

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	Smart watch
Test Model:	E32 Pro
Sample ID:	HC-C-202406-0053-02-02
Environmental Conditions	
Temperature:	24.2℃
Relative Humidity:	46.2%
Test Voltage:	DC 3.8V
Test Engineer:	Jolin Le
Note: For a more detailed features description, please refer to the report TBR-C-202406-0053-11 The report only show the worst case data.	

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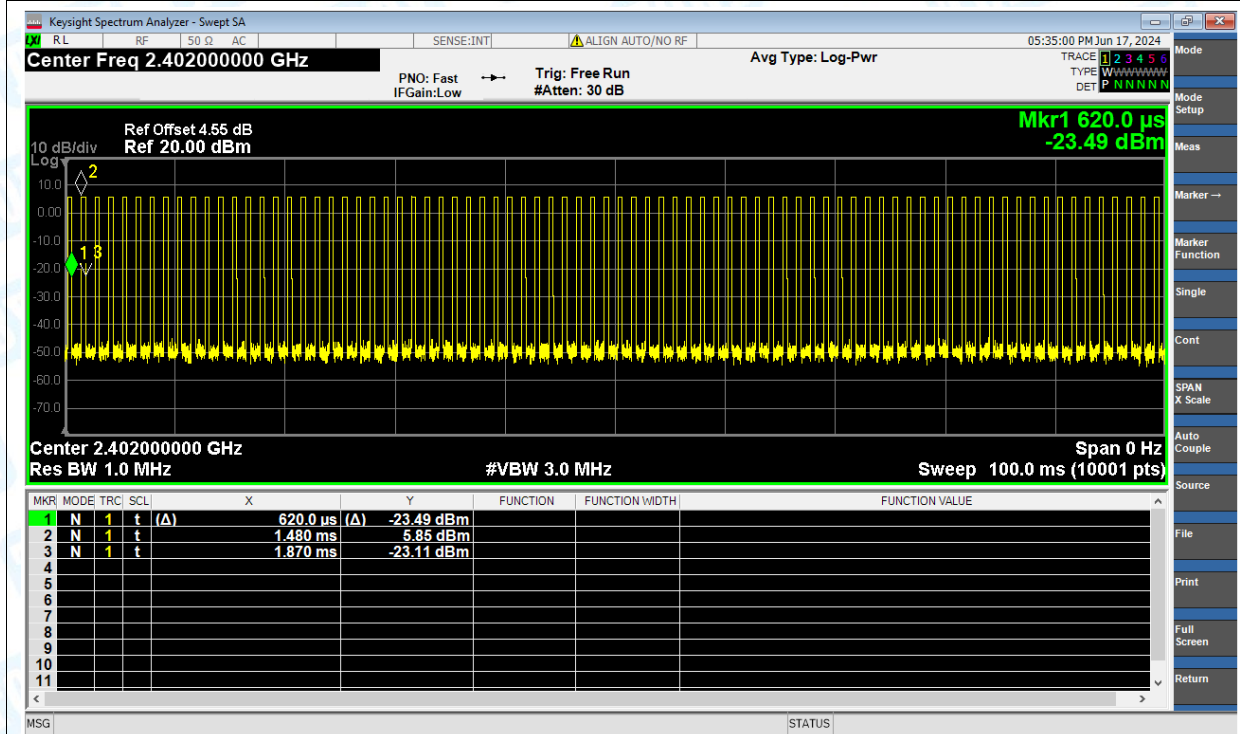
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1. Duty Cycle

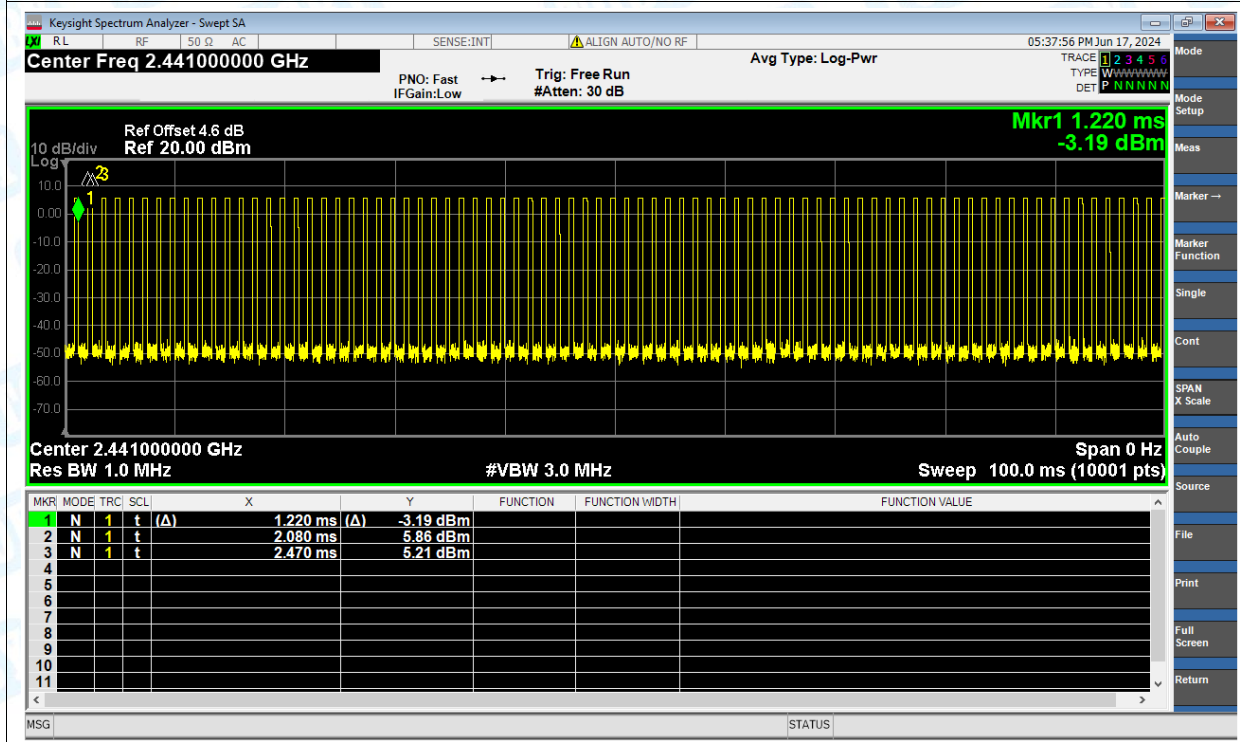
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	1-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	1-DH1	2480	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2402	Ant1	32	4.95	2.5
NVNT	2-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2480	Ant1	31.2	5.06	2.56

Test Graphs

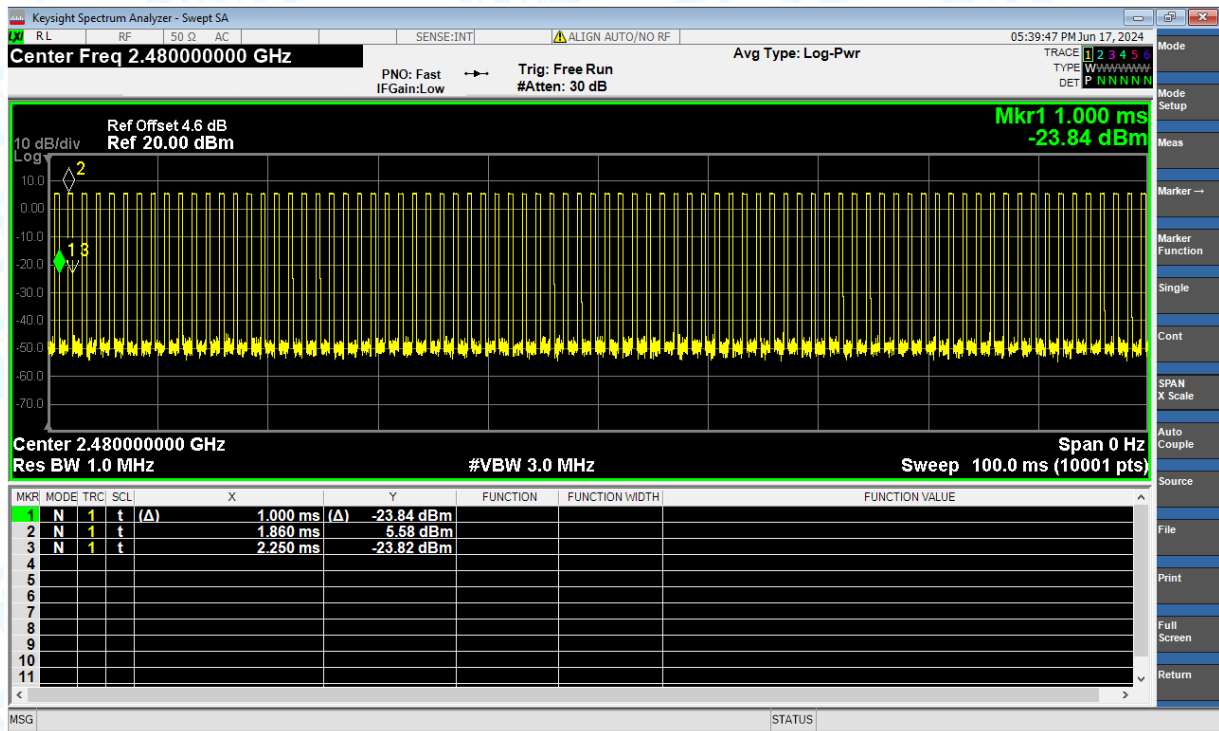
Duty Cycle NVNT 1-DH1 2402MHz Ant1



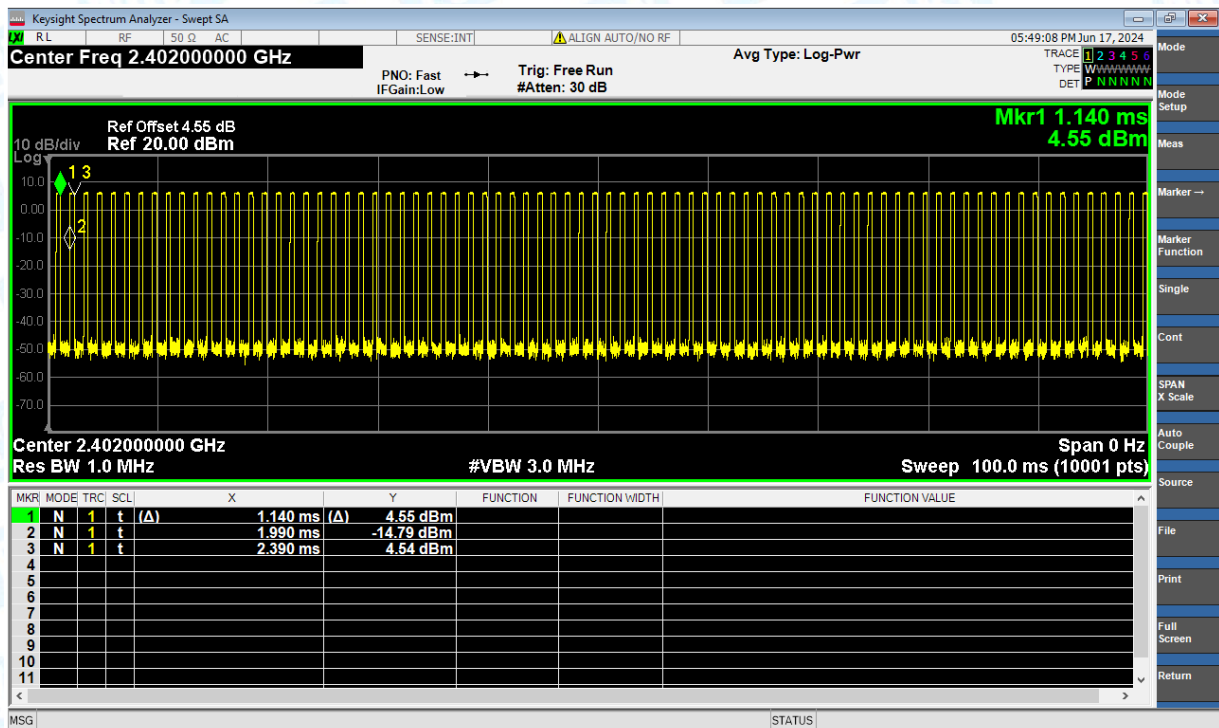
Duty Cycle NVNT 1-DH1 2441MHz Ant1



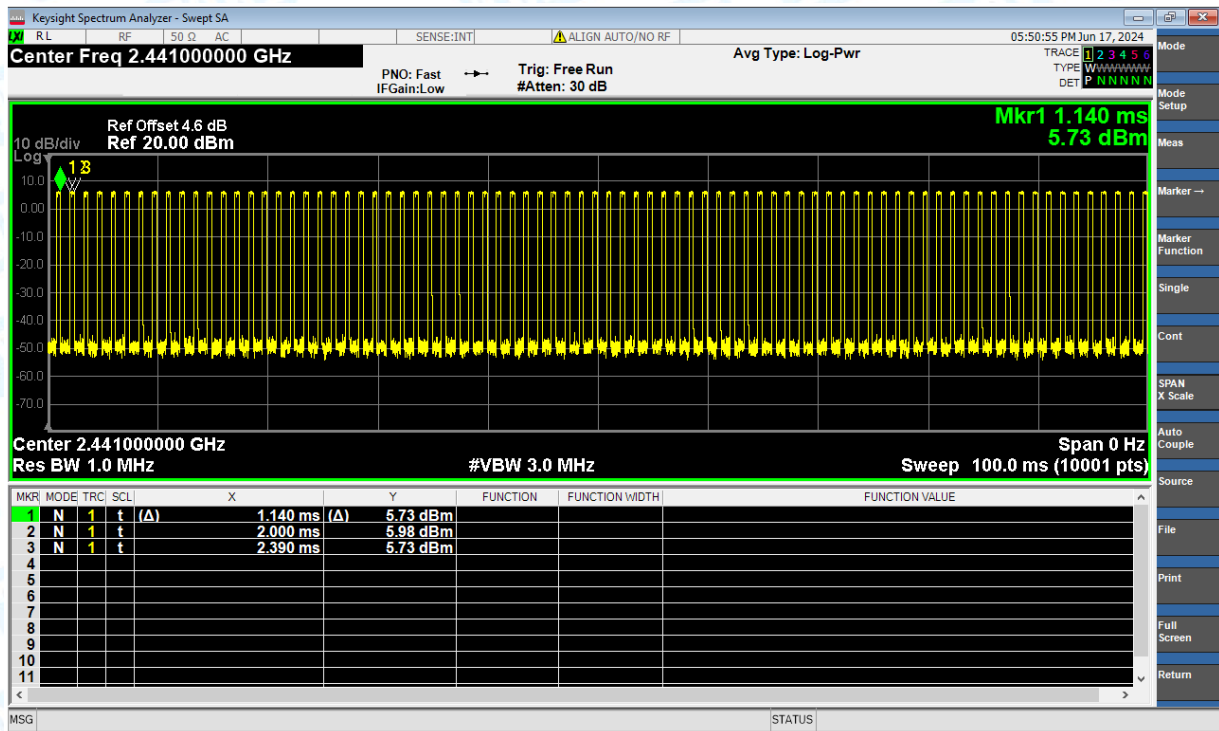
Duty Cycle NVNT 1-DH1 2480MHz Ant1



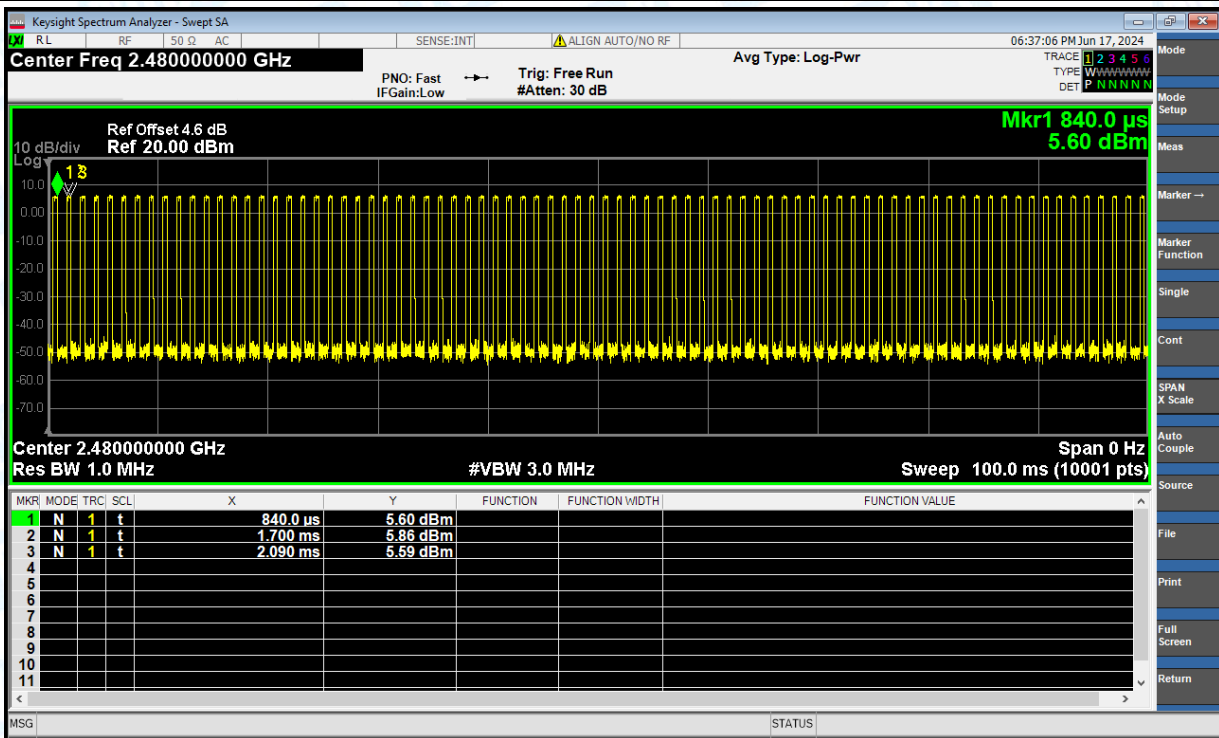
Duty Cycle NVNT 2-DH1 2402MHz Ant1



Duty Cycle NVNT 2-DH1 2441MHz Ant1



Duty Cycle NVNT 2-DH1 2480MHz Ant1

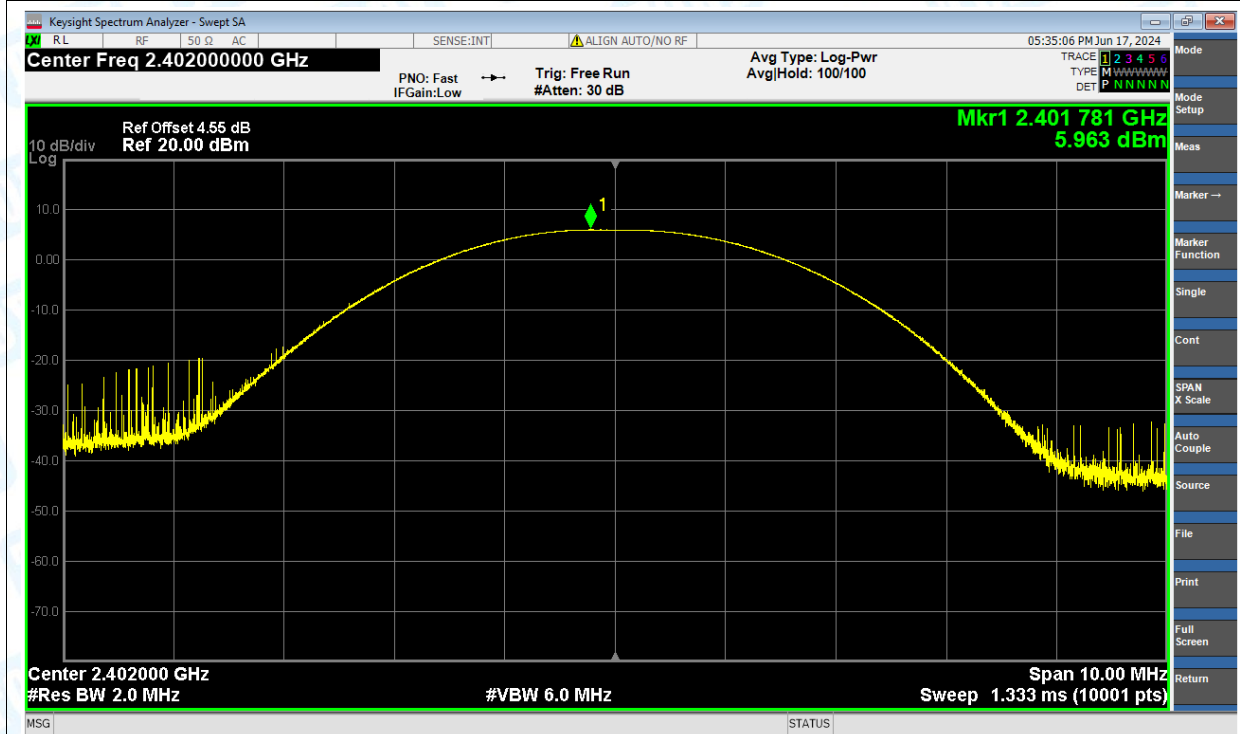


2. Maximum Conducted Output Power

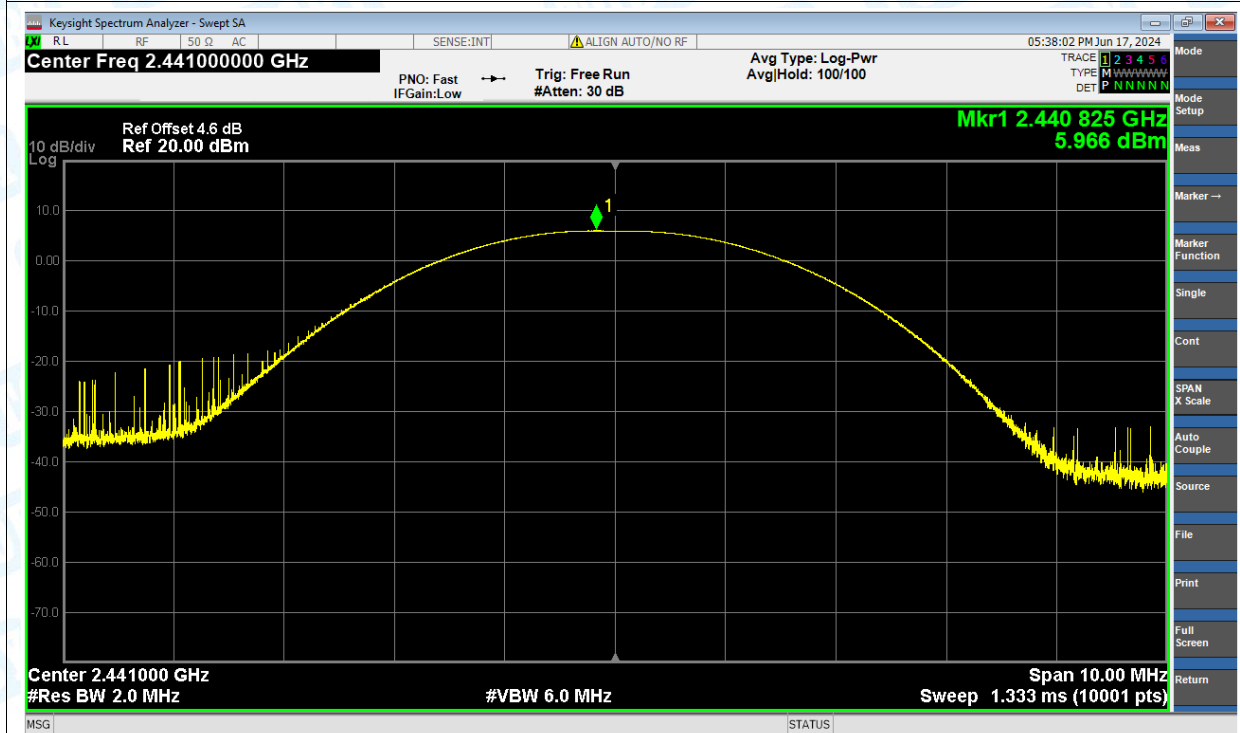
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	5.963	21	Pass
NVNT	1-DH1	2441	Ant1	5.966	21	Pass
NVNT	1-DH1	2480	Ant1	5.677	21	Pass
NVNT	1-DH3	2441	Ant1	6.162	21	Pass
NVNT	1-DH5	2441	Ant1	6.155	21	Pass
NVNT	2-DH1	2402	Ant1	6.908	21	Pass
NVNT	2-DH1	2441	Ant1	6.839	21	Pass
NVNT	2-DH1	2480	Ant1	6.71	21	Pass
NVNT	2-DH3	2441	Ant1	7.007	21	Pass
NVNT	2-DH5	2441	Ant1	6.987	21	Pass

