

DEEP SKY DAD FR1 MANUAL



Framing manually can be cumbersome, time consuming and inaccurate. That's why we decided to create Deep Sky Dad field rotator. Development was quite lengthy with many stages of testing different approaches. Our top priority was preventing any tilt and still trying to make it as affordable as possible.

And now, it is finally finished! We have used innovative hybrid combination of precise milled parts and 3D printed circuit enclosure.

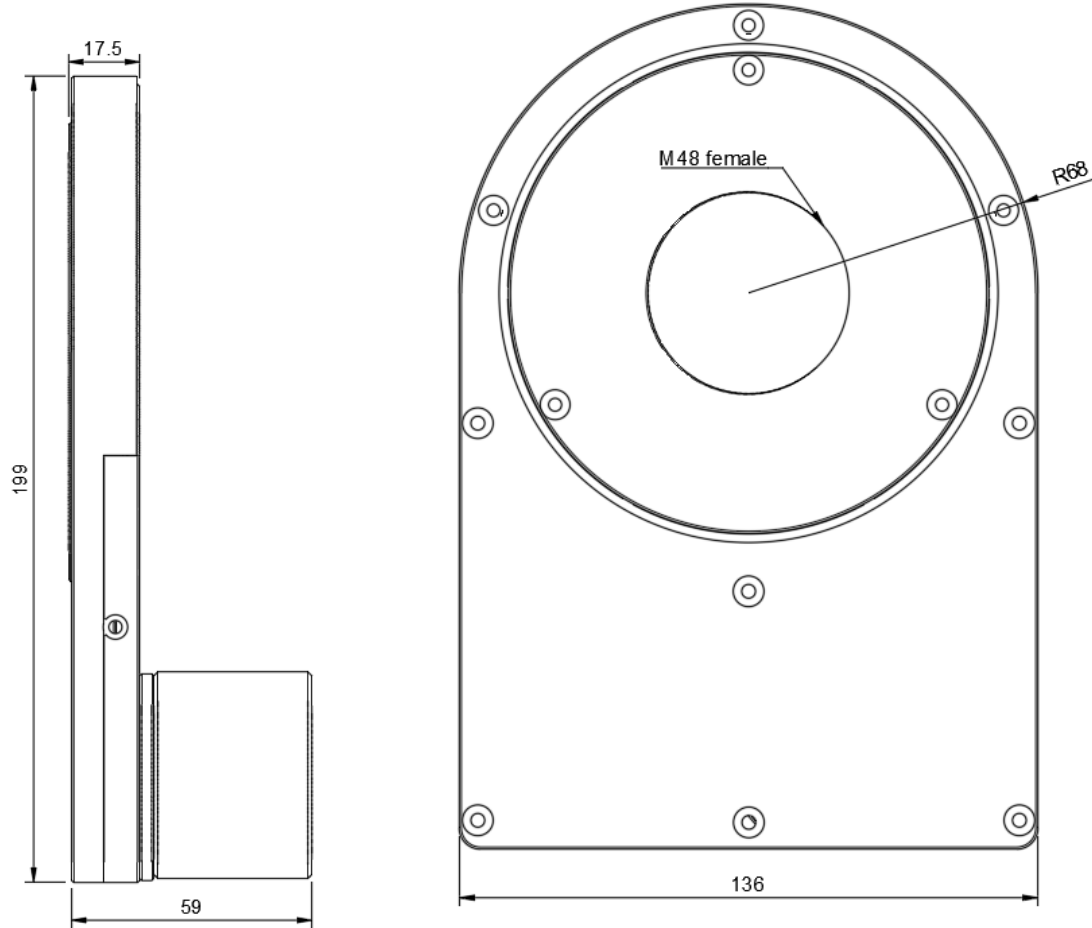
Intro

Deep Sky Dad Field Rotator enables framing automation. This way you can fit the target optimally within your sensor size.

Features

- ASCOM supported
- INDI supported
- thickness: 17.5mm
- weight: 750g
- maximum payload: 8kg
- M48 x 0.75 female thread (on both sides)
- optional: hand controller
- optional: M48 female to M48 male adapter
- power adapter NOT included
- Power requirements: 12V 3A (**not included**)
- PC connectivity: micro USB cable (**included**)

Dimensions



Installation

M48 x 0.75mm thread is available on each side. Orientate rotator with motor towards the telescope/focuser. Attach the camera on the side **without** the motor.

FAQ

Basics

What kind of power adapter can I use?

