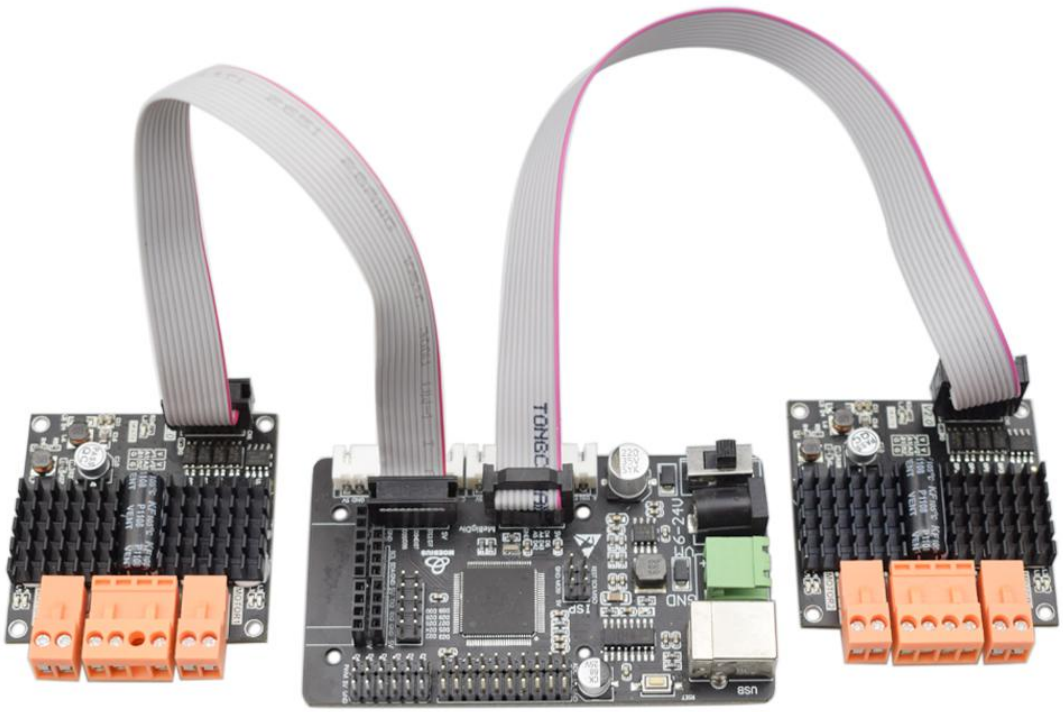
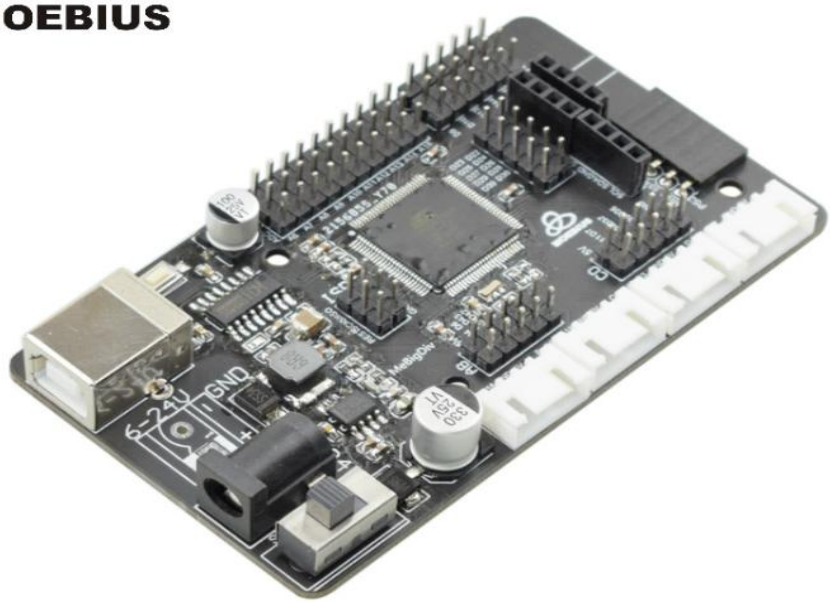
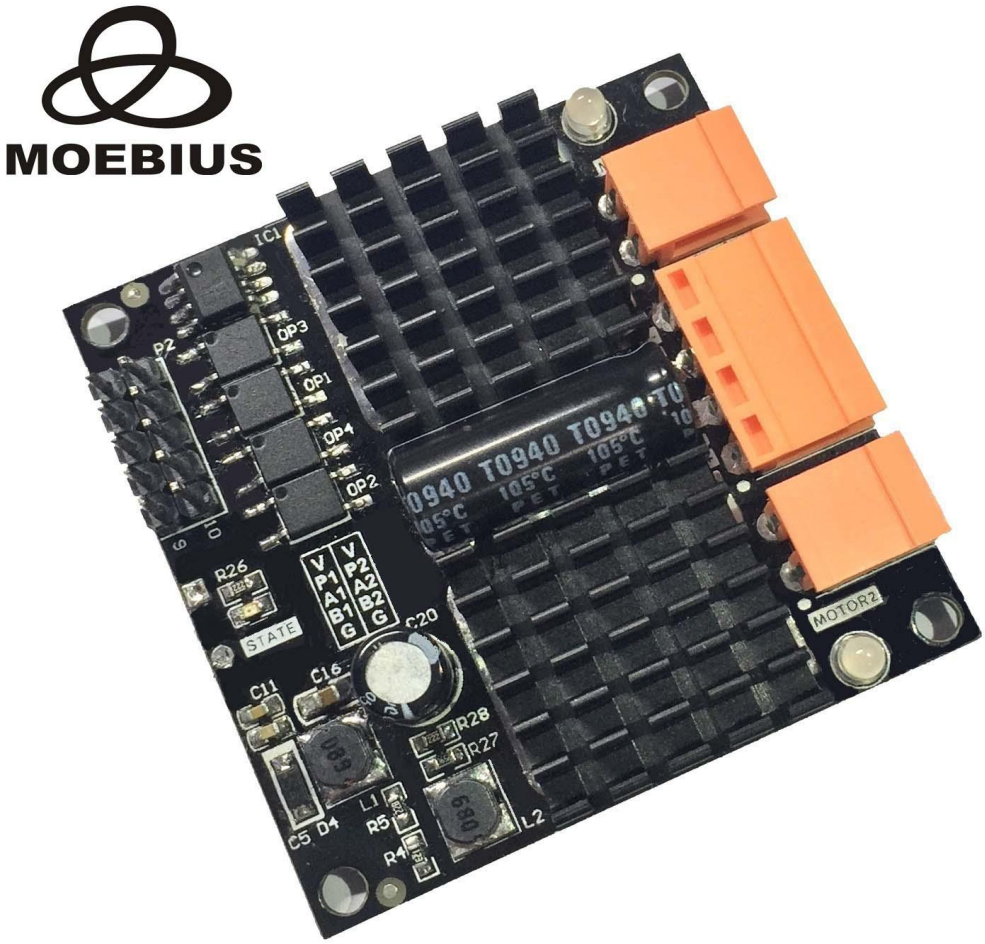
MeBigDiv，DWS300 驱动模块使用说明

