

RF Test Data for Bluetooth LE (Conducted Measurements)

General Description of EUT	
Product Name:	4001991 PORTABLE WIRELESS SPEAKER
Test Model:	4001991
Sample ID:	HC-C-202511-0034-02-01#
Environmental Conditions	
Temperature:	25℃
Relative Humidity:	55%
Test Voltage:	DC 5V
Test Engineer:	Lily Zhang
Note: For a more detailed features description, please refer to the report TBR-C-202511-0034-6 The report only show the worst case data.	

Contents

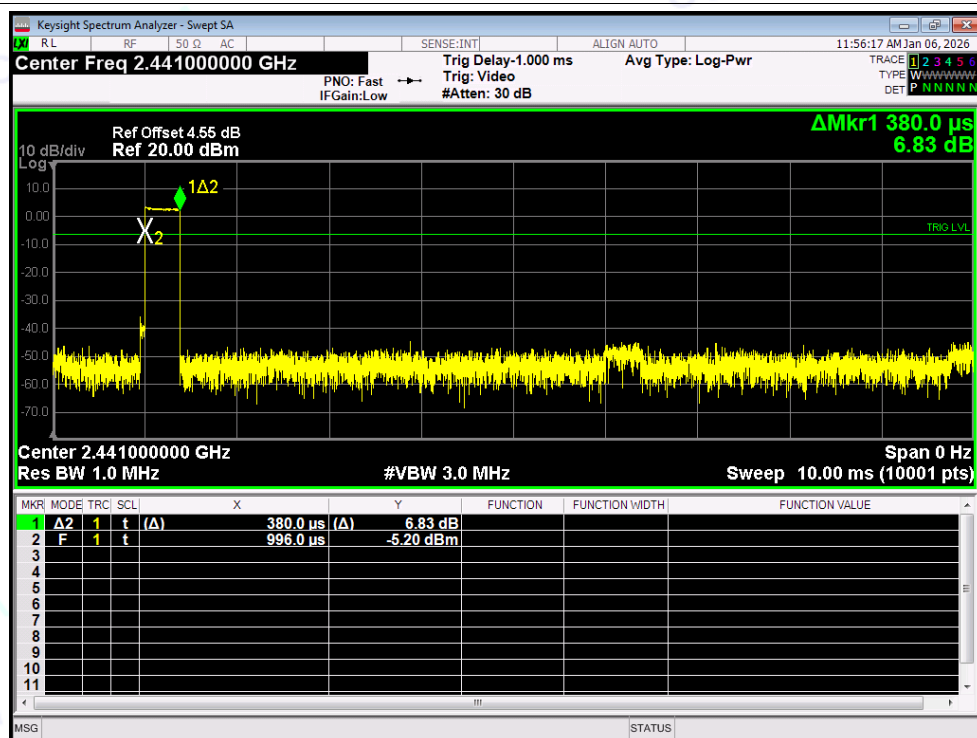
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1.Dwell Time

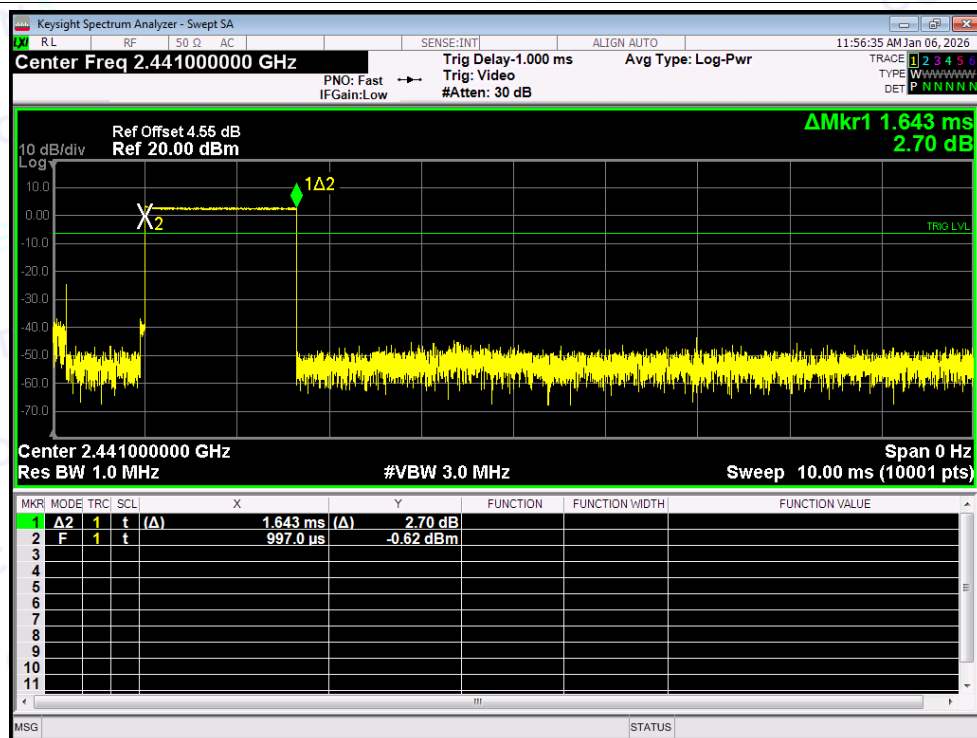
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.38	121.6	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.643	262.88	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.892	308.48	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.387	123.84	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.638	262.08	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.887	307.947	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.387	123.84	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

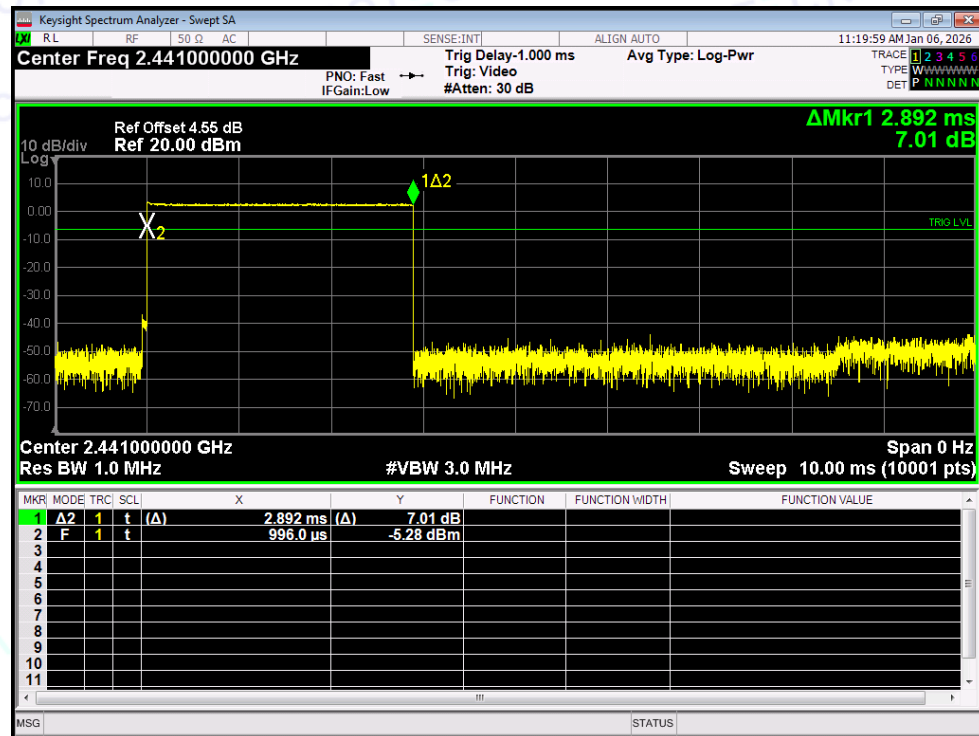
Dwell NVNT 1-DH1 2441MHz Ant1



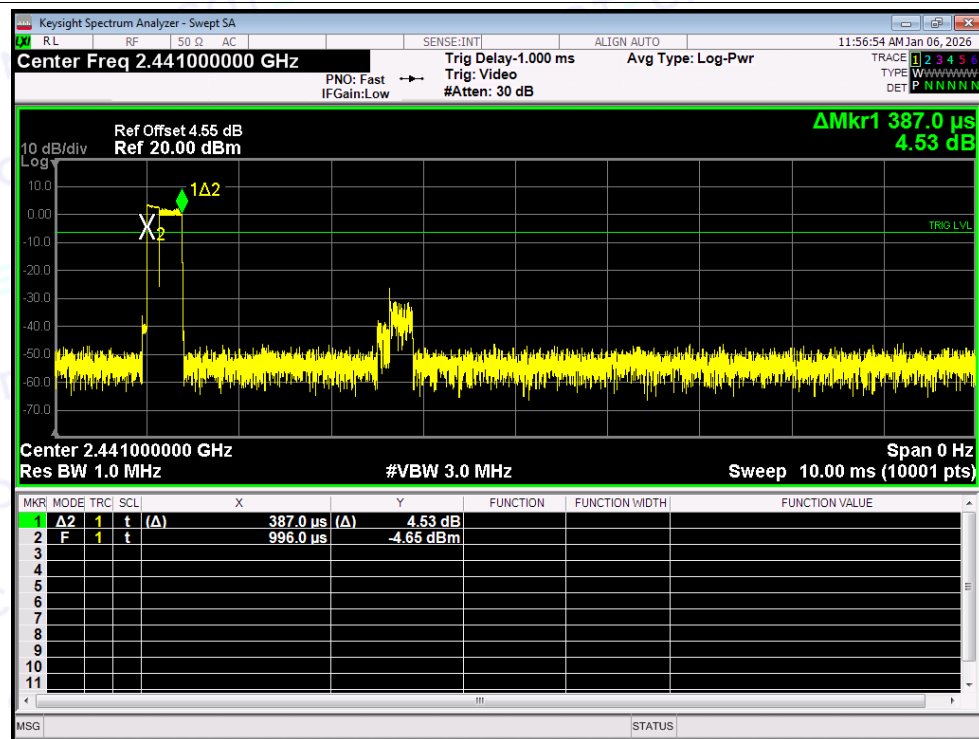
Dwell NVNT 1-DH3 2441MHz Ant1



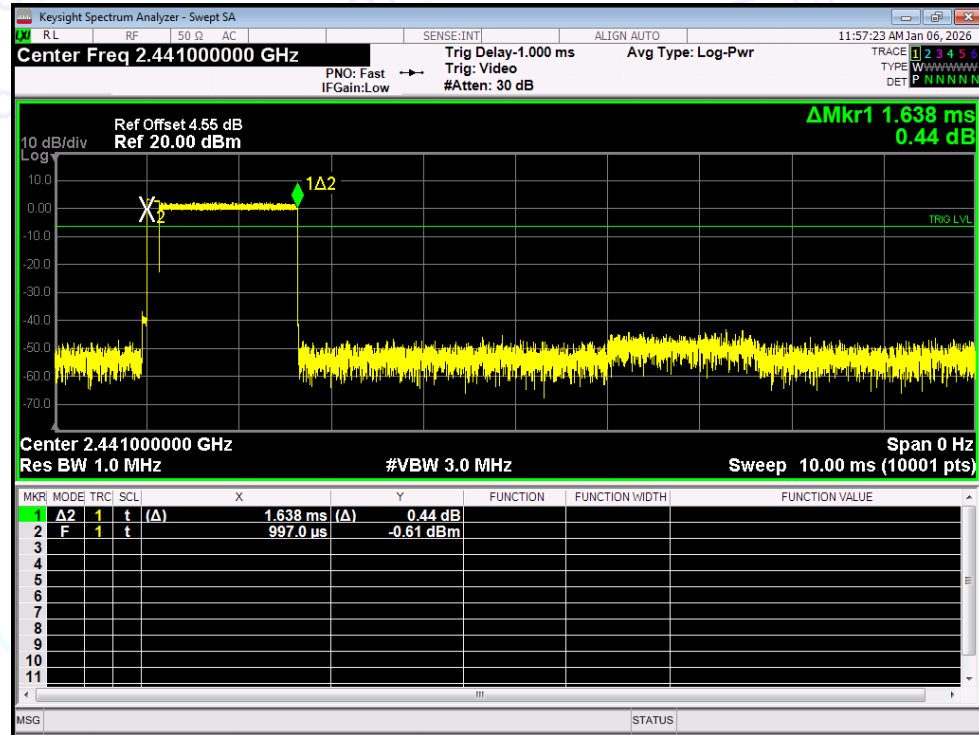
Dwell NVNT 1-DH5 2441MHz Ant1



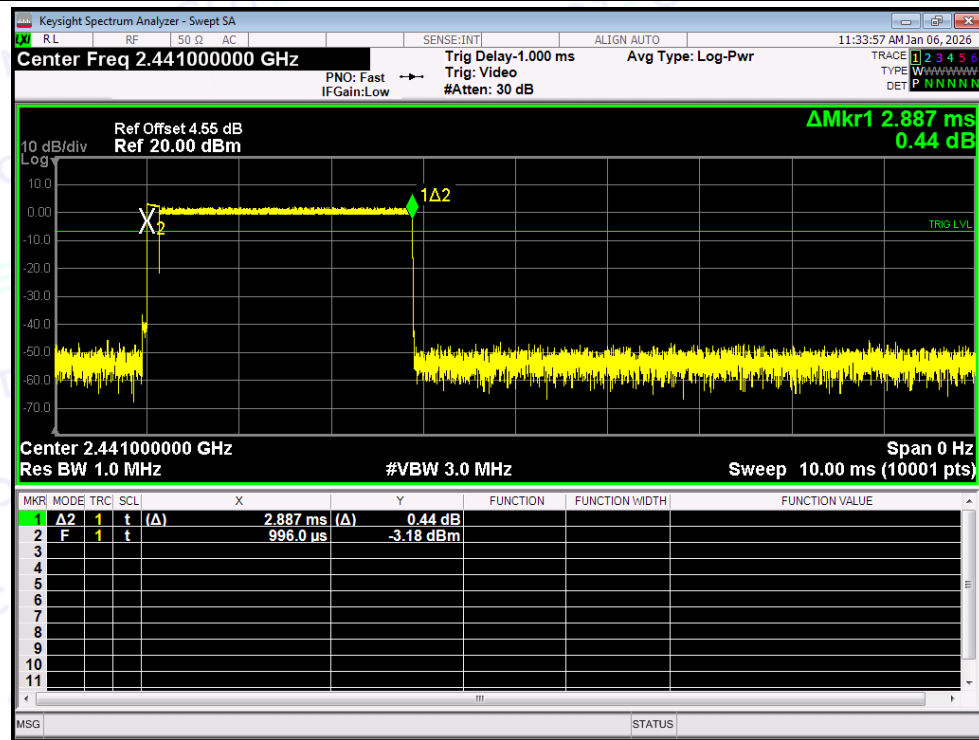
Dwell NVNT 2-DH1 2441MHz Ant1



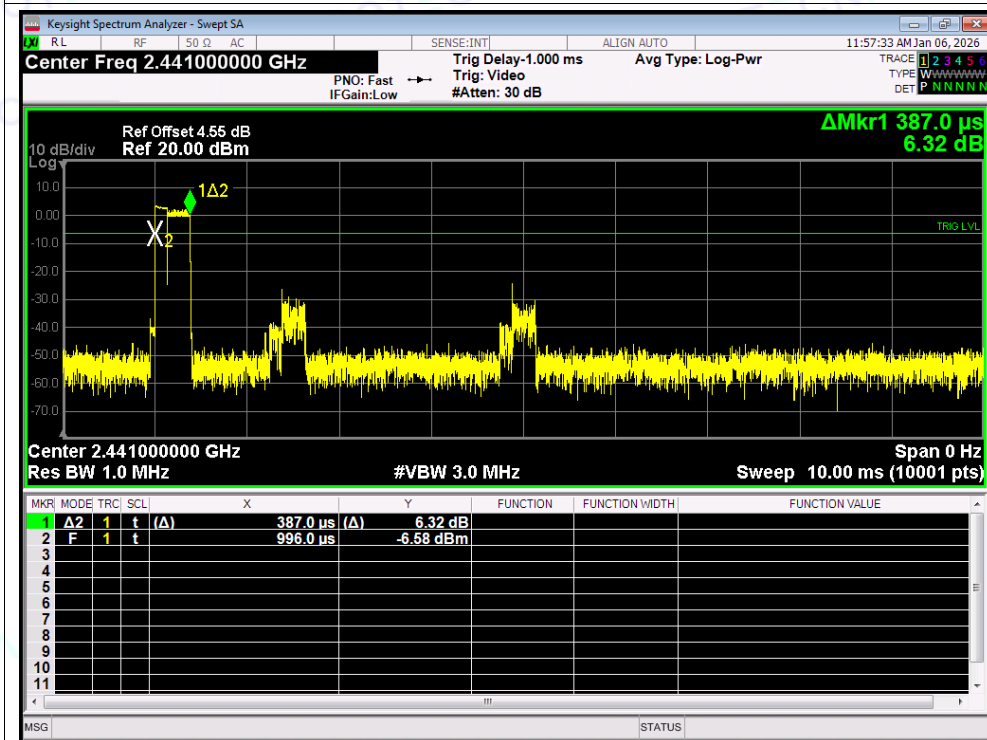
Dwell NVNT 2-DH3 2441MHz Ant1



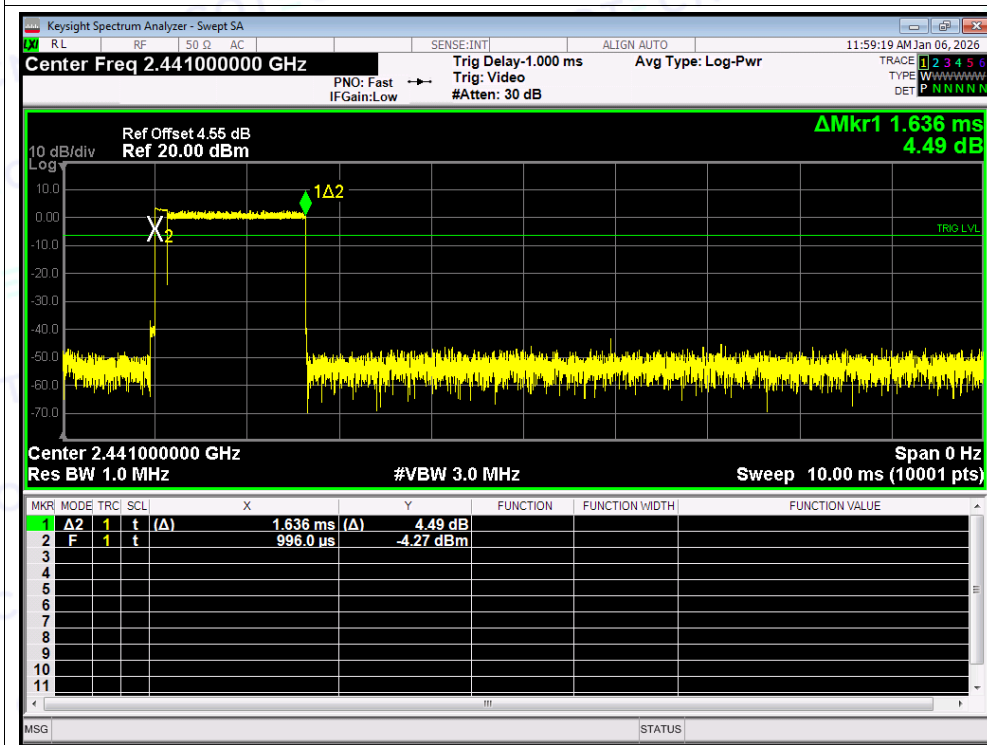
Dwell NVNT 2-DH5 2441MHz Ant1

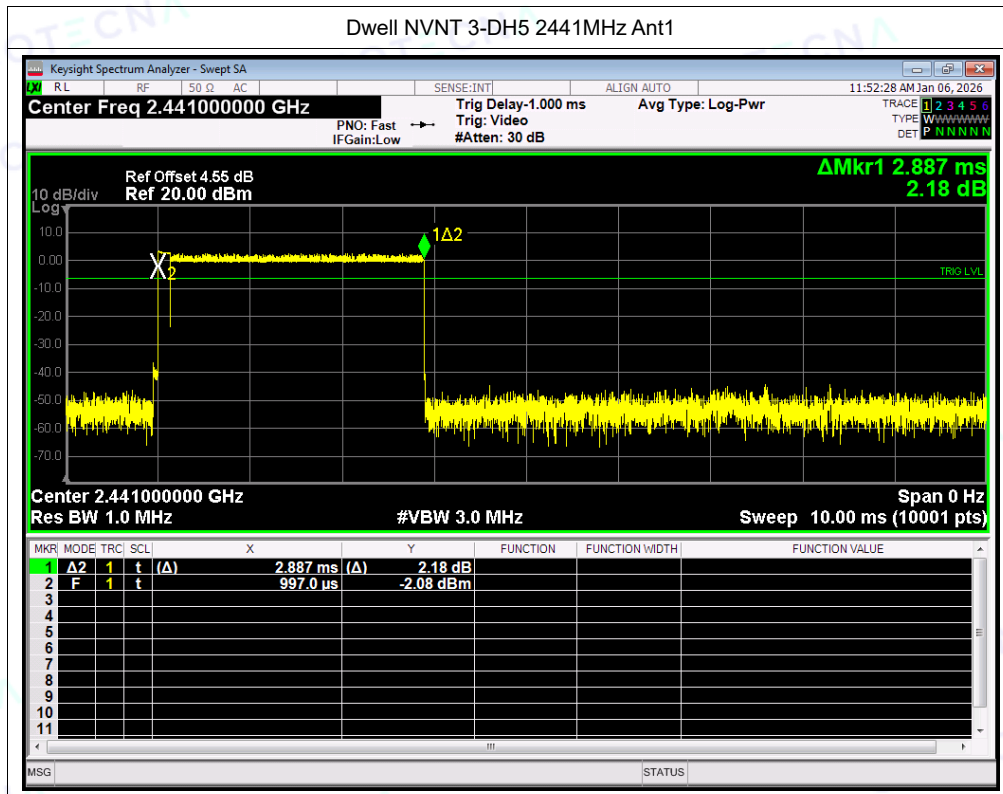


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1



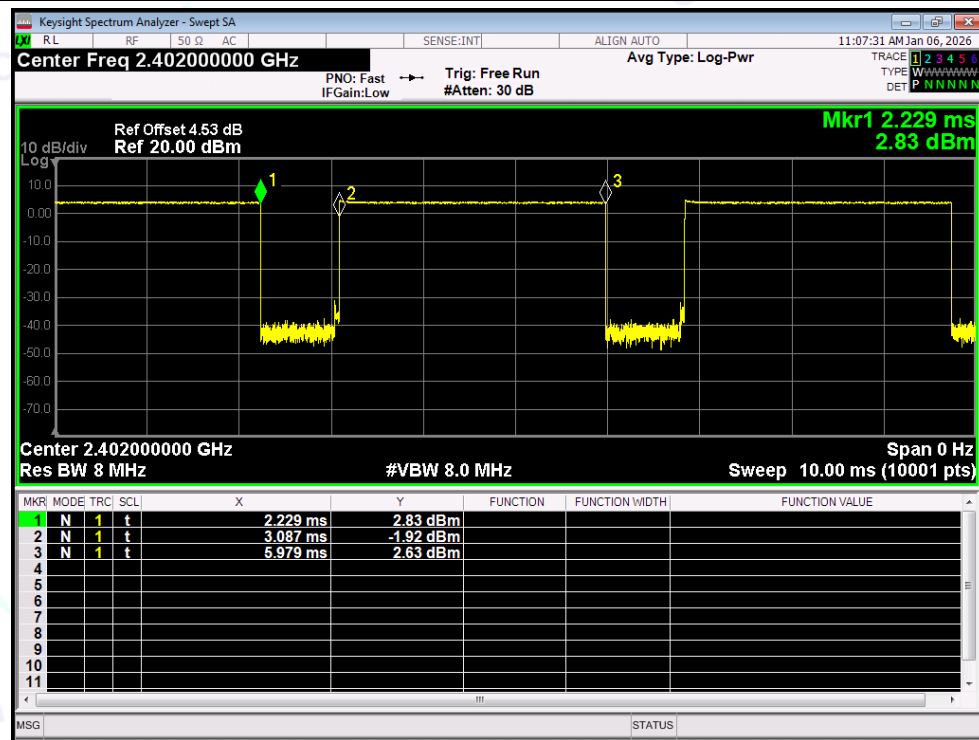


2.Duty Cycle

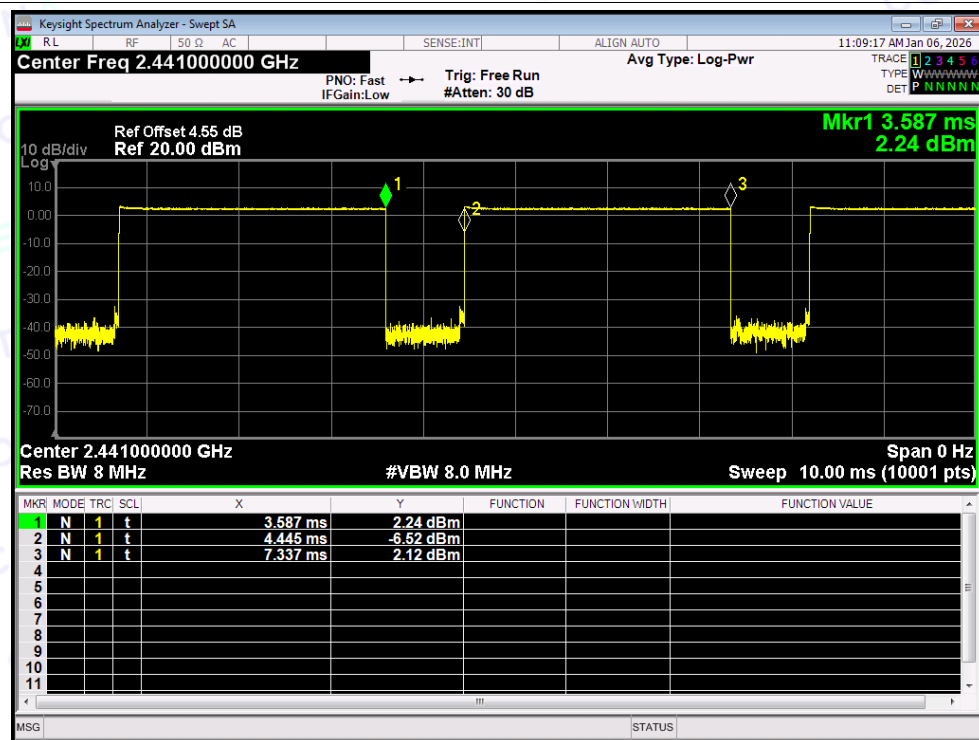
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	77.12	1.13	0.35
NVNT	1-DH5	2441	Ant1	77.12	1.13	0.35
NVNT	1-DH5	2480	Ant1	77.12	1.13	0.35
NVNT	2-DH5	2402	Ant1	0	0	鉴?
NVNT	2-DH5	2441	Ant1	80	0.97	62.5
NVNT	2-DH5	2480	Ant1	98	0.09	10.2
NVNT	3-DH5	2402	Ant1	77.07	1.13	0.35
NVNT	3-DH5	2441	Ant1	77.07	1.13	0.35
NVNT	3-DH5	2480	Ant1	78.69	1.04	0.34

