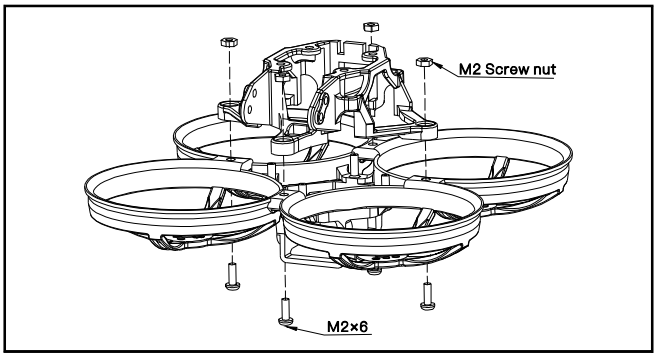
Features
Digital HD FPV experience
New CrazyF405 ELRS HD flight controller
Powerful and Smooth
UART ExpressLRS receiver
Built-in blackbox for Gyroflow and PID Tune
Battery tray size: Maximum support for batteries with a width of approximately 17mm and a height of approximately 13mm

Specifications
Brand Name: Happymodel
Item Name: Mobula8 2S 85mm Digital HD Micro FPV whoop DJI O3 version or without O3 version
Wheelbase: 85mm
Size: 120mm*120mm*48mm
Weight: DJI O3 version 82.5gram
Without DJI O3 version 42.5gram

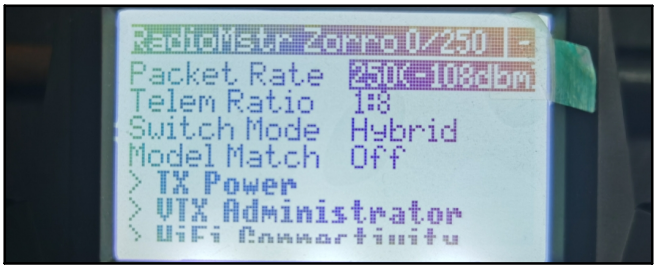
Package Includes	
Item Name	Qty
Mobula8 Frame	1
CrazyF4HD ELRS flight controller firmware target:BETAFLIGHTF4	1
EX1103 KV11000 brushless motor	4
Gemfan Hurricane 2023 tri-blade propellers(4cw+4ccw)	1
Option1: DJI O3 Air unit	1
Option2: Without DJI O3 Air unit	
Canopy	1
Screw driver	1

Frame Installation Diagram

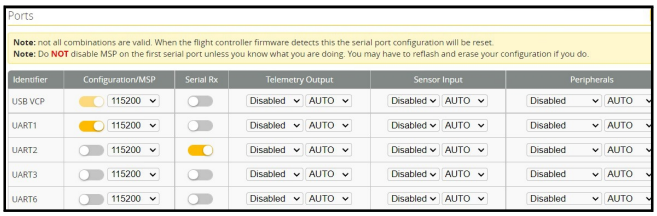


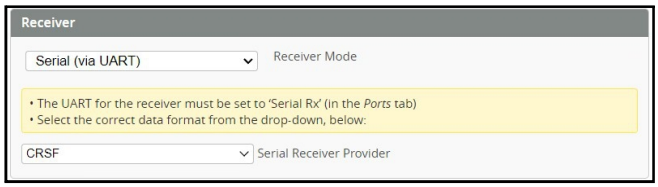
Bind Procedure

1) Supply power to the flight controller by plug USB, wait until the Red LED on the FC is off, immediately turn off the power, and then repeat again the above steps. When the FC is powered on for the third time, the Red LED light will start to double-flash, which means that the RX enters the binding mode
2) Please make sure your ExpressLRS tx module firmware is v3.x.x. And go to ExpressLRS.lua from “TOOLS” menu of your radio transmitter. Then hit [Bind] to binding with the onboard ExpressLRS receiver. The Red LED should blinking slowly first then turn to solid, that means binding was successfully. If the red LED got triple blinking and no rx input from receiver tab ,please change Model Match tab value from “off” to “on” or from “on” to “off”, then change back to "off", that would working normal.



Port and Receiver settings

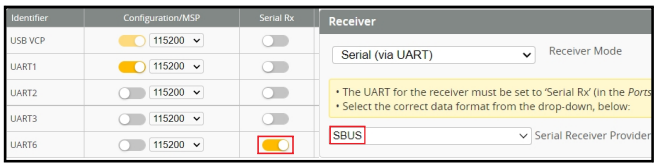




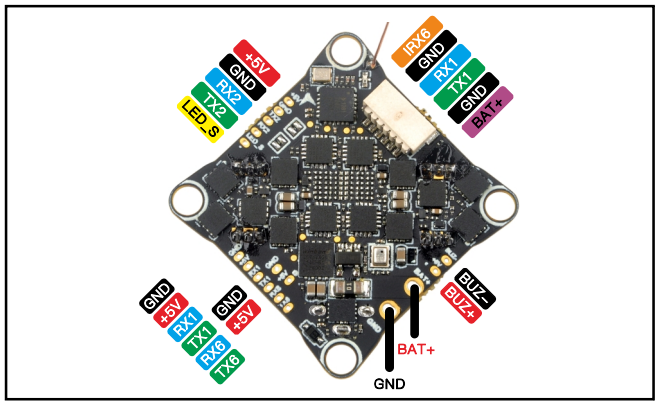
***OSD display command for Mobula8 O3 version if you re-flashed firmware:
set osd_displayport_device = MSP
set displayport_msp_serial = 0
save

