

# RF Test Data for Bluetooth(BR+EDR) (Conducted Measurements)

General Description of EUT	
<b>Product Name:</b>	Smart Watch
<b>Test Model:</b>	EW5
<b>Sample ID:</b>	HC-C-202404-0039-01-01
Environmental Conditions	
<b>Temperature:</b>	22.6°C
<b>Relative Humidity:</b>	48%
<b>Test Voltage:</b>	DC 3.7V
<b>Test Engineer:</b>	Jolin Lee
Note: For a more detailed features description, please refer to the report TBR-C-202404-0039-41 The report only show the worst case data.	



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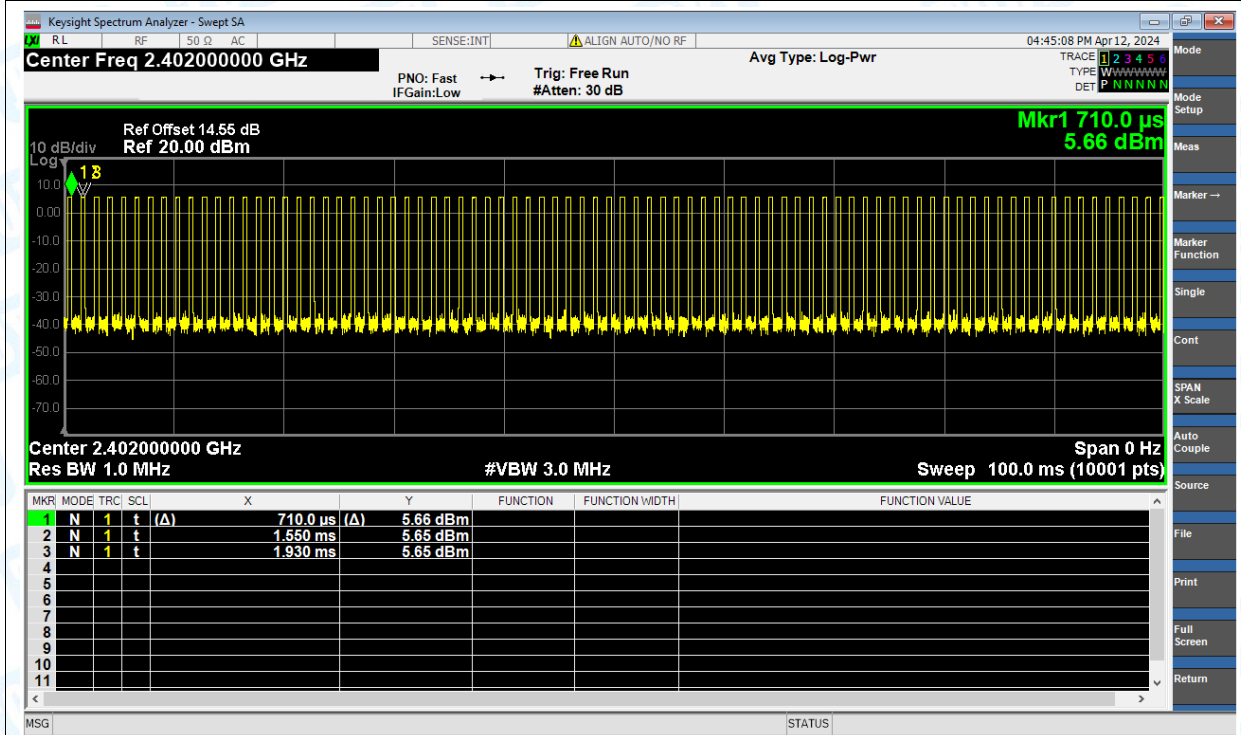


## 1. Duty Cycle

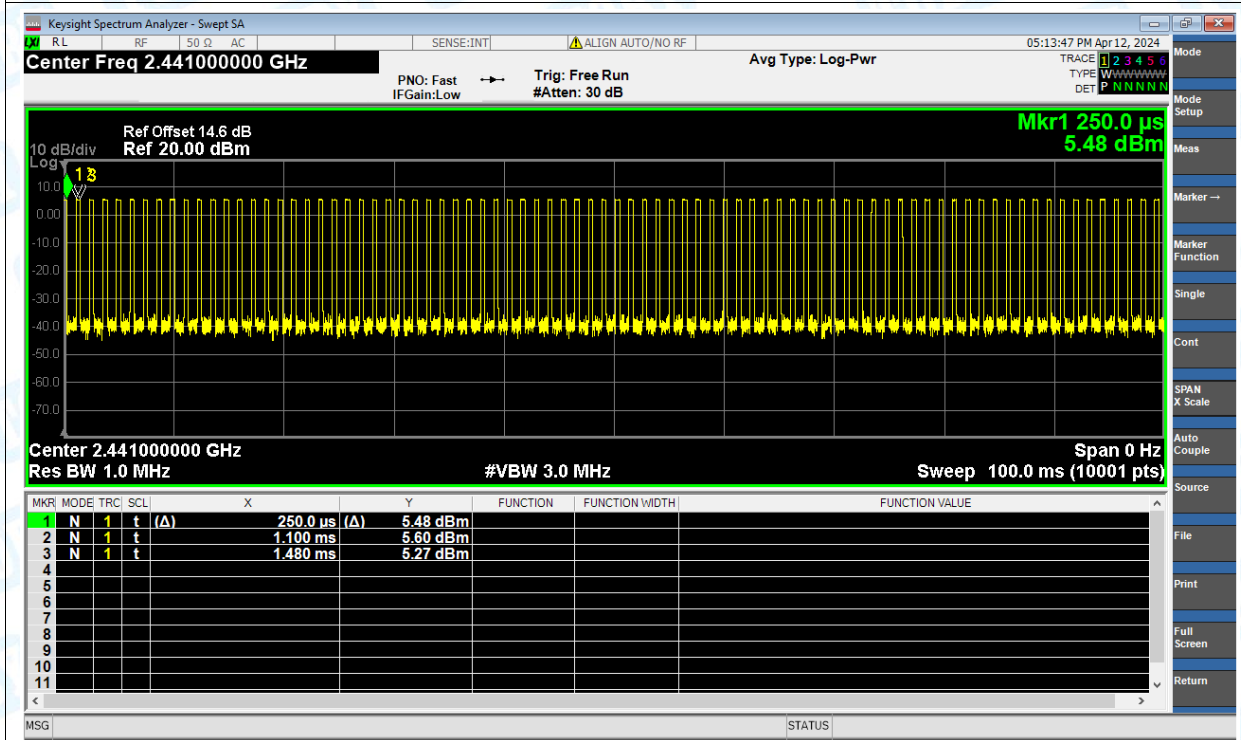
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	31.15	5.07	2.63
NVNT	1-DH1	2441	Ant1	30.89	5.1	2.63
NVNT	1-DH1	2480	Ant1	30.89	5.1	2.63
NVNT	2-DH1	2402	Ant1	31.71	4.99	2.56
NVNT	2-DH1	2441	Ant1	31.71	4.99	2.56
NVNT	2-DH1	2480	Ant1	31.71	4.99	2.56
NVNT	3-DH1	2402	Ant1	31.71	4.99	2.56
NVNT	3-DH1	2441	Ant1	31.45	5.02	2.56
NVNT	3-DH1	2480	Ant1	31.71	4.99	2.56

Test Graphs

Duty Cycle NVNT 1-DH1 2402MHz Ant1

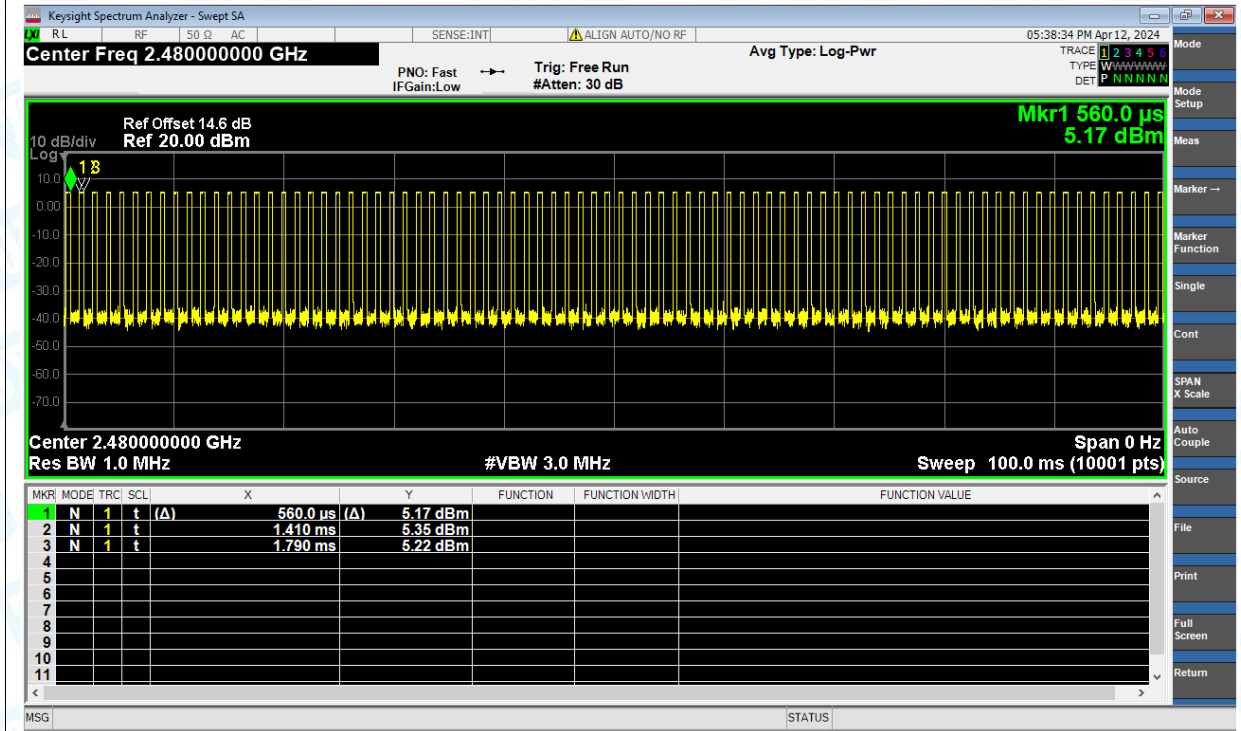


Duty Cycle NVNT 1-DH1 2441MHz Ant1

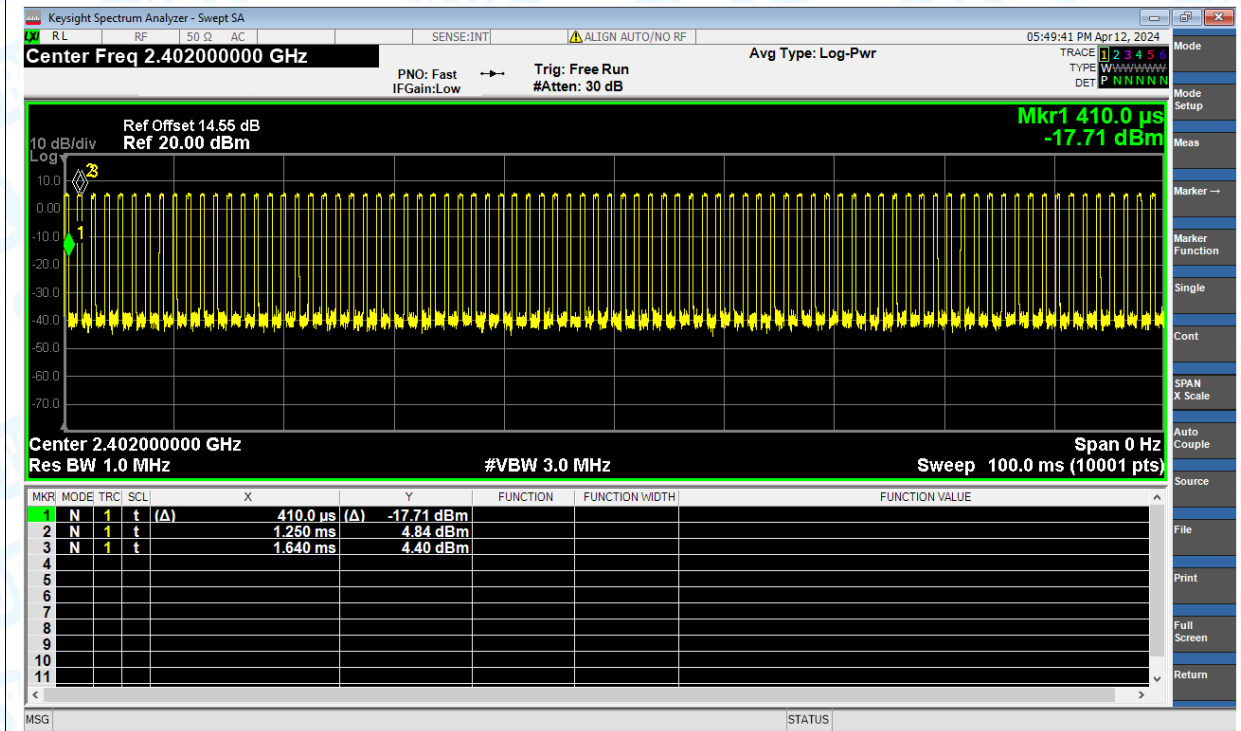




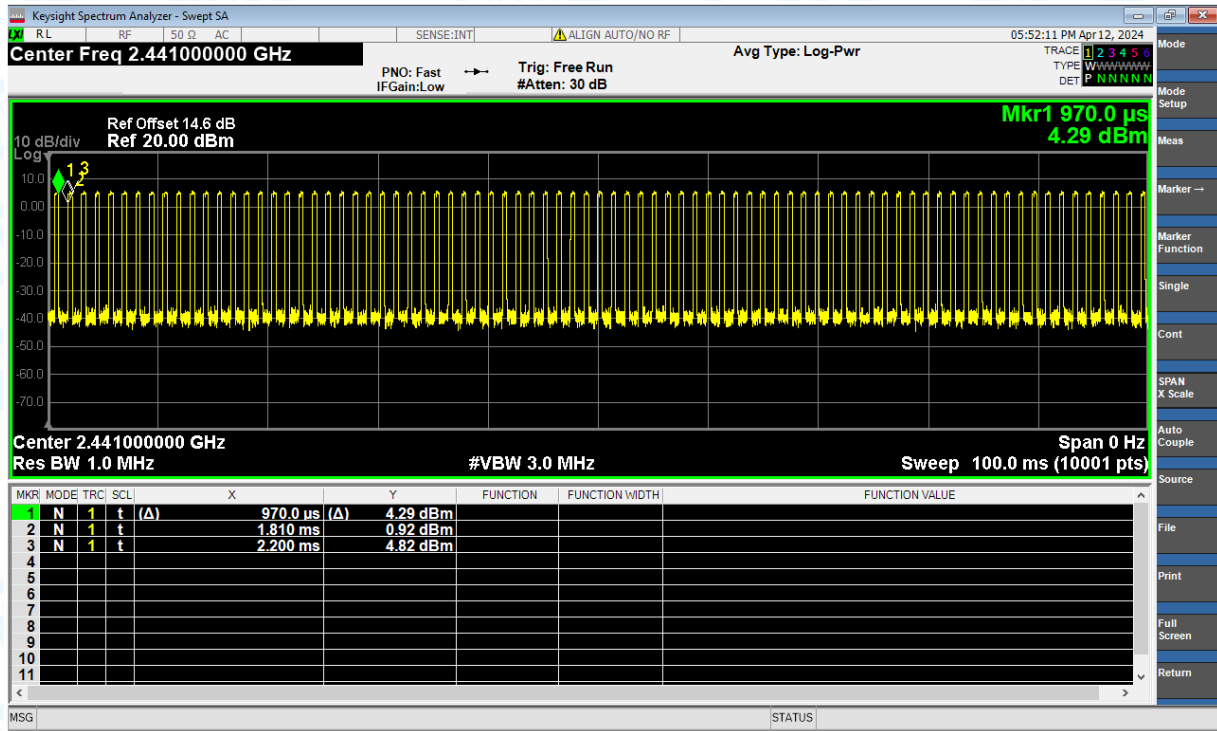
Duty Cycle NVNT 1-DH1 2480MHz Ant1



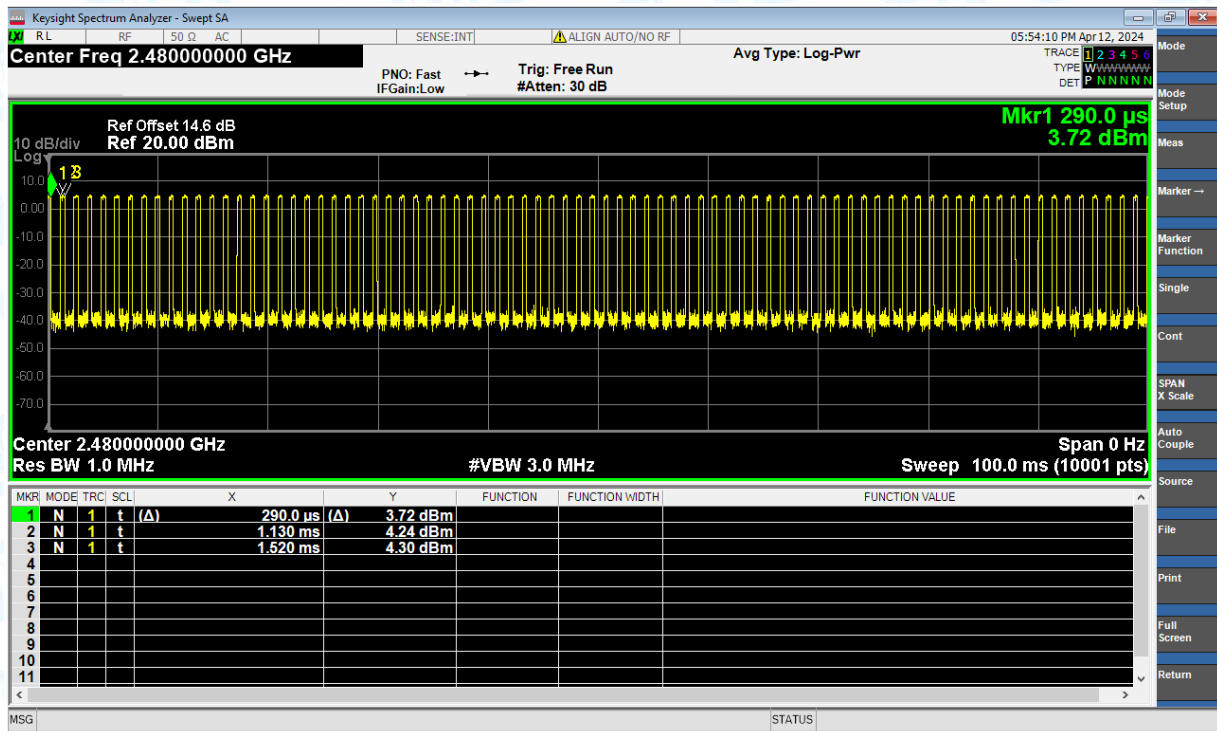
Duty Cycle NVNT 2-DH1 2402MHz Ant1



Duty Cycle NVNT 2-DH1 2441MHz Ant1

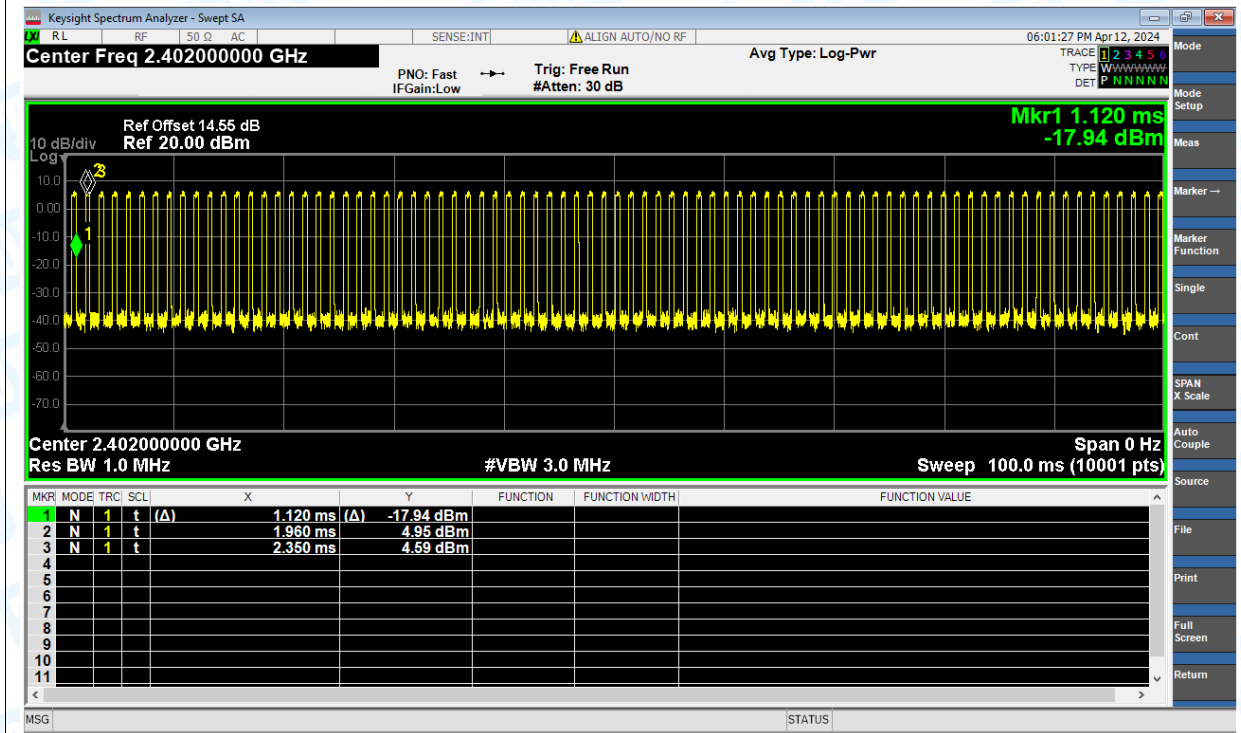


Duty Cycle NVNT 2-DH1 2480MHz Ant1

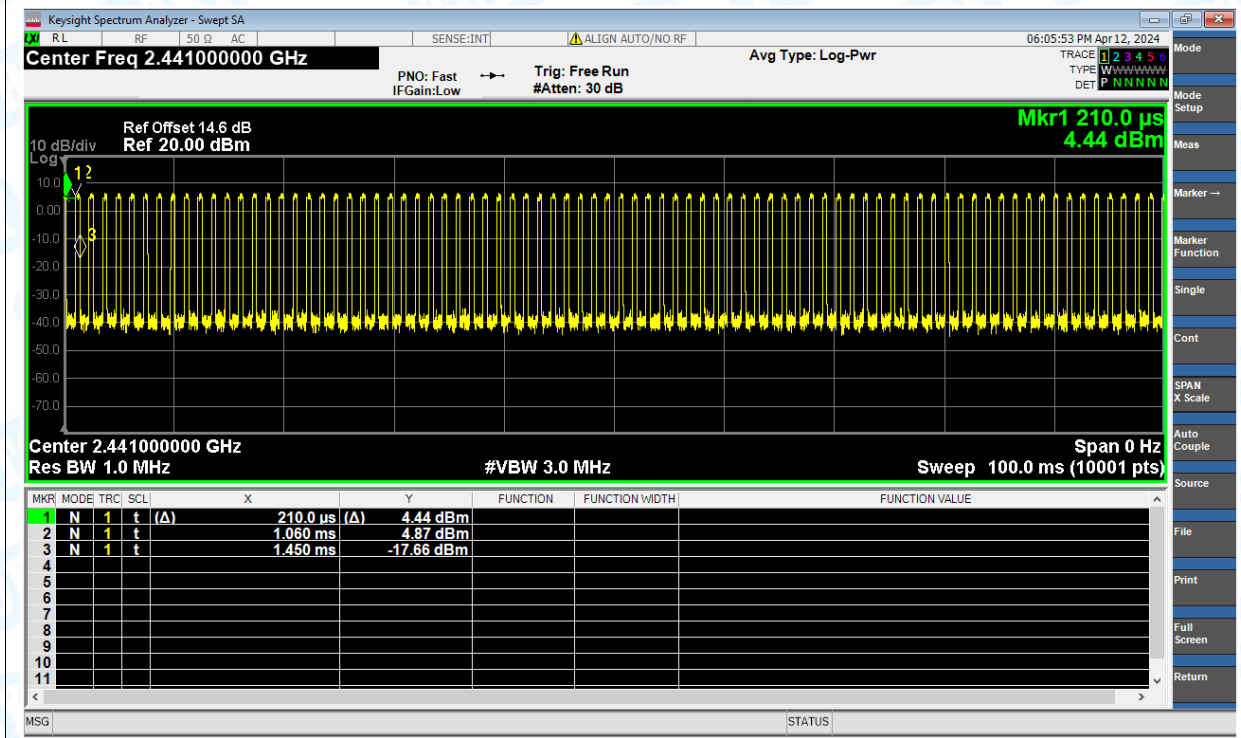


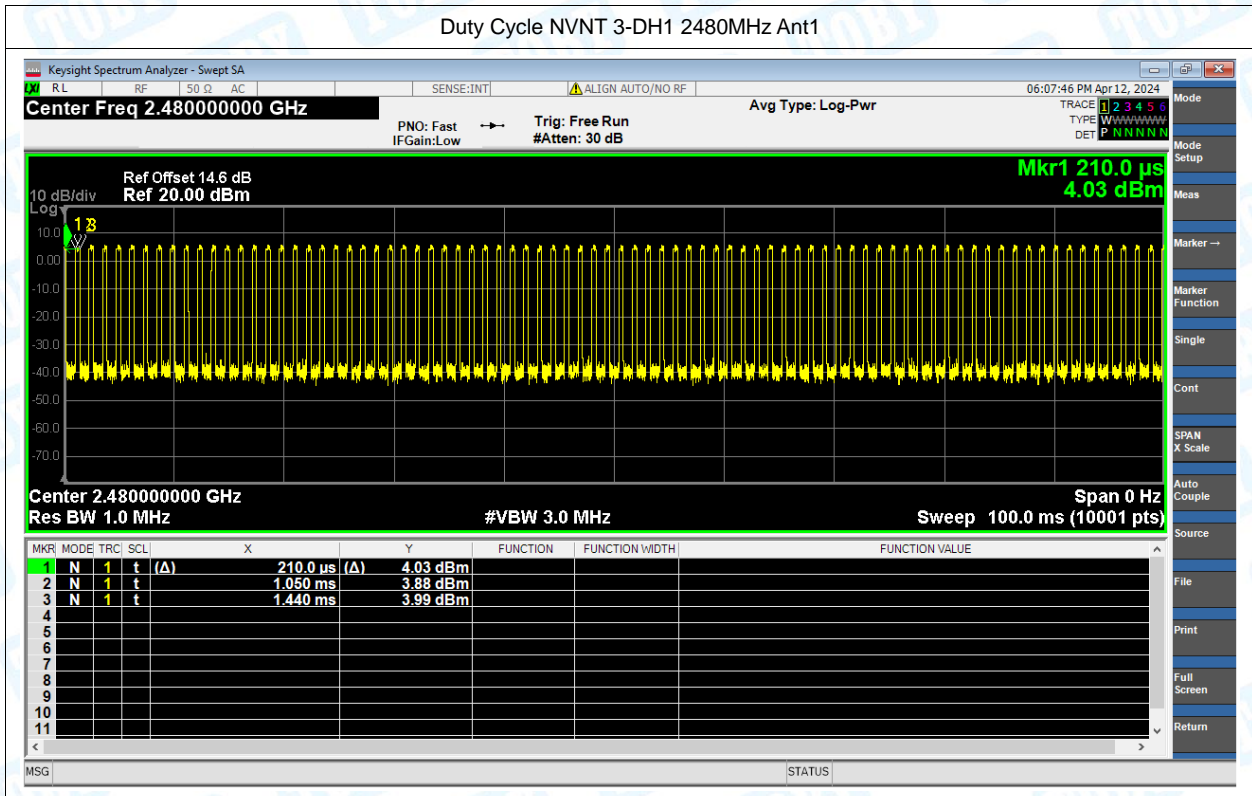


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1





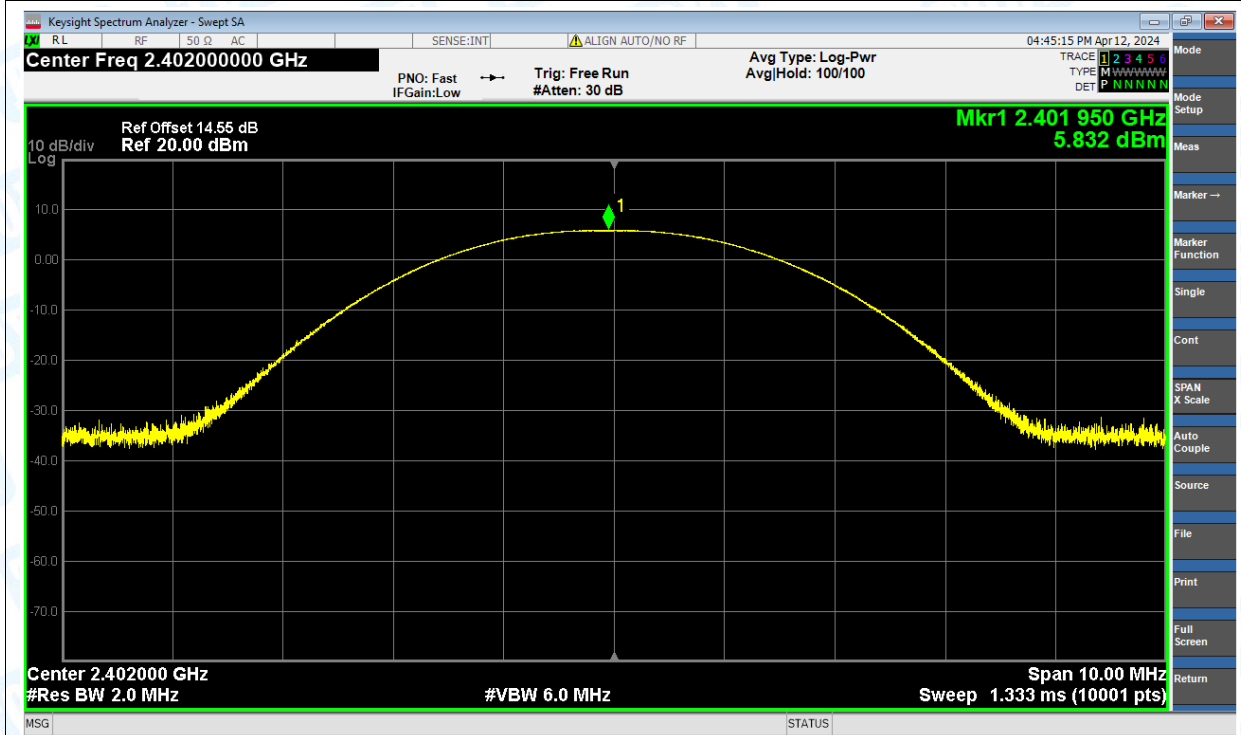


## 2. Maximum Conducted Output Power

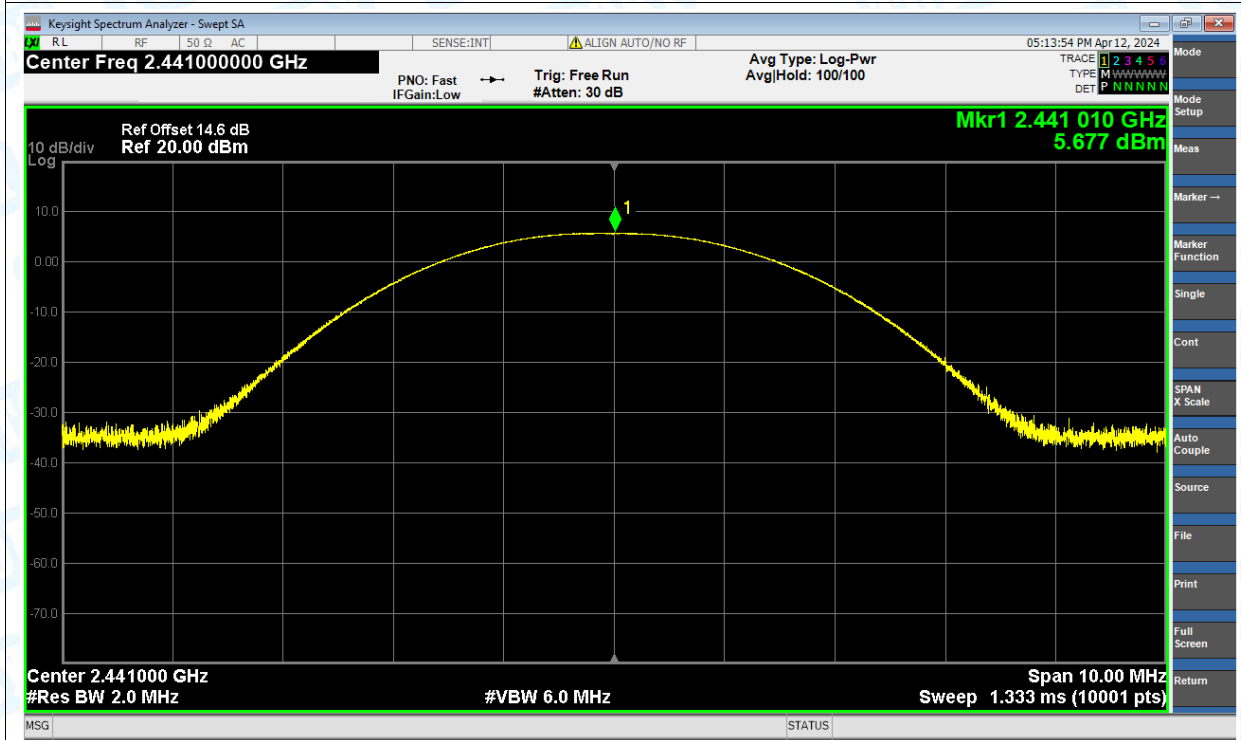
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	5.832	21	Pass
NVNT	1-DH1	2441	Ant1	5.677	21	Pass
NVNT	1-DH1	2480	Ant1	5.42	21	Pass
NVNT	1-DH3	2441	Ant1	5.871	21	Pass
NVNT	1-DH5	2441	Ant1	5.797	21	Pass
NVNT	2-DH1	2402	Ant1	6.143	21	Pass
NVNT	2-DH1	2441	Ant1	6.083	21	Pass
NVNT	2-DH1	2480	Ant1	5.598	21	Pass
NVNT	2-DH3	2441	Ant1	6.232	21	Pass
NVNT	2-DH5	2441	Ant1	6.174	21	Pass
NVNT	3-DH1	2402	Ant1	6.861	21	Pass
NVNT	3-DH1	2441	Ant1	6.743	21	Pass
NVNT	3-DH1	2480	Ant1	6.31	21	Pass
NVNT	3-DH3	2441	Ant1	6.715	21	Pass
NVNT	3-DH5	2441	Ant1	6.682	21	Pass

