RICH Control Manual

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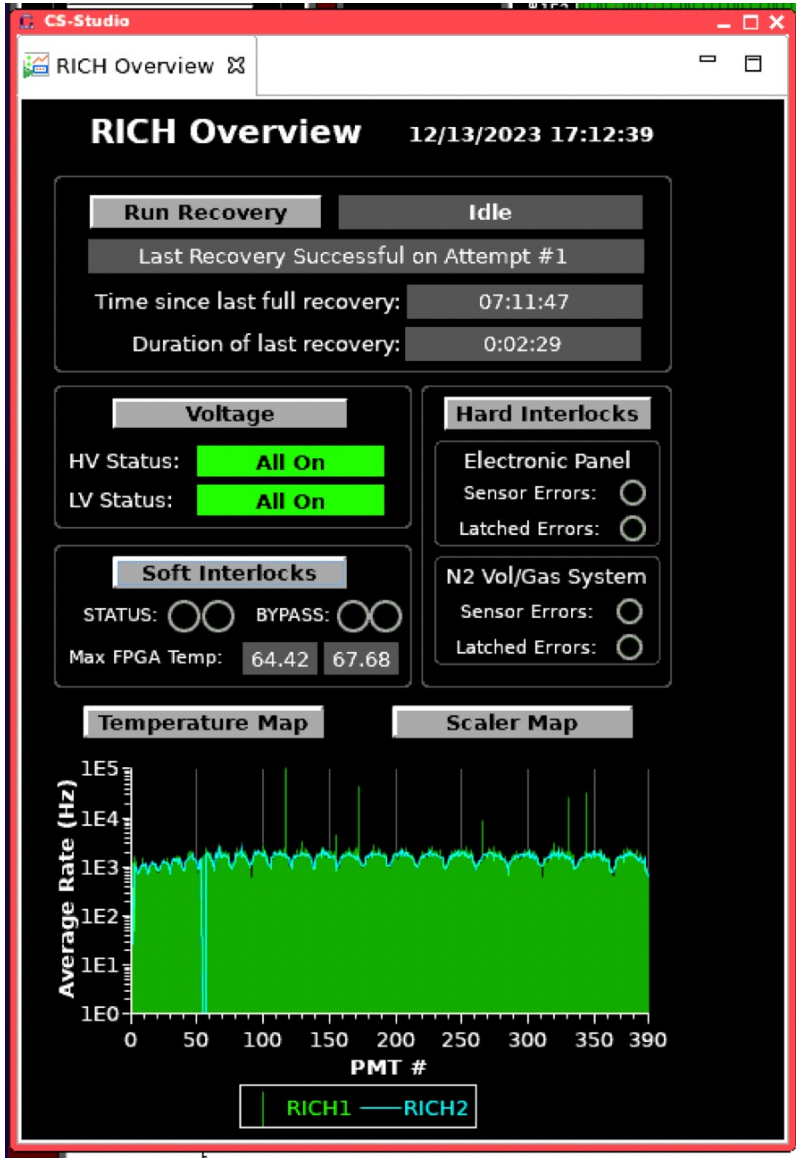
- RICH front-end is sitting in the beam of the secondary particles. The radiation damage causes the malfunction of FE . Dead tiles appear. The damage is not permanent. It can be recovered by switching LV OFF/ON or reloading the RICH front-end FPGA
- We don’t need to perform the RICH full recovery daily any more. DAQ is reloading FPGA memory during prestart automatically
- In case you got RICH alarm do the following:
    1. Continue data taking if DAQ is working.
    2. Start new run with CANCEL-RESET
    3. With high probability the problem will be fixed automatically
    4. If the problem is not solved do RICH full recovery.
    5. If it does not not help call RICH expert



RICH mainframe remote reboot

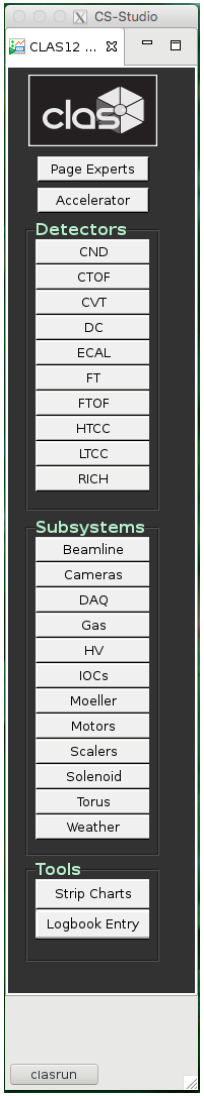
In case of communication lost with the RICH mainframe try to reboot it remotely

