# Slide Potentiometer (000x0000 Article Number) (TS2173)

DESIGN THE WORLD

**Product Details**

The TelePort slide potentiometer is a 10kΩ linearly variable resistor. When you push the slider from one side to the another side, the output voltage from the potentiometer is in the range of 0V and VCC. Additionally, it has two signal terminals which can output two same analog values.


**Features and Benefits**

- Compatible with RJ11 6P6C OKdo TelePort Control boards and expansion shields.
- This dual sliding potentiometer outputs between GND and VCC either through the TelePort or solder two headers to the board for direct connection.
- The resistors are 5KΩ.

**Technical Specifications**

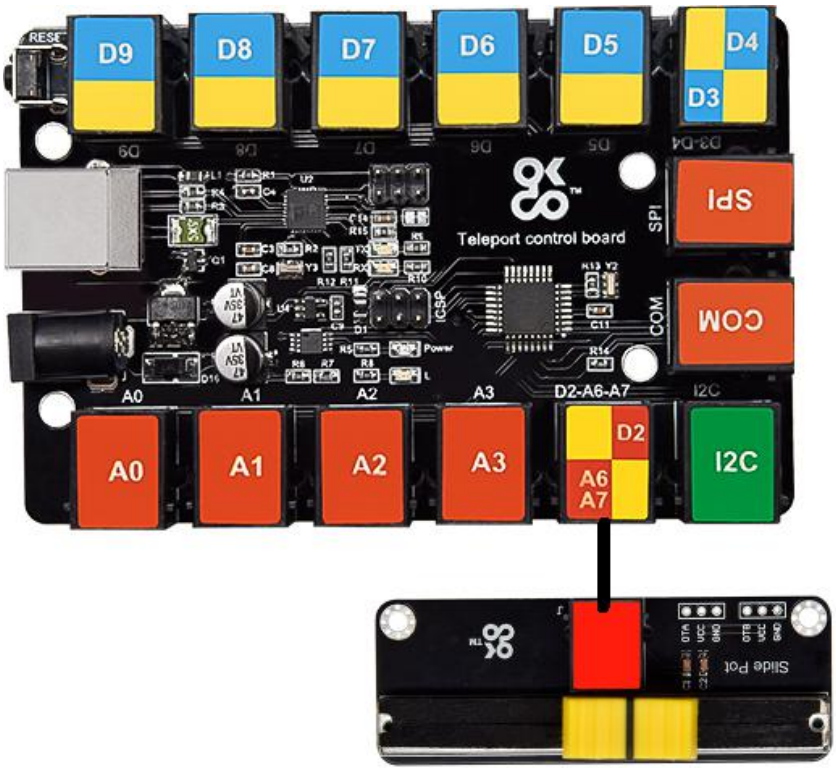
| | |
|---|---|
| Sensor type | Analog input |
| Working Voltage | 3.3V-5V |
| Resistance | 5K |
| Dimensions | 28mm*76.7mm*31.3mm |
| Weight | 17g |

**Applications**

- Voltage divider
- Angles of servos adjustment
- Brightness adjustment
- Volume adjustment

This module is compatible with the TS2180-Raspberry Pi shield, the TS2179-Micro:bit shield and the TS2178-TelePort main board.

## ➢ Arduino Application




This module is compatible with the TS2178 TelePort control board.

