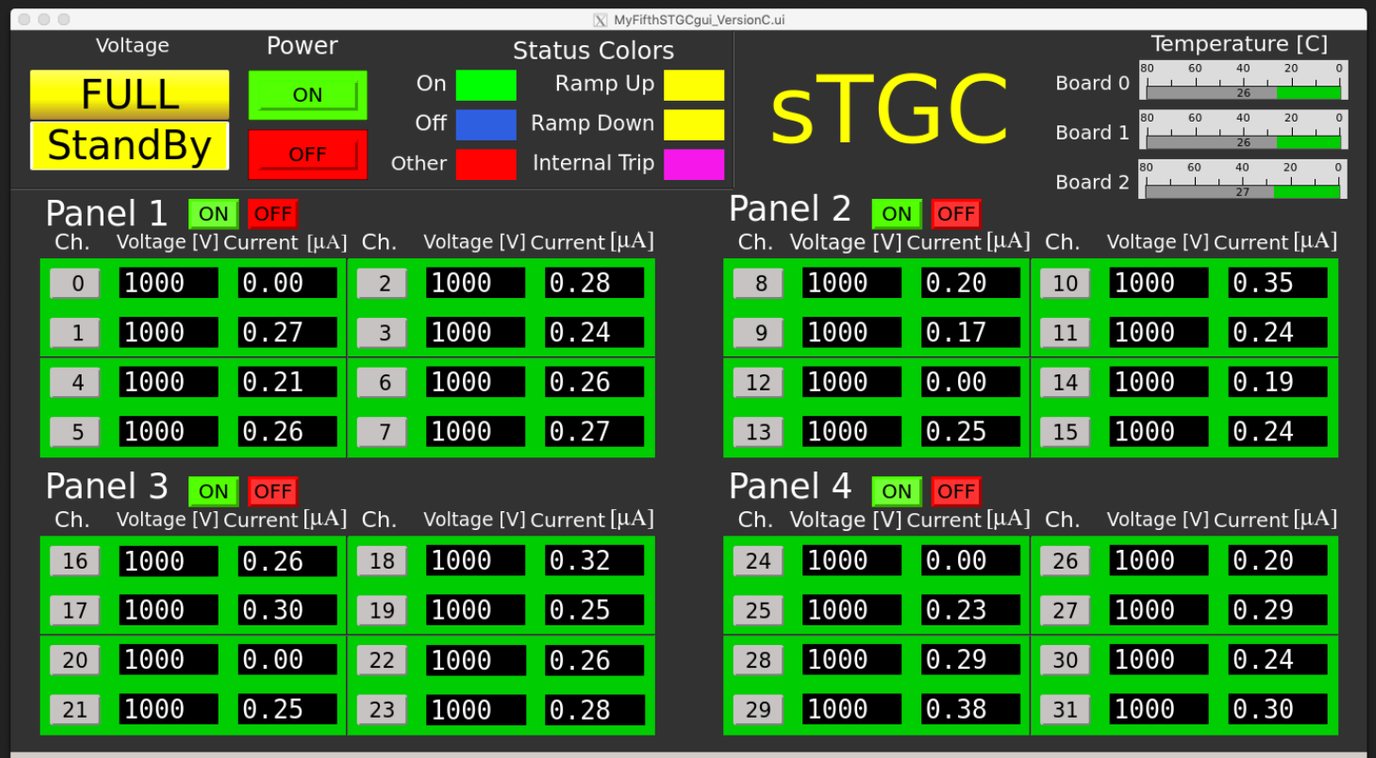
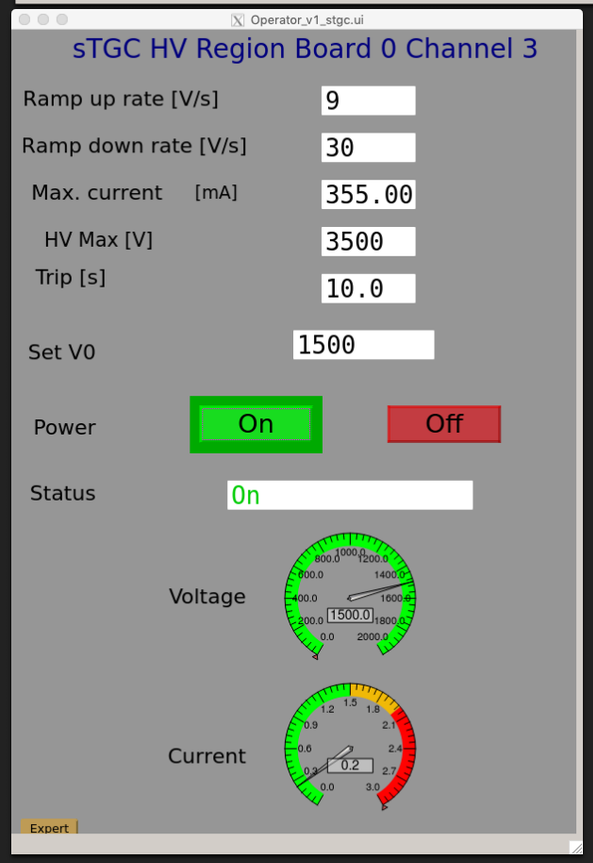
DAVID TLUSTY (AFF. W. CREIGHTON)
PAUL NORD (VALPARAISO)
XU SUN (UIC)
YU HU (UIC)
LUKAS HOLUB (CTU)
JAROSLAV ADAM (BNL)
CHRISTOPHER ANSON (AFF. W CREIGHTON)
EMMA DUFRESNE (CREIGHTON)
REBECCA POWERS (CREIGHTON)

