

pco.sensicam

ImageJ-Plugin-Description

This document describes the Sensicam ImageJ plugin interface.

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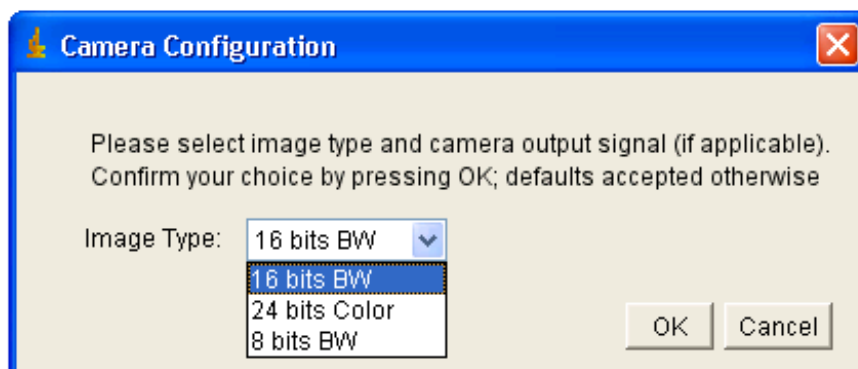
1 Installation:

Assuming you have Sensicam driver and ImageJ installed on your computer. To install SensiCam plugin, you need to

1. Create a folder pco inside the plugin directory.
2. Put SensiCamNative.dll and SensiCam_.jar under \ImageJ\plugins\pco

You are ready to load the plug-in from ImageJ. "SensiCam" should be listed under "Plugins/pco" menu.

On startup, you are requested to select image type that you would like your camera to generate. You can run SensiCam in 16 bit monochrome, 24 bit RGB, or 8 bit monochrome. Some cameras are equipped with color filters inside, so you get true color images. For those with monochrome cameras, you may still run them in color mode, but images are in single color, by default in black and white. The output control is also a one time setting. This is only useful for those who need to extract hardware signals from PCI boards during acquisition. If you have no need to use this feature, you may want to ignore this part.



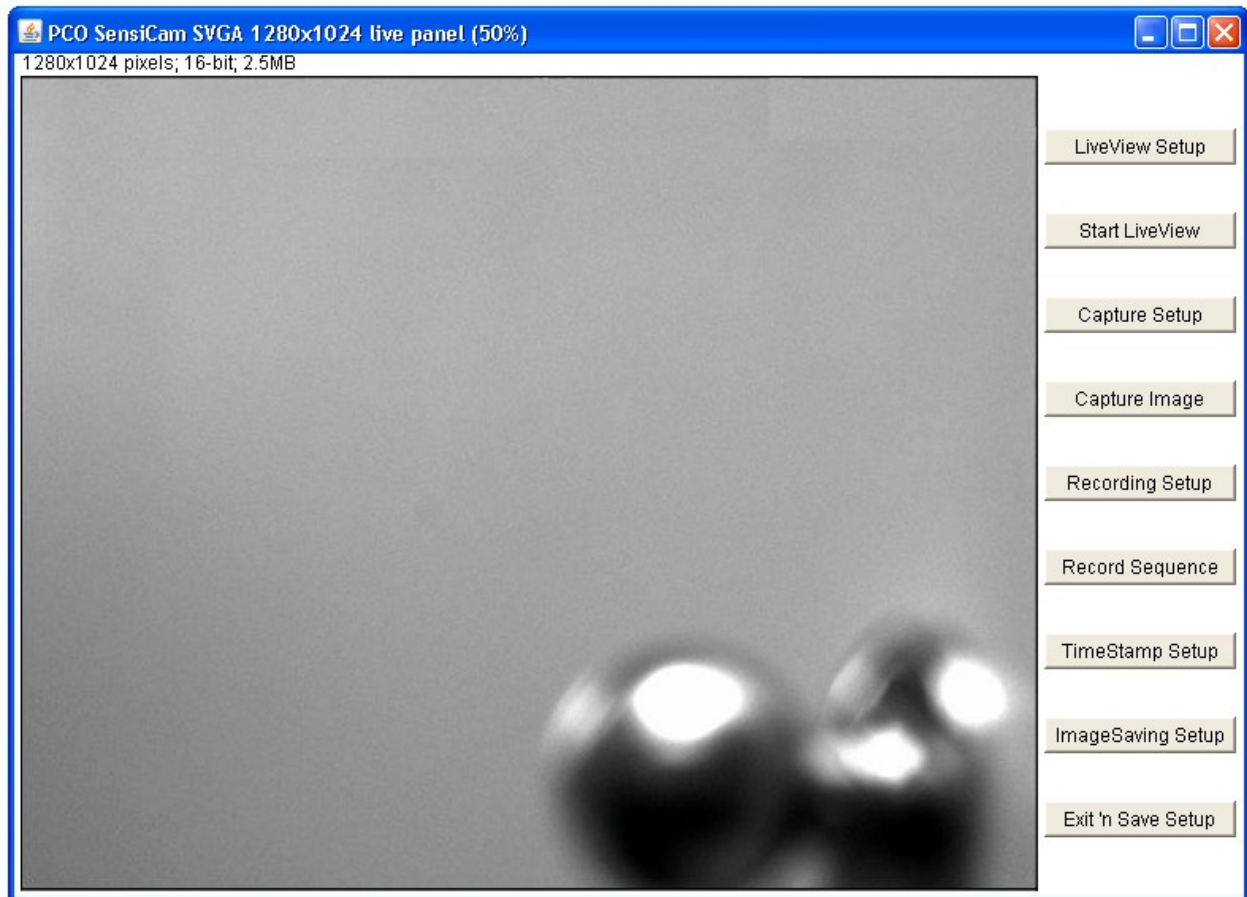
This configuration is applied to the entire session of application. If you want to operate on a different image type, you have to restart the application.

