



iOptron ASCOM 3.11 PC Control Application Note

iOptron ASCOM driver 3.11 provides a connection between an iOptron mount and a computer through serial/USB cable or wireless adapter. This version covers the following iOptron mount:

The mount with serial port (**Serial Mount**)

- iEQ30/iEQ45 with 8407 hand controller¹
- ZEQ25¹
- SmartEQ/SmartEQ Pro¹
- iEQ45 with 8406 hand controller²

The mount with USB port (**USB mount²**)

- MiniTower/MiniTower II/MiniTower Pro/Cube Pro/Cube-A with 8401 hand controller
- SmartStar-PR and GOTONOVA kit
- Other SmartStar Cube Mount with 8401 hand controller

The following hardware and software are needed to perform the job:

- ASCOM Platform 6.1. Download and install it from <http://www.ascom-standards.org>.
- Microsoft .NET Framework 4 or later to match ASCOM Platform 6.1 requirement. (Windows XP users should install .NET Framework 4. We recommend Windows Vista and Windows 7 users install .NET Framework 4.5.2, Windows 8 and later users do not need to install any additional .NET Framework.)
- The mount with the latest firmware.
- iOptron ASCOM Driver Installer V3.11 or later. Download and install it from <http://www.ioptron.com>, under Support directory. An **iOptron Commander 2013**



shortcut will be created on the desktop.

- Buy/download planetarium software and install it.

For a Serial Mount, it may also need:

- RS232-RJ9 serial cable (#8412) if connecting via RS232 port, or optional StarFi wireless adapter (#8434) if via Wi-Fi connection
- Optional USB to RS232 converter (#8435) and driver, if your computer does not equip a 9-pin D-shaped (DB9) RS232 port except the USB port.

Hardware Connection

1. Connect a Serial Mount to a Computer

In order to enable planetarium software to control the mount, the communication between the PC and the mount has to be established.

¹ If the mount does not work properly with this ASCOM V3.11 driver, you may install ASCOM 2.4 with control panel

² These mounts also supported by iOptron ASCOM 2.10

1.1 Find a serial port (RS232) from your computer

The first step is to find if your computer has a serial port (or RS232 port). The following photos show a native (built-in) serial port on a laptop (left) and a desk top (right). It is a 9-pin D-shaped (DB9) connector. The assigned port number usually is COM1.



If your computer only has USB ports, like most late PC or laptops do, you need a USB to COM converter to convert one USB port to a serial port (RS232 port). Here are two examples of USB2COM converters. We recommend having a converter that uses high quality chipset, such as one from FTDI.



When plug the converter into one of the computer USB port, the computer may ask you to install the VCP (virtual COM port) driver or it may install the VCP driver automatically. Please follow the user manual to finish the installation.

1.2 Connect mount to computer

(1) iEQ45/30 with 8407 hand controller, or iEQ45 with 8406 hand controller

Use the white, long RS232 cable that comes with the mount to connect the mount to the PC. Plug one end of the cable into the RS232 port on the mount main board and the other end of the cable into the serial port of a PC/Laptop or USB to RS232 converter.

(2) ZEQ25

Use included black RS232-RJ9 serial cable to connect the mount. Plug the RS232 end into the serial port of a PC/Laptop or USB to RS232 converter. Plug the 4-pin RJ9 end into 8408 hand controller serial port.

(3) SmartEQ/SmartEQ Pro

An iOptron RS232-RJ9 cable (#8412) is needed for the SmartEQ/SmartEQ Pro mount. Plug the RS232 end into the serial port of a PC/Laptop or USB to RS232 converter. Plug the 4-pin RJ9 end into 8408 hand controller serial port.

2. Connect a USB Mount to a Computer

iOptron's USB mount has a built-in USB to RS232 converter in the hand controller. The hand controller can be directly plugged into a computer USB port to establish the connection, after a VCP driver being installed.

