
# The PAUCam
# ROE in a nut shell

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# PAUCam ROE

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  - FEEDTROUGHT
  - MIX BOARD
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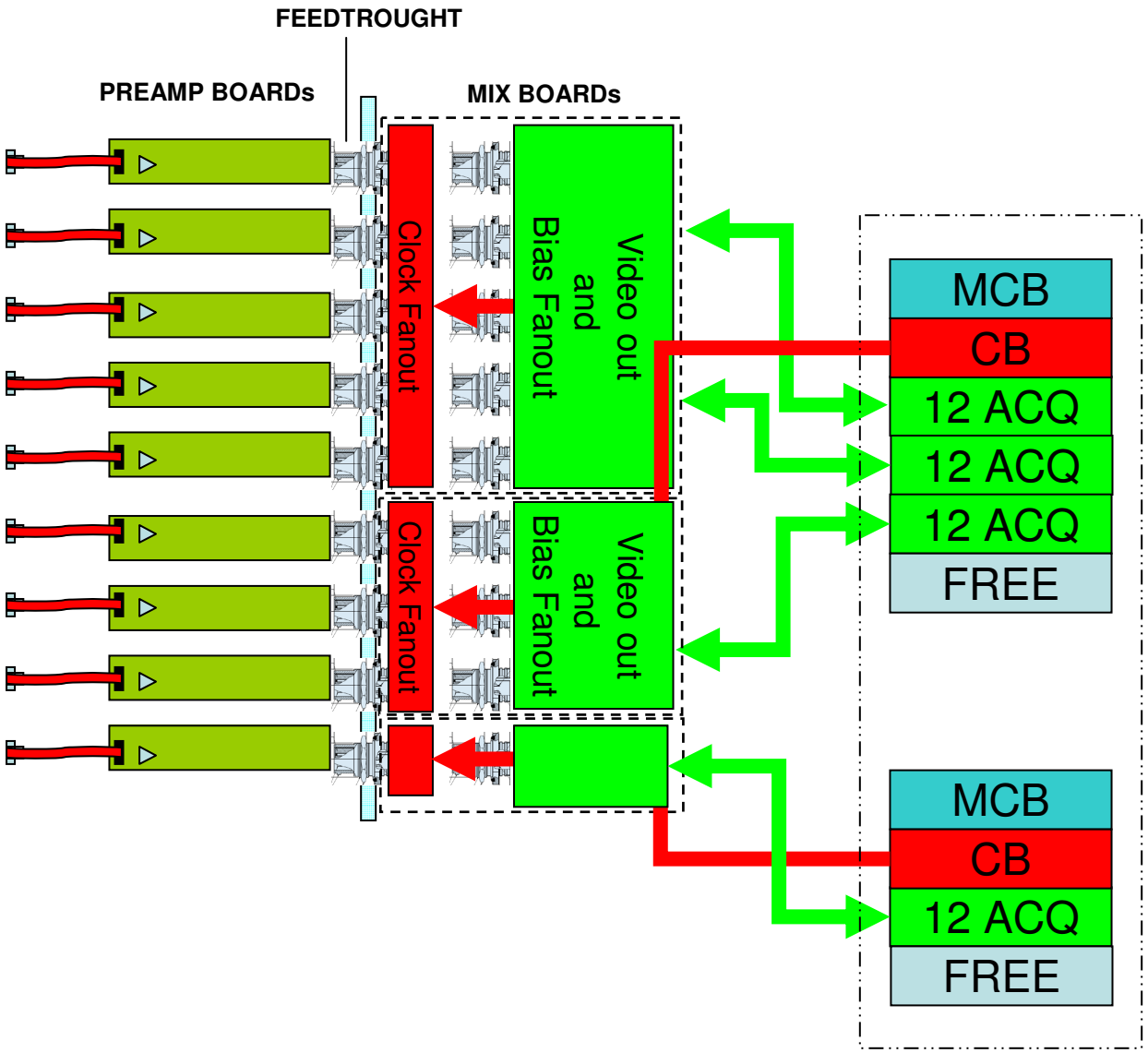
  - FILTER BOARD and POWER SUPPLIES
- Software:
  - panview

