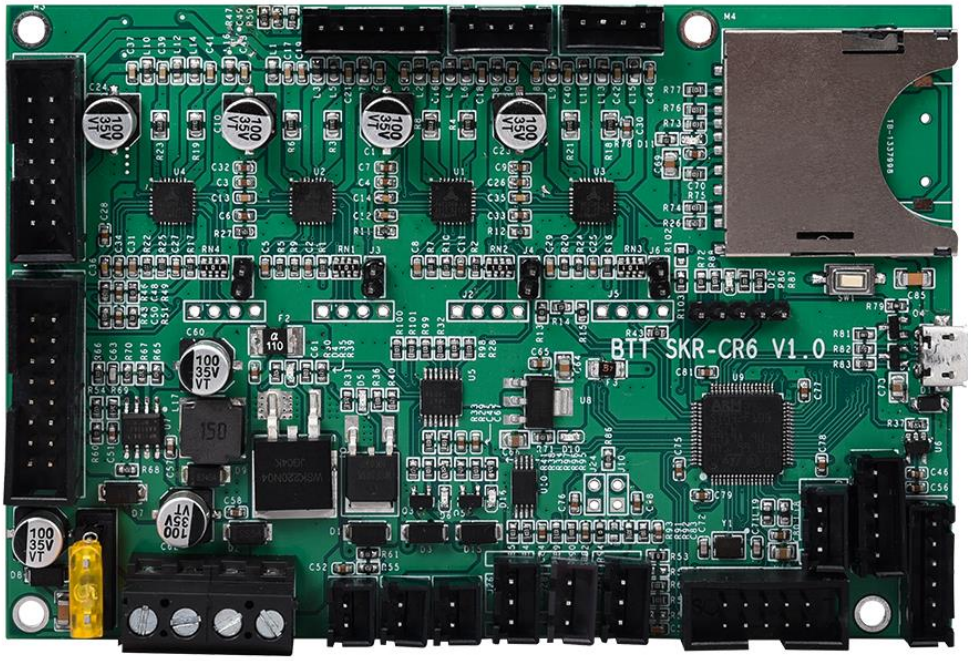
SHENZHEN BIGTREE TECHNOLOGY CO., LTD.
BIG TREE TECH

BIGTREETECH
SKR CR6 V1.0

User's Instruction



【Please read this manual carefully before use】

1.Product introduction

BIGTREETECH SKR CR6 V1.0 is a motherboard developed by the 3D printing team of Shenzhen BIG TREE Technology Co., Ltd. to upgrade your CREALITY CR-6 SE 3D printer.

SKR CR6 V1.0 is a direct replacement for the motherboard on the CREALITY CR-6 SE. This printer has an extruder and uses 4 TMC2209 stepper drivers.

2. Main Features

1) The main control adopts 32-bit ARM-level Cortex-M3 series with 72MHz main frequency STM32F103RET6 chip;
2) Equipped with highly modular open source firmware Marlin2.0, which is convenient for users to DIY and reopen
To avoid the worries of not being able to master the core code;
3) Marlin2.0 uses powerful development tools, Visual Studio Code integrated development environment: supports online debugging, which is more helpful for product development and performance optimization, and uses C/C++ language development, which has a low development threshold;
4) The PCB board wiring is rigorous and beautiful, and has been specially optimized for heat dissipation;
5) Use a dedicated power chip to support 12-24V power input;
6) Support BIGTREETECH-3.5 inch TFT color touch screen, LCD12864 screen, CR-6 original screen;
7) The system supports languages such as simplified Chinese and English, which can be switched by itself;
8) Upgrade the configuration firmware via SD card, the operation is simple, convenient and efficient;
9) Using high-performance MOSFET tube, the heat dissipation effect is better;
10) The use of removable fuses makes the replacement process easier;
11) Support connecting to a computer for printing or using SD card to print offline;
12) Reserved dual Z-axis printer

13) Support onboard SD card printing function

14) Onboard EEPROM (AT24C32)

15) Support RGB light bar

3. Specification

1) Appearance size: 118.6*80mm

2) Installation size: 105.4*73.6mm

3) Microprocessor: ARM 32-bit Cortex™-M3 CPU

4) Input voltage: DC12V--DC24V

5) Motor driver: TMC2209 onboard

6) Motor drive interface: X, Y, Z0, Z1, E

7) Temperature sensor interface: BED, T0

8) Display screen: BIGTREETECH-3.5 inch TFT, LCD12864, original screen

9) PC communication interface: Micro USB, easy to plug and unplug, communication baud rate 115200

10) Expanded interface function support: detection of material interruption, continuous operation after a power failure, shutdown after finishing, auto-leveling of strain gauge.

