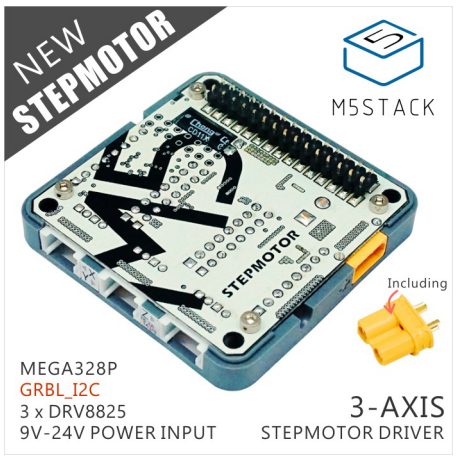
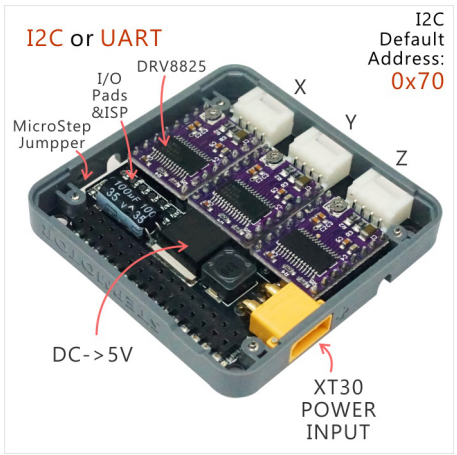
Module STEPMOTOR





Description

STEPMOTOR is used for stepper motor control. It is perfect for any motion project as it can drive up to 3 Stepper motors with **GRBL** control.

It is built with MEGA328P has been flashed **GRBL** firmware. The module comunicates with M5Core via I2C(0x70)

Integrated 3 DRV8825, a simple but very powerful board that can control one bipolar stepper motor at the time and allows micro stepping up to 1/32 of a step.

Product Features

- 9-24V Power Input
- 3-way stepper motors **(X, Y, Z)**
- Product Size：54.2mm x 54.2mm x 12.8mm
- Product weight：23.5g

Include

- 1x Step Motor Module
- 12V Power (Optional)
- 1x 5V FAN Module for heat dissipation (Optional)

Applications

- DIY 3D Printer
- Simple Robot Arm

- **The Firmware of inside MEGA328**
- **5 Datasheet**

EasyLoader

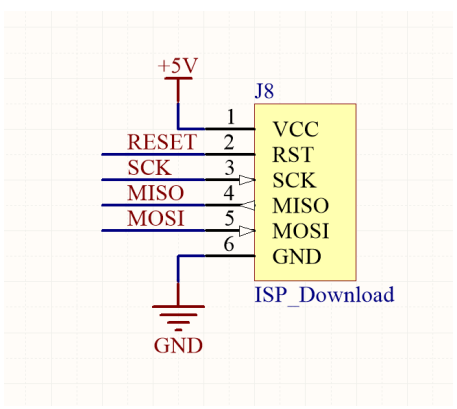
1.EasyLoader is a simple and fast program burner. Every product page in EasyLoader provides a product-related case program. It can be burned to the master through simple steps, and a series of function verification can be performed.(**Currently EasyLoader is only available for Windows OS**)

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.