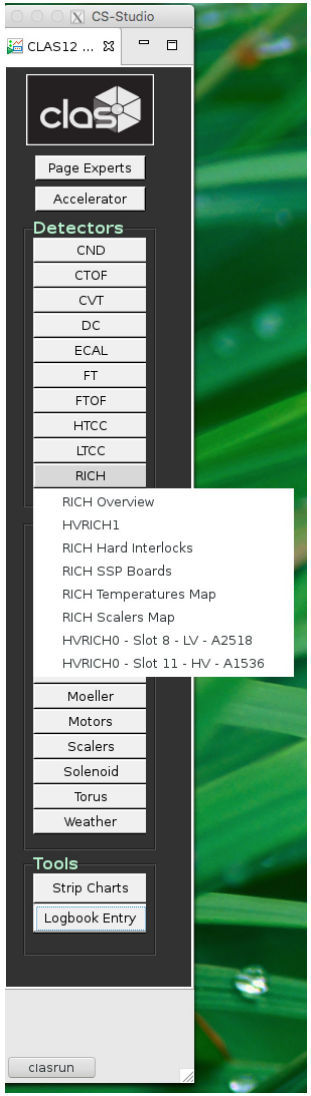
- To reboot only the CPU:
  caenhvReset.py --soft hvrich1 (sector 4)

  caenhvReset.py --soft hvrich2 (sector 1)
- To power cycle the whole thing, causing all voltages to go to zero:
  caenhvReset.py --hard hvrich1 (sector 4)

  caenhvReset.py --hard hvrich2 (sector 1)

