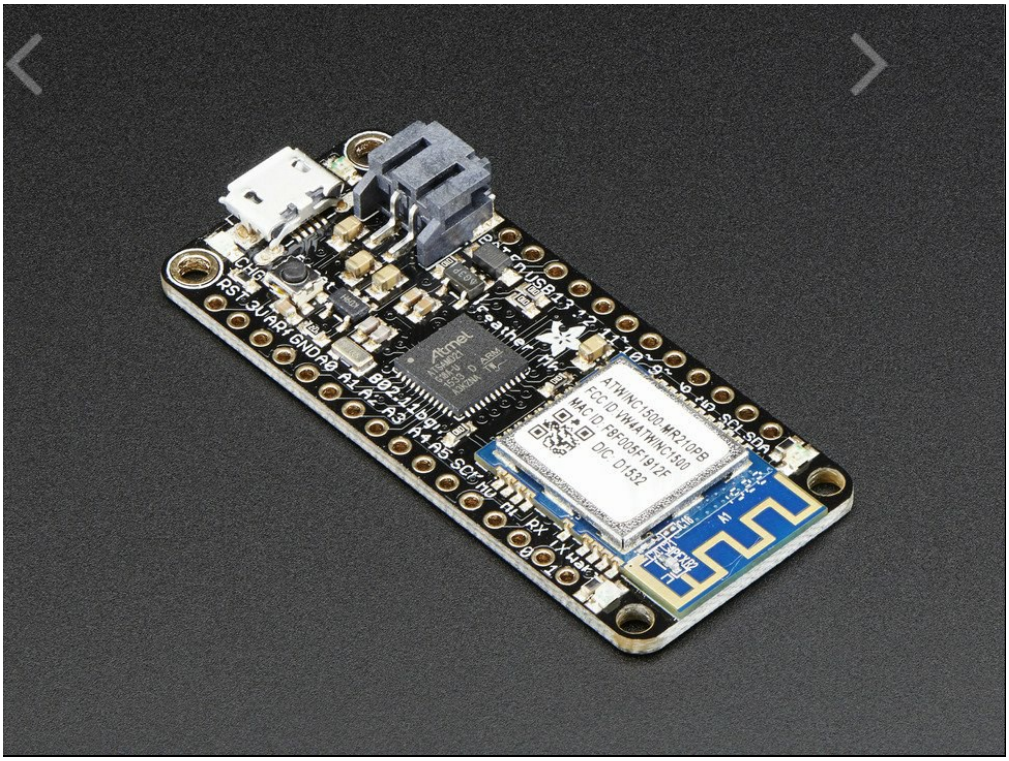
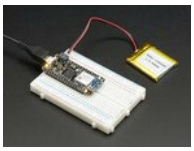
















Adafruit Feather M0 WiFi - ATSAMD21 + ATWINC1500

PRODUCT ID: 3010

IN STOCK

1 ADD TO CART

- Also include 1 x Header Kit for Feather - 12-pin and 16-pin Female Header Set ()
- Also include 1 x Stacking Headers for Feather - 12-pin and 16-pin female headers ()
- Also include 1 x Lithium Ion Polymer Battery - 3.7v 1200mAh ()
- Also include 1 x Lithium Ion Polymer Battery - 3.7v 350mAh ()
- Also include 1 x Lithium Ion Polymer Battery - 3.7v 500mAh ()
- Also include 1 x Short Headers Kit for Feather - 12-pin + 16-pin Female Headers ()
- Also include 1 x Adafruit IO+ Subscription Pass – One Year ()

1-9

10-99

100+

ADD TO WISHLIST

DESCRIPTION

TECHNICAL DETAILS

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DESCRIPTION

Feather is the new development board from Adafruit, and like its namesake it is thin, light, and lets you fly! We designed Feather to be a new standard for portable microcontroller cores. This is the **Adafruit Feather M0 WiFi w/ATWINC1500** - our take on an 'all-in-one' Arduino-compatible + high speed, reliable WiFi with built in USB and battery charging. Its an Adafruit Feather M0 with a WiFi module, ready to rock! We have other boards in the Feather family, check'em out here.