Test Graphs

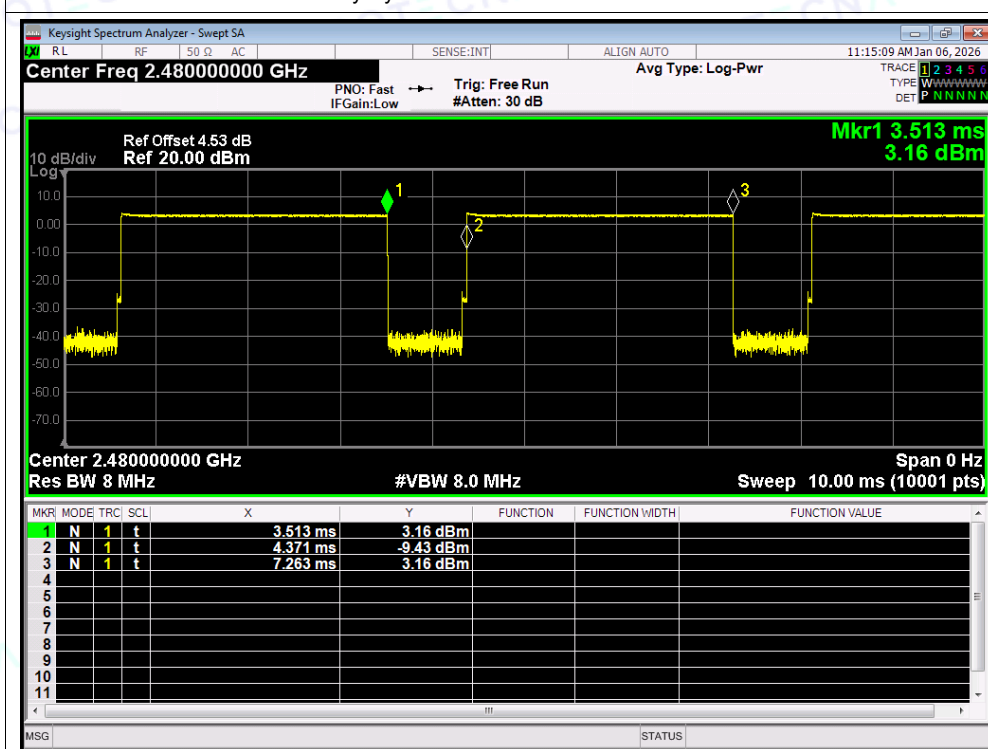
Duty Cycle NVNT 1-DH5 2402MHz Ant1



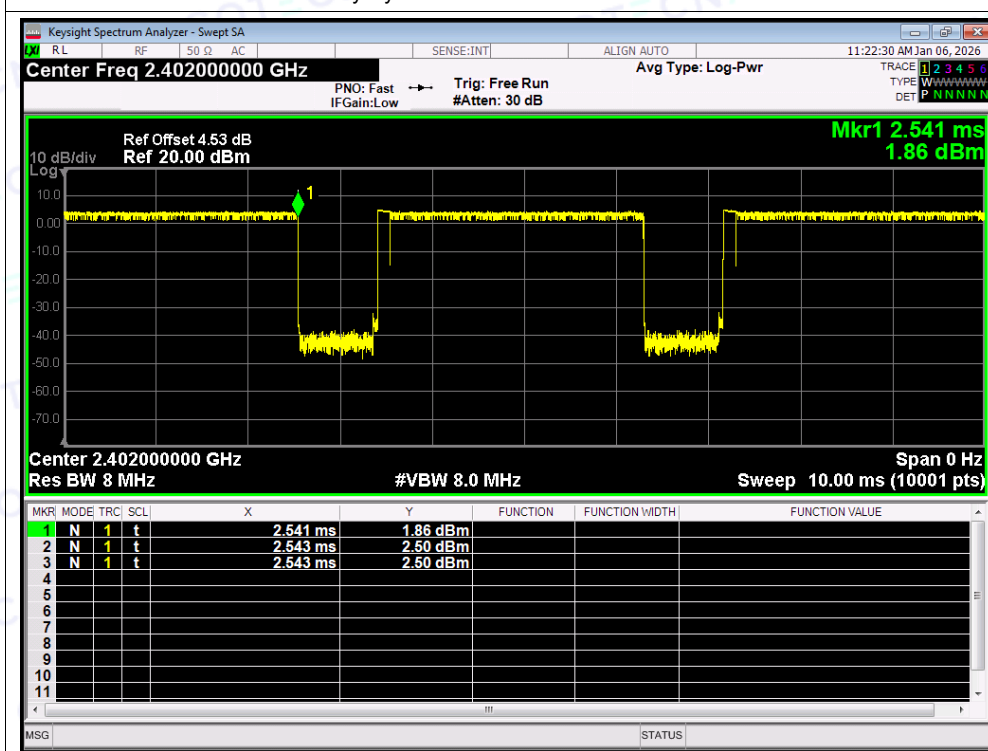
Duty Cycle NVNT 1-DH5 2441MHz Ant1



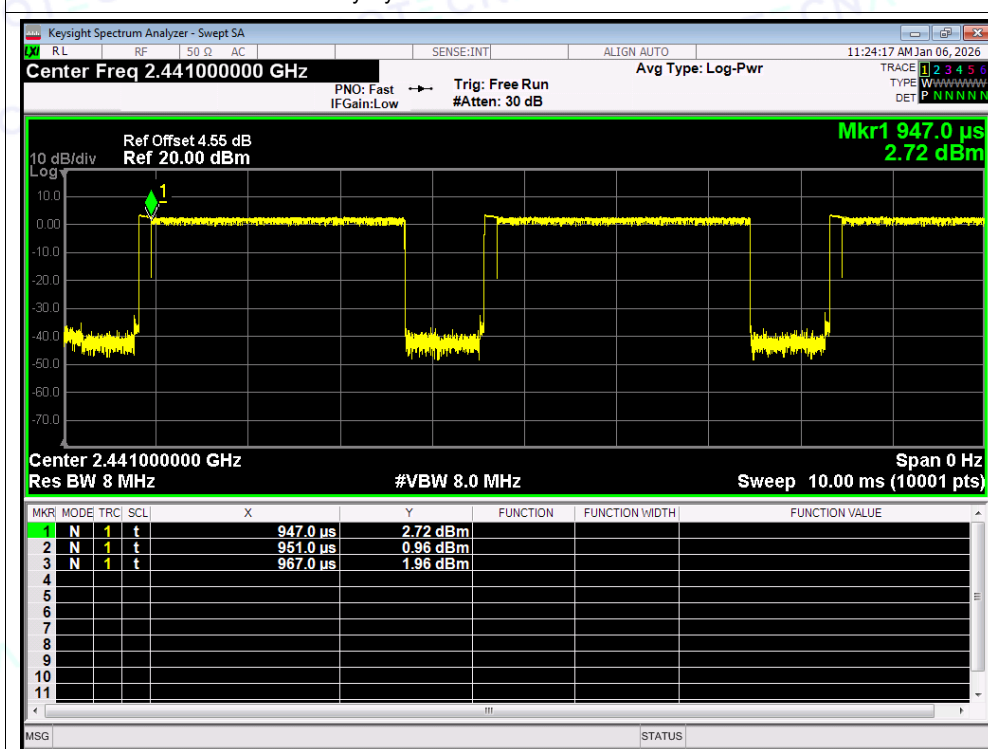
Duty Cycle NVNT 1-DH5 2480MHz Ant1



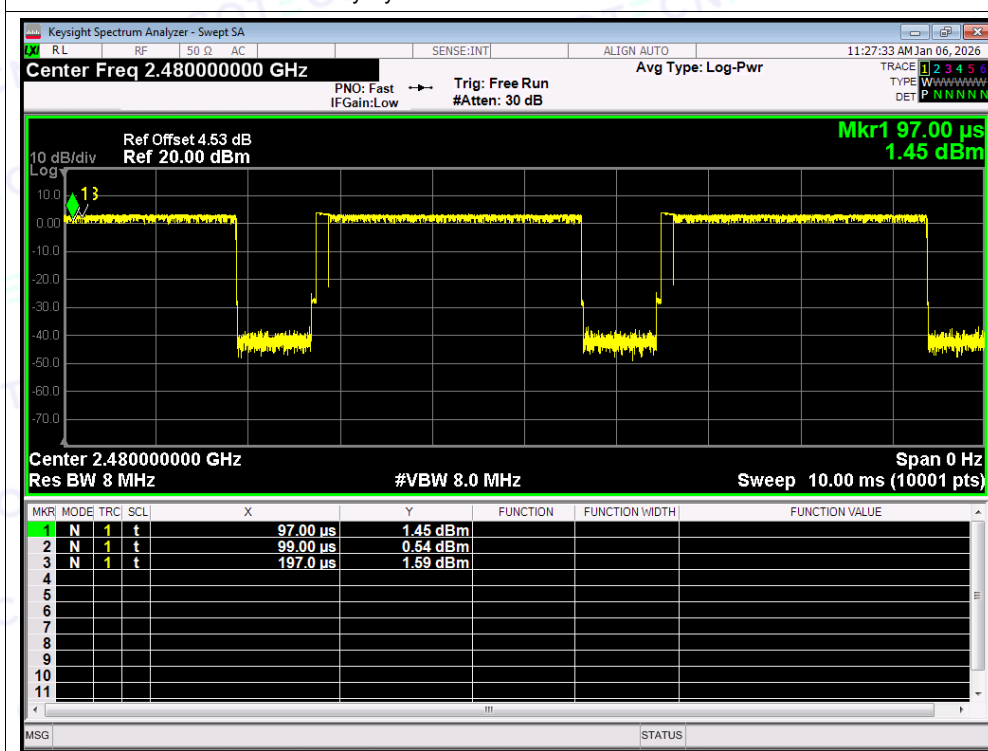
Duty Cycle NVNT 2-DH5 2402MHz Ant1



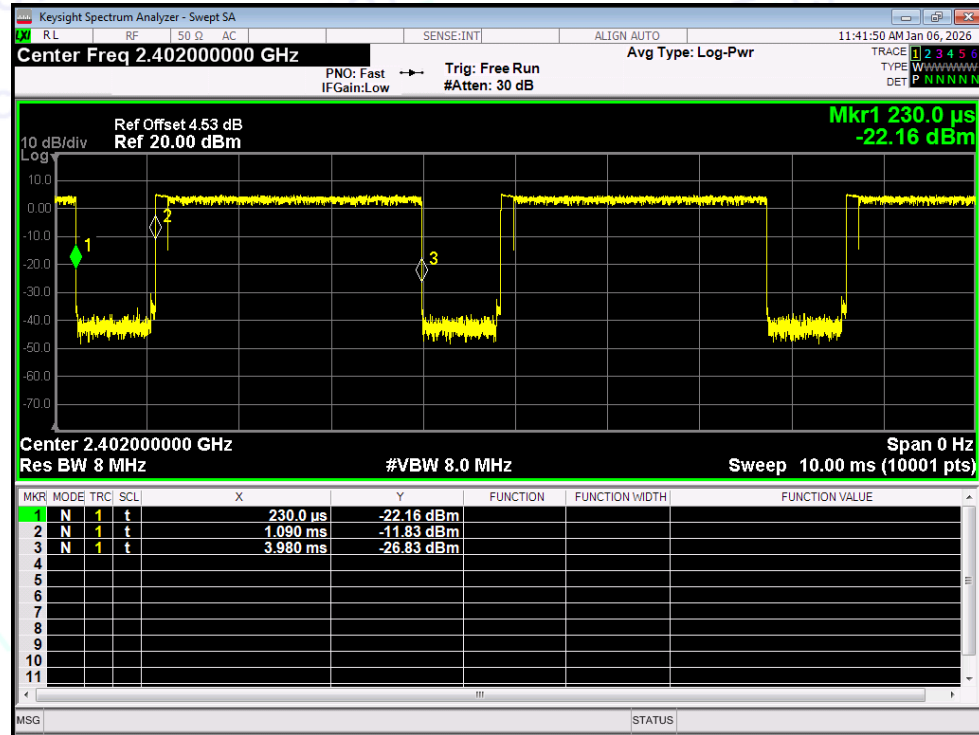
Duty Cycle NVNT 2-DH5 2441MHz Ant1



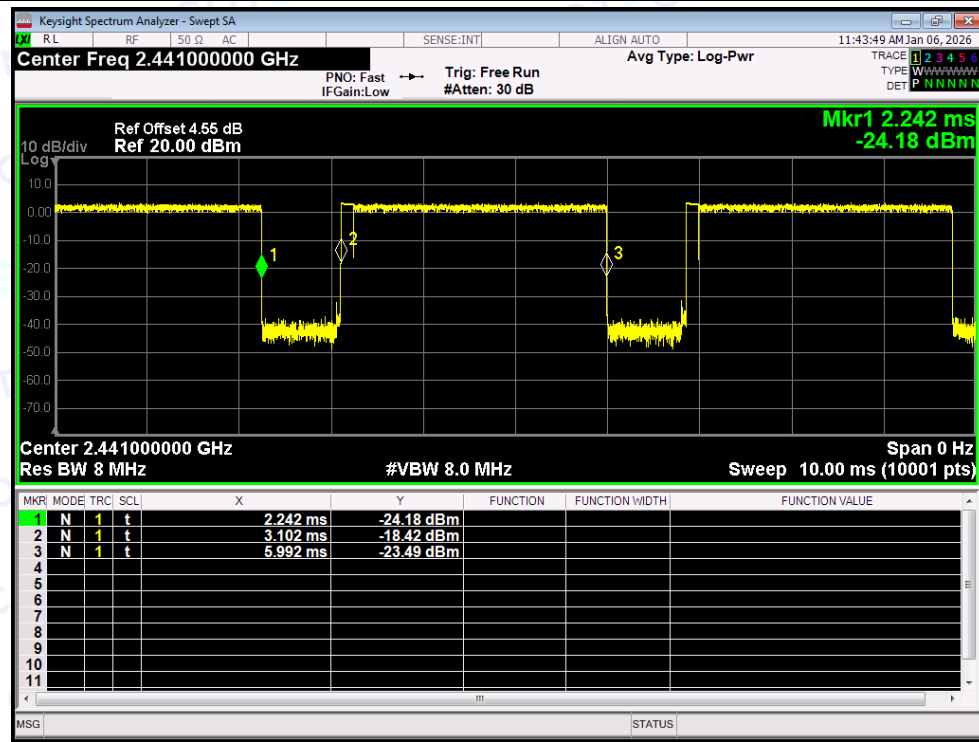
Duty Cycle NVNT 2-DH5 2480MHz Ant1

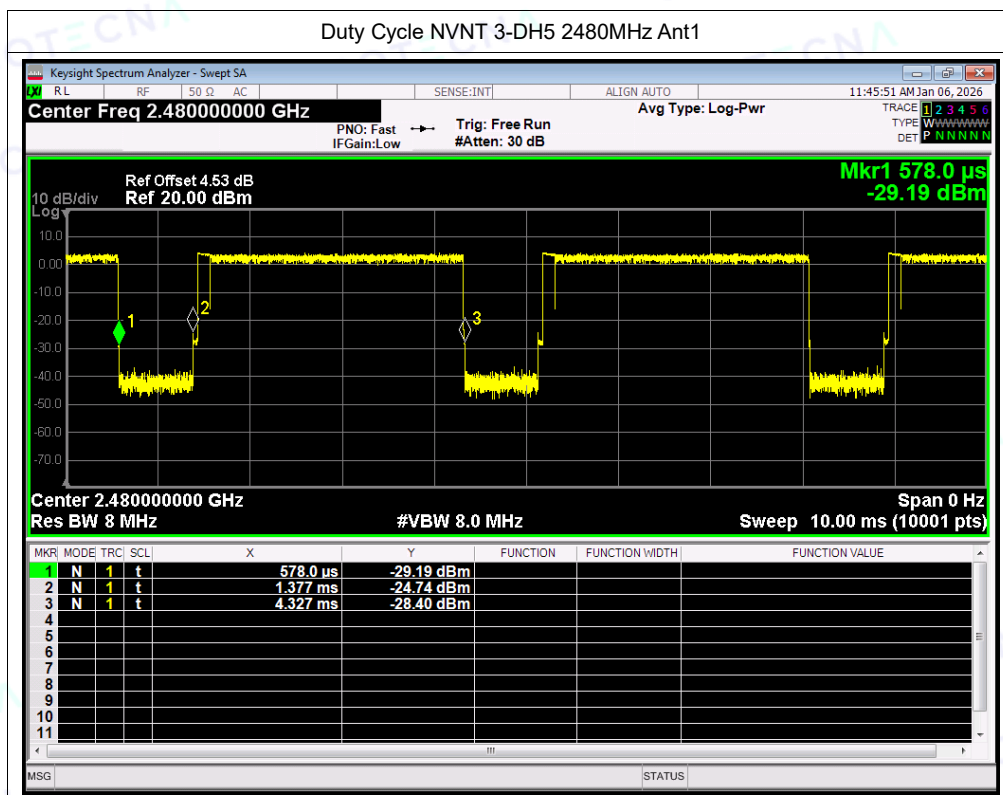


Duty Cycle NVNT 3-DH5 2402MHz Ant1



Duty Cycle NVNT 3-DH5 2441MHz Ant1



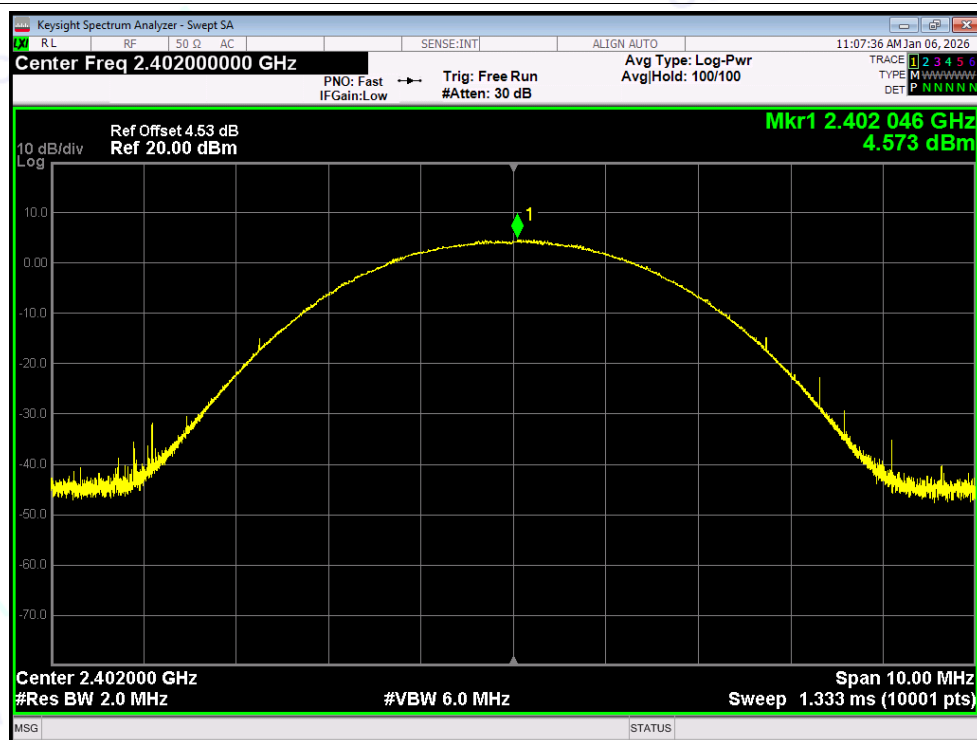


3.Maximum Conducted Output Power

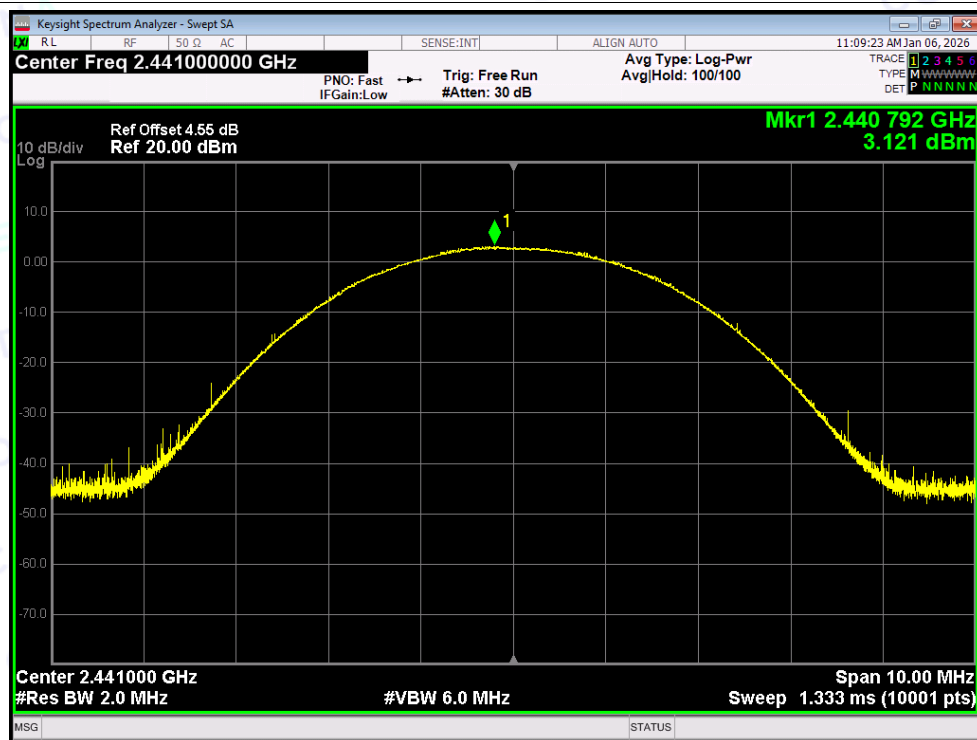
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	4.573	21	Pass
NVNT	1-DH5	2441	Ant1	3.121	21	Pass
NVNT	1-DH5	2480	Ant1	3.693	21	Pass
NVNT	2-DH5	2402	Ant1	4.825	21	Pass
NVNT	2-DH5	2441	Ant1	3.247	21	Pass
NVNT	2-DH5	2480	Ant1	3.793	21	Pass
NVNT	3-DH5	2402	Ant1	4.908	21	Pass
NVNT	3-DH5	2441	Ant1	3.375	21	Pass
NVNT	3-DH5	2480	Ant1	3.97	21	Pass

