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

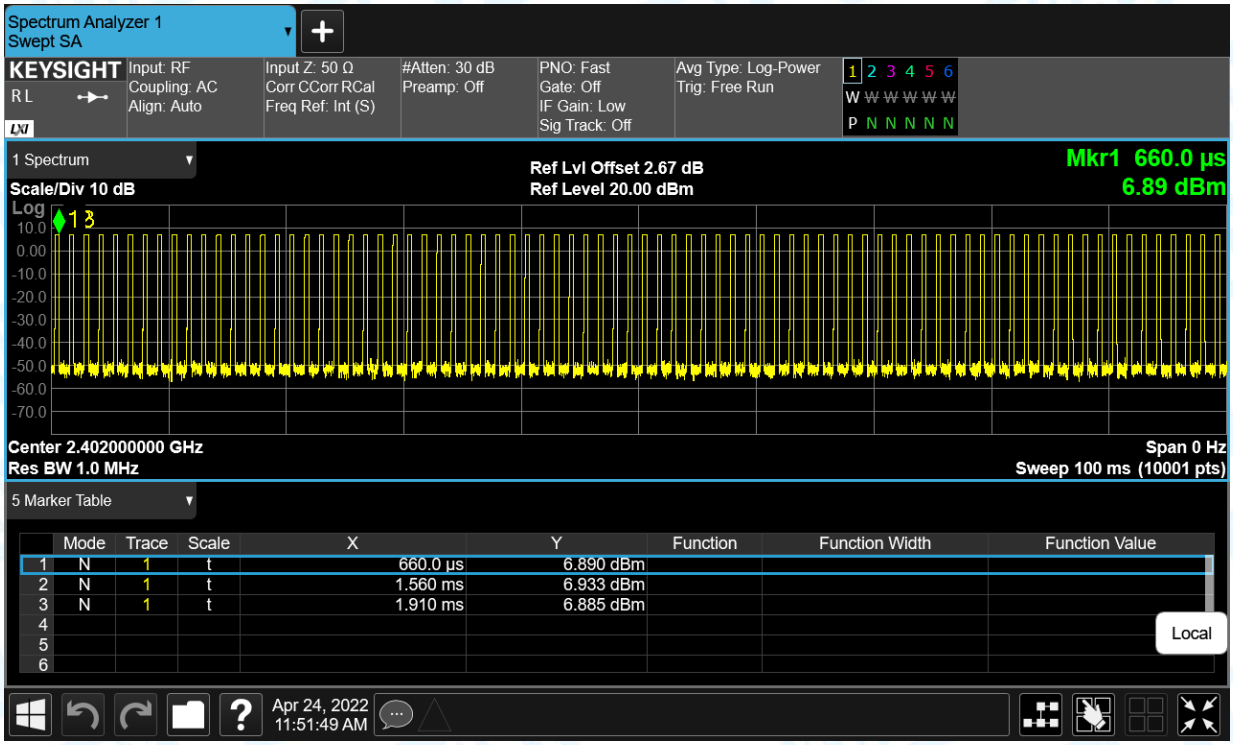
General Description of EUT	
Product Name:	Heltec Indoor Hotspot
Test Model:	HT-M2802
Sample ID:	RW-C-202204-0107-1-2#
Environmental Conditions	
Temperature:	23.8℃
Relative Humidity:	48%
Test Voltage:	DC 5V
Test Engineer:	Huang jian ping
Note: For a more detailed features description, please refer to the report TBR-C-202204-0107-1	

1. Duty Cycle

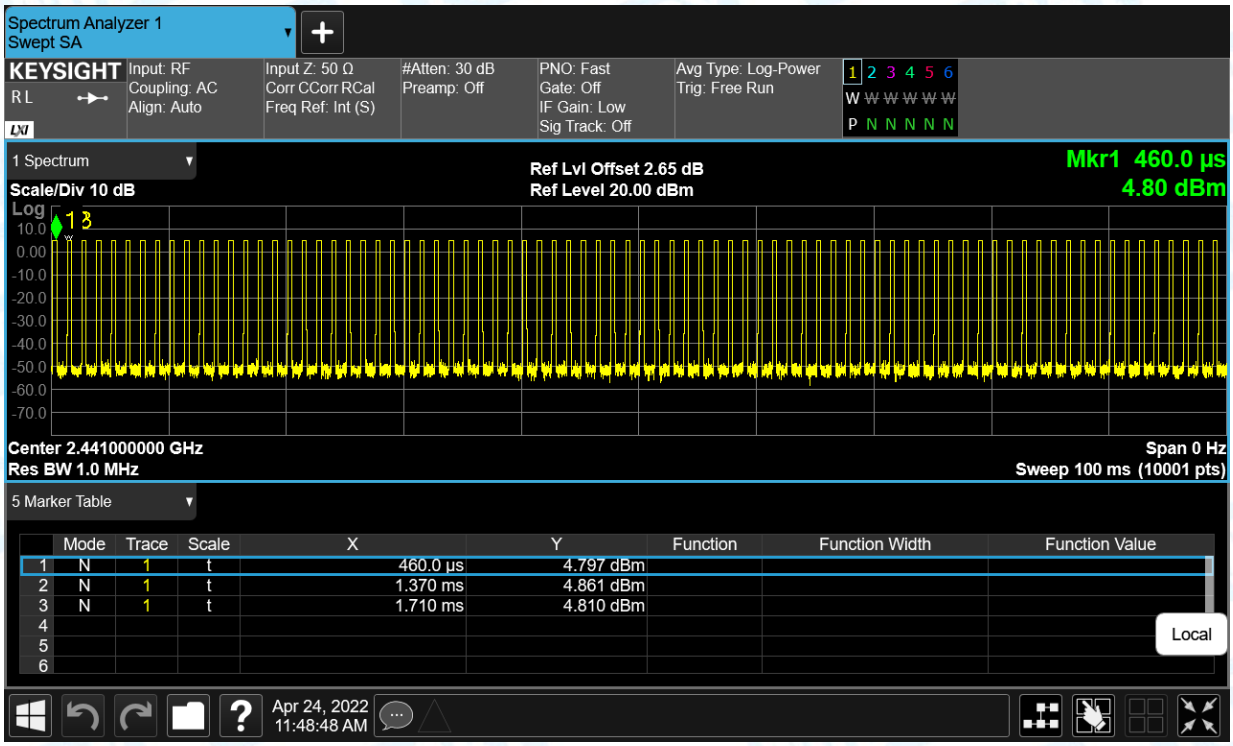
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	28.37	5.47	2.86
NVNT	1-DH1	2441	Ant1	28.22	5.49	2.94
NVNT	1-DH1	2480	Ant1	28.73	5.42	2.94
NVNT	2-DH1	2402	Ant1	32.2	4.92	2.5
NVNT	2-DH1	2441	Ant1	32.11	4.93	2.56
NVNT	2-DH1	2480	Ant1	32.04	4.94	2.5
NVNT	3-DH1	2402	Ant1	32	4.95	2.56
NVNT	3-DH1	2441	Ant1	32.01	4.95	2.56
NVNT	3-DH1	2480	Ant1	32.1	4.94	2.56

Test Graphs

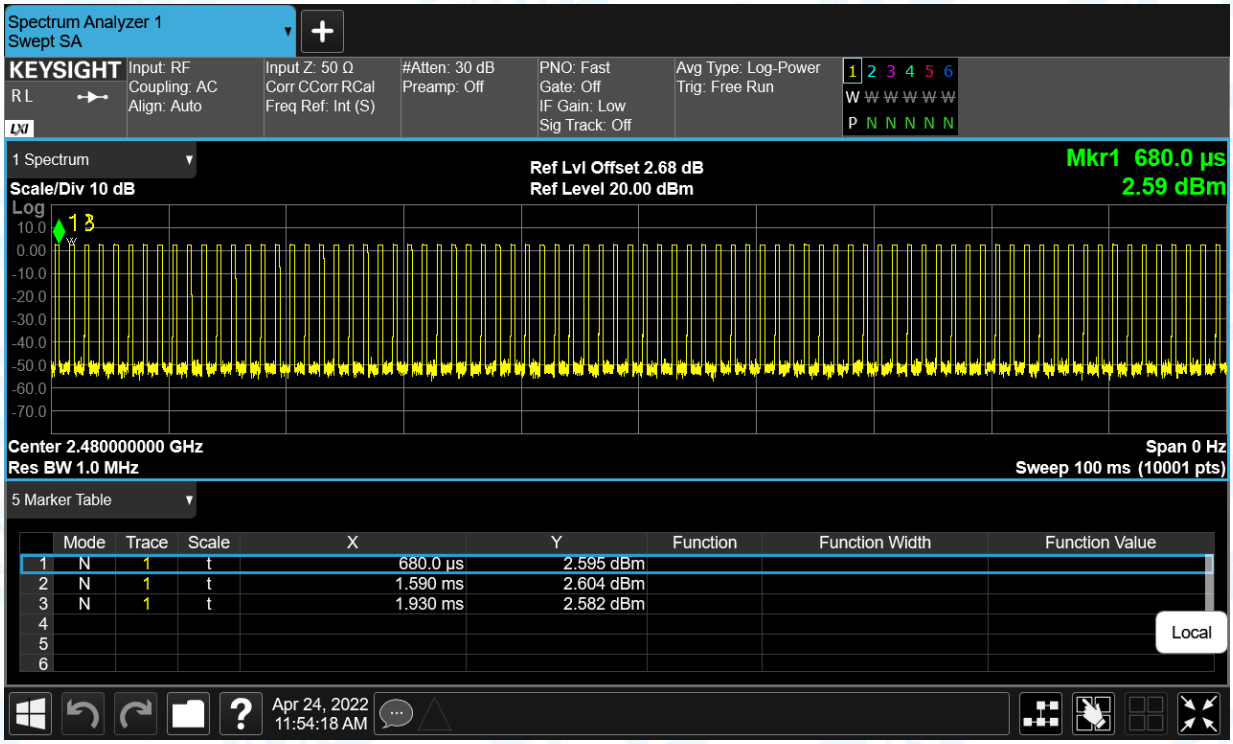
Duty Cycle NVNT 1-DH1 2402MHz Ant1



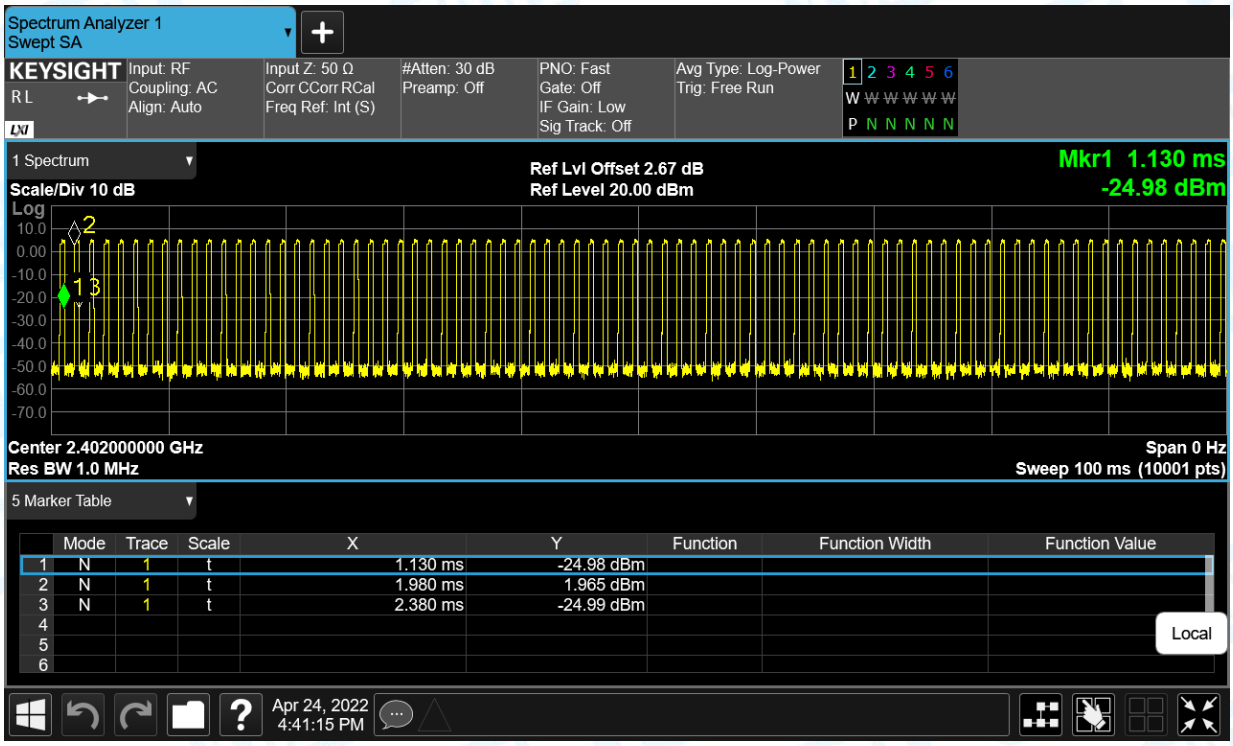
Duty Cycle NVNT 1-DH1 2441MHz Ant1



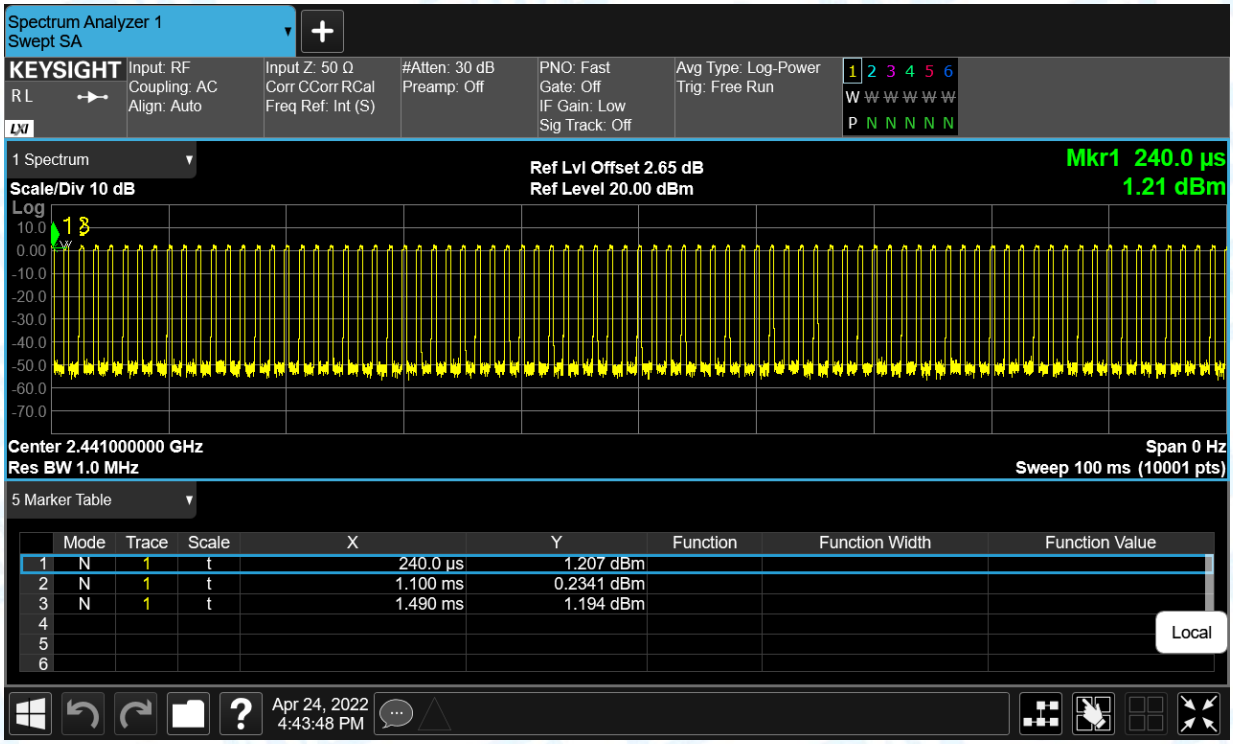
Duty Cycle NVNT 1-DH1 2480MHz Ant1



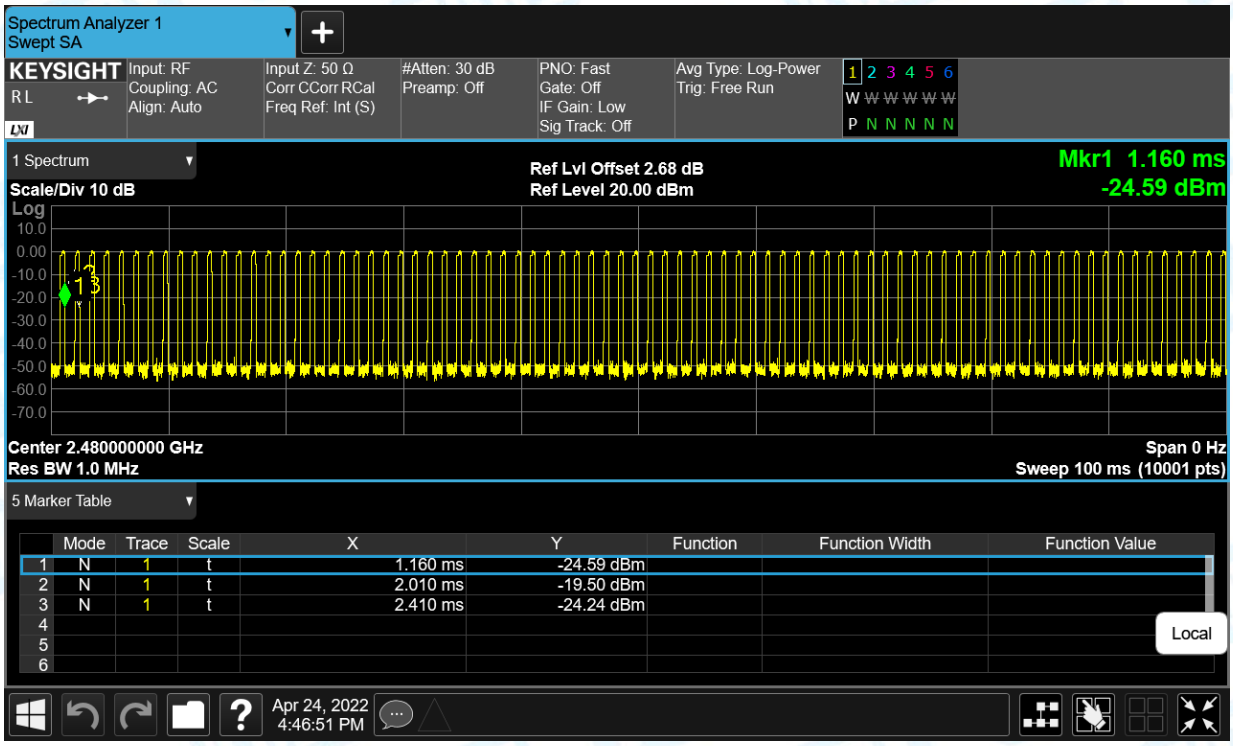
Duty Cycle NVNT 2-DH1 2402MHz Ant1



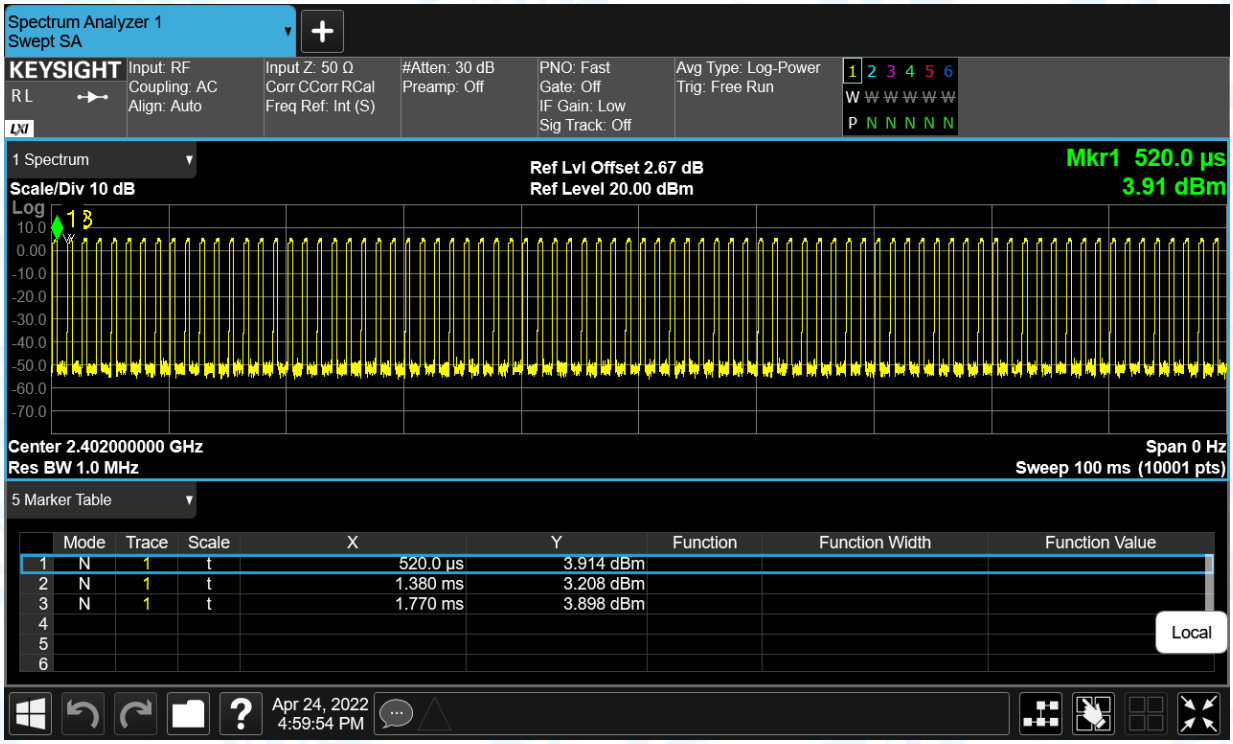
Duty Cycle NVNT 2-DH1 2441MHz Ant1



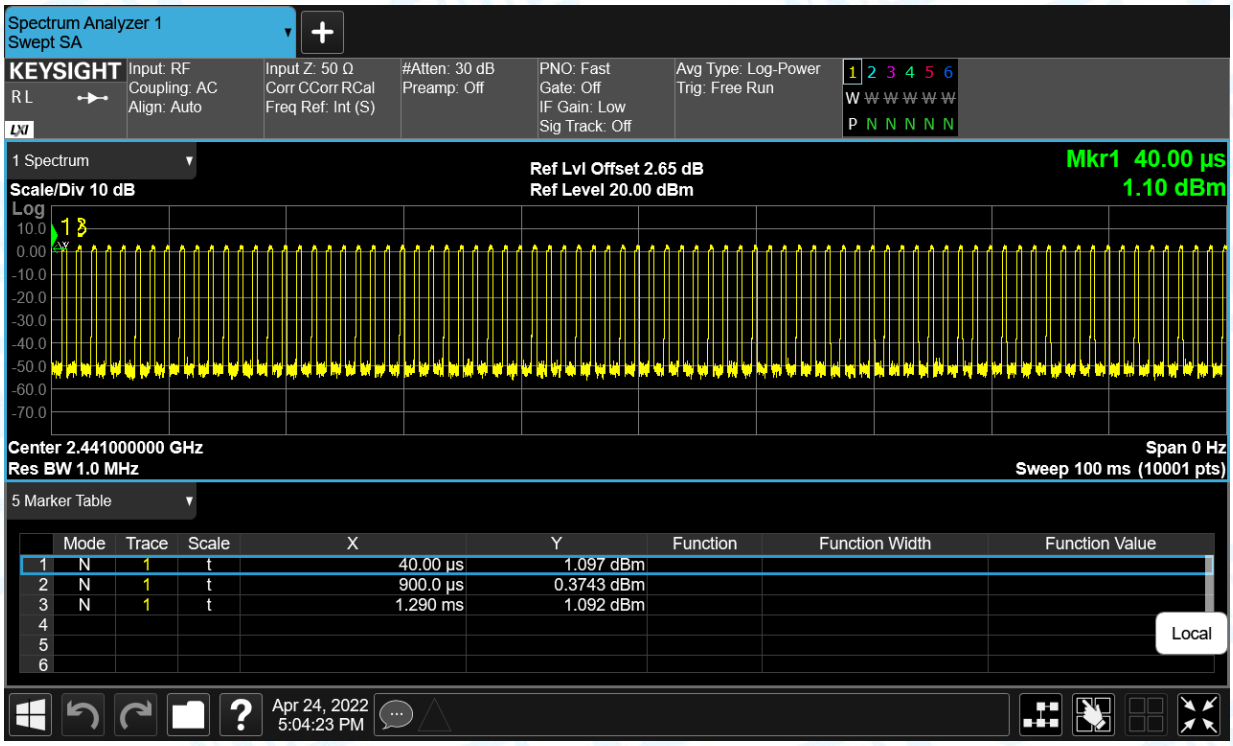
Duty Cycle NVNT 2-DH1 2480MHz Ant1



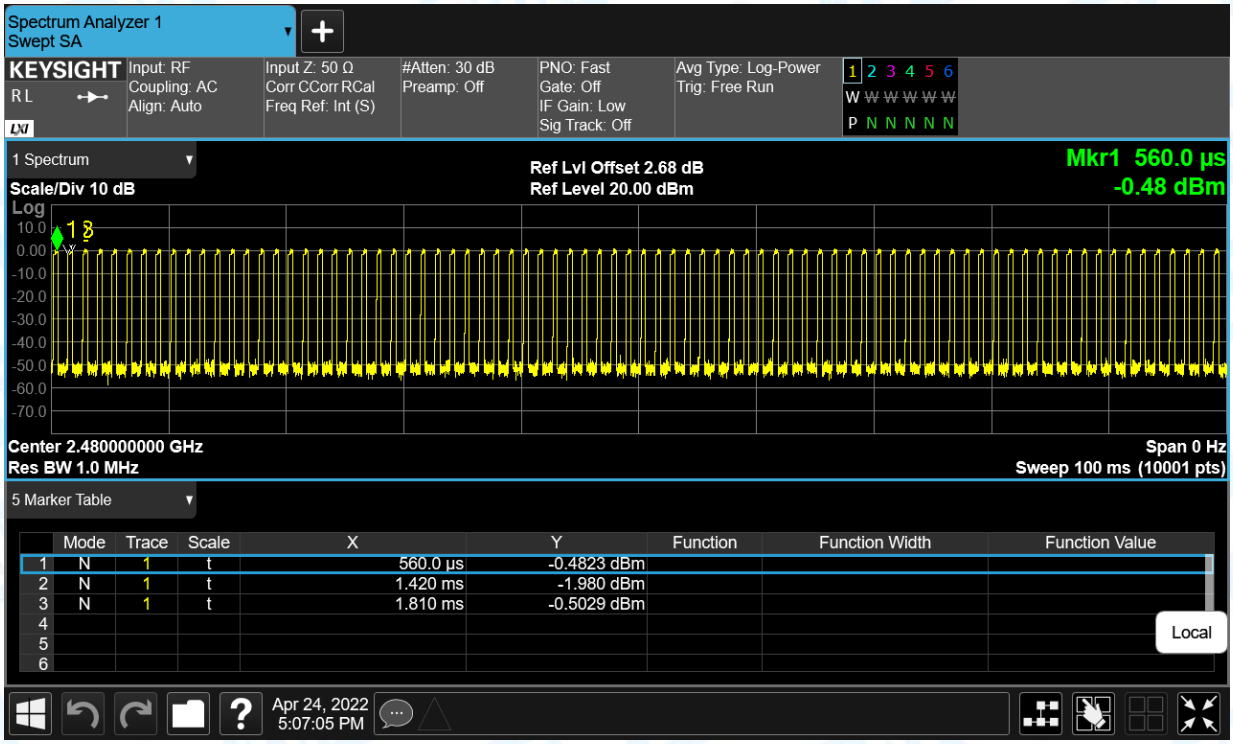
Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



Duty Cycle NVNT 3-DH1 2480MHz Ant1

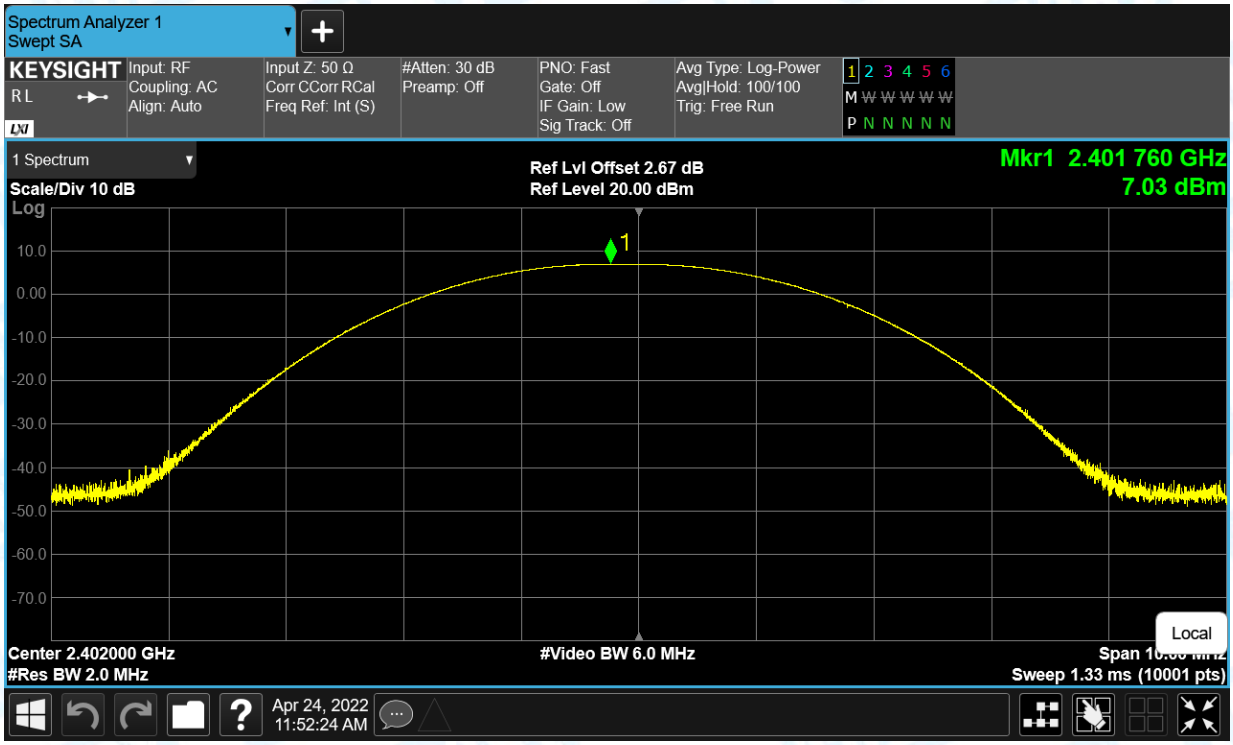


2. Maximum Conducted Output Power

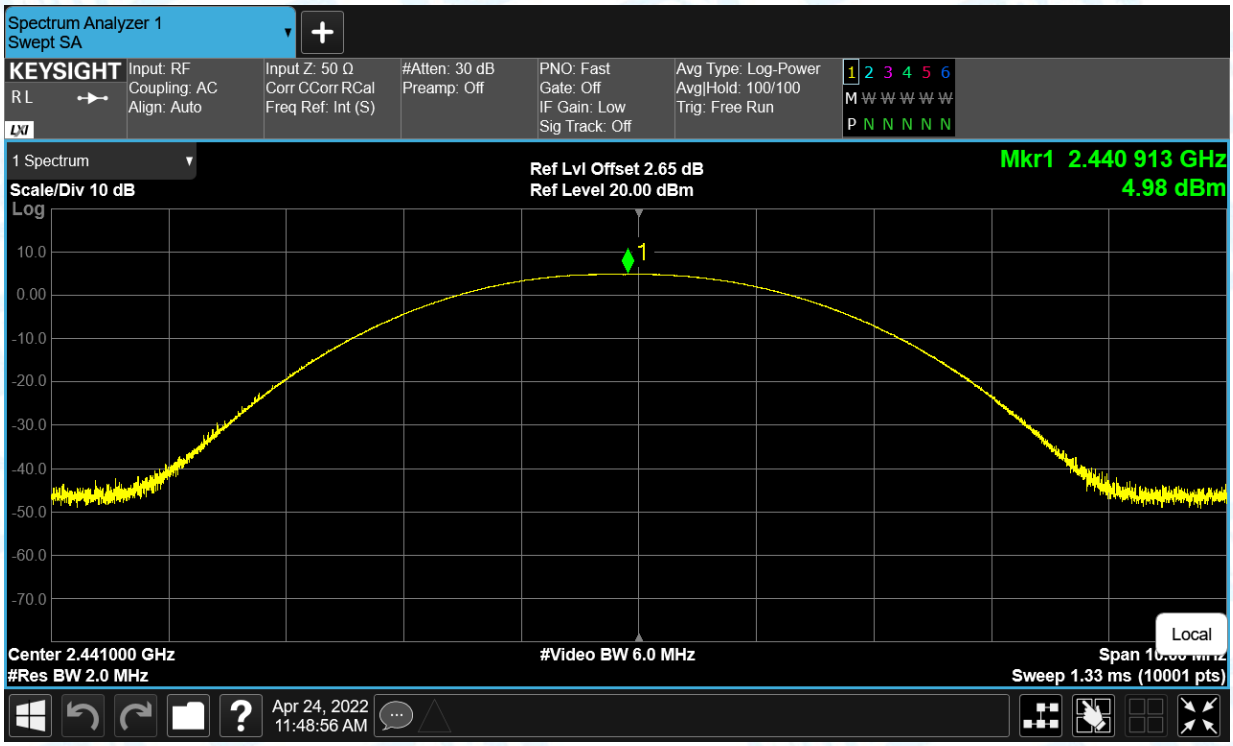
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	7.03	21	Pass
NVNT	1-DH1	2441	Ant1	4.98	21	Pass
NVNT	1-DH1	2480	Ant1	2.78	21	Pass
NVNT	2-DH1	2402	Ant1	5.39	21	Pass
NVNT	2-DH1	2441	Ant1	2.63	21	Pass
NVNT	2-DH1	2480	Ant1	0.56	21	Pass
NVNT	3-DH1	2402	Ant1	5.96	21	Pass
NVNT	3-DH1	2441	Ant1	3.29	21	Pass
NVNT	3-DH1	2480	Ant1	1.22	21	Pass

Test Graphs

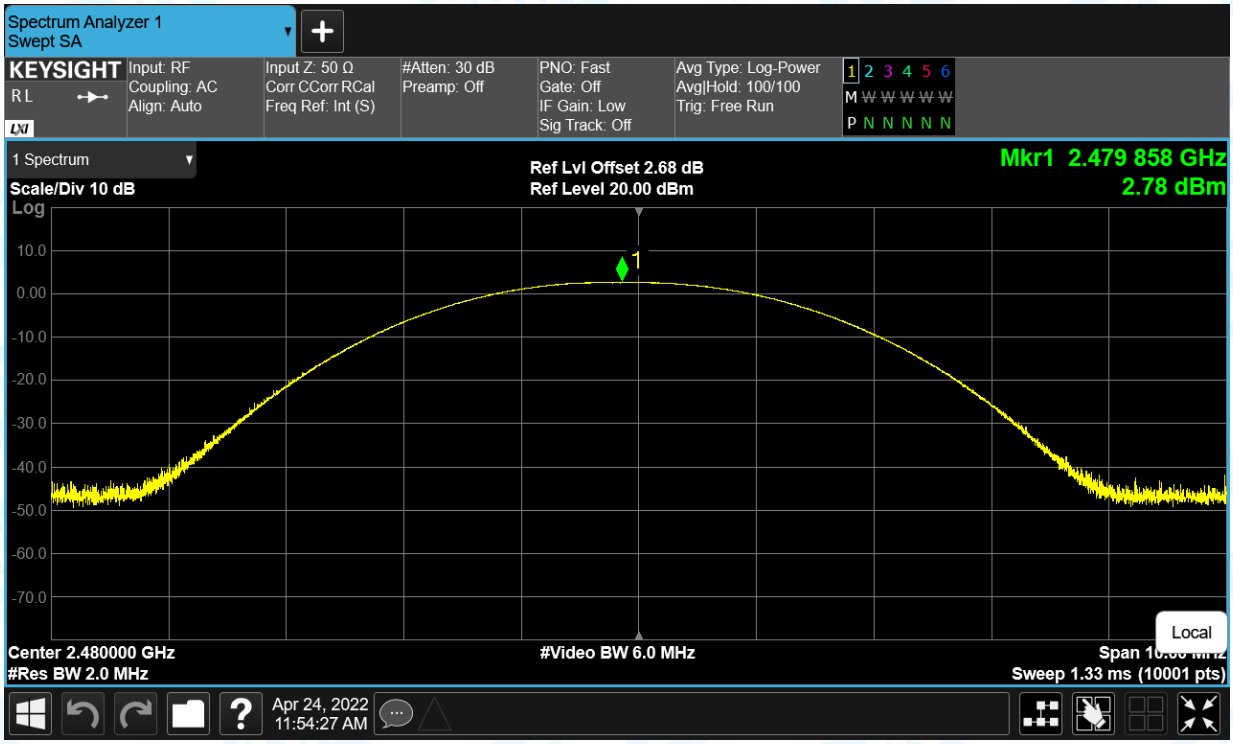
Power NVNT 1-DH1 2402MHz Ant1



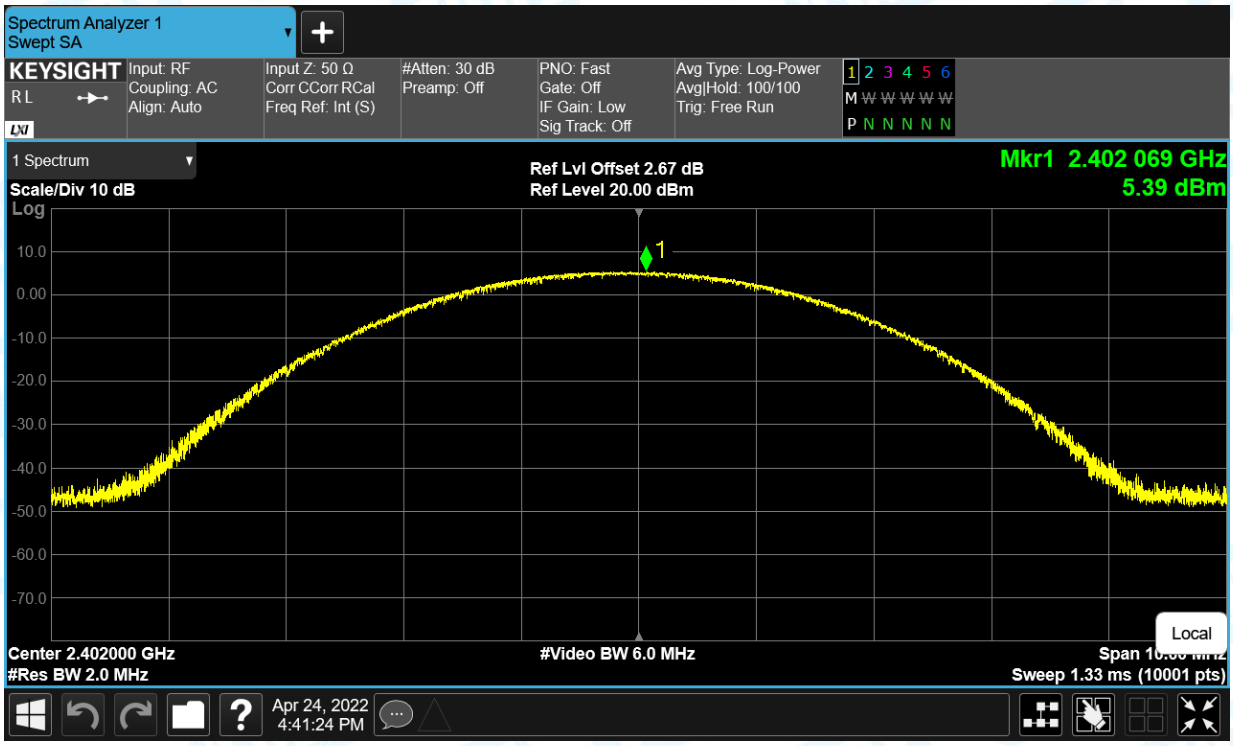
Power NVNT 1-DH1 2441MHz Ant1



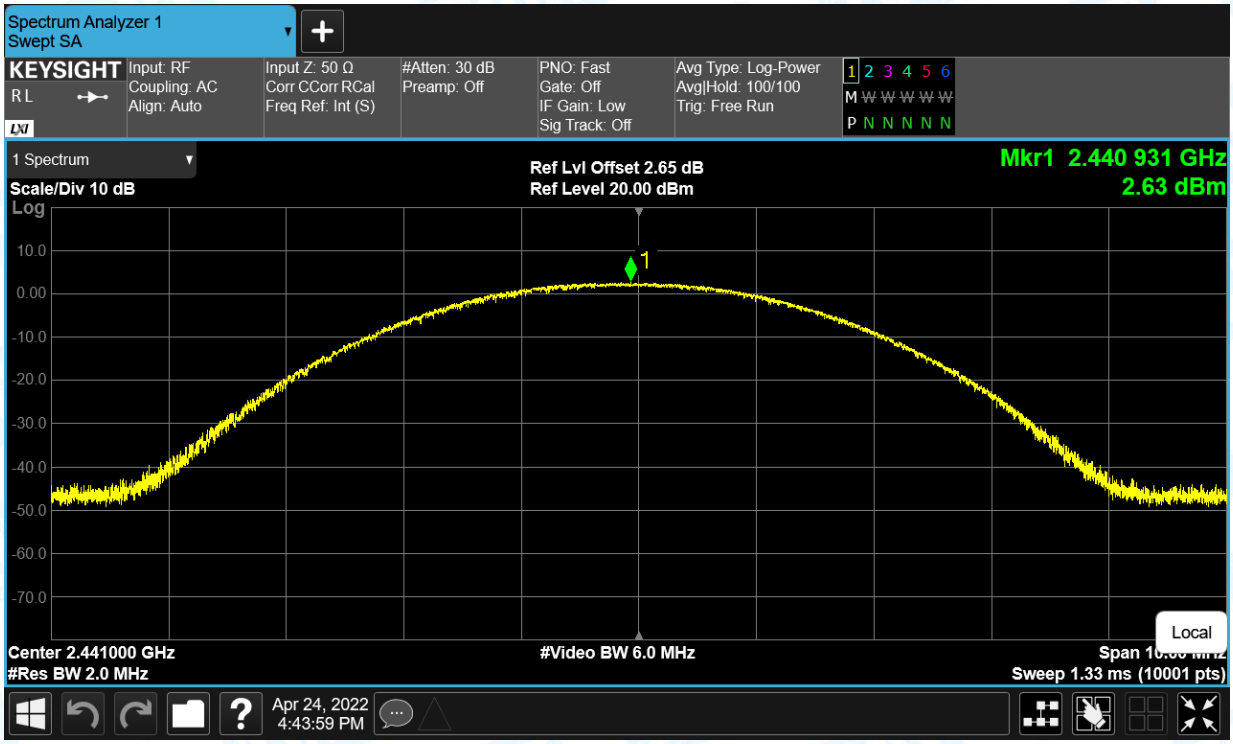
Power NVNT 1-DH1 2480MHz Ant1



Power NVNT 2-DH1 2402MHz Ant1



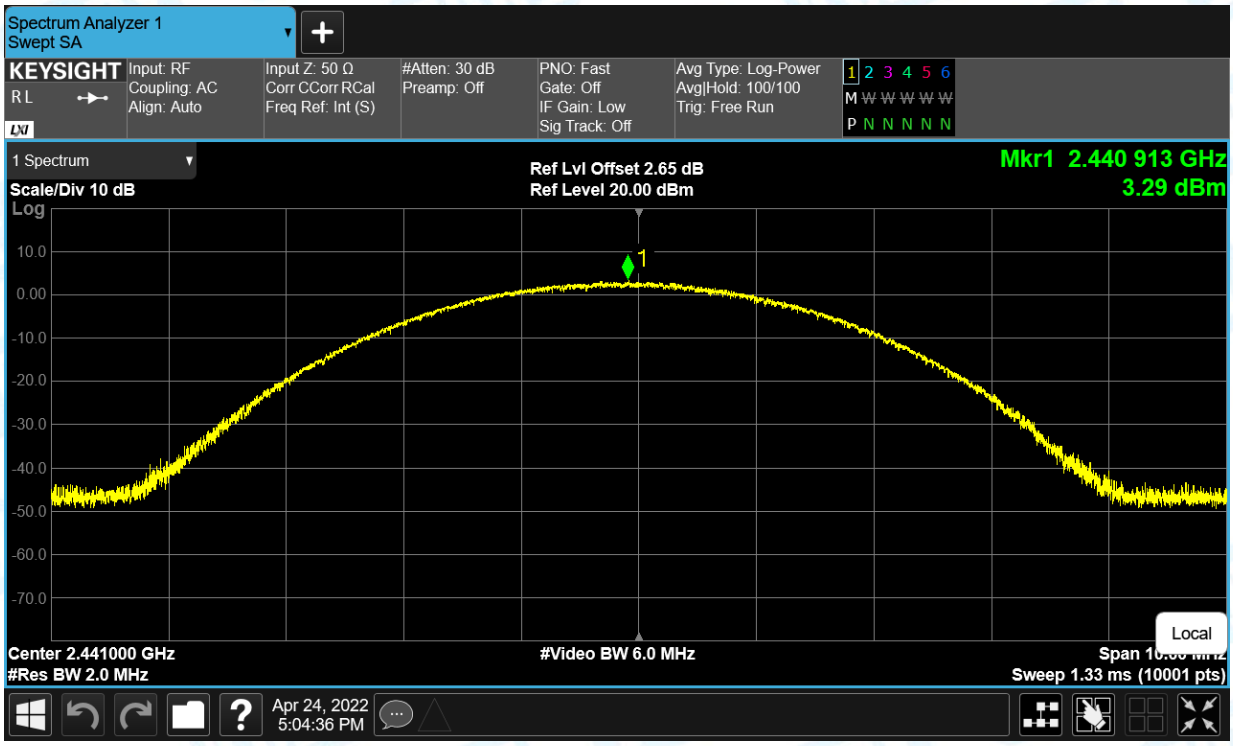
Power NVNT 2-DH1 2441MHz Ant1



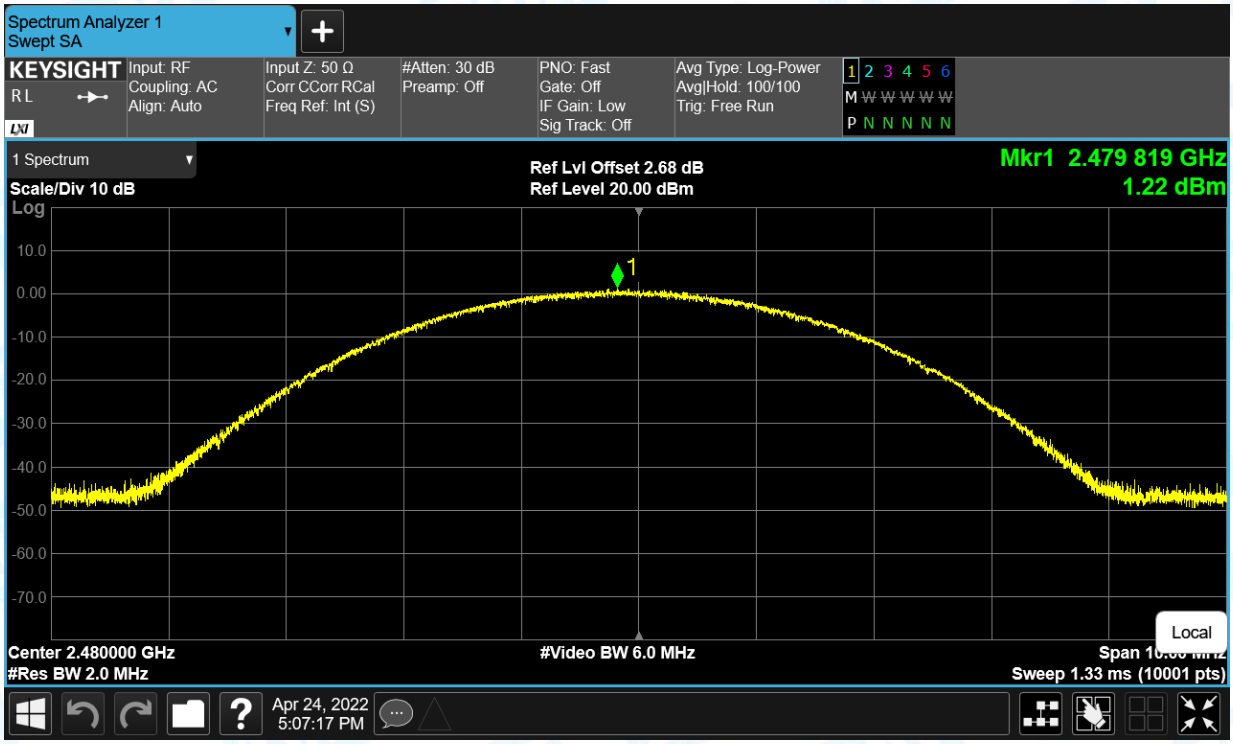
Power NVNT 2-DH1 2480MHz Ant1

Power NVNT 3-DH1 2402MHz Ant1

Power NVNT 3-DH1 2441MHz Ant1



Power NVNT 3-DH1 2480MHz Ant1

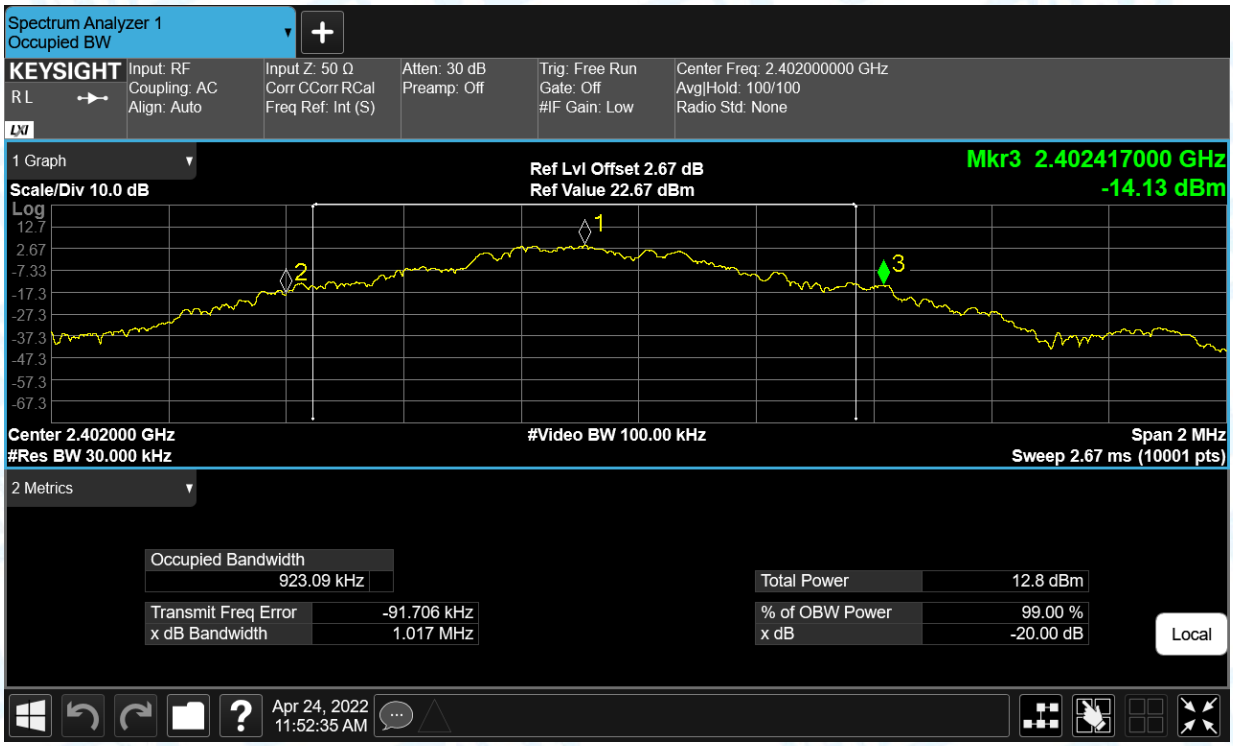


3. -20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	1.02	----	Pass
NVNT	1-DH1	2441	Ant1	1.03	----	Pass
NVNT	1-DH1	2480	Ant1	1.04	----	Pass
NVNT	2-DH1	2402	Ant1	1.35	----	Pass
NVNT	2-DH1	2441	Ant1	1.34	----	Pass
NVNT	2-DH1	2480	Ant1	1.33	----	Pass
NVNT	3-DH1	2402	Ant1	1.31	----	Pass
NVNT	3-DH1	2441	Ant1	1.33	----	Pass
NVNT	3-DH1	2480	Ant1	1.31	----	Pass

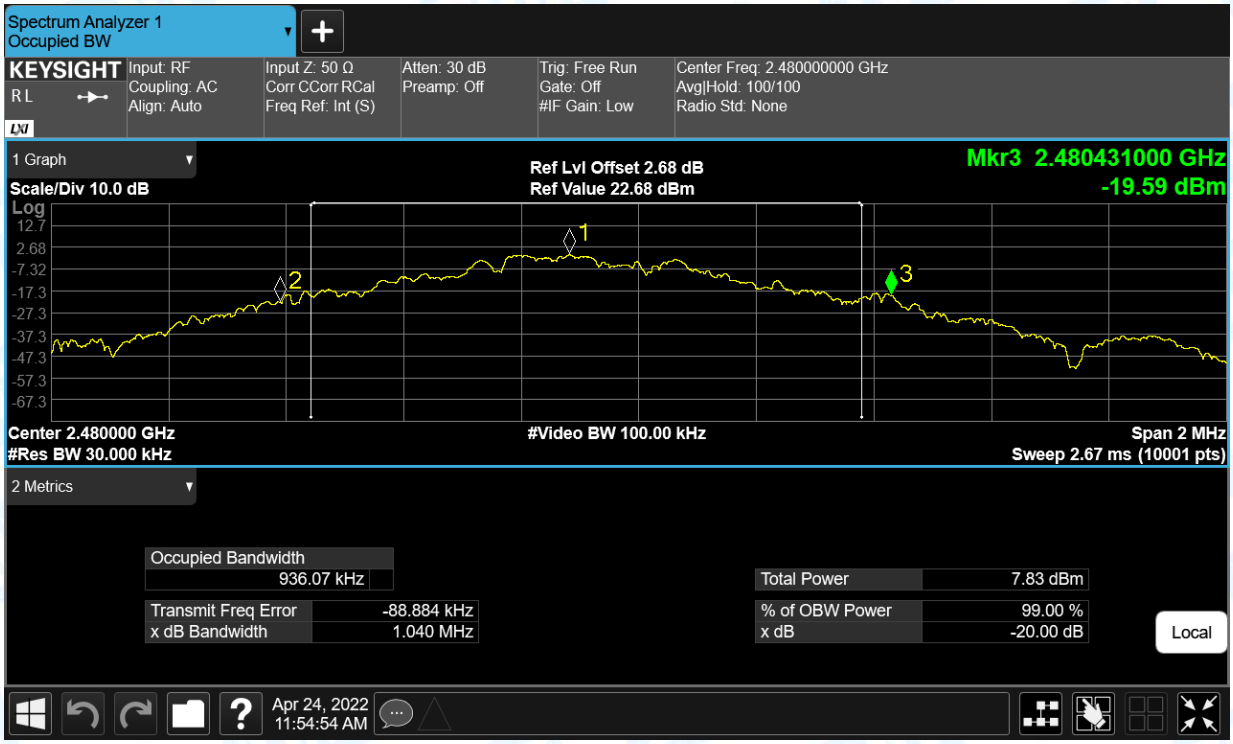
Test Graphs

-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1

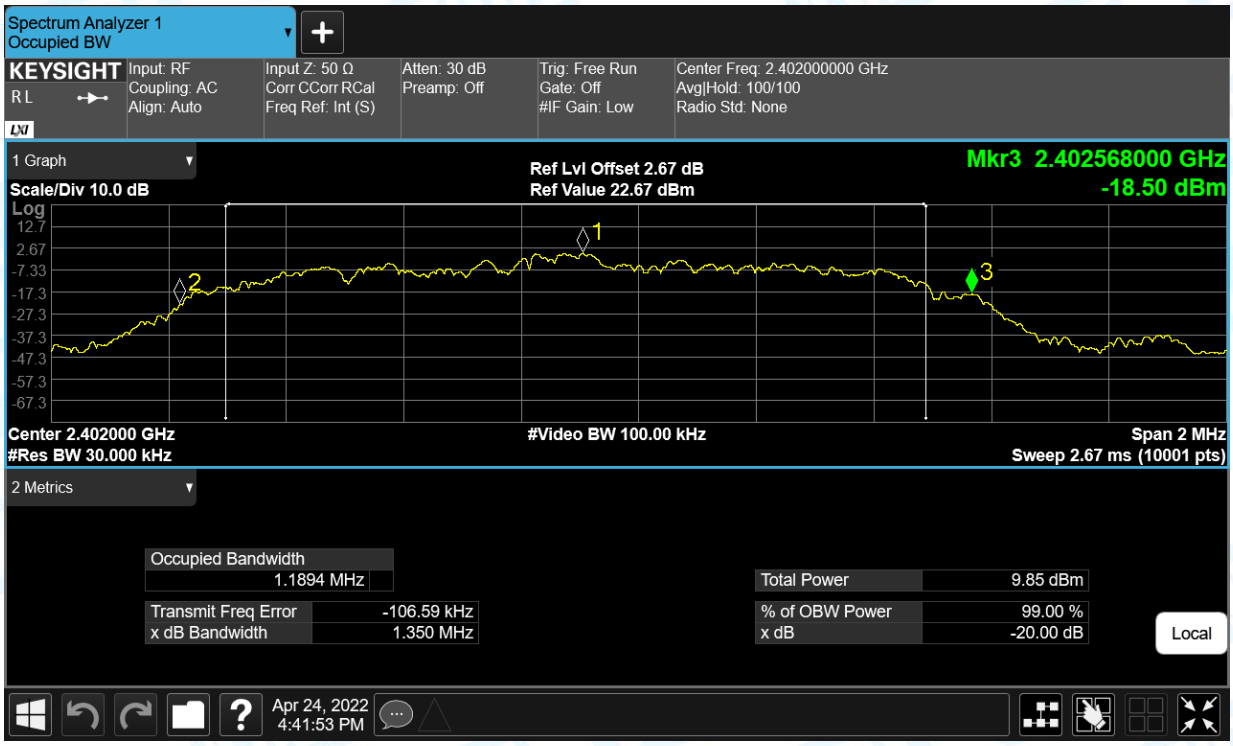


-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1

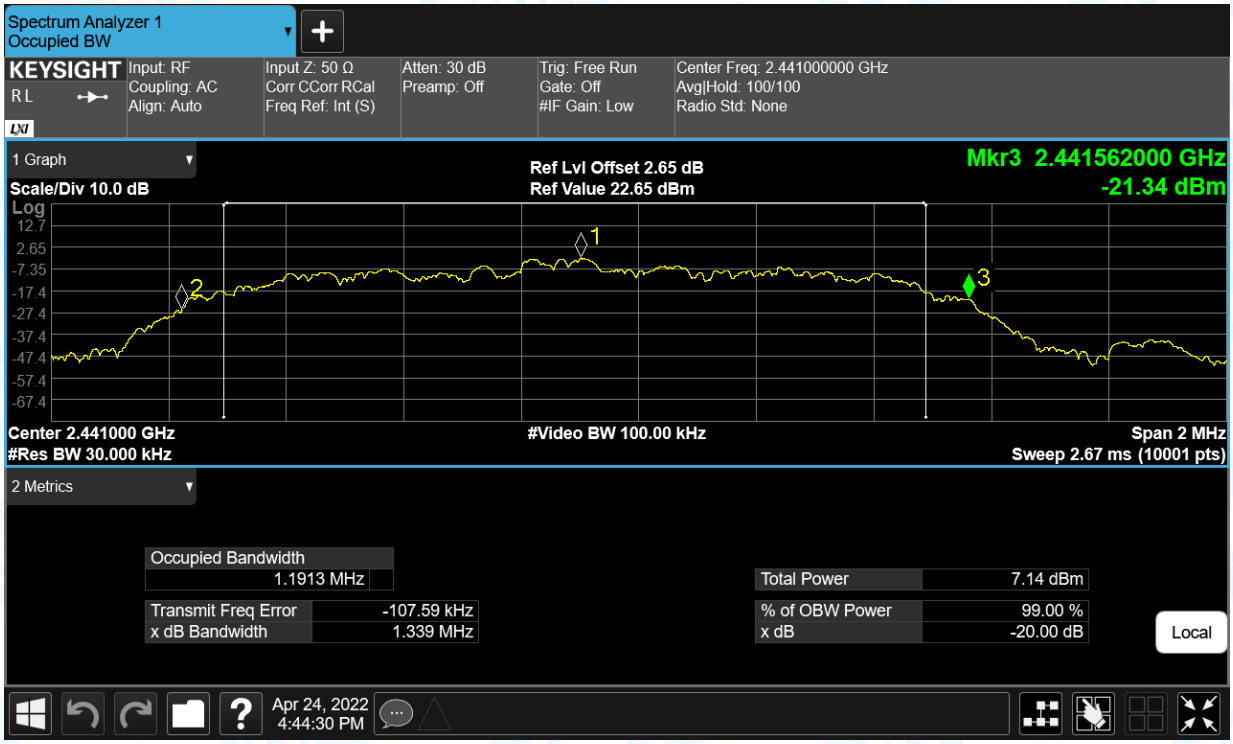
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



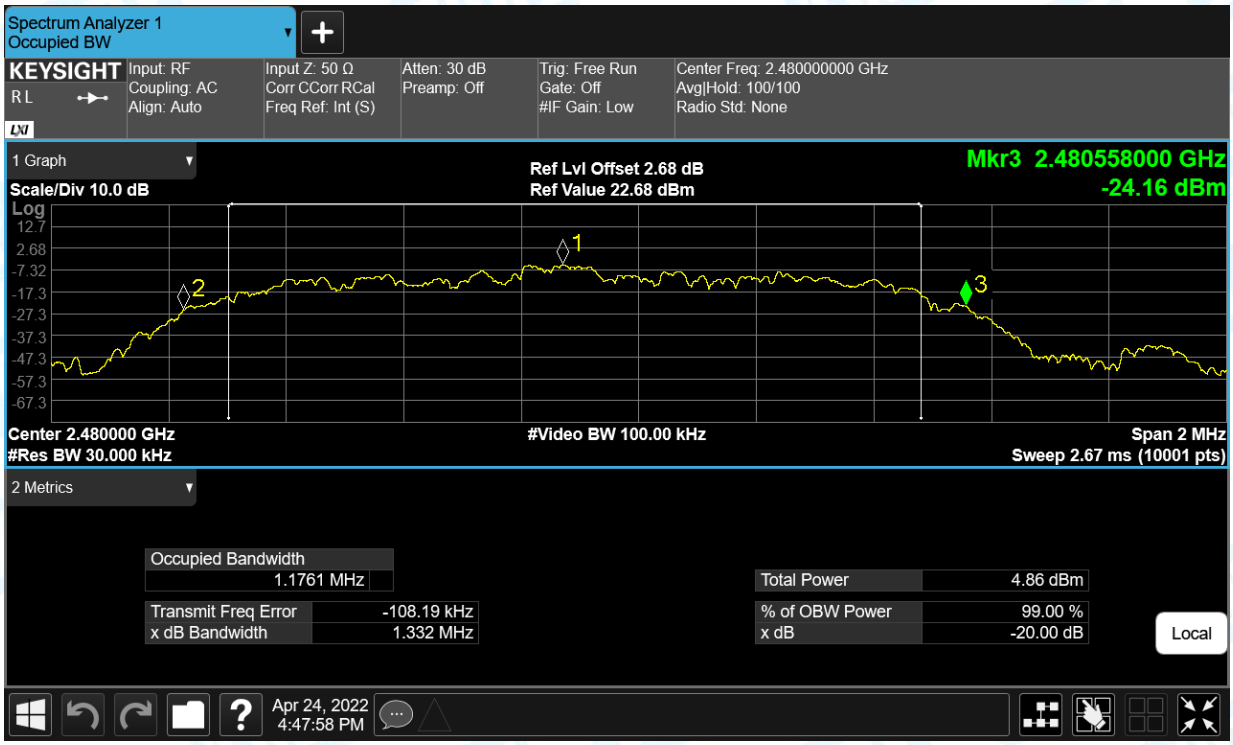
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



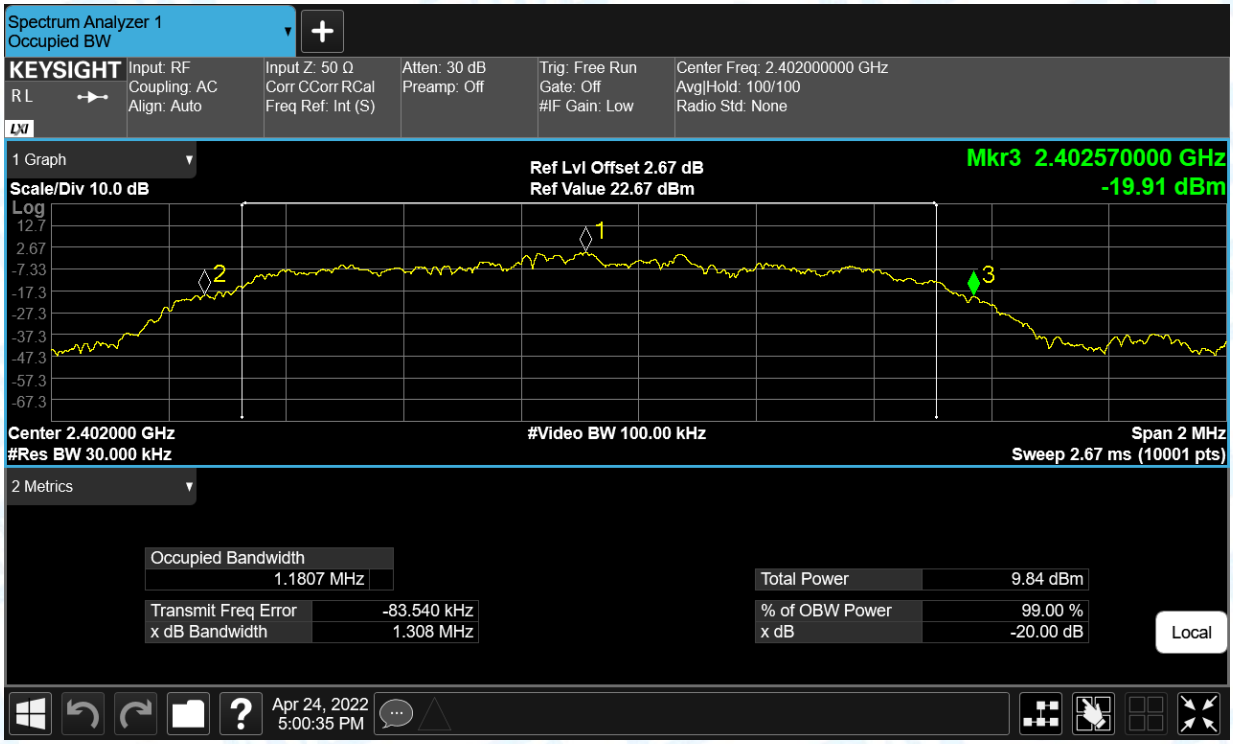
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



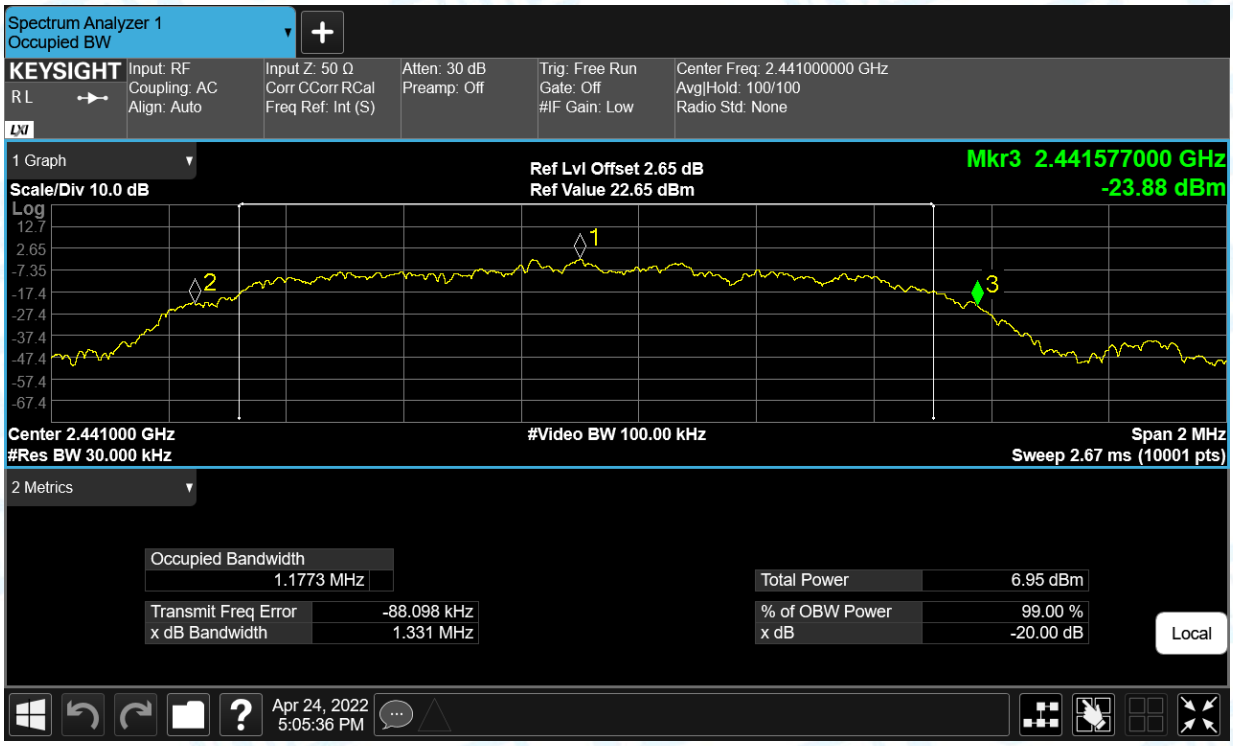
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1



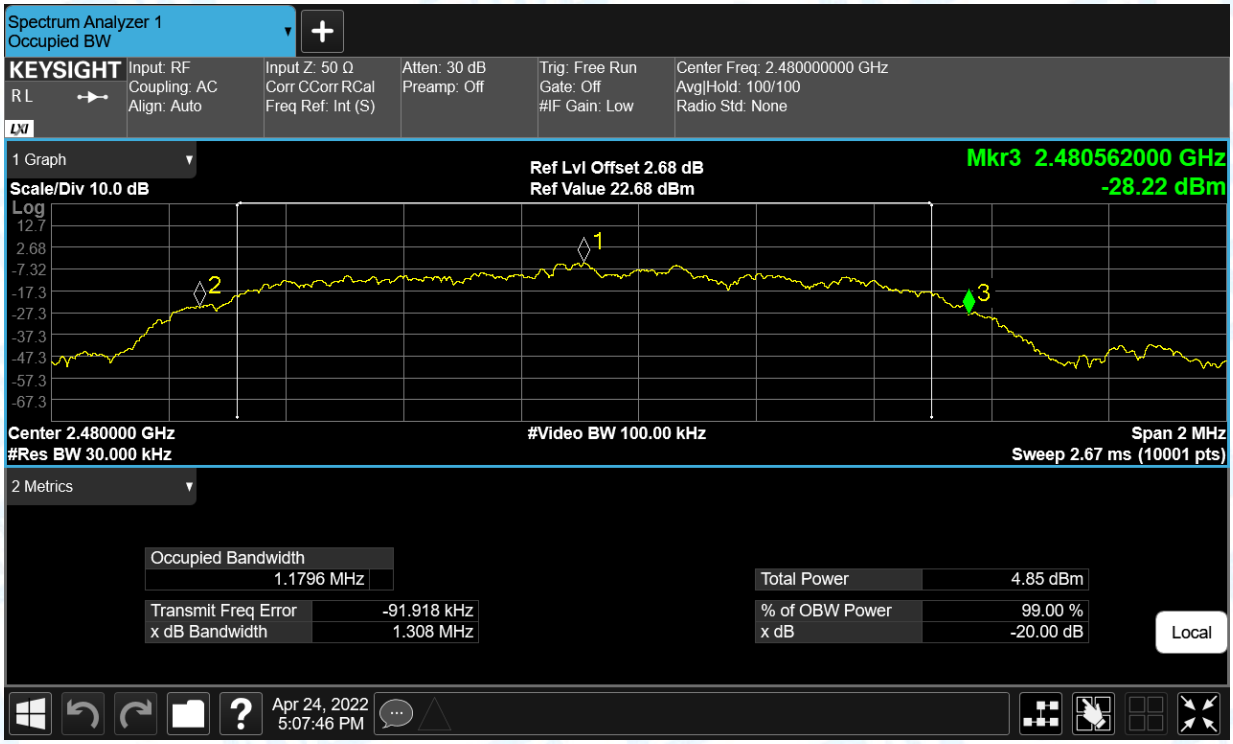
-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-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	0.932
NVNT	1-DH1	2441	Ant1	0.952
NVNT	1-DH1	2480	Ant1	0.927
NVNT	2-DH1	2402	Ant1	1.202
NVNT	2-DH1	2441	Ant1	1.215
NVNT	2-DH1	2480	Ant1	1.202
NVNT	3-DH1	2402	Ant1	1.188
NVNT	3-DH1	2441	Ant1	1.18
NVNT	3-DH1	2480	Ant1	1.173

Test Graphs

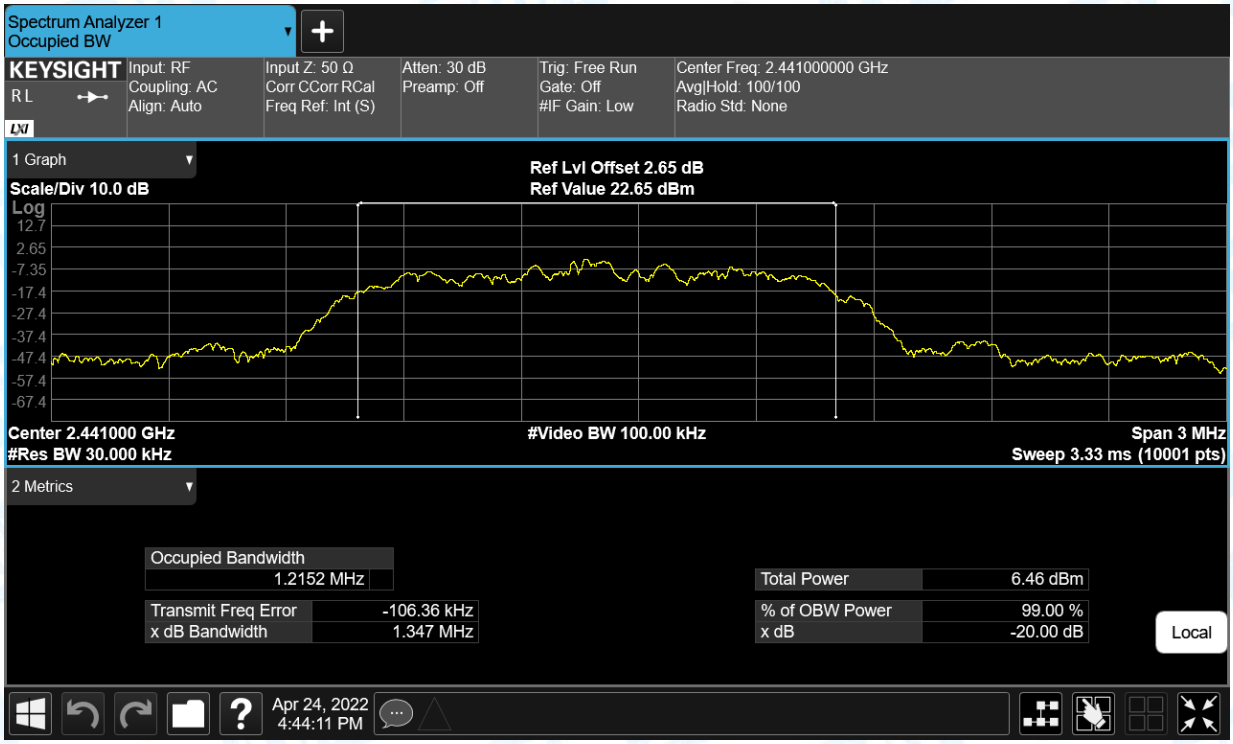
OBW NVNT 1-DH1 2402MHz Ant1

OBW NVNT 1-DH1 2441MHz Ant1

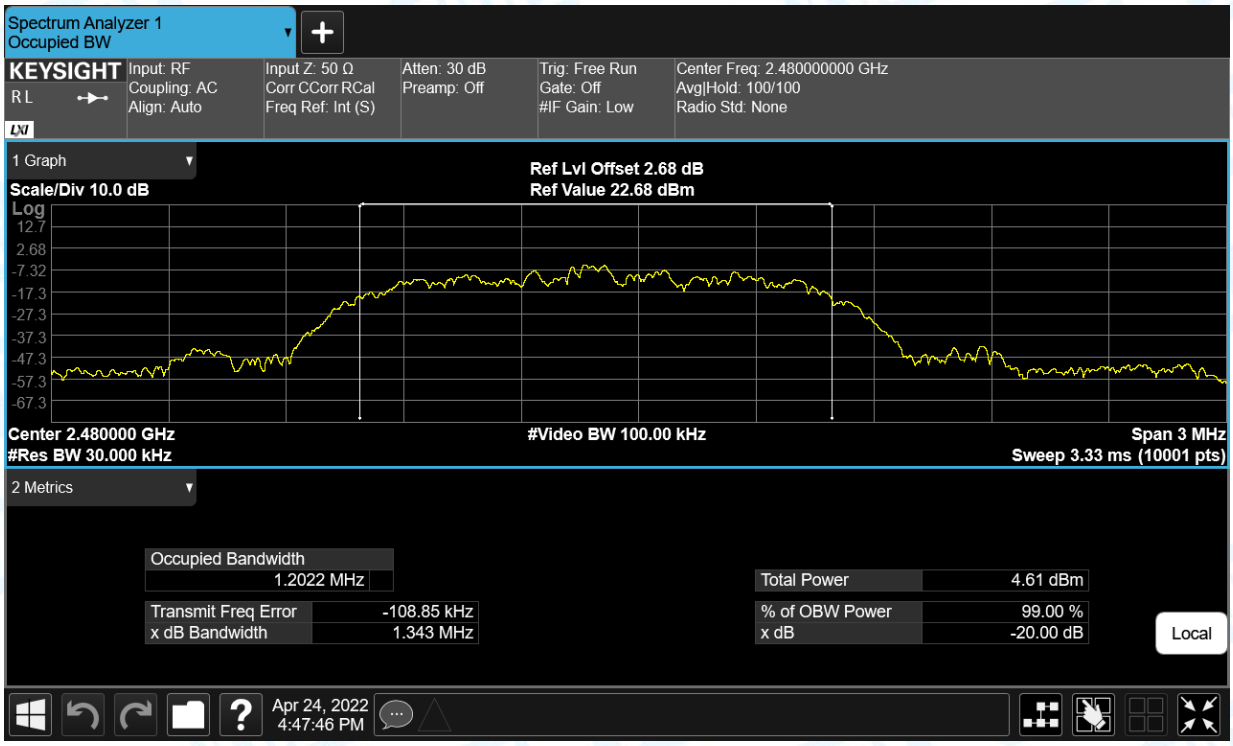
OBW NVNT 1-DH1 2480MHz Ant1

OBW NVNT 2-DH1 2402MHz Ant1

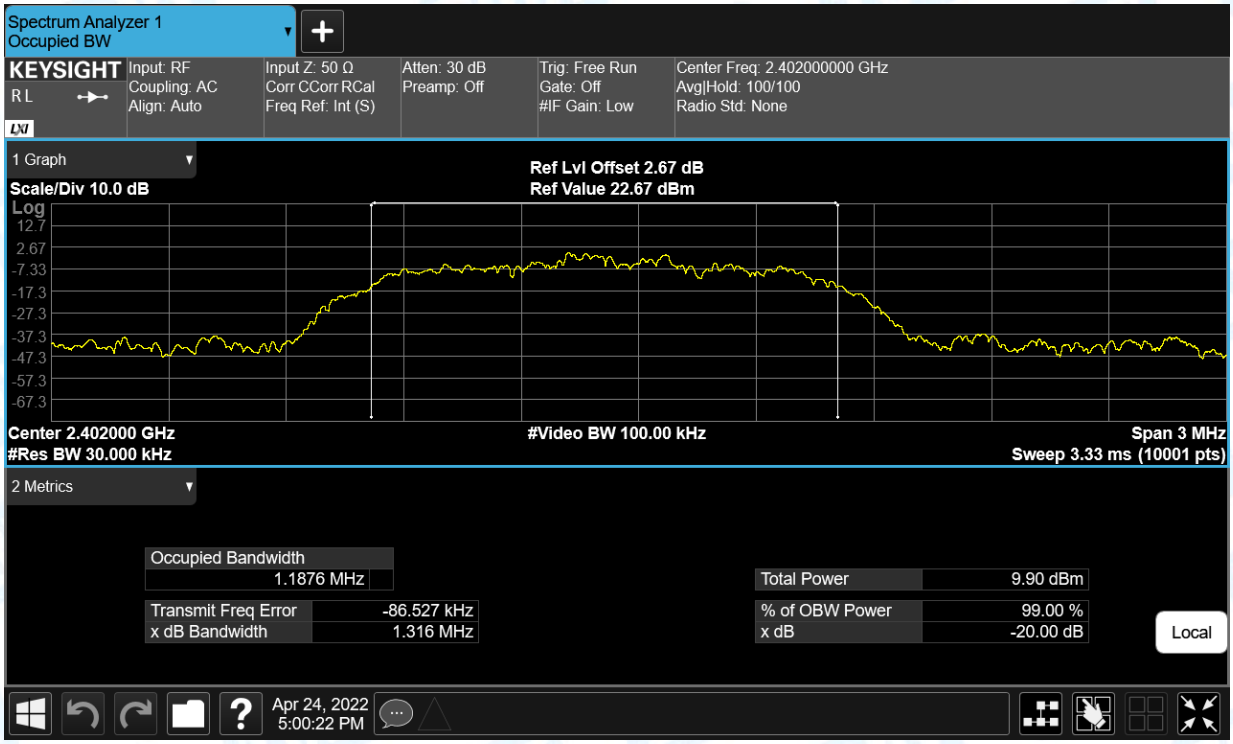
OBW NVNT 2-DH1 2441MHz Ant1



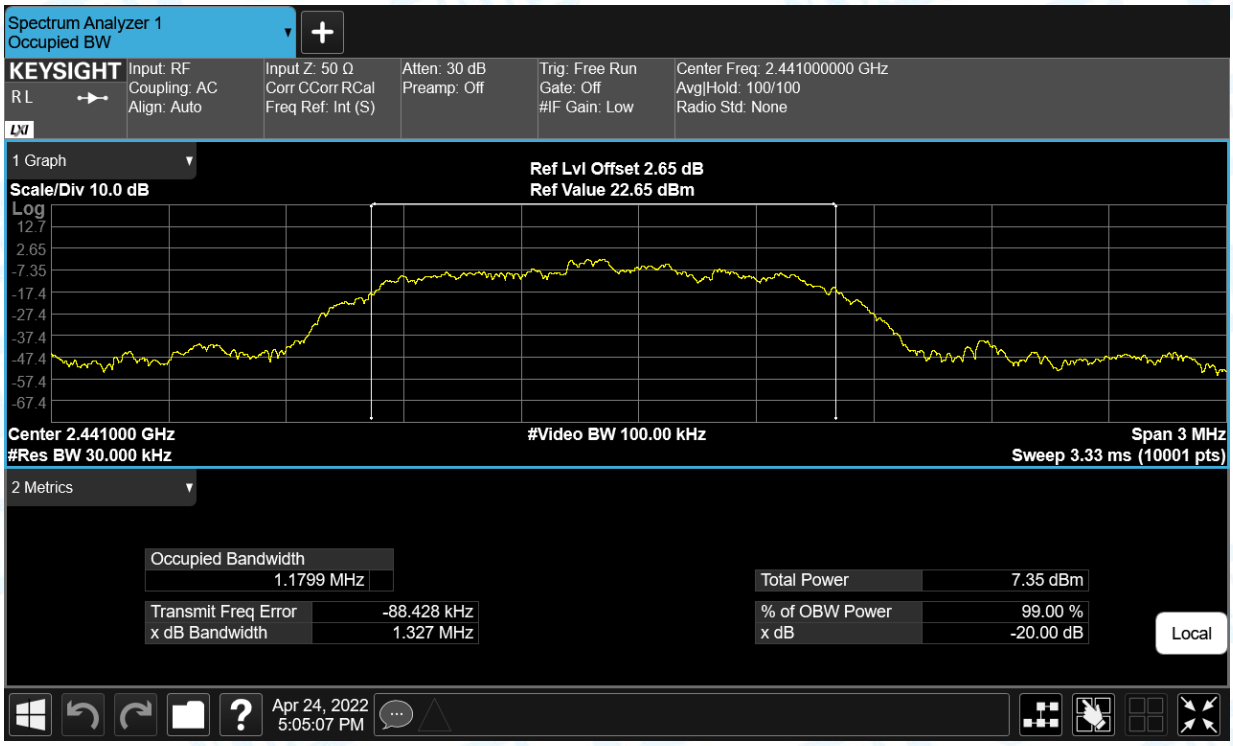
OBW NVNT 2-DH1 2480MHz Ant1



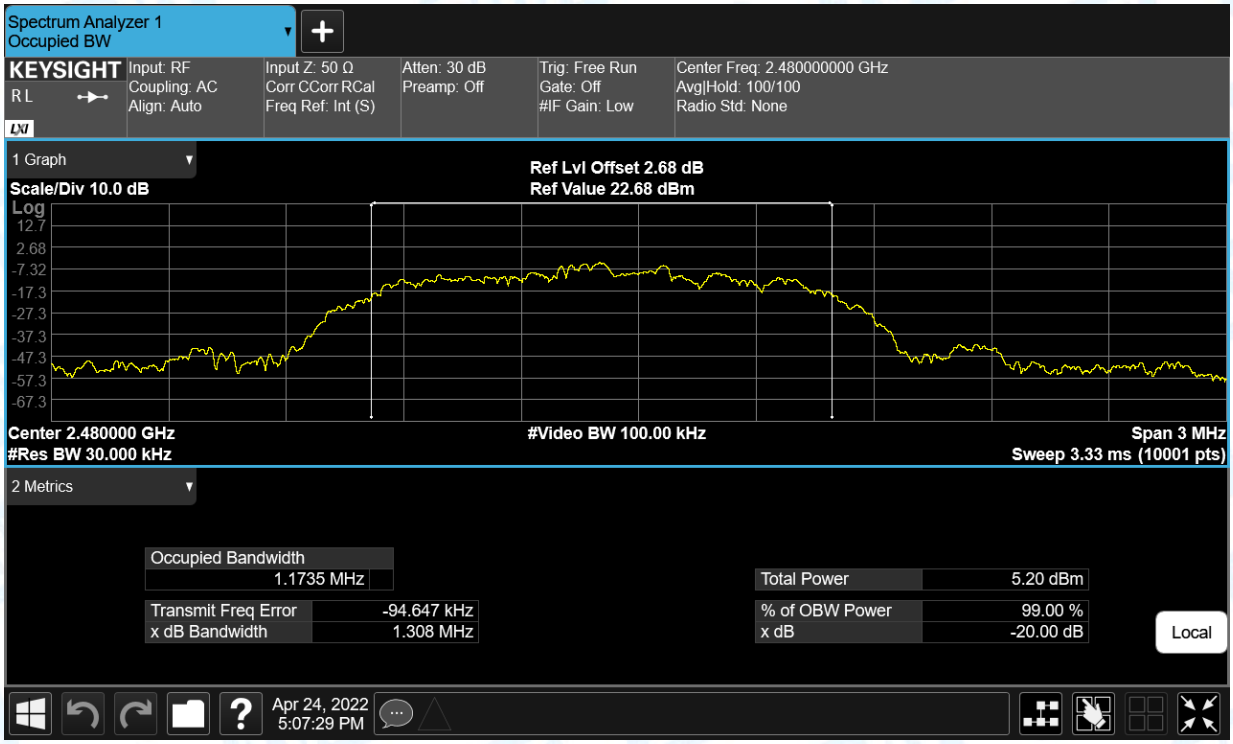
OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



OBW NVNT 3-DH1 2480MHz Ant1

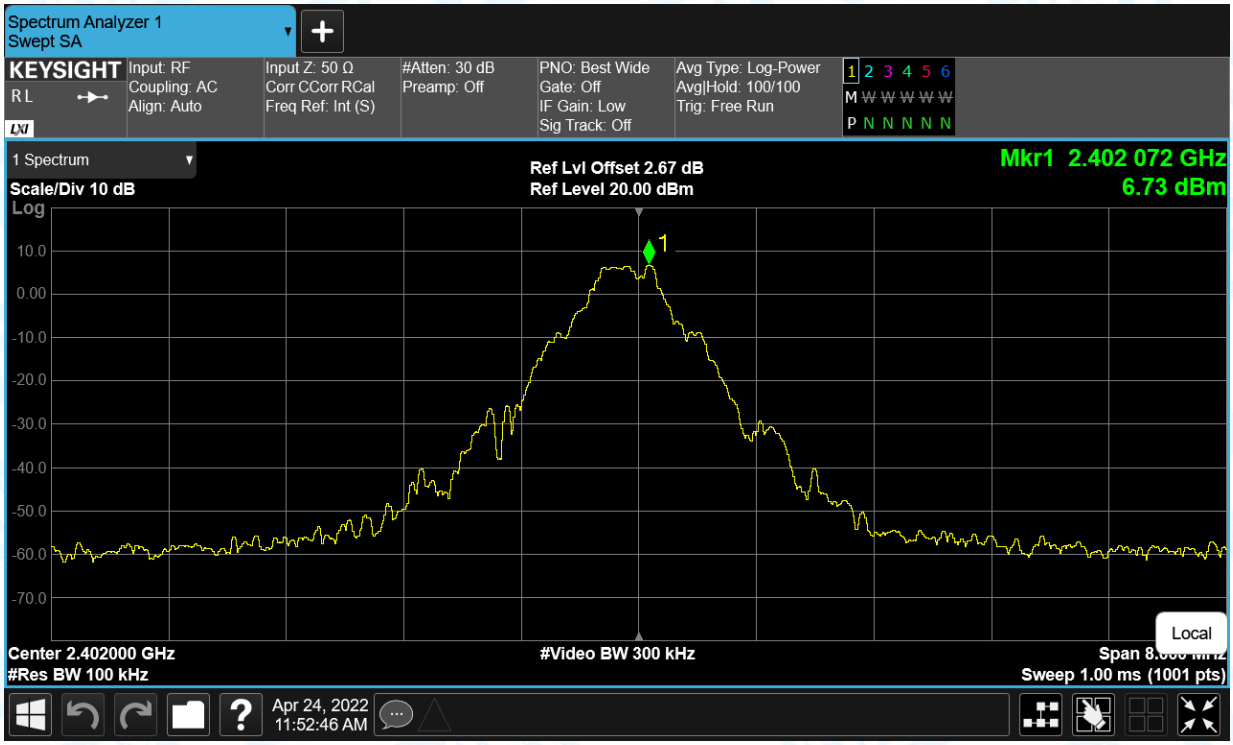


5. Band Edge

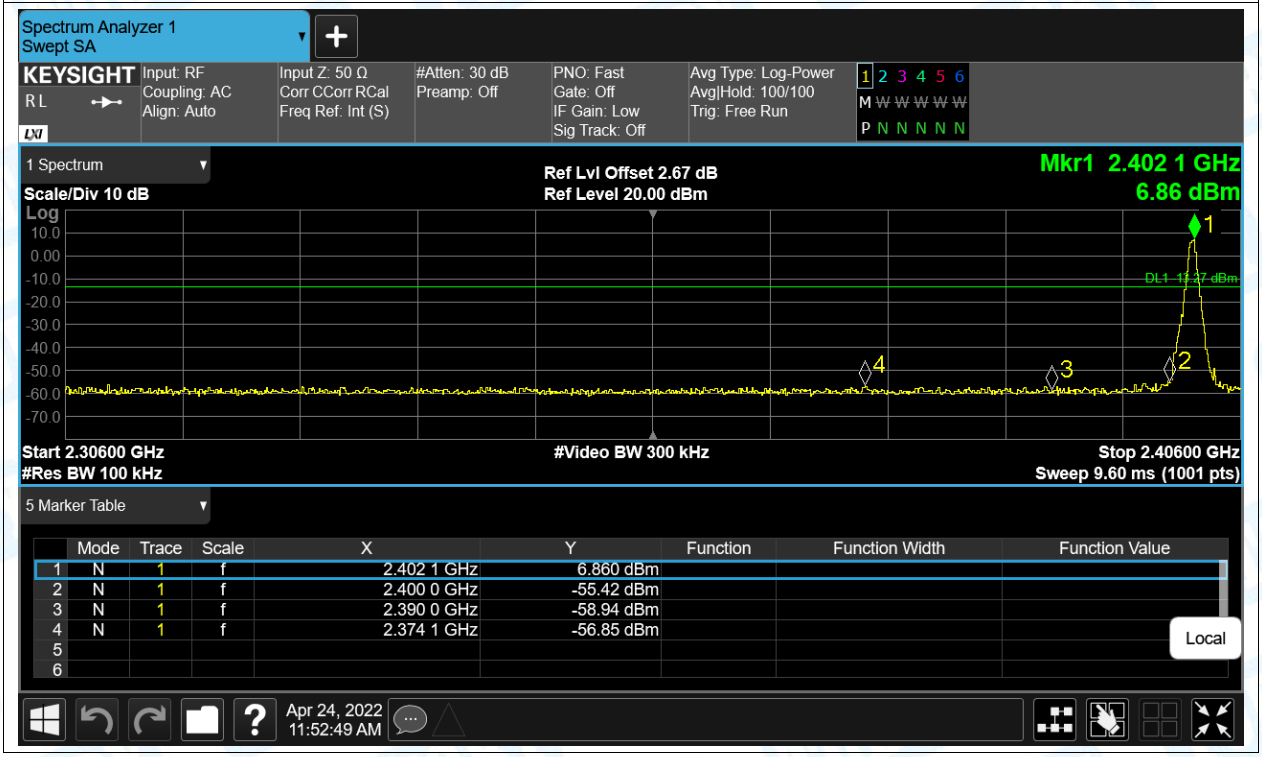
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-63.58	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-58.17	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-57.7	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-54.15	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-58.65	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-54.09	-20	Pass

Test Graphs

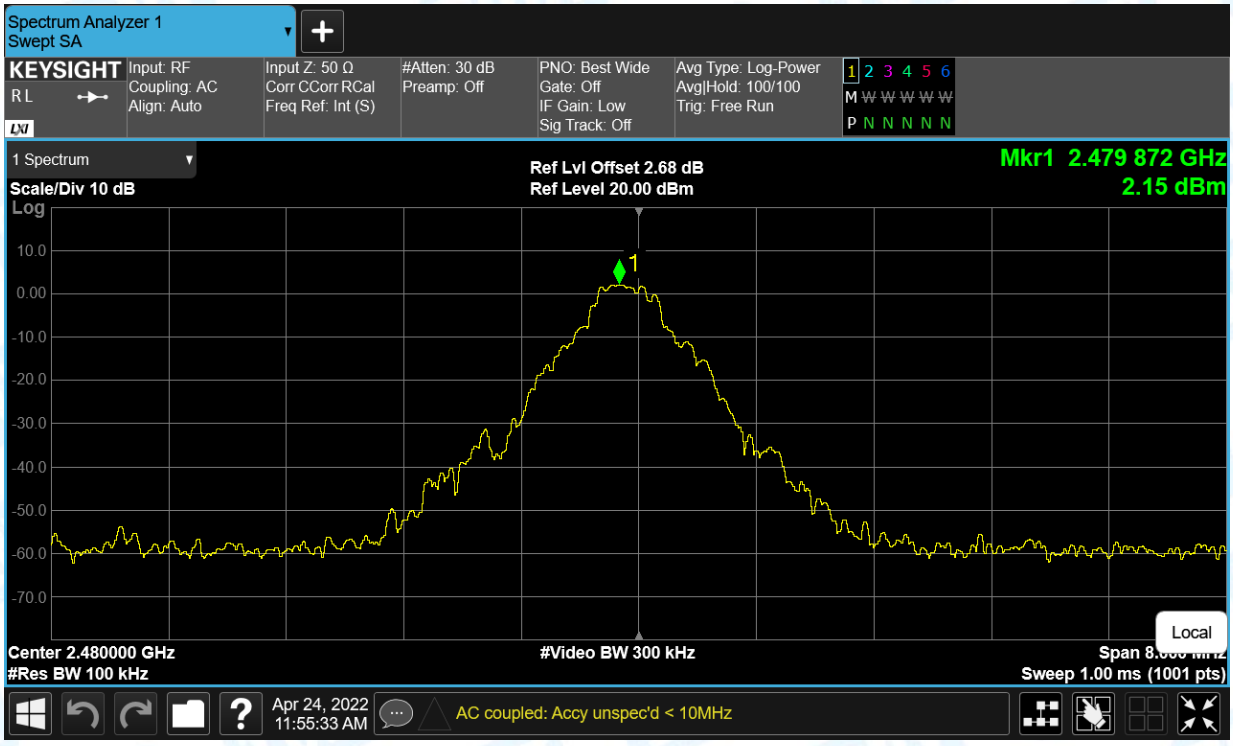
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



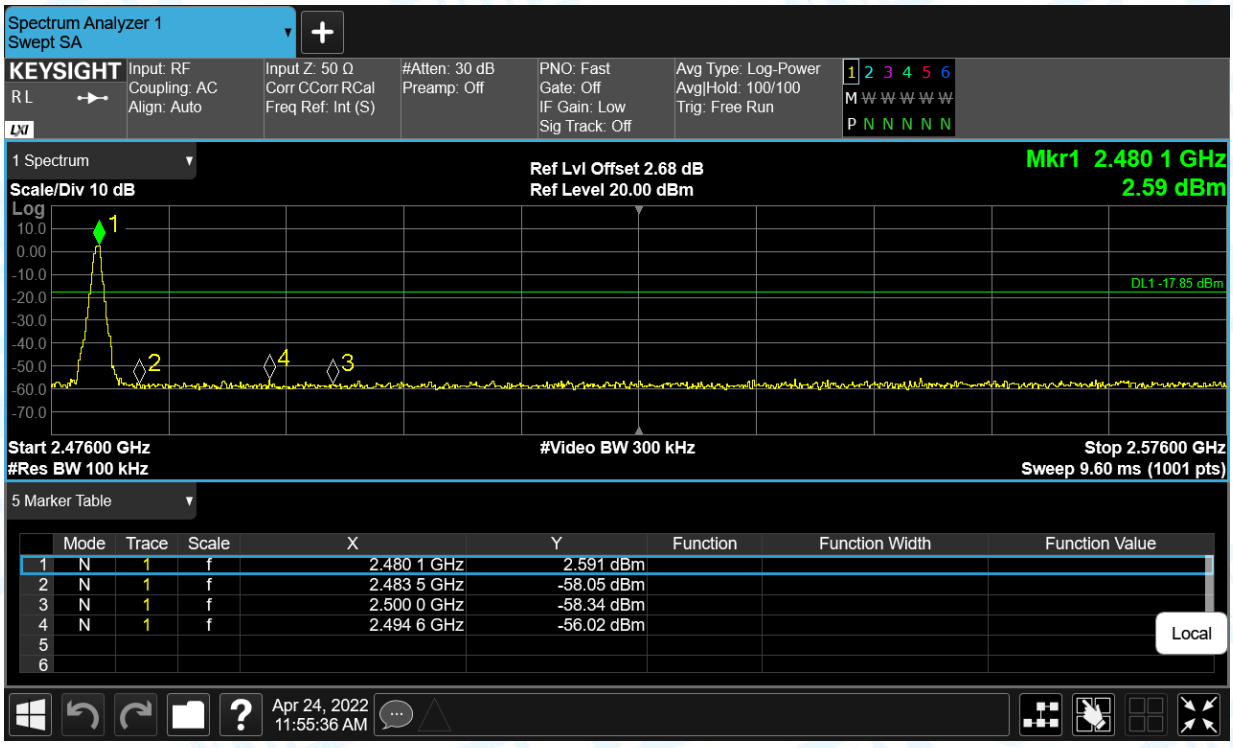
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



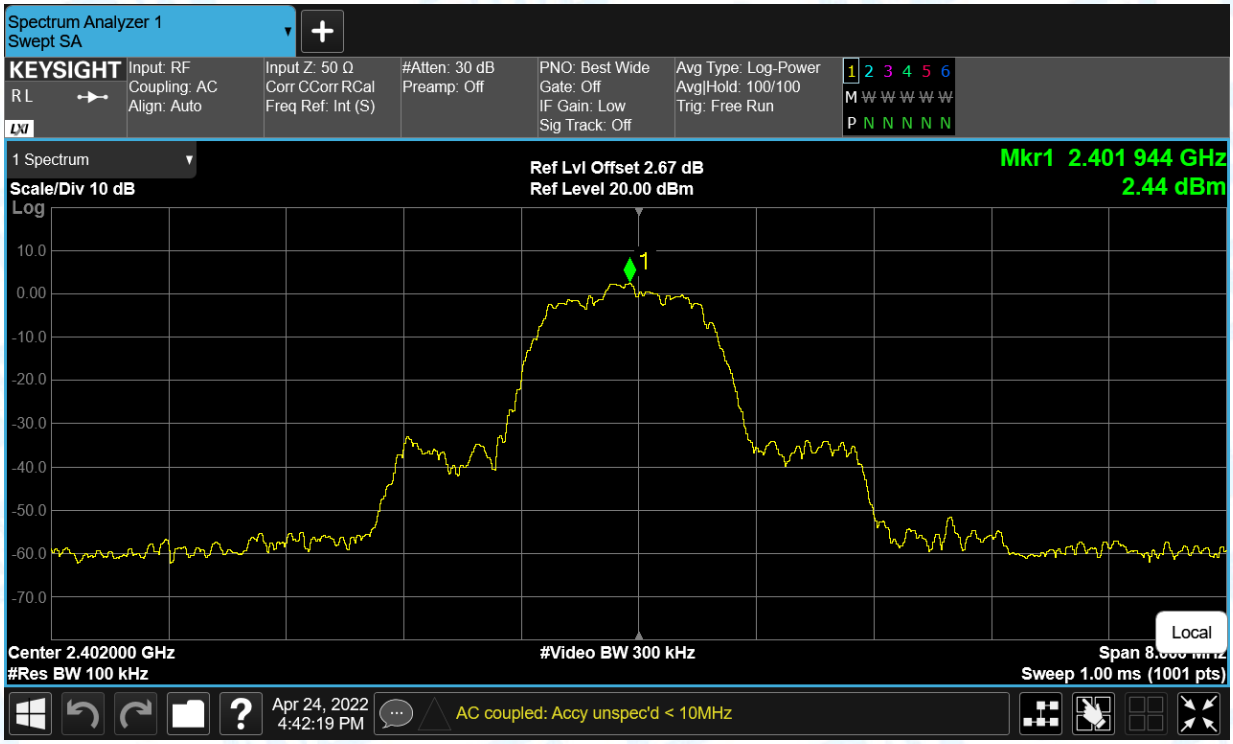
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



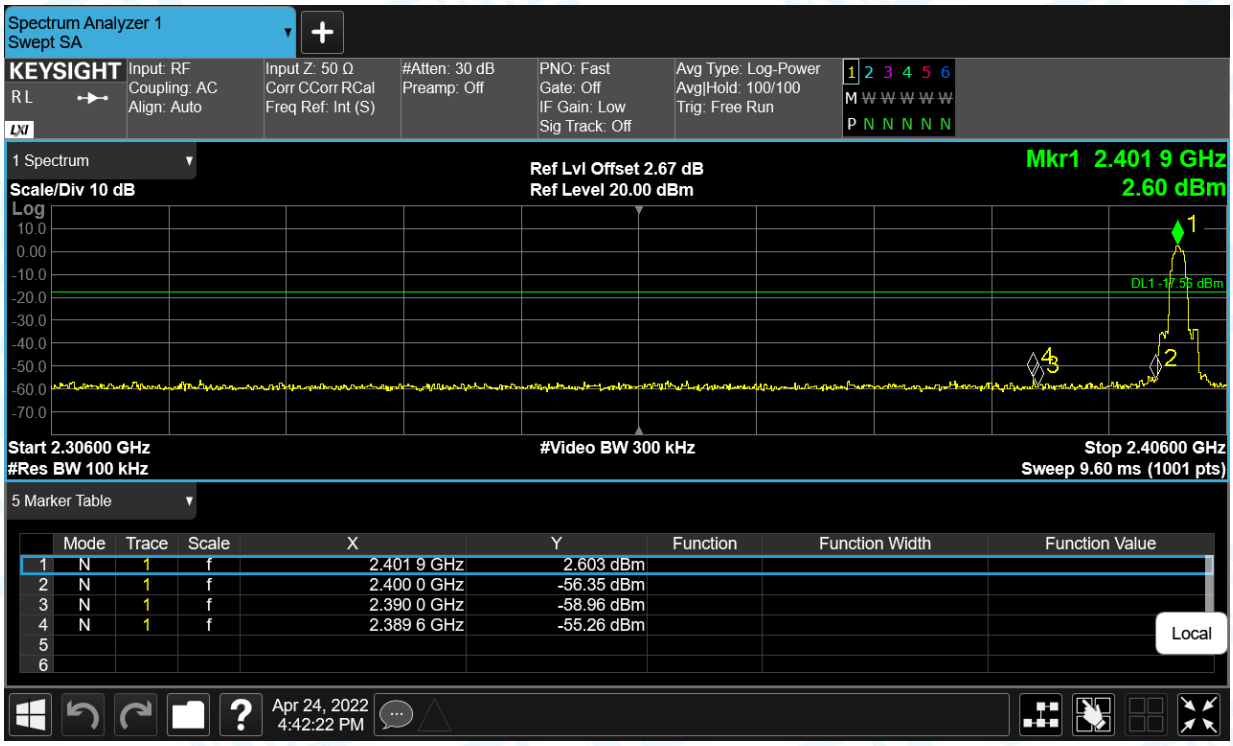
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



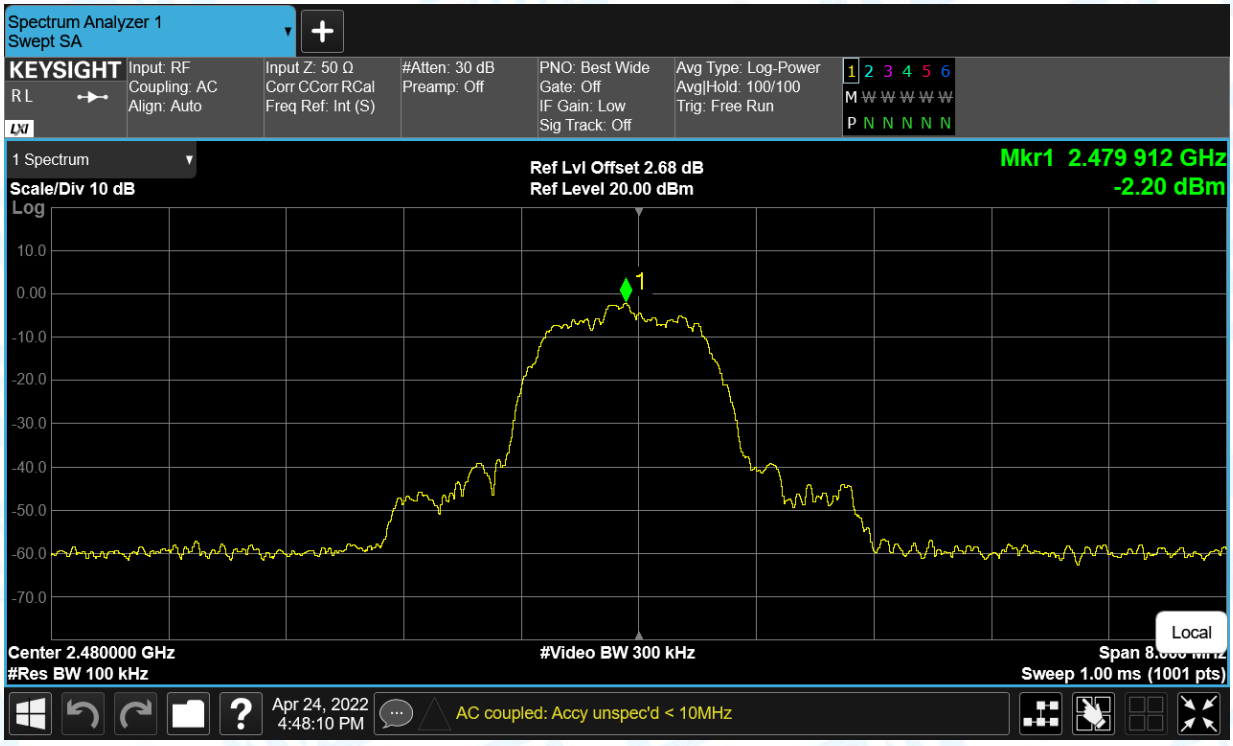
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



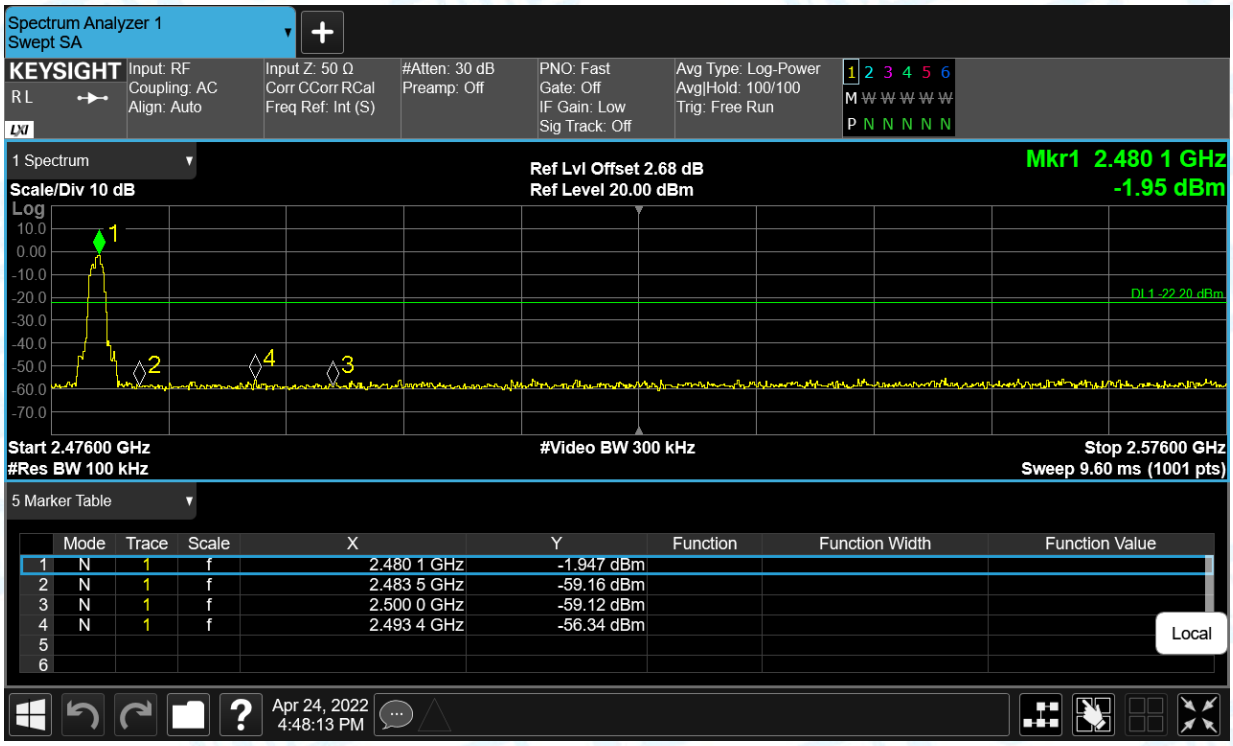
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



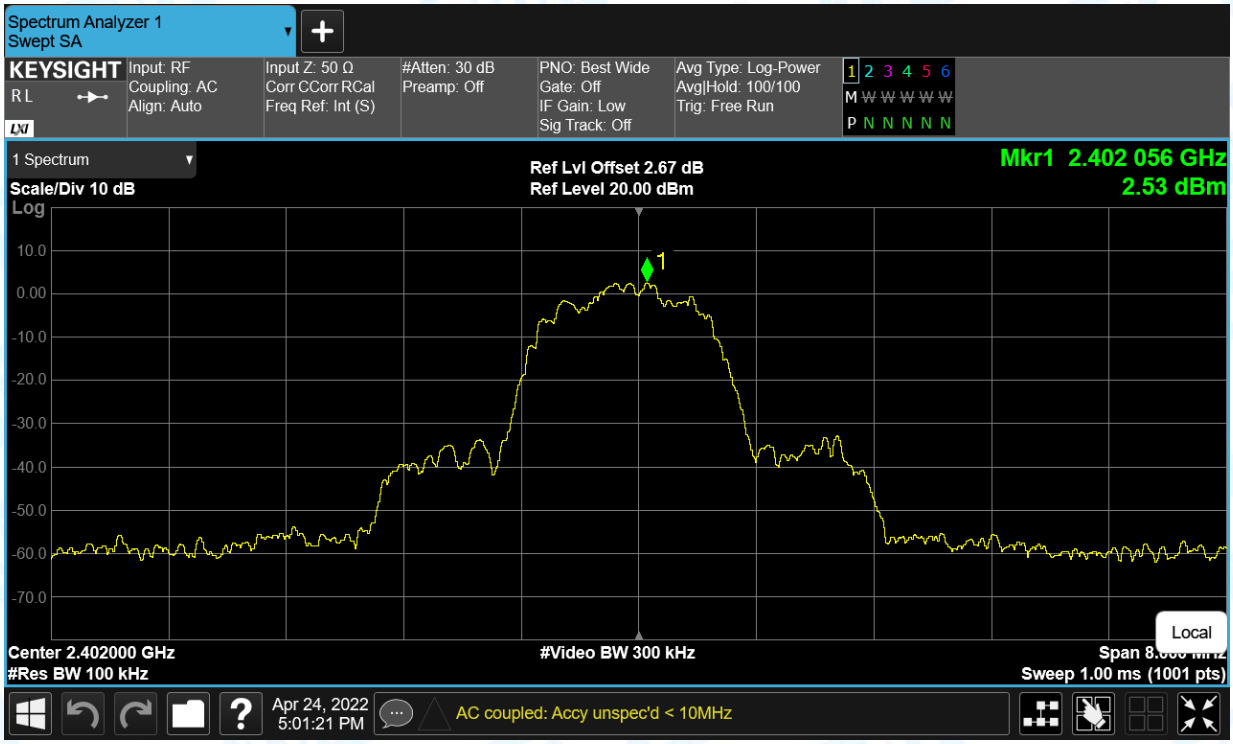
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



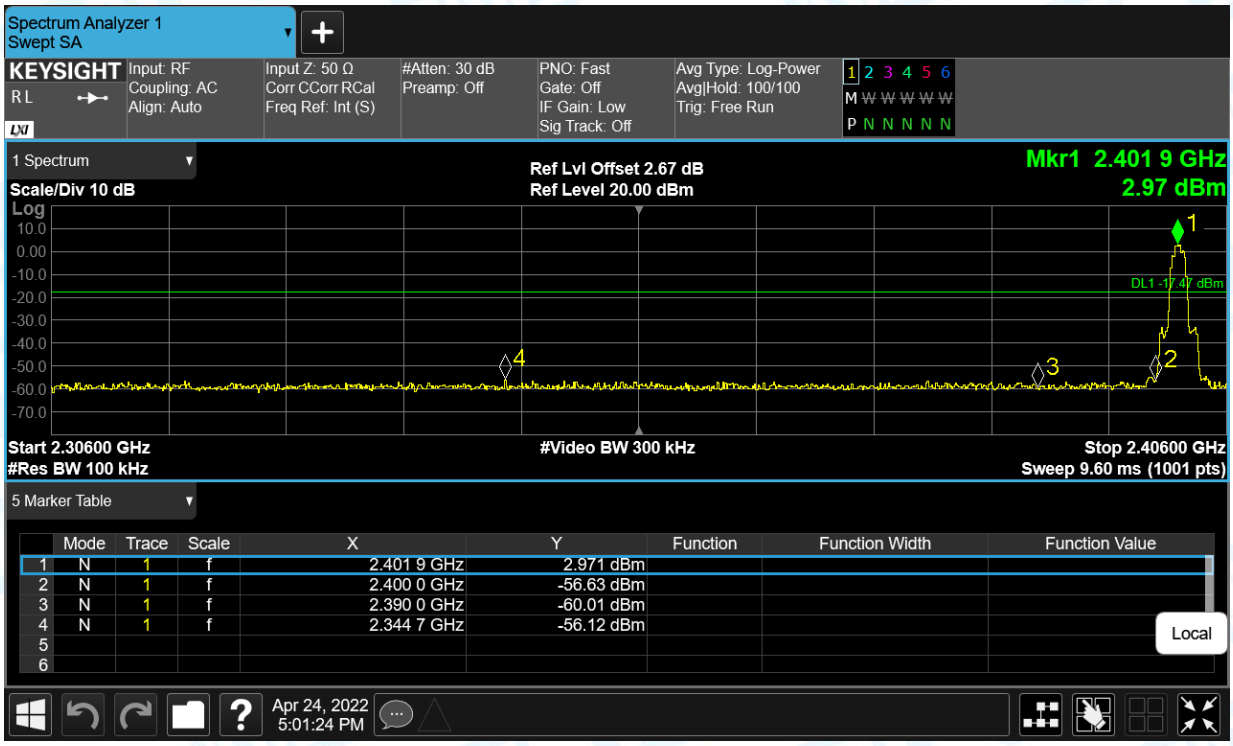
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



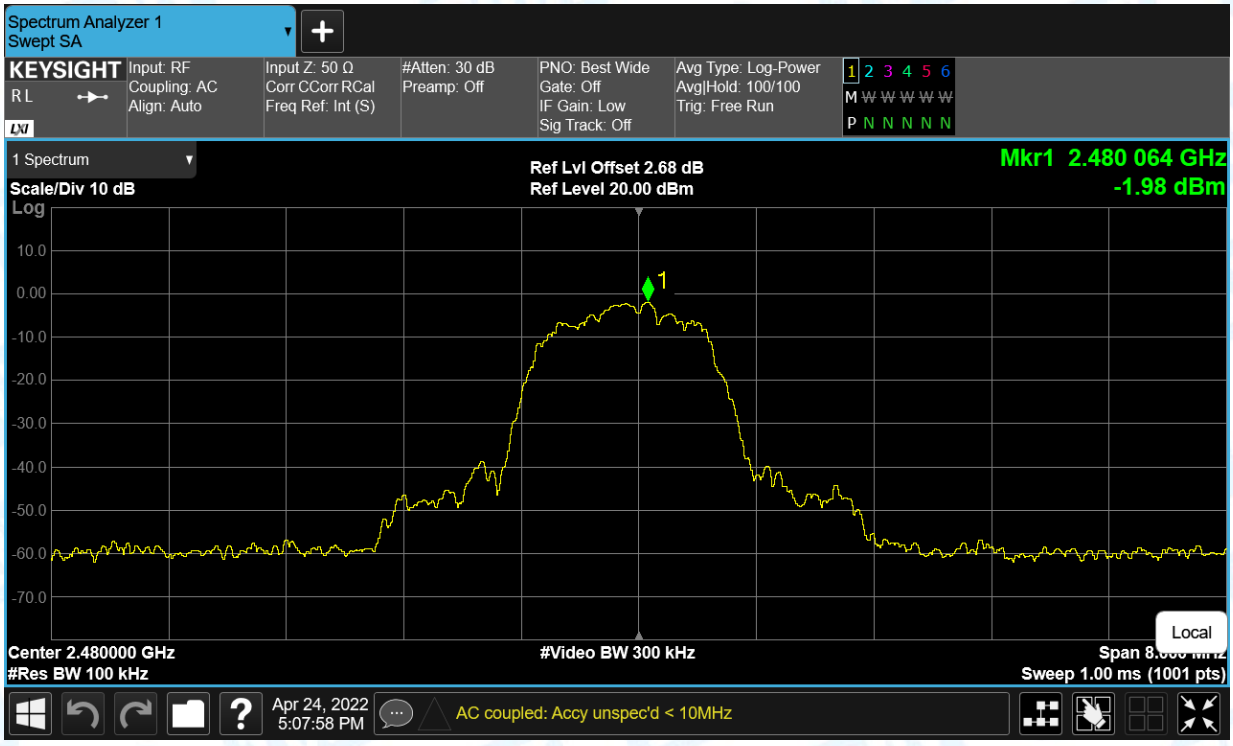
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



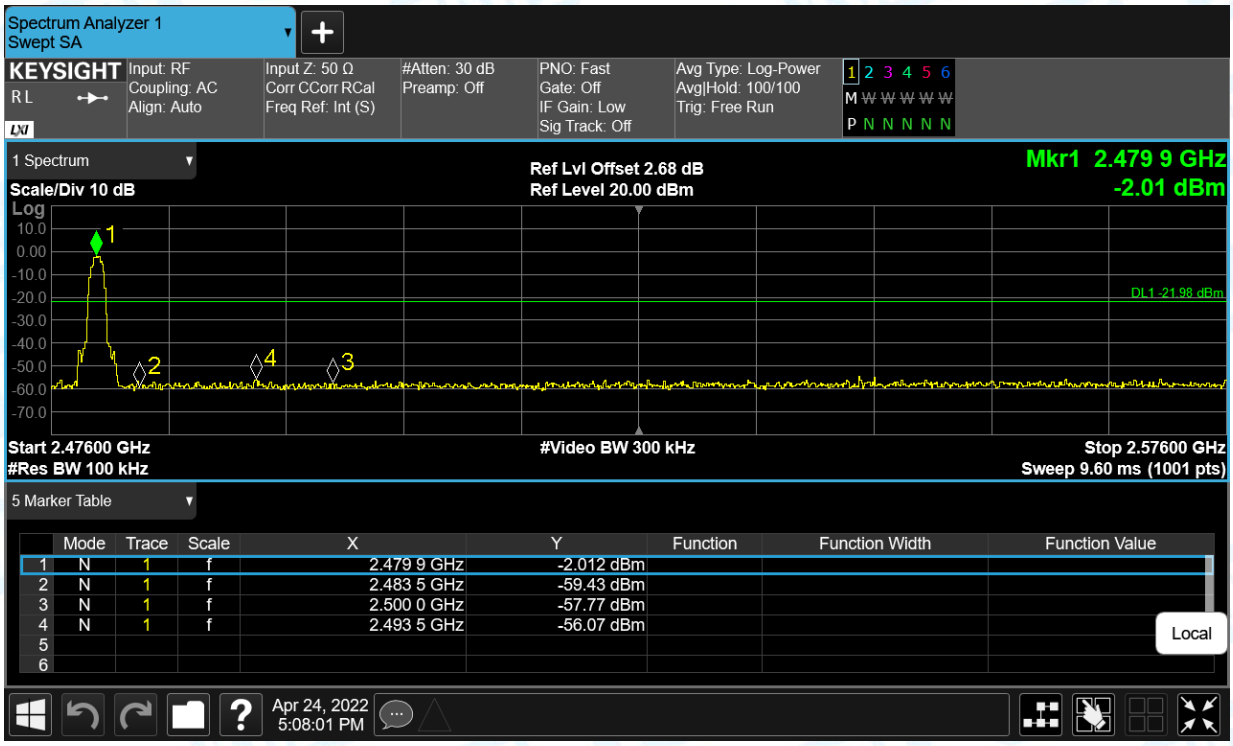
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



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



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

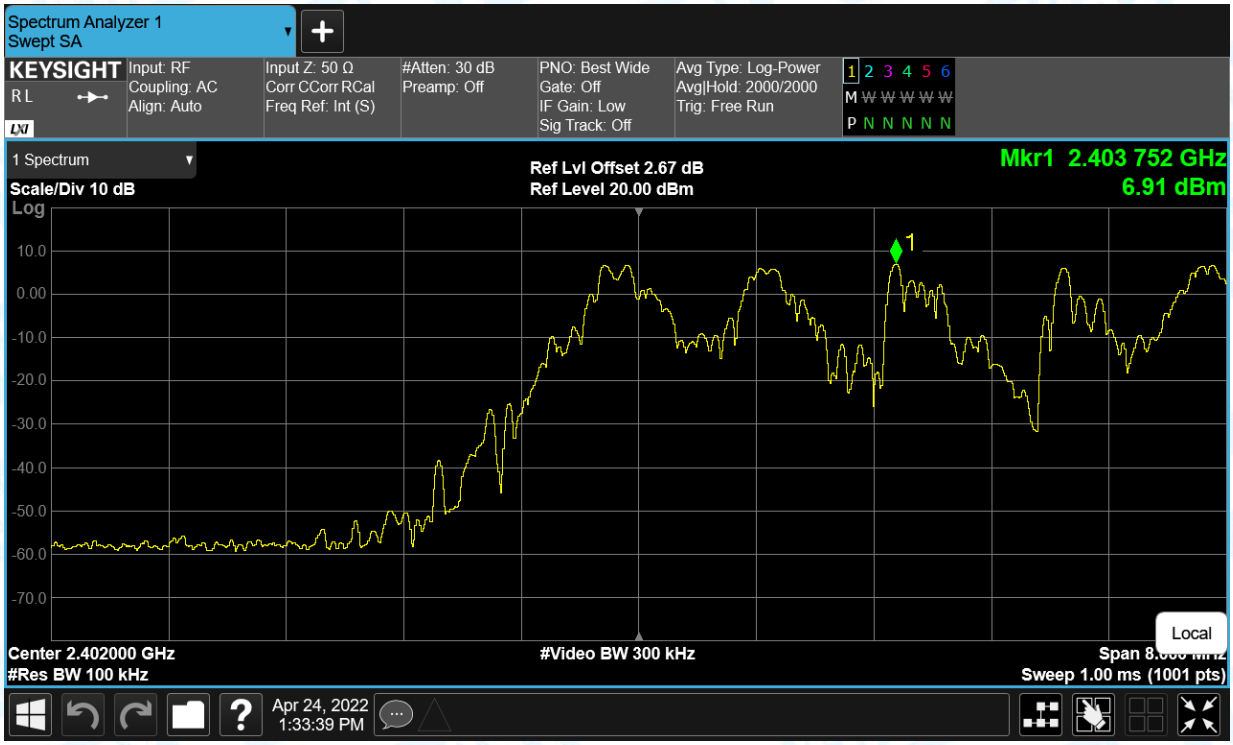


6. Band Edge(Hopping)

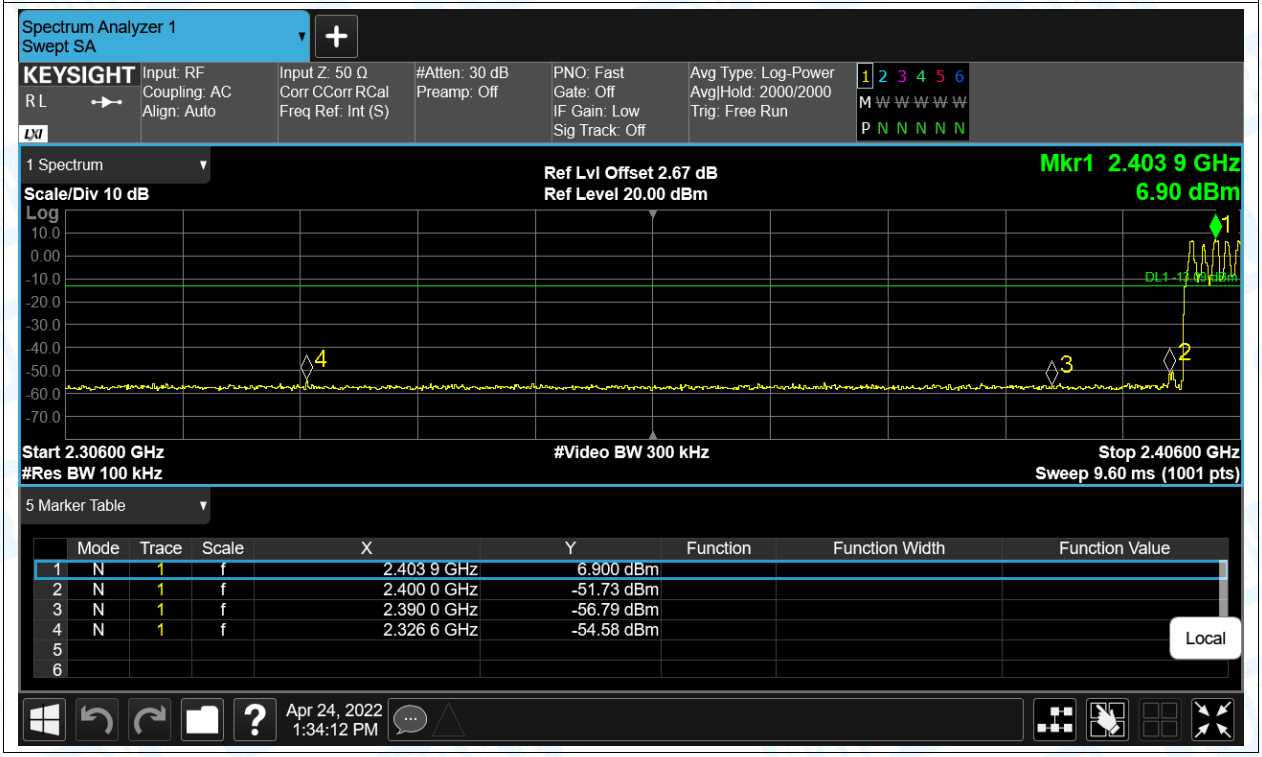
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-61.49	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-57.91	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-57.76	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-53.39	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-58.25	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-53.62	-20	Pass

Test Graphs

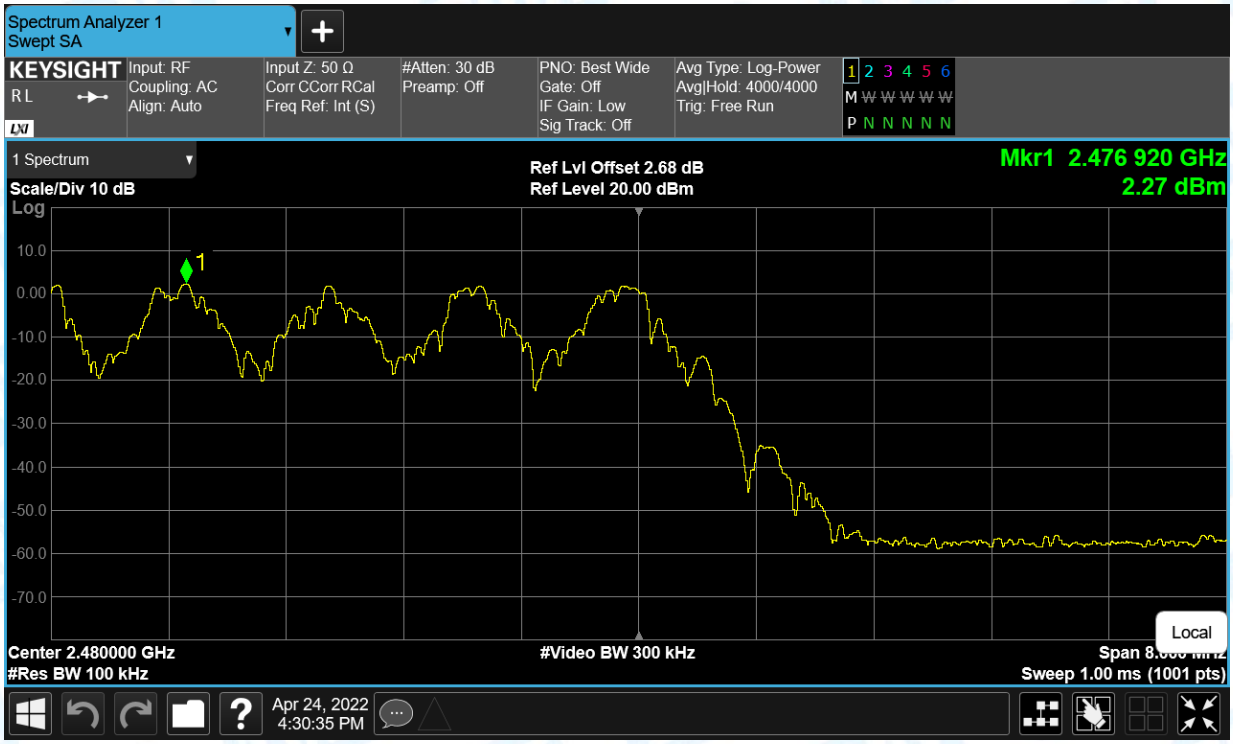
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref



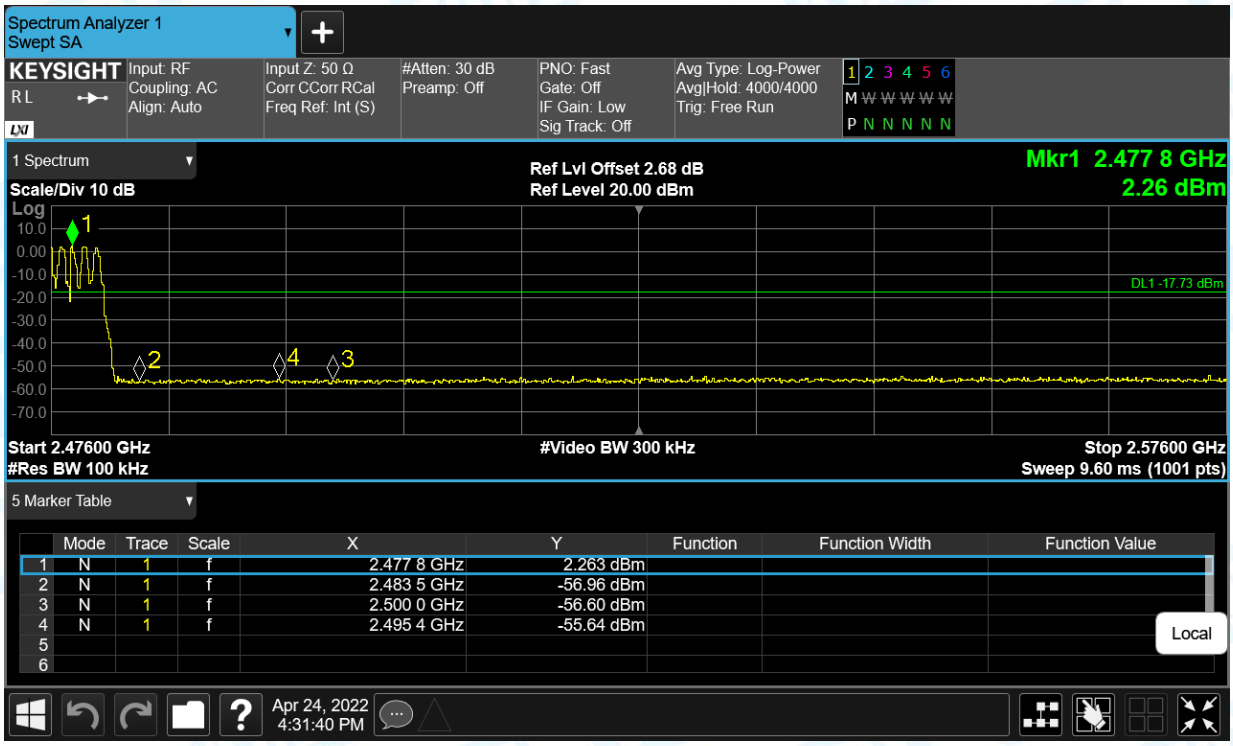
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



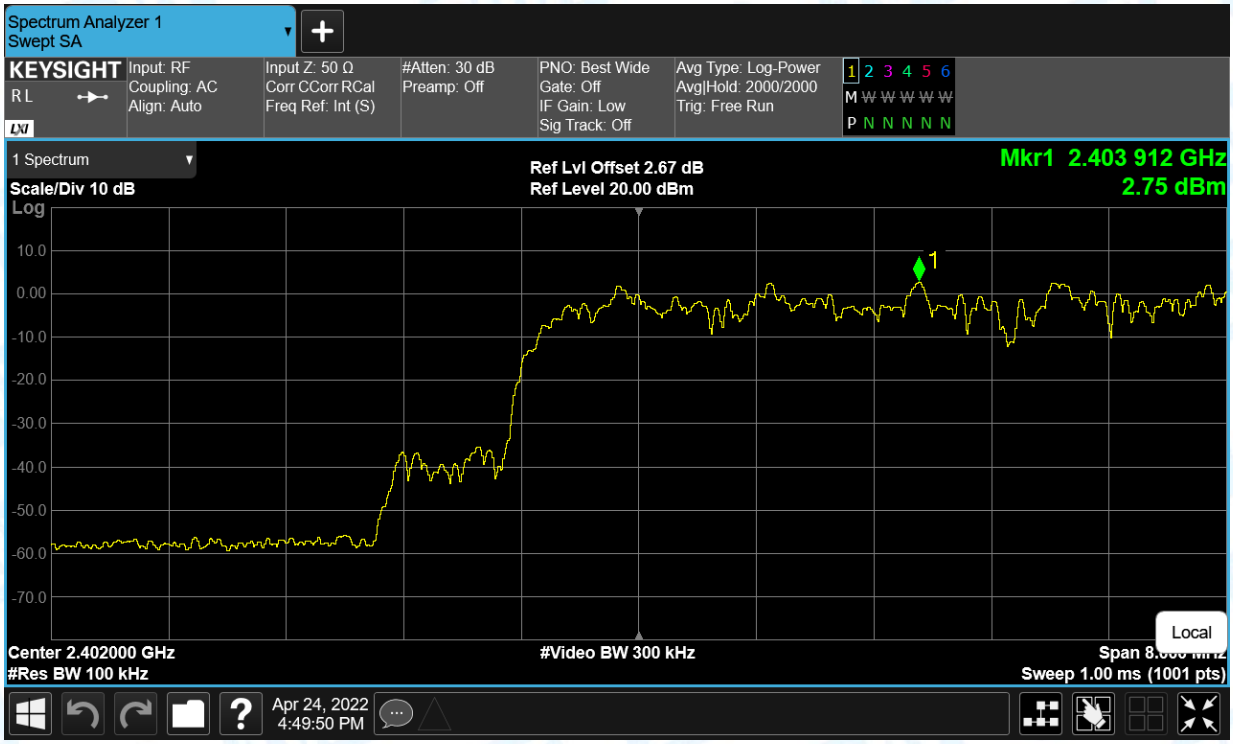
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref



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