AIOF3_BRUSHED Flight Control Board Built-in OSD Frsky Receiver

The AIOF3_BRUSHED flight controller is a Highly integrated F3 flight controller both for Indoor FPV flight and outdoor FPV.

The flight controller integrate OSD and Receiver, run Betaflight firmware. It's amazing, you only just get ready your VTX and camera, it's simple to DIY a whole FPV racing Quadcopter with brushed motor .
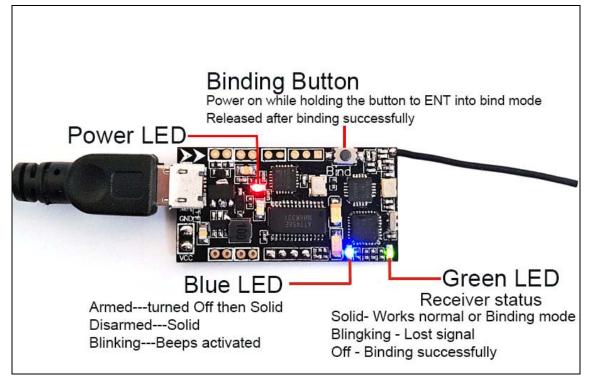
1. Specification:

Brand Name: Eachine

Size: 38mm*19mm

Weight: 3g

Processor: STM32 F303 MCU

Sensor: SPI Sensor MPU6000
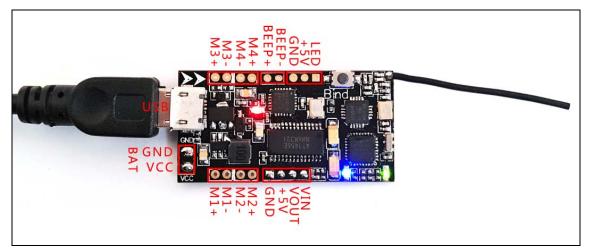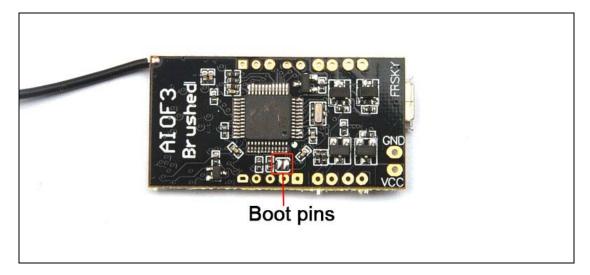
Target: Omnibus

Firmware Version: Betaflight 3.0.1

Receiver: Frsky D8 mode SBUS Output 8ch With RSSI output (OSD display Channle9 / X9D telemetry)

2. Connector and LED Definition:

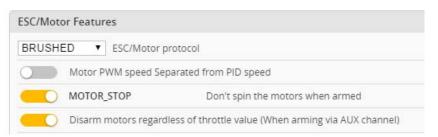## 3. Installation and Connection diagram：

Boot pins

4. Betaflight configuration：

All the configuration was set up before shipping, if you need to flash firmware and select "Full chip erase", you should reconfigure for the AIOF3 Flight controller board according to the bellowing diagram.

> ⚠️ After you flashed firmware and do the "Full chip erase" option, Please remove the propeller from the motor and plug your battery ,otherwise it maybe can't connected to the Betaflight configurator.

Reconfigure steps:

Go to Configure Tab and set ESC/Motor protocol to BRUSHED

ESC/Motor Features

BRUSHED ▼	ESC/Motor protocol
⚪	Motor PWM speed Separated from PID speed
🟠	MOTOR_STOP — Don't spin the motors when armed
🟠	Disarm motors regardless of throttle value (When arming via AUX channel)

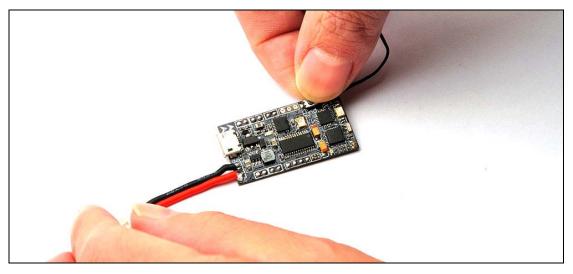*This step is in order to avoid motor auto-spinning when connect the battery

1. Ports and receiver mode sets like the bellowing diagram: First Enable Seria_RX for uart3 and Set Receiver mode RX_SERIAL , Select SBUS signal in Betaflight configurator.

Ports WIKI

Note: not all combinations are valid. When the flight controller firmware detects this the serial port configuration will be reset.
Note: Do NOT disable MSP on the first serial port unless you know what you are doing. You may have to reflash and erase your configuration if you do.

Identifier	Data	Logging	Telemetry		RX	GPS
USB VCP	🟠 MSP 115200 ▼	⚪ Blackbox 115200 ▼	Disabled ▼	AUTO ▼	⚪ Serial RX	⚪ 57600 ▼
UART1	⚪ MSP 115200 ▼	⚪ Blackbox 115200 ▼	Disabled ▼	AUTO ▼	⚪ Serial RX	⚪ 57600 ▼
UART2	⚪ MSP 115200 ▼	⚪ Blackbox 115200 ▼	Disabled ▼	AUTO ▼	⚪ Serial RX	⚪ 57600 ▼
UART3	⚪ MSP 115200 ▼	⚪ Blackbox 115200 ▼	Disabled ▼	AUTO ▼	🟠 Serial RX	⚪ 57600 ▼

Receiver Mode	
○ RX_PPM	PPM RX input
◉ RX_SERIAL	Serial-based receiver (SPEKSAT, SBUS, SUMD)
○ RX_PARALLEL_PWM	PWM RX input (one wire per channel)
○ RX_MSP	MSP RX input (control via MSP port)

Serial Receiver Provider

Note: Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX_SERIAL feature.

SPEKTRUM1024
SPEKTRUM2048
SBUS
SUMD

2.   Binding Procedure:

a)Power for the AIOF3_Brushed board while holding the Bind button, the Green LED will getting to be solid, this means the AIOF3_Brushed is in binding mode, then release the button.

b)Turn on your Radio and select D8 mode for the Receiver. Then Go to the Receiver [Bind] option, and ENT to Binding with the AIOF3_Brushed. The Green LED will turning off, this indicates binding successfully. Reconnect the battery to the AIOF3_Brushed board after Binding successfully.

3.   The default receiver channel map is TAER1234, please ensure your transmitter is matched with it, otherwise it can't be armed.

Channel Map	RSSI Channel
TAER1234 ▾	Disabled ▾

4. The Default Arm/Disarm switch is AUX1(Channel 5),and you can also customize it with Betaflight Configurator.

5. Set Arm/Disarm switch for your TARANIS X9D: Move to the MIXER interface, Set "SA" or "SB" switch etc. for Ch5 to ARM/DISARM the motor.

6. Toggle the AUX1 Switch and the blue LED on the board will first turning off and get be solid soon, this indicate the motor was armed. Be careful and enjoy your flight now!

5. OSD configuration：

Connect the AIOF3 board to the computer , open Betaflight Configurator , move to the OSD option

RSSI output use Channel 9 , configure in Betaflight receiver option

Craft Name set in configuration option