MeBigDiv, DWS300 driver module instructions



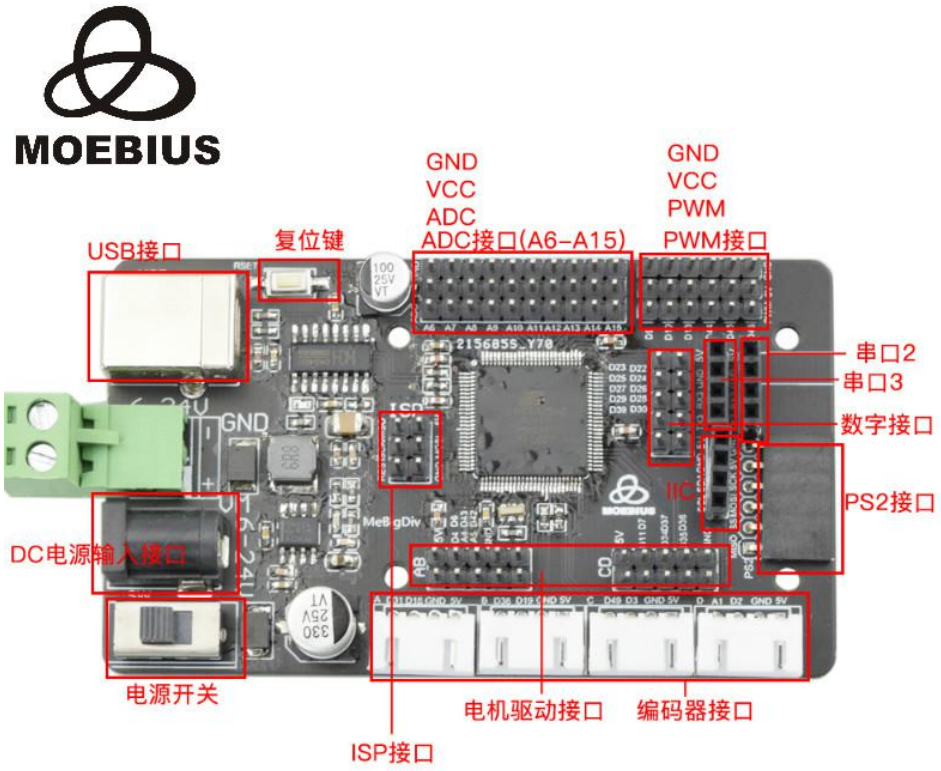


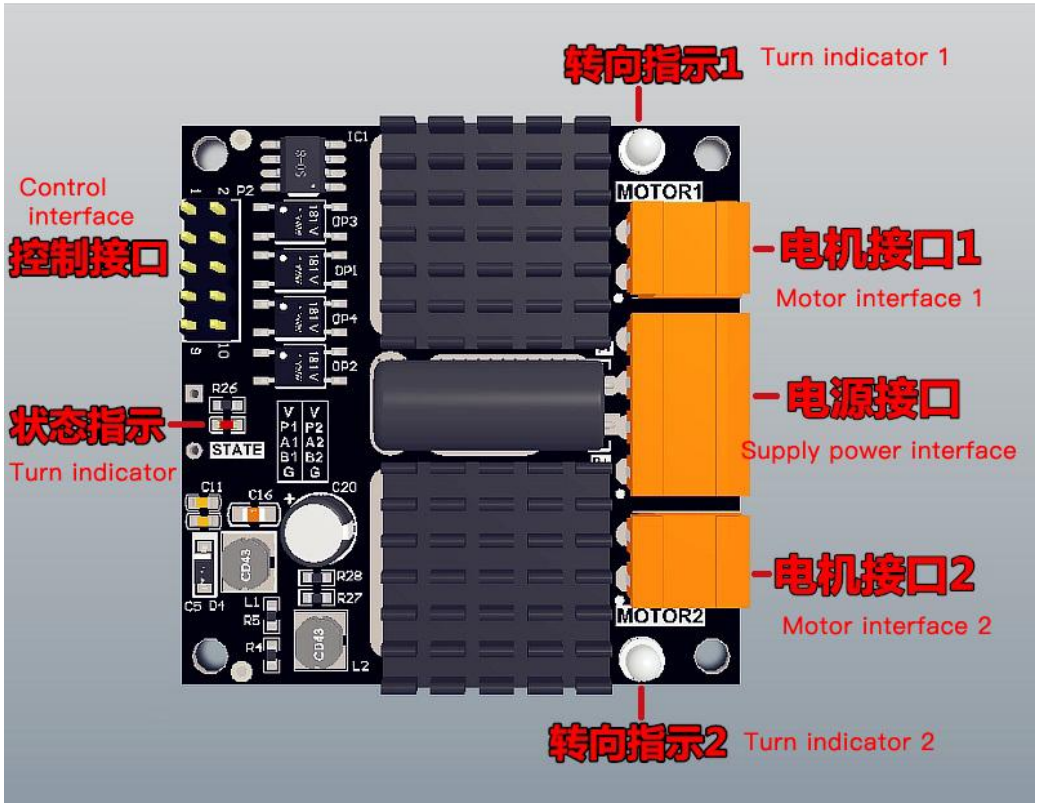
MeBigDiv 控制器参数：
控制器： ATmega2560
工作电压：5V
输入电压（推荐）：7-12V
输入电压（限制）：6-28V
数字 I/0 口：26 (含 10 路 PWM 输出)
模拟输入口：12
IIC 接口：1
串口：3（含 usb 输入口）
SPI：1
每个 I/0 口直流电流：40 mA
5vUSB 口直流电流：1000 mA
闪存（Flash Memory）：256 KB（其中 8 KB 用作 bootloader）
静态存储器（SRAM）： 8 KB
EEPROM：4 KB
时钟：16 MHz



DWS300 双通道电机驱动模块参数：
电机通道：2 个
输入电压：6.5-28VDC
控制信号输入电压：兼容 3-5V
控制信号输入电流：15mA（5V 控制信号电压输入下）
PWM 输入频率：18-60KHz
PWM 最小脉宽：2us
峰值电流：70A（最多持续 100ms），随着温度的升高，电流将受到限制
连续电流：每通道可持续输出 12A 电流
工作温度：-25℃~85℃
过热温度：85℃~95℃
尺寸：50mm*50mm*12.5mm
过电压：28V
欠电压：6.3V
内置过电压、欠电压、过热保护电路，通过 STATE 指示灯闪烁表示

板载接口说明 ：


MOEBIUS
GND
VCC
ADC
ADC接口(A6-A15)
GND
VCC
PWM
PWM接口
USB接口
复位键
串口2
串口3
数字接口
PS2接口
IIC
DC电源输入接口
电源开关
电机驱动接口
编码器接口
ISP接口


转向指示1
Turn indicator 1
Control interface
控制接口
MOTOR1
电机接口1
Motor interface 1
电源接口
Supply power interface
状态指示
Turn indicator
STATE
电机接口2
Motor interface 2
MOTOR2
转向指示2
Turn indicator 2

驱动使用自制电机驱动模块输入电压 9V-28V，可以采用带保护板锂离子电池供电，可以驱动 9V-24V 有刷减速电机

电机驱动模块推荐使用电压 9-25.2V，单通道持续输出电流 Imc 12A

(在开放环境温度 20℃，24V 条件下测试得出 Tested under the open environment temperature of 20℃, 24V）

VIN 隔离正电源输入，兼容 3.3V、5V 电源

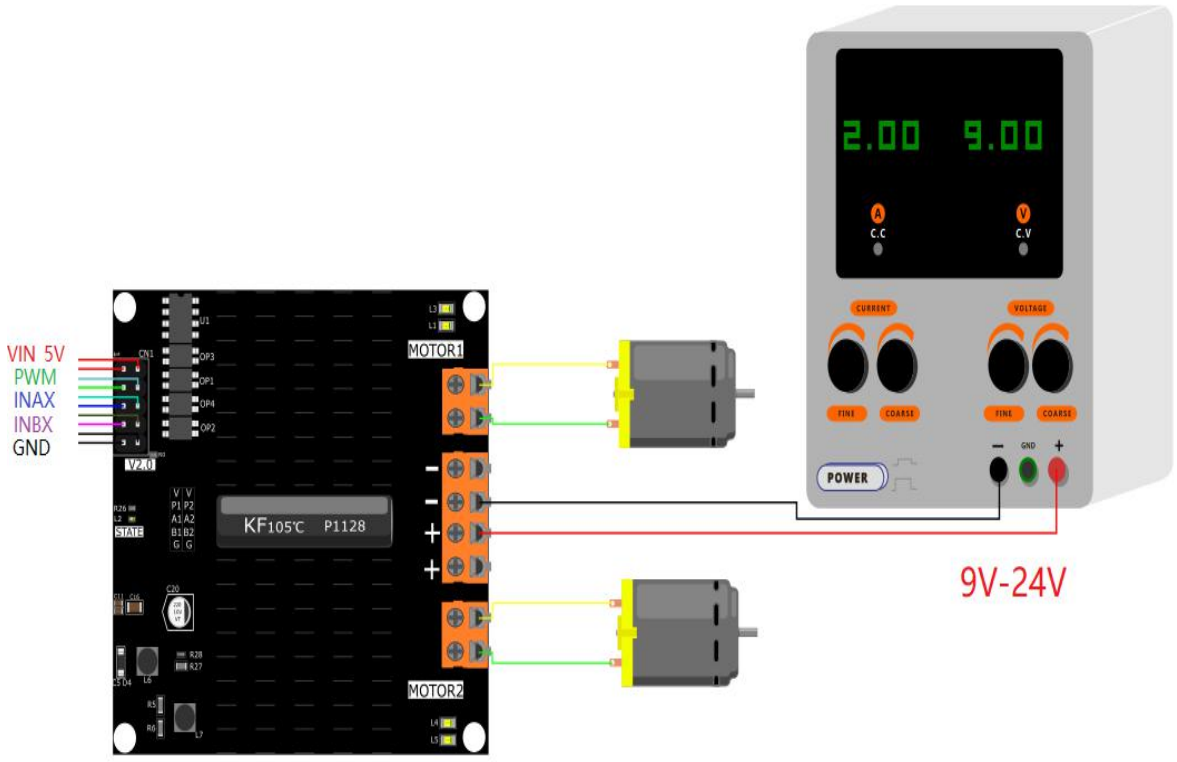
PWM 占空比调制输入，高速隔离，带宽 50MHz PWM 输入频率 推荐 18khz

