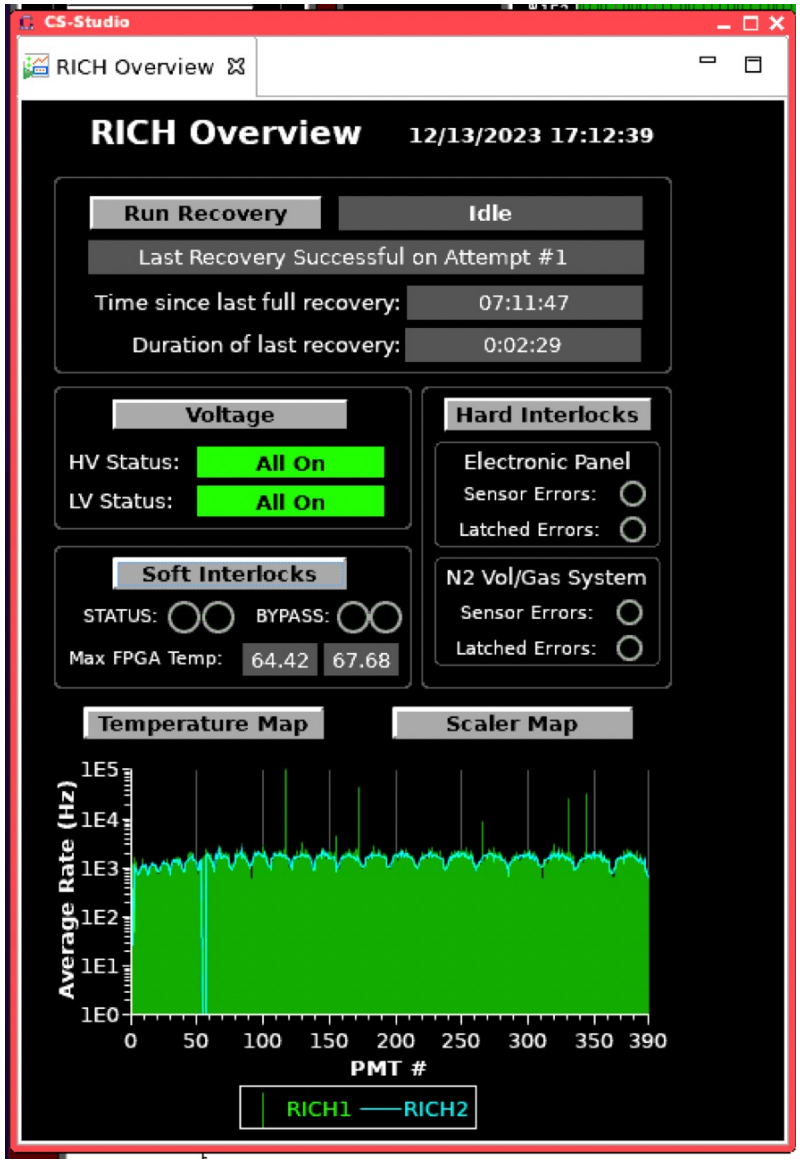
RICH Control Manual

September 20, 2021

Do full RICH RECOVERY every day shift between runs and in case of missing tiles in the temperature or scaler plots

- RICH front-end is sitting in the beam of the secondary particles. The radiation damage causes the malfunction of FE . Dead tiles appear. The damage is not permanent. It can be recovered by switching LV OFF/ON.
- One click RICH recovery procedure
  1. RICH LV OFF/ON
  2. Verify the number of live tiles
  3. Repeat 1) if RICH still has dead tiles
  4. Reboot rich4
- **Start new run with CANCEL-RESET!**



