

Minicube F4 flight controller integrate Betaflight OSD Quick user guide

Specification:

Brand name: Eachine

Item name: Minicube F4 flight controller integrate Betaflight OSD

Size: 27*27mm

Mounting hole: 20*20mm

Weight: 3.3g

Processor: STM32F405RGT6

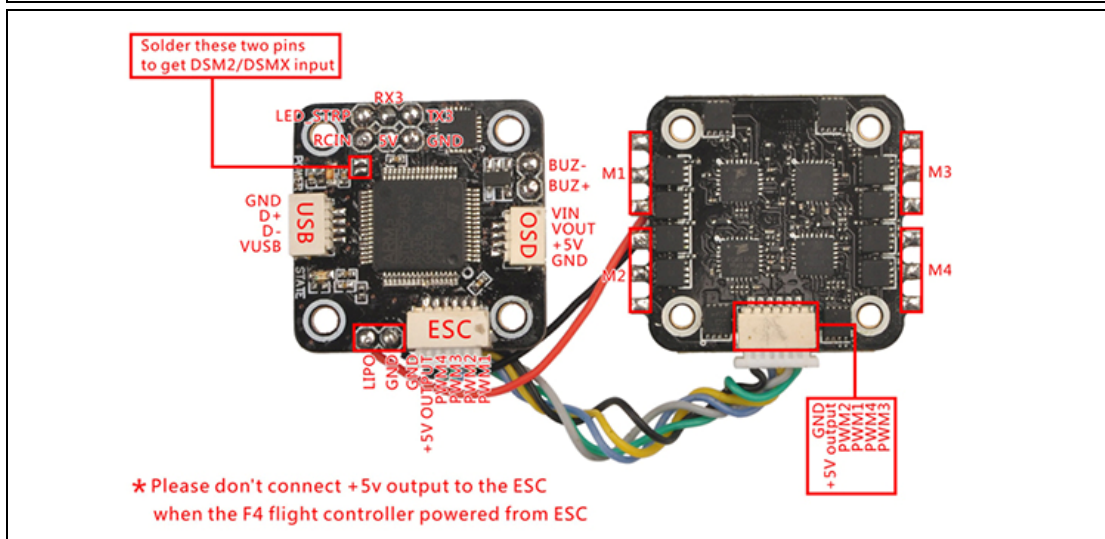
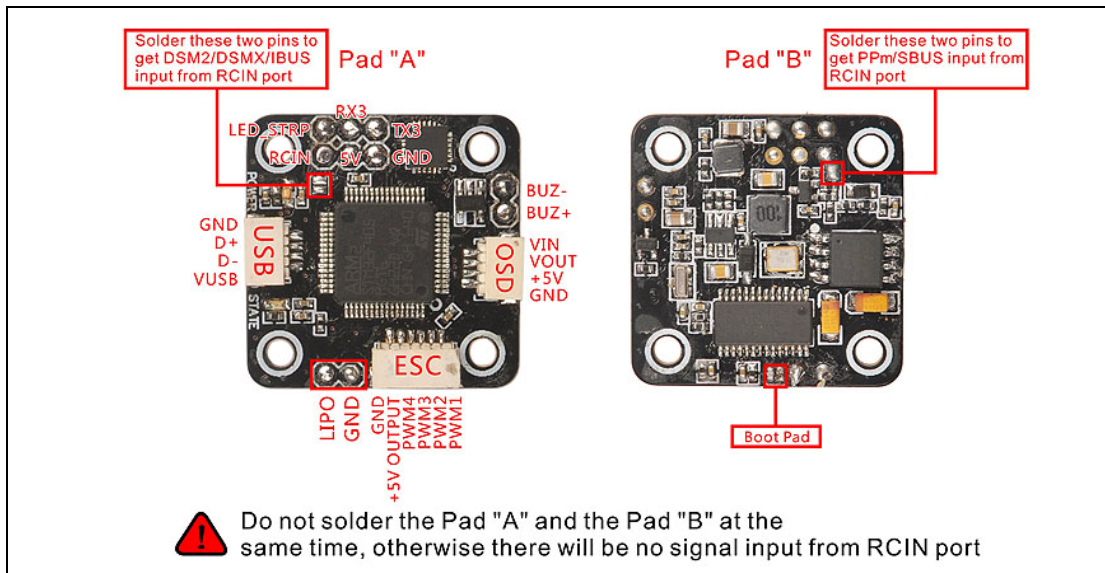
Sensor: MPU-6000 (connected by SPI)

Firmware Target: betaflight_3.1.7 OmnibusF4SD

Built-in BEC: 5V/1A

Power supply: 2-4S lipo battery

Pins connection diagram:



Getting start:

1. Install latest STM32 Virtual COM Port Driver

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

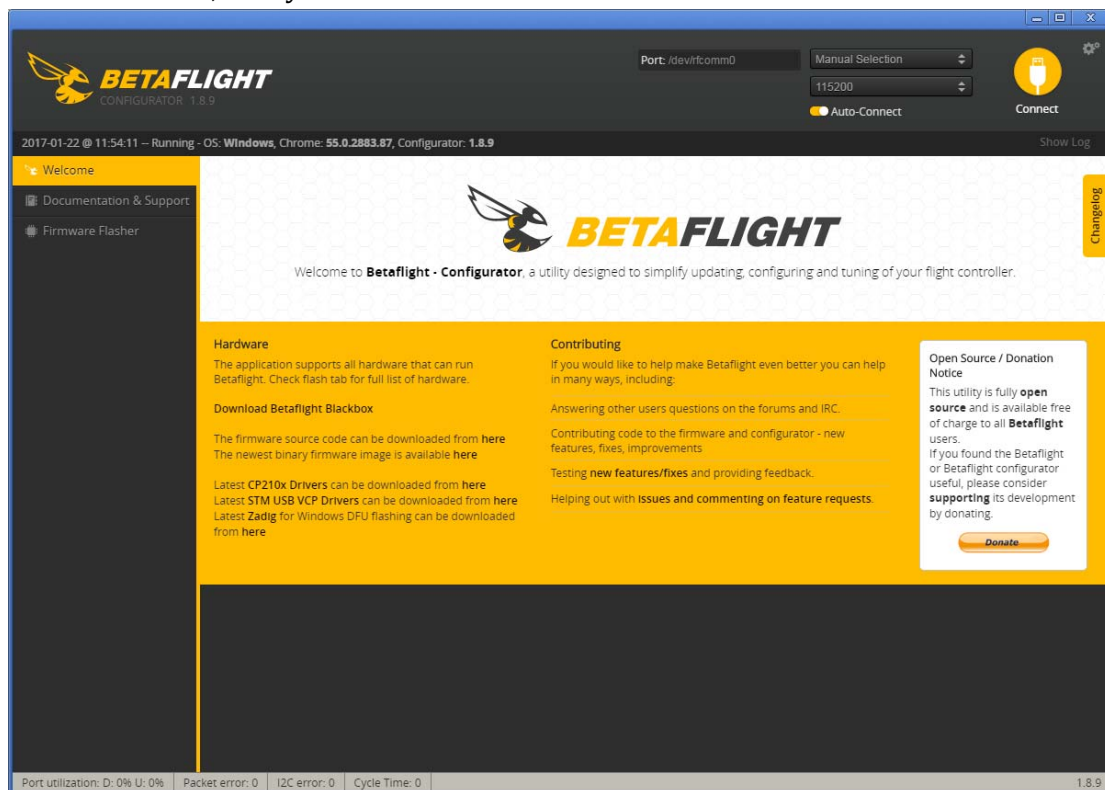
2. Install and launch the Cleanflight Configurator tool

https://chrome.google.com/webstore/detail/betaflight-configurator/kdaghagfopacdngbohiknlhcocjccjao?utm_source=chrome-ntp-icon (you need to open this link in Google Chrome. If you don't have Google Chrome, download and install this first)

3. Connect the flight controller to the computer via USB cable.

4. Select the correct COM port if it is not automatically detected.

5. Click connect, verify that communication is established .



Software:

The Mini cube F4 flight controller runs the Open-source Betaflight flight control (FC) software . The newest version is Betaflight 3.1.7 which supports DSHOT very well .

HEX Firmware target:

https://github.com/betaflight/betaflight/releases/download/v3.1.7/betaflight_3.1.7_OMNIBUSF4SD.hex

DFUUSE tools:

<http://www.st.com/zh/development-tools/stsw-stm32080.html> DFUMODE

to flash firmware should first Connect the boot pad and install the STM32 Bootloader driver.

Receiver Configurations

1. SBUS Receiver:

Connect your SBUS receiver to [RCIN +5V GND] port; Enable Serial_RX for UART1 from the Port tab in Betaflight configurator, then select SERIAL-based receiver from the RECEIVER Mode and set the Serial Receiver Provider to be SBUS in Betaflight Configurator. Solder the Pad "B" in the bottom of the board to get SBUS signal input



from RCIN port

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.

