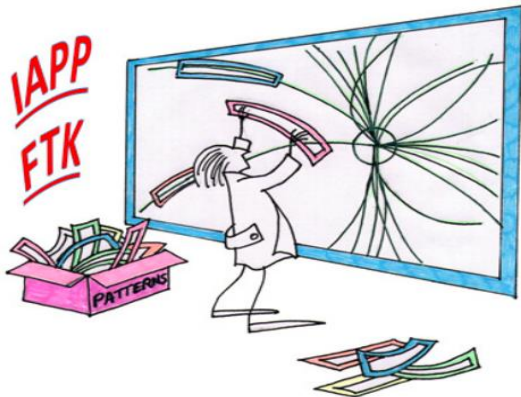


Power Supply redesign

Marco Piendibene (UNIFI)

Alessandro Iovene (CAEN)

IAPP Project number: 324318

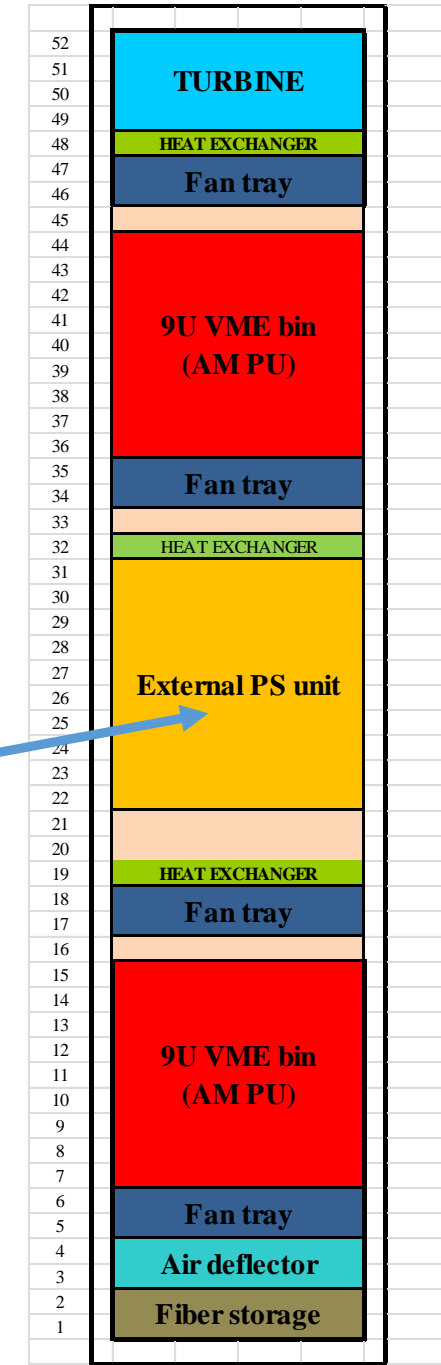
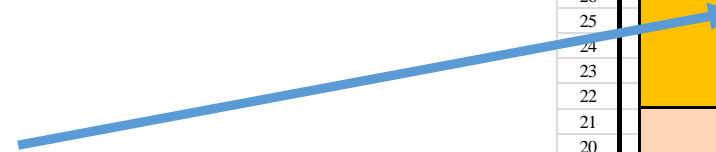


Pisa, 29/5/2015

FTK rack and CAEN PS

- 1 power supply for 2 VME crates (1 rack)
- 16 Kwatt of total power

CAEN Power Supply
(9U high)