Go2Nova 8401 hand controller uses CP2102 chipset from Silicon Labs. You can download and install the latest CP210x VCP drivers from Silicon Labs website

<https://www.silabs.com/products/mcu/Pages/USBtoUARTBridgeVCPDrivers.aspx>

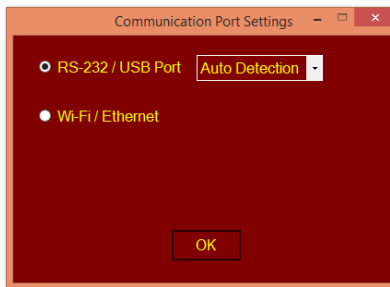
Plug one end of the included USB cable into one of the available USB port on a PC/Laptop, and the other end into the USB port on the 8401 hand controller.

Establish the ASCOM connection

As a general instruction, freeware planetarium software, *Cartes du Ciel*, is used as an example. Please refer to you own software manual for detailed operation.

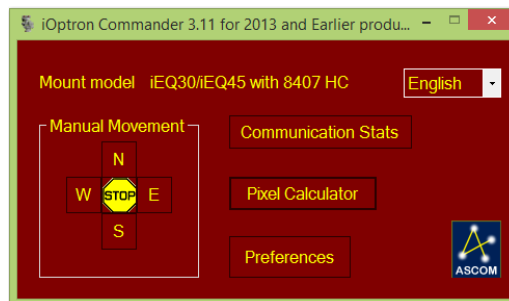


1. Launch iOptron Commander 2013 from computer desktop. A connection screen will displayed.



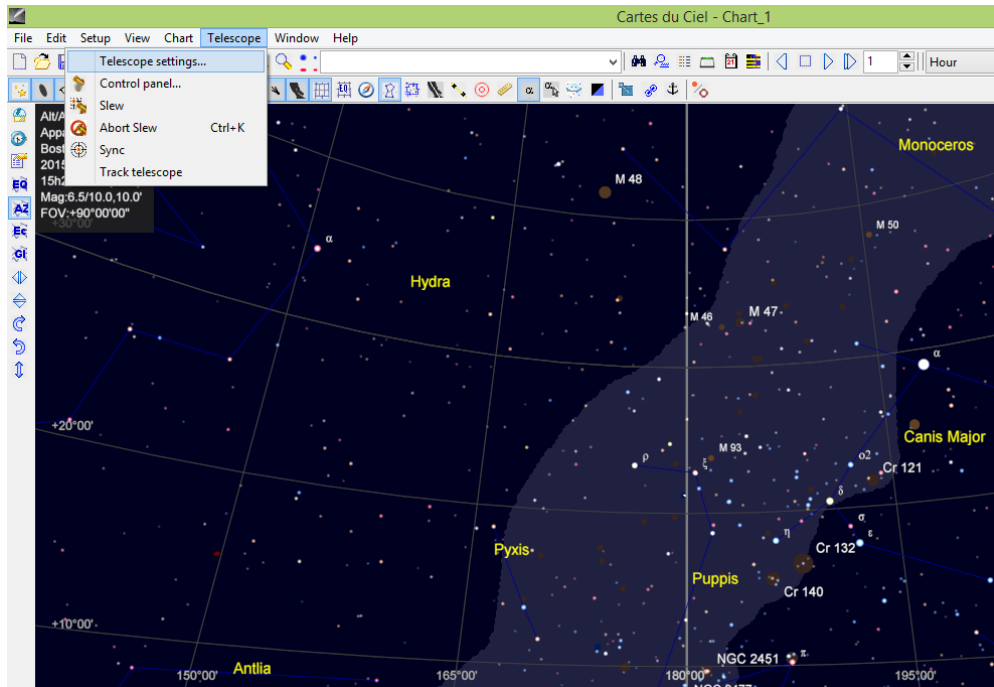
2. Select connection via RS232/USB Port, and choose Auto Detection. The iOptron Commander will automatic scan the system COM port and make the connection when click on OK button. If you know the assigned COM port, such as the native serial port will be COM1, you also can use the pull-down menu to select the COM port.