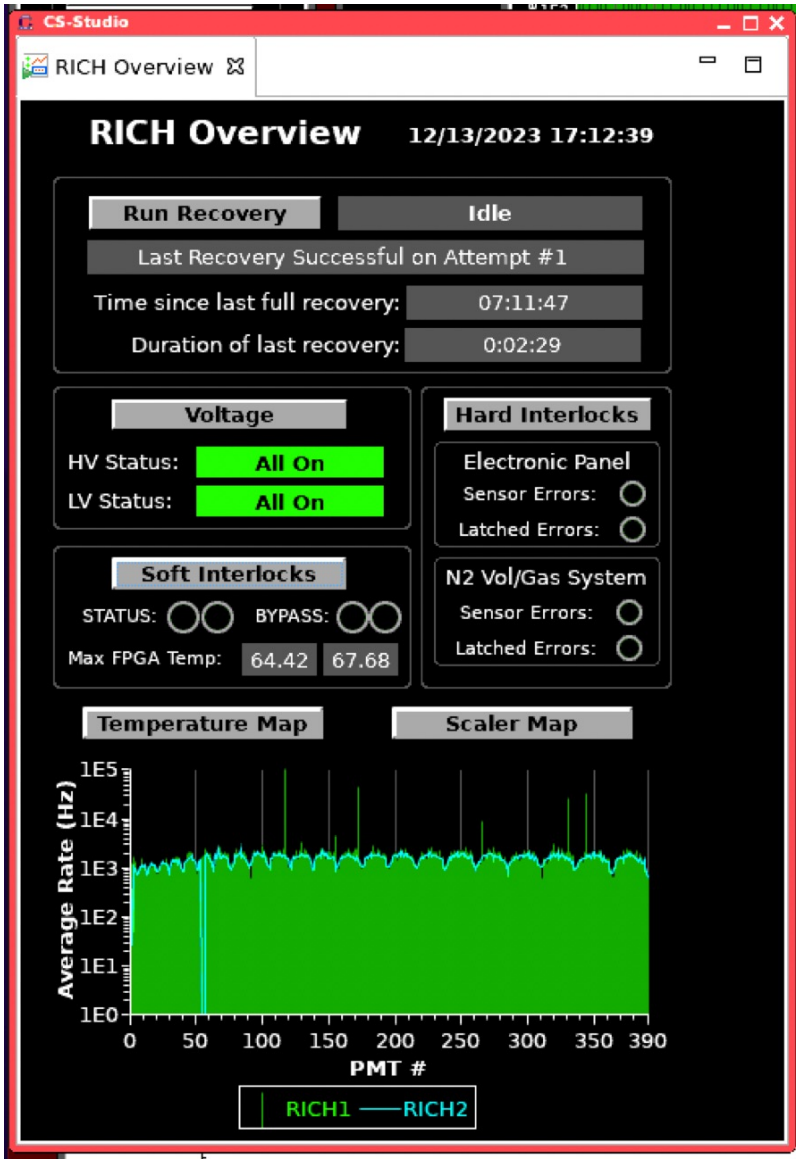
RICH mainframe remote reboot

In case of communication lost with the RICH mainframe try to reboot it remotely

- To reboot only the CPU:
  caenhvReset.py --soft hvrich1
- To power cycle the whole thing, causing all voltages to go to zero:
  caenhvReset.py —-hard hvrich1