FTK rack

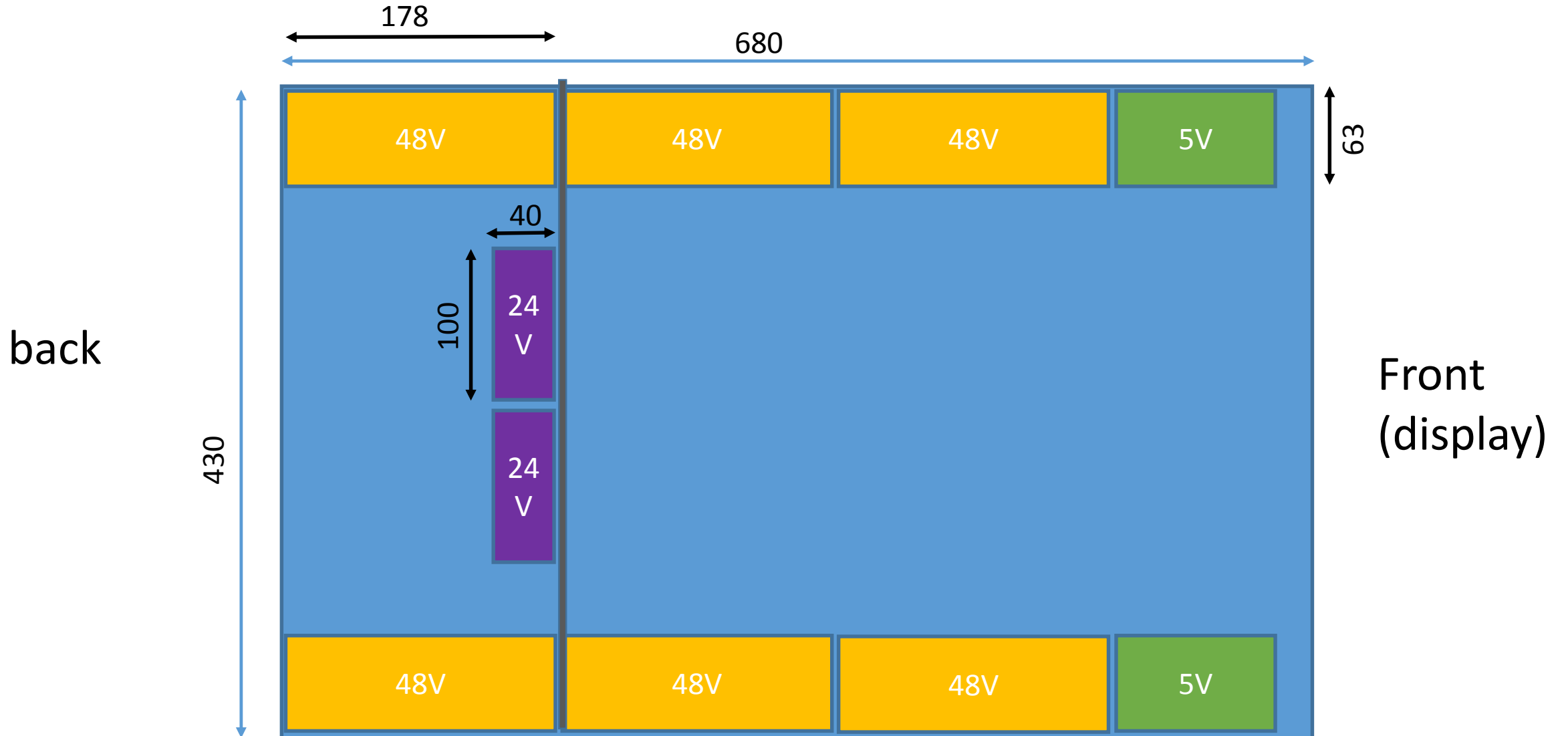
Specification

- 2Ch 48V/150A
- 2Ch 5V/120A,
- 2Ch 24V(Max 30V)/30A (Max 35A),
- Input: 3-phase, 1 connector for each channel group
- Output: bolts placed 5 cm from each other
- Interface: Ethernet + display
- Local / Remote Control:
 - V/I Monitor for each Voltage
 - ON/OFF Control for each section.
- Dimensions: 9U 680mm

Layout (view from the top)