Test Graphs

Power NVNT 1-DH1 2402MHz Ant1



Power NVNT 1-DH1 2441MHz Ant1

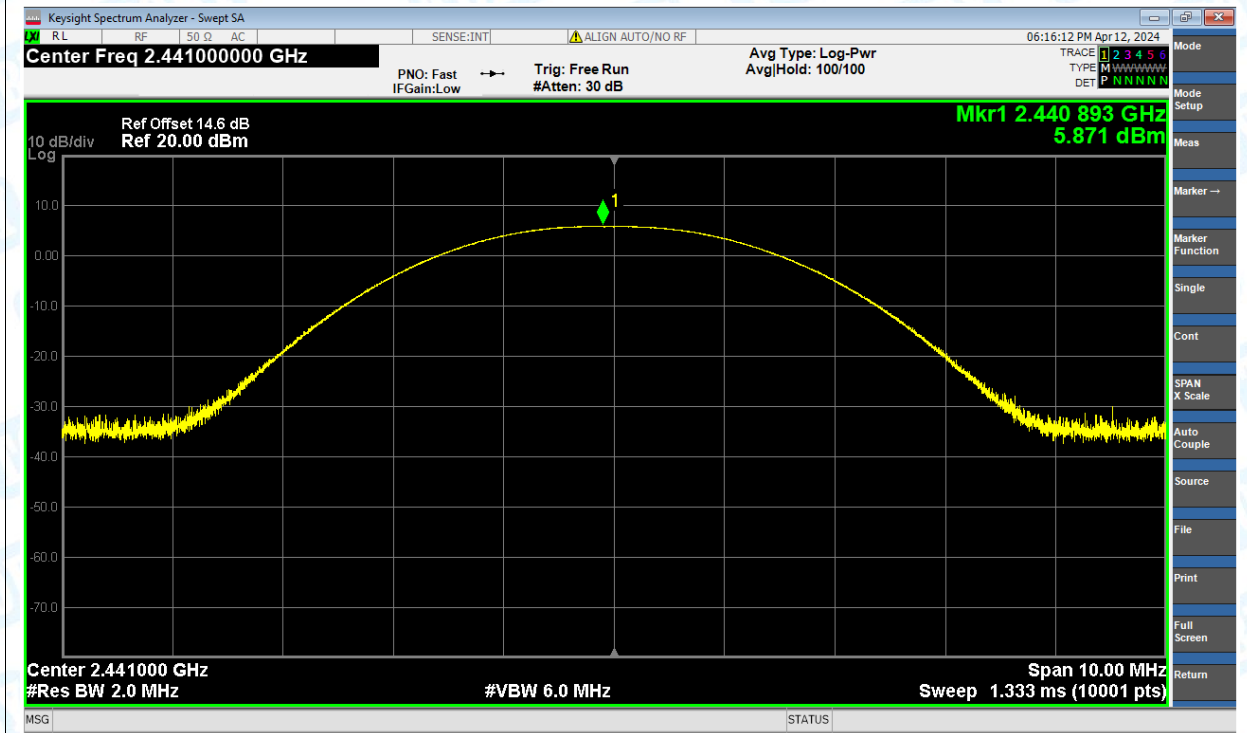




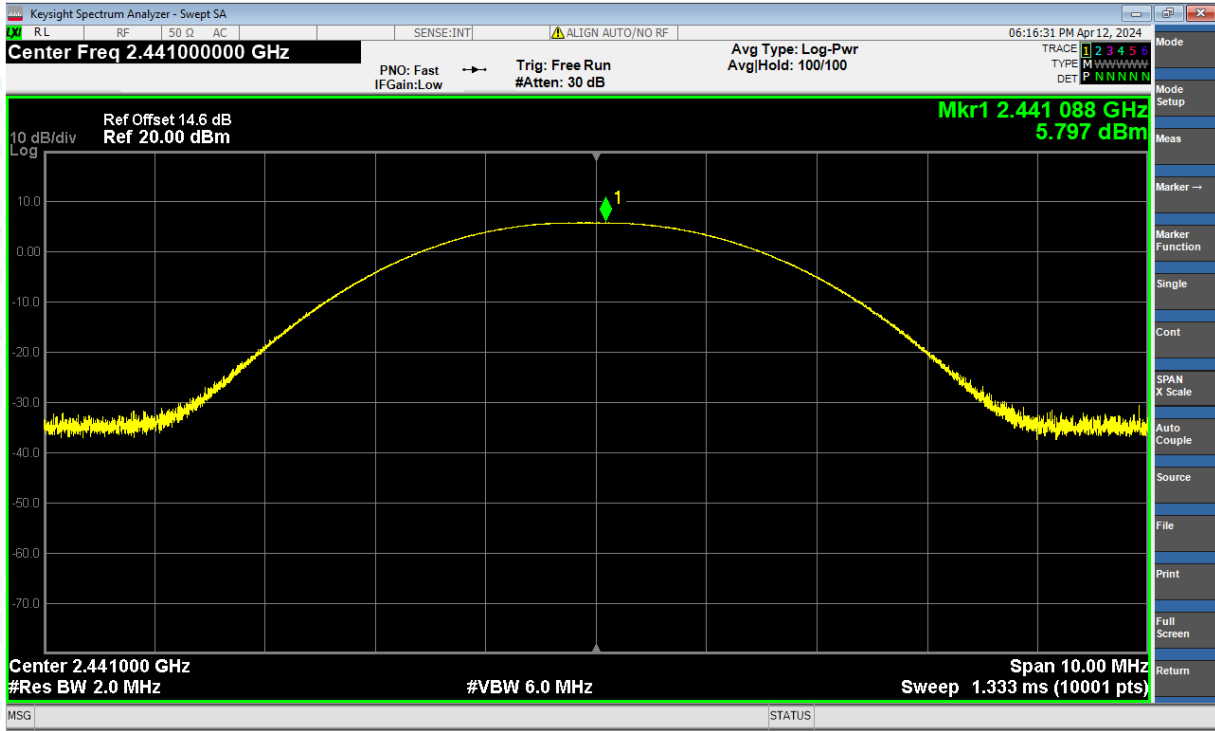
Power NVNT 1-DH1 2480MHz Ant1



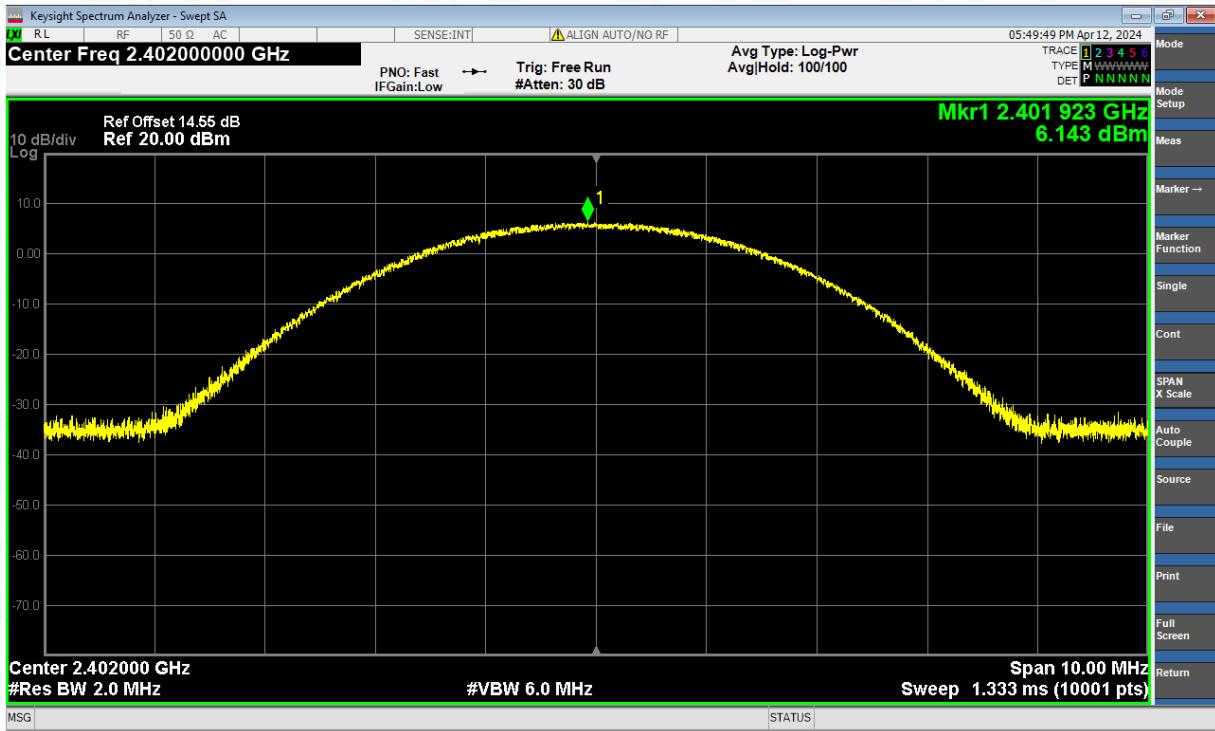
Power NVNT 1-DH3 2441MHz Ant1



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





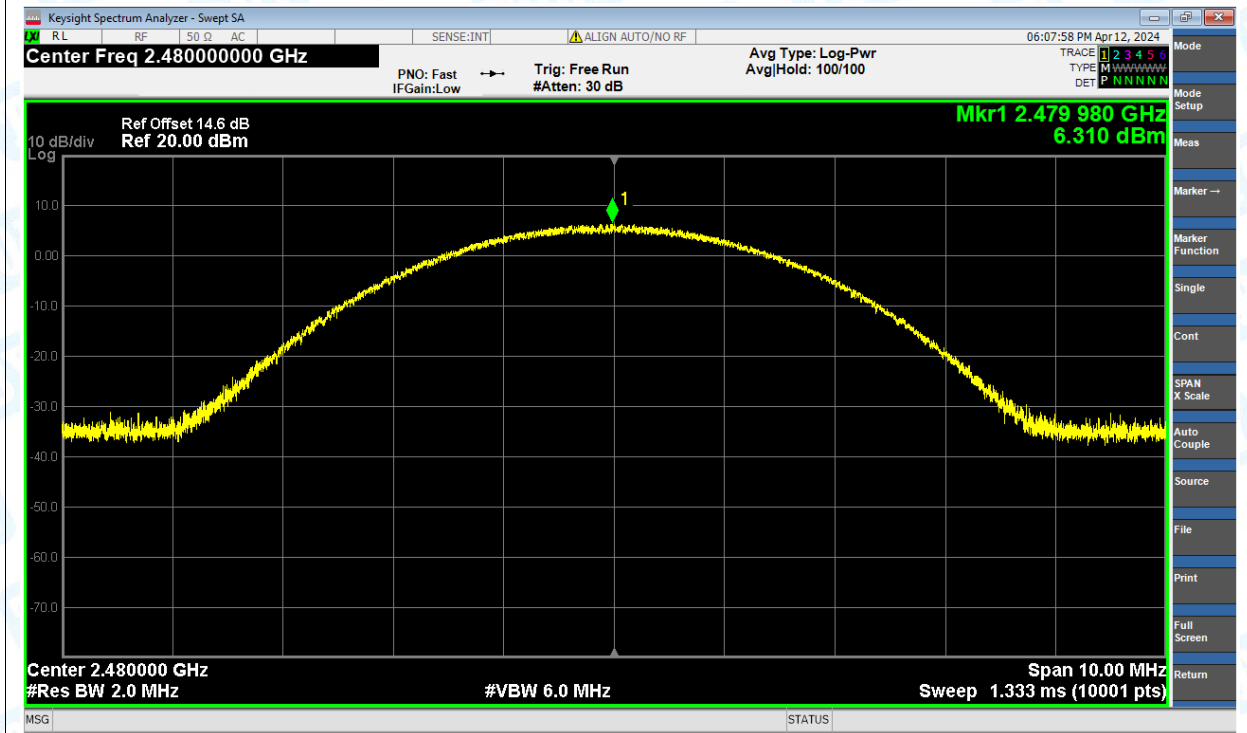
Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



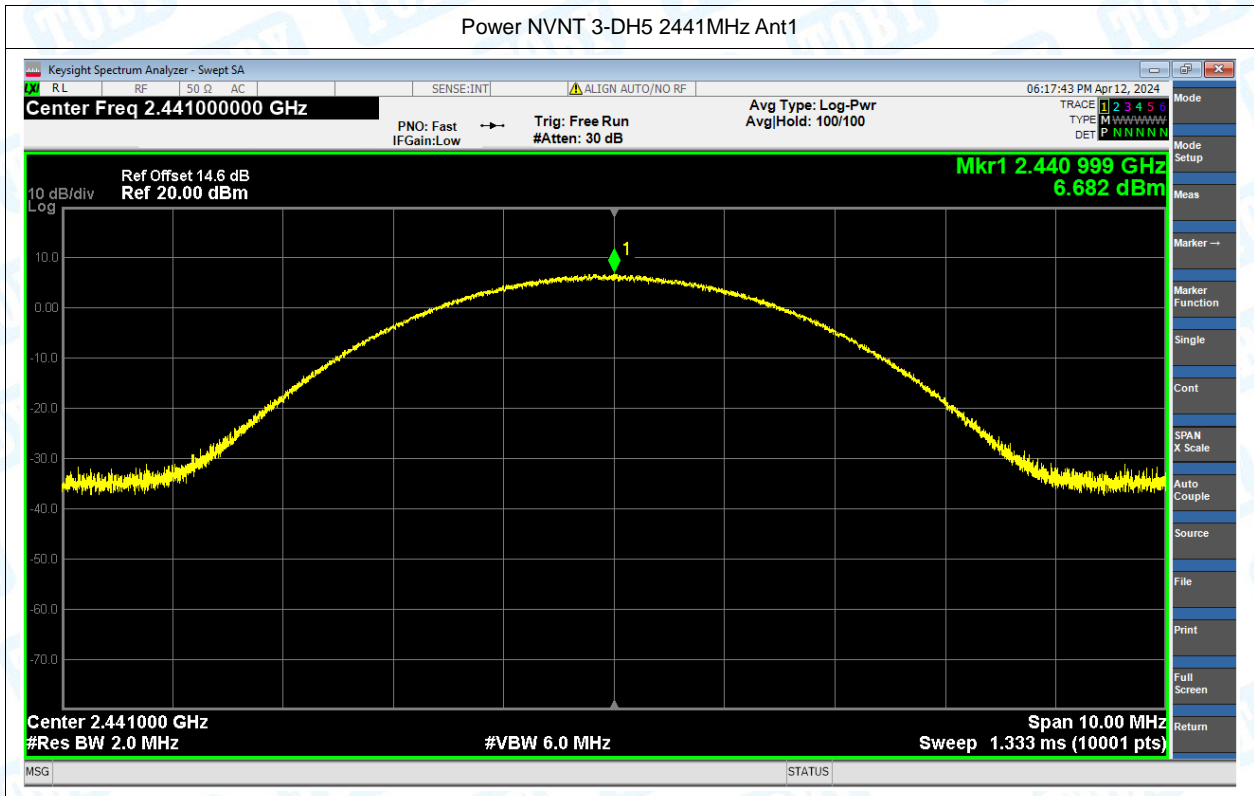
Power NVNT 3-DH1 2480MHz Ant1



Power NVNT 3-DH3 2441MHz Ant1







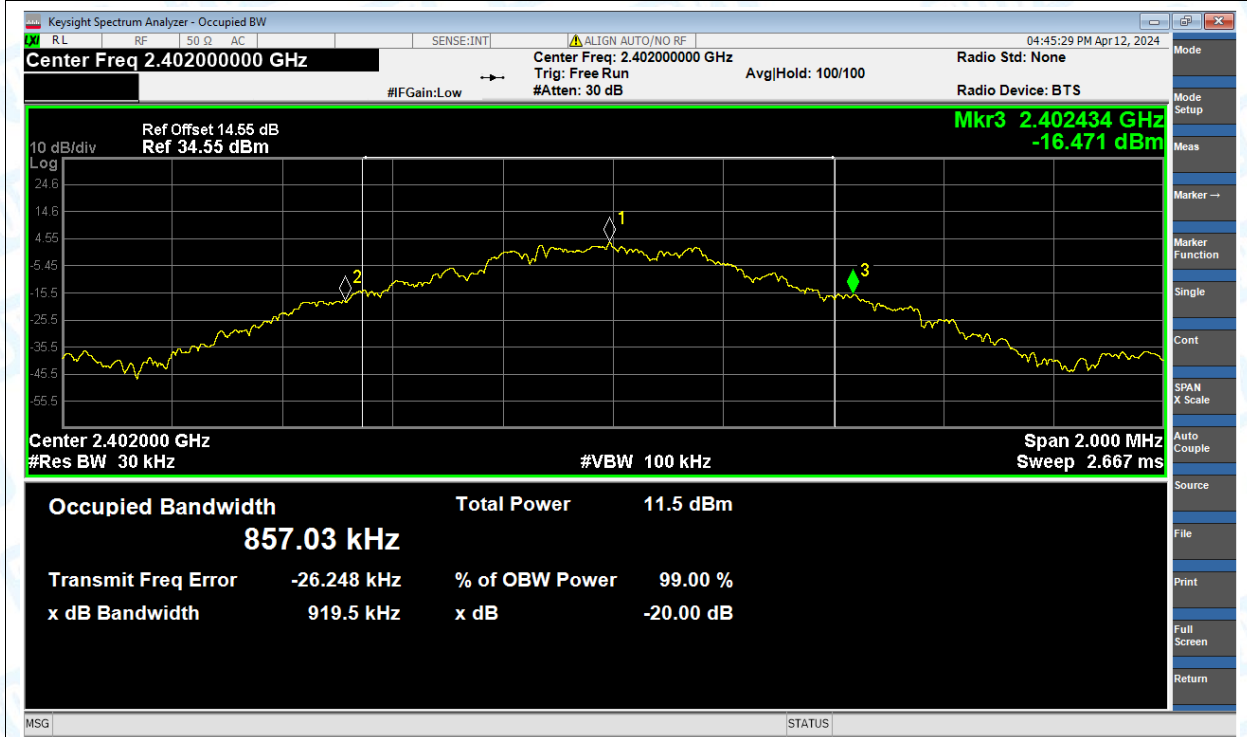
### 3. -20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.92	0	Pass
NVNT	1-DH1	2441	Ant1	0.93	0	Pass
NVNT	1-DH1	2480	Ant1	0.95	0	Pass
NVNT	2-DH1	2402	Ant1	1.25	0	Pass
NVNT	2-DH1	2441	Ant1	1.26	0	Pass
NVNT	2-DH1	2480	Ant1	1.24	0	Pass
NVNT	3-DH1	2402	Ant1	1.21	0	Pass
NVNT	3-DH1	2441	Ant1	1.22	0	Pass
NVNT	3-DH1	2480	Ant1	1.21	0	Pass



Test Graphs

-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



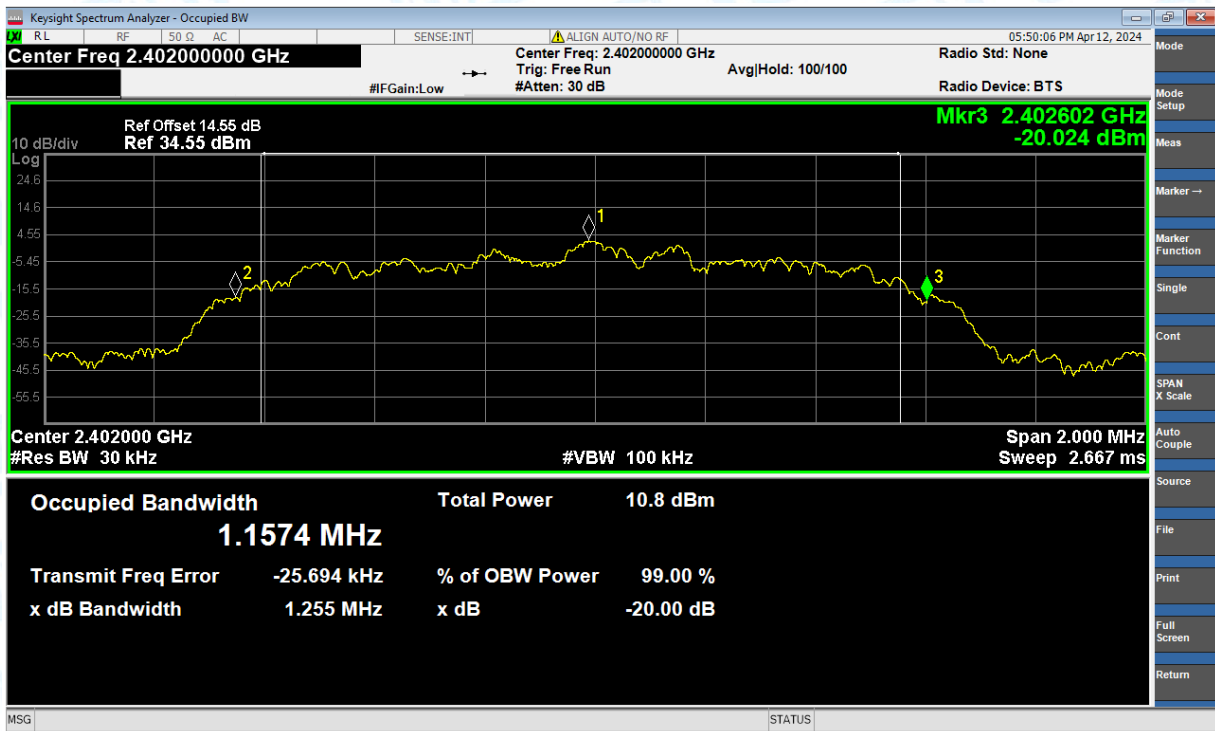
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1

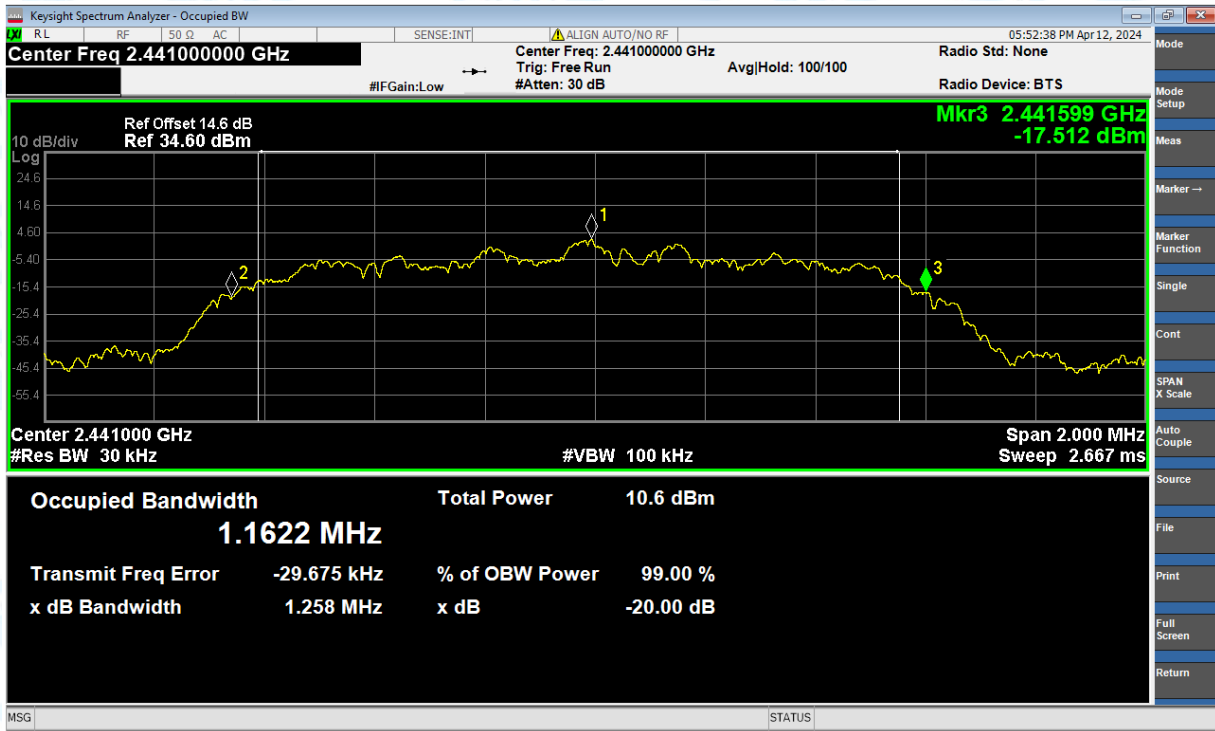


-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1

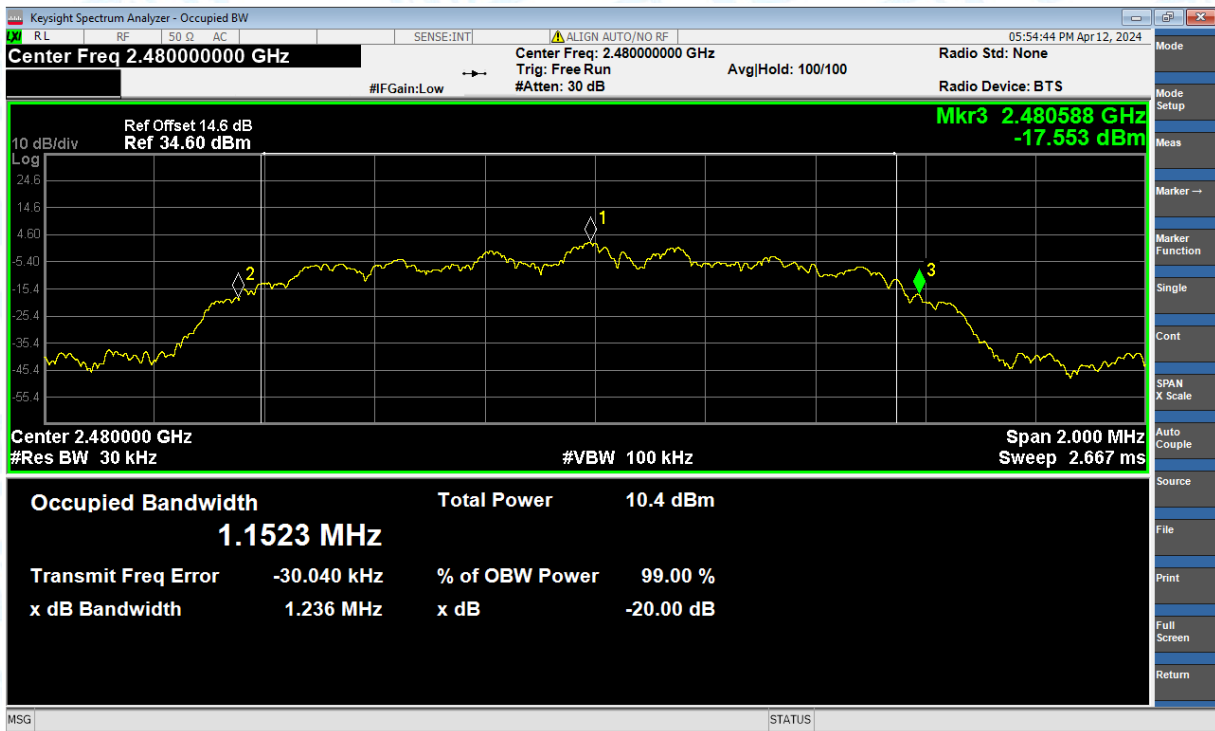




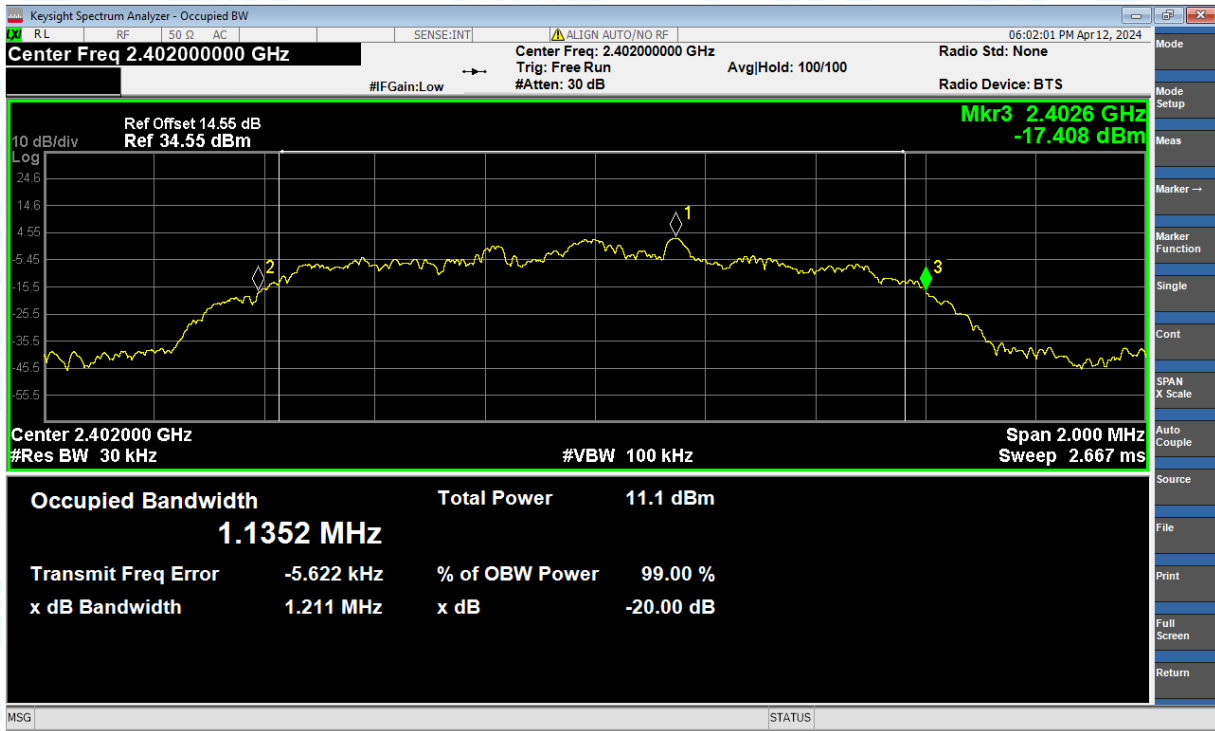
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



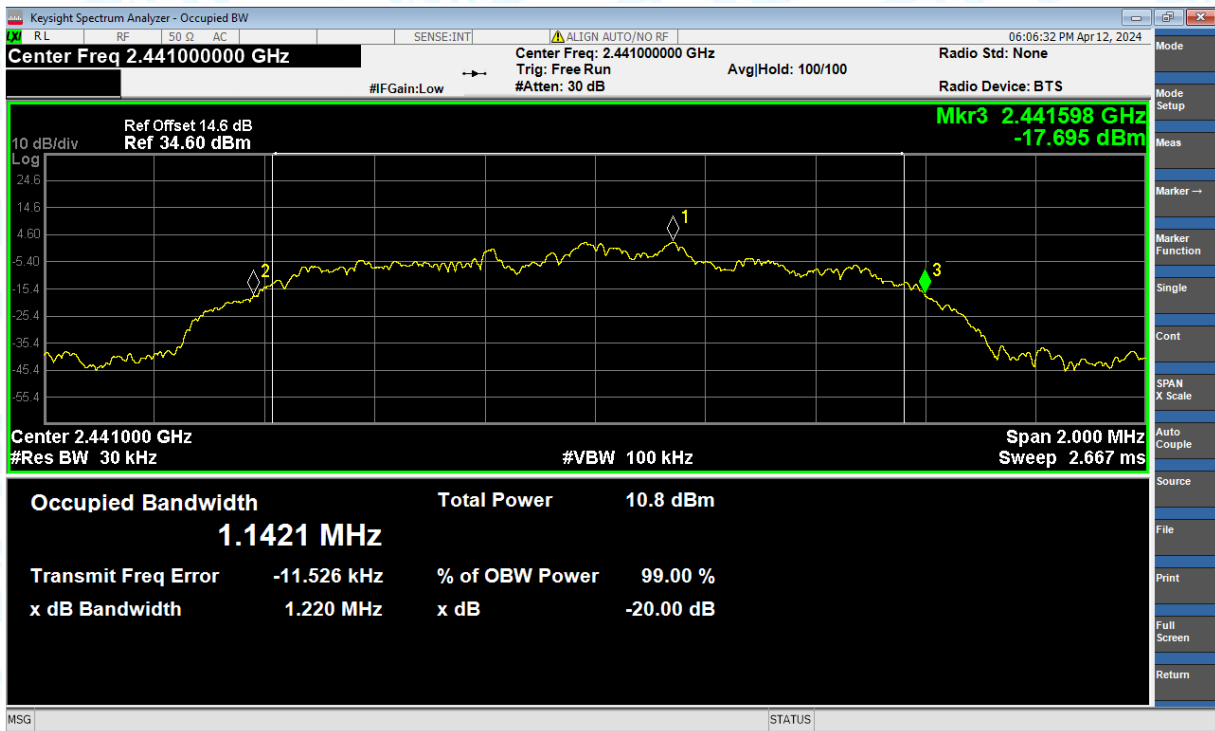
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1



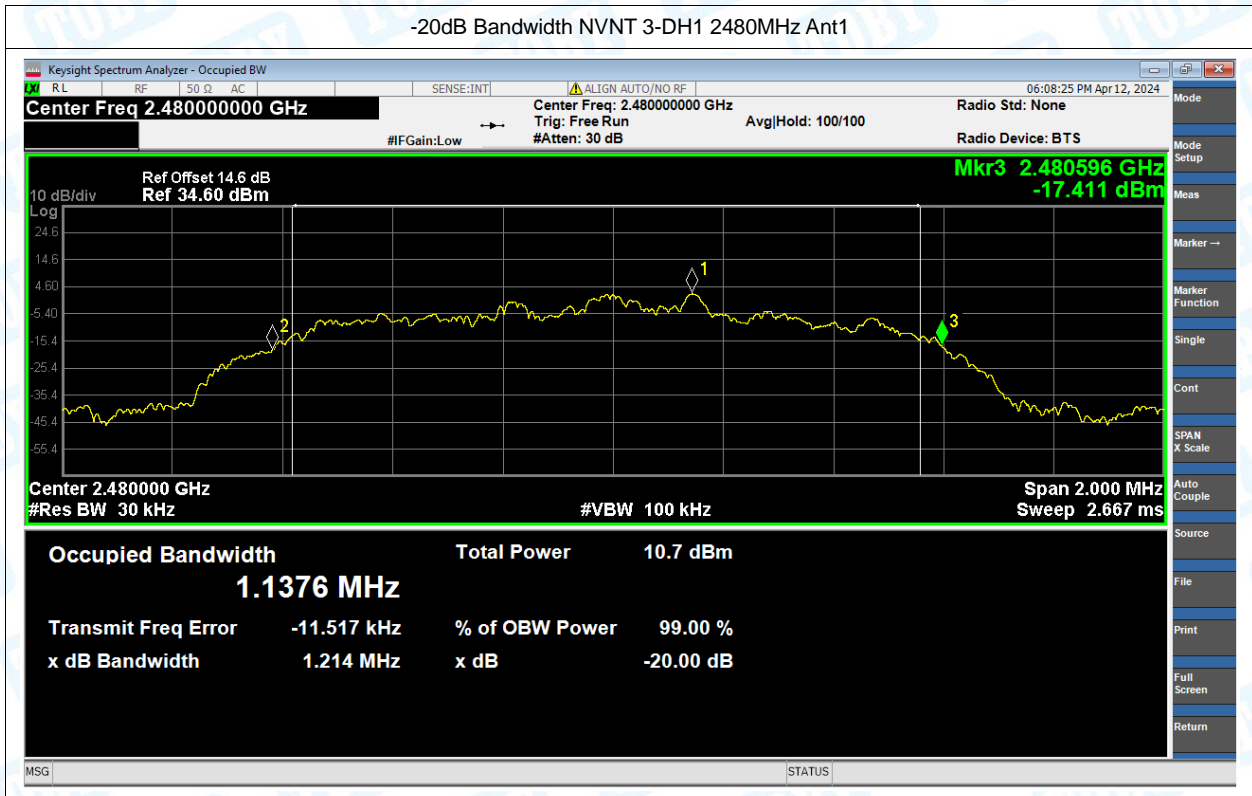
-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1







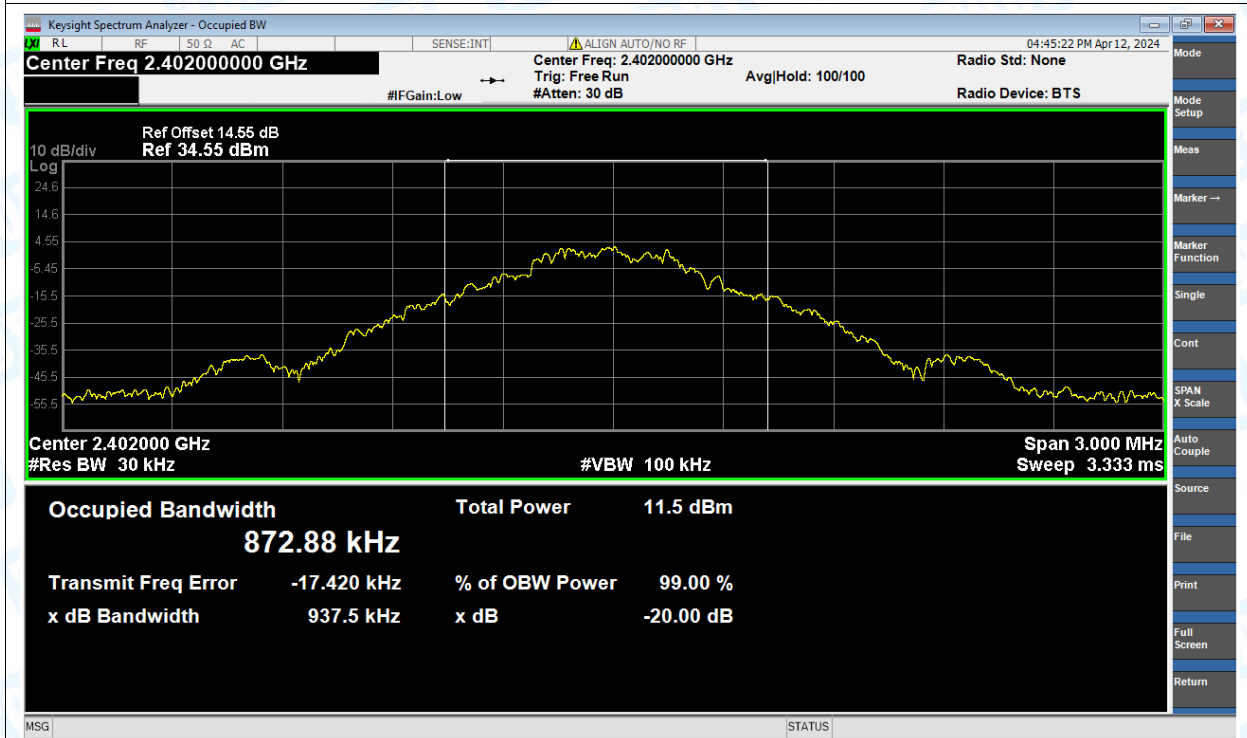
## 4.Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.873
NVNT	1-DH1	2441	Ant1	0.871
NVNT	1-DH1	2480	Ant1	0.861
NVNT	2-DH1	2402	Ant1	1.166
NVNT	2-DH1	2441	Ant1	1.153
NVNT	2-DH1	2480	Ant1	1.142
NVNT	3-DH1	2402	Ant1	1.142
NVNT	3-DH1	2441	Ant1	1.136
NVNT	3-DH1	2480	Ant1	1.14

