BIQU 3D Printing KFB3.0 Motherboard Specification

Product Introduction

KEB3.0 controller board is our company designed and developed according to the problems of 3D printer KFB2.0 controller board.

Take full account of voltage stability, board heat dissipation, practicability and so on, in our research team has been verified. The design of the circuit takes full account of the protective facilities, and the double self recovery fuse prevents the circuit from short-circuit burning out of the device. The 5 channels of high current resistant diodes to prevent reverse connection, even if the power supply is positive and negative, it will not burn the controller board. The pin is designed to be compatible with BaseV1.0 and MKS GenV1.4 controller board, Marlin, Repefier and other open source firmware which can be downloaded from its website directly.

Product size: 100*100mm
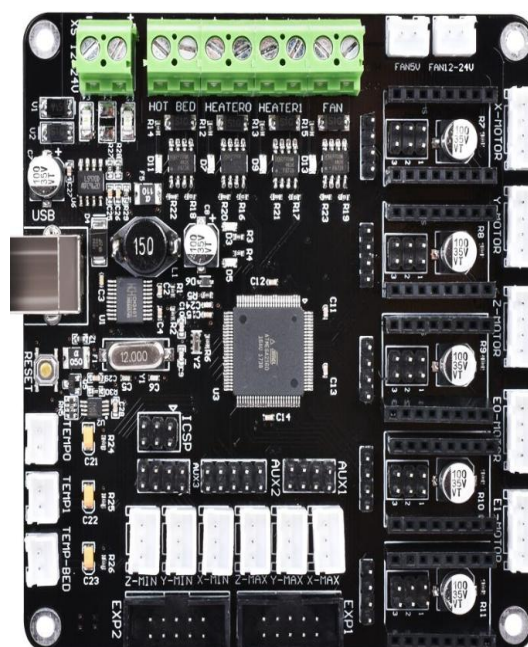**Screw hole size: 3.3mm*4**
Power input: 12V~24V
Support for motor drive: 5
Motor drive type: A4988, DEV8825, LV8729, MS4998, MS4989, TMC2100, TMC2208, TMC2130 etc.
Support control panel: LCD2004, LCD12864, LCD1602, touch color screen
Compile environment: Arduino IDE
Firmware: Marlin

KFB3.0 controller board characteristics:

(1) Power step-down voltage chip adopted L5970D chip: work up to 1A output current, input voltage of 4.4V to 36V, low operation. 100% duty, internal fixed frequency, 250 KHZ voltage feedforward, run zero load current, the zero current consumption, shut off the heat, high efficiency, good stability, not easy to overheating, short circuit protection function, sufficient margin Arduino step-down chip maximum support only 12V, so has been loaded with work is easy to burn out.

(2) The USB serial chip adopts CH340T chip, the maximum 2Mbps, the communication is stable and not lost, which solves the problem that the compact version of Windows drive cannot be installed, and supports the whole series of

Windows, mac and liunx operating system.

(3) The processor uses the tamega2560 chip, and the 54 output meets the various output interface.

(4) Heatbed MOS tube adopts F8736 chip, the largest 18A current, no heating and ulfimaker, the same solution using the Wj500V type wiring terminal, which is larger, easier to connect and durable.

(5) Tantalum capacitor filter collection temperature, anti - interference, more accurate.

Basic parameter:

(6) 3 road temperature measurement, 4 MOS tube output, 5 motor drive, MOS tube output with LED as instruction.

(7) Support high power output heatbed, dual color printing, and support 5V, 12~24V fan.

5 motor drive signal output, external high power motor drive, make large 3D printer.

(8) Support LCD screen LCD2004, LCD12864, LCD1602, touch color screen, insert EXP1, EXP2 interface, can use touch screen, insert AUX1. 4 screw holes use M3 screws.

