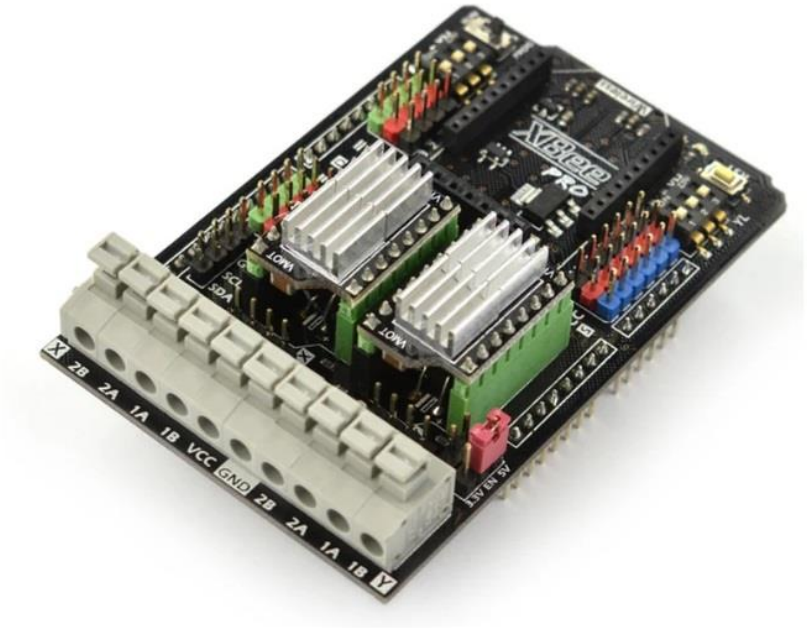
Gravity Dual Bipolar Stepper Motor Shield for Arduino DRV8825

Overview

Do you want to do some projects with stepper motors such as a drafting instrument, a 3D printer, an auto curtain, etc...? As we all know, regular stepper motors are hard to drive, but with this stepper motor shield, you can easily drive 2 stepper motors via just 6 digital I/O's. This board is compatible with the Arduino UNO R3. Directly supports Xbee and Xbee form factor Wi-Fi, Bluetooth and RF modules. Easy connection of cables via screwless PC terminals. Each stepper motor has a code switch for adjusting driving modes, to obtain different rotational speeds. Interfaces of the board include extension 6 channel Analog I/O, 8 channel Digital I/O & I2C.

Stepper motor is a brushless DC electric motor that divides a full rotation into a number of equal steps. The motor's position can then be commanded to move and hold at one of these steps without any feedback sensor (an open-loop controller), as long as the motor is carefully sized to the application in respect to torque and speed.



Order Code

Order Code	Brand	Description
E06012-001	DFRobot	Gravity Dual Bipolar Stepper Motor Shield for Arduino DRV8825

Gravity Dual Bipolar Stepper Motor Shield for Arduino DRV8825

Specification

- Support 3.3V and 5V operating voltage
- Suitable for two-phase and four-wire stepper motor
- Board with two DRV8825 driver chip and a heat sink has been mounted.
- Input Voltage： 8.2-45V DC (Just power the stepper motor driver), 1.6A output current per coil
- Driving Pins: D4,D5,D6,D7,D8,D12
- Squeeze connector, quite easy and convenient.
- 8 channel digital I/O pins & 6 channel Analog input pins
- DRV8825 Microstepping bipolar stepper motor driver
- Six different microstep resolutions (full-step, 1/2-step, 1/4-step, 1/8-step, 1/16-step, 1/32-step)
- Compatible with Arduino UNO R3, Leonardo, Mega and other controllers, with full port extensions. Support XBee, XBee Wi-Fi, Bluetooth and RF modules, ensure that the needs of your wireless communications.
- There is a switch on the board Xbee wireless interfaces corner. PROG stop wireless module, available USB programming. RUN time can use the wireless communication module.

