EURONS 506065: JRA4 - DLEP

VME-MIDAS operation

Report: 13-17 March 2006 DAQ system operation

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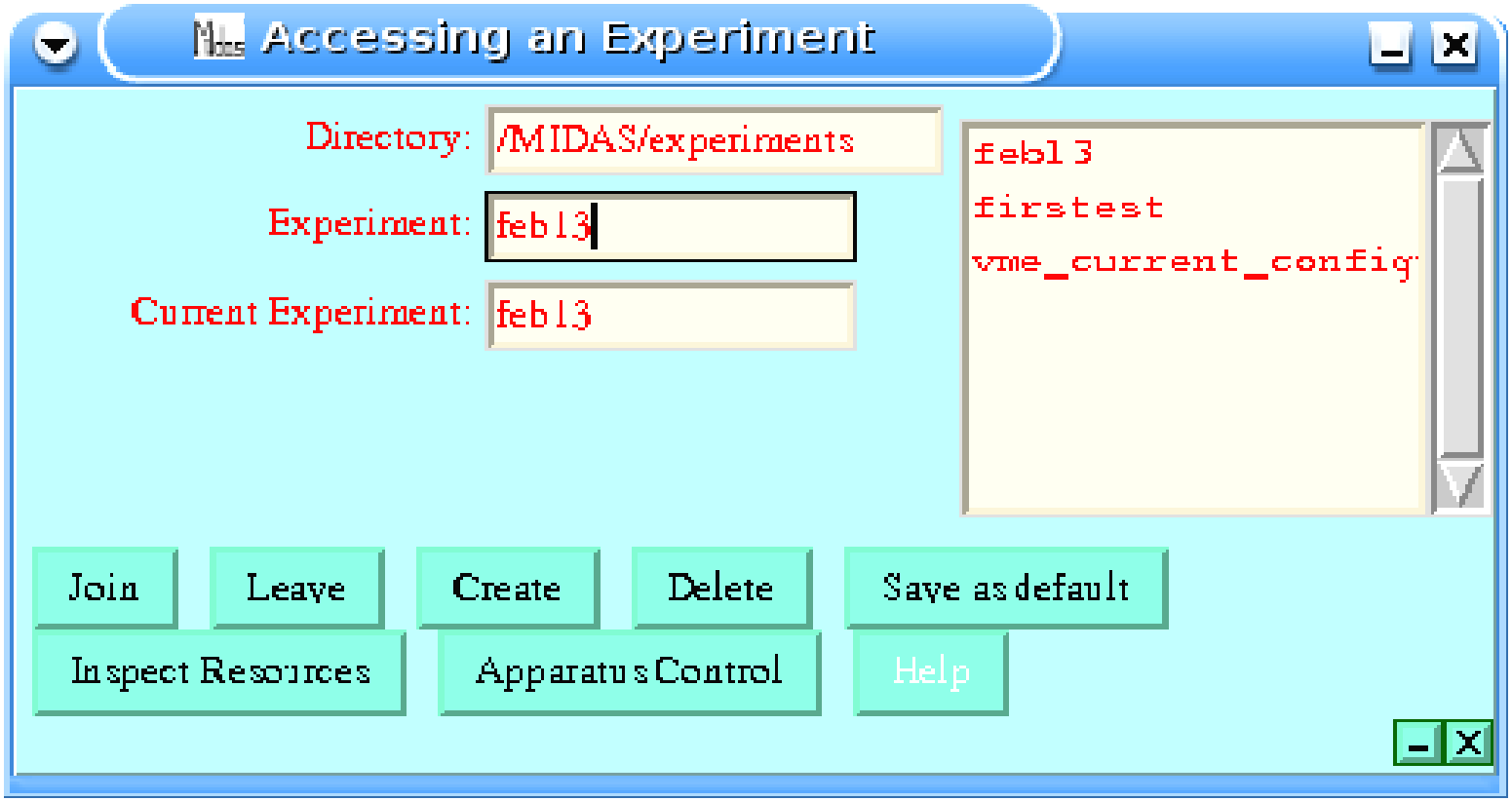
To open MIDAS, execute **MIDAS-session**. Choose **Data Acquisition** in the menu that pops up. This opens the main menu and the **Session Log** –frame which is a log for how things are working during a measurement. Choose **Access Control -> Experiment Access** from the main menu to open the *Accessing an Experiment* –frame.

