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

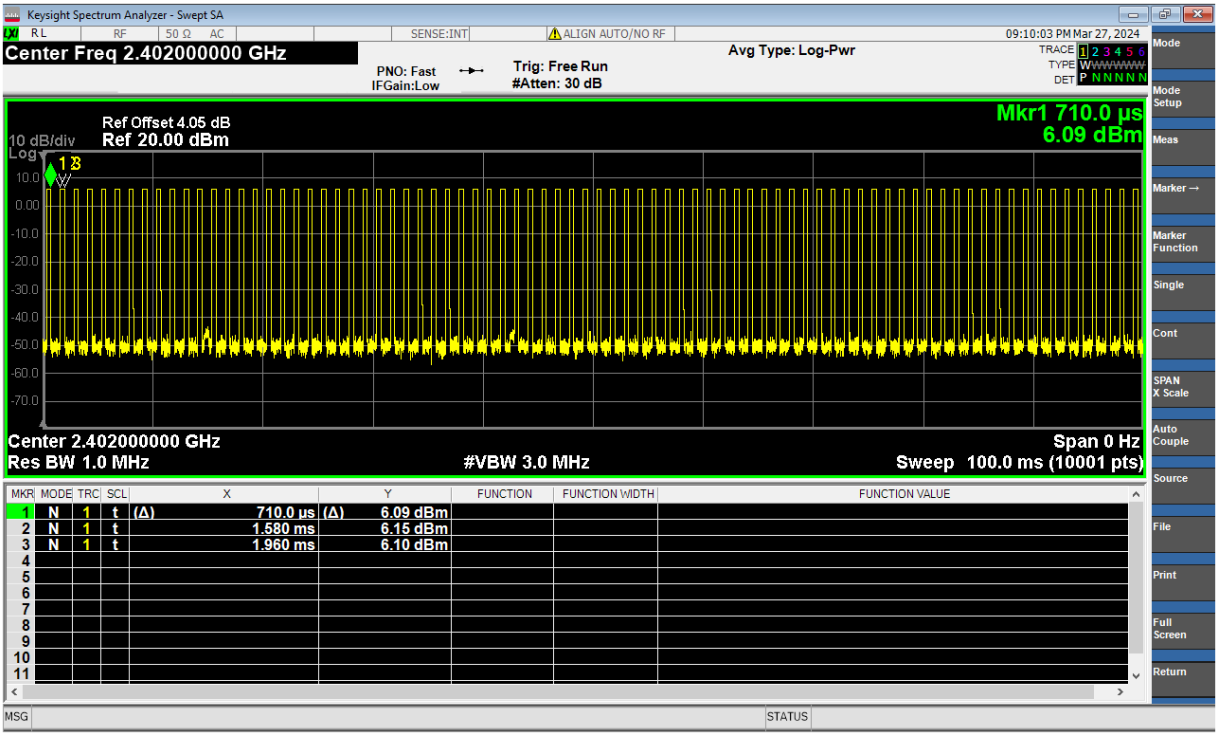
General Description of EUT	
Product Name:	Smart Watch
Test Model:	KE5
Sample ID:	HC-C-202403-0239-01-01-2#
Environmental Conditions	
Temperature:	23.8℃
Relative Humidity:	48%
Test Voltage:	DC 3.8V
Test Engineer:	Mike Yan
Note: For a more detailed features description, please refer to the report TBR-C-202403-0239-6 The report only show the worst case data.	

1. Duty Cycle

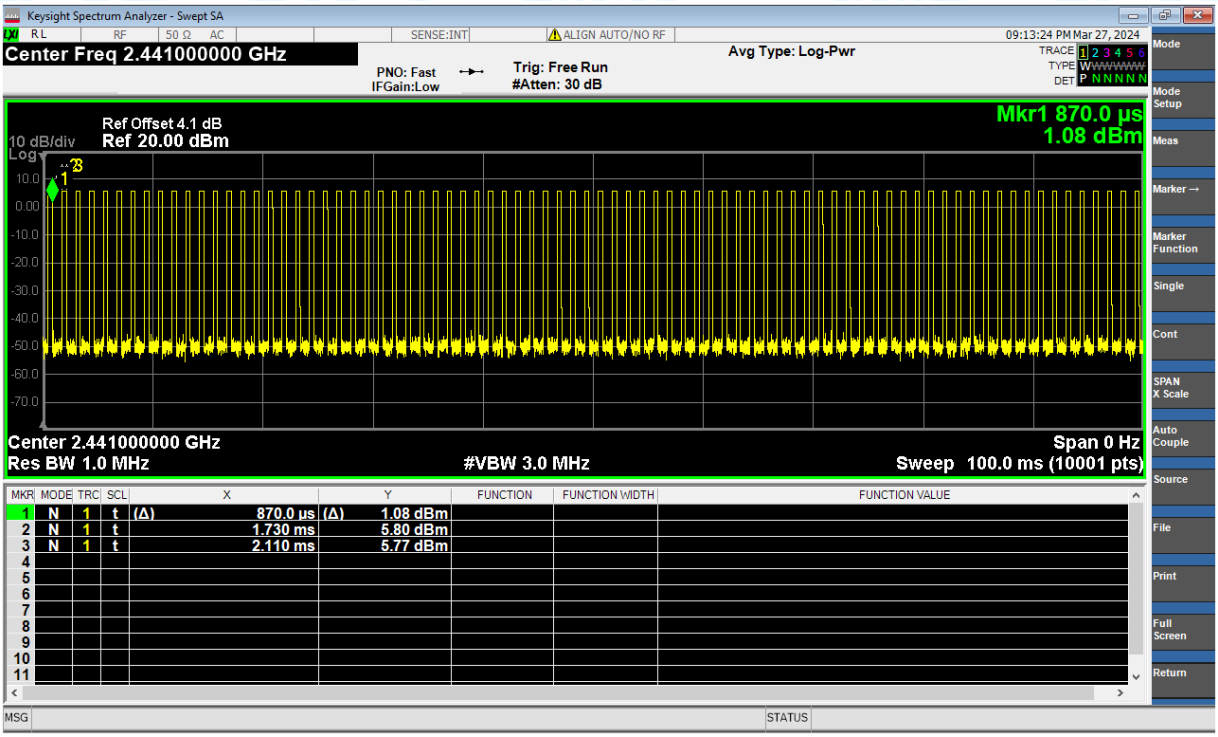
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2441	Ant1	30.65	5.14	2.63
NVNT	1-DH1	2480	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2441	Ant1	32	4.95	2.5
NVNT	2-DH1	2480	Ant1	32	4.95	2.5
NVNT	3-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	3-DH1	2441	Ant1	32	4.95	2.5
NVNT	3-DH1	2480	Ant1	31.2	5.06	2.56

Test Graphs

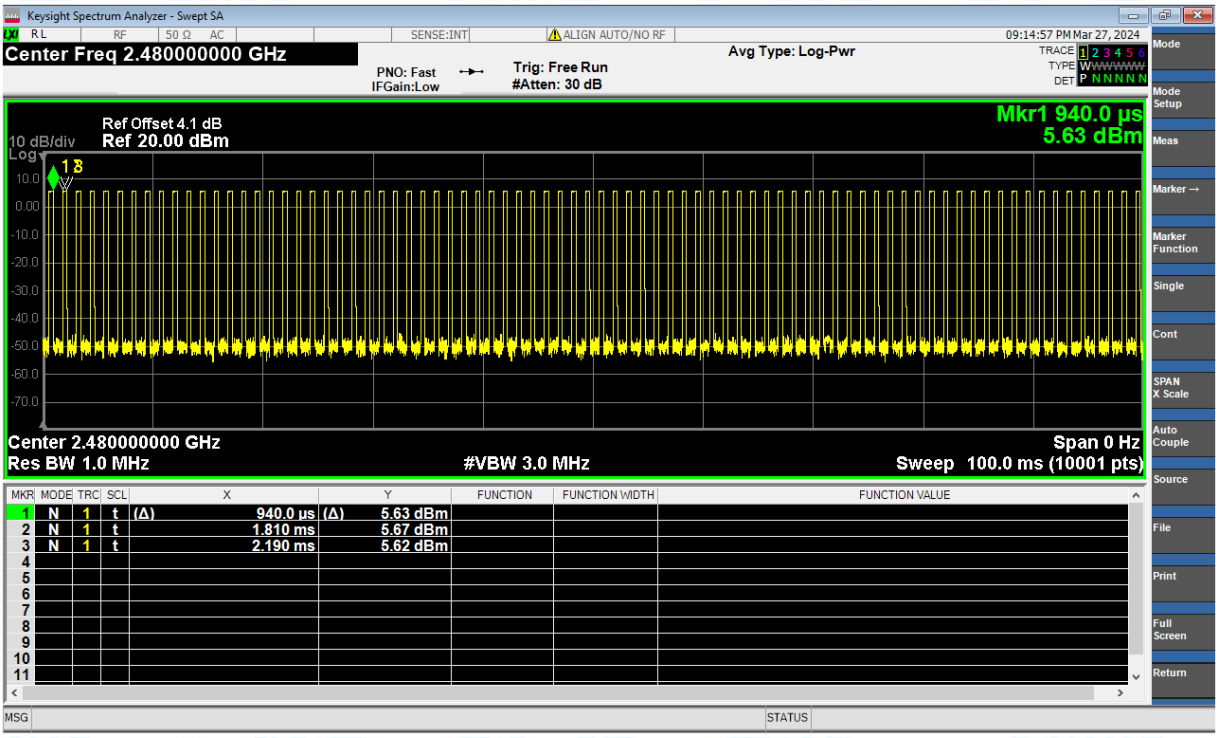
Duty Cycle NVNT 1-DH1 2402MHz Ant1



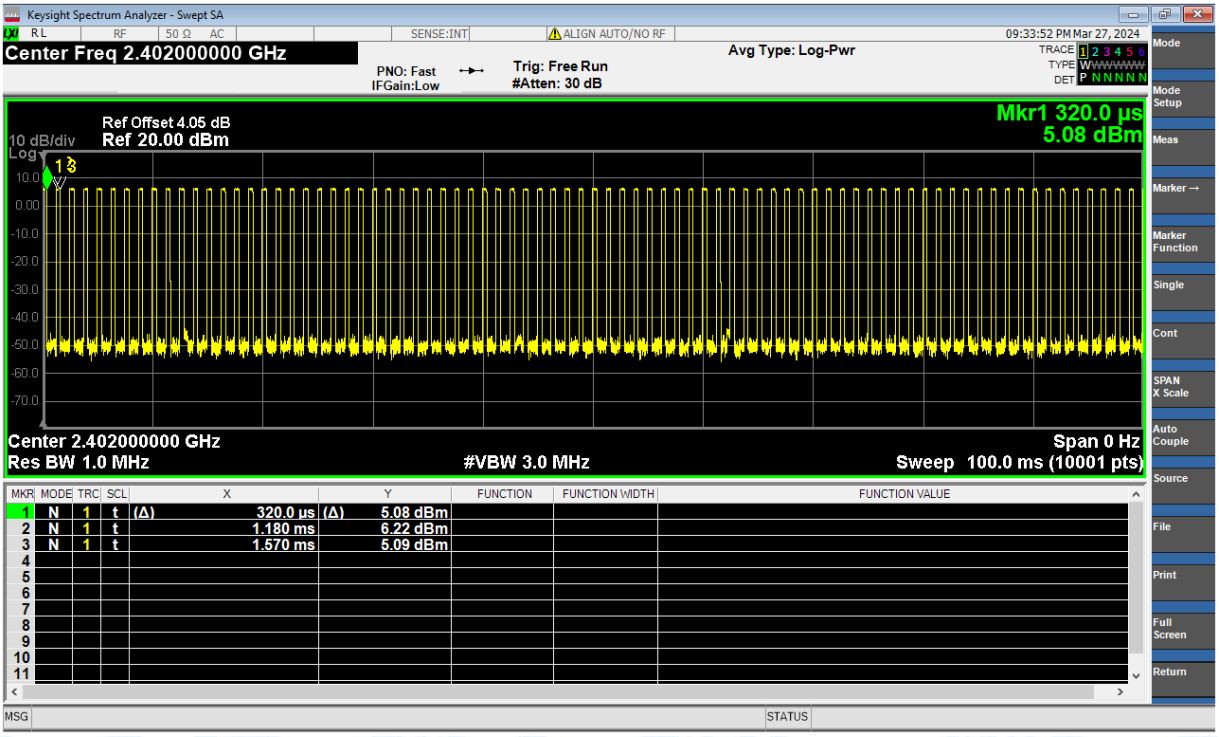
Duty Cycle NVNT 1-DH1 2441MHz Ant1



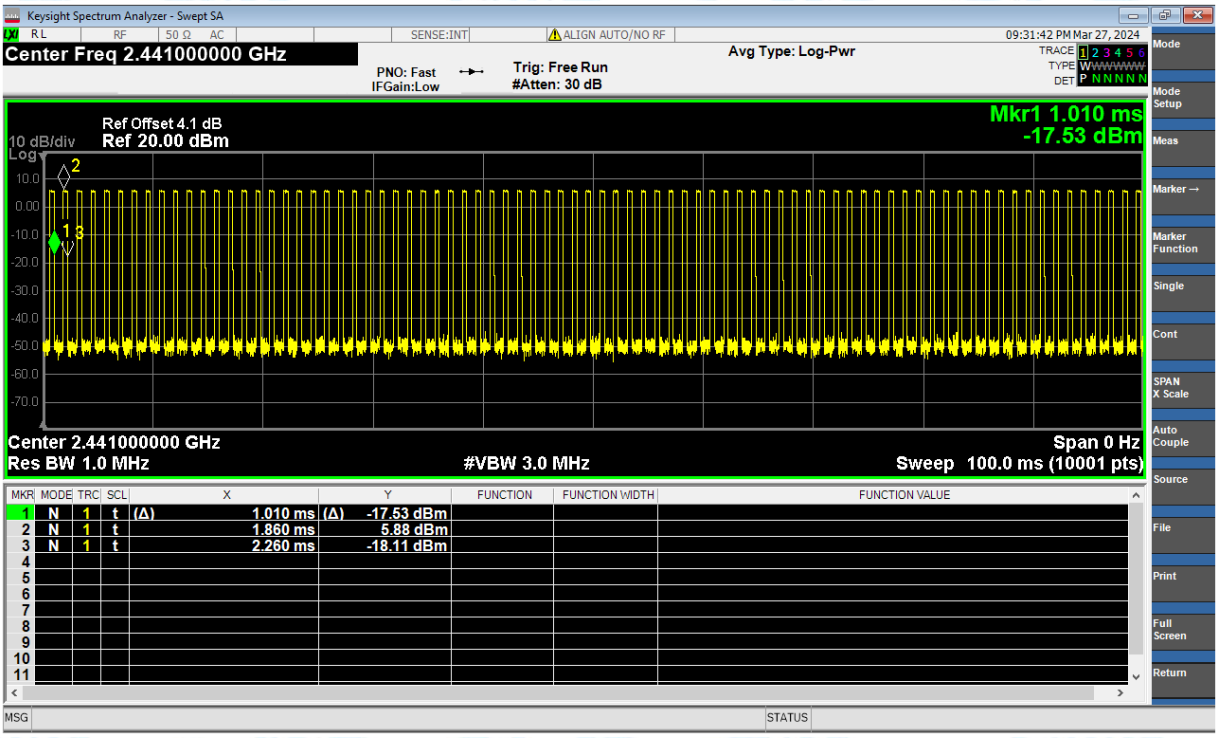
Duty Cycle NVNT 1-DH1 2480MHz Ant1



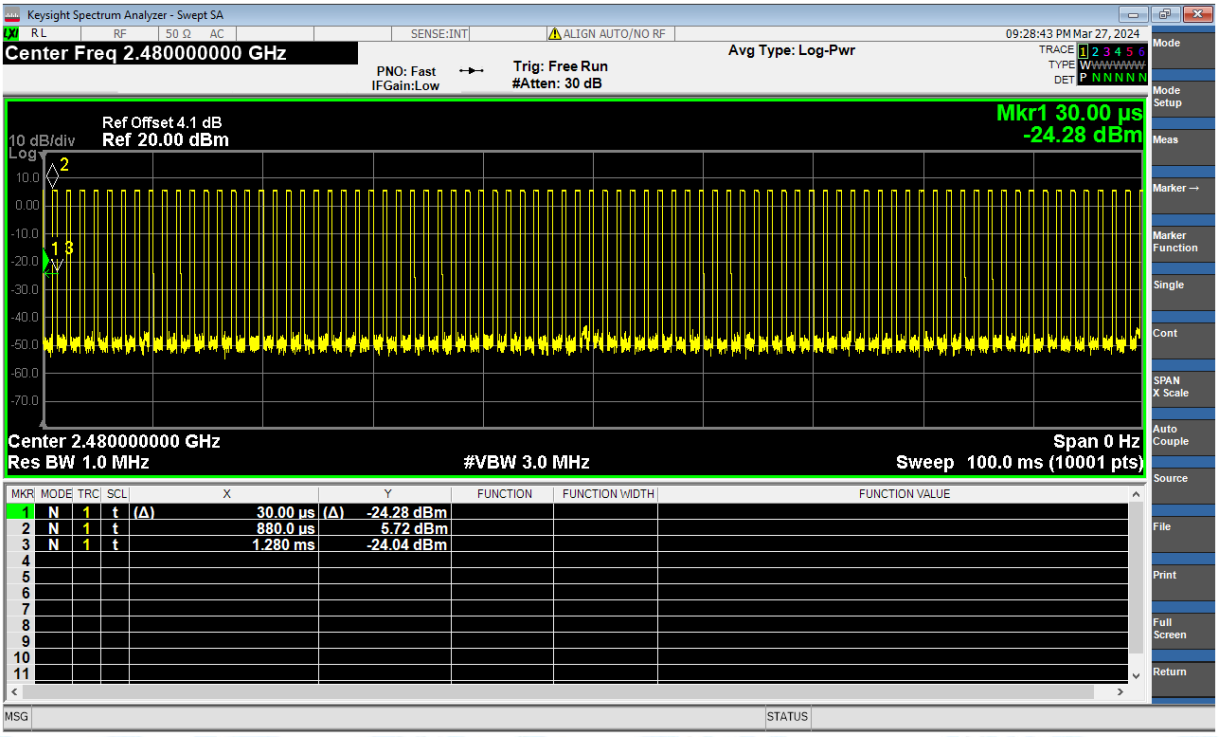
Duty Cycle NVNT 2-DH1 2402MHz Ant1



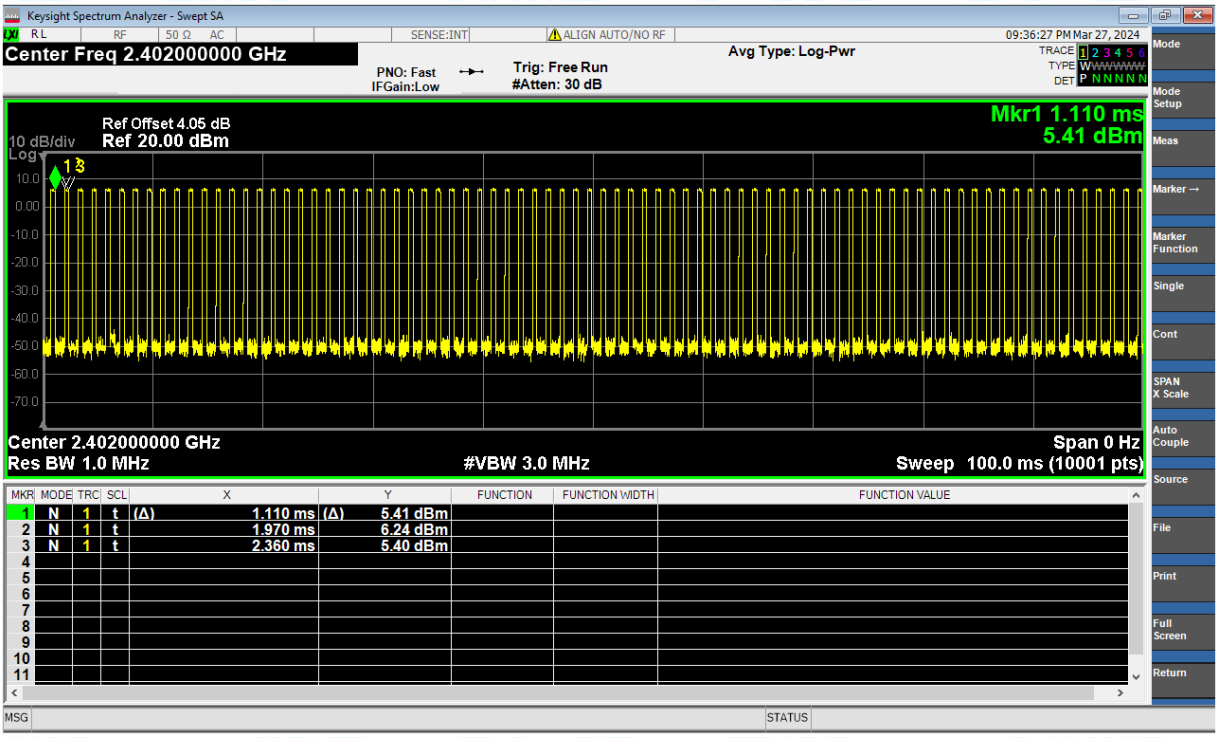
Duty Cycle NVNT 2-DH1 2441MHz Ant1



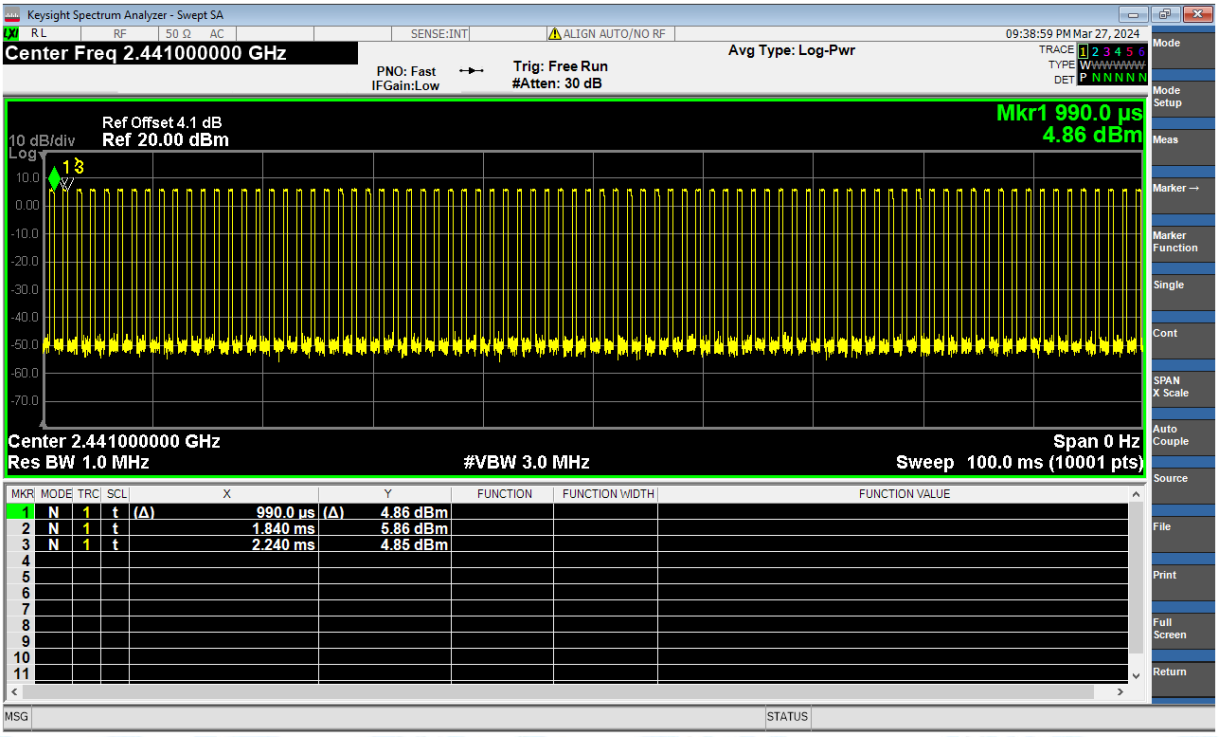
Duty Cycle NVNT 2-DH1 2480MHz Ant1



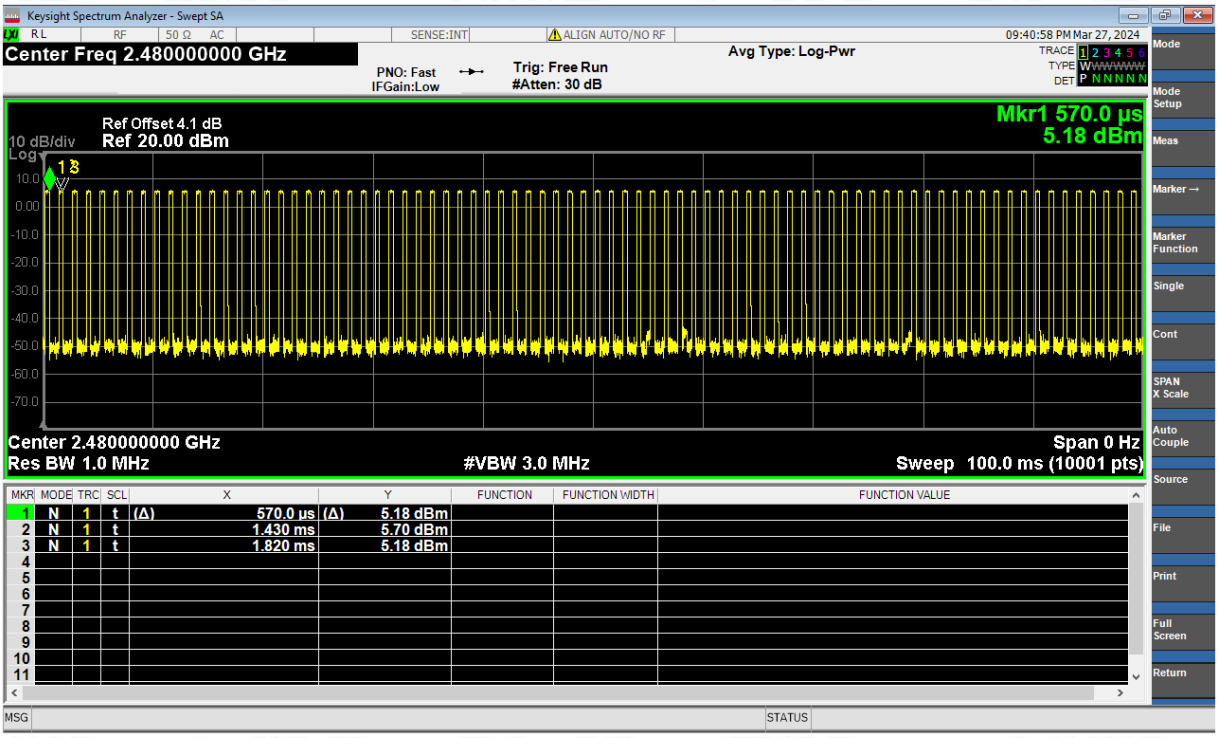
Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



Duty Cycle NVNT 3-DH1 2480MHz Ant1

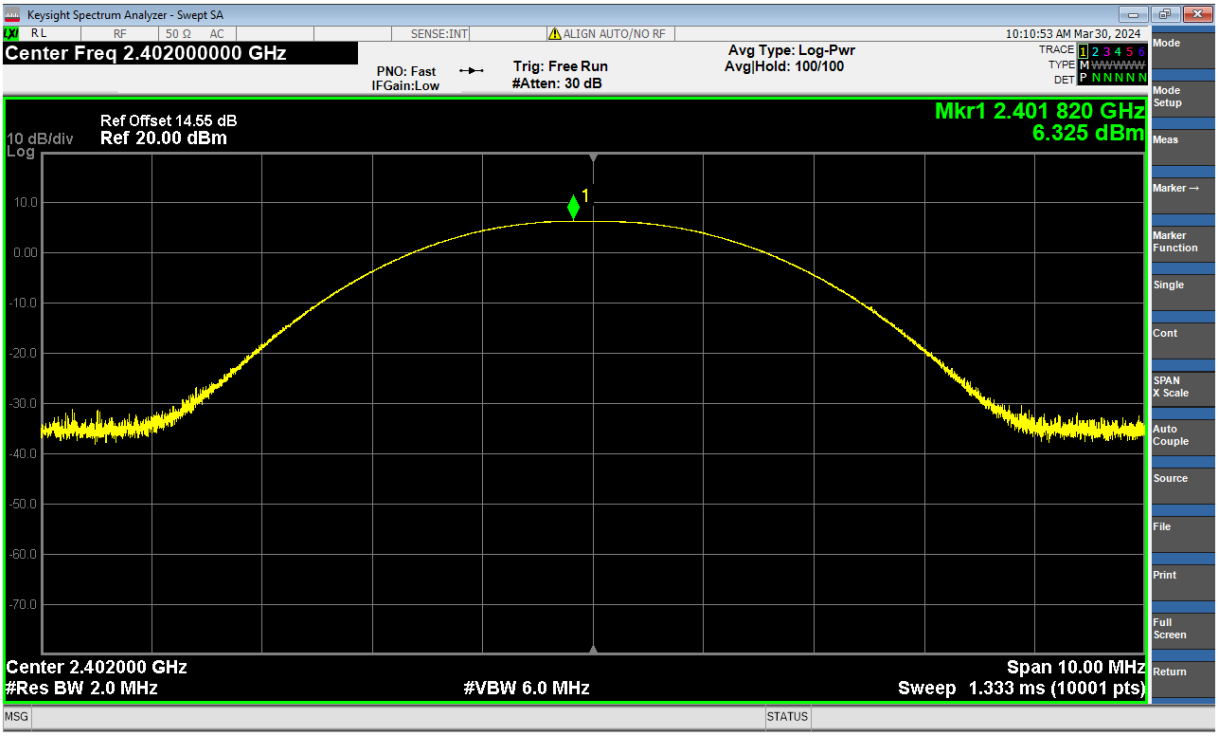


2. Maximum Conducted Output Power

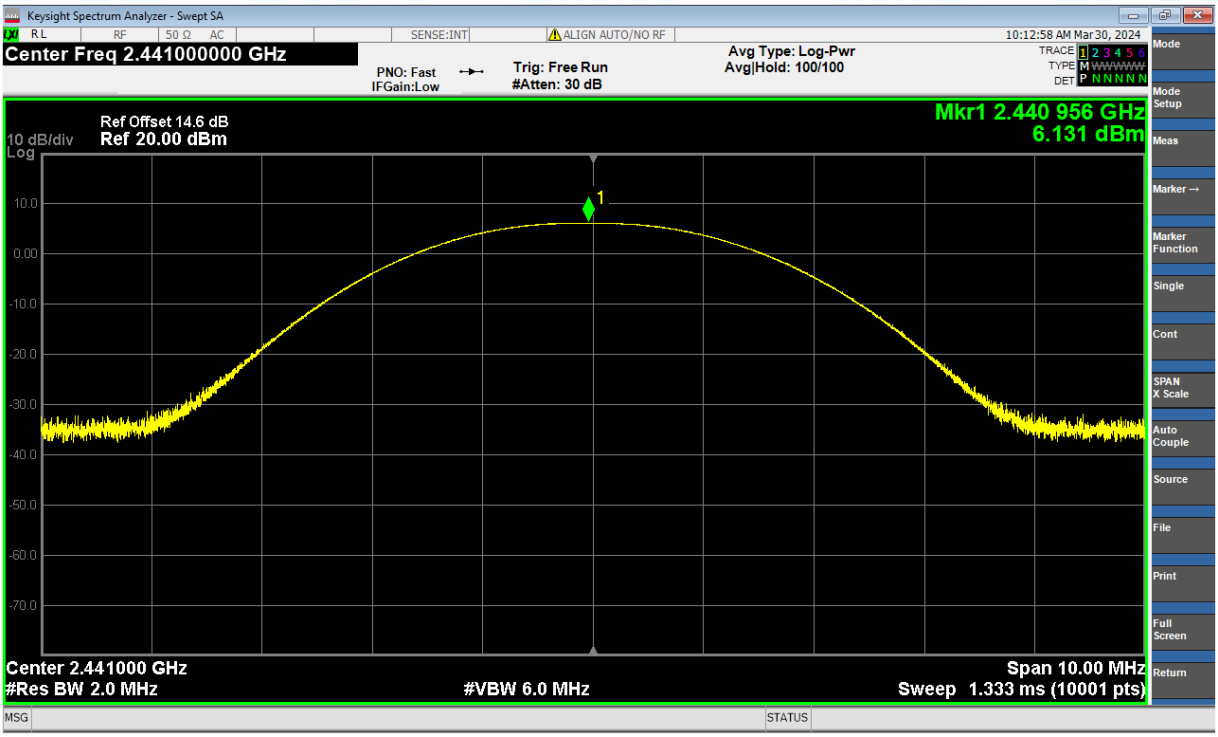
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	6.325	21	Pass
NVNT	1-DH1	2441	Ant1	6.131	21	Pass
NVNT	1-DH1	2480	Ant1	5.782	21	Pass
NVNT	2-DH1	2402	Ant1	6.795	21	Pass
NVNT	2-DH1	2441	Ant1	6.499	21	Pass
NVNT	2-DH1	2480	Ant1	6.018	21	Pass
NVNT	3-DH1	2402	Ant1	7.417	21	Pass
NVNT	3-DH1	2441	Ant1	7.185	21	Pass
NVNT	3-DH1	2480	Ant1	6.778	21	Pass