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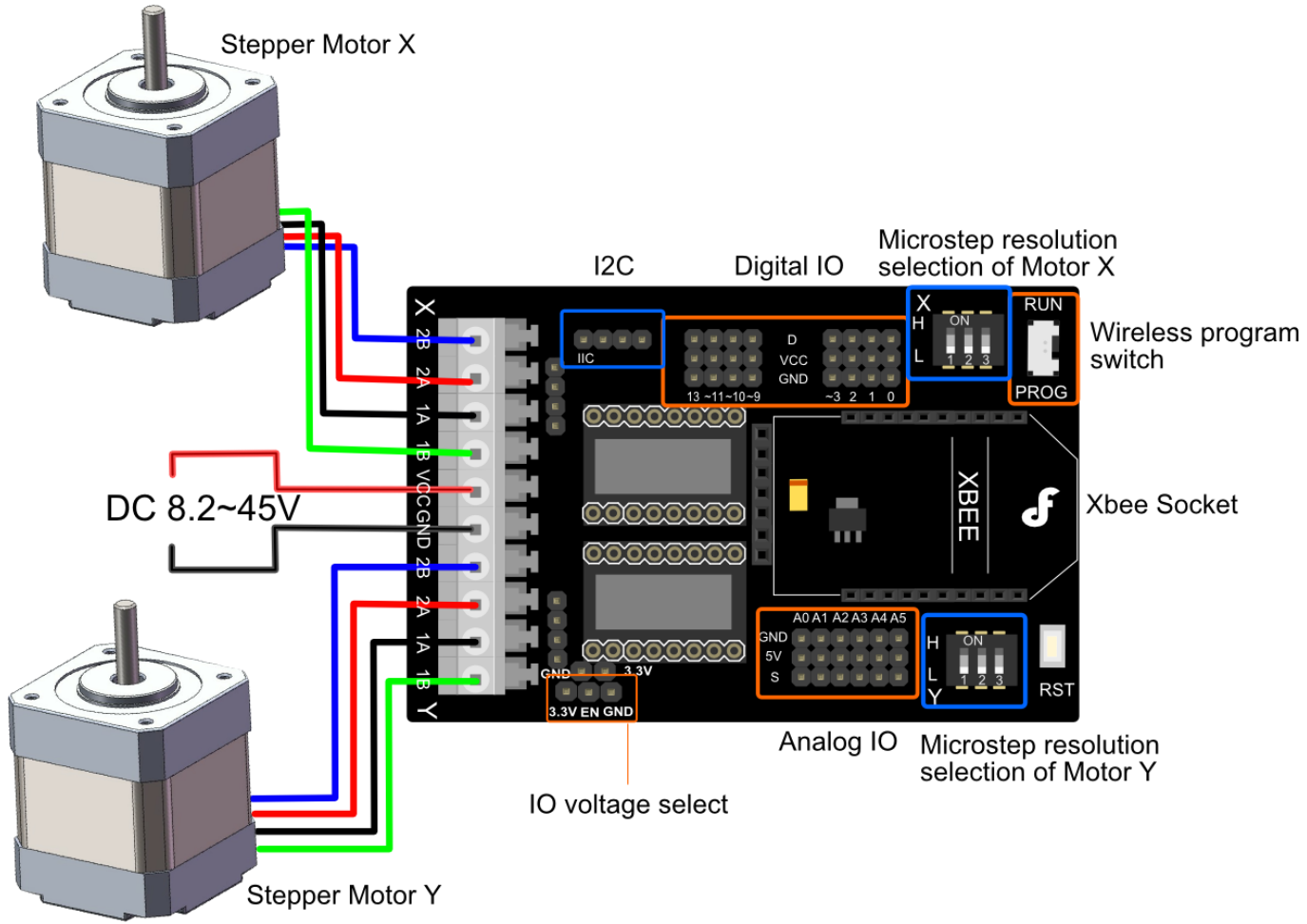
Pin Out& Diagram