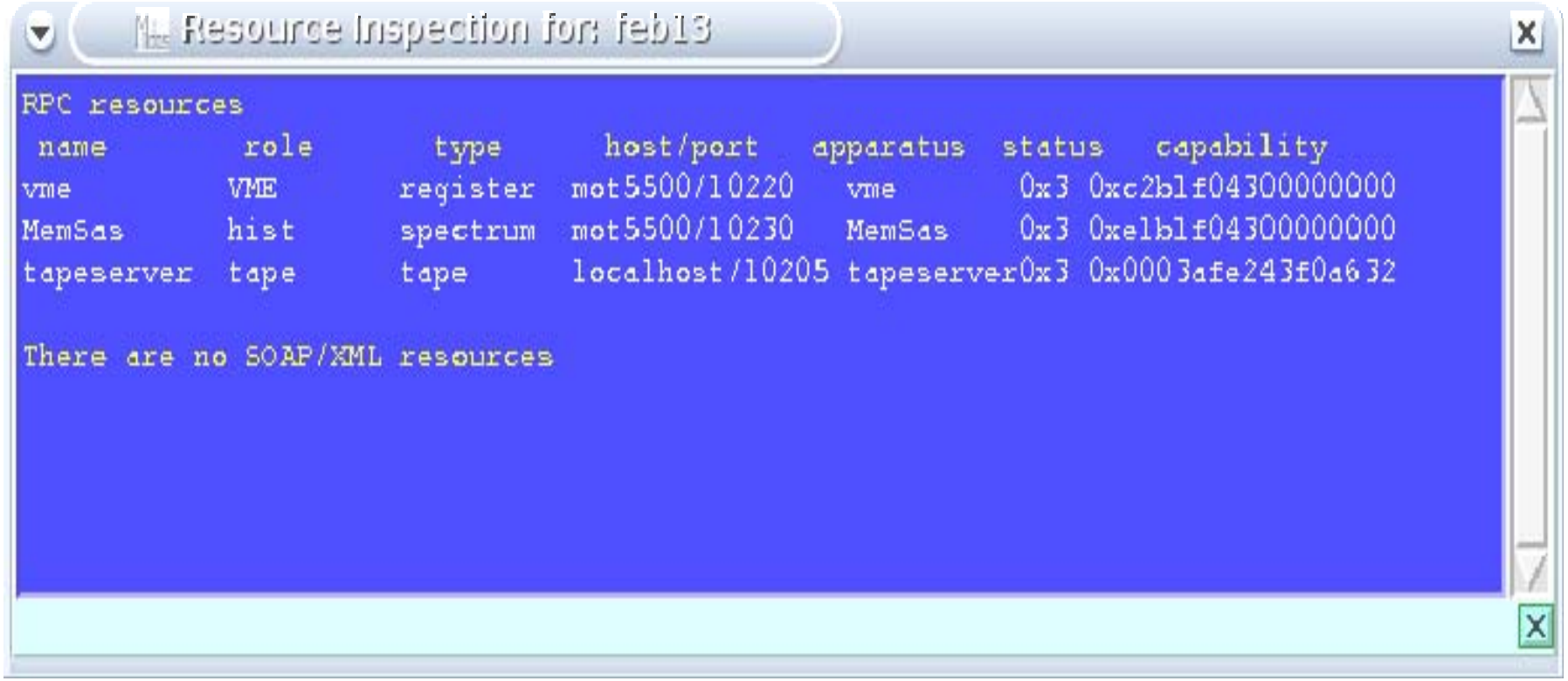


First, create an experiment by typing an appropriate name to the **Experiment**-field and then clicking **Create**. Second, join the experiment with the **Join** -button.

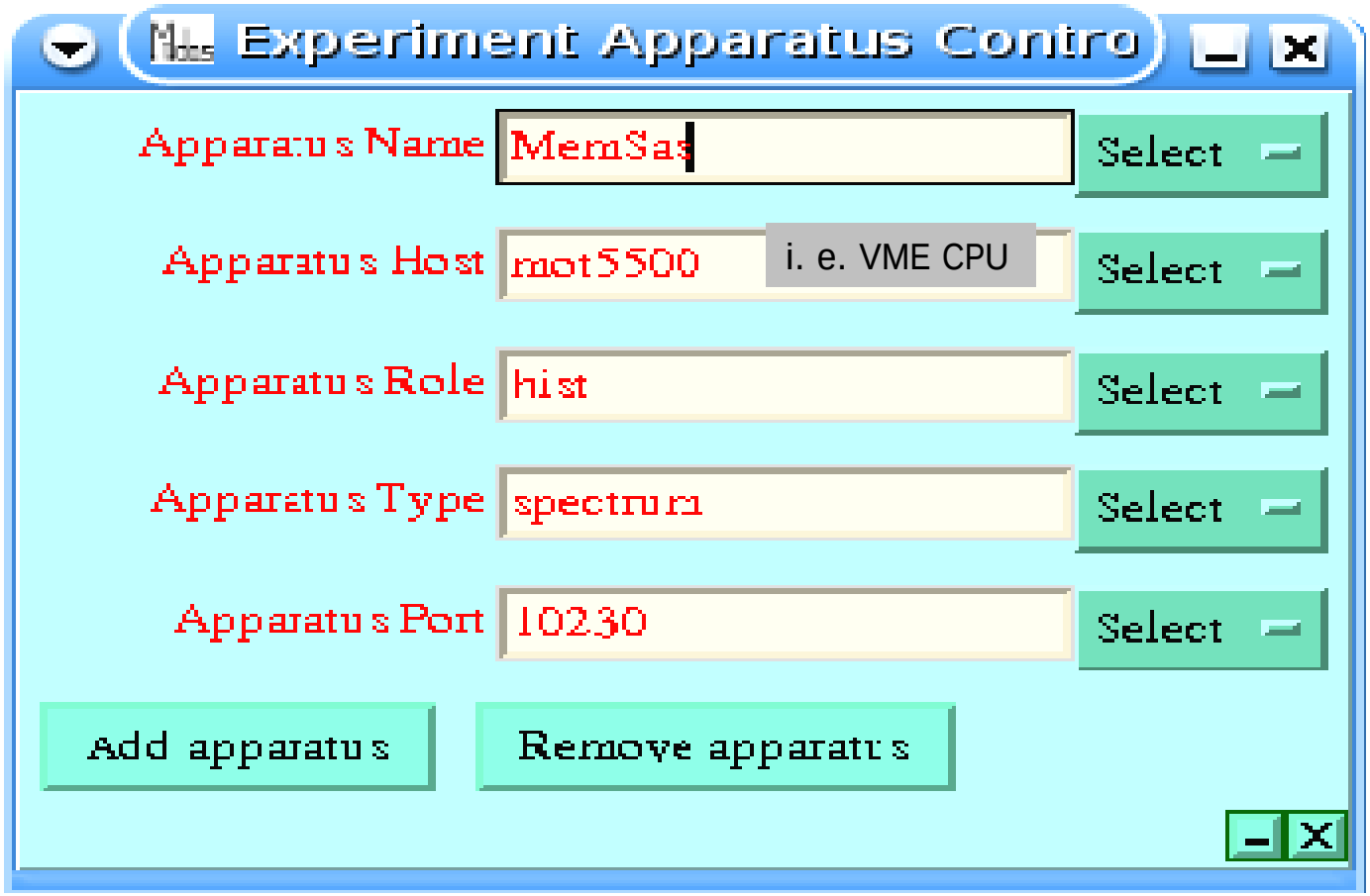
After this choose **Inspect Resources**.

If the **Apparatus Control** is done, i. e. you have joined an earlier experiment, the **Inspect Resources** look like the frame below including vme, MemSas and tapeserver. The tapeserver needs only to be included to save data. If data saving is desired go to **/MIDAS/TapeServer/Linux** and execute the command **./Master** before starting MIDAS. The host for the tapeserver would be the name of the local server. MemSas is needed to be able to plot spectra. Vme communicates with the crate and is always needed.

If the experiment is new then choose **Apparatus Control** from the previous frame and add the instruments wanted according to the *Experiment Apparatus Control* –frame on the next pages. Inspect resources after finishing apparatus control.

