Manuals+

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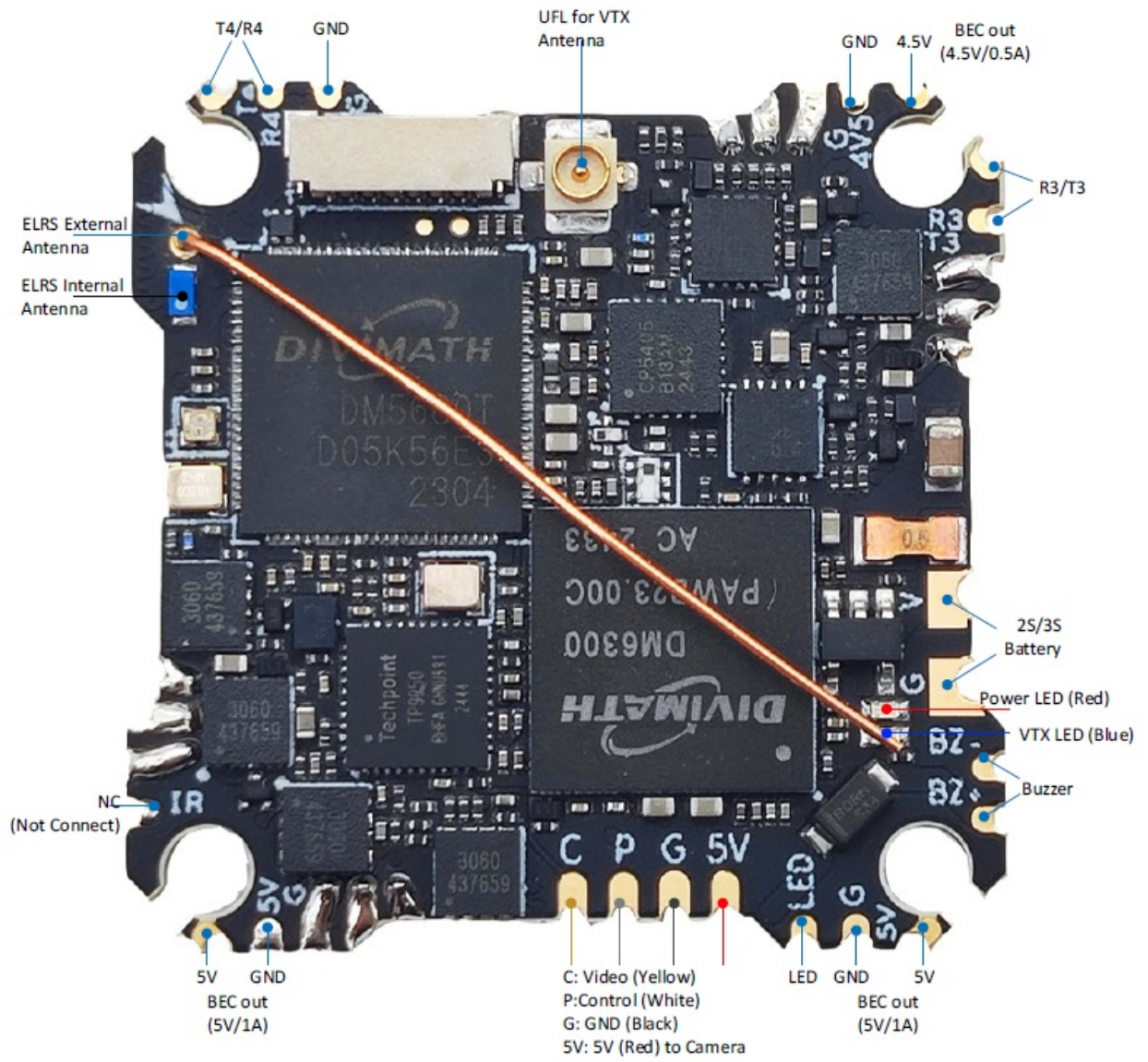# DIVIMATH AIO15 2-3S Digital AIO Flight System