Connect your Feather to the Internet with this fine new FCC-certified WiFi module from Atmel. This 802.11bgn-capable WiFi module is the best new thing for networking your devices, with built-in low-power management capabilites, Soft-AP, SSL TSL 1.2 support and rock solid performance. We were running our adafruit.io MQTT demo for a full weekend straight with no hiccups (it would have run longer but we had to go to work, so we unplugged it). This module is very fast & easy to use in comparison to other WiFi modules we've used in the past.

This module works with 802.11b, g, or n networks & supports WEP, WPA and WPA2 encryption. You can connect to your own WiFi networks or create your own with "Soft AP" mode, where it becomes its own access point (we have an example of it creating a webserver that you can then control the Arduino's pins). You can clock it as fast as 12MHz for speedy, reliable packet streaming. And scanning/connecting to networks is very fast, just a second or two.

You might be wondering why use this when you can get a HUZZAH Feather? Well, you get:

- A highly-capable Cortex M0+ processor with ton more I/O pins, lots of 12-bit ADCs, a 10-bit DAC, 6 total SERCOMs that can each do SPI, I2C or UART (3 are used by the existing interfaces, leaving you 3), plenty of timers, PWMs, DMA, native USB, and more (check out the Datasheet)
- The ATWINC has much lower power usage, about 12mA for the WINC & 10mA for the ATSAMD21 with auto-powermanagement on for the WiFi and no power management for the ARM. With manual power management, you can get the WiFi module to down to ~2mA by putting it to sleep.
- This is compared to the ESP's ~70mA average current draw, and whose deep sleep mode requires a WDT reset.
- We also found that we could stream more reliably (less 'bursty') with the ATWINC, although altogether the ESP has higher throughput.
- You also dont have to 'yield' all the time to the WiFi core, since its a separate chip. You get full reign of the processor and timing

Of course, both WiFi-capable Feathers have their strengths and tradeoffs, & we love both equally!

At the Feather M0's heart is an ATSAMD21G18 ARM Cortex M0 processor, clocked at 48 MHz and at 3.3V logic, the same one used in the new Arduino Zero. This chip has a whopping 256K of FLASH (8x more than the Atmega328 or 32u4) and 32K of RAM (16x as much)! This chip comes with built in USB so it has USB-to-Serial program & debug capability built in with no need for an FTDI-like chip. For advanced users who are comfortable with ASF, the SWDIO/SWCLK pins are available on the bottom, and when connected to a CMSIS-DAP debugger can be used to use Atmel Studio for debugging.

To make it easy to use for portable projects, we added a connector for any of our 3.7V Lithium polymer batteries and built in battery charging. You don't need to use a battery, it will run just fine straight from the micro USB connector. But, if you do have a battery, you can take it on the go, then plug in the USB to recharge. The Feather will automatically switch over to USB power when its available. We also tied the battery through a divider to an analog pin, so you can measure and monitor the battery voltage to detect when you need a recharge.

Here's some handy specs! Like all Feather M0's you get:

- Measures 2.1" x 0.9" x 0.3" (53.65mm x 23mm x 8mm) without headers soldered in. Note it is 0.1" longer than most Feathers
- Light as a (large?) feather - 6.1 grams
- ATSAMD21G18 @ 48MHz with 3.3V logic/power
- 256KB FLASH, 32KB SRAM, No EEPROM
- 3.3V regulator (AP2112K-3.3) with 600mA peak current output, WiFi can draw 300mA peak during xmit
- USB native support, comes with USB bootloader and serial port debugging
- You also get tons of pins - 20 GPIO pins
- Hardware Serial, hardware I2C, hardware SPI support
- 8 x PWM pins
- 10 x analog inputs
- 1 x analog output
- Built in LiPoly charger with charging status indicator LED