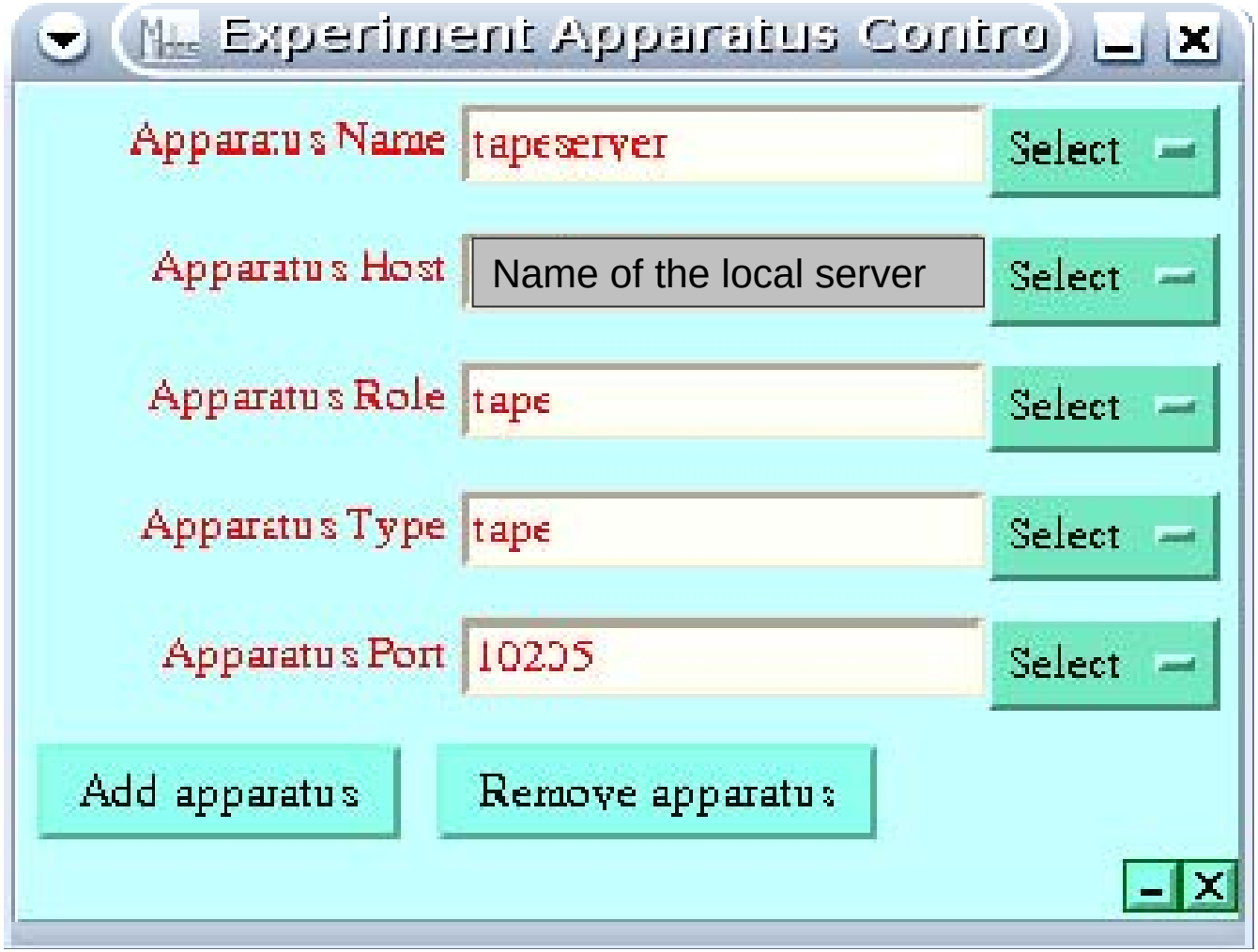


Add MemSas by completing the fields as below. When finished, click **Add Apparatus**.



To add tapeserver fill in the fields as below. When finished click **Add Apparatus**.

N. b. the name of the local server would be its real name.



To continue choose **VME Module Control->Control** from the main menu. This will open the *VME Configuration & Control* -frame on the next page. Here desired modules can be added, for example on next page there are one SAC, seven CAENV783 and one CAENV1190.

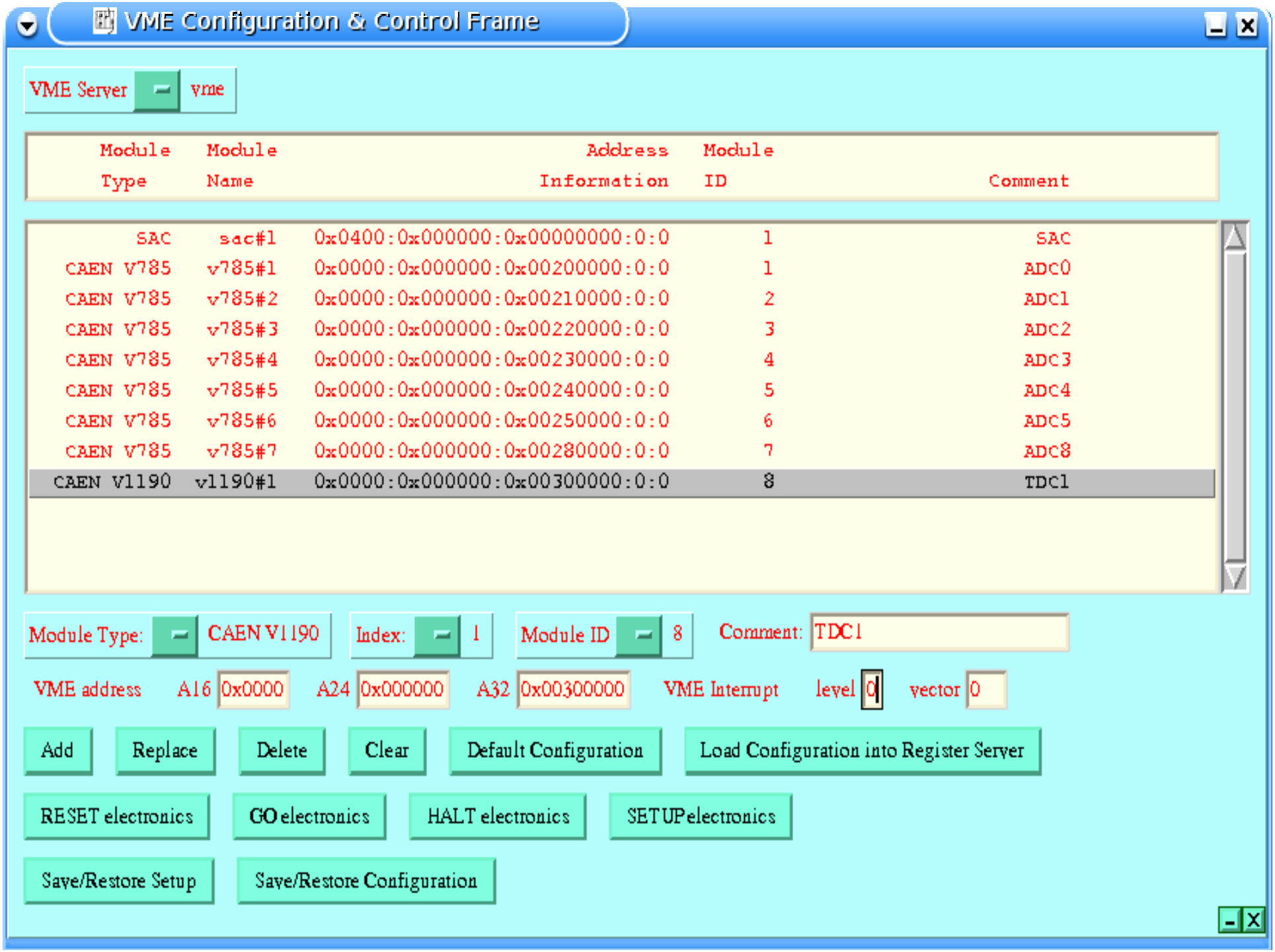
I. e. for two ADCs there are three **module types** that should be in the VME Configuration & Control Frame:

1. SAC with **index** and **module ID** 1 and **VME addresses A16=0x0400** and **A24=A32=0**. (One SAC is always needed.)

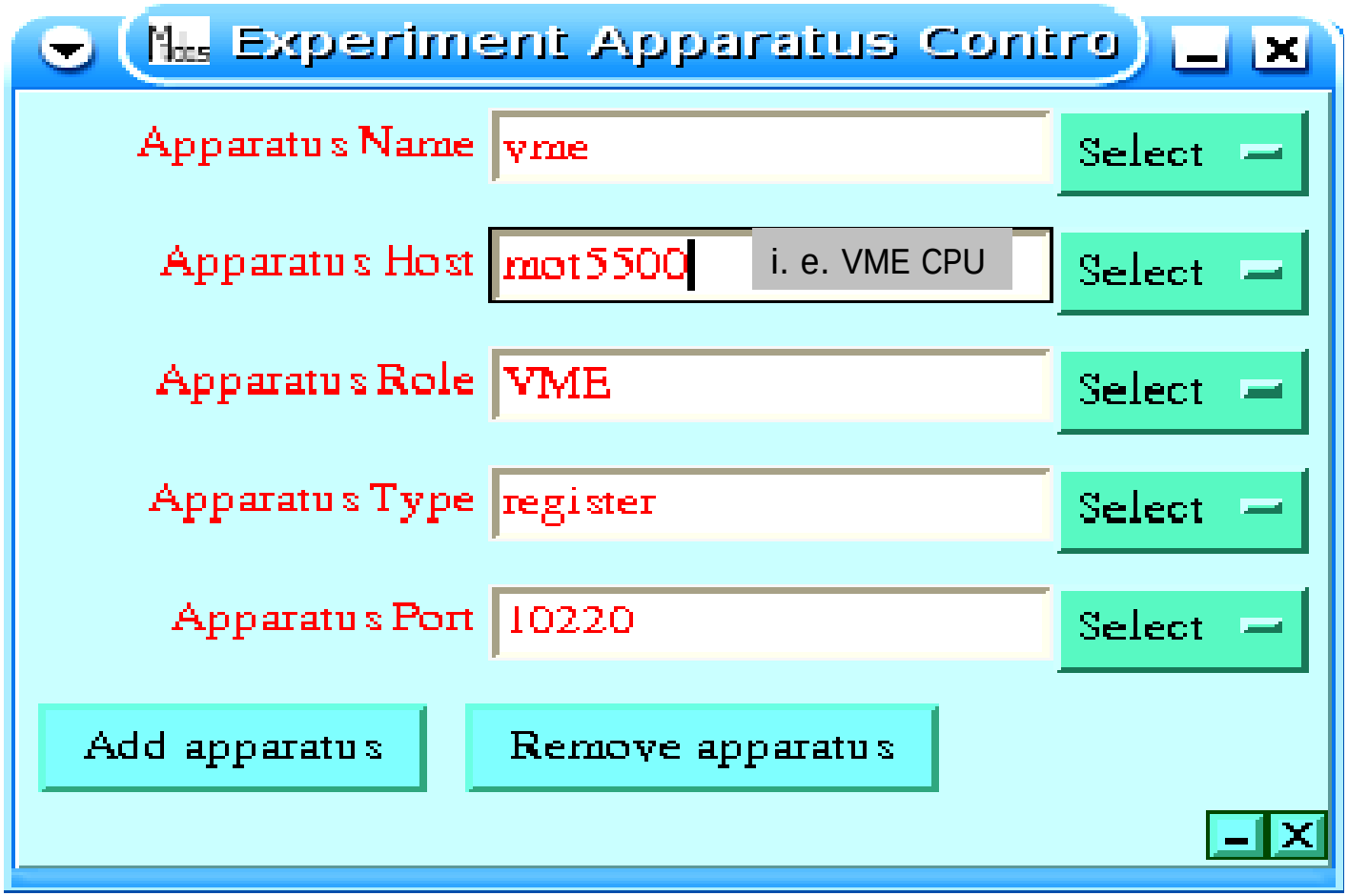
2. CAENV785 with **index** and **module ID** 1 and **addresses A16= A24=0** and **A32**=Rotary Switch Number specified in the CAEN manual (see page 10).

3. CAENV785 with **index** and **module ID** 12and **addresses A16** =**A24=0** and **A32=**Rotary Switch Number. (The number of CAENs is equal to the number of ADCs.)

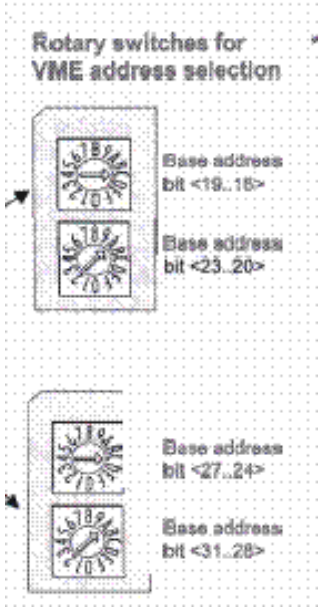
If needed one may comment the modules with some appropriate names . The modules have to be added one by one. When all the fields are filled just click **Add**. When all modules are added click **Load Configuration into Register Server**.


