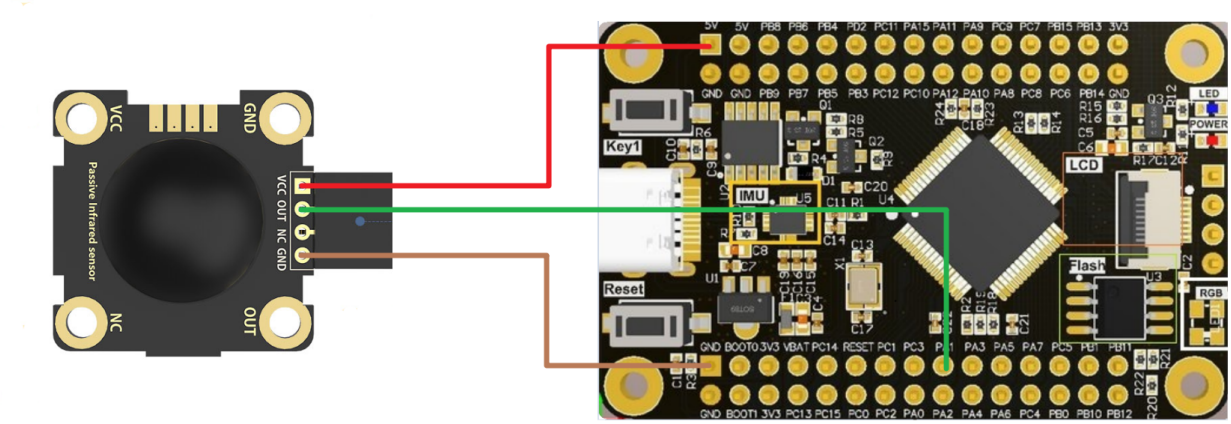
Human infrared sensing module: control LED_GPIO input/output

