

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

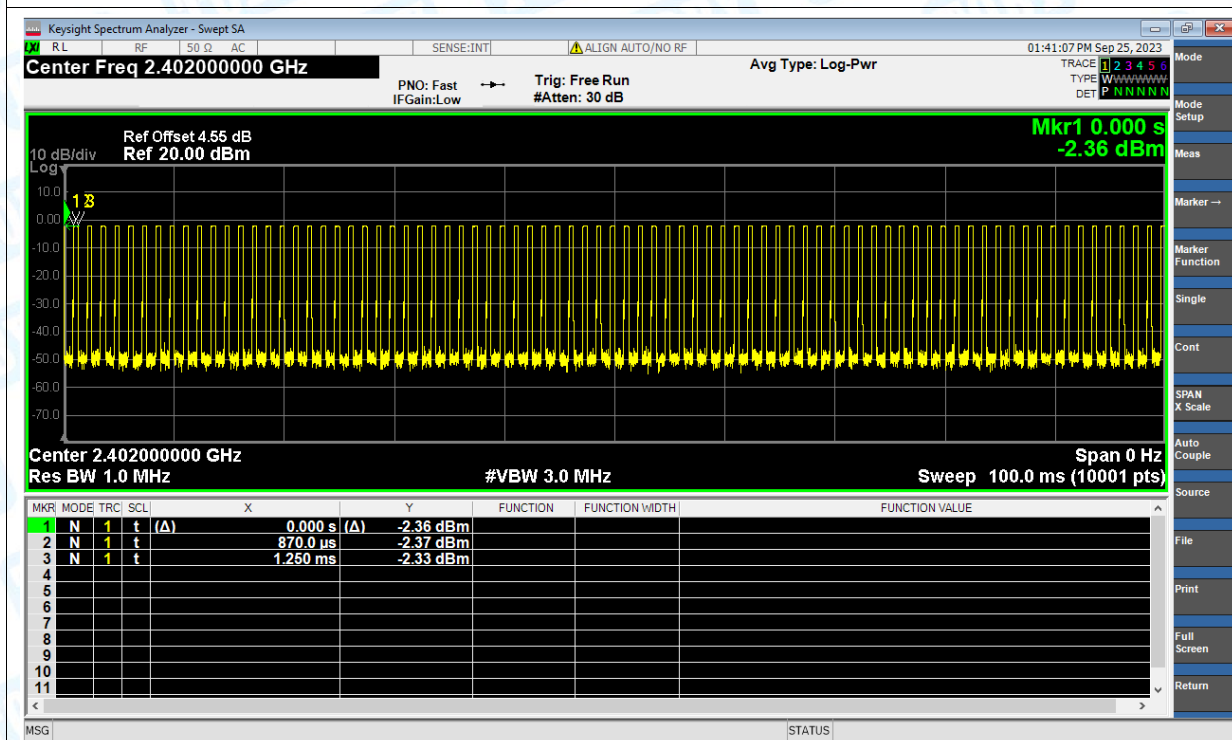
General Description of EUT	
Product Name:	Wireless Speakers
Test Model:	WP-01A
Sample ID:	HC-C-202309-0184-01-01-2#
Environmental Conditions	
Temperature:	24℃
Relative Humidity:	50%
Test Voltage:	DC 3.7V
Test Engineer:	Zhengchenxi
Note: For a more detailed features description, please refer to the report TBR-C-202309-0184-2 The report only show the worst case data.	

Duty Cycle

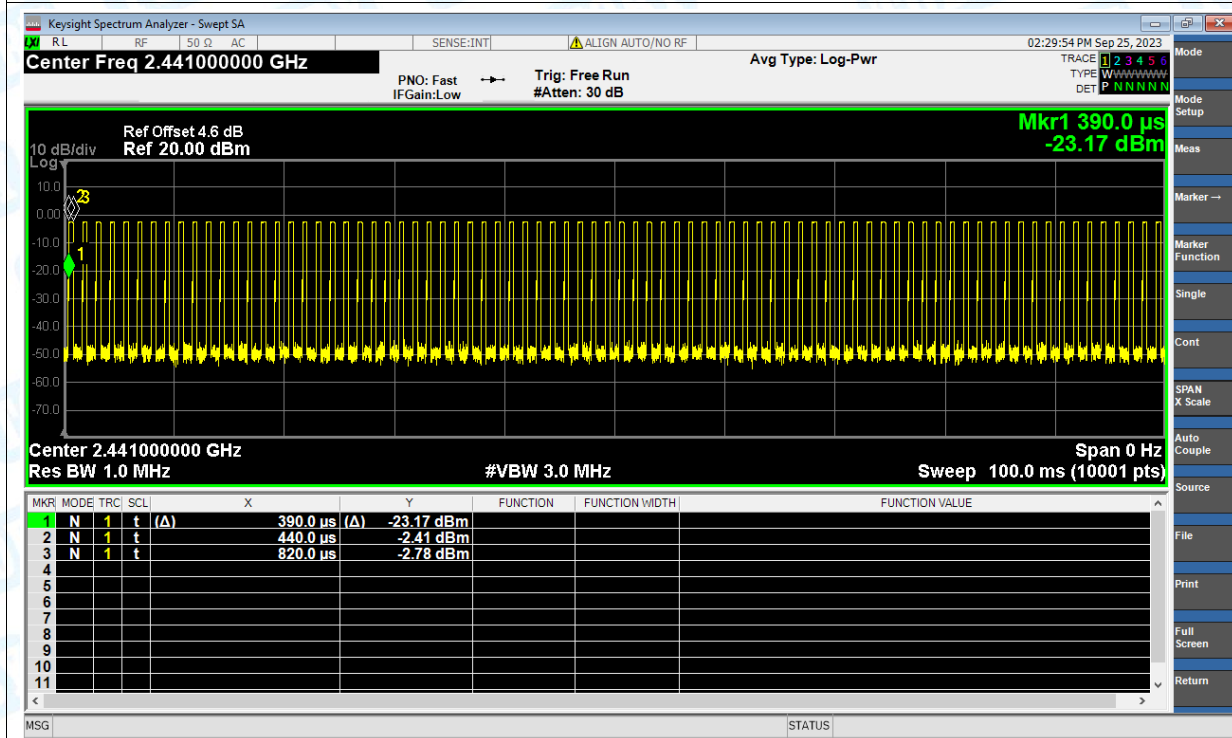
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	30.4	5.17	2.63
NVNT	1-DH1	2441	Ant1	88.37	0.54	2.63
NVNT	1-DH1	2480	Ant1	30.4	5.17	2.63
NVNT	2-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2441	Ant1	90.7	0.42	2.56
NVNT	2-DH1	2480	Ant1	31.2	5.06	2.56
NVNT	3-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	3-DH1	2441	Ant1	88.64	0.52	2.56
NVNT	3-DH1	2480	Ant1	31.2	5.06	2.56

Test Graphs

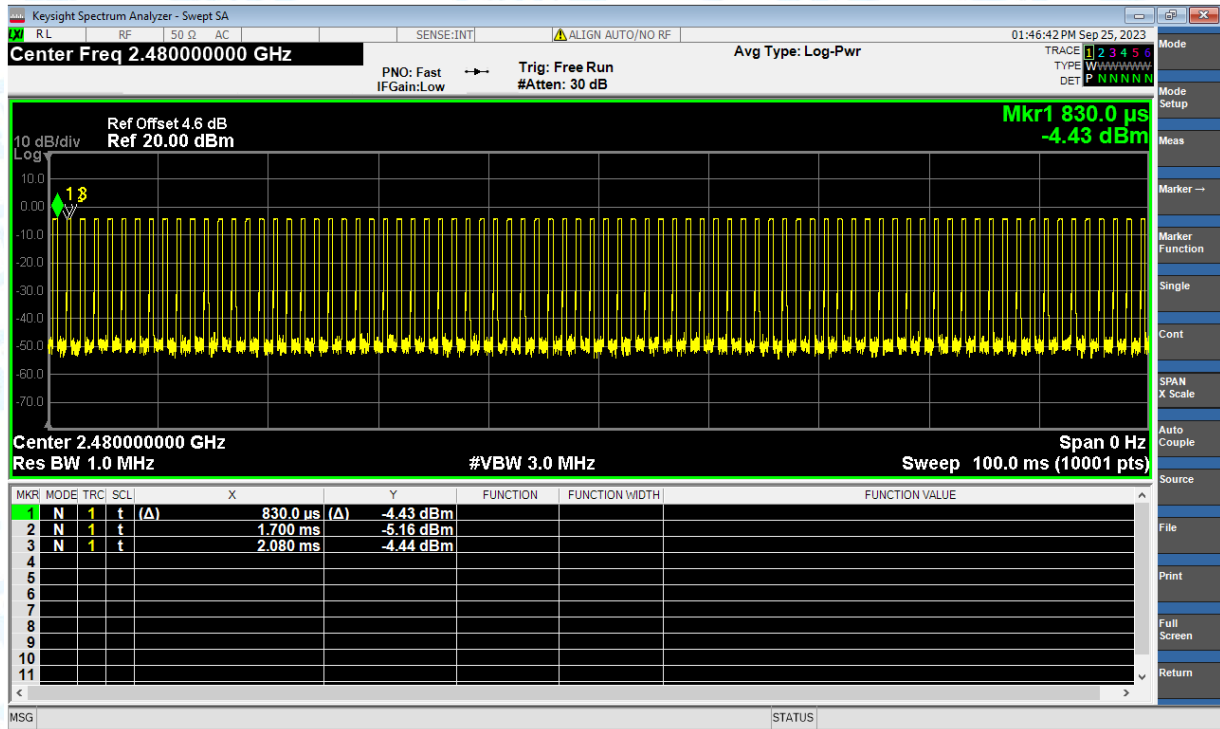
Duty Cycle NVNT 1-DH1 2402MHz Ant1



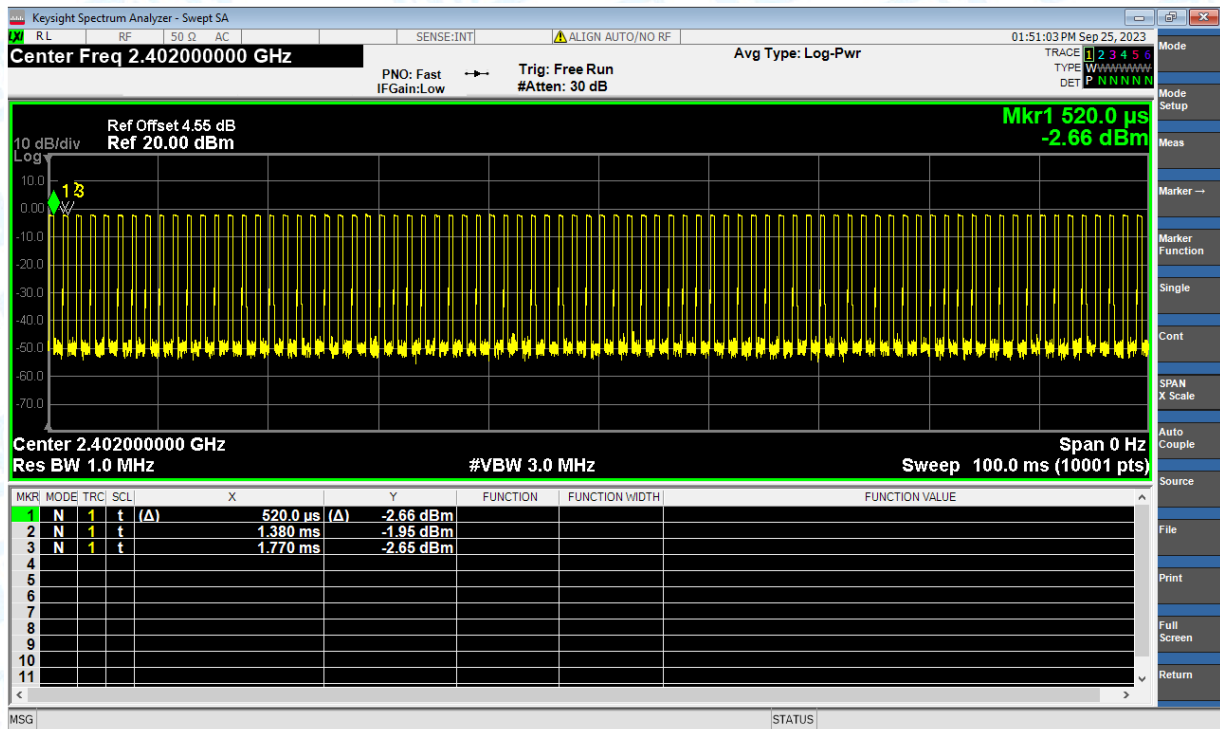
Duty Cycle NVNT 1-DH1 2441MHz Ant1



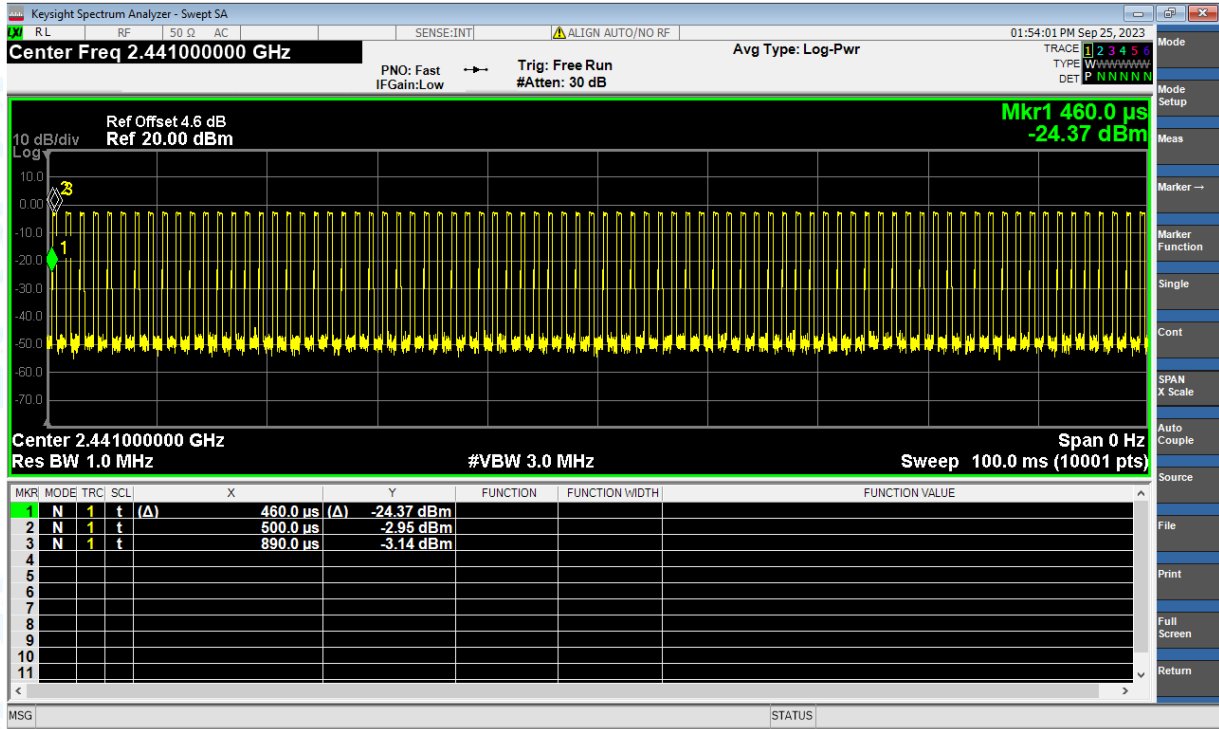
Duty Cycle NVNT 1-DH1 2480MHz Ant1



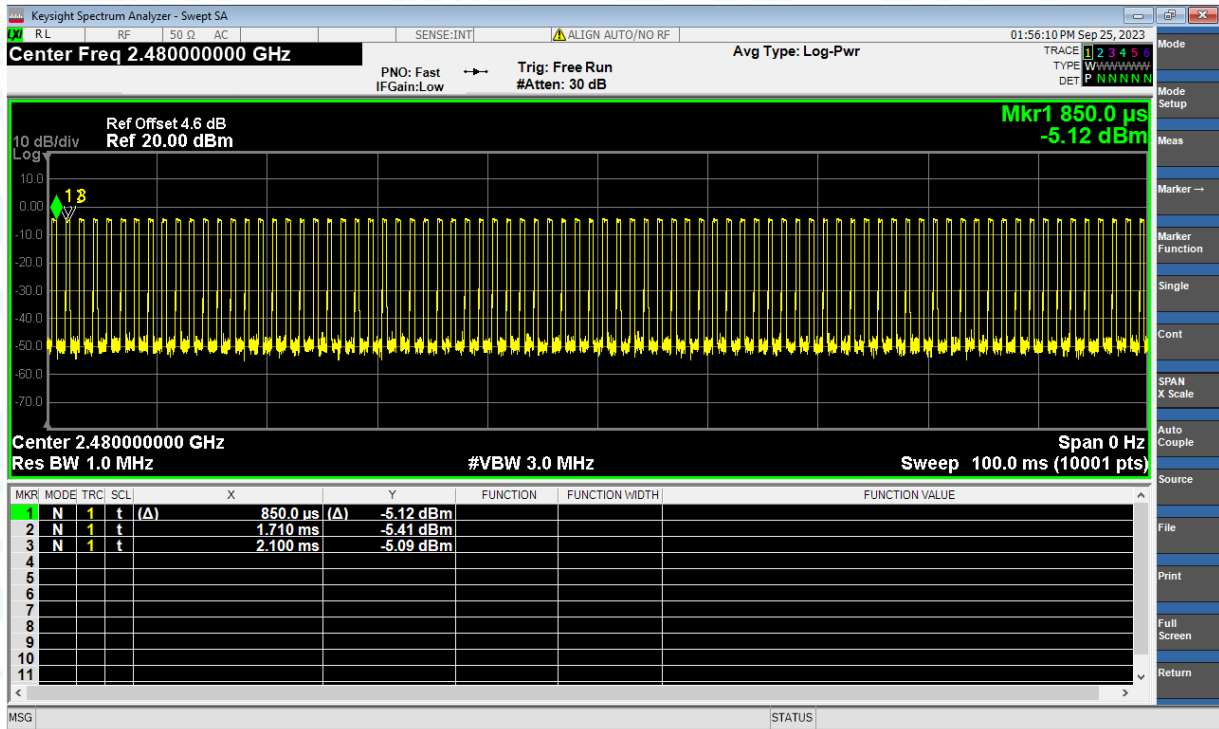
Duty Cycle NVNT 2-DH1 2402MHz Ant1



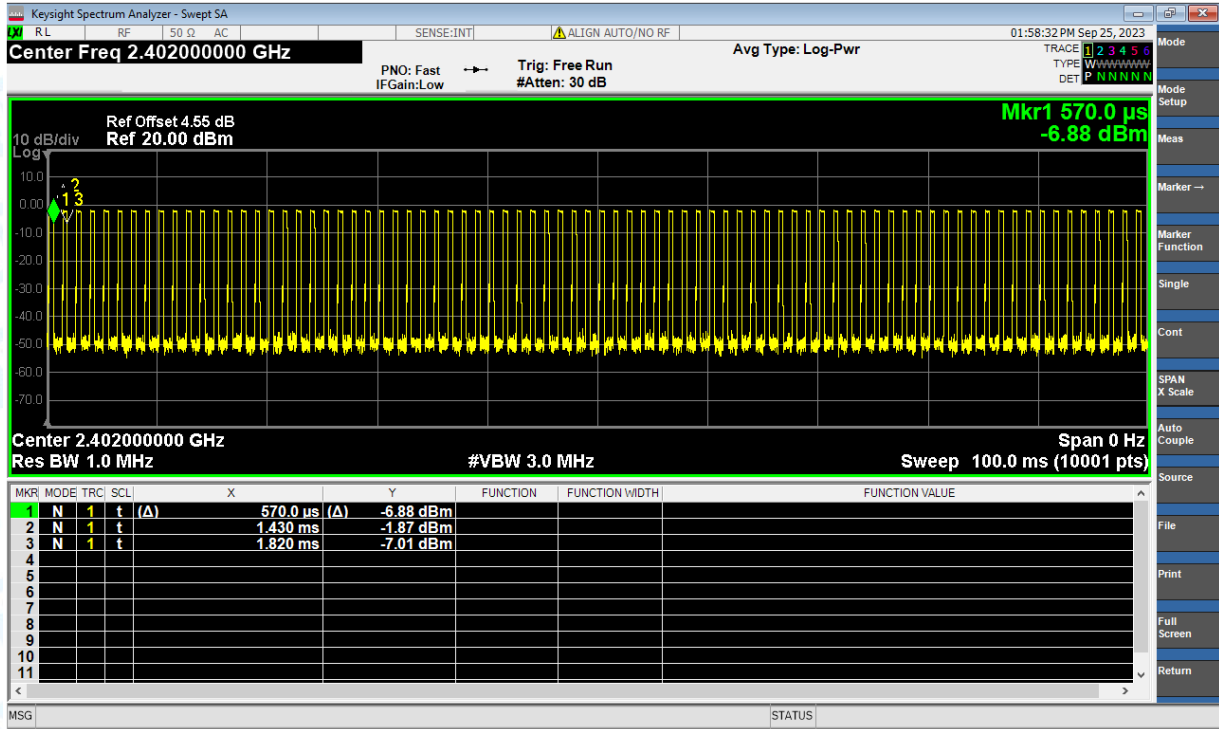
Duty Cycle NVNT 2-DH1 2441MHz Ant1



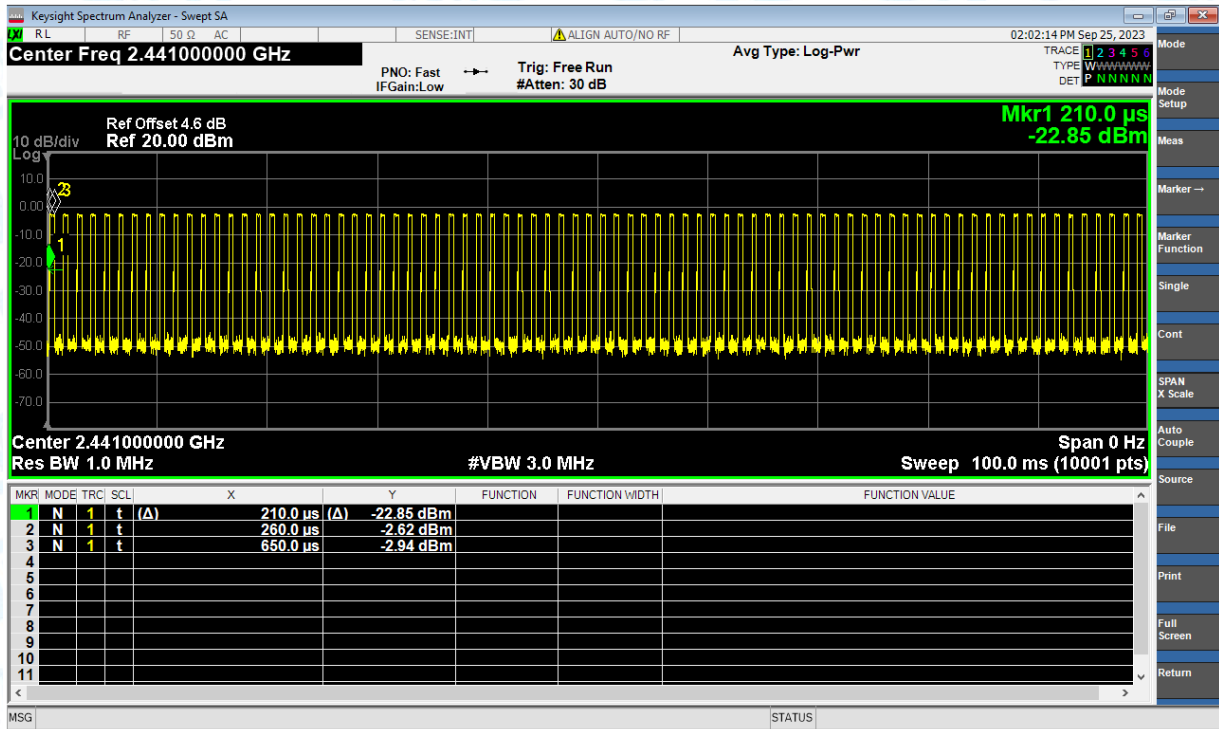
Duty Cycle NVNT 2-DH1 2480MHz Ant1

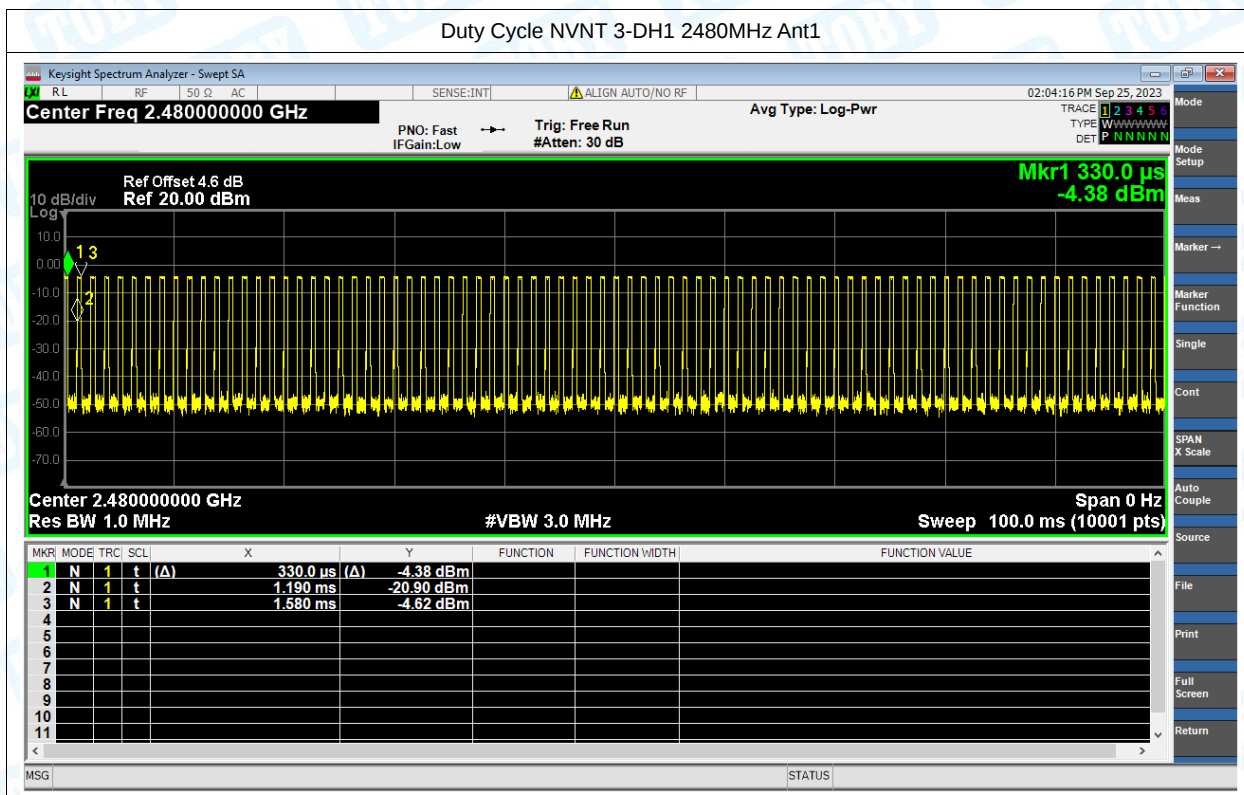


Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



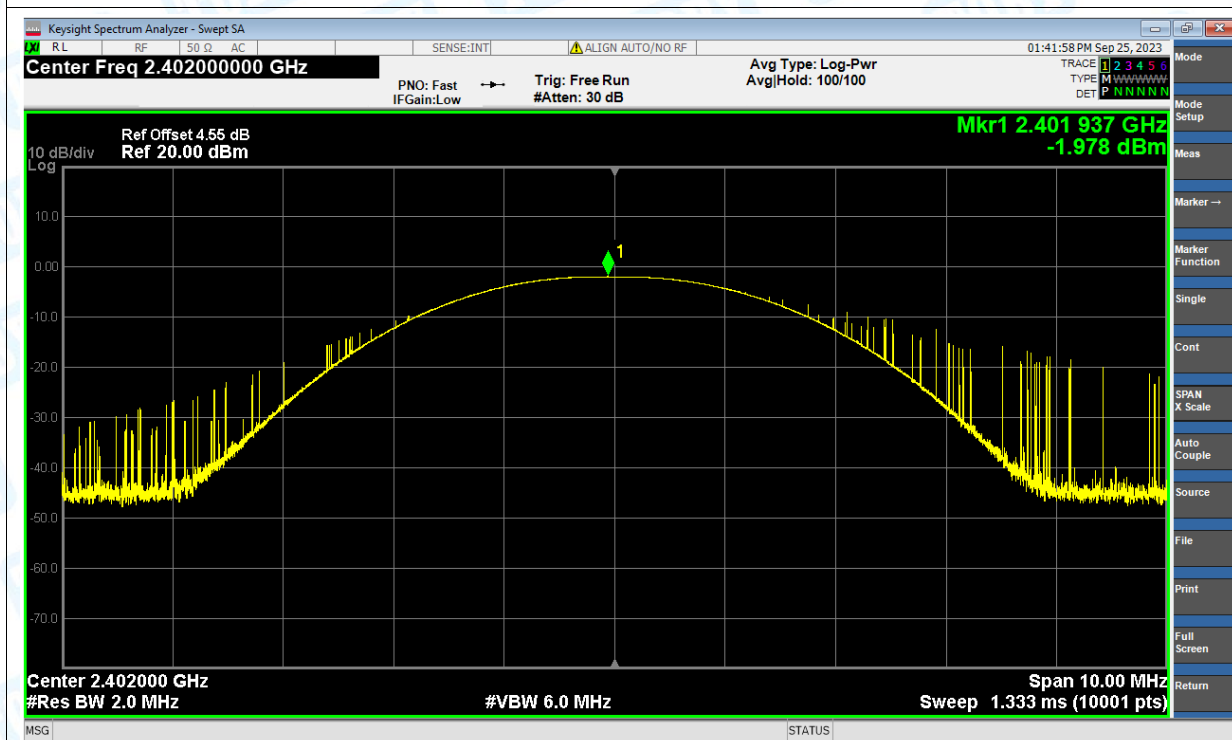


Maximum Conducted Output Power

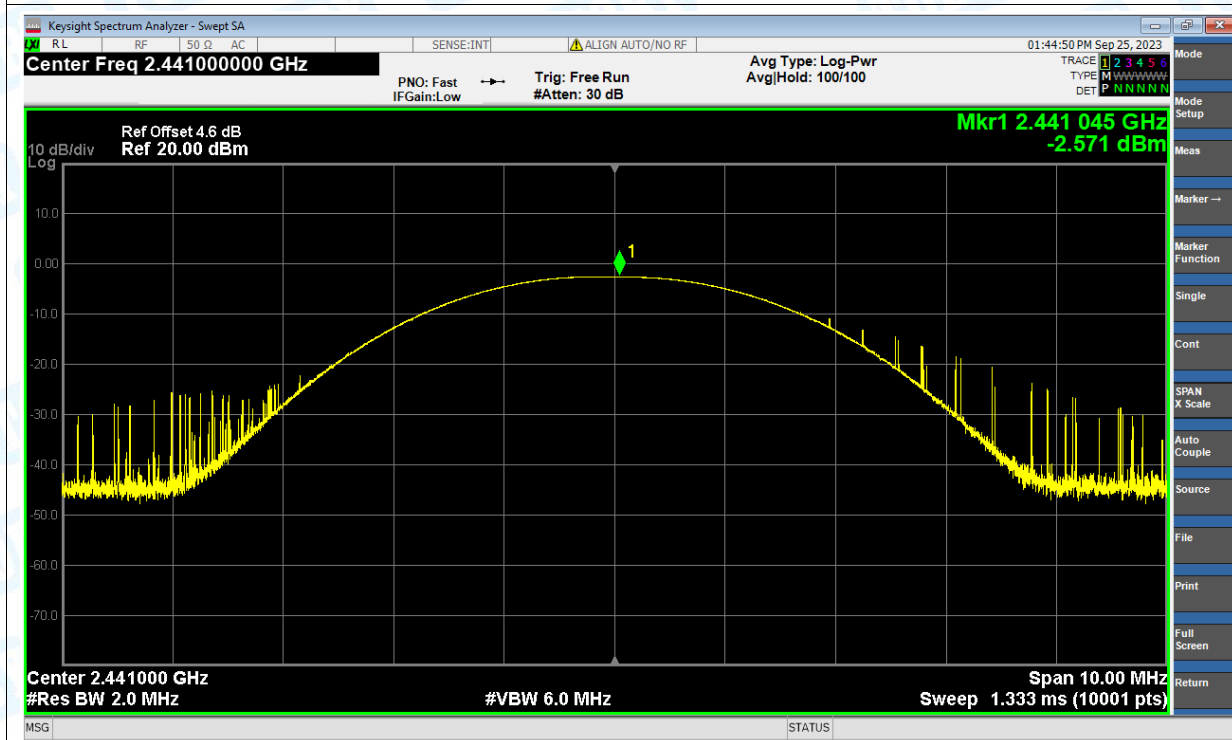
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	-1.978	21	Pass
NVNT	1-DH1	2441	Ant1	-2.571	21	Pass
NVNT	1-DH1	2480	Ant1	-4.199	21	Pass
NVNT	2-DH1	2402	Ant1	-1.934	21	Pass
NVNT	2-DH1	2441	Ant1	-2.506	21	Pass
NVNT	2-DH1	2480	Ant1	-4.003	21	Pass
NVNT	3-DH1	2402	Ant1	-1.831	21	Pass
NVNT	3-DH1	2441	Ant1	-2.416	21	Pass
NVNT	3-DH1	2480	Ant1	-3.932	21	Pass

Test Graphs

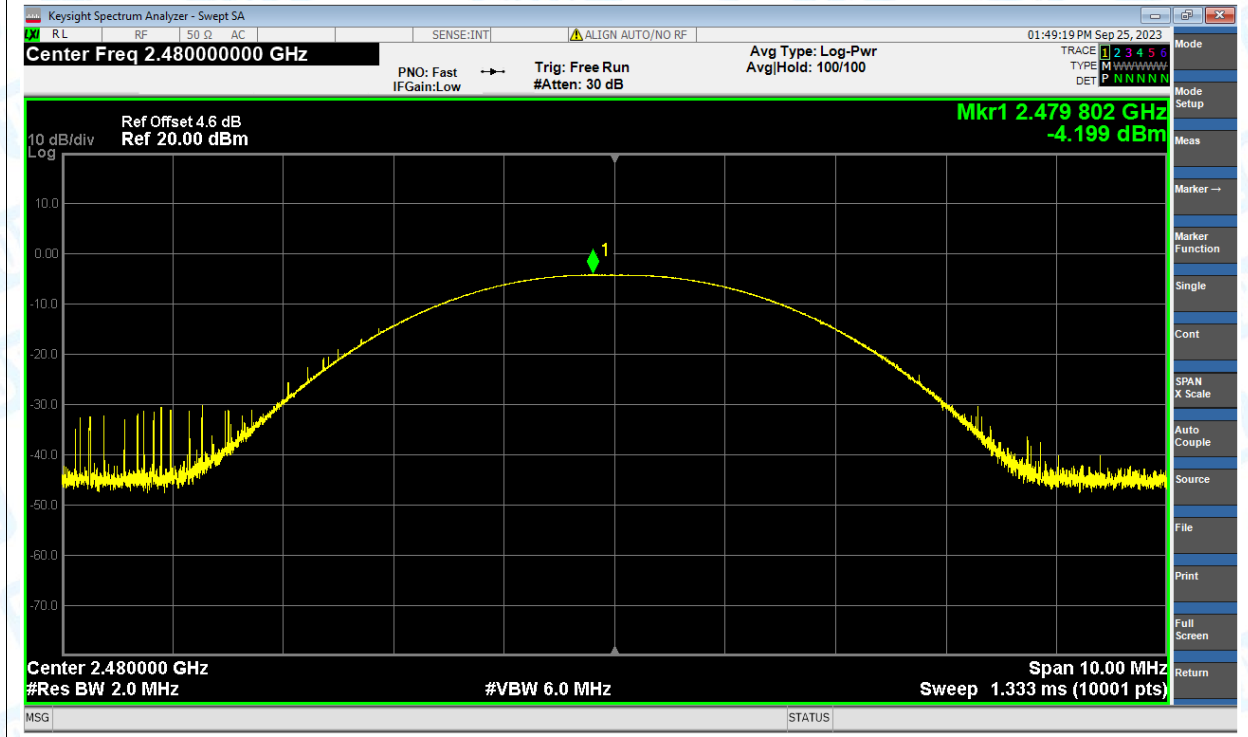
Power NVNT 1-DH1 2402MHz Ant1



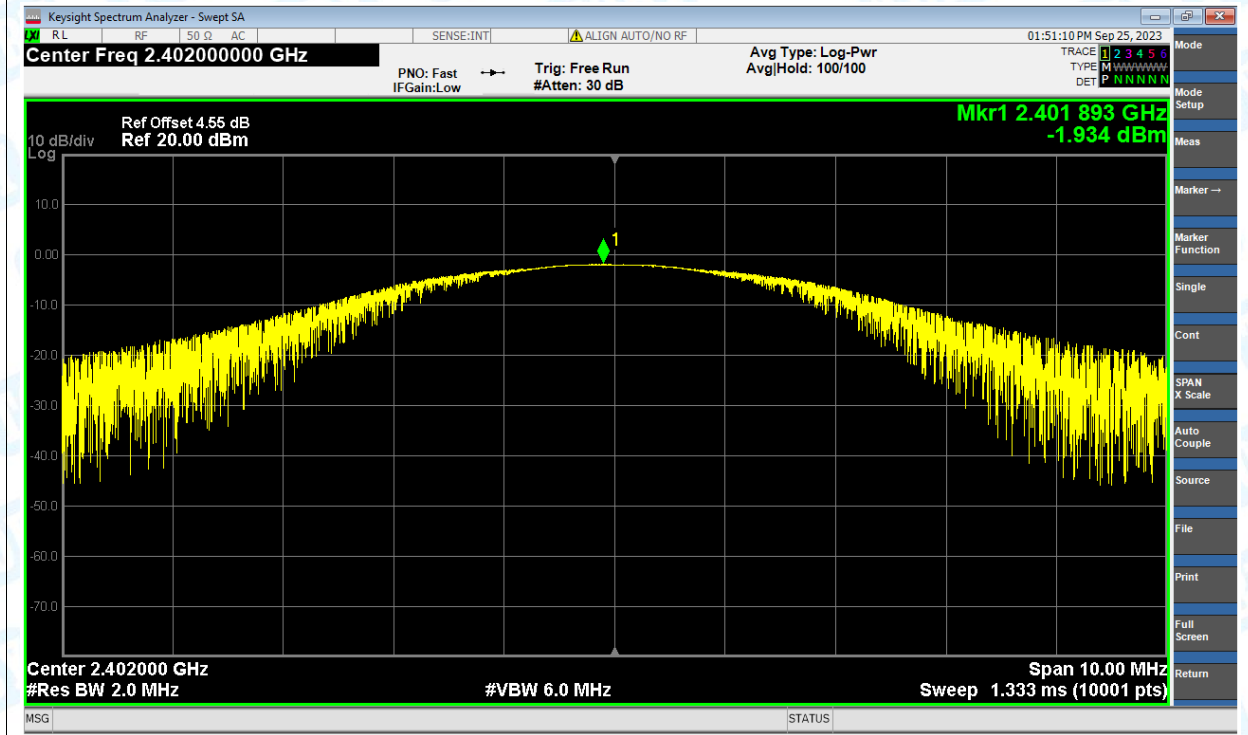
Power NVNT 1-DH1 2441MHz Ant1



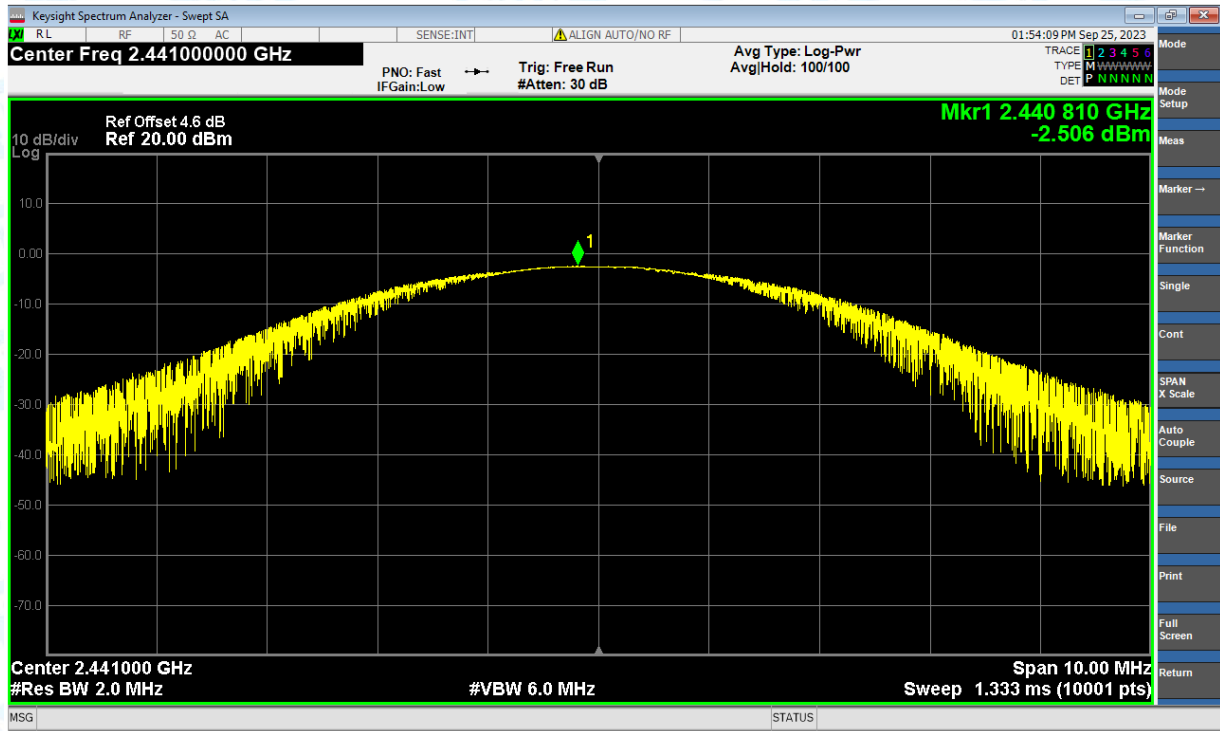
Power NVNT 1-DH1 2480MHz Ant1



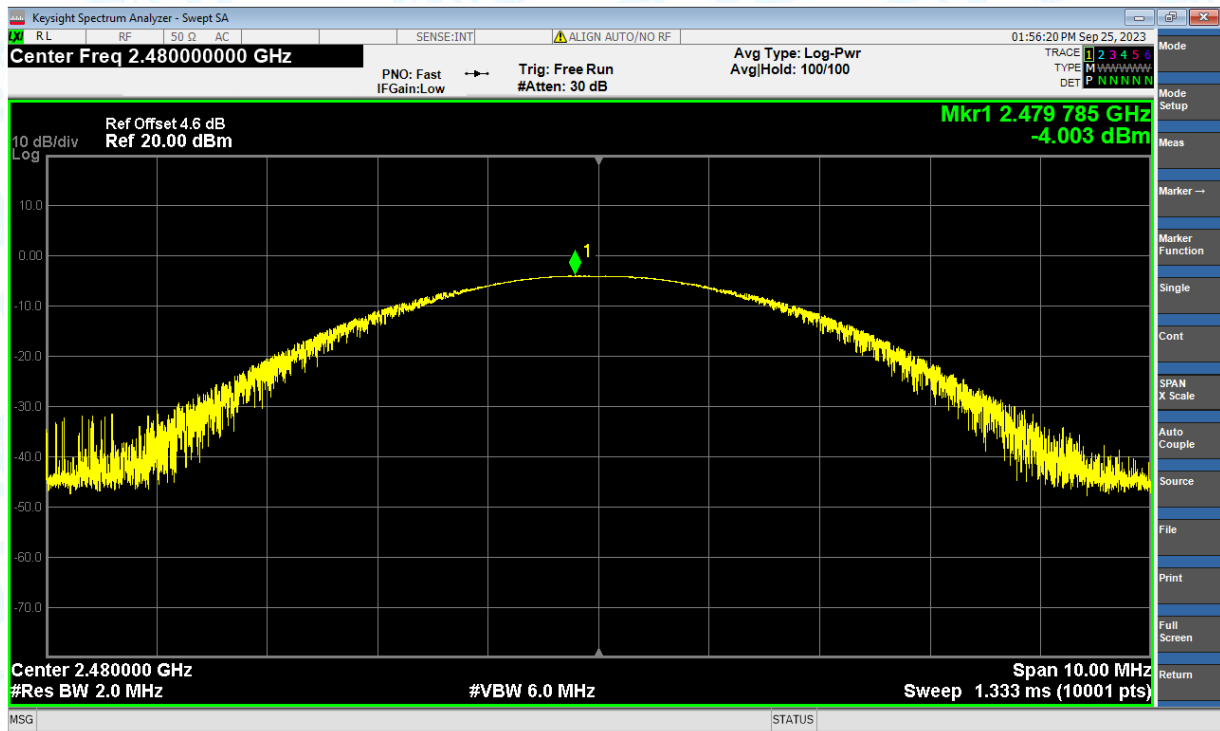
Power NVNT 2-DH1 2402MHz Ant1



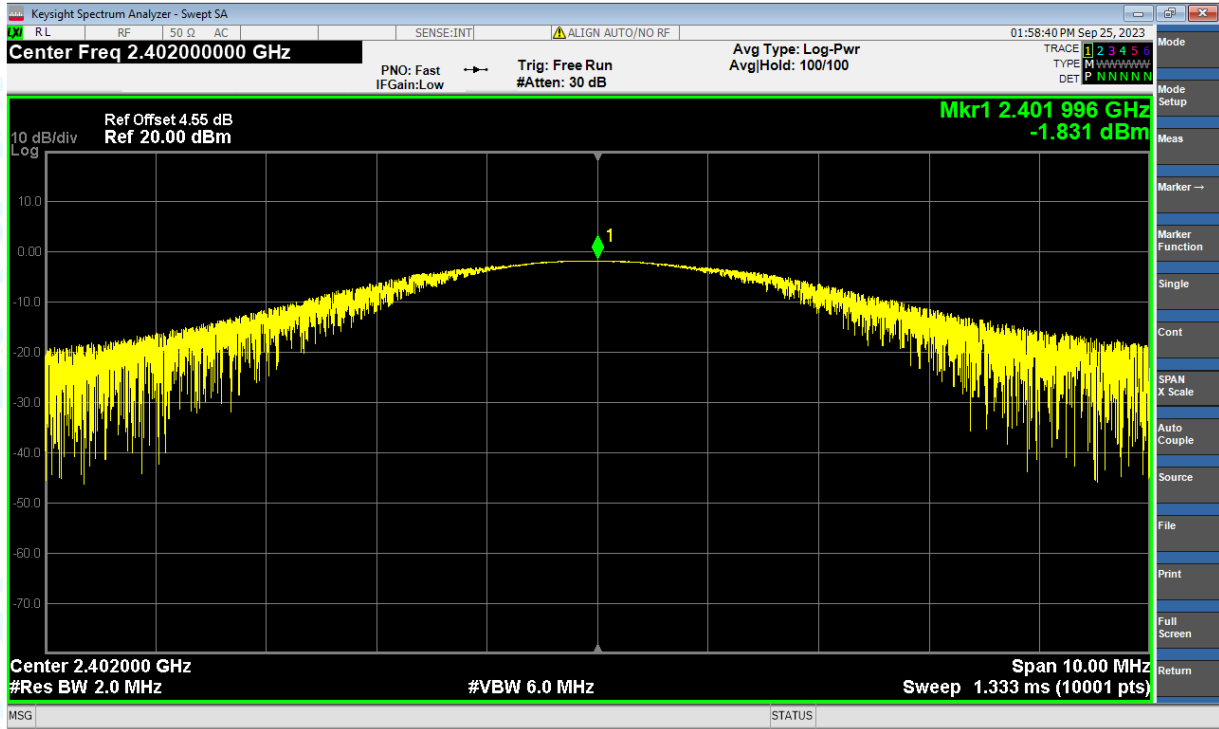
Power NVNT 2-DH1 2441MHz Ant1



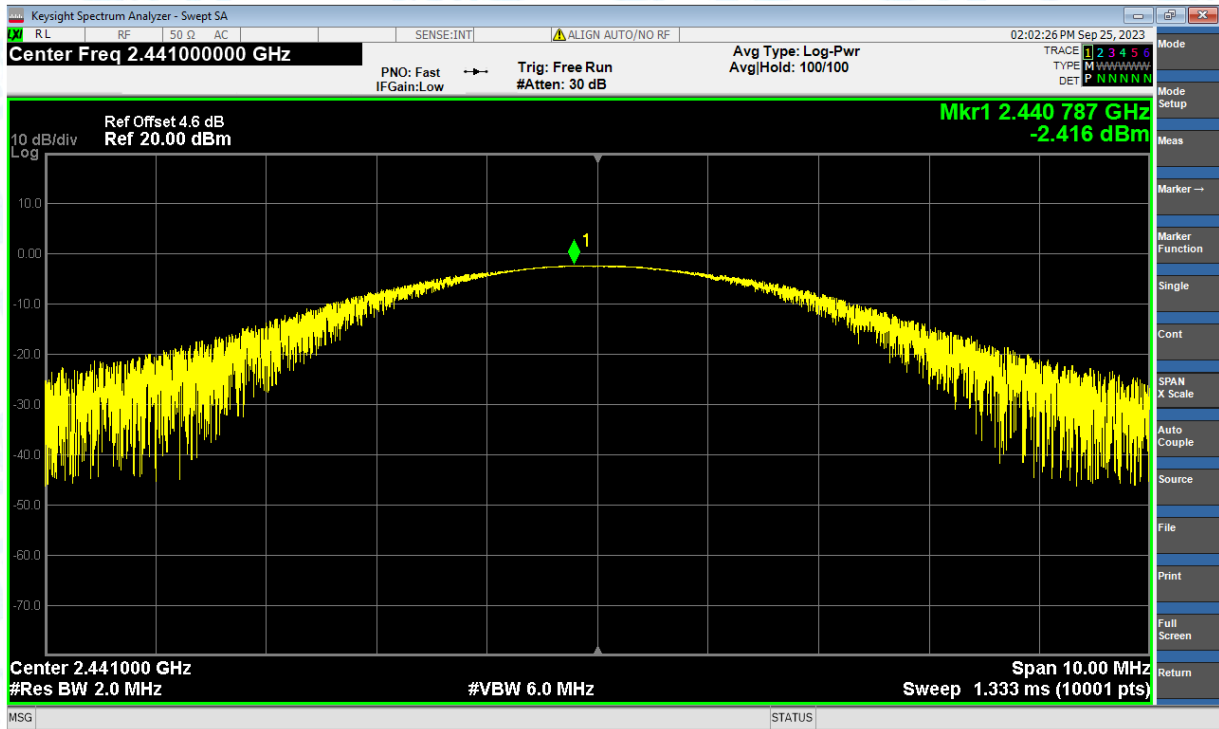
Power NVNT 2-DH1 2480MHz Ant1



Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



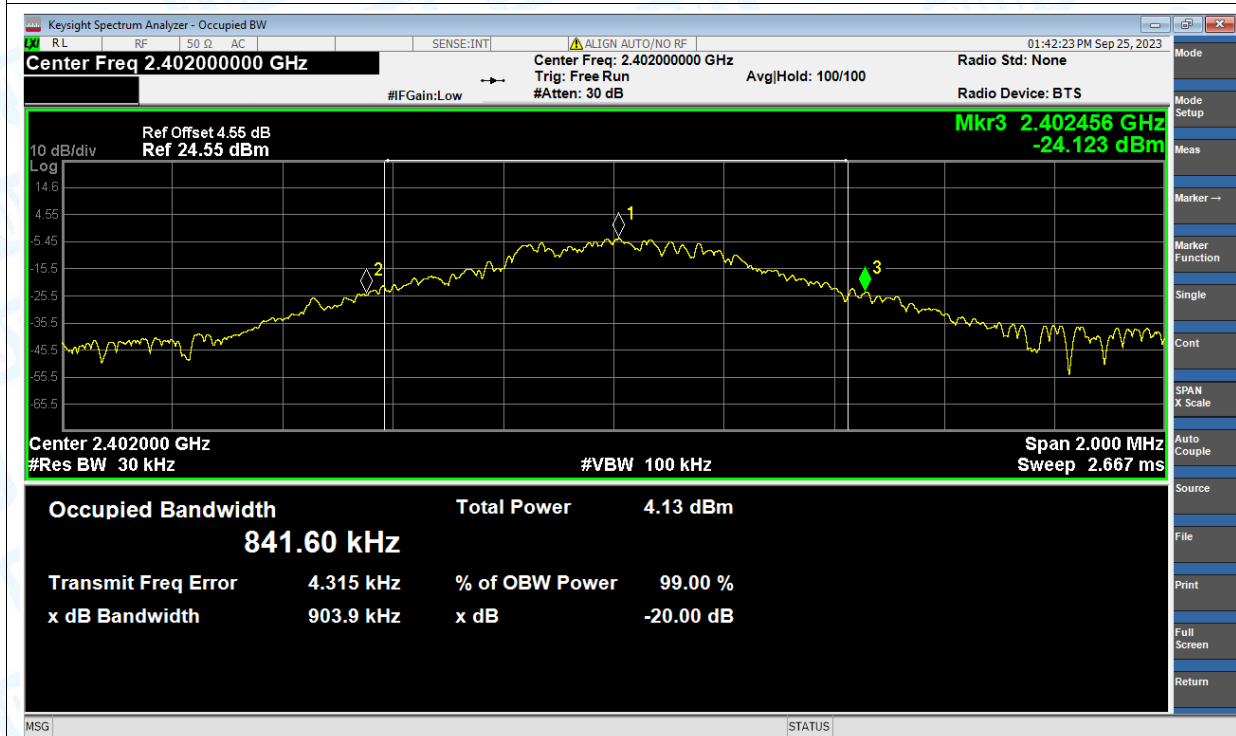


-20dB Bandwidth

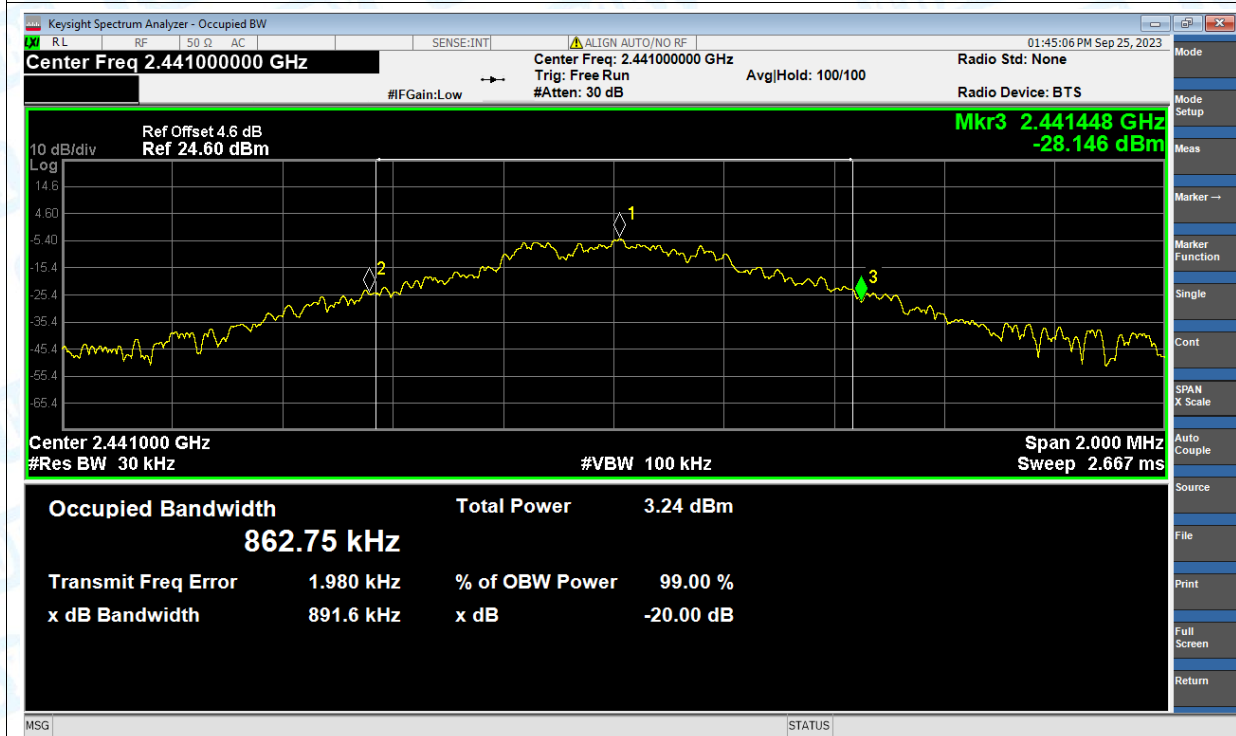
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.9	0	Pass
NVNT	1-DH1	2441	Ant1	0.89	0	Pass
NVNT	1-DH1	2480	Ant1	0.95	0	Pass
NVNT	2-DH1	2402	Ant1	1.38	0	Pass
NVNT	2-DH1	2441	Ant1	1.41	0	Pass
NVNT	2-DH1	2480	Ant1	1.31	0	Pass
NVNT	3-DH1	2402	Ant1	1.37	0	Pass
NVNT	3-DH1	2441	Ant1	1.36	0	Pass
NVNT	3-DH1	2480	Ant1	1.33	0	Pass

Test Graphs

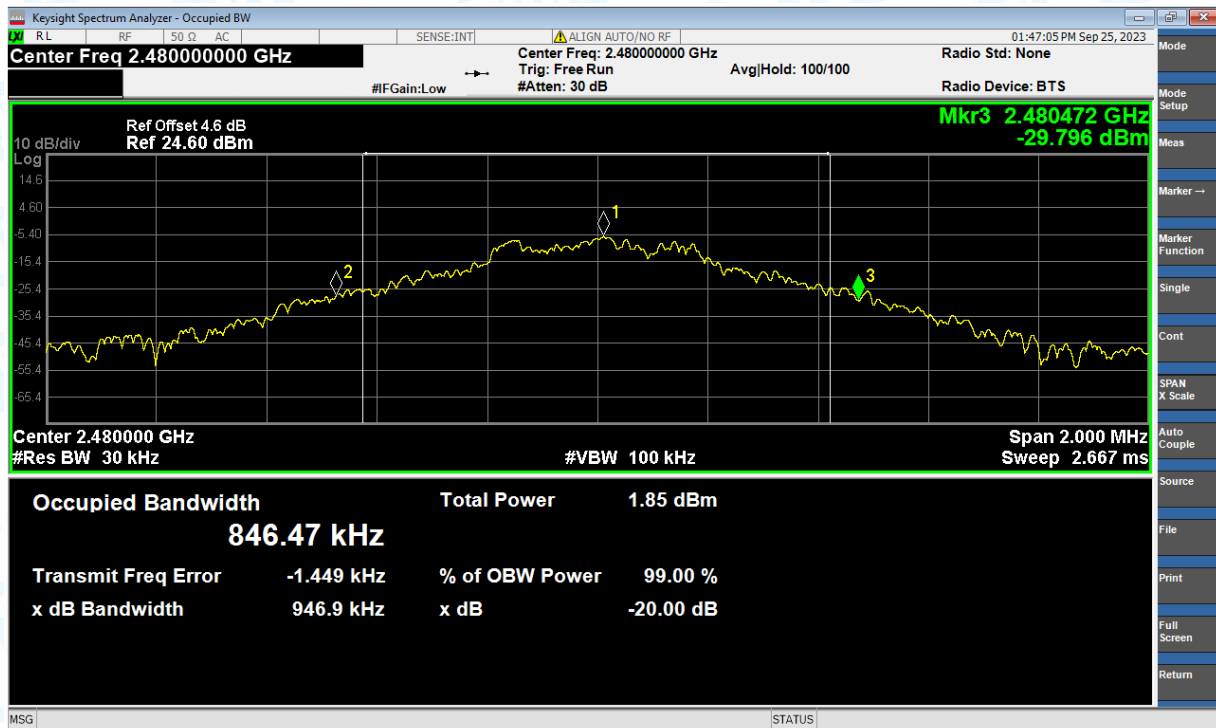
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



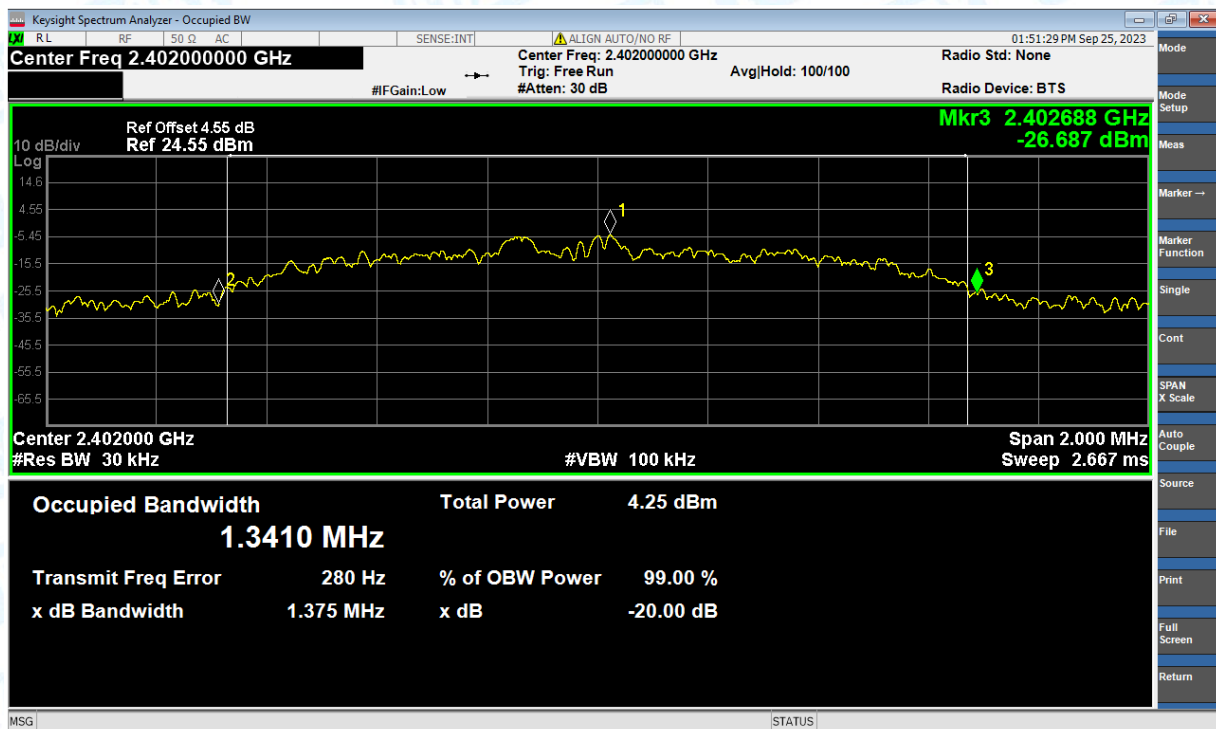
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



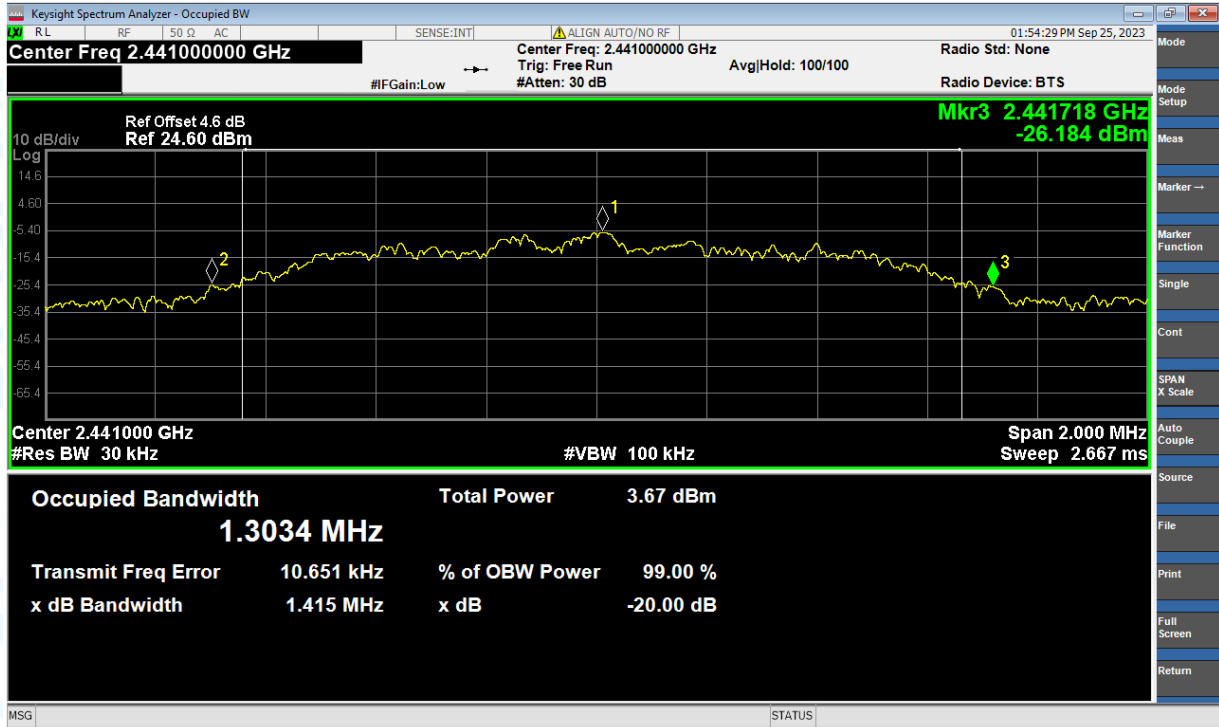
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



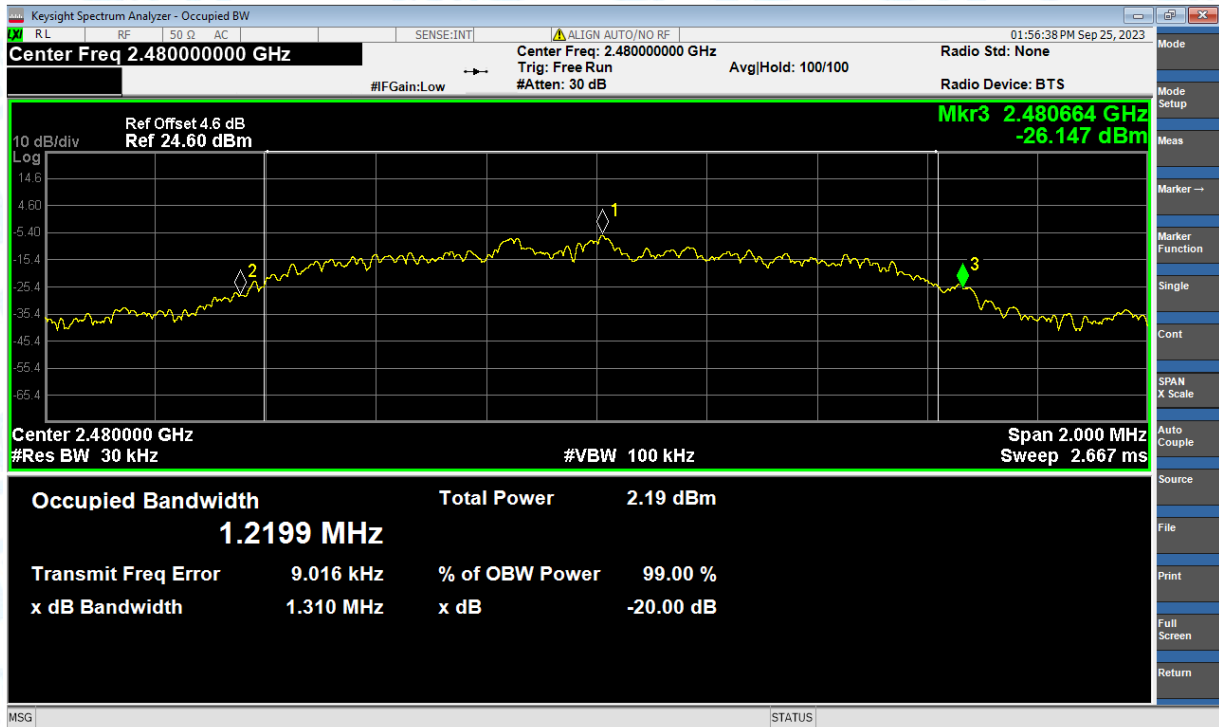
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



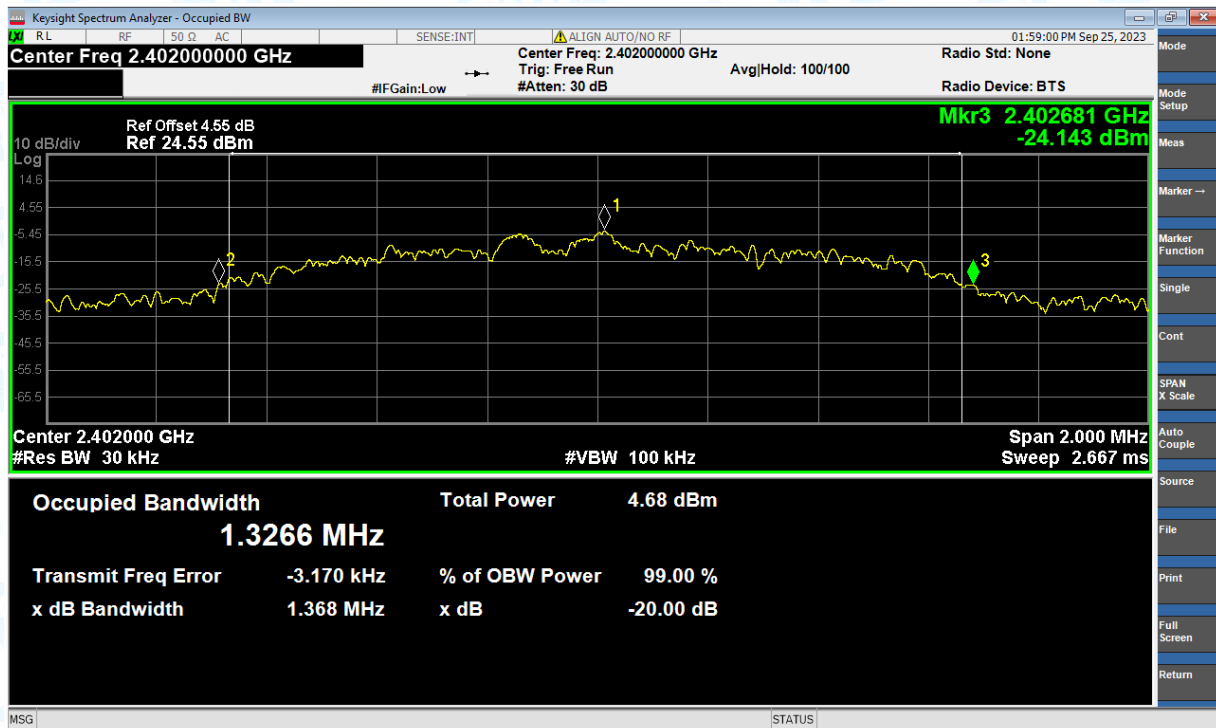
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



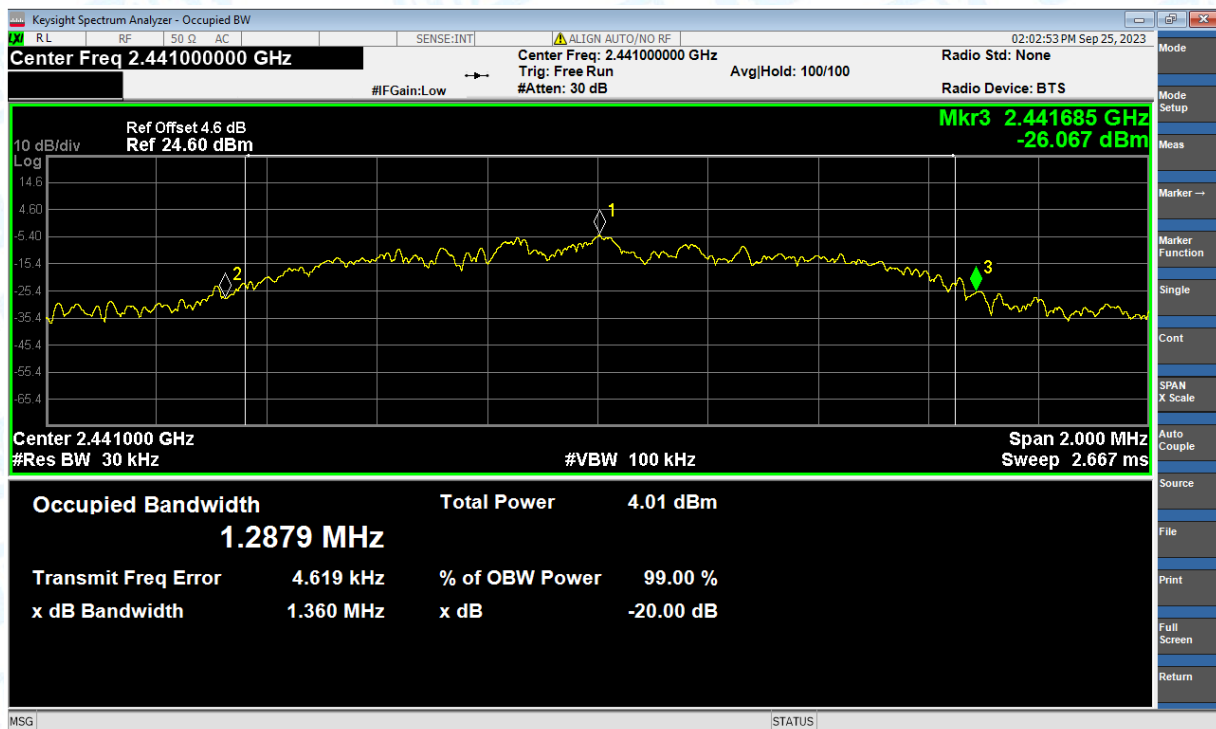
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

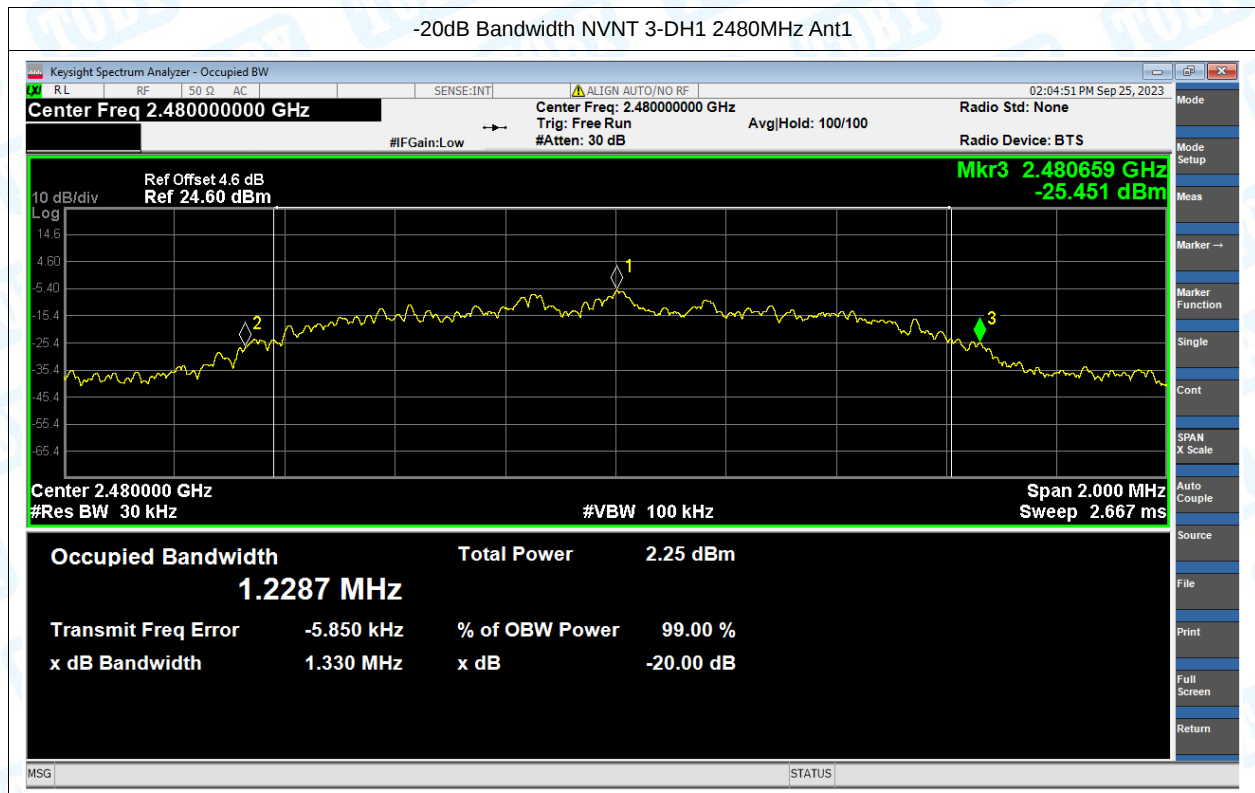


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



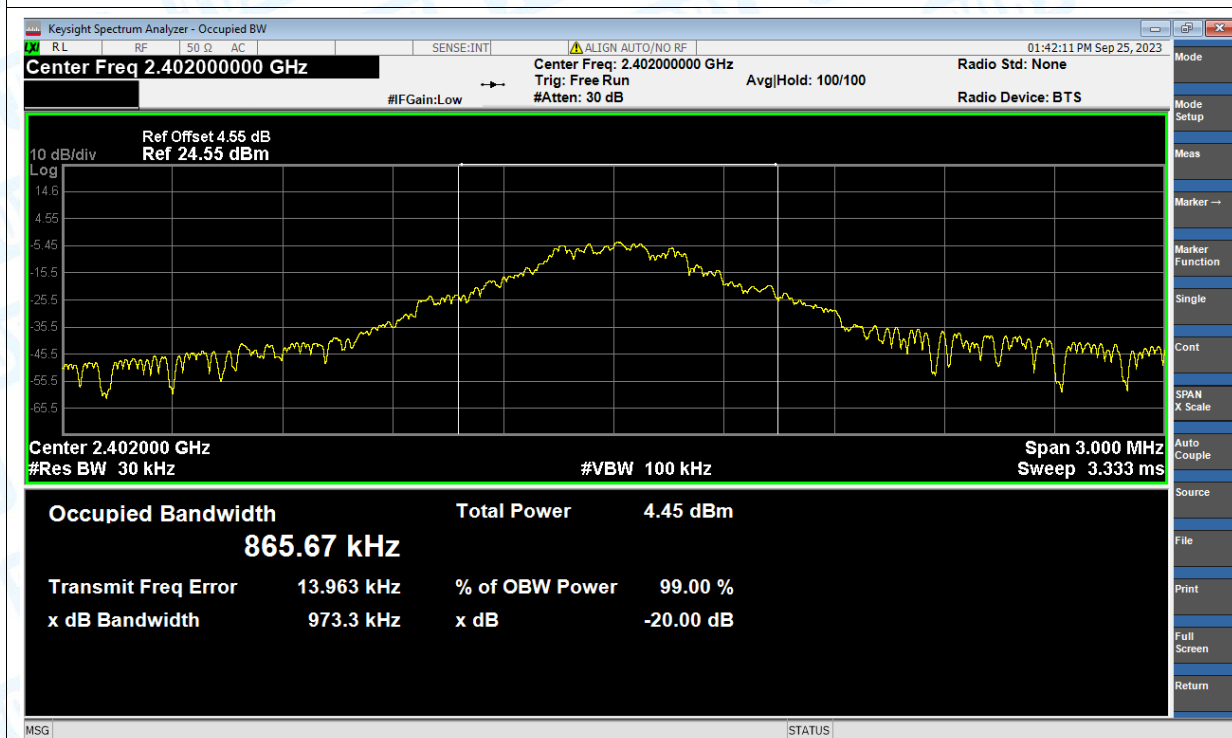


Occupied Channel Bandwidth

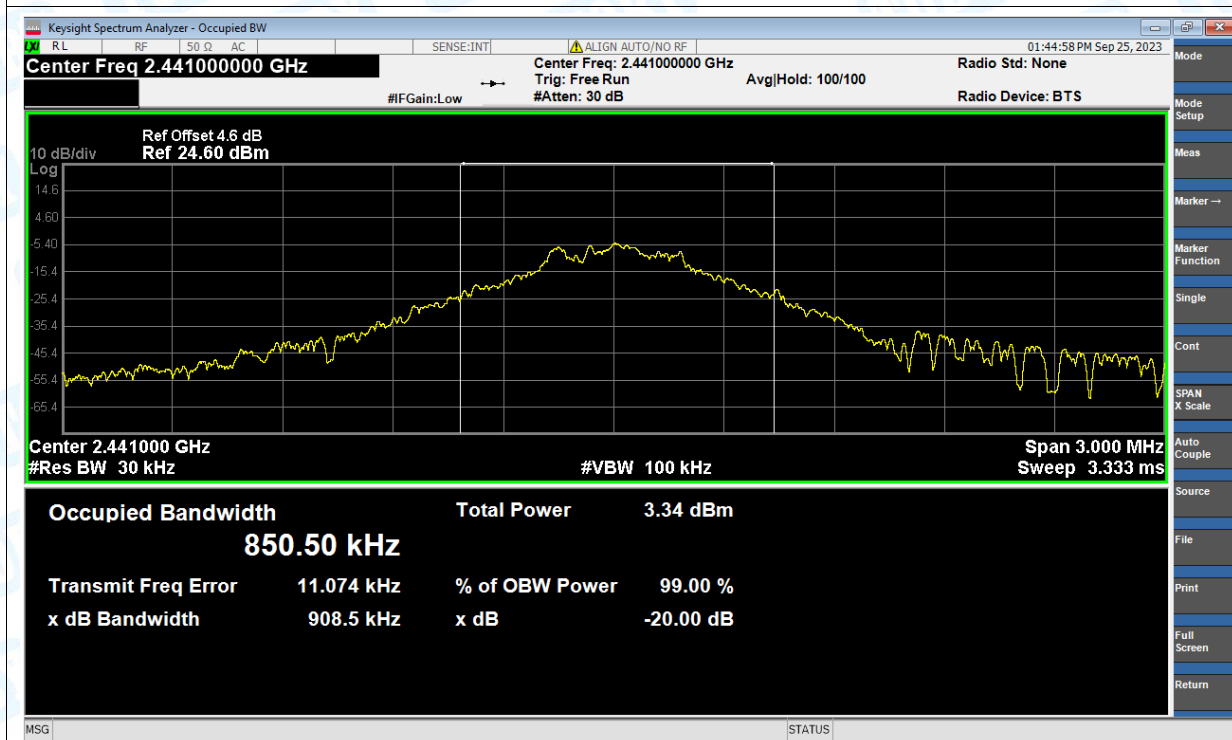
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.866
NVNT	1-DH1	2441	Ant1	0.85
NVNT	1-DH1	2480	Ant1	0.896
NVNT	2-DH1	2402	Ant1	2.07
NVNT	2-DH1	2441	Ant1	1.836
NVNT	2-DH1	2480	Ant1	1.32
NVNT	3-DH1	2402	Ant1	1.953
NVNT	3-DH1	2441	Ant1	1.616
NVNT	3-DH1	2480	Ant1	1.308

Test Graphs

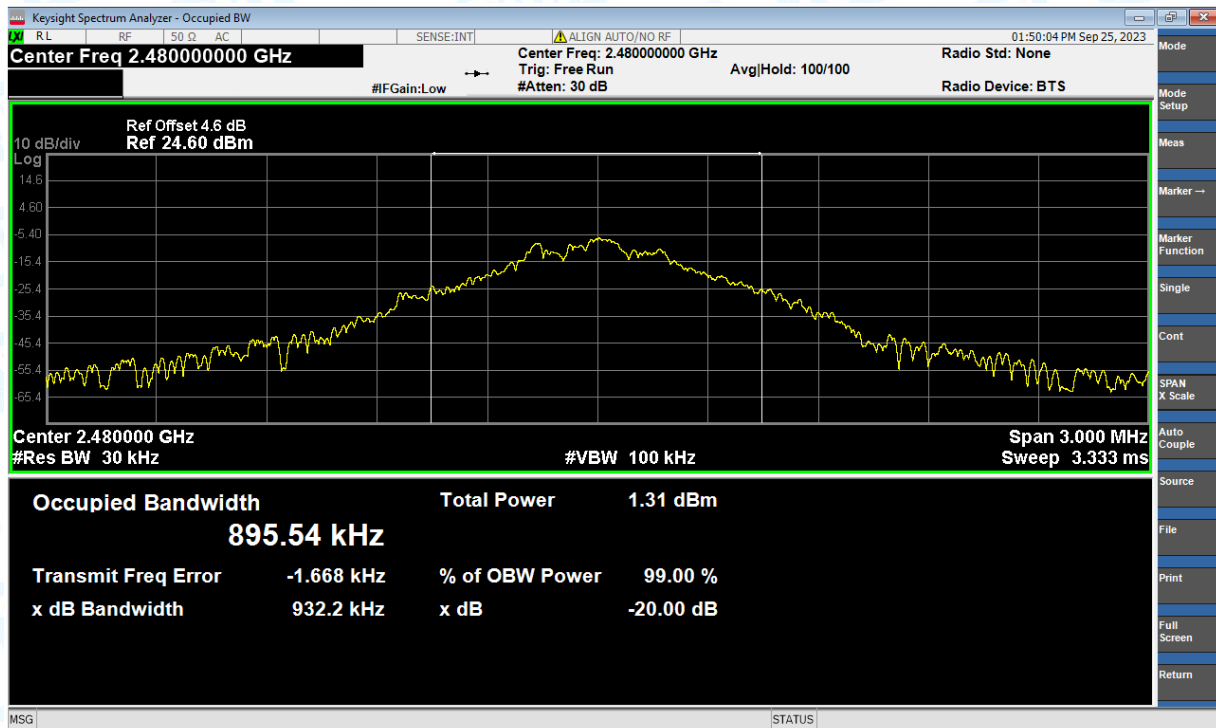
OBW NVNT 1-DH1 2402MHz Ant1



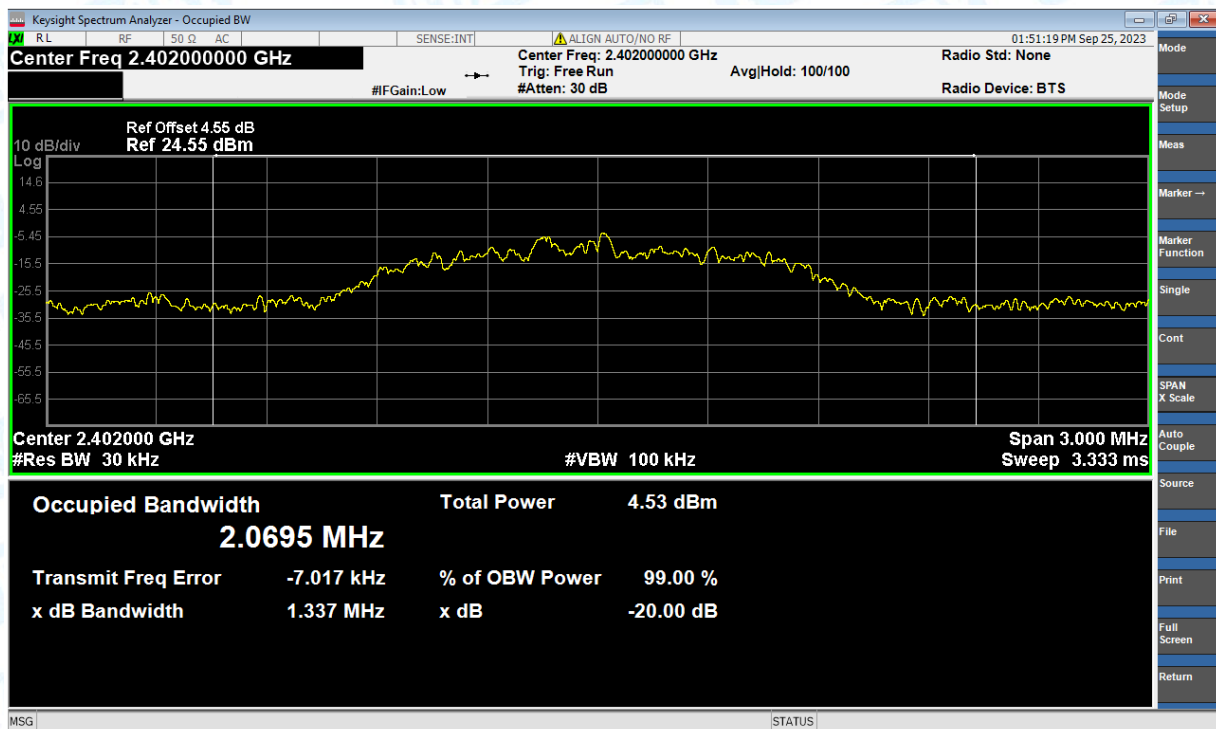
OBW NVNT 1-DH1 2441MHz Ant1



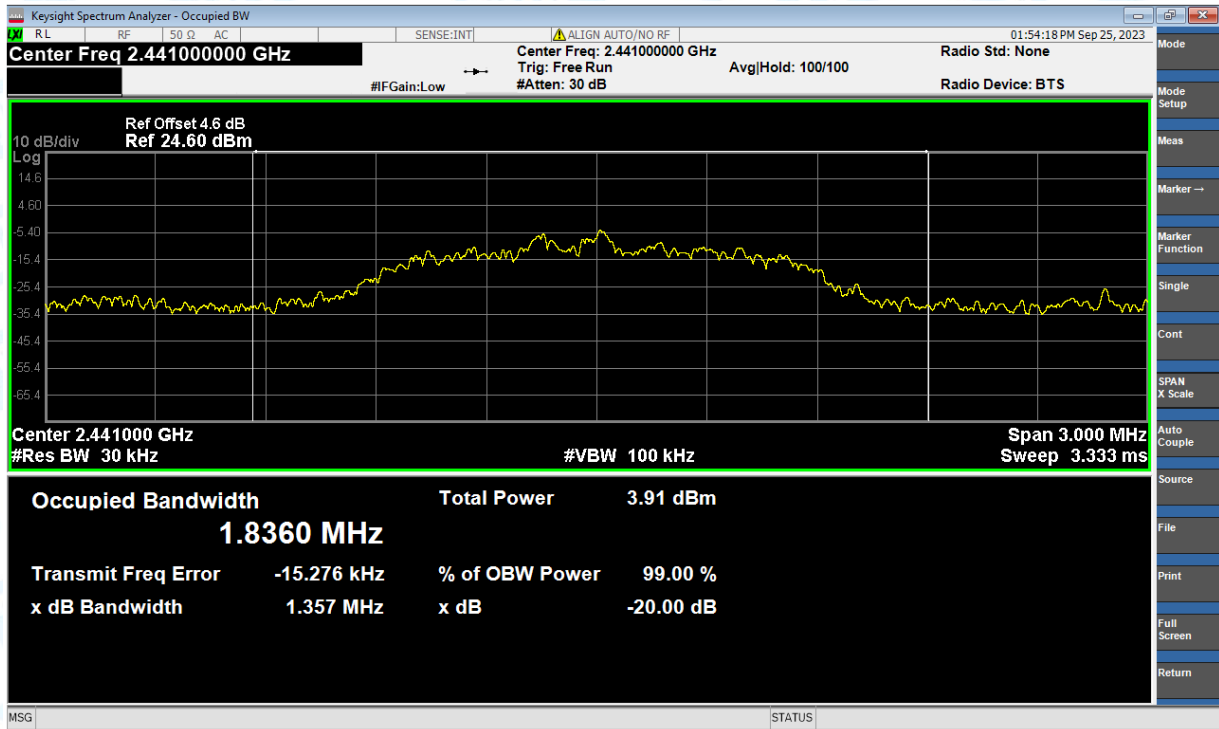
OBW NVNT 1-DH1 2480MHz Ant1



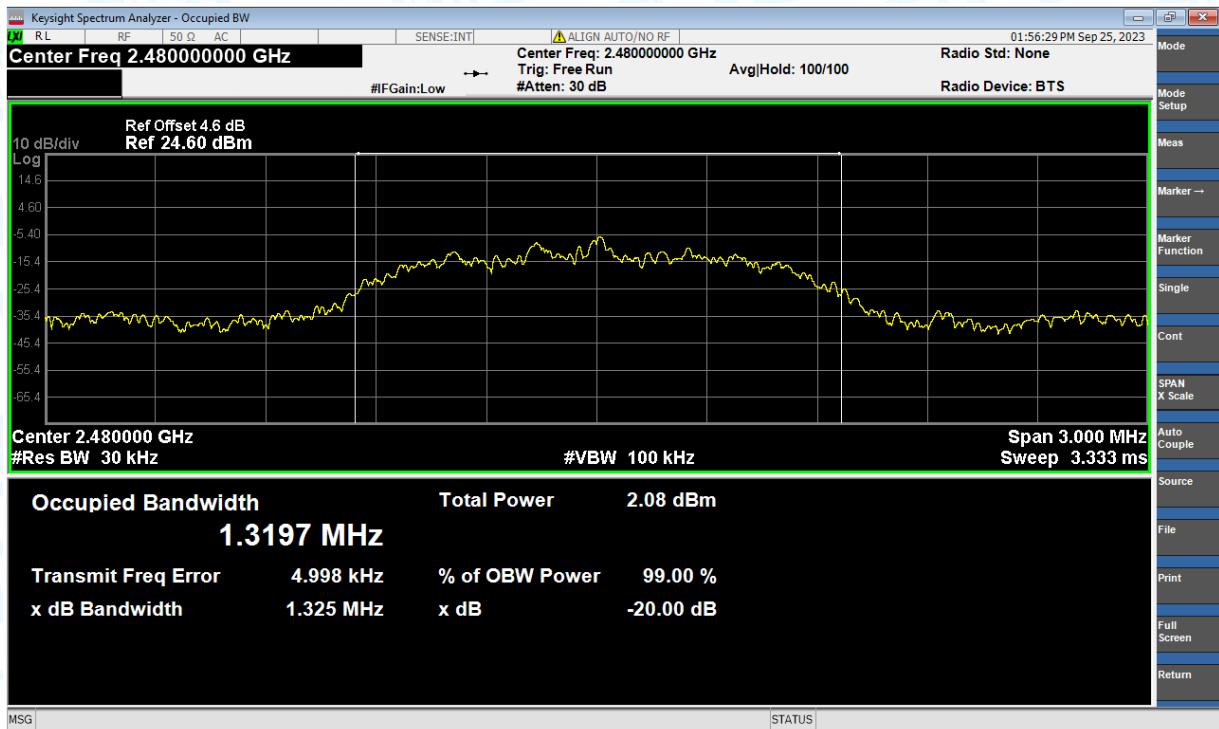
OBW NVNT 2-DH1 2402MHz Ant1



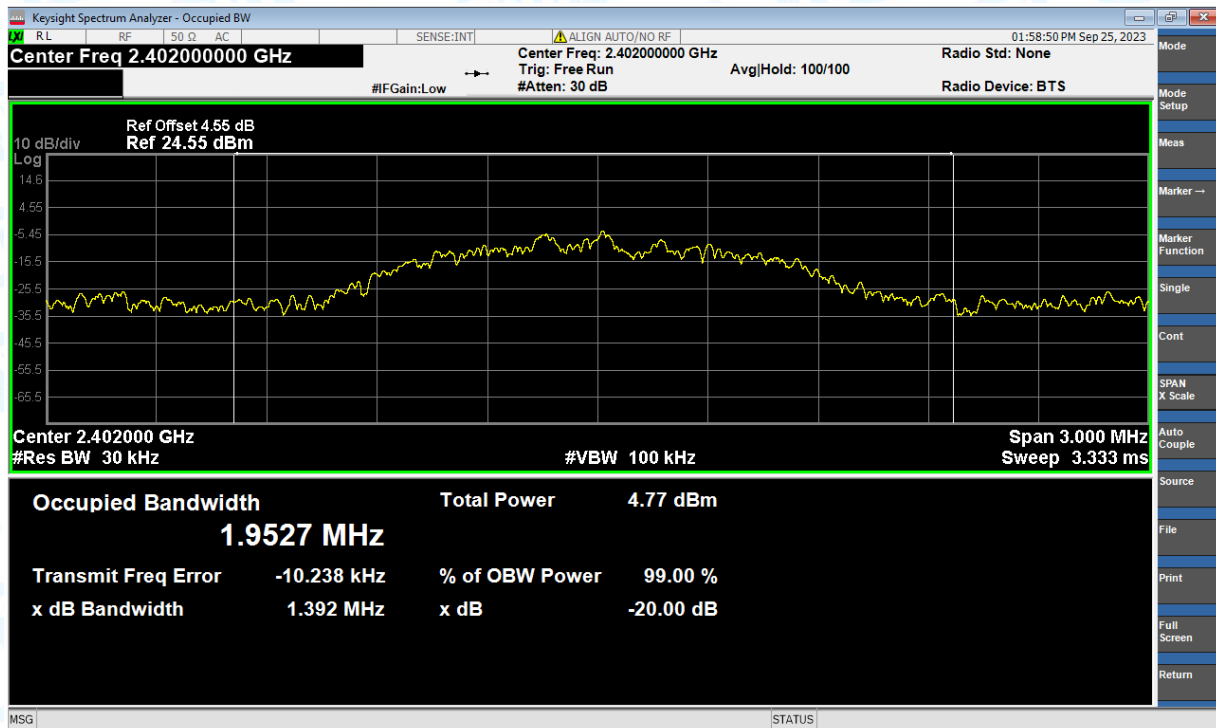
OBW NVNT 2-DH1 2441MHz Ant1



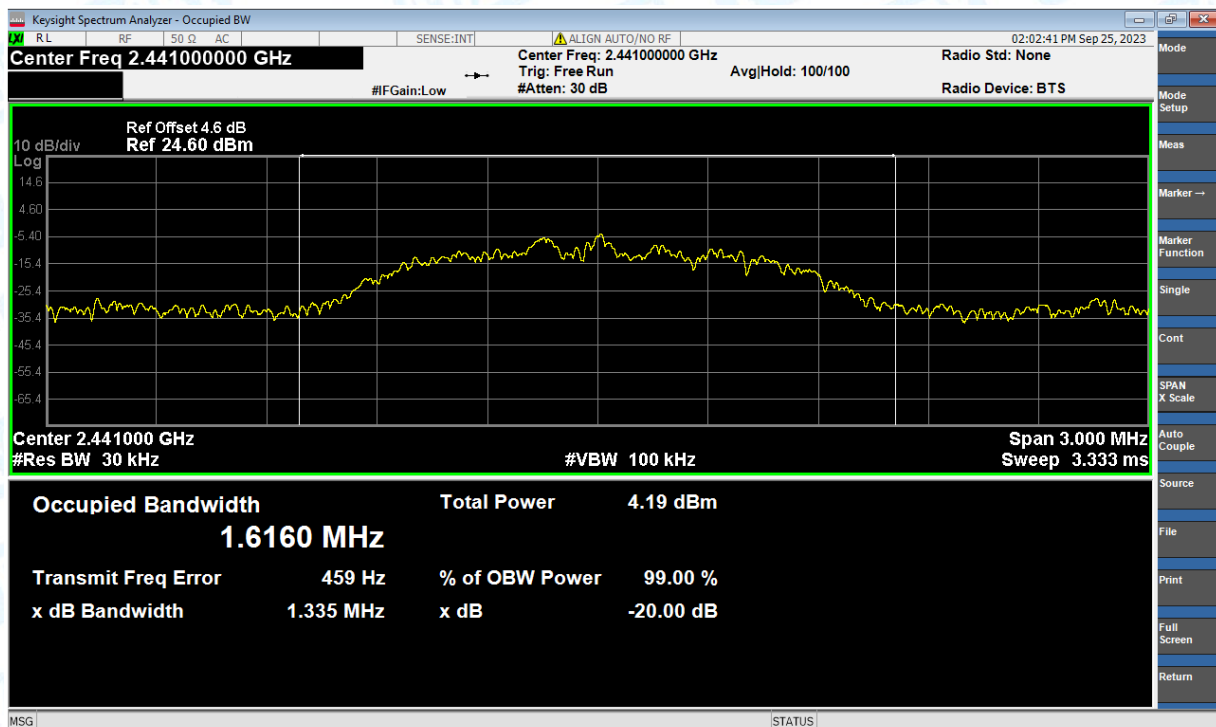
OBW NVNT 2-DH1 2480MHz Ant1

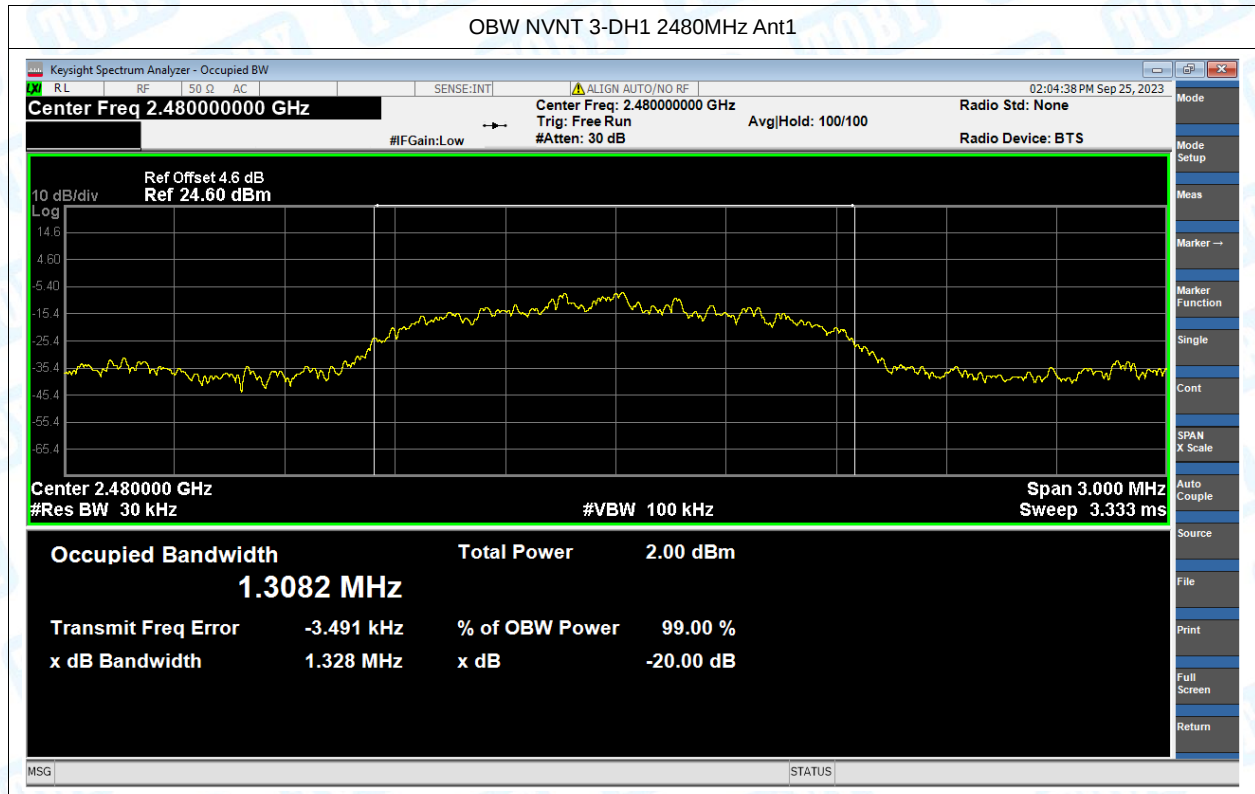


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



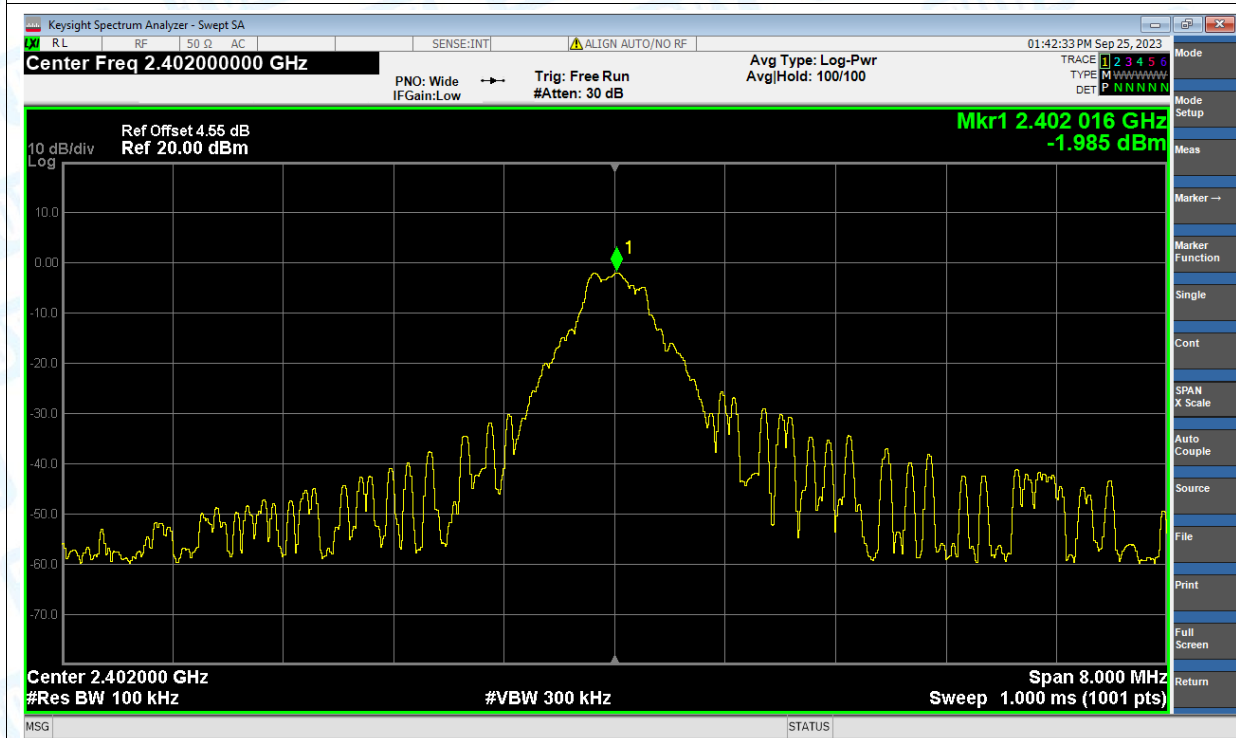


Band Edge

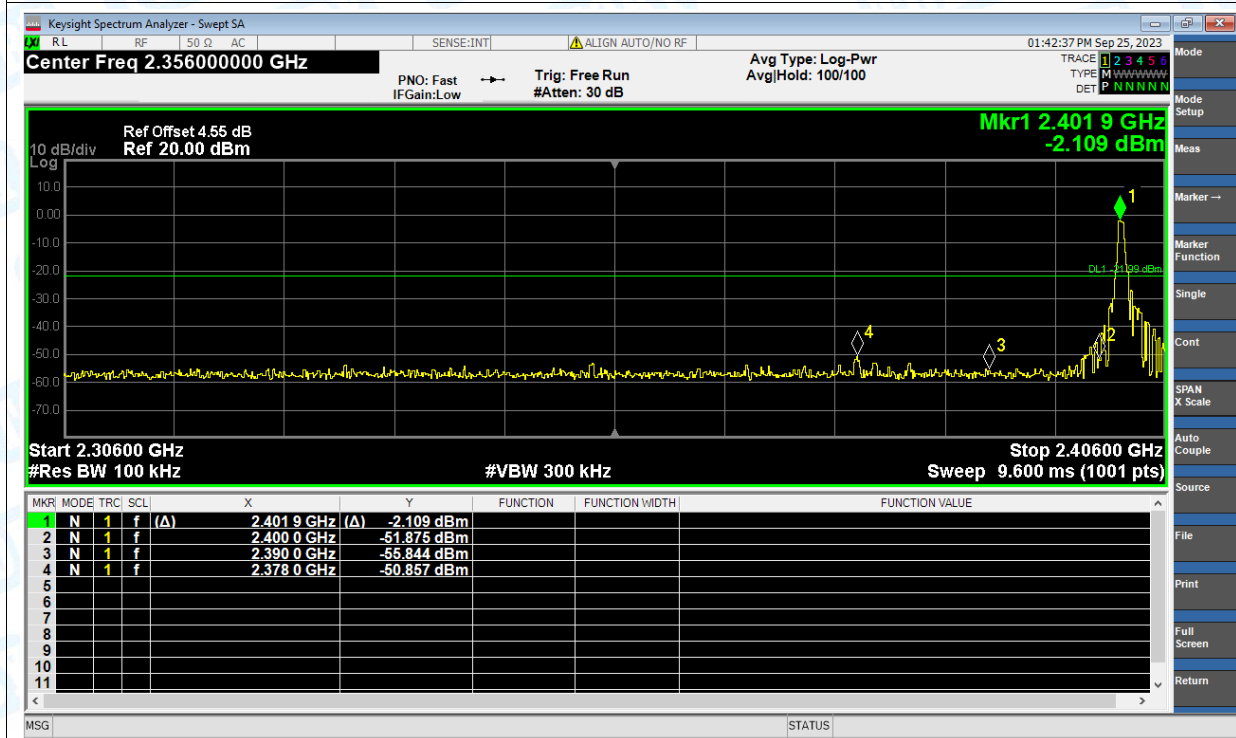
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-48.88	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-50.3	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-48.36	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-49.33	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-47.6	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-49.12	-20	Pass

Test Graphs

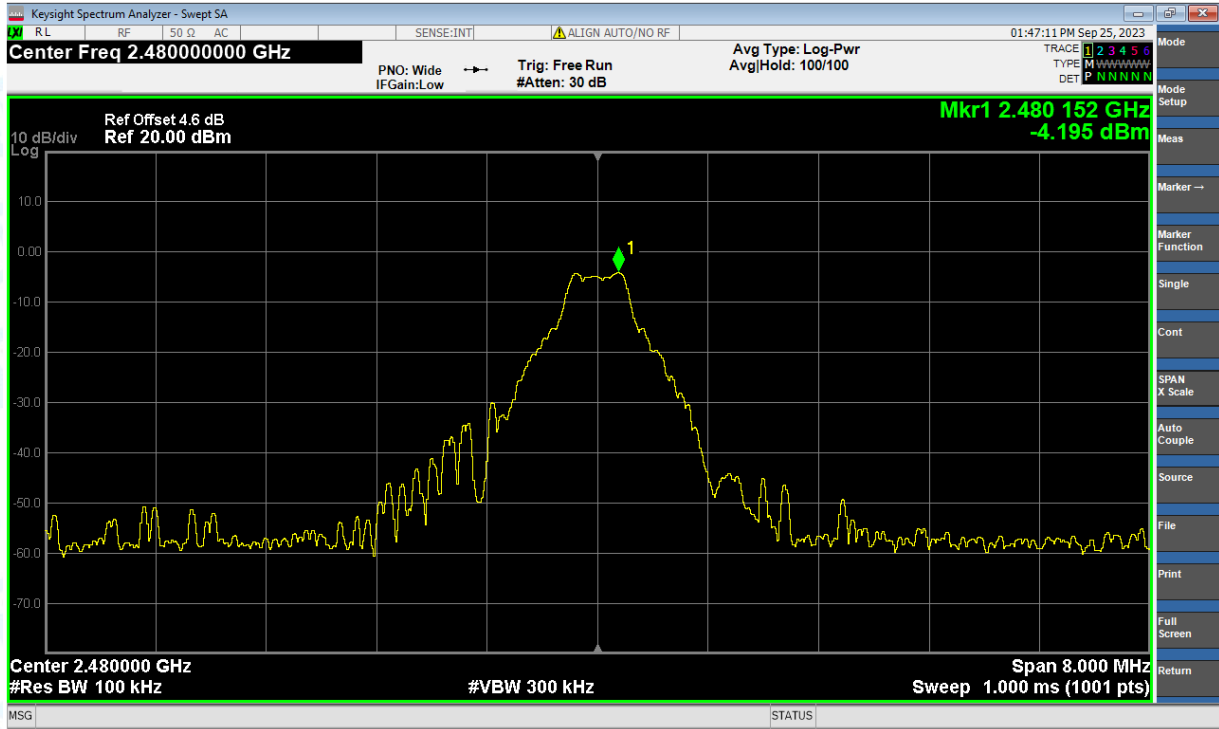
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



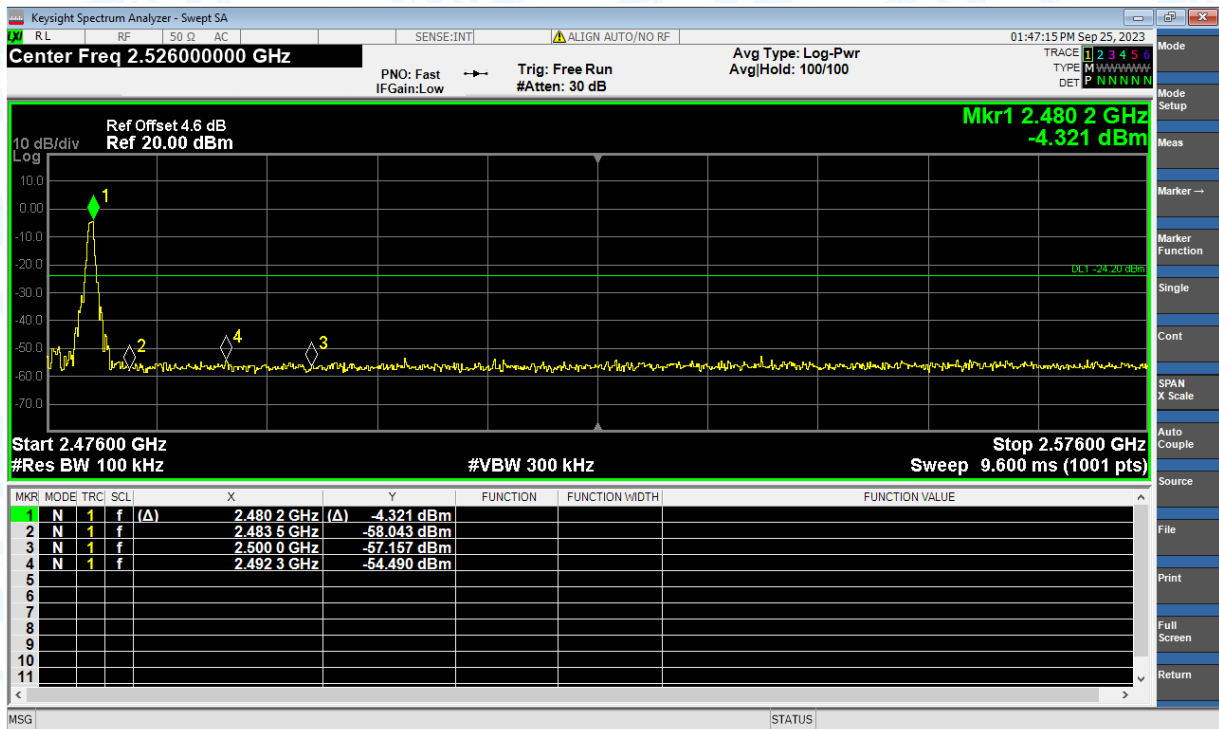
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



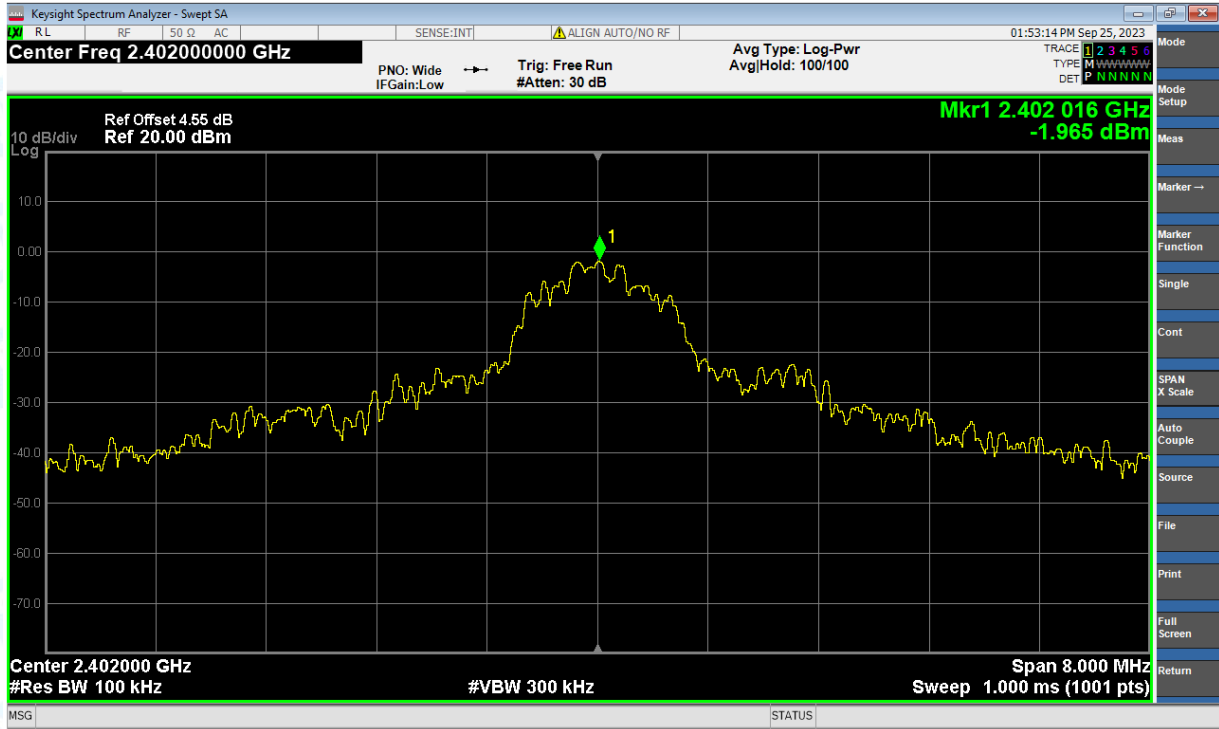
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



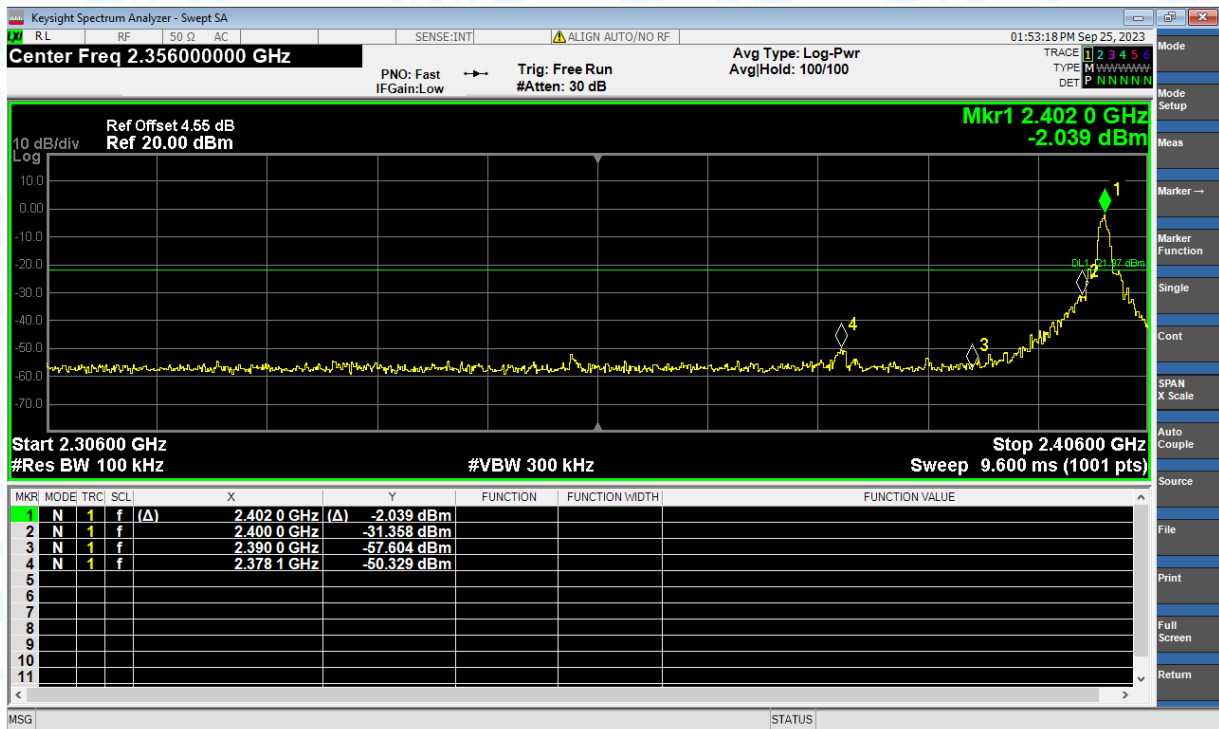
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



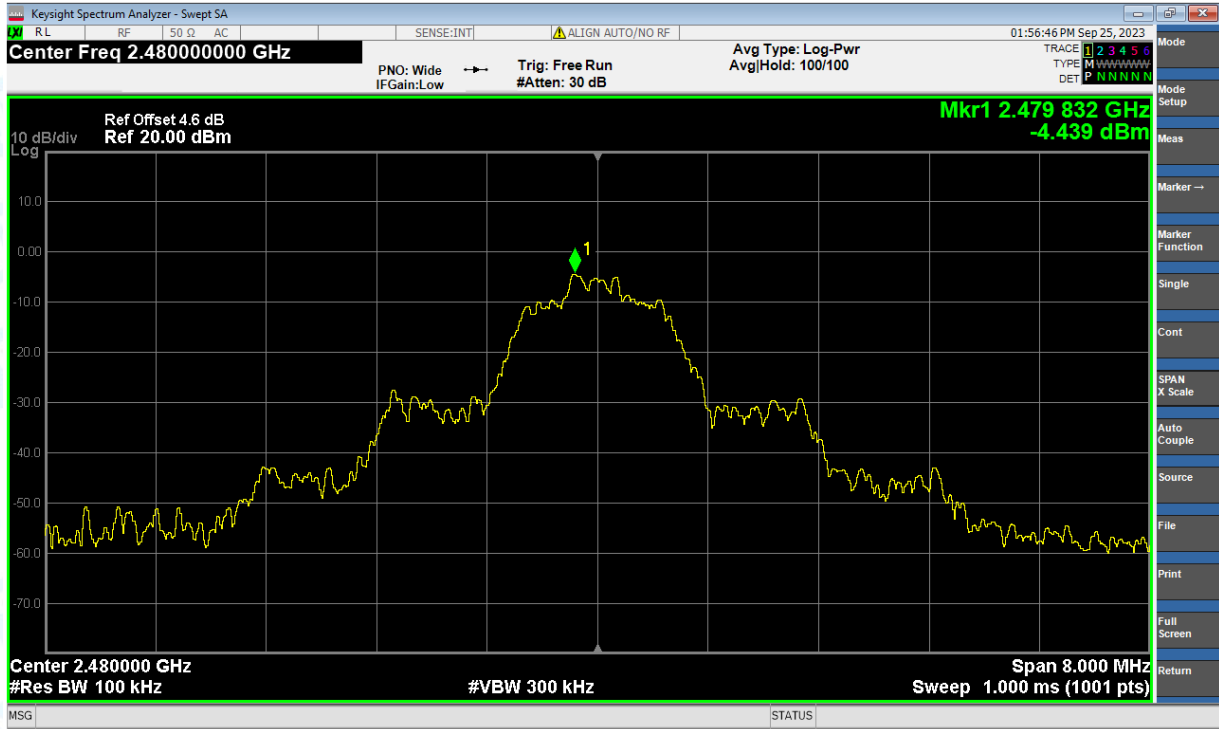
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



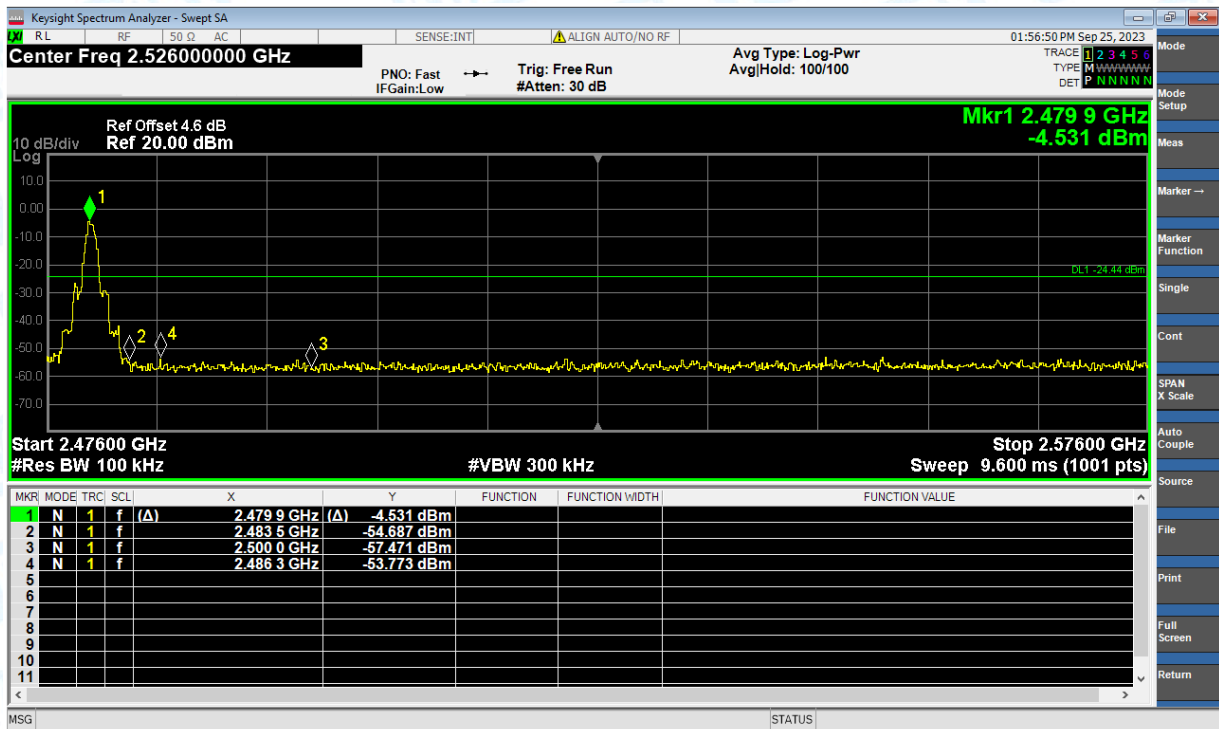
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



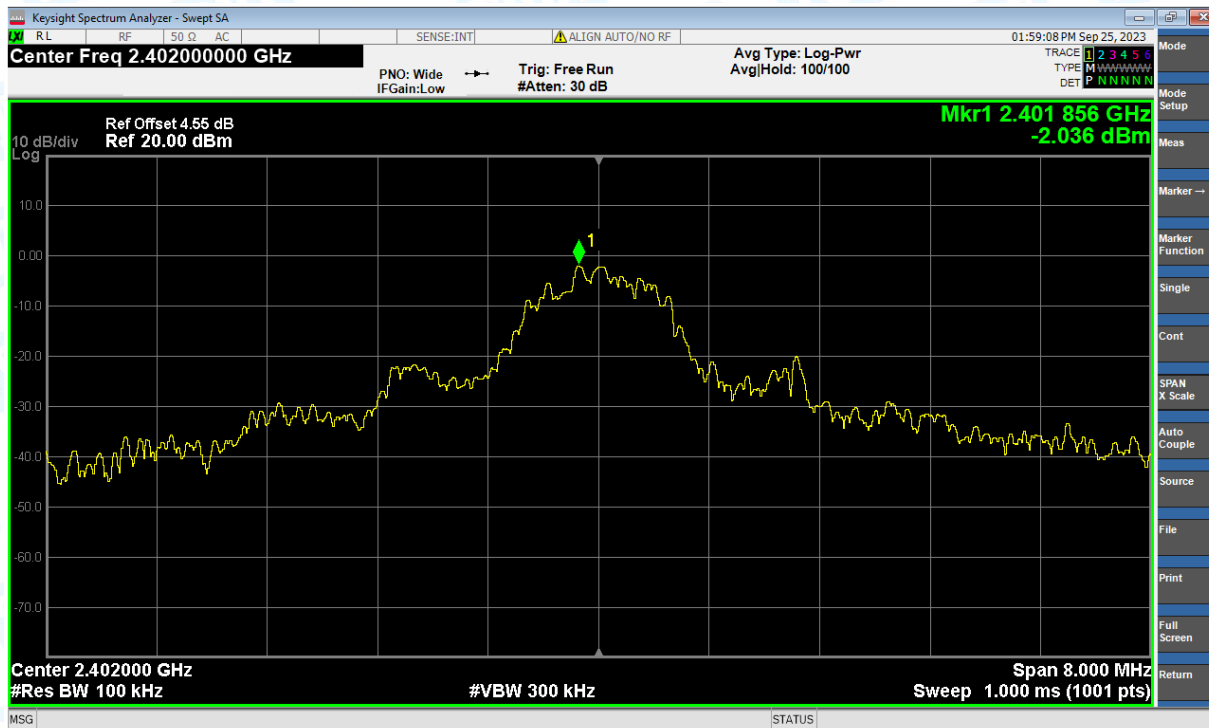
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



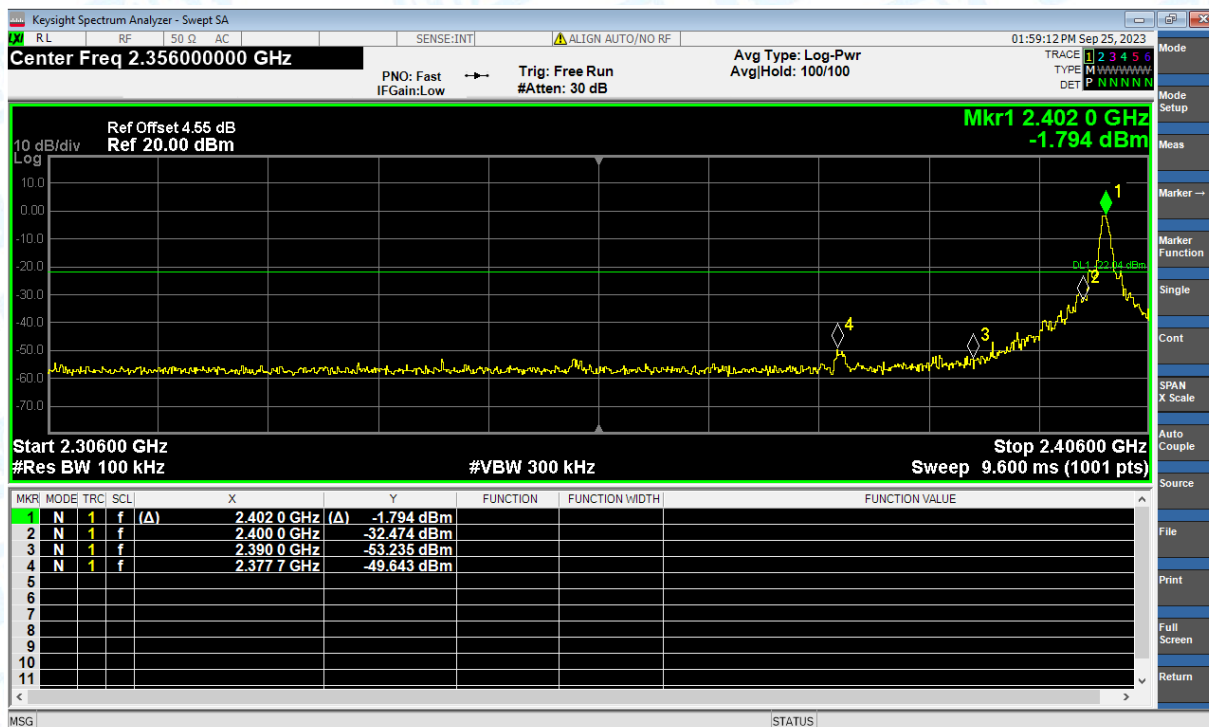
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



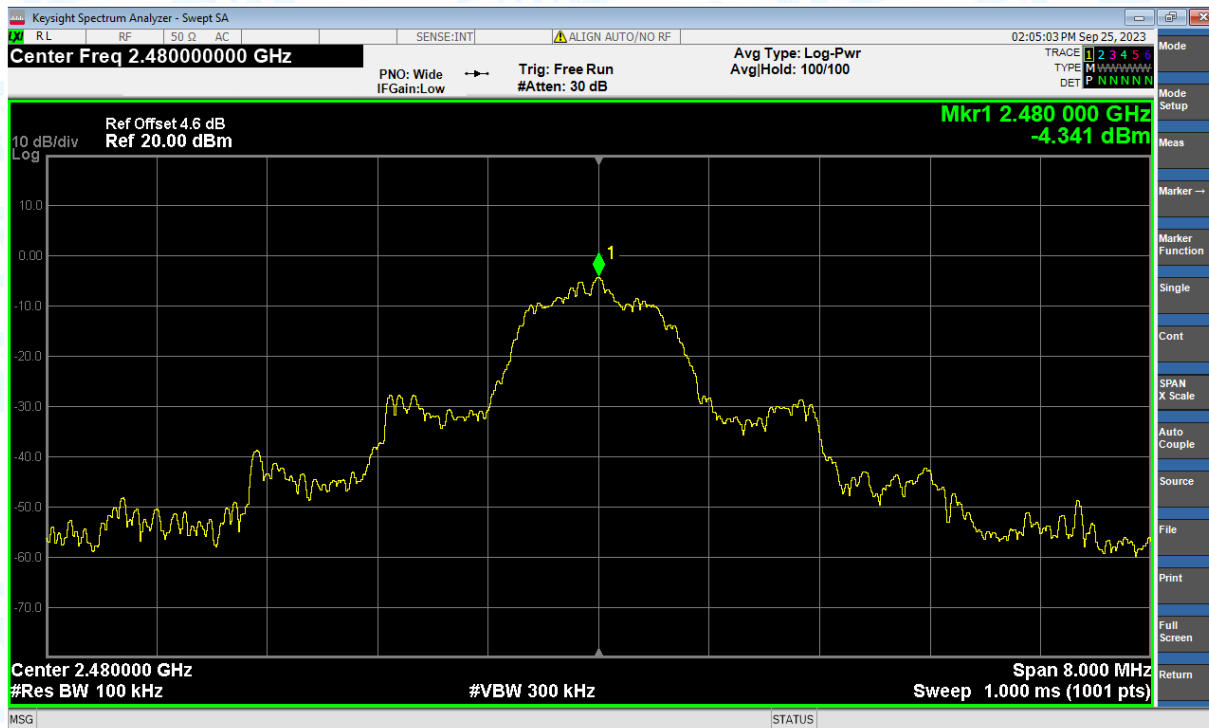
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



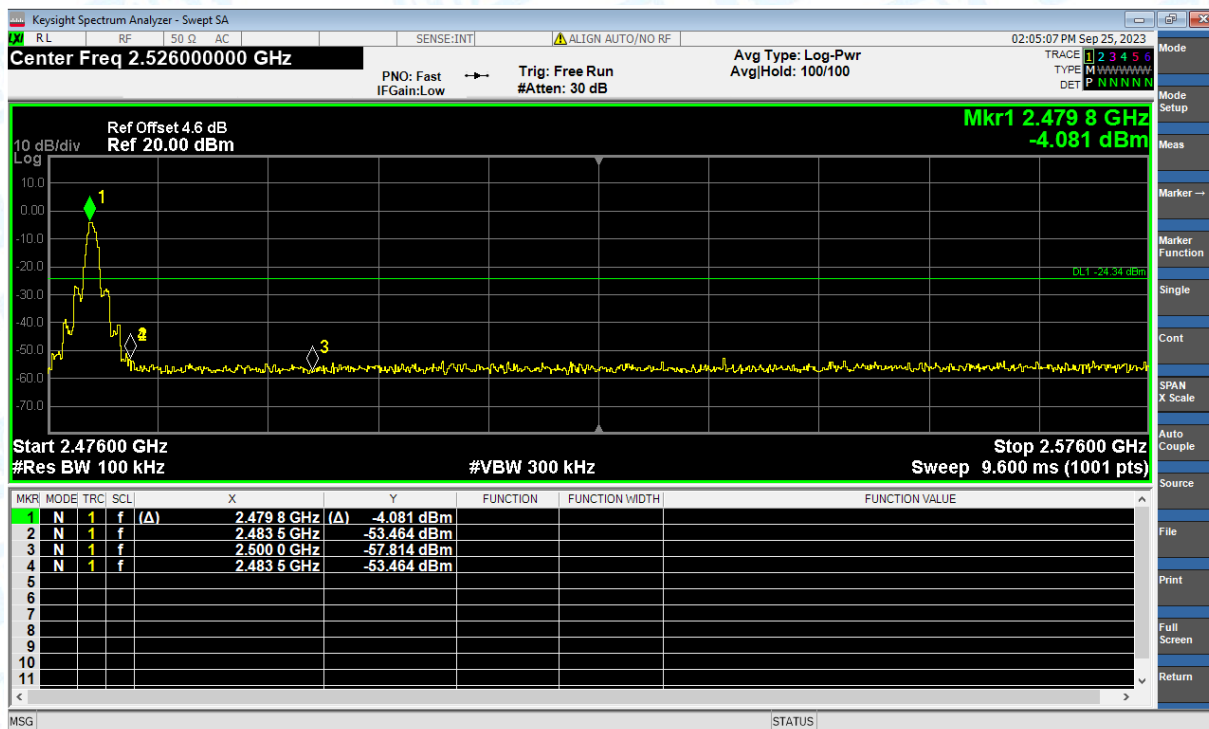
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



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



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

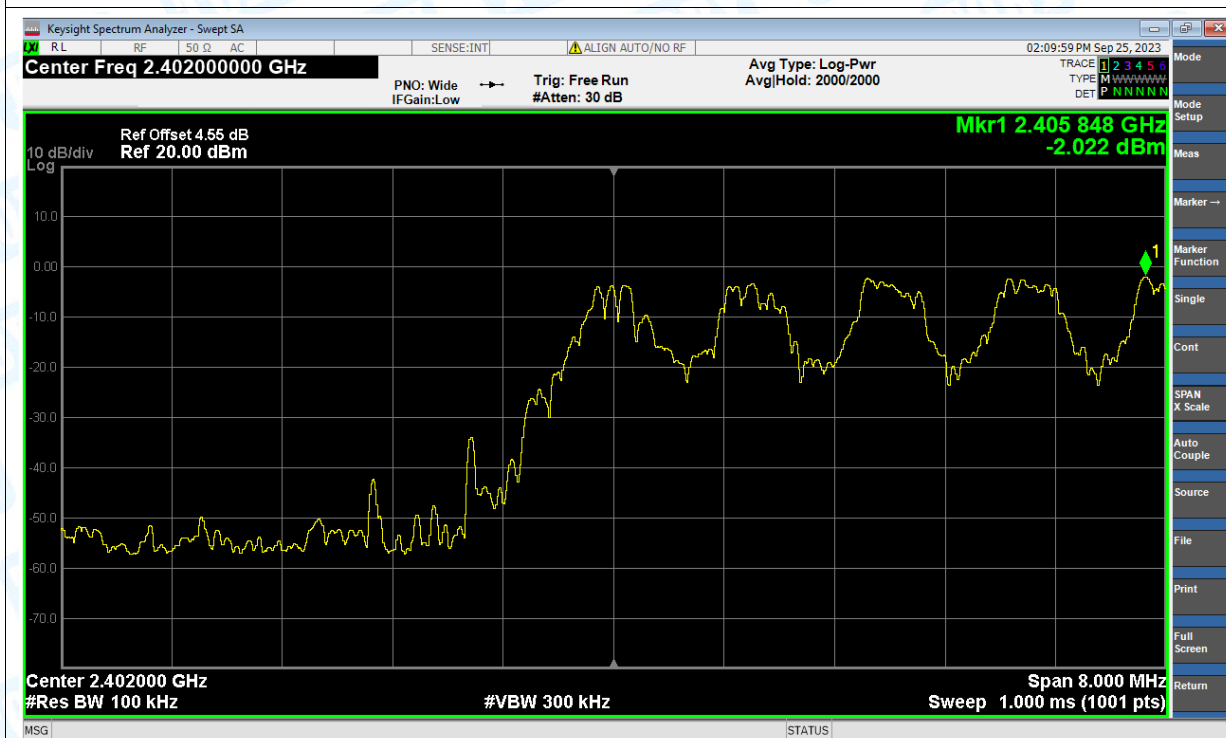


Band Edge(Hopping)

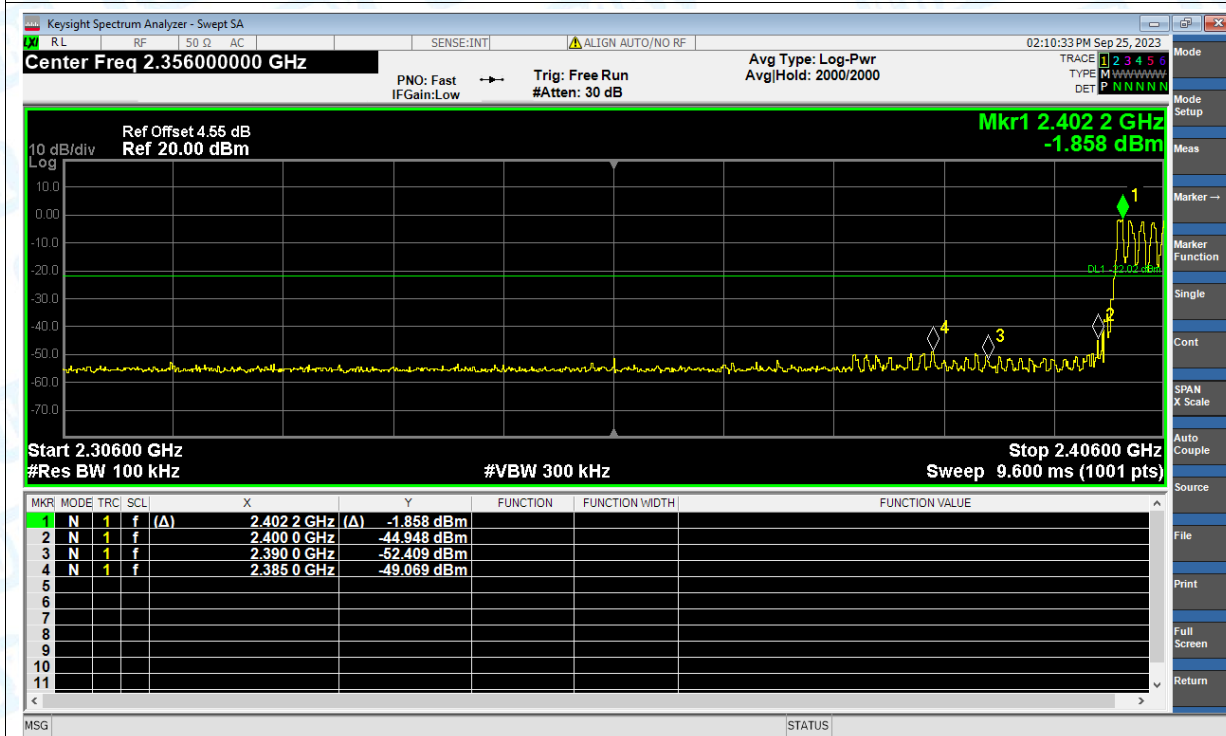
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-47.05	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-48.7	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-47.14	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-49.66	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-47.78	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-46.46	-20	Pass

Test Graphs

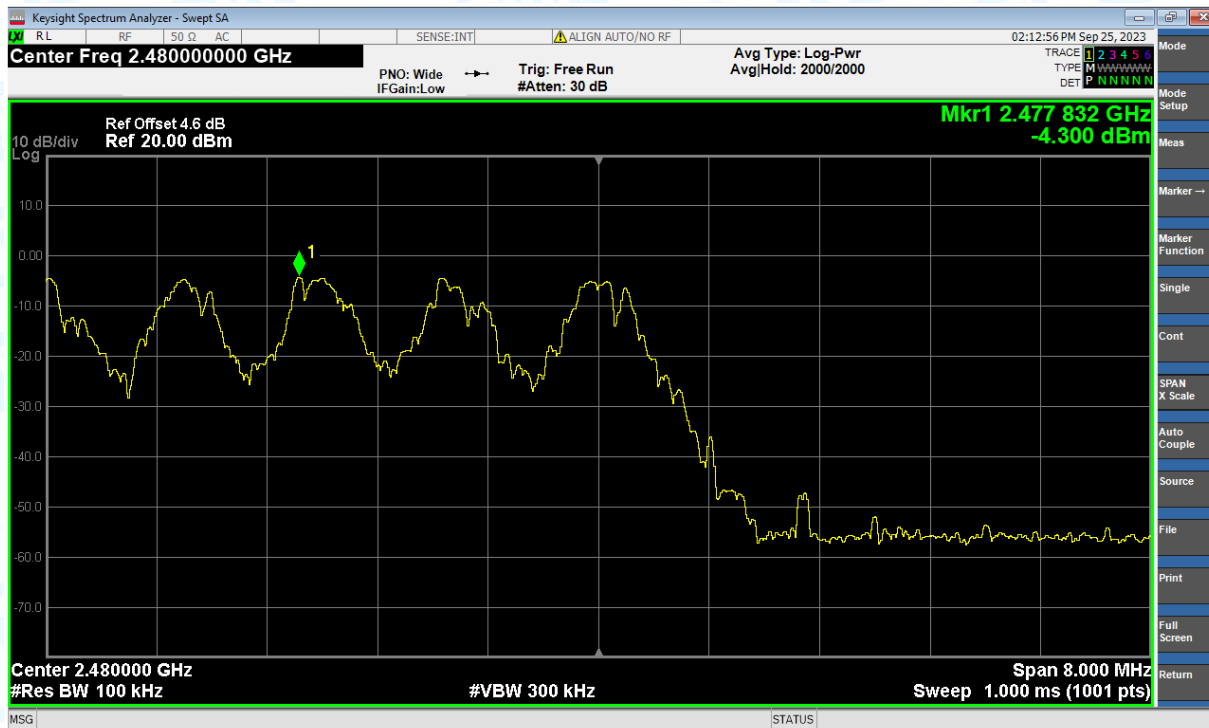
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref



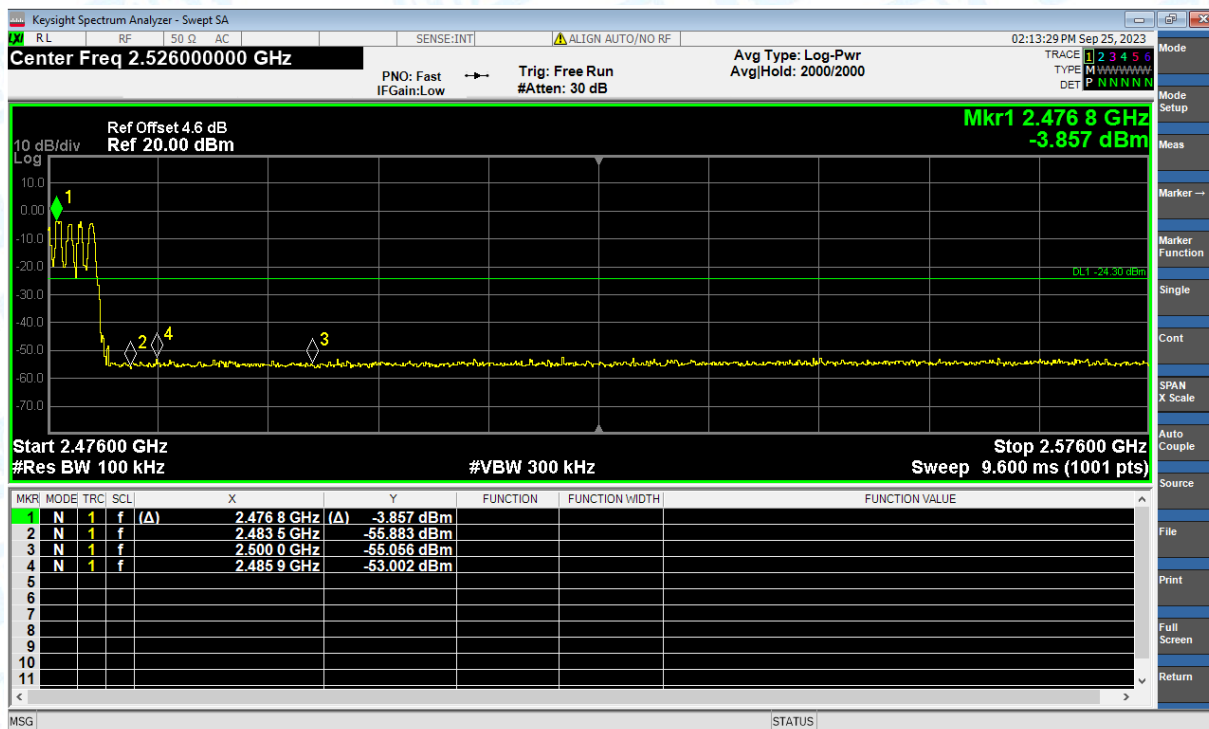
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



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



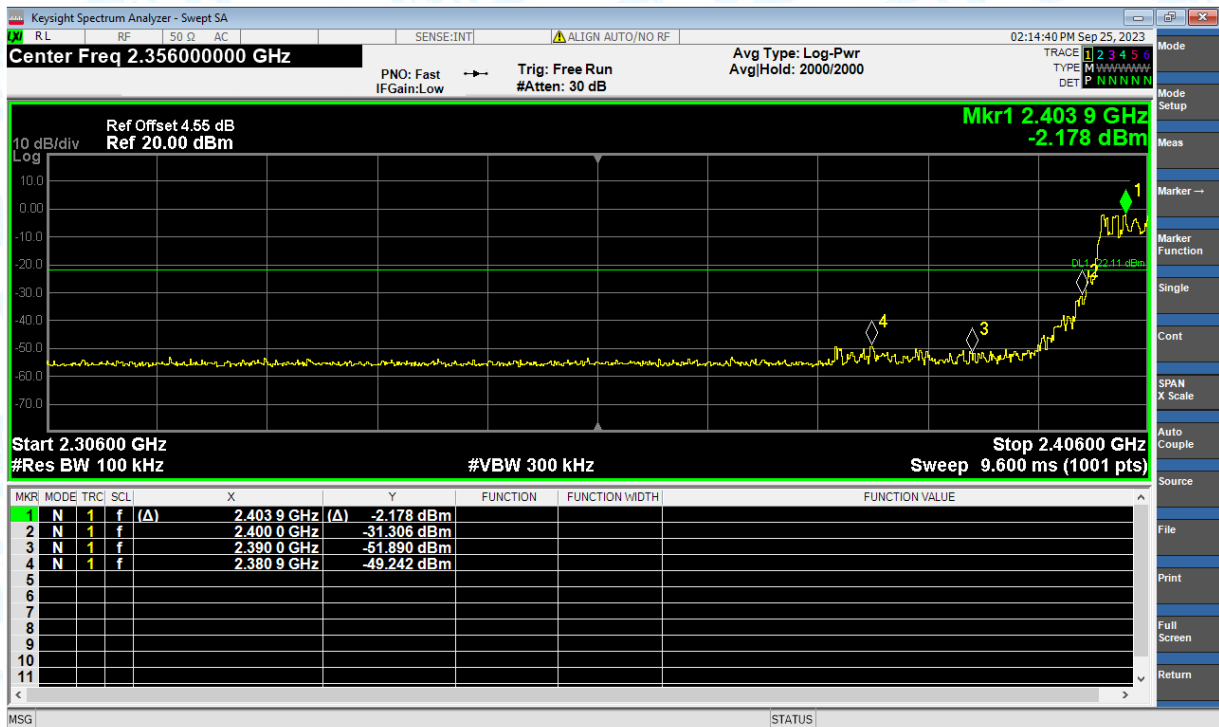
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



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



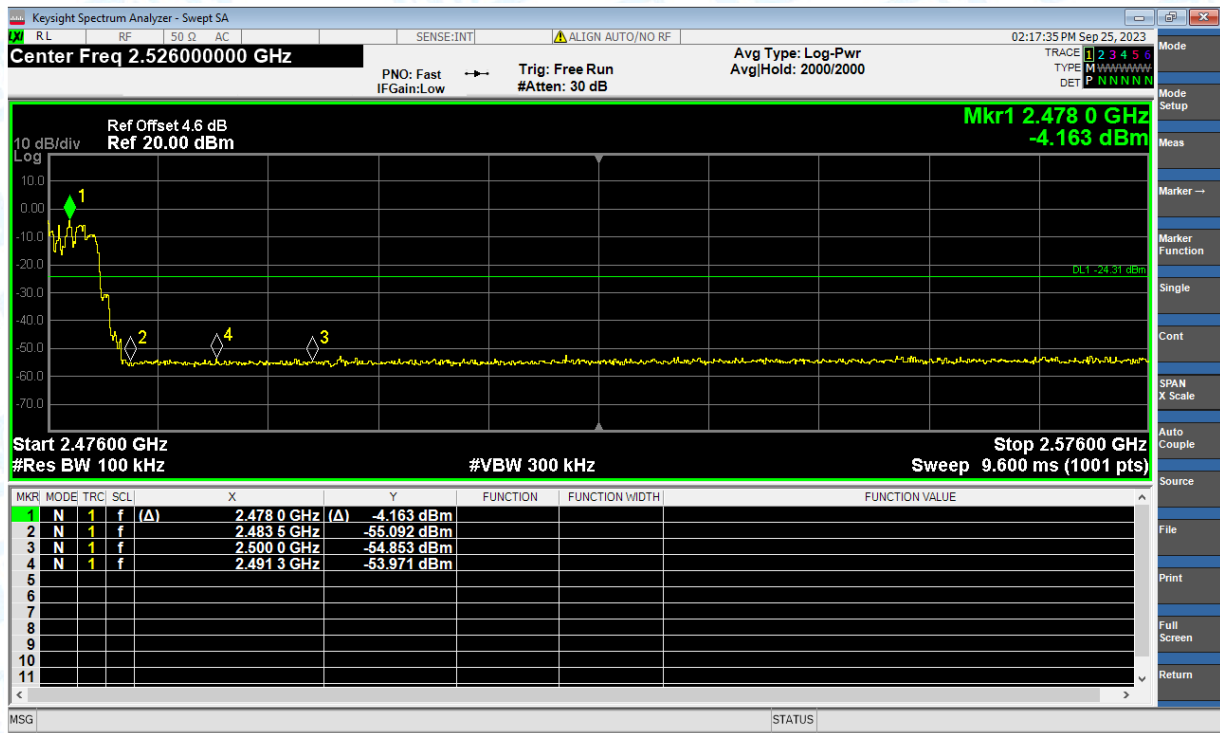
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



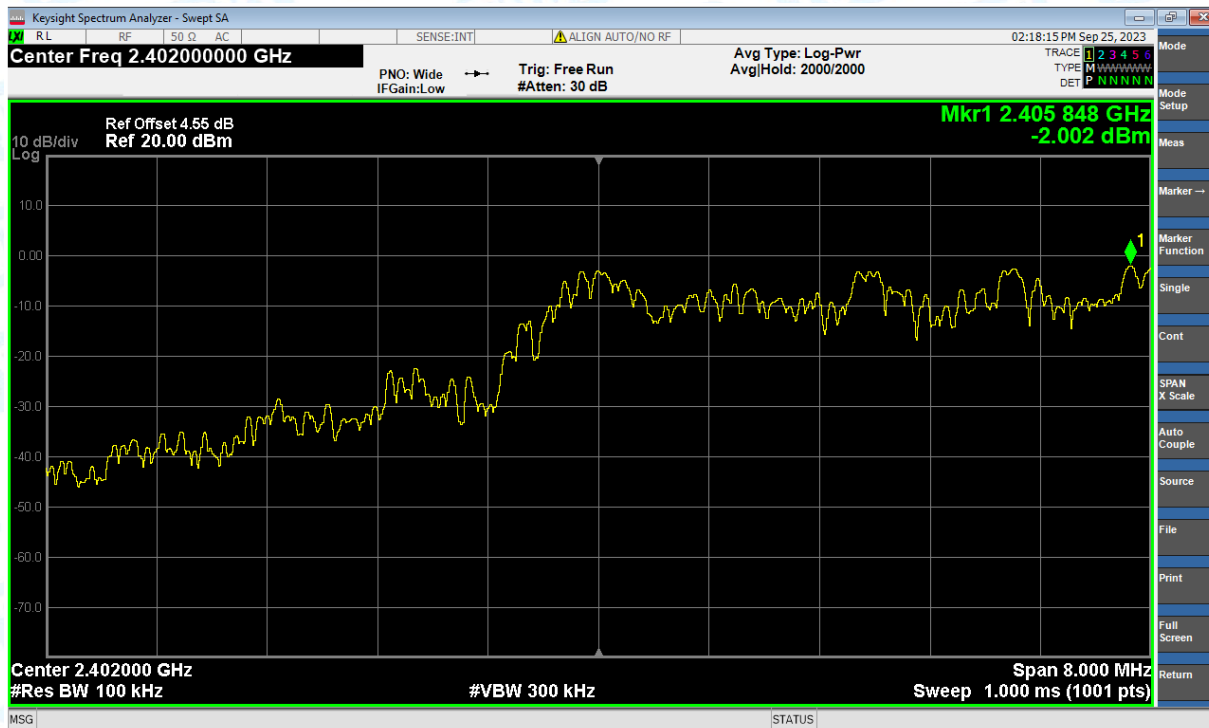
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref



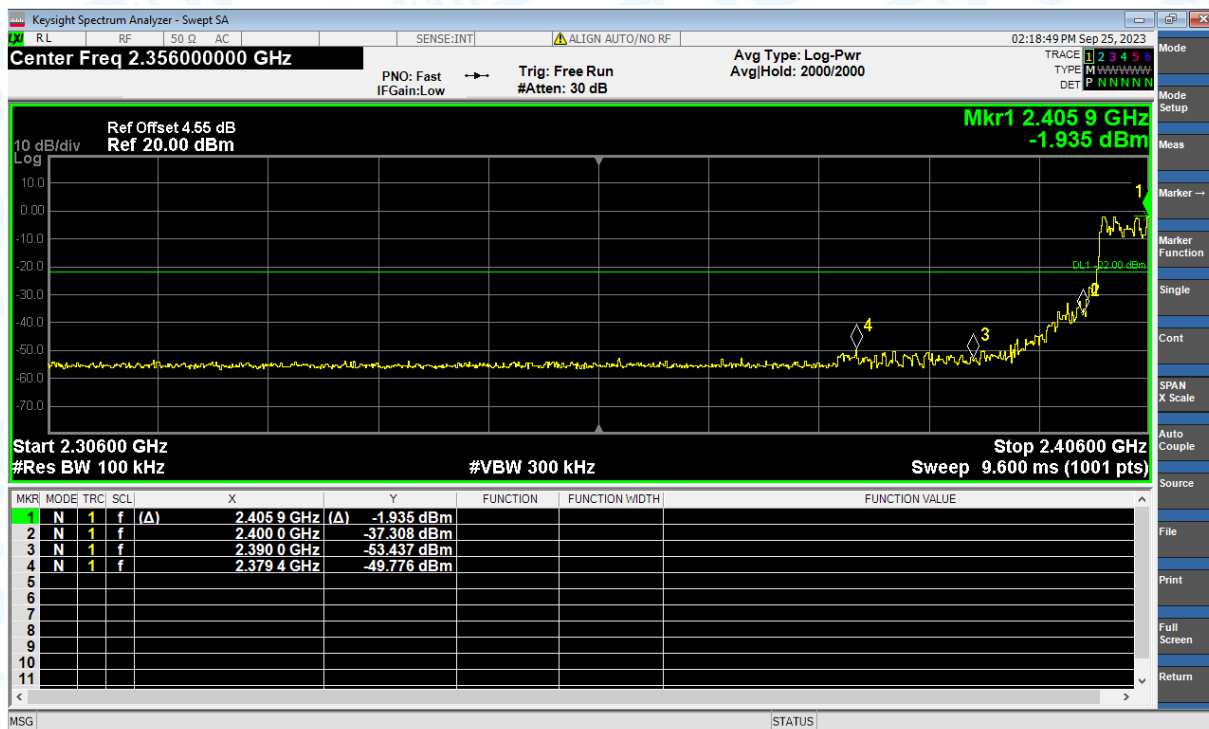
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission



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



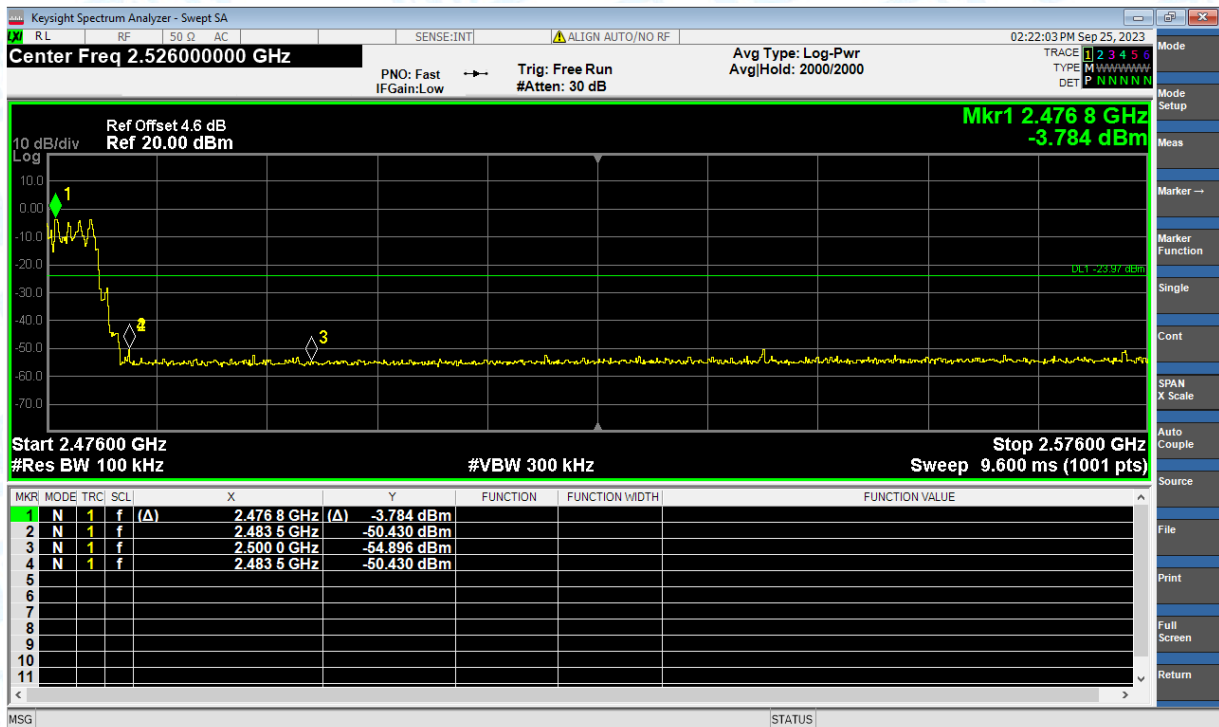
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



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



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

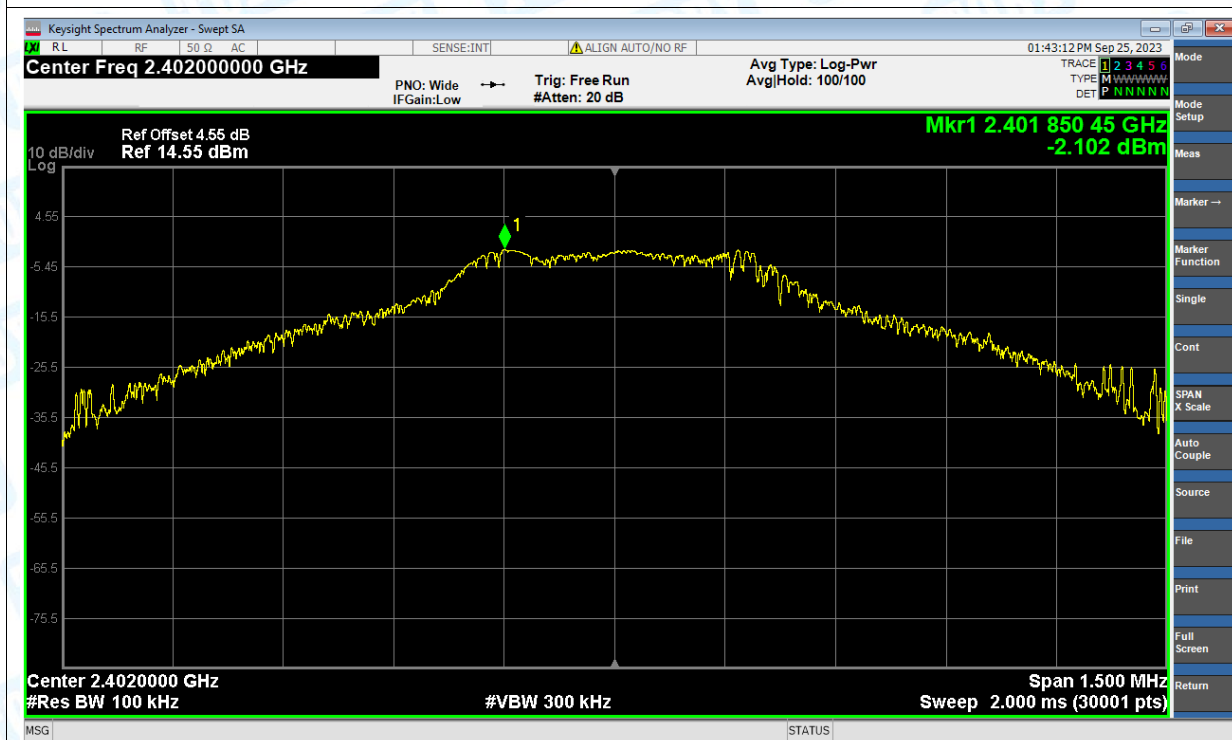


Conducted RF Spurious Emission

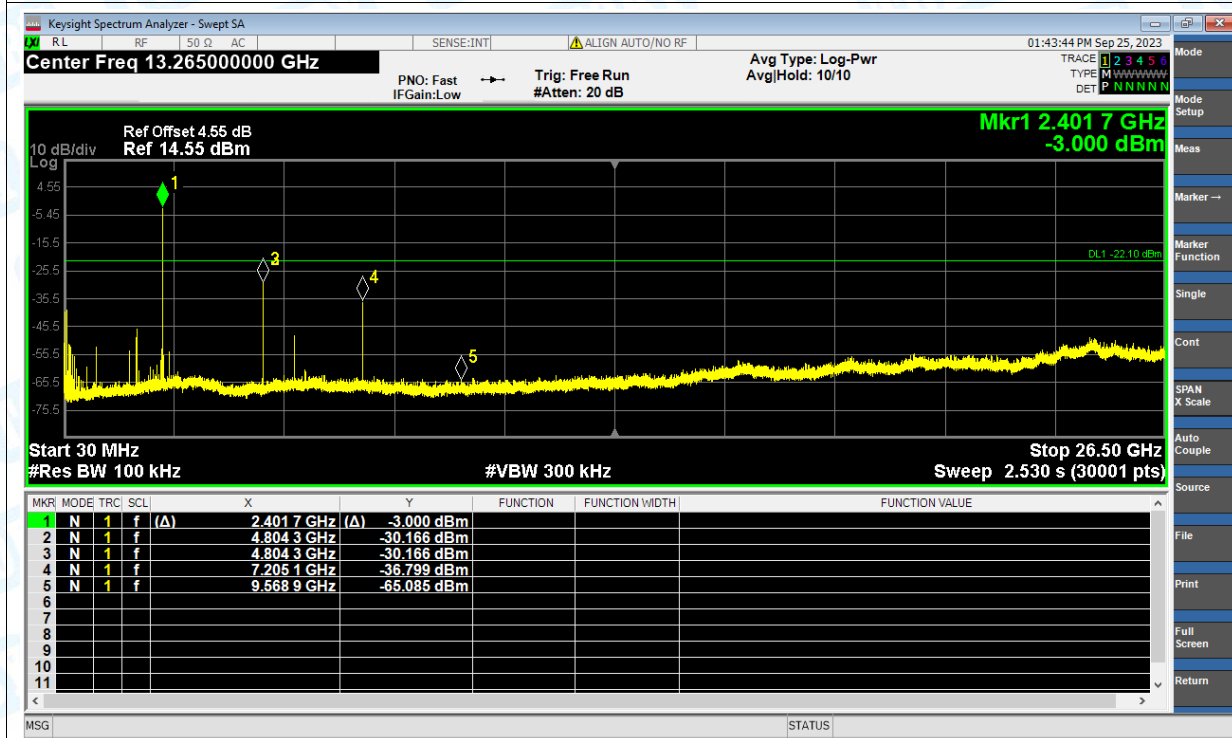
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-28.07	-20	Pass
NVNT	1-DH1	2441	Ant1	-32.75	-20	Pass
NVNT	1-DH1	2480	Ant1	-28.76	-20	Pass
NVNT	2-DH1	2402	Ant1	-32.91	-20	Pass
NVNT	2-DH1	2441	Ant1	-30.3	-20	Pass
NVNT	2-DH1	2480	Ant1	-30.98	-20	Pass
NVNT	3-DH1	2402	Ant1	-27.99	-20	Pass
NVNT	3-DH1	2441	Ant1	-33.79	-20	Pass
NVNT	3-DH1	2480	Ant1	-35.03	-20	Pass

Test Graphs

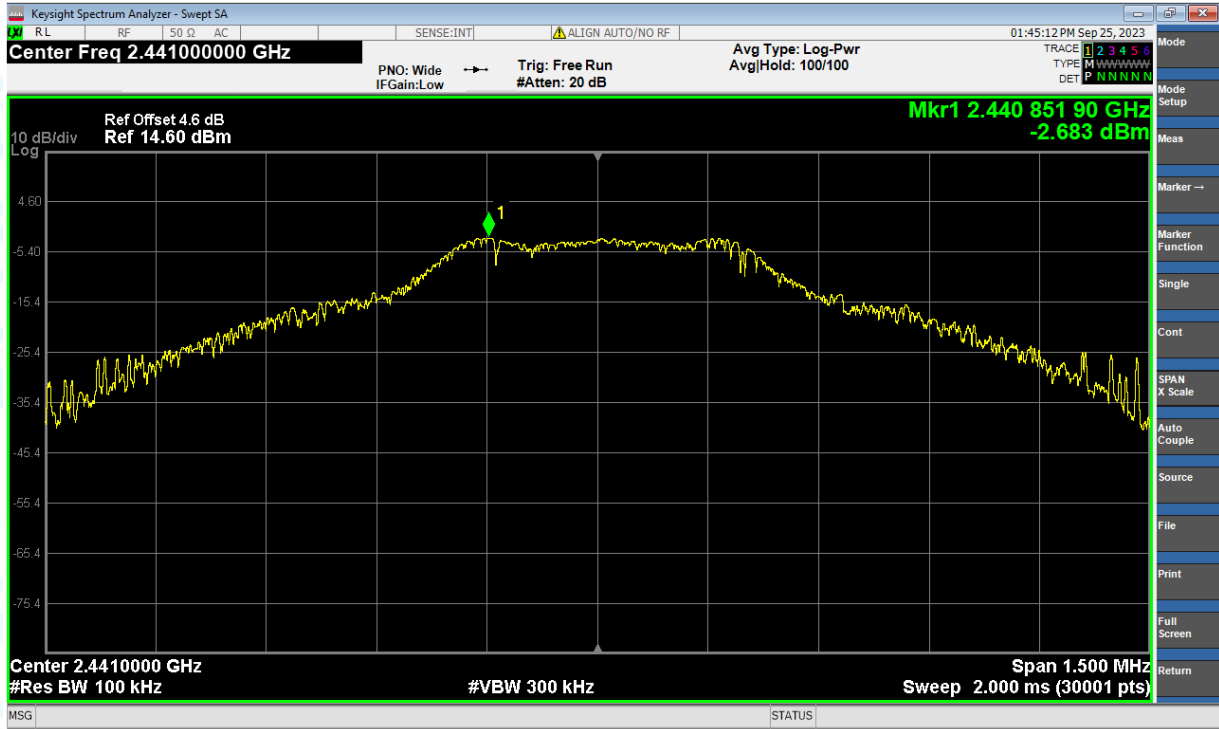
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



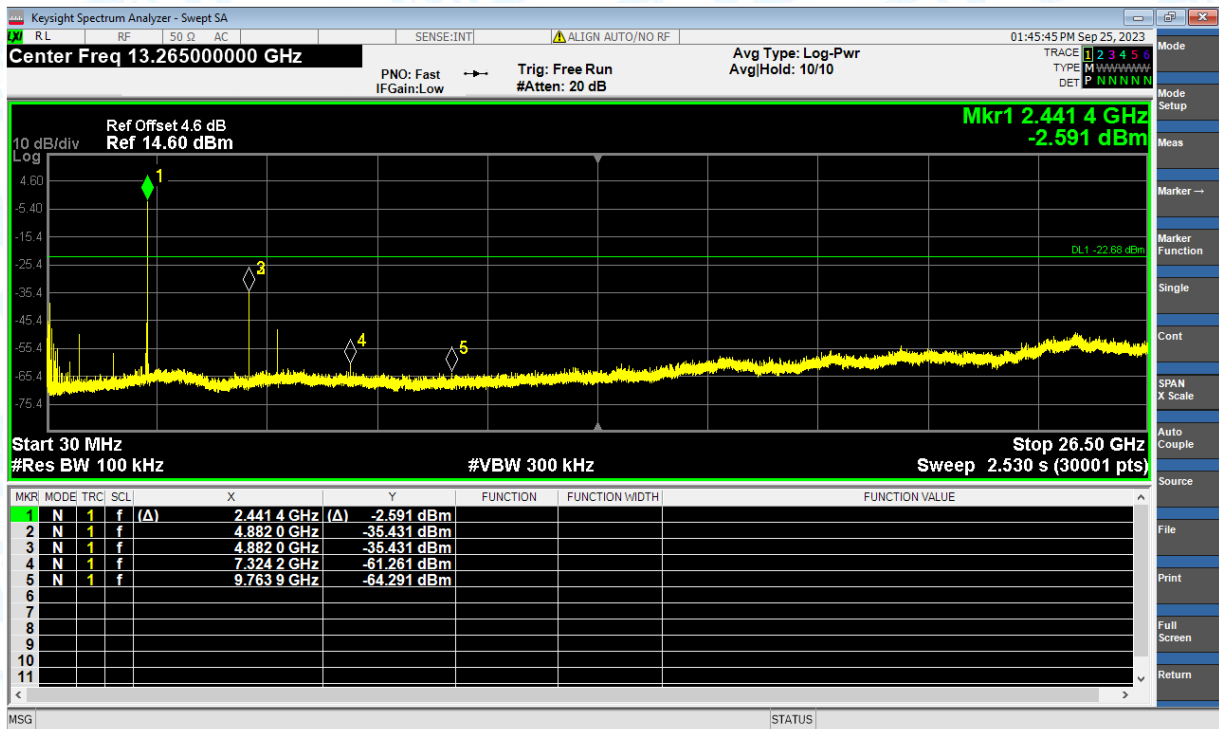
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



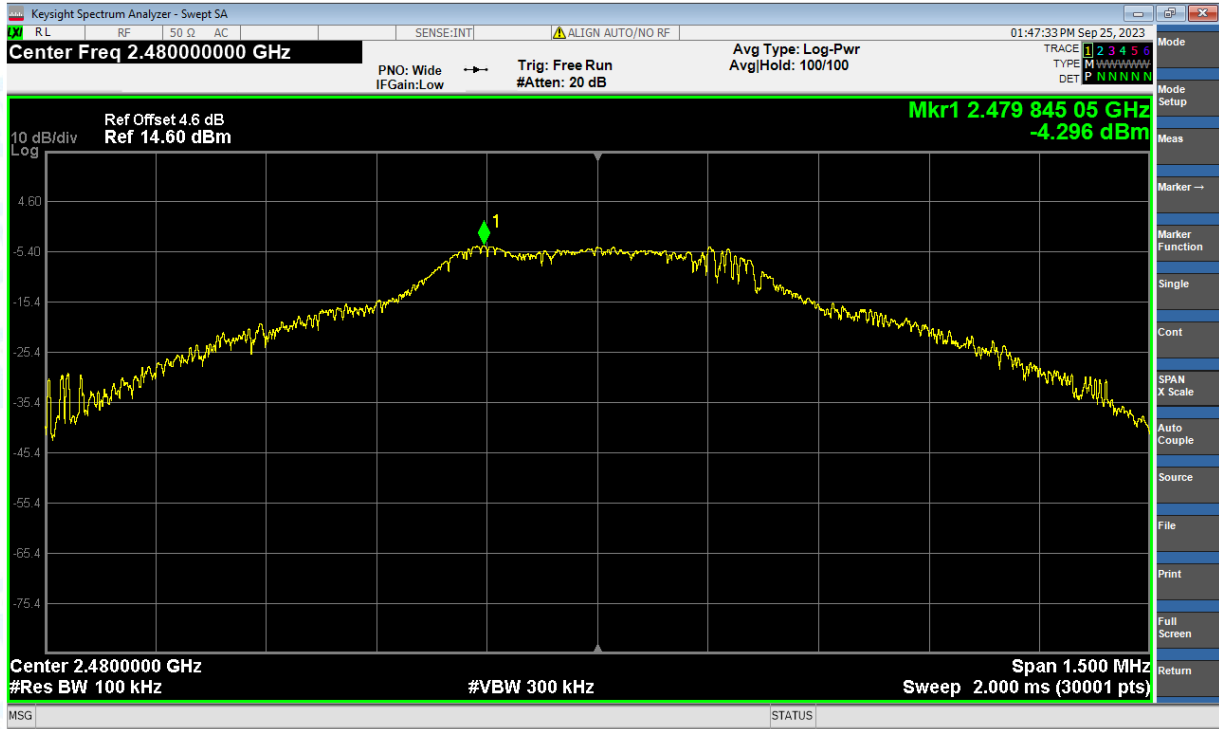
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



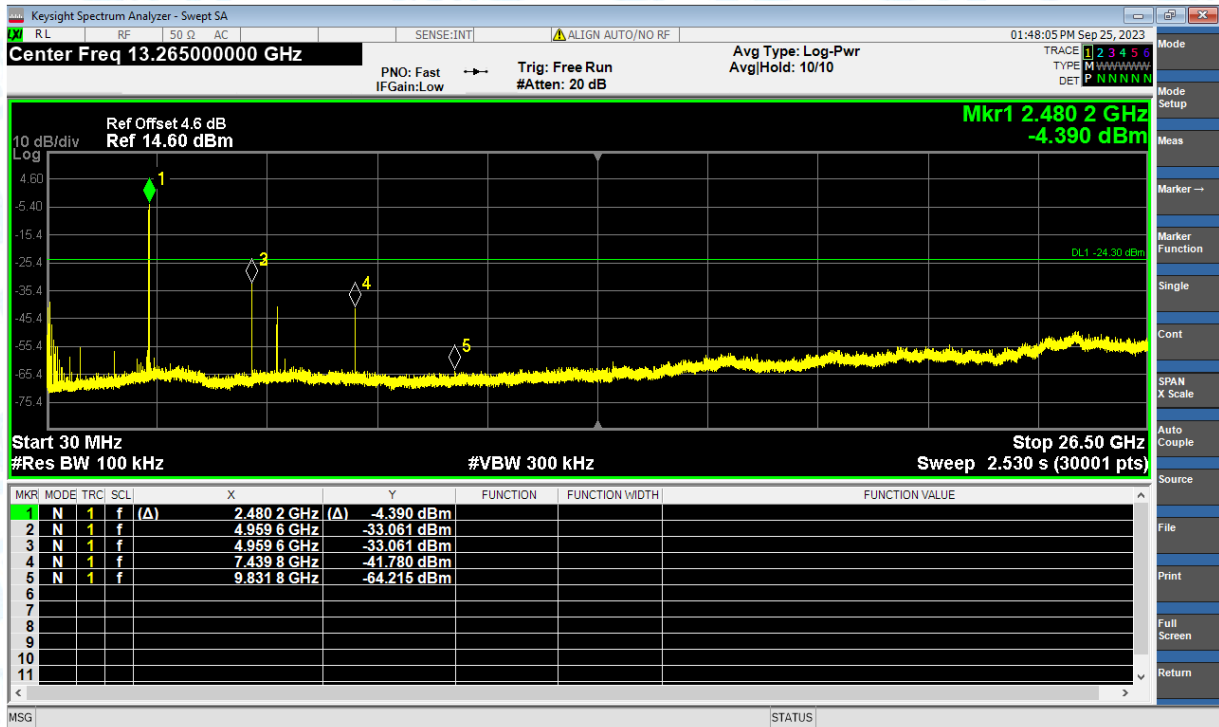
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



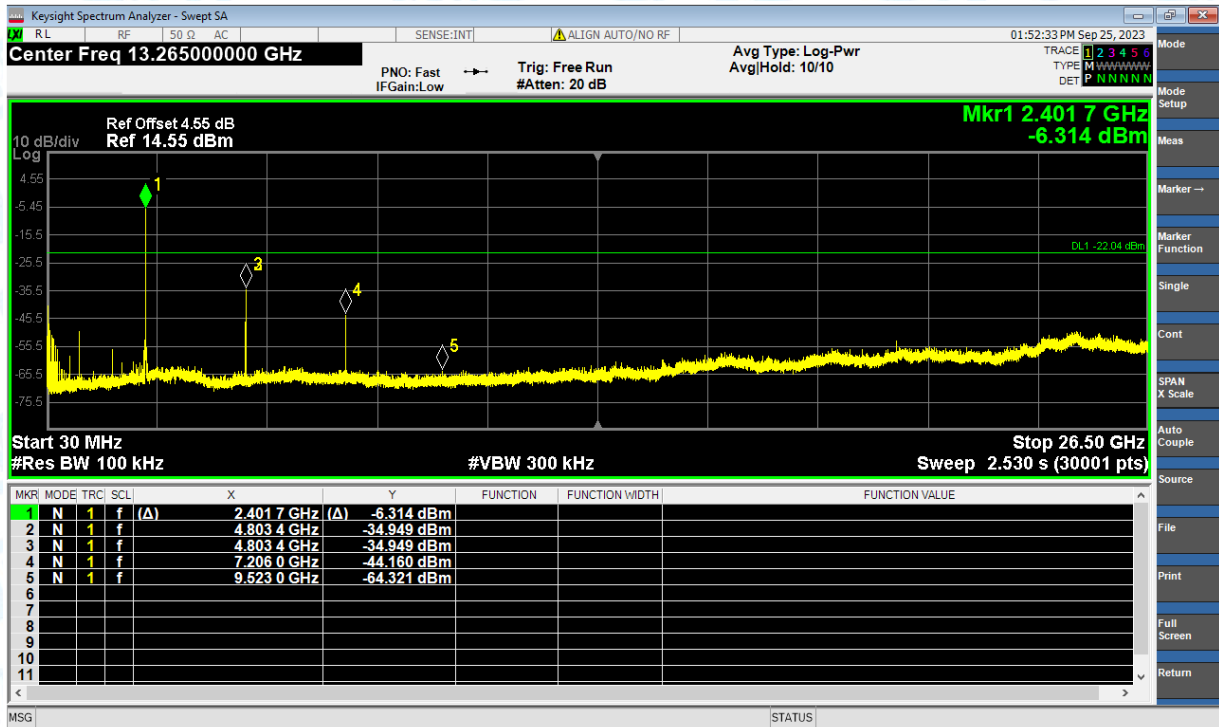
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



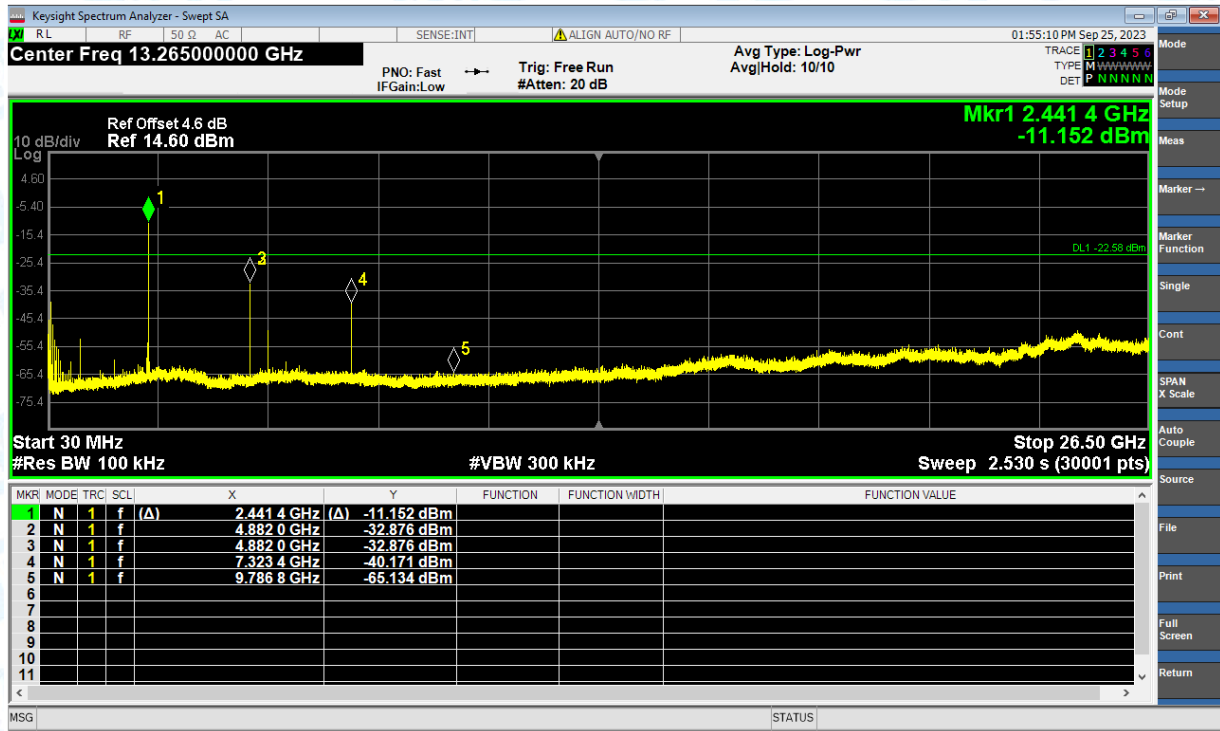
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



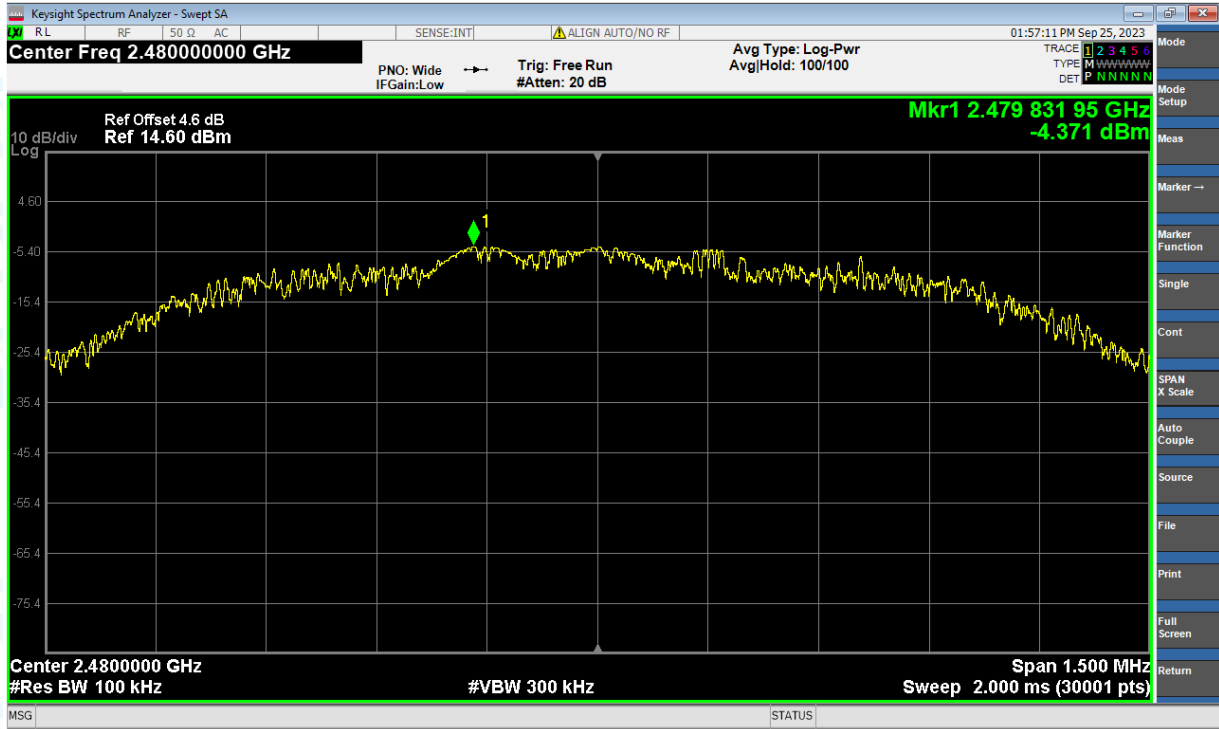
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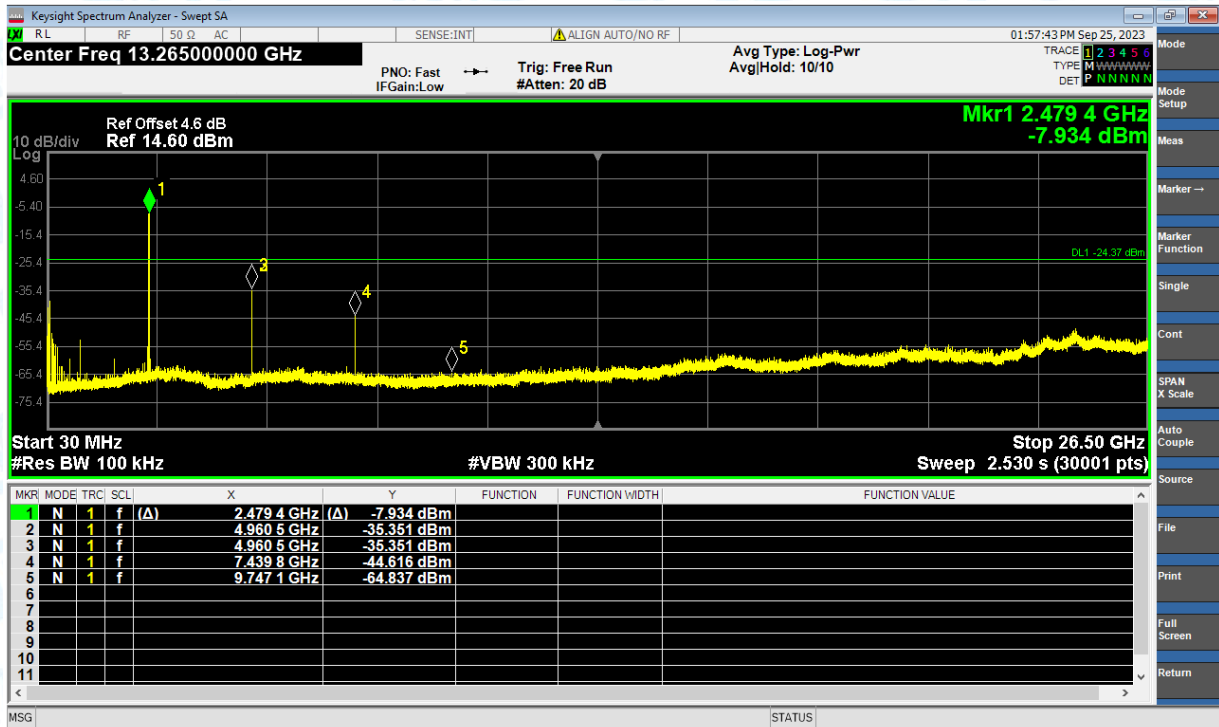
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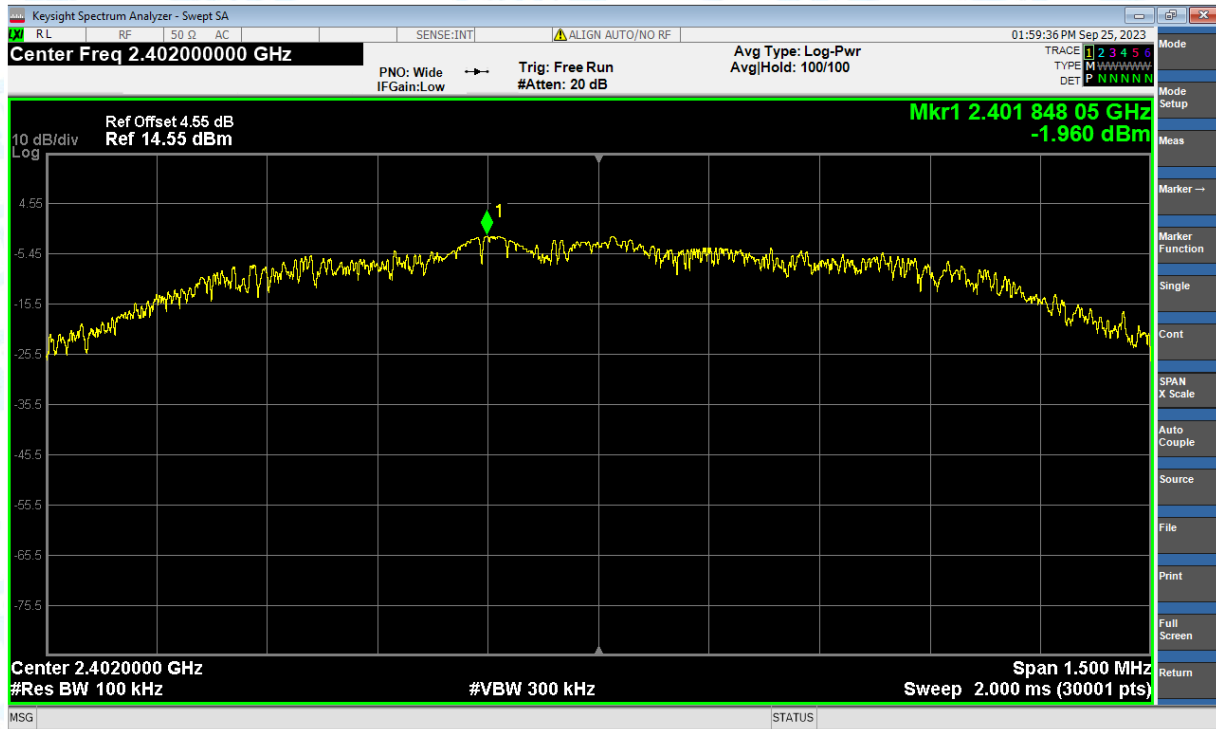
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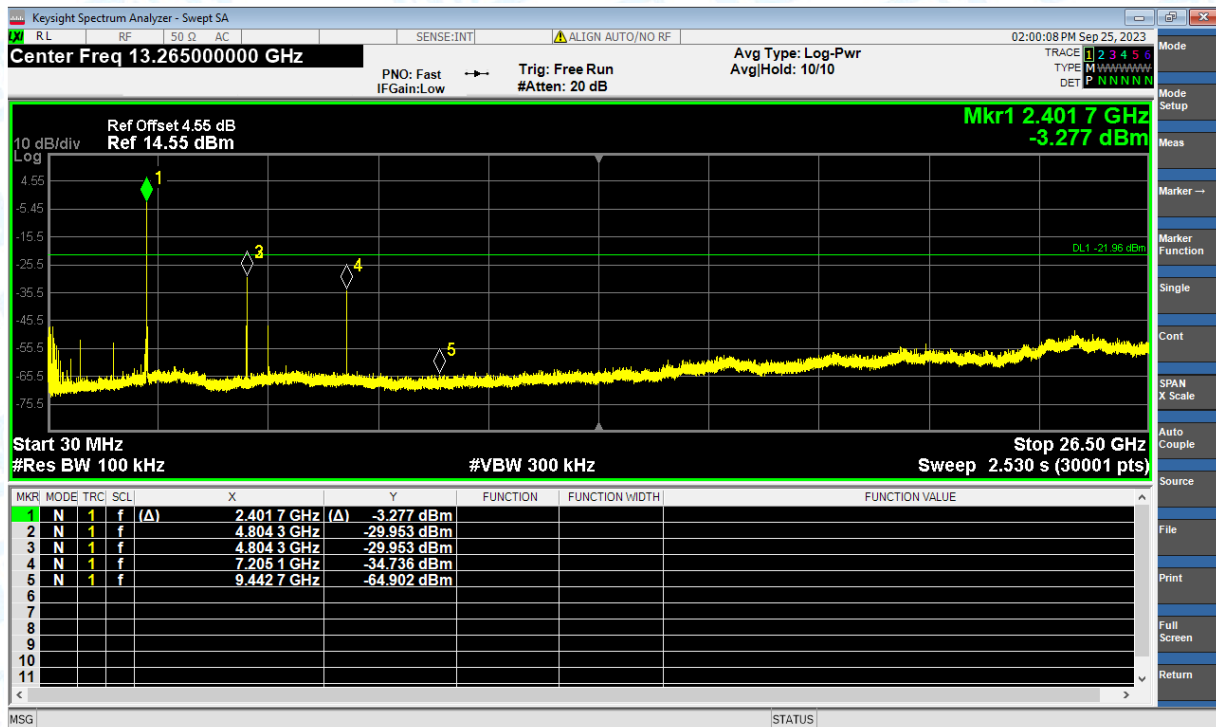
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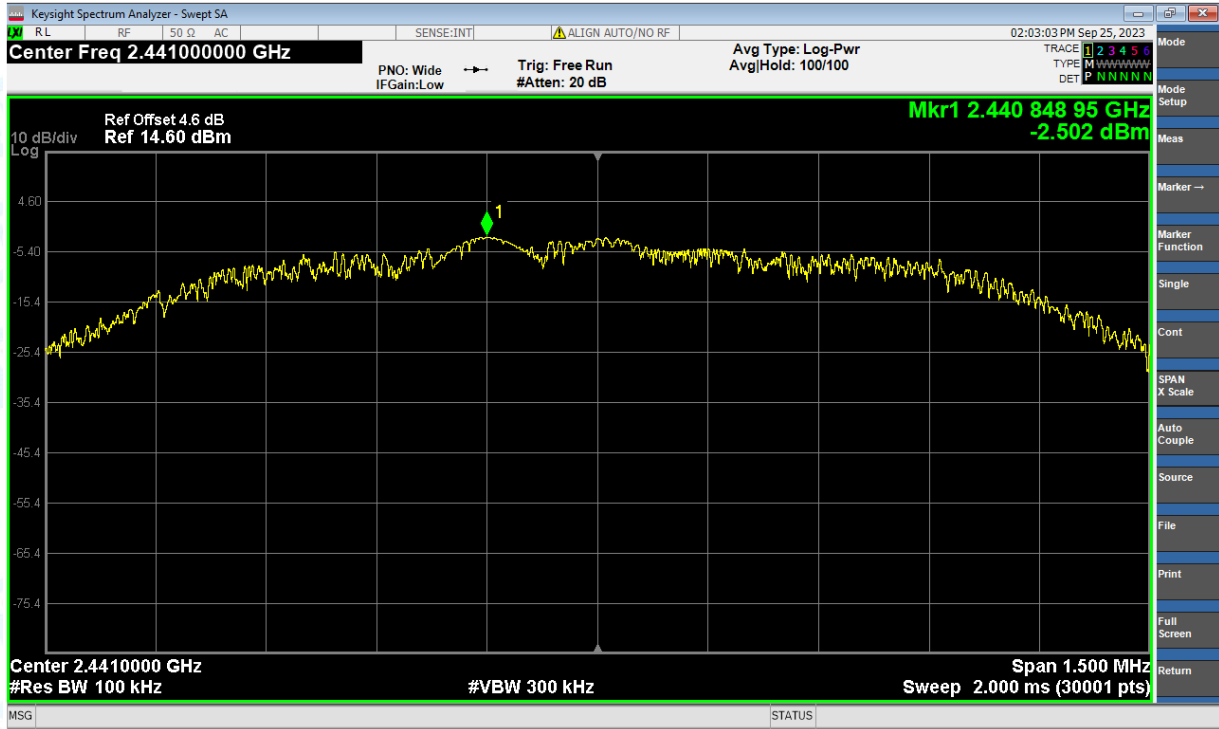
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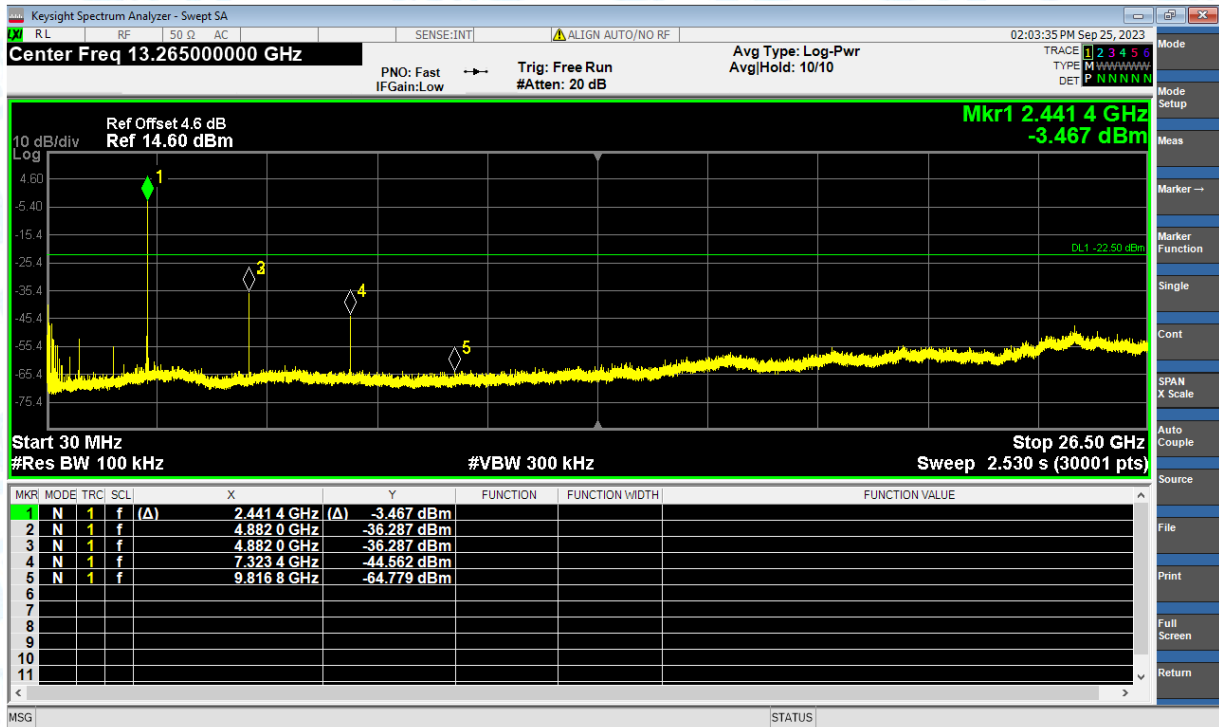
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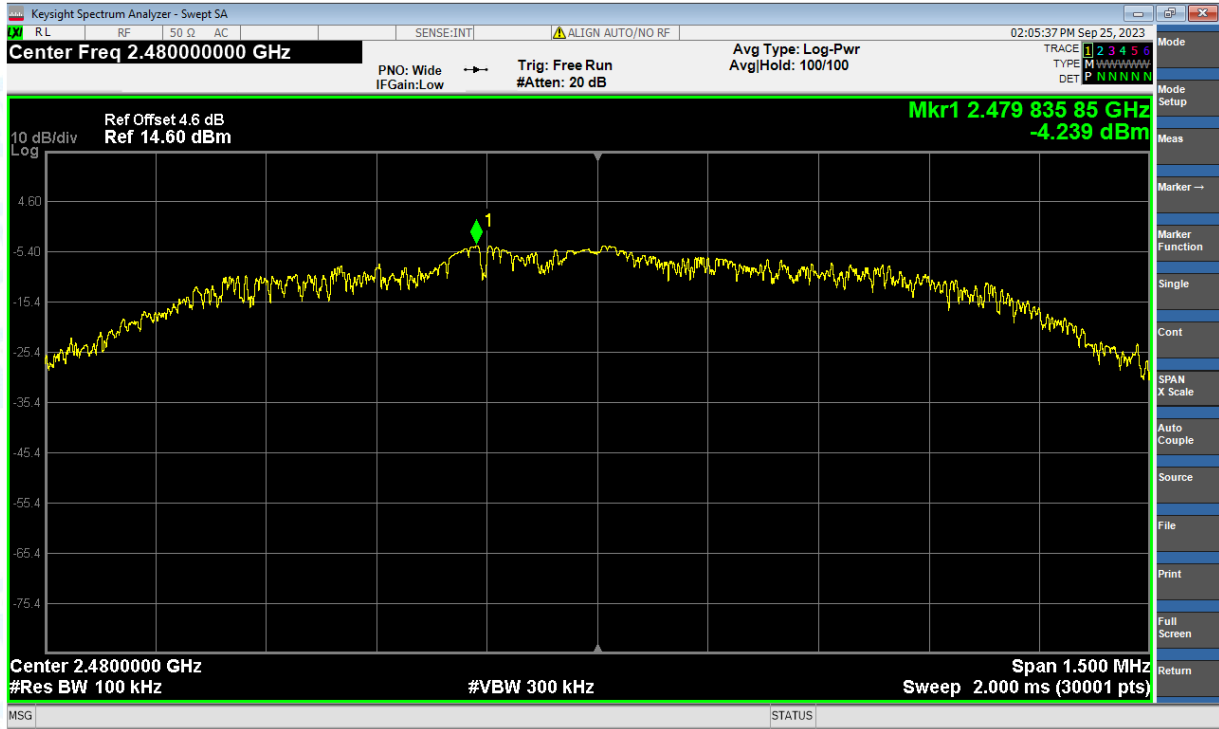
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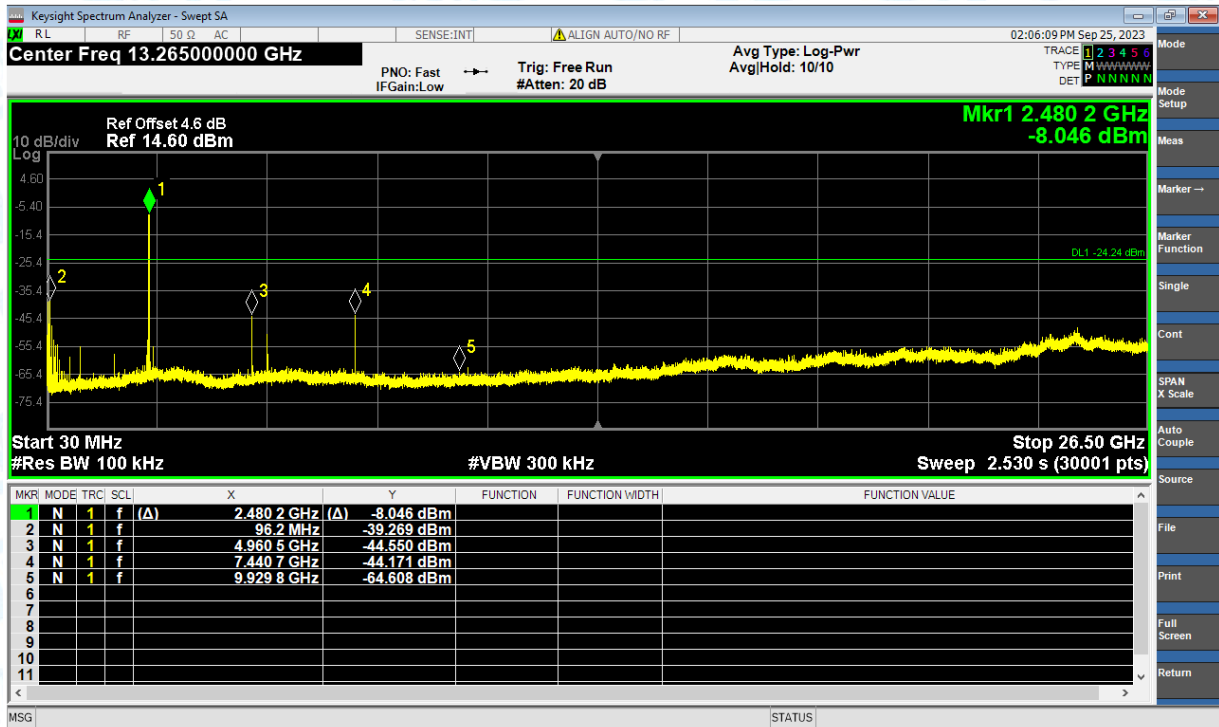
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

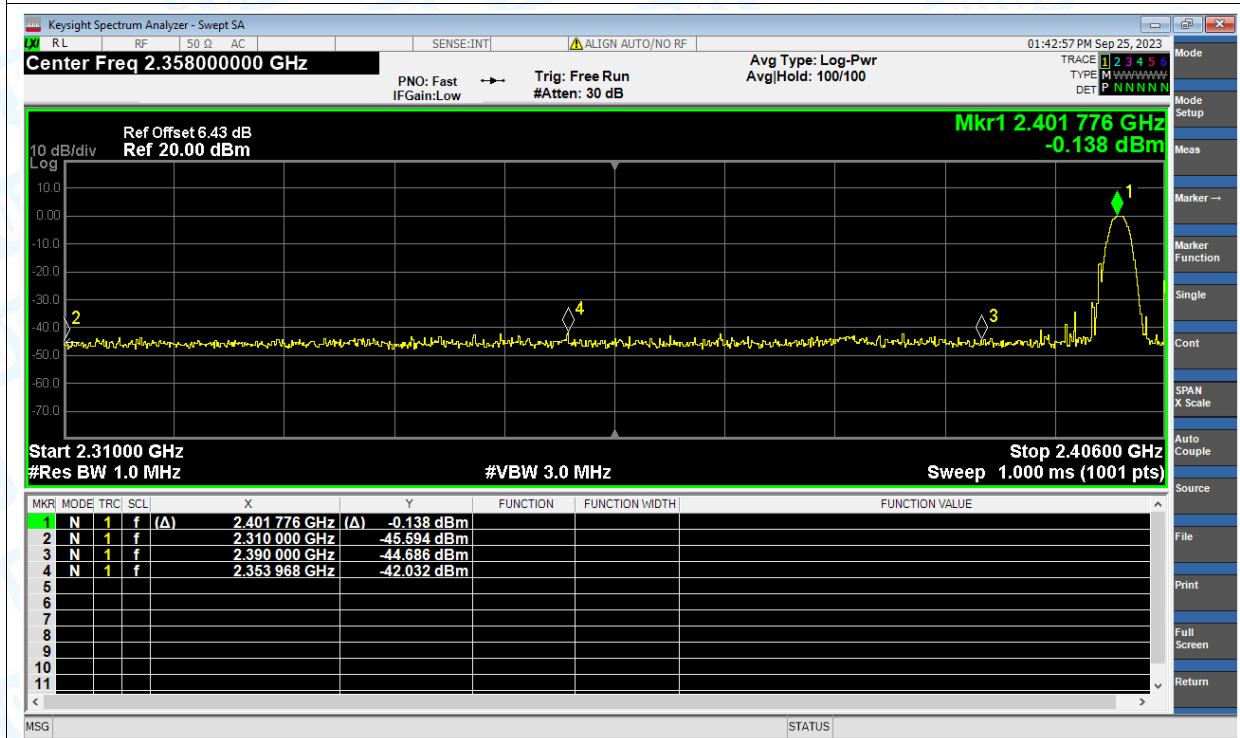


Restrict Band

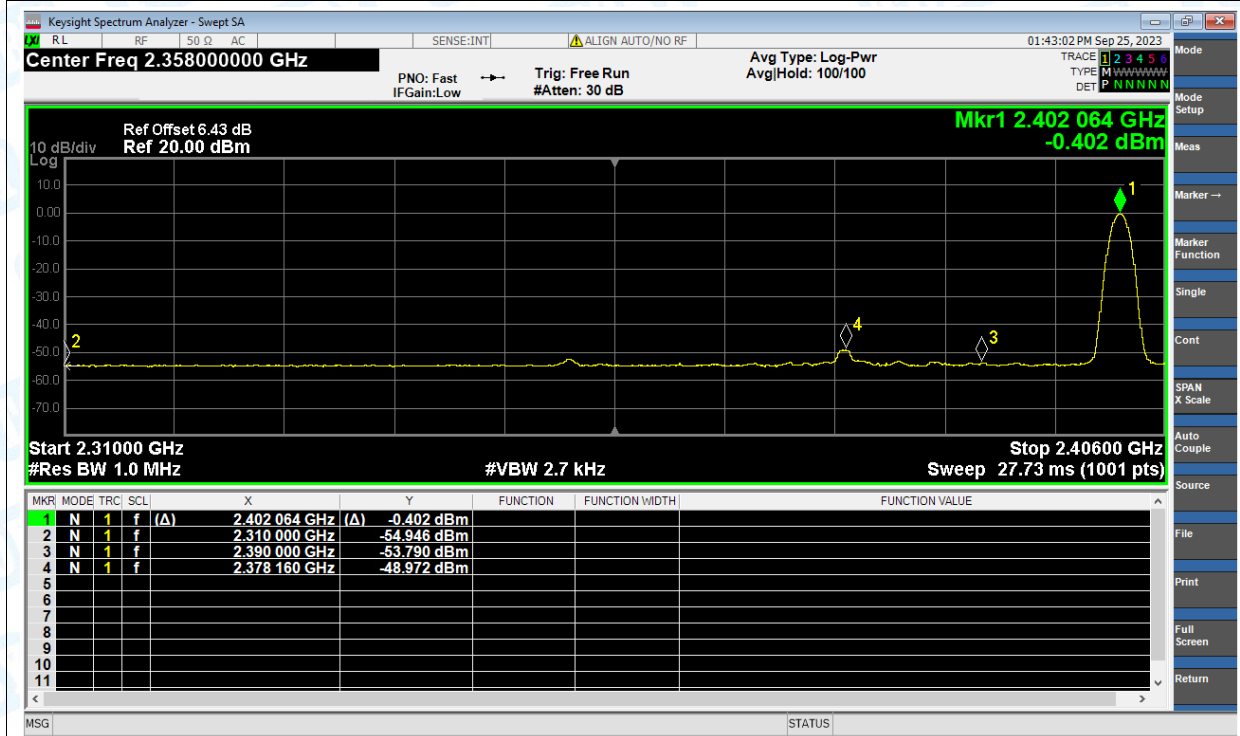
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-45.59	2	51.67	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-54.95	2	42.31	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2353.968	-42.03	2	55.23	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2378.16	-48.97	2	48.29	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-45.85	2	51.41	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-53.82	2	43.44	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-44.72	2	52.54	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-54.72	2	42.54	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2494.768	-42.48	2	54.78	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2499.496	-54.05	2	43.21	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-45.06	2	52.2	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-54.54	2	42.72	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-44.32	2	52.94	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-54.86	2	42.4	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2389.488	-40.76	2	56.5	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2378.064	-47.56	2	49.7	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-40.88	2	56.38	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-52.89	2	44.37	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-41.89	2	55.37	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-52.93	2	44.33	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.584	-40.15	2	57.11	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.536	-52.75	2	44.51	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-44.75	2	52.51	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-54.16	2	43.1	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-43.82	2	53.44	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-54.89	2	42.37	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2388.432	-36.94	2	60.32	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2378.064	-47.73	2	49.53	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-37.58	2	59.68	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-52.6	2	44.66	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-39.94	2	57.32	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-52.74	2	44.52	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.608	-39.06	2	58.2	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.512	-52.74	2	44.52	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-45.7	2	51.56	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-54.07	2	43.19	Average	54	Pass

Test Graphs

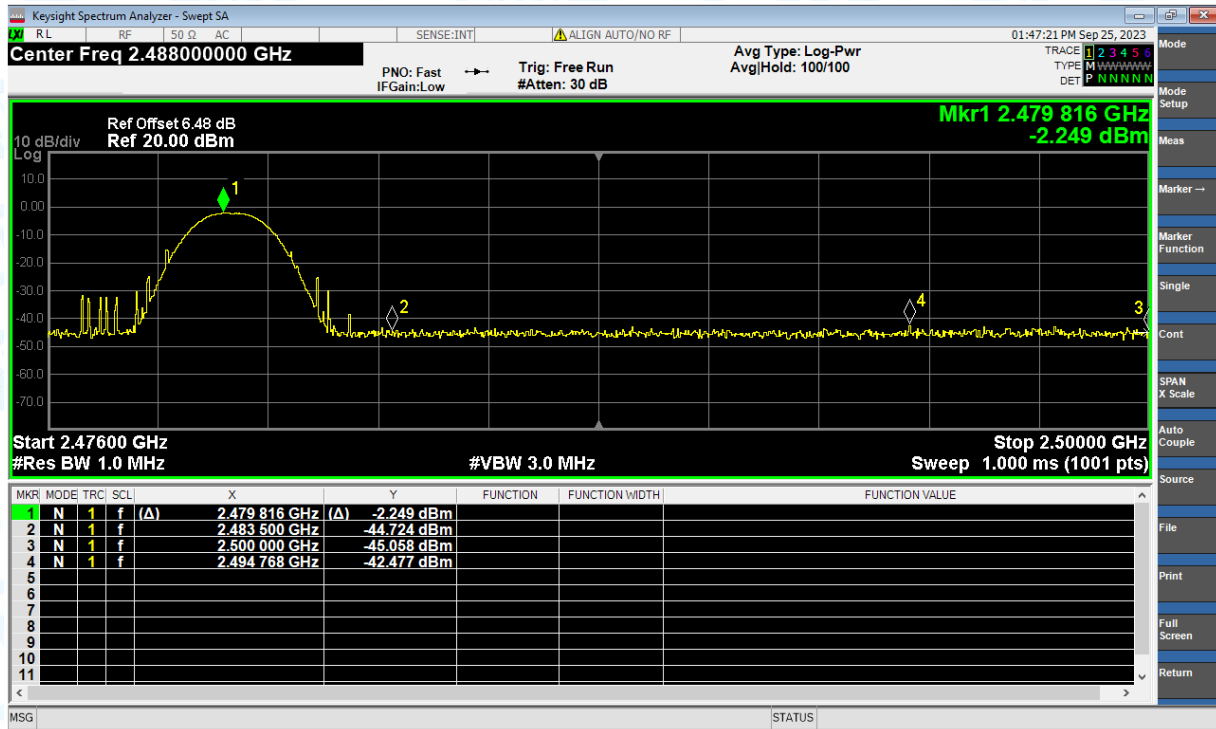
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



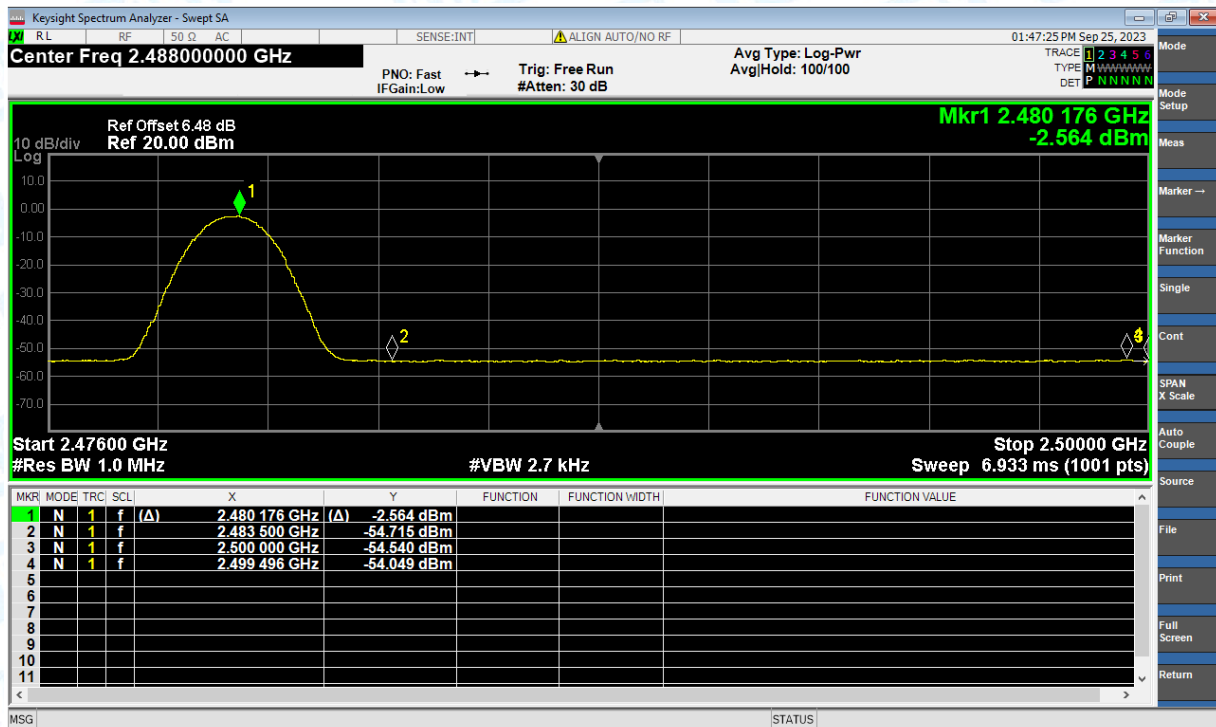
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



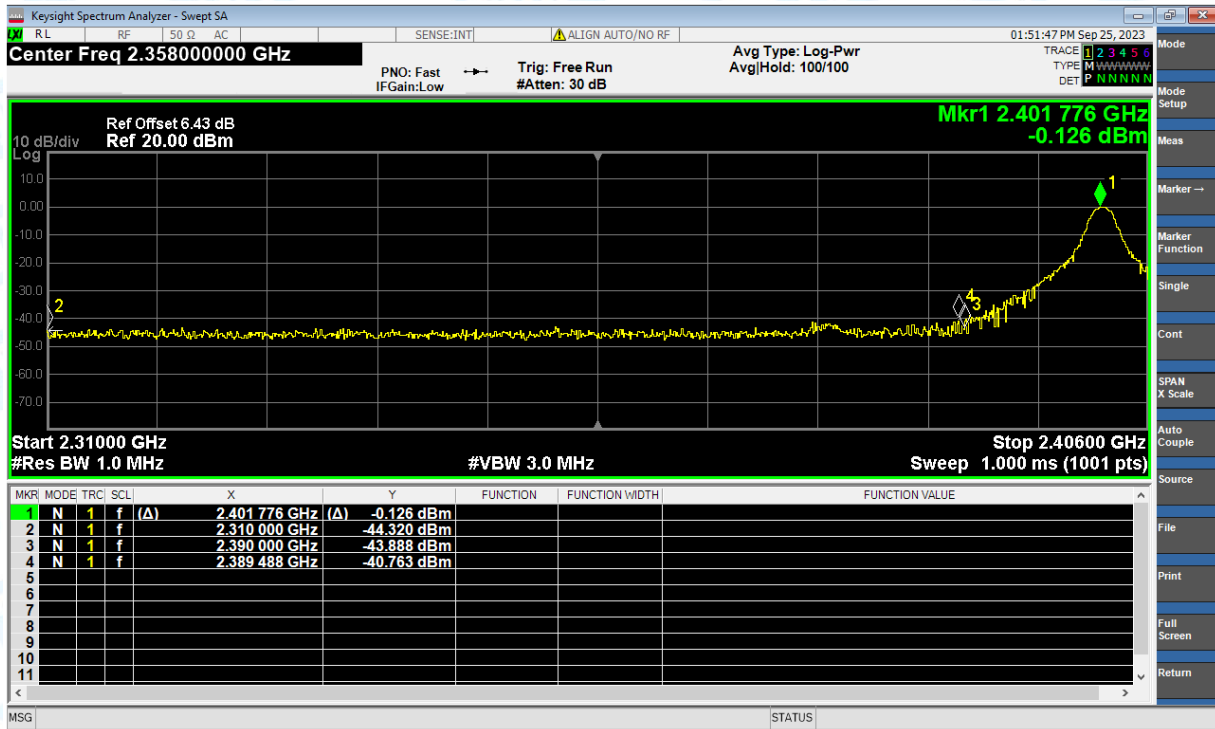
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



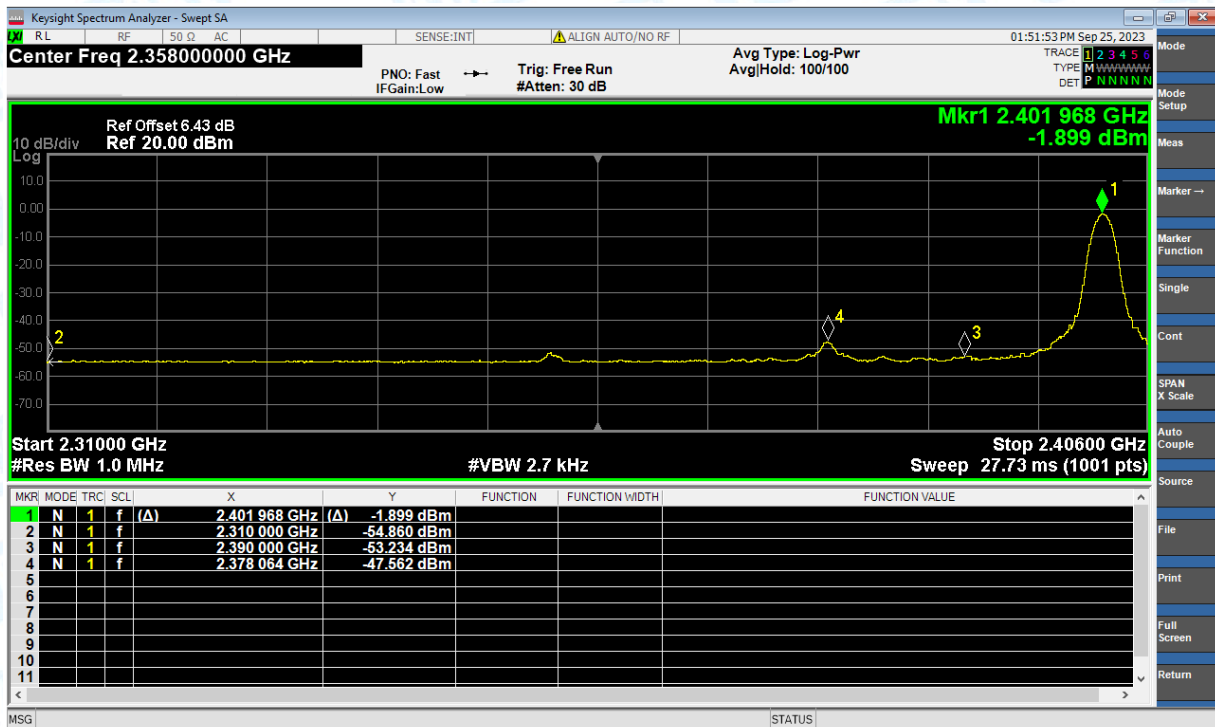
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



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



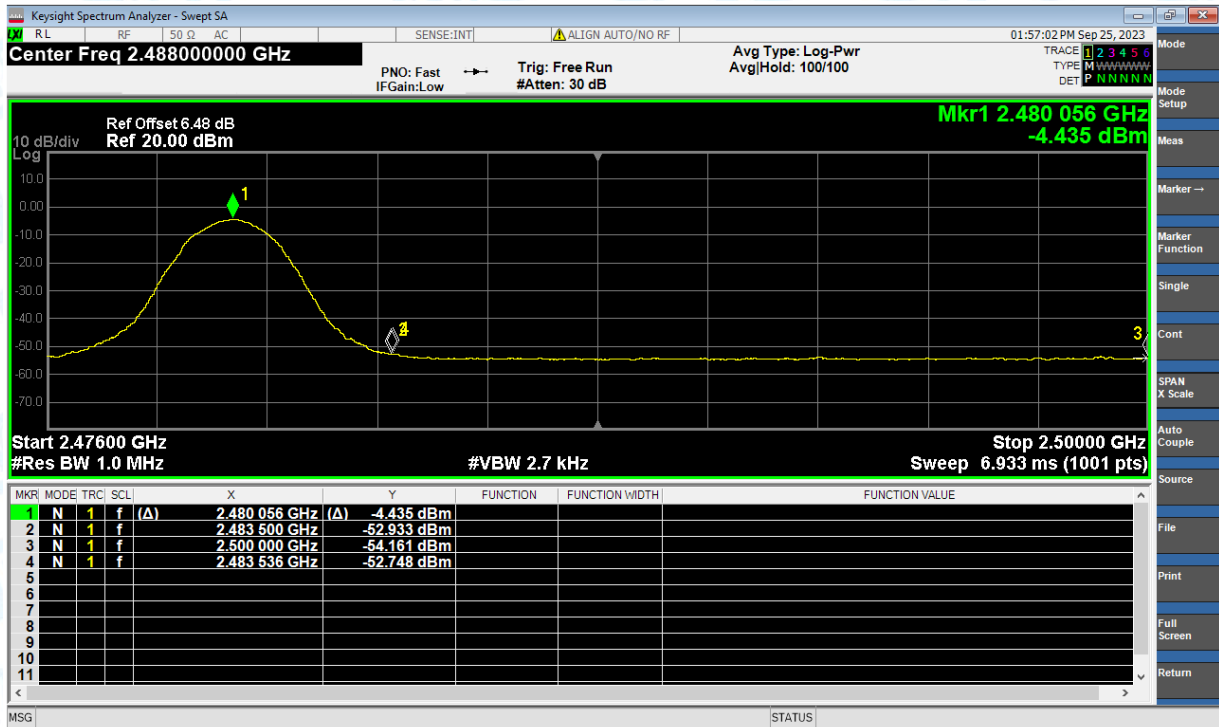
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



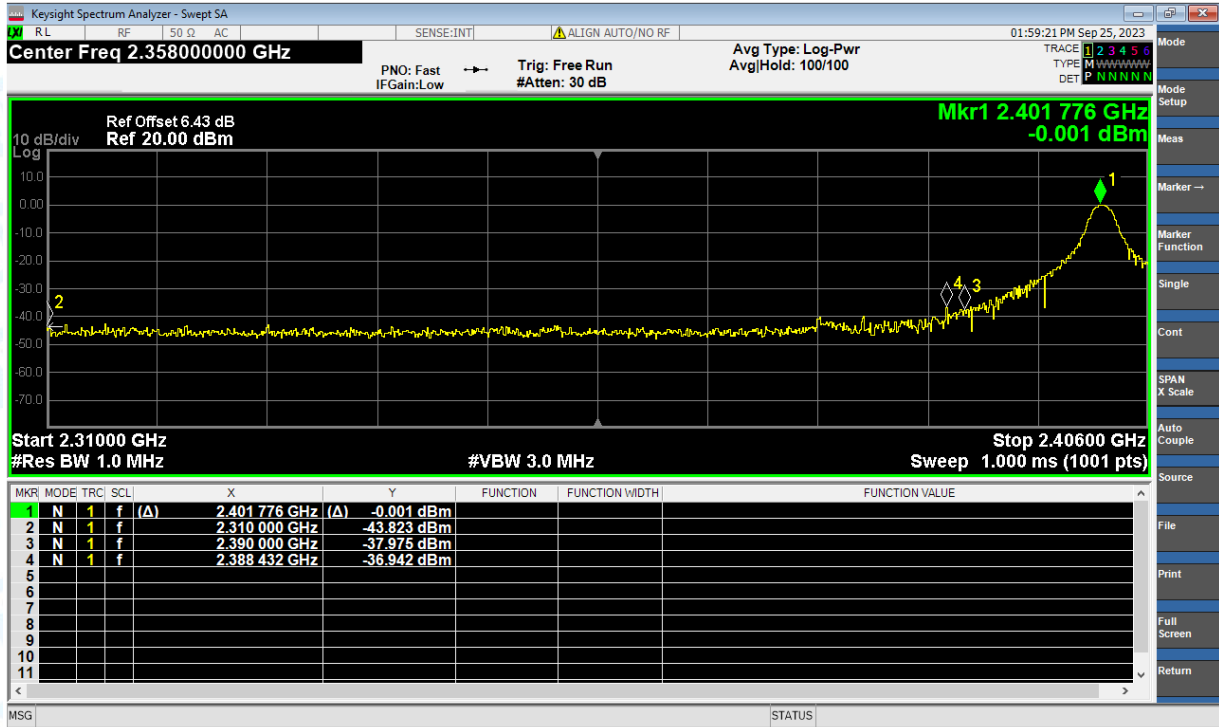
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



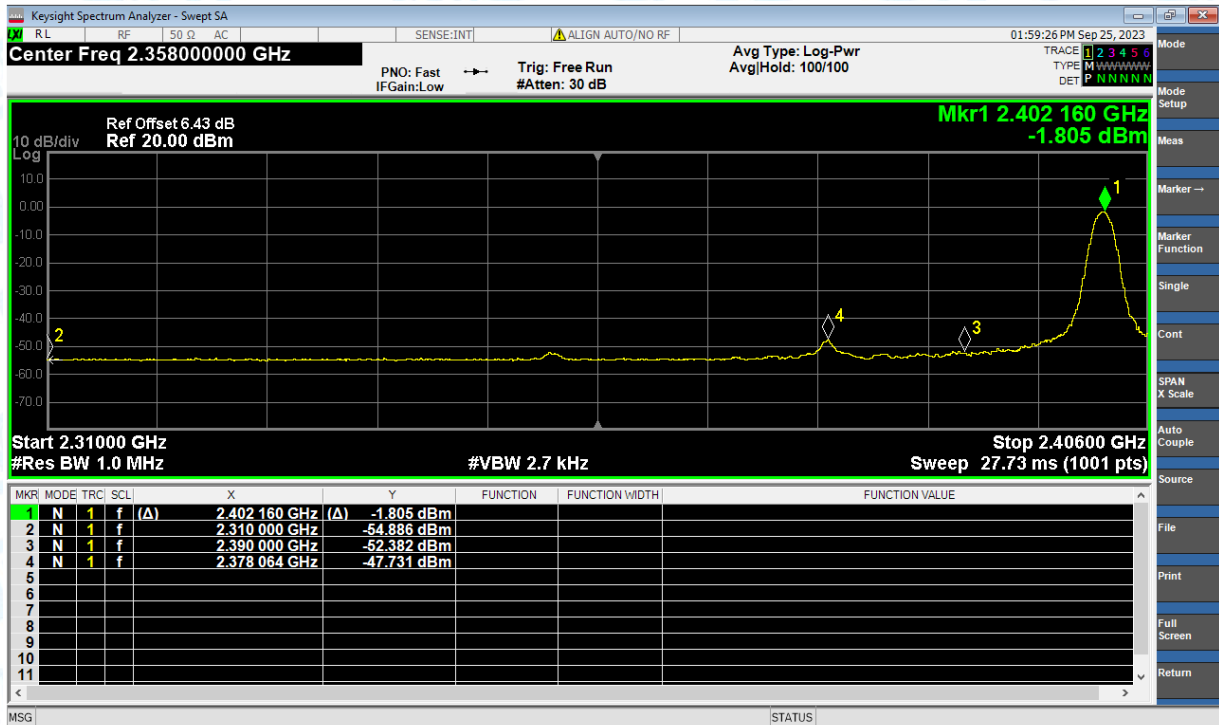
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



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



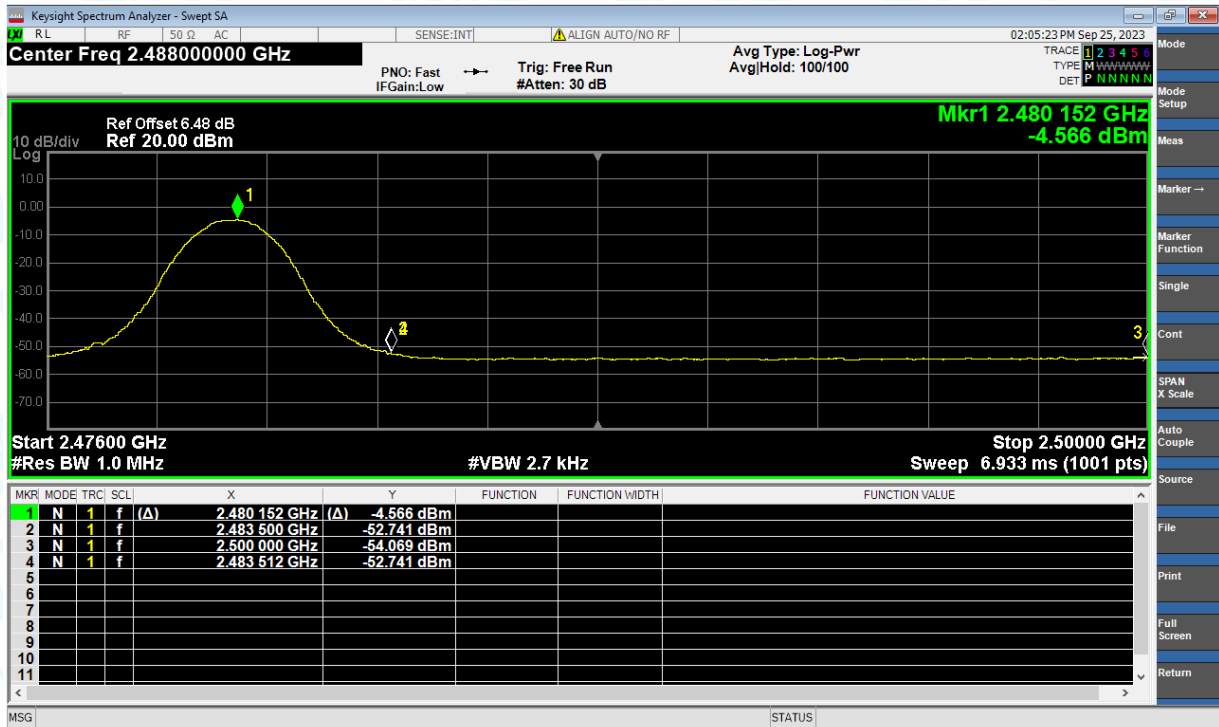
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



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



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



Carrier Frequencies Separation

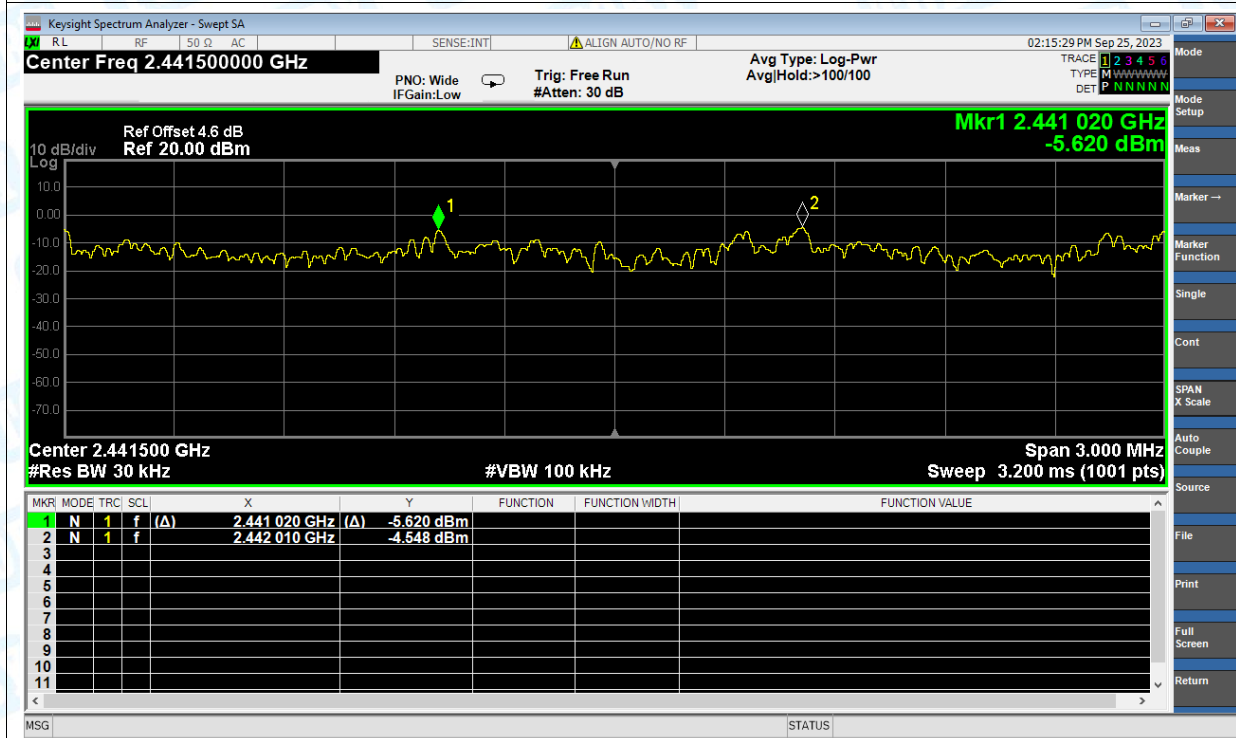
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2441.014	2441.959	0.945	0.593	Pass
NVNT	2-DH1	Ant1	2441.02	2442.01	0.99	0.94	Pass
NVNT	3-DH1	Ant1	2440.846	2441.866	1.02	0.907	Pass

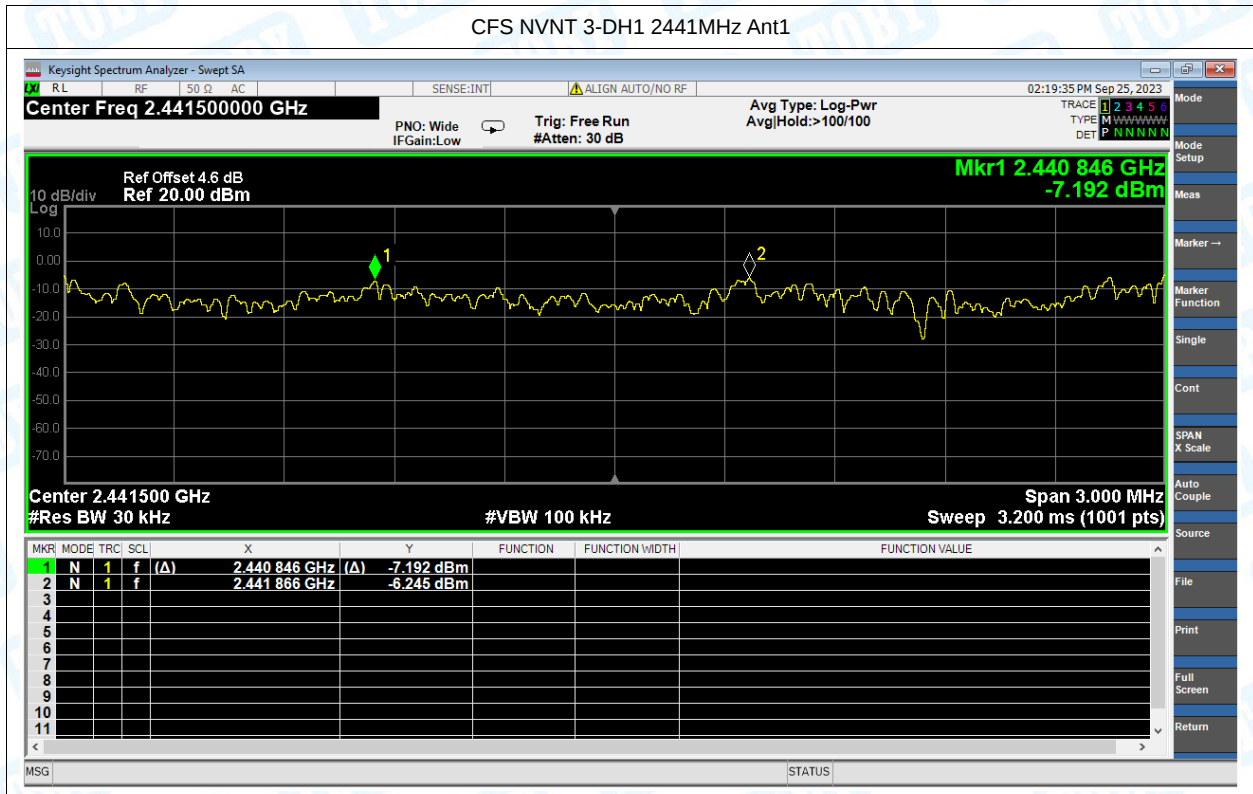
Test Graphs

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



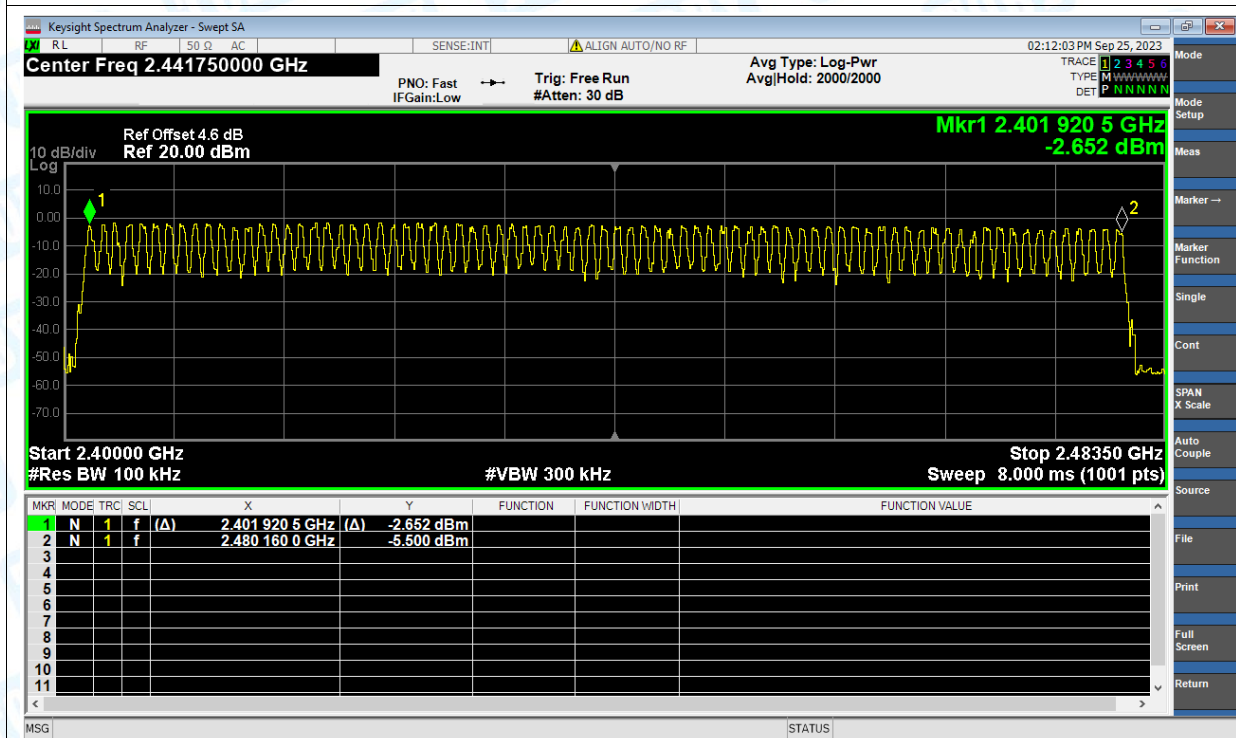


Number of Hopping Channel

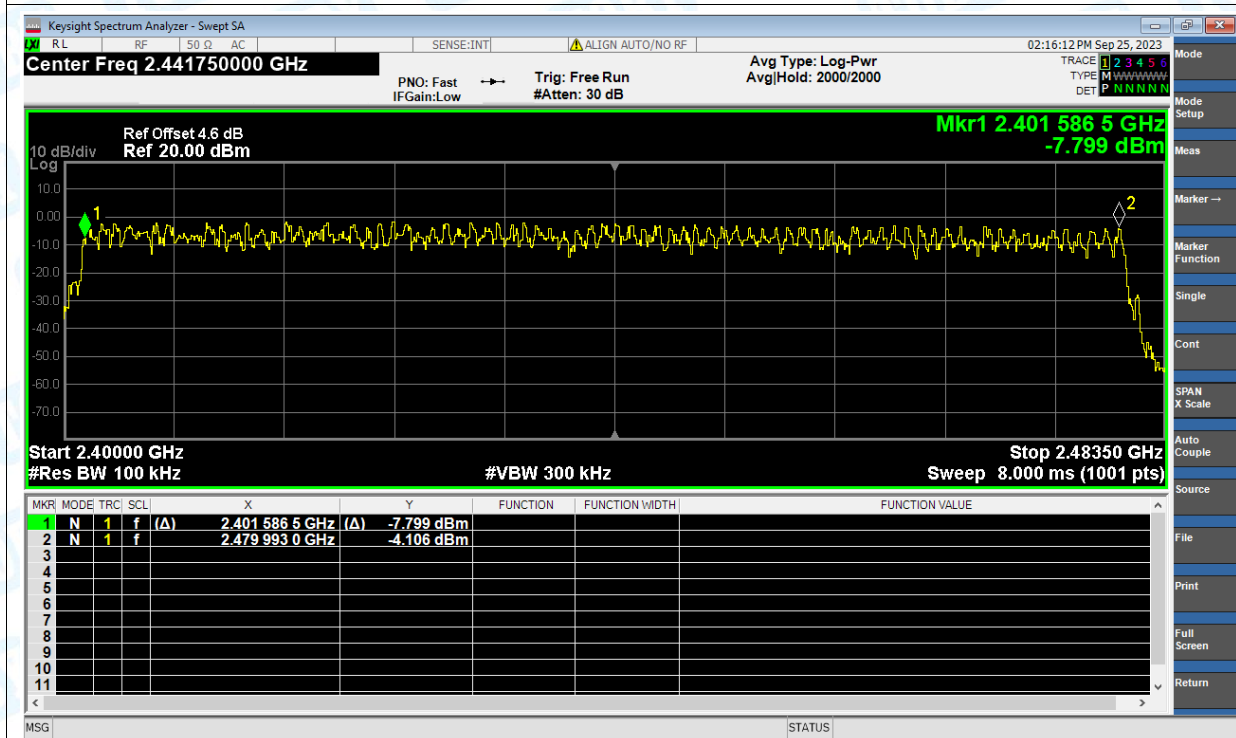
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

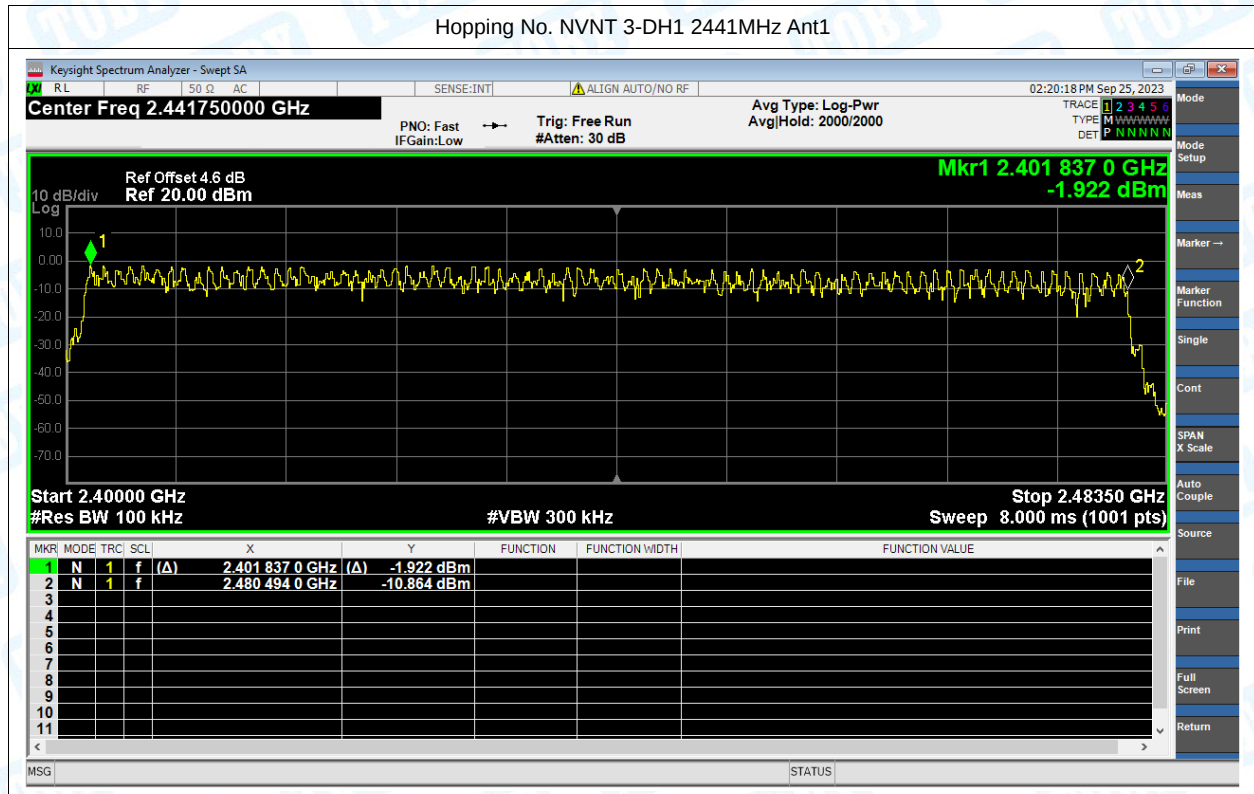
Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



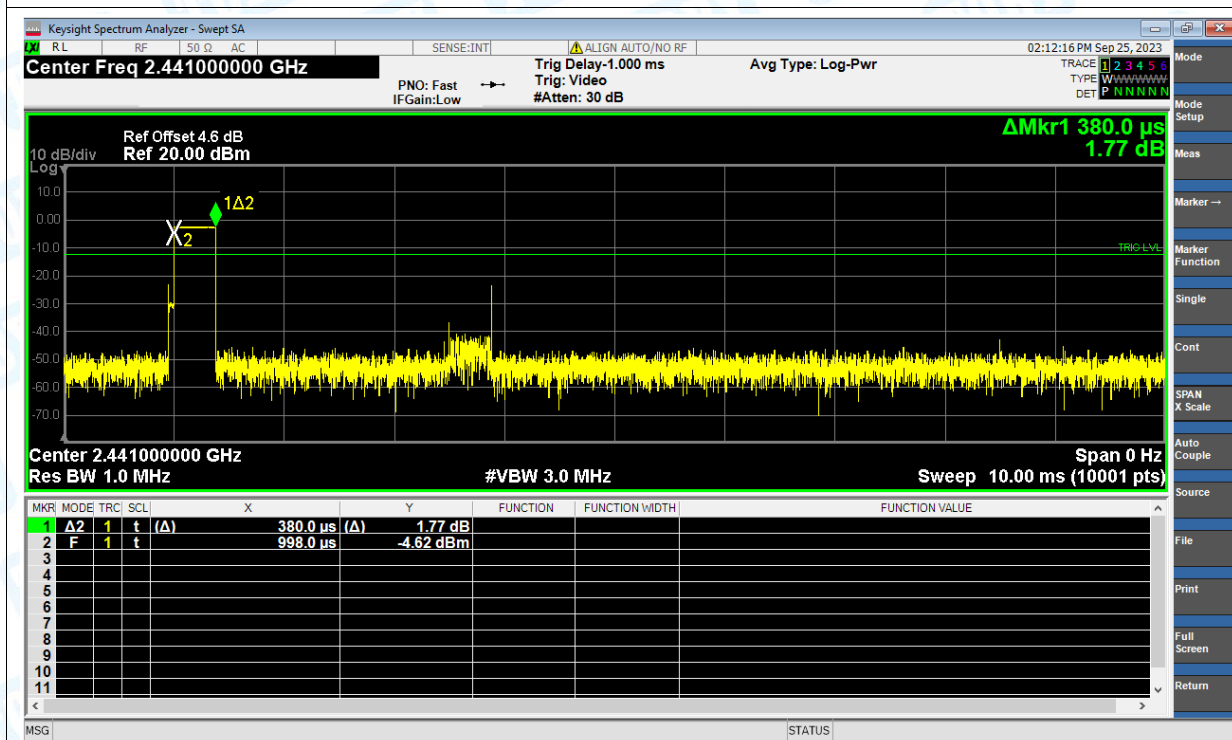


Dwell Time

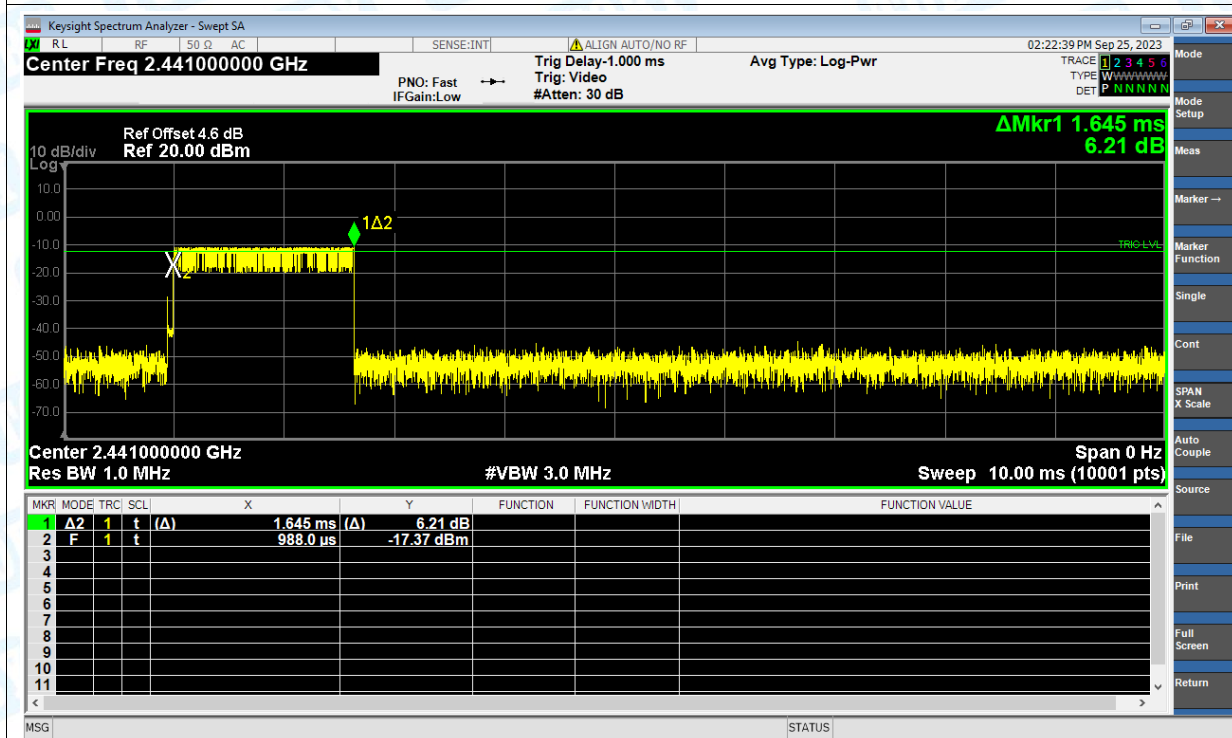
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.38	121.6	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.645	263.2	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.893	308.587	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.388	124.16	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.639	262.24	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.888	308.053	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.388	124.16	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.637	261.92	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.889	308.16	31600	400	Pass

Test Graphs

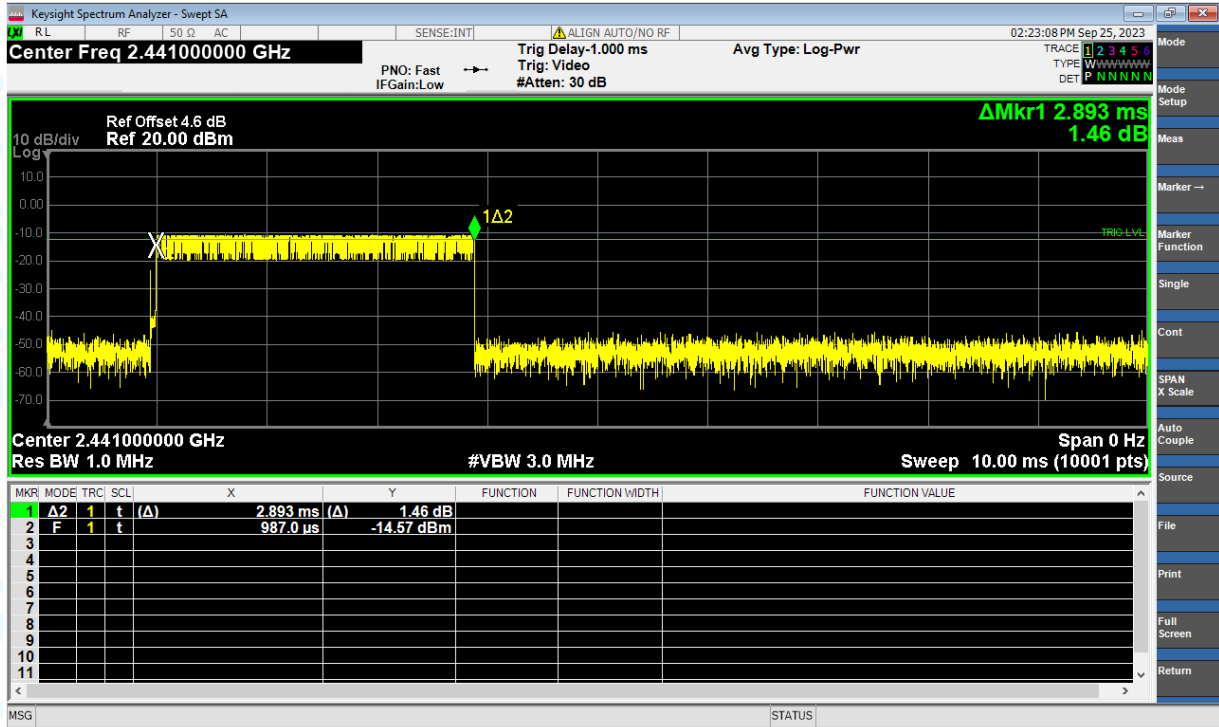
Dwell NVNT 1-DH1 2441MHz Ant1



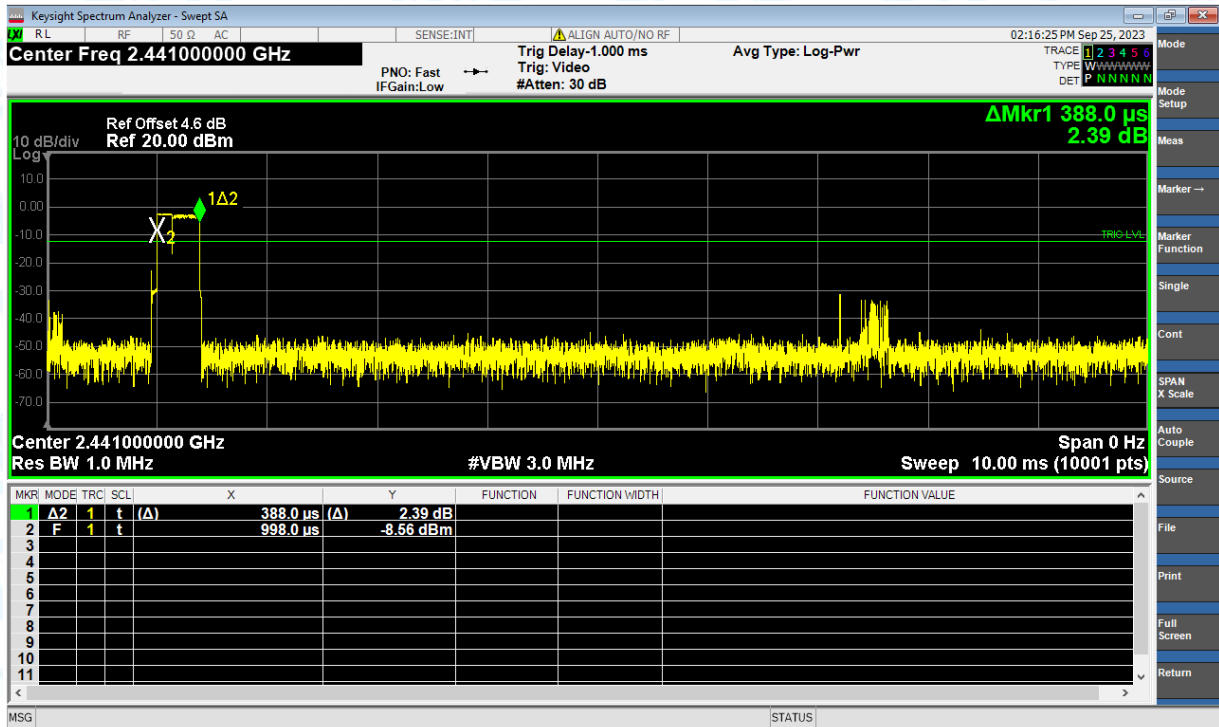
Dwell NVNT 1-DH3 2441MHz Ant1



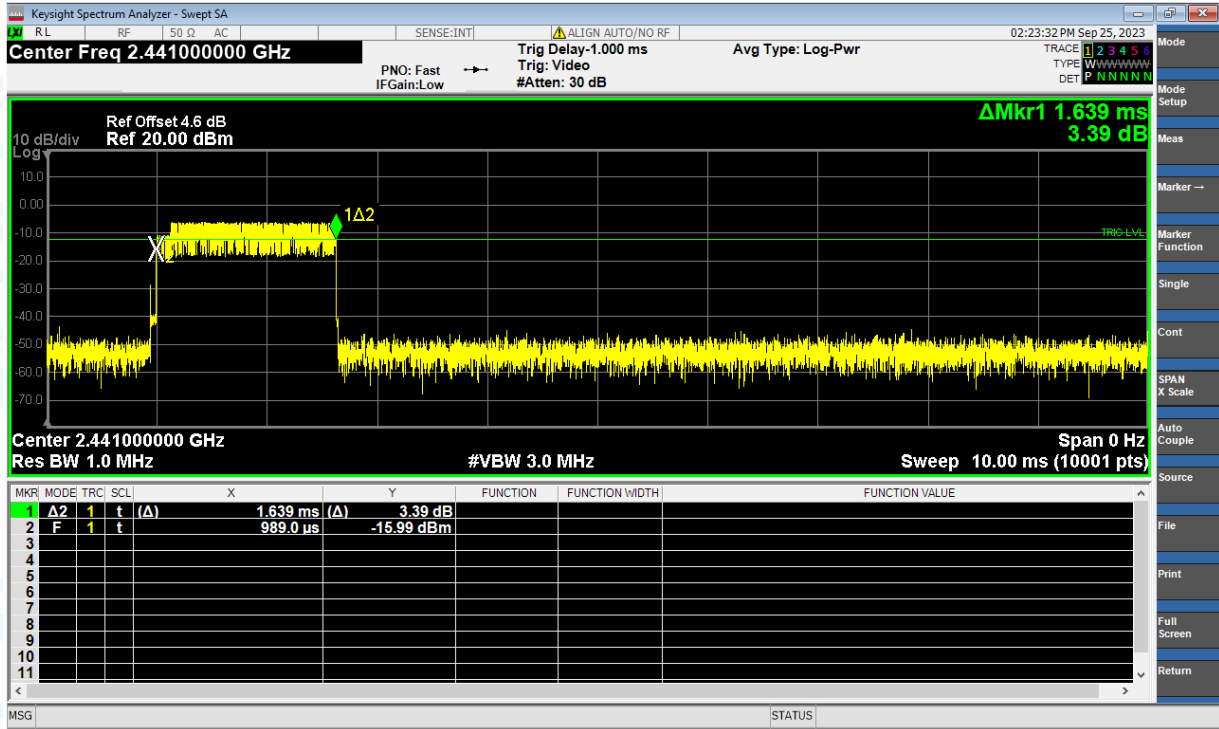
Dwell NVNT 1-DH5 2441MHz Ant1



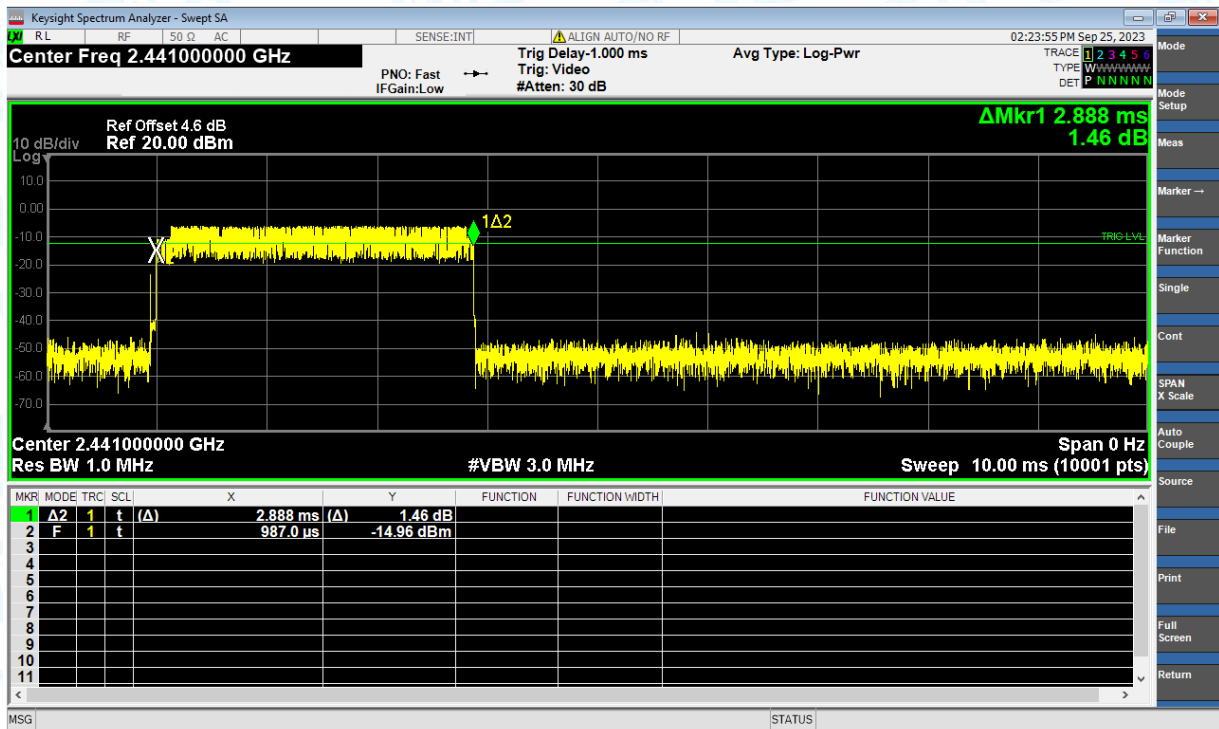
Dwell NVNT 2-DH1 2441MHz Ant1



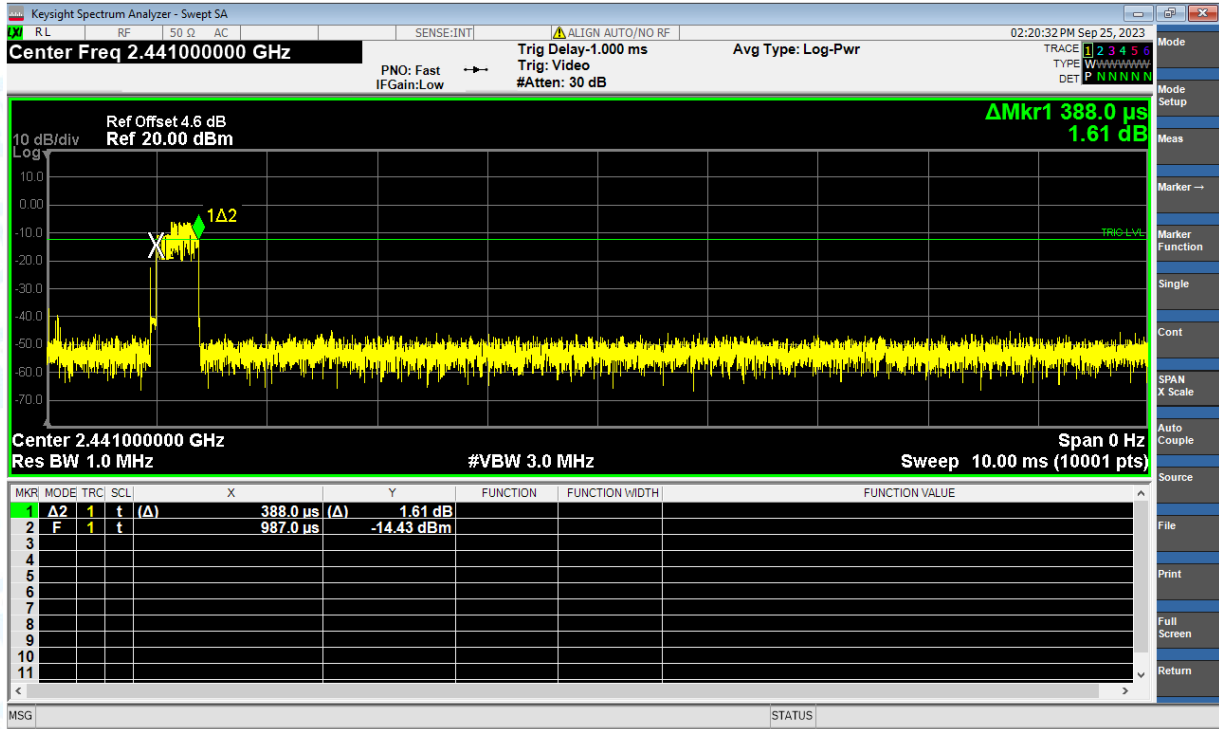
Dwell NVNT 2-DH3 2441MHz Ant1



Dwell NVNT 2-DH5 2441MHz Ant1



Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1