PinMap

Mega328 ISP Download interface Pin foot definition



Example

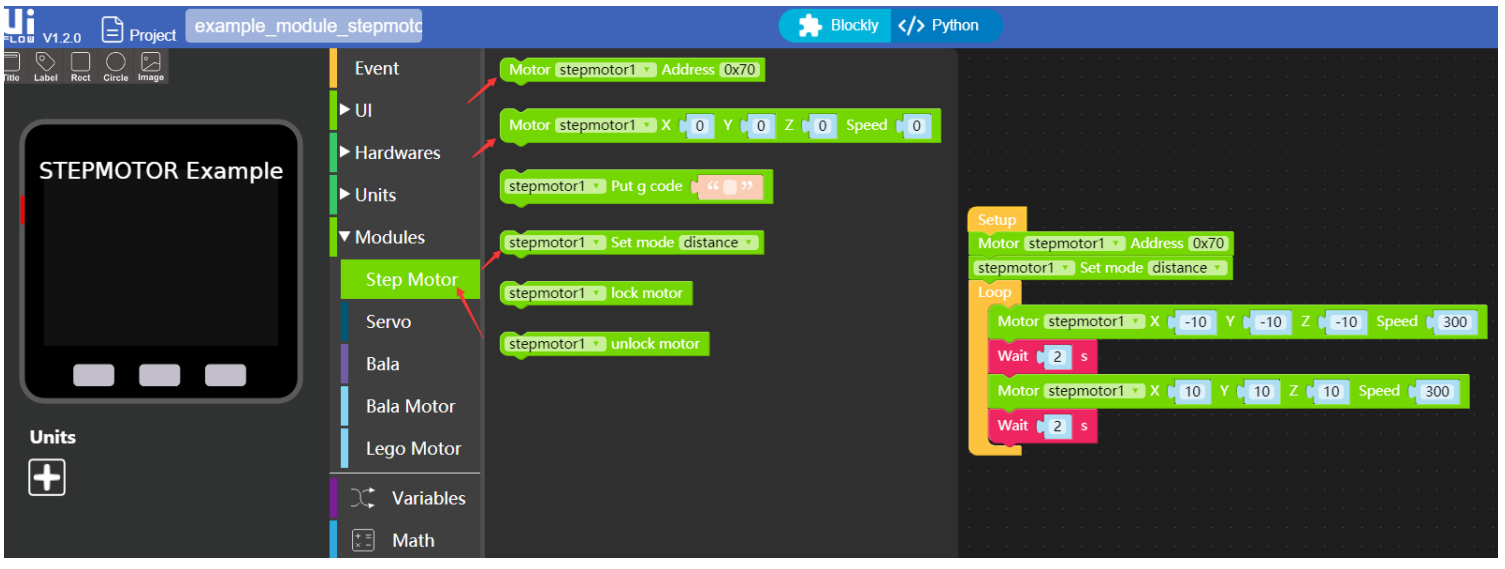
1. Arduino IDE

The code below is incomplete.

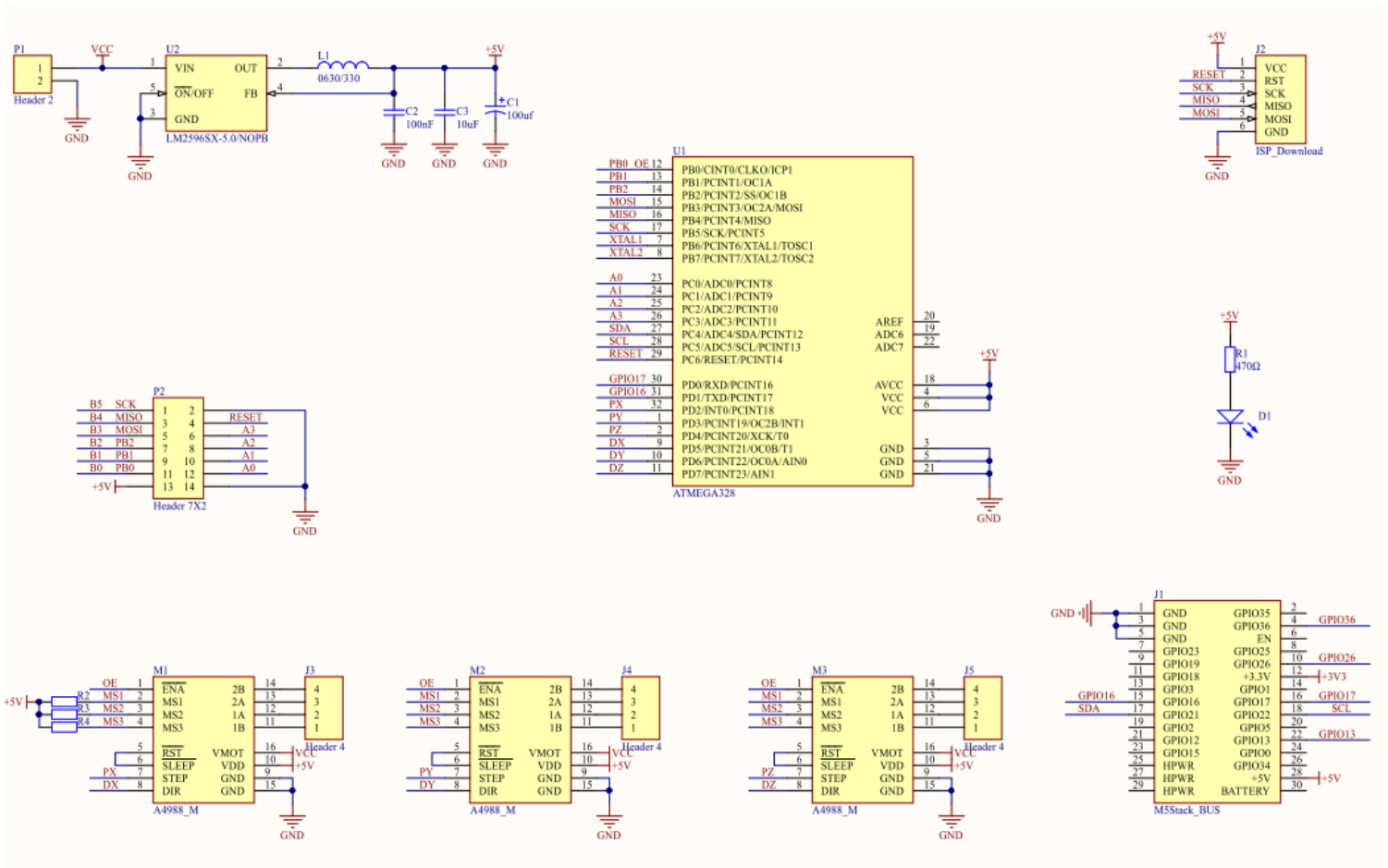
```
    If Button A was pressed,
    stepmotor will rotate back and forth at a time
*/

#include <M5Stack.h>
#include <Wire.h>

#define STEPMOTOR_I2C_ADDR 0x70

// initialization
M5.begin();
Wire.begin();

// Controlling Protocol:
//  G<n> X<distance>Y<distance>Z<distance> F<speed>
SendCommand(STEPMOTOR_I2C_ADDR, "G1 X20Y20Z20 F500");
SendCommand(STEPMOTOR_I2C_ADDR, "G1 X0Y0Z0 F400");

            // Get Data from Module.
    Wire.requestFrom(STEPMOTOR_I2C_ADDR, 1);

if (Wire.available() > 0) {
  int u = Wire.read();
  if (u != 0) Serial.write(u);
}

// Send Data to Module.
while (Serial.available() > 0) {
  int inByte = Serial.read();
  SendByte(STEPMOTOR_I2C_ADDR, inByte);
}
```

