# Install Guide for Cleanflight and Control via MSP

#### Compiling Firmware

Download firmware and compile with

make TARGET=NAZE OPTIONS=USE\_MSP\_UART

There is also a version located cleanflight\_2.1.0\_NAZE.hex.

### Flashing Fimware

1. Open the cleanflight configurator and go to the "Firmware Flasher" tab. This tab is before you connect to the base station.



Figure 1: Firmware Flasher

- 2. Click "Load Firmware [local]" and load your custom firmware file from cleanflight/obj/cleanflight\_x.y.z\_NAZE.hex
- 3. Click the "Flash Firmware" button to flash the flight controller.
- 4. If this is a success, the bar at the bottom will say "Programming: SUC-CESSFUL" and you are ready to move to the next step.



Figure 2: Load Firmware

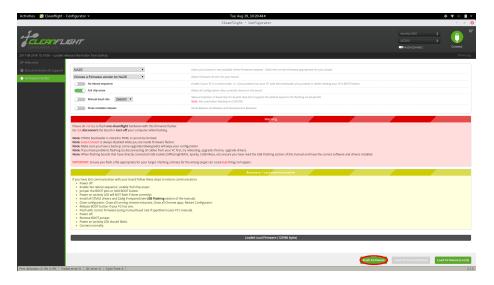


Figure 3: Flash Firmware

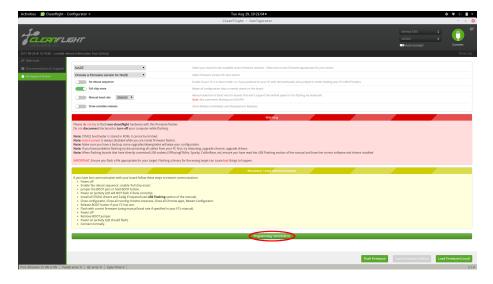


Figure 4: Successful Flash

#### **Configuration Options**

- 1. Plug in Skyline and click "Connect"
- 2. Go to "Ports" tab and make sure SerialRX for UART2 is disabled and click "Save and Reboot"
- 3. Go to "Configuration" tab
  - a. Flip the yaw by 180 degrees and click "Save and Reboot"
  - b. Also change the receiver to "MSP\_RX" and click "Save and Reboot"
- 4. Go to the "Receiver" tab and change the input map to "AERT1234" and click "Save"
- 5. Go to the "Modes" tab
  - a. Under "Angle", click "Add Range"
  - b. Drag the sliders so that the range spans from 900 to 2100
  - c. Click "Save"
- 6. Go to the "PID Tuning" tab
  - a. Change the "ROLL" and "PITCH" PID terms to match the image
  - b. Change the "Angle Limit" to 50
  - c. Click "Save"
- 7. Plug the skyline back into the Pi and you should be set to fly!



Figure 5: Connect to Skyline

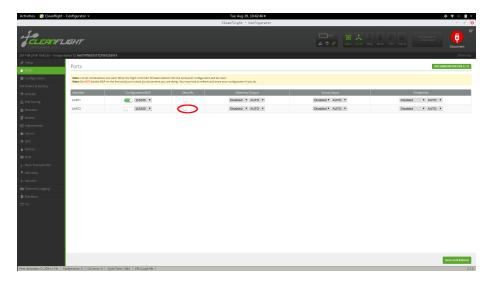


Figure 6: Disable SerialRX

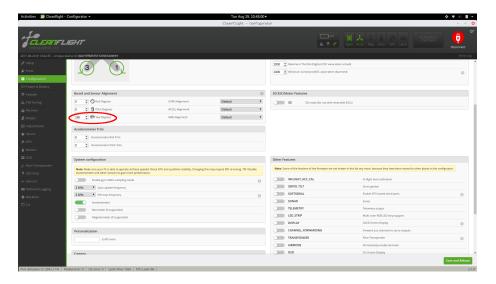


Figure 7: Flip Yaw

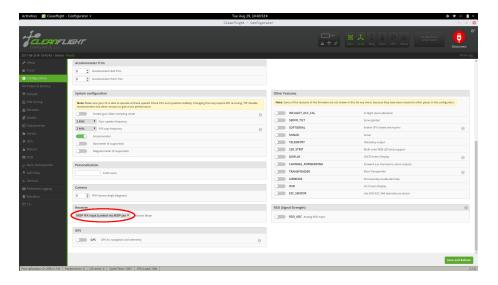


Figure 8: MSP RX

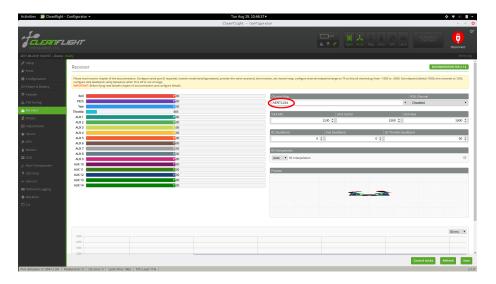


Figure 9: Channel Mapping



Figure 10: Add Range

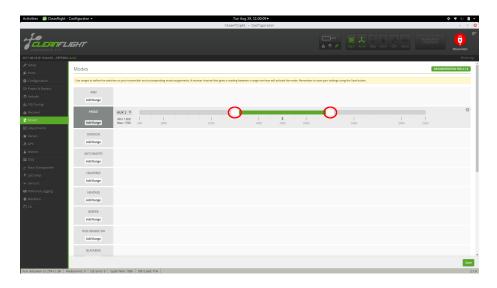


Figure 11: Angle Range Before

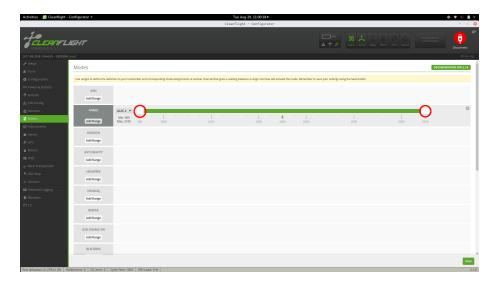


Figure 12: Angle Range After

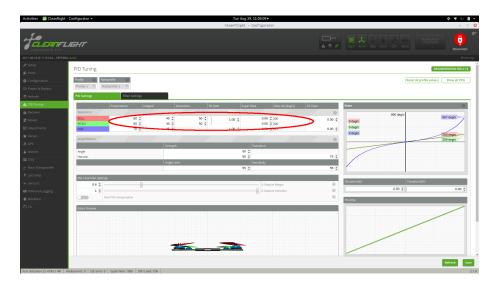


Figure 13: PID Settings

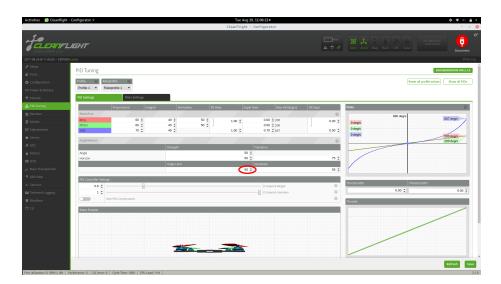


Figure 14: Angle Limit

## Other Options

## Throttle Angle Compensation

```
Go to "CLI" tab and type
set thr_corr_value = XX and set thr_corr_angle = YY
This will set it (linearly?) so that it adds XX to the throttle when at angle YY
```