



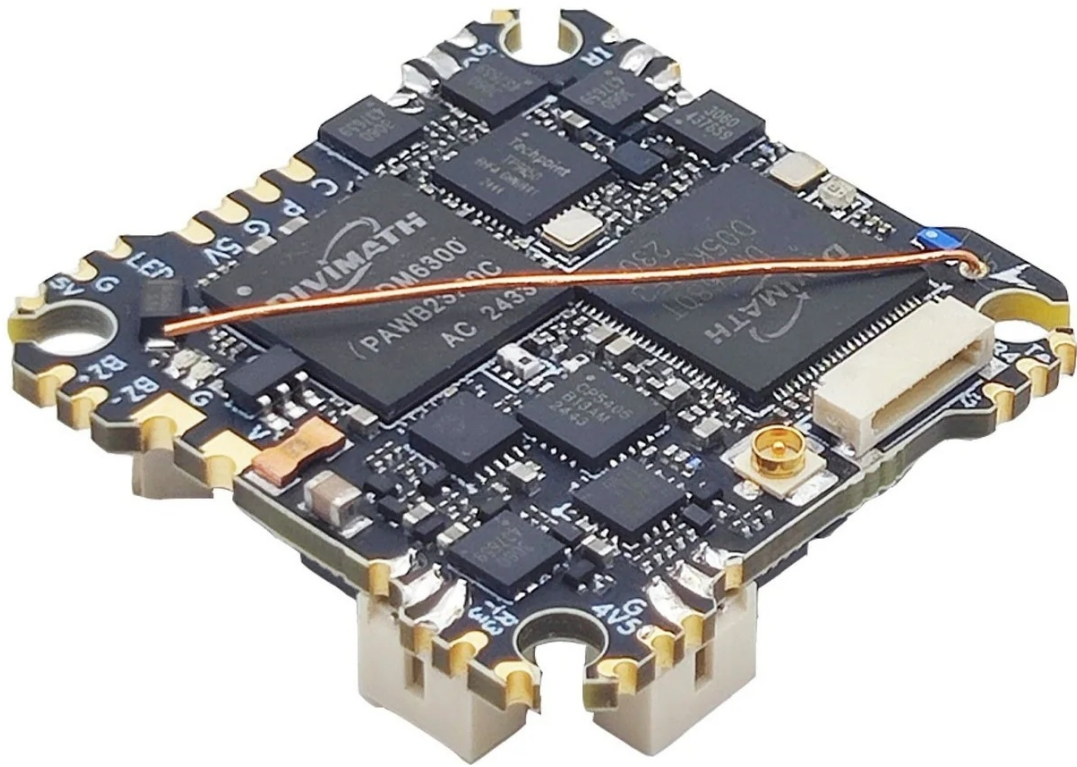
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HDZERO AIO15 Digital AIO Flight Controller



Product Usage Instructions

- Ensure your drone frame is compatible with the HDZero AIO15 dimensions.
- Mount the AIO15 securely onto the frame using appropriate screws and standoffs.
- Connect the motors, camera, and battery to their respective ports on the AIO15.
- Double-check the connections to ensure they are secure.
- Connect the battery to the AIO15 to power it on.
- Check for LED indicators to confirm power status.
- Use the provided manual to configure flight modes, receiver settings, and video transmitter settings as per your preference.
- Perform a test flight in a safe and open area to ensure the HDZero AIO15 is functioning correctly.
- Make any necessary adjustments based on flight performance.

Introduction

- HDZero AIO15 is the world's first digital video AIO, enabling bind and fly 80mm whoops to weigh less than 33.4g.
- AIO15 integrates a G4-based flight controller, HDZero 5.8GHz digital video transmitter, Serial 2.4GHz ExpressLRS 3.0 receiver, BlueJay 4-in-1 15Ax4 ESC, and a 5V/1A BEC. It is ideal for tiny whoop freestyle.