**Test Code**

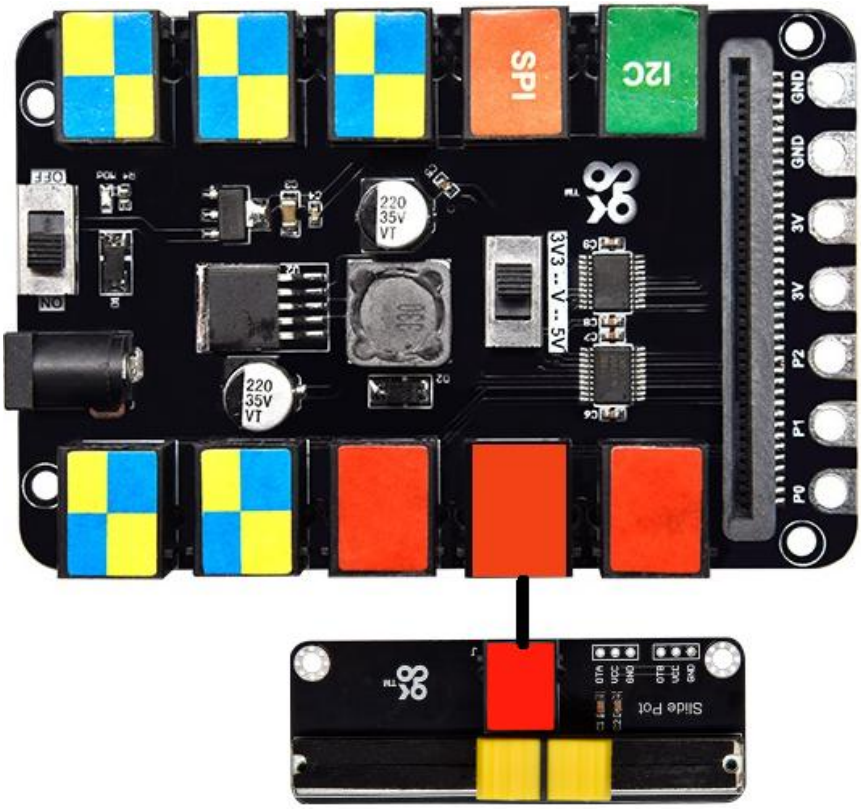
```
void setup() {
  // initialize serial communication at 9600 bits per second:
  Serial.begin(9600);
}
// the loop routine runs over and over again forever:
void loop() {
int sensorValue1 = analogRead(A6);
int sensorValue2 = analogRead(A7);
  // print out the value you read:
Serial.print(sensorValue1);
Serial.print("");
Serial.println(sensorValue2);
delay(100);        // delay in between reads for stability
}
```

**Test Result**

Wire up, upload code, power it up, open serial monitor and set baud rate to 9600. Then you will see the analog value of A6 and A7, as shown below. Slide the slider, the value varies in the range of 0-1023. As shown below;

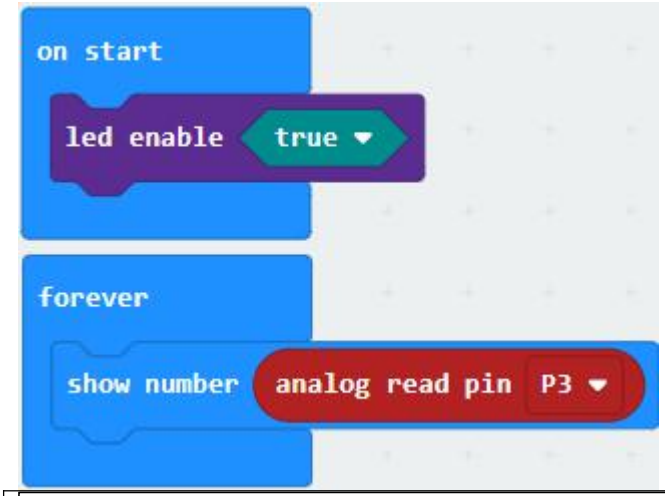

If you want to know more details about Arduino and the TelePort control board, you can refer to TS2178.

- **Micro:bit Application**




It is compatible with the Micro:bit board and the TS2179 Micro:bit expansion board.