VME Configuration & Control Frame
VME Server
vme
Module Type
Module Name
Address Information
Module ID
Comment
SAC sac#1 0x0400:0x000000:0x00000000:0:0 1 SAC
CAEN V785 v785#1 0x0000:0x000000:0x00200000:0:0 1 ADC0
CAEN V785 v785#2 0x0000:0x000000:0x00210000:0:0 2 ADC1
CAEN V785 v785#3 0x0000:0x000000:0x00220000:0:0 3 ADC2
CAEN V785 v785#4 0x0000:0x000000:0x00230000:0:0 4 ADC3
CAEN V785 v785#5 0x0000:0x000000:0x00240000:0:0 5 ADC4
CAEN V785 v785#6 0x0000:0x000000:0x00250000:0:0 6 ADC5
CAEN V785 v785#7 0x0000:0x000000:0x00280000:0:0 7 ADC8
CAEN V1190 v1190#1 0x0000:0x000000:0x00300000:0:0 8 TDC1
Module Type:
CAEN V1190
Index:
1
Module ID
8
Comment:
TDC1
VME address
A16
0x0000
A24
0x000000
A32
0x00300000
VME Interrupt
level
0
vector
0
Add
Replace
Delete
Clear
Default Configuration
Load Configuration into Register Server
RESET electronics
GO electronics
HALT electronics
SETUP electronics
Save/Restore Setup
Save/Restore Configuration

To add vme fill in the fields as below. When finished click **Add Apparatus**.



V785 & V1190

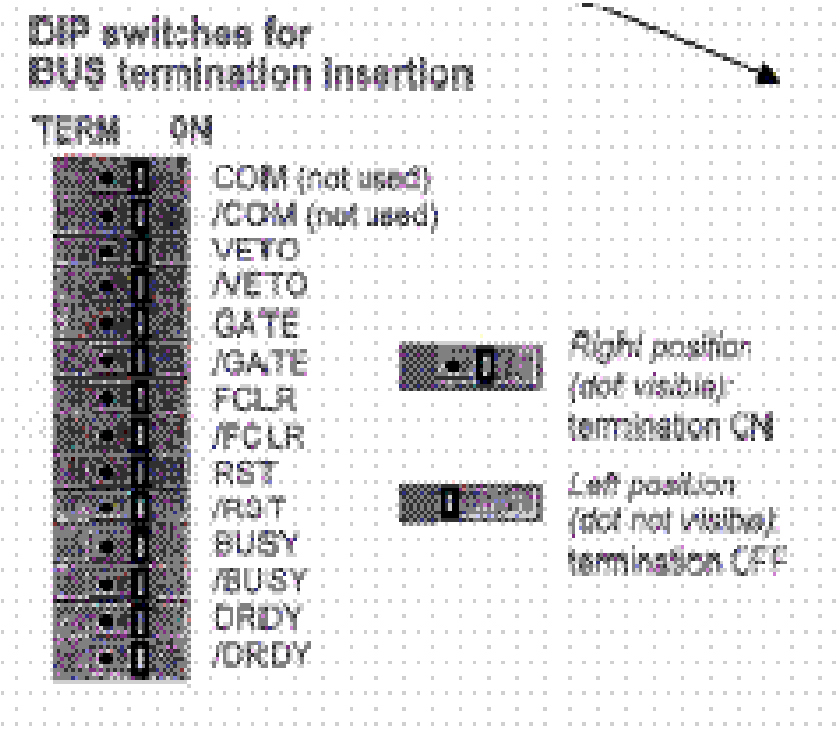


	ADC 0	*ADC1*	*ADC2*	*TDC1*
Base address bit <19..16>	*0*	*1*	*2*	*0*
Base address bit <23..20>	*2*	*2*	*2*	*3*
Base address bit <27..24>	*0*	*0*	*0*	*0*
Base address bit <31..28>	*0*	*0*	*0*	*0*

