USB Guider
User Manual

Contents

Congratulations on your purchase of the 'Hitecastro' USB Guider. We hope your device will provide for many years of happy autoguiding. The USB Guider is a premium quality interface between your ST4 compatible telescope mount and your computer. Although no driver is required to connect the device to your computer we provide a driver which enables you to use your USB Guider with any software which uses the ascom standard.

Warranty

Hitecastro warrants that this product will be free from defects for a period of 12 months following purchase. This warranty is in addition to any statutory rights which may exist in your jurisdiction. This warranty only applies to use as described in this document and also for use as a telescope autoguiding controller. No other use is recommended or supported by Hitecastro. Any user repair attempt other than described in the troubleshooting section of this document or directed by Hitecastro will invalidate your warranty. Hitecastro and its affiliates disclaim any responsibility for any consequential damage or injury which may result from use of this device except as described in this document. Should your product fail within the first year of ownership we will repair/replace the unit at no cost to you.

Connecting the device

Connect a high quality USB cable to the USB port on the device and connect the other end to a free USB port on your computer. You may use any USB 2.0 port. USB Guider is also backwardly compatible with the USB 1.1 standard. No matter which version of windows you use, the USB guider should be recognised as a 'HID device' without any further input from you. Now connect the provided ST4 autoguiding cable to the device and connect the other end to the ST4 compatible autoguiding port on your telescope mount.

Installing the ASCOM driver

VERY IMPORTANT

Before installing our ascom driver ensure that you have already installed the latest version of the ASCOM platform from http://www.ascom-standards.org

At the time of writing this is version 5.5

Before installing the ascom driver check our website to ensure that the version provided on disk is the very latest. You can download updated drivers directly from our support area.
Double click on the setup file to begin installation. We recommend you accept the default installation defaults. Once complete the driver will be ready to use.

Using the ASCOM Driver.

We cannot go into specifics about the nuances of each individual piece of ASCOM compliant software. For the purposes of this document we will look at connecting the device using the freely available PHD guiding. If you do not have this software we recommend you download a copy from http://www.stark-labs.com.

Once PHD-Guiding is installed and started, select ASCOM from the 'Mount' option on the menu bar
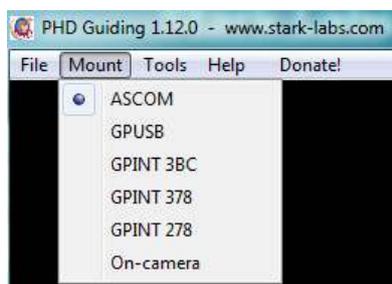
Now choose the telescope icon from the available icons at the bottom of the screen. You should be presented with the 'ASCOM Telescope Chooser'

From this point, no matter what software you use the procedure is the same
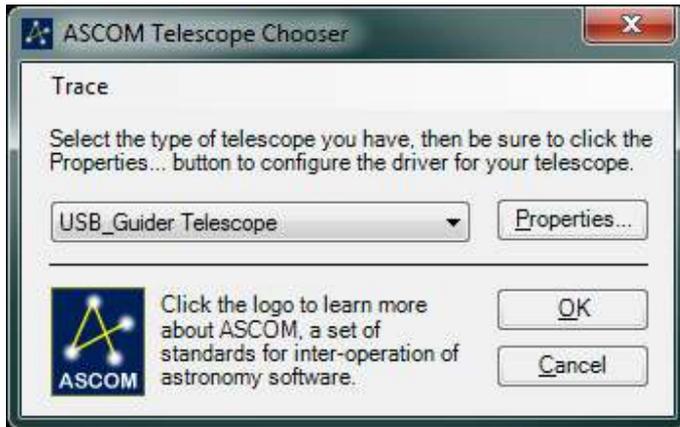
From the available list of telescopes in the drop-down box, choose 'USB_Guider Telescope'. You can set up various parameters relating to your USB Guider by choosing the 'Properties' button. If you are new to autoguiding, we recommend you leave the properties section alone until you are more familiar with what the various options do. However we will now explain the various features presented here.
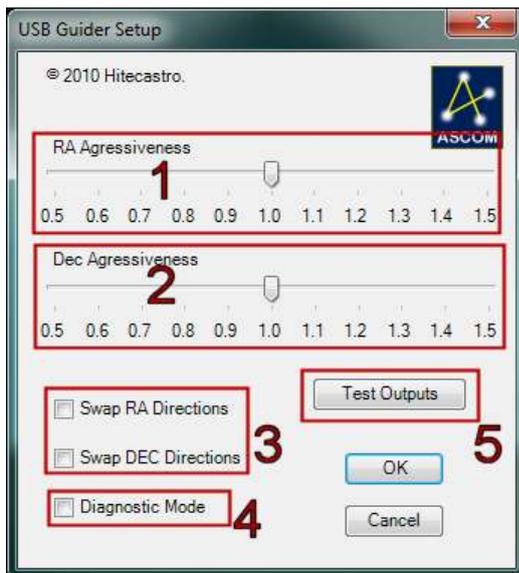
1 and 2 – RA and DEC aggressiveness settings.