**Test Code**



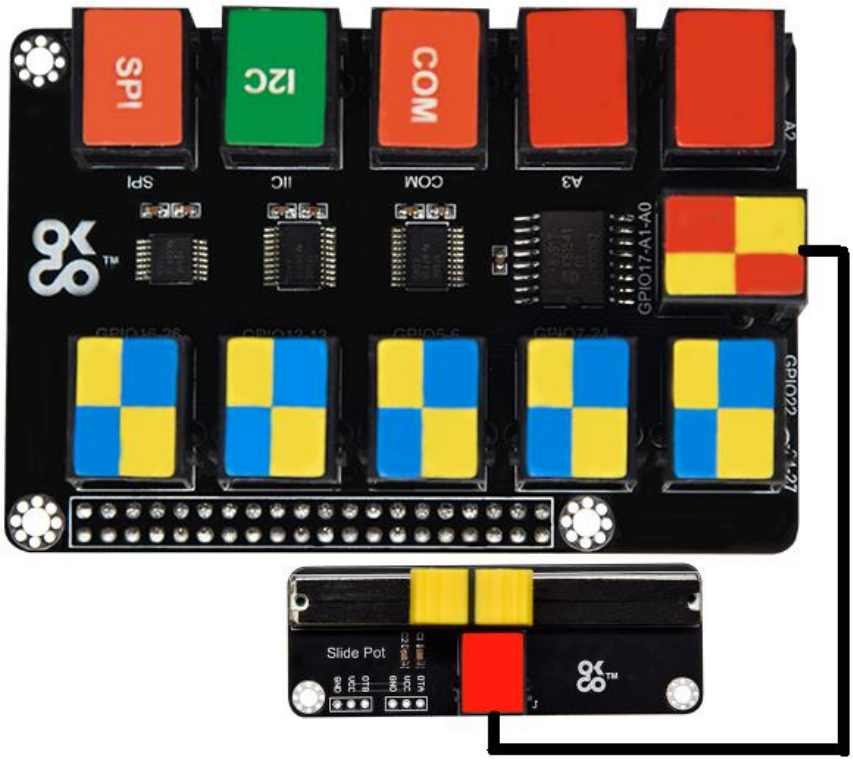

.....①Run the "on start" block to boot the program
.....②Open the LED matrix of the Micro:bit
.....③The program is run circularly under the command of "forever" block
.....④the Micro:bit will display the analog value read by slider potentiometer.

**Test Result**

Wire up, insert the Micro:bit V2.0 into the shield, turn DIP switch to 3V3, upload test code and power it up. Slide the slider, the Micro:bit will display the analog value read by slider potentiometer.

If you want to know more details about the Micro:bit board and Micro:bit shield, you can refer to TS2179.

## ➢ Raspberry Pi Application




It is compatible with the Raspberry Pi board and the TS2180 Raspberry Pi shield.

**PCF8591 A/D Conversion：**

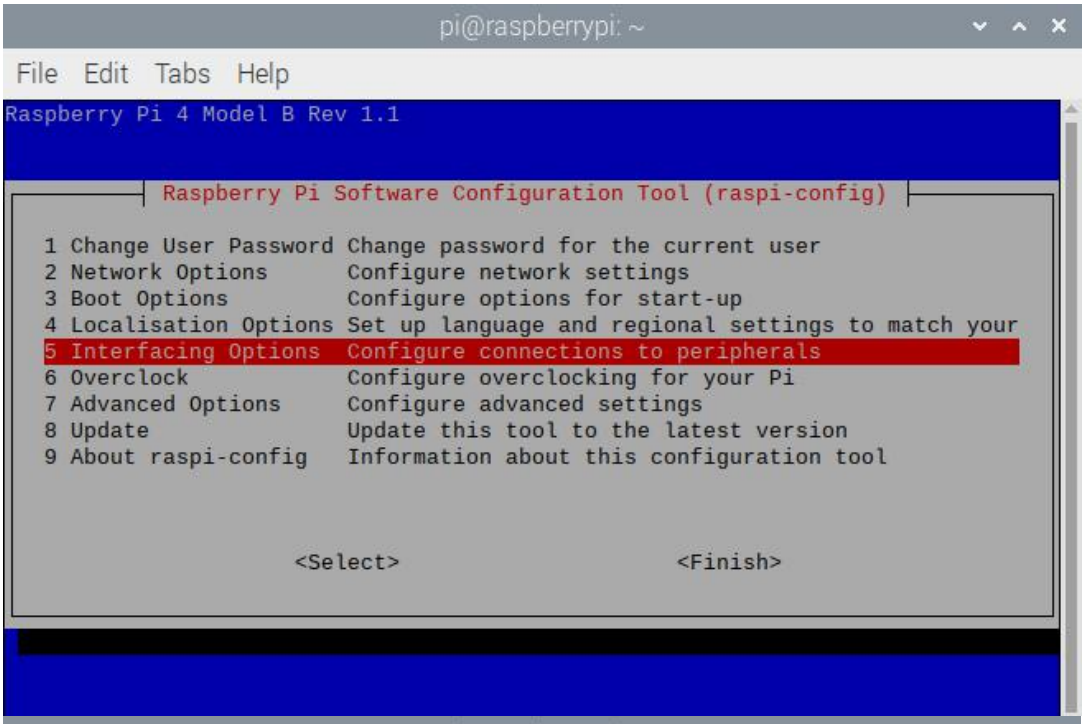
The Raspberry Pi itself does not have AD/DA function; therefore an expansion board with this function is required when connected to external analog sensors. And here we use a PCF8591 A/D converter with I2C communication.

