

# GROBOTRONICS BTT Skr Mini E3 3D Printer Controller Board User Manual

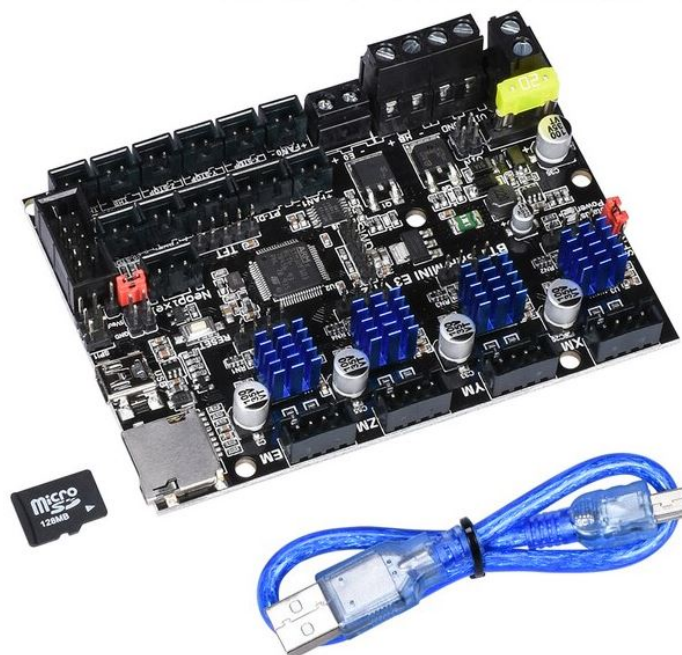
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## GROBOTRONICS

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### GROBOTRONICS BTT Skr Mini E3 3D Printer Controller Board



## Instruction

BTT SKR MINI E3 V3.0 is a motherboard designed for Ender3, which launched by the 3D printing team of Shenzhen Big Tree Technology Co., Ltd. It is the perfect replacement of the original motherboard of Ender3.

## Features

- Redesigned motherboard ID(Industrial Design) make it good-looking
- Adopts STMicroelectronics G0 series MCU STM32G0B1RET6
- Upgraded heat sink improves heat dissipation
- Thermistor inputs are protected from short circuit to Vin
- Added a third PWM controlled cooling fan output
- Adopt MicroUSB instead of MiniUSB interface
- Added +3.3V power supply for SPI output header

## Parameters

Product size: 103.75*70.25mm	Mounting size: Please refer to BTT SKR MINI E3 V3.0-SIZE.pdf for more
Board layer:4	MCU: ARM Cortex-M0+ STM32G0B1RET6
Power input:DC 12/24V	Logic voltage:3.3V
Motor driver: UART mode of on-board TMC2209	Interfaces of motor driver: XM, YM, ZAM, ZBM, EM

<p>Interface of temperature sensor:</p> <p>TH0, THB, 2-way 100K NTC (RTD)</p>	<p>Display screen:</p> <p>2.4-inch TFT, 3.5-inch TFT, Ender3 original LCD12864 screen, etc.</p>
<p>PC communication interface: USB Micro B type, easy to plug, communication baud rate 115200</p>	<p>File format:G-code</p>
<p>Recommended software: Cura, Simplify3D, Pronterface, Repetier-host, Makerware</p>	

### **Motherboard LED meanings**

- When the motherboard is powered on:
  - Power LED = Red. Solid on = Normal power supply
  - Status LED = Red. Blinking during a firmware update. Controlled by firmware otherwise
- D8 green light for the hot bed HB status indicator: always on when heating, off when not heating.
- D6 green light for the heating rod E0 status indicator: always on when heating, off when not heating.
- D10 green light for the CNC fan FAN0 status indicator: on when open, off when closed.
- D7 green light for the CNC fan FAN1 status indicator: on when open, off when closed.
- D3 green light for the CNC fan FAN2 status indicator: on when open, off when closed.
- D9 green light for the SD card status indicator: light up when inserted into the SD, off when pulled out

