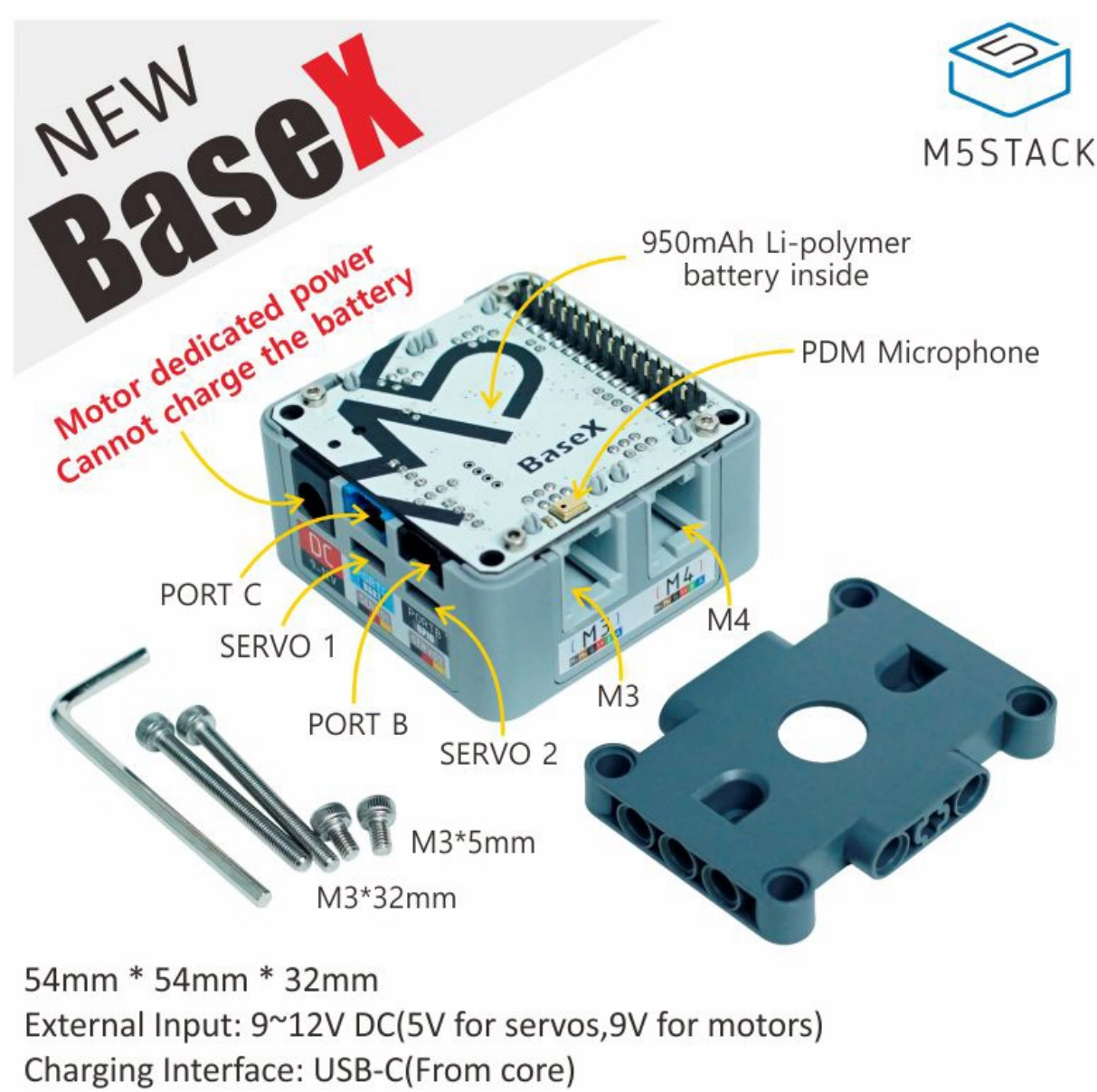# BaseX

SKU:K037

Description

BaseX is a special base compatible with LEGO EV3 motor. The structure design is similar to base26, supporting multiple ways of fixation, and an additional LEGO connection base is provided. When building the LEGO structure, Basex can be easily embedded in the work. Basex can be connected to 4-way (RJ11) LEGO motor at the same time, supporting angle / speed reading and control, and perfectly compatible with the original motor functions. In addition, the base provides two servo interfaces, which can directly control the rotation angle of the servo.There is a motherboard PDM microphone for sound collection. In order to adapt to different use scenarios, a UART interface (16 / 17) and a GPIO interface (26 / 36) are provided to make access to various sensors more flexible. A 950mAh battery is built in the base, which can be charged through the usb-c interface of m5core to extend the endurance. In order to improve the driving ability of the interface, the base is equipped with a DC power socket, which can be powered by an external 9-12v power supply to provide a stable power supply for the motor.

