DEEP SKY DAD FP1 MANUAL

Making flats can be quite cumbersome, especially if you stride towards automation and simplification of the process. Our flap panel makes making flat frames with your refractor telescopes part of automated routine, without hacks like lcd screens, sky with t-shirt etc.

Intro

Deep Sky Dad Flap Panel enables automation of making flats, protecting your optics from unwanted dust when not imaging and (optionally) preventing dewing issues with built in heater. We are currently offering following variations of our flap panel:

- Apperture up to 84mm
    - WO RedCat (aperture 51mm, outer diameter 80mm)
    - Askar FRA400 (aperture 71mm, outer diameter 100mm)
- Apperture up to 134mm :
    - Askar FRA600 (apperture 108, outer diameter 148mm)
    - TS Photoline 115mm (apperture 115mm, outer diameter 141mm)
    - Vixen AX103S (apperture 103mm, outer diameter 144mm)

Features

INPUT: 12V 3A (min)

Micro USB plug (for PC control via ASCOM, INDI,...)

BUTTON FOR MANUAL CONTROL (OPEN/CLOSE, TURN LED LIGHT ON/OFF)

TEMPERATURE AND HUMIDITY SENSOR PORT (OPTIONAL)

DIMMABLE LED LIGHT

SERVO MOTOR WITH 270 DEGREES OF MOTION

BUILT IN MAGNETS, WHICH KEEP FLAP SHUT EVEN WHEN UNPOWERED

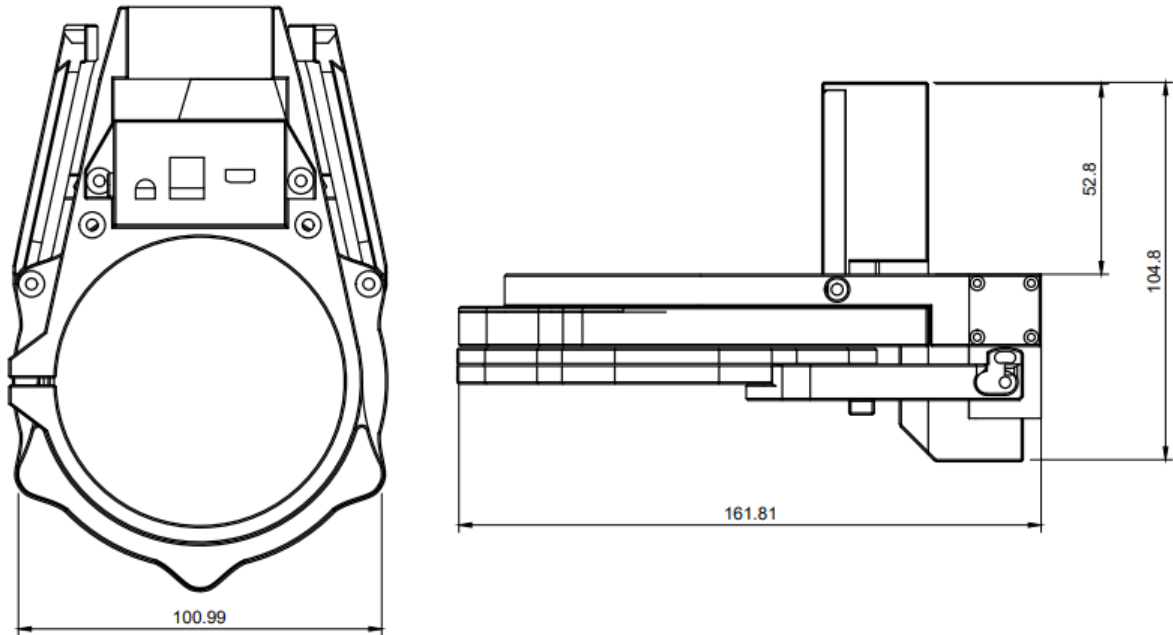BUILT IN HEATER TO PREVENT OPTICS DEWING (OPTIONAL)

