

MSPM0 configure camera

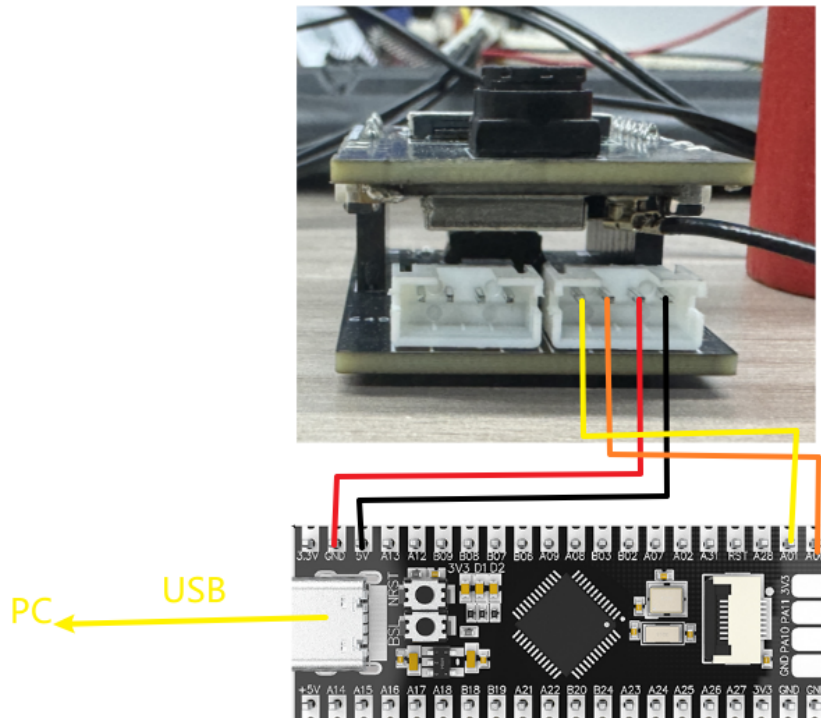
Note: esp32 camera needs to be burned with factory firmware. If you have not flashed the firmware after receiving the esp32 camera, it is not necessary. The factory default firmware, before using iic communication, you can use the serial port to configure the esp32 camera to the network, and iic is used for data reading

1. Experimental preparation

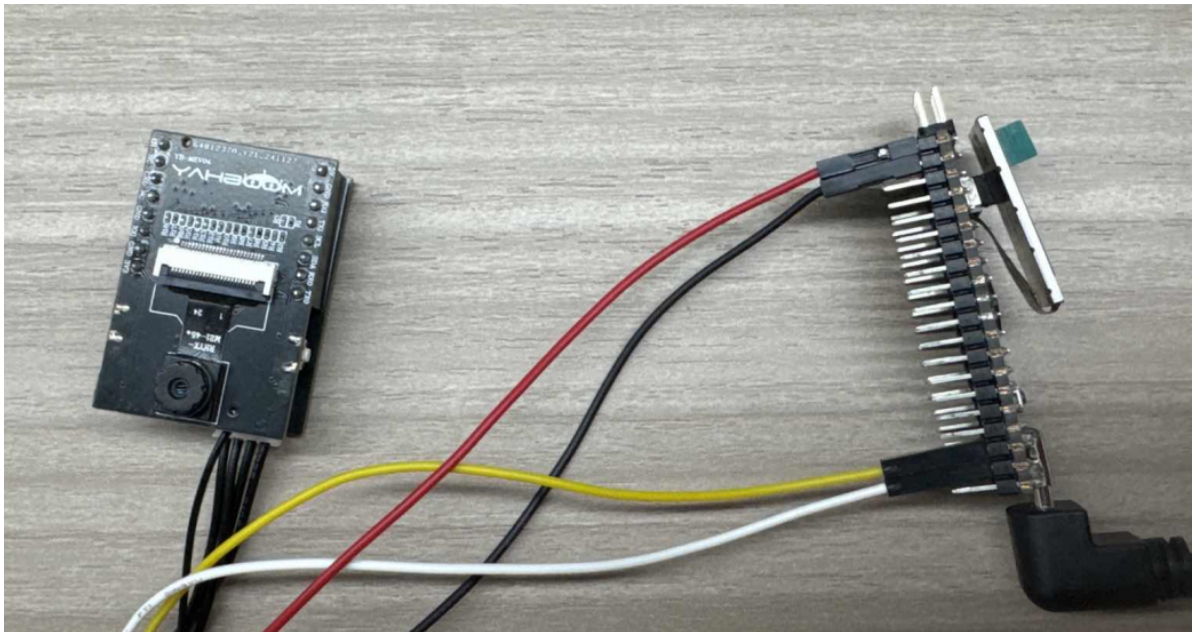
- mspm0g350 series microcontroller
- wifi camera

