

microbit_ K210 mask detection

1.K210 and microbit communication

1.1 Experimental premises

This tutorial uses microbit V2.0, and K210 requires running the program in * * K210-AI (microbit) *
* to start the experiment

Microbit * 1

Eyu clip * 3

Several DuPont Lines

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

USB to TTL module * 1

Import k210AI library: <https://github.com/YahboomTechnology/K210-Module>

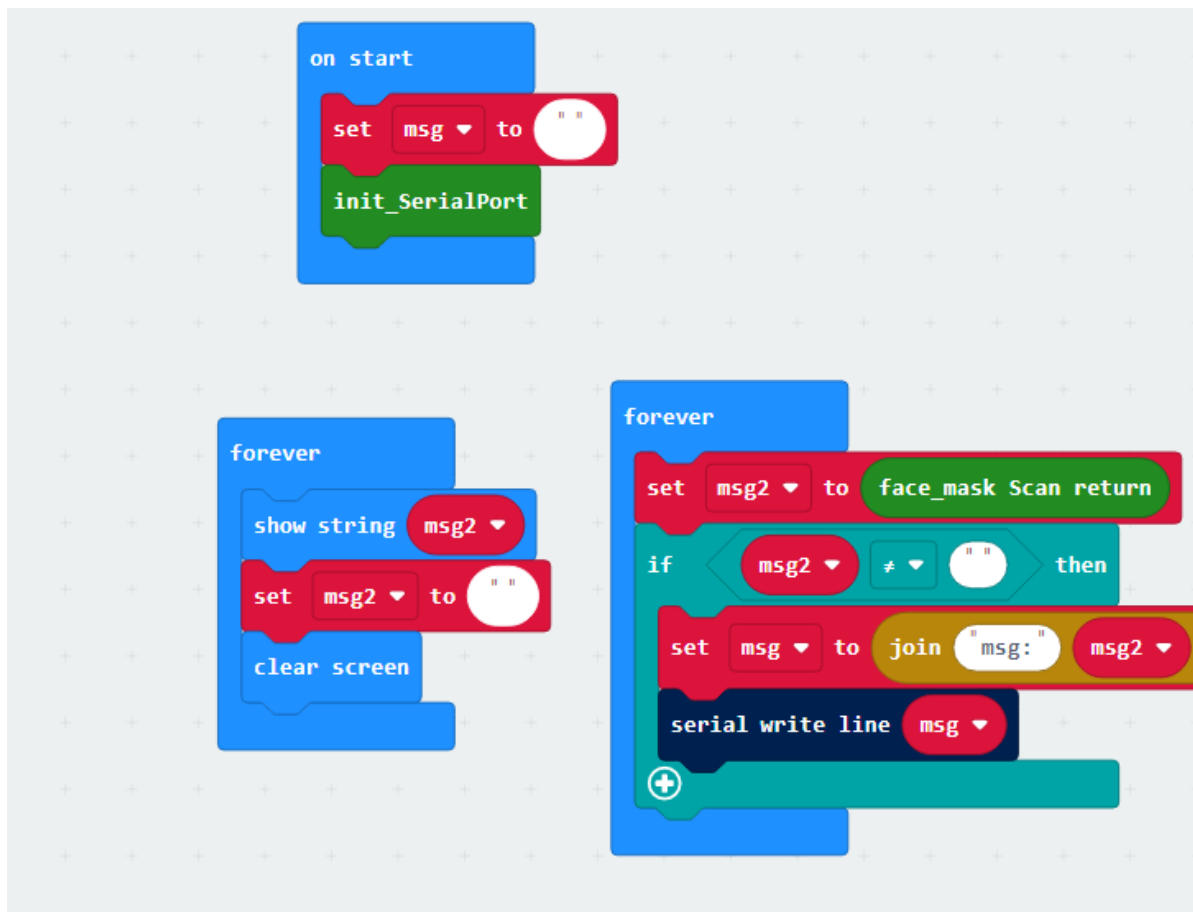
1.2 Experimental wiring

microbit	USB to TTL module
P1	RXD
GND	GND

microbit	k210
P2	TXD
GND	GND
Wiring as shown in the diagram:	



1.3 Main code analysis



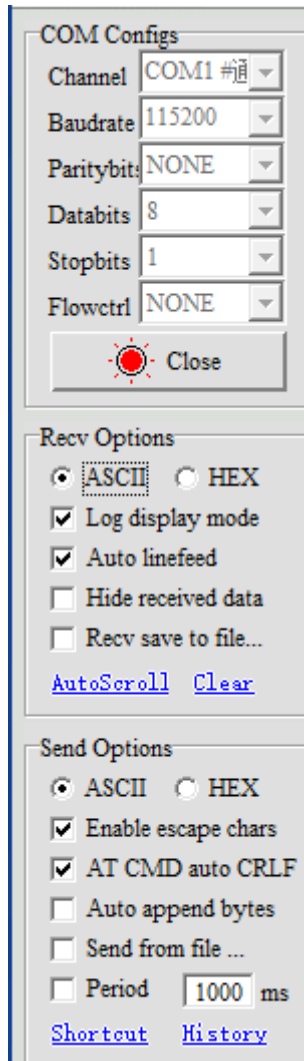
From the code, simply configure the serial port and call the relevant serial port and K210 building blocks for data acquisition

- Msg: is the result of mask detection recognition, YES: with mask, NO: represents without mask

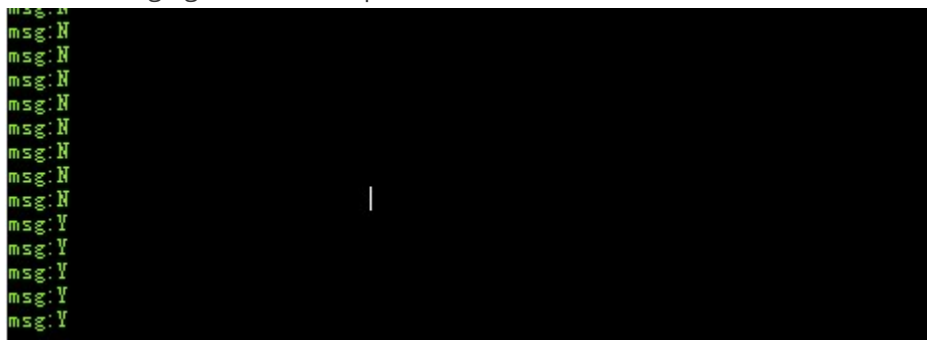
1.4 experimental phenomena

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. Download the hex program of this tutorial into microbit
4. After starting recognition, you can see that the serial assistant prints something and the microbit screen also scrolls to display the received information. The experimental results in the following figure show the phenomenon of mask detection



This experiment displays the results of mask detection and recognition

1.5 Microbit calls the building blocks to parse the results of K210, and the roles of each block

k210_models

face_detect Scan return

Apriltag_id return

handwriting_number return

self_learning Scan return

object_detct Scan return

face_reg Scan return

face_mask Scan return

Apriltag Scan return

Color scan return

QRcode scan return

Barcode scan return

reg_H return

reg_W return

reg_Y return

reg_X return

init_SerialPort