Test Graphs

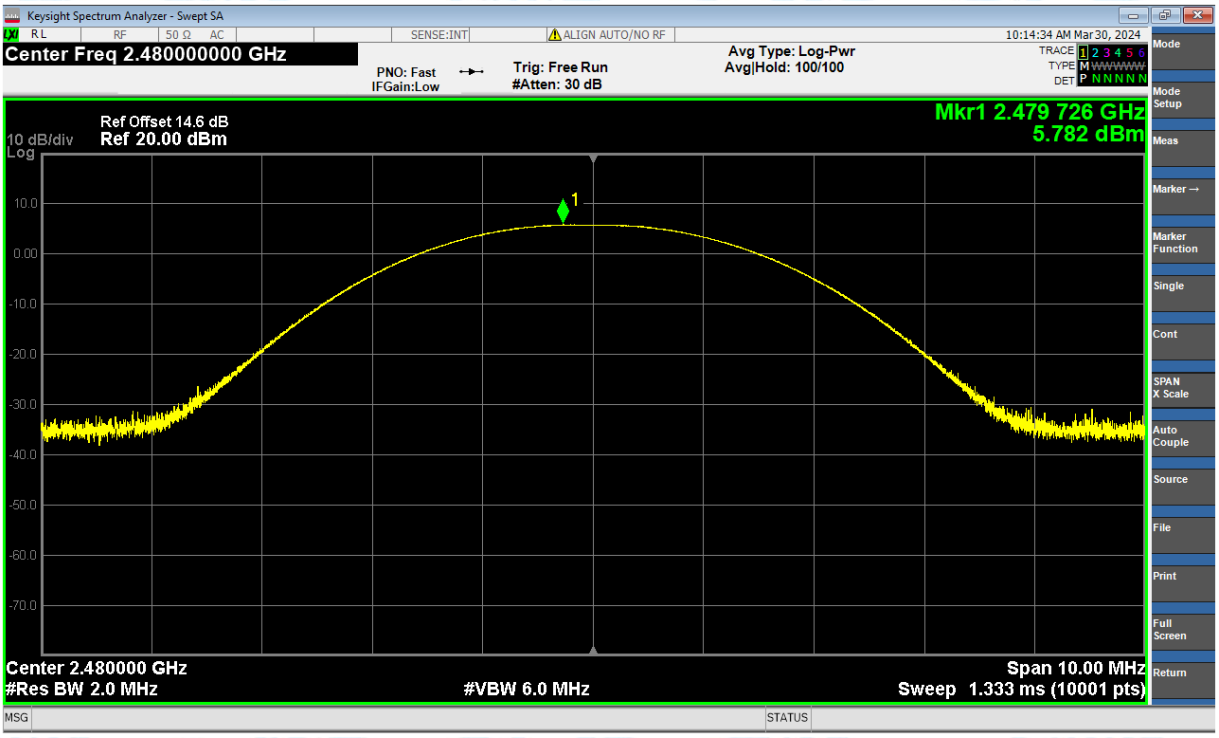
Power NVNT 1-DH1 2402MHz Ant1



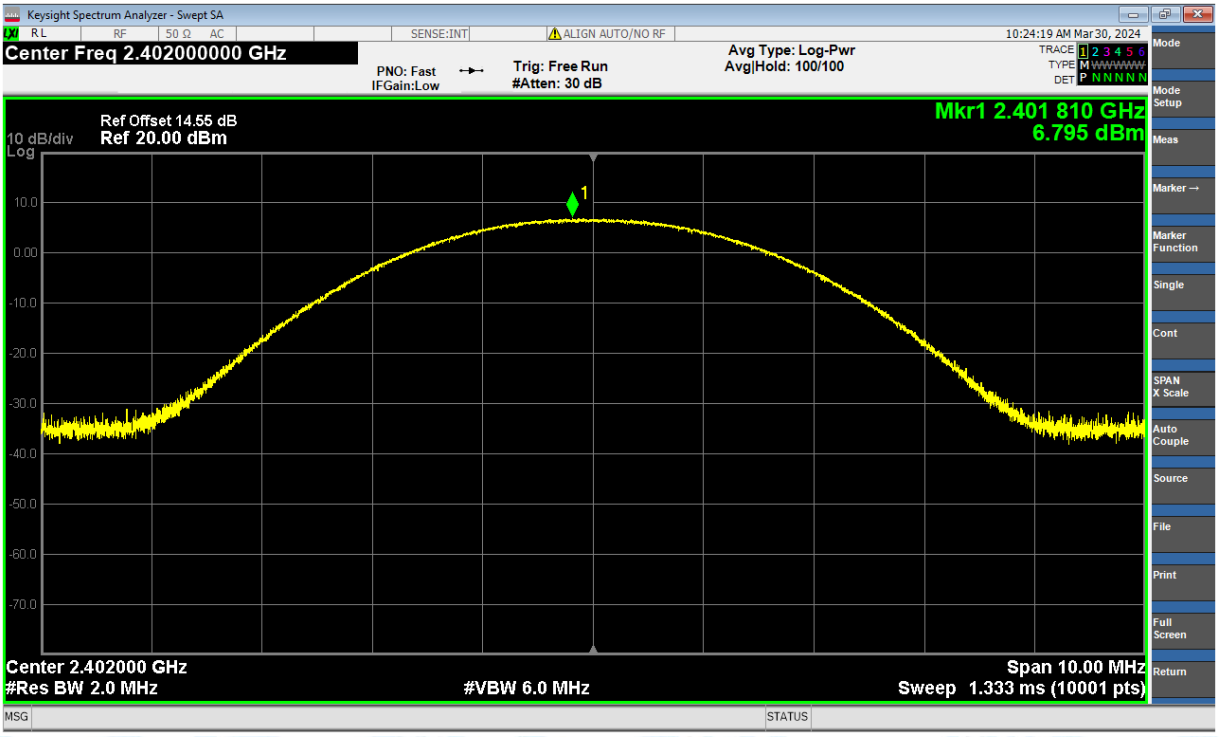
Power NVNT 1-DH1 2441MHz Ant1



Power NVNT 1-DH1 2480MHz Ant1

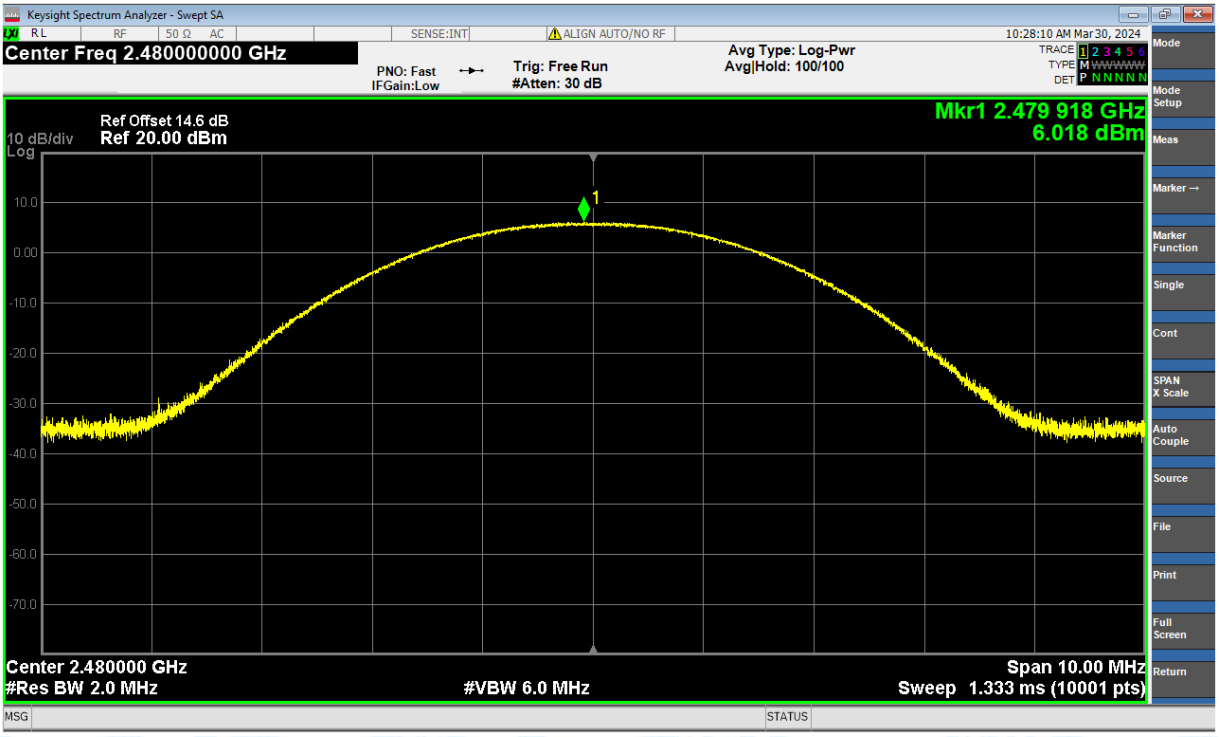


Power NVNT 2-DH1 2402MHz Ant1

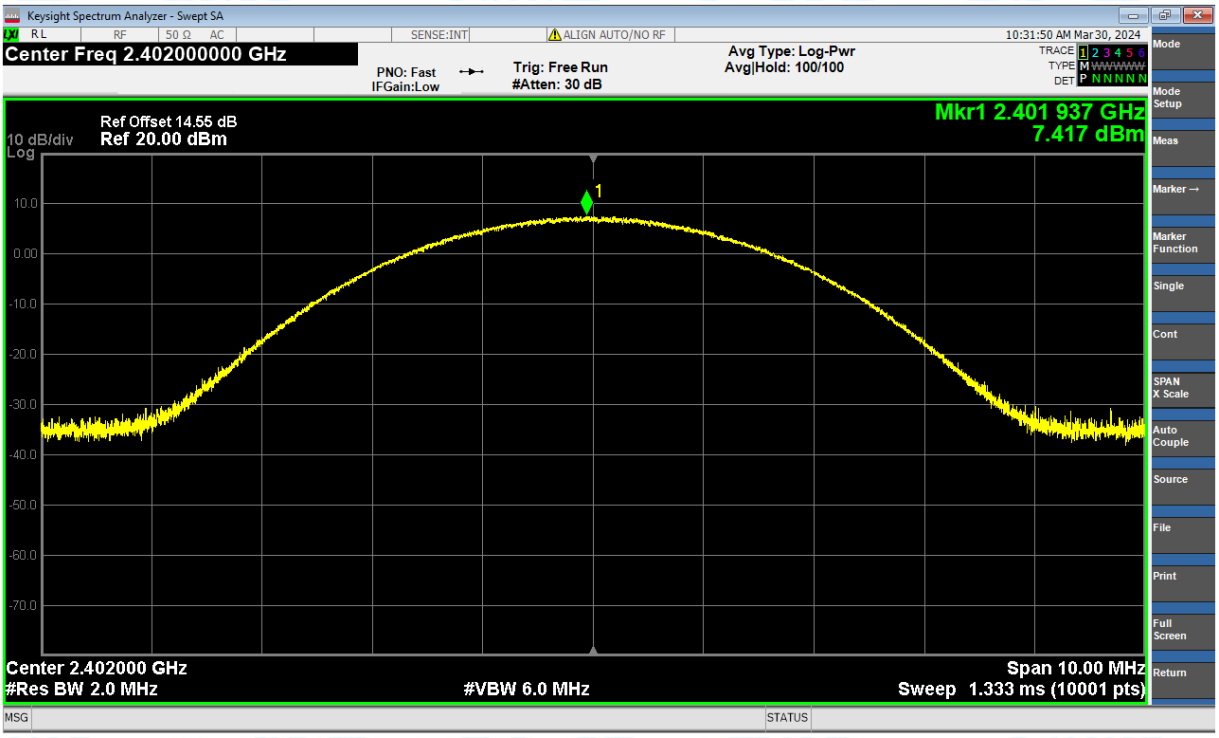


Power NVNT 2-DH1 2441MHz Ant1

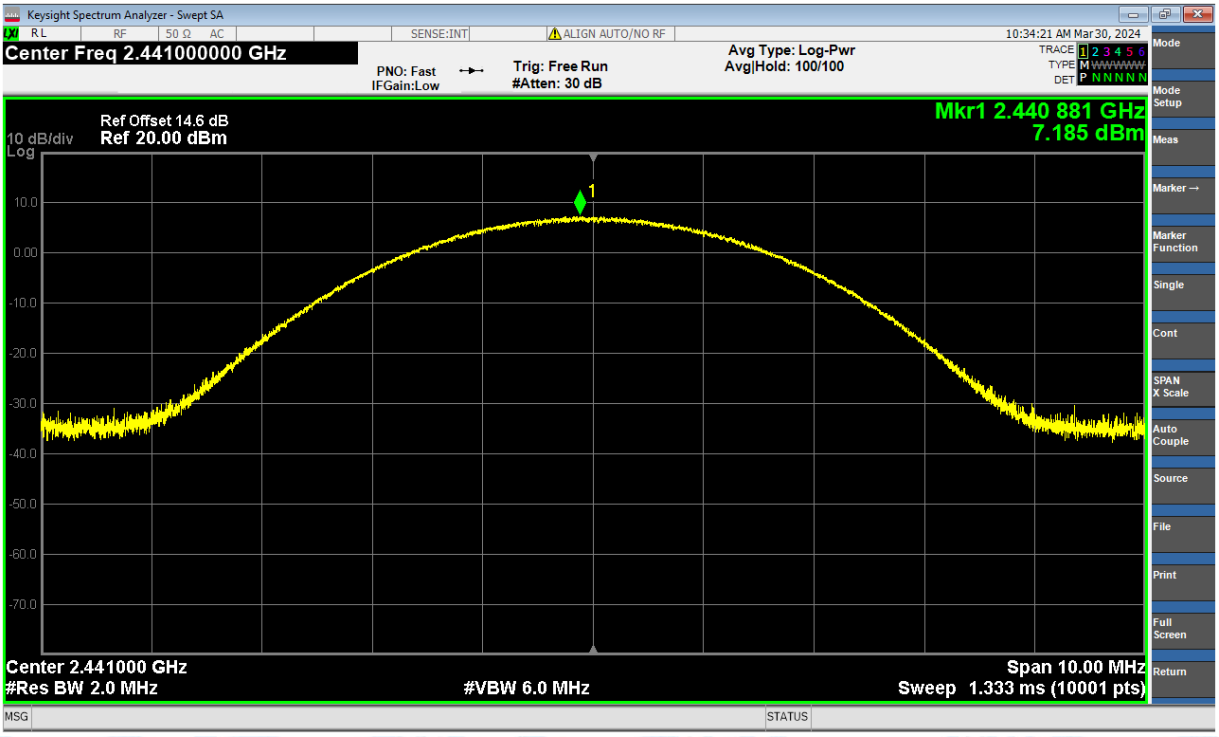
Power NVNT 2-DH1 2480MHz Ant1



Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



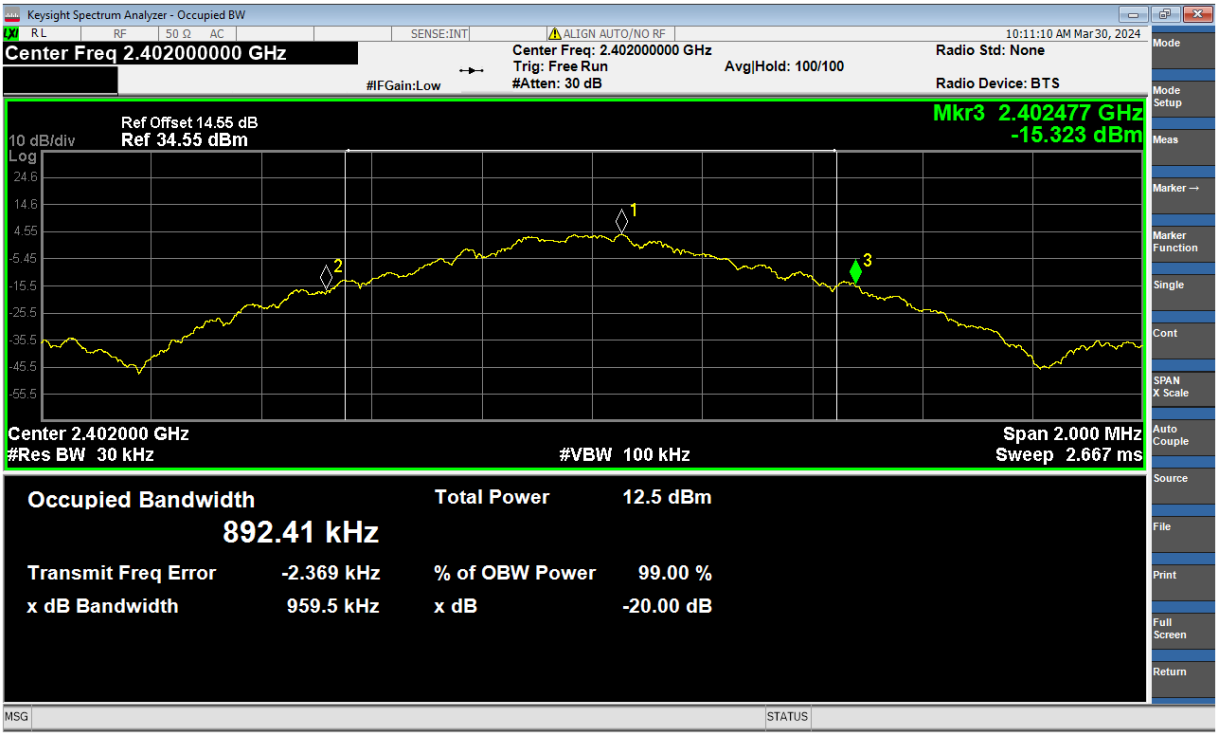
Power NVNT 3-DH1 2480MHz Ant1

3. -20dB Bandwidth

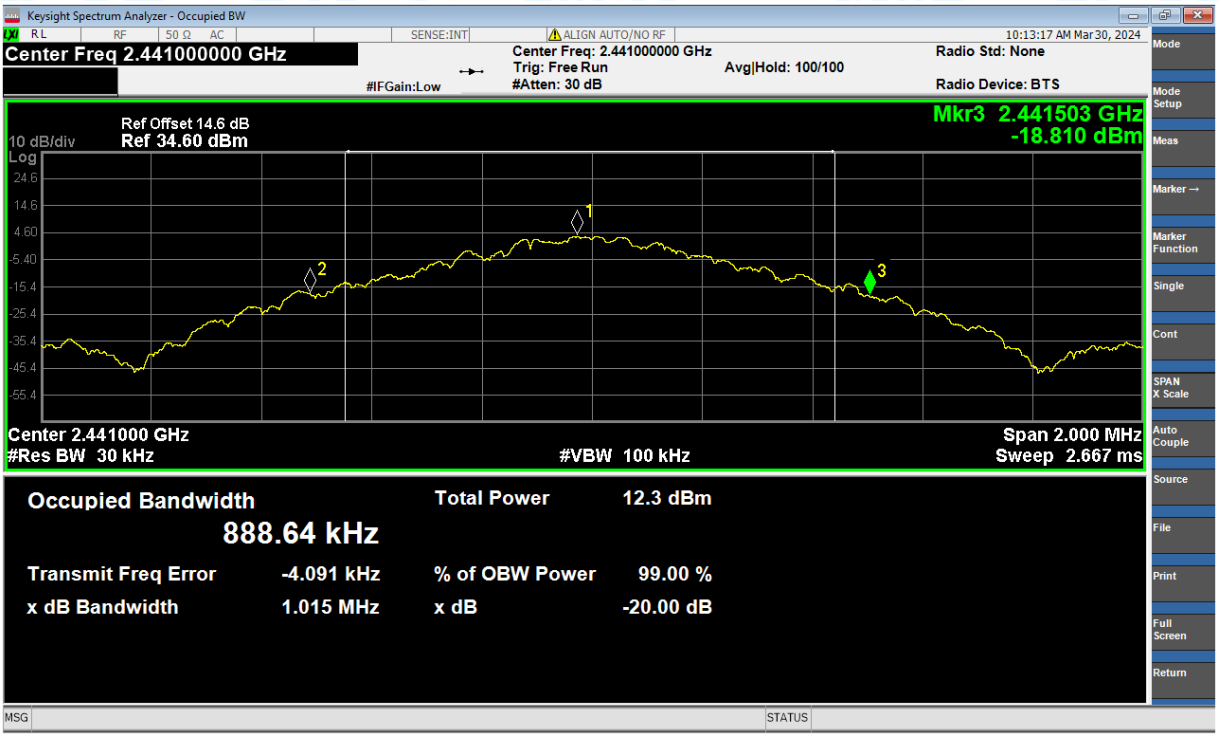
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.96	----	Pass
NVNT	1-DH1	2441	Ant1	1.02	----	Pass
NVNT	1-DH1	2480	Ant1	0.95	----	Pass
NVNT	2-DH1	2402	Ant1	1.36	----	Pass
NVNT	2-DH1	2441	Ant1	1.37	----	Pass
NVNT	2-DH1	2480	Ant1	1.36	----	Pass
NVNT	3-DH1	2402	Ant1	1.35	----	Pass
NVNT	3-DH1	2441	Ant1	1.35	----	Pass
NVNT	3-DH1	2480	Ant1	1.35	----	Pass

Test Graphs

-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1

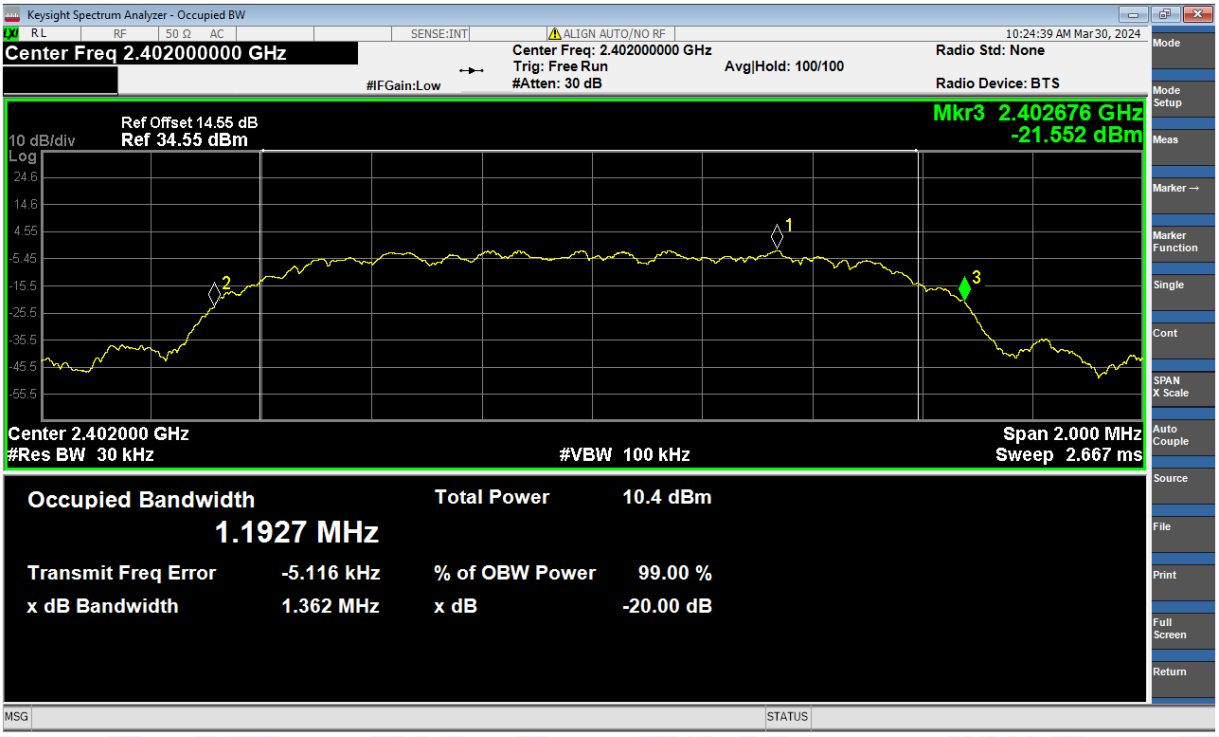


-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1

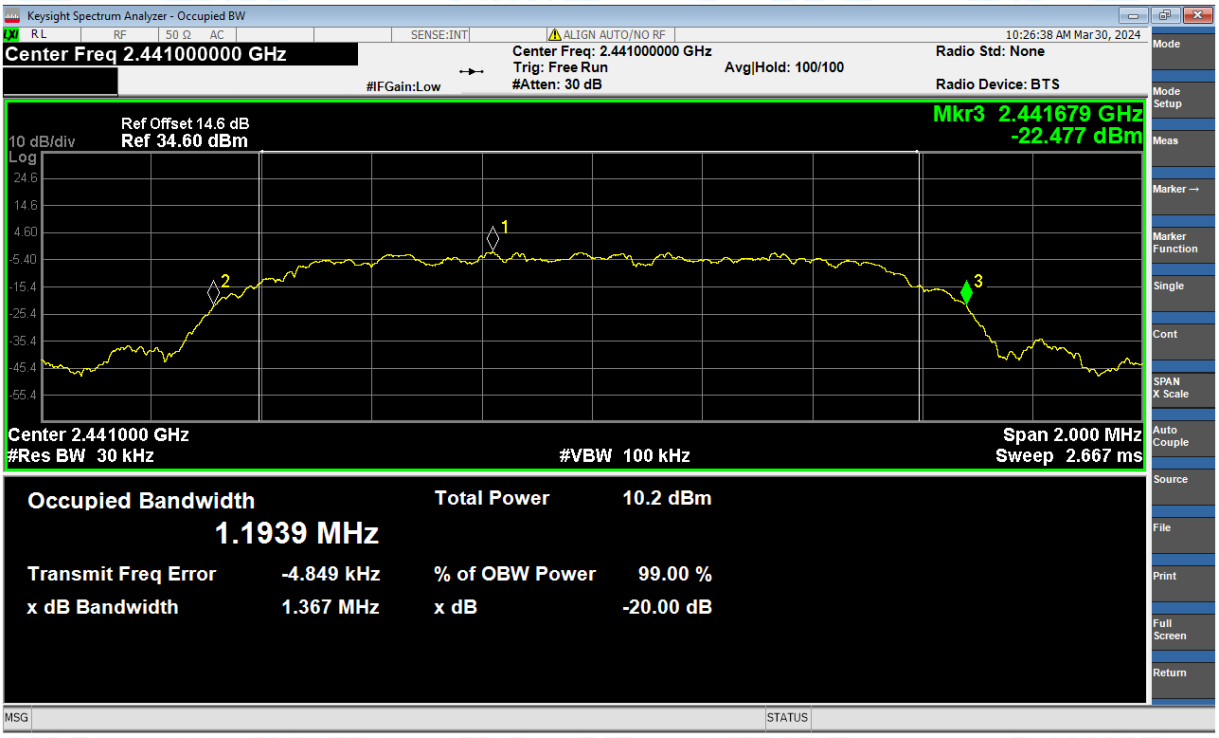


-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1

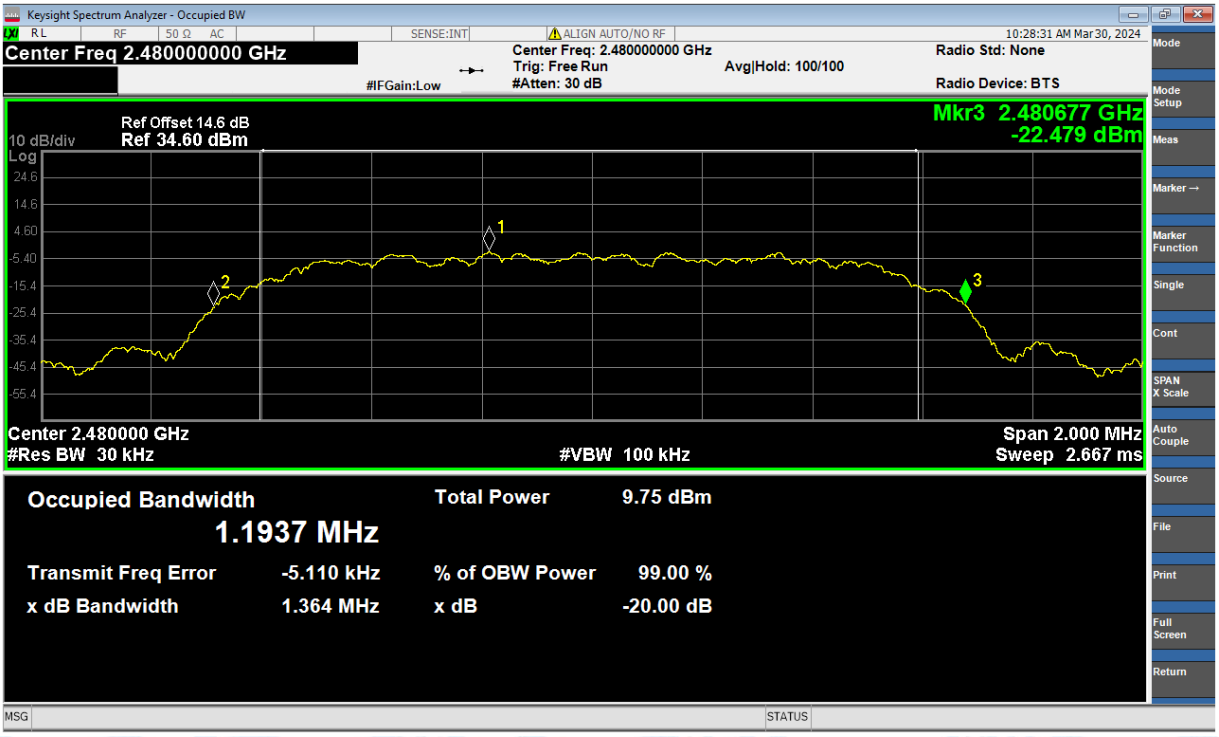
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



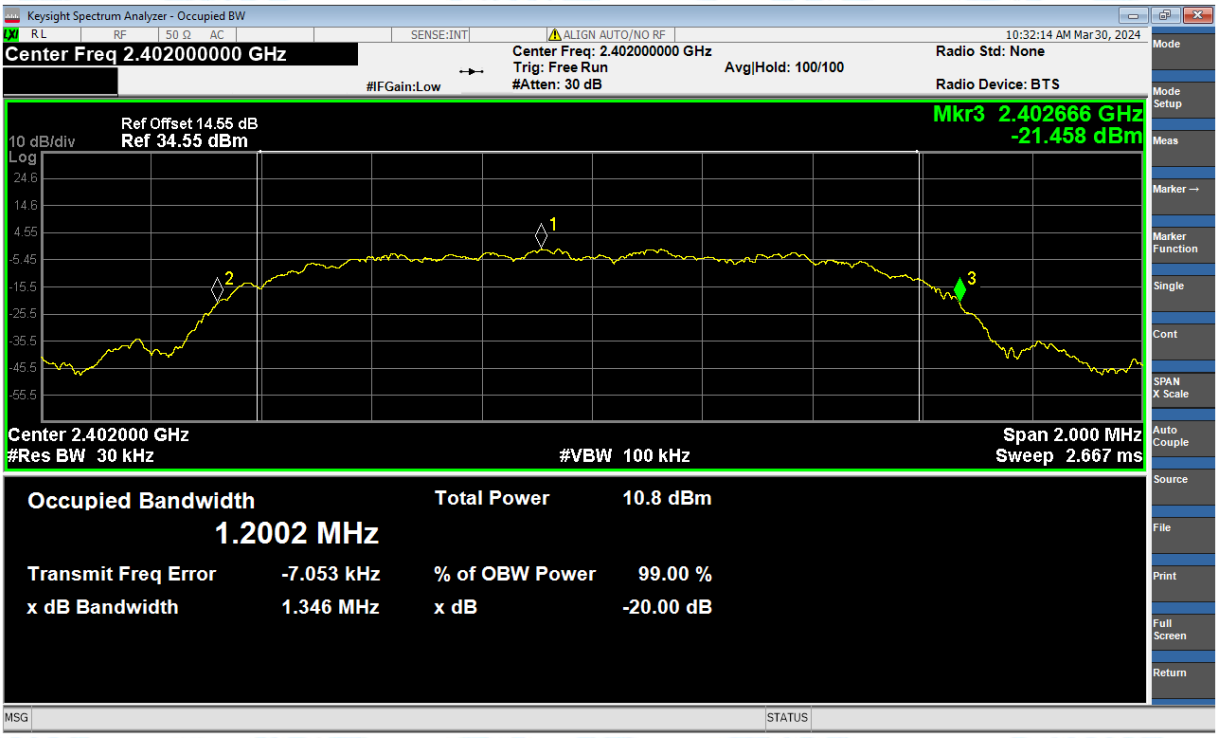
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



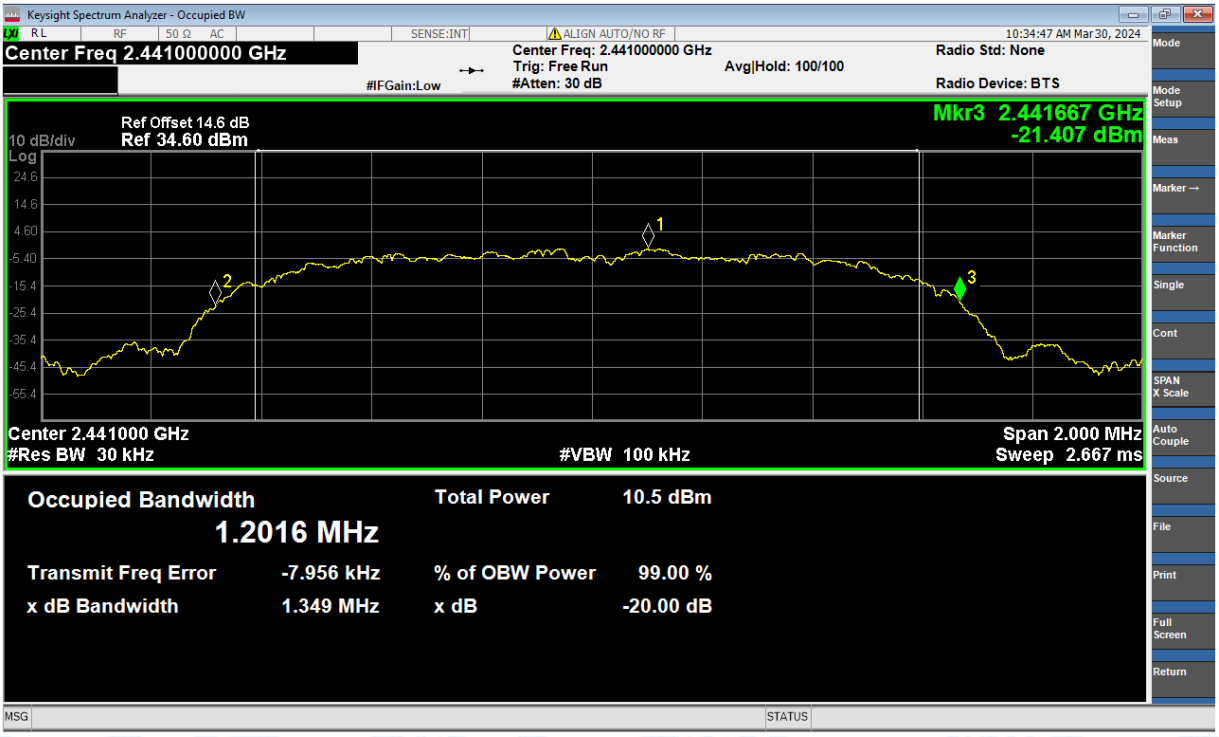
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1



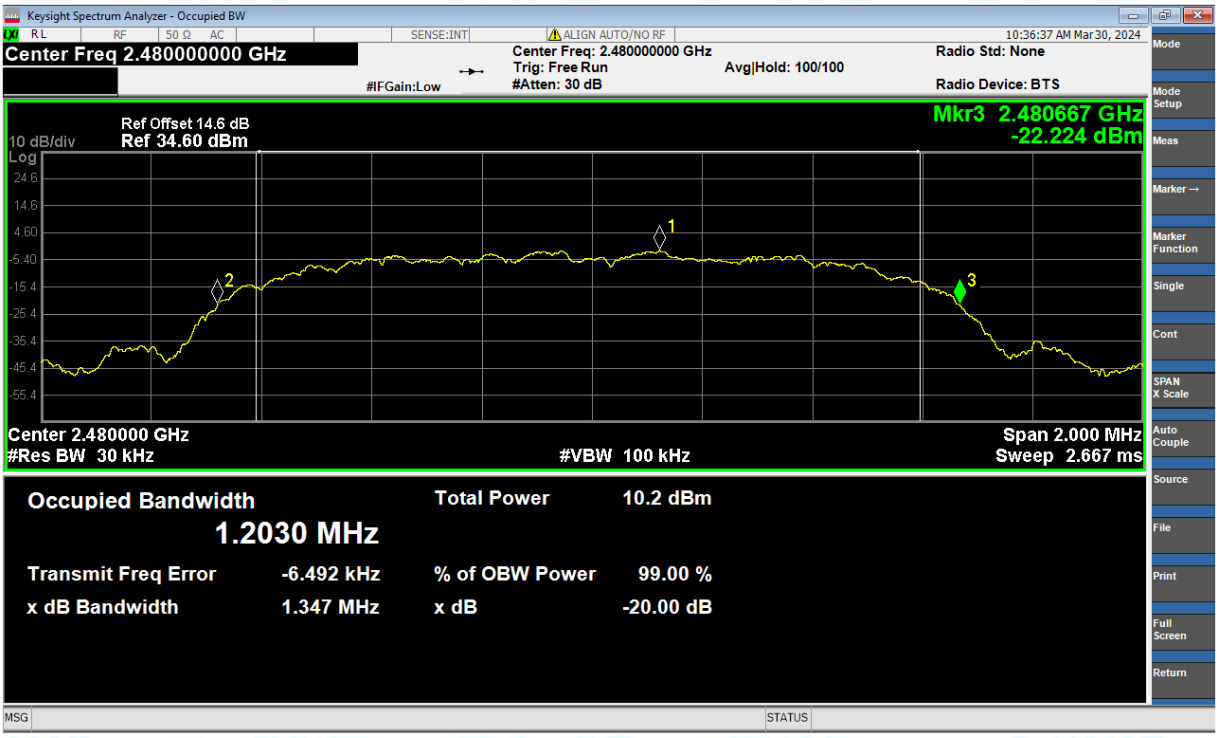
-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2480MHz Ant1