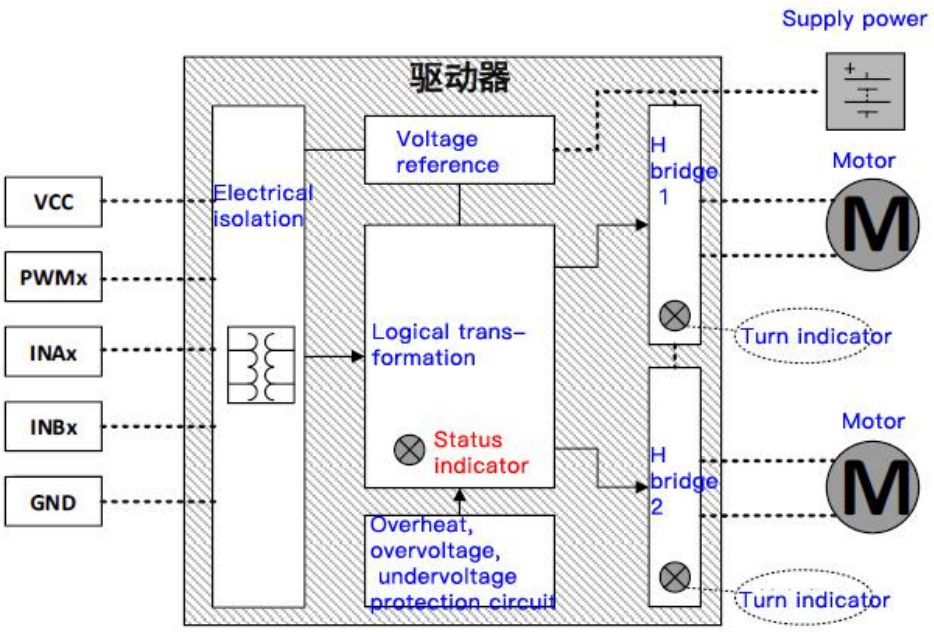
INAX 通道控制逻辑输入 A

INBX 通道控制逻辑输入 B

GND 隔离电源地输入

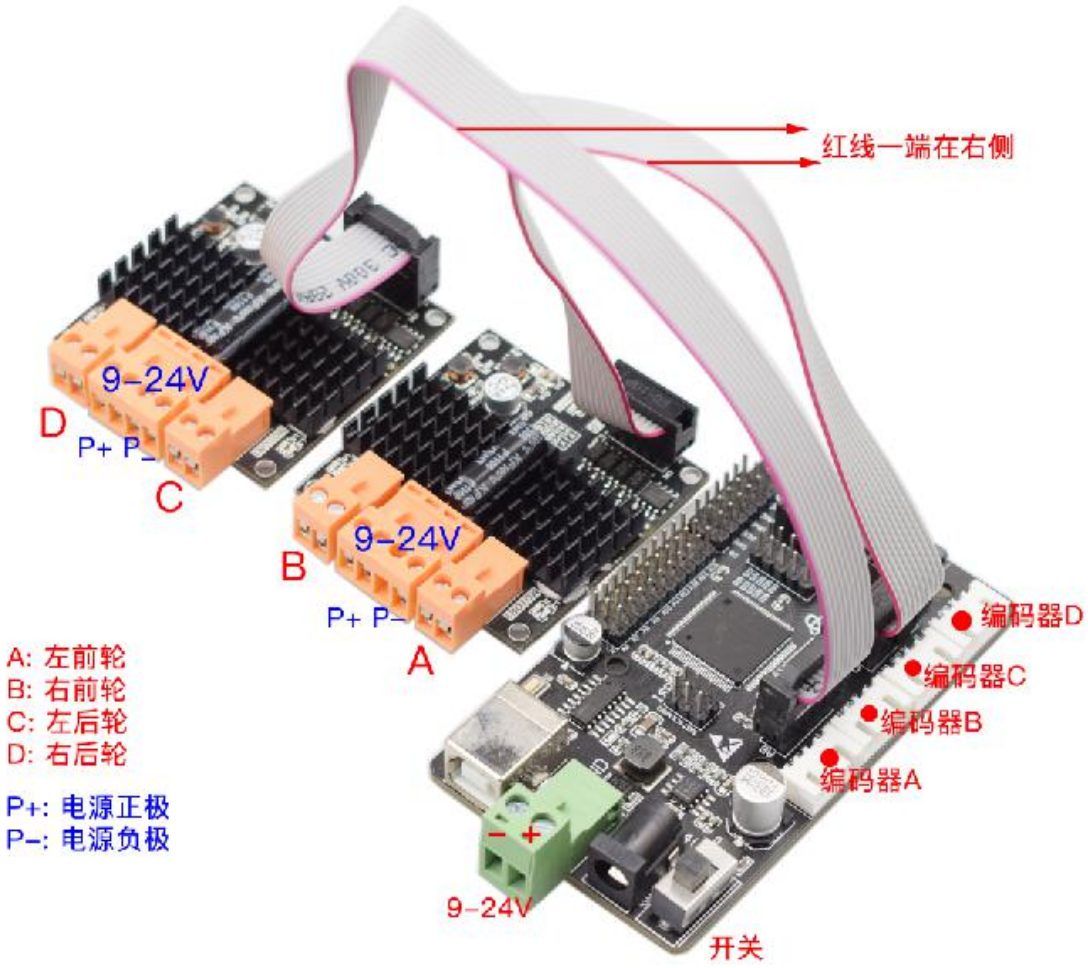
电机驱动接线如图所示



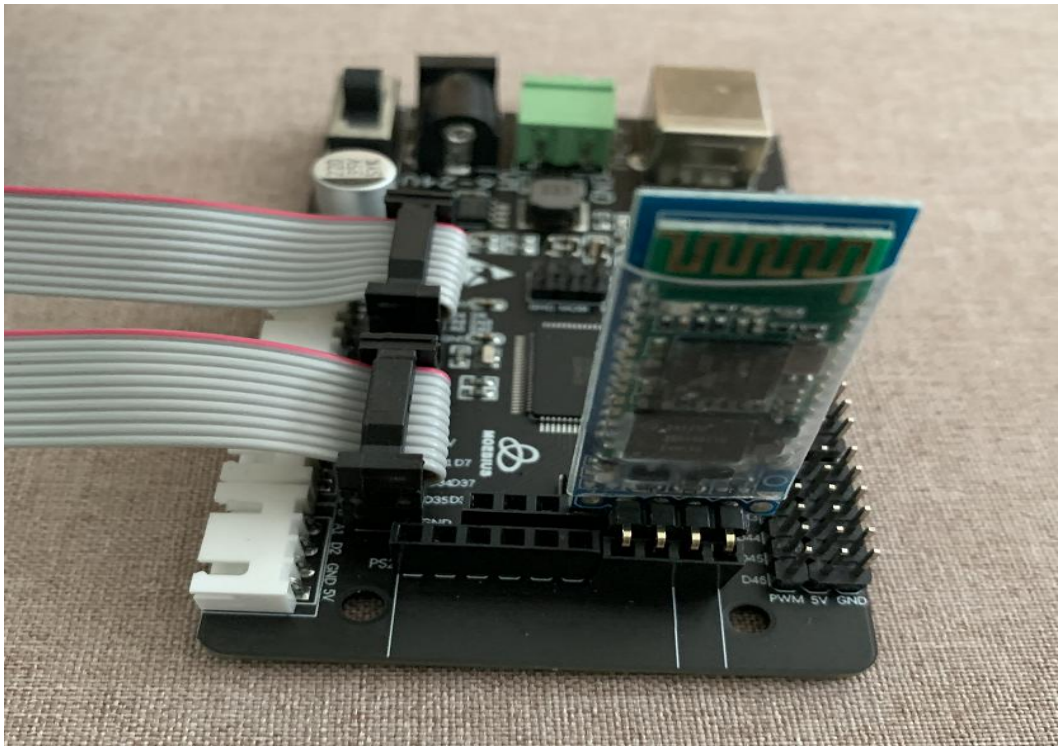


MeBigDiv 控制器与电机驱动模块接线图

（请以红色红线为基准接线，保证接线无误）

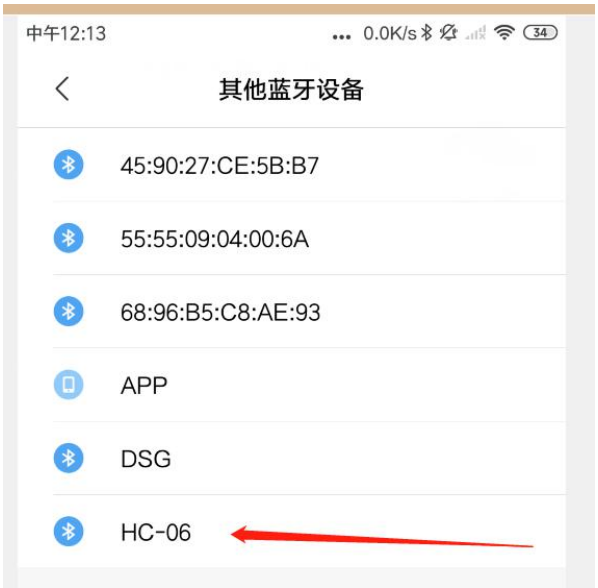

红线一端在右侧
9-24V
D
P+ P-
C
9-24V
B
P+ P-
A
A: 左前轮
B: 右前轮
C: 左后轮
D: 右后轮
P+: 电源正极
P-: 电源负极
编码器D
