

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	Bluetooth speaker
Test Model:	MZ-622
Sample ID:	HC-C-202504-0077-01-07#
Environmental Conditions	
Temperature:	25℃
Relative Humidity:	55%
Test Voltage:	DC 19V
Test Engineer:	Lily Zhang
Note: For a more detailed features description, please refer to the report TBR-C-202504-0077-1 The report only show the worst case data.	

Contents

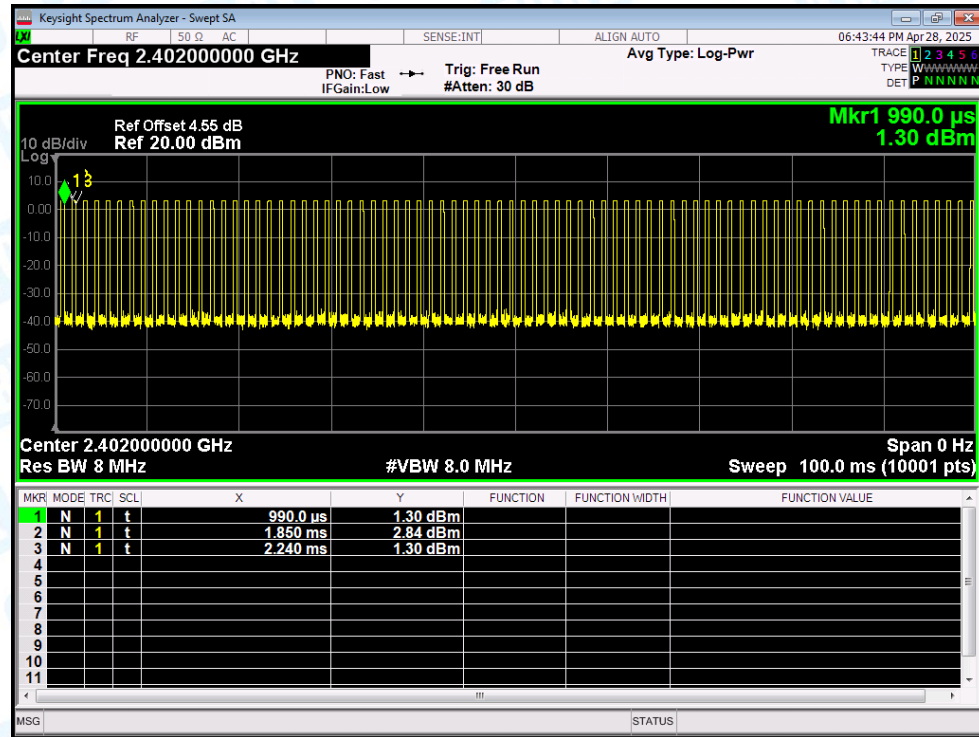
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1.Duty Cycle

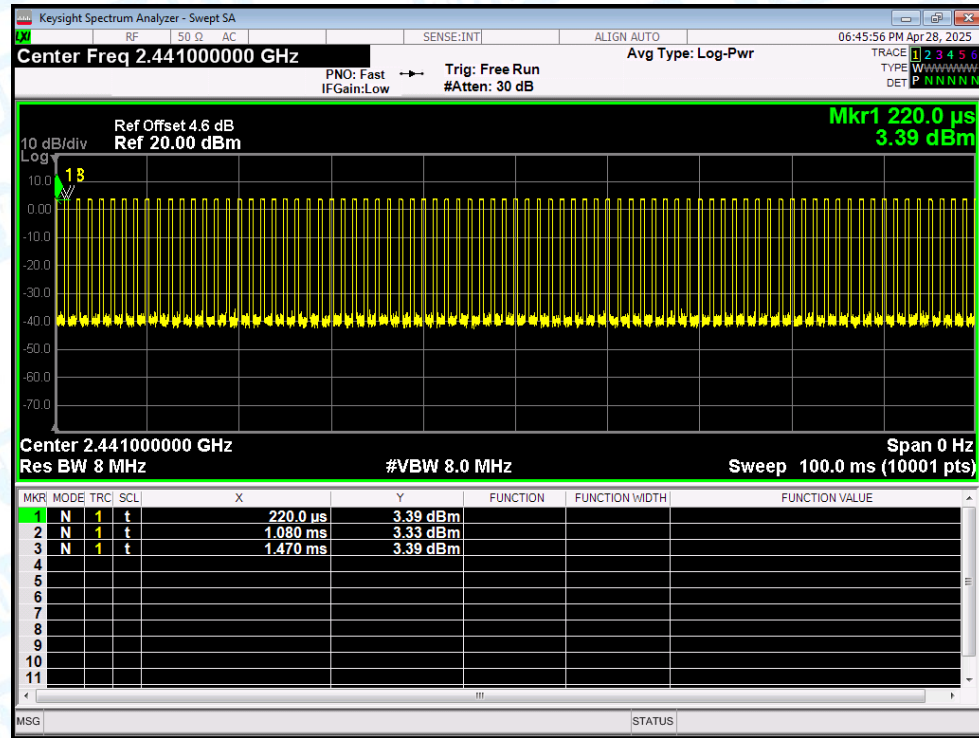
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	1-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	1-DH1	2480	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2480	Ant1	31.2	5.06	2.56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

Test Graphs

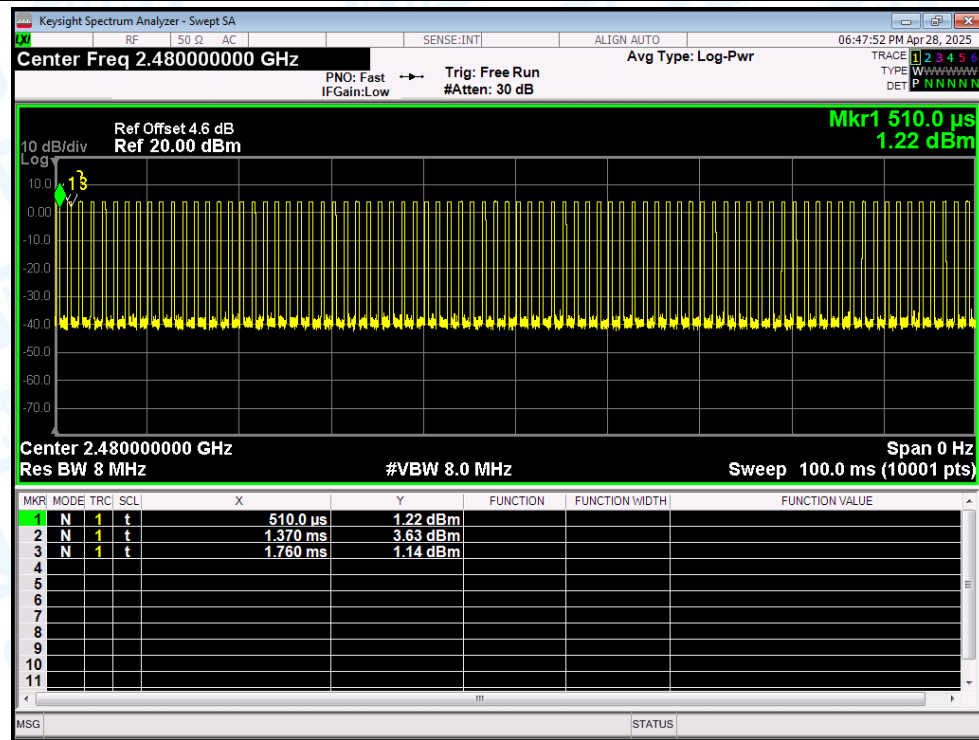
Duty Cycle NVNT 1-DH1 2402MHz Ant1



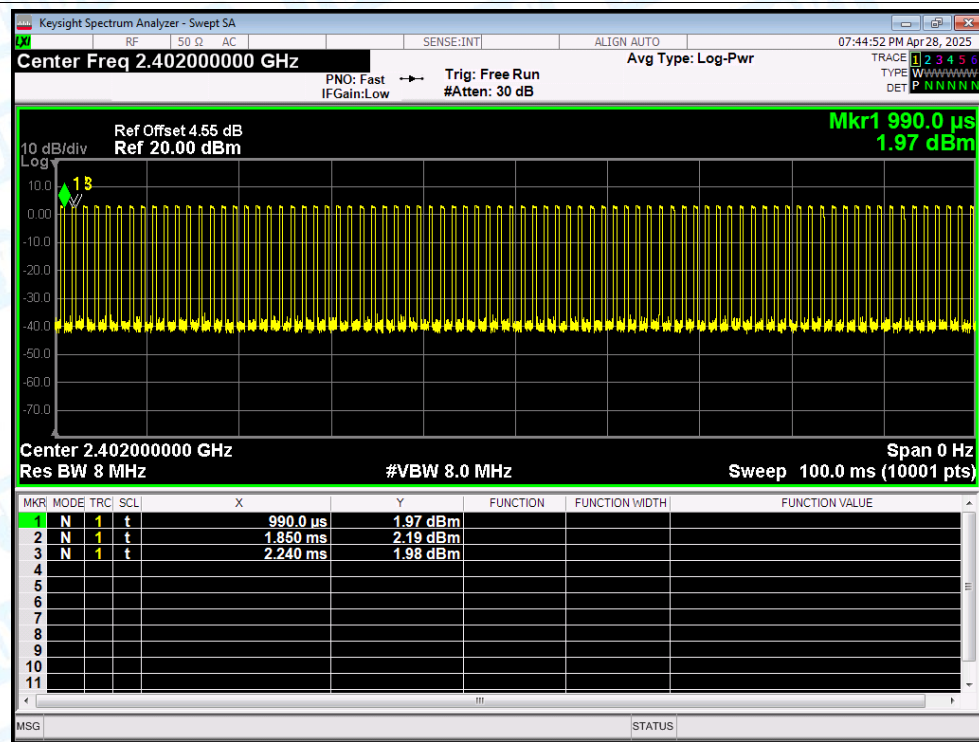
Duty Cycle NVNT 1-DH1 2441MHz Ant1



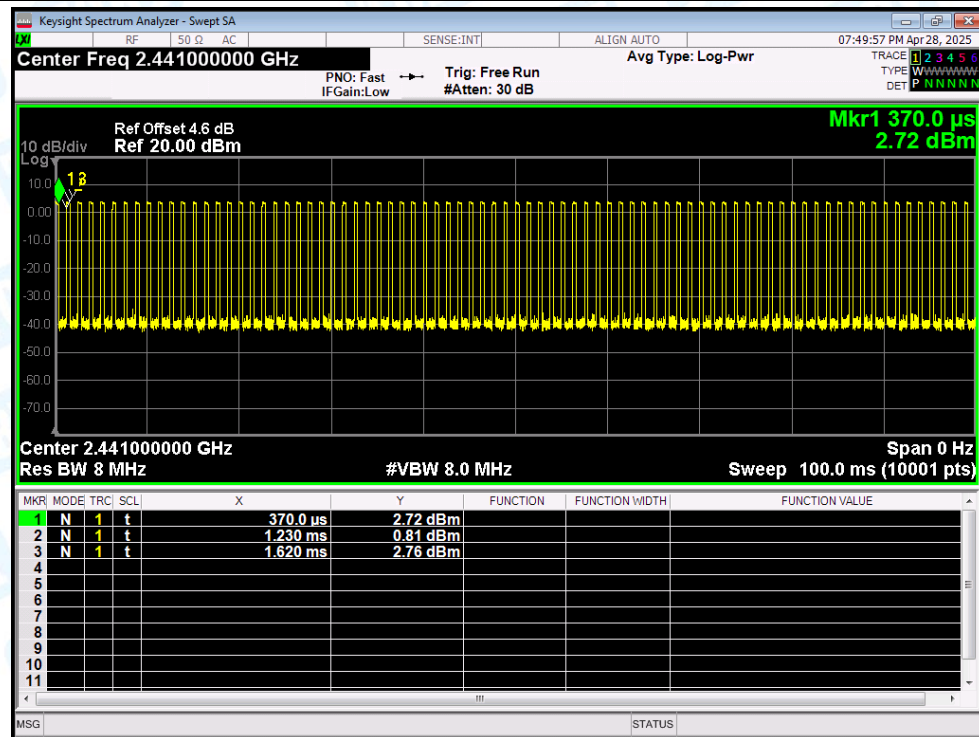
Duty Cycle NVNT 1-DH1 2480MHz Ant1



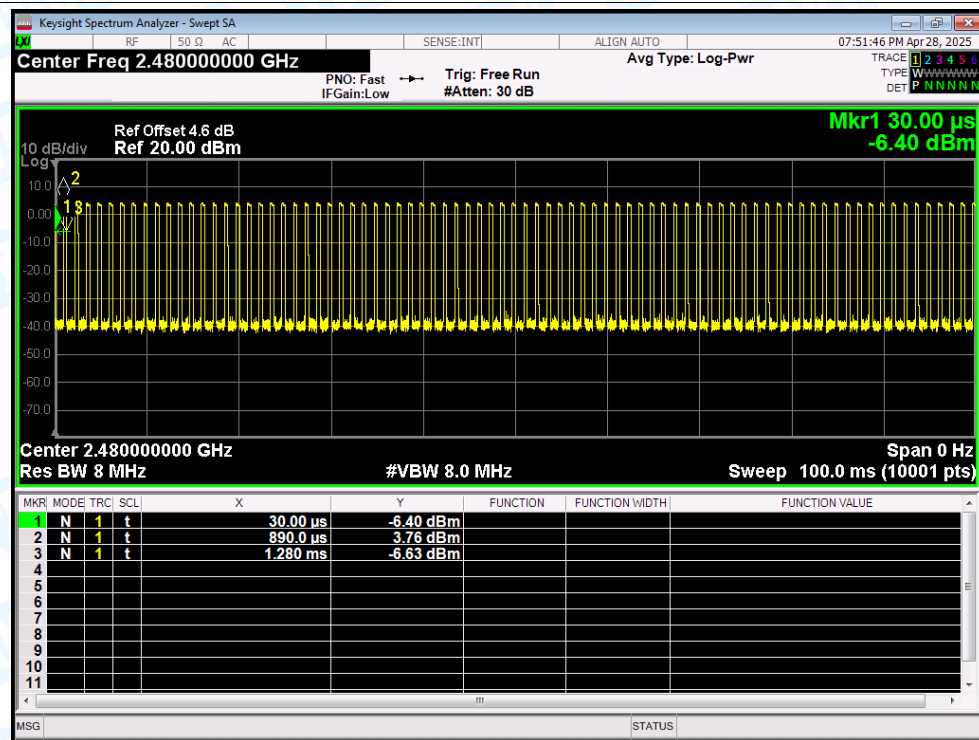
Duty Cycle NVNT 2-DH1 2402MHz Ant1



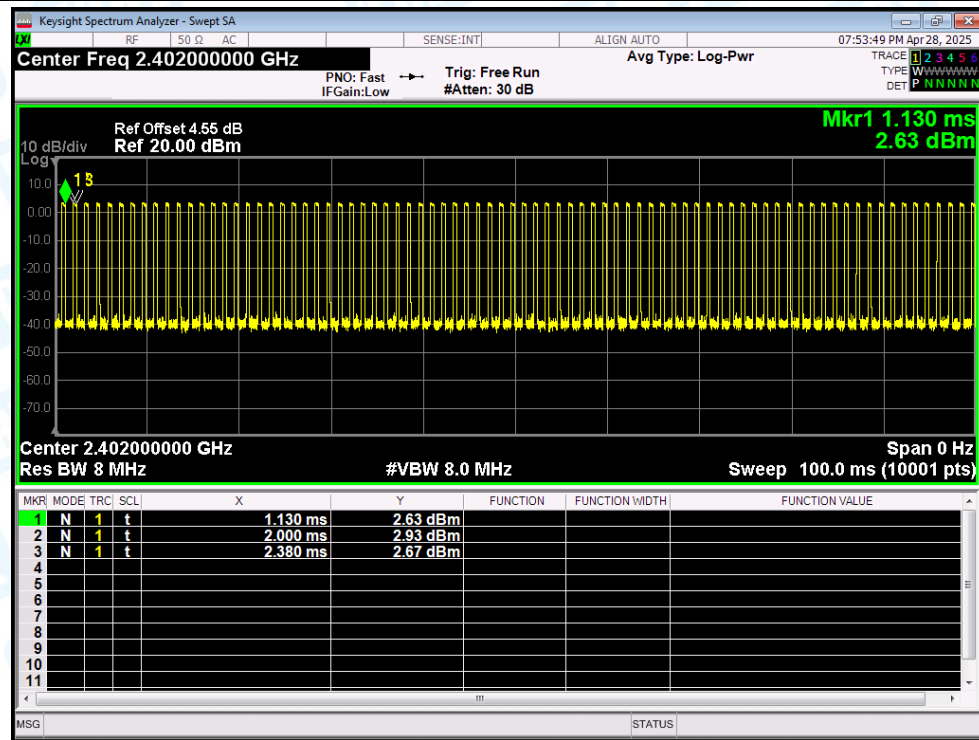
Duty Cycle NVNT 2-DH1 2441MHz Ant1



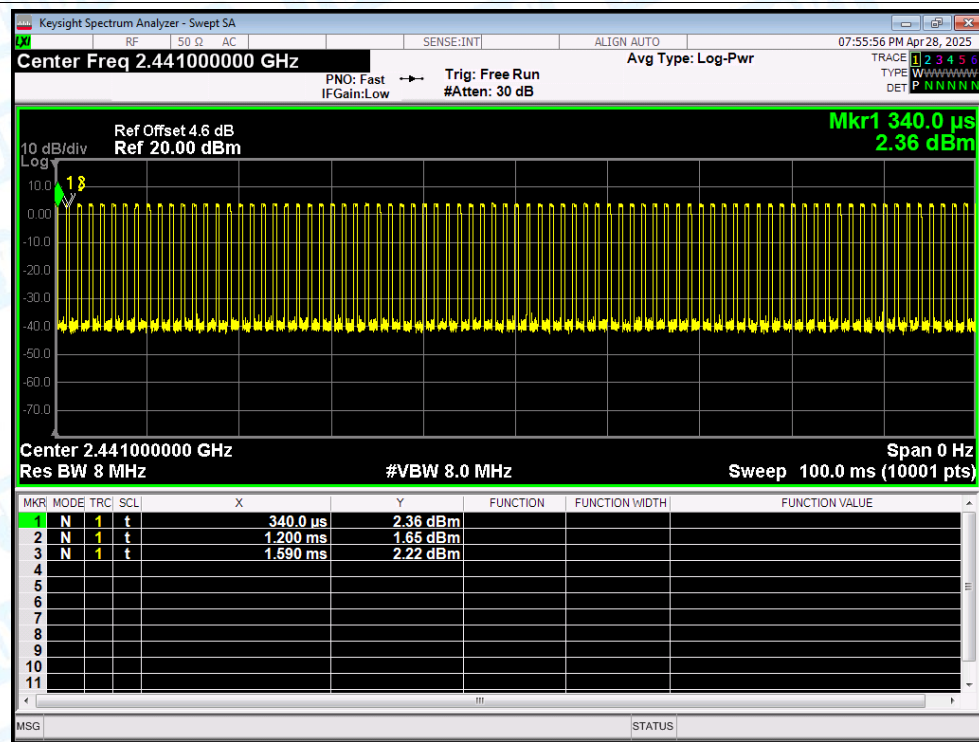
Duty Cycle NVNT 2-DH1 2480MHz Ant1

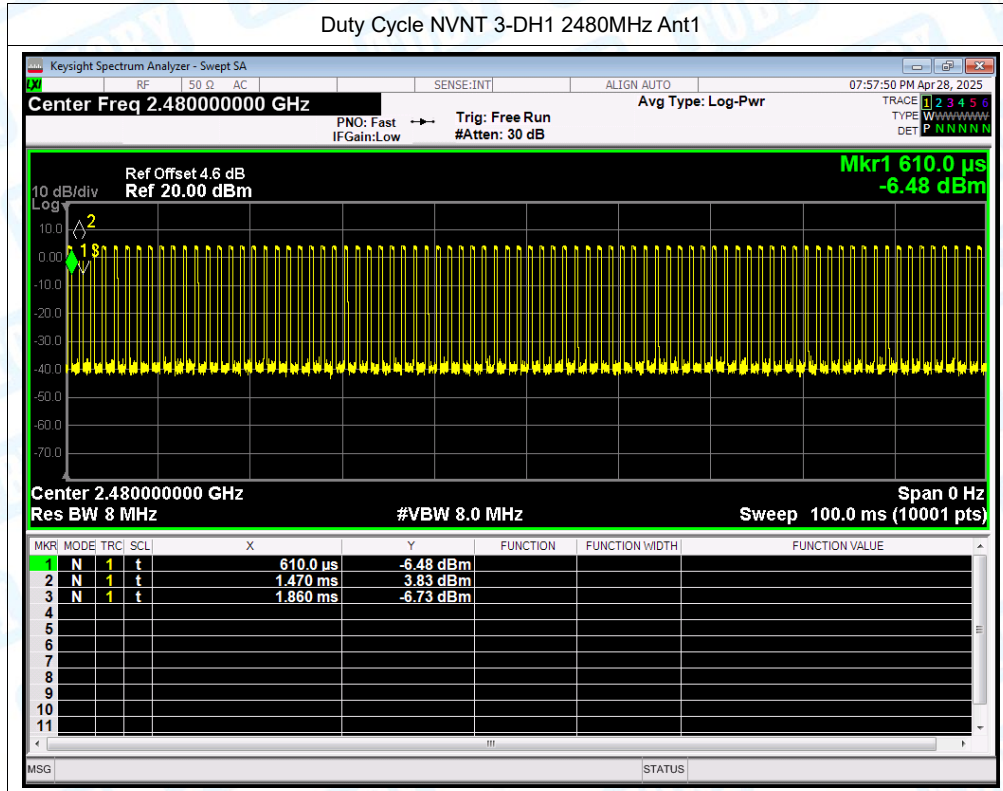


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



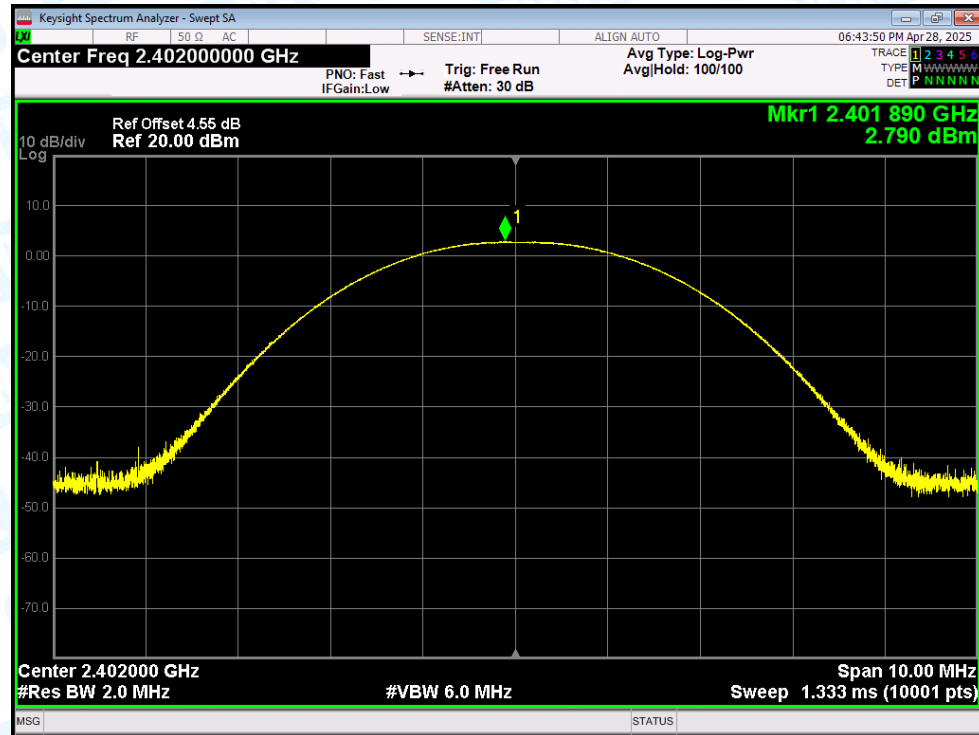


2.Maximum Conducted Output Power

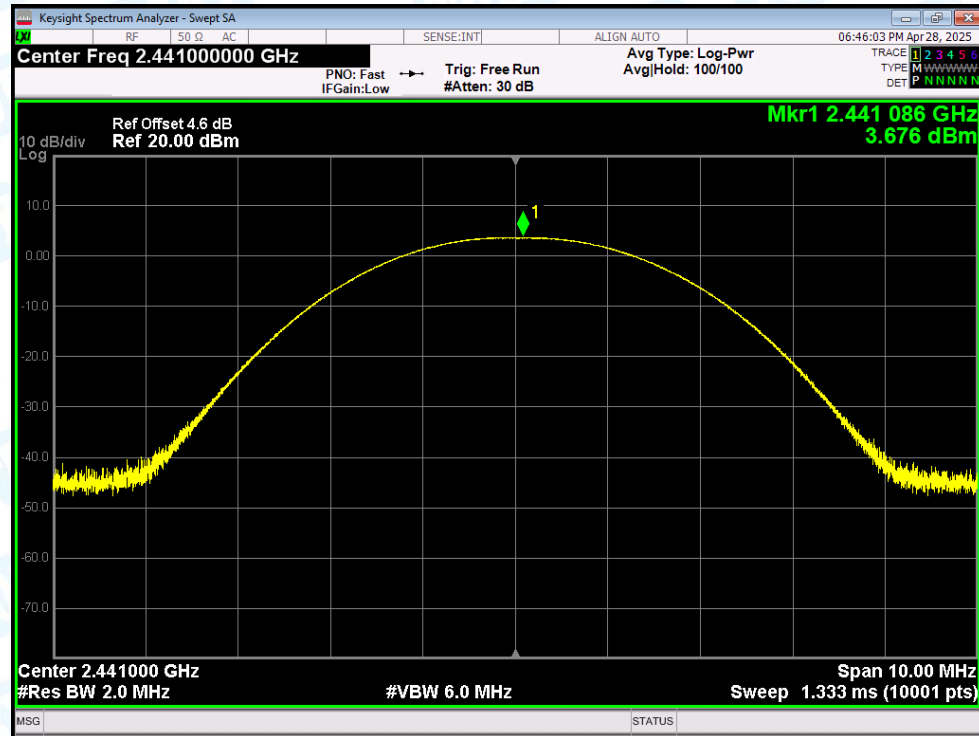
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	2.79	21	Pass
NVNT	1-DH1	2441	Ant1	3.676	21	Pass
NVNT	1-DH1	2480	Ant1	3.852	21	Pass
NVNT	2-DH1	2402	Ant1	3.112	21	Pass
NVNT	2-DH1	2441	Ant1	3.778	21	Pass
NVNT	2-DH1	2480	Ant1	3.947	21	Pass
NVNT	3-DH1	2402	Ant1	3.227	21	Pass
NVNT	3-DH1	2441	Ant1	3.844	21	Pass
NVNT	3-DH1	2480	Ant1	3.99	21	Pass

