

英文原版教程参见: <http://www.ediy.com.my/index.php/blog/item/72-digispark-diy-the-smallest-usb-arduino>

Digispark是一个基于ATTINY85微控制器的USB开发板，体积小并且价格便宜。功能没有Arduino完善，但可以使用arduino IDE来完成程序开发。

本文将介绍如何制作一片Digispark,当然也可以从官方购买原版的Digispark。因为Digispark完全开源,你也可以购买任何一种兼容版本。

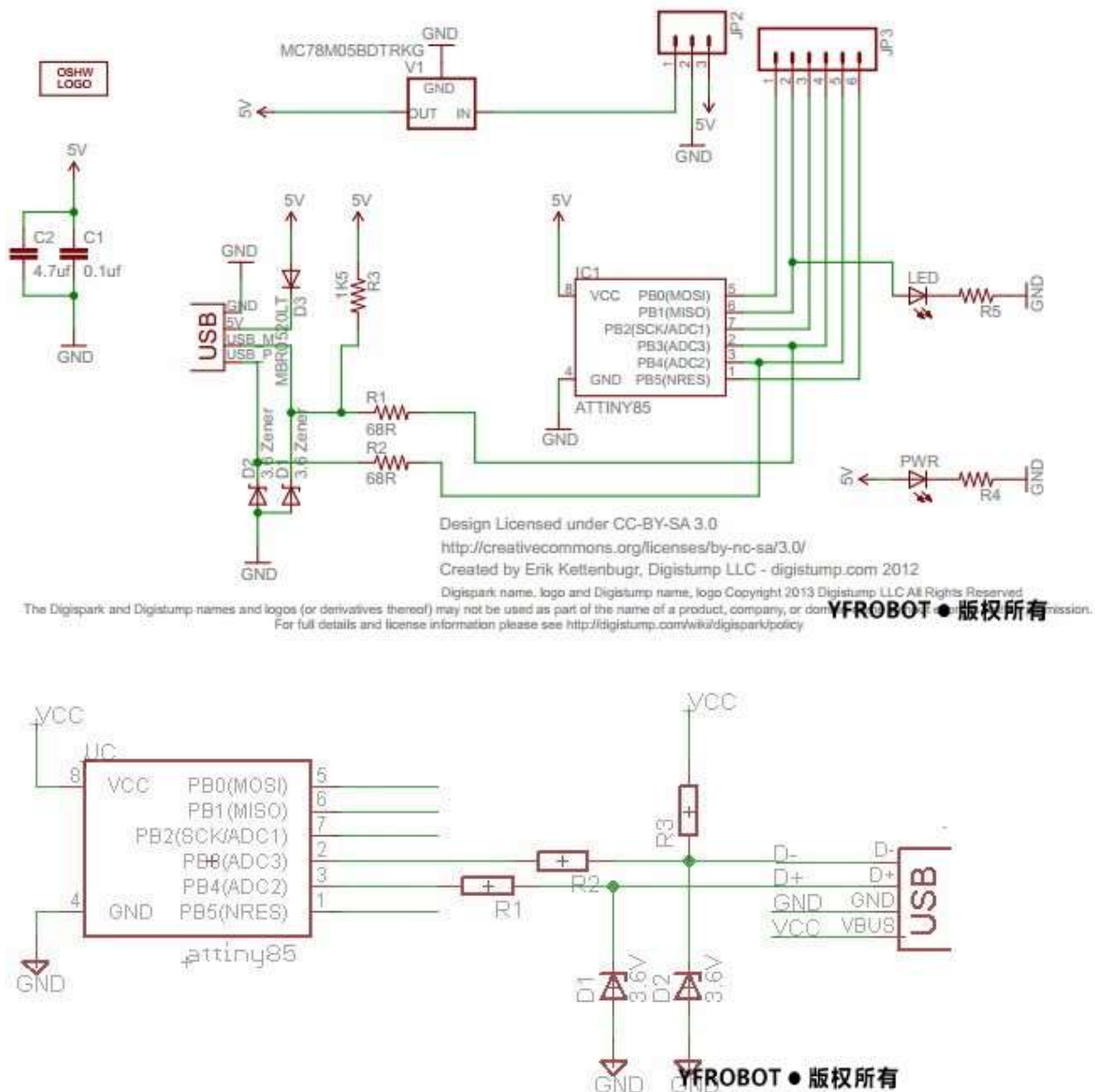
Digispark归[Digistump LLC](#)版本所有, 详情见[Digispark许可](#)!