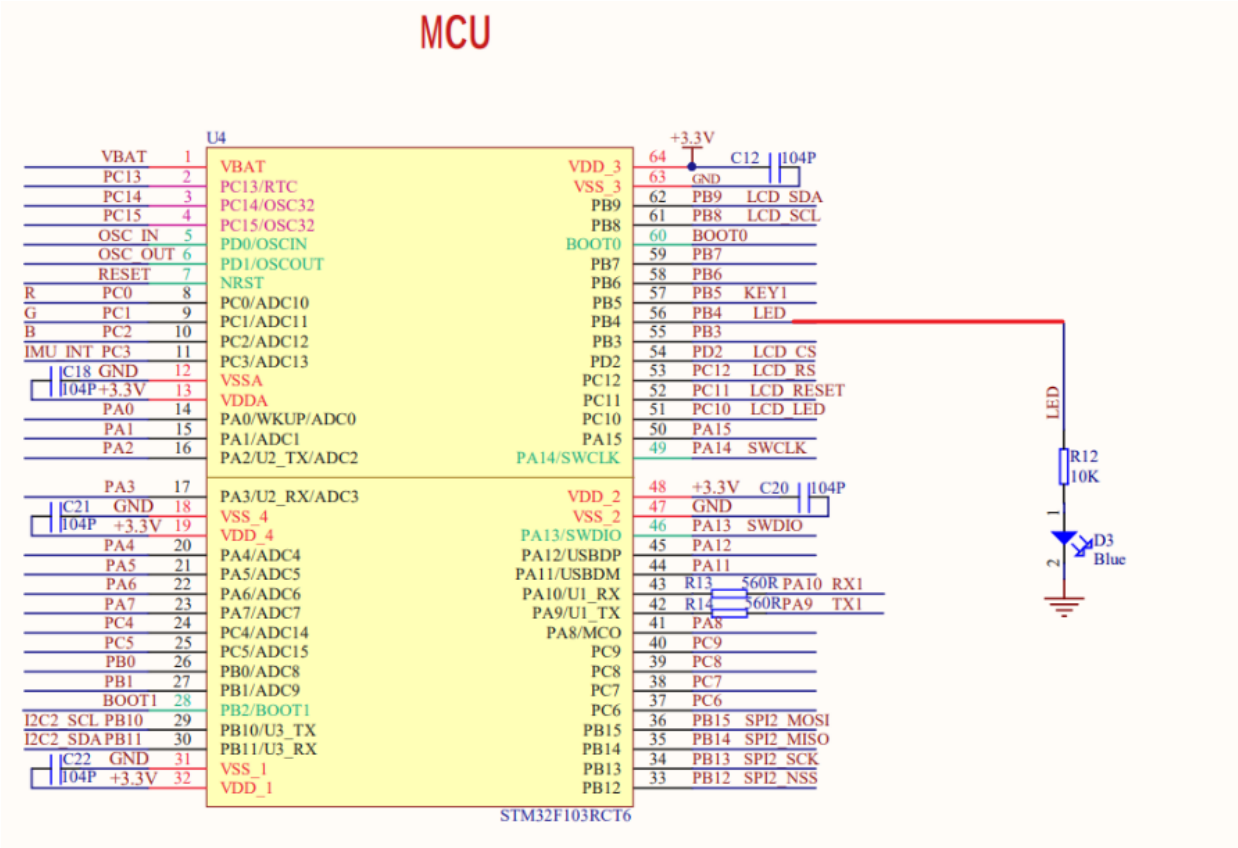
Hardware wiring



Human infrared sensing module	STM32F103RCT6
VCC	5V/3.3V
OUT	PA1
NC	
GND	GND

Brief principle

Circuit schematic



The LED is connected to the PB4 pin, you need to pay attention to the pin configuration of PB4 (see the code for the specific configuration):

PB4 output high level, LED on;

The PB4 output is low and the LED is off.

When the human infrared sensing module detects an obstacle:

OUT outputs a high level and the LED lights up.

When the human infrared sensor module does not detect an obstacle:

OUT outputs a low level and the LED goes off.

Main code

main.c

```
#include "stm32f10x.h"
#include "Human_Body_Infrared_Moudle.h"
#include "LED.h"


int main(void)
{
    LED_Init();//LED初始化(PB4)
        Human_Body_Infrared_Moudle_Init();//人体红外模块初始化(PA1)

    while(1)
```

```
    {
            if(GPIO_ReadInputDataBit(GPIOA, GPIO_Pin_1) == Bit_SET)//判断人体红外模块是
否检测到人
        {

            GPIO_WriteBit(GPIOB, GPIO_Pin_4, Bit_SET);//LED 亮
        }
        else
        {
            GPIO_WriteBit(GPIOB, GPIO_Pin_4, Bit_RESET);//LED 灭
        }
    }
}
```

LED.c

```
#include "LED.h"

void LED_Init(void)//LED初始化(PB4)
{
    GPIO_InitTypeDef GPIO_InitStructure;

    /* Enable GPIOB and AFIO clocks */
    /* 使能GPIOB和功能复用IO时钟 */
    RCC_APB2PeriphClockCmd(RCC_APB2Periph_GPIOB | RCC_APB2Periph_AFIO, ENABLE);

    /* JTAG-DP Disabled and SW-DP Enabled */
    /* 禁用JTAG 启用SWD */
    GPIO_PinRemapConfig(GPIO_Remap_SWJ_JTAGDisable, ENABLE);

    /* Configure PB4 in output pushpull mode */
    /* 配置PB4 推挽输出模式 */
    GPIO_InitStructure.GPIO_Pin = GPIO_Pin_4;
    GPIO_InitStructure.GPIO_Mode = GPIO_Mode_Out_PP;
    GPIO_InitStructure.GPIO_Speed = GPIO_Speed_50MHz;
    GPIO_Init(GPIOB, &GPIO_InitStructure);

    /* Set the GPIOB port pin 4 */
    /* 设置PB4端口数据位 */
    GPIO_WriteBit(GPIOB, GPIO_Pin_4, Bit_RESET);
}
```

LED.h

```
#ifndef __LED_H__
#define __LED_H__

#include "stm32f10x.h"

void LED_Init(void);//LED初始化(PB4)

#endif
```

Human_Body_Infrared_Moudle.c

```
#include "Human_Body_Infrared_Moudle.h"

void Human_Body_Infrared_Moudle_Init(void)//人体红外模块初始化(PA1)
{
    GPIO_InitTypeDef GPIO_InitStructure;

    /* Enable GPIOA */
    /* 使能GPIOA时钟 */
    RCC_APB2PeriphClockCmd(RCC_APB2Periph_GPIOA, ENABLE);

    /* Configure PA1 in Floating input mode */
    /* 配置PA1 浮空输入模式 */
    GPIO_InitStructure.GPIO_Pin = GPIO_Pin_1;
    GPIO_InitStructure.GPIO_Mode = GPIO_Mode_IN_FLOATING;
    GPIO_Init(GPIOA, &GPIO_InitStructure);
}
```

Human_Body_Infrared_Moudle.h

```
#ifndef __HUMAN_BODY_INFRARED_MOUDLE_H__
#define __HUMAN_BODY_INFRARED_MOUDLE_H__

#include "stm32f10x.h"

void Human_Body_Infrared_Moudle_Init(void);//人体红外模块初始化(PA1)

#endif
```

Phenomenon

After downloading the program, press the Reset key once, and the downloaded program will run.

When the human infrared sensing module detects an obstacle: OUT will output a high level and the LED will light up.

When the human infrared sensor module does not detect an obstacle: OUT outputs a low level and the LED goes off.