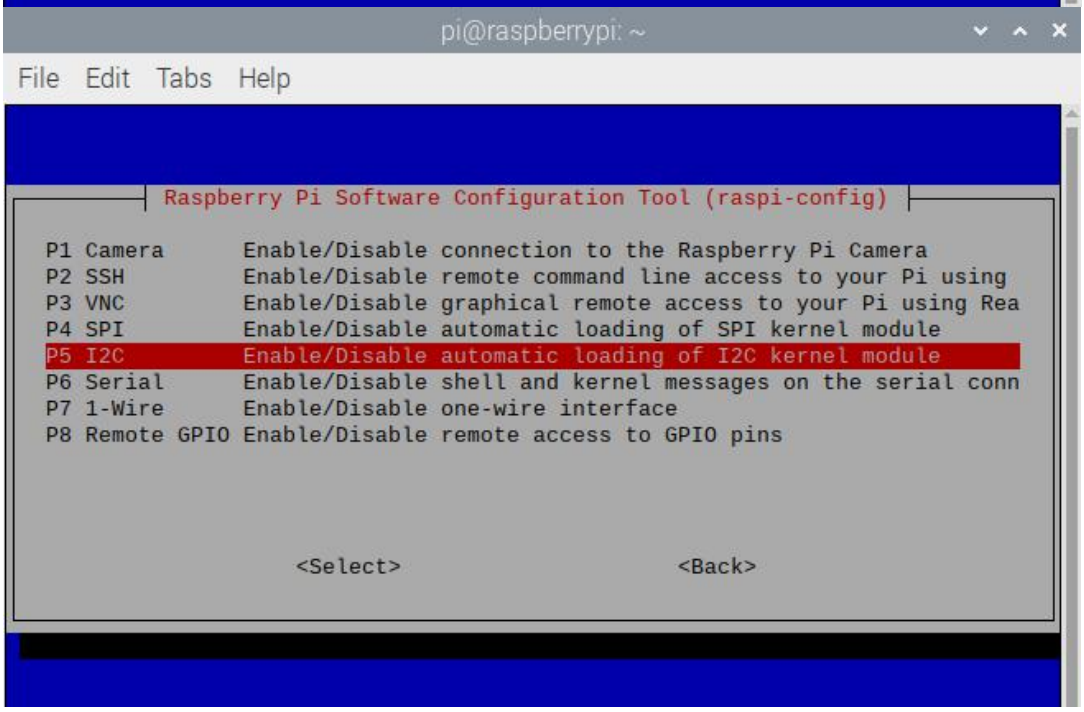
Enable the I2C communication function of the Raspberry Pi as follows:

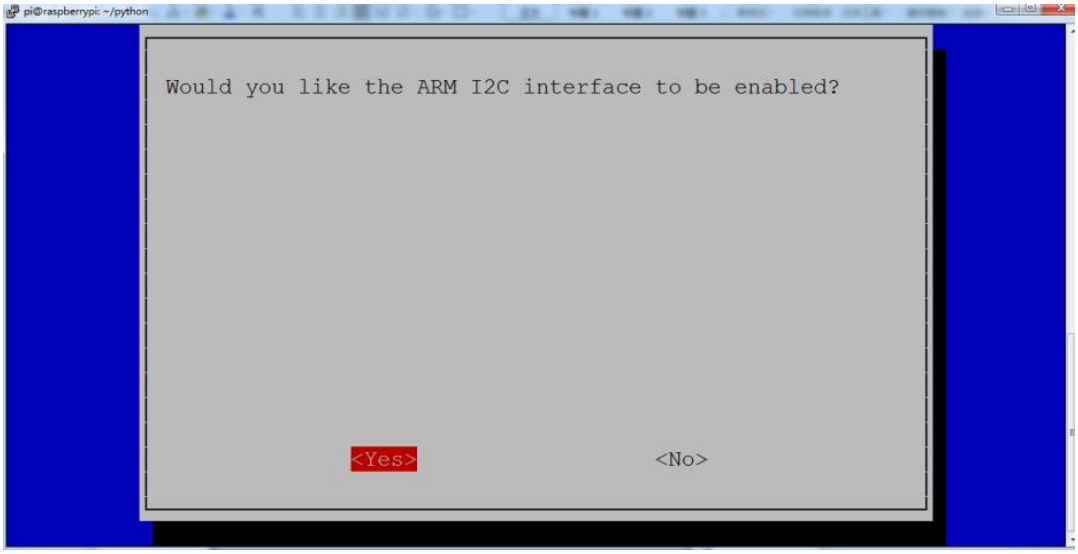
a. Raspberry Pi does not enable the I2C function by default. Enter sudo raspi-config in the terminal to enter the Raspberry Pi configuration interface.

```
pi@raspberrypi:~/python $ sudo raspi-config
```

