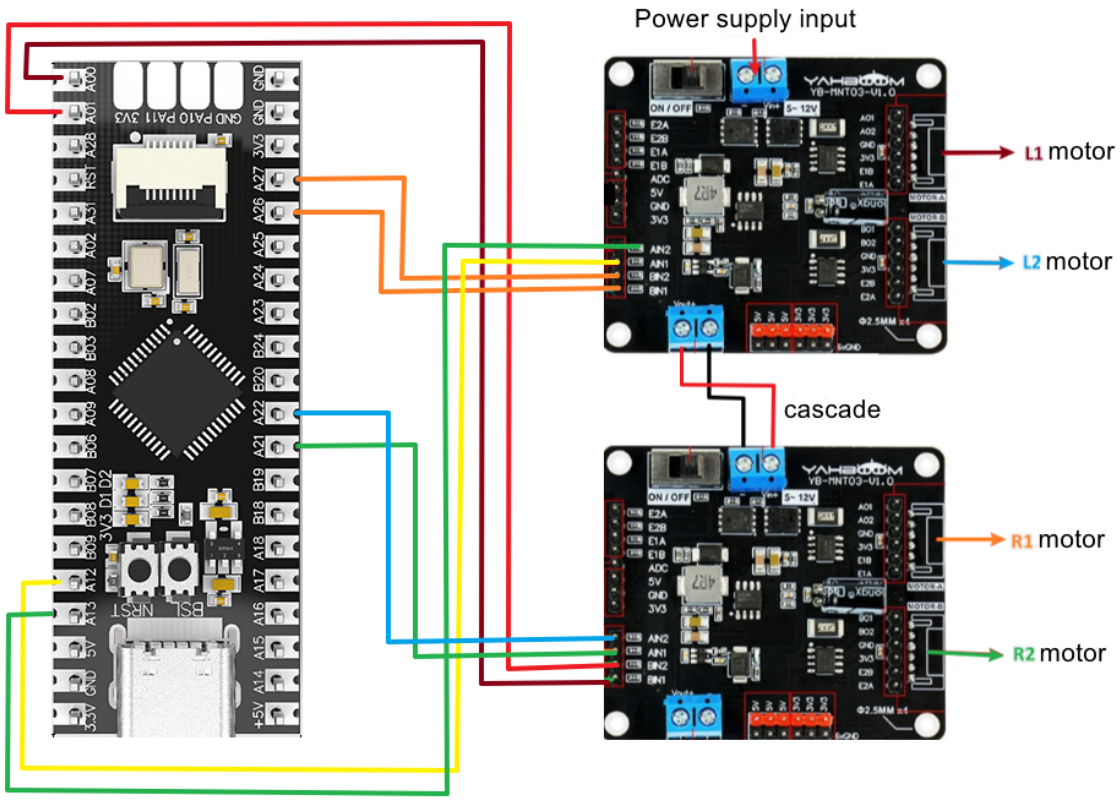
AT8236 drive tutorials

1. Learning objectives

Use AT8236 motor driver module to drive the motor.

2. Hardware connection

Connect the pins of MSPM0G3507 and AT8236



L1 motor:

MSPM0G3507	AT8236
PA12	AIN1
PA13	AIN2

L2 motor:

MSPM0G3507	AT8236
PA26	BIN1
PA27	BIN2

R1 motor:

MSPM0G3507	AT8236
PA21	AIN1
PA22	AIN2

R2 motor：

MSPM0G3507	AT8236
PA0	BIN1
PA1	BIN2

Motor and voltage regulator board pin connection.

AT8236	Motor
AO1	Motor+
AO2	Motor-

AT8236 motor driver module voltage standard version pin description.

Pin details					
Interface type	Pin name	Pin description	Interface type	Pin name	Pin description
MCU/ host interface	E1A	Motor 1 Hall signal A	Motor port	AO1	Motor 1 power supply+
	E1B	Motor 1 Hall signal B		AO2	Motor 1 power supply-
	E2A	Motor 2 Hall signal A		GND	GND
	E2B	Motor 2 Hall signal B		3V3	Motor 1 Hall power supply
	ADC	Collect VM input voltage		E1B	Motor 1 Hall signal B
	5V	Output 5V3A power supply		E1A	Motor 1 Hall signal A
	GND	GND		BO1	Motor 2 power supply+
	3V3	Output 3.3V voltage		BO2	Motor 2 power supply-
	AIN1	Motor 1 drive signal 1		GND	GND
	AIN2	Motor 1 drive signal 2		3V3	Motor 2 Hall power supply
	BIN1	Motor 2 drive signal 1		E2B	Motor 2 Hall signal B
	BIN2	Motor 2 drive signal 2		E2A	Motor 2 Hall signal A

3. Code analysis

- bsp_at8236.h

```
#ifndef __BSP_TB6612_H_
#define __BSP_TB6612_H_

#include "ti_msp_dl_config.h"


void init_motor(void);

void L1_control(uint16_t motor_speed,uint8_t dir);
void L2_control(uint16_t motor_speed,uint8_t dir);
void R1_control(uint16_t motor_speed,uint8_t dir);
void R2_control(uint16_t motor_speed,uint8_t dir);

#endif
```

Define four motor control functions.