Port Identifier	Configuration	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	<input checked="" type="checkbox"/> MSP 115200	<input type="checkbox"/> Serial RX	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART1	<input type="checkbox"/> MSP 115200	<input checked="" type="checkbox"/> Serial RX	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART3	<input type="checkbox"/> MSP 115200	<input type="checkbox"/> Serial RX	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART6	<input type="checkbox"/> MSP 115200	<input type="checkbox"/> Serial RX	Disabled AUTO	Disabled AUTO	Disabled AUTO

Receiver

Serial-based receiver (SPEKSAT, S) Receiver Mode

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

SBUS Serial Receiver Provider

2. PPM Receiver:

Connect your PPM receiver to [RCIN +5V GND] port and then set the Receiver Mode to RX_PPM from the configuration in Betaflight configurator. Solder the Pad "B" in the bottom of the board to get PPM signal input from RCIN port



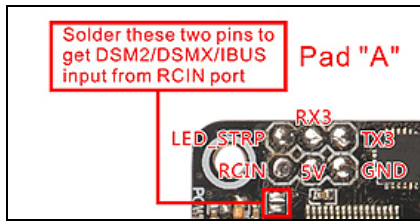
Receiver

PPM RX input Receiver Mode

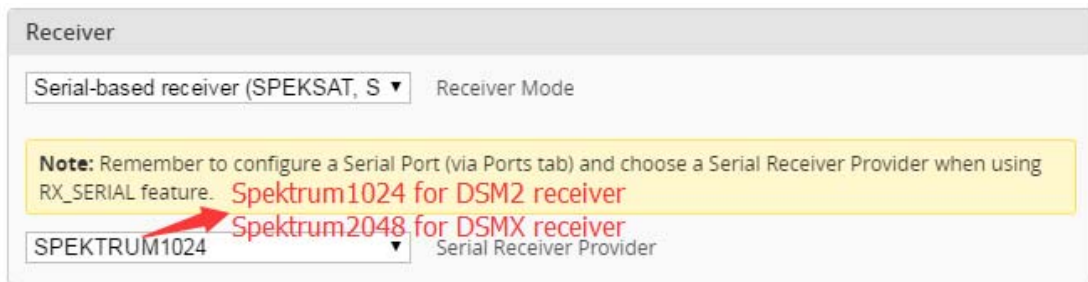
Notes: If you use PPM receiver ,please disable LED_Strip, it's a know issue of Betaflight 3.17 firmware

3. Minicube DSM2/DSMX Receiver

Connect your Minicube DSM2/DSMX receiver to [RCIN +5V GND] port; Solder the

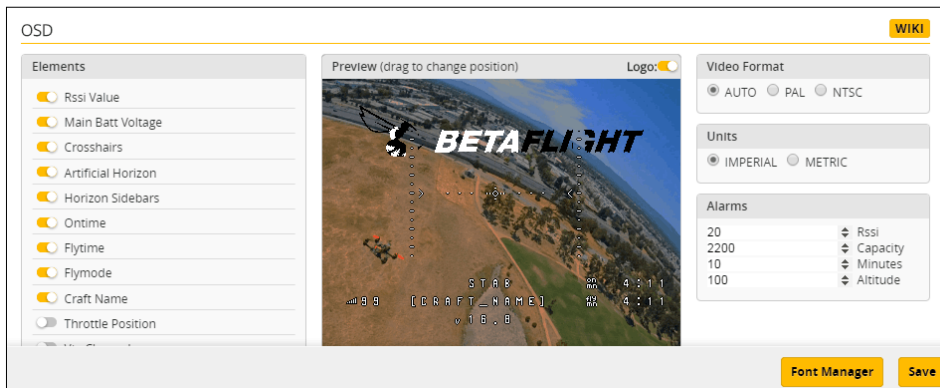


Pad "A" to get DSM2/DSMX input Enable Serial_RX for UART1 from the Port tab in Betaflight configurator, then select SERIAL-based receiver from the RECEIVER Mode and Select SPEKTRUM1024 for DSM2 Radio; Select SPEKTRUM2048 for DSMX Radio in Betaflight Configurator.

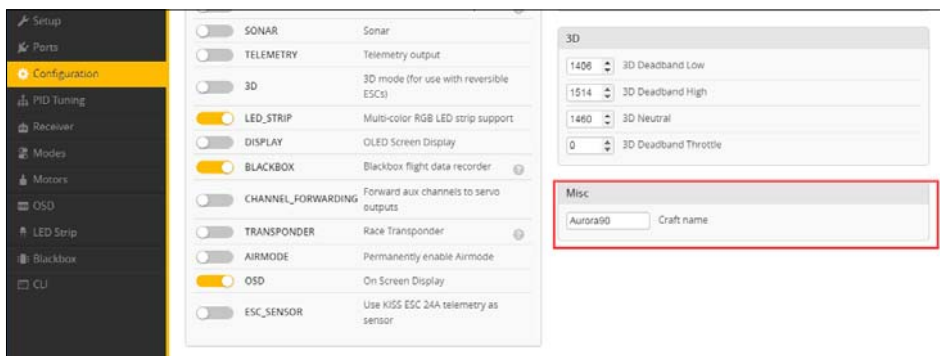


Betaflight OSD Configurations:

1. Connect the Minicube F4 to the computer, open Betaflight Configurator, move to the OSD option, then you can configure the layout of the OSD.



2. Craft Name set is in configuration option



Useful Links:

<https://github.com/betaflight/betaflight/wiki>