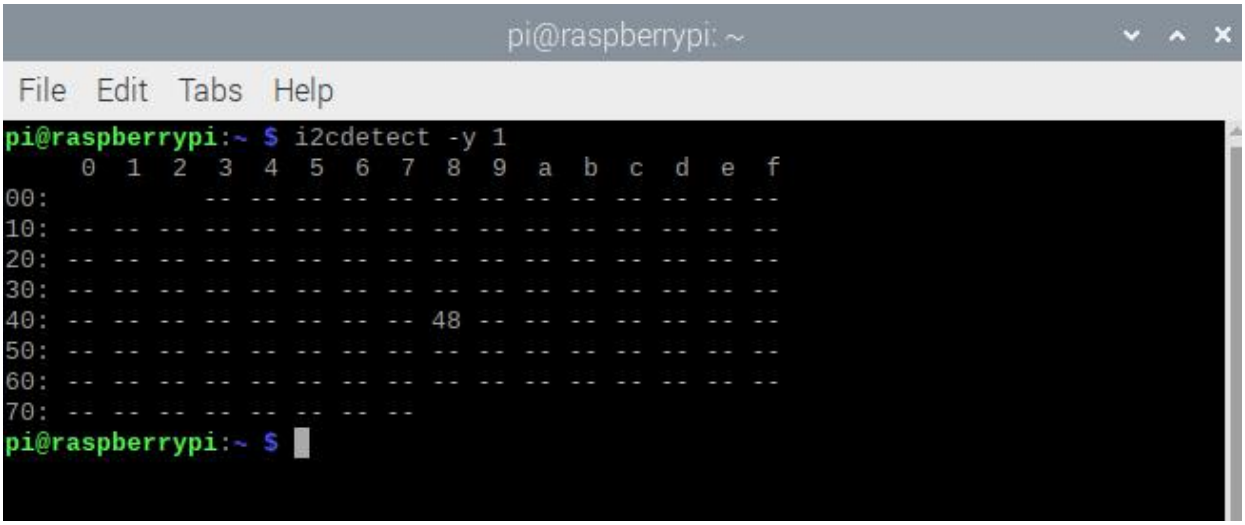
Follow the below instructions to enable the I2C function of Raspberry Pi:(press ←,↑,↓,→ then“Enter”)