- bsp_at8236.c

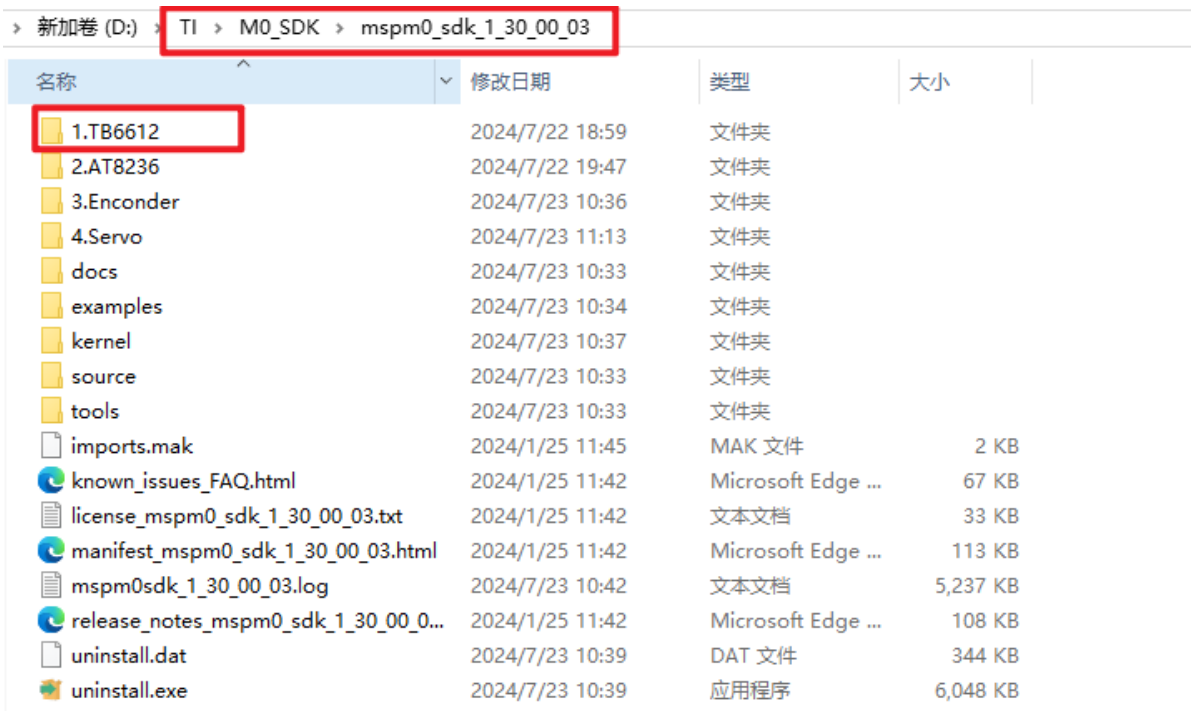
```
void L1_control(uint16_t motor_speed,uint8_t dir)
{
    if(dir)
    {
            DL_TimerA_setCaptureCompareValue(PWM_L1_INST, motor_speed,
DL_TIMER_CC_0_INDEX);
            DL_TimerA_setCaptureCompareValue(PWM_L1_INST, 0,
DL_TIMER_CC_1_INDEX);
    }
    else
    {
            DL_TimerA_setCaptureCompareValue(PWM_L1_INST, 0,
DL_TIMER_CC_0_INDEX);
            DL_TimerA_setCaptureCompareValue(PWM_L1_INST, motor_speed,
DL_TIMER_CC_1_INDEX);
    }

}
```

The L1_control function is used to control the speed and direction of the L1 motor by adjusting the duty cycle of the PWM signal.

motor_speed and dir represent the motor speed and motor direction of the motor respectively.

Note: The project source code must be placed in the SDK path for compilation,

For example, path: D:\TI\M0_SDK\mspm0_sdk_1_30_00_03\TB6612


新加卷 (D:) › TI › M0_SDK › mspm0_sdk_1_30_00_03
名称
修改日期
类型
大小
1.TB6612 2024/7/22 18:59 文件夹
2.AT8236 2024/7/22 19:47 文件夹
3.Enconder 2024/7/23 10:36 文件夹
4.Servo 2024/7/23 11:13 文件夹
docs 2024/7/23 10:33 文件夹
examples 2024/7/23 10:34 文件夹
kernel 2024/7/23 10:37 文件夹
source 2024/7/23 10:33 文件夹
tools 2024/7/23 10:33 文件夹
imports.mak 2024/1/25 11:45 MAK 文件 2 KB
known_issues_FAQ.html 2024/1/25 11:42 Microsoft Edge ... 67 KB
license_mspm0_sdk_1_30_00_03.txt 2024/1/25 11:42 文本文档 33 KB
manifest_mspm0_sdk_1_30_00_03.html 2024/1/25 11:42 Microsoft Edge ... 113 KB
mspm0sdk_1_30_00_03.log 2024/7/23 10:42 文本文档 5,237 KB
release_notes_mspm0_sdk_1_30_00_0... 2024/1/25 11:42 Microsoft Edge ... 108 KB
uninstall.dat 2024/7/23 10:39 DAT 文件 344 KB
uninstall.exe 2024/7/23 10:39 应用程序 6,048 KB