Test Graphs

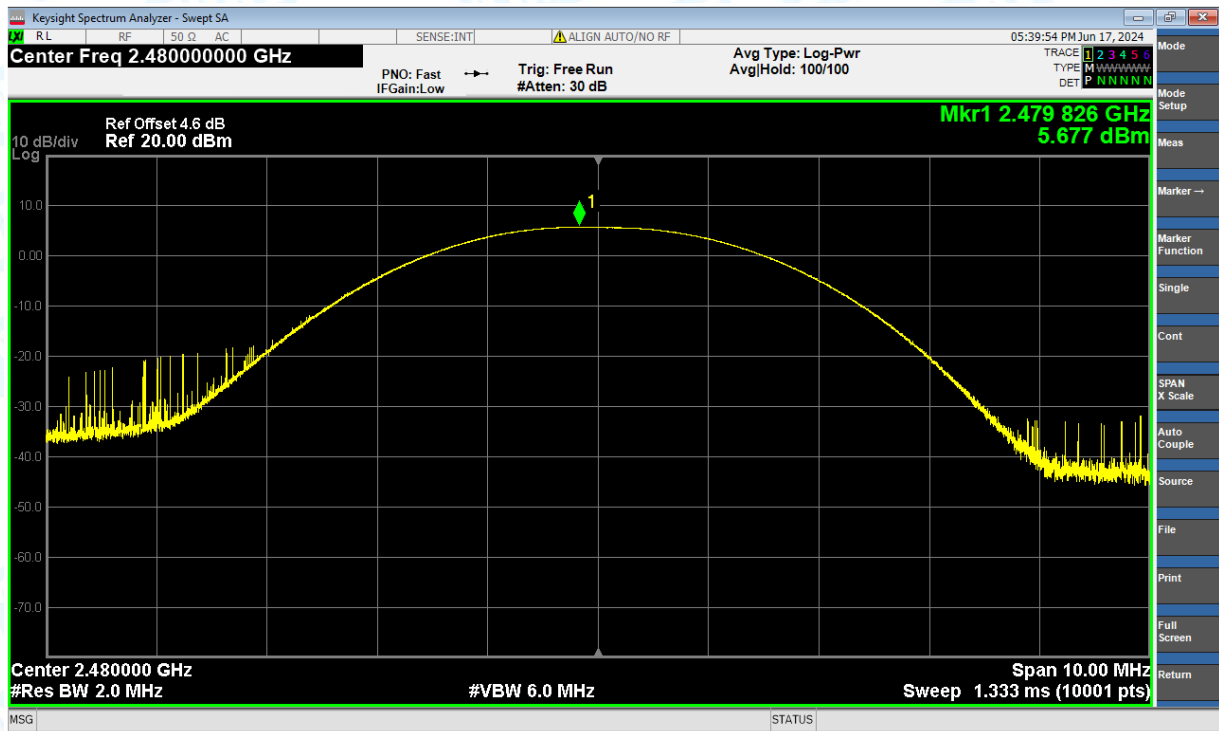
Power NVNT 1-DH1 2402MHz Ant1



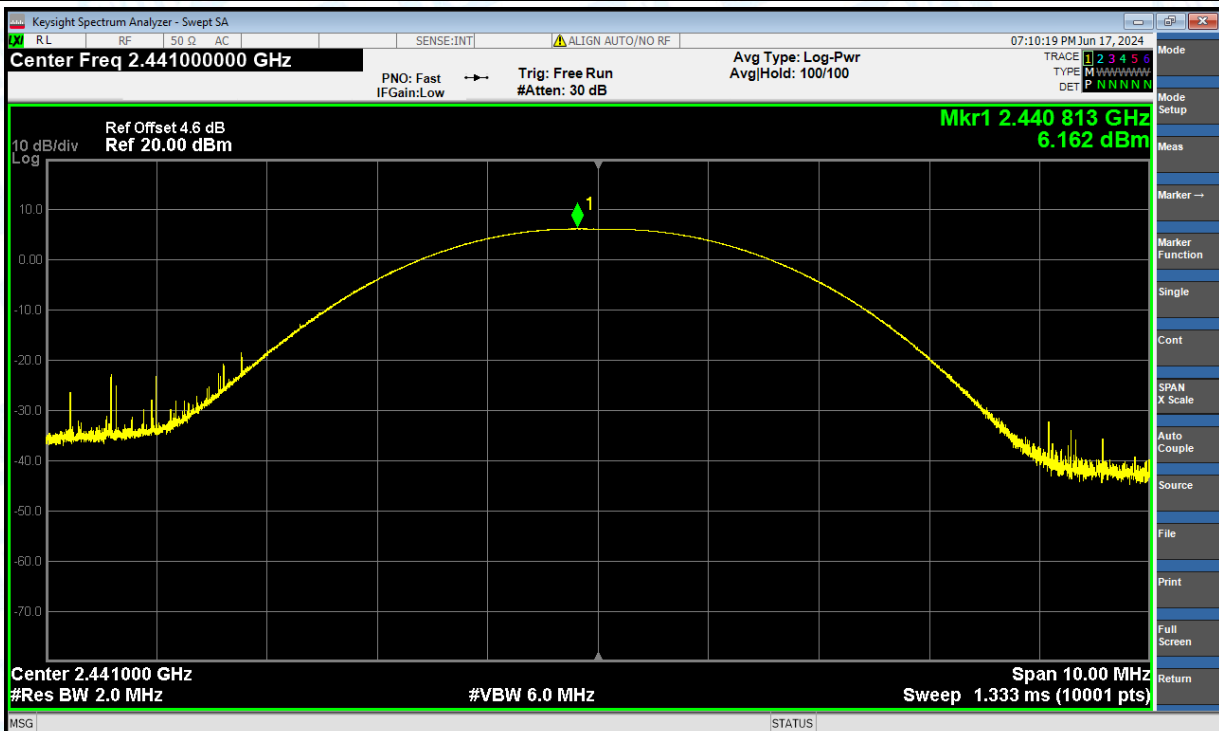
Power NVNT 1-DH1 2441MHz Ant1



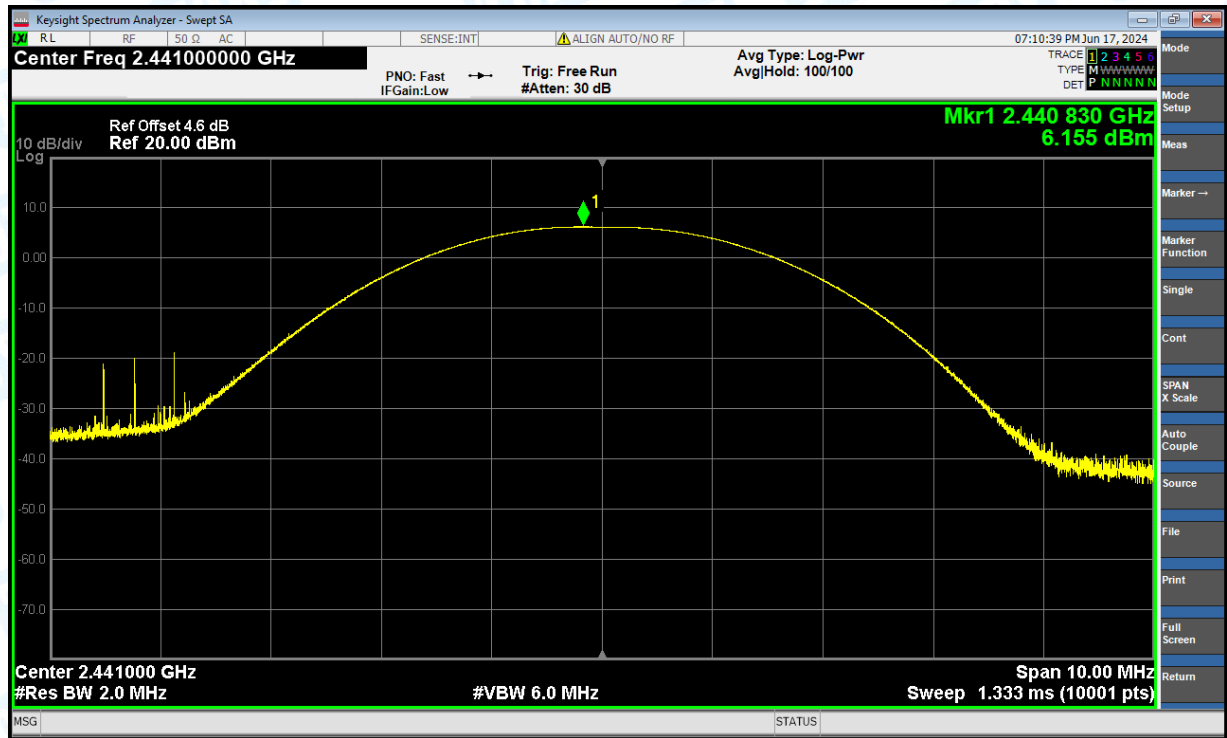
Power NVNT 1-DH1 2480MHz Ant1



Power NVNT 1-DH3 2441MHz Ant1



Power NVNT 1-DH5 2441MHz Ant1



Power NVNT 2-DH1 2402MHz Ant1



Power NVNT 2-DH1 2441MHz Ant1



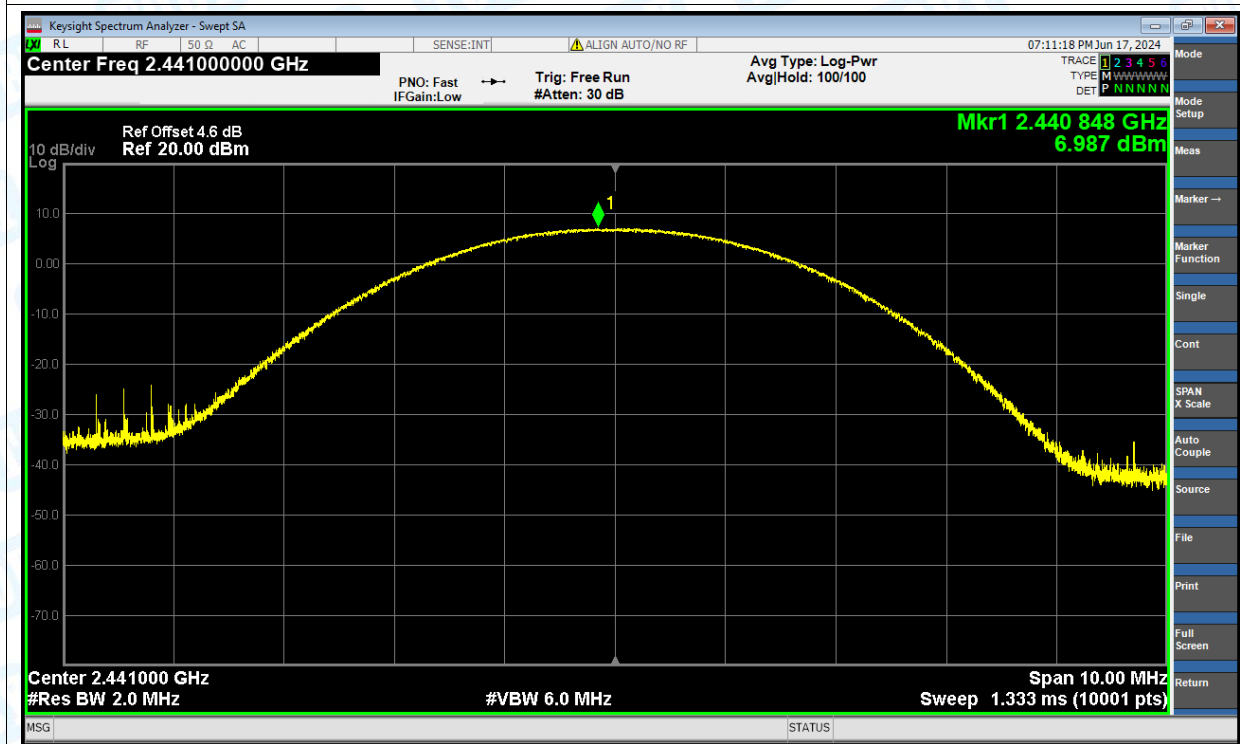
Power NVNT 2-DH1 2480MHz Ant1



Power NVNT 2-DH3 2441MHz Ant1



Power NVNT 2-DH5 2441MHz Ant1

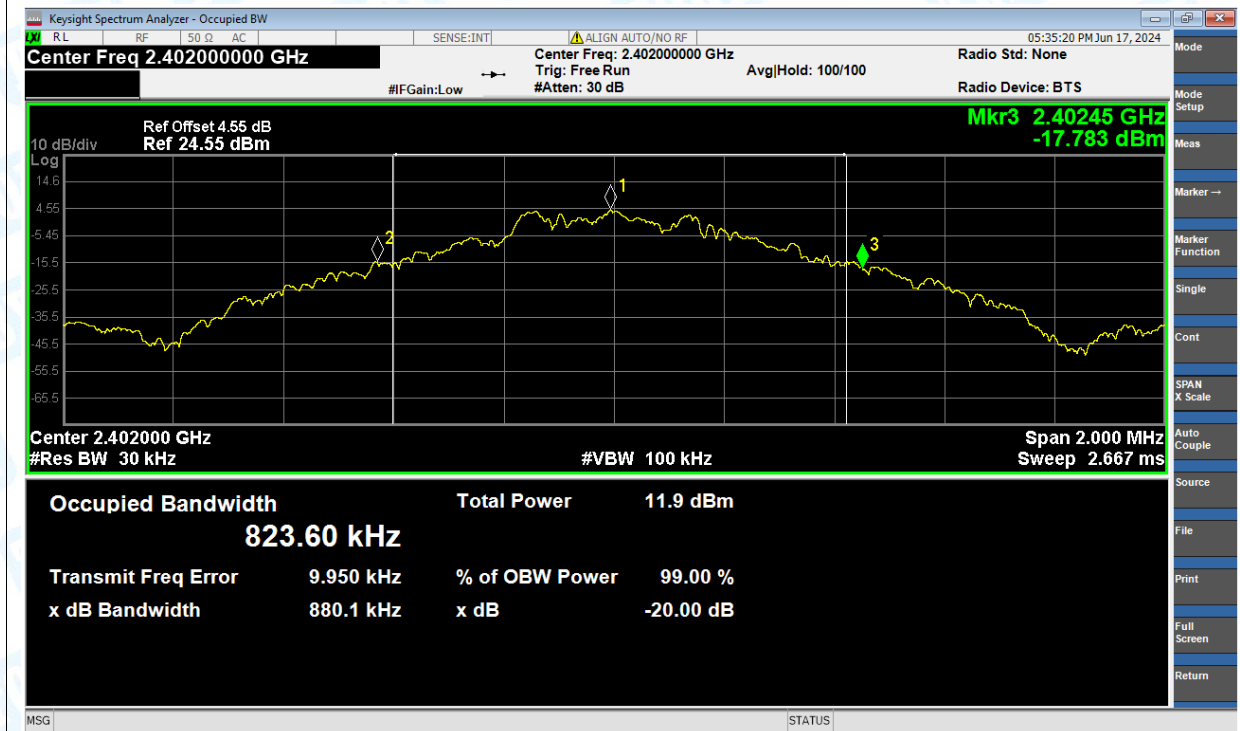


3. -20dB Bandwidth

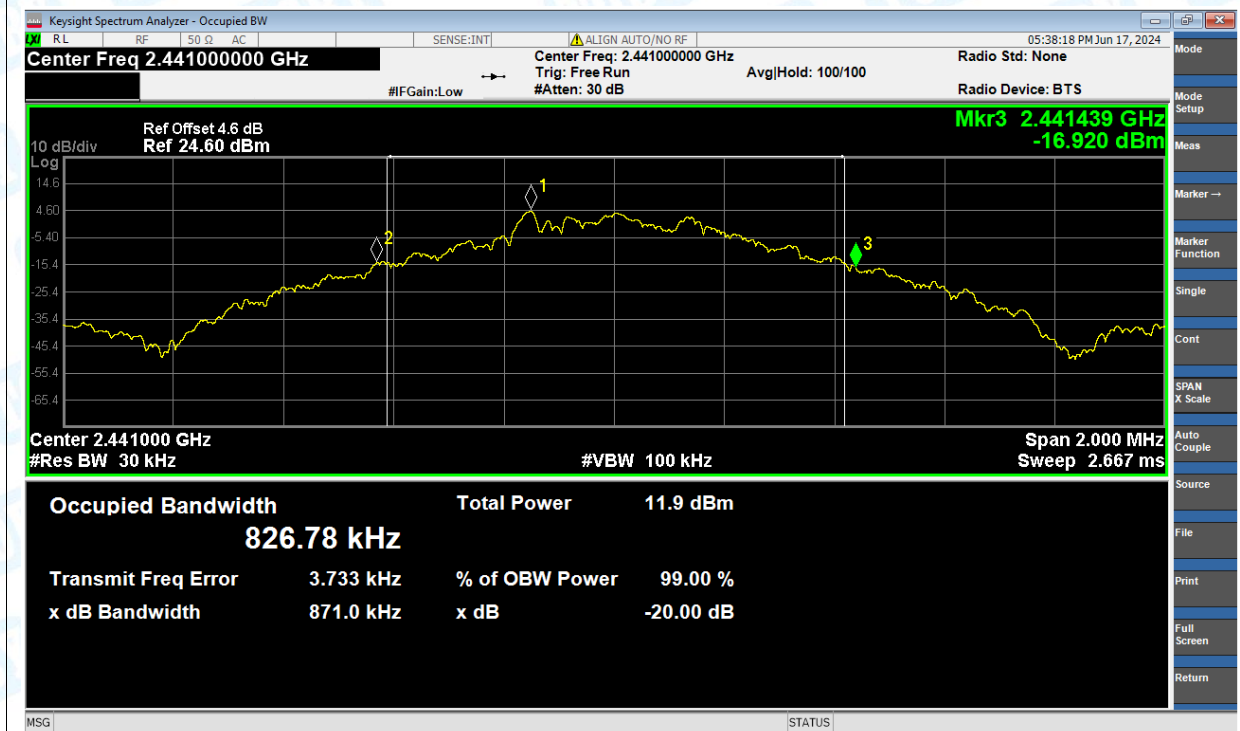
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.88	0	Pass
NVNT	1-DH1	2441	Ant1	0.87	0	Pass
NVNT	1-DH1	2480	Ant1	0.86	0	Pass
NVNT	2-DH1	2402	Ant1	1.25	0	Pass
NVNT	2-DH1	2441	Ant1	1.24	0	Pass
NVNT	2-DH1	2480	Ant1	1.23	0	Pass

Test Graphs

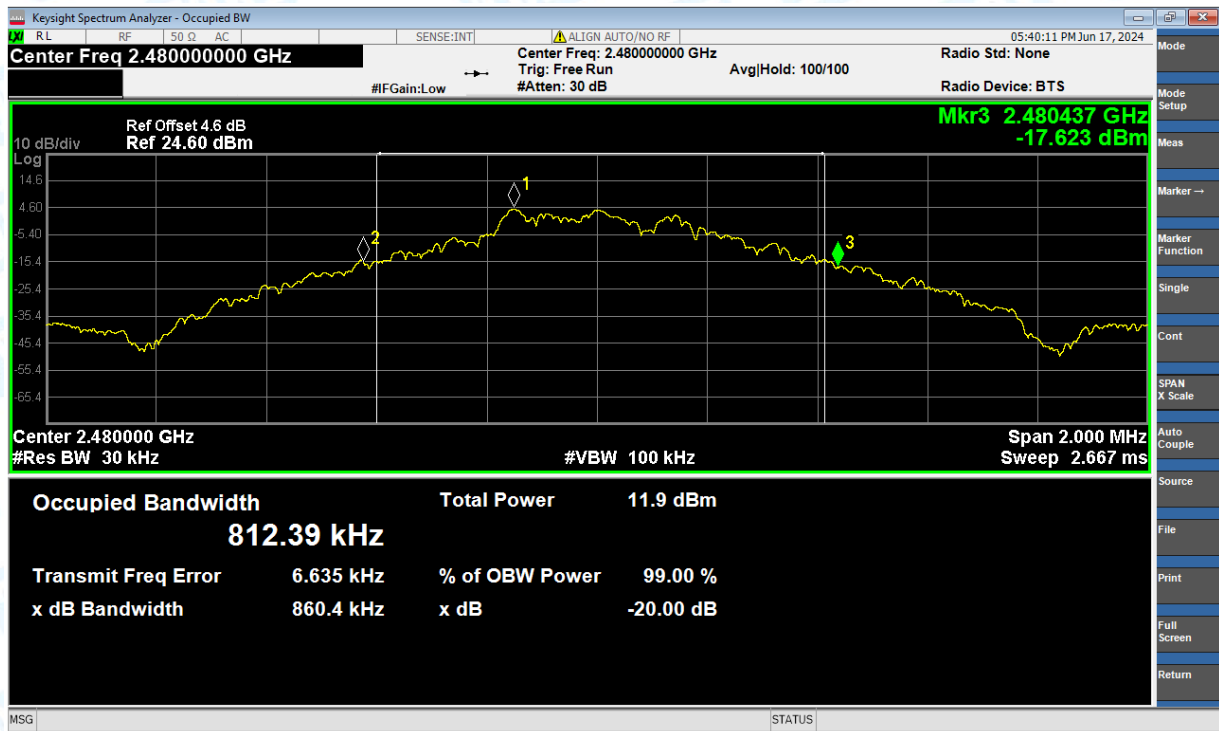
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