dimensions in mm

High: 9U





2400W Single Output Power Supply

RSP-2400 series



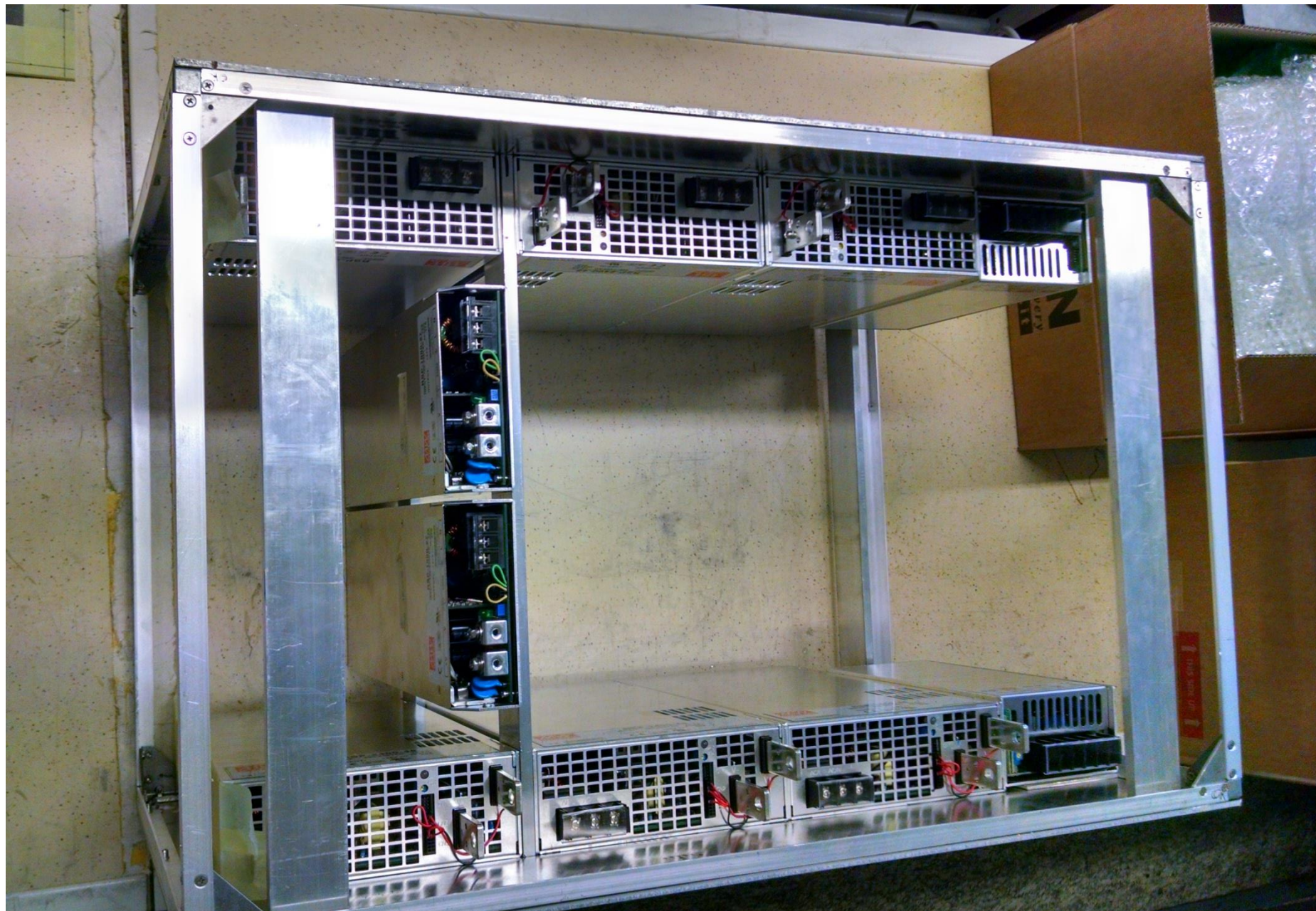
■ Features :

- AC input 180 ~ 264VAC
- AC input active surge current limiting
- High efficiency up to 91.5%
- Built-in active PFC function, PF>0.95
- Protections: Short circuit / Overload / Over voltage / Over temperature / Fan alarm
- Forced air cooling by built-in DC with fan speed control function
- Output voltage can be trimmed between 20~110% of the rated output voltage
- High power density 12.5W/inch³
- Current sharing up to 3 units
- Alarm signal output (relay contact and TTL signal)
- Built-in 12V/0.1A auxiliary output for remote control
- Built-in remote ON-OFF control
- Built-in remote sense function
- 5 years warranty