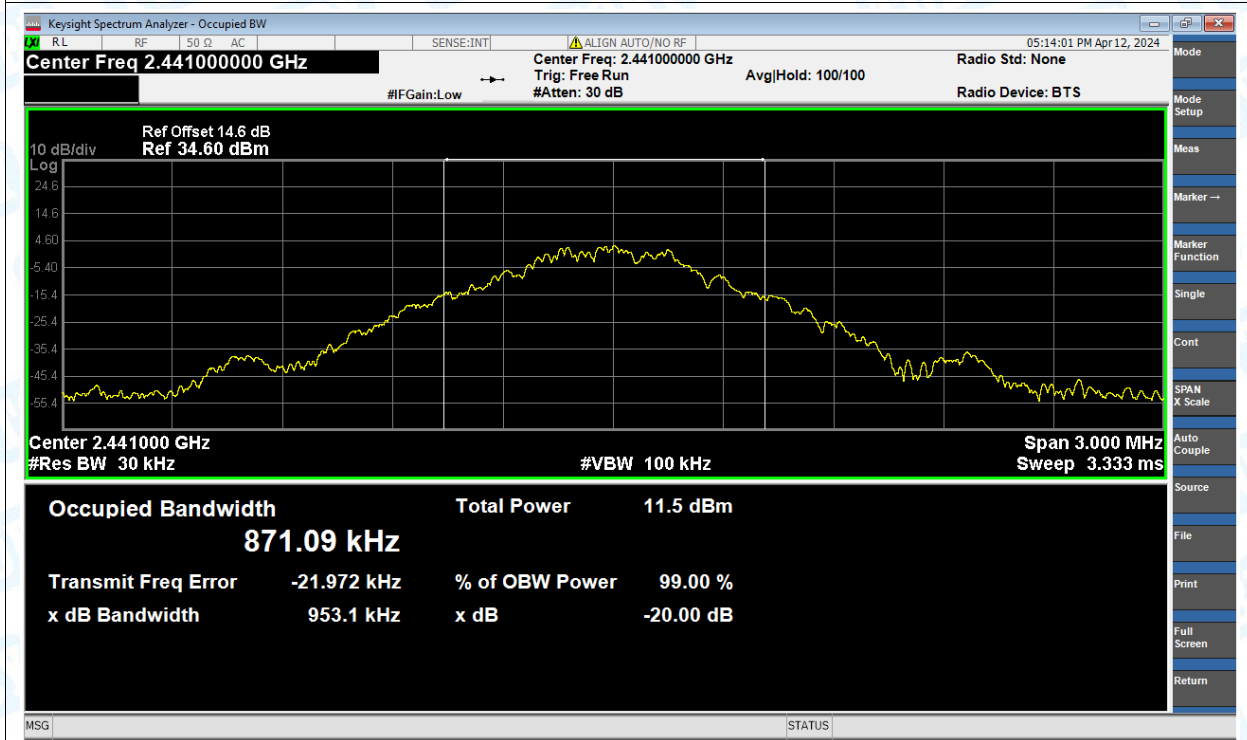


Test Graphs

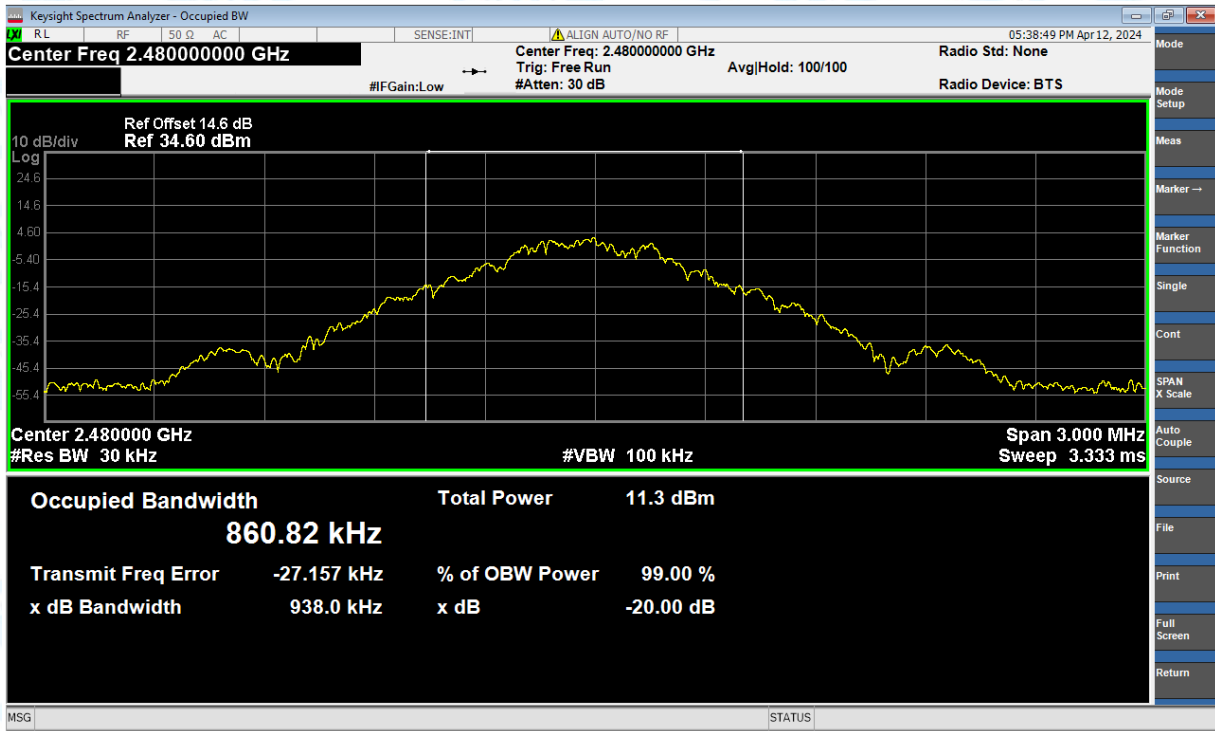
OBW NVNT 1-DH1 2402MHz Ant1



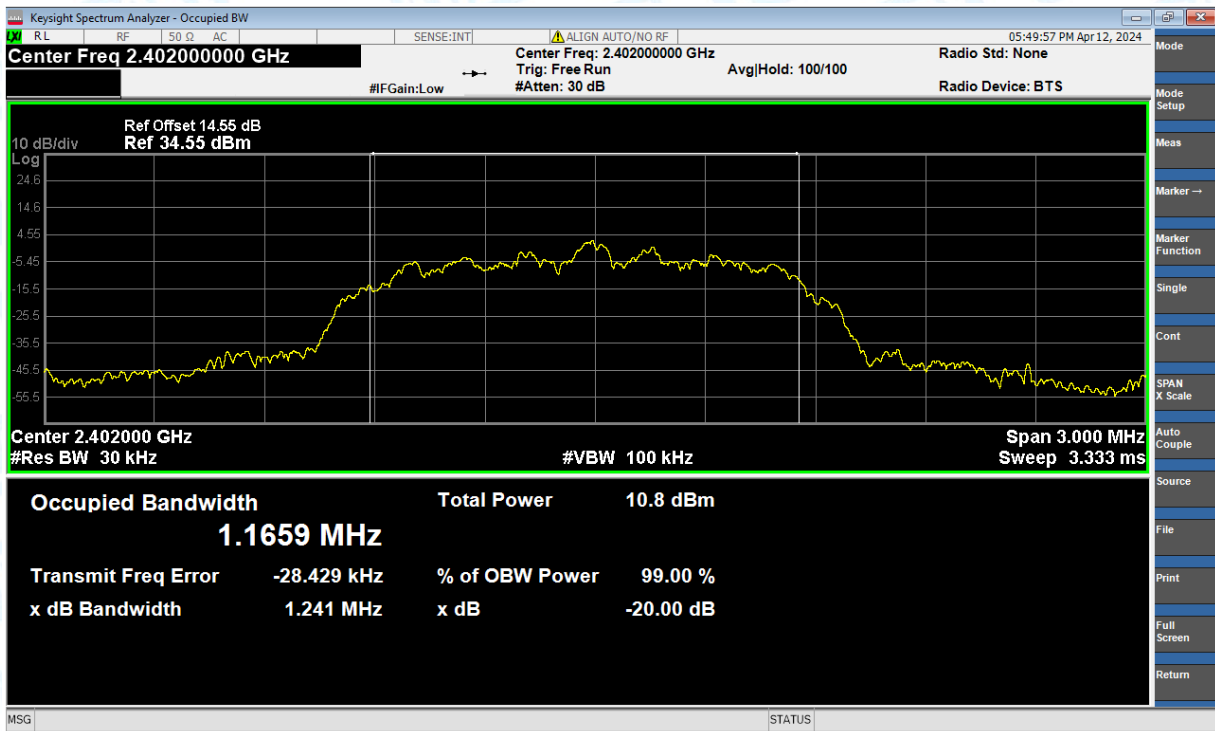
OBW NVNT 1-DH1 2441MHz Ant1



OBW NVNT 1-DH1 2480MHz Ant1

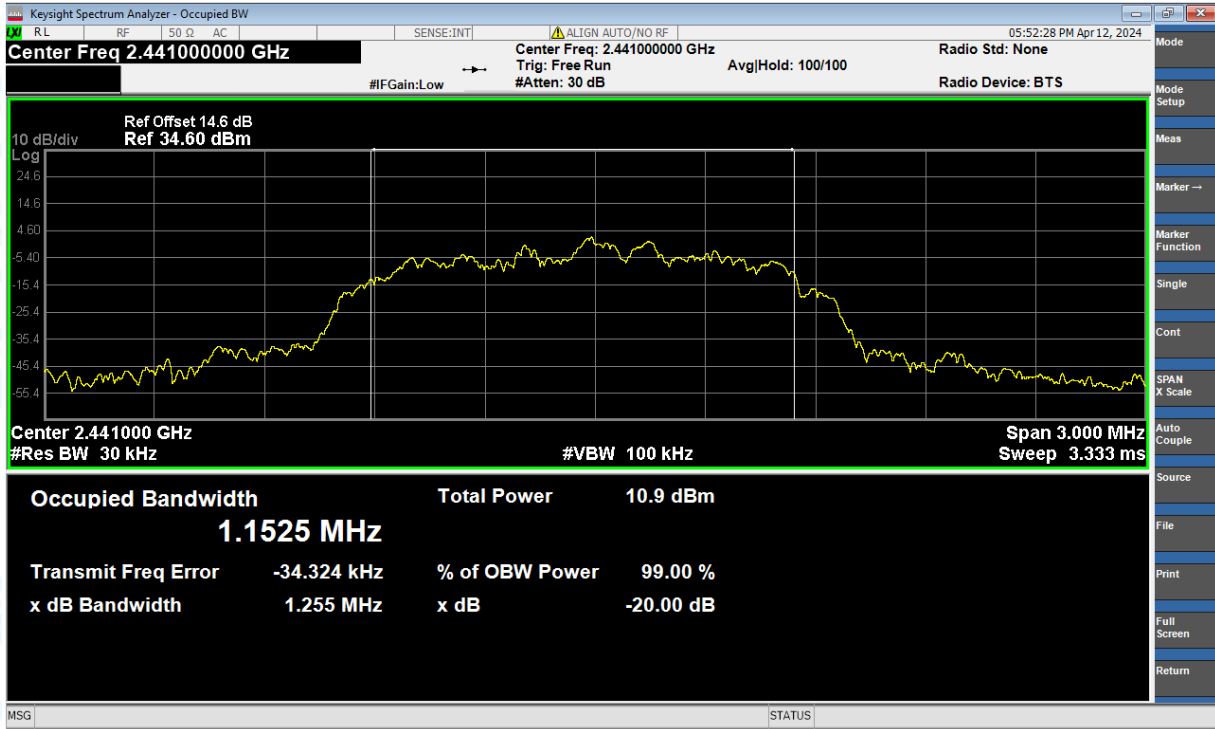


OBW NVNT 2-DH1 2402MHz Ant1

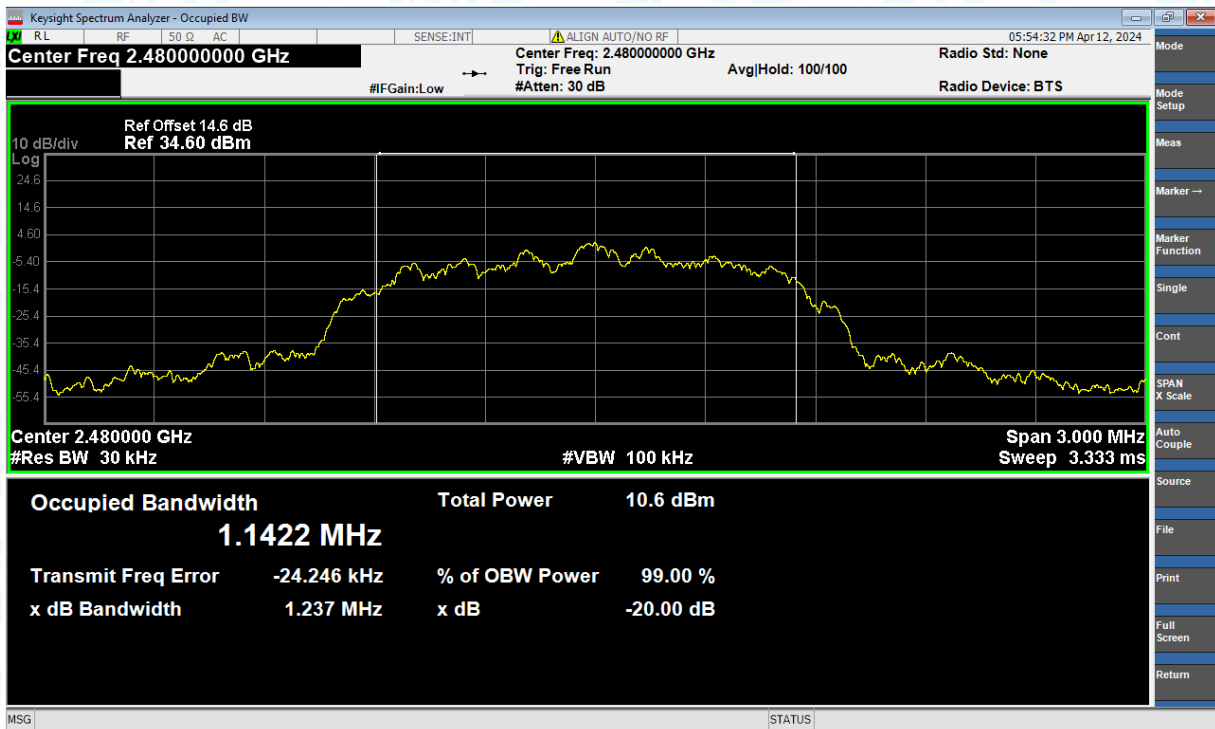




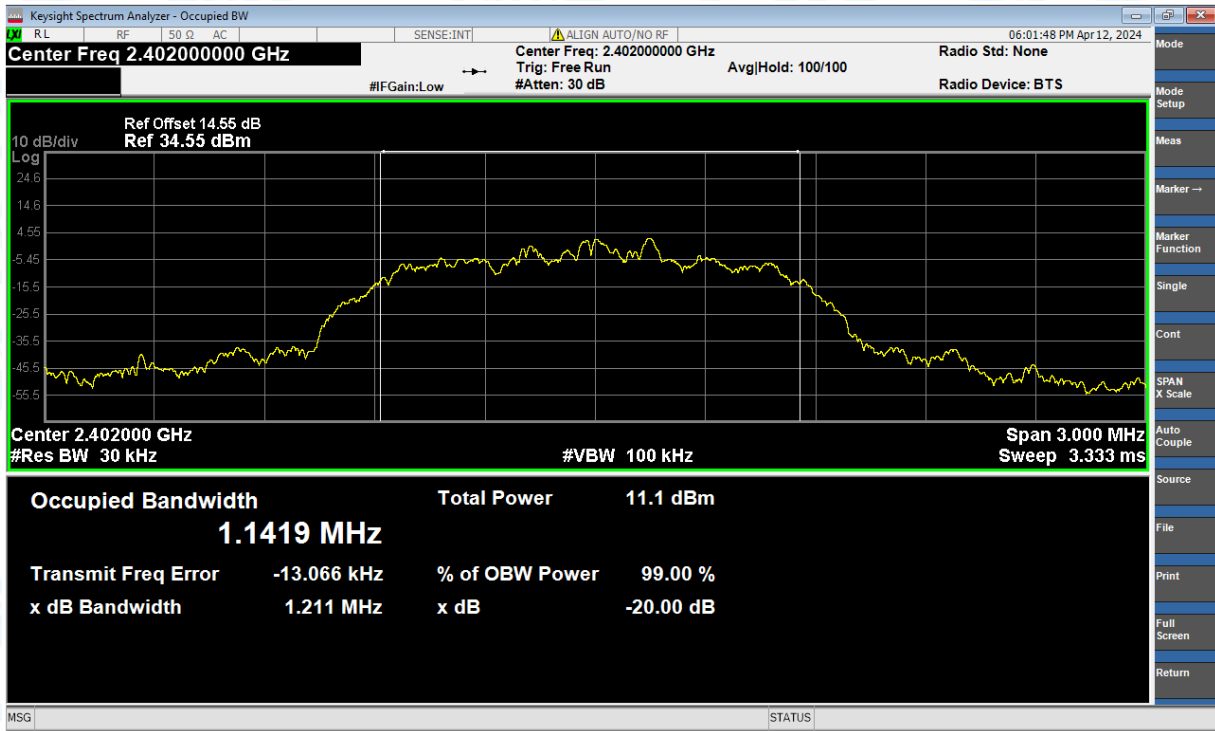
OBW NVNT 2-DH1 2441MHz Ant1



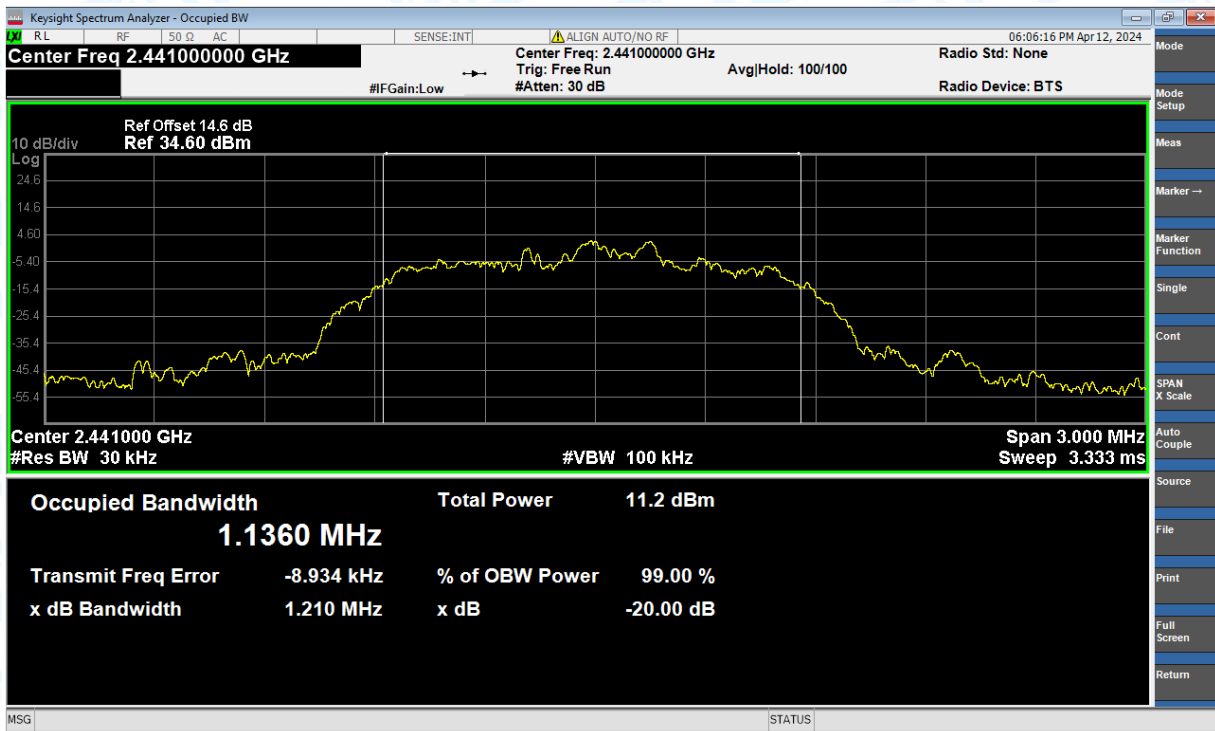
OBW NVNT 2-DH1 2480MHz Ant1



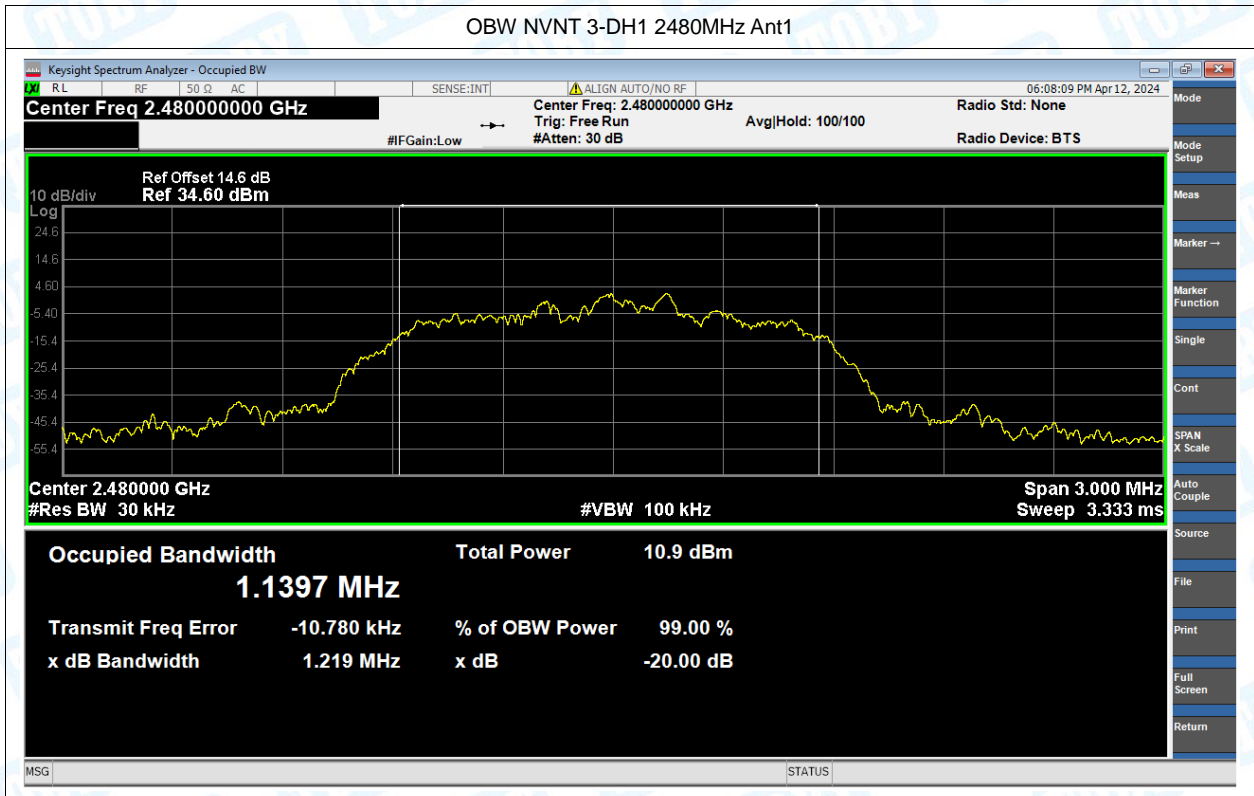
OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1







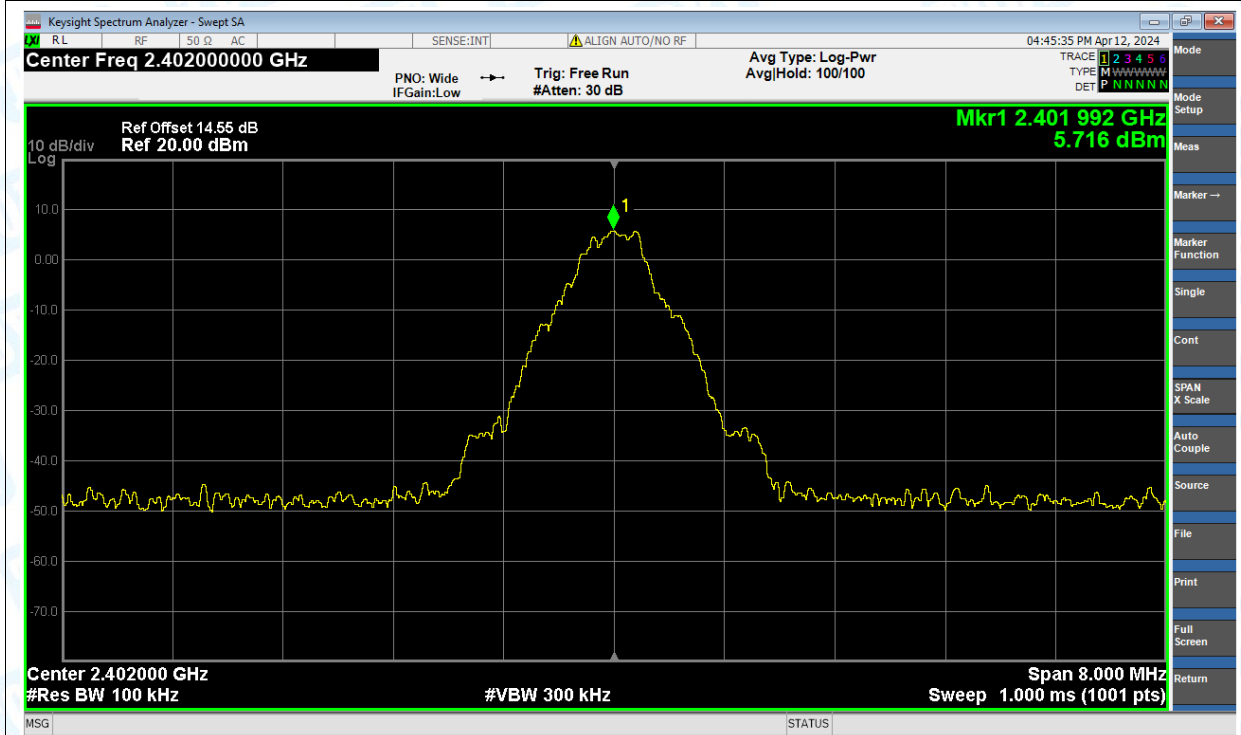
## 5. Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-49.72	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-50	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-49.11	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-49.42	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-48.5	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-48.27	-20	Pass

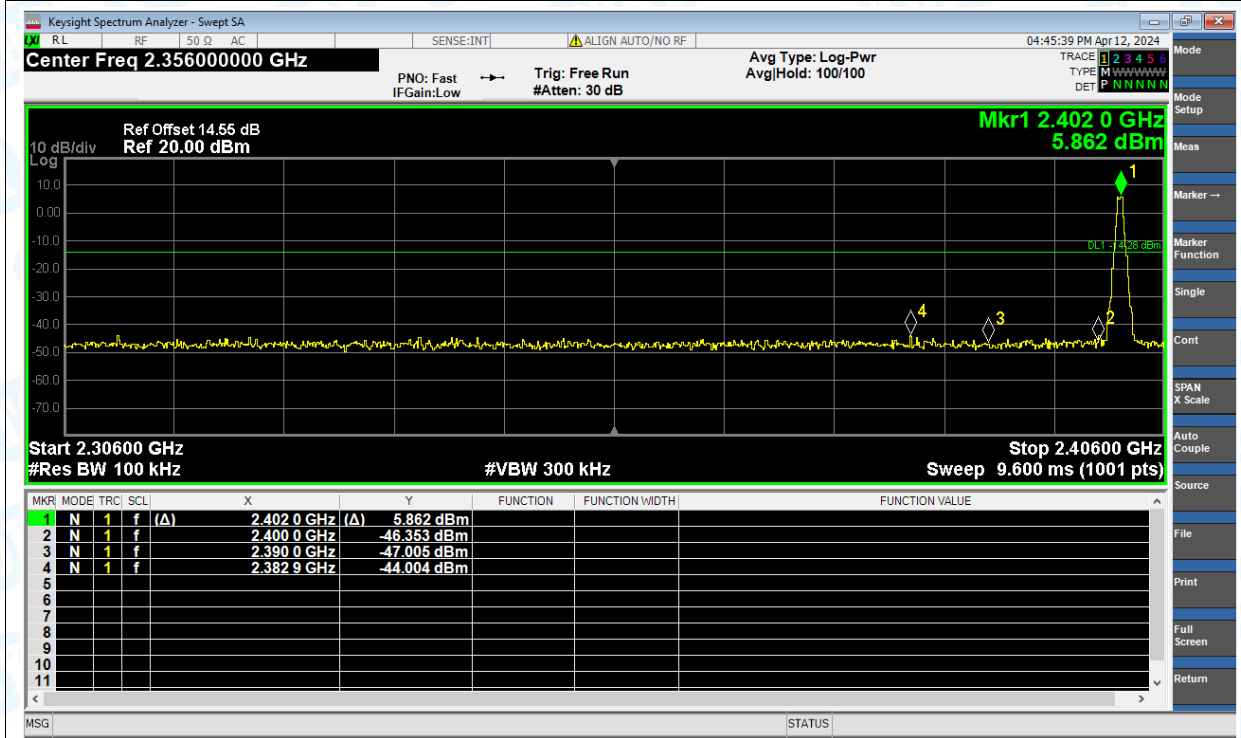


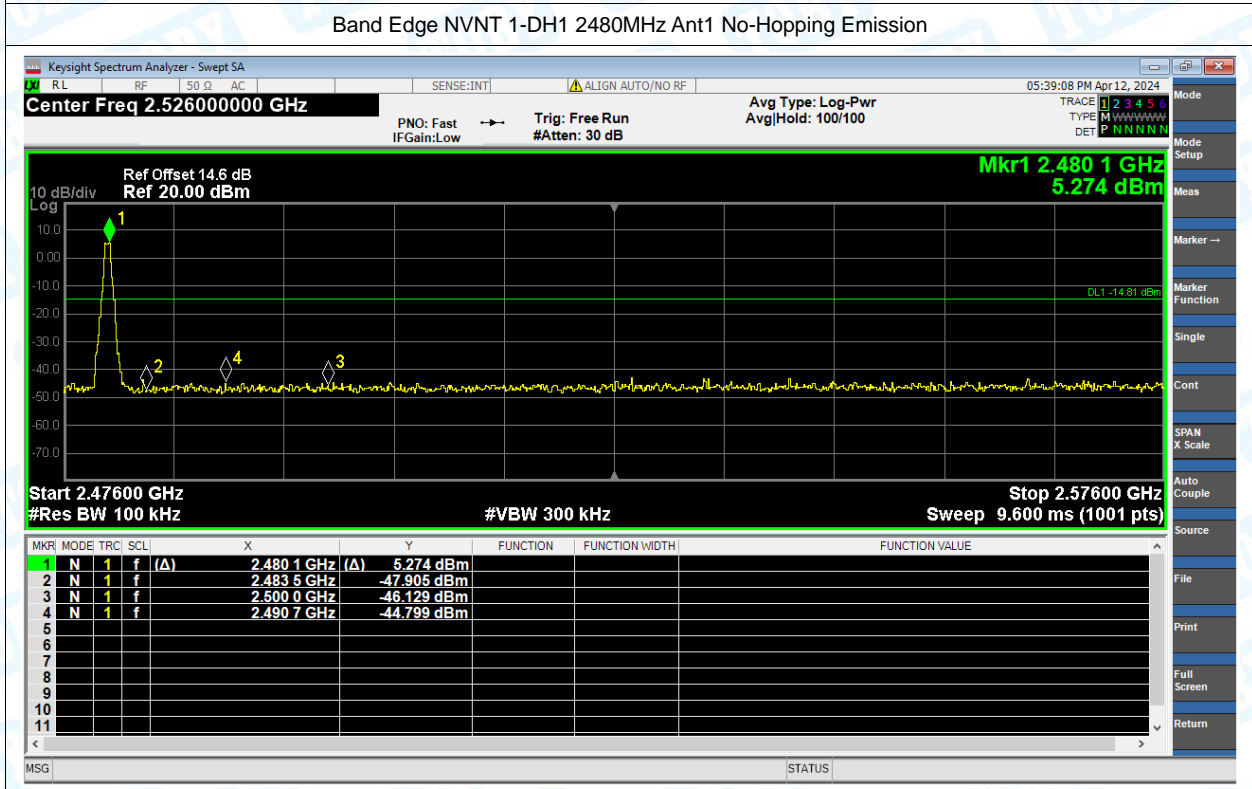
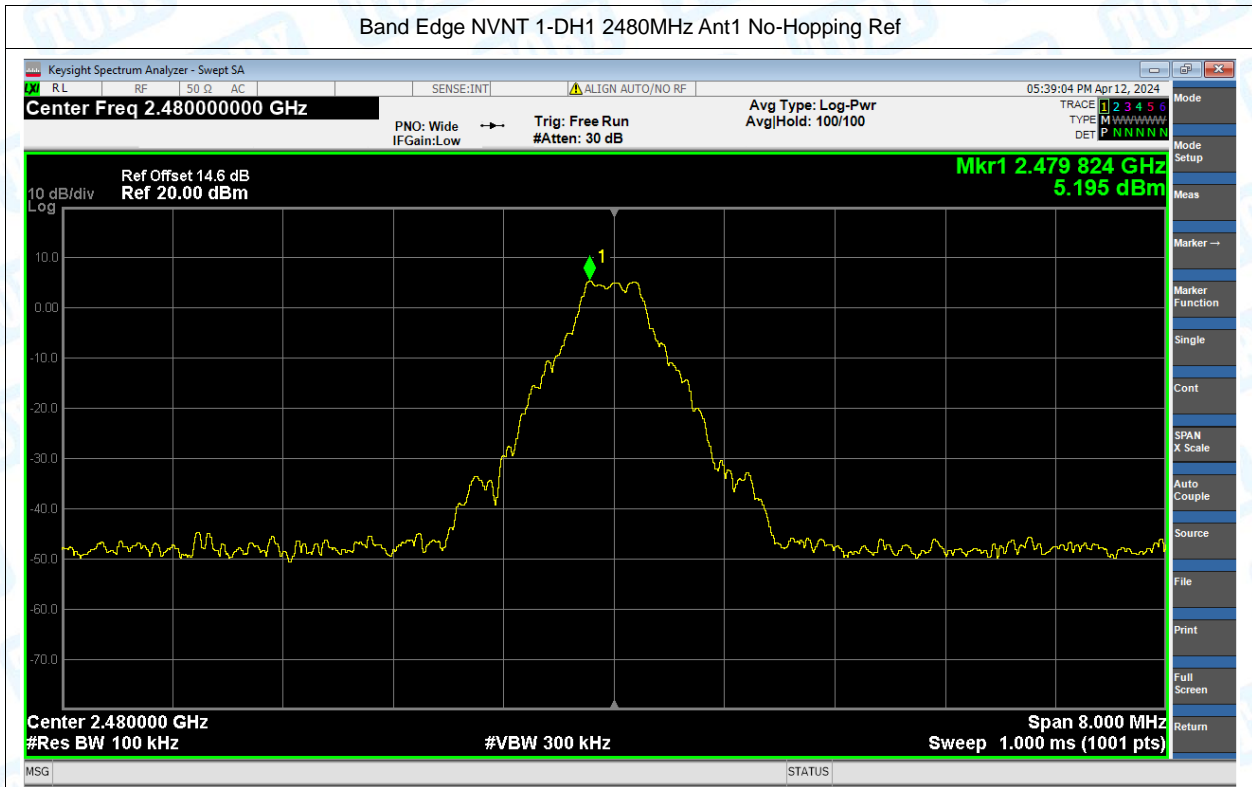
Test Graphs