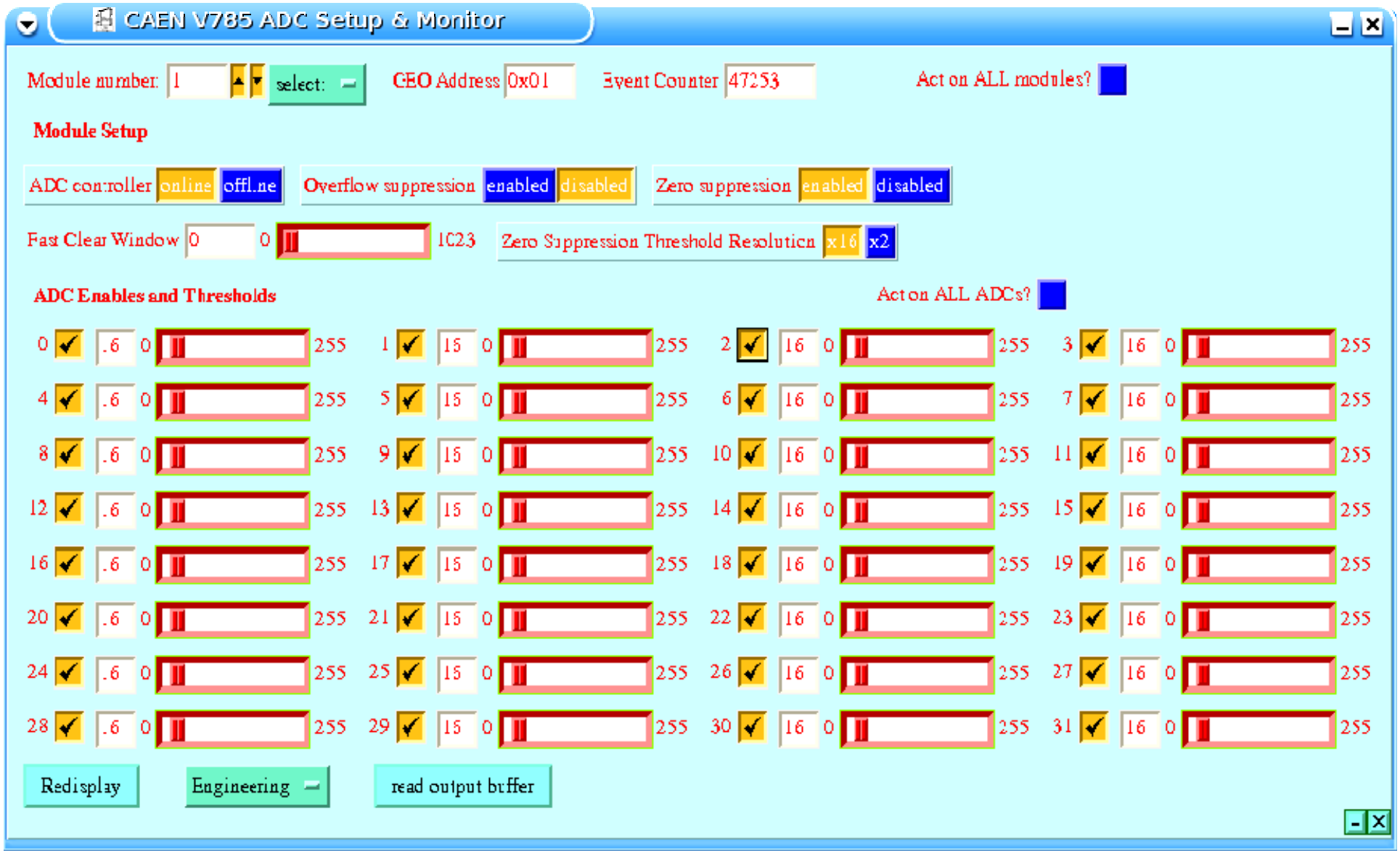
V785 terminator switches

GATE-busline
Only the last ADC in the
Bus should be terminated

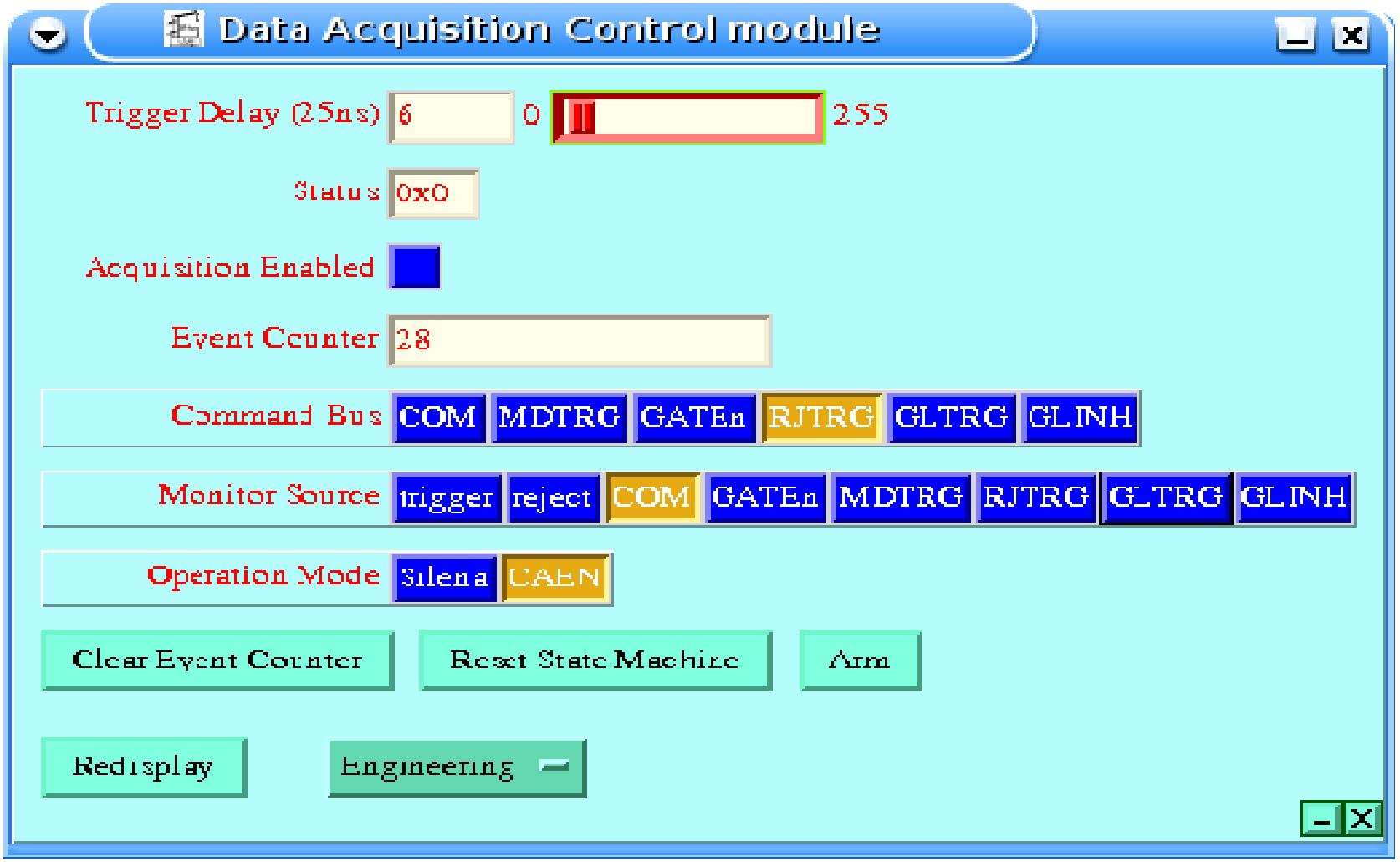
Terminator off red light
Terminator on green light



