

Arduino Uno Rev3 SMD 意大利原装开发板

(此款产品是全新的原装进口产品，开封后非质量问题我们不支持退换货喔)

概述

Arduino Uno Rev3 SMD 是基于 **ATmega328** 的微控制器板。它具有 **14** 个数字输入/输出引脚（其中 **6** 个可用作 **PWM** 输出）、**6** 个模拟输入、一个 **16 MHz** 陶瓷谐振器 (**CSTCE16M0V53-R0**)、一个 **USB** 连接、一个电源插孔、一个 **ICSP** 接头和一个复位按钮。它包含支持微控制器所需的一切；只需使用 **USB** 电缆将其连接到计算机或使用 **AC-DC** 适配器或电池为其供电即可开始使用。

Uno 不同于之前所有的板子，它不使用 **FTDI USB** 转串口驱动芯片。

R3 版本附带的附加功能包括：

ATmega16U2 代替 **8U2** 作为 **USB** 到串行转换器。

1.0 引脚分配：添加了用于 **TWI** 通信的 **SDA** 和 **SCL** 引脚，这些引脚位于 **AREF** 引脚附近，另外两个新引脚位于 **RESET** 引脚附近，**IOREF** 允许屏蔽适应电路板提供的电压，第二个是未连接的引脚，留作将来之用。

更强的 **RESET** 电路。

“**Uno**”在意大利语中的意思是“一个”，命名是为了纪念即将发布的 **Arduino 1.0**。**Uno** 和 **1.0** 版将成为 **Arduino** 的参考版本，继续向前发展。**Uno** 是一系列 **USB Arduino** 板中的最新款，也是 **Arduino** 平台的参考模型。

相关板块

如果您对具有类似功能的电路板感兴趣，您可以在 **Arduino** 中找到：

Arduino Uno Rev3

Arduino Uno WiFi Rev2

入门

入门部分包含配置电路板、使用 **Arduino** 软件 (**IDE**) 以及开始修改编码和电子设备所需的所有信息。

在教程部分，您可以找到来自库和内置草图的示例以及其他有用的信息，以扩展您对 **Arduino** 硬件和软件的了解。

需要帮忙？

查看 **Arduino** 论坛，了解有关 **Arduino** 语言或如何使用 **Arduino** 制作您自己的项目的问题。如果您的开发板需要任何帮助，请联系官方 **Arduino** 用户支持，如我们的联系我们页面所述。

技术规格

微控制器 ATmega328P

工作电压 5V

输入电压（推荐）7-12V

输入电压（极限）6-20V

数字 I/O 引脚 14 个（其中 6 个提供 PWM 输出）

PWM 数字 I/O 引脚 6

模拟输入引脚 6

每个 I/O 引脚的直流电流 20 mA

3.3V 引脚的直流电流 50 mA

闪存 32 KB (ATmega328P) 其中 0.5 KB 由引导加载程序使用

SRAM 2 KB (ATmega328P)

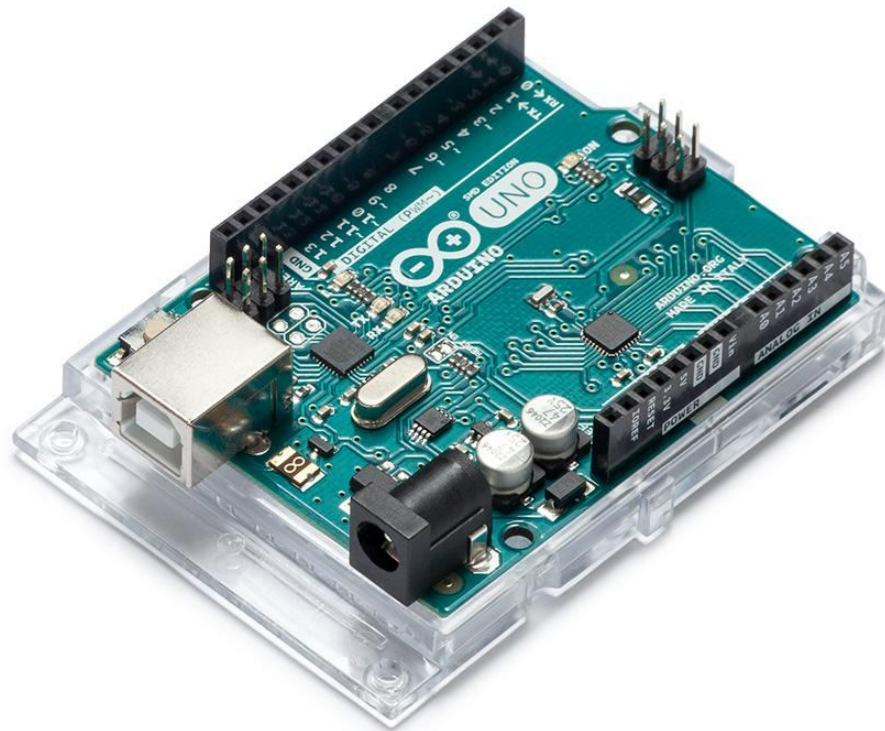
EEPROM 1 KB (ATmega328P)