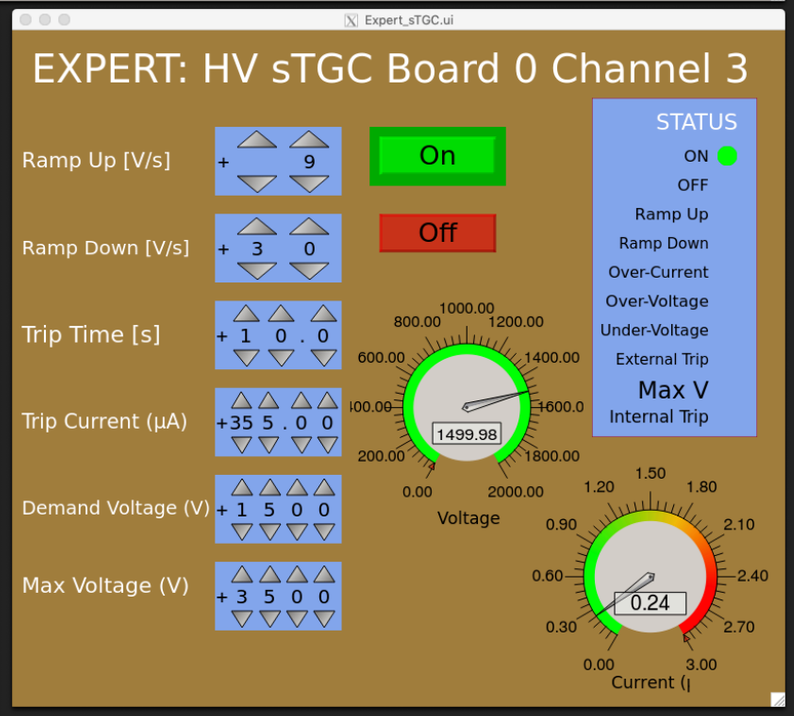
FORWARD UPGRADE SLOW CONTROLS

STGC HIGH VOLTAGE

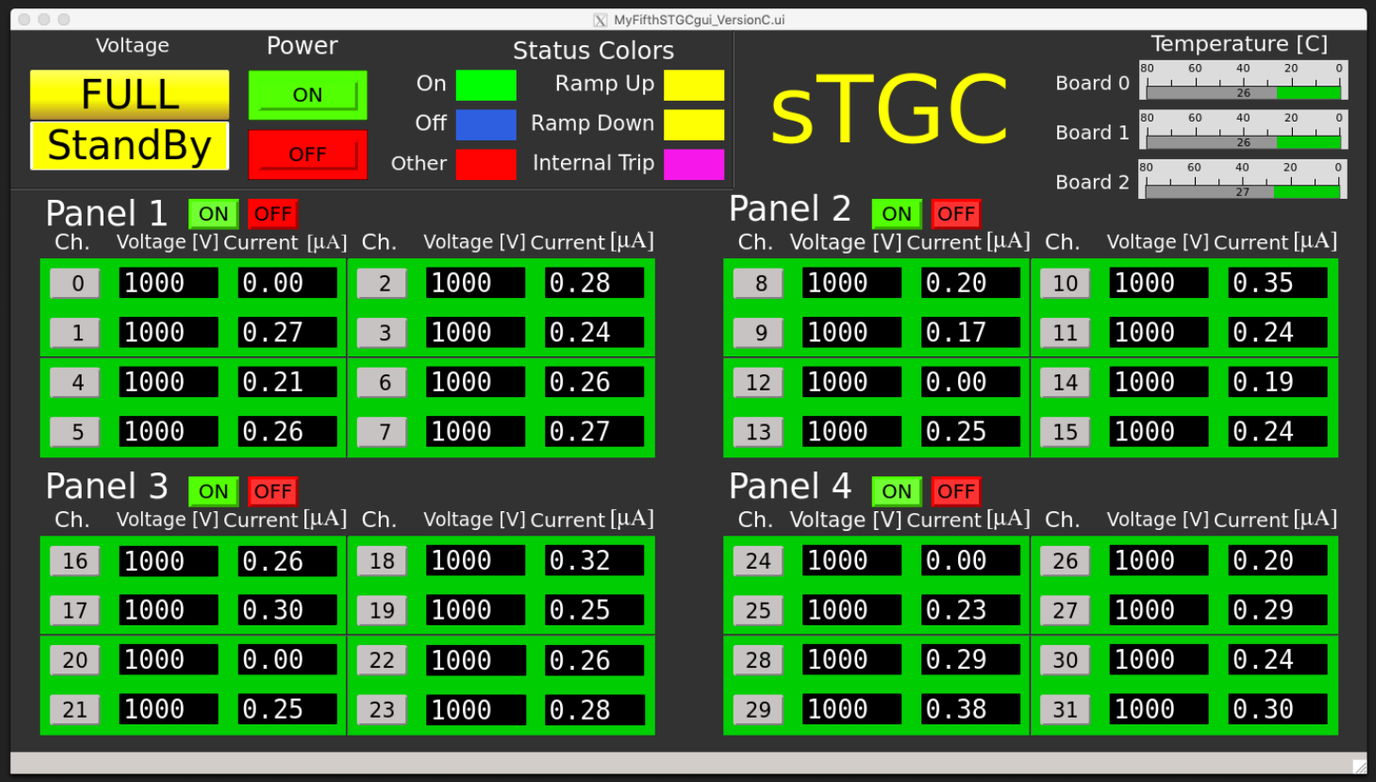
- IOC ready for operations
  - running on forward-cr computer
    - to start type “stgcHVIOC”
    - code in /home/u/stgc/iocTop/sTGC_HV/
    - controlling CAEN SY5527 power supply (IP ADD 130.199.60.244)
- GUI ready for operations
  - forward-cr machine (type “sTGC_DM”)
- remaining work - monitoring HV interlock