2. UIFlow

Wanna explore the easiest way of Servo programming??



Schematic


P1
Header 2
VCC
GND
U2
VIN
OUT
ON/OFF
FB
GND
LM2596SX-5.0/NOPB
L1
0630/330
+5V
C2
100nF
C3
10uF
C1
100uf
GND
U1
PB0/CINT0/CLKO/ICP1
PB1/PCINT1/OC1A
PB2/PCINT2/SS/OC1B
PB3/PCINT3/OC2A/MOSI
PB4/PCINT4/MISO
PB5/SCK/PCINT5
PB6/PCINT6/XTAL1/TOSC1
PB7/PCINT7/XTAL2/TOSC2
PC0/ADC0/PCINT8
PC1/ADC1/PCINT9
PC2/ADC2/PCINT10
PC3/ADC3/PCINT11
PC4/ADC4/SDA/PCINT12
PC5/ADC5/SCL/PCINT13
PC6/RESET/PCINT14
PD0/RXD/PCINT16
PD1/TXD/PCINT17
PD2/INT0/PCINT18
PD3/PCINT19/OC2B/INT1
PD4/PCINT20/XCK/T0
PD5/PCINT21/OC0B/T1
PD6/PCINT22/OC0A/AIN0
PD7/PCINT23/AIN1
AREF
ADC6
ADC7
AVCC
VCC
GND
ATMEGA328
J2
RESET
SCK
MISO
MOSI
VCC
RST
SCK
MISO
MOSI
GND
ISP_Download
R1
470Ω
D1
P2
Header 7X2
M1
M2
M3
J3
J4
J5
A4988_M
Header 4
OE
MS1
MS2
MS3
RST
SLEEP
STEP
DIR
ENA
VMOT
VDD
2B
2A
1A
1B
R2
R3
R4
J1
M5Stack_BUS
GPIO35
GPIO36
EN
GPIO25
GPIO26
GPIO19
GPIO18
+3.3V
GPIO3
GPIO1
GPIO16
GPIO17
GPIO21
GPIO22
GPIO2
GPIO5
GPIO12
GPIO13
GPIO15
GPIO0
GPIO34
HPWR
+5V
BATTERY
SDA
SCL