

20170622 STATUS REPORT

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DAQ programs

FADC500-IBS



MTCB

-

PC – MTCB connected by LAN cable

-

LEMO cable

-

fdaq

-

dat2root

NKFADC500



TCB

-

PC – TCB connected by USB cable

-

SMA cable

-

CUP software (tcbdaq / runcontrol)

-

evrec

DAQ programs

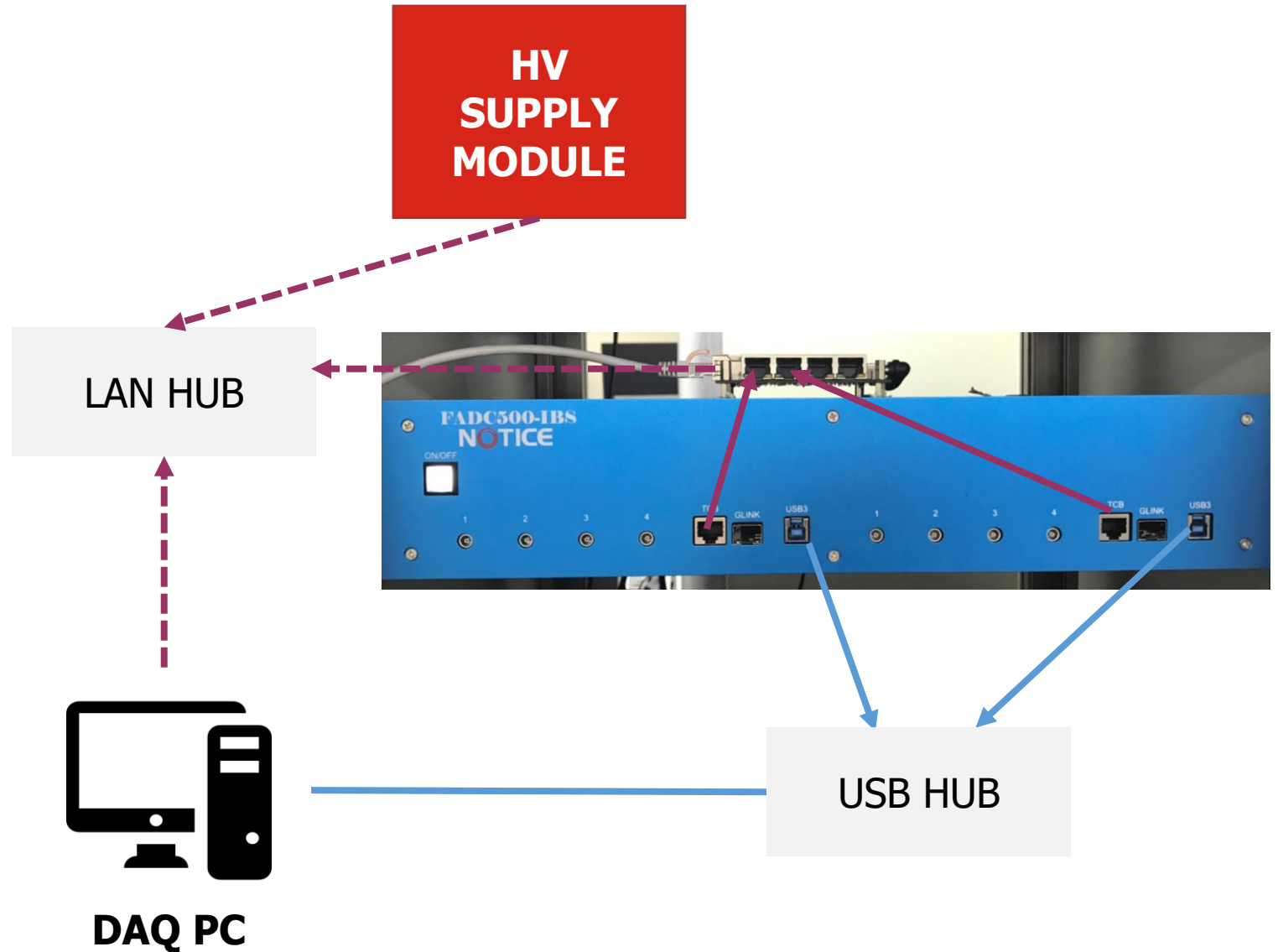
FADC500-IBS

Connections

FADC – MTCB : LAN cable

FADC – PC : USB 3.0

Internal network
(HV – PC – MTCB)