2. Wiring diagram

mspm0g350	esp32 camera
PA0	SCL
PA1	SDA
GND	GND
5V	5V



Physical connection diagram:

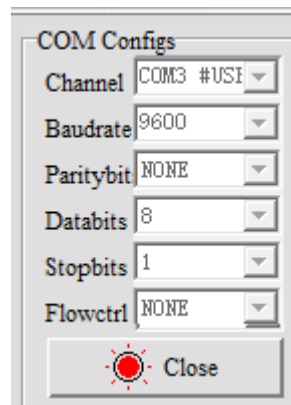


3. Experimental steps and experimental results

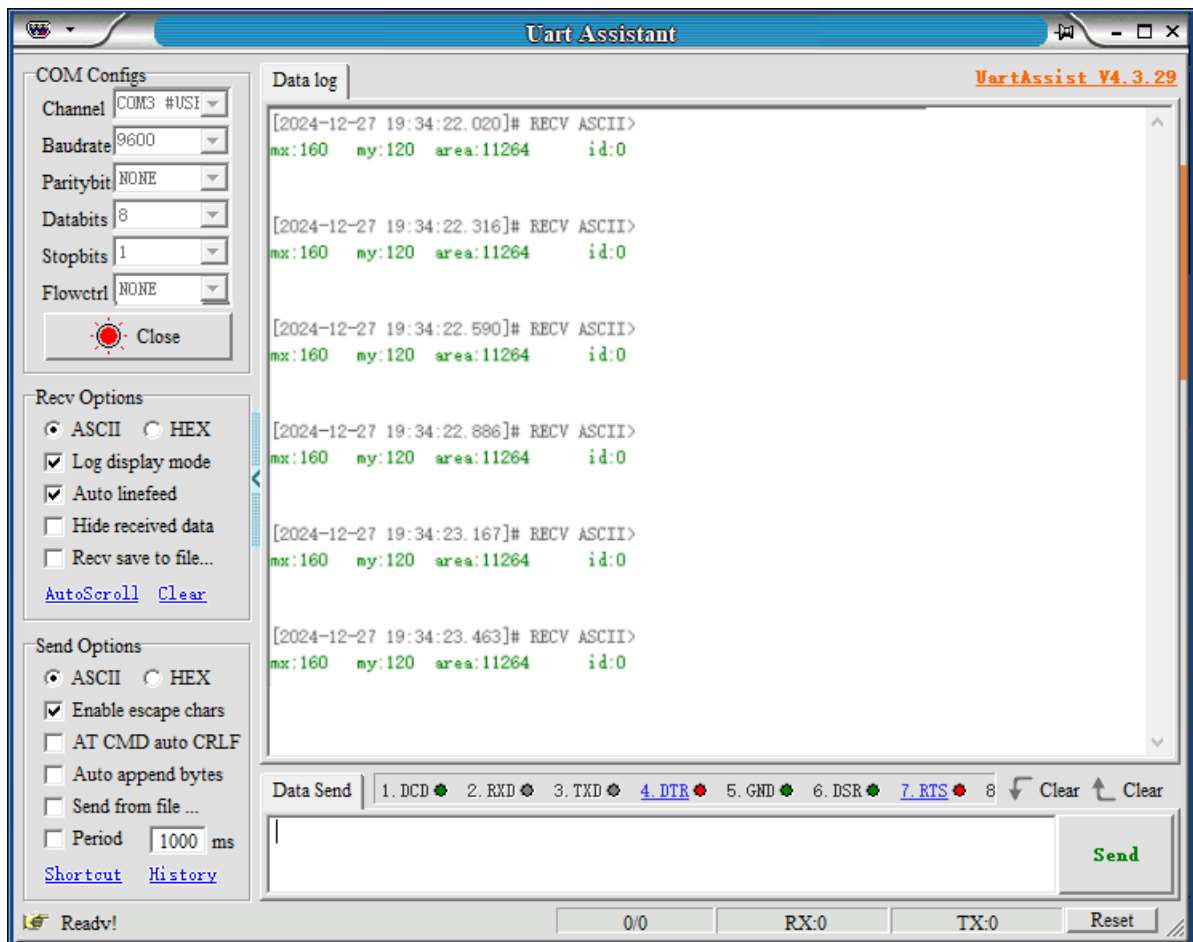
1. Check whether the program runs normally
2. In the main function, change to the corresponding ai mode.

```
Model_state model = Cat_Dog_Model;
```