PRODUCT INFORMATION

HDZero AIO15 is the world's first 2S-3S 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.
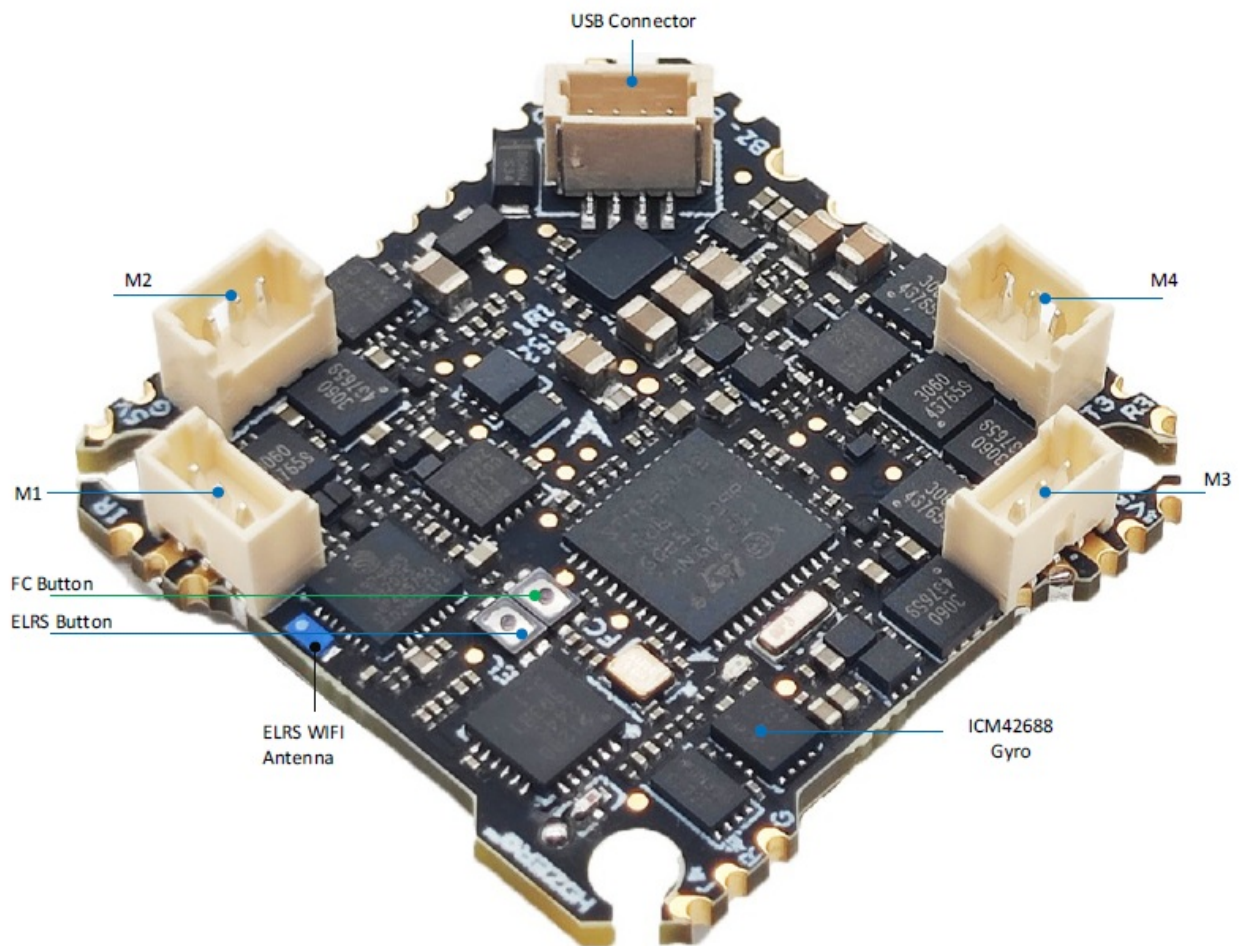
Specifications

- **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

T4/R4

GND

UFL for VTX Antenna

GND 4.5V

BEC out (4.5V/0.5A)

R3/T3

ELRS External Antenna

ELRS Internal Antenna

DIVIMATH
DM5600T
D05K56E
2304

CP5405
B134M

3060
437659

2S/3S Battery

Power LED (Red)

VTX LED (Blue)

Buzzer

DM6300
(PAW23.00C)
AC 2433
DIVIMATH

Techpoint
TP9950

3060
437659

3060
437659

NC
(Not Connect)

IR

C P G 5V

LED

5V
G

3060
437659

5V   GND

BEC out
(5V/1A)

