

Gigapixel Micro Capture Computer Setup and Installation Notes

Gene Cooper, Four Chambers Studio
gene@fourchambers.org, 707-319-9310
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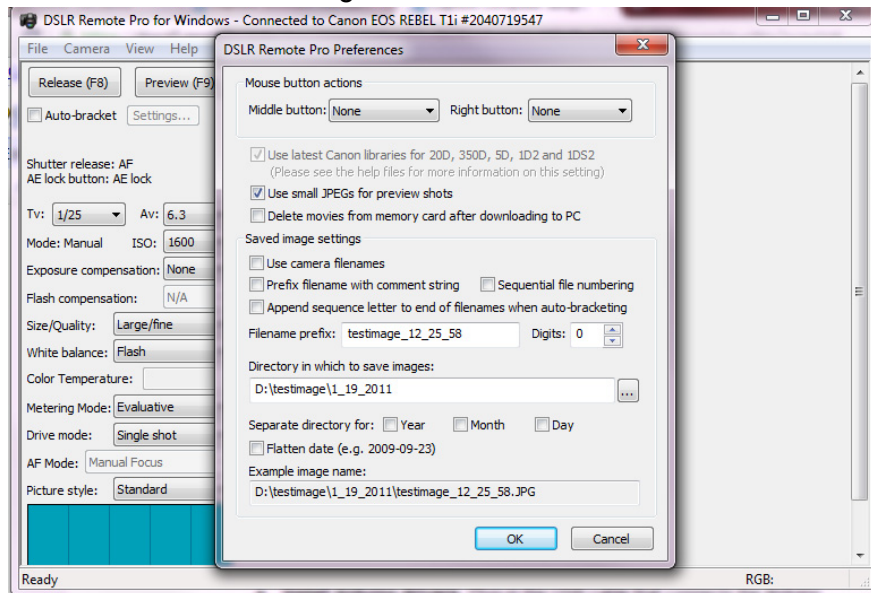
The Capture Software (to enable your camera, motion control system, and capture software)

1. **Java Runtime Environment**, <http://www.java.com/en/download/index.jsp>
The java runtime environment is needed to enable various functions and operations for Max / MSP and Arduino. Often, if JRE is not installed, the Arduino board and interface will not be recognized.
 - **Install Java Runtime Environment.**
2. **Quicktime**, <http://www.apple.com/quicktime/>
Quicktime is required to enable various functions and operations in Max / MSP that are video and image related.
 - **Install Quicktime.**
3. **PACE drivers for 64-bit systems**, <http://www.paceap.com/dldrvr.html>
These drivers may be needed to authorize the Max / MSP software package to allow editing of the capture software. This is only needed for the non-runtime version.
 - **Install PACE drivers for 64-bit systems** (Only if you need to use the full non-runtime version of Max / MSP to edit the capture software).
4. **Canon Camera Driver** (auto install using system drivers)
Needed for the computer to recognize when the camera is connected to the computer.
 - **Connect the Canon DSLR camera and install driver.** (Driver will most likely auto-install. You know it is installed correctly when the camera shows up as a device on your computer.)
5. **Arduino drivers**, <http://www.ftdichip.com/>
Arduino is the micro-controller that provides a USB interface to the motion control system. Note: If the drivers for arduino do not automatically install correctly, then you may need to download the drivers from the ftdi website listed above and install them manually.
 - **Install Arduino drivers.** Plug-in the USB cable that connects the Arduino micro-controller. If the system asks you where the drivers are for the device, then direct the system to the software folder with the FTDI drivers.
6. **Arduino software** program, <http://www.arduino.cc/>
Arduino is the micro-controller that provides a USB interface to the motion control system. The Arduino software program provides a way to update the firmware that is installed on the Arduino micro-controller. The firmware is used to define the configuration and interface between the capture program and the motion control hardware.
 - **Install Arduino software.** (Only if you need to update and upload new firmware to Arduino).

7. **DSLR Pro**, <http://www.breezesys.com/>

Used to provide an interface to the Canon DSLR camera.

- Install **DSLR Pro**
- **Test camera connection with DSLR Pro.** If installed correctly you should be able to connect and take photos with DSLR Pro.
- Edit the preferences for DSLR Pro and change settings so that automatic numbering, timestamps, etc. are turned off. The capture software will assign the correct name to each image instead of DSLR Pro.



8. **Max / MSP 5.0 Runtime** or higher, <http://www.cycling74.com/>

Used as the main prototyping and development environment for the capture software. The runtime is free. The non-runtime version will allow you to edit the capture software to make programming changes.

- Install **Max / MSP Runtime version** (and/or full version if you plan to make programming changes to the capture software)

9. **DOSHACK** java plugin for Max / Msp

A plug-in that is used by Max / Msp to provide access to the windows dos commands.