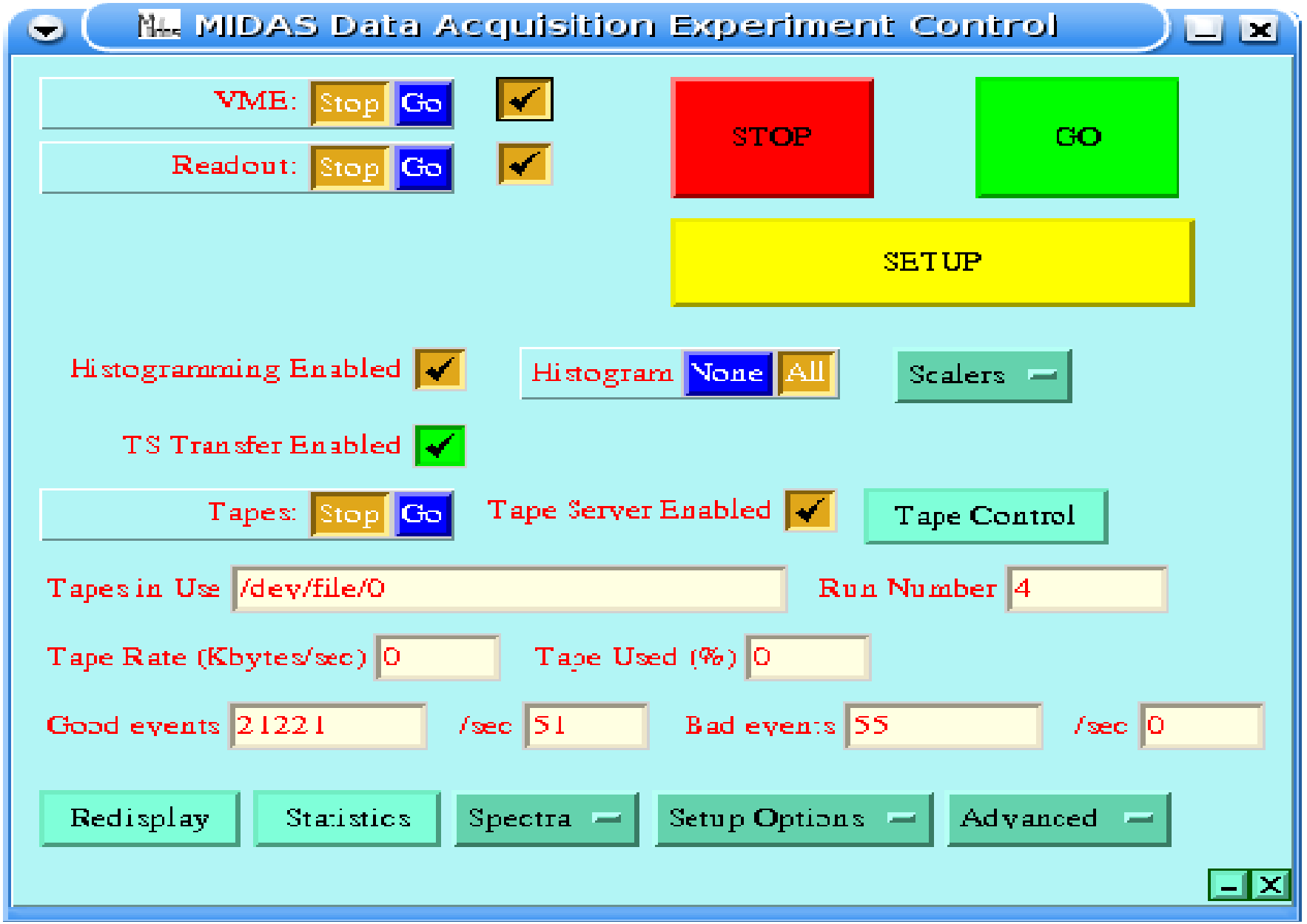
To modify a module click on them in the *VME Configuration & Control –frame.* A setup frame in which desired changes can be made will pop up. Below the *CAENV785 Setup & Monitor* - frame.



In **VME Module Control->SAC** one can find the Data Acquisition Control module. This can be checked during a measurement and should look like the one below.



To start a measurement, choose **Experimental Control** from the main menu. The *MIDAS Data Acquisition Experiment Control* –frame will pop up.



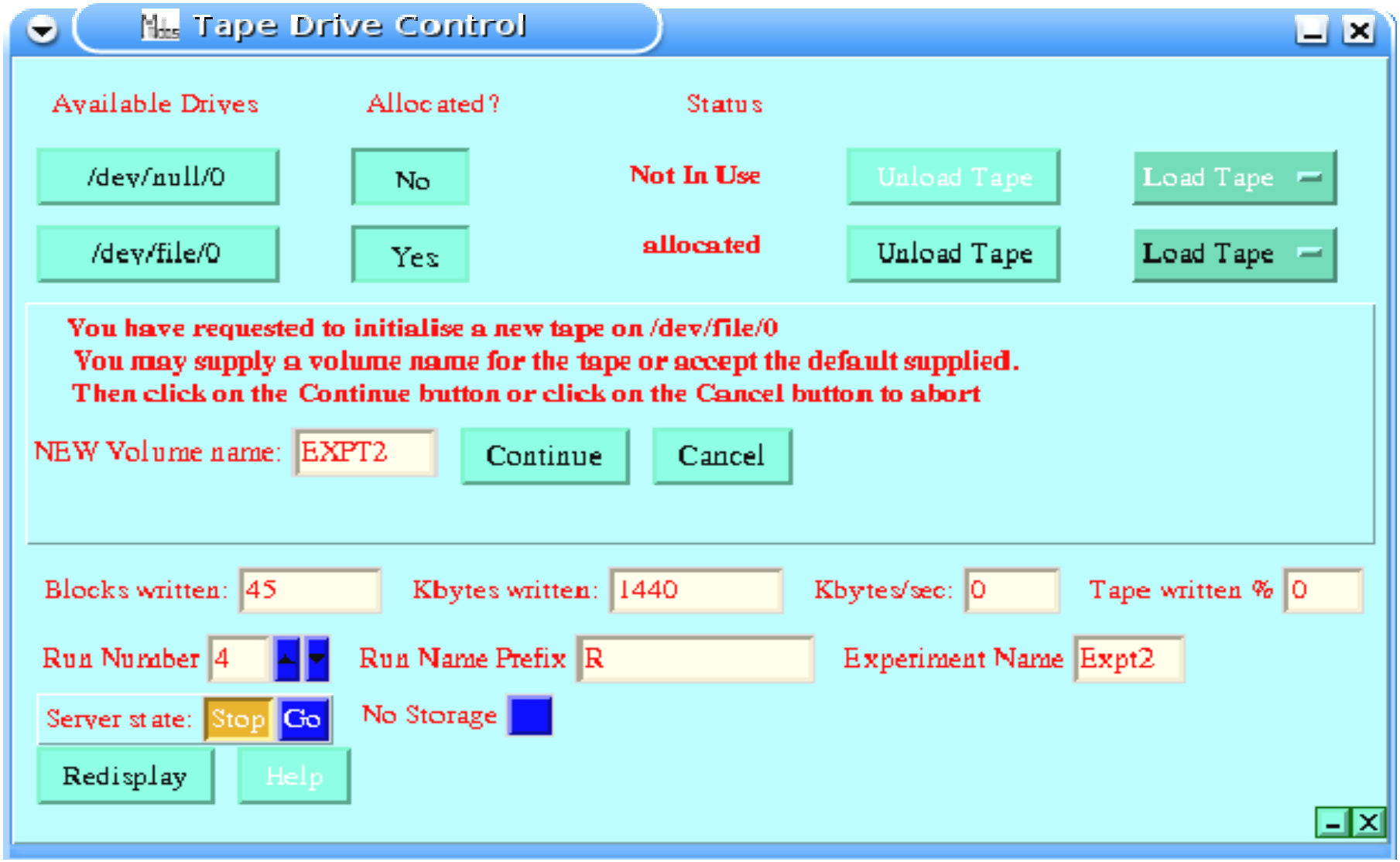
When measuring first time click on **Setup** and choose **Setup everything**.

To save data to a file one chooses **Tape Control** which opens the *Tape Drive Control* -frame, see next page.