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

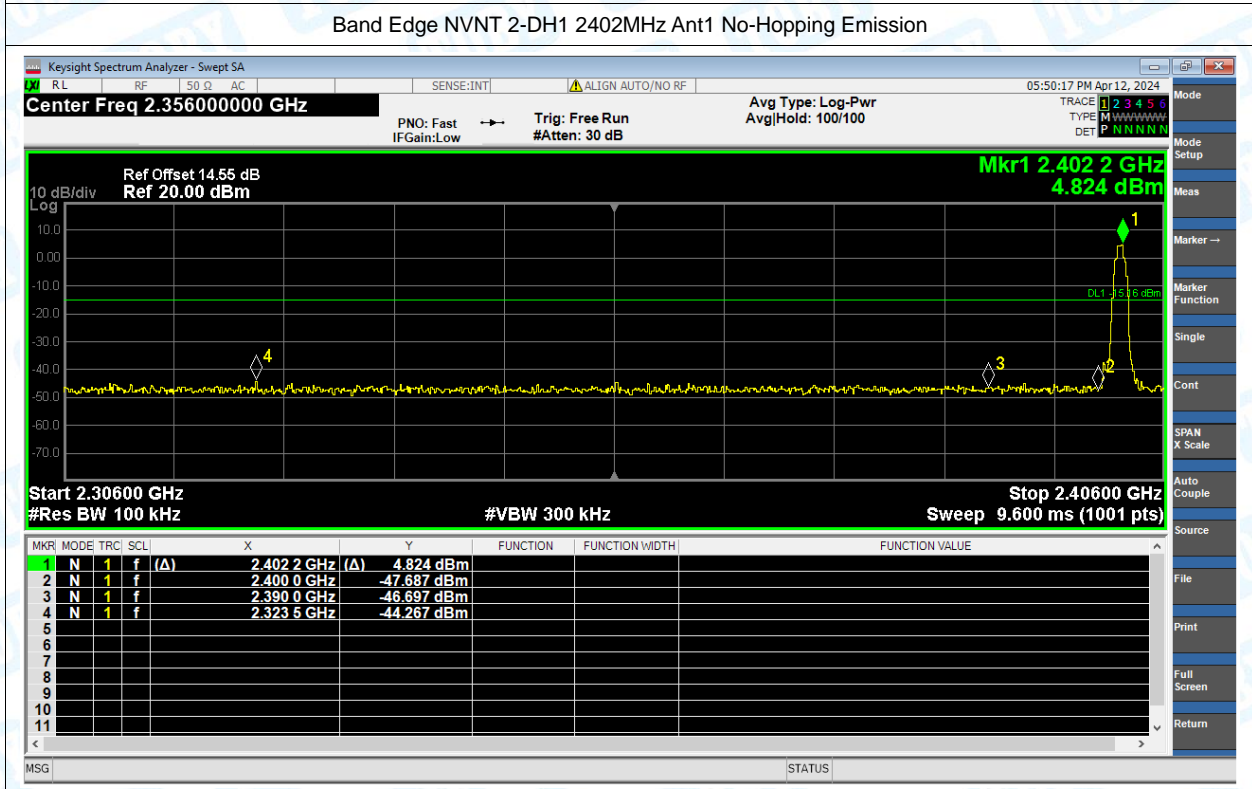
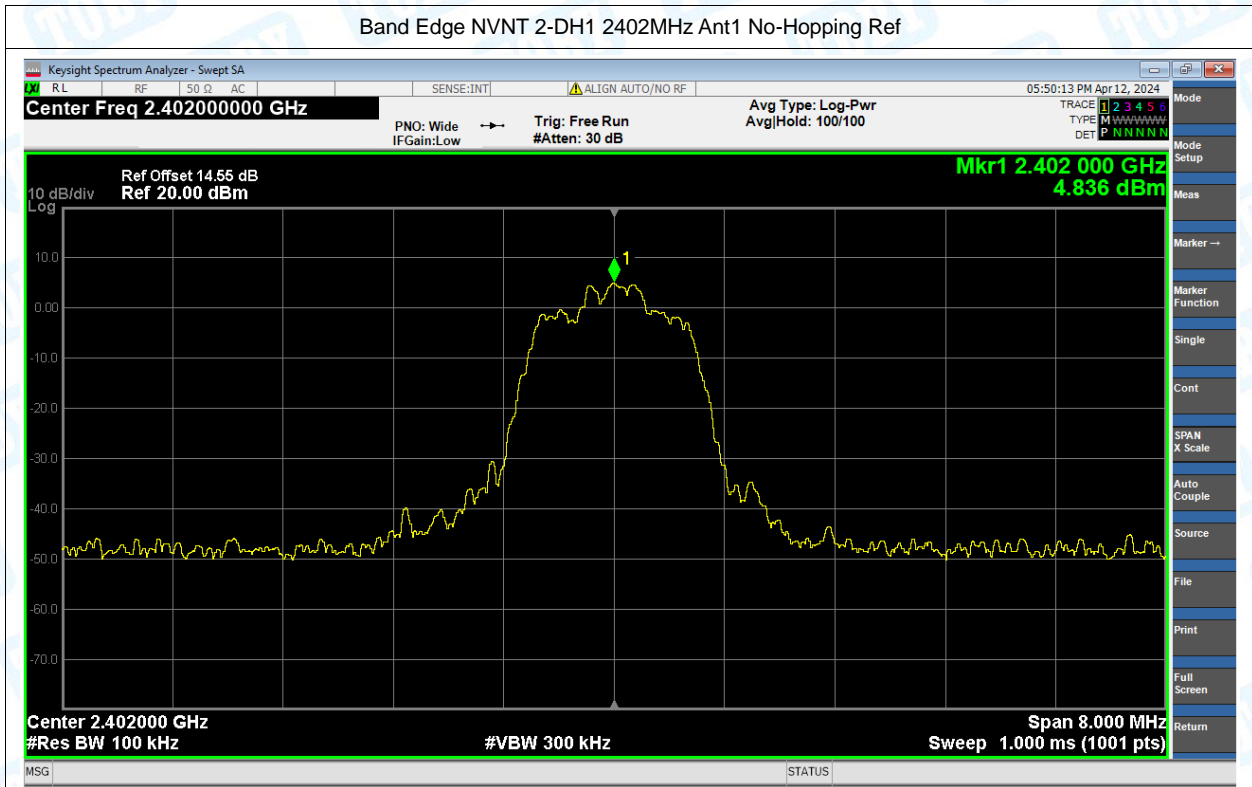


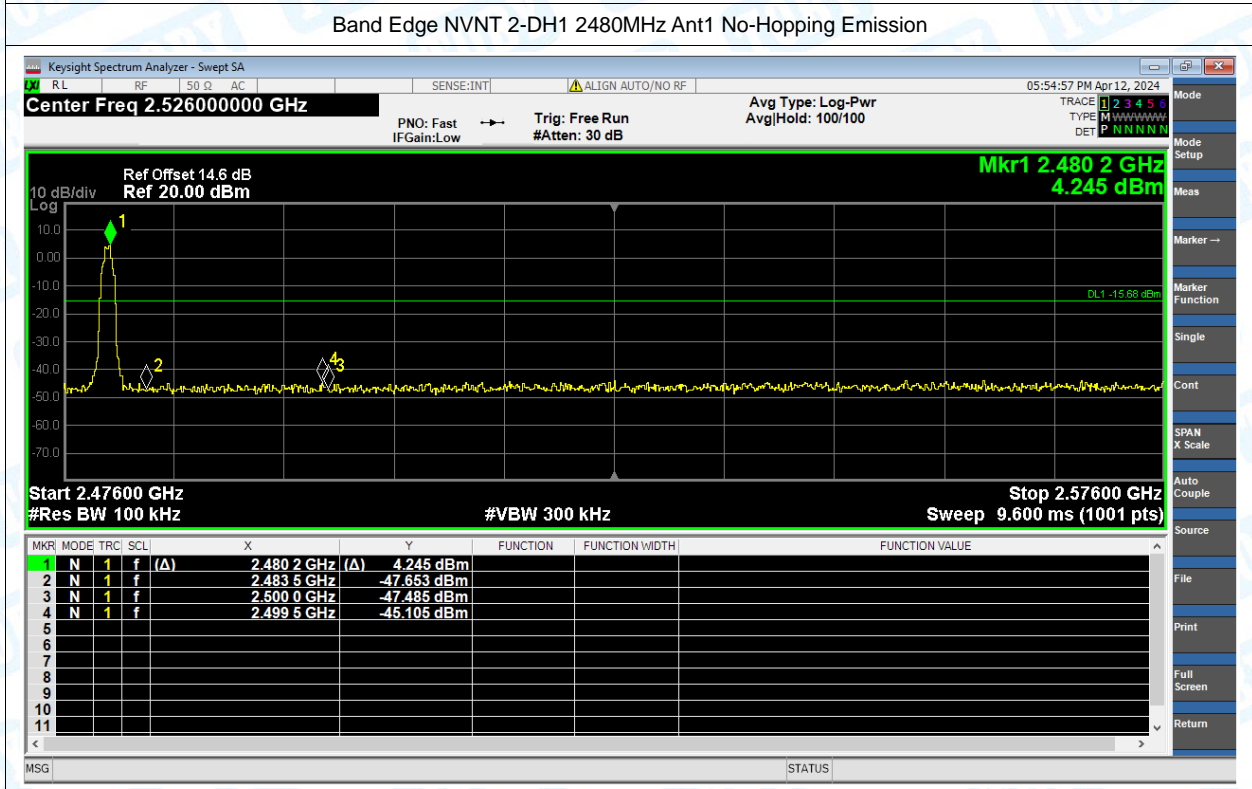
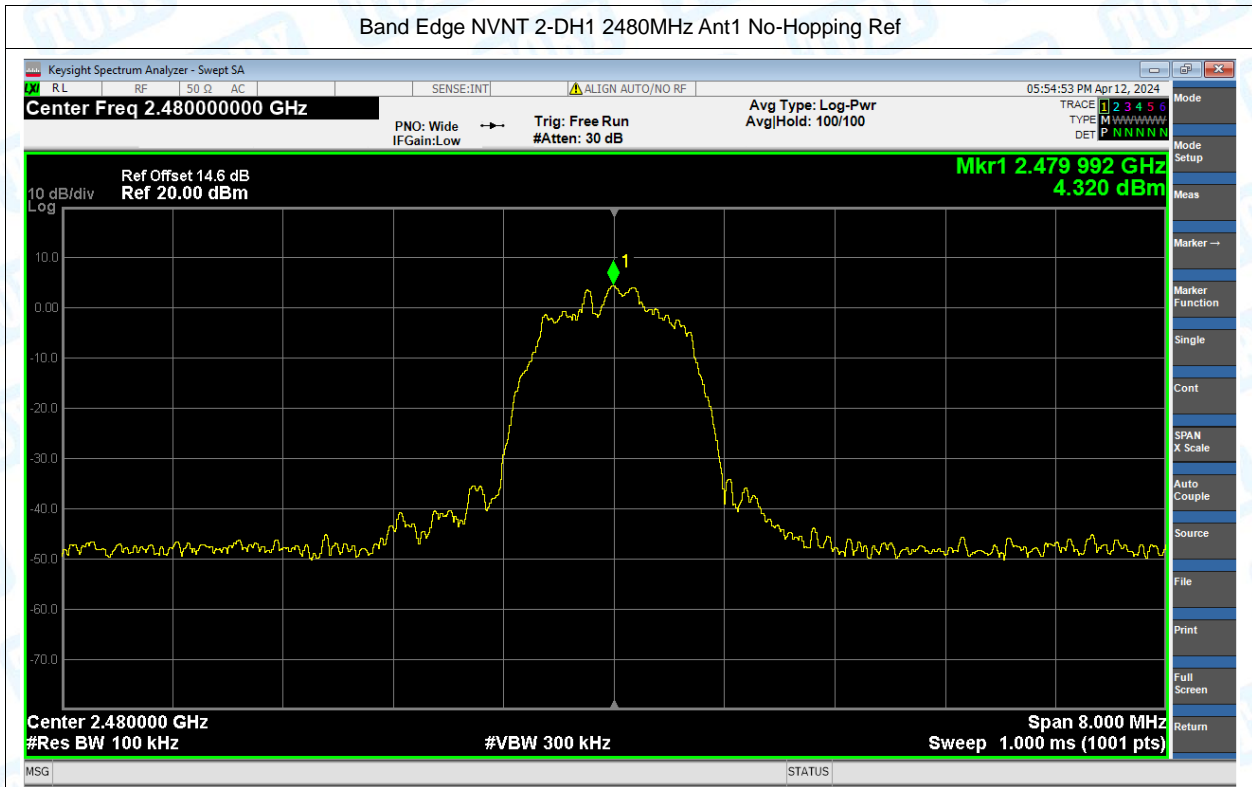
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



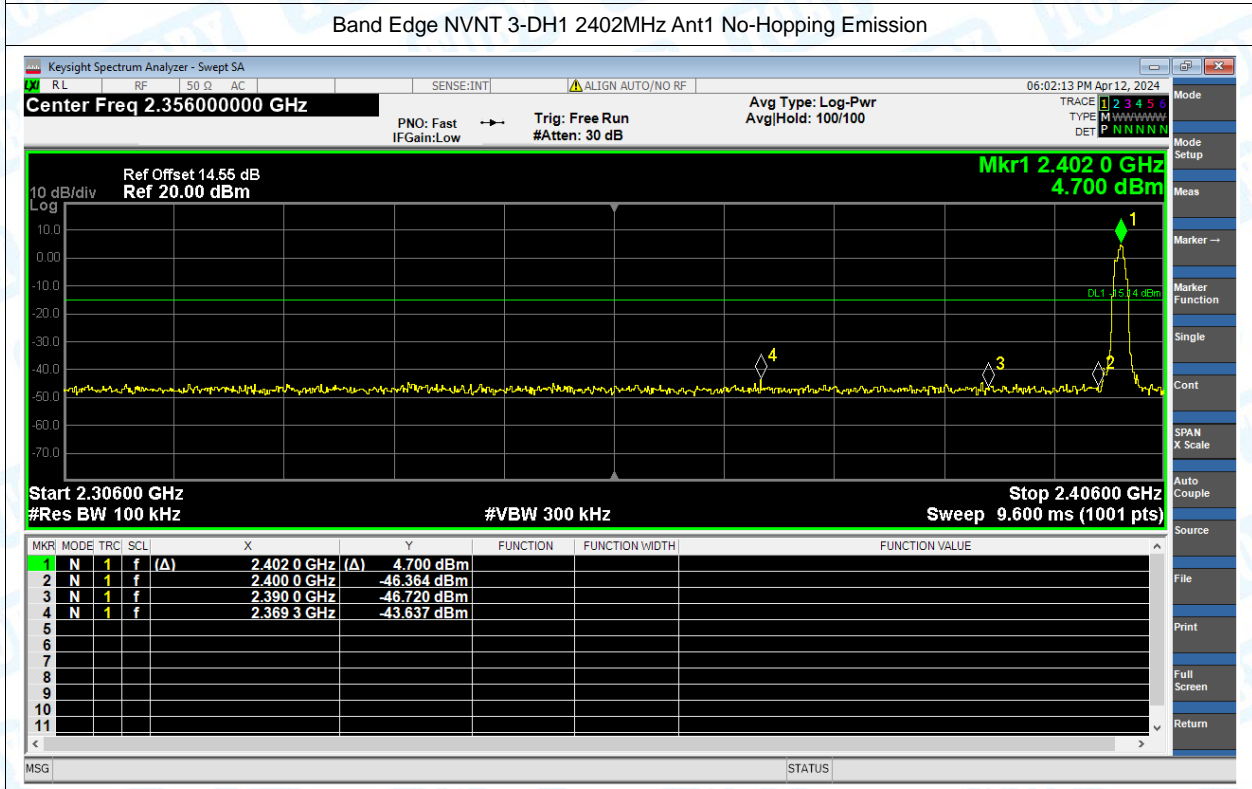
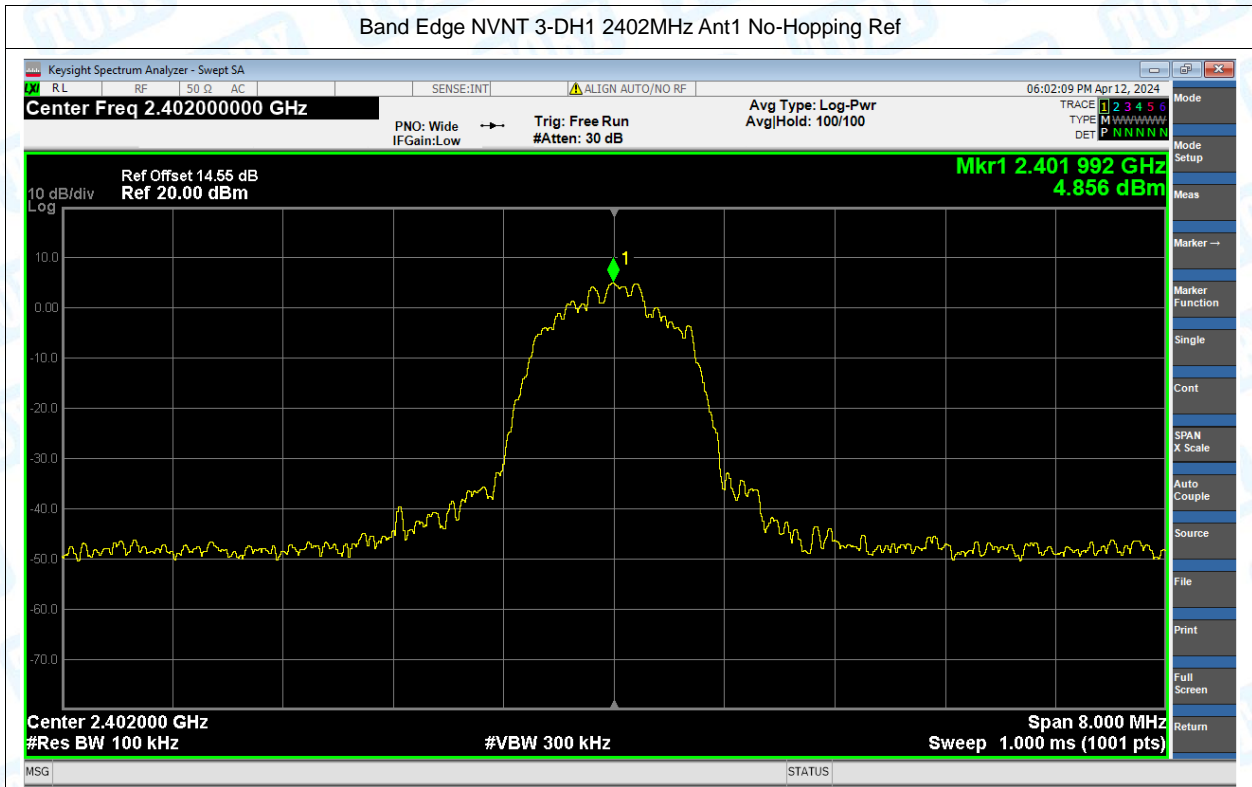


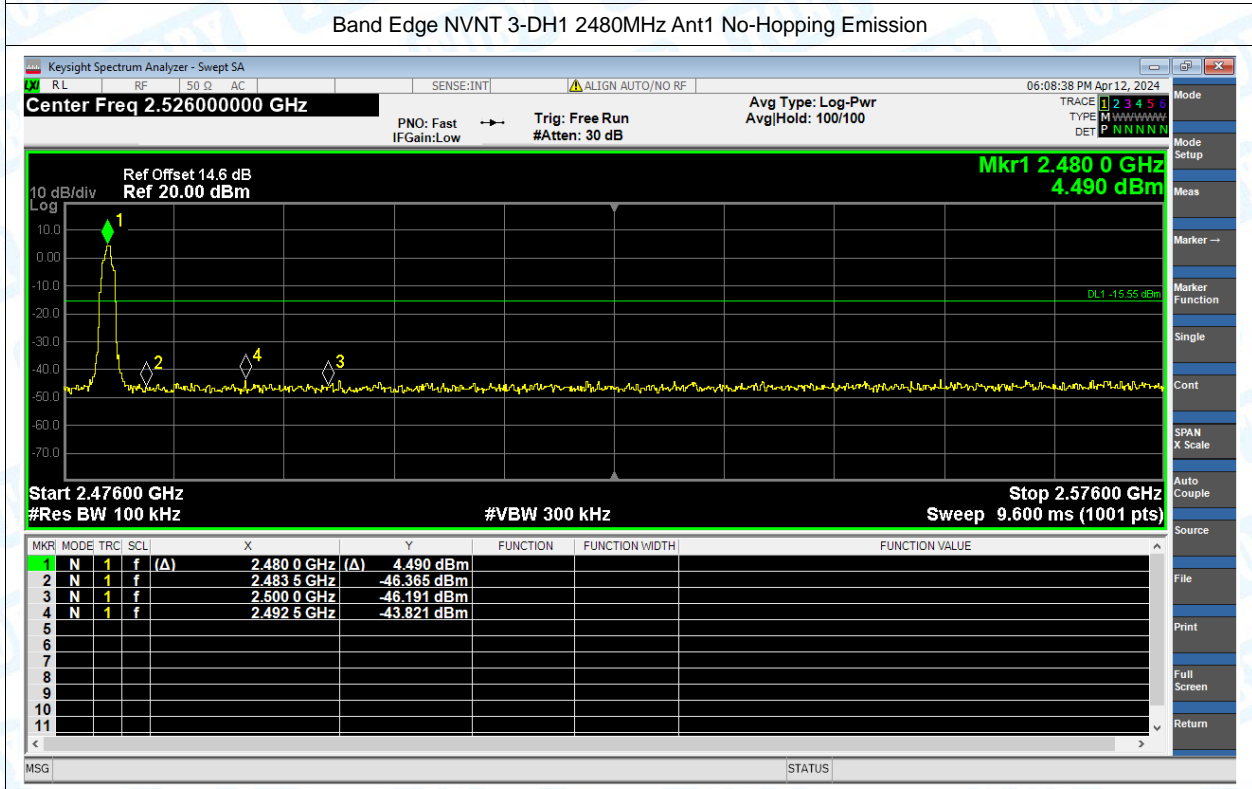
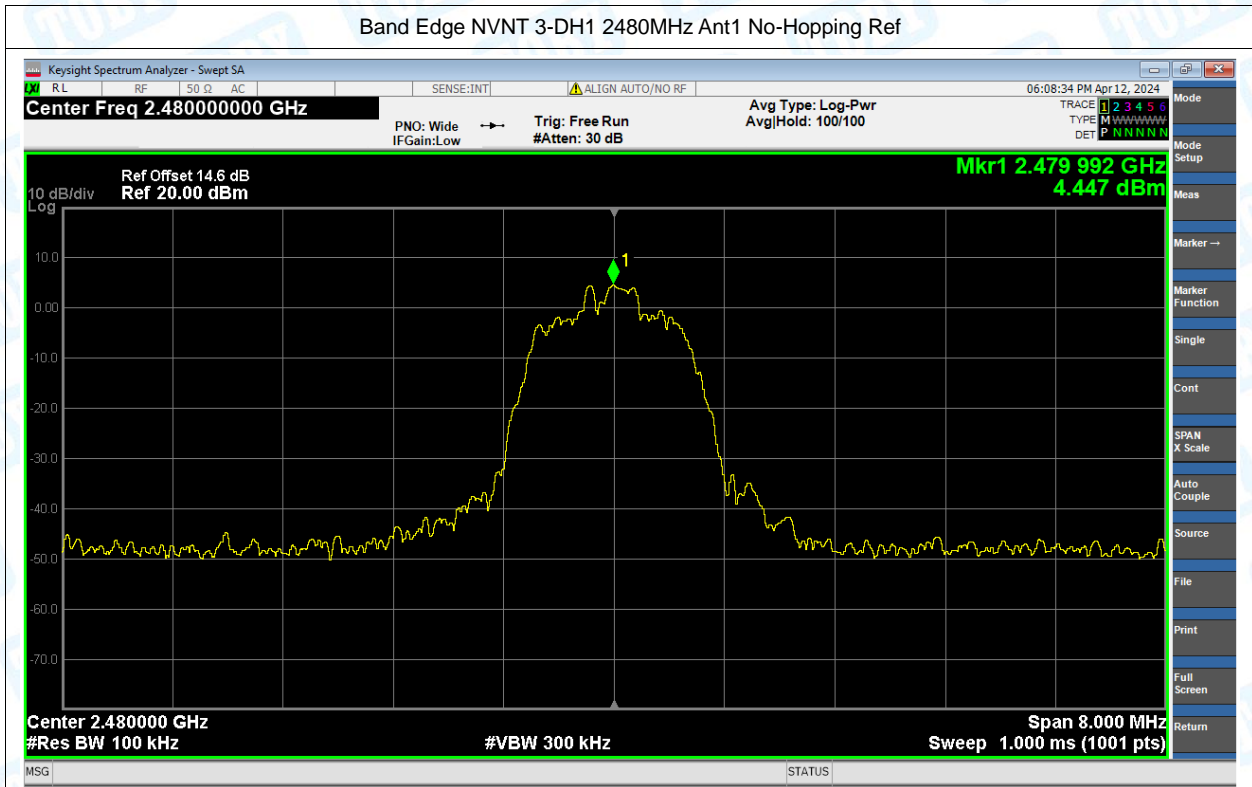












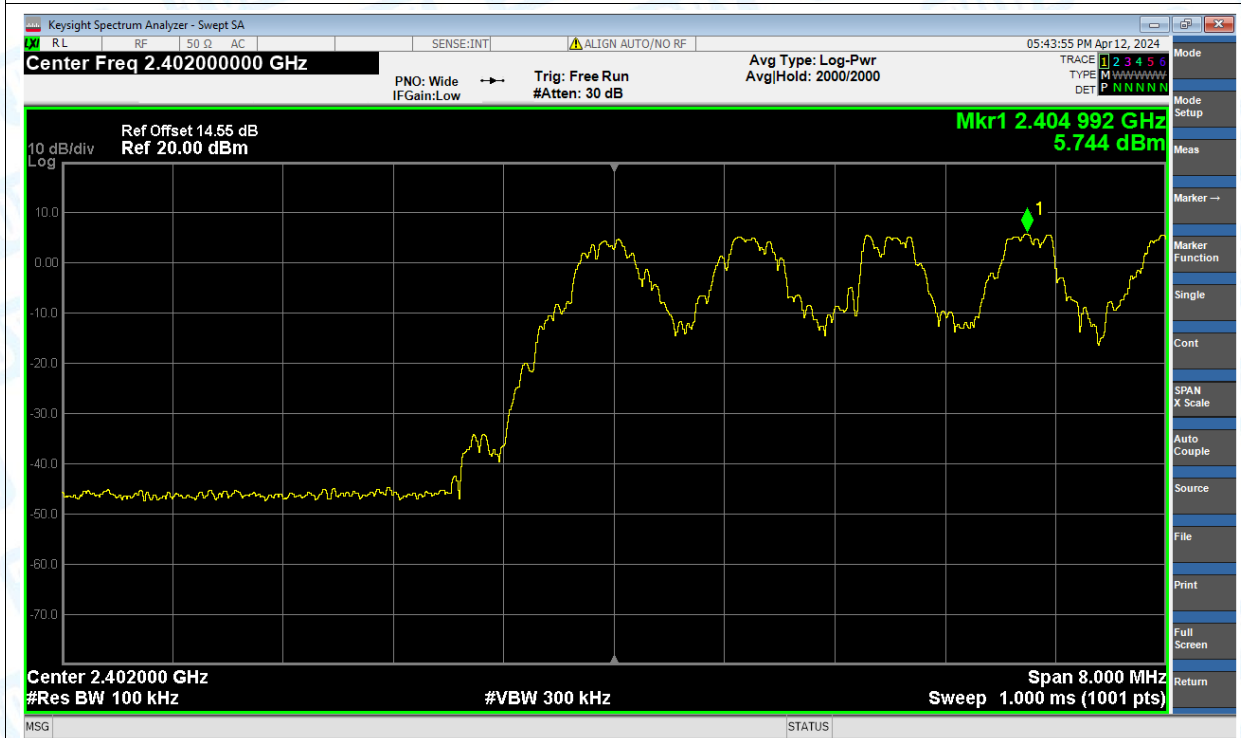


## 6. Band Edge(Hopping)

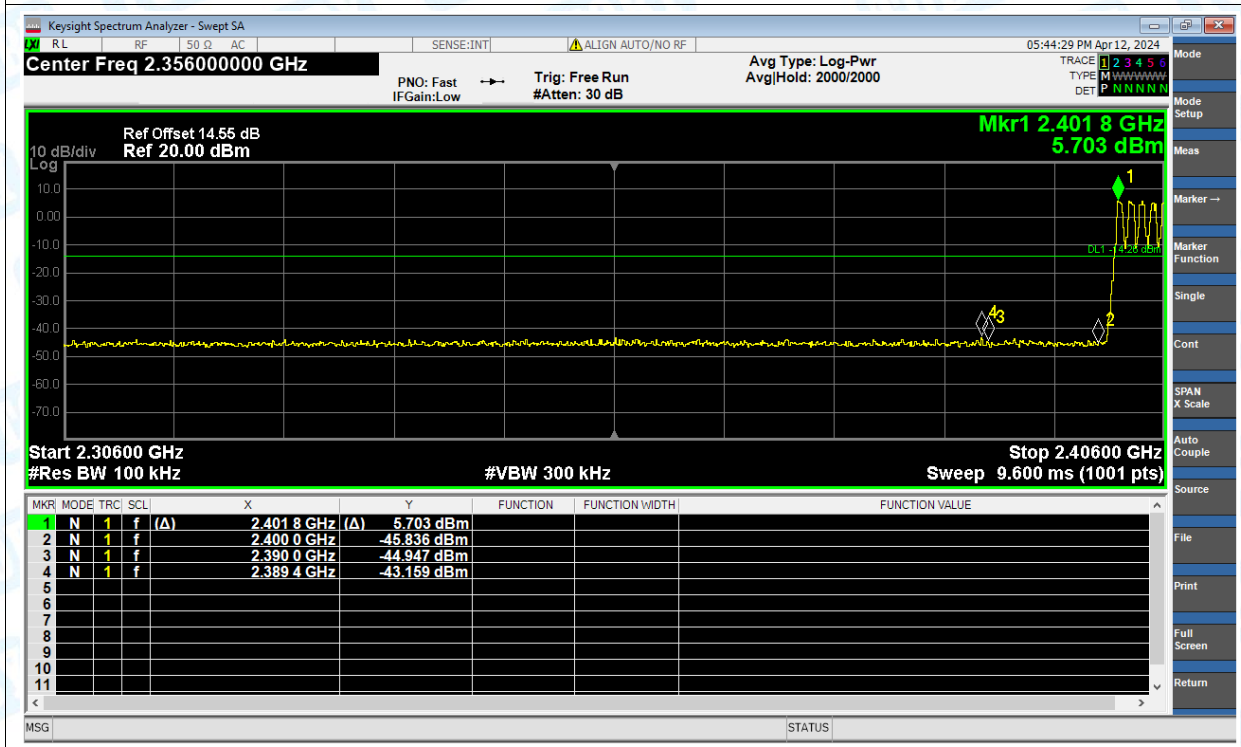
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-48.9	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-48.39	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-47.92	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-47.89	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-48.6	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-47.77	-20	Pass

Test Graphs

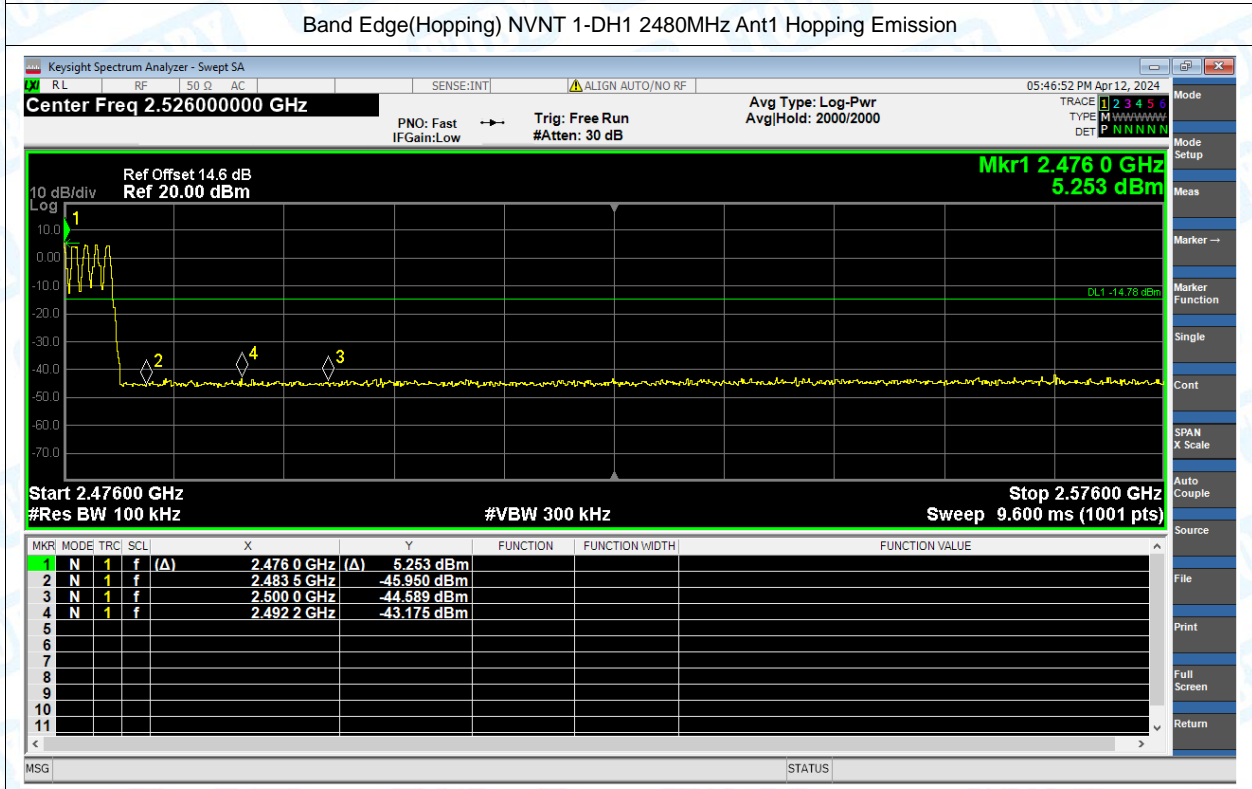
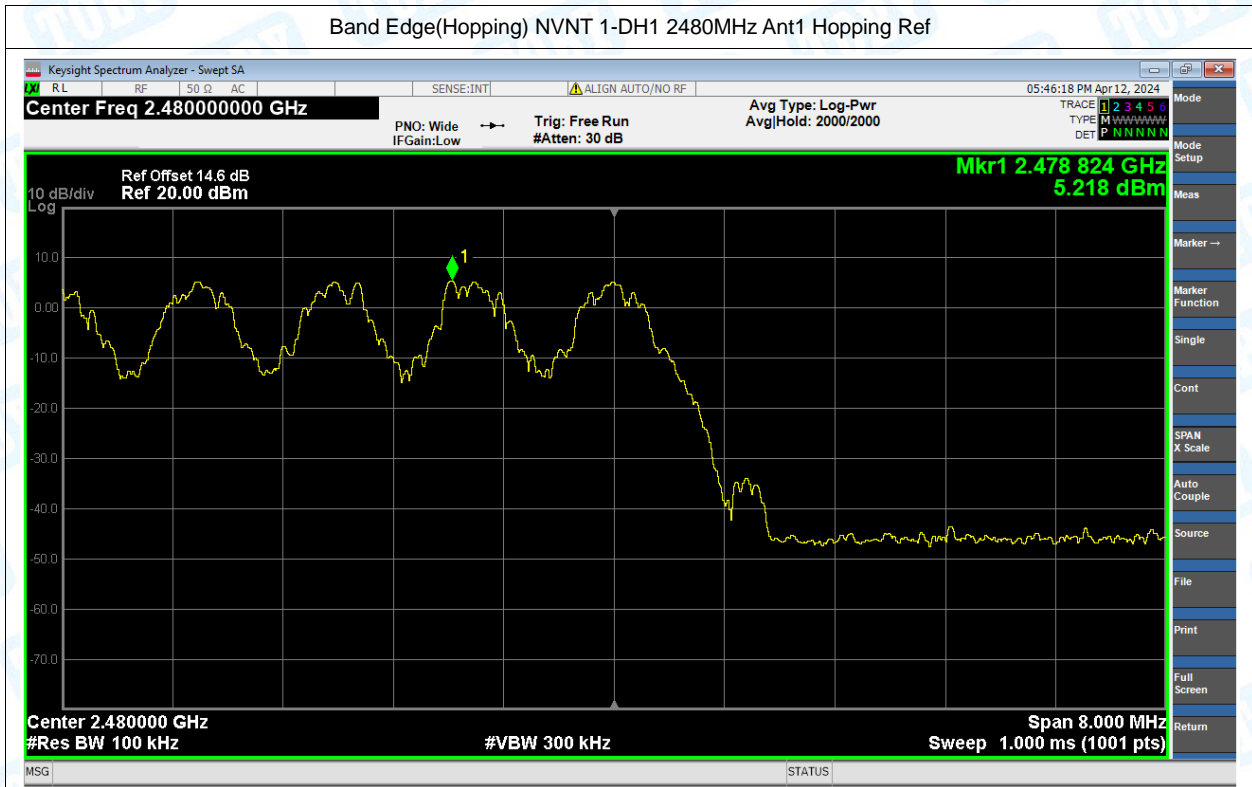
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref

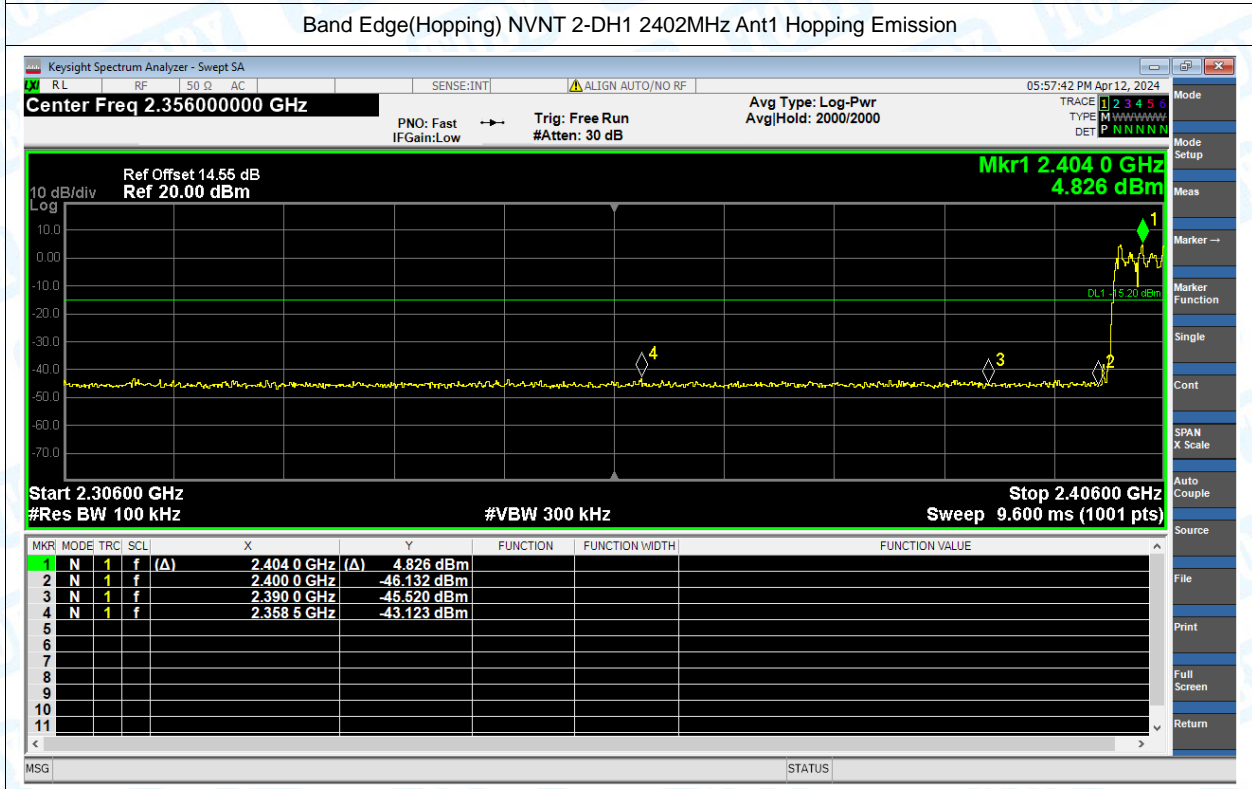
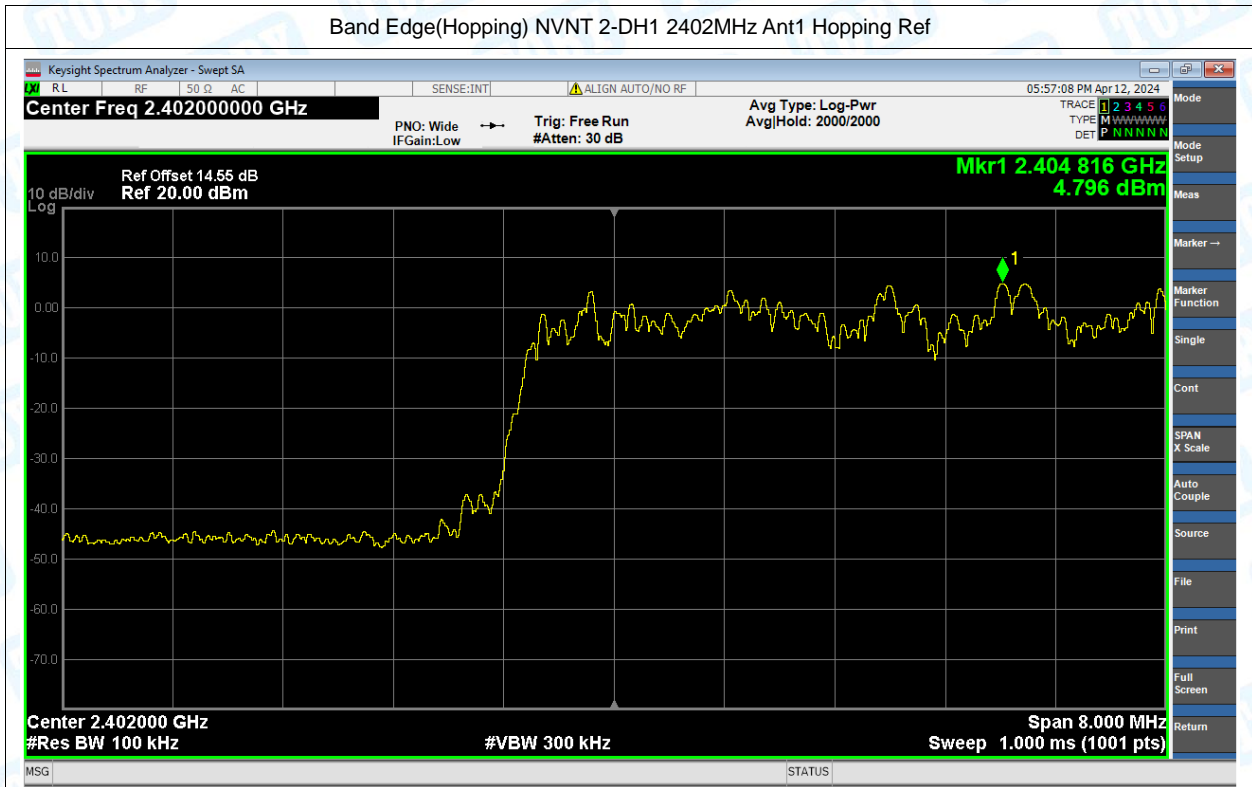


Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



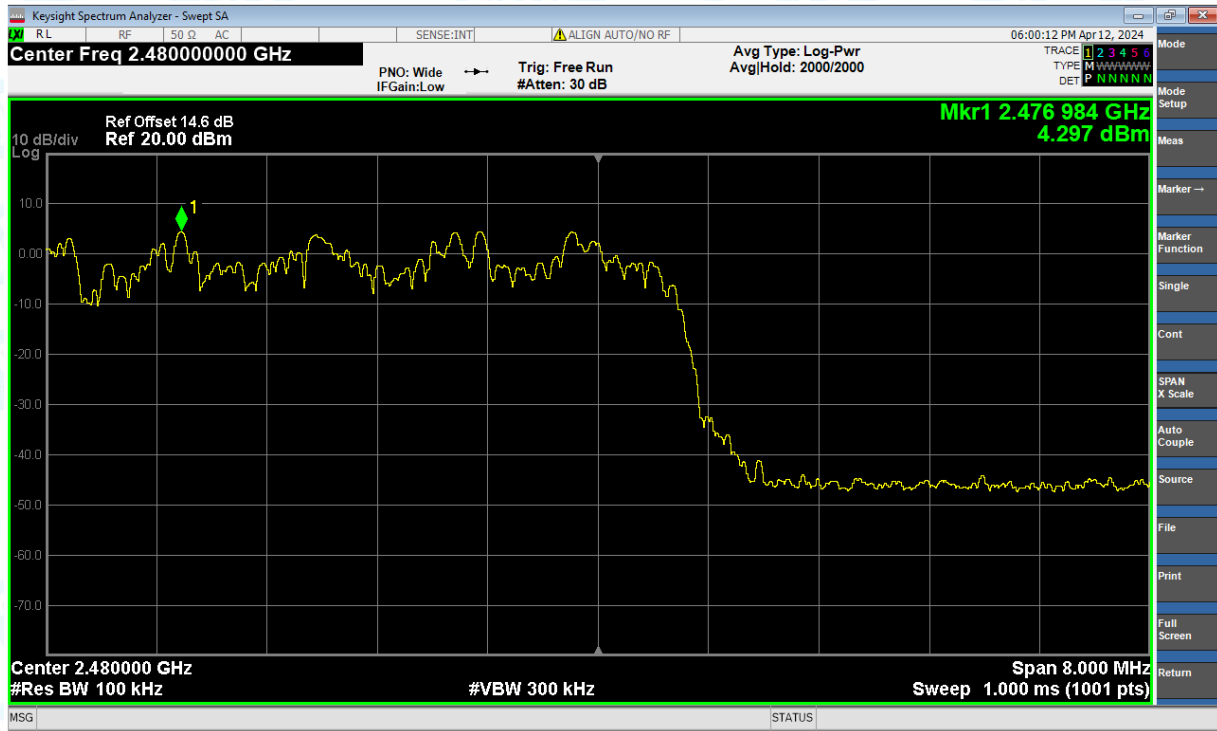




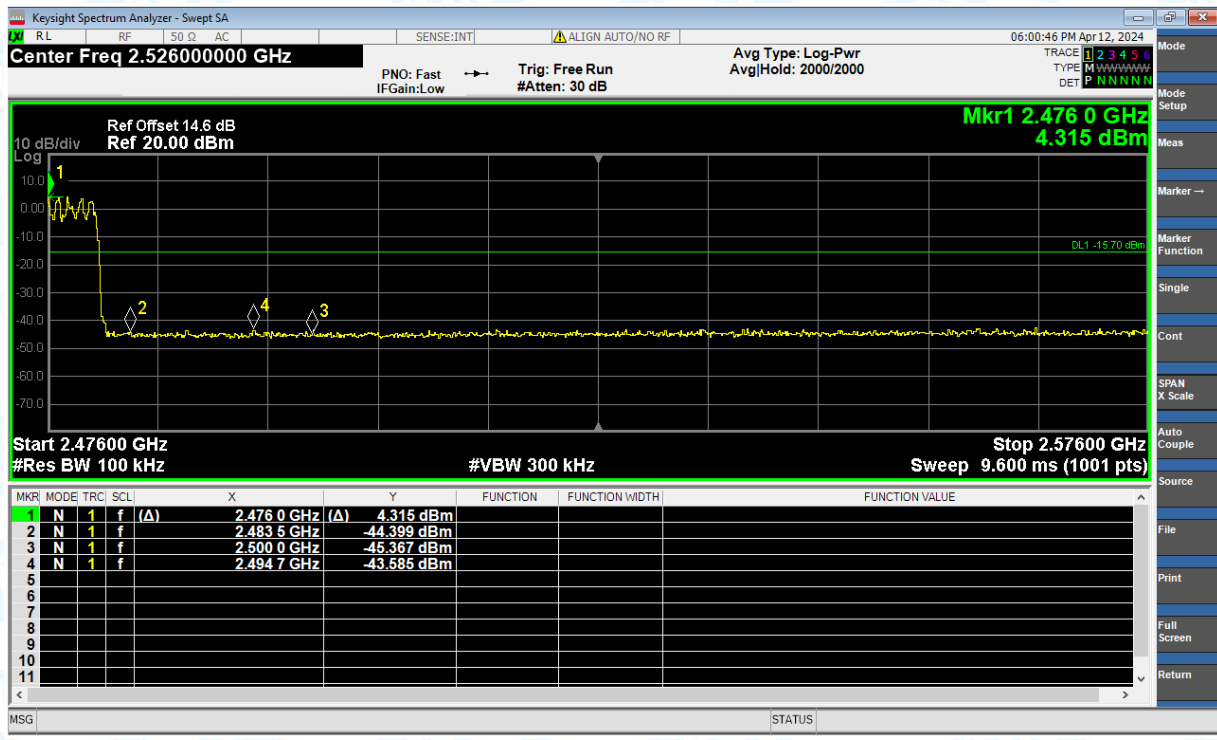


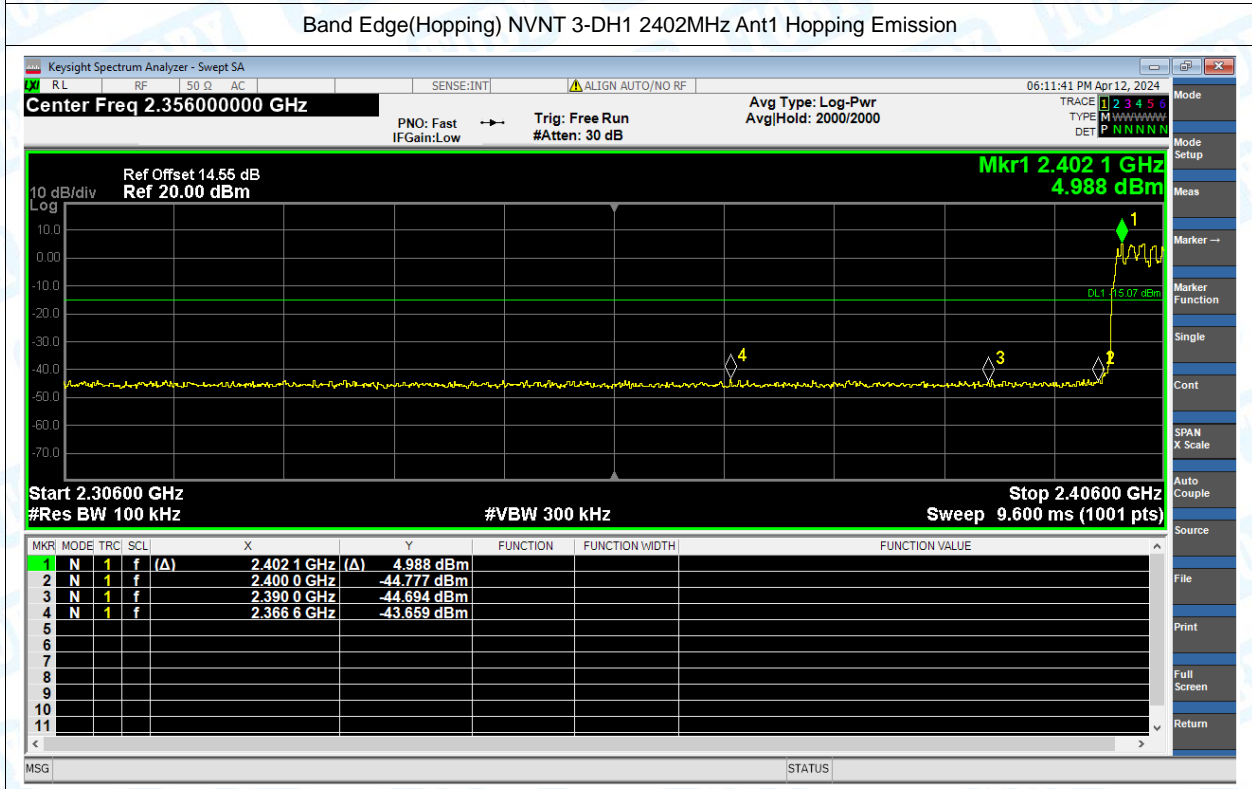
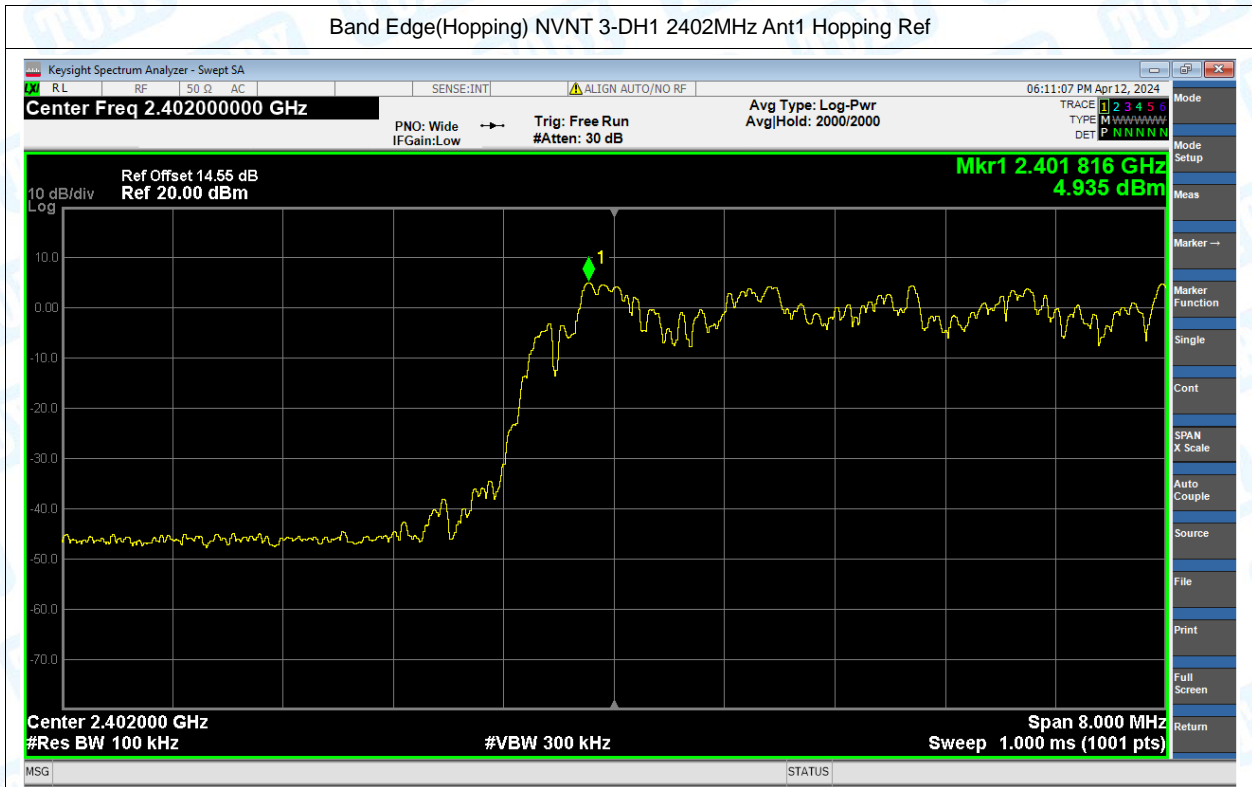


Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref

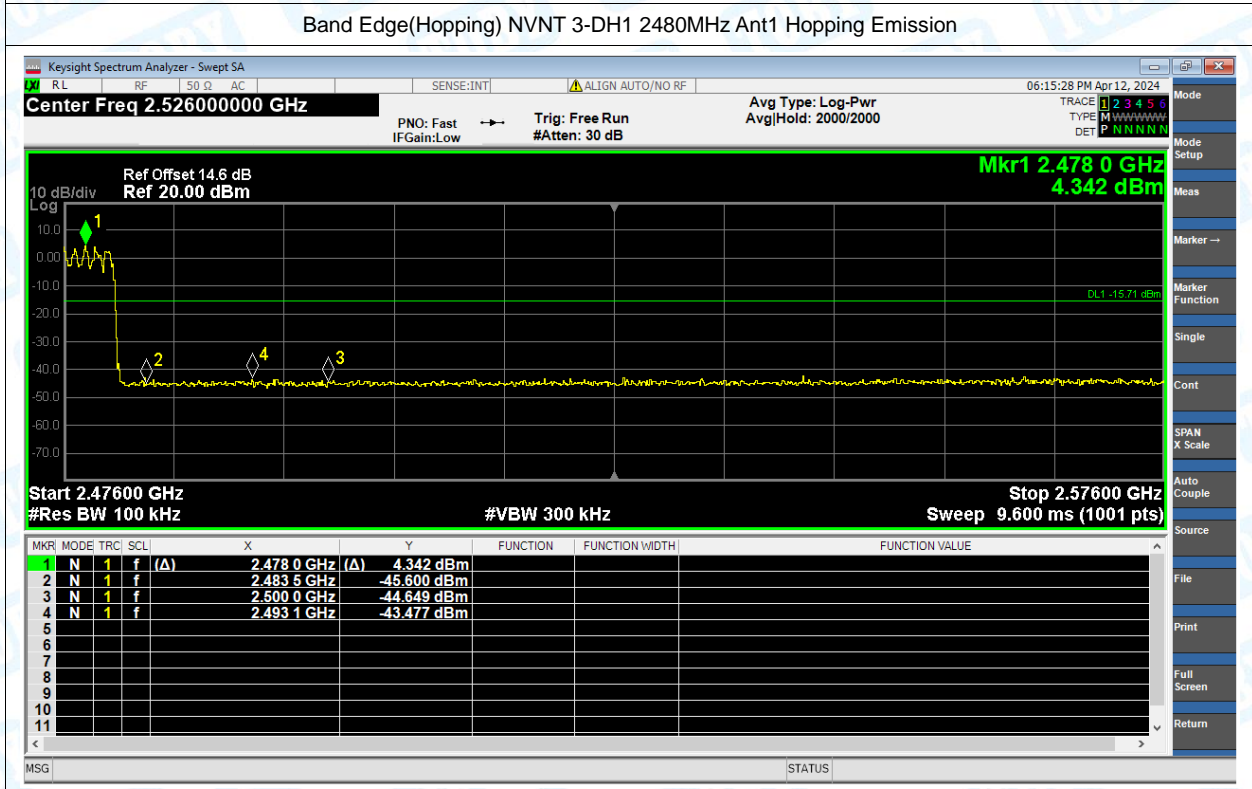
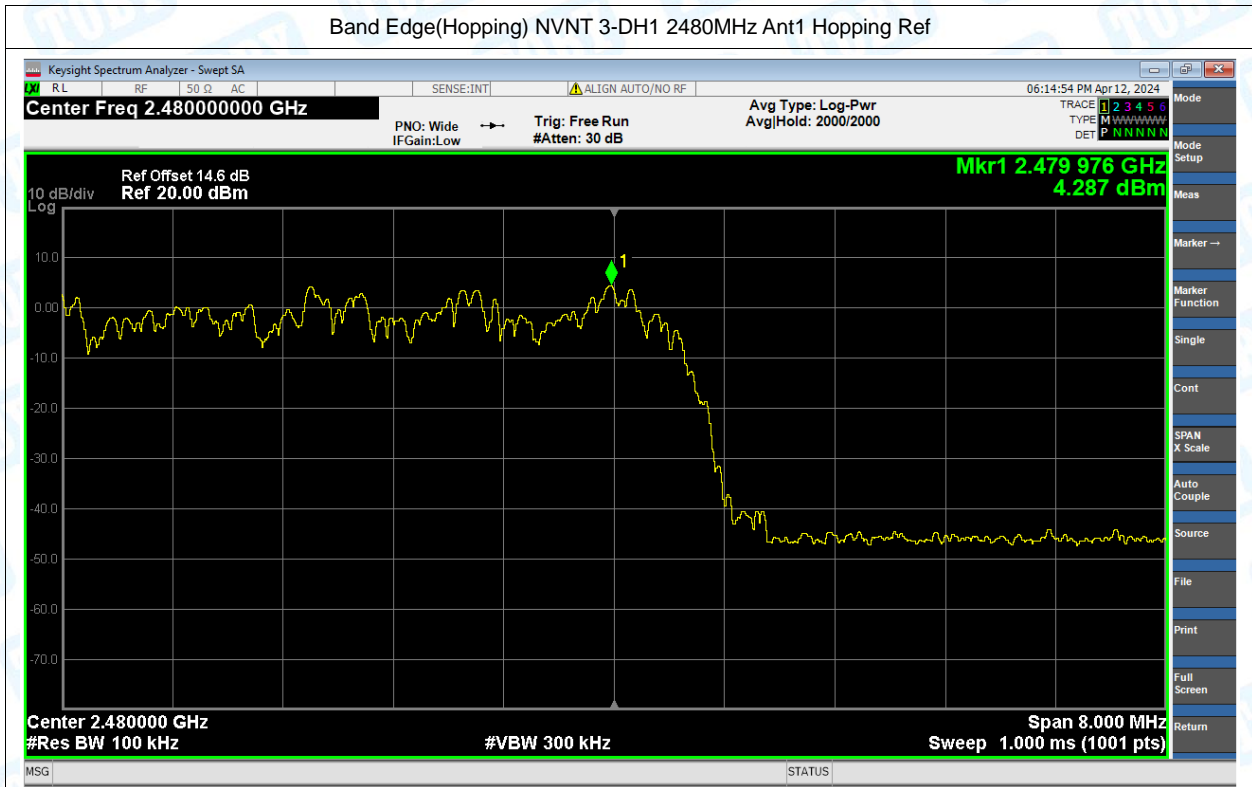


Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission









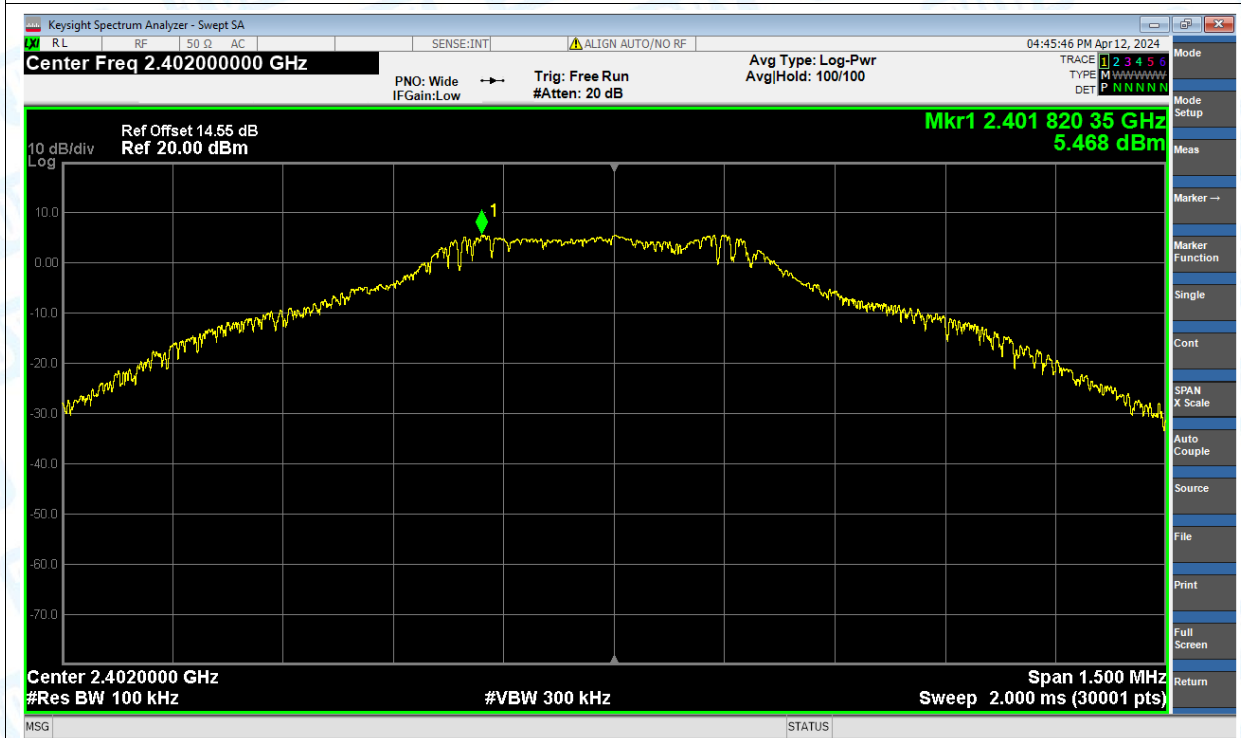
## 7. Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-43.97	-20	Pass
NVNT	1-DH1	2441	Ant1	-43.54	-20	Pass
NVNT	1-DH1	2480	Ant1	-44.52	-20	Pass
NVNT	2-DH1	2402	Ant1	-44.24	-20	Pass
NVNT	2-DH1	2441	Ant1	-43.98	-20	Pass
NVNT	2-DH1	2480	Ant1	-44.16	-20	Pass
NVNT	3-DH1	2402	Ant1	-43.88	-20	Pass
NVNT	3-DH1	2441	Ant1	-45.3	-20	Pass
NVNT	3-DH1	2480	Ant1	-44.12	-20	Pass

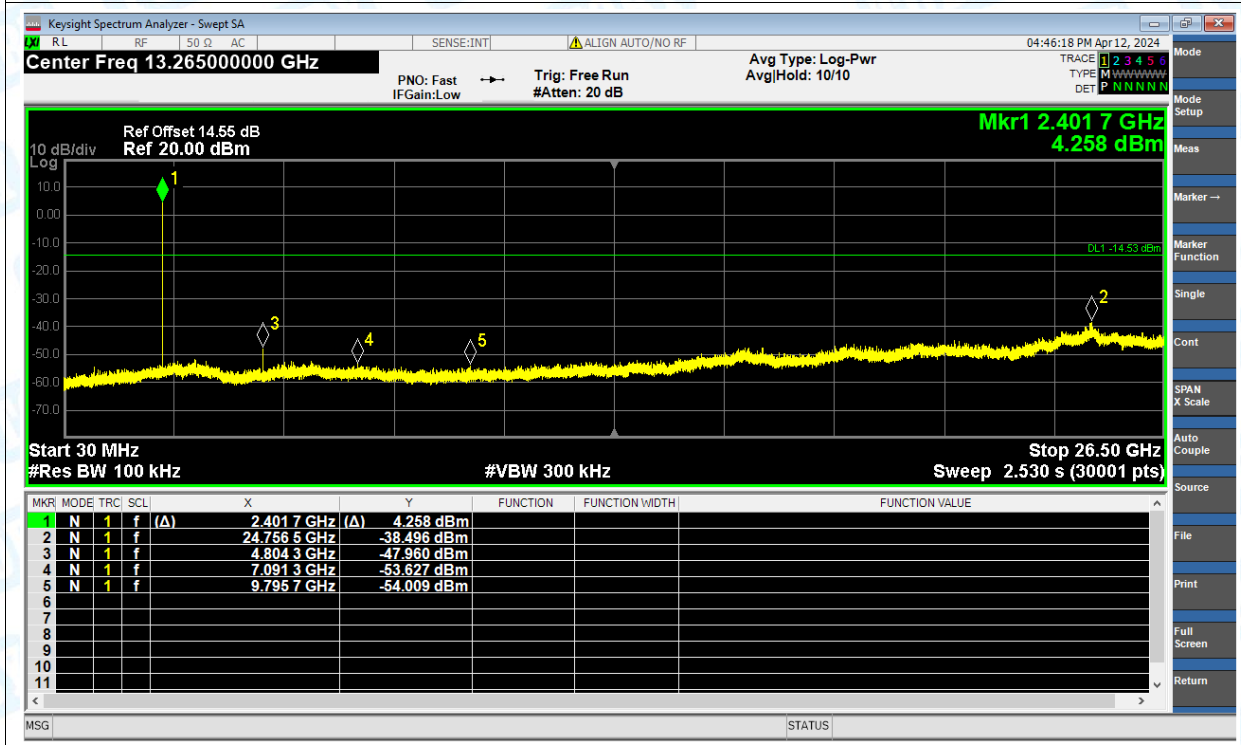


Test Graphs

Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



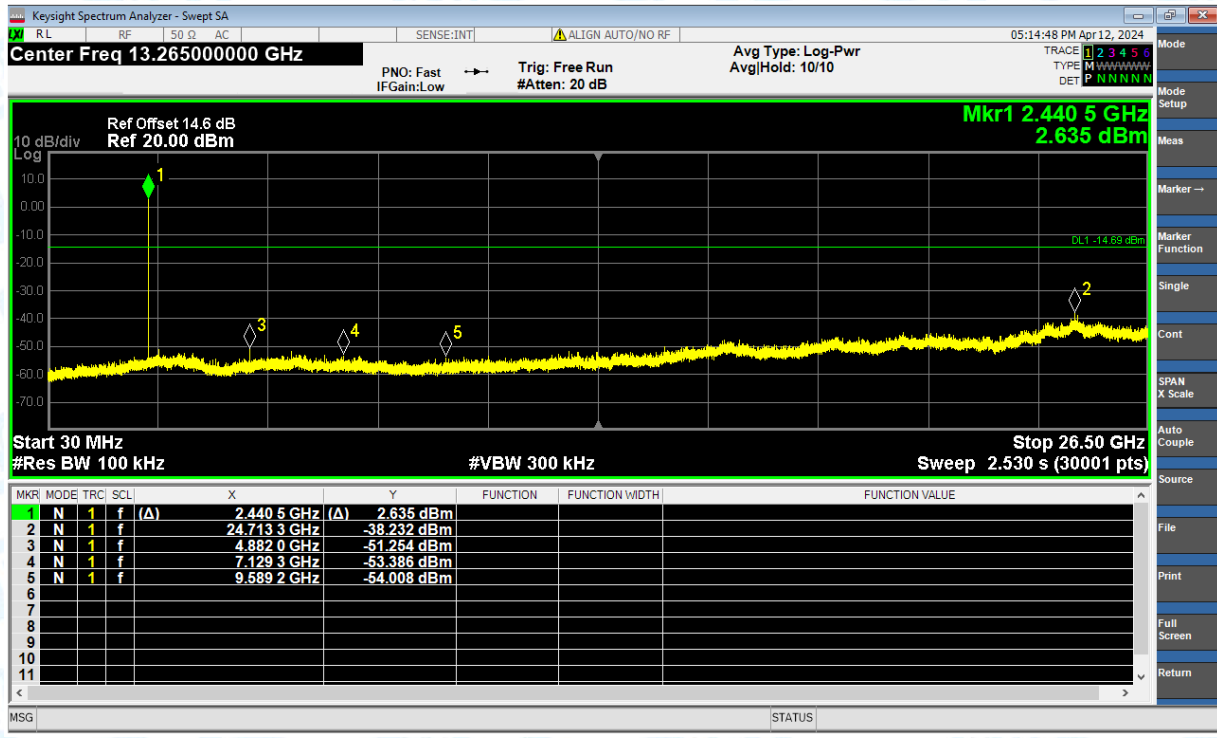
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission

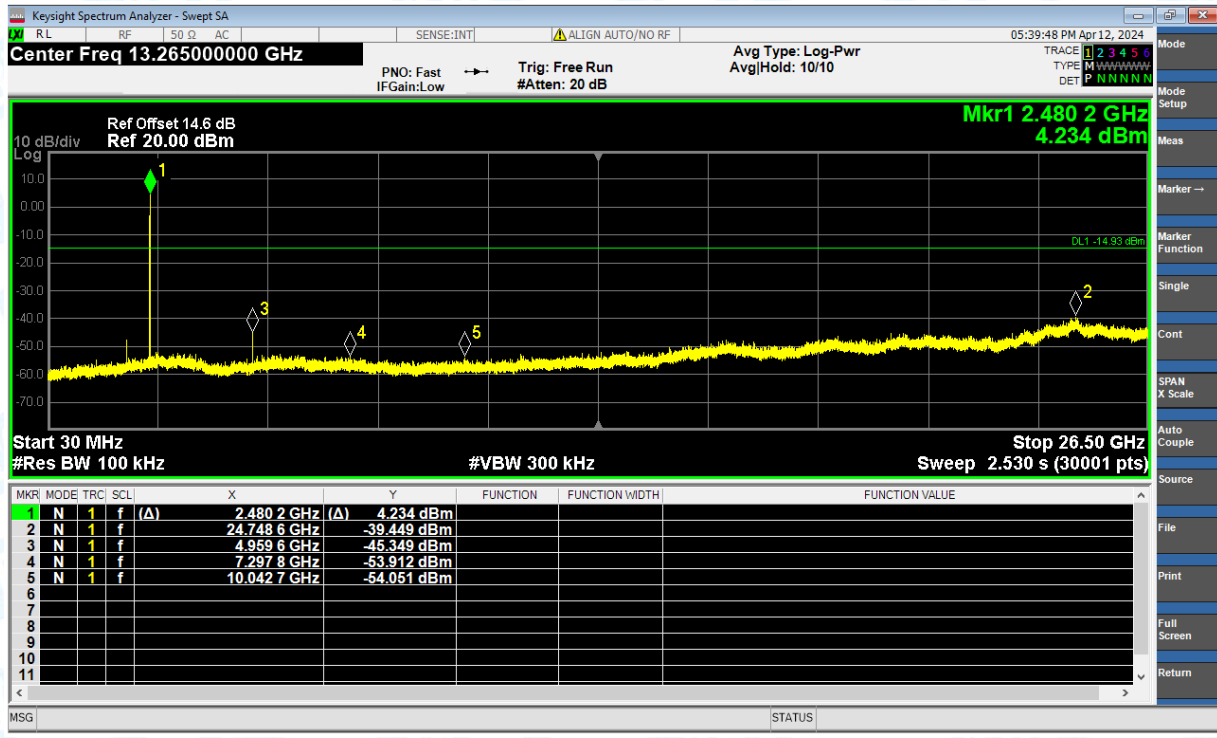




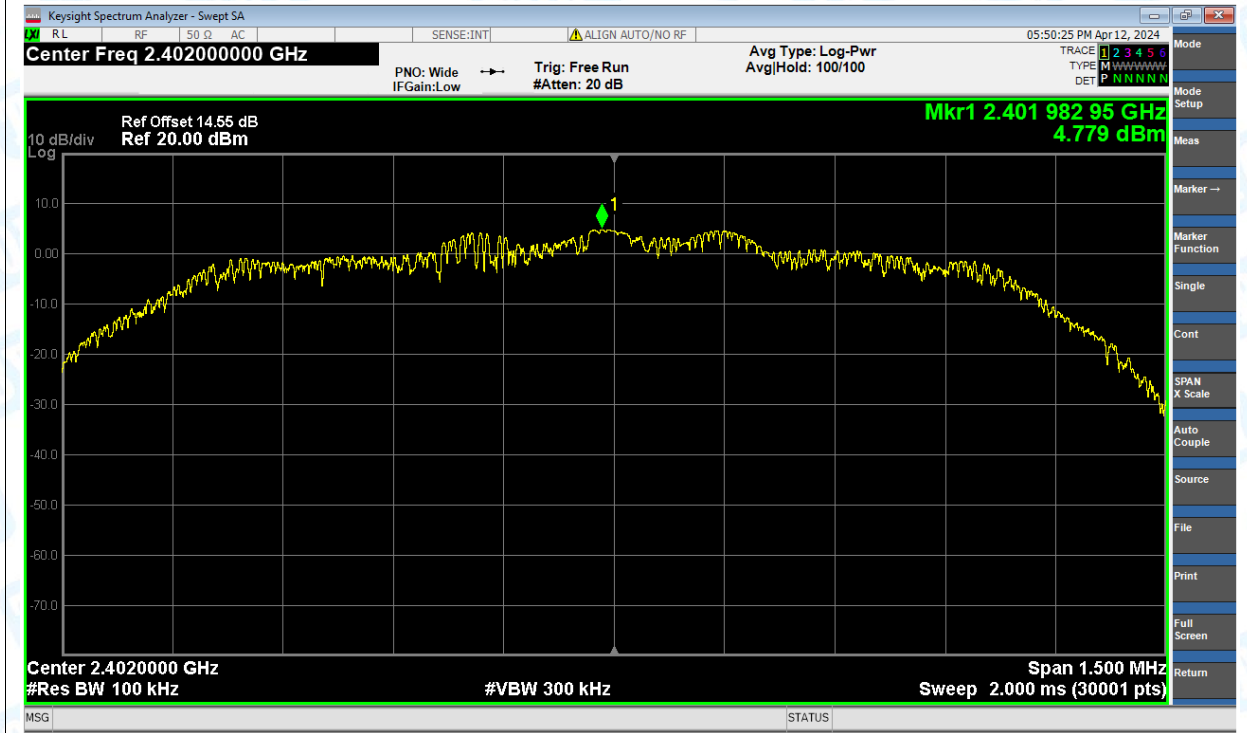
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