- It is available at major FPV resellers worldwide, and also at Happymodel and HDZero official online shops.

Specifications

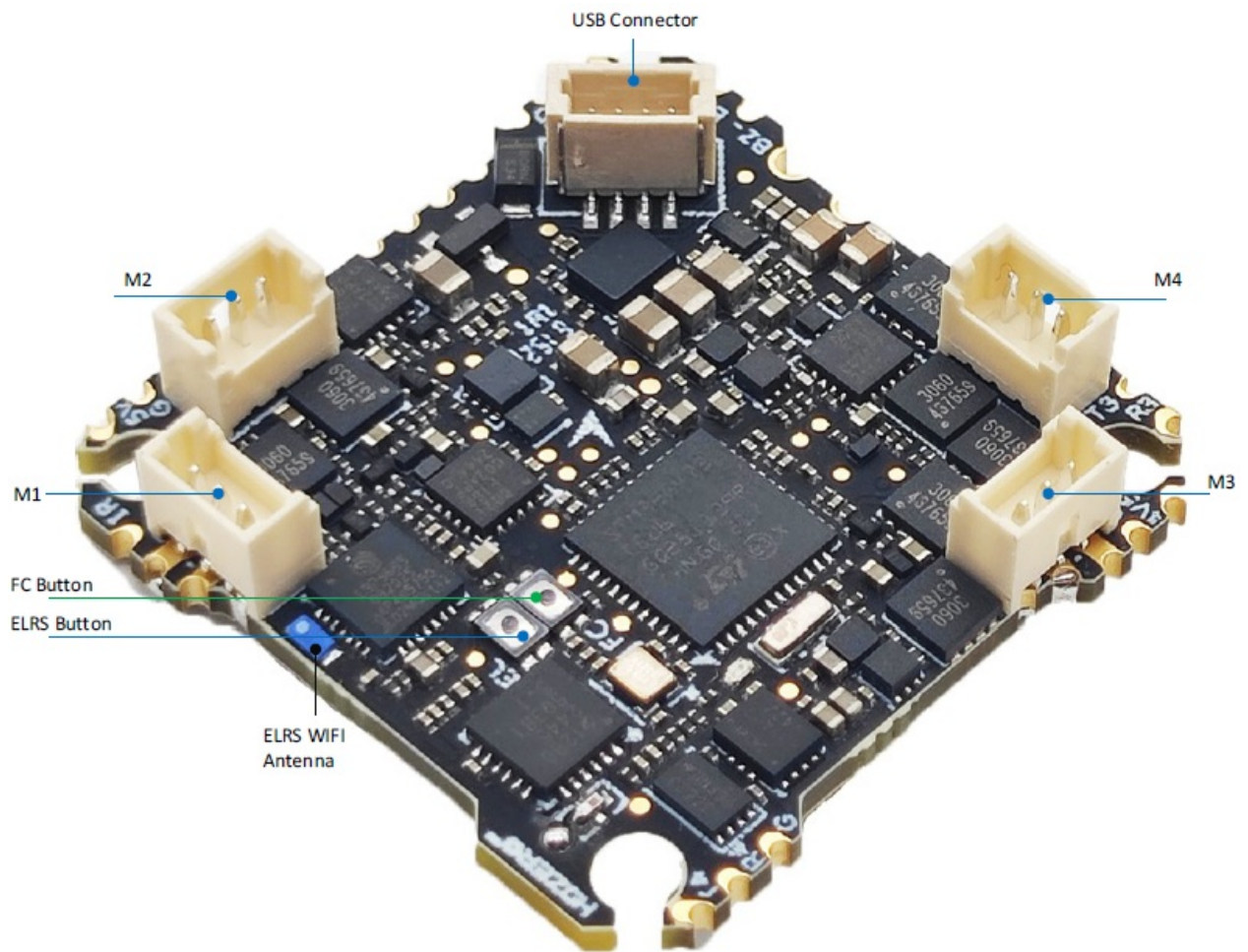
- MCU: STM32G473 (170MHz, 512K Flash)
- Gyro: ICM42688
- On board voltage and amperage meters
- Built-in 15A(each) BlueJay 4-in-1 ESC
 - MCU: EFM8BB21
 - HV Current: 15Ax4(continuous), 18Ax4(peak, 3 seconds)
 - Factory firmware: Z_H_30_48_v0.19.2.HEX
 - Dshot600 ready
- Built-in 5.8G HDZero VTX
 - RF output: 25mw/200mW
 - Supported channels: R1-R8, F2/F4, L1-L8
 - UFL connector (ultra-lite linear antenna included)
- Built-in Serial ExpressLRS 2.4GHz receiver
 - Packet rate option: 50/100/150/250/333/500/D250/D500/F500/F1000Hz
 - Pre-soldered enamel wire antenna
 - Telemetry output power: <12dBm
- Built-in 5V 3A BEC
- Flight controller firmware target: HDZERO_AIO15
- Power supply: 2S/3S battery (3.5V – 13V)
- Fully compatible with the popular Whoop frames
 - Board size:31.3×31.3mm with a 25.5×25.5 mounting hole size
- Weight:7.2g (with motor plugs)

