

# Introduction to the Micro-Manager(MM) Software for driving and controlling TUCSEN cameras

## 1.download and installation of the MM software

1) Use the following link to download the latest version of 32 bit or 64bit format of MM 1.4 software , as shown Figure 1:

<http://valelab4.ucsf.edu/~MM/nightlyBuilds/1.4/Windows/>

Index of /~MM/nightlyBuilds/1.4/Windows

Name	Last modified	Size	Description
CaseM_Disector	-	-	-
MMSetup_64bit_1.4.23_20180426.exe	26-Apr-2018 23:32	86M	
MMSetup_32bit_1.4.23_20180426.exe	26-Apr-2018 23:32	84M	
MMSetup_64bit_1.4.23_20180425.exe	26-Apr-2018 23:32	86M	
MMSetup_32bit_1.4.23_20180425.exe	26-Apr-2018 23:32	84M	
MMSetup_64bit_1.4.23_20180424.exe	24-Apr-2018 23:33	86M	
MMSetup_32bit_1.4.23_20180424.exe	24-Apr-2018 23:32	84M	
MMSetup_64bit_1.4.23_20180423.exe	23-Apr-2018 23:33	86M	
MMSetup_32bit_1.4.23_20180423.exe	23-Apr-2018 23:33	84M	
MMSetup_64bit_1.4.23_20180422.exe	22-Apr-2018 23:34	86M	
MMSetup_32bit_1.4.23_20180422.exe	22-Apr-2018 23:34	84M	
MMSetup_64bit_1.4.23_20180421.exe	21-Apr-2018 23:33	86M	
MMSetup_32bit_1.4.23_20180421.exe	21-Apr-2018 23:33	84M	
MMSetup_64bit_1.4.23_20180420.exe	20-Apr-2018 23:35	86M	
MMSetup_32bit_1.4.23_20180420.exe	20-Apr-2018 23:35	84M	
MMSetup_64bit_1.4.23_20180419.exe	19-Apr-2018 23:34	86M	
MMSetup_32bit_1.4.23_20180419.exe	19-Apr-2018 23:34	84M	
MMSetup_64bit_1.4.23_20180418.exe	18-Apr-2018 23:33	86M	
MMSetup_32bit_1.4.23_20180418.exe	18-Apr-2018 23:33	84M	
MMSetup_64bit_1.4.23_20180417.exe	17-Apr-2018 03:34	86M	

Figure 1: Interface for downloading MM 1.4 software

2) After the download has completed, double click to begin the installation process, as shown in figure 2:

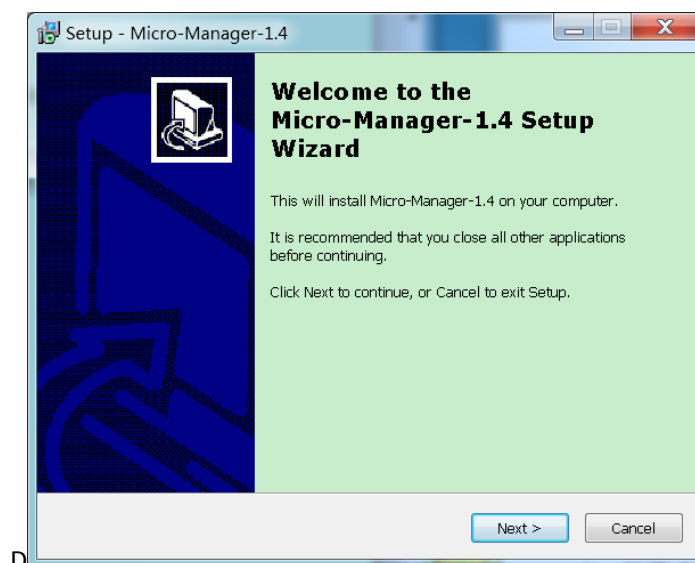


Figure 2: Installation GUI for MM 1.4 software

3) Click on the NEXT button, select the path to install, as shown in Figure 3:

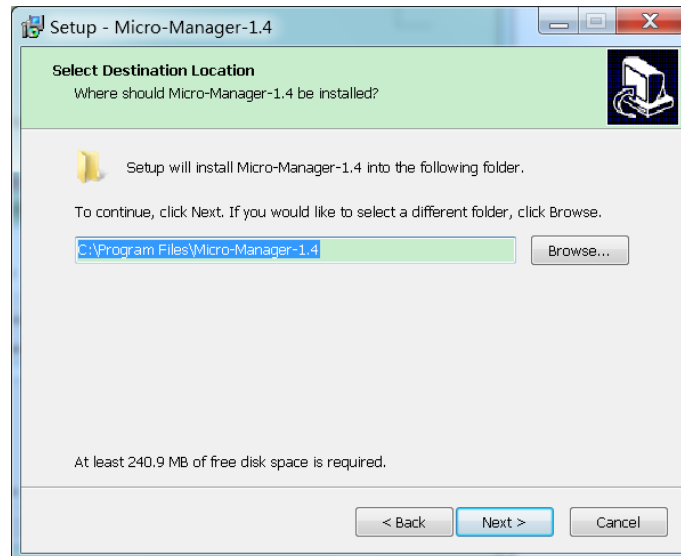


Figure 3: Select the path for installation

4) Select a suitable or default path for installation, click the NEXT button, follow the directions for installing step by step, after installing, click the FINISH button, as shown in Figure 4:

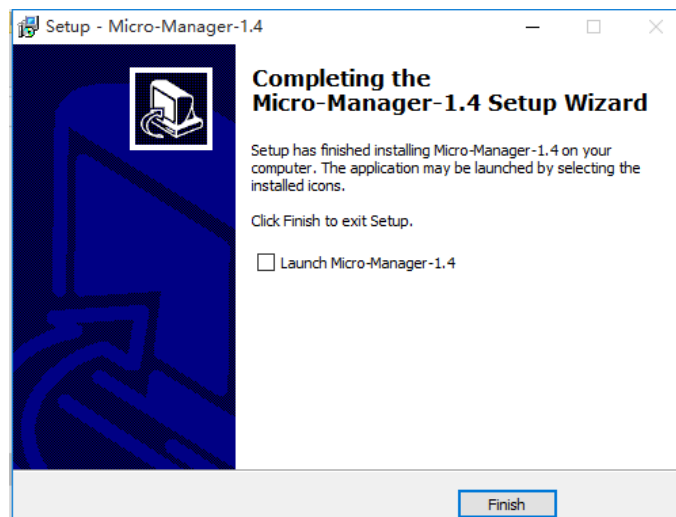


Figure 4: The finished installing page

## 2. Download and install the driver of Tucsen cameras

Go to the Tucsen website ([www.tucsen.com](http://www.tucsen.com)) for the driver of Tucsen cameras, check out the link as following. Double click the installed driver and follow the direction step by step.

(<http://www.tucsen.com/Home/Product/download/dataid/18/id/27.html>)

## 3. Settings to control Tucsen cameras by MM software

1) Plug in the power cord and connect to camera to the power supply, connect the USB3.0 data cable between camera and PC.

2) Double click the MM software short-cut icon on the desktop of the computer or double click on the application programs installed under the root directory, open the MM software.

3) A dialogue box comes up and the user can chose the configuration files to load the cameras, when running the camera for the first time, no related configuration files can be selected, pick(none); click on OK to continue, shown as Figure 5:



Figure 5: Micro-Manager startup Configuration

4) Click to select the path: Tool>Hardware Configuration Wizard, to the setting of the hardware configuration wizard of cameras, shown as Figure 6:

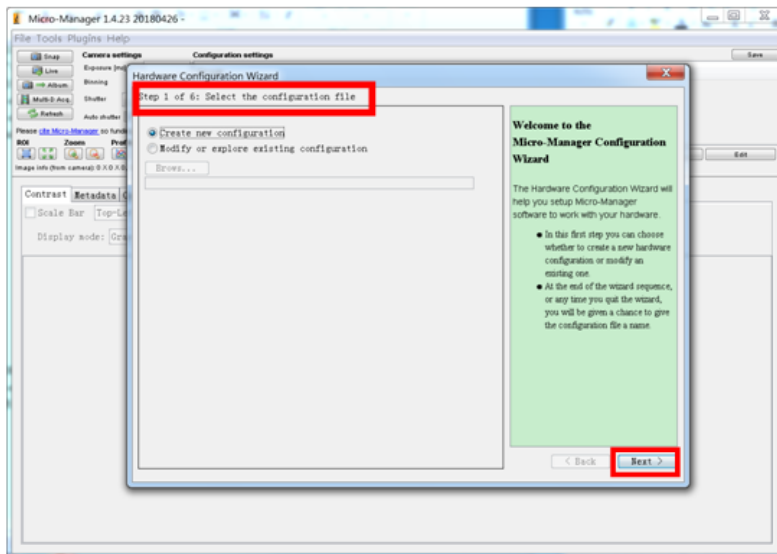


Figure 6: Step 1 of 6. Hardware Configuration Wizard.

5) Enter into step 1 of 6: Select the Configuration file (shown as the red frame area on the left hand side at the top): select “Create new configuration”, click on the NEXT button.