时钟速度 16 MHz

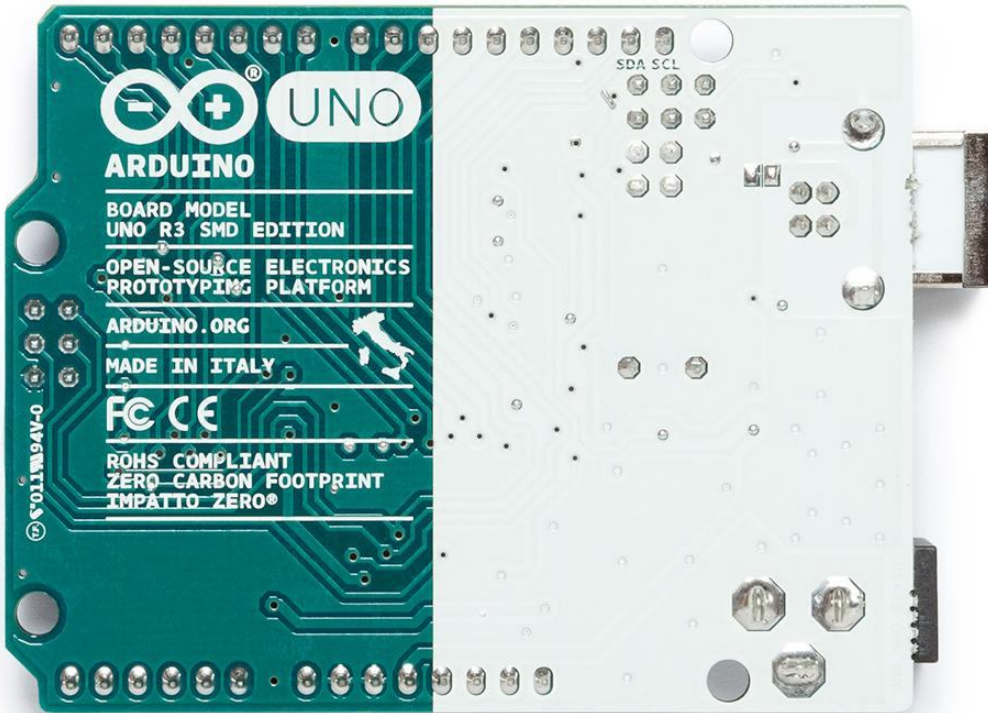
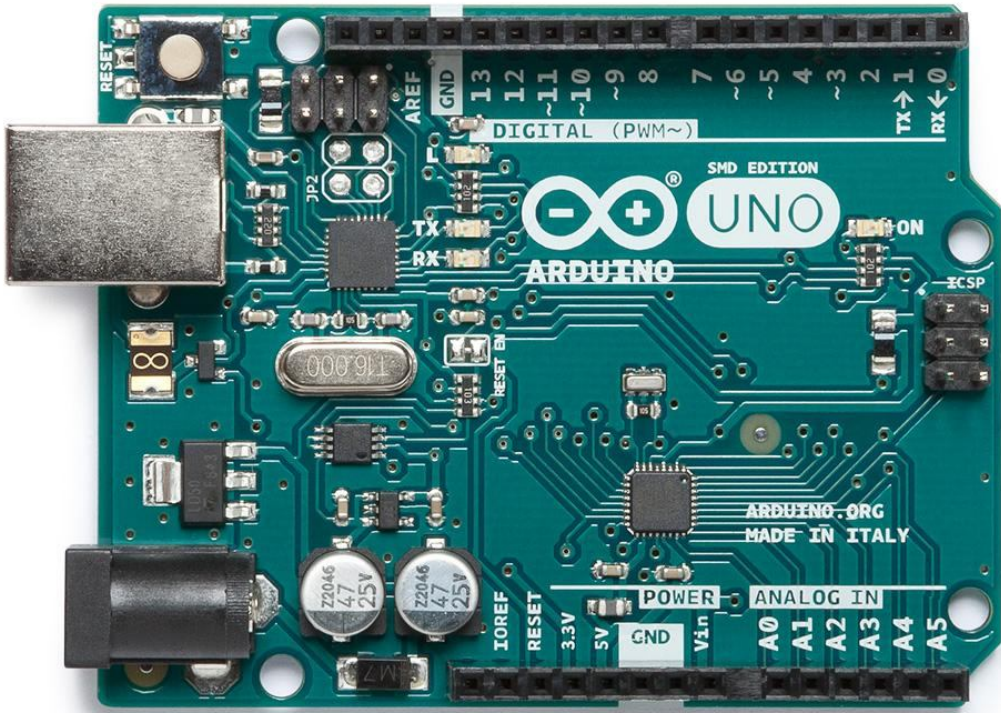
LED_BUILTIN 13

