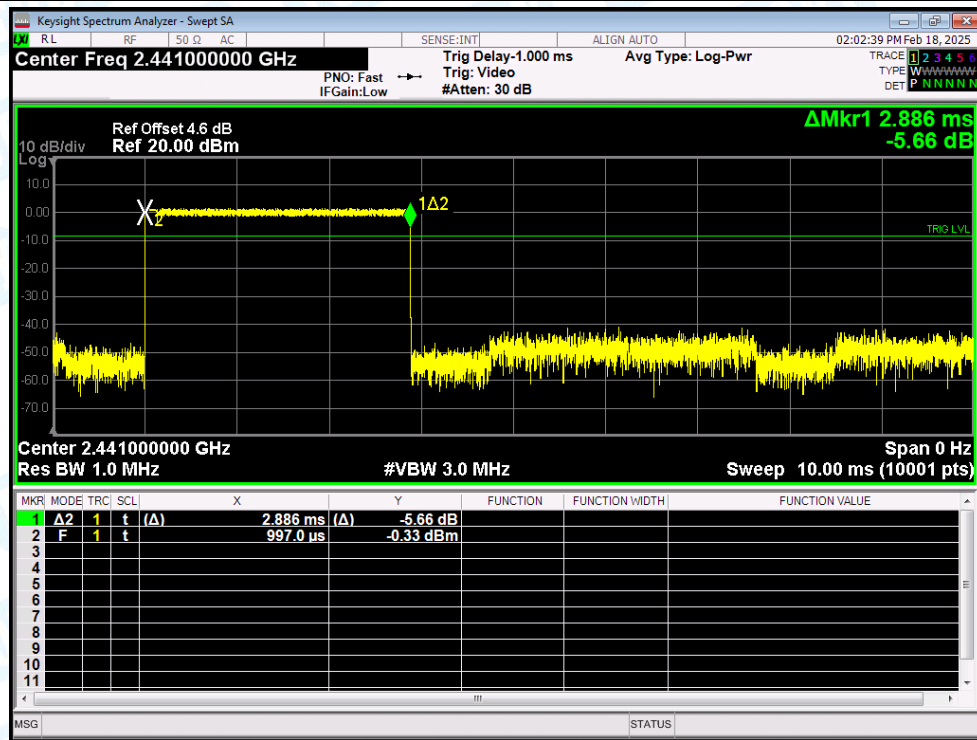
Dwell NVNT 2-DH1 2441MHz Ant1



Dwell NVNT 2-DH3 2441MHz Ant1



Dwell NVNT 2-DH5 2441MHz Ant1



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