- Compact, lightweight design (small flap ~300g, large flap ~400g)
- Easy installation with 1 bolt
- Dimmable LED light
- Servo motor with 270 degrees of motion
- Manual control with button
- Built in magnets, which snap the panel nice and tight when closed
- Optionally: built in heater to prevent dewing (with automatic temperature regulation)
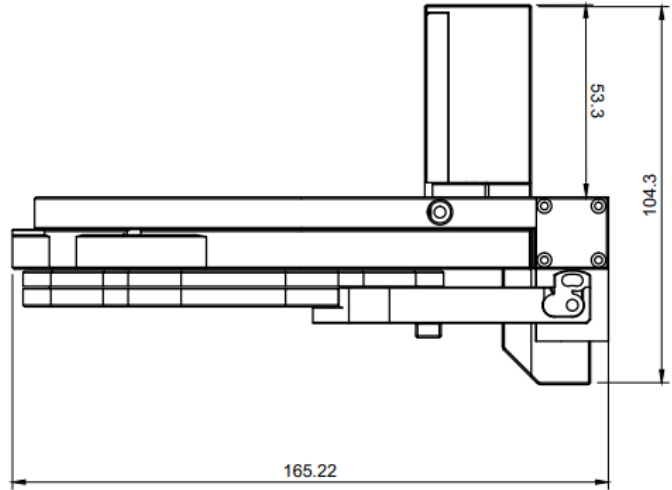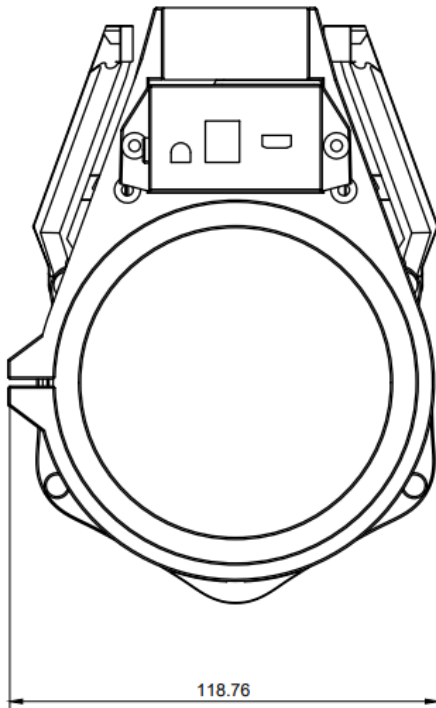
- ASCOM support
- INDI support
- Power requirements: 12V 3A (**not included**)
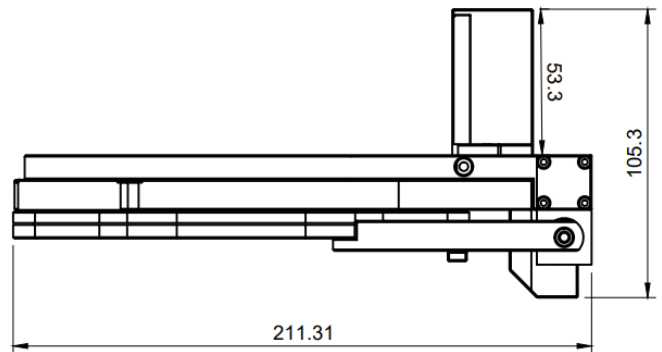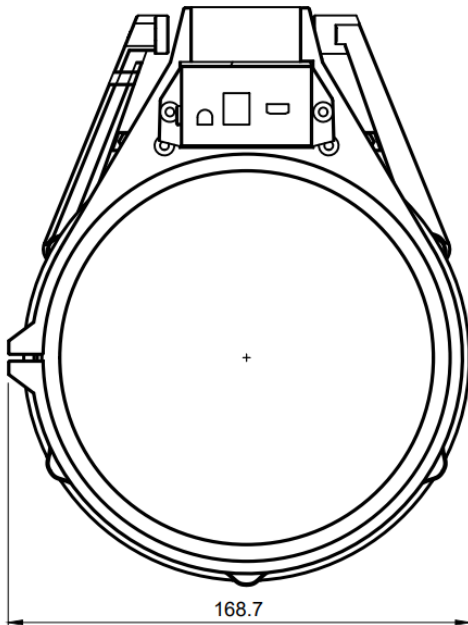- PC connectivity: micro USB cable (**not included**)