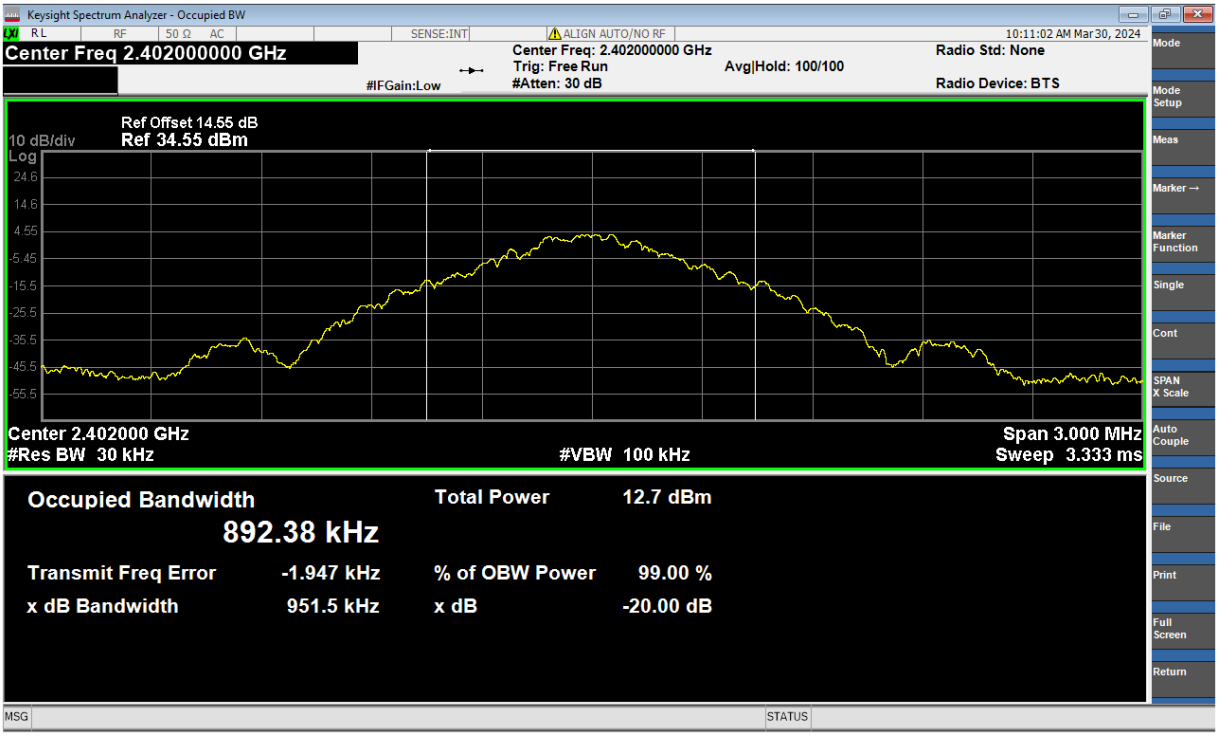


4. Occupied Channel Bandwidth

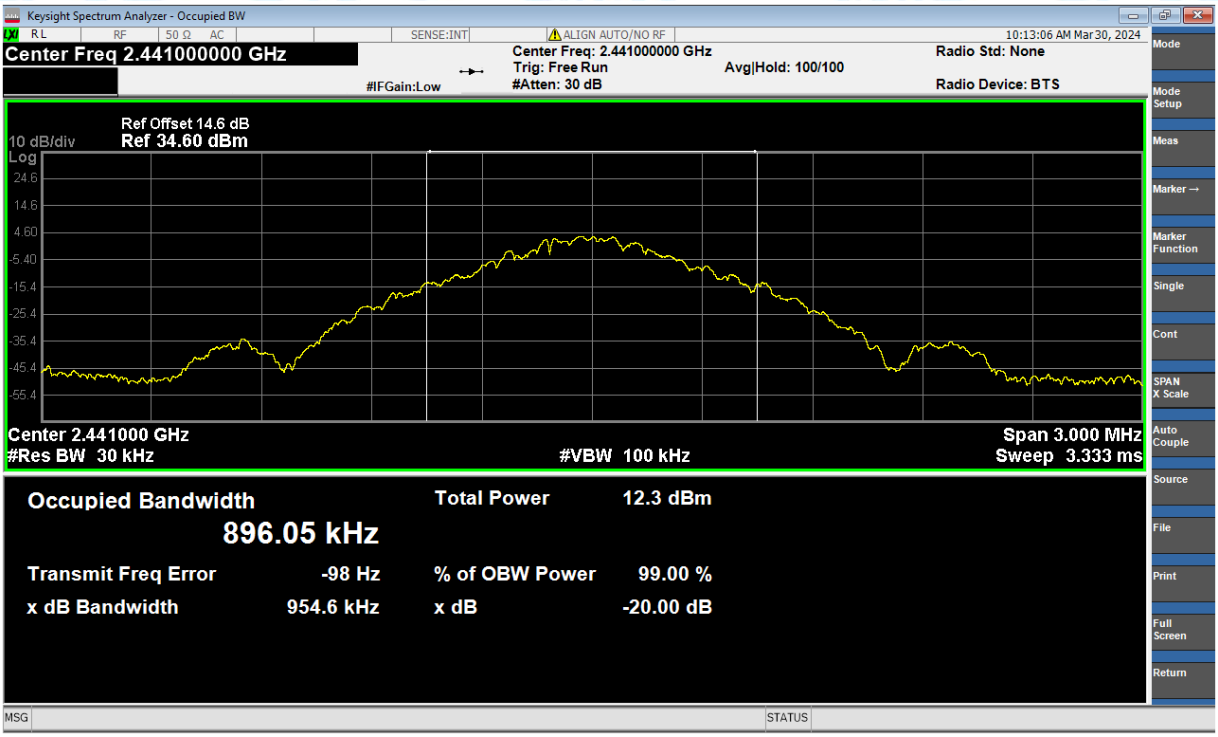
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.892
NVNT	1-DH1	2441	Ant1	0.896
NVNT	1-DH1	2480	Ant1	0.889
NVNT	2-DH1	2402	Ant1	1.197
NVNT	2-DH1	2441	Ant1	1.192
NVNT	2-DH1	2480	Ant1	1.194
NVNT	3-DH1	2402	Ant1	1.205
NVNT	3-DH1	2441	Ant1	1.204
NVNT	3-DH1	2480	Ant1	1.202

Test Graphs

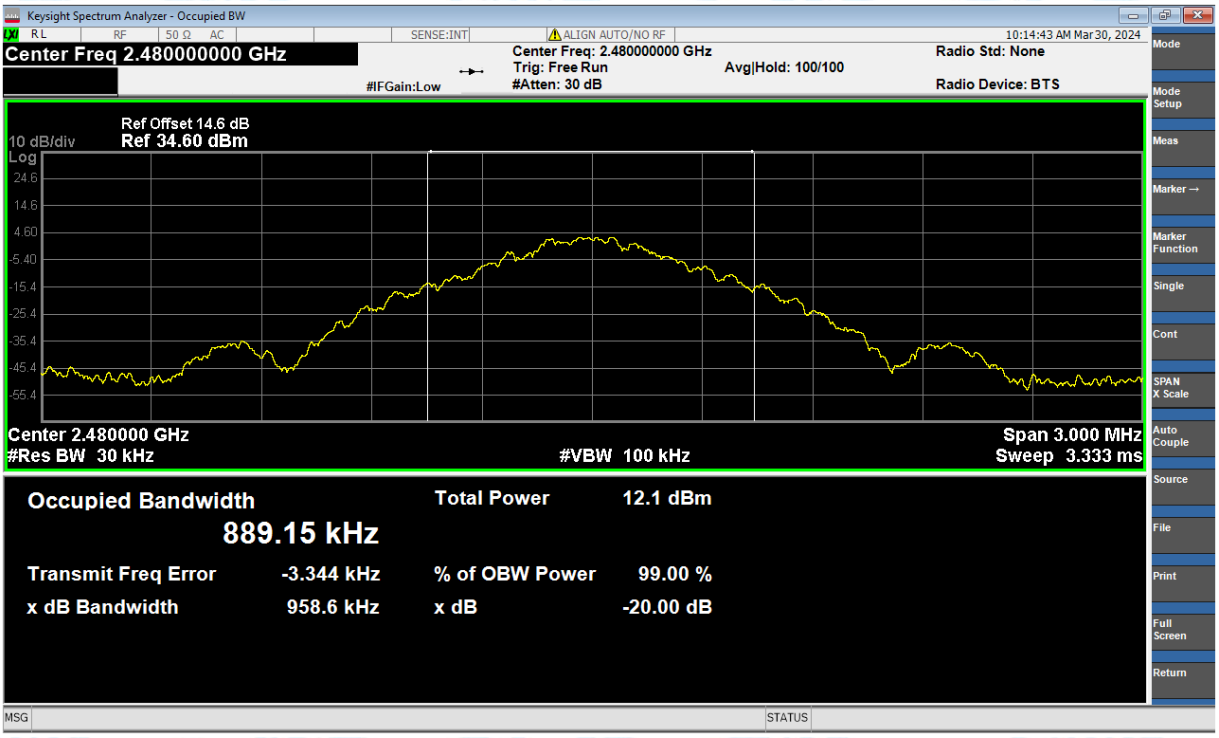
OBW NVNT 1-DH1 2402MHz Ant1



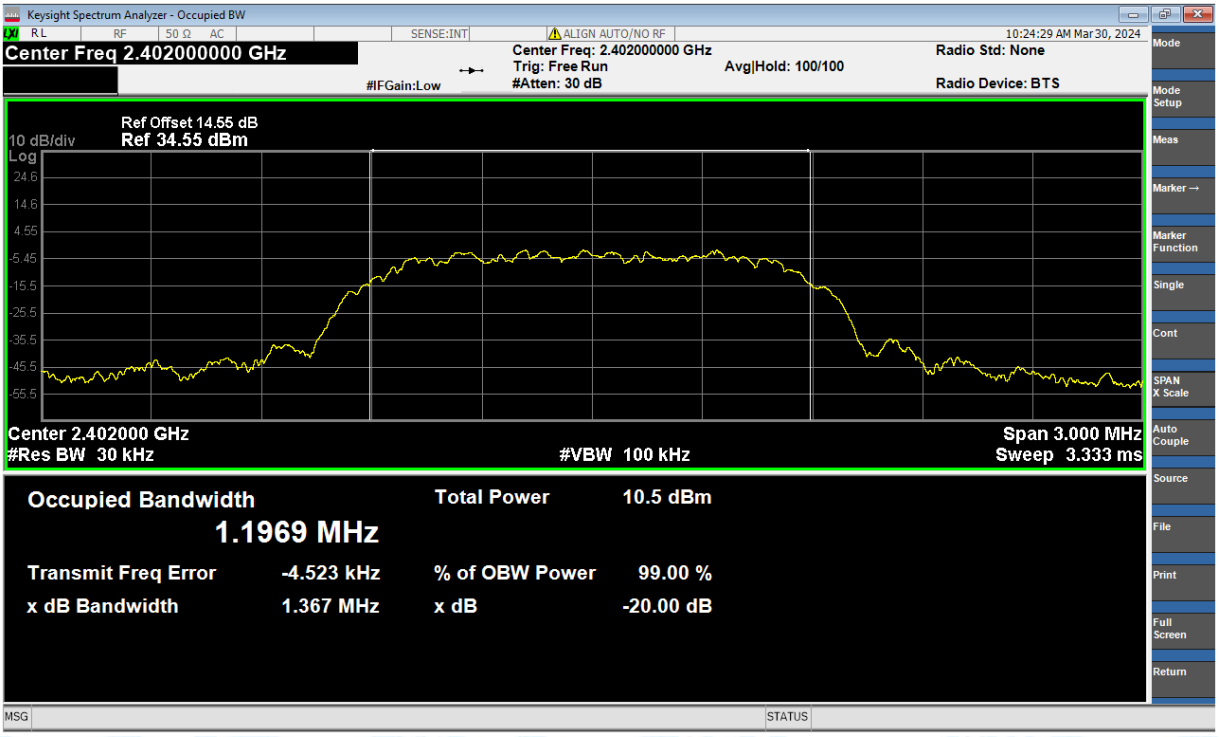
OBW NVNT 1-DH1 2441MHz Ant1



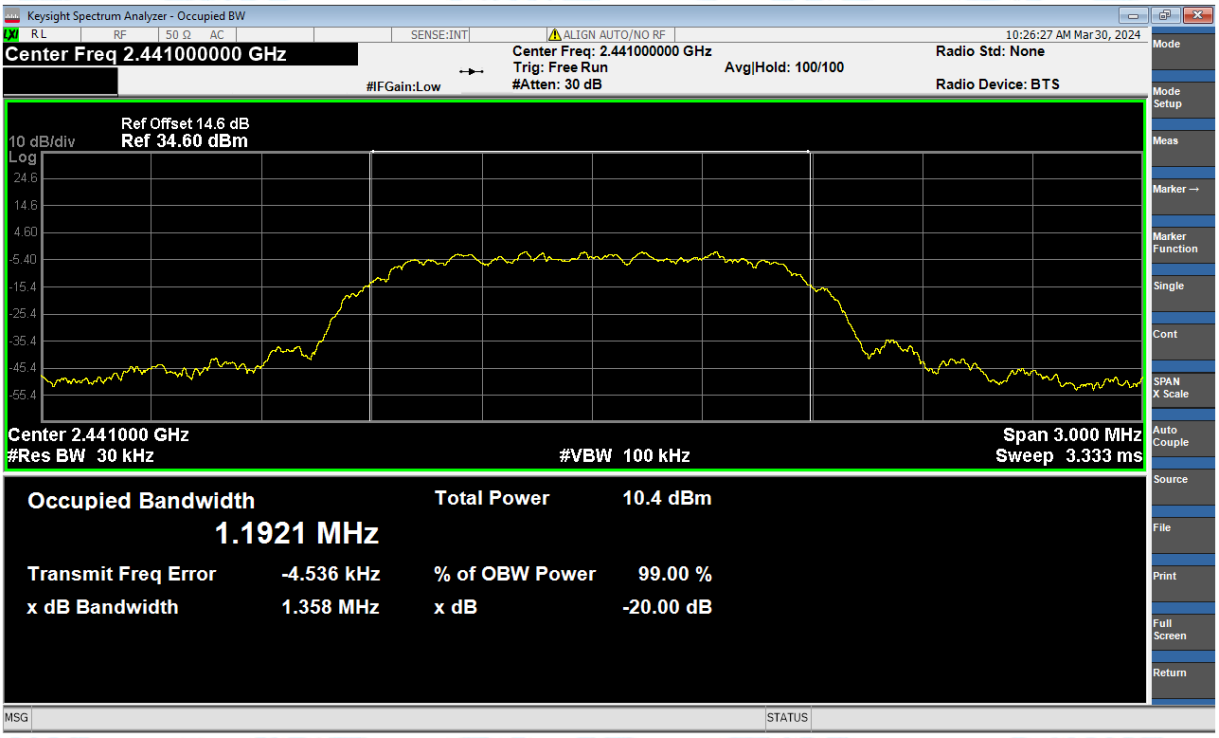
OBW NVNT 1-DH1 2480MHz Ant1



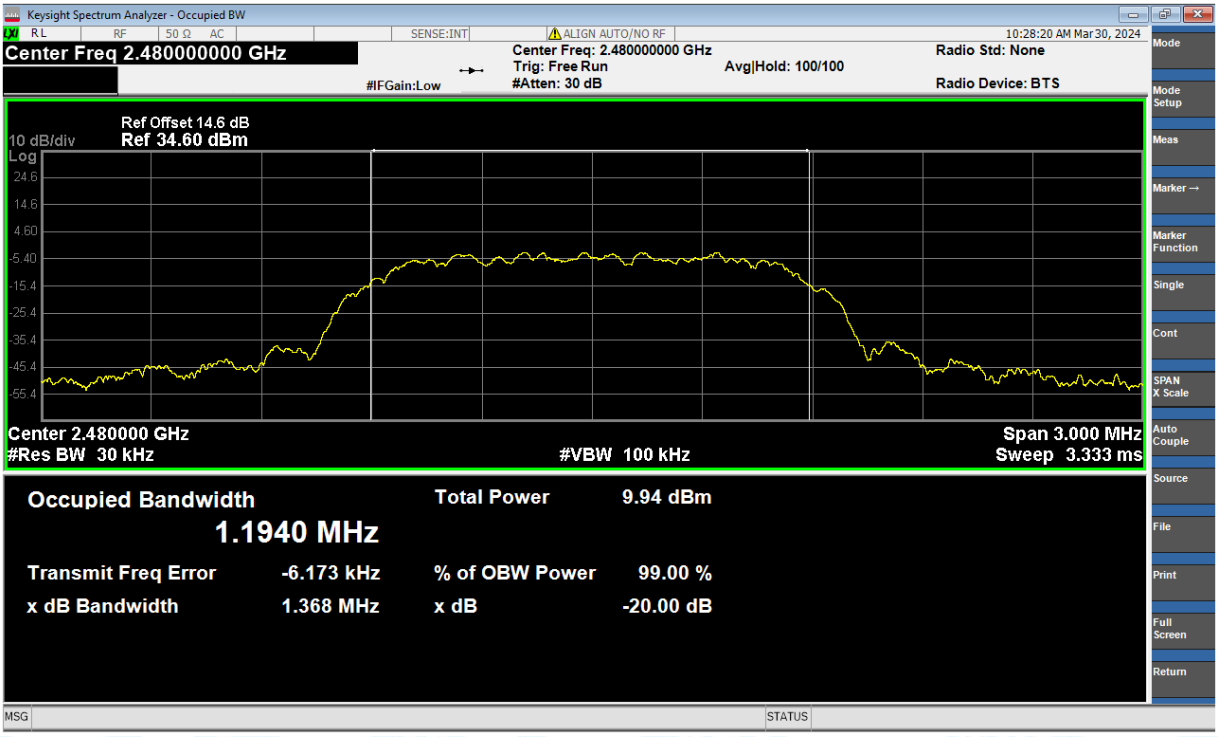
OBW NVNT 2-DH1 2402MHz Ant1



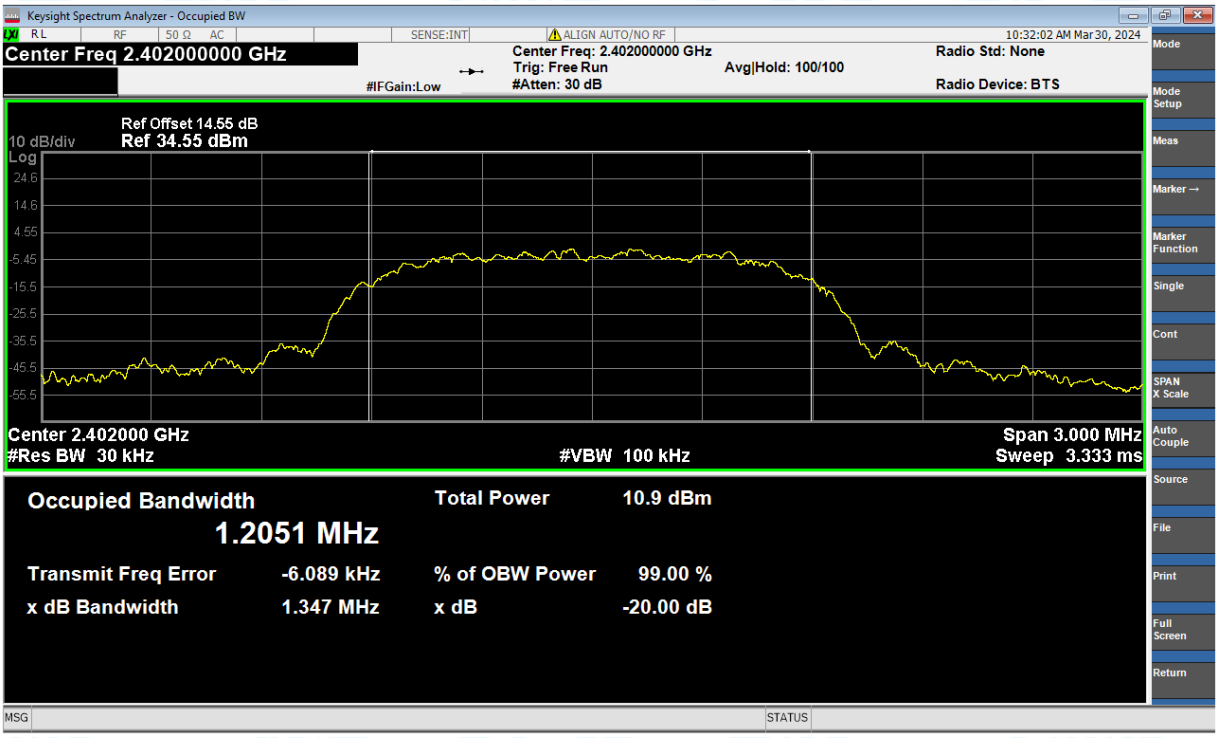
OBW NVNT 2-DH1 2441MHz Ant1



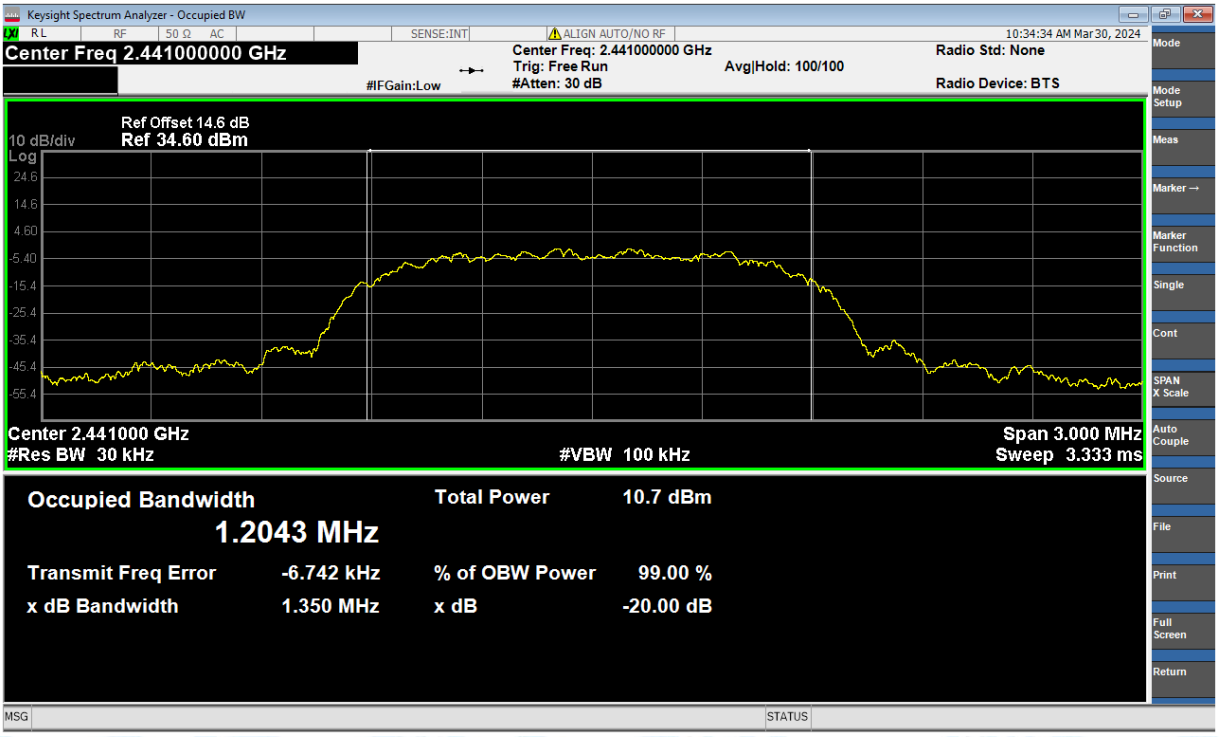
OBW NVNT 2-DH1 2480MHz Ant1



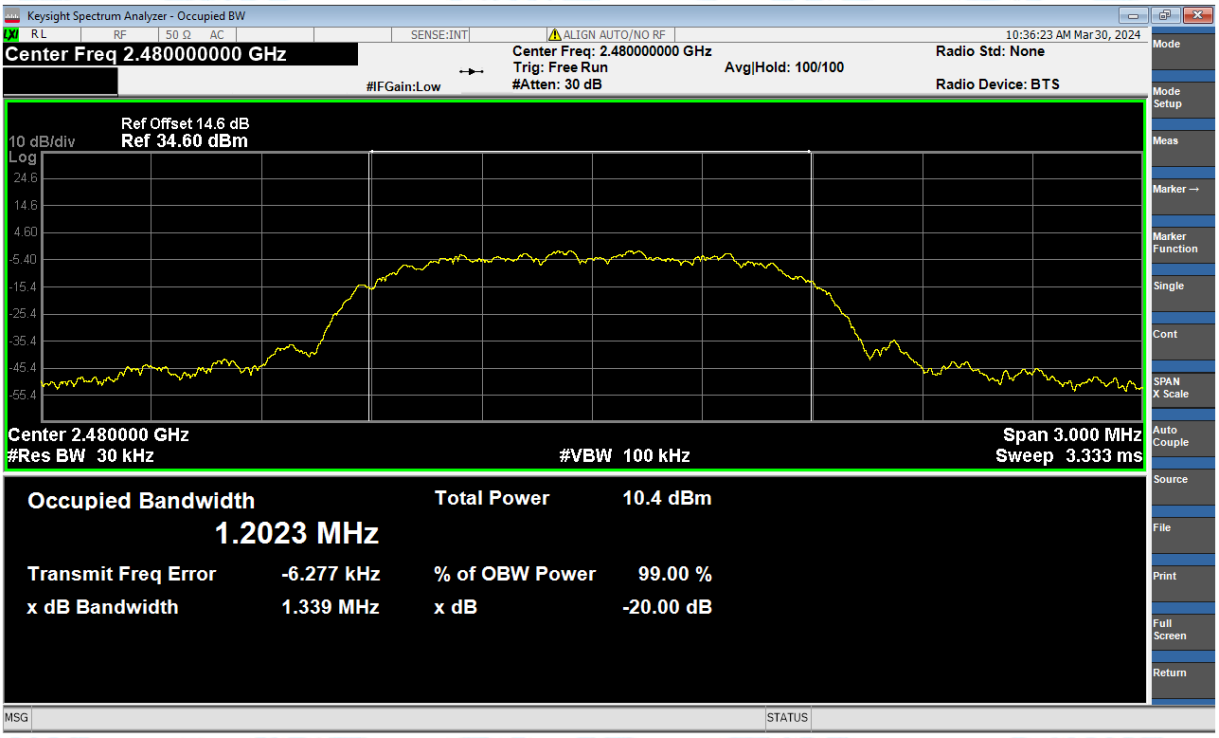
OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



OBW NVNT 3-DH1 2480MHz Ant1

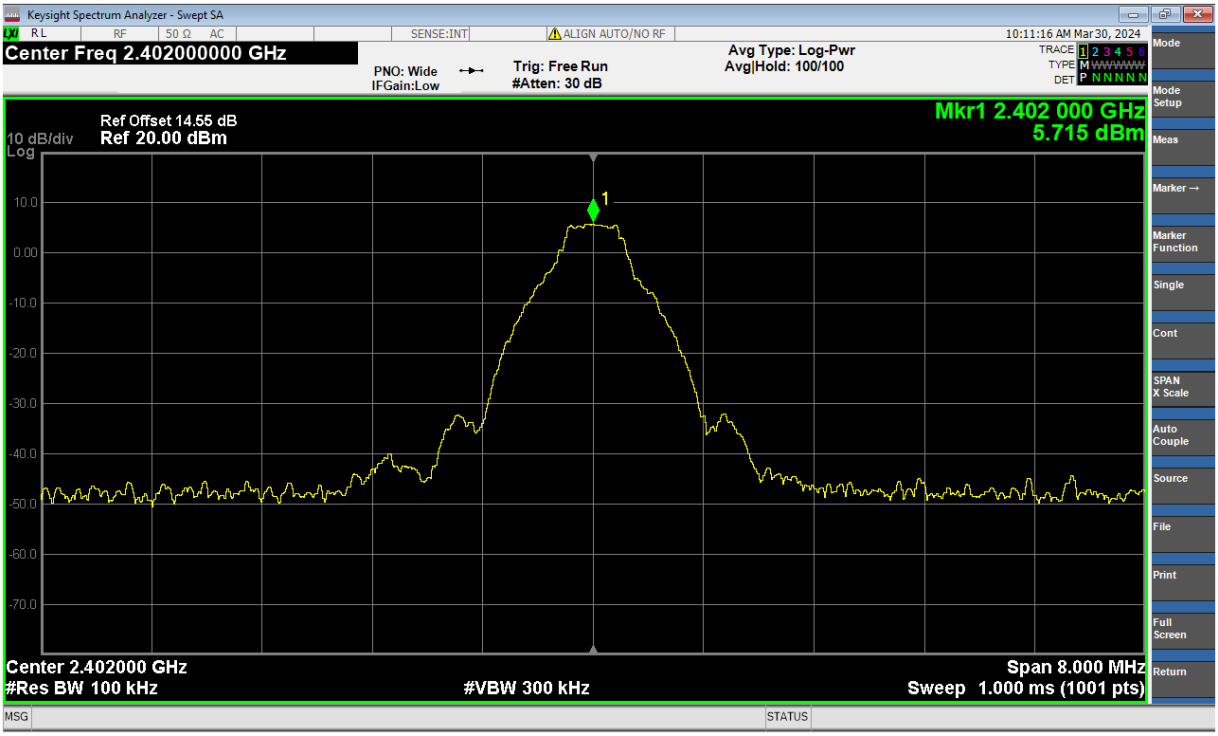


5. Band Edge

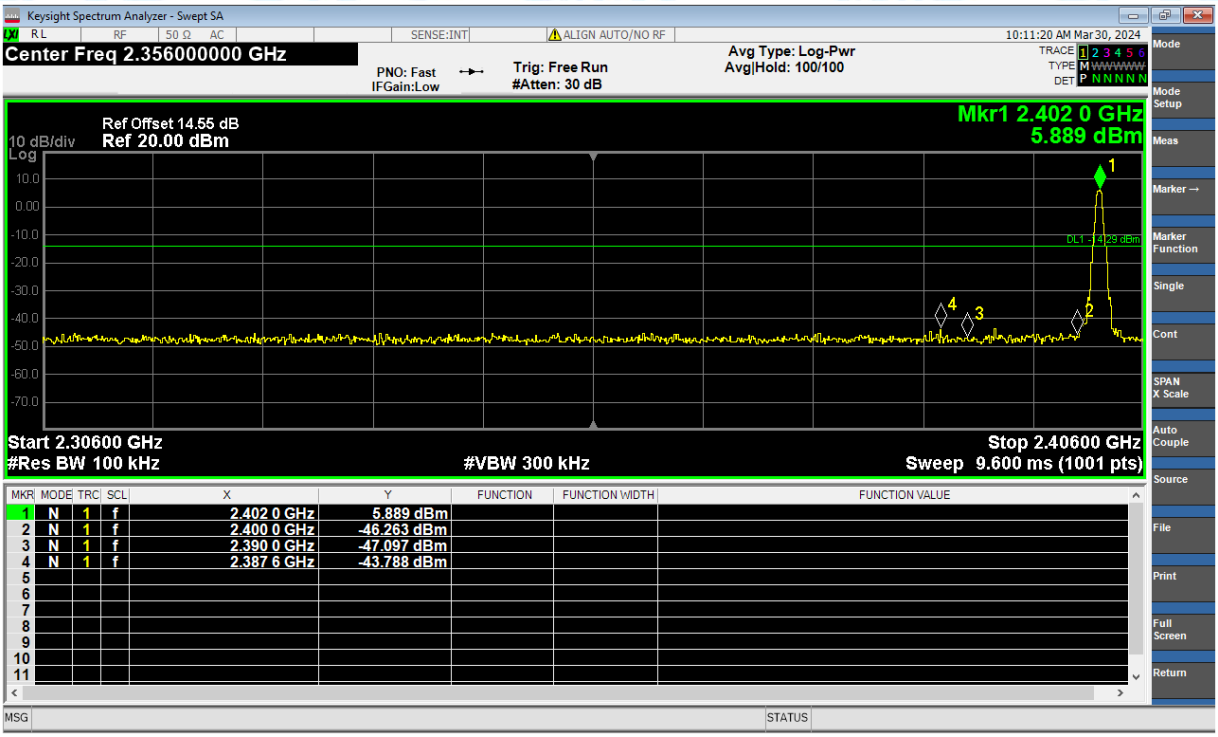
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-49.51	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-50.11	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-46.85	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-49.10	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-46.92	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-47.30	-20	Pass

Test Graphs

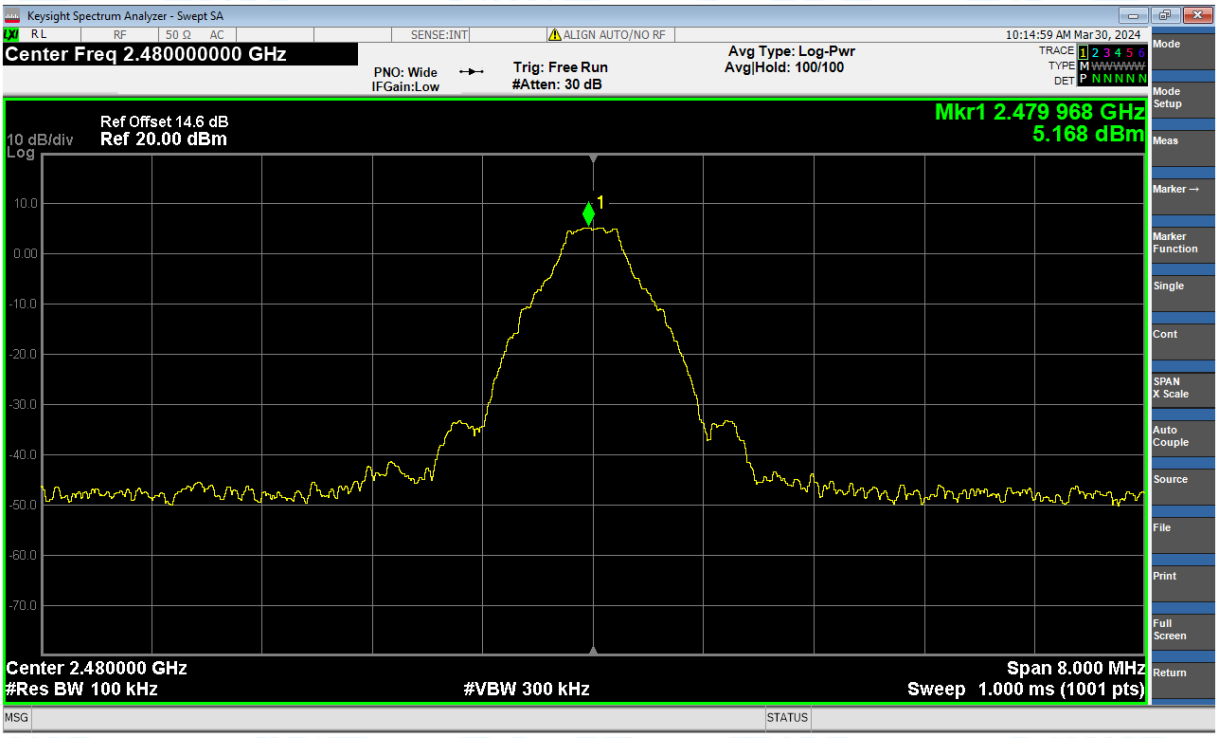
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



