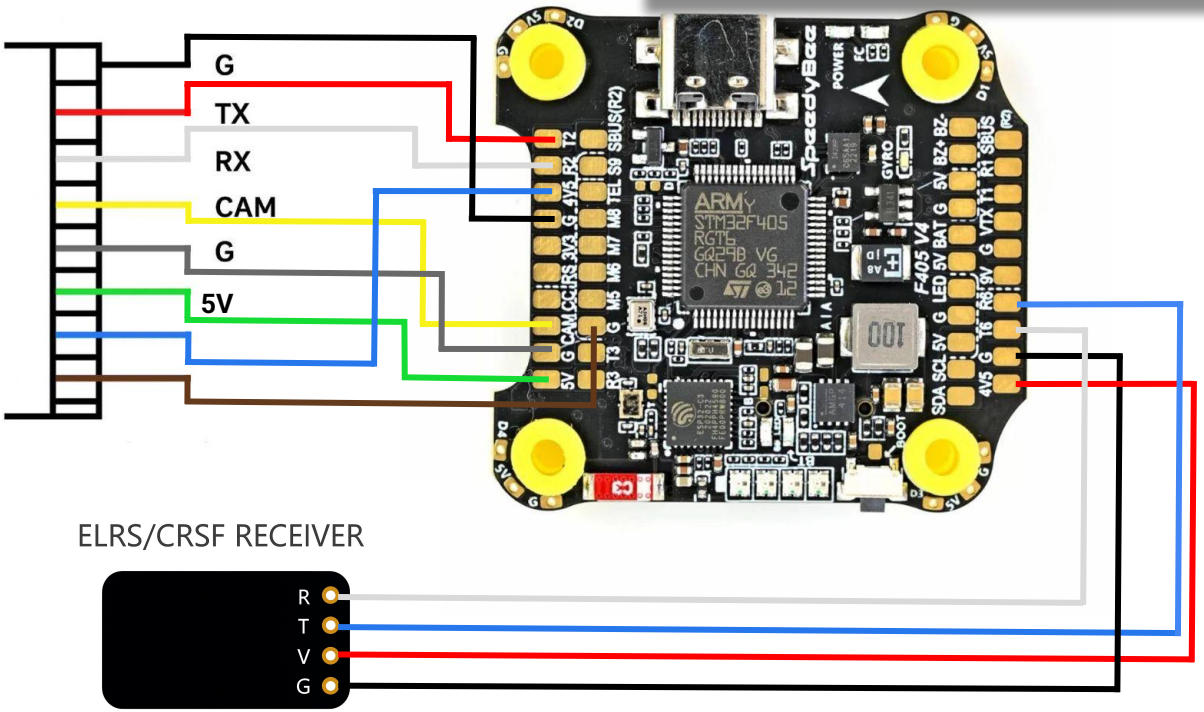
ZIR
target recognition
and destruction system

- Supported Firmwares
  **4.4.3_4.5.x /**
  **MilBeta/MilELRS 4.12.2**


**Soldering** to the Flight Controller:

- **The soldering scheme is universal for integrating ZIR Base and ZIR Ai modules.**



