

# UART Fingerprint Reader

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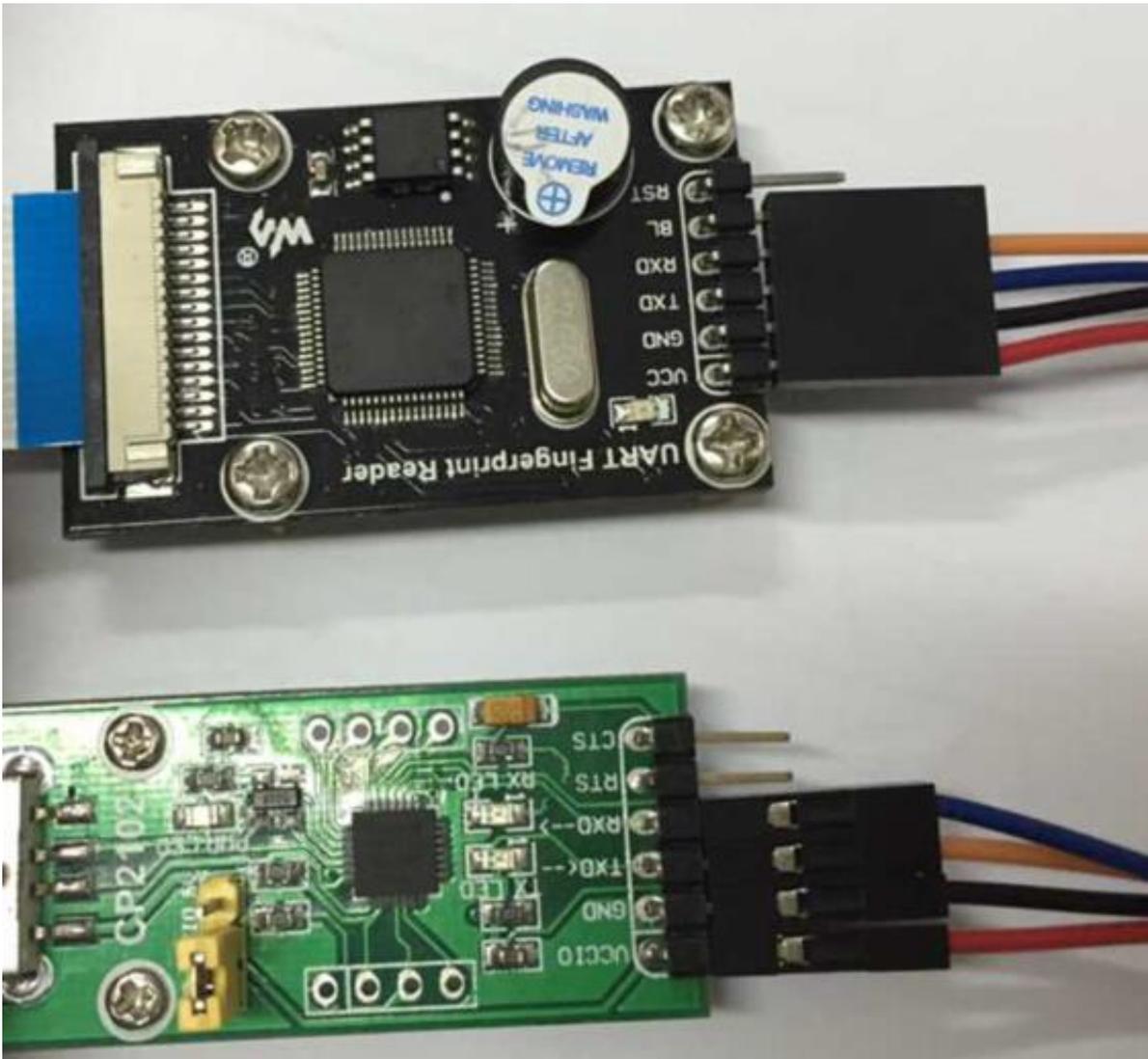
UART Fingerprint Reader, onboard processor STM32F205, commercial fingerprinting algorithm, optical sensor.

## Resources

- [Code](#)
- [Software](#)
- [Drawing of Scanner](#)

## Preparation

1. In this document, we use the CP2102 USB to Serial Module for testing. (The operation steps described here are applicable to other USB to Serial Modules as well) Therefore, you need to install the CP2102 driver.
2. Wire the cables to the Module as indicated in the Figure below:



3. Connect the CP2102 to the USB port of your PC, and then open the Device Manager to see if the corresponding COM port can be viewed.