Digispark规格参数:

- 支持Arduino IDE 1.0+
- USB供电或者外部供电（供电范围7 - 15V）
- 内置USB
- 6个IO口（2个用于USB，也可以通过编程配置为IO口使用）
- 8K Flash存储（2K用于Bootloader）
- I2C和SPI
- 3个PWM接口（可以通过软件模拟更多）
- 4个ADC接口

Digispark 原理图:

下面的原理图来源于官方版本，第二幅图为精简版本，只使用USB供电，使用了更少的元件组件。



下载Bootloader:

连接好线路后，下载[Bootloader for Attiny85](#)

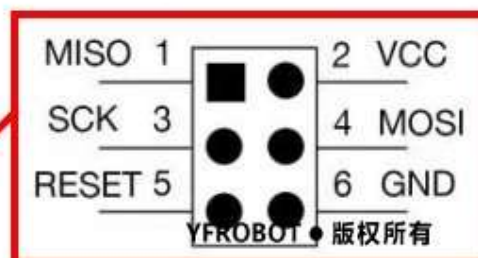
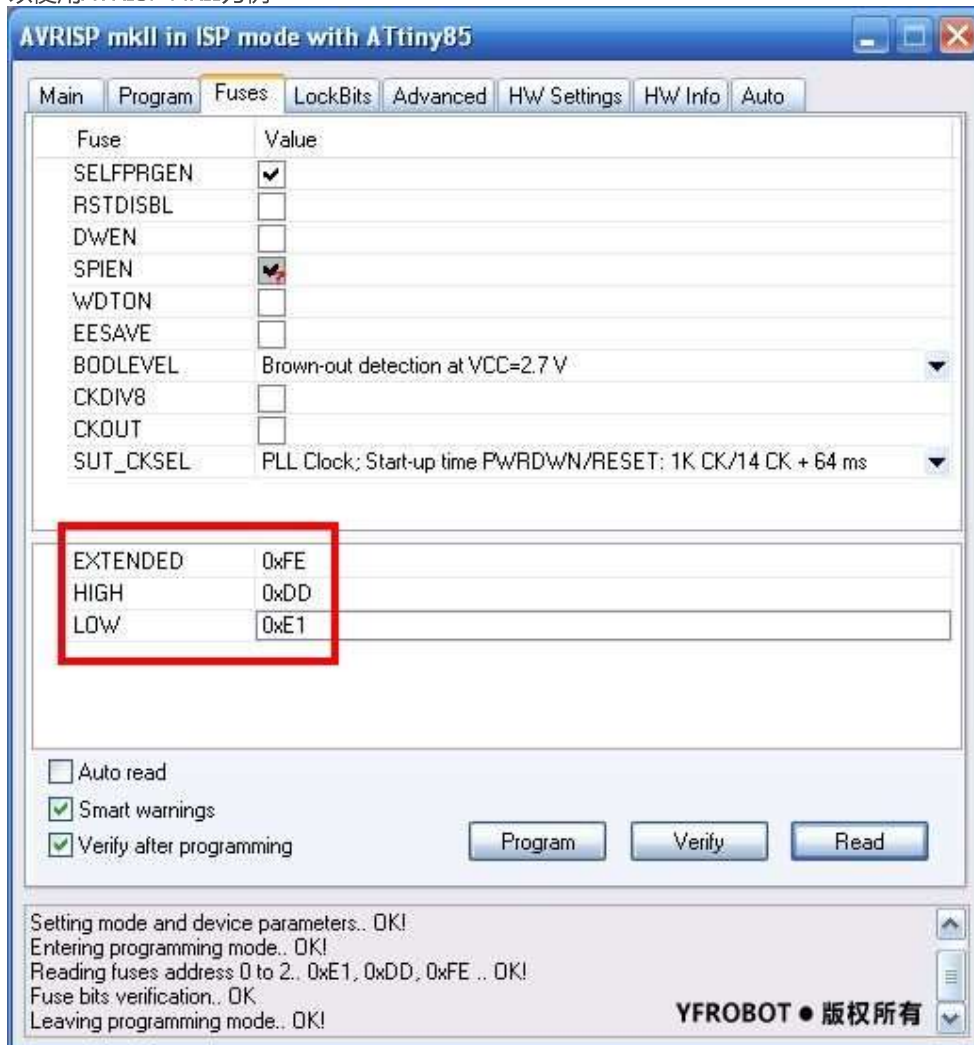
解压获得micronucleus-1.06.hex