(9) Power supply: the power input is DC12V-24V, (it is recommended to use DC12V power supply), and the heatbed supports DC12V (recommended <200W).
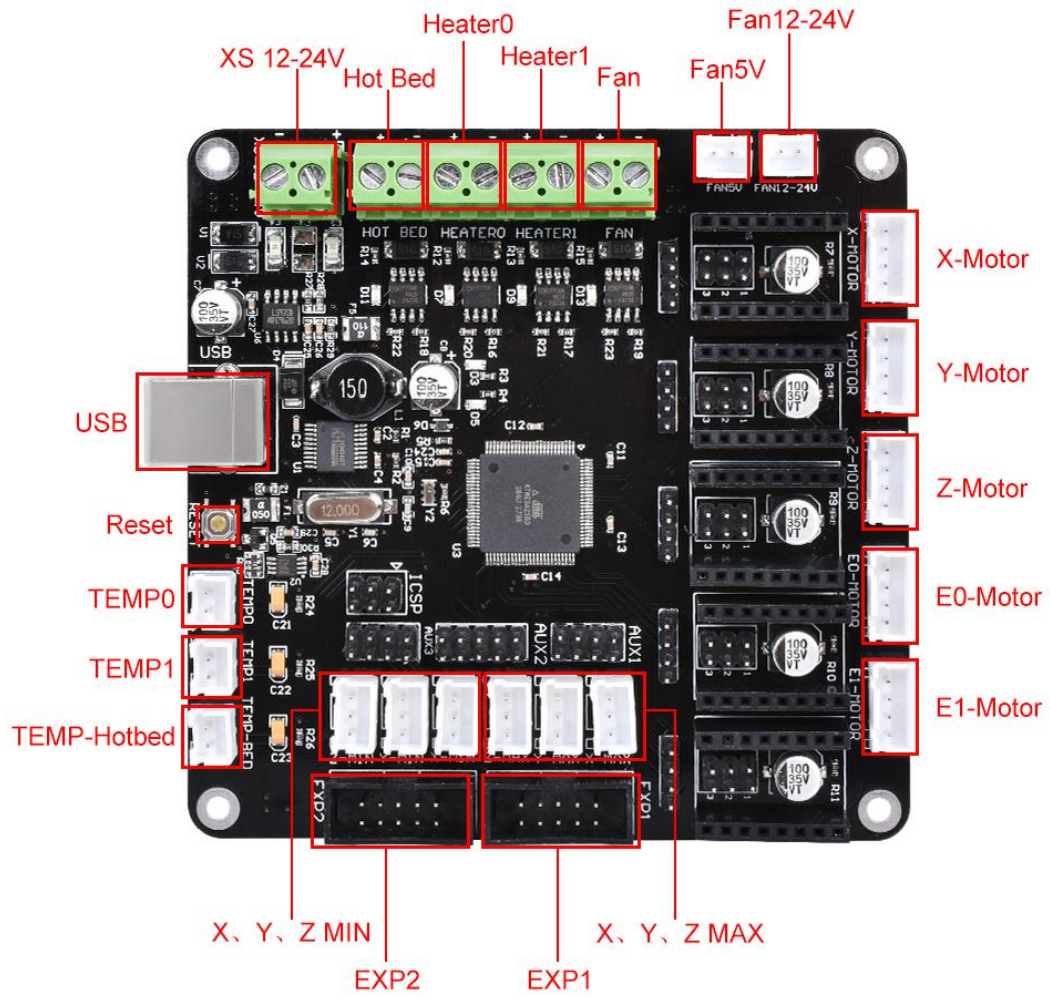
(10) The control panel firmware will adopt the most widely used Marlin now, with good performance in stability, usability and functionality.
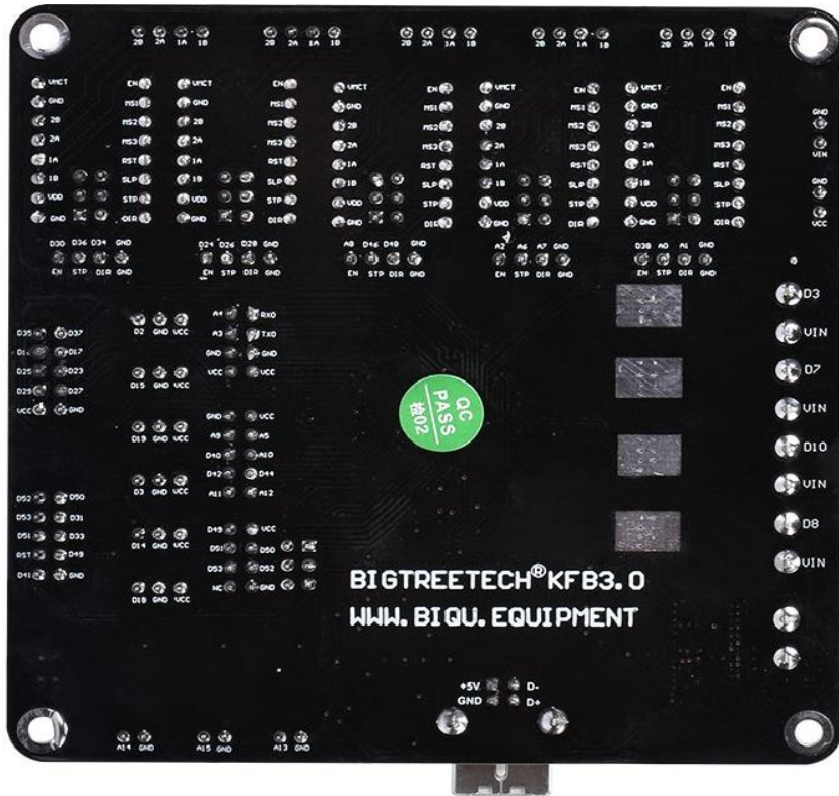

