Manual of

DYS-F4 PRO

Brief introduction

DYS F4 flight control with high performance which is designed for FPV hobbyists. Not only put PCB board together with flight control, but also integrated OSD, current meter, voltmeter and built-in high power BEC etc functions. DYS F4 can meet all the functions you need including FPV racer, aerobatic flight and aerial photograph.

Note: Please be attention that do not modify or amend the flight control, otherwise any quality issue or damage of the products should be charged by the user.

Basic functions

- New version F4 PRO comes with 3.3V output port, PPM and RSSI port
- Betaflight firmware
- Enable DYSFOUR firmware as well as OMNIBUSF4 firmware
- STM32F405 master with higher refresh rate and more function ports.
- Six-layer PCB board and 3OZ copper to enhance the over-current and heat dissipation
- 5V power supply max up to 3A
- Easier to soldering with integrated exposed solder pad
- Compatible with all split-type escs, connect with DYS 4-in-1 esc without soldering
- Support BF setting software to flash and debug OSD
- Integrated current meter to monitor the power consumption etc in real time
- Adjust the flight control via OSD by remote control
- Support SMART AUDIO, IRC TRAMP, adjust the VTX like frequency point and power etc by remote control
- Comes with heat resistance damping balls to upgrade the stability and operation
- 2-6s lipo input support
- Net weight 11.2g without cable
- Dimension L 42X W 36mm, hole distance 30.5 x 30.5mm

Cautions

Please be attention to below notes to protect your flight control and ensure your flight control stable

- Be attention to the polarity, please double check before power on.
- While pull/plug or connection, please cut off the power.
- Do not short the 5V or any power, otherwise the flight control will burn.
- Damping balls should be installed on the flight control (Already mounted before leaving the factory).
- While mount with 4-in-1 esc, please check the plugged pins correct or not. Be attention that do not force to pull or plug.
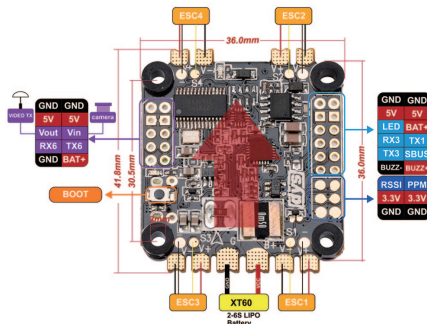- The maximum refresh rate of PID and gyro up to 8K.

1. Specification:
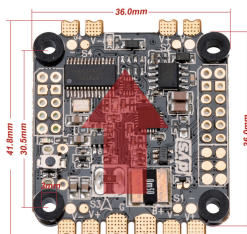
Data:

Size: L 42 X W 36mm ,
Hole distance 30.5 X 30.5mm
Master: STM32F405 GRT6
Enable voltage: 3-6S Lipo input
Withstand current: 150A
BEC: 5V 3A
Net weight: 11.2g

2. Connection:

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ESC M1-M4：For esc power cable

S1-S4：For esc signal cable and GND, "-" means GND

BOOT: BOOT button（for flash firmware）

5V: With 3A output for VTX, receiver and camera in the meantime

GND: Ground wire

Vout: Video output for VTX image signal wire

Vin：Video input for camera signal wire

LED: Programmable LED signal wire output

SBUS: Connect with sbus receiver

USart 6 rx、Smart Audio（USart6 tx）：serial port for USART6，Wiring for Smart Audio of VTX（OSD adjust VTX）

VtxPower+: VTX wide voltage positive with power filter (the voltage is battery voltage) to reduce the interference.

Buzz-、Buzz++: Wiring for buzzer

UART3-TX, URAT3-RX: Serial port for URAT3

Bottom pins：Signal connection port for 4-in-1 esc

UART3-TX,URAT3-RX: Wiring of URAT3

RSSI port: Analog signal strength input port (Note: this function depends on the RX and TX to support)

PPM port: PPM input port, connect with PPM receiver

3.3V port: 3.3V output port, power supply for 3.3V device

Pin socket: For 4 in 1 esc's signal connector

Note:

1. When use the ESC, please do the soldering of the signal negative wire

2. You can use the U3 and U6 of the X4RSB, XSR receiver by following below step: The GREEN arrow (SOT23 transistor) needs to connect to the TX of a spare UART on the FC. If you are using Betaflight or Cleanflight you only need to connect a single wire to the GREEN arrow and TX pin. This is because the firmware puts the UART into a bi-directional half-duplex mode using the TX pin only (the TX and RX pins are bridged within the MCU to be specific). If you are using an alternate FC firmware, you may need to connect the WHITE arrow (middle pin [A] of an XOR chip, SOT23-5) to the RX of the same spare UART on the FC.
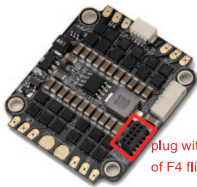
X4RSB receiver:
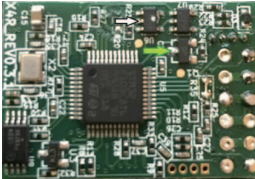
X4R receiver:
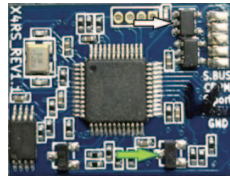
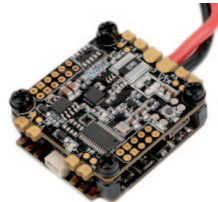## 3. Mount with DYS 4-in-1 esc (optional)

1) Signal connection wire of DYS 4-in-1 esc

2) Plug the F4 back pins with esc signal port

plug with the back pins of F4 flight control

Notes:

● Please mount the F4 pro with 4-in-1 esc as pic shows. Be attention that do not force to pull/ plug to avoid damage the socket.

While using with 4-in-1 esc

● Please solder the battery power cable with esc power cable, do not connect with battery.

● F4 pro current meter will be out of use. Esc 5V output take the place of flight control 5V.

● With voltage detection for battery.

● Voltage of Vtxpower+ is the power voltage of the esc

4. Betaflight firmware flash steps:

If you need to upgrade the DYS-F4 PRO, please make sure below drive is already install correctly.

1) CP210x DRIVERS

http://www.silabs.com/products/development-tools/software/usb-to-uart-bridge-vcp-drivers

2) STM USB VCP DRIVERS

http://www.st.com/web/en/catalog/tools/PF257938

3) Zadlg:http://zadig.akeo.ie/

Please press the boot key on FC, and stop pressing the boot key after you connect with the USB, and at this moment, the GUI port will show up with the DFU. Enter the firmware flasher page, choose OMNIBUSF4 to the versions you like to flash, then click Load Firmware (On line). As soon as the flash firmware is shining, you can click it to flash the firmware.

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