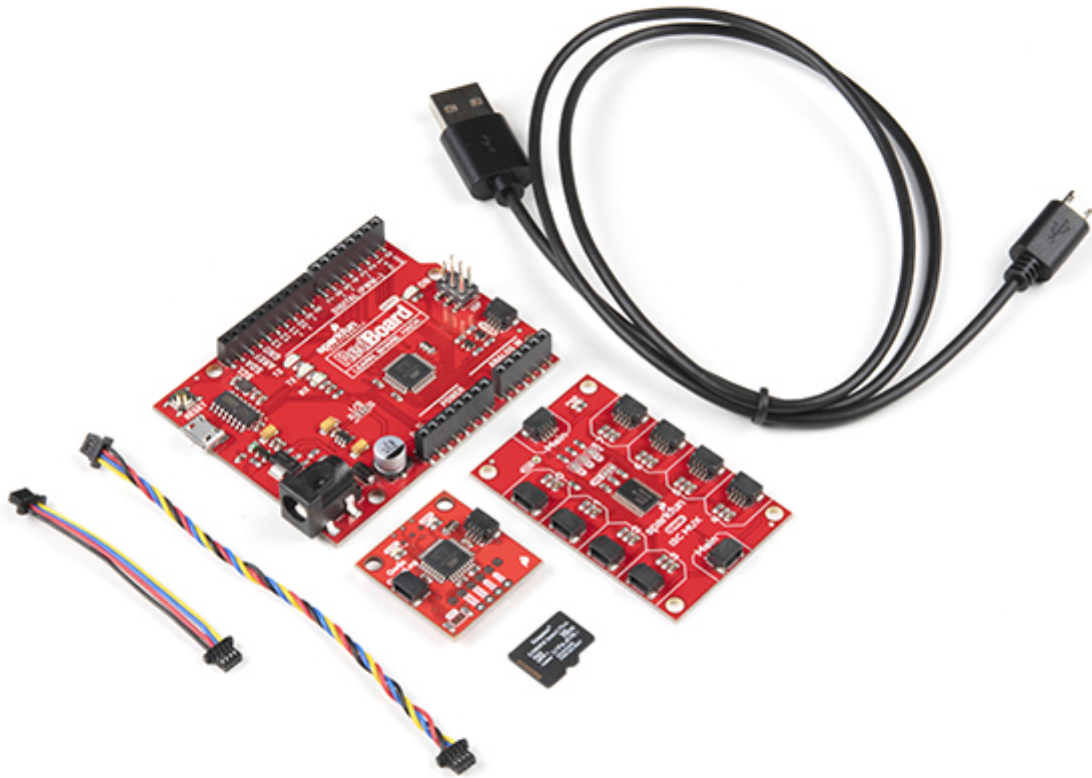# SparkFun Qwiic OpenLog Kit

The SparkFun Qwiic OpenLog Kit includes everything you'll need to get up and running with the Qwiic OpenLog and the Qwiic Ecosystem. Inside the kit you will find a SparkFun RedBoard Qwiic, a Qwiic Mux, a reversible USB A to micro-B cable, a 32GB microSD card, and the necessary Qwiic cables to hook them all together.

The Qwiic OpenLog can store, or "log", huge amounts of serial data and act as a black box of sorts to store all the data that your project generates, for scientific or debugging purposes. Utilizing our handy Qwiic system, no soldering is required to connect it to the rest of your system. However, we still have broken out 0.1"-spaced pins in case you prefer to use a breadboard.

The Qwiic OpenLog also supports clock stretching, and will record data up to 20,000 bytes per second at 400kHz. As the receive buffer fills up this OpenLog will hold the clock line, letting the master know that it is busy. Once the Qwiic OpenLog is finished with a task, it releases the clock thus allowing the data to continue flowing without corruption.

The SparkFun RedBoard Qwiic is an Arduino-compatible development board. The SparkFun RedBoard Qwiic can be programmed over a USB Micro-B cable using the Arduino IDE: Just plug in the board, select "Arduino UNO" from the board menu and you're ready to upload code. RedBoard Qwiic has all of the hardware peripherals you know and love: 20 Digital I/O pins with 6 PWM pins, UART, SPI and external interrupts. We've also broken out the SDA, SCL and IOREF pins that showed up on the UNO R3, so the RedBoard Qwiic will be compatible with future shields (if you choose to use them). You can power the SparkFun RedBoard Qwiic over USB or through the barrel jack. The on-board power regulator can handle anything from 7 to 15VDC.

The Qwiic Mux Breakout enables communication with multiple I²C devices that have the same address that makes it simple to interface with. The Qwiic Mux also has eight configurable addresses of its own, allowing for up to 64 I²C buses on a connection. To make it even easier to use this multiplexer, all communication is enacted exclusively via I²C, utilizing our handy Qwiic system.

The SparkFun Qwiic Connect System is an ecosystem of I²C sensors, actuators, shields and cables that make prototyping faster and less prone to error. All Qwiic-enabled boards use a common 1mm pitch, 4-pin JST connector. This reduces the amount of required PCB space, and polarized connections mean you can't hook it up wrong.