

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	projector
Test Model:	P4
Sample ID:	HC-C-202412-0058-01-01
Environmental Conditions	
Temperature:	23.5℃
Relative Humidity:	46.2%
Test Voltage:	DC 15V
Test Engineer:	Rick chen
Note: For a more detailed features description, please refer to the report TBR-C-202412-0058-18 The report only show the worst case data.	

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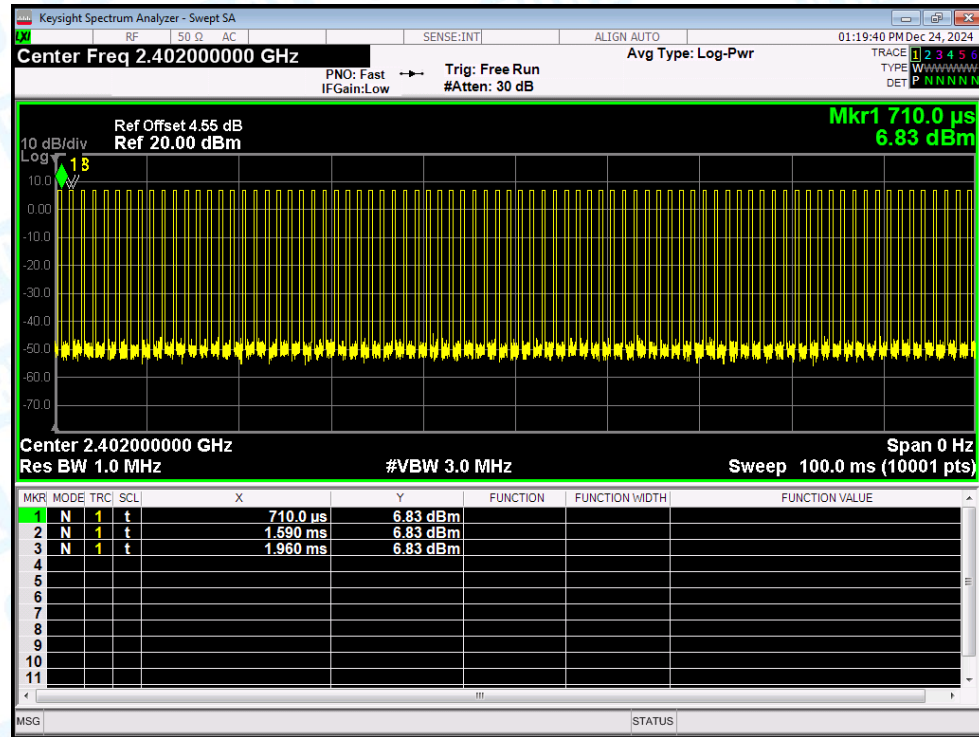
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1. Duty Cycle

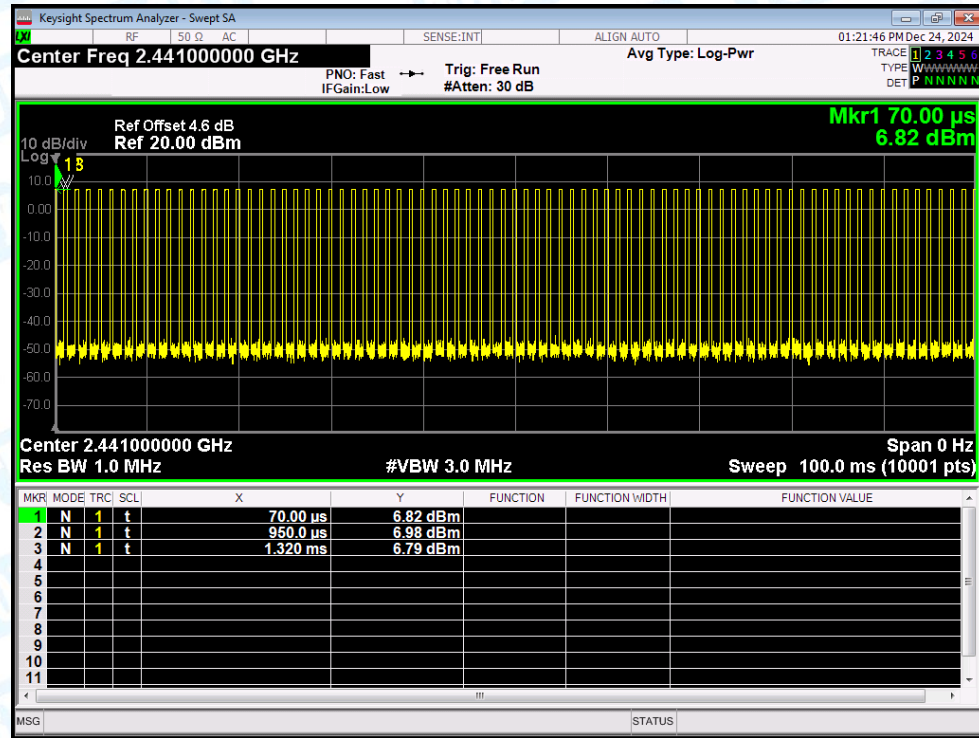
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	29.6	5.29	2.7
NVNT	1-DH1	2441	Ant1	29.6	5.29	2.7
NVNT	1-DH1	2480	Ant1	29.6	5.29	2.7
NVNT	2-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2441	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2480	Ant1	30.4	5.17	2.63
NVNT	3-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	3-DH1	2441	Ant1	30.4	5.17	2.63
NVNT	3-DH1	2480	Ant1	30.4	5.17	2.63

Test Graphs

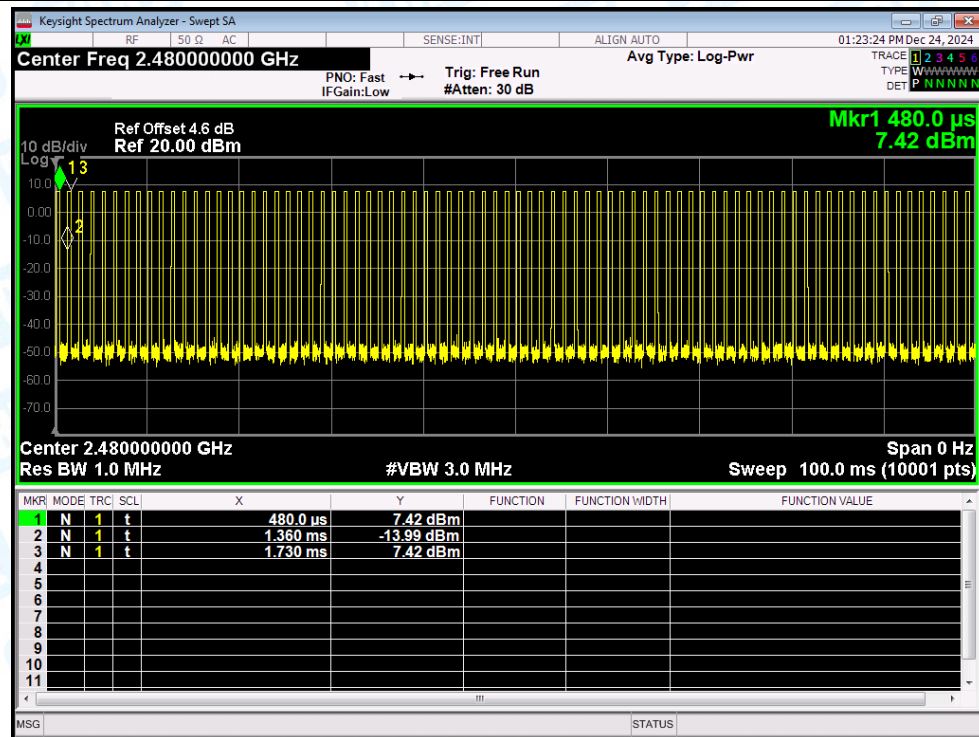
Duty Cycle NVNT 1-DH1 2402MHz Ant1



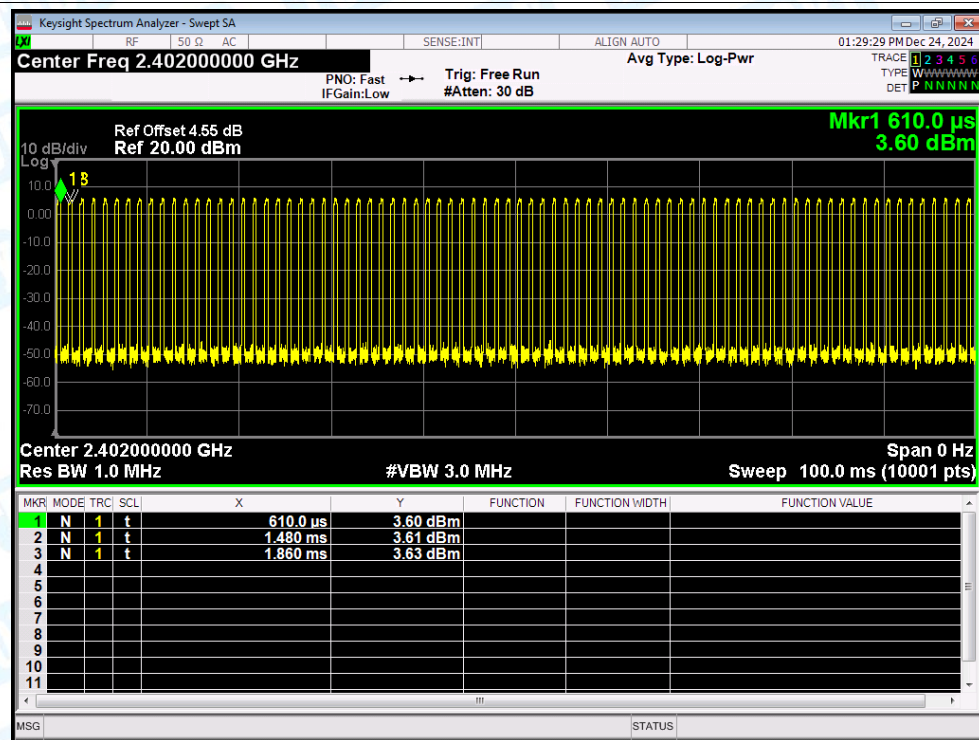
Duty Cycle NVNT 1-DH1 2441MHz Ant1



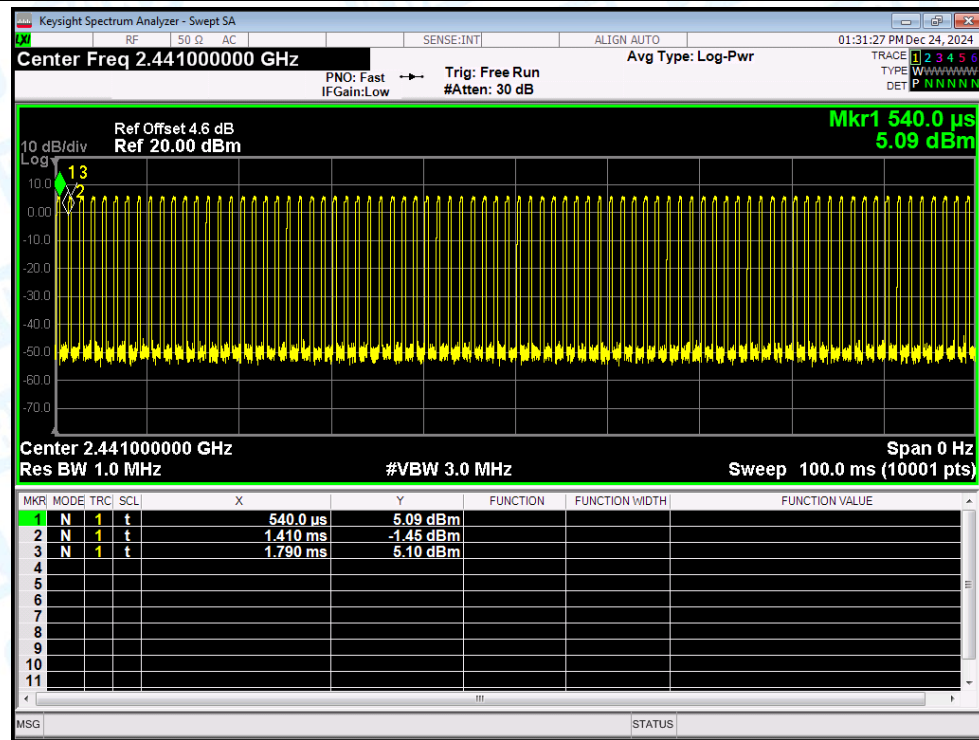
Duty Cycle NVNT 1-DH1 2480MHz Ant1



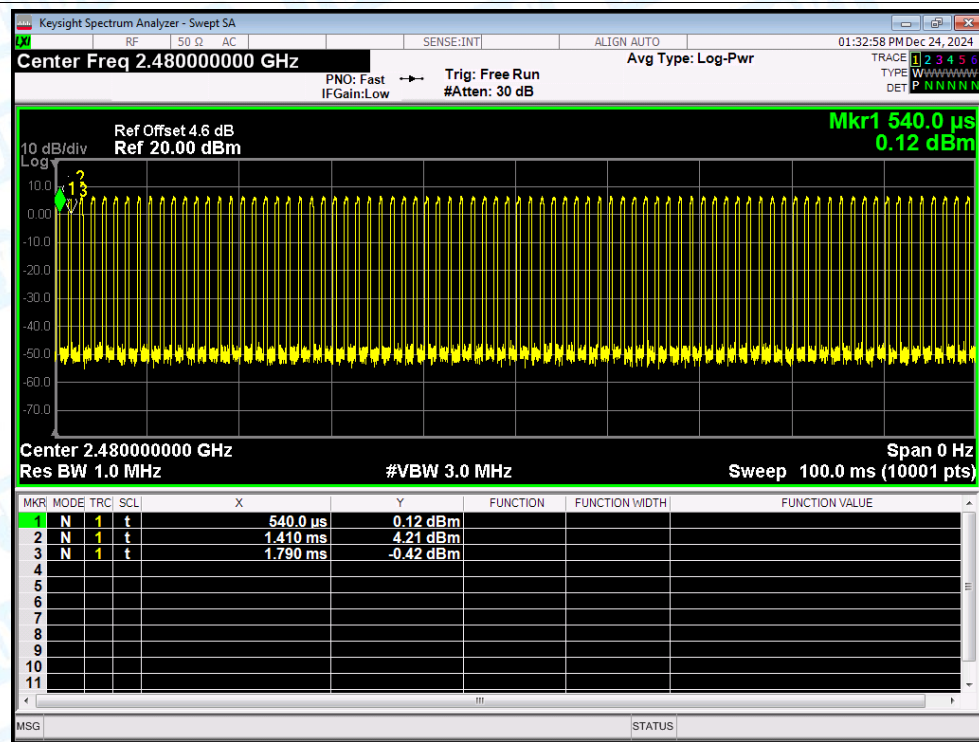
Duty Cycle NVNT 2-DH1 2402MHz Ant1



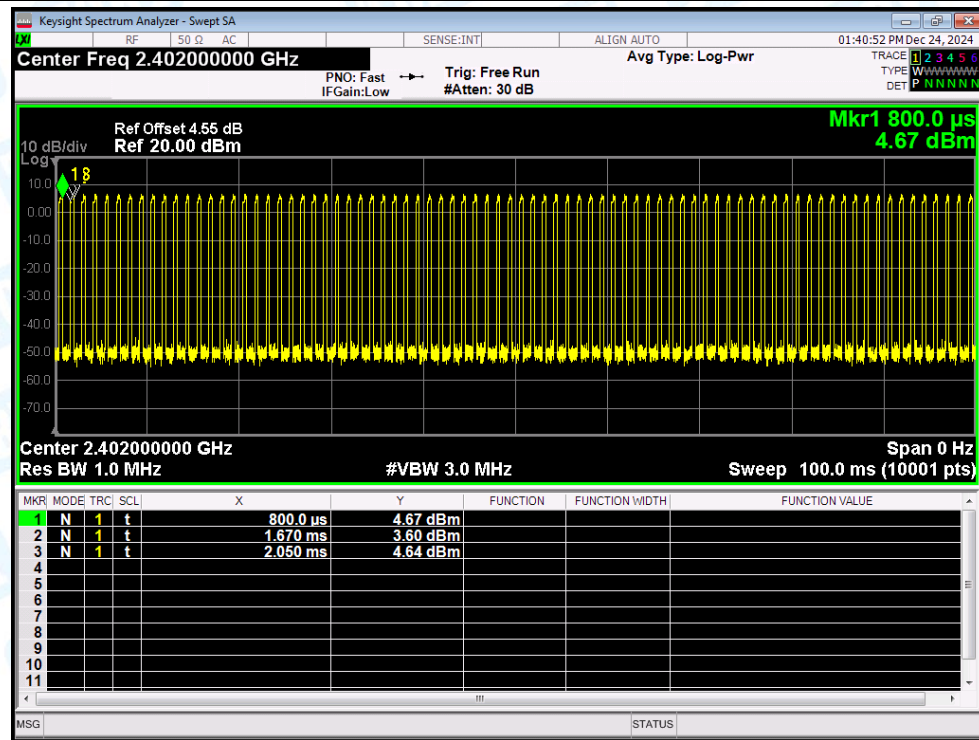
Duty Cycle NVNT 2-DH1 2441MHz Ant1



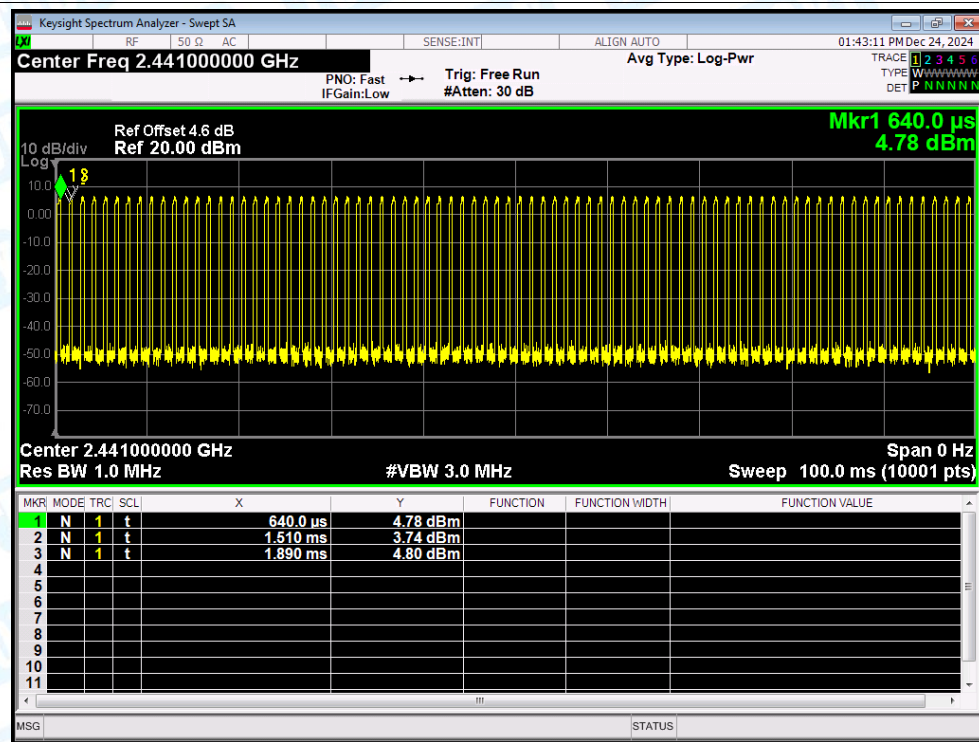
Duty Cycle NVNT 2-DH1 2480MHz Ant1

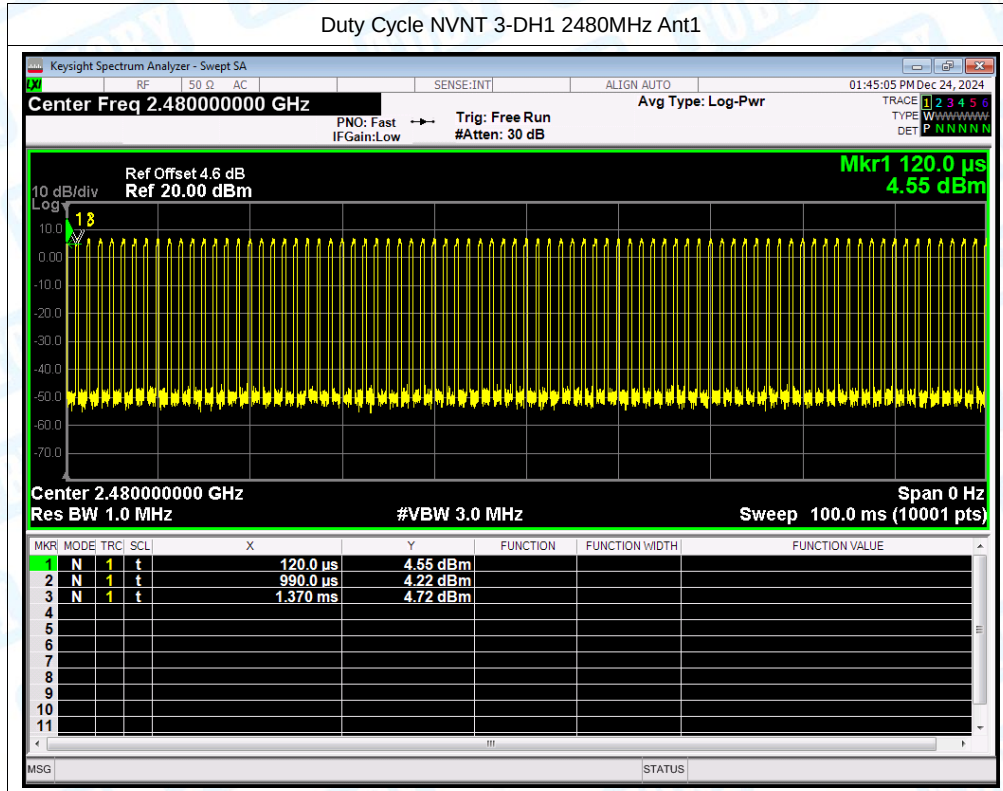


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



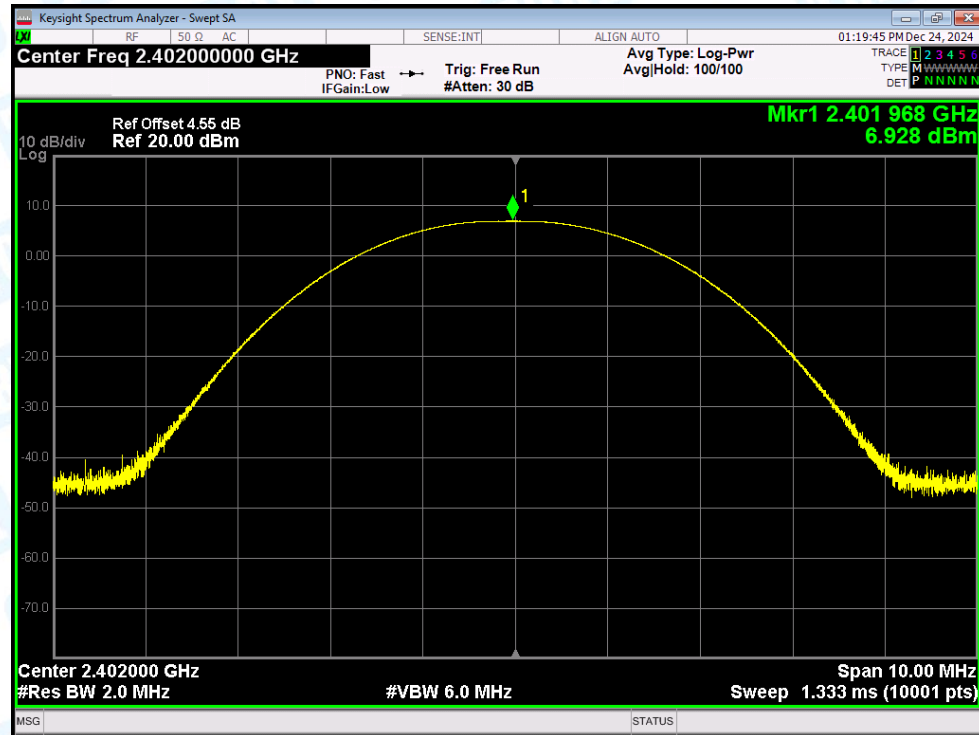


2. Maximum Conducted Output Power

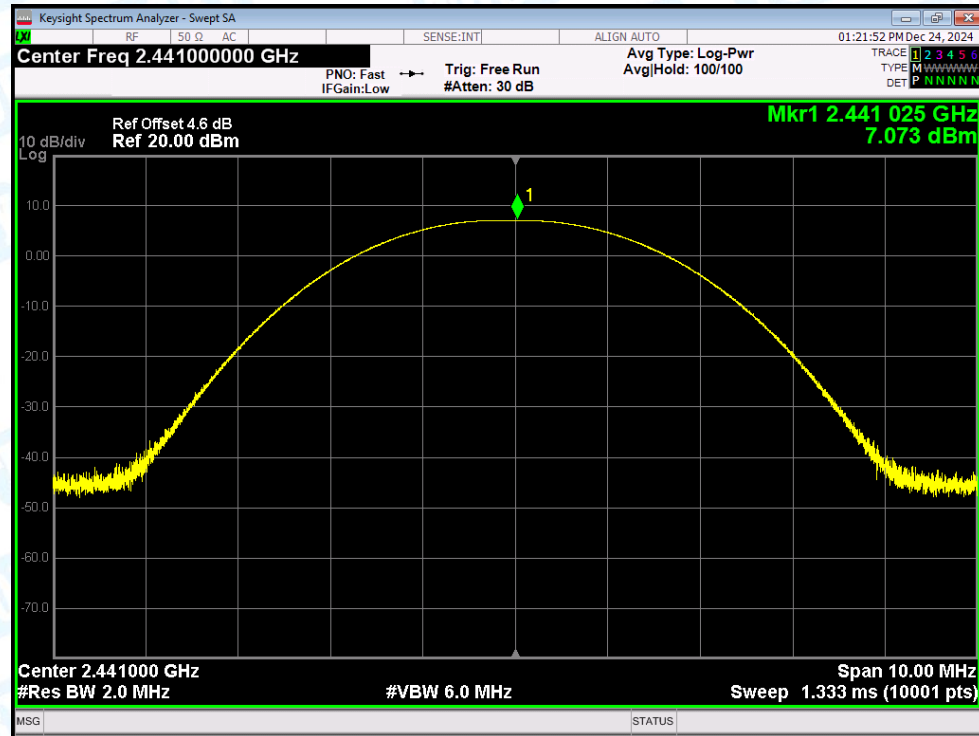
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	6.928	21	Pass
NVNT	1-DH1	2441	Ant1	7.073	21	Pass
NVNT	1-DH1	2480	Ant1	7.517	21	Pass
NVNT	2-DH1	2402	Ant1	6.257	21	Pass
NVNT	2-DH1	2441	Ant1	6.391	21	Pass
NVNT	2-DH1	2480	Ant1	6.818	21	Pass
NVNT	3-DH1	2402	Ant1	6.795	21	Pass
NVNT	3-DH1	2441	Ant1	6.972	21	Pass
NVNT	3-DH1	2480	Ant1	7.407	21	Pass

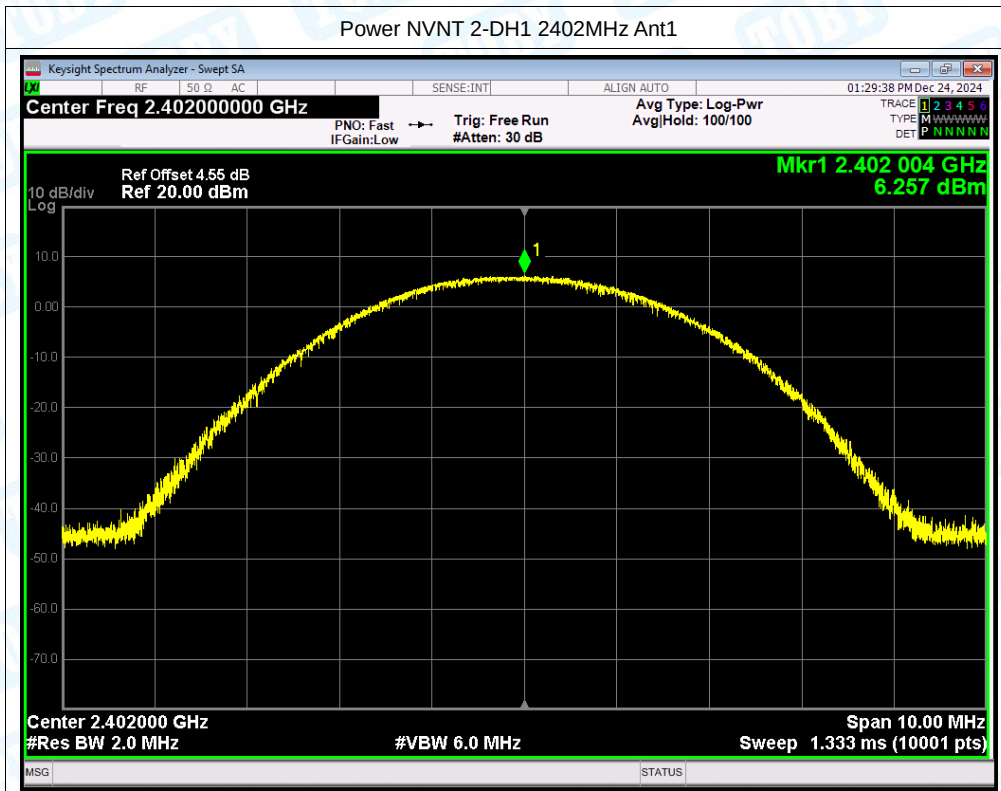
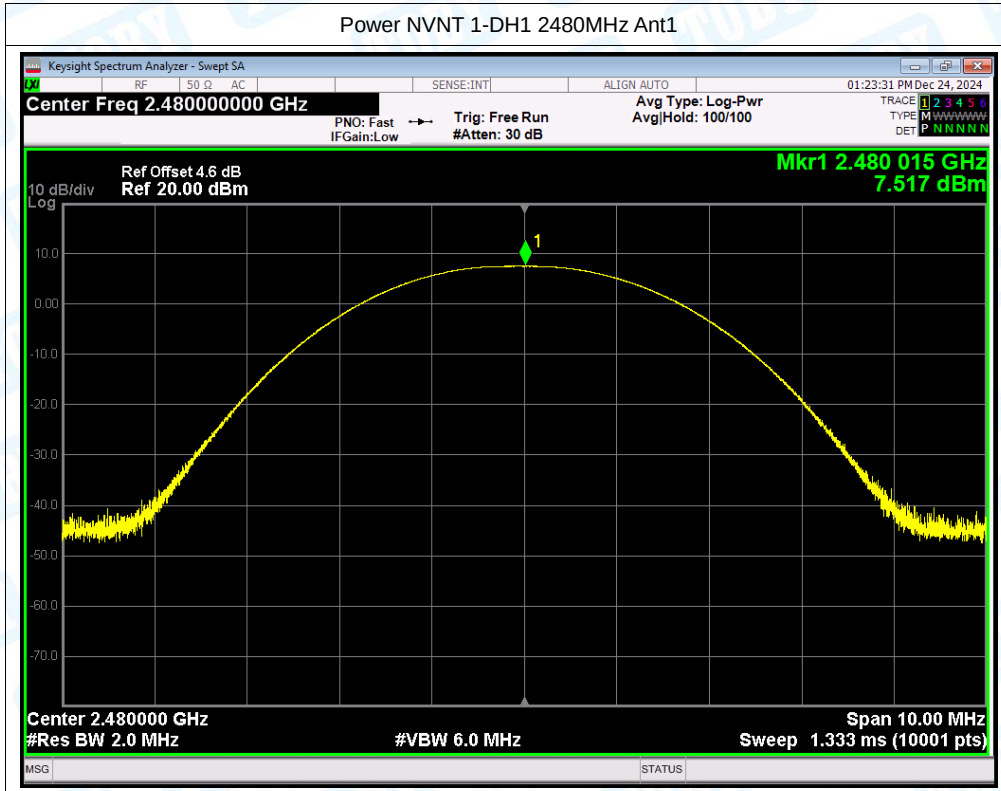
Test Graphs