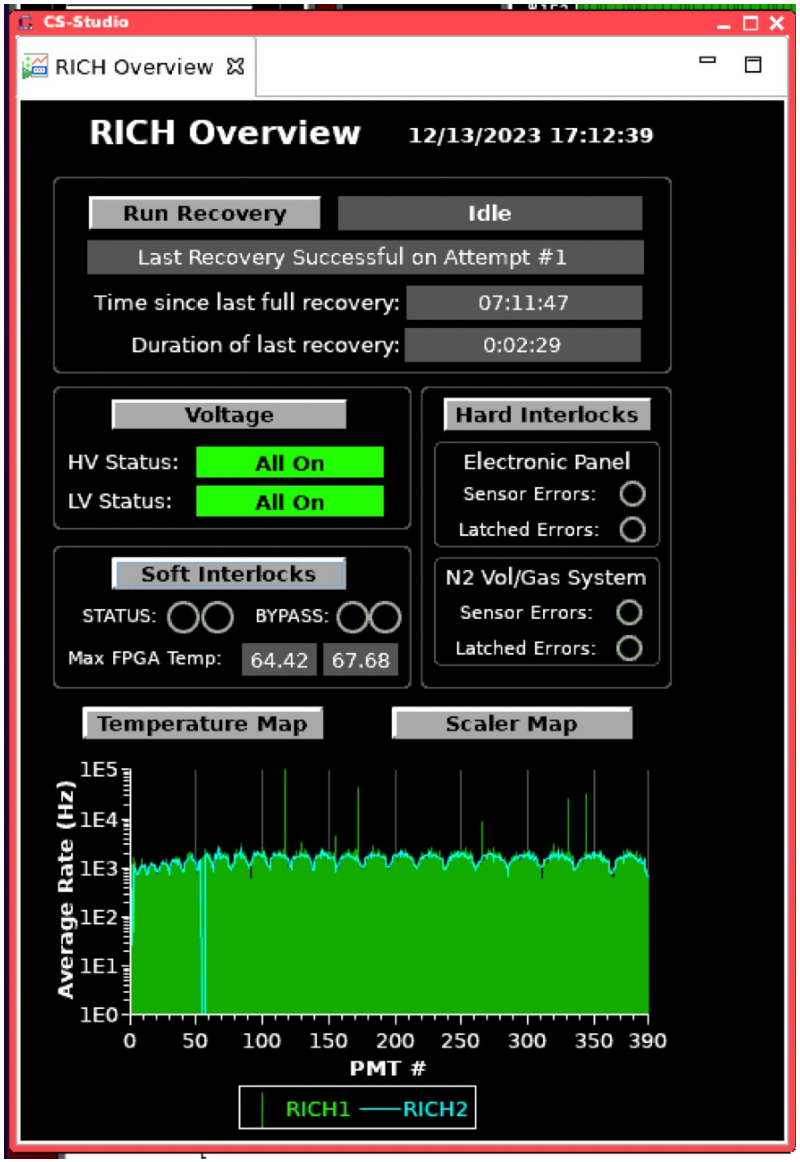
RICH GUI overview





- Press RICH on clascss menu
- Chose RICH Overview

RICH GUI



- ***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