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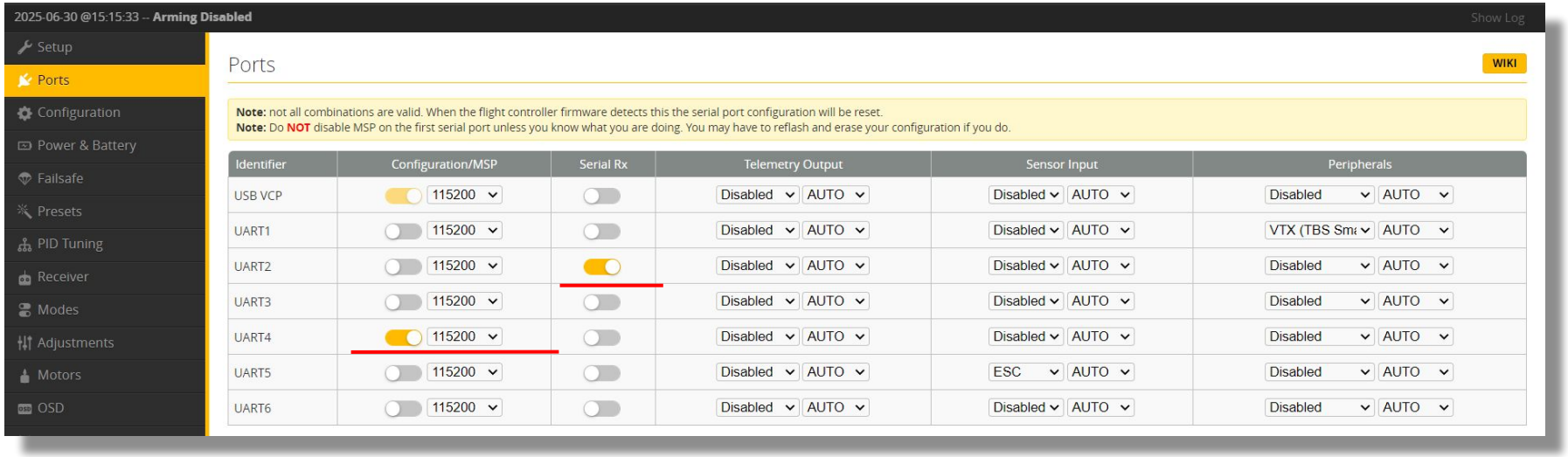
Tab **Ports**:




- - activate the **MSP port (115200)** on UART №, to which the **Raspberry 5 RX/TX** is soldered
  - activate the **Serial RX** port on UART №, to which **RX/TX ELRS** is soldered
  - in peripheral devices on UART №, to which the **VTX** is connected, select the protocol **(SmartAudio or IRC Tramp)**.

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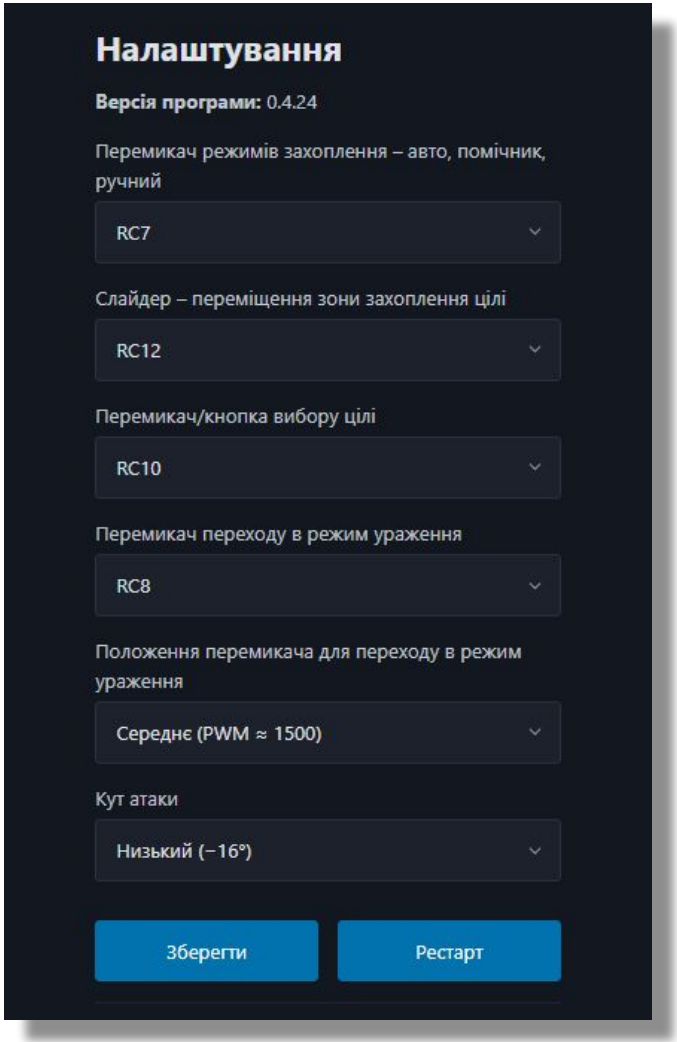
**Web** interface:

After launching the drone and loading the software, the module will create a **ZIR WiFi** access point.
First of all, configure the system control for your hardware via the web interface:

http://192.168.4.1:8181/

- Assign the RC according to the channels of your transmitter.