Power NVNT 1-DH1 2402MHz Ant1

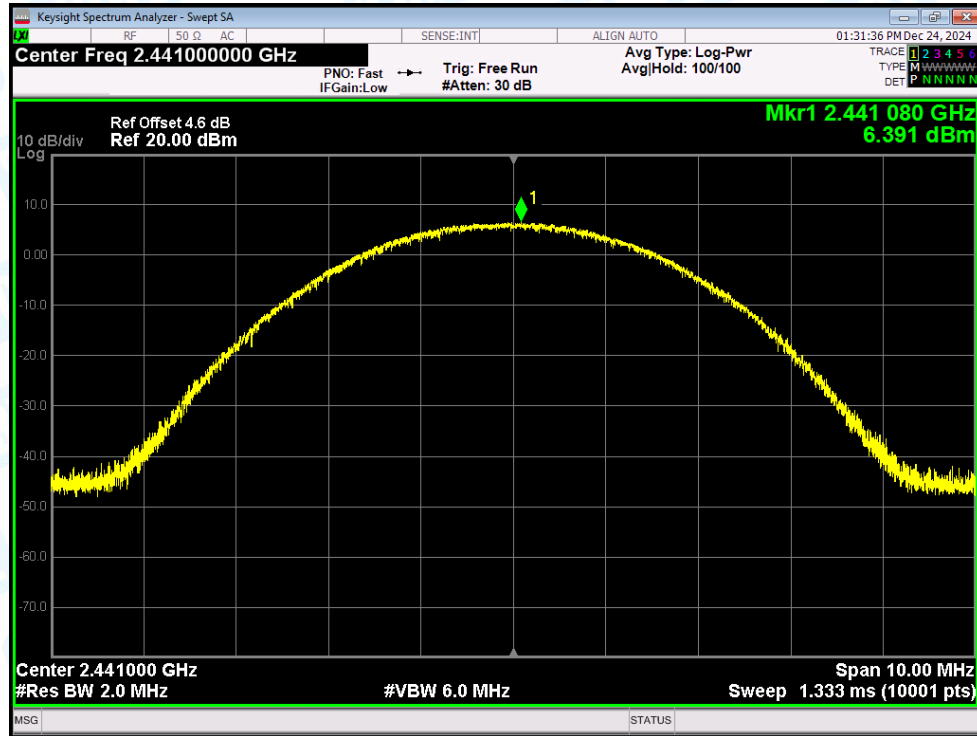


Power NVNT 1-DH1 2441MHz Ant1

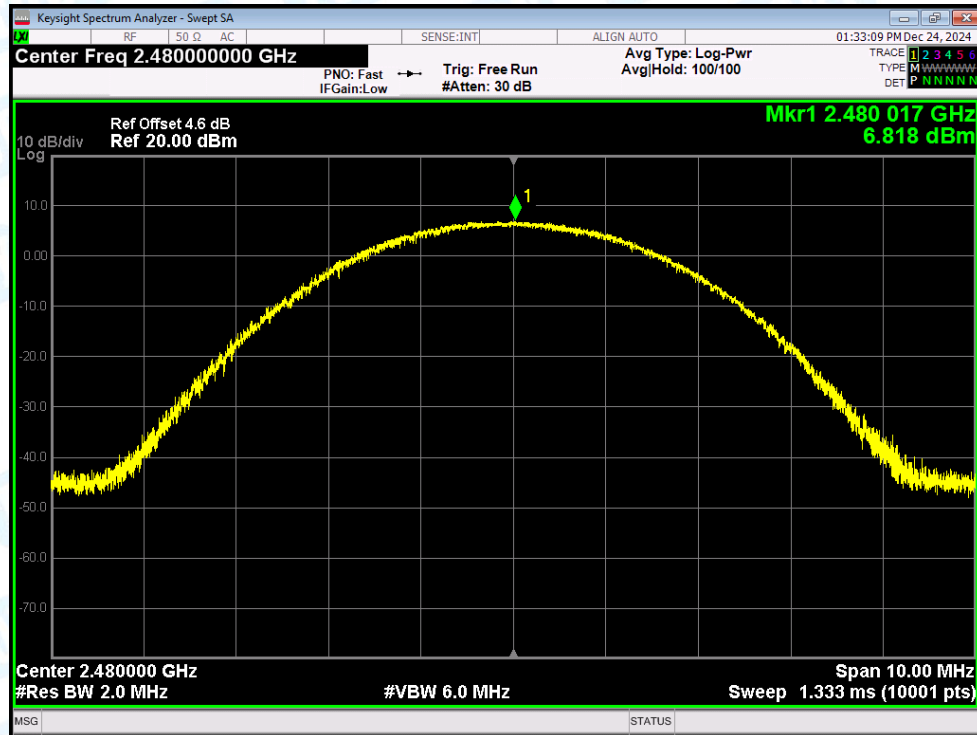




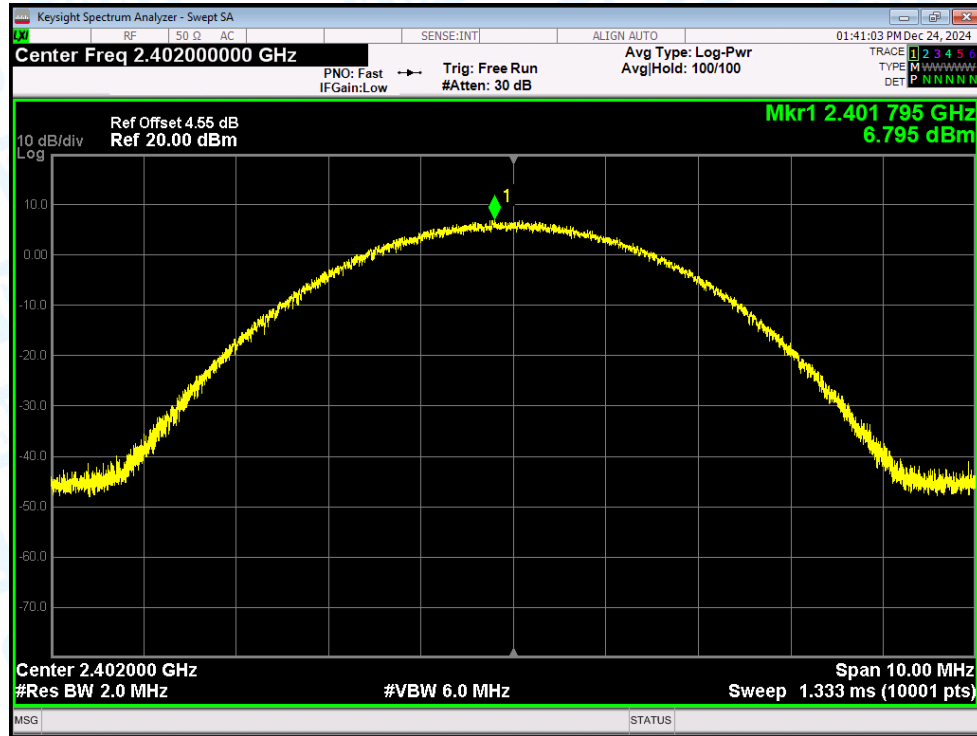
Power NVNT 2-DH1 2441MHz Ant1



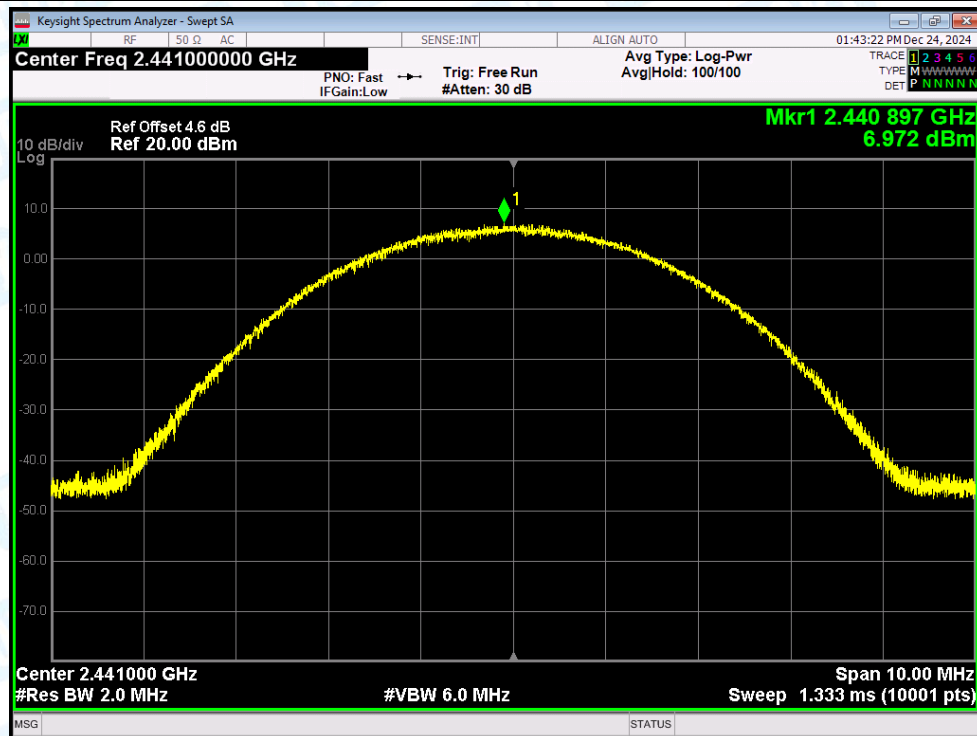
Power NVNT 2-DH1 2480MHz Ant1

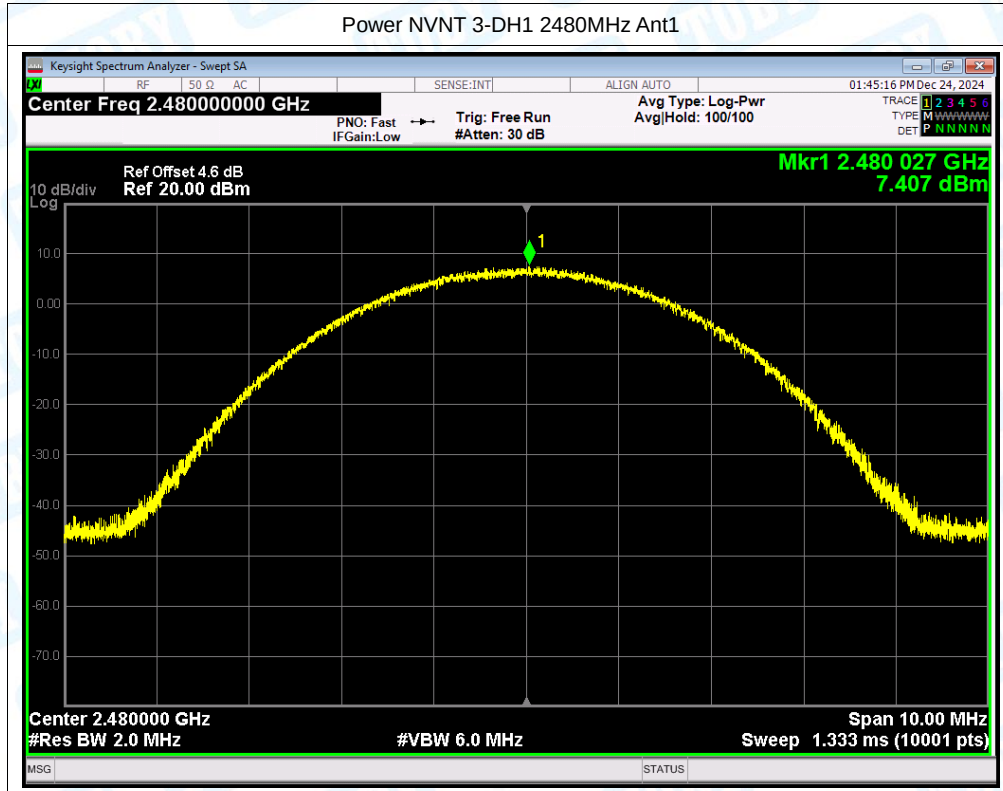


Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



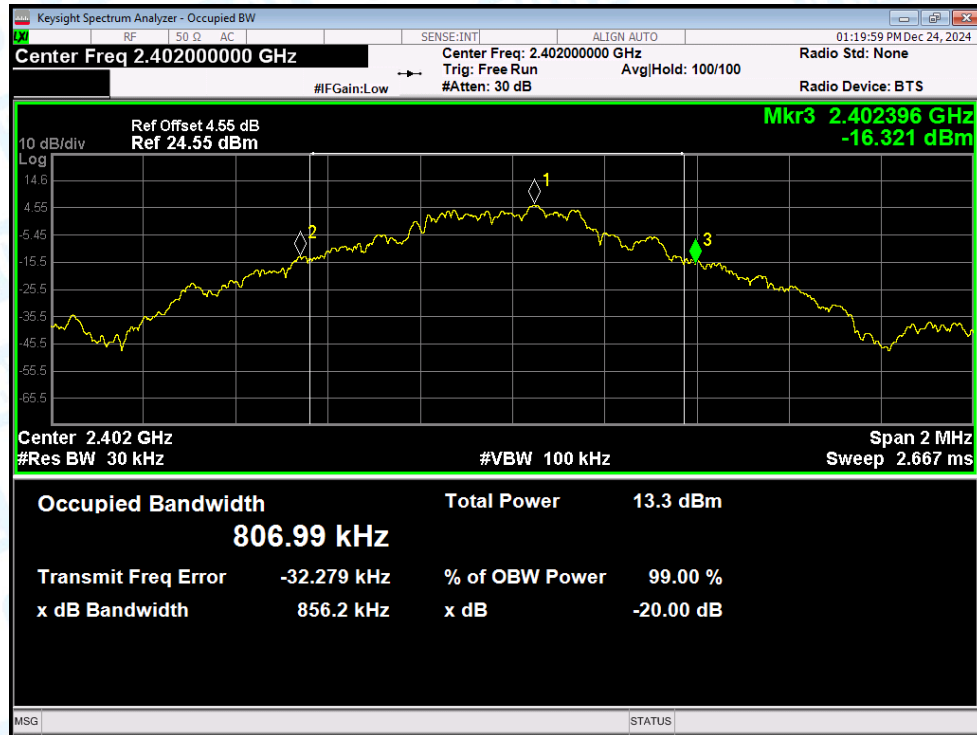


3. -20dB Bandwidth

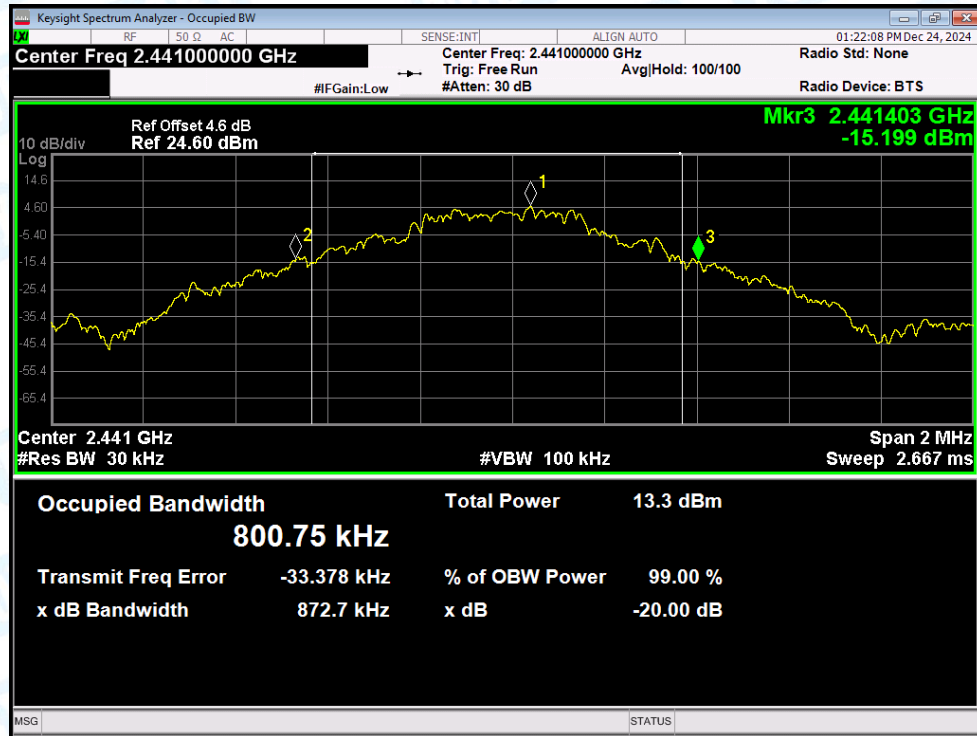
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.86	0	Pass
NVNT	1-DH1	2441	Ant1	0.87	0	Pass
NVNT	1-DH1	2480	Ant1	0.83	0	Pass
NVNT	2-DH1	2402	Ant1	1.31	0	Pass
NVNT	2-DH1	2441	Ant1	1.26	0	Pass
NVNT	2-DH1	2480	Ant1	1.26	0	Pass
NVNT	3-DH1	2402	Ant1	1.24	0	Pass
NVNT	3-DH1	2441	Ant1	1.24	0	Pass
NVNT	3-DH1	2480	Ant1	1.25	0	Pass

Test Graphs

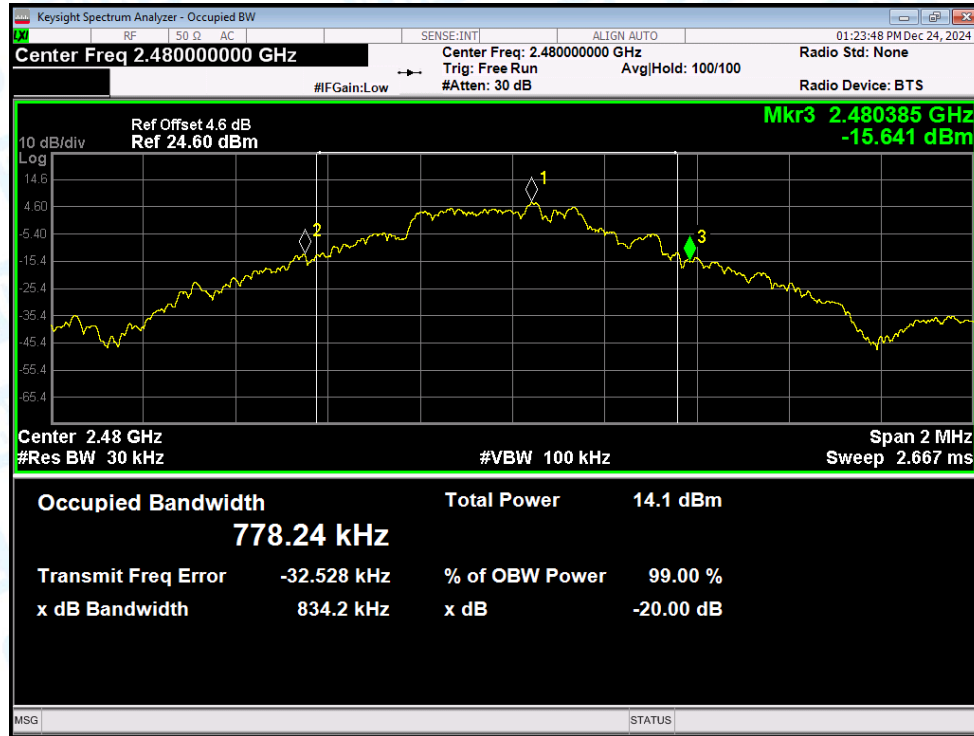
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



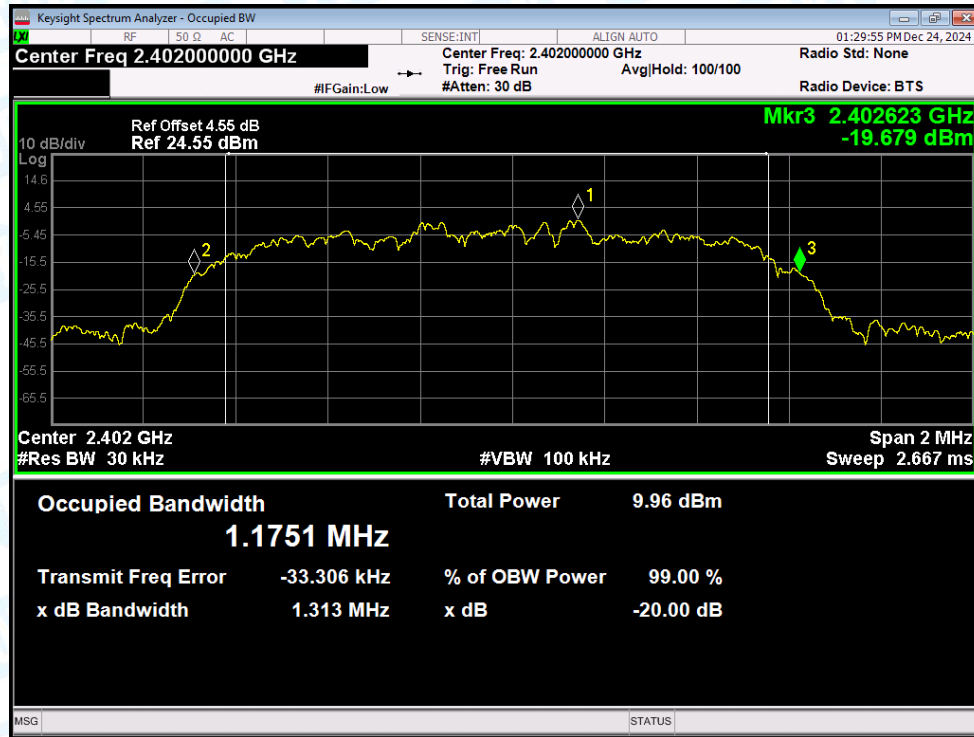
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



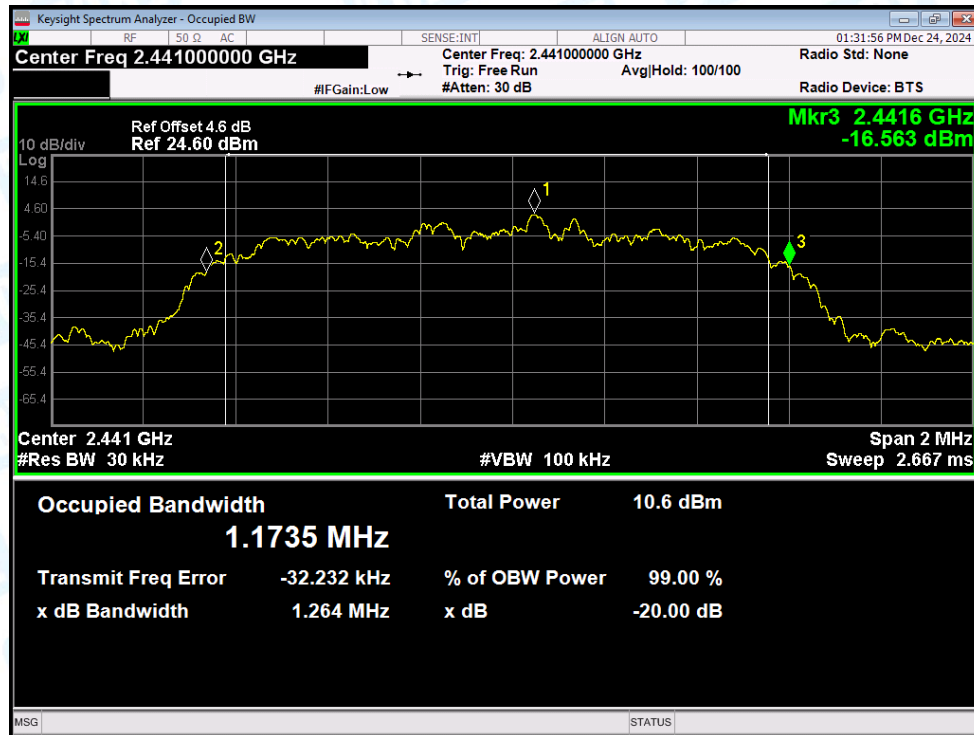
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



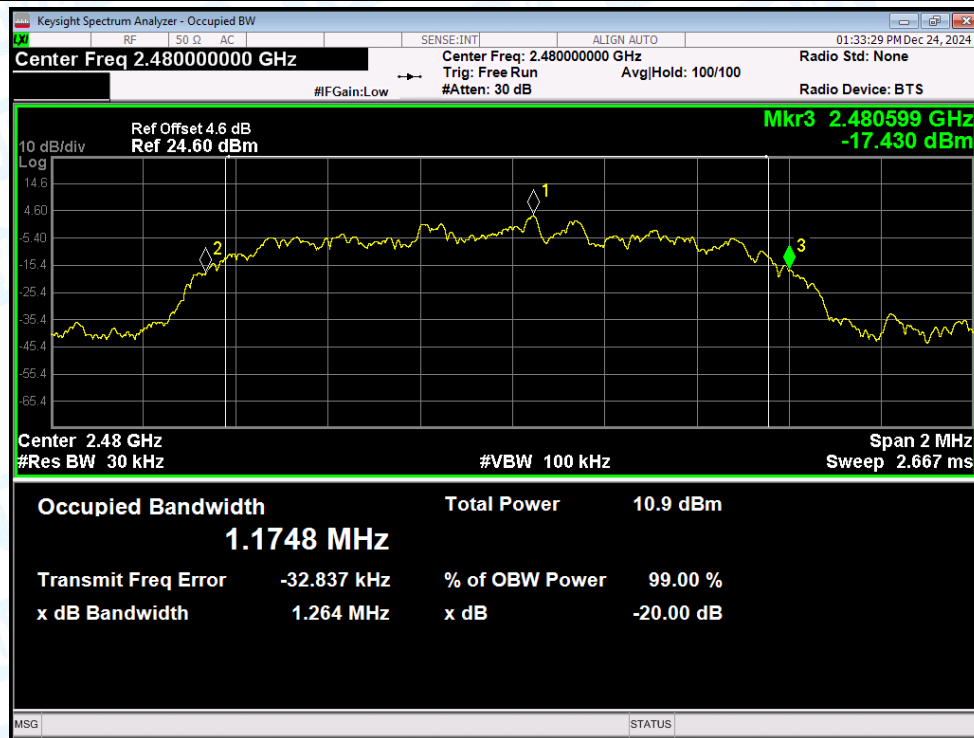
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



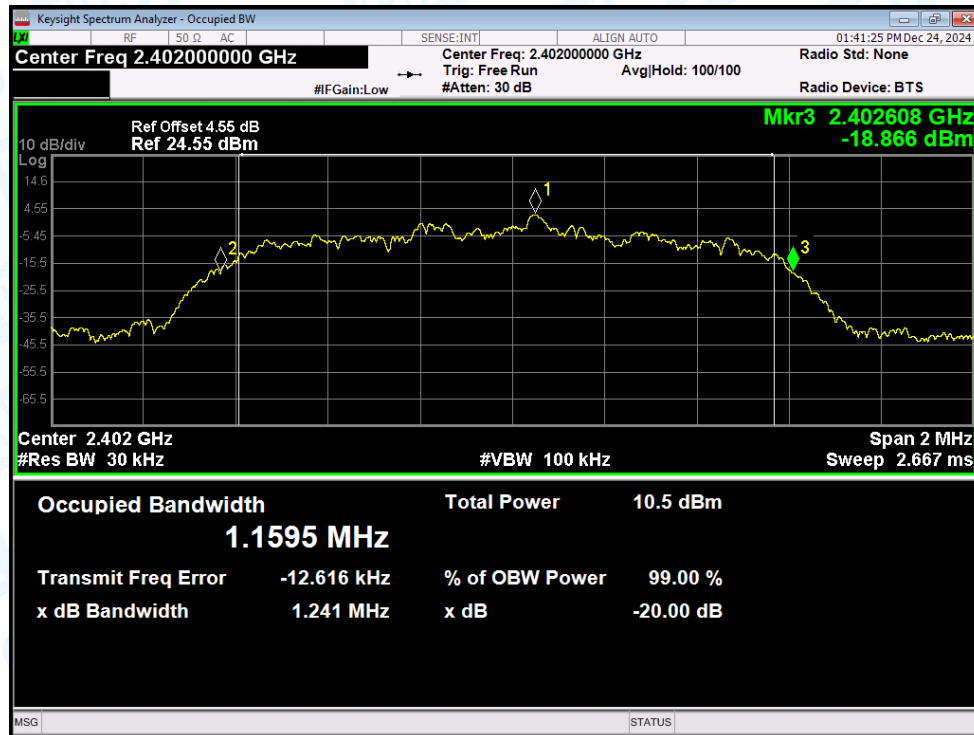
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



