

Description:

12V ESP8288 four ways WiFi relay module carried a ESP-01 WiFi module and mature 8 bit MCU.It could control the relay by cell phone APP within the local area network (LAN).It is easy to set .

Function features:

1. On board high quality MCU and ESP-01WIFI module
2. Two working mode:
Mode 1: cellphone carry on wifi module directly
Mode 2: cellphone and wifi module carry on router together
Additional function: work as USB module when disconnect ESP-01 module
3. Transmission distance:
(1) The open environment, the mobile phone when carrying on the WIFI module maximum transmission distance of 100 m;
(2) When the WiFi module and cell phone carrying on the router at the same time the signal transmission distance depends on router signal
4. Use the Smartconfig technology to complete the configuration of the account and password of the esp-01 WIFI module on the mobile APP. The configured account and password will be memorized after power off
5. The board contains 12V,10A/250V AC 10A/30V DC relay, which can continuously absorb 100,000 times, with the protection of diode current and short response time.
6. With mode option and working statue LED indicator
7. With 4 isolator and strong anti interference ability
8. Reserved UART debug interface and MCU download port for program
9. Board size: 60*63mm

Interface:

IN+, IN-: 12V voltage input

12V, GND, TX, RX: UART serial port PIN

SWIM, PIN8, NRST: reserved MCU download port

Button S1: change mode, default mode is mode 1

Button S2: reset

LED D1/D2/D3/D4(red): relay working LED, LED on when relay is on

LED D7(red): indicator for mode 1

LED D5(blue): indicator for mode 2

LED D6(green): work statue indicator, exact details as below:

- (1)When extinguished, it is being configured or disconnected from the router.
- (2)0.5s fast blinking represents cellphone app is configuring WIFI account and password for ESP-01 module
- (3) 2S slow blinking to configure finished ,and wait for connection with cellphone by TCP
- (4)LED always on represents TCP connections with mobile phone successfully

Connection for reserved two cap jumper:

Generally, insert them to the bottom ,that is RX to RX1, TX to TX1. Insert them to upper ,when use it as USB module

COM1 COM2 COM3 COM4: Common terminal

NC1 NC2 NC3 NC4: normal close

NO1 NO2 NO3 NO4: normal open

Control command for relay(hex format):

Open relay 1: A0 01 01 A2

Close relay 1: A0 01 00 A1

Open relay 2: A0 02 01 A3

Close relay 2: A0 02 00 A2

Open relay 3: A0 03 01 A4

Close relay 3: A0 03 00 A3

Open relay 4: A0 04 01 A5

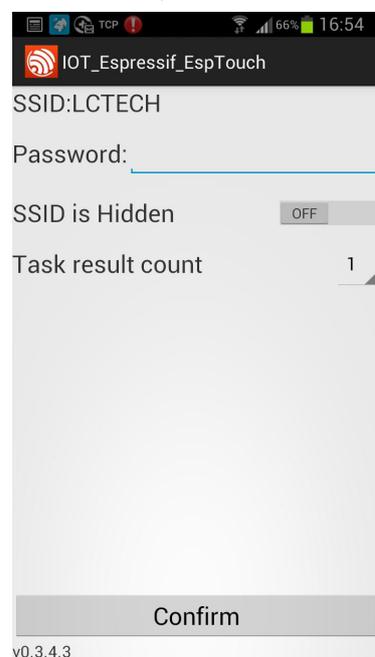
Close relay 4: A0 04 00 A4

Tips: The following are all examples of using the mobile APP to control the front 2 relays. The third and fourth methods are the same, except that the relay control commands are different.