6) Enter into Step 2 of 6: Add or remove device, pick up the folder named “TUCam” from the “Available Devices”, open the folder and select the “TUCam/TUCSEN Camera”, then click on the “ADD” button, as shown as Figure 7:

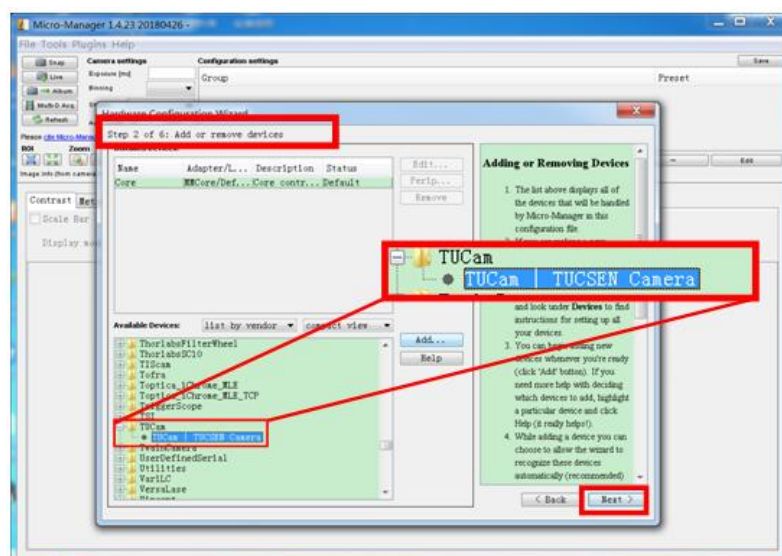


Figure 7: Step 2 of 6. Add or remove devices.

7) Enter into: Device: TUCam/Library: TuCam interface, rename Label as the model of your camera, for the example of the Dhyana 95 camera, shown as the Figure 8, then click on the NEXT button:

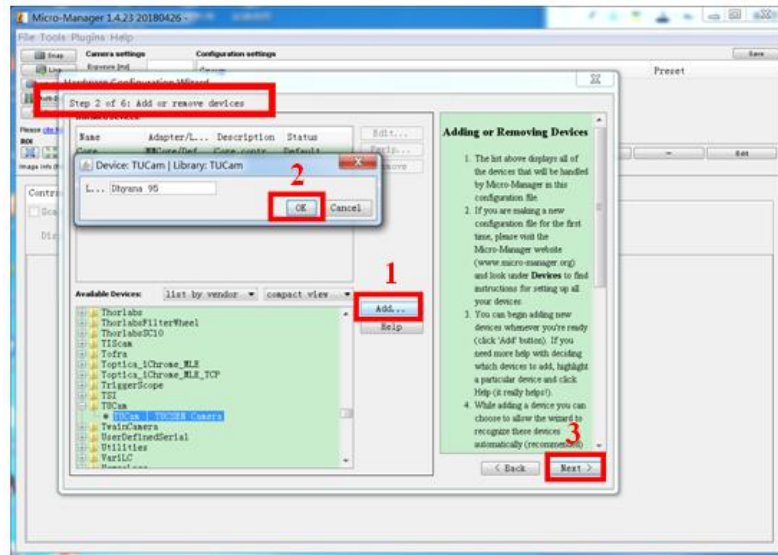


Figure 8. Device: TUCam/Library: TUCam.

8) Enter into Step 3 of 6: “Select default devices and choose auto-shutter setting” interface, shown as Figure 9, then click on NEXT button:

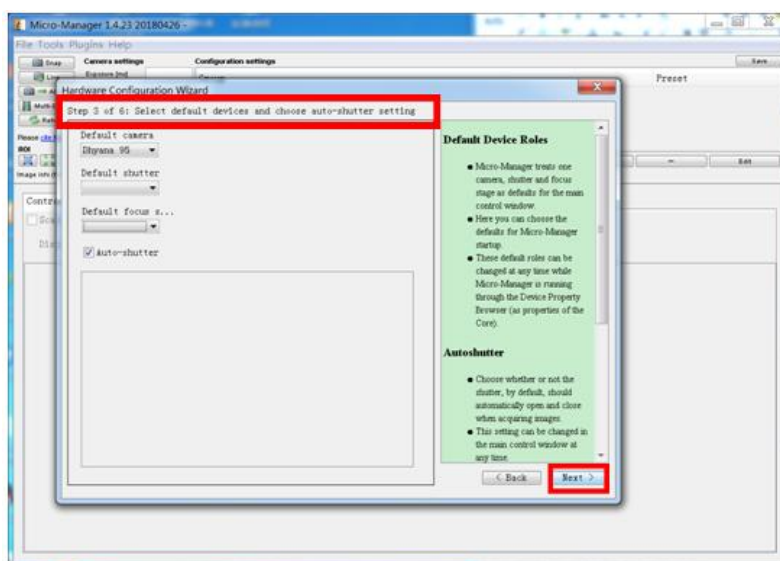


Figure 9: Step 3 of 6. Select default devices and choose auto-shutter setting

9) Enter into Step 4 of 6: “Set delays for devices without synchronization capabilities” interface, shown as Figure 10, then click NEXT button:

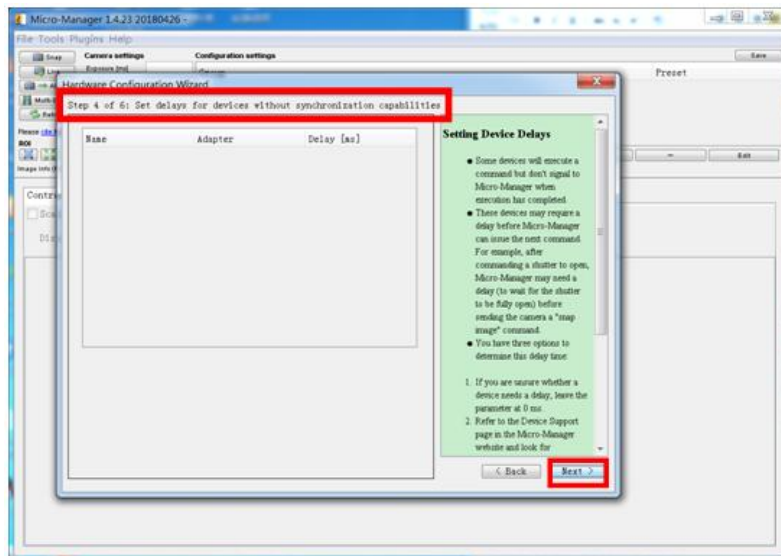


Figure 10: Step 4 of 6. Set delays for devices without synchronization capabilities.

10) Enter into Step 5 of 6: “Define position labels for state devices” interface, shown as Figure 11, then click NEXT button:

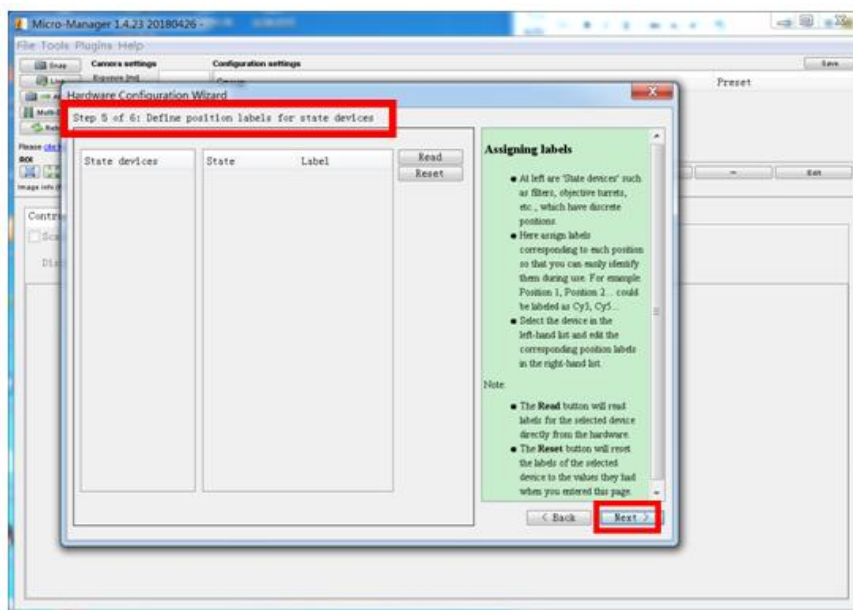


Figure 11: Step 5 of 6. Define position labels for state devices

11) Enter into Step 6 of 6 "Save configuration and exit" interface, shown as Figure 12, select the folder( saved under the root directory as default) to save the configuration files, name the files, save the files and click on the FINISH button:

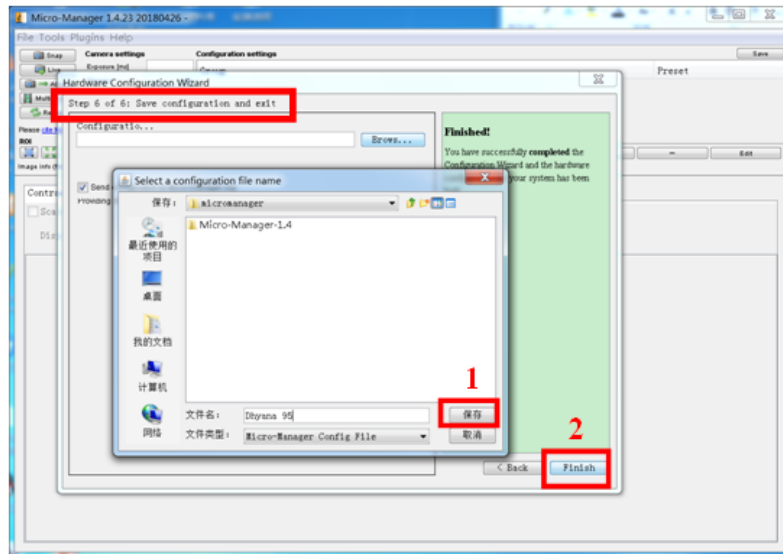


Figure 12: Step 6 of 6. Save configuration and exit

12) Enter into the Micro-Manger operation window interface, shown as Figure 13:

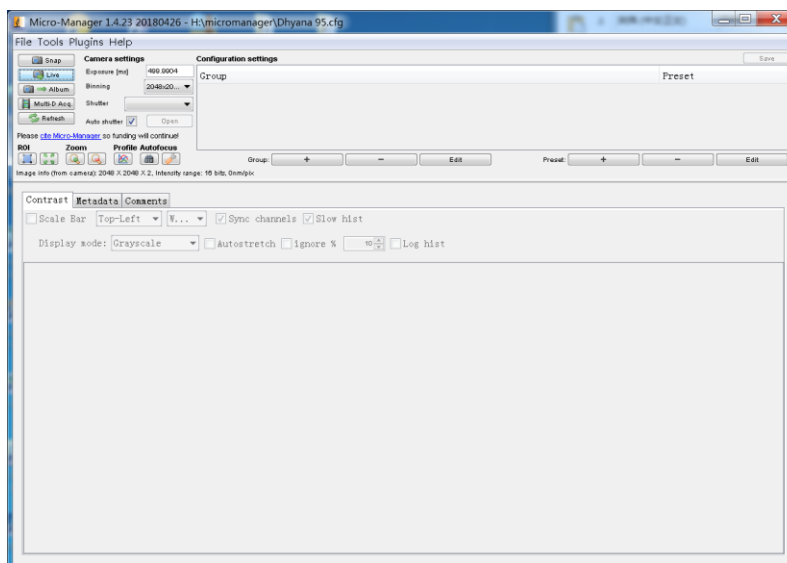


Figure 13: Micro-Manager interface

13) Click on Live button to run the image preview mode, as shown in Figure 14, sCMOS cameras are ready to go:

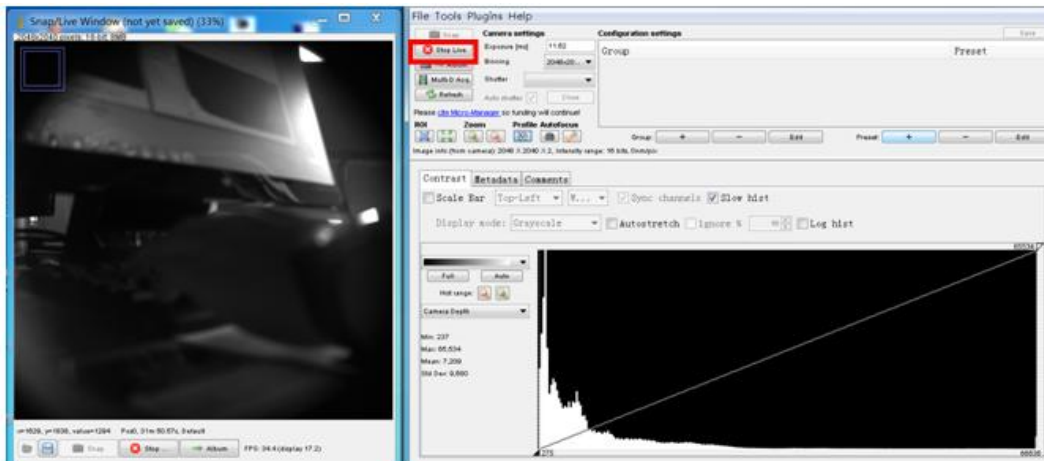


Figure 14: Micro-Manager image preview mode

Note:

At present, the Micro-Manager software drives the models of DHYANA400D/400DC/95/400BSI sCMOS cameras from TUCSEN.