C: Video (Yellow)
P:Control (White)
G: GND (Black)
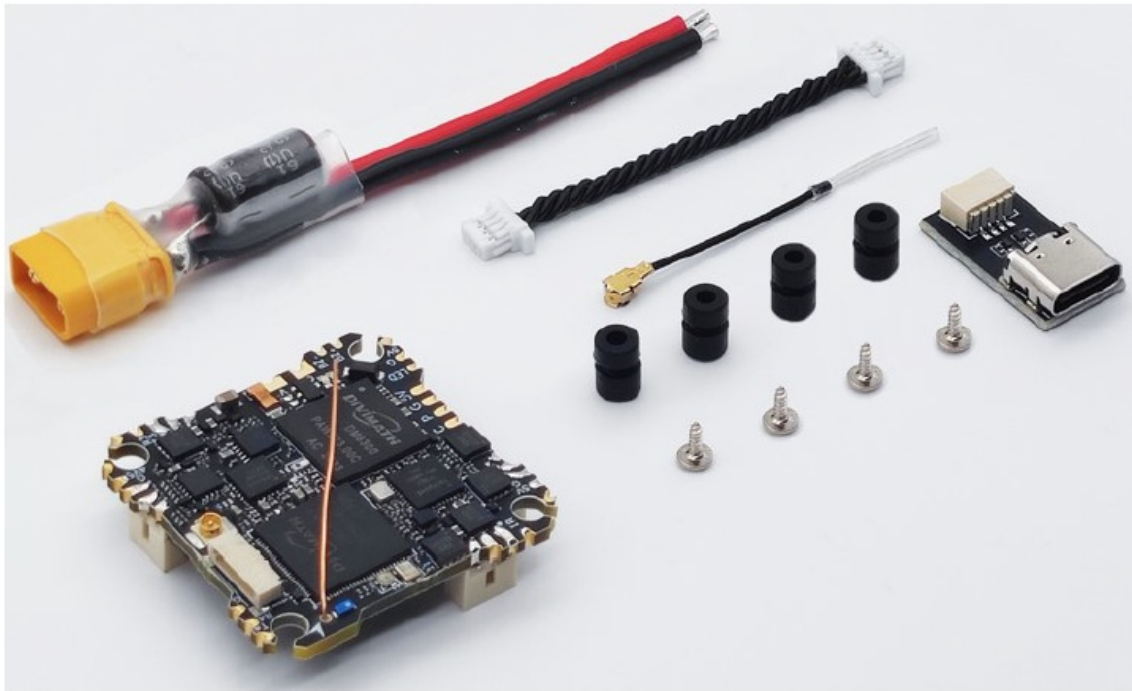5V: 5V (Red) to Camera

LED   GND   5V

BEC out
(5V/1A)

Bottom

Included

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

Installation Notes

ELRS antenna

- A line antenna (¼ 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.
- **Note:** because an internal antenna is also included, the external line antenna can be removed to save weight. After the external antenna is removed, the internal antenna is automatically used. Do note that the external antenna performs better than the internal one.

VTX antenna

- The HDZero VTX integrated into the AIO15 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.
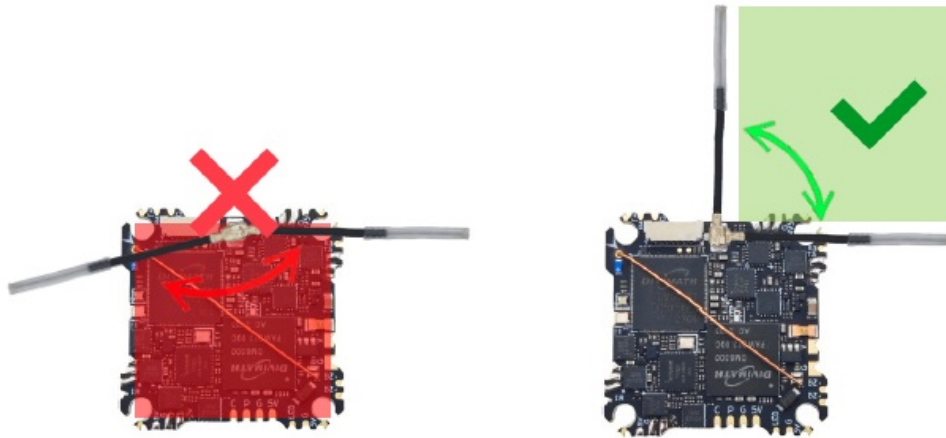
Bind with TX radio