DAQ programs

FADC500-IBS

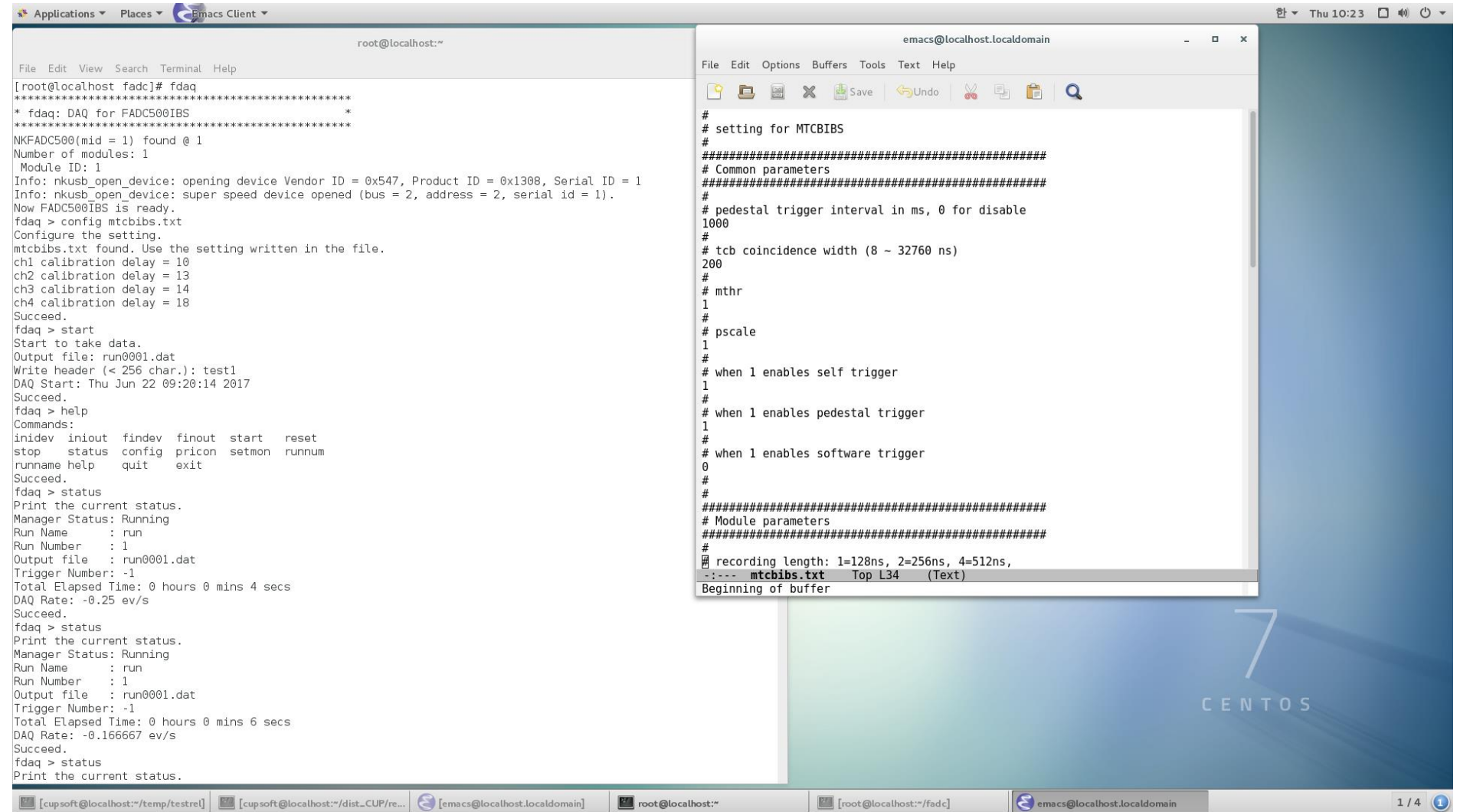
fdaq

(dir)

/root/fadc/

(config.)

mtcbibs.txt



```
[root@localhost fadc]# fdaq
*****
* fdaq: DAQ for FADC500IBS
*****
NKFADC500(mid = 1) found @ 1
Number of modules: 1
Module ID: 1
Info: nksusb_open_device: opening device Vendor ID = 0x547, Product ID = 0x1308, Serial ID = 1
Info: nksusb_open_device: super speed device opened (bus = 2, address = 2, serial id = 1).
Now FADC500IBS is ready.
fdaq > config mtcibbs.txt
Configure the setting.
mtcibbs.txt found. Use the setting written in the file.
ch1 calibration delay = 10
ch2 calibration delay = 13
ch3 calibration delay = 14
ch4 calibration delay = 18
Succeed.
fdaq > start
Start to take data.
Output file: run0001.dat
Write header (< 256 char.): test1
DAQ Start: Thu Jun 22 09:20:14 2017
Succeed.
fdaq > help
Commands:
inidev inkout findev finout start reset
stop status config pricon setmon runnum
runname help quit exit
Succeed.
fdaq > status
Print the current status.
Manager Status: Running
Run Name : run
Run Number : 1
Output file : run0001.dat
Trigger Number: -1
Total Elapsed Time: 0 hours 0 mins 4 secs
DAQ Rate: -0.25 ev/s
Succeed.
fdaq > status
Print the current status.
Manager Status: Running
Run Name : run
Run Number : 1
Output file : run0001.dat
Trigger Number: -1
Total Elapsed Time: 0 hours 0 mins 6 secs
DAQ Rate: -0.166667 ev/s
Succeed.
fdaq > status
Print the current status.
```

```
#
# setting for MTCBIBS
#
#####
# Common parameters
#####
# pedestal trigger interval in ms, 0 for disable
1000
#
# tcb coincidence width (8 ~ 32760 ns)
200
#
# mthr
1
#
# pscale
1
#
# when 1 enables self trigger
1
#
# when 1 enables pedestal trigger
1
#
# when 1 enables software trigger
0
#
#####
# Module parameters
#####
#
# recording length: 1=128ns, 2=256ns, 4=512ns,
:--- mtcibbs.txt Top L34 (Text)
Beginning of buffer
```

