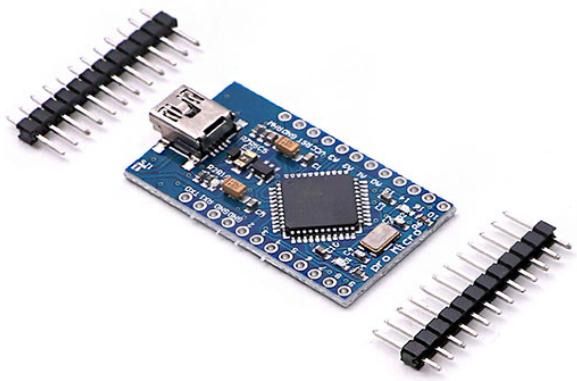
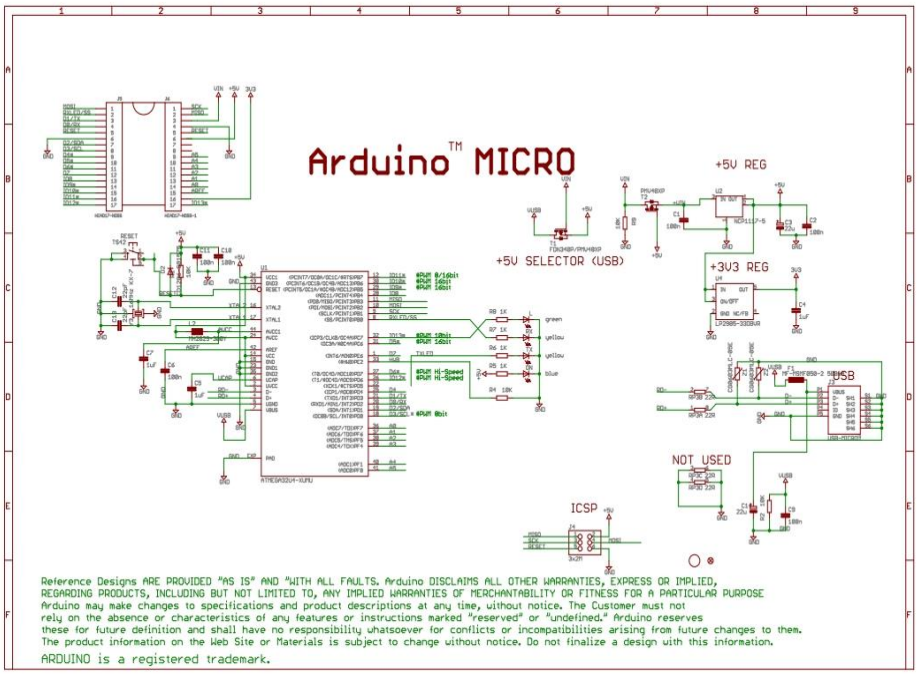
Arduino Pro Micro 5V/16M - Compatible

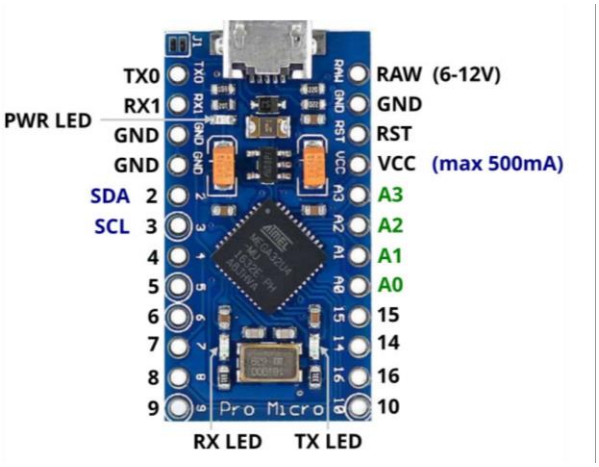


SCHEMATIC DIAGRAM:



- The Micro is a microcontroller board based on the ATmega32U4 developed in conjunction with Adafruit
- It has 20 digital input/output pins (of which 7 can be used as PWM outputs and 12 as analog inputs), a 16 MHz crystal oscillator, a micro USB connection, an ICSP header, and a reset button.
- It contains everything needed to support the microcontroller; simply connect it to a computer with a micro USB cable to get started. It has a form factor that enables it to be easily placed on a breadboard. The Micro board is similar to the Arduino Leonardo in that the ATmega32U4 has built-in USB communication, eliminating the need for a secondary processor. This allows the Micro to appear to a connected computer as a mouse and keyboard, in addition to a virtual (CDC) serial / COM port.

PIN FUNCTION:



- **Power Pins:** There are a variety of power and power-related nets broken out:
- **RAW** is the unregulated voltage input for the Pro Micro. If the board is powered via USB, the voltage at this pin will be about 4.8V (USB's 5V minus a schottkey diode drop). On the other hand, if the board is powered externally, through this pin, the applied voltage can be up to 12V.
- **VCC** is the voltage supplied to the on-board ATmega32U4. This voltage will depend on whether you're using a 3.3V/8MHz Pro Micro or a 5V/16MHz version, it'll be either 3.3V or 5V respectively. This voltage is regulated by the voltage applied to the RAW pin. If the board is powered through the 'RAW' pin (or USB), this pin can be used as an output to supply other devices
- **RST** can be used to restart the Pro Micro. This pin is pulled high by a 10k&Ohm; resistor on the board, and is active-low, so it must be connected to ground to initiate a reset. The Pro Micro will remain "off" until the reset line is pulled back to high.
- **GND,** of course, is the common, ground voltage (0V reference) for the system

- **I/O Pins:** The Pro Micro's I/O pins -- 18 in all -- are multi-talented. Every pin can be used as a digital input or output, for blinking LEDs or reading button presses. These pins are referenced in the Arduino IDE via an integer value between 0 and 21. (The A0-A3 pins can be referenced digitally using either their analog or digital pin number).
  Nine pins feature analog to digital converters (ADCs) and can be used as analog inputs. These are useful for reading potentiometers or other analog devices using the analogRead([pin]) function.
  There are five pins with pulse width modulation (PWM) functionality, which allows for a form of analog output using the analogWrite([pin], [value]) function. These pins are indicated on-board with a faint, white circle around them.
  There are hardware UART (serial), I2C, and SPI pins available as well. These can be used to interface with digital devices like serial LCDs, XBees, IMUs, and other serial sensors.
  The Pro Micro has five external interrupts, which allow you to instantly trigger a function when a pin goes either high or low (or both). If you attach an interrupt to an interrupt-enabled pin, you'll need to know the specific interrupt that pin triggers: pin 3 maps to interrupt 0 (INT0), pin 2 is interrupt 1 (INT1), pin 0 is interrupt 2 (INT2), pin 1 is interrupt 3 (INT3), and pin 7 is interrupt 4 (INT6).
  - **On-Board LEDs:** There are three LEDs on the Pro Micro. One red LED indicates whether power is present. The other two LEDs help indicate when data is transferring over USB. A yellow LED represents USB data coming into (RX) the the Pro Micro, and a green LED indicates USB data going out (TX).