

# jetson configure camera

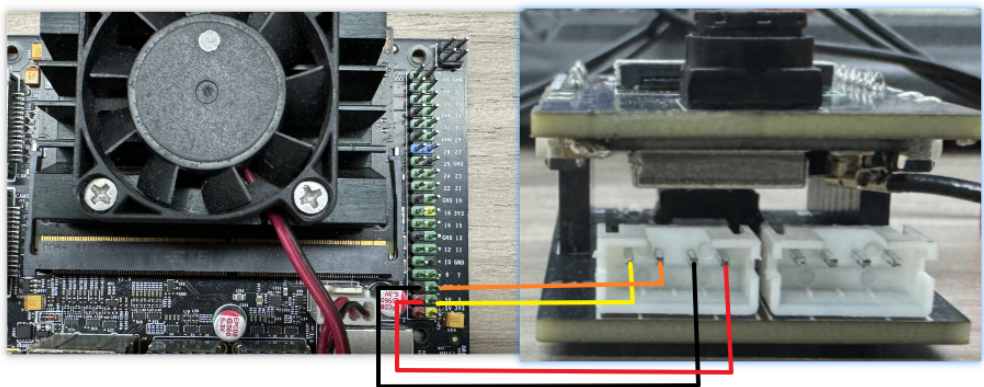
**Note:** The ESP32 camera needs to record the factory firmware. The ESP32 camera does not need to swipe the firmware after it is in hand. Data reading

## 1. Experimental preparation

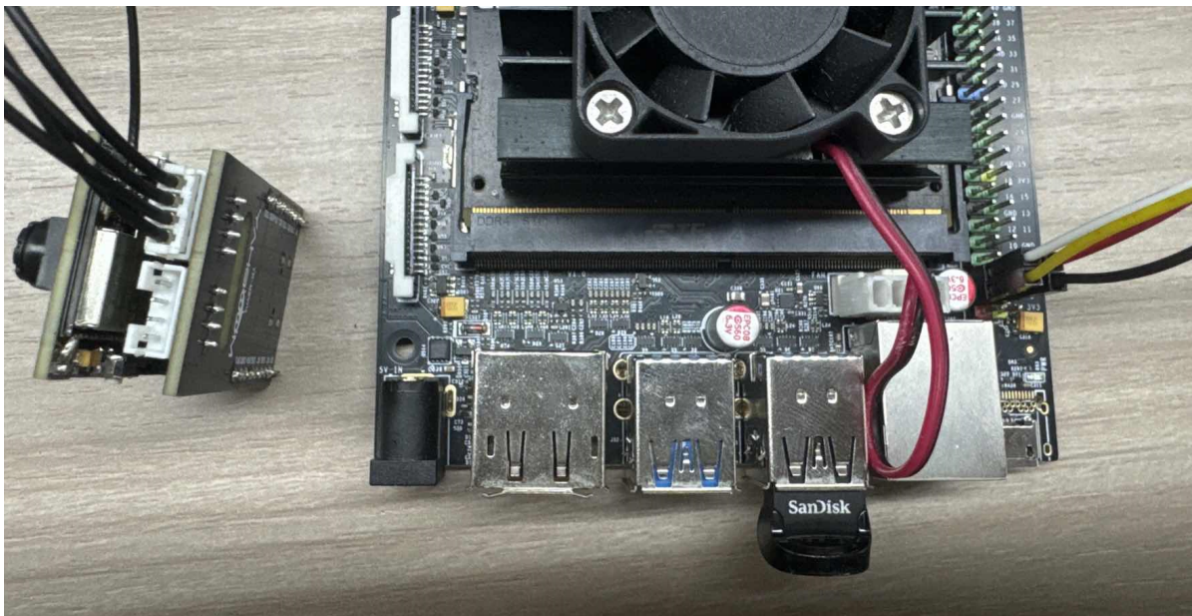
- Jetson master control one piece
- The ESP32 camera

## 2. Wiring diagram

jetson	ESP32 camera
Board3	SDA
Board5	SCL
GND	GND
5V	5V



The physical connection chart:



Jetson pin drawing:

BCM	Name	BOARD	BOARD	Name	BCM
3V3	3.3VDC (Power)	1	2	5.0VDC (Power)	5V
2	I2C_2_SDA (I2C Bus 1)	3	4	5.0VDC (Power)	5V
3	I2C_2_SCL (I2C Bus 1)	5	6	GND	GND
4	AUDIO_MCLK	7	8	UART_2_TX (dev/ttyTHS1)	14
GND	GND	9	10	UART_2_RX (dev/ttyTHS1)	15
17	UART_2_RTS	11	12	I2S_4_SCLK	18
27	SPI_2_SCK	13	14	GND	GND
22	LCD_TE	15	16	SPI_2_CS1	23
3V3	3.3VDC (Power)	17	18	SPI_2_CSO	24
10	SPI_1_MOSI	19	9	GND	GND
9	SPI_1_MISO	21	20	SPI_2_MISO	25
11	SPI_1_SCK	23	24	SPI_1_CS0	8
GND	GND	25	26	SPI_1_CS1	7
0	I2C_1_SDA (I2C Bus 0)	27	28	I2C_1_SCL (I2C Bus 0)	1
5	CAM_AF_EN	29	30	GND	GND
6	CPIO_PZ0	31	32	LCD_BL_PWM	12
13	CPIO_PE6	33	34	GND	GND
19	I2S_4_LRCK	35	36	UART_2_CTS	16
26	SPI_2_MOSI	37	38	I2S_4_SDIN	20
GND	GND	39	40	I2S_4_SDOU	21

### 3. Experimental steps and experimental effects

1. Open a new Jetson terminal and send the source code of this experiment to Jetson
2. Open the code just passed, and you need to change the position of the arrow in the picture to modify it to the corresponding AI mode.

```

Normal = 0x00
Cat_Dog_Model = 0x01 #猫狗检测 Cat and Dog Detection
Face_Detection = 0x02 #人脸检测 Face Detection
Color_identify = 0x03 #颜色检测 Color Detection
Face_identify = 0x04 #人脸识别 Face Recognition

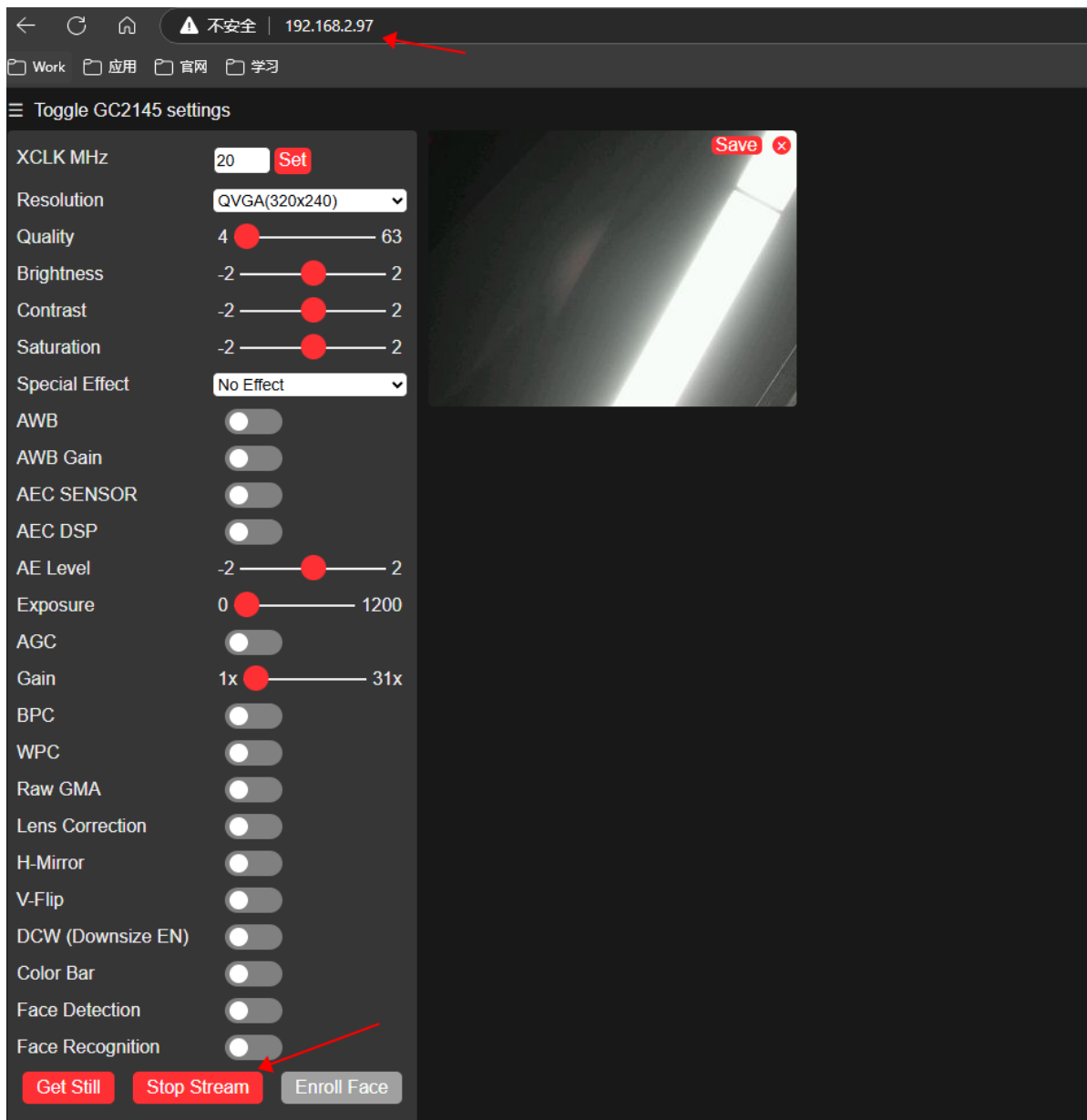
ai_mode = Cat_Dog_Model #修改这里的变量来切换模式 Modify the variables here to switch modes

