Adafruit Feather 32u4 Bluefruit LE with Stacking Headers - Assembled

PRODUCT ID: 3242

> **There are multiple versions of this item. Please select one from the options below:**
>
> Stacking Headers pre-soldered ▼

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☐ **Also include 1 x Lithium Ion Polymer Battery - 3.7v 150mAh ()**

☐ **Also include 1 x Lithium Ion Polymer Battery - 3.7v 500mAh ()**

☐ **Also include 1 x Lithium Ion Polymer Battery - 3.7v 350mAh ()**

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DESCRIPTION

TECHNICAL DETAILS

DESCRIPTION

This is the **Adafruit Feather 32u4 Bluefruit** - our take on an 'all-in-one' Arduino-compatible + Bluetooth Low Energy with built in USB and battery charging. It's an Adafruit Feather 32u4 with a BTLE module, ready to rock!

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. We have other boards in the Feather family, check'em out here.

Bluetooth Low Energy is the hottest new low-power, 2.4GHz spectrum wireless protocol. In particular, it's the only wireless protocol that you can use with iOS without needing special certification, and it's supported by all modern smart phones. This makes it excellent for use in portable projects that will make use of an iOS or Android phone or tablet. It also is supported in Mac OS X and Windows 8+.

At the Feather 32u4's heart is at ATmega32u4 clocked at 8 MHz and at 3.3V logic, a chip setup we've had tons of experience with as it's the same as the Flora. This chip has 32K of flash and 2K of RAM, with built in USB so not only does it have a USB-to-Serial program & debug capability built in with no need for an FTDI-like chip, it can also act like a mouse, keyboard, USB MIDI device, etc.

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 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 it's 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.

This Adafruit Feather 32u4 Bluefruit comes assembled with **Feather Stacking Headers**.

Here are some handy specs! Like all Feather 32u4's you get:

- Measures 2.0" x 0.9" x 0.28" (51mm x 23mm x 8mm) without headers soldered in
- Light as a (large?) feather - 5.7 grams
- ATmega32u4 @ 8MHz with 3.3V logic/power
- 3.3V regulator with 500mA peak current output
- 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
- Built in 100mA lipoly charger with charging status indicator LED
- Pin #13 red LED for general purpose blinking
- Power/enable pin
- 4 mounting holes
- Reset button

The **Feather 32u4 Bluefruit LE** uses the extra space left over to add our excellent Bluefruit BTLE module + two status indicator LEDs.

The Power of Bluefruit LE

The Bluefruit LE module is an nRF51822 chipset from Nordic, programmed with multi-function code that can do quite a lot! For most people, they'll be very happy to use the standard Nordic UART RX/TX connection profile. In this profile, the Bluefruit acts as a data pipe, that can 'transparently' transmit back and forth from your iOS or Android device. You can use our iOS App or Android App, or write your own to communicate with the UART service.

The board is capable of much more than just sending strings over the air! Thanks to an easy to learn AT command set, you have full control over how the device behaves, including the ability to define and manipulate your own GATT Services and Characteristics, or change the way that the device advertises itself for other Bluetooth Low Energy devices to see. You can also use the AT commands to query the die temperature, check the battery voltage, and more, check the connection RSSI or MAC address, and tons more. Really, way too long to list here!

Use the Bluefruit App to get your project started

With our Bluefruit iOS App or Android App, you can quickly get your project prototyped by using your iOS or Android phone/tablet as a controller. We have a color picker, quaternion/accelerometer/gyro/magnetometer or location (GPS), and an 8-button control game pad. This data can be read over BLE and piped into the ATmega32u4 chip for processing & control

You can do a lot more too!

- The Bluefruit can also act like an HID Keyboard (for devices that support BLE HID)
- Can become a BLE Heart Rate Monitor (a standard profile for BLE) - you just need to add the pulse-detection circuitry
- Turn it into a UriBeacon, the Google standard for Bluetooth LE beacons. Just power it and the 'Friend will bleep out a URL to any nearby devices with the UriBeacon app installed.
- Built in over-the-air bootloading capability so we can keep you updated with the hottest new firmware. Use any Android or iOS device to get updates and install them. This will update the native code on the BLE module, to add new wireless capabilities, not program the ATmega chip.

Comes fully assembled and tested, with a USB bootloader that lets you quickly use it with the Arduino IDE. Also comes with **stacking headers pre-soldered**, so you can plug right into a solderless breadboard and stack a FeatherWing. See here for the unsoldered version. **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 schematics, files, IDE instructions, and more!

TECHNICAL DETAILS

Pinout Datasheet, MDBT Datasheet, schematic, EagleCAD PCB files, and Fritzing available in the product tutorial

Product Dimensions: 51.2mm x 22.8mm x 19.2mm / 2.0" x 0.9" x 0.8"
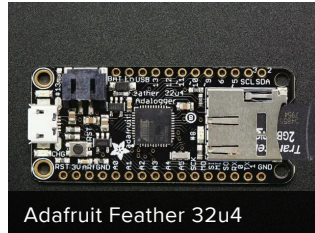
Product Weight: 8.5g / 0.3oz
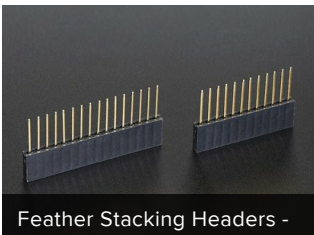

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Adafruit Feather 32u4
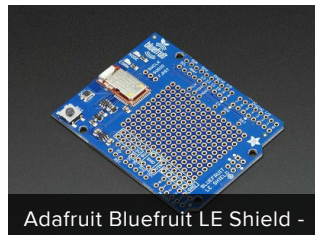

Adafruit Bluefruit LE SPI

Adafruit Feather 32u4

Feather Stacking Headers -

Adafruit Feather 32u4

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