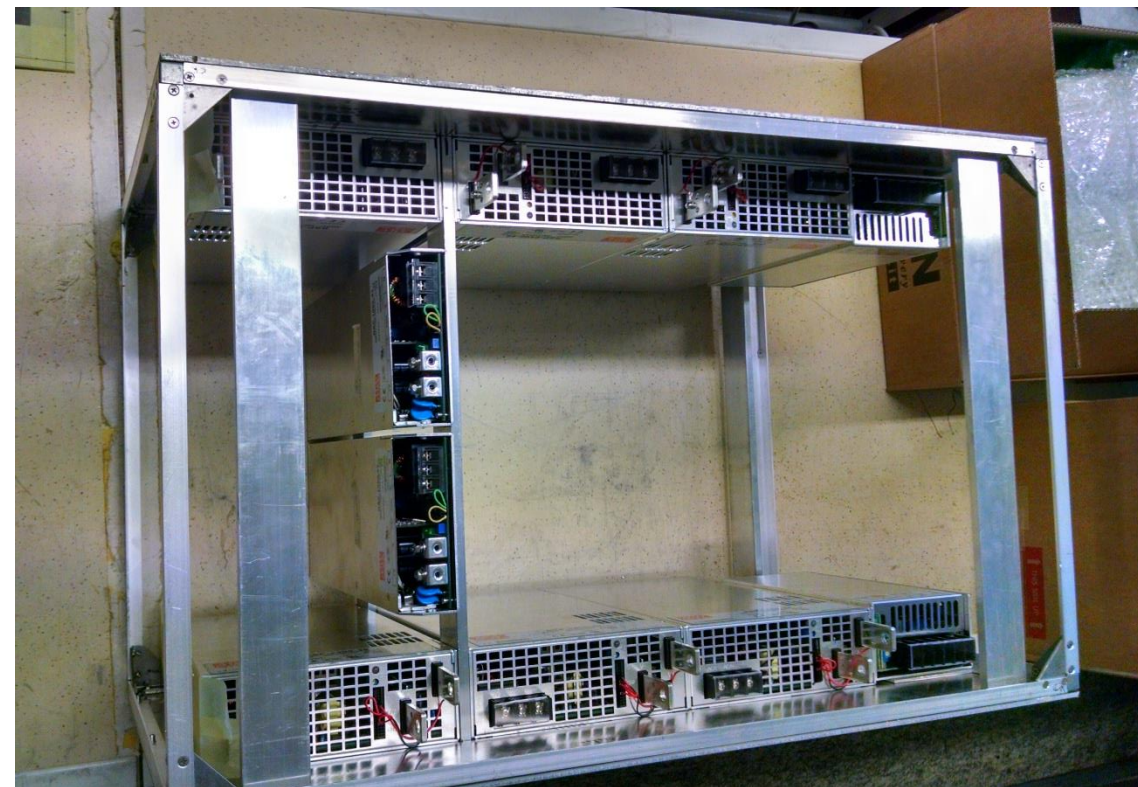
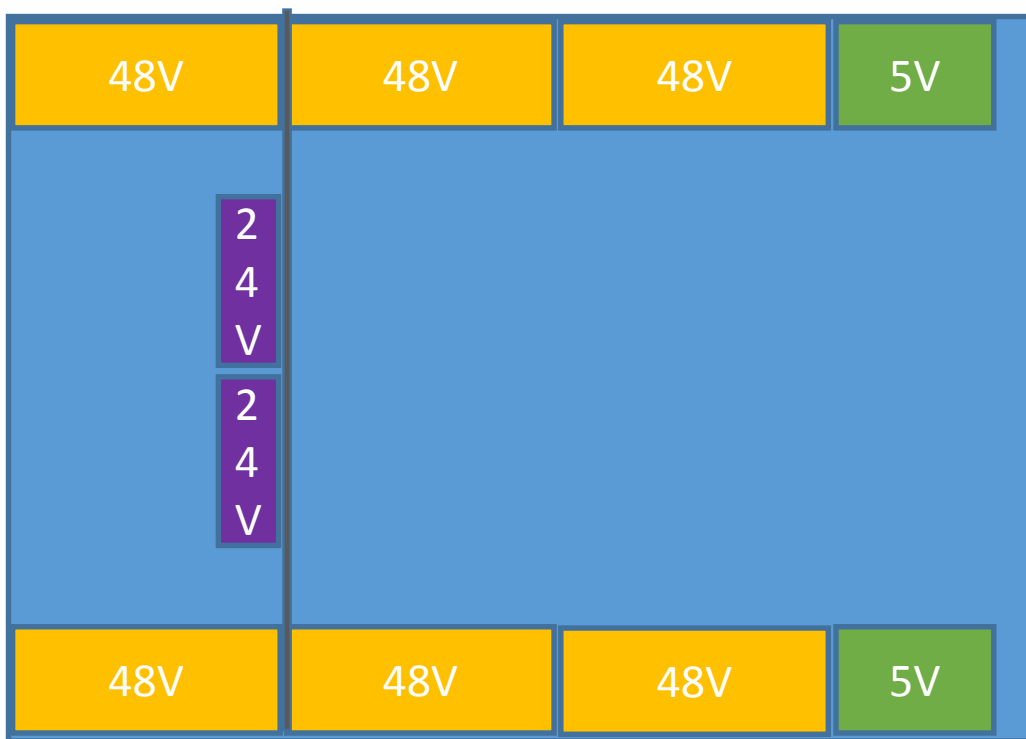
SPECIFICATION



