ICARUS MEETING
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Electronics installation for the T600

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The T600 electronic racks in Pavia

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The rack has air tight structure in order to reduce post installation servicing.

Fan controlled air flow, through the aluminum heat exchanger, moderates internal temperature.

Total power dissipation of any rack is about 700W.

A custom unit allows remote probing and control of rack status via an I2C interface.

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Rack composition

External fan

External aluminum heat exchanger

Internal fan

System monitor

Internal fan

Digital crate

Internal aluminum heat exchanger

Linear P.S.

Analogue crate

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the System Monitor

The System Monitor manages the acquisition of the rack parameters as: analog and digital crates power supplies voltages; high voltages; line voltage; internal temperatures and fans rotation.

Several alarm thresholds are settable, to guarantee proper operations in safety conditions. A back-up battery allows the Monitor to maintain all the settings stored during black-out.

The SM provides a direct control of the power supply of each connected crate, and operates, when alarms occurs, increasing the fans' speed or switching-off the module. 20 NIM-TTL I/O are availables.

All the operations can be made in remote, via I2C bus, by Lab View program installed on dedicated PC

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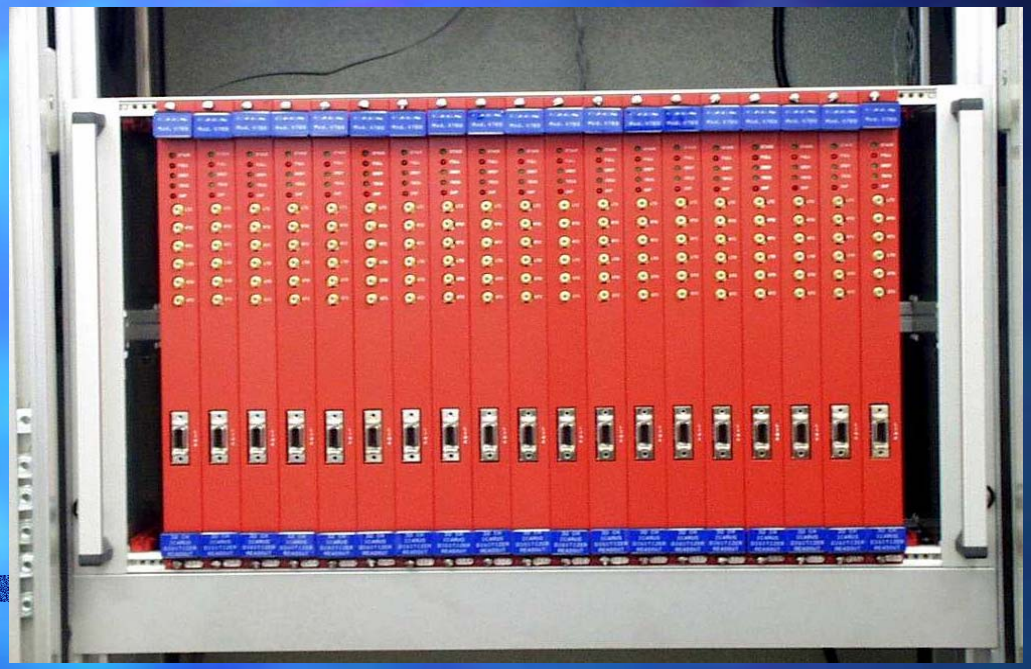
The digital crate



The digital crate is a standard VME crate. This crate is produced by SCHROFF and has a low EMC radiation value. Inside the crate 18 modules V789, 1 module V816 and 1 CPU are accomodated.

A custom backplane distributes the global clock and trigger signals between V816 and V789 modules.

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T600: linear P.S.

The power supply has been designed for ICARUS analog crate.

In order to obtain low noise value of output voltages, power supply has been realyzed with three linear modules.

These modules have been tested in extreme conditions at 110% of the maximum load @70°C, to verify the ripple is kept within a 1mV.

Current outputs are 6, 10 and 18A @ 5Vdc_for total power of 200W.