```

3. Execute the following instructions, the default data will return, because it does not open the camera recognition

```
python3 I2C_TEST.py
```





4. Because we set it as a cat and dog mode, we put cats and dogs in front of the camera to select cats or dogs,

← ↻ 🏠 ⚠️ 不安全 | 192.168.2.97

📁 Work 📁 应用 📁 官网 📁 学习

☰ Toggle GC2145 settings

XCLK MHz  Set

Resolution

Quality  4 63

Brightness  -2 2

Contrast  -2 2

Saturation  -2 2

Special Effect

AWB ☐

AWB Gain ☐

AEC SENSOR ☐

AEC DSP ☐

AE Level  -2 2

Exposure  0 1200

AGC ☐

Gain  1x 31x

BPC ☐

WPC ☐

Raw GMA ☐

Lens Correction ☐

H-Mirror ☐

V-Flip ☐

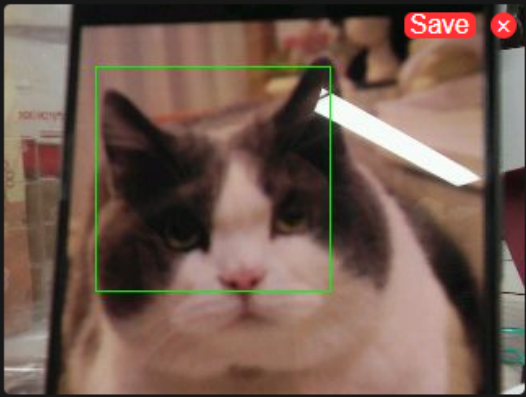
DCW (Downsize EN) ☐

Color Bar ☐

Face Detection ☐

Face Recognition ☐

Get Still Stop Stream Enroll Face



At the same time, the terminal will print out the current central coordinates, and the area has been selected.



```

0
读取的数据: data0:0 data1:160 data2:0 data3:80
14200
读取的数据: data0:0 data1:139 data2:0 data3:109
17040
读取的数据: data0:0 data1:129 data2:0 data3:101
16520
读取的数据: data0:0 data1:126 data2:0 data3:100
16497
读取的数据: data0:0 data1:125 data2:0 data3:100
15340
