microbit_k230 looking direction

K230 and microbit communication

1. Experimental Prerequisites

This tutorial uses microbit, and the corresponding routine path is [14.export\microbit-K230\7.Microbit_k230_eye_gaze].

K230 needs to run the [14.export\CanmvIDE-K230\07.eye_gaze.py] program to start the experiment. It is recommended to download it as an offline program.

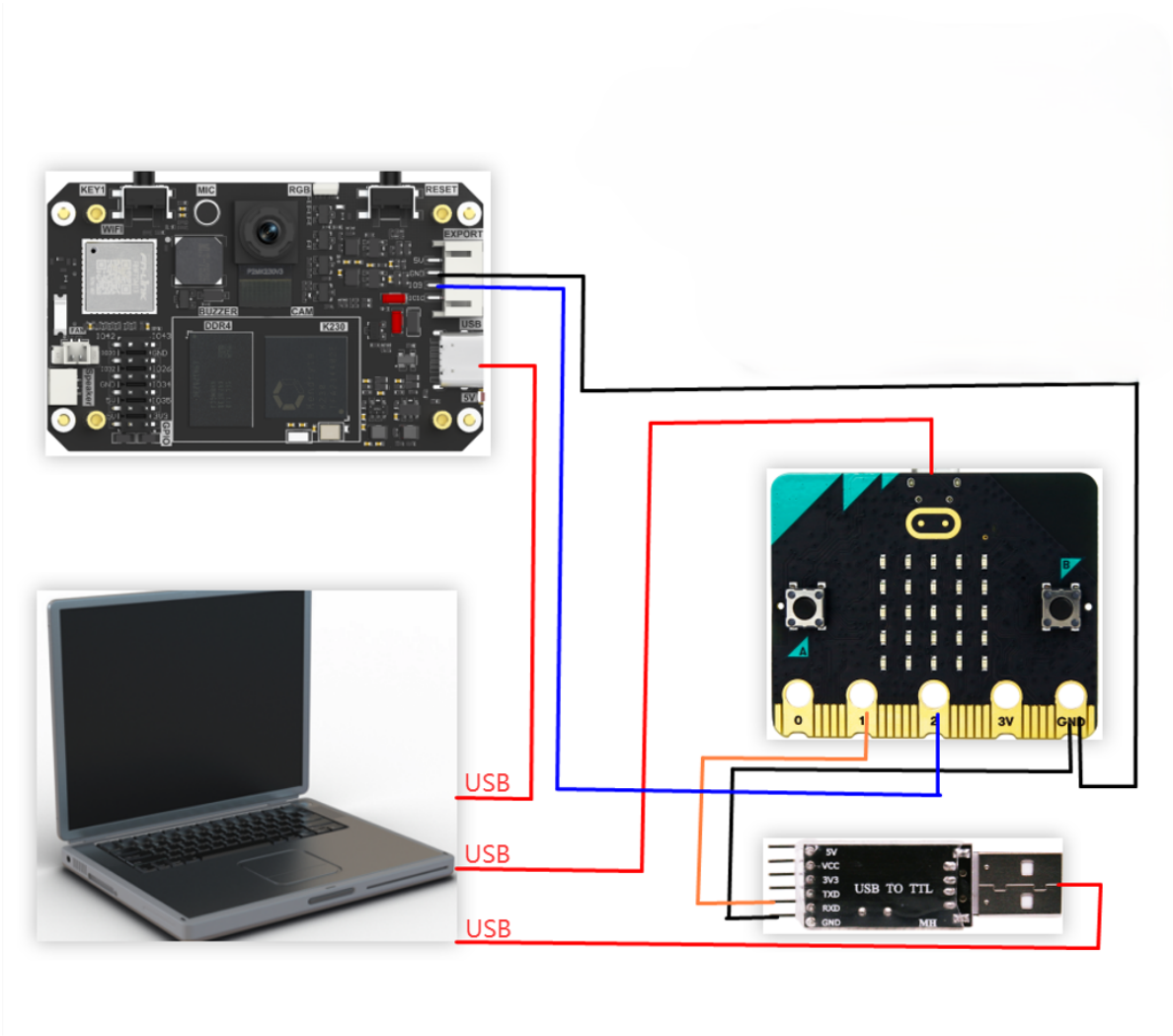
Items needed:

Windows computer, microbit, USB to TTL module, K230 vision module (including TF card with image burned), type-C data cable, connecting cable (Dupont cable), alligator clip, import K230AI library: https://github.com/YahboomTechnology/K230-Module.git

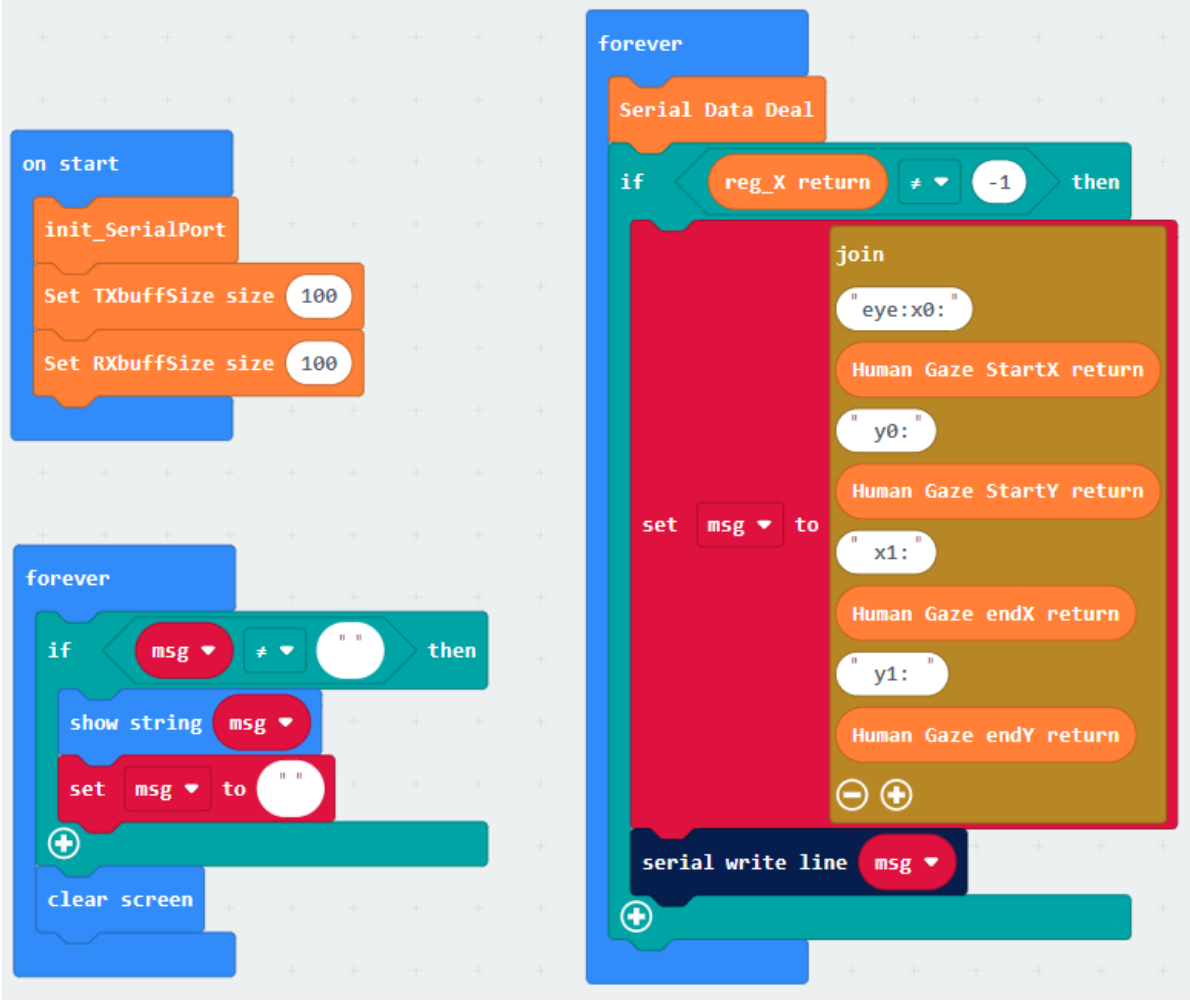
2. Experimental wiring

k230 vision module	Microbit
GND	GND
TXD(IO9)	P2

USB to TTL module	Microbit
RXD	P1
GND	GND



3. Main code explanation

