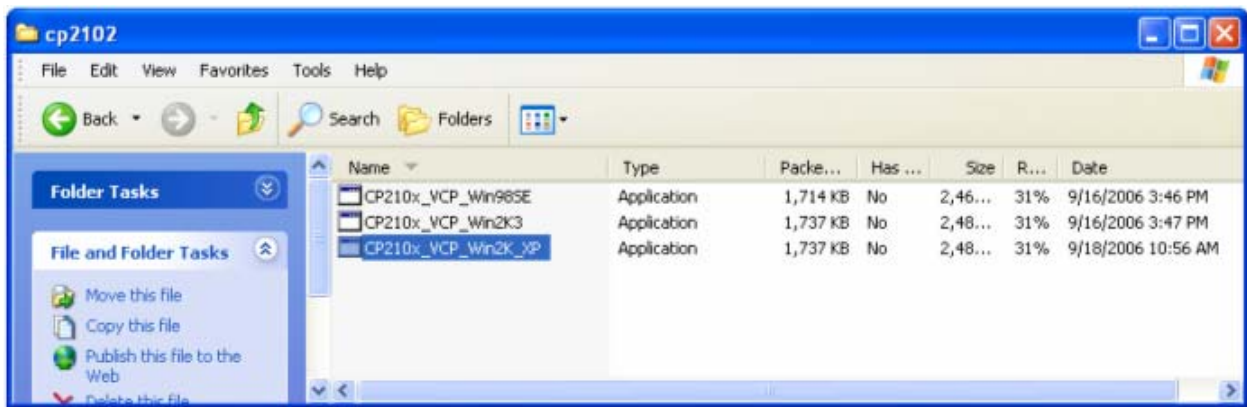
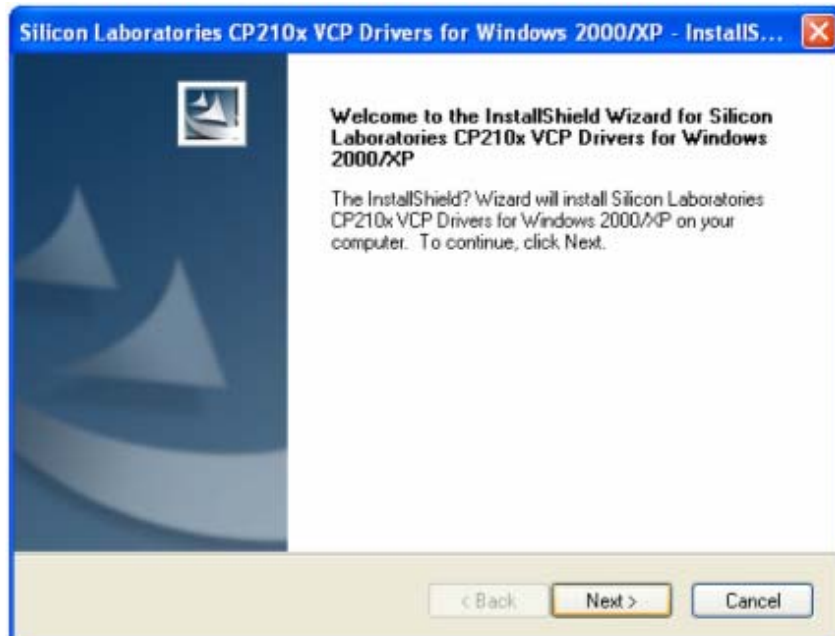