# ROE Layout



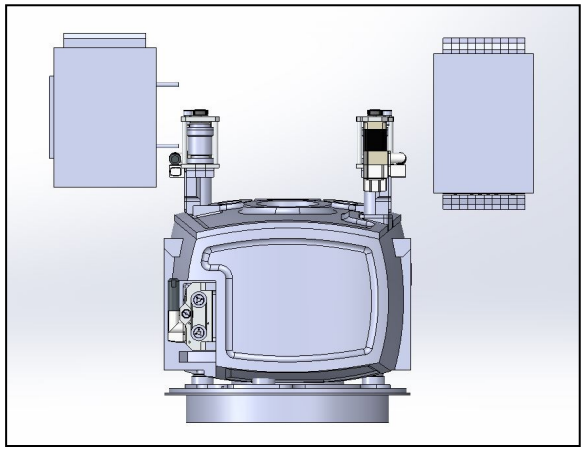

## Science Crate

1 cPCI 6 slots bus
1 Master board (MCB)
1 Clock board (CB)
3 Acquisition boards (ACQ)
8 PREAMPS boards
2 MIX boards

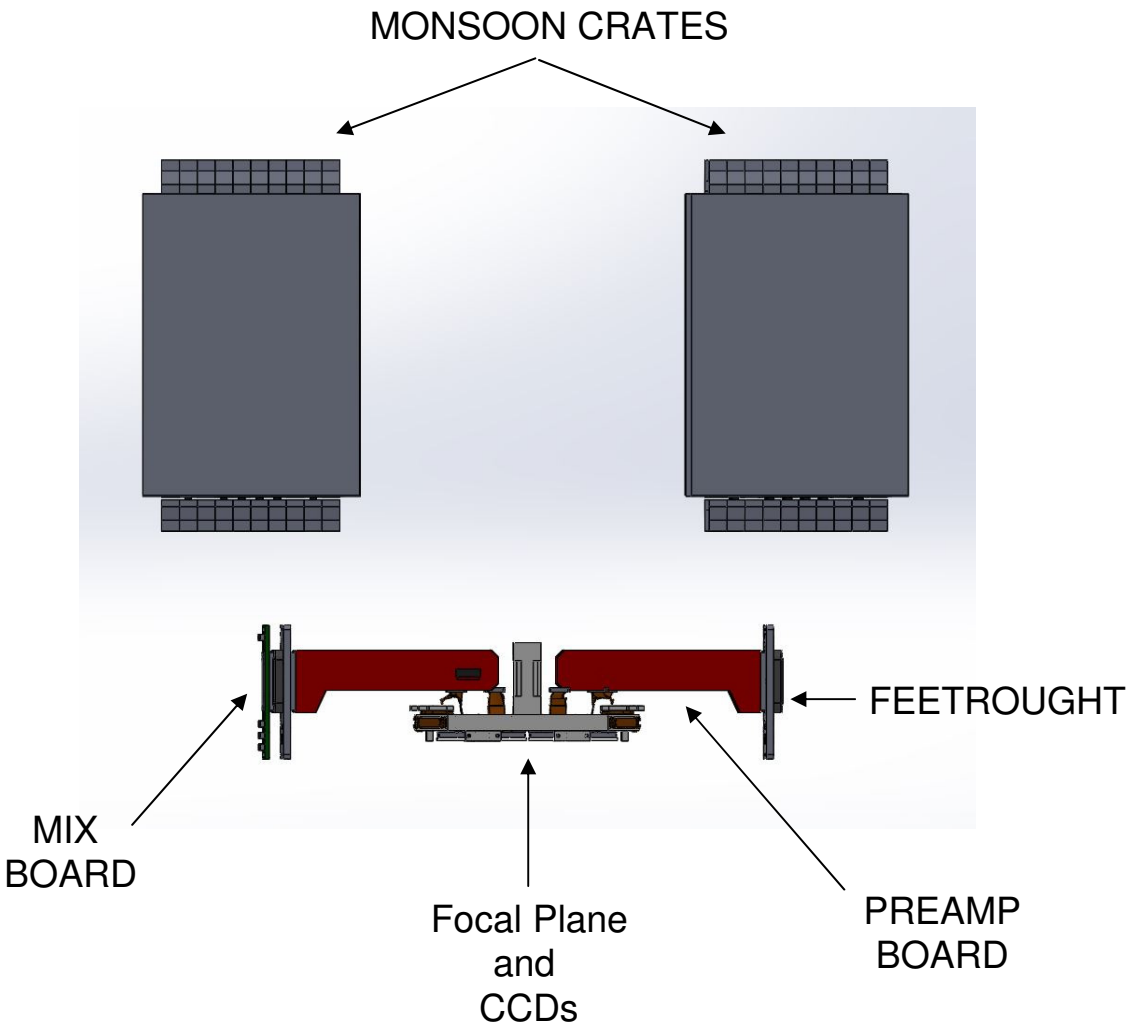
## Guiding Crate

1 cPCI 4 slots bus
1 Master board (MCB)
1 Clock board (CB)
1 Acquisition board (ACQ)
1 PREAMPS boards
1 MIX boards