编码器C
编码器B
编码器A
- +
9-24V
开关

蓝牙模块接线图

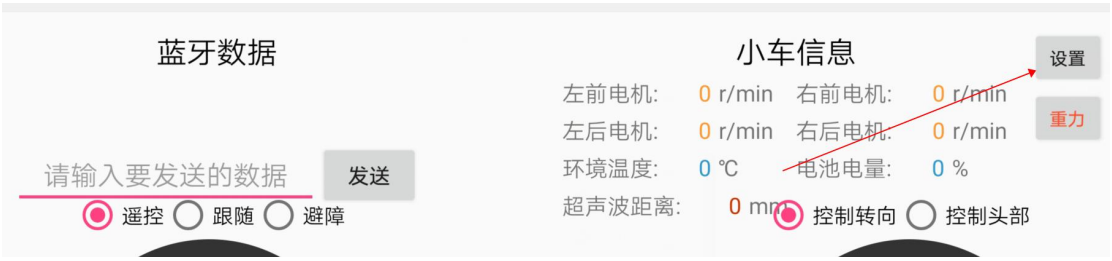


蓝牙模块使用说明

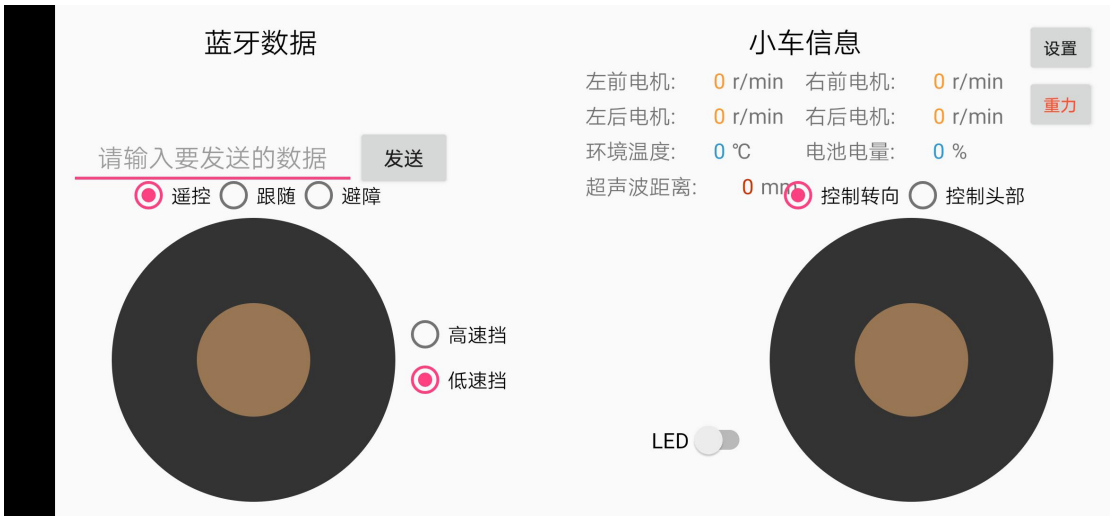
插上蓝牙，使用安卓手机打开蓝牙找到 HC-06 进行配对，密码 1234.



配对完成之后打开 MOEBIU.app(需要先安装 MOEBIUS.APK)找到右上角设置点击进去点击 HC-06 进行连接，连接好会自动调到控制界面



点击 HC-06 进行蓝牙连接



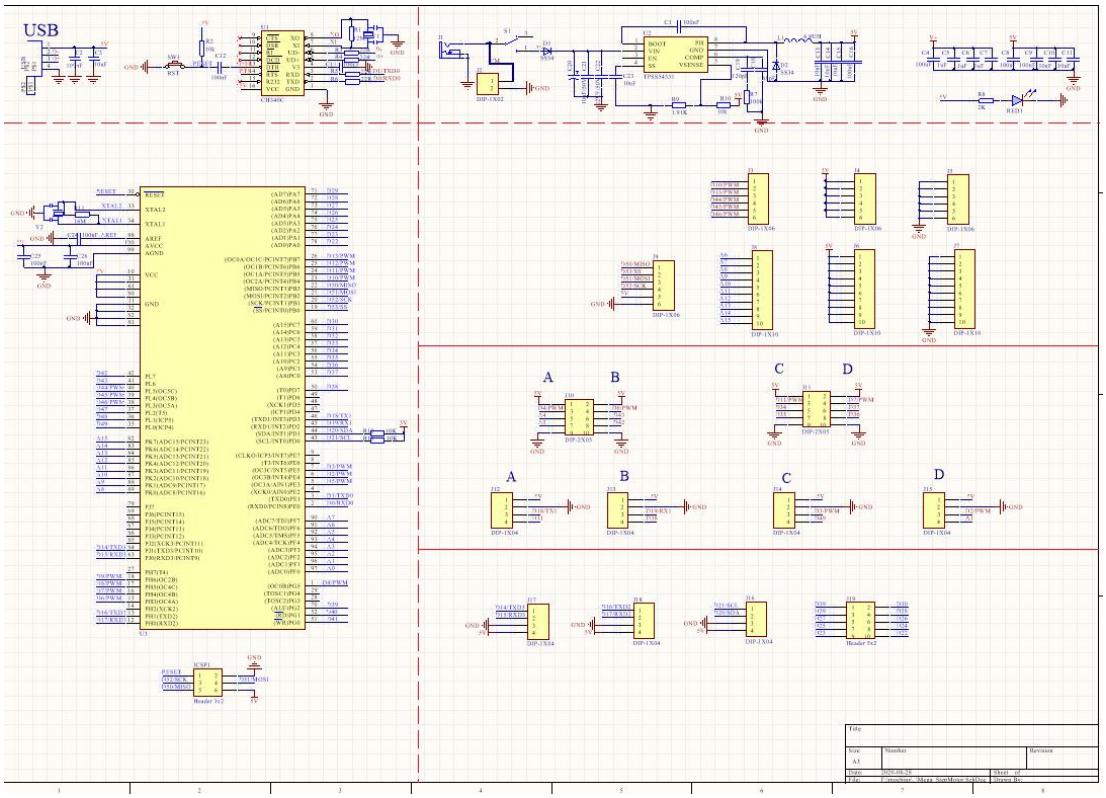
连接上完成会自动到这个界面
同时蓝牙模块上 LED 灯为常亮状态
通过左边这个滑动按钮控制电机运动