Test Graphs

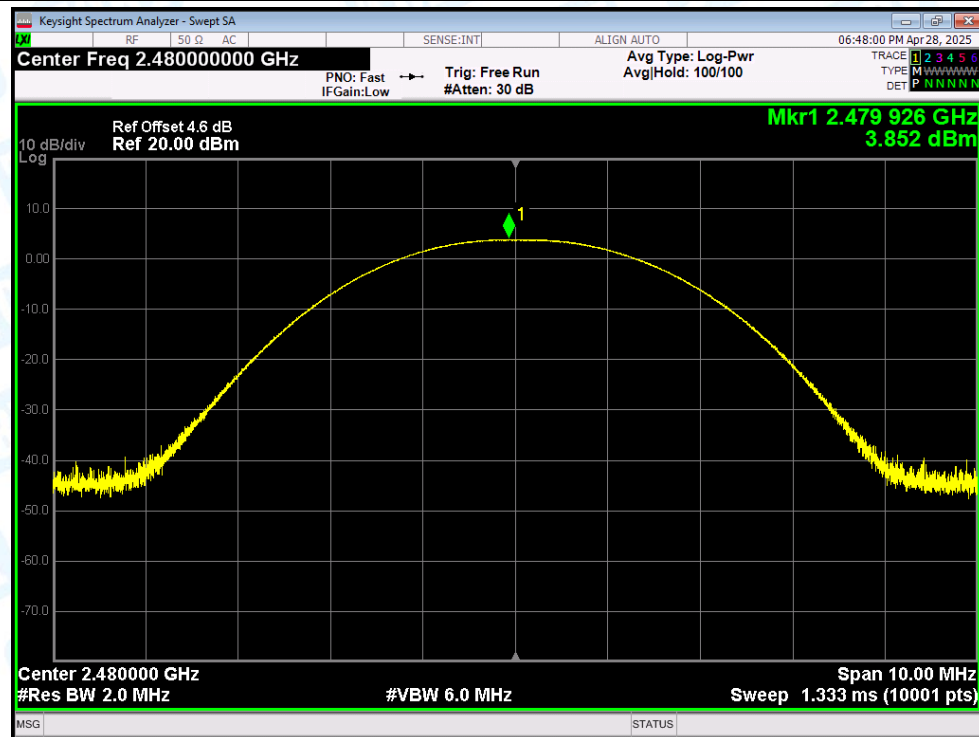
Power NVNT 1-DH1 2402MHz Ant1



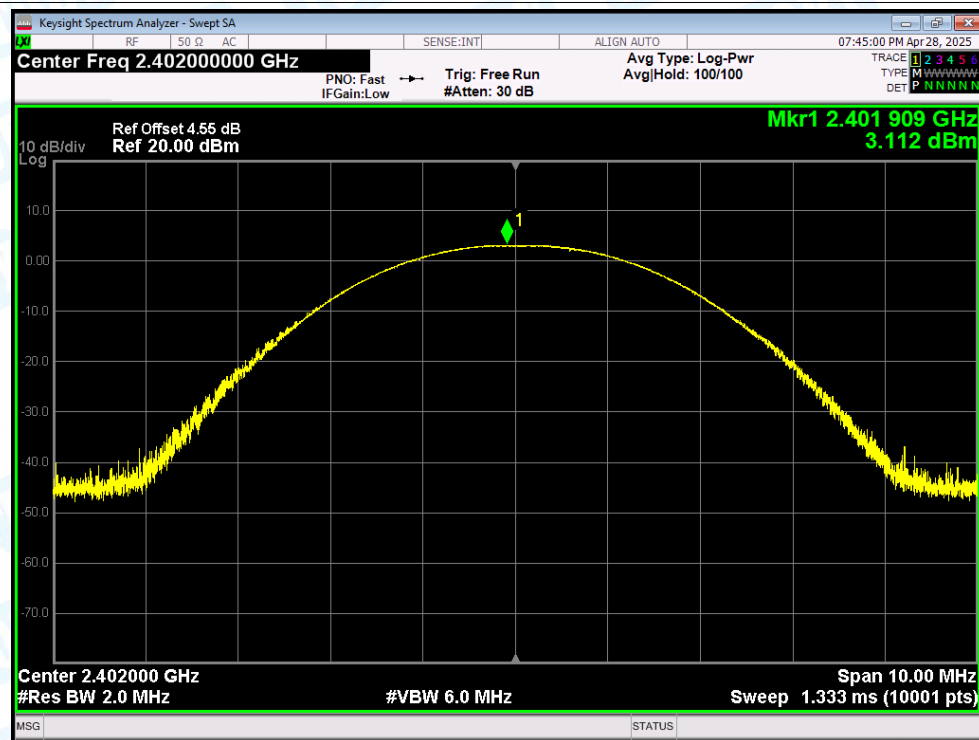
Power NVNT 1-DH1 2441MHz Ant1



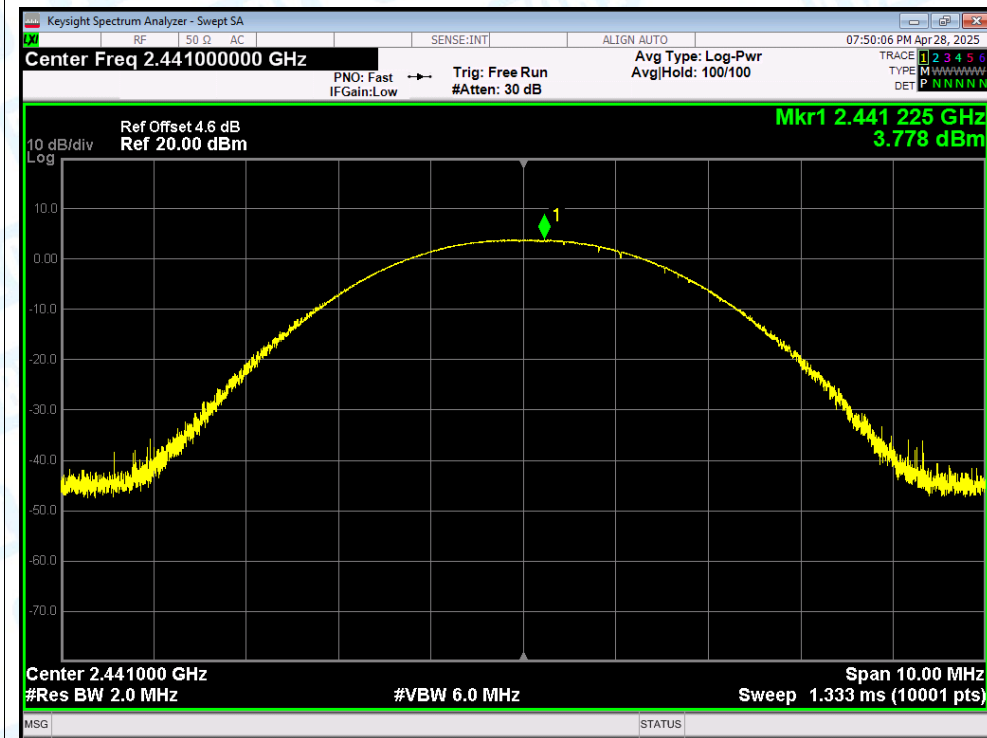
Power NVNT 1-DH1 2480MHz Ant1



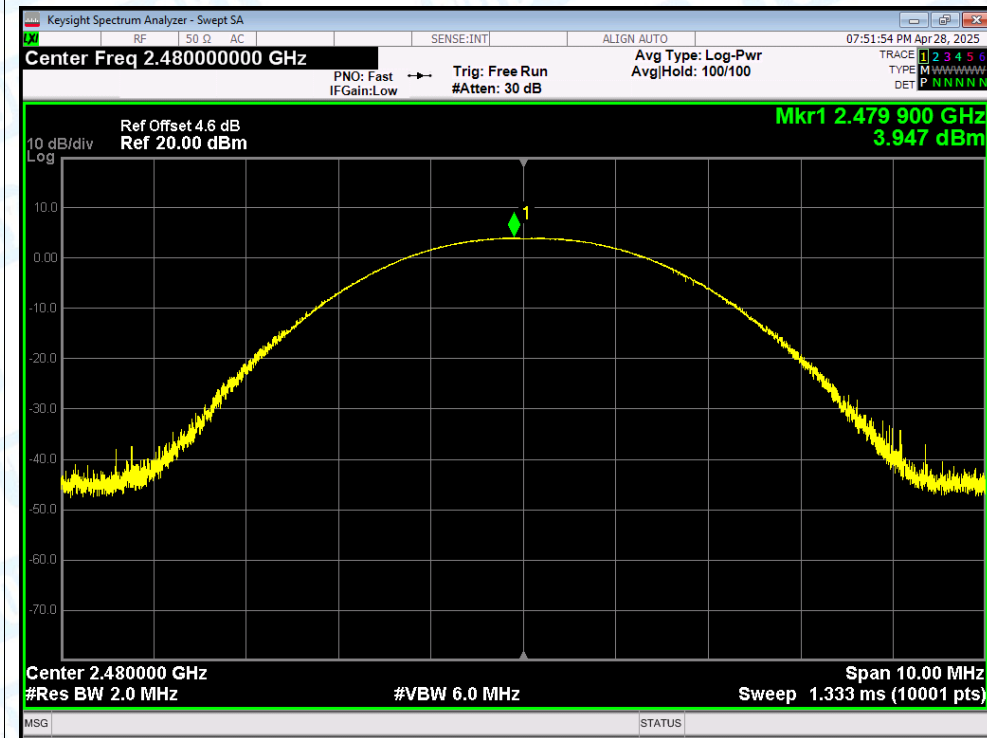
Power NVNT 2-DH1 2402MHz Ant1



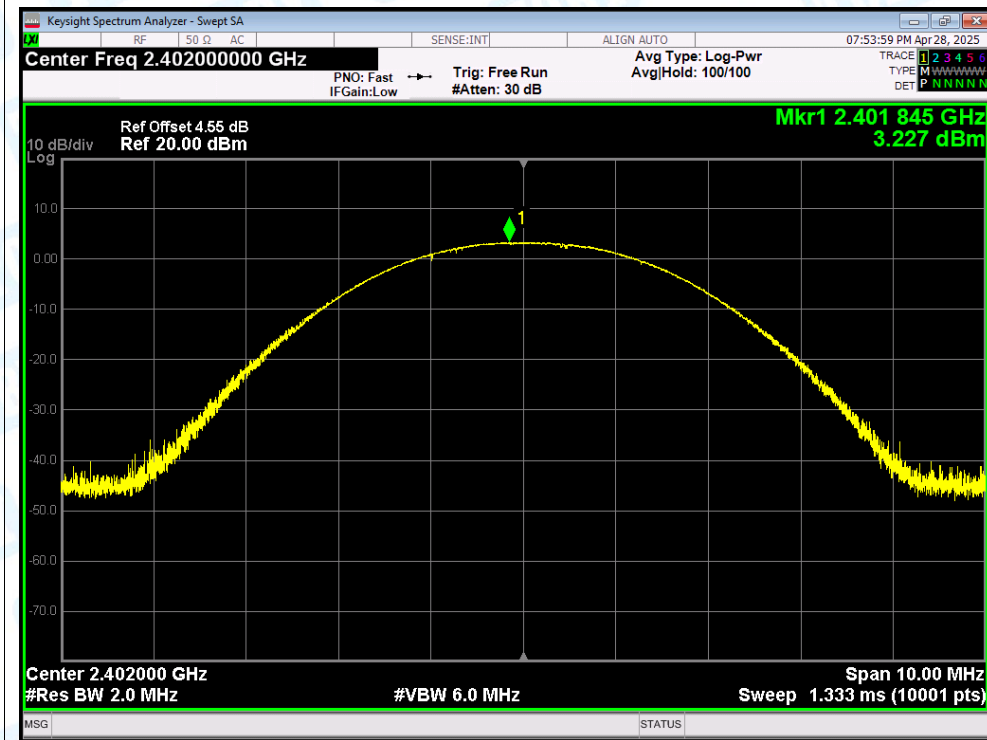
Power NVNT 2-DH1 2441MHz Ant1



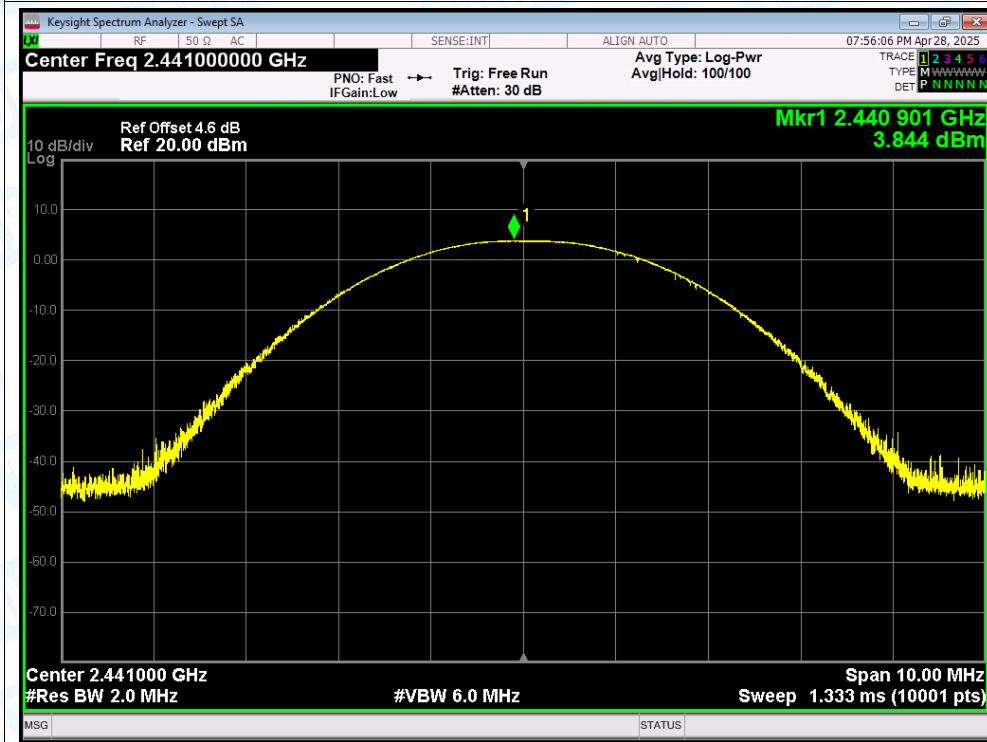
Power NVNT 2-DH1 2480MHz Ant1

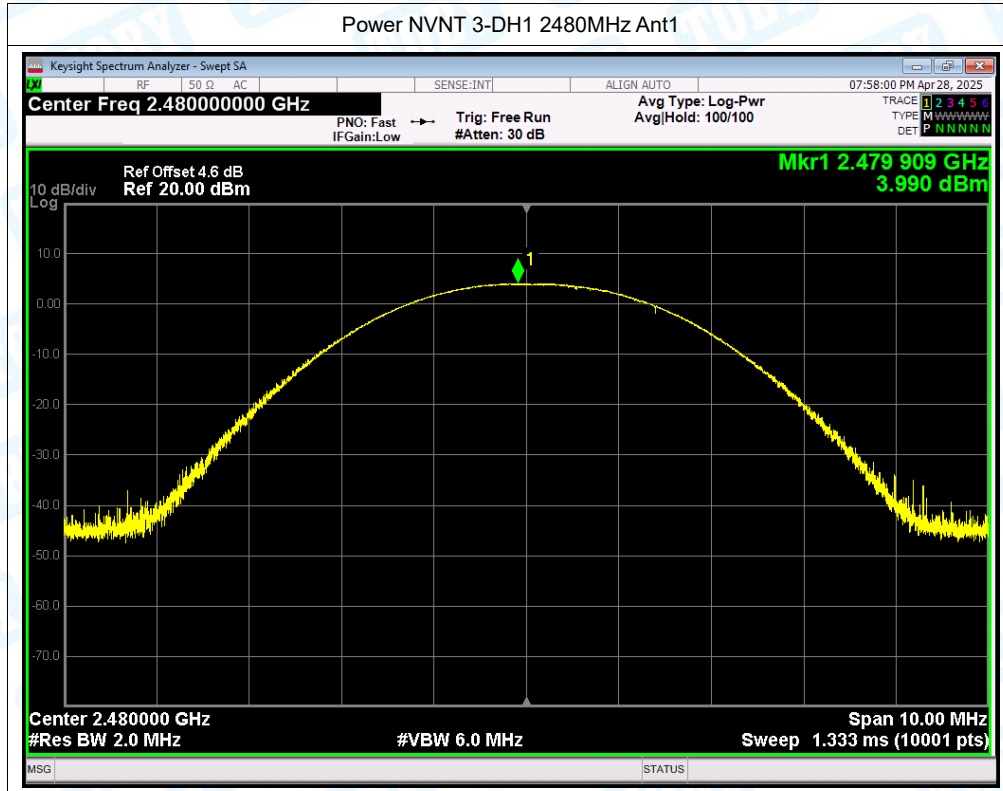


Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



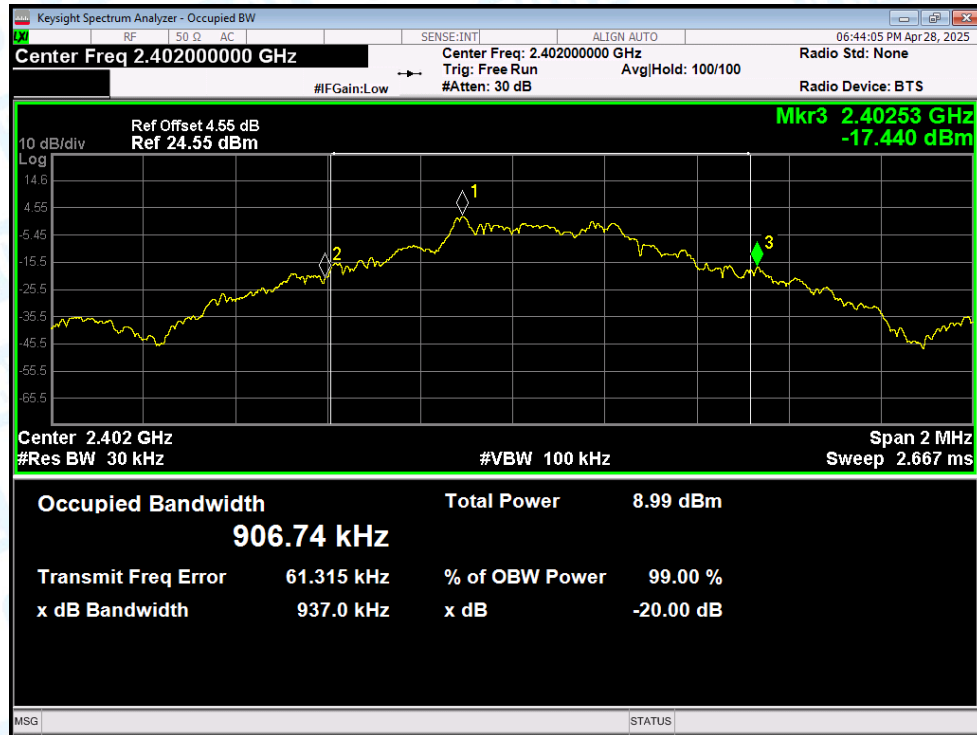


3.-20dB Bandwidth

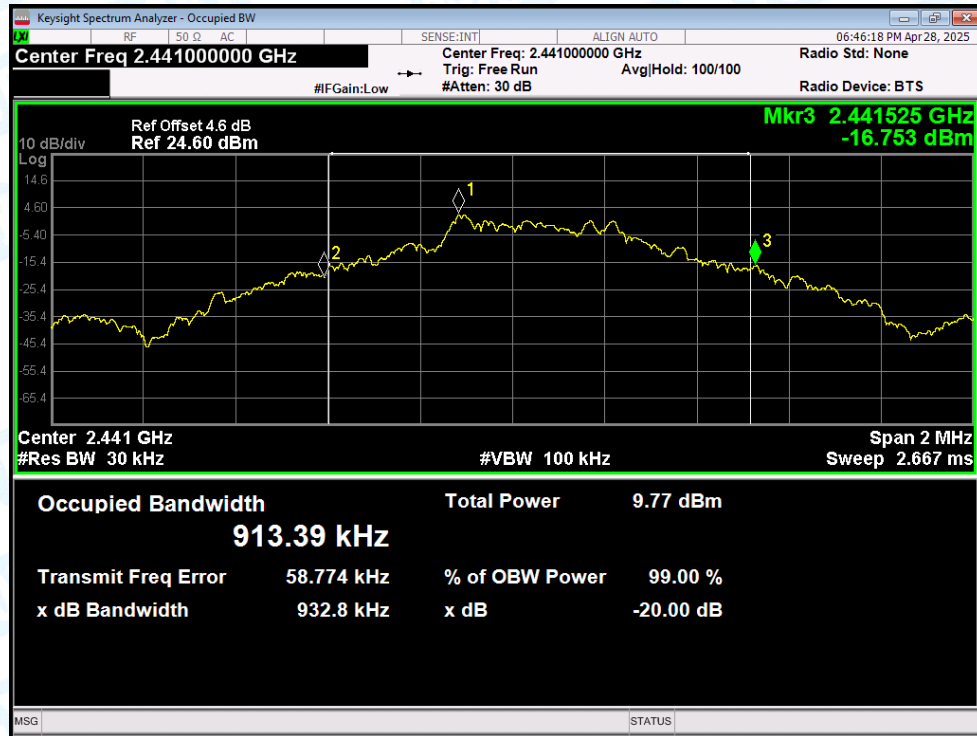
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.94	0	Pass
NVNT	1-DH1	2441	Ant1	0.93	0	Pass
NVNT	1-DH1	2480	Ant1	0.89	0	Pass
NVNT	2-DH1	2402	Ant1	1.22	0	Pass
NVNT	2-DH1	2441	Ant1	1.19	0	Pass
NVNT	2-DH1	2480	Ant1	1.18	0	Pass
NVNT	3-DH1	2402	Ant1	1.19	0	Pass
NVNT	3-DH1	2441	Ant1	1.2	0	Pass
NVNT	3-DH1	2480	Ant1	1.19	0	Pass

Test Graphs

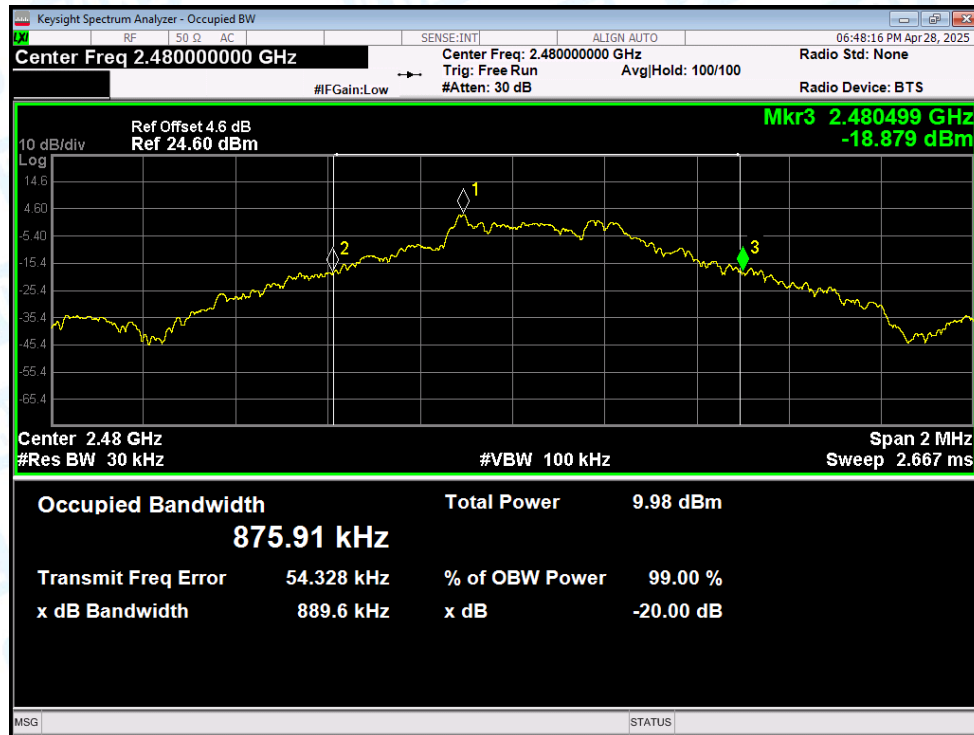
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



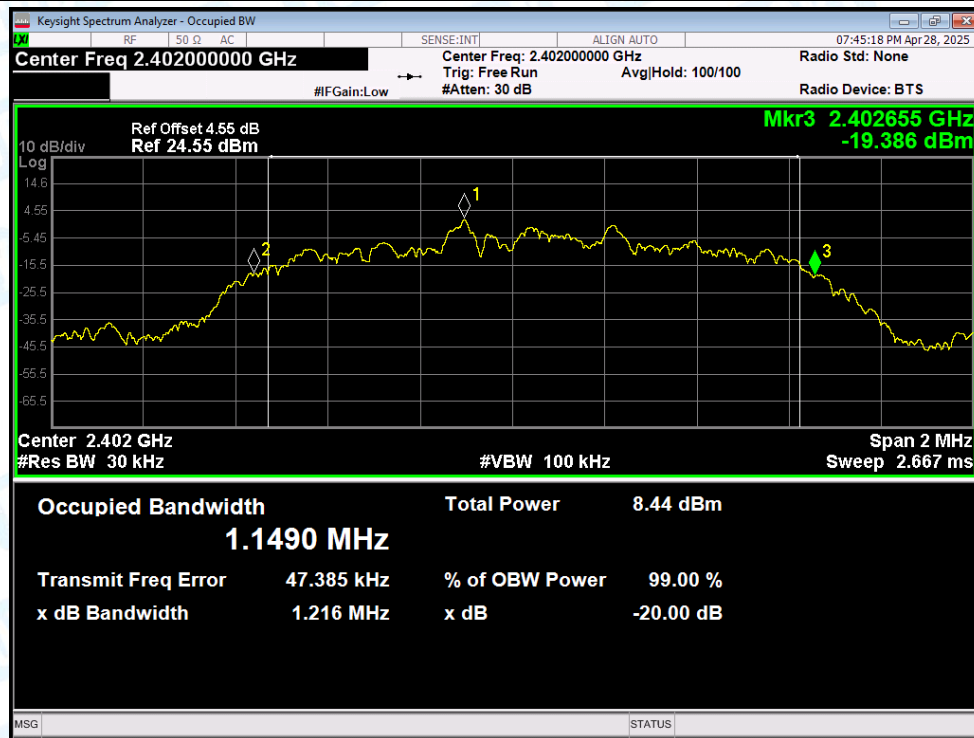
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



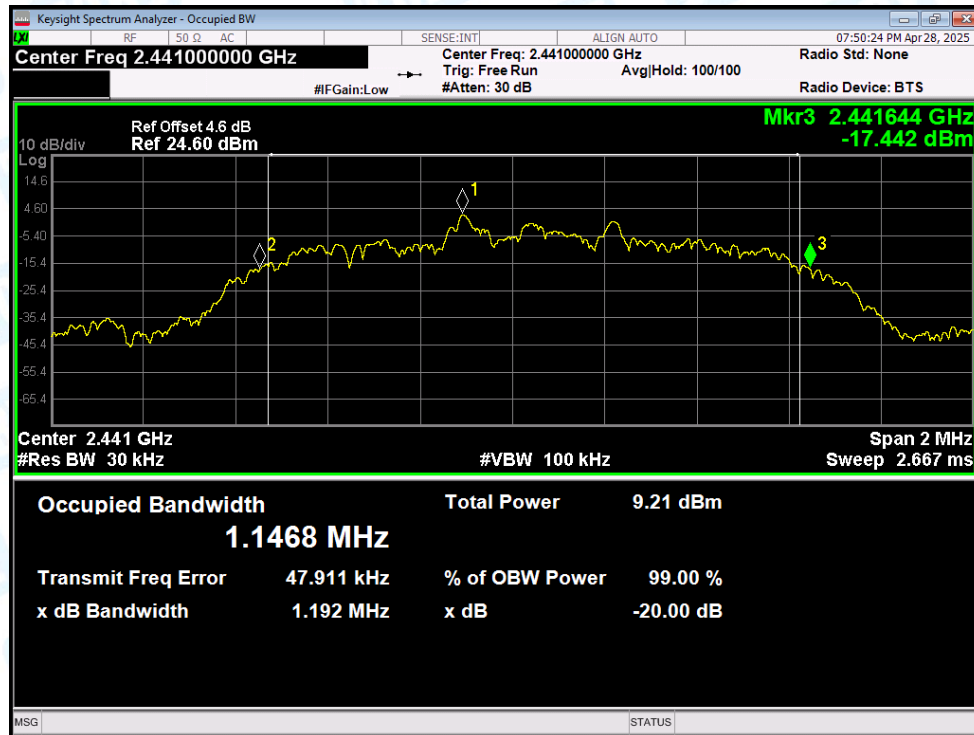
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



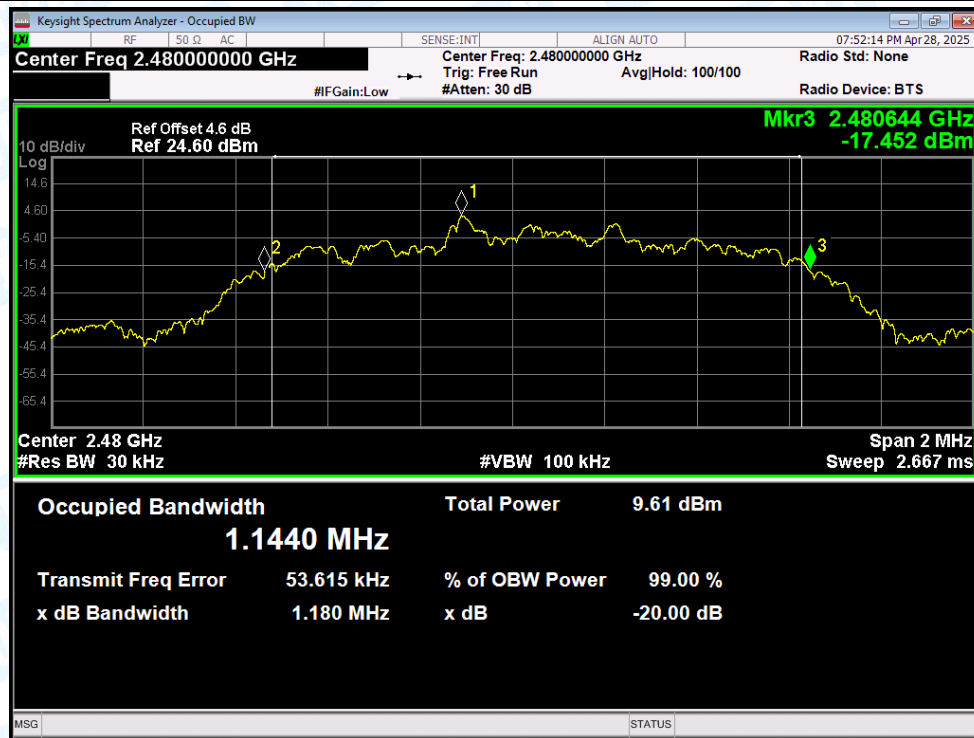
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



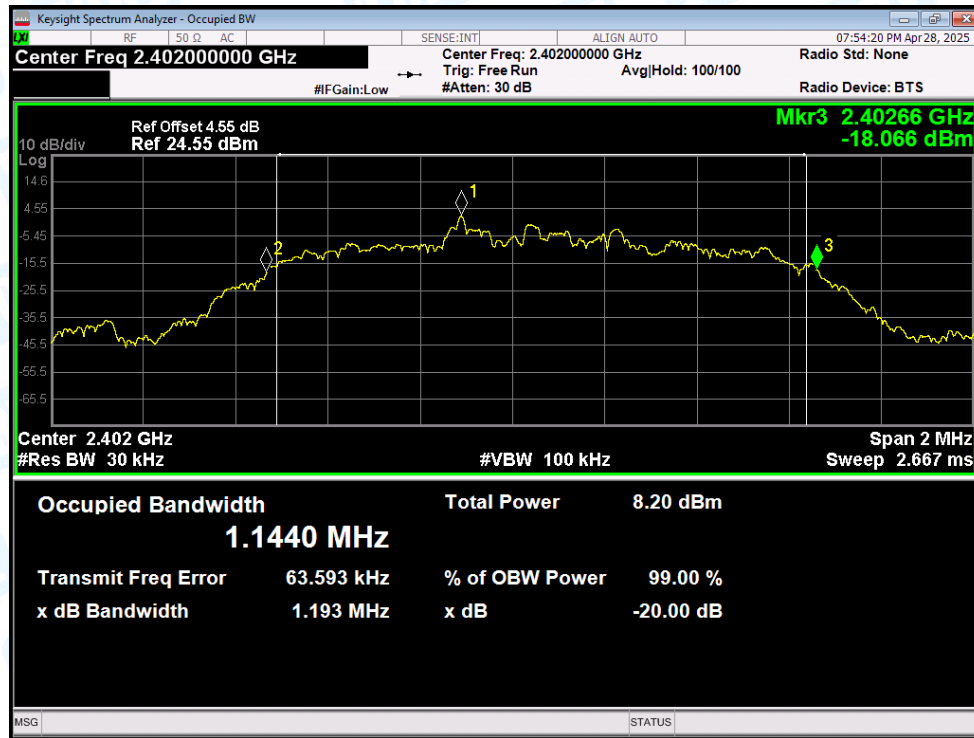
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