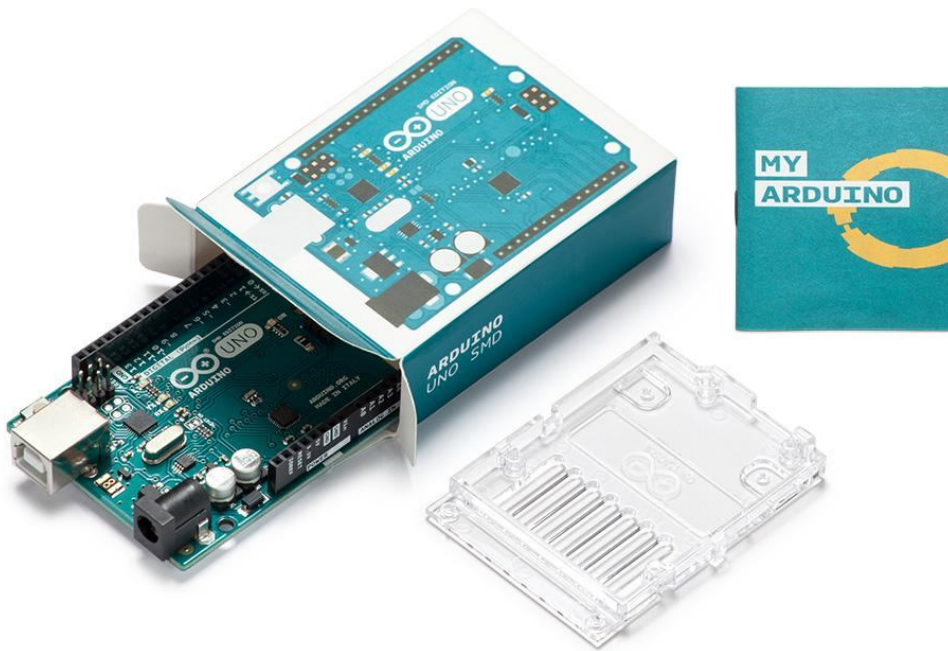
长度 68.6 毫米

宽度 53.4 毫米



重量 25 克





Each of the 14 digital pins on the Uno can be used as an input or output, using `pinMode()`, `digitalWrite()`, and `digitalRead()` functions. They operate at 5 volts. Each pin can provide or receive 20 mA as recommended operating condition and has an internal pull-up resistor (disconnected by default) of 20-50k ohm. A maximum of 40mA is the value that must not be exceeded on any I/O pin to avoid permanent damage to the microcontroller.