2. Prepare the following tools before use:

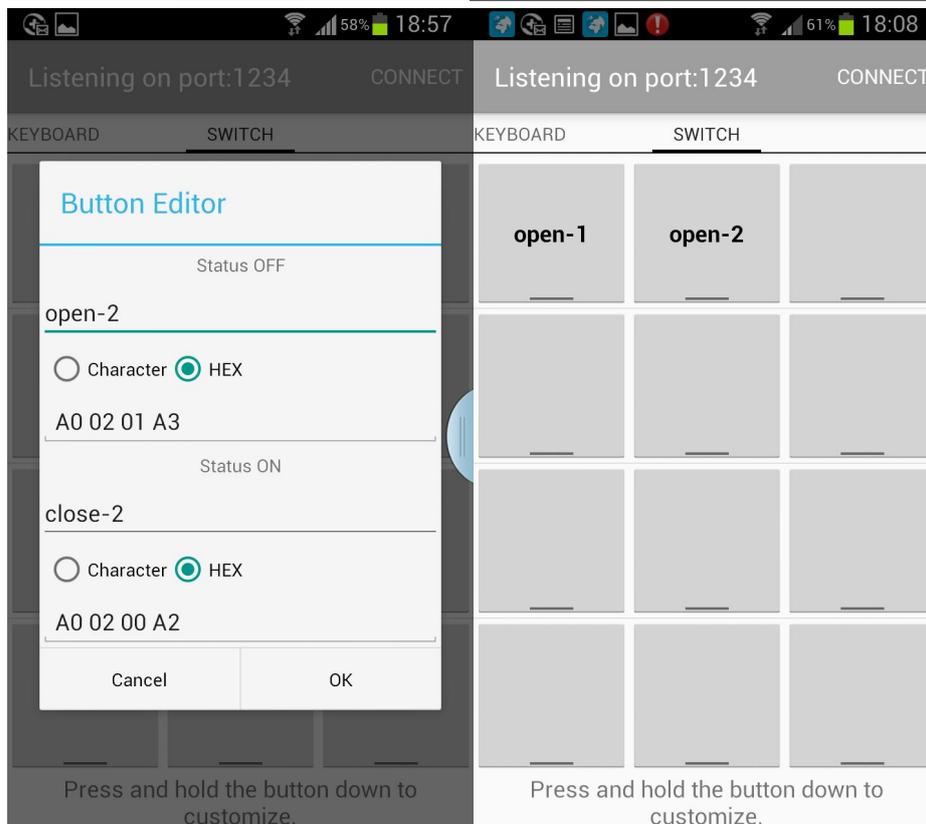
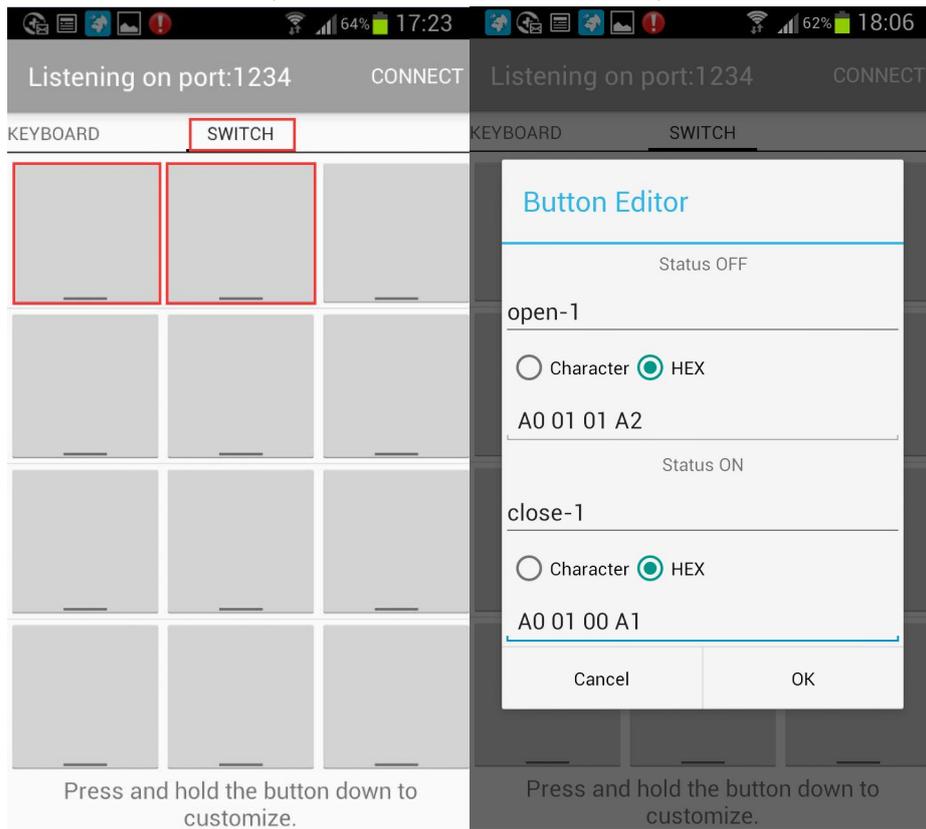
(1)12V/1A power adapter, the positive and negative electrodes of the power supply are connected to IN+ and IN- of the module respectively;

(2) install the APP "EspTouch_Demo" on android phone, which is used to configure the WIFI account and password for the esp-01 module in the first working mode 2;



(3) install the APP "EasyTCP_20" on the android phone terminal and TCP transmission tool for sending relay control instructions. Click "SWITCH", and then long press the gray box in the interface to input the name and content of 4 relay