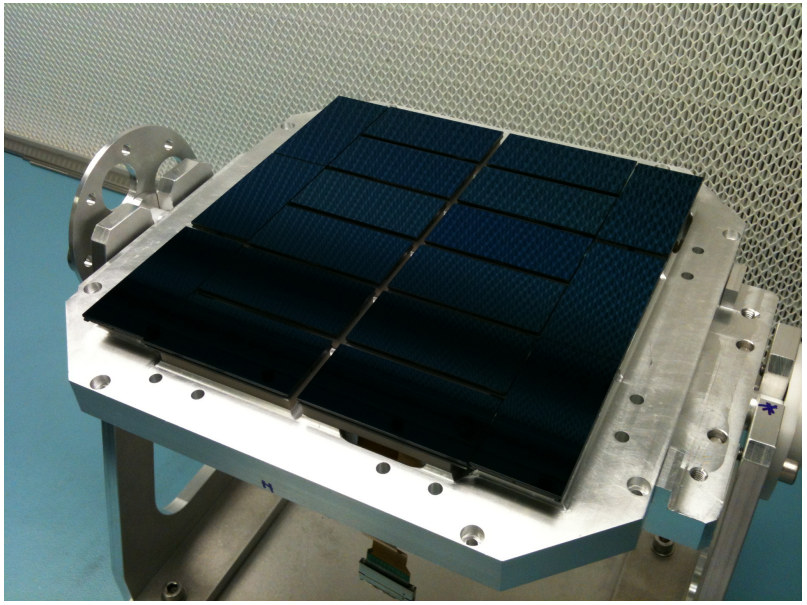
# ROE Layout

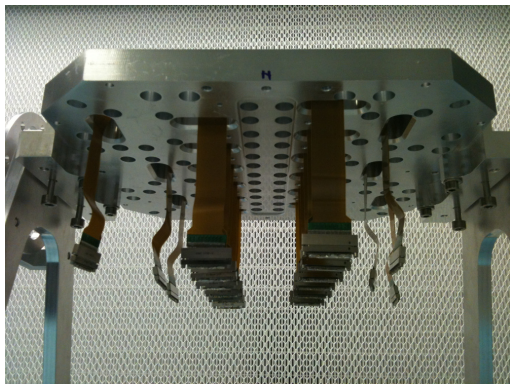


SIDE VIEW



# ROE Overview





## DETECTORS

- 18 Hamamatsu CCDs 2k x 4k
  - 16 used for science (~150kHz)
  - 2 used for guiding (~200kHz)
- 15 µm pixel size, back-side illuminated
- 4 outputs

