22-1、Motor Driver DRV8833

1. 参考《0-1》文档，插入ESP32模块。
2. 用导线连接IO口与电机控制口，如下图所示：

红色线<------->MOTOR\_A（1号电机正极）

绿色线<------->MOTOR\_B（1号电机负极）

蓝色线<------->MOTOR\_C（2号电机正极）

黑色线<------->MOTOR\_D（2号电机负极）

棕色线<------->MOTOR\_E（3号电机正极）

粉色线<------->MOTOR\_F（3号电机负极）

黄色线<------->MOTOR\_G（4号电机正极）

紫色线<------->MOTOR\_H（4号电机负极）



1. 代码示例

#main.py

from machine import RTC,Pin,Timer

import time

# create output pin

Motor\_A\_Pin = 16

Motor\_B\_Pin = 17

Motor\_C\_Pin = 18

Motor\_D\_Pin = 19

Motor\_E\_Pin = 12

Motor\_F\_Pin = 14

Motor\_G\_Pin = 27

Motor\_H\_Pin = 26

Motor\_A = Pin(Motor\_A\_Pin, Pin.OUT)

Motor\_B = Pin(Motor\_B\_Pin, Pin.OUT)

Motor\_C = Pin(Motor\_C\_Pin, Pin.OUT)

Motor\_D = Pin(Motor\_D\_Pin, Pin.OUT)

Motor\_E = Pin(Motor\_E\_Pin, Pin.OUT)

Motor\_F = Pin(Motor\_F\_Pin, Pin.OUT)

Motor\_G = Pin(Motor\_G\_Pin, Pin.OUT)

Motor\_H = Pin(Motor\_H\_Pin, Pin.OUT)

def do\_motor\_init():

Motor\_A = Pin(Motor\_A\_Pin, Pin.OUT, Pin.PULL\_UP)

Motor\_A = Pin(Motor\_A\_Pin, Pin.OUT, value=1)

Motor\_A = Pin(Motor\_A\_Pin, Pin.OUT, drive=Pin.DRIVE\_3)

Motor\_B = Pin(Motor\_B\_Pin, Pin.OUT, Pin.PULL\_UP)

Motor\_B = Pin(Motor\_B\_Pin, Pin.OUT, value=1)

Motor\_B = Pin(Motor\_B\_Pin, Pin.OUT, drive=Pin.DRIVE\_3)

Motor\_C = Pin(Motor\_C\_Pin, Pin.OUT, Pin.PULL\_UP)

Motor\_C = Pin(Motor\_C\_Pin, Pin.OUT, value=1)

Motor\_C = Pin(Motor\_C\_Pin, Pin.OUT, drive=Pin.DRIVE\_3)

Motor\_D = Pin(Motor\_D\_Pin, Pin.OUT, Pin.PULL\_UP)

Motor\_D = Pin(Motor\_D\_Pin, Pin.OUT, value=1)

Motor\_D = Pin(Motor\_D\_Pin, Pin.OUT, drive=Pin.DRIVE\_3)

Motor\_E = Pin(Motor\_E\_Pin, Pin.OUT, Pin.PULL\_UP)

Motor\_E = Pin(Motor\_E\_Pin, Pin.OUT, value=1)

Motor\_E = Pin(Motor\_E\_Pin, Pin.OUT, drive=Pin.DRIVE\_3)

Motor\_F = Pin(Motor\_F\_Pin, Pin.OUT, Pin.PULL\_UP)

Motor\_F = Pin(Motor\_F\_Pin, Pin.OUT, value=1)

Motor\_F = Pin(Motor\_F\_Pin, Pin.OUT, drive=Pin.DRIVE\_3)

Motor\_G = Pin(Motor\_G\_Pin, Pin.OUT, Pin.PULL\_UP)

Motor\_G = Pin(Motor\_G\_Pin, Pin.OUT, value=1)

Motor\_G = Pin(Motor\_G\_Pin, Pin.OUT, drive=Pin.DRIVE\_3)

Motor\_H = Pin(Motor\_H\_Pin, Pin.OUT, Pin.PULL\_UP)

Motor\_H = Pin(Motor\_H\_Pin, Pin.OUT, value=1)

Motor\_H = Pin(Motor\_H\_Pin, Pin.OUT, drive=Pin.DRIVE\_3)

print("do\_motor\_init")

def do\_rotate\_CCW():

Motor\_A.value(0)

Motor\_B.value(1)

Motor\_C.value(0)

Motor\_D.value(1)

Motor\_E.value(0)

Motor\_F.value(1)

Motor\_G.value(0)

Motor\_H.value(1)

def do\_rotate\_CW():

Motor\_A.value(1)

Motor\_B.value(0)

Motor\_C.value(1)

Motor\_D.value(0)

Motor\_E.value(1)

Motor\_F.value(0)

Motor\_G.value(1)

Motor\_H.value(0)

def do\_brake():

Motor\_A.value(1)

Motor\_B.value(1)

Motor\_C.value(1)

Motor\_D.value(1)

Motor\_E.value(1)

Motor\_F.value(1)

Motor\_G.value(1)

Motor\_H.value(1)

def do\_taxiing():

Motor\_A.value(0)

Motor\_B.value(0)

Motor\_C.value(0)

Motor\_D.value(0)

Motor\_E.value(0)

Motor\_F.value(0)

Motor\_G.value(0)

Motor\_H.value(0)

do\_motor\_init()

while True:

do\_rotate\_CW()

time.sleep\_ms(1000)

do\_taxiing()

time.sleep\_ms(5000)

do\_rotate\_CCW()

time.sleep\_ms(1000)

do\_brake()

time.sleep\_ms(5000)

1. 上传main.py到模块中，按F5或点击运行按钮，就可以看见4个直流电机一会正转一会反转。

下图中红色箭头所指为电机驱动芯片DRV8833，绿色框内接口接直流电机（AB、CD、EF、GH分别接直流电机正负极），红色框内接口为控制信号连接到ESP32模块上。电机的选择需在DRV8833的驱动能力之内。