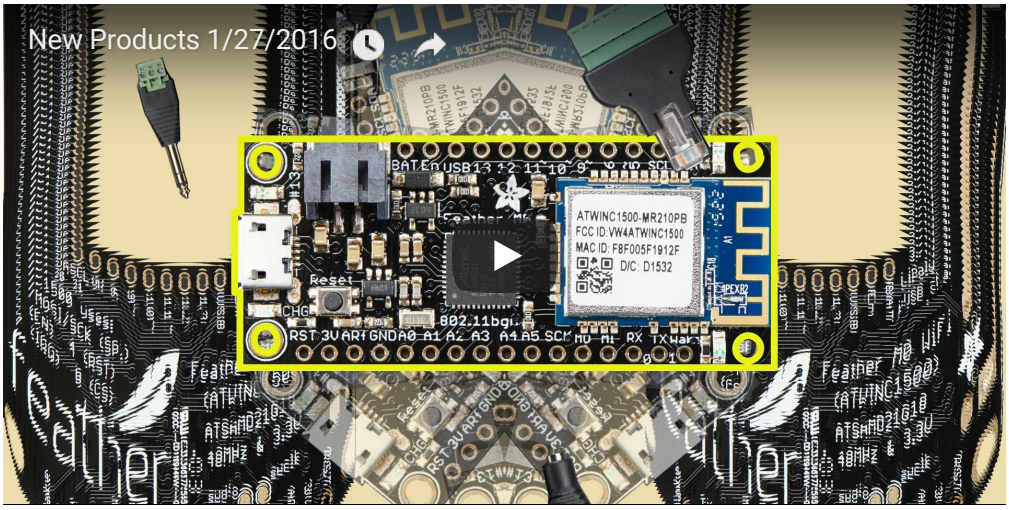
Downloaded from Arrow.com.

- Pin #13 red LED for general purpose blinking
- Power/enable pin
- 4 mounting holes
- Reset button

Comes fully assembled and tested, with a USB bootloader that lets you quickly use it with the Arduino IDE. Please note that we do not have CircuitPython support for the WINC1500 modules (it won't fit in the ATSAMD21 chip, not enough room!)

We also toss in some header so you can solder it in and plug into a solderless breadboard. **Lipoly battery and MicroUSB cable** not included (but we do have lots of options in the shop if you'd like!)

Check out our tutorial for all sorts of details, including pinouts, power management, Arduino IDE setup and more!

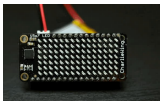


TECHNICAL DETAILS

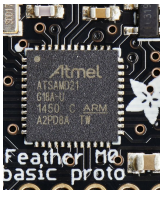
- 53.65mm x 22.8mm x 8mm / 2" x 0.9" x 0.3"
- Weight: 6.1g
- EagleCAD PCB files, Fritzing object, datasheets and more in the tutorial

RoHS

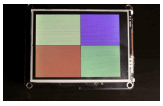
LEARN



MicroPython Displays: Drawing Text
How to write text on any MicroPython display.



Using ATSAMD21 SERCOM for more SPI, I2C and Serial ports
Get more high speed serial commports without bitbanging



CircuitPython Hardware: ILI9341 TFT & FeatherWing
How to draw on a ILI9341 TFT display with CircuitPython!

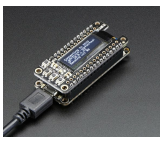


LIGHTSHIP: LED Animation over WiFi
Any sufficiently advanced technology is indistinguishable from magic.

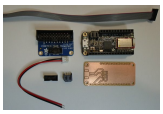
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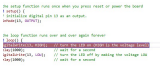
[MicroPython Displays: Drawing Shapes]
How to draw basic shapes on pixel-based displays with MicroPython!



[Adafruit Feather M0 WiFi with ATWINC1500]
ARM Cortex M0+ with fast & fun wireless built in



[Debug Header for the Feather [M0]]
Make a Simple JTAG Debugging FeatherWing for the M0



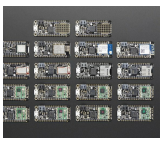
[Proper Debugging of ATSAMD21 Processors]
Step in, step out, step over and repeat!



[3D Printed Case for Adafruit Feather]
A Multipurpose Enclosure for Adafruit Feather



[Automatic Twitch On-Air Sign]
Know when your favorite streamer is twitchin'



[Introducing Adafruit Feather]
Boards of a Feather flock together!



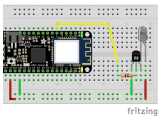
[Pixie CyberWig - A Wearable WiFi LED Visualization]
Wireless video on your head



[DMA-Driven NeoPixels]
NeoPixels and interrupts living in peace and harmony!



[3D Printed IoT On Air Sign for Twitch]
Make an internet connected On Air Sign



[Internet of Things Infrared Remote]
Control your TV, Cable box, DVD over Wi-Fi using IR output



[7 Segment Display Internet Clock]
NTP-enabled clock in your favorite color



[Adafruit NeoPXL8 FeatherWing and Library]
NeoPixels to the max!