- Press RICH on clascss menu
- Chose RICH Overview

RICH Overview



- ***Voltage*** control RICH HV and LV
- ***Temperature Map***

Shows the temperature of the RICH electronic boards

- ***Scaler Map***

Presents the rate of the MAPMT pixels

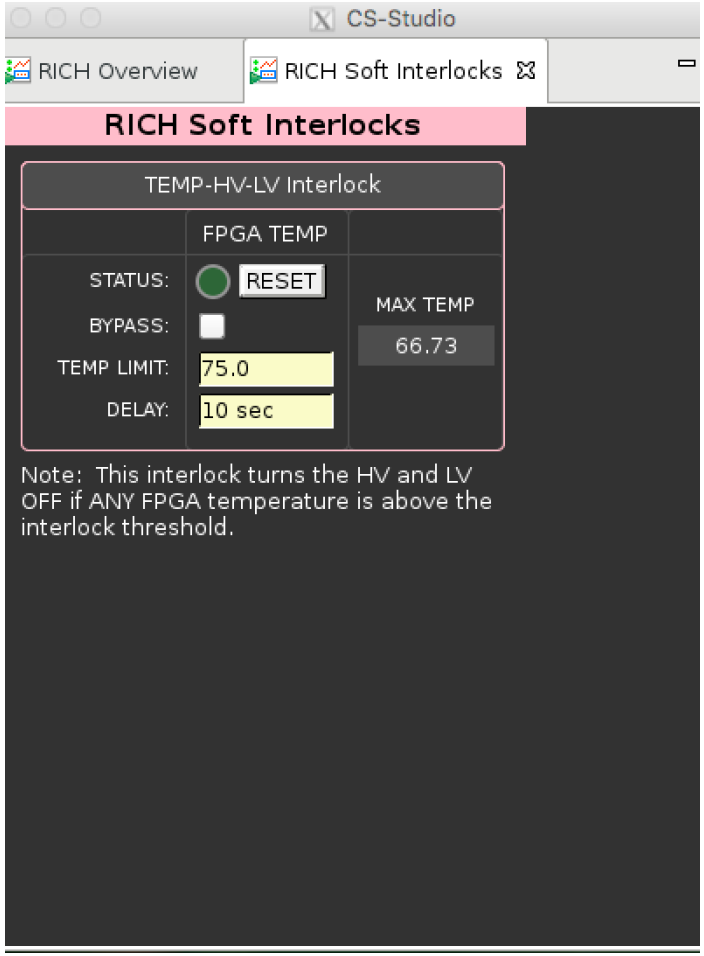
- ***Hard Interlock***

Control the RICH interlock

- ***Soft Interlock***

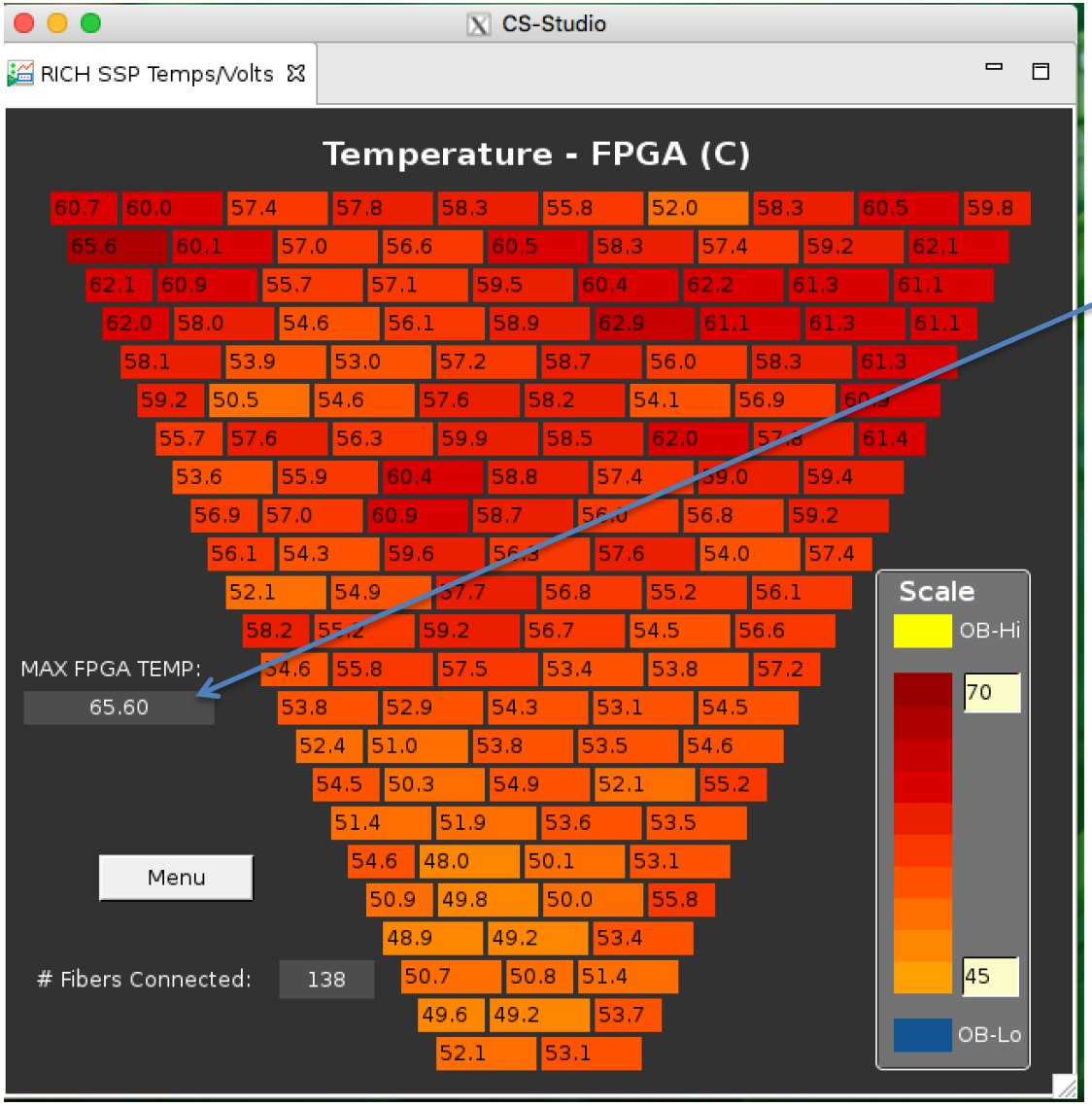
Control the max temperature of the FPGA chips