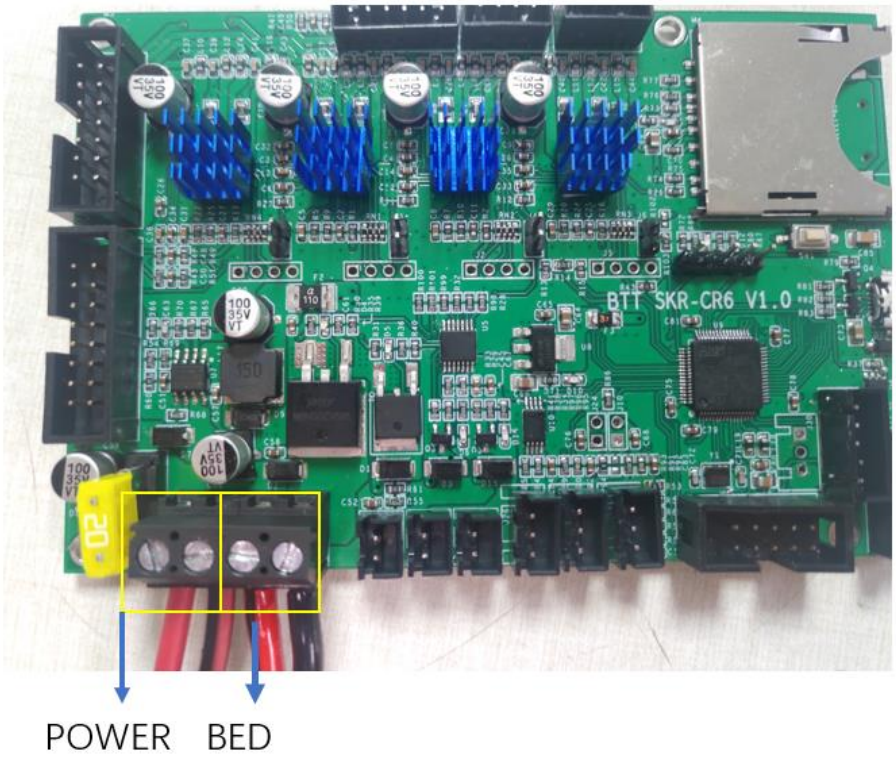
11) Support file format: G-code

12) Support machine structure: CREALITY CR-6 SE

13) Recommended software: Cura, Simplify3D, pronterface, Repetier-host, Makerware.

4. Mainboard power wiring method

The main board uses switching power supply for power supply, the wiring method is



shown in the figure below.

The two wires on the left are the main input power wires, and the two wires on the right are the hotbed wires. Pay attention to the positive and negative poles of the power supply. The red wire is the positive pole and the black wire is the negative pole.

When wiring, be sure to disconnect the 220V power supply and distinguish the positive and negative poles (the red positive and the black negative in the picture above) to avoid burning the motherboard.

5. Motherboard and computer communication

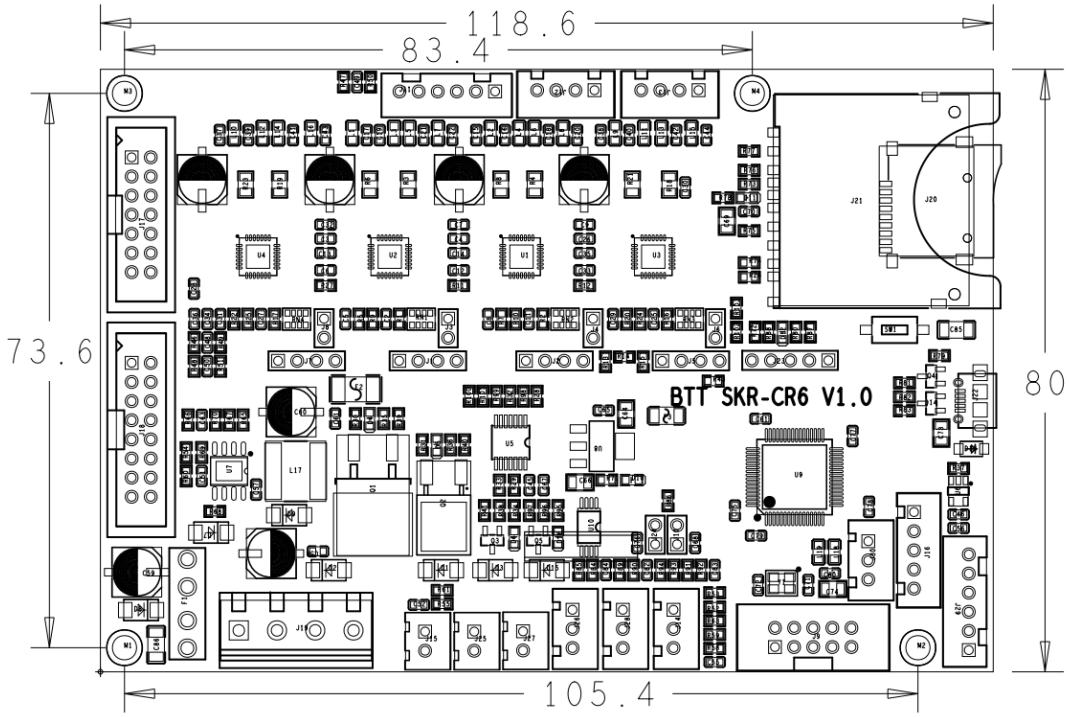
After the motherboard is connected to the computer via a USB cable, the computer will automatically install the driver. After the driver is installed, the motherboard can