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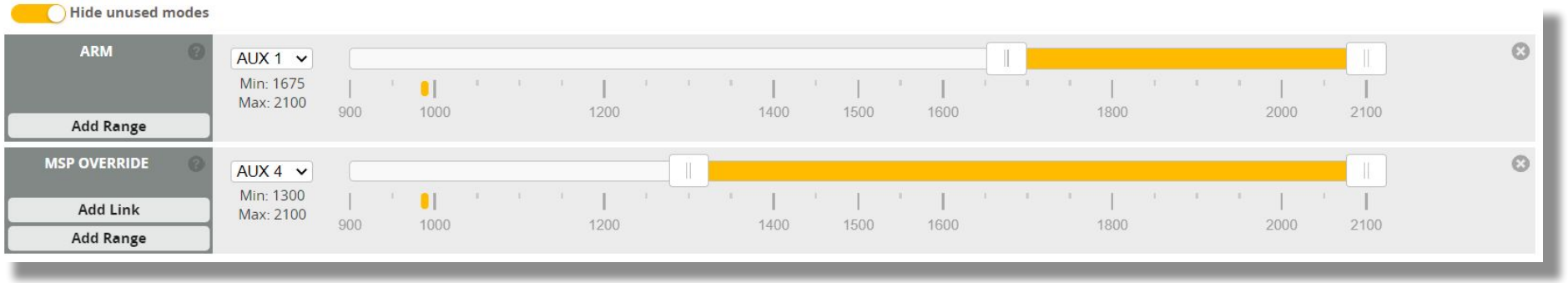
Configure **Arm/Disarm** on your usual AUX channel

It is **important** to select your additional control channels while **avoiding duplication** with the operating modes of the aiming module.

Tab **Modes**:

- In the CLI, enter the command **set msp_override_channels_mask = 15**

  In the Modes tab, enable **MSP OVERRIDE** on the AUX channel where you configured the "**hit**".



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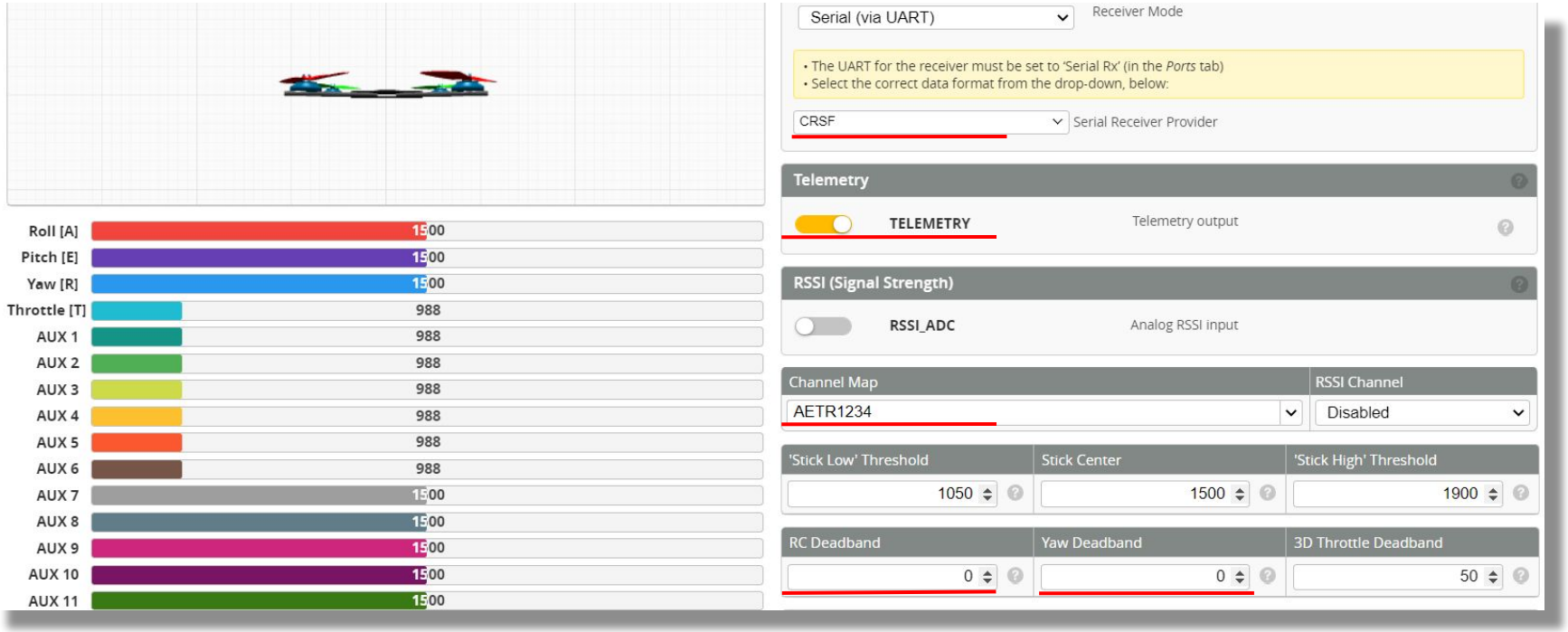
- – activate **Telemetry**
  – Channel map - **AETR1234**
  – Stick **LOW** 1050, **Center** Stick 1500, Stick **HIGH** 1900pwm
  – **RC Deadband** 0, **YAW Deadband 0**

