Oasys Operation Manual

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1.Schematic of System

Hardware list

- CCD Camera 56/arm
- Multiplexer : Keithley 7011 *2 (north and south)
    GPIB Address 0::7
- GPIB-Ether Interface : National Instrument GPIB-Ether 100
    North IP : 130:199.98.211
        Ethernet Address : 08:00:11:09:25:A5
    South IP : 130.199.99.135
        Ethernet Address : 08:10:11:17:DD:B5
- PCI Capture Board : National Instrument IMAQ PCI-1407

- Windows Machine
    oasys1(north) : oasys1.phenix.bnl.gov (130.199.98.243)
    oasys2 (south): oasys2.phenix.bnl.gov (130.199.98.244)
- Linux Machine
    oasys3 : oasys3.phenix.bnl.gov (130.199.98.245)

Software list

- LabVIEW (Windows)
- ROOT (Linux)
- SAMBA server (Linux)
- Appache (Linux)

DAQ system

electric → optical

Video Signal

GPIB-Ether

maltiplexor

CCD camera

PCI capture board

GPIB command

Windows (LabVIEW)

Linux (SAMBA, Apache, ROOT)

optical → electric
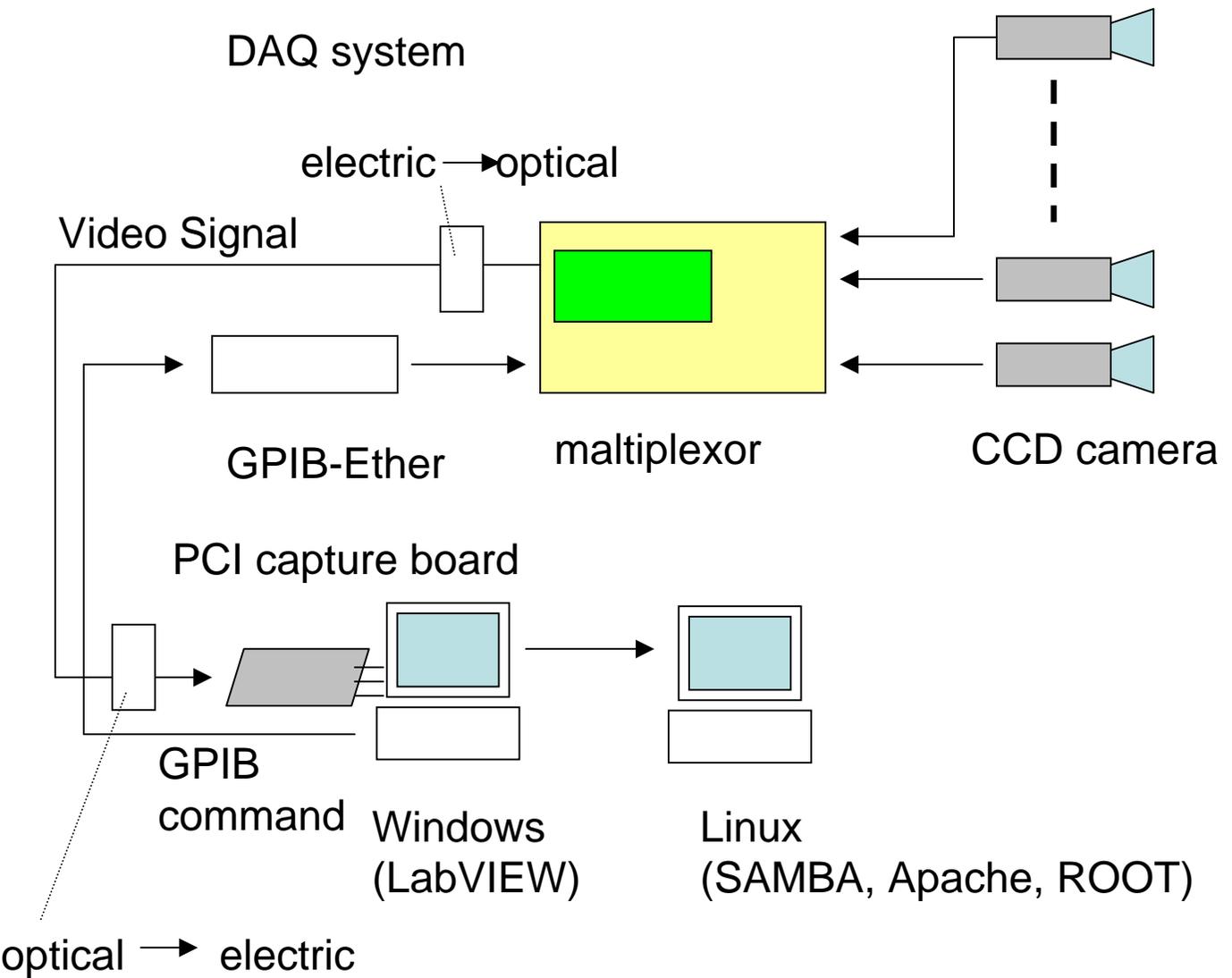
directory/file list

Windows (Both oasys1 and oasys2 are same)
  E:¥LabOAsys   ¥OAsysRun.exe   program
                   ¥data¥confDAT¥   configure file
                   ¥data¥error¥   error log
                   ¥data¥hist¥   histogram
                   ¥data¥image¥   image
                   ¥data¥raw¥   raw data
                   ¥source¥   source
  ¥¥OAsys3¥OAsys3-smb¥   SAMBA

Linux (oasys3)

¥data1¥u¥OAsys-samba ¥north¥hist   histogram
                      ¥north¥html   html
                      ¥north¥image   image
                      ¥north¥raw   raw data

                      ¥south ¥ hist   histogram