4. Download the testing software: <File:UART Fingerprint Reader test.zip>, and register the relative control.

Please first change your system language to "Chinese (PRC)" and then follow the next steps:

On registering the control of MSCOMM32.OCX, if there is a prompt popped out telling you that *The module "mscomm32.ocx" was loaded but the call to DllRegisterServer failed with error code 0x8002801c.*

You can solve this problem with the following method:

For a 64-bit OS, copy the MSCOMM32.OCX to the directory of C:\Windows\SysWOW64, and then run the register script. If it still dose not work, you need to copy the MSCOMM32.OCX to the directory of C:\Windows\System32, and run the register script. (It may requires the administrator privileges to register the control successfully in this method.)

Open the UART Fingerprint Reader, you will see the operation interface as the below figure shows if the module works properly. (The default port of the USB to serial interface was set to COM1. If your COM1 isn't in use, there will be a prompt saying that *Comm port error!*. In this case, just click *OK* then choose the corresponding COM port in use.



## Operations

5. Configure the COM port: select the tab **Setting**, and choose the correct COM port in the option **Communication port selection** (Default baud rate: 19200).

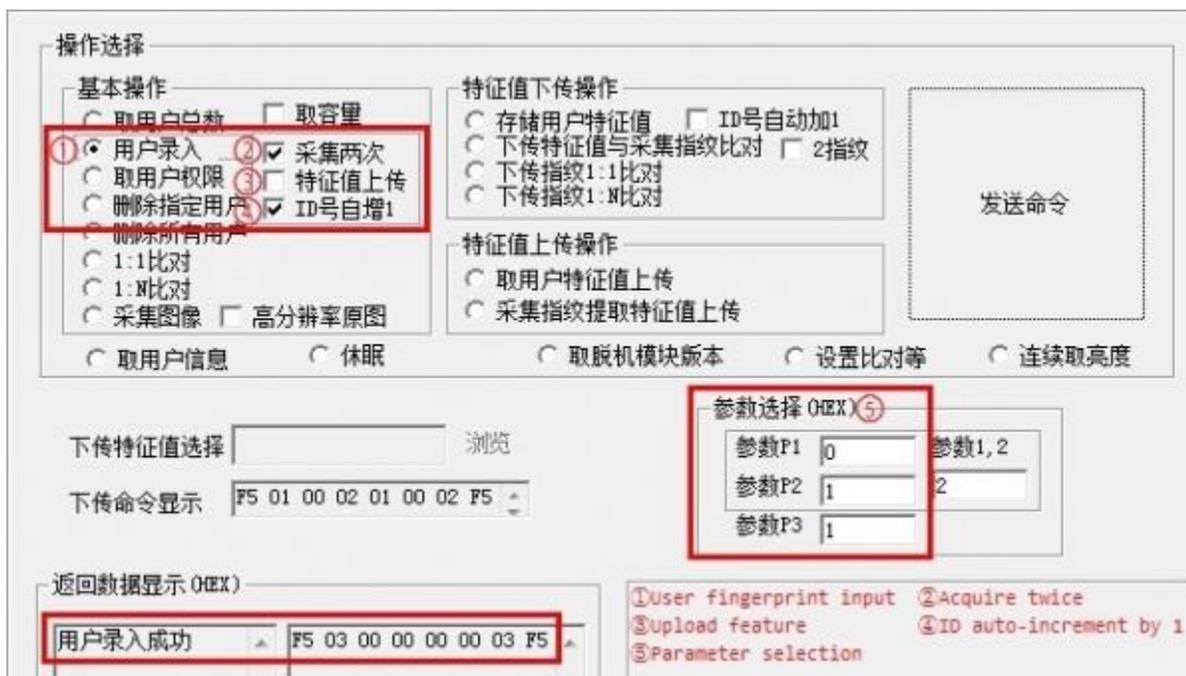


6. Check the communication: select the tab **Test**, and choose the option **Get the total number of user** in the area of **Basic operation**. Then, click the button **Send**. You will see the relative information displayed in the box of **Display returned data** (e.g. it prompts "用户总数: 0" which means "Total number of users: 0"), if the communication between the module and your PC is built up successfully. (In case of no information shown, please turn back to the previous steps to check carefully whether there are any mistakes.)

