

Eachine Beecore V2.0 Brushed Flight Control Board DSM2/X version Manual

Eachine Beecore V2.0 brushed Flight control board is a new upgraded version which integrated Betaflight OSD and MPU6000 at SPI bus. The new version also integrated 2.4G receiver with 3 versions to choose(Frsky/Flysky/DSMX). It's the best flight controller for Indoor Brushed quadcopter.

1.Specification:

CPU: STM32F303CCT6

Six-Axis: MPU6000

ESC: All FETs are rated at 10A maximum

Size: 26mm x 26mm,fully compatible with the Inductrix and Eachine E010/E010S frame and mounting pattern

Firmware version: BETAFLIGHTF 3.2.0

Firmware Target: Omnibus

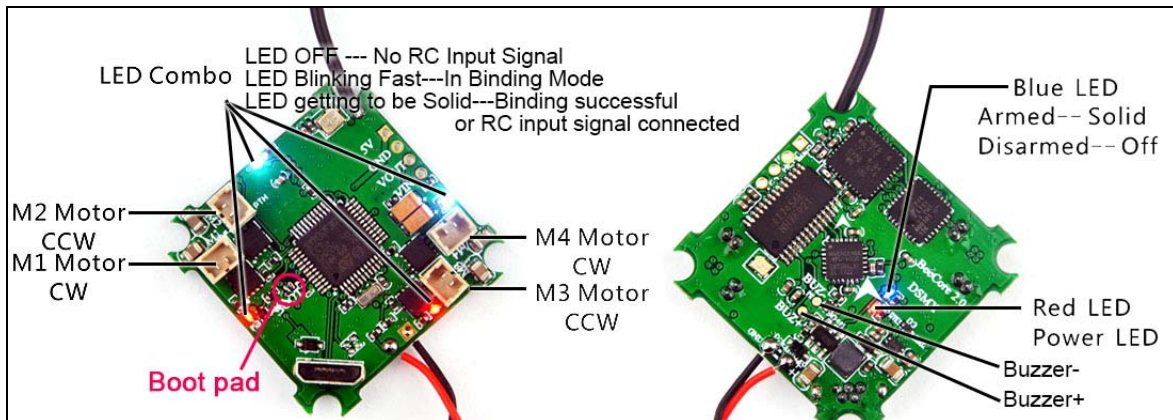
OSD: Built-in BetaFlight OSD (STM32 controls OSD chip over SPI in DMA mode)

Receiver Option: Frsky D8 potocol (SBUS), Flysky AFHDS-2A protocol(IBUS), Spektrum DSM2/DSMX protocol

Weight: 3.2g

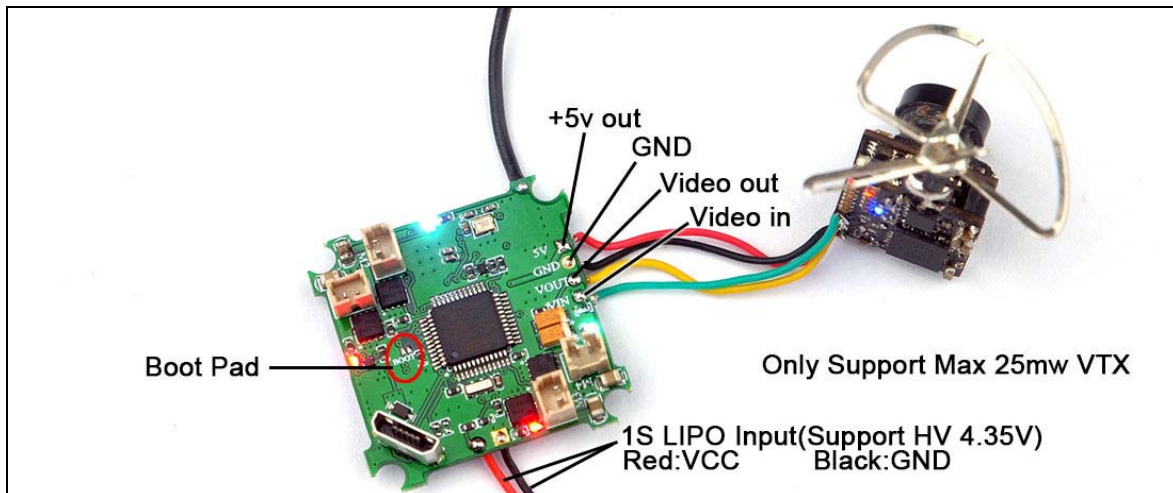
Work voltage:1S Lipo 3.5v~4.35v

2.Connection and LED

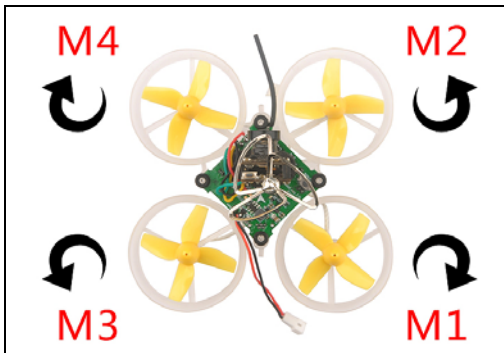


Notes: The LED Combo is blinking slowly after binding Successfully for some DSM2 Radio


3.Camera connection



4.Mixer type and ESC/Motor protocol



ESC/Motor Features	
BRUSHED	ESC/Motor protocol
<input type="checkbox"/>	Motor PWM speed Separated from PID speed
<input checked="" type="checkbox"/>	MOTOR_STOP Don't spin the motors when armed
<input checked="" type="checkbox"/>	Disarm motors regardless of throttle value (When ARM is configured in Modes tab)
5	Disarm motors after set delay [seconds] (Requires MOTOR_STOP feature)
1070	Minimum Throttle (Lowest ESC value when armed)
2000	Maximum Throttle (Highest ESC value when armed)

 Please pay attention to the motor sequence of Inductrix main board , it's different from BEECORE, Install the motor according to the diagram above.

5.Receiver configuration

Ports and receiver mode sets like the bellowing diagram: First Enable Serial_RX for uart3 and Set Receiver mode to "RX_SERIAL" , Select "Spektrum2048" signal for DSMX radio and "Spektrum1024" signal for DSM2 radio in Betaflight configurator . And the default channel map is "TAER1234", please check your RC transmitter channel map, make sure they are matched, otherwise it will not armed.

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	<input checked="" type="checkbox"/> 115200	<input type="checkbox"/>	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART1	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART2	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART3	<input type="checkbox"/> 115200	<input checked="" type="checkbox"/>	Disabled AUTO	Disabled AUTO	Disabled AUTO

Receiver	
Serial-based receiver (SPEKSAT, S)	Receiver Mode
<p>Note: Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX_SERIAL feature.</p>	
SPEKTRUM2048	Serial Receiver Provider
SPEKTRUM1024	Serial Receiver Provider

Channel Map	RSSI Channel	
TAER1234	AUX 5	
'Stick Low' Threshold	Stick Center	'Stick High' Threshold
1050	1500	1900

6.Binding procedure

- Connect BEECORE V2.0 DSM2/DSMX Version to computer and open Betaflight configurator, From CLI tab type: "set spektrum_sat_bind = 9" for DSMX radio or "set spektrum_sat_bind = 5" for DSM2 radio
- Type "save" and after Flight controller reboot remove USB cable (=Power off the board)
- Wait a second and reconnect the USB cable. After cold start the led combo(2 white color LED and 2 red color LED) should start blinking fast and transmitter should be turned on while pressing the bind button
- After binding the led combo should be solid. Connect Betaflight and use receiver tab to test that receiver is working correctly.
- Final step is to go to CLI tab and type "set spektrum_sat_bind = 0" and then type "save". This must be done so

that the receiver doesn't go back to binding mode when the BEECORE V2.0 is repowered again.

```
Entering CLI Mode, type 'exit' to return, or 'help'  
  
# Set spektrum_sat_bind=9  
spektrum_sat_bind set to 9  
# save
```

For DSMX

```
Entering CLI Mode, type 'exit' to return, or 'help'  
  
# Set spektrum_sat_bind=5  
spektrum_sat_bind set to 5  
# save
```

For DSM2

```
Entering CLI Mode, type 'exit' to return, or 'help'  
  
# Set spektrum_sat_bind=0  
spektrum_sat_bind set to 0  
# save
```

Close Binding

6.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 "OMNIBUS", 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.

