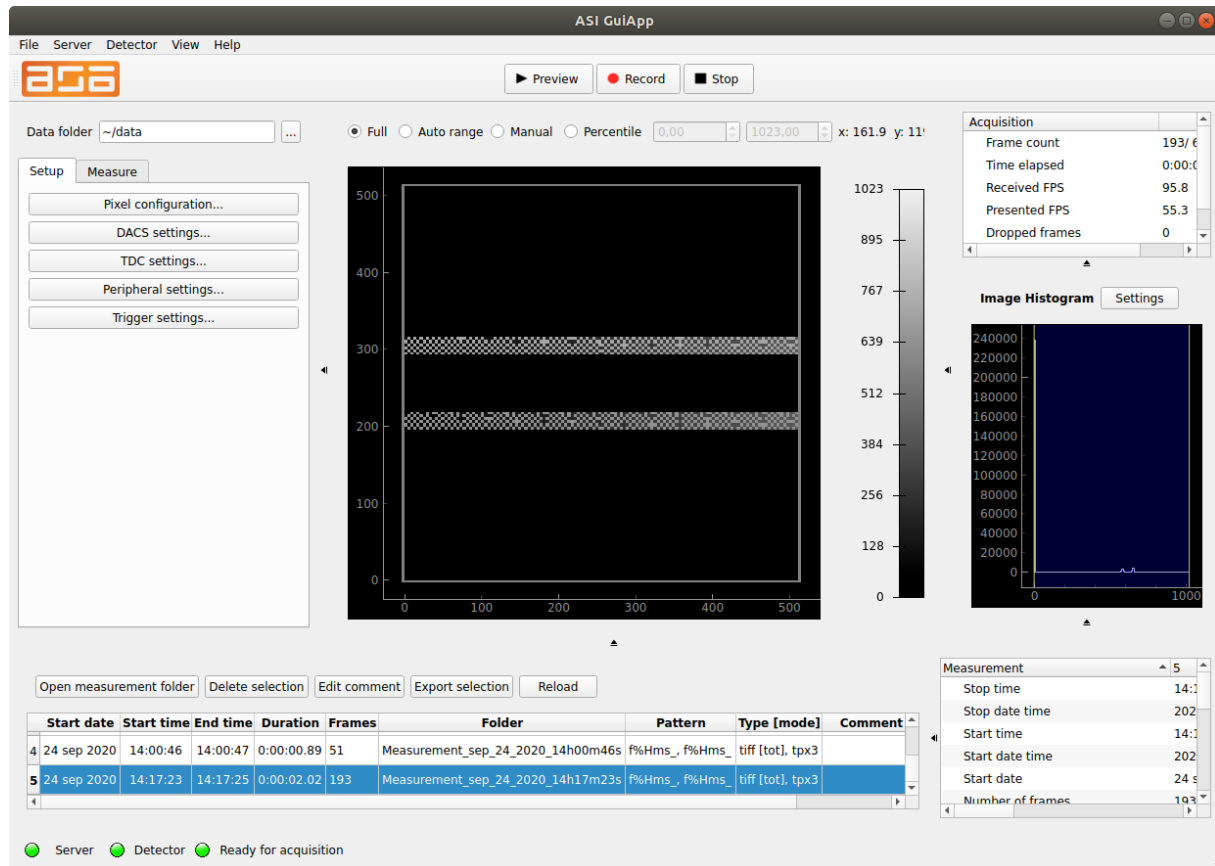


ACCOS User manual

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1. Main view



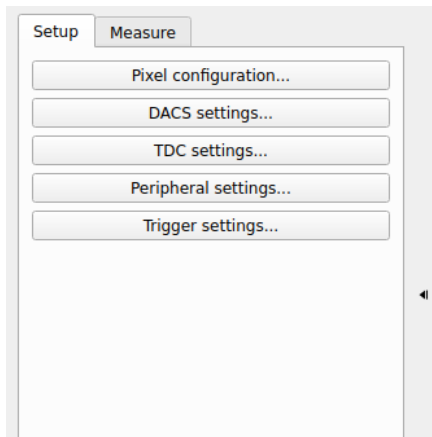
ACCOS consists of several panels that control or display various items. The general layout is:

- The central item of the screen is the **image**.
- All **settings** are in the left panel.
- All your saved **measurements** are in the bottom panel.
- The display of the current **acquisition information** is in the right.
- All **histograms** are in the right panel. The time of flight histogram will be added in the next version.
- The top bar contains the **acquisition control** buttons.
- The bottom toolbar displays the **status** of server and detector.

In general, the acquisition will start by first adjusting the settings in the Setup tab in the left panel, and then moving to the Measure tab for taking the data.