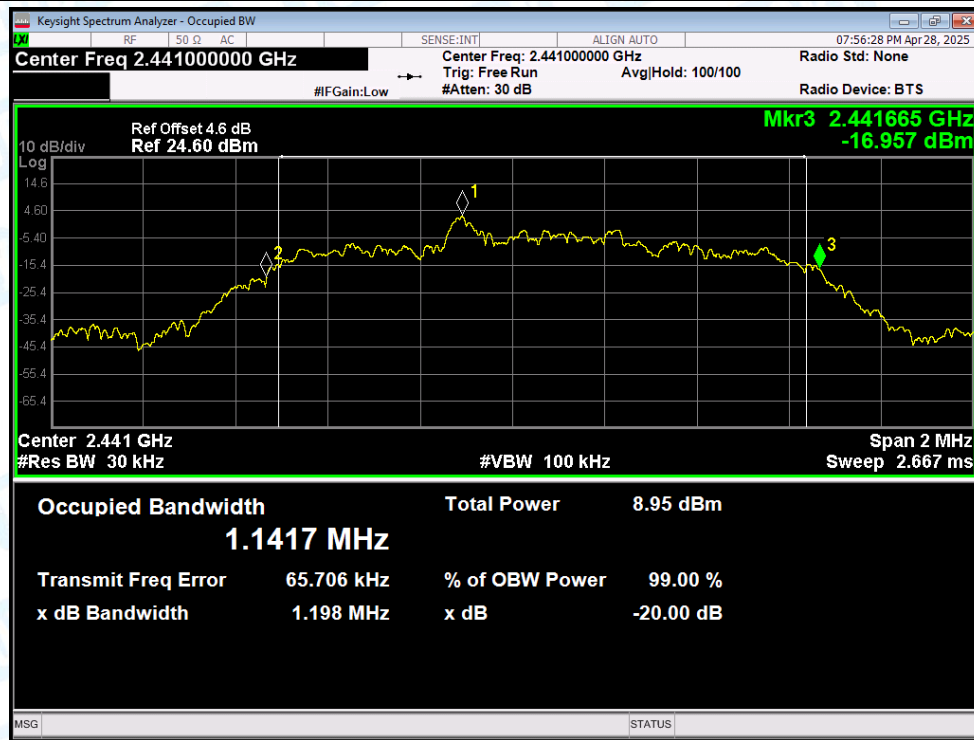
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

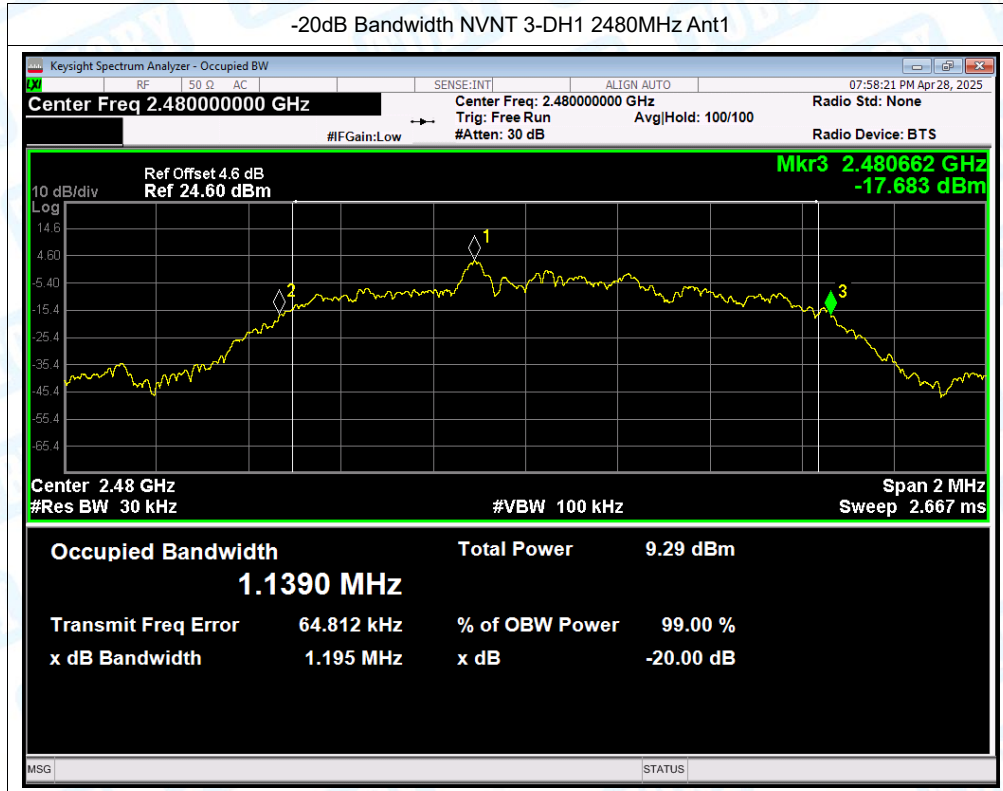


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



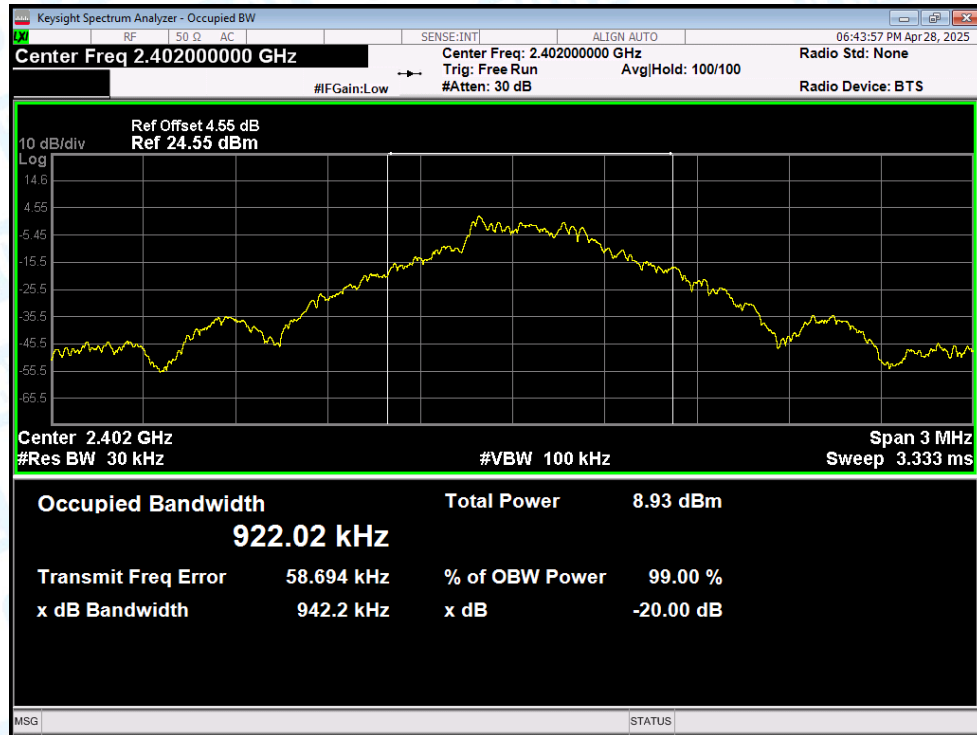


4.Occupied Channel Bandwidth

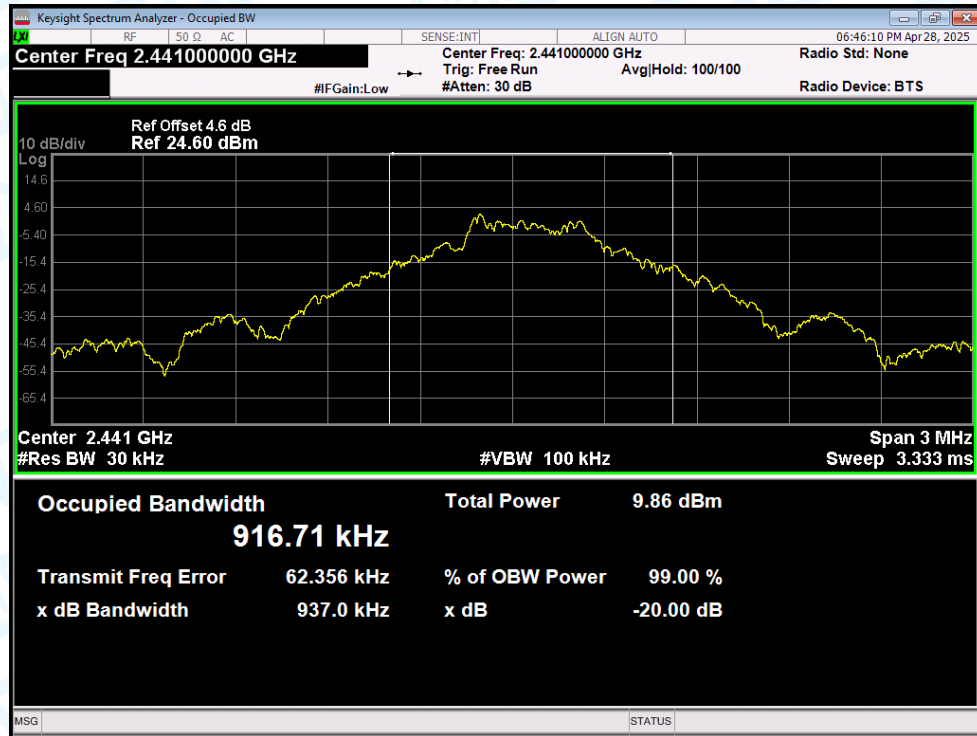
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.922
NVNT	1-DH1	2441	Ant1	0.917
NVNT	1-DH1	2480	Ant1	0.899
NVNT	2-DH1	2402	Ant1	1.147
NVNT	2-DH1	2441	Ant1	1.148
NVNT	2-DH1	2480	Ant1	1.132
NVNT	3-DH1	2402	Ant1	1.15
NVNT	3-DH1	2441	Ant1	1.143
NVNT	3-DH1	2480	Ant1	1.132

Test Graphs

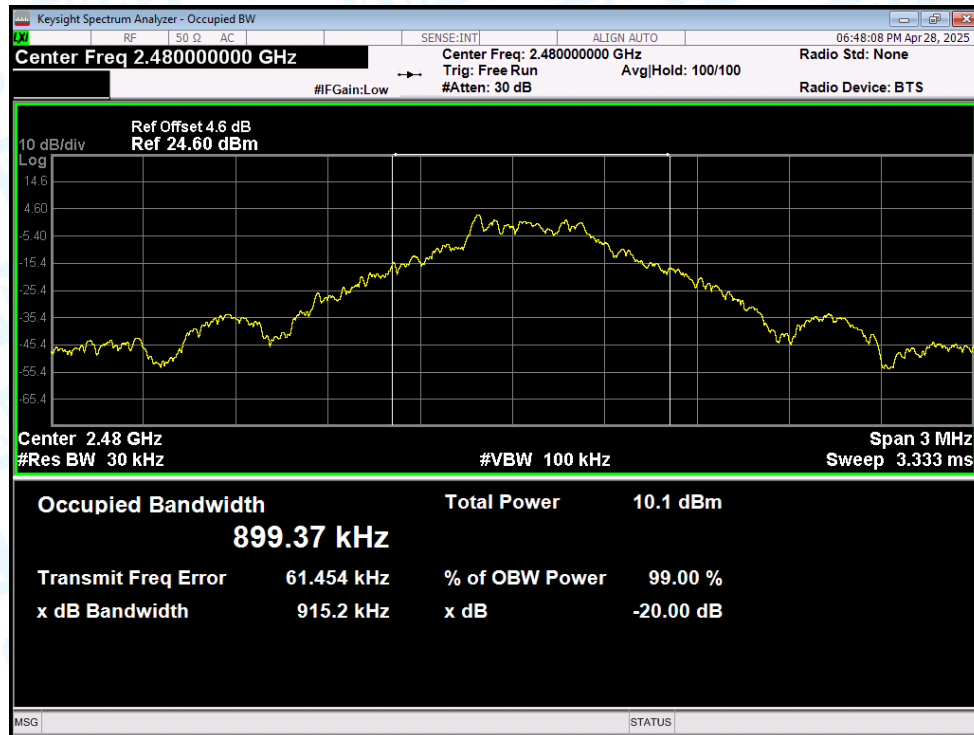
OBW NVNT 1-DH1 2402MHz Ant1



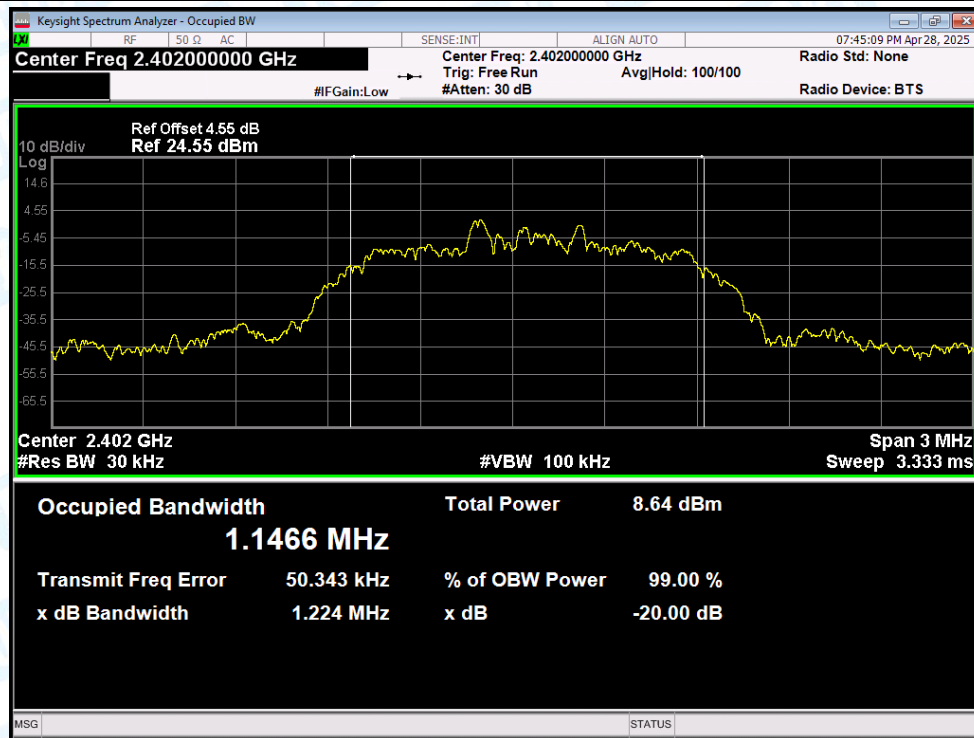
OBW NVNT 1-DH1 2441MHz Ant1



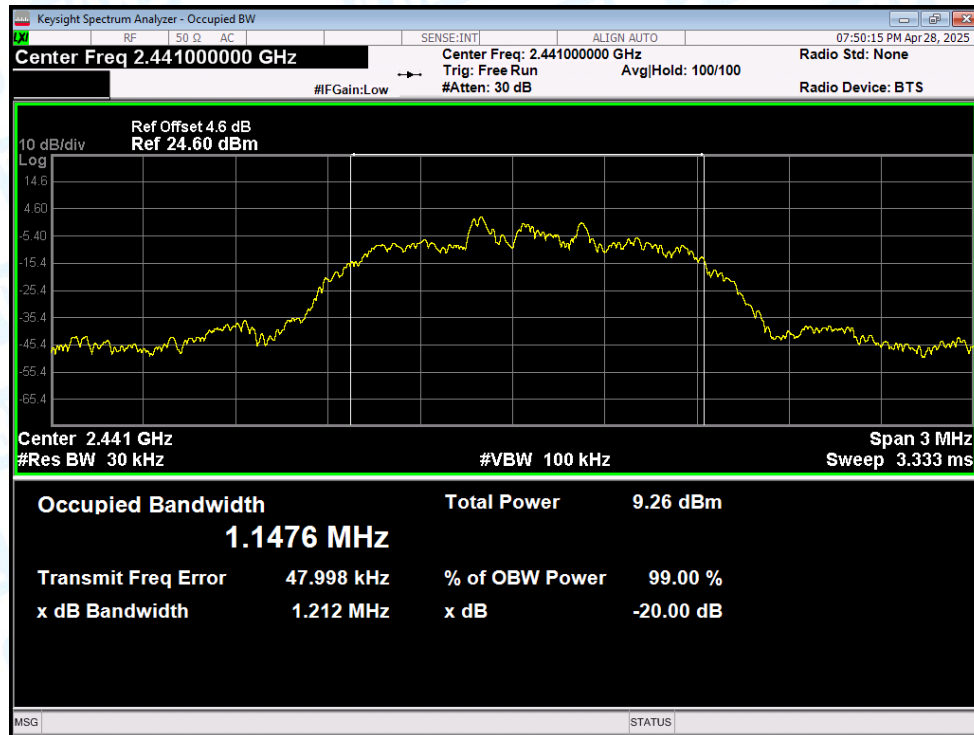
OBW NVNT 1-DH1 2480MHz Ant1



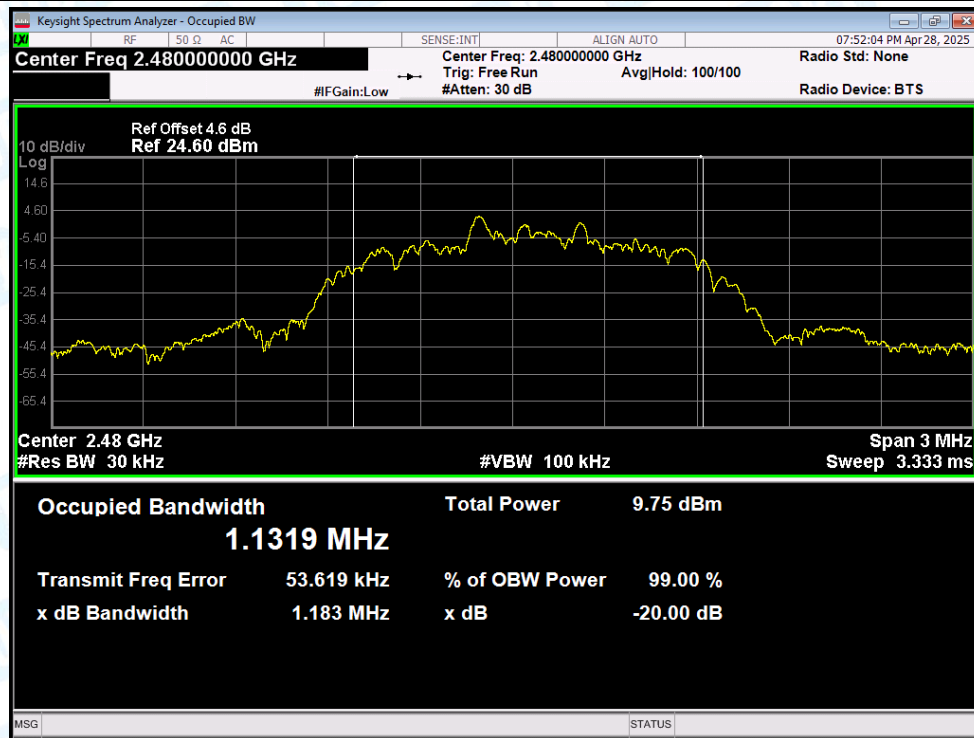
OBW NVNT 2-DH1 2402MHz Ant1



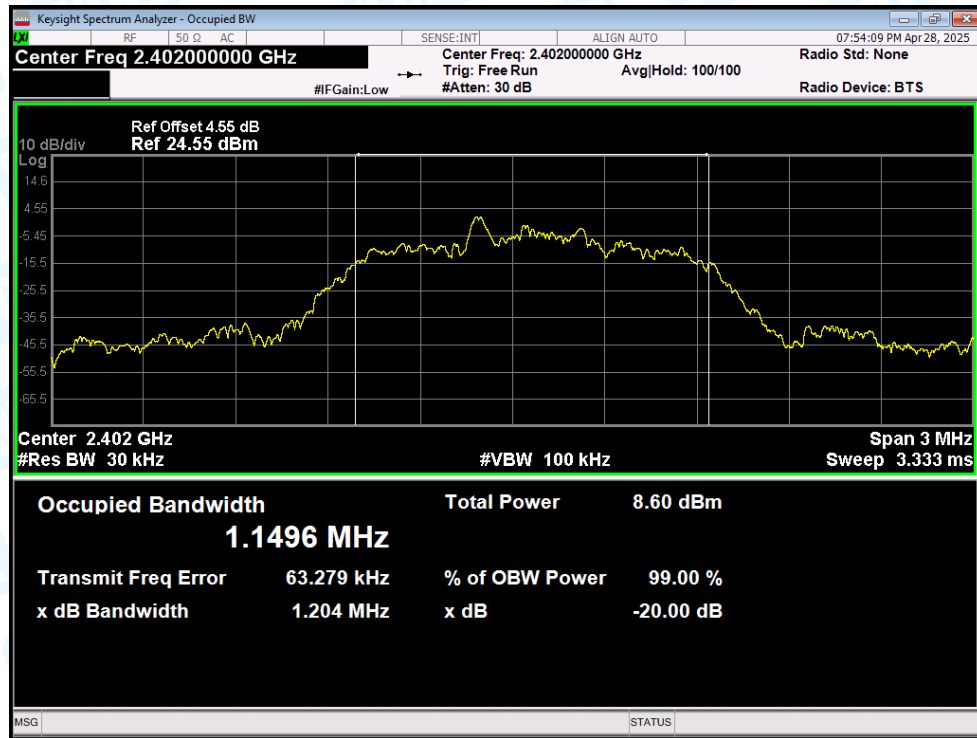
OBW NVNT 2-DH1 2441MHz Ant1



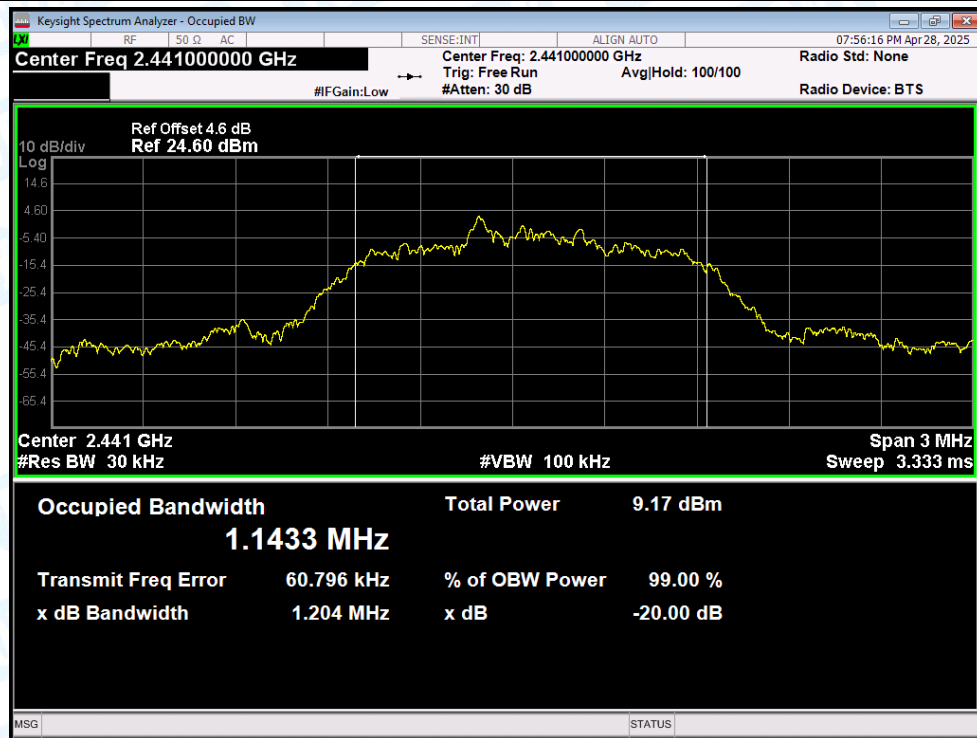
OBW NVNT 2-DH1 2480MHz Ant1

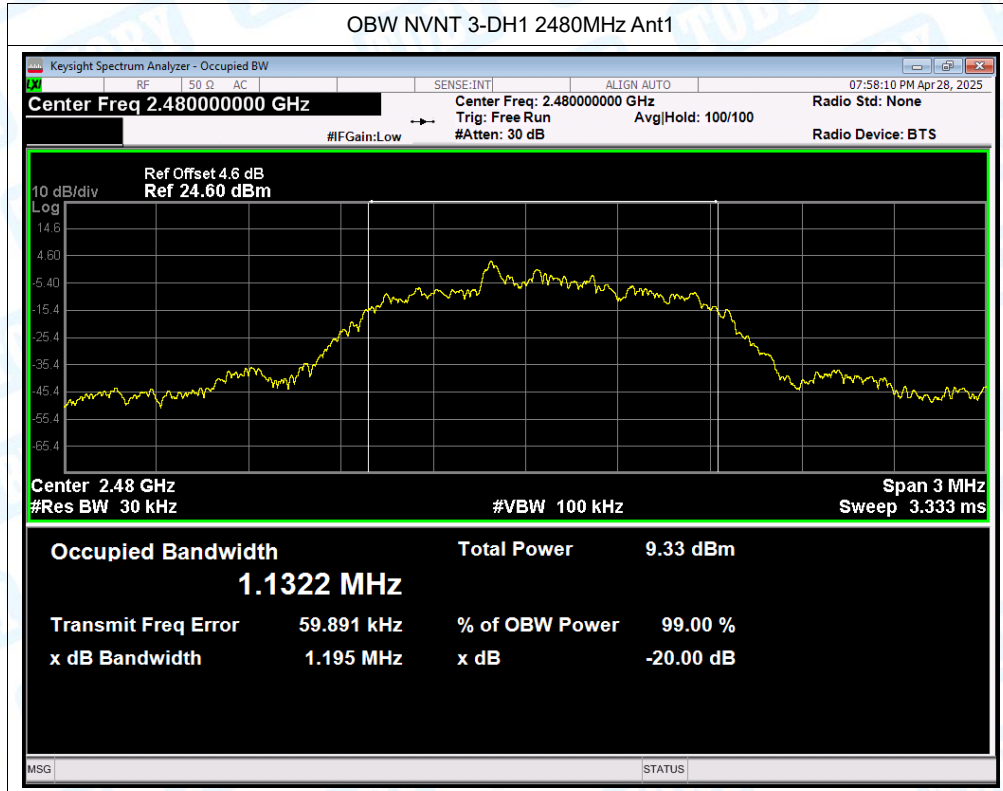


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



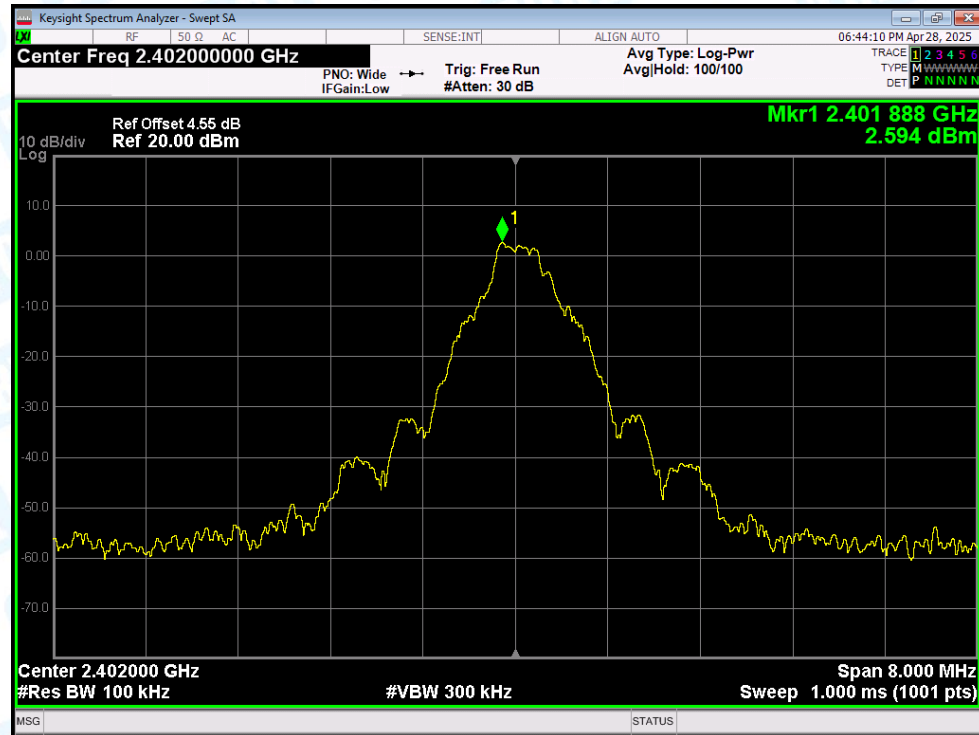


5.Band Edge

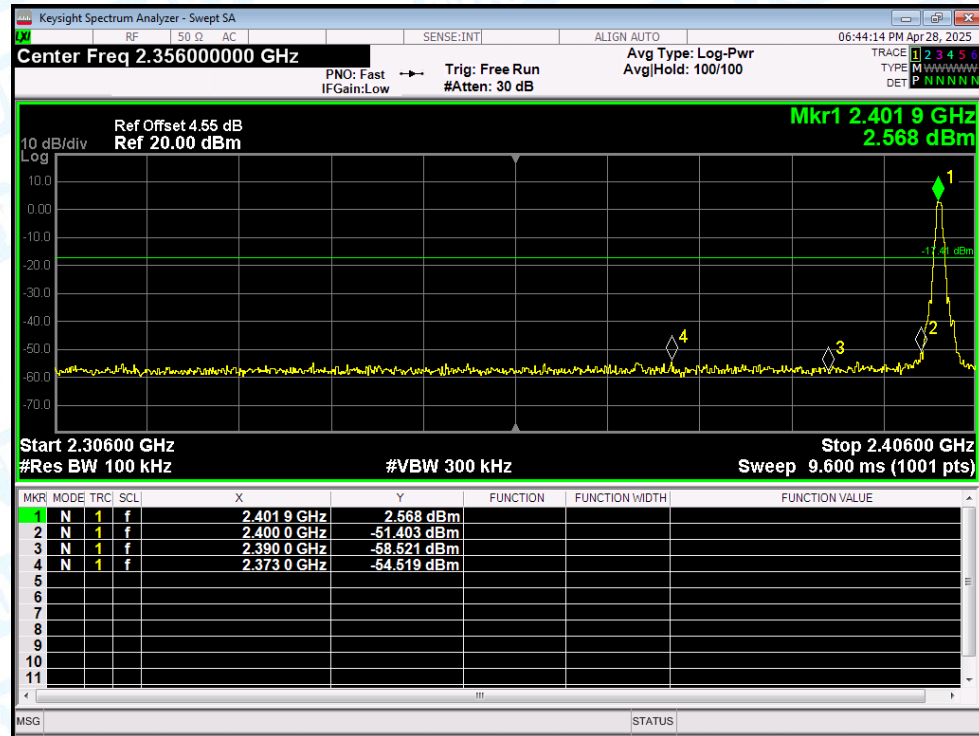
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-57.11	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-56.88	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-56.78	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-58.09	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-56.67	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-58.41	-20	Pass

