

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	smart watch
Test Model:	DK56
Sample ID:	HC-C-202502-0078-01-05-2#
Environmental Conditions	
Temperature:	23.8℃
Relative Humidity:	48%
Test Voltage:	DC 3.7V
Test Engineer:	Rick. chen
Note: For a more detailed features description, please refer to the report TBR-C-202502-0078-15 The report only show the worst case data.	

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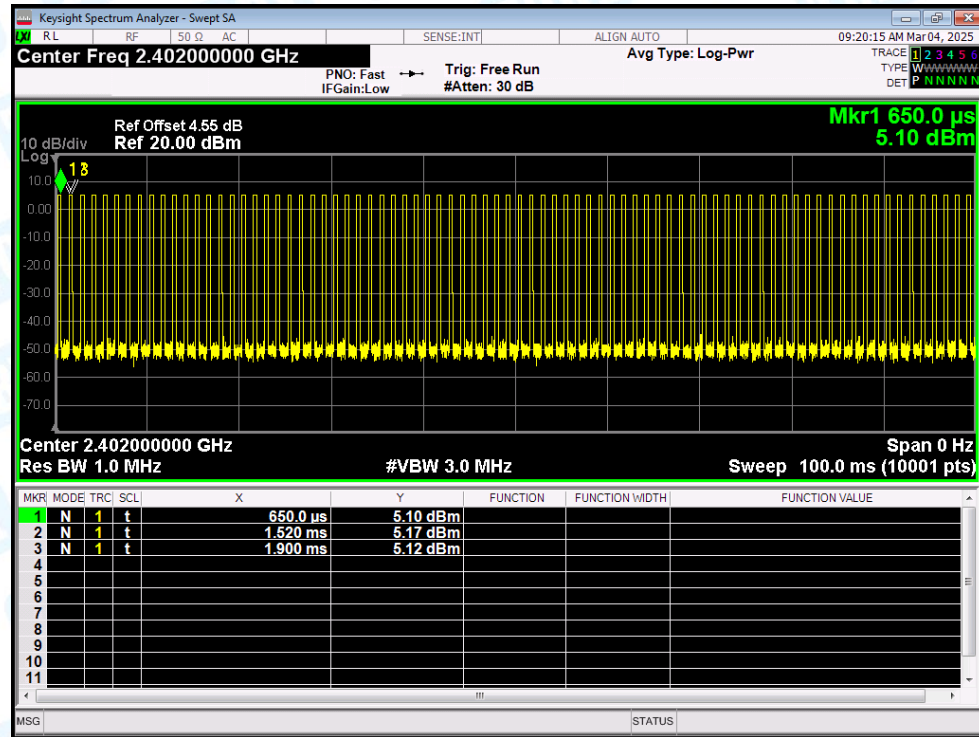
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1. Duty Cycle

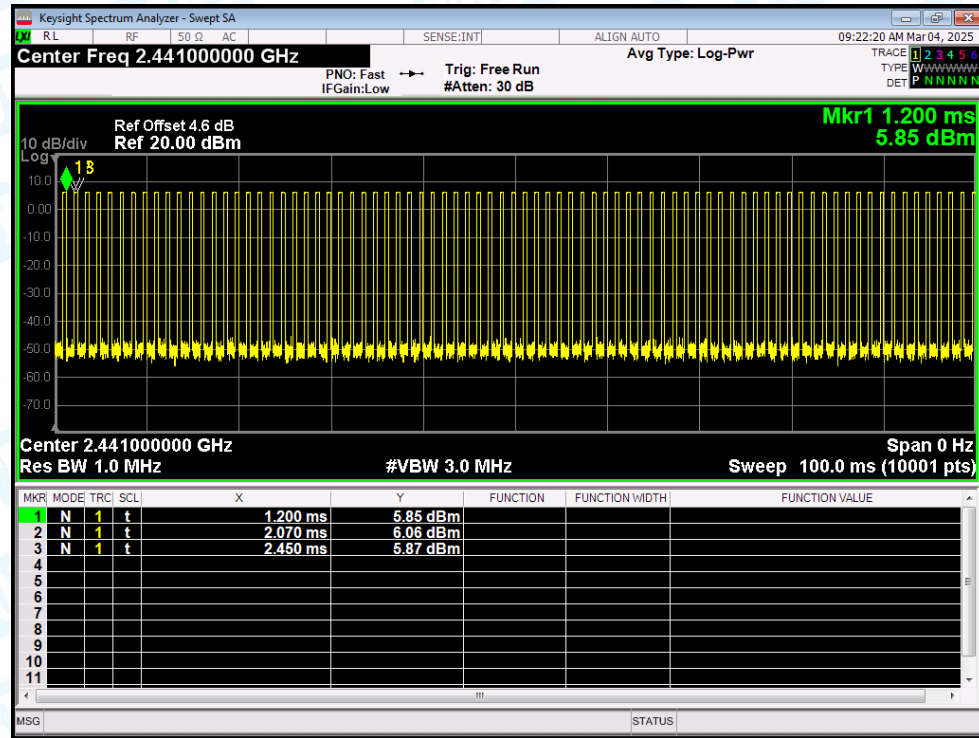
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2441	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2480	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2480	Ant1	31.2	5.06	2.56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

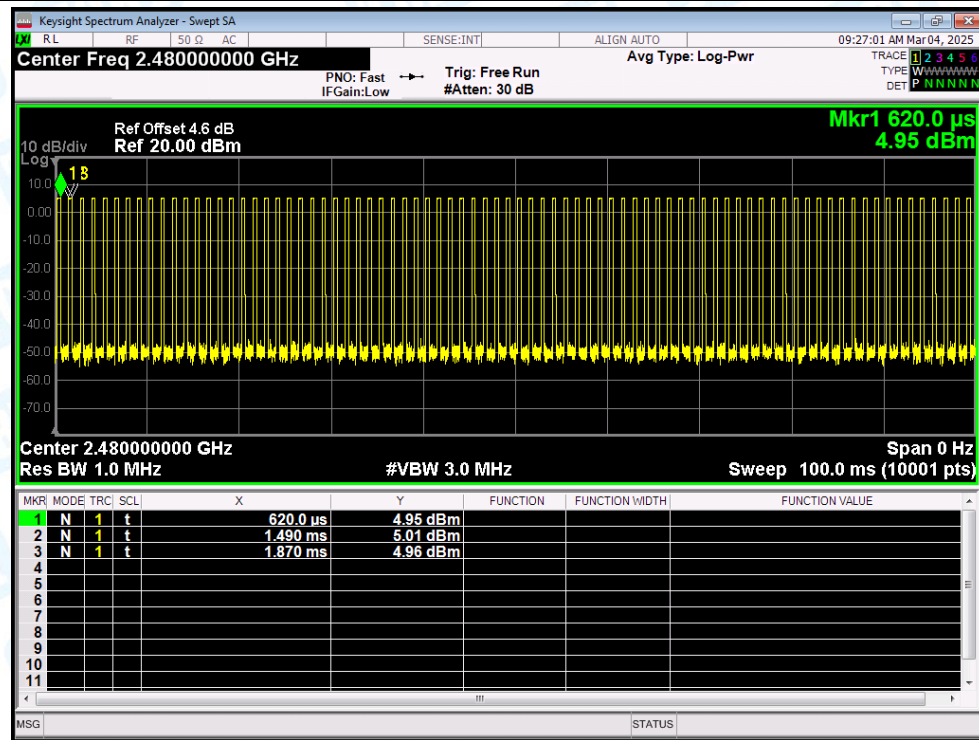
Duty Cycle NVNT 1-DH1 2402MHz Ant1



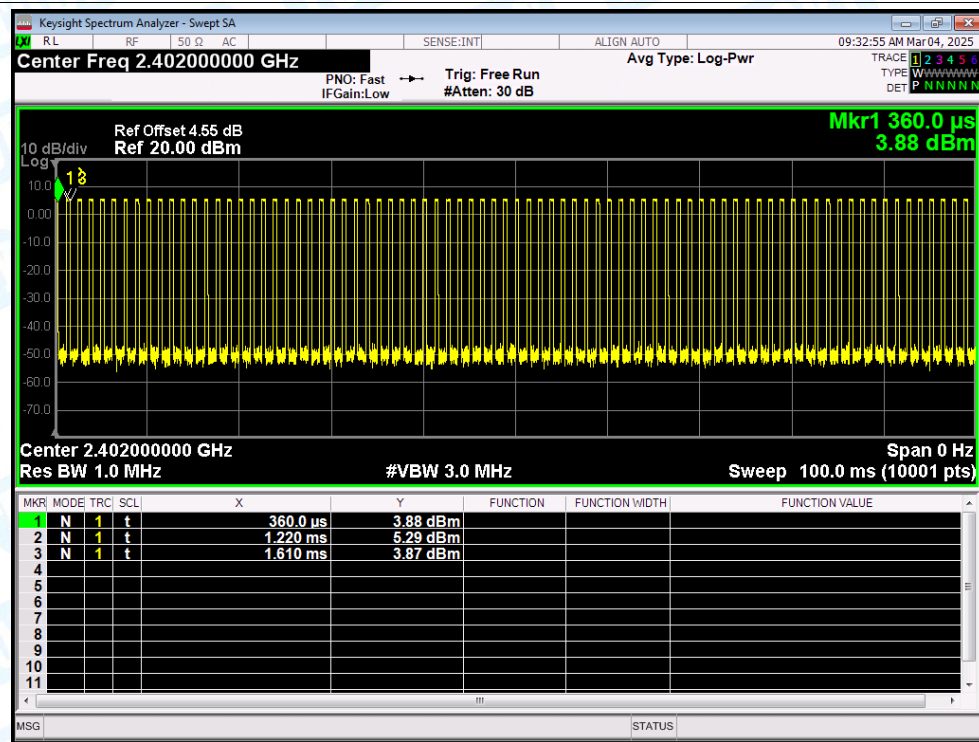
Duty Cycle NVNT 1-DH1 2441MHz Ant1



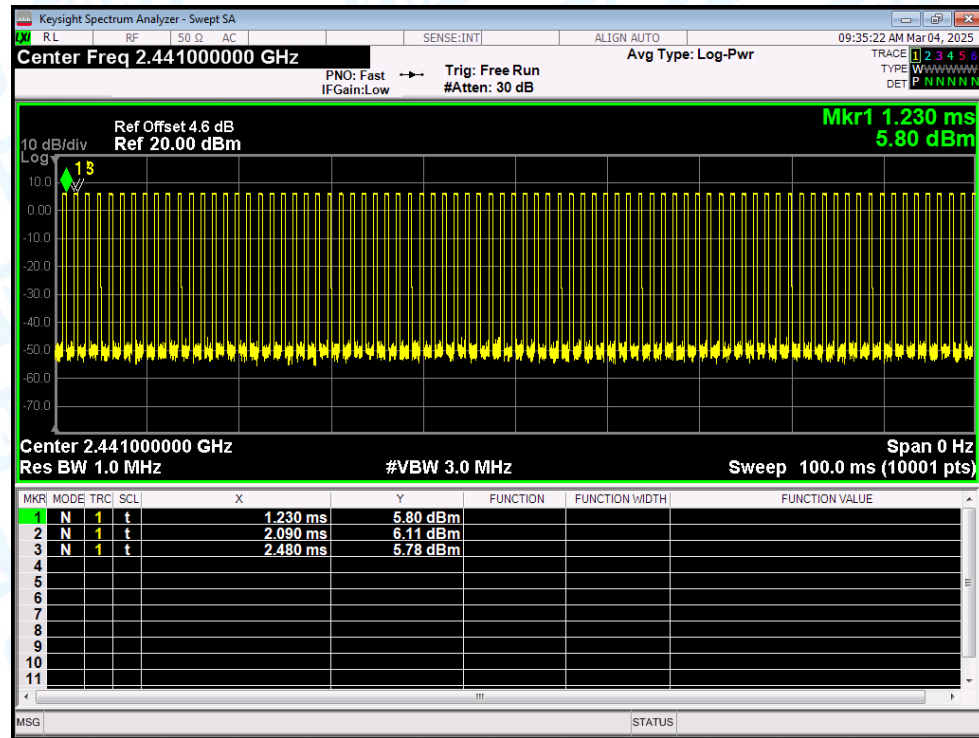
Duty Cycle NVNT 1-DH1 2480MHz Ant1



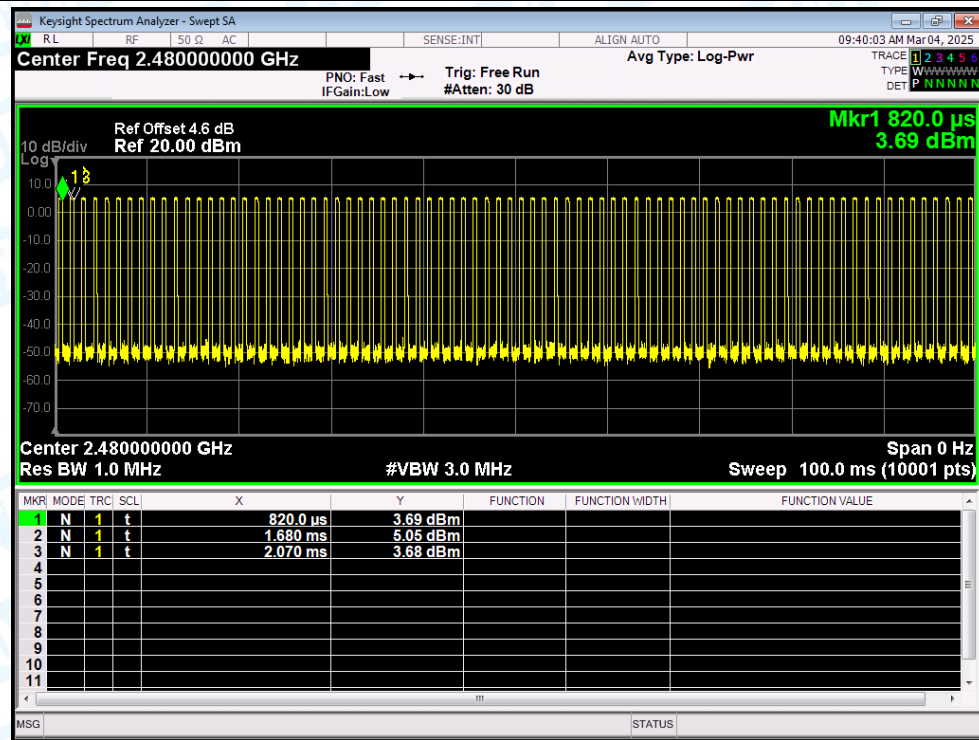
Duty Cycle NVNT 2-DH1 2402MHz Ant1



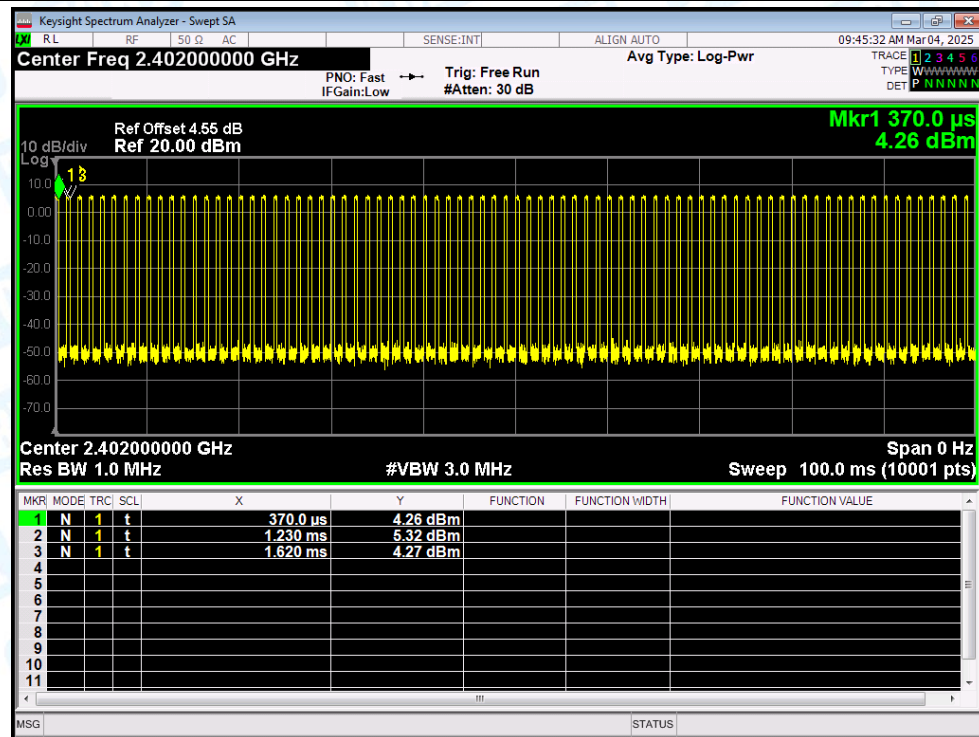
Duty Cycle NVNT 2-DH1 2441MHz Ant1



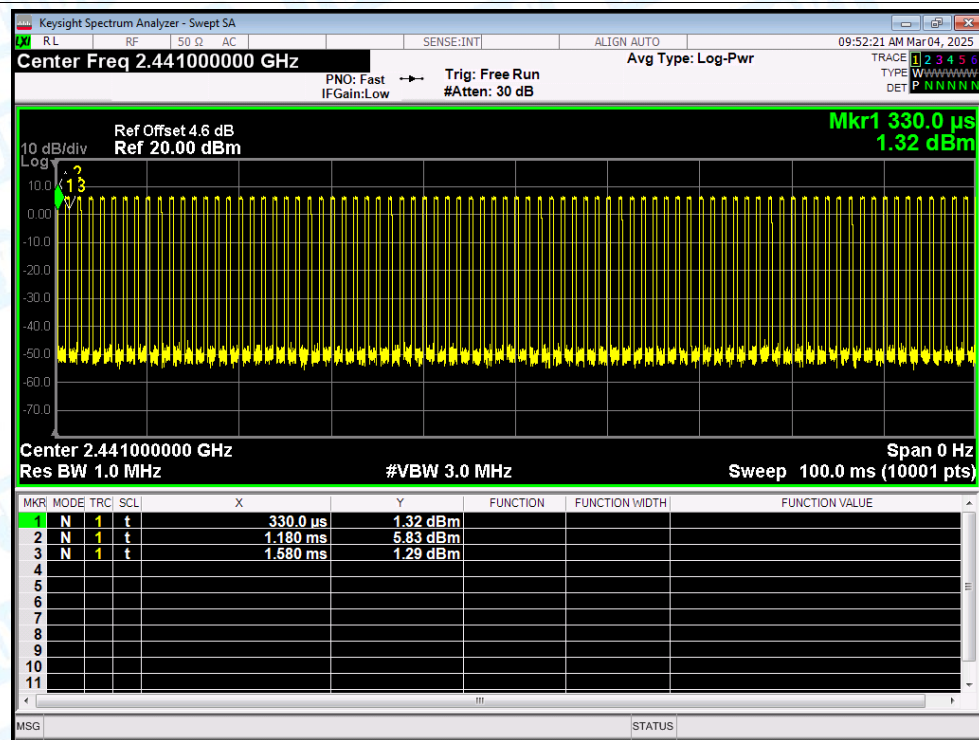
Duty Cycle NVNT 2-DH1 2480MHz Ant1

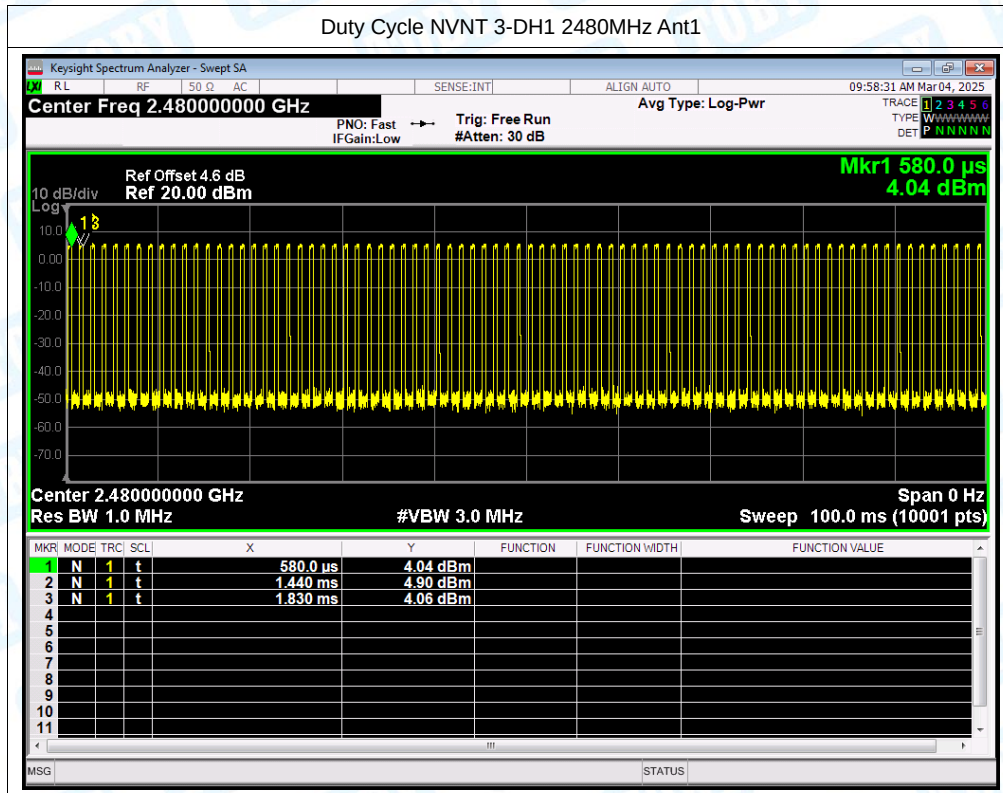


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



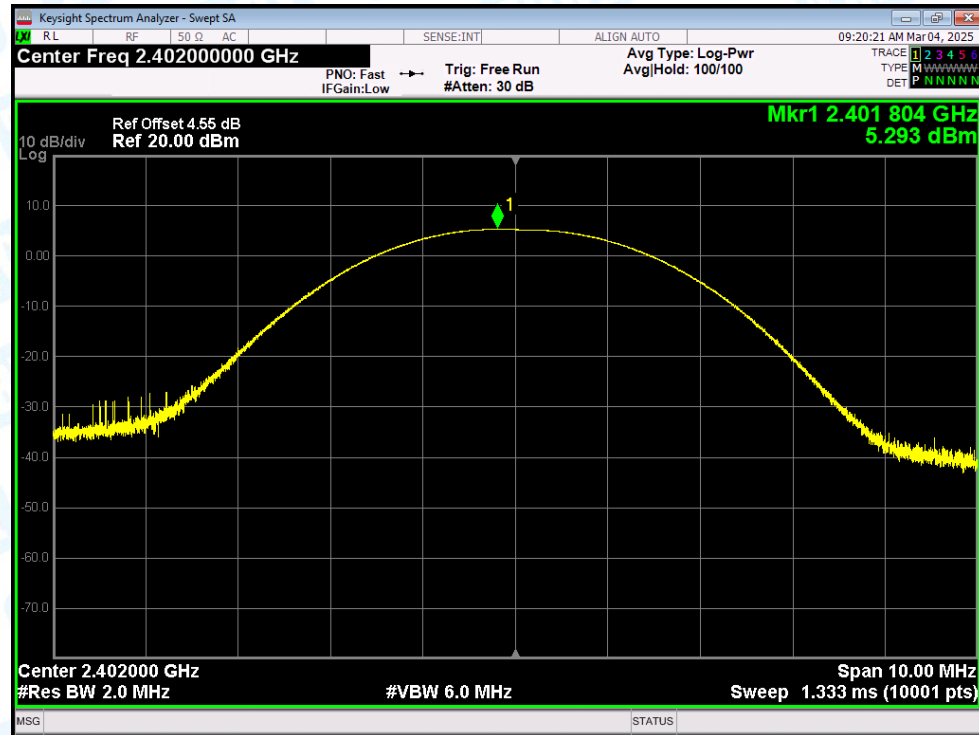


2. Maximum Conducted Output Power

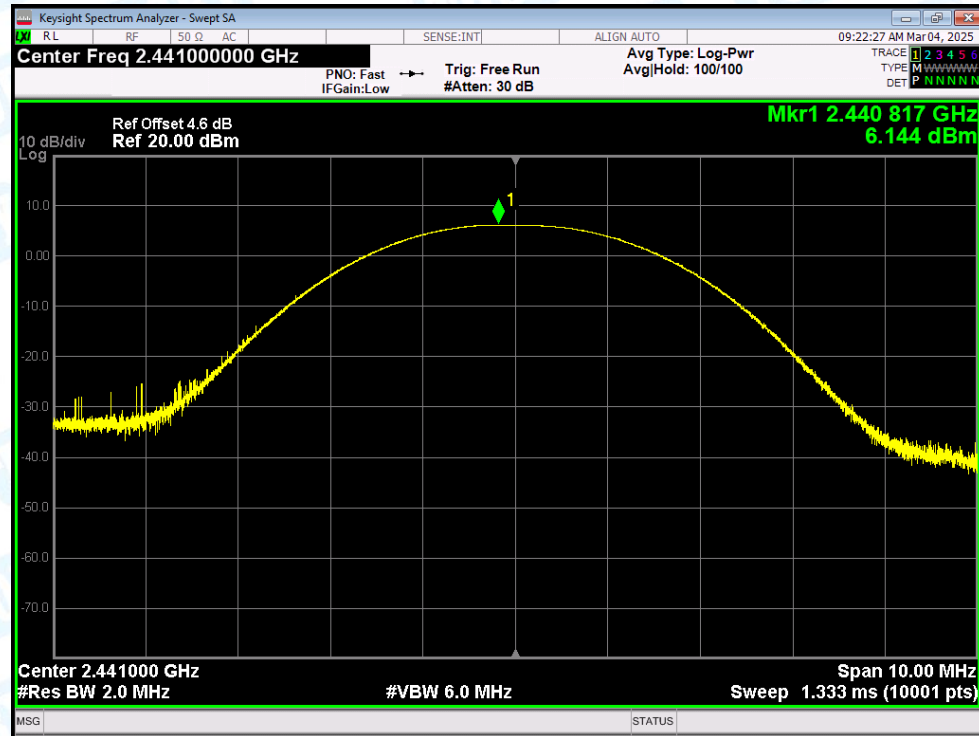
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	5.293	21	Pass
NVNT	1-DH1	2441	Ant1	6.144	21	Pass
NVNT	1-DH1	2480	Ant1	5.073	21	Pass
NVNT	2-DH1	2402	Ant1	5.962	21	Pass
NVNT	2-DH1	2441	Ant1	6.618	21	Pass
NVNT	2-DH1	2480	Ant1	5.716	21	Pass
NVNT	3-DH1	2402	Ant1	6.323	21	Pass
NVNT	3-DH1	2441	Ant1	6.732	21	Pass
NVNT	3-DH1	2480	Ant1	5.924	21	Pass

Test Graphs

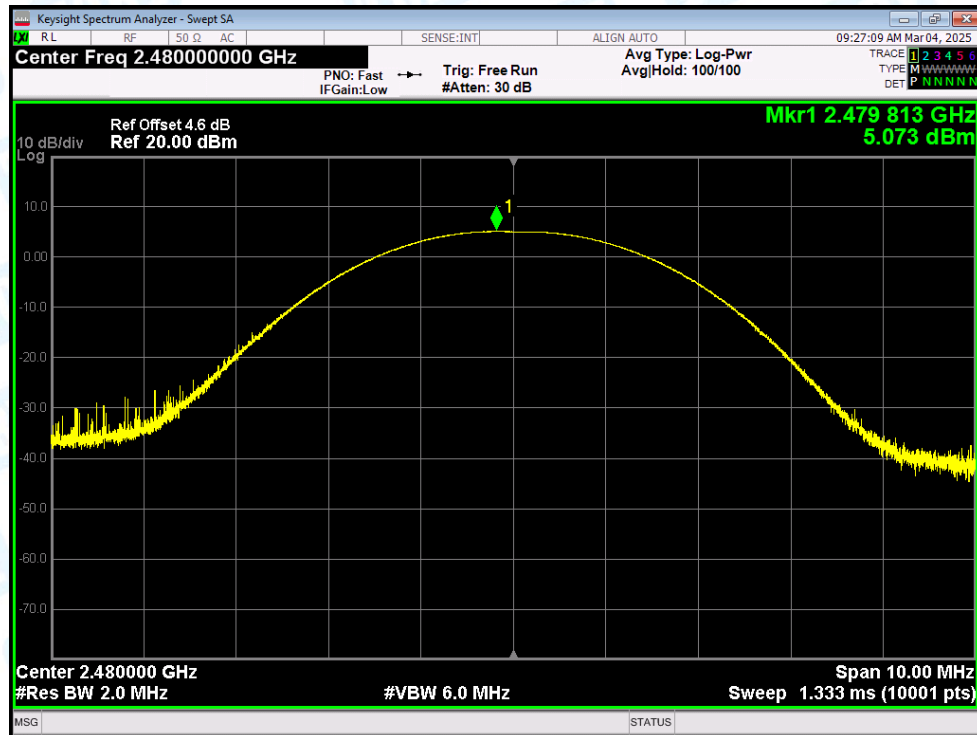
Power NVNT 1-DH1 2402MHz Ant1



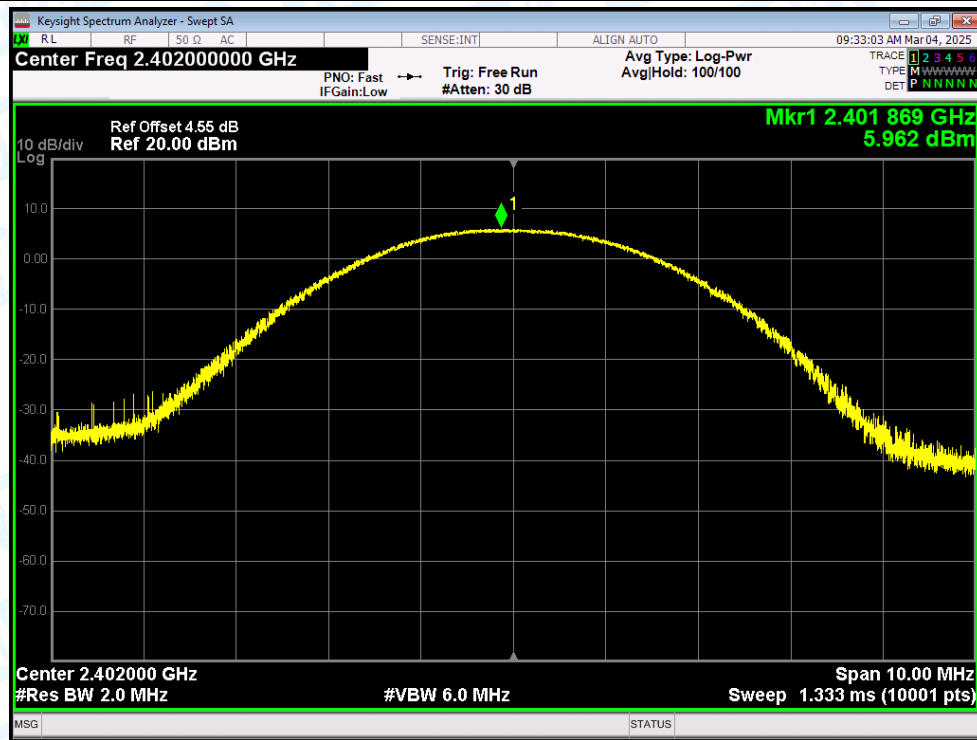
Power NVNT 1-DH1 2441MHz Ant1



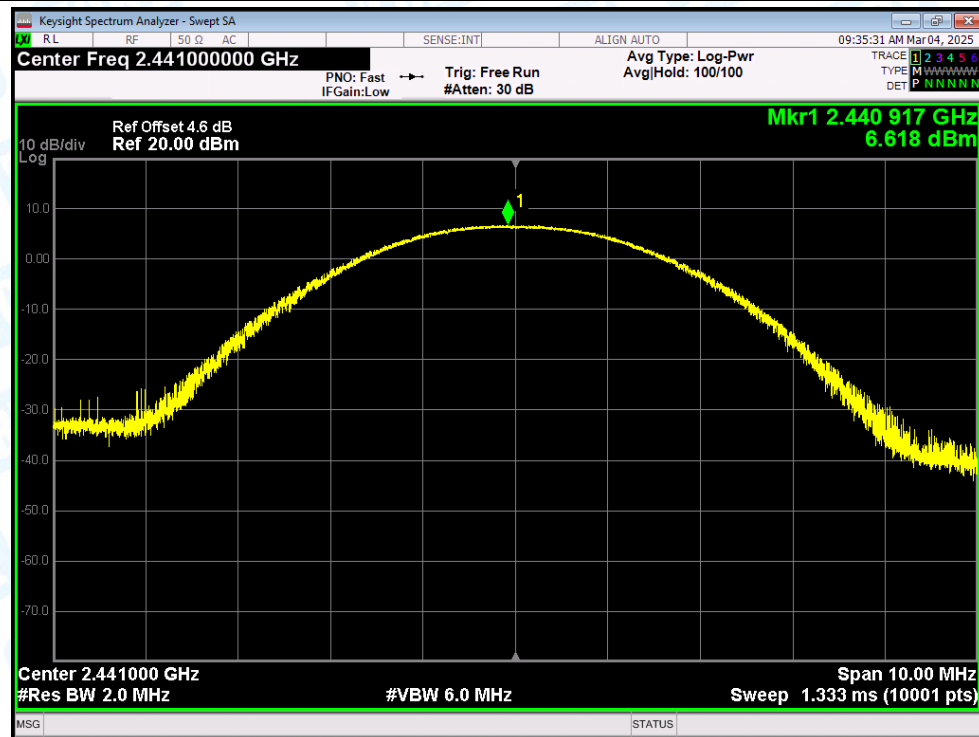
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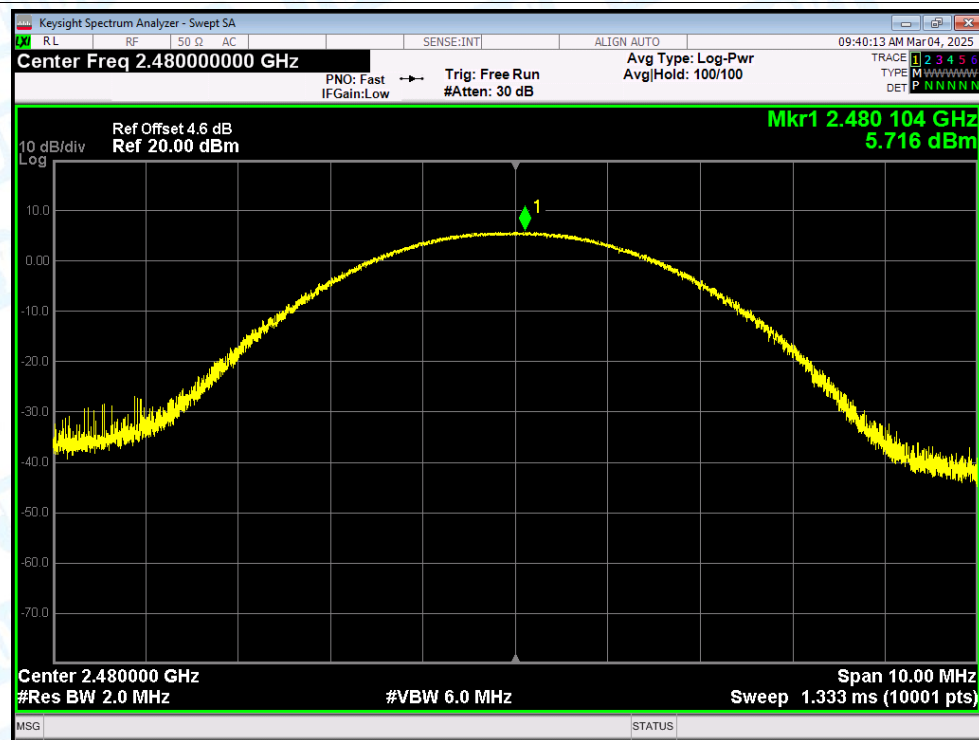
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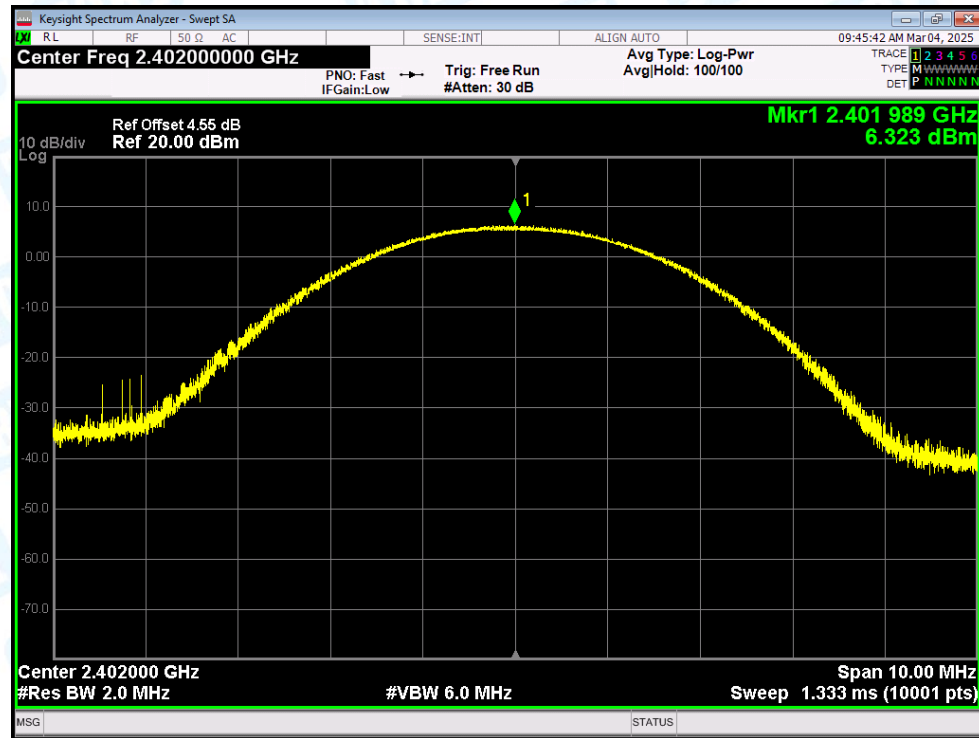
Power NVNT 2-DH1 2441MHz Ant1



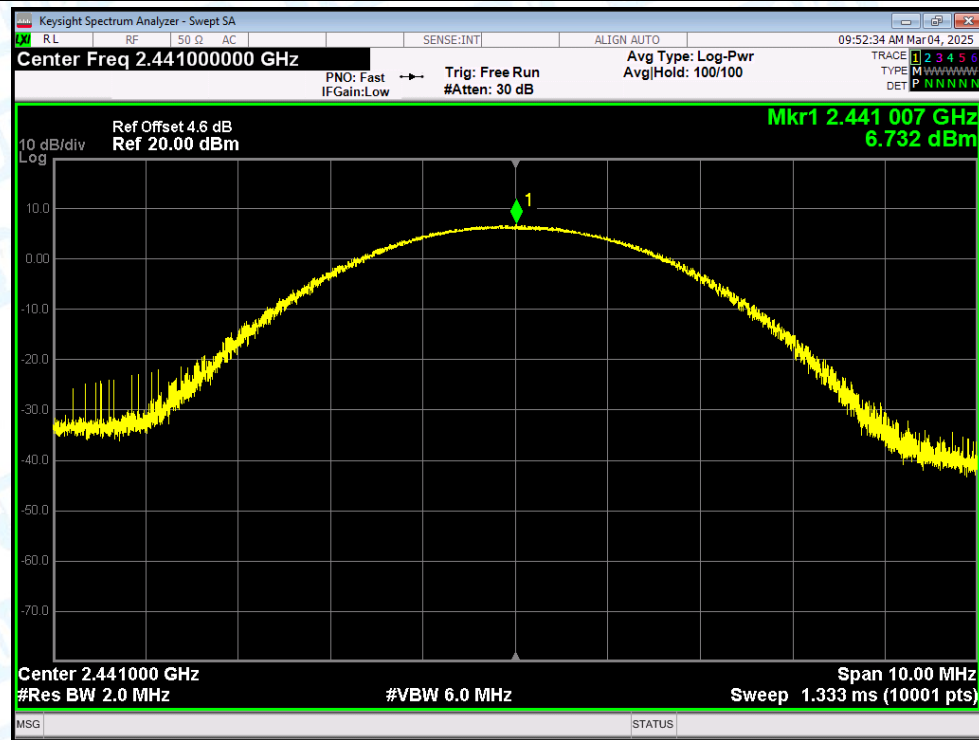
Power NVNT 2-DH1 2480MHz Ant1

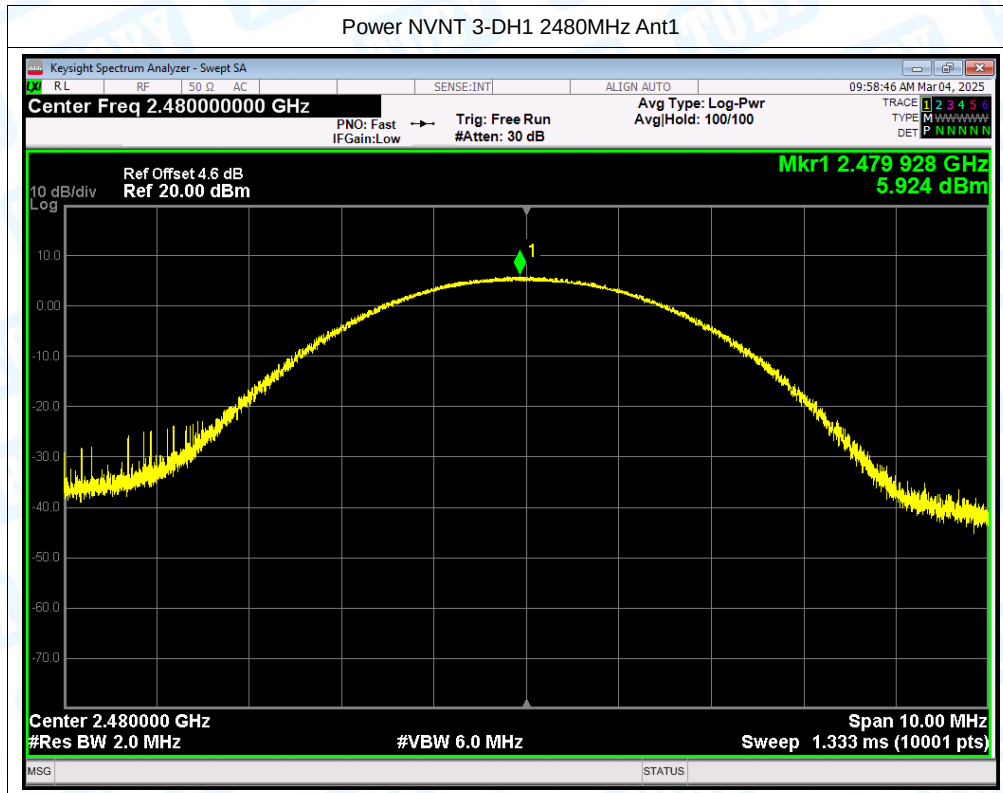


Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



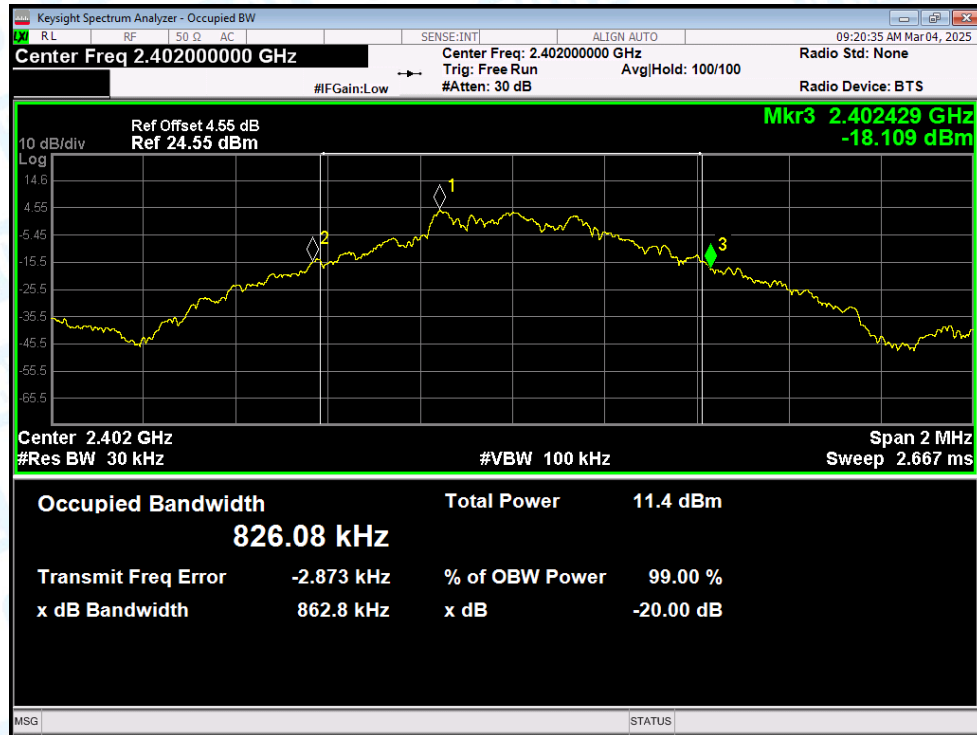


3. -20dB Bandwidth

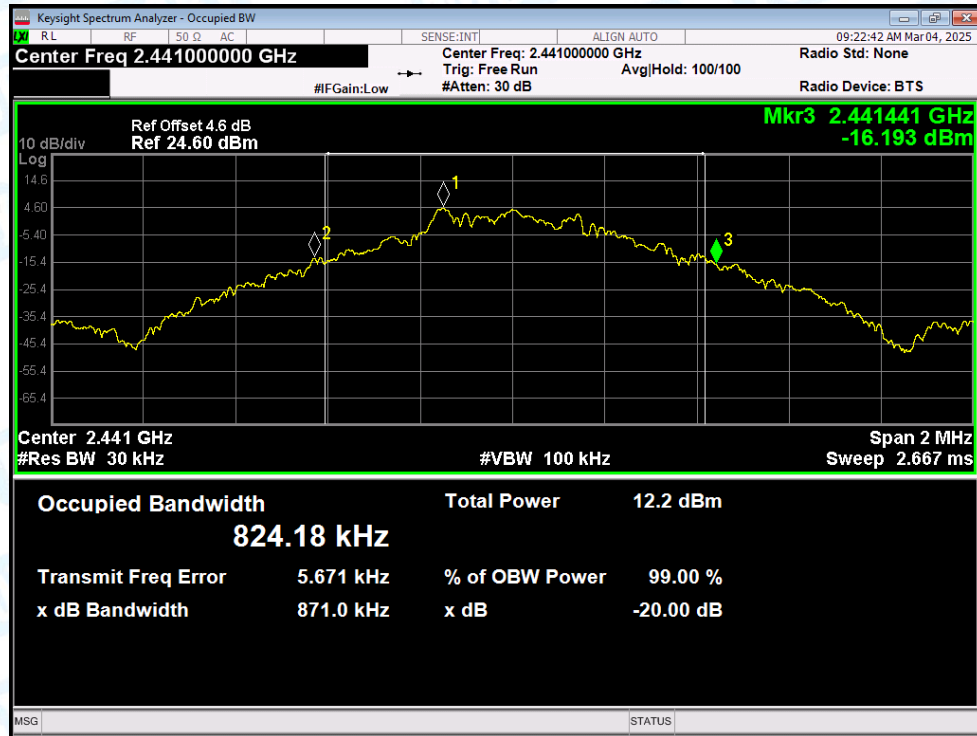
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.86	0	Pass
NVNT	1-DH1	2441	Ant1	0.87	0	Pass
NVNT	1-DH1	2480	Ant1	0.86	0	Pass
NVNT	2-DH1	2402	Ant1	1.25	0	Pass
NVNT	2-DH1	2441	Ant1	1.28	0	Pass
NVNT	2-DH1	2480	Ant1	1.27	0	Pass
NVNT	3-DH1	2402	Ant1	1.22	0	Pass
NVNT	3-DH1	2441	Ant1	1.22	0	Pass
NVNT	3-DH1	2480	Ant1	1.23	0	Pass

Test Graphs

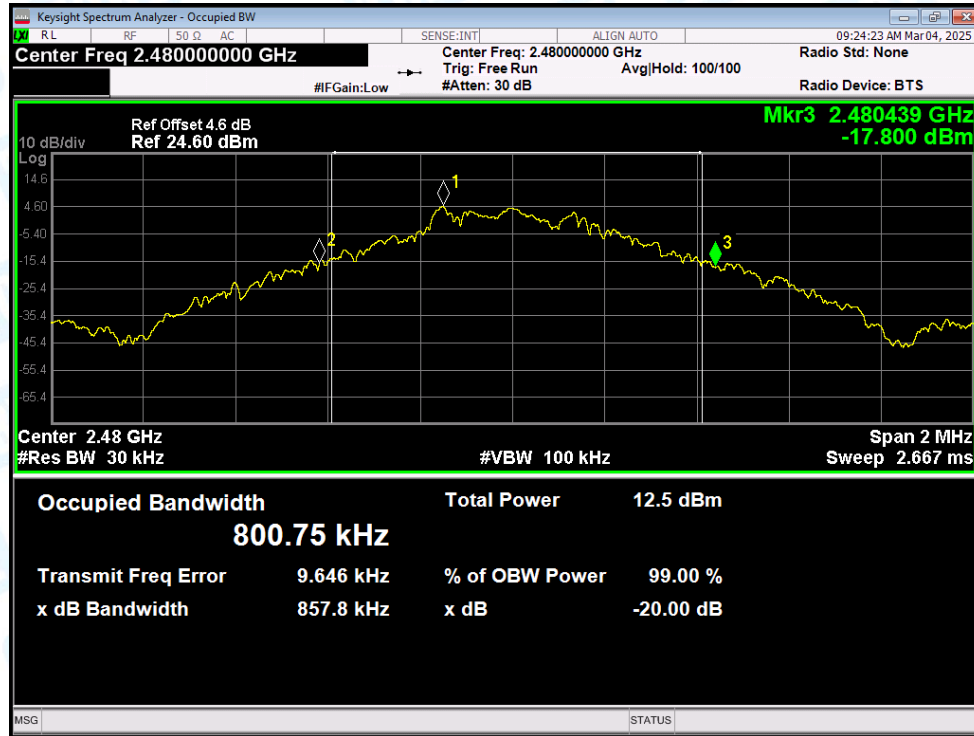
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



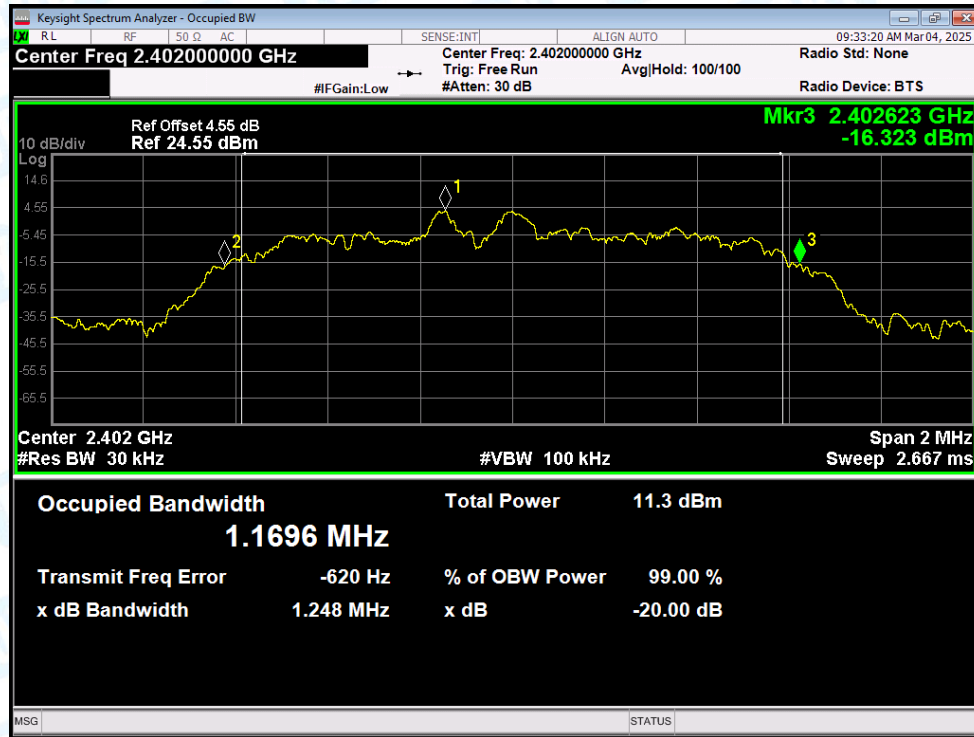
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



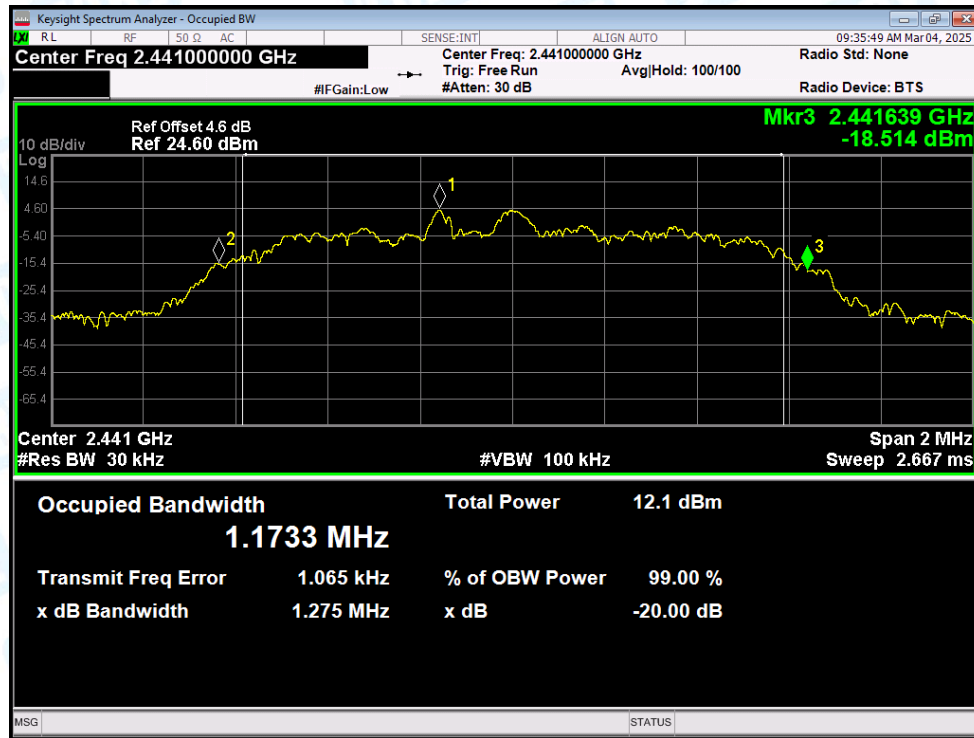
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



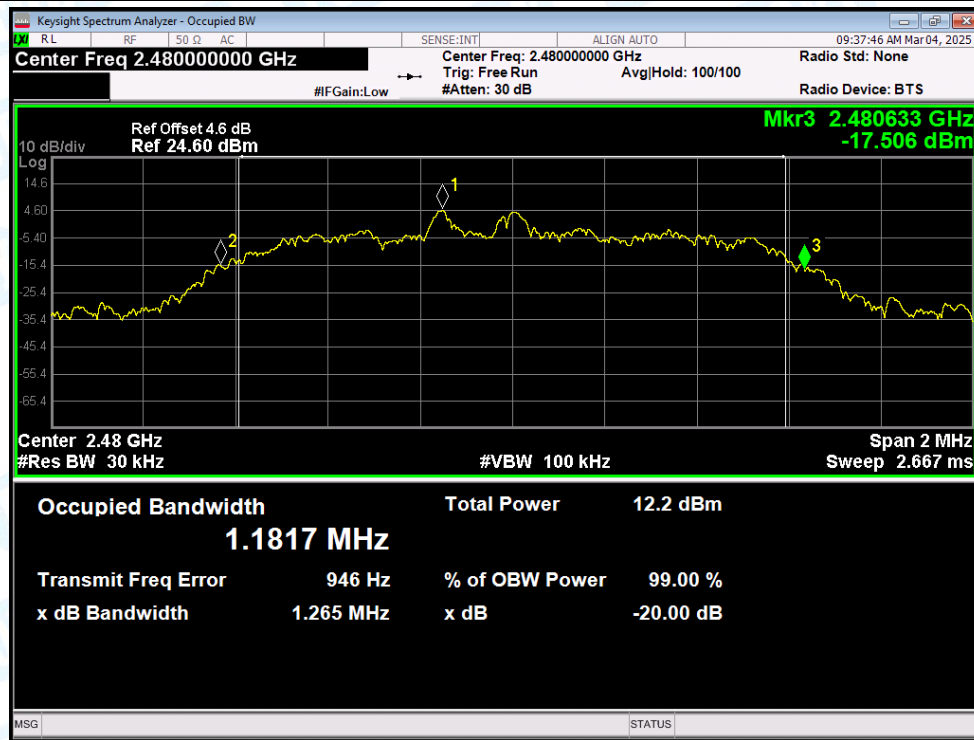
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



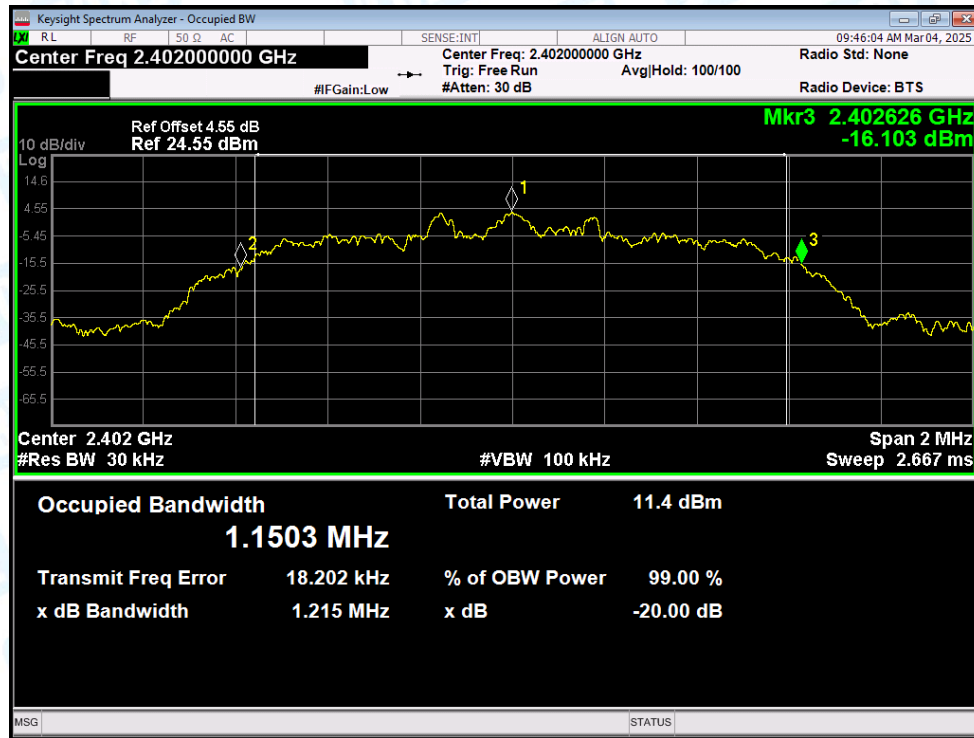
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



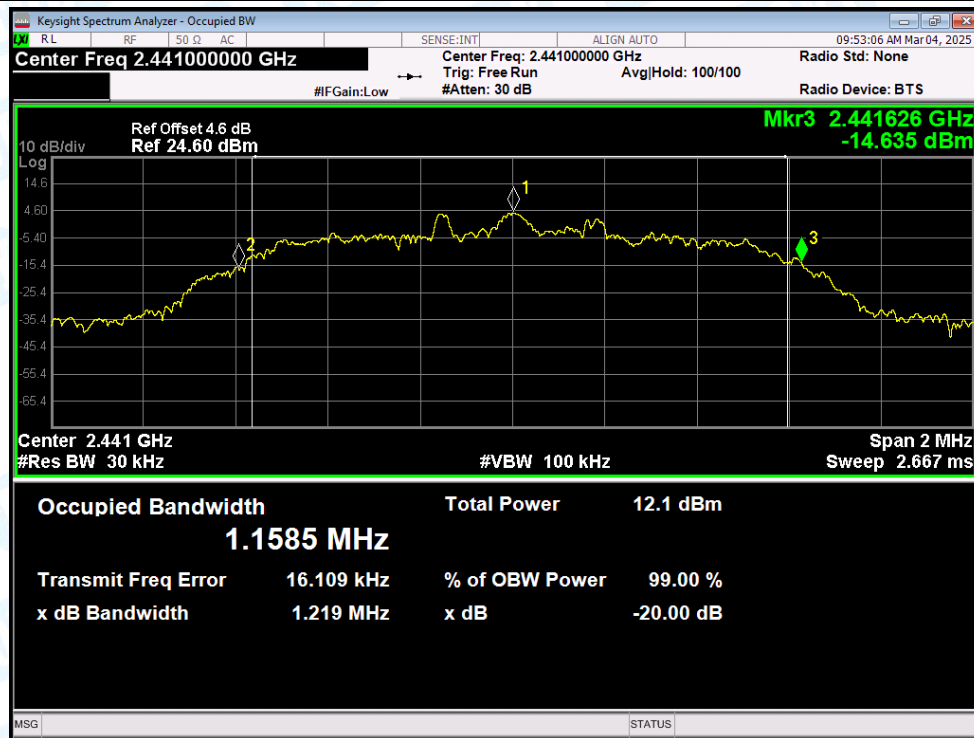
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

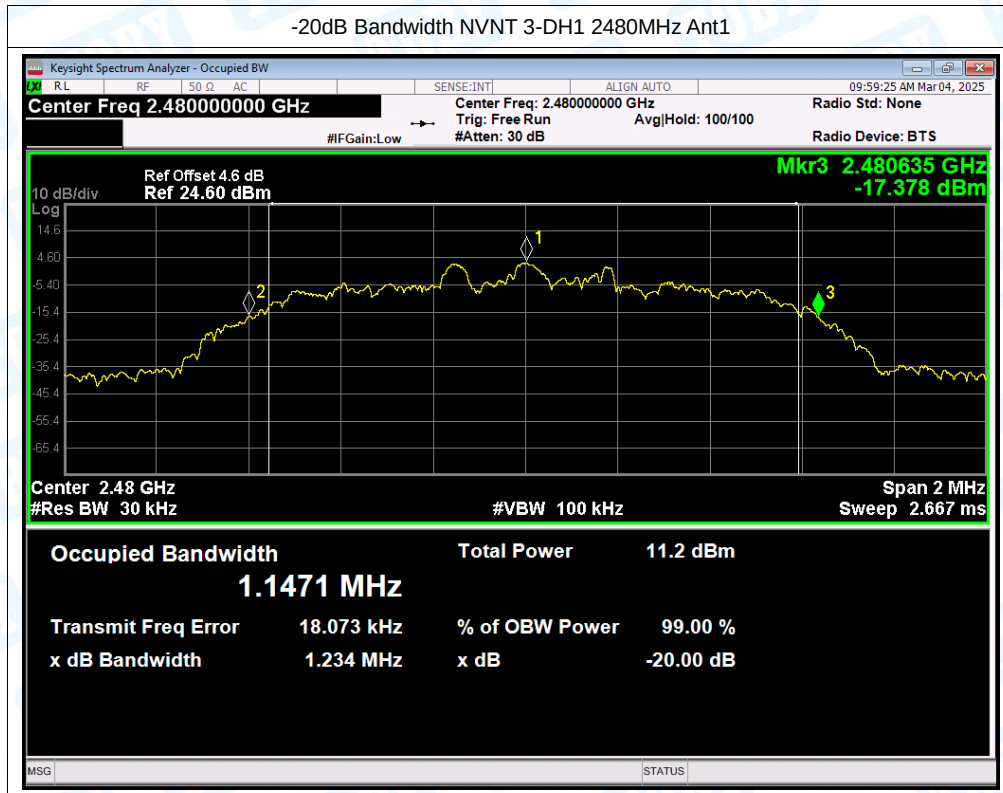


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



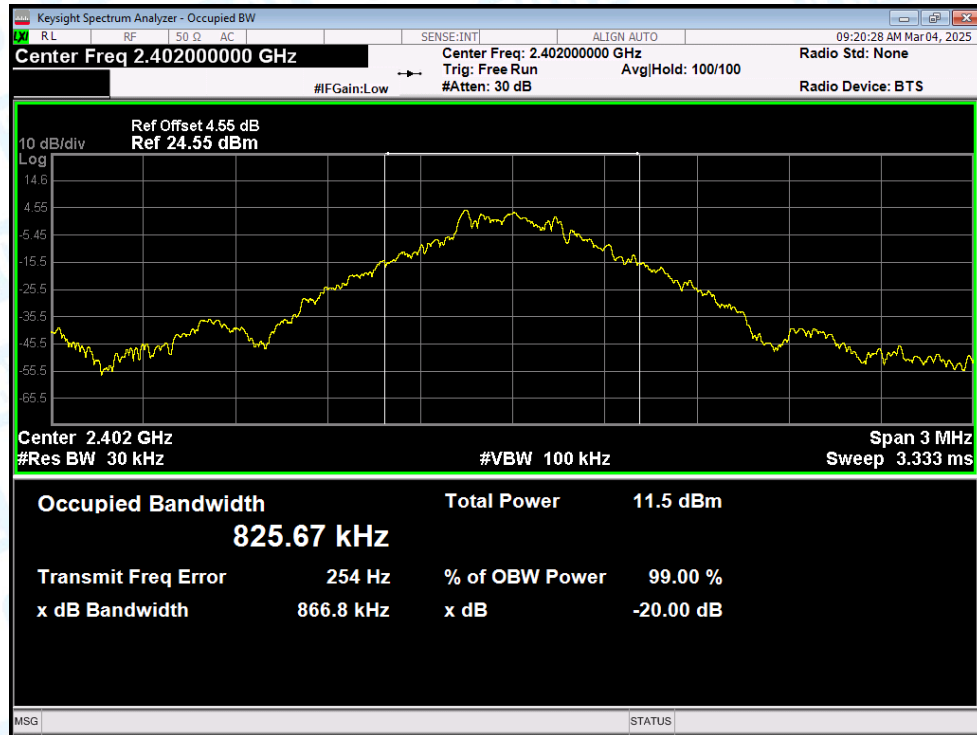


4. Occupied Channel Bandwidth

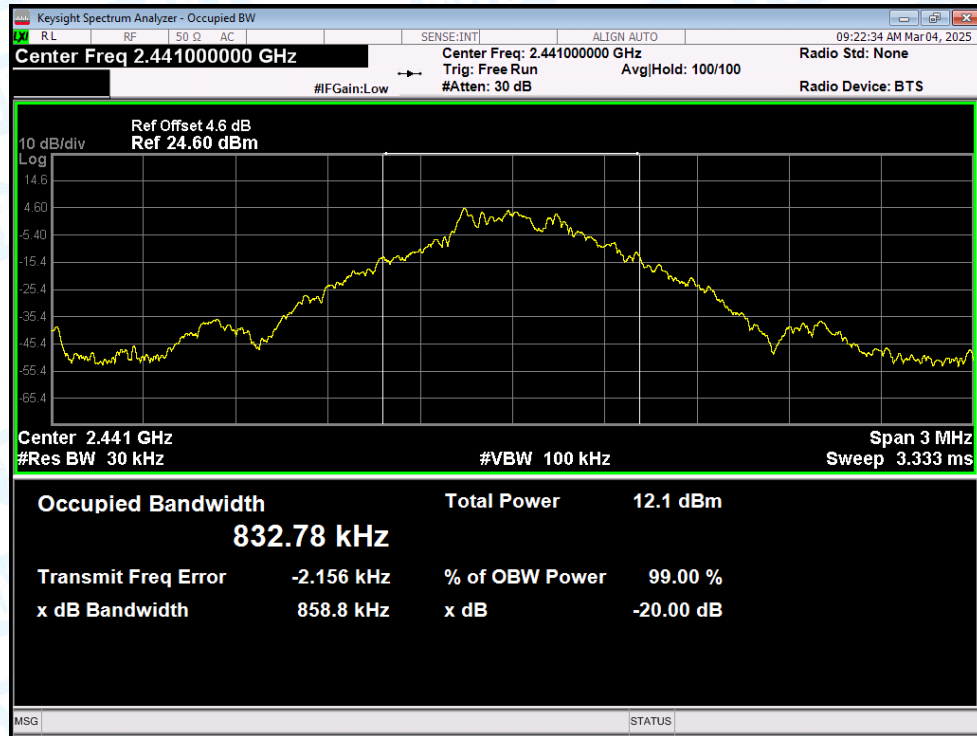
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.826
NVNT	1-DH1	2441	Ant1	0.833
NVNT	1-DH1	2480	Ant1	0.819
NVNT	2-DH1	2402	Ant1	1.160
NVNT	2-DH1	2441	Ant1	1.168
NVNT	2-DH1	2480	Ant1	1.189
NVNT	3-DH1	2402	Ant1	1.166
NVNT	3-DH1	2441	Ant1	1.173
NVNT	3-DH1	2480	Ant1	1.161

Test Graphs

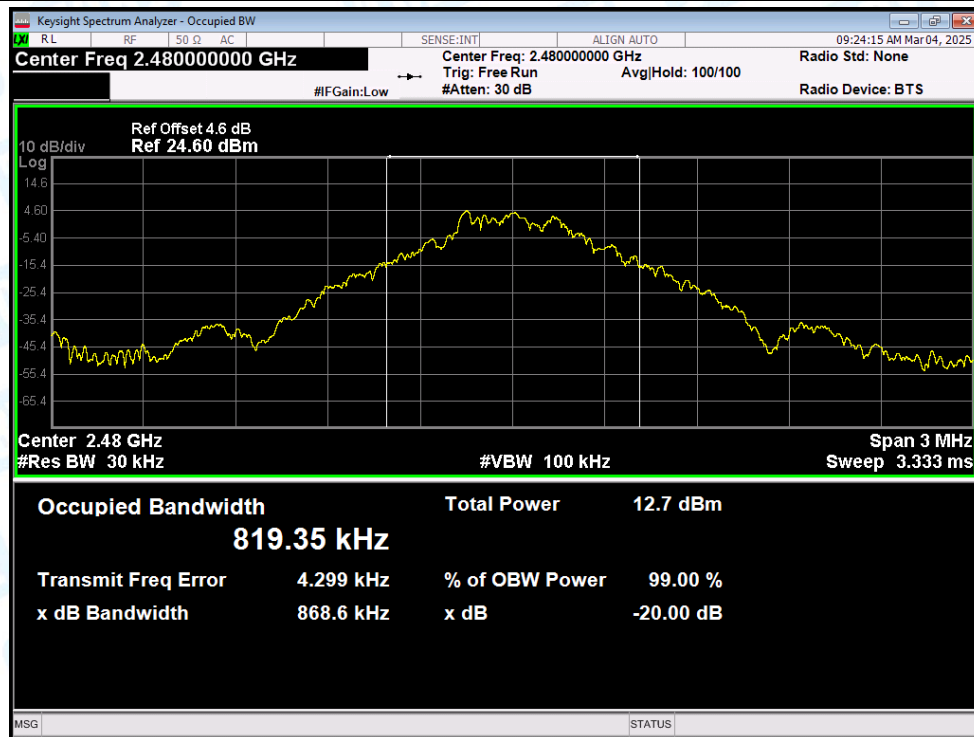
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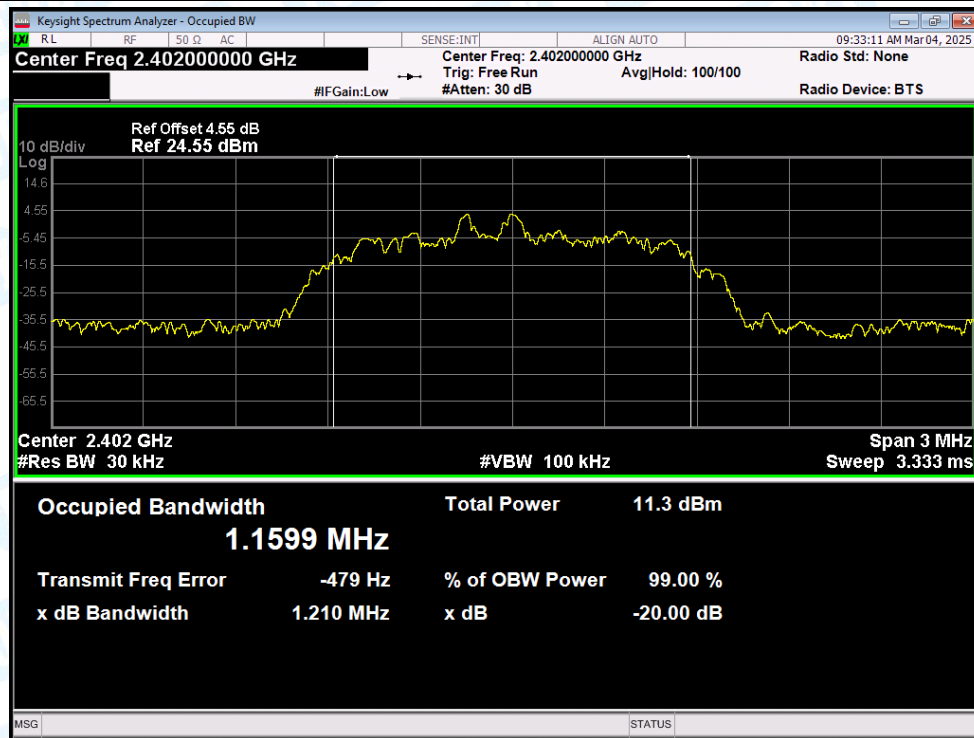
OBW NVNT 1-DH1 2441MHz Ant1



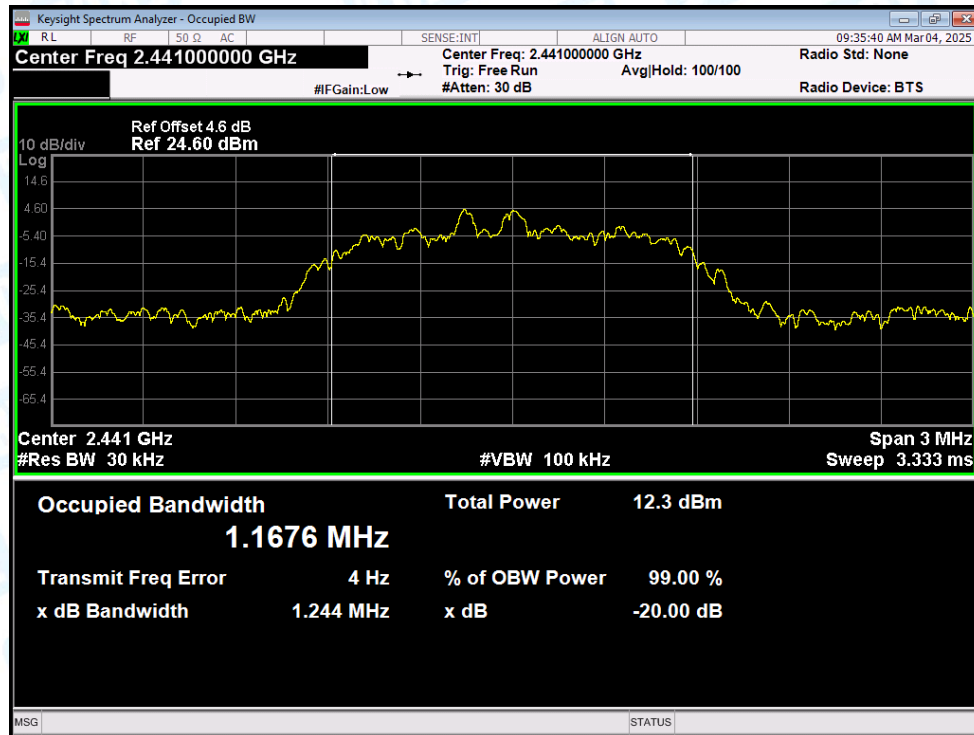
OBW NVNT 1-DH1 2480MHz Ant1



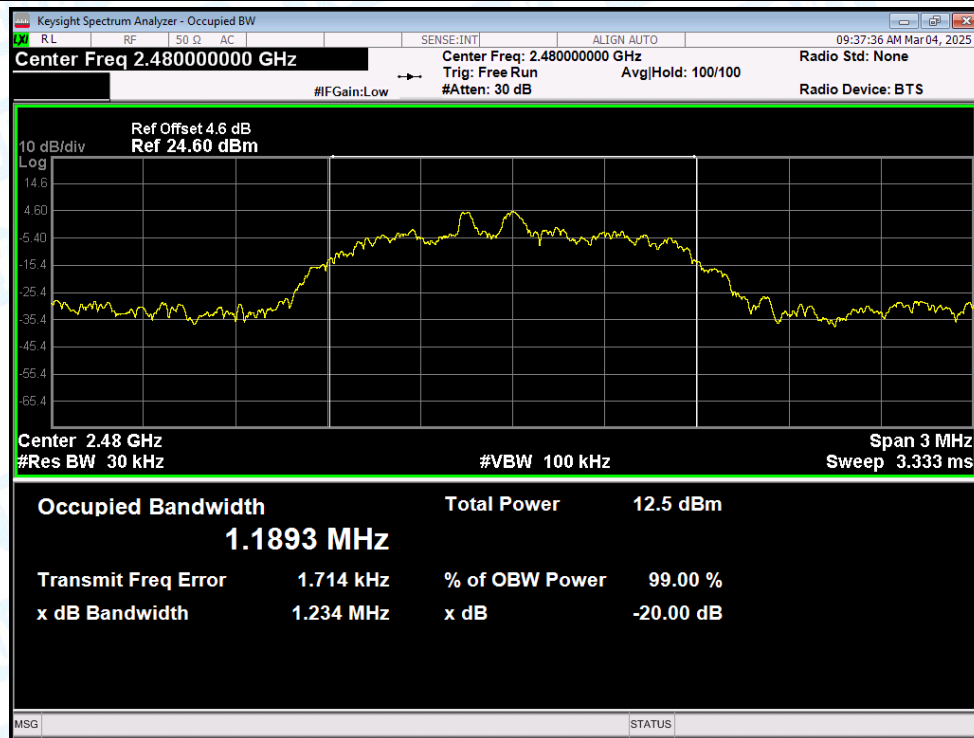
OBW NVNT 2-DH1 2402MHz Ant1



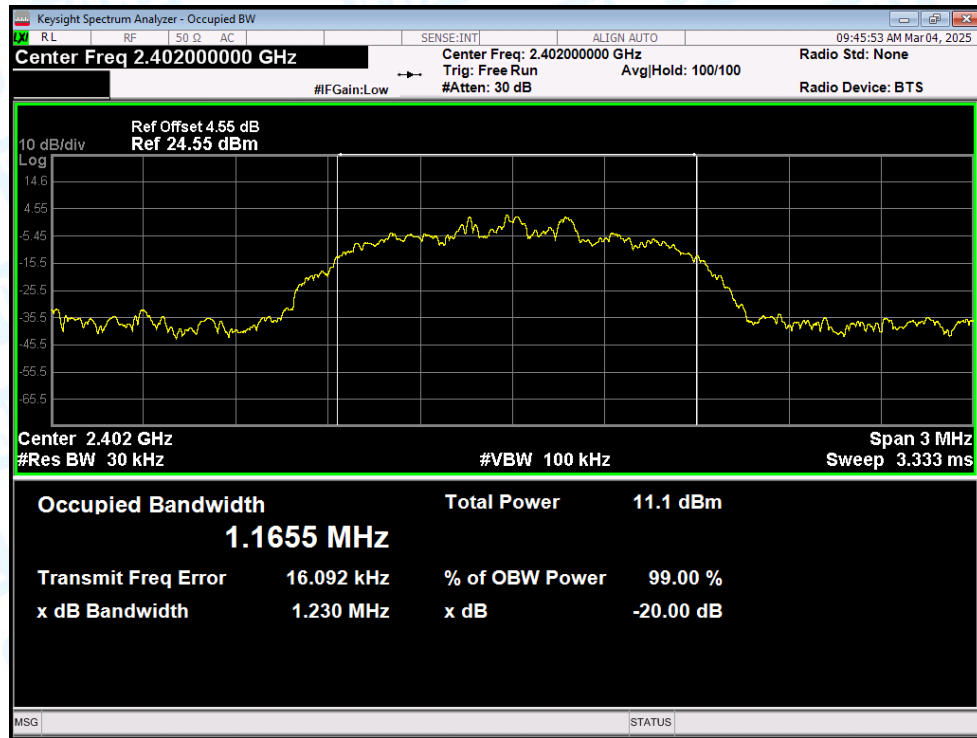
OBW NVNT 2-DH1 2441MHz Ant1



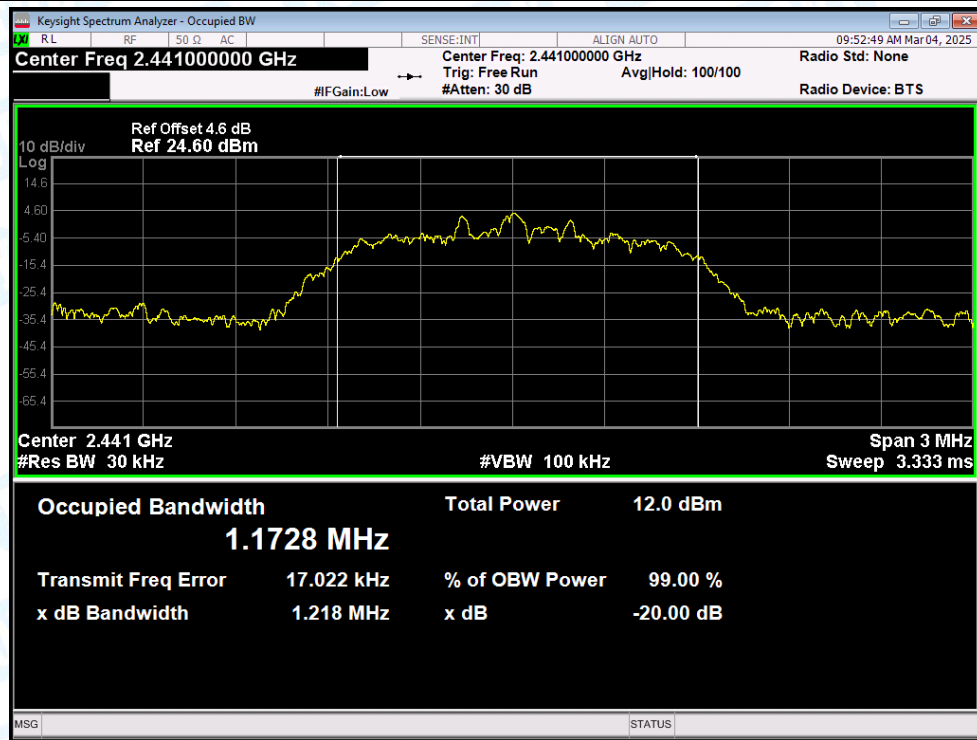
OBW NVNT 2-DH1 2480MHz Ant1

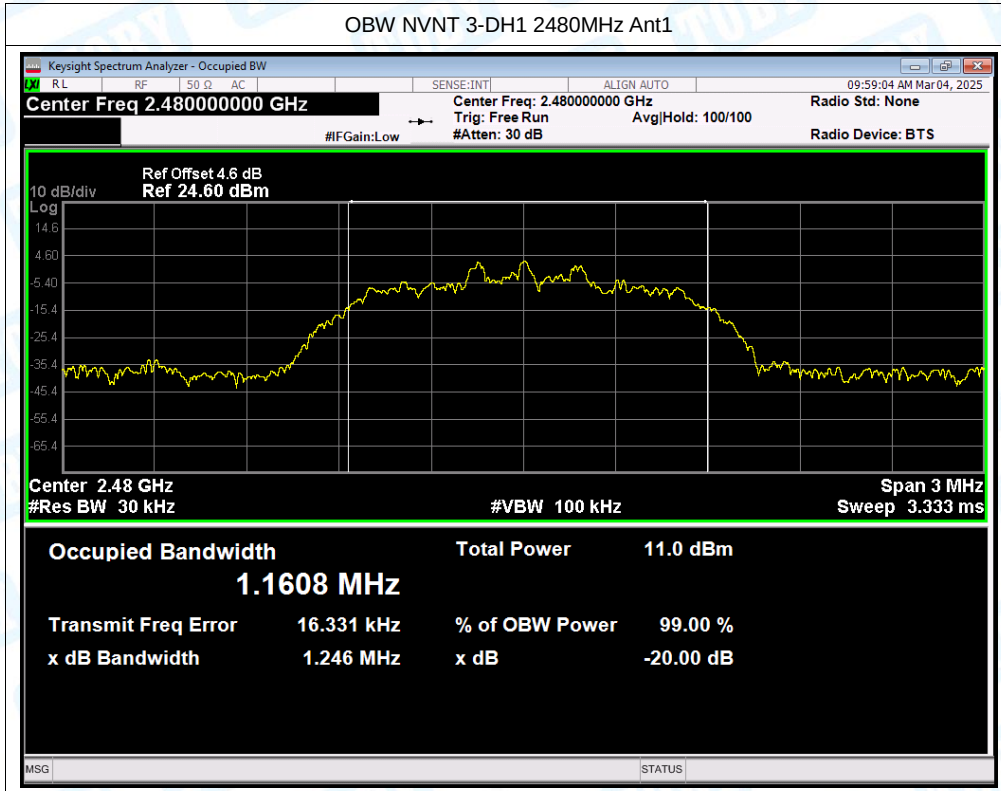


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1





5. Band Edge

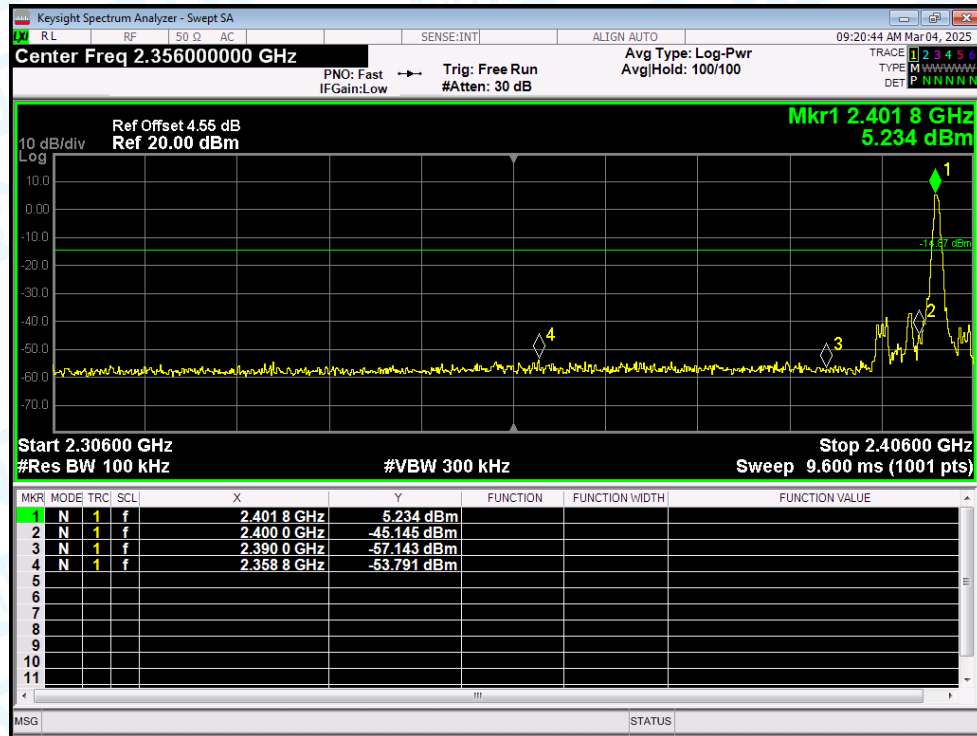
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-58.92	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-47.35	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-58.66	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-48.81	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-58.68	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-49.50	-20	Pass

Test Graphs

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



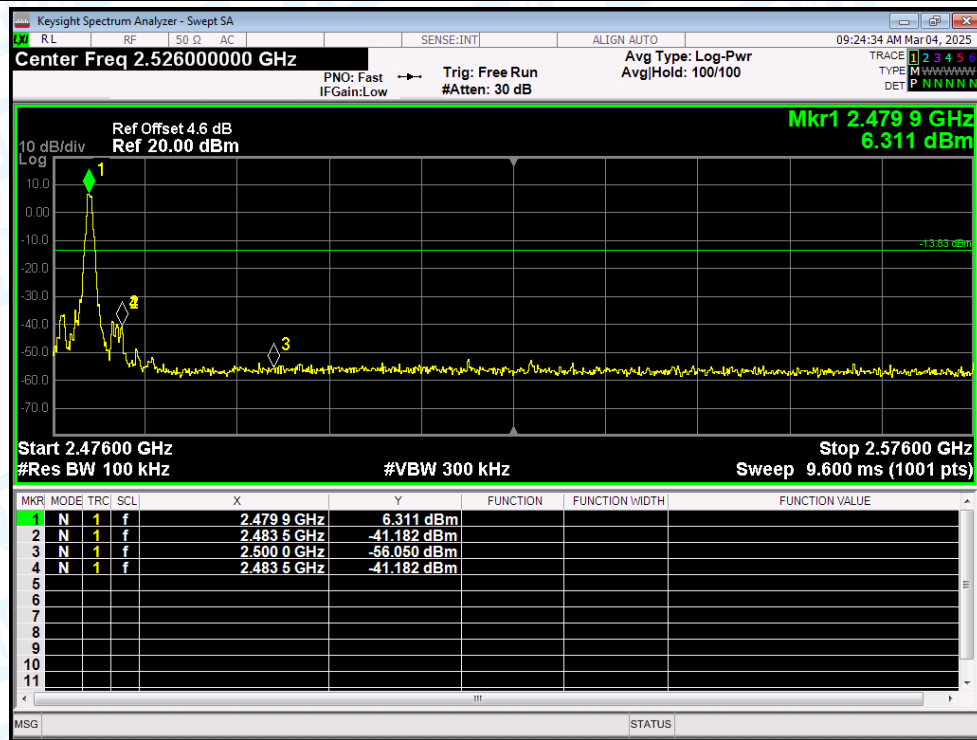
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



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



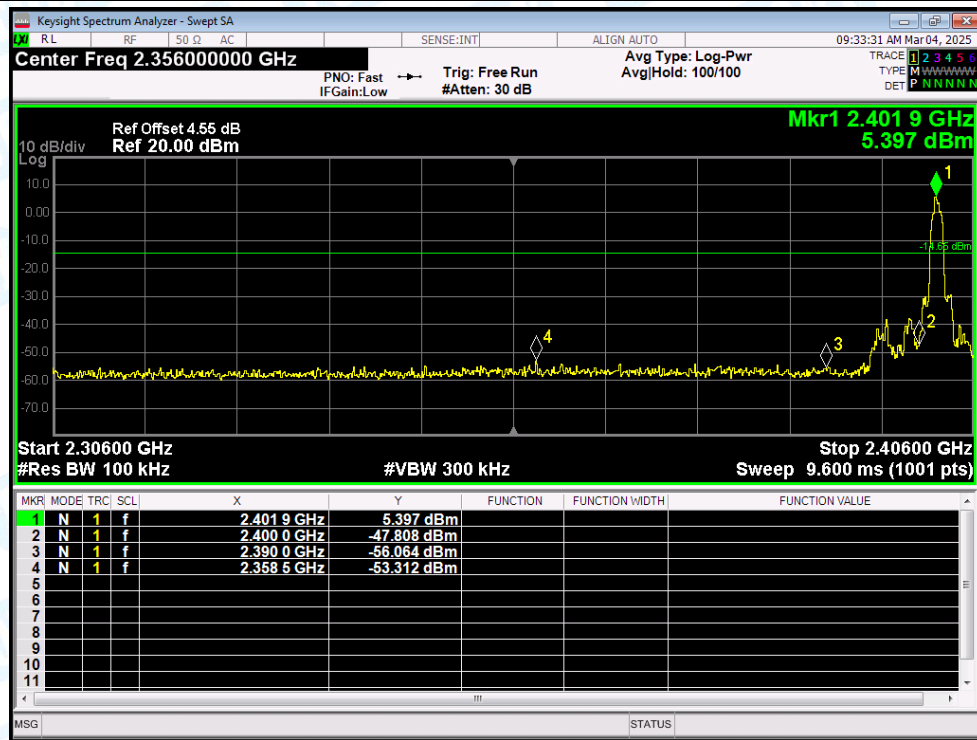
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



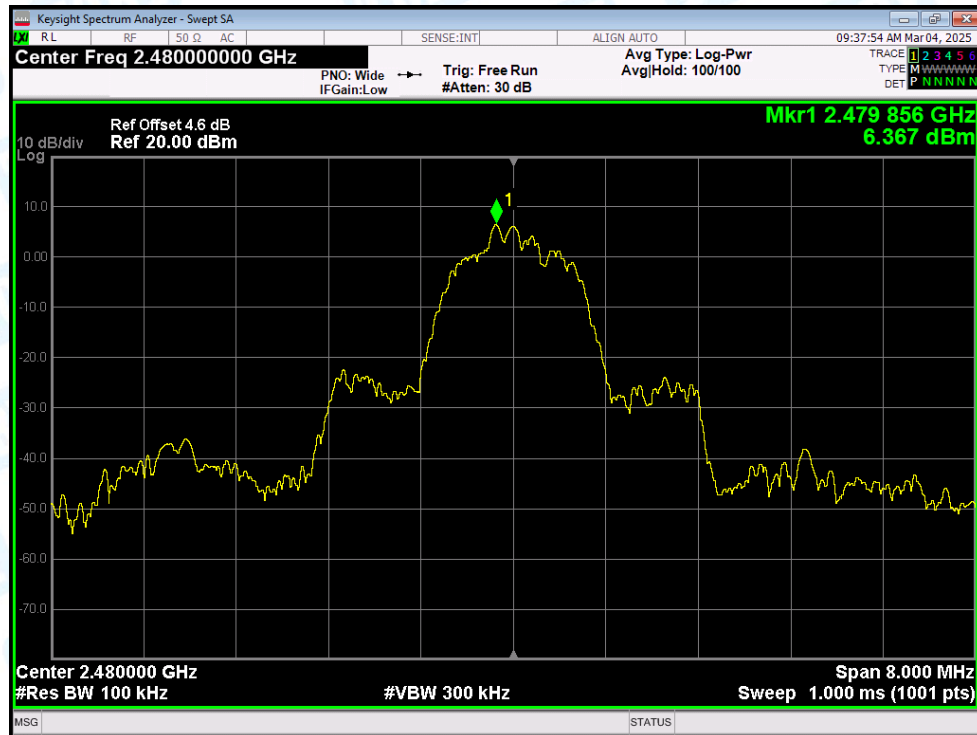
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



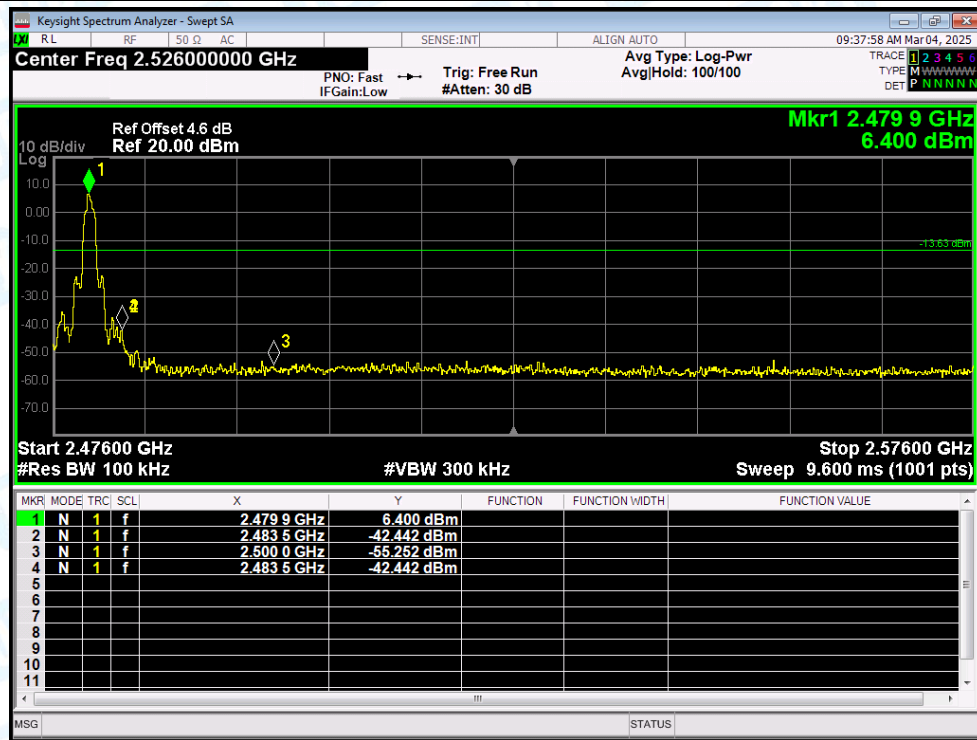
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



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



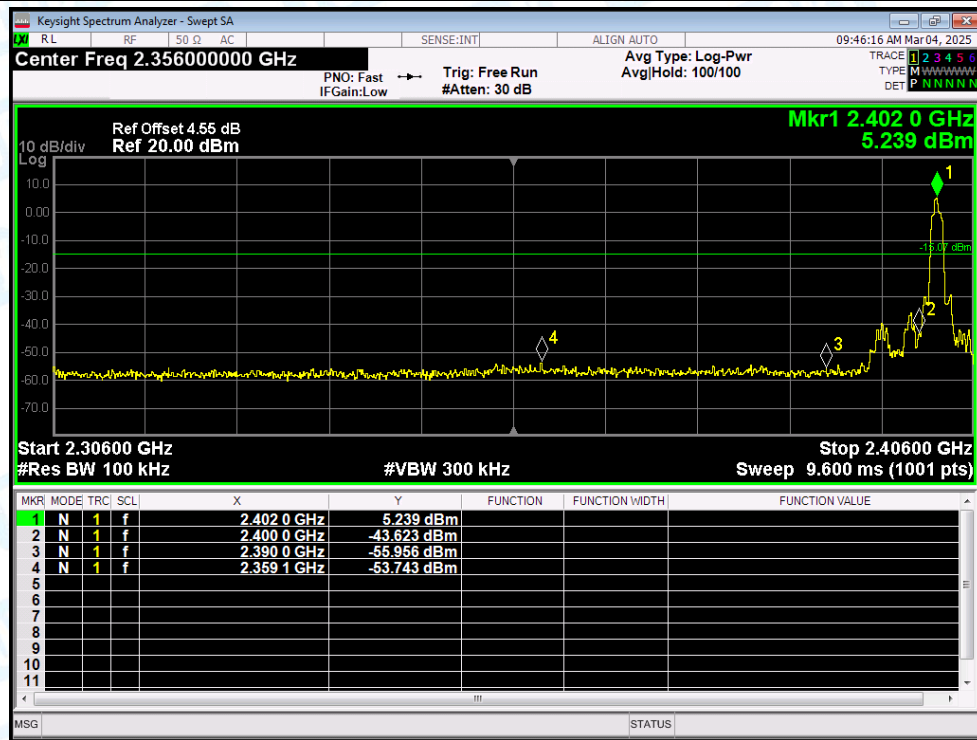
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



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



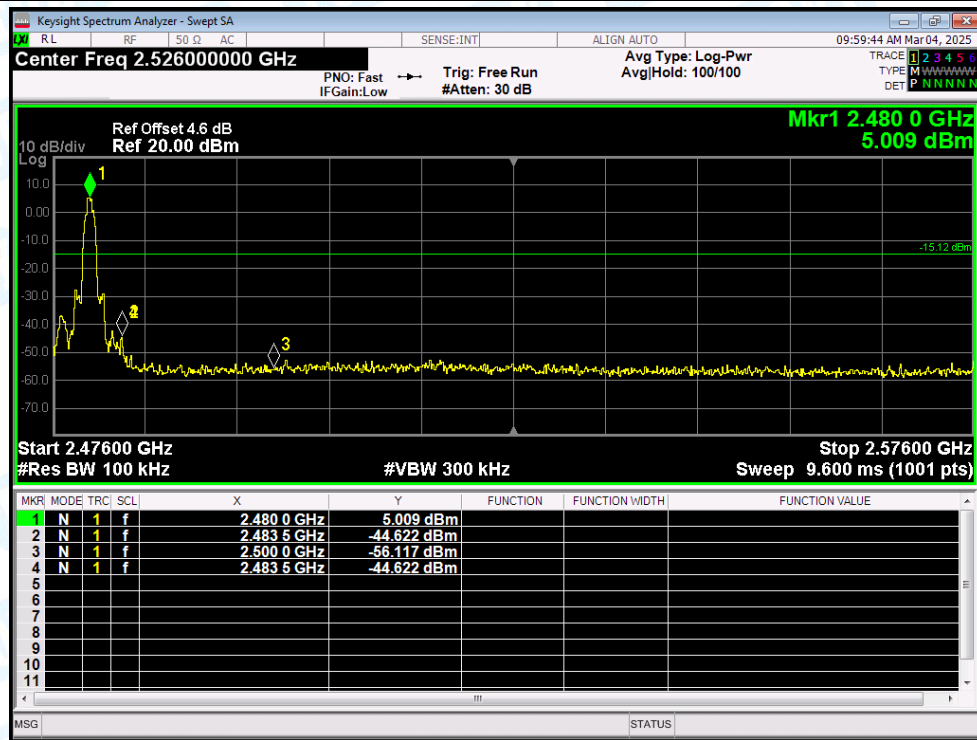
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



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



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

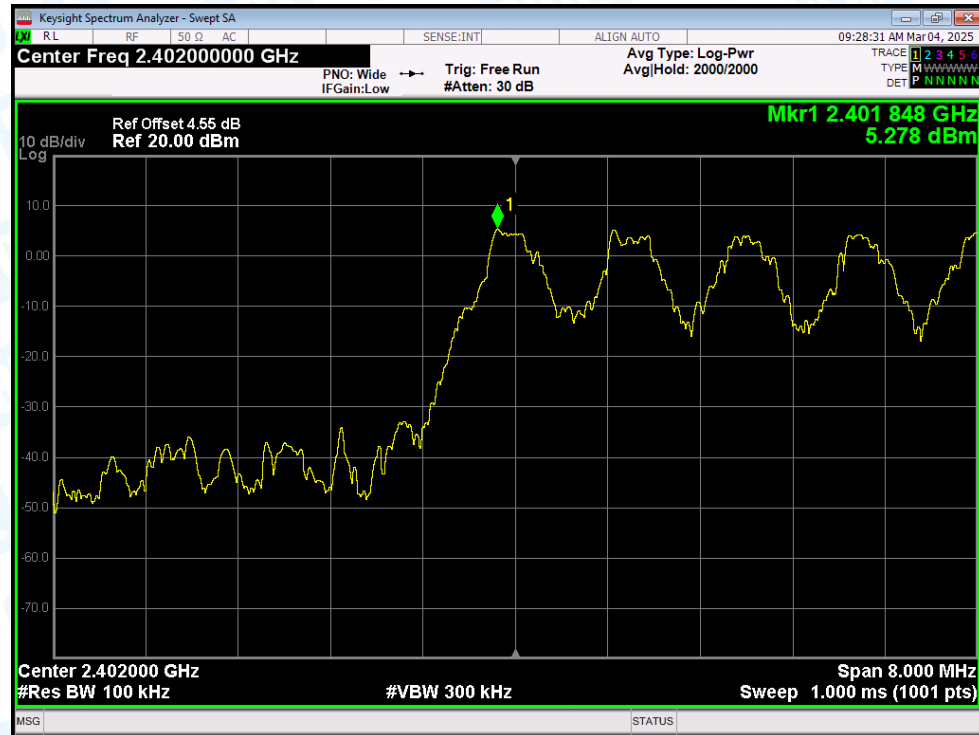


6. Band Edge(Hopping)

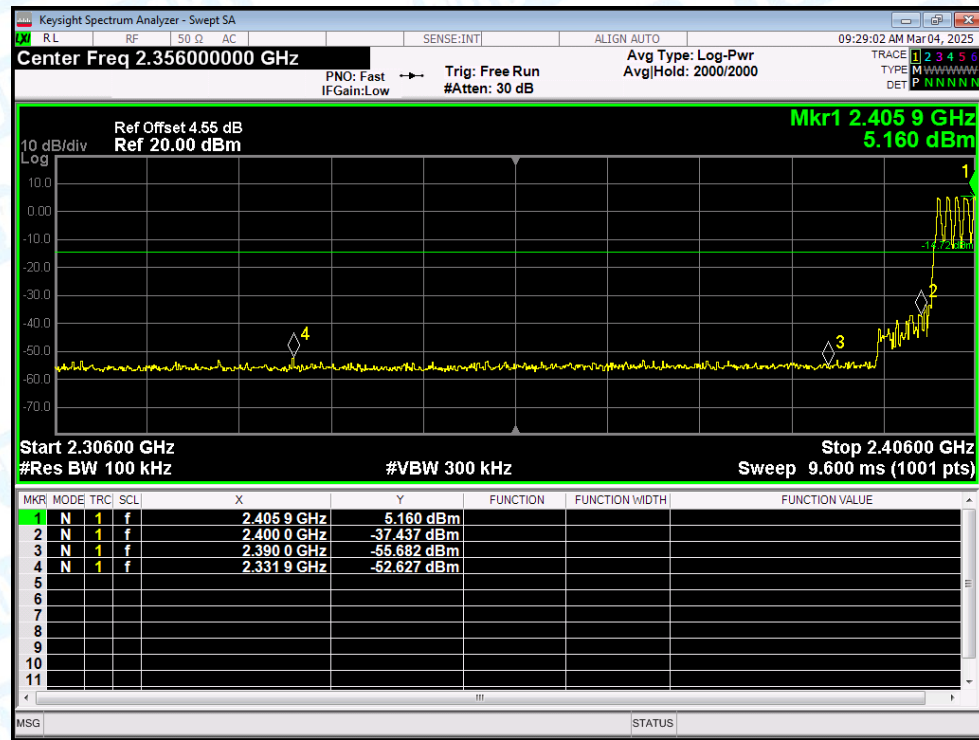
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-57.91	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-50.47	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-57.63	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-52.58	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-58.42	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-48.67	-20	Pass

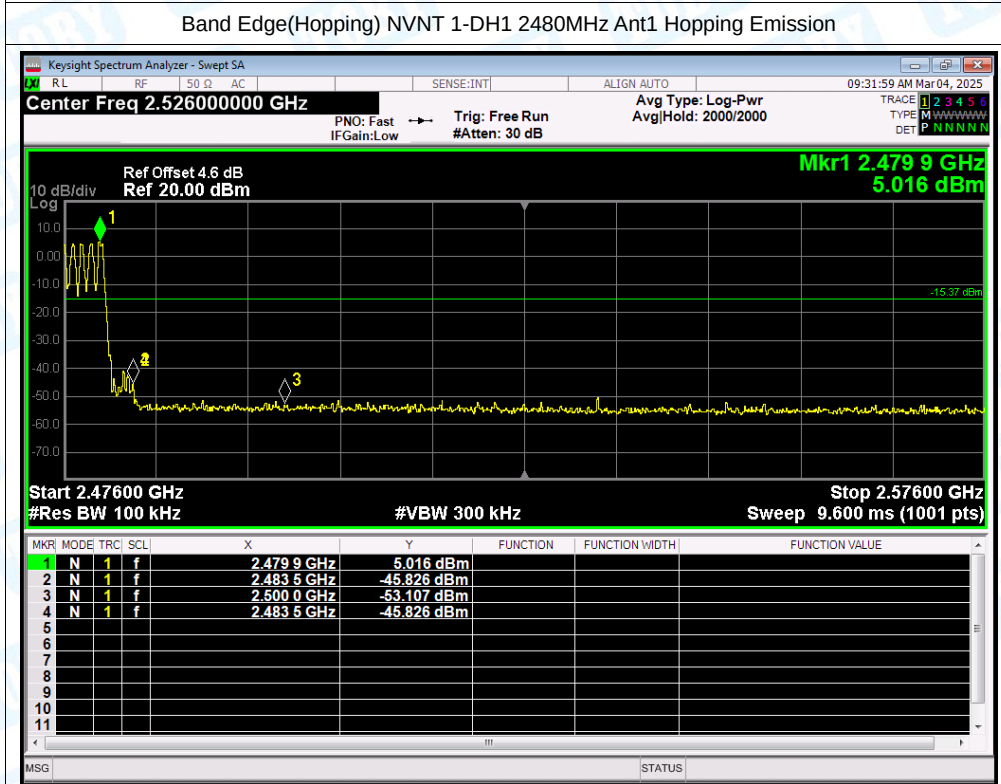
Test Graphs

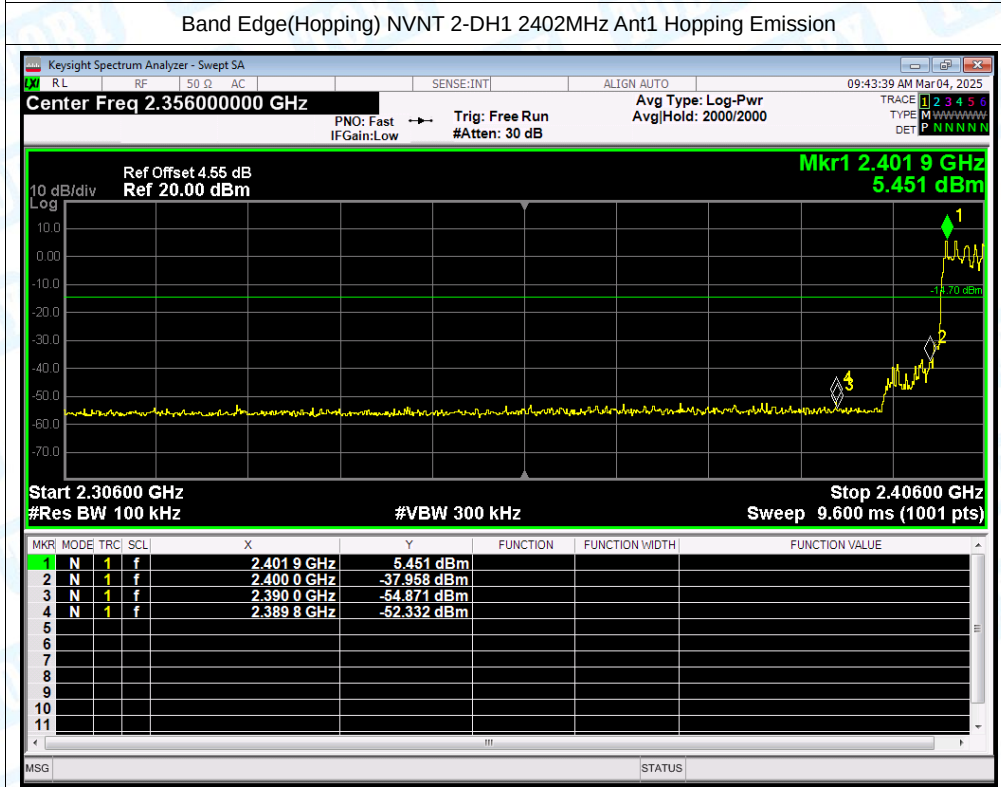
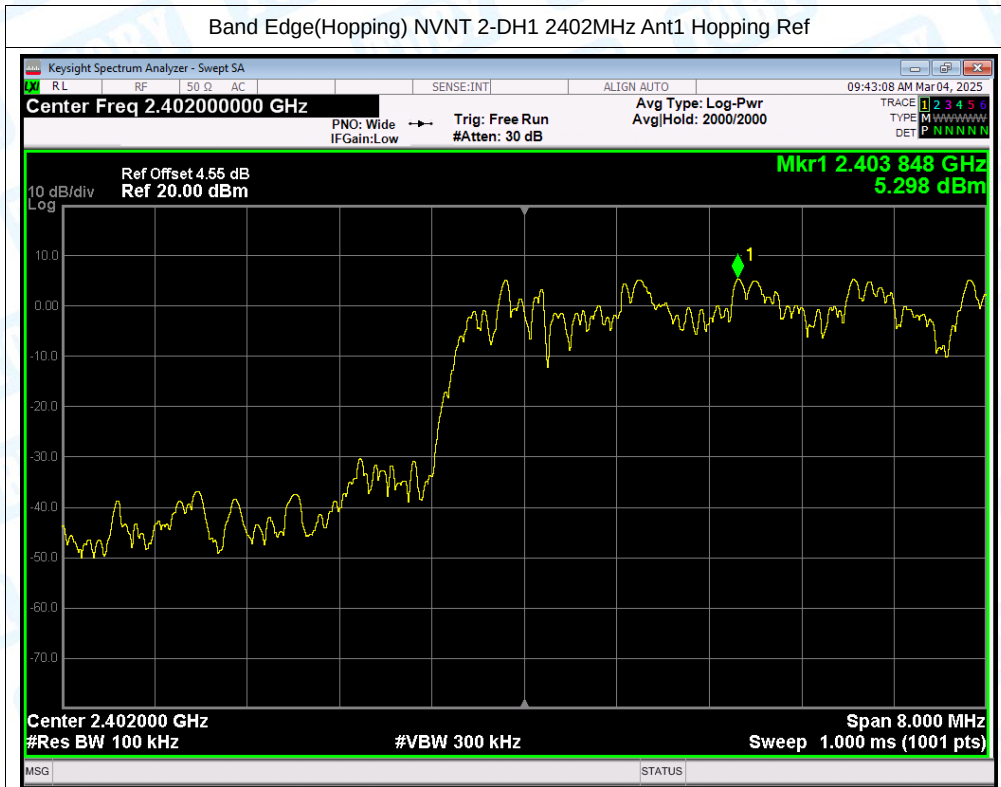
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref

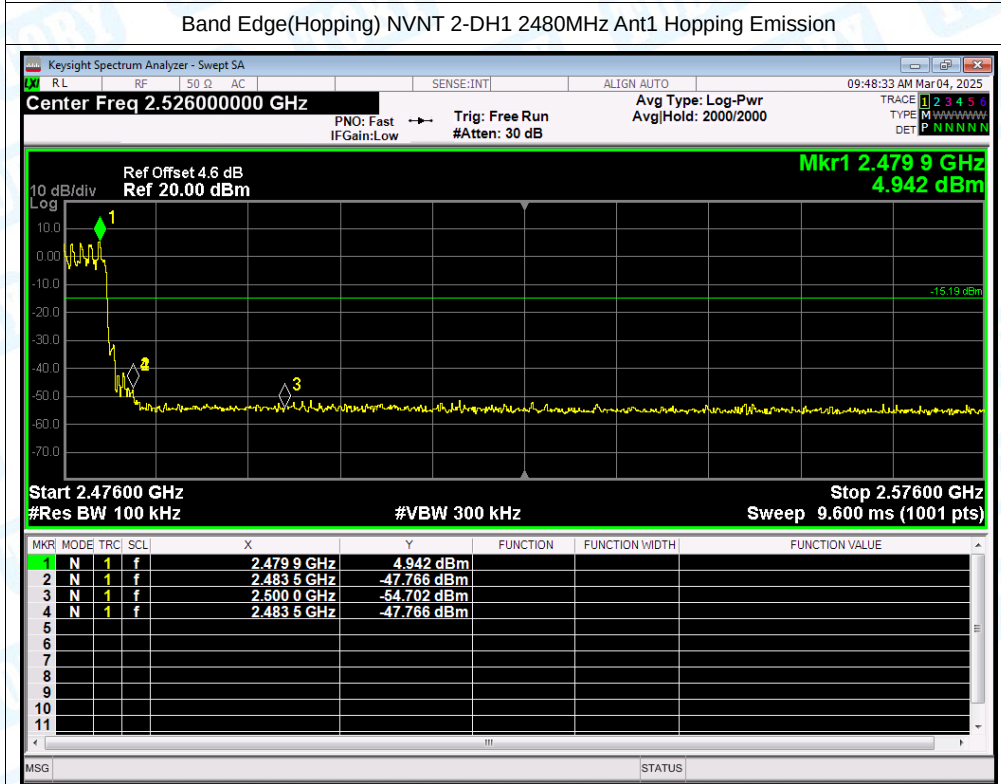
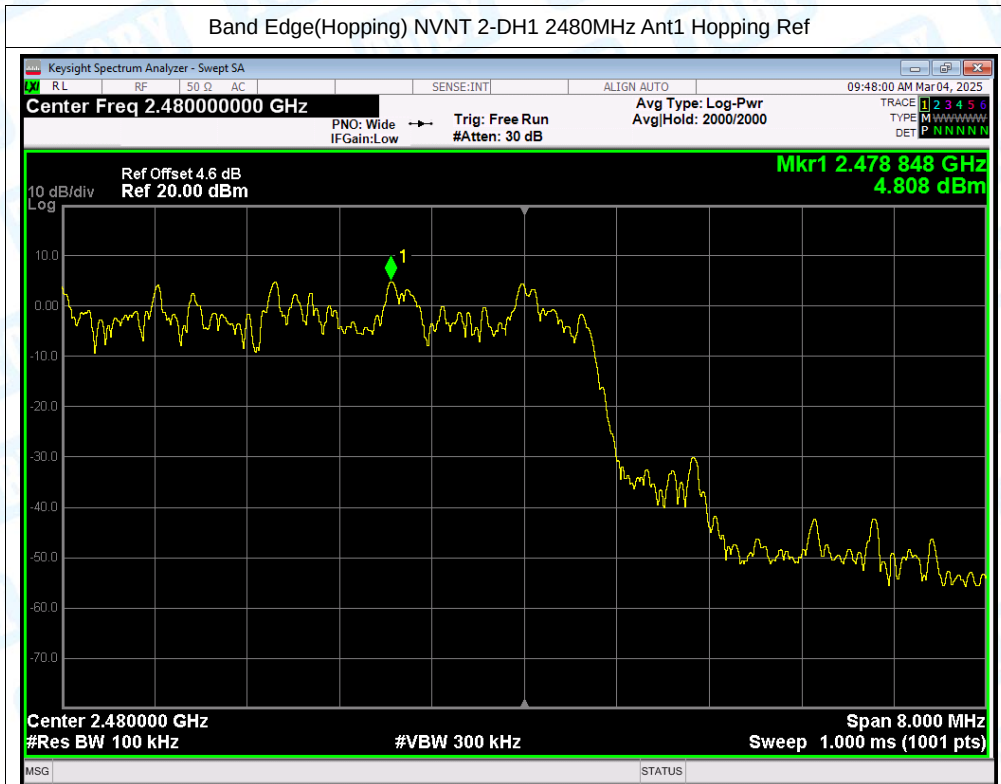


Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission

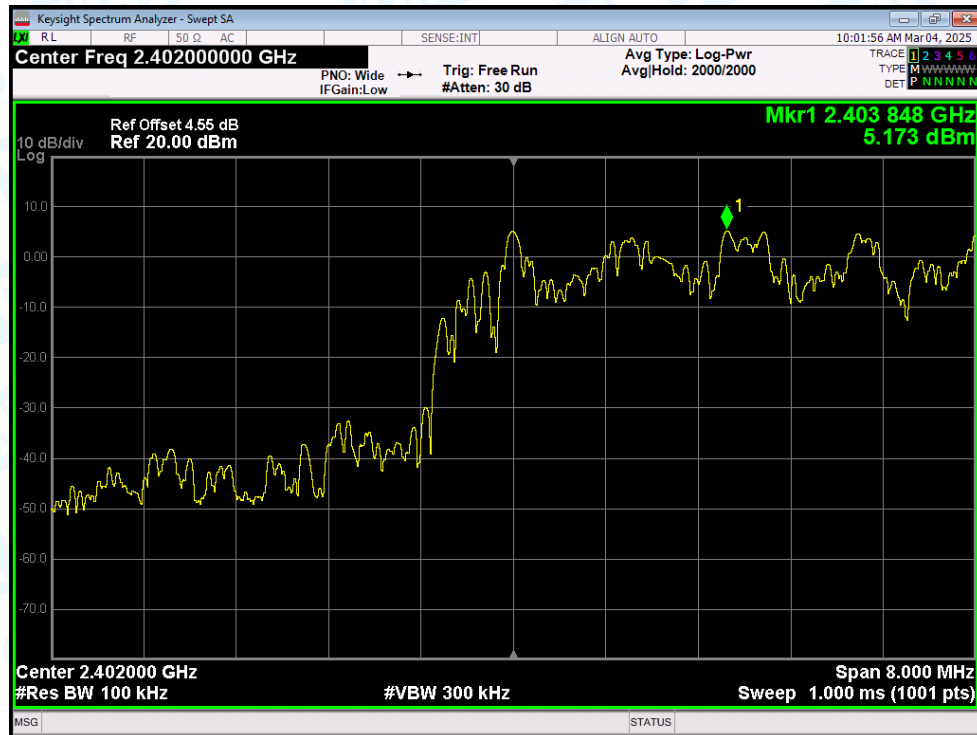




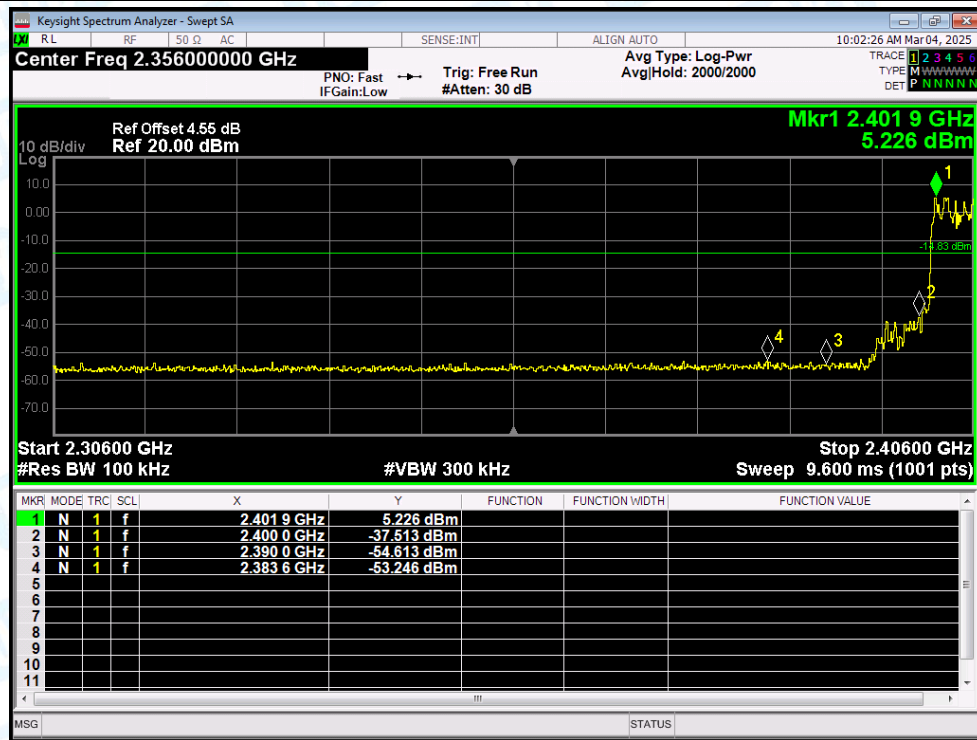


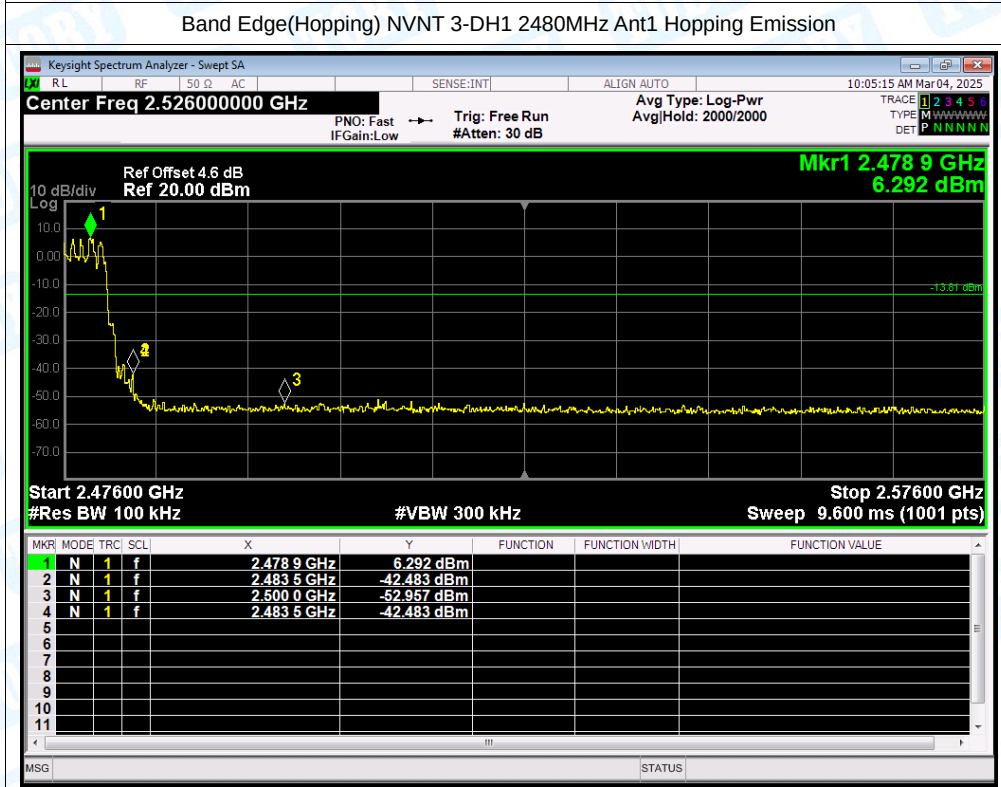


Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



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



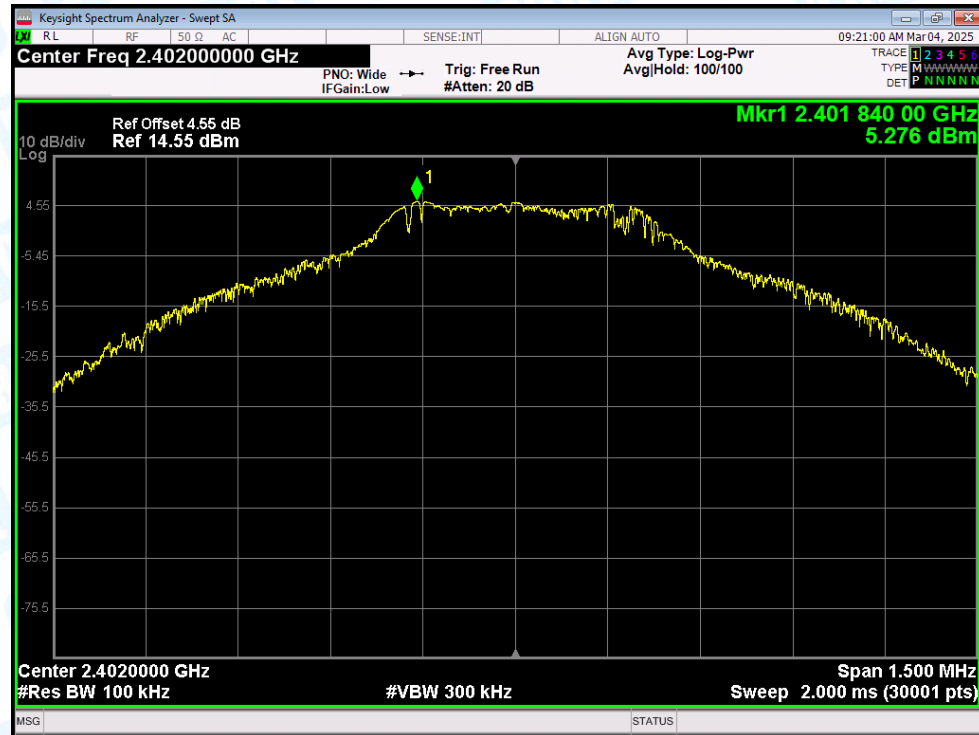


7. Conducted RF Spurious Emission

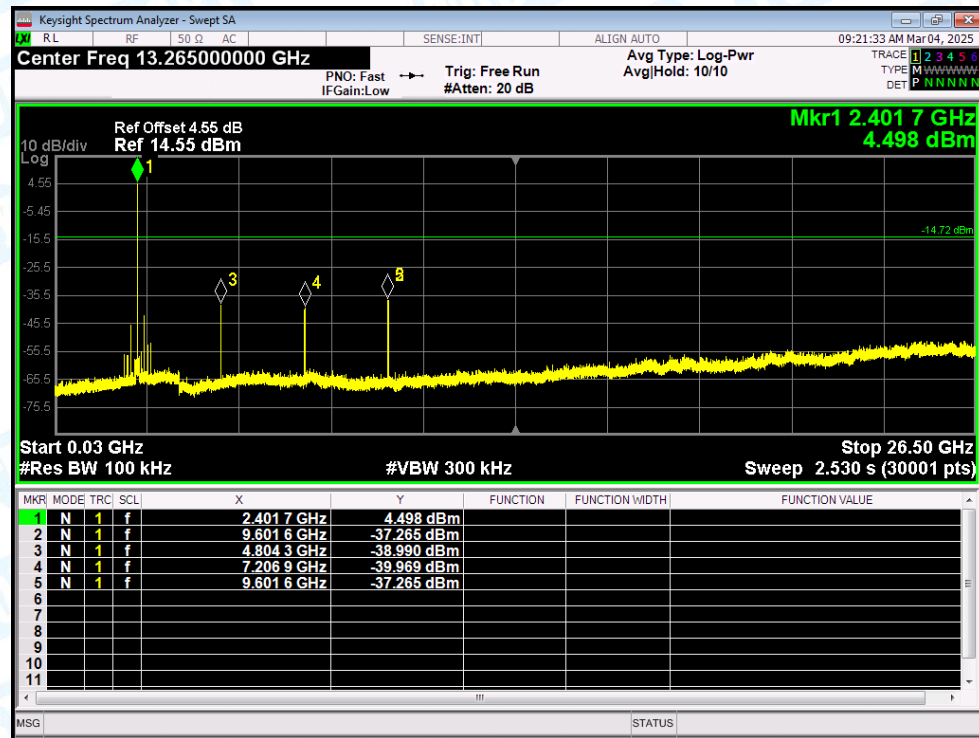
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-42.54	-20	Pass
NVNT	1-DH1	2441	Ant1	-40.02	-20	Pass
NVNT	1-DH1	2480	Ant1	-38.74	-20	Pass
NVNT	2-DH1	2402	Ant1	-38.82	-20	Pass
NVNT	2-DH1	2441	Ant1	-39.67	-20	Pass
NVNT	2-DH1	2480	Ant1	-41.45	-20	Pass
NVNT	3-DH1	2402	Ant1	-38.92	-20	Pass
NVNT	3-DH1	2441	Ant1	-39.94	-20	Pass
NVNT	3-DH1	2480	Ant1	-41.77	-20	Pass

Test Graphs

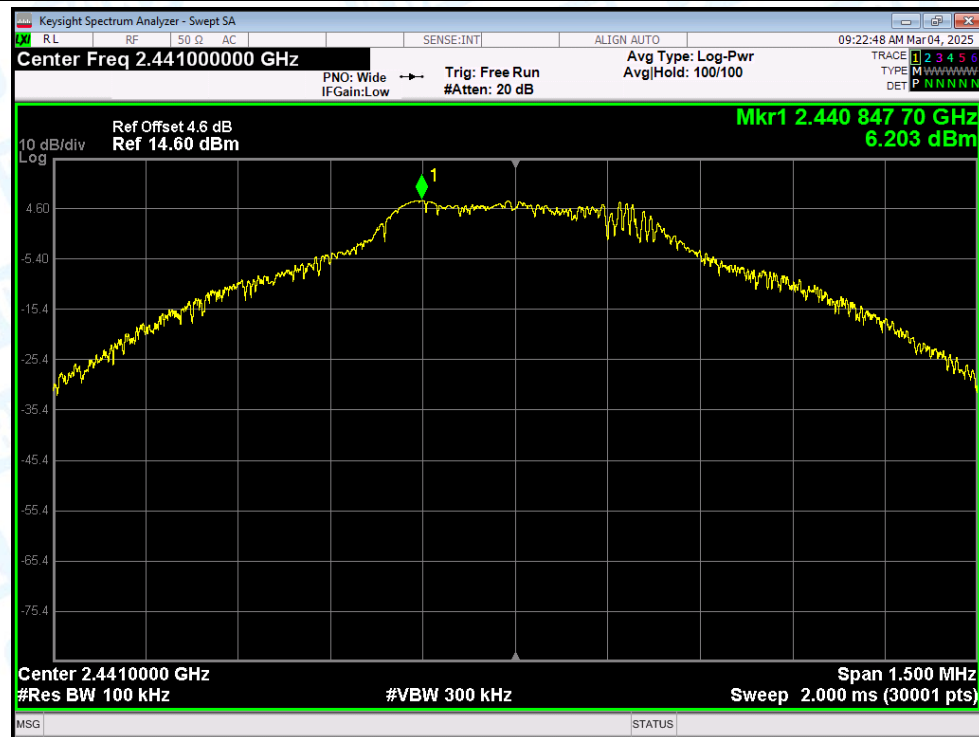
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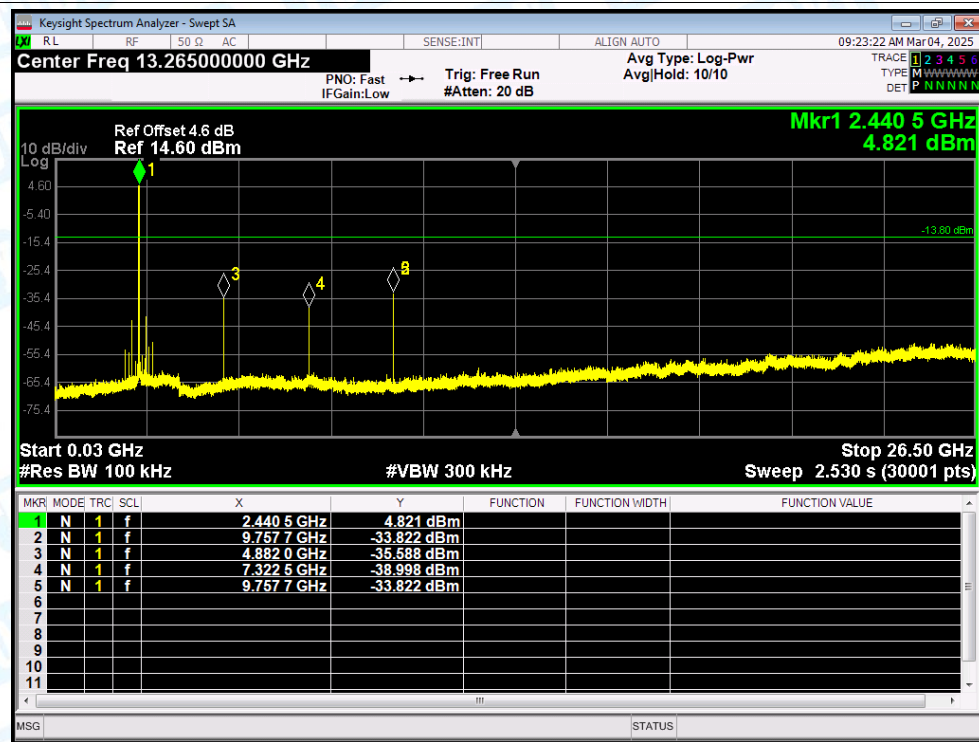
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



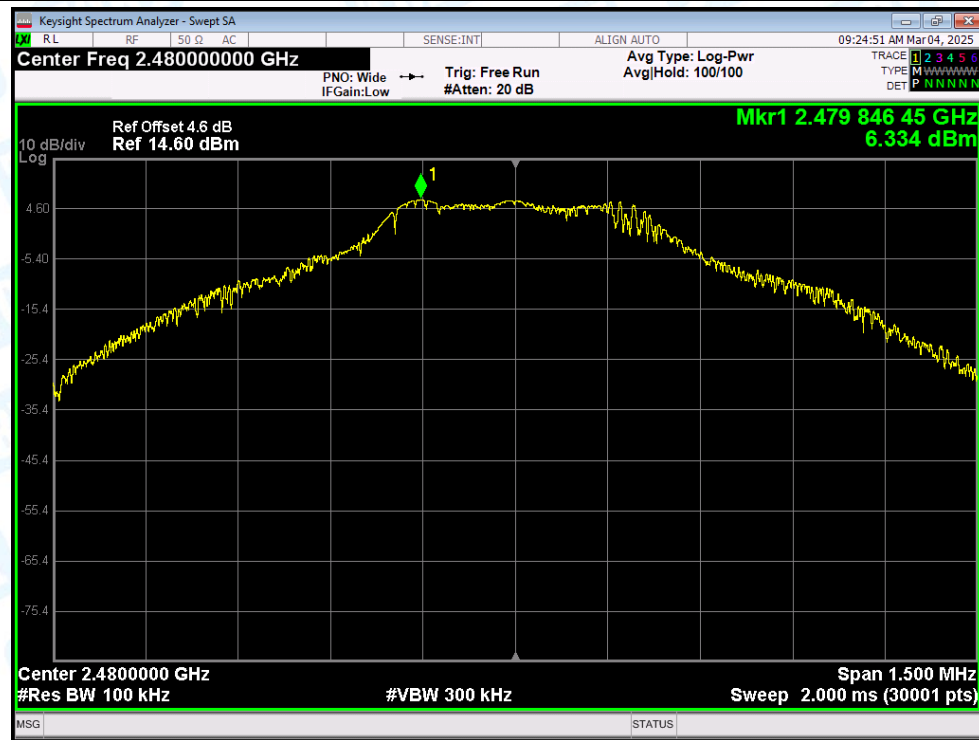
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



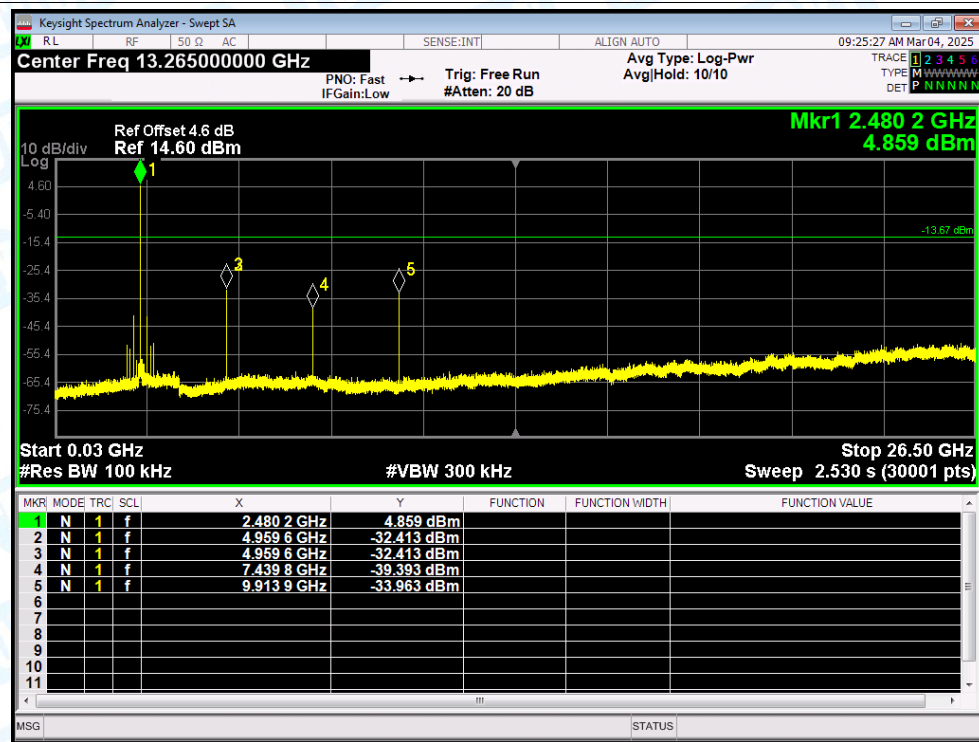
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



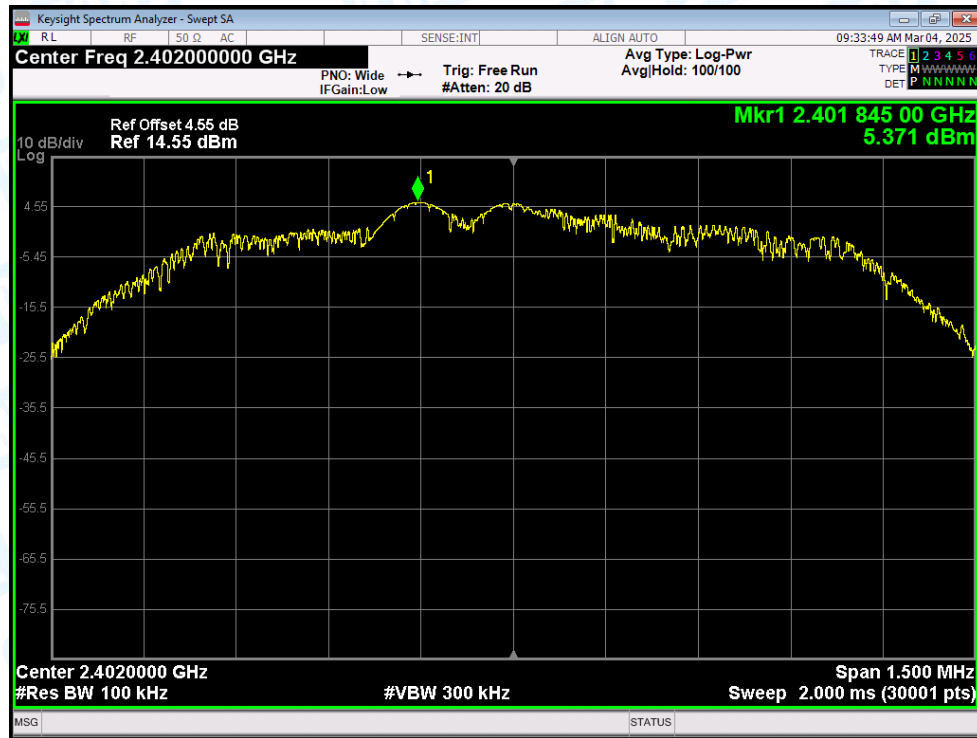
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



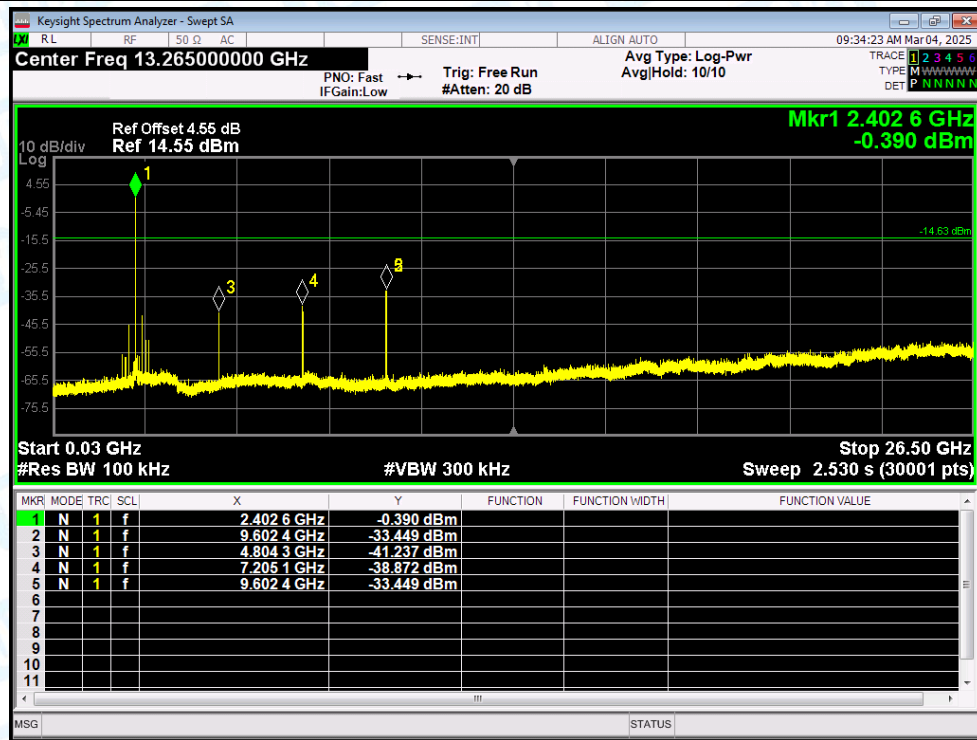
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



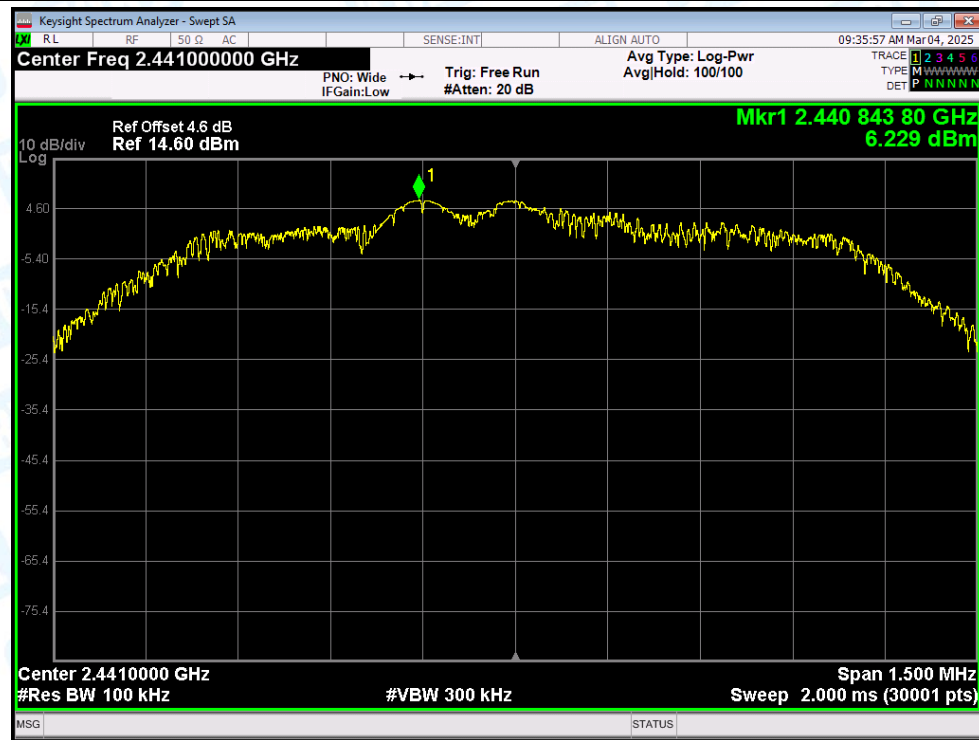
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



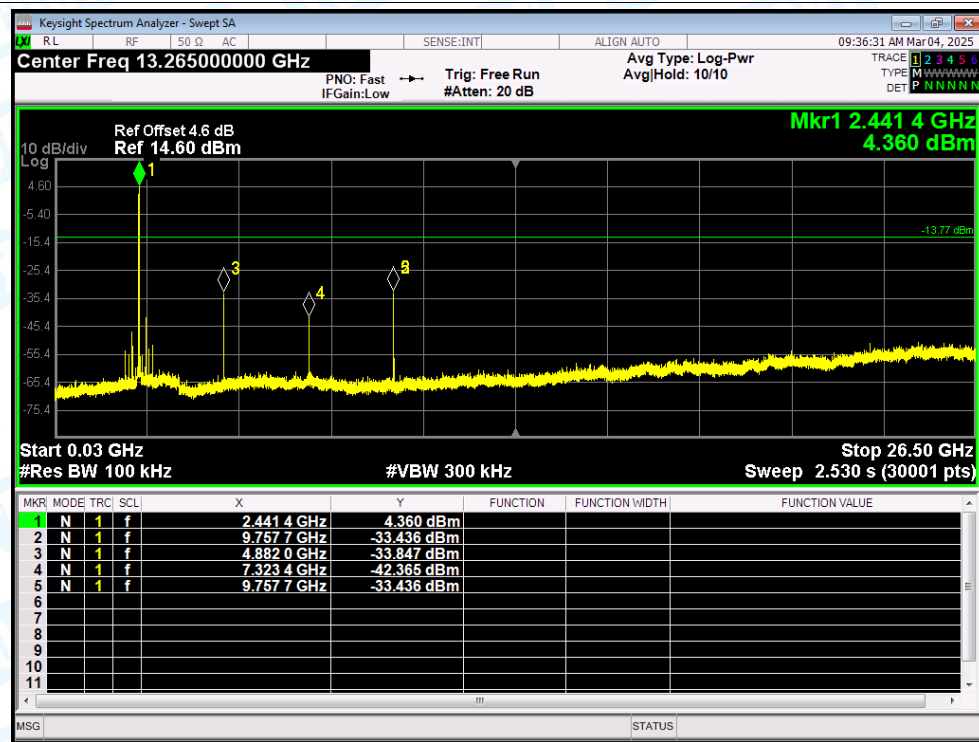
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



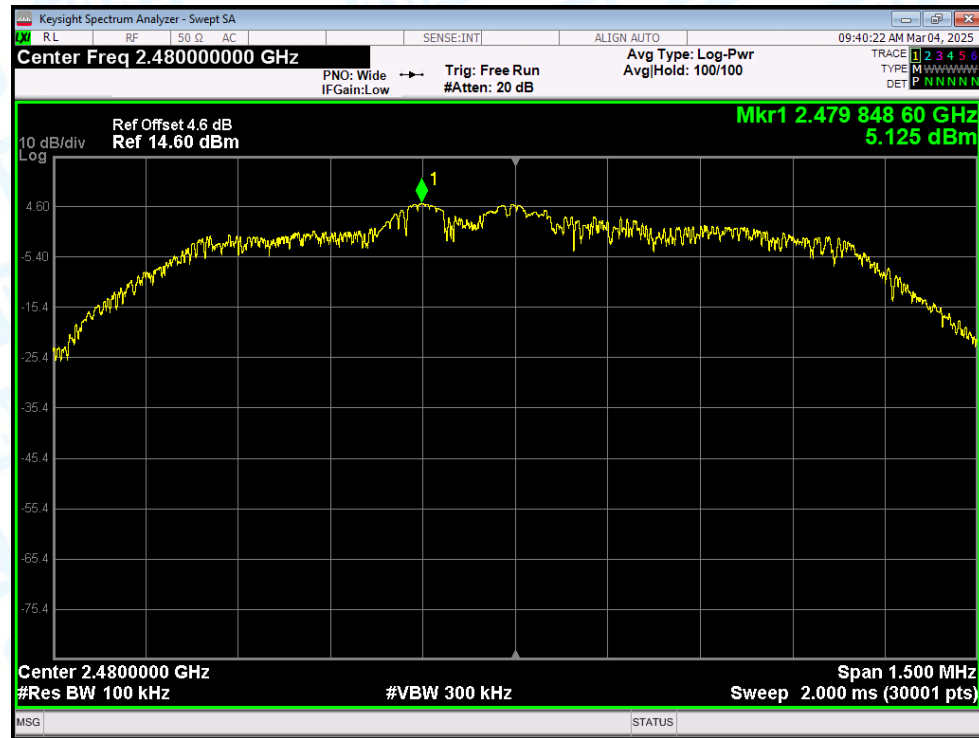
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



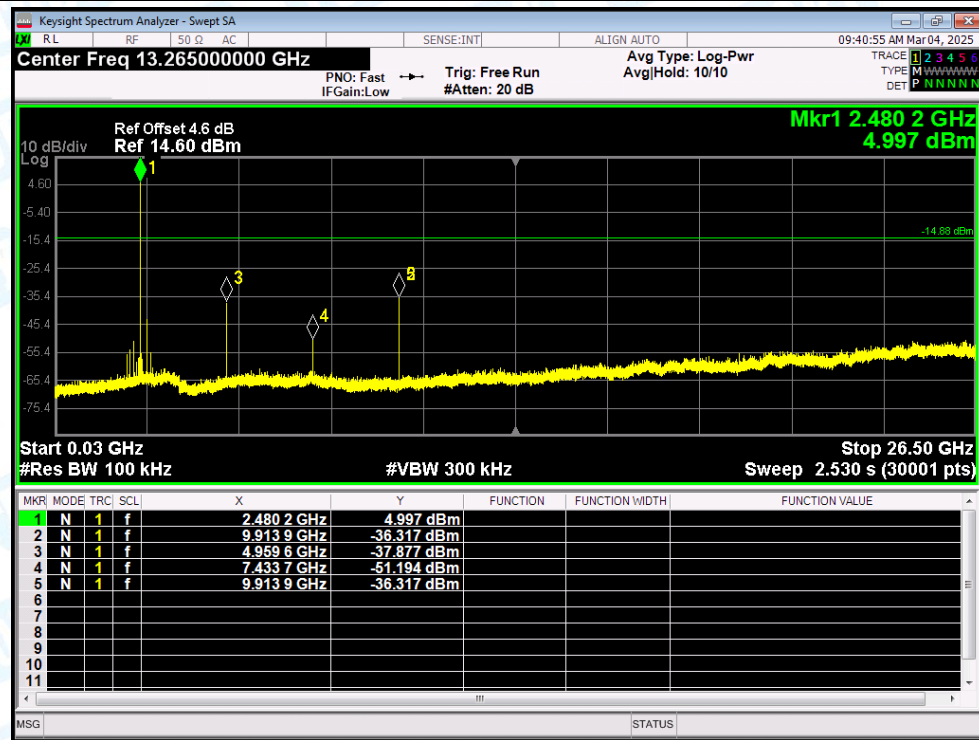
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



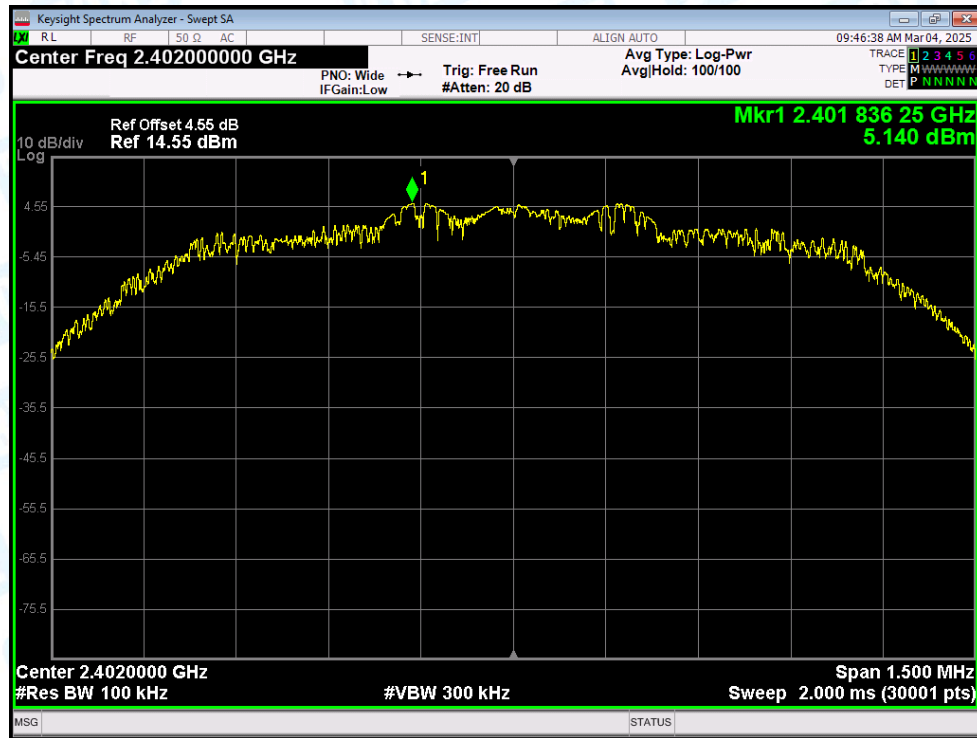
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



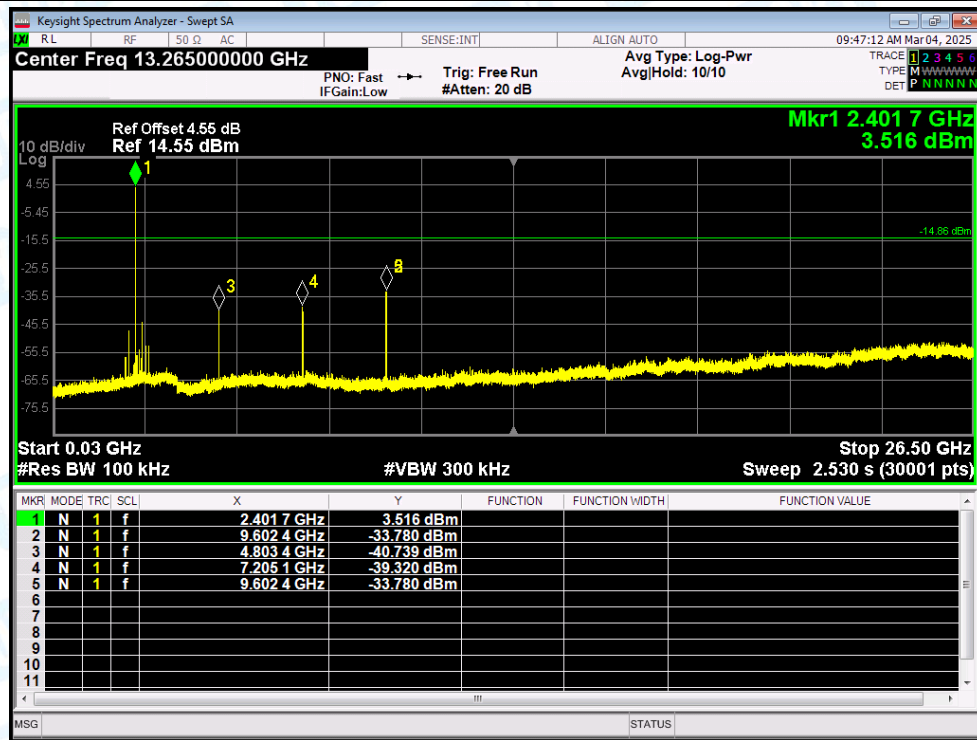
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



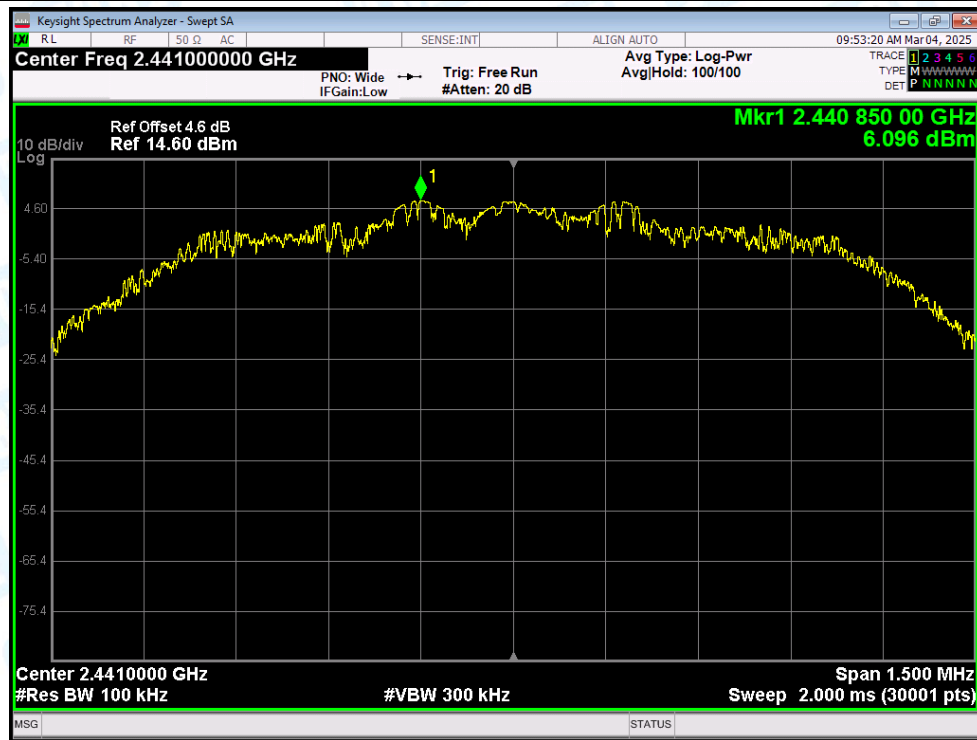
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



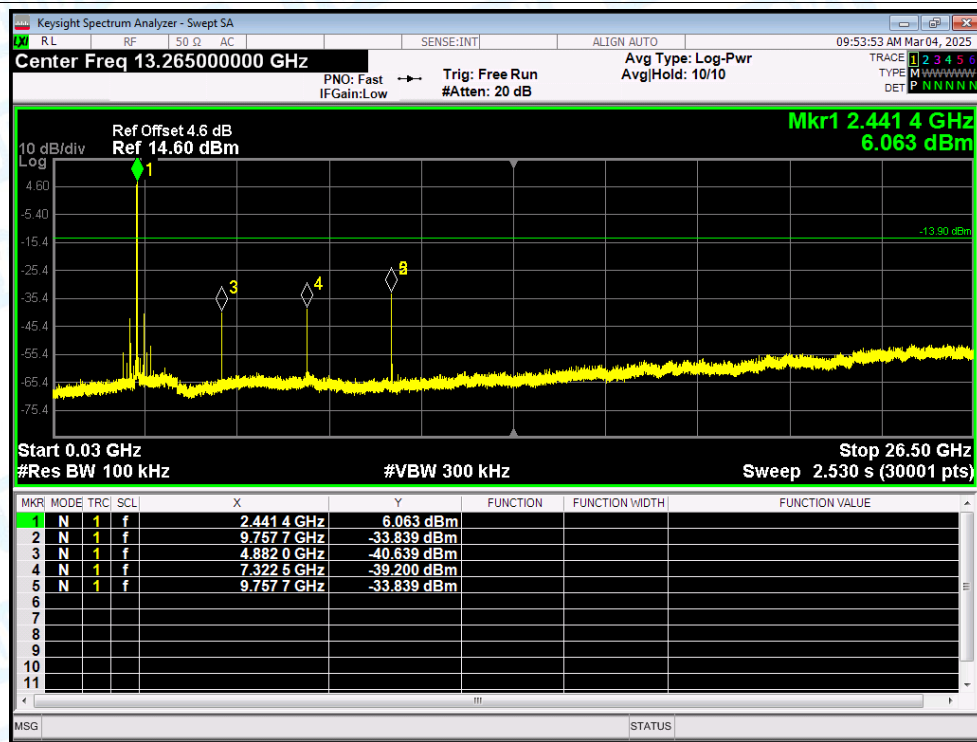
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



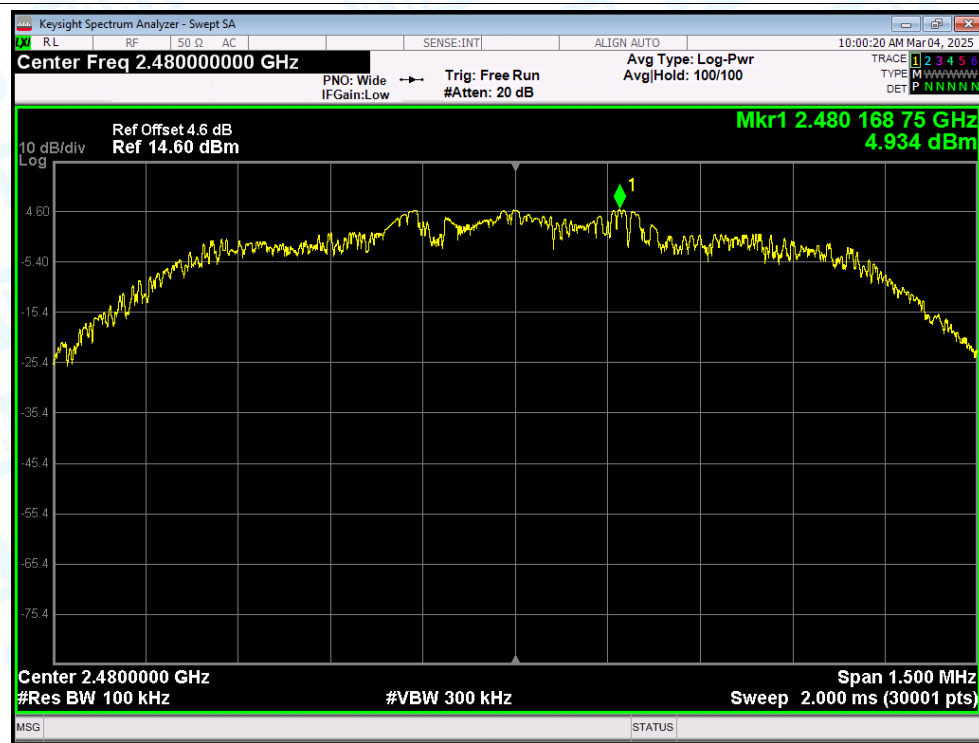
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



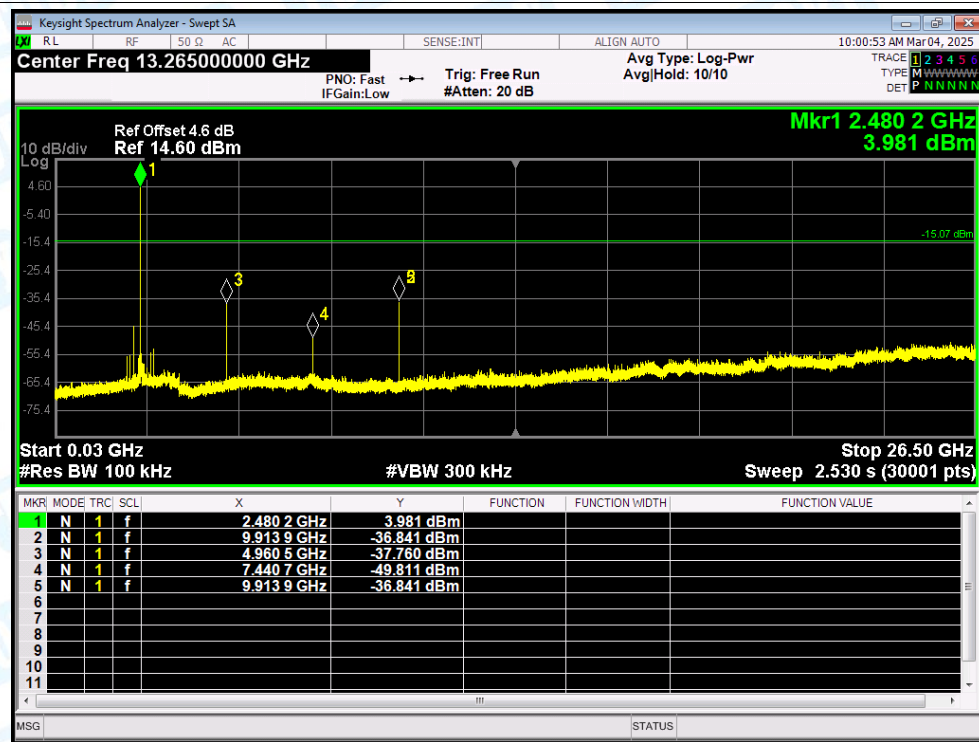
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

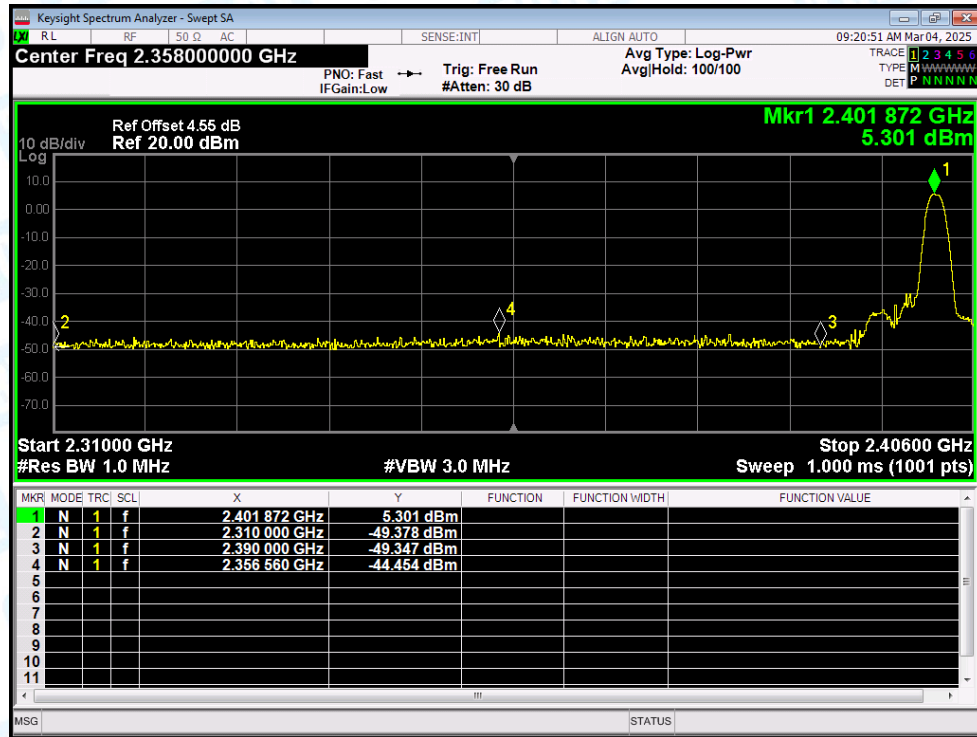


8. Restrict Band

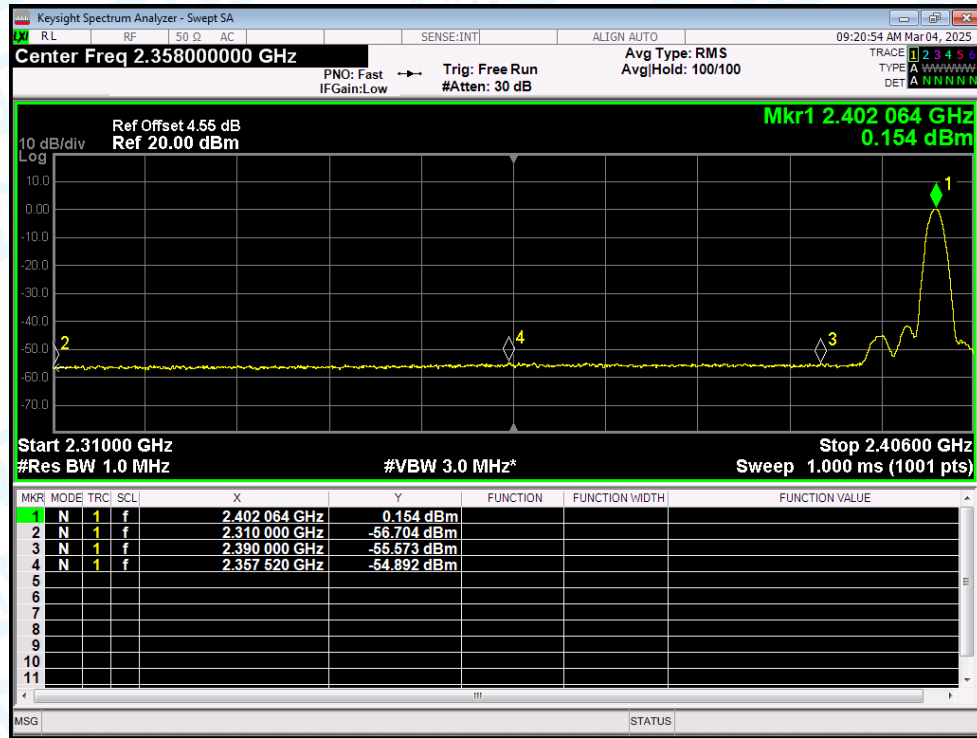
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-49.38	2	-	47.88	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.7	2	5.17	45.73	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2356.56	-44.45	2	-	52.81	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2357.52	-54.89	2	5.17	47.54	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-49.35	2	-	47.91	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-55.57	2	5.17	46.86	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-38.87	2	-	58.39	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-49.84	2	5.06	52.48	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.512	-38.87	2	-	58.39	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.608	-49.65	2	5.06	52.67	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-46.41	2	-	50.85	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-54.5	2	5.06	47.82	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-49.76	2	-	47.5	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.49	2	5.06	45.83	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2388.432	-43.64	2	-	53.62	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2354.352	-54.93	2	5.06	47.39	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-47.05	2	-	50.21	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-55.34	2	5.06	46.98	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-40.37	2	-	56.89	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-51.02	2	5.06	51.3	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.632	-39.13	2	-	58.13	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.632	-50.57	2	5.06	51.75	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-46.64	2	-	50.62	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.37	2	5.06	46.95	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-47.83	2	-	49.43	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.67	2	5.06	45.65	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2362.704	-44.99	2	-	52.27	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2377.296	-55.12	2	5.06	47.2	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-48.59	2	-	48.67	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-55.65	2	5.06	46.67	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-38.45	2	-	58.81	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-50.74	2	5.06	51.58	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.512	-38.45	2	-	58.81	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.512	-50.74	2	5.06	51.58	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-47.39	2	-	49.87	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.13	2	5.06	47.19	Average	54	Pass

Test Graphs

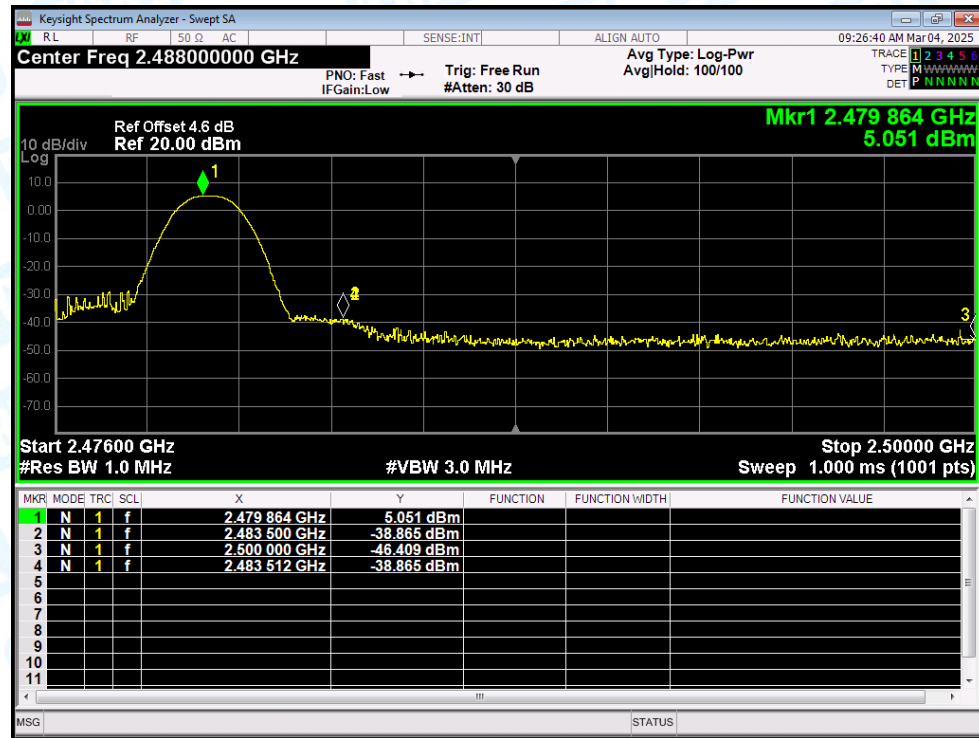
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



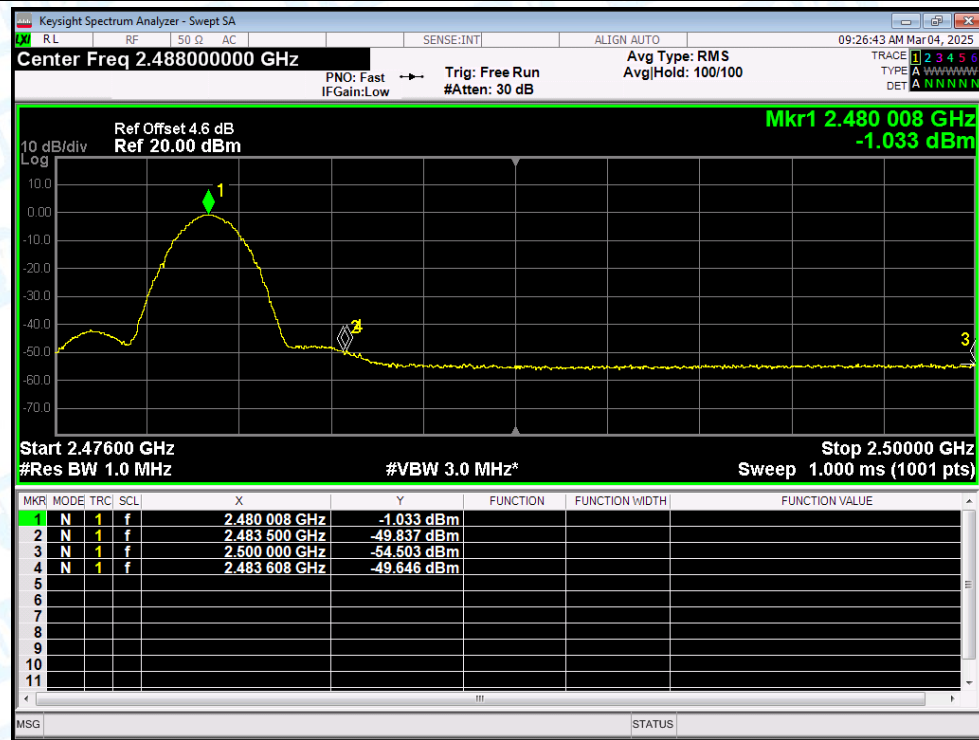
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



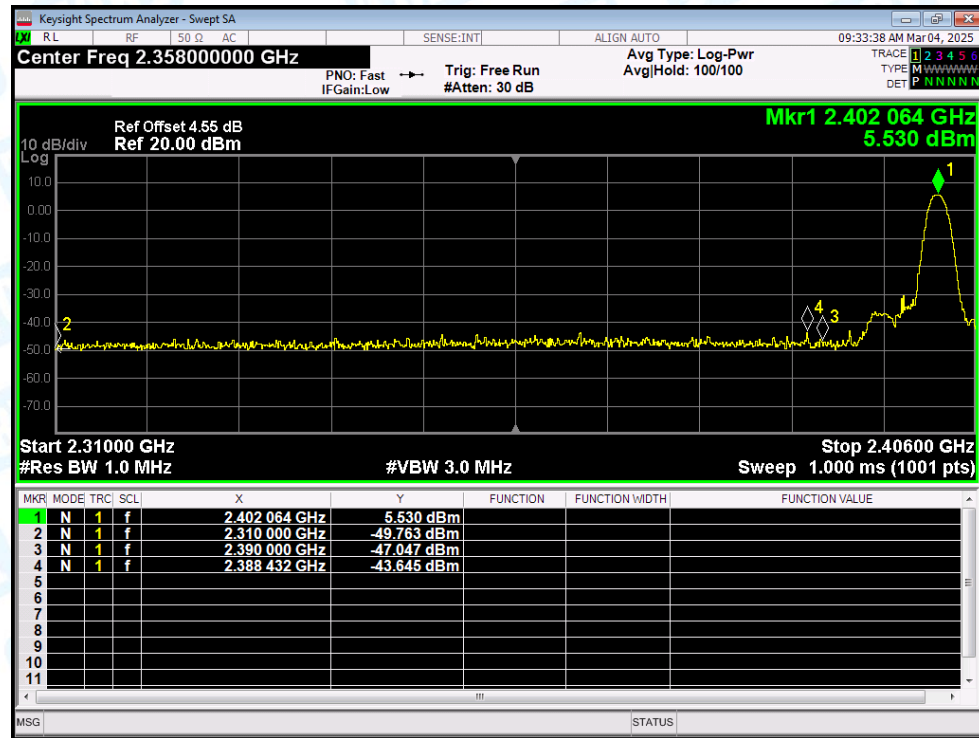
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



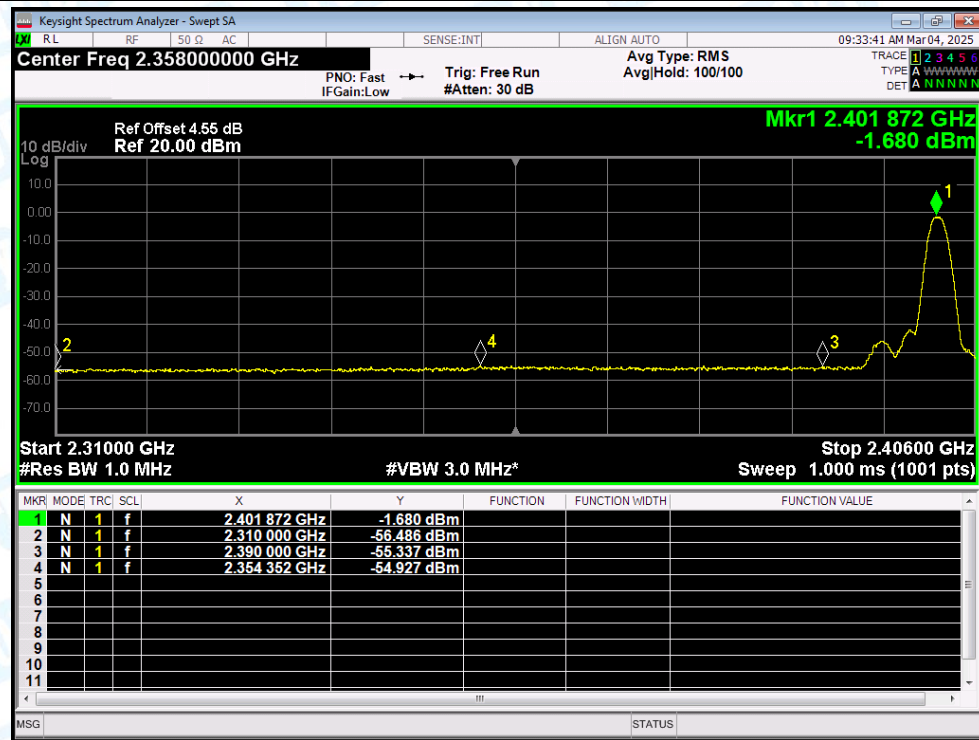
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



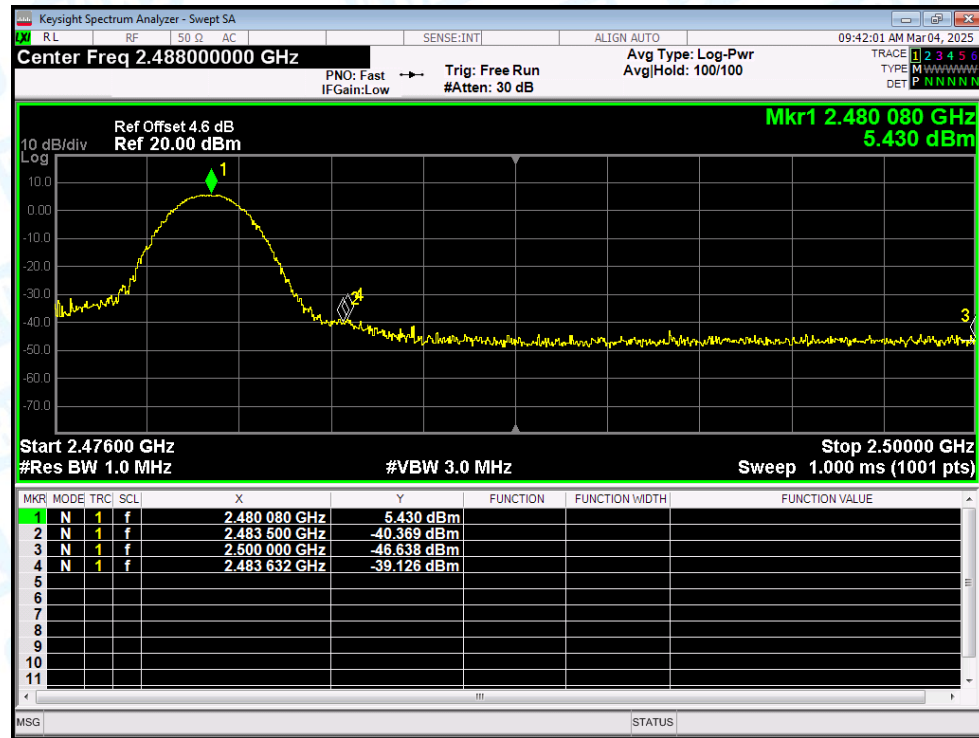
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



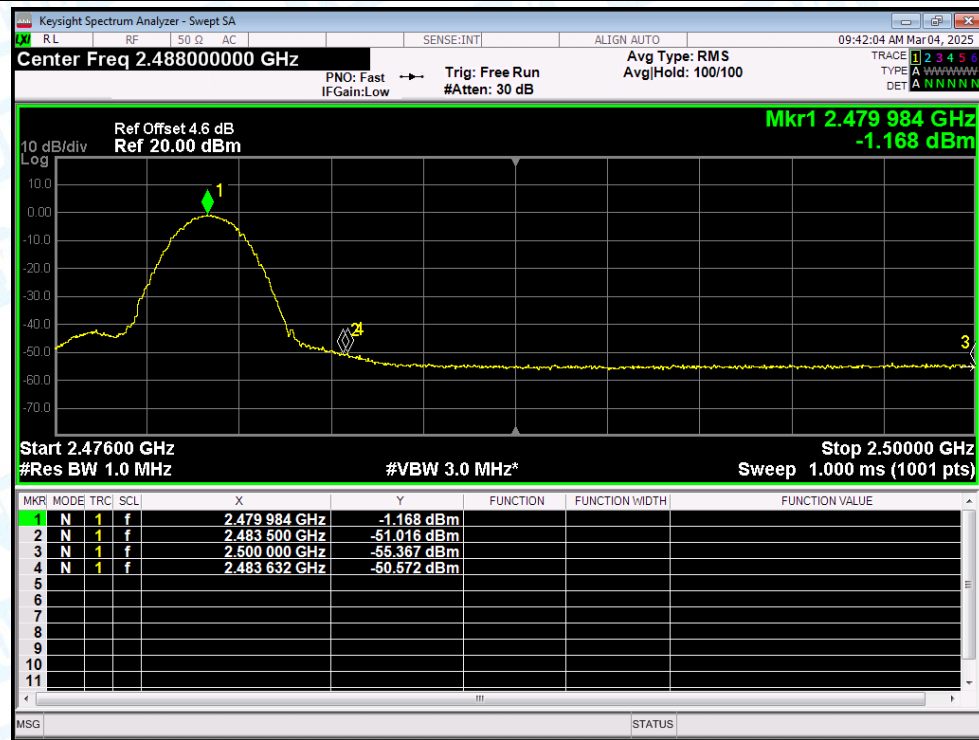
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



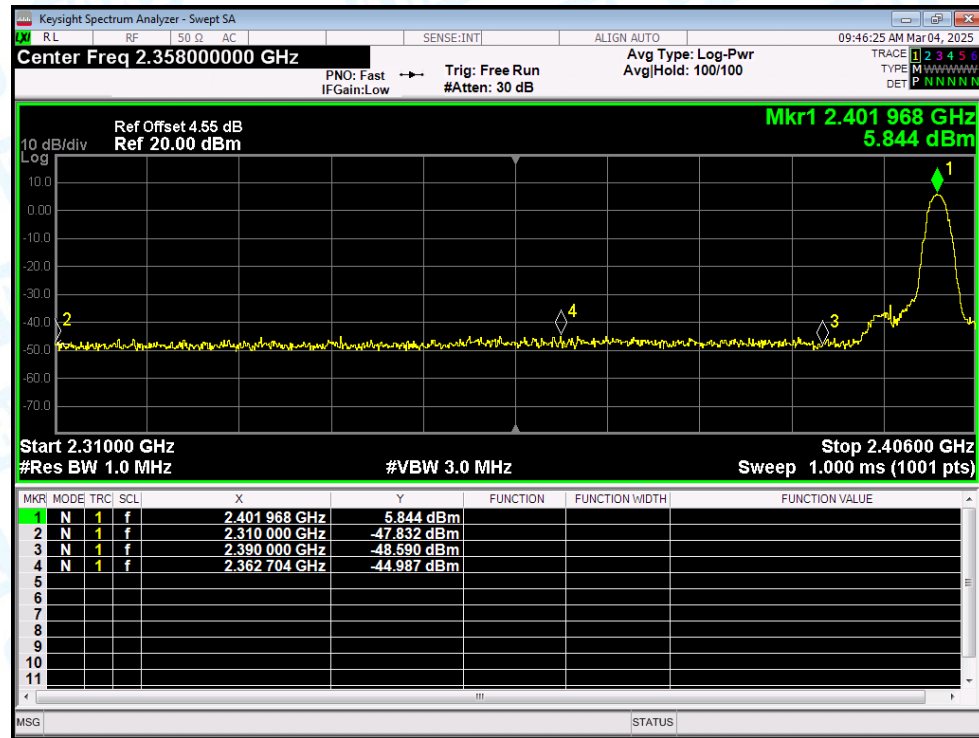
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



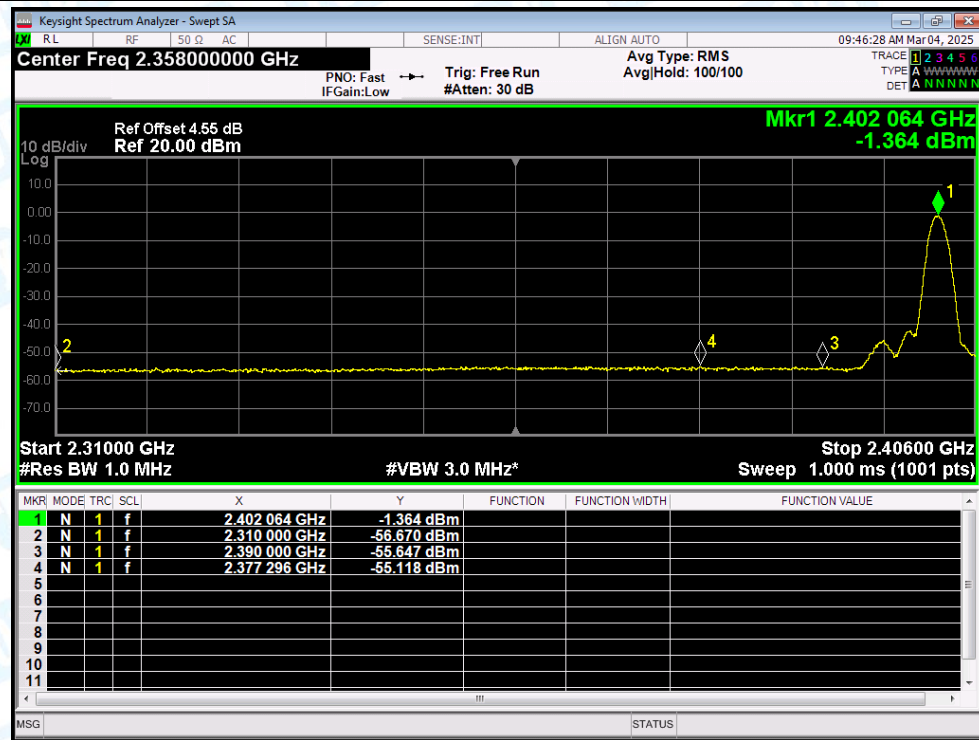
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



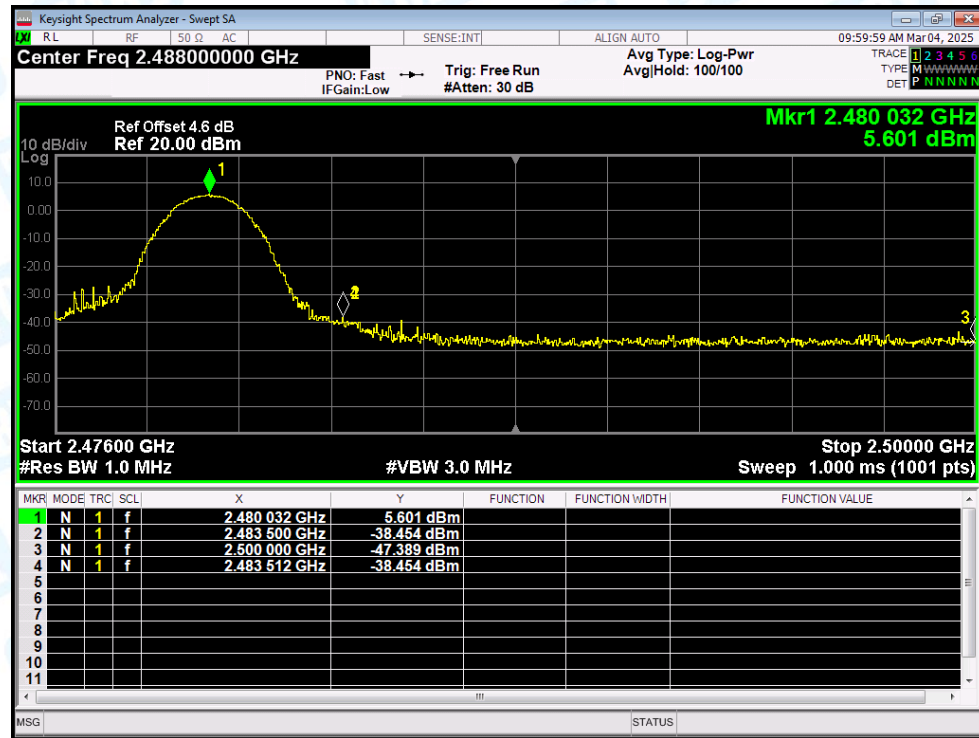
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



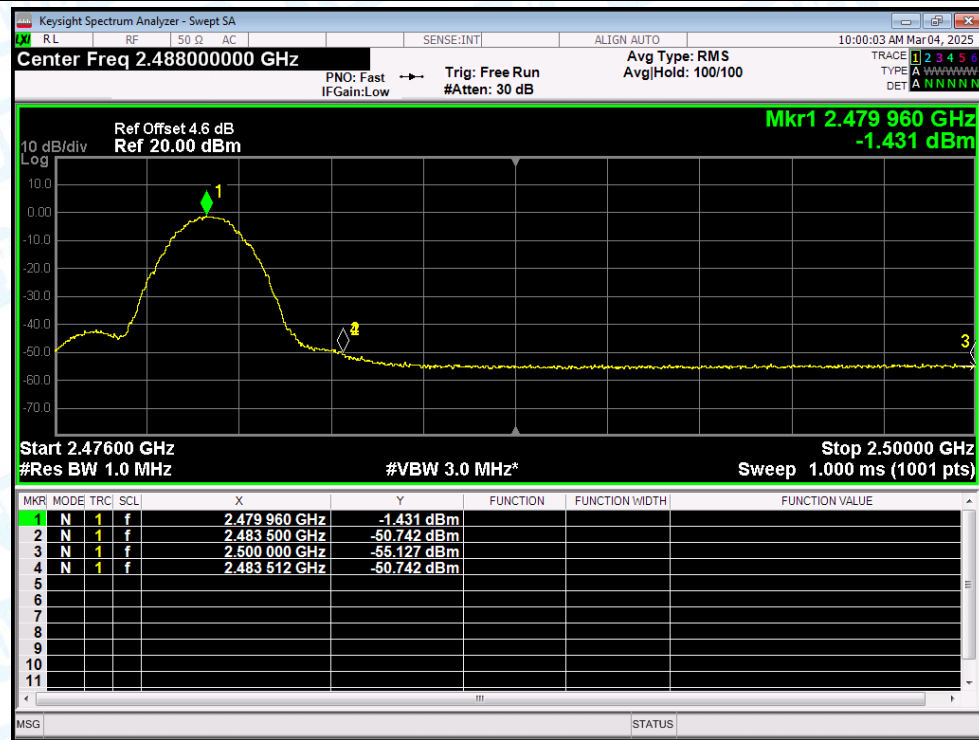
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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

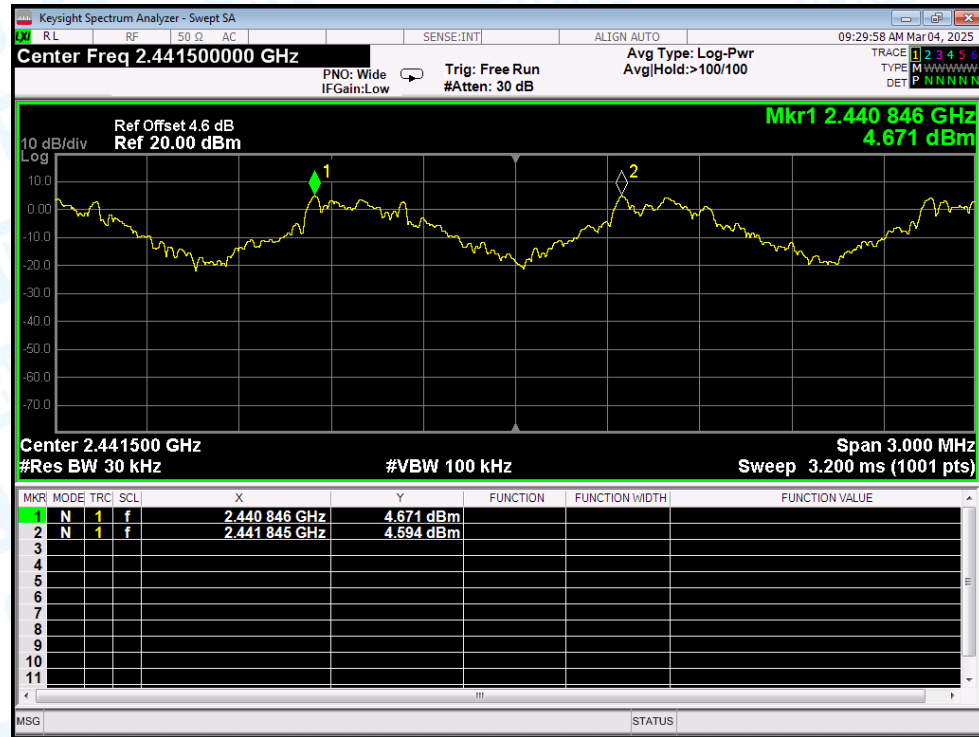


9. Carrier Frequencies Separation

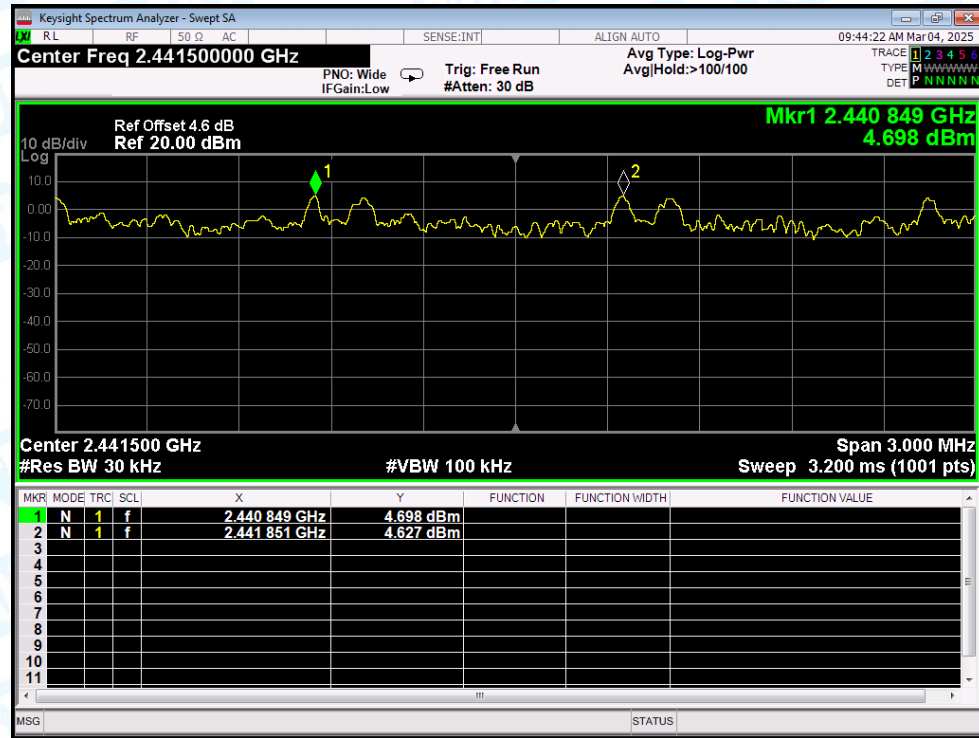
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.846	2441.845	0.999	0.580	Pass
NVNT	2-DH1	Ant1	2440.849	2441.851	1.002	0.853	Pass
NVNT	3-DH1	Ant1	2441.008	2442.004	0.996	0.820	Pass

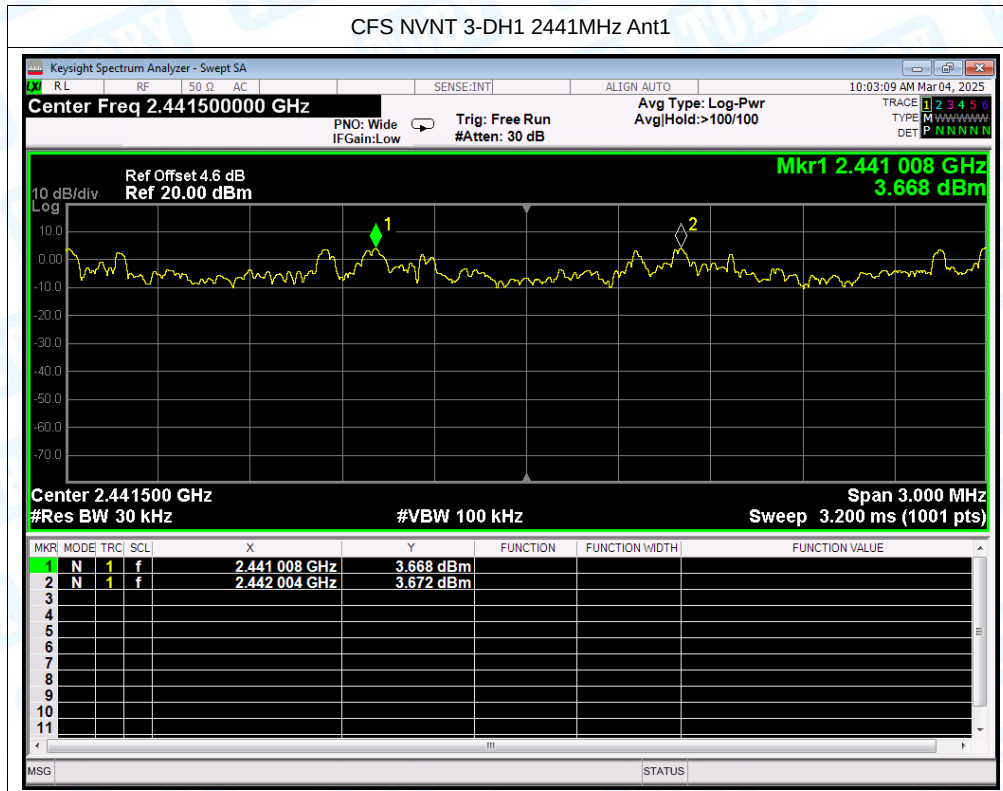
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



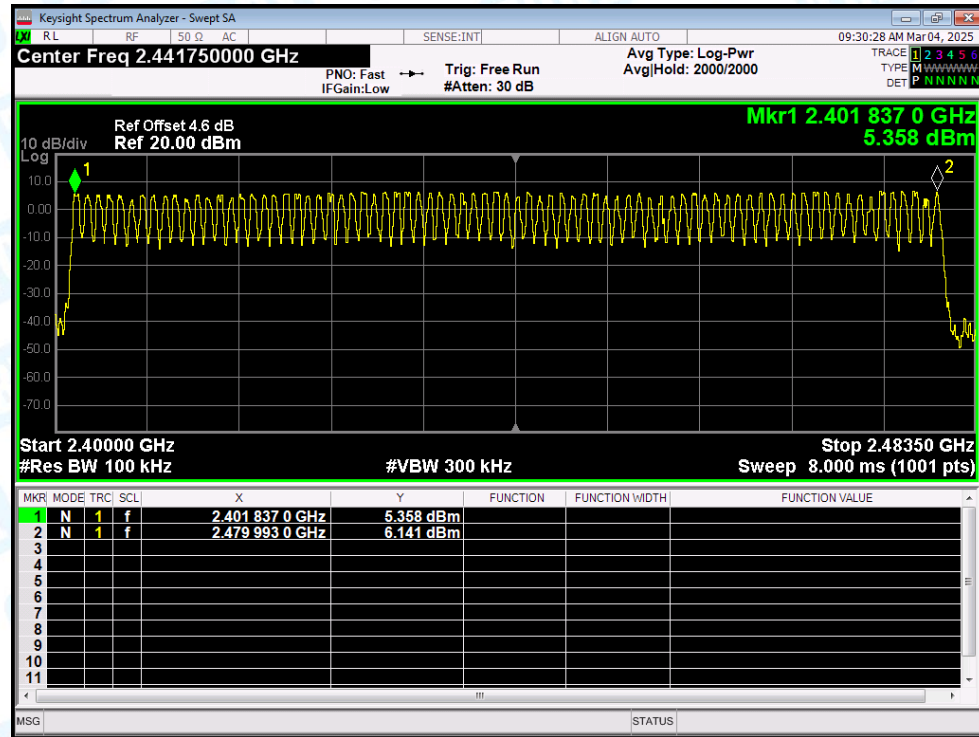


10. Number of Hopping Channel

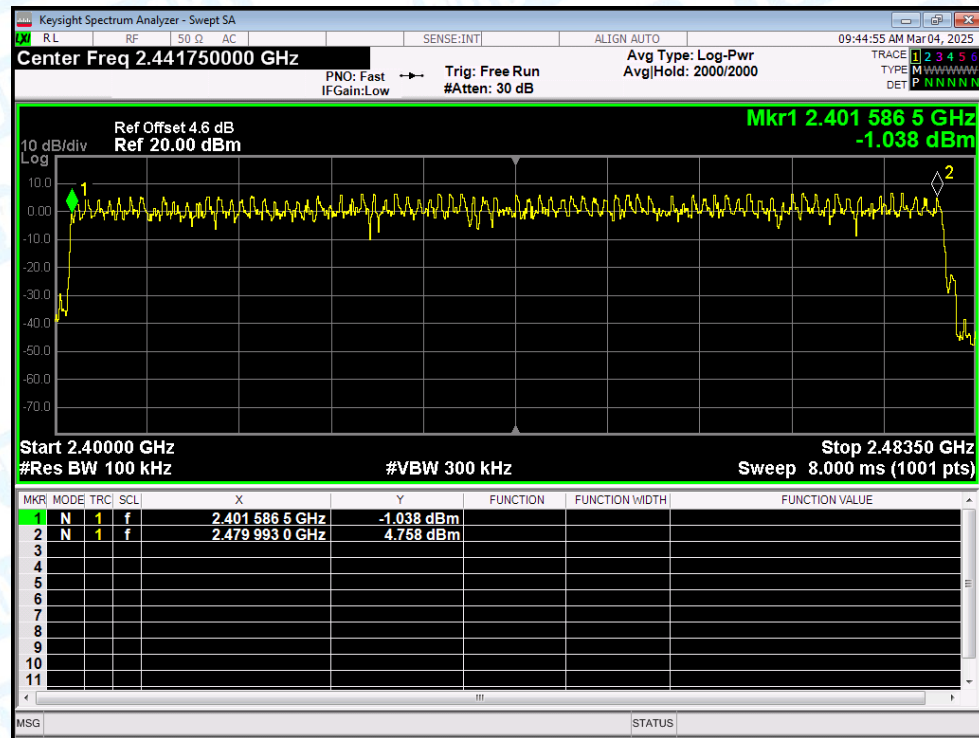
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

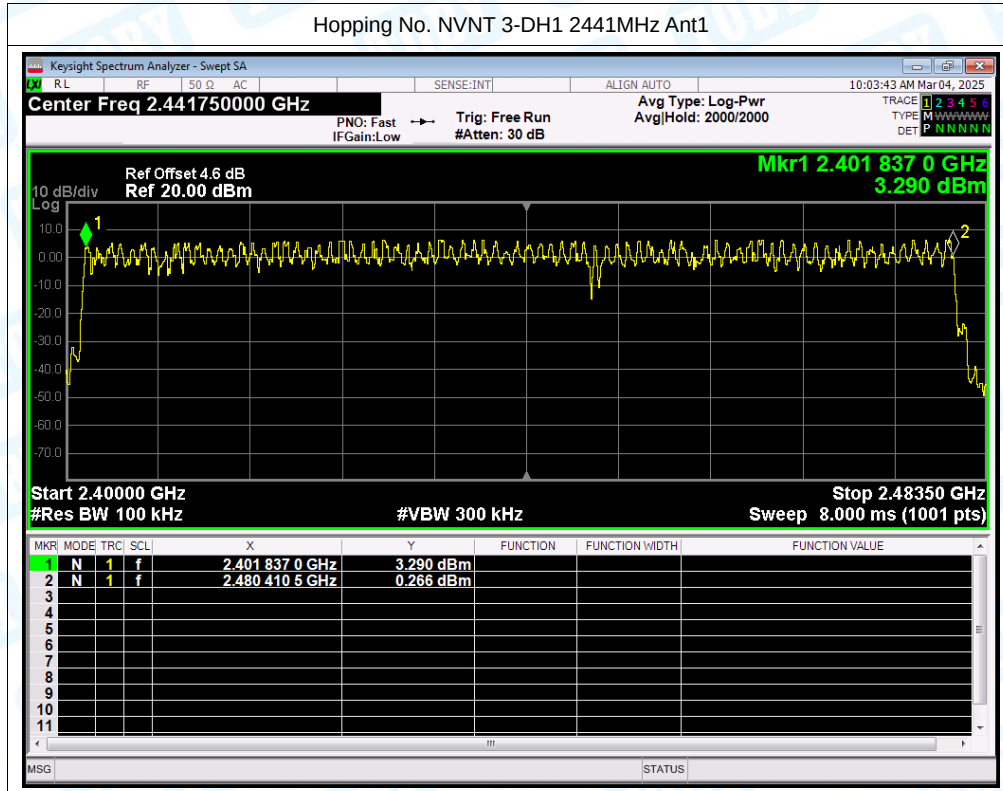
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



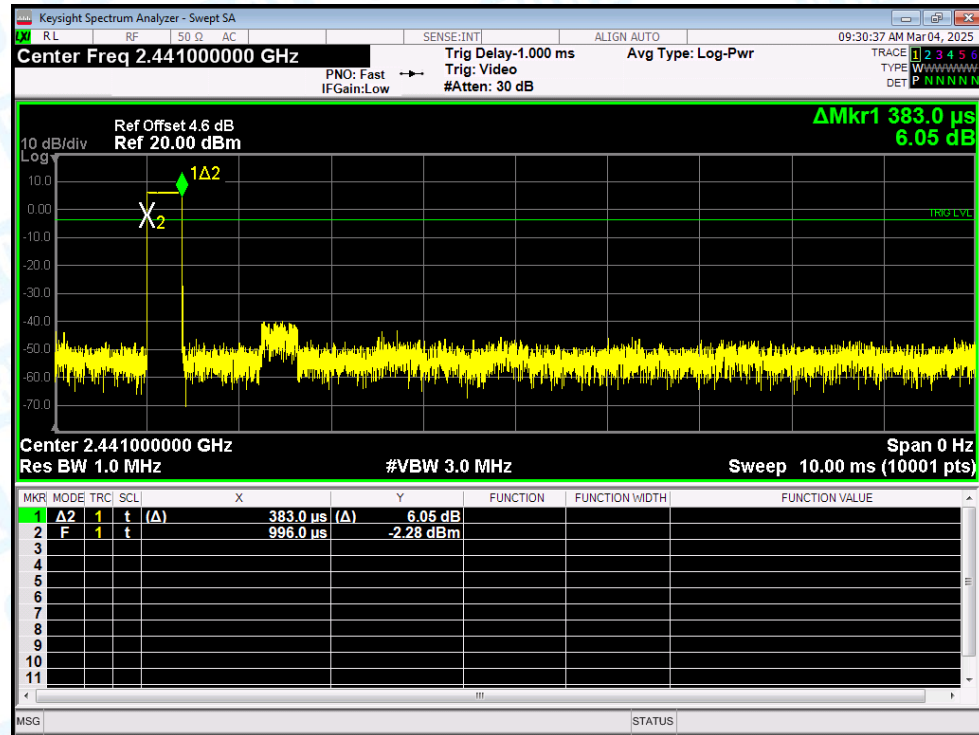


11. Dwell Time

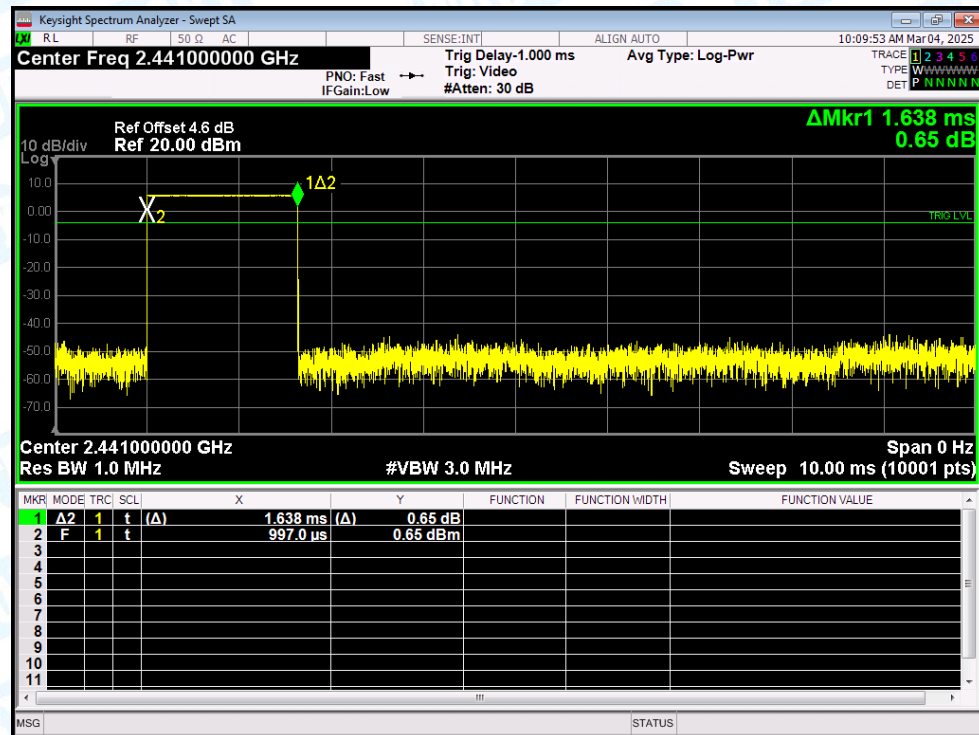
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.383	122.56	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.638	262.08	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.886	307.84	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.391	125.12	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.644	263.04	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.892	308.48	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.392	125.44	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

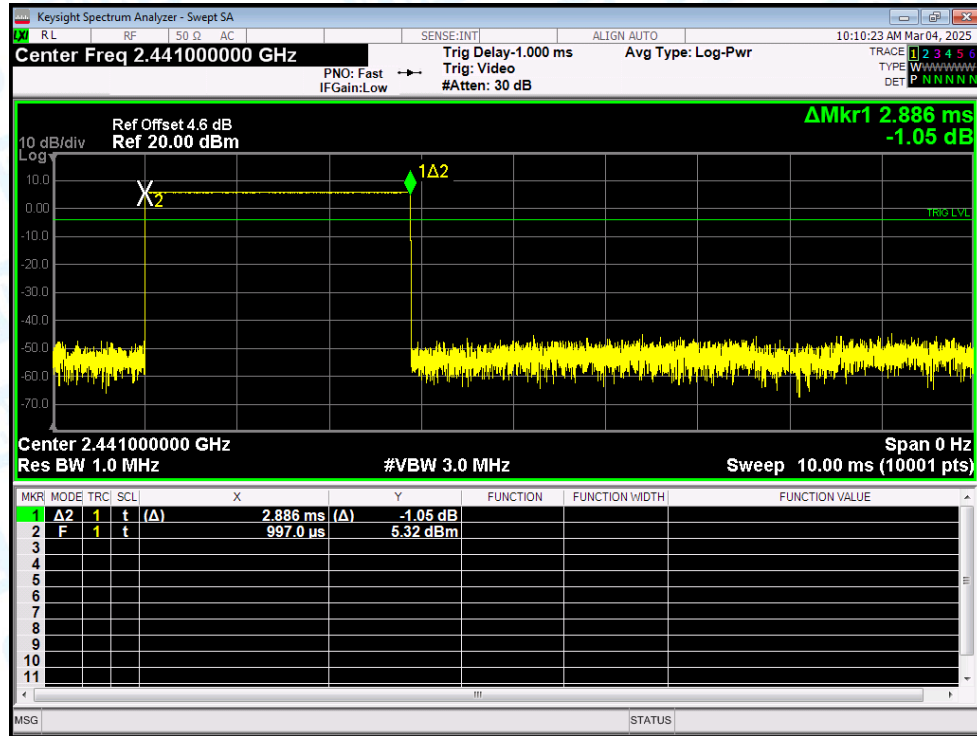
Dwell NVNT 1-DH1 2441MHz Ant1



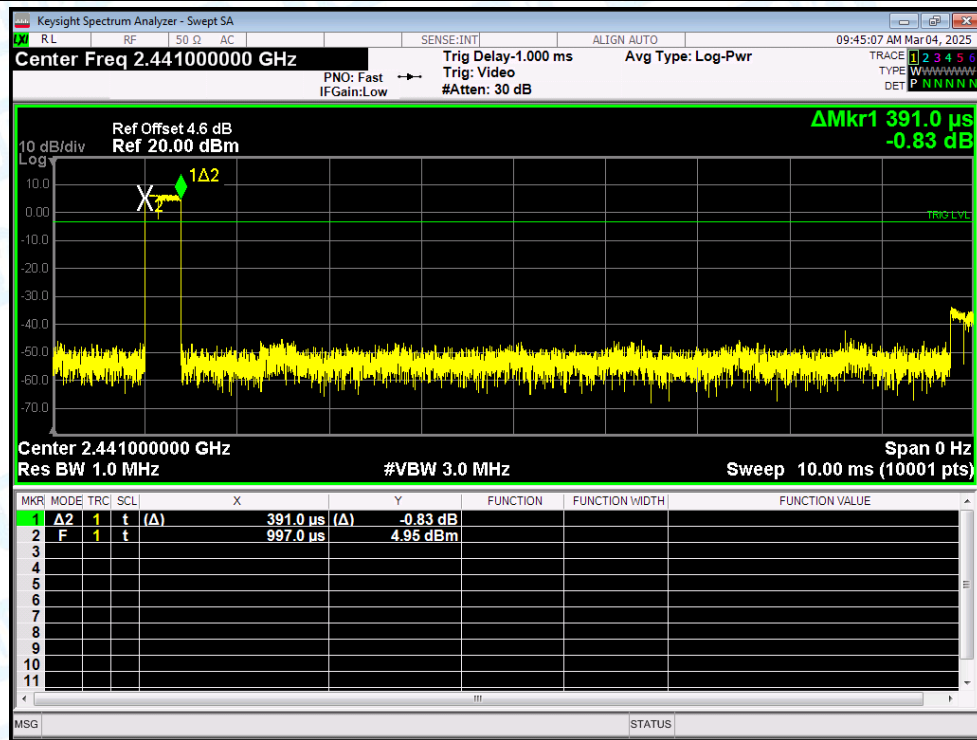
Dwell NVNT 1-DH3 2441MHz Ant1



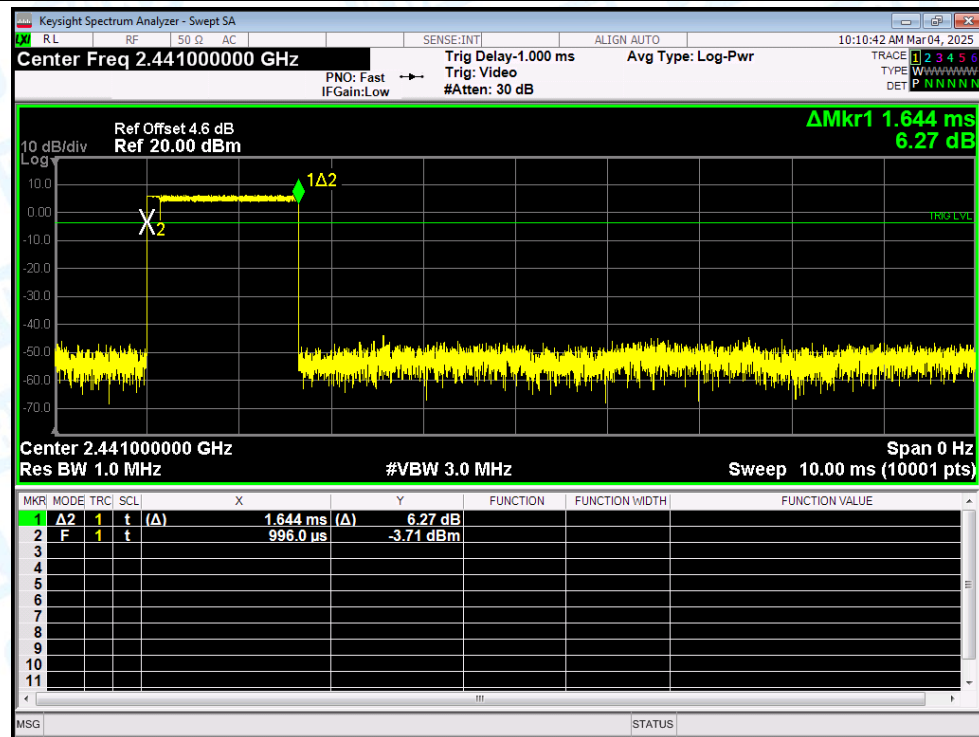
Dwell NVNT 1-DH5 2441MHz Ant1



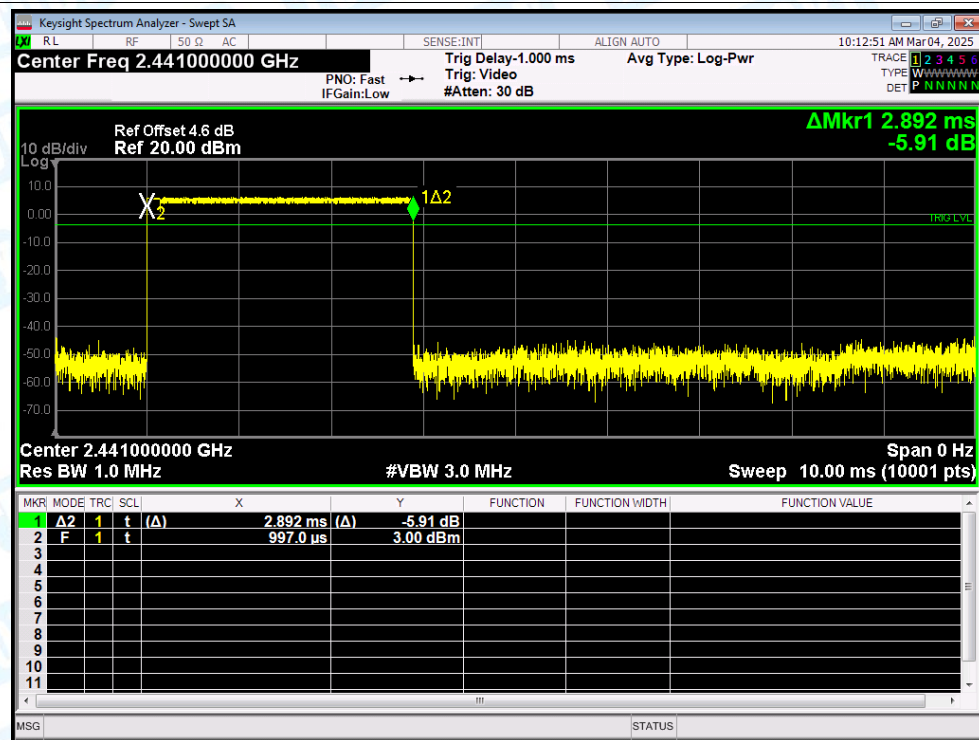
Dwell NVNT 2-DH1 2441MHz Ant1



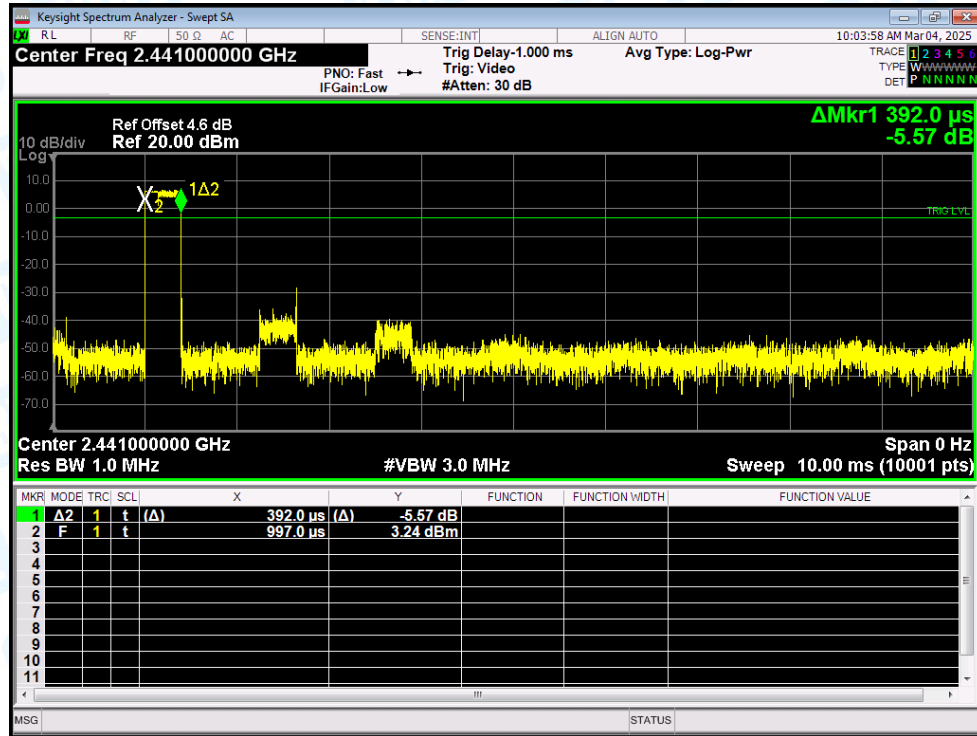
Dwell NVNT 2-DH3 2441MHz Ant1



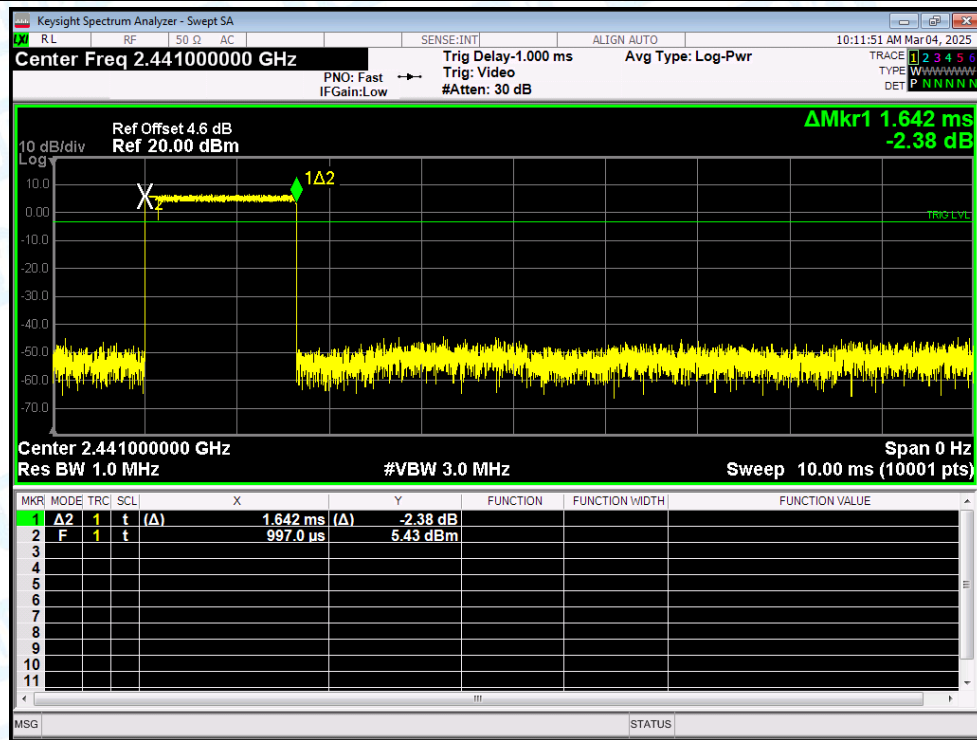
Dwell NVNT 2-DH5 2441MHz Ant1

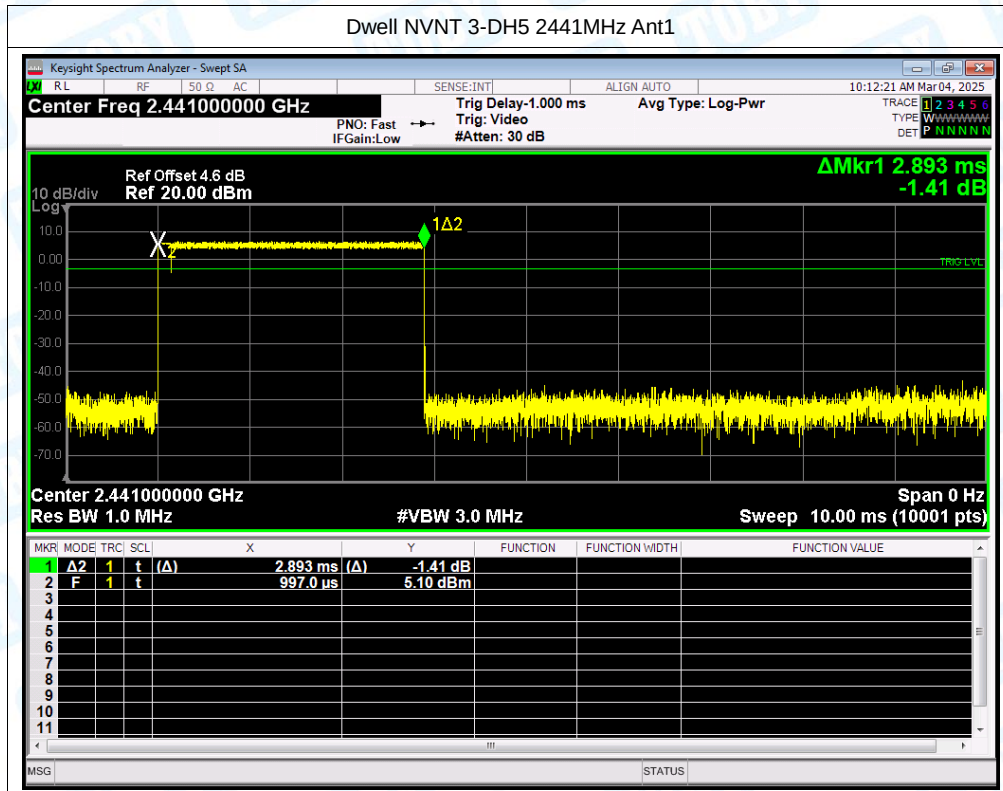


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





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