# iOptron® MiniTower Pro™ 8401 Hand Controller Firmware Upgrade Instruction

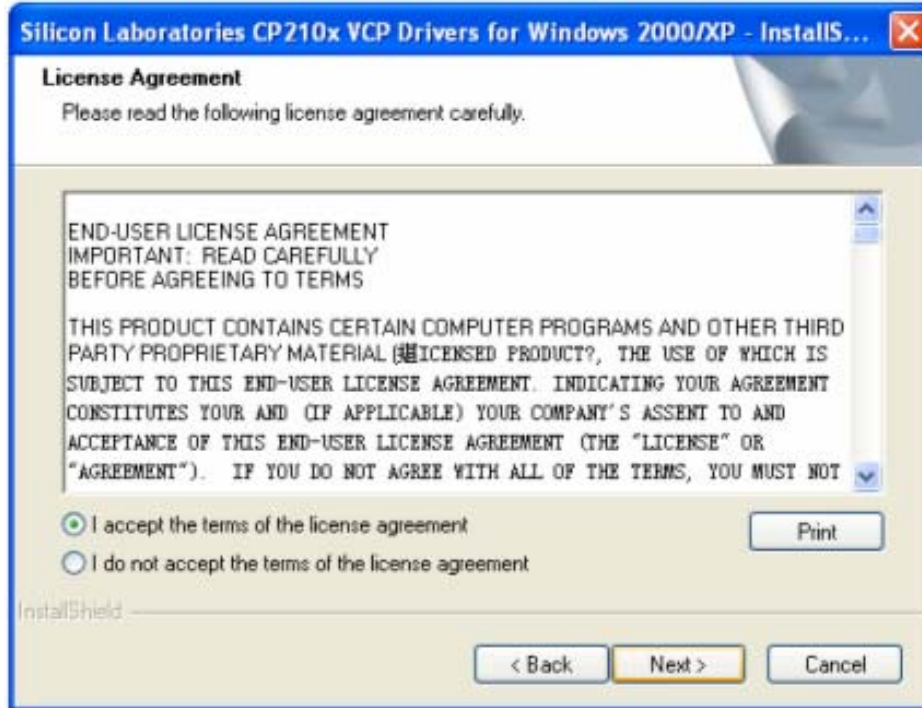
1. Download and save USB-to-COM port driver based on you Windows operation system
2. Download and install iOptron Downloader
3. Download MiniTower Pro 8401 hand controller firmware
4. Make sure the mount is power off and the USB cable is not connected to the PC.
5. Install cp2101(usb2com) driver



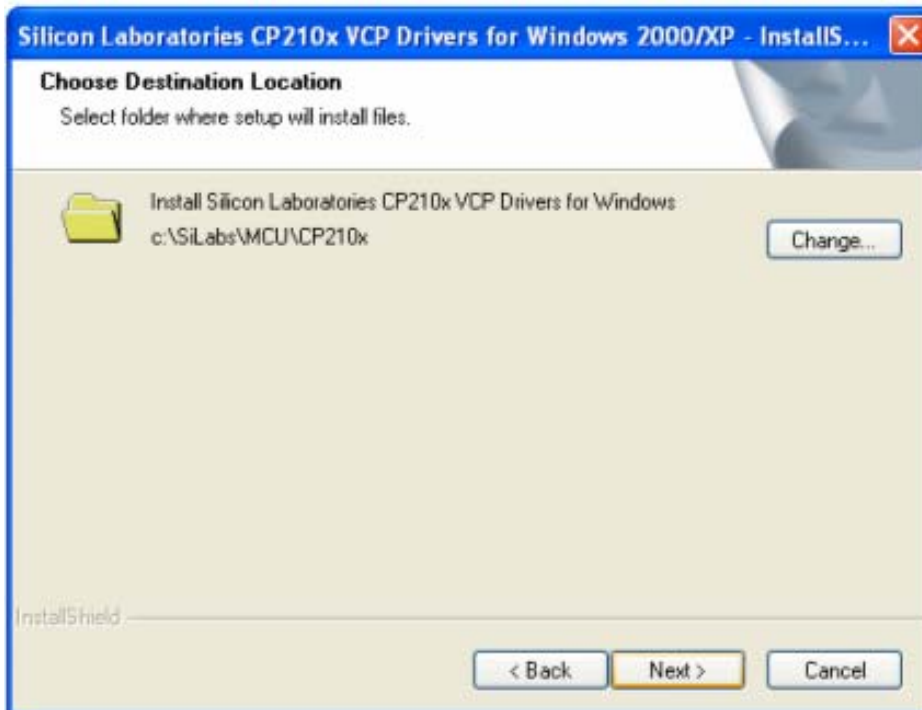
Choose the appropriate driver for your OS. In this case is a Windows XP operation system. For Windows Vista, select CP210x\_VCP\_Win2K\_XP. Double click on it, and an InstallShield Wizard window will be displayed:



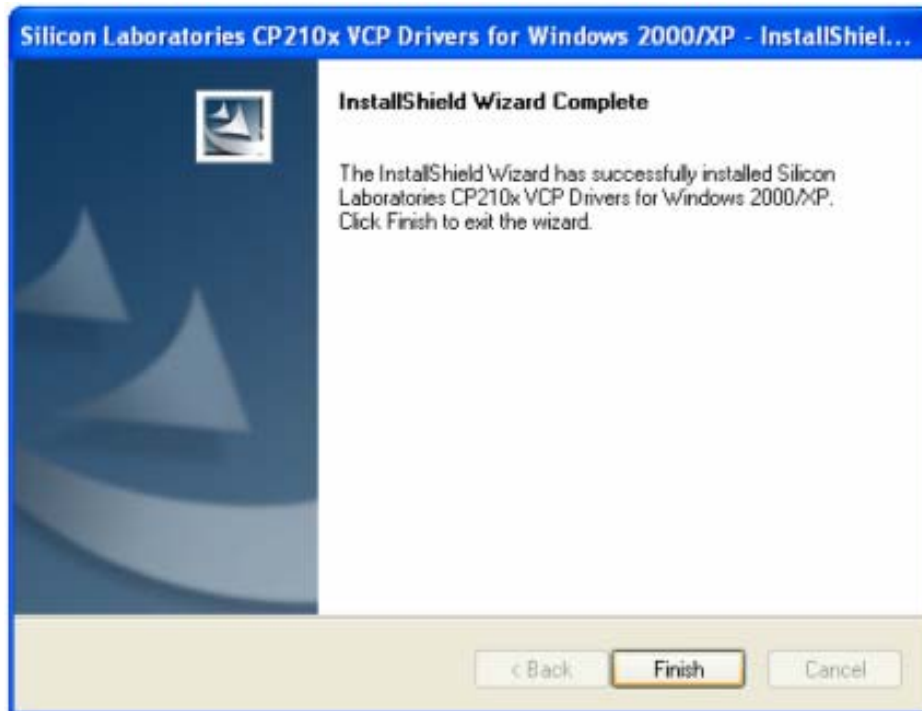
Click "Next".



Select "I accept the terms of license agreement", and click "Next"



Using the default installation path, c:\SiLabs\MCU\CP210x, or specify your own path by click "Change". Click "Next". Then click "Install".

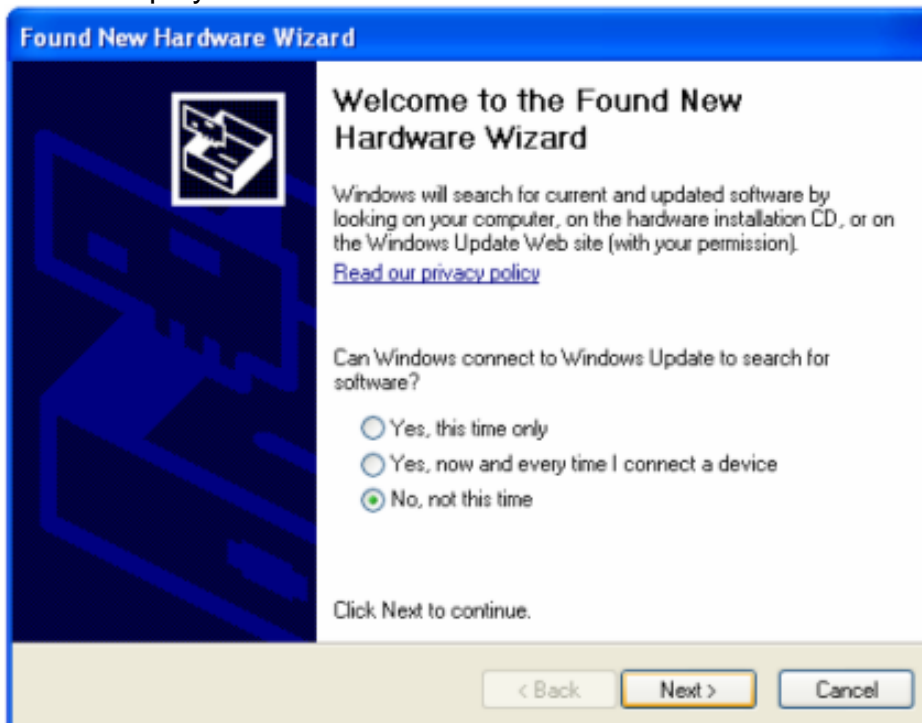


When finished installation, click “Finish”