烧写Bootloader：

烧写Boot时必须正确配置熔丝位，请使用下面的设置

- Extended: 0xFE
- High: 0xDD
- Low: 0xE1

以使用AVRISP MKII为例

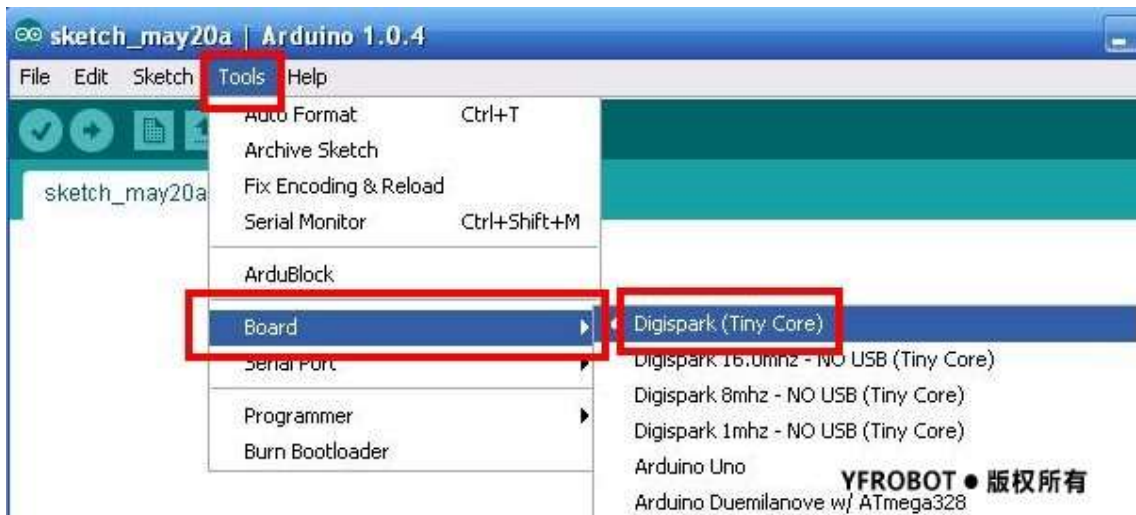


下载Arduino IDE安装驱动：

- 下载[DigisparkArduino 1.0.4](#)，文件里带有Digispark USB驱动
- 运行DigisparkArduino-Win32DigisparkWindowsDriverInstallDriver.exe
- 自动安装完成usb驱动程序
-

连接Digispark并上传程序：

- 使用USB线连接Digispark
- 提示安装Digispark bootloader程序
- 双击运行DigisparkArduino-Win32\Digispark-Arduino-1.0.4\arduino.exe
- 板卡类型选择Tools>Board>Digispark (Tiny Core)



- 测试示例程序，点击 File>Examples>Digispark_Example>Start

[code=Cpp width=720px]/*

Blink

Turns on an LED on for one second, then off for one second, repeatedly.

This example code is in the public domain.

*/

// Pin 13 has an LED connected on most Arduino boards.

// give it a name:

int led = 1;

// the setup routine runs once when you press reset:

void setup() {

// initialize the digital pin as an output.