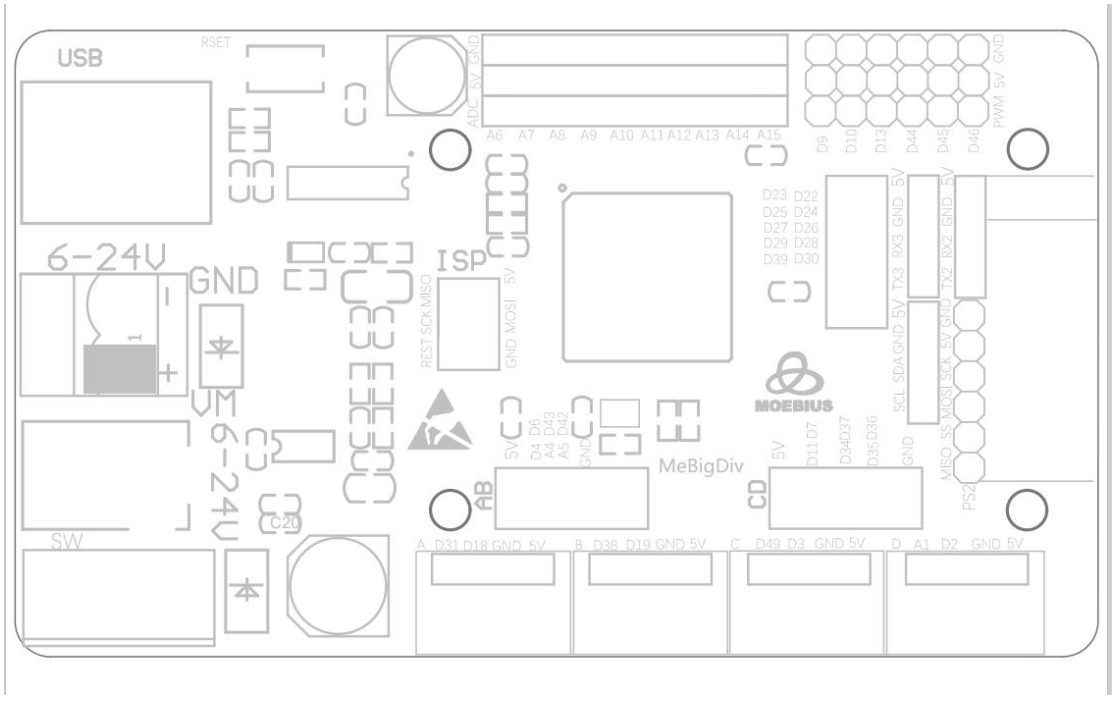
代码名称: BlueTooth_2560
MCU 控制芯片管脚对应代码如下

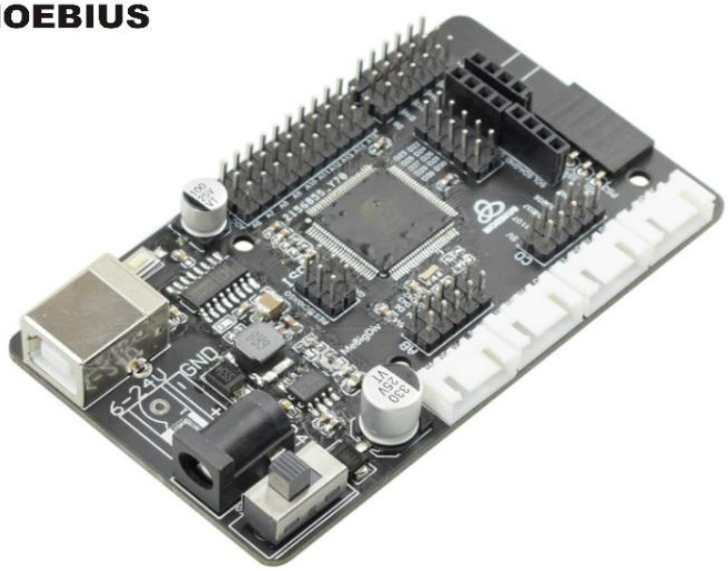
```
//主控芯片MEGA2560芯片
//Main control chip MEGA2560 chip download chip CH340 needs to install CH340 driver
//MeBigDiv黑色控制器和DWS300黑色电机驱动蓝牙程序
//MeBigDiv black controller and DWS300 black motor driver Bluetooth program


//电机引脚
//Motor pin
#define PWMA 4      //A电机转速 A Motor speed
#define DIRA1 A4    //26
#define DIRA2 A5     //27  //A电机方向 A Motor direction
#define PWMB 6      //B电机转速   B Motor speed
#define DIRB1 43
#define DIRB2 42     //B电机方向 Motor direction
#define PWMC 11      //C电机转速  C Motor speed
#define DIRC1 34
#define DIRC2 35  //C电机方向  C Motor direction
#define PWMD 7      //D电机转速  D Motor speed
#define DIRD1 37
#define DIRD2 36   //D电机方向 D Motor direction
```

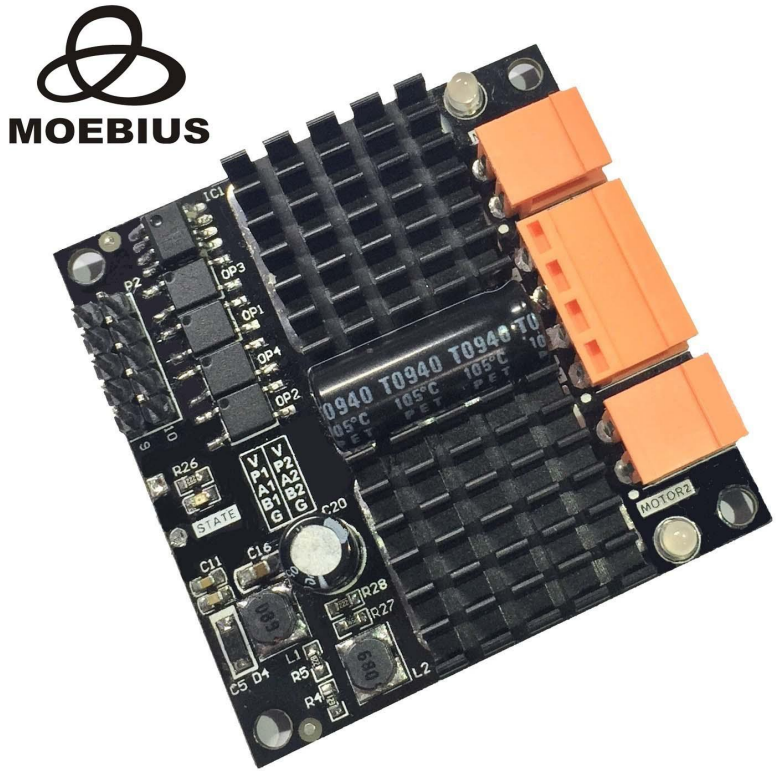
MeBigDiv 控制器原理图，另附 PDF 文档 MeBigDiv—SCH.PDF





