

MTP1 FEE cards setup.

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draft

The MTP1 has been setup in the lab with the intention of doing readout board and cosmic ray tests.

Present hardware and setup.

- Readout board and auxiliary boards setup in the mode when the back faced together on opposite side of the mounting bar. It turned out to be necessary to remove one of the four legs supporting the upper mount to connect the two boards with the two 4" 50 pin flex cables.
- The pad plane was instrumented with 36 FEE cards setup in a geometry with the FEE cards in two orientations.
- A scheme was worked out by connecting the FEE cards with the readout board connector. The cables have varying length (10-14") and are connected in a slightly twisting way.
- The most difficult part in the cable attachment is due to the staggering layout of FEE cards. The results in a layout where some connector cannot have the cable put onto it as long as the FEE card is secured to the pad-plane with the screws tightened. They must be loosened first, cables connected, and then tightened. This is quite difficult to do with the readout board in place. The recommended procedure is remove the readout boards when installing the FEE followed by adding the cables, and at last re-insert the readout board.

Cooling

The boards were powered up and the temperature monitored. With all boards connected and the power supplies drawing 12A +-6V the temperature raised from about 25C (room temperature) to about 39C for the air between FEE cards and readout plane and the pad connectors. The temperature of the Al plate was 36C. This was after about a few hours.

A cooling cable-tray fan i.e. 3 fans was set to blow air from the room across and in between the Fee cards, cables just sitting at the side with no special arrangement. In this setup the temperature raises to only about 1.5C over room temp to 27C, and cards as well as pre-amplifier shaper chips stays comfortable cool (perhaps 40C).

In conclusion active cooling is needed, but air-cooling seems sufficient.

Fig 1 Top view of MTP1 showing the FEE inserted on Pad plane before cabling.

