AstroHub 3.0

AstroHub 3.0 device has been designed to make astrophotography amateurs life easier. It is a box that allows to control following equipment:

* Four PWM outputs to control heaters, peltier coolers o any other device that can be controlled with PWM signal. Three outputs can power 3A devices, fourth can be loaded with 5A
* Four power supply outputs that can be used to power any equipment like mount, camera, filter wheel or anything else. Each output can power 5A max
* Two DB9 focuser outputs compatibile with RoboFocus pinout. Can drive both unipolar or bipolar stepper motors with 12V voltage and 0.6A max current
* One DC motofocus output compatibile with Synta motofocus
* One hand control output – this is box with two buttons that can control any of three connected focusers
* Two temperature/humidity DHT22 sensors input. Read values can be used to automatically adjust PWM heat power for dewheaters or to control peltier devices connected to any of PWM outputs
* One temperature DS1820 sensor input.
* One COMM port to attach additional modules (currently MLX sky temperature sensor is available)
* 5V 2A output to power any device, like USB hub
* Regulated voltage 2A output, set to 8V by default, to power for example DSLR camera with additional battery adapter.

Device is powered with one XLR socket, can be powered with voltage 11-14V DC and can supply maximum 12A total with all outputs.

AstroHub is equipped with red 4x20 characters negative LCD display, that can be configured to display any of preselected information set, and rotate up to six different information screens. Both contrast and backlight level can be adjustes. Additionally there can be GPS module placed inside the device.

AstroHub is controlled with one piece of software – AstroHub panel. All configuration can be done there, also all parameters can be controller with this panel plus all informations can be read there. Additionally there is ASCOM Server multi driver installed that contains following ASCOM drivers:

* Primary focuser driver
* Secondary focuser driver
* DC focuser driver
* Observing conditions driver
* Switch driver

Each driver can be controlled from multiple programs in the same time AstroHub panel software is running.

Informations available in the AstroHub panel and LCD display are:

* Primary and secondary focuser position in steps and mm
* All connected sensors data – temperature, humidity, dew point, sky temperaturę
* PWM outputs settings and current output power value (if AUTO or HEAT is selected)
* Power output settings
* Voltages: input voltage, regulated voltage, 5V voltage
* Total input current
* Total power consumed in Ah and Wh (useful to control battery level when working in the field)