                      ¥south¥html   html
                      ¥south¥image   image
                      ¥south¥raw   raw data

                      ¥online   online analysis

How to use

Bring up

◆Bring up Hardware (3 steps)

1.Check Muon Tracking LV

Note!
The MuTr LV system should only be turned on by muTr experts. So,when the LV power has been turned off, ask to the MUTR expert

. Rack Power
The status of low voltage rack power for the MuTr can be seen on the screen of phoncs12, which is located at the north west corner of the counting room. It is commonly used to control LV for entire PHENIX.In the "Rack Monitoring and Control" window, you can find 6 segments of MuTr low voltage control (NMT1, NMT2, NMT3, SMT1, SMT2, and SMT3).
Click "**ON**" button of voltage control and check indicator above the "**ON**" button turns from Green to Red.

. **Low Voltage**
On the same screen as "Rack Monitoring and Control" there are graphical user interface windows called "SMT" for the south muon arm and "NMT" for the north. Click "Crate A" and "Crate B" button, and check "Crate A" and "Crate B" button turns from Green to Red.

Low Voltage

Rack Power

2.Turn cameras on

To turn cameras on, use graphical user interface
called "North (South) Muon Tracking Low Voltage
Power Control" (NMTLV_2.0,SMTLV_2.0).
On this window, you can see "Turn Cameras On"
button and 56 segment.

of camera indicators.

Click "Turn Cameras ON"
button and check indicator
turn on Red

You must check the racks
and crates are on
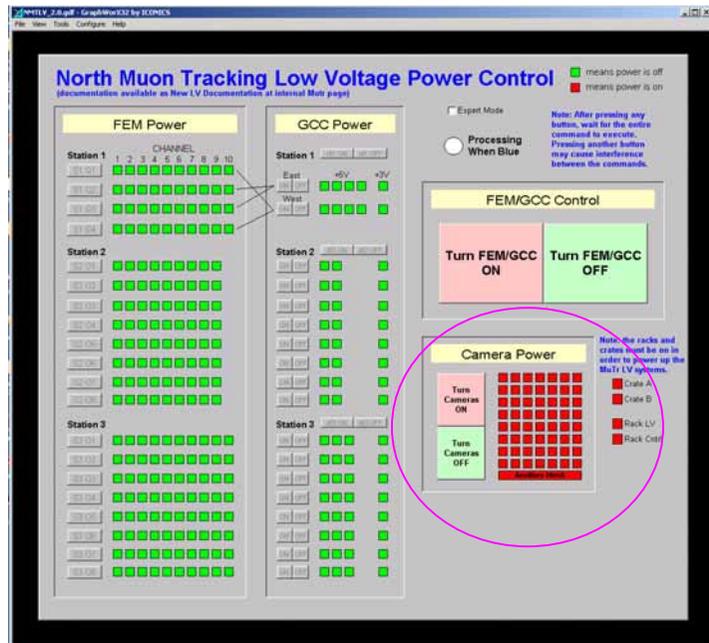
Fig.North Muon Tracking Low Voltage

