MicroMod STM32WB5MMG Processor

DEV-21438

Product Overview

07/08/2024

For the most up-to-date information, visit www.mouser.com or the supplier's website.
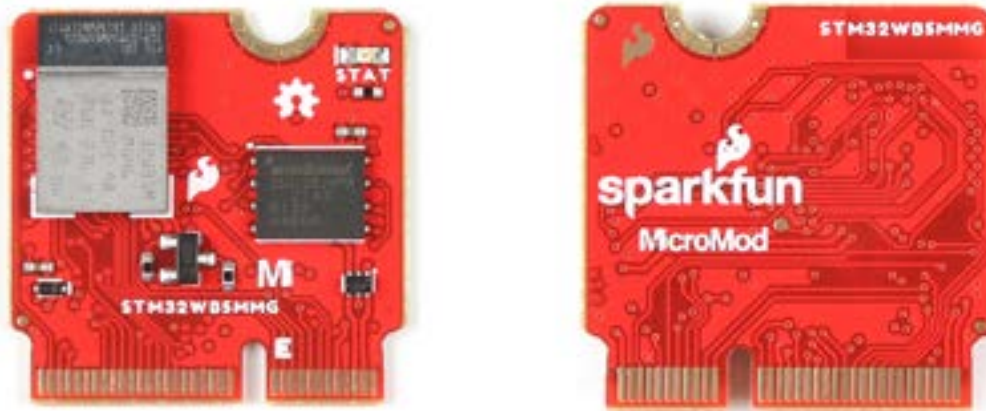
Description

SparkFun MicroMod STM32WB5MMG Processor offers a powerful M.2-connectable processor with computing and wireless capabilities. This STM32WB5MMG combines Arm® Cortex® processors and Cortex-M4 processors with FPU and ART for primary computing and a Cortex-M0 to run the 2.4GHz RF stack. The Cortex-M4 features a Floating-Point Unit (FPU) single precision, which supports all ARM single-precision data-processing instructions and data types and operates at a frequency of up to 64MHz. This module uses an integrated chip antenna for the RF stack with Tx output power up to 6dBm and Rx sensitivity of -96dBm for BLE and -100dBm for 802.15.4 protocols. The STM32WB5MMG processor consists of an additional 128Mb (16MB) serial flash memory chip. The device is Bluetooth® Low Energy 5.3, Zigbee® 3.0, and Open Thread certified. Typical applications include wireless audio devices, gaming and toys, lighting and home automation, industrial, and smart locks.
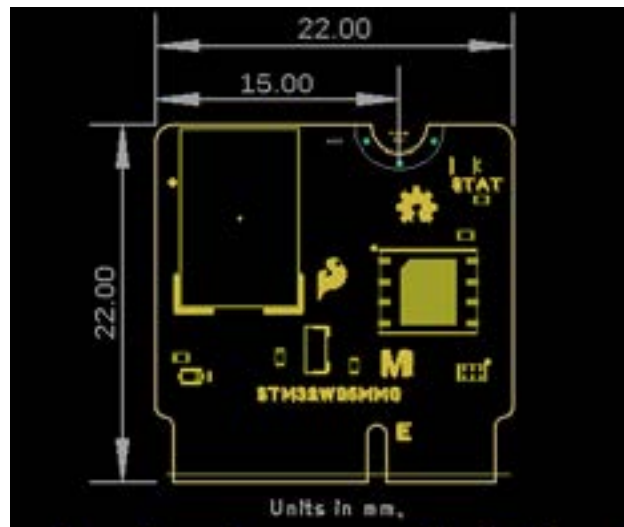
Features

- Pair of Arm Cortex processors
- Arm Cortex-M4 CPU with FPU (Floating Point Unit):
  - Adaptive real-time accelerator (ART Accelerator™) allowing 0-wait state execution from Flash memory
  - Frequency up to 64MHz
  - Memory protection unit
  - 80 DMIPS/ 1.25 DMIPS/MHz (Dhrystone 2.1)
  - DSP instructions
- DSP instructions
- 256KB SRAM
- 1.71V to 3.6V supply voltage range
- 2.4GHz RF transceiver
  - Bluetooth 5.3

- IEEE 802.15.4-2011 PHY and MAC
- Programmable up to 6dBm (1dBm increments) output power
- RX sensitivity:
  - -96dBm for BLE @ 1Mbps
  - -100dBm for 802.15.4
- Ultra-low power consumption:
  - 13nA shutdown mode
  - 600nA stop mode
  - 600nA standby mode
  - 4.5mA (Rx)/5.2mA (Tx @ 0dBm)

Board Overview

Board Dimension

Additional Resources

- [Schematic Representation](#)
- [RM0434 Reference Manual](#)
- [STM32WB5MMG Datasheet](#)

View Part

To learn more, visit https://www.mouser.com/new/sparkfun/sparkfun-stm32wb5mmg-processor/