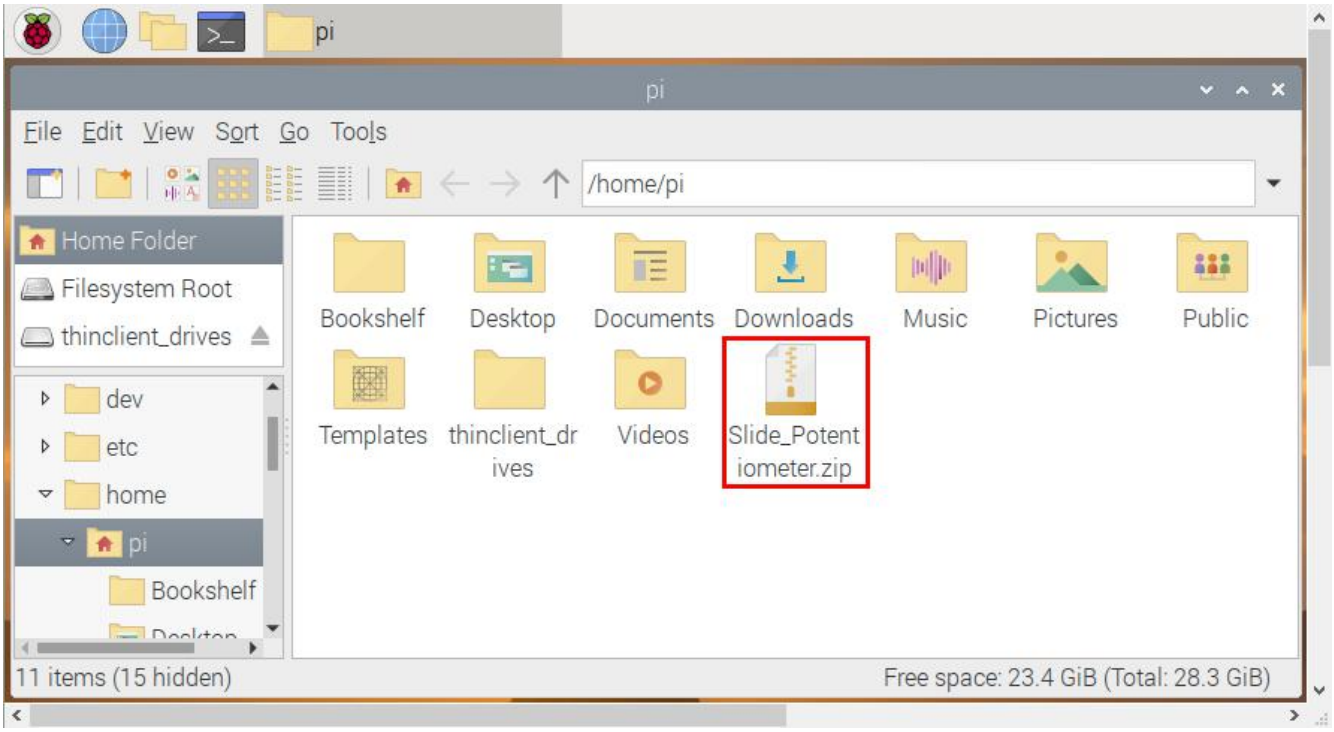


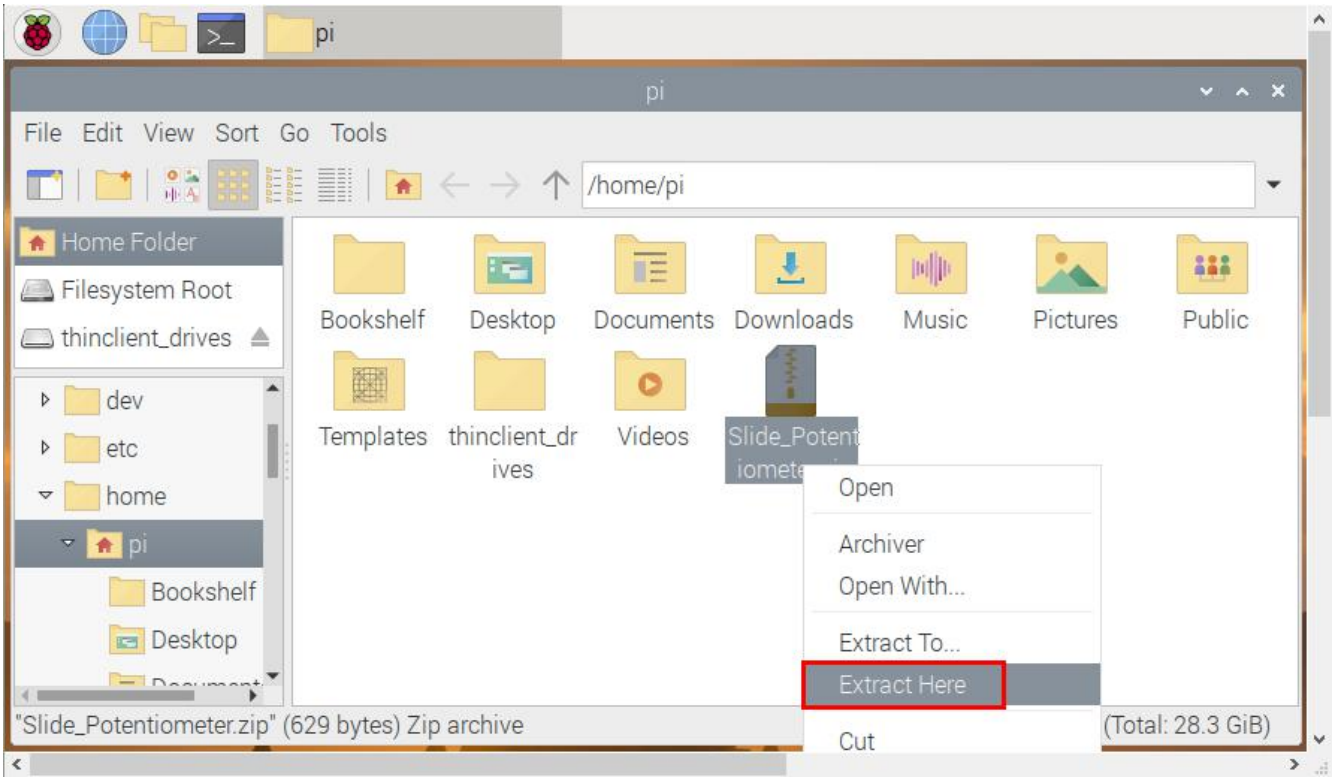

Check the address of the I2C module (PCF8591) connected to the Raspberry Pi, enter the command i2cdetect -y 1, and then press **Enter**.
From the below picture, it is known that the I2C address of PCF8591 is 0x48 .




**Copy the test code to Raspberry Pi system to run it**

(1) Save the test code in the **pi** folder of Raspberry Pi system. Then place the Slide_Potentiometer.zip file we provide in the **pi** folder, right-click and click **Extract Here. As shown below:**


pi
pi