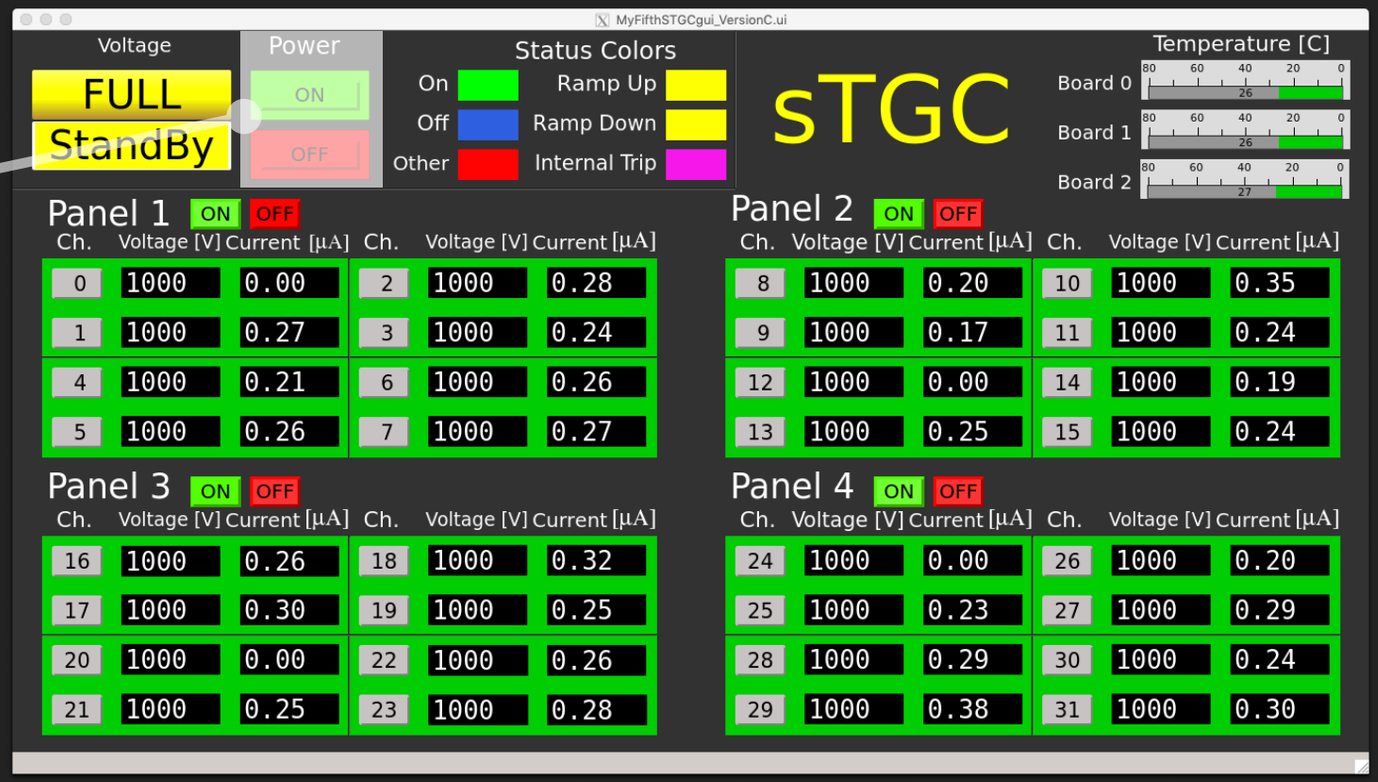
STGC HIGH VOLTAGE



STGC HIGH VOLTAGE

Turn all Channels ON/OFF

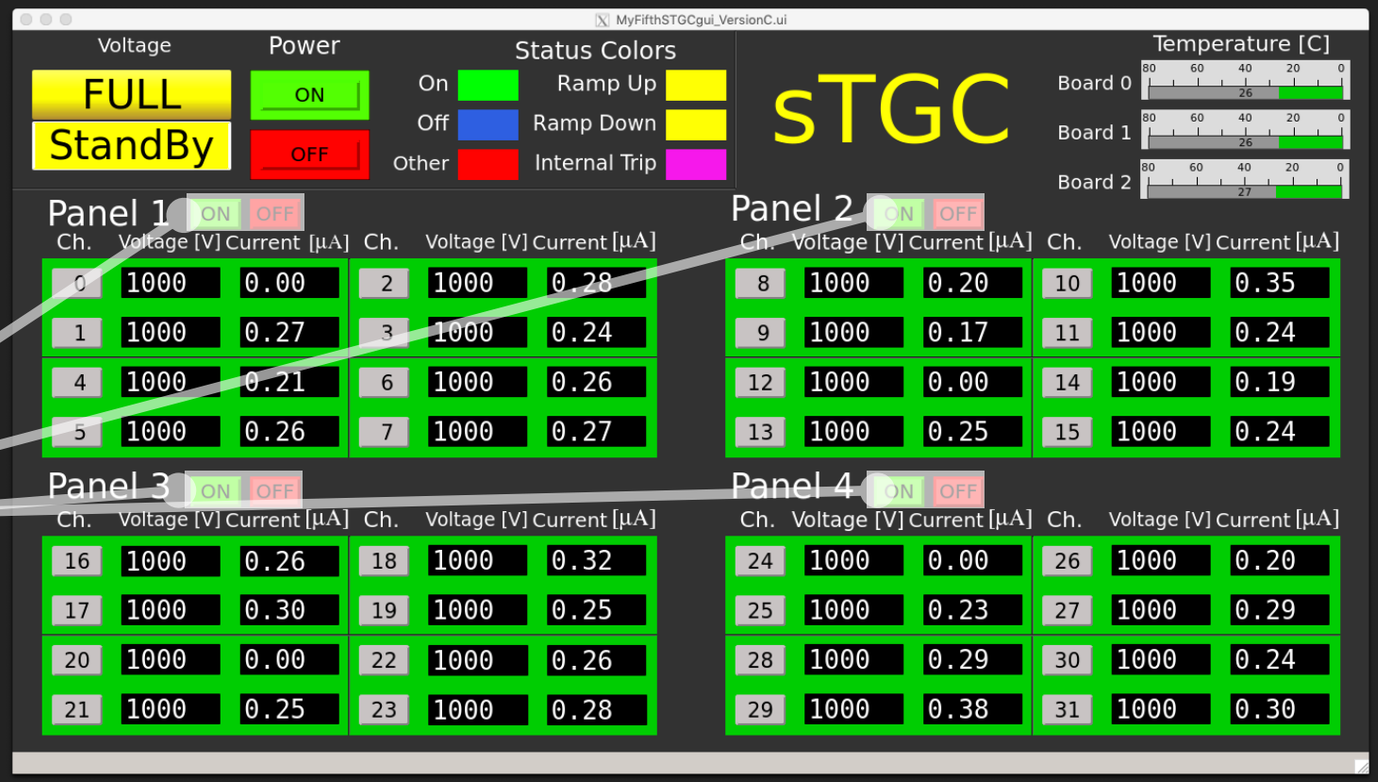
Color indicates status of channels (see the legend "Status Colors")



STGC HIGH VOLTAGE

Color indicates status of channels (see the legend “Status Colors”)

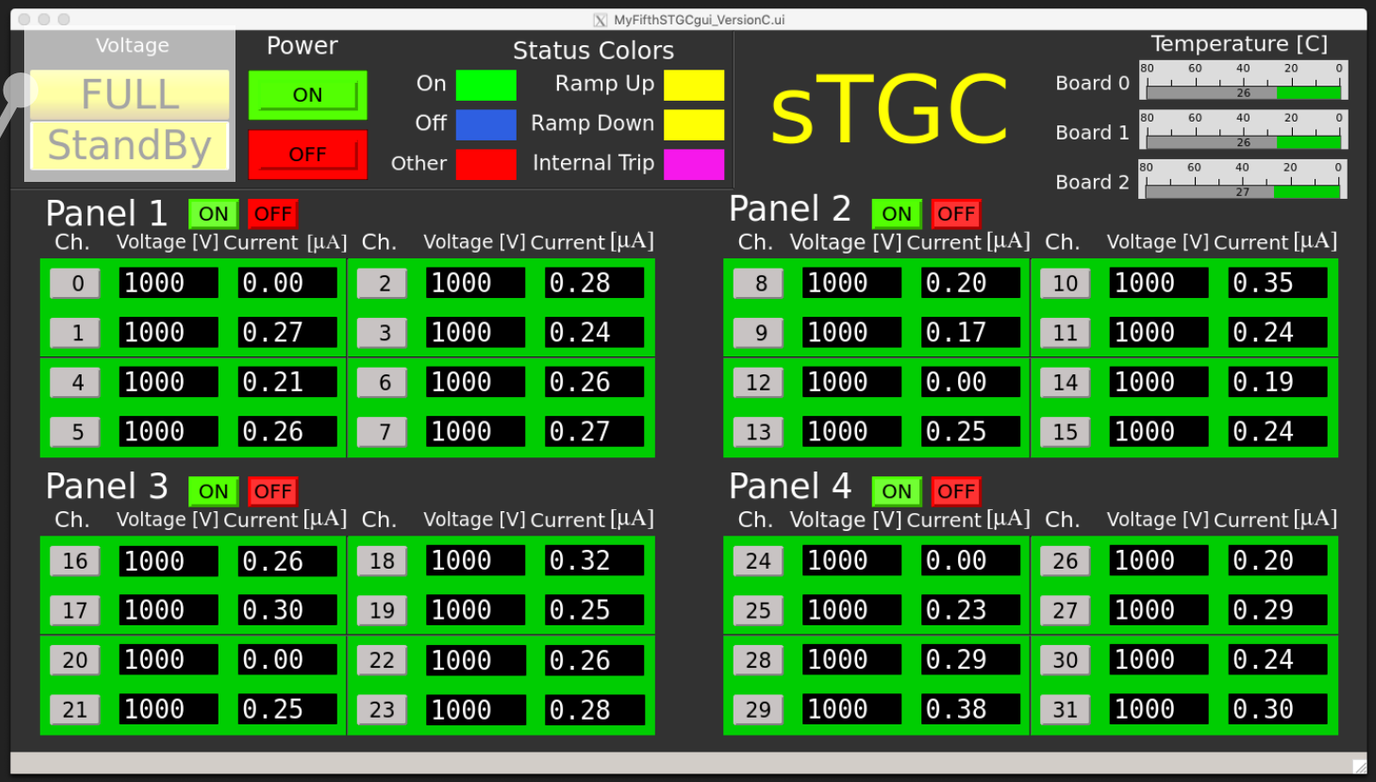
Turn a group of channels ON/OFF



STGC HIGH VOLTAGE

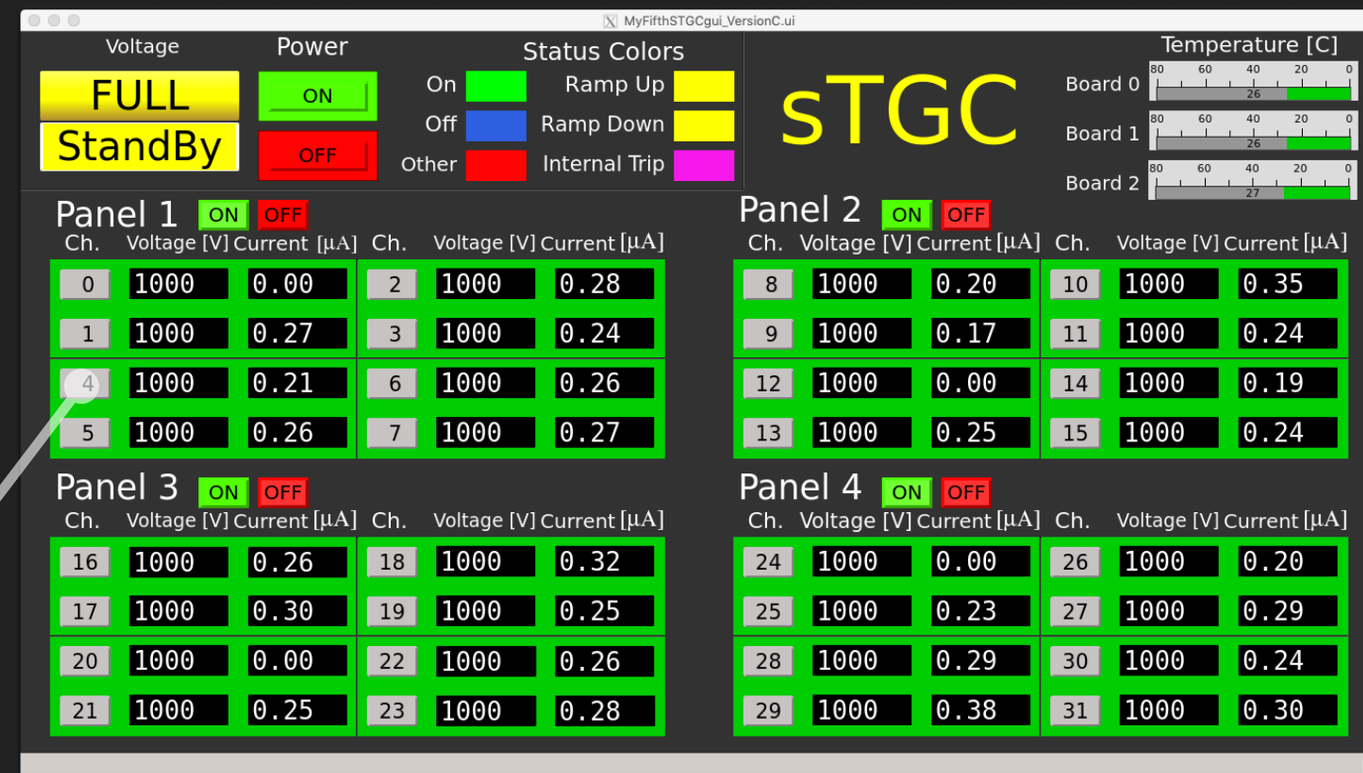
Color indicates status of channels (see the legend “Status Colors”)

