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Shenzhen City Biqu Technology Co., Ltd.

**BIG TREE TECH**

**BIGTREETECH**

**SKR V1.1**

Motherboard instruction manual

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First, **SKR** motherboard introduction

BIGTREETECH SKR V1.1 motherboard is 3D printing of Shenzhen Biqu Technology Co., Ltd.

The team launched a cost-effective 3D for some problems in the motherboards on the market.

The printer main control board is especially suitable for small and medium-sized printers.

**1. SKR** motherboard features:

1) ARM-class Cortex-M3 series LPC1768 master chip with 32-bit main frequency 100M, sex

Can be greatly improved;

2) Equipped with highly modular open source firmware Smoothieware, convenient for users DIY and secondary development, free

In addition to the inability to master the core code of worries;

3) Using powerful development tools, Keil MDK integrated development environment: support online debugging, on products

Development and performance optimization are more helpful, using C language development, the development threshold is low;

4) PCB board wiring is rigorous and beautiful, and specializing in heat dissipation optimization;

5) Using a dedicated power chip to support 12-24V power input;

6) Accept 24V input, reduce the hot bed current to 1/4 at the same power, effectively solve the hot bed

MOS tube heating problem;

7) Support 2.8-inch, 3.5-inch color touch screen, support LCD12864 screen;

8) The system supports Chinese simplified Chinese, English and other languages, which can be switched by itself;

9) Upgrade the firmware by SD card, which is easy and convenient to operate;

10) Use the configuration file to set the driving current mode, avoid manual adjustment of the current and cause burnout

Dynamic, convenient, safe and reliable;

11) Support functions such as power failure, continuous material detection, and shutdown;

12) High-performance MOSFET is used for better heat dissipation.

**2. SKR** motherboard parameters:

Appearance size: 110\*85mm

Installation size: 97mm\*67mm

Microprocessor: ARM Cortex-M3 CPU

Input voltage: DC12V-DC24V 5A-15A

Motor Driver: Supports TMC2208, TMC2130, LV8729, DRV8825, A4988

Etc., can be externally connected to the motor drive

Motor drive interface: X, Y, Z, E0, E1, five-way (each channel has a re-expandable interface),

Up to 256 segments

Temperature sensor interface: TH0, TH1, TB, 3 channels 100K NTC (thermal resistance)

Display: 2.8-inch TFT, 3.5-inch TFT, LCD12864

PC communication interface: square USB, easy to plug and unplug, communication baud rate 115200

Support file format: G-code

Support machine structure: XYZ, delta, kossel, Ultimaker, corexy

Recommended software: Cura, Simplify3D, pronterface, Repetier-host, Makerware

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Second, **SKR** motherboard power

After the SKR mainboard is powered on, the red light of the D4 in the lower left corner will light up, indicating that the power supply is normal;

5V SEL is the power supply terminal;

1) When using USB to power the motherboard, connect the +5V and USB pins with a shorting cap;

2) When using 12V-24V power supply, connect the +5V and INT pins with the shorting cap;

Note: You can connect [12V-24V power supply] and [USB] at the same time. The printing process must be connected with a short-circuit cap +5V.

And INT feet.

Third, **SKR** motherboard and **PC** communication

The SKR motherboard communicates with the PC via the [USB] interface and requires a driver to be used.

1.smoothieware-usb-driver-v1.1 driver installation

Drivers are available from the open source web at http://smoothieware.org/windows-drivers;

2. After installing the driver, connect the PC and SKR motherboard with USB cable.

Open the computer "Device Manager", you can see the "smoothieboard USB Serial" asynchronous communication

The COM number to which the port belongs.

Fourth, **SKR** motherboard interface description

1. SKR motherboard size chart

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2. SKR motherboard wiring diagram

Five, **SKR** motherboard firmware description

The factory-installed motherboard will be equipped with firmware for testing (I3 model), which can be used directly or according to

Need to change it yourself.

1. SKR motherboard firmware acquisition method

Ask customer service or technical staff to obtain;

Log in to the original website to download: [https://github.com/Smoothieware/Smoothieware](https://translate.google.com/translate?hl=en&prev=_t&sl=zh-CN&tl=en&u=https://github.com/Smoothieware/Smoothieware)

2. SKR motherboard firmware update method

1) Select the file that suits your model in the downloaded firmware package and copy it to the SD card root directory, including:

1 firmware firmware.bin (select according to your model)

2 configuration file config.txt (you can change the configuration according to your own needs) details in the configuration file

For detailed function options, please refer to the original website: http://smoothieware.org/configuration-options

Note: The file name cannot be changed. The **firmware.bin** must be lowercase!

2) Insert the SD card into the SD card slot of the motherboard, power it on again or press the reset button to wait for about 10S.

After the update is complete;

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Six, note:

1. The motherboard 5V SEL must be connected to the INT and +5V pins.

Printing (that is, you must have 12V-24V power supply to power the motherboard to print);

2. The power of the hot bed connected to the motherboard must be less than or equal to 110W (ie the resistance of the hot bed)

More than 1.3 Ω), if a high-power hot bed is used, the external thermal bed power must be expanded.

Display board

3. The firmware file name in the SD card cannot be changed (including capitalization);

4. The wiring process and the plug-in drive process must be carried out under the premise of power failure.

Check that the correct connection of the line and the correct insertion of the drive can be powered on to prevent misconnection.

Causes the motherboard and driver to be burned, causing unnecessary losses;

5. To replace the configuration file, please back up the factory configuration file to record

Each part of the chip is labeled with a pin and then the new configuration file is changed!

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**FAQ** (Frequently Asked Questions)

Q: The computer does not recognize the SKR motherboard?

A: Check if the smoothieware-usb-driver-v1.1 driver is installed , you can open the original URL from

After downloading and installing, after installation, connect the computer and SKR motherboard with USB cable.

Q: After changing the configuration file, insert the motherboard, the firmware failed to update successfully?

A: Check whether the format of the firmware.bin file in the SD card is correct and whether it is

Lowercase, file name is correct.

Q: After replacing the configuration file, the LCD12864 screen cannot be displayed?

A: Find the configuration information of the screen in the configuration file, and change it according to the following:

If you encounter other problems in use, please contact us, we will be careful

You answer; if you have any good comments or suggestions on our products, you are welcome to return

Feed us, we will carefully consider your comments or suggestions, thank you for choosin