Diagram

TOP

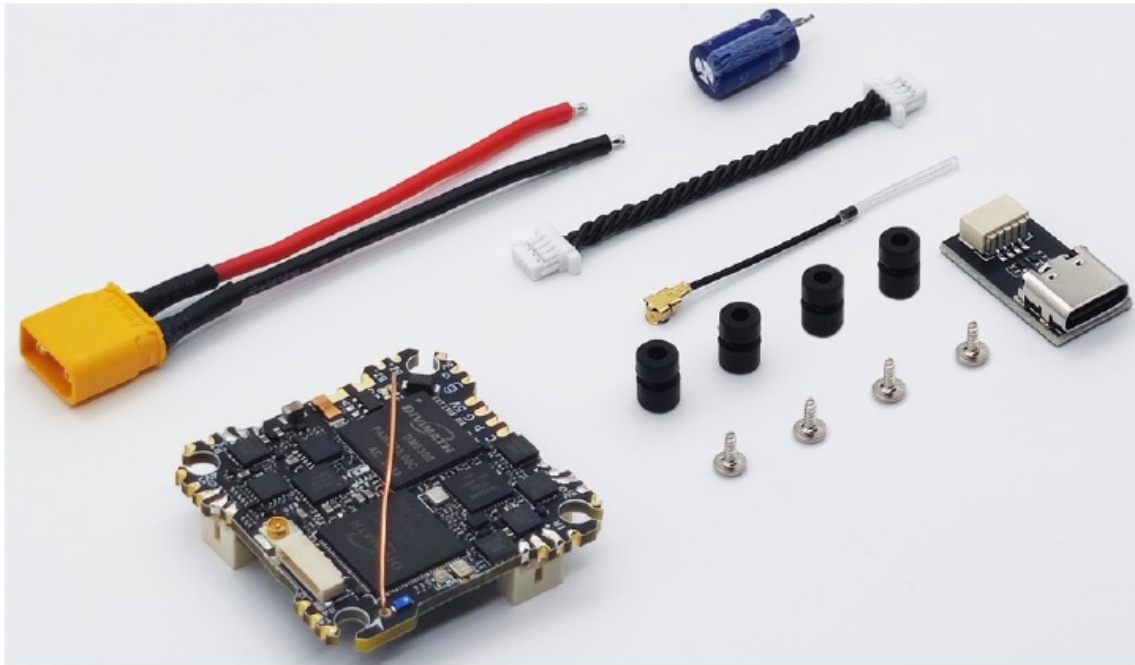


Bottom



Included

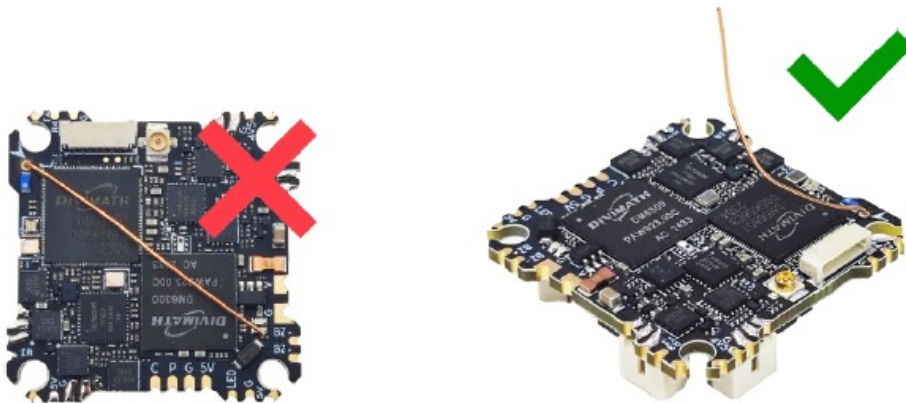
- 1x HDZero AIO15 board
- 1x Power cable with XT30 connector
- 4x screws
- 4x rubber grommets
- 1x ultra-lite linear VTX antenna
- 1x JST-USB convert board and its cable
- 1x Capacitor (25V/150uF)



Installation Notes

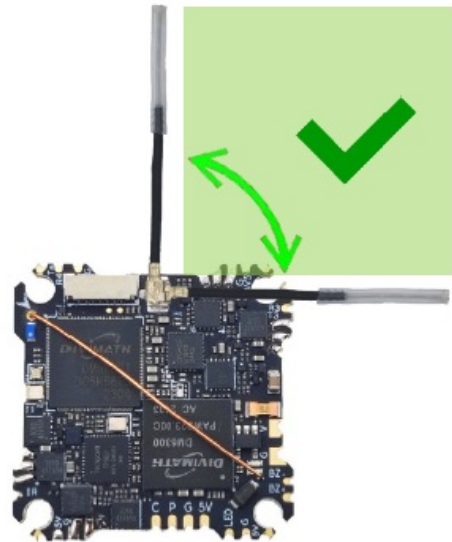
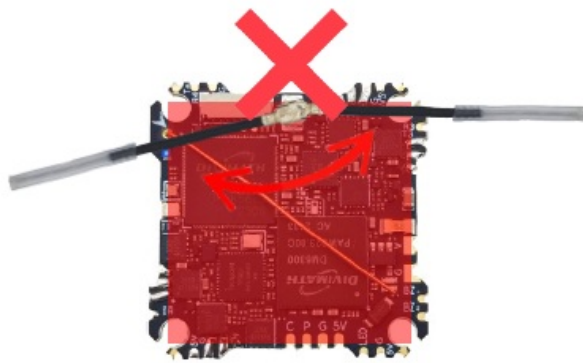
ELRS antenna

- A line antenna ($\frac{1}{4}$ wavelength) for the ELRS receiver is pre-soldered and positioned close to the board for low-profile and easy packaging.
- However, the ELRS antenna needs to be lifted to maintain at least 3 mm of clearance from the board.



VTX antenna

- The HDZero VTX integrated into the AIO5 has a specific requirement to prevent video noise caused by the video RF signal being routed back to the onboard power amplifier.
- The VTX antenna should be mounted outward, not inward, on the board.



Bind with TX radio

There are two ways to configure AIO for binding:

1. Connect HDZero AIO15 to PC via micro-USB. Open Betaflight and connect to the AIO15. Navigate to the "Receiver" tab and click "Bind" to initiate binding mode; or
2. Power off the HDZero AIO15.

Power-cycle the HDZero AIO15 3 times.

