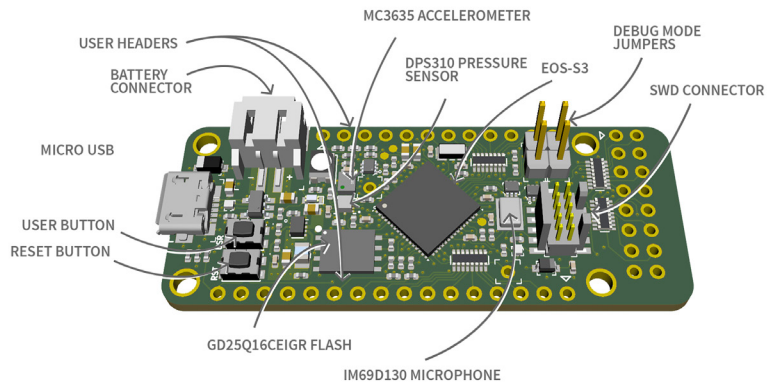QuickLogic

QuickFeather Dev Kit with SensiML™ AI Analytics Toolkit

AI at the Edge: Building intelligent IoT endpoints for consumer, industrial and commercial designs. Harness the power of open source hardware and software.

QuickFeather Development Kit

100% open source hardware dev kit and software tools based on QuickLogic's EOS™ S3 low power, multi-core Arm® Cortex M4 MCU + eFPGA, can be bundled with SensiML Analytics Studio Toolkit Suite.
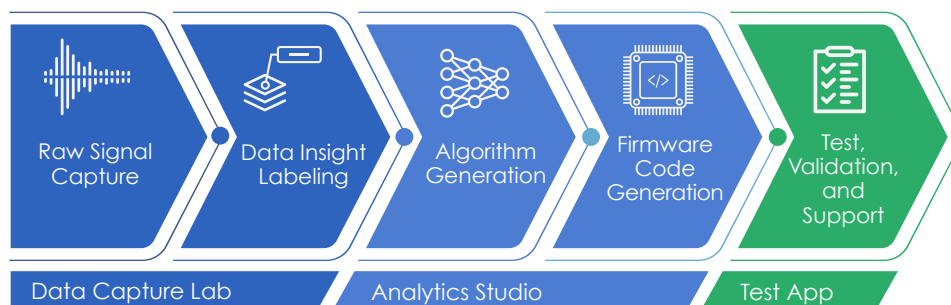
- Easy-to-use, low cost dev kit and open source software toolchains that integrate into your own work flow

- With multiple product delivery packages (CSP, BGA, SiP, Module), you have the flexibility to choose what is best for YOUR system

- Go from idea to prototype to mass production quickly with the EOS S3 SoC

USER HEADERS
BATTERY CONNECTOR
MICRO USB
USER BUTTON
RESET BUTTON
MC3635 ACCELEROMETER
DPS310 PRESSURE SENSOR
EOS-S3
DEBUG MODE JUMPERS
SWD CONNECTOR
GD25Q16CEIGR FLASH
IM69D130 MICROPHONE

Unlike other development kits that are based on proprietary hardware and software tools, QuickFeather is based on open source hardware, is compatible with the Adafruit Feather form factor, and is built around 100% open source software (including the Symbiflow FPGA tools).

SensiML Analytics Toolkit

The SensiML Analytics Toolkit Suite automates each step of the process for creating optimized AI IoT sensor recognition code. The overall workflow uses a growing library of advanced ML and AI algorithms to generate code that can learn from new data.

Raw Signal Capture | Data Insight Labeling | Algorithm Generation | Firmware Code Generation | Test, Validation, and Support

Data Capture Lab | Analytics Studio | Test App

For more information, please visit **www.quicklogic.com**

SensiML Benefits

- Significant TTM Gains: 5x faster development over hand-coded algorithm

- AI Without Data Science Complexity: AutoML tool usable by mainstream developersr

- Runs on EOS S3 AI: Enabling practical AI applications on embedded wireless IoT devices

- Maximize Your Hardware: Smart compilation optimized for QuickFeather Dev Kit

- Extensibility and Flexibility: Add algorithms, change hardware, customize code as desired

- Proven Solution: Launched in 2016 by Intel, now independent and greatly expanded

EOS S3 AI Benefits

- No more multi gigabyte software installs, no more of the hassles associated with proprietary tools, no more vendor-specific hardware incompatible with the industry

- QuickFeather is small, Feather compatible, inexpensive, and is 100% supported by open source tools

- With a Cortex M4F MCU and integrated eFPGA, the onboard EOS S3 lets you innovate with 100% open source hardware and software

Applications

Industrial
Predictive Maintenance, Anomaly Detection, Process Control and Inspection, and Industrial Wearables

Commercial
Occupancy Aware Smart Lighting and Smart City Infrastructure

Agriculture
Livestock Wearables

Consumer
Virtual Coaching Smart Wearables

Specifications

- **EOS S3 MCU + eFPGA SoC**
  - Arm Cortex M4F Microcontroller
    - up to 80 MHz operating frequency
    - up to 512 KB SRAM

- **Embedded FPGA (eFPGA)**
  - 2400 effective logic cells
  - 64 Kb RAM

- **Feather Form Factor**
  - Breadboard-compatible 0.1" (2.54 mm) pitch headers - all headers are pre-soldered
  - 2.3" x 0.9" (58.4 mm x 22.9 mm) footprint
  - All 20 Feather-defined GPIO + 13 additional GPIO

- **Interfaces**
  - SWD programming connector for use with USB-TTL converter
  - USB data signals are tied to eFPGA programmable logic
  - UART available via I/O headers
  - I²C
  - I²S
  - SPI

- **Storage: 16 Mbit SPI NOR flash - GigaDevice GD25Q16CEIGR**

- **Sensors**
  - Accelerometer - mCube MC3635
  - Pressure sensor - Infineon DPS310
  - Digital pulse density modulation (PDM) microphone - Infineon IM69D130

- **User Interfaces**
  - RGB LED
  - User pushbutton
  - Reset pushbutton

- **Power**
  - USB micro Type-B connector (regulated to 3.3 V)
  - Li-Po battery
    - On-board charging circuitry - Microchip MCP73831/2
    - Standard Li-Po JST connector

- **Software**
  - Machine Learning

  - Real-time Operating Systems

  - FPGA Tools:

For more information about QuickLogic, please visit **www.quicklogic.com**

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