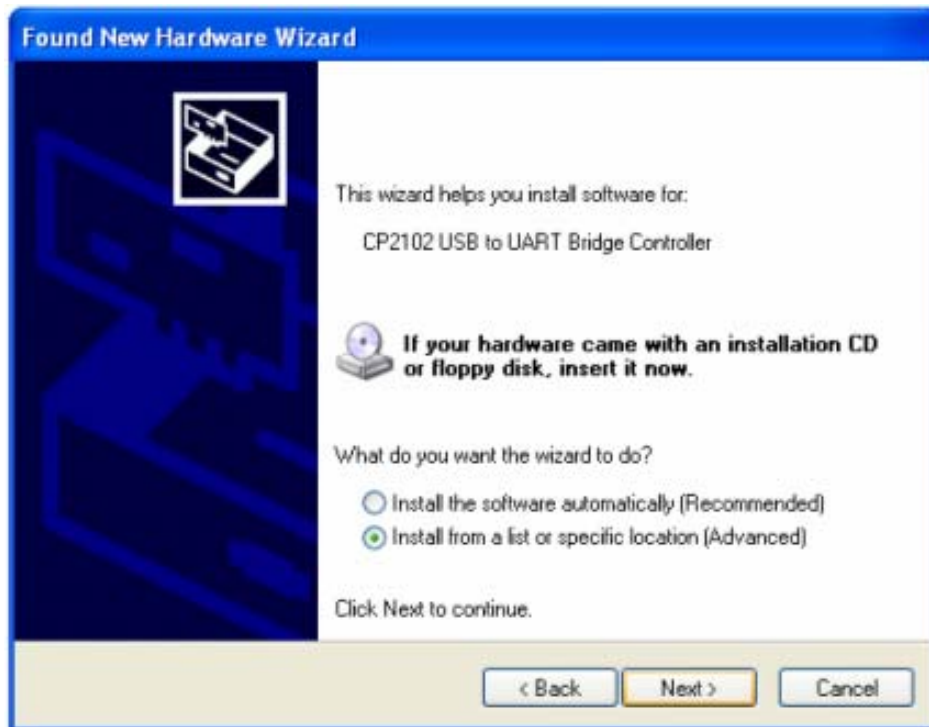
6. **Plug the USB cable to the USB port on your PC, plug the other end of the USB cable to the hand controller. Turn on the mount ON.**

## 7. Install the Hardware

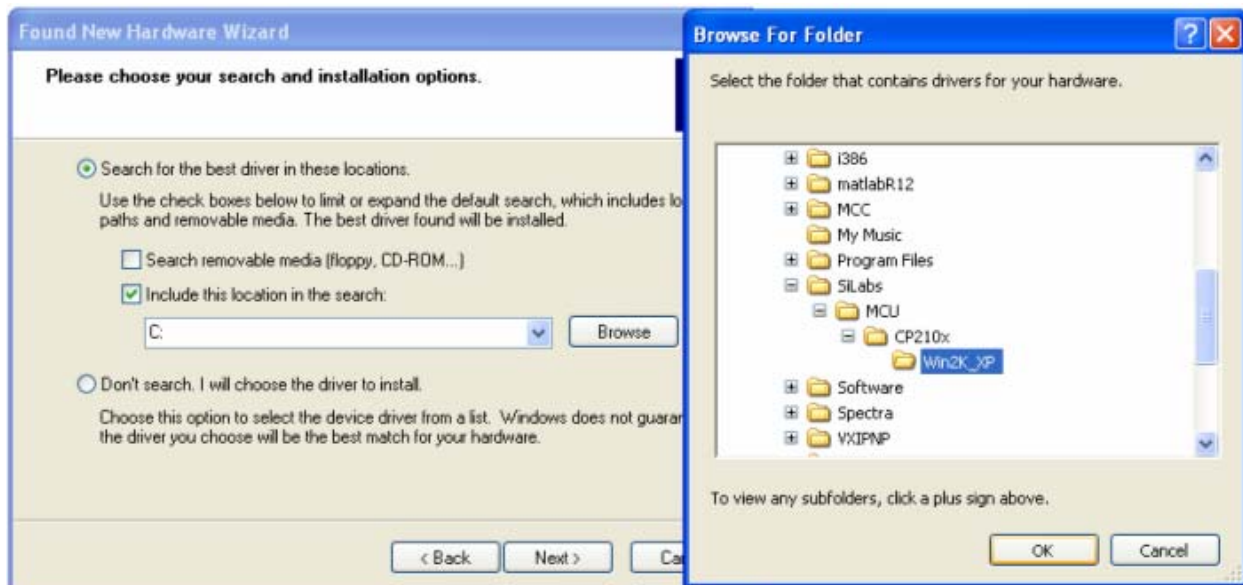
The computer will display a “Found New Hardware Wizard” window:



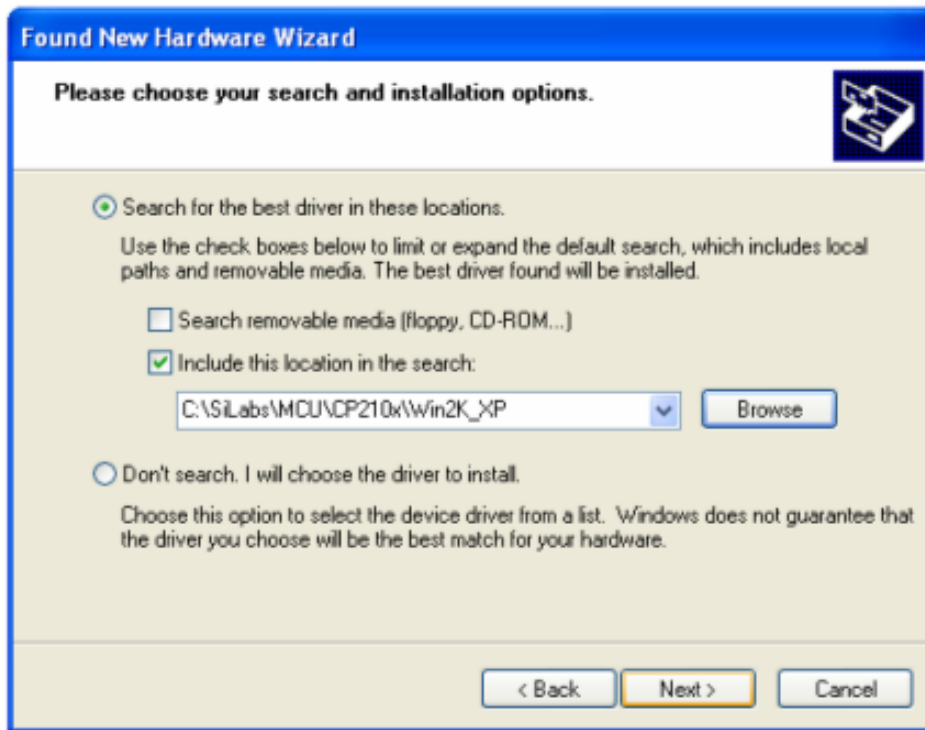
Select “No, not this time” and click “Next”.



Select “Install from a list or specific location” and click “Next”.



Select “Search for the best driver in these locations,” and check “Include this location in the search.” Click on “Browse” and select the cp210x driver from directory c:\SiLabs\MCU\CP210x\Win2K\_XP, click OK.



Click "Next". The computer will start to install the driver for the USB2COM converter. When the installation is done, click "Finish".

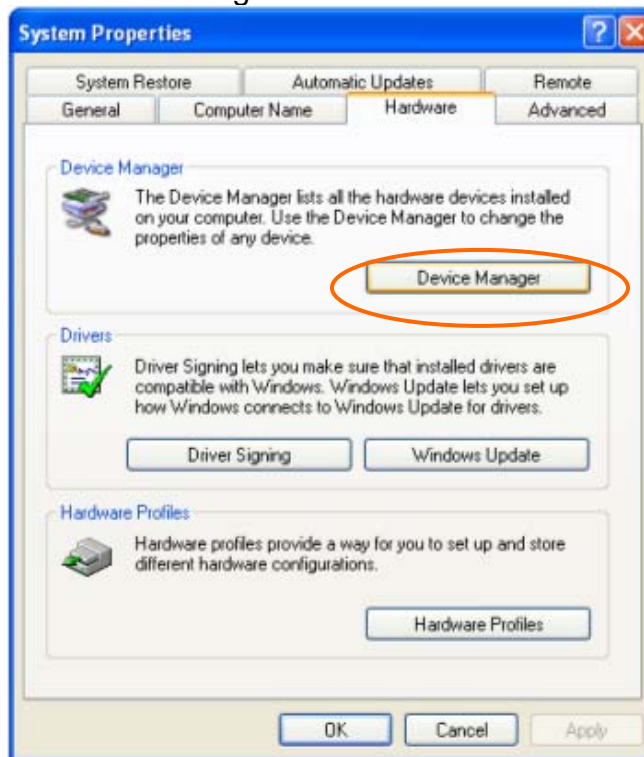


Now your computer is ready for Firmware Upgrading, computer communication with the mount via ASCOM platform and planetarium software applications. However, you need