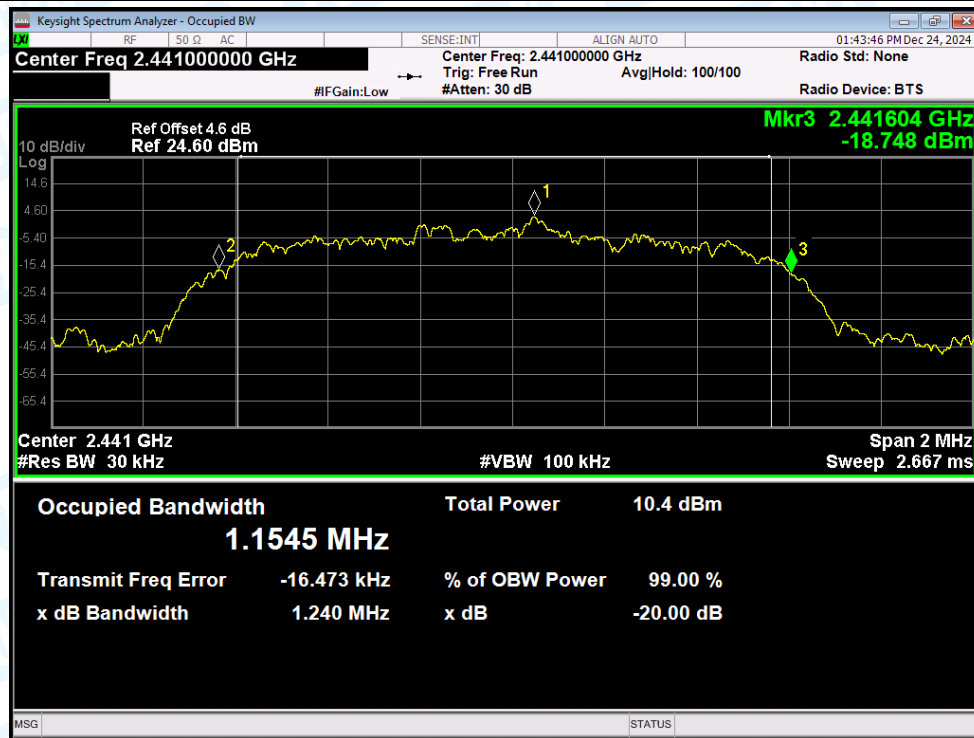
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

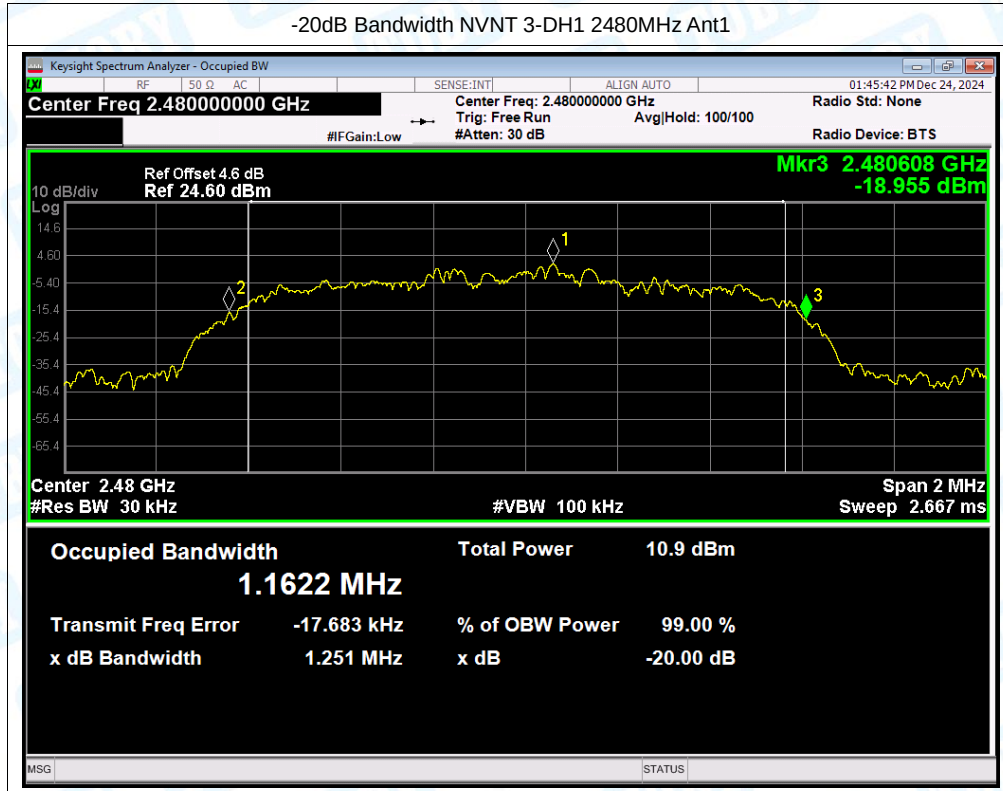


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



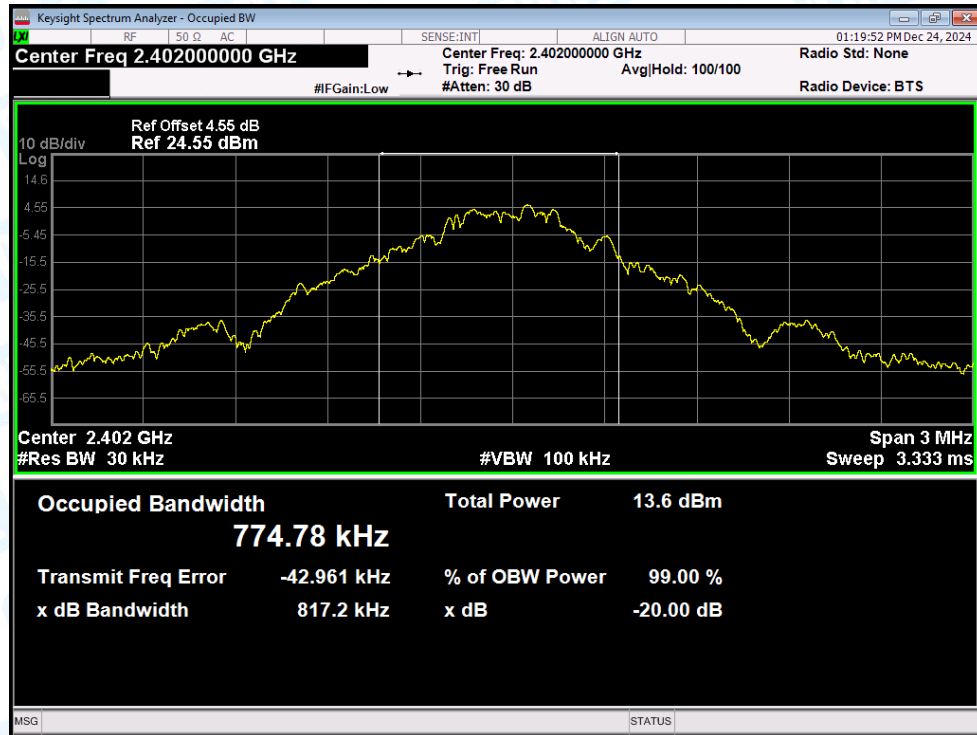


4. Occupied Channel Bandwidth

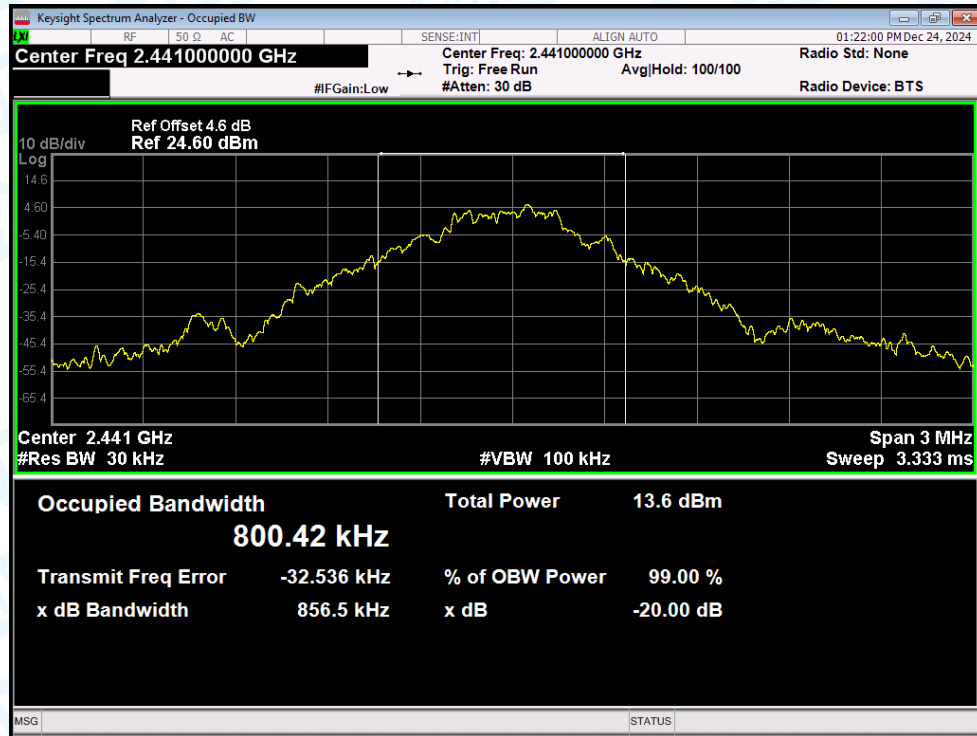
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.775
NVNT	1-DH1	2441	Ant1	0.8
NVNT	1-DH1	2480	Ant1	0.795
NVNT	2-DH1	2402	Ant1	1.18
NVNT	2-DH1	2441	Ant1	1.19
NVNT	2-DH1	2480	Ant1	1.181
NVNT	3-DH1	2402	Ant1	1.164
NVNT	3-DH1	2441	Ant1	1.162
NVNT	3-DH1	2480	Ant1	1.17

Test Graphs

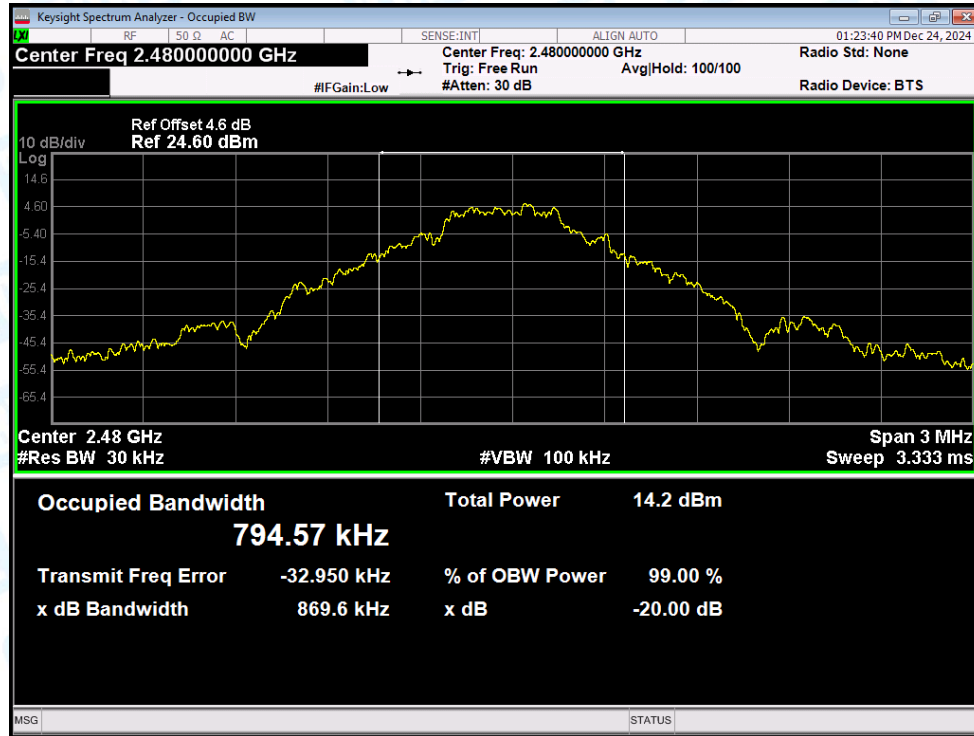
OBW NVNT 1-DH1 2402MHz Ant1



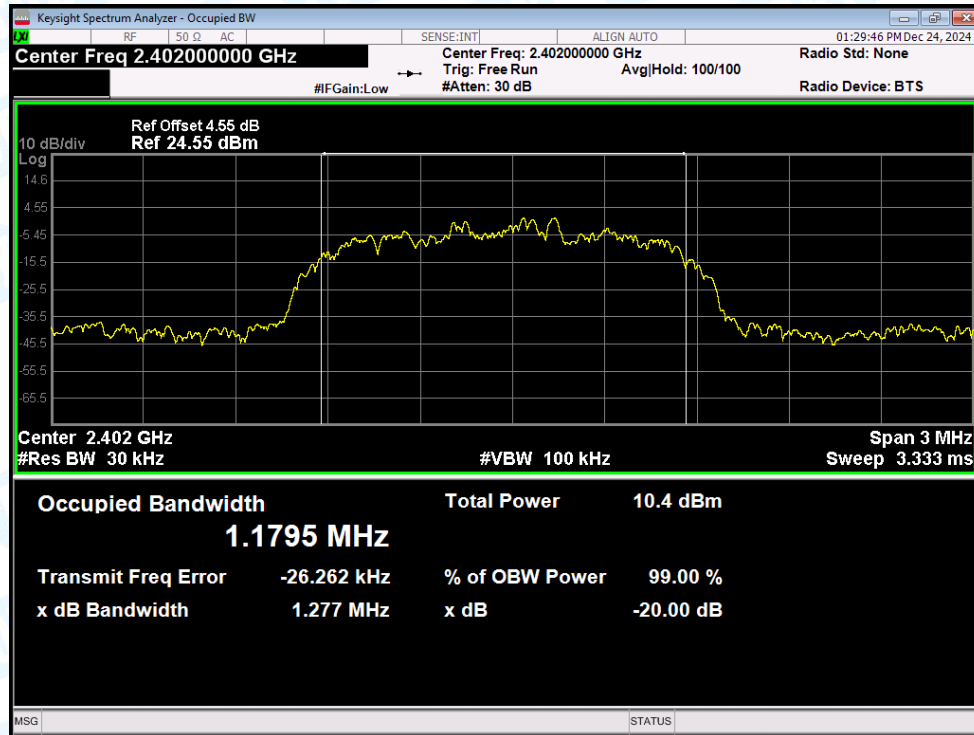
OBW NVNT 1-DH1 2441MHz Ant1



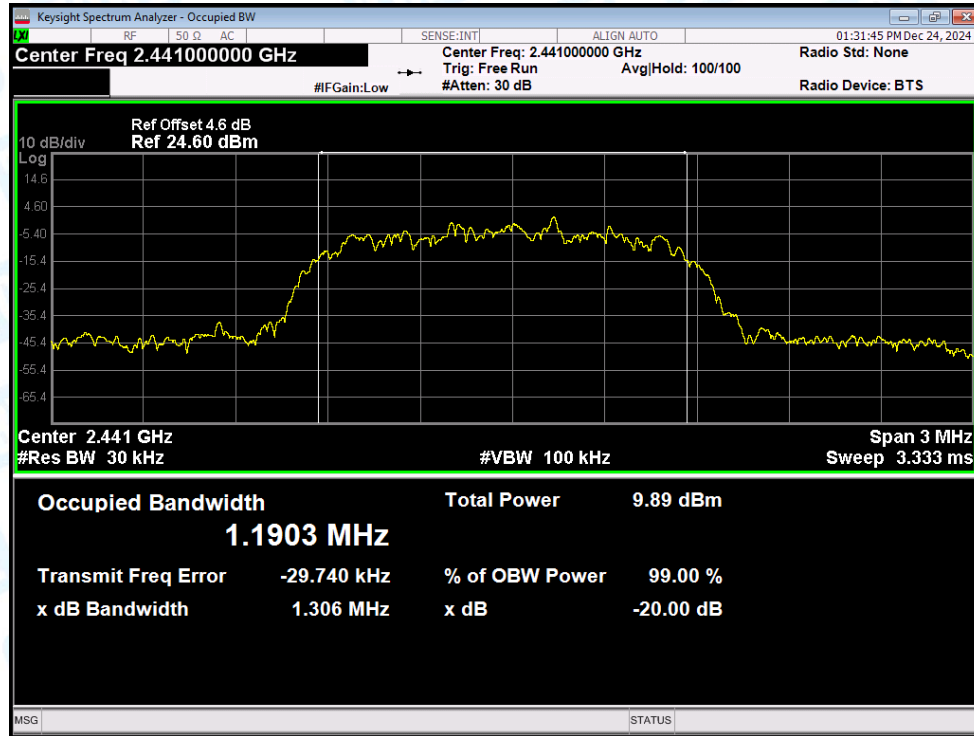
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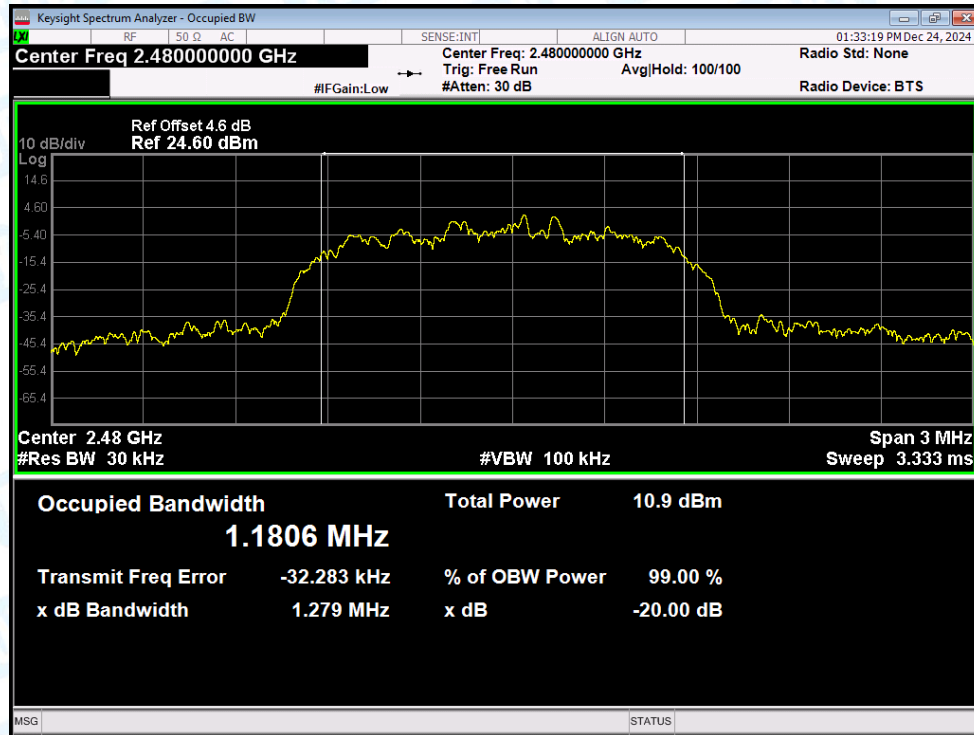
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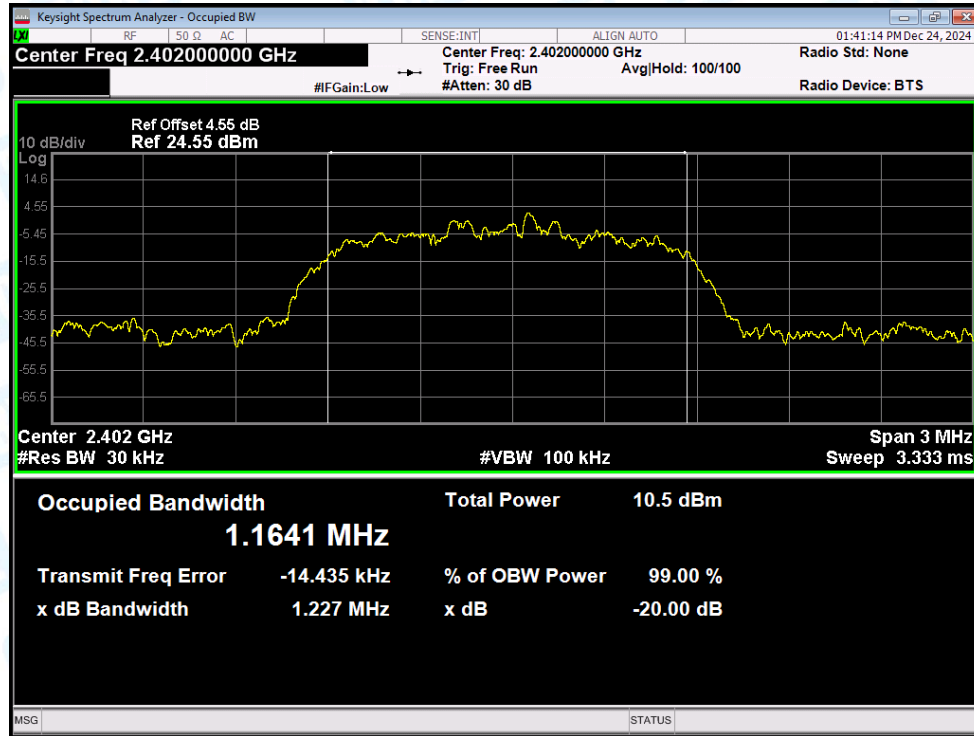
OBW NVNT 2-DH1 2441MHz Ant1



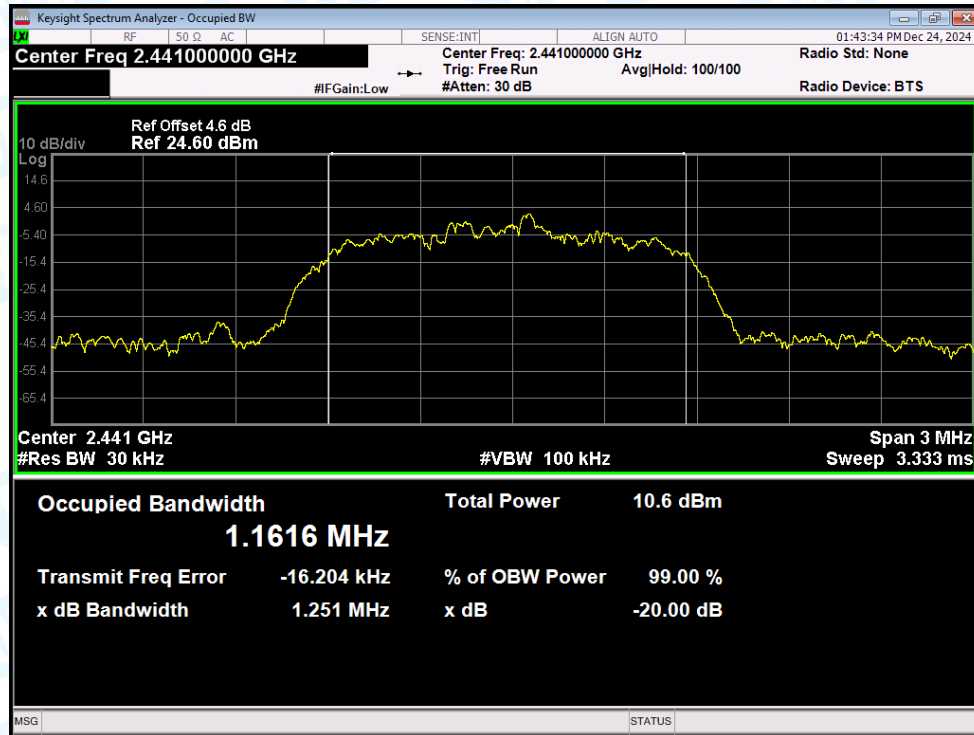
OBW NVNT 2-DH1 2480MHz Ant1

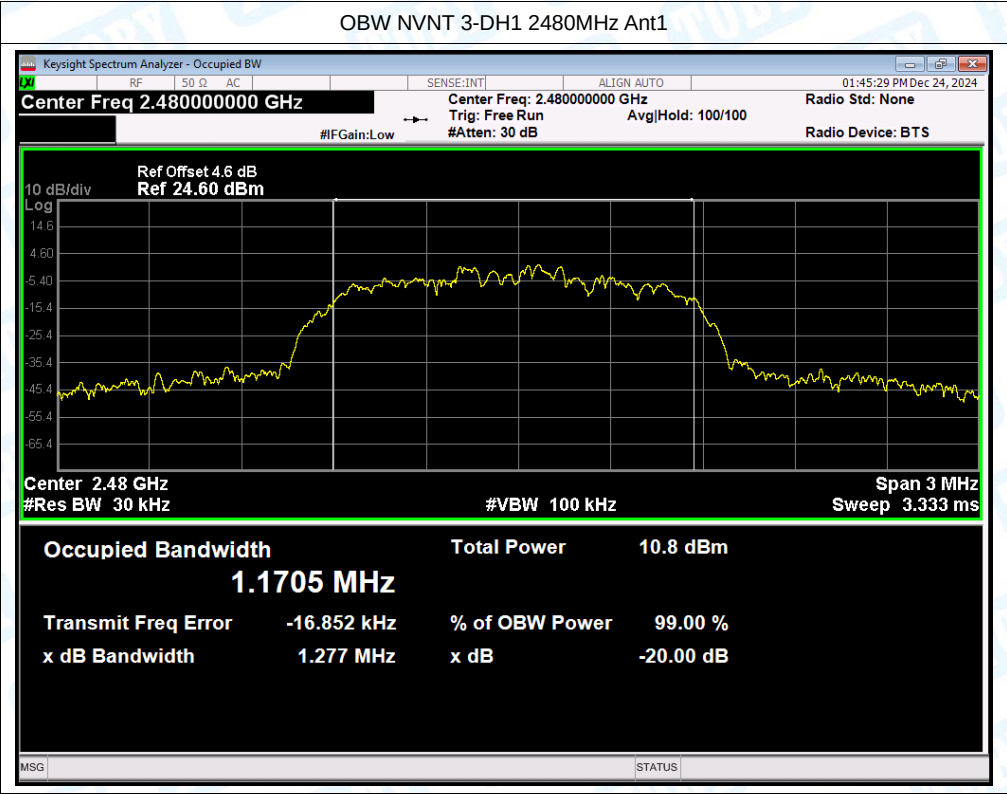


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



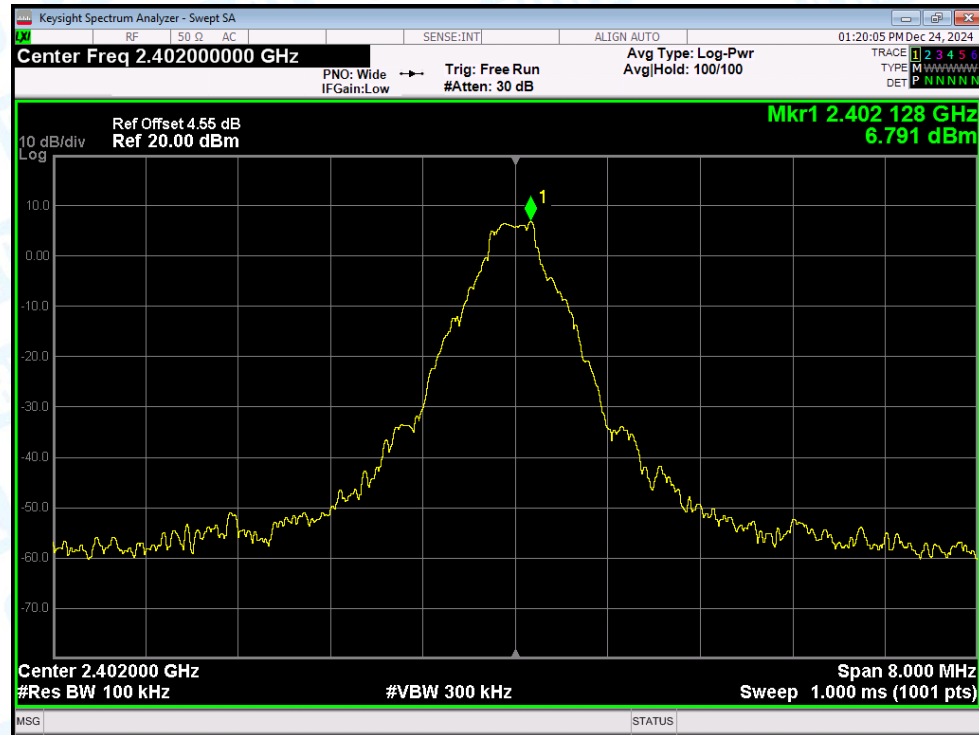


5. Band Edge

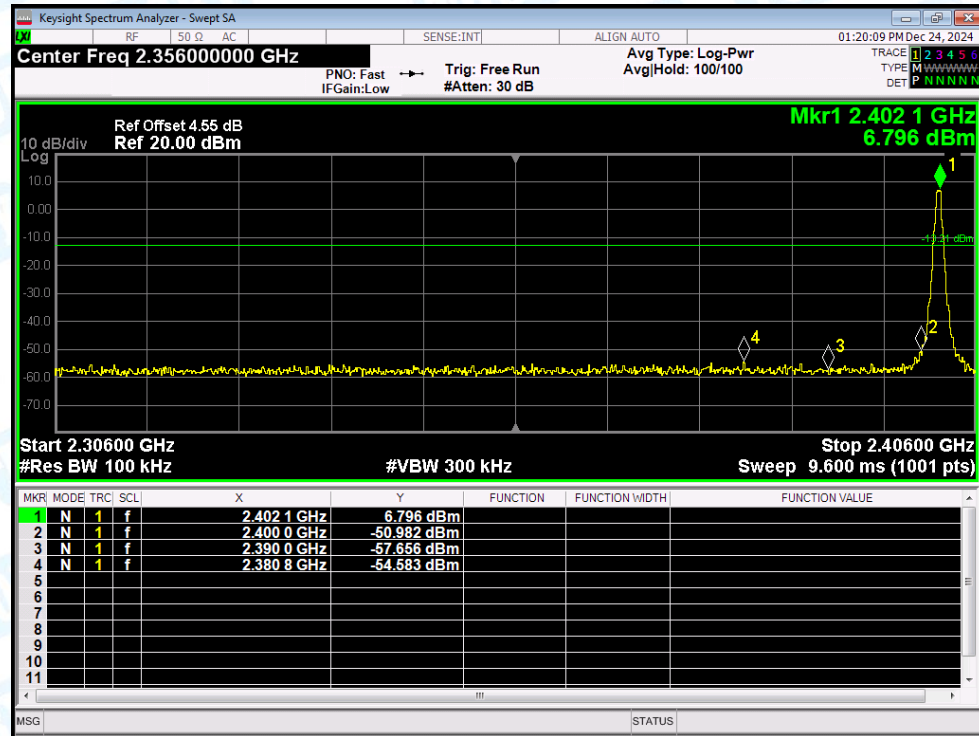
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-61.37	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-61.6	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-57.78	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-59	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-57.94	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-57.44	-20	Pass