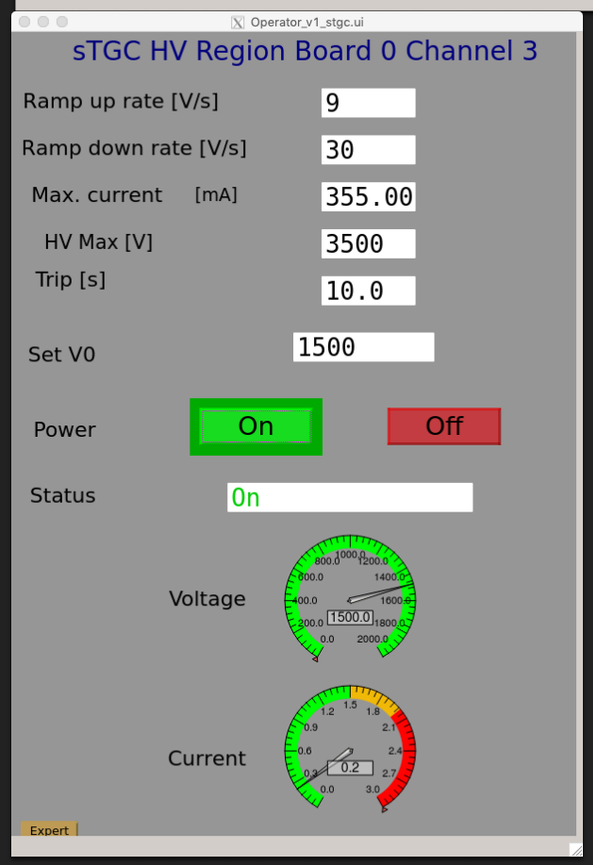
Set Voltages to all channels at Full / Standby levels



STGC HIGH VOLTAGE

Bring GUI for an individual channel
Possible to check main parameters
and turn it ON/OFF

