

# ard\_k210-Bar code identification

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### 1.K210 and Arduino communication

#### 1.1 Experimental premises

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#### 1.3 Main code explanation

#### 1.4 experimental phenomena

## 1.K210 and Arduino communication

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### 1.1 Experimental premises

This tutorial uses arduino, and K210 requires running the program in **K210-AI (stm32\_pico\_arduino)** to start the experiment

arduino \*1

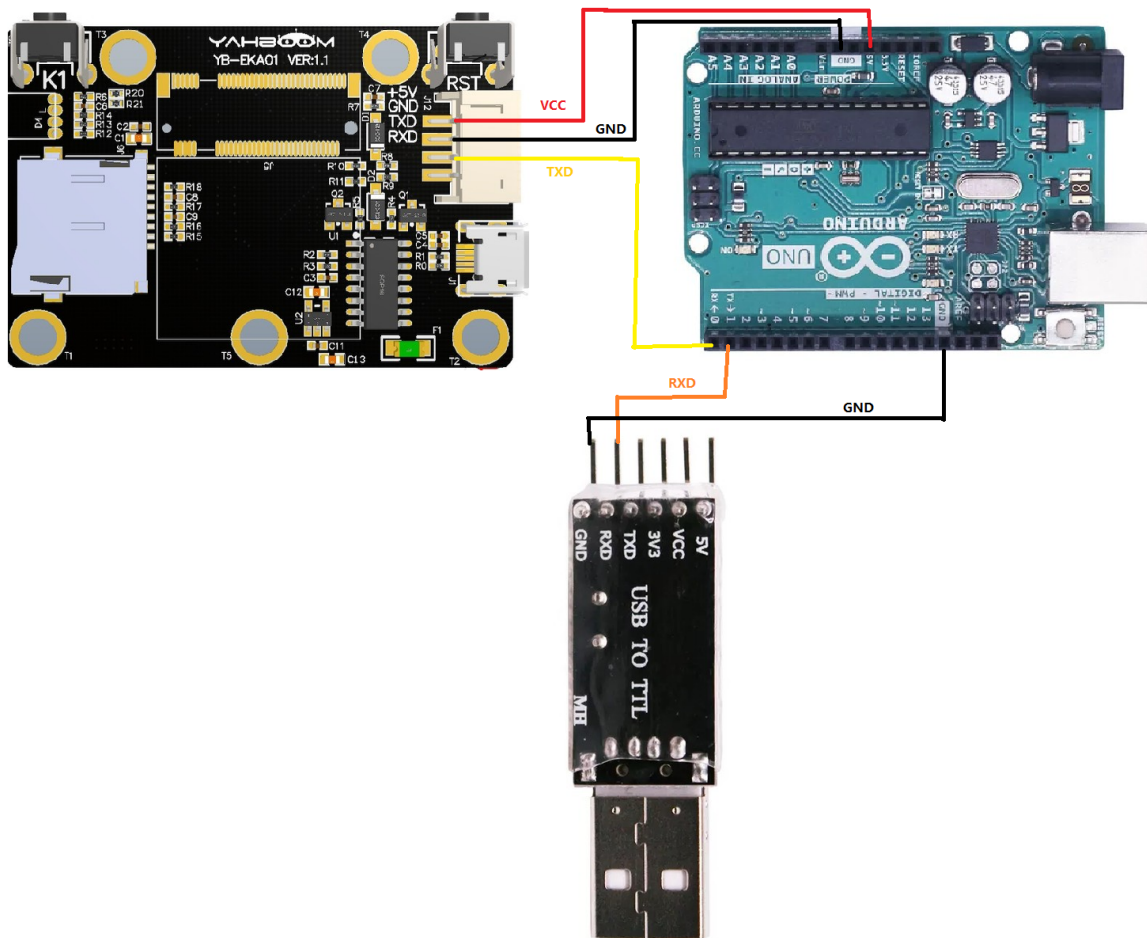
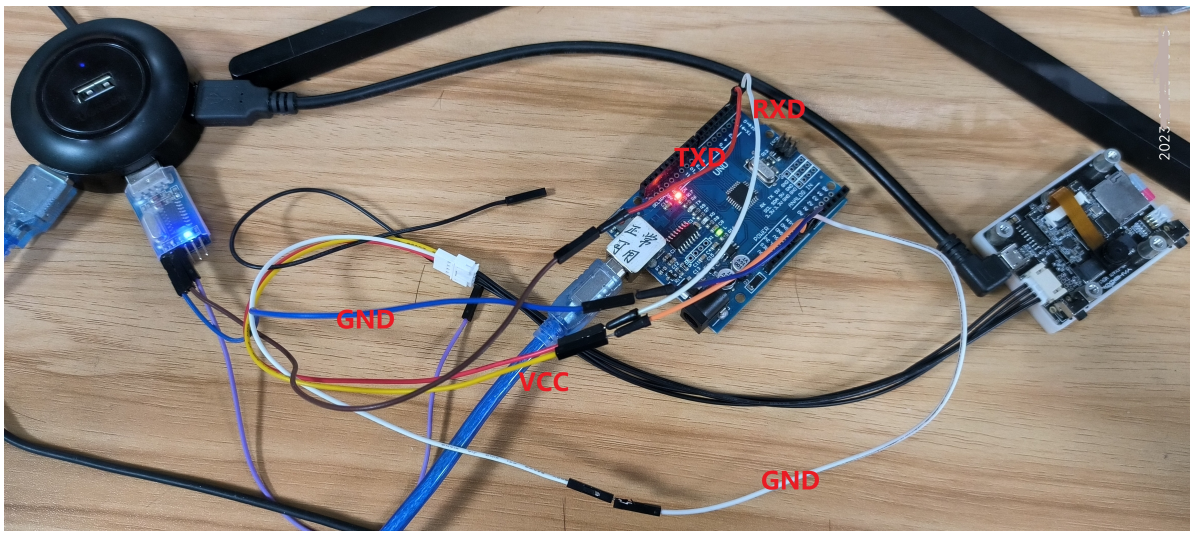
K210 perspective module \* 1 (requires SD card (with AI model inside) and camera)

