



BALA ESP32 Development Mini Self-balancing Car

SKU: K014-B

BALA is short for 'Balance', like its namesake, **BALA** is a Self Balancing Robot consist of a M5 FIRE and two wheels(DC motors).

This Application product comes with preloaded software, a self-balance robot application. While there are lots of open source code on Arduino as well, We especially encourage you to modify and enhance the code yourself.

This Self Balancing Robot is a Two-wheeled Robot that balances vertically using a closed-loop algorithm. This Self Balancing Robot Features various modes like Position Hold, Simple Mode, Rise Mode and Joystick Control. This Robot is controllable by a Smartphone device or a Transmitter. Self Balancing robot uses data from the Accelerometer and Gyroscope to correct its orientation and position.

The 2 DC driver module communicates with M5Stack FIRE through I2C bus. It's default I2C address is **0x56**.

Product Features

- Programming Support
 - Python
 - UIFlow (Blockly)
 - Arduino
- Compatible LEGO
- POGO Pin
- TF Card Support

M5Fire PARAMETER

Model	M5Stack FIRE
ESP32	240MHz dual core, 600 DMIPS, 520KB SRAM, Wi-Fi, dual mode Bluetooth
Flash	16MB Flash + 4MB PSRAM
Input	5V @ 500mA
Interface	TypeC x 1, GROVE(I2C+I/O+UART), Pogo Pin x 1
LCD	2 inch, 320x240 Colorful TFT LCD, ILI9341
Speaker	1W-0928
Microphone	MEMS Analog BSE3729 Microphone
LED	SK6812 3535 RGB LED x 10

Model	M5Stack FIRE
MEMS	MPU9250 (MPU6500 + AK8963)
Battery	550mAh @ 3.7V, inside
Op.Temp.	32°F to 104°F (0°C to 40°C)
Size	54 x 54 x 21 mm
C.A.S.E	Plastic (PC)

Kit includes

- 1x M5Stack BALA
- 1x Motor Driver
- 2x N20(Encoder included)
- Type-C USB Cable



Magnet

LEGO

Controlled by
I2C
Addr: 0x56

POGO-PIN

For Example:

```
Wire.beginTransmission(0x56);
Wire.write(0x00);
Wire.write(m0_pwm_h);
Wire.write(m0_pwm_l);
Wire.write(m1_pwm_h);
Wire.write(m1_pwm_l);
Wire.endTransmission();
```

0x00	M0PWM_H	M0PWM_L	M1PWM_H	M1PWM_L
0x04	ENCODER0_H	ENCODER0_L	ENCODER1_H	ENCODER1_L
0x08	ENCODER0 Total Counter			
0x0c	ENCODER1 Total Counter			



<https://m5stack.com/products/bala-esp32-development-mini-self-balancing-car/10-2-19>