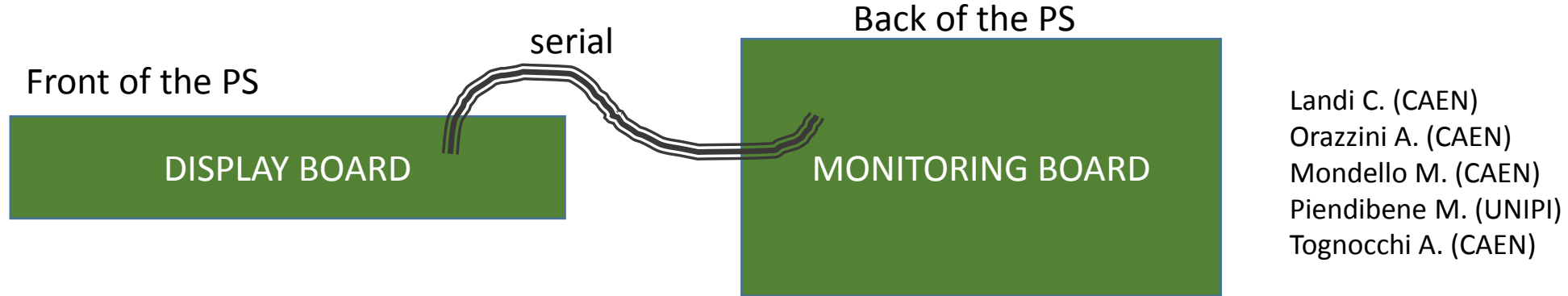
back



Front
(display)



Remote monitoring/control: electronics



Display board

- Ethernet/Canbus interface for remote control
- Microcontroller
- **ALREADY EXISTING** (CAEN)

Monitoring board (Landi, Orazzini, Piendibene)

- V/I monitoring for 48V, 24V and 5V
- Signal conditioning for ADC compatibility
- Microcontroller ATMEGA128
- ON/OFF control for each channel of the power supply
- **PCB submitted for production**