Features:

- 1) 16 bit gray, 8 bit gray, 24 bit RGB
- 2) Binning up to 8x16 (2x2 only for EM) and external trigger
- 3) Two timing stamp modes
- 4) Electronic gain
- 5) Support of all Long exposure and some fast shutter cameras (VGA, SVGA, QE, EM)

2 Usage:

When invoked, Sensicam runs live view with default exposure 10 ms; other default settings are depending on the camera types and image types you have selected.

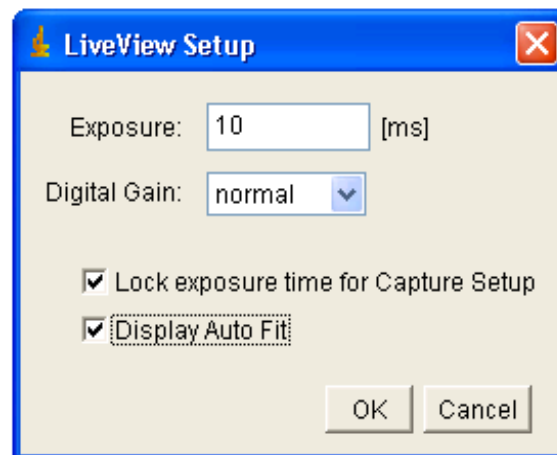


Among the 9 control buttons, “LiveView Setup”, “Capture Setup”, “Recording Setup”, “TimeStamp Setup” and “ImageSaving Setup” each prompts a setup window. Setup options for “LiveView Setup”, “Capture Setup” are defined by image type. The other 4 buttons are for execution only; actions are carried out with the current settings.

2.1 LiveView Setup:

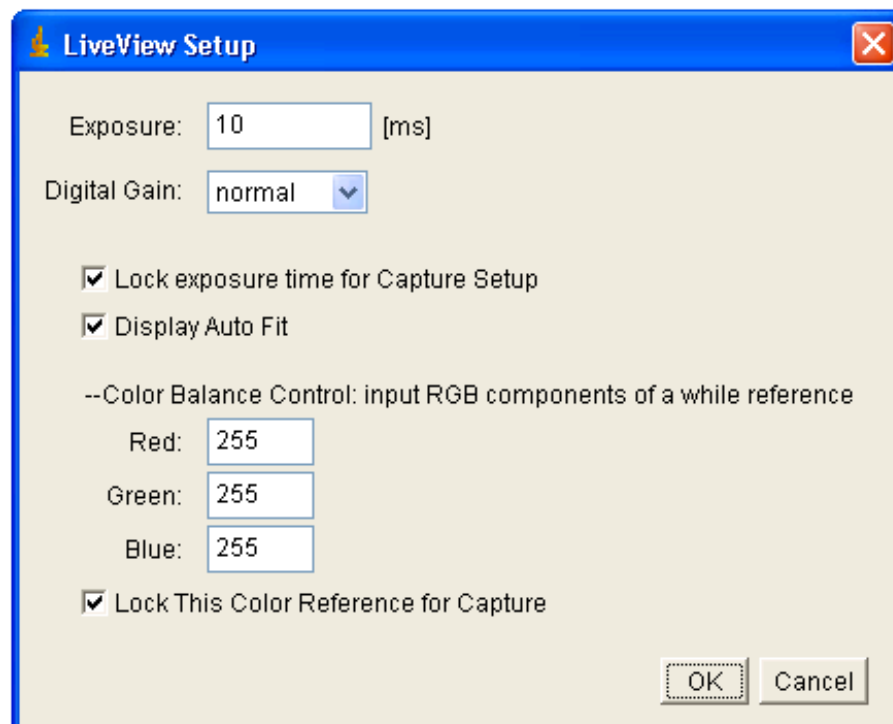
2.1.1 Image type----16 bits BW:

Live view is run with 1x1 binning only, user can control exposure and gain and lock the exposure time for capture by checking its box



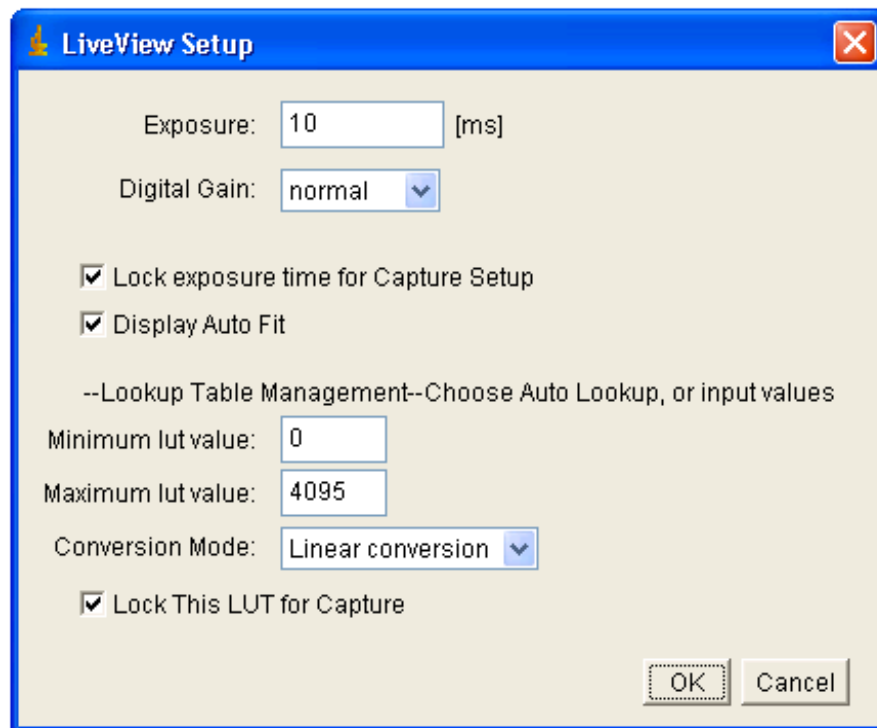
2.1.2 Image type----24 bits RGB:

Color balance control gives user the ability to white balance images. If you place mouse pointer to a spot of white reference, the color components of the pixel is displayed on the status bar, type in these values and the plugin amplify the color channels which appeared weak based on the reference information. The values must be in the range 1 to 255. For monochrome cameras, modifying the color channel creates the unicolor in placement of gray.



2.1.3 Image type----8 bits BW:

User has control over how the 12bit image data are converted into 8 bits and exported into ImageJ.



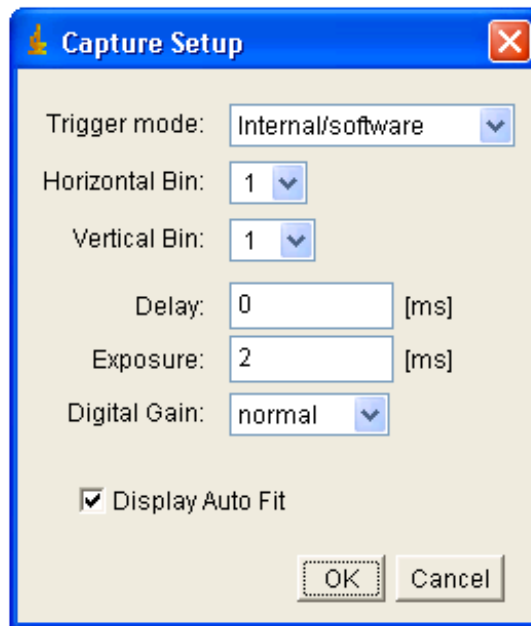
LUT minimum and maximum are the limits of 12 bit pixel values to be converted. Pixels that are beyond the range are coerced into the closest limit value. A linear conversion evenly spreads and maps the pixels between the ranges into 8bits. You can apply the lookup table to your single capture by checking the box.

2.2 Start Live View:

Activate Live View if stopped by single capture or recording operation.