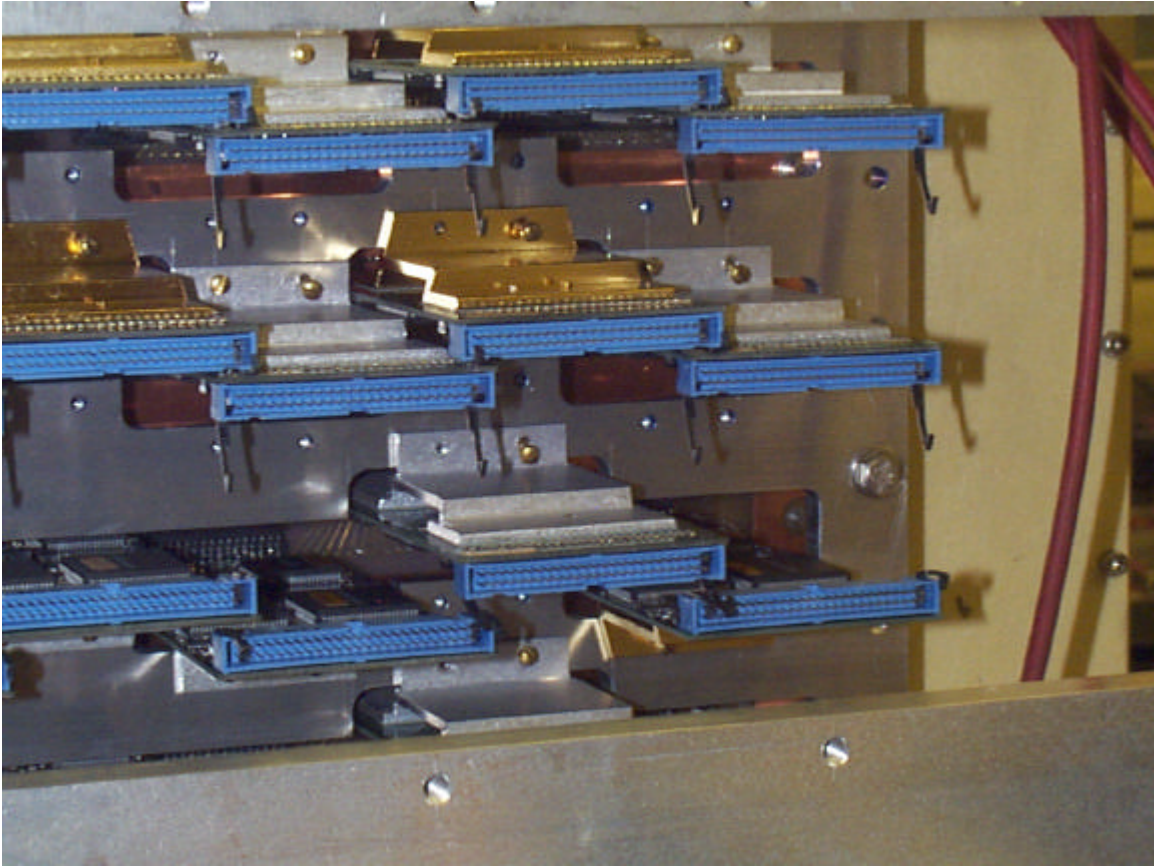


Fig.2 Top view of MTP1 showing cabled up readout boards

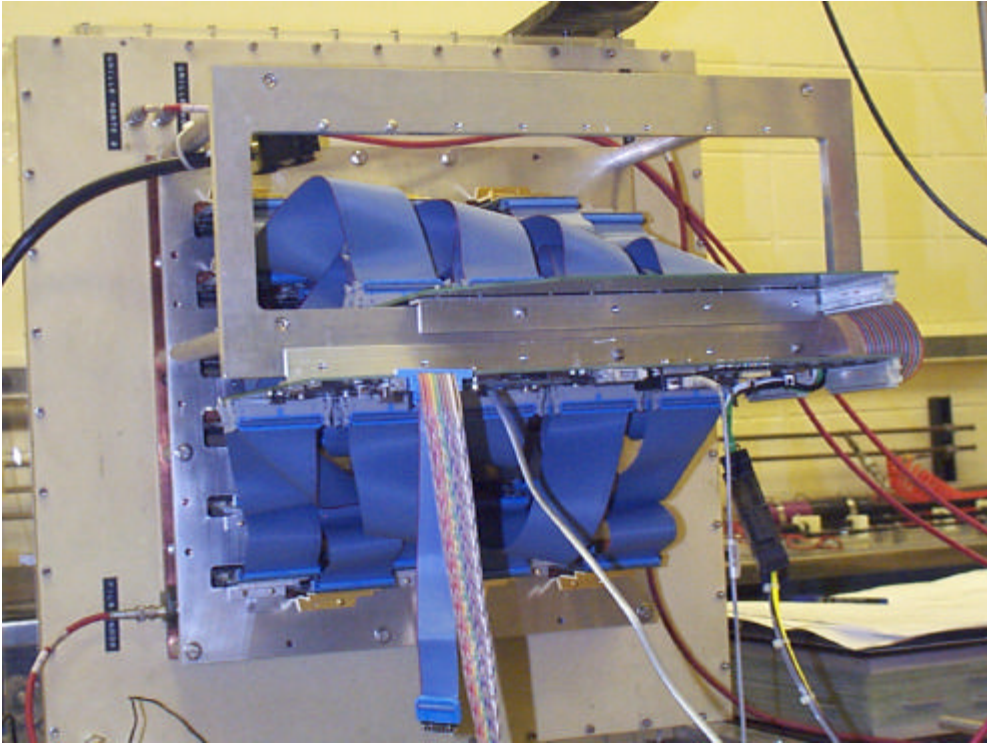


Fig. 3 Top view of MTP1 showing main read out board with its cabling.

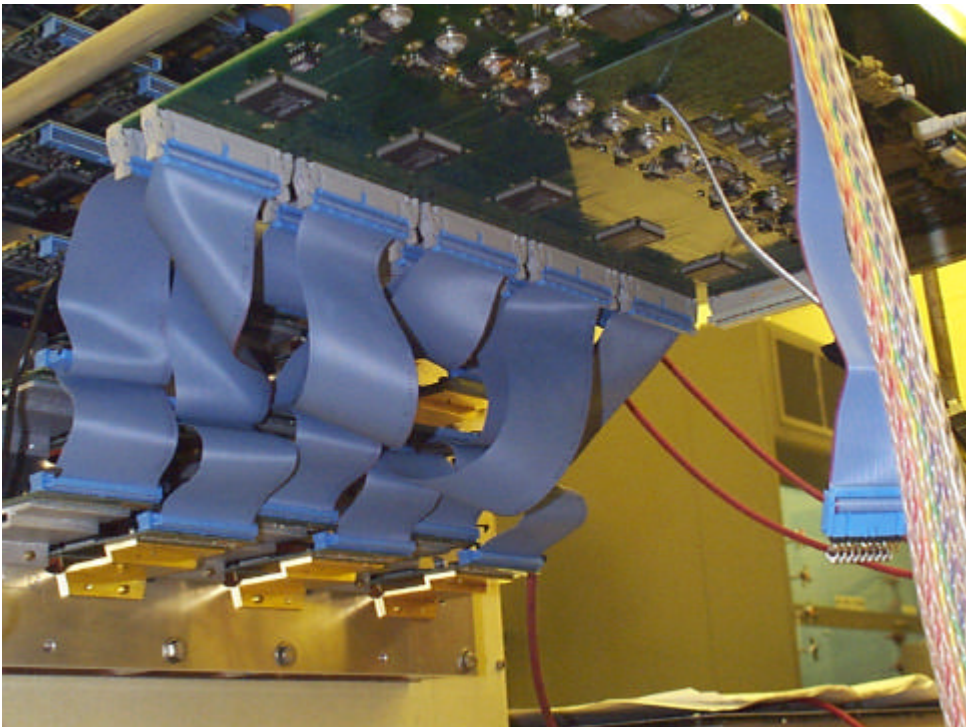


Fig.4 Side view of MTP1. Before cabling of aux. Board.

