FTK infrastructure

A. Lanza – INFN Pavia

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Status of racks in USA15

DF racks 06-07.A2 and 06-09.A2

Fiber installation completed at the end of June. All fibers, apart a few, are closed inside the fiber trays, ready to be connected to the DF boards when available and installed.

Storage of fibers inside the box

Fibers installed and fixed inside the fiber tray

Both racks now equipped with the final ATCA shelves

Status of racks in USA15

Core rack 05-09.A2

It is now used for cooling tests. Since August the Caen power supply was installed, and it is ready for other cooling tests

CAEN Power Supply (A3488E)

Main specifications:

- 2 independent channels supplying 48V, 24V and 5V
- Each channel 48V@150A, 24V@35A, 5V@120A, total power 8.64kW/channel
- INPUT voltage separated for each channel, 3-phase 5 poles
- OUTPUT connectors made of M13 bolts, minimum distance among bolts 5 cm
- External interface implemented remotely by means of the Ethernet (SNMP) protocol and locally by means of a manual display
- Local/Remote controls: V/I monitor and ON/OFF for each voltage output
- OPC server used in ATLAS will be updated to include this new device
- Dimensions: 19” large, 9U tall and 680 mm deep
- EU conformity mark

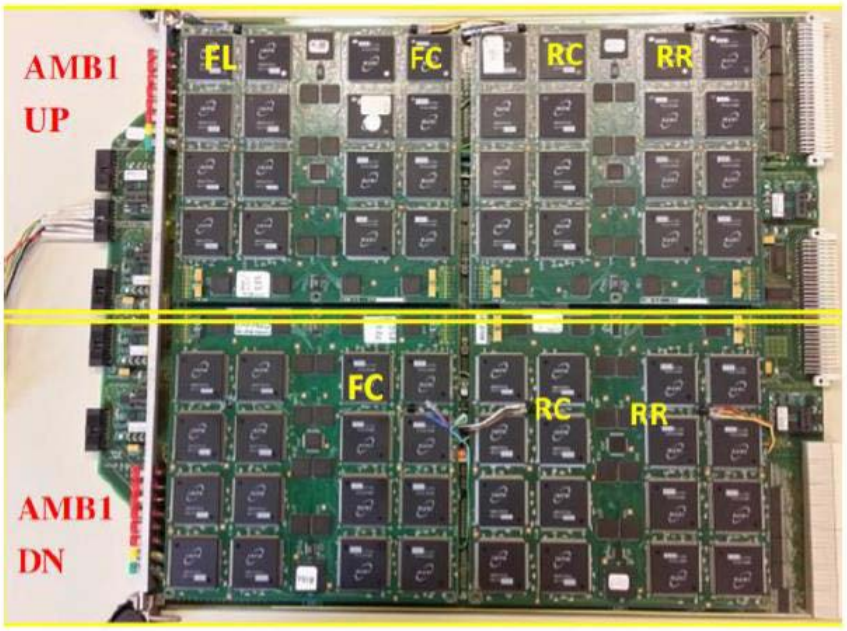
Available since August

The custom fan unit

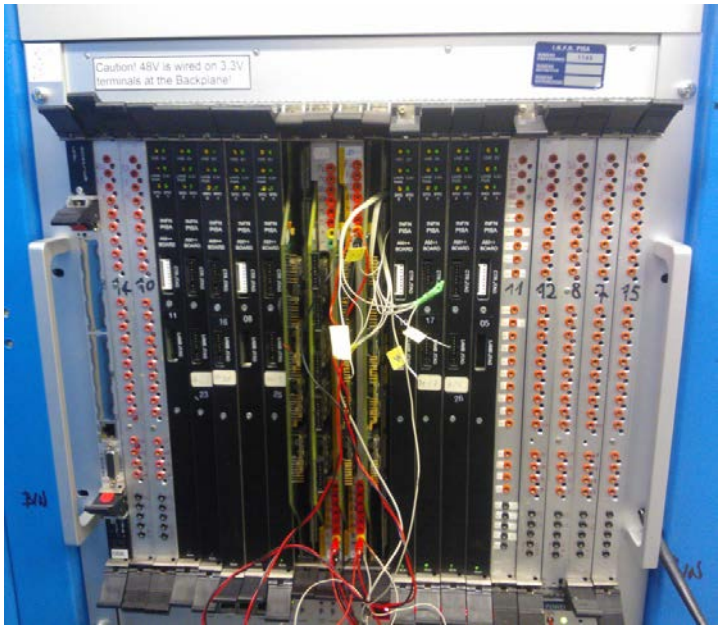
The rack-mount version is available since middle of June. It was used for the first time in an FTK rack during the second set of cooling tests.
The crate-mount version will be available by November 4th.
Next year the CanBus interface will be joined by the Ethernet interface (hopefully)

Cooling tests

In June we performed two cooling tests, using four (old) AMBslim boards. They were put in the central slots (6 to 9) and moved one slot at a time all together up to the slots 9 to 12. AMBslims were named 3v3, 1v2, 1v3 and 190W. The total dissipated power by the four AMBslims for both tests was about 0.9 kW.
The other slots in the crate were filled in with very old CDF AMBs (black front panel) and resistive load boards (clear front panel). No one of these boards was connected to the backplane. The aim was to simulate a real situation concerning the crate transparency to the air blown by the Wiener Hyper-Blower fan unit.
The first test, done on June 16th, used the Wiener H-B fan unit only. The second one, done on June 26th, used the Wiener H-B fan unit on bottom and the custom fan unit on top. Another test was performed on July 20th – 24th.



Positions of the 12 T sensors on an AMBslim. Only three AMBslim were equipped with sensors



Setup for both tests. The four AMBslims are without front panel

Summary of cooling tests

Two cooling tests were performed in June, with and without the new custom fan unit. Another test was performed at the end of July

Four old AMBslim were used as load, the total dissipated power was about 0.9 kW

The VME crate anyway was filled in with other passive boards to provide a realistic resistance to the air convection

With two fans the temperature is slightly higher at the centre of the board, about 60 °C, but it is much more uniform as a function of the slot number

Next test will be performed at the beginnin of November with two custom fan units, to compare with the present data obtained with one custom fan unit and one Wiener HB unit.

Update of the Time Schedule presented on July 15th