be recognized for data transmission. If the installation fails, you can go to our open source website: https://github.com/bigtreetech?tab=repositories to find the corresponding motherboard to download the driver.

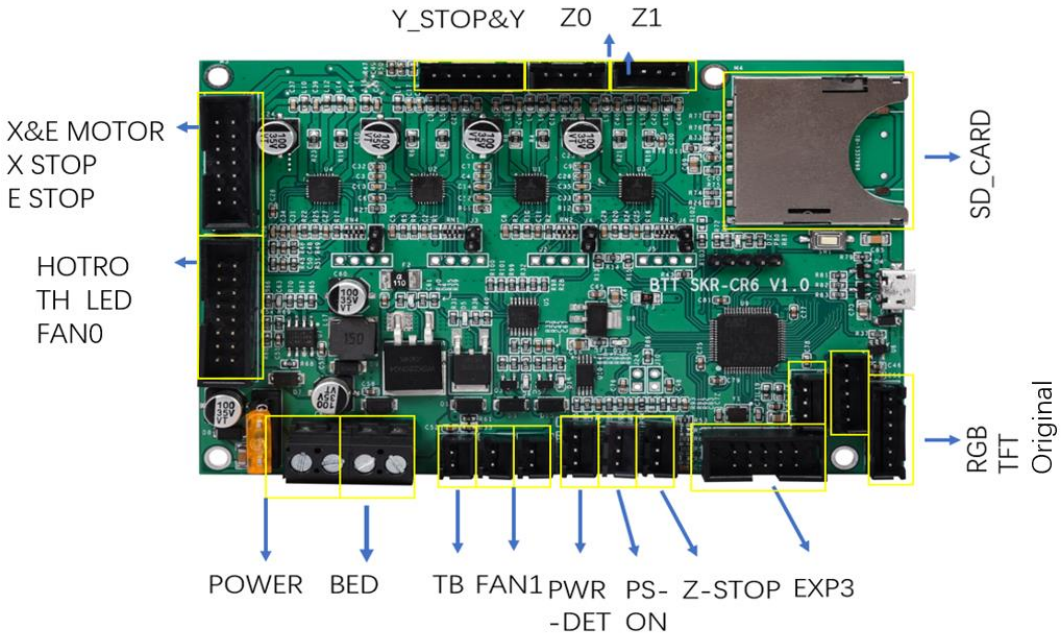
After the driver is installed, open the "Device Manager" and you can see the ports as shown in the figure below, indicating that the motherboard is connected to the computer normally.