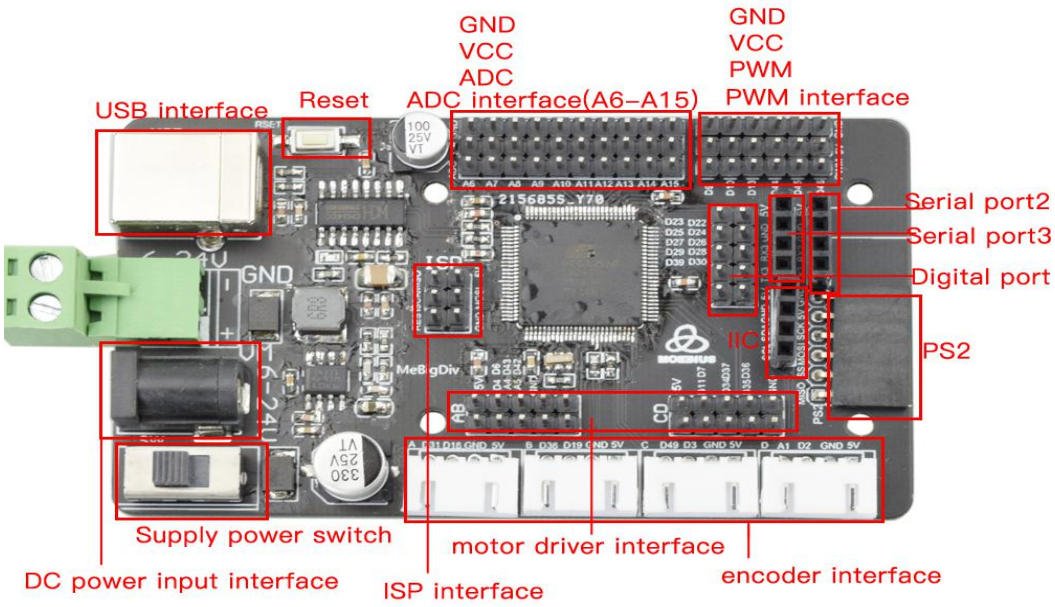


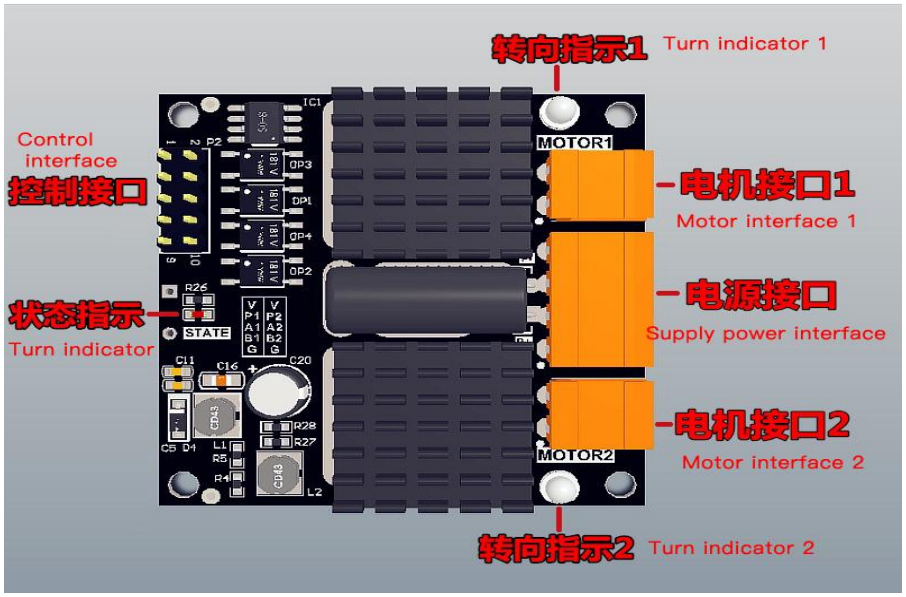
MeBigDiv controller parameters:
Controller: ATmega2560
Working voltage: 5V
Input voltage (recommended): 7-12V
Input voltage (limit): 6-28V
Digital I / 0 port: 26 (including 10 PWM outputs)
Analog input port: 12
IIC interface: 1
Serial port: 3 (including USB input port)
SPI: 1 DC current per
I / 0 port: 40 mA
5vUSB port DC current: 1000 mA
Flash Memory: 256 KB (of which 8 KB is used as bootloader)
Static memory (SRAM): 8 KB
EEPROM: 4 KB Clock: 16 MHz



DWS300 Motor channels: 2
Input voltage: 6.5-28VDC
Control signal input voltage: compatible with 3-5V
Control signal input current: 15mA (with 5V control signal voltage input)
PWM input frequency: 18-60KHz
PWM minimum pulse width: 2us
Peak current: 70A (up to 100ms), as the temperature increases, the current will be limited
Continuous current: 12A continuous output current per channel
Working temperature: -25 ℃ ~ 85 ℃
Overheating temperature: 85 ℃ ~ 95 ℃
Size: 50mm * 50mm * 12.5mm
Overvoltage: 28.5V
Under voltage: 6.3V
Built-in over-voltage, under-voltage, and over-temperature protection circuits, indicated by blinking STATE indicator

On-board interface description:

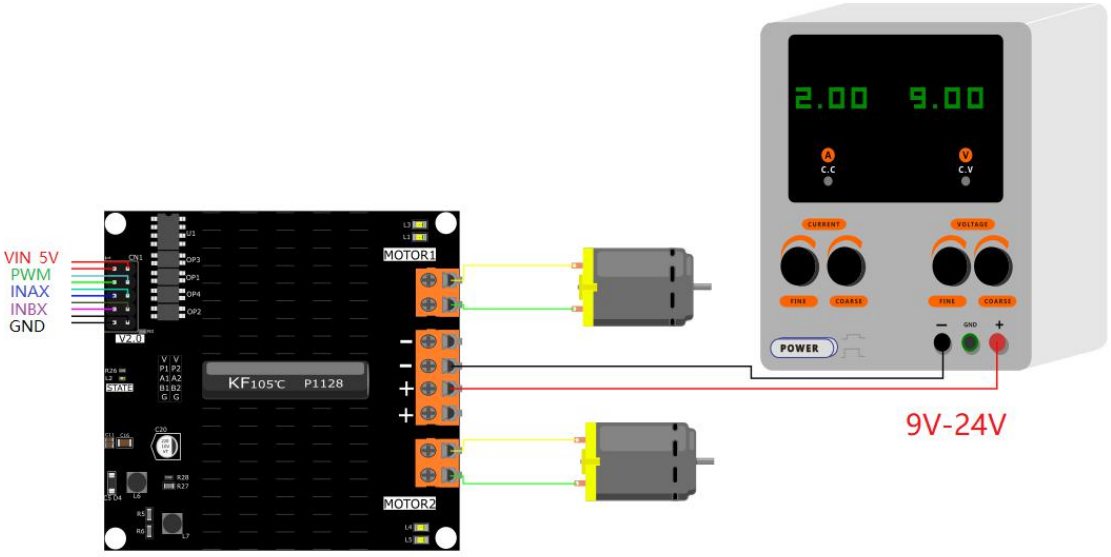


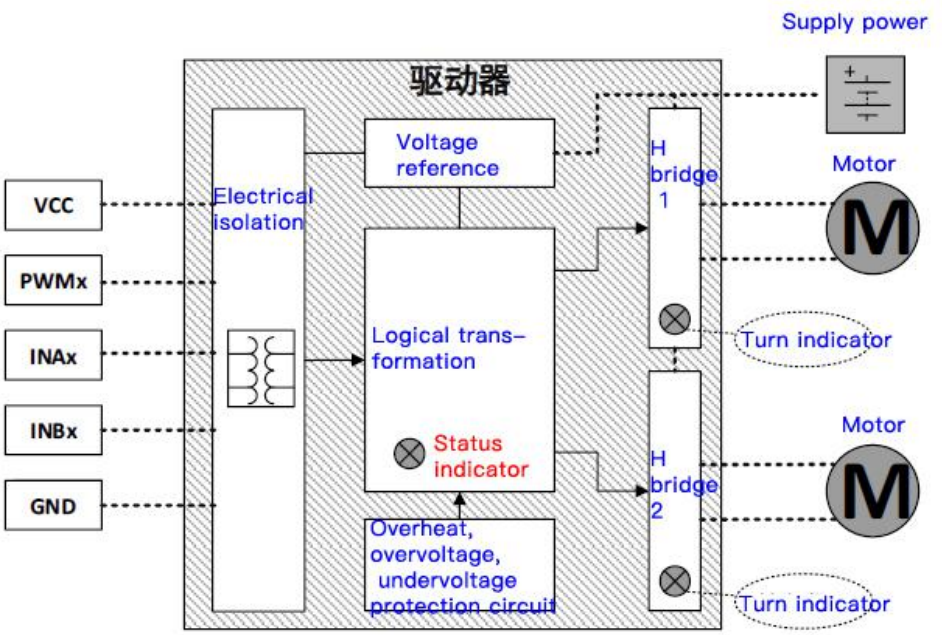


Drive using self-made motor drive module input voltage 9V-28V, can be powered by lithium ion battery with protection board, can drive 9V-24V brushed geared motor
The recommended voltage for the motor drive module is 9-25.2V, and the single-channel continuous output current Imc 12A
(Tested under the open environment temperature of 20℃, 24V）