We recommend 12V DC power adapter, as the units are fine tuned to this specific voltage. However, autofocuser will work up to 14V. Socket specification: tip positive, 5.5mm x 2.1mm. Should you not have 12V adapter at hand, the units also work in range from 12V-14V without issues. Current output of the power adapter should be about 1A, but can be more (it will not damage the flap).

When I connect the rotator to computer, Windows does not recognize it. What can I do?

If you are using Windows 10, the driver will self install. If you are using Windows 7, please install [32](#) or [64](#) bit driver. Should you experience any problems with detection (COM port not visible, no USB device connected chime), try:

- different USB cable
- direct connection (without USB hub)
- using USB 2.0 port (instead of 3.0)

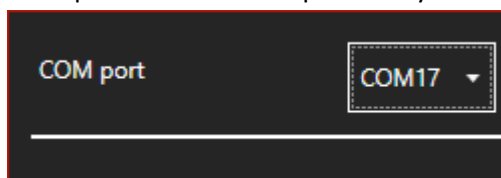
How can I upgrade the firmware?

Firmware upgrade is a simple yet delicate procedure. That is why I have put together simple and straightforward step-by-step instructions for installing the latest firmware.

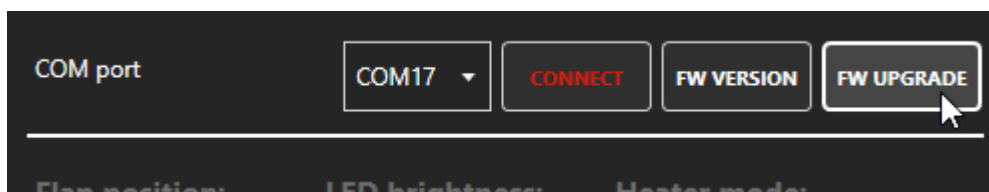
disclaimer

Please follow upgrade instructions very carefully. Deviating from the instructions could cause bootloader issues or in worse case unresponsive unit, for which we are not responsible.

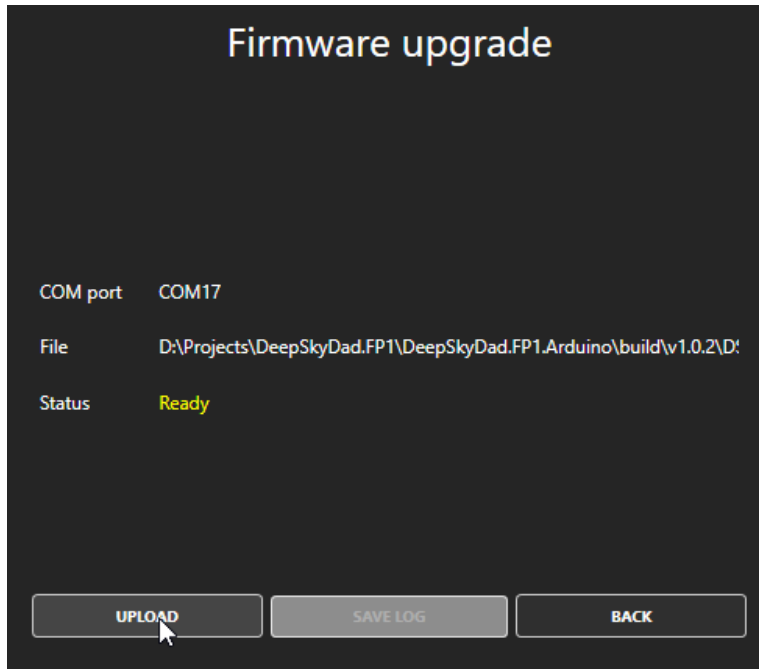
1. Connect the unit directly to computer (do not use USB hub). In device manager check which COM port was assigned to it and write it down. If unit is not recognized, check FAQ above for details
2. Download the latest firmware [from our website](#).
3. Download and unzip FR1 Control Panel from [our website](#)
4. Start control panel as administrator and enter following settings
 - a. COM port – choose com port that you have written down