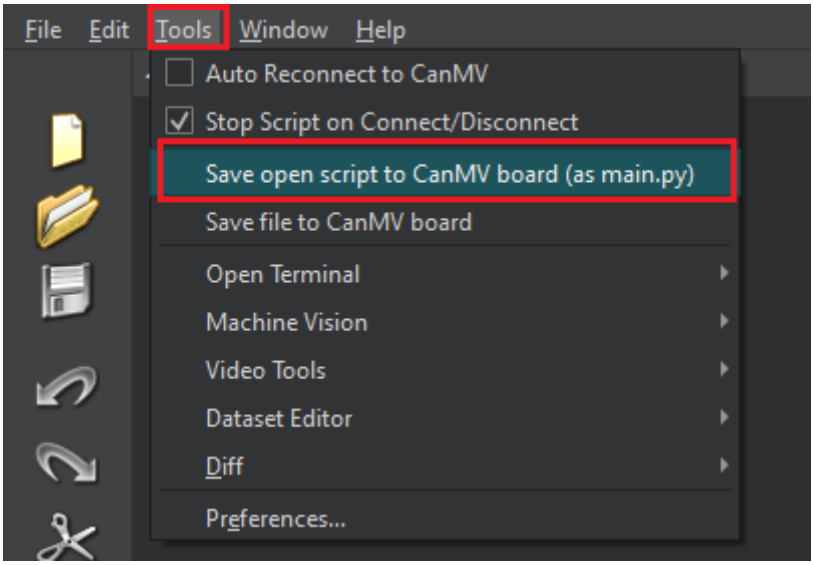


From the code, we can simply configure the serial port and call the relevant serial port and K230 building blocks to obtain data.

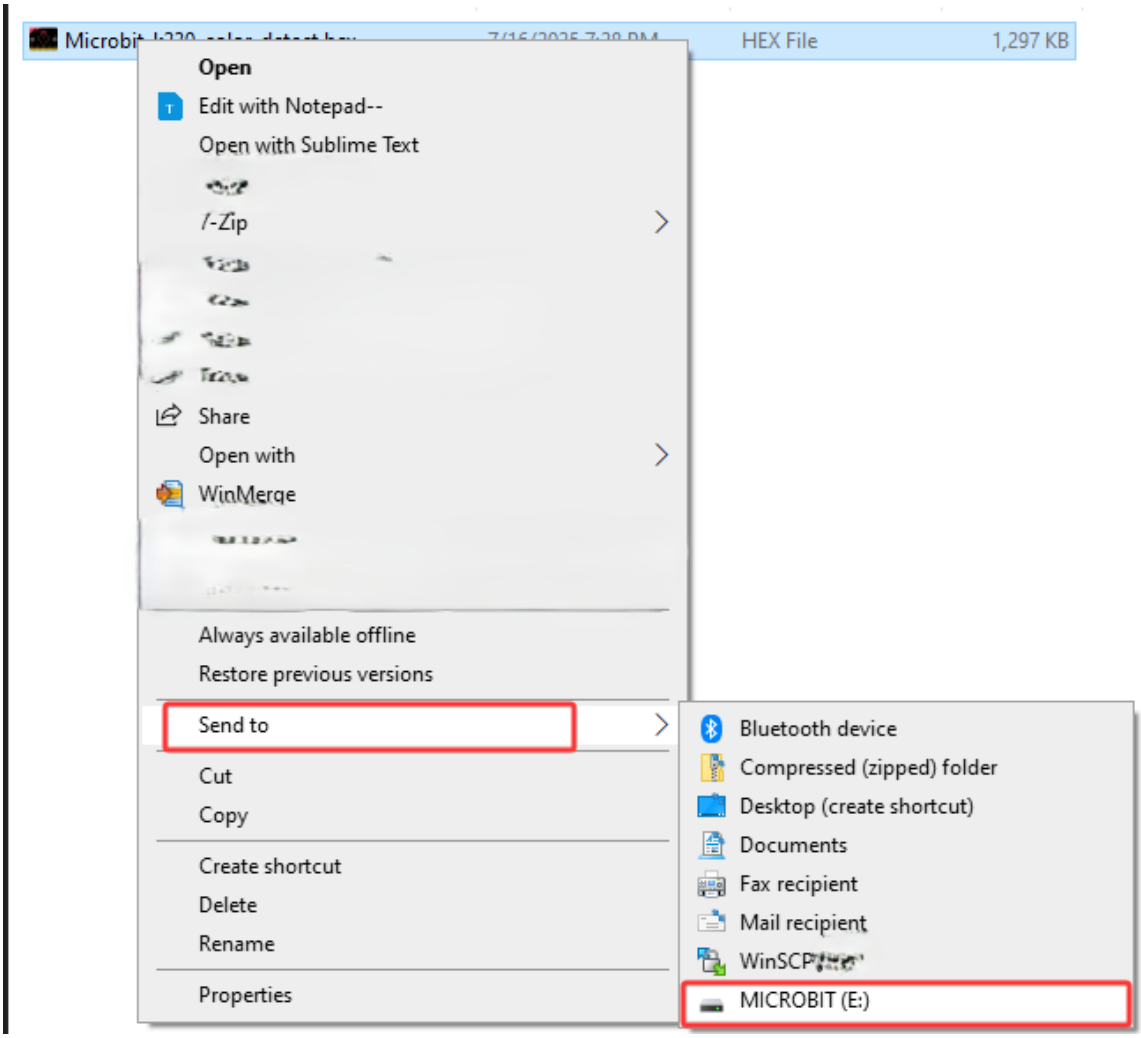
- x0: is the horizontal coordinate of the eye starting point
- y0: is the vertical coordinate of the eye starting point
- x1: is the horizontal coordinate of the gaze direction
- y1: is the vertical coordinate of the gaze direction

