

# OpenHarmony驱动子系统开发—I2C总线

# ■ 前言

#### 本节主要介绍:

- I2C相关API
- 如何使用I2C相关API
- 如何通过I2C读写NFC芯片



## : 目录

- 1. I2C API介绍
- 2. 查看NFC的I2C对应的GPIO引脚
- 3. I2C读写NFC芯片
- 4. 总结





#### wifiiot\_i2c.h接口简介:

wifiiot\_i2c.h中包含声明I2C接口函数。

接口名	功能描述
I2cInit	初始化I2C
I2cDeinit	取消I2C初始化
I2cWrite	将数据写入到I2C设备
I2cRead	从I2C设备读取数据



## 国 I2C API介绍

#### wifiiot\_i2c\_ex.h接口简介:

wifiiot\_i2c\_ex.h中包含声明扩展I2C接口函数。

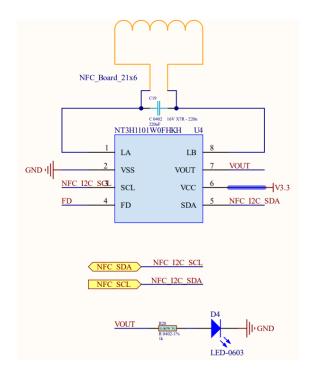
接口名	功能描述
12cWriteread	向I2C设备发送数据并接受数据响应
I2cSetBaudrate	设置I2C频率

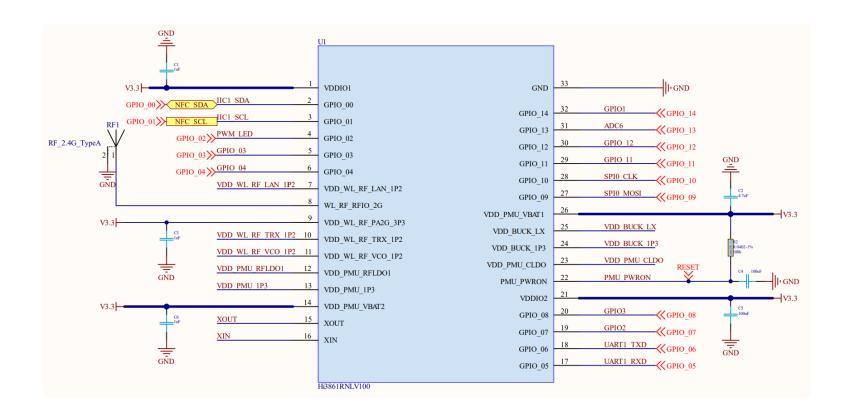




## 查看NFC的I2C对应的GPIO引脚

NFC芯片的I2C对应的GPIO引脚是分别是GPIO0和GPIO1,所以需要编写软件使用GPIO\_0和GPIO\_1产生I2C信号去控制NFC芯片。









### I2C读写NFC芯片

打开 "B5\_basic\_i2c\_nfc" 工程的 i2c\_example.c文件,可在代码中查看实现 NCF读写的代码

```
BEARPI-HM_NANO

✓ applications \ BearPi

∨ BearPi-HM_Nano

  > docs
  sample
   > A1_kernal_thread
   > A2 kernel timer
   > A3 kernel event
   > A4_kernel_mutex
   > A5_kernel_semaphore
   > A6_kernel_message
   > B1_basic_led_blink
   > B2_basic_button
   > B3_basic_pwm_led
   > B4 basic adc

→ B5 basic i2c nfc

    > nfc
    ■ BUILD.gn
    C i2c_example.c

 README.md

    > B6_basic_uart
```

```
uint8 t ret;
GpioInit();
//GPIO 0复用为I2C1 SDA
IoSetFunc(WIFI_IOT_IO_NAME_GPIO_0, WIFI_IOT_IO_FUNC_GPIO_0_I2C1_SDA);
//GPIO 1复用为I2C1 SCL
IoSetFunc(WIFI IOT IO NAME GPIO 1, WIFI IOT IO FUNC GPIO 1 I2C1 SCL);
//baudrate: 400kbps
I2cInit(WIFI IOT I2C IDX 1, 400000);
I2cSetBaudrate(WIFI_IOT_I2C_IDX_1, 400000);
printf("I2C Test Start\n");
ret = storeText(NDEFFirstPos, (uint8 t *)TEXT);
if (ret != 1)
   printf("NFC Write Data Falied :%d ", ret);
ret = storeUrihttp(NDEFLastPos, (uint8 t *)WEB);
if (ret != 1)
   printf("NFC Write Data Falied :%d ", ret);
while (1)
   printf("======\r\n");
   printf("*******************\r\n");
   printf("=======\r\n");
   printf("Please use the mobile phone with NFC function close to the development board!\r\n");
   usleep(1000000);
```



## □ 本节小结

- 1、了解I2C相关API
- 2、掌握如何操作I2C总线读写NFC芯片

# 谢谢观看

开源从小熊派开始 OPEN-SOURCE STARTED WITH THE BEARPI