Dimensions

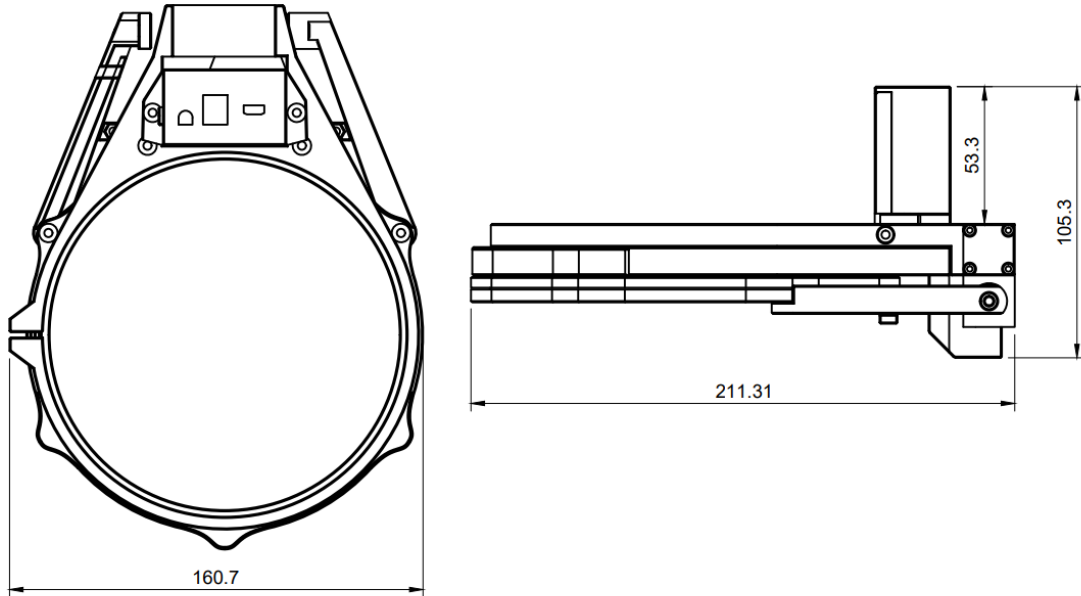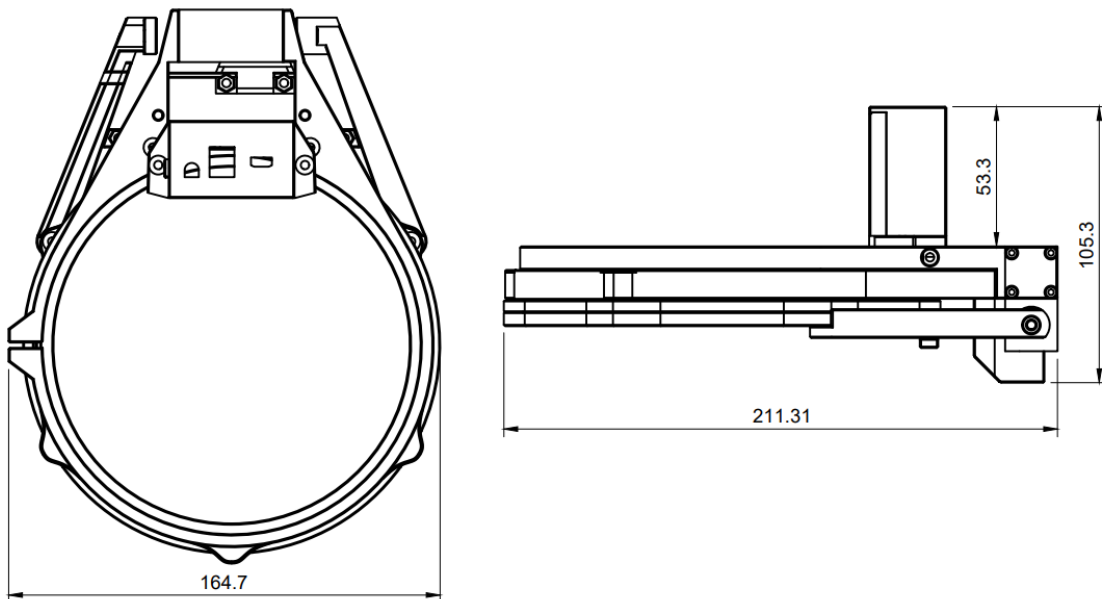### WO RedCat

Askar FRA400

53.3

104.3

165.22

118.76

Askar FRA600

53.3

105.3

211.31

168.7

TS Photoline 115mm

160.7 · 211.31 · 53.3 · 105.3

Vixen AX103S

164.7 · 211.31 · 53.3 · 105.3

Installation

Installation of the flap panel is simple. Open the panel, slide it on so that the front is in line wih the dew shield edge. Tighten M3 compression bolt gently, **do not overtighten, or plastic may crack!** After that close the panel before powering it.