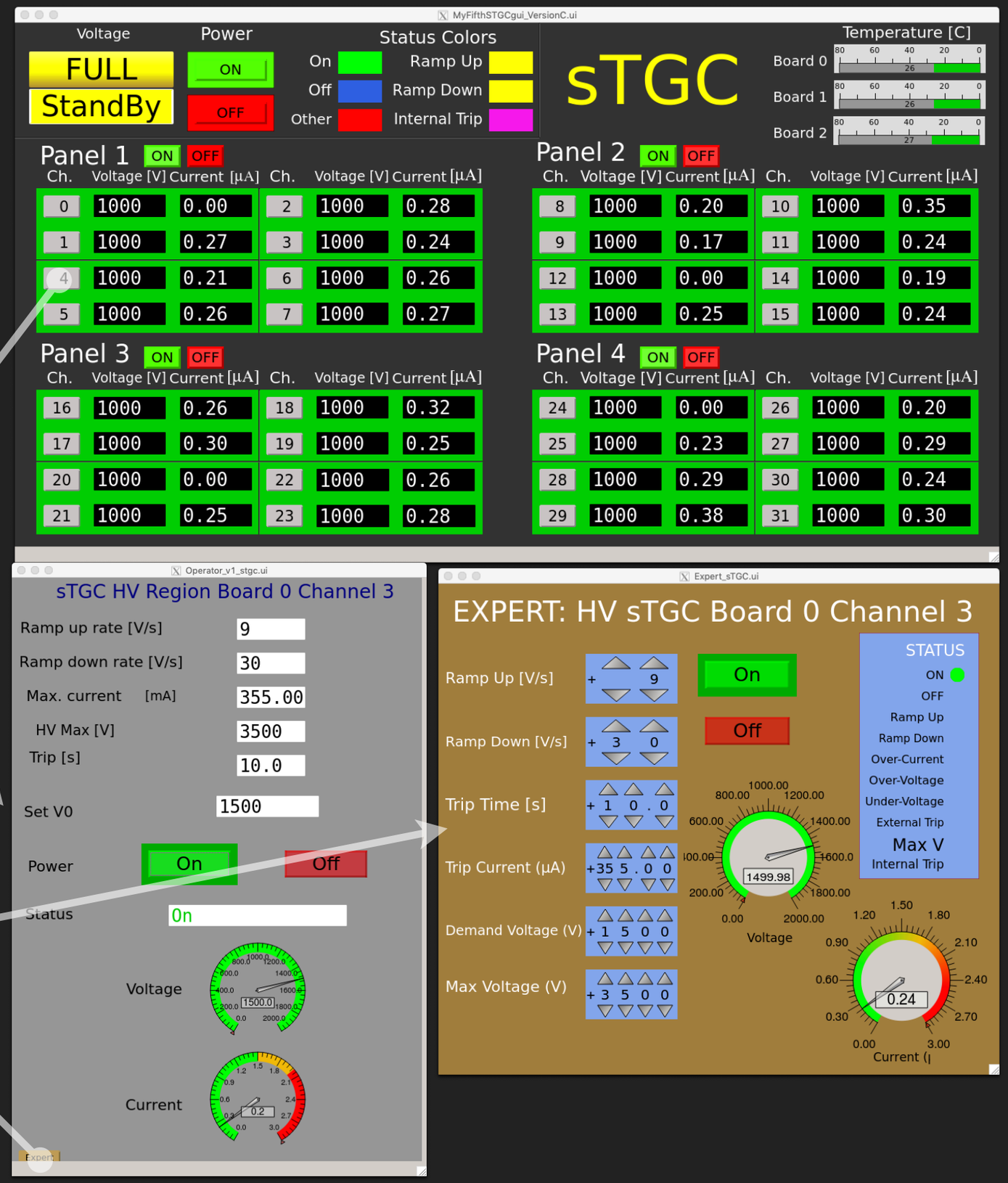




STGC HIGH VOLTAGE

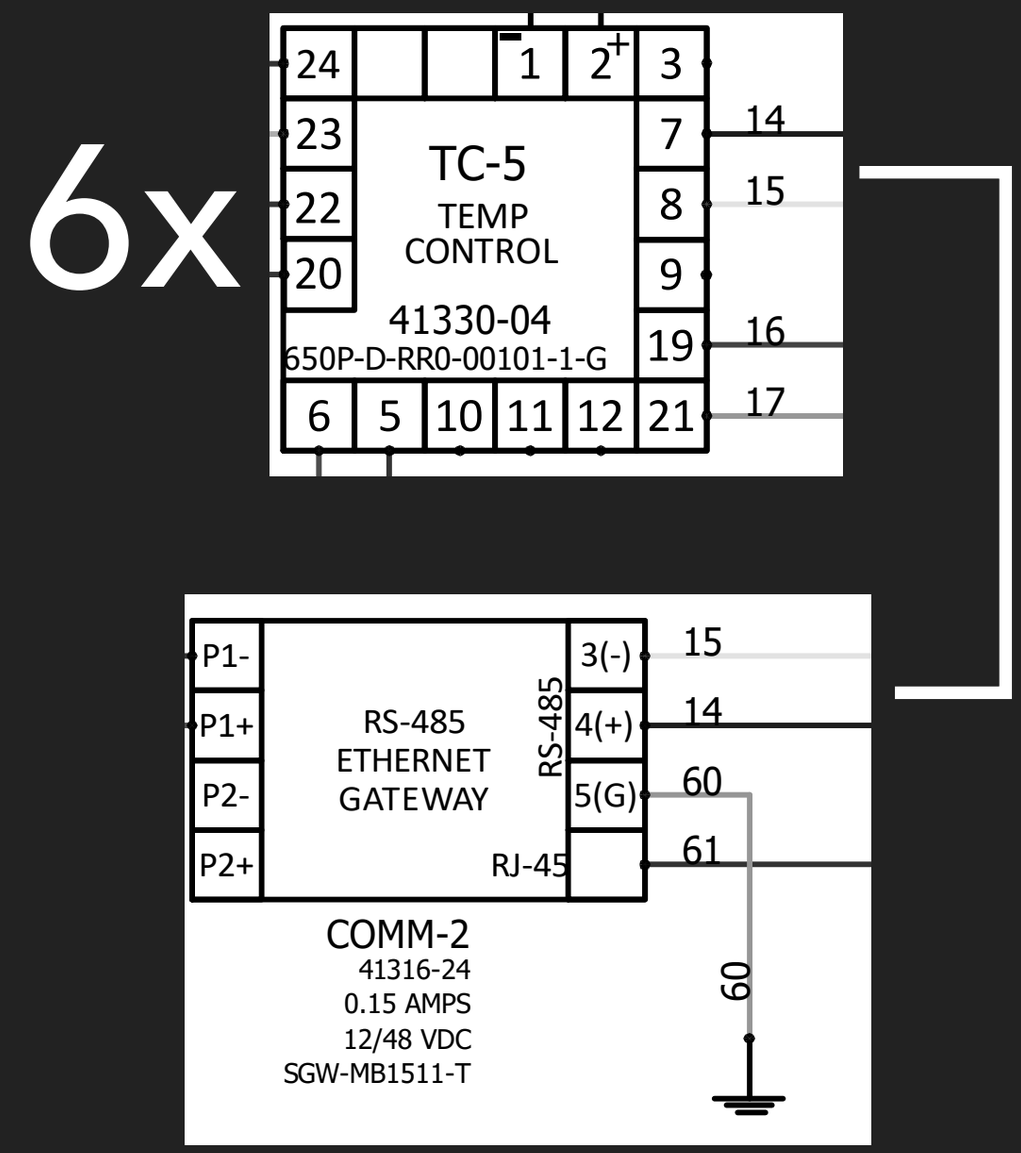
Bring GUI for an individual channel
Possible to check main parameters and turn it ON/OFF

Bring "Expert" GUI for the individual channel to set main parameters and monitor the channel status in detail



BRISK HEAT TAPE CONTROLLER

- client connected via ethernet (RJ45) to the Stride RS-485 Ethernet Gateway
- the Gateway connected to Modbus chain of 6 Gefran Temperature controllers
- Tested the connection using pyModbusTCP ModbusClient
  - Client is open, recognizes ID and MODE, but getting CRC error in the return message
  - neet to
    - set the same baud rate at both Gateway and controllers
    - set unique modbus addresses on the controllers
    - check the connection



PENTANE SNIFFERS AND HEAT DETECTORS, AND BRONCKHORST FLOWMETERS

- need to be connected through RS-485 to Moxa Gateway 130.199.60.185 (Server 1)
  - part of the gas cabinet
  - mounting and installation ongoing
- will use pyModbusTCP ModbusClient

FST Crate Slow Control

- Re-use of old IST slow control.
  - FST use the same crate and readout system as IST => a natural choice to re-use old IST slow control system.
- IOC for FST
  - The base of EPICs, ASYN and Sequencer (same as GMT) are compiled on softioc4.
  - Updated the old IST databases and configuration to FST setup.
  - Updated the old IST sequencer to FST setup.
  - **Successfully updated IOC to FST setup and fst-mpod02 is currently running at softioc4 for further development.**
- GUI for Shift Crew
  - Operation is based on a set of shell script => already updated to FST setup and tested at BNL/UIC/FNAL test stand.
  - Monitor and alarm are though sequencer.
  - Need to modify old IST GUI for FST => adjust naming and pictures.
- GUI for Expert
  - Operation, monitor and alarm are all based on sequencer.
  - Need to modify old IST GUI for FST => adjust naming and pictures.

Shift Crew GUI

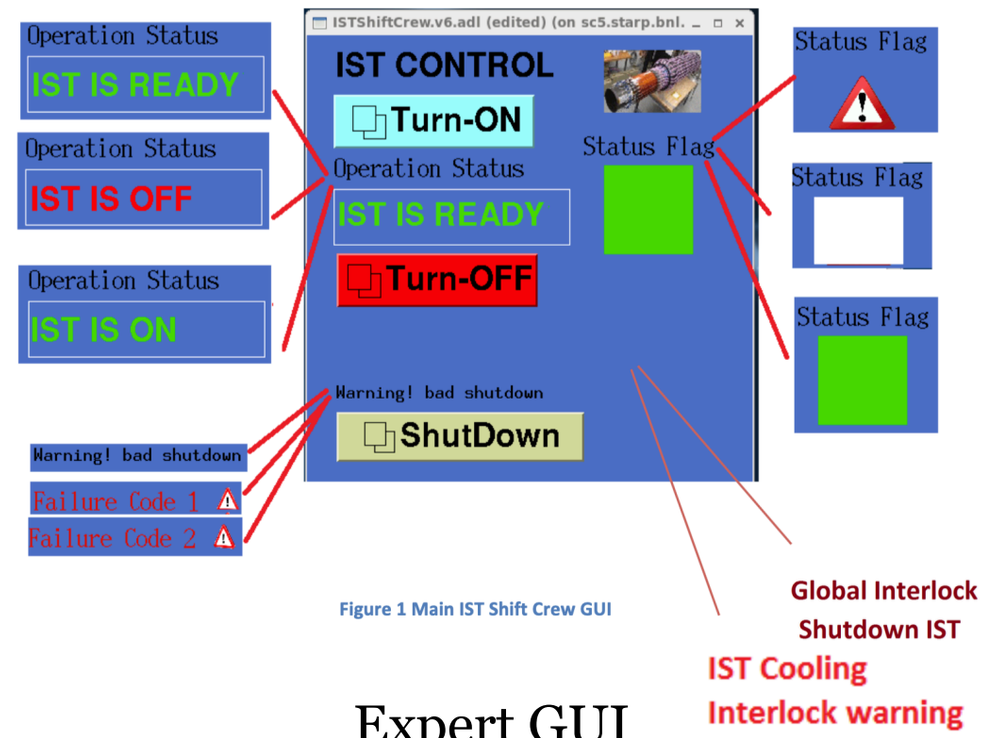
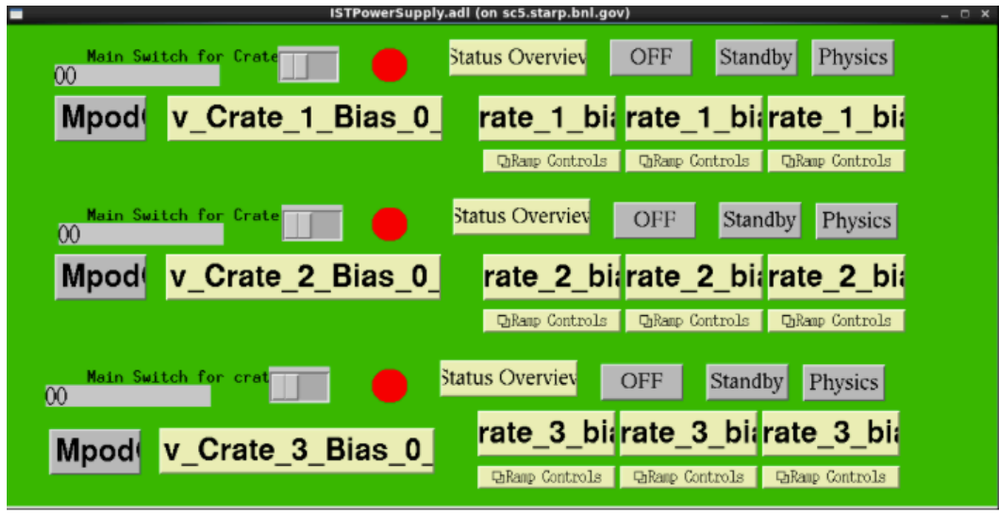