Test Graphs

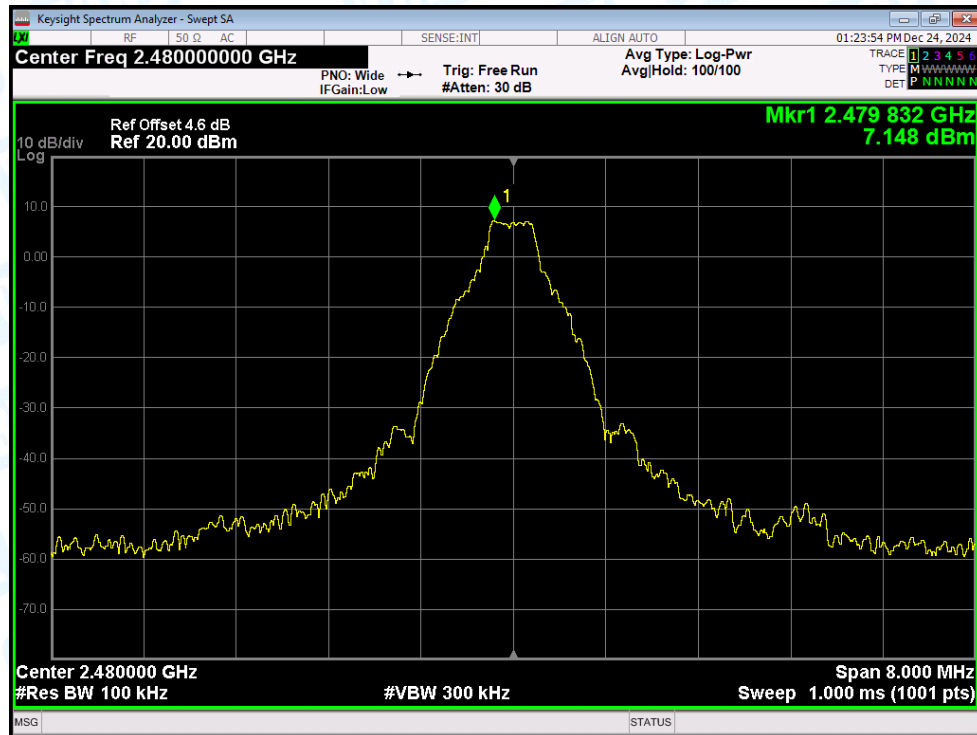
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



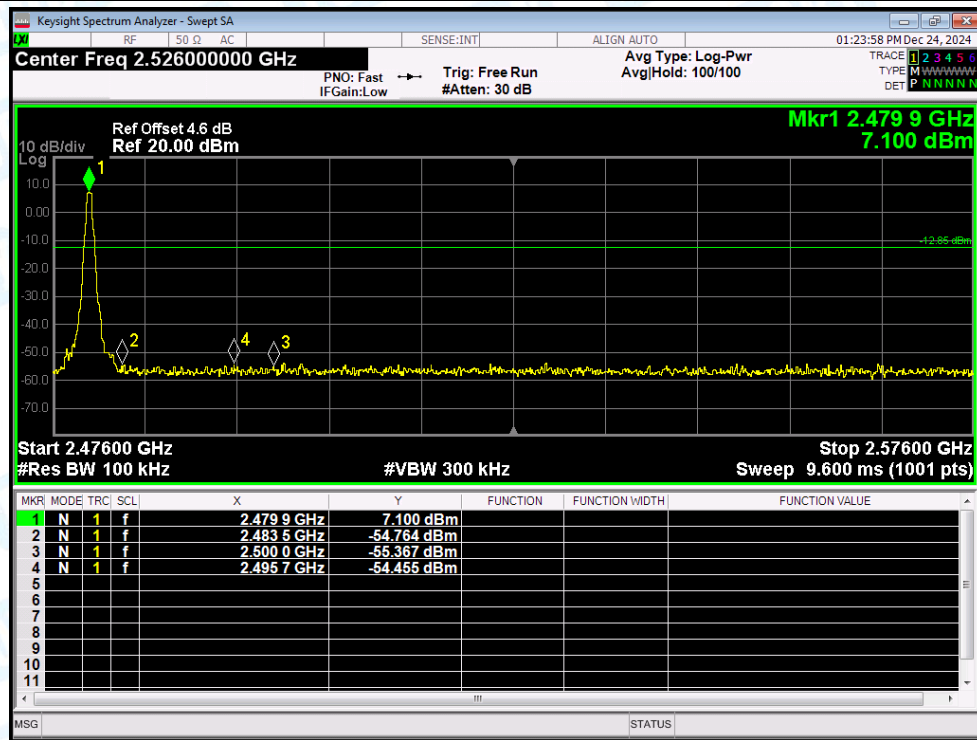
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission

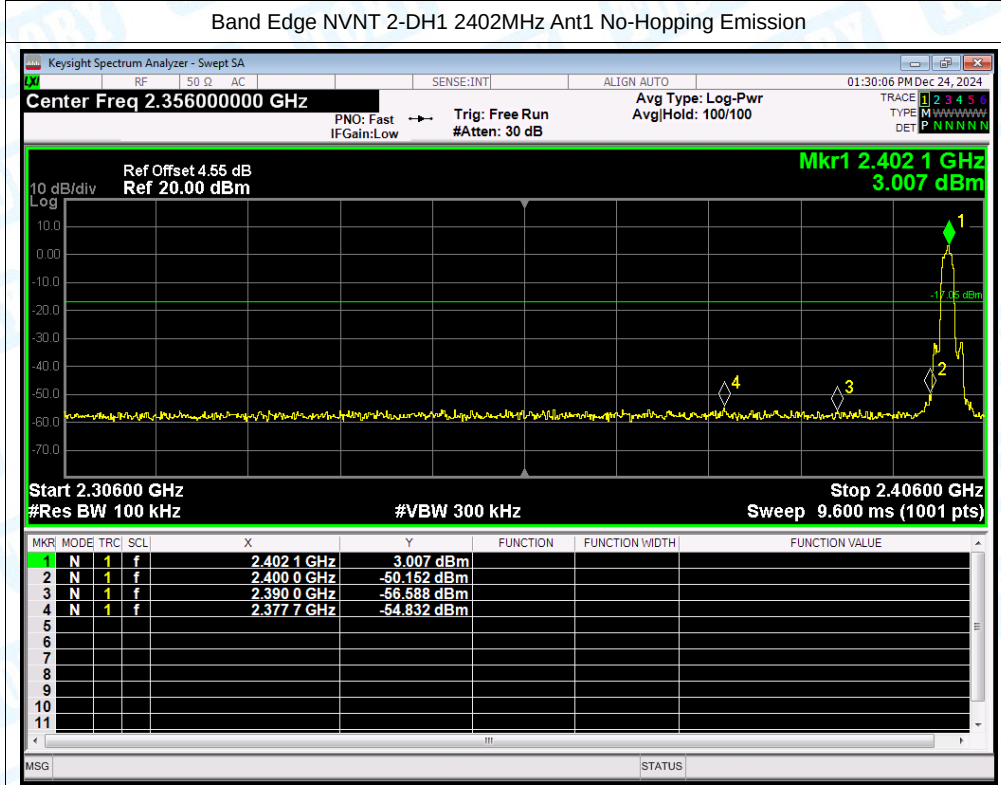
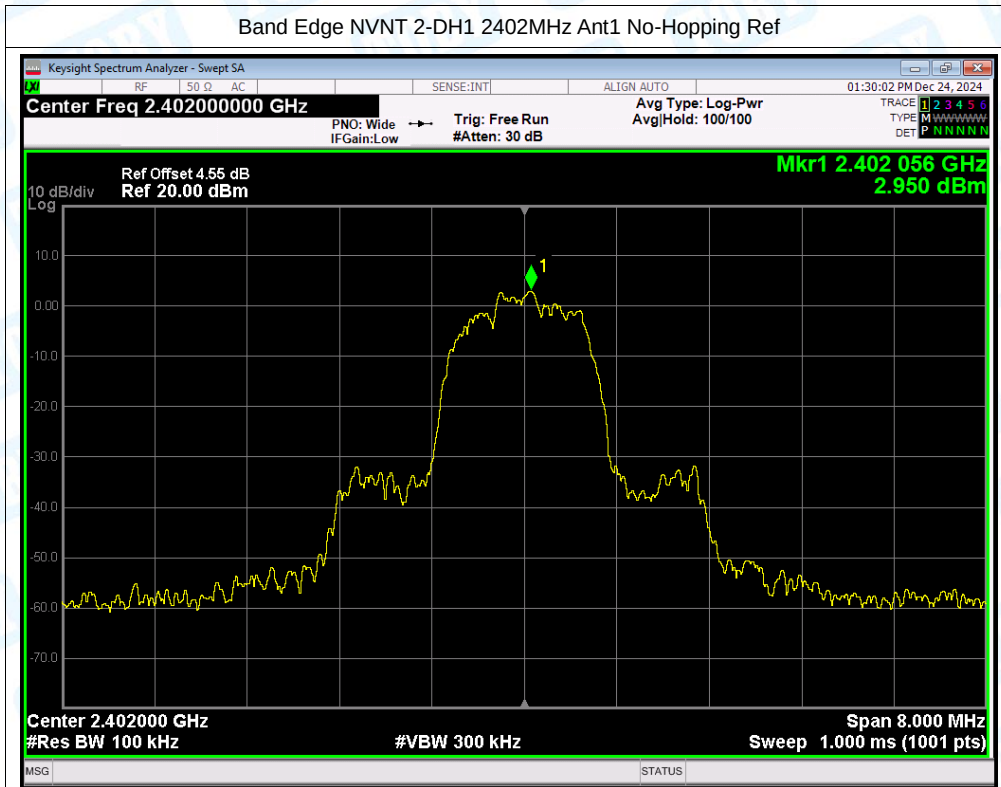


Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref

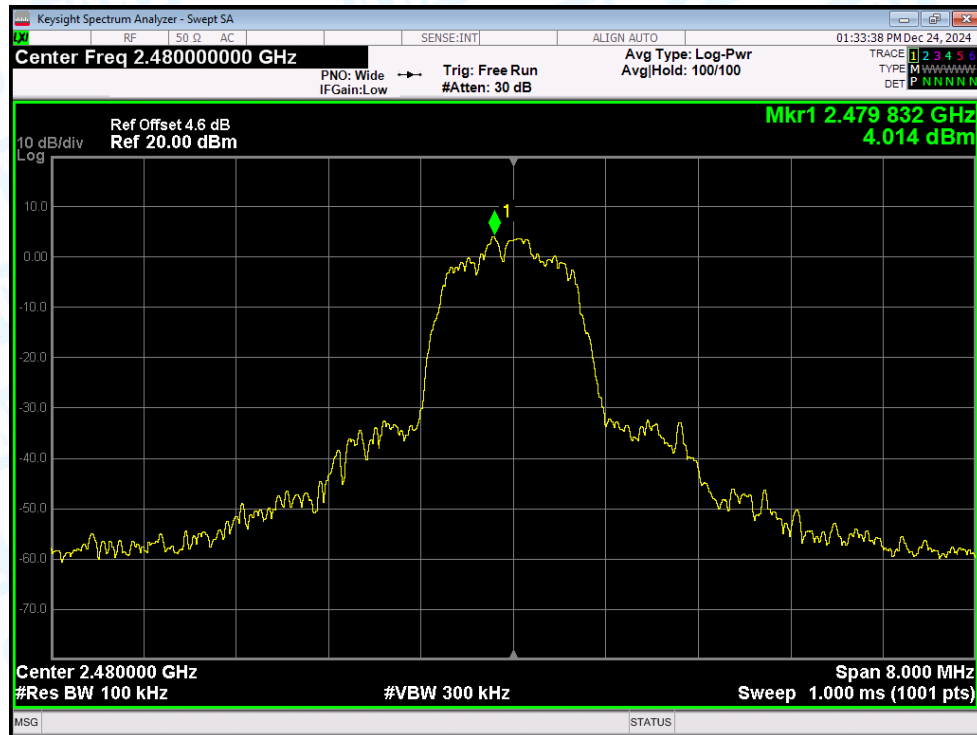


Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission

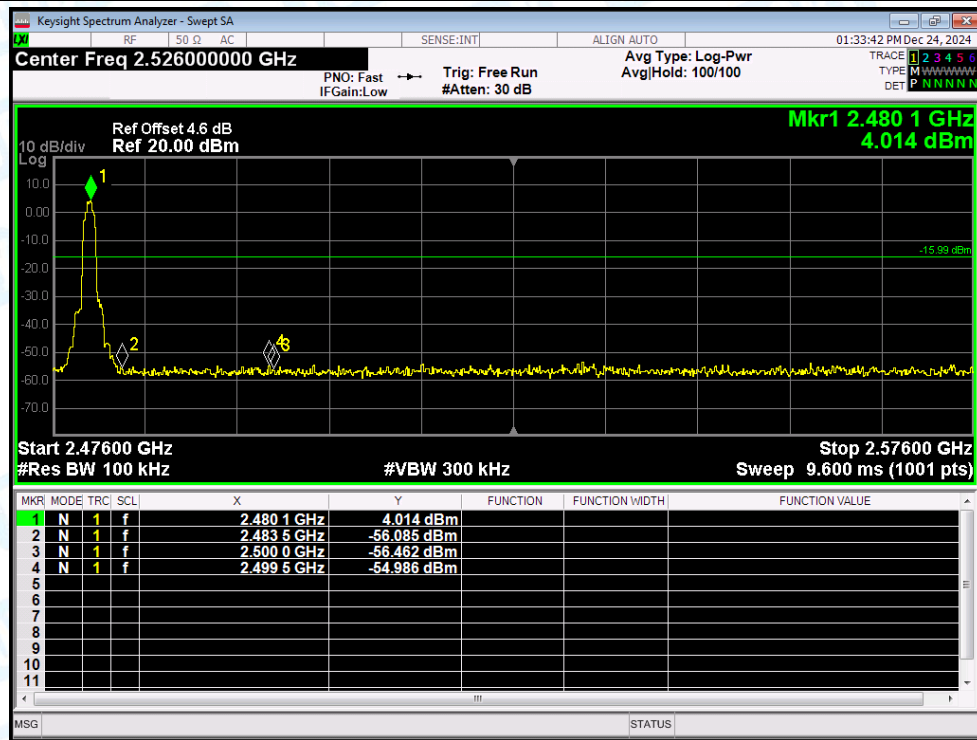




Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



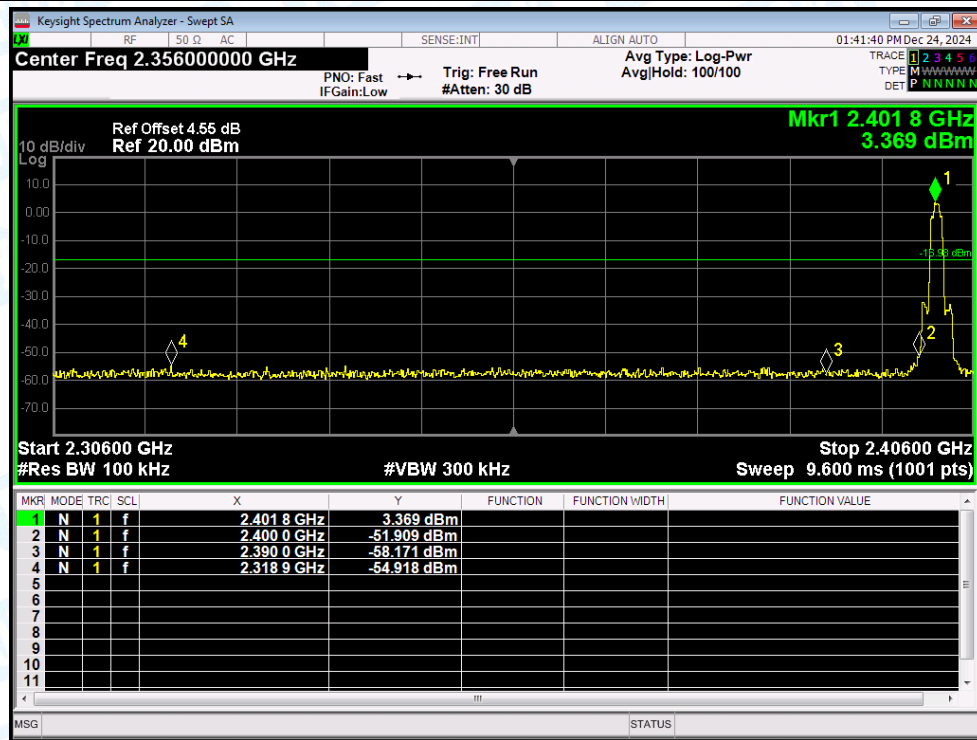
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



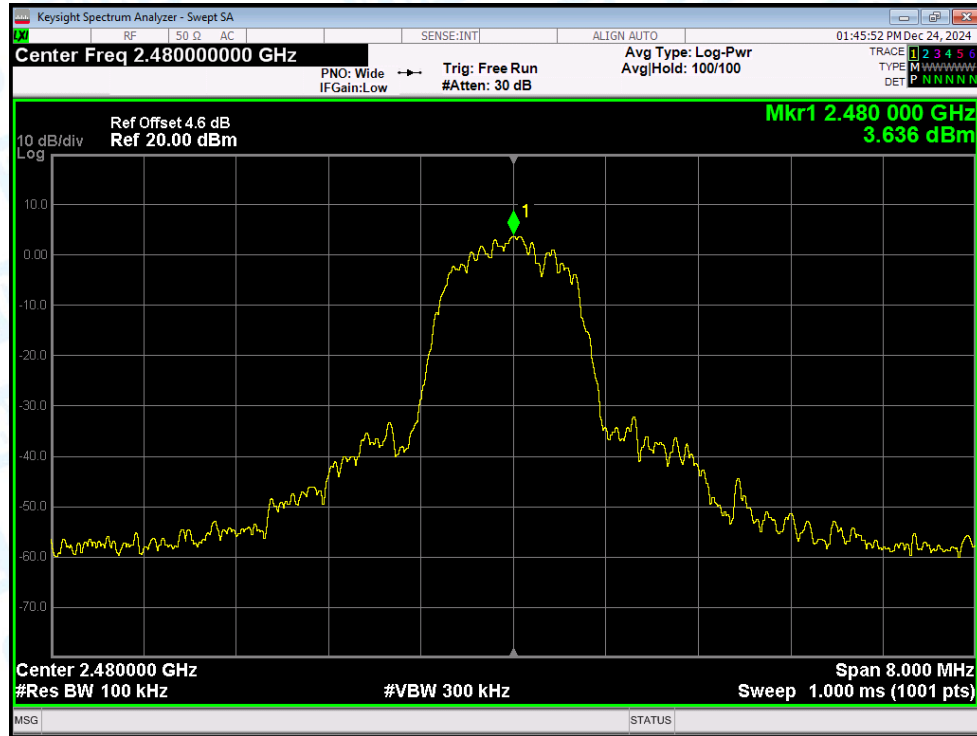
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



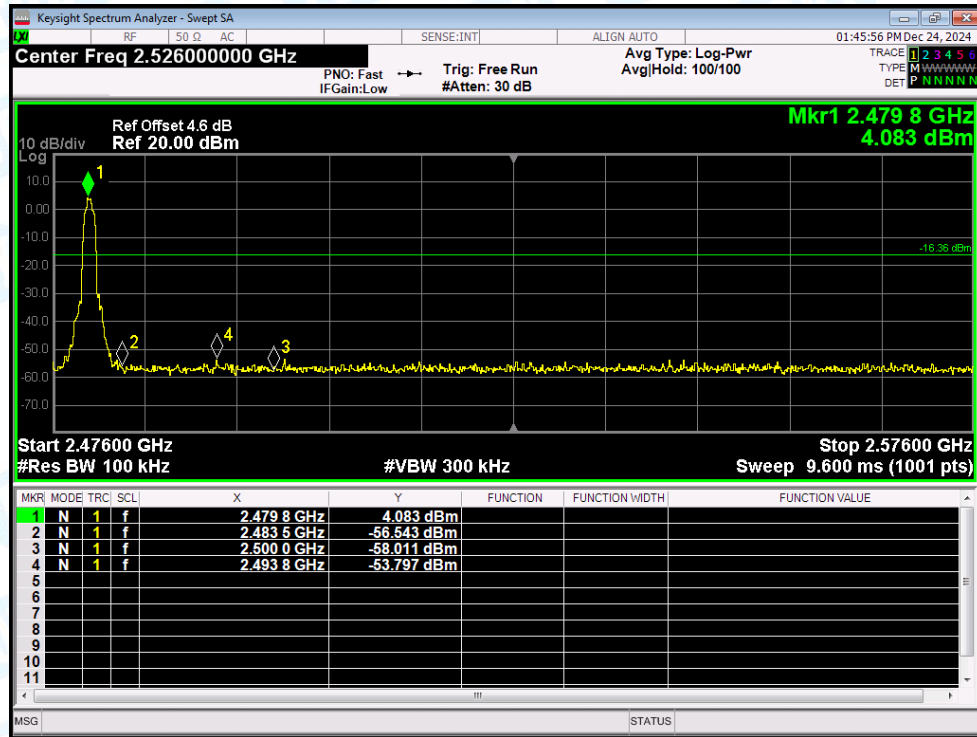
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



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



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



6. Band Edge(Hopping)

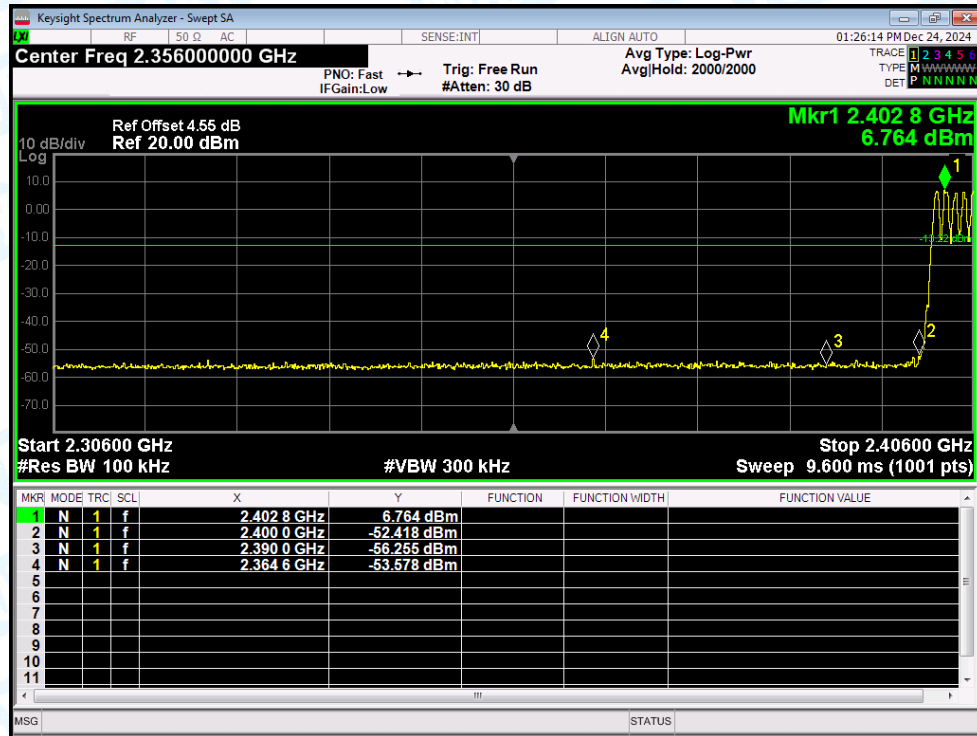
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-60.36	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-61.22	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-57.66	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-57.23	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-56.82	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-57.2	-20	Pass

Test Graphs

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



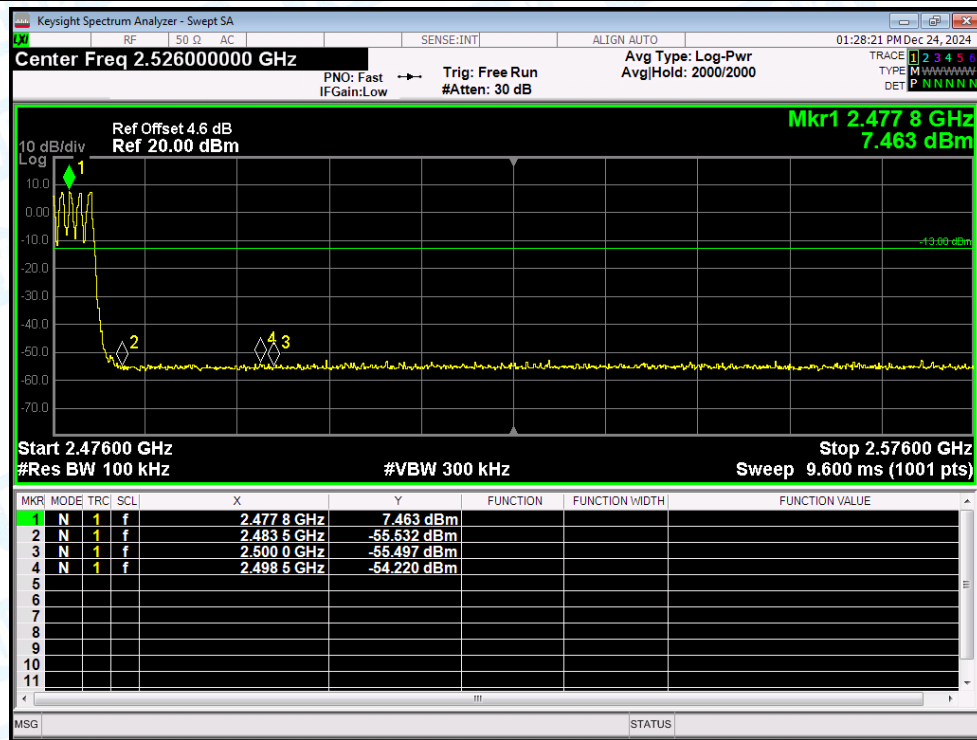
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission

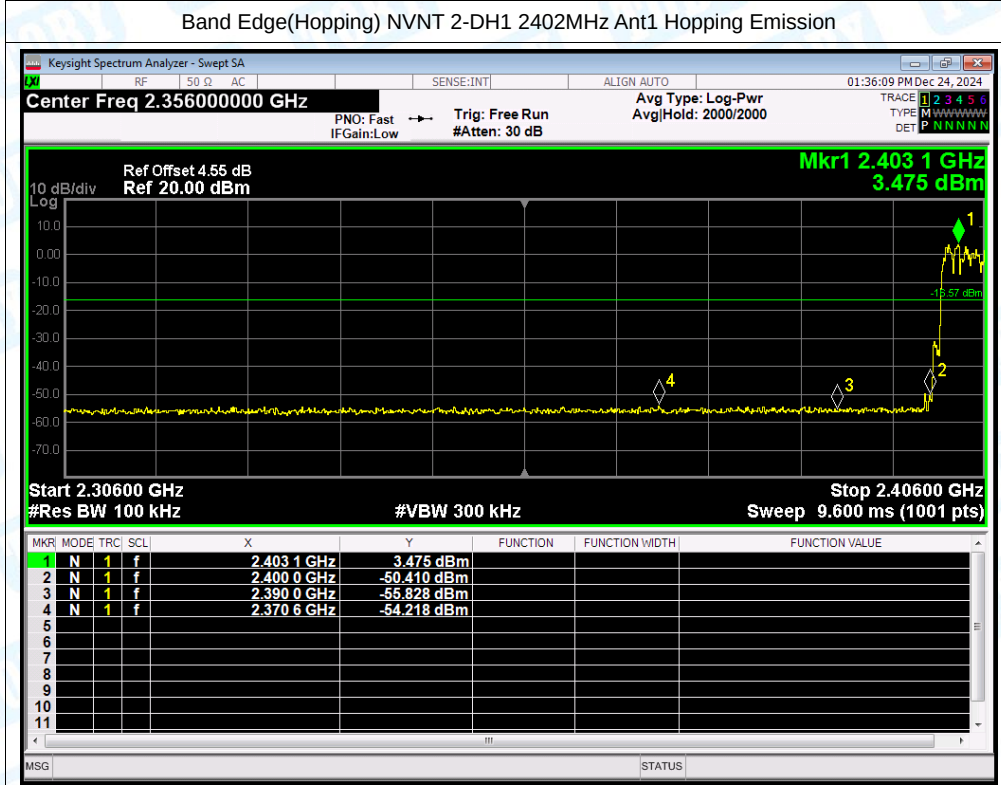
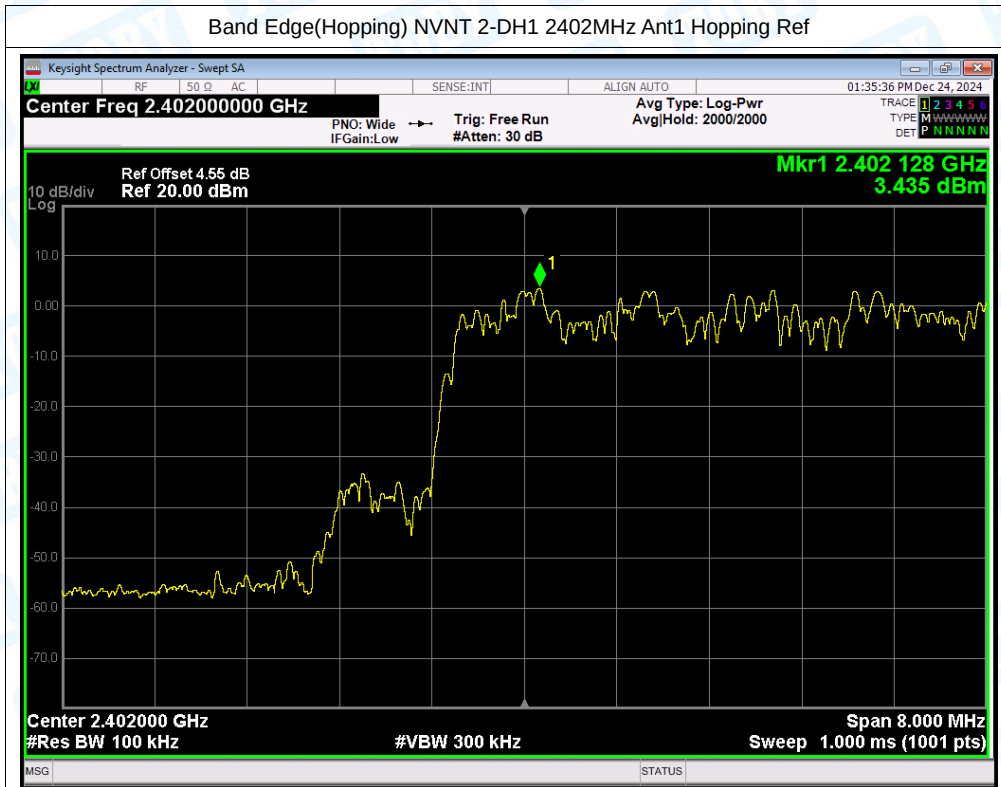


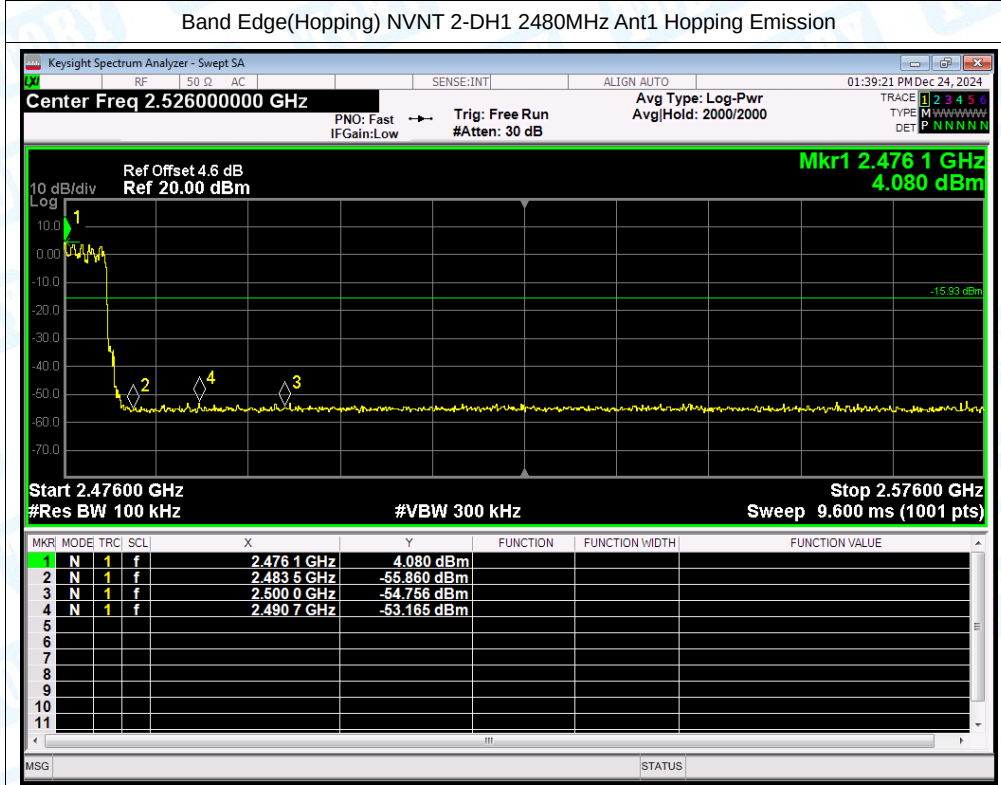
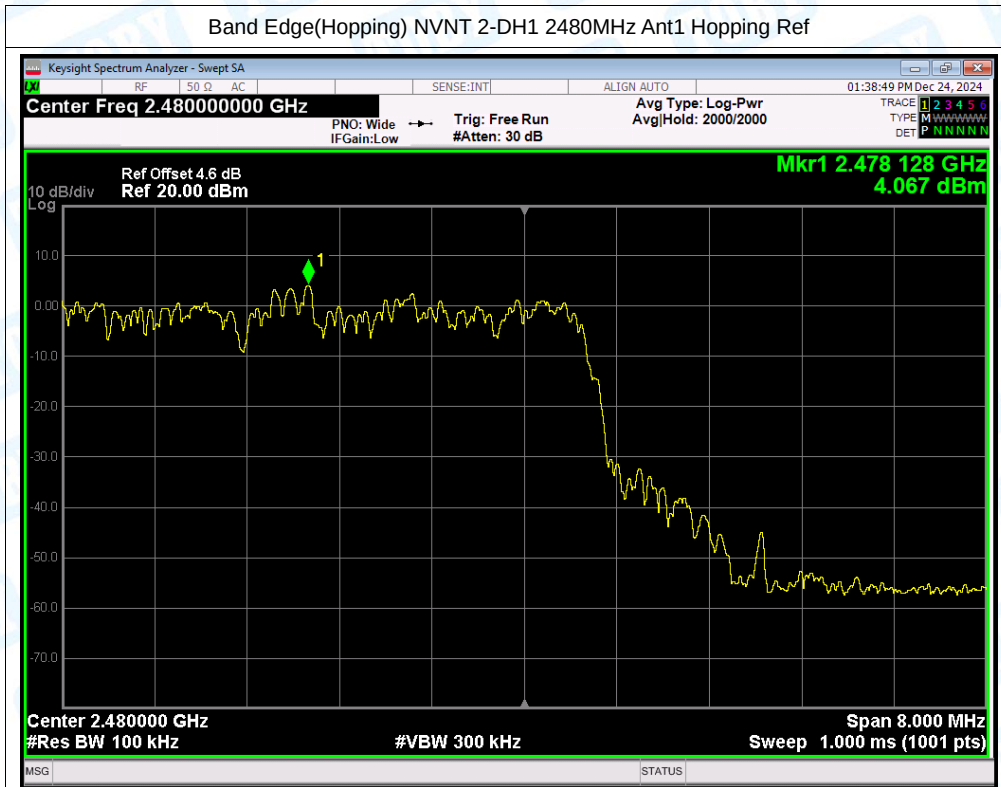
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref



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



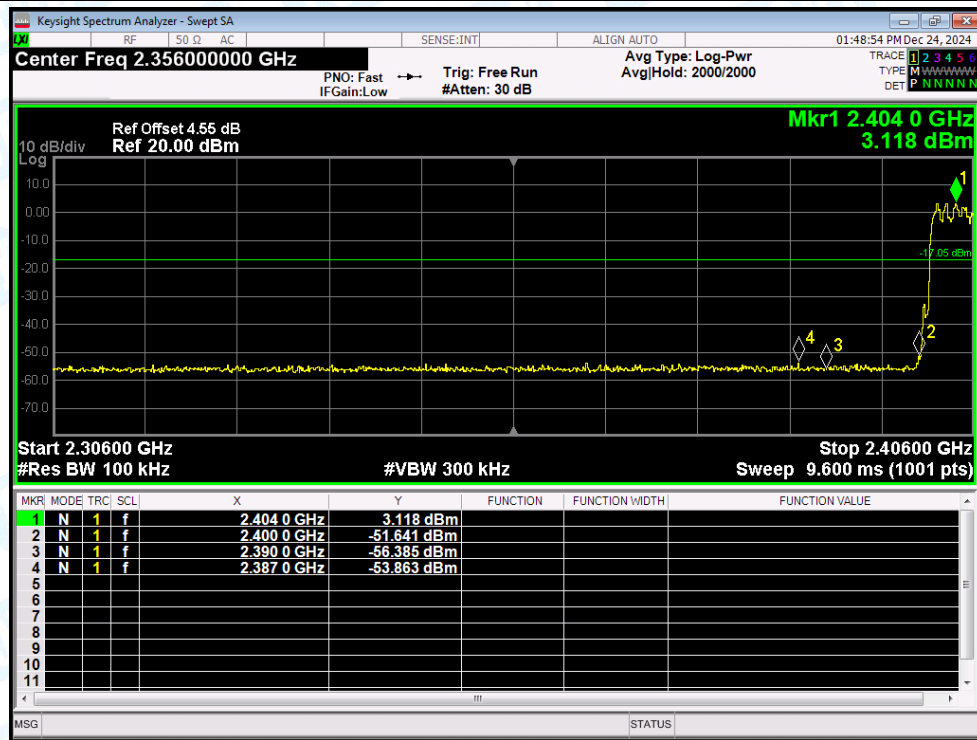




Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



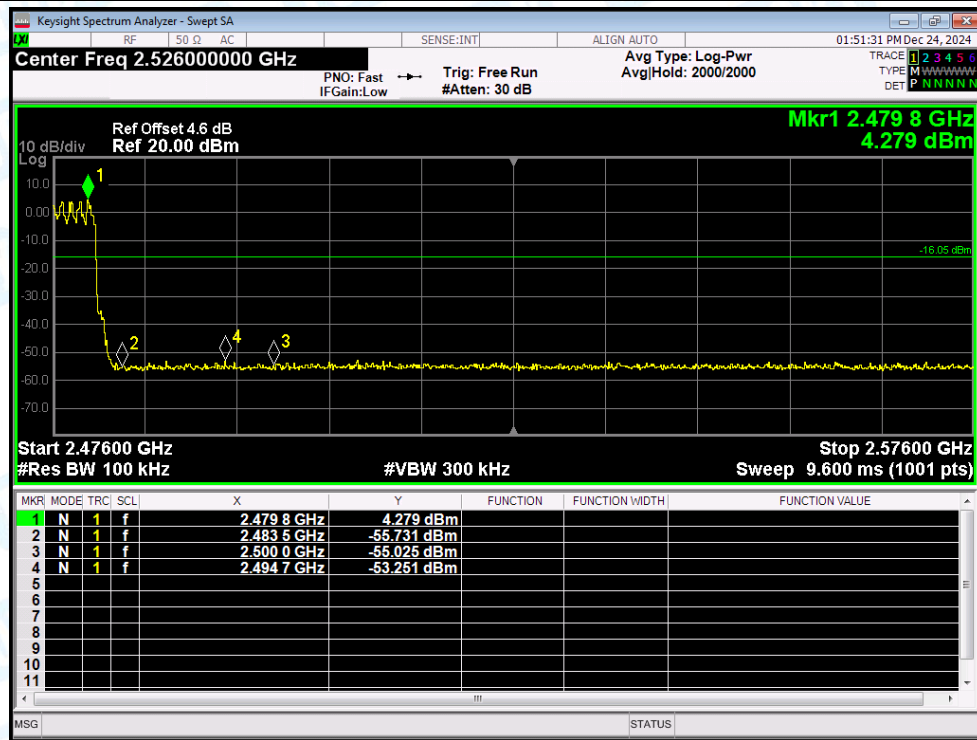
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 3-DH1 2480MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 3-DH1 2480MHz Ant1 Hopping Emission

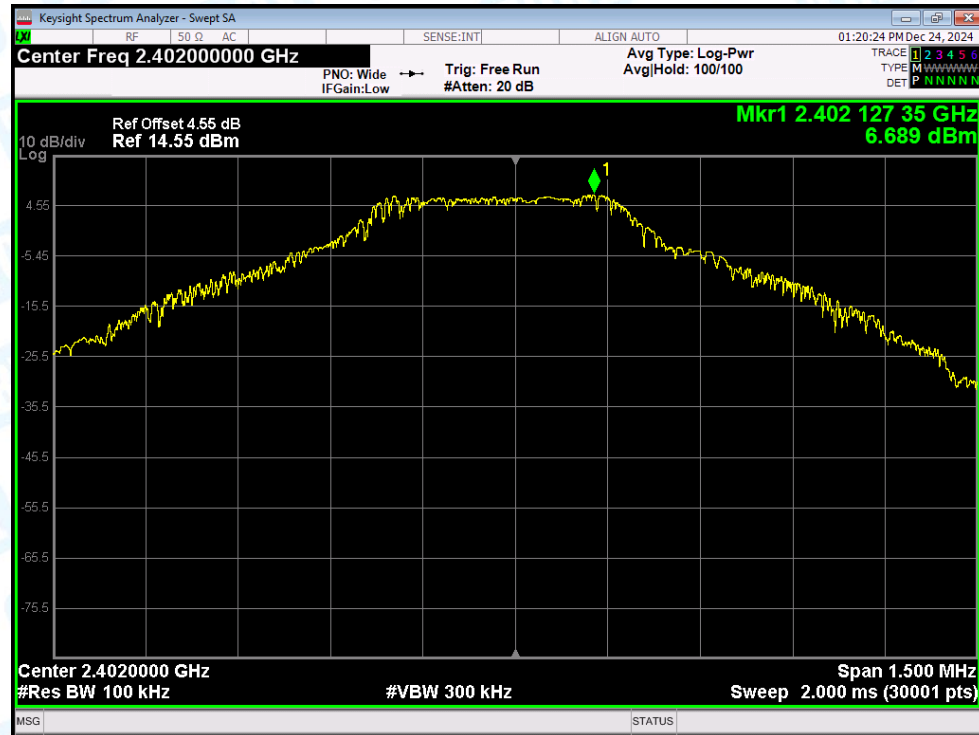


7. Conducted RF Spurious Emission

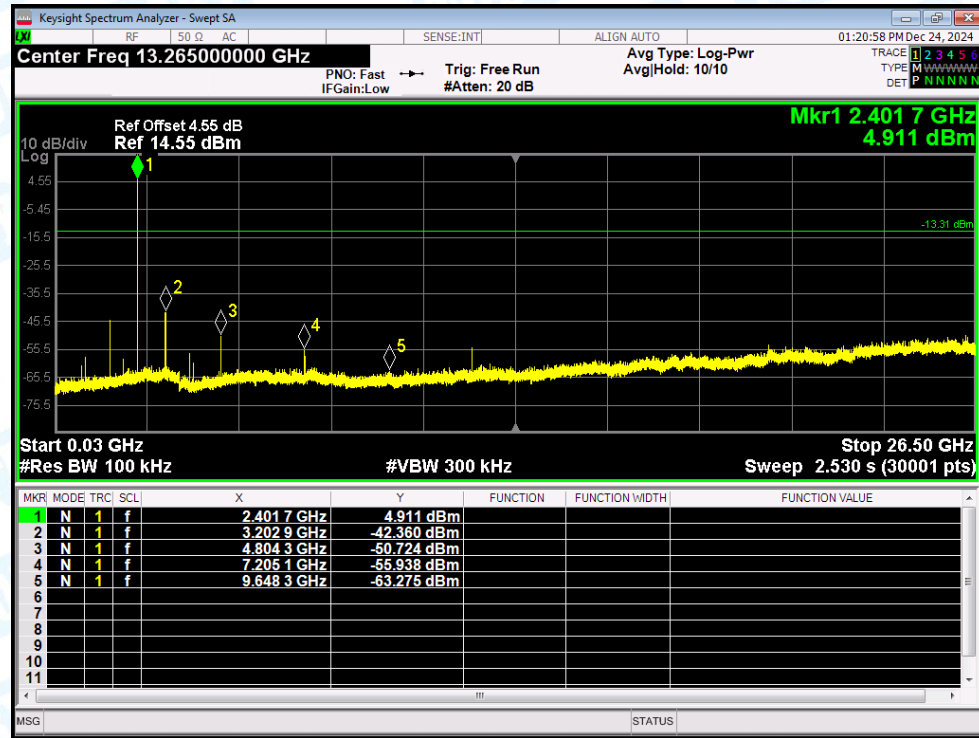
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-49.05	-20	Pass
NVNT	1-DH1	2441	Ant1	-50.97	-20	Pass
NVNT	1-DH1	2480	Ant1	-47.93	-20	Pass
NVNT	2-DH1	2402	Ant1	-52.02	-20	Pass
NVNT	2-DH1	2441	Ant1	-51.35	-20	Pass
NVNT	2-DH1	2480	Ant1	-49.17	-20	Pass
NVNT	3-DH1	2402	Ant1	-48.09	-20	Pass
NVNT	3-DH1	2441	Ant1	-49.59	-20	Pass
NVNT	3-DH1	2480	Ant1	-48.61	-20	Pass

Test Graphs

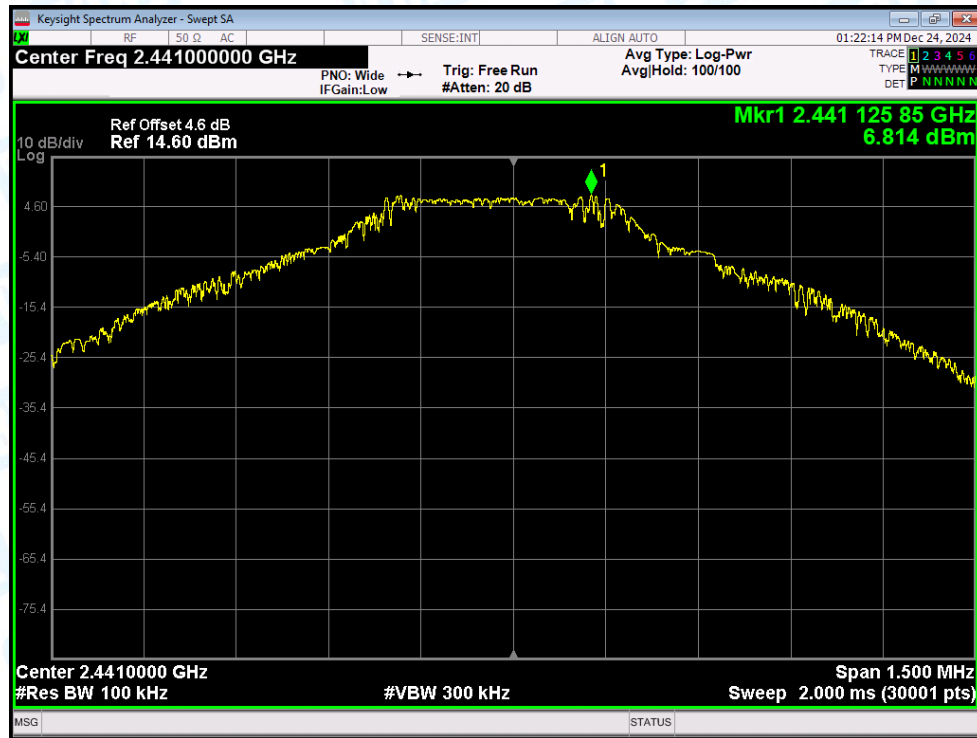
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



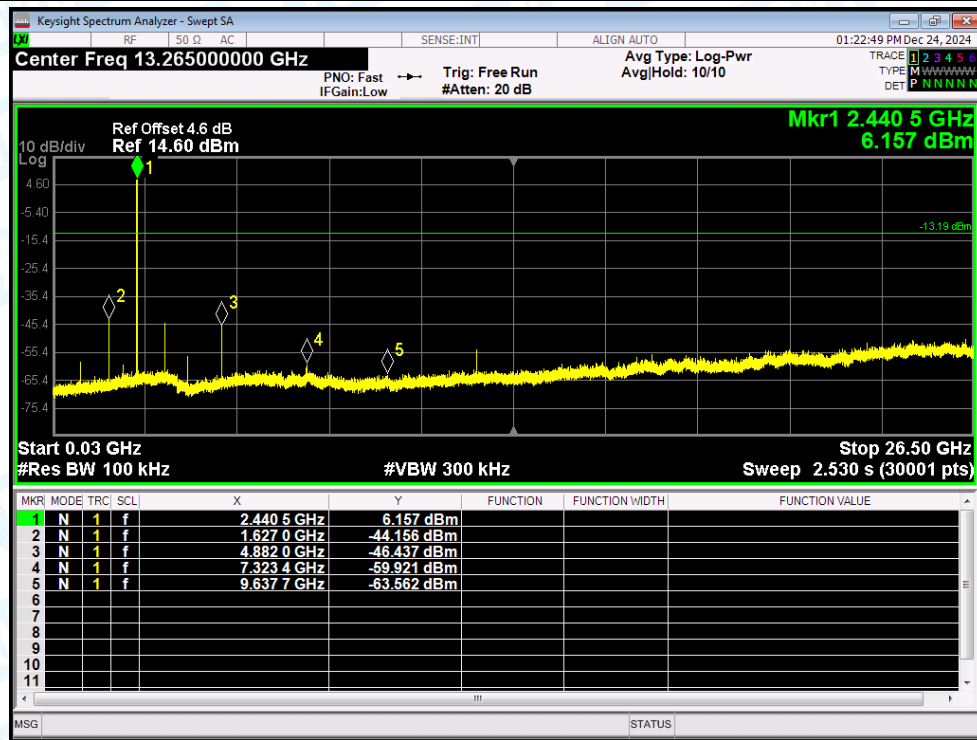
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



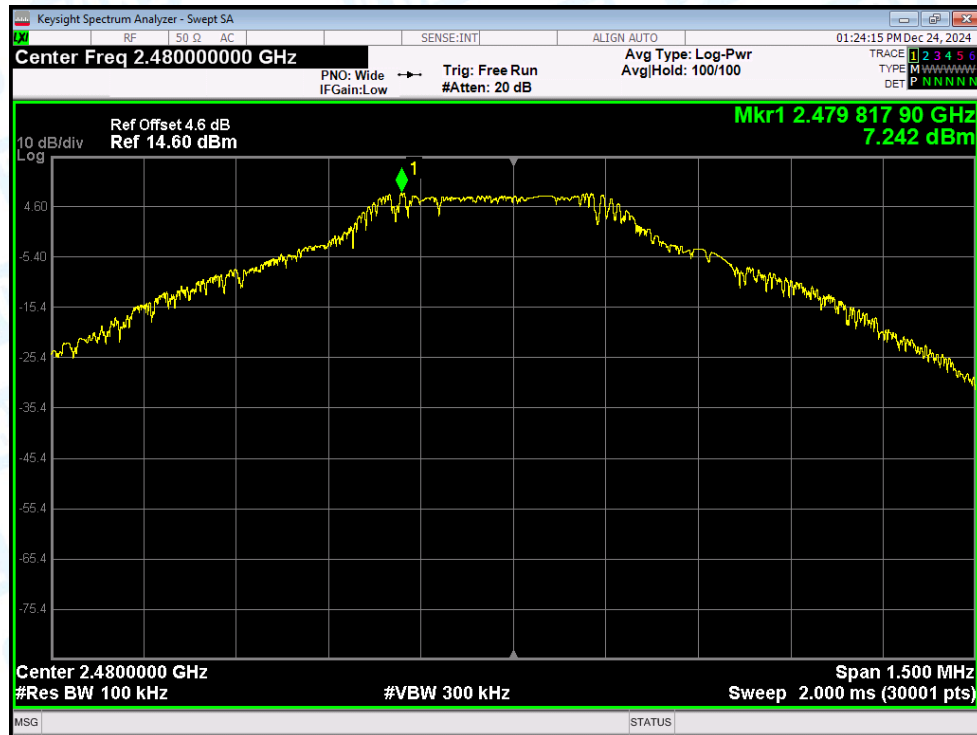
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



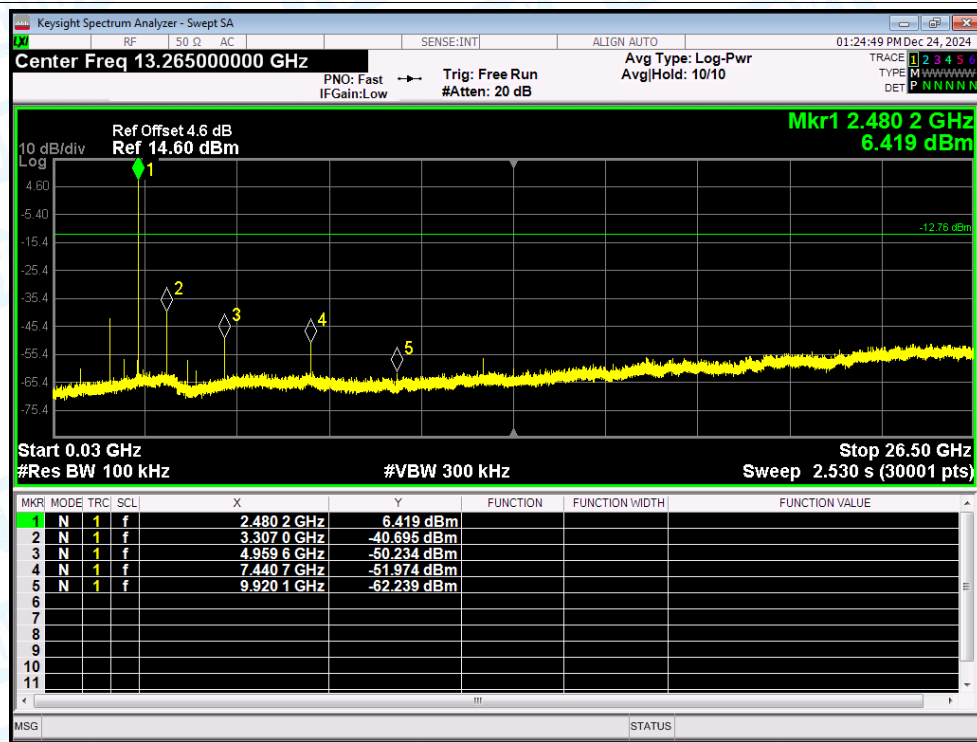
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



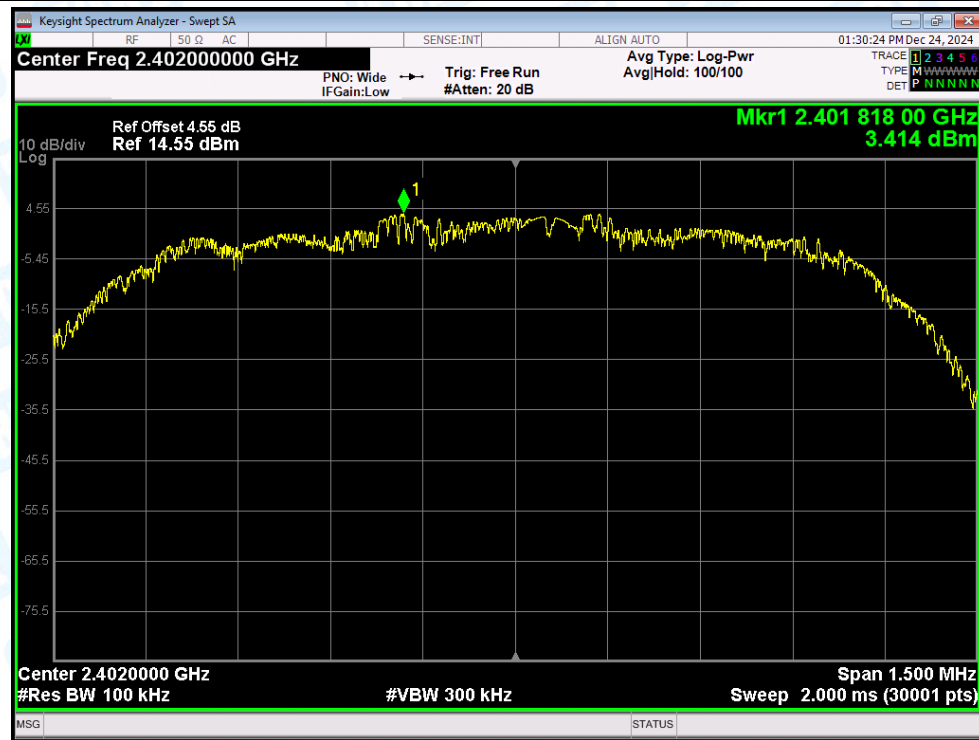
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