Most software provides an 'aggressiveness' setting which you can control. Your USB Guider provides an extra setting in the driver for this. This is completely independent of your software and generally should not be used. However imagine a scenario where you are using a low quality mount and even with your guiding software aggressiveness setting is up full but this is still not enough to correct the guiding errors. Using the sliders in the driver setup you can give the guide commands extra length which will help in this case. For example if you set the RA aggressiveness to 1.5, the duration which the computer sends to the guider is multiplied by that amount. So if your software tells the USB guider to issue a guide pulse East for 1 second, the USB guider will actually tell your mount to move for 1.5 seconds. If your guiding is working well you should always leave these sliders at 1.0

3 Swap Directions.

This causes commands received from the computer to be executed on the opposite direction for the axis chosen. e.g. if you check the Reverse RA box and the computer sends a command to guide West, the unit will actually guide East. Most users will not need this setting and generally it should be left unchecked.

4 Diagnostic Mode

If you check this box a new window will open when you connect to the unit. This will give you textual information on guiding commands received and acted on by the unit. Please keep in mind just because the USB guider has acted on a command and directed your mount to move there is no guarantee that your mount actually carried out this command. Ensuring that your mount actually carries out instructions sent to it via the guide port is your responsibility and is of course the main aim of successful autoguiding.

5 Test Outputs Button

Clicking this button will do two things.

1. It will verify that the USB Guider is communicating with your computer.
2. It will pulse all for directions for a very short period < 1 second. This can help you verify that your mount is responding to commands.

> To tell that your mount is actually moving, turn the backlash settings to a high value. You will hear your mount click as the directions reverse. Remember to set the backlash settings back to their original values when you are done testing.

Once you have adjusted the settings to your liking click OK on the properties window. Depending on the software you use you may have to click a 'Connect' button or perhaps the software will attempt to autoconnect.

Troubleshooting

Q: My USB Guider does not connect to my computer

A: Ensure that your version of windows has all the latest updates and service packs. Please note any error message you are given and contact support (support@hitecastro.co.uk)

Q: My device connects but does not move my mount.

Firstly the amount a guiding command will move your mount by is so small you will generally not notice it. However if you are certain that the USB guider is not moving your mount then check the following;

Ensure your ST4 compatible cable is seated correctly into your mount and also into the USB guider. Check for any obvious breaks in the cabling (paying particular attention to the plugs at both ends. Check with your mount retailer/manufacturer that your guide port supports the ST4 standard.

Ensure that the software you are using has connected correctly to the ASCOM driver.

We cannot support general autoguiding queries, we recommend that you join some of the many yahoo groups dedicated to autoguiding and the various software packages which carry out that function. There you will find many helpful astronomers including some of the Hitecastro staff who will be more than happy to help you with your autoguiding queries.

If the above does not solve your problem first check our support area on our website http://www.hitecastro.co.uk We will add knowledge base articles as they arise. Failing that please contact us by e-mailing

support@hitecastro.co.uk

or by contacting your retailer.