

First aid for operating the Lund DAQ-system

Switch on equipment

Switch on the monitor computer

Wait until the monitor computer has booted

Switch on the data taking computer

Switch on LV supplies for the FEC

Switch on the RCU

Wait until the led-lamp on the RCU turns from red to green

Wait a few minutes before you start the DAQ program to let the RCU finish the boot (see 'Test that the RCU is working' to check the RCU has booted)

Wait 15 minutes before taking data/pedestal files after power on of FECs, this is to let the pedestals to become stable after warming up of the electronics

To log in on the monitor computer

Id: ilcdaq

Password: *****

To start up the DAQ control window

Type: localdaq enter

→ opens three windows

ILCDAQGUI-v2.5 (DAQ control panel)

ilcdaq@lunddaq (console on daq computer)

ILCSERVER (the readout programs writes status/debug information in this window)

Test that the RCU has booted

On the run control select

RCUs → Find RCUs

The status of FECs of RCU in use should green or red.

See the document [gui-vx.y.pdf](#) (where x.y is the latest version) for the colour coding.

To set the RCU/FEC configuration

On the run control select

FECs → RCUx (where x is the RCU in use)

check/uncheck FECs to use and save and close

Power on FECs

Tick: 'load lookup tables at power on' on the screen

Click: power on on the screen to power on and load lookup tables

Set preamplifier (PCA) parameters

Preamp enable: unticked means shaped pulses, ticked means unshaped pulses

Gain: (12, 15, 19 and 27mV/fC respectively)

Shaping: (120, 90, 60 and 30 ns respectively)

Decay time: 0 – 2500

Load parameters by clicking: PcaLoad on the screen

Start the monitor program

window on monitor computer

startmon enter

open two windows

MONVIEW-v2.3 (Presenter window)

Debug/status window of monitor program

Choose RCU number

Choose FEC number

Click online on the screen

In case you set the RCU and FEC numbers after you have clicked online:

Click FEC to monitor

Perform pedestal runs

Monitor program must be running (it calculates the pedestals).

In run control panel:

Click: Stop DAQ if DAQ not stopped

Tick: pedestals

Untick: pedestal subtraction and zero suppression

Untick: logging

Choose: monitor in the unfolding menu (readout/monitor) on the screen

Fill out: Number of monitor events equal to 1

Fill out: Number of events to be recorded 300

Set preamplifier parameters to the values you want

1 Click: PcaLoad on the screen to load parameters

2 Click: Start DAQ on the screen

3 Click: Start run on the screen

4 Click: Status on the screen to see that everything is ok, events should increment

When run stops change the PCA parameters:

5 Click: Stop DAQ on the screen and go to 1)

Analyze pedestals

`cd ~/ilcdaq/analys/pedestals/` go to pedestal analysis directory

execute

`./anasum-fectest.sh <directory> <FEC number>`

<directory> is a directory to which all new pedestal files will be copied, temporary files will be put, and a pdf-file with result be put (named combined-<directoryname>.pdf)

The pdf-file will be automatically opened in acrobat reader.

<directory> can be tmp if you do not want to keep the result, else create a directory with a unique name.

Synchronize the pedestal file to the DAQ computer with the command
`pedsync`

Change zero suppression threshold and sampling time

On run control select

settings → physics or pedestals

You will get a window where the threshold and number of samples to take can set. Save and Close.

Physics run

In run control do

Set preamplifier parameters

Click: PcaLoad on the screen

Tick: Physics

Tick: Pedestal subtraction

Tick: Zero suppression

Tick: Logging if data file wanted

Choose: read events in the unfolding menu (read events/monitor) on the screen

Fill out the number of events that should be recorded (0 means no upper limit), if >0 the run will stop after that number of events

Click: Start DAQ on the screen

Fill out the number of events that should be monitored e.g. 5 means every 5th event

Click: Start run on the screen

Switch off the system

In the run control window do:

Click: Stop run if active

Click: Stop DAQ if active

Click: Power off (of the FEC)

Exit on the screen

Kill the monitor program:

in the presenter window: MONVIEW-v2.3 (Monitor window) and do exit

Go to: Monitor-v5.0 ctrl-C (to kill the monitor debug/status window)

Kill the DAQ program on DAQ computer:

Go to: ILC SERVER ctrl-C to kill the DAQ program

Go to: ilcdaq@flctpc-lunddaq (ilcdaq@lunddaq) exit the console on DAQ computer

Switch off the Low Voltage supplies to the FEC

Switch off the power for the RCU

Shutdown the DAQ computer

Shutdown the monitor computer

Further information

in

<http://www.hep.lu.se/eudet/daq/doc/>

e.g. the gui-v2.8.pdf gives more information about the run control

e.g. the presenter-v2.2.pdf gives information about the histograms