

D-MARK Controller Board

CS-DMARK

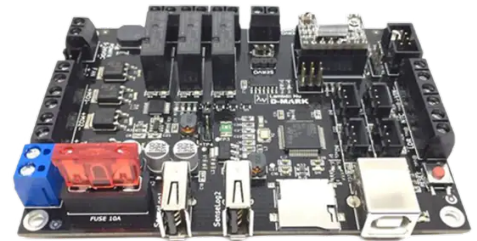
Product Overview

11/29/2022

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

Description

Crowd Supply D-MARK Controller Board with a microSD is a versatile, open-source development board designed to leverage the STM32F070RB ARM microcontroller's price-to-performance ratio. This controller board comes with an open-source D-MARK Script Interpreter (DMSI) firmware, so no programmer is required. The easy-to-use board needs a few lines of text to a microSD card, slot it in, and D-MARK starts working. The controller board includes a curated selection of inputs and outputs designed to facilitate real-life applications and prevent hardware reinvestment. The controller board is a fast and economical way for professional programmers and electronics enthusiasts to begin exploring the world of ARM microcontrollers.



Features

- Sensor and controller functionality in a single board
- Inputs and outputs sufficient for typical controller-related applications
- Field-ready hardware that can handle real-world applications
- No IDE and no need to program or compile code
- Gets you up and running with ARM in minutes rather than hours or days
- Bridges the gap between education and implementation
- Open hardware is driven by open-source software
- Reduces both hardware and software development time
- In-build D-MARK Script Interpreter (DMSI) firmware
- Fast and economical way for programmers to begin exploring the world of ARM microcontrollers

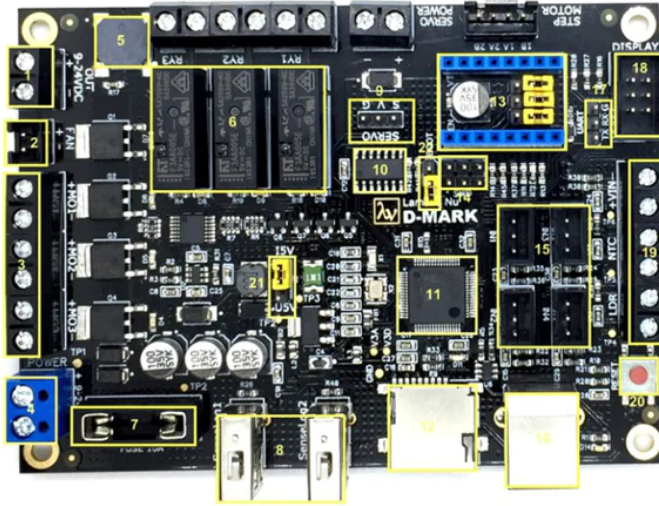
Specifications

- Inputs:
 - 4x Digital inputs
 - 1x LDR sensor
 - 1x NTC temperature sensor
 - 1x $0V_{DC}$ to $30V_{DC}$ analog voltage
- Outputs:
 - 4x MOSFET outputs (rated for 12V and 3.5A continuous without heatsink)
 - 3x SPST relays (5A contact)
 - 1x stepper motor driver socket
 - 1x RC servo output
 - 1x piezo passive speaker
- Communication:
 - 1x USB Type-B female
 - 2x USB Type-A female
 - 1x microSD card socket
 - 1x UART
 - 1x 6-pin I²C OLED display socket
 - 1x SWD programming and debug port
- Others:
 - 1x 10A blade fuse
 - 1x tactile reset switch

Applications

- Irrigation
- Temperature
- Light levels
- Manufacturing
- Security
- Velocity control
- Point-to-point
- Pressure
- Animatronics
- Education

Board Overview



1. **Auxiliary Power Output** - parallel to the *Main Power Connector* (see #4, below)
2. 1x **MOSFET Output Connector** - a dedicated output to drive a DC fan or similar load
3. 3x **MOSFET Output Connectors** - the same function as #2, above
4. **Main Power Connector** - accepts 9 - 24 VDC power supply
5. **Piezo Speaker Output**
6. 3x **Relay Outputs** - with connectors
7. **Fuse** - accepts a blade fuse similar to those used in cars (provided)
8. 2x **SenseLog Port** - a custom sensors connection using single-wire communication
9. **Servo Header** - usable with typical RC servos and powered by external power
10. **Auxiliary ATTINY84A MCU** - pre-programmed to work as a transparent input/output
11. **ARM STM32F070RB MCU** - running at 48 MHz with built-in DMSI
12. **Micro SD Card** - for running user scripts
13. **Stepper Motor Module Header** - headers for docking a [stepper motor module](#)
14. **SWD header** - for programming the STM32F070RB using a standard SWD interface (such as the ST-LINK V2 or V3)
15. 4x **Digital Inputs** - accepts mechanical or optical switches and each channel is pulled up and current-limited
16. **USB Connector** - served as a virtual COM port output for debugging and other purposes
17. **UART Header** - similar to the *USB Connector* above, but without an interface IC
18. **Display Port** - direct support for OLED displays using the SH1106 driver
19. 3x **Analog Sensor Connectors** - inputs for LDR, NTC, and analog voltage input at 0-30 VDC
20. **Reset Button**
21. **Logic Power Source Selection** - can be provided internally or externally via 5 V USB
22. **Boot Mode Selection** - opened for normal use, shorted for use with a boot loader

Mouser Part Number

[View Part](#)

To learn more, visit <https://www.mouser.com/new/crowd-supply/crowd-supply-d-mark-controller-board/>