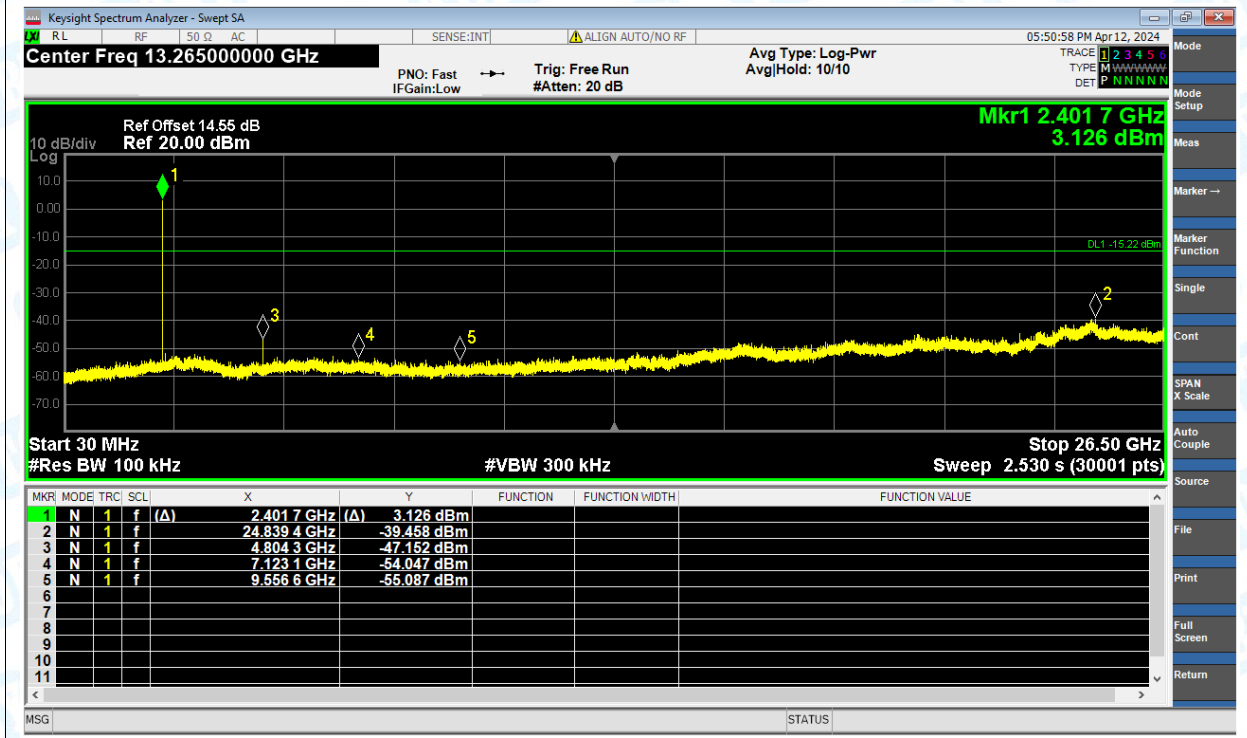
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission

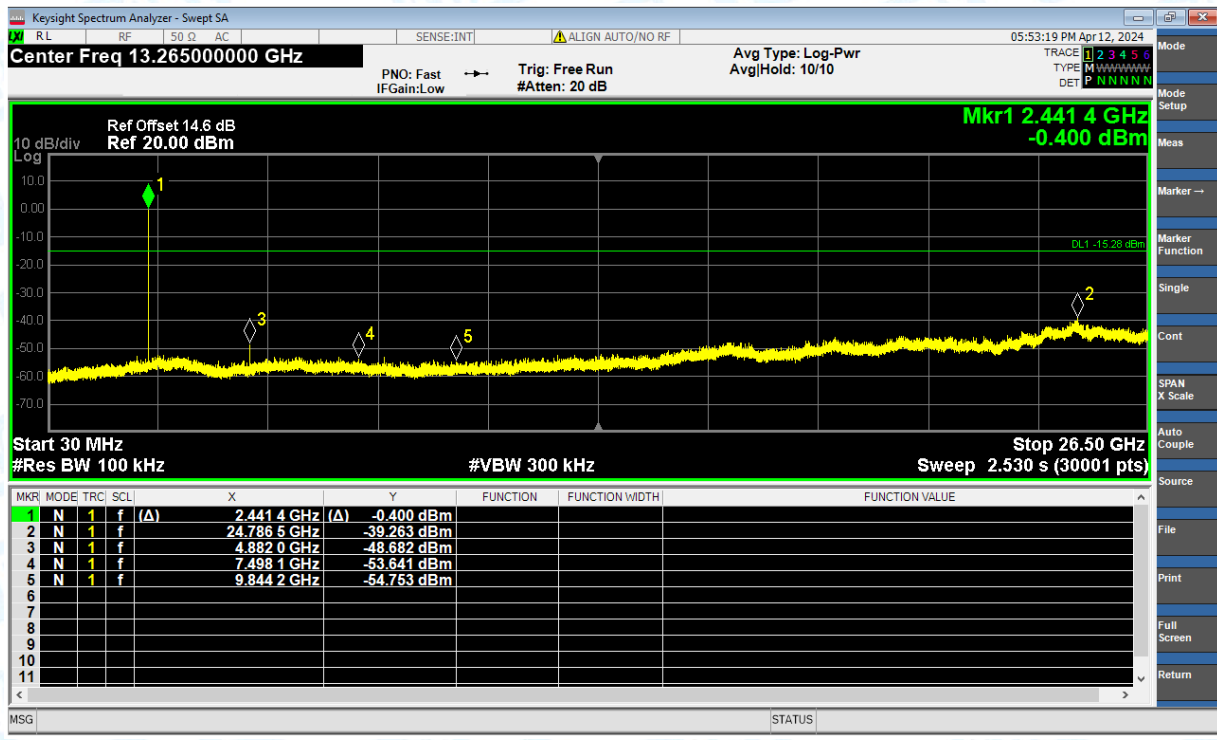




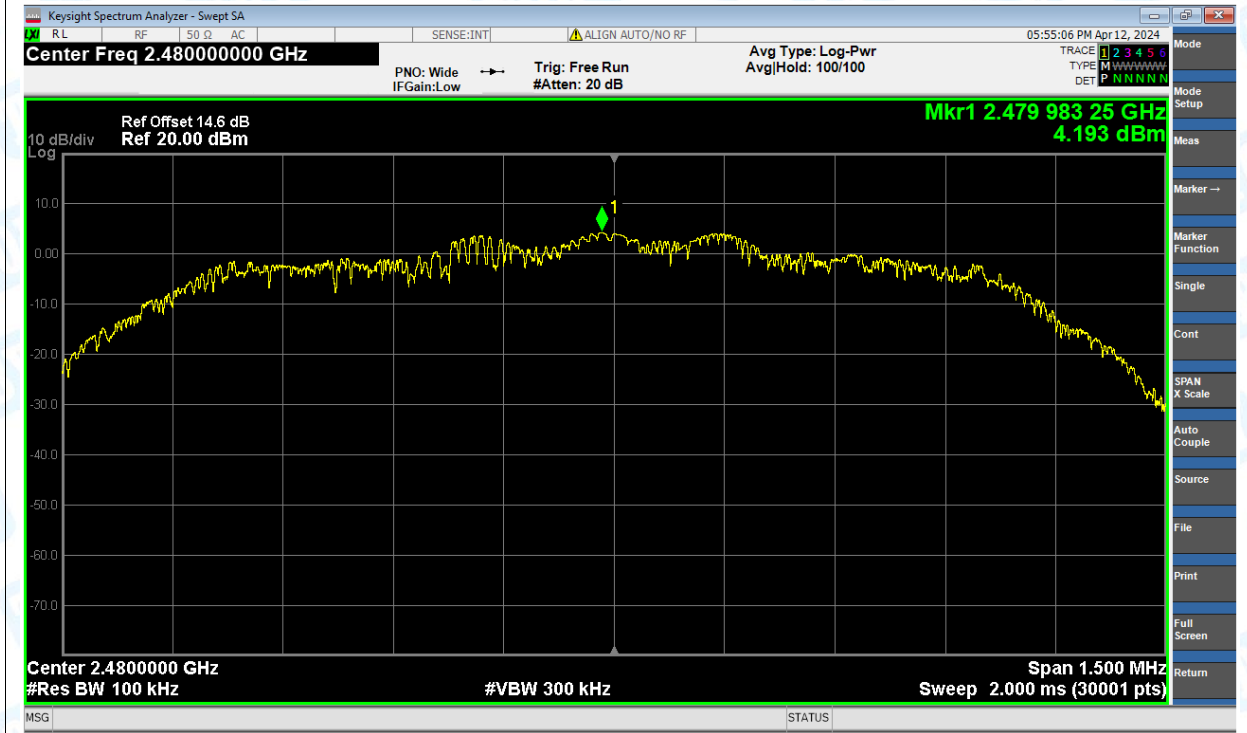
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



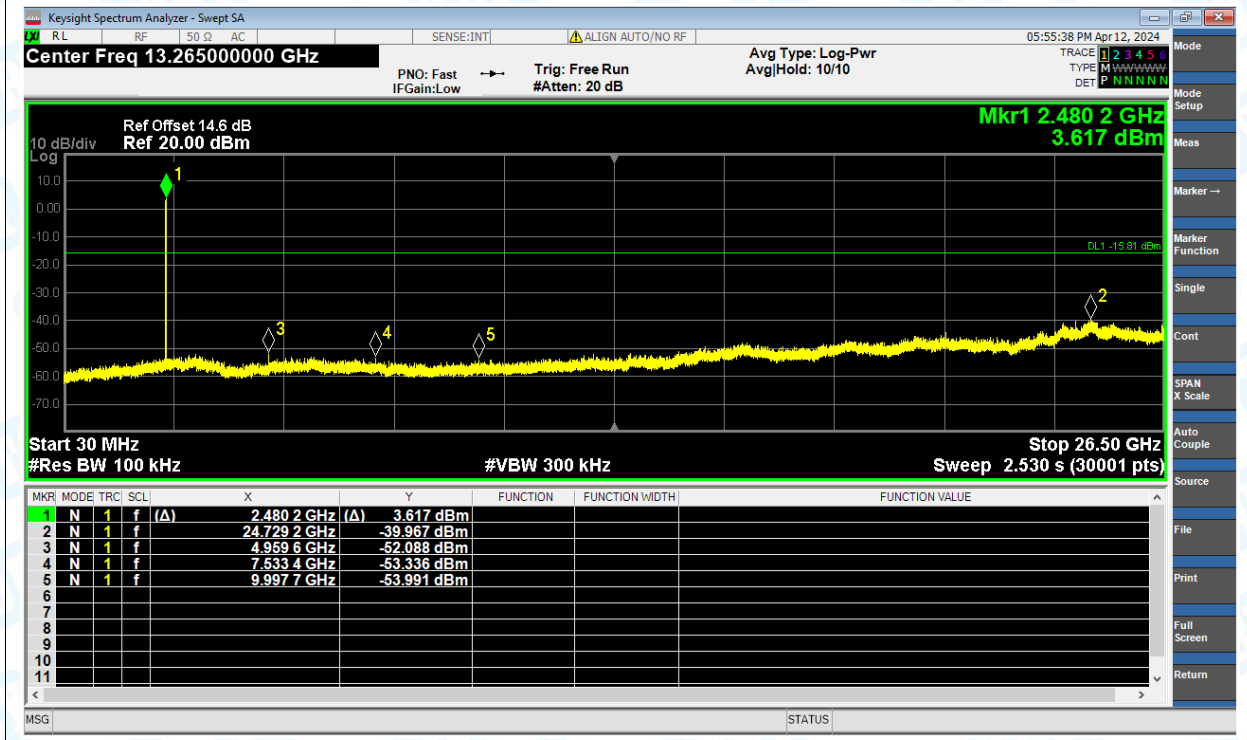
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



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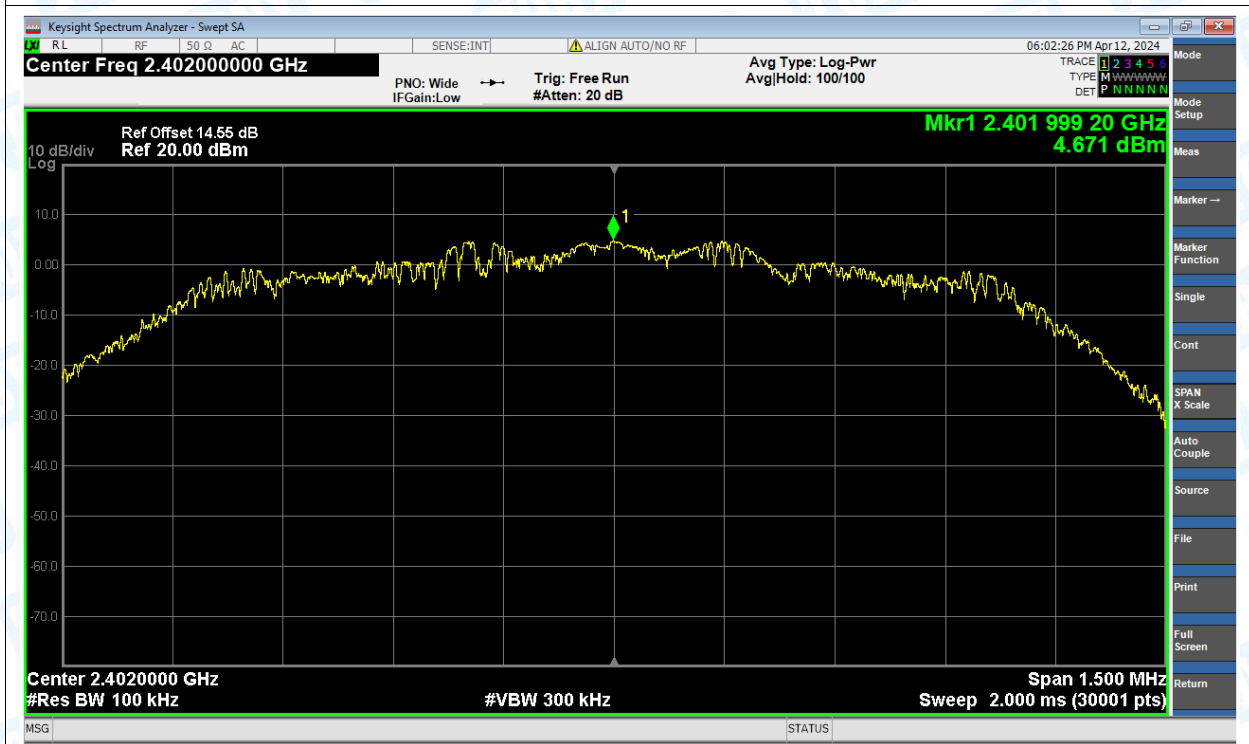


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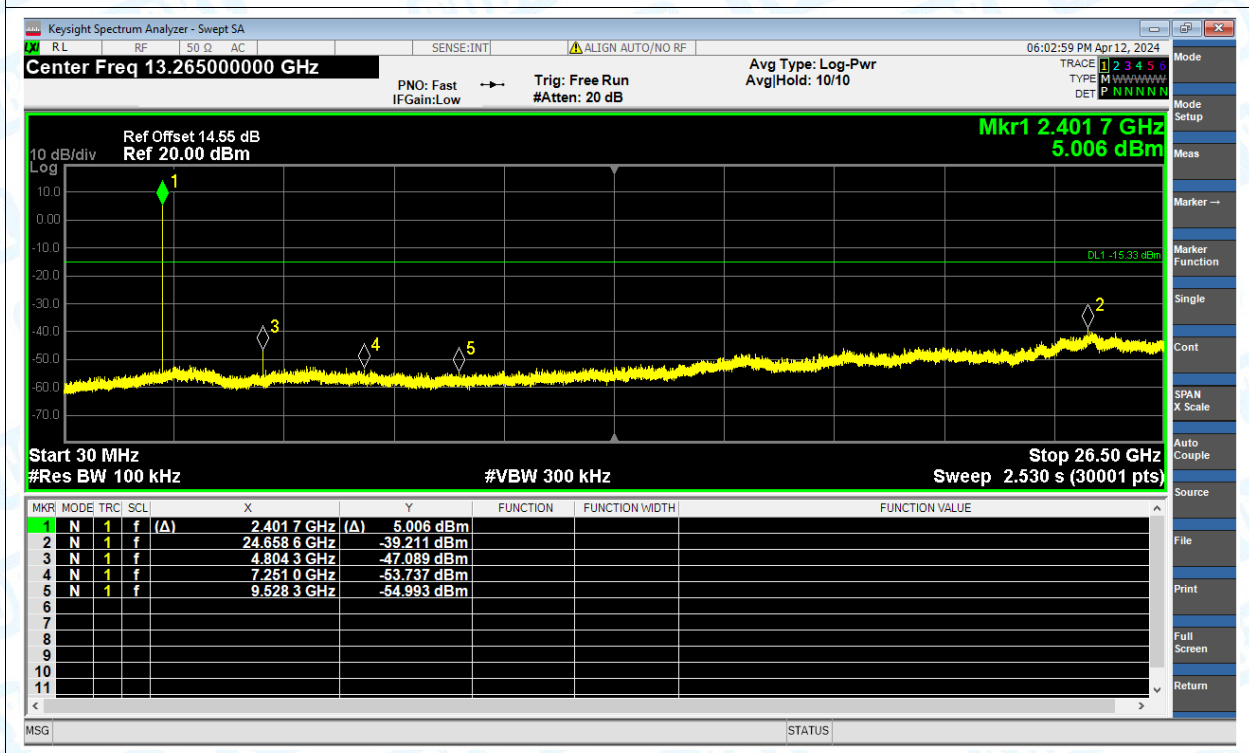




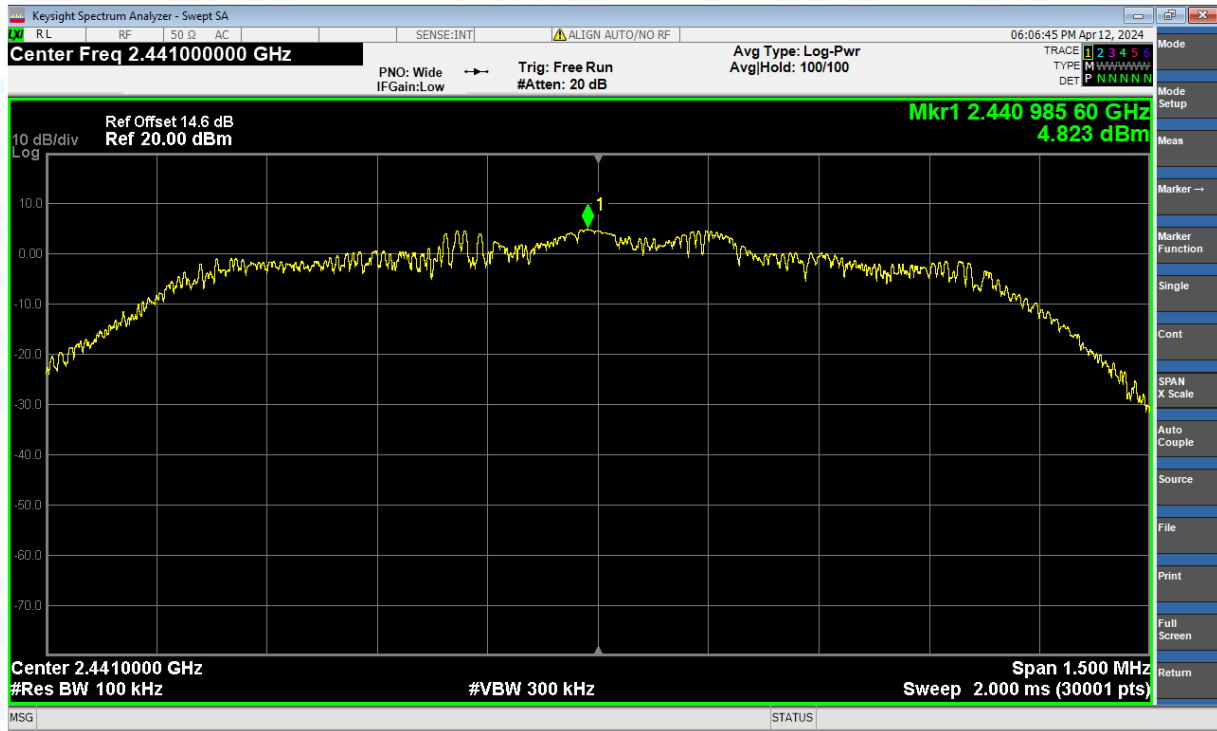
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



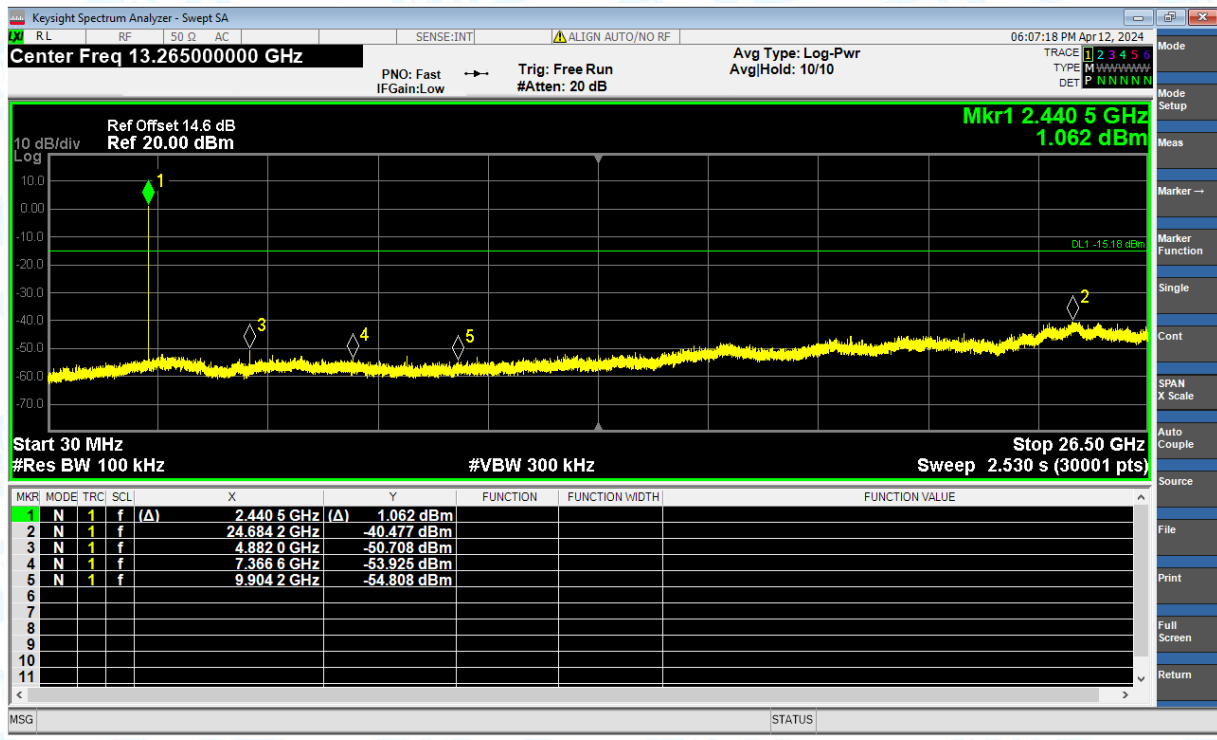
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref

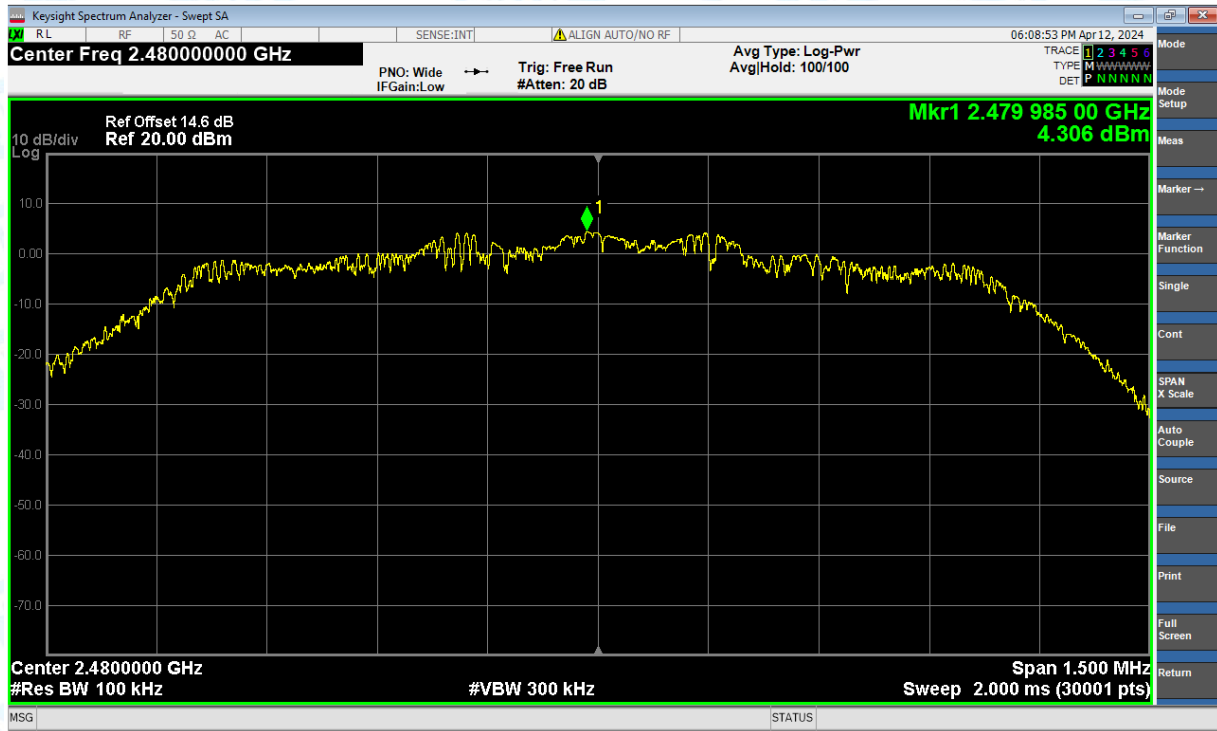


Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission

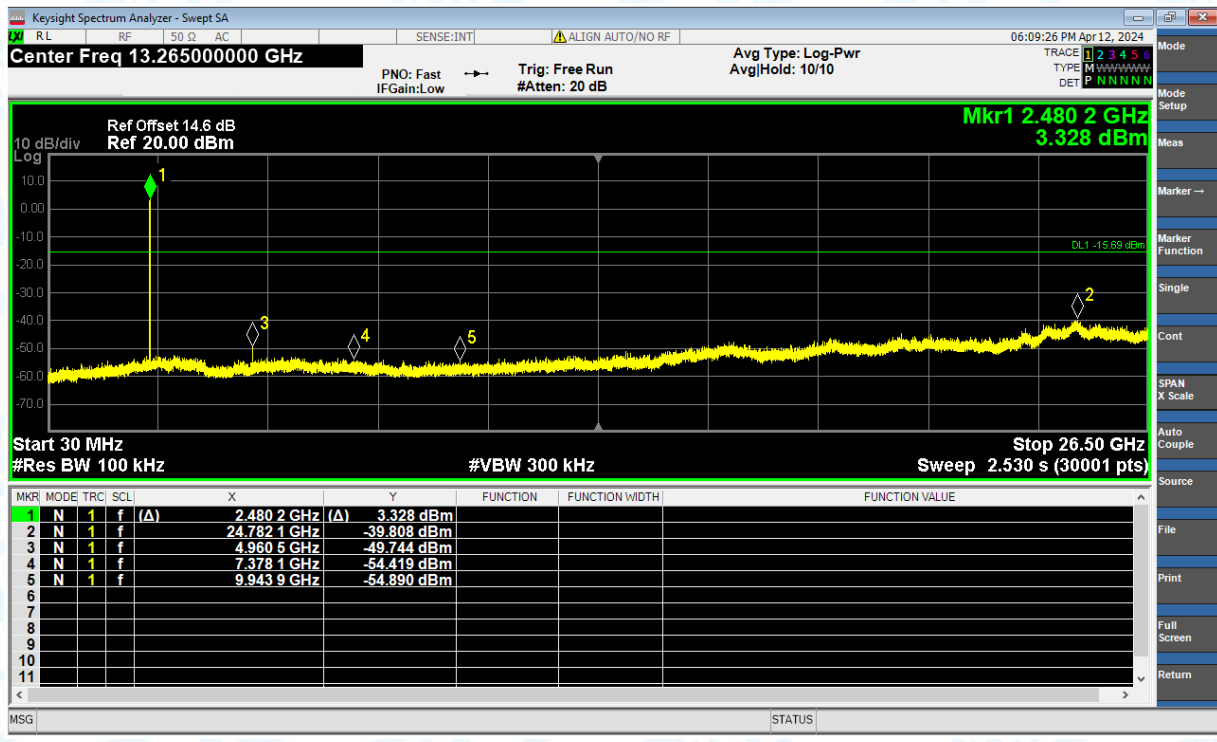




Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission



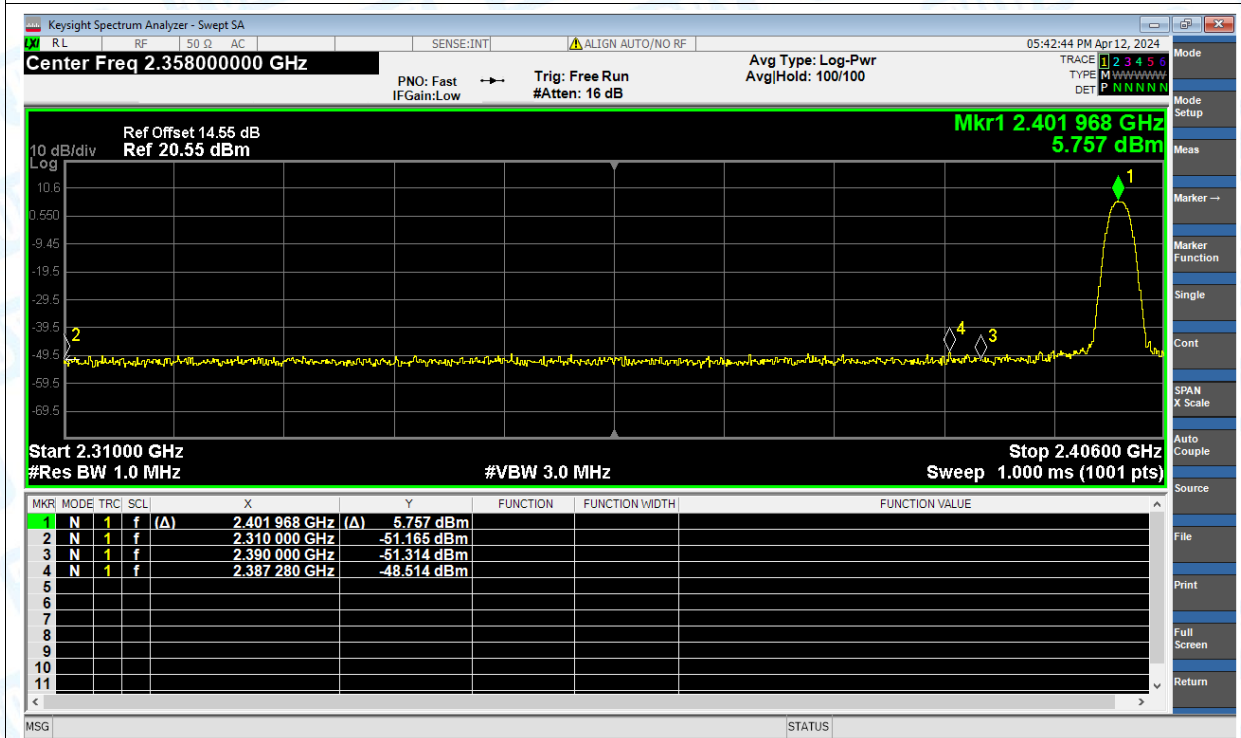
## 8. Restrict Band

Condition	Mode	Frequency (MHz)	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	No-Hopping	2310	-51.17	2	-	46.09	Peak	74	Pass
NVNT	1-DH1	2402	No-Hopping	2310	-59.95	2	5.07	42.38	Average	54	Pass
NVNT	1-DH1	2402	No-Hopping	2387.28	-48.51	2	-	48.75	Peak	74	Pass
NVNT	1-DH1	2402	No-Hopping	2386.608	-58.78	2	5.07	43.55	Average	54	Pass
NVNT	1-DH1	2402	No-Hopping	2390	-51.31	2	-	45.95	Peak	74	Pass
NVNT	1-DH1	2402	No-Hopping	2390	-59.27	2	5.07	43.06	Average	54	Pass
NVNT	1-DH1	2480	No-Hopping	2483.5	-49.29	2	-	47.97	Peak	74	Pass
NVNT	1-DH1	2480	No-Hopping	2483.5	-58.13	2	5.1	44.23	Average	54	Pass
NVNT	1-DH1	2480	No-Hopping	2483.8	-46.14	2	-	51.12	Peak	74	Pass
NVNT	1-DH1	2480	No-Hopping	2483.656	-57.61	2	5.1	44.75	Average	54	Pass
NVNT	1-DH1	2480	No-Hopping	2500	-50.95	2	-	46.31	Peak	74	Pass
NVNT	1-DH1	2480	No-Hopping	2500	-59.1	2	5.1	43.26	Average	54	Pass
NVNT	2-DH1	2402	No-Hopping	2310	-52	2	-	45.26	Peak	74	Pass
NVNT	2-DH1	2402	No-Hopping	2310	-59.98	2	4.99	42.27	Average	54	Pass
NVNT	2-DH1	2402	No-Hopping	2378.16	-49.01	2	-	48.25	Peak	74	Pass
NVNT	2-DH1	2402	No-Hopping	2362.512	-58.87	2	4.99	43.38	Average	54	Pass
NVNT	2-DH1	2402	No-Hopping	2390	-51.09	2	-	46.17	Peak	74	Pass
NVNT	2-DH1	2402	No-Hopping	2390	-59.88	2	4.99	42.37	Average	54	Pass
NVNT	2-DH1	2480	No-Hopping	2483.5	-47.47	2	-	49.79	Peak	74	Pass
NVNT	2-DH1	2480	No-Hopping	2483.5	-58.37	2	4.99	43.88	Average	54	Pass
NVNT	2-DH1	2480	No-Hopping	2483.608	-47.45	2	-	49.81	Peak	74	Pass
NVNT	2-DH1	2480	No-Hopping	2483.56	-57.85	2	4.99	44.4	Average	54	Pass
NVNT	2-DH1	2480	No-Hopping	2500	-51.78	2	-	45.48	Peak	74	Pass
NVNT	2-DH1	2480	No-Hopping	2500	-60.19	2	4.99	42.06	Average	54	Pass
NVNT	3-DH1	2402	No-Hopping	2310	-51.46	2	-	45.8	Peak	74	Pass
NVNT	3-DH1	2402	No-Hopping	2310	-59.29	2	4.99	42.96	Average	54	Pass
NVNT	3-DH1	2402	No-Hopping	2383.824	-48.39	2	-	48.87	Peak	74	Pass
NVNT	3-DH1	2402	No-Hopping	2317.296	-58.81	2	4.99	43.44	Average	54	Pass
NVNT	3-DH1	2402	No-Hopping	2390	-51.55	2	-	45.71	Peak	74	Pass
NVNT	3-DH1	2402	No-Hopping	2390	-59.27	2	4.99	42.98	Average	54	Pass
NVNT	3-DH1	2480	No-Hopping	2483.5	-48.66	2	-	48.6	Peak	74	Pass
NVNT	3-DH1	2480	No-Hopping	2483.5	-58.76	2	4.99	43.49	Average	54	Pass
NVNT	3-DH1	2480	No-Hopping	2484.208	-45.97	2	-	51.29	Peak	74	Pass
NVNT	3-DH1	2480	No-Hopping	2483.536	-57.65	2	4.99	44.6	Average	54	Pass
NVNT	3-DH1	2480	No-Hopping	2500	-51	2	-	46.26	Peak	74	Pass
NVNT	3-DH1	2480	No-Hopping	2500	-59.6	2	4.99	42.65	Average	54	Pass