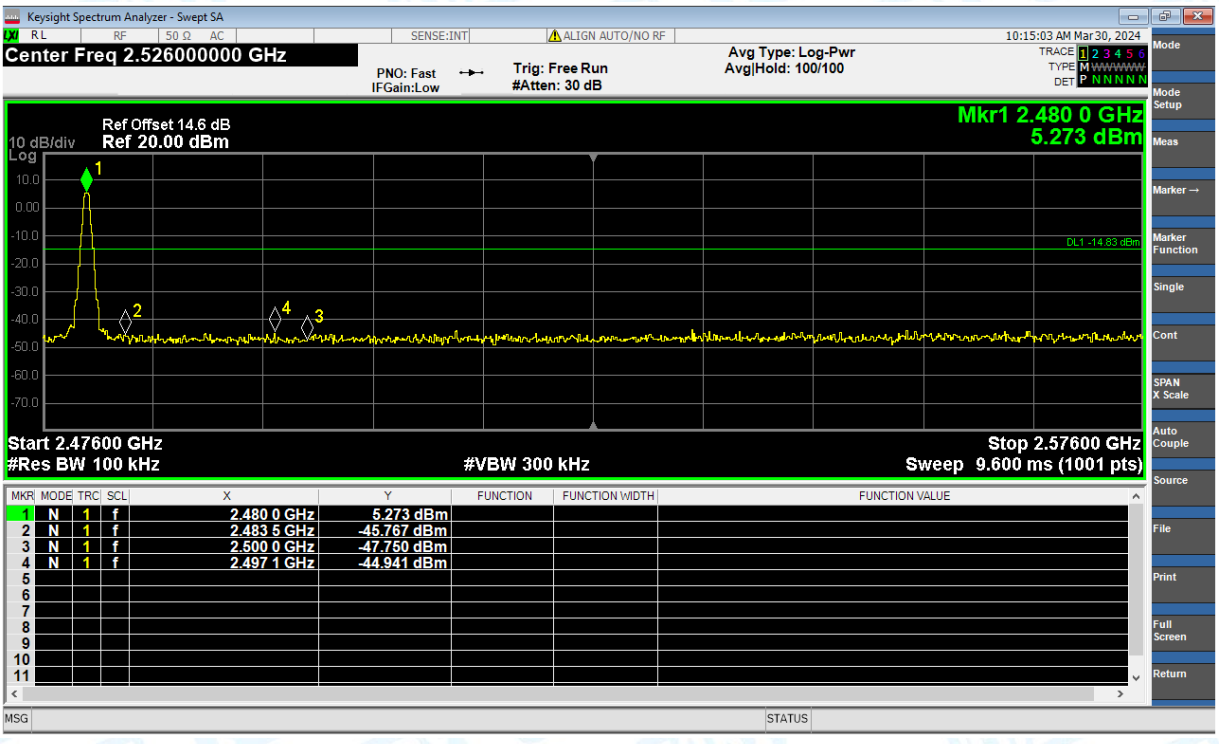
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



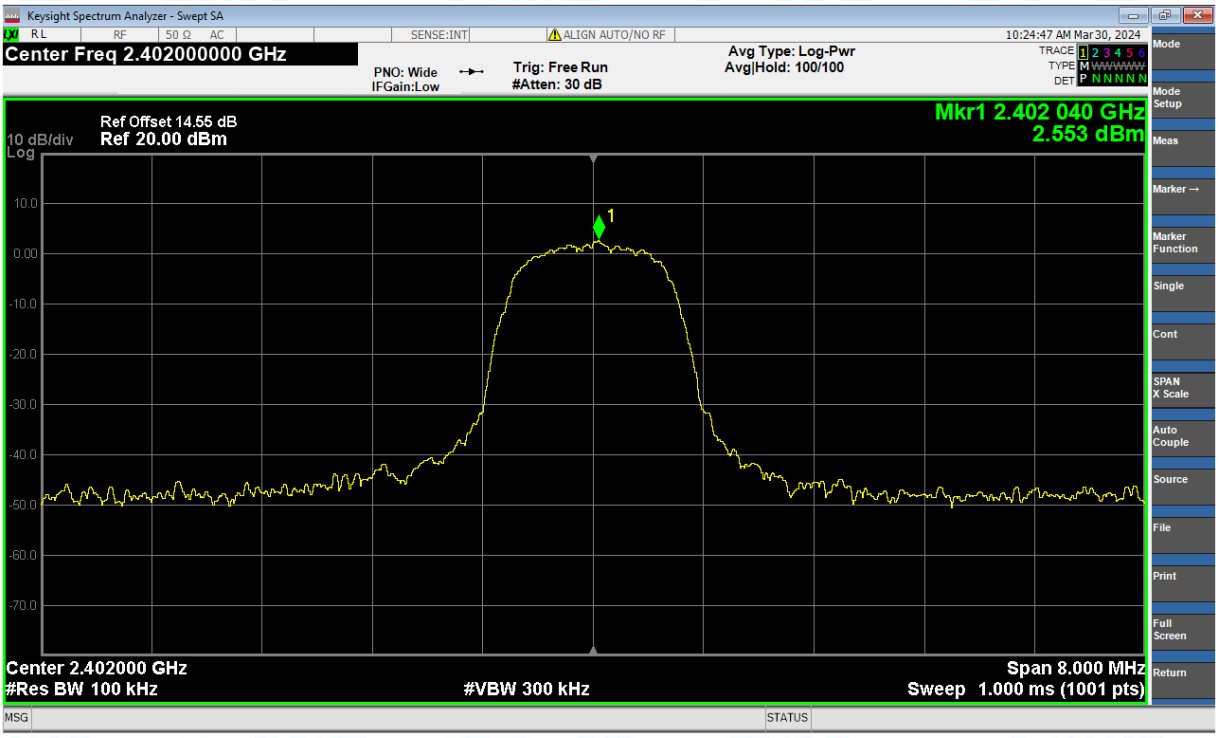
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



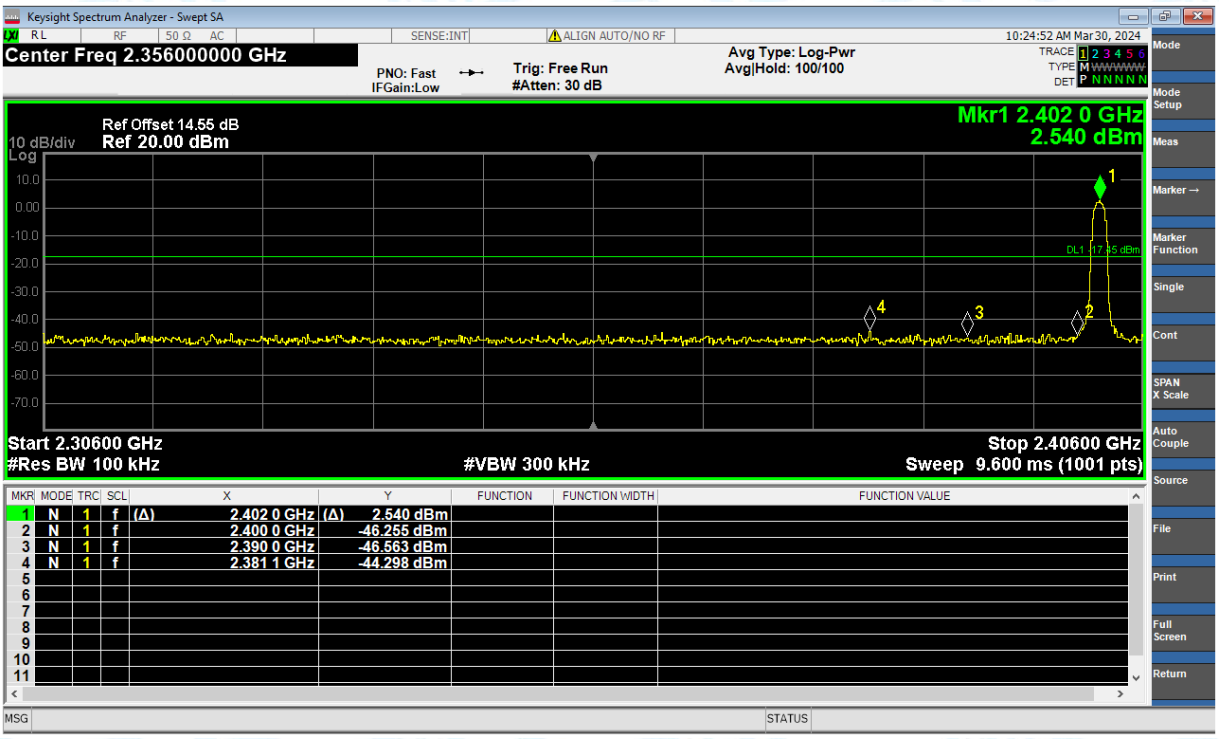
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



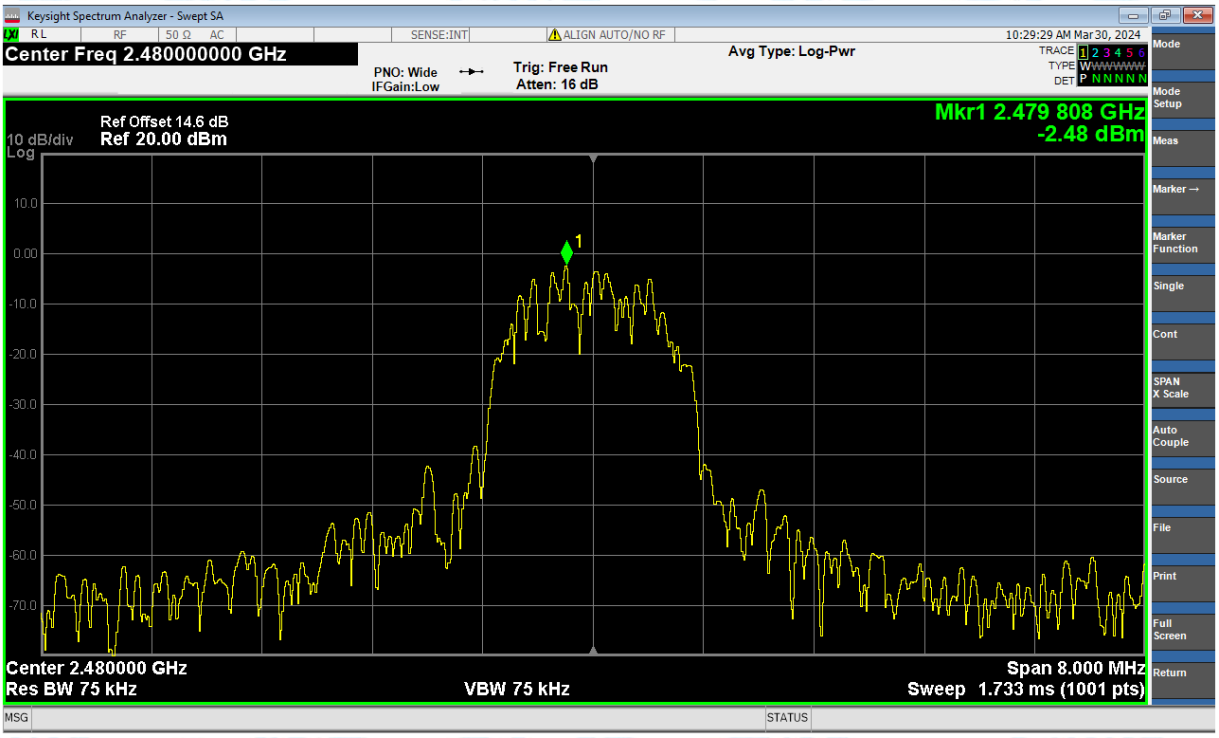
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



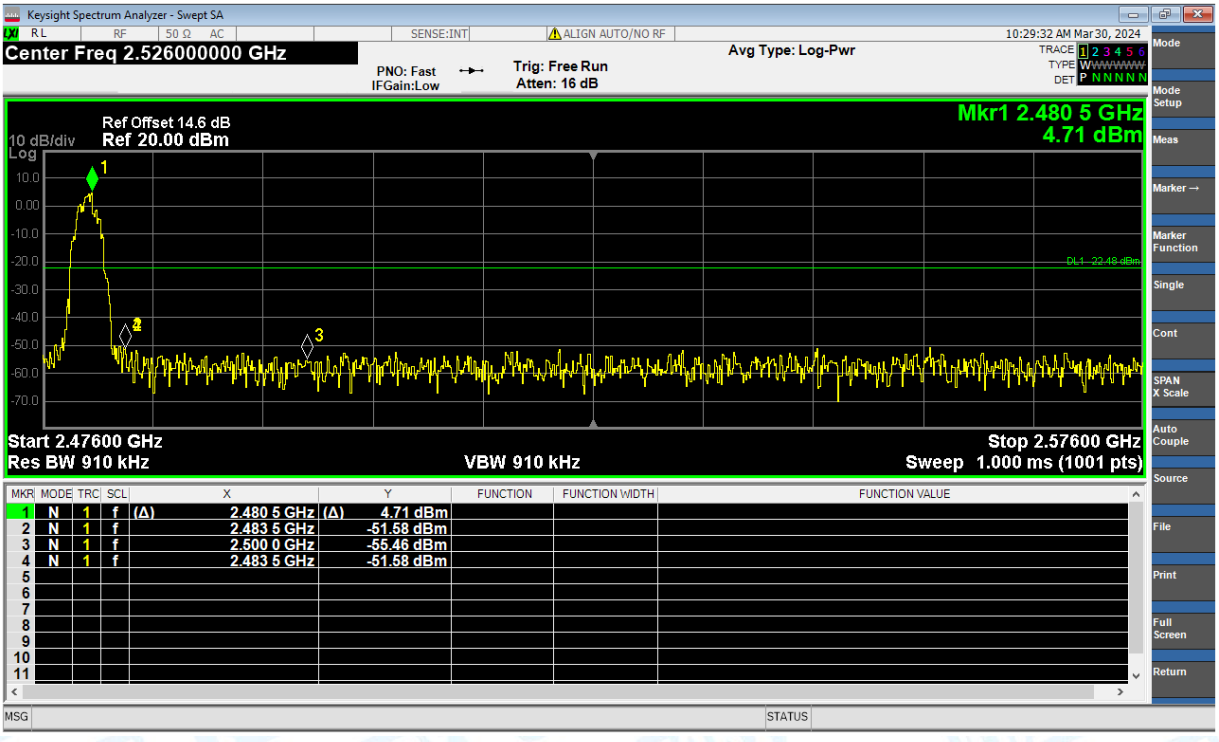
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



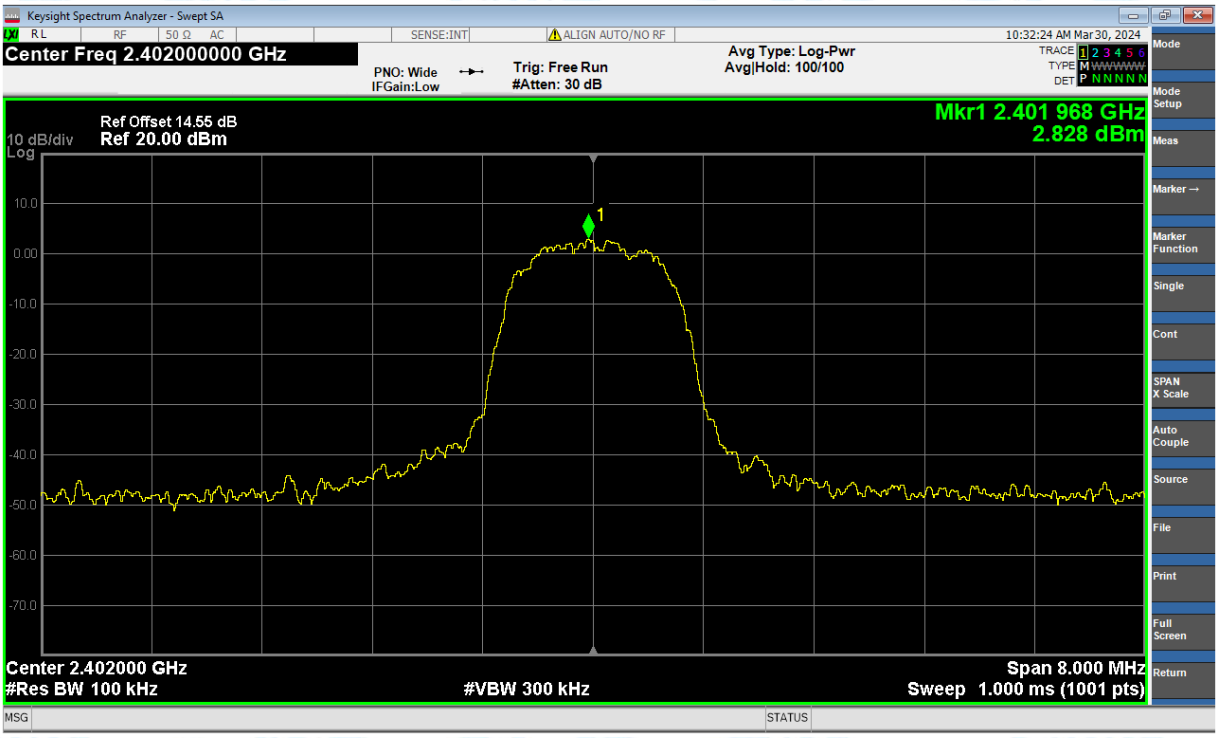
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



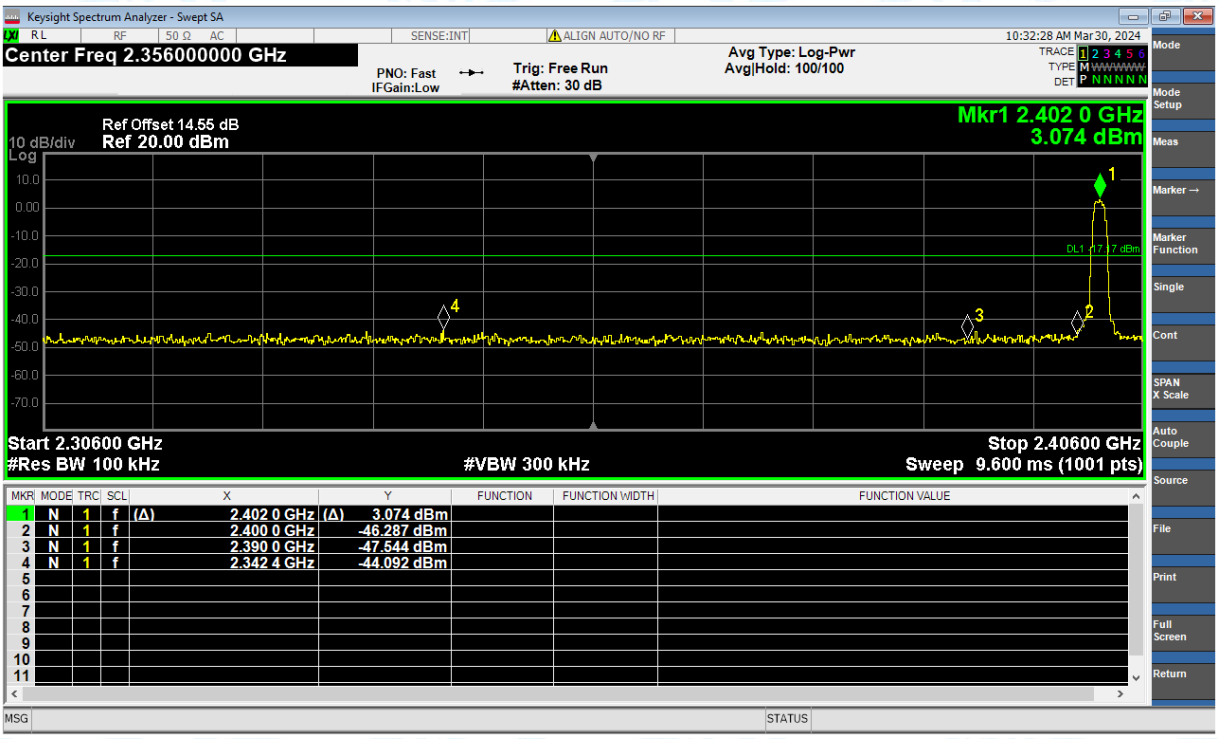
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



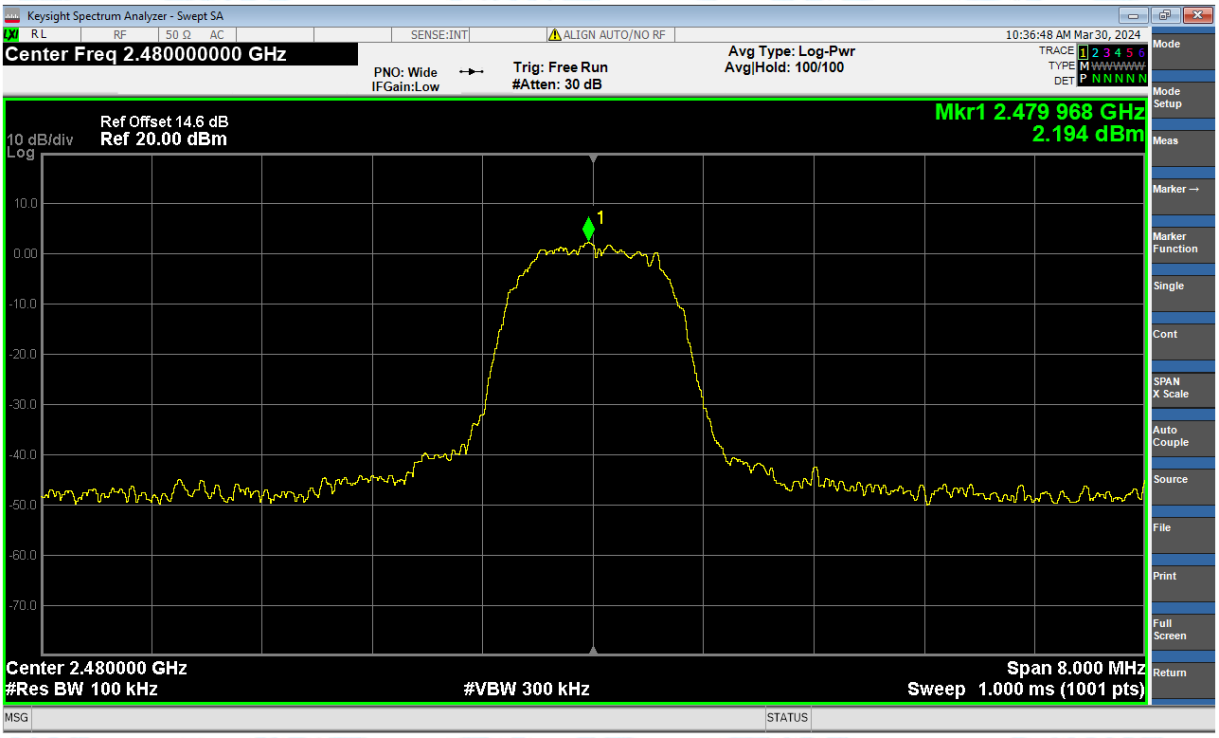
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



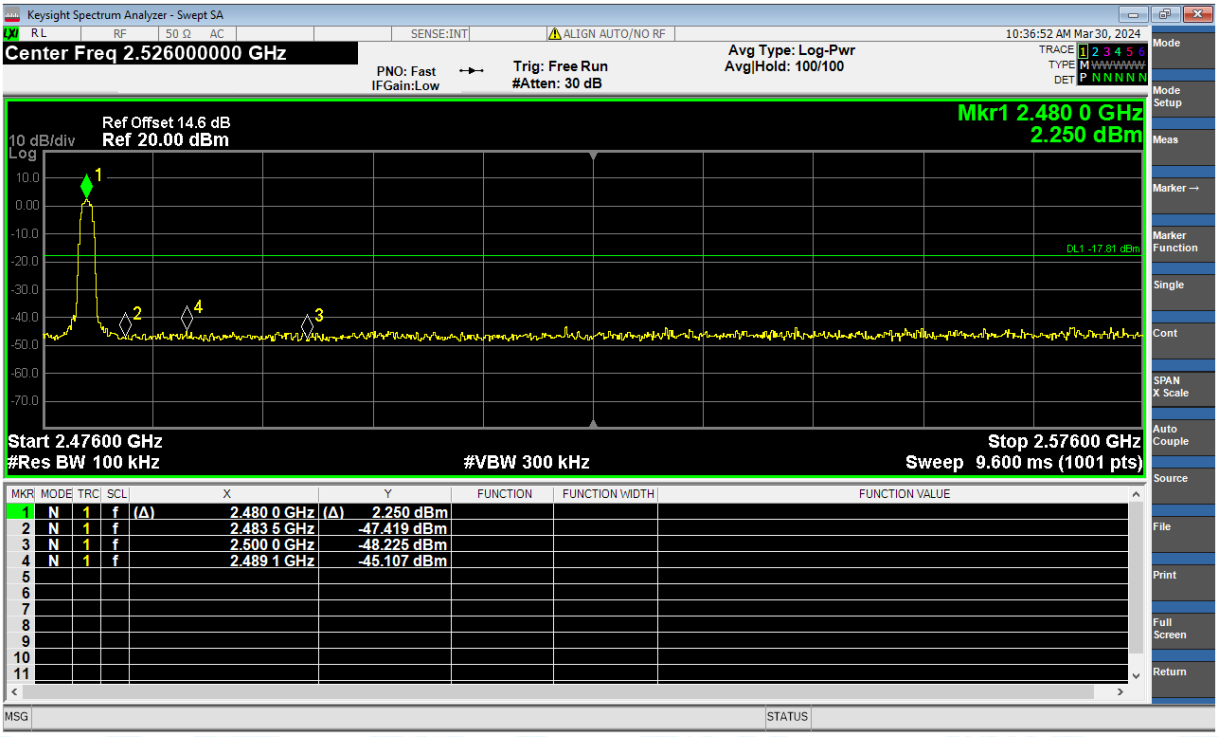
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



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



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

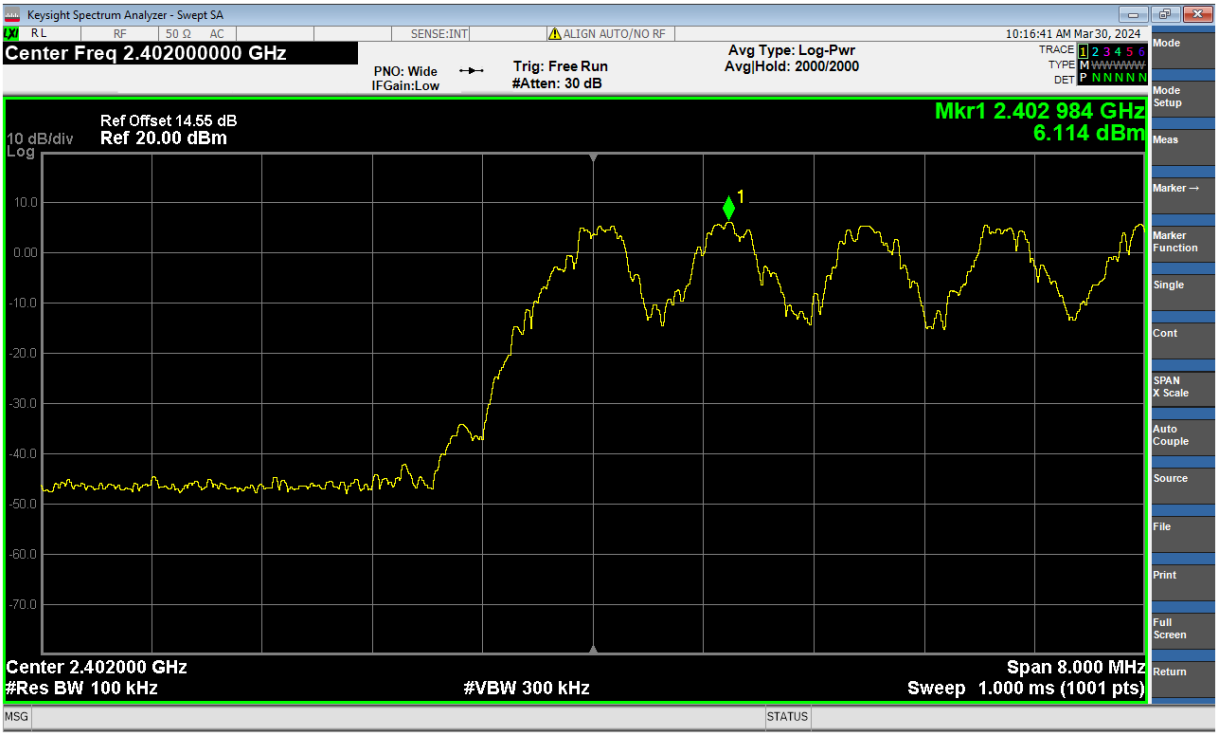


6. Band Edge(Hopping)

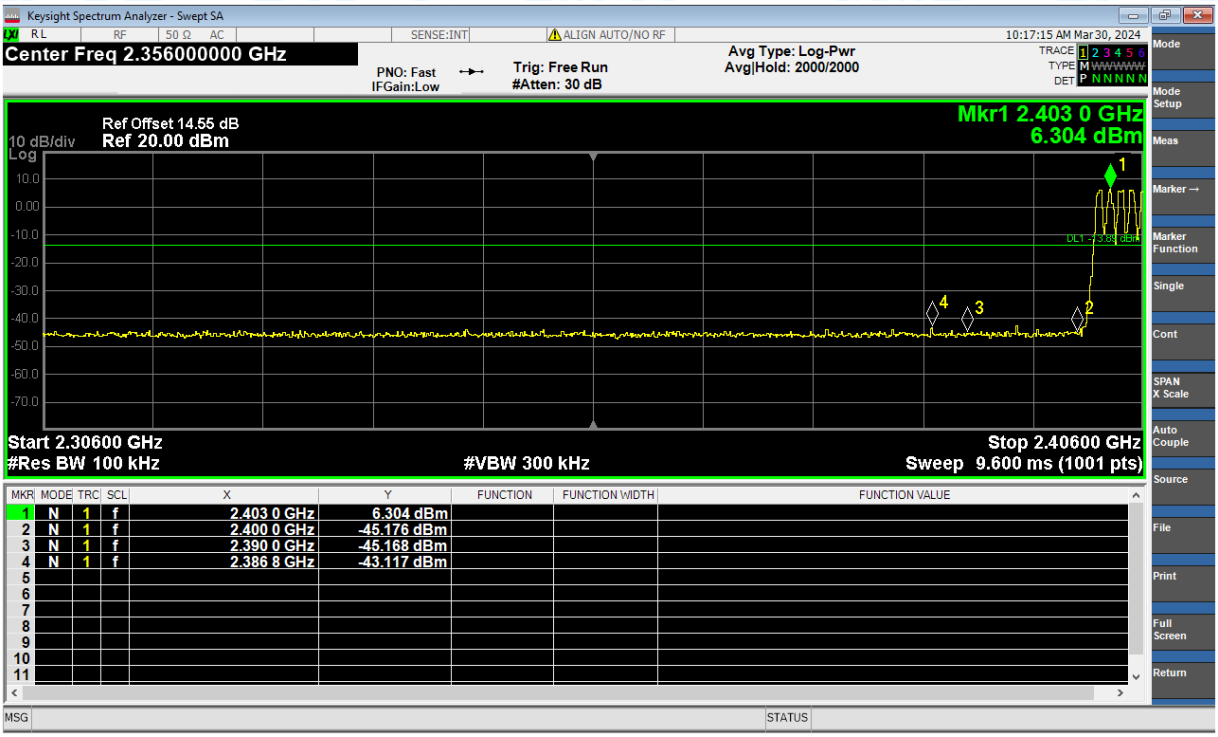
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-49.23	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-49.24	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-48.40	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-48.26	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-48.81	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-48.05	-20	Pass

Test Graphs

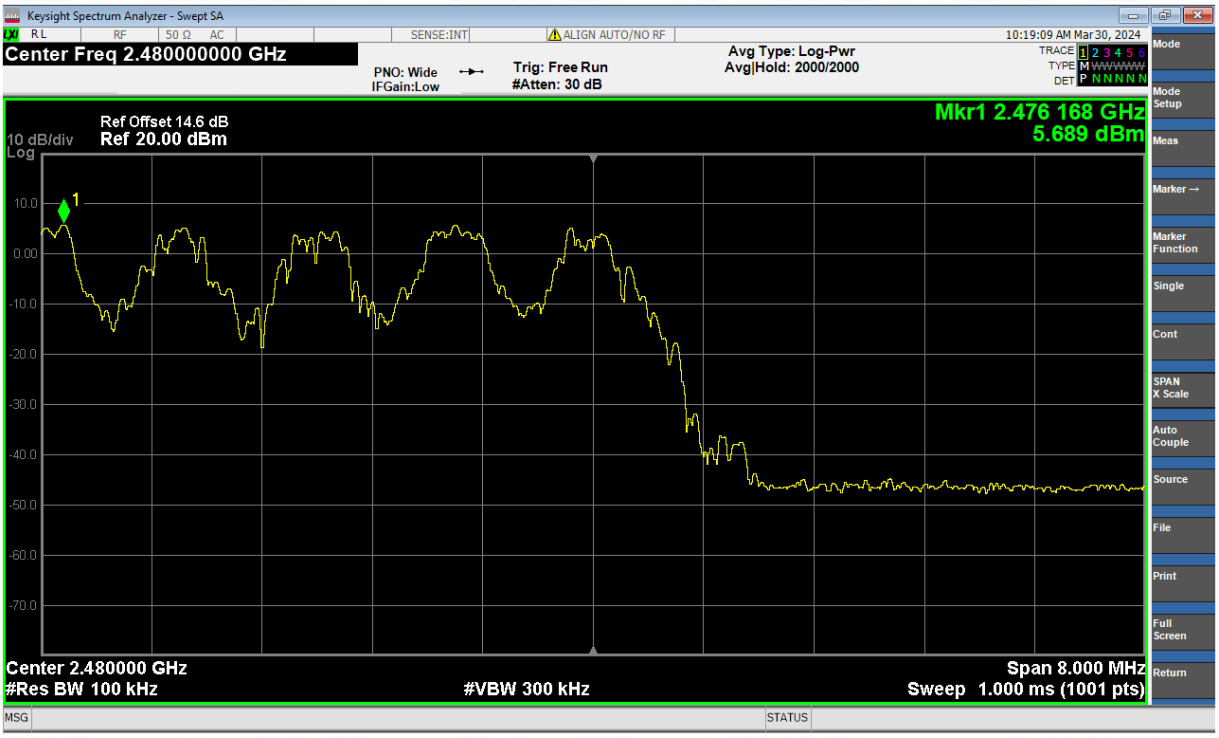
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref



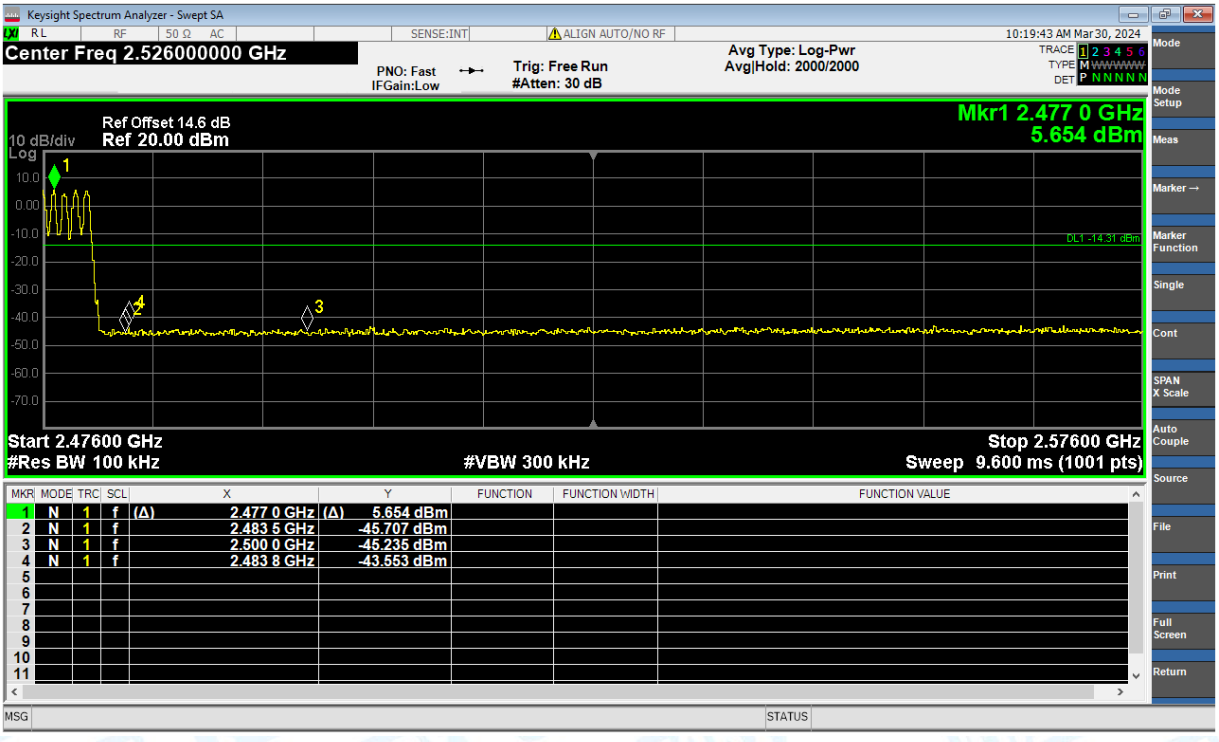
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