Monitoring board: current monitoring



Current Transducer HAIS 50..400-P and HAIS 50..100-TP

$$I_{PN} = 50 \dots 400 \text{ A}$$

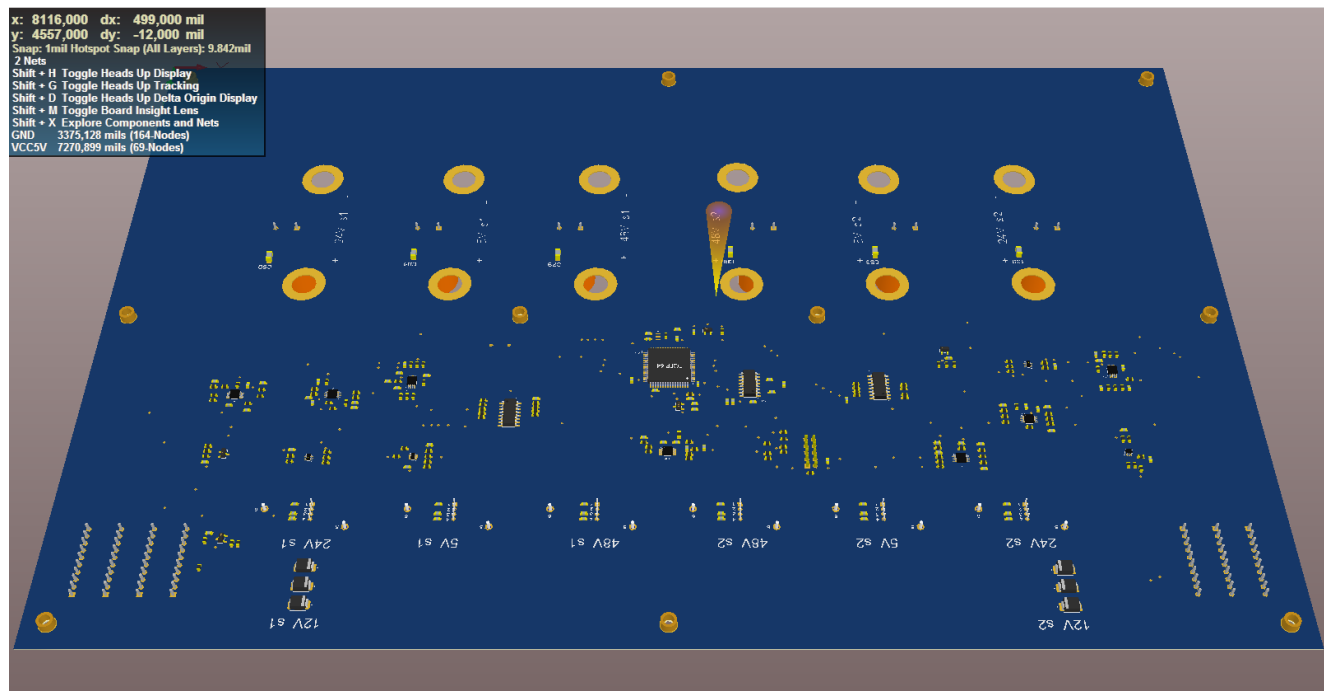
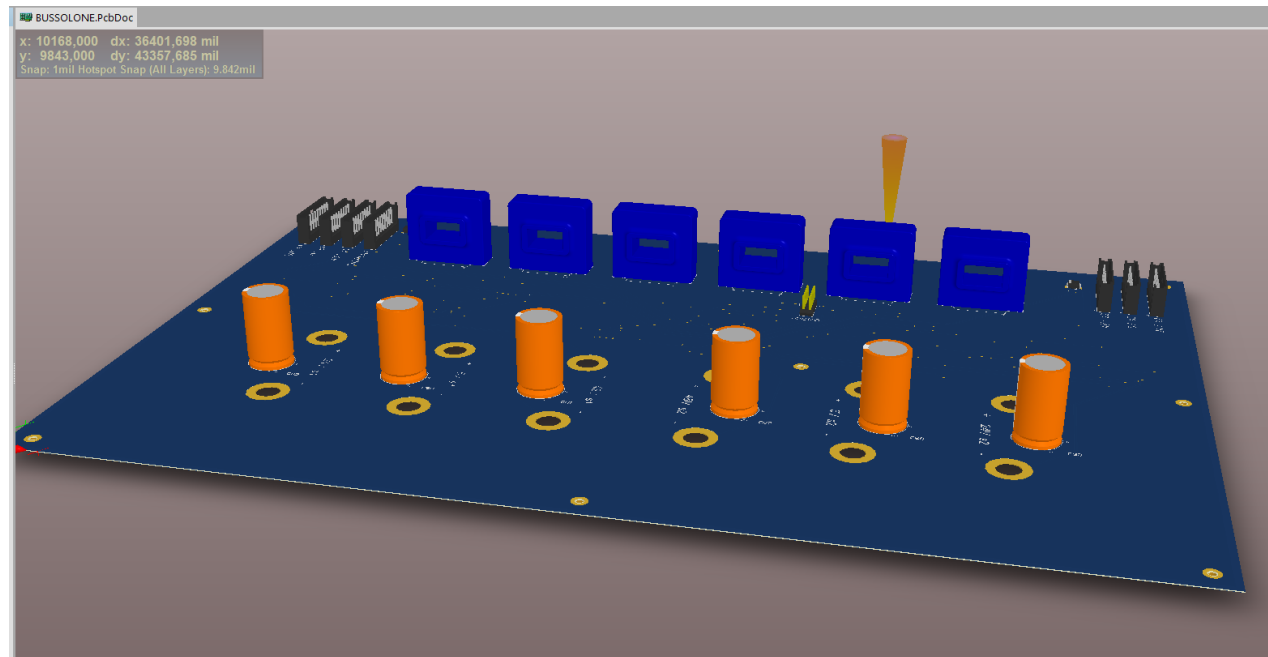
For the electronic measurement of currents : DC, AC, pulsed, mixed,
with a galvanic isolation between the primary circuit (high power)
and the secondary circuit (electronic circuit).



All Data are given with a $R_L = 10 \text{ k}\Omega$



Display board



Status:

- Power supply mechanics: already in CAEN
- Power supply modules: already in CAEN
- Monitoring board: submitted for production
- Display board: ALREADY EXISTING
- Firmware for microcontrollers: TO BE WRITTEN (but something is already present)
- TESTS: TO BE DONE

→ POWER SUPPLY READY IN THE SECOND HALF OF JULY

Thanks

