

Reference Scheme for Multiple TFmini-I²C Used in Arduino

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1 Introduction

In this scheme, four TFmini-I²C radars are used to receive data through a set of I²C buses on the Arduino UNO development board.

I²C communication adopts master-slave mode, Arduino development board as master, TFmini-I²C as slave. Each TFmini is configured as a separate address, and the host queries the data corresponding to the TFmini address and waits for the data to be returned.

2 Tools

- (1) Four TFmini-I²C radars



- (2) Arduino UNO



- (3) 5VDC/2A source

- (4) DuPont Line

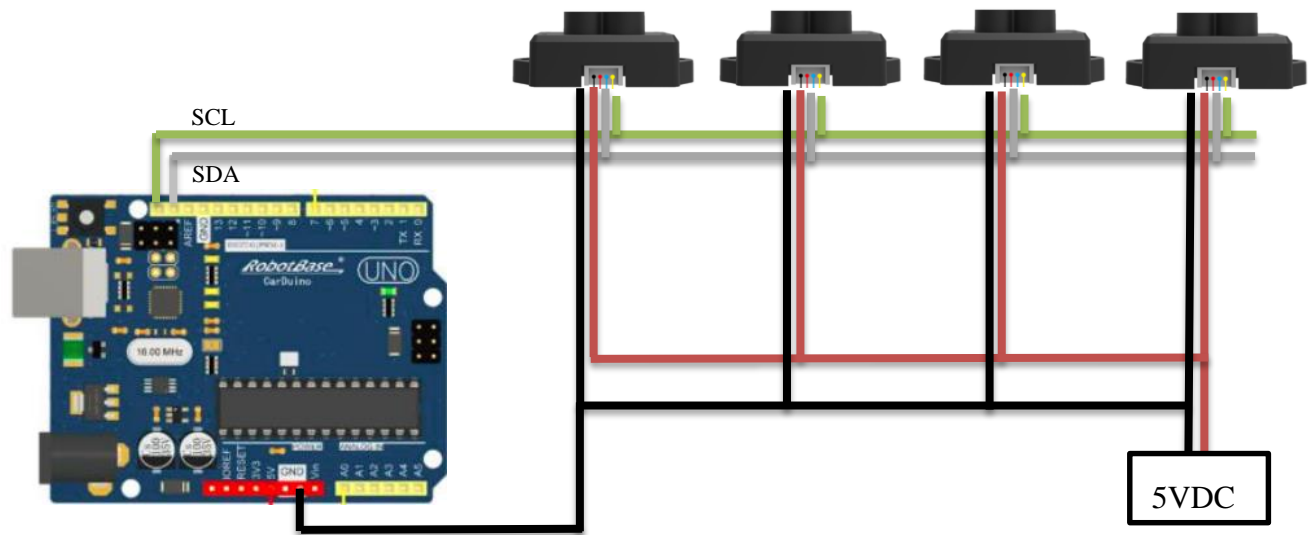
3 Connection Testing

3.1 Setting TFmin-I2C address

Setting method can refer to "Product Manual". In this scheme, the slave addresses of four TFminis are set to 0x10, 0x11, 0x12 and 0x13 respectively.

3.2 Connection

Note: Because the output current of computer USB interface is limited, it needs external 5V power supply to connect multiple TFminis at the same time. At the same time, radar and Arduino development board need to be common-ground.



3.3 Code

/*This is a reference code about Arduino UNO receive TFmini-I²C Data from I²C bus

* Arduino is Master, TFmini-I²C is slave. Master send check

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*/

```
#include <Wire.h>
```

```
void setup() {
```

```
    Wire.begin();          // join i2c bus (address optional for master)
```

```
    Serial.begin(115200);  // start serial for output
```

```
    pinMode(LED_BUILTIN, OUTPUT); //LED
```

```
}
```

```
void loop() {
```

```
    Get_LidarDatafromIIC(0x10);
```

```

    Get_LidarDatafromIIC(0x11);

    Get_LidarDatafromIIC(0x12);

    Get_LidarDatafromIIC(0x13);

    delay(250);

    digitalWrite(LED_BUILTIN, HIGH);    // turn the LED on (HIGH is the voltage level)

    delay(250);

    digitalWrite(LED_BUILTIN, LOW);     // turn the LED off by making the voltage LOW
}

void Get_LidarDatafromIIC(byte address){

    char i = 0;

    byte rx_buf[7] = {0};

    Wire.beginTransmission(address); // Begin a transmission to the I2C Slave device with the given address.

    Wire.write(1); // Reg's Address_H

    Wire.write(2); // Reg's Address_L

    Wire.write(7); // Data Length

    Wire.endTransmission(0); // Send a START Sign

    Wire.requestFrom(address, 7); // request 7 bytes from slave device address

    //print the result via serial

    Serial.print("Address=0x");

    Serial.print(address,HEX);

    Serial.print(":   ");

    while ( Wire.available())

    {

        rx_buf[i] = Wire.read(); // received one byte

        Serial.print("0x");

```

```

Serial.print(rx_buf[i],HEX);

Serial.print(";");

i++;

if(i>=7)

{

    i=0;

    Serial.print("----->");

    Serial.print("Distance=");

    Serial.print(rx_buf[3]*256+rx_buf[2]);

    Serial.print(";");

    Serial.print("Strength=");

    Serial.print(rx_buf[5]*256+rx_buf[4]);

}

}

Serial.print("\r\n");

}

```

4 Results

Arduino queries radar data through I²C bus and prints the data through serial port.