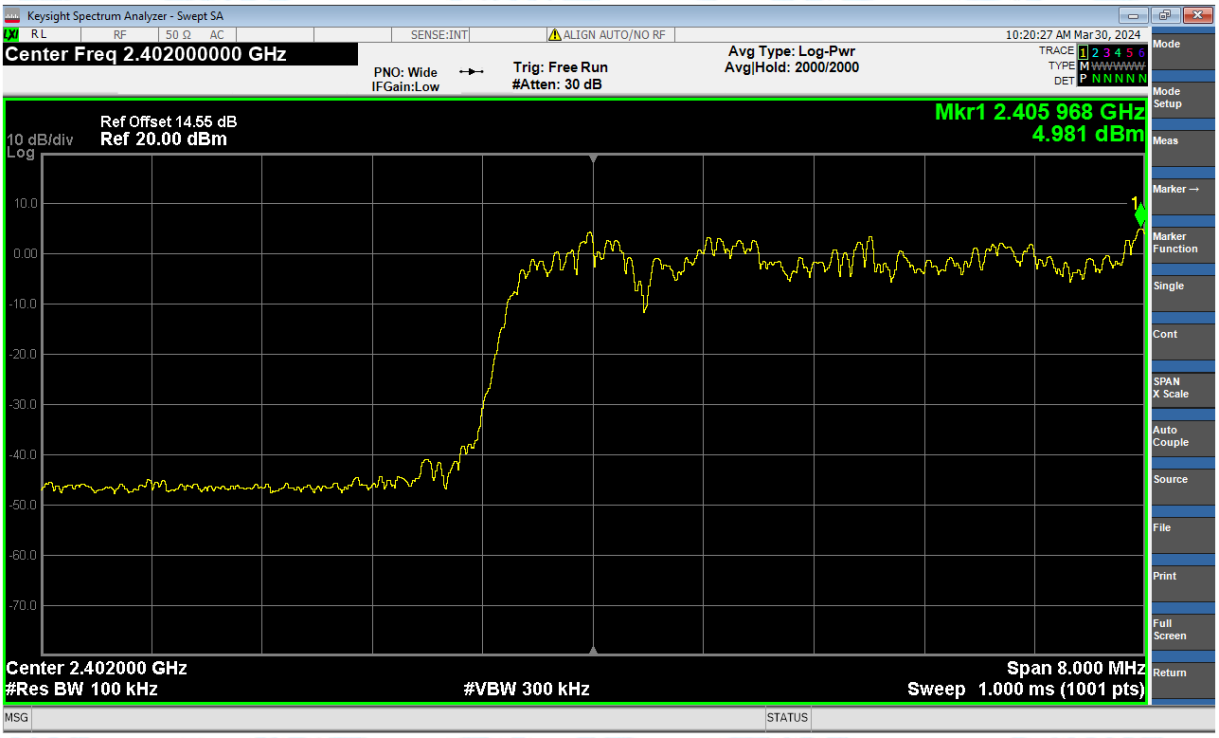
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref



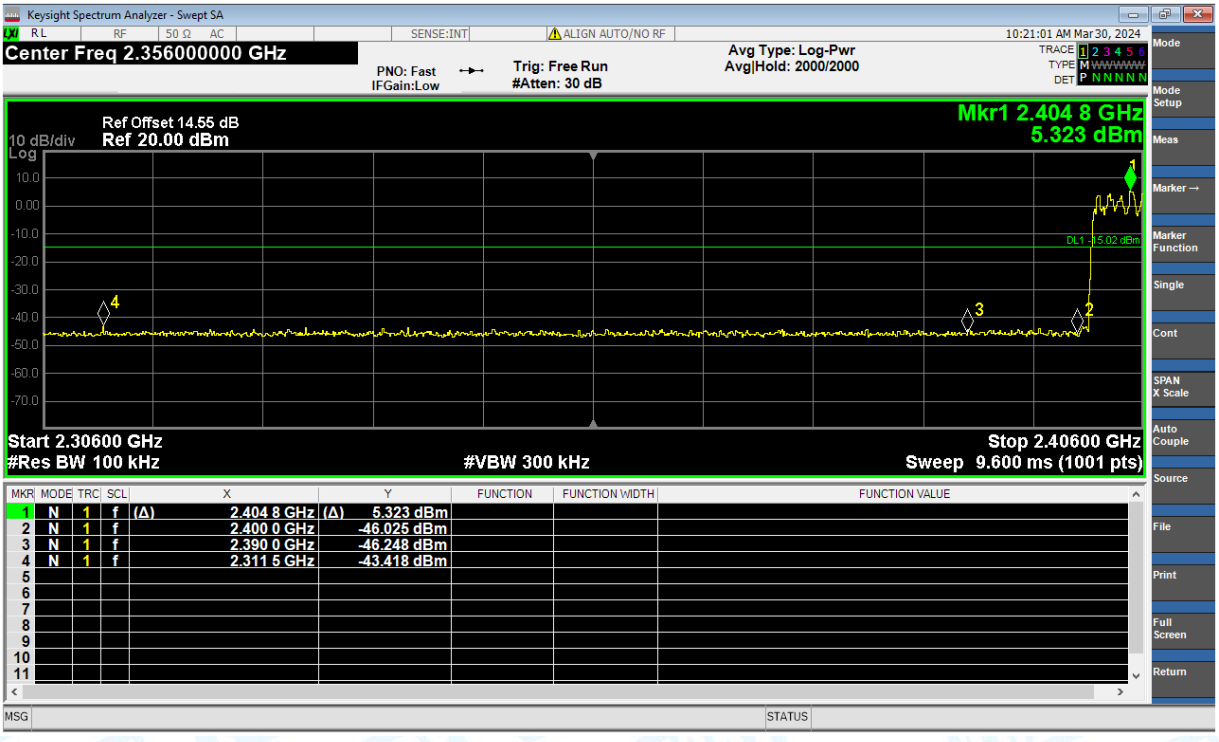
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



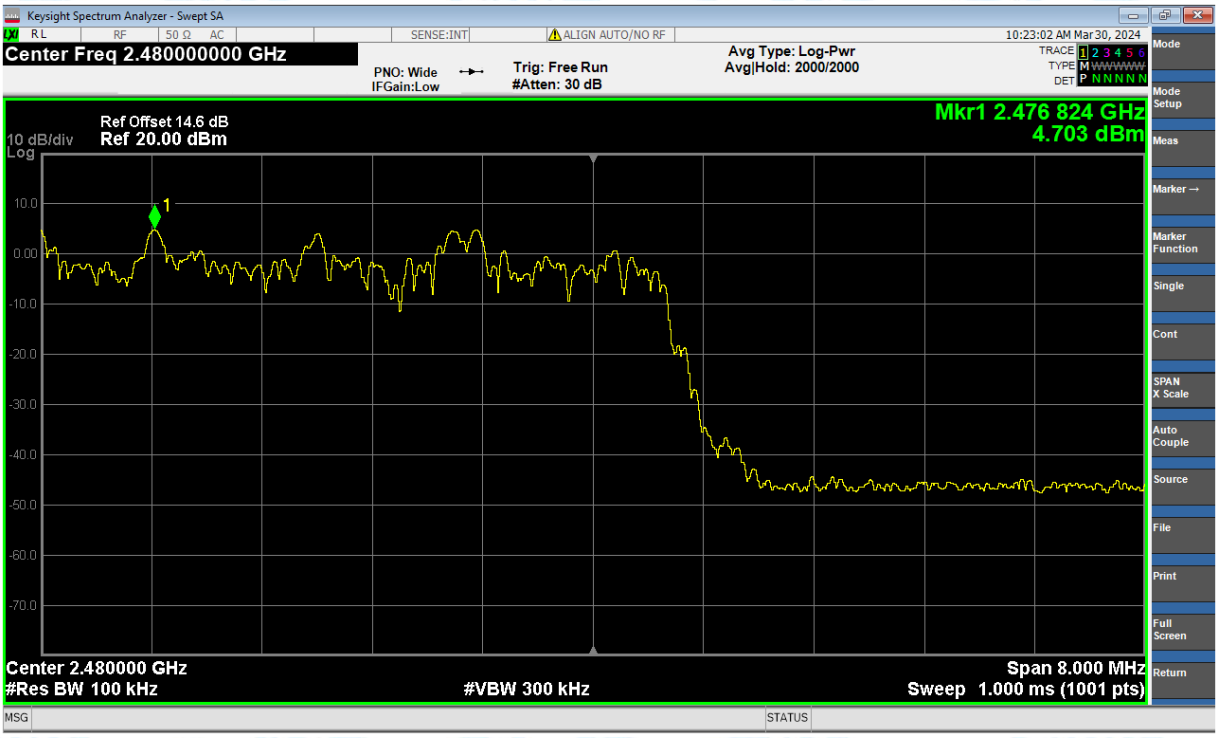
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref



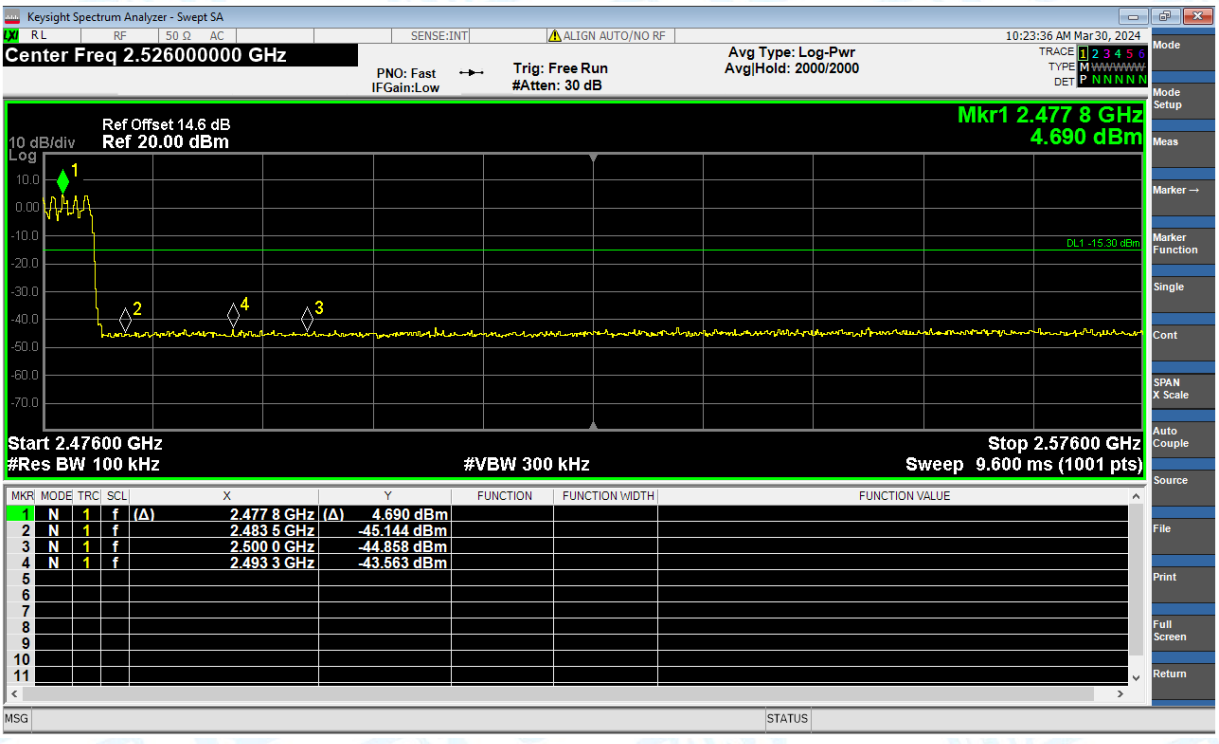
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



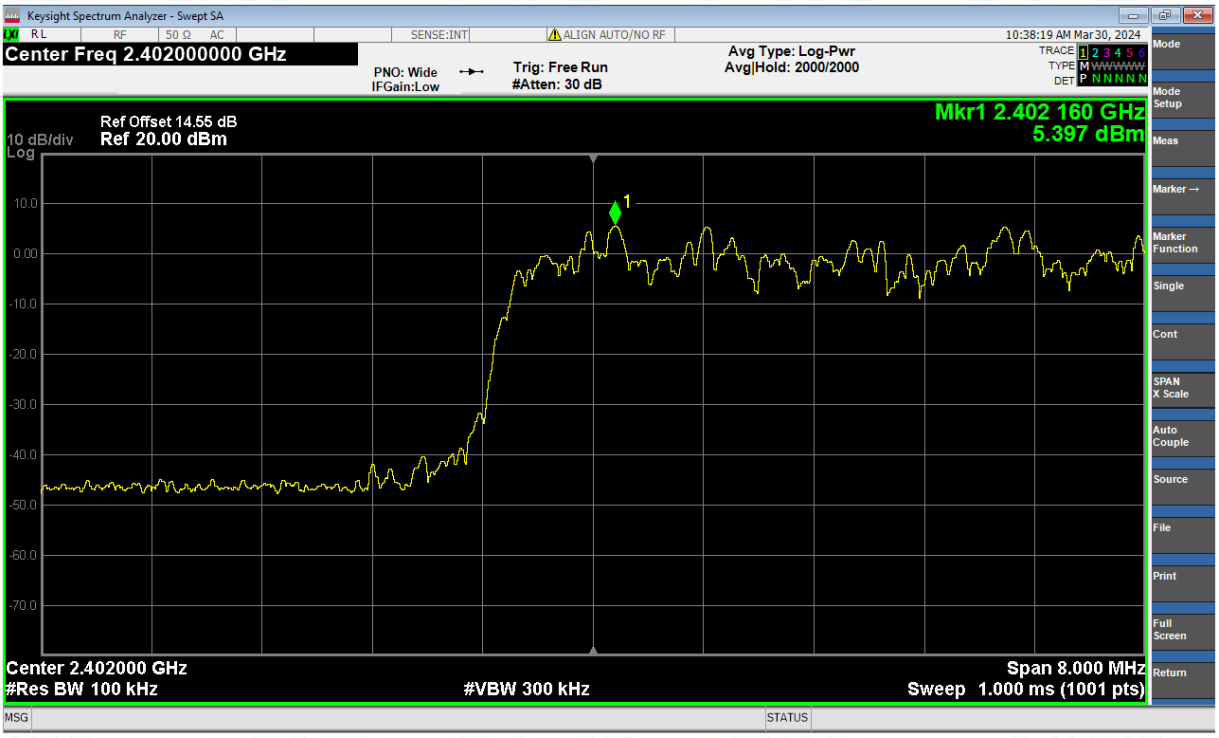
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref



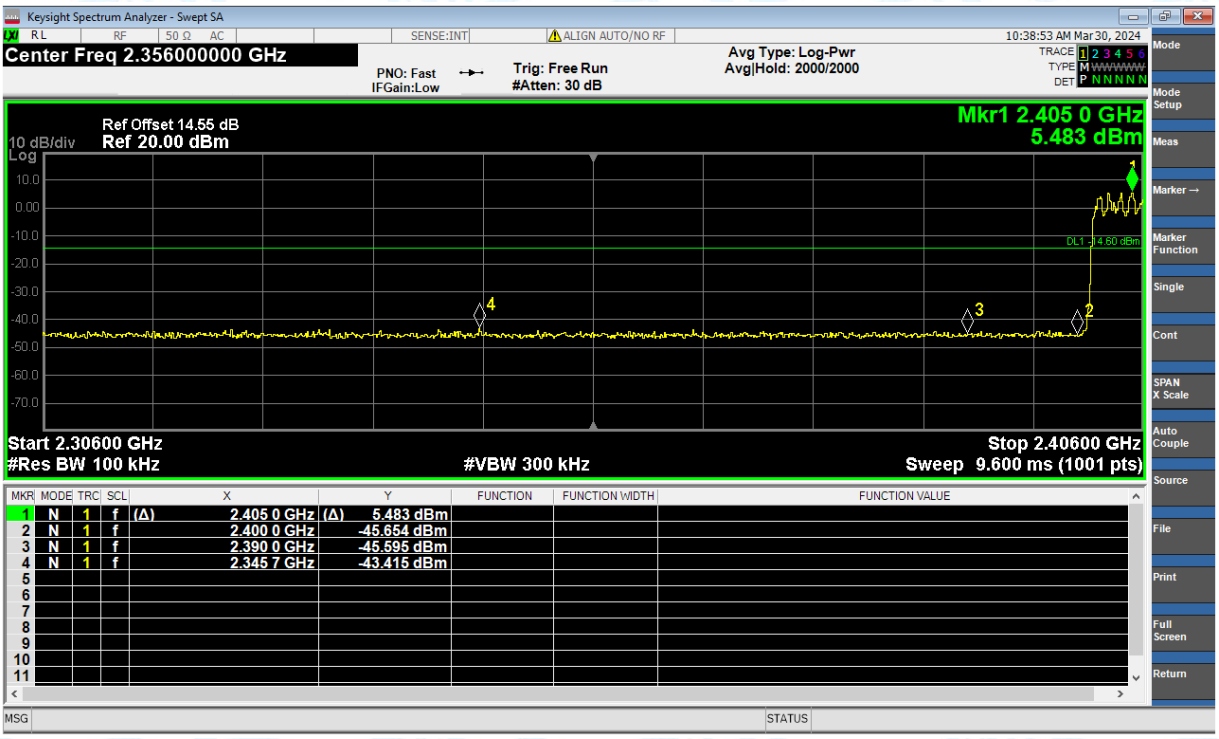
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission



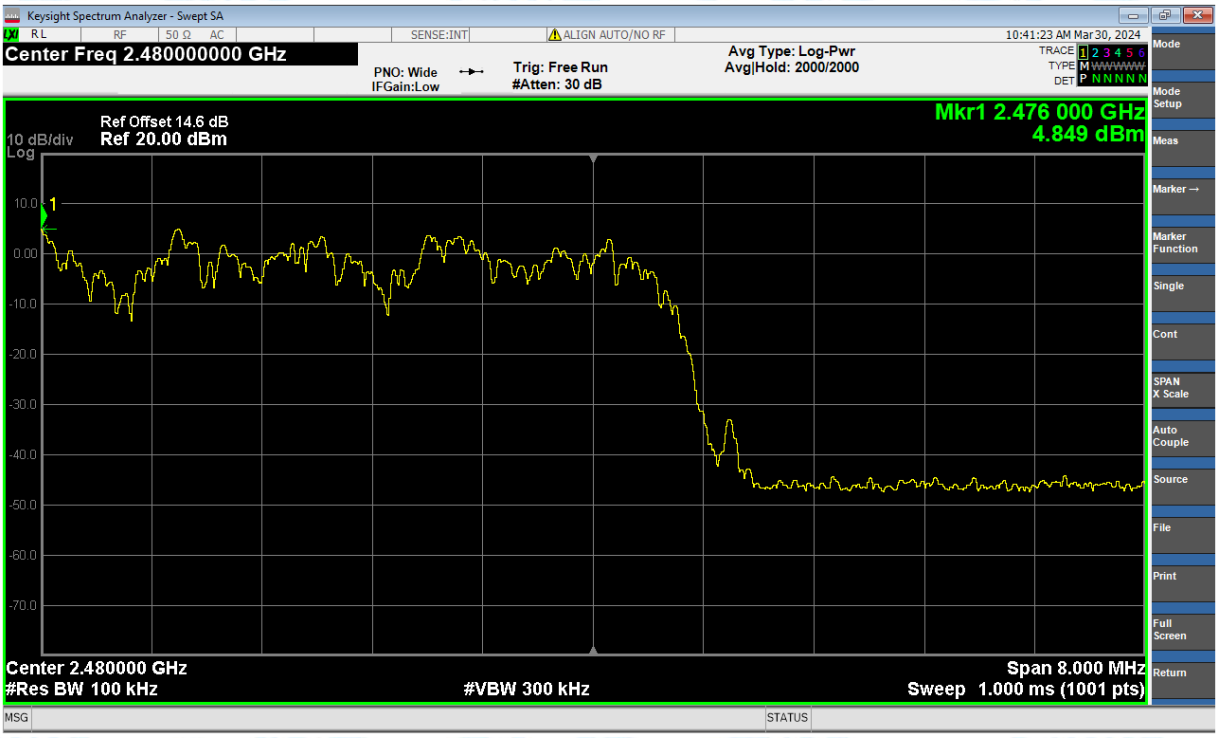
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



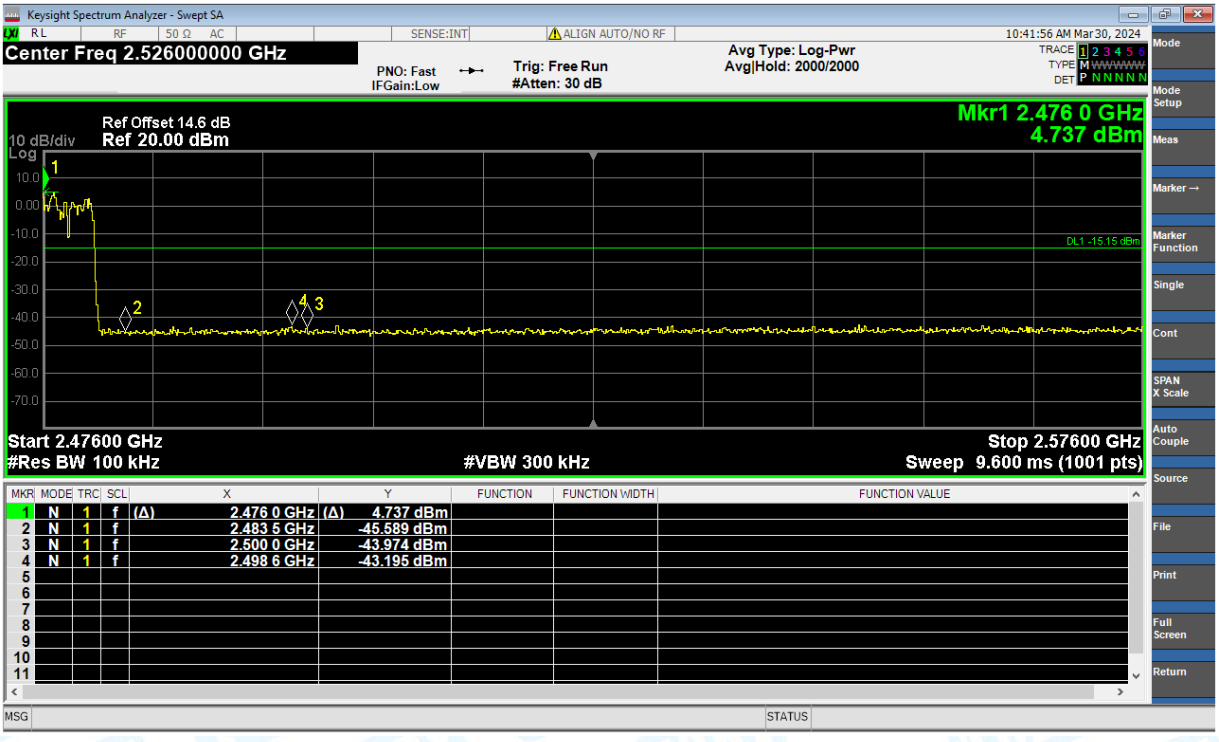
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



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



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

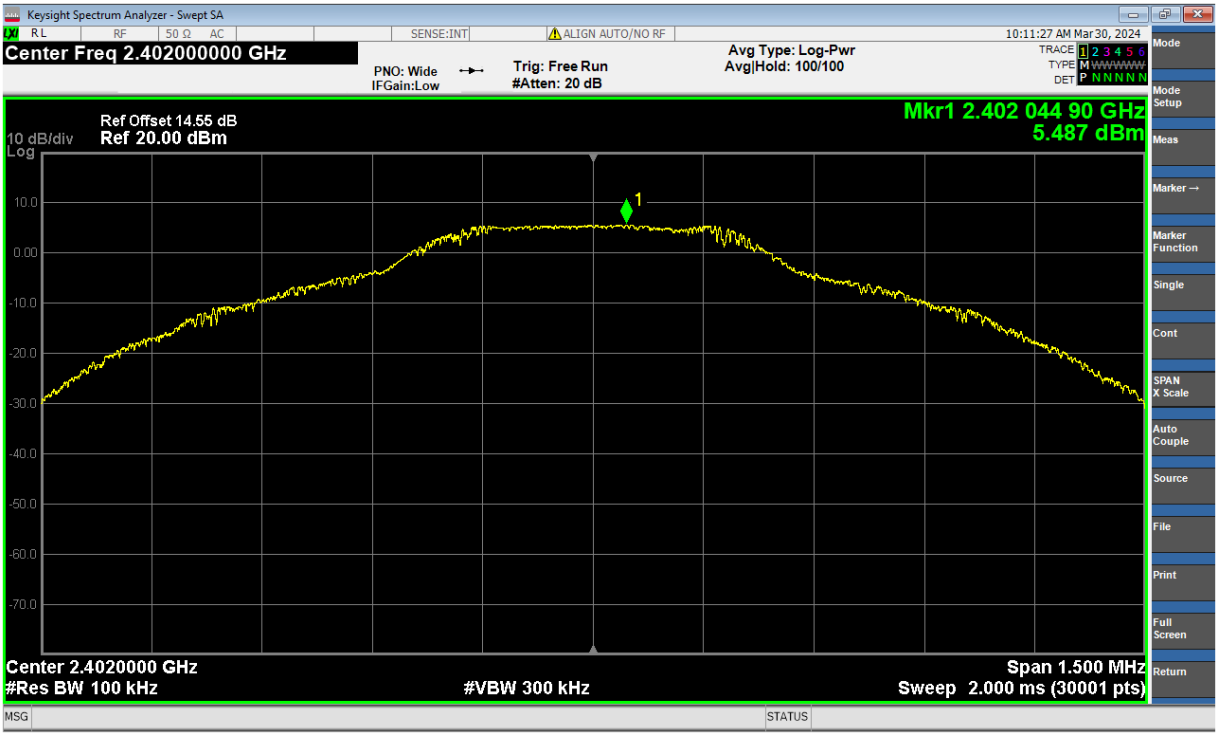


7. Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-44.72	-20	Pass
NVNT	1-DH1	2441	Ant1	-44.36	-20	Pass
NVNT	1-DH1	2480	Ant1	-44.07	-20	Pass
NVNT	2-DH1	2402	Ant1	-43.13	-20	Pass
NVNT	2-DH1	2441	Ant1	-38.66	-20	Pass
NVNT	2-DH1	2480	Ant1	-41.90	-20	Pass
NVNT	3-DH1	2402	Ant1	-42.38	-20	Pass
NVNT	3-DH1	2441	Ant1	-42.39	-20	Pass
NVNT	3-DH1	2480	Ant1	-40.4	-20	Pass

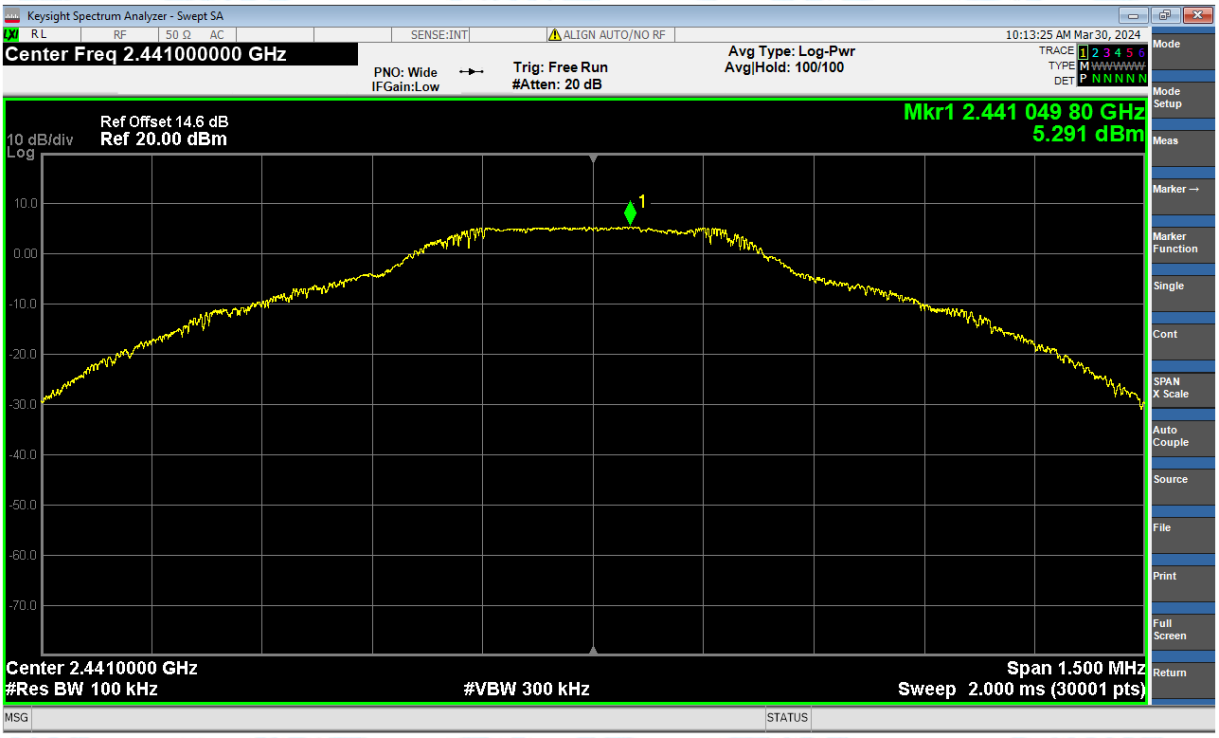
Test Graphs

Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref

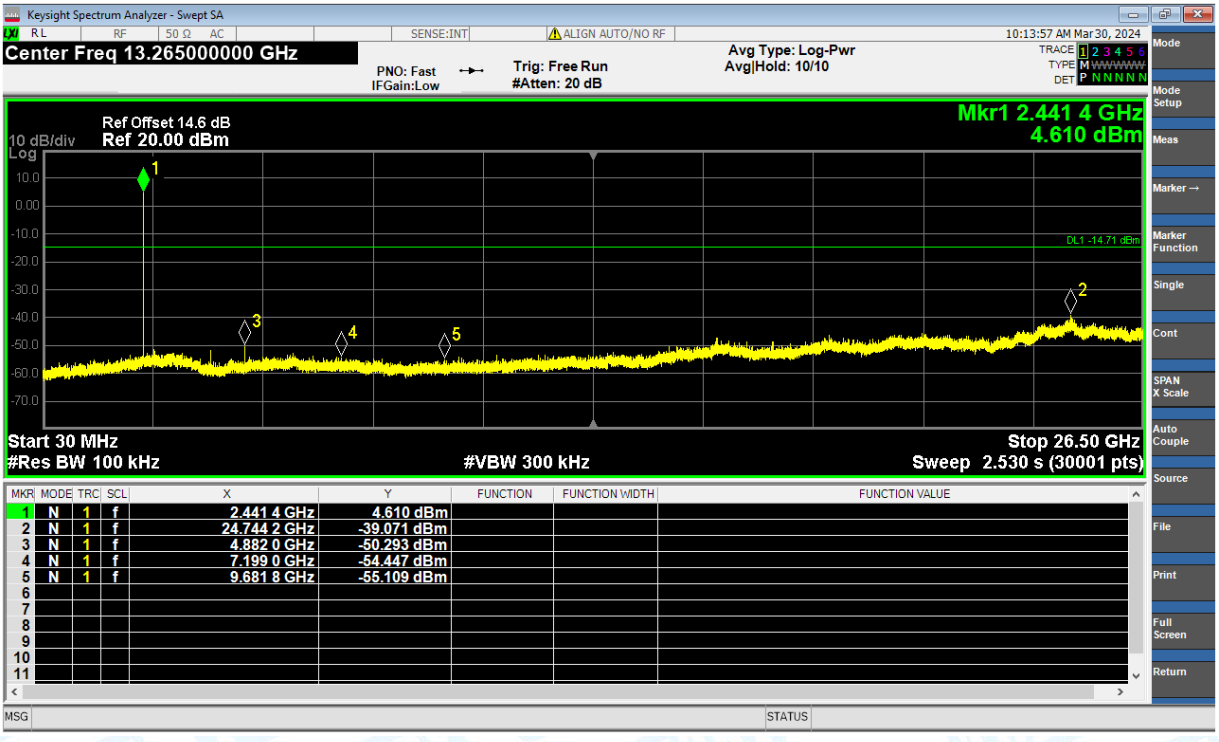


Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission

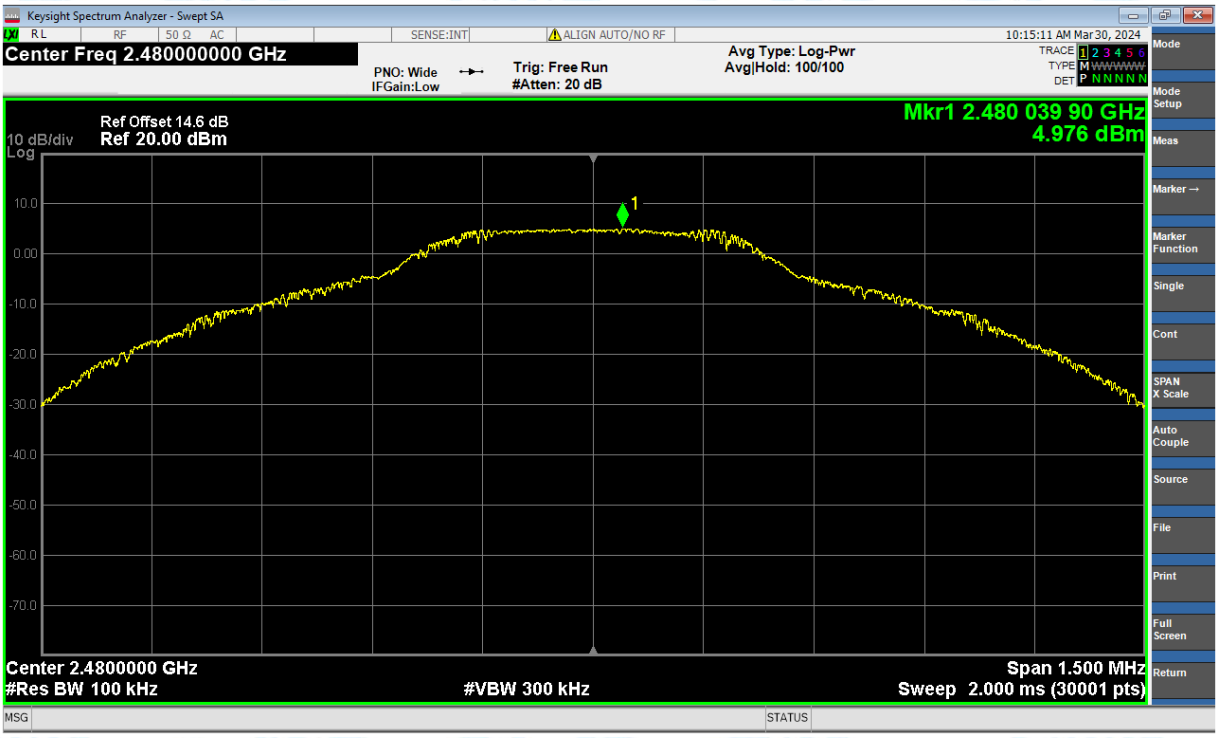
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