Test Graphs

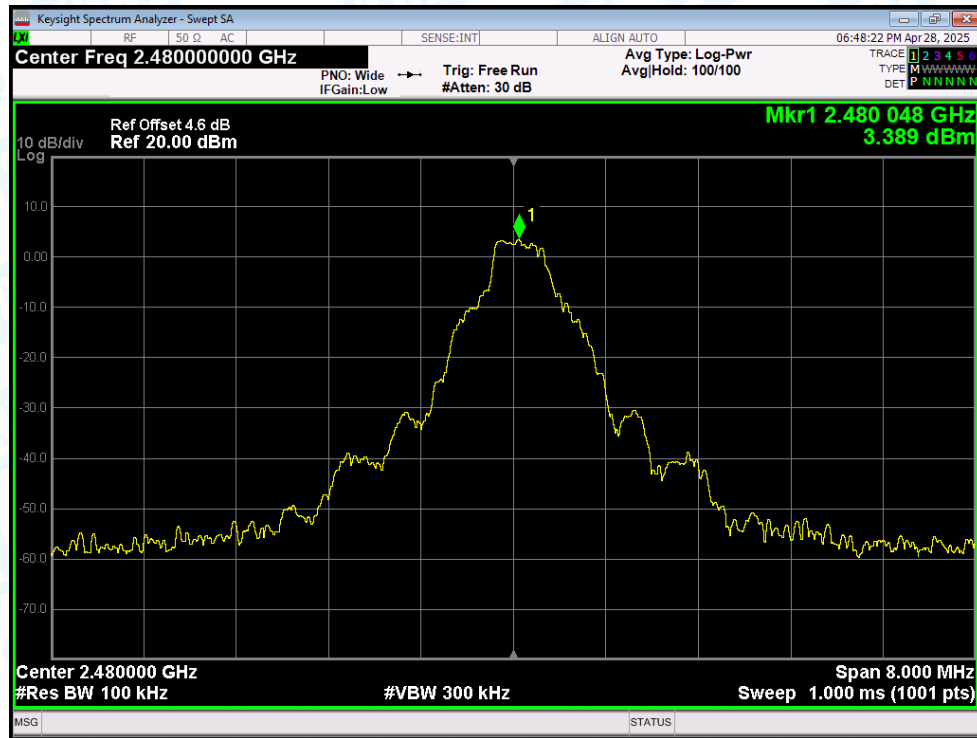
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



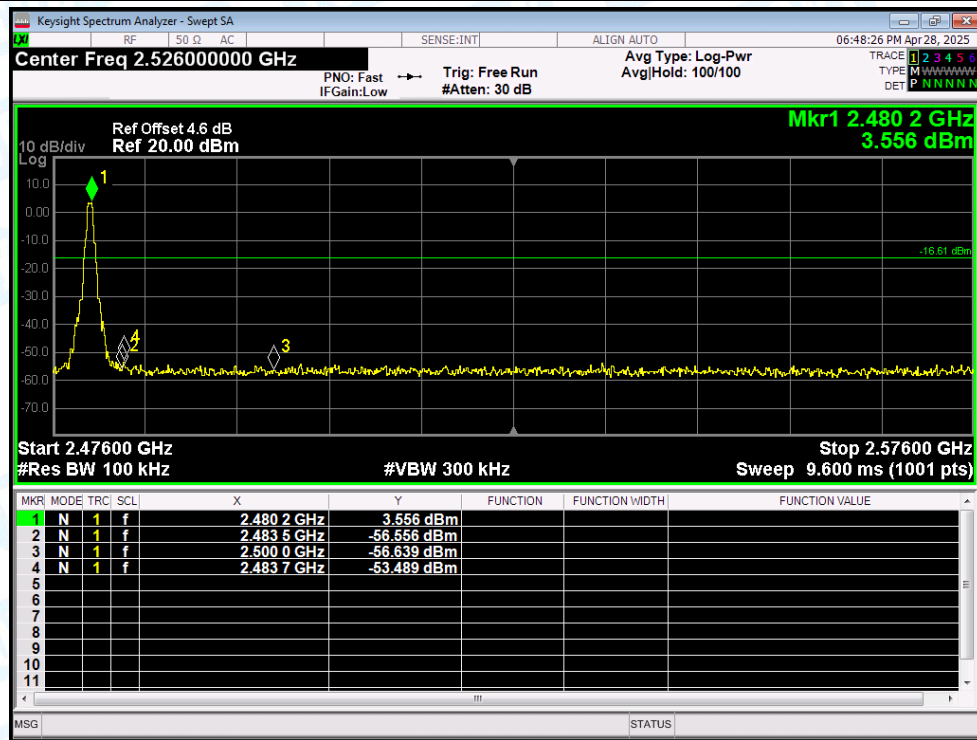
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission

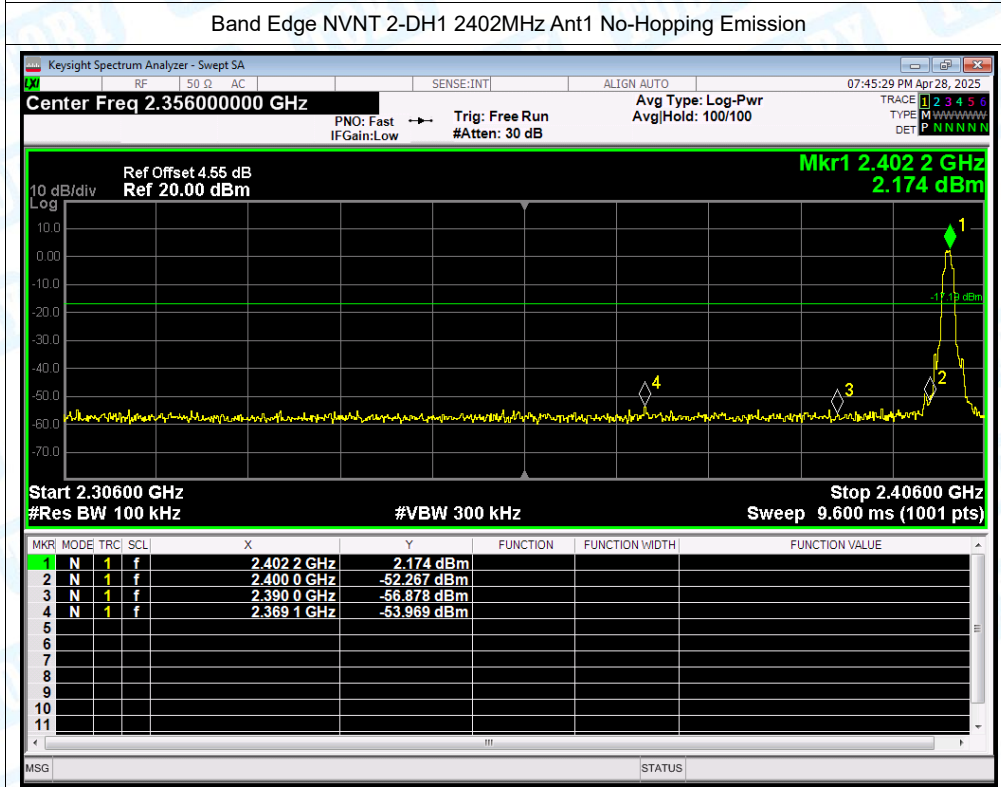
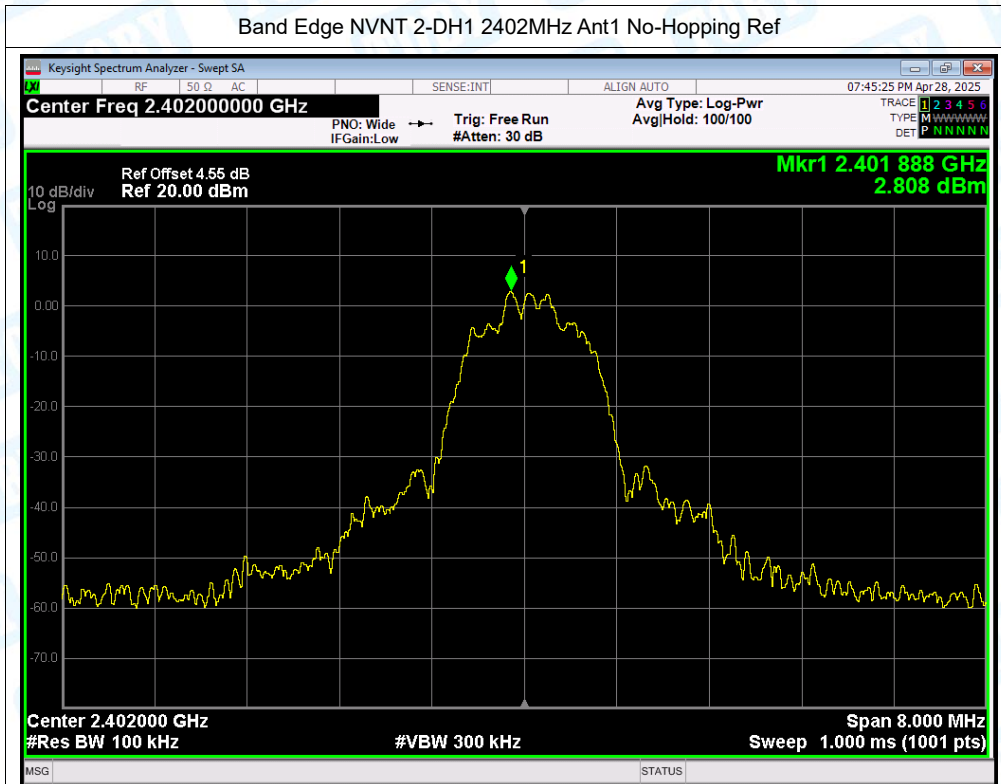


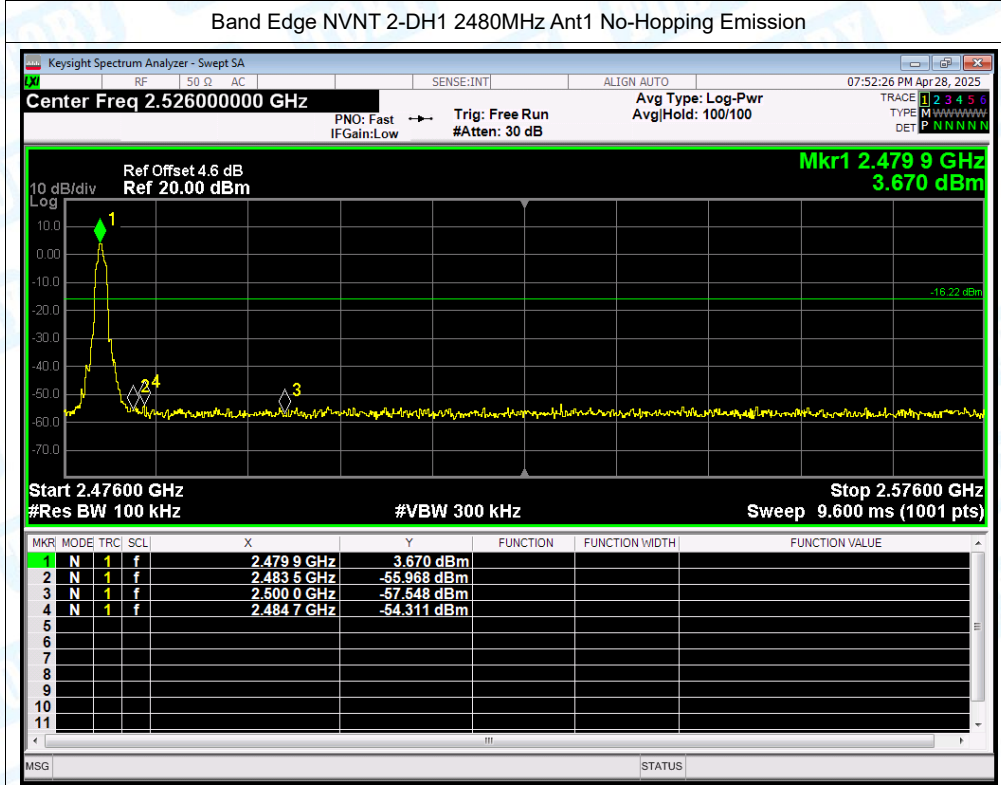
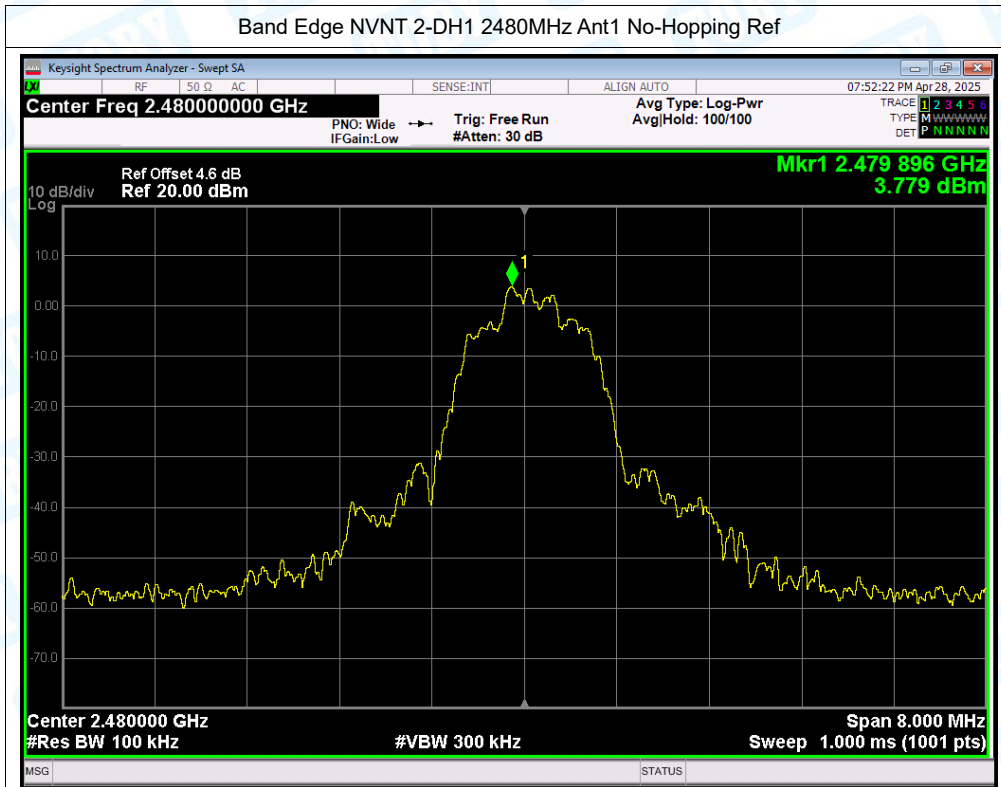
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref

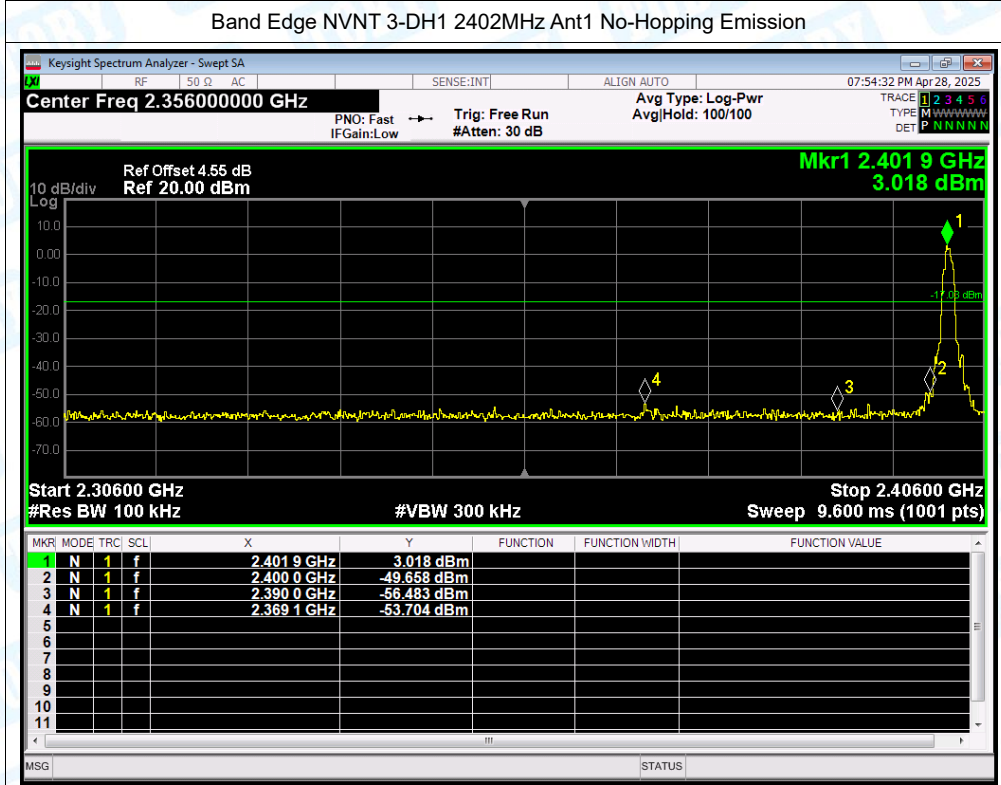
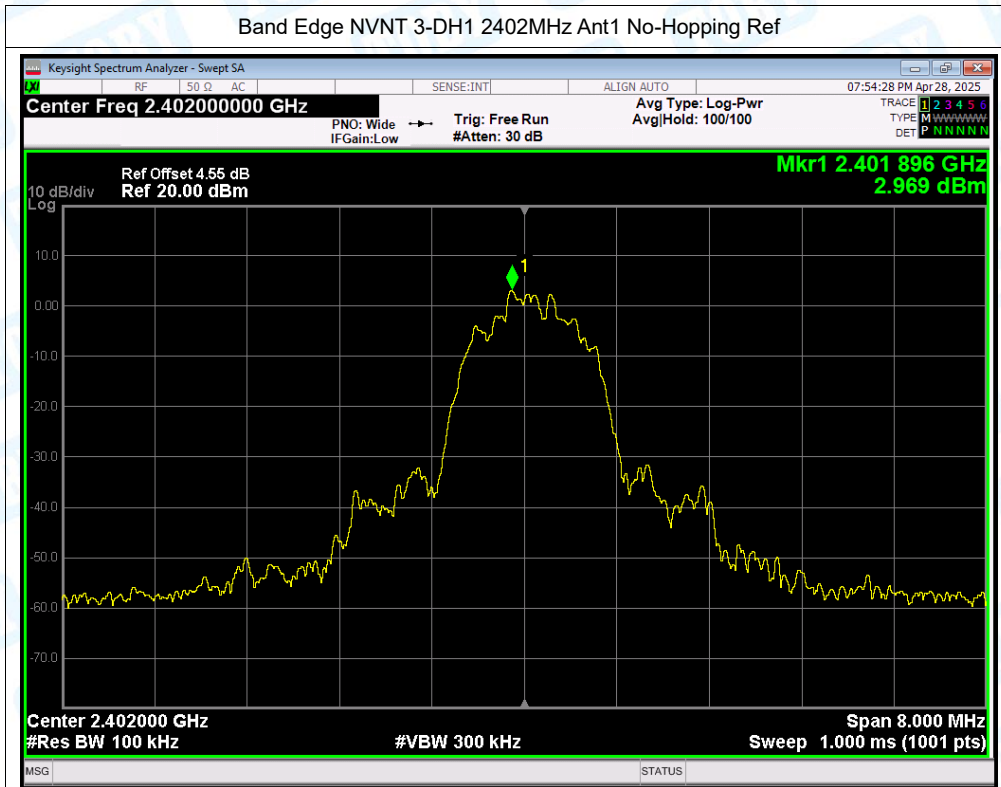


Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission

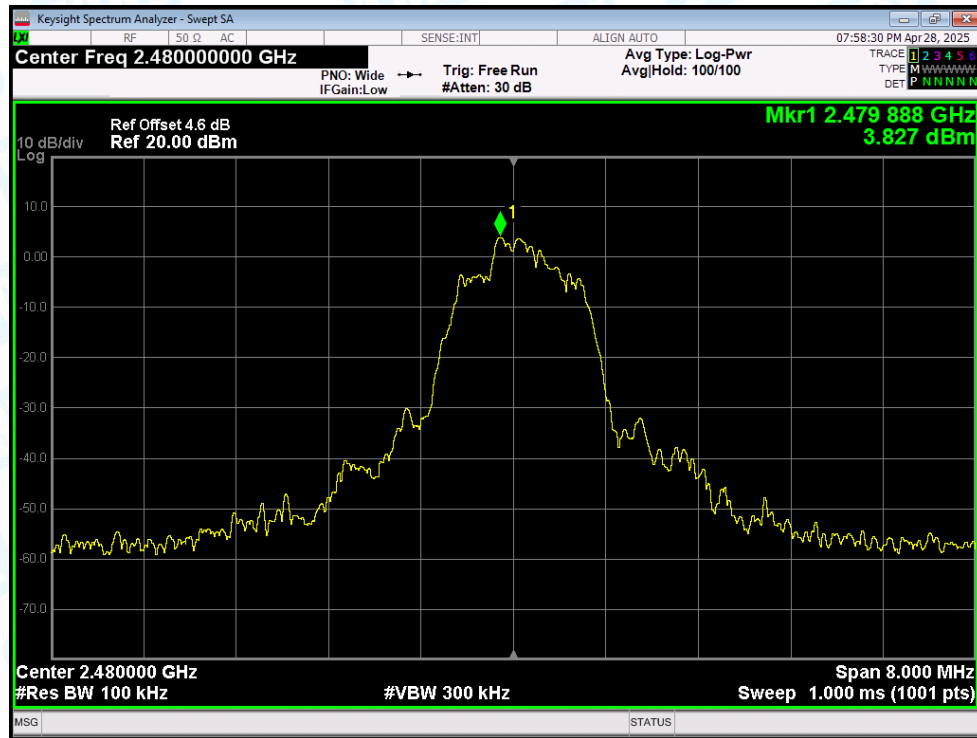




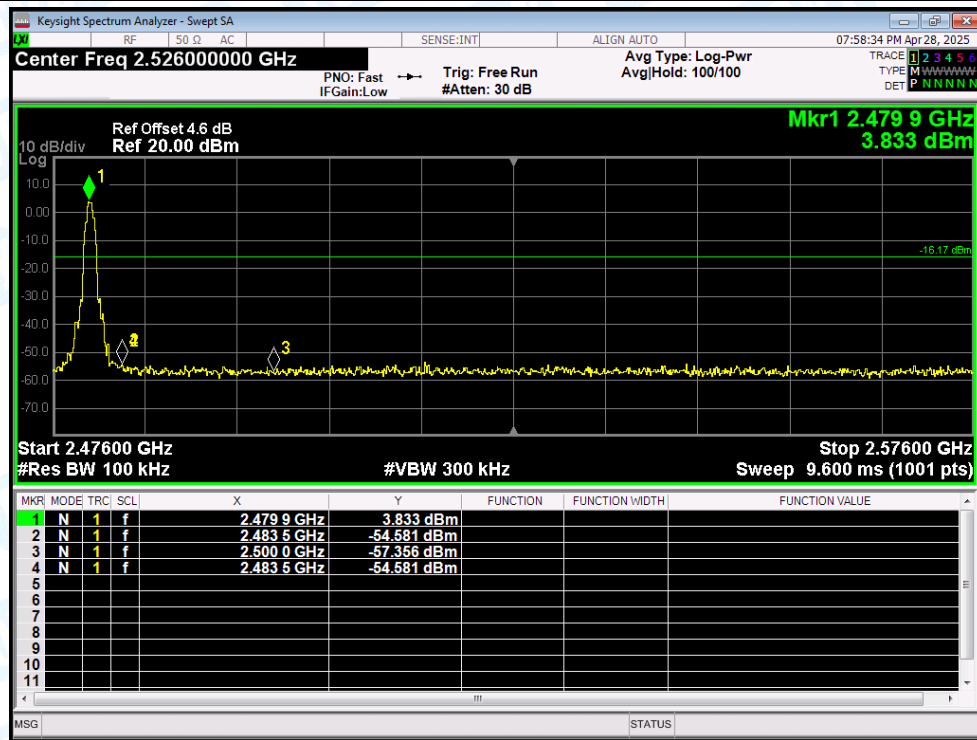




Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Ref



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

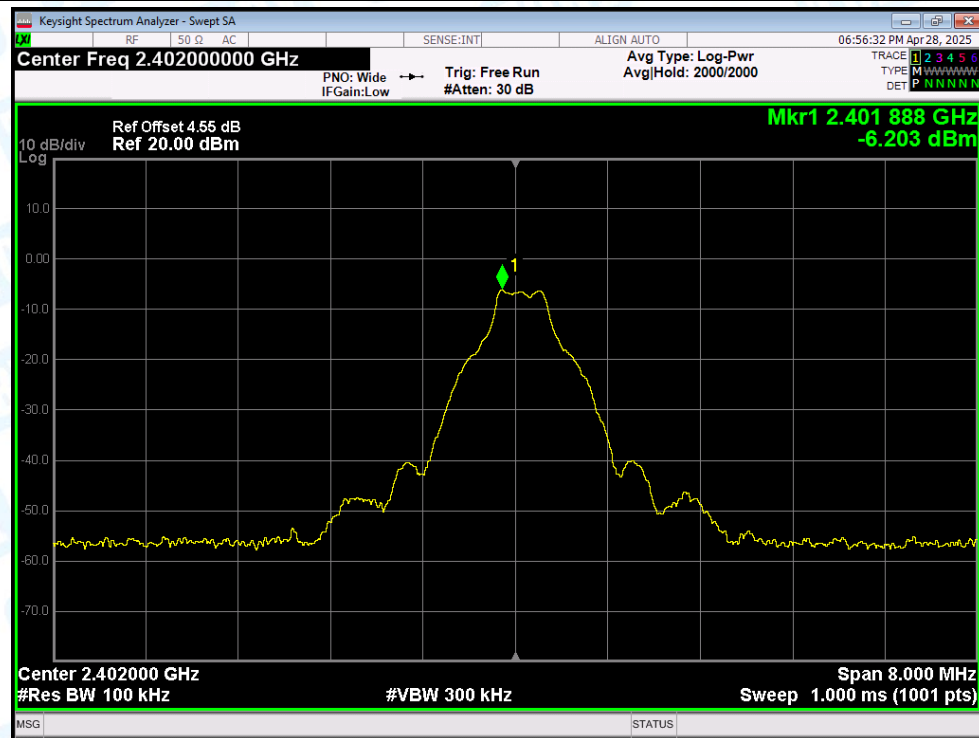


6. Band Edge(Hopping)

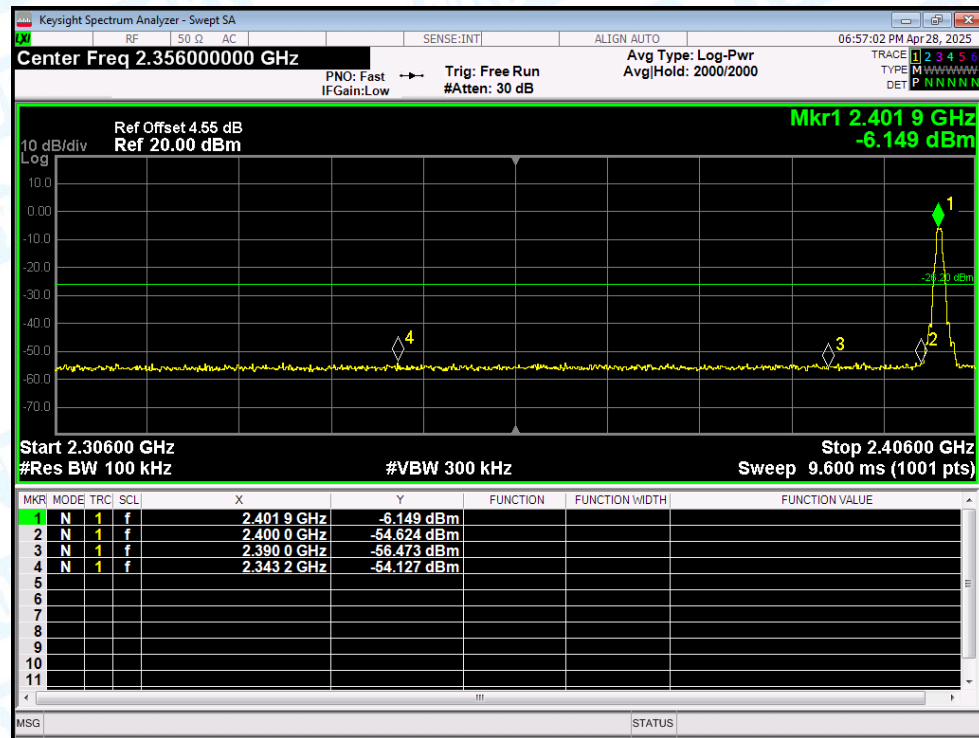
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-47.93	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-47.86	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-49.71	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-55.53	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-37.56	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-57.23	-20	Pass