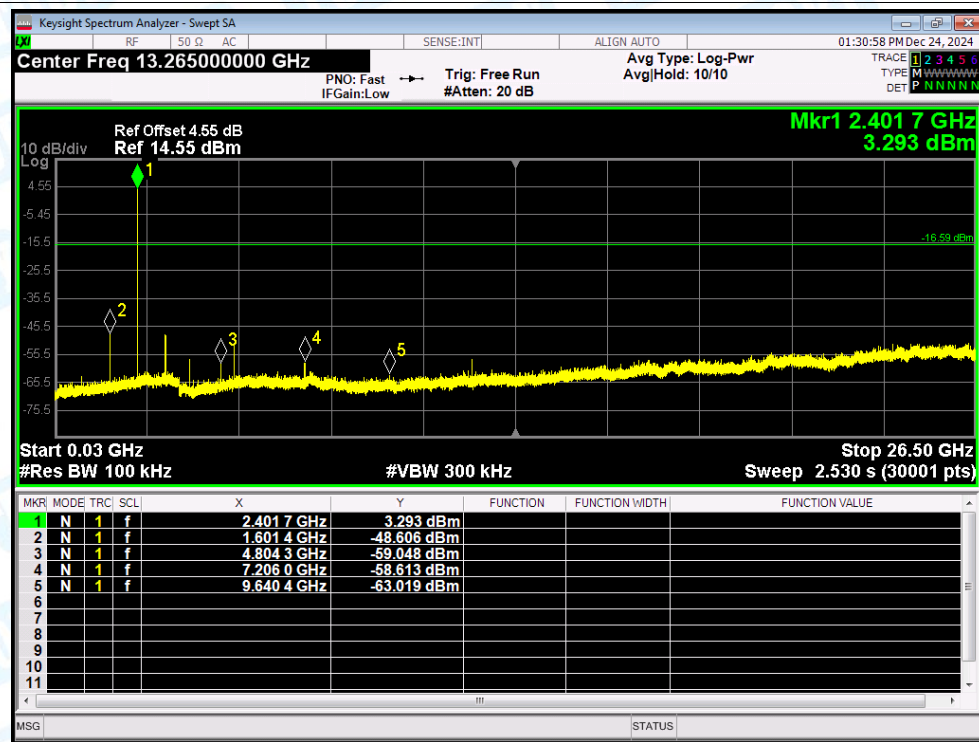
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



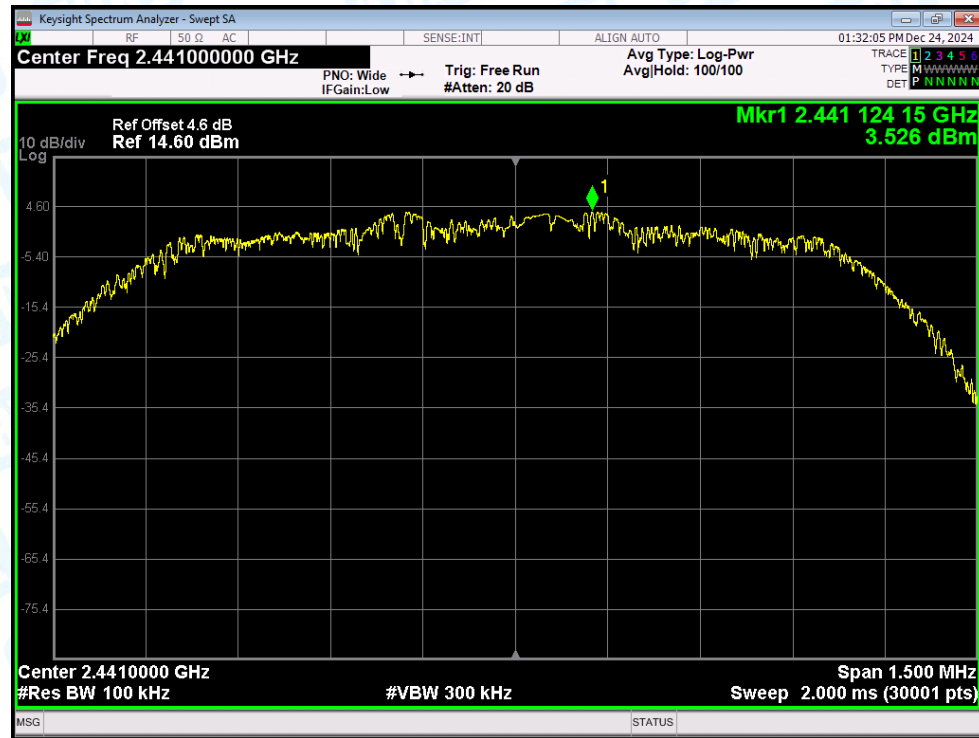
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



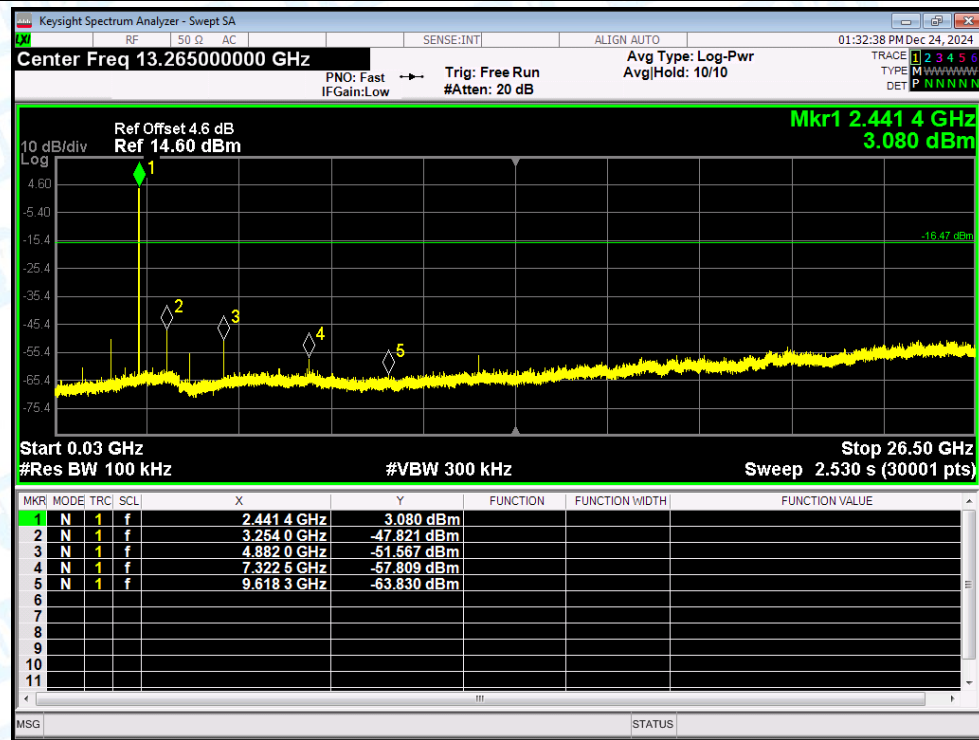
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



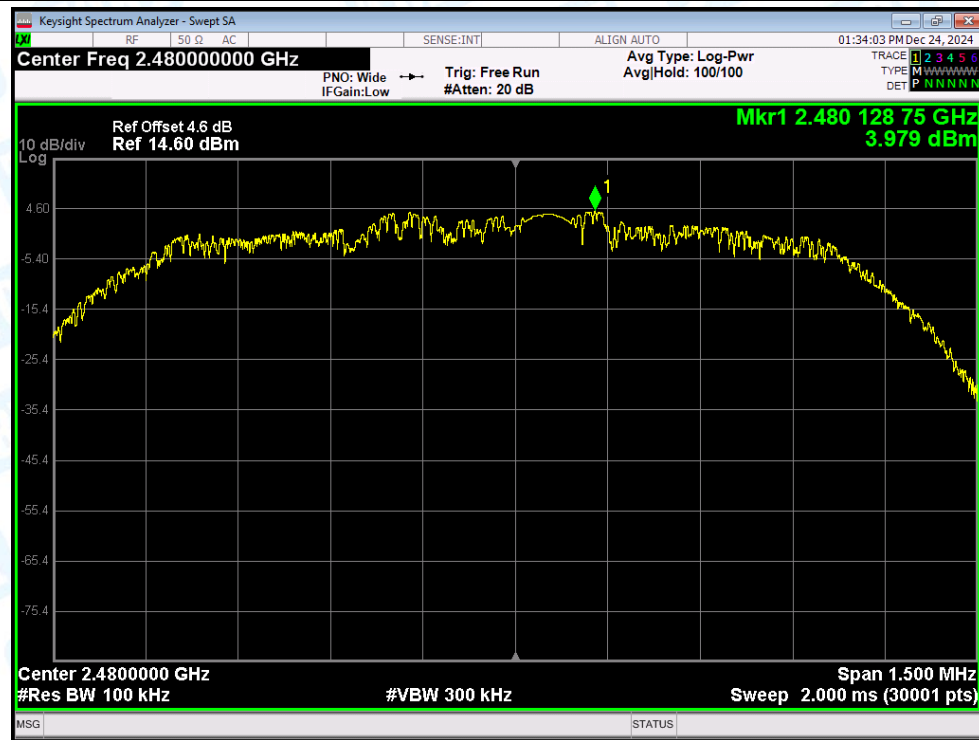
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



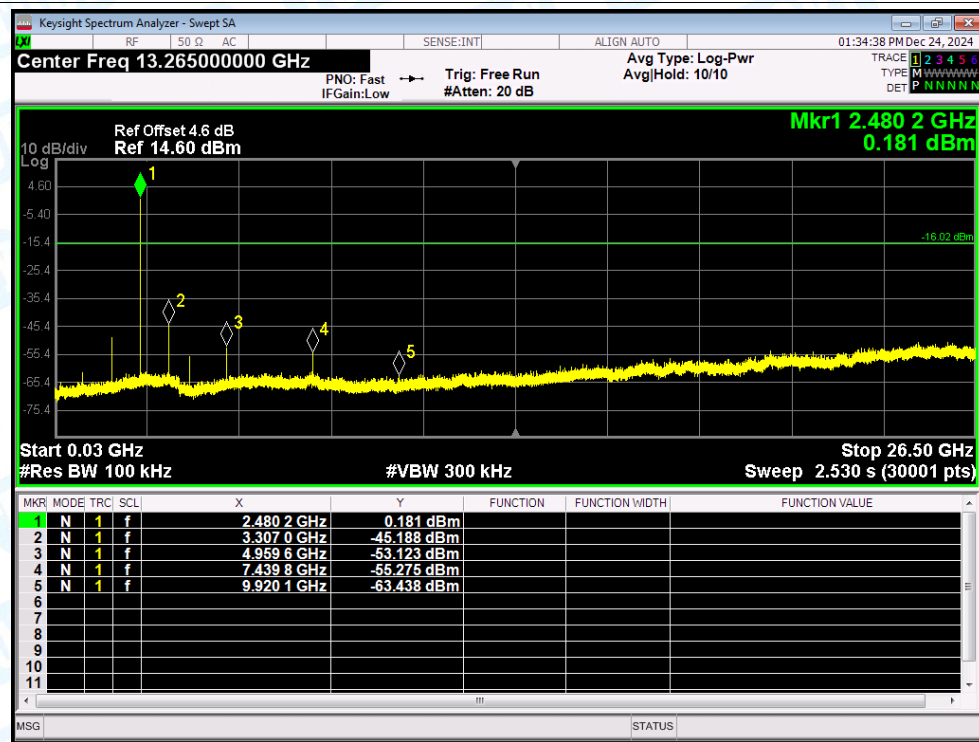
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



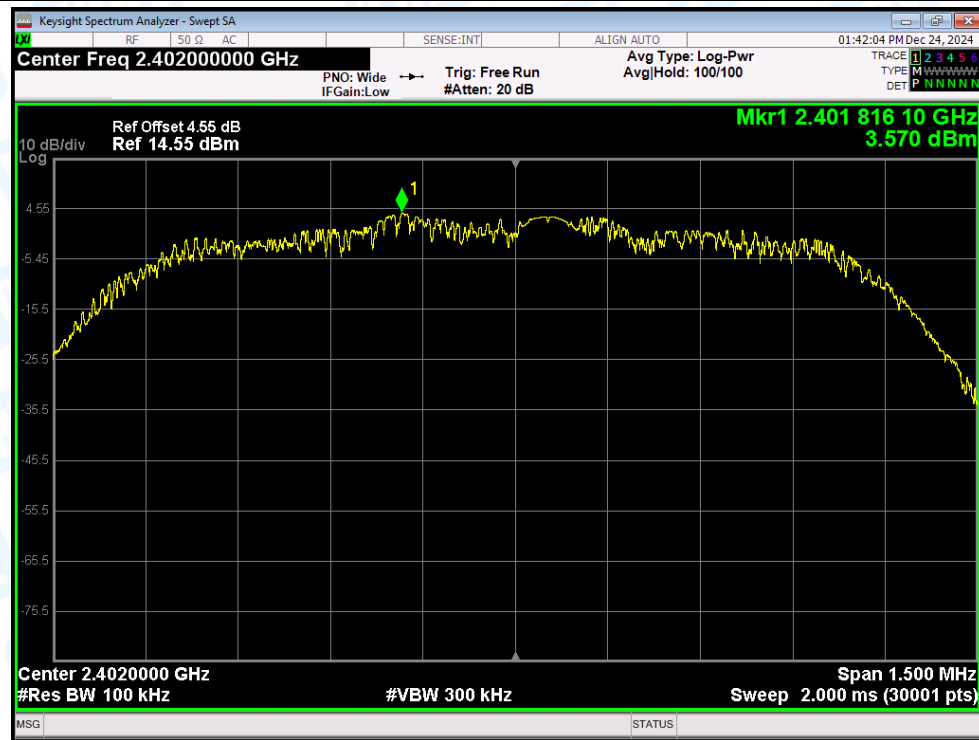
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



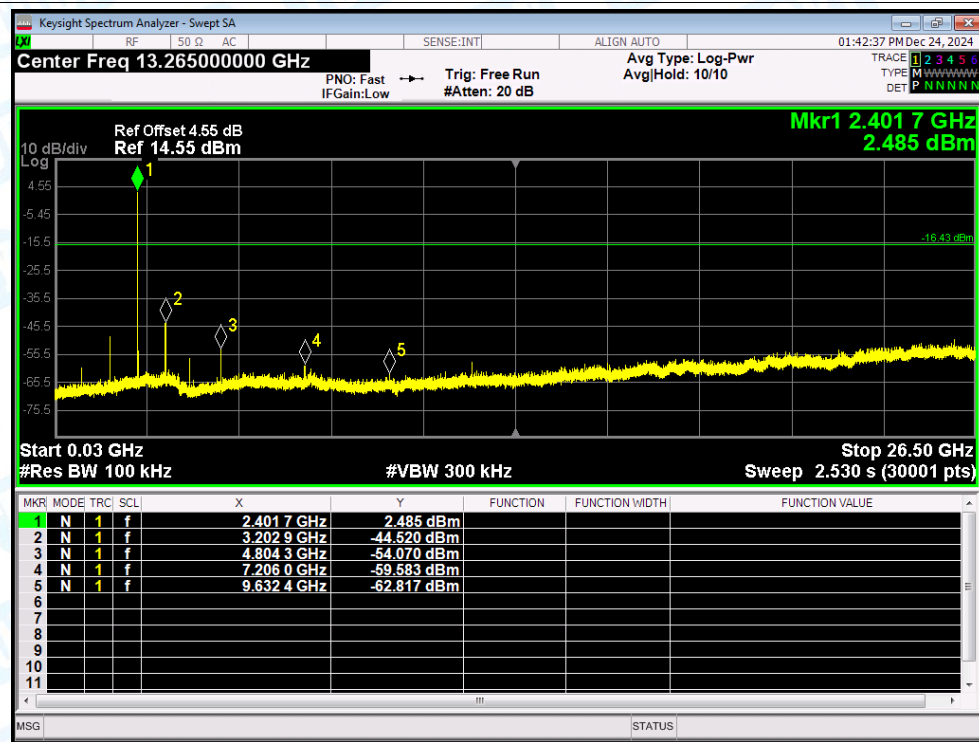
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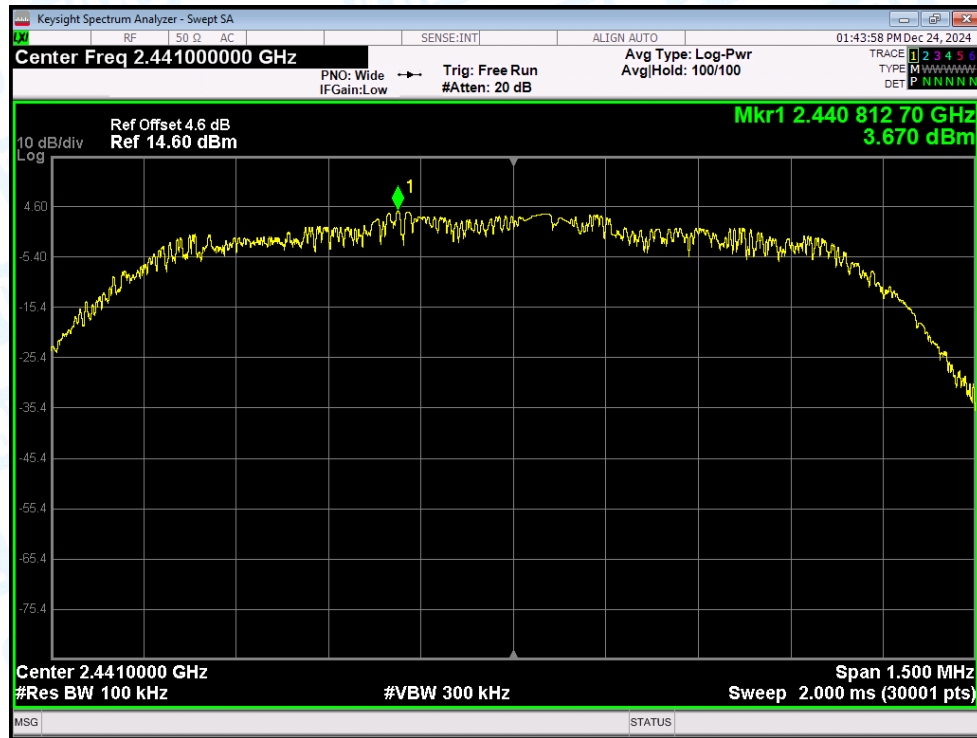
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



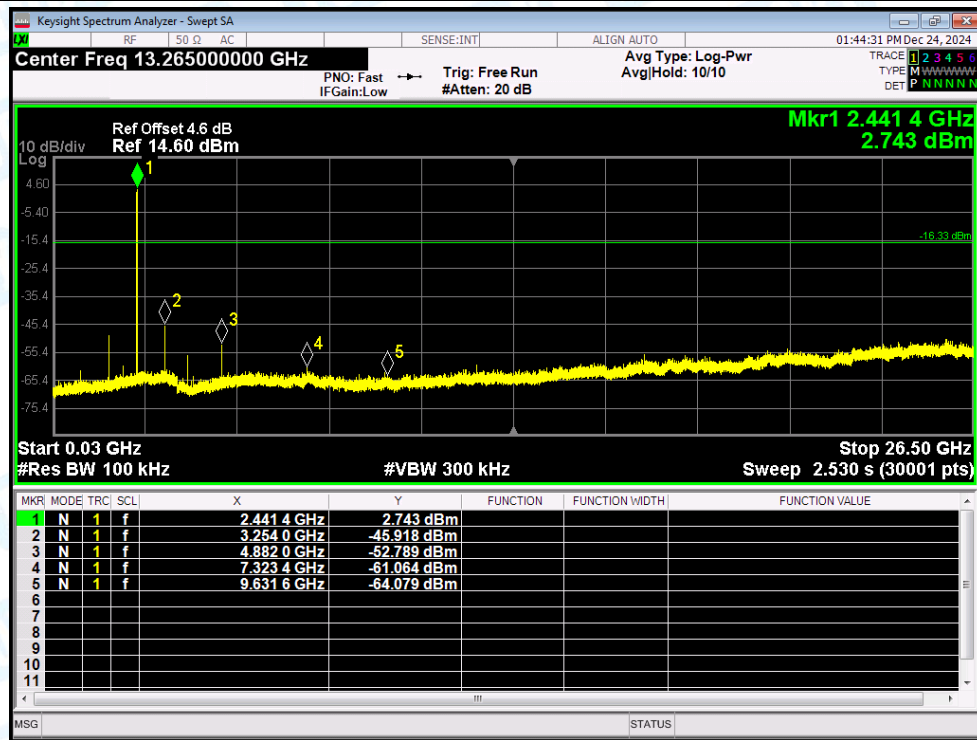
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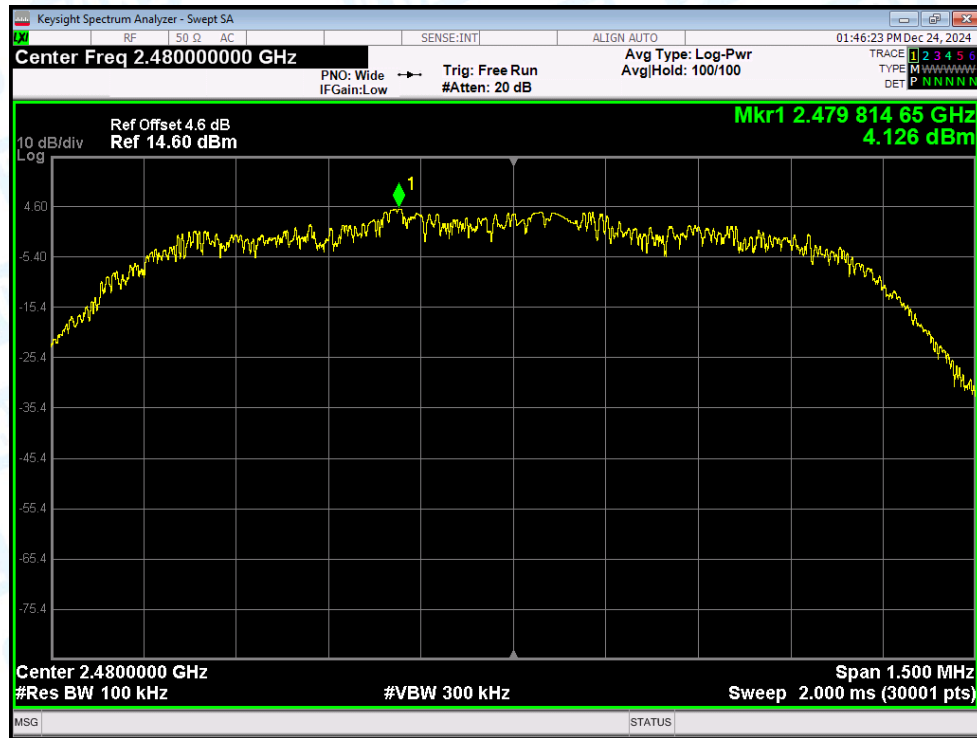
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



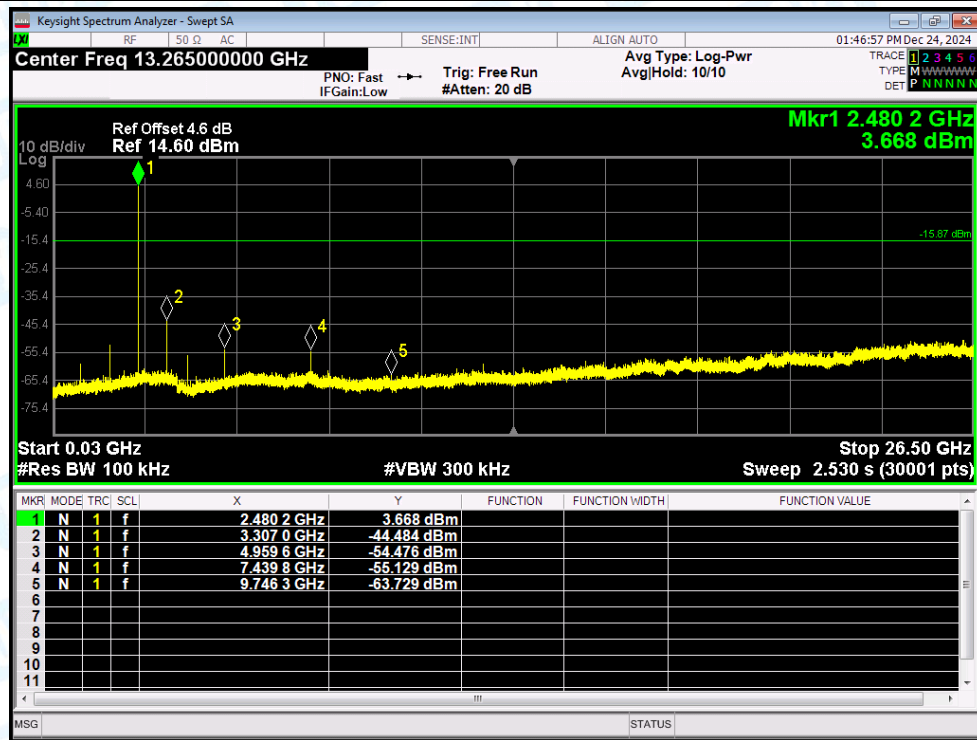
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

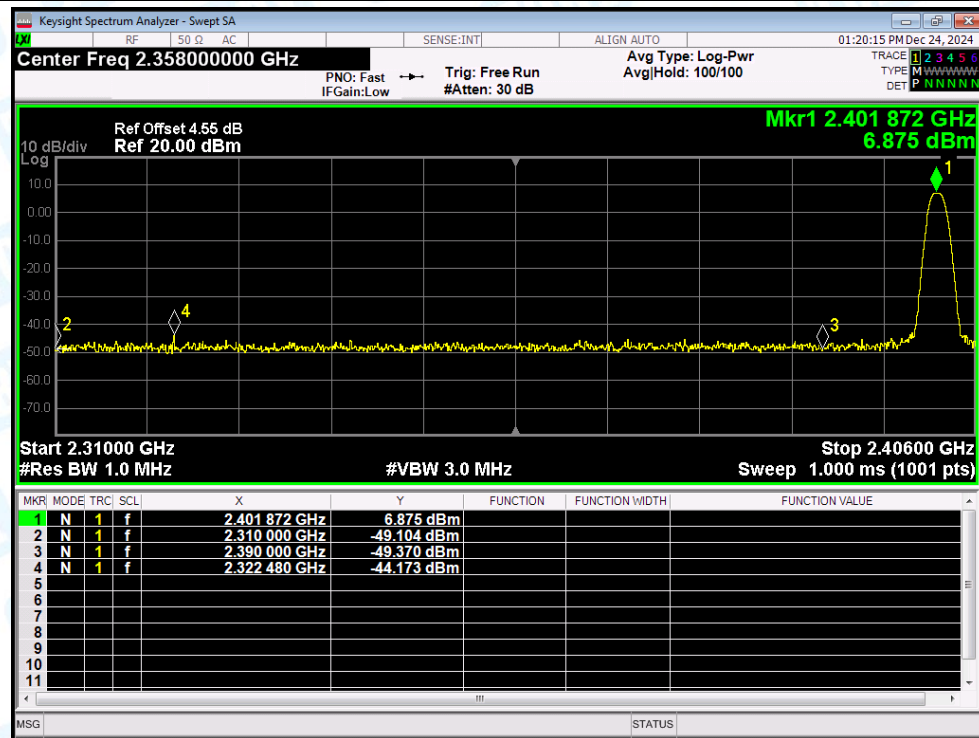


8. Restrict Band

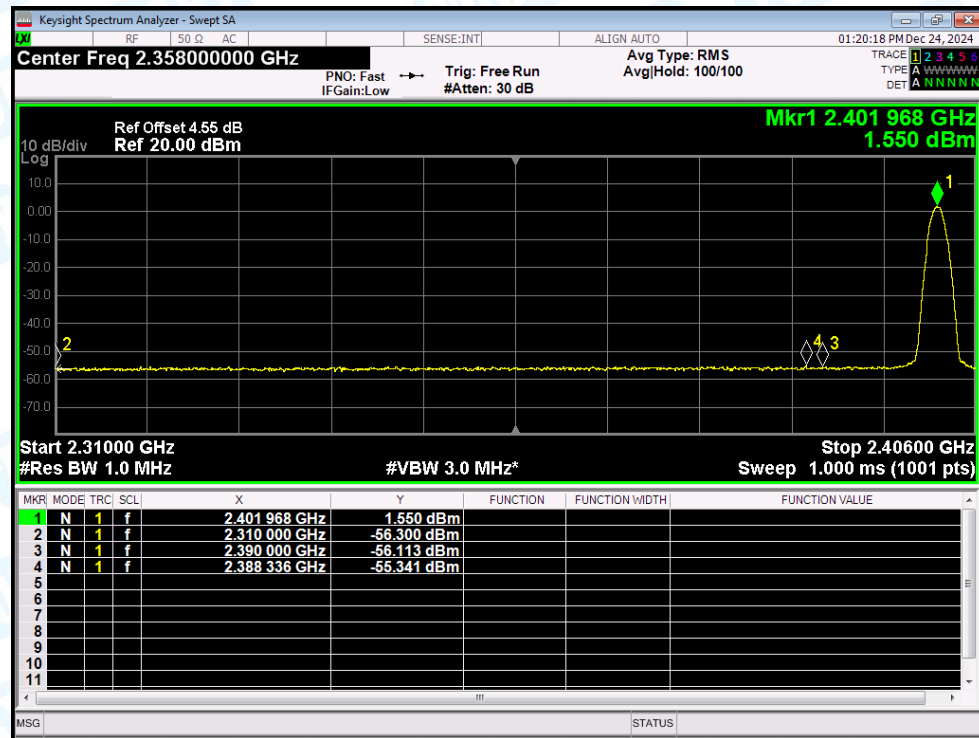
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-49.1	2	-	48.16	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.3	2	5.29	46.25	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2322.48	-44.17	2	-	53.09	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2388.336	-55.34	2	5.29	47.21	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-49.37	2	-	47.89	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-56.11	2	5.29	46.44	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-46.8	2	-	50.46	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-55.46	2	5.29	47.09	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2491.168	-44.41	2	-	52.85	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.752	-54.37	2	5.29	48.18	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-49.18	2	-	48.08	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-55.01	2	5.29	47.54	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-49.2	2	-	48.06	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.52	2	5.17	45.91	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2389.584	-44.82	2	-	52.44	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2377.968	-55.27	2	5.17	47.16	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-48.55	2	-	48.71	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-56.52	2	5.17	45.91	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-46.01	2	-	51.25	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-54.6	2	5.17	47.83	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.92	-44.3	2	-	52.96	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.704	-54.39	2	5.17	48.04	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-45.6	2	-	51.66	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-56.16	2	5.17	46.27	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-46.81	2	-	50.45	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.39	2	5.17	46.04	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2370.96	-45.15	2	-	52.11	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2369.52	-55.33	2	5.17	47.1	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-48.65	2	-	48.61	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-56.16	2	5.17	46.27	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-44.41	2	-	52.85	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-55	2	5.17	47.43	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.512	-44.41	2	-	52.85	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2496.592	-54.58	2	5.17	47.85	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-47.48	2	-	49.78	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.68	2	5.17	46.75	Average	54	Pass