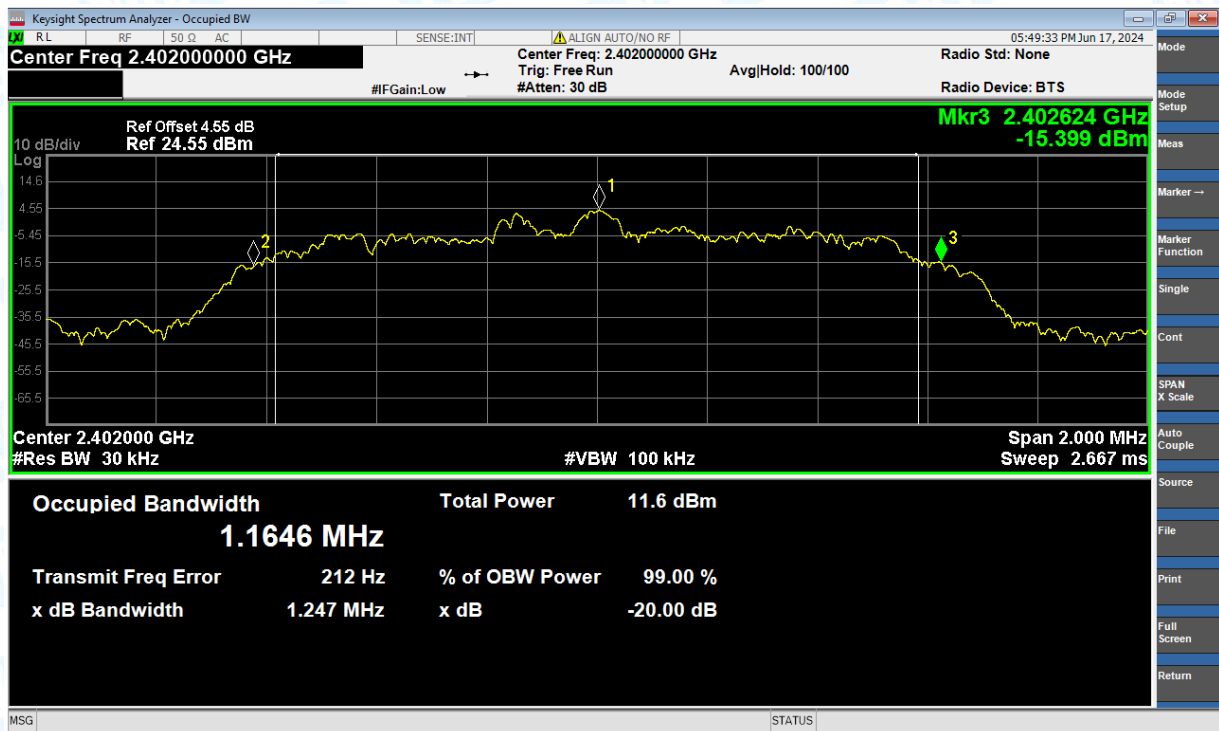
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



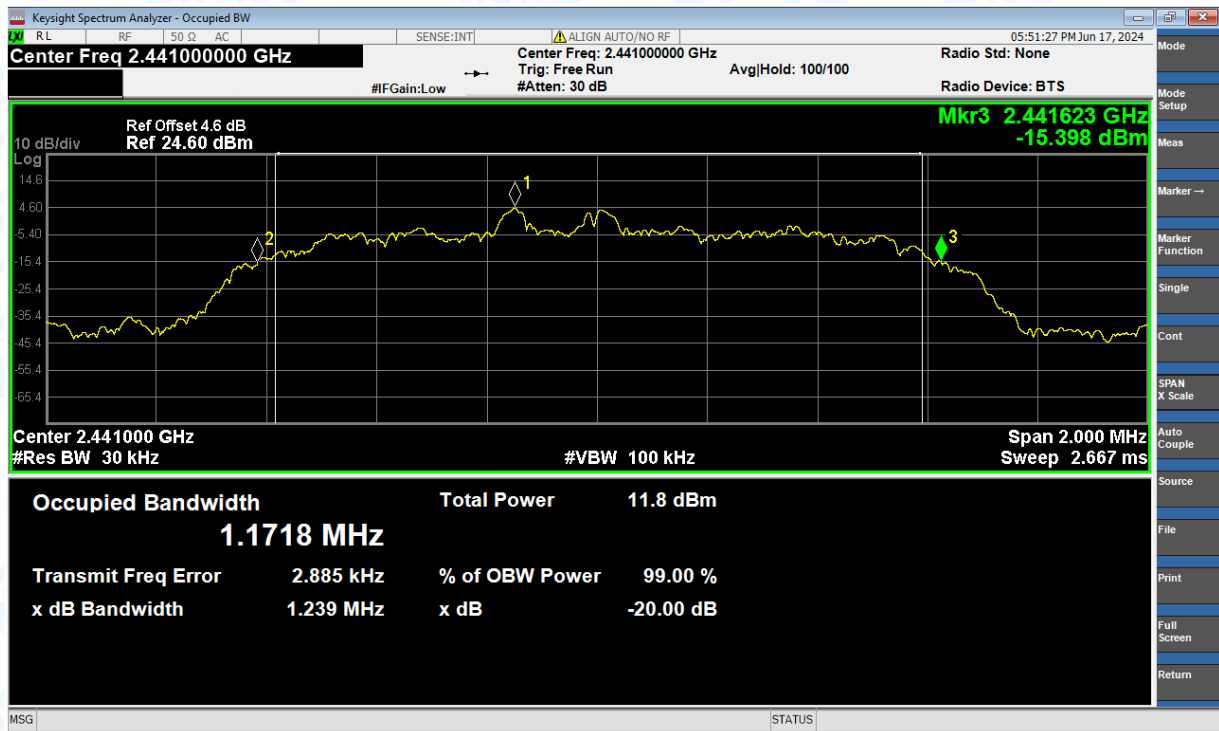
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



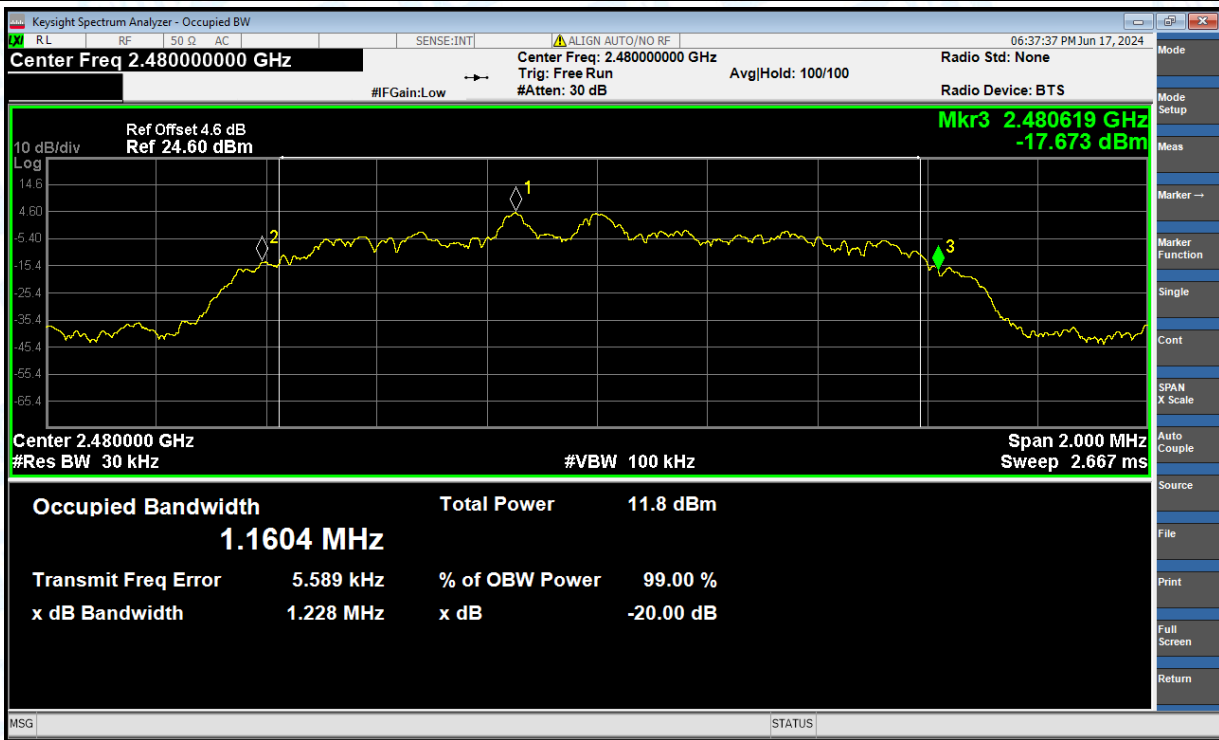
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

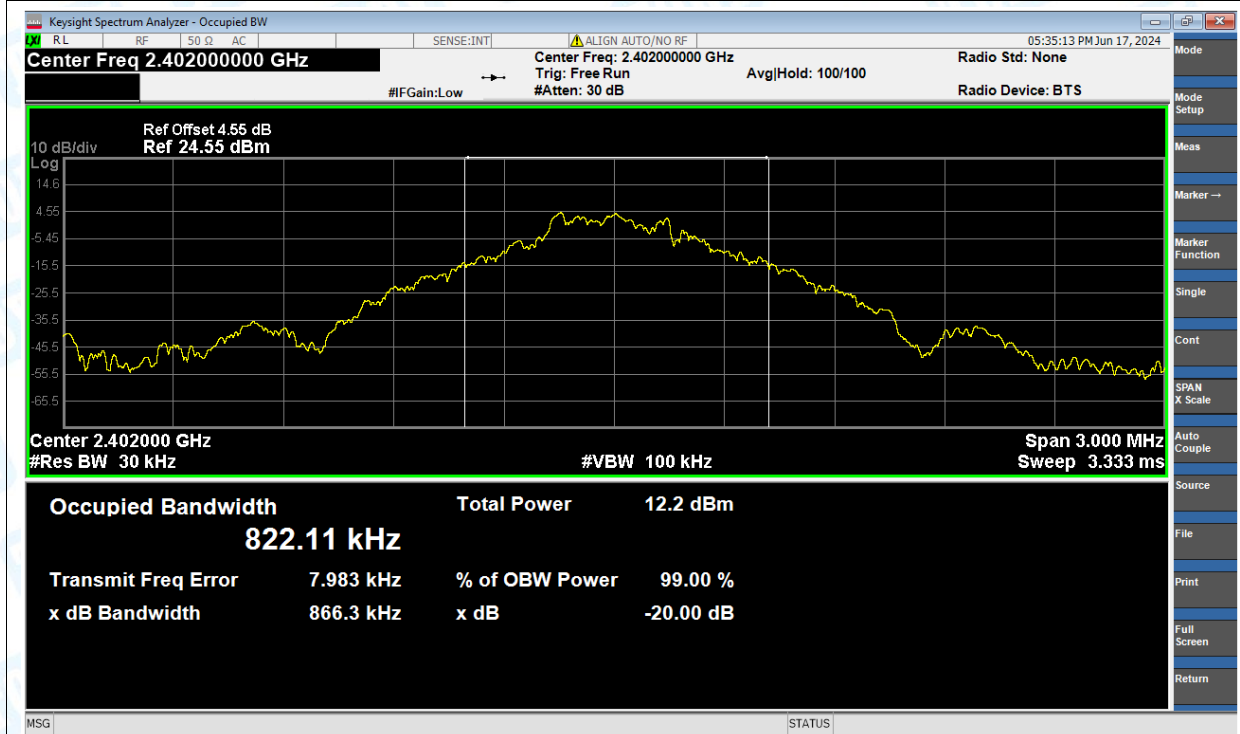


4. Occupied Channel Bandwidth

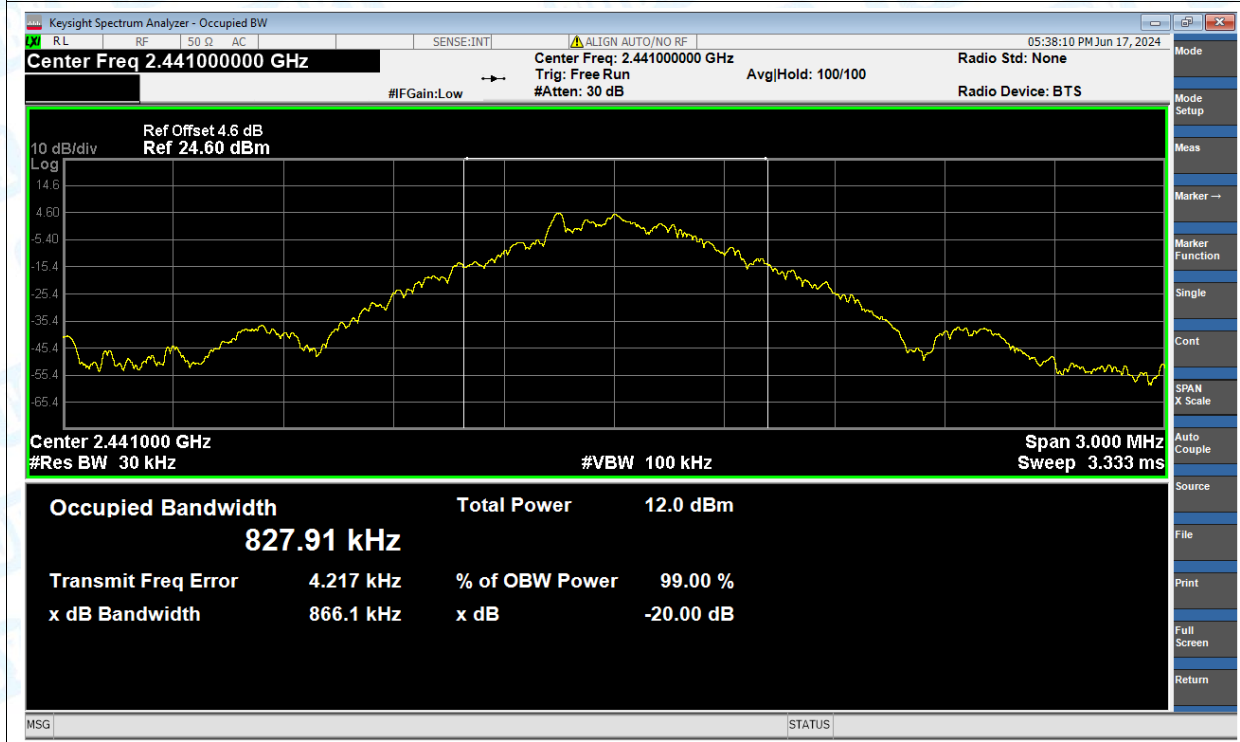
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.822
NVNT	1-DH1	2441	Ant1	0.828
NVNT	1-DH1	2480	Ant1	0.795
NVNT	2-DH1	2402	Ant1	1.148
NVNT	2-DH1	2441	Ant1	1.139
NVNT	2-DH1	2480	Ant1	1.159