- Supply power to the HDZero AIO15.
- The ELRS LED lights up.
- Turn it off within 2 seconds.
- Repeat 2 more times.

Once RX is in binding mode, insert the ELRS TX module into your OpenTX Radio transmitter, select External RF mode, and set it to the CRSF protocol. You will find the ELRS menu in the Radio system (ensure the ELRS.LUA file is copied to the SD-Card tools first). Enter the ELRS menu and press [Bind]. The RX LED on the flight controller will become solid if the binding is successful.

NOTE: Make sure you use the matching ELRS preset for your link rate; failure to do so can lead to uncommanded movement in turns.

ELRS LED status:

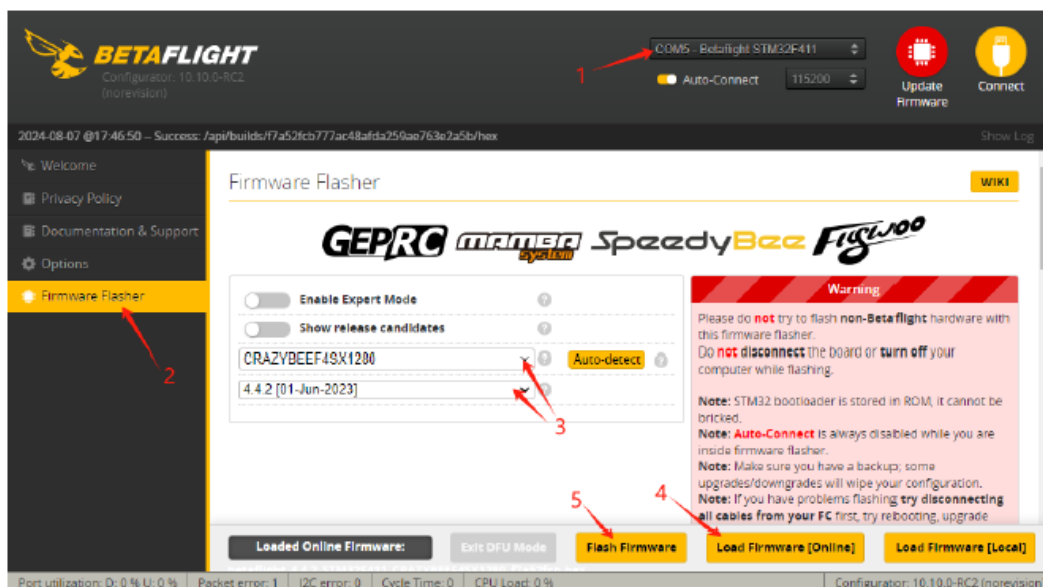
- Solid means bind successful or Connection established;
- Double-flash means in bind mode.

- Flash slowly means no signal established with the TX module

Firmware

Betaflight firmware

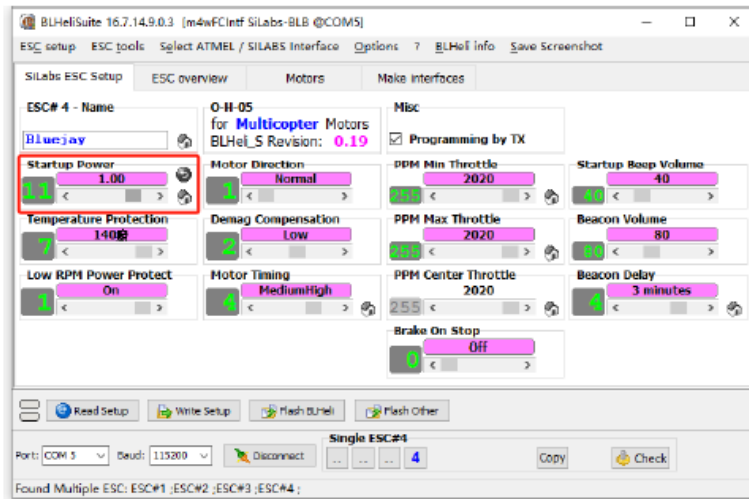
- Download and install the [Betaflight Configurator](#).
- Launch the Betaflight Configurator to flash firmware.