Product Features

- 4-way RJ11 LEGO motor interface (total maximum output current 2A)
- 2-way servo interface (total maximum output current 2A)
- 1-way UART
- 1-way GPIO
- On board PDM microphone (GOIO 34)
- On board DC-DC conversion (9 ~ 12V,independent power supply for the motor only)
- Built in 950mAh battery
- Multiple fixing methods / LEGO hole connection support

Application

- Encoder motor / servo controller
- LEGO DIY intelligent control

Include

- 1x BaseX
- 1x LEGO base
- 2x M3 * 5mm 304 Stainless steel hexagon socket bolt
- 2x M3 * 32mm 304 Stainless steel hexagon socket bolt
- 1x HEX KEY

Specification

Resources	Parameter
Net weight	59g
Gross weight	110g
Product Size	54*54*26mm
Package Size	150*65*40mm

EasyLoader

download EasyLoader

○ EasyLoader is a simple and fast program burner. Every product page in EasyLoader provides a product-related case program. This can be burned to the M5 device through simple steps, and a series of function verifications can be performed.

I2C Control instructions

I2C Slave address: 0x22

Function	Register address	Value
SERVO1_ANGLE_ADDR	0X00	0~180
SERVO2_ANGLE_ADDR	0x01	0~180
SERVO1_PULSE_ADDR	0x10	(uint16_t) 500~2500
SERVO2_PULSE_ADDR	0x12	(uint16_t)500~2500
MOTOR1_PWM_DUTY_ADDR	0x20	-127~127
MOTOR2_PWM_DUTY_ADDR	0x21	-127~127
MOTOR3_PWM_DUTY_ADDR	0x22	-127~127
MOTOR4_PWM_DUTY_ADDR	0x23	-127~127
MOTOR1_ENCODER_ADDR	0x30	int32_t
MOTOR2_ENCODER_ADDR	0x34	int32_t
MOTOR3_ENCODER_ADDR	0x38	int32_t
MOTOR4_ENCODER_ADDR	0x3C	int32_t
MOTOR1_SPEED_ADDR	0x40	-127~127
MOTOR2_SPEED_ADDR	0x41	-127~127
MOTOR3_SPEED_ADDR	0x42	-127~127
MOTOR4_SPEED_ADDR	0x43	-127~127

I2C Motor address:

Motor number	Motor Address
MOTOR1	0x50
MOTOR2	0x60
MOTOR3	0x70
MOTOR4	0x80

Mode config method: Motor address + nByte

Byte	Value
0	Run mode
1	position-p(3)
2	position-i(1)
3	position-d(15)
4	5
8	position-max-speed
9	speed-p
10	speed-i
11	speed-d
12	speed-point

| Learn
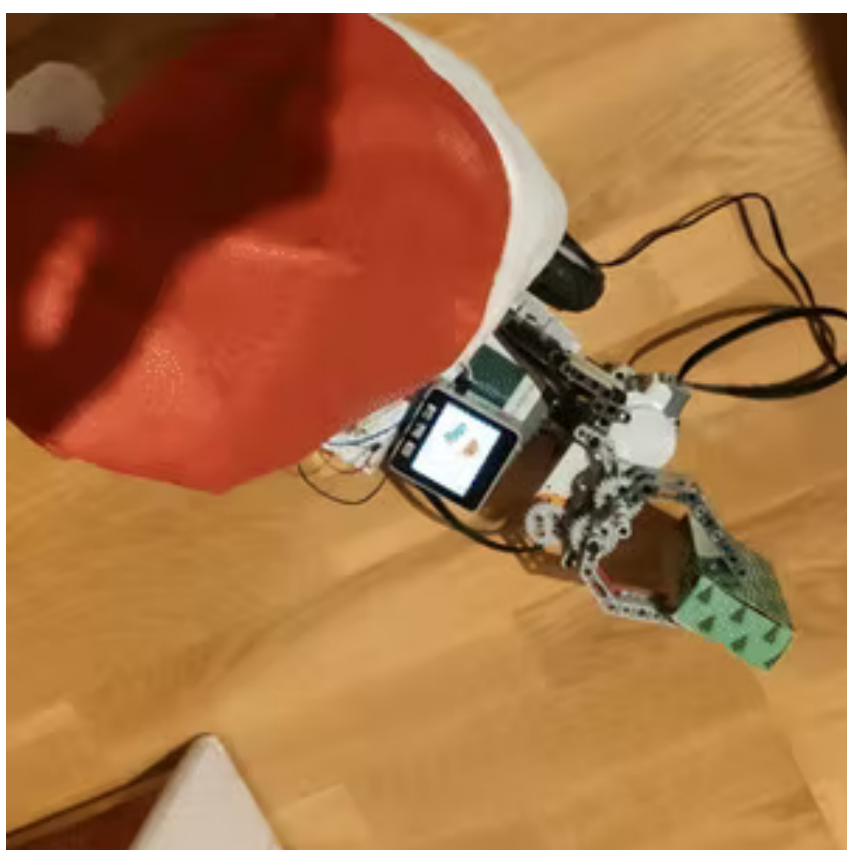
M5Stack Christmas Lego Robot Santa Helper