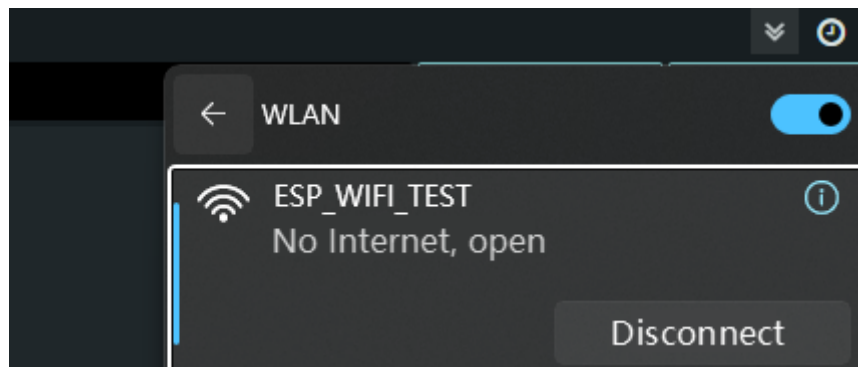
3. Download the program of this project to the mspm0 board
4. Open the serial port assistant on the computer, open the computer to detect the serial port of mspm0, as shown below



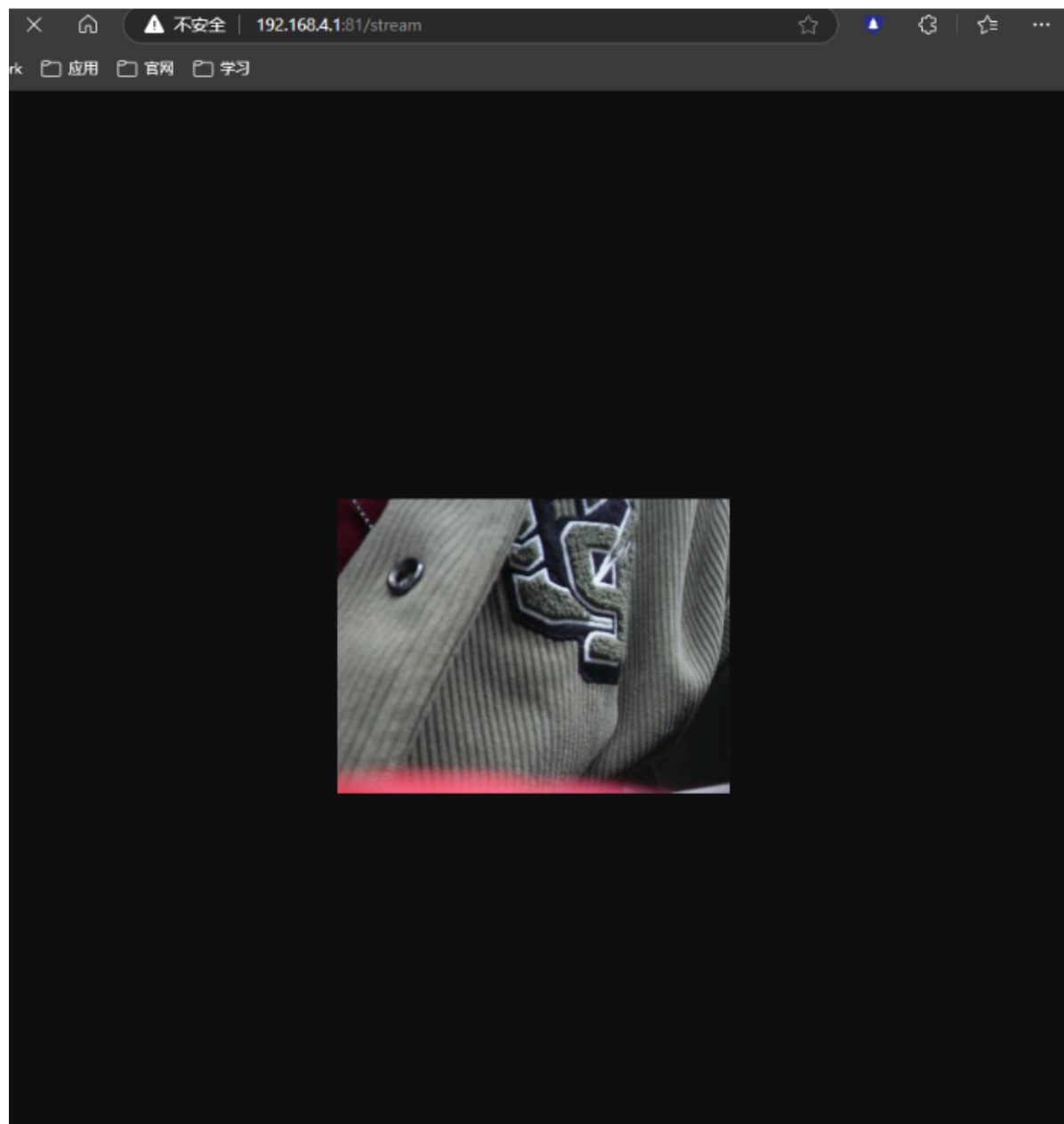
After pressing the reset button of mspm0, the serial port assistant will print out the corresponding information