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 3A, but can be more (it will not damage the flap).

When I connect the flap 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)

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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 FP1 Control Panel from our website
4. Start control panel as administrator and enter following settings
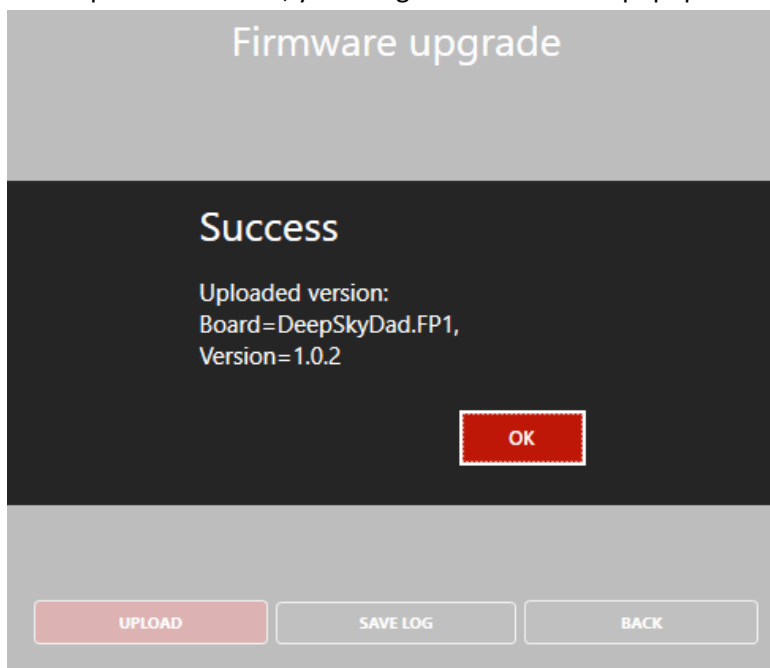   a. COM port – choose com port that you have written down
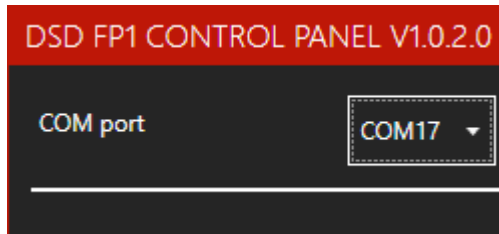
   b. Click »FW UPGRADE« and select .dsd file
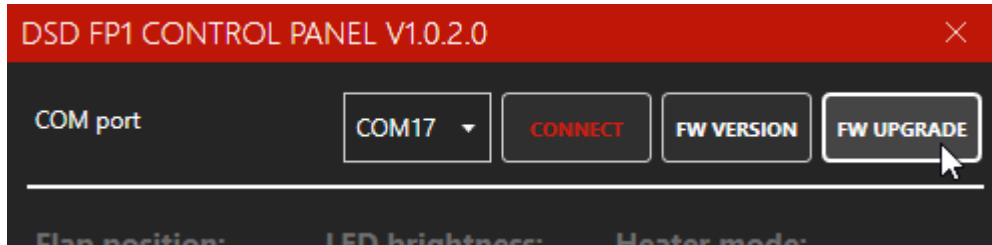
   c. Click upload and the process will begin
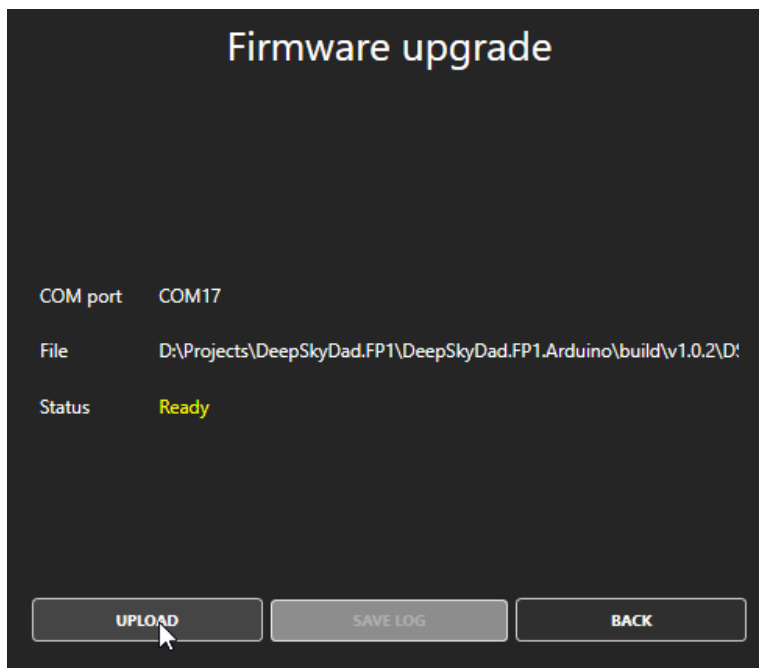
d. After upload is finished, you will get a confirmation popup