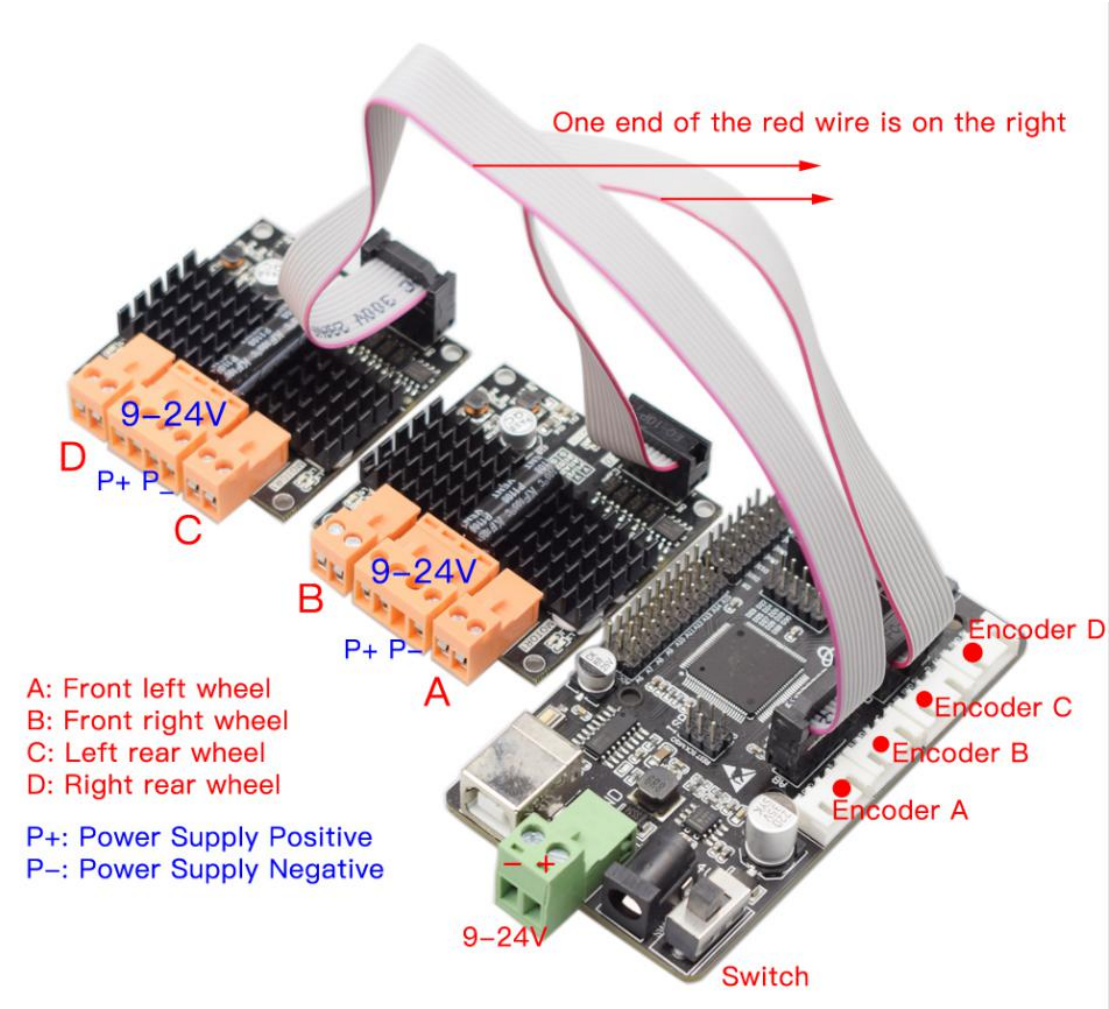
VIN Isolated positive power input, compatible with 3.3V, 5V power supply
PWM Duty cycle modulation input, high-speed isolation, bandwidth 50MHz PWM input frequency 18khz recommended
INAX Channel control logic input A
INBX Channel control logic input B
GND Isolated power ground input

The motor drive wiring is shown in the figure

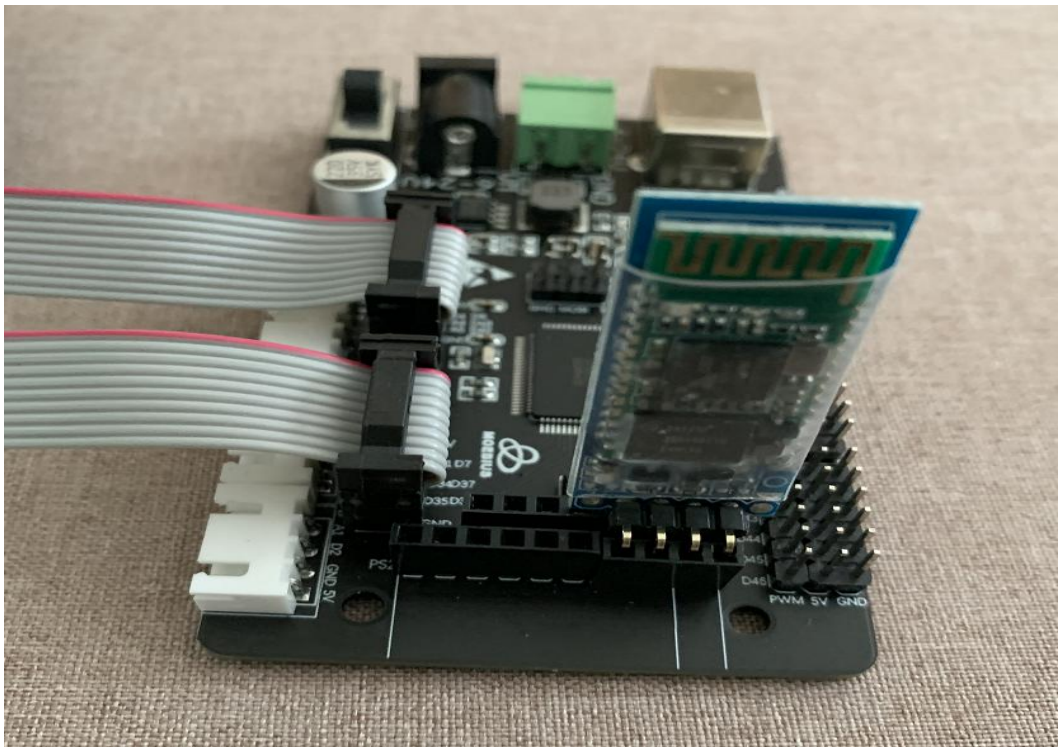




Wiring diagram of MeBigDiv controller and motor drive module(Please use the red red wire as the reference for wiring to ensure correct wiring)

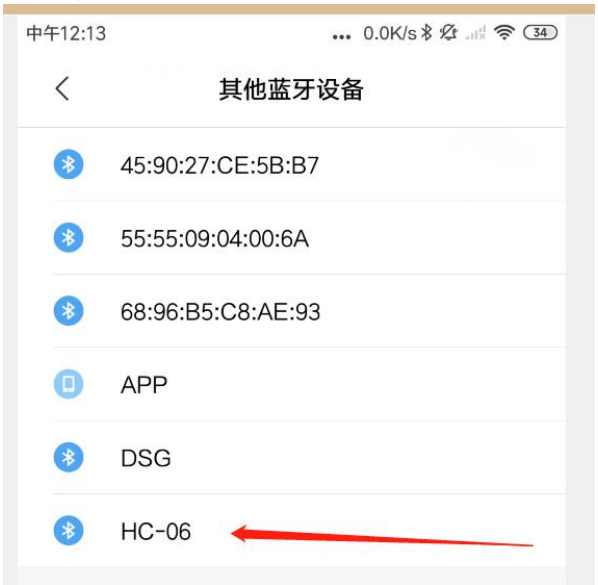


Bluetooth module wiring diagram



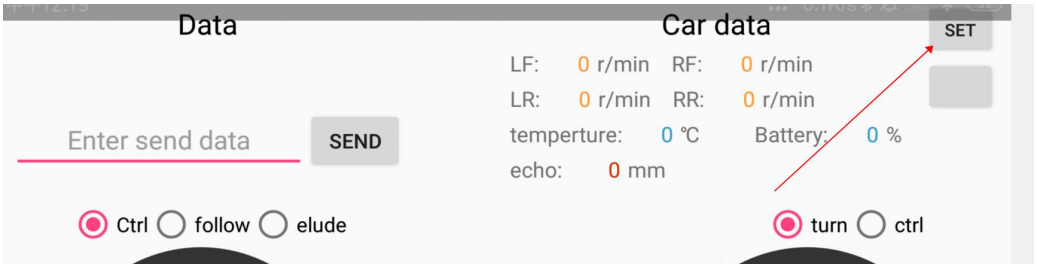
Bluetooth module instructions

Plug in the Bluetooth, use your Android phone to turn on the Bluetooth to find HC-06 for pairing, the password is 1234.