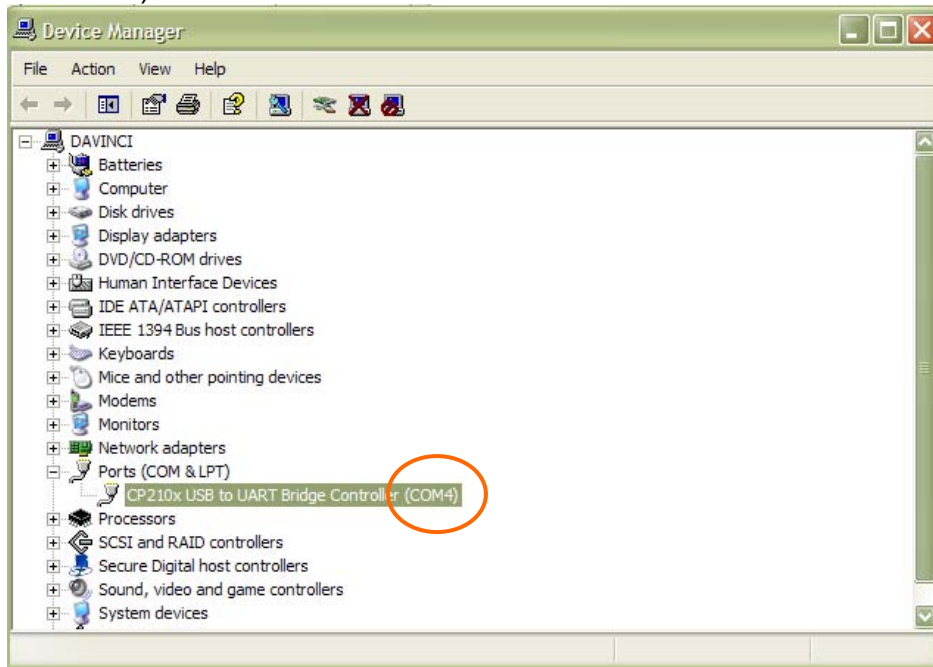
to find assigned COM port number for the USB connection. To do so, right click “My Computer”, and click “Properties”



Click “Hardware”, click “Device Manager”

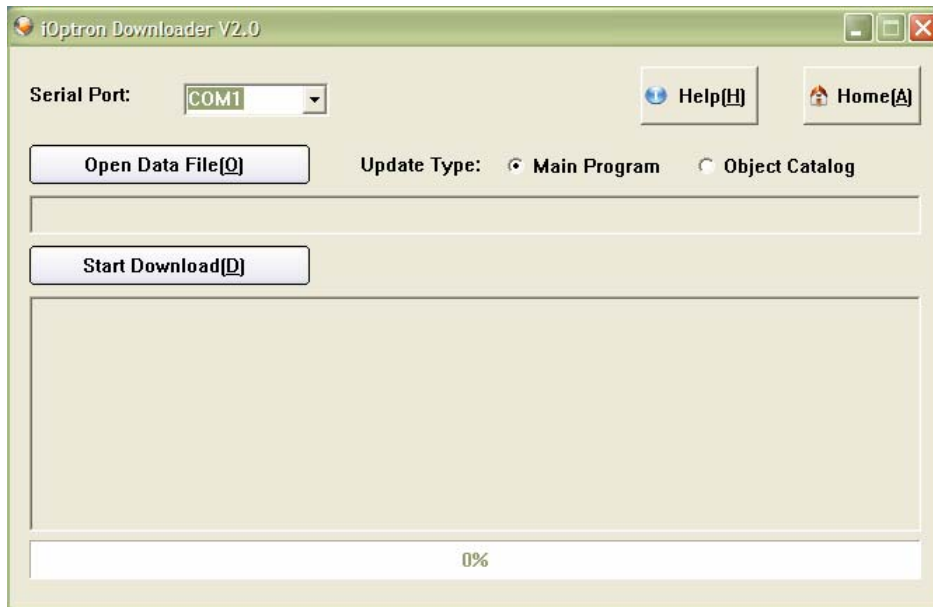


Double click “Ports(COM & LPT)”, find out the COM number and write it down (in this example, it is COM4)