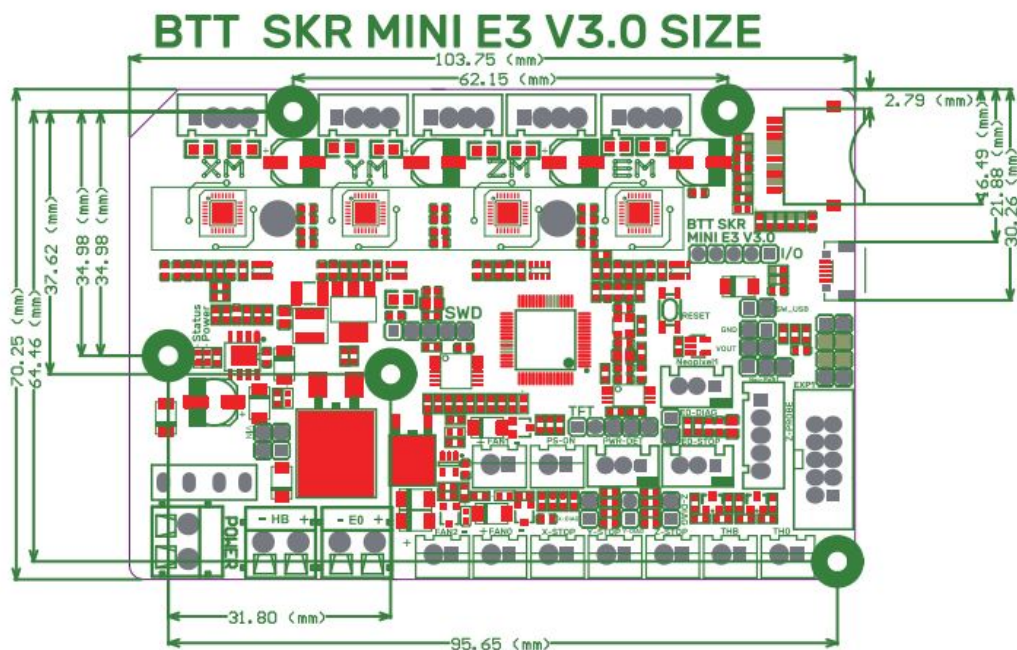
### **Communication of Motherboard and PC**

The motherboard can communicate with a PC using the USB interface. The same USB interface can be used to communicate with a Raspberry pi or any other host device.

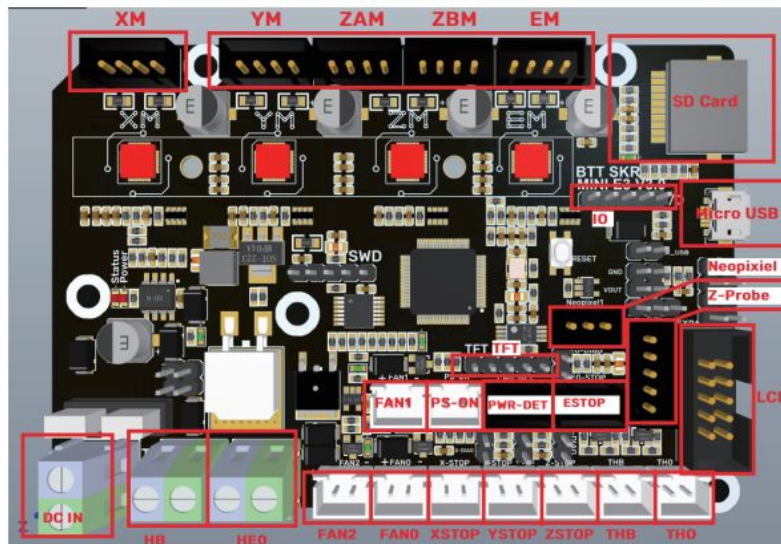
- > 处理器
- > 磁盘驱动器
- > 存储控制器
- > 打印队列
- ✓ 端口 (COM 和 LPT)
- USB 串行设备 (COM3)
- > 固件