Test Graphs

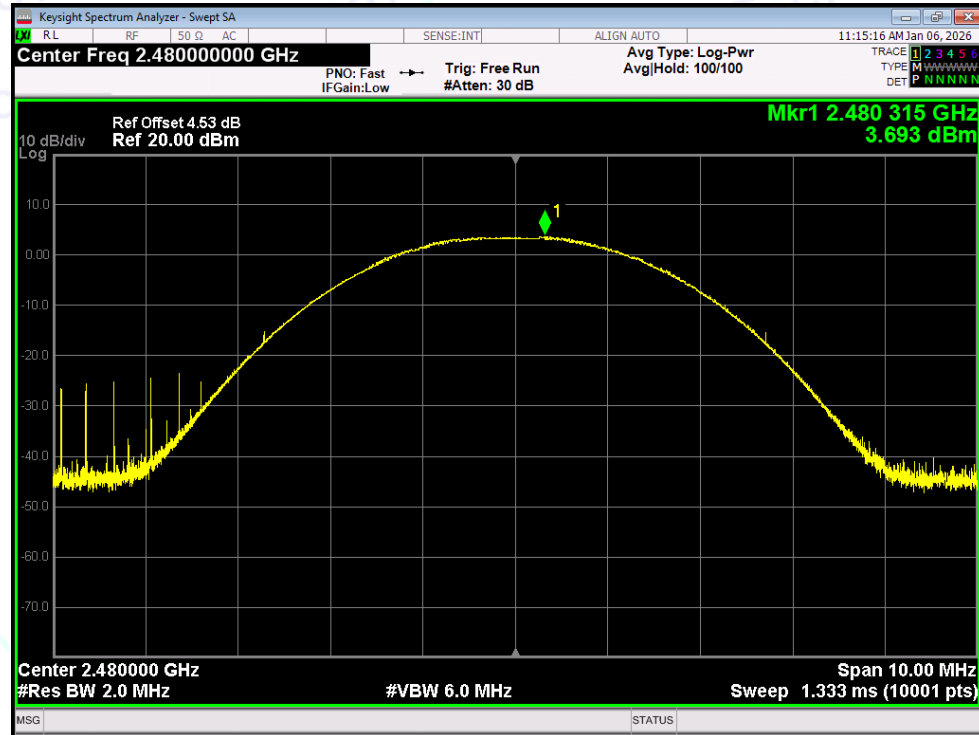
Power NVNT 1-DH5 2402MHz Ant1



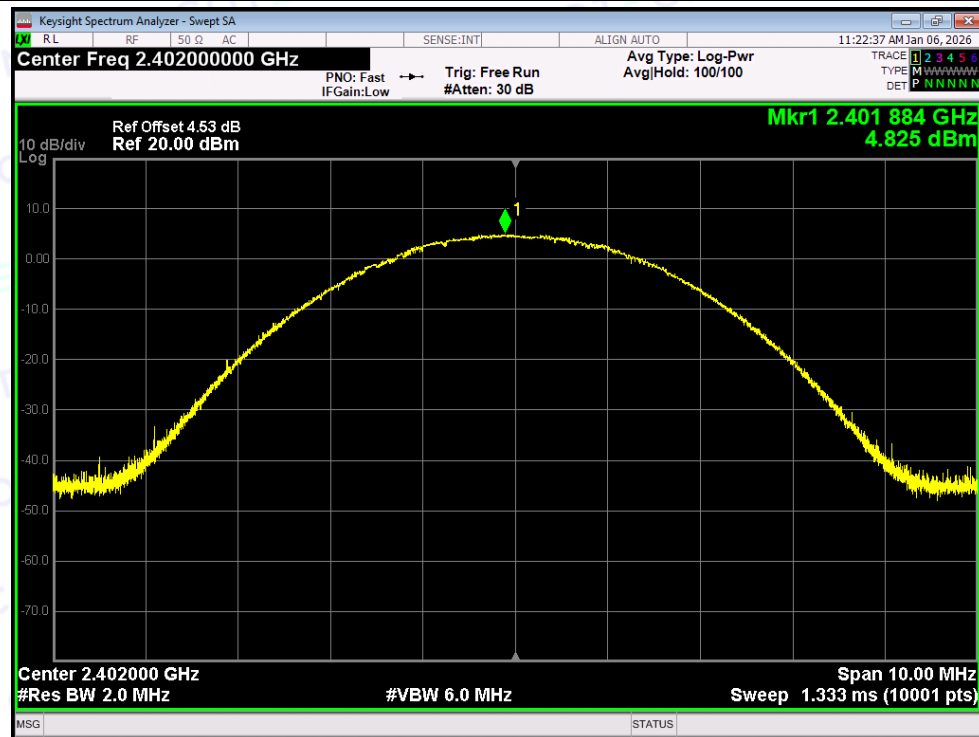
Power NVNT 1-DH5 2441MHz Ant1



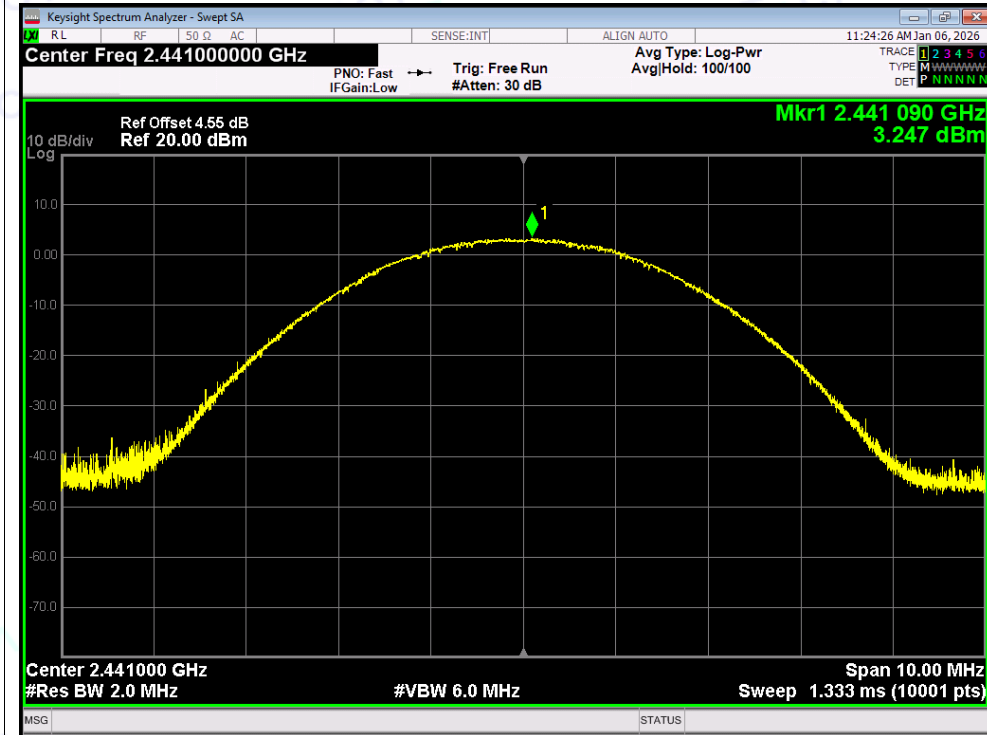
Power NVNT 1-DH5 2480MHz Ant1



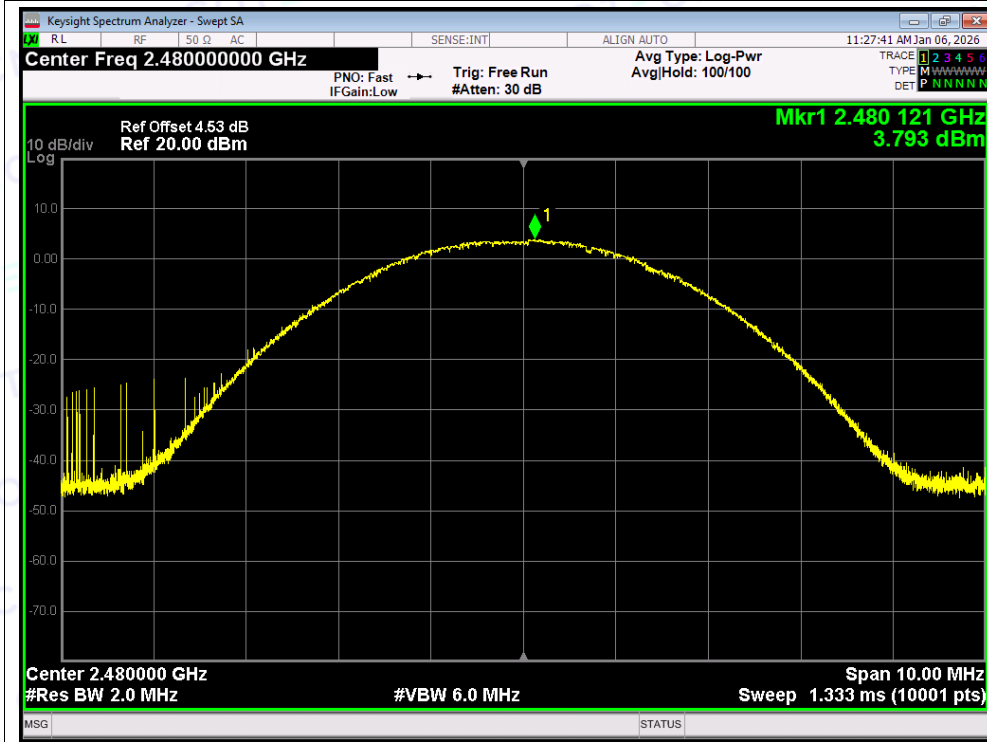
Power NVNT 2-DH5 2402MHz Ant1



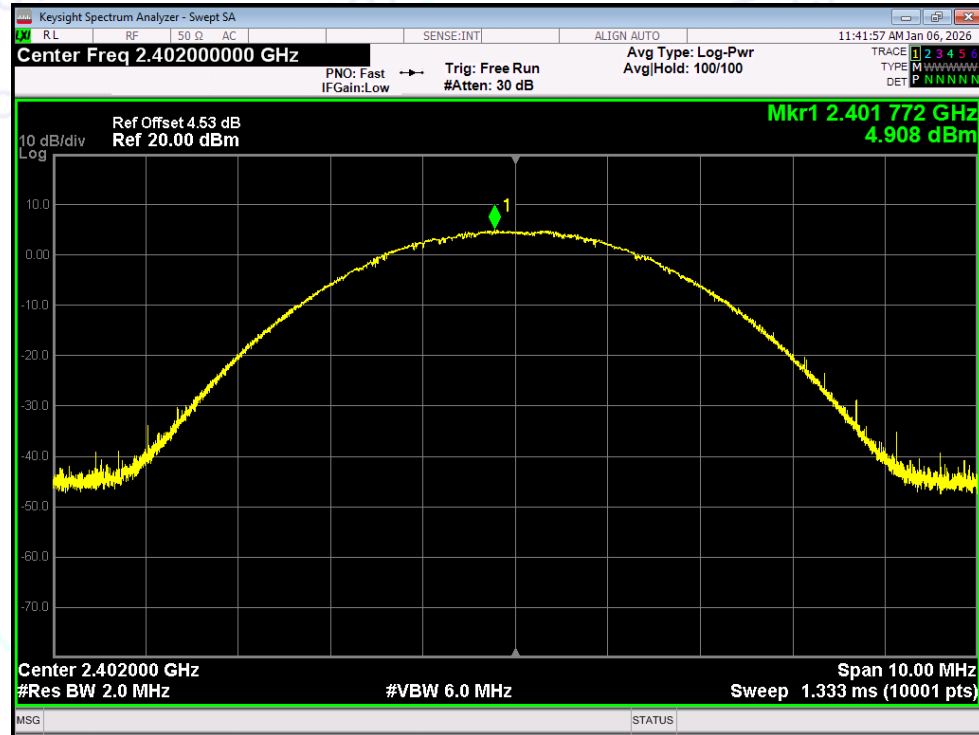
Power NVNT 2-DH5 2441MHz Ant1



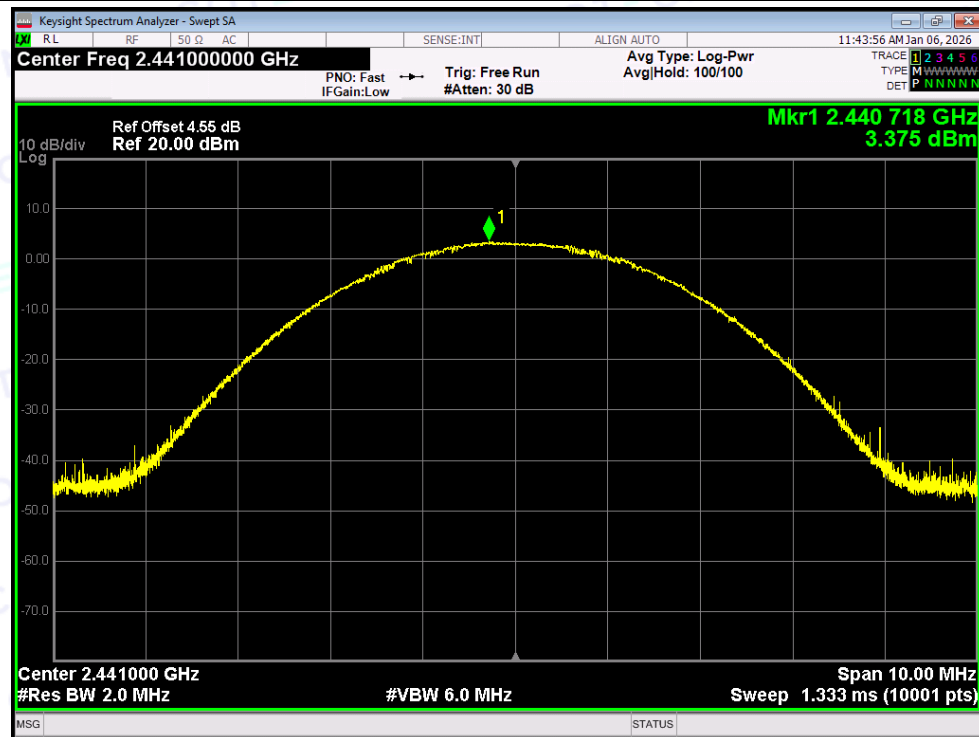
Power NVNT 2-DH5 2480MHz Ant1

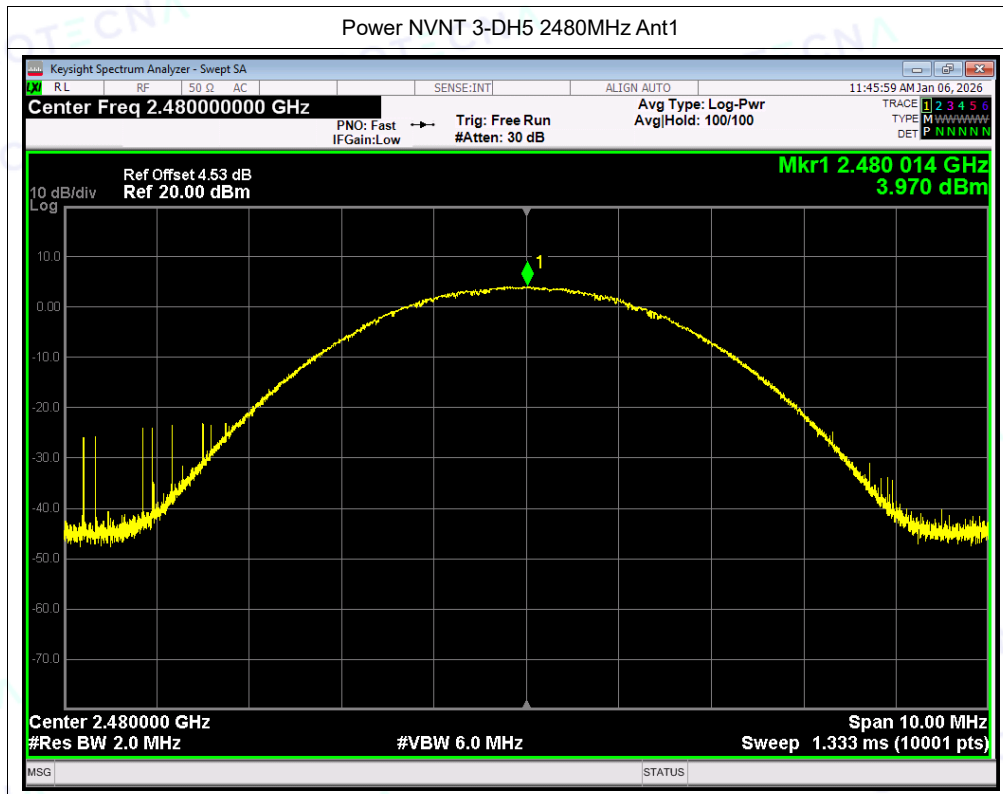


Power NVNT 3-DH5 2402MHz Ant1



Power NVNT 3-DH5 2441MHz Ant1



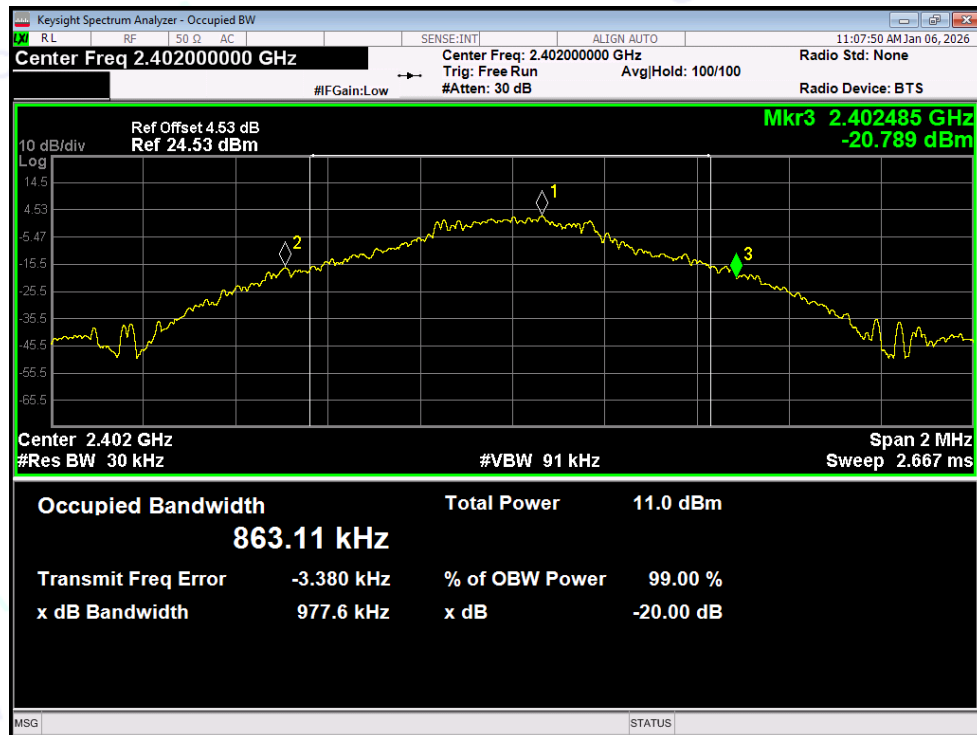


4.-20dB Bandwidth

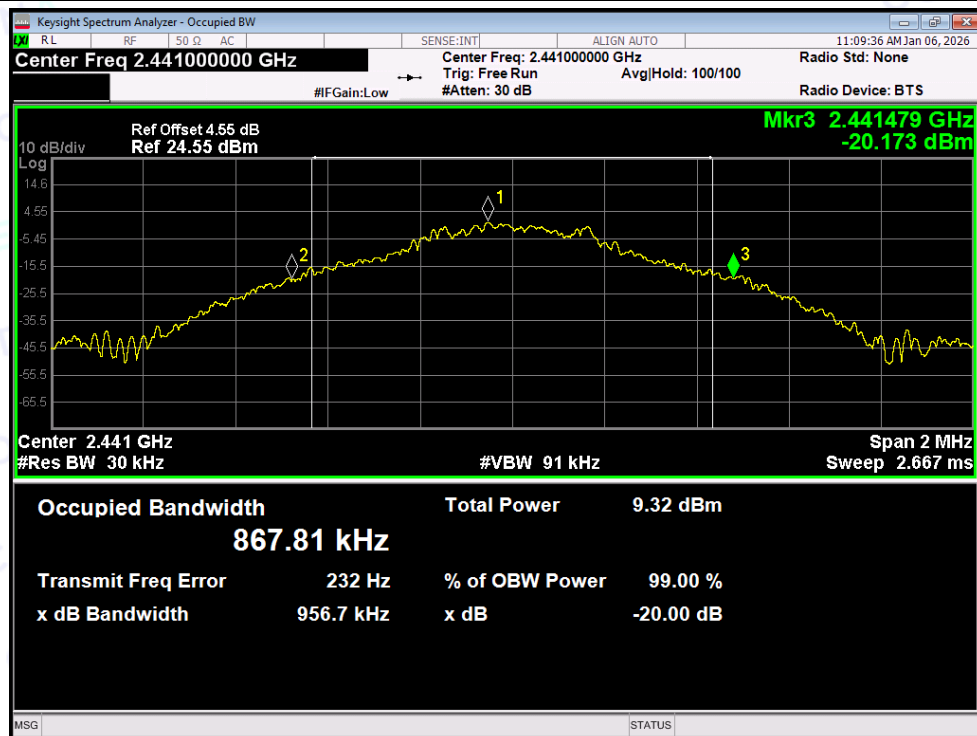
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.98	0	Pass
NVNT	1-DH5	2441	Ant1	0.96	0	Pass
NVNT	1-DH5	2480	Ant1	0.97	0	Pass
NVNT	2-DH5	2402	Ant1	1.31	0	Pass
NVNT	2-DH5	2441	Ant1	1.27	0	Pass
NVNT	2-DH5	2480	Ant1	1.29	0	Pass
NVNT	3-DH5	2402	Ant1	1.28	0	Pass
NVNT	3-DH5	2441	Ant1	1.28	0	Pass
NVNT	3-DH5	2480	Ant1	1.29	0	Pass

Test Graphs

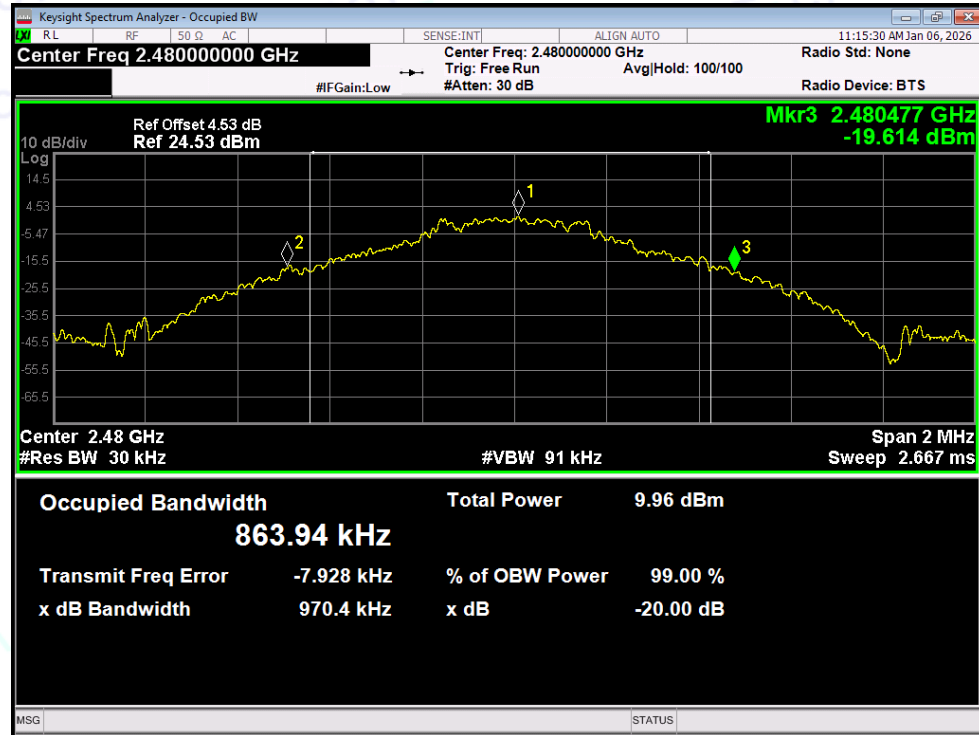
-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



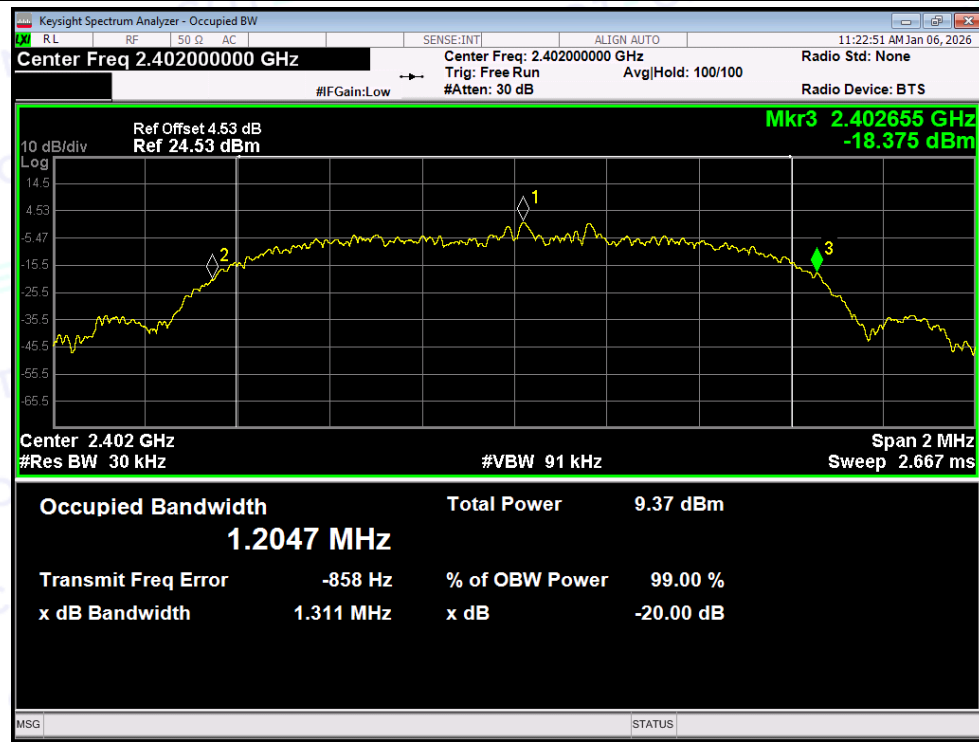
-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



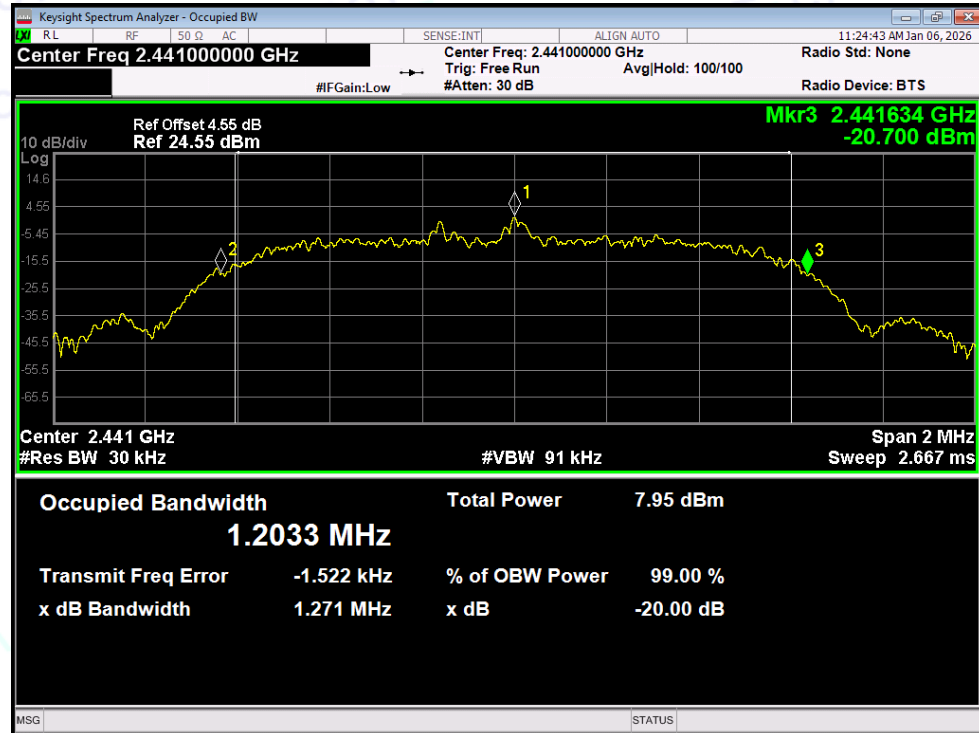
-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



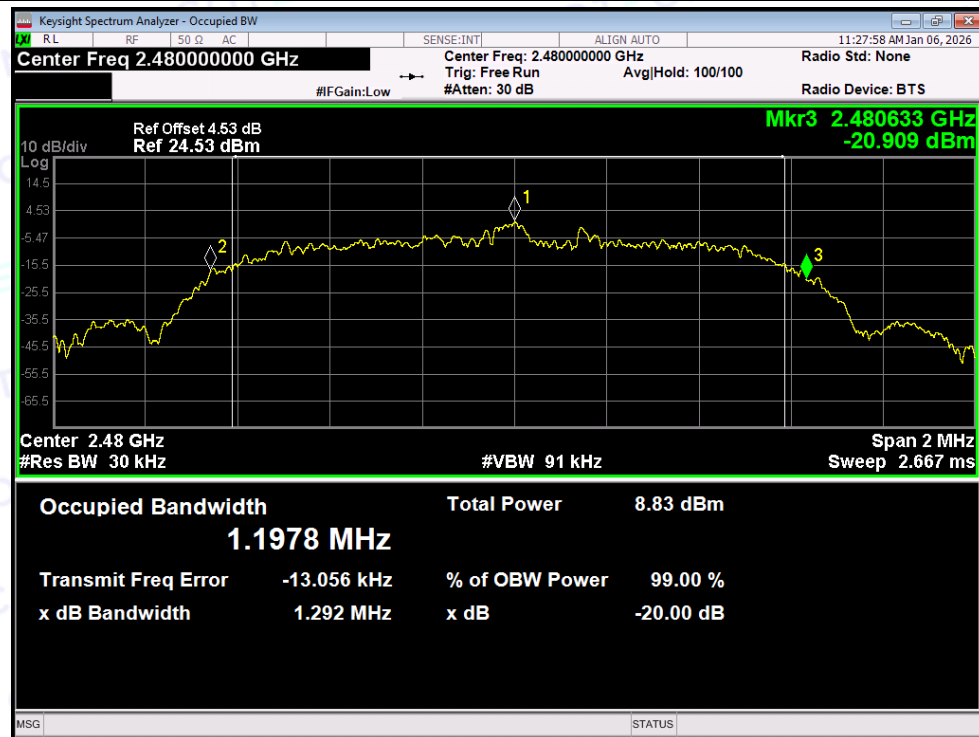
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



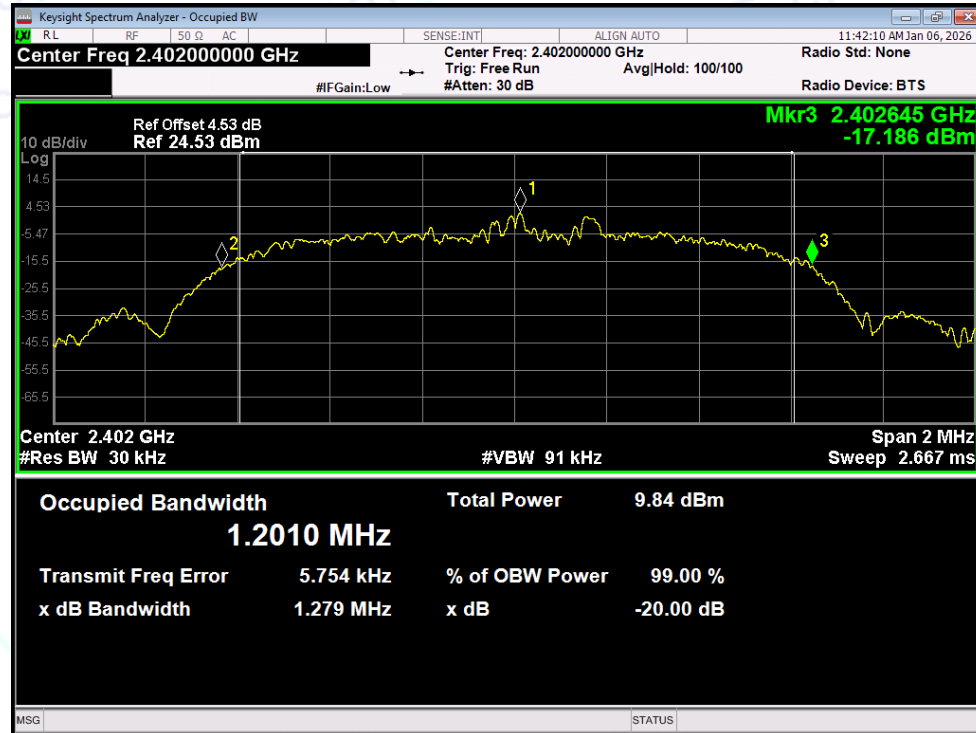
-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



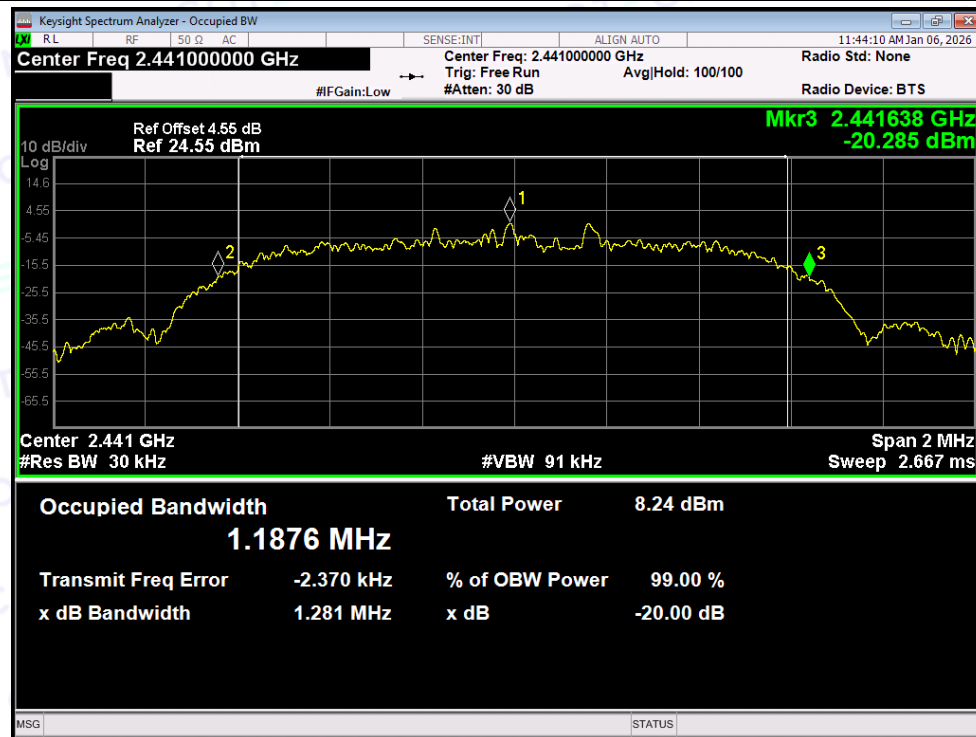
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

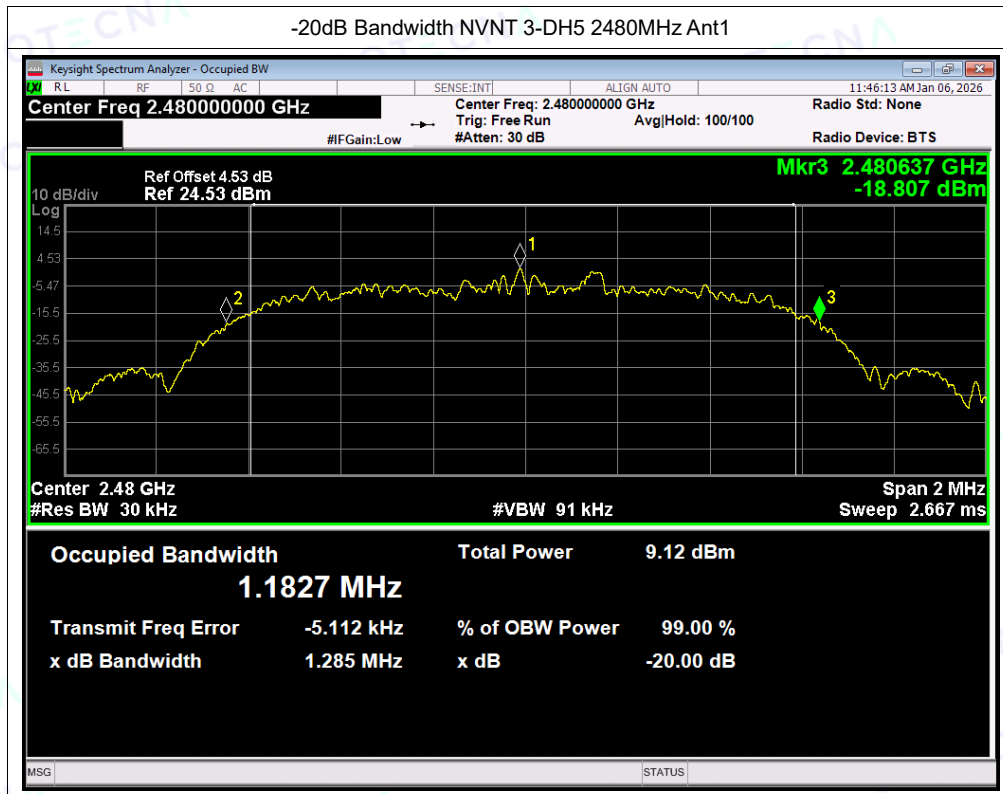


-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



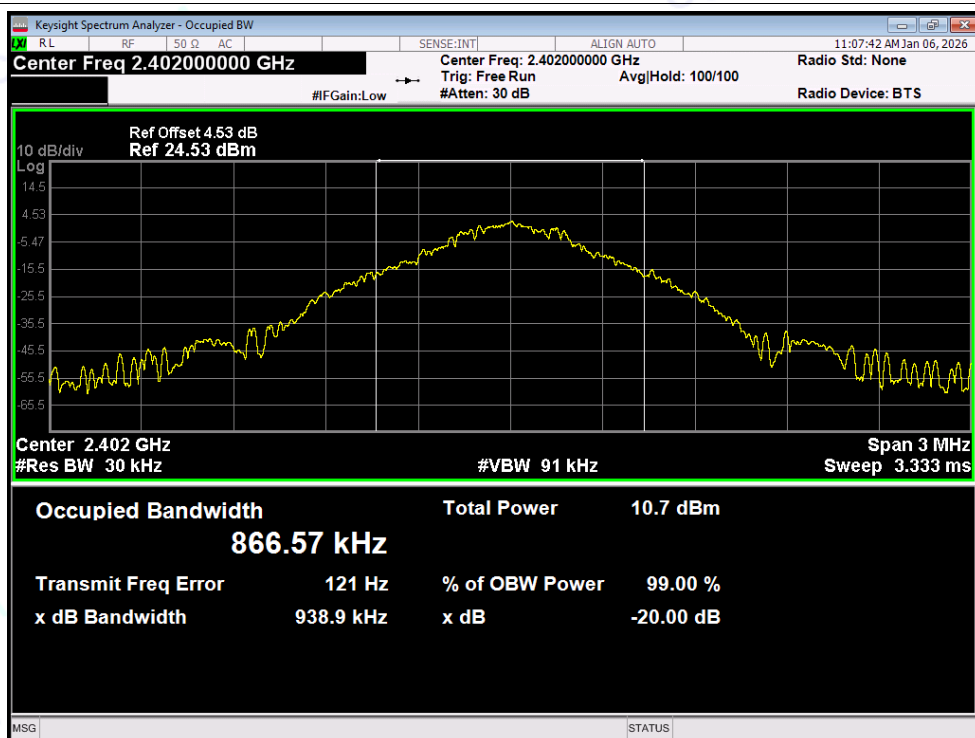


5.Occupied Channel Bandwidth

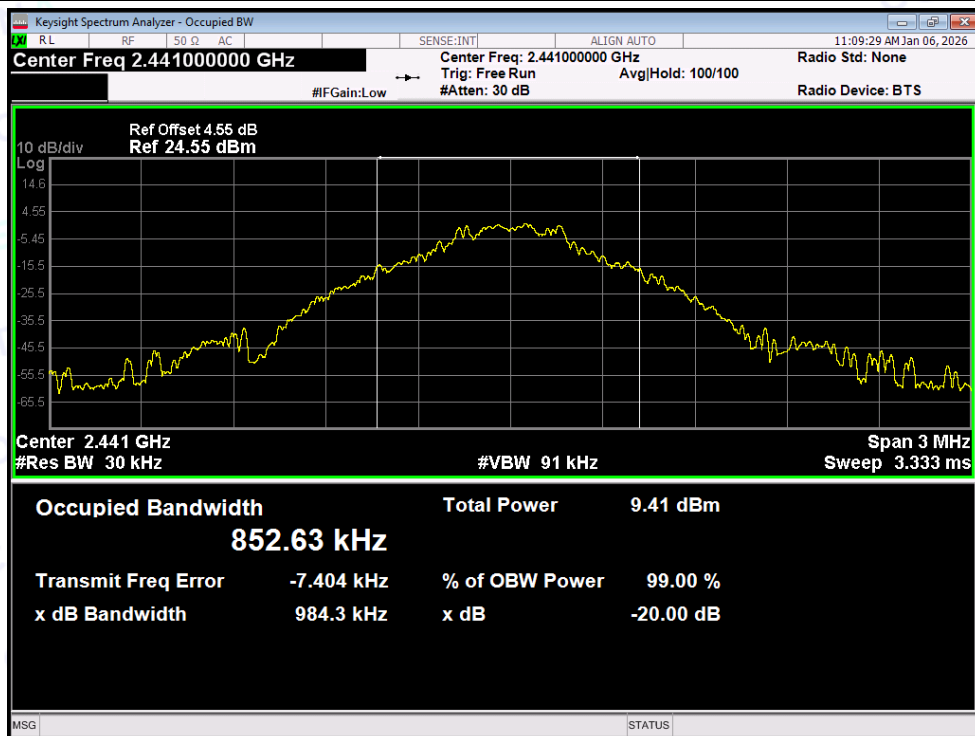
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH5	2402	Ant1	0.867
NVNT	1-DH5	2441	Ant1	0.853
NVNT	1-DH5	2480	Ant1	0.862
NVNT	2-DH5	2402	Ant1	1.19
NVNT	2-DH5	2441	Ant1	1.204
NVNT	2-DH5	2480	Ant1	1.192
NVNT	3-DH5	2402	Ant1	1.198
NVNT	3-DH5	2441	Ant1	1.182
NVNT	3-DH5	2480	Ant1	1.187