读取的数据: data0:0 data1:120 data2:0 data3:109
14272
读取的数据: data0:0 data1:129 data2:0 data3:118
16779
读取的数据: data0:0 data1:126 data2:0 data3:106
16874
读取的数据: data0:0 data1:127 data2:0 data3:108
17545
读取的数据: data0:0 data1:131 data2:0 data3:108
16166
读取的数据: data0:0 data1:130 data2:0 data3:118
18056
读取的数据: data0:0 data1:130 data2:0 data3:107
17190
读取的数据: data0:0 data1:126 data2:0 data3:106
16844
读取的数据: data0:0 data1:131 data2:0 data3:108
15295
读取的数据: data0:0 data1:131 data2:0 data3:115
16029
读取的数据: data0:0 data1:130 data2:0 data3:118
14888
读取的数据: data0:0 data1:118 data2:0 data3:158
21546
读取的数据: data0:0 data1:118 data2:0 data3:158
21546
读取的数据: data0:0 data1:118 data2:0 data3:158
21546
读取的数据: data0:0 data1:118 data2:0 data3:158
21546
读取的数据: data0:0 data1:118 data2:0 data3:158
21546
读取的数据: data0:0 data1:118 data2:0 data3:158
21546
读取的数据: data0:0 data1:118 data2:0 data3:158
21546

```

### Face recognition mode

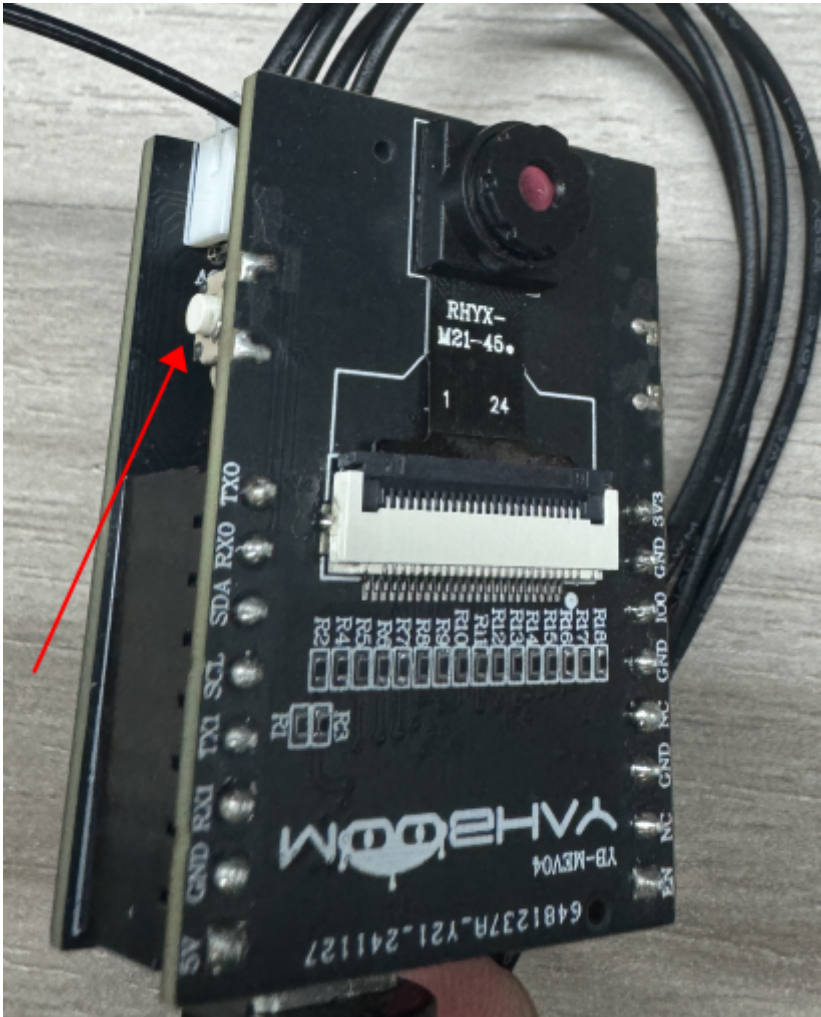
When switching the adult face recognition mode, the terminal will print the current face ID

```
ai_mode = Face_identify #ai模式选择 AI mode selection
```

```
python3 I2C_TEST.py
```