- Install **DOSHACK** java plugin for Max / Msp. The plug-in software can be installed the Cycling 74, Max / MSP directory. See installation notes for DOSHACK for details and specific directory installation notes.

10. **Arduino Firmware (optional)**

The firmware is used to define the configuration and interface between the capture program and the motion control hardware.

- The Gigapixel Micro Capture Software includes a set of firmware for arduino. If you need to modify this, you can do so using the Arduino program.

11. The Gigapixel Micro Capture Software

This is a Max / MSP “patch” or program that provides an interface to setup and capture a full 3D matrix of images needed for a gigapixel micro panorama.

- Open the Max / MSP application.
- Open the file (most current file) called gigapixel_micro_captur_vxxx.maxpat
- Once the software loads, then follow the instructions in the capture manual.

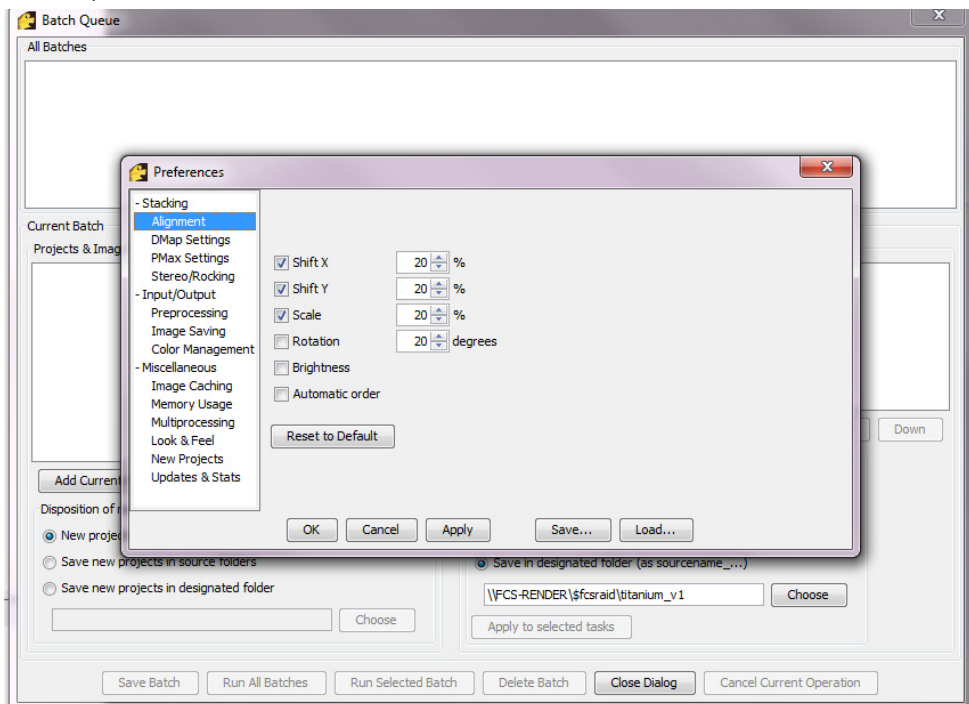
The Post-Processing Software (to Stack, Stitch, and Upload the panorama)

1. Focus Stacking Option: Zerene Stacker, <http://www.zereneystems.com/>

This is an amazing piece of software that allows you to focus stack the images after the capture process is complete.

- Install the program and your software license.
- To focus stack the imagery, use the batch process window to select the directories that contain your images and focus stack them.

Typically, use the PMAX process and change your settings to only align the images with Shift X, Shift Y, and Scale.



2. **Stitching Option: AutoPano Giga**, <http://www.kolor.com/>

This is an excellent program for stitching your panorama once the images are focus-stacked.

- Install the program and your software license.
- Choose “Import” and select “GigaPan” as the import type. This will import your complete set of images as a matrix and help with the alignment and stitching process.
- Follow the directions from AutoPano Giga to stitch and render your panorama.

3. **Stitching Option: GigaPan Stitcher**, <http://www.gigapan.org/>

This is an excellent program for stitching your panorama. If you already own a GigaPan device, the stitching software that is provided will allow you to stitch your panorama.

- Install the program and your software license.
- Select and import your images.
- Follow the directions from GigaPan stitch and render your panorama.
- You can choose to automatically upload your images directly to the GigaPan.org website from the Stitcher.

4. **Uploading to the GigaPan website**: <http://www.gigapan.org/>

This is an excellent uploader to transfer your files to the GigaPan.org website for online viewing.

- Install the uploader program.
- Create a free account at <http://www.gigapan.org/> if you don't already have one.
- Launch the uploader program and choose your image. For large images, you can use the Photoshop RAW format. Use the naming convention... myimagename_20000x10000.raw where 20000 is the width of the image in pixels, 10000 is the height of the image in pixels.
- View on the GigaPan website.