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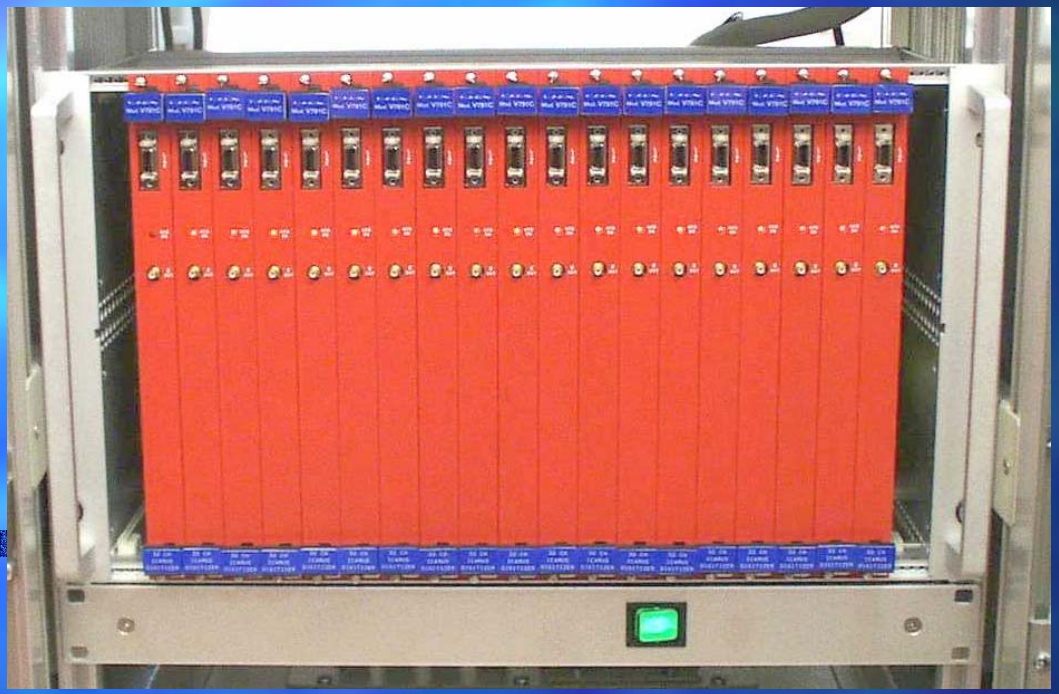
The analog crate



Analog crate is a standard Europa 6U-21TE. The structure has been designed in way to accommodate boards on both sides.

18 V791 analog boards and one Slow Control module are accommodated in front of the crate, while 18 A764 decoupling boards, on the back.

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Currently the material necessary in order to assemble all the racks to install on the 600T, are stored in the LNGS.

50 racks come from Pavia are already partially assembled.

For the others 50 racks all the parts must completely be assembled

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Electronics installation for the T600

To complete the 50 racks come from PV, the following operations are needed:

- Carry-up in the right position the digital and analog crates, the power supply and the rack controller
- Insert the FE and DAQ cards within the crates
- Wire all cables (FE, MDR, HV, trigger)
- Test single parts and verify the noise
- Finally make the packaging for the transport.

it takes about 1 man/day for rack.

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Electronics installation for the T600

For the others 50 racks it's necessary:

- predispose the mechanic of the racks
- prepare digital crates with the insertion of the back-plane
- position the digital and analog crates, the power supply and the rack controller to the right heights
- insert the FE and DAQ cards within the crates
- wire all cables (FE, MDR, HV, trigger)
- test single parts and verify the noise
- finally make the packaging for the transport.

it takes about 2 man/day for rack.

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Transport in the Hall B and installation on the detector:

the transport of the 100 racks will be carried out from a external company; the coordination of this activity will be necessary and will take

about 10 man/days

More difficult it's to estimate the necessary time to positioning the racks on the detector.

Considering the experience gained in Pavia and refererring to the several working activities (positioning rack with overhead-traveling crane, cabling FE to feedtrough, assembling supports for trigger and HV cables, testing and final setting-up)

we estimate about 50 man/days overall.

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Altogether for the assembling, tests, transport and installation will be necessary approximately:

210 man/days

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Supposing to have 2-3 persons who execute the work, we can suppose to complete assembling operations in approximately 2-3 months from beginning (april-june 2003) and approximately

1-2 months for the installation in Hall B.

we assume the collaboration of:

3 persons from PD (Corti D, Marchini S, Nicoletto M)

1-2 person from LNGS (.....)

1-2 person from NA (.....)

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