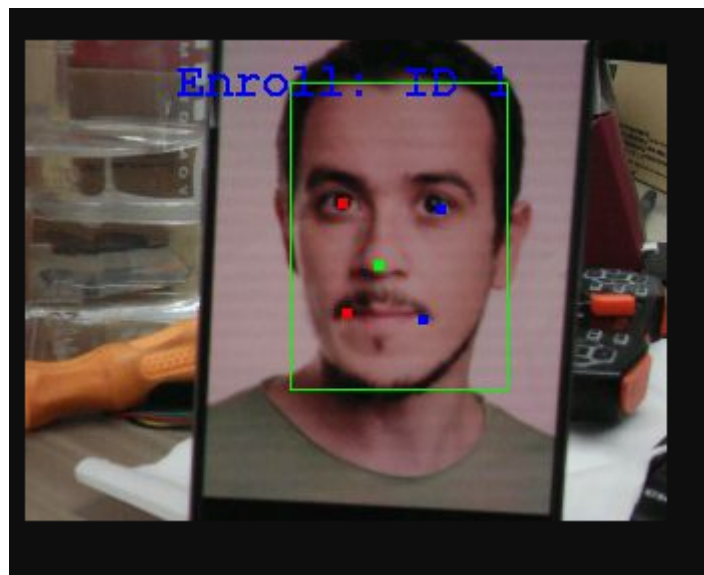
[illegible]

Recognize the face. When you don't get the face, press the key button to indicate the face of the face

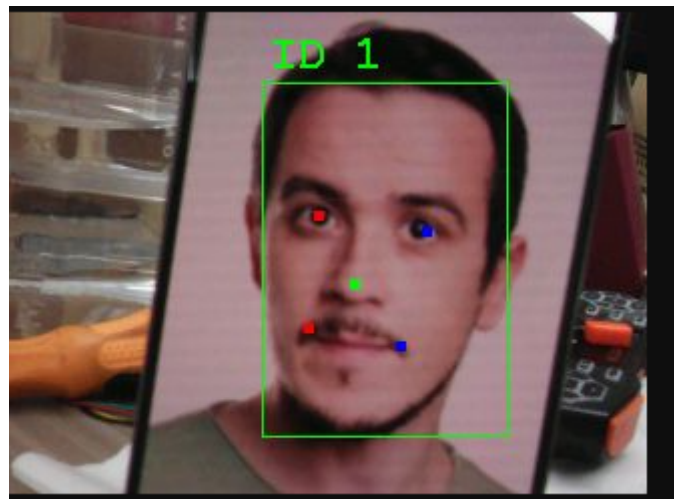


The picture below appears that the record is successful, and the record is a face 1





At this time, you can press and press the key for two seconds, and then release the key to recognize the current face.



At the same time, the terminal will print out the current central coordinates and the recognized face.

```
读取的数据: data0:0 data1:142 data2:0 data3:102
arear:20196
id:1
读取的数据: data0:0 data1:142 data2:0 data3:102
arear:20196
id:1
读取的数据: data0:0 data1:142 data2:0 data3:102
arear:20196
id:1
读取的数据: data0:0 data1:142 data2:0 data3:102
arear:20196
id:1
读取的数据: data0:0 data1:142 data2:0 data3:102
arear:20196
id:1
读取的数据: data0:0 data1:142 data2:0 data3:102
arear:20196
id:1
读取的数据: data0:0 data1:142 data2:0 data3:102
arear:20196
id:1
读取的数据: data0:0 data1:142 data2:0 data3:102
arear:20196
id:1
```

### Color detection mode

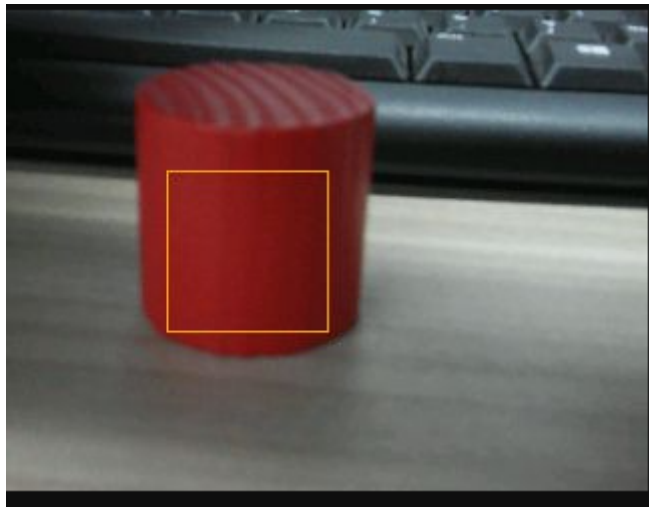
When we switch to color detection mode,

```
ai_mode = Color_identify #修改这里的变量来切换模式 Modify the variables here to switch modes
```