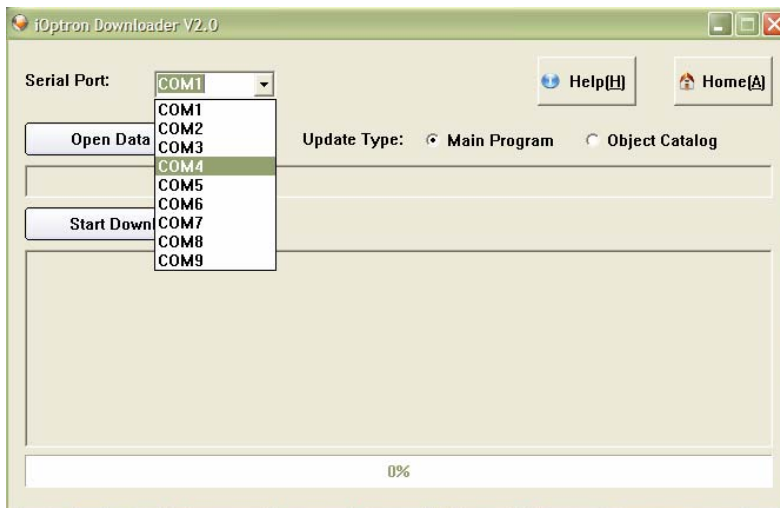


## 8. Upgrade the Firmware

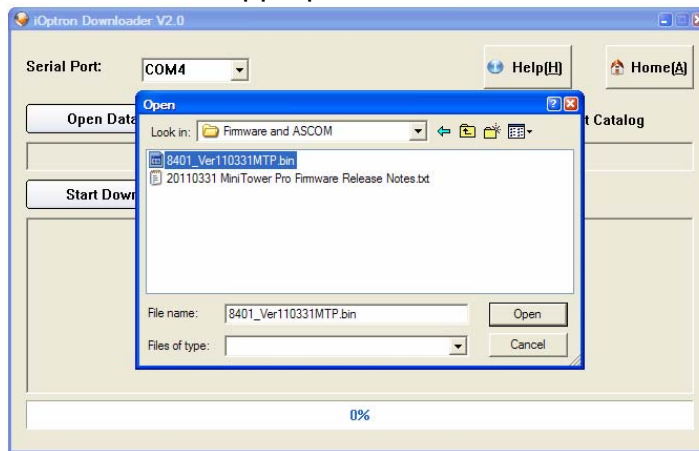
Double click and open “iOptron Downloader”



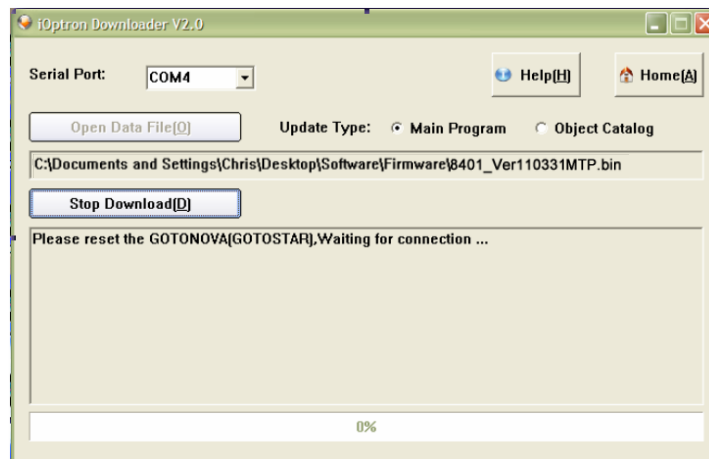
On the interface, select appropriate port using pull-down menu (in this case, COM4):



Click “Open Data File”, and select appropriate “.bin” file that matches your controller