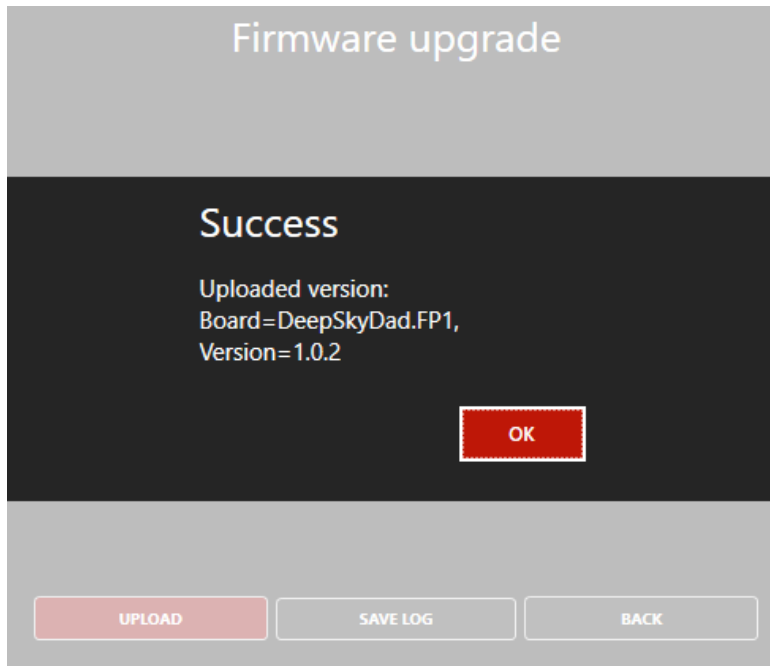
- b. Click »FW UPGRADE« and select .dsd file



- c. Click upload and the process will begin



- d. After upload is finished, you will get a confirmation popup



5. If the upload should fail, you will get the error message popup. For example, should you still be connected to the unit in some other program and tried to upload the firmware, you will get »Access is denied«. If you get timeout error, try replugging power and retry the upgrade process.

Remote control

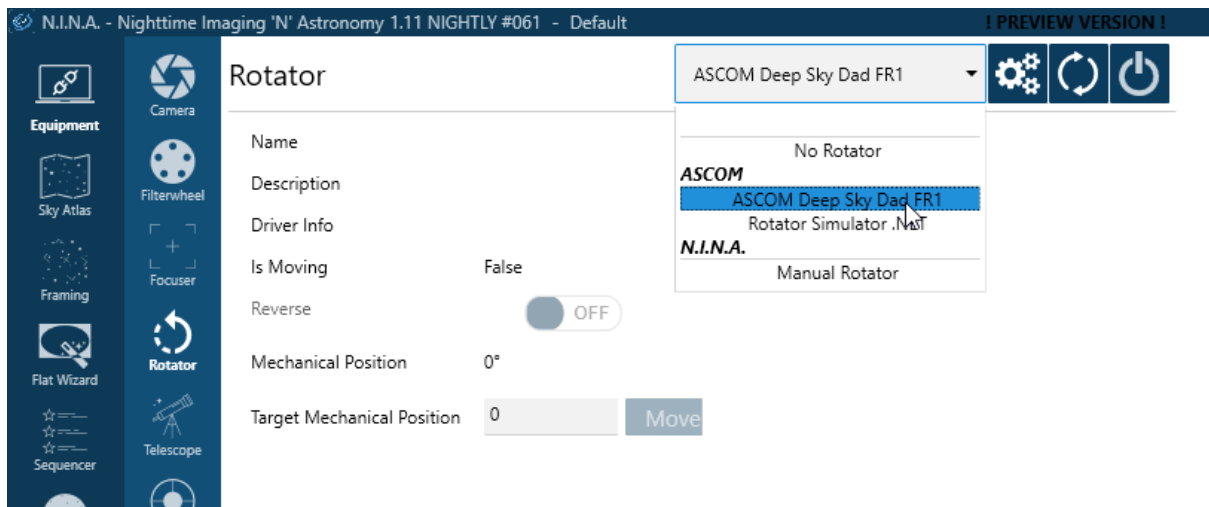
Remote operation is supported via Micro USB cable or hand controller. Below is a description of current control methods (more will be available in the future)

ASCOM (Windows)