2.3 Capture Setup (example for image type of 16 bits BW only):

This panel controls the camera setting for Capture Image and Record Sequence.



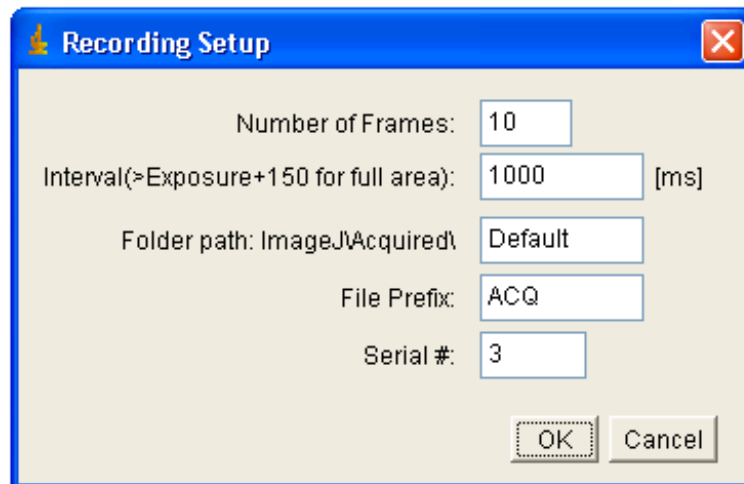
Setup binning other than 1x1 automatically invalidates any ROI you have previously selected. ROI draw is defined for 1x1 binning images only, so binning and ROI setting may be mutually restricted. The latter setup finalizes the ROI and binning values. ROI requested may be adjusted to fit into pixel blocks of 32 multiples. The final resolution is seen on the title bar of captured images. Calling "Capture image" or "Record sequence" terminates live view, if running, and sets up the coc for capture state, if necessary. This state remains valid until new setup is required or "live view" is called.

2.4 Capture Image:

Capture a single image using the Capture Setup and ROI (if set), the image is displayed in a separate panel.

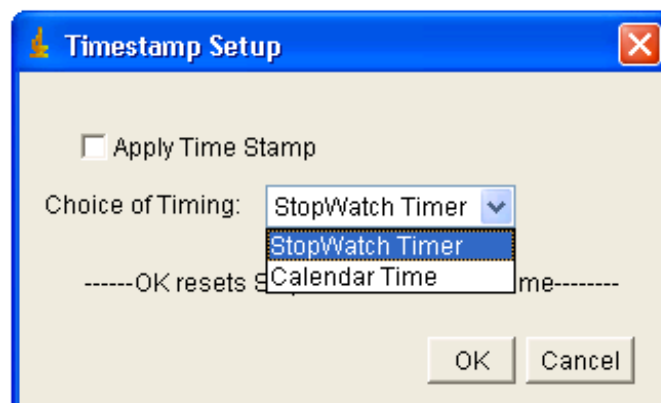
2.5 Recording Setup:

Sets the recording pace and file name serials, refer to ImageSavingOptions for file naming.



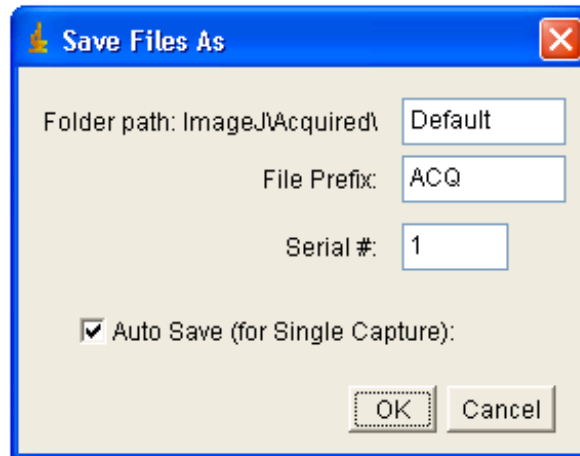
2.6 Time Stamp Setup:

To insert a timestamp of your choice in your image.



2.7 Image Saving Setup:

Choose the path and file name for single image saving, a file is such named as ACQ0001.TIF for the example, with a prefix and 4 digits. The Serial # specifies the starting number. The number is incremented with each saved image.



2.8 Region of Interest:

You can set ROI on the main panel by mouse dragging. A rectangle is highlighted and you are prompted to confirm the selection for your camera setup. By accepting the ROI, your camera is set to the ROI or the size is slightly adjusted according to the camera ROI definition. Any new "Capture Image" will be taken on that selected ROI. If you had previous binning setting other than 1x1, the binning is restored to 1x1 to accommodate the ROI.

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