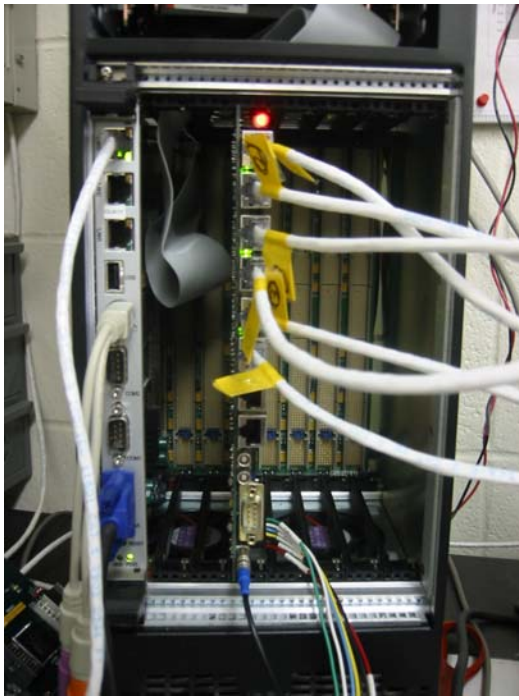


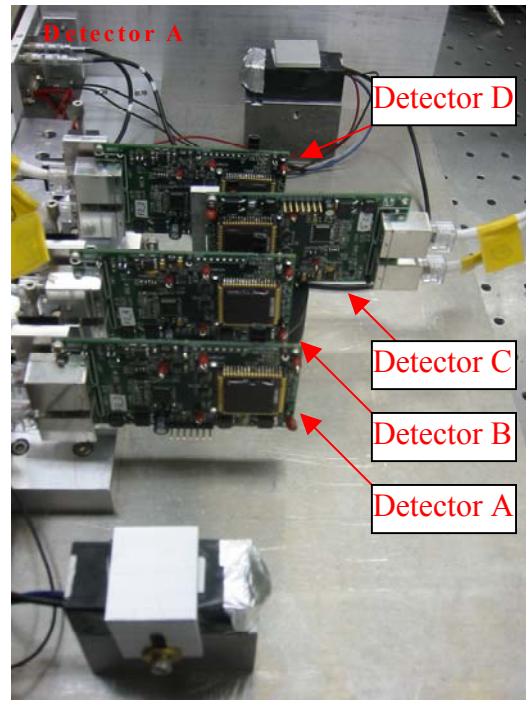
Pixel Test Beam, MAY04→June04 A short manual for shifters

What is the system made of????

The system is (usually) made of a B2 board + 4 F2 boards



The B2 board



The F2 boards

→ 4 F2-boards.

Each board has a CAP1 Monolithic Active Pixel Sensor –MAPS- prototype or a CAP2 MAPS prototype, as well as electronics to handle the pixel data acquisition and chip operation. An important component on each board is the Xilinx CPLD chip, basically a chip you can program with your laptop, which handles the CAP operation and data acquisition, as well as the communication to the B2 board.

→ 1 B2-board.

This board handles the data synchronization from F2 board to F2 board, and the communication with the data acquisition software and the F2s. It contains 5 Xilinx chips, 1 per detector and an extra chip for synchronization between detectors and communication to the CPU.

→ A bunch of cables.

From the B2 board to each F2 board, there are 2 ethernet cables. One is labeled “jcom”, the other “jdat”... Beware not to swap them around (jcom on B2 must be linked to jcom on F2s and such...). This is how communication signals from B2 to F2 pass, as well as the powering of F2, and the data return. Also it is **important in case of cable configuration change to keep careful record in the log book** of which detector (F2+cap) correspond to which pair of cables correspond to which detector channel on the B2 board side.

How to run the data acquisition???

→ Be sure to know which version of the acquisition program to run: currently it is **capeval v25.c**, or **capeval v27.c**, but this evolves rapidly: **talk to the previous shifters** to know which version is to be run. The current version of the program sits in the directory **/root/WinDriver/wizard/CAPEval**

→ In the program you use, check that: COSMIC_FLAG is set to 1
PRINT_TO_FILE is set to 1

→ Move to **/root/WinDriver/wizard/CAPEval/linux**

There, you’ve got a makefile, and you should be able with a *make* to compile the version of the program you want to use to operate. When compiling, please check that the compiled version is indeed the current version (it will tell you that on screen).

(the directory tree diagram is hence:

capdaq:/root/WinDriver/wizard/CAPEval/capeval_v25.c	<- source file
/linux/makefile	<- makefile
/capeval_v25	<- executable file

→ Once compiled, typing from **/root/WinDriver/wizard/CAPEval/linux**
“./capeval_v25”, the data acquisition should start.

When starting the program (“./capeval_v25”), you will be asked a file name. Give a format like DATE-*-RUNnb.dat (for example, 27MAY04-beamoff-run01.dat). It asks you to confirm your detector definition (if F2_3 with CAP1_6, “36” should do it...). Right now, it is ch A: 36, ch B: 40, ch C: 0x, ch D: 25. It tells you what you are using as *-stat.dat files (which **must correspond** to the detector definitions you just typed in).

Then it is running.

When you want to stop the program, ctrl^C does it.

What to enter for each run in the logbook????

- The **start time and date**.
- The **momentum and the sign** of the particles used.
- The **DAQ filename** : which version of capeval_v*.c you use.
- The **name of the data file**: for exemple 03JUN04-bigstat07.dat.
- Which **-stat.dat** files you use:
for exemple right now: detector A: 01JUN04-nois03-36-stat.dat
 detector B: 01JUN04-nois03-40-stat.dat
 detector C: 01JUN04-nois03-0x-stat.dat
 detector D: 01JUN04-nois03-25-stat.dat
- Your acquisition conditions and flags: A_SIGMA = ...
 B_SIGMA = ...
 C_SIGMA = ...
 D_SIGMA = ...

 COINC = ...

Last remarks: Please **write as much as you want in the logbook**. Take space to write so that we can write extra comments if needed afterwards. Don't hesitate to write. It is the only way for us to know what we have done later. **Experience shows that all extra information you provide is always very useful.**