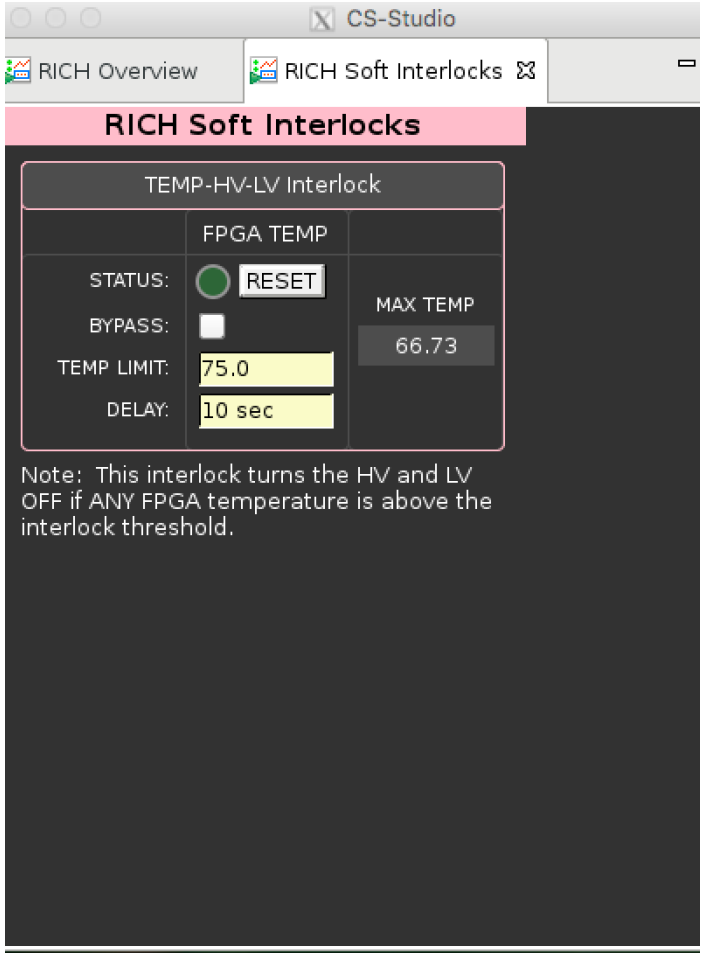
- ***Hard Interlock***

Control the RICH interlock

- ***Soft Interlock***

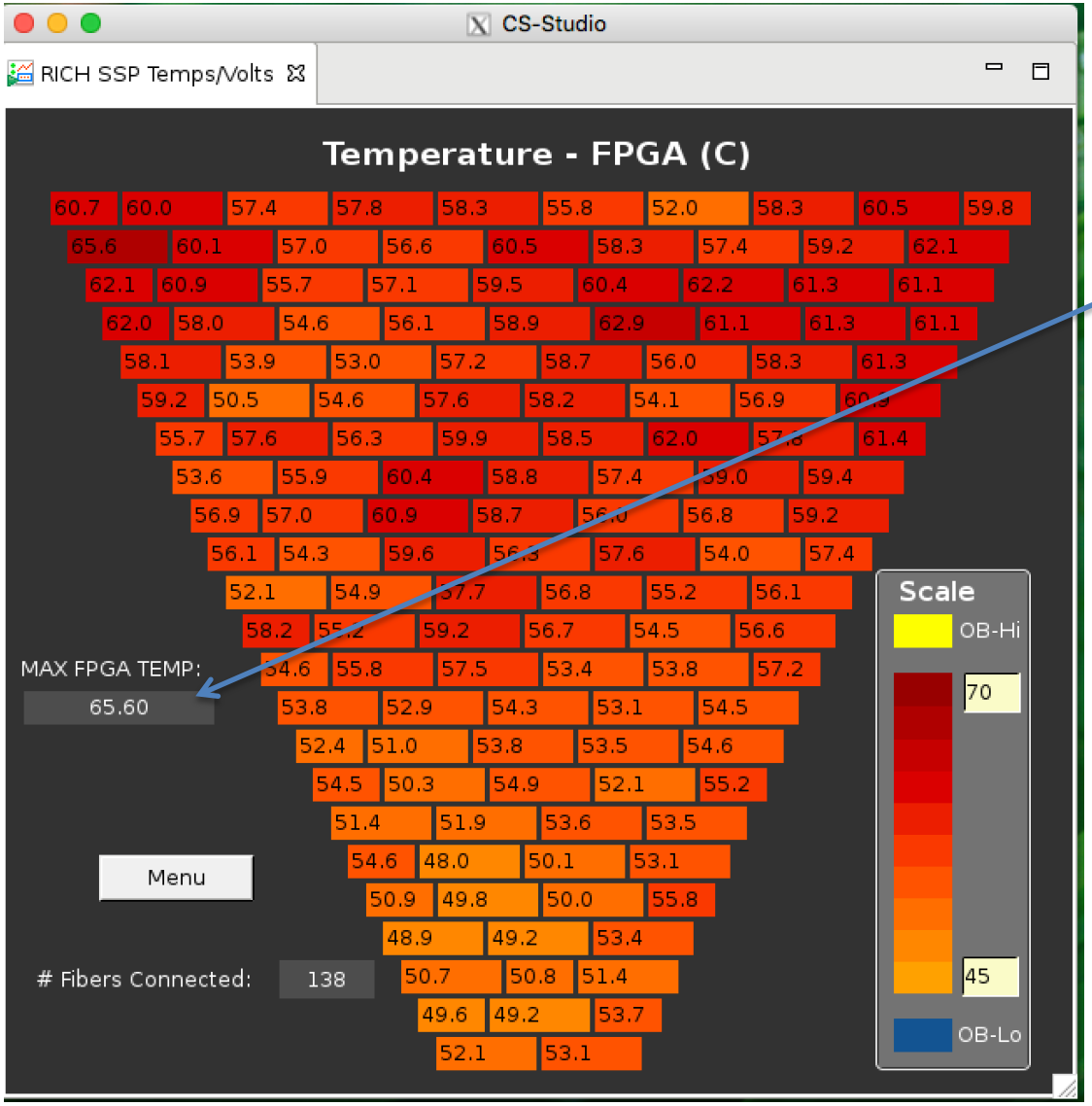
Control the max temperature of the FPGA chips