6. Motherboard interface description

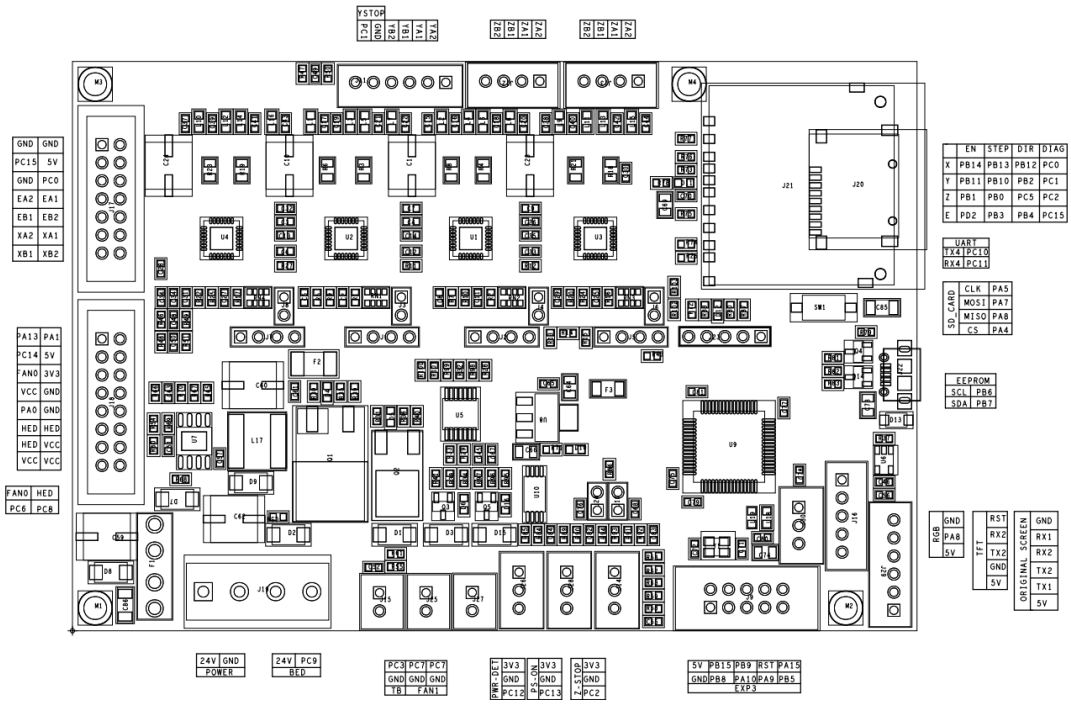
1、Motherboard size diagram



2、Motherboard wiring diagram



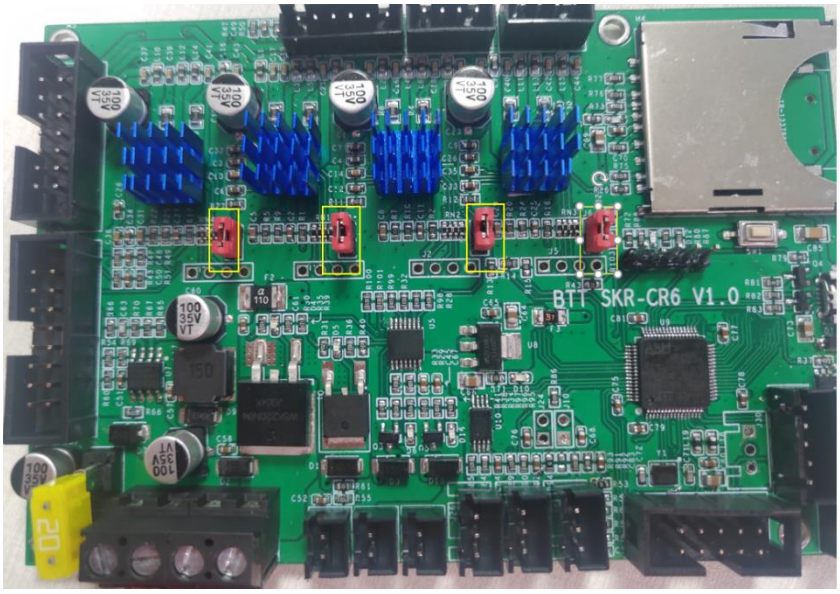
3. Motherboard Pin Diagram



For details, see Pin file information.

7.Motherboard jumper description

If you need the locked-rotor detection function, you need to short the following 4 positions with a jumper cap:



8.Motherboard firmware description

1) Currently, only our open-source Marlin2.0 firmware is supported, and you can go to our open source website to find the corresponding motherboard to download.
https://github.com/bigtreetech?tab=repositories

2) Marlin2.0 firmware update method:
After downloading our open-source Marlin2.0 firmware, use Visual Studio Code to open the project to compile, then find the firmware.bin file, copy it to the SD card, and then reset the motherboard and wait about 10 seconds. (You can also download firmware.bin directly)
Please refer to the tutorial for detailed steps：
https://www.dropbox.com/s/ppjfflhf3j5yzh2/MarlinV2.0%20SKRV1.1%20instruction.docx?dl=0

3) When using the original screen or other screens produced by our company, different firmware needs to be programmed.

9. Precautions

1. The firmware currently only supports our open source Marlin2.0 firmware.

2. U disk function is not supported temporarily, so stay tuned!

3. When supplying 12V/24V power to the motherboard, be sure to pay attention to the positive and negative poles of the power supply.

4. The name of the firmware file in the SD card cannot be changed, including case.

5. Before powering on, ensure that all wires and jumper caps are plugged in correctly and completely.