

ITk pixel system test

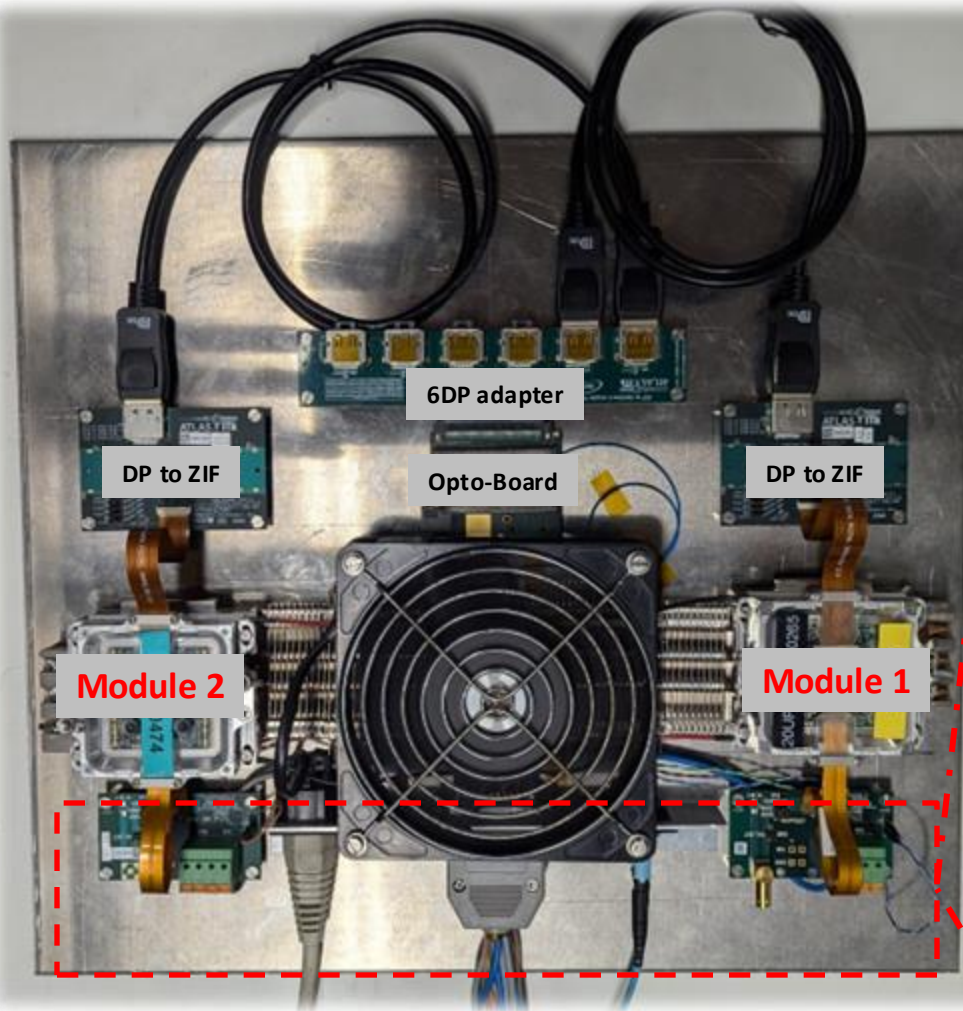
Zaza Chubinidze on behalf of the ITk Outer EndCap group at LNF



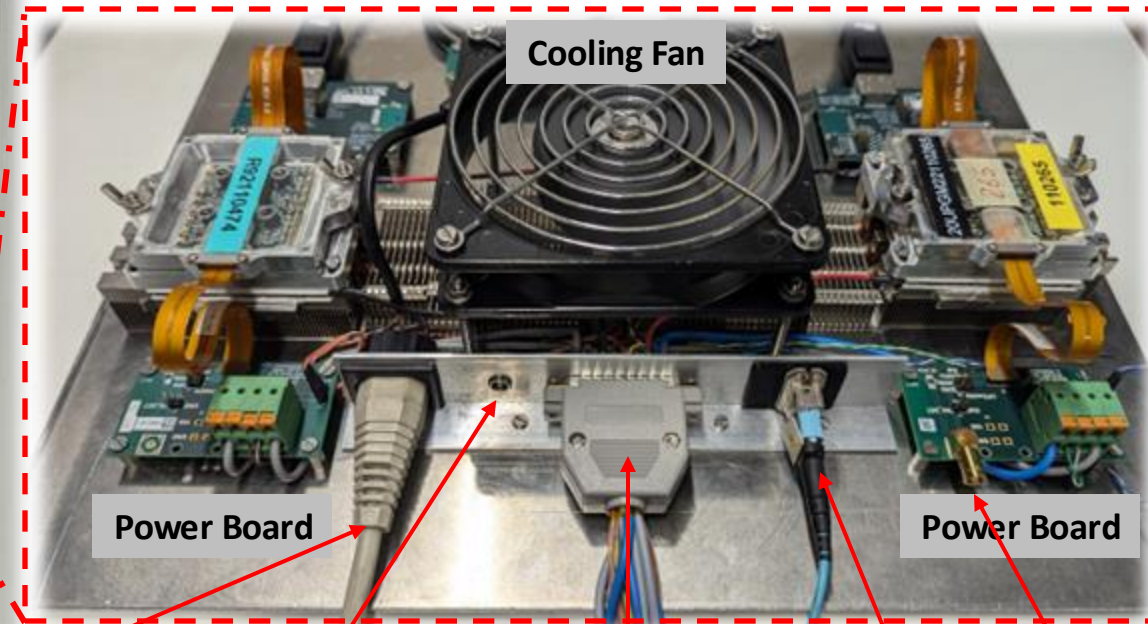
➤ Target:

DCS development for two pixel modules setup with serial powering

Two Pixel modules in serial Power setup



- Two Pixel Modules are connected in Serial Power (Modules with Digital and Sensor)
- The setup is compact and flexible to move and disconnect all services
- The setup is connected to Interlock system.
- The two modules in serial power data taking has been demonstrated.
- **The Low-Power mode has been integrated and tested in Serial Power mode.**



Fan Power

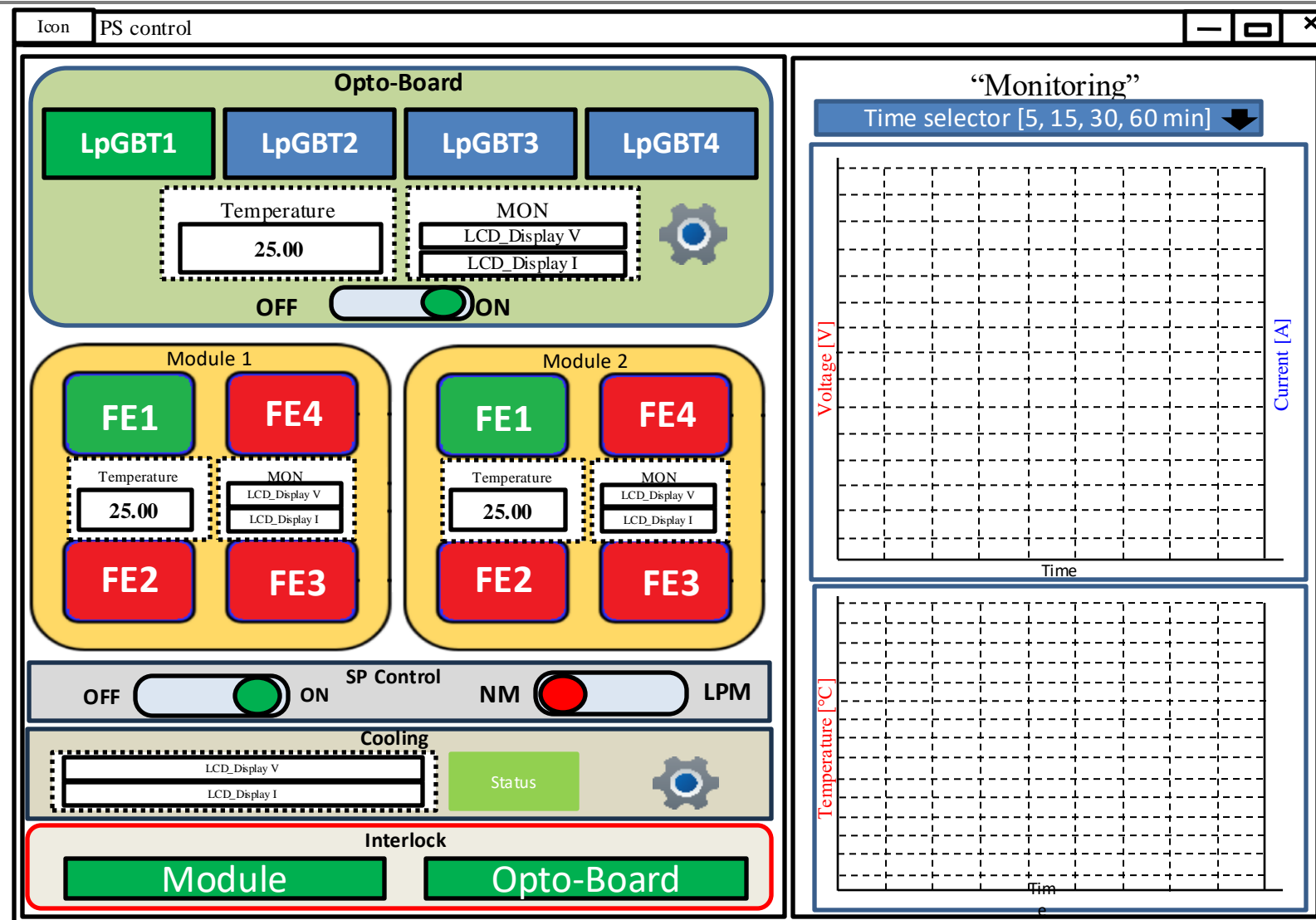
LP Mode pulser

Power Connector

Optic Fibers

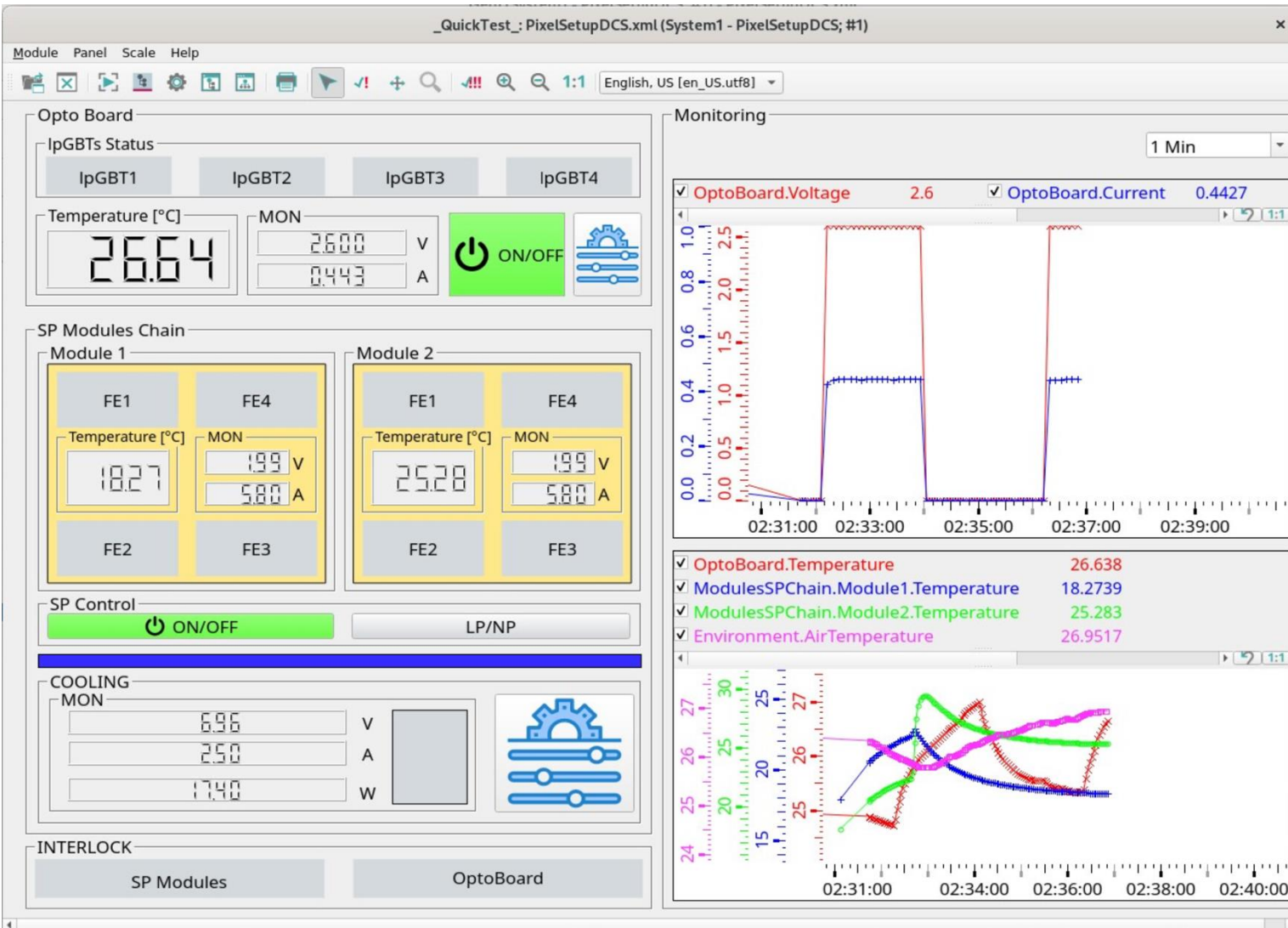
HV

Design of DCS Panel of pixel module setup



- Start with small project in DCS for scale up for Integration
- Practical Pixel demonstration setup DCS panel Design
- Pixel module setup DCS panel with PSU (HMP4040), Opto-Board and Interlock visualization.
- Visualizing Opto-board IpGBTs configuration statuses.
- Visualizing Opto-Board power metrics.
- Visualizing Module Chip electrical links alignment statuses.
- Module power metrics measuring.
- Multi axis plots for Voltages, Currents and Temperatures
- Real time monitoring of Opto-Board and Module metrics.
- Module Temperature monitoring by Interlock system.
- Interlock system status visualization.

Development DCS Panel of pixel module setup



- First draft version of DCS panel for pixel modules development setup has been released.
- Opto-board Metrics are visualized.
- Modules some metrics are visualized.
- Some plots are implemented.
- Cooling functionality has been implemented.

- Project is under development yet!
- Some pixel module setup metrics are needed to implement
- Interlock system visualization still is not working.
- Low-Power mode functionality is not working yet
- Some OPC UA servers scripts are needed to finish for FELIX metrics monitoring.

Thank You For Your Attention!
Any Questions?