

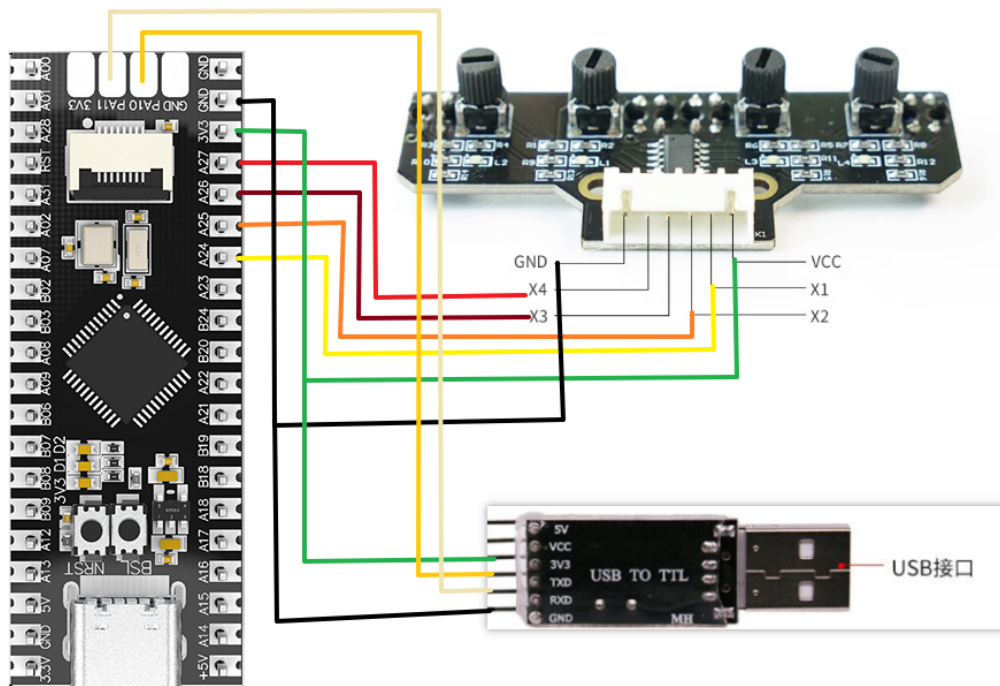
# 4-channel tracking module

## 1. Learning objectives

Read the data of each channel of the four-way patrol sensor.

## 2. Hardware connection

Pin connection between MSPM0G3507 and four-way patrol module



Four-way patrol module	More ActionsMSPM0G3507
VCC	3.3V-5V
X1	PA24
X2	PA25
X3	PA26
X4	PA27
GND	GND

**Note:** You can use the ttl module, or just use the Type-C port of MSPM0G3507 to connect to the computer.

### 3. Program description

- board.c

```
void board_init(void)
{
    // SYSCFG initialization
    SYSCFG_DL_init();
    // Clear serial port interrupt flag
    NVIC_ClearPendingIRQ(UART_0_INST_INT_IRQN);
    // Enable serial port interrupt
    NVIC_EnableIRQ(UART_0_INST_INT_IRQN);

    printf("Board Init [[ ** LCKFB ** ]]\r\n");

}

//Serial port sends string
void uart0_send_string(char* str)
{
    // The current string address is not at the end and the string first address is
    not empty
    while(*str!=0&&str!=0)
    {
        // Send the characters in the string first address, and the first address
        increments after the sending is completed
        uart0_send_char(*str++);
    }
}
```

This file defines the delay function, serial communication (including the functions of sending single characters and strings, redefining the printf function, and a USART interrupt service) and related initialization functions.

- main.c

```
int main(void)
{
    unsigned int LineL1 = 1, LineL2 = 1, LineR1 = 1, LineR2 = 1; //Initial value of
    west patrol line module
    board_init(); //Related initialization
    sprintf(buf, "Four_way patrol line\n"); //Four-way patrol line module
    uart0_send_string(buf); //Serial port sending function
    while (1)
    {
        LineL1 = DL_GPIO_readPins(Linewalk_L1_PORT, Linewalk_L1_PIN_27_PIN) > 0 ? 1 :
        0; //Read left one
        LineL2 = DL_GPIO_readPins(Linewalk_L2_PORT, Linewalk_L2_PIN_26_PIN) > 0 ? 1 :
        0; //Read left two
        LineR1 = DL_GPIO_readPins(Linewalk_R1_PORT, Linewalk_R1_PIN_24_PIN) > 0 ? 1 : 0;
        //Read the right line
        LineR2 = DL_GPIO_readPins(Linewalk_R2_PORT, Linewalk_R2_PIN_25_PIN) > 0 ? 1 : 0;
        //Read the right line
        sprintf(buf, "LineL1 = %d, LineL2 = %d, LineR1 = %d, LineR2 =
        %d\n", LineL1, LineL2, LineR1, LineR2);
        uart0_send_string(buf); //Serial port sending function
    }
```

```
delay_ms(300);  
}  
}
```

Initialize the value of the sensor to 1, call DL\_GPIO\_readPins to read the status of the four tracking sensors, and output these statuses through the serial port. For example, read the status of the left sensor. If the return value is greater than 0, the sensor detects a black line and the variable LineL1 is set to 1; otherwise, it is set to 0.

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

**For example, the path: D:\TI\M0\_SDK\mspm0\_sdk\_1\_30\_00\_03\1.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	