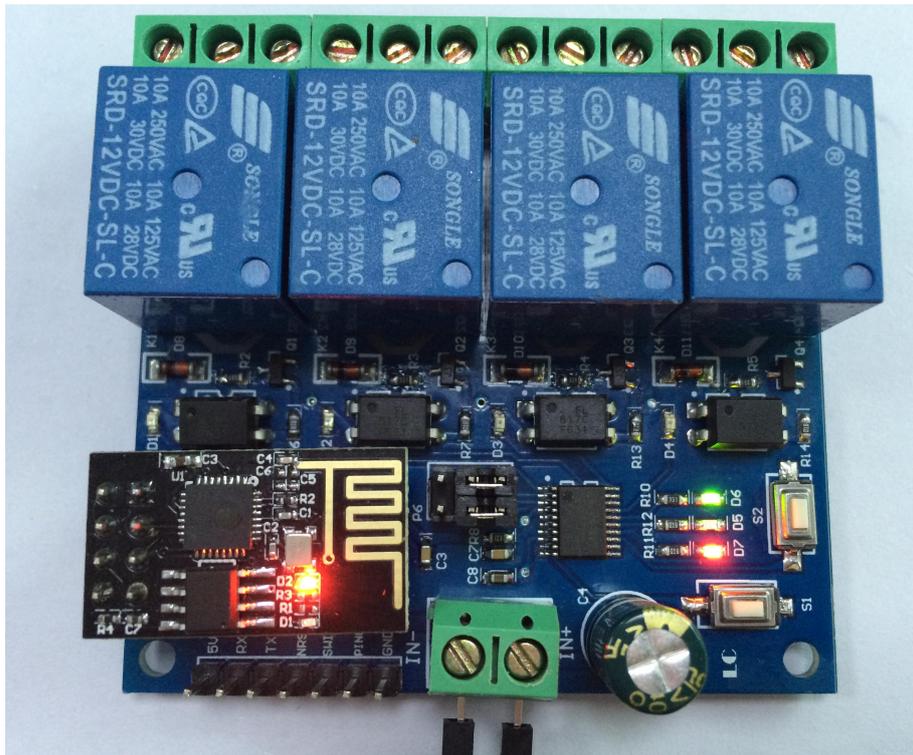
control instructions (the instruction format is HEX).



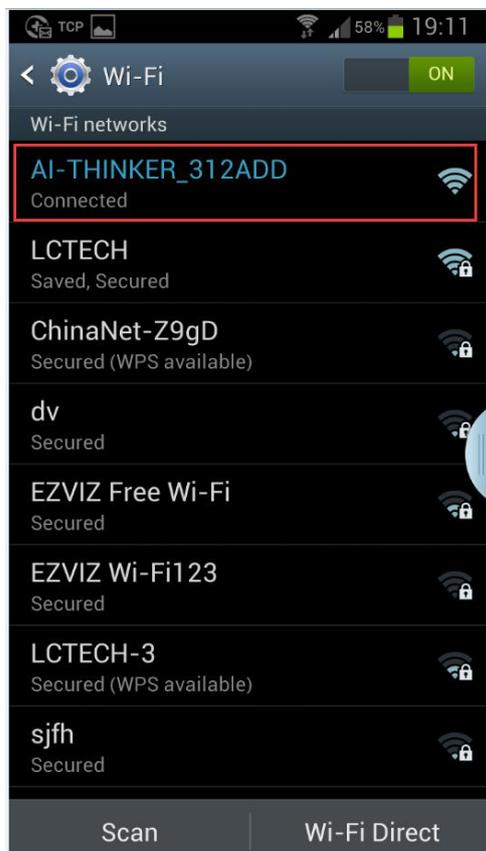
3. Operating mode 1 (the phone is equipped on the esp-01 module)

(1) plug in the esp-01 module and power on the module. After about 4S, the green light turns to slow flash of 2S, indicating that the configuration is completed as

follows:

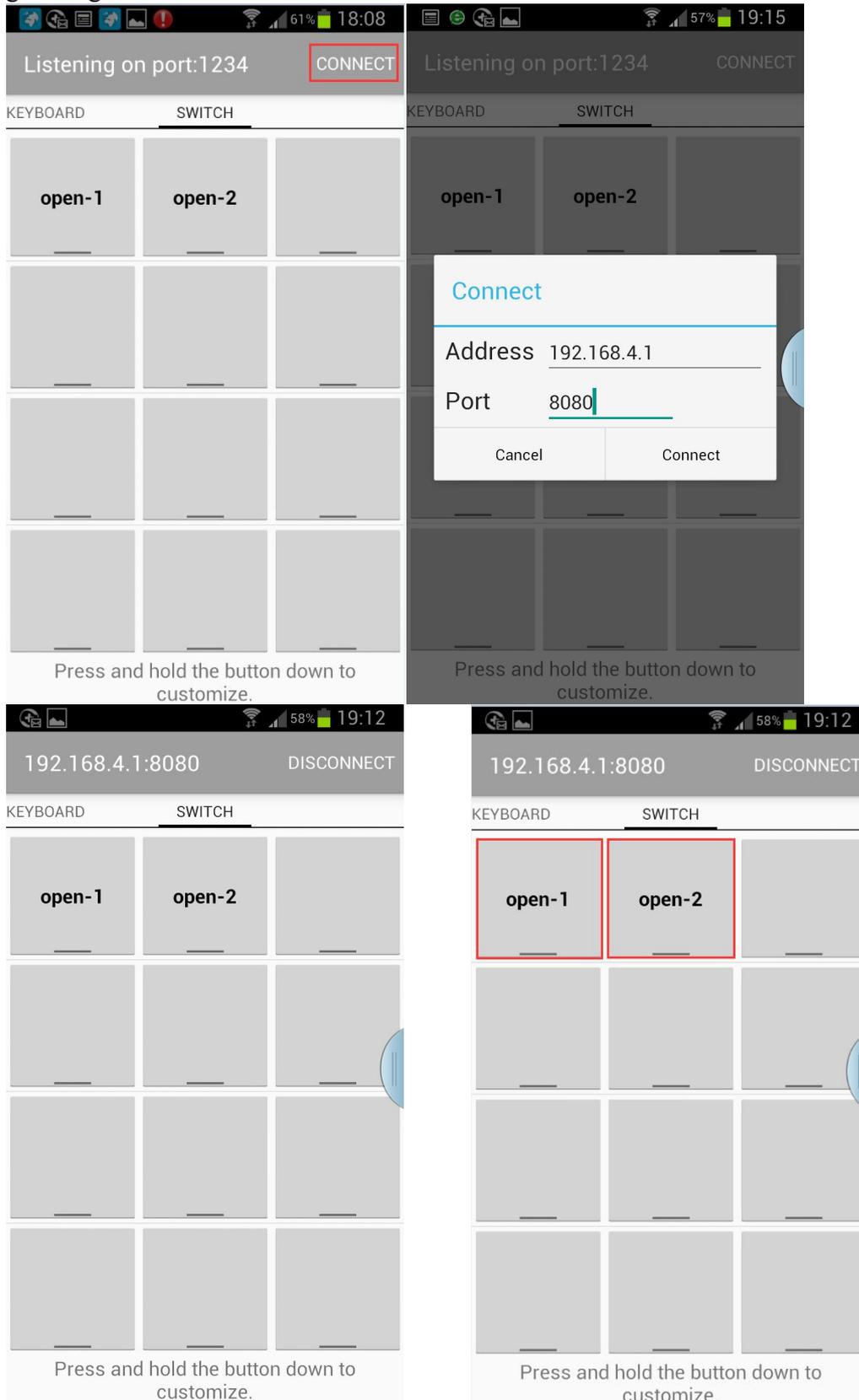


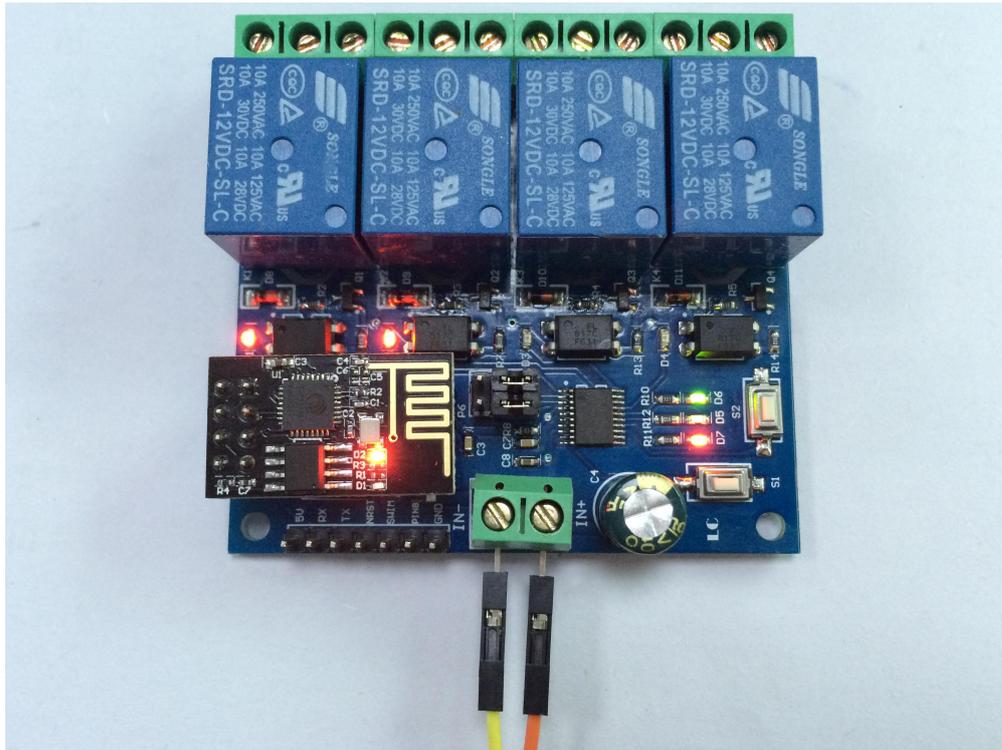
(2) connect the cell phone to the AP hot spot signal of the esp-01 module



(3) open the "EasyTCP_20" APP, click "CONNECT", input IP address: 192.168.4.1 and port number 8080, then click "CONNECT". After successful connection, the

