MKS MINI

Overview

MKS MINI is a feature all-in-one electronics solution for Reprap and other CNC devices.

It features an onboard ATmega2560. It's four motor outputs are powered by DRV8825 stepper drivers.

The board can use the same firmware as Ramps1.4.

The mounting hole locations is the same as Arduino Mega2560.

The power supply with 7805, more stable and reliable than the 1117, but only supports 12V.

USB to serial modules is 16U2, the same as Arduino Mega2560.

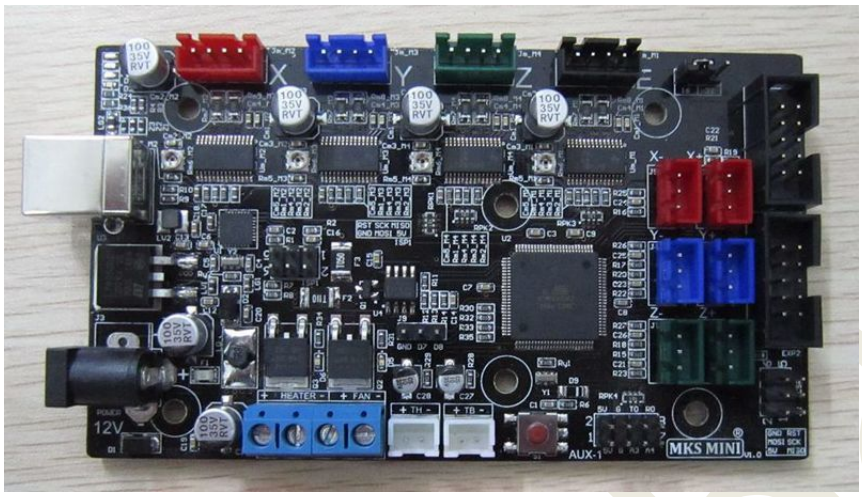
Without hot bed heating output, but has bed thermal interface and bed control signal interface.

MKS-MINI is suitable for One-Extrude and no bed printer.

Features

- Arduino MEGA compatible Atmega2560 processors are compatible with all RAMPS class firmware
- Firmware can use the same configuration as ramps1.4
- Easy DISPLAY + SD-CARD connector,RepRapDiscount SmartController compatible pin header on board
- 2x temperature ADC connectors for thermistors
- up to 4 motor driver with DRV8825
- 2x PWM capable power mosfet outputs with voltage selector for MainPower.(Extruder0,Fans)

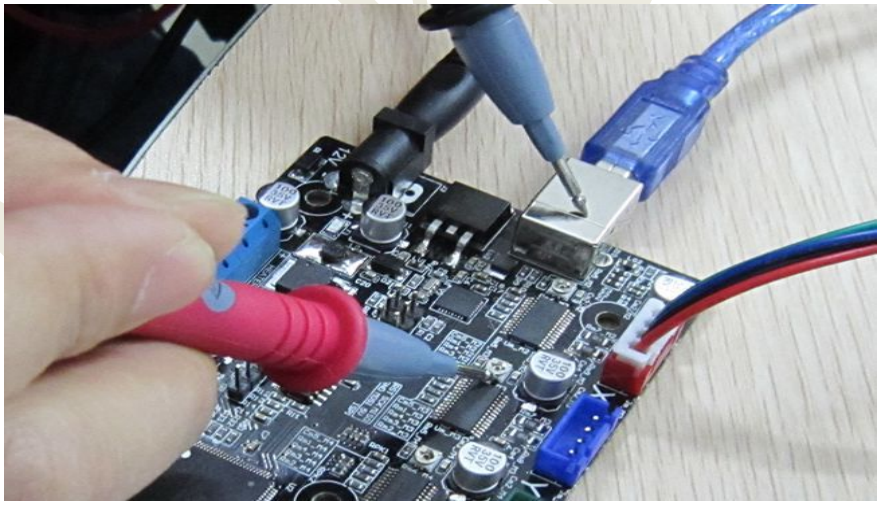
- 4 layers PCB, optimize heat dissipation.
- 6x end stop connectors with power supply Xmin/Xmax/Ymin/Ymax/Zmin/Zmax
- Recoverable fuse for short-circuit protection.



MKS MINI board

Motor Driver

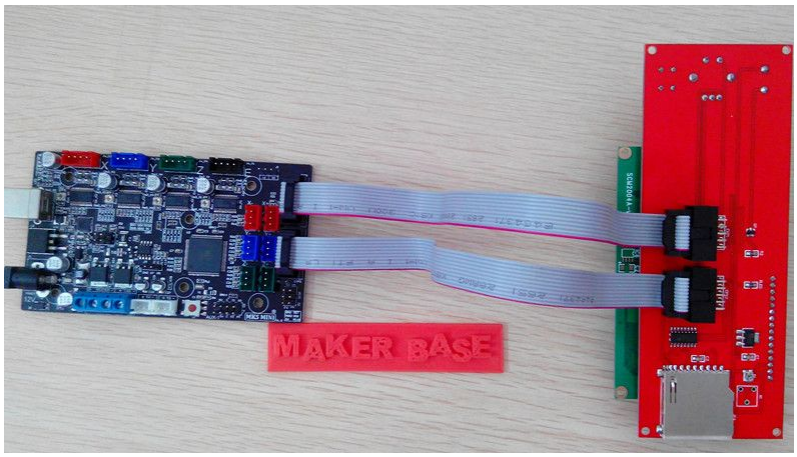
I=V_REF*2，V_REF can be checked as the picture:



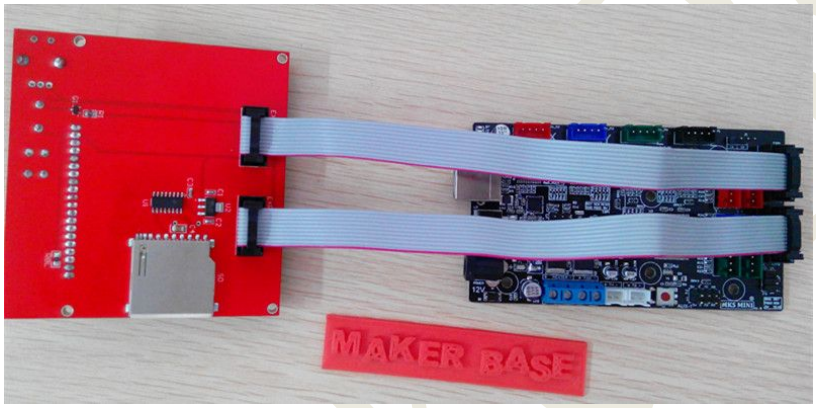
Stepper DRV8825

MKS MINI's DRV8825 Microstepping default is 16 microsteps,and can be changed to 32 microsteps.

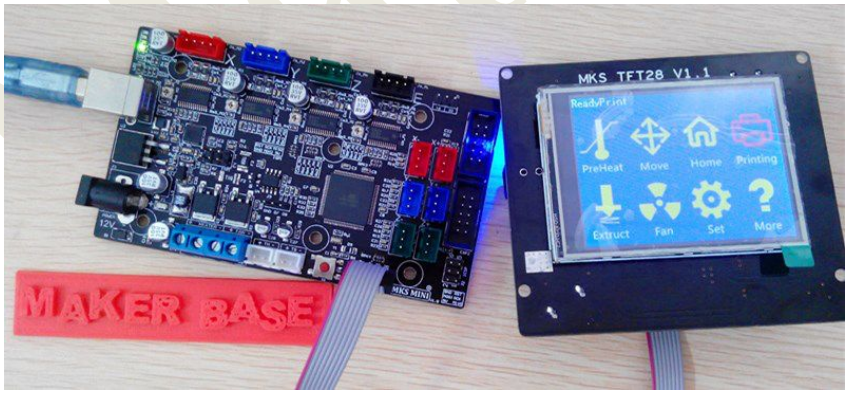
Smart Controller



MKS MINI Board and 2004LCD



MKS Base Board and 12864LCD



MKS MINI Board and MKS TFT

Website：www.makerbase.com.cn Database: https://github.com/makerbase-mks
E-mail：2228481602@qq.com ;529442067@qq.com; 4164049@qq.com;
Address： Room C407-408，He Jing Industrial Design Science and Technology Park，No. 23 Guangzhou Road, Liwan District East Sha Industrial Zone,Guangzhou city,Guangdong province， China.

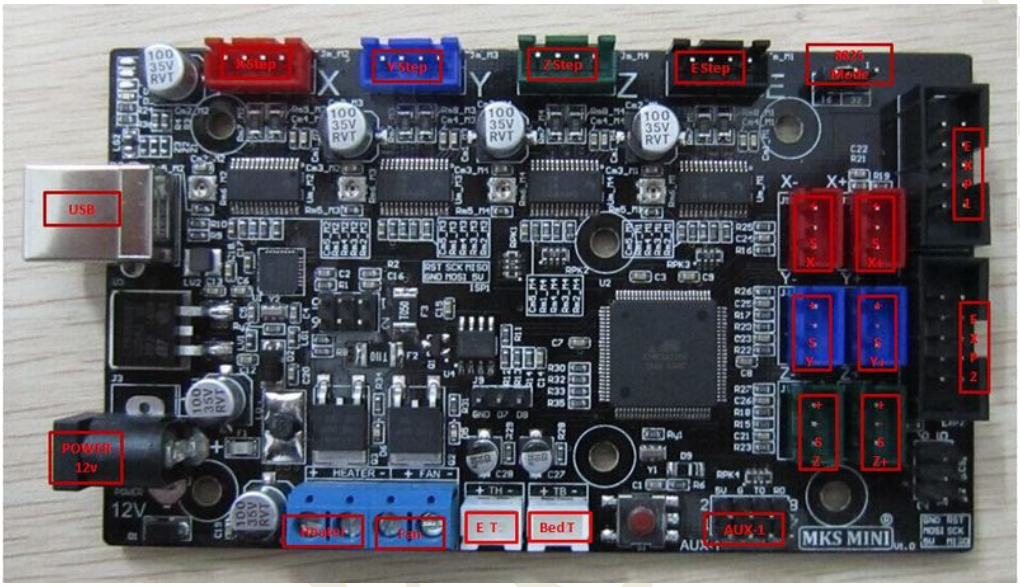
MKS MINI can easy use RepRapDiscount Smart Controller and RepRapDiscount Full Graphic Smart Controller

You only need connect Smart Controller's Exp1 to MKS MINI's Exp1,Smart Controller's Exp2 to MKS Base's Exp2.

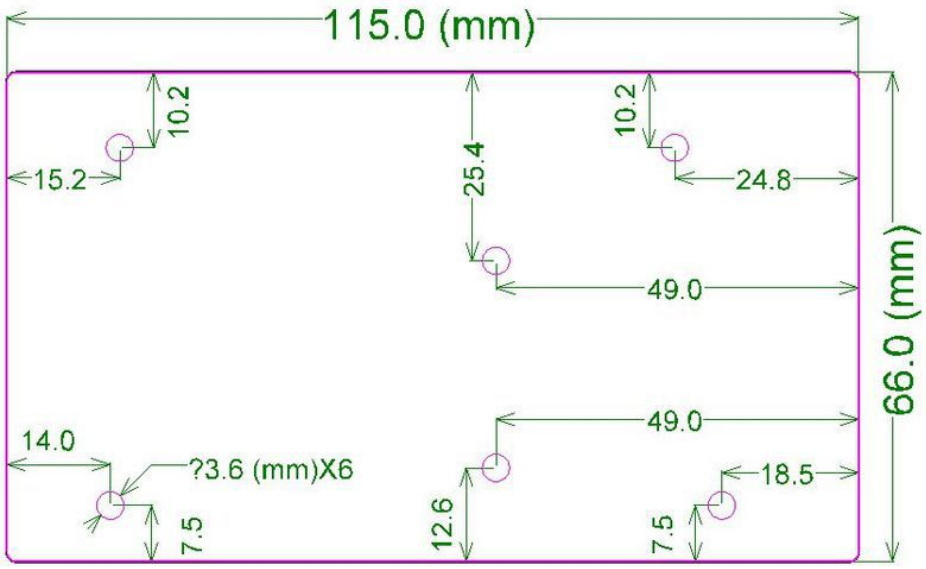
Wiring

Wiring plan based on available information

MKS MINI Connectors

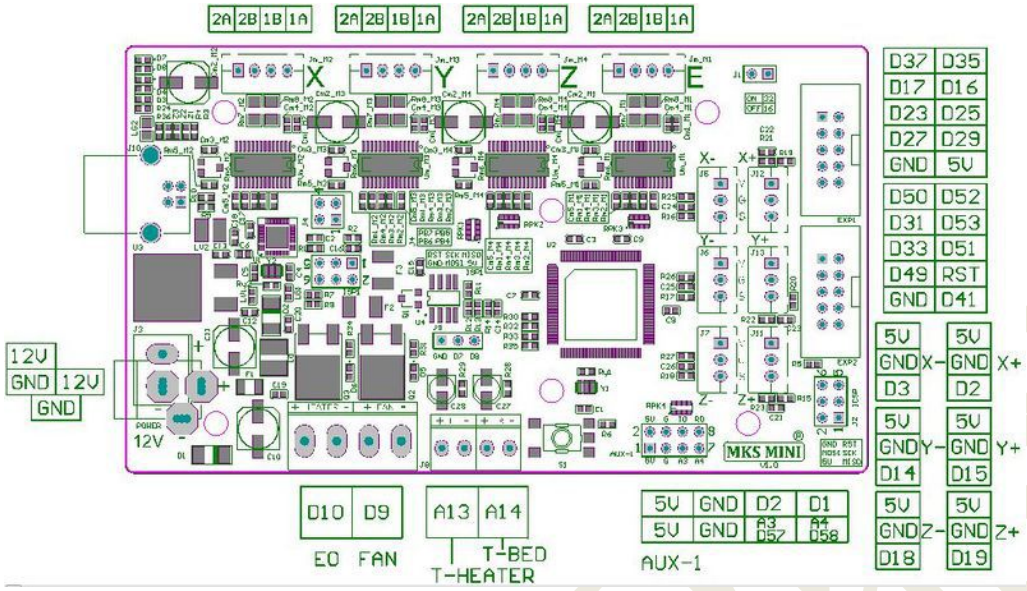


MKS MINI Size



Website：www.makerbase.com.cn Database: https://github.com/makerbase-mks
E-mail：2228481602@qq.com ;529442067@qq.com; 4164049@qq.com;
Address： Room C407-408 ,He Jing Industrial Design Science and Technology Park ,No. 23 Guangzhou Road, Liwan District East Sha Industrial Zone,Guangzhou city,Guangdong province , China.

MKS MINI PINS



Safety Tip

Caution

Once you start putting electricity into your RepRap - even at just 12 volts - you have to take basic, common sense precautions to avoid fires.

Firmware

This section will show you how to get firmware into your controller and run it with basic settings.

Software required: Arduino IDE, Choice of firmware (Marlin or Repetier or Sprinter), Pronterface

1.The VCP drivers will install a COM Port on your computer for the MKS MINI, you can check what port number was assigned by going to your device

manager and click on Ports(COM & LPT) look for something that says "USB Serial Port(COM3)" where COM3 is you assigned port number(will vary from PC to PC). Remember this number as you will be using it later in configuring other software.

2. Install Arduino IDE - Download and extract the Arduino IDE .

3. Get your firmware - While you can use most firmwares out there, we will use Marlin as an example. Download and extract Marlin or any other forks of the firmware that you prefer/need.

4. Upload firmware - Run the Arduino IDE (arduino.exe).

   Select your board - Click on Tools -->Board -->Arduino Mega 2560,

   Select your serial port - Click on Tools-->Serial Port-->(select your COM port for the X3 USB, you can check this in Device manager)

On Arduino click File-->Open -- then point to your Marlin Download and select Marlin.pde. With Marlin loaded on the IDE window, click on the tab that says "configuration.h". These are the basic entries that you need to change to get the X3 working.

```
#define BAUDRATE 250000 //This will work fine for the MKS Gen
#define MOTHERBOARD 33 //33 is for RAMPS which the MKS GEN is compatible with MOTHERBOARD 34
#define TEMP_SENSOR_0 3 //If you have the NTC 100K
#define TEMP_SENSOR_1 0
#define TEMP_SENSOR_2 0
#define TEMP_SENSOR_BED 0 //If you have the NTC 100K
```

These entries are the only ones you need just to get the MKS Gen running. Once you get it to upload you can now test most features of the board. You will need to tweak the settings on the configuration file for your printer.

5. Upload(or compile to test) Marlin - While still on the Arduino window

   Click on the Triangle inside the circle to do a test compile, this makes sure that the firmware does not contain errors(you can skip this)

   Click on the arrow pointing to the right inside a square frame to upload firmware to the board. If everything goes well you'll see a "Done Uploading" message near the bottom of the Arduino window.