In addition, some pins have specialized functions:

- Serial: 0 (RX) and 1 (TX). Used to receive (RX) and transmit (TX) TTL serial data. These pins are connected to the corresponding pins of the ATmega8U2 USB-to-TTL Serial chip.
- External Interrupts: 2 and 3. These pins can be configured to trigger an interrupt on a low value, a rising or falling edge, or a change in value. See the `attachInterrupt()` function for details.
- PWM: 3, 5, 6, 9, 10, and 11. Provide 8-bit PWM output with the `analogWrite()` function.
- SPI: 10 (SS), 11 (MOSI), 12 (MISO), 13 (SCK). These pins support SPI communication using the SPI library.
- LED: 13. There is a built-in LED driven by digital pin 13. When the pin is HIGH value, the LED is on, when the pin is LOW, it's off.
- TWI: A4 or SDA pin and A5 or SCL pin. Support TWI communication using the `Wire` library.

The Uno has 6 analog inputs, labeled A0 through A5, each of which provide 10 bits of resolution (i.e. 1024 different values). By default they measure from ground to 5 volts, though it is possible to change the upper end of their range using the AREF pin and the `analogReference()` function. There are a couple of other pins on the board:

- AREF. Reference voltage for the analog inputs. Used with `analogReference()`.
- Reset. Bring this line LOW to reset the microcontroller. Typically used to add a reset button to shields which block the one on the board.

Communication

Arduino/Genuino Uno has a number of facilities for communicating with a computer, another Arduino/Genuino board, or other microcontrollers. The ATmega328 provides UART TTL (5V) serial communication, which is available on digital pins 0 (RX) and 1 (TX). An ATmega16U2 on the board channels this serial communication over USB and appears as a virtual com port to software on the computer. The 16U2 firmware uses the standard USB COM drivers, and no external driver is needed.

However, [on Windows, a .inf file is required](#). The Arduino Software (IDE) includes a serial monitor which allows simple textual data to be sent to and from the board. The RX and TX LEDs on the board will flash when data is being transmitted via the USB-to-serial chip and USB connection to the computer (but not for serial communication on pins 0 and 1).

A [SoftwareSerial library](#) allows serial communication on any of the Uno's digital pins.

The ATmega328 also supports I2C (TWI) and SPI communication. The Arduino Software (IDE) includes a Wire library to simplify use of the I2C bus; see the [documentation](#) for details. For SPI communication, use the [SPI library](#).

Automatic (Software) Reset

Rather than requiring a physical press of the reset button before an upload, the Arduino/Genuino Uno board is designed in a way that allows it to be reset by software running on a connected computer. One of the hardware flow control lines (DTR) of the ATmega8U2/16U2 is connected to the reset line of the ATmega328 via a 100 nanofarad capacitor. When this line is asserted (taken low), the reset line drops long enough to reset the chip. The Arduino Software (IDE) uses this capability to allow you to upload code by simply pressing the upload button in the interface toolbar. This means that the bootloader can have a shorter timeout, as the lowering of DTR can be well-coordinated with the start of the upload.