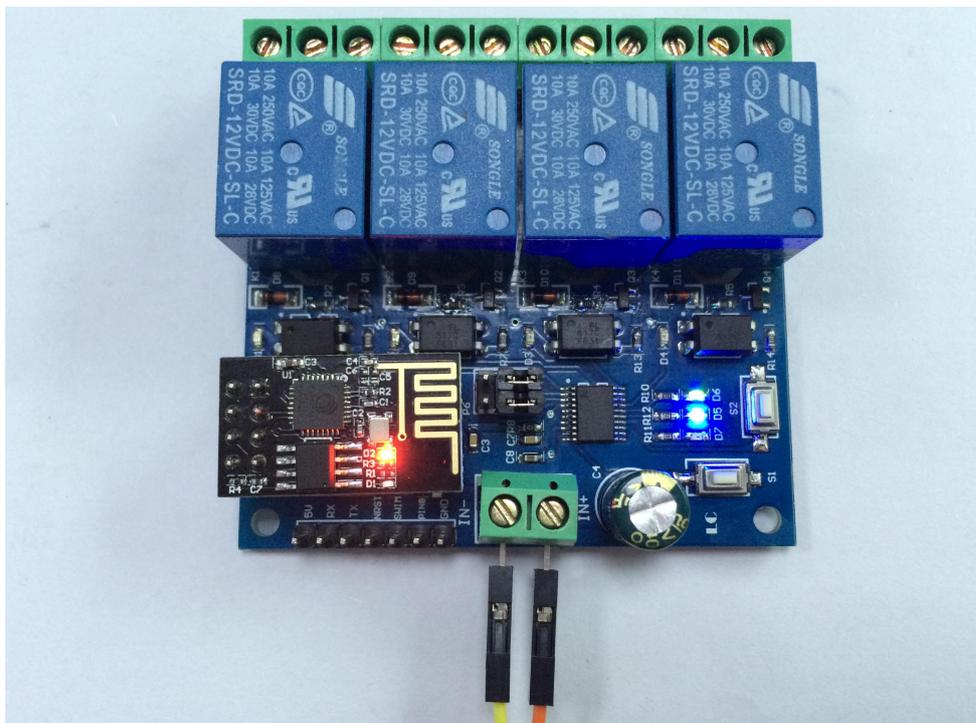
green light turns to normal after a slow flash of 2 seconds.





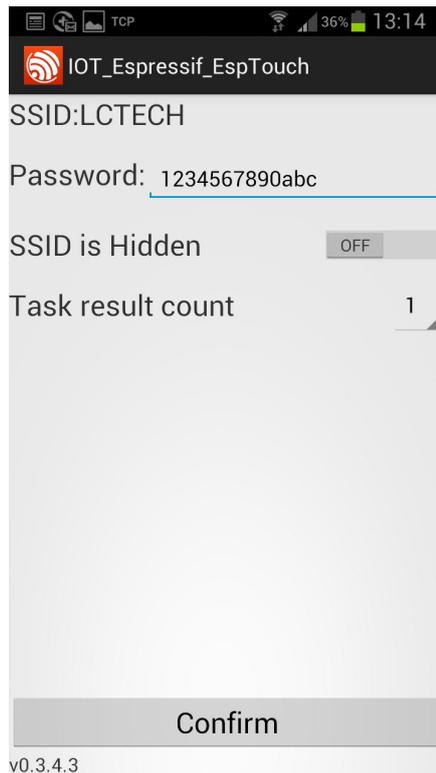
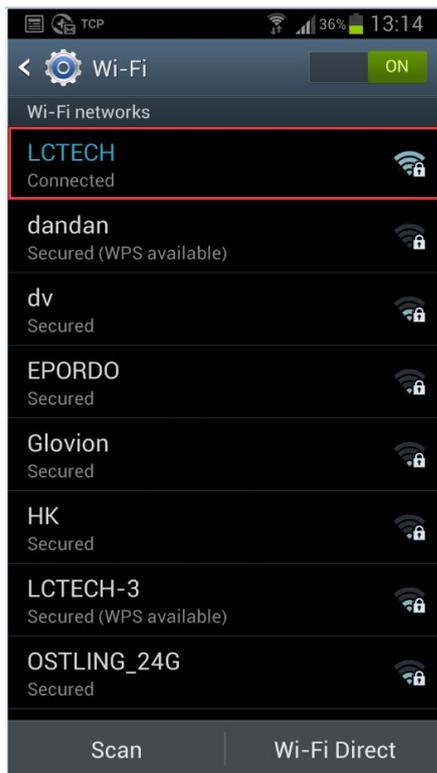
4, working mode 2 (mobile phone and ESP-01 module are mounted on the router at the same time) instructions for use, the previous two relays for example:

(1) Plug in the ESP-01 module, power on the module, wait until the green light changes to slow flash, then press the S1 key to switch to mode 2. The blue light is on. After about 1 minute, the green light changes from off to 0.5S. Description Waiting for the "EspTouch_Demo" APP to configure the WIFI account and password for it.

