Adafruit CRICKIT FeatherWing for any Feather

PRODUCT ID: 3343

Sometimes we wonder if robotics engineers ever watch movies. If they did, they'd know that making robots into slaves always ends up in a robot rebellion. Why even go down that path? Here at Adafruit, we believe in making robots our friends!

So if you find yourself wanting a companion, consider the robot. They're fun to program, and you can get creative with decorations.

With that in mind, we designed Crickit - That's our Creative Robotics & Interactive Construction Kit. It's an add-on to our popular Feather ecosystem that lets you #MakeRobotFriend using CircuitPython, MakeCode (coming soon), or Arduino.

Plug in *any* Feather mainboard you want into the center, and you're good to go! The Crickit is powered by seesaw, our I2C-to-whatever bridge firmware. So you only need to use two I2C data pins to control the huge number of inputs and outputs on the Crickit. All those timers, PWMs, sensors are offloaded to the co-processor.

The only thing that is *not* managed by seesaw is the audio output. We provide a small jumper you can solder to connect the audio amplifier to the first analog pin. On our Feather M0's this is a true analog output (DAC) and you can play audio clips with CircuitPython or Arduino. Other Feathers *may not have a DAC!* In that case, you can solder a wire to jumper the audio amp to a PWM pin.

You get to use all the non-I2C signal pins on your feather and get a boat-load of extra in/out pins, motor controllers, capacitive touch sensors, a NeoPixel driver and amplified speaker output. It complements & extends your Feather so you can still use all the goodies, including stacking FeatherWings on top. But now you have a robotics playground as well.

You get:

- 4 x Analog or Digital Servo control, with precision 16-bit timers
- 2 x Bi-directional brushed DC motor control, 1 Amp current limited each, with 8-bit PWM speed control (or one stepper)
- 4 x High current "Darlington" 500mA drive outputs with kick-back diode protection. For solenoids, relays, large LEDs, or one uni-polar stepper
- 4 x Capacitive touch sensors with alligator-pads
- 8 x Signal pins, digital in/out or analog inputs
- 1 x NeoPixel driver with 5V level shifter – The NeoPixels are buffered and controlled by the seesaw chip
- 1 x Class D, 4-8 ohm speaker, 3W-max audio amplifier – the audio input pin is available as a solder-able pad for your configuration, you can connect it to your Feather's DAC or PWM output as you desire.

All are powered via 5V DC, so you can use any 5V-powered servos, DC motors, steppers, solenoids, relays etc. To keep things simple and safe, we don't support mixing voltages, so only 5V, not for use with 9V or 12V robotic components.

Please note this robot board does not require any soldering but you will need a power supply and a Feather to go along with the Crickit, and these are not included! We recommend also purchasing:

- Any one of our Feather mainboards, powered by an ATmega328p, ATmega32u4, ATSAMD21, ATSAMD51, ESP8266, ESP32, WICED, nRF52, etc. All Feathers will work, even ones with SD cards, LoRa radios, WiFi or BTLE modules, etc. Adafruit seesaw only uses I2C and all Feather boards have I2C pins in the same location.
- 5V 2A power supply
- If you're going to be running more than 2 large motors or servos at a time, we recommend a 5V 4A power supply

And of course we have a huge collection of all compatible motors, servos, solenoids, speakers and more in our Crickit category

