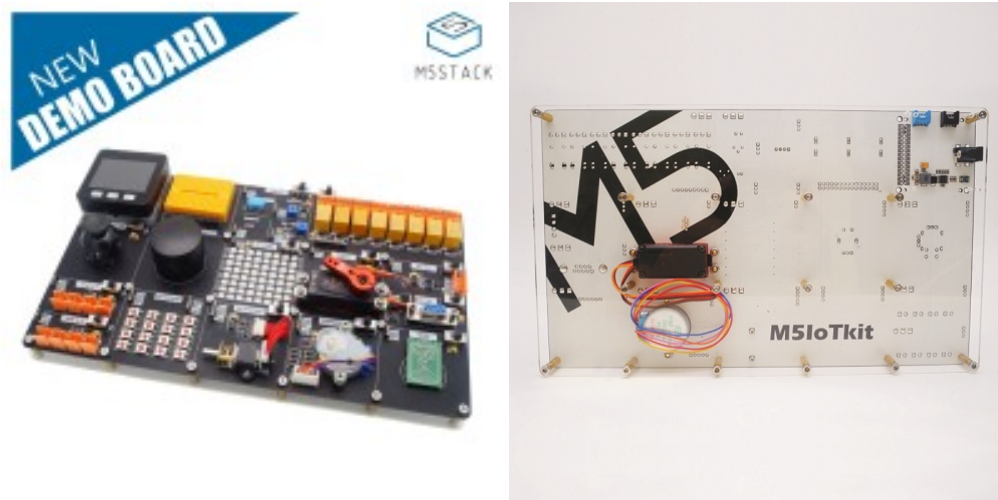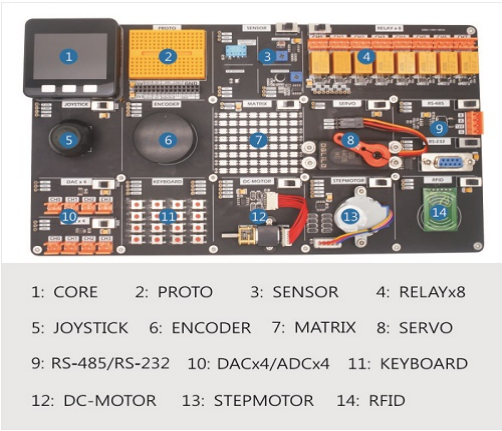# Application Demo Board

Description

Demo Board. This is a feast of IoT stuff, powered by M5Stack. It is an all-in-one Learning board powered

by ESP32, which includes anything you can imagine in an IoT + industrial application scenarios. Let's see what you can do with it: Robotic movement, the most commonly used serial communication port(RS485 RS232), Relay control, all different types of Button control, RF reader, speaker, Microphone and more all able to develope by an M5stack core device, so you can program this board with Blockly(UIFlow),

Arduino, and Micropython. Based on application scenarios, we've partitioned them into different functional parts with the good-looking layout and full-function performance. Here comes the most powerful IIoT learning board.

Product Feature

- Fully Compatible with the M5Stack stackable and extendable system
- Protoboard, M5-BUS extension
- Each module comes with an individual power switch.
- Environment Sensor set (Temperature, Humility, barometric pressure, light intensity, and Microphone)
- Joystick Controller
- 8 Channel of Realy output
- 4x DAC，4x ADC
- 4x4 button matrix
- 8x8 RGB LED matrix
- Encoder
- 1x Servo
- DC-Motor(with feedback encoder)
- step motor with four-phase five-wire
- Radio frequency identification Reader
- RS-485，RS232 series communication

1: CORE	2: PROTO	3: SENSOR	4: RELAYx8
5: JOYSTICK	6: ENCODER	7: MATRIX	8: SERVO
9: RS-485/RS-232	10: DACx4/ADCx4	11: KEYBOARD	
12: DC-MOTOR	13: STEPMOTOR	14: RFID	

Include

- 1x **Demo Board** learning board
- 1x Power Aapter
- 1x RS232 cable
- 1x RFID Card
- 1x ID Card
- 16x breadboard cable
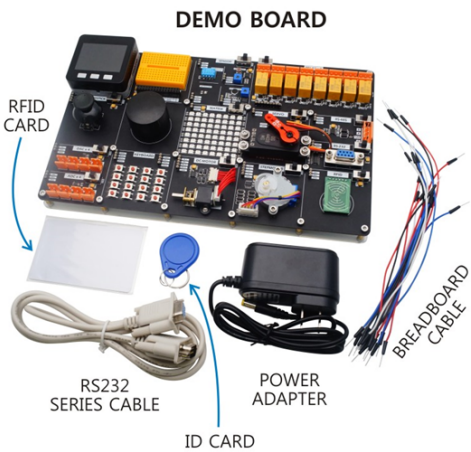
Weight and Size

- Product size:330mm x 210mm x 95mm
- Product weight:1120g

EasyLoader

1.EasyLoader is a simple and fast program burner. Every product page in EasyLoader provides a product-related case program. It can be burned to the master through simple steps, and a series of function verification can be performed.(**Currently EasyLoader is only available for Windows OS**)

2.After downloading the software, double-click to run the application, connect the M5 device to the computer via the data cable, select the port parameters, and click **"Burn"** to start burning.

3.The CP210X (USB driver) needs to be installed before the EasyLoader is burned.

Specification

Module Name	working Voltage	Patameter
ADC	5V	4x ADC port/ADS1115
DAC	5V	4x DAC port/DAC6574
Joystick	3.3V	axis-X/Y potentiometer input, axis-Z button input
DHT12	3.3V	I2C address 0x5C
BMP280	3.3V	I2C address 0x76
Light	3.3V	A/D sampling supported, adjustable threshold
Microphone	3.3V	A/D sampling supported, adjustable threshold
Relay	5V	8 channels /3A-220V-AC/3A-30V-DC
Neopixel	5V	8x8 LED matrix
Servo	5V	10KG torsion
DC-Motor	5V	feedback encoder/LV8548MC
Stepmotor	5V	4-phase 5 wires LV8548MC
RFID	3.3V	Read & Write distance: < 8 cm/ MFRC522
RS485	5V	SP485EEN-L/TR
RS232	5V	MAX232ESE
Encode		Encoder button
Proto		170x holes
Keyboard		4x4 button matrix

Learn

Datasheet

- ADS1115

- DAC6574

- MRC522

- MAX232ESE

- MAX4466

- SP485EEN

- BMP280

Schematic

- M5IoT-kit

Example

Arduino IDE

- **Joystick**

- **DHT12+BMP280**

- **Light**

- **Relay**

- **Microphone**

- **RGBled**

- **Servo**

- **DC-Motor**

- **RFID**