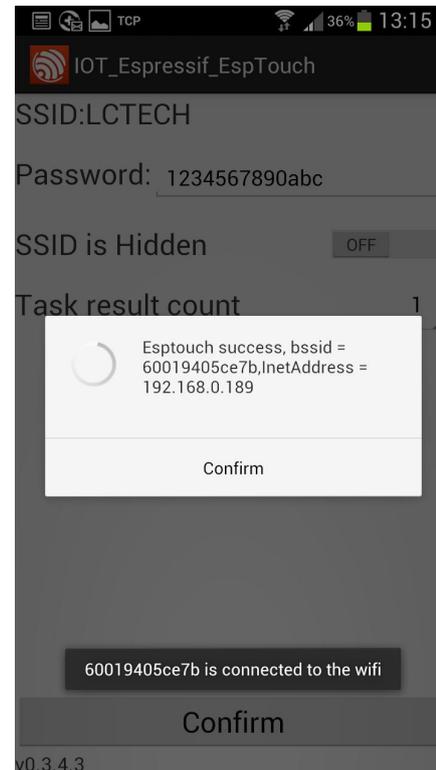
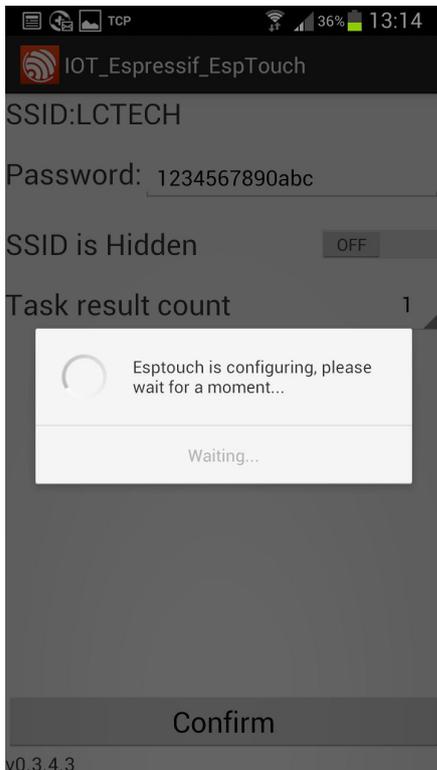


(2) At this time, the mobile phone is connected to the router first, open the

"EspTouch_Demo" APP, enter the router password, and click "Confirm"

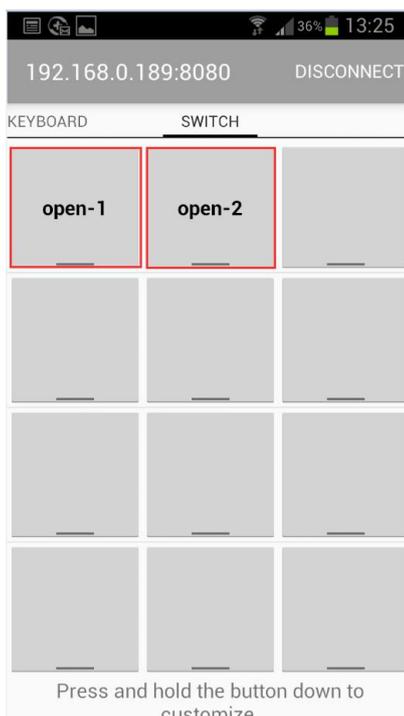
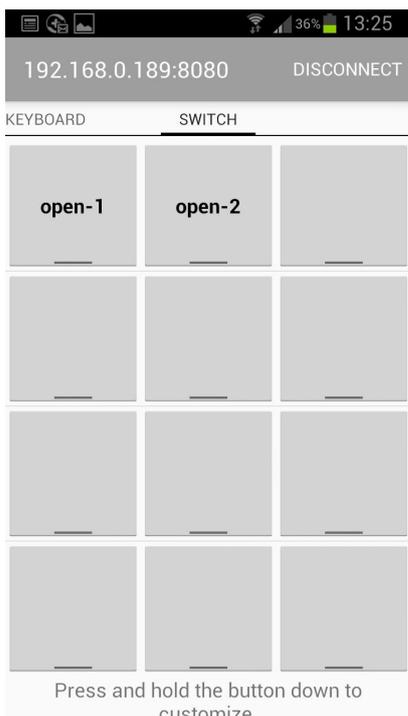
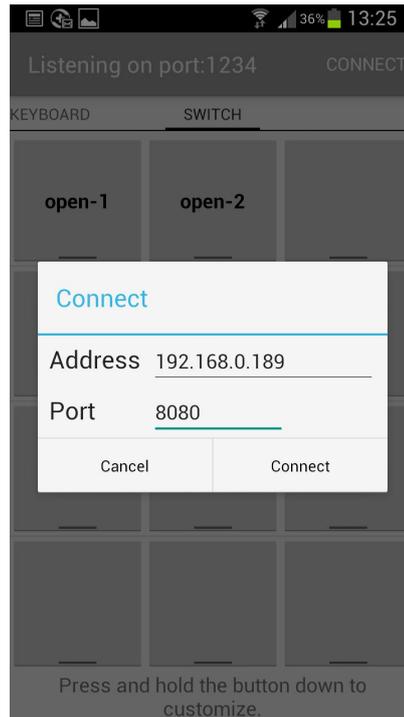
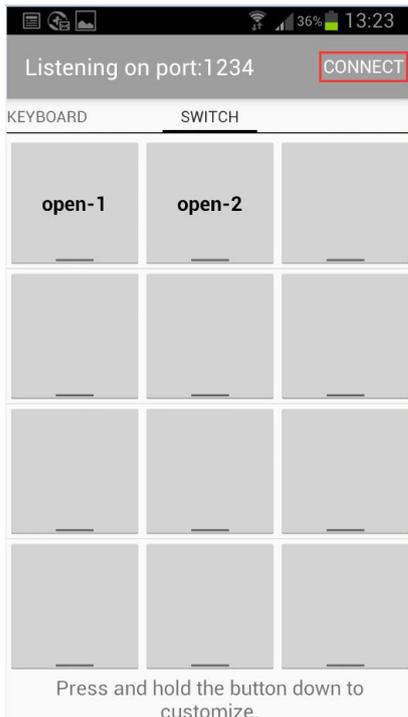