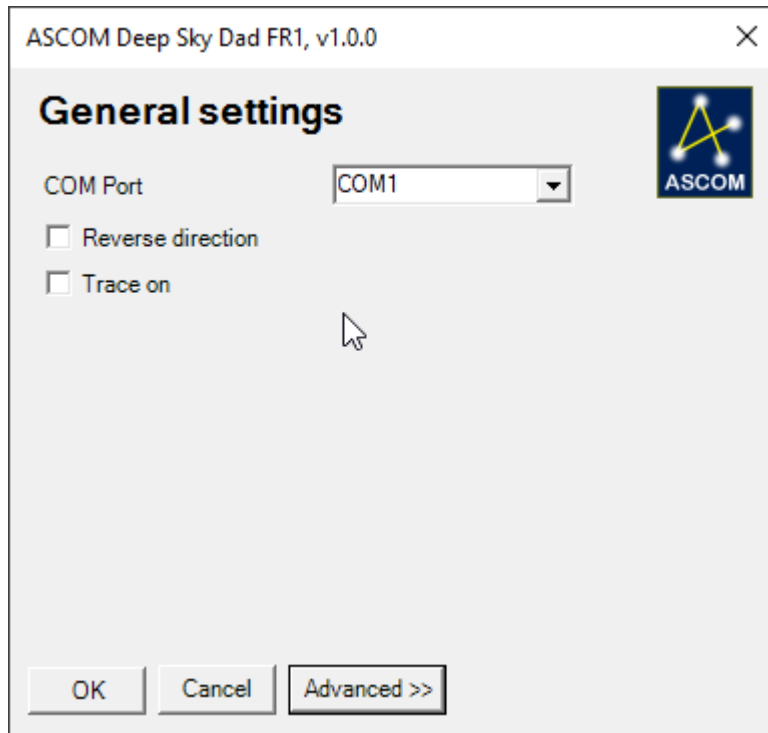
In Windows, we recommend you to use ASCOM Field Rotator driver for control. This way, you can automate our flap in any of the popular astronomy softwares (N.I.N.A, APT, SGPro, Voyager,...). We will use N.I.N.A. for a short demonstration below.

Basic usage

1. Download, unzip and install latest version of ASCOM driver from our website
2. Open N.I.N.A, navigate to *Equipment -> Flat Panel*
3. Select *ASCOM Driver for DeepSkyDad.FR1*



4. Open ASCOM settings and select correct COM port



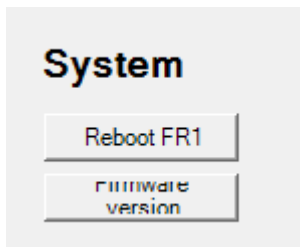
5. Click OK and connect to the flap

6. And you are ready to automate your framing!



System controls

1. Open ASCOM settings, click Advanced
2. On the right side you have 2 sections. Heater and System. We are currently interested in System, which contains 4 buttons:
 - a. Reboot FR1 – resets the unit
 - b. Firmware version – currently installed firmware version (in case you have ASCOM connectivity issues, click this button)