File Edit View Sort Go Tools
/home/pi
Home Folder
Filesystem Root
thinclient_drives
dev
etc
home
pi
Bookshelf
Bookshelf
Desktop
Documents
Downloads
Music
Pictures
Public
Templates
thinclient_drives
Videos
Slide_Potentiometer.zip
11 items (15 hidden)
Free space: 23.4 GiB (Total: 28.3 GiB)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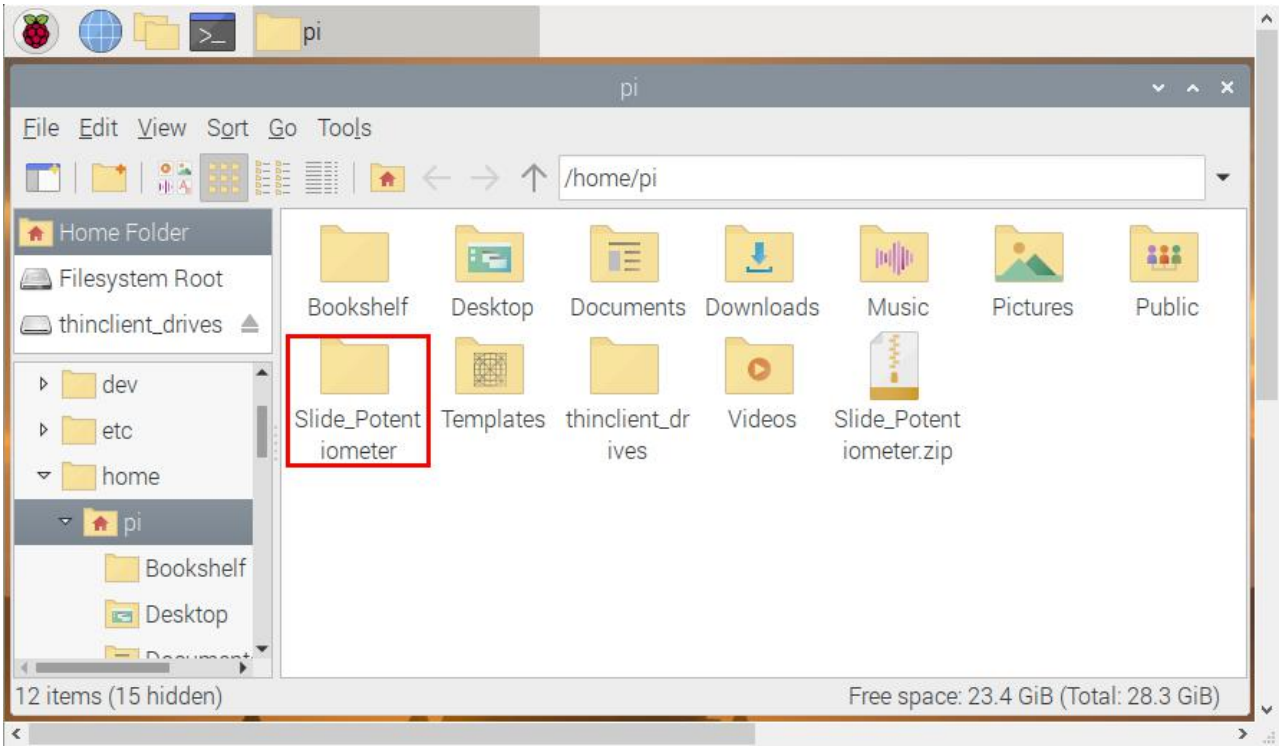
Pictures
Public
Templates
thinclient_drives
Videos
Slide_Potentiometer.zip
Open
Archiver
Open With...
Extract To...
Extract Here
Cut
"Slide_Potentiometer.zip" (629 bytes) Zip archive
(Total: 28.3 GiB)




