

Adafruit EdgeBadge – TensorFlow Lite for Microcontrollers

PRODUCT ID: 4400

Machine learning has come to the 'edge' – small microcontrollers that can run a very miniature version of TensorFlow Lite to do ML computations.

But you don't need super complex hardware to start developing your own TensorFlow models! We've adapted our popular PyBadge board to add a microphone so you can dip your toes into machine learning waters. It does

everything that the PyBadge does, and as we make more projects that use Machine Learning we'll adapt this board to make it better and better for machine learning.

The EdgeBadge is a compact board – it's credit card sized. It's powered by our favorite chip, the ATSAM51, with 512KB of flash and 192KB of RAM. We add 2 MB of QSPI flash for file storage, handy for TensorFlow Lite files, images, fonts, sounds, or other assets.

We've added a PDM microphone on the front as an input for micro speech recognition. Our Arduino library has some demos you can get started with to recognize various word pairs like "yes/no", "up/down" and "cat/dog". TensorFlow Lite for microcontrollers is very cutting-edge so expect to see a lot of development happening in this area, with lots of code and process changes.

You can code the EdgeBadge with: CircuitPython, MakeCode Arcade, TensorFlow Lite for Microcontrollers / Arduino, and more!

Here's a list of everything you get with the EdgeBadge. Since its a PyBadge+Microphone you can read a lot more about it on the product page

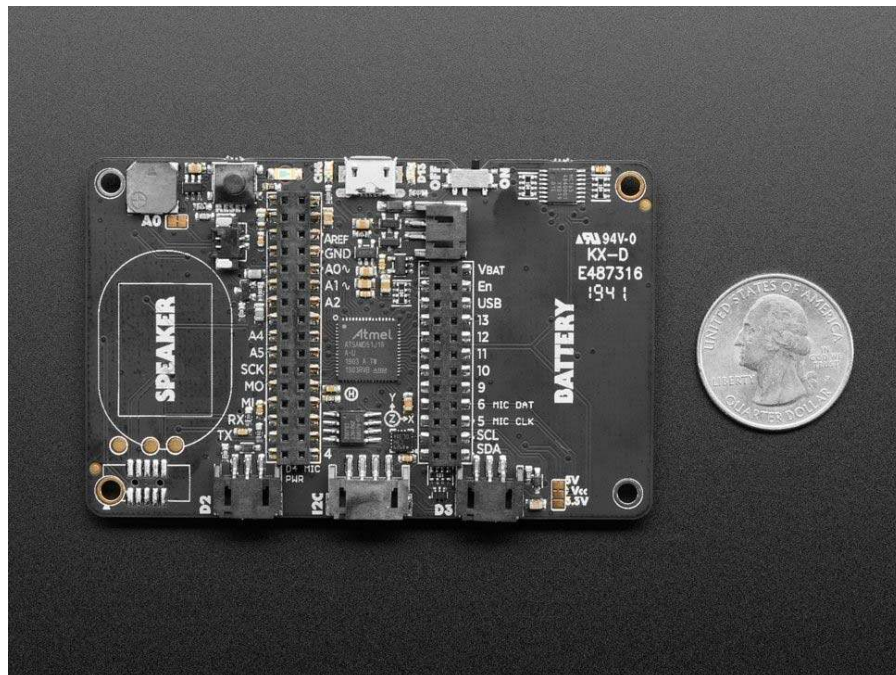
- ATSAM51J19 @ 120MHz with 3.3V logic/power – 512KB of FLASH + 192KB of RAM
- 2 MB of SPI Flash for storing images, sounds, animations, whatever!
- 1.8" 160x128 Color TFT Display connected to its own SPI port
- 8 x Game/Control Buttons with nice silicone button tops (these feel great)
- 5 x NeoPixels for badge dazzle, or game score-keeping
- Triple-axis accelerometer (motion sensor)
- Light sensor, reverse-mount so that it points out the front
- Built in buzzer mini-speaker
- Mono Class-D speaker driver for 4–8 ohm speakers, up to 2 Watts
- LiPoly battery port with built in recharging capability
- USB port for battery charging, programming and debugging
- Two female header strips with Feather-compatible pinout so you can plug any FeatherWings in

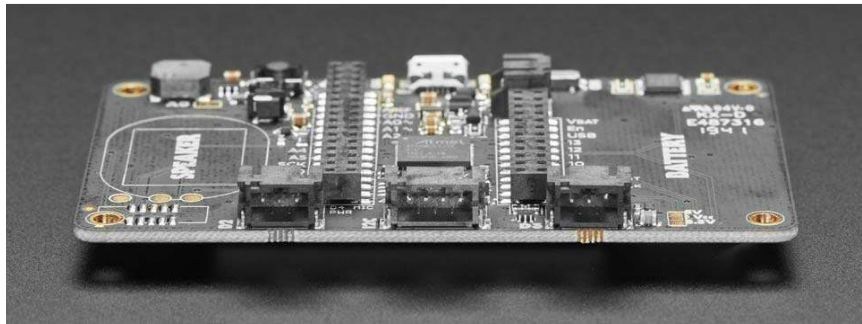
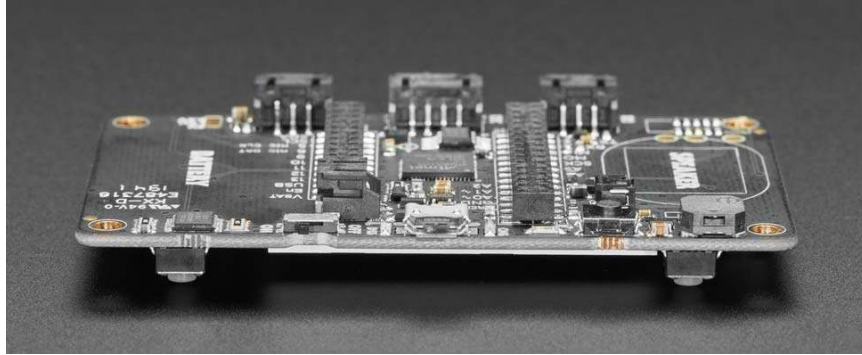
- JST ports for NeoPixels, sensor input, and I2C (you can fit I2C Grove connectors in here)
- Reset button
- On-Off switch

TECHNICAL DETAILS

Product Dimensions: 86.3mm x 54.3mm x 13.6mm / 3.4" x 2.1" x 0.5"

Product Weight: 29.6g / 1.0oz





<https://www.adafruit.com/product/4400/11-22-19>