



深圳市艾尔赛科技有限公司  
Shenzhen LC Technology Co., Ltd.

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**LC-Relay-ESP01-4R-12V**

**12V four channel wifi relay module**

**12V ESP8266 four ways wifi relay IOT smart**

**home cellphone app remote control switch**

深圳市艾尔赛科技有限公司

2018-01



## 1, Overview :

LC 12V ESP8266 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 .

## 2, 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 remove ESP-01 module

3. Transmission distance:

(1) the open environment, when the mobile phone carrying on the WIFI module ,maximum transmission distance is 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

## 3, Hardware introduction :

Board size : 60\*63mm

1, interface on board :

IN+、IN-: 5V voltage input ;

5V、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)S 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 bottom ,that is RX to RX1,TX to TX1 .Insert them to upper ,when use it as USB module

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

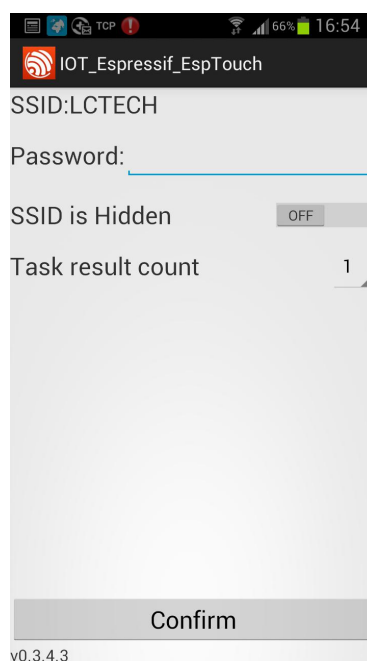
Close relay 4 : A0 04 00 A4

**Tips: all of the following are used to control the first 2 relay in the mobile phone APP. The third and fourth way are the same, except that the relay control instructions are different.**

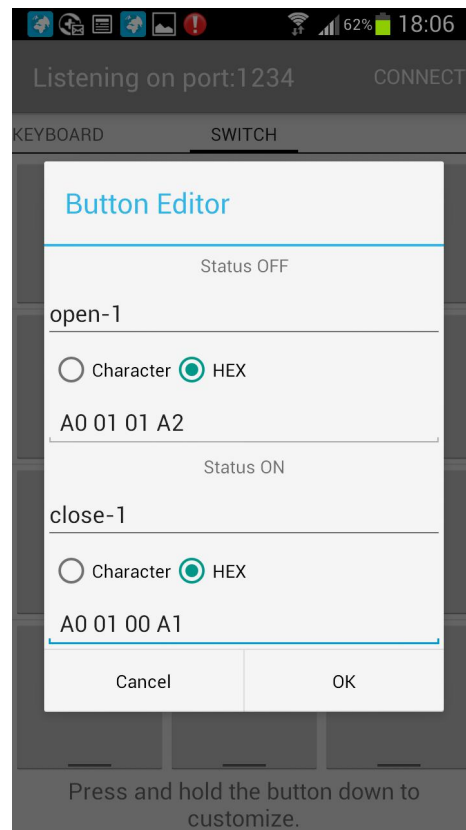
2, get ready for the following software and tools :

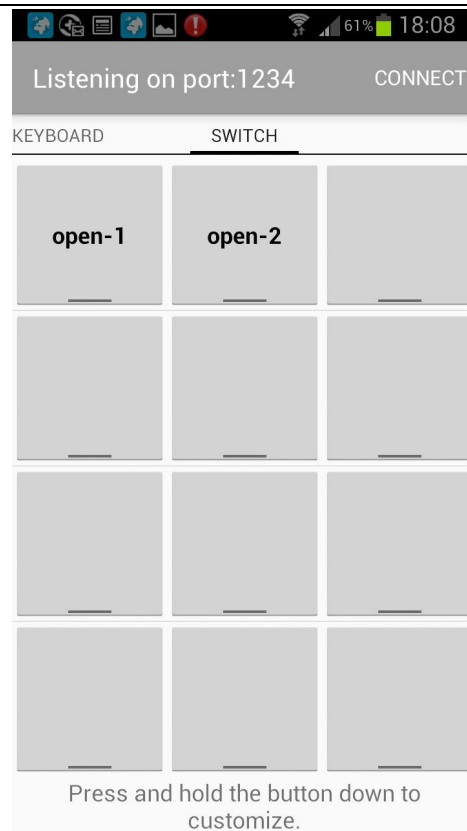