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.
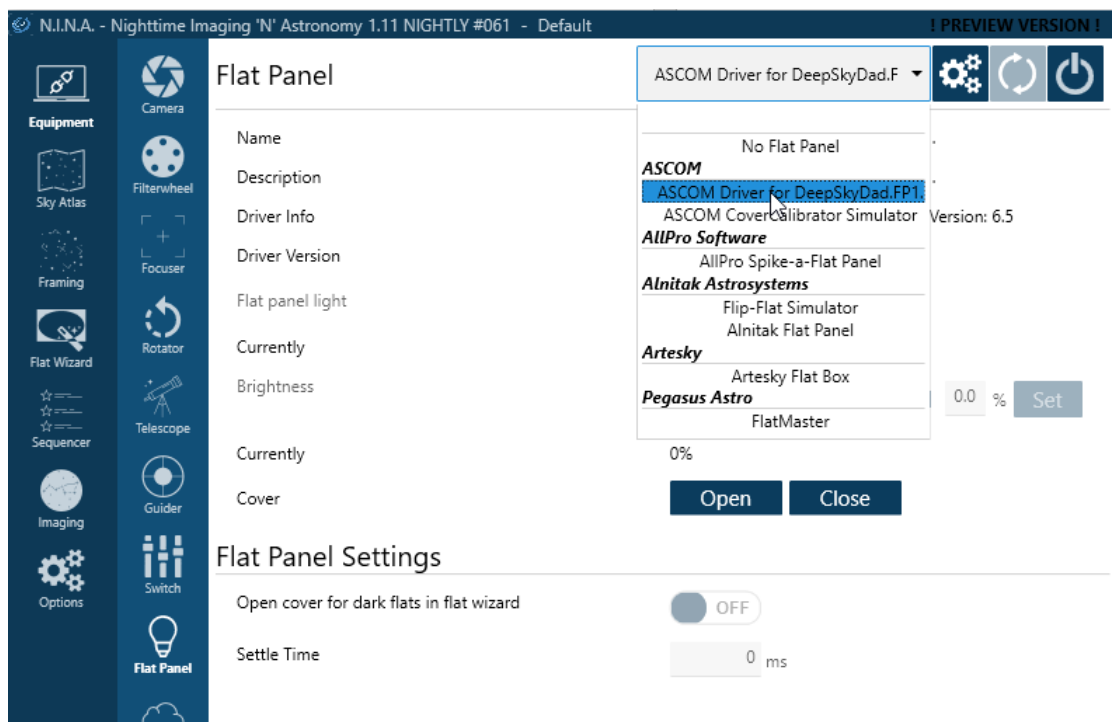
Remote control