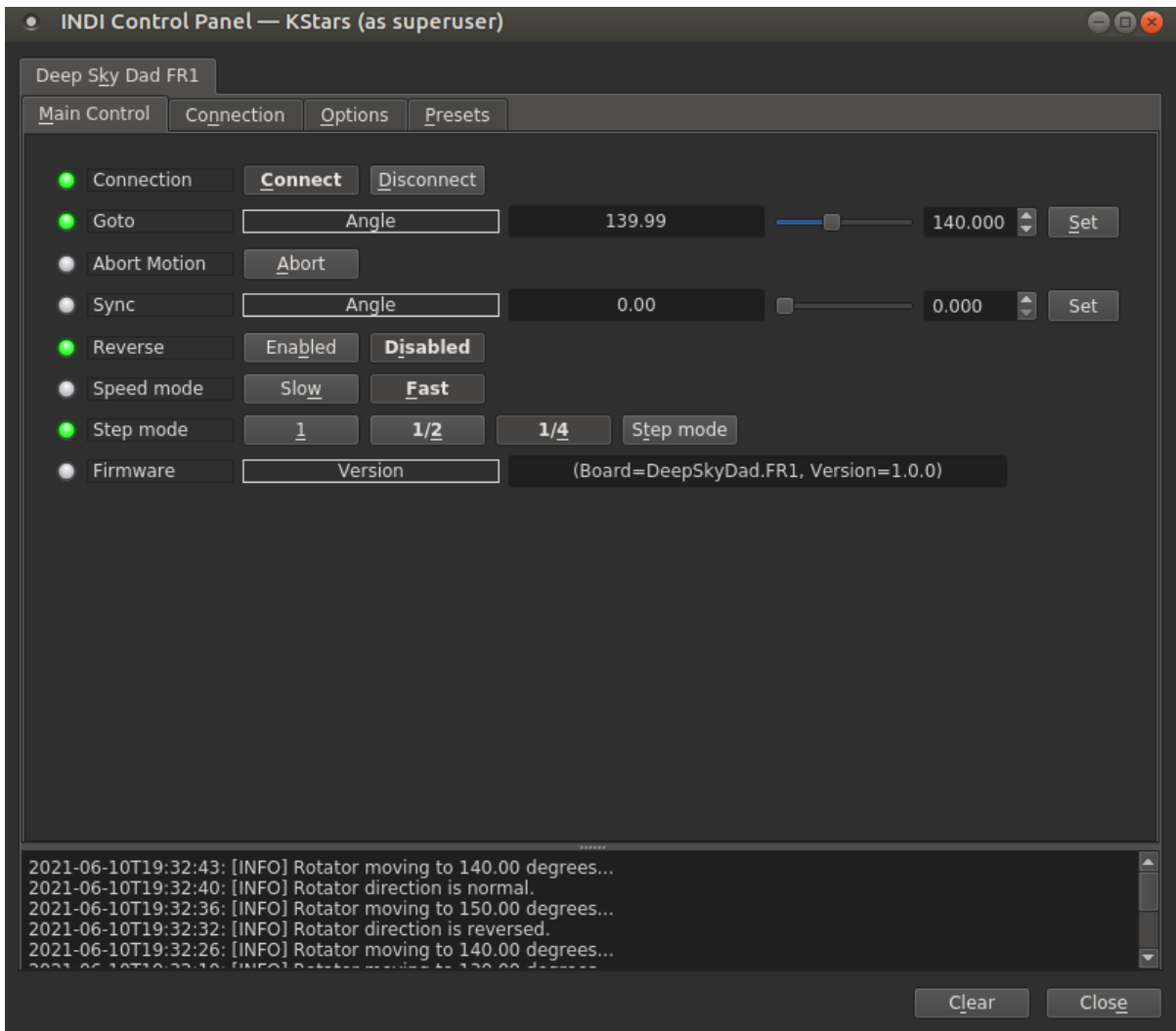


INDI (Linux)

In Linux, you can control our flap panel with Deep Sky Dad FR1 INDI driver.

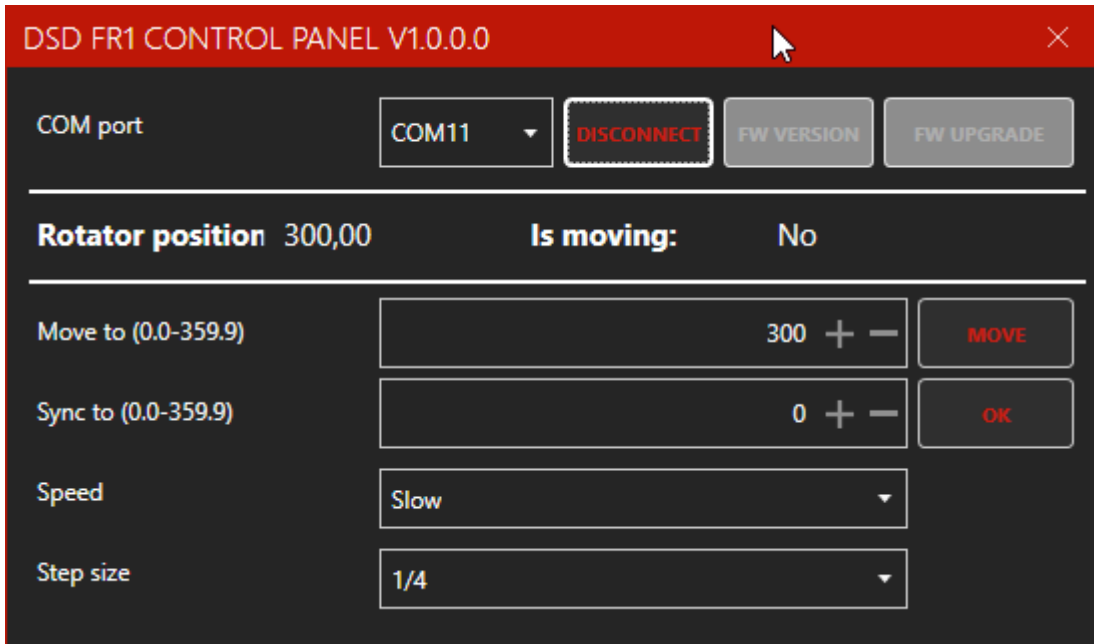
Basic usage

Select correct ttyUSB device (e.g. ttyUSB0) and click connect. Below is print screen of main tab after rotator is connected:



FR1 Control Panel (Windows)

If you wish to control our panel without 3rd party software, you can do so in Deep Sky Dad FR1 Control panel:



Control the angle, sync to desired position and select speed & step size (this affects maximum payload – heavier cameras might require slower speeds).

Manual control

Manual operation is possible via optional hand controller.

- + button rotates it clockwise (unless reversed)
- - button rotates it counter clockwise (unless reversed)

All our products have 2 years warranty. We will replace any malfunctioning units in this period free of charge. Warranty does not apply to any malfunction caused by improper usage (wrong power supply,) or physical damage to the unit.

The customer covers return shipping costs when sending back the unit for repair or replacement. If the unit was purchased via dealer, the dealer is responsible for customer service.