1. Select the target port
2. Click "Update Firmware" to enter the Firmware Flasher tab
3. Select target "HDZero_AIO15" and version. The factory version is 4.4.2[01-Jun-2023]
4. Click "Load Firmware[Online]" to download the firmware
5. Click "Flash Firmware" to flash the Flight controller

BlueJay ESC firmware

- The factory firmware: Z_H_30_48_v0.19.2.HEX. To flash a new ESC firmware, here is [a YouTube tutorial](#).
- After flashing firmware, it is needed to set the Startup Power of each ESC to 1.00 through [BLHeliSuite 16.7.14.9.0.3](#)
- Please note that heat dissipation and a fully charged battery are needed for flashing ESC firmware.



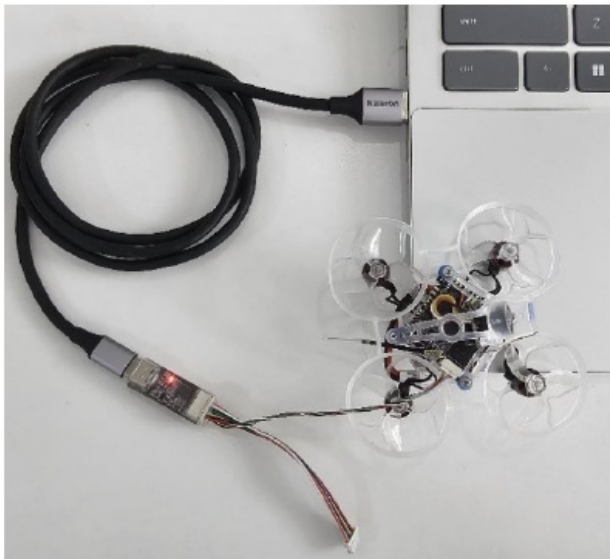
HDZero firmware

- Purchase [a HDZero VTX Programmer](#) if you don't have one.
- Download the HDZero Programmer application from <https://www.hd-zero.com/document>

Utilities

| Utilities | Download | Note |
|-------------------|-----------------------|--|
| Unlock_Lowband* | Unlock_Lowband.zip | Make sure your region allows low band before download. |
| HDZero Programmer | HDZero Programmer.zip | |
| Phoenix Card | PhoenixCard.zip | |
| VTX_Table | VTX_Table.zip | |

- Plug the HDZero VTX Programmer into AIO15's VTX FW Connector. And use the USB-C cable to connect the programmer tool and PC
- Launch the HDZeroProgrammer.exe on a Windows PC
 1. Select the AIO15
 2. Click "Load Online Firmware" and select the version number
 3. Click "Flash VTX". "Connecting VTX ..." will be displayed at the bottom
- The application will automatically download the firmware and flash it.



FAQ

- **Q: Where can I purchase spare parts for the HDZero AIO15?**
 - **A:** Spare parts can be purchased from major FPV resellers worldwide, as well as Happymodel and HDZero official online shops.
- **Q: How do I update the firmware of the HDZero AIO15?**
 - **A:** Refer to the official website of HDZero for firmware update instructions.
Typically, firmware updates can be done through a USB connection to a computer.

Documents / Resources

| | |
|--|--|
| | <p>HDZERO AIO15 Digital AIO Flight Controller [pdf] Instruction Manual</p> <p>AIO15, AIO15 Digital AIO Flight Controller, Digital AIO Flight Controller, AI O Flight Controller, Flight Controller</p> |
|--|--|

References

- [User Manual](#)

HDZERO

AIO Flight Controller, AIO15, AIO15 Digital AIO Flight Controller, Digital AIO Flight Controller, Flight Controller, HDZERO

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