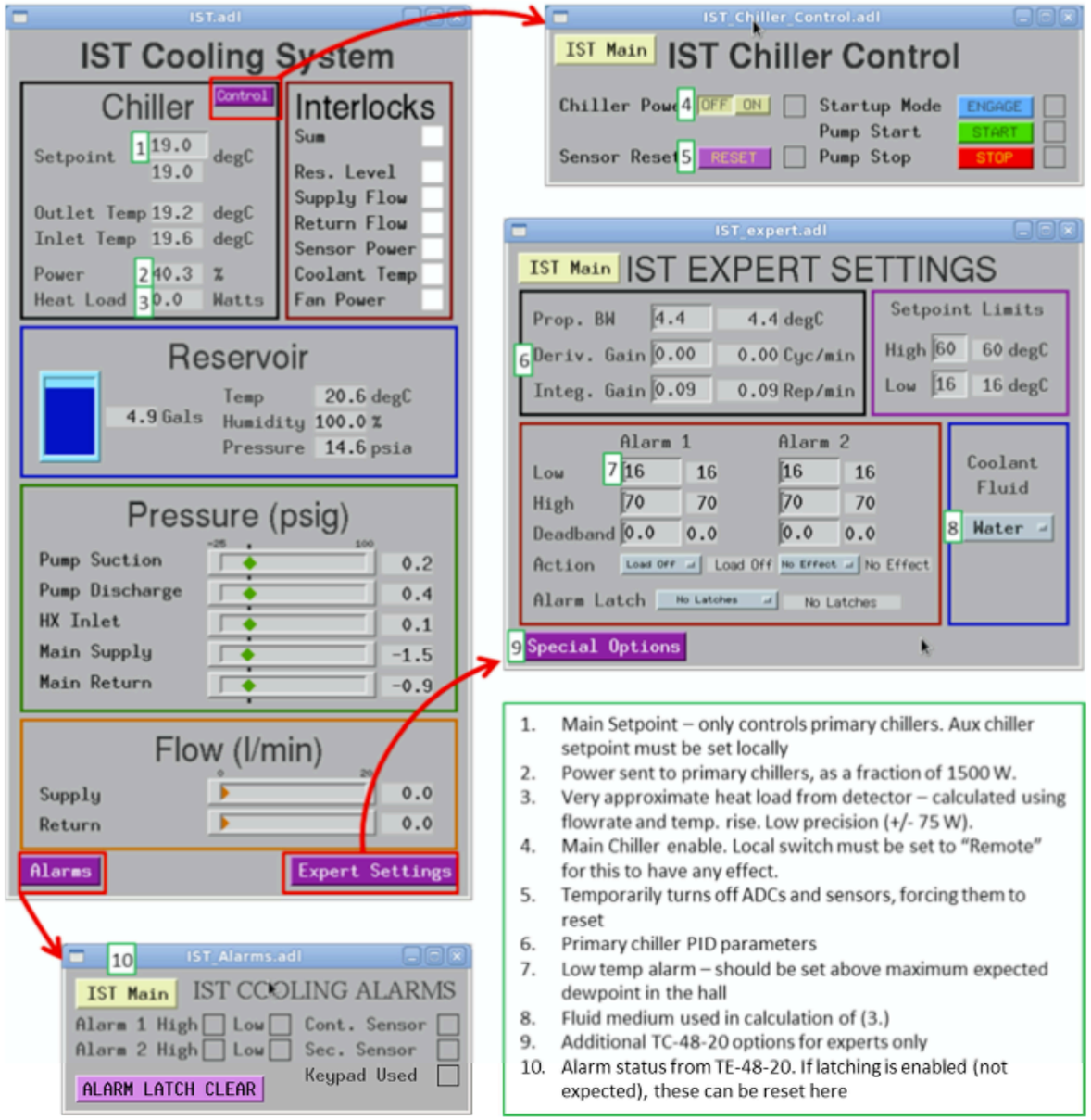
Figure 1 Main IST Shift Crew GUI

Expert GUI



FST Cooling Slow Control

EPICS Interface

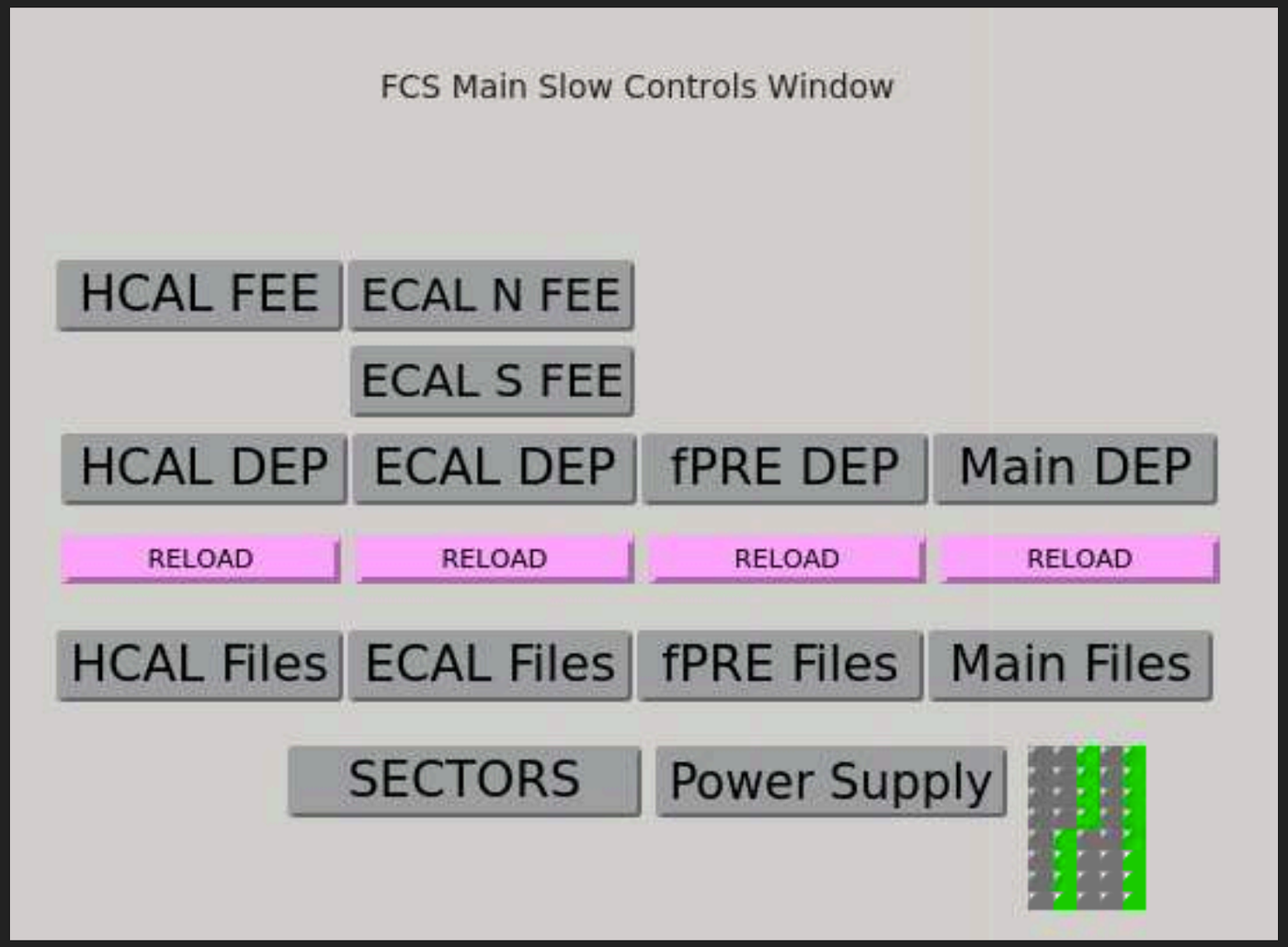


1. Main Setpoint – only controls primary chillers. Aux chiller setpoint must be set locally
2. Power sent to primary chillers, as a fraction of 1500 W.
3. Very approximate heat load from detector – calculated using flowrate and temp. rise. Low precision (+/- 75 W).
4. Main Chiller enable. Local switch must be set to "Remote" for this to have any effect.
5. Temporarily turns off ADCs and sensors, forcing them to reset
6. Primary chiller PID parameters
7. Low temp alarm – should be set above maximum expected dewpoint in the hall
8. Fluid medium used in calculation of (3.)
9. Additional TC-48-20 options for experts only
10. Alarm status from TE-48-20. If latching is enabled (not expected), these can be reset here