When all desired fields in the *Tape Drive Control* are filled, close the *Tape Drive Control* and go back to *MIDAS Data Acquisition Experiment Control* –frame. Ensure that the fields **Histogramming Enabled** and **Tape Server Enabled** are marked before starting a measurement with the **GO** -button. To stop a measurement click **STOP**.

The **Advanced** –button has a debug function which one can find in **Advanced->Configurations->Test->Debug Frame.**

To save data the field **/dev/file/0** must be allocated. To specify the file name fill click **Load Tape** and fill in the name in the field **NEW Volume name** which pops up after allocating. Click **continue** when finished. In the field at the bottom of *Tape Drive Control* -frame the user may specify e. g. run number and a label for the experiment. This field gives just information to the user and is neglected by the program while running.

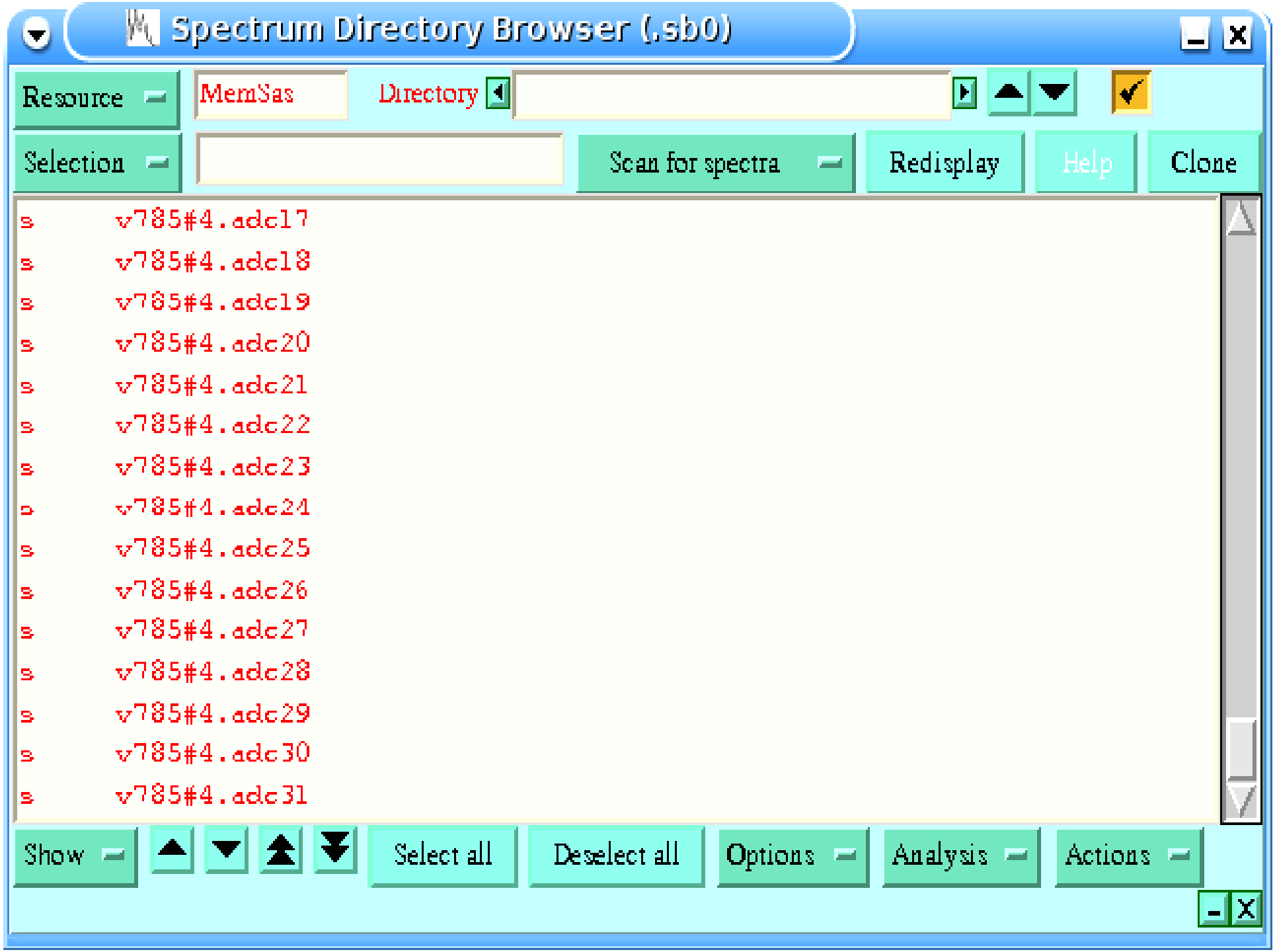


To plot a spectra choose **Spectra->Spectrum Browser** in the *MIDAS Data Acquisition Experiment Control* –frame. This open the *Spectrum Directory Browser* –frame on the next page.

Choose **Resource->Memsas** to do on-line data analysis. Mark the channels you want to plot and click **Show**. This results in the *Displaying Spectra* -frame on page 17. For off-line data analysis one may specify the current file in the **Directory** –field.

When spectra is displayed you can among other functions do a curve fit, see the graph in the middle on page 19. First mark the actual area and backgrounds by clicking with left mouse button in the graph. Then choose **peakfit** from **Analysis**. To expand a graph, mark the desired area and then choose **View->expand**.

Delete all former data with **Actions->just zero** in the *Spectrum Directory Browser*.


Spectrum Directory Browser (.sb0)
Resource
MemSas
Directory
Selection
Scan for spectra
Redisplay
Help
Clone
s v785#4.adc17
s v785#4.adc18
s v785#4.adc19
s v785#4.adc20
s v785#4.adc21
s v785#4.adc22
s v785#4.adc23
s v785#4.adc24
s v785#4.adc25
s v785#4.adc26
s v785#4.adc27
s v785#4.adc28
s v785#4.adc29
s v785#4.adc30
s v785#4.adc31
Show
Select all
Deselect all
Options
Analysis
Actions


Displaying Spectra (.sd.s0)
View
Arrange
Analysis
Tags & Fits
Channel
Help
Clone
Reset
Refresh
new
current
linear
slicing off
32768
/MemSas/Stat
0
1789
2661
512
/MemSas/v785#1.adc0
0
0
45
32
0
0
0
2210
2217
2220
2233
2246
2255
2259
2266
512
/MemSas/v785#1.adc1
0
1886
2209

Manuals to MIDAS can be founded in

http://npg.dl.ac.uk/MIDAS/

http://www.targisol.csic.es/ISOCO/VME