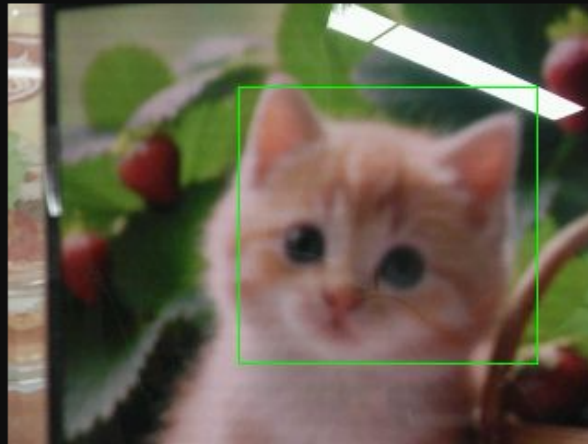
4. Open the camera and connect to the hotspot released by esp32



Then enter <http://192.168.4.1:81/stream> through the browser This accesses the camera screen



5. Identify cats and dogs. If the recognition is successful, the current center coordinates will be printed out, and the cat image will be placed in front of the previous screen.



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

```
[2024-12-27 19:37:46.944]# RECV ASCII>
mx:189  my:104  area:16300  id:0

[2024-12-27 19:37:47.241]# RECV ASCII>
mx:189  my:105  area:16564  id:0

[2024-12-27 19:37:47.520]# RECV ASCII>
mx:190  my:106  area:16335  id:0

[2024-12-27 19:37:47.814]# RECV ASCII>
mx:192  my:108  area:14256  id:0

[2024-12-27 19:37:48.094]# RECV ASCII>
mx:203  my:112  area:14926  id:0

[2024-12-27 19:37:48.395]# RECV ASCII>
mx:204  my:111  area:27982  id:0
```