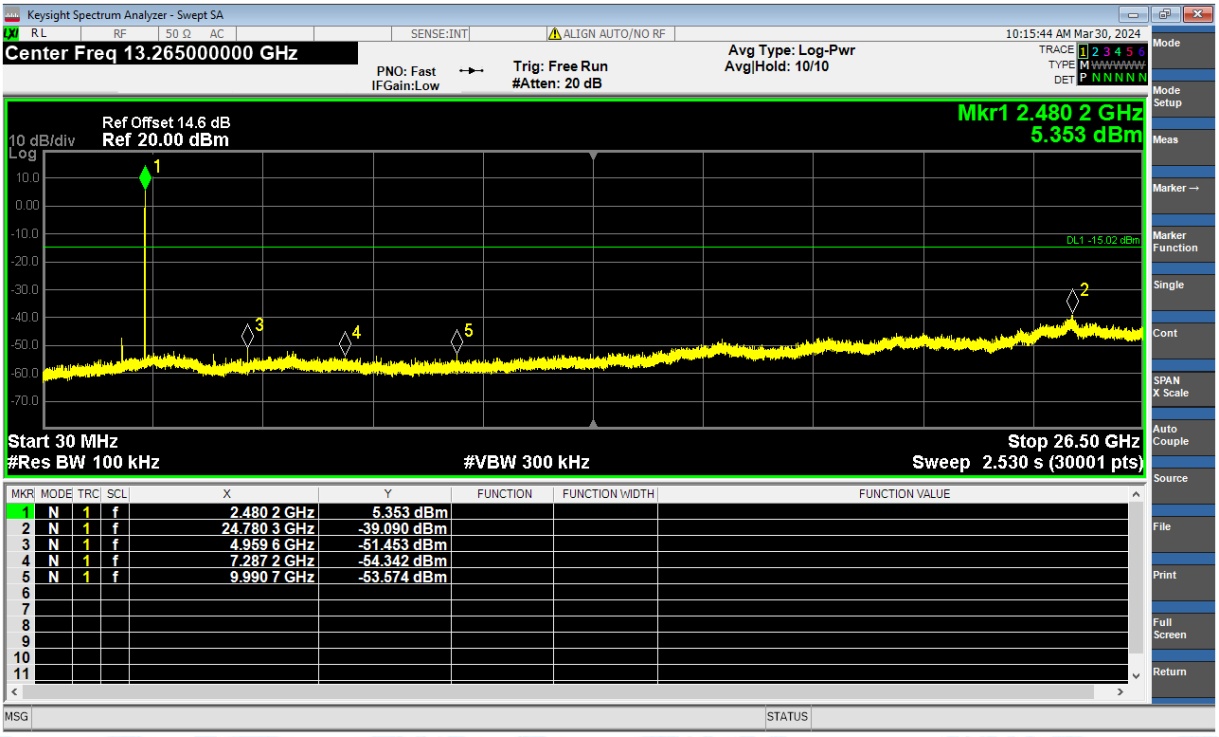
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



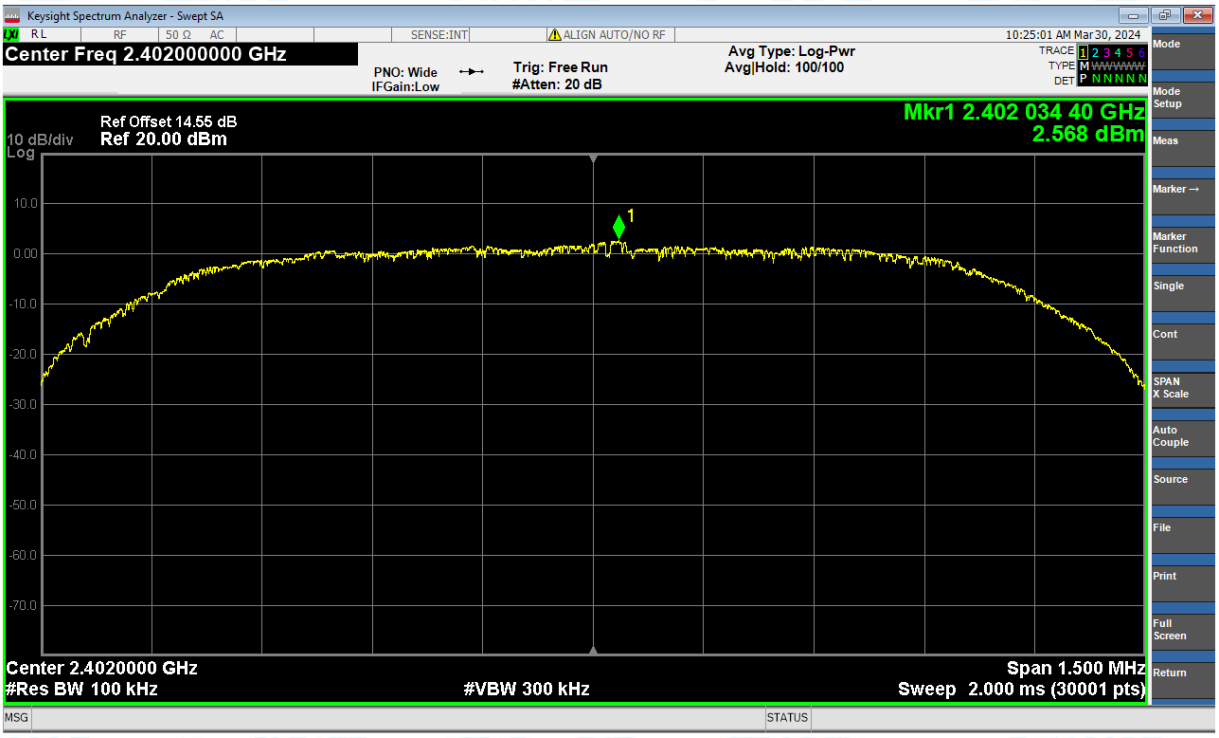
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



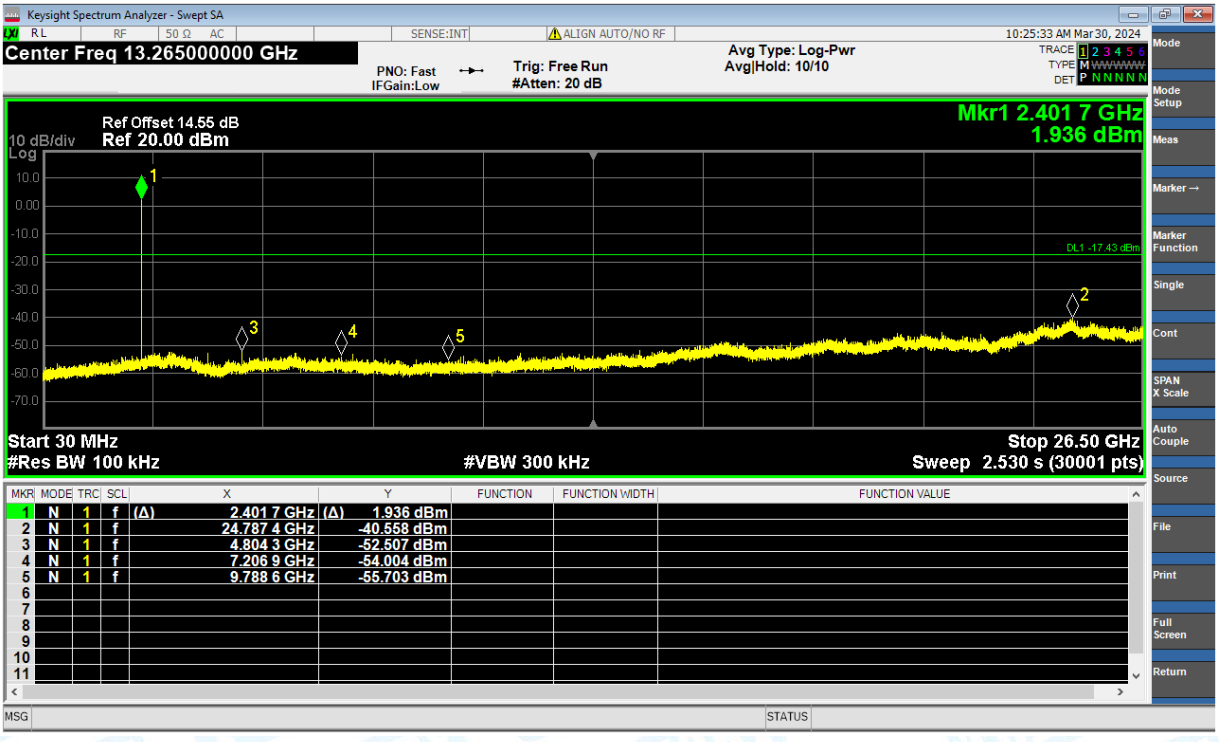
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



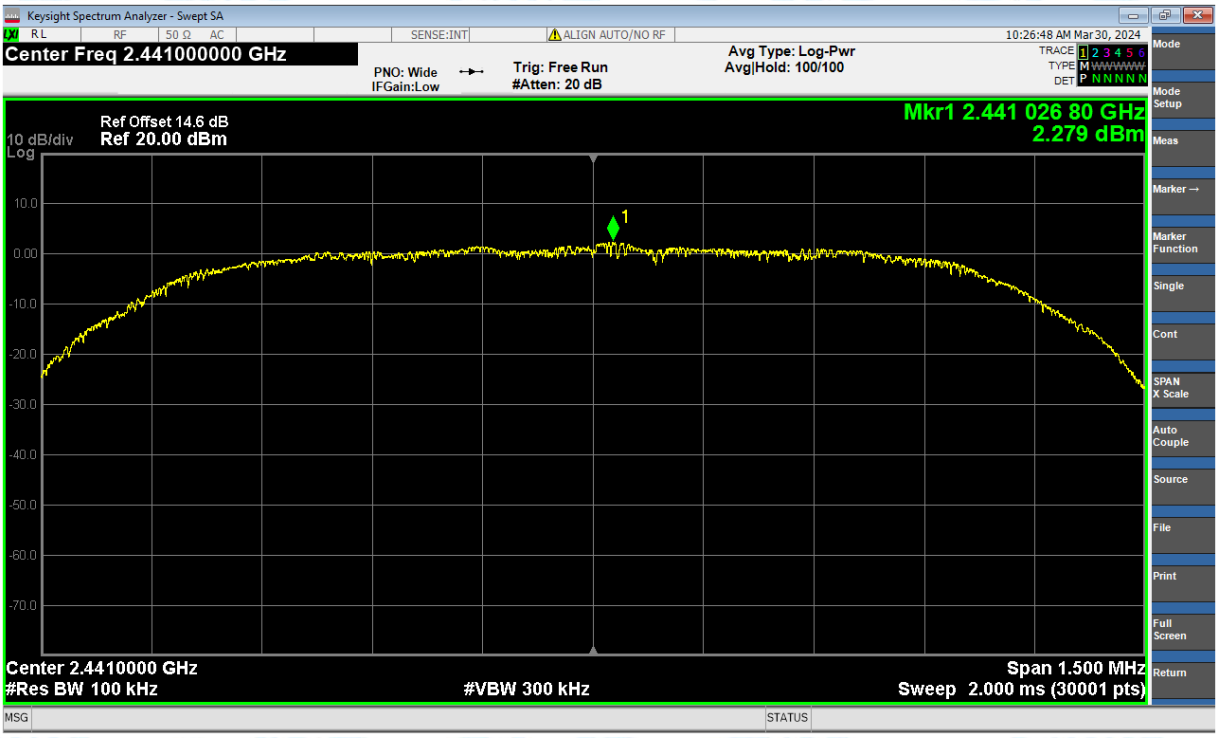
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



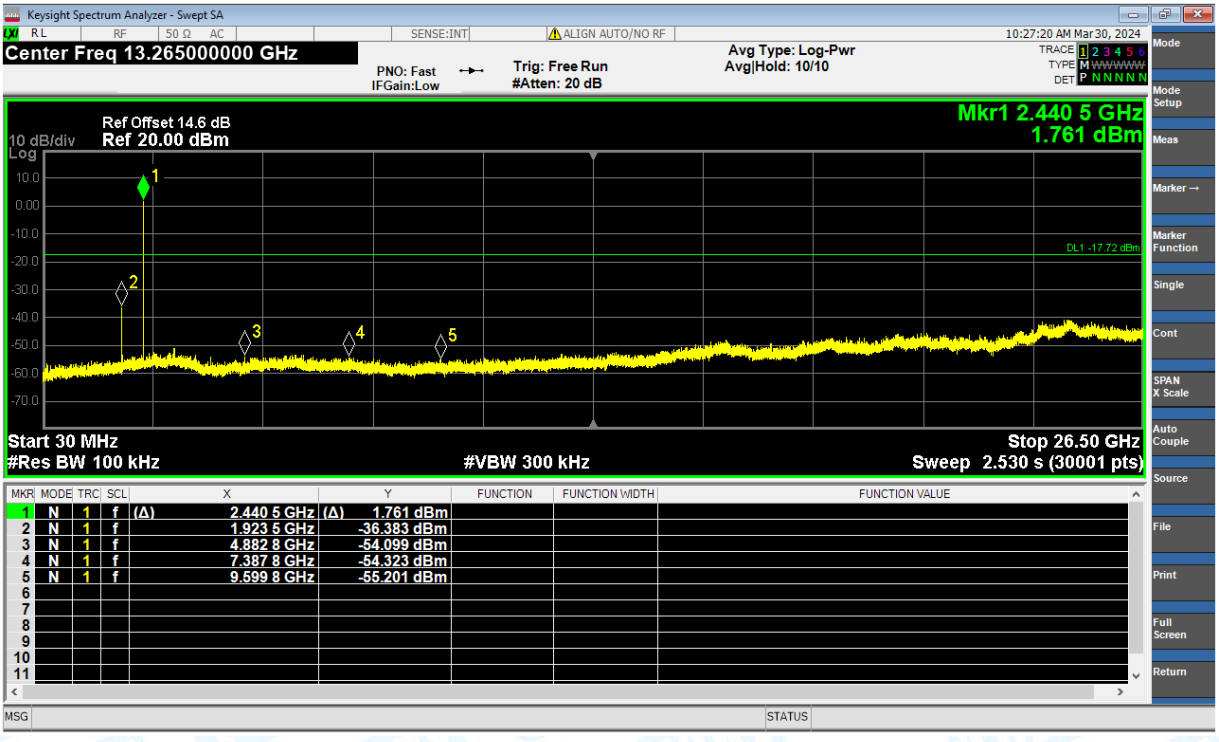
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



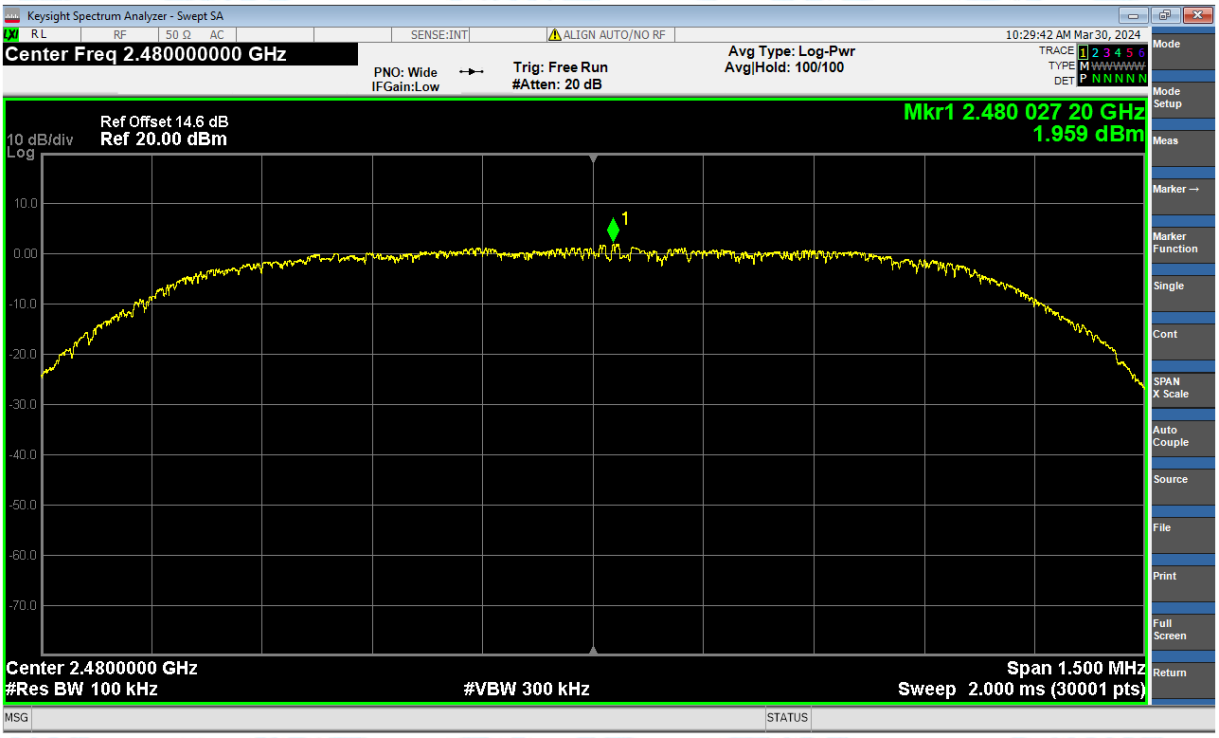
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



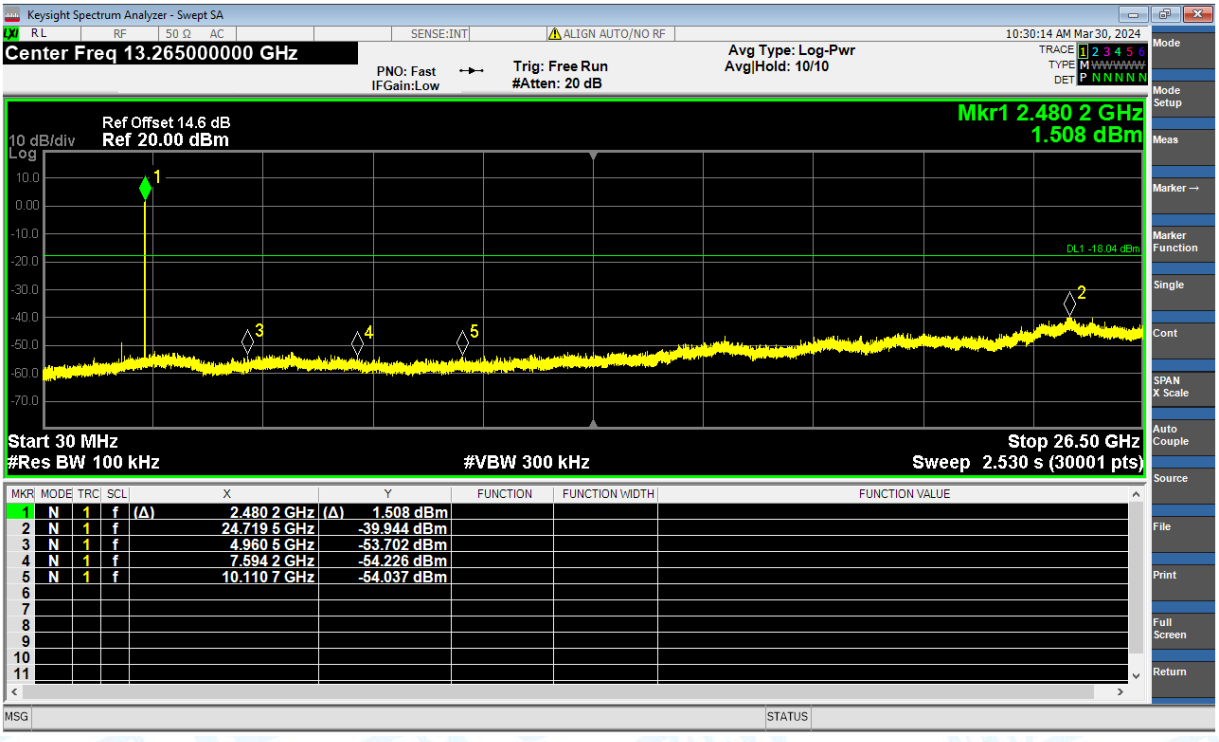
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



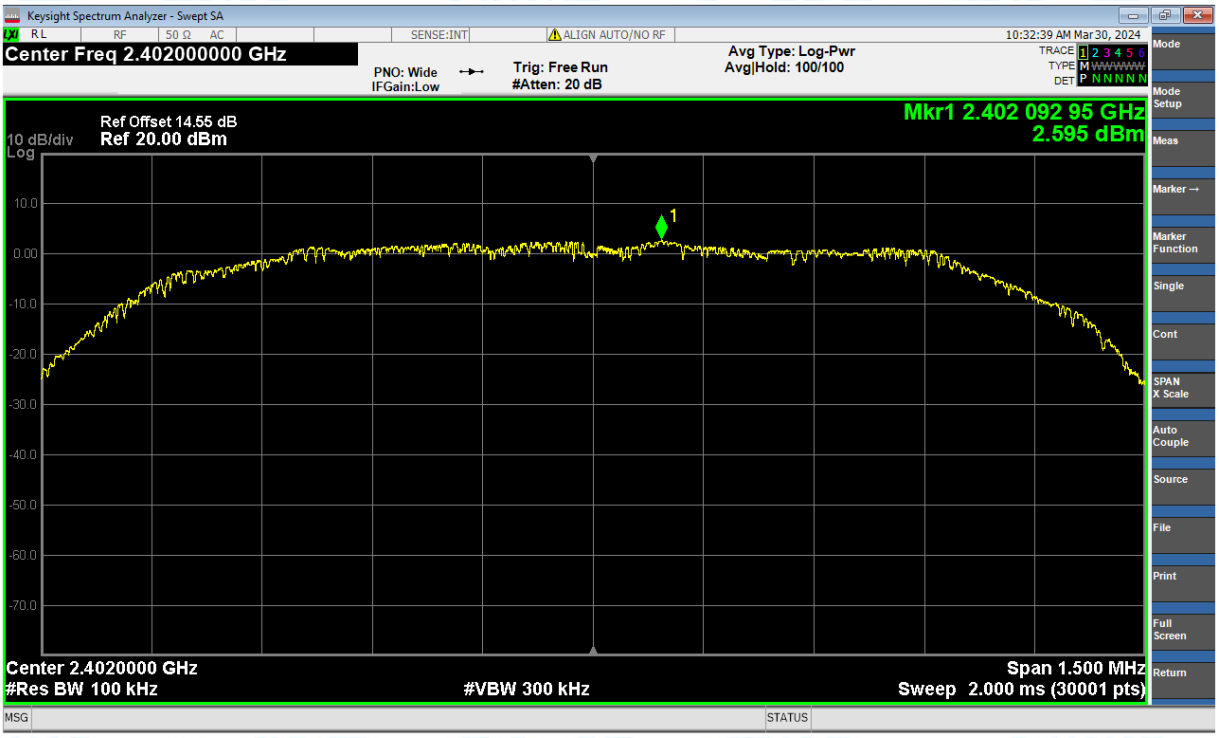
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission

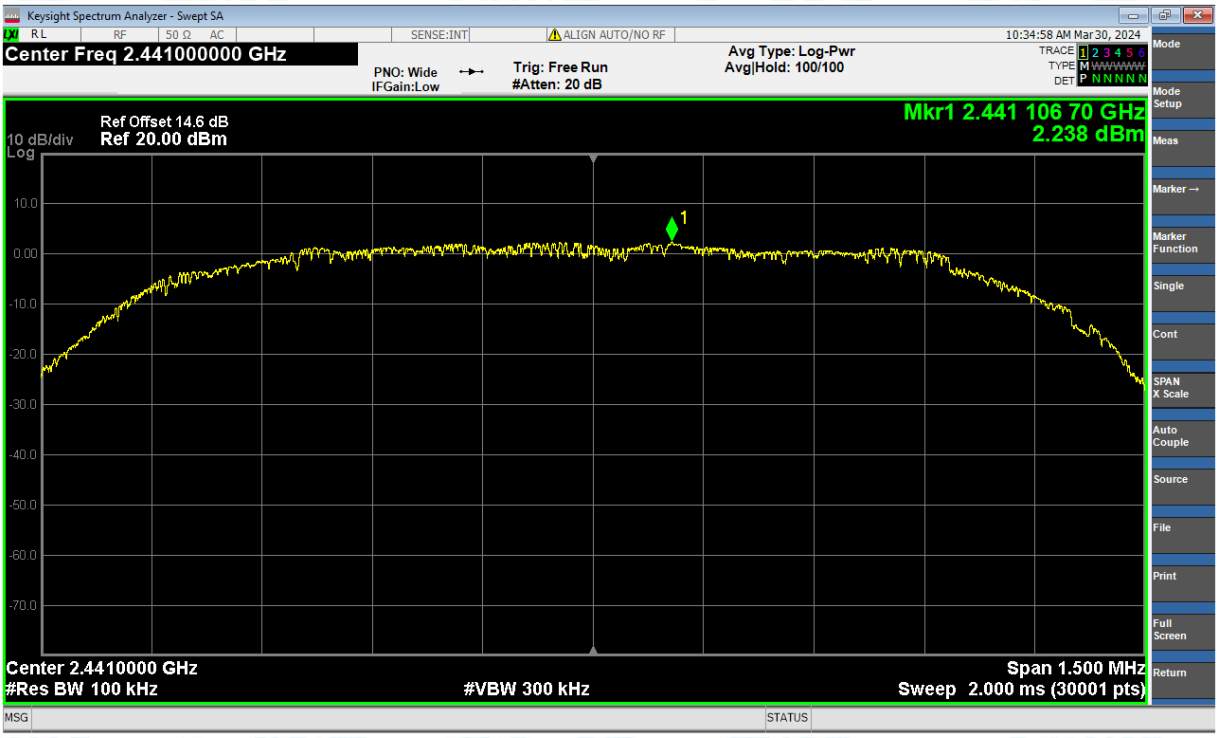


Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



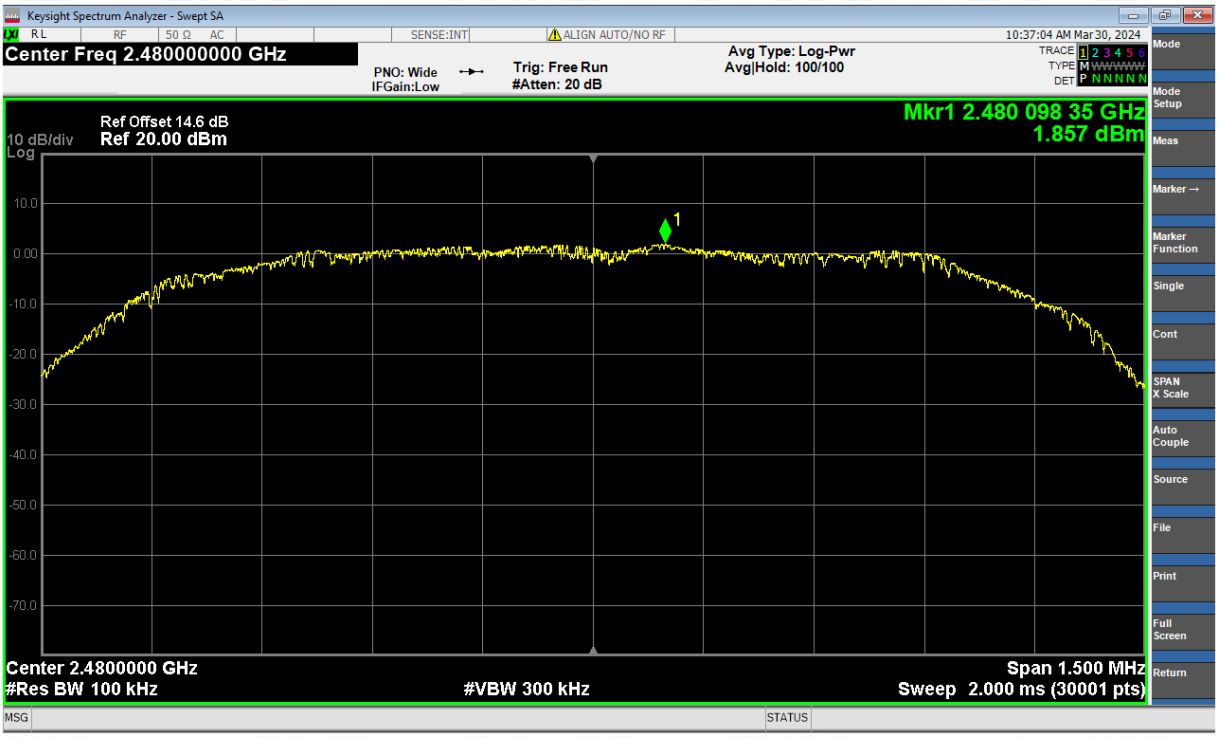
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission

Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref

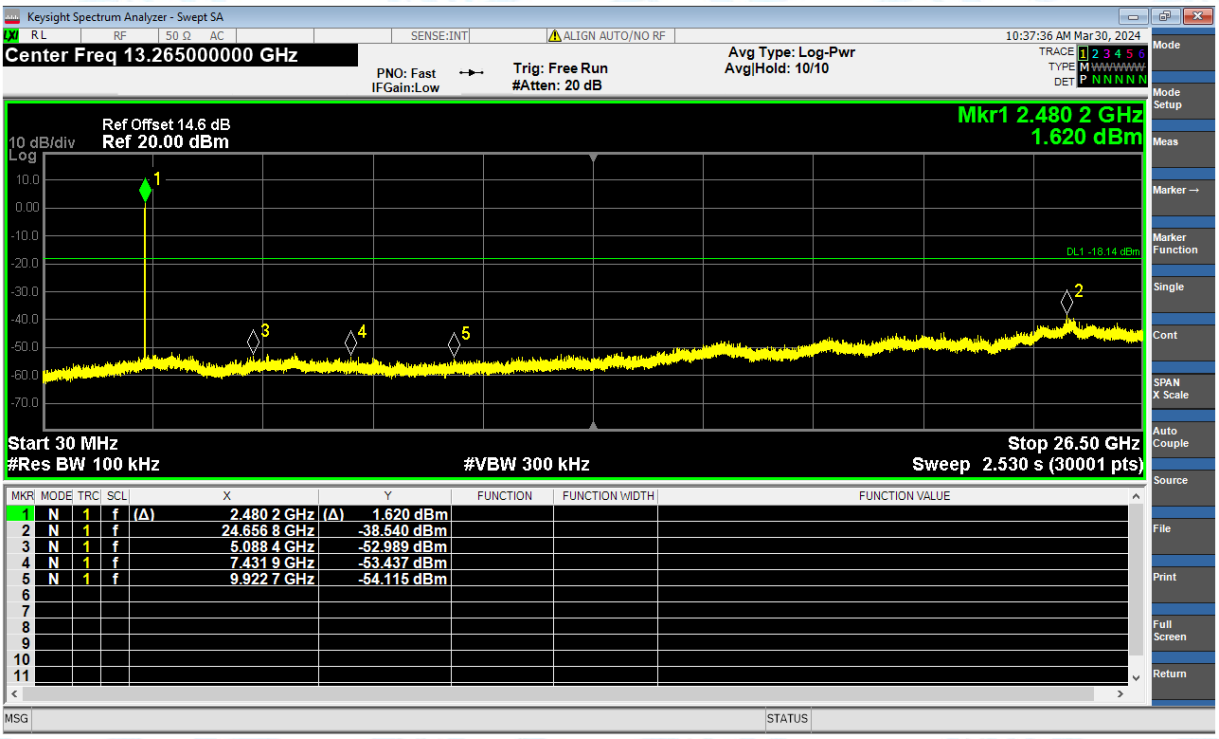


Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission

Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

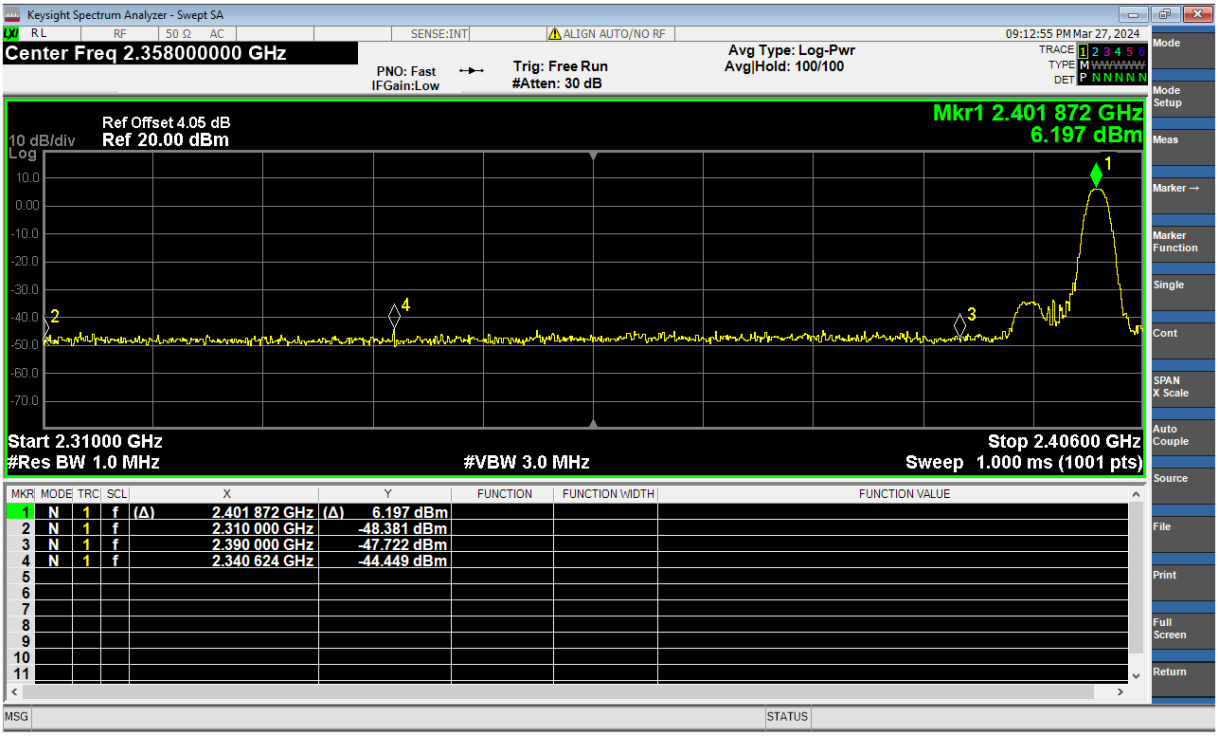


8. Restrict Band

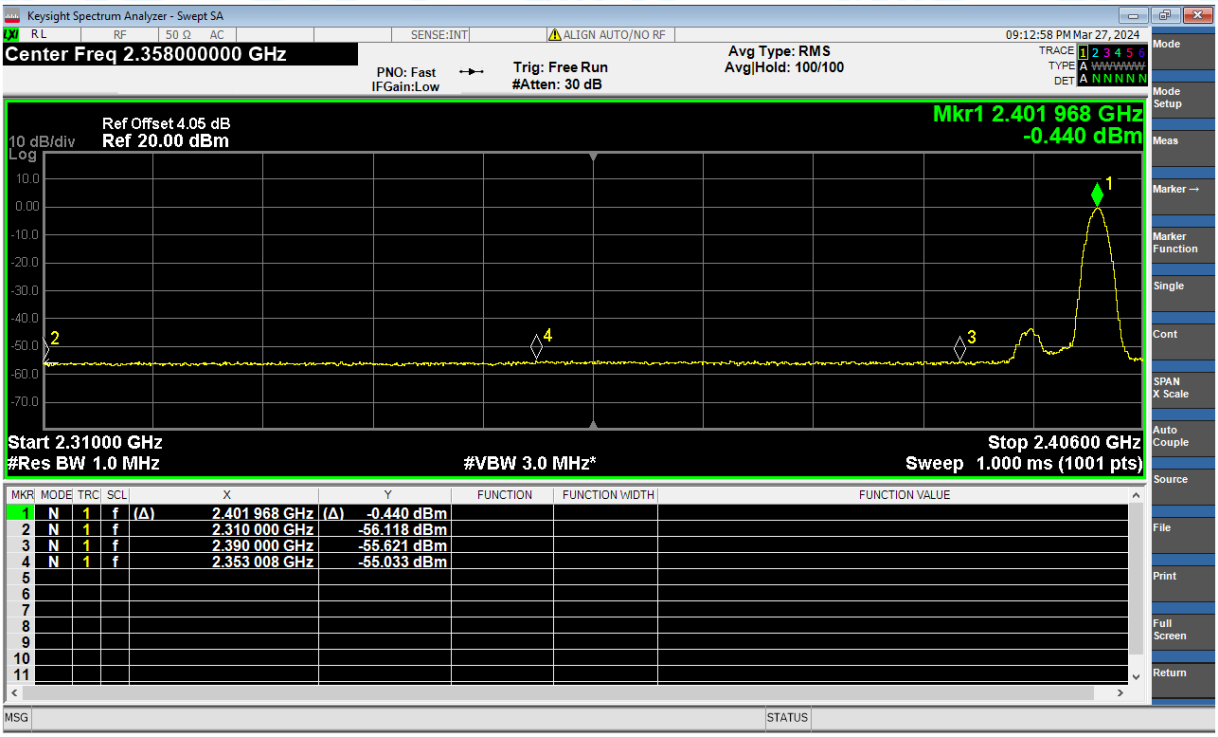
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-48.38	2	-	48.88	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.12	2	5.17	46.31	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2340.624	-44.45	2	-	52.81	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2353.008	-55.03	2	5.17	47.4	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-47.72	2	-	49.54	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-55.62	2	5.17	46.81	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-38.95	2	-	58.31	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-49.9	2	5.17	52.53	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.536	-38.54	2	-	58.72	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.56	-49.39	2	5.17	53.04	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-51.68	2	-	45.58	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-63.74	2	5.17	38.69	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-47.4	2	-	49.86	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.06	2	5.06	46.26	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2357.904	-44.16	2	-	53.1	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2378.352	-54.86	2	5.06	47.46	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-47.7	2	-	49.56	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-54.92	2	5.06	47.4	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-37.39	2	-	59.87	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-48.85	2	4.95	53.36	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.68	-35.13	2	-	62.13	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.608	-48.23	2	4.95	53.98	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-51.61	2	-	45.65	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-62.82	2	4.95	39.39	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-46.69	2	-	50.57	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.46	2	5.06	45.86	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2333.136	-44.2	2	-	53.06	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2361.648	-54.44	2	5.06	47.88	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-47.7	2	-	49.56	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-55.82	2	5.06	46.5	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-36.52	2	-	60.74	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-51.23	2	5.06	51.09	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.512	-36.52	2	-	60.74	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.56	-50.98	2	5.06	51.34	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-50.26	2	-	47	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-62.26	2	5.06	40.06	Average	54	Pass