Soft Interlock



- Max temperature has to be less than 75 C
- Reset the interlock if necessary

Temperature Map



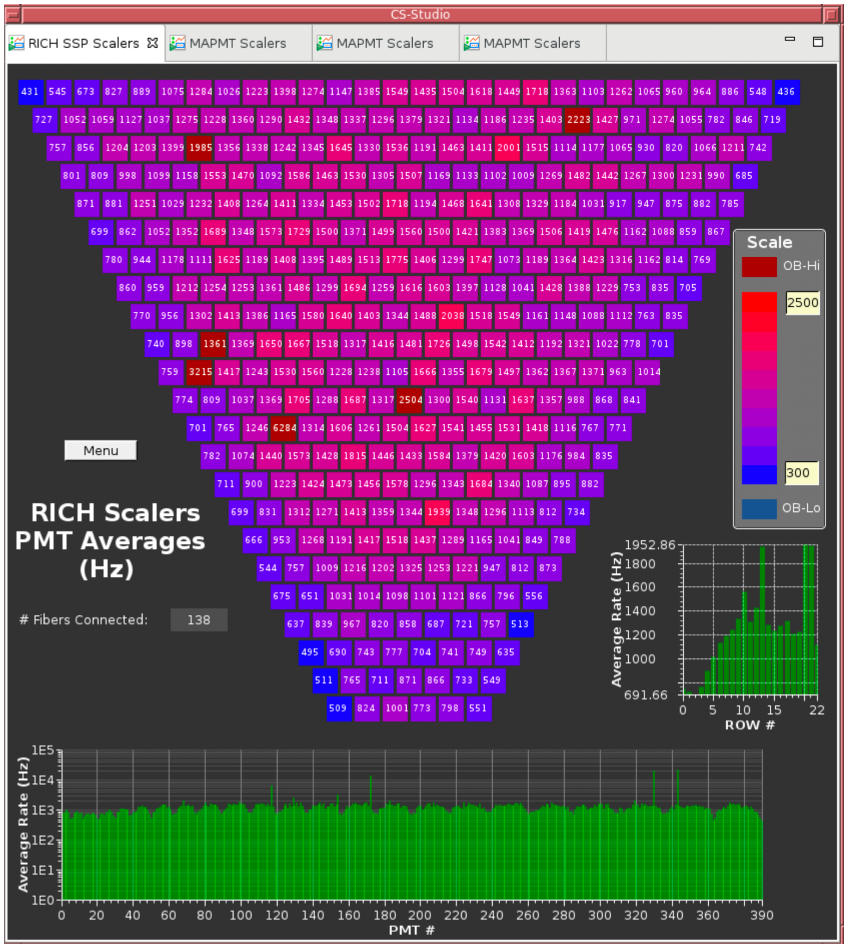
- Max temperature has to be less than 75 C
- Soft interlock switches off