Remote operation is supported via Micro USB cable. 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 Cover Calibrator driver for control. This requires ASCOM Platform 6.5, which introduced Cover Calibrator device. 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.
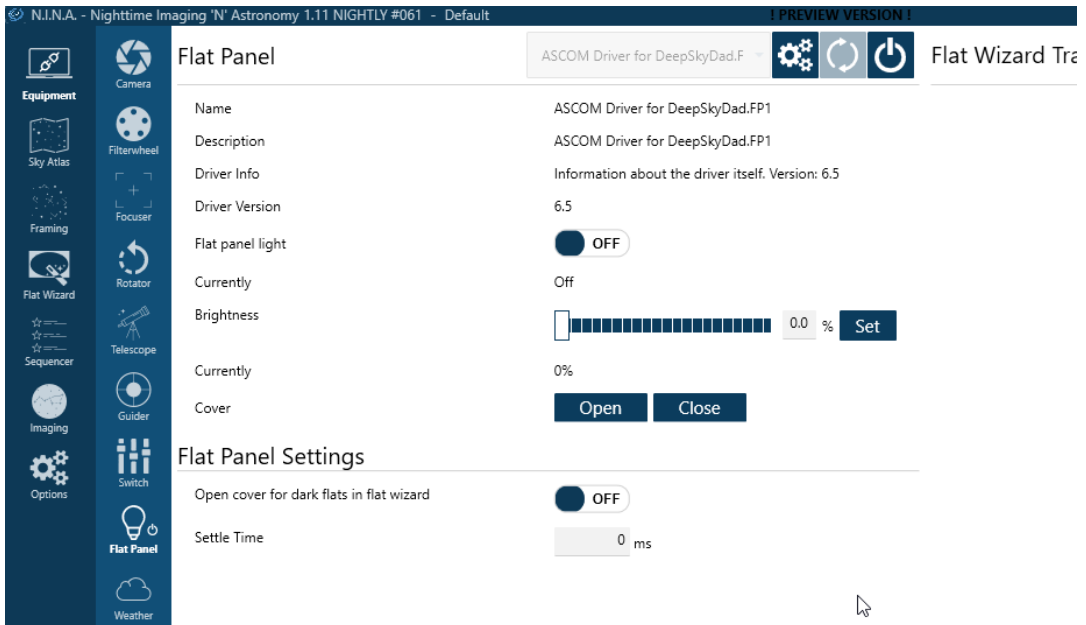
Basic usage

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.FP1*

4. Open ASCOM settings and select correct COM port

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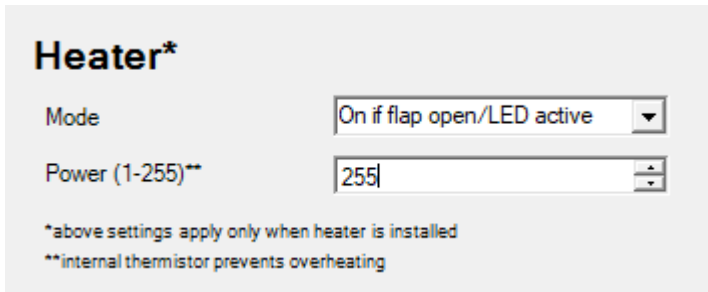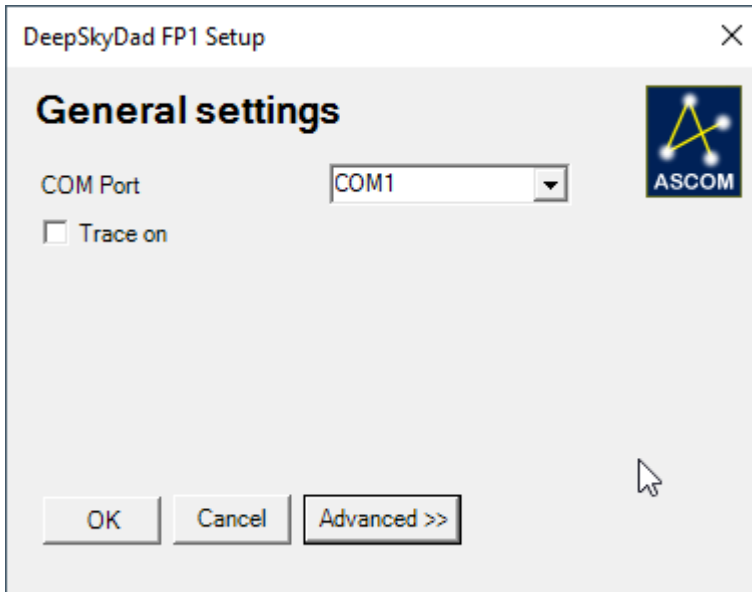
5. Click OK and connect to the flap

6. And you are ready to automate your flaps! You can open/close the panel, control LED brightness etc.

Built in heater (optional)

If you also purchased optional built in heater to prevent dewing, you can choose heating mode and power in advanced ASCOM settings

1. Open ASCOM settings, click Advanced
2. On the right side you have 2 sections. Heater and System. We are currently interested in Heater, which contains 2 input fields:
   a. Heater mode
      i. **Off** – heater is off at all times
      ii. **On** – heater is on at all times*

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       iii. On if flap open/LED active – heater is on when flap is opened or LED light is on*****

    b. Heater power – power of heater output. We recommend you leave this setting at default (255 - maximum).
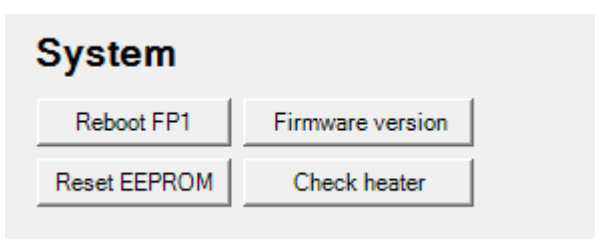