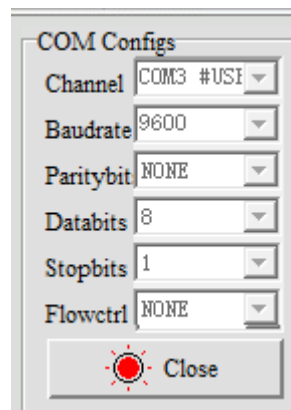
Face recognition mode

When switching to face recognition mode,

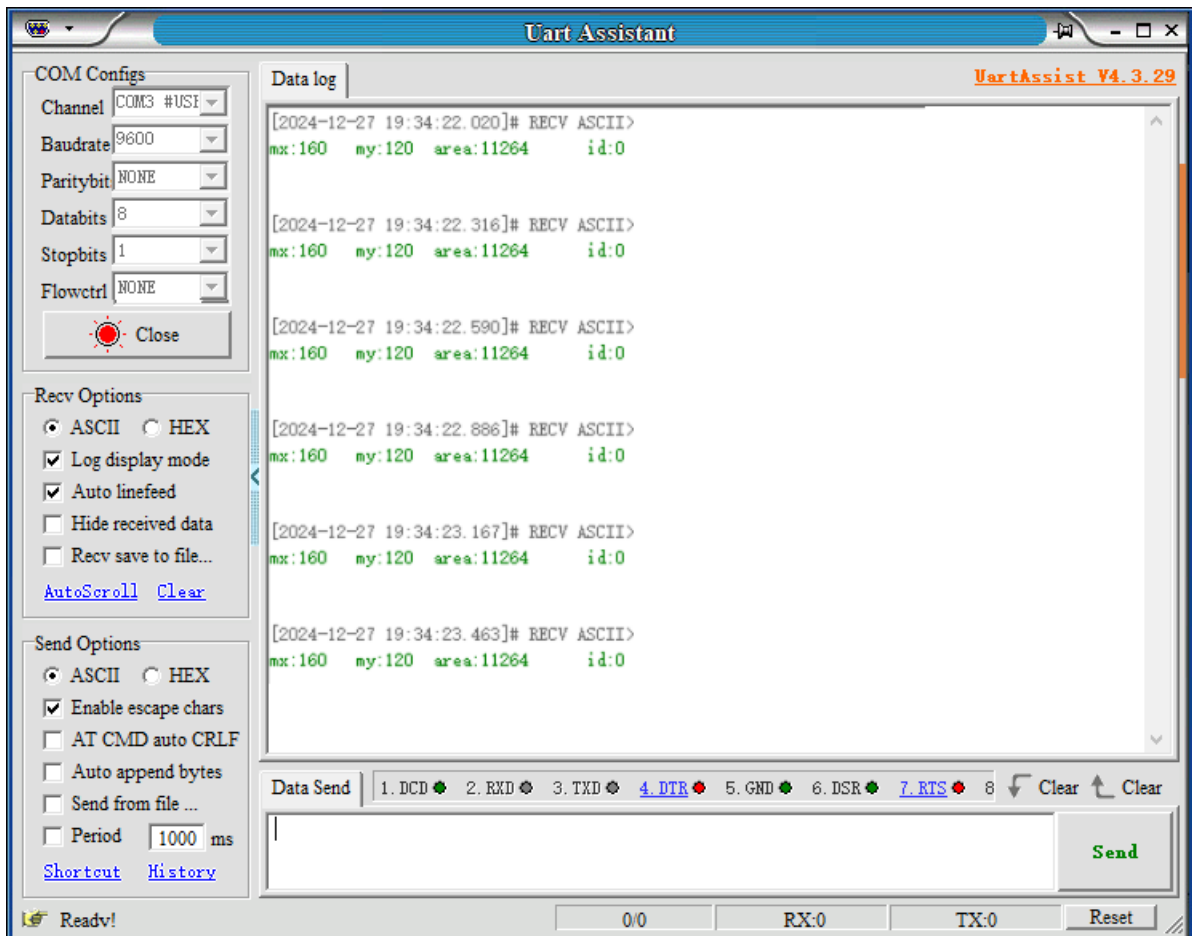
```
#include "AllHeader.h"

Model_state model = Face_identify;
```