The RICH HV and LV if t>75C^0

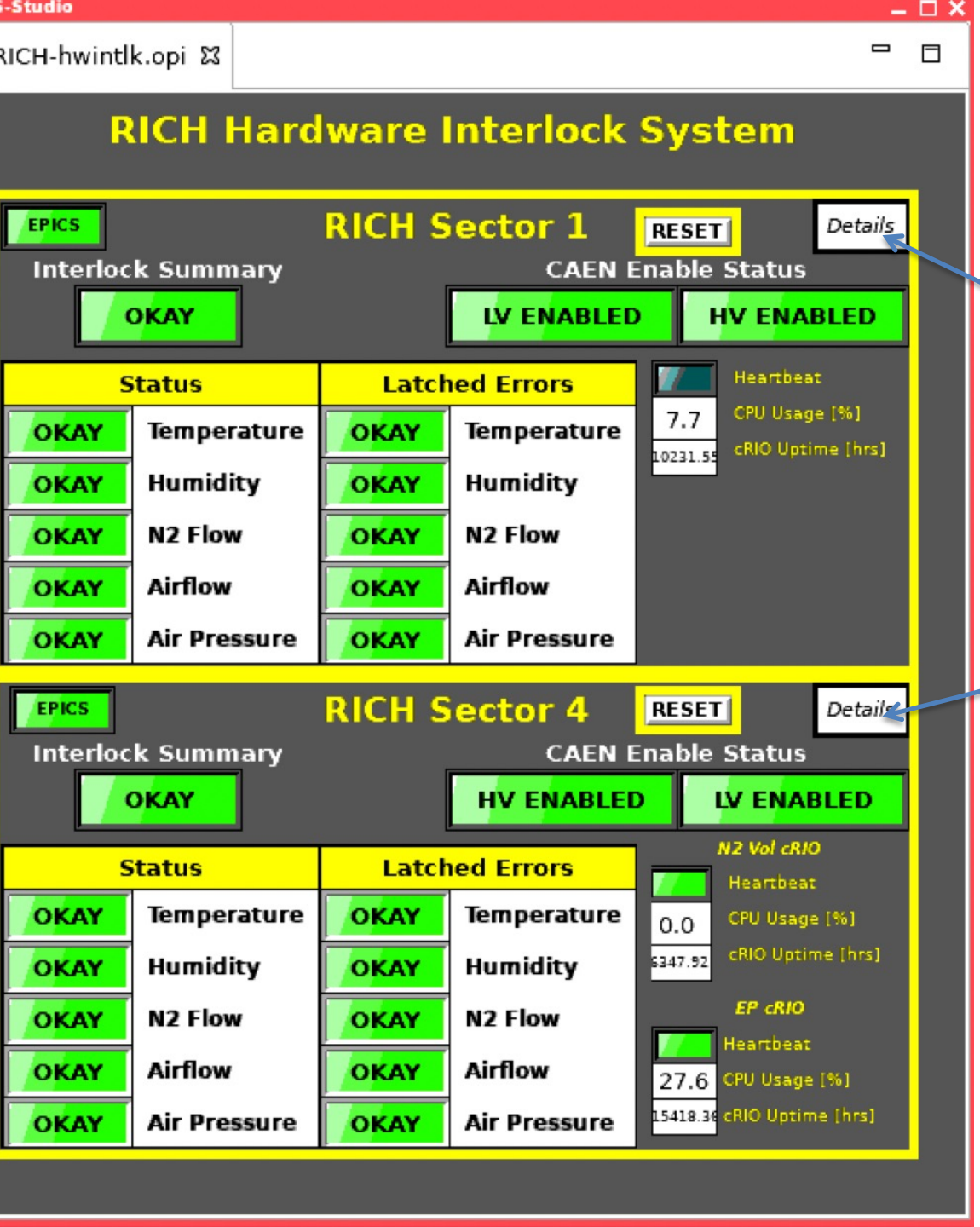
- All tiles have to be present

except Tile 21 in sector 1

RICH scalers