Test Graphs

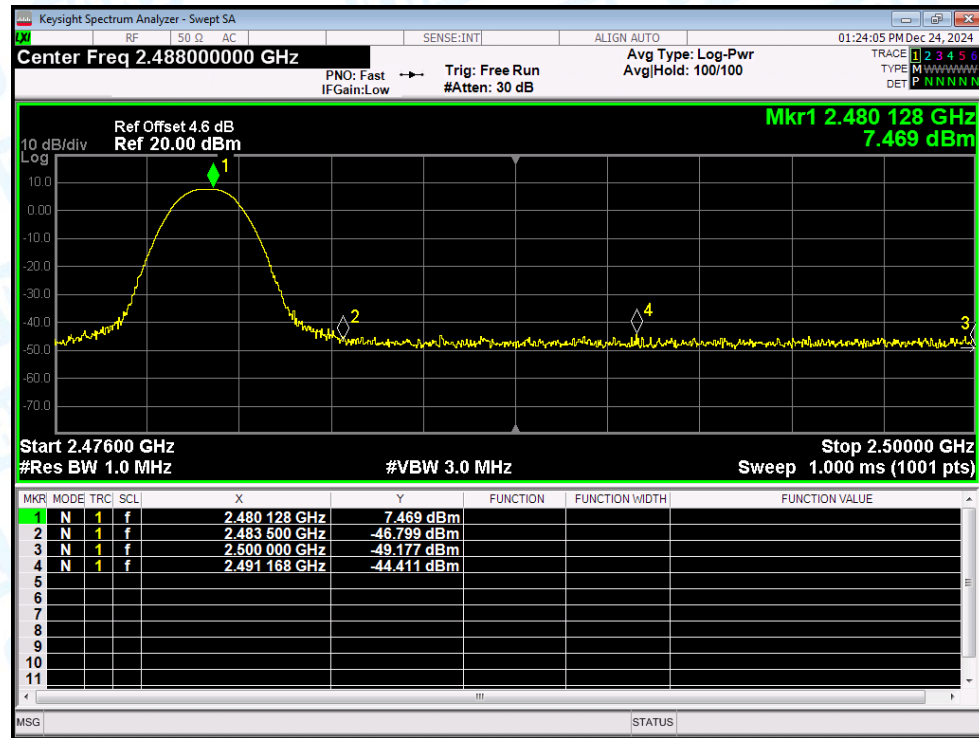
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



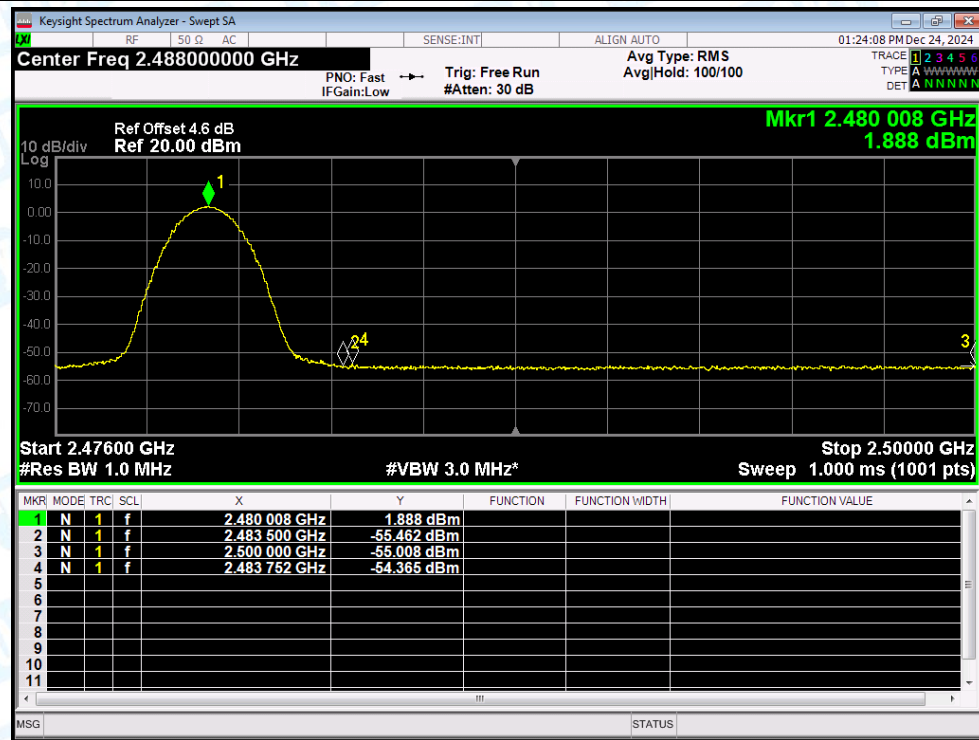
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



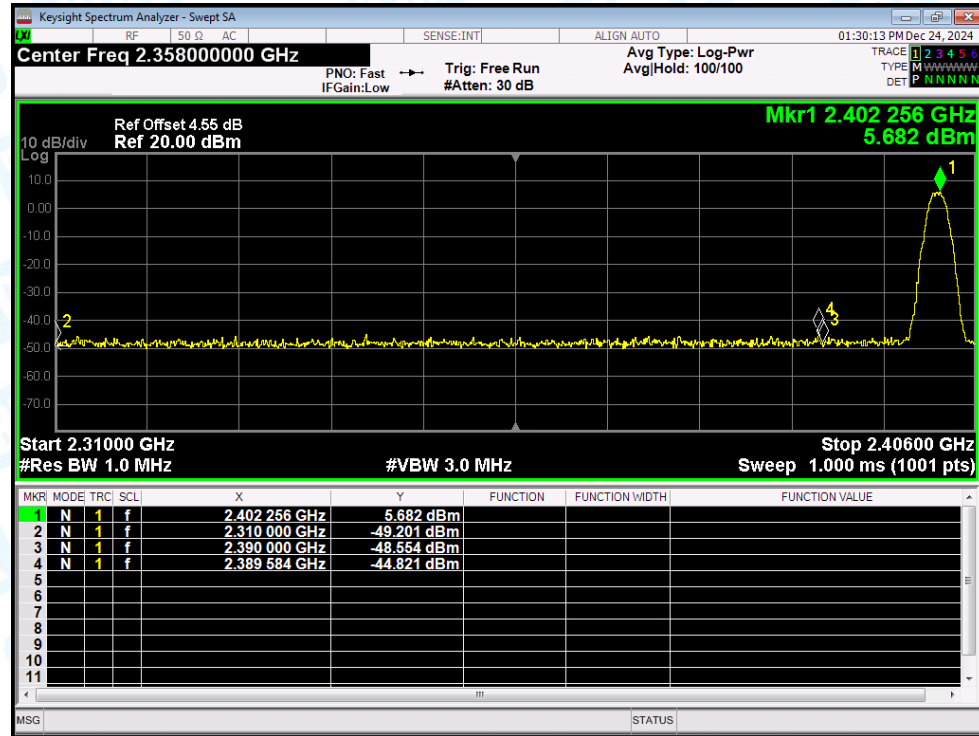
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



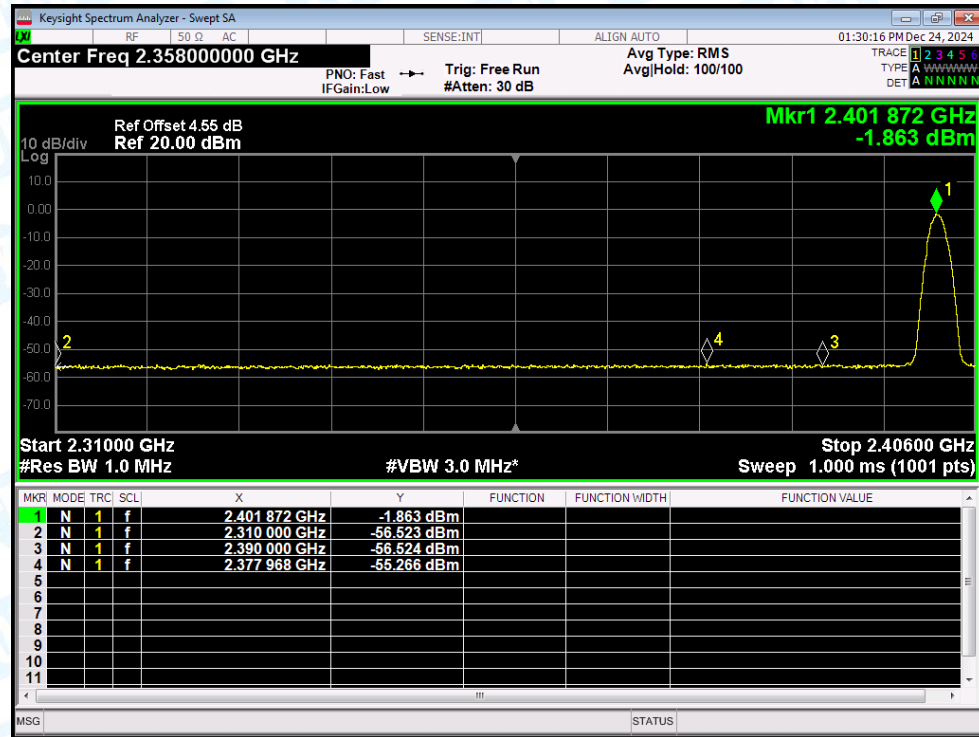
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



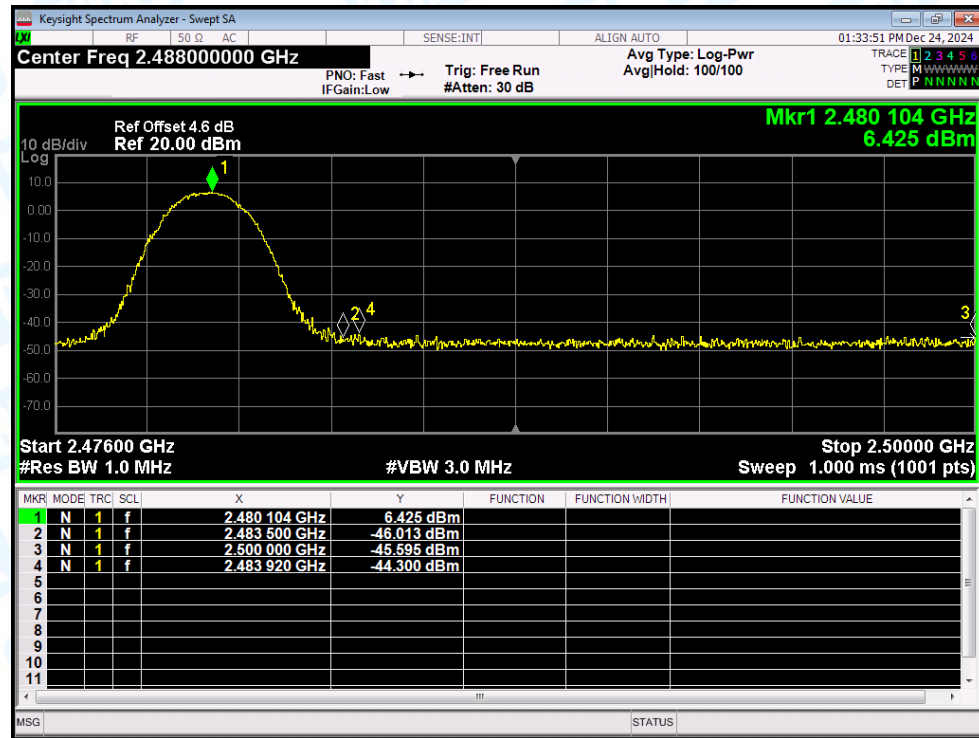
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



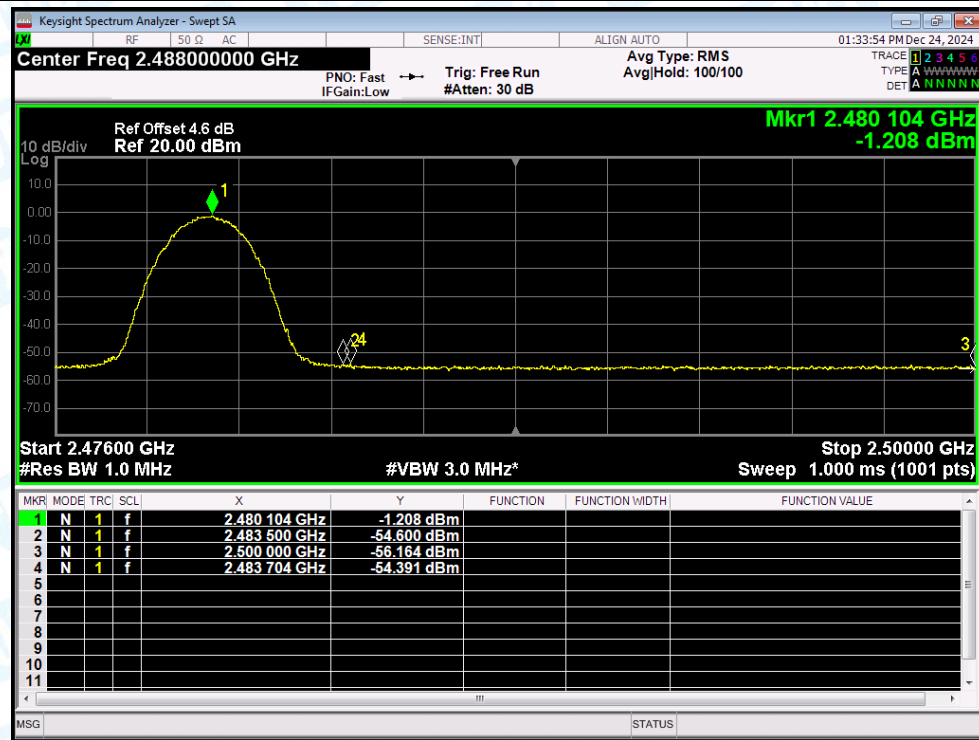
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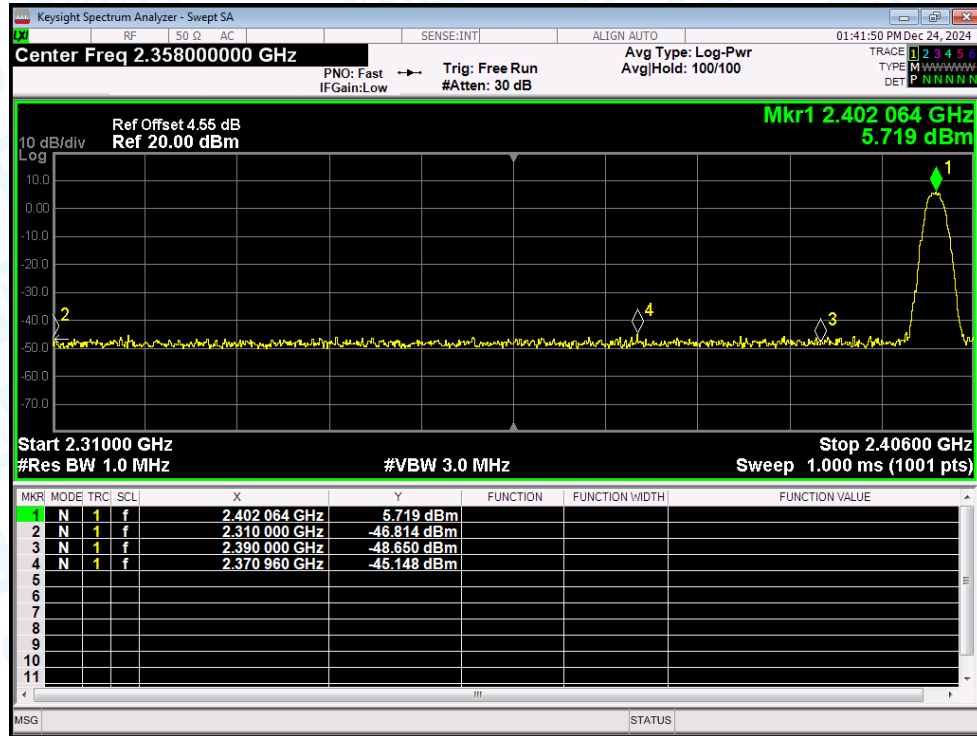
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



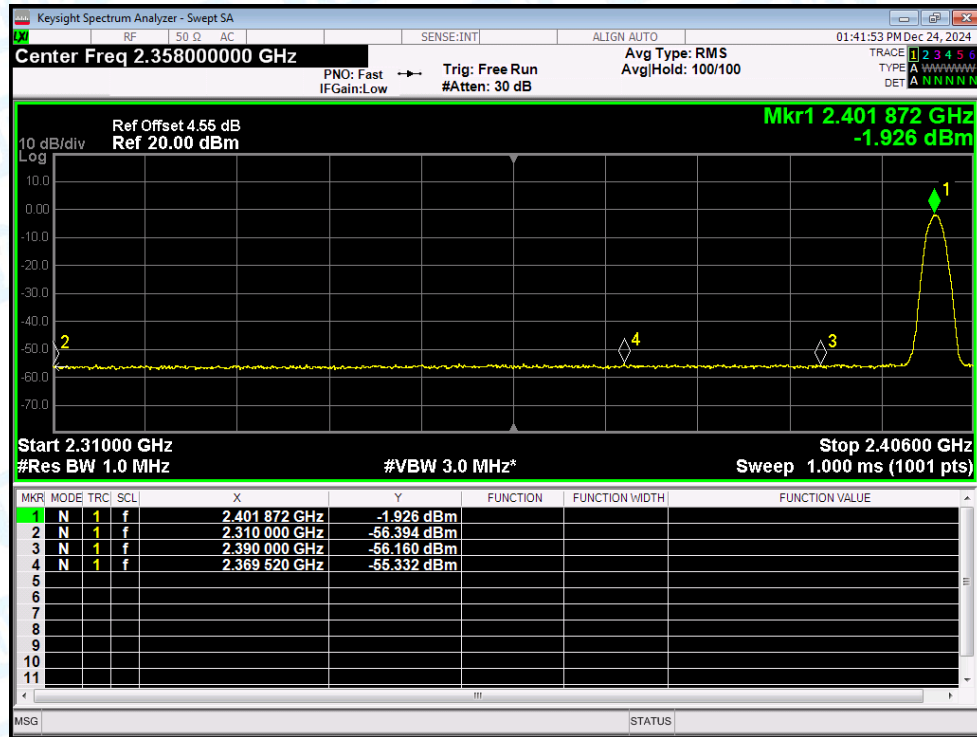
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



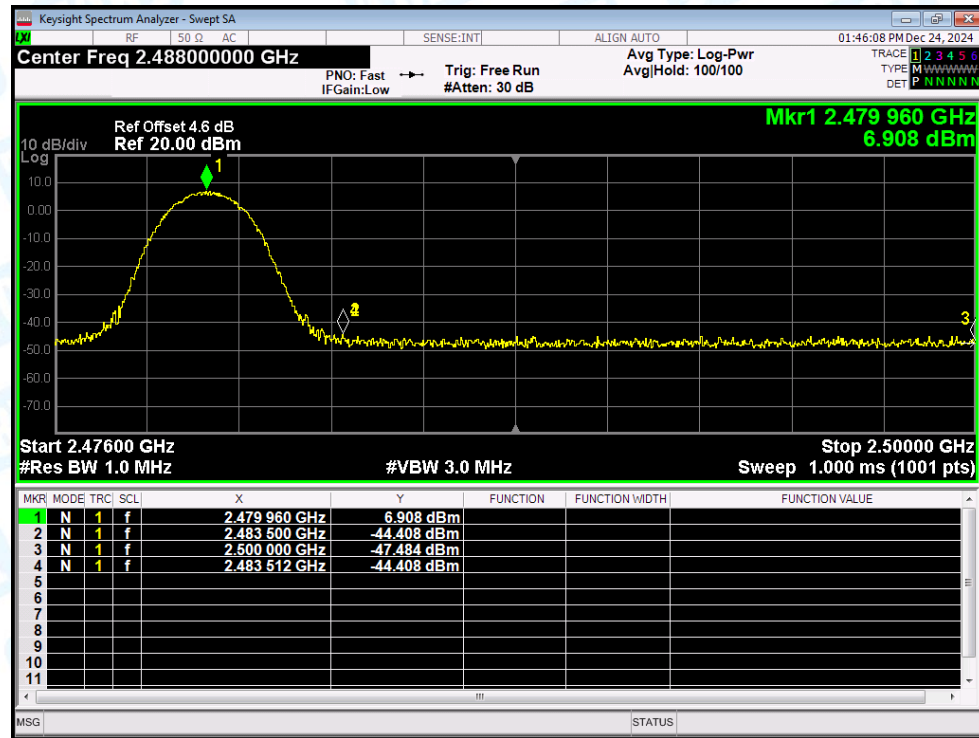
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



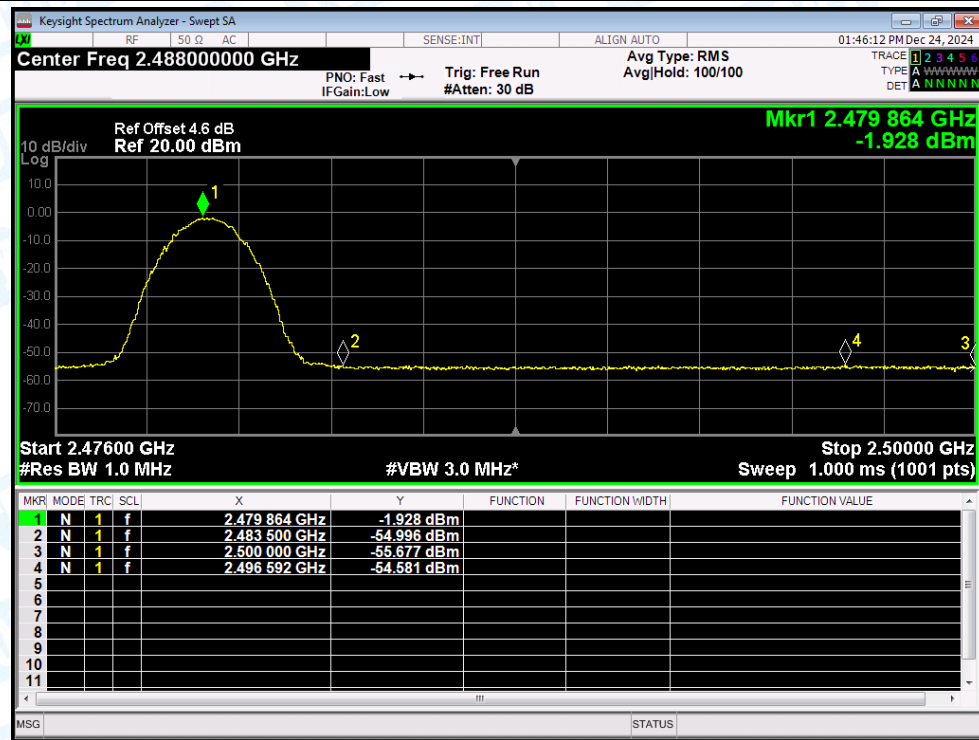
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

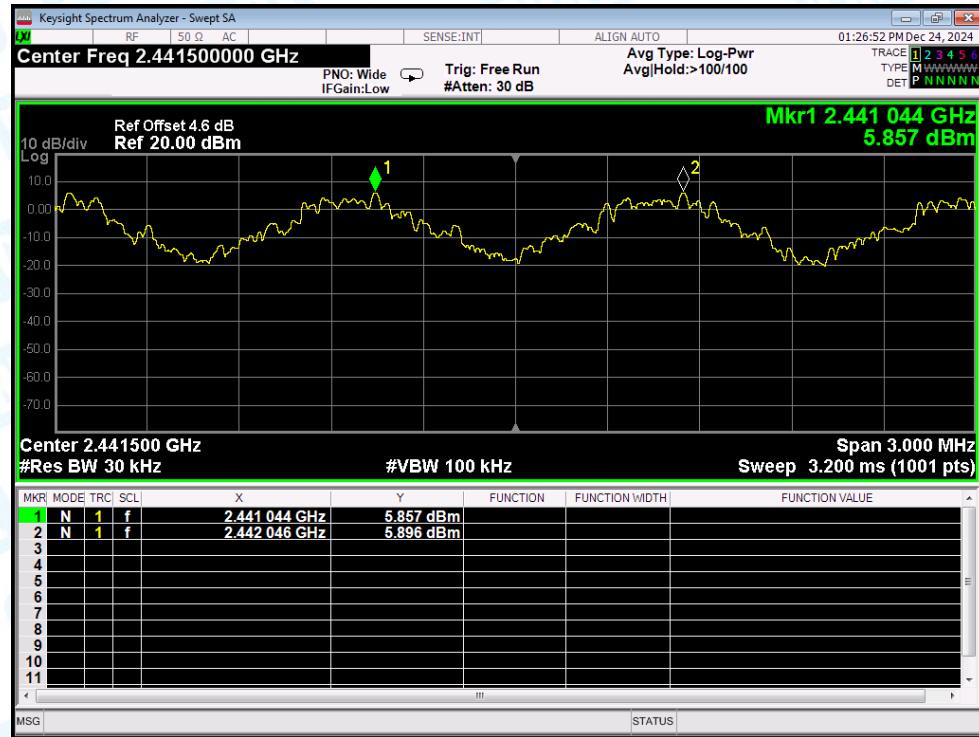


9. Carrier Frequencies Separation

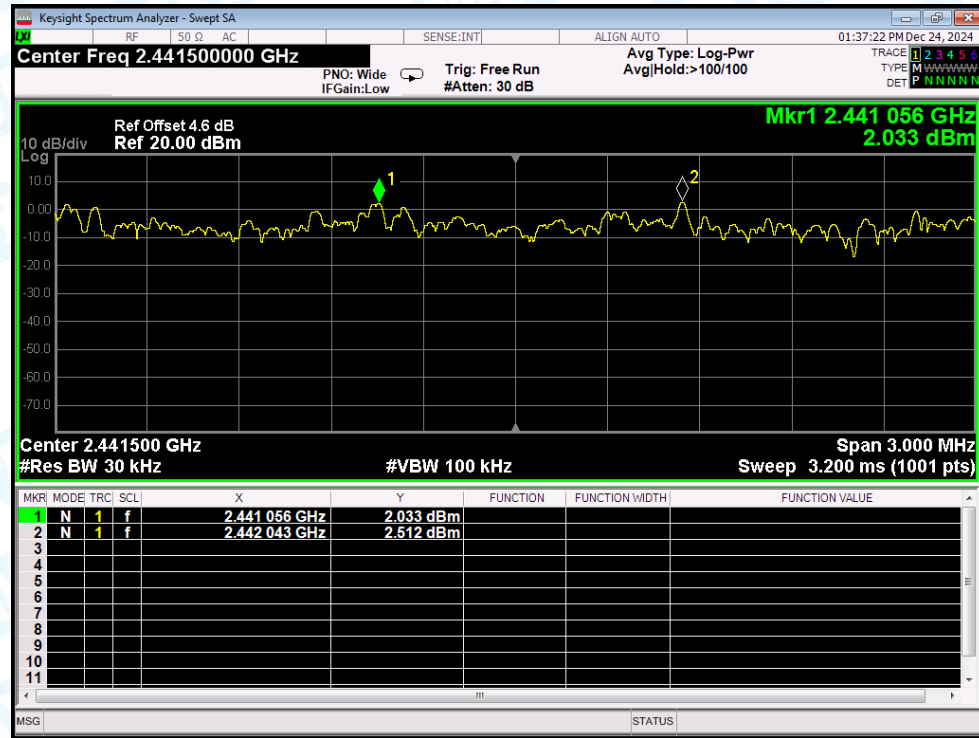
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2441.044	2442.046	1.002	0.58	Pass
NVNT	2-DH1	Ant1	2441.056	2442.043	0.987	0.84	Pass
NVNT	3-DH1	Ant1	2441.05	2442.037	0.987	0.827	Pass

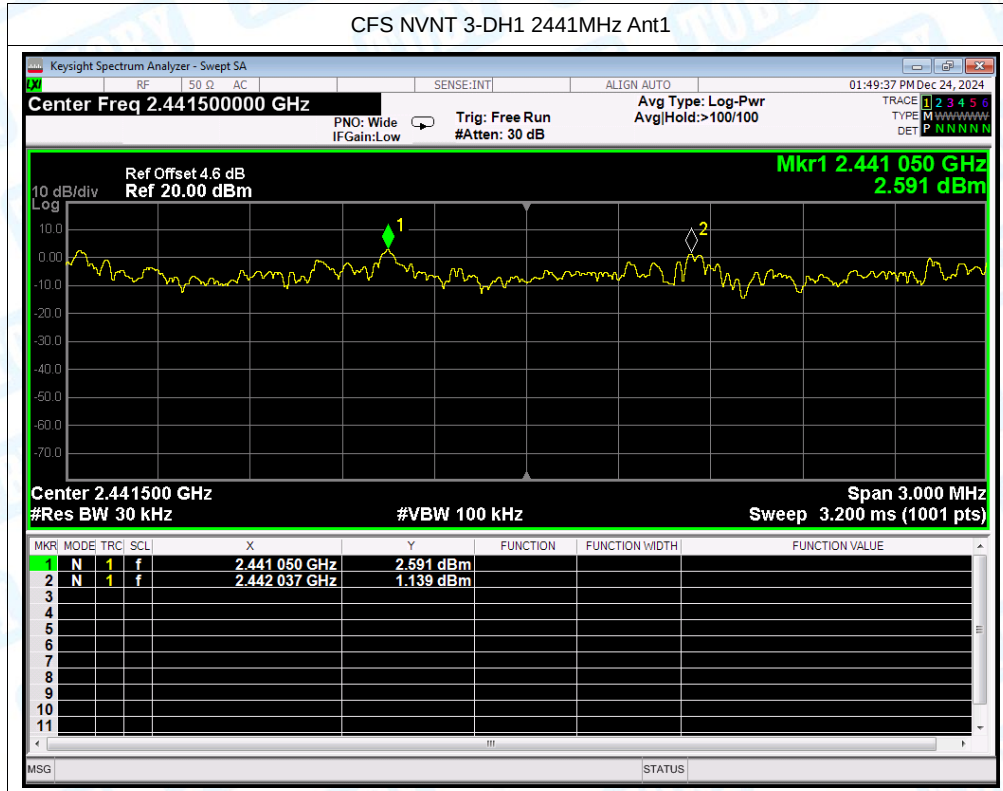
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