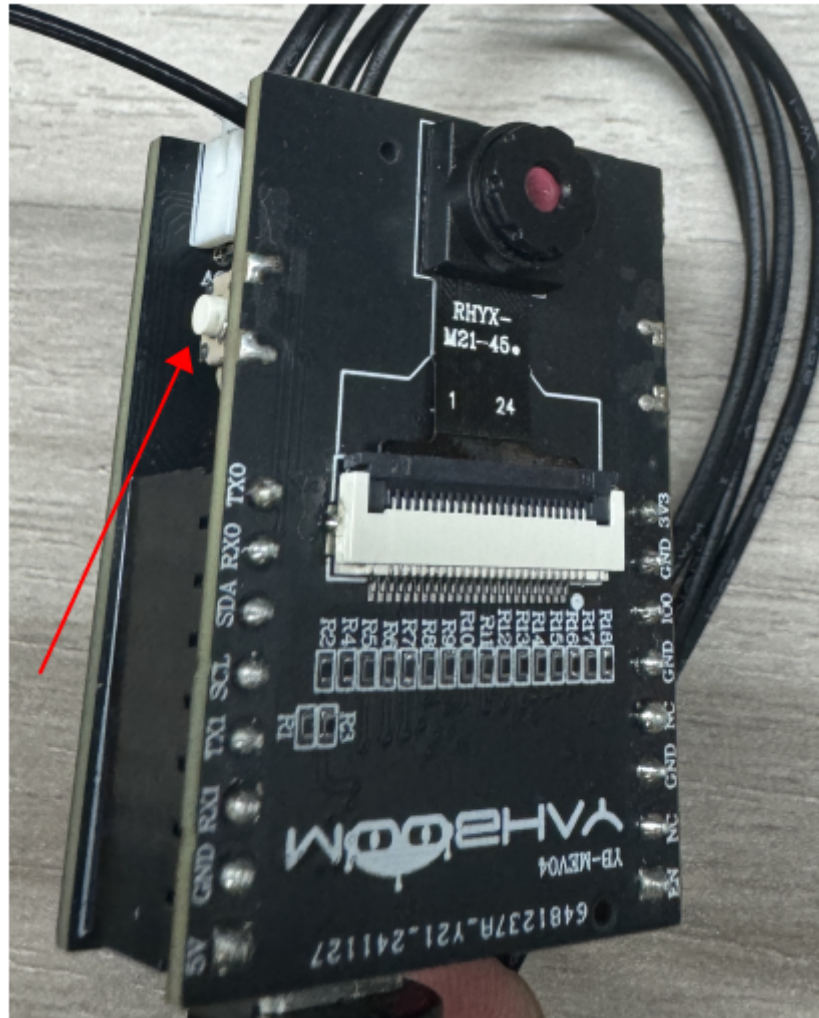
Compile and download to the mspm0 mainboard, open the serial port debugging assistant



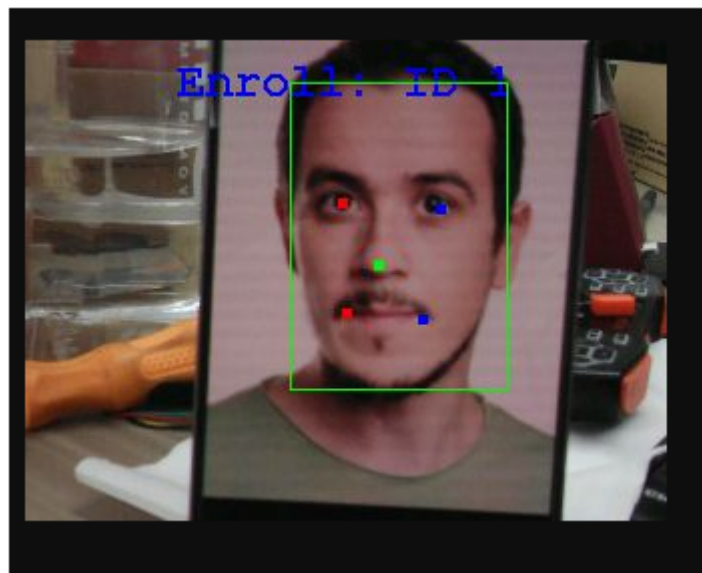
After pressing the reset button of mspm0, the serial port assistant will print out the corresponding information



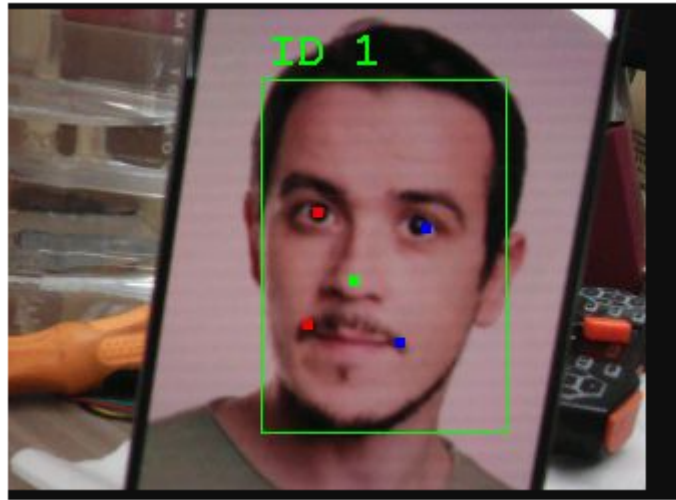
Recognize face. When you see a face, press the key button to record the face