Test Graphs

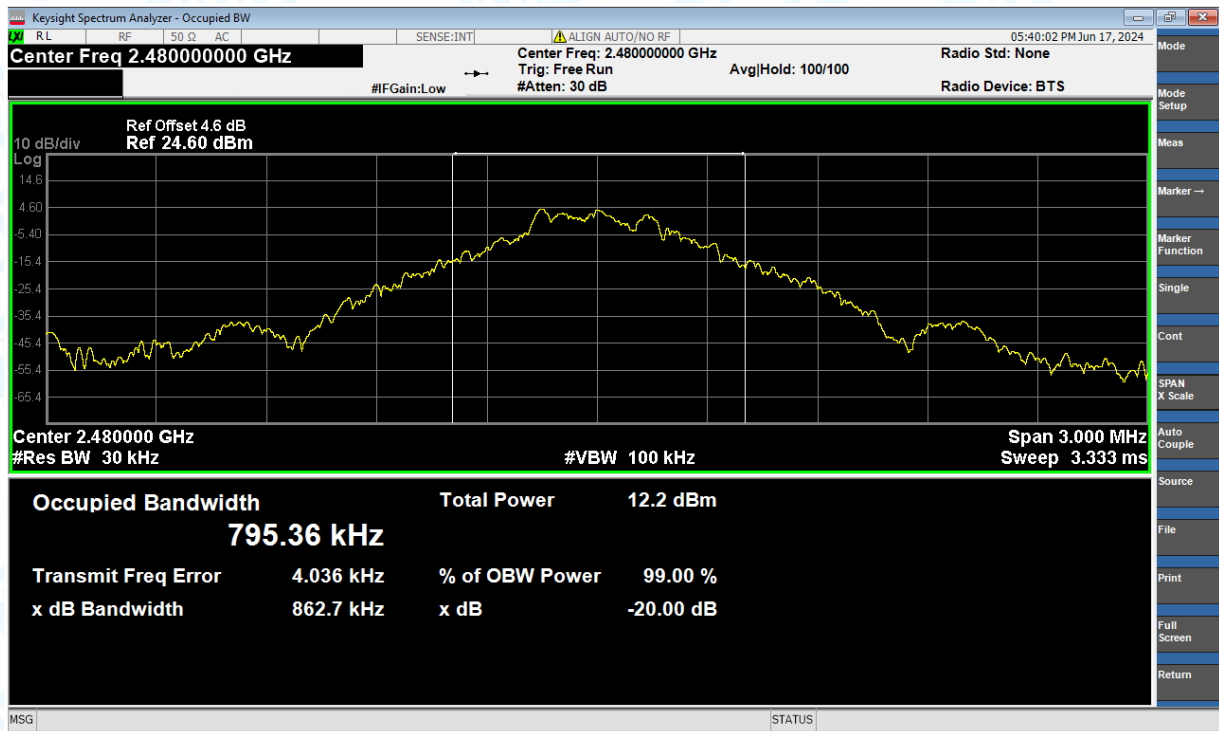
OBW NVNT 1-DH1 2402MHz Ant1



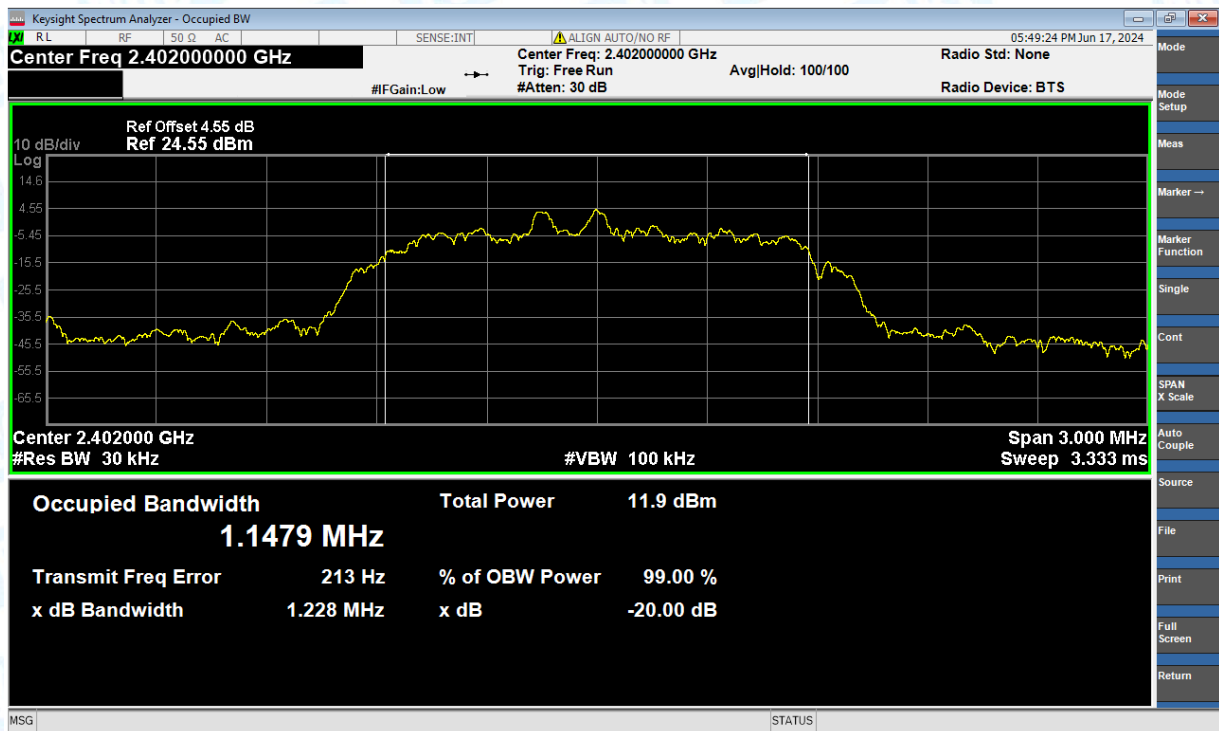
OBW NVNT 1-DH1 2441MHz Ant1



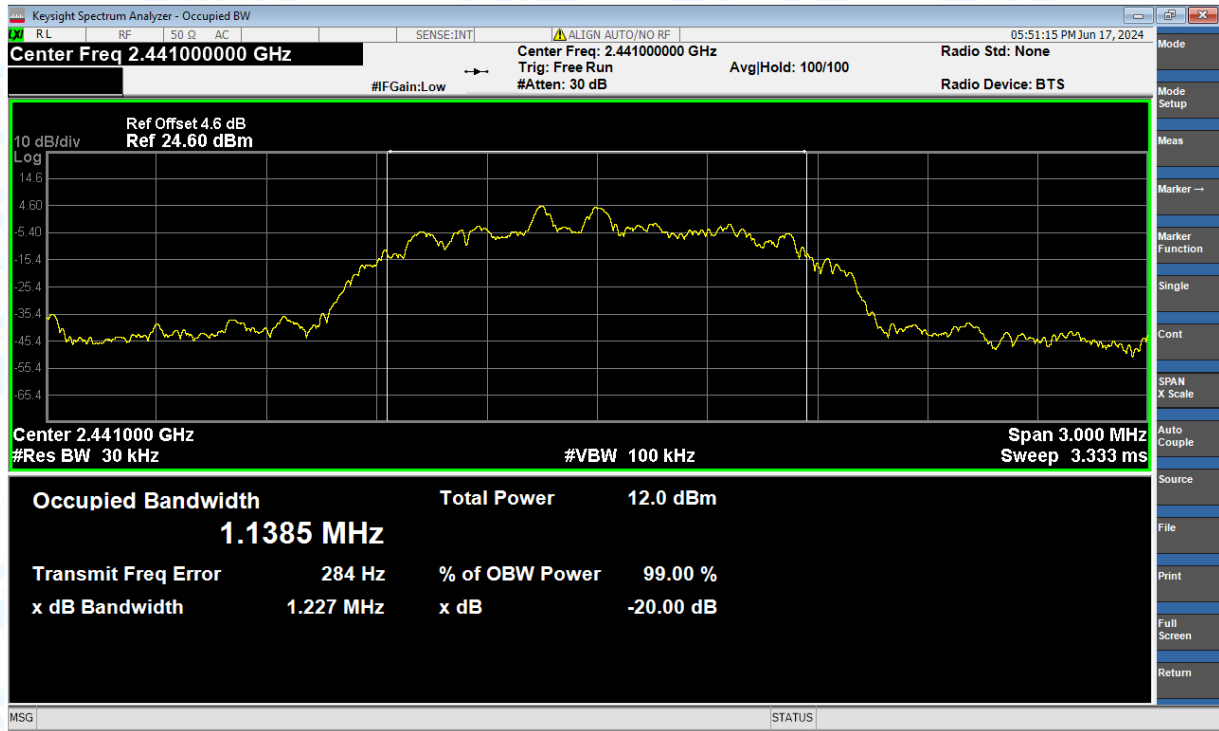
OBW NVNT 1-DH1 2480MHz Ant1



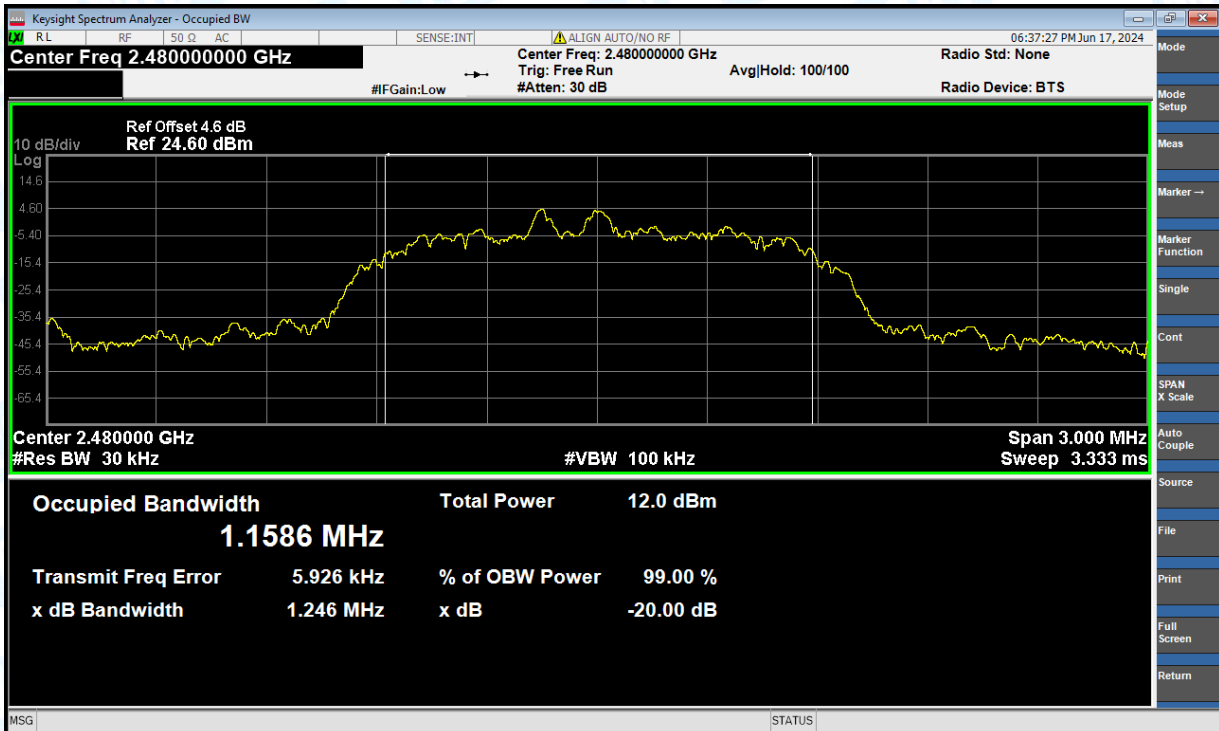
OBW NVNT 2-DH1 2402MHz Ant1



OBW NVNT 2-DH1 2441MHz Ant1



OBW NVNT 2-DH1 2480MHz Ant1



5. Band Edge

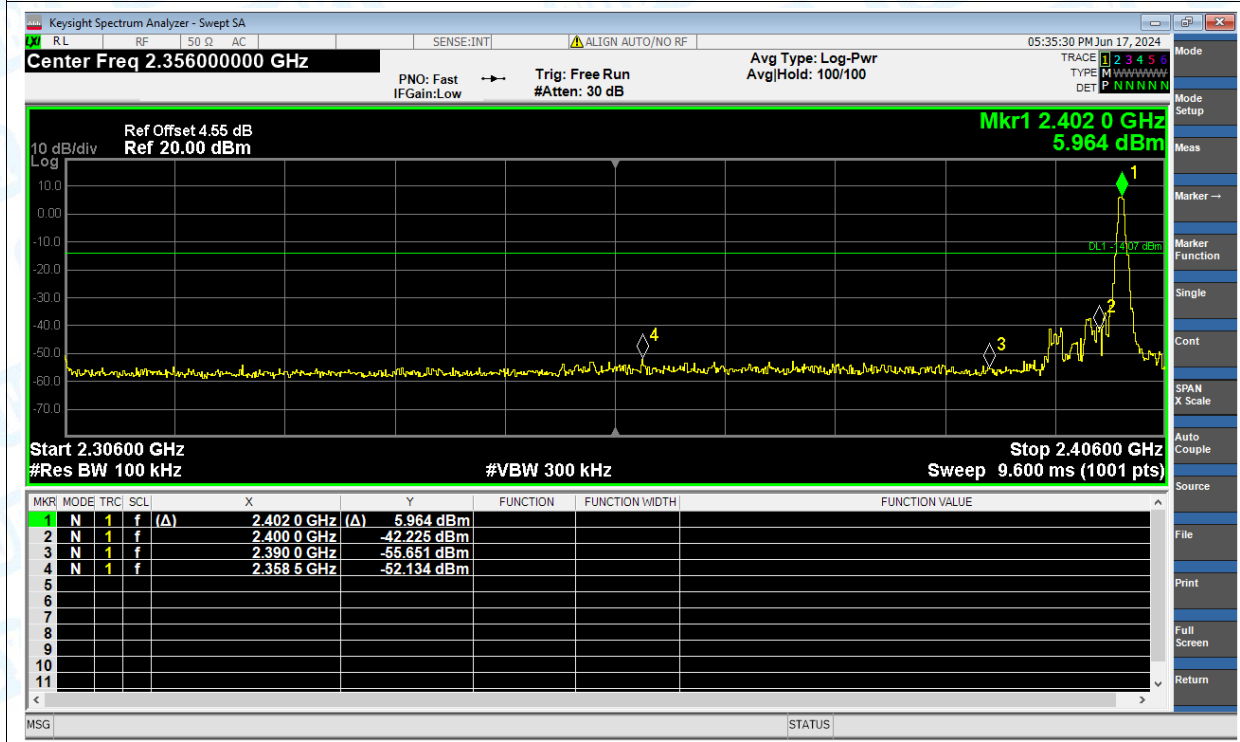
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-58.06	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-57.28	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-58.96	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-58.65	-20	Pass

Test Graphs

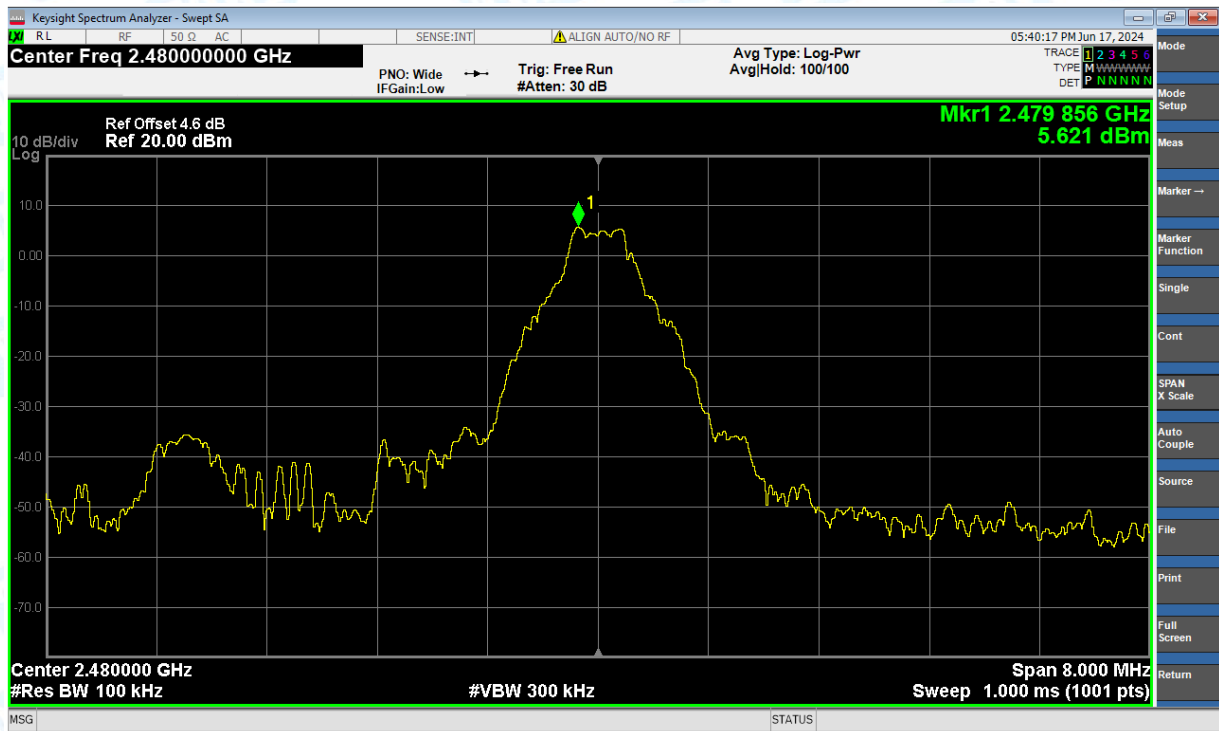
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



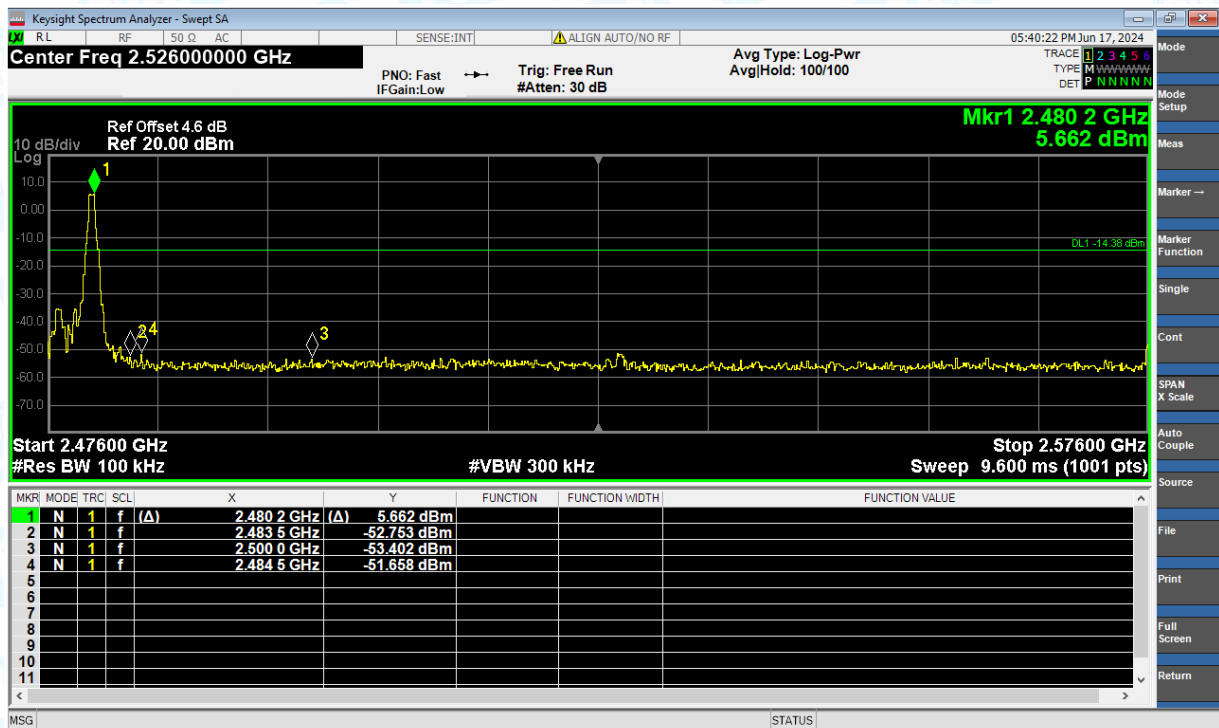
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



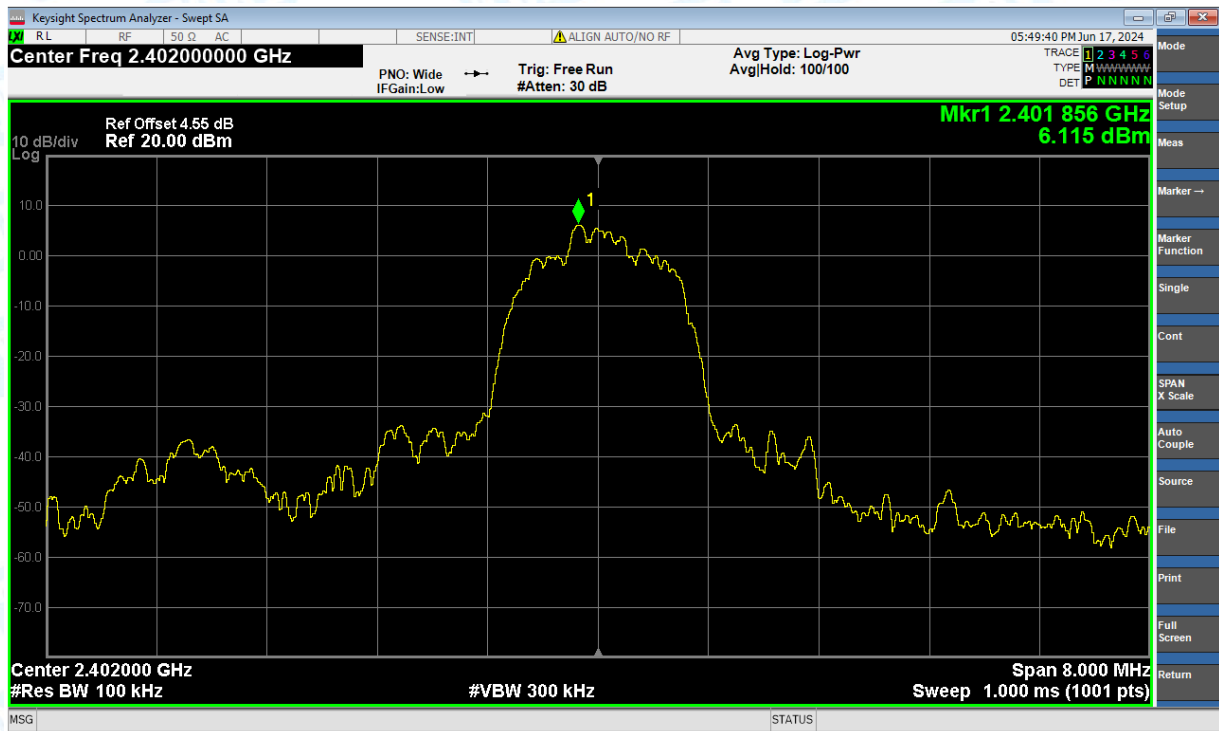
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



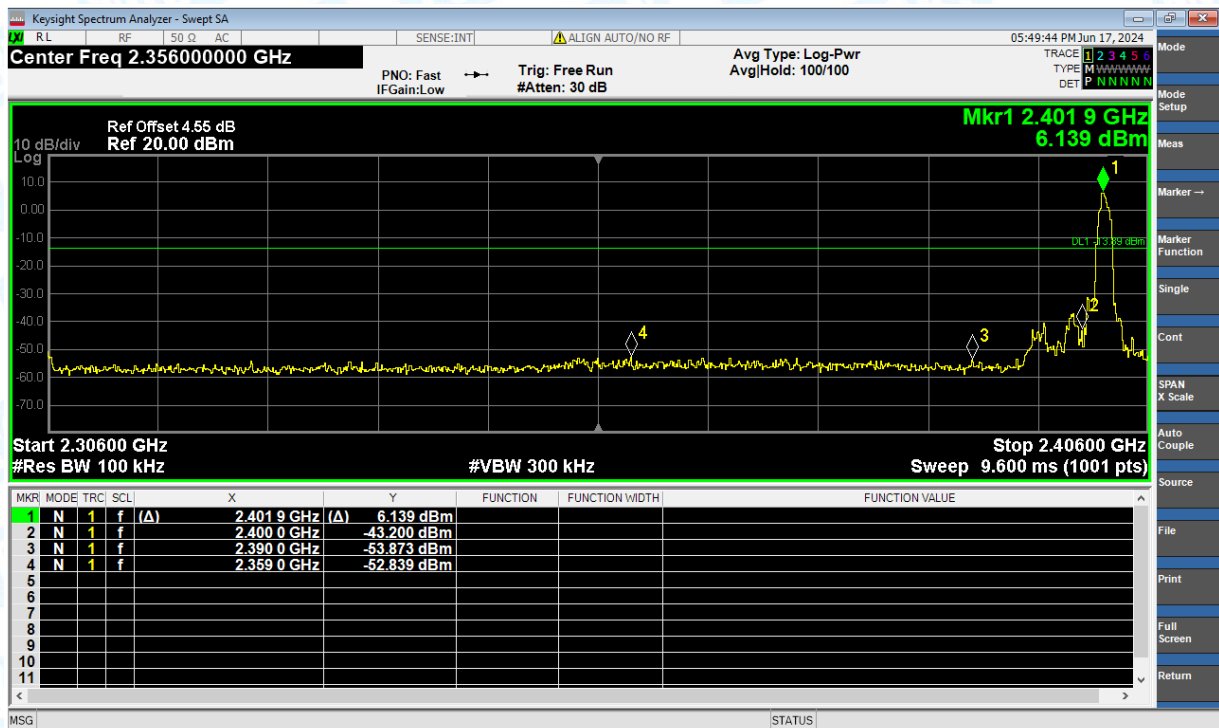
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



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



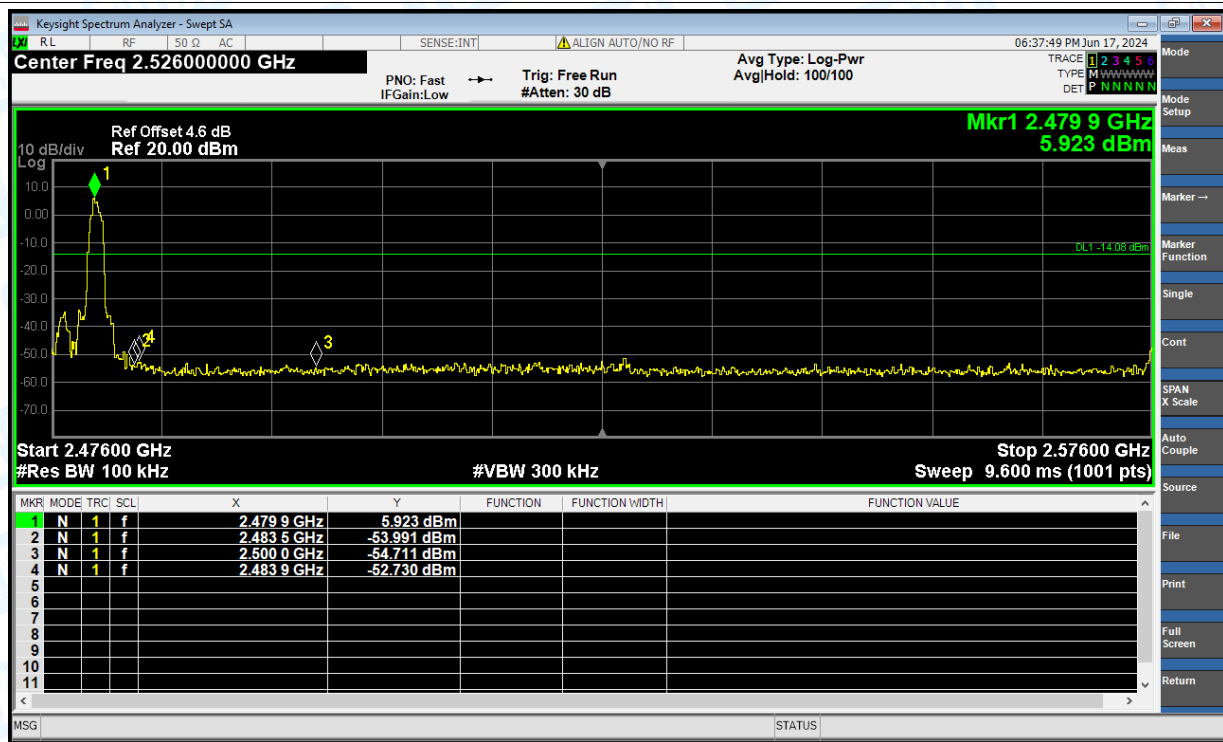
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



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



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



6. Band Edge(Hopping)

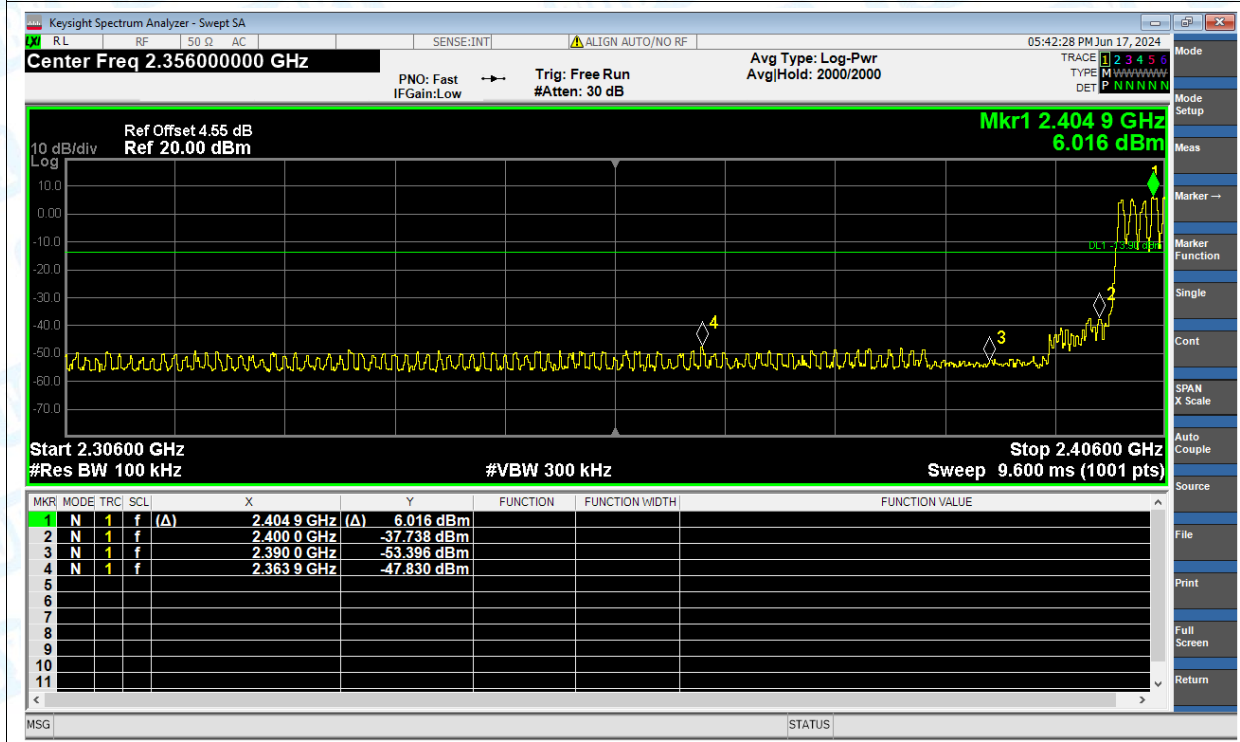
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-53.93	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-53.22	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-52.09	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-52.04	-20	Pass