4.Experimental Phenomenon

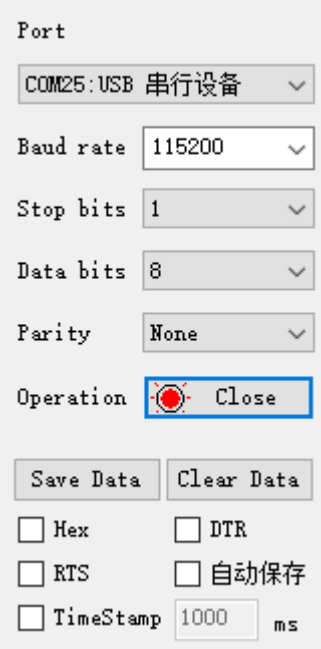
1. After connecting the cables, the k230 visual module runs offline
   After K230 is connected to Canmv IDE, open the corresponding program, click [Save open script to CanMV board (as main.py)] on the toolbar, and then restart K230.



2. Find the hex program of this tutorial, right-click the hex program, and upload the hex program of this tutorial to the microbit



3. The serial port assistant is set to the interface shown in the figure



4. 3. When the K230 camera recognizes a face, the serial port assistant will print out the information transmitted from K230 to microbit.

- x0: is the horizontal coordinate of the eye starting point
- y0: is the vertical coordinate of the eye starting point
- x1: is the horizontal coordinate of the gaze direction
- y1: is the vertical coordinate of the gaze direction

As shown in the figure below

```
eye:x0:202 y0:75 x1:393 y1: 53

eye:x0:203 y0:76 x1:391 y1: 62

eye:x0:203 y0:77 x1:361 y1: 89

eye:x0:201 y0:76 x1:410 y1: 68

eye:x0:202 y0:78 x1:406 y1: 69

eye:x0:202 y0:78 x1:403 y1: 59

eye:x0:203 y0:78 x1:366 y1: 63

eye:x0:202 y0:77 x1:364 y1: 63

eye:x0:201 y0:77 x1:381 y1: 62

eye:x0:202 y0:76 x1:368 y1: 65

eye:x0:202 y0:75 x1:387 y1: 84
```