Test Graphs

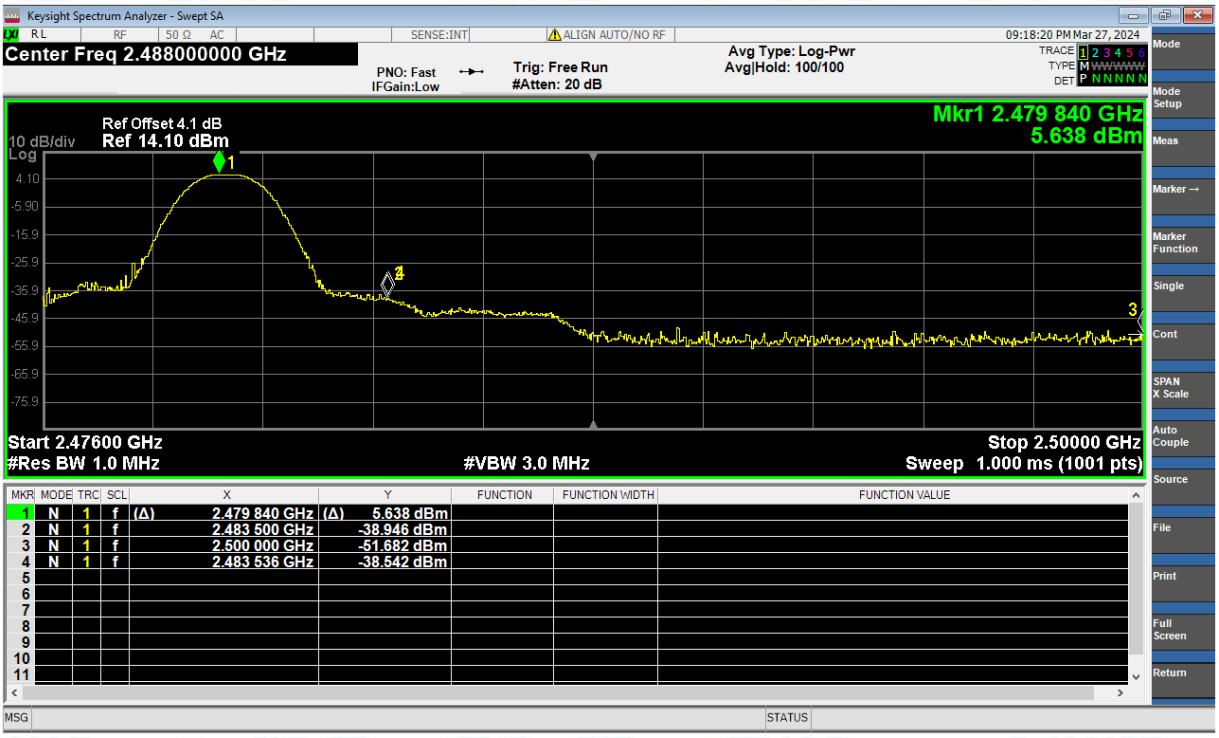
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



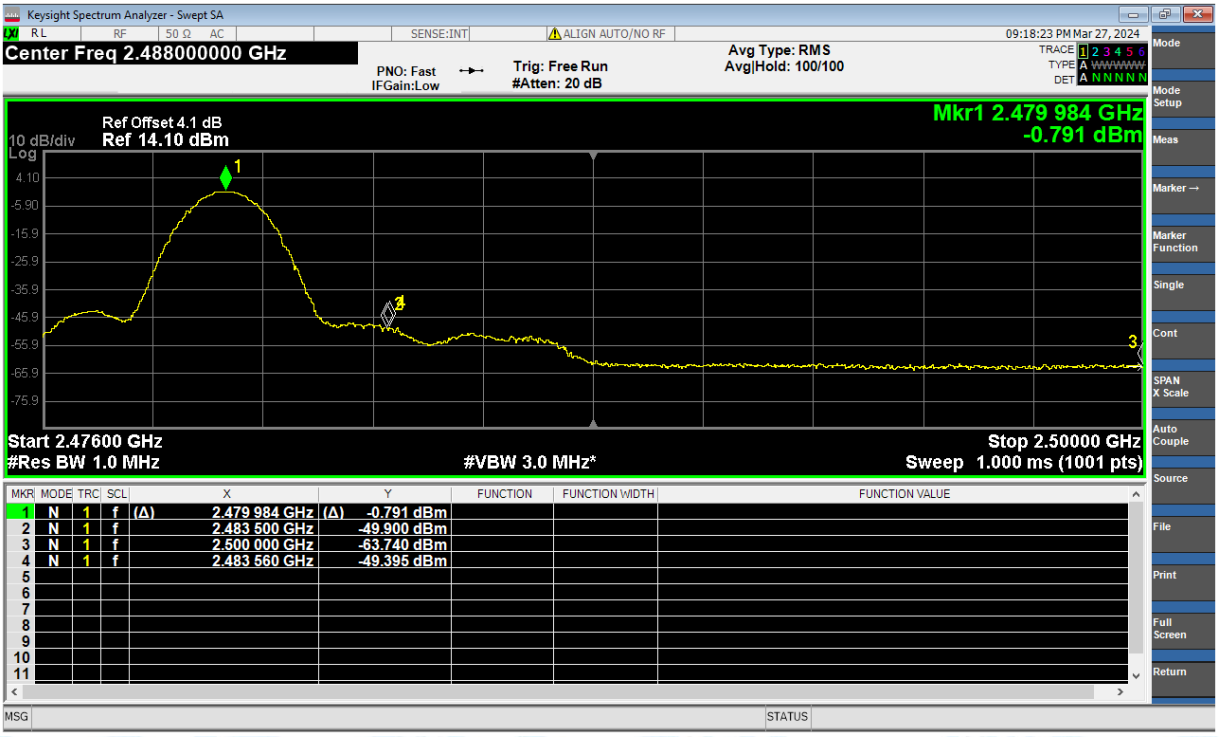
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



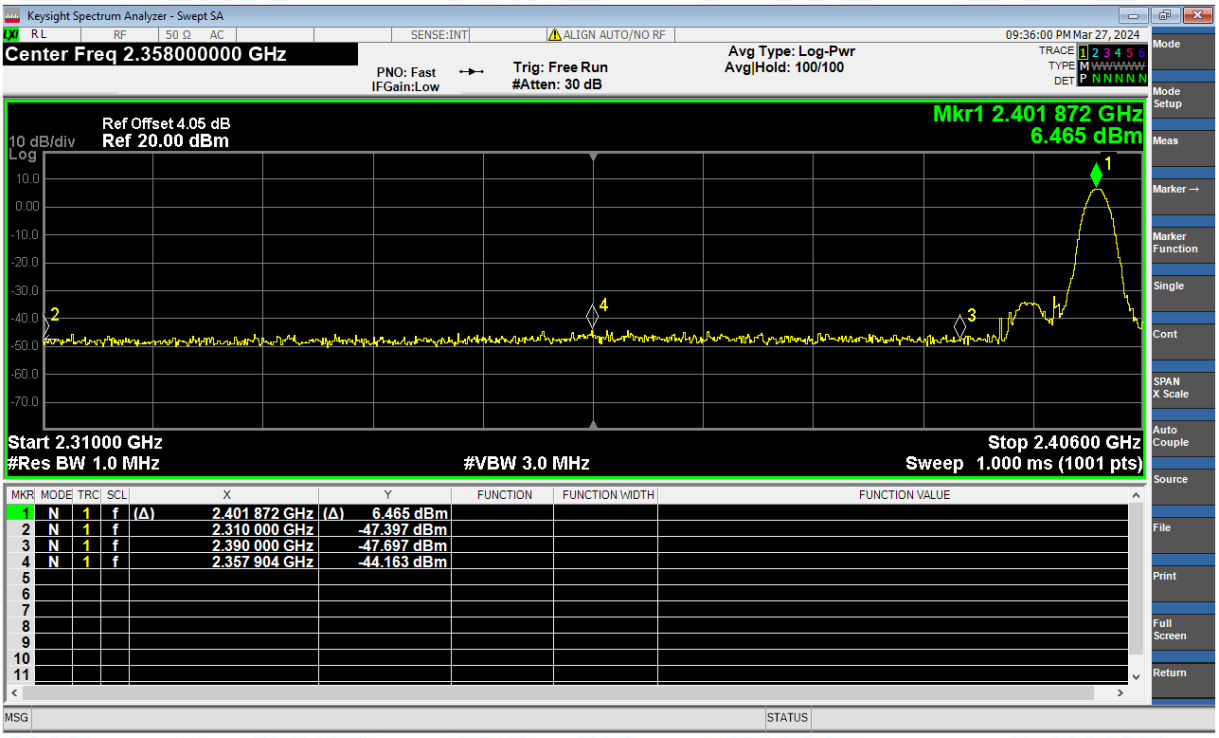
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



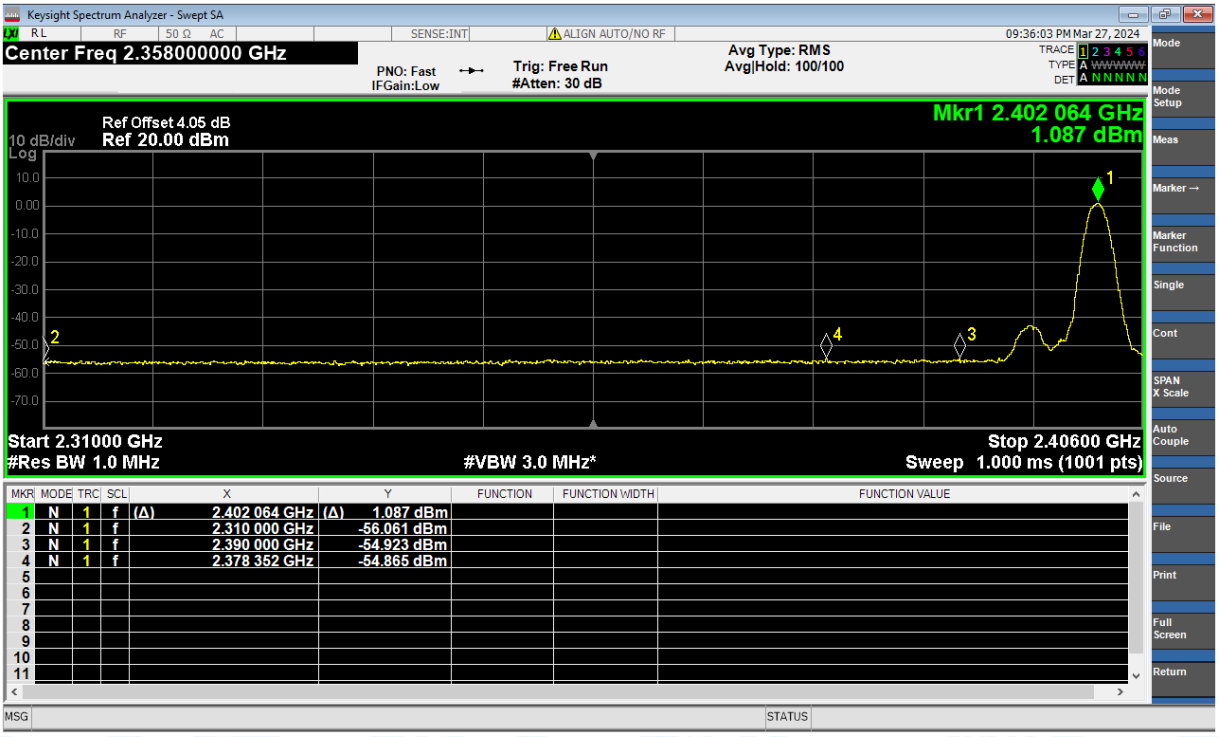
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



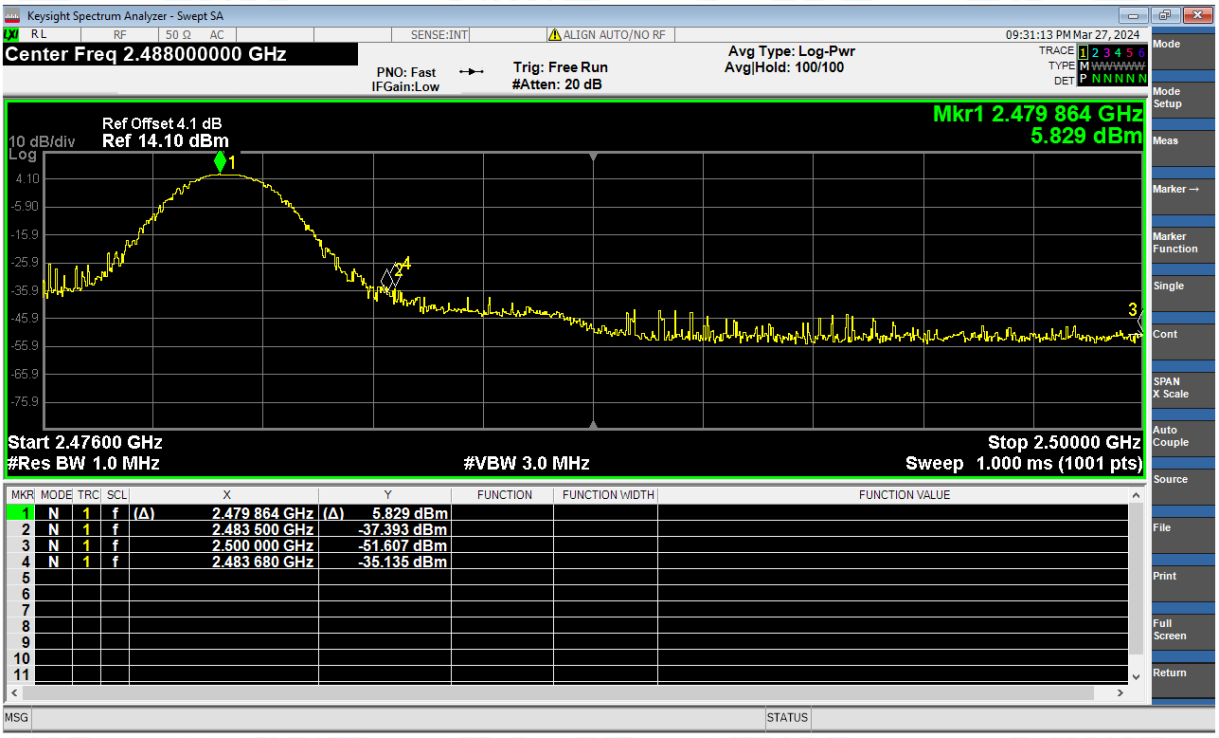
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



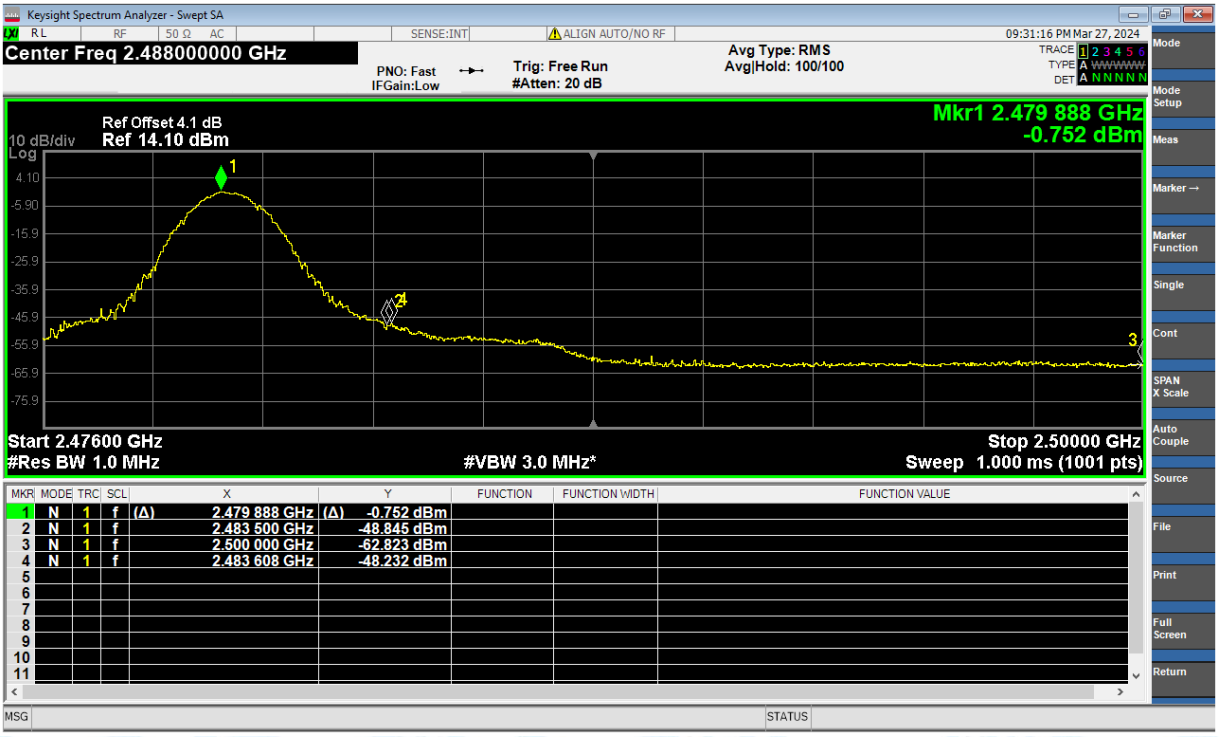
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



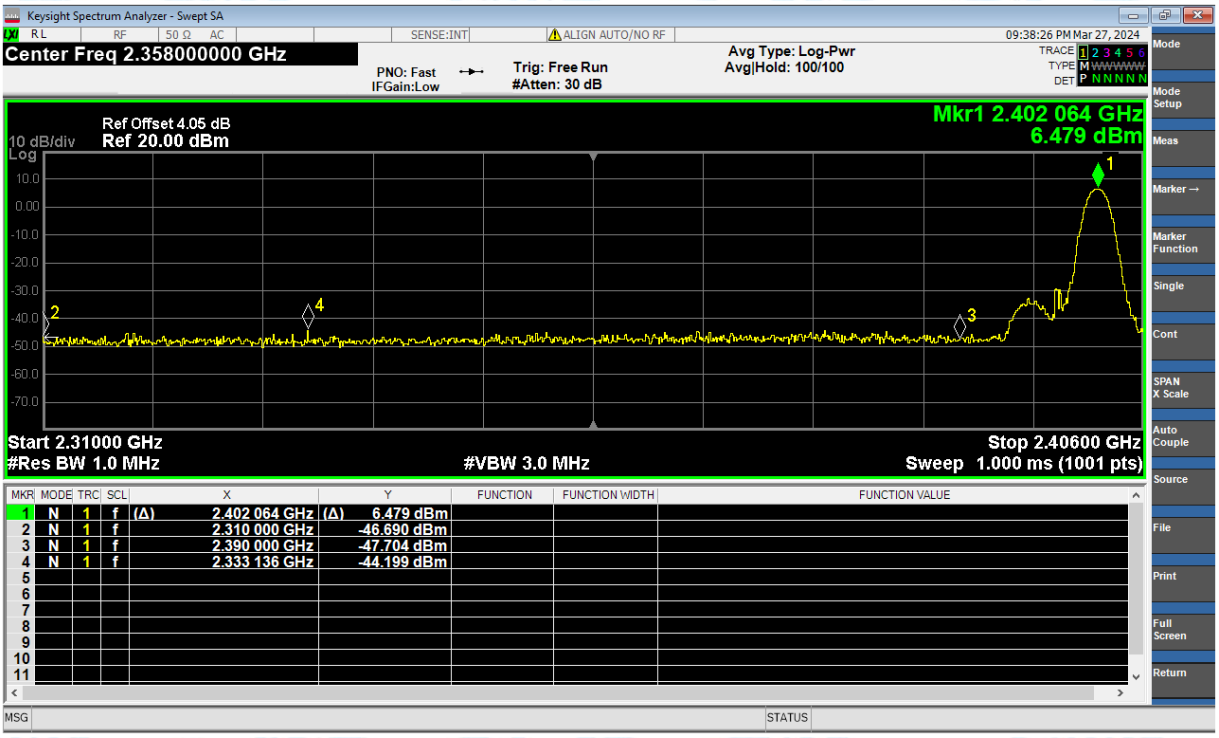
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



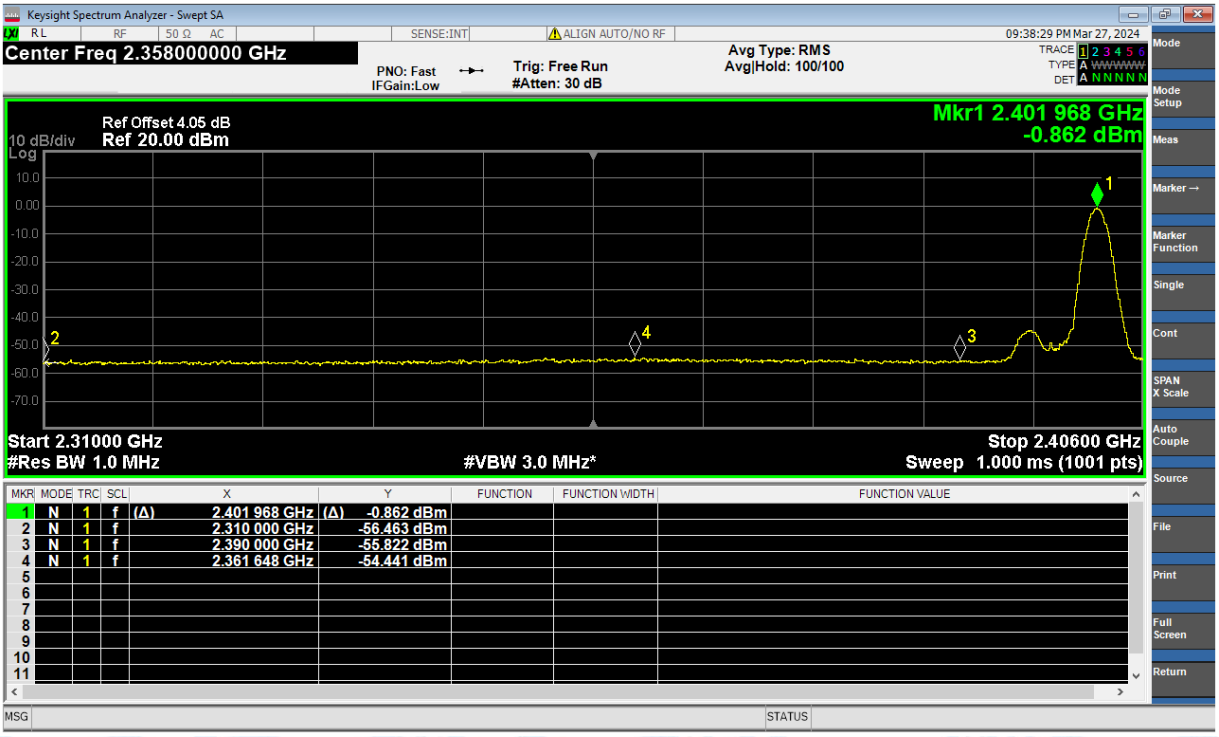
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



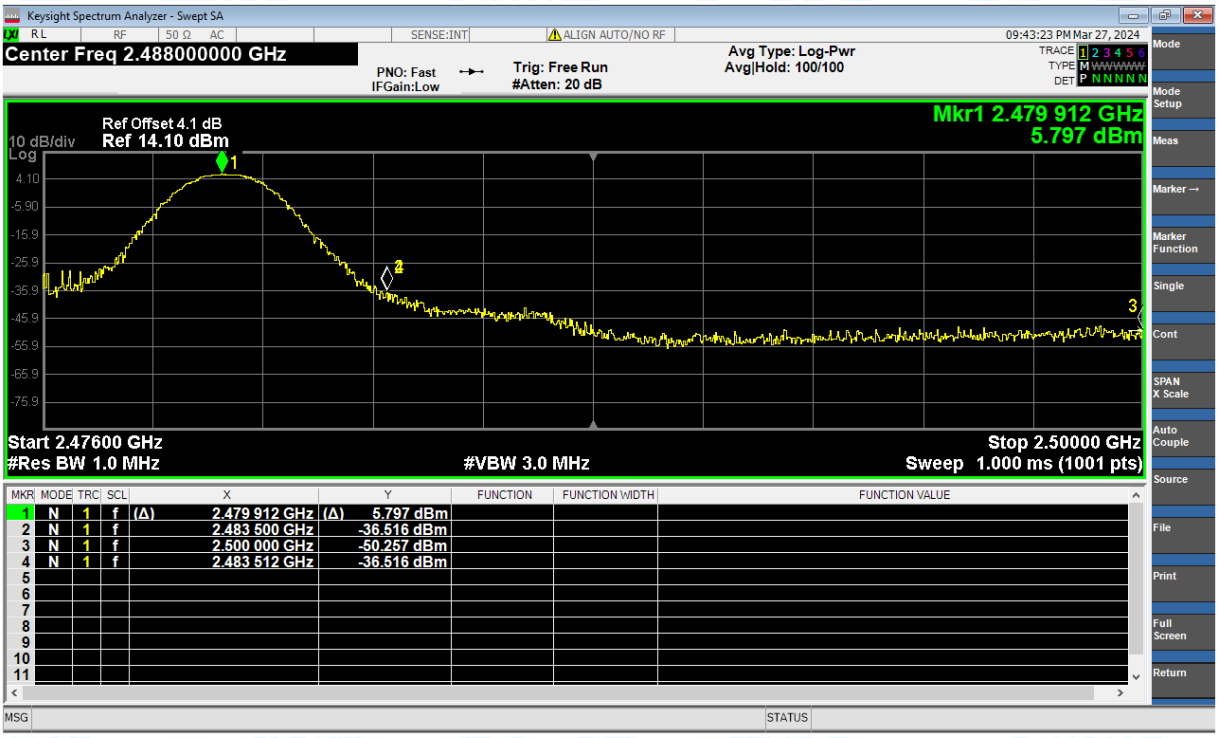
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



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



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



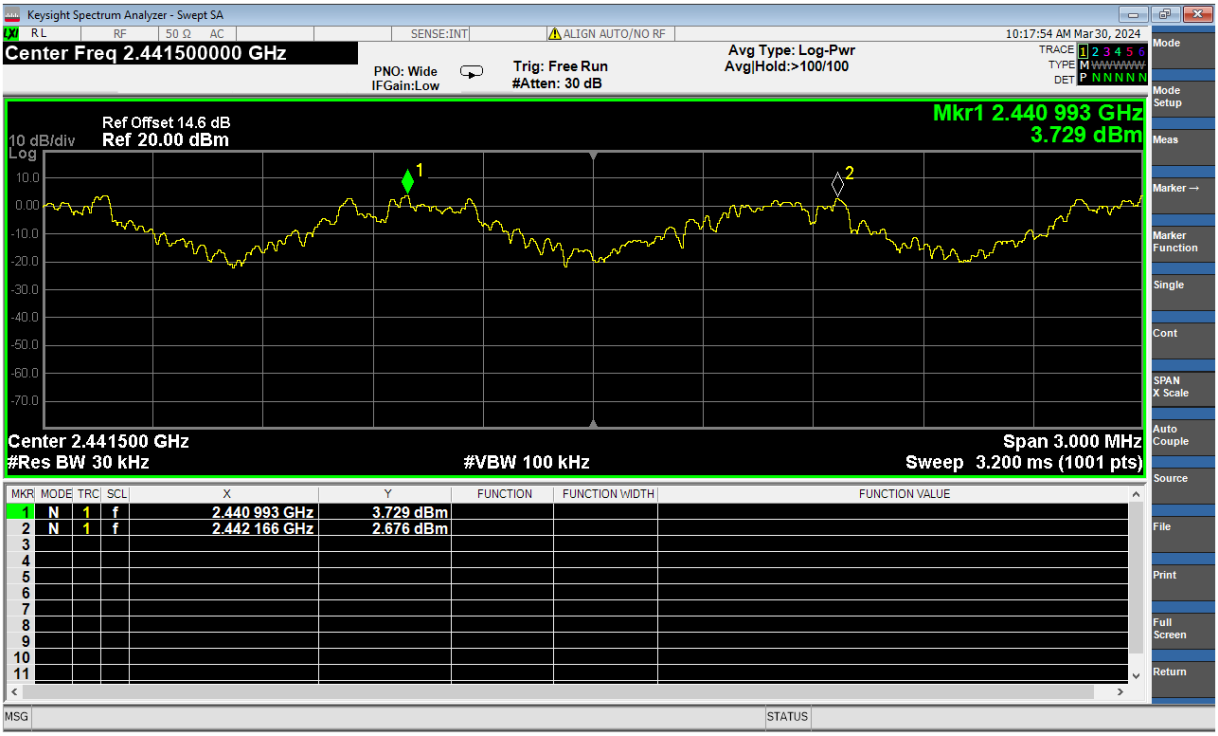
Restrict Band NVNT 3-DH1 2480MHz Ant1 No-Hopping Average

9. Carrier Frequencies Separation

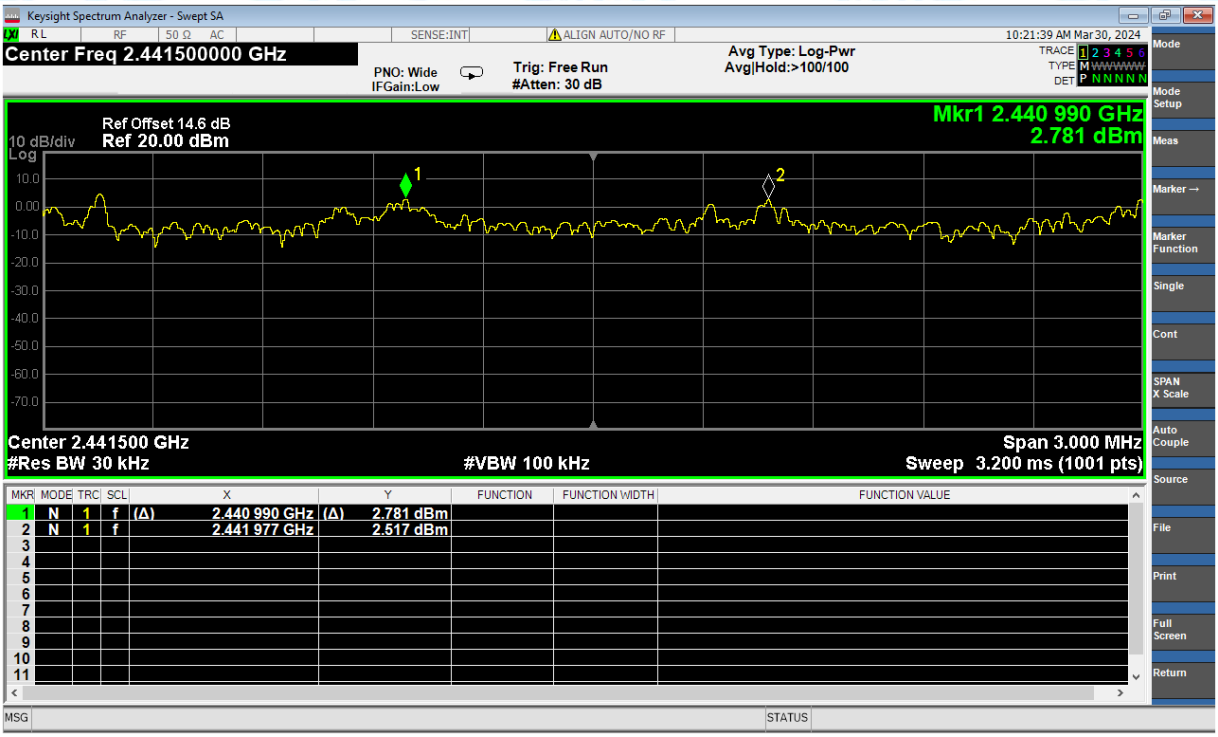
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.993	2442.166	1.173	0.680	Pass
NVNT	2-DH1	Ant1	2440.99	2441.977	0.987	0.913	Pass
NVNT	3-DH1	Ant1	2440.993	2441.995	1.002	0.900	Pass

Test Graphs

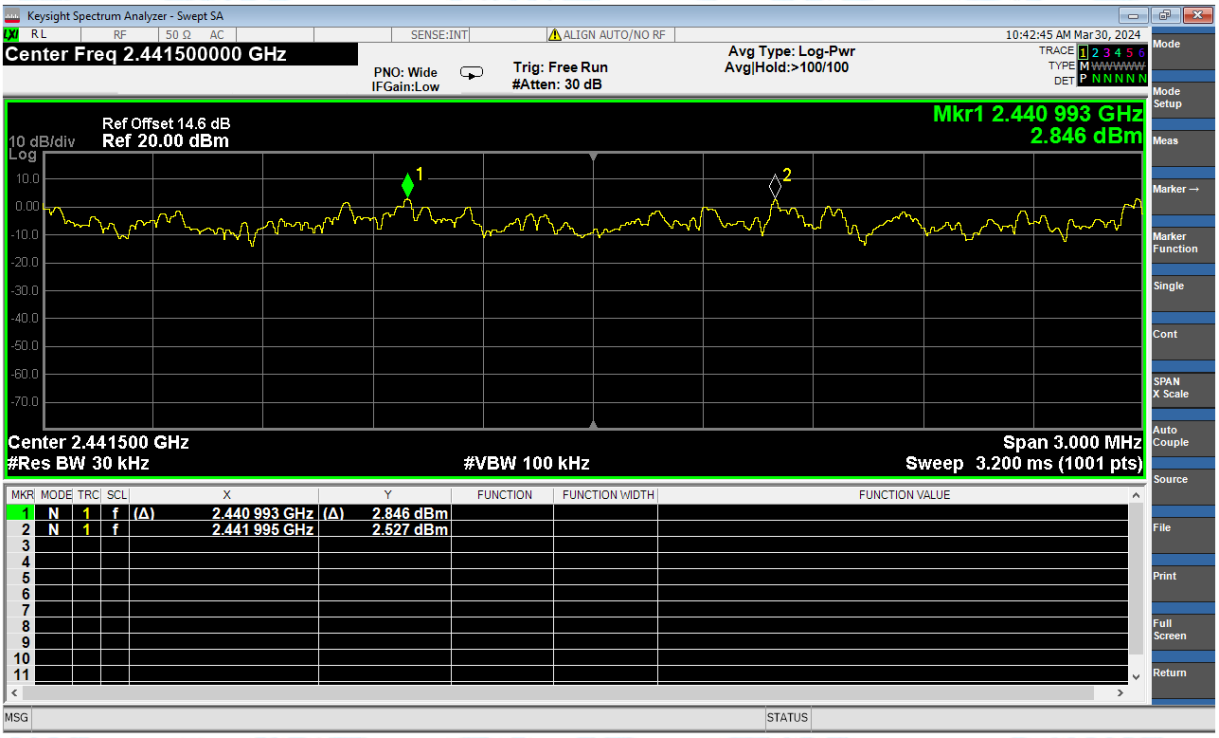
CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