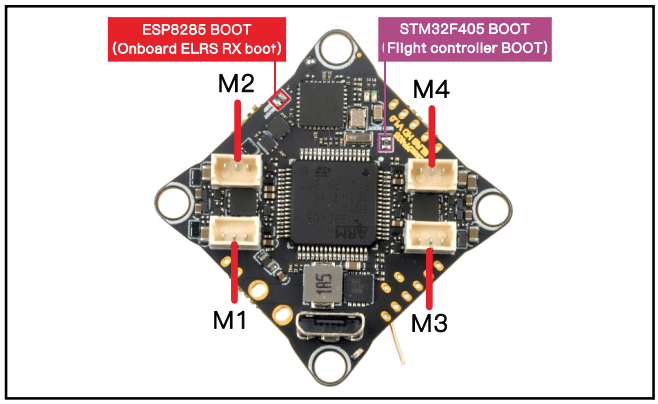
***If you upgrade firmware to 4.4.x , then you should enable MSP for uart1 and VTX(MSP+Displayport) from Port setting of the betaflight configurator

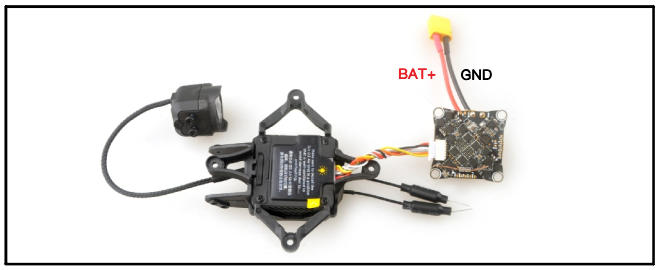
***If you want to use DJI radio controller, then please enable Serial RX for UART6 and select SBUS for the serial receiver provider from betaflight configurator



Flight controller connection diagram



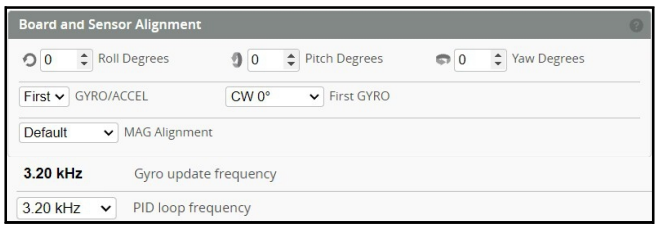




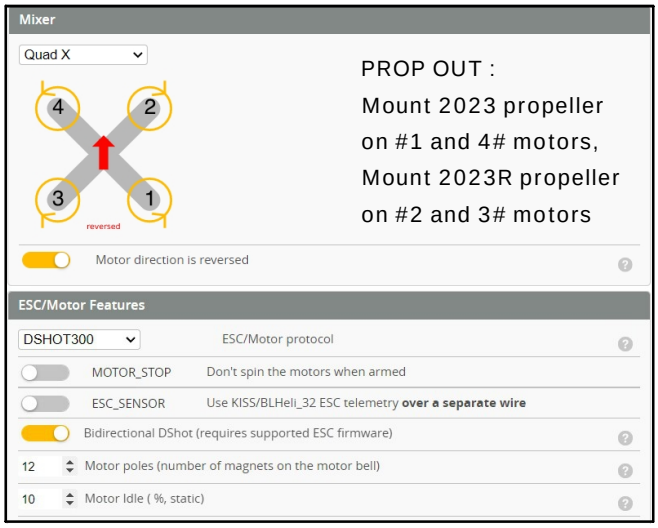
Arm/Disarm the Motor

1)After install the DJI O3 air unit to the bracket ,please first link the VTX with goggles
2)Turn on your radio transmitter and connect the battery to the Mobula8 HD drone .Then place Mobula8 HD drone horizontally on the ground.
3)Toggle Aux1 switch to arm the motors, the Green LED at the bottom of the flight controller would get solid once armed, happy flying.