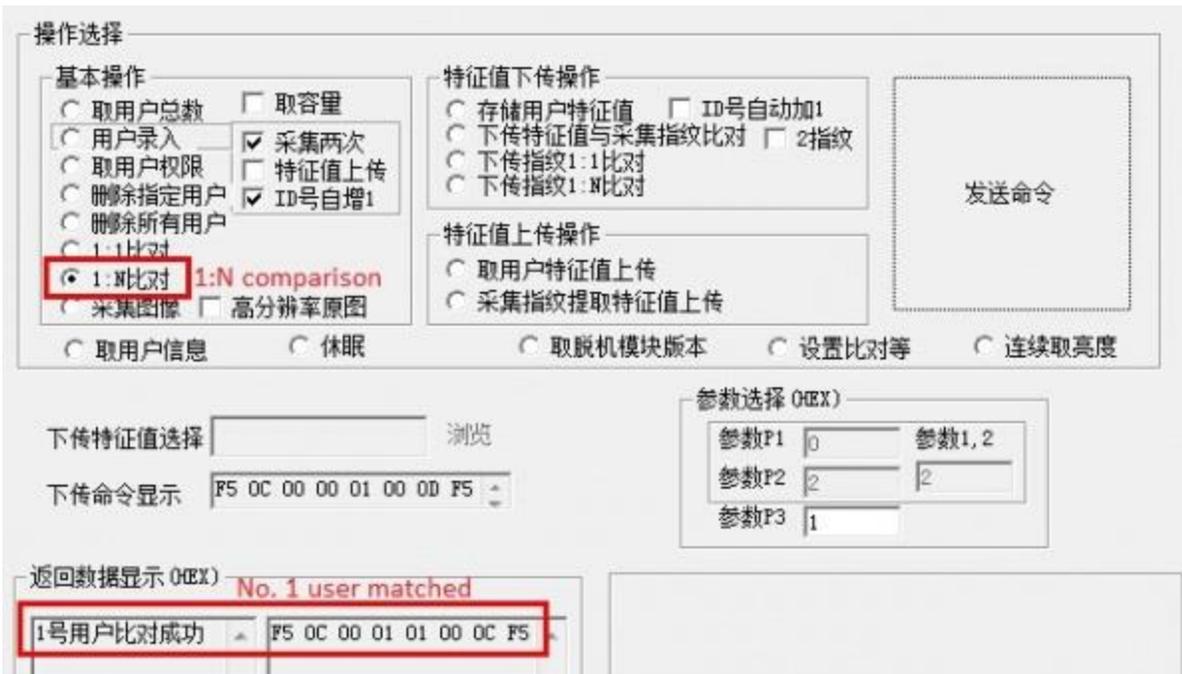


7. User fingerprint input: select the option **User fingerprint input** in the area of **Basic operation**, and check the options **Acquire twice** and **ID auto-increment by 1**. Set the parameters P1, P2 and P3 in the area of **Parameter selection** to 0, 1, 1, respectively. (You can of course set the parameters to other numbers, but just make sure the ID number they make up is not in used.) Click the button **Send**. When you hear a 'beep' from the module and find the fingerprint sensing area light up, you can put your finger on the sensing area for scanning. After the second scanning finished, it will prompt "用户录入成功" which means "Input Fingerprint Successfully".

Please take a notice that do not check the option **Upload feature**. This option may upload the characteristic value to the PC other than fingerprint reader, which will cause fingerprint marching failure and no increase in the total number of user, though you may get the information of 'fingerprint input success!' after a new fingerprint is added.



8. Fingerprint comparison: select the option **1:N comparison** in the area of **Basic operation**, and click the button **Send**. When you hear a 'beep' from the module and find the fingerprint sensing area light up, you can put your finger on the sensing area for scanning. If the fingerprint scanned is already stored into the module, the module will present the information "n号用户比对成功" which means "No. n user matched". Or else, you may get the information "No match".



## Additional operations

9. Modify the baud rate: take the modification of the baud rate from 19200 to 115200 as an example:

Select the tab **Setting**, and choose the correct COM port in the option **Communication port selection**. Then, set '115200' into the option of **Modify baud rate setting**, and click the button **Send** to make it take effect.

