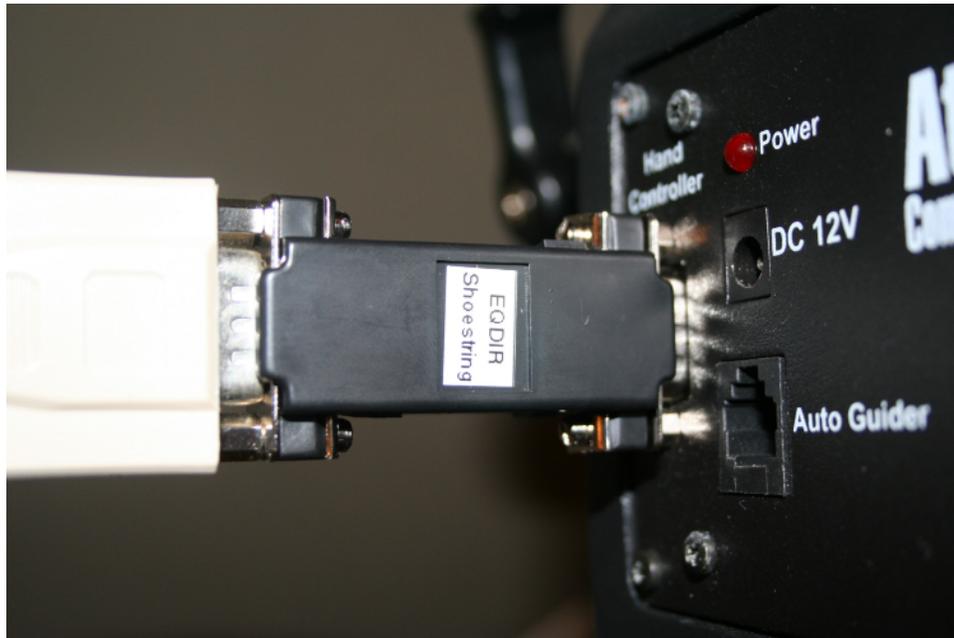


Shoestring Astronomy

# EQDIR Interface Module User Manual Model EQDIR

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## Introduction

The latest generation 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>).

The only drawback of the EQ Direct approach is that the input to the mount is not directly compatible with the serial port signals that come out of a personal computer. The EQDIR Interface Module serves as a voltage level translator to bridge the electrical gap between the two.

## Features

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

## Device Installation

Before installing the EQDIR, make sure the power is disconnected from the mount or the power switch is off.

### For EQ-6:

The EQDIR is very easy to install. With the EQ-6 mount, there are three ways it can be used.

- 1) The male connector end of the EQDIR can be plugged directly into the DB-9 handcontroller port on the mount. A serial cable is then connected the female end of the EQDIR and run back to your PC or USB-to-serial adapter.
- 2) A serial extension cable can be attached to the DB-9 handcontroller port on the mount, then the male end of the EQDIR can be plugged into the end of this cable. A second serial extension cable is connected to the female end of the EQDIR and run back to your PC or USB-to-serial adapter.
- 3) The female end of the EQDIR can be connected directly to your PC or USB-to-serial connector, then a serial cable run from the male end of the EQDIR to the DB-9 handcontroller port on the mount.

Depending upon the configuration you choose, you may need to remove and/or relocate the threaded nuts on the EQDIR.

### For EQ-5:

With the EQ-5 mount, there are two ways it can be used, but both require the EQCBL-01 adapter cable that is available from Shoestring Astronomy.

- 1) A serial extension cable can be attached to your PC or USB-to-serial adapter, then the female end of the EQDIR is connected to the end of this cable. The EQCBL-01 adapter cable is then plugged into the male end of the EQDIR and run to the RJ-45 handcontroller port on the mount.
- 2) The female end of the EQDIR can be connected directly to your PC or USB-to-serial adapter, then the EQCBL-01 adapter cable is connected to the male end of the EQDIR and run to the RJ-45 handcontroller port on the mount.

Depending upon the configuration you choose, you may need to remove and/or relocate the threaded nuts on the EQDIR.

## Operation Verification

Once you have completed the initial installation, you may want to verify that the EQDIR 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 EQDIR, 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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