Notice:

1.   Please don't wire the main board or replace each module interface operation.

2.   Please notice the positive and negative terminals of the wiring.

3.   Please check whether the connection interface is correct to avoid damaging the motherboard before power.

4.   Please don't touch the motherboard with wet hand.

5.   When an emergency occurs, please press the RESET button on the motherboard or disconnect the power.

KFB3.0 Motherboard Wiring Diagram

XS 12-24V
Hot Bed
Heater0
Heater1
Fan
Fan5V
Fan12-24V

HOT BED   HEATER0   HEATER1   FAN

X-Motor
Y-Motor
Z-Motor
E0-Motor
E1-Motor

USB

Reset

TEMP0

TEMP1

TEMP-Hotbed

X、Y、Z MIN
X、Y、Z MAX
EXP2
EXP1

(11) 3 road TEMP interface is available for temperature measurement, 2 extruder measurement, and a hot bed temperature measurement.

(12) 4 road PWM interface, 2 control extruders, 1 heatbed heating, 1 CNC cooling fan, 1 5V cooling fan or LED lamp, 1 12-24V cooling fan.

(13) 6 road limit switch, Xmin, Xmax, Ymax, Ymin, Zmin, Zmax can connect mechanical or optical limit switches.

Installation of motor drive module:

When installing the motor drive module, please press KFB3.0 main board motor drive

socket on the reverse side of the position number and the number corresponding to the driver module to install, otherwise it will burn the drive module.

MS1	MS2	MS3	Microstep Resolution
L	L	L	Full Step
H	L	L	1/2
L	H	L	1/4
H	H	L	1/8
H	H	H	1/16
H	L	H	1/32
L	H	H	1/64
L	L	H	1/128

配套驱动板采用防呆设计，左边排针为蓝色，右边为黑色，防止插反后烧毁。
如使用其他控制板，或者驱动板，请注意左上角三角箭头处为ENABLE定义，对应插入。
最高支持128细分，可通过驱动板插座中间的MS1、MS2、MS3跳帽调节，H表示短接，L表示断开。
如需调节电流，请重启打印机后，将万用表正极放在可调电阻螺丝孔内，负极放在USB接口外壳。
测得的电压除以0.8即为驱动芯片电流，如默认是0.6V，电流为0.6/0.8=0.75A。
请务必先断电，之后用螺丝刀旋转可调电阻，向左调小，向右调大，一次不要拧太多，30度即可。
拧完通电，测量电压，如不合适，断电后继续调整，推荐XYZ电机0.75A，E电机1A。

Motherboard wiring instructions:

(1) Pay attention to the distinction between positive and negative electrodes when switching power supply connection. The recommended voltage is 12V, and the power supply and heatbed wire are recommended to select a larger wire, (22# wire).

(2) When installing the drive module, distinguish the direction of the module, as shown in the figure above, the driver module is installed correctly. If use other driver module, pay attention to ENABLE definition of driver module board feet, corresponding to insert, can pass the driver module on a board in the middle of the MS1, MS2 and MS3 adjusted jump cap, H means short circuit (insert), L means disconnect (not insert). Note: Please turn off the power when the motor drive module is inserted.

(3) Connect LCD screen, connect the LCD screen with the motherboard, and pay attention to the position number and positive frame direction of the motherboard when connecting line, and there is no skew.

(4) Connect heatbed: Use a small screwdriver counterclockwise unscrewing heatbed connection port two screws, the strip the heated wire to a certain length, expose the copper wire, insert the copper wire into the port, tighten the corresponding screw, make sure the wire does not drop, and heated wire to connect both positive and negative.

(5) The temperature sensor connecting the heatbed is not positive or negative.

(6) Connect the cooling fan and insert the wire into the FAN5V, FAN12~24V.

(7) When connected to USB (D3)LED light is always on, D5 will flash a few times, and when the burner is ready to burn, D5 will continue flashing until the burn is finished.

(8) The limit switch, the printing limit connection X-MIN, Y-MIN, Z-MIN interface, the connection should be IO and GND feet (note the back sign), regardless of the positive and negative.