Test Graphs

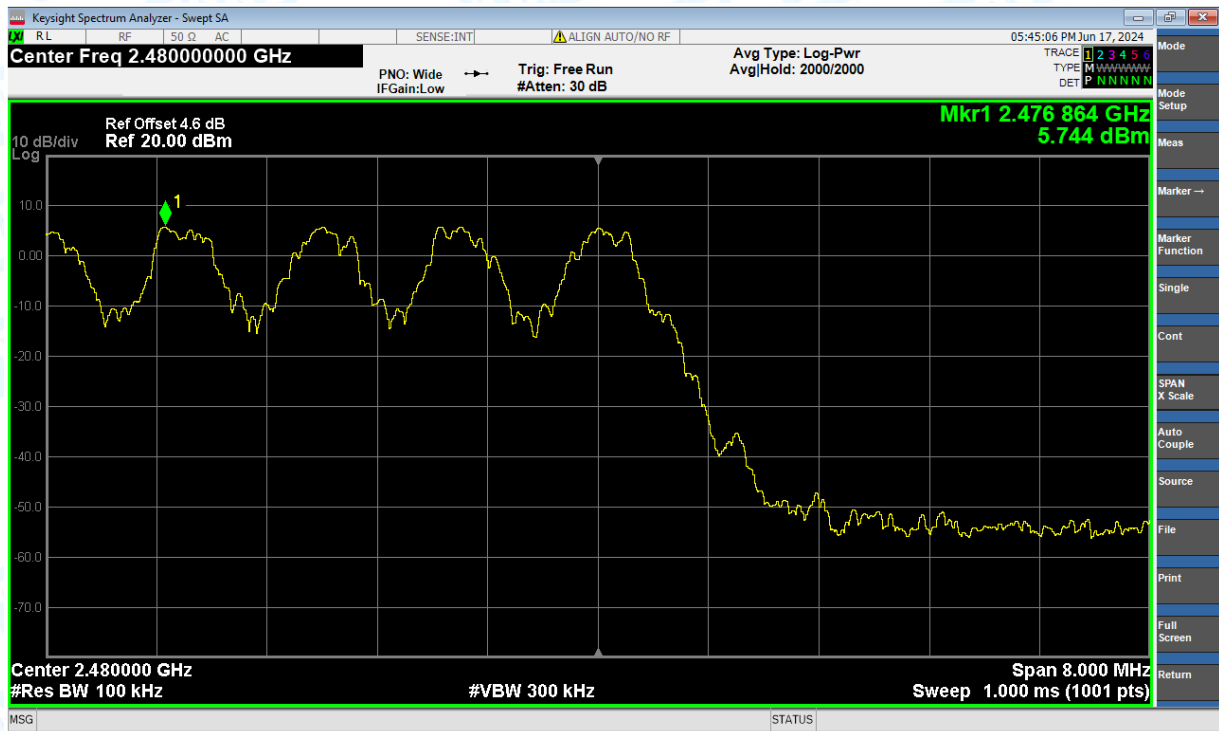
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref



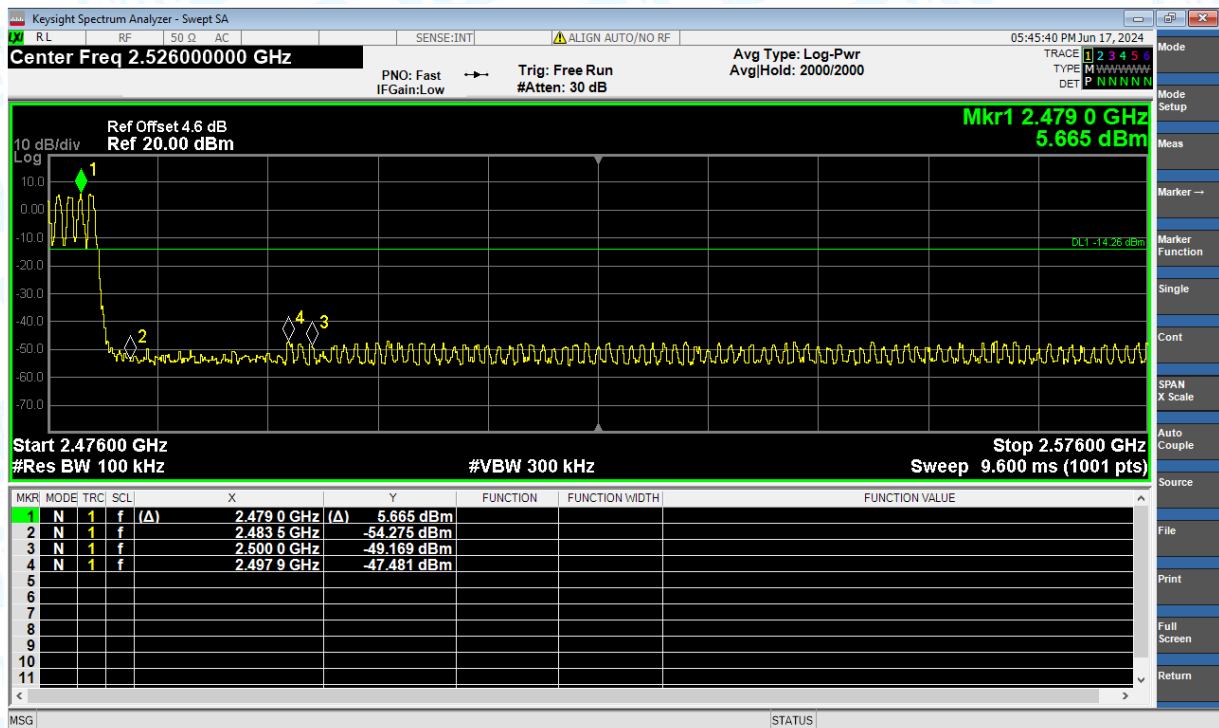
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



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



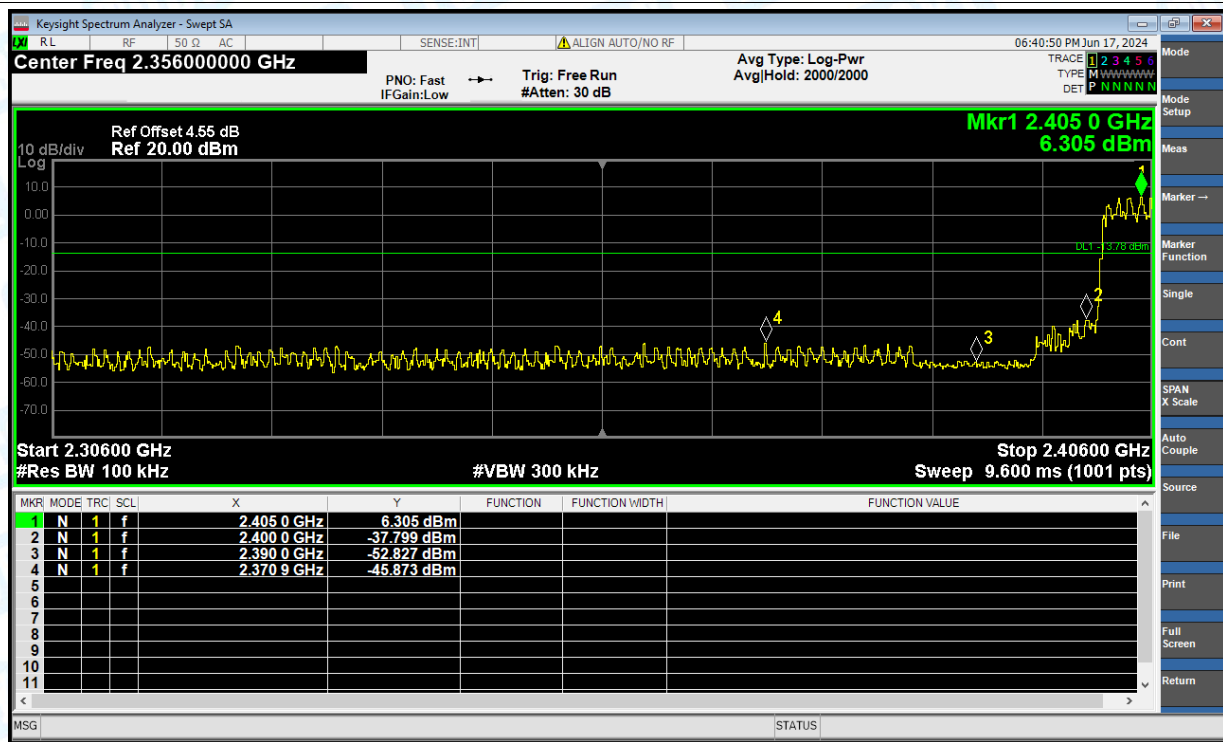
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



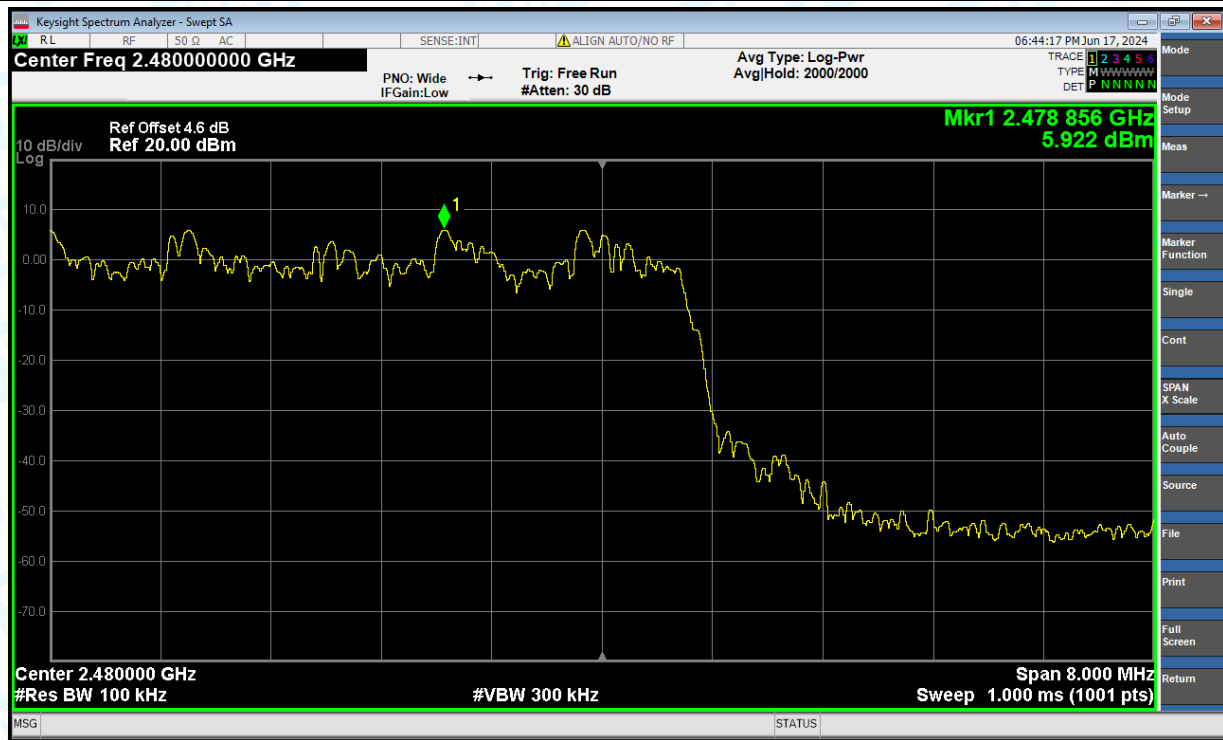
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref



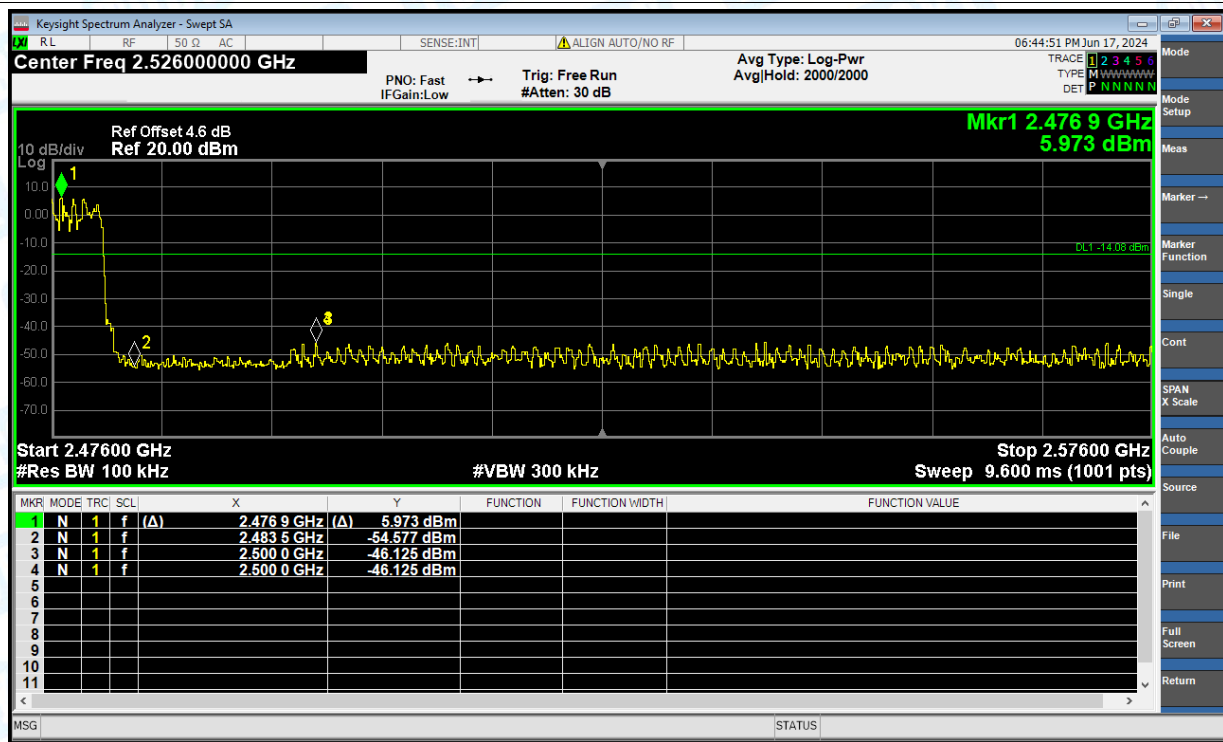
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



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



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

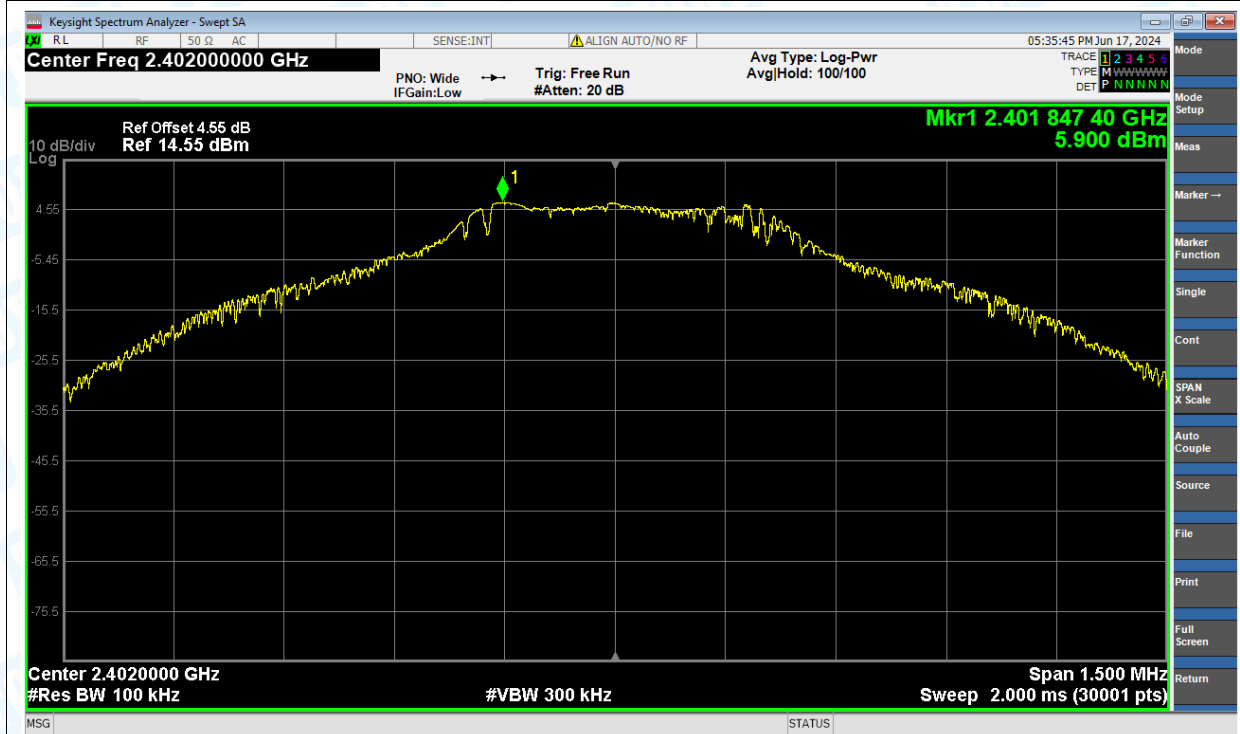


7. Conducted RF Spurious Emission

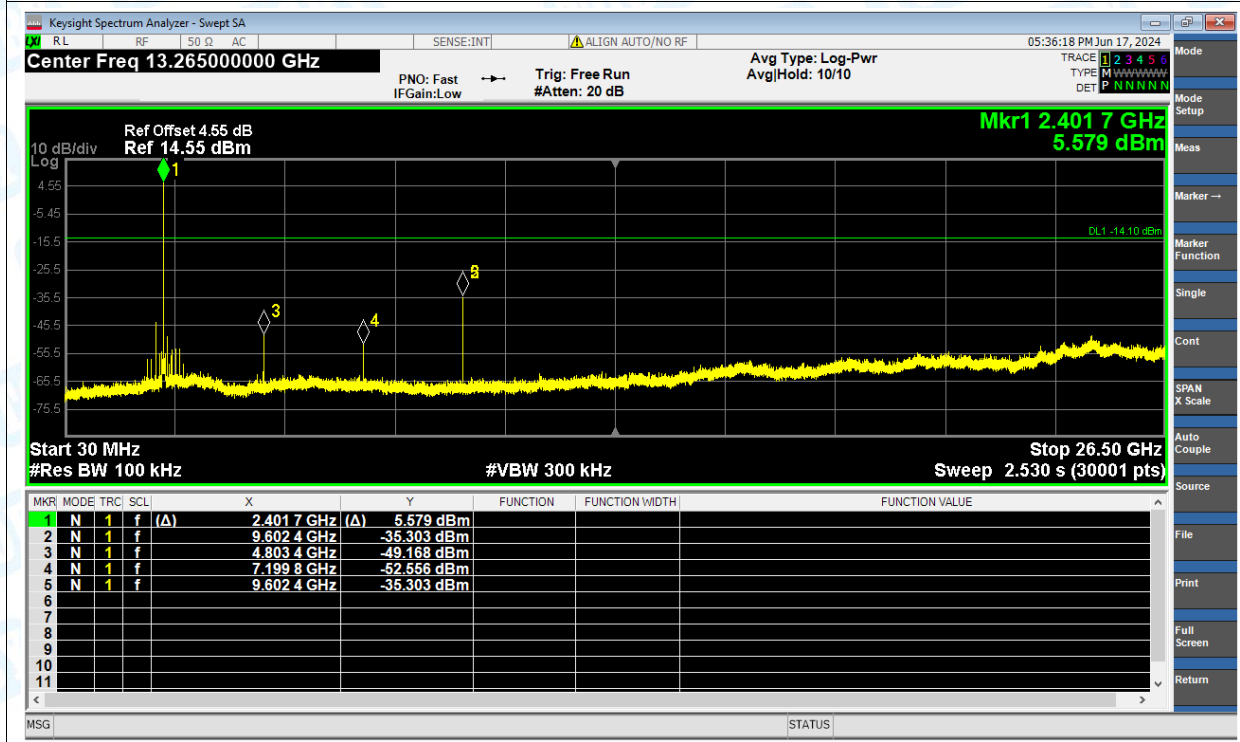
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-41.2	-20	Pass
NVNT	1-DH1	2441	Ant1	-39.56	-20	Pass
NVNT	1-DH1	2480	Ant1	-37.43	-20	Pass
NVNT	2-DH1	2402	Ant1	-40.58	-20	Pass
NVNT	2-DH1	2441	Ant1	-39.02	-20	Pass
NVNT	2-DH1	2480	Ant1	-37.07	-20	Pass

Test Graphs

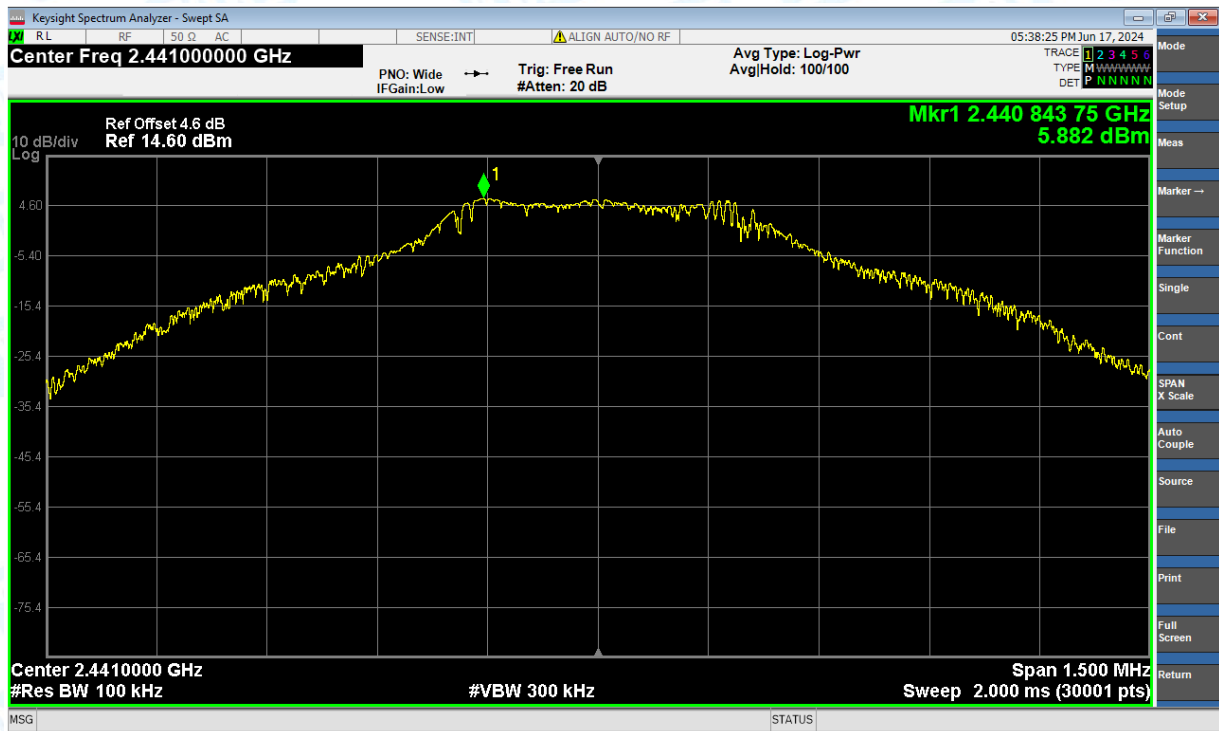
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