Soft Interlock



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

Temperature Map



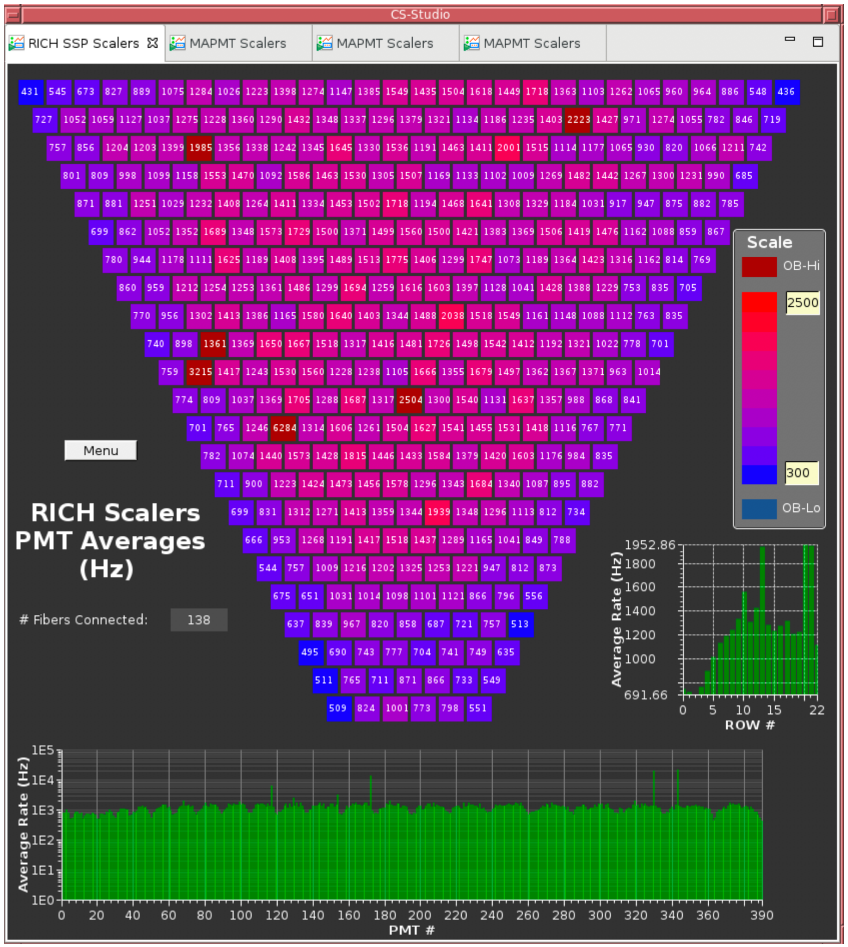
- Max temperature has to be less than 75 C
- Soft interlock switches off