- Re-use of old IST cooling slow control.
  - FST use the same cooling system as IST => a natural choice to re-use old IST cooling slow control system.
- GUI for Expert
  - Operation, monitor and alarm are all based on sequencer.
  - Need to modify old IST sequencer for FST setup => adjust flow speed limits.
  - Need to modify old IST GUI for FST => adjust naming and pictures.
- Updates will start after the cooling system back online.

FCS SLOW CONTROLS

- Expert Screens
  - FEE Boards
    - HCAL
    - ECAL North
    - ECAL South
  - DEP Boards
    - HCAL
    - ECAL
    - fPRE
    - Main
  - Configuration Files
  - Sectors
  - Power Supply



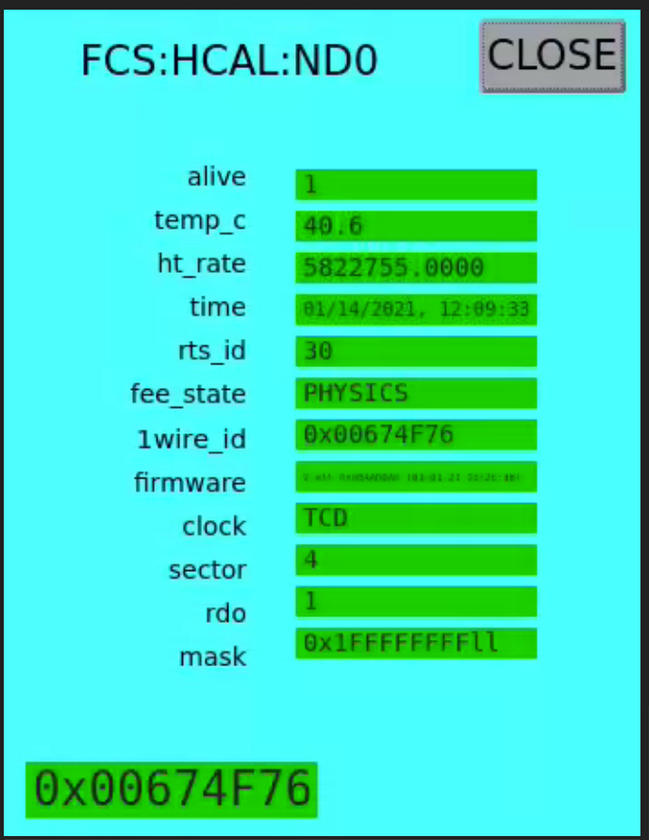
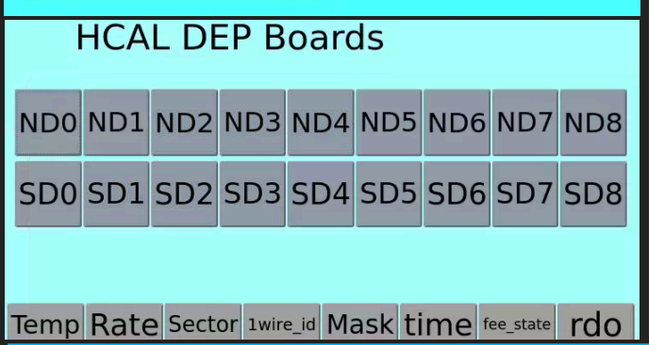
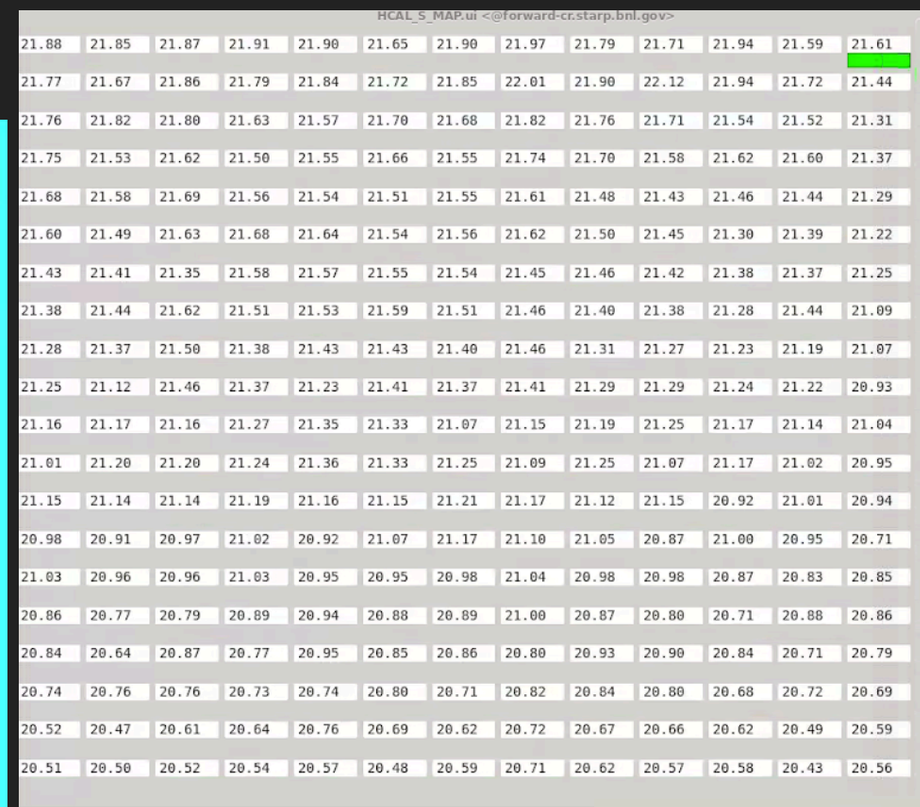
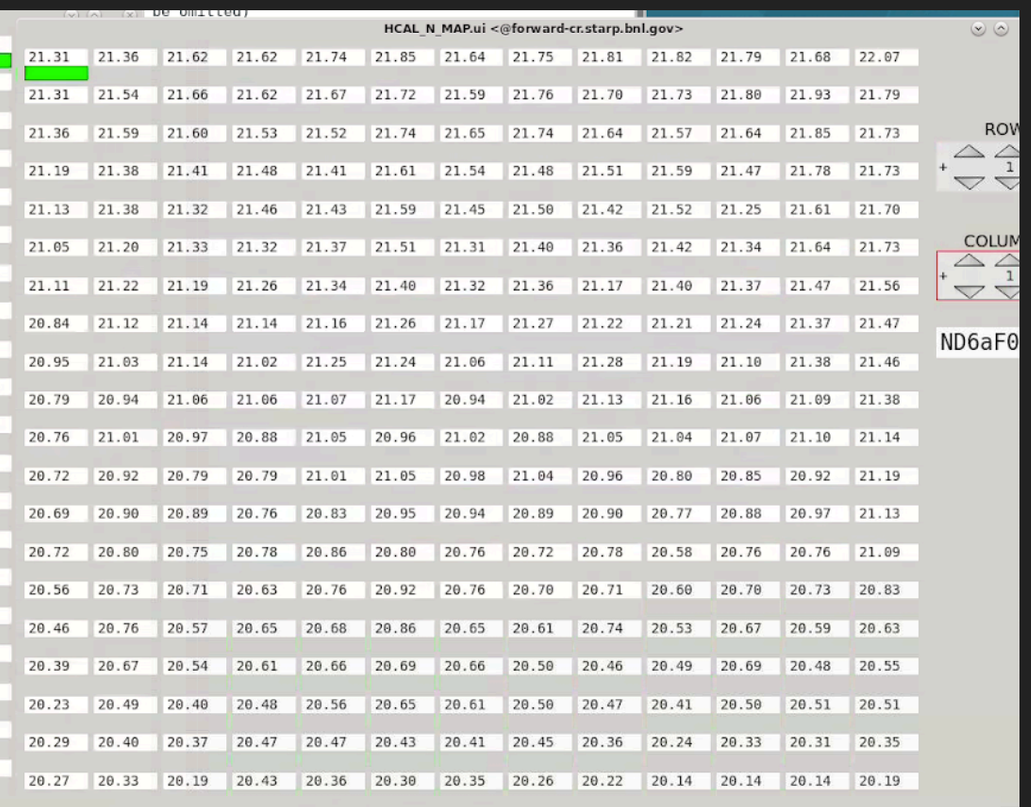
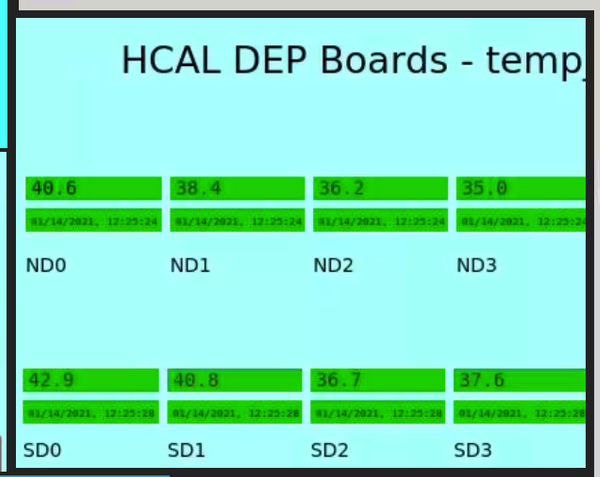