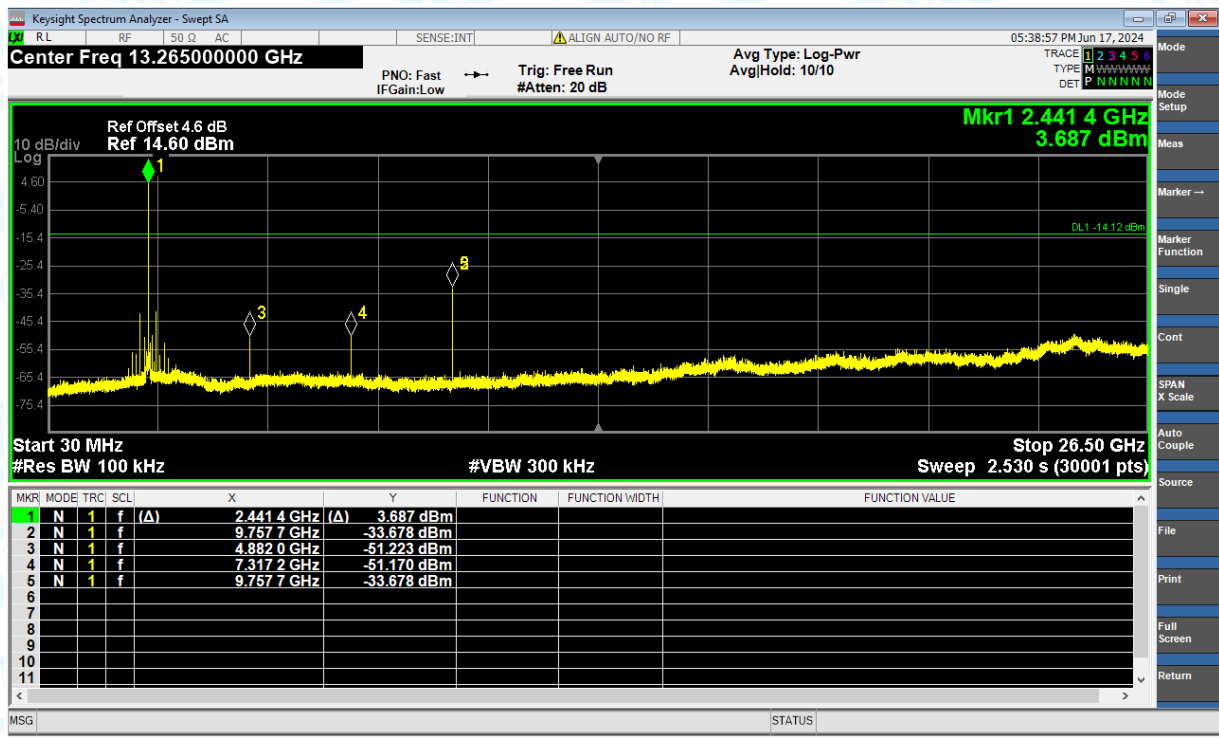
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



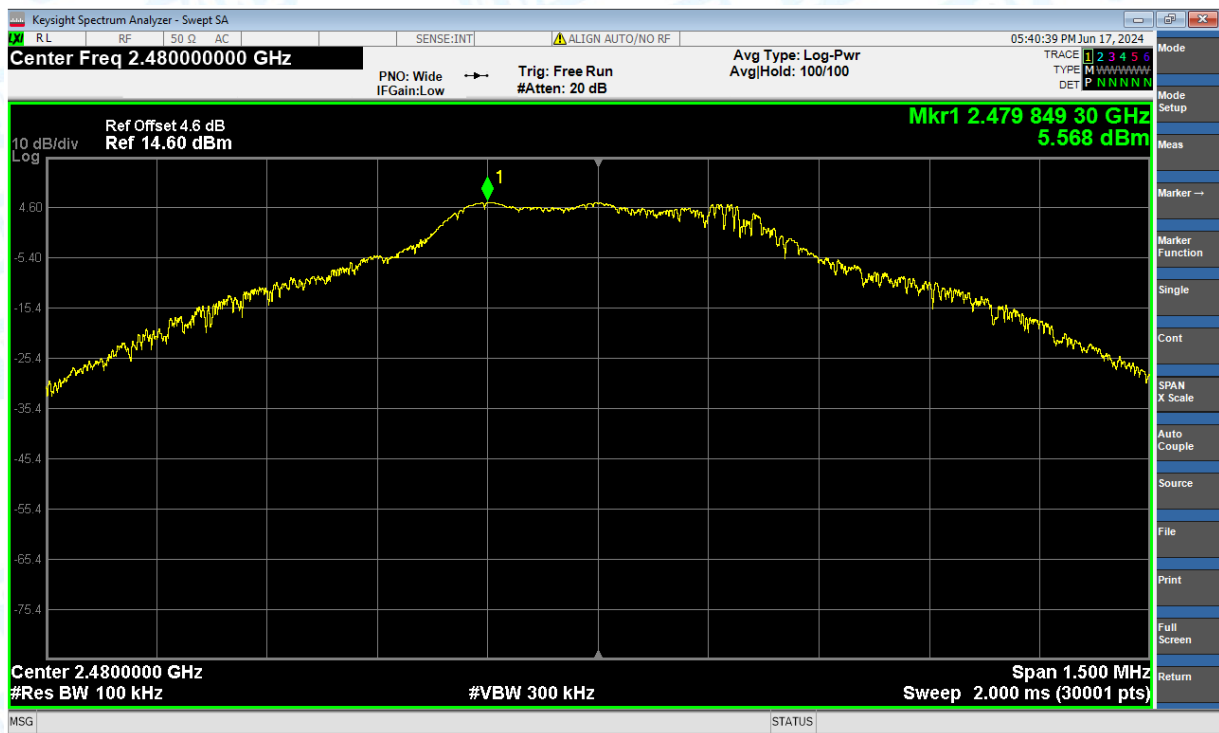
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



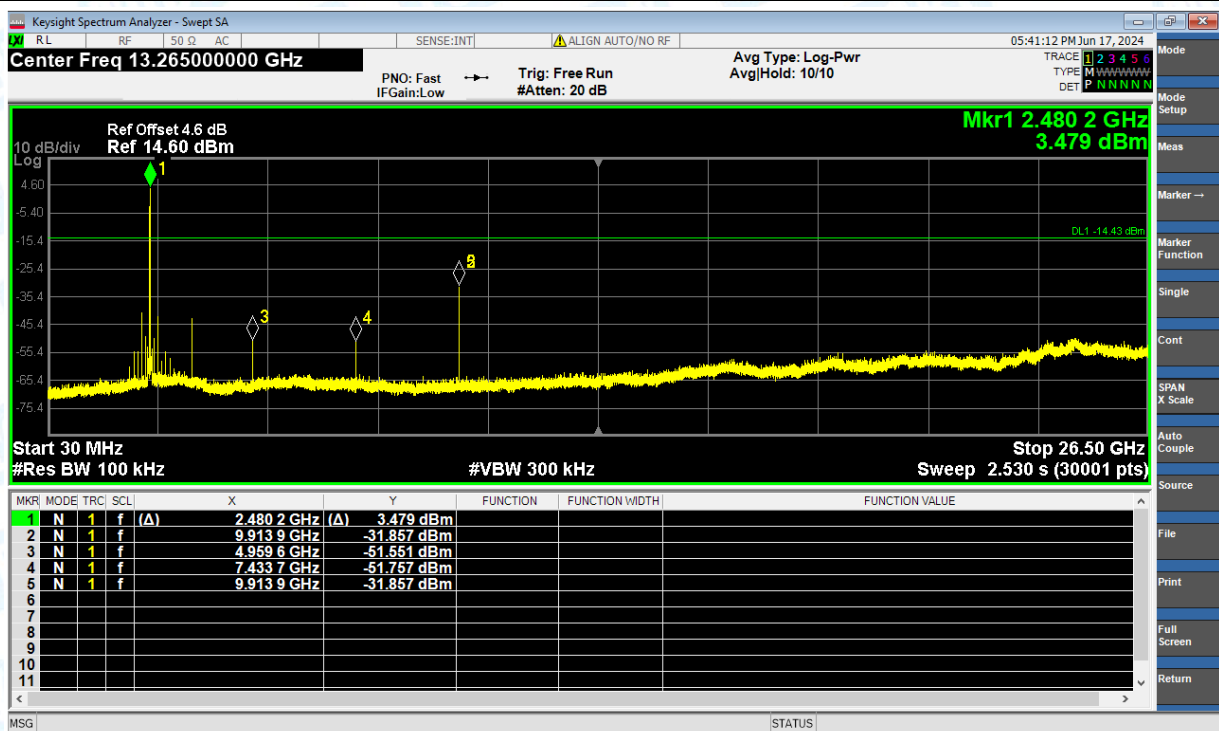
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



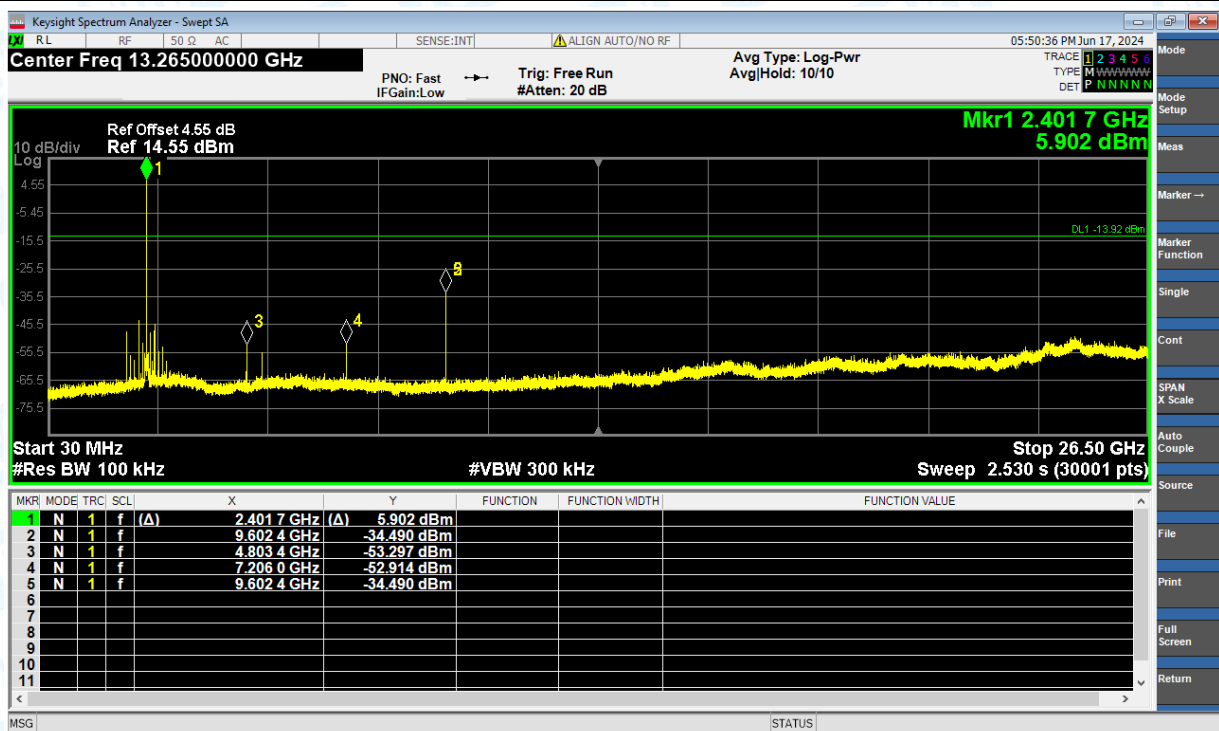
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Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



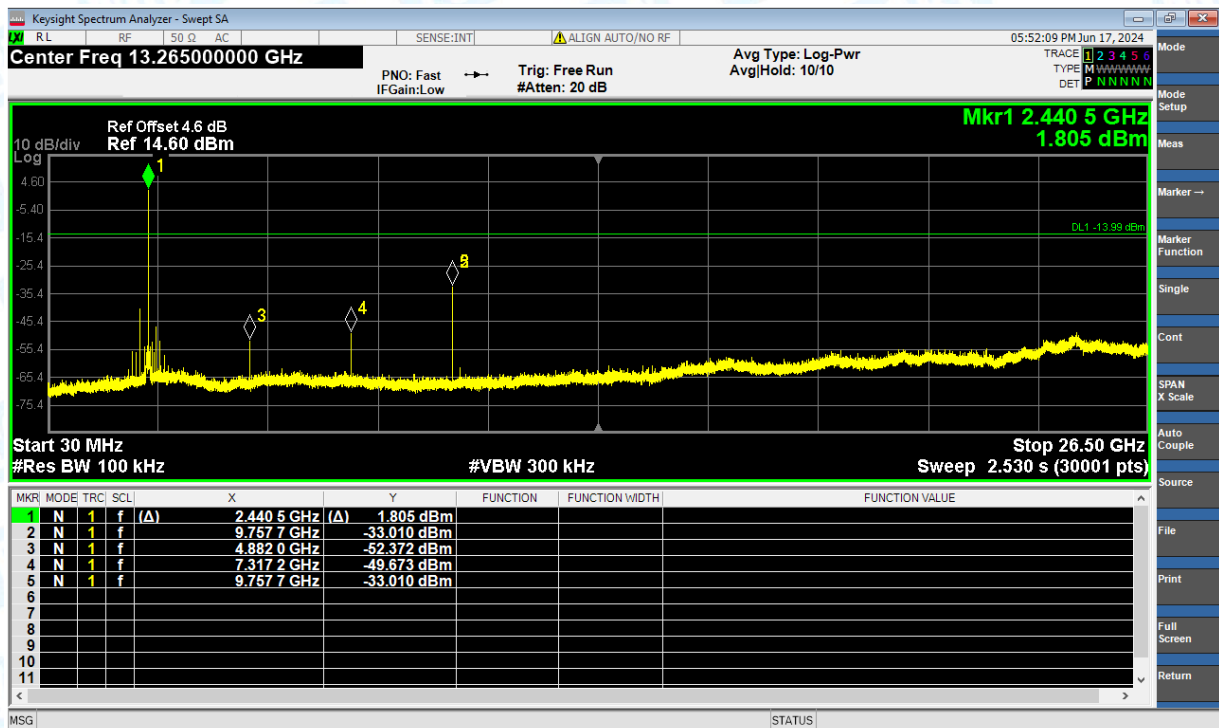
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



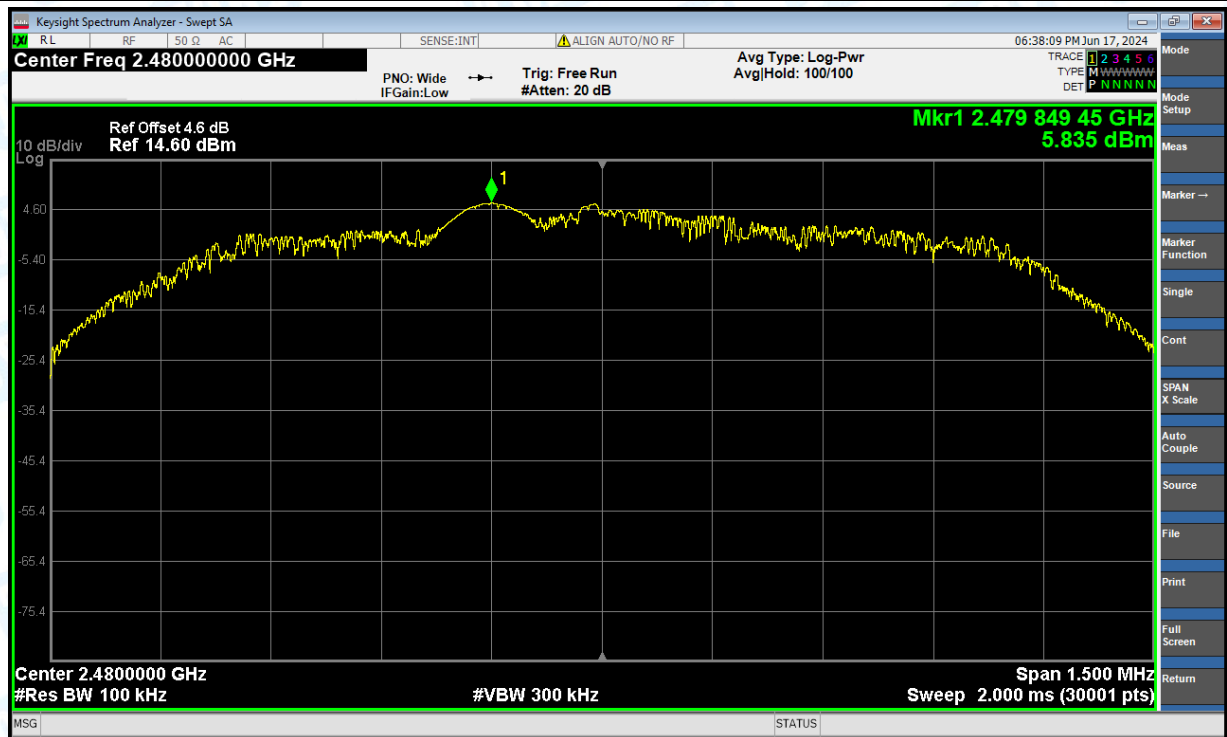
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



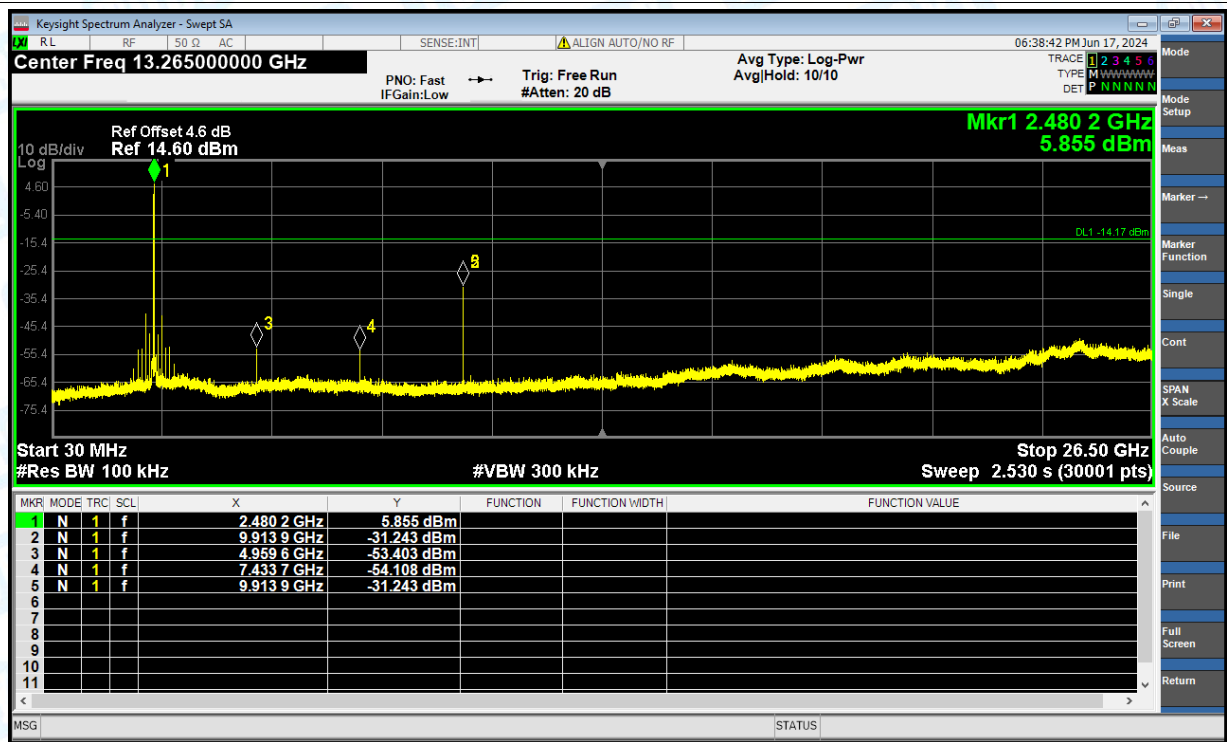
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission

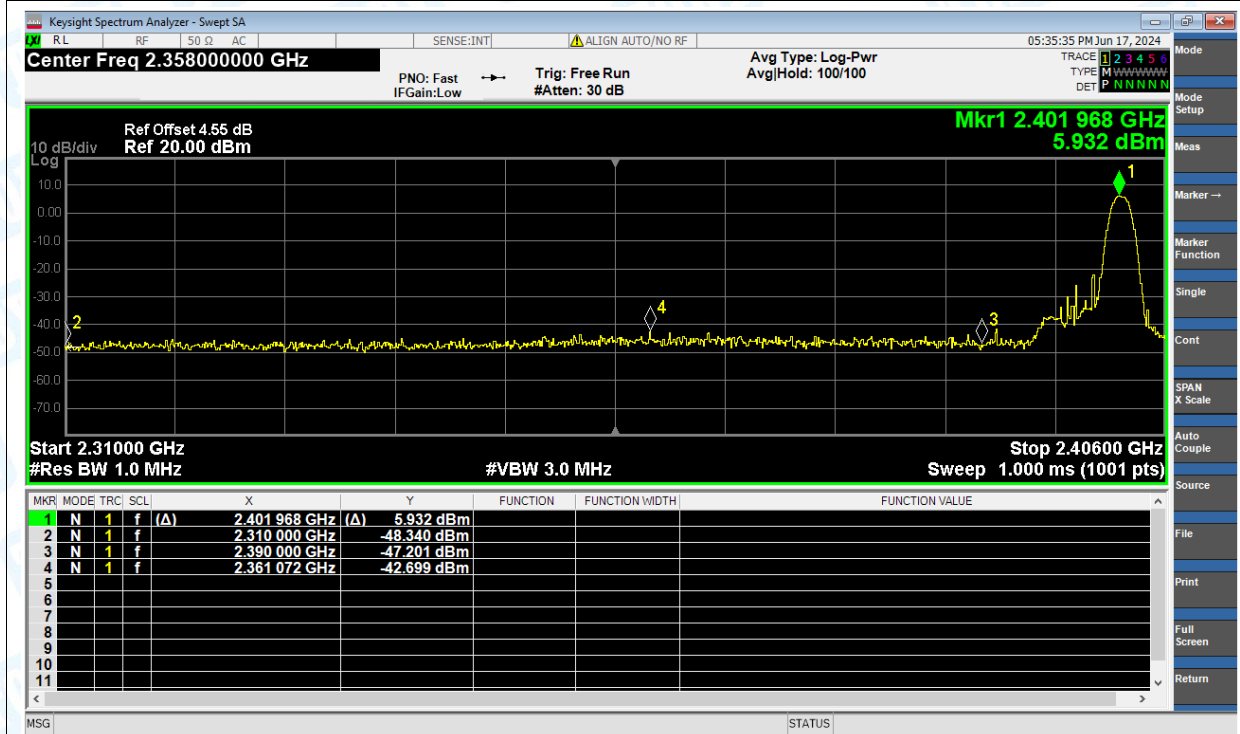


8. Restrict Band

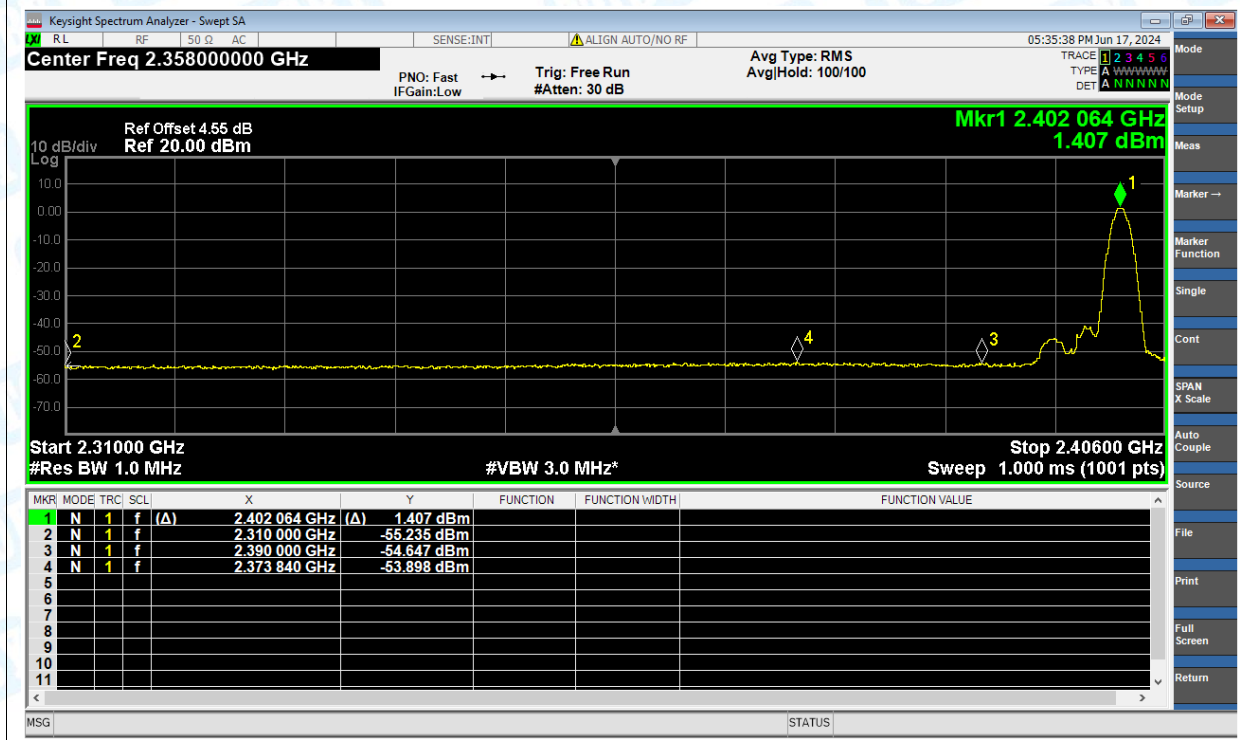
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-48.34	2	-	48.92	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-55.24	2	5.06	47.08	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2361.072	-42.7	2	-	54.56	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2373.84	-53.9	2	5.06	48.42	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-47.2	2	-	50.06	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-54.65	2	5.06	47.67	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-45.57	2	-	51.69	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-53.22	2	5.06	49.1	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2485.984	-37.35	2	-	59.91	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.512	-53.22	2	5.06	49.1	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-46.4	2	-	50.86	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-54.68	2	5.06	47.64	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-47.71	2	-	49.55	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.14	2	4.95	46.07	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2373.84	-41.94	2	-	55.32	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2379.6	-54.04	2	4.95	48.17	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-45.72	2	-	51.54	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-54.88	2	4.95	47.33	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-43.75	2	-	53.51	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-53.75	2	5.06	48.57	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2485.048	-42.67	2	-	54.59	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.8	-53.22	2	5.06	49.1	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-44.73	2	-	52.53	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-54.1	2	5.06	48.22	Average	54	Pass