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

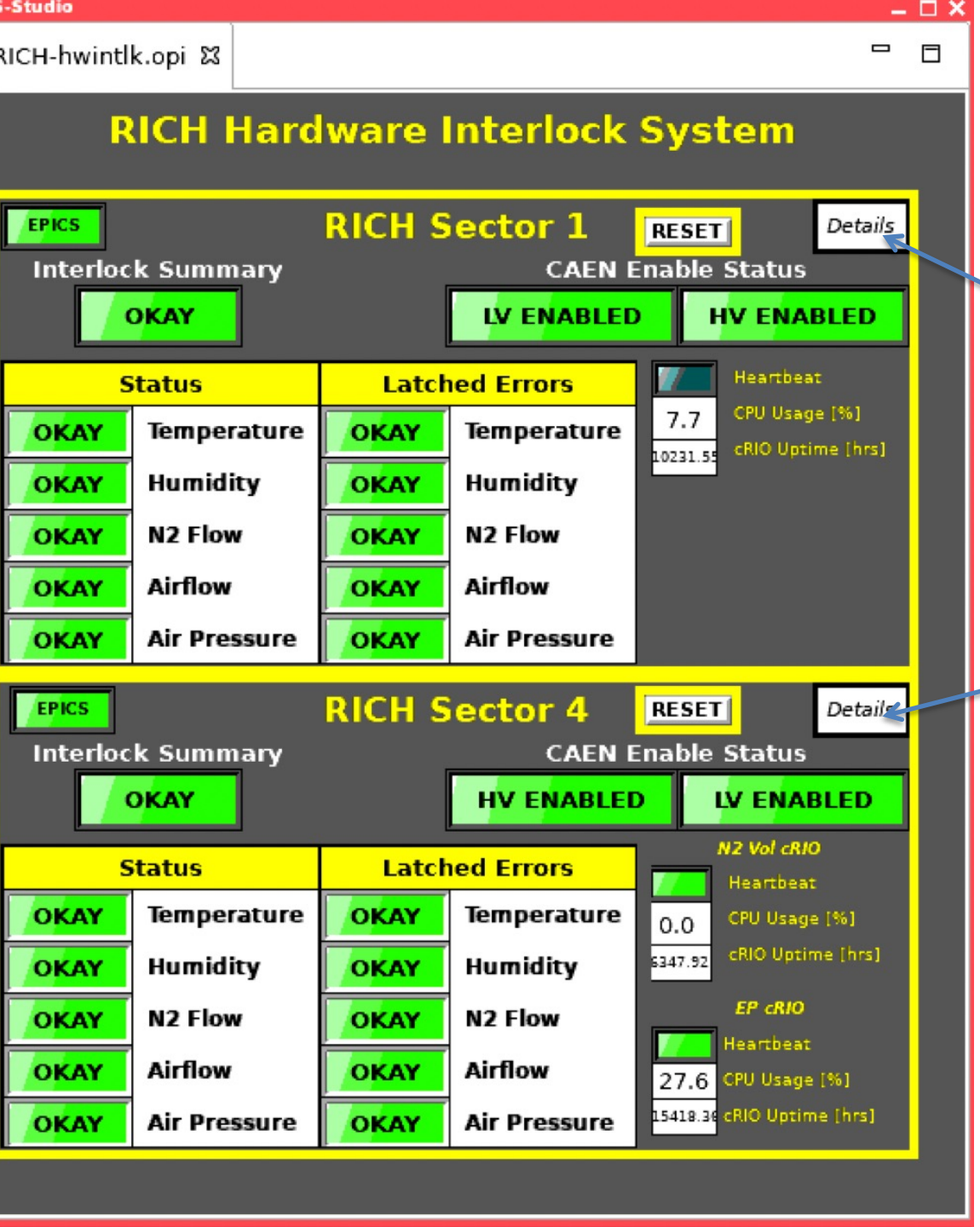
- All tiles have to be present

except Tile 21 in sector 1

RICH scalers

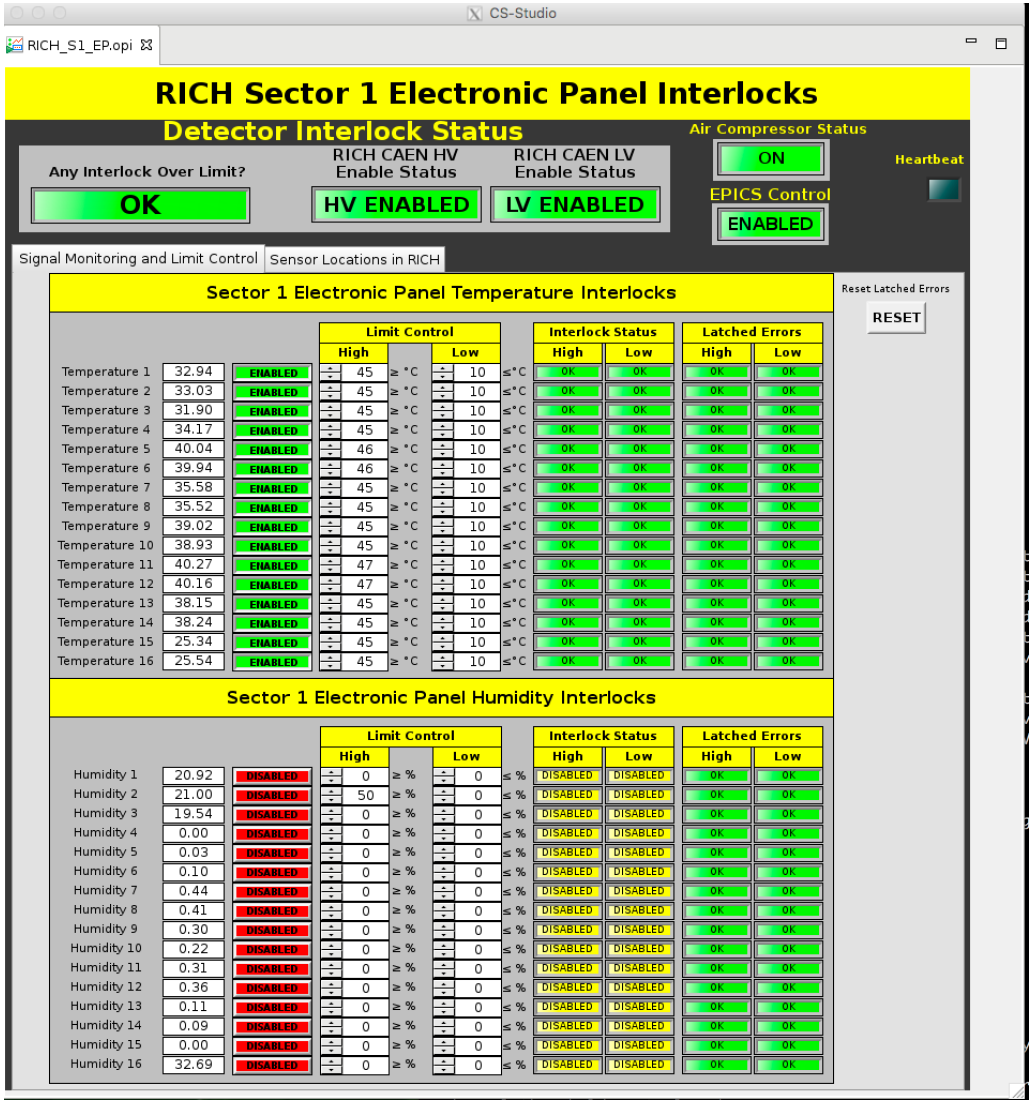


- The plot presents the average rate of the MAPMT pixels
- ALL MAPMTs have to be present except Tile 21 in sector 1