(2) Compile and run test code:

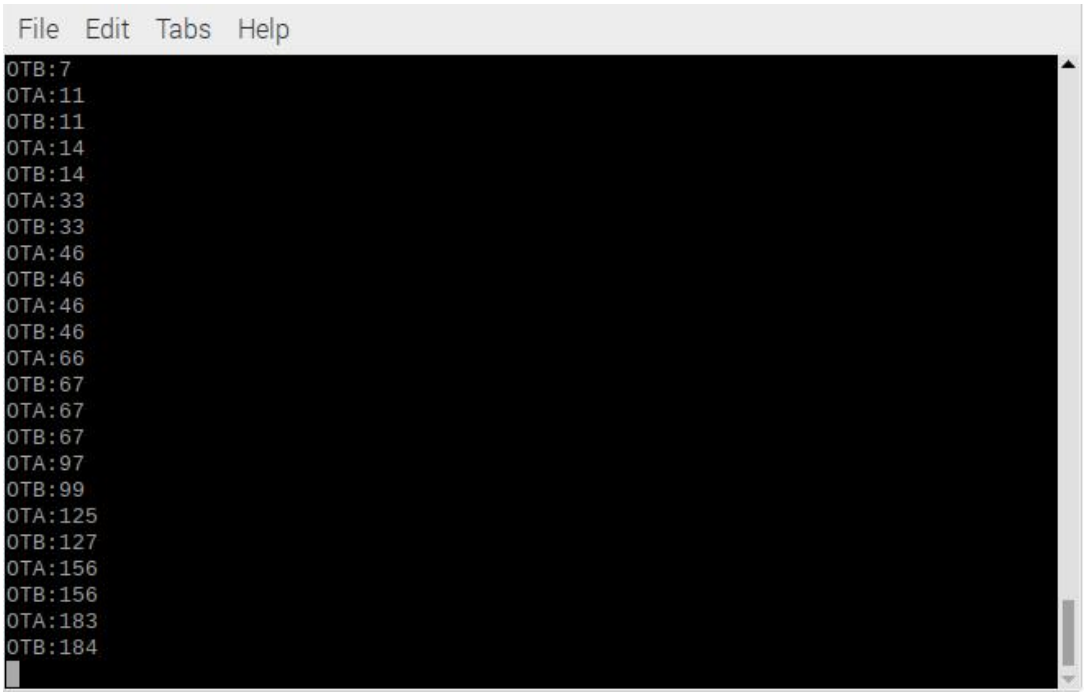
Input the following code and press"Enter"

```
cd /home/pi/Slide_Potentiometer
gcc Slide_Potentiometer.c -o Slide_Potentiometer -lwiringPi
sudo ./Slide_Potentiometer
```

(3) Test Result:

Insert the shield into the Raspberry Pi board. After programming finishes, slide the slider, then the terminal will display data.

Note: press Ctrl + C to exit code running



**Test Code**

File name: Slide_Potentiometer.c

```
#include <wiringPi.h>
#include <pcf8591.h>
#include <stdio.h>

#define Address 0x48
#define BASE 64
#define A0 BASE+0
#define A1 BASE+1
#define A2 BASE+2
#define A3 BASE+3


int main(void)
{
    unsigned char value;
    wiringPiSetup();
    pcf8591Setup(BASE,Address);

    while(1)
    {
      value=analogRead(A1);  //Read the value of the OTA pin
      printf("OTA:%d\n",value);  //print data
      value=analogRead(A0);  //Read the value of the OTB pin
      printf("OTB:%d\n",value);  //print data
      delay(300);
    }
}
```

If you want to know how to utilize Raspberry Pi and the Raspberry Pi shield, you can refer to TS2180.

***END***