stm_ K210 mechanical code identification

1. Communication between k210 and stm32

1.1 Experimental premises

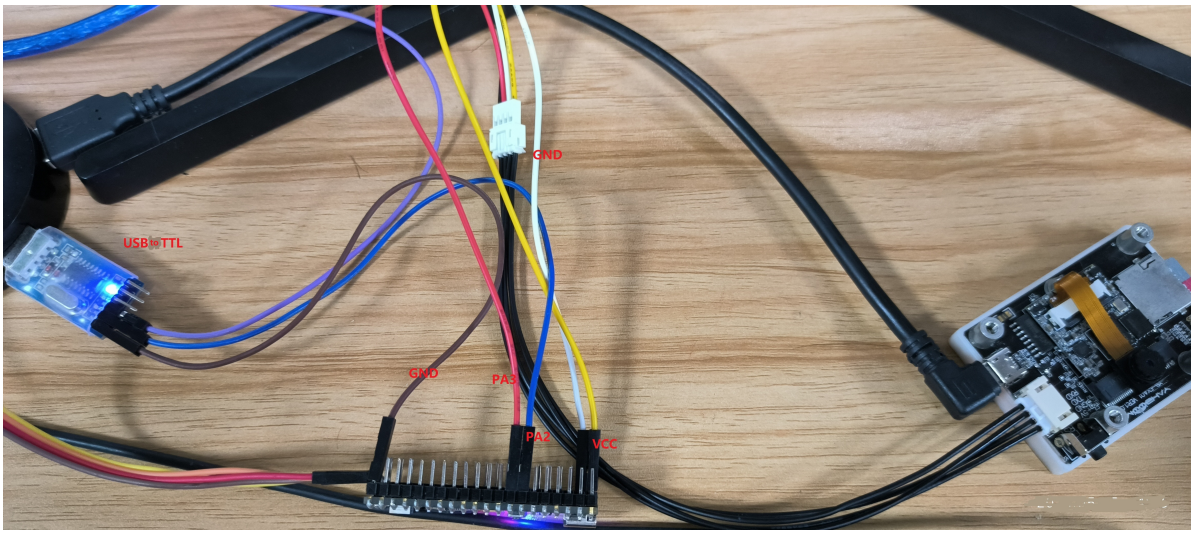
This tutorial uses stm32C8T6, and k210 requires running the program in * * K210-AI (stm32_pico_arduino) * * to start the experiment
Stm32 * 1
K210 perspective module * 1 (requires SD card (with AI model inside) and camera)
USB to TTL module * 1

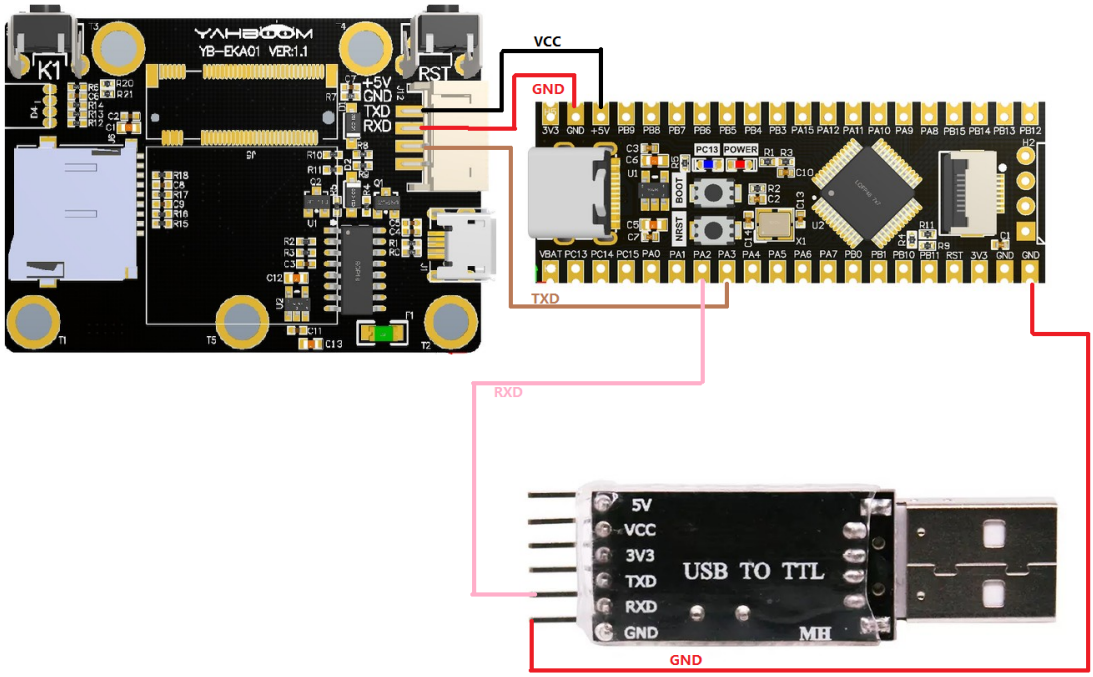
1.2 Experimental wiring

stm32	usb to ttl
PA2	RXD
GND	GND

STM32	k210
PA3	TXD
GND	GND
VCC	5V

Wiring as shown in the diagram:





This type of wiring is not necessary for the RXD of k210 and the TXD of USB to TTL, as it was not used in the experiment.