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 un-commanded movement in turns.
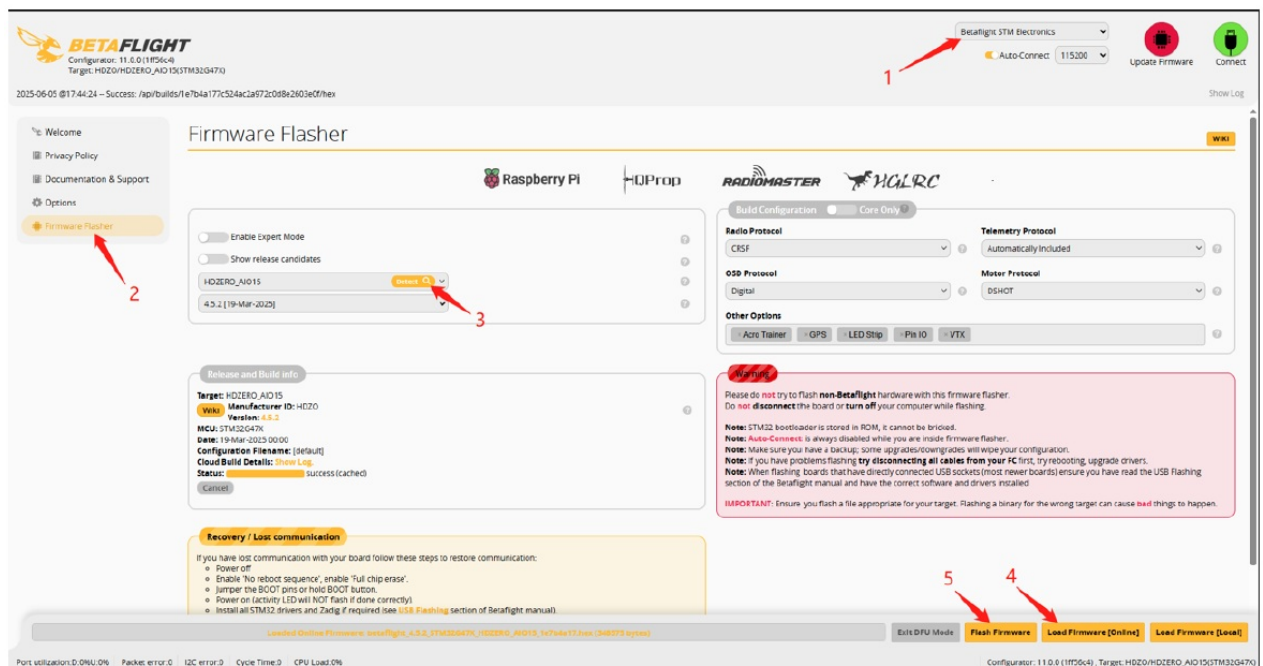
ELRS LED status:

- Solid means bind successful or Connection established;
- Double-flash means in bind mode;
- Flash slowly means no signal established with the TX module.

Firmware

1. 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 Firmware Flasher tab
   3. Select target "HDZero_AIO15" and version, The factory version is 4.5.2
   4. Click "Load Firmware[Online] " to download the firmware
   5. Click "Flash Firmware" to Flash the Flight controller