USB to TTL module \* 1

### 1.2 Experimental wiring

| arduino | usb to ttl |
|---------|------------|
| TXD     | RXD        |
| GND     | GND        |

| arduino                         | K210 perspective module |
|---------------------------------|-------------------------|
| RXD                             | TXD                     |
| GND                             | GND                     |
| VCC                             | 5V                      |
| Wiring as shown in the diagram: |                         |



### 1.3 Main code explanation

```
void loop()
{
  while (K210Serial1.available())
  {
    recv_k210msg(K210Serial1.read());

    if (k210_msg.class_n != 0)
    {
      if(k210_msg.class_n == 2)
      {

```

```

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);
    k210Serial.print(buff_com);

    sprintf(buff_com, "str = %s\r\n", k210_msg.msg_msg);
    k210Serial.print(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

The image shows two stacked dialog boxes from a serial assistant application. The top dialog, titled 'COM Configs', has fields for Channel (COM1), Baudrate (115200), Paritybits (NONE), Databits (8), Stopbits (1), and Flowctrl (NONE). It includes a 'Close' button with a red circular icon. The bottom dialog, titled 'Recv Options', has radio buttons for ASCII (selected) and HEX, and checkboxes for Log display mode, Auto linefeed, Hide received data, and Recv save to file... It also has 'AutoScroll' and 'Clear' links. Below it, the 'Send Options' section has radio buttons for ASCII (selected) and HEX, and checkboxes for Enable escape chars, AT CMD auto CRLF, Auto append bytes, Send from file ..., and Period (1000 ms). It includes 'Shortcut' and 'History' links.

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

```
x=10, y=23, w=307, h=60
str = 1234567890
x=9, y=22, w=307, h=60
str = 1234567890
x=10, y=21, w=307, h=61
str = 1234567890
x=10, y=22, w=308, h=61
str = 1234567890
x=11, y=21, w=308, h=59
str = 1234567890
x=9, y=19, w=308, h=60
str = 1234567890
x=11, y=21, w=308, h=59
str = 1234567890
x=11, y=18, w=308, h=61
str = 1234567890
x=12, y=19, w=307, h=58
str = 1234567890
x=11, y=19, w=308, h=61
str = 1234567890
x=10, y=17, w=309, h=62
str = 1234567890
x=11, y=18, w=308, h=60
str = 1234567890
x=6, y=13, w=308, h=60
str = 1234567890
x=1, y=7, w=308, h=61
```

Barcode recognition only transmits The five Member variable of k210\_msg are x, y, w, h and msg.