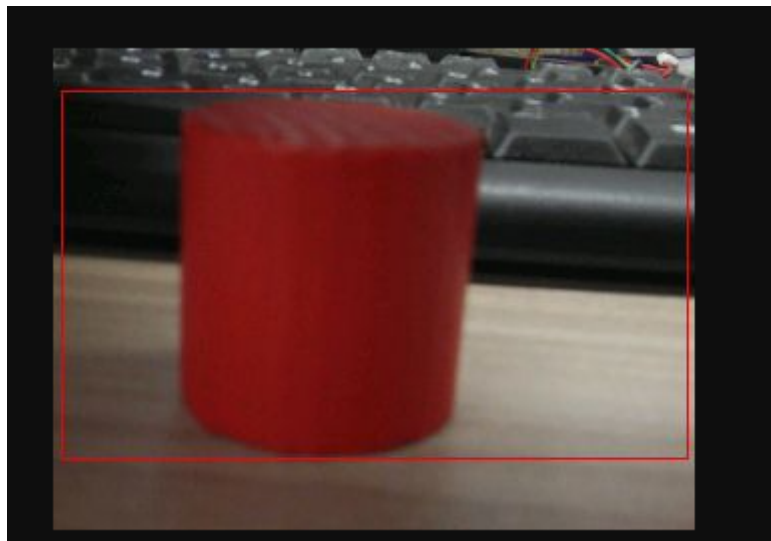
```
python3 I2C_TEST.py
```

```
jetson@jetson-desktop:~$ python3 I2C_TEST.py
读取的数据: data0:-121 data1:-121 data2:-121 data3:-121
arear:-30976
读取的数据: data0:0 data1:160 data2:0 data3:120
arear:0
读取的数据: data0:0 data1:160 data2:0 data3:120
arear:0
读取的数据: data0:0 data1:160 data2:0 data3:120
arear:0
读取的数据: data0:0 data1:160 data2:0 data3:120
arear:0
读取的数据: data0:0 data1:160 data2:0 data3:120
arear:0
```

Recognize color. Press the button to appear a box, you can use this box to frame the color you want to use.



Press and press the key for two seconds, let go and press it again to identify the color selected by the current box, and the red box appears at the same time.



At the same time, the terminal will print out the current central coordinates,

```
读取的数据: data0:0 data1:160 data2:0 data3:135
arear:33708
读取的数据: data0:0 data1:112 data2:0 data3:141
arear:32128
读取的数据: data0:0 data1:108 data2:0 data3:139
arear:30880
读取的数据: data0:0 data1:174 data2:0 data3:144
arear:38916
读取的数据: data0:0 data1:132 data2:0 data3:147
arear:30804
读取的数据: data0:0 data1:106 data2:0 data3:120
arear:36556
读取的数据: data0:0 data1:100 data2:0 data3:129
arear:16200
读取的数据: data0:0 data1:116 data2:0 data3:150
arear:22380
读取的数据: data0:0 data1:90 data2:0 data3:150
arear:40200
读取的数据: data0:0 data1:138 data2:0 data3:150
arear:38340
读取的数据: data0:0 data1:100 data2:0 data3:151
arear:48184
读取的数据: data0:0 data1:114 data2:0 data3:147
arear:17516
读取的数据: data0:0 data1:96 data2:0 data3:157
arear:42660
读取的数据: data0:0 data1:90 data2:0 data3:157
arear:42660
读取的数据: data0:0 data1:90 data2:0 data3:157
arear:42660
读取的数据: data0:0 data1:90 data2:0 data3:157
arear:42660
读取的数据: data0:0 data1:90 data2:0 data3:157
arear:11264
```

