Chitu V3.6 User Manual

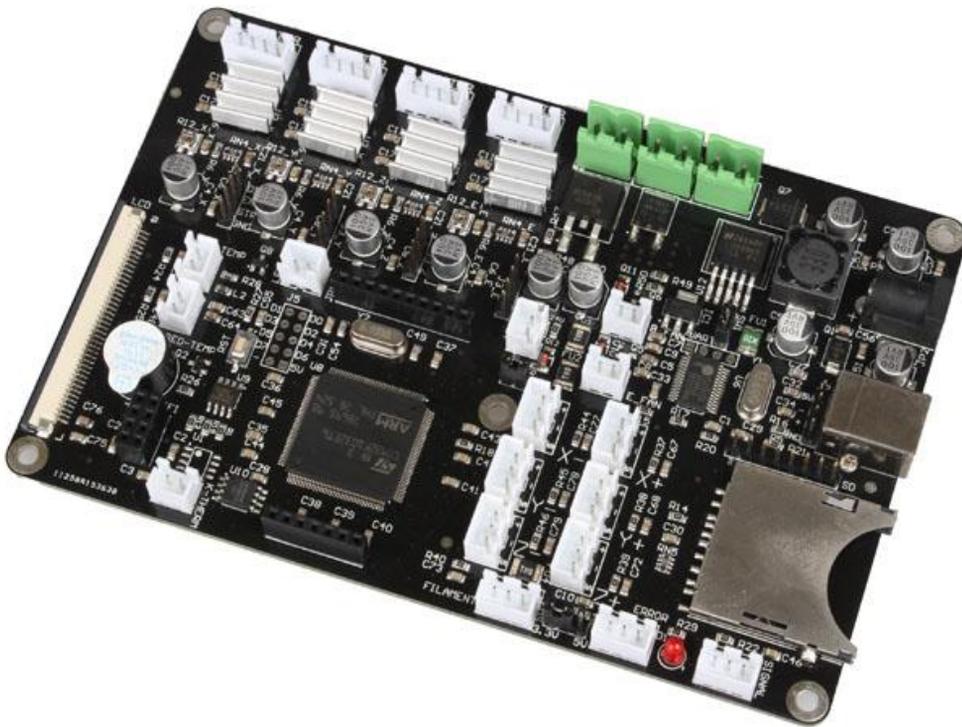**Compiler**：<u>Pitt Xie</u>　　　　　　Date：01/11/2015

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Approver：<u>Sam Lin</u>　　　　　　Date：01/11/2015

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Technical Supports

Please contact us if you have any interest in finished product of 3D printed pieces, development board and related modules or is you desire for more technical information as well as supports:

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If you have any technical problems, please visit CBD-Tech technical forum（http://www.cbd-3d.com/forum/ ） and download the information you need.

1.Introduction

The main board of "Chitu" carries high speed microchip with 32 bit, adopting self-developed firmware that enjoys the advantages of open source firmware. Besides, it also carries out repeated optimization, employing SD file configuration mode which will bring about convenient and quick renewal.

"Chitu" mainboard matches color touch screen, enjoying simple interface and high sensitivity. The firmware has experienced arc optimization, PID temperature stability optimization, which is in favor of breakpoint saving and shutdown automatically after printing. Currently, we can provide the services of customized operation interface of the screen, customized APP on the mobile phone, and customized software on PC, offering you a platform to show your company. This system is bilingual and can be switched between Chinese and English by one button. CBD-Tech can provide the services for different languages.

1.1 Parameters of Mainboard

External Dimension:150*100mm

Microprocessor : STM32

Input Voltage : 12V~24V 10~15A

Power Interface: Switching power supply or adapter

Motor Driver: Allegro A4988 (1/16 microstepping)

ChiTu V3.6 can be externally connected motor drive

Motor Driven Interface: Single head motherboard has four motor interface

Double head motherboard has five motor interface

Temperature Sensor Interface: 3 paths of 100K NTC (thermistor)

2 paths of MAX6675（thermocouple）

Color Touch Screen: 2.8 or 3.5 inches of TFT

Upgraded Firmware supporting SD card (supports 8G<= FAT 16 and FAT32)