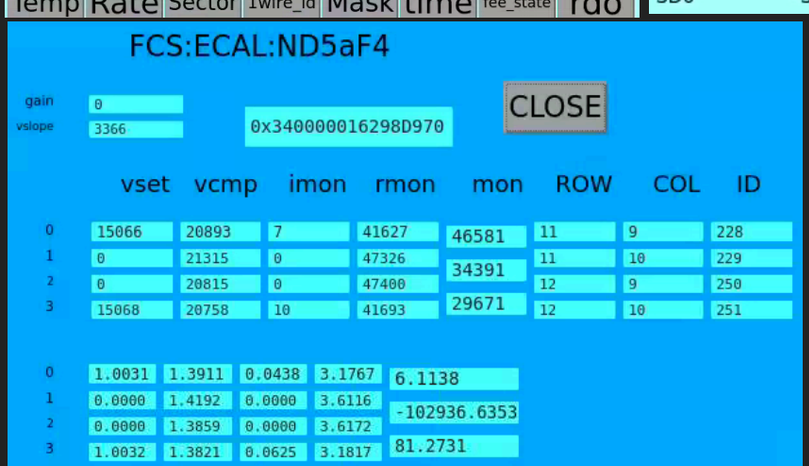
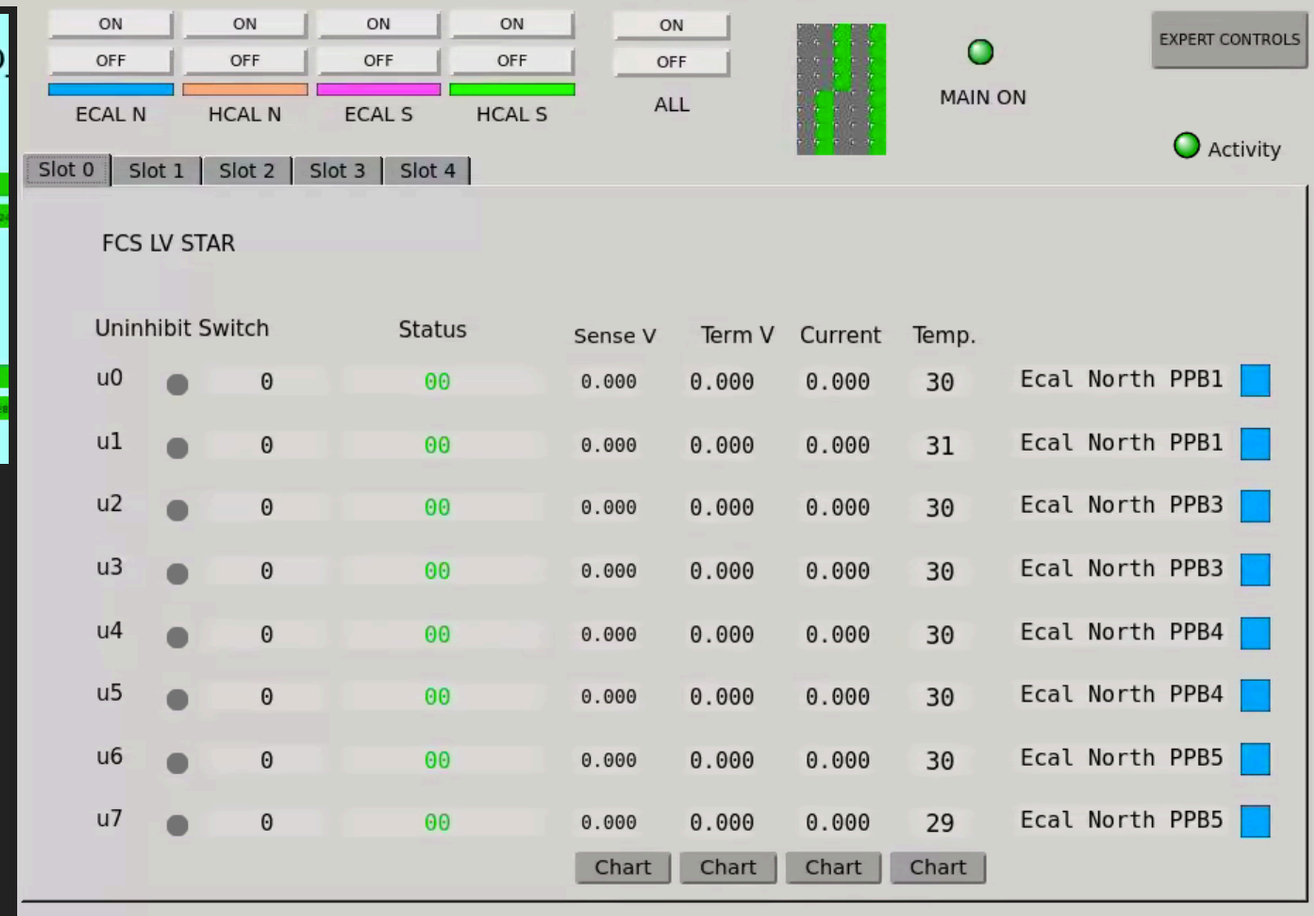
RECENT SOFTWARE ADDITIONS

- Corrected FEE temperature calculations
  Created display of FEE Temperatures by Row/Col (physical detector map)

- Power Supply status added to online logs
  Use “GroupsSwitch” command rather than “OutputSwitch”
  Setup EPICS Alarms for Power Supply Status
  Added Strip Chart display for Power Supply I, V, Temp
  Alarm status summary added to Power Supply Control screen

- Requested STAR Alarms indication for Power Supply
  Requested addition of HCAL FEE variables to online log

PLANNED FCS SLOW CONTROLS ADDITIONS

- Add ECAL FEE variables to online log
- Consider adding alarms for FEE, and DEP board status (current, temp, other?)
- Review SC documentation with Donald Isenhower
- Make non-expert status and control screens for shift crew (2022, sooner?)

MISC SCREENS