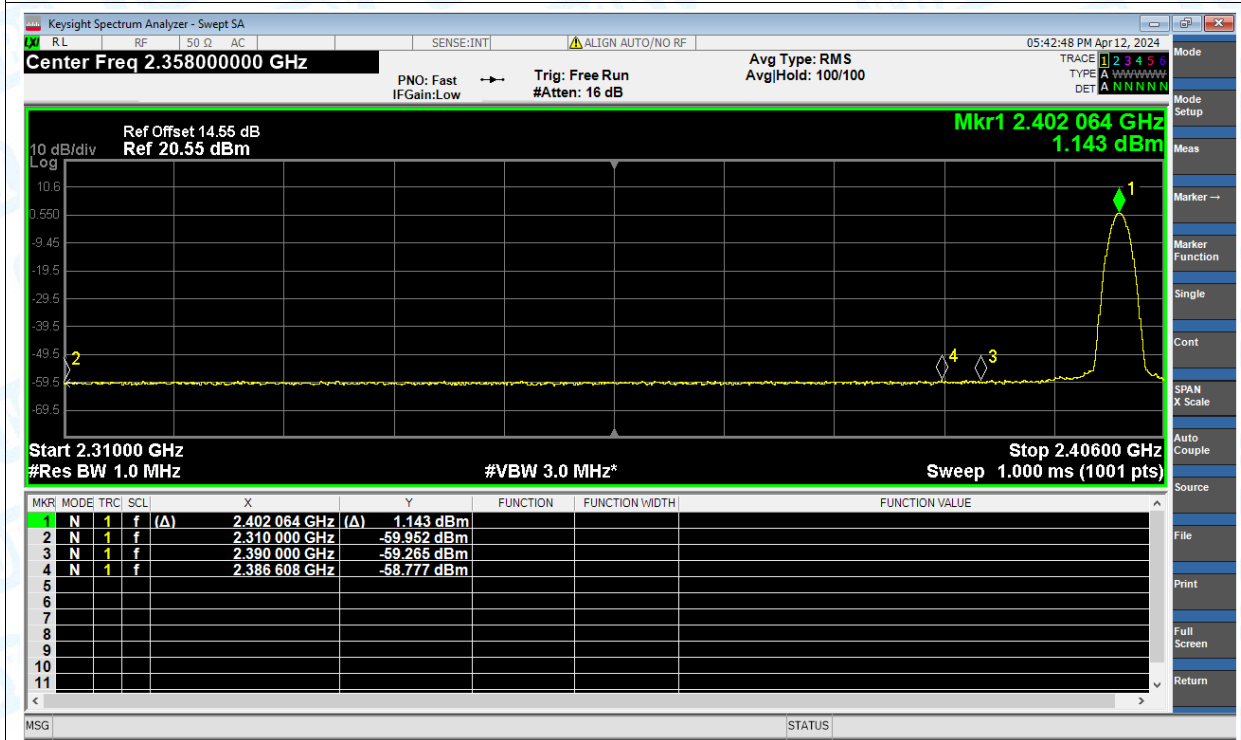


Test Graphs

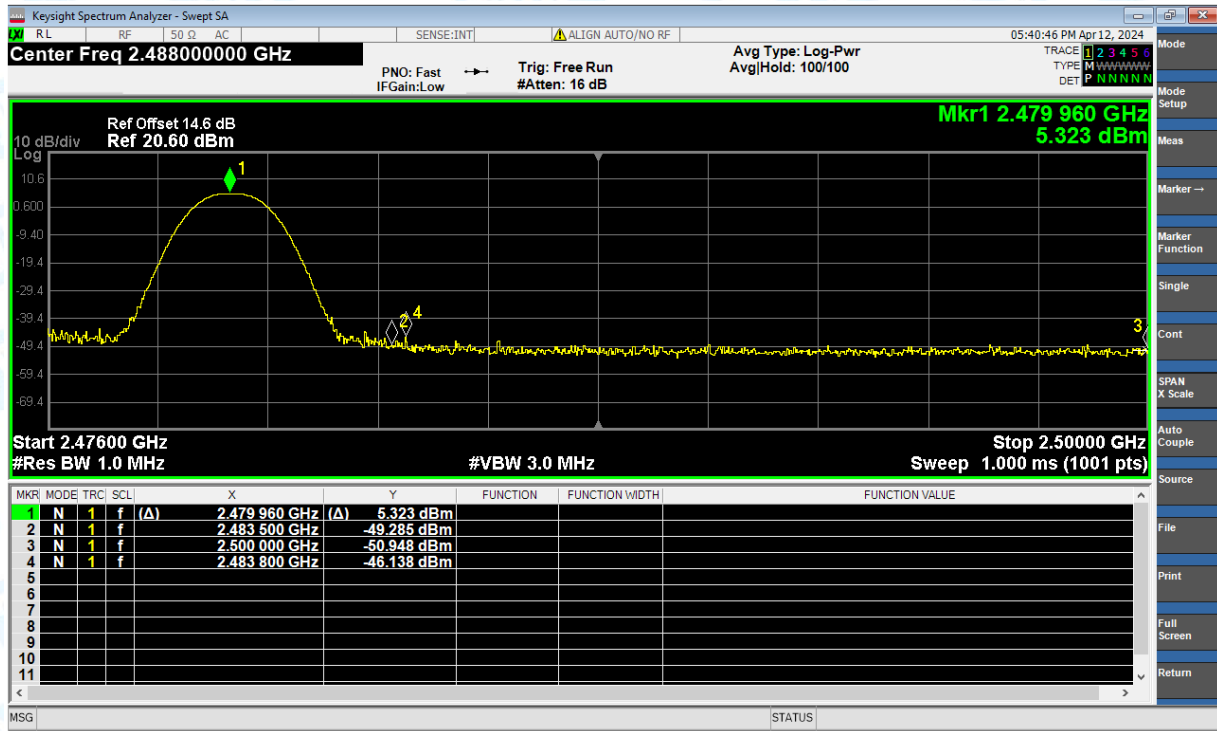
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



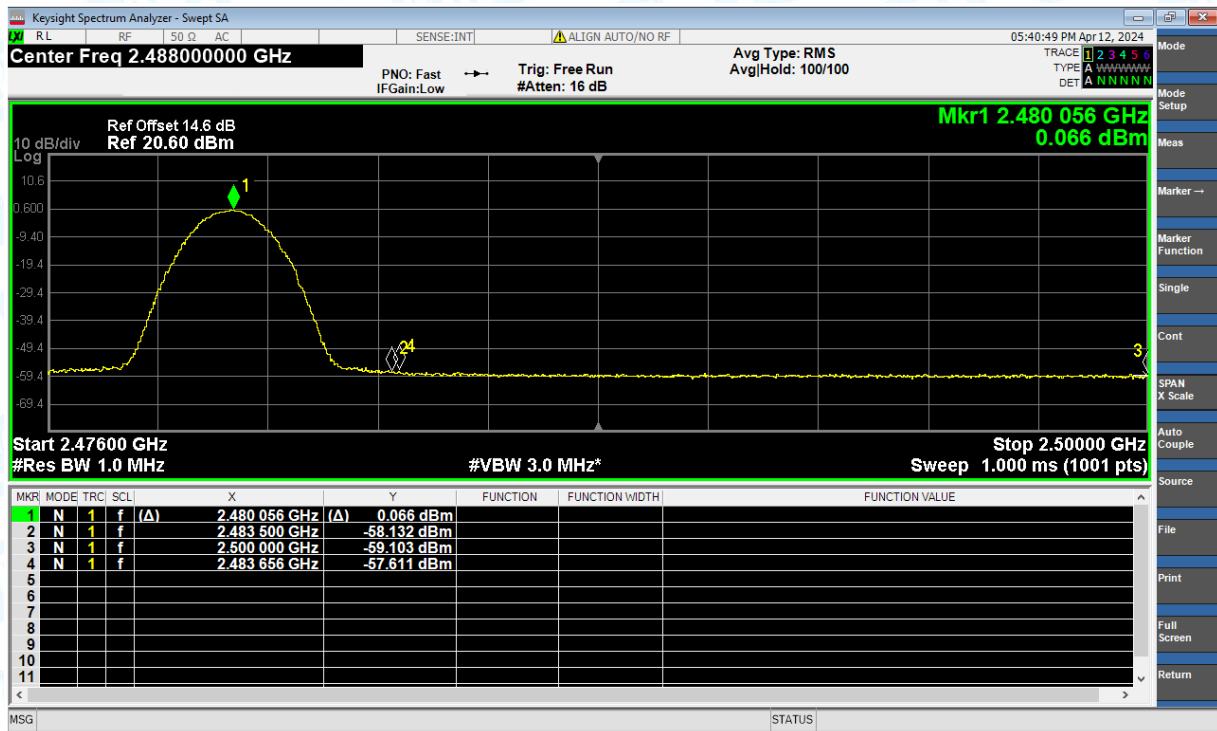
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



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

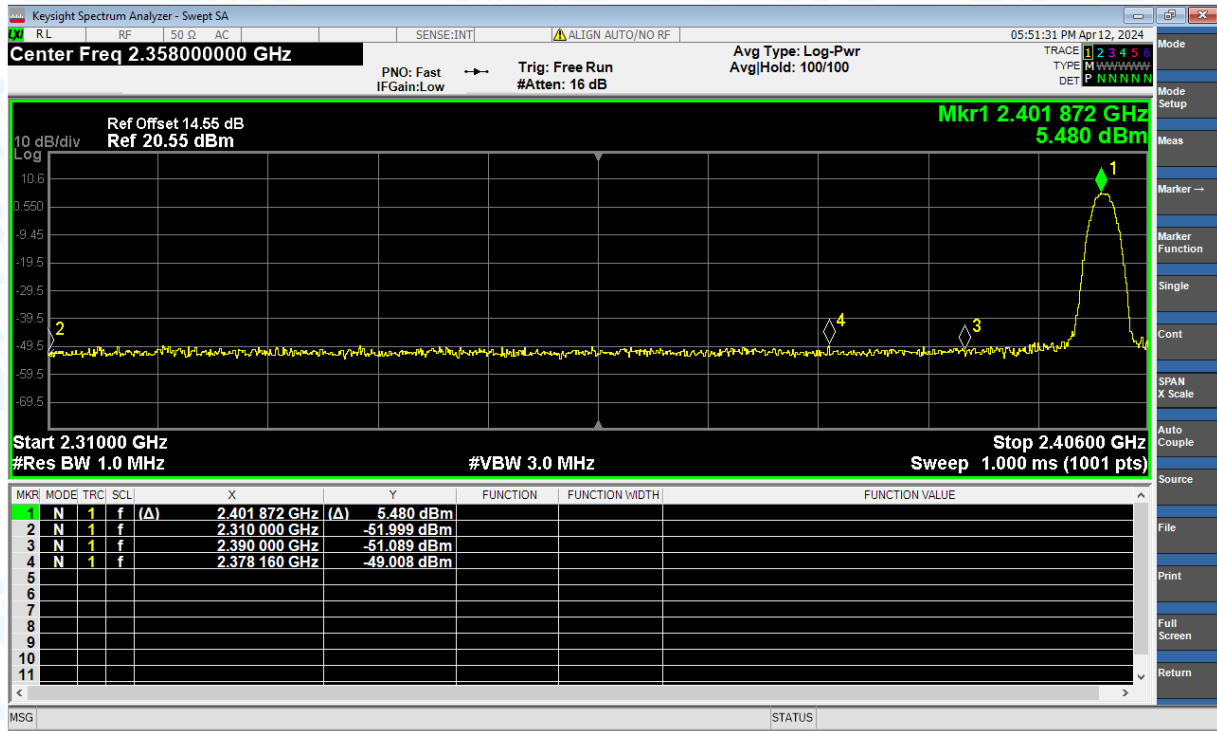


Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average

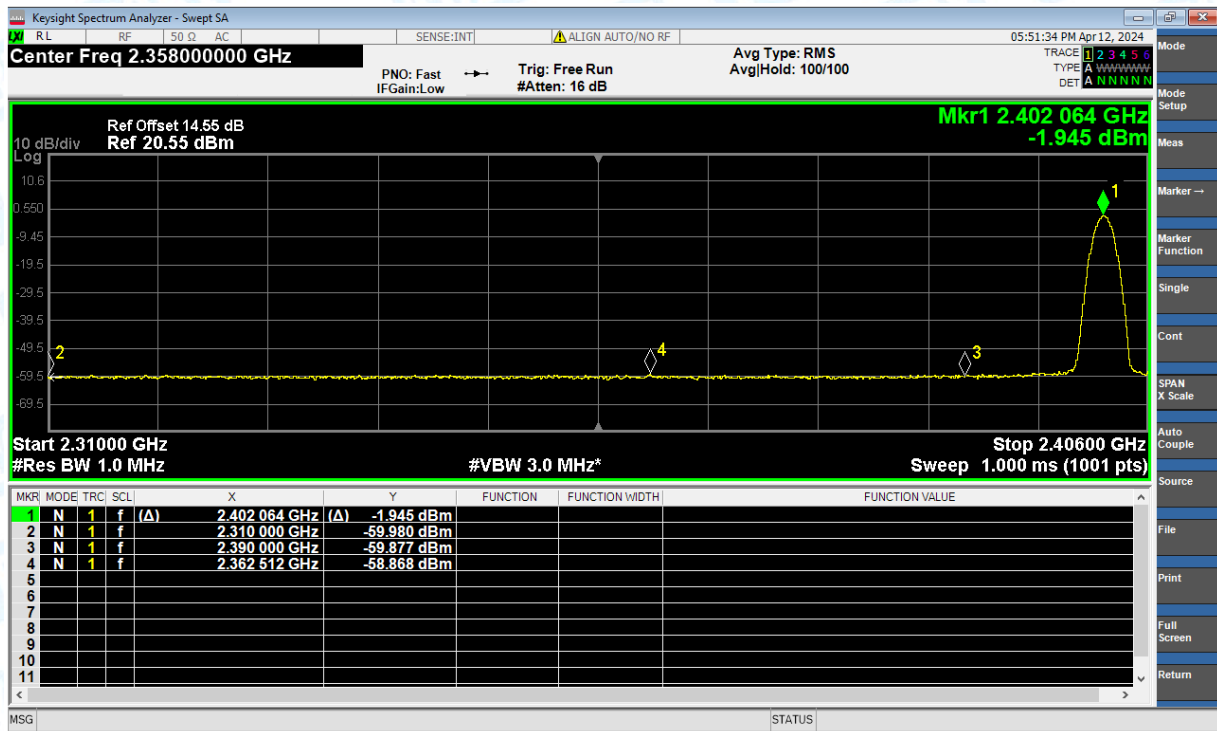




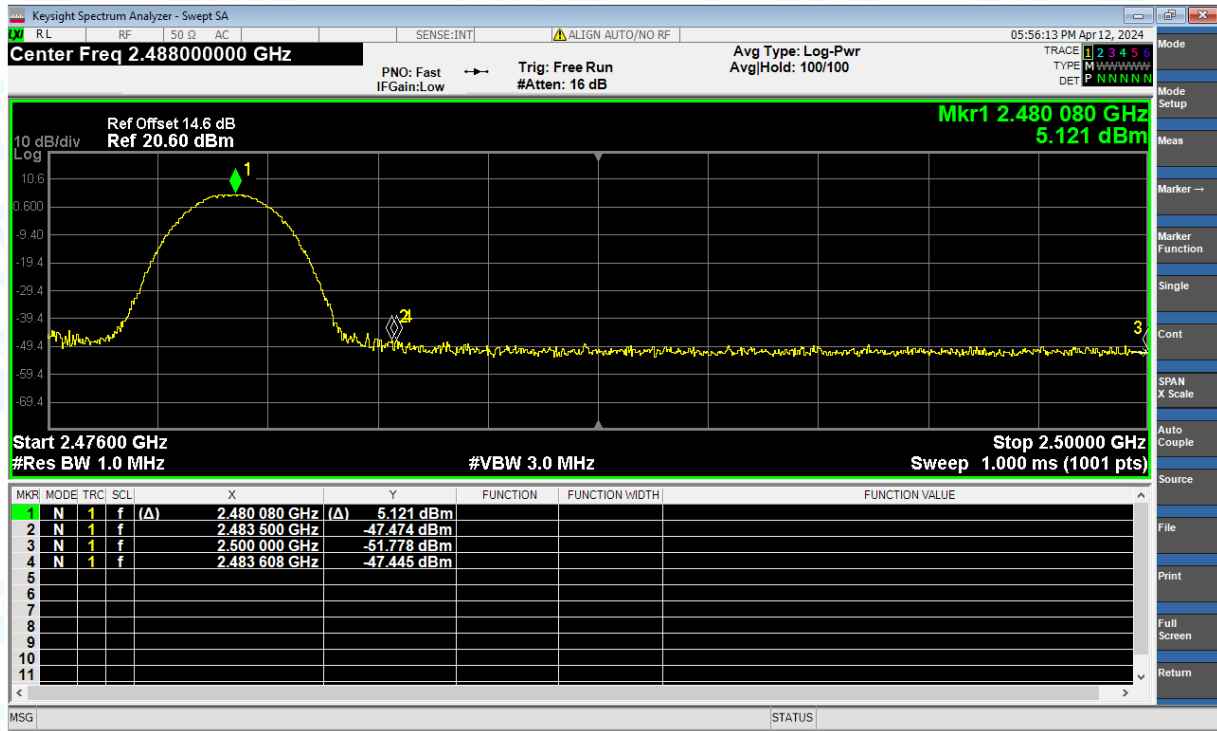
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



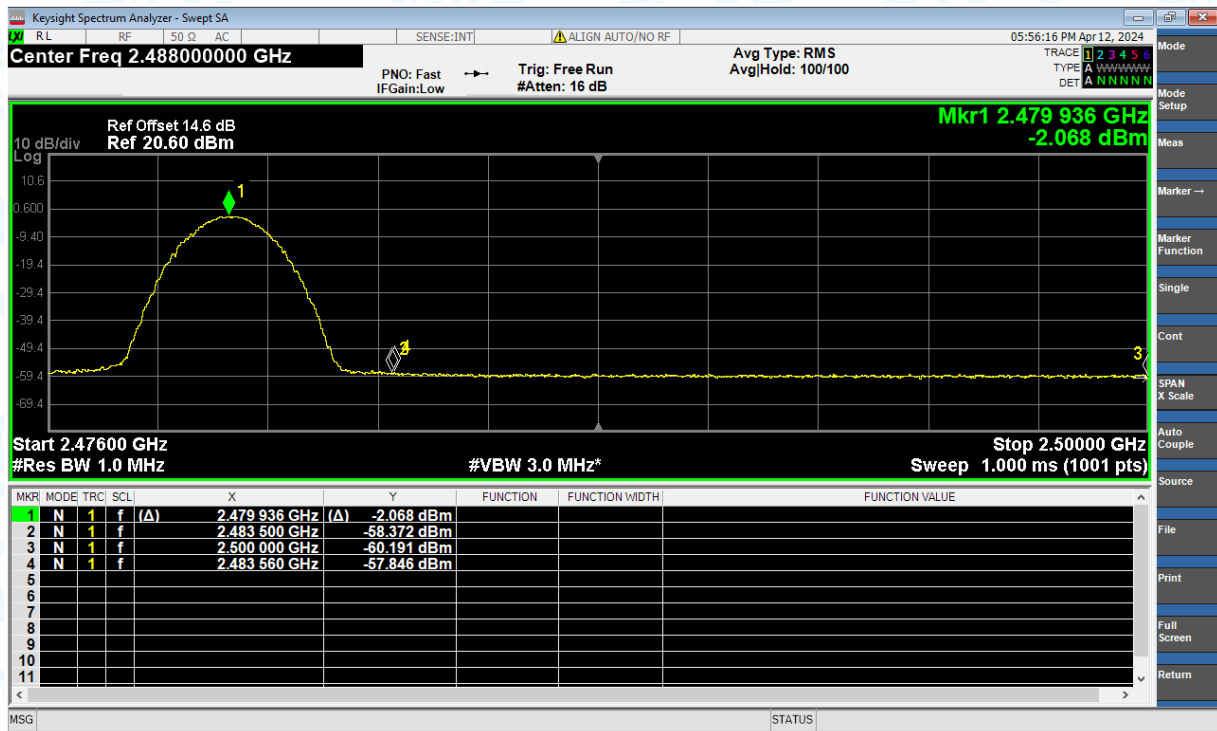
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



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

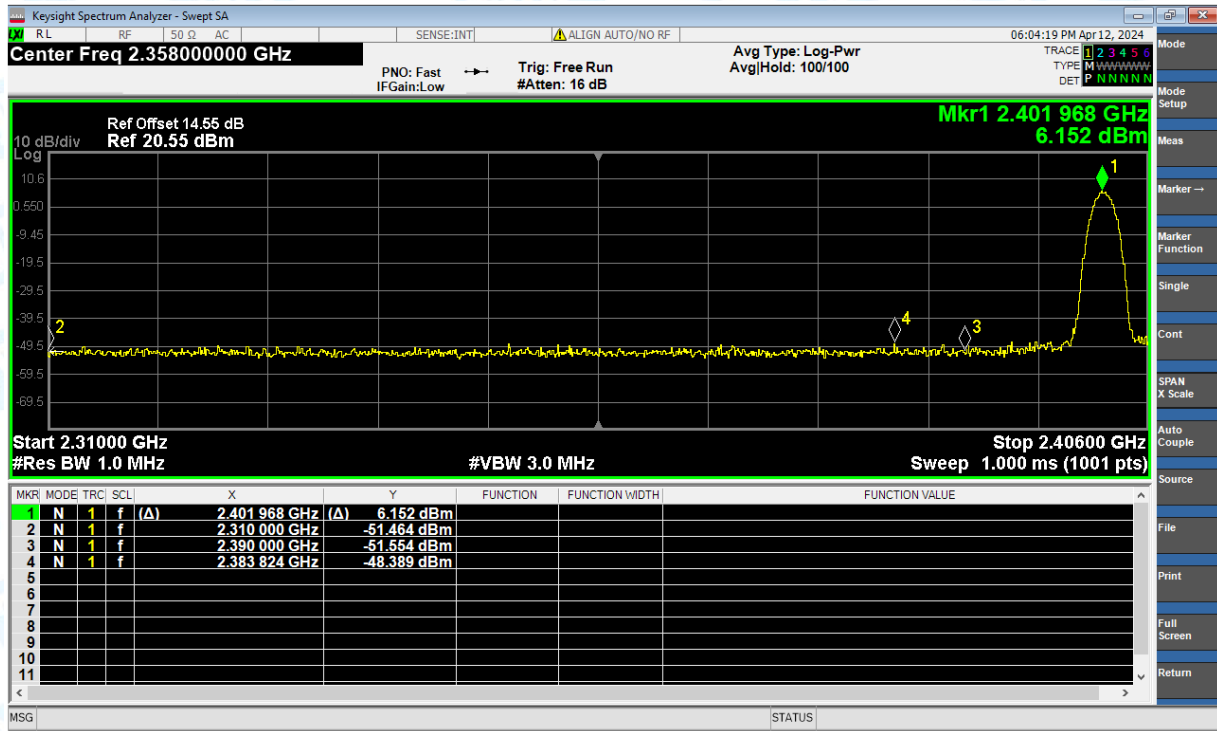


Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average

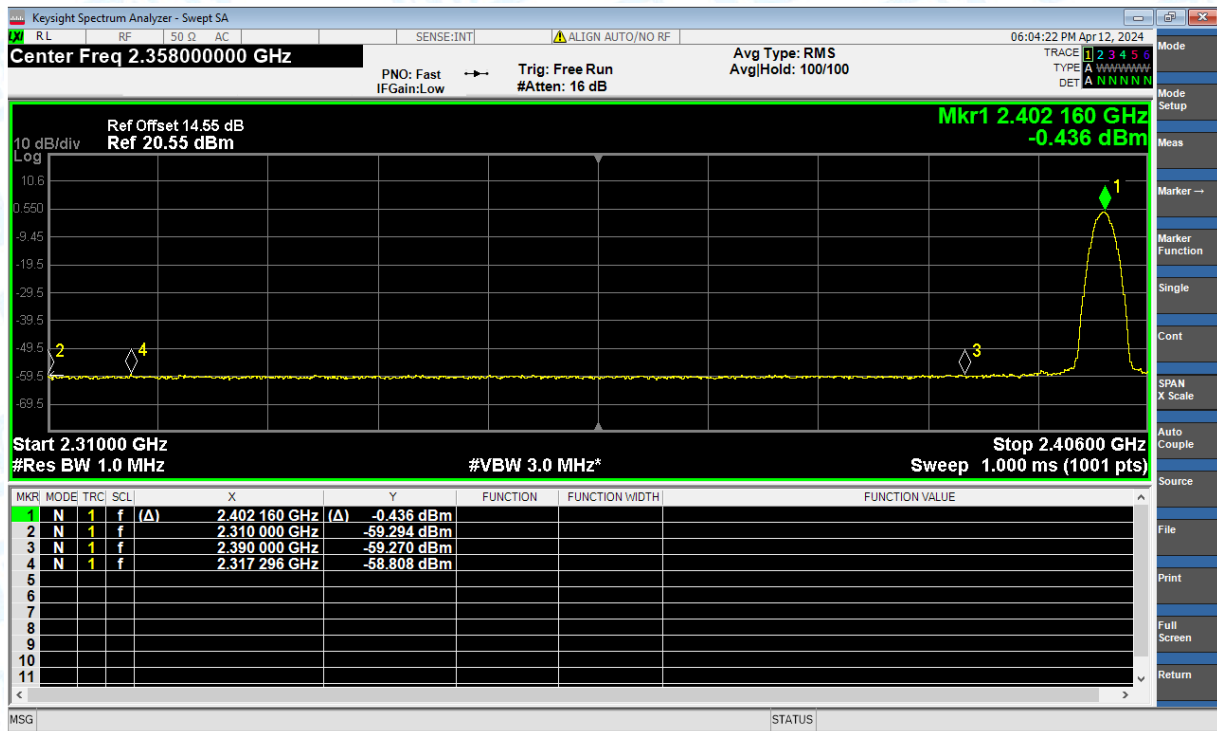




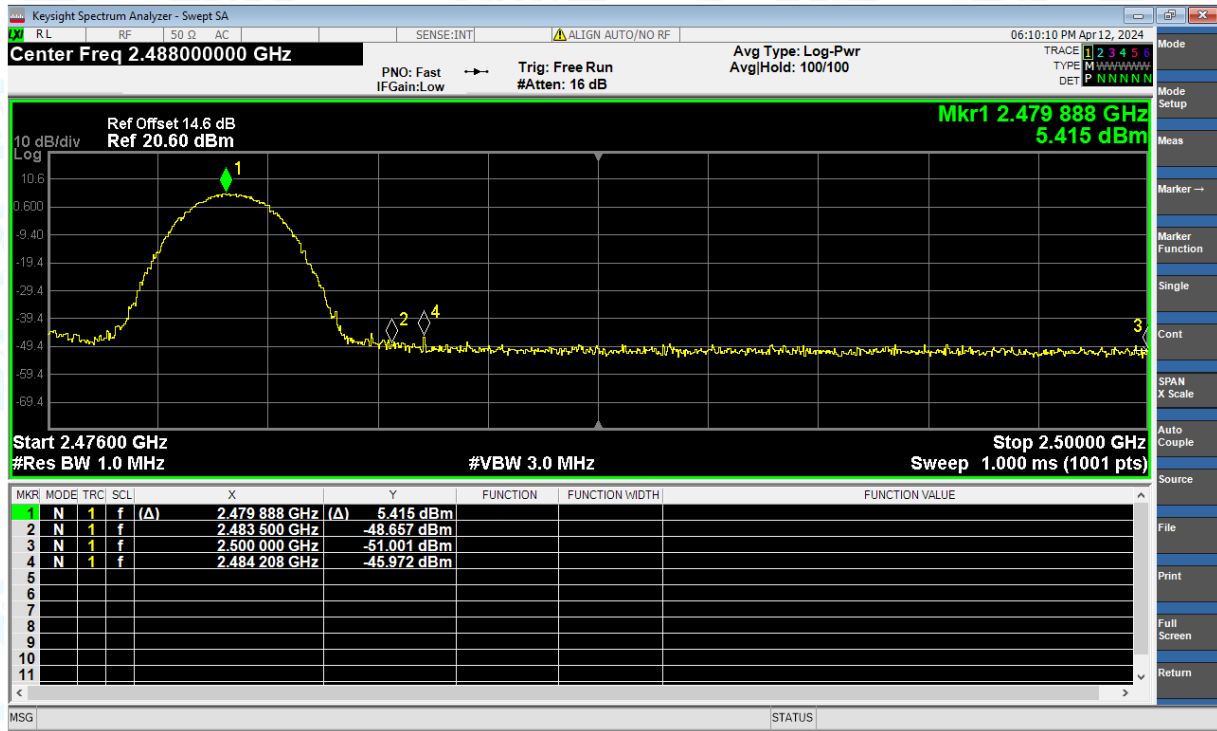
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



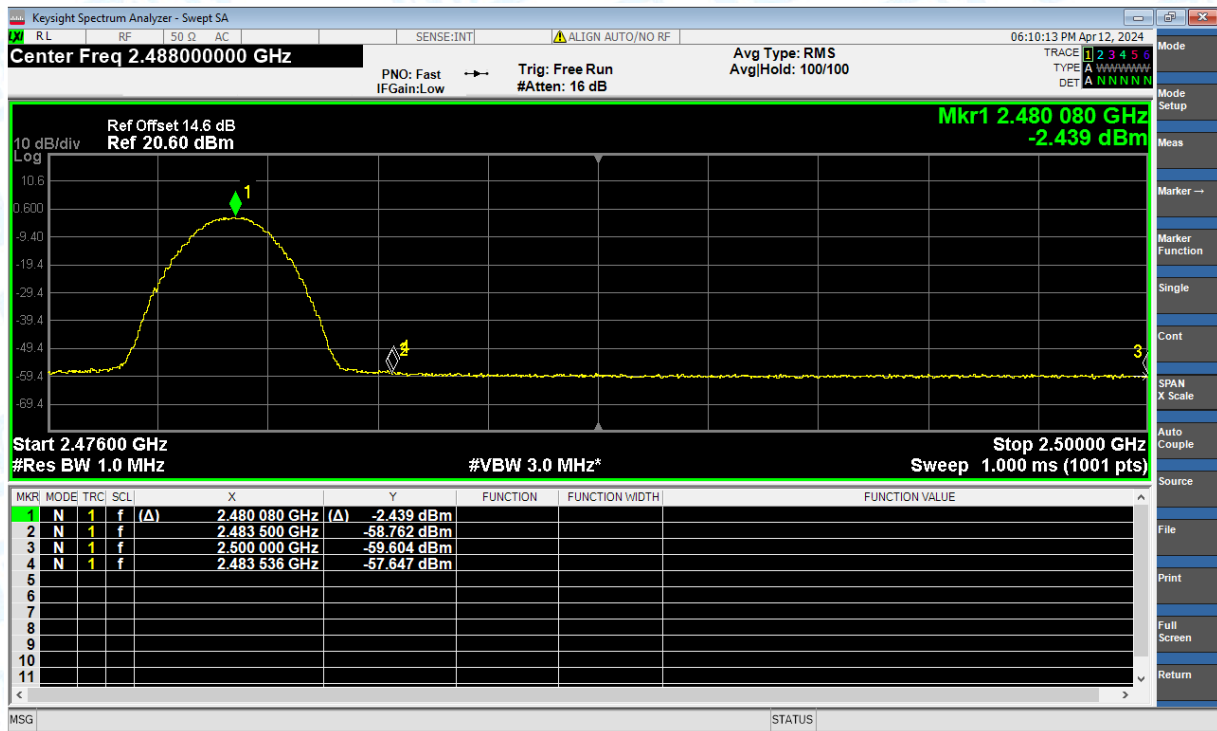
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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



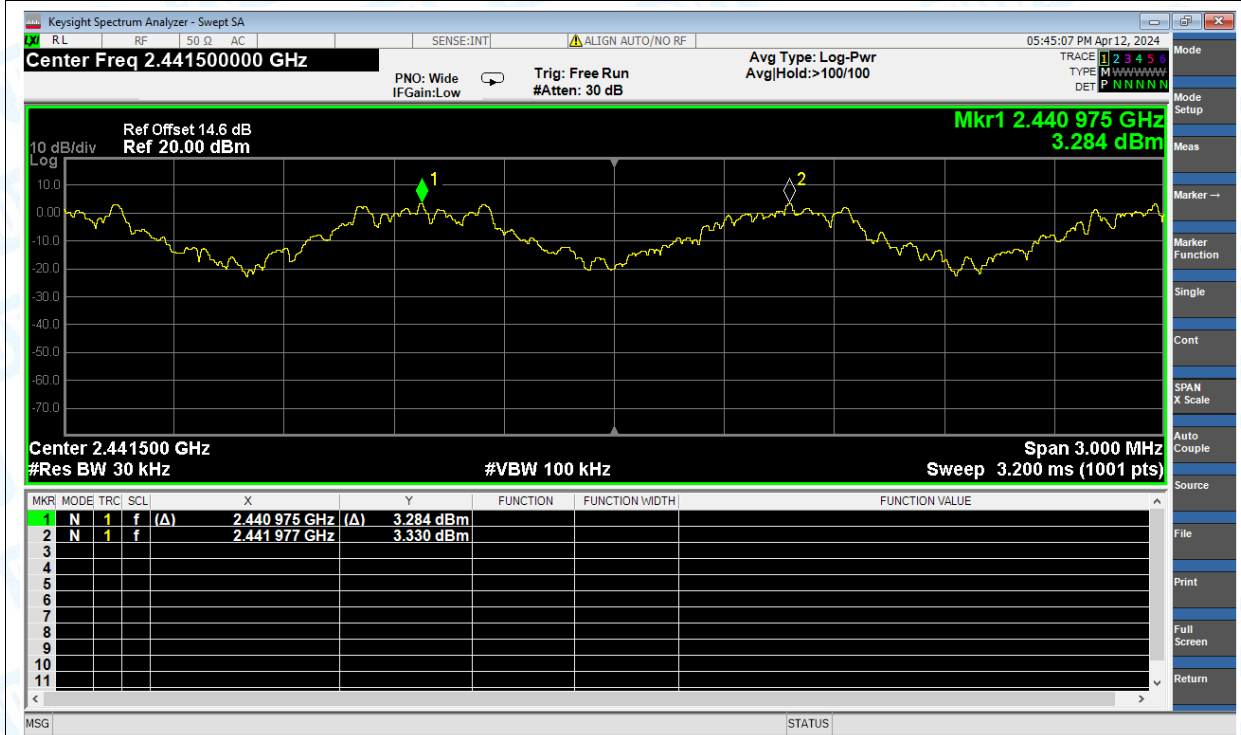


## 9. Carrier Frequencies Separation

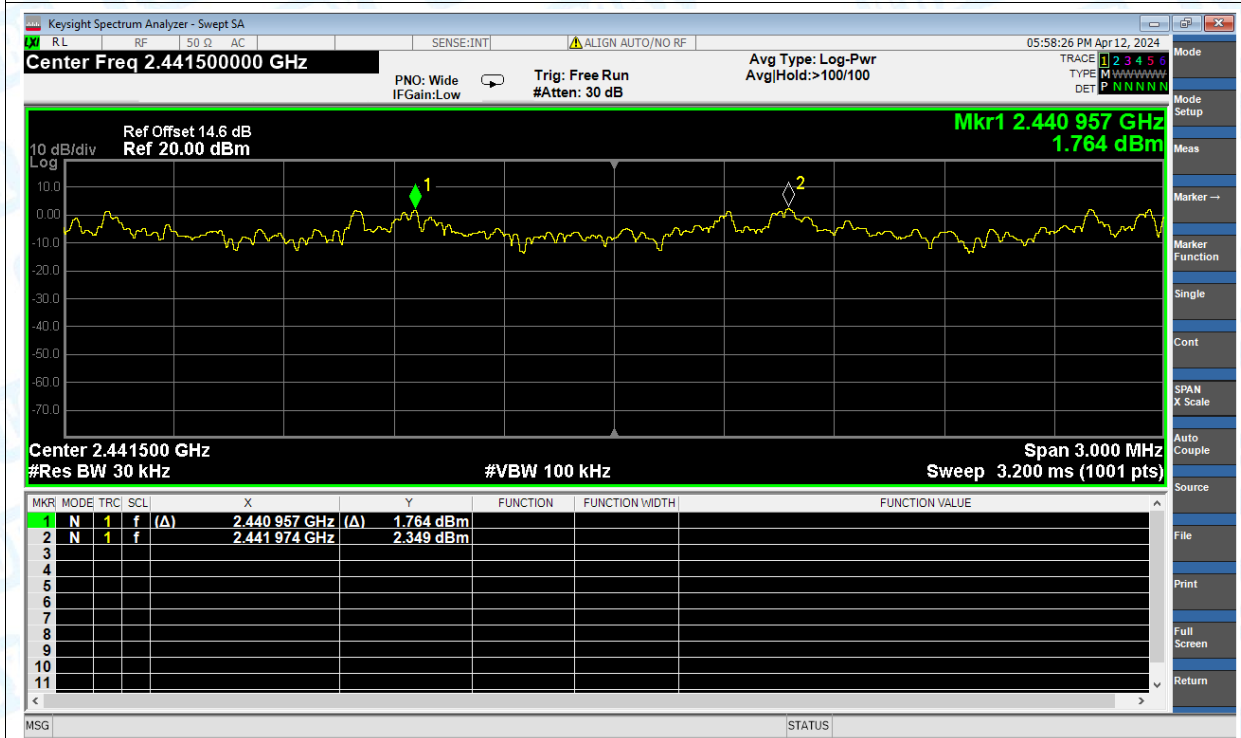
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.975	2441.977	1.002	0.62	Pass
NVNT	2-DH1	Ant1	2440.957	2441.974	1.017	0.84	Pass
NVNT	3-DH1	Ant1	2440.966	2441.959	0.993	0.813	Pass