If there is a mount connected to the computer, the iOptron Commander will displayed with mount identification. Here is a iEQ30/iEQ45 w/ 8407 HC.

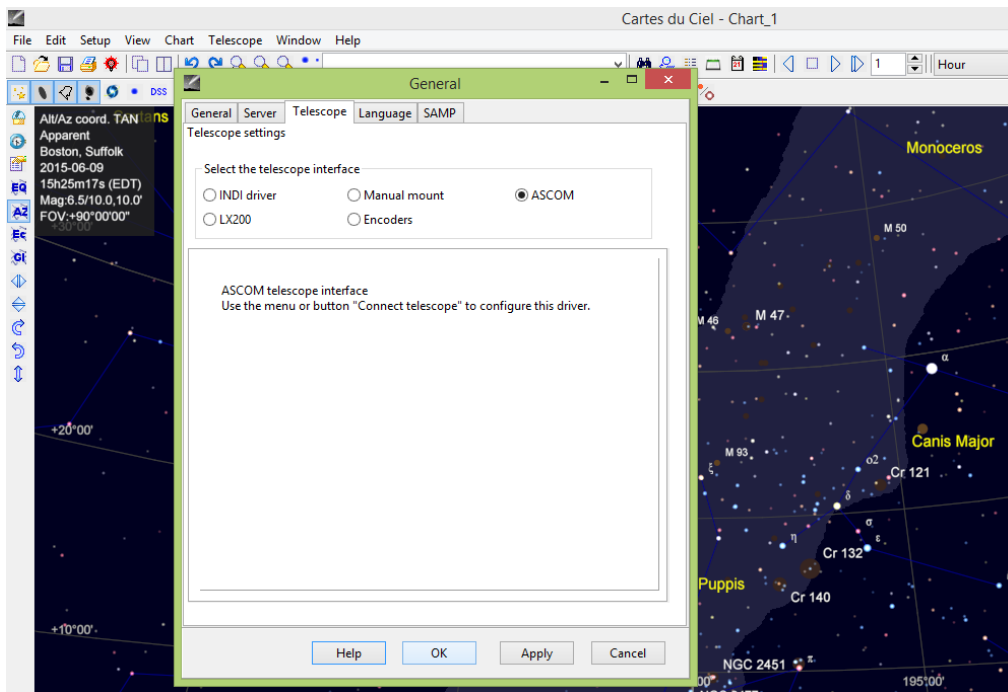


You may move the mouse to N,S,E,W and press the mouse to slew the mount.

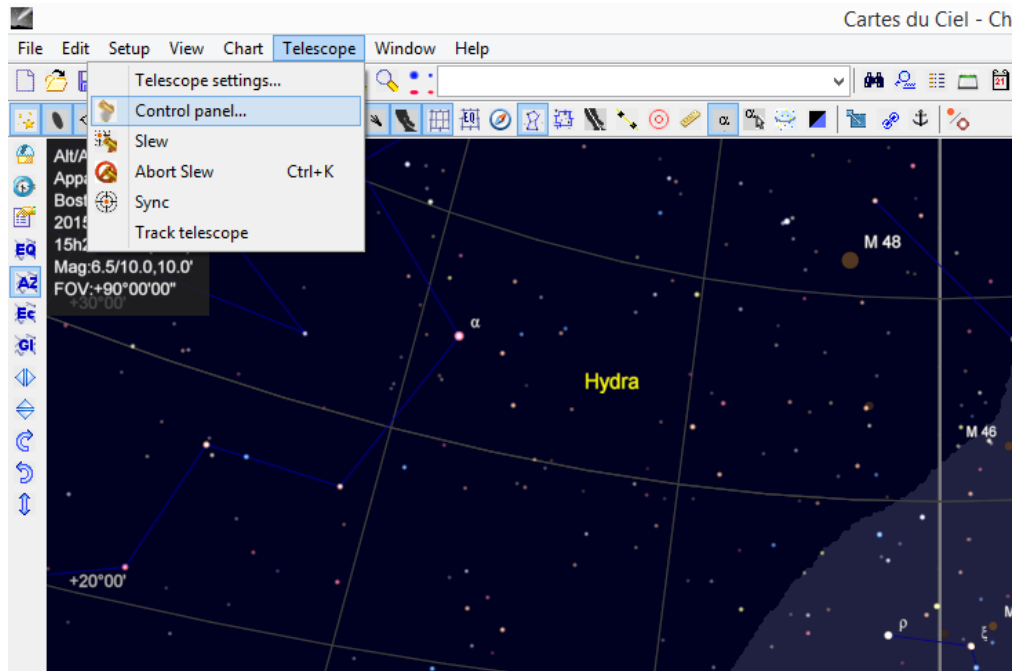
3. Open *Cartes du Ciel*. Select **Telescope settings** in **Telescope** pull-down manual.