The size of all panels can be adjusted by dragging the borders. Panels can be completely collapsed as well. Some panels contain multiple items; their relative size can similarly be adjusted. The bar with acquisition control buttons can be dragged to different locations on the screen.

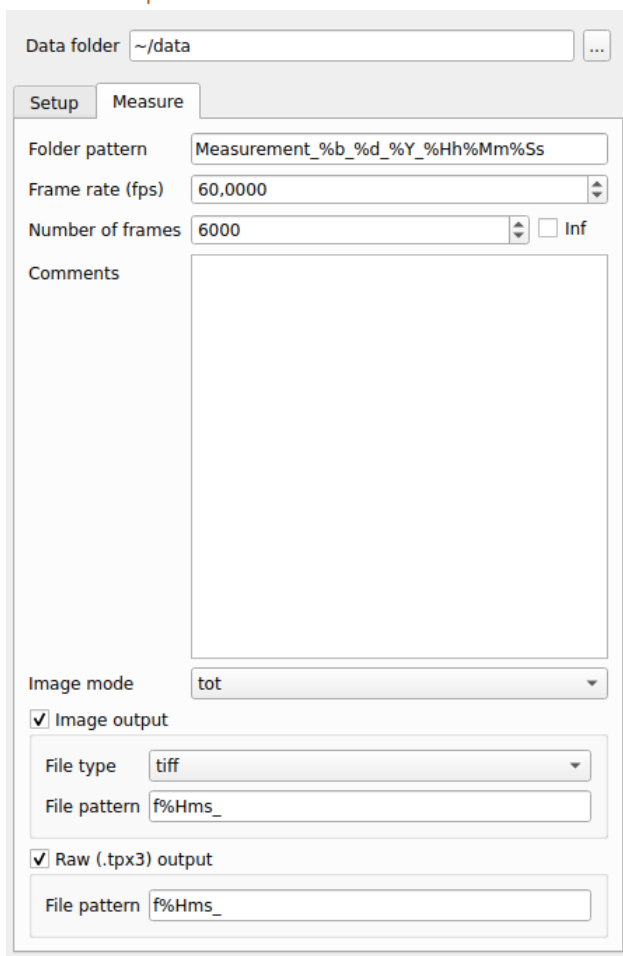
1.1 Left panel – Setup



The left panel's first tab is **Setup**. This contains buttons that guide the user to different setting windows:

- **Pixel configuration**: equalization information (.bpc file) and pixel mask file.
- **DACs settings**.
- **TDC settings**.
- **Peripheral settings**: shows information and settings about the temperature, fan speed and bias voltage.
- **Trigger settings**: trigger mode, number of frames and exposure time settings.

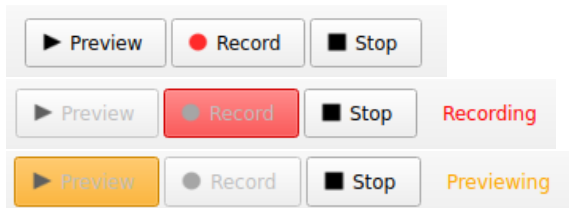
1.2 Left panel – Measure



The second tab on the left panel is the **Measure** tab. This contains the settings of the current measurement (a measurement is defined by pressing the record and stop buttons).

Each measurement produces a folder containing all data. The folder pattern can be chosen to show a date-time format with the % notation. If this is not done, numbers will be appended to the folder name. All measurements will be created as sub-folders of the base folder selected above the left panel. Any comments will be saved as a .txt file in the measurement folder. The comments can be changed before or during the measurement (using this text box) or after the measurement (see Measurements overview).

1.3 Acquisition controls



The top bar shows the recording control buttons. Preview mode shows the acquired frames, but no data is stored. Record means that the data is saved to disk, as specified in the Measure tab.

1.4 Acquisition information

Acquisition	
Frame count	193/ 6000
Time elapsed	0:00:01.98
Received FPS	95.8
Presented FPS	55.3
Dropped frames	0

Information about the current acquisition is shown in the top right panel.

1.5 Measurements overview

Start date	Start time	End time	Duration	Frames	Folder	Pattern	Type [mode]	Comment
4 24 sep 2020	14:00:46	14:00:47	0:00:00.89	51	Measurement_sep_24_2020_14h00m46s	f%Hms_, f%Hms_	tiff [tot], tpx3	
5 24 sep 2020	14:17:23	14:17:25	0:00:02.02	193	Measurement_sep_24_2020_14h17m23s	f%Hms_, f%Hms_	tiff [tot], tpx3	

The bottom panel shows all measurements contained within the data folder (selected on the top left). One or more measurements can be selected in the list. The buttons show the following options:

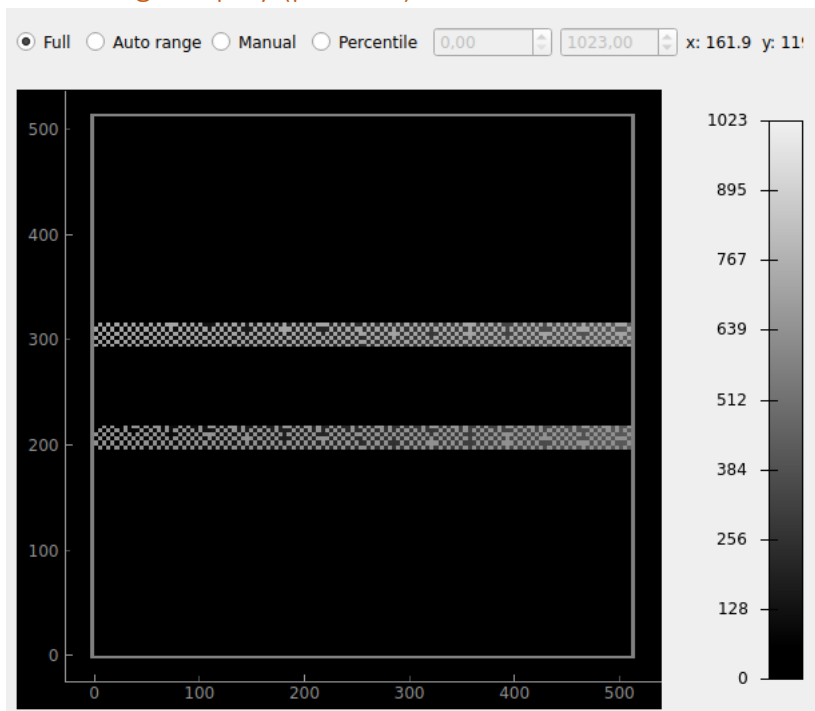
- **Open measurement folder:** open a file browser at the location of the selected measurement.
- **Delete selection:** delete all the data of the selected measurement(s).
- **Edit comment:** edit the comment of the selected measurement. This can also be prompted by double-clicking the comment text box. Note: to update the edited comment in the display, click Reload.

- **Export selection:** export the displayed meta-data of the current selection to a .json or .csv (Excel-readable) file.
- **Reload:** refresh the Measurement information of the current data folder.

Measurement	5
Stop time	14:17:25
Stop date time	2020-09-24T14:17:25.706241
Start time	14:17:23
Start date time	2020-09-24T14:17:23.686084
Start date	24 sep 2020
Number of frames	193

The view on the bottom right shows detailed information of the currently selected measurement.

1.6 Image display (preview)

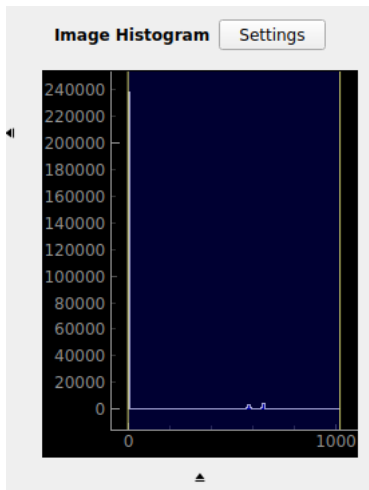


The central display shows the preview image. The color bar scale can be changed with the controls above the image. The options are:

- **Full:** use the full dynamic range of the image.
- **Auto range:** adjust the range to the current image.
- **Manual:** manually select the boundaries.
- **Percentile:** manually select the boundaries as a fraction of the full dynamic range.

The bar on the right shows the color scale. The colormap can be changed by clicking on it.

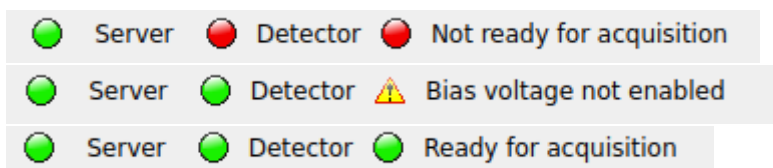
1.7 Image histogram



The histogram on the right side displays a histogram of the intensity values of the currently displayed image (it is comparable to brightness histogram in Photoshop). The range shown with blue shading corresponds to the color range in the image. It can be changed by dragging the borders.

By right-clicking on the image, various options are adjustable. The 'settings' window is currently not functional.

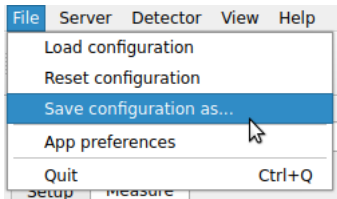
1.8 Status information



The left bottom indicates if ACCOS is ready for acquisition. There are 3 status indicators: one for the Server state, one for the Detector and one for validation of the settings.