3. Selected heater settings are applied **when you connect to the flap next time.**

**heater contains built in thermistor, which constantly measures temperature and prevents overheating, should you forget to turn heater off*

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 FP1 – resets the unit
   b. Firmware version – currently installed firmware vesion (in case you have ASCOM connectivity issues, click this button)
   c. Reset EEPROM – resets unit settings to factory defautls
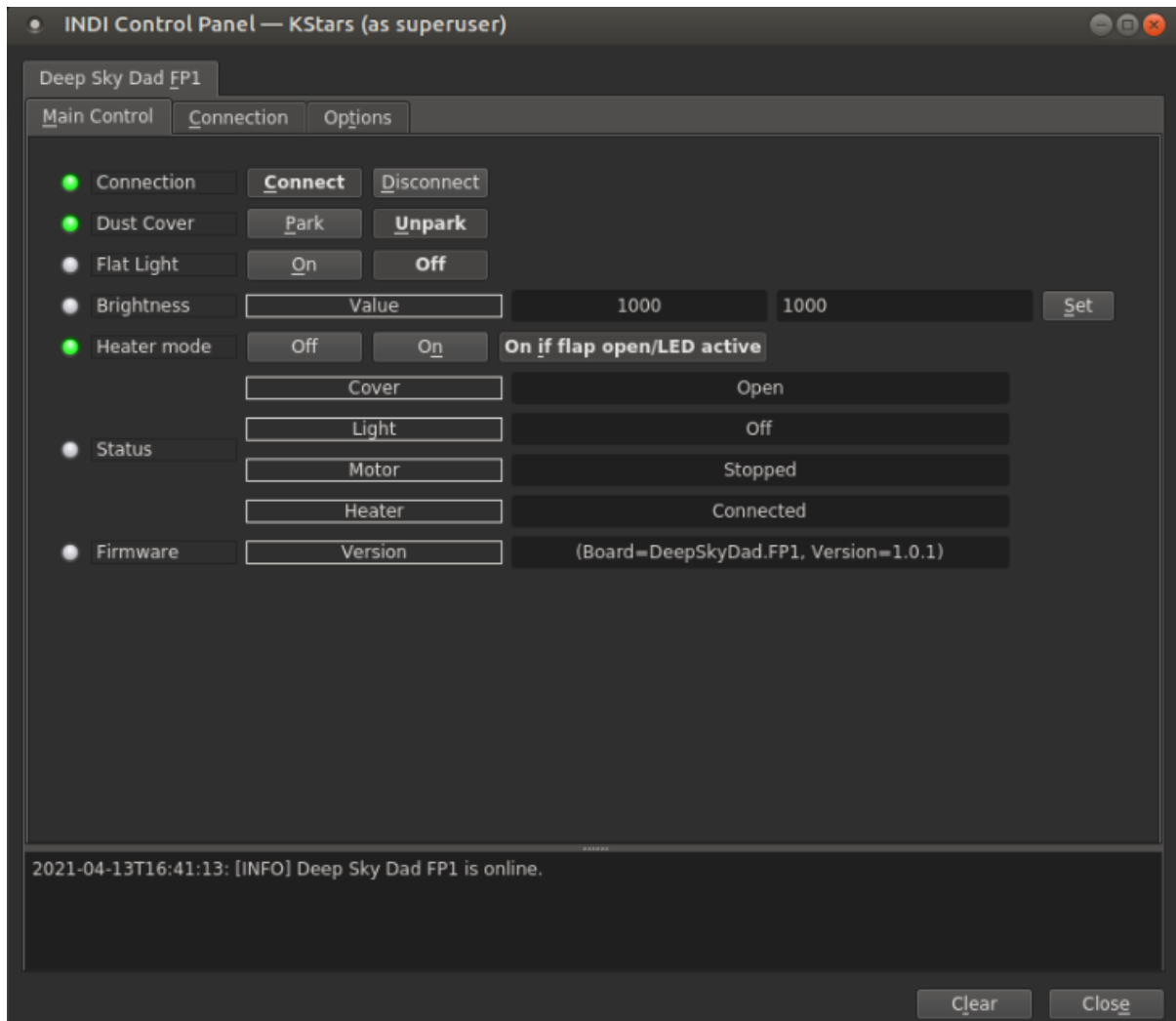   d. Check heater – checks whether heater is present

INDI (Linux)

In Linux, you can control our flap panel with Deep Sky Dad FP1 INDI driver.

