

Manual for the weather station

Startup sequence

| 1. | 2. | 3. | 4. | 5. |
|---|--------------------------------------|--------------------------------|--|--|
| All LEDs flash together to test for any bad ones. | The power LED stays on. Sensor init. | Check for any buttons pressed. | Mounting the SD card (Write to SD card LED flashes). | Connecting to the ethernet shield (Ethernet activity LED turns on while connecting). |

Calibrating wind direction ADC sensor

1. Press the **WindDir Calibration** button and then the **RESET** button.
2. Release the **RESET** button but keep holding the **WindDir Calibration** button until the display says the calibration started.
3. The display will show the current analog value, to calibrate the sensor, it has to be spun in a clockwise direction. (The value on the display should increase and startup LED blink while spinning).

Changing Ethernet settings via serial port

1. Connect the computer to the weather station using USB and enable a serial terminal. (**baud rate: 9600**)
2. Press the **IP settings** button and then the **RESET** button.
3. Release the **RESET** button but keep holding the **IP settings** button until the display says the calibration started.
4. Follow instructions in the serial terminal and type IPs in format: xxx.xxx.xxx.xxx\n (example: 192.168.0.101\n)



Web interface

- First-page displays information from sensors as well as if the box is open.
- IP settings can be changed in the settings page, as well as the port to send data to.
 - The timeout (how often the data is sent) can also be changed. Timeout is the time weather station spends in the Ethernet state.
 - Hall sensor value is the threshold at which it detects if the box is closed. (Try to lower the value if after closing the box it is still indicated as open, and check if the sensor is in place as well as the magnet).
- RTC Settings page is used to set the current date and time.

Changing brightness of LCD display

To lower brightness: Hold **IP Settings** button and press **Navigation** button.
To increase brightness: Hold **WindDir Calibration** button and press **Navigation** button.

Space Invaders mode

- To start Space Invaders hold the **Navigation** button and **WindDir Calibration** button and press the **RESET** button. Hold them until Space Invaders splash screen appears on the display.
- Controls:
 - Left - **Navigation** button.
 - Shoot - **IP Settings** button.
 - Right - **WindDir Calibration** button.
- In game mode, data won't be collected!
- After 24 seconds of not pressing any buttons, the weather station will be reset into normal mode.