# ROE Overview

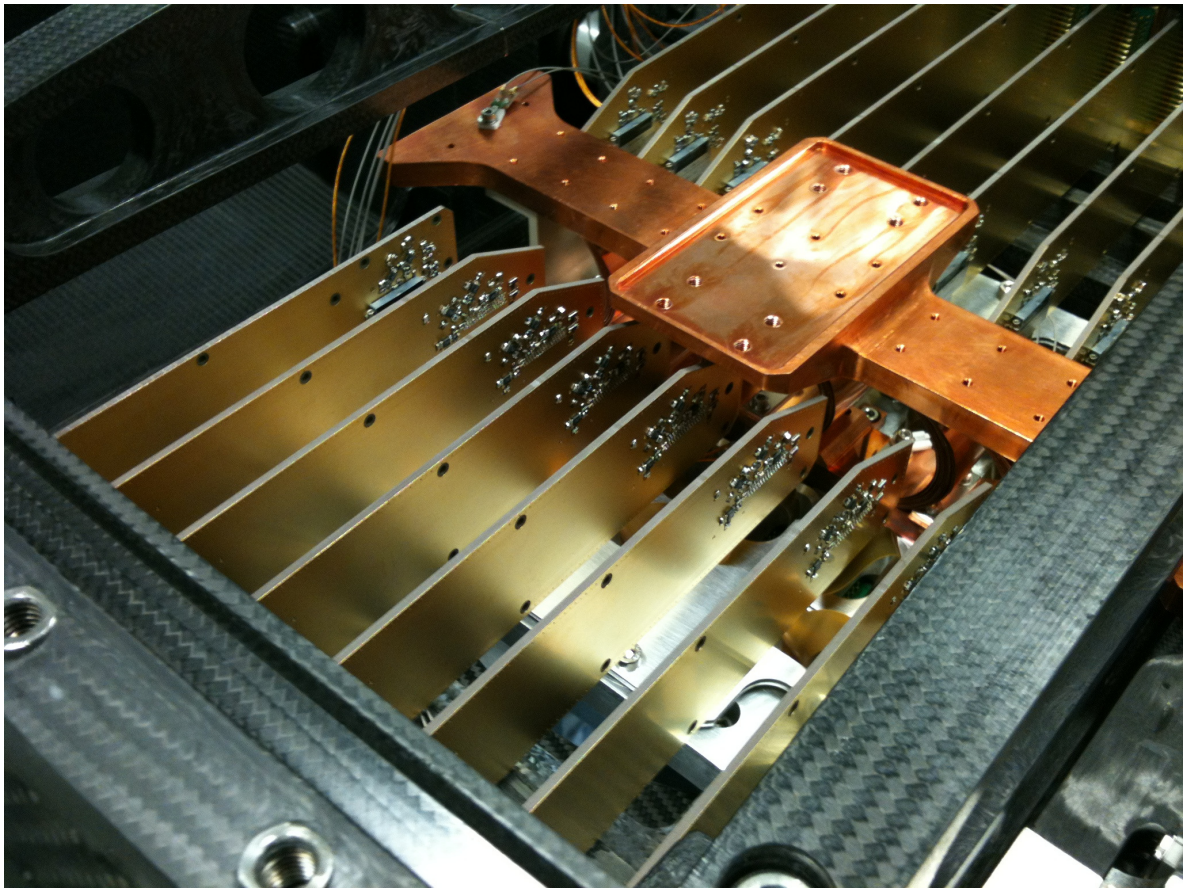
**PREAMPs:** Preamplification stage inside camera.

- 1 PREAMP/CCD
- Customized for:
  - Fully differential amplification
  - Low noise
  - Cryogenics and UHV

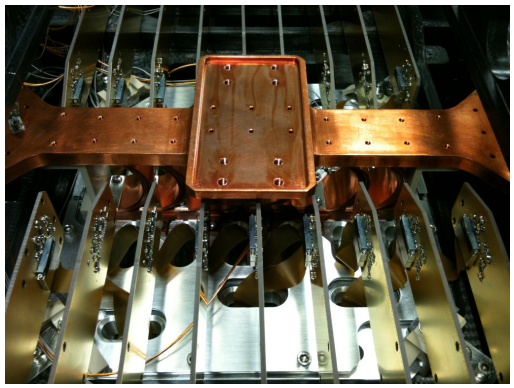
**MIXs:** Fanout clocks and bias signals.

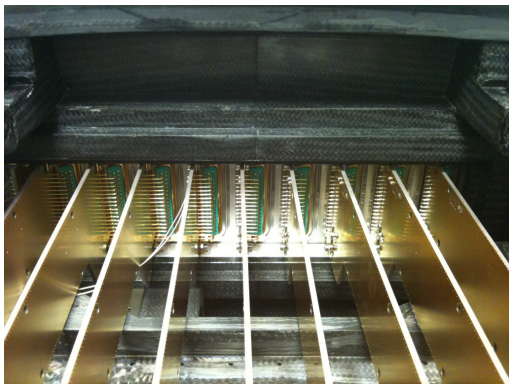
- 2 types:
  - MIX5 drive 5 CCDs
  - MIX3 drive 3 CCDs
  - MIX3 used for guiding (drive 1 CCD)