The following picture appears, which means the recording is successful, and the face 1 is recorded



At this time, you can press and hold the button for two seconds, then release it and press the button again to recognize the current face



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

```
[2024-12-27 19:48:14.146]# RECV ASCII>
mx:155  my:115  area:25972  id:1

[2024-12-27 19:48:14.523]# RECV ASCII>
mx:155  my:115  area:25972  id:1

[2024-12-27 19:48:14.895]# RECV ASCII>
mx:155  my:115  area:25972  id:1

[2024-12-27 19:48:15.269]# RECV ASCII>
mx:155  my:115  area:25972  id:1

[2024-12-27 19:48:15.644]# RECV ASCII>
mx:155  my:115  area:25972  id:1

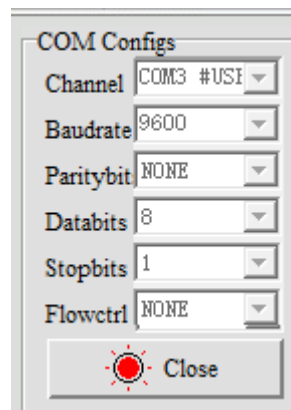
[2024-12-27 19:48:15.999]# RECV ASCII>
mx:155  my:115  area:25972  id:1
```

Color detection mode

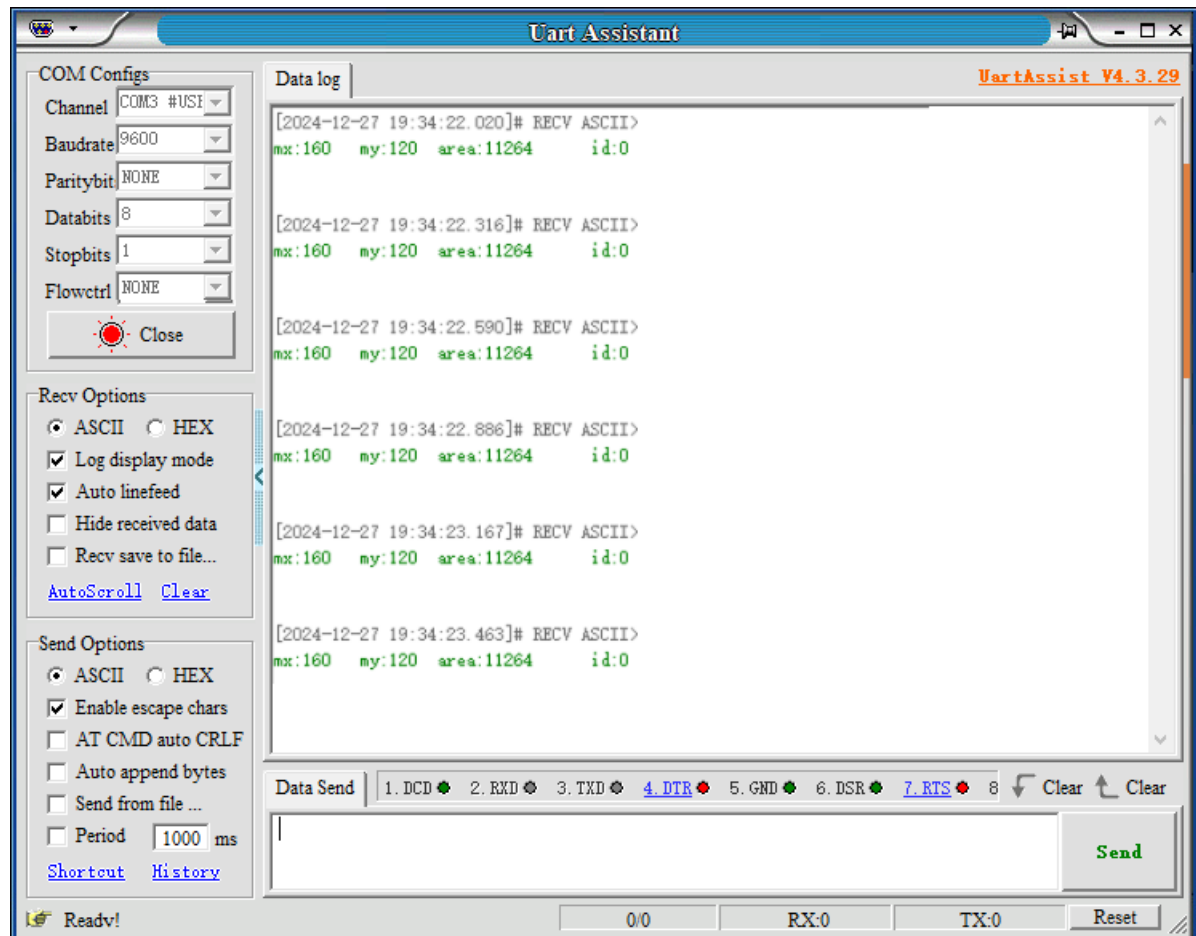
When switching to color detection mode,

```
Model_state model = Color_identify;
```