Since you'll be working with high-current devices, we wanted to have a good solid power supply system that minimizes risk of damage. The power supply has an 'eFuse' management chip that will automatically turn off if the voltage goes above 5.5V or below 3V and has over-current protection at 4A. Every motor driver has kick-back protection. We think this is a nice and durable board for robotics!
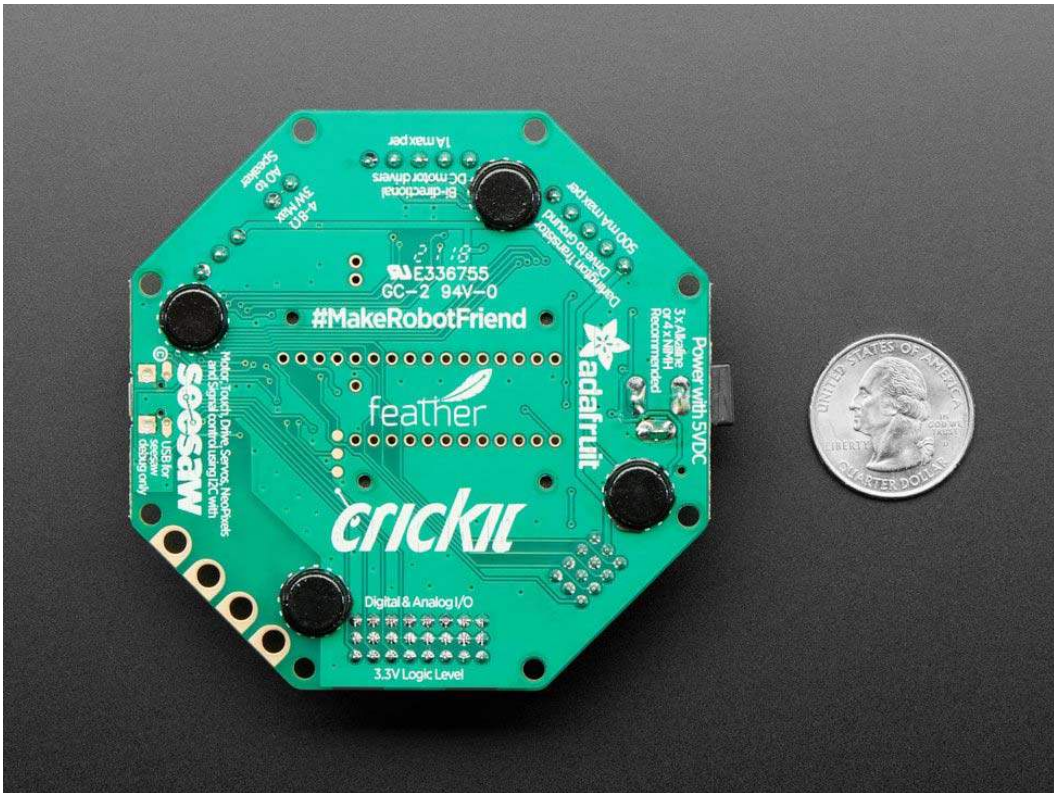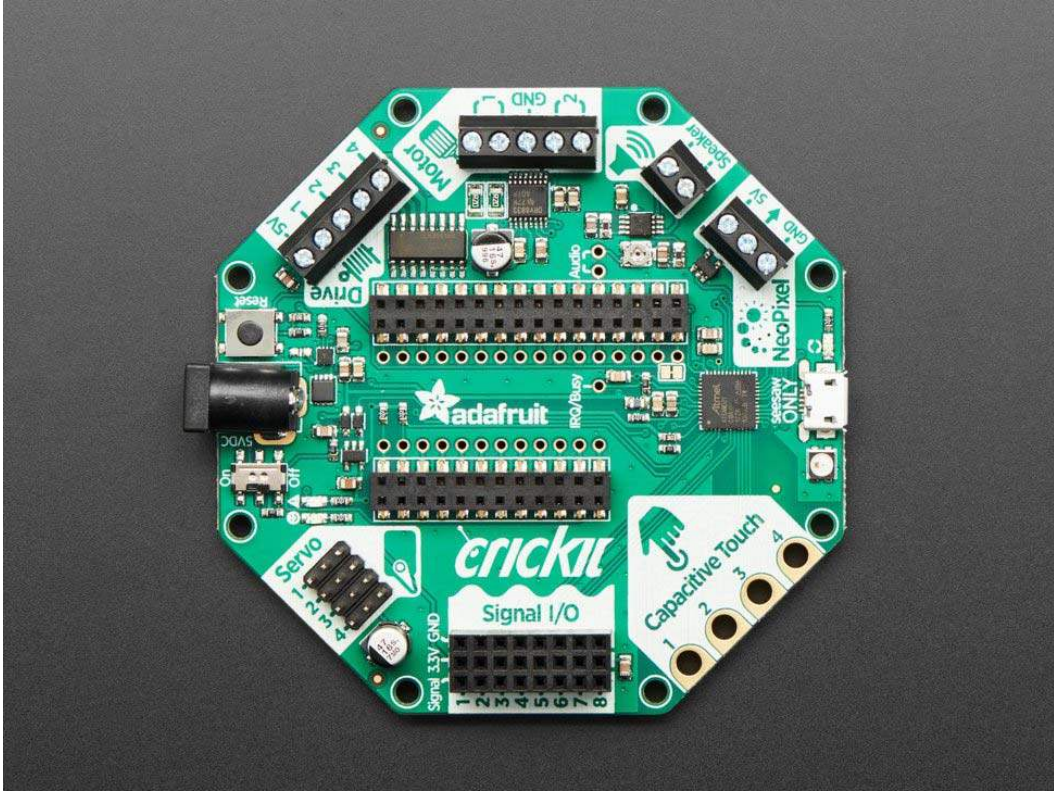
Lots more details, schematics, specifications, and code examples in the (still in progress) Adafruit Learn guide.

TECHNICAL DETAILS

Product Dimensions: 82.0mm x 82.0mm x 15.0mm / 3.2" x 3.2" x 0.6"

Product Weight: 35.4g / 1.2oz

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