

# Adafruit Itsy Bitsy 32u4 - 3V 8MHz

PRODUCT ID: 3675

Also include 1 x [Adafruit Pro Trinket Lilon/LiPoly Backpack Add-On+](#)

## Description

- What's smaller than a Feather but larger than a Trinket? It's an Itsy Bitsy! Small, powerful, Arduino-compatible - this microcontroller board is perfect when you want something very compact, but still with a bunch of pins.

Itsy Bitsy is only 1.4" long by 0.7" wide, but has 6 power pins, 6 analog & digital pins and 17 digital pins. It packs much of the same capability as an Arduino UNO or Feather 32u4. So it's great once you've finished up a prototype on a bigger Arduino, and want to make the project much smaller.

The Itsy Bitsy 32u4 3V 8MHz uses the Atmega32u4 chip, which is the same core chip in the Arduino Leonardo as well as the same chip we use in our Feather 32u4. It even runs at the same voltage and speed as the Feather 32u4, so you'll be happy to hear that not only is Itsy Bitsy programmable using the Arduino IDE as you already set up, but a vast number of projects will work out of the box!

We recommend this as an upgrade from the [Pro Trinket 3V](#) because this has native USB so it will work with all computers, USB serial debugging, and a more reliable bootloader. [You can even use the Pro Trinket LiPo backpack with this board to add recharge-able battery.](#)

We have two special pins on the 3V version of this board. There's a VHigh pin, this pin is a power pin whose voltage is the *higher* of VBAT and VUSB. We also made the digital #5 pin extra special on this board, it connects to a level shifter so it is *only an output* but the output is that 'high logic'. Basically what this means is if you want to drive NeoPixels, a picky servo, or a high-dropout-voltage LED from this board, and you want a 5V-logic-level output, this pin is the one you should use!

Here's some handy specifications:

- ATmega32u4 onboard chip in QFN package
- 3.3V power and logic, 8 MHz clock rate, 2KB RAM and 28K FLASH
- USB bootloader with a nice LED indicator, AVR109 compatible (same as Flora, Feather 32u4, Leonardo, etc)
- Micro-USB jack for power, USB uploading and debugging, you can put it in a box or tape it up and use any Micro USB cable for when you want to reprogram.
- Can act as a USB HID Keyboard, Mouse, MIDI or plain USB 'CDC' serial device (default)
- On-board 3.3V power regulator with 500mA output capability and ultra-low dropout. Up to 6V input, reverse-polarity protection, thermal and current-limit protection.

- Special Vhigh output pin gives you the higher voltage from VBAT or VUSB, for driving NeoPixels, servos, and other high-current devices. Digital 5 level-shifted output for high-voltage logic level output.
- Power with either USB or external output (such as a battery) into VBAT pin - it'll automatically switch over
- On-board red pin #13 LED
- 23 GPIO total - 6 analog in, 1x SPI port, 1x I2C port, 1x Hardware Serial port and 10 more GPIO, 4 of which have PWM
- Can drive NeoPixels, connect to sensors, servos, etc.
- Reset button for entering the bootloader or restarting the program.

Once headers are installed they can be fitted into 0.6" wide sockets

#### Technical Details

- Product Dimensions: 35.0mm x 17.0mm x 4.2mm / 1.4" x 0.7" x 0.2"
- Product Weight: 2.7g / 0.1oz

