

# k230OCR character recognition

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## k230OCR character recognition

k230 and PICO2 communication

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## k230 and PICO2 communication

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### 1. Experimental Prerequisites

This tutorial uses the PICO2 development board, and the corresponding routine path is [14.export\PICO-K230\13\_pico\_k230\_ocr\_rec.py].

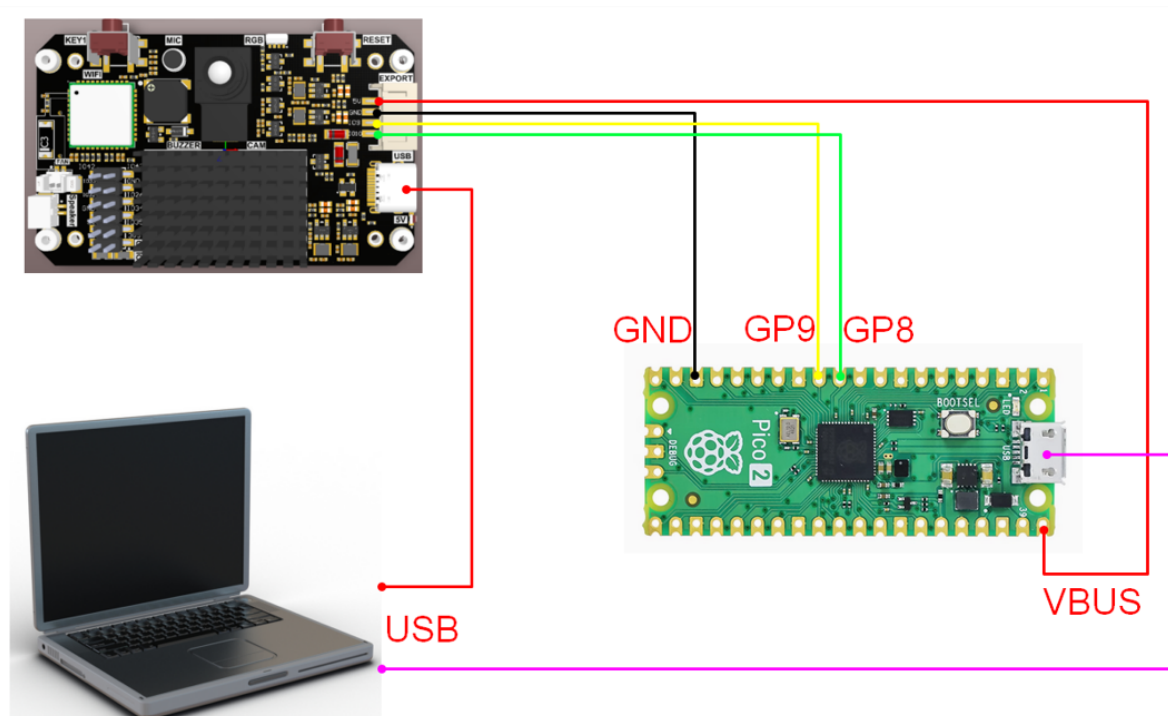
K230 needs to run the [14.export\CanmvIDE-K230\13.ocr\_rec.py] program to start the experiment. It is recommended to download it as an offline program.

Things you need:

Windows computer  
PICO2 development board  
microUSB cable  
K230 visual module (including TF card with image burned in)  
type-C cable  
connection cable

### 2. Experimental wiring

k230 vision module	PICO2 Development Board
5V	VCC
GND	GND
TXD(IO9)	RXD(GP9)
RXD(IO10)	TXD(GP8)



### 3. Main code explanation

```
from machine import UART, Pin

FUNC_ID = 13

uart1 = UART(1, baudrate=115200, tx=Pin(8), rx=Pin(9), bits=8, parity=None,
stop=0)

print("hello yahboom")

def parse_data(data):
    if data[0] == ord('$') and data[len(data)-1] == ord('#'):
        data_list = data[1:len(data)-1].decode('utf-8').split(',')
        data_len = int(data_list[0])
        data_id = int(data_list[1])
        if data_len == len(data) and data_id == FUNC_ID:
            # print(data_list)
            result = data_list[2]
            return result
        elif (data_len != len(data)):
            print("data len error:", data_len, len(data))
        elif (data_id != FUNC_ID):
            print("func id error:", data_id, FUNC_ID)
    else:
        print("pto error", data)
    return ""

last_data = bytearray()
while True:
    if uart1.any() > 0:
        cur_data = uart1.readline()
        # print("rx:", cur_data)
        if ord('\n') in cur_data:
            # data = bytearray(last_data + cur_data.decode('utf-8'), 'utf-8')
```

```

data = last_data + cur_data
last_data = bytearray()
result = parse_data(data.rstrip(b'\n'))
print("ocr_rec:", result)
else:
    last_data = last_data + cur_data

```

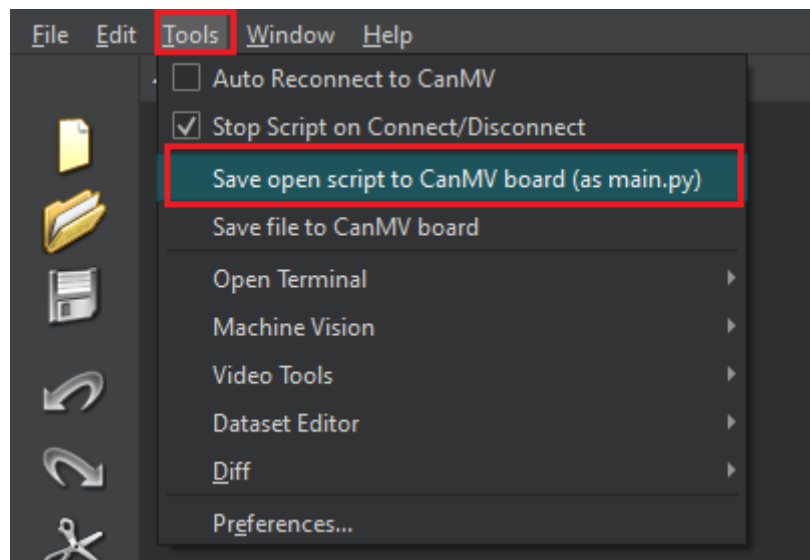
The above program is for parsing K230 data. Only when it complies with specific protocols can the corresponding data be parsed.

in

- msg: is the OCR character information.

## 4. Experimental Phenomenon

1. After connecting the cables, the k230 visual module runs offline. After K230 is connected to Canmv IDE, open the corresponding program, click [Save open script to CanMV board (as main.py)] on the toolbar, and then restart K230.



2. Open the Thonny editor, connect the PICO2 mainboard, open the program file and run it.

Note: The PICO2 mainboard needs to have the microPython firmware downloaded in advance.

3. When the K230 camera image recognizes characters, the terminal will parse and print out the information transmitted by the K230.

in

- msg: is the OCR character information.

As shown in the figure below

```
[2025-04-30 12:05:30.059]# RECV ASCII>  
ocr_rec:'HELLO'
```

```
[2025-04-30 12:05:30.536]# RECV ASCII>  
ocr_rec:'HELLO'
```

```
[2025-04-30 12:05:31.028]# RECV ASCII>  
ocr_rec:'HELLO'
```

```
[2025-04-30 12:05:31.501]# RECV ASCII>  
ocr_rec:'HELLO'
```

```
[2025-04-30 12:05:31.976]# RECV ASCII>  
ocr_rec:'HELLO'
```

```
[2025-04-30 12:05:32.481]# RECV ASCII>  
ocr_rec:'HELLO'
```