DAQ programs

FADC500-IBS

fdaq

(conversion)

dat2root

```
File Edit View Search Terminal Help
[root@localhost fadc]# ls
dev mtcibbs.txt run0001.dat run0001.log
[root@localhost fadc]# dat2root help
Usage: dat2root [option] (max. ch.) (file) [destination]
Convert a dat file to a root file including a tree.

Version 160929

Options
-s, --simp          not create branches for waveform
-a, --all           fill the tree at least one valid channel
-h, --help          print this message and end.
[root@localhost fadc]# dat2root 4 run0001.dat
=====
DAT2ROOT
Option :
===== Initial Setting =====
Input filename  : run0001.dat
Output filename : run0001.root

# of Channel : 4
Data Size    : 1024 Bytes
ADC Waveform Length : 496
TDC Waveform Length : 124
=====
Header      : test1
Run Name    : run
Run Number  : 1
Start Time  : Thu Jun 22 09:20:14 2017
=====
Event Number: 16
Stored Event Number: 16
=====
Ender       : test end
End Time    : Thu Jun 22 09:20:32 2017
Last Trig.  : 15
=====
[root@localhost fadc]# lxs
bash: lxs: command not found...
[root@localhost fadc]# ls
dev mtcibbs.txt run0001.dat run0001.log run0001.root
```

TOF to CERN

170619 shipping

Wooden box 1				
No.	Name	Contents	Weight(kg)	Price(USD)
1	Plastic scintillator	4 Bars	40	4,000
2	Plastic scintillator	4 Bars	40	4,000
3	Plastic scintillator	4 Bars	40	4,000
4	Photomultiplier tube	12 PMTs	12	14,000
5	Photomultiplier tube	12 PMTs	12	14,000
6	Bakelite guide	Bakelites	20	350
Total			164 kg	40,350 USD

Wooden box 2				
No.	Name	Contents	Weight(kg)	Price(USD)
1	HV system	1 Crate	40	6,000
		4 Modules	10	21,600
2	NOTICE readout system	1 TCB	5	5,000
		3 FADCs	15	27,000
3	Profile(support)	Aluminum profiles	10	50
4	Profile(support)	Aluminum profiles	10	50
5	Profile(support)	Aluminum profiles	10	50
6	Profile(support)	Aluminum profiles	10	50
7	Profile(support)	Aluminum profiles	10	50
8	Profile(support)	Aluminum profiles	10	50
9	Accessories	Cables, Acc., etc.	5	200
Total			115 kg	60,100 USD

TOF to CERN

170619 shipping



CERN Meeting preparation

GBAR note

1. Introduction

- 1.1 simulation and analysis
- 1.2 secondary particles
- 1.3 Detection efficiency

2. Detector optimization

- 2.1 Secondary particles from anti-proton annihilation
- 2.2 threshold for energy deposit of hits
- 2.3 cosmic-ray rejection
- 2.4 Top detector height
- 2.5 Effect of flange thickness of the FFC
- 2.6 length of scintillator
- 2.7 single charged pion detection efficiency
- 2.8 free-fall chamber made by Ti
- 2.9 Threshold dependence of single charged pion detection eff.

3. Experiment procedure

- 3.1 data taking
- 3.2 data analysis
- 3.3 simultaneous simulation with an antiproton annihilation and cosmic-ray shower
- 3.4 test of the cosmic-ray rejection algorithms
- 3.5 threshold dependence of the cosmic-ray rejection
- 3.6 event window dependence of the cosmic-ray rejection

4. discussion

CERN Meeting preparation

**CERN
161206
(ARL)**

- 1. TOF detector description**
- 2. DAQ system**
- 3. Detector performance**
 - 3.1 A prototype TOF detector
 - 3.2 Analysis method
 - 3.3 Results

**CERN
161206
(JWH)**

- 1. Overview**
- 2. Purpose of the simulation**
- 3. Details of the simulation**
- 4. Results**
 - 4.1 Cosmic-ray rejection
 - 4.2 Detection Efficiency
- 5. Summary**

**CERN
170628
(ARL)**

1. TOF description
 - principle
 - purpose
 - image
2. Simulation
 - purpose
 - details
 - results
 - cosmic ray rejection
 - detection efficiency
3. Performance check?
4. Experiment procedure
 - DAQ system
 - data taking / analysis
5. Status
 - TOF status
 - 17' summer test plans