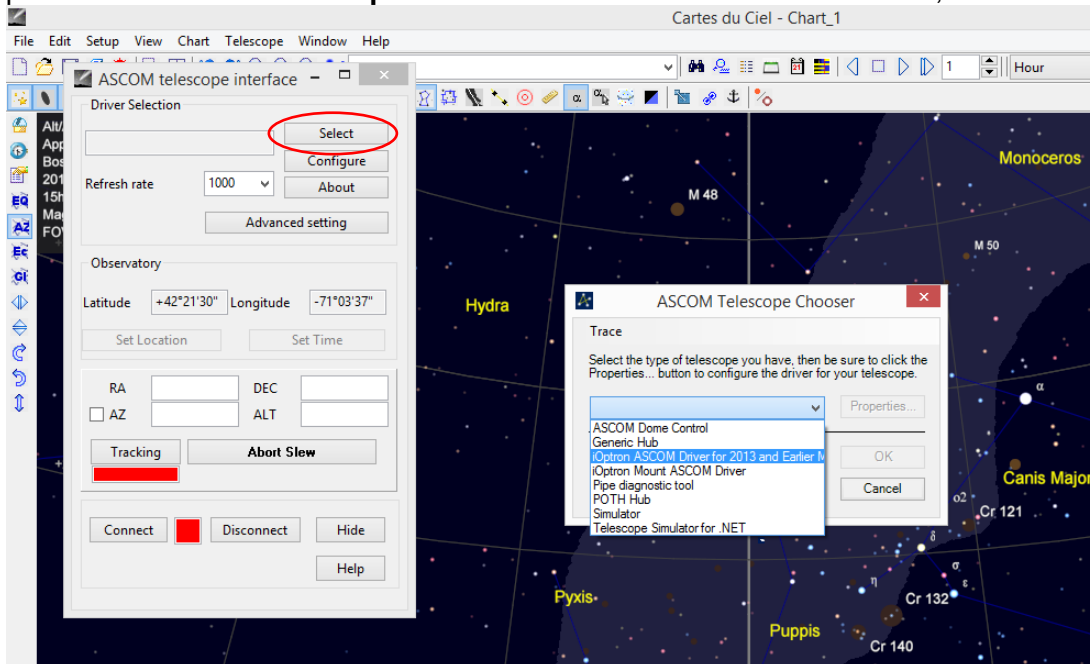
4. Select **ASCOM** as the telescope interface and click **OK**.



5. Select **Control panel** in **Telescope** pull-down manual.



6. Click on **Select** button, an **ASCOM Telescope Chooser** window will pop-up. Click on the pull-down menu to select **iOptron ASCOM Driver for 2013 and Earlier**, then click **OK**.



- Click **Connect** button. The **RED** status square will change to **GREEN**. Now you are ready to GOTO and tracking.