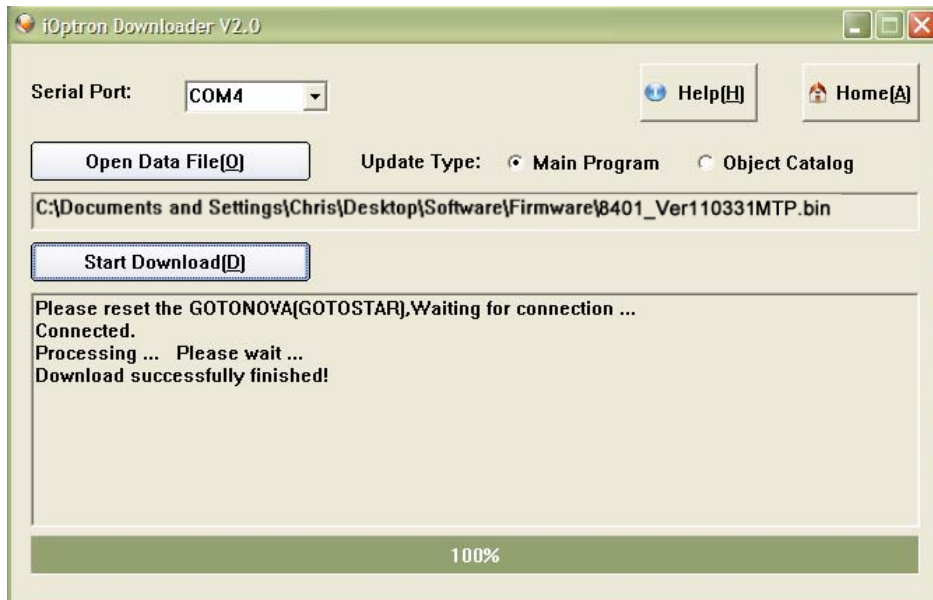
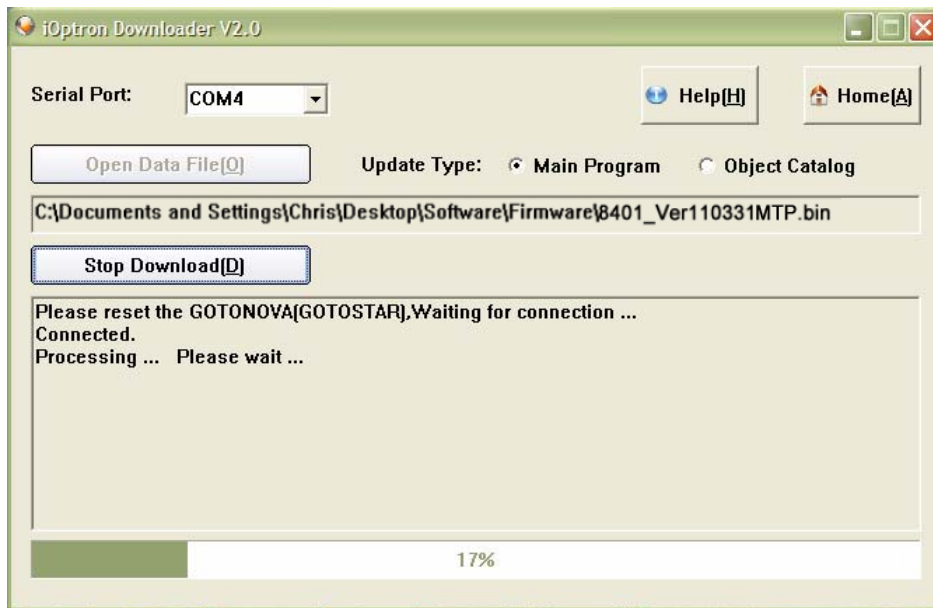
and click “Open”.



Click “Start Download”. iOptron Downloader will display “Please reset GOTONOVA[GOTOSTAR], waiting for connection...”

On the hand controller, press “MENU”, and select “Set Up Controller” and scroll down to “Upgrade firmware”, press “ENTER” and the upgrade starts.





Now the upgrade is finished.

### Typical Errors:

1. Invalid Port Number: in Device Manager, make sure you have the correct COM port number for CP210x;
2. Do not check Update Type as Object Catalog;
3. Wrong ".bin" file: make sure you have the correct ".bin" file for firmware upgrade.

## What can I do if the firmware upgrade was interrupted, or after download the screen is blank or does not respond?

- Turn on the mount to power on the hand controller (the key pad should be lit)
- Click on the iOptron Downloader  
Change the Serial Port to the right COM port in the pull-down menu (example: COM4)
- Click on **Open Data File(O)** button to select the right Firmware for your hand controller. (example: 8401\_Ver110331MTP.bin)
- **DON'T** click on **Start Download (D)** button yet. **Turn the mount power off.**
- Turn the mount power back on. **Right after** hearing the “beep”, click on **Start Download (D)** button. The timing is very important. The downloading process will begin
- When the download is successfully finished, turn the mount off and back on to check the hand controller. Double check the settings, such as time and site info, mount type, anti-backlash, to see if they are changed
- You may need to practice a few times to get the procedure work correctly.