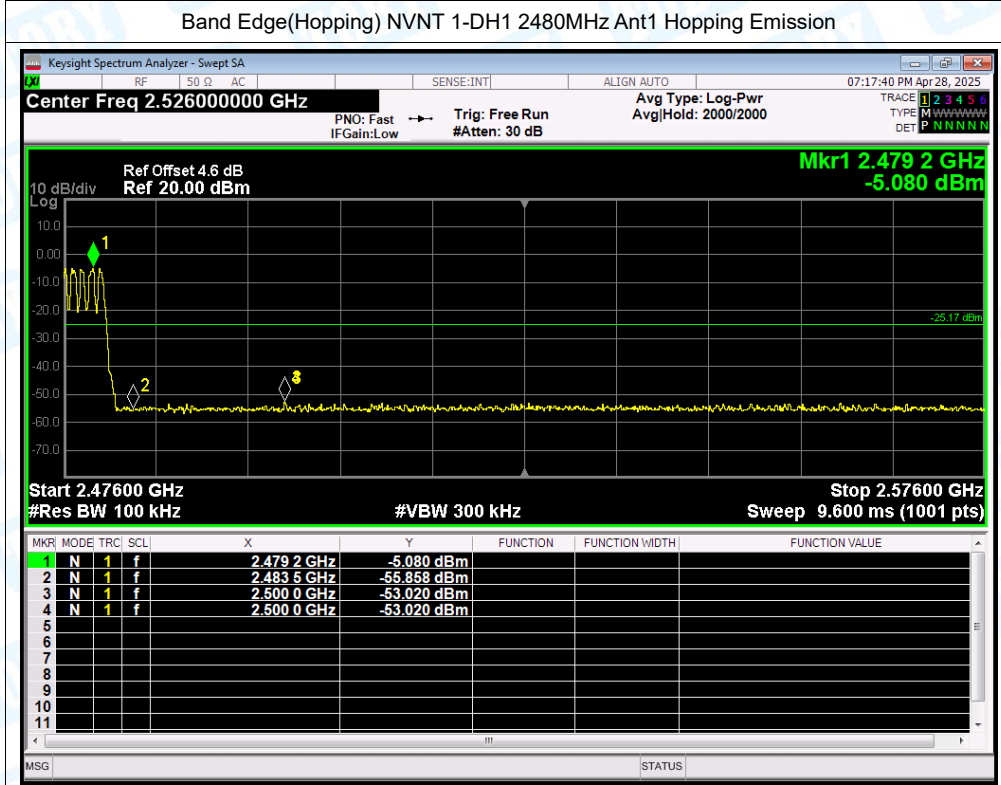
Test Graphs

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



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

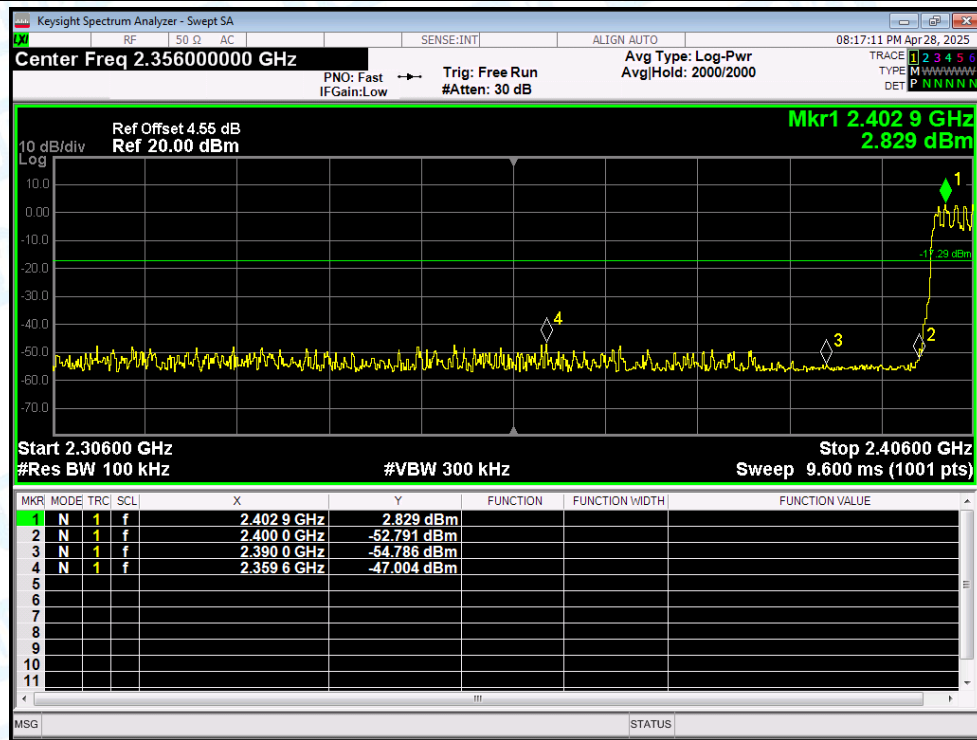


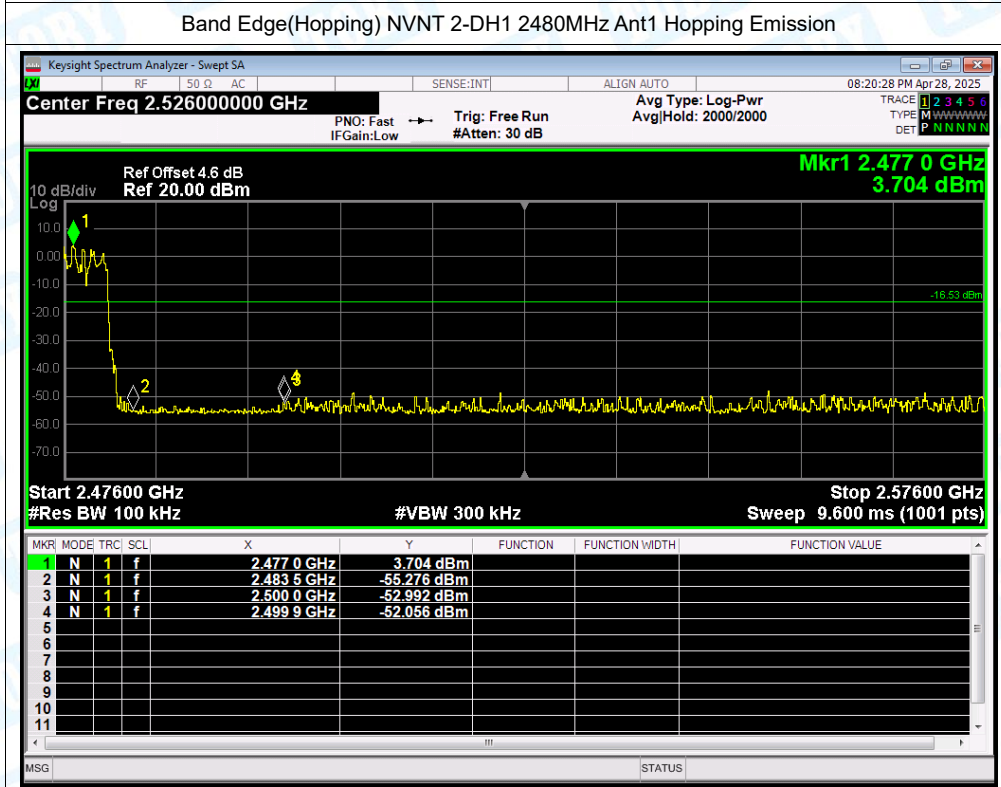
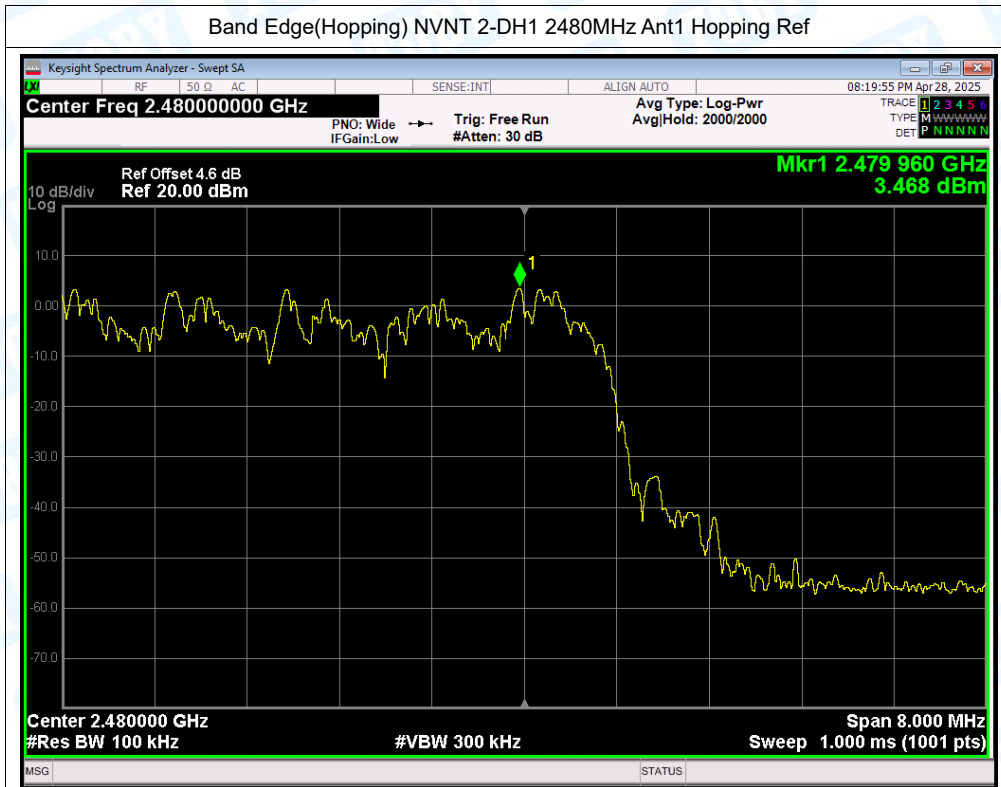


Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref



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

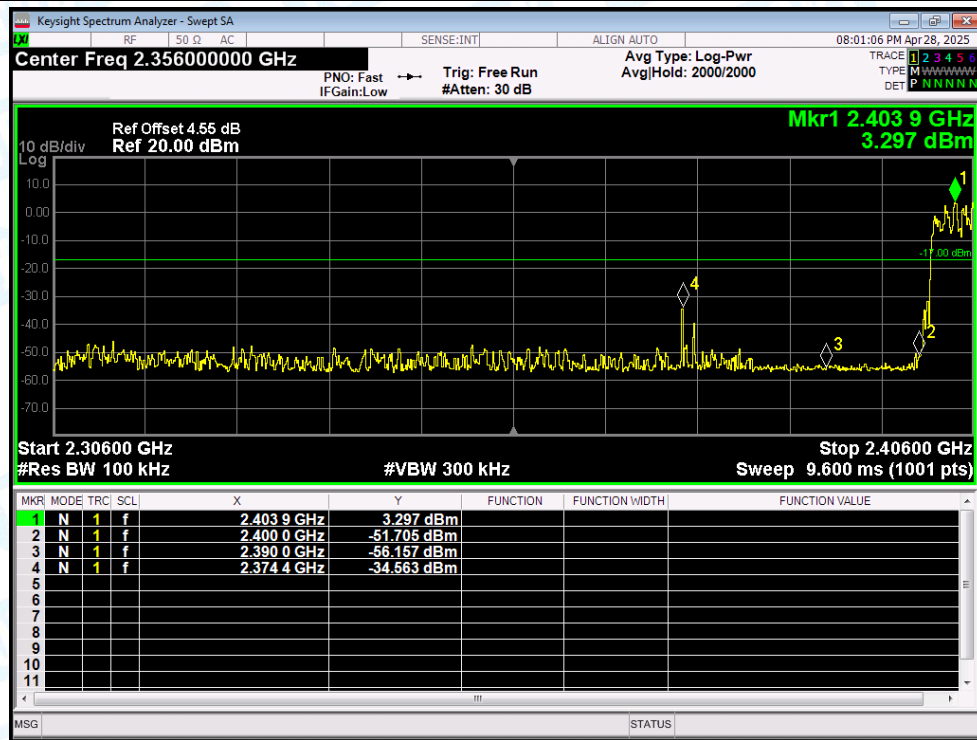


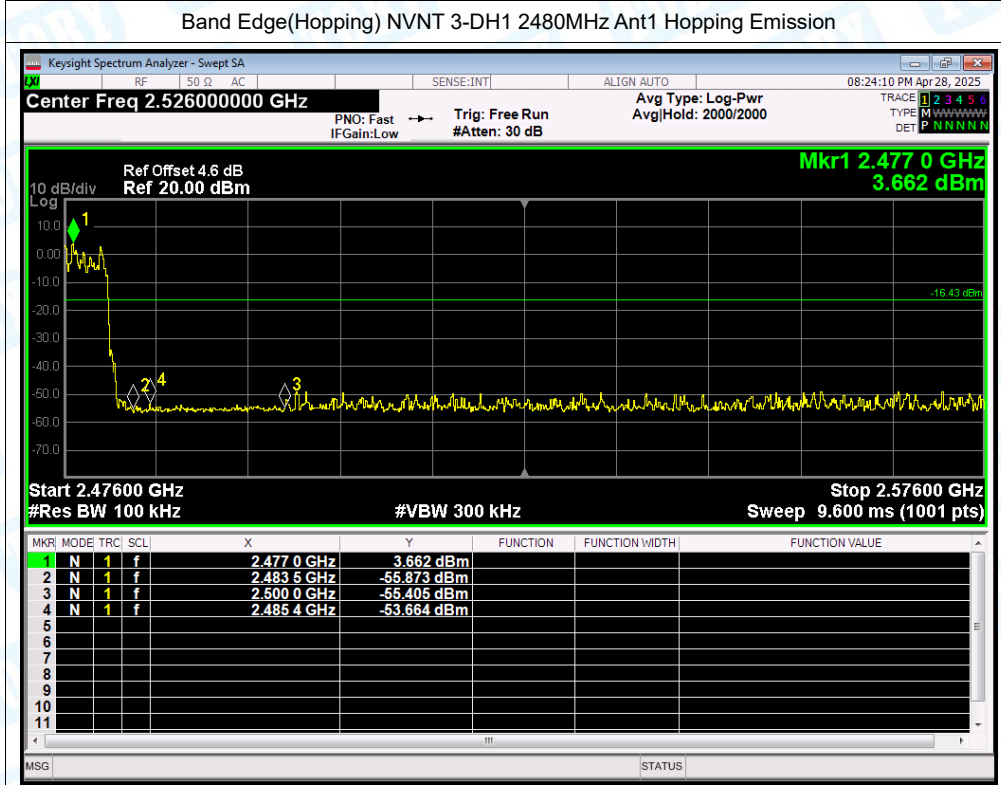


Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



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



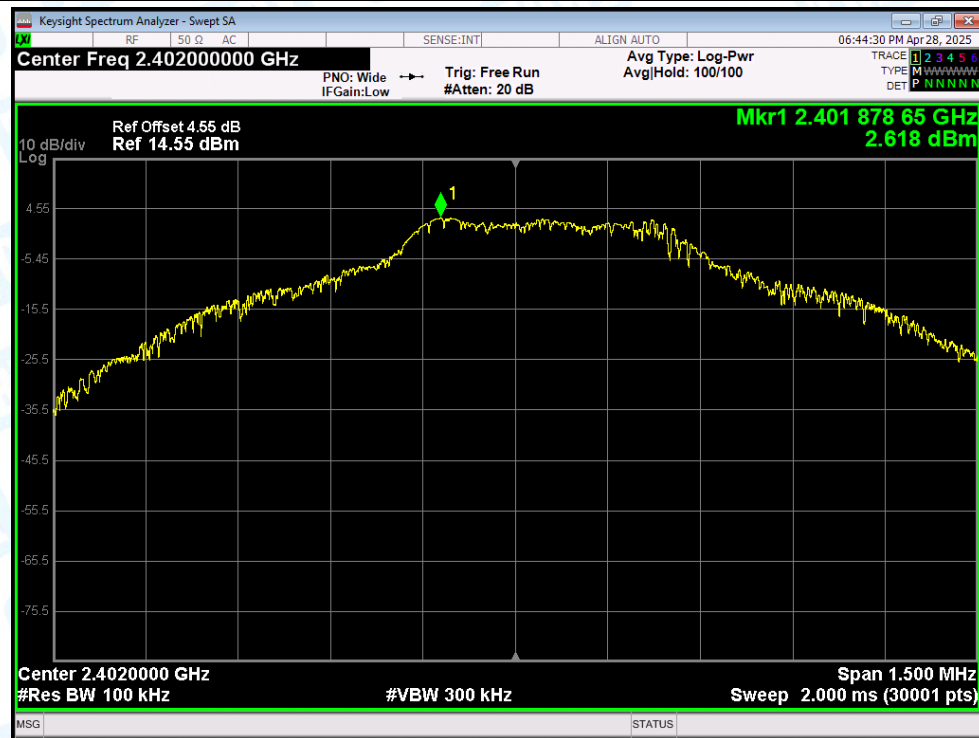


7. Conducted RF Spurious Emission

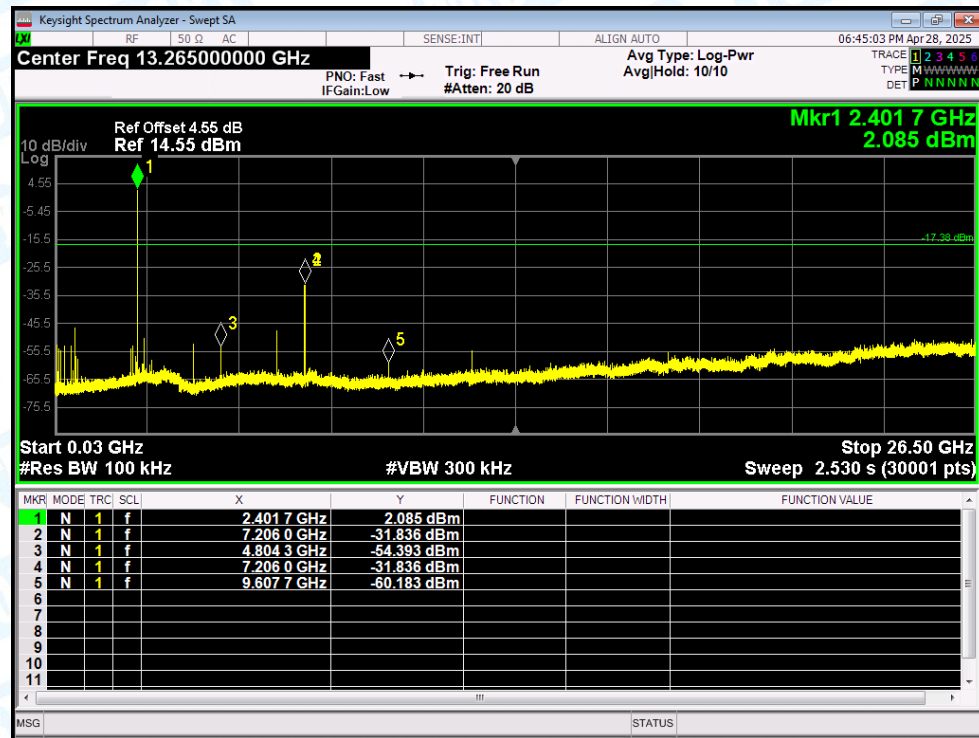
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-34.46	-20	Pass
NVNT	1-DH1	2441	Ant1	-36.07	-20	Pass
NVNT	1-DH1	2480	Ant1	-34.63	-20	Pass
NVNT	2-DH1	2402	Ant1	-39.16	-20	Pass
NVNT	2-DH1	2441	Ant1	-35.22	-20	Pass
NVNT	2-DH1	2480	Ant1	-39.75	-20	Pass
NVNT	3-DH1	2402	Ant1	-35.8	-20	Pass
NVNT	3-DH1	2441	Ant1	-38.52	-20	Pass
NVNT	3-DH1	2480	Ant1	-39.93	-20	Pass

Test Graphs

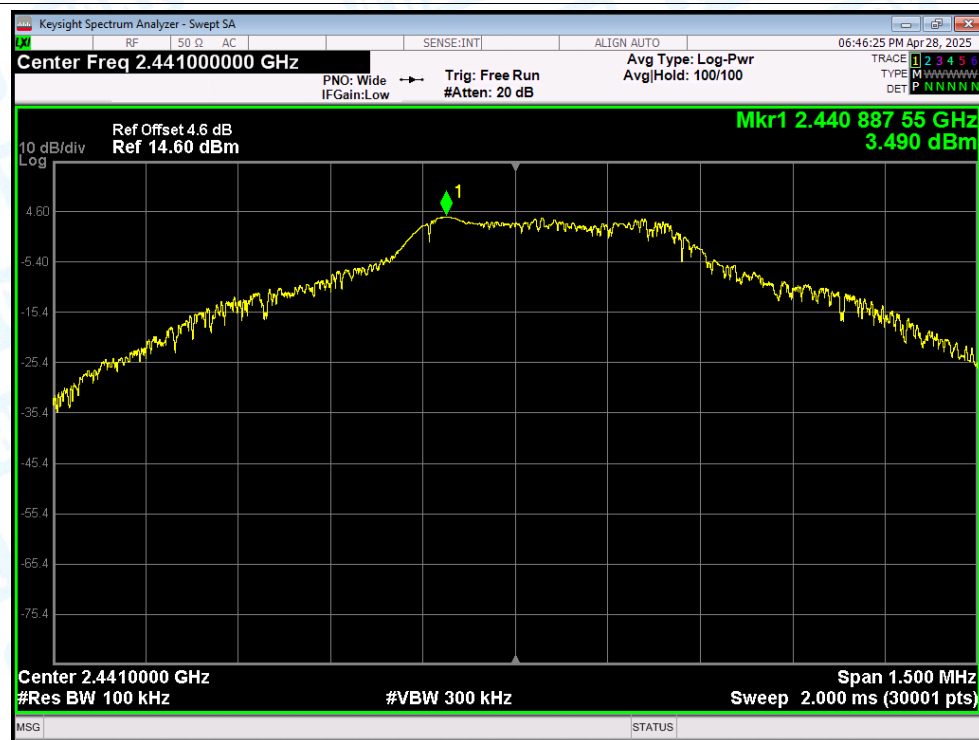
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



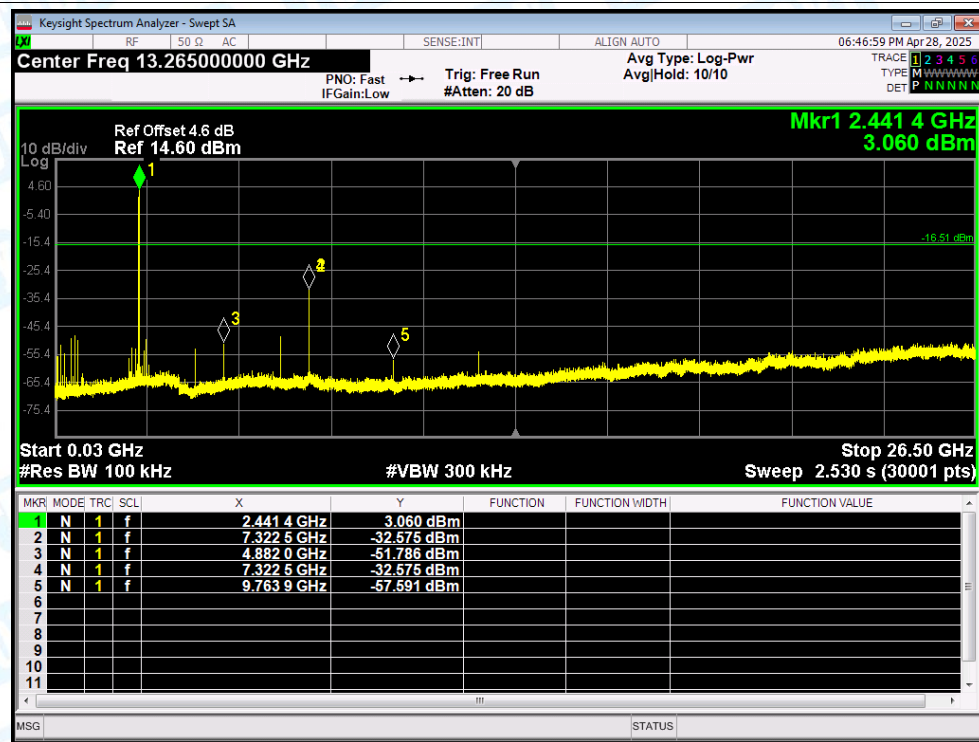
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



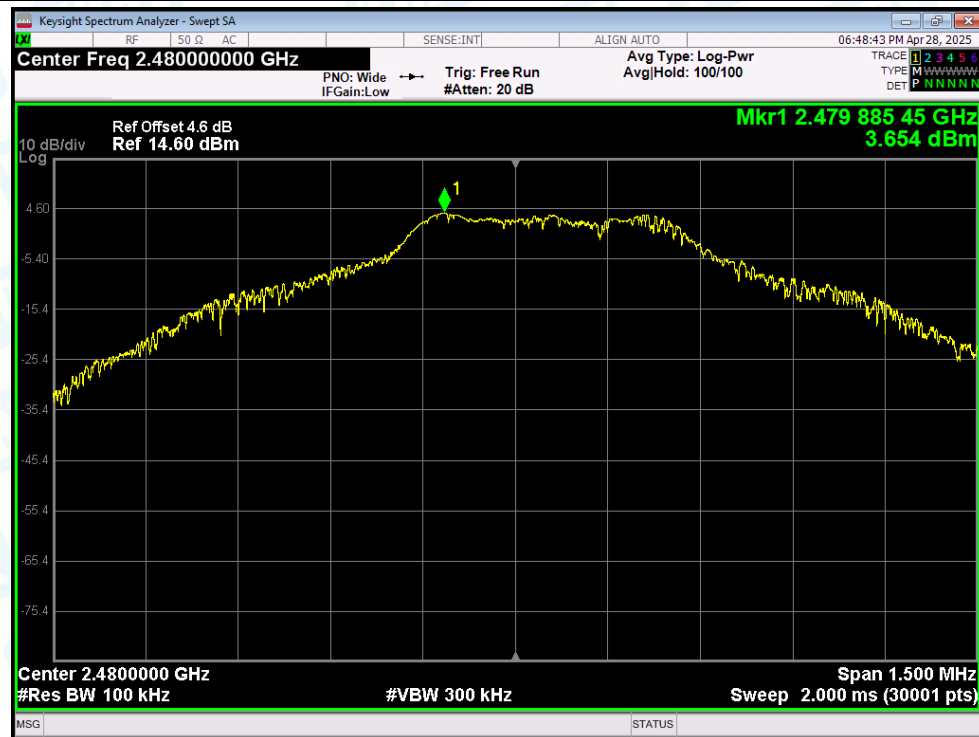
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



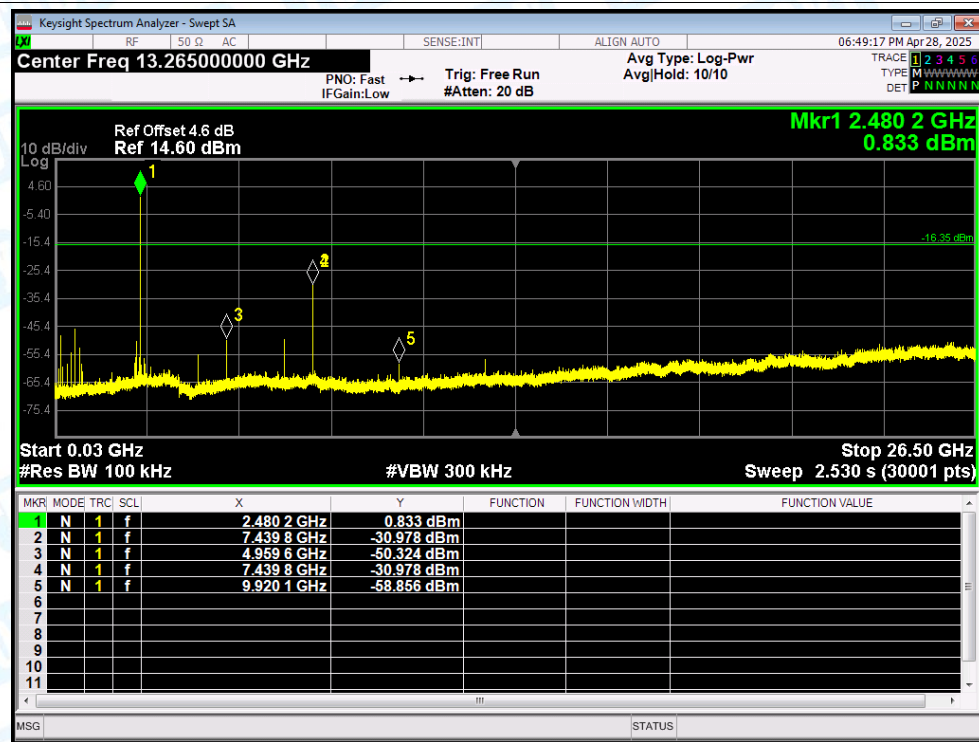
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



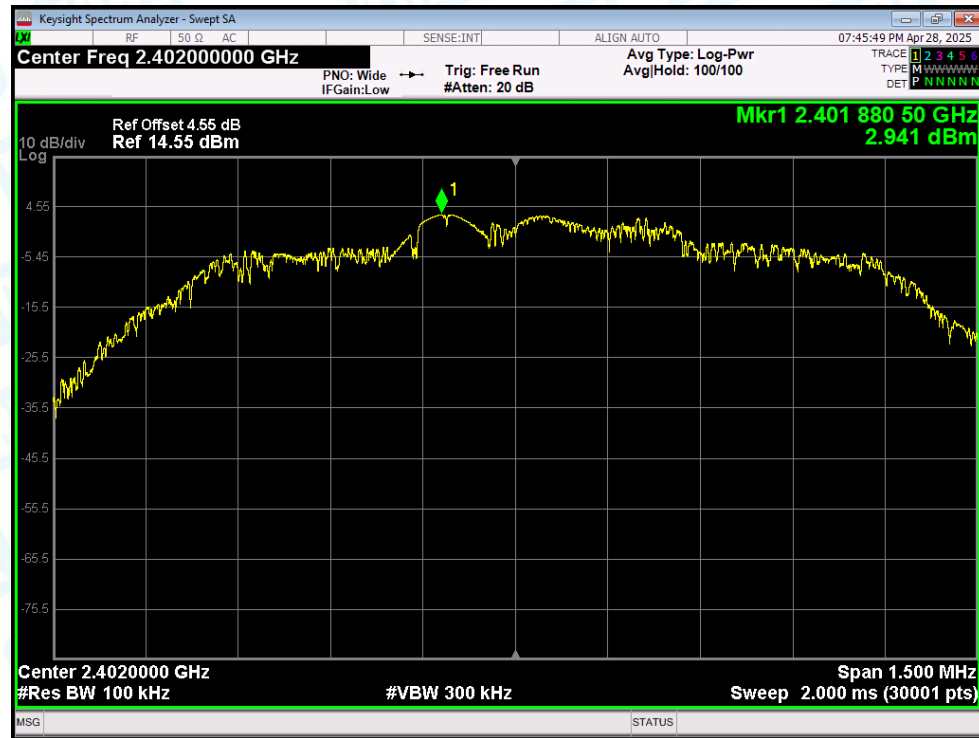
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



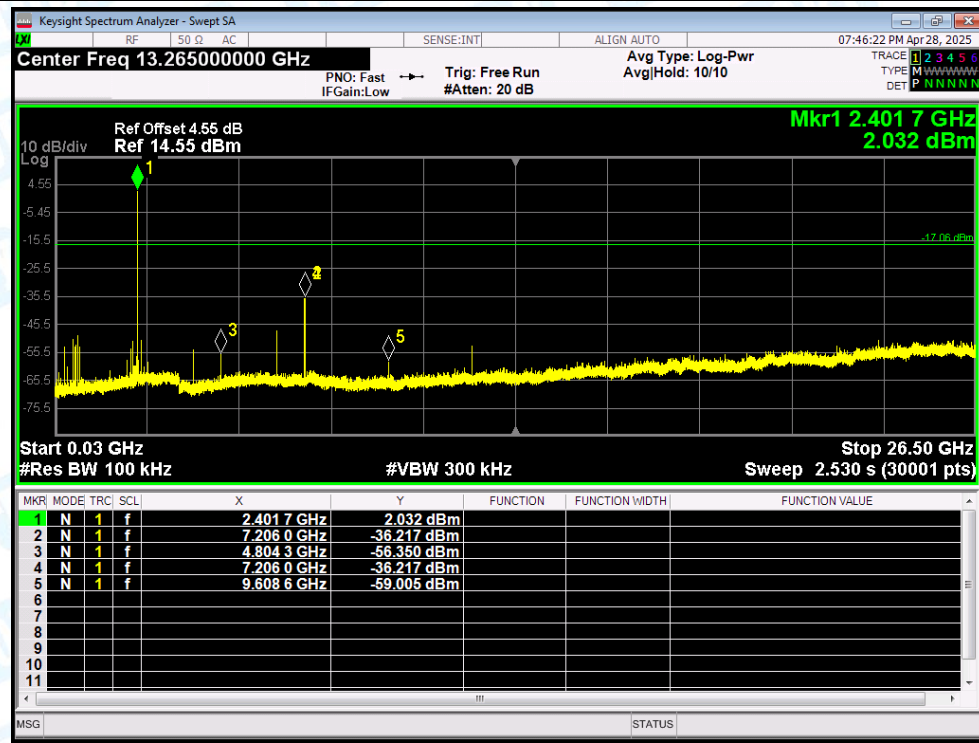
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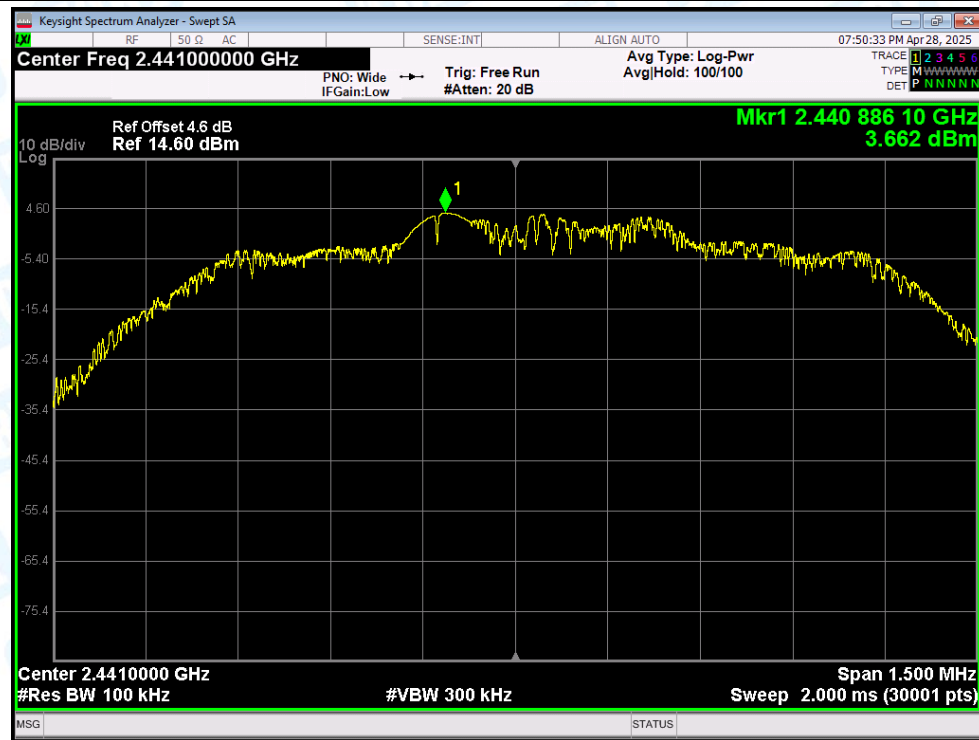
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



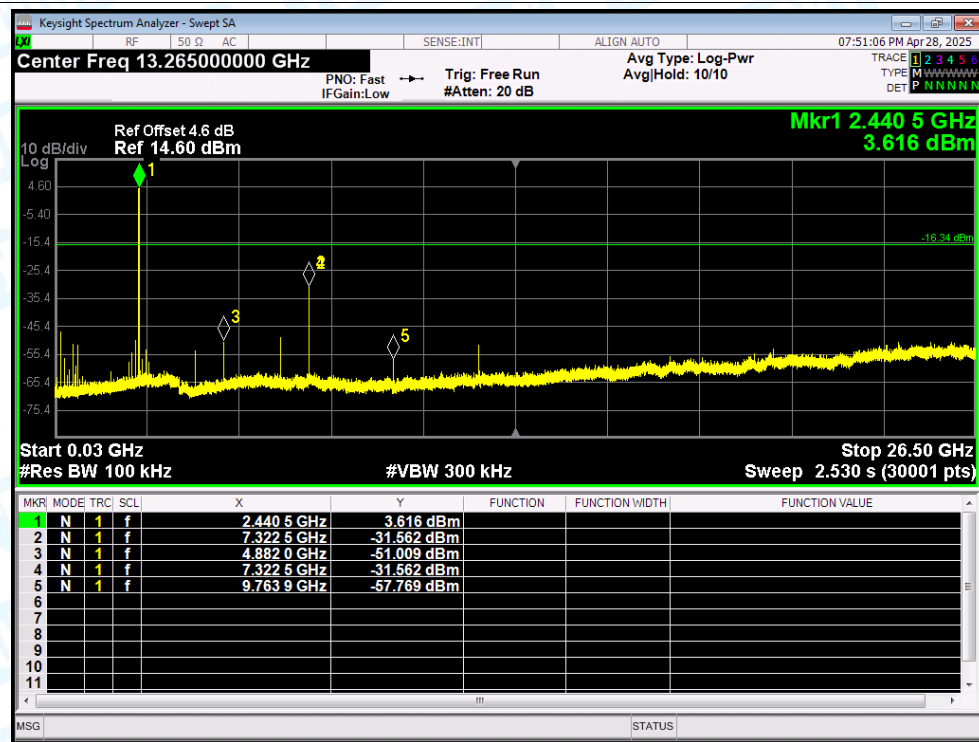
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



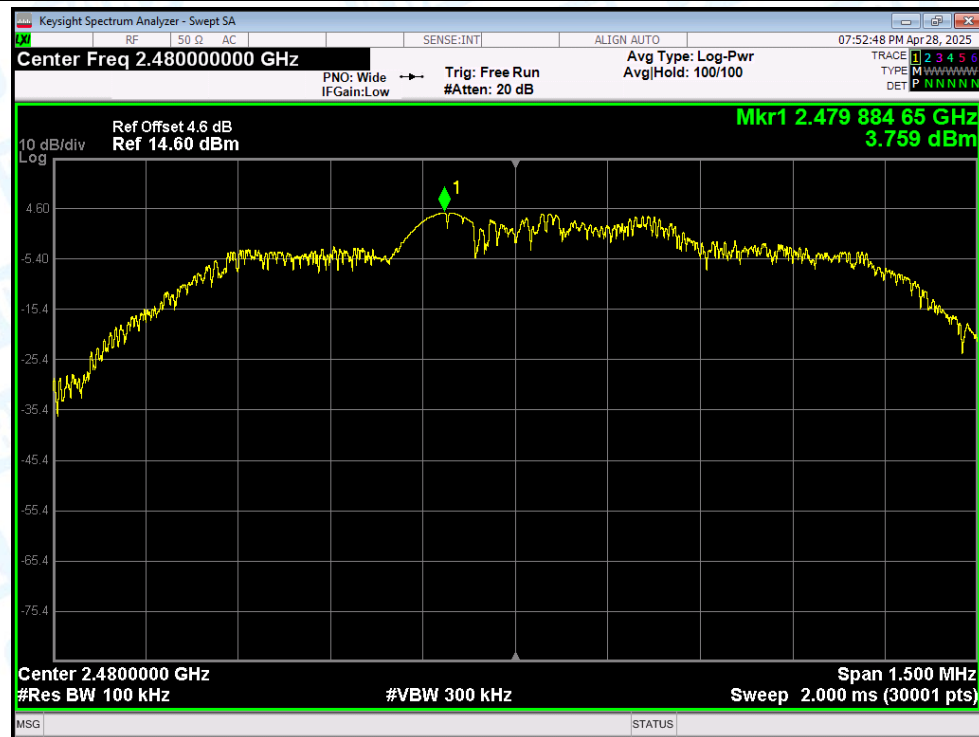
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



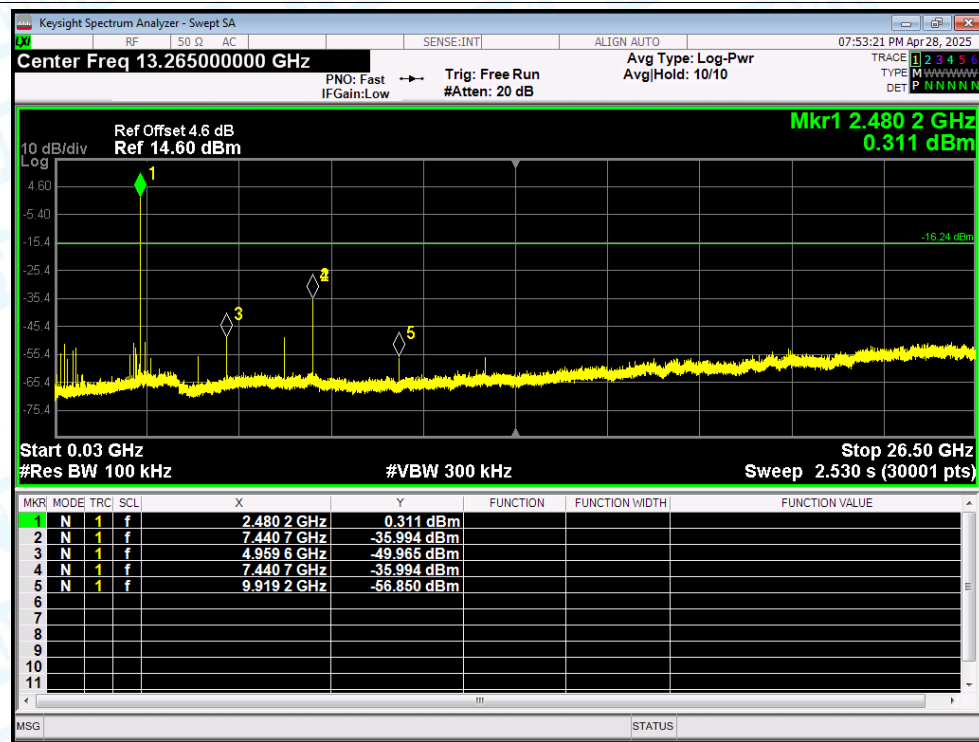
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



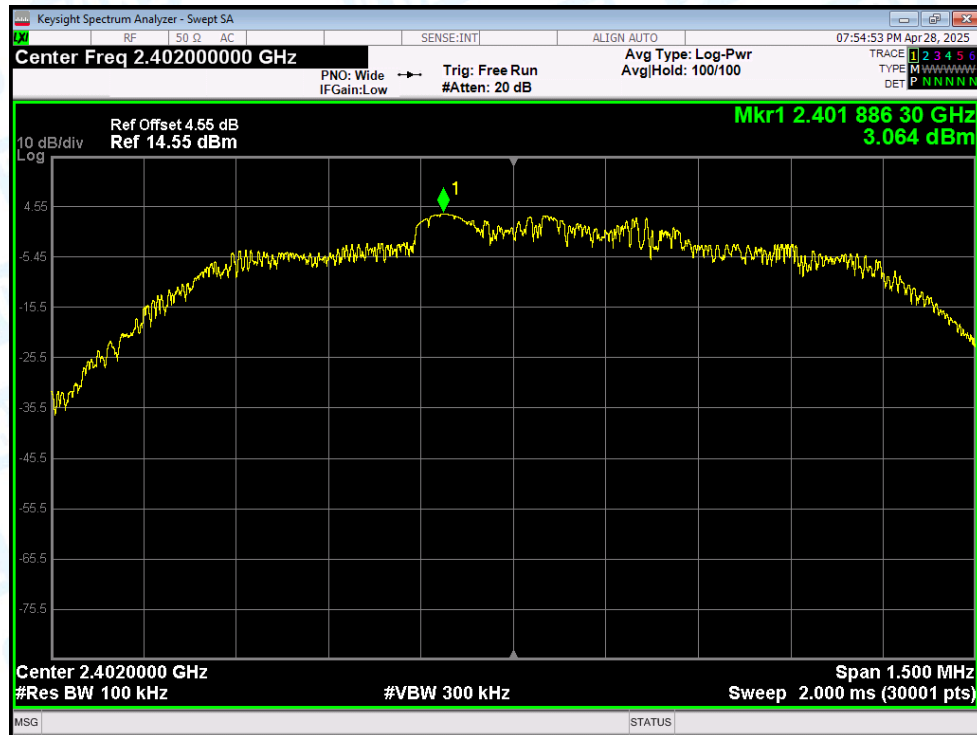
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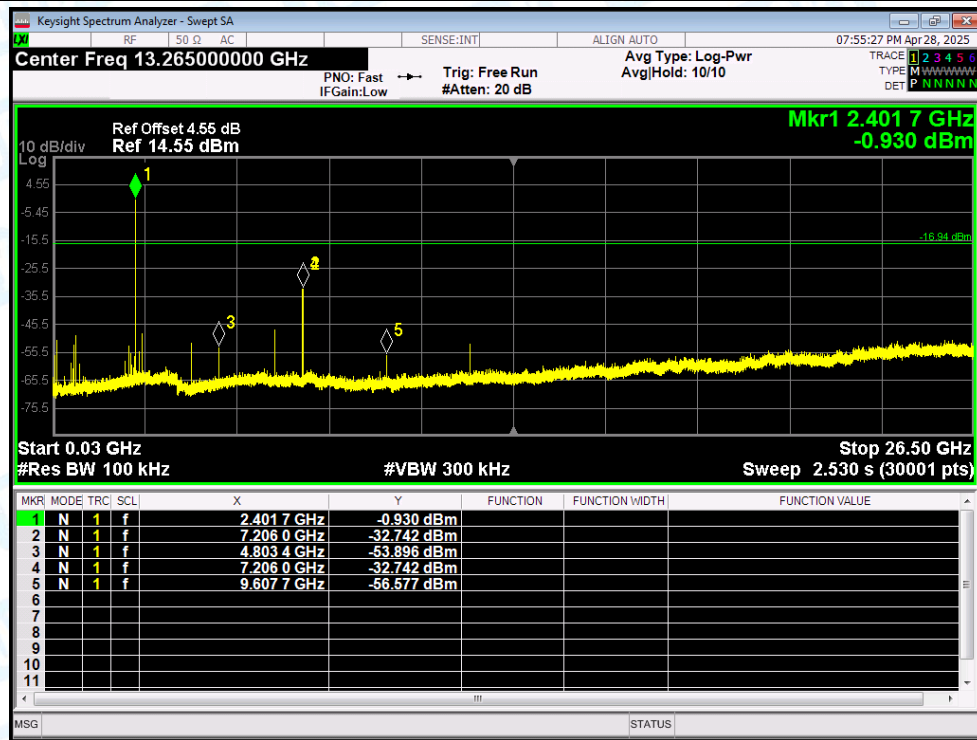
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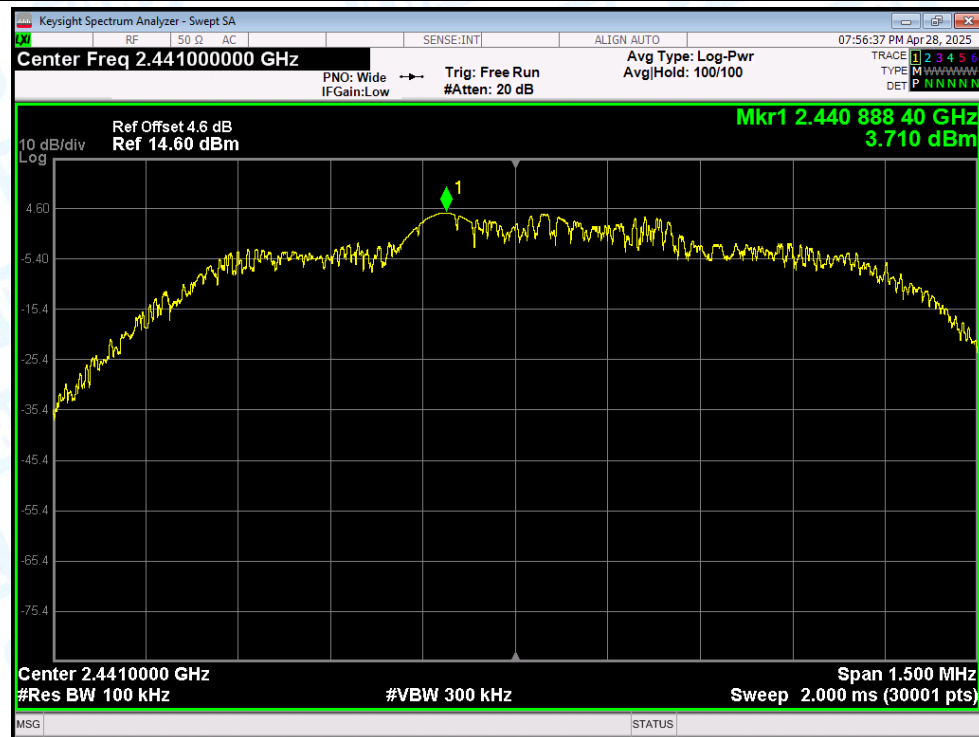
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



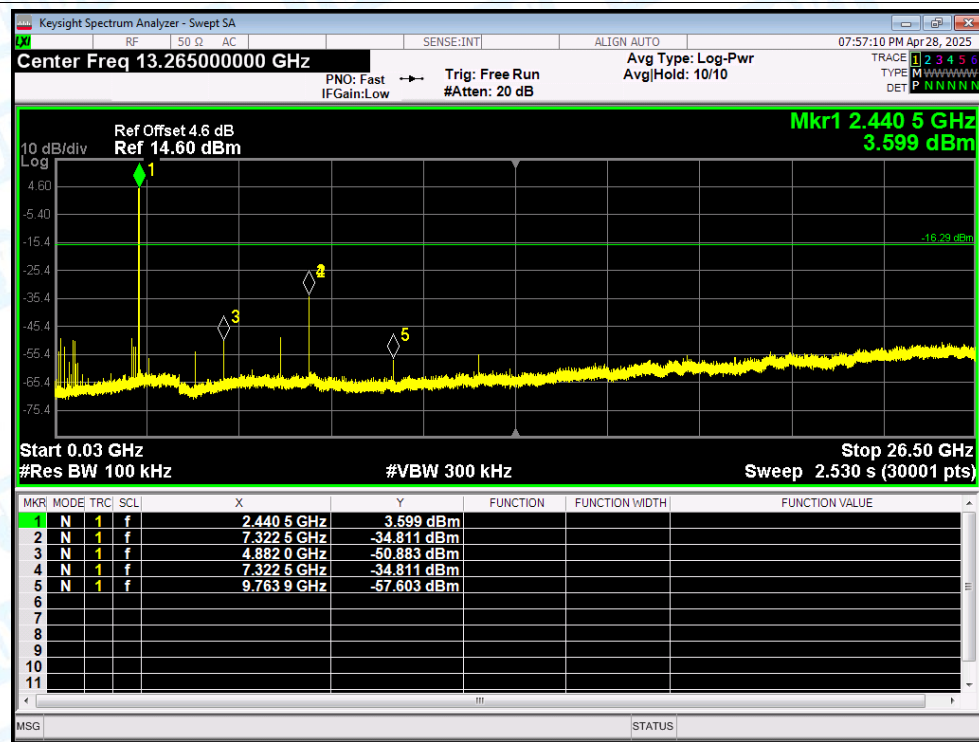
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



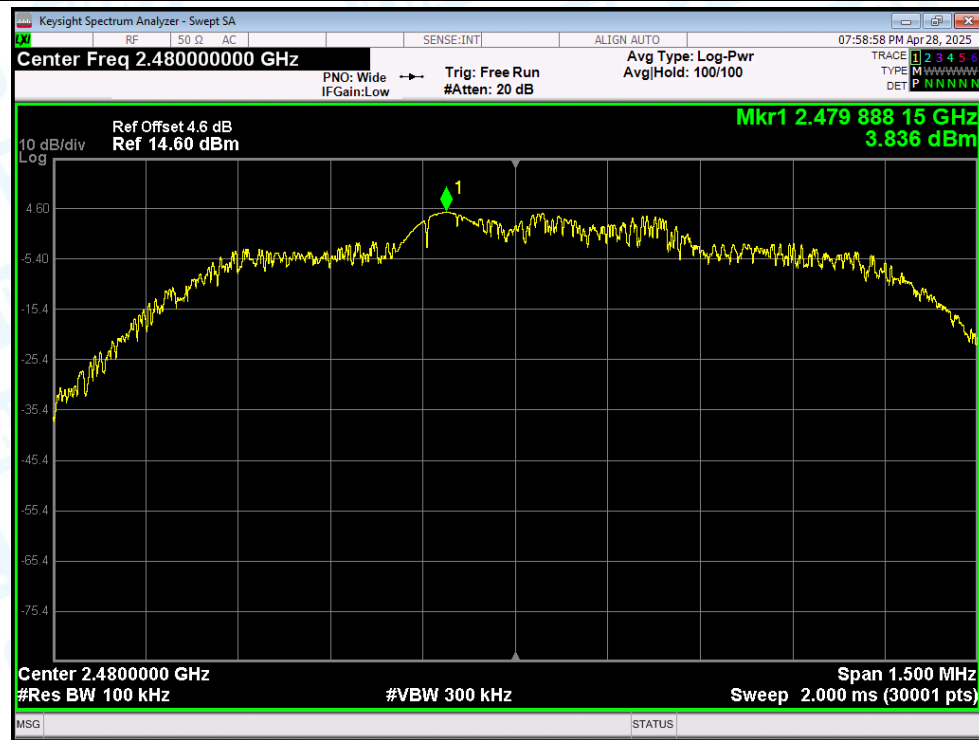
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



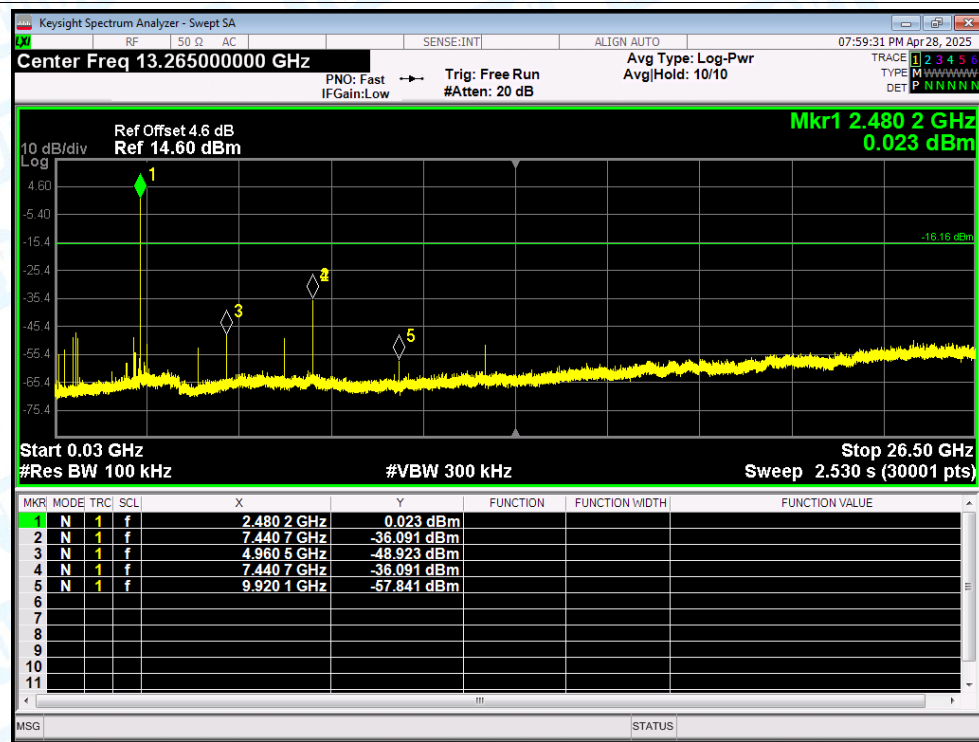
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

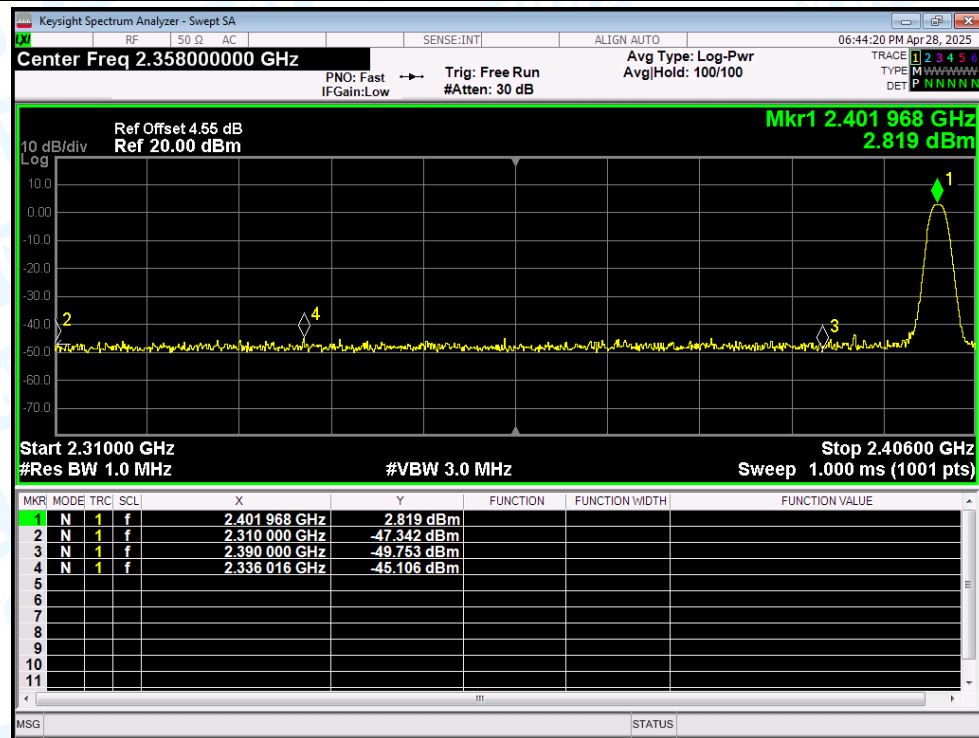


8.Restrict Band

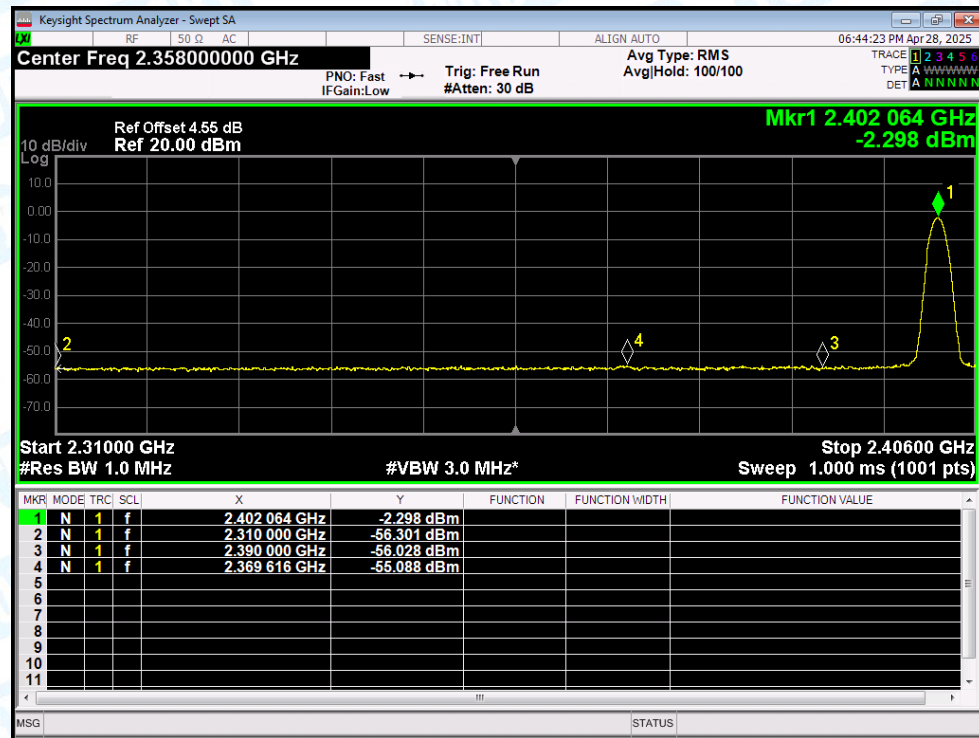
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-47.34	2	-	49.92	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.3	2	5.06	46.02	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2336.016	-45.11	2	-	52.15	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2369.616	-55.09	2	5.06	47.23	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-49.75	2	-	47.51	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-56.03	2	5.06	46.29	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-46.33	2	-	50.93	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-54.32	2	5.06	48	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2484.76	-43.1	2	-	54.16	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.608	-54.27	2	5.06	48.05	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-48.09	2	-	49.17	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-55.43	2	5.06	46.89	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-48.86	2	-	48.4	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.77	2	5.06	45.55	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2368.848	-45.35	2	-	51.91	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2369.232	-54.77	2	5.06	47.55	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-49.13	2	-	48.13	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-56.3	2	5.06	46.02	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-46.46	2	-	50.8	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-54.85	2	5.06	47.47	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2489.128	-43.99	2	-	53.27	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2485.024	-54.52	2	5.06	47.8	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-47.12	2	-	50.14	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.72	2	5.06	46.6	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-48.8	2	-	48.46	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.57	2	5.17	45.86	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2380.176	-43.91	2	-	53.35	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2376.144	-55.24	2	5.17	47.19	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-48.33	2	-	48.93	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-56.01	2	5.17	46.42	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-45.96	2	-	51.3	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-54.89	2	5.06	47.43	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2488.792	-43.42	2	-	53.84	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2484.088	-54.21	2	5.06	48.11	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-46.75	2	-	50.51	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-54.97	2	5.06	47.35	Average	54	Pass

Test Graphs

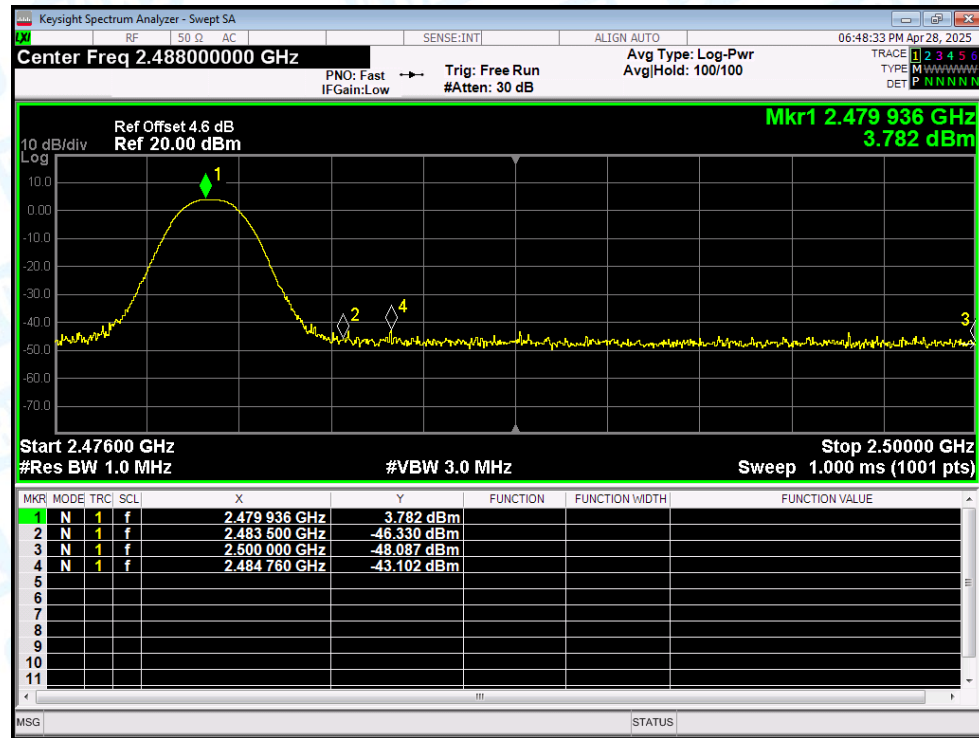
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



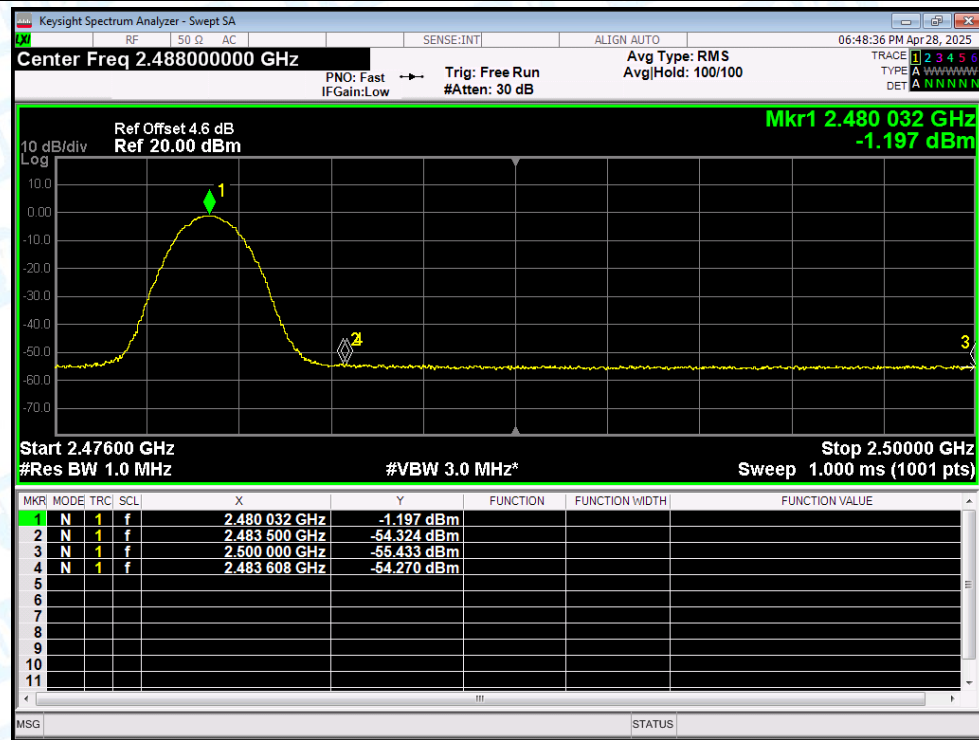
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



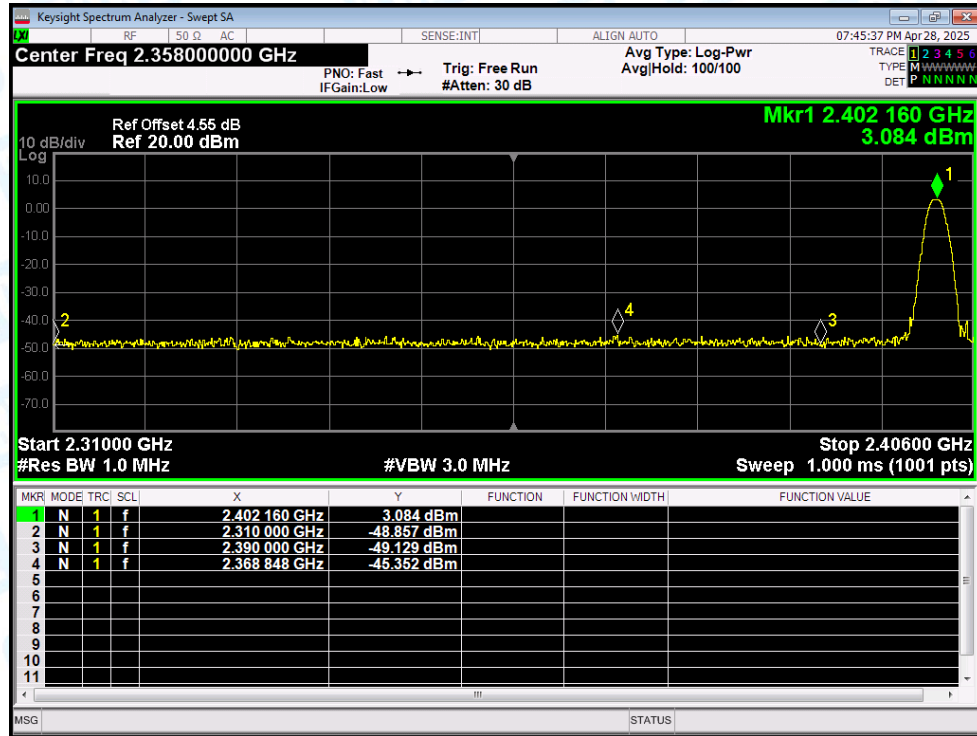
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



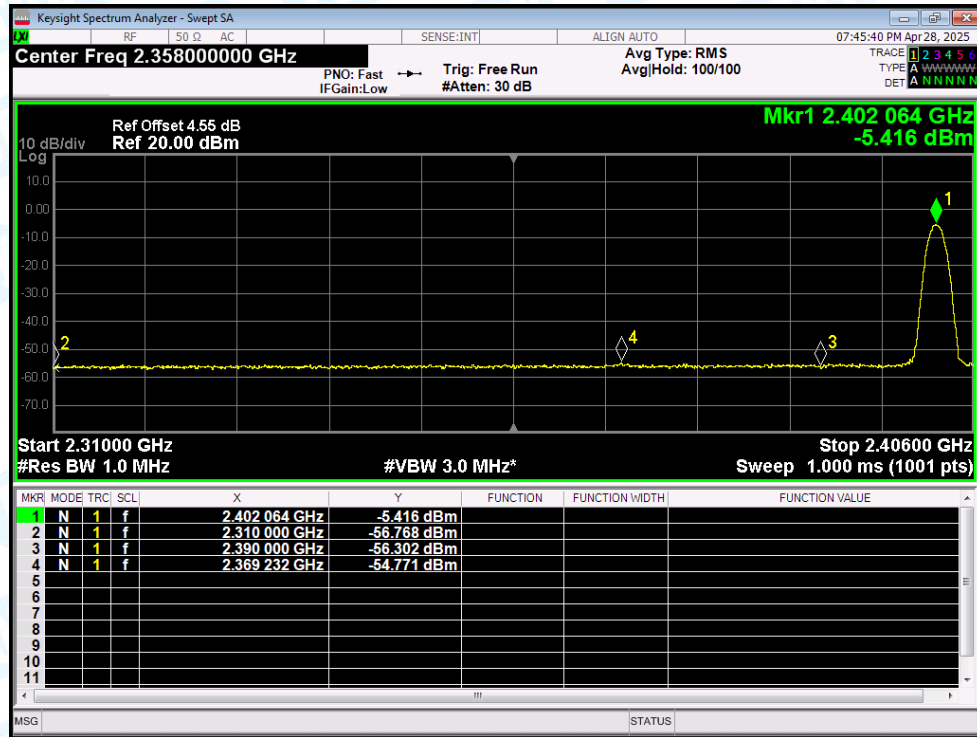
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



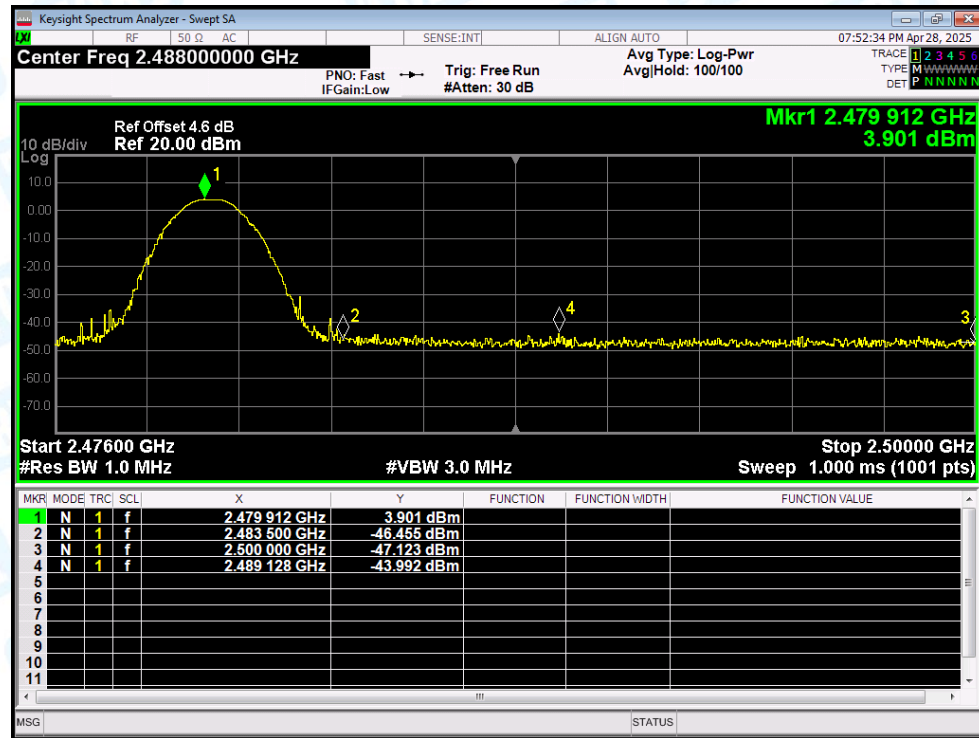
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



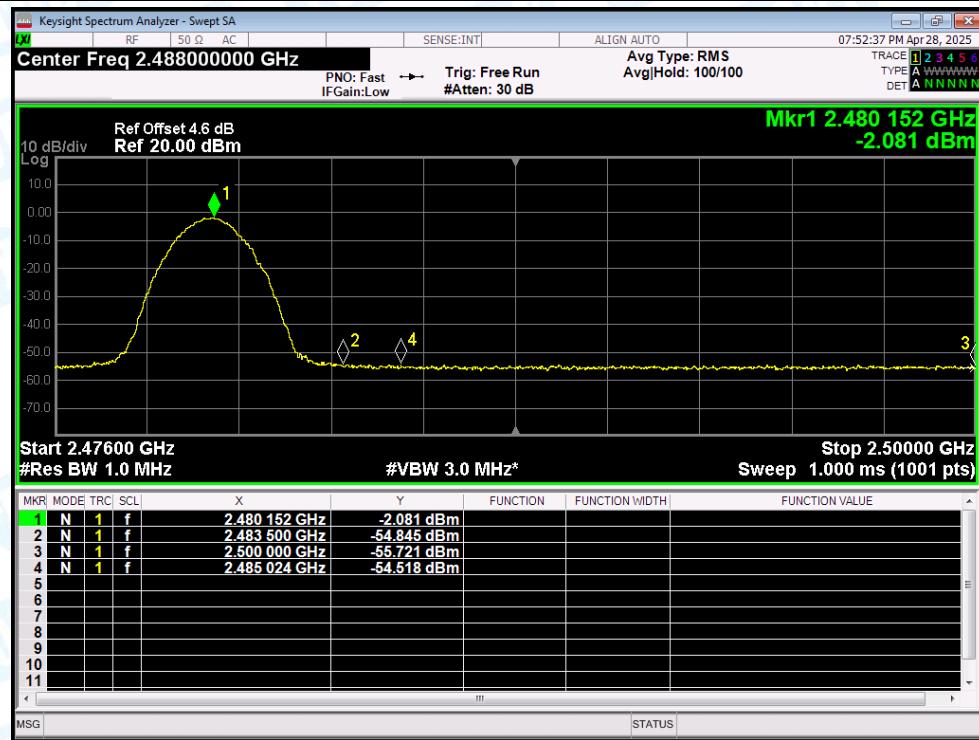
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



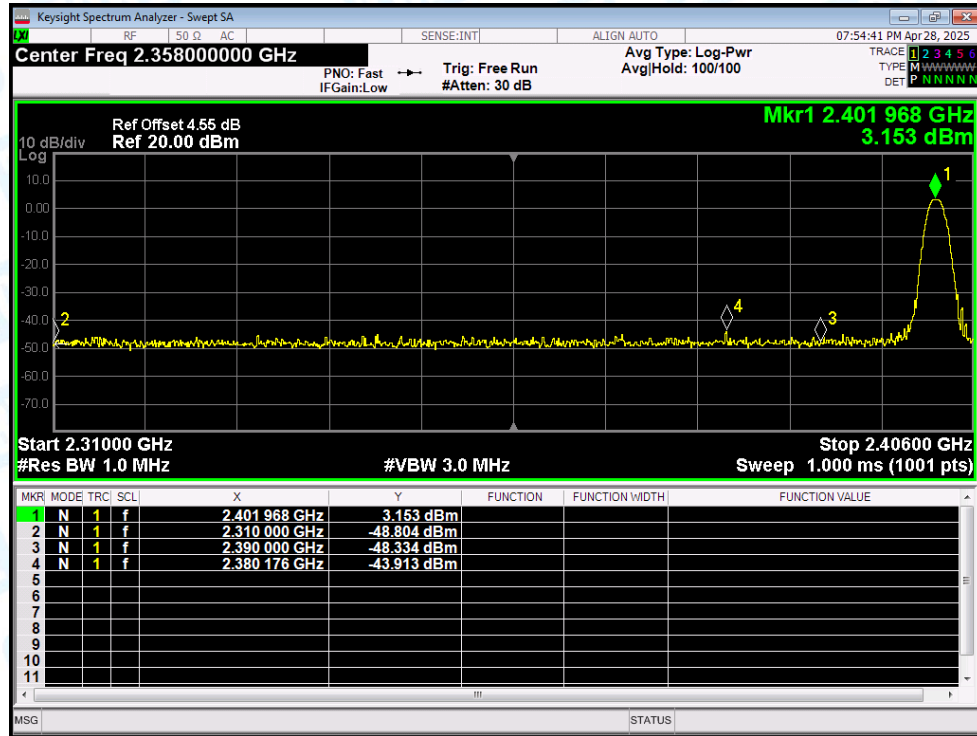
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



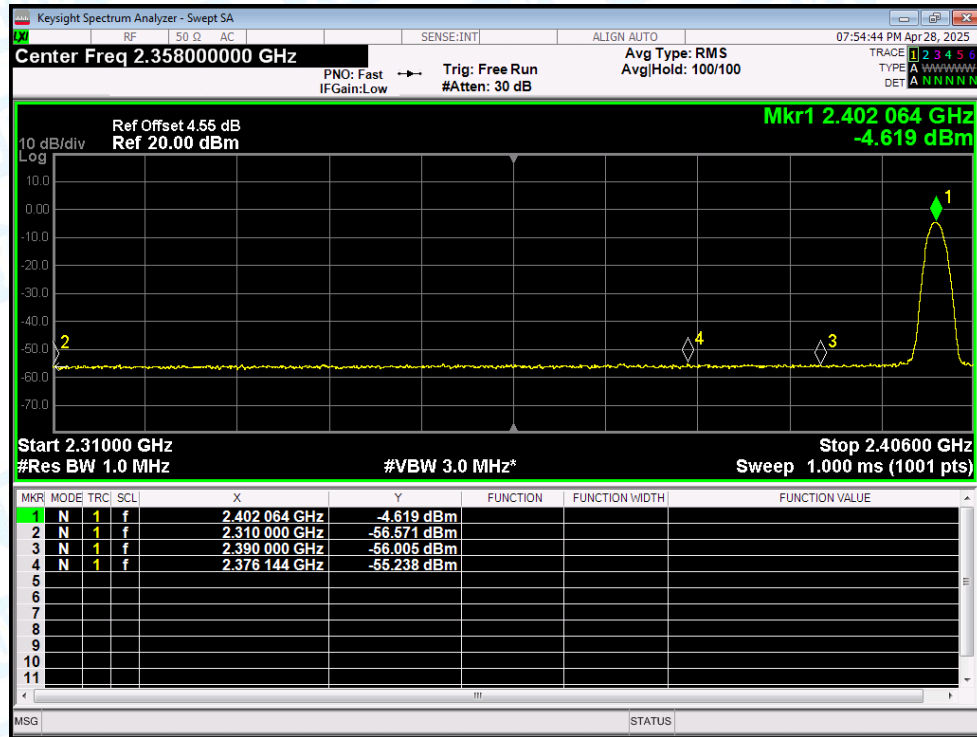
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



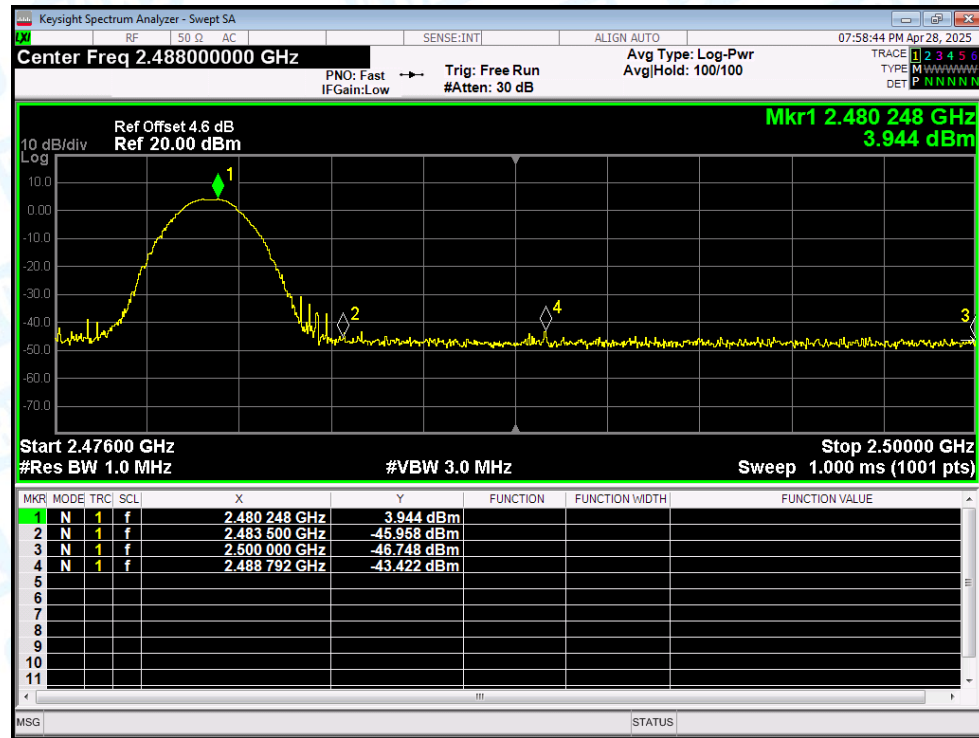
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



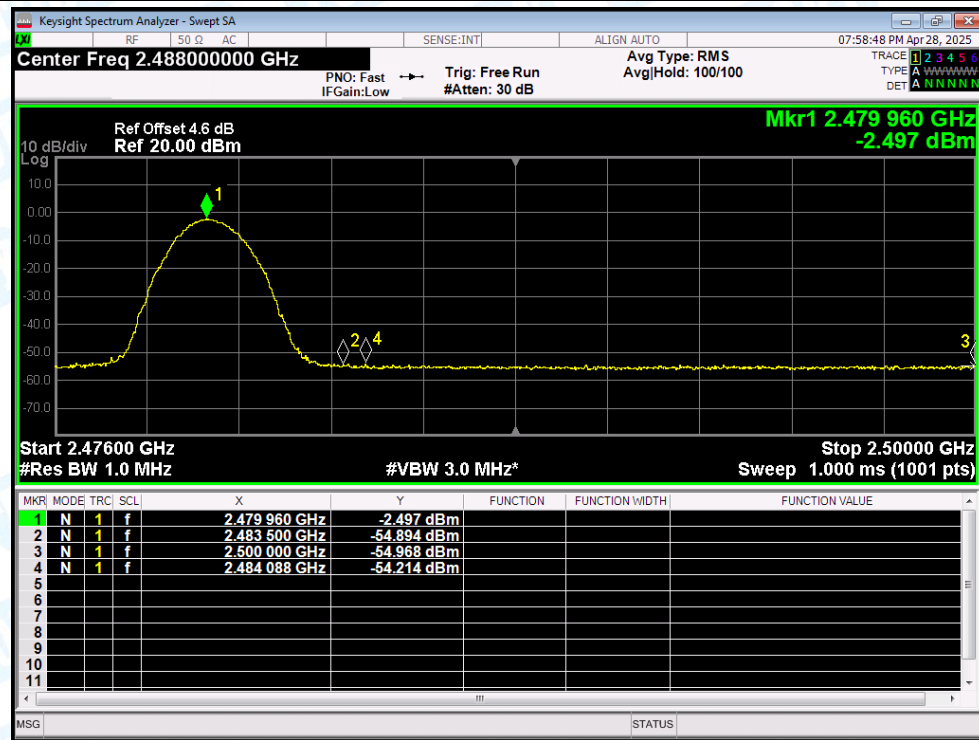
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

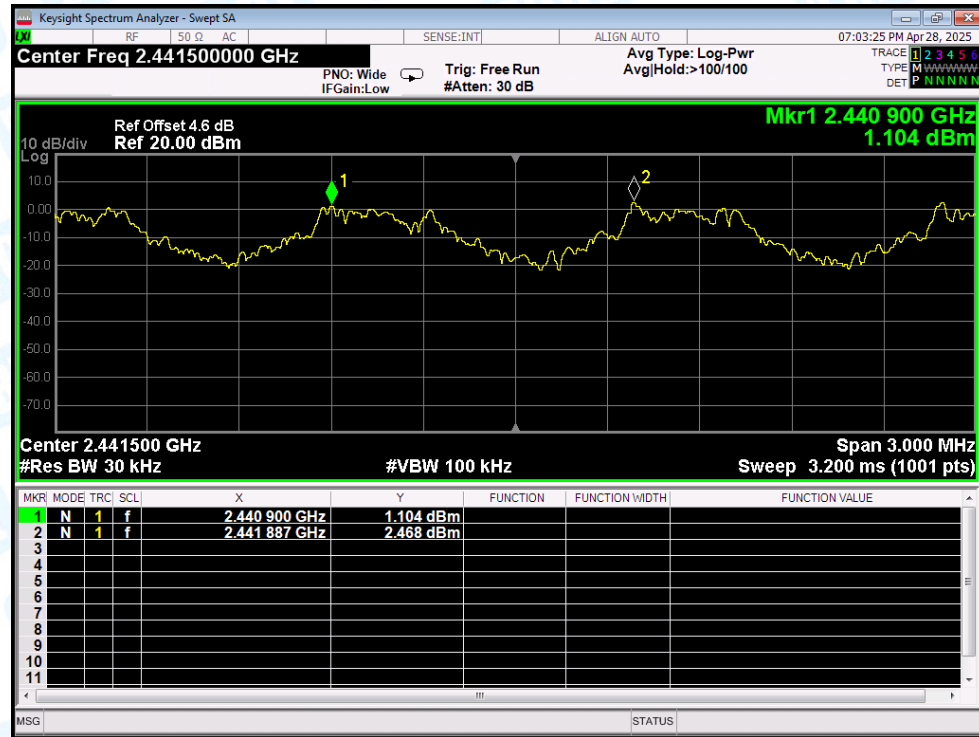


9. Carrier Frequencies Separation

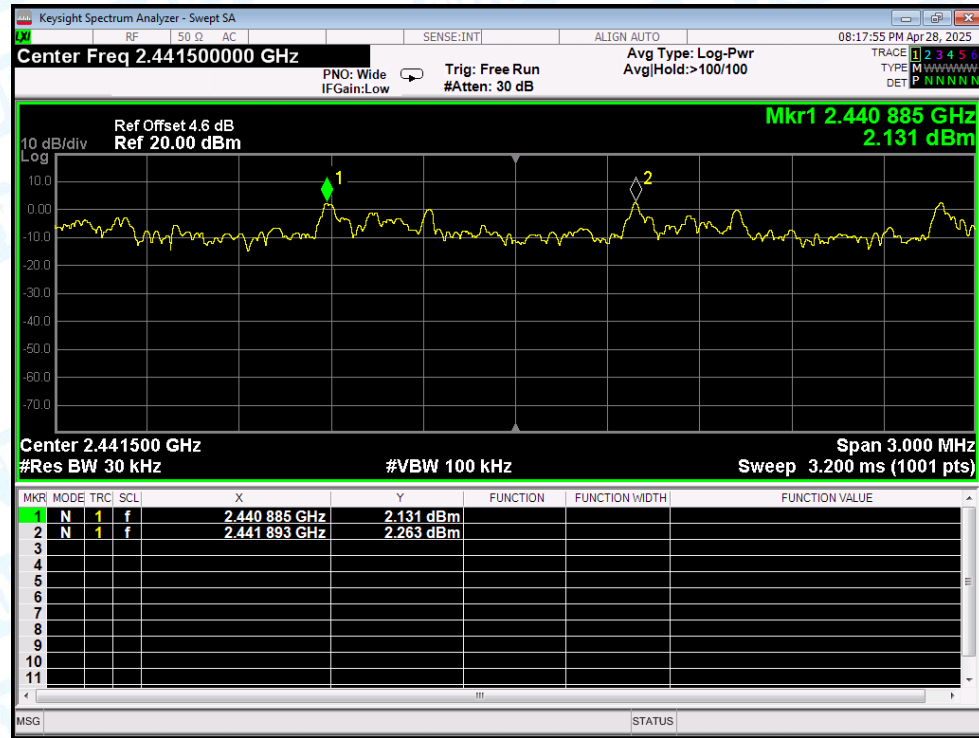
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.9	2441.887	0.987	0.62	Pass
NVNT	2-DH1	Ant1	2440.885	2441.893	1.008	0.793	Pass
NVNT	3-DH1	Ant1	2440.876	2441.887	1.011	0.8	Pass

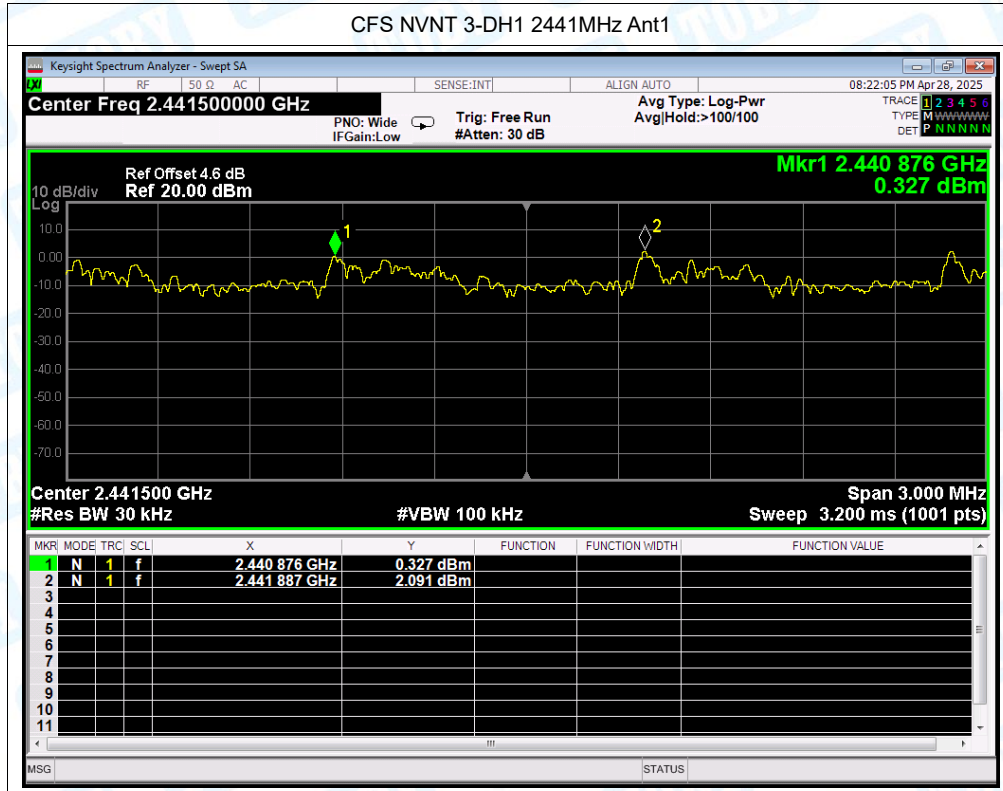
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



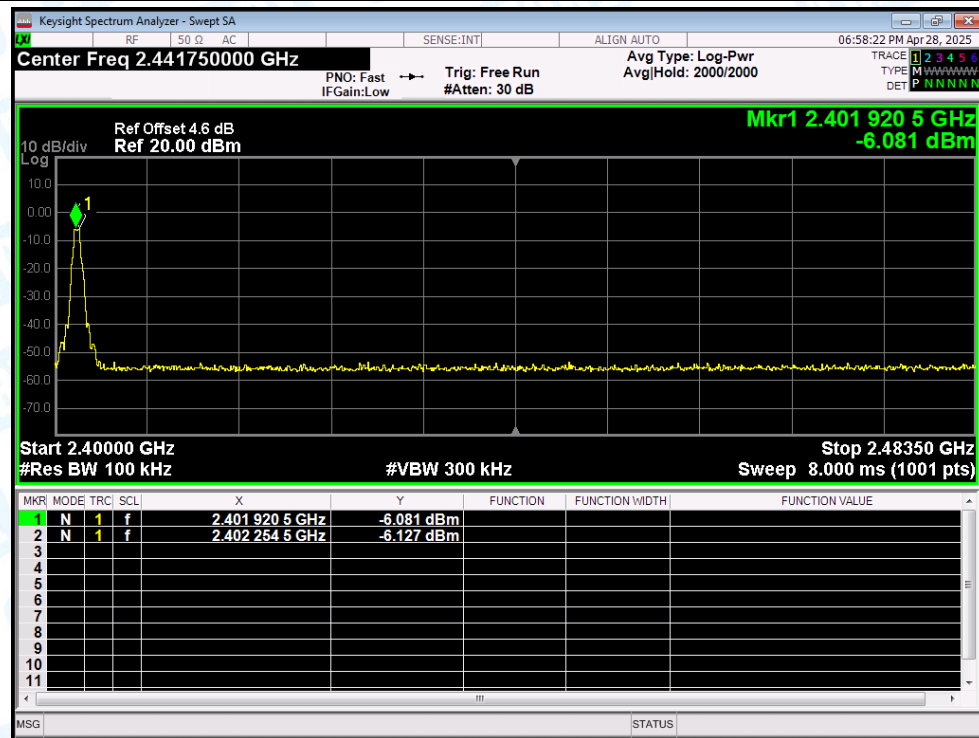


10.Number of Hopping Channel

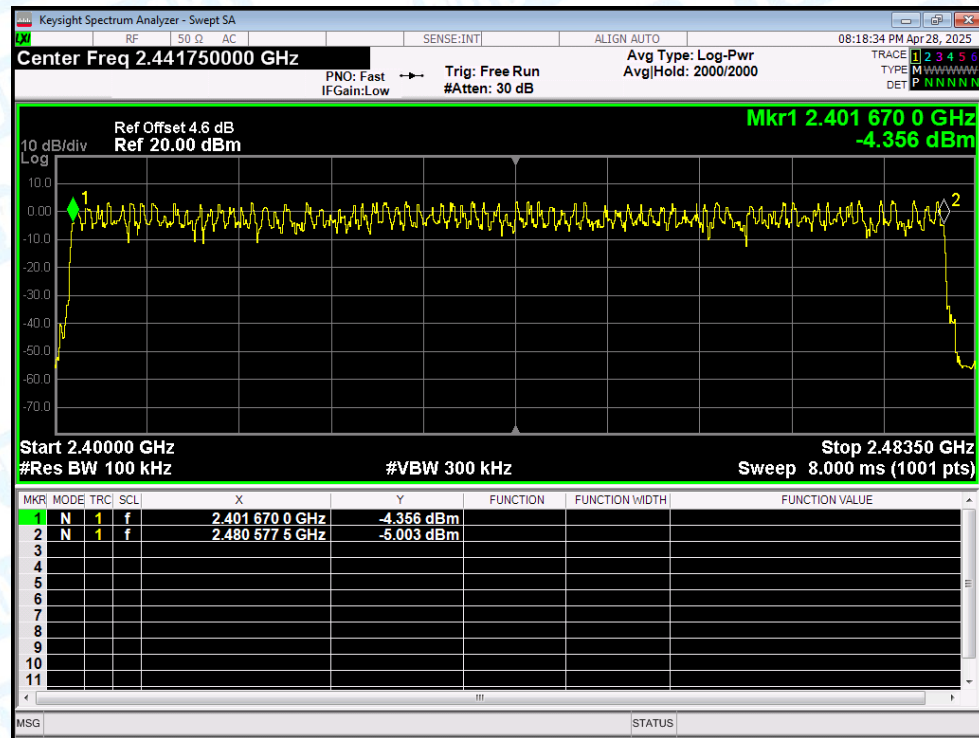
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

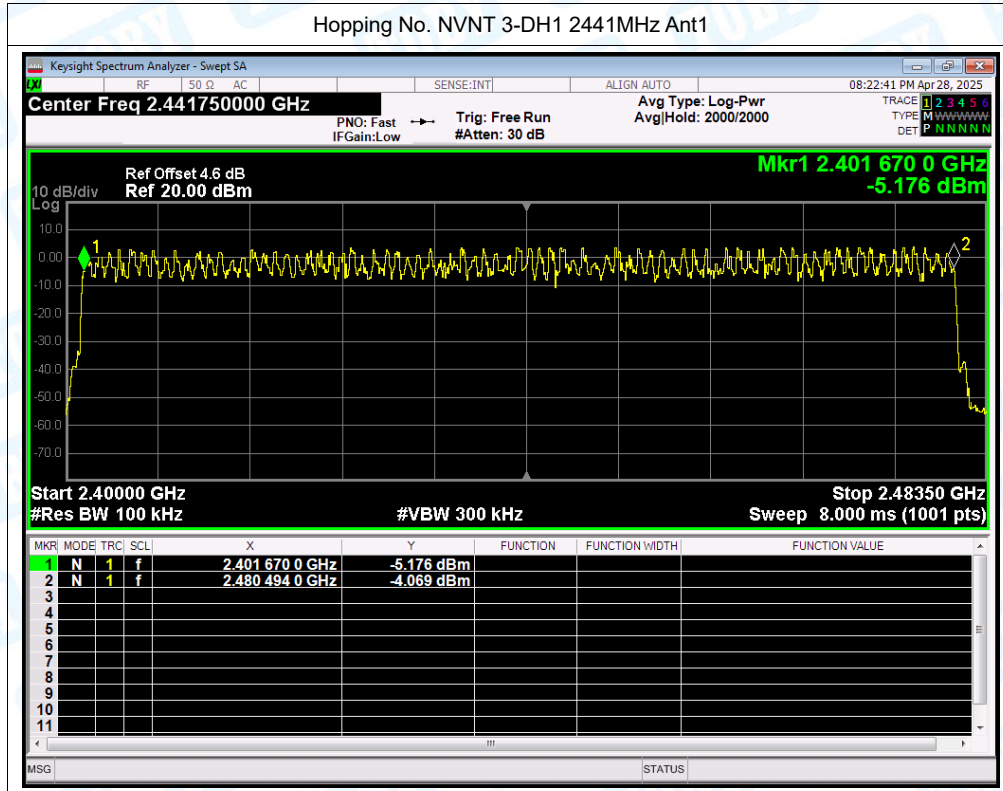
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



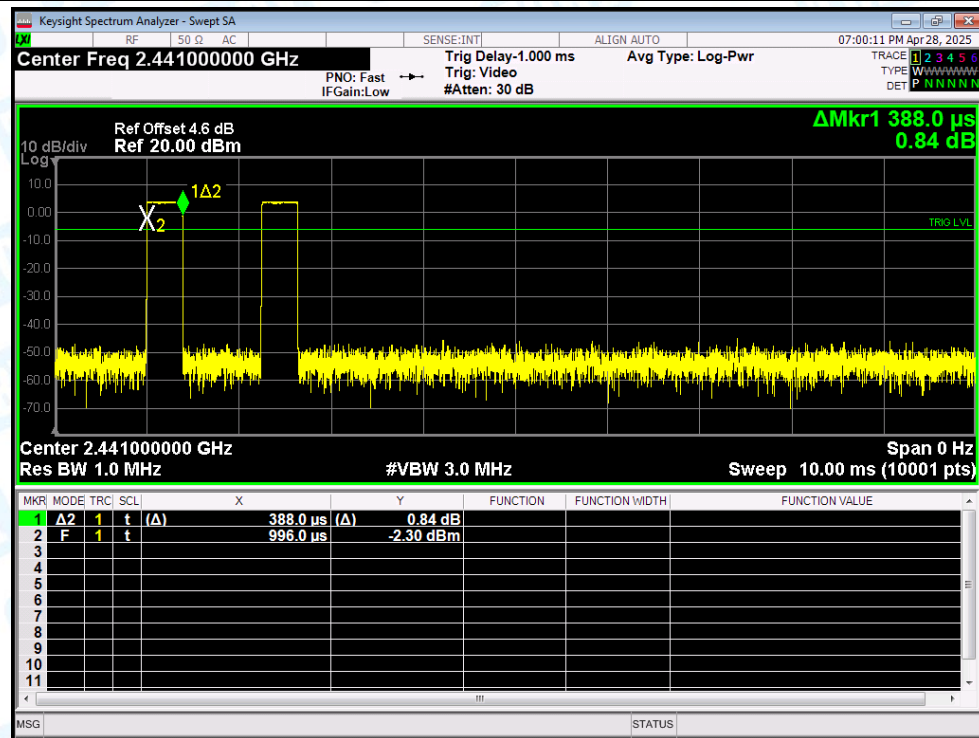


11.Dwell Time

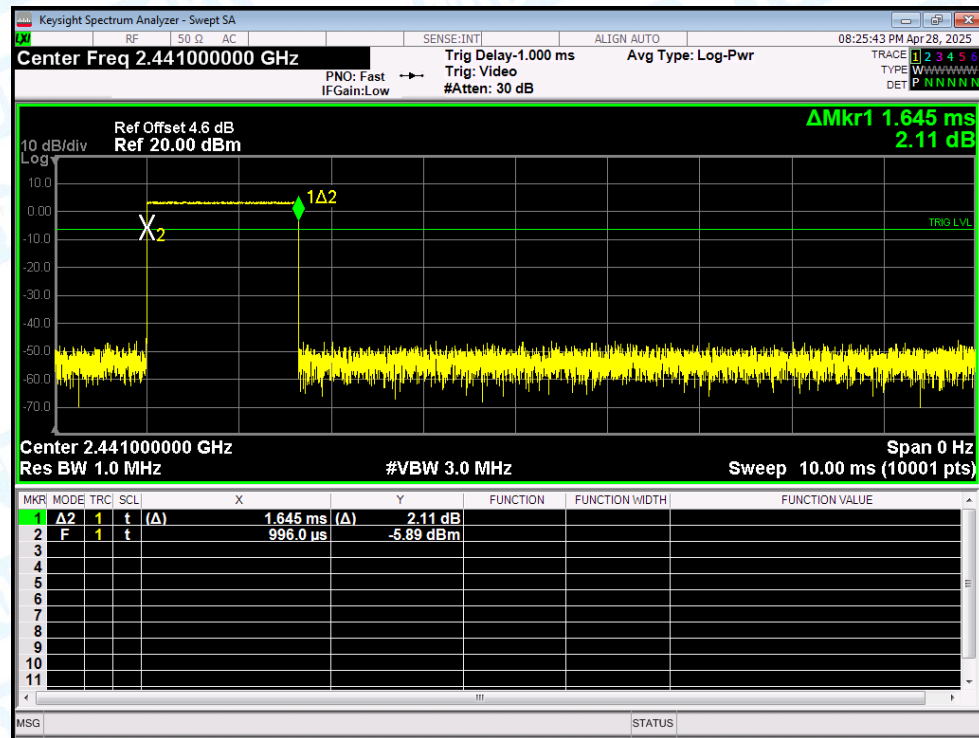
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.388	124.16	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.645	263.2	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.893	308.587	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.386	123.52	31600	400	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
NVNT	3-DH1	2441	Ant1	0.386	123.52	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.636	261.76	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.887	307.947	31600	400	Pass

Test Graphs

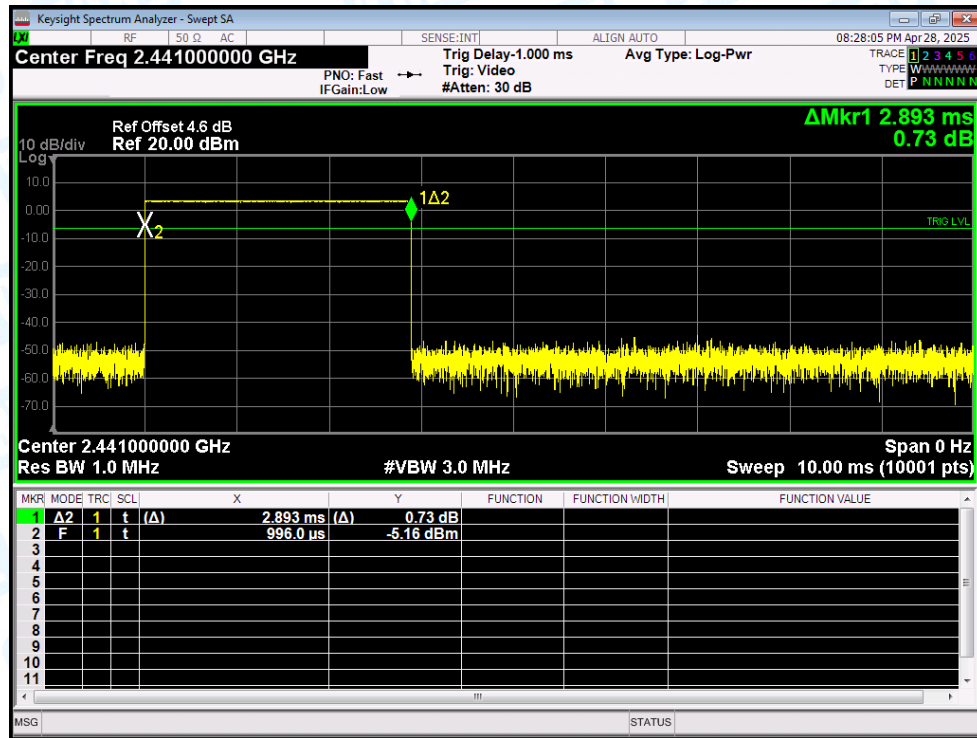
Dwell NVNT 1-DH1 2441MHz Ant1



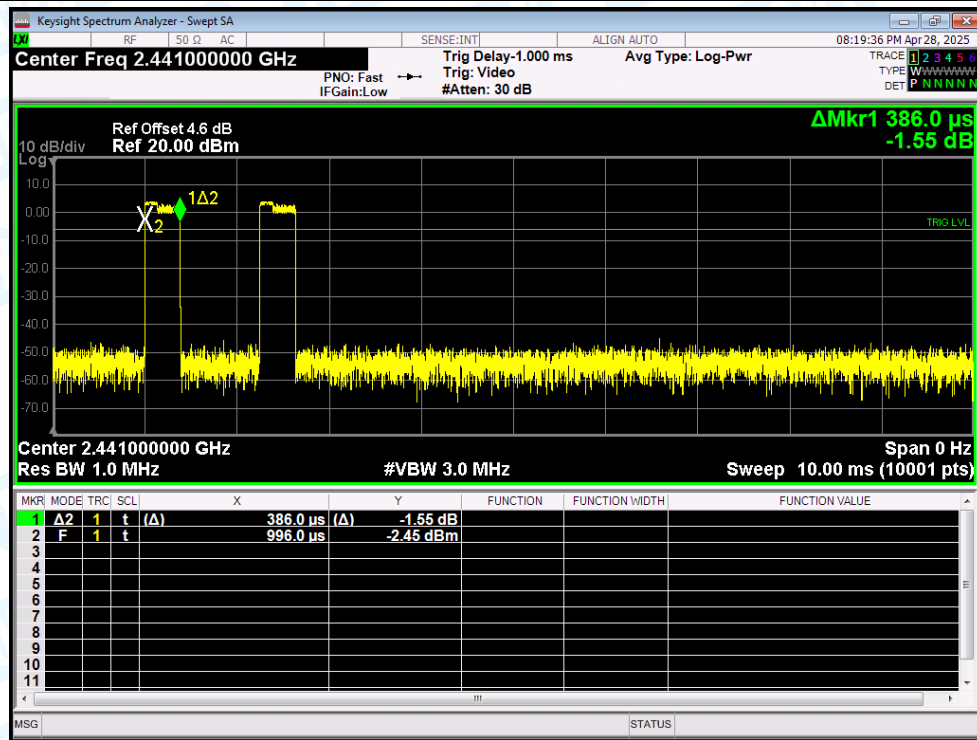
Dwell NVNT 1-DH3 2441MHz Ant1



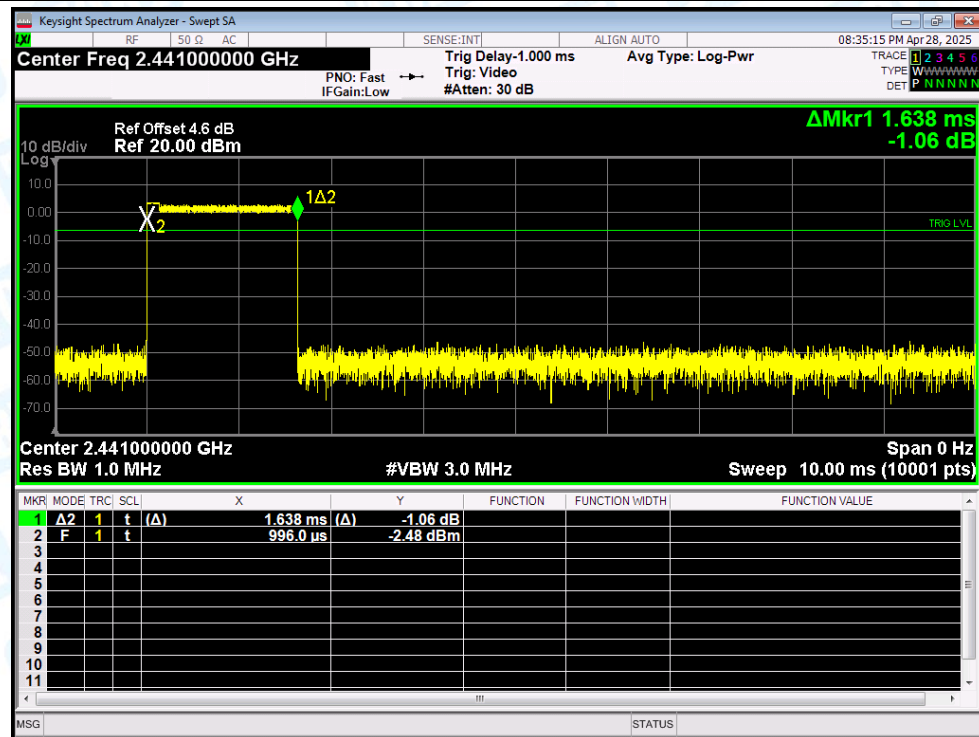
Dwell NVNT 1-DH5 2441MHz Ant1



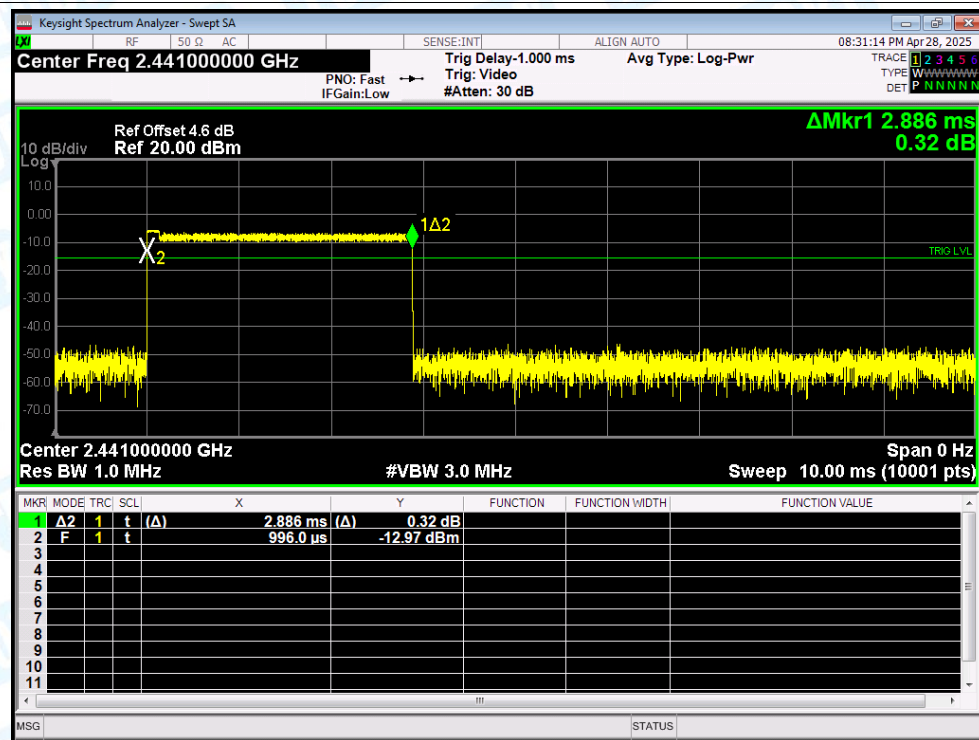
Dwell NVNT 2-DH1 2441MHz Ant1



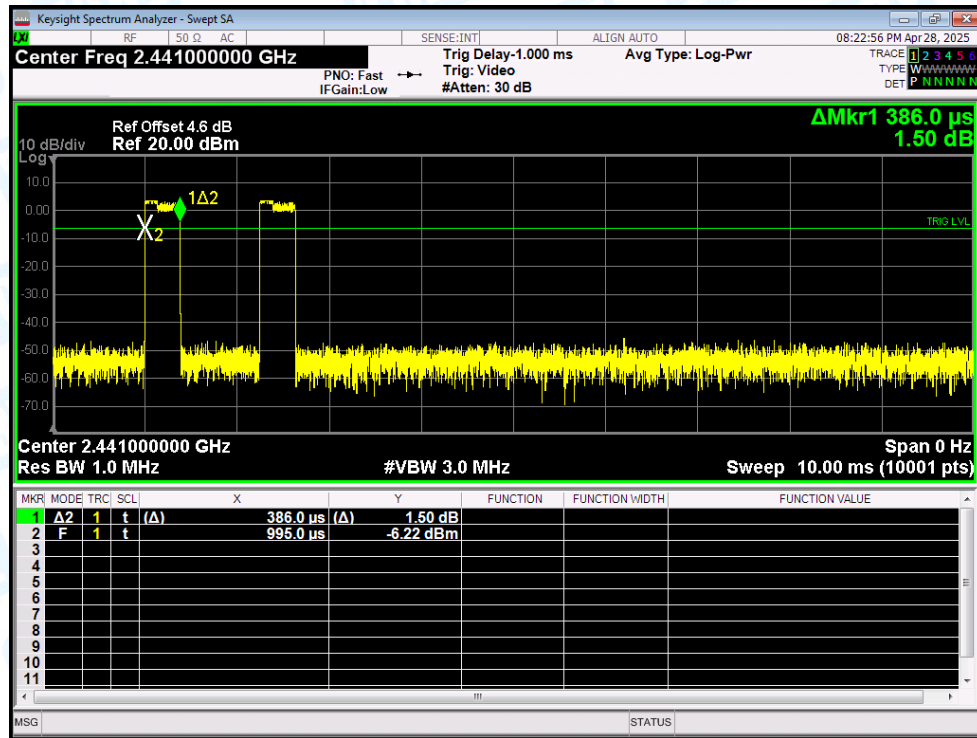
Dwell NVNT 2-DH3 2441MHz Ant1



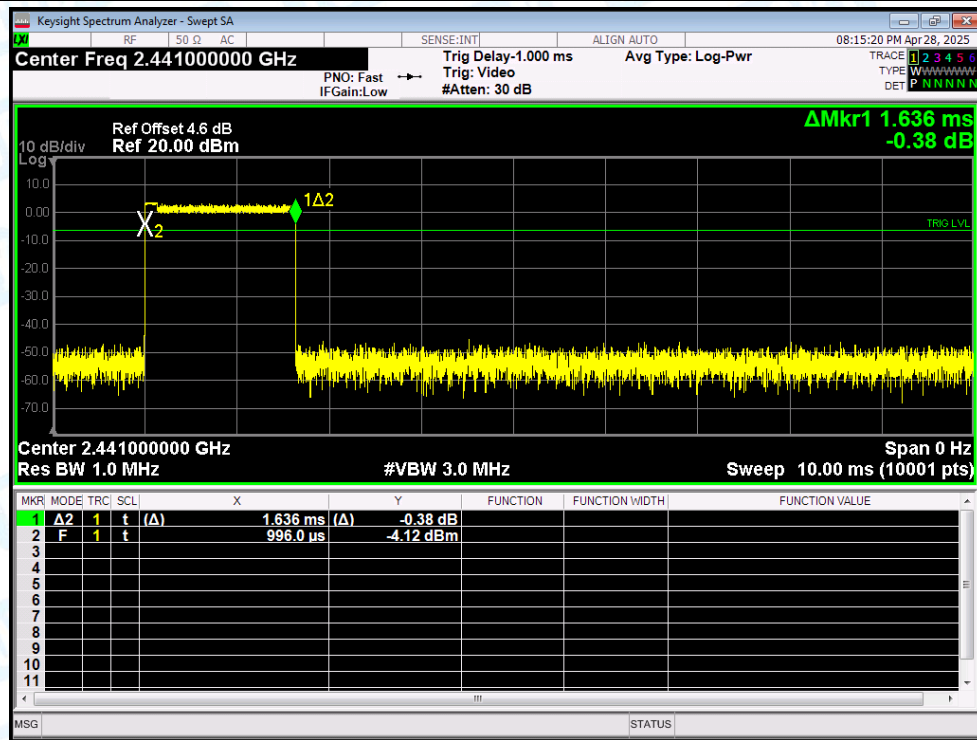
Dwell NVNT 2-DH5 2441MHz Ant1

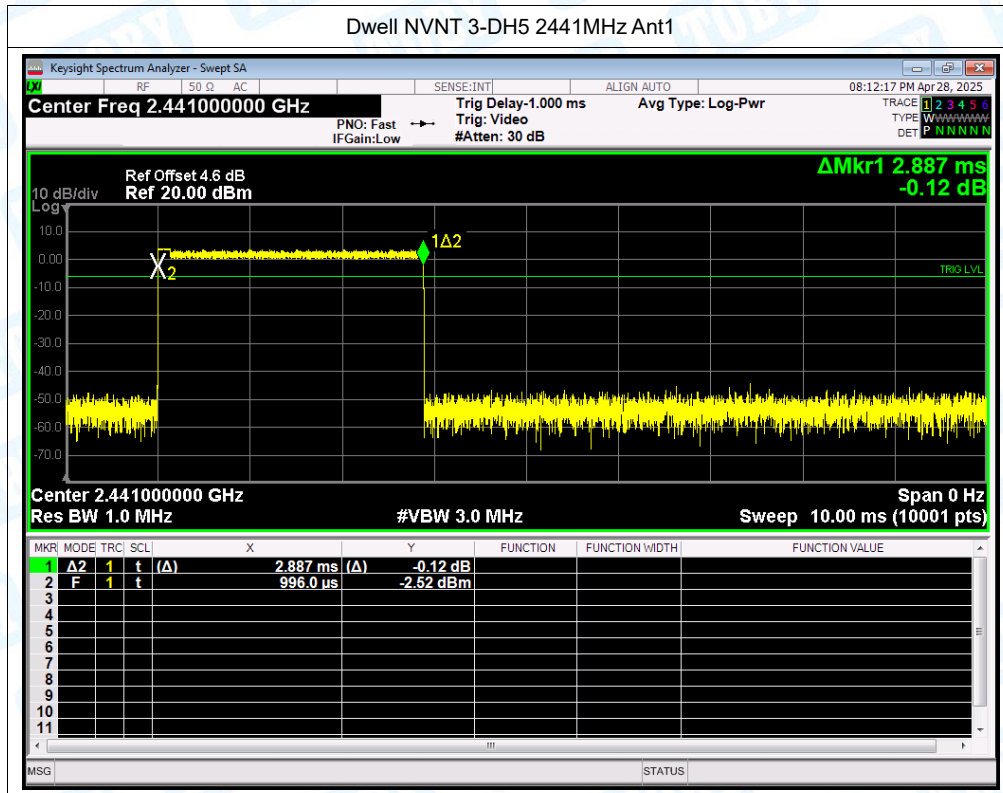


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





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