3.Tunr light source on

At last, turn light source using graphical user interface
called "North (South) Muon Tracker monitoring"
(MuTr.N, MuTr.S) .
Click "light source" control and check it turn on Red.
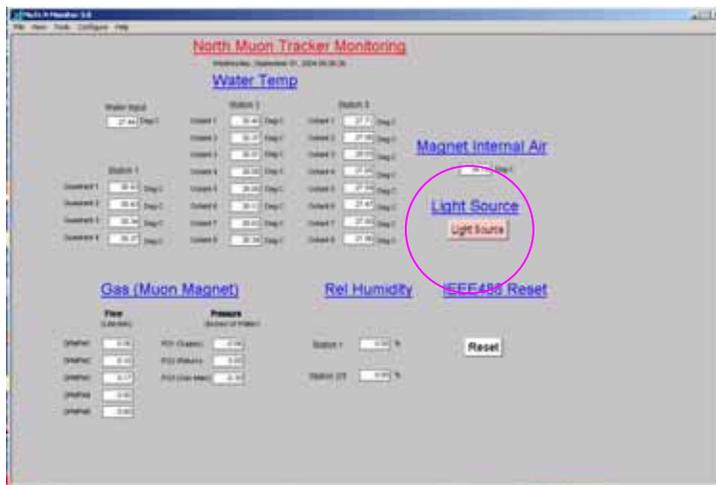
Fig. North Muon Tracker monitoring
Note : GPIB Reset is obsolete.
        Because, it is never needed in the new DAQ system.

◆Bring up DAQ Software

*You must done procedure bellow both oasys1and oasys2,
which is allocated in the rack room.

Double click "OAsysRun " on the Desktop or
directly bring up executable file

(Program Path E:¥LabOAsys¥OAsysRun.exe)
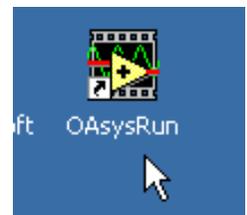
Error check

  When you would bring DAQ software up,
automatically data taking will be started and system
take data every 10 min. After you bring DAQ software
up, you should check if system works properly or not.
Checking procedure is as bellow.
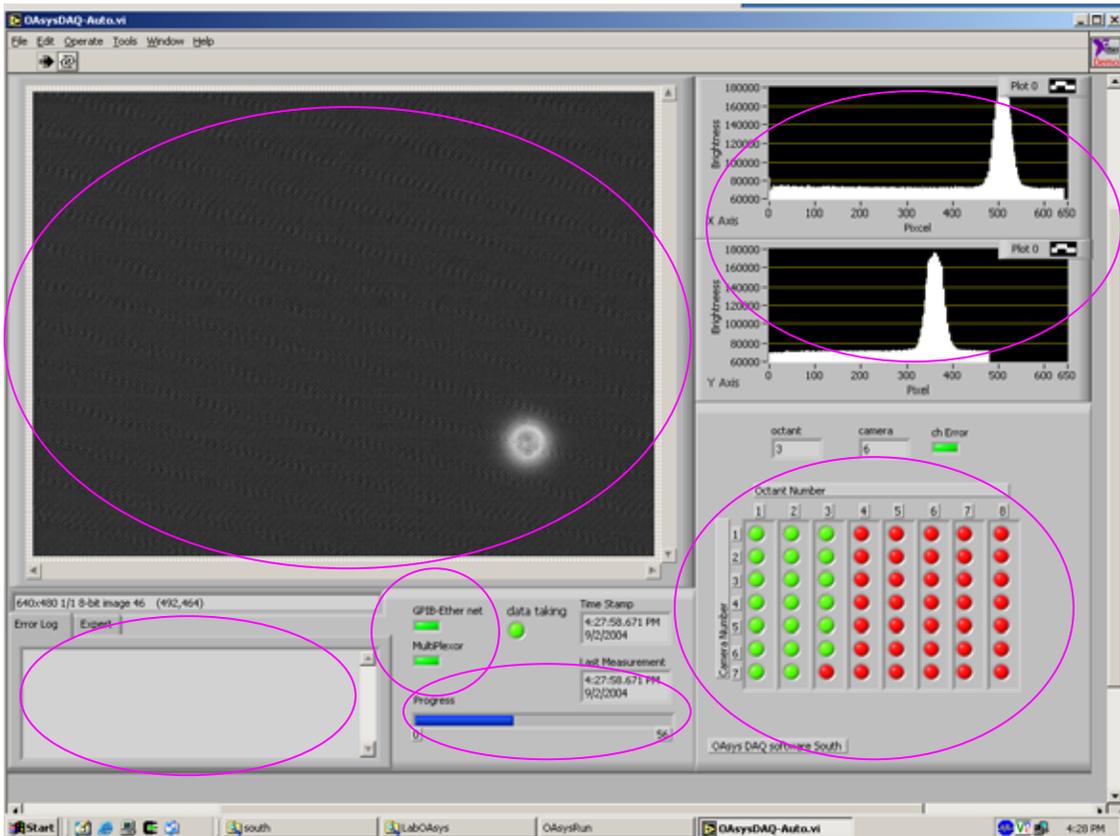
Fig. DAQ software
(on Windows)

Check it

- ✓ Is there light image on display?   Look
- ✓ Is there peak on the histogram?   Look
- ✓ CPIB-Ether interface & Multiplexer status is
   tuned on Green ?   Look
- ✓ Each CCD status should be Green ?
               Look

image display
if there are no signal from CCD, gray image will be displayed.