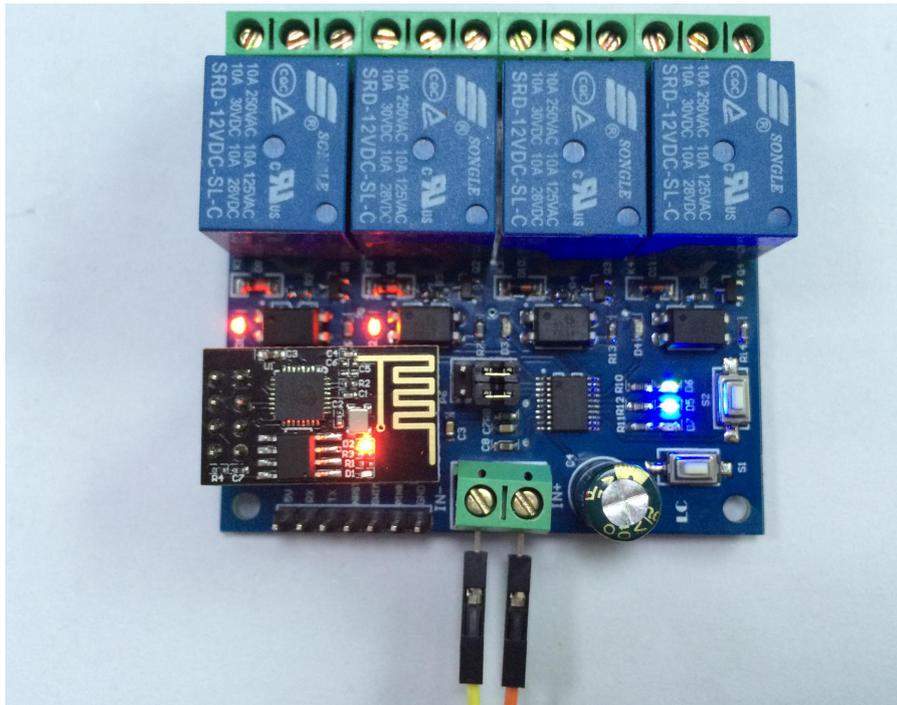
(3) Waiting for the configuration to be successful. When the IP address of the ESP-01 (such as 192.168.0.189) appears on the APP interface, the ESP-01 module is successfully connected to the router, and the account and password are automatically remembered. Automatic connection (approximately 20-60S can be connected)



It should be noted that the IP address 192.168.0.189 is dynamically assigned to the ESP-01 module by the router. The address may change after the next reconnection. You can view the real-time IP address of the ESP-01 module in the device list of the router. address.