Test Graphs

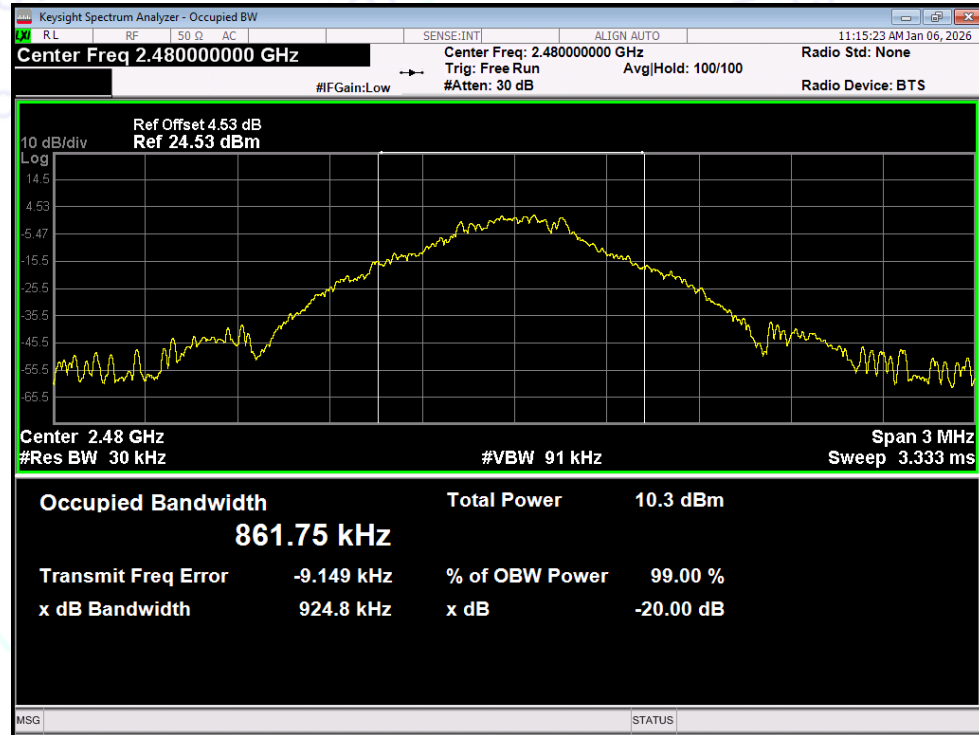
OBW NVNT 1-DH5 2402MHz Ant1



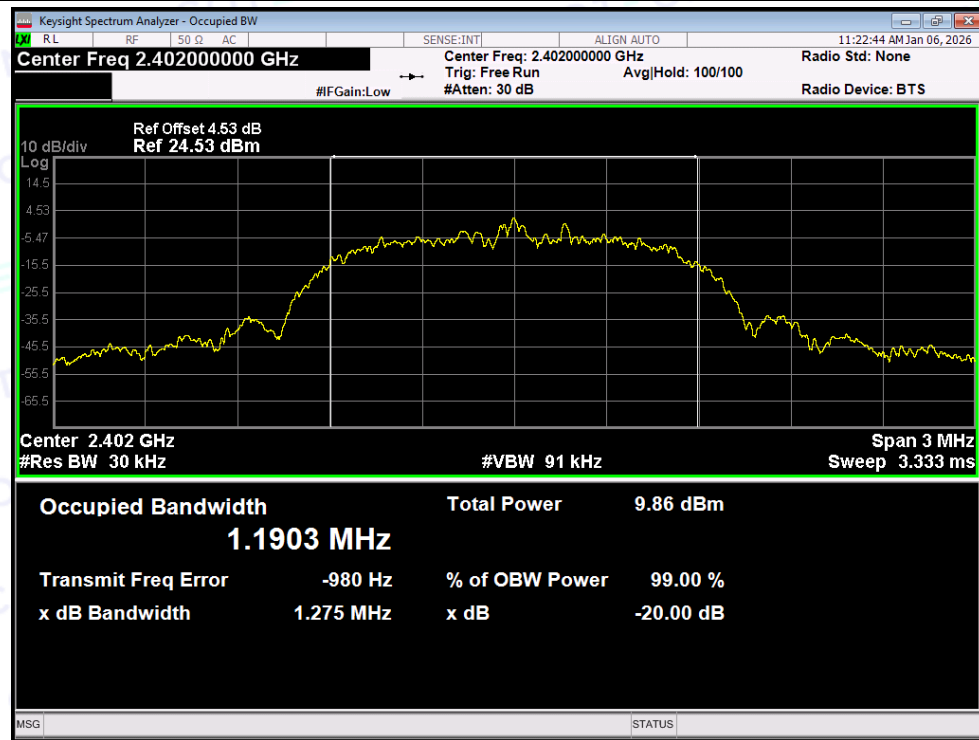
OBW NVNT 1-DH5 2441MHz Ant1



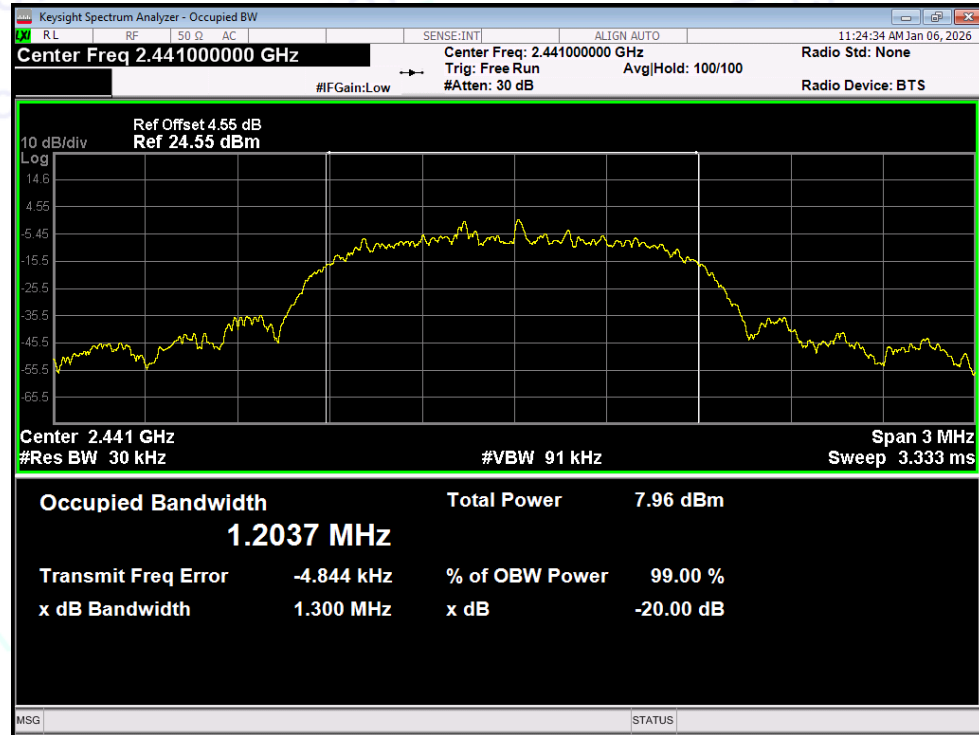
OBW NVNT 1-DH5 2480MHz Ant1



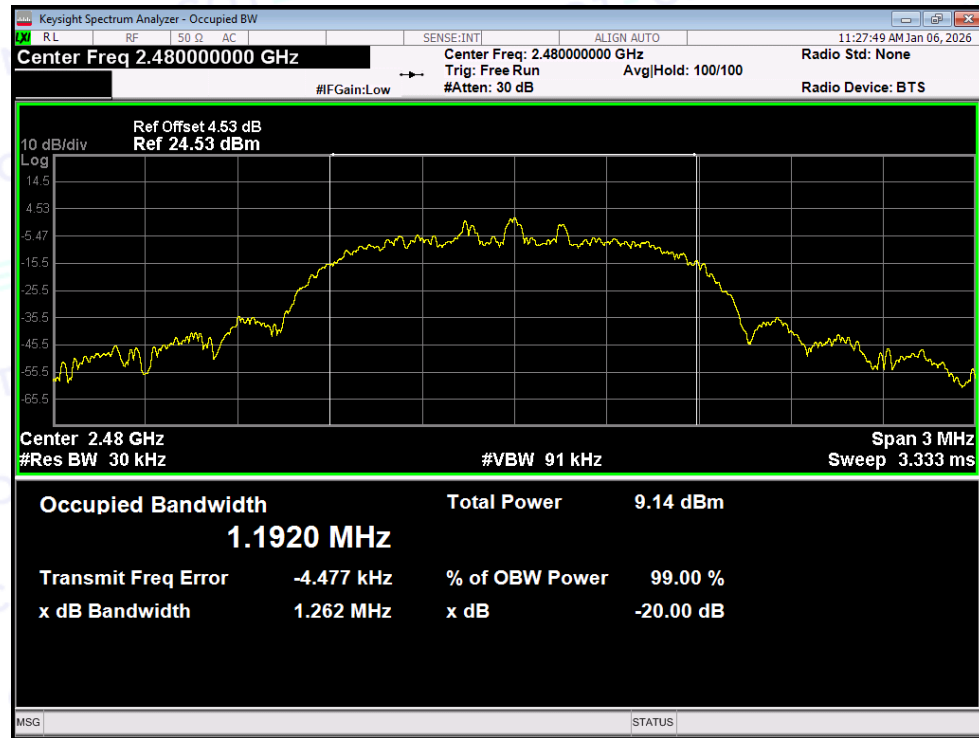
OBW NVNT 2-DH5 2402MHz Ant1



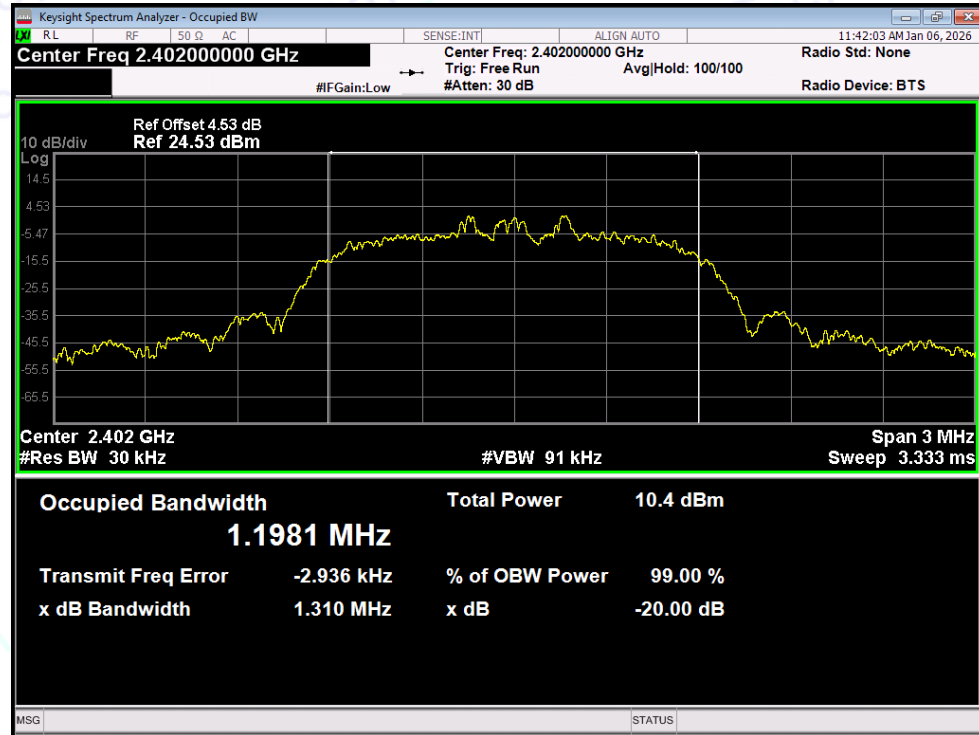
OBW NVNT 2-DH5 2441MHz Ant1



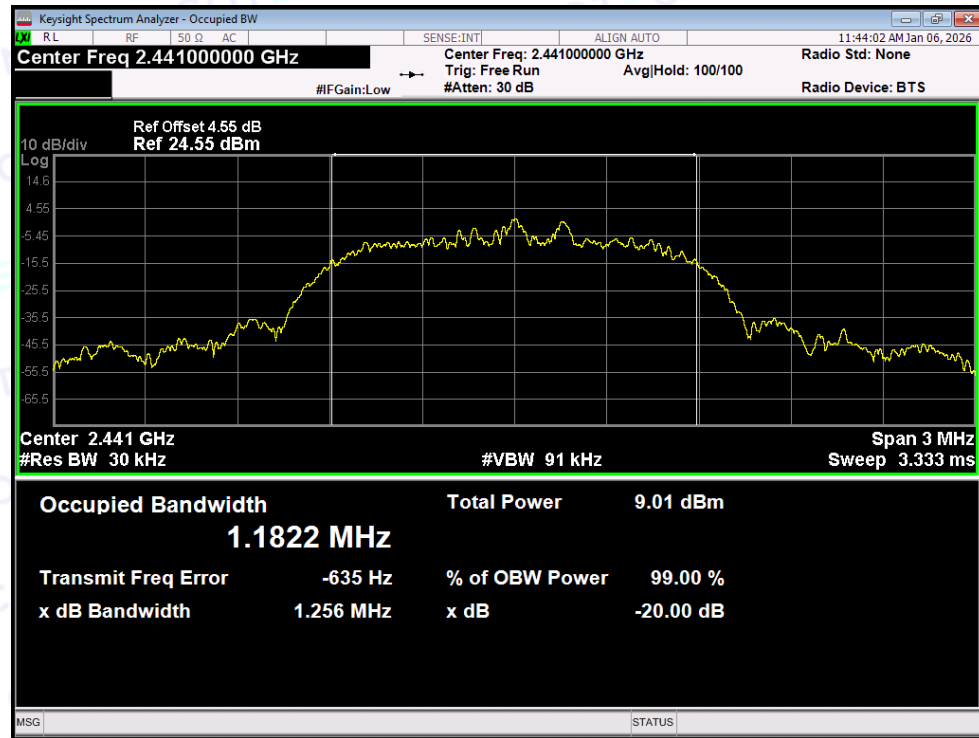
OBW NVNT 2-DH5 2480MHz Ant1

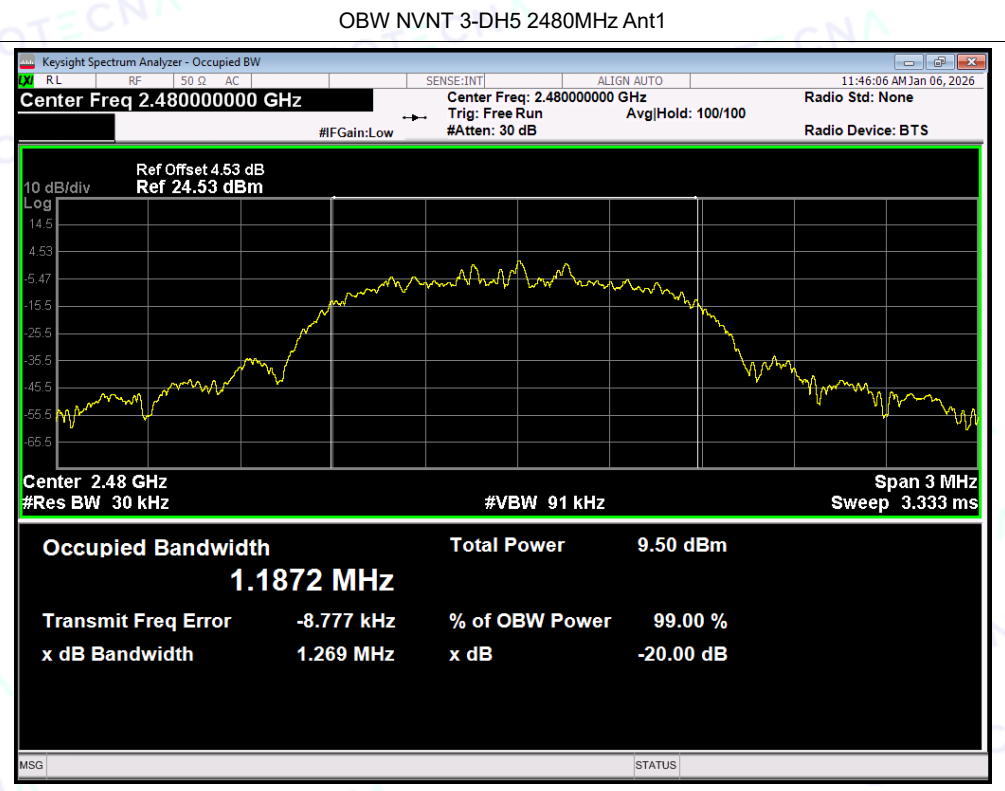


OBW NVNT 3-DH5 2402MHz Ant1



OBW NVNT 3-DH5 2441MHz Ant1



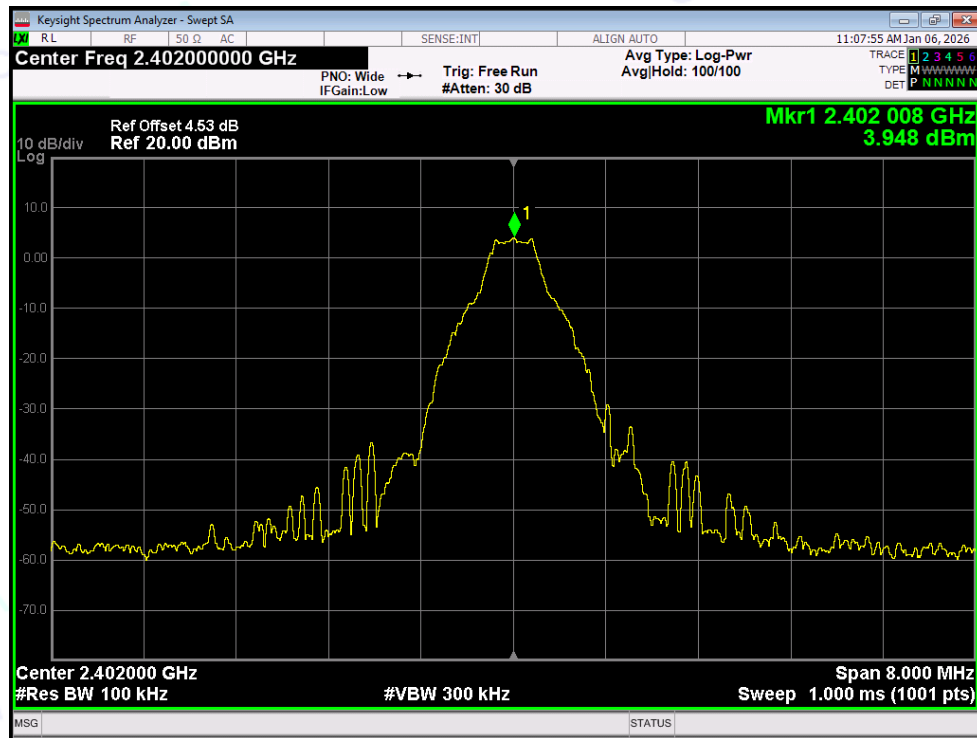


6.Band Edge

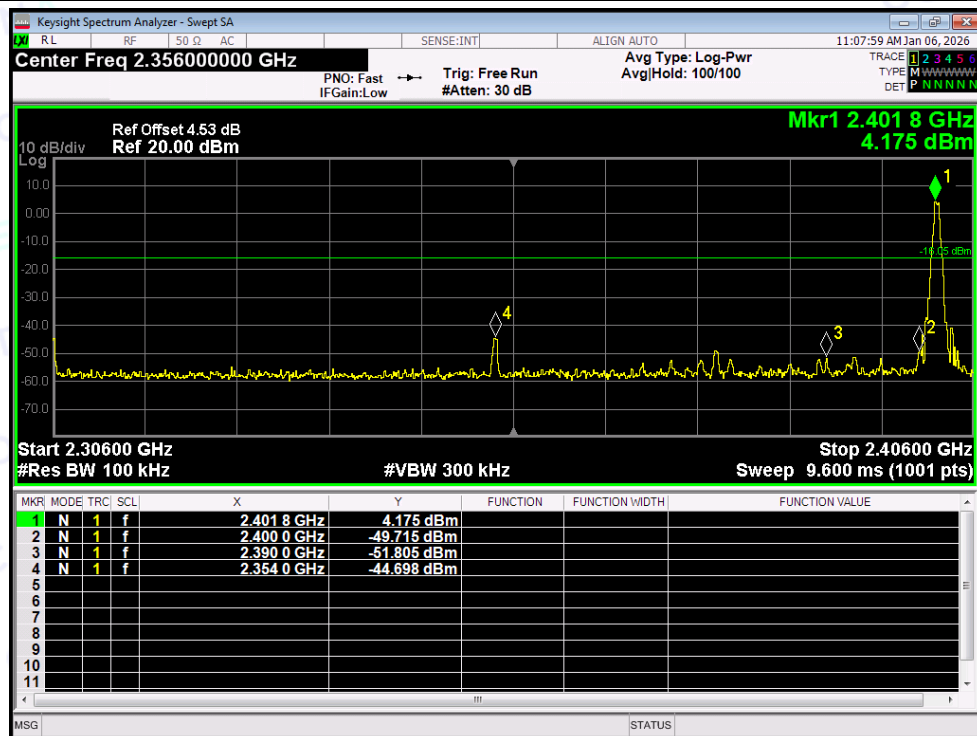
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-48.65	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-56.73	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-47.52	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-58.38	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-49.94	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-57.37	-20	Pass

Test Graphs

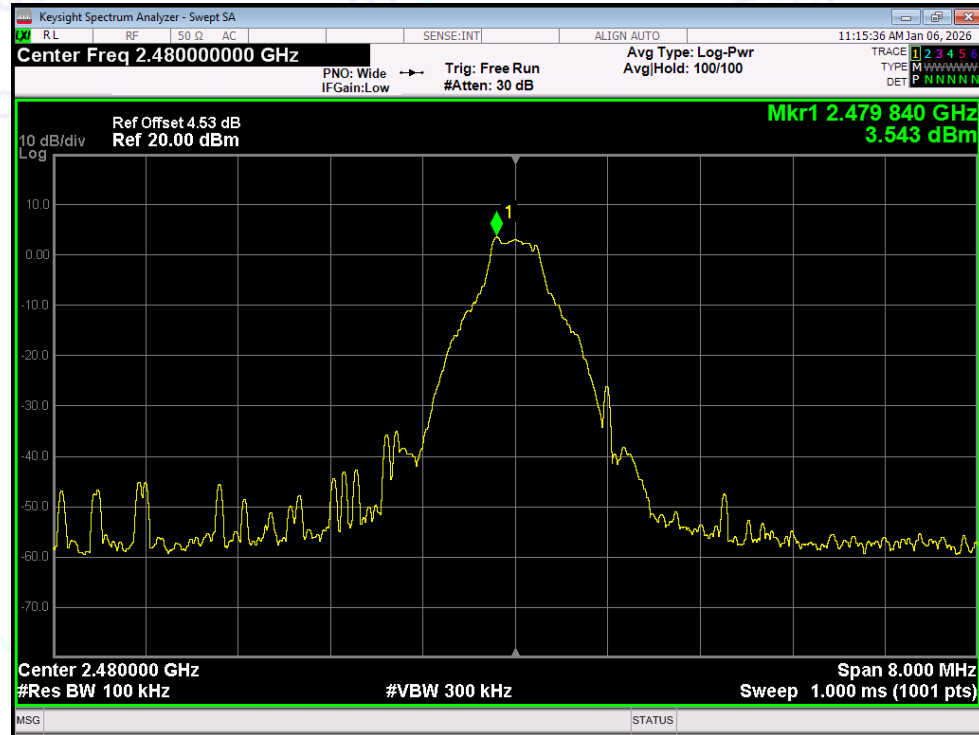
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



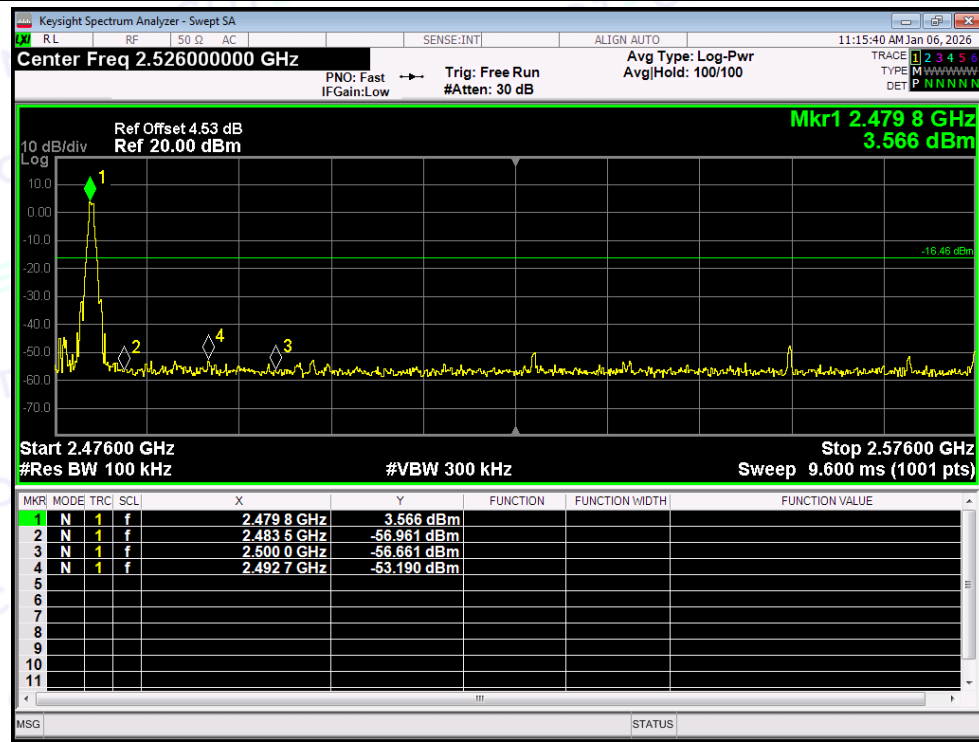
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



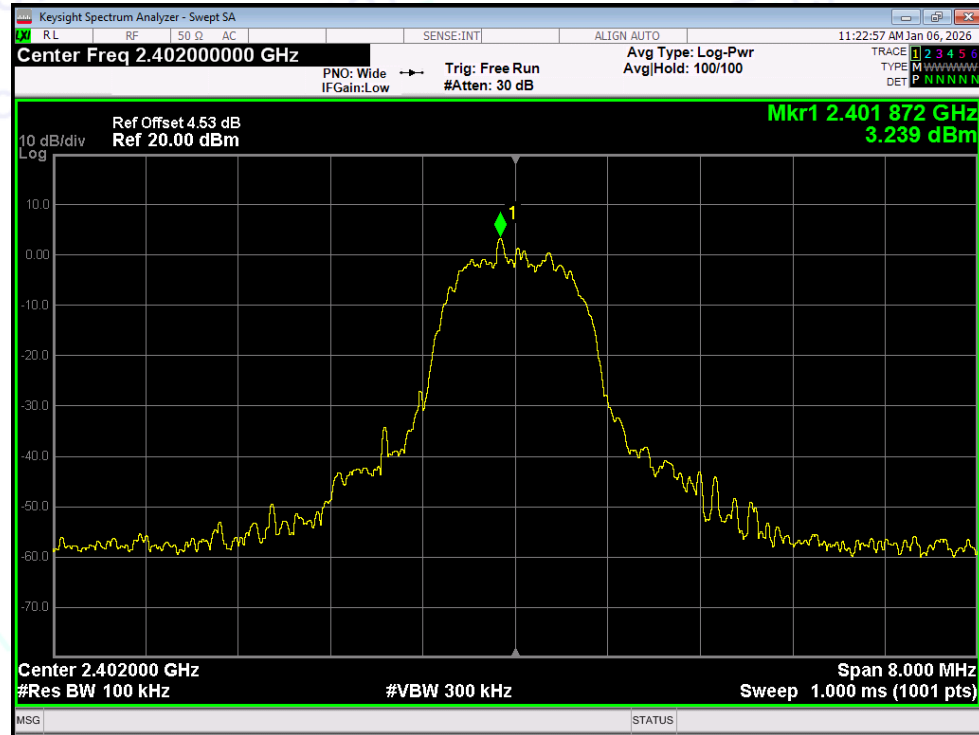
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



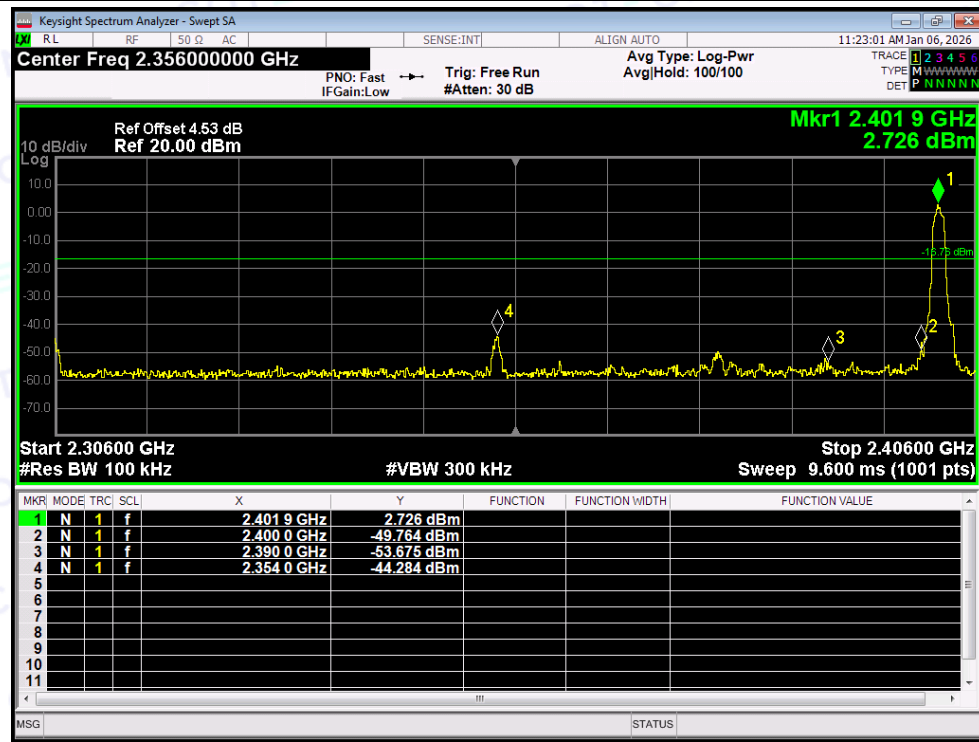
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



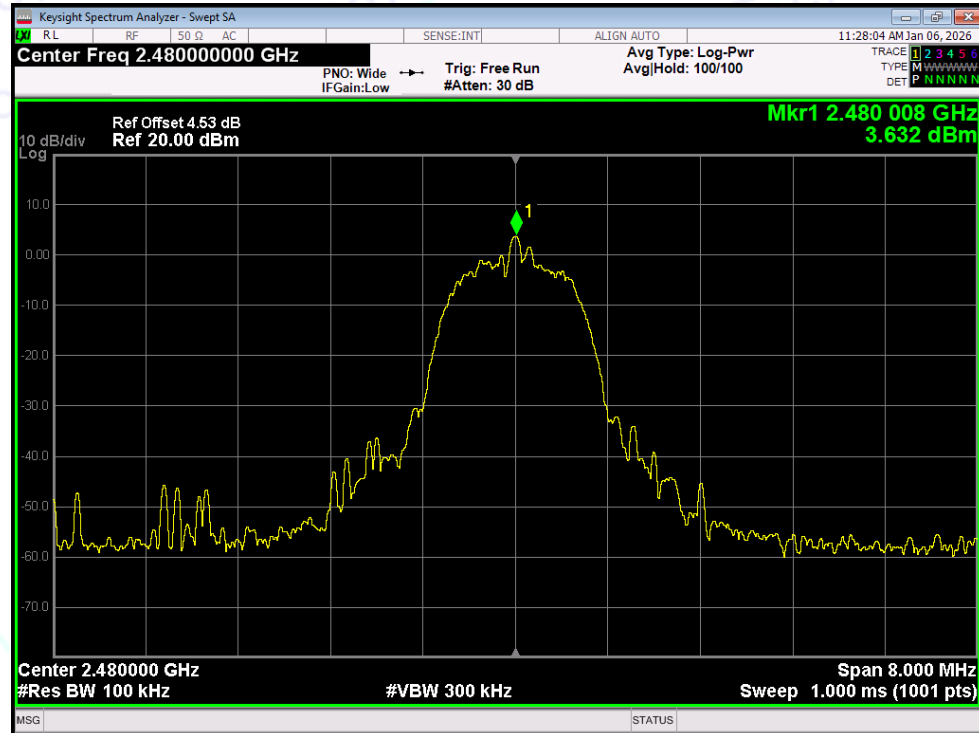
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



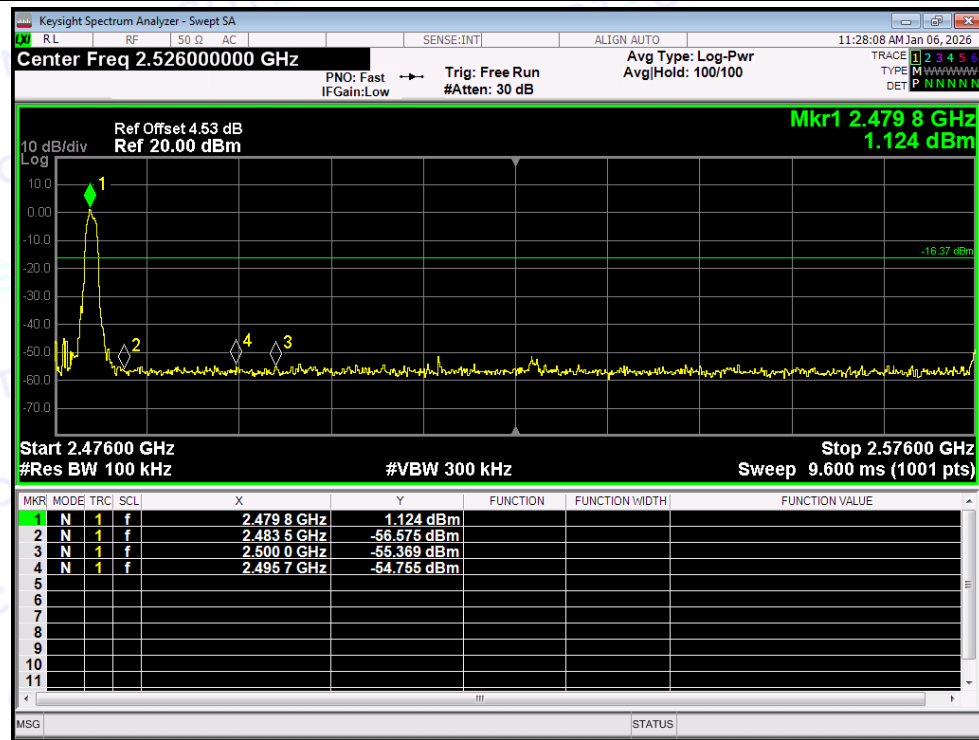
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission



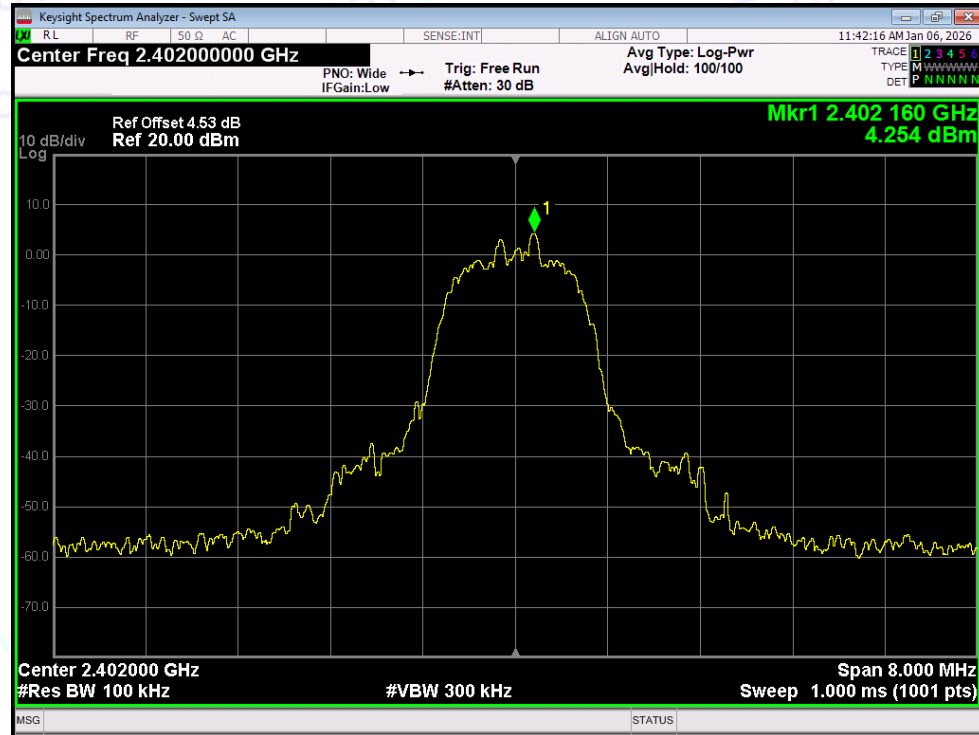
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



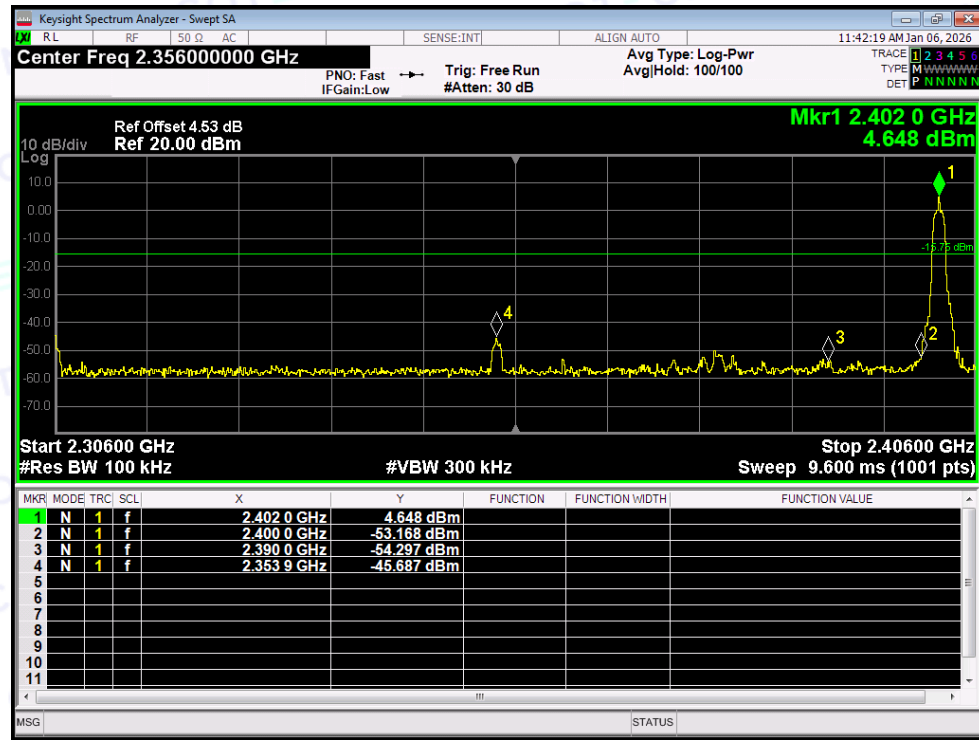
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission



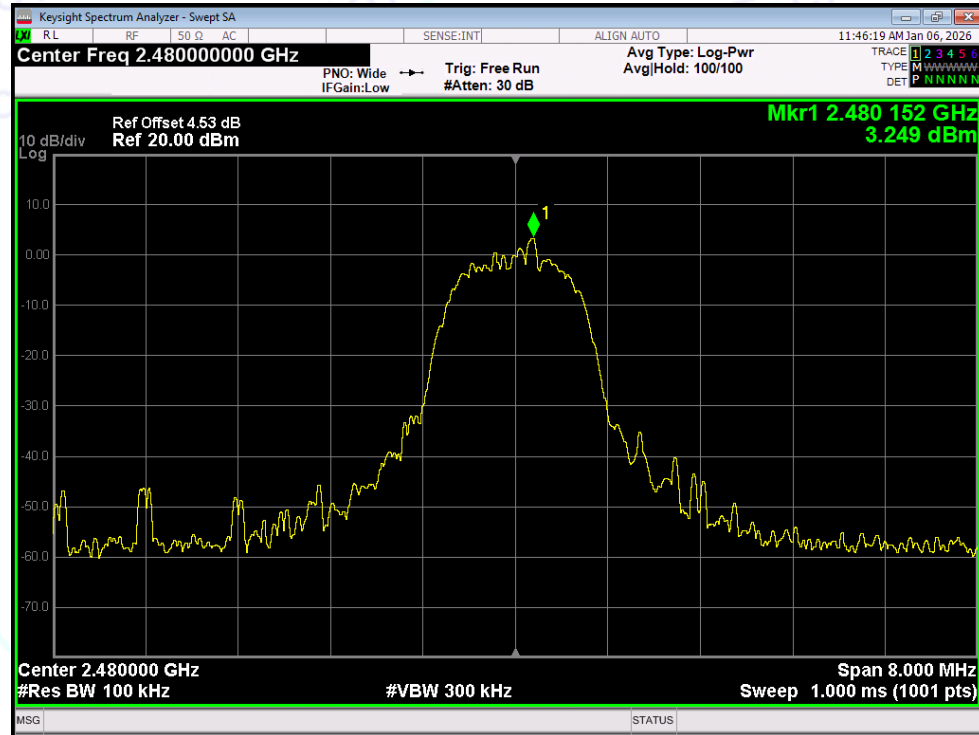
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref



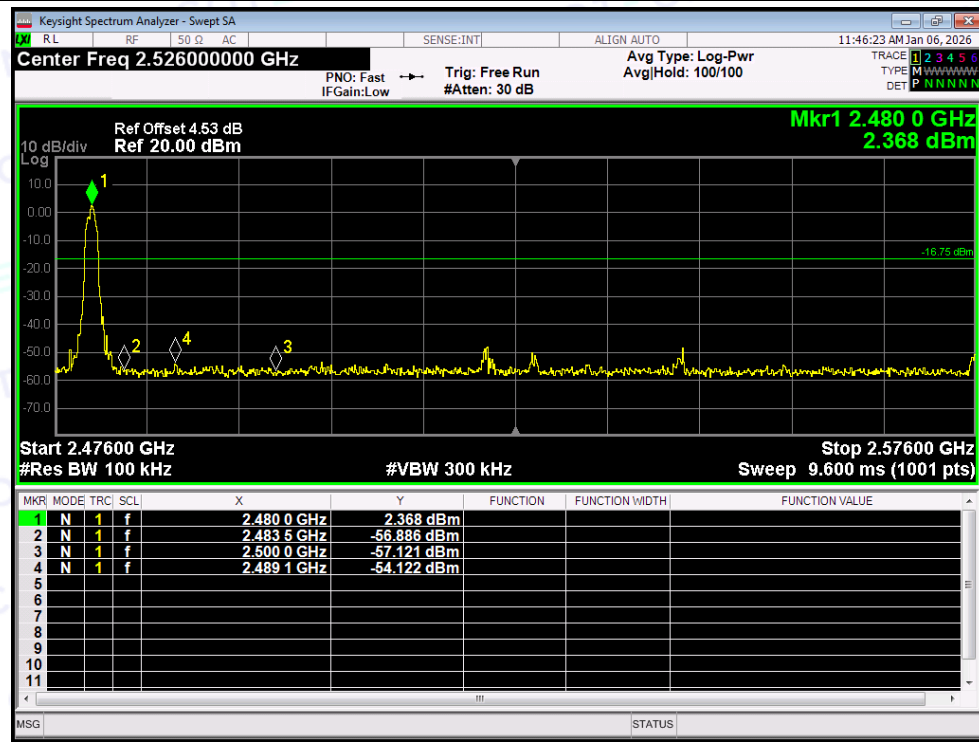
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission



Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Ref



Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Emission



7. Band Edge(Hopping)

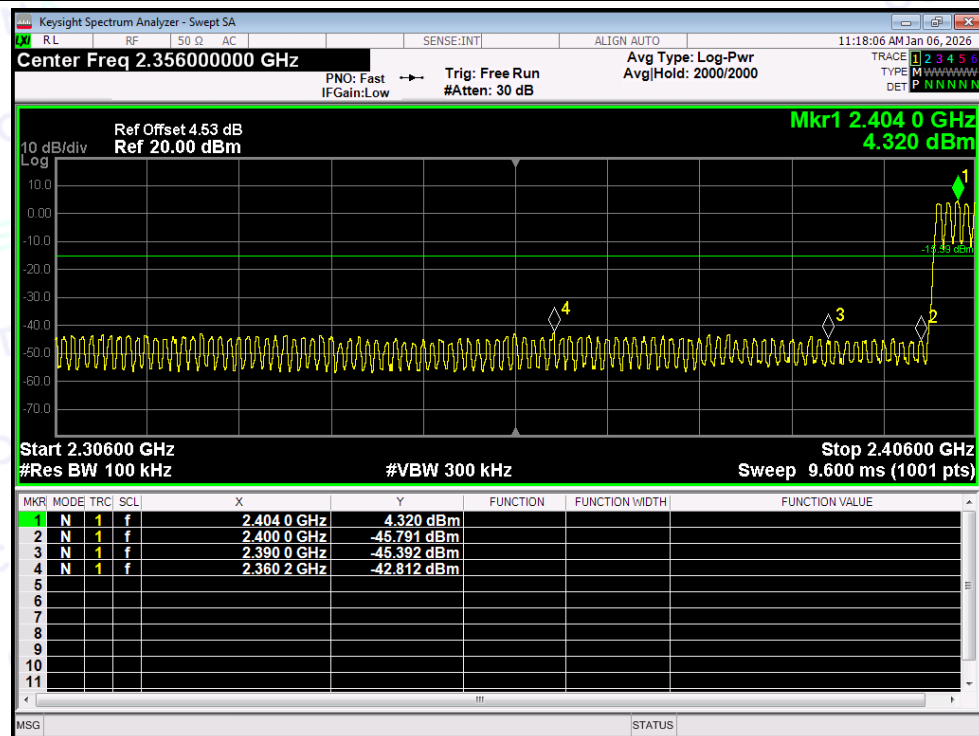
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-47.22	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-47.69	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-46.82	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-48.66	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-47.76	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-49.95	-20	Pass

Test Graphs

Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



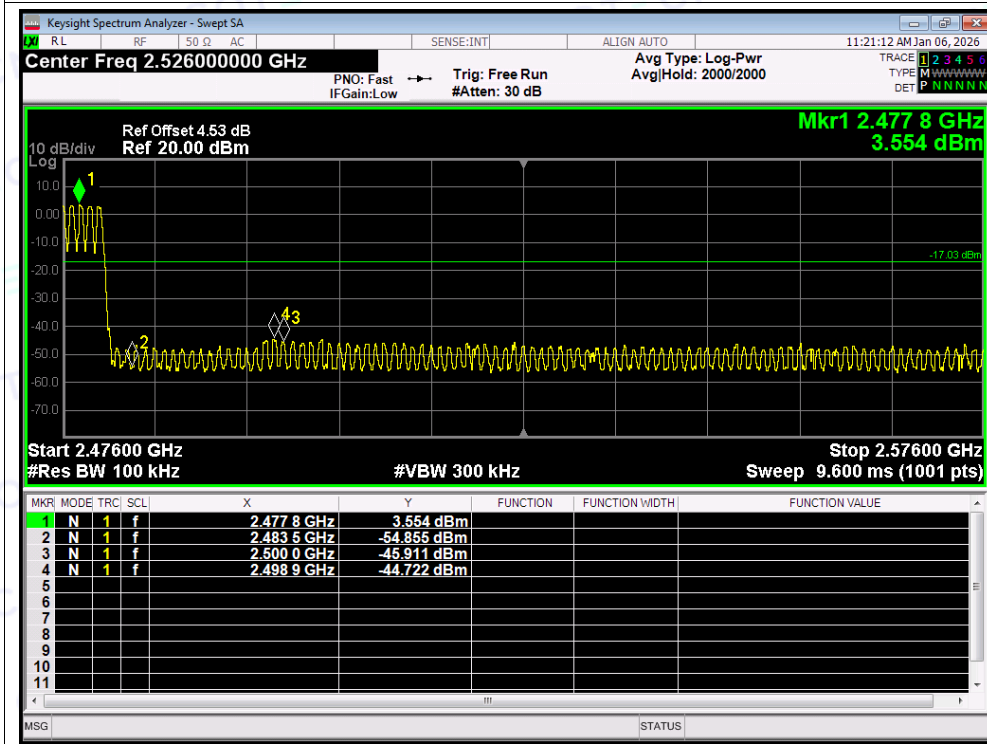
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



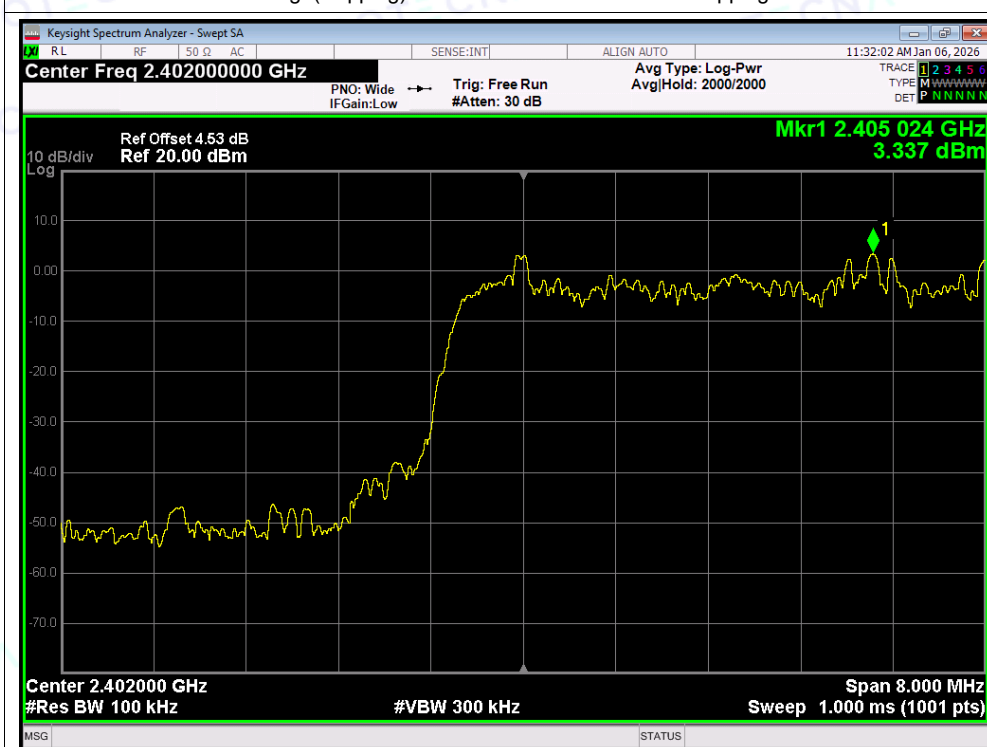
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



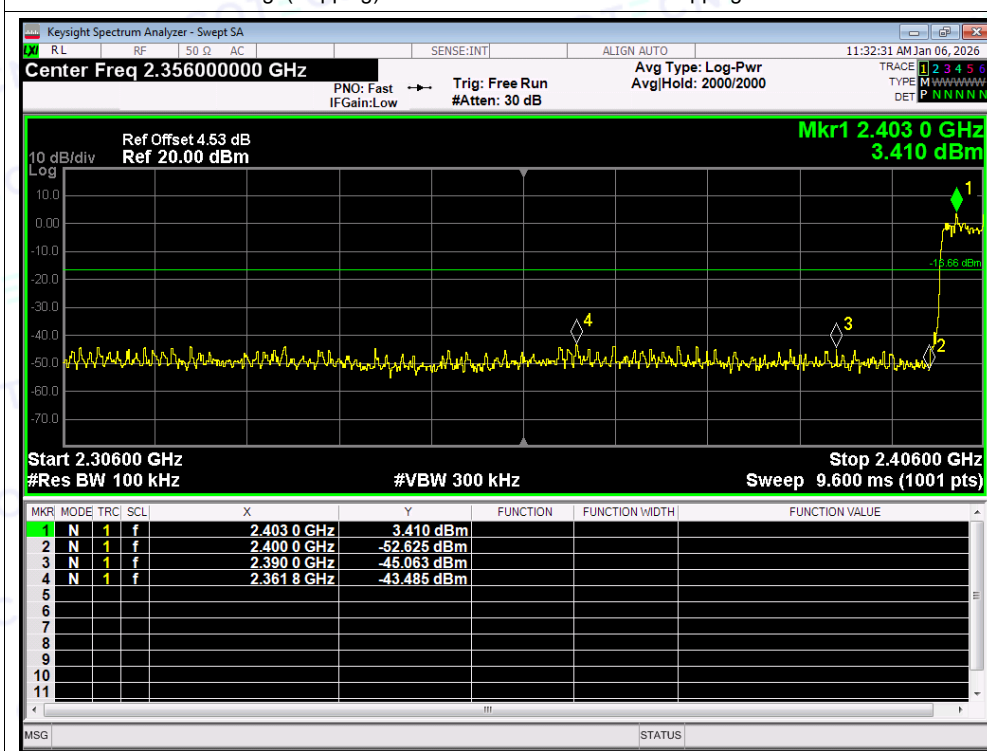
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



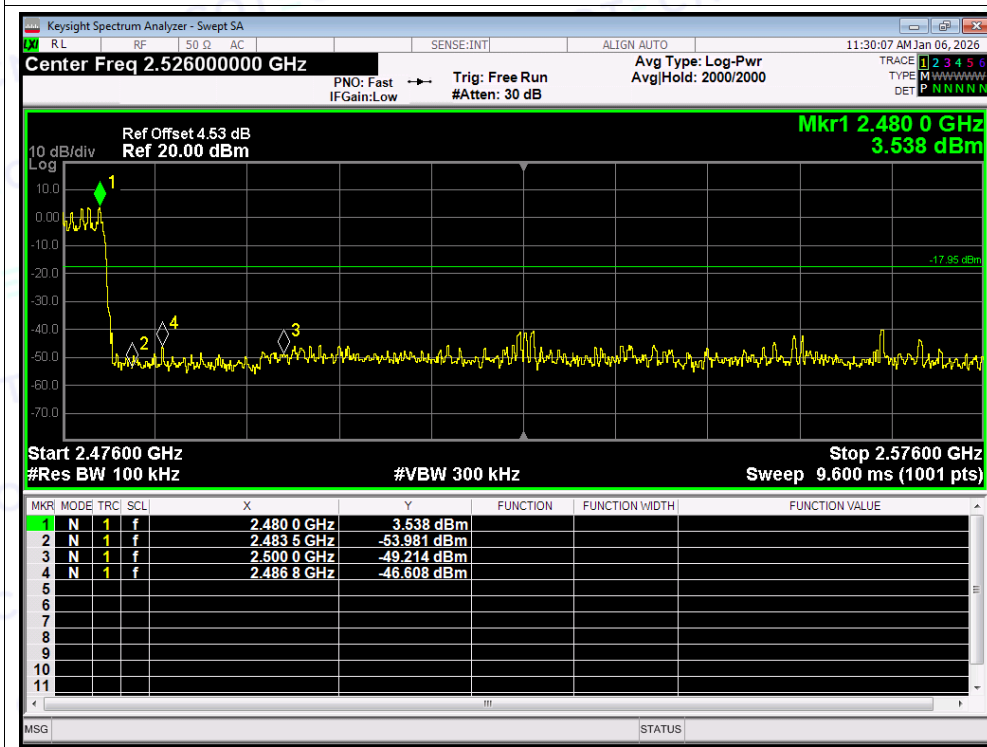
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



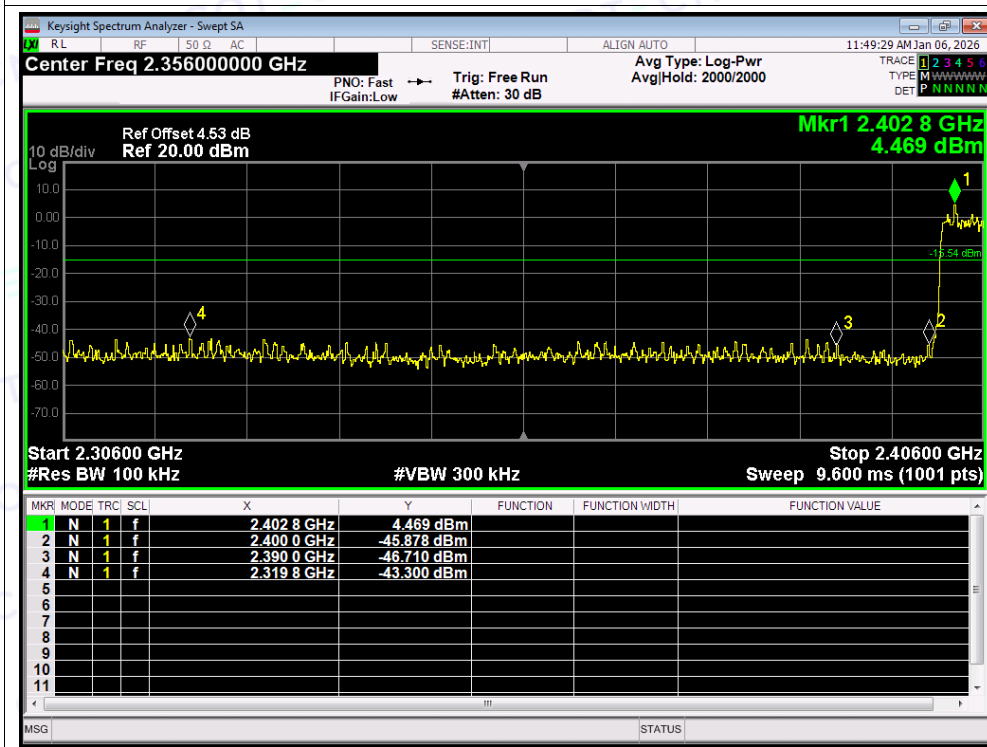
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission



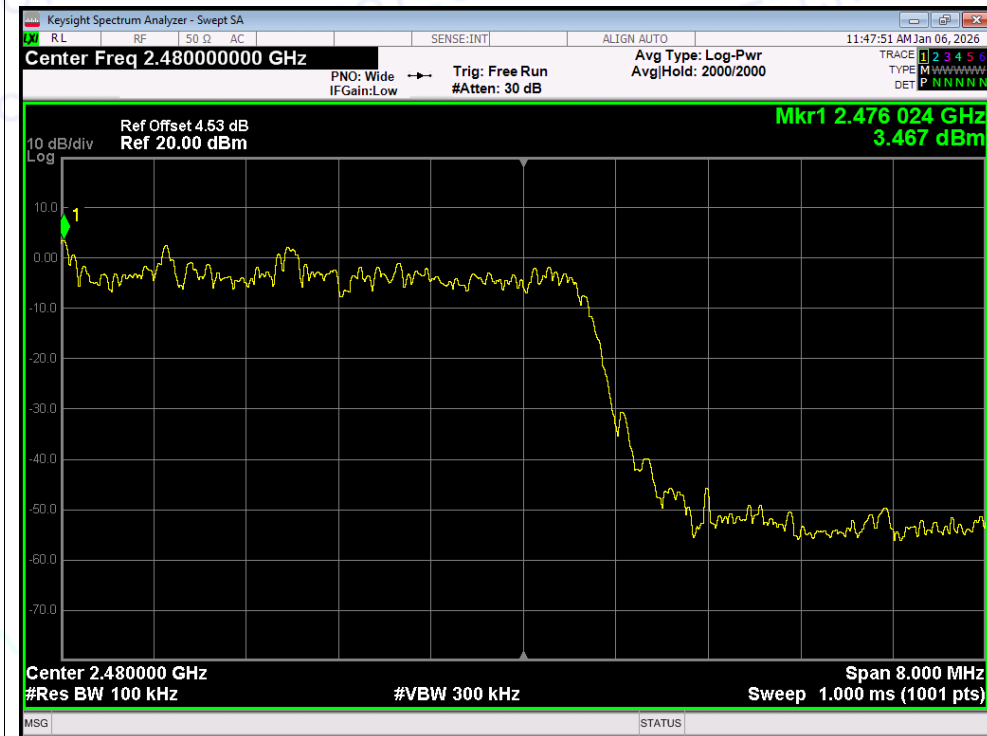
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref



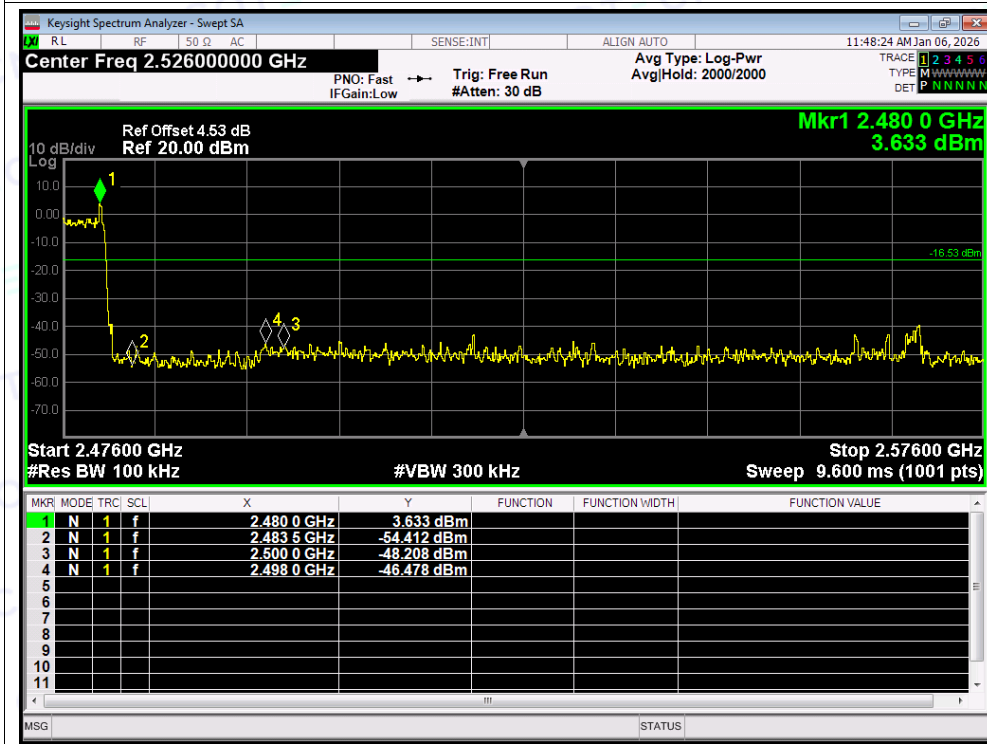
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Emission

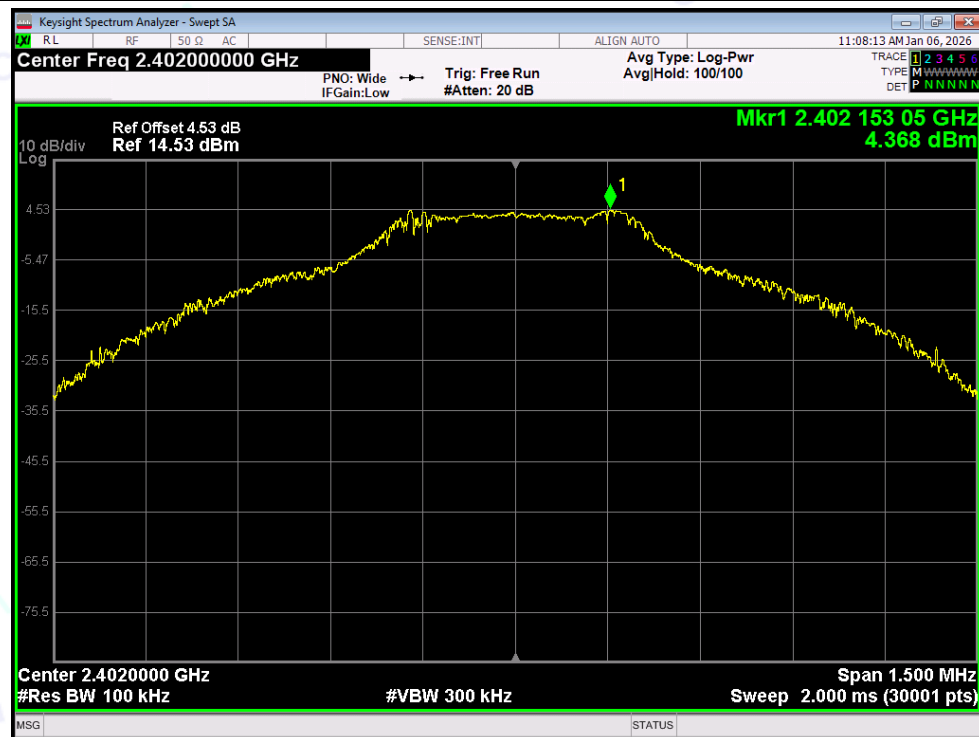


8. Conducted RF Spurious Emission

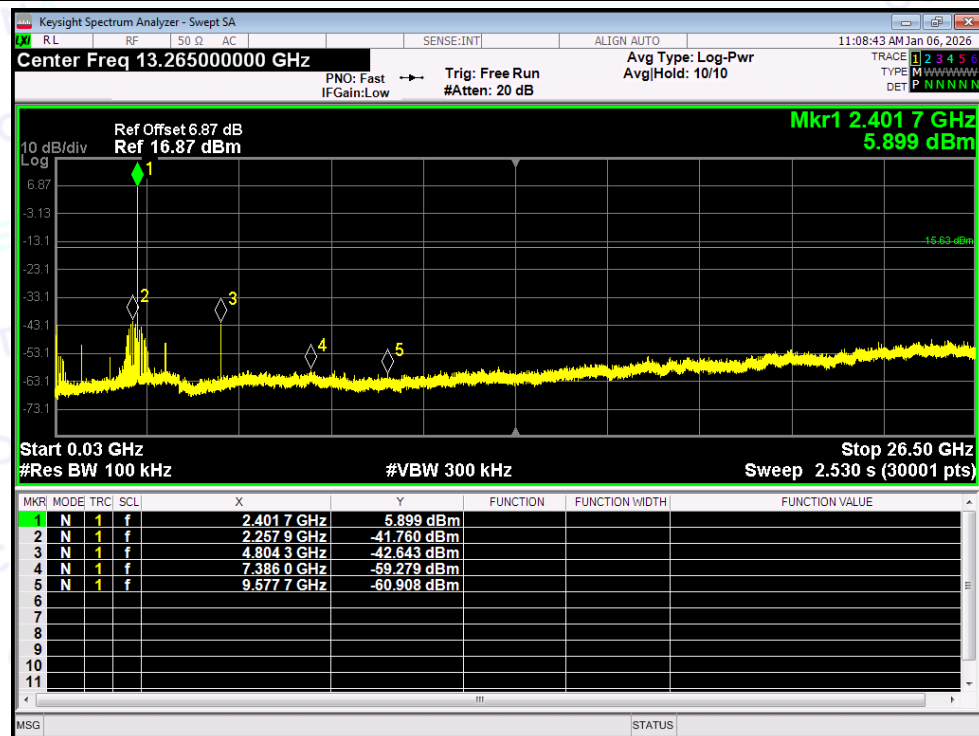
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-46.13	-20	Pass
NVNT	1-DH5	2441	Ant1	-44.3	-20	Pass
NVNT	1-DH5	2480	Ant1	-44.6	-20	Pass
NVNT	2-DH5	2402	Ant1	-47.48	-20	Pass
NVNT	2-DH5	2441	Ant1	-46.09	-20	Pass
NVNT	2-DH5	2480	Ant1	-45.98	-20	Pass
NVNT	3-DH5	2402	Ant1	-46.63	-20	Pass
NVNT	3-DH5	2441	Ant1	-48.95	-20	Pass
NVNT	3-DH5	2480	Ant1	-45.05	-20	Pass

Test Graphs

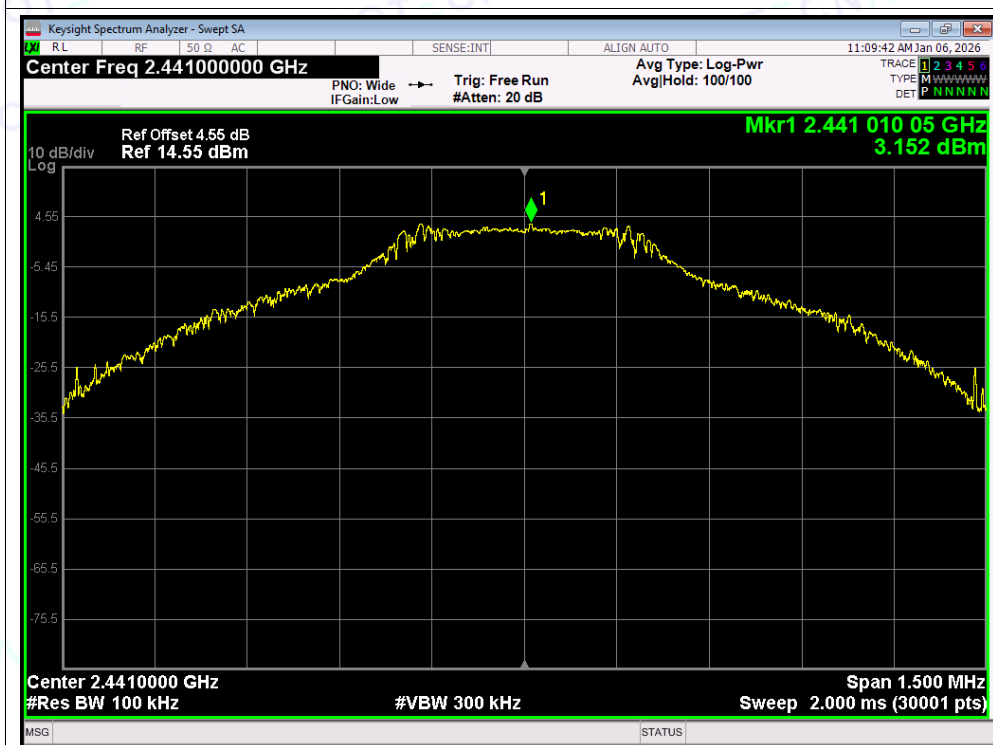
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



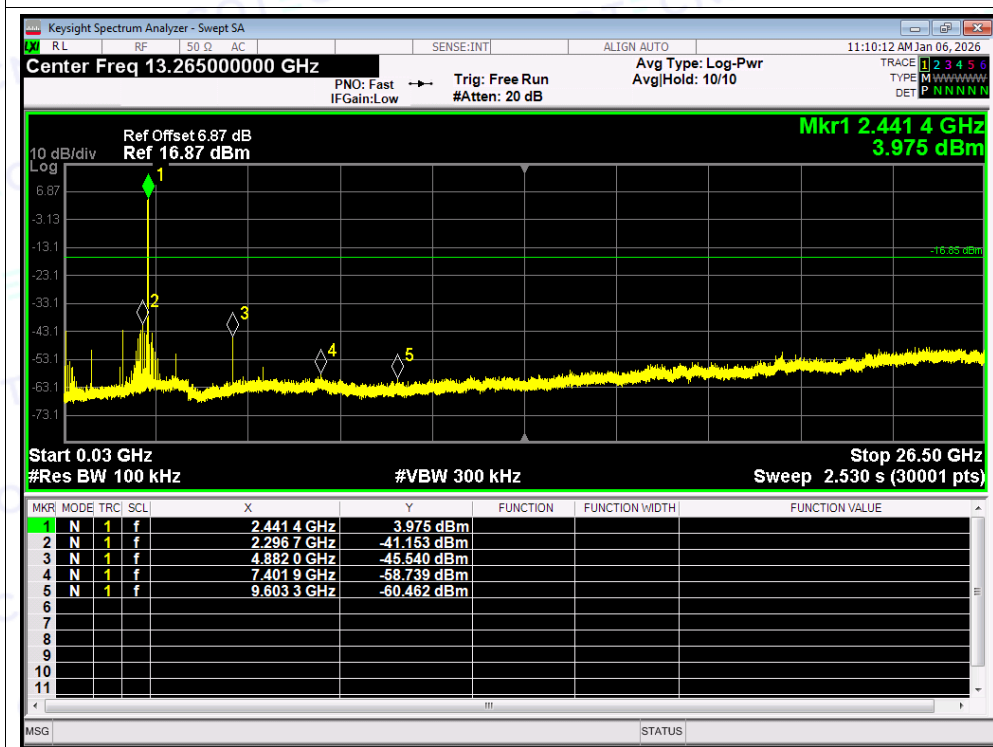
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



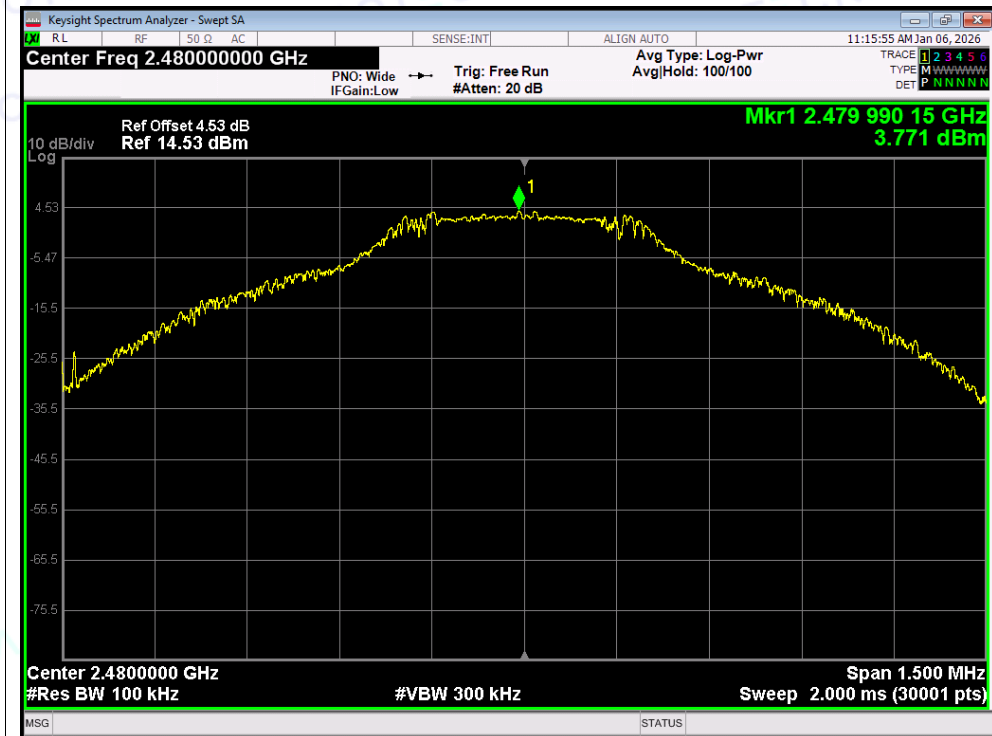
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



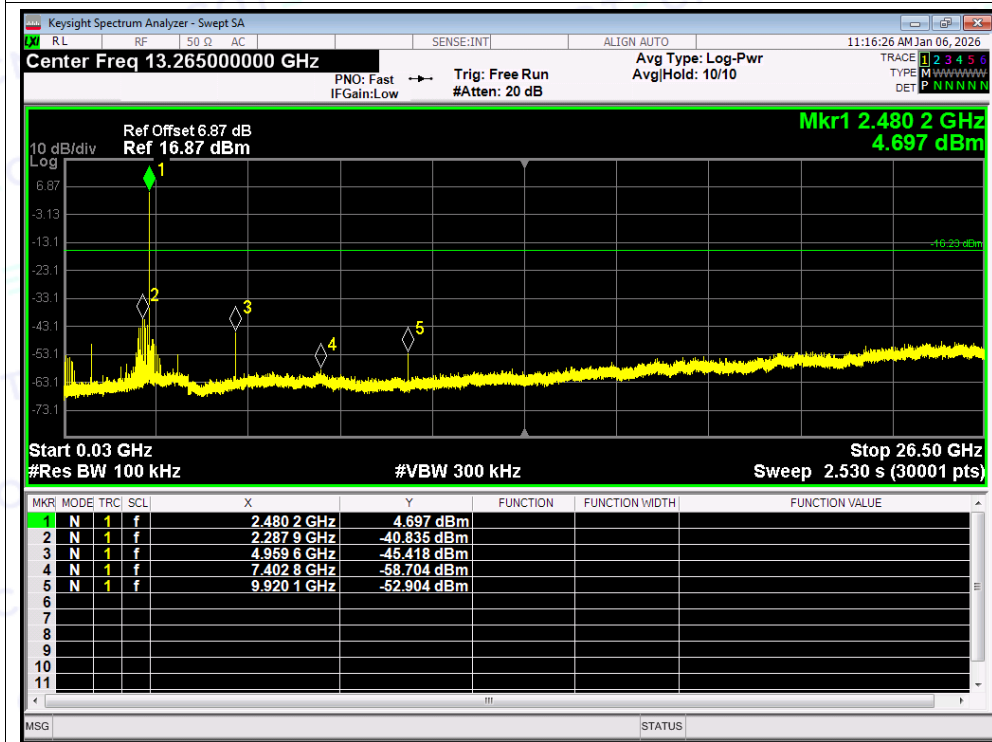
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



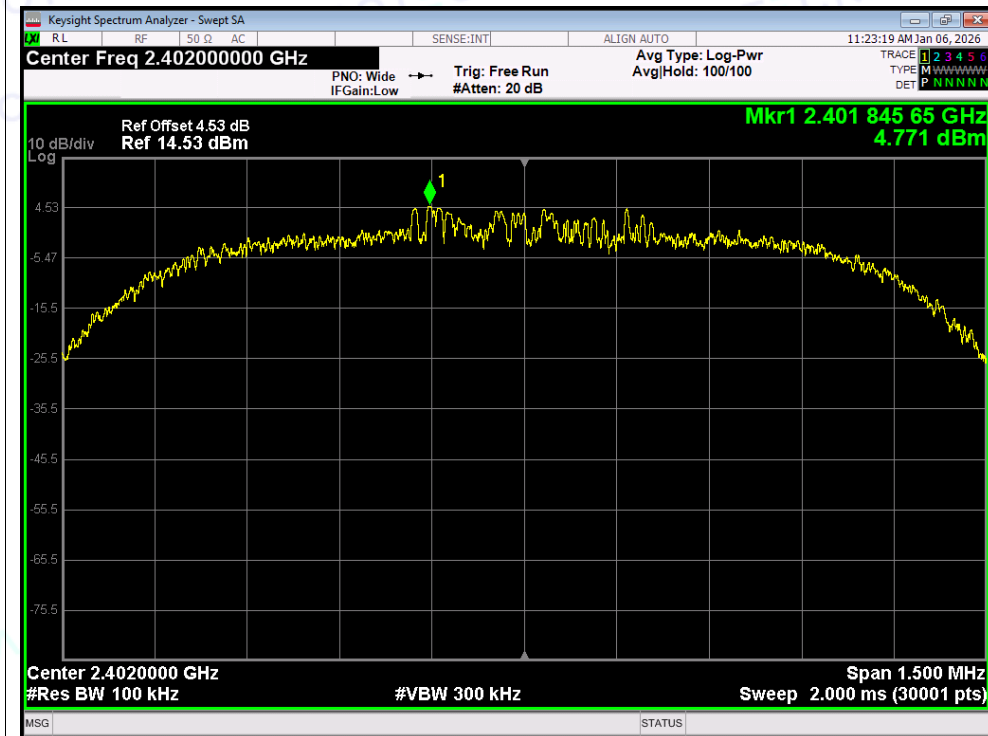
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



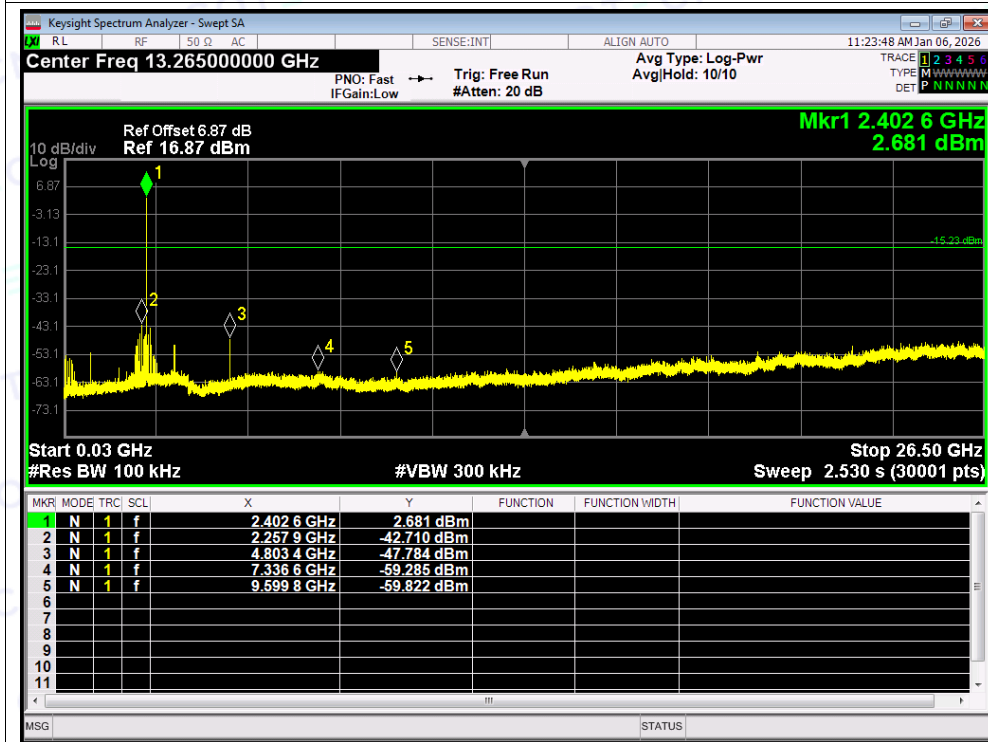
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



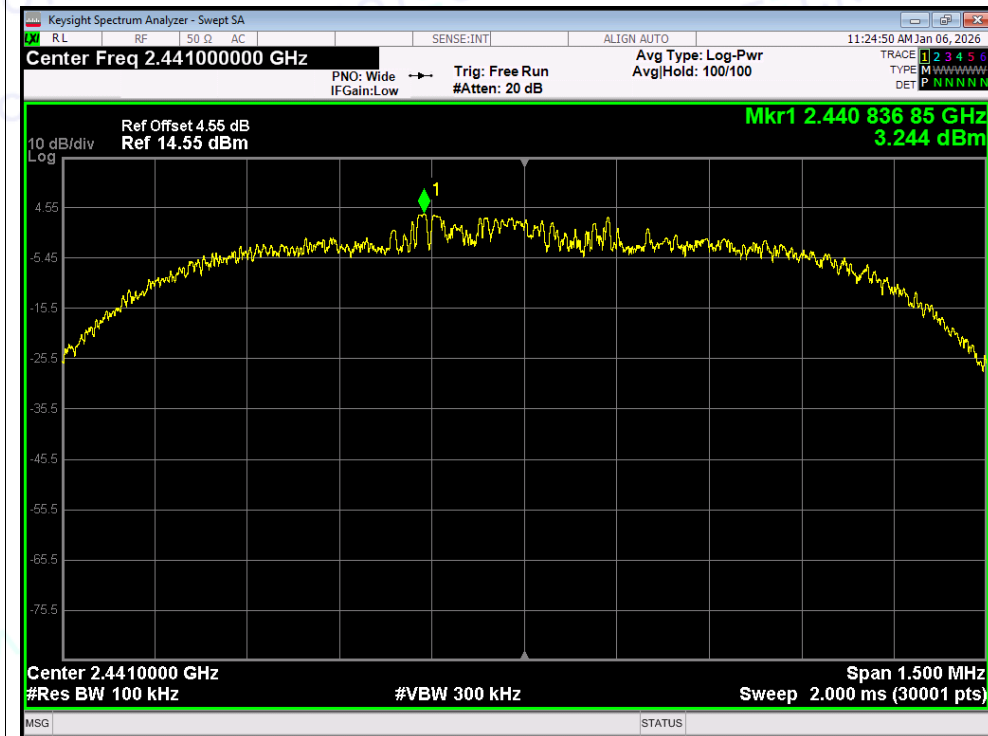
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



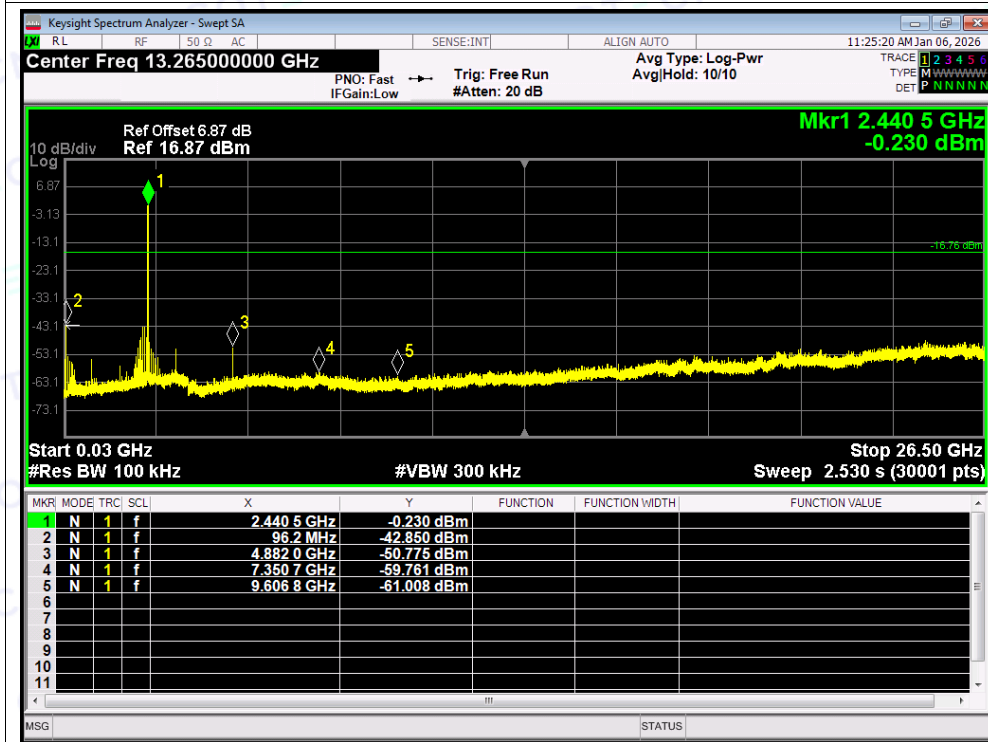
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



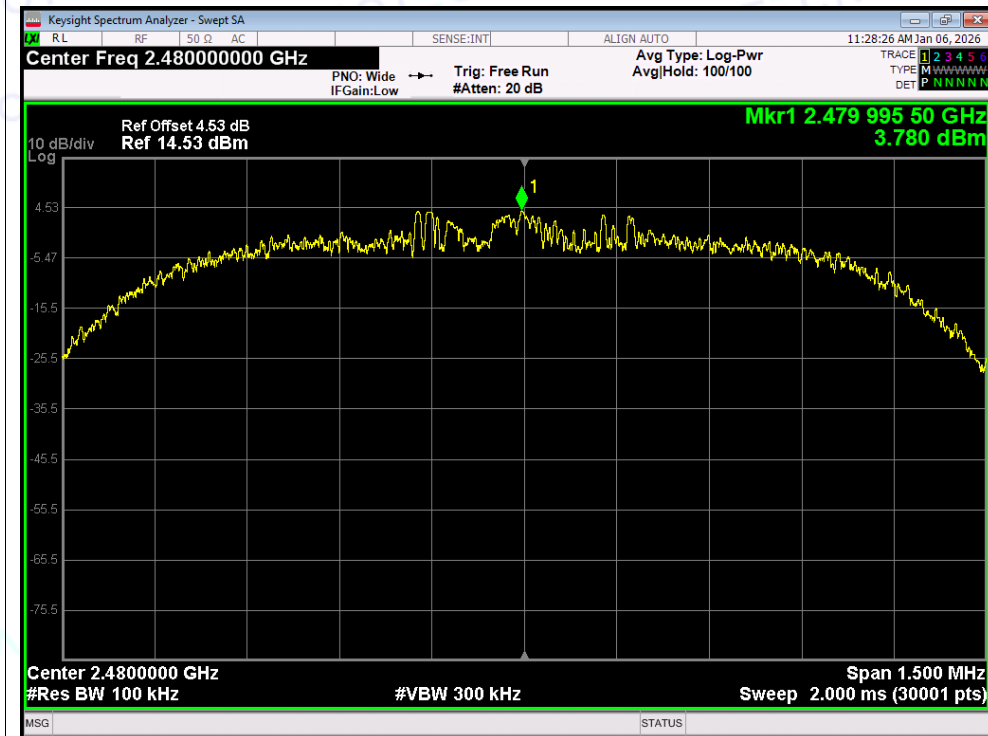
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



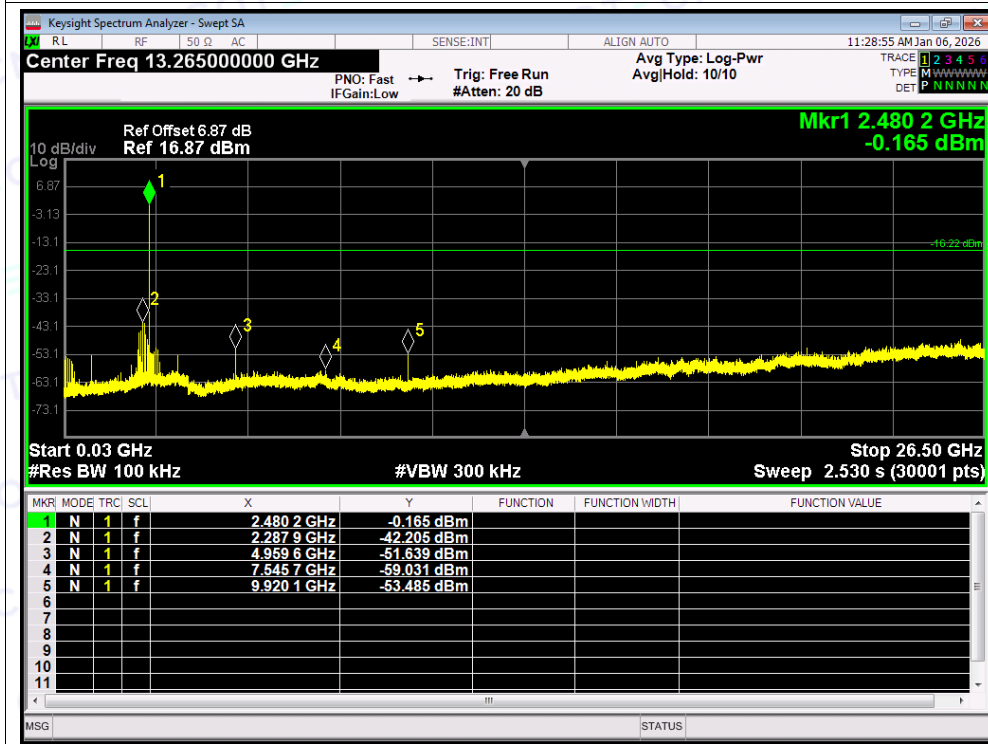
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



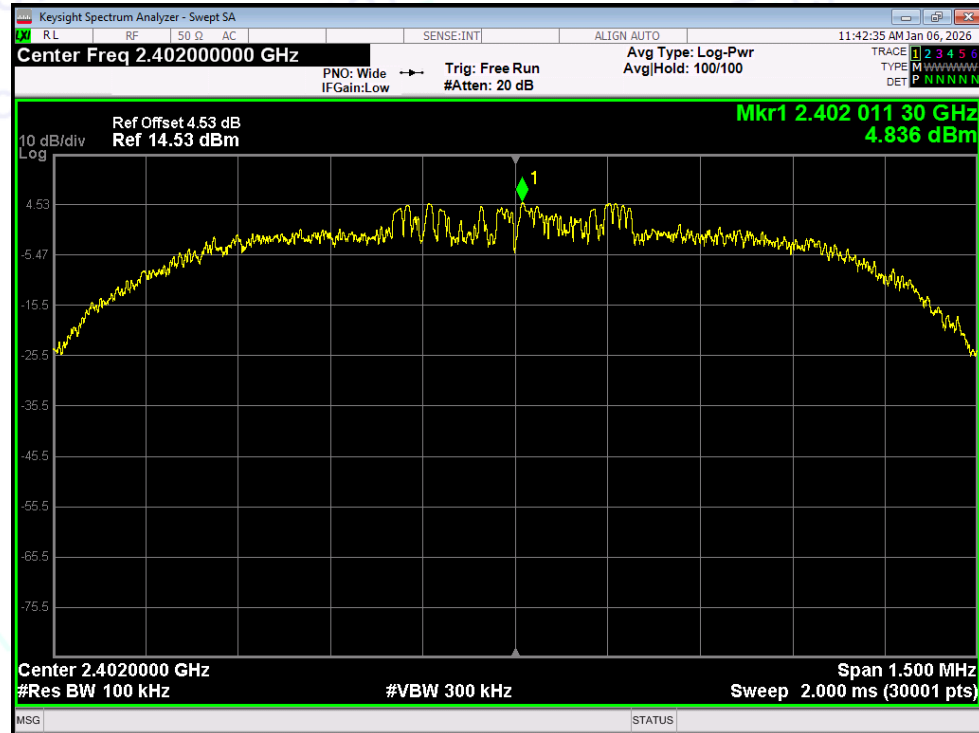
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



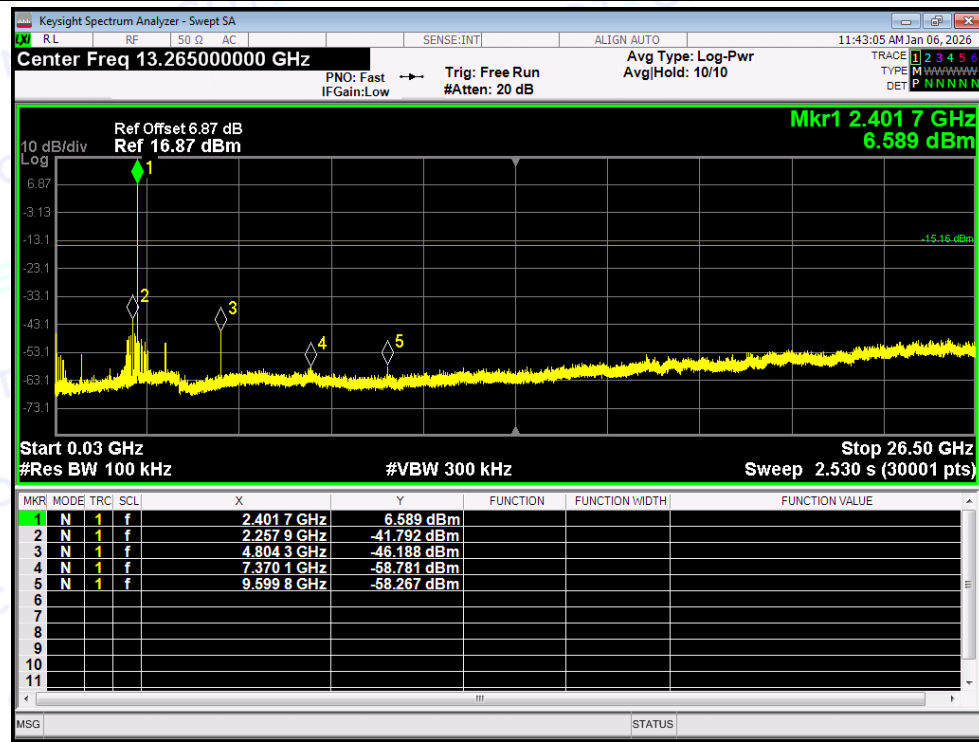
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission



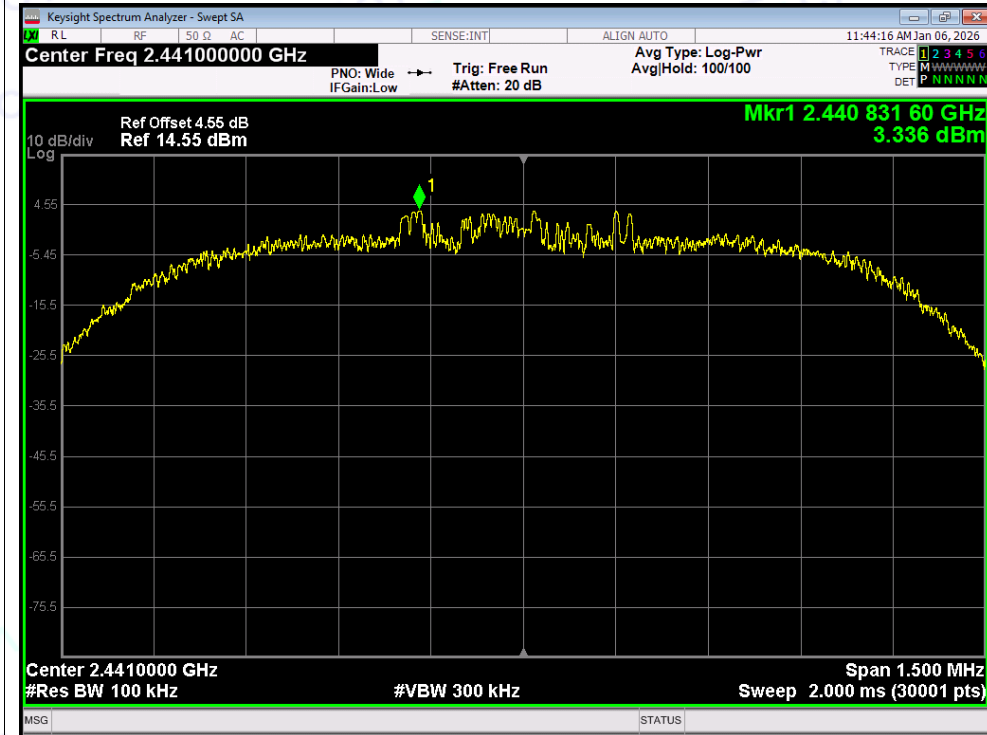
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref



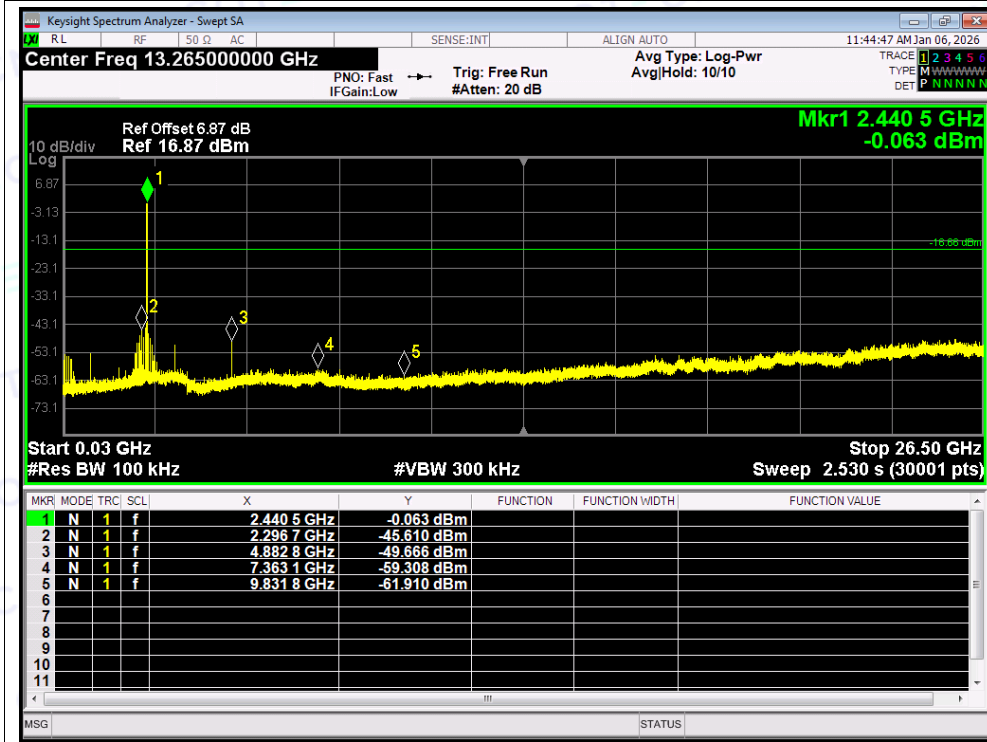
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission



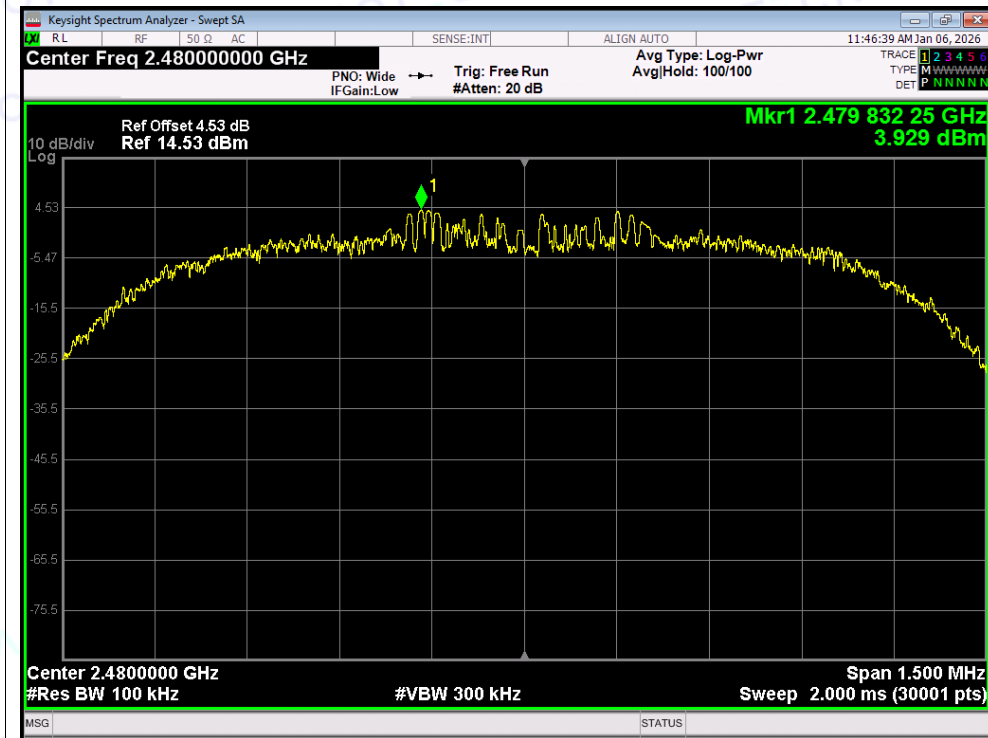
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



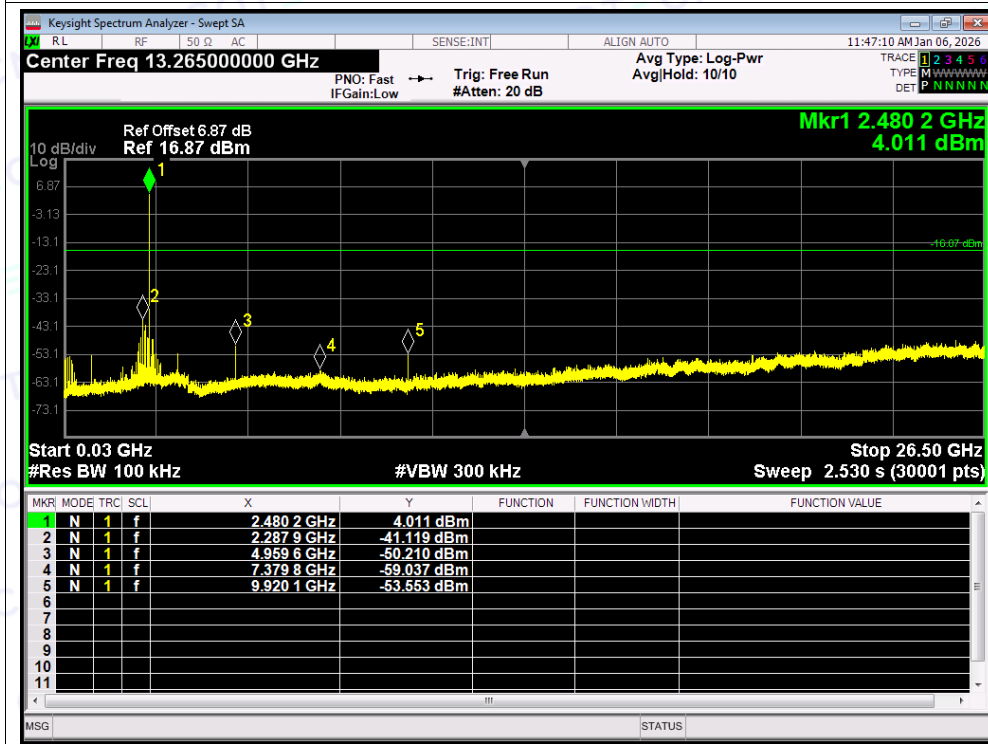
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission

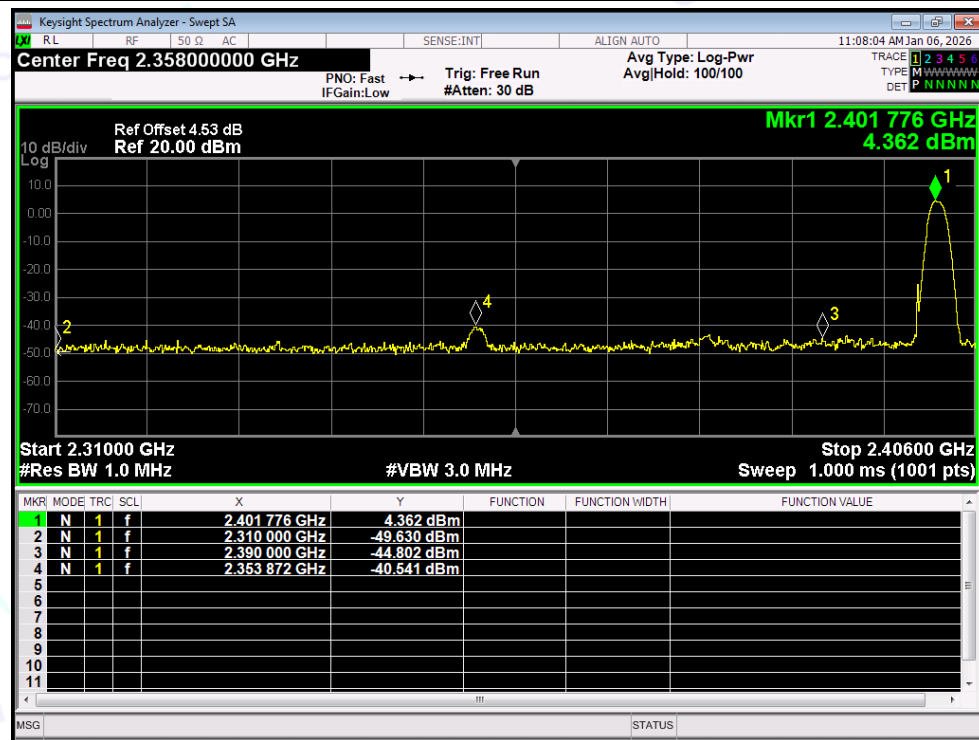


9.Restrict Band

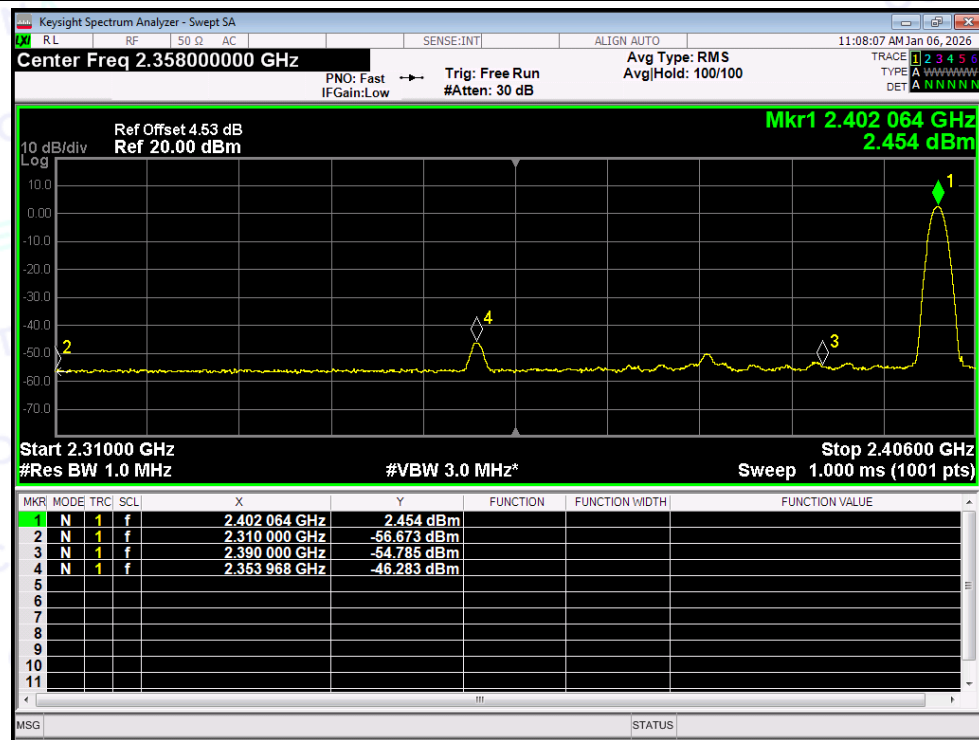
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-49.63	2	-	47.63	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-56.67	2	1.13	41.72	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2353.872	-40.54	2	-	56.72	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2353.968	-46.28	2	1.13	52.11	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-44.8	2	-	52.46	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-54.79	2	1.13	43.6	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-48.23	2	-	49.03	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-54.85	2	1.13	43.54	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.968	-43.69	2	-	53.57	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2492.992	-53.82	2	1.13	44.57	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-47.91	2	-	49.35	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-55.43	2	1.13	42.96	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-49.44	2	-	47.82	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-56.58	2	0	40.68	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2353.968	-40.72	2	-	56.54	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2354.064	-48.33	2	0	48.93	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-47.76	2	-	49.5	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-54.76	2	0	42.5	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-45.6	2	-	51.66	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-55.66	2	0.09	41.69	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2486.032	-44.7	2	-	52.56	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2492.608	-54.15	2	0.09	43.2	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-47	2	-	50.26	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-55.45	2	0.09	41.9	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-48.06	2	-	49.2	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-56.5	2	1.13	41.89	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2354.064	-41.86	2	-	55.4	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2353.968	-47.78	2	1.13	50.61	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-46.01	2	-	51.25	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-55.01	2	1.13	43.38	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-47.79	2	-	49.47	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-55.02	2	1.04	43.28	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2499.736	-43.74	2	-	53.52	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2486.344	-54.35	2	1.04	43.95	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-47.13	2	-	50.13	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-55.85	2	1.04	42.45	Average	54	Pass

Test Graphs

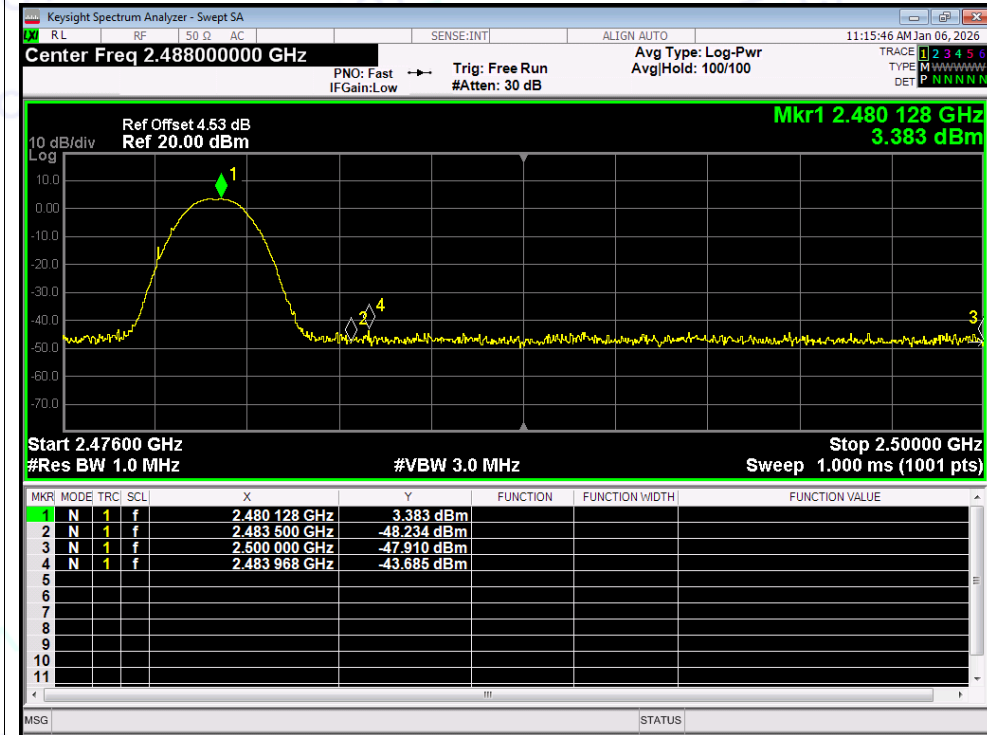
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak



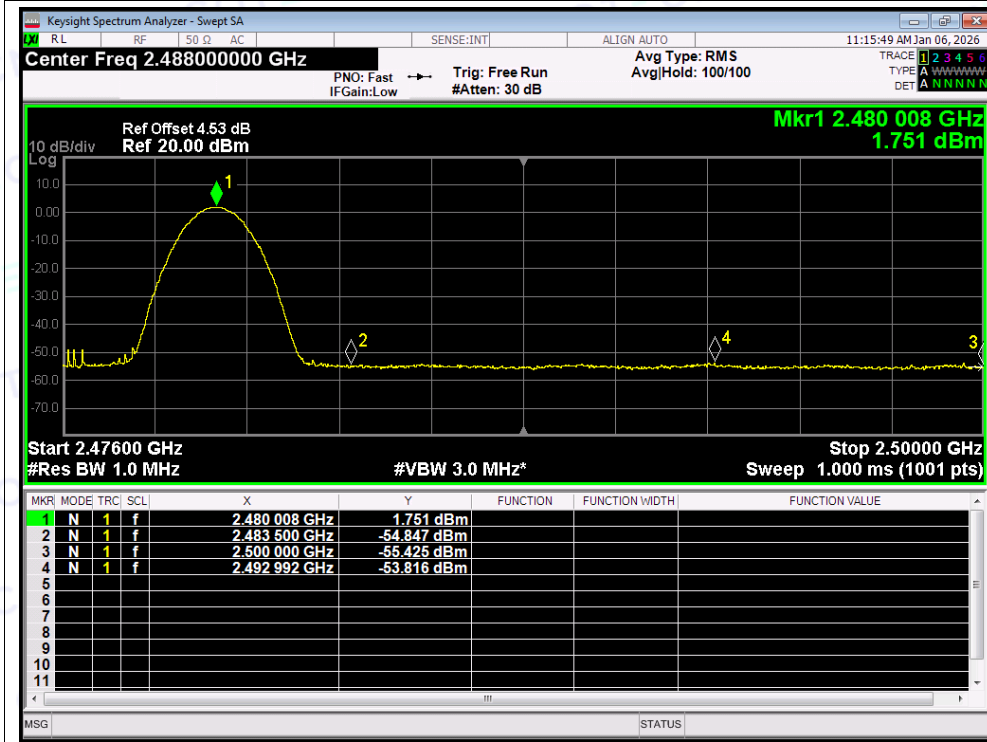
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average



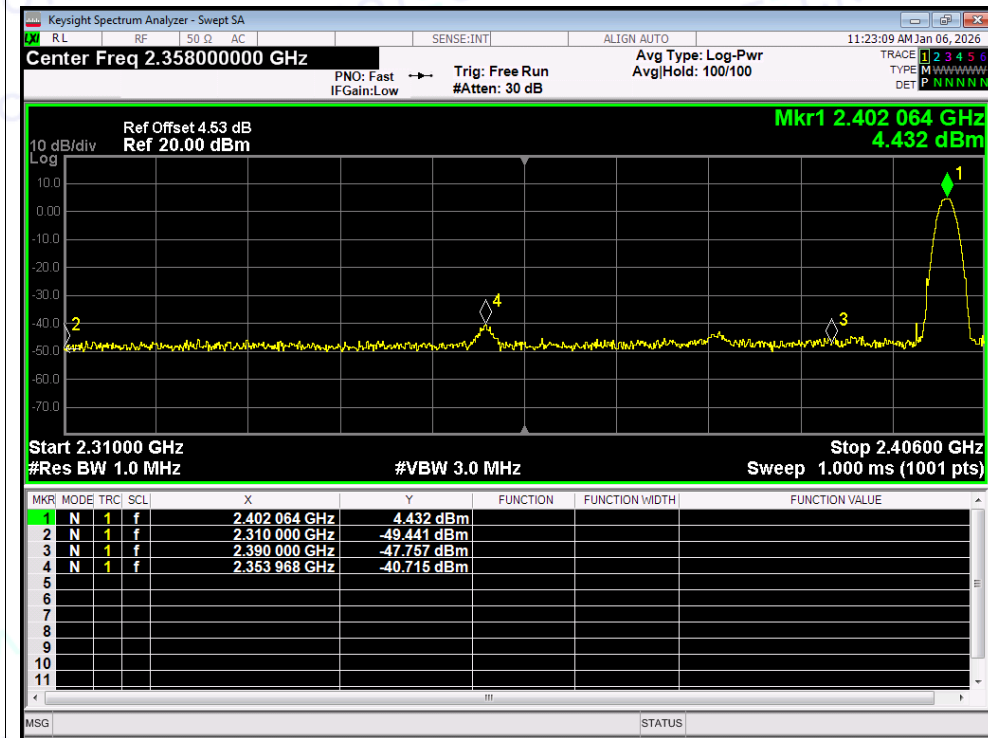
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak



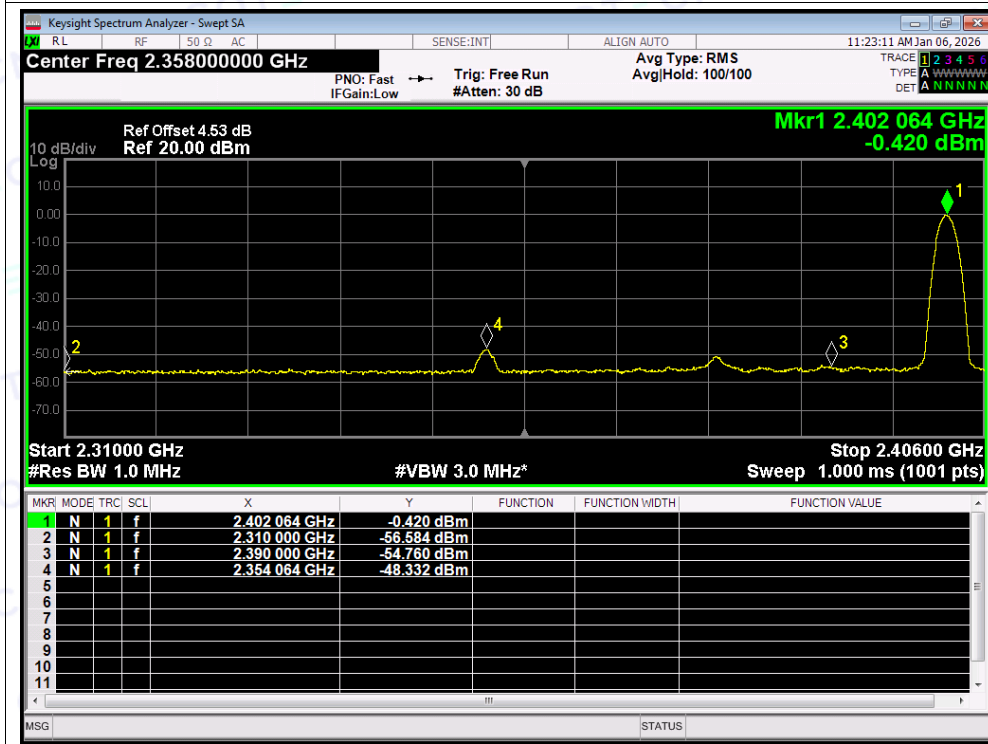
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average



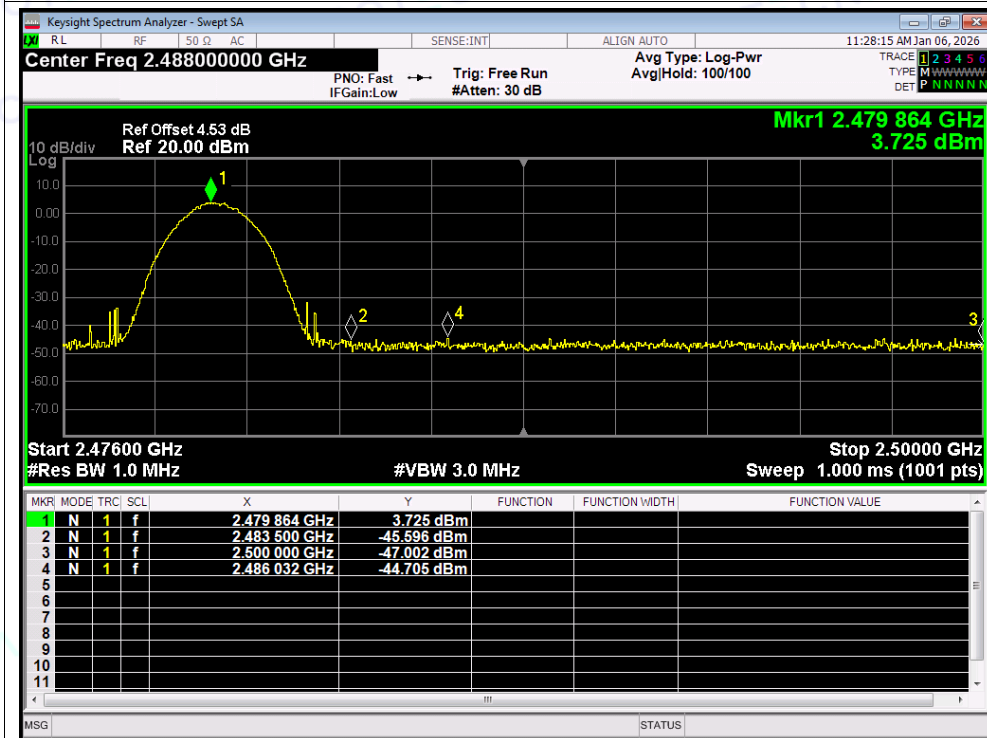
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak



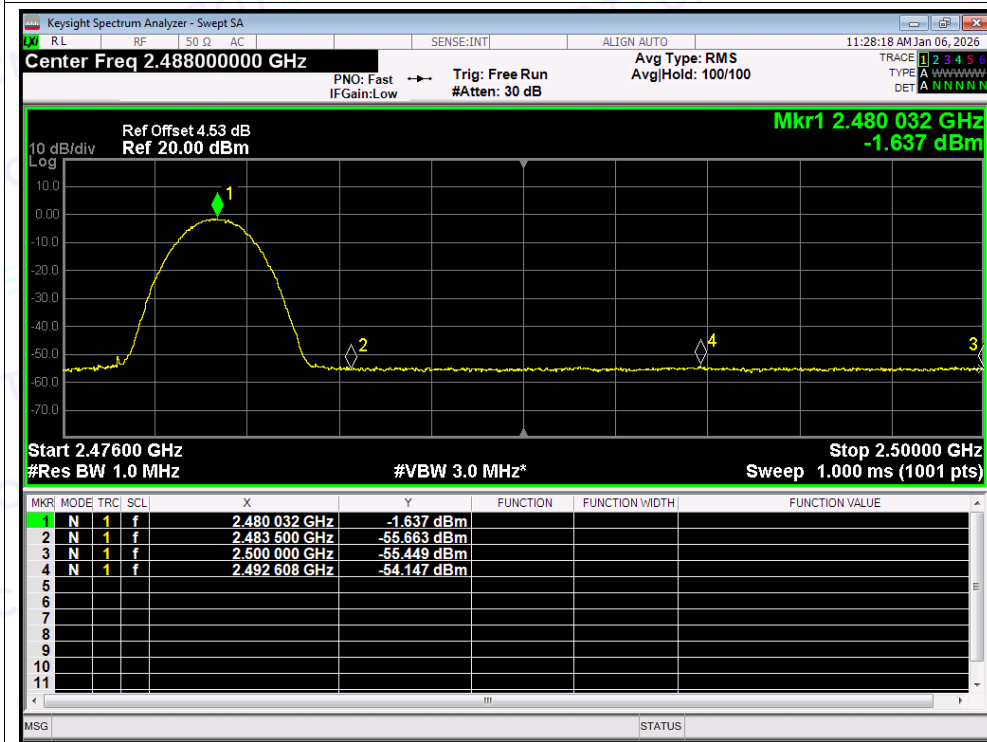
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average



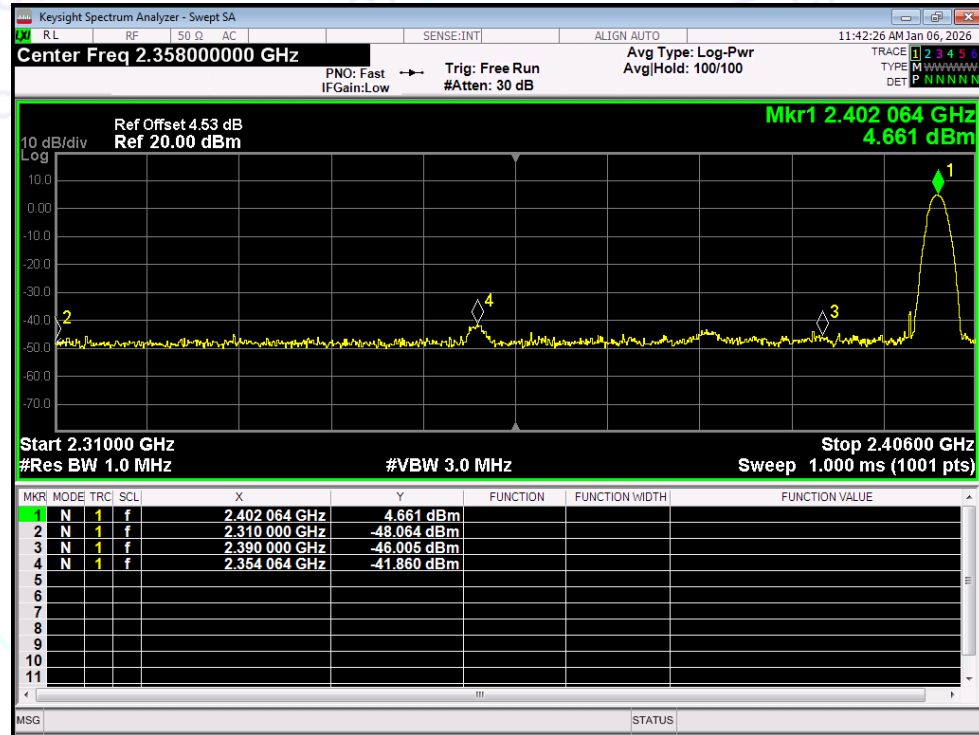
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Peak



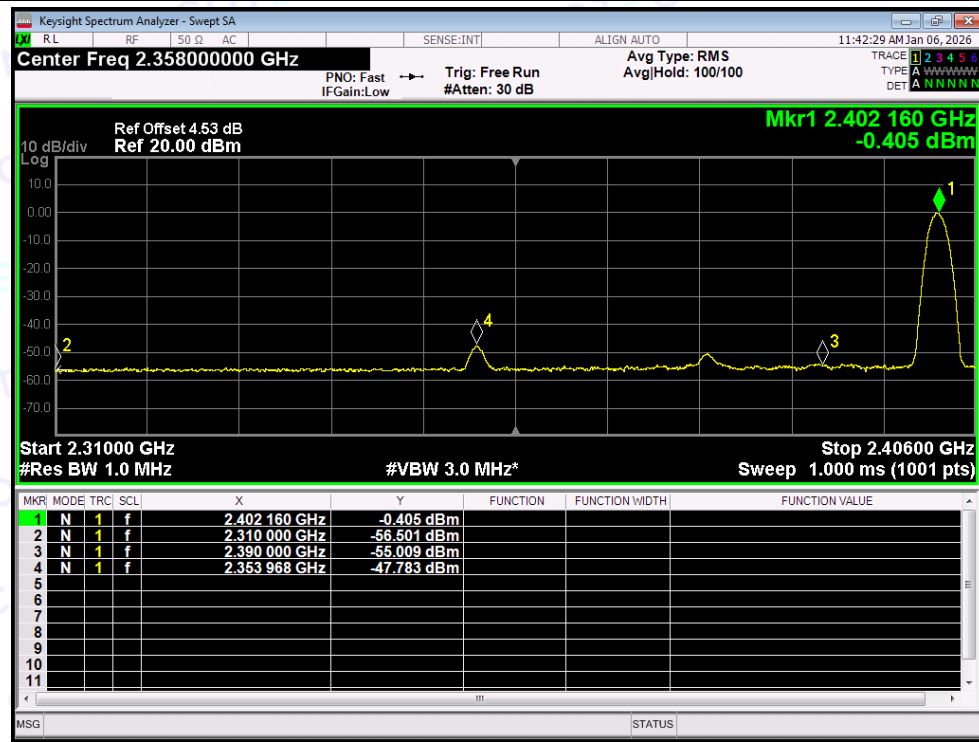
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Average



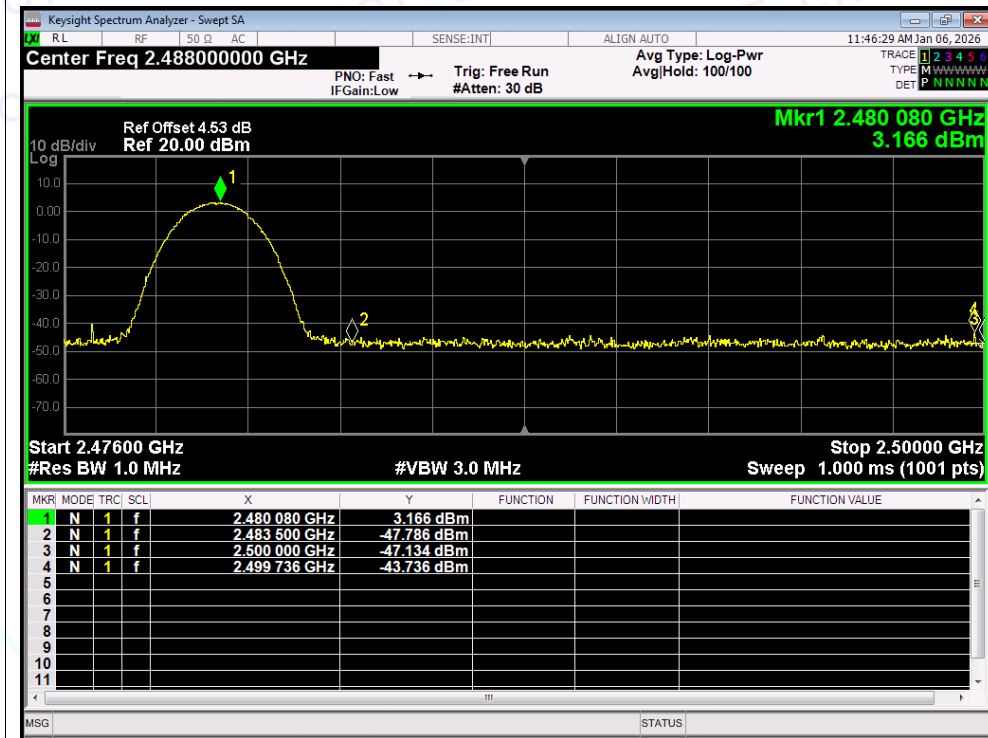
Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Peak



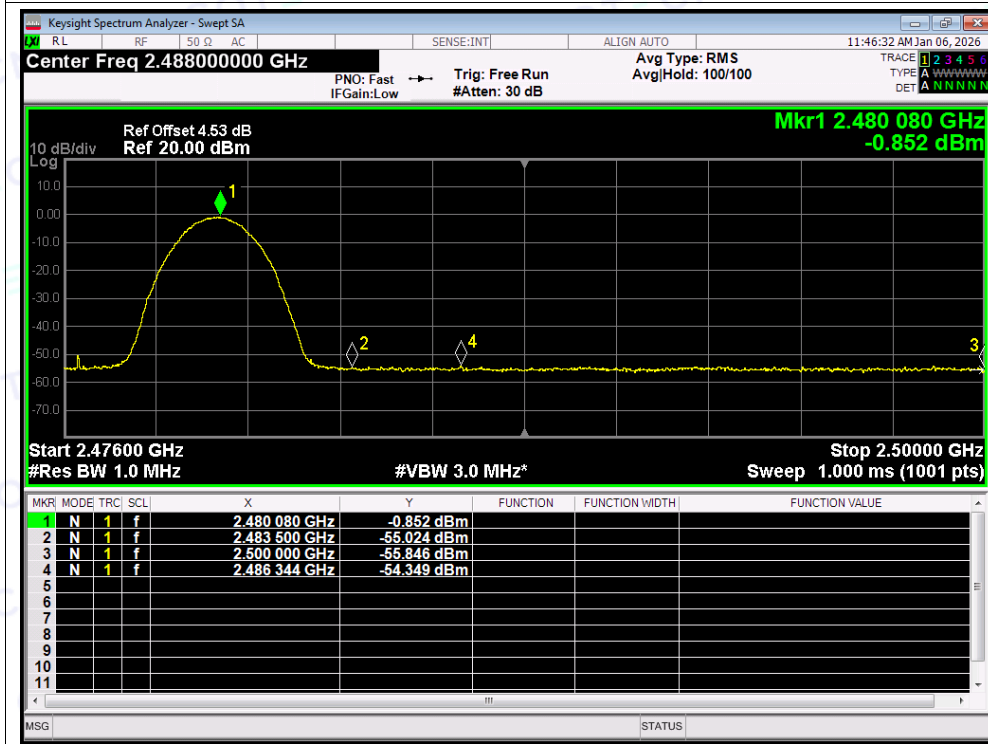
Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Average



Restrict Band NVNT 3-DH5 2480MHz Ant1 No-Hopping Peak



Restrict Band NVNT 3-DH5 2480MHz Ant1 No-Hopping Average

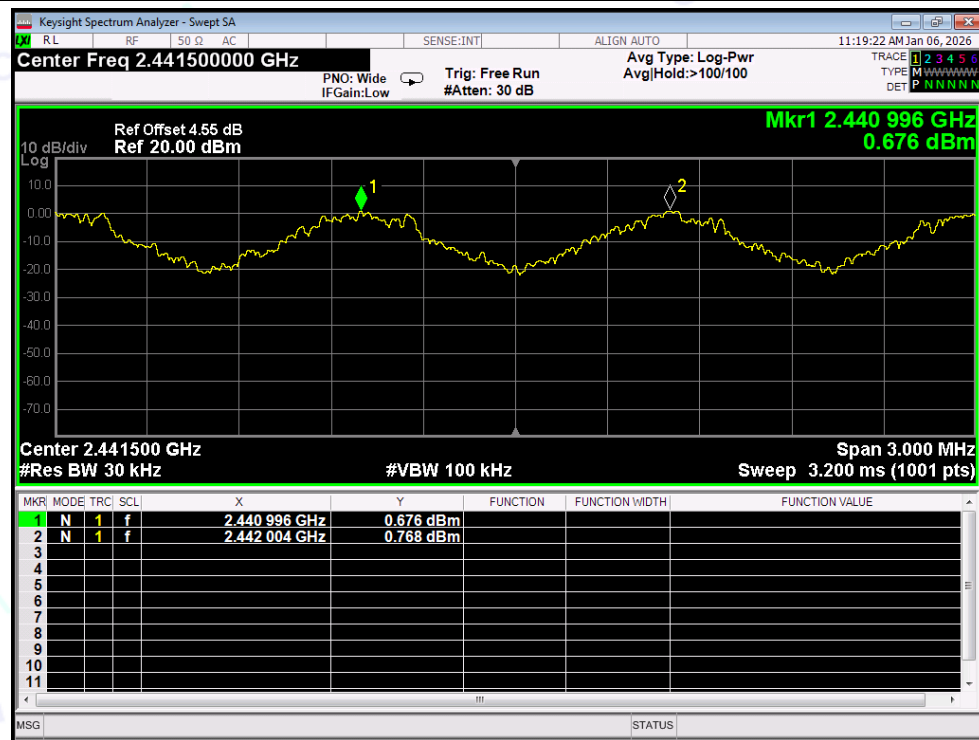


10.Carrier Frequencies Separation

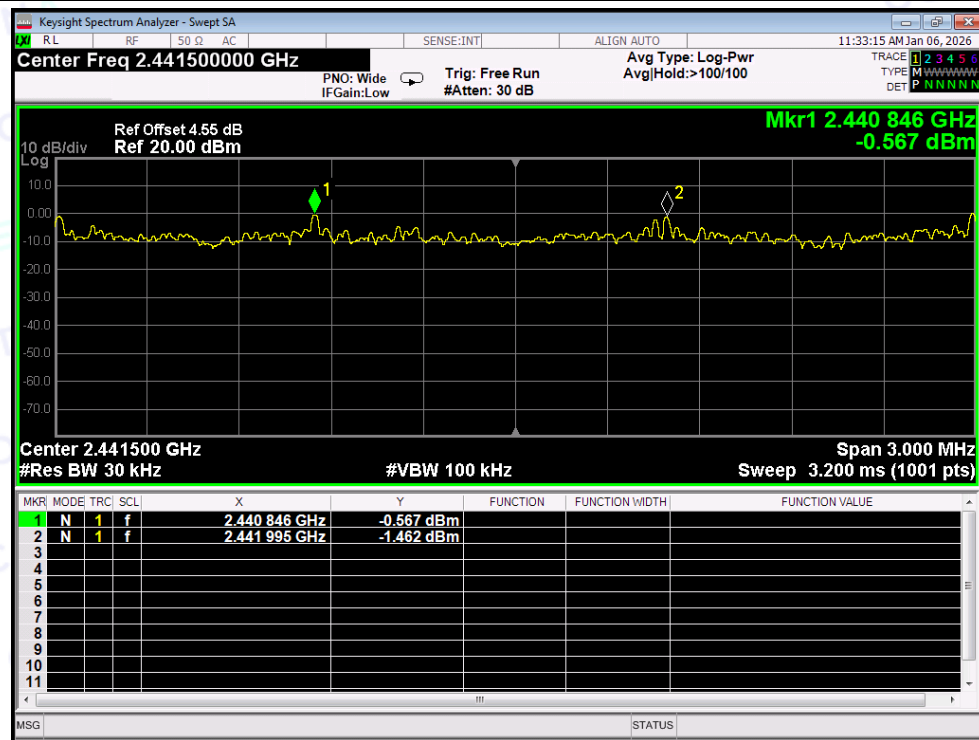
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2440.996	2442.004	1.008	0.64	Pass
NVNT	2-DH5	Ant1	2440.846	2441.995	1.149	0.847	Pass
NVNT	3-DH5	Ant1	2441.008	2442.163	1.155	0.853	Pass

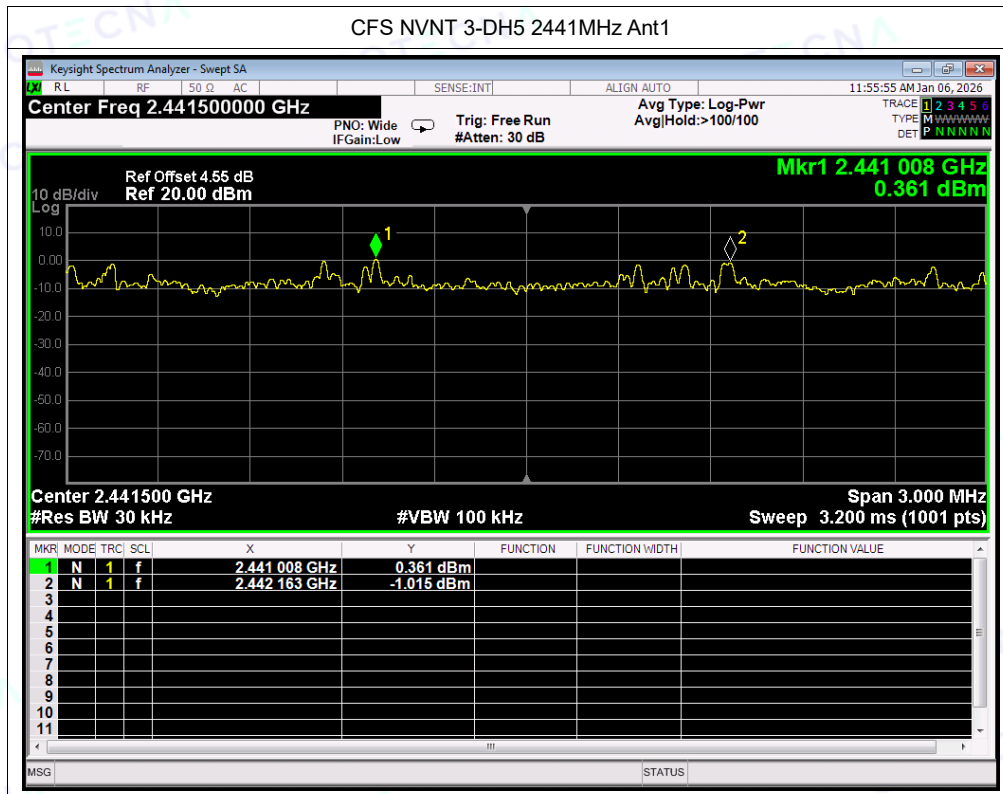
Test Graphs

CFS NVNT 1-DH5 2441MHz Ant1



CFS NVNT 2-DH5 2441MHz Ant1



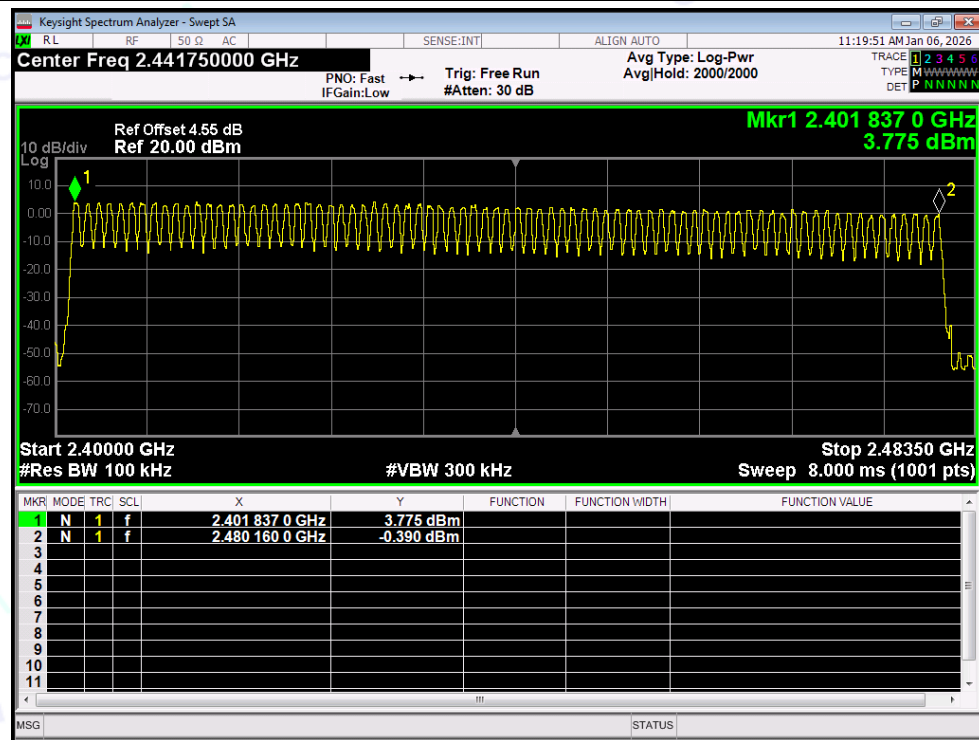


11.Number of Hopping Channel

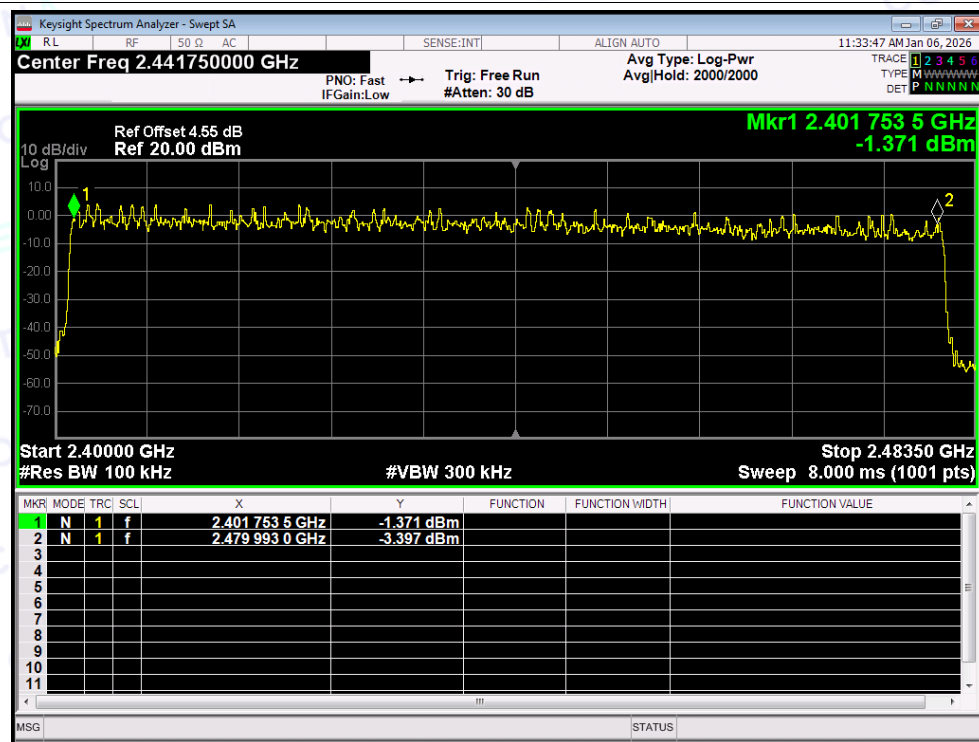
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass

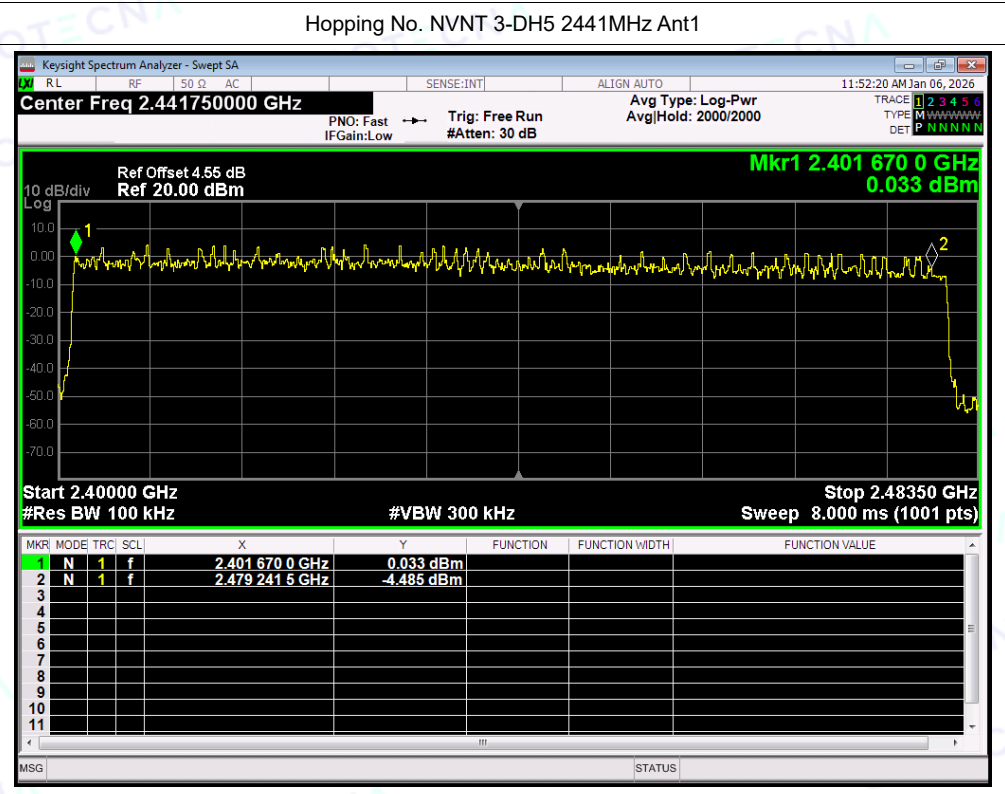
Test Graphs

Hopping No. NVNT 1-DH5 2441MHz Ant1



Hopping No. NVNT 2-DH5 2441MHz Ant1





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