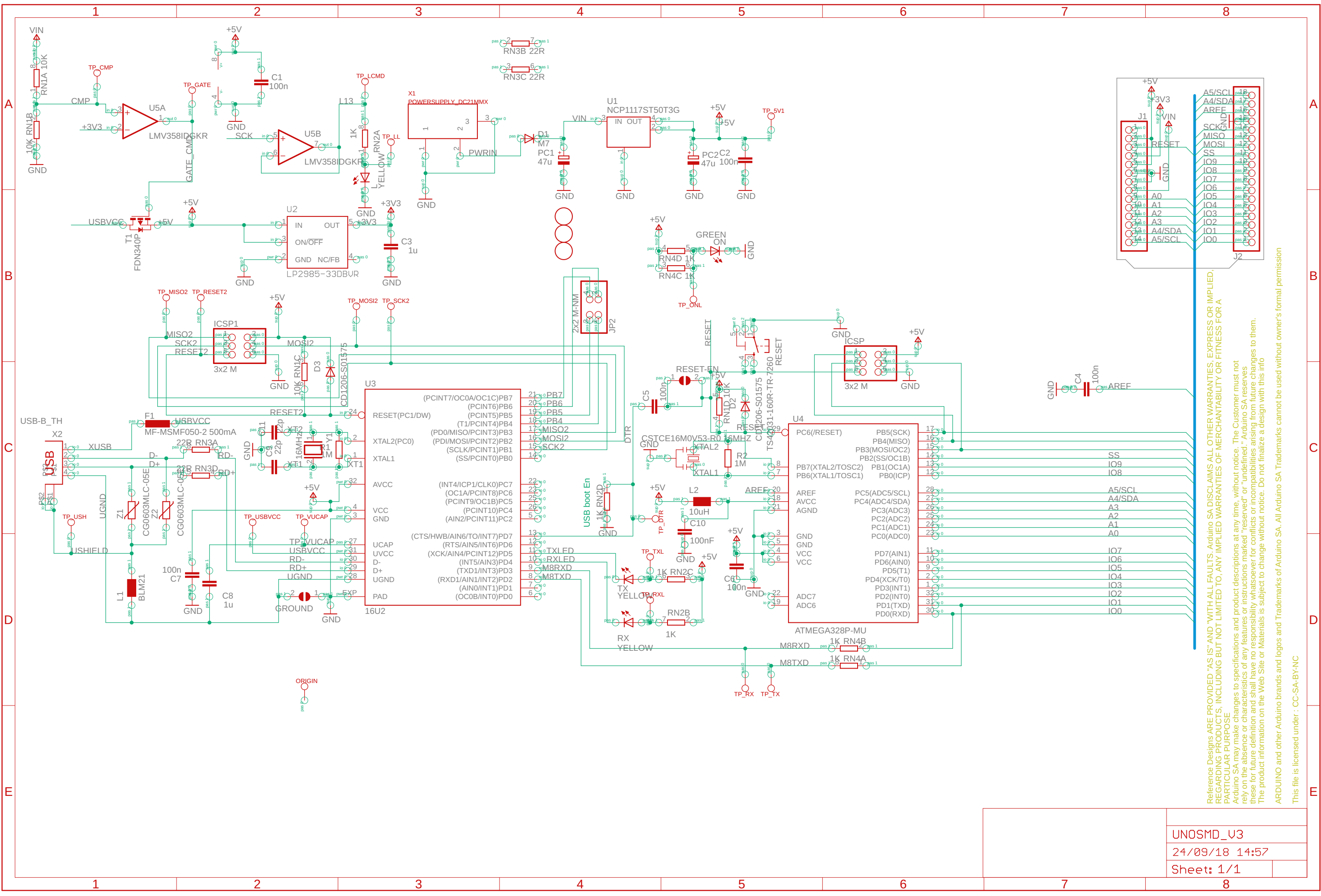
This setup has other implications. When the Uno is connected to either a computer running Mac OS X or Linux, it resets each time a connection is made to it from software (via USB). For the following half-second or so, the bootloader is running on the Uno. While it is programmed to ignore malformed data (i.e. anything besides an upload of new code), it will intercept the first few bytes of data sent to the board after a connection is opened. If a sketch running on the board receives one-time configuration or other data when it first starts, make sure that the software with which it communicates waits a second after opening the connection and before sending this data.

The Uno board contains a trace that can be cut to disable the auto-reset. The pads on either side of the trace can be soldered together to re-enable it. It's labeled "RESET-EN". You may also be able to disable the auto-reset by connecting a 110 ohm resistor from 5V to the reset line; see [this forum thread](#) for details.

Revisions

Revision 3 of the board has the following new features:

- 1.0 pinout: added SDA and SCL pins that are near to the AREF pin and two other new pins placed near to the RESET pin, the IOREF that allow the shields to adapt to the voltage provided from the board. In future, shields will be compatible with both the board that uses the AVR, which operates with 5V and with the Arduino Due that operates with 3.3V. The second one is a not connected pin, that is reserved for future purposes.
- Stronger RESET circuit.
- Atmega 16U2 replace the 8U2.



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