

BEECORE DSM2 F3_EVO_Brushed ACRO Flight Control Board quick user guide

This board is designed to work with Inductrix / BeeDuctrix / Tiny Whoop / Eachine E010, just replace the current board with our new BEECORE main board and experience the next level of flight control.

1. Specification:

STM32 F303 processor

Six-Axis: MPU6500

Size: 2mm x 26mm

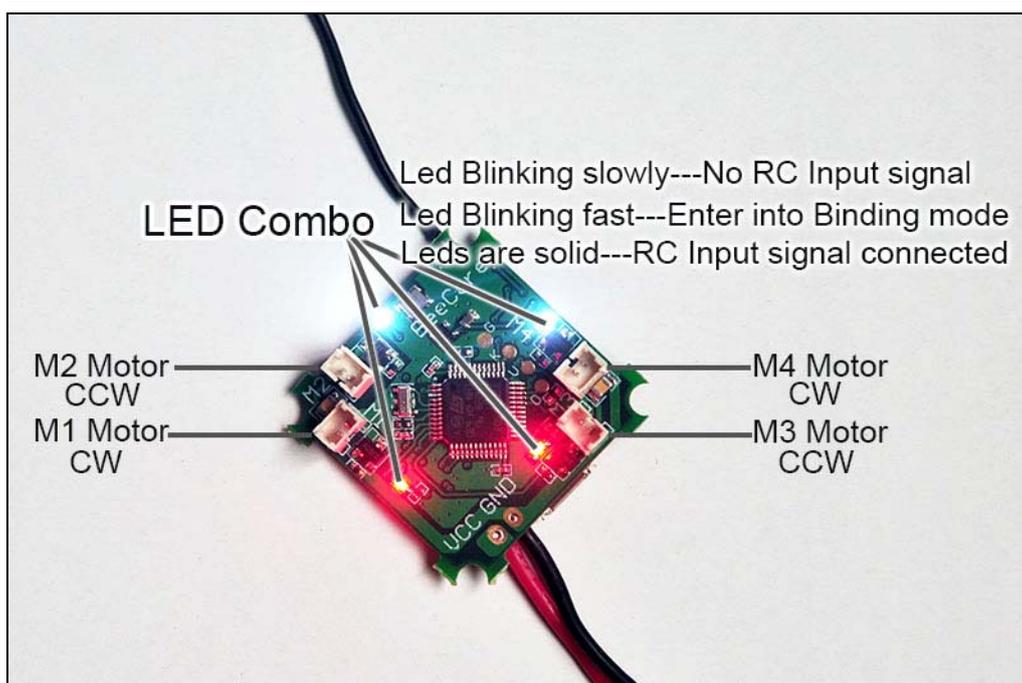
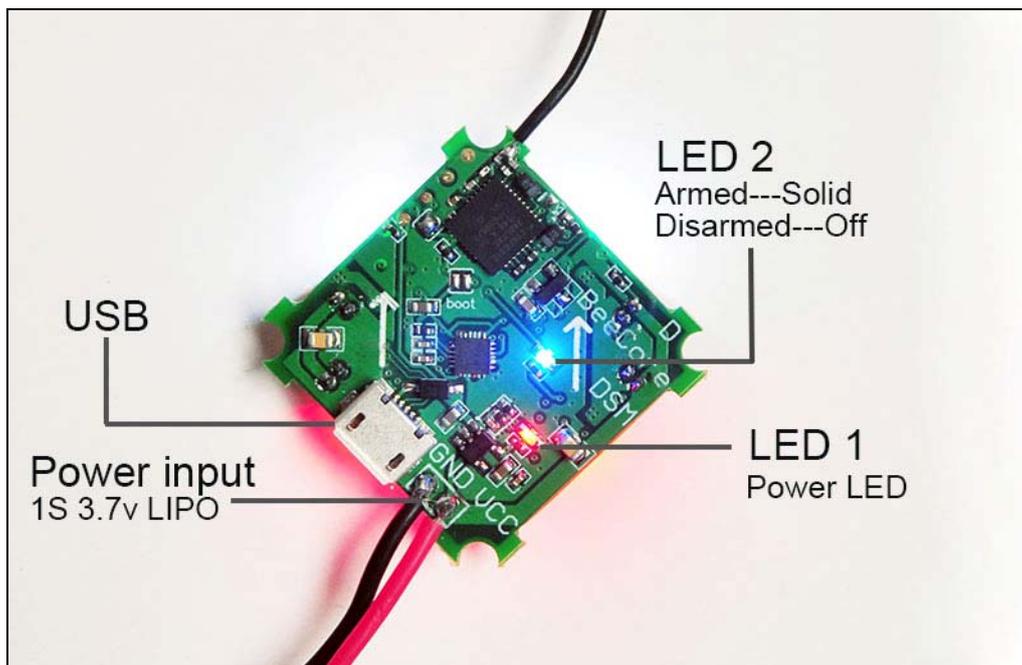
Weight: 3 grams

Work voltage: 3.7v-5v / 1S Lipo battery input

Receiver: 6CH DSM2 protocol PPM output

Firmware Version: Cleanflight 1.13.0

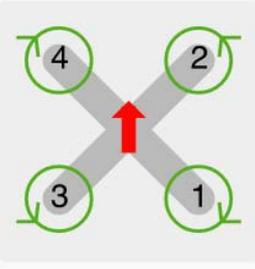
2. Connector and LED Definition:



3. Installation and Connection diagram:

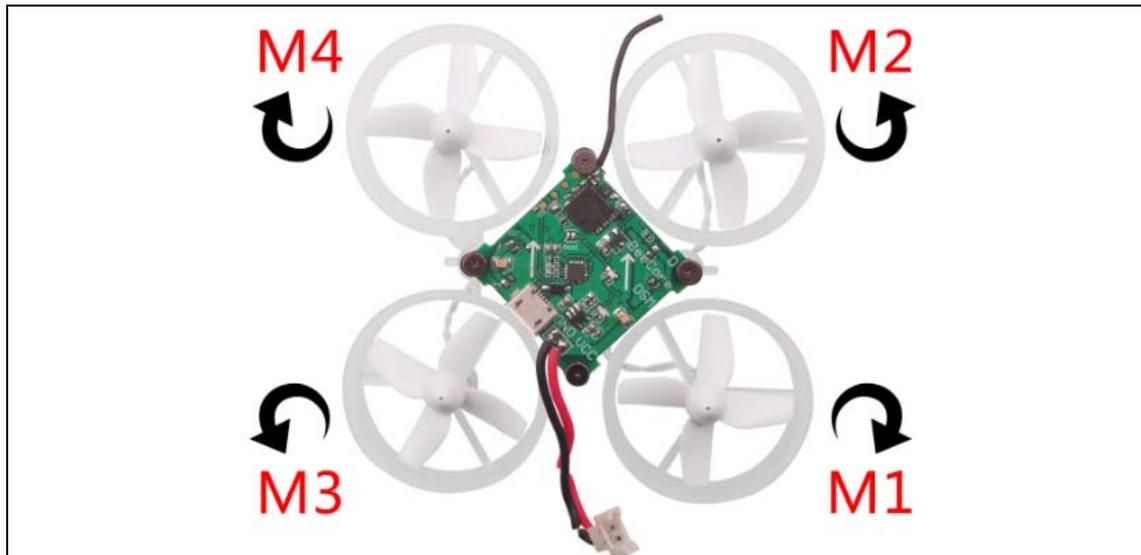
Mixer

Quad X



ESC/Motor Features

- MOTOR_STOP Do not spin motors when armed
- ONESHOT125 ONESHOT ESC support
- Disarm motors regardless of throttle value (When arming via AUX channel)
- 5 Disarm motors after set delay(Seconds) (Requires MOTOR_STOP feature)
- 1150 Minimum Throttle
- 2000 Maximum Throttle
- 1000 Minimum Command



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

4. Cleanflight / 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 BEECORE Flight controller board according to the bellowing diagram.



Please unplug the motor from the BEECORE when you need to flash firmware and "Full chip erase", otherwise it will can't connect to the Clenflight configurator.

Reconfigure steps:

1. Cleanflight: Go to the CLI tab, type "Set motor_pwm_rate=1000" ,then enter save

```
Entering CLI Mode, type 'exit' to return, or 'help'  
  
# set motor_pwm_rate=1000  
motor_pwm_rate set to 1000  
# save
```

Betaflight: 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

2. Ports and receiver mode sets like the bellowing diagram

DOCUMENTATION FOR 1.13.0

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	<input checked="" type="checkbox"/> MSP 115200 ▾	<input type="checkbox"/> Blackbox 115200 ▾	Disabled ▾ AUTO ▾	<input type="checkbox"/> Serial RX	<input type="checkbox"/> 57600 ▾
UART1	<input checked="" type="checkbox"/> MSP 115200 ▾	<input type="checkbox"/> Blackbox 115200 ▾	Disabled ▾ AUTO ▾	<input type="checkbox"/> Serial RX	<input type="checkbox"/> 57600 ▾
UART2	<input type="checkbox"/> MSP 115200 ▾	<input type="checkbox"/> Blackbox 115200 ▾	Disabled ▾ AUTO ▾	<input type="checkbox"/> Serial RX	<input type="checkbox"/> 57600 ▾
UART3	<input type="checkbox"/> MSP 115200 ▾	<input type="checkbox"/> Blackbox 115200 ▾	Disabled ▾ AUTO ▾	<input type="checkbox"/> Serial RX	<input type="checkbox"/> 57600 ▾

Receiver Mode ?

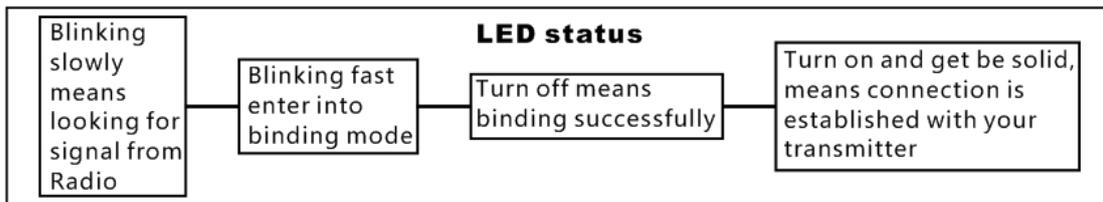
- RX_PPM PPM RX input
- RX_SERIAL Serial-based receiver (SPEKSAT, SBUS, SUMD)
- RX_PARALLEL_PWM PWM RX input (one wire per channel)
- RX_MSP MSP RX input (control via MSP port)

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
- SUMH
- SRXL (XBUS_MODE_B)
- XBUS_MODE_B_RJ01
- IBUS

3. Binding Procedure: Power for the BEECORE, waiting the LED Combo (2 Red and 2 White) blinking fast, this means the BEECORE is in binding mode ,then turn on your Radio and enter into binding mode, the LED Combo (2 Red and 2 White) will turning off and then get to be solid if binding successfully. Please repeat the above operation if binding not success.



4. 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 ▾

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

ARM

AUX 1 ▾

✕

✕

Min: 1450 Max: 2100

90010001200140015001600180020002100

ANGLE

AUX 1 ▾

✕

✕

Min: 1175 Max: 2100

90010001200140015001600180020002100

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