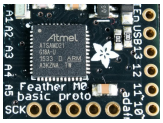
[MicroPython Basics: How to Load MicroPython on a Board]
Learn how to load MicroPython firmware on a development board.

Downloaded from Arrow.com.



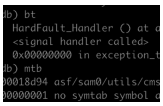
Welcome to Adafruit IO

Want to connect your project to the Internet? Start Here!



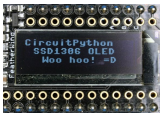
MicroPython for SAMD21

How to use MicroPython with boards like the Feather M0 & Arduino Zero!



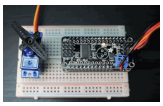
Debugging the SAMD21 with GDB

Using GDB to better understand program state and history.



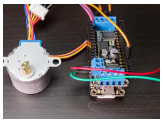
CircuitPython Hardware: SSD1306 OLED Display

How to use a SSD1306 OLED display with CircuitPython boards.



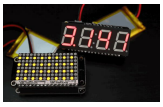
CircuitPython Hardware: PCA9685 PWM & Servo Driver

How to use the PCA9685 PWM & servo driver with CircuitPython!



CircuitPython Hardware: PCA9685 DC Motor & Stepper Driver

How to use the PCA9685 DC Motor & Stepper driver with CircuitPython!



CircuitPython Hardware: LED Backpacks & FeatherWings

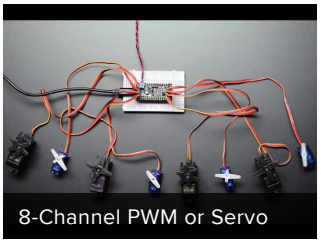
How to use LED Backpacks & FeatherWings with CircuitPython!

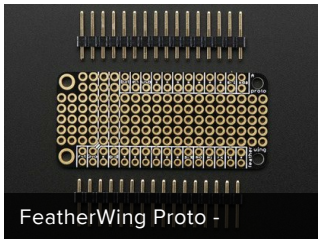


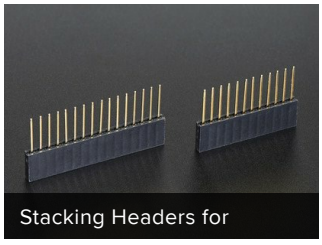
CircuitPython Hardware: Charlieplex LED Matrix

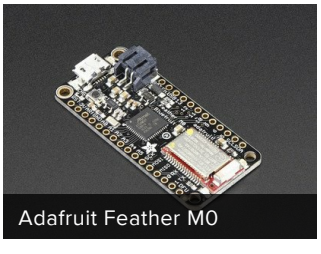
How to use Charlieplex LED matrices with CircuitPython!

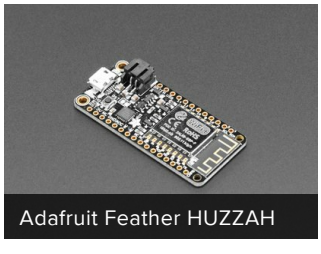
MAY WE ALSO SUGGEST...







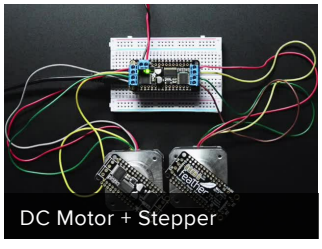








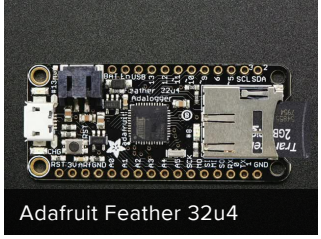




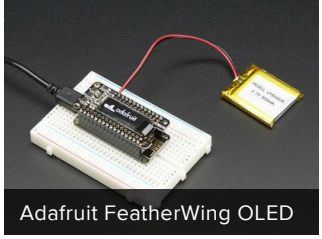
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Adafruit Feather M0



Adafruit Feather 32u4



Adafruit FeatherWing OLED

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"Seek freedom and become captive of your desires. Seek discipline and find your liberty" - Frank Herbert

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