> Note : Good CCD has peak but some one has no light spot at all. List is shown later.

Histogram display
GPIB-Ether interface status (upper) and,
 Multiplexer status (lower)

> indicator means
> Good: Green
> Bad : Red

CCD camera status 7 camera/octant * 8 octant

> indicator means
> Good : Green
> Not measured yet or Bad: Red
> Note : if you wait more than 10 min, should not be Red

Progress bar
Error log & expert tab

Error handling

In case of at least 1 CCD camera turned on Red or no light image in the image display for all CCD camera, you should manage error according to procedure bellow.

What colour GPIB-Ether status turned on ?

Red → Check rack power and Low Voltage. Or check LAN cable connection

Green ↓

What colour Multiplexer Status turned on ?

Red → Multiplexer is disconnected.

Green ↓

What colour CCD status turned on ?

All Red → Check connection video signal to Capture board or CCD camera power

Partially Red → Some camera may broken or video signal to Multiplexer is disconnected .

All Green ↓

Check light source power

If system does not work correctly yet after your error management, or in case of any other error, Call expert.

If you are DAQ expert, you can control some measurement parameter from DAQ software graphical user interface. To control DAQ, you should do as bellow.

1. Click "expert" tab in the left bottom of the window.
2. Then tab window change as bellow picture. From this window, you can control some part of DAQ system.

expert tab

Click!
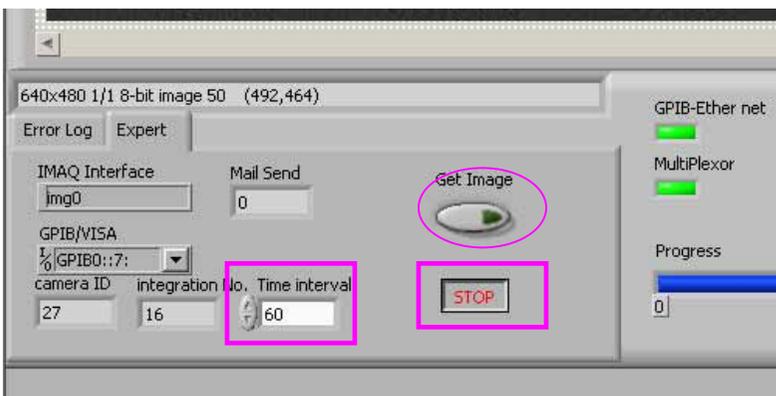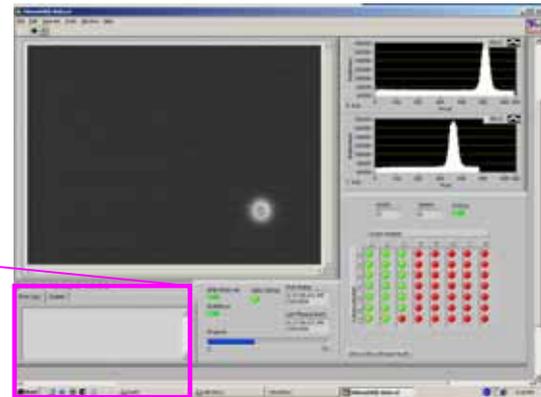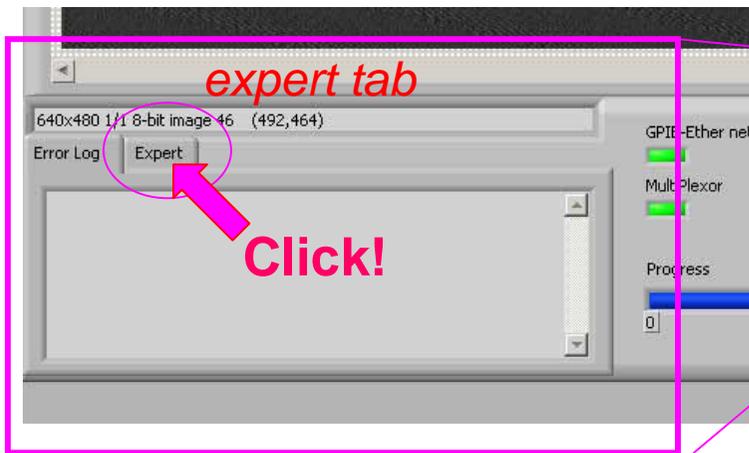
Get Image button
Start measurement immediately
Stop button
Stop measurement
Time interval control
Set time interval among measurement in seconds.
(default value : 600 sec)

If you want to kill or restart program, do as bellow.

1.Go to "expert" window.
2.Click "STOP" button.
    If system is during data taking, program will be stopped after it take 56 images for all CCD cameras
3.Close Window
4.If you want to restart program, double click program icon again.