2. Toolbar menu

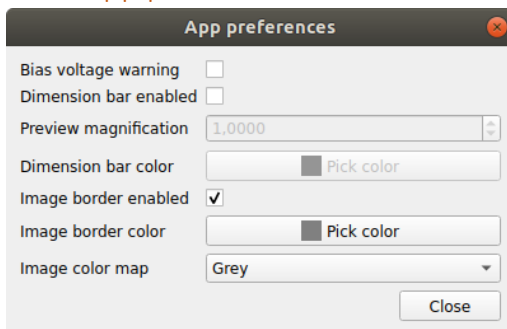
2.1 File menu



The current configuration of ACCOS can be stored or loaded from this file menu. When ACCOS is started, all settings are equal to the last used ones.

The **App preferences** window is accessed from this menu.

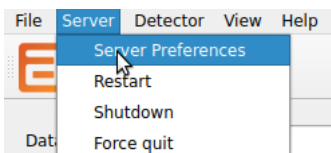
2.2 App preferences



This window contains settings related to the displayed functionality:

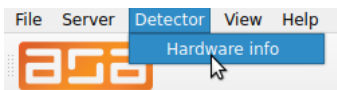
- **Bias voltage warning:** give a warning (in the bottom status bar) if the bias voltage is not enabled or too low.
- **Dimension bar:** show a bar in the preview image that indicated the size in the image.
- **Image border:** show a border around the preview image.
- **Color map:** this adjusts the color map used in the preview image.

2.3 Server menu

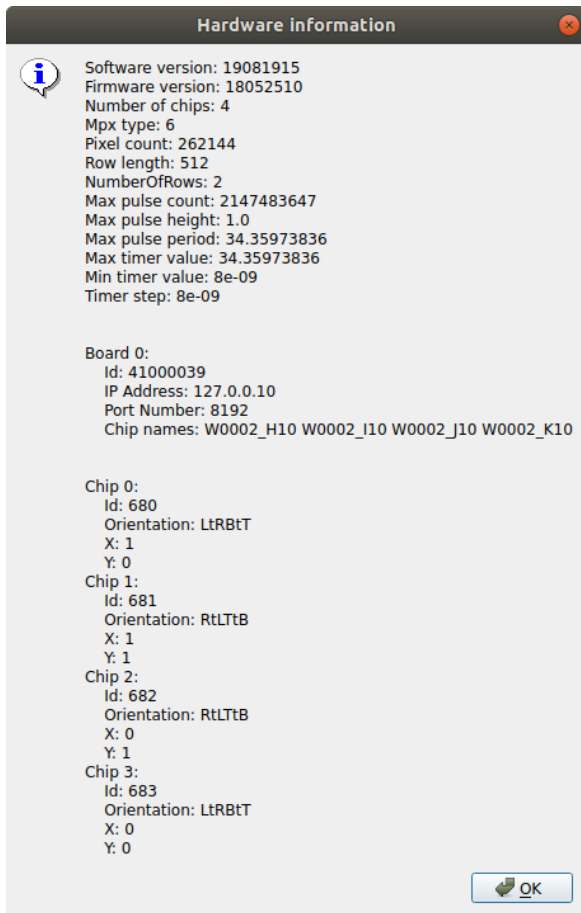


When ACCOS is started, Serval is automatically started. This process can be controlled from this menu.

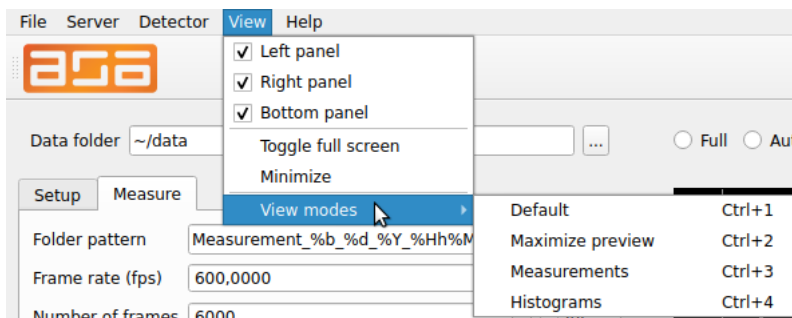
2.4 Detector menu – Hardware info



The detector hardware info is accessed from the detector menu. It shows all available information about the chips and the SPIDR hardware.

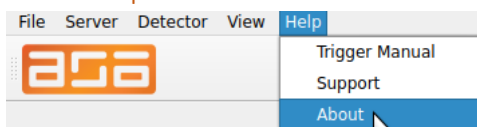


2.5 View menu



The view menu shows all options related to the size and visibility of the panels. There are several pre-loaded view modes that can also be accessed with shortcuts.

2.6 Help menu



The help menu shows information about ACCOS, manuals and support options.

About Amsterdam Scientific Instruments

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