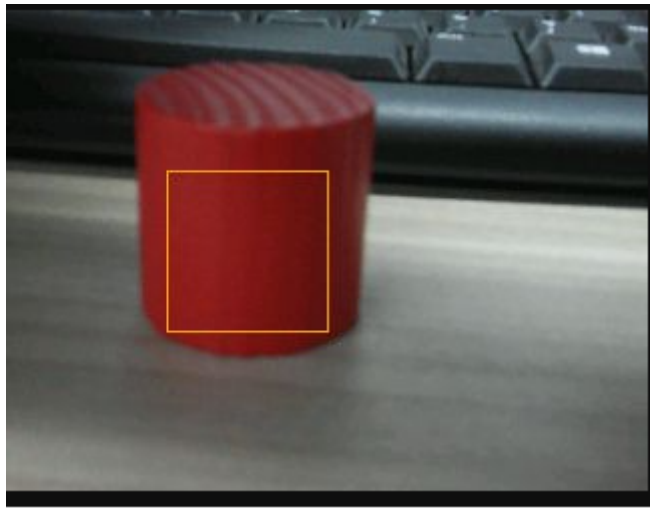
Compile and download to the mspm0 motherboard, open the serial port debugging assistant



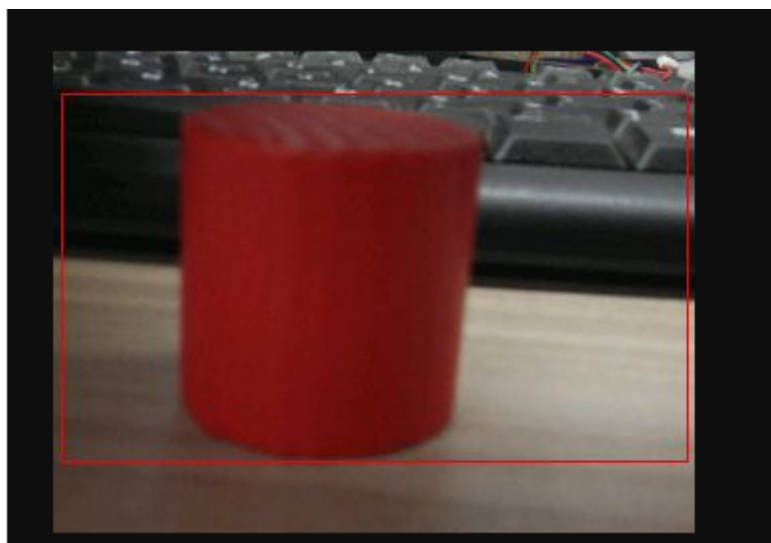
After pressing the reset button of mspm0, the serial port assistant will print out the corresponding information



identify the color. Press the button and a box will appear. You can use this box to select the color you want to use.



Press the button for two seconds, release it and press it again to identify the currently selected color. A red box will appear at the same time.



At the same time, the terminal will print out the current center coordinates.

```
[2024-12-27 19:37:46.944]# RECV ASCII>  
mx:189  my:104  area:16300    id:0  
  
[2024-12-27 19:37:47.241]# RECV ASCII>  
mx:189  my:105  area:16564    id:0  
  
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mx:190  my:106  area:16335    id:0  
  
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```