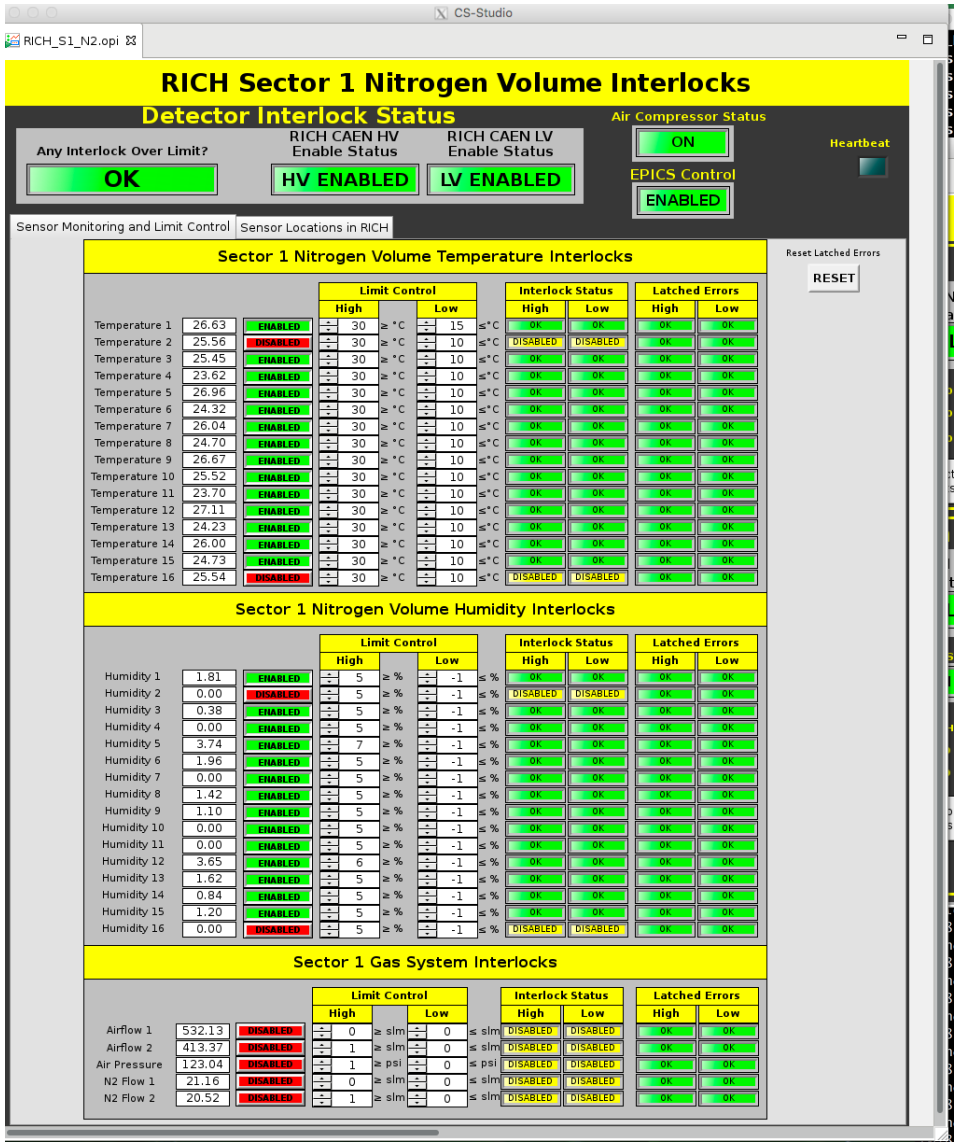
- Hard Interlock controls the temperature and humidity inside the RICH detector
- Press this button to view the sector 1 panel
- Press this button to view the sector 4 panel

Electronic Volume Interlock



Check the temperature and humidity

Nitrogen Volume Interlock



Check the temperature and humidity