Tab **Receiver**:



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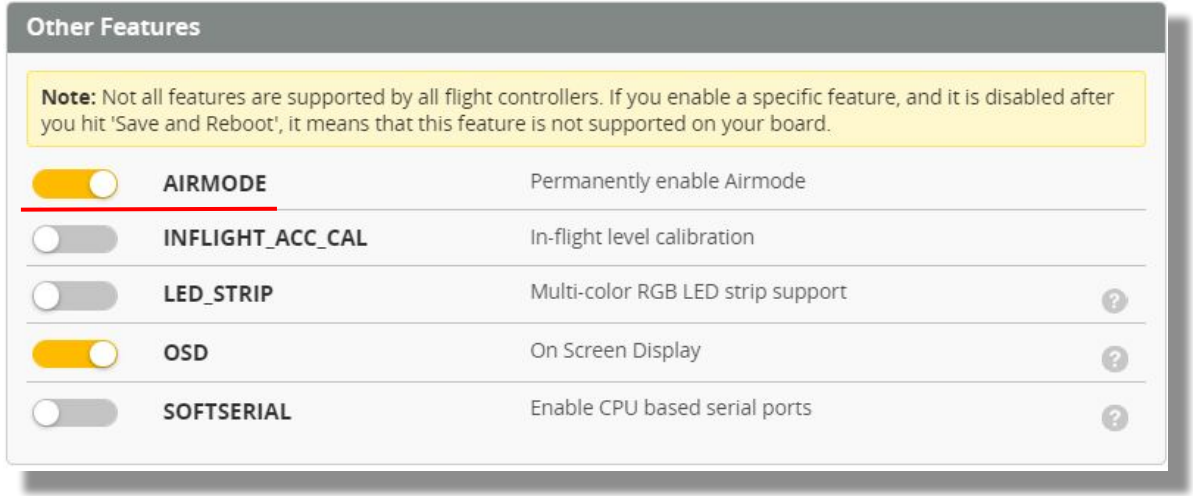
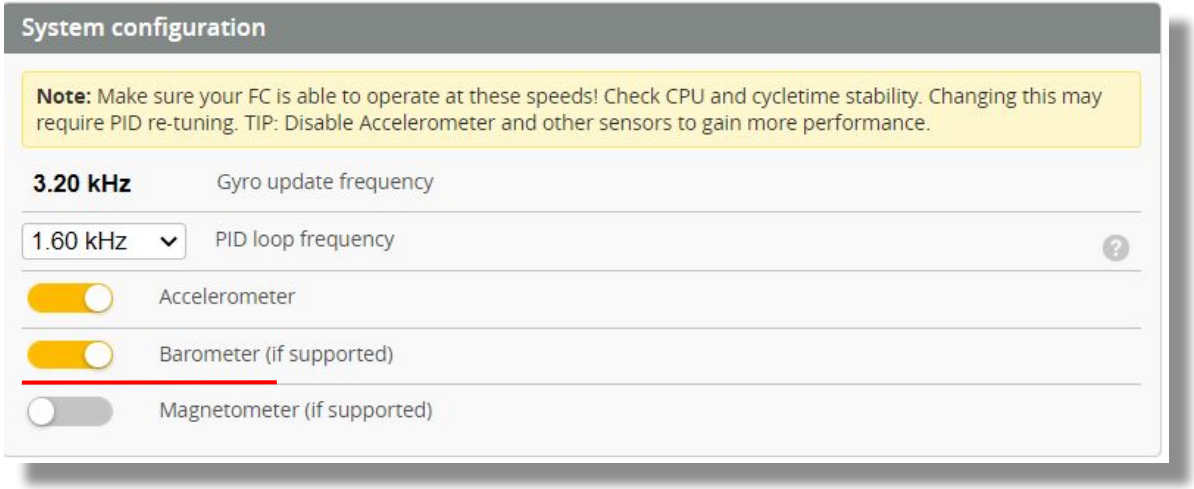
Tab **Configuration**:

- **AIRMode** must be enabled

- For using the **Cruise** function, it is important that the barometer is enabled. In its absence, an external one should be installed.



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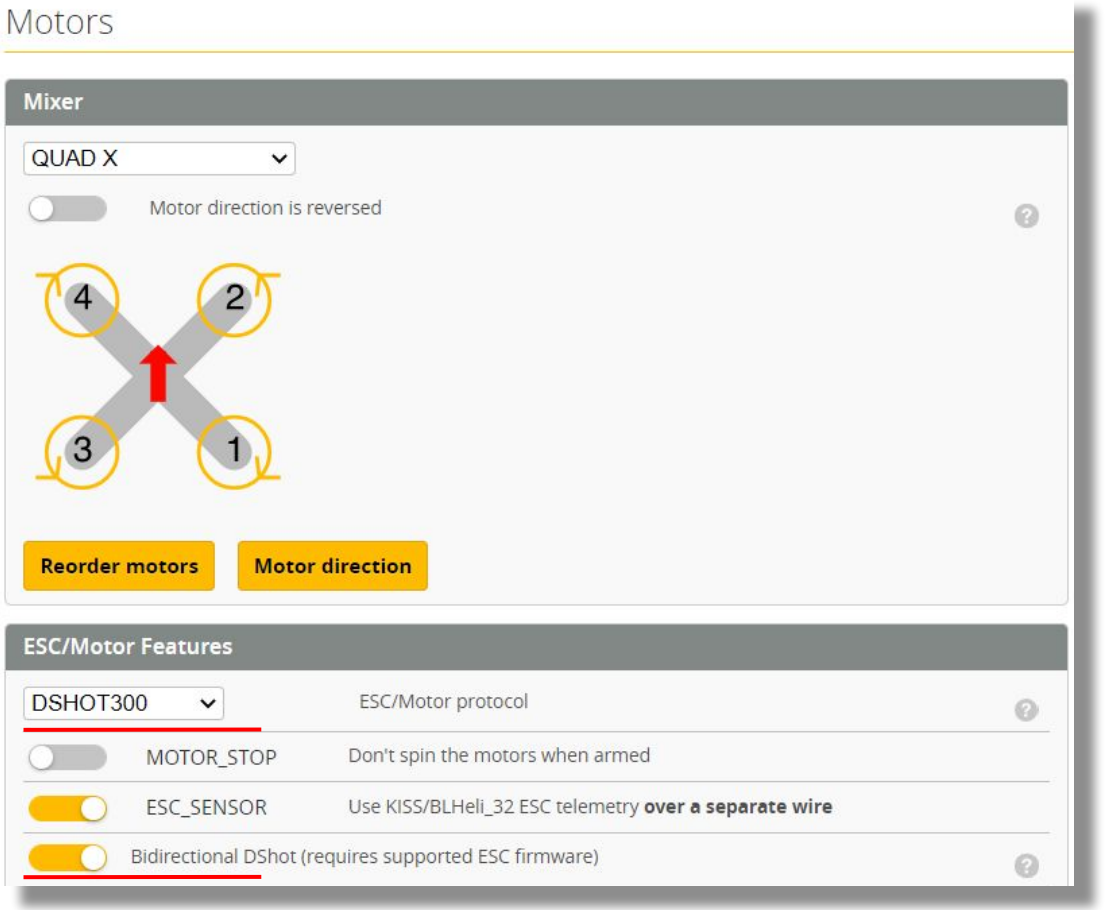
Tab **Motor**:

- Motor rotation direction - **from the ESC towards the camera and tail**.