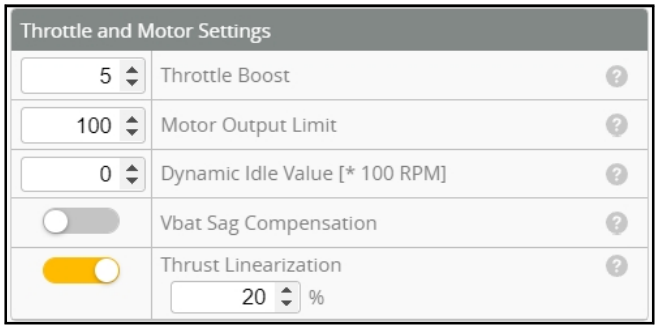
Board and sensor alignment and frequency settings

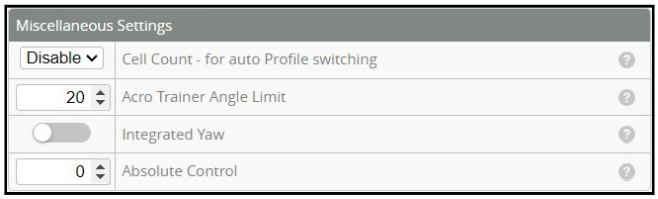


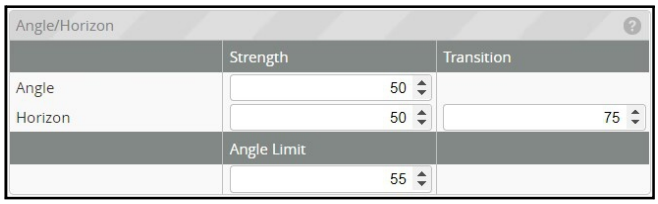
Motors and ESC settings

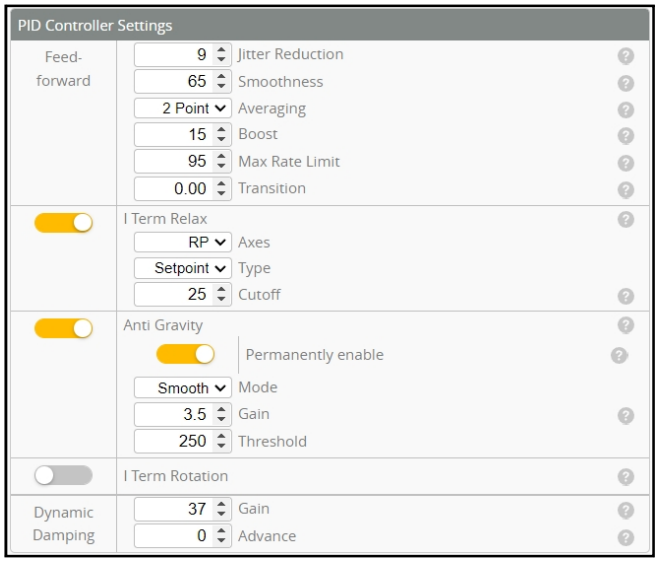


Default PID and Filter Settings

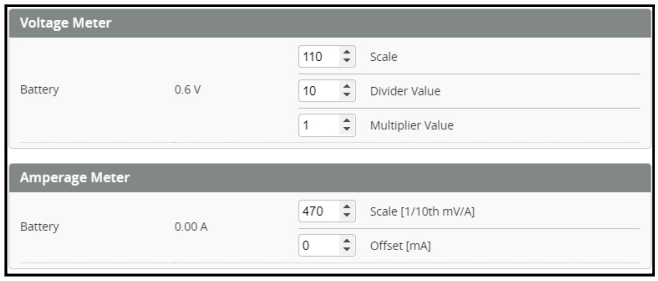




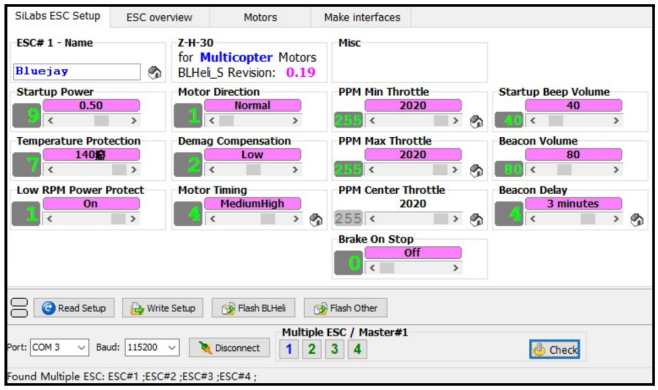




Voltage and Currents meter settings

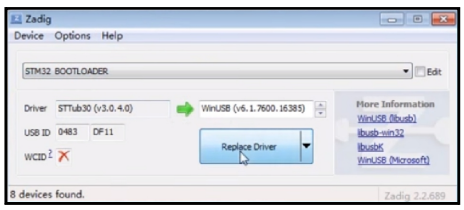


ESC Settings



Flight controller firmware update

1.Install latest STM32 Virtual COM Port Driver
http://www.st.com/web/en/catalog/tools/PF257938
2.Install STM BOOTLOAD Driver (STM Device in DFU MODE)
3.Open Betaflight configurator and choose firmware target "BetaflightF4",then select the firmware version.
4.There are 2 ways to get in DFU Mode: 1). solder the boot pad and then plug USB to computer 2).loading betaflight firmware and hit "flash", then it will getting into DFU Mode automatically.
5.Open Zadig tools to replace the drivers from STM32 Bootloader to WINUSB Driver.
6.Reconnect the flight controller to the computer after replace driver done , and open Betaflight Configurator, loading firmware and flash.



Firmware and dump file

Firmware and diff download