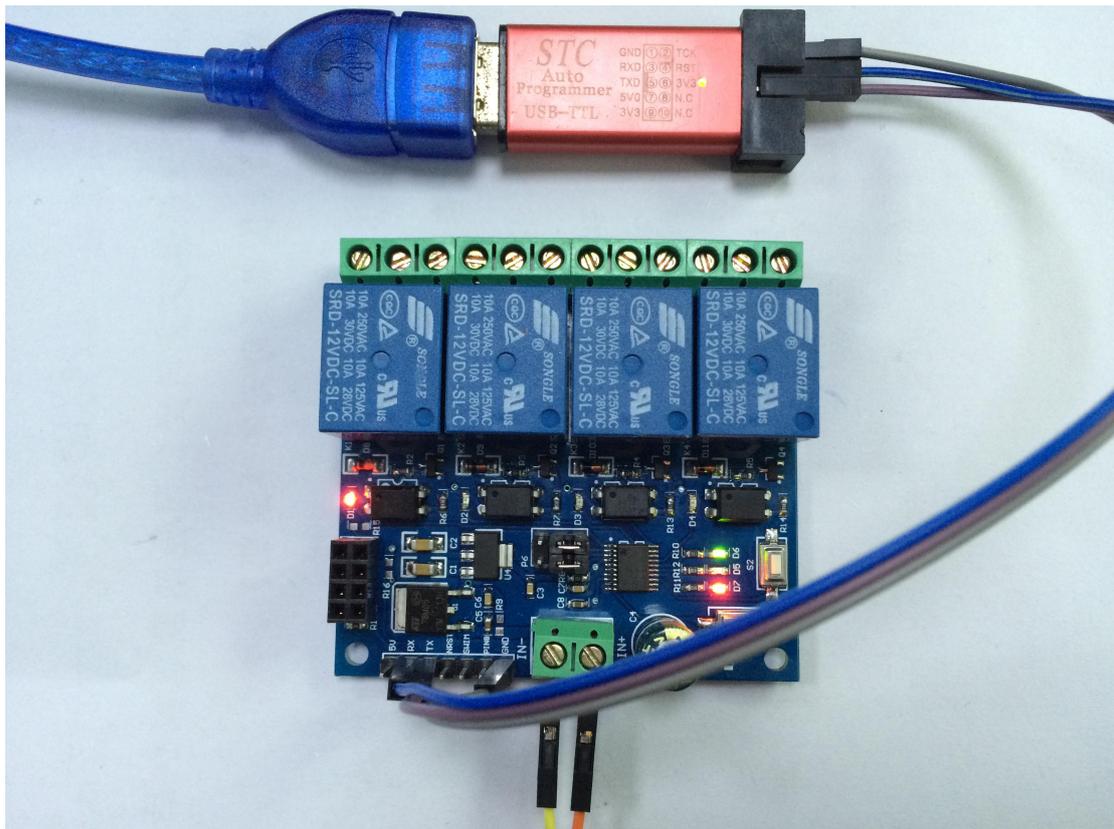
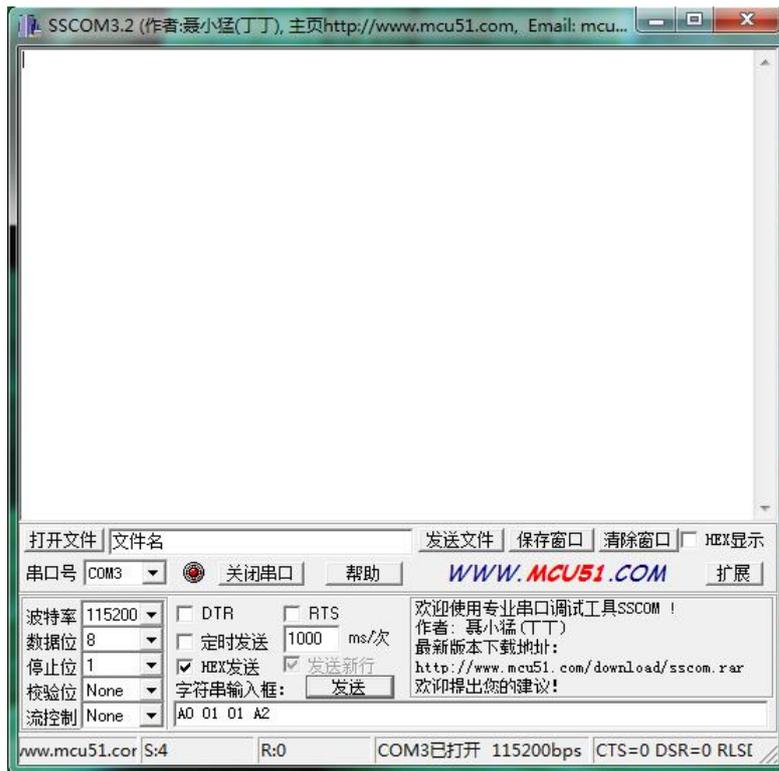
(4) Open the "EasyTCP_20" APP, click "CONNECT", enter the IP address of the ESP-01 module: 192.168.0.189 and port number 8080, and then click "Connect". After the connection is successful, the green light changes from 2 seconds to slow. Always on, click on the gray square to send a command to control the switch of the relay





5, additional features (as a USB relay) instructions for use:

Prepare a USB to TTL serial port module, GND module GND, TX, RX respectively connect the relay module GND, TX, RX, unplug the ESP-01 module, select mode 1, and wait for the green light to become 2S slow flash on the computer Open the serial port debugging software (such as SSCOM32), select the baud rate of 115200, send the relay control command in hexadecimal (hex) format to turn the corresponding relay on or off. Take the first relay as an example and send A0 01 01 A2 can open the first relay:



Tips:

- 1, the time to use the first time to configure the WIFI password will be a little longer (about 1 minute), the next time the configuration is completed, it only takes 20 seconds to automatically connect.
2. If you want to replace the router, you can power off or restart or press S2 (press S2

to clear the previously saved WIFI account and password), and re-configure the WIFI account and password for ESP-01 in mode 2.

3. When the ESP-01 memory router signal is weak or the connection is interrupted in the service area, the green light will go out and automatically try to connect. In this process, the button is inactive. When the green light changes to 2S, the connection is restored. .

4. In mode 1 and mode 2, the button is only available when the green light is slow or steady for 2 seconds. The rest is self-configuring or waiting for the configuration process, and the button is invalid.

5, ESP-01 has a timeout mechanism, the mobile phone and ESP-01 no data exchange for more than 6 minutes will automatically disconnect the TCP connection, then click "CONNECT" in the upper right corner of the "EasyTCP_20" APP to re-establish the connection.

6, on the onboard UART interface: When debugging 8266, USB to TTL module TX, RX, GND are connected to the relay module RX, TX, GND; when the relay module is used as a USB relay, USB to TTL module TX, RX, and GND are connected to the TX, RX, and GND of the module.

7. About the reserved MCU program download port: When the onboard MCU is STM8S003/STM8S103, NRST and SWIM are the programming interfaces; when the onboard MCU is N76E003, NRST, SWIM and PIN8 correspond to the Nu-Link programmer respectively. RST, CLK, DAT interface.

8. The serial port baud rate of the onboard MCU is 115200. Therefore, when the APP and ESP-01 cannot be connected, please make sure that the baud rate of the ESP-01 module used is 115200.