Based on a LEGO NXT Mindstorm base for movement, and a M5Stack Grey Core for brains. Controlled by a simple web interface
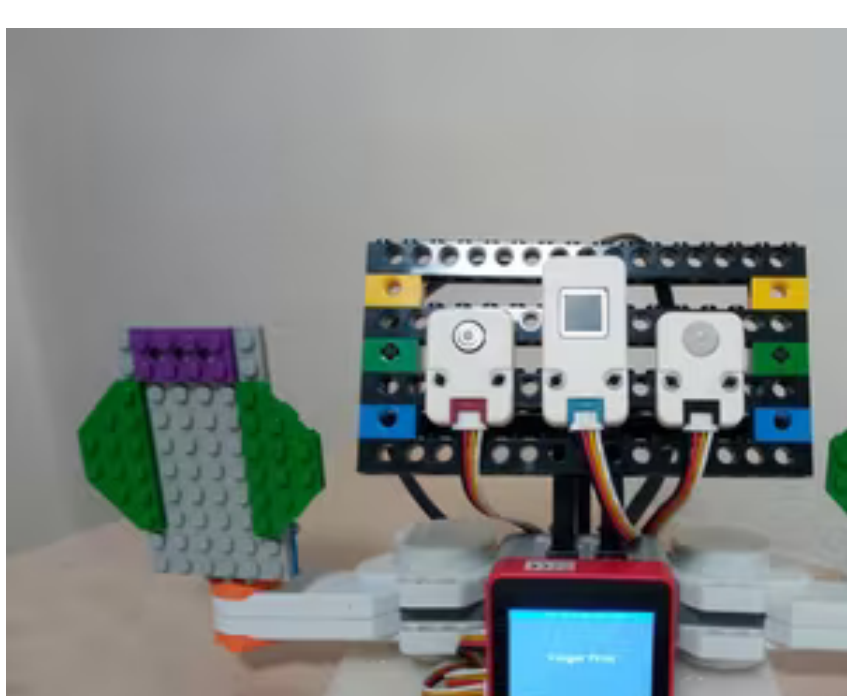
M5Stack Based Anti-COVID Security Gate (Proof of Concept)

Gate/door fingerprint security system with body temperature checks for the anti-COVID measure.
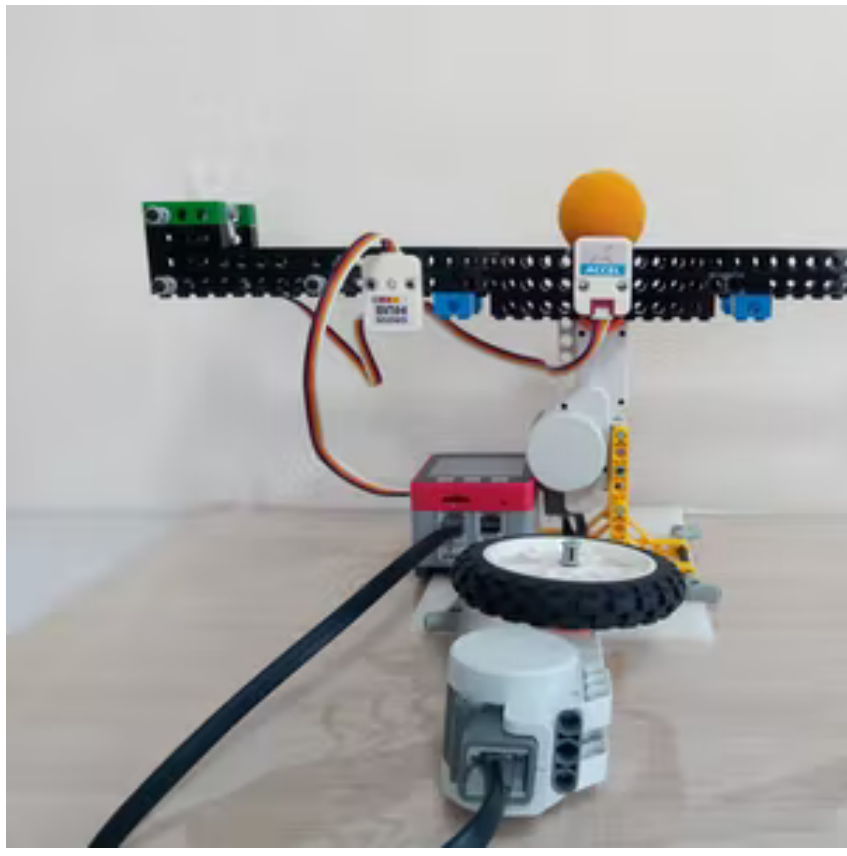
M5Stack Based PID Control Learning Platform

The PID Control Learning Platform is based on an M5Stack Fire & BaseX with TOF and Accel Units, and some Lego NXT parts.

Example

Arduino IDE

Click here to download Arduino code

UIFlow

Click here to download UIFlow code

Video

FAQ

COMMON

Q1: Consultation for after-sales problems of products

Describe the problems encountered in detail. Screenshots of the programs involved or files can be added as attachments and sent to M5Stack's official after-sales email

support@m5stack.com

Q2: Code Resources, Cases, User Communication ⊕

M5Stack related resource links: Official Github

https://github.com/m5stack

https://m5stack.hackster.io/

https://community.m5stack.com/