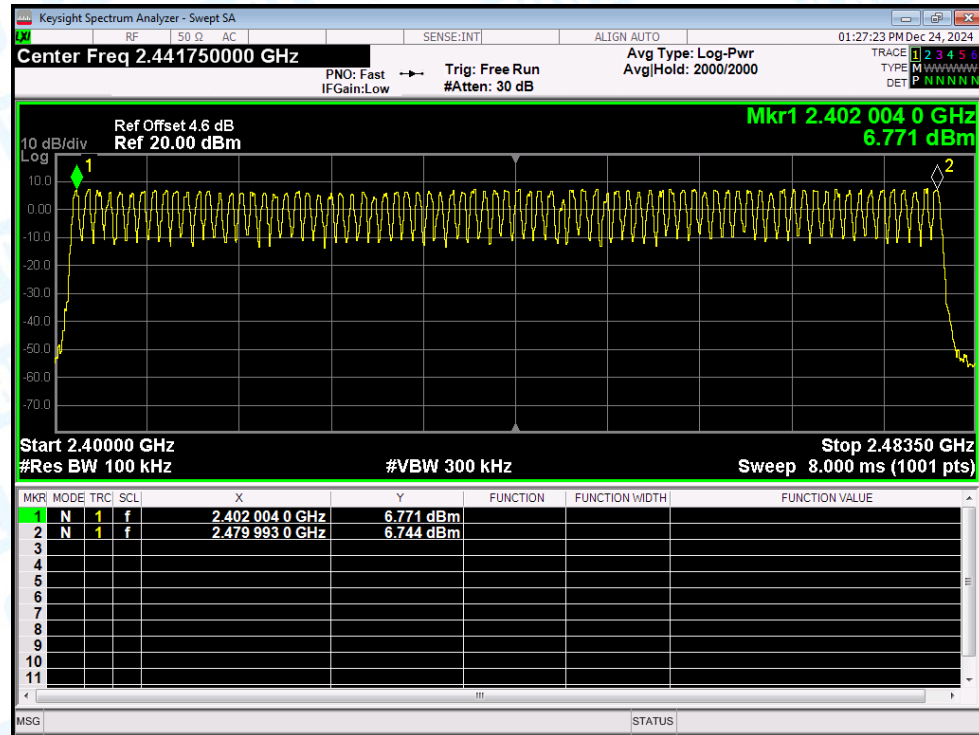


10. Number of Hopping Channel

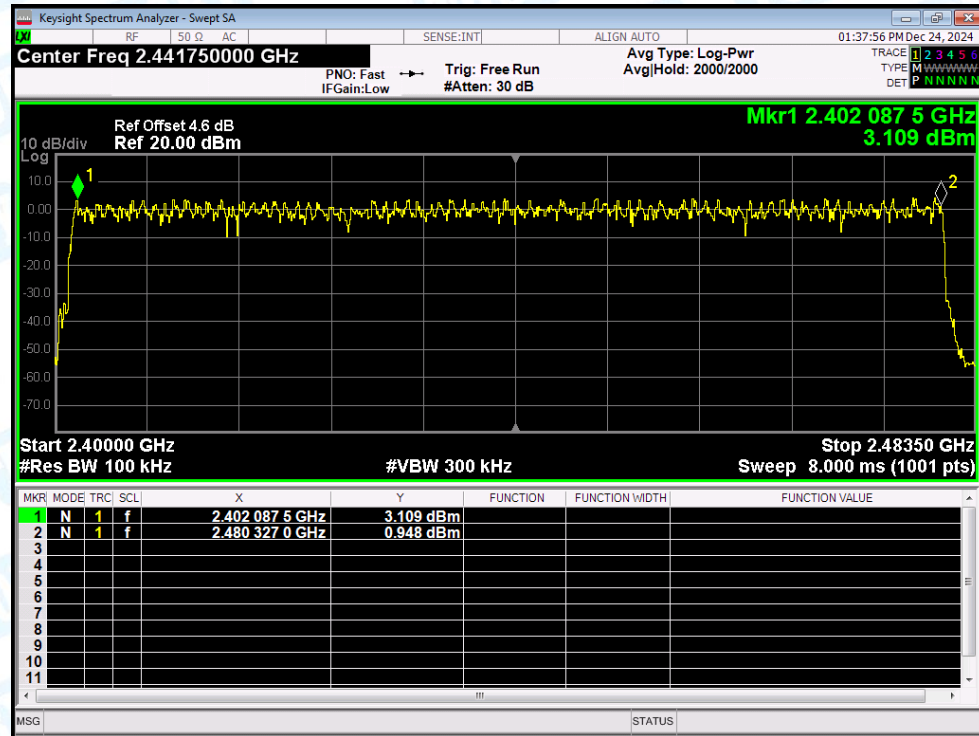
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

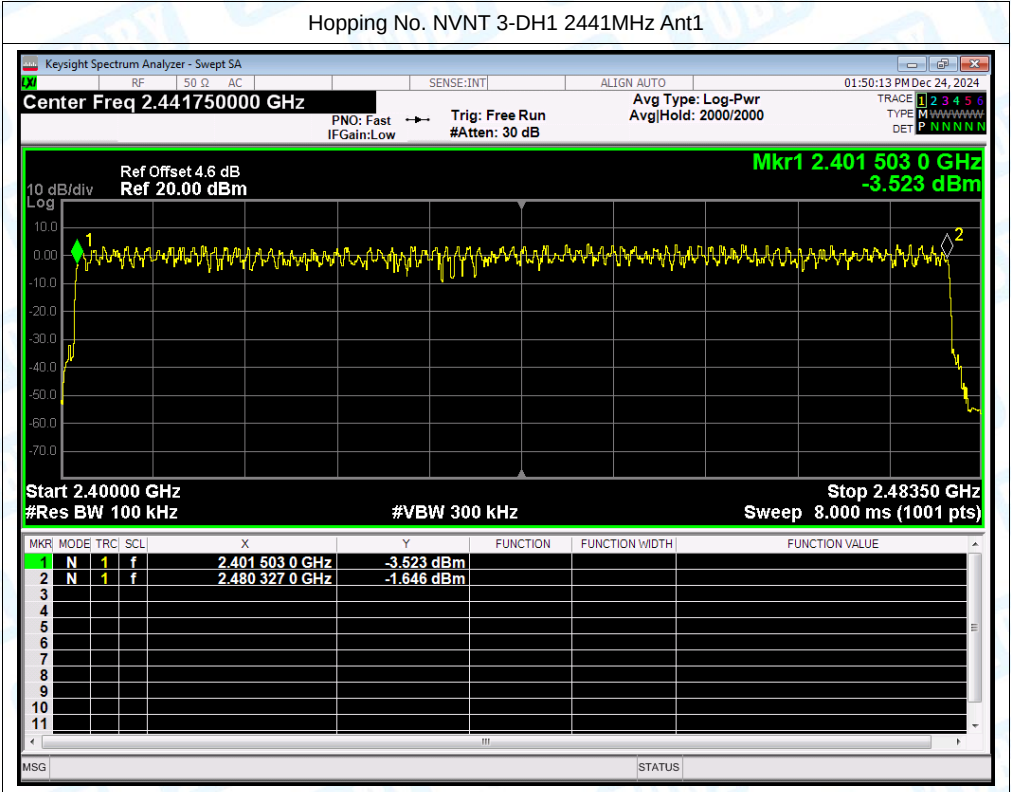
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



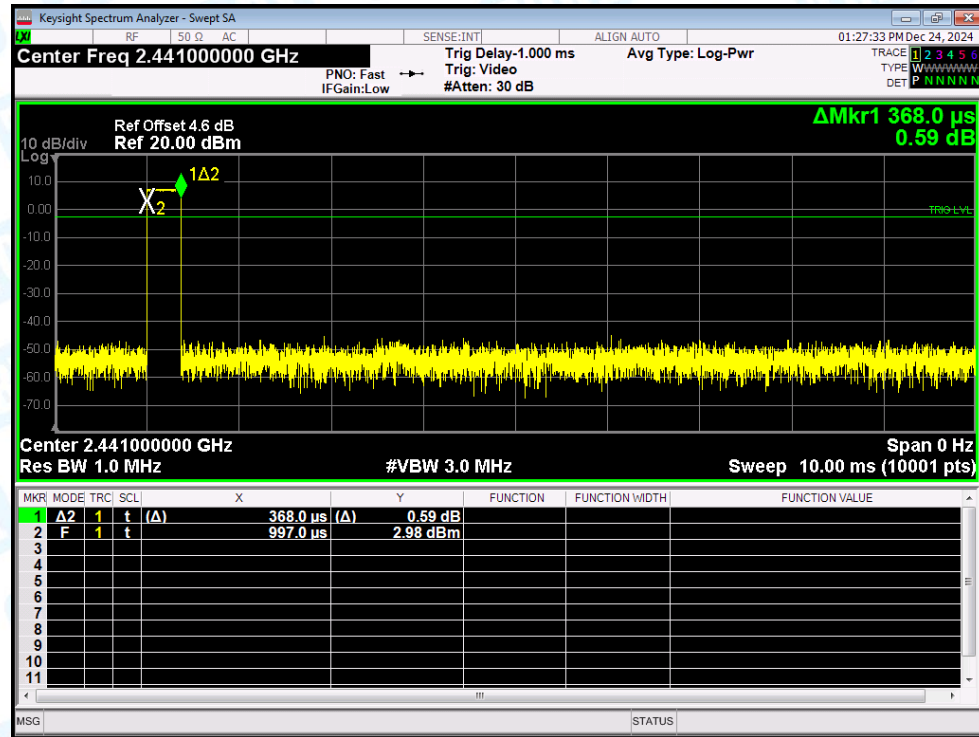


11. Dwell Time

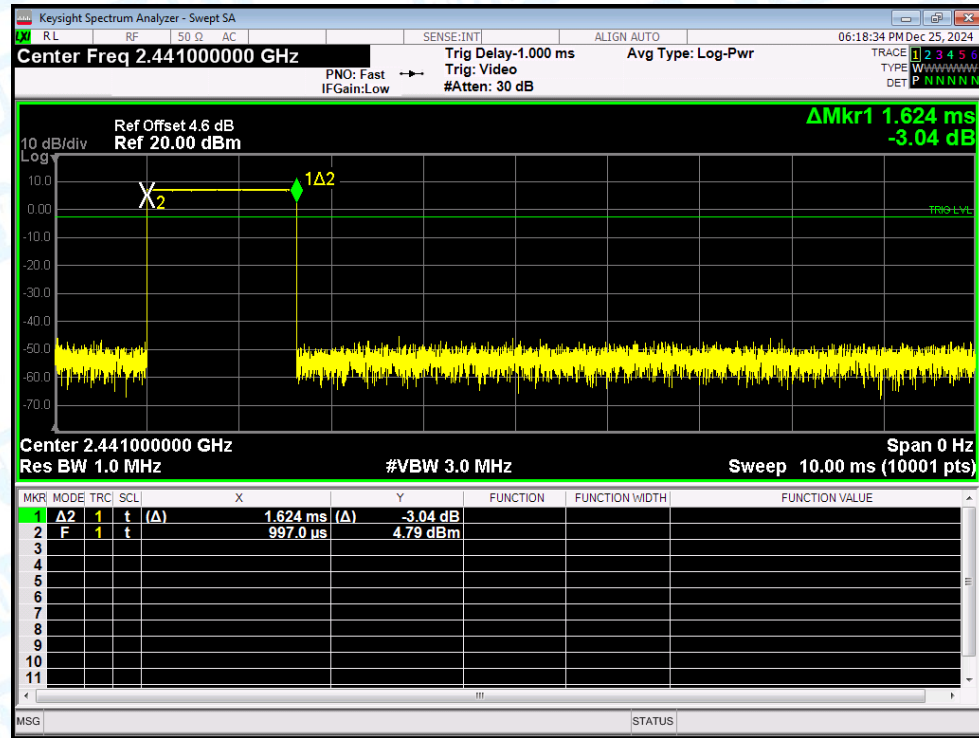
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.368	117.76	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.624	259.84	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.872	306.347	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.378	120.96	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.63	260.8	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.877	306.88	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.377	120.64	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.628	260.48	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.88	307.2	31600	400	Pass

Test Graphs

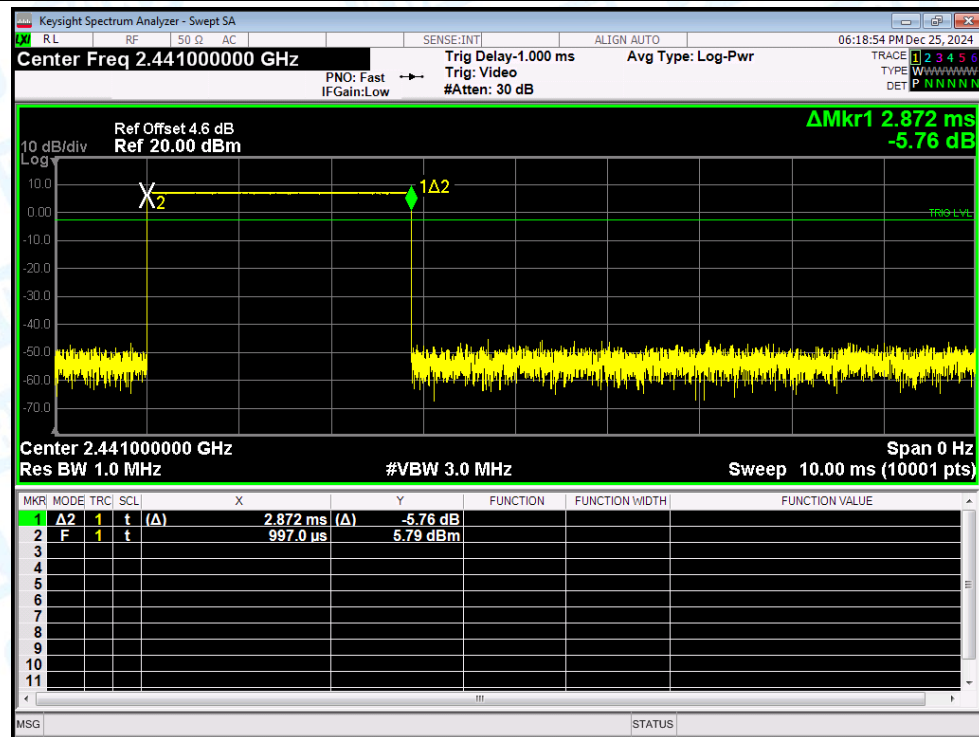
Dwell NVNT 1-DH1 2441MHz Ant1



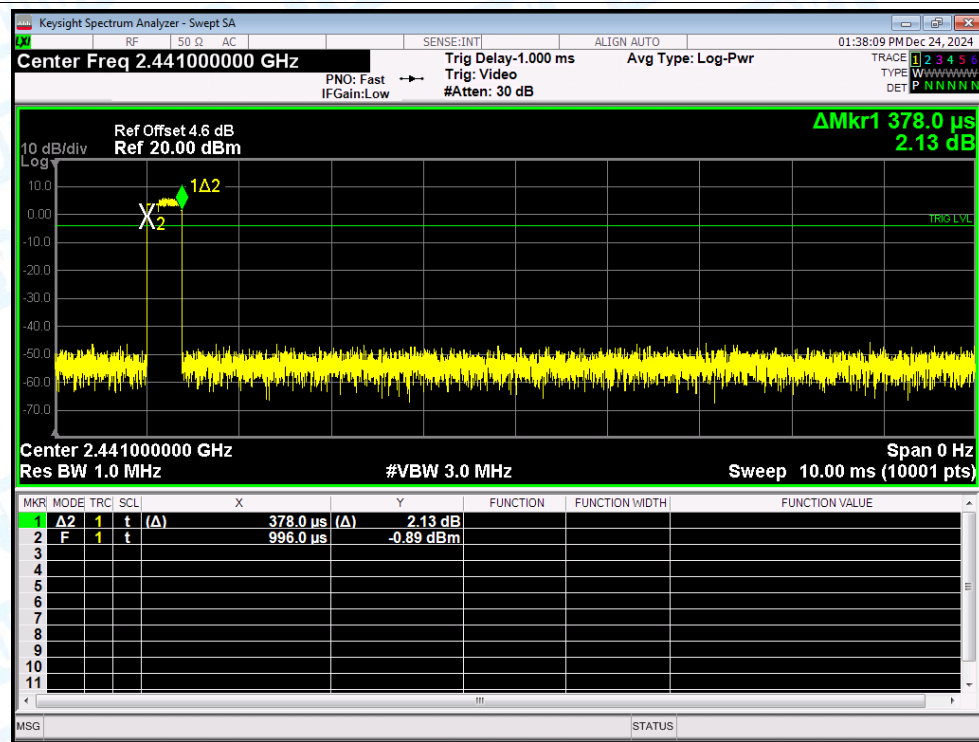
Dwell NVNT 1-DH3 2441MHz Ant1



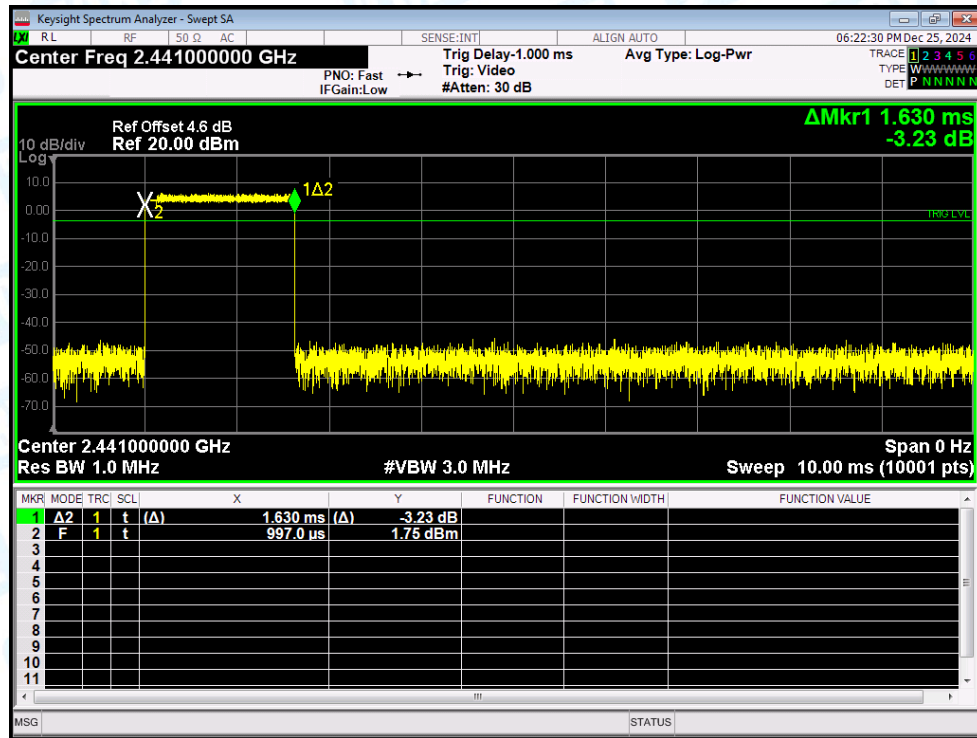
Dwell NVNT 1-DH5 2441MHz Ant1



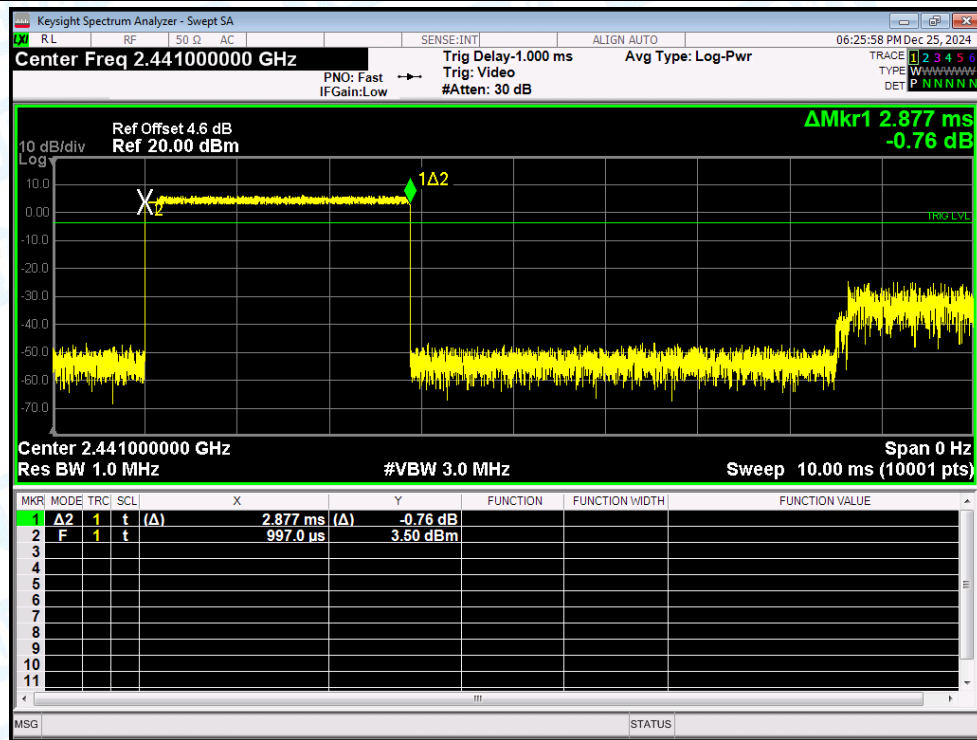
Dwell NVNT 2-DH1 2441MHz Ant1



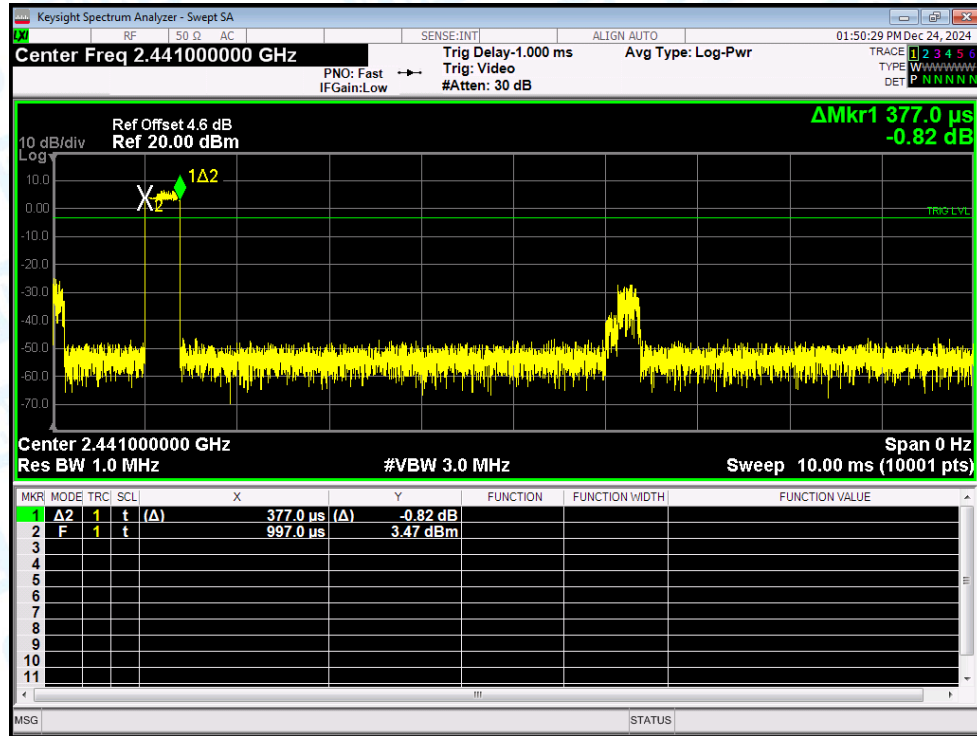
Dwell NVNT 2-DH3 2441MHz Ant1



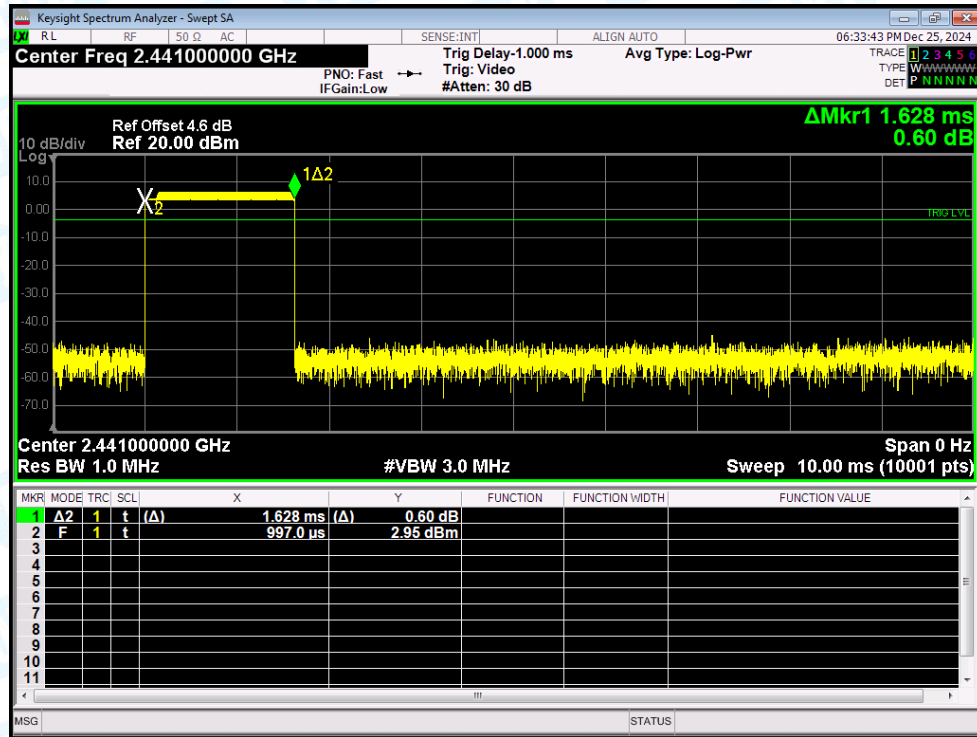
Dwell NVNT 2-DH5 2441MHz Ant1

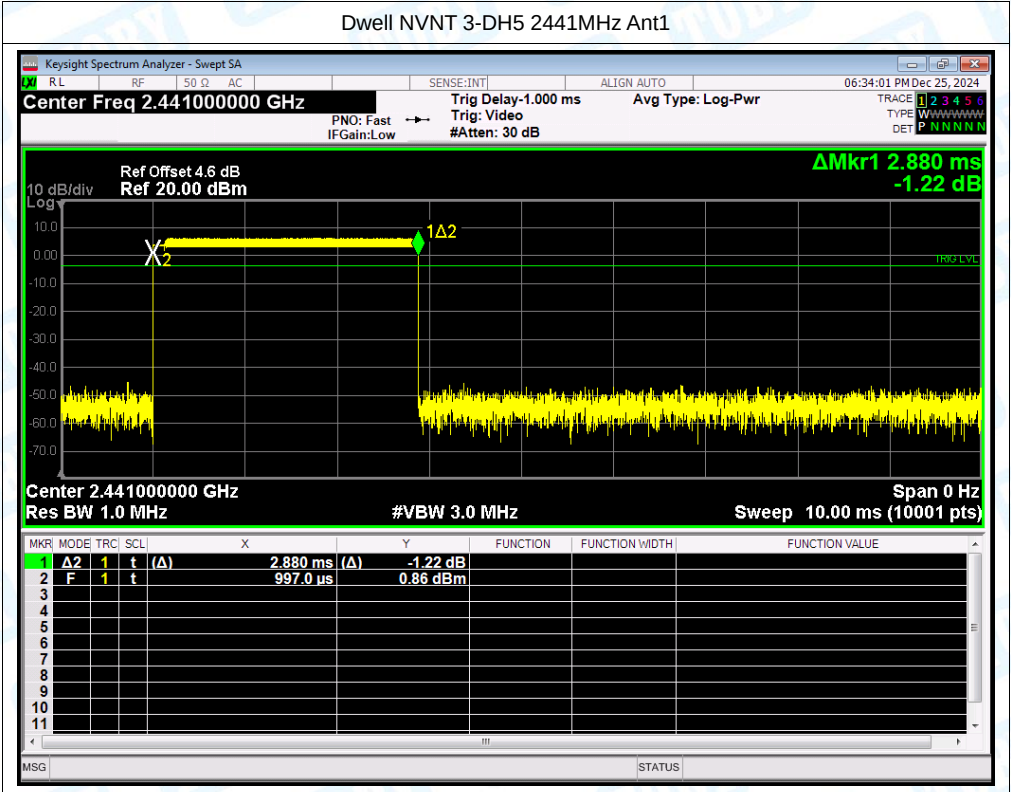


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





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