2. **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](#).
   - **Notes:**
     - Before flashing ESC firmware, the Radio needs to be turned off to disconnect the ELRS.
   - After flashing firmware, it is needed to set the Startup Power of each ESC to 1100 for Minimum and 1200 for Maximum through https://esc-configurator.com/.
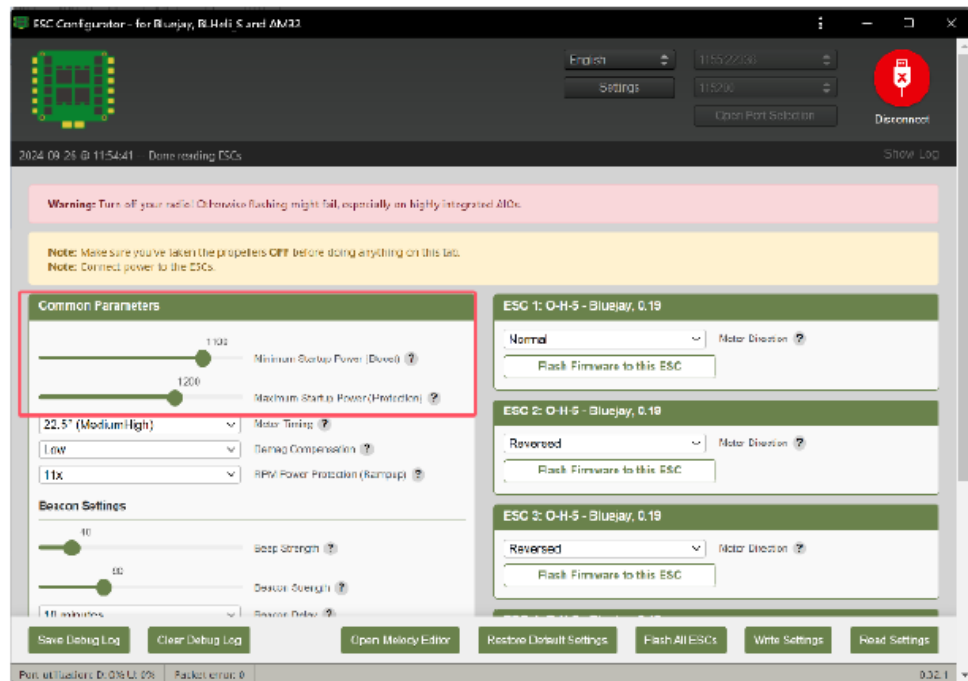
- ○ Please note that heat dissipation and fully charged battery are needed for flashing ESC firmware.

3. **HDZero firmware**

- Purchase a HDZero VTX Programmer if you don't have one;
- Download HDZero Programmer application from https://www.hd-zero.com/document.

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 USBC 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.
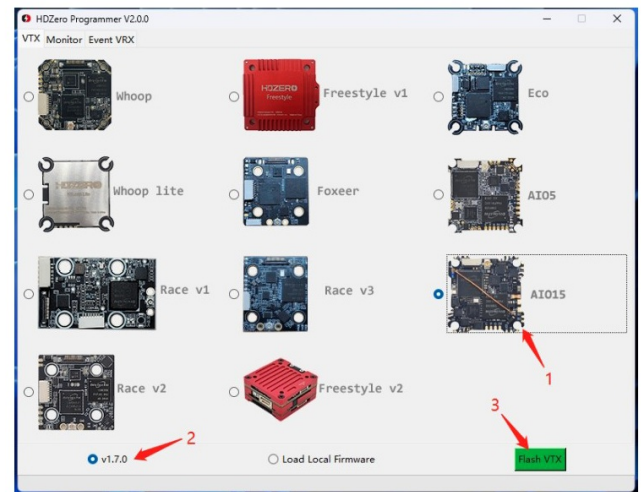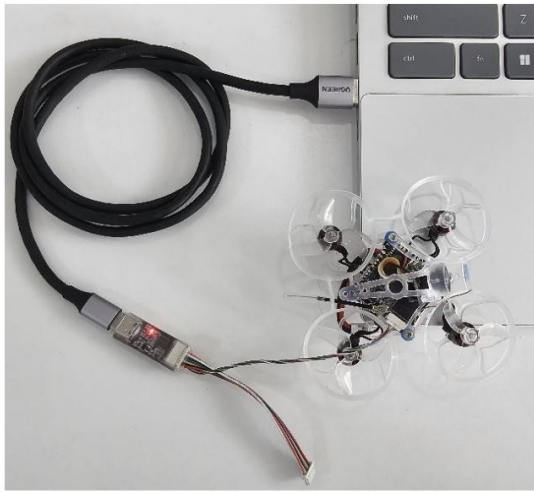
FAQs

- **Q: Where can I purchase the HDZero AIO15?**
  - **A:** The HDZero AIO15 is available at major FPV resellers worldwide, as well as at Happymodel and HDZero official online shops.
- **Q: What is the weight of the HDZero AIO15?**
  - **A:** The HDZero AIO15 enables bind and fly 80mm whoops to weigh less than 33.4g.

Documents / Resources

[DIVIMATH AIO15 2-3S Digital AIO Flight System](#) [[pdf](#)] Instruction Manual AIO15 2-3S Digital AIO Flight System, AIO15, 2-3S Digital AIO Flight System, Digital AIO Flight System, AIO Flight System, Flight System

References

- [User Manual](#)

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🏷 2-3S Digital AIO Flight System, AIO Flight System, AIO15, AIO15 2-3S Digital AIO Flight System, Digital AIO Flight System, DIVIMATH, Flight System

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