Test Graphs

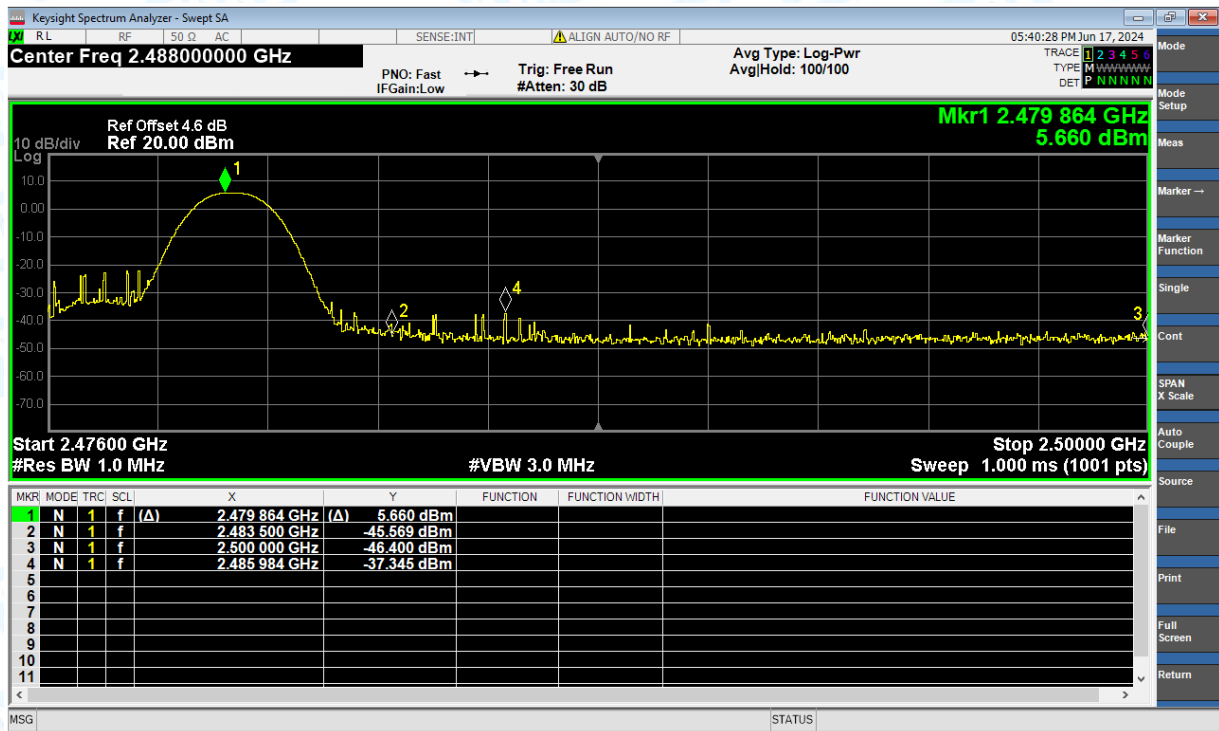
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



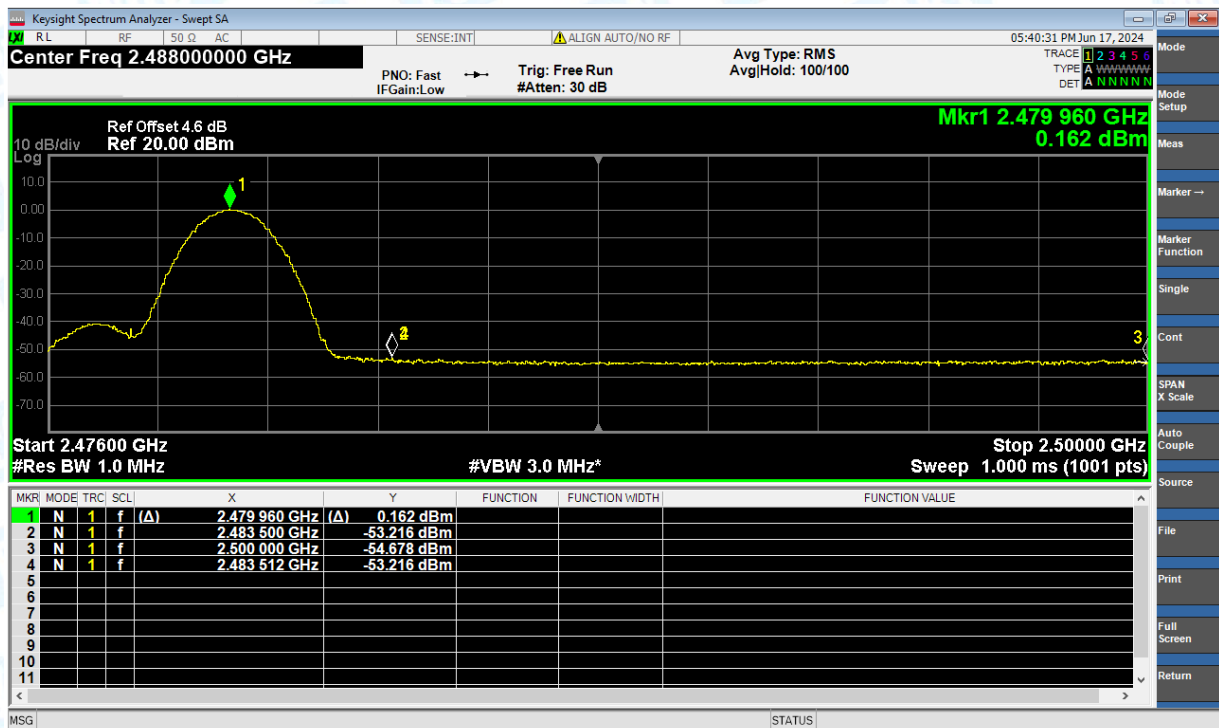
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



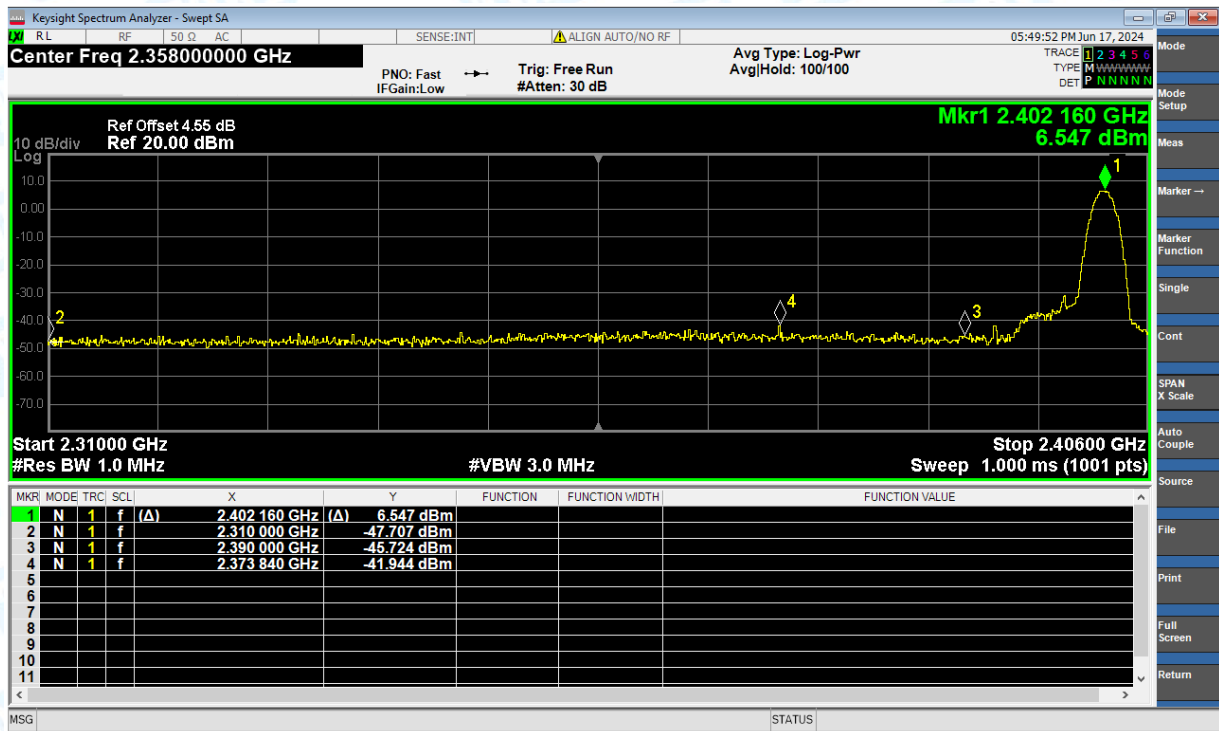
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



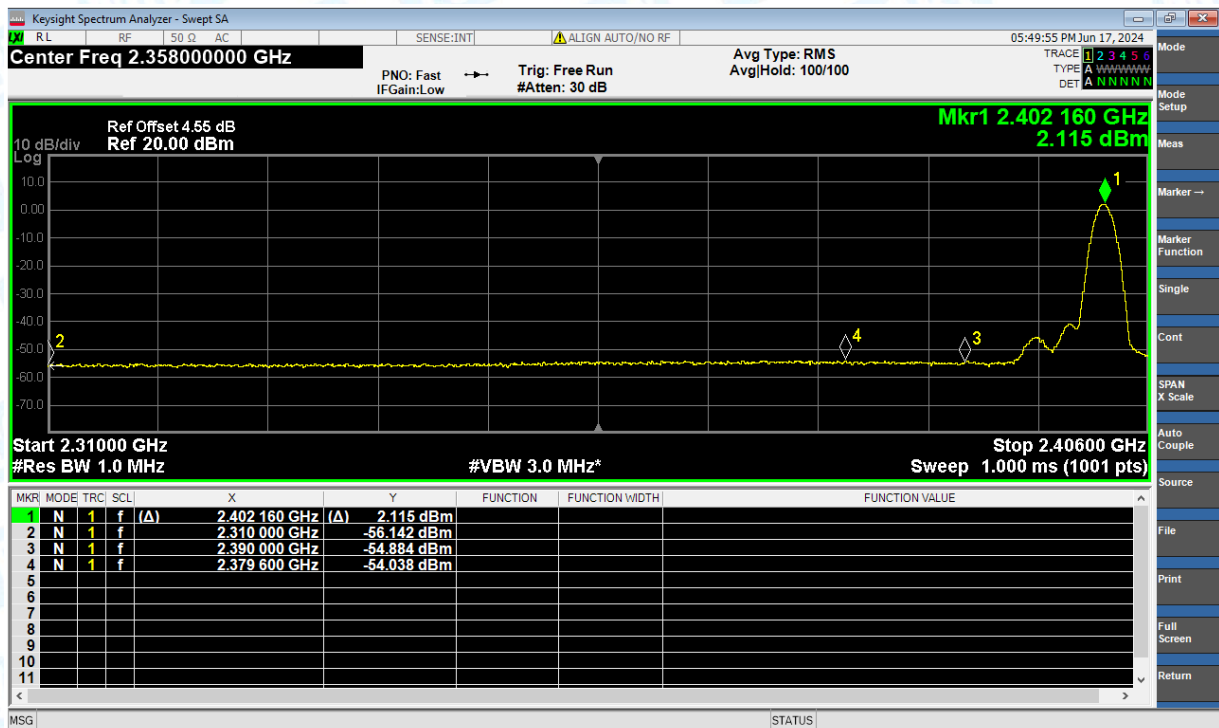
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



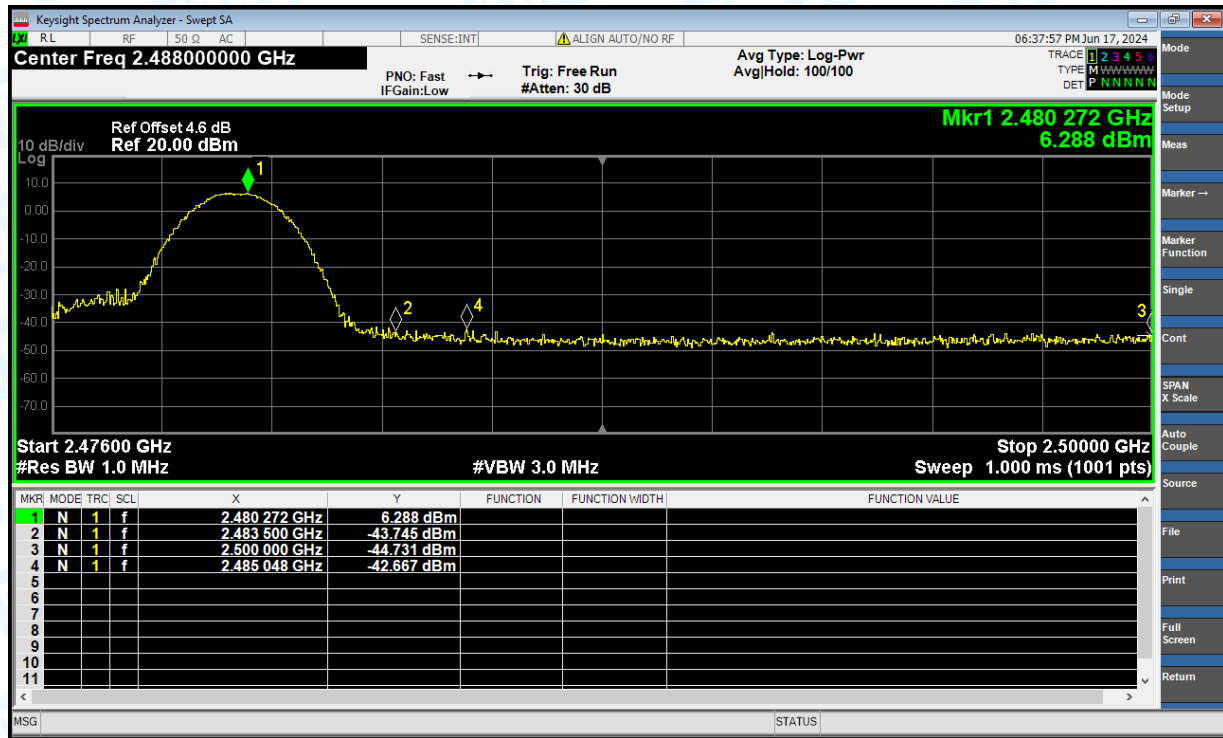
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



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

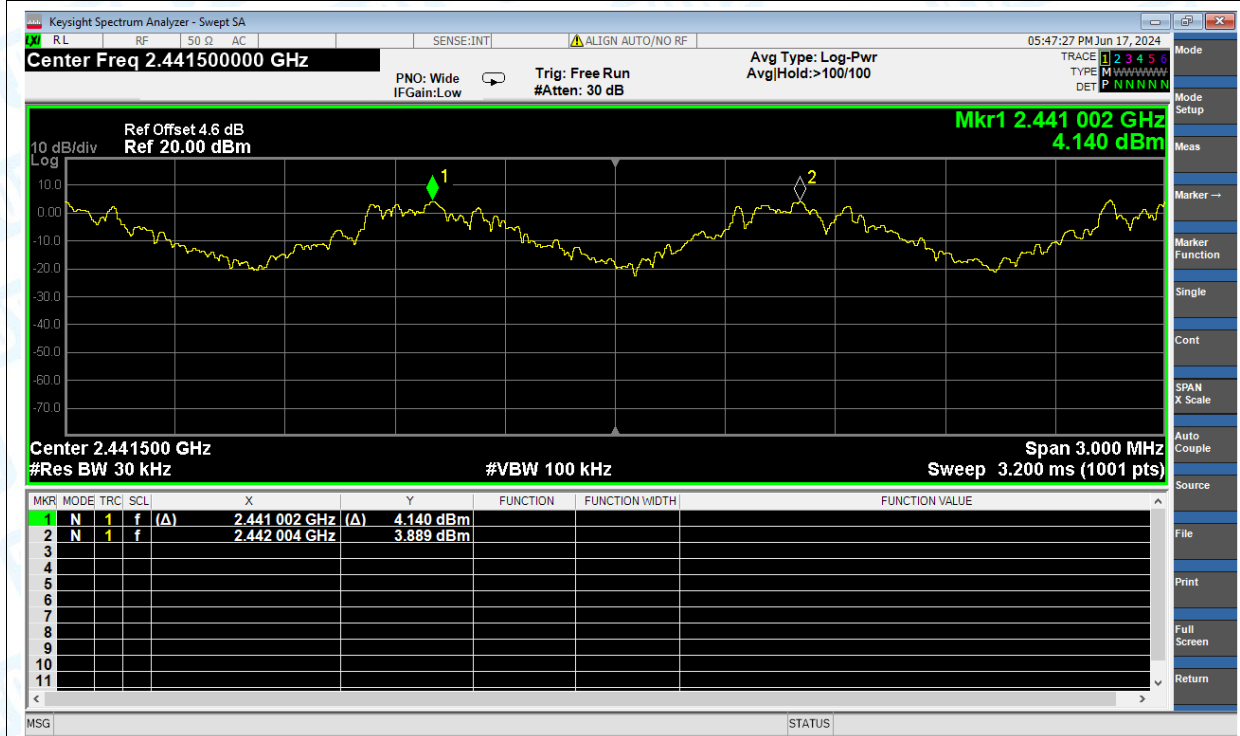


9. Carrier Frequencies Separation

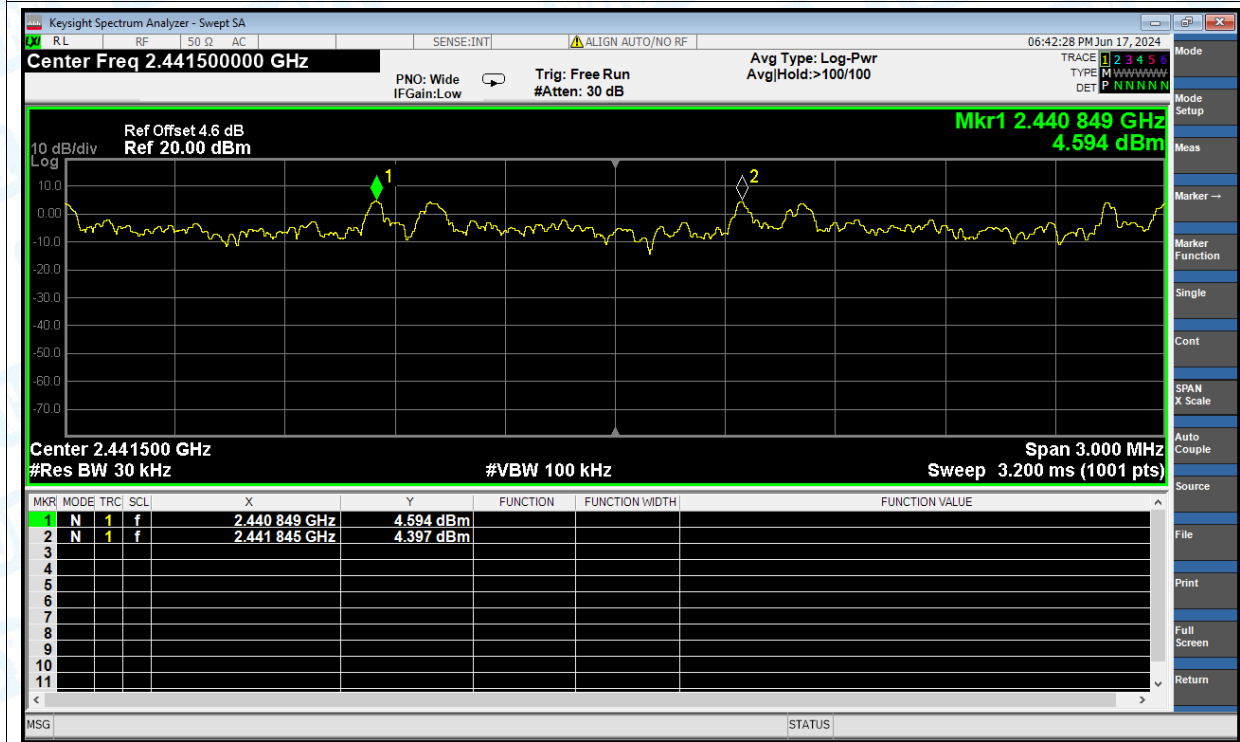
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2441.002	2442.004	1.002	0.58	Pass
NVNT	2-DH1	Ant1	2440.849	2441.845	0.996	0.827	Pass

Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1

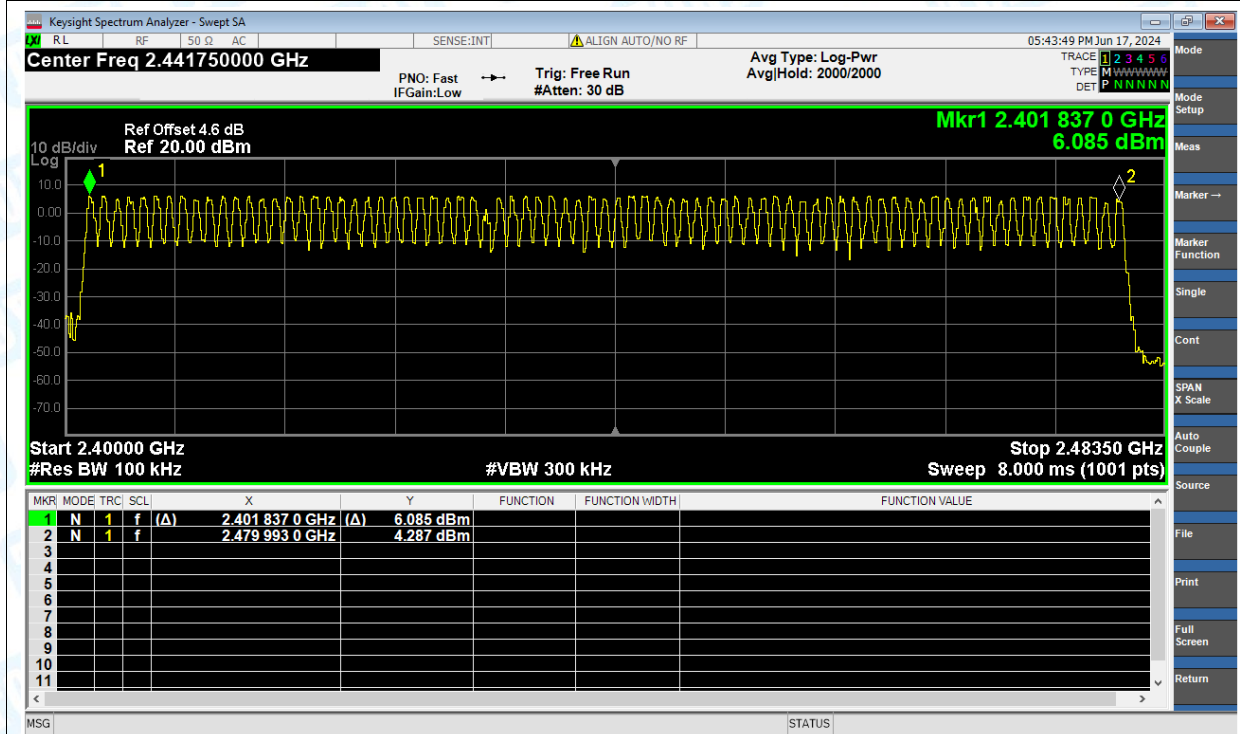


10. Number of Hopping Channel

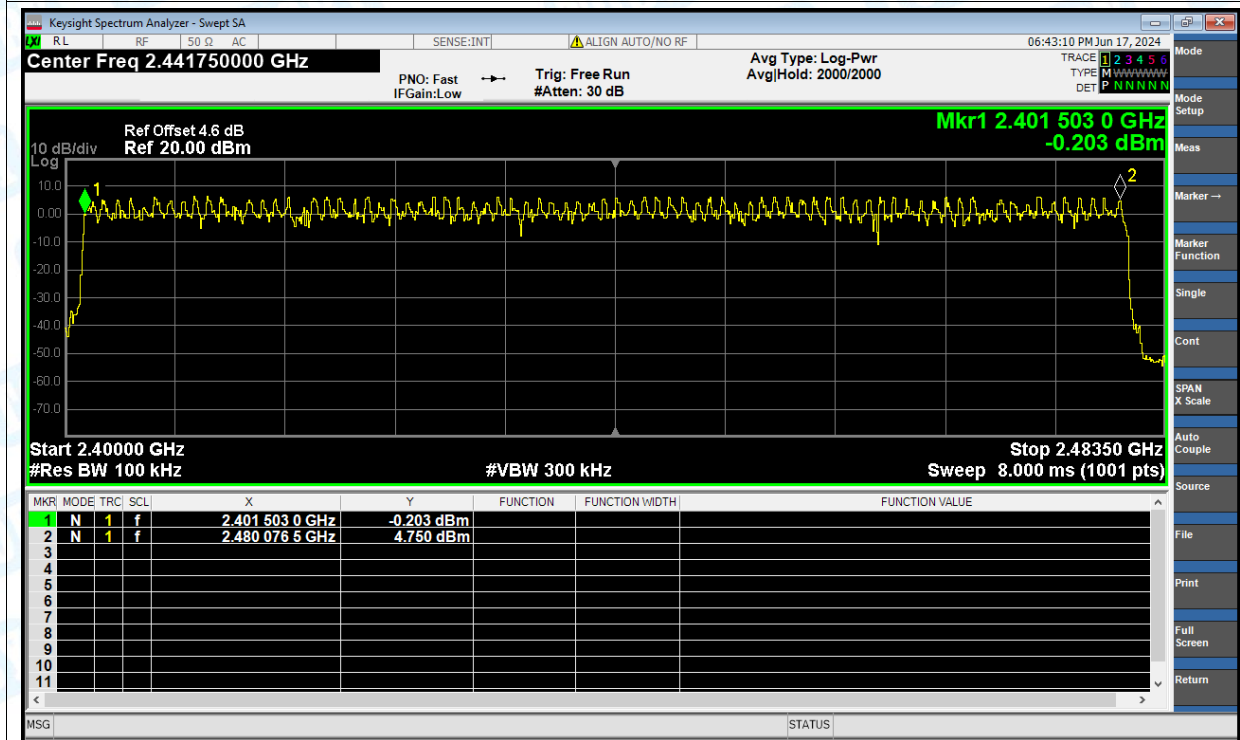
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass

Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1

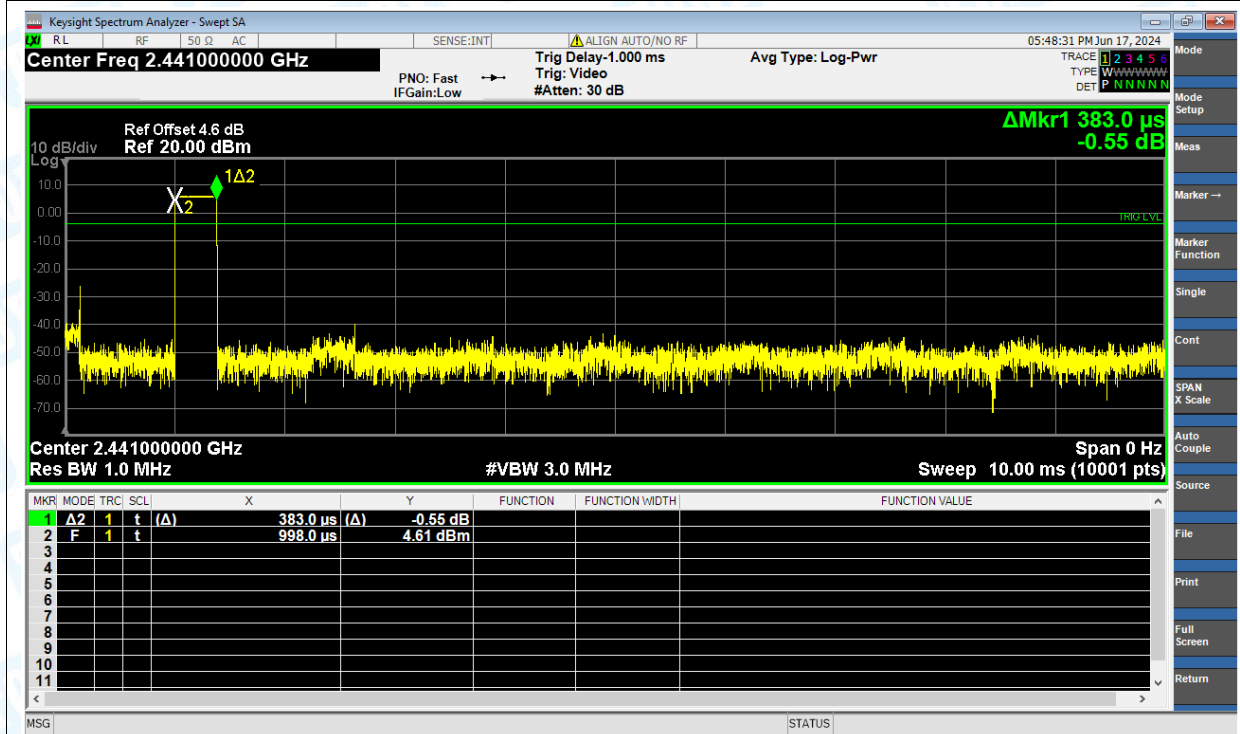


11. Dwell Time

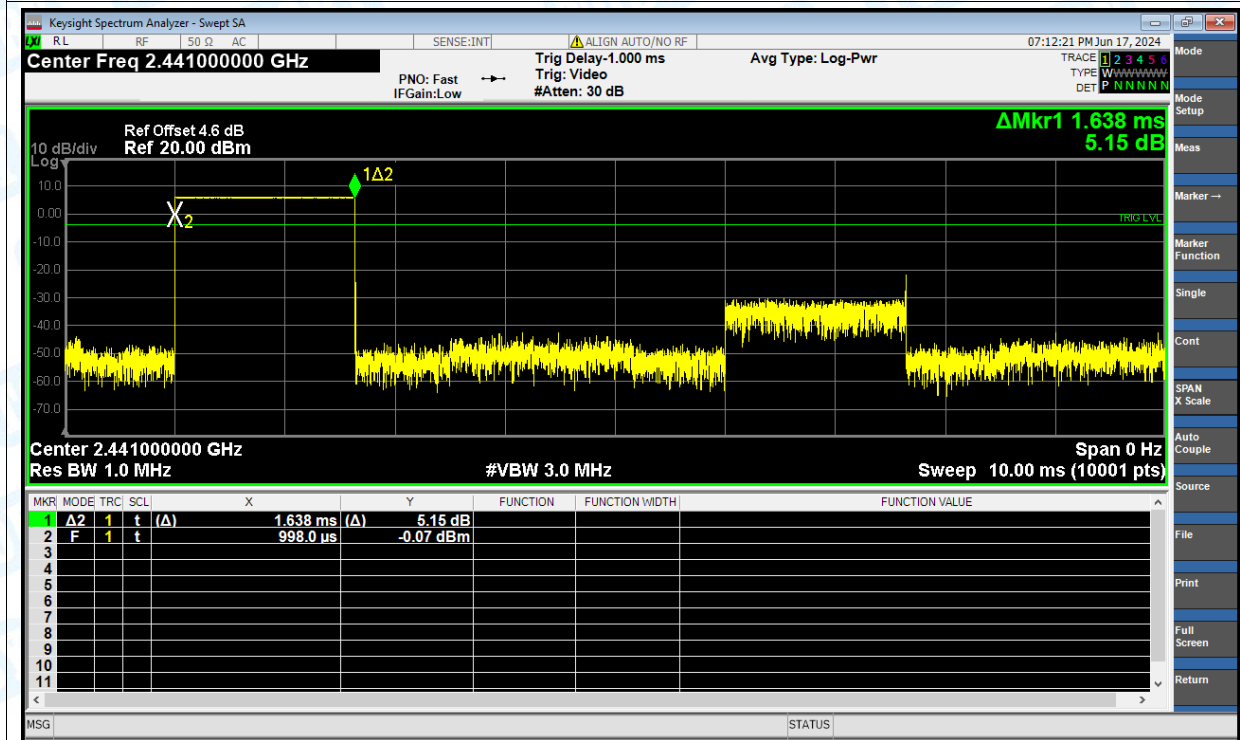
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.383	122.56	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.638	262.08	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.886	307.84	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.392	125.44	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.644	263.04	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.892	308.48	31600	400	Pass

Test Graphs

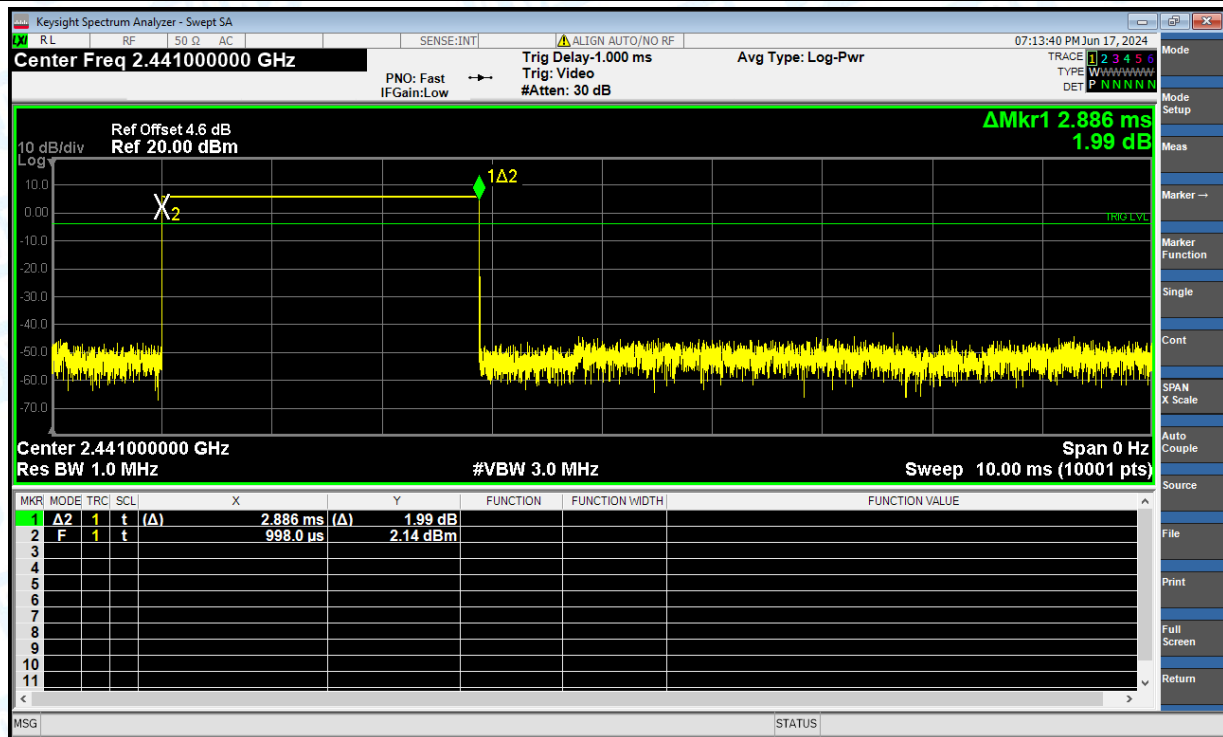
Dwell NVNT 1-DH1 2441MHz Ant1



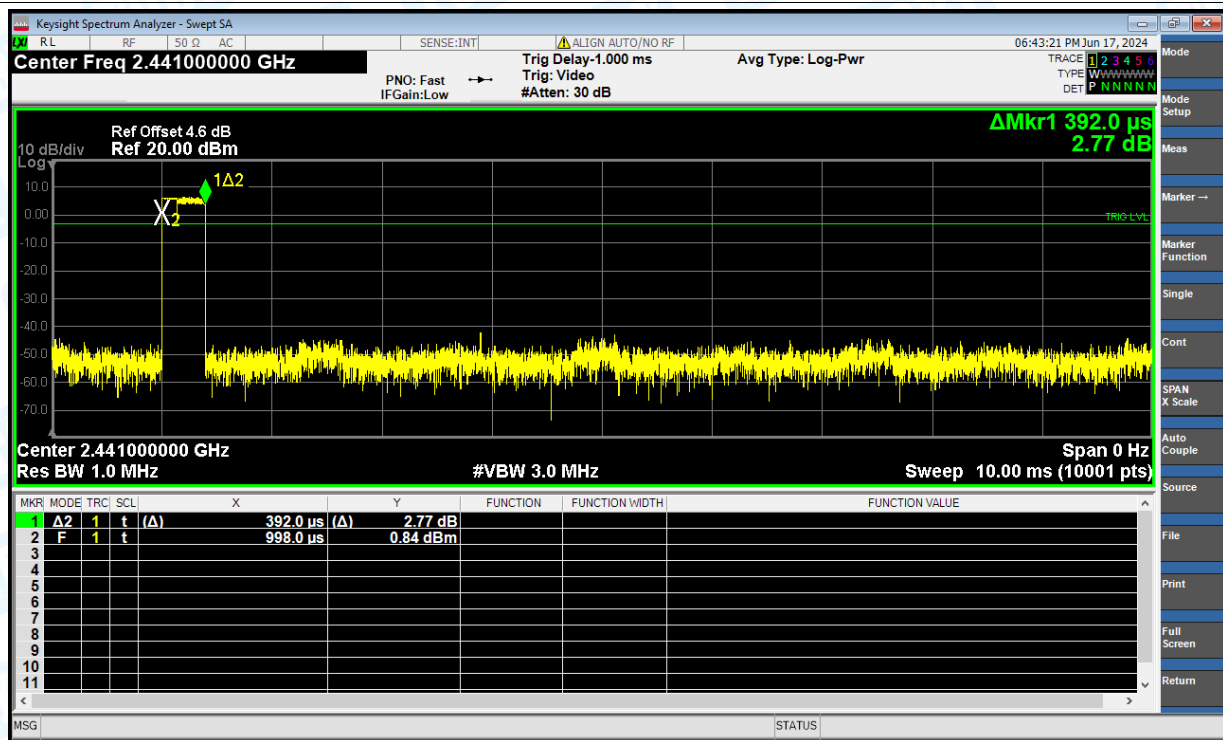
Dwell NVNT 1-DH3 2441MHz Ant1



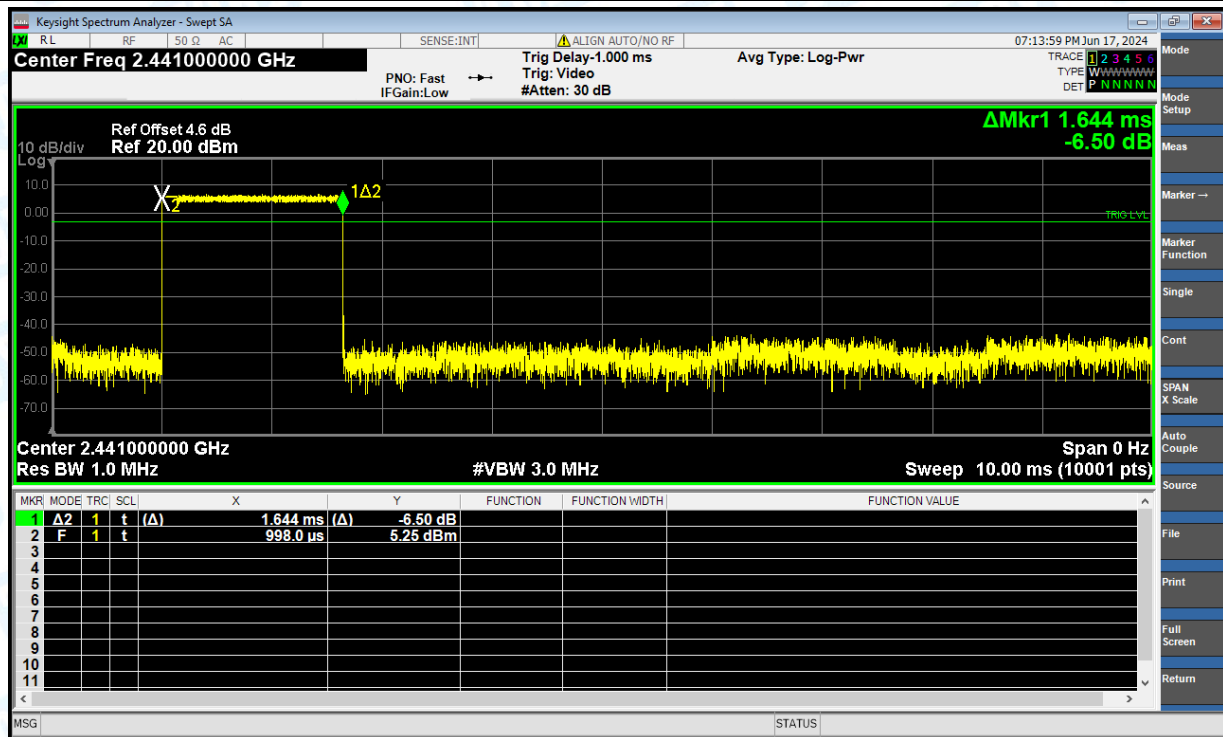
Dwell NVNT 1-DH5 2441MHz Ant1



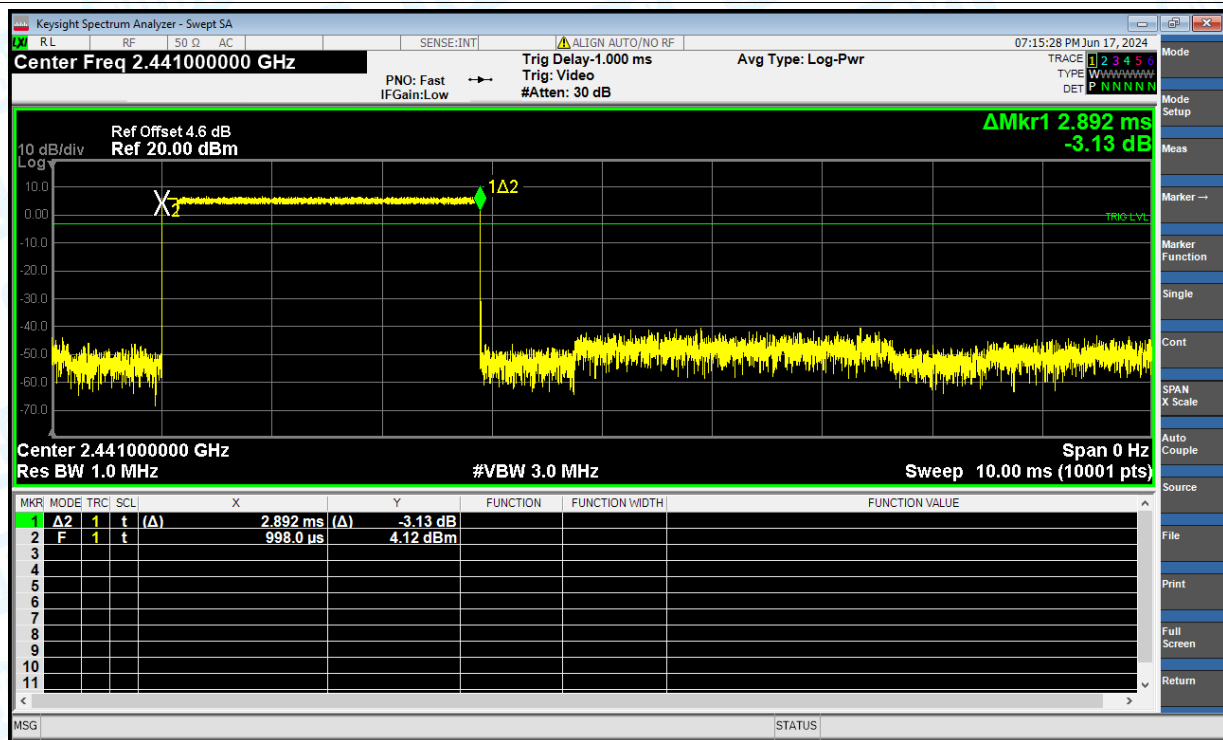
Dwell NVNT 2-DH1 2441MHz Ant1



Dwell NVNT 2-DH3 2441MHz Ant1



Dwell NVNT 2-DH5 2441MHz Ant1



-----End of report-----