- select **DSHOT300 or DSHOT600** must be turned on **Bidirectional DShot**



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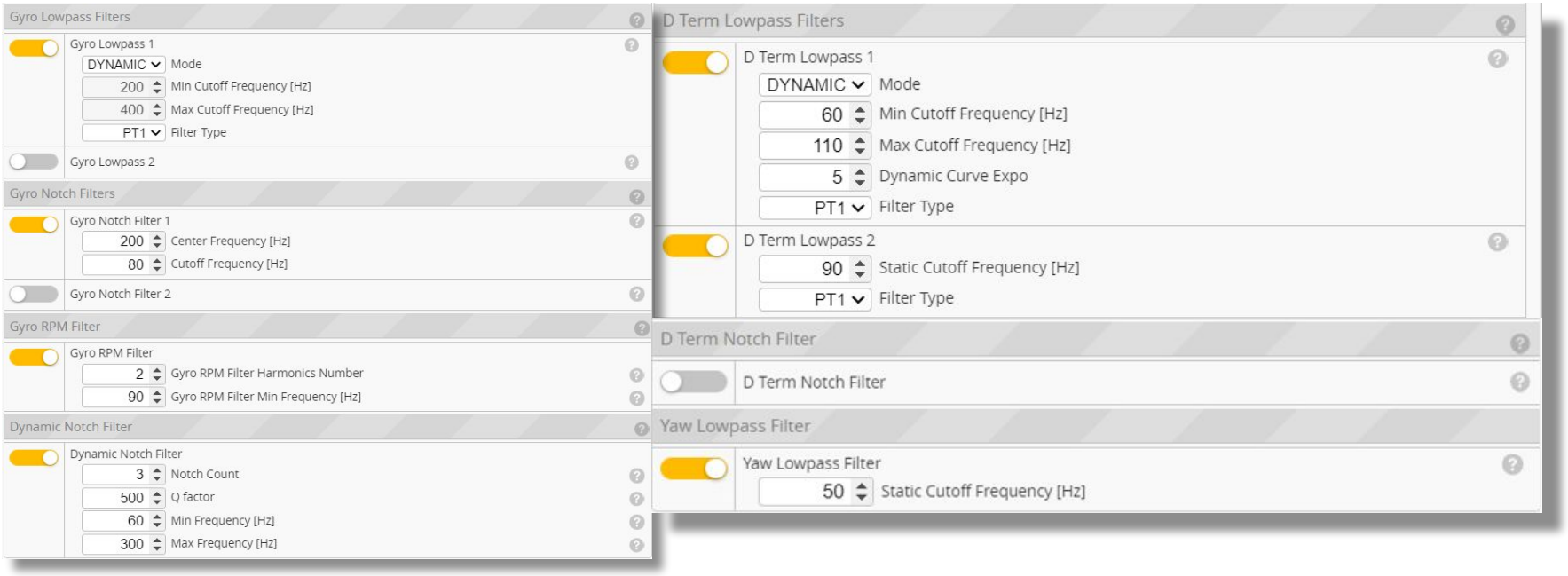
betaflight/
**blackbox-tools**

Tab **PID Tuning(Filters)**:

- Before using the aiming system, **it is important to properly filter the drone** and tune the PID.



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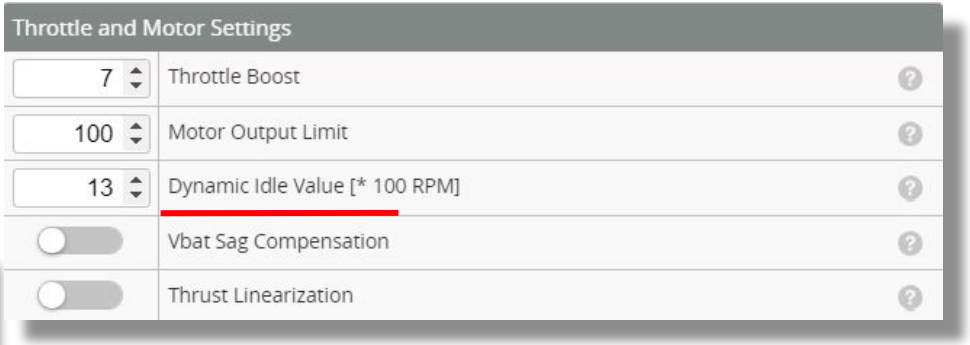
Tab **PID Tuning**:

- Tune the PID using **PIDtoolBox** or **PIDanalyzer**


**Importantly!**

**Set Dynamic Idle to the minimum possible value for the size of your copter.**

* taking into account the weight of the warhead, the sizes of the props, and their angle of attack

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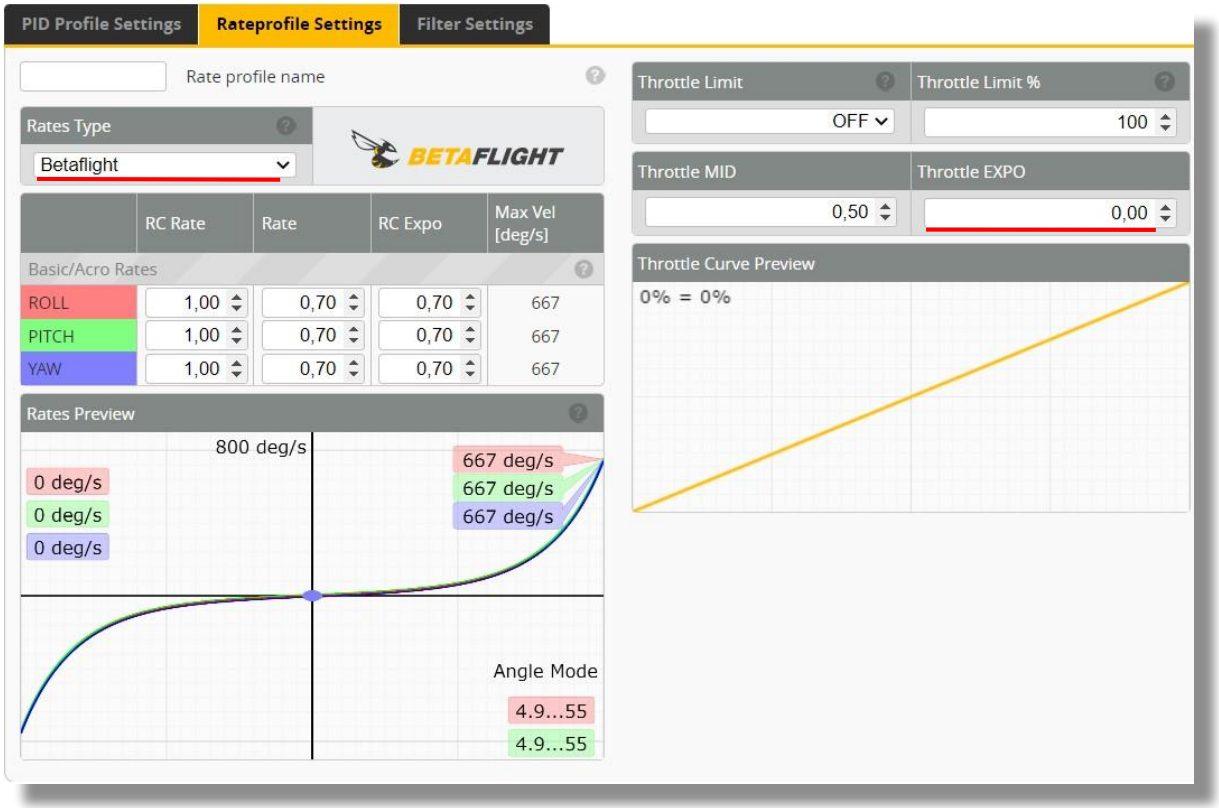
Tab **PID Tuning (Rate Profile)**:

- the system works with
  **Rate Type = BetaFlight**

  specify the recommended values on all axes:

  **RC Rate = 1.00**
  **Rate = 0.70**
  **RC Expo = 0.70**

  **Throttle Expo = 0.00**



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Tab **OSD**:

Places that are **not recommended to cover** with telemetry:

– **System modes**
– **System warnings**
– **Zoom window**

Display the element layout and additional data in the free corners of the OSD