



## SparkFun MicroMod mikroBUS Starter Kit

KIT-19935

The SparkFun MicroMod mikroBUS™ Starter Kit is designed to give you just what you need to start using the MicroMod and Click ecosystems side-by-side. The core of this kit is designed around the [SparkFun MicroMod mikroBUS™ Carrier Board](#) and the [SparkFun MicroMod STM32 Processor](#) but you will also receive a MIKROE Terminal Click, MIKROE Weather Click, SparkFun Serial Basic Breakout, USB A to C cable, Jumper wires, and a MicroMod screwdriver!

The SparkFun MicroMod mikroBUS Carrier Board takes advantage of the [MicroMod](#), [Qwiic](#), and [mikroBUS™](#) ecosystems making it easy to rapidly prototype with each of them, combined. The MicroMod M.2 socket and mikroBUS 8-pin header provide users the freedom to experiment with any Processor Board in the MicroMod ecosystem and any Click board in the mikroBUS ecosystem, respectively. This board also features two Qwiic connectors to seamlessly integrate hundreds of Qwiic sensors and accessories into your project.

The SparkFun MicroMod STM32 Processor Board is ready to rock your MicroMod world with its ARM® Cortex®-M4 32-bit RISC core! This little Processor Board provides you with an economical and easy to use development platform if you're needing more power with minimal working space. With the M.2 MicroMod connector, connecting your STM32 Processor is a breeze. Simply match up the key on your processor's beveled edge connector to the key on the M.2 connector and secure it with a screw (included with all Carrier Boards). The STM32 is one of the most powerful and economical microcontrollers available so to be able to add it to your MicroMod Carrier Board is a huge advantage for your project!

*MicroMod* is a modular interface ecosystem that connects a microcontroller “processor board” to various “carrier board” peripherals. Utilizing the M.2 standard, the MicroMod standard is designed to easily swap out processors on the fly. Pair a specialized carrier board for the project you need with your choice of compatible processor!

## INCLUDES

- 1x SparkFun MicroMod mikroBUS™ Carrier Board
- 1x SparkFun MicroMod STM32 Processor
- 1x MIKROE Terminal Click
- 1x MIKROE Weather Click
- 1x SparkFun Serial Basic Breakout - CH340C and USB-C
- 1x USB 3.1 Cable A to C - 3 Foot
- 1x Jumper Wires Premium 6" M/F Pack of 10
- 1x MicroMod Screwdriver

## FEATURES

### MicroMod mikroBUS™ Carrier Board

- M.2 MicroMod (Processor Board) Connector
- USB-C Connector
- 3.3V 1A Voltage Regulator
- Qwiic Connectors (x2)
- mikroBUS Socket
- Boot/Reset Buttons
- Charge Circuit
- JTAG/SWD PTH Pins

### STM32 General Features:

- ARM® 32-bit Cortex®-M4 CPU with FPU
  - Adaptive real-time accelerator (ART Accelerator™) allowing 0-wait state execution from Flash memory
  - Frequency up to 168 MHz
  - Memory protection unit
  - 210 DMIPS/ 1.25 DMIPS/MHz (Dhrystone 2.1)
  - DSP instructions
- 1 MB of Flash memory
- 192 Kbytes of SRAM including 64 Kbytes of CCM (core coupled memory) data RAM
- Flexible static memory controller supporting Compact Flash, SRAM, PSRAM, NOR and NAND memories
- Clock, reset and supply management
  - 1.8 V to 3.6 V application supply and I/Os
  - 32 kHz oscillator for RTC with calibration
  - Internal 32 kHz RC with calibration
- Low-power operation
  - Sleep, Stop and Standby modes
- Debug mode

- Serial wire debug (SWD) & JTAG interfaces
- Cortex-M4 Embedded Trace Macrocell™
- Advanced connectivity
  - USB 2.0 full-speed device/host/OTG controller with on-chip PHY
  - USB 2.0 high-speed/full-speed device/host/OTG controller with dedicated DMA, on-chip full-speed PHY and ULPI
  - 10/100 Ethernet MAC with dedicated DMA: supports IEEE 1588v2 hardware, MII/RMII

### Specific Peripherals available on MicroMod STM32:

- UART
- Two I<sup>2</sup>C Buses
- SPI Bus
- PDM Audio Processing
- Two Dedicated Analog Inputs, 15 total analog input capable inputs

## DOCUMENTS

### MicroMod mikroBUS Carrier Board Documentation

- [Schematic](#)
- [Eagle Files](#)
- [Board Dimensions](#)
- [Hookup Guide](#)
- [Getting Started with Necto Studio](#)
- [mikroBUS Standard](#)
- [Qwiic Info Page](#)
- [GitHub Hardware Repo](#)

### MicroMod STM32 Processor Documentation:

- [Schematic](#)
- [Eagle Files](#)
- [Hookup Guide](#)
- [Board Dimensions](#)
- [Datasheet \(STM32F405xx\)](#)
- [Graphical Datasheet](#)
- [GitHub Hardware Repo](#)

### MicroMod Documentation:

- [SparkFun MicroMod Interface v1.0 - Pinout](#)
- [SparkFun MicroMod Interface v1.0 - Pin Descriptions](#)
- [Getting Started with MicroMod](#)
- [Designing with MicroMod](#)
- [MicroMod Info Page](#)
- [MicroMod Forums](#)
- [SparkFun Eagle Libraries](#) contains example footprints for the M.2 connector and SMD standoff
- [M.2 MicroMod Connector Datasheet](#)

- [MicroMod Reflowable Standoff Datasheet](#)

#### **STM32 Documentation:**

- [STM32 32-bit Arm Cortex MCUs](#)
- [High Performance MCUs](#)

#### **MIKROE Terminal Click**

- [Schematic](#)
- [GitHub](#)
- [mikroSDK](#)

#### **MIKROE Weather Click**

- [Schematic](#)
- [Datasheet](#) (BME280)
- [GitHub](#)

#### **SparkFun Serial Basic Breakout**

- [Schematic](#)
- [Eagle Files](#)
- [Hookup Guide](#)
- [Datasheet](#) (CH340C)
- Drivers
  - [Windows](#)
  - [Linux](#)
  - [Mac](#)
- [GitHub](#)