Basic usage

Select correct ttyUSB device (e.g. ttyUSB0) and click connect. You can park/unpark the flap and control the LED brightness (0-4096). Statuses are displayed below the button interface.

Built in heater (optional)

If you also purchased optional built in heater to prevent dewing, you can choose heating mode in INDI Main Control tab:

        a. **Off** – heater is off at all times
        b. **On** – heater is on at all times*****
        c. **On if flap open/LED active –** heater is on when flap is opened or LED light is on*****

**heater contains built in thermistor, which constantly measures temperature and prevents overheating, should you forget to turn heater off*

FP1 Control Panel (Windows)

If you wish to control our panel without 3rd party software, you can do so in Deep Sky Dad FP1 Control panel:
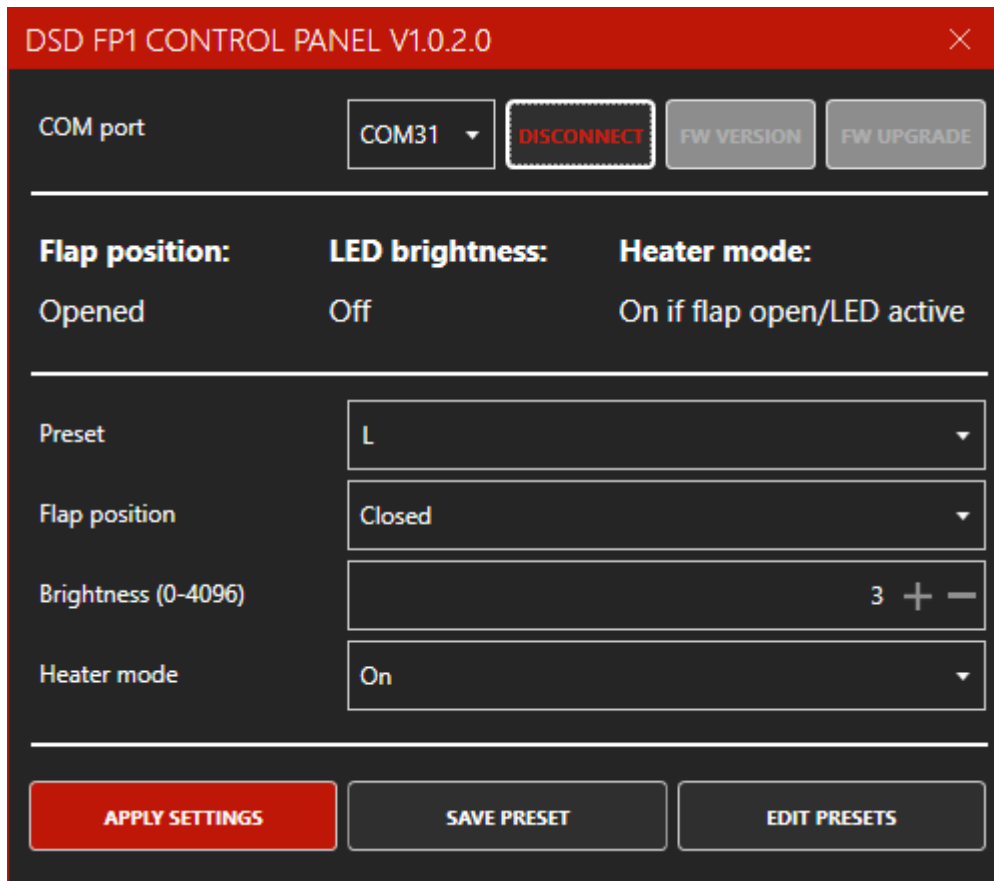
You can control flap position, LED brigtness (0 is off) and heater mode. You can also save presets for different purposes (e.g. different brightnesses for different camera filers, panel closed and Brightness 0 for making darks, panel open and heater on for imaging,...).

Manual control

Manual operation is possible via built in button.

- Single press of button opens/closes the panel
- If you press the button again while moving, the flap stops at current position
- Long press turns LED light ON/OFF. This can come handy if you need a lamp while working in the dark.

Warranty and returns

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.