# ROE Overview

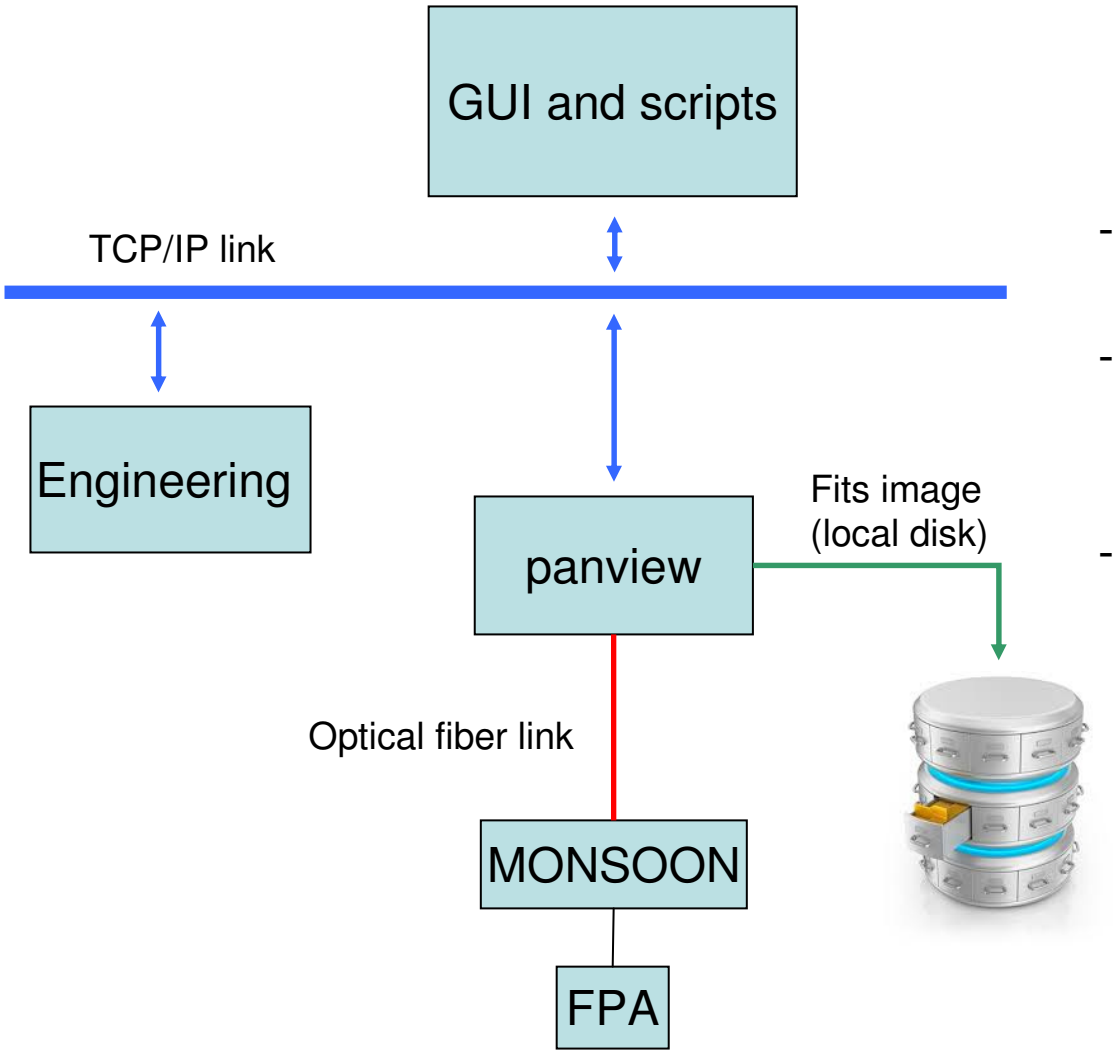


Top view of the camera inside





# ROE Overview




panview + MONSOON

- MONSOON based on NOAO standards
- Ready to readout IR and CCDs detectors
- panview developed at CTIO and based on LabVIEW

# ROE Overview

panview + MONSOON

Configuration files:

From files here (main file is called dhe.conf)

- Get hardware description: CSV file
- Get link info: systran, slink, slink_d, auto
- Get hardware type: fermi, orange, sim
- Get FPA information: FPA name, initial readmode, overscan, prescan, etc
- Get specific “translations” file: define special attributes (cols, rows, intTime, etc)
- Get initialization macro name

MONSOON hardware Initialization 

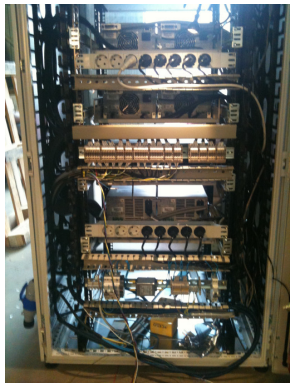
# ROE Overview

panview + MONSOON

MONSOON hardware Initialization:

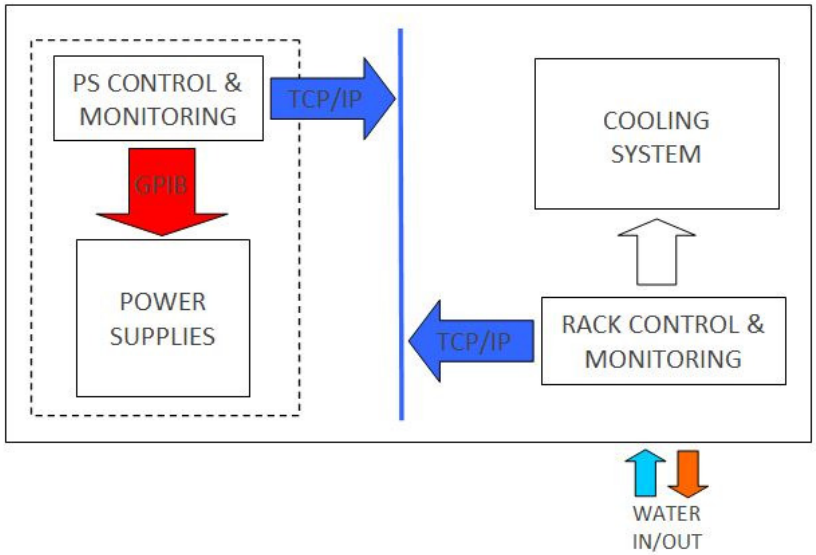
- Open driver
- Read CSV (store)
- Read “translations” (store)
- Pass FPA info to GEOM,
- Get back total cols, rows, etc
- Set on hardware “special” attributes with right values: cols, rows, etc
- Executes specified initialization macro:
  - load specified .ucd file
  - run specified .mod file
  - In general, run any desired command

# ROE Overview

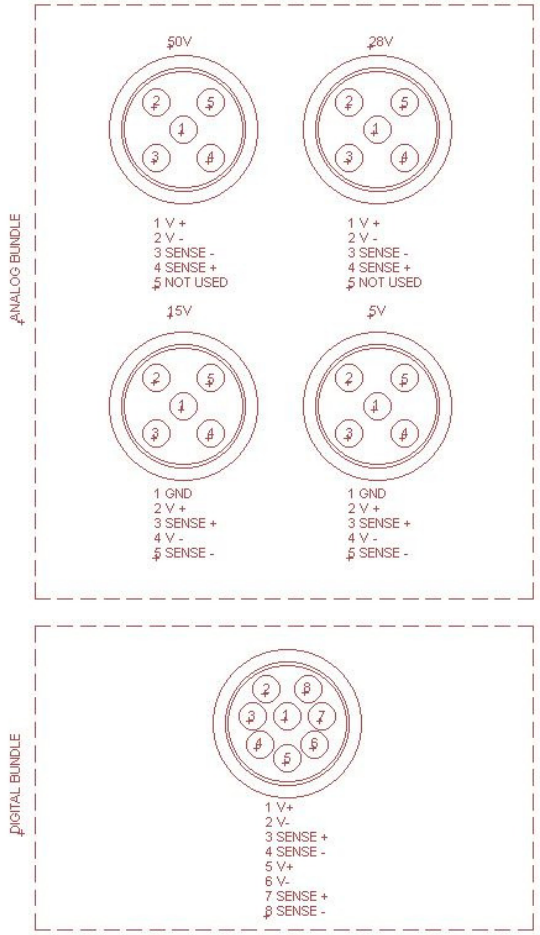


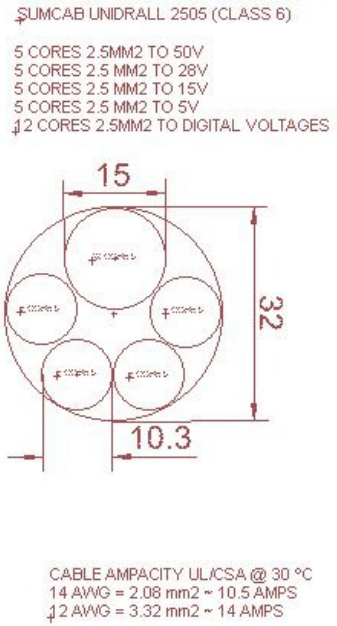
## Power Supply Rack

- Manage all power supplies via TCP/IP
- Manage the rack cooling (warning & alarms)



# ROE Overview




ROE Power Supplies :

- High performance – lineal-power supplies (Agilent)
- Overvoltage and overcurrent protection
- Separated distribution for analog and digital voltages

Connectors:

- Militar (MIL-C-5015 and MIL-DTL-24308 Class M) and space grade (ASTM E-595 & NASA-RP-1124) connectors