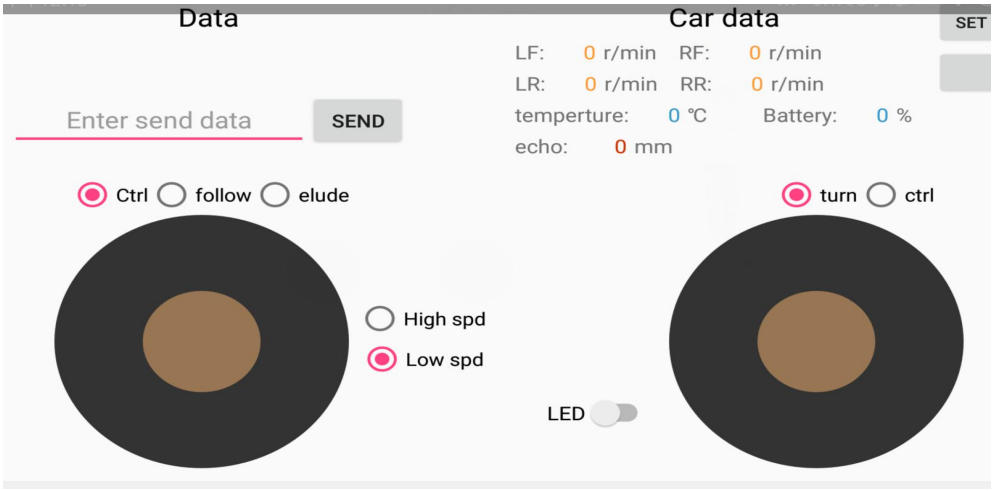


After the pairing is complete, open MOEBIU.app (you need to install MOEBIUS.APK first), find the settings in the upper right corner, click in, and click HC-06 to connect.

After the connection is completed, it will automatically be transferred to the control interface.



Click HC-06 for Bluetooth connection



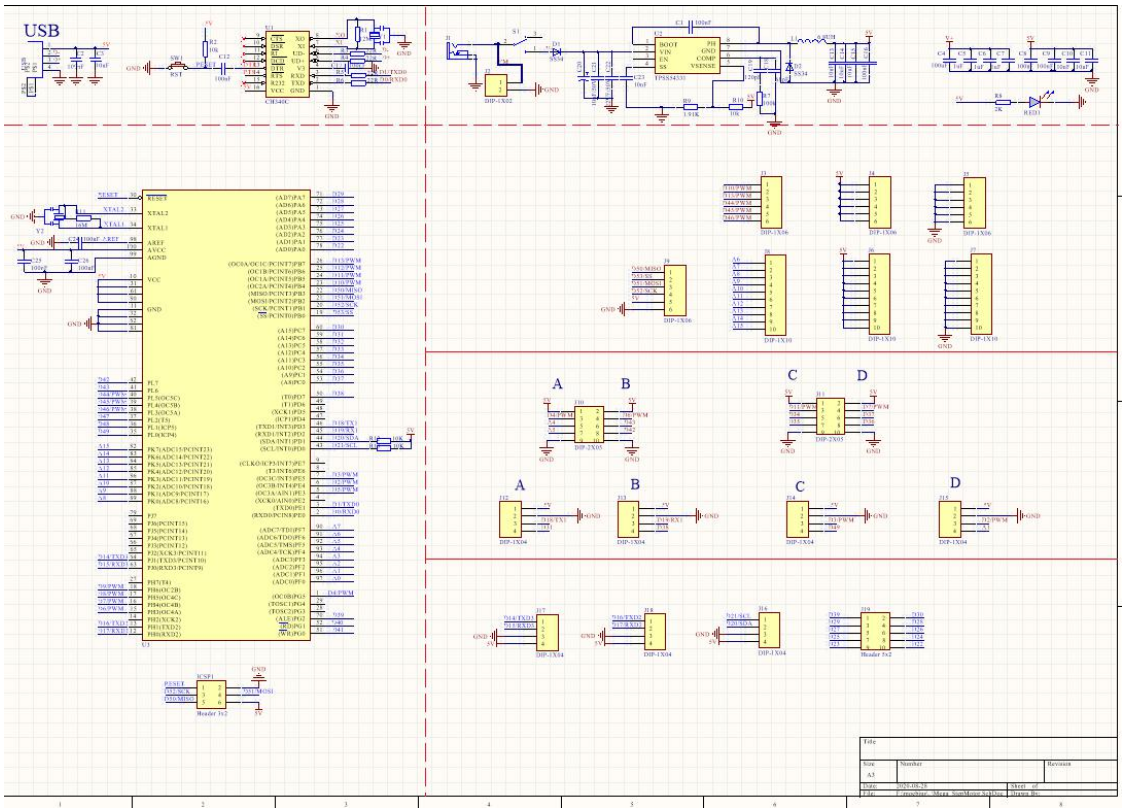
After the connection is completed, it will automatically go to this interface
At the same time, the LED light on the Bluetooth module is always on
Control the motor movement through the sliding button on the left

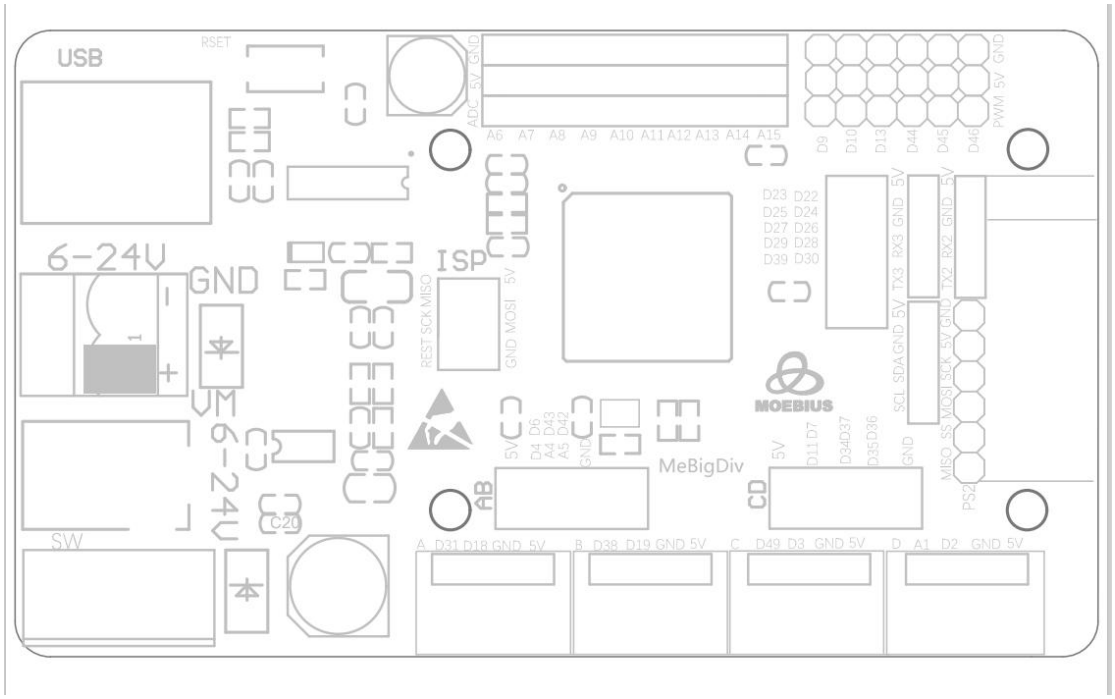
Code name: BlueTooth_2560
The corresponding codes of MCU control chip pins are as follows

```
//主控芯片MEGA2560芯片
//Main control chip MEGA2560 chip download chip CH340 needs to install CH340 driver
//MeBigDiv黑色控制器和DWS300黑色电机驱动蓝牙程序
//MeBigDiv black controller and DWS300 black motor driver Bluetooth program


//电机引脚
//Motor pin
#define PWMA 4     //A电机转速 A Motor speed
#define DIRA1 A4   //26
#define DIRA2 A5    //27  //A电机方向 A Motor direction
#define PWMB 6     //B电机转速   B Motor speed
#define DIRB1 43
#define DIRB2 42    //B电机方向 Motor direction
#define PWMC 11     //C电机转速  C Motor speed
#define DIRC1 34
#define DIRC2 35  //C电机方向  C Motor direction
#define PWMD 7     //D电机转速  D Motor speed
#define DIRD1 37
#define DIRD2 36   //D电机方向 D Motor direction
```

MeBigDiv controller schematic diagram, attached PDF file MeBigDiv—SCH.PDF





https://github.com/MoebiusTech/MeBigDiv