CFS NVNT 3-DH1 2441MHz Ant1

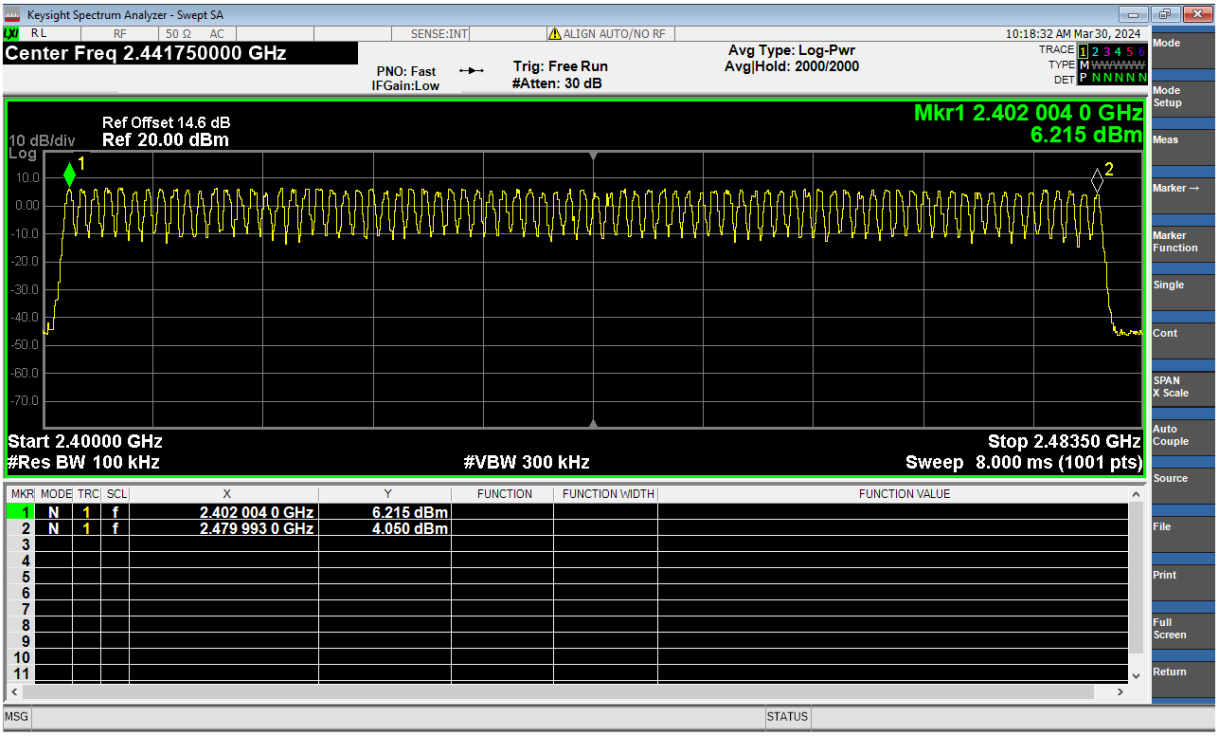


10. Number of Hopping Channel

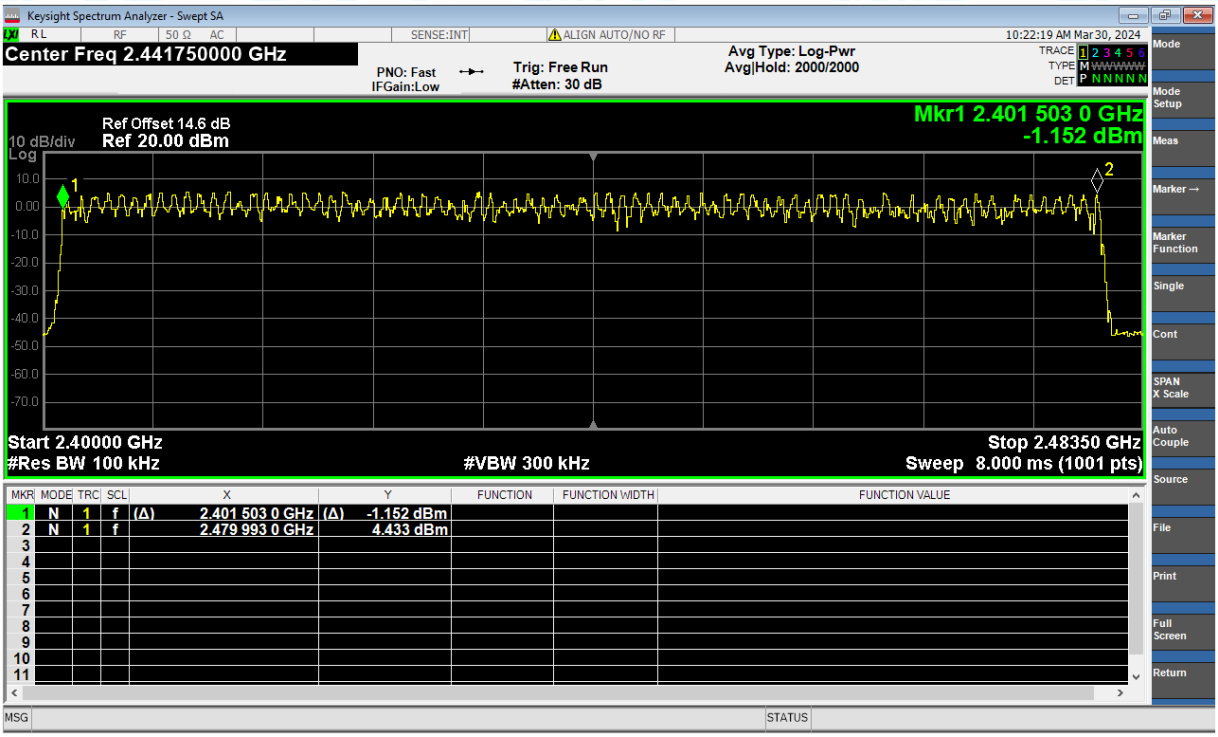
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

Test Graphs

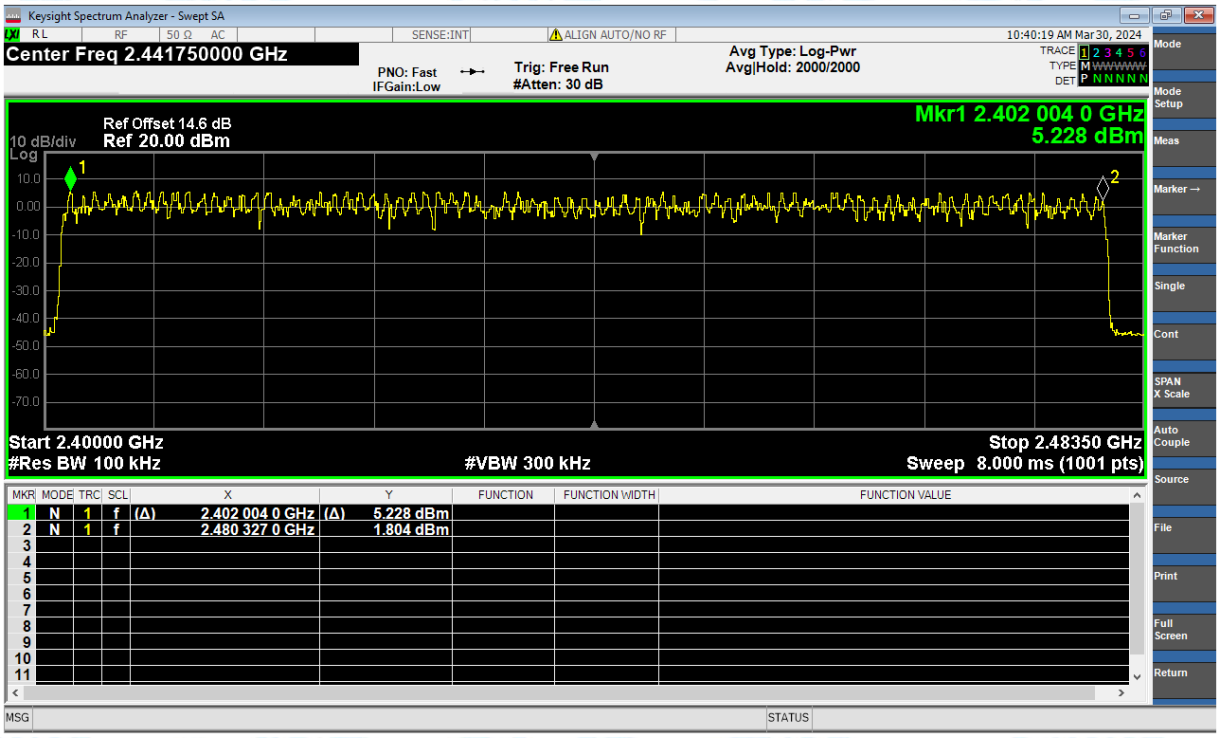
Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



Hopping No. NVNT 3-DH1 2441MHz Ant1

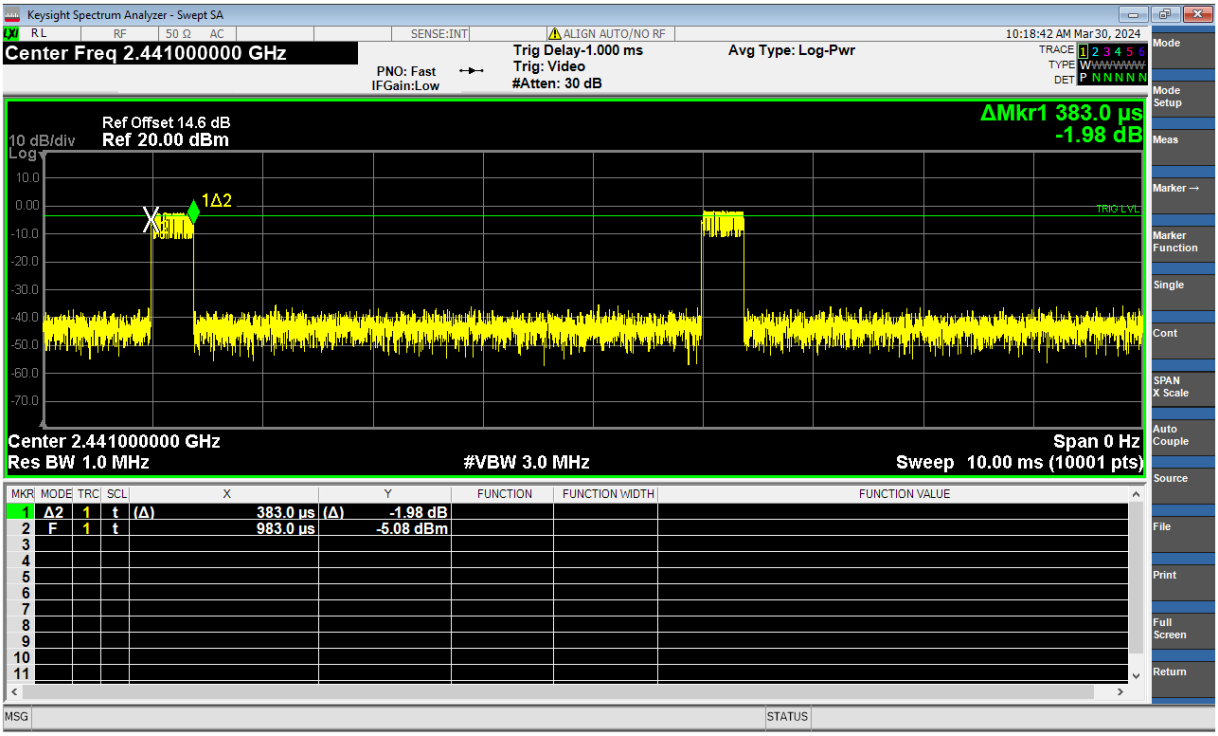


11. Dwell Time

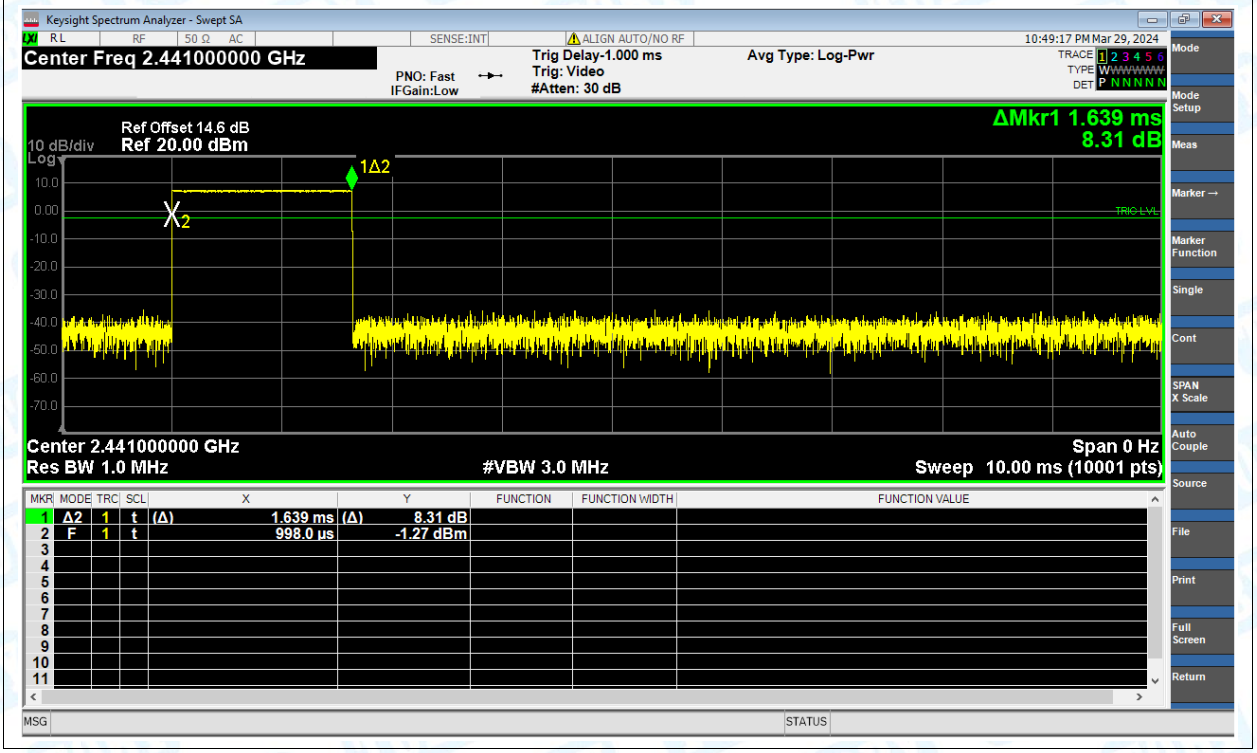
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.383	122.56	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.639	262.24	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.887	307.947	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.391	125.12	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.644	263.04	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.891	308.373	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.391	125.12	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.643	262.88	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.893	308.587	31600	400	Pass

Test Graphs

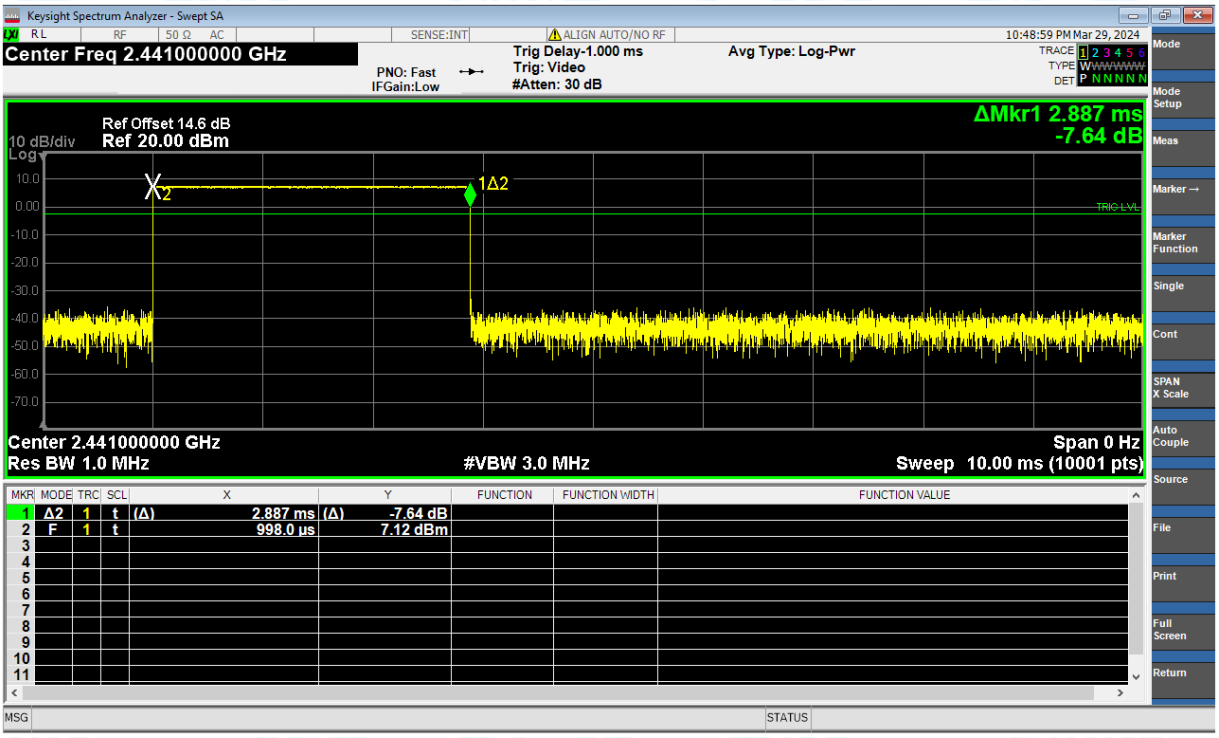
Dwell NVNT 1-DH1 2441MHz Ant1



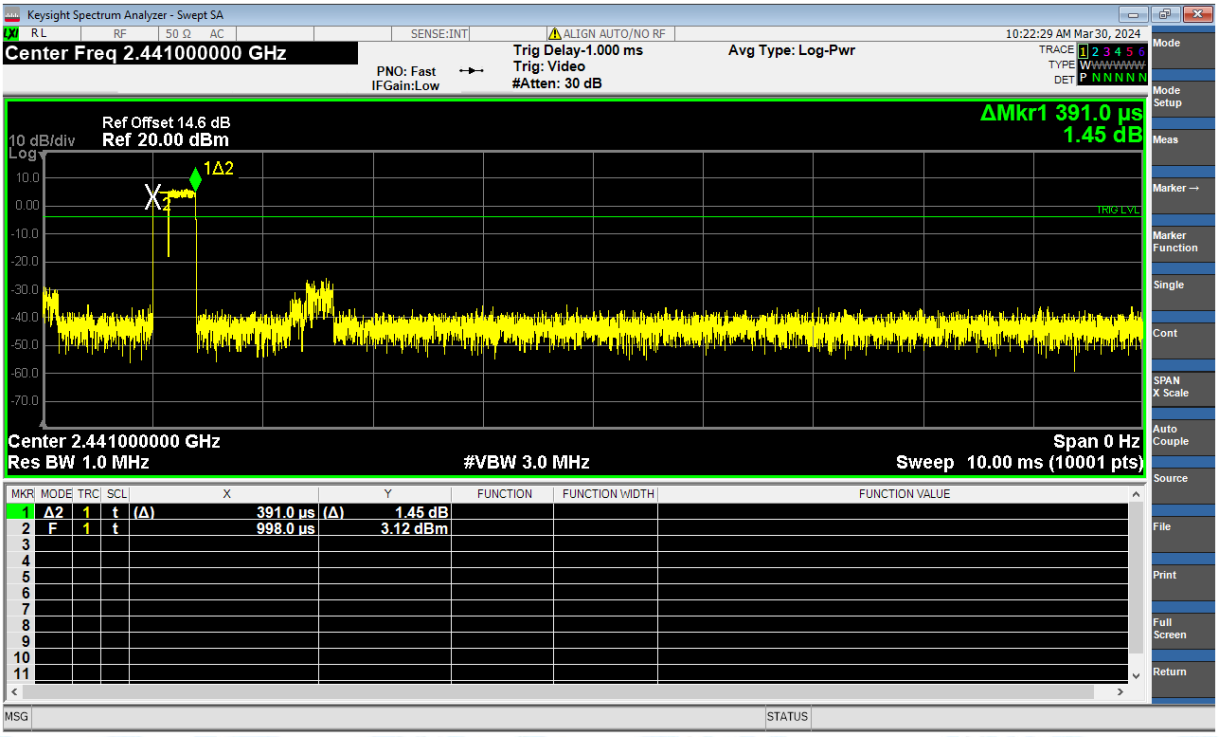
Dwell NVNT 1-DH3 2441MHz Ant1



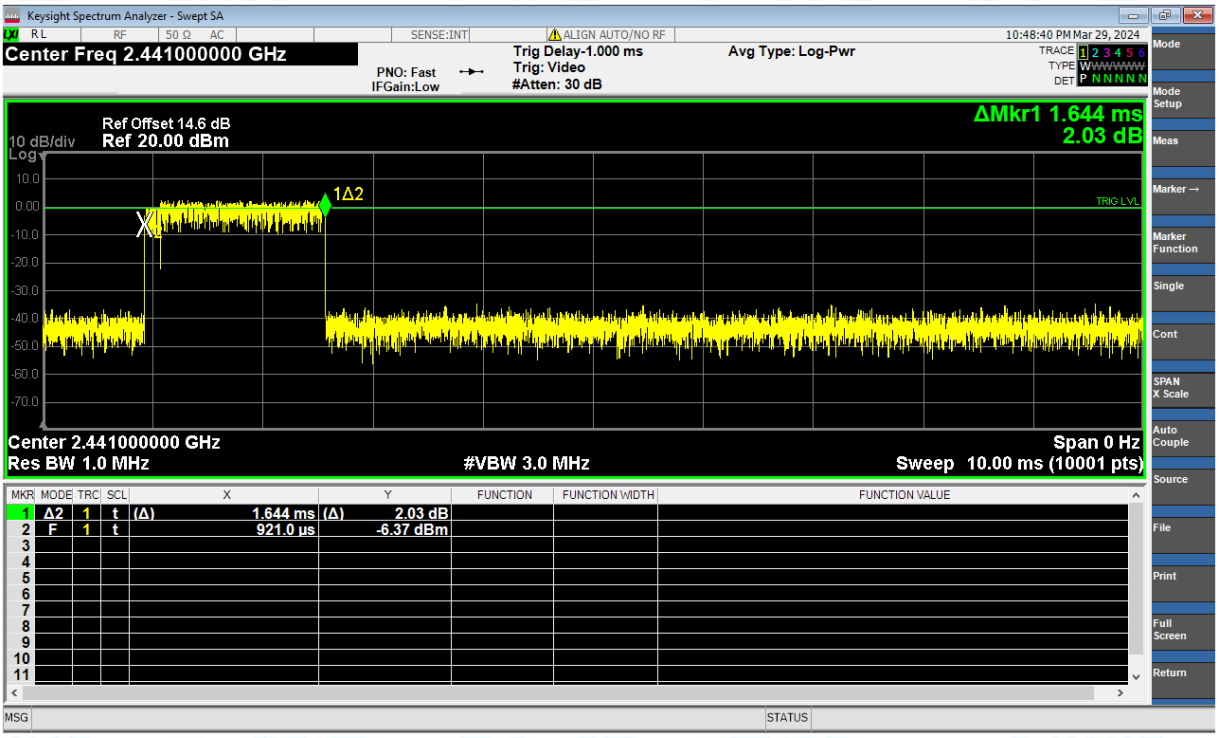
Dwell NVNT 1-DH5 2441MHz Ant1



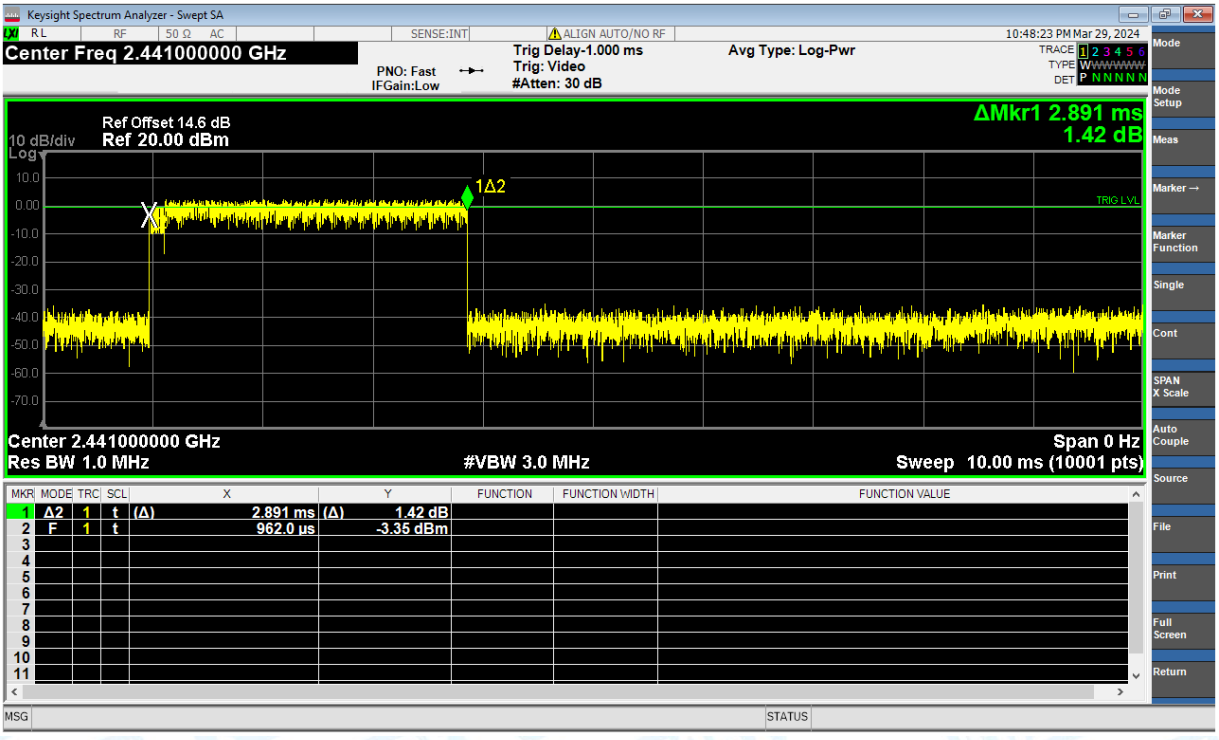
Dwell NVNT 2-DH1 2441MHz Ant1



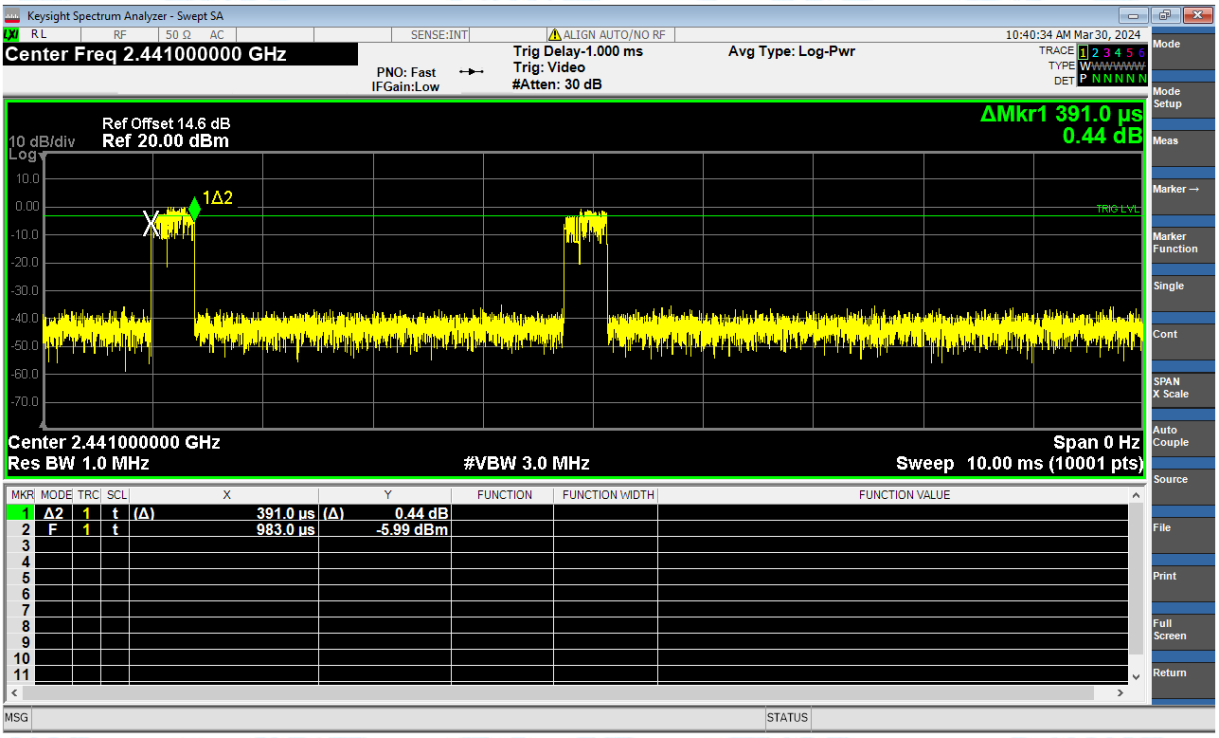
Dwell NVNT 2-DH3 2441MHz Ant1



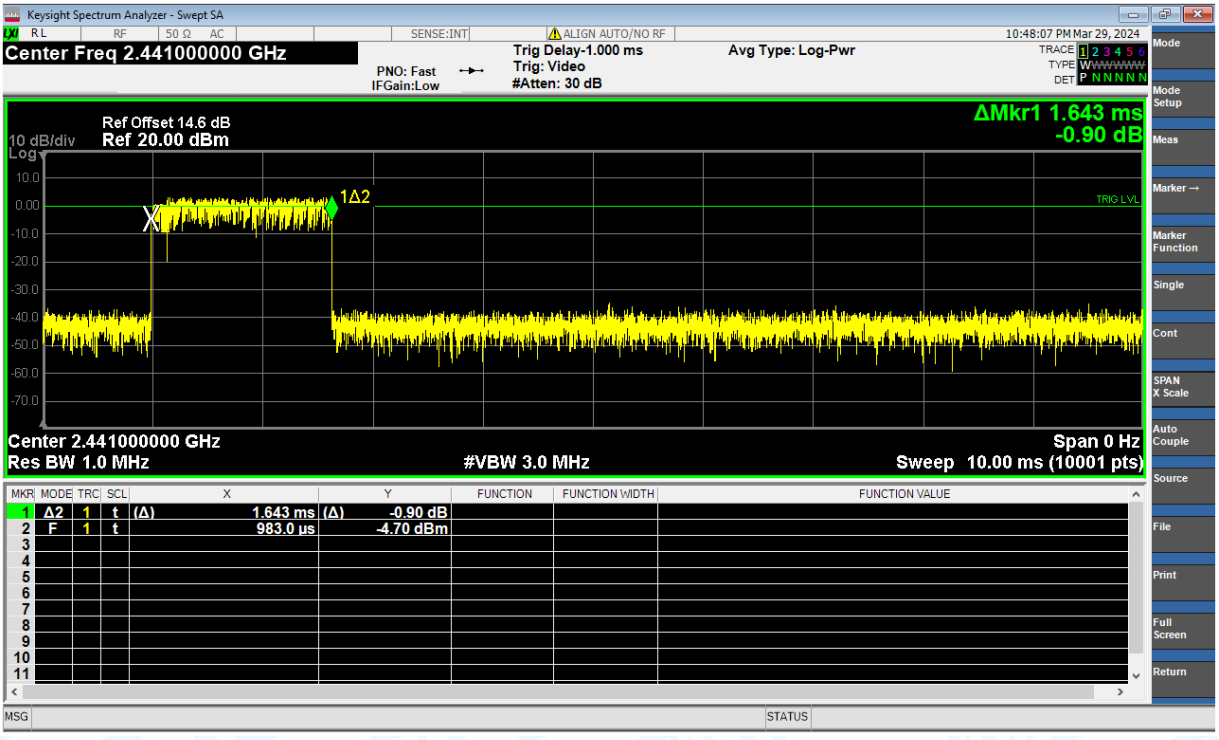
Dwell NVNT 2-DH5 2441MHz Ant1



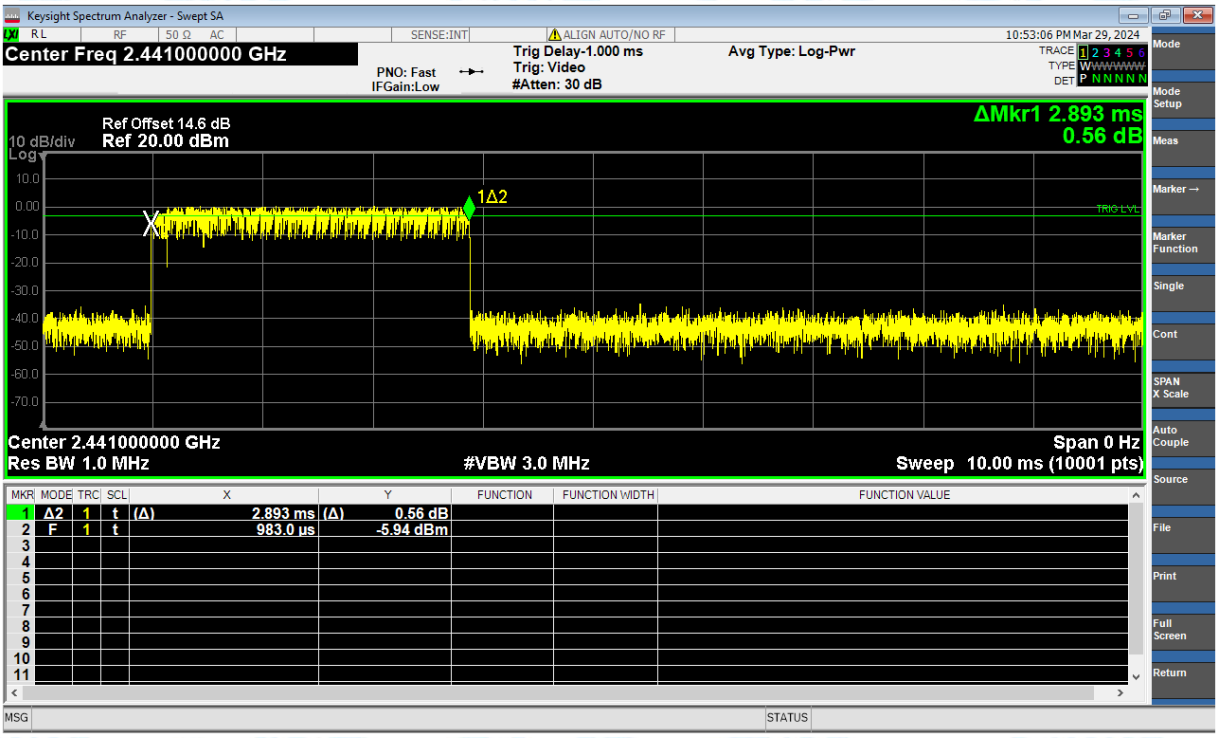
Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1



Dwell NVNT 3-DH5 2441MHz Ant1



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