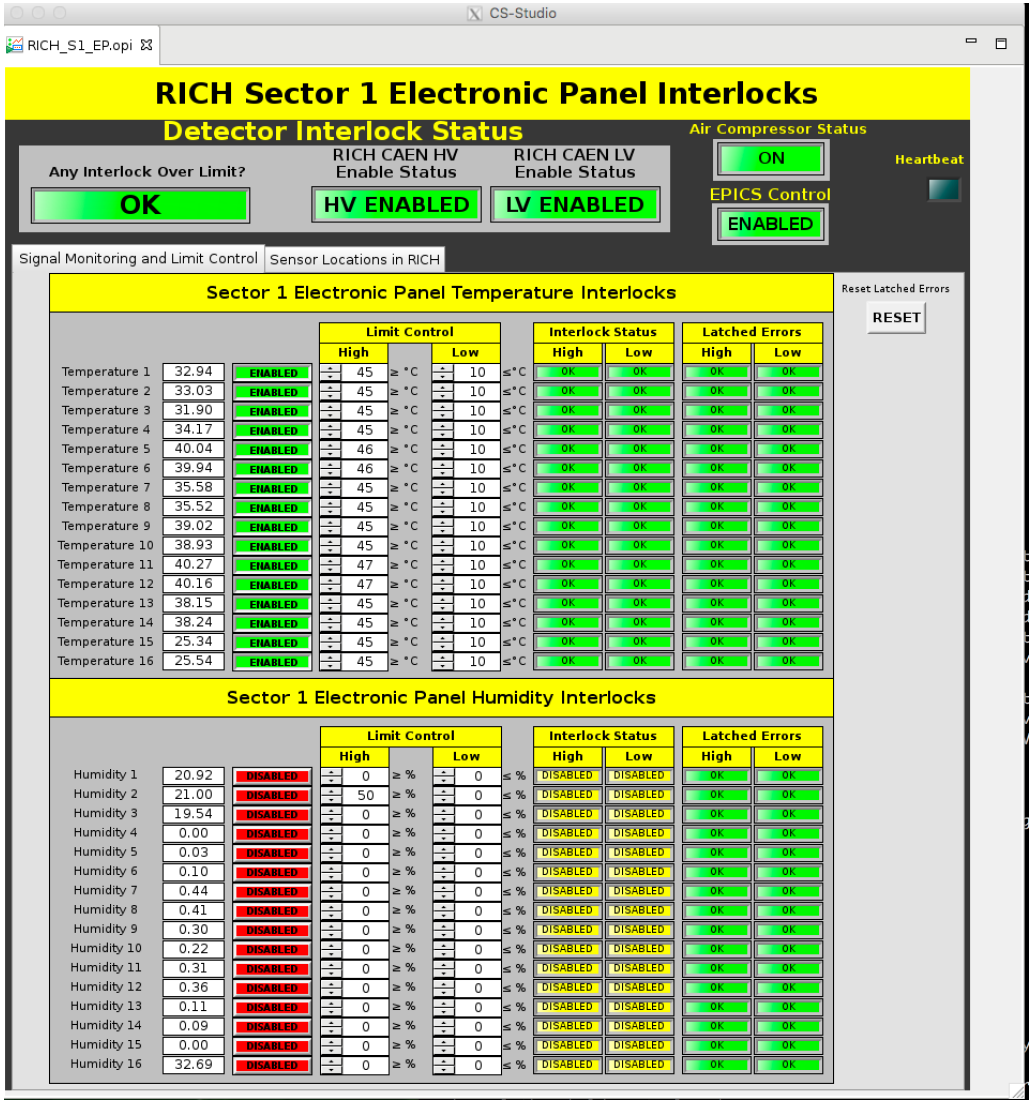


- The plot presents the average rate of the MAPMT pixels
- ALL MAPMTs have to be present except Tile 21 in sector 1



