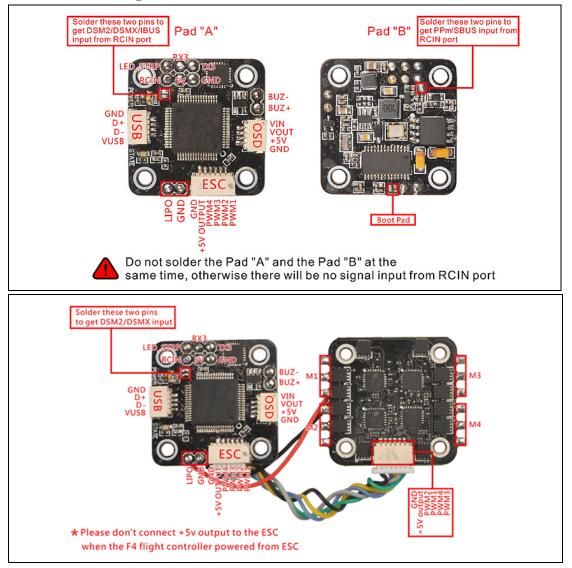
Minicube F4 flight controller integrate Betaflight OSD Quick user guide

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/kdaghagfopac dngbohiknlhcocjccjao?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 .

	LIGHT ⁸⁹	Port: /deviricomm0 Manual Selection 115200 • Auto-Connect	
2017-01-22 @ 11:54:11 Running	- OS: Windows, Chrome: 55.0.2883.87, Configurator: 1.8.9		
Welcome Documentation & Support Firmware Flasher	H O - O - O - O - O - O - O - O - O - O	BETAFLIGHT	our flight controller.
			K AGAGA AGAG
	Hardware The application supports all hardware that can run Betaflight. Check flash tab for full list of hardware.	Contributing If you would like to help make Betaflight even better you can help in many ways, including:	Open Source / Donation Notice This utility is fully open
	Download Betaflight Blackbox	Answering other users questions on the forums and IRC.	source and is available free
	The firmware source code can be downloaded from here The newest binary firmware image is available here	Contributing code to the firmware and configurator - new features, fixes, improvements	of charge to all Betaflight users. If you found the Betaflight
	Latest CP210x Drivers can be downloaded from here	Testing new features/fixes and providing feedback.	or Betaflight configurator useful, please consider
	Latest STM USB VCP Drivers can be downloaded from here Latest Zadig for Windows DFU flashing can be downloaded	Helping out with Issues and commenting on feature requests.	supporting its development by donating.
	from here		Donate
Port utilization: D: 0% U: 0% Pa	cket error: 0 12C error: 0 Cycle Time: 0		1.8.9

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

DFUSE 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

			v what you are doing. You may h		
Port Identifier	Configuration	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	──── MSP 115200 ▼	Serial RX	Disabled v AUTO v	Disabled • AUTO •	Disabled • AUTO •
UART1	MSP 115200 V	Serial RX	Disabled • AUTO •	Disabled V AUTO V	Disabled • AUTO •
	MSP 115200 V	Serial RX	Disabled v AUTO v	Disabled V AUTO V	Disabled • AUTO •
UART3					

Serial-based receiver	(SPEKSAT, S ▼ Receiver Mode
Note: Remember to co RX_SERIAL feature.	onfigure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using

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

Pad "B" Solder these two pins to get PPm/SBUS 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.

leceiver	
Serial-based receiv	er (SPEKSAT, S 🔻 Receiver Mode
	o configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using
RA SERIAL ledure.	Spektrum1024 for DSM2 receiver

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.

lements	Preview (drag to change position)	Logo:	Video Format	
🔾 Rssi Value			🖲 AUTO 🔍 F	al 🔍 ntsc
🔾 Main Batt Voltage		ALT	Units	
Crosshairs	S BETAFLI		IMPERIAL	
Artificial Horizon	and the second second	2	IMPERIAL V	METRIC
O Horizon Sidebars	a ser a nón e ser a d		Alarms	
🜔 Ontime			20	Rssi
Flytime	Contraction of the second s		2200	Capacity
Flymode	the second se	-BLANNENS	10	Minutes
	STAB	AR 4 1 1 1	100	Altitude
🔘 Craft Name		盤 4:11		
Throttle Position	v 1 6 . 8 ·	100		

2. Craft Name set is in configuration option

🖋 Setup	SONAR	Sonar	3D
🖌 Ports	TELEMETRY	Telemetry output	
Configuration	30	3D mode (for use with reversible	1406 C 3D Deadband Low
占 PID Tuning	30	ESCs)	1514 ID Deadband High
da Receiver	LED_STRIP	Multi-color RGB LED strip support	1460 C 3D Neutral
2 Modes	DISPLAY	OLED Screen Display	0 3D Deadband Throttle
and contractor	BLACKBOX	Blackbox flight data recorder 🛛 🕥	
🛓 Motors 🎫 OSD	CHANNEL_FORWARDIN	G Forward aux channels to servo outputs	Misc
🕈 LED Strip	TRANSPONDER	Race Transponder	Aurora90 Craft name
1 Blackbox	AIRMODE	Permanently enable Airmode	
m cu	OSD	On Screen Display	
	ESC_SENSOR	Use KISS ESC 24A telemetry as sensor	

Useful Links: <u>https://github.com/betaflight/betaflight/wiki</u>