Shoestring Astronomy

BT2EQ5/BT2EQ6
Interface Module
User Manual
Model EQDIR

Revision 1.0
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Introduction

The latest generations of Synta EQ-5 and EQ-6 mounts (such as the Orion Sirius EQ-G and Orion Atlas EQ-G) show great performance as stable, quality GOTO mounts at affordable prices for observing and imaging. However, the features available when they are interfaced to a personal computer are somewhat limited, primarily due to the type of data that is available through the handcontroller's serial interface. Now, thanks to the efforts of several individuals, far more powerful features are made available by bypassing the handcontroller and communicating directly with the mount's stepper motor controller. More information on the EQ Direct method can be found in the Yahoo EQMOD Group (http://tech.groups.yahoo.com/group/EQMOD/) or on the EQ Mod website (http://eq-mod.sourceforge.net).

Shoestring Astronomy provides a line of products designed to provide the electrical link PC to your EQ mount and allow you to unlock the power of the EQMOD software.

- EQDIR for standard serial ports

- USB2EQ5 and USB2EQ6 for USB ports

- BT2EQ5 and BT2EQ6 for wireless Bluetooth connectivity

Features

- Receives its power from the EQ mount, so no battery or external power source is required.
- Small, convenient package
- Wireless Bluetooth connectivity
- Easy installation

Device Installation

Before installing the BT2EQ5 or BT2EQ6, make sure the power is disconnected from the mount or the power switch is off. Simply plug the device into the port on the mount where the handcontroller normally attaches.

Turn the power on to the mount. The LED on the BT2EQ device should start to blink.

Establishing the Bluetooth Connection

Your computer will need either built-in Bluetooth capability or an inexpensive USB-to-Bluetooth adapter installed.

Windows XP:
1) "Control Panel", then "Bluetooth Devices"
2) Click "Add…", then check the box by "My device is set up and ready to be found", then click "Next"
3) A device called "linvor" or "HC-06" should appear. Click it, then click "Next"
4) Select "Use the passkey found in the documentation", then enter "1234" into the box, then click "Next"
5) Note the COM port number for the "Outgoing COM port" in the final screen of the Add Bluetooth Device Wizard, then click "Finish", then click "OK". This COM port number must be between 1 and 7. If it is not, then change the COM port number as follows:
6) "Control Panel", then "System", then "Hardware" tab, then "Device Manager"
7) Expand the "Ports (COM & LPT)" list to show all COM ports.
8) Right-click on the COM port shown in step 7 above, the select "Properties"
9) "Port Settings" tab, then "Advanced"
10) Change the "COM Port Number" here to something between 1 and 7. If you have done installs before and then removed a device, that COM port may show up as "In Use". If you are sure that COM port is no longer in use by another device, you can choose it safely and ignore any warnings.

Windows 7:
1) "Control Panel", then "Add a Device"
2) A device called "linvor" or "HC-06" should appear in the list of devices found. Select this device, then click "Next"

3) Click "Enter the device's pairing code", then type "1234" in the box and click "Next"
4) Click "Close"
5) Now find the device's COM port number as follows:
6) "Control Panel", then "View devices and printers"
7) Double-click the "linvor" or "HC-06" device, then click on the "Services" tab. The COM port number is shown on this tab. This number must be between 1 and 7. If it is not, then change the COM port number as follows:
8) "Control Panel", then ""Hardware and Sound", then "Device Manager"
9) Expand the "Ports (COM & LPT)" list to show all COM ports.
10) Right-click on the COM port shown in step 7 above, the select "Properties"
11) "Port Settings" tab, then "Advanced"
12) Change the "COM Port Number" here to something between 1 and 7. If you have done installs before and then removed a device, that COM port may show up as "In Use". If you are sure that COM port is no longer in use by another device, you can choose it safely and ignore any warnings.

Windows 8:
The BT2EQ5 and BT2EQ6 should work with Windows 8 but we at Shoestring Astronomy have not yet had access to Windows 8 to develop the instructions.

Operation Verification

Once you have completed the initial installation, you may want to verify that the Bluetooth connection is working properly. To do this, you should download and install EQDIRCheck from the Shoestring Astronomy website and follow the EQDIRCheck instructions below. Even though you will be using third-party software to operate your mount through the BT2EQ device, this step will help you verify that everything is working properly. Should you have trouble getting your third-party software to work, using EQDIRCheck will allow you to troubleshoot your setup. In other words, if everything works with EQDIRCheck, then your problem most likely is with your third-party software or some other aspect of your setup.

Using EQDIRCheck Software

Download and install EQDIRCheck software from the Shoestring Astronomy website. Connect your computer to your mount via one of the methods outlined in the Device Installation section above, then turn on your mount.

Now start the EQDIRCheck software. Notice that initially at the bottom of the window it says Mount = N/A. There are four combo boxes that allow you to select the Com port, the baud rate, the timeout interval and the number of retries. These should be set to the same values that are used to configure your Com port.

Now click the Connect button. The text at the bottom should now say Mount = xxxx where xxxx is some number. If it say anything else, or if a message box pops up, then the PC is not communicating properly with the mount. All EQDIRCheck does is open a communications channel to the mount and ask it what revision the mount is, but this is enough to assure that PC and mount are talking to each other.

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