## Motherboard Interfaces

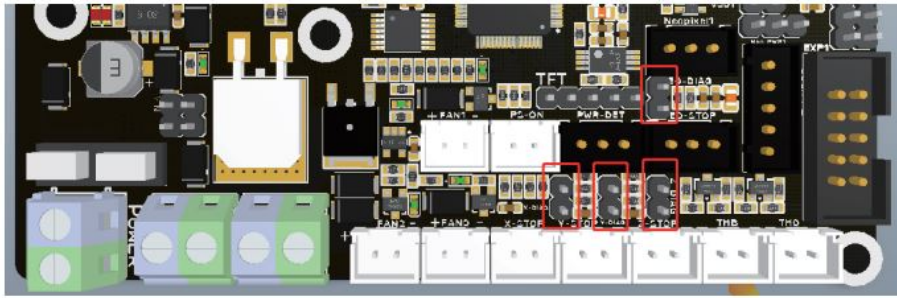
- Size Diagram



- Wiring Diagram

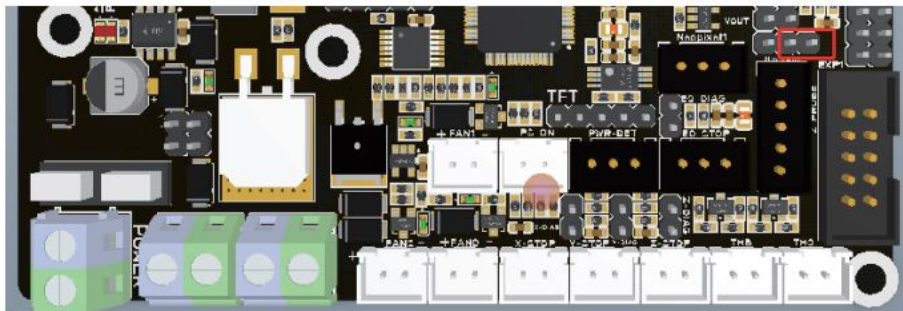


- Sensorless homing function

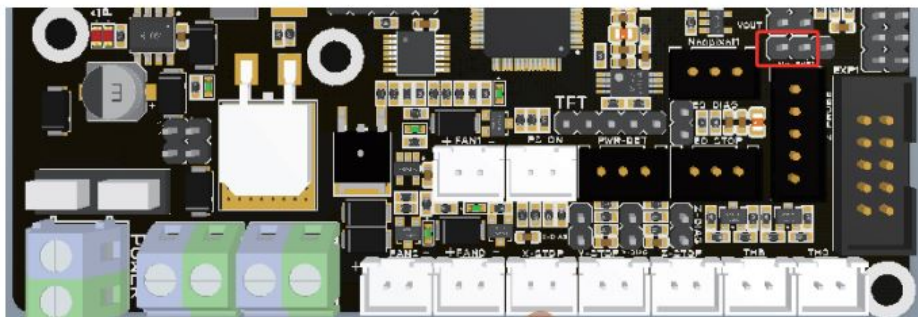


As shown, connect the corresponding axes with the jump caps to choose Sensorless homing function **NOTE:** If you choose this function, you cannot use external ENDSTOP!

- 5V power supply for BLtouch, TFT, RGB interfaces
  - To use the onboard 5V PSU, short the pins shown in the above image using a jumper.



- To use an external BIGTREETECH DCDC5V V1.0 module, short the pins shown in the above image using a jumper.



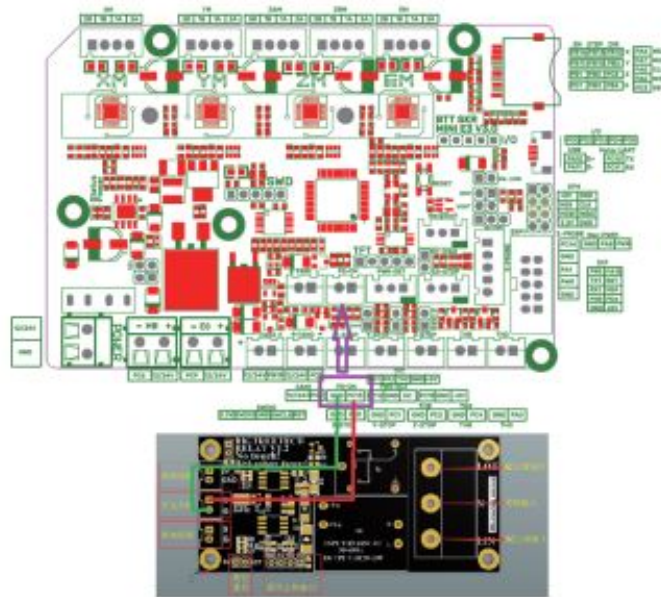
- Connection of cooling fan



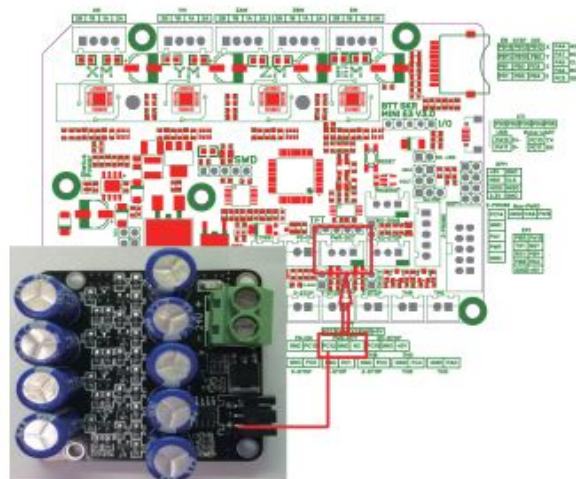
Connect the fan by FAN2 to realize the whole machine cooling. Please note that the operating voltage is the same as the input power supply voltage to avoid damage.



- Connection to BIGTREE TECH Relay V1.2



- Connection to BTT UPS 24V V1.0



- Connection to Neopixel light



Caution

- The text form and file name of firmware in the SD card cannot be changed from
  - The wiring must be done before powering on.
  - The LCD screen only supports the LCD12864 screen with CR10\_STOCKDISPLAY interface.
- Should you have any issues, please don't hesitate to contact us. We strive to provide you with the best quality products and services. If you have any good comments or suggestions, please feel free to share with us. Thank you for choosing BIGTREETECH products!

Documents / Resources

<div><div><div>BIGTREETECH</div><div>SKR MINI E3 V3.0</div><div>User Manual</div></div></div>	<div><div><a href="#">GROBOTRONICS BTT Skr Mini E3 3D Printer Controller Board</a> [pdf] User Manual</div><div>BTT Skr Mini E3 3D Printer Controller Board, BTT Skr Mini E3, 3D Printer Controller Board</div></div>
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