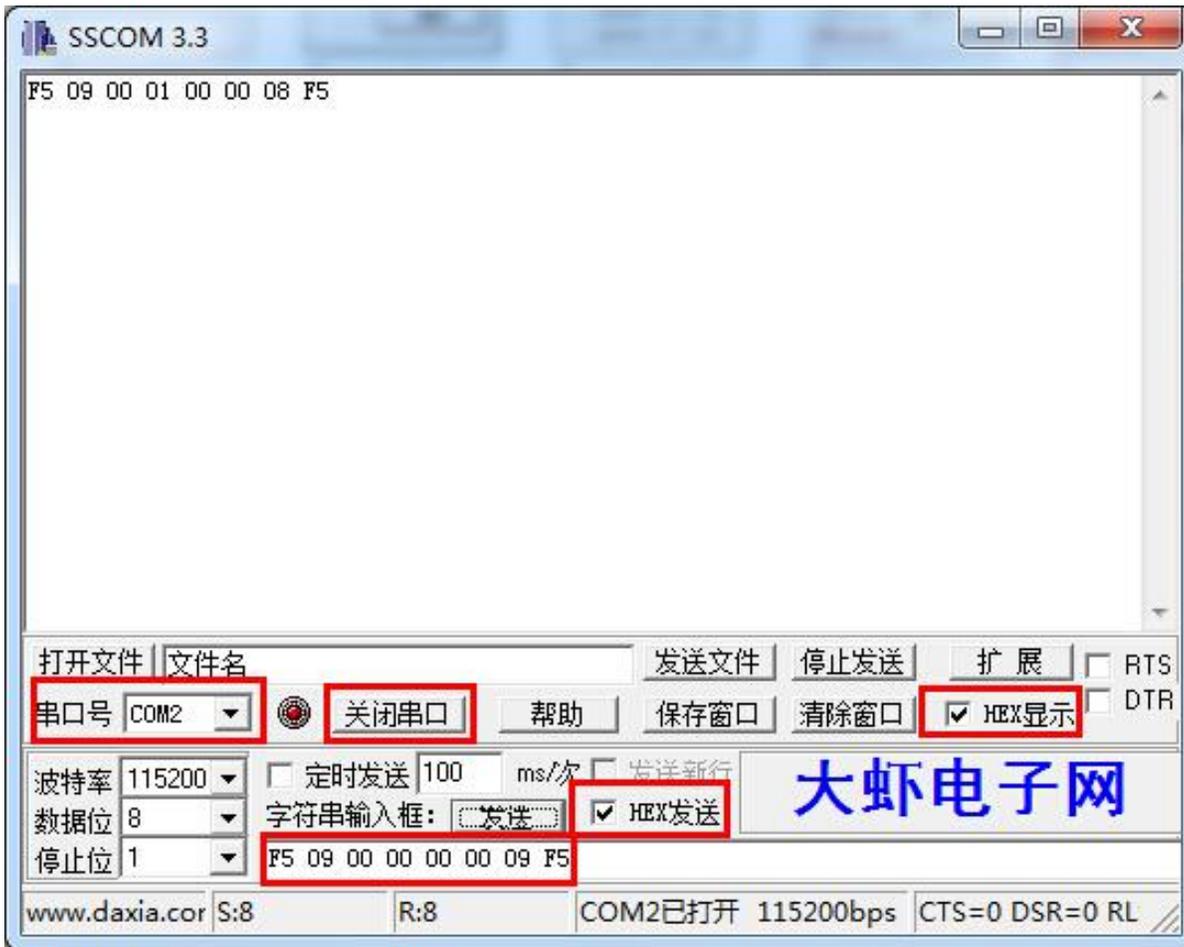


Notice: When the baud rate of the module has been modified to 11520, the baud rate of your PC should be set to 115200 as well. Otherwise, it may cause communication failure.



If you forget the baud rate of the module, the following method can help you to find it back:

Start the software **Serial Debugging Assistant**, and select the corresponding COM number. Then, open the COM port and check the options HEX display and HEX transmission. Input a string of data , such as 'F5 09 00 00 00 00 09 F5', into the string input box, and click the button Send. If the baud rate setting is correct, the receive box will show the relative data, such as 'F5 09 00 01 00 00 08 F5' in here. For a wrong baud rate setting, there will be nothing displayed. In this way, you can get back the correct baud rate by trying different baud rate setting.



10. Acquire fingerprint image: select the option **Acquire fingerprint image** in the area of **Basic operation**, and click the button **Send**. When you hear a 'beep' from the module and find the fingerprint sensing area light up, you can put your finger on the sensing area for scanning. It may take 6 seconds before displaying the fingerprint image acquired on the PC.

**Notice:** If the module can not acquire any image or the image acquired is imperfect, you should reduce the baud rate to make sure the quality of the image. It is recommended to use the baud rate of 9600 for fingerprint image acquirement.



操作选择

基本操作

- 取用户总数
- 用户录入
- 取用户权限
- 删除指定用户
- 删除所有用户
- 1:1比对
- 1:N比对
- 采集图像
- 高分辨率原图
- 取容量
- 采集两次
- 特征值上传
- ID号自增1
- 取用户信息
- 休眠 Sleep

特征值下传操作

- 存储用户特征值
- ID号自动加1
- 下传特征值与采集指纹比对
- 2指纹
- 下传指纹1:1比对
- 下传指纹1:N比对

特征值上传操作

- 取用户特征值上传
- 采集指纹提取特征值上传

发送命令

下传特征值选择  浏览

下传命令显示

参数选择 (HEX)

参数P1  参数1,2   
参数P2   
参数P3

返回数据显示 (HEX)

Module enters sleep mode and no command will be responded

模块进入休眠状态，不再响应任何命令