1.3 Main code explanation

```
int main()
{
    //......
    while(1)
    {
        if (k210_msg.class_n != 0)
        {
            if(k210_msg.class_n == 4)
            {

sprintf(buff_com,"x=%d,y=%d,w=%d,h=%d\r\n",k210_msg.x,k210_msg.y,k210_msg.w,k210
_msg.h);
                USART2_Send_ArrayU8((uint8_t*)buff_com,strlen(buff_com));
```

```
                sprintf(buff_com,"id = %c%c,str = %s\r\n",
(k210_msg.id>>8),k210_msg.id,k210_msg.msg_msg);
                USART2_Send_ArrayU8((uint8_t*)buff_com,strlen(buff_com));

                k210_msg.class_n = 0;
            }

        }
    }
}
```

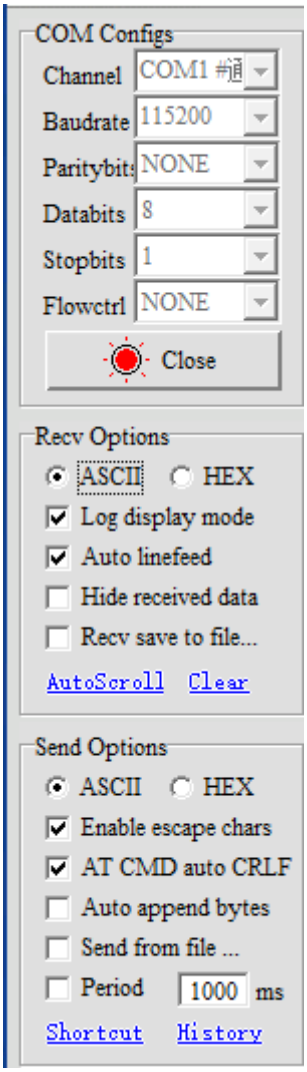
After the above program, if you are running this routine, k210_ The members of the msg structure have corresponding values and are processed through serial port printing
K210_ Msg: is a structure that receives information, and its main members are

- X: is the horizontal coordinate of the top left corner of the recognized box (range: 0-240)
- Y: is the vertical coordinate of the upper left corner of the identified box (range: 0-320)
- W: is the width of the recognized box (range: 0-240)
- H: The length of the recognized box (range: 0-320)
- ID: is the recognized label
- Class_ n: Routine number
- Msg_ Msg [20]: Valid data
  After receiving and processing data, k210_ Each member of the msg will store valid information. If you want to develop it again, call K210 directly_ Members of msg are sufficient

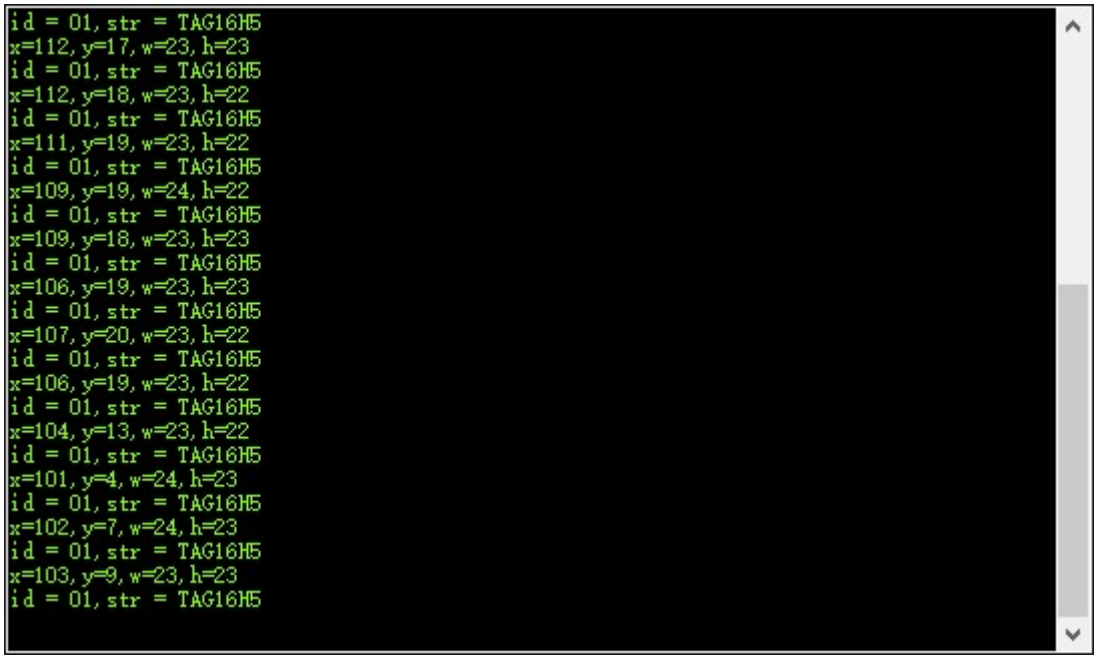
1.4 experimental phenomena

1. After connecting the cable, the K210 perspective module runs offline. Please check 【6.2 K210 as coprocessor】--【ReadMe】

2.Set the serial port assistant to the interface shown in the figure



3. Then run the mechanical code recognition routine, and the serial assistant will print out the important information transmitted from k210 to stm32, as shown in the following figure



Mechanical code recognition only transmits the six Member variable of k210msg, namely, x, y, w, h, msg and id.