Square USB that is convenient in pull and plug，Communication Baud Rate is 115200
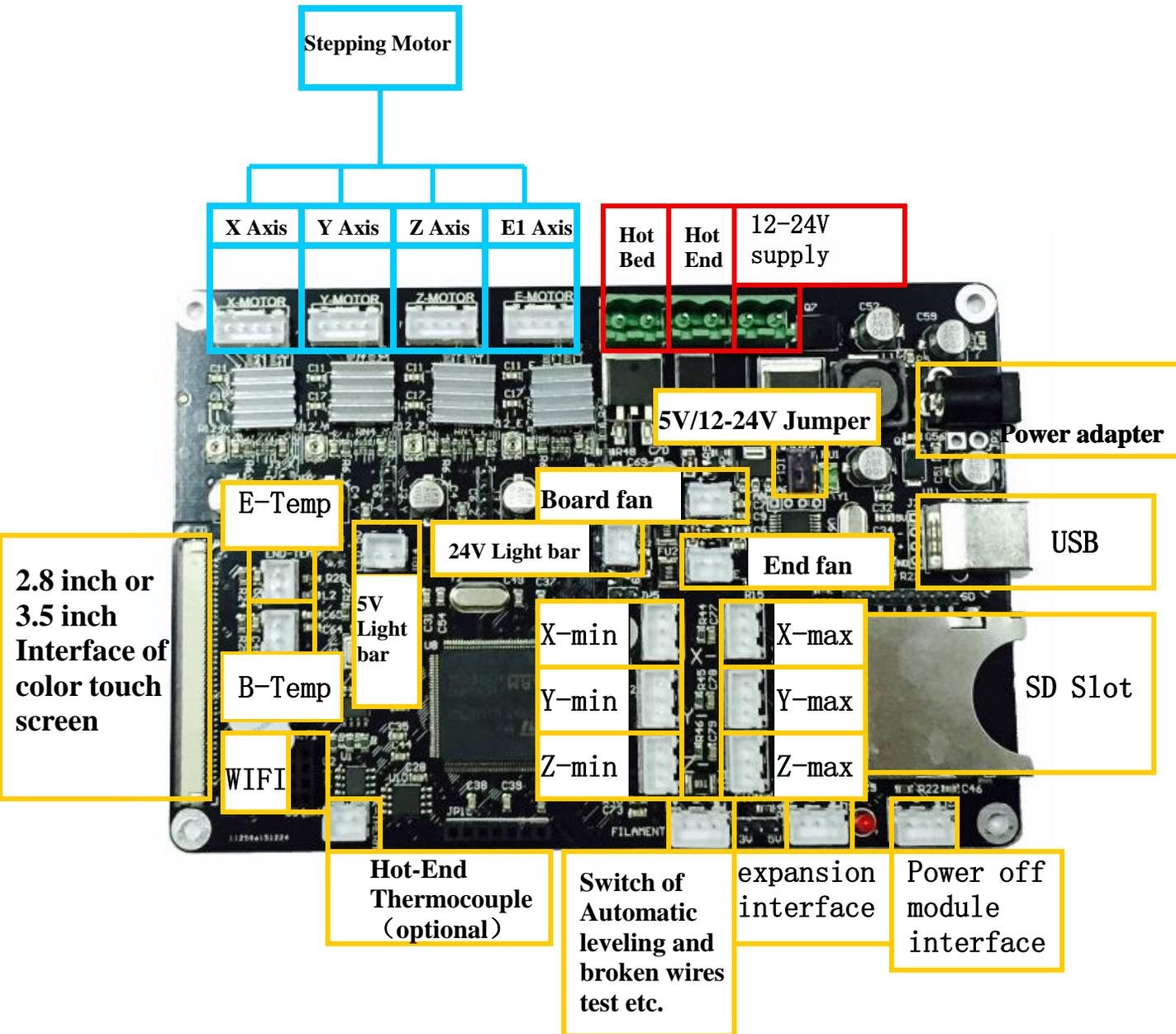
File Format Supported: G-code

Machine Structure Supported: XYZ type, Ultimaker type, Hbot type, Delta，Kossel type.

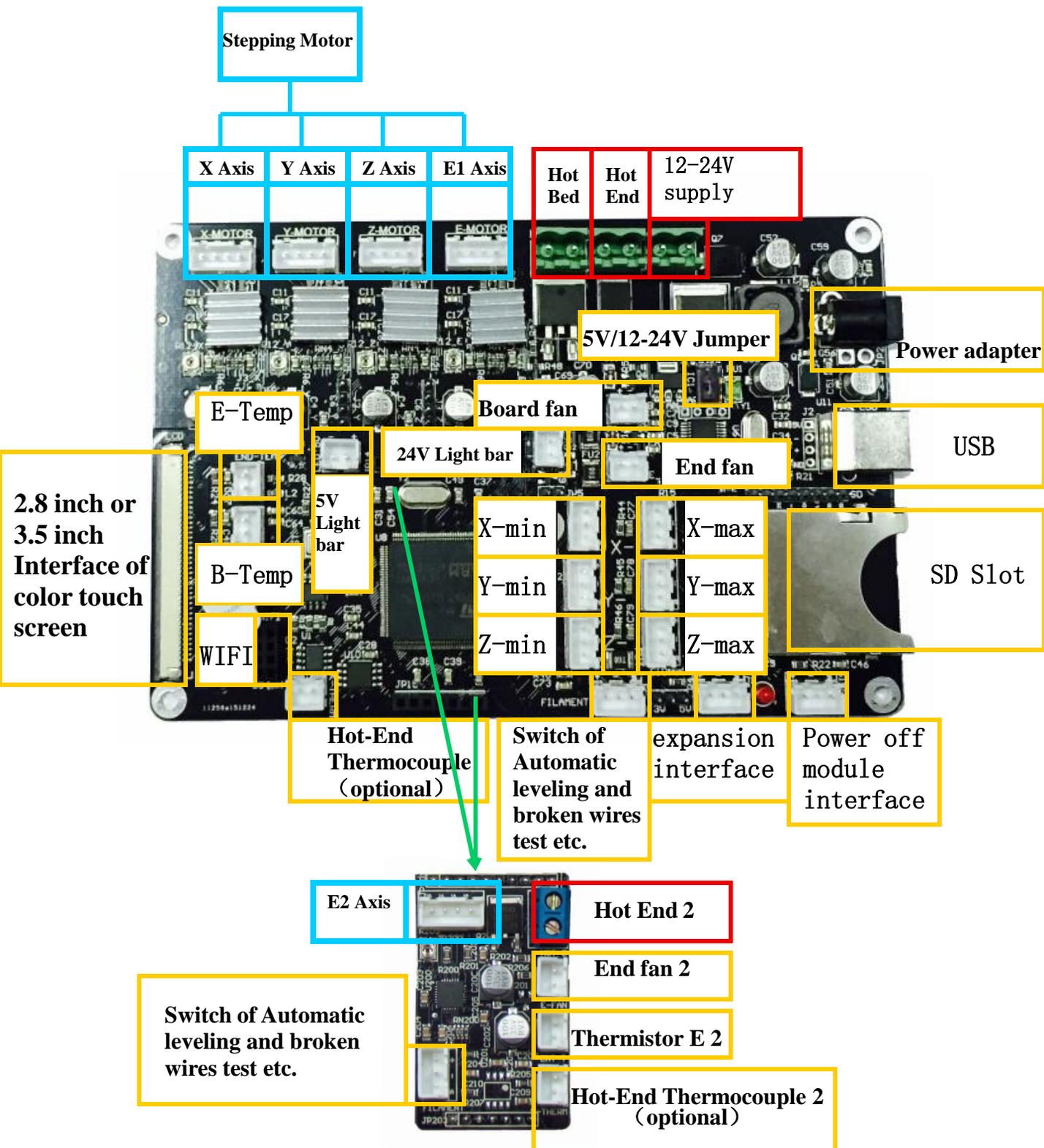Recommendation of Software: Cura/Repetier-host/Makerware/Simplify3d

Expandable modules: WIFI module, power module(continue to print after power off), large motor drive, SD card module, USB drive module

1.2 Interface Layout

Single-head Mainboard

Stepping Motor

X Axis · Y Axis · Z Axis · E1 Axis

Hot Bed · Hot End · 12-24V supply

5V/12-24V Jumper

Power adapter

Board fan

E-Temp

24V Light bar

End fan

USB

2.8 inch or 3.5 inch Interface of color touch screen

5V Light bar

X-min · X-max

Y-min · Y-max

Z-min · Z-max

SD Slot

B-Temp

WIFI

Hot-End Thermocouple（optional）

Switch of Automatic leveling and broken wires test etc.

expansion interface

Power off module interface

Double-head Mainboard

Stepping Motor

X Axis   Y Axis   Z Axis   E1 Axis

Hot Bed   Hot End   12-24V supply

5V/12-24V Jumper

Power adapter

E-Temp

Board fan

24V Light bar

End fan

USB

2.8 inch or 3.5 inch Interface of color touch screen

5V Light bar

X-min   X-max

Y-min   Y-max

Z-min   Z-max

SD Slot

B-Temp

WIFI

Hot-End Thermocouple（optional）

Switch of Automatic leveling and broken wires test etc.

expansion interface

Power off module interface

E2 Axis

Hot End 2

End fan 2

Switch of Automatic leveling and broken wires test etc.
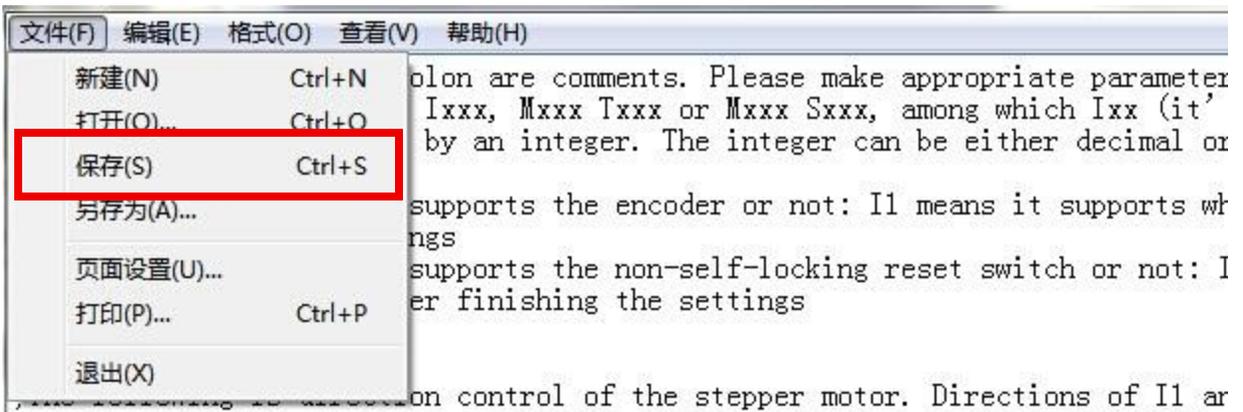
Thermistor E 2

Hot-End Thermocouple 2（optional）

2.How to Use

① Firmware Parameters Setting

Open the file of **Complete machine parameters V1.2.30.gcode** (the one with the notepad icon with file ending .gcode)with notepad. Set the related parameter in line with machine parameters, which is shown as follows.

Motherboard and screen size chart	2015/1/3 15:51	文件夹	
PL2303 driver (for XP, vista 32 and 6...	2015/1/3 14:58	文件夹	
Chitu V3.6 users manual.pdf	2015/1/7 17:57	PDF 文件	1,052 KB
Complete machine parameters V1.2....	2015/1/16 15:54	GCODE 文件	12 KB

Click to "save" after allocation, which is shown as follows.

文件(F)	编辑(E)	格式(O)	查看(V)	帮助(H)

新建(N)	Ctrl+N	olon are comments. Please make appropriate parameter
打开(O)...	Ctrl+O	Ixxx, Mxxx Txxx or Mxxx Sxxx, among which Ixx (it'
		by an integer. The integer can be either decimal or
保存(S)	Ctrl+S	
另存为(A)...		supports the encoder or not: I1 means it supports wh
		ngs
页面设置(U)...		supports the non-self-locking reset switch or not: I
打印(P)...	Ctrl+P	er finishing the settings
退出(X)		

on control of the stepper motor. Directions of I1 ar

Take the allocation of **Complete machine parameters V1.2.30.gcode** into SD card.

Complete machine parameters V1.2.... →
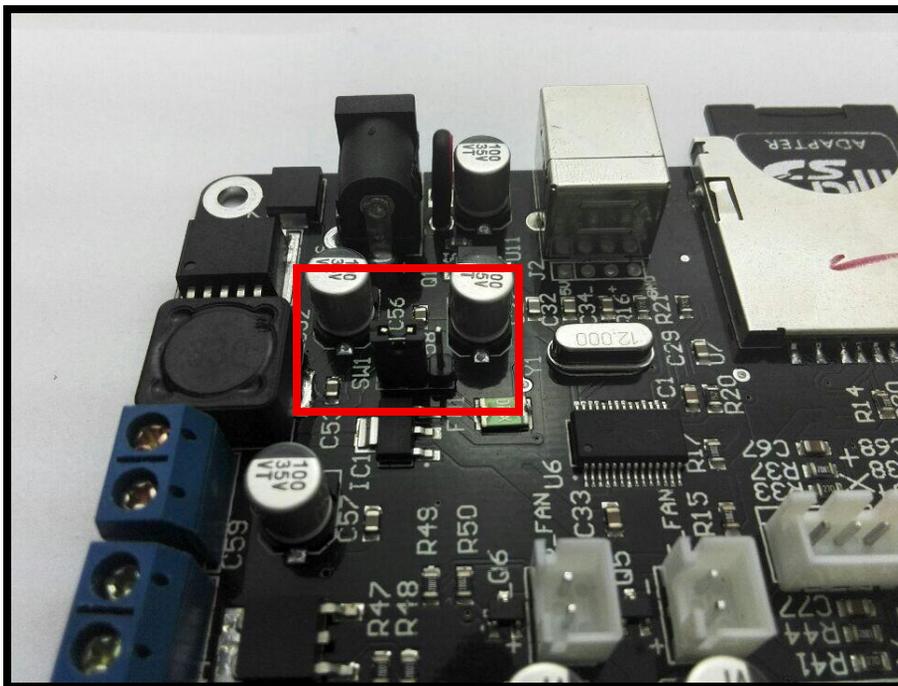
SD Card

② Update Firmware in SD Card

Plug the jumper cap of 5V/12-24V, supplying for USB. There are two kinds of power supply.
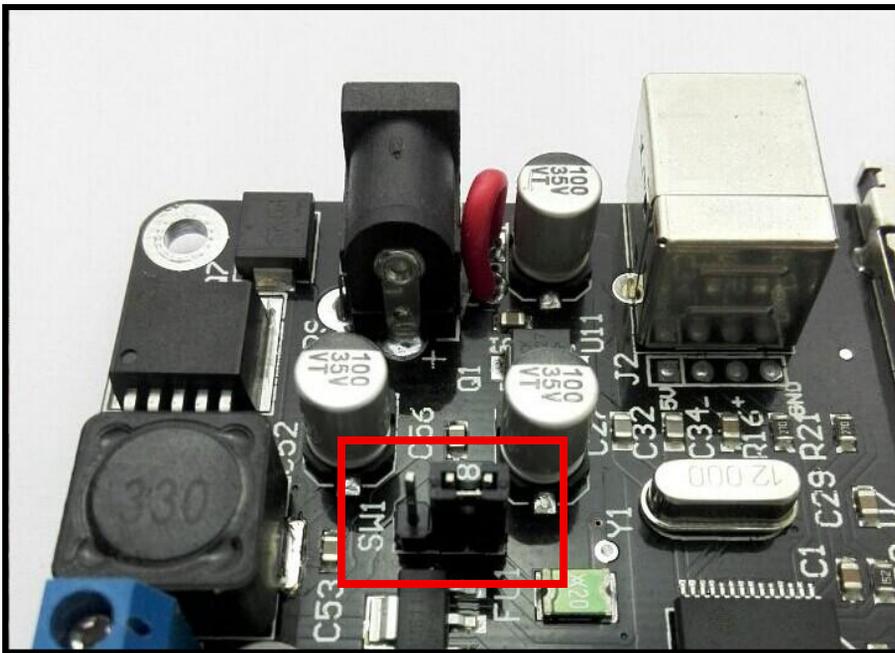

USB（5V) Power Supply


Power Supply（12-24V）

Choose one of the above methods. Take USB supply as example, plug the jumper cap and connect screen flat cable. The screen will light up.

After the SD card is plugged, choose the file of **Complete machine parameters V1.2.30.gcode** and print. When printing is finished(about 2s-3s), the firmware parameter is updated, shown as following figure.
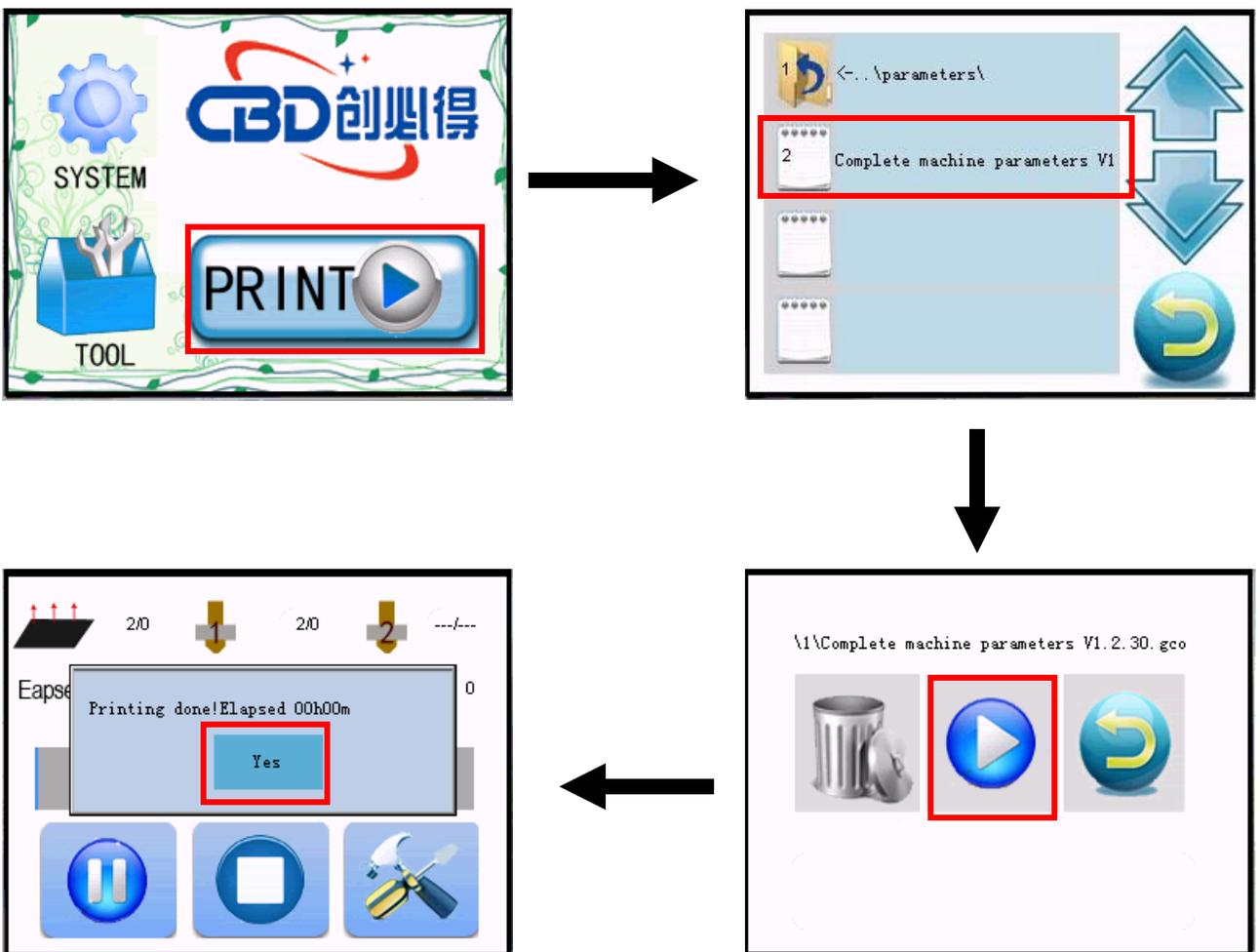
③ Computer Test Printing

   After the connection of all the external devices, plug the jumper cap of 12-24V, which is shown as follows.
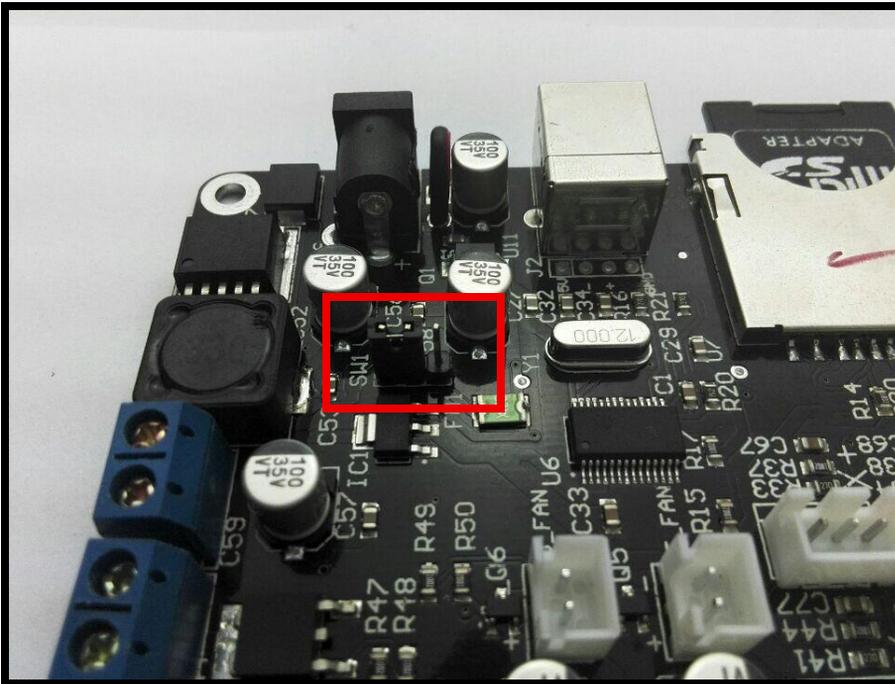
If you use a power adapter, the interface switch needs to be configured, as seen below.

If you use the power adapter, the switch can be connected in both holes. If the switch is not used then use the available short connection else, the board will not get energized and will not work.

When the machine is initiated, it is recommended to print some small models so as to test the validity and accuracy of parameters. Make adjustment to parameter according to print effect until the printing is in good condition.

3.FAQ

1.Why does not the screen light up after the connection and plugging of USB or power supply?

Answer：

(1) Wrong connection of power supply jumper cap.

(2) Poor contact of flat cable on both sides of screen. It is recommended to pull out and plug again.

(3) If you use a power adapter, you can check whether the switch interfaces is shorting or not.

2. Why does not the limit switch stop after trigger?

Answer：

(1) Wrong setting of direction of electrical machine.

(2) Wrong setting of structure type of limit switch in terms of machine parameters.

3. The electrical motor does not rotate？

Answer： Wrong connection of electrical motor and false identification between inverting and non-inverting.

4. Failure in installation of drive? （ChuTu V 3.6 support WIN 8.1 /7/XP）

Answer： At first, you can install the drive(PL2303TA) file in the folder. If failed, you can download from official website of PL2303TA drive, or you can one-click install by using the Driver Genius and other driver installation software

Driver Genius download:
http://www.driver-soft.com/download.html

5.How to adjust the drive current of the drive chip?

Answer：

At present, the driving chip current is calculated by I=U/0.8 (driving voltage divided by 0.8), the factory default is 0.85V, the driving (rotary potentiometer) voltage is the highest recommendation does not exceed 1.1V (driving chip current is too high to force the cooling), the following describes how to measure the driving voltage, as shown below.
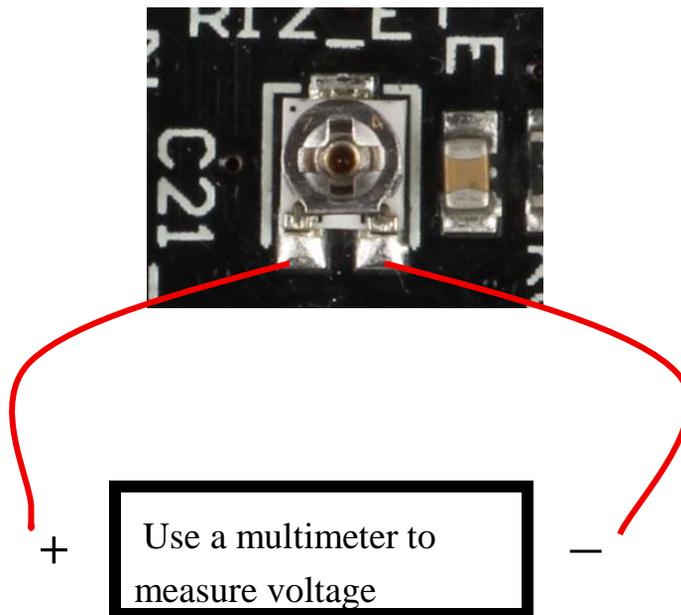
+   Use a multimeter to measure voltage   —