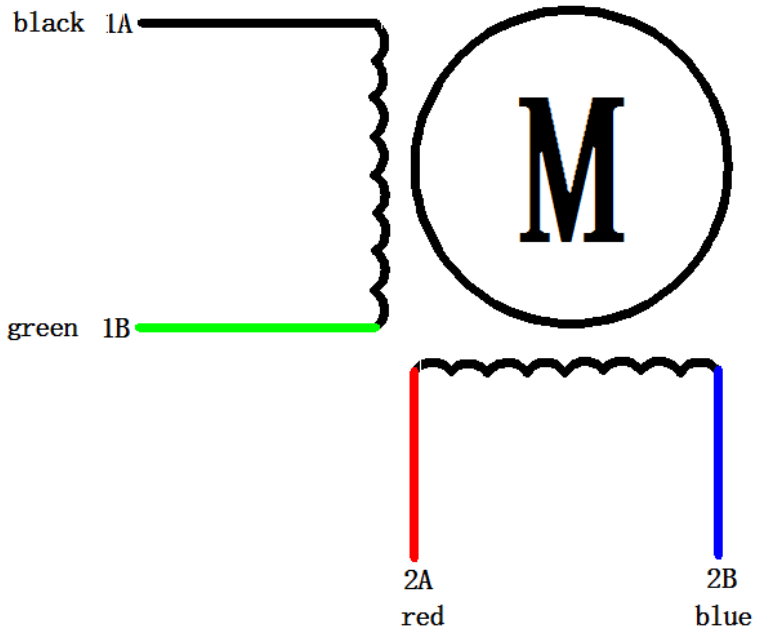


Pin Out& Diagram

•Wireless program switch:

- **RUN:** Turn the Switch here to use the Xbee module
- **PROG:** Turn the Switch here to upload the sketch via USB

•Motor wiring diagram：



Pin Out& Diagram

•The new version expand two enable pins, you can enable/disable the motor driver to save the power consumption, Motor X enable pin for the D8, Motor Y enable pin for the D12, low voltage enable, the following truth table:

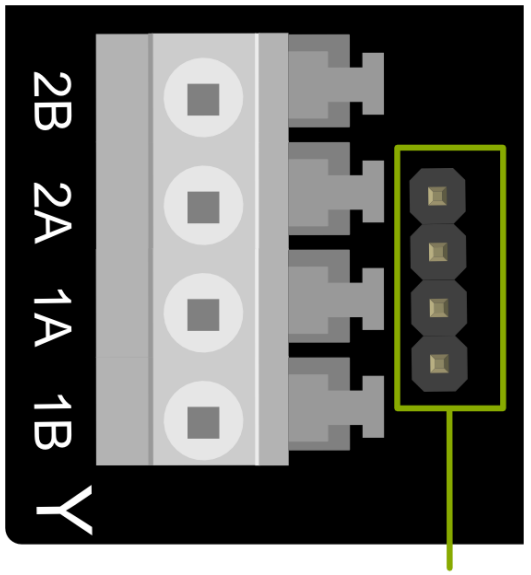
D8	D12	M1	M2
Low	Low	ENABLE	ENABLE
High	Low	DISENABLE	ENABLE
Low	High	ENABLE	DISENABLE
High	High	DISENABLE	DISENABLE

Dip switch settings for Microstep resolution:

MS1	MS2	MS3	Microstep Resolution
Low	Low	Low	Full step
High	Low	Low	Half step
Low	High	Low	1/4 step
High	High	Low	1/8 step
Low	Low	High	1/16 step
High	Low	High	1/32 step
Low	High	High	1/32 step
High	High	High	1/32 step

Pin Out& Diagram

IO voltage select
Change the position of the jumper cap according to your Main board operating voltage.
Squeeze connector makes connection easily and quickly.
The other form of connector for XH2.54 or female headers



Other form of connector
to stepper motor

Sample Code

```
/*
This sample code is for testing the 2 stepper motors
The rotation velocity can be adjusted by the code switch
Microcontroller: Arduino UNO
*/
int M1dirpin = 7;  //Motor X direction pin
int M1steppin = 6; //Motor X step pin
int M1en=8;  //Motor X enable pin
int M2dirpin = 4;  //Motor Y direction pin
int M2steppin = 5; //Motor Y step pin
int M2en=12;  //Motor Y enable pin

void setup()
{
  pinMode(M1dirpin,OUTPUT);
  pinMode(M1steppin,OUTPUT);
  pinMode(M1en,OUTPUT);
  pinMode(M2dirpin,OUTPUT);
  pinMode(M2steppin,OUTPUT);
  pinMode(M2en,OUTPUT);

  digitalWrite(M1en,LOW);// Low Level Enable
  digitalWrite(M2en,LOW);// Low Level Enable

}
```

Sample Code

```
void loop()
{
    int j;
  delayMicroseconds(2);
  digitalWrite(M1dirpin,LOW);
  digitalWrite(M2dirpin,LOW);
  for(j=0;j<=5000;j++){
    digitalWrite(M1steppin,LOW);
    digitalWrite(M2steppin,LOW);
    delayMicroseconds(2);
    digitalWrite(M1steppin,HIGH); //Rising step
    digitalWrite(M2steppin,HIGH);
    delay(1);
  }
}
```

Documents

- DRV8825 datasheet

Revision History

Date	Revision	Change description
30/10/2025	1.0	Initial release