Test Graphs

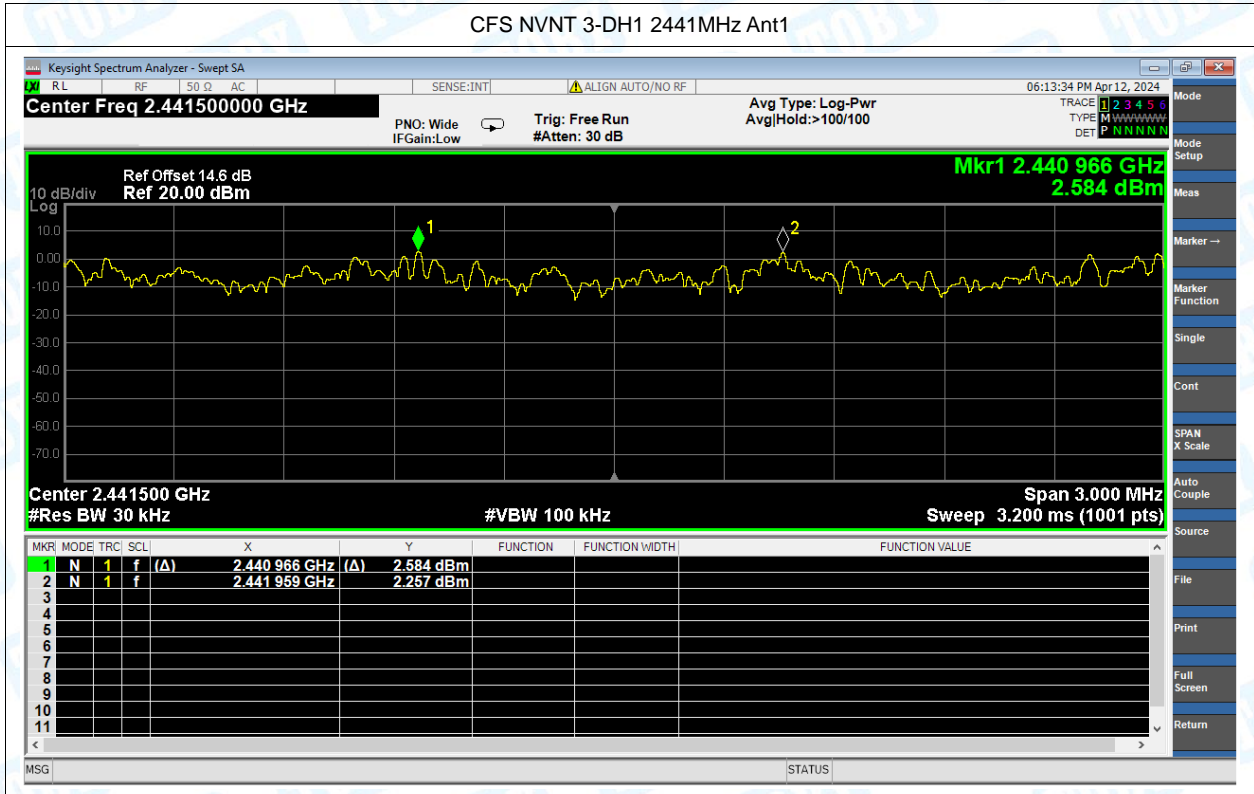
CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1







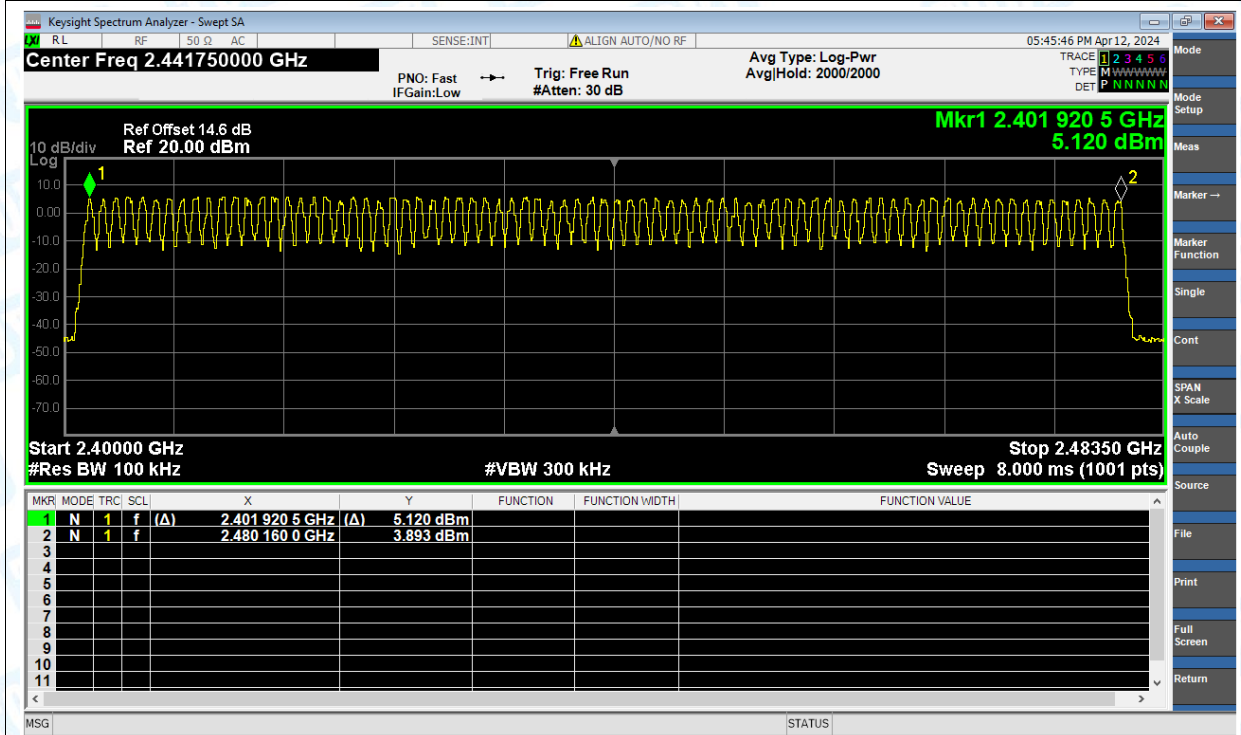
## 10. Number of Hopping Channel

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

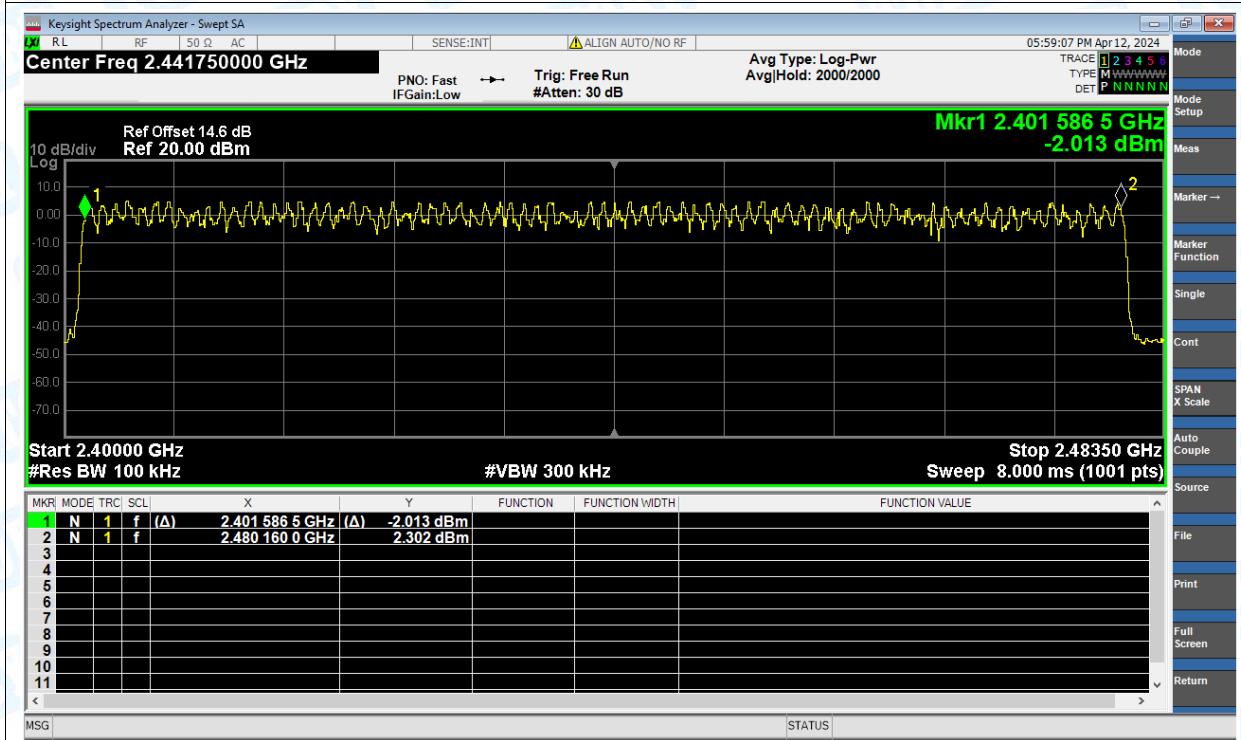


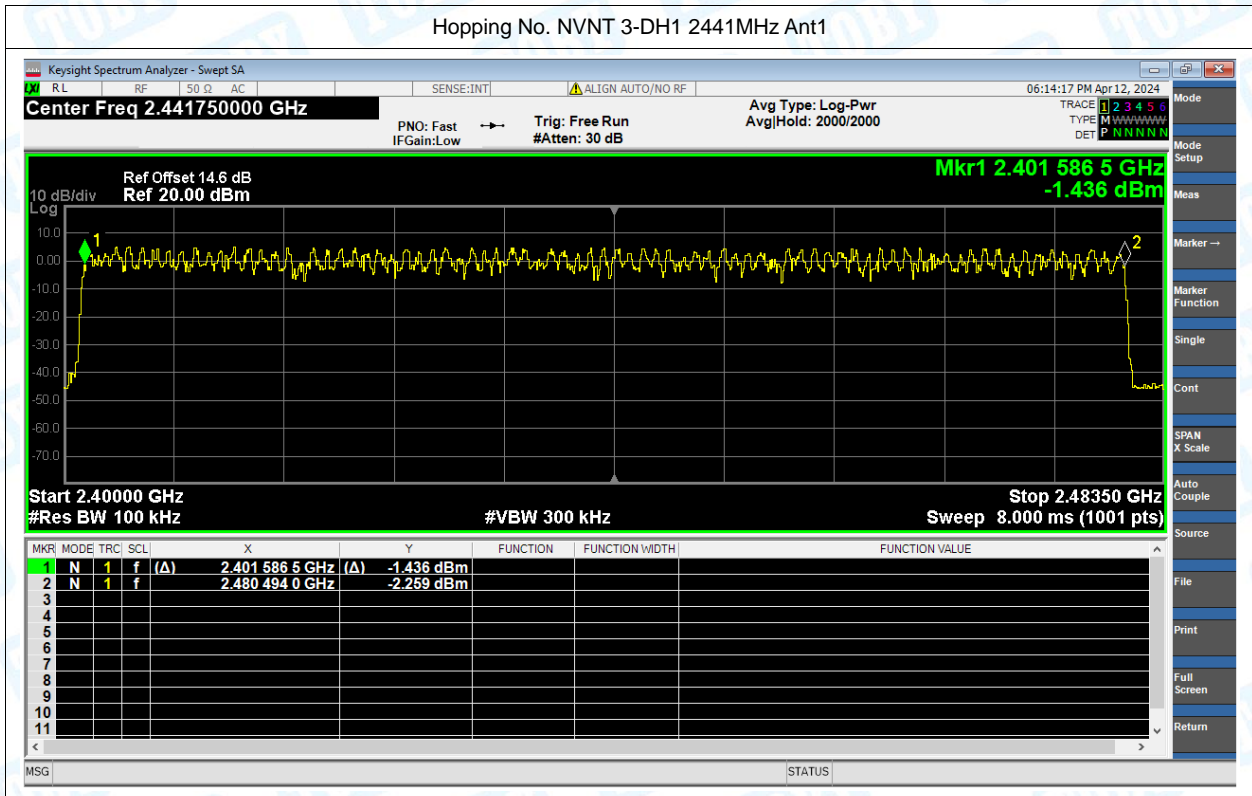
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1





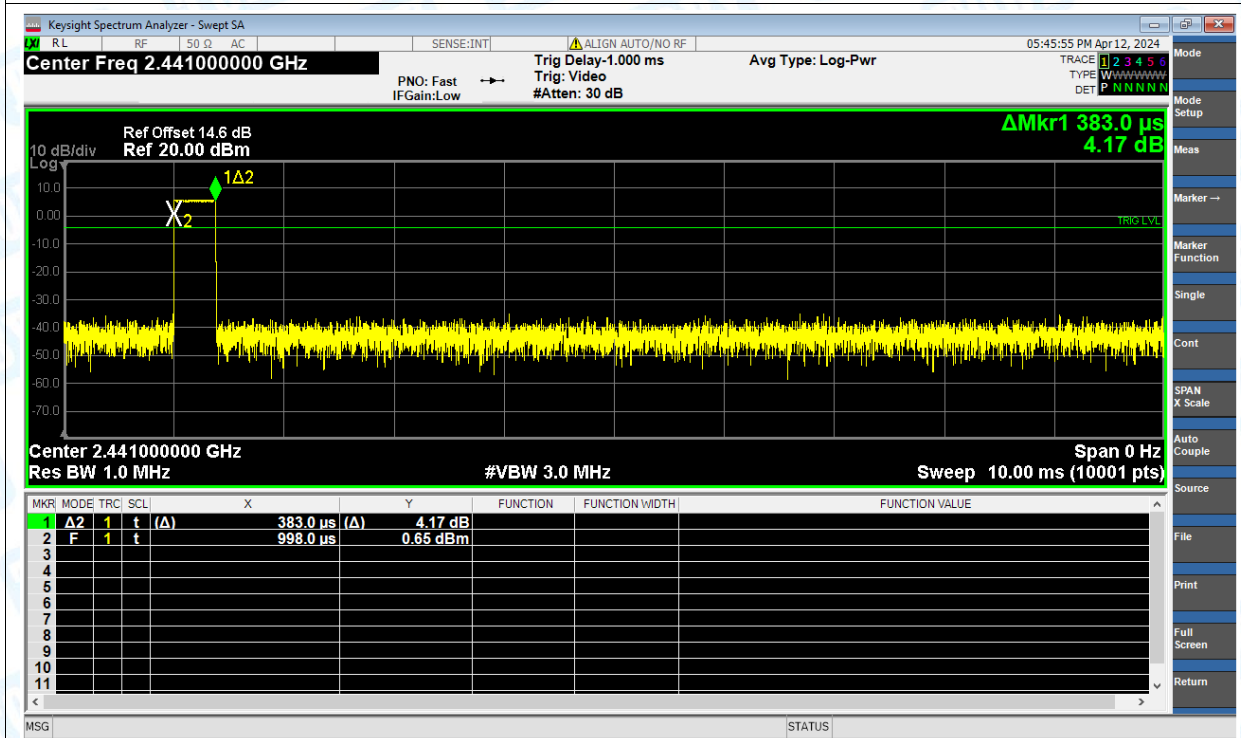


## 11. Dwell Time

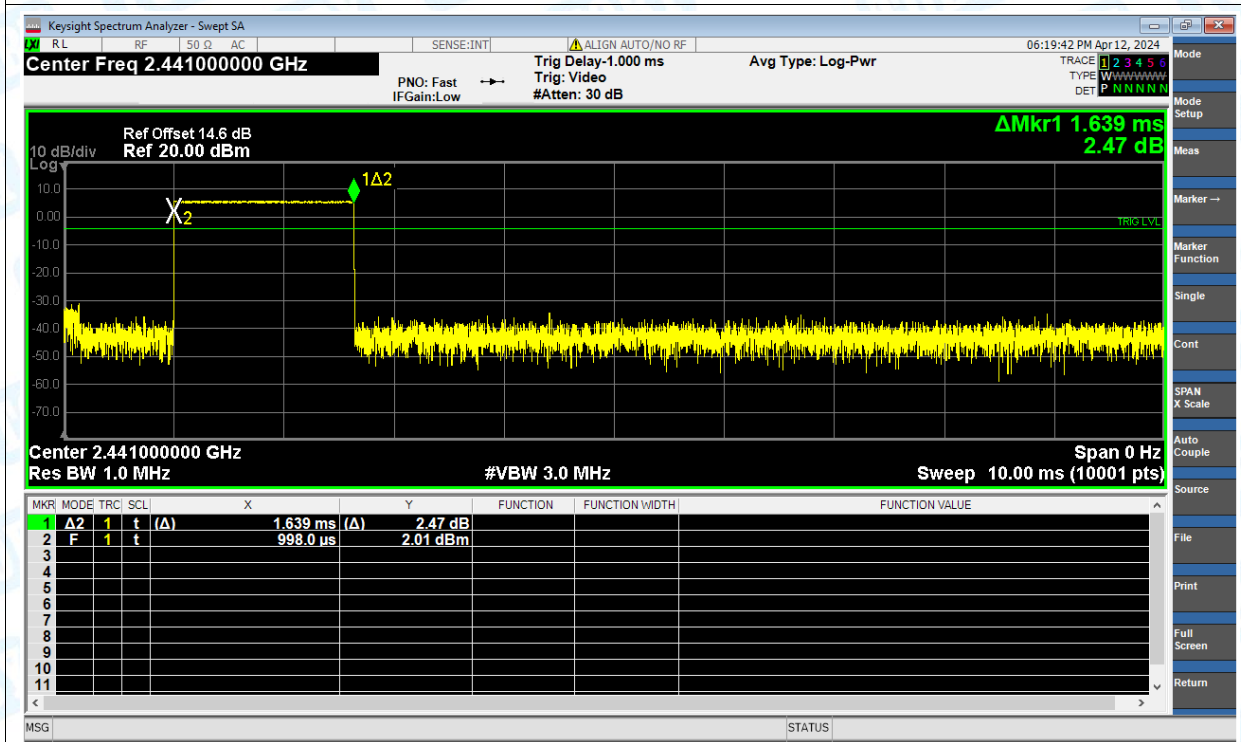
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.383	122.56	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.639	262.24	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.887	307.947	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.391	125.12	31600	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
NVNT	3-DH1	2441	Ant1	0.391	125.12	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.642	262.72	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.893	308.587	31600	400	Pass

Test Graphs

Dwell NVNT 1-DH1 2441MHz Ant1

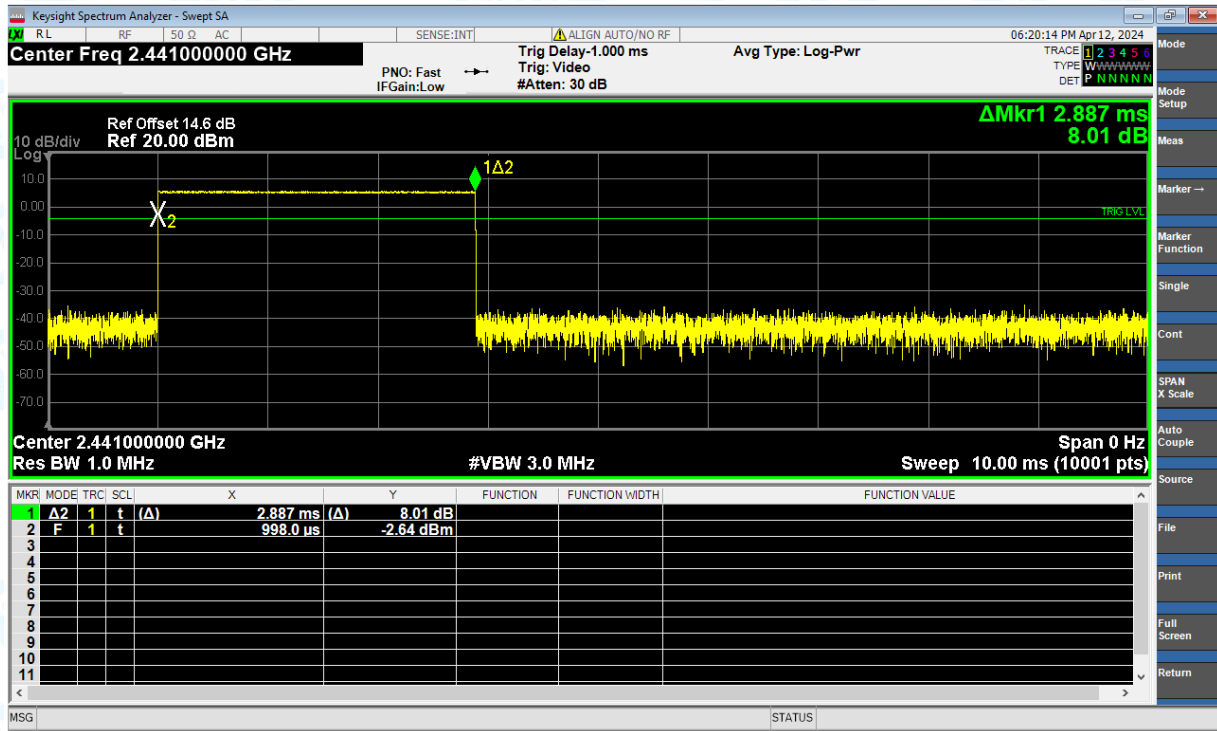


Dwell NVNT 1-DH3 2441MHz Ant1

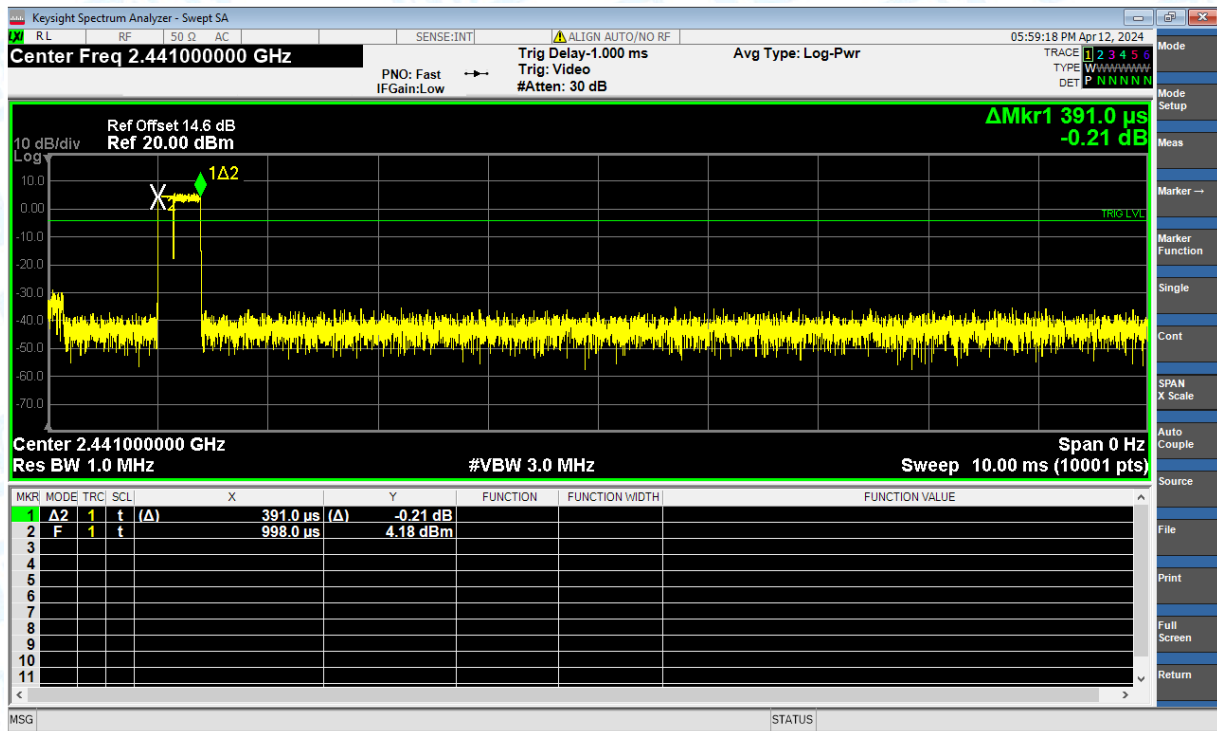




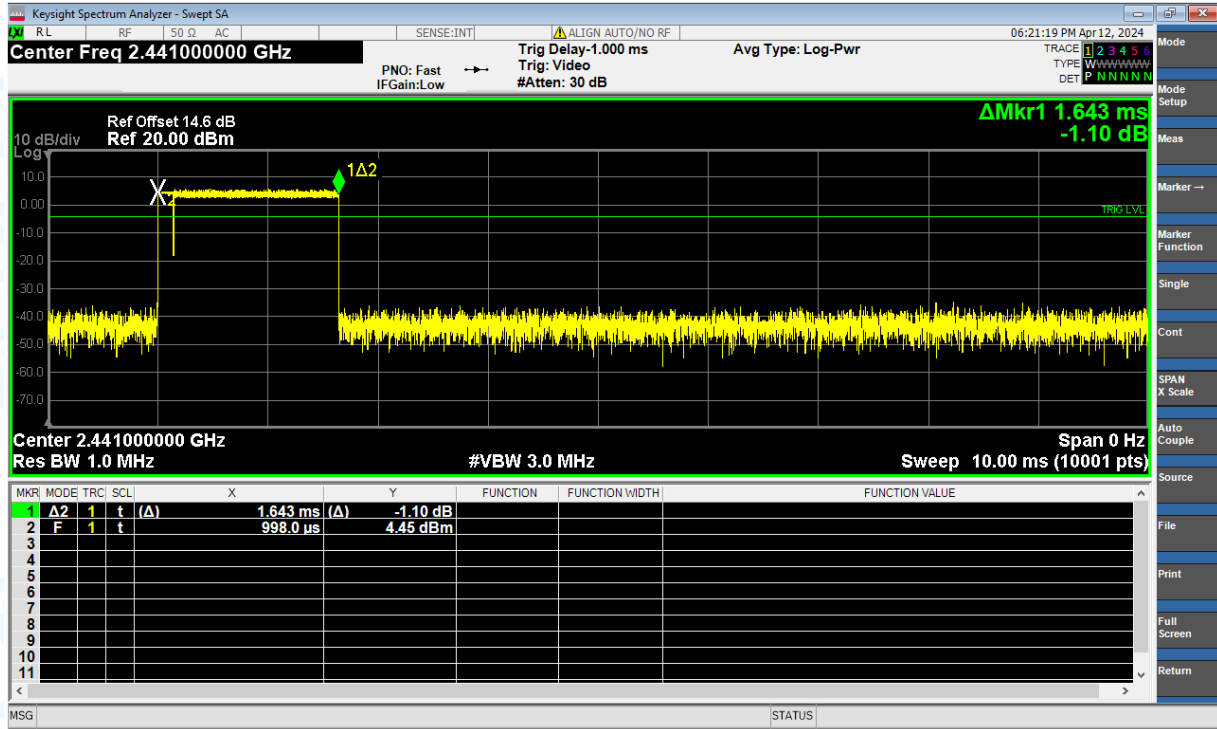
Dwell NVNT 1-DH5 2441MHz Ant1



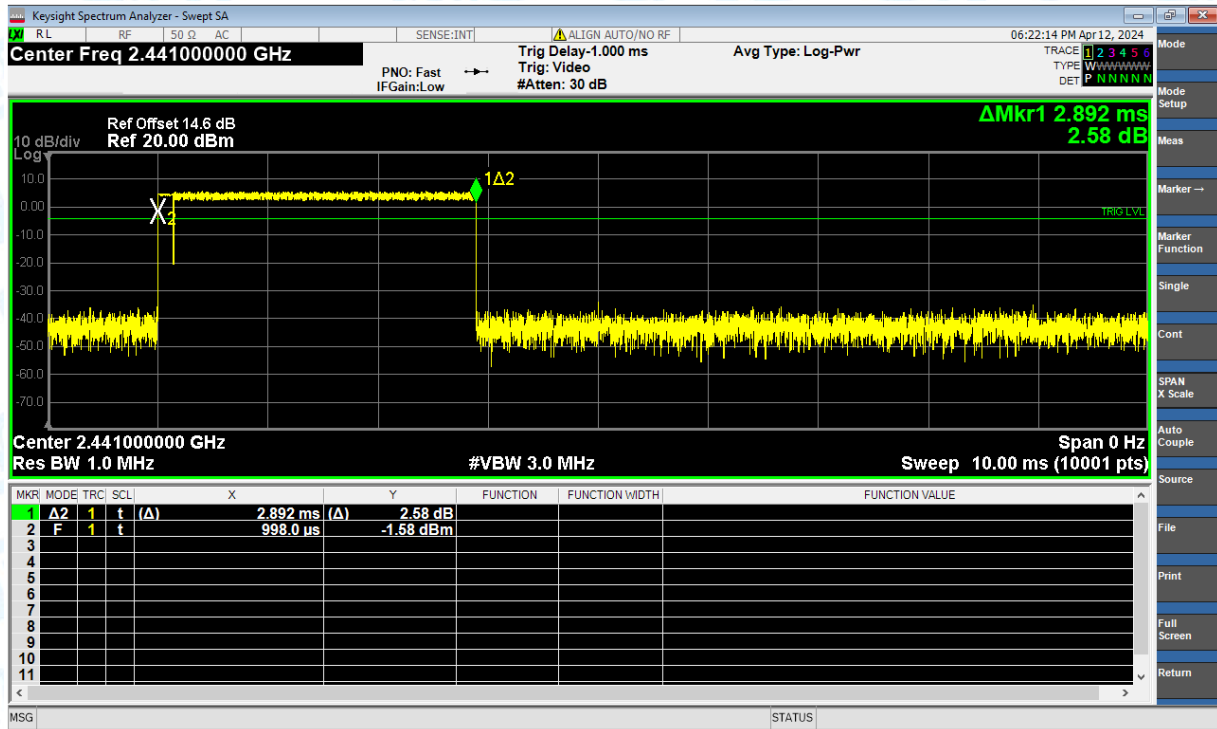
Dwell NVNT 2-DH1 2441MHz Ant1



Dwell NVNT 2-DH3 2441MHz Ant1

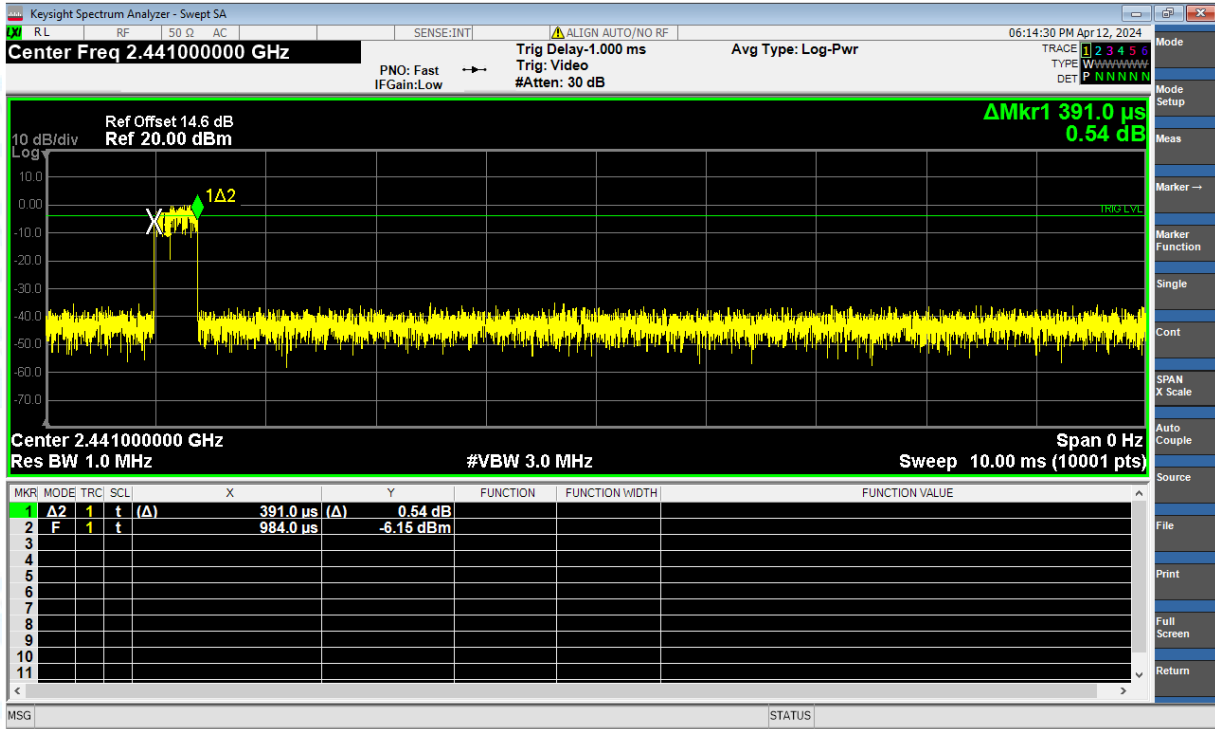


Dwell NVNT 2-DH5 2441MHz Ant1

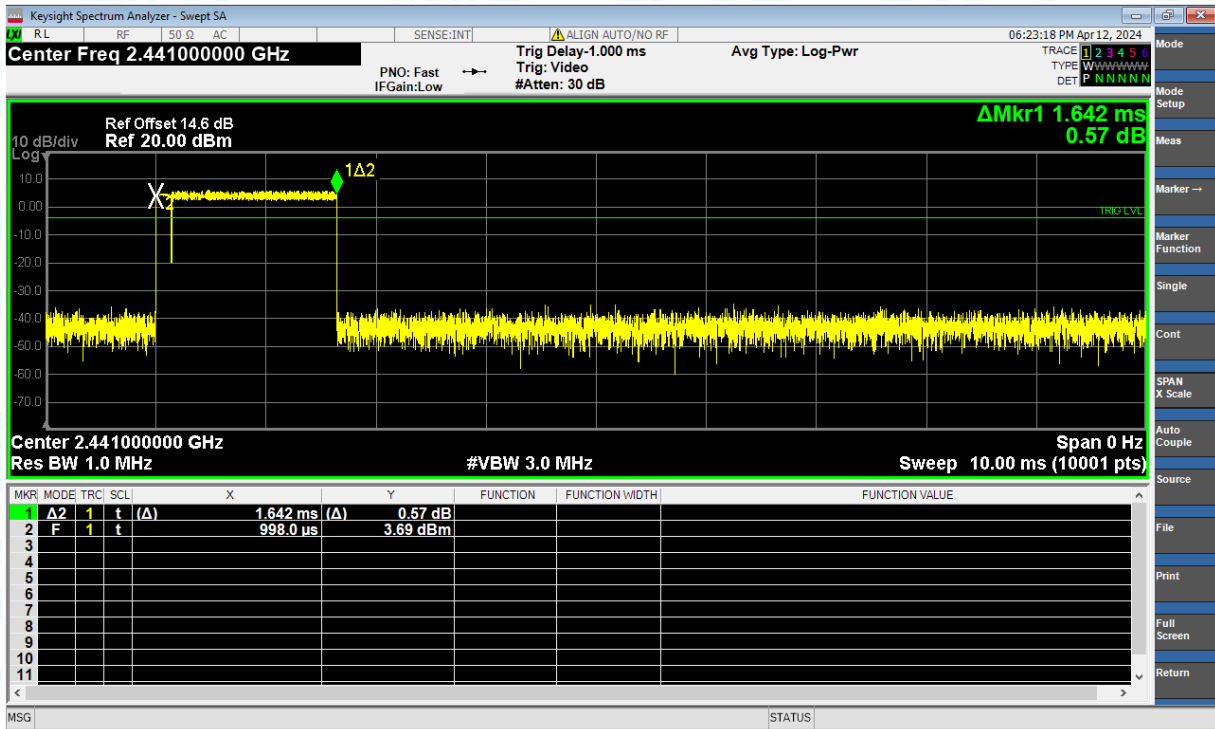


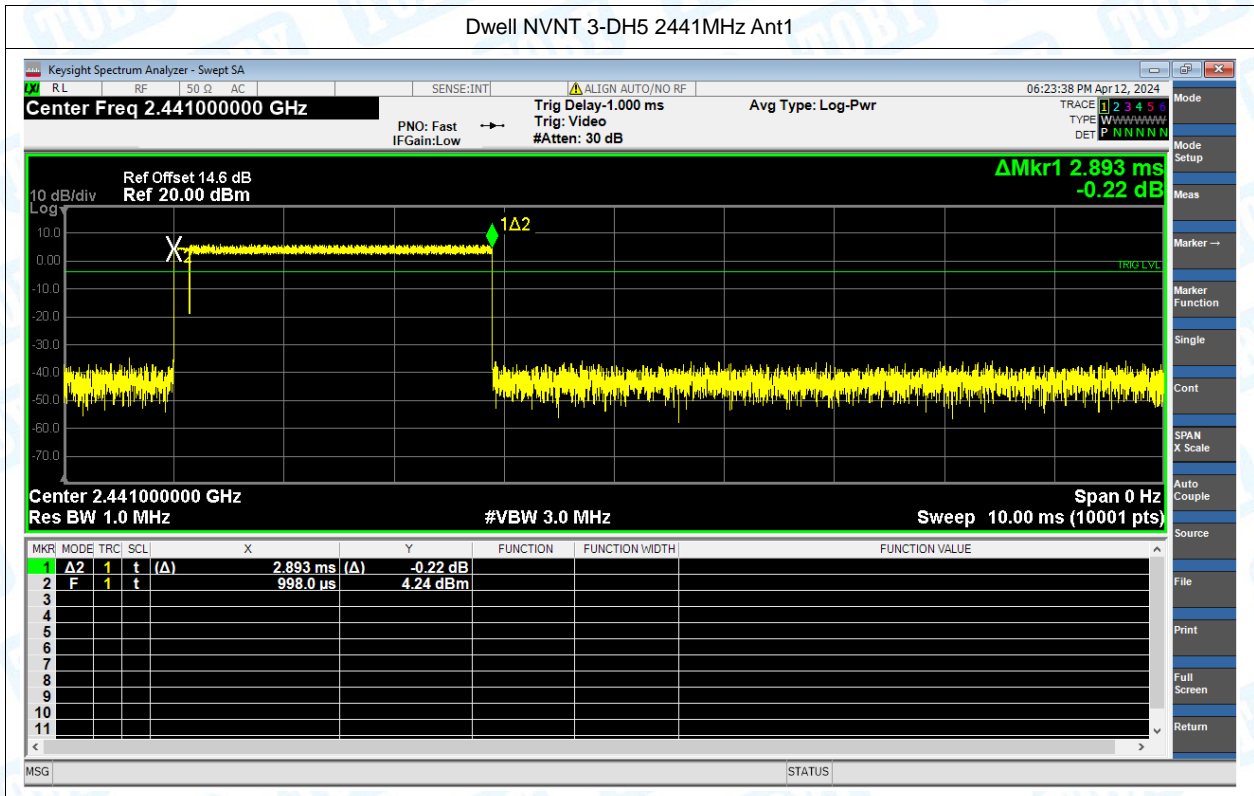


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





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