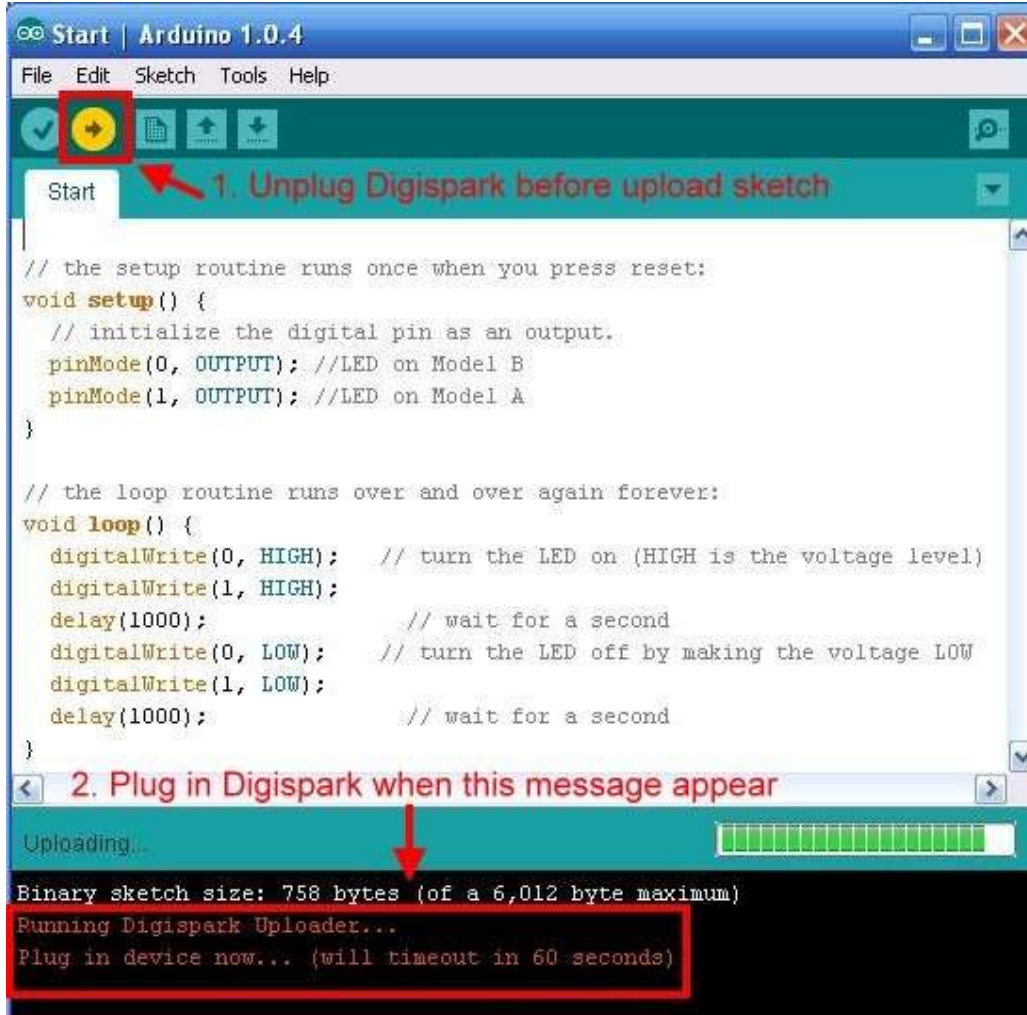
pinMode(led, OUTPUT);

```
}
```

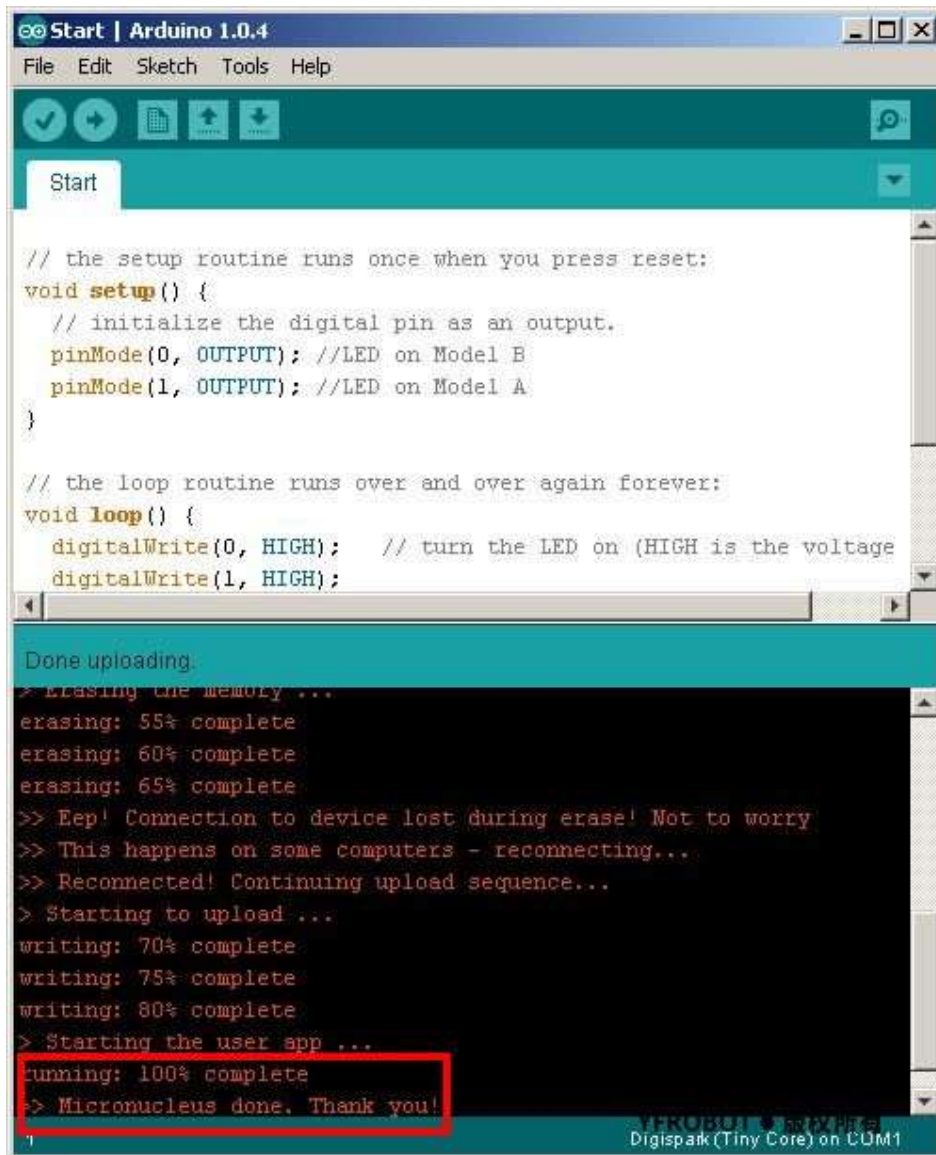
```
// the loop routine runs over and over again forever:
```

```
void loop() {  
  digitalWrite(led, HIGH); // turn the LED on (HIGH is the voltage level)  
  delay(1000);             // wait for a second  
  digitalWrite(led, LOW);  // turn the LED off by making the voltage LOW  
  delay(1000);             // wait for a second  
}
```

- 点击程序下载按钮，出现如下提示时，重新插拔一次USB



- 等待程序下载完成



The screenshot shows the Arduino IDE 1.0.4 window. The top menu bar includes File, Edit, Sketch, Tools, and Help. Below the menu is a toolbar with icons for opening files, saving, uploading, and downloading. The main text area contains a C++ sketch for a Digispark board. The sketch defines two pins (0 and 1) as outputs and writes HIGH to them in the loop. Below the sketch, the 'Serial Monitor' window is open, displaying the upload progress. The progress bar is at 100%, and the status is 'Done uploading.' The serial output shows the following messages:

```
// the setup routine runs once when you press reset:
void setup() {
  // initialize the digital pin as an output.
  pinMode(0, OUTPUT); //LED on Model B
  pinMode(1, OUTPUT); //LED on Model A
}

// the loop routine runs over and over again forever:
void loop() {
  digitalWrite(0, HIGH); // turn the LED on (HIGH is the voltage
  digitalWrite(1, HIGH);
```

Done uploading.
> Erasing the memory ...
erasing: 55% complete
erasing: 60% complete
erasing: 65% complete
>> Eep! Connection to device lost during erase! Not to worry
>> This happens on some computers - reconnecting...
>> Reconnected! Continuing upload sequence...
> Starting to upload ...
writing: 70% complete
writing: 75% complete
writing: 80% complete
> Starting the user app ...
running: 100% complete
>> Micromucleus done. Thank you!

The status bar at the bottom indicates 'Digispark (Tiny Core) on COM1'.

如果看到板载的LED灯隔一秒一次亮灭，说明程序运行OK！