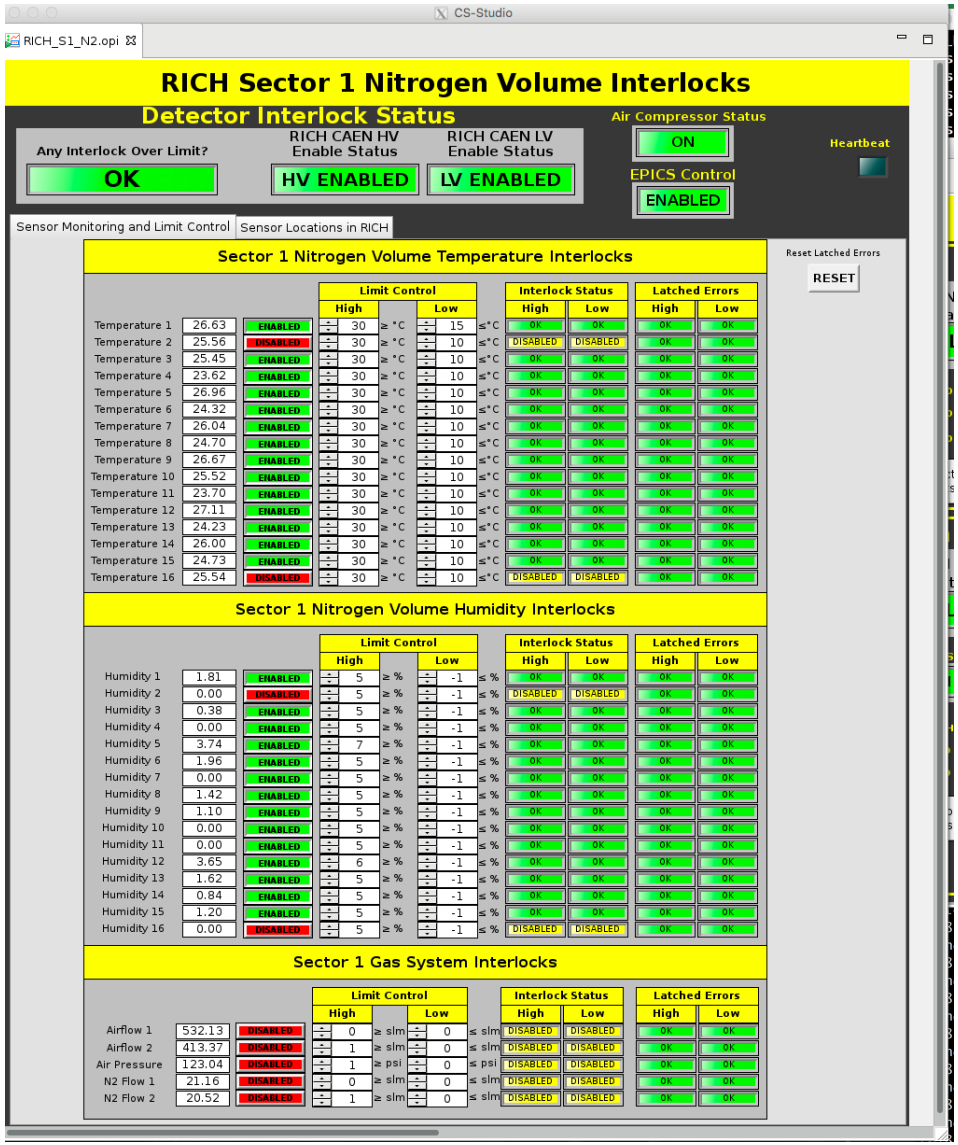
- Hard Interlock controls the temperature and humidity inside the RICH detector
- Press this button to view the sector 1 panel
- Press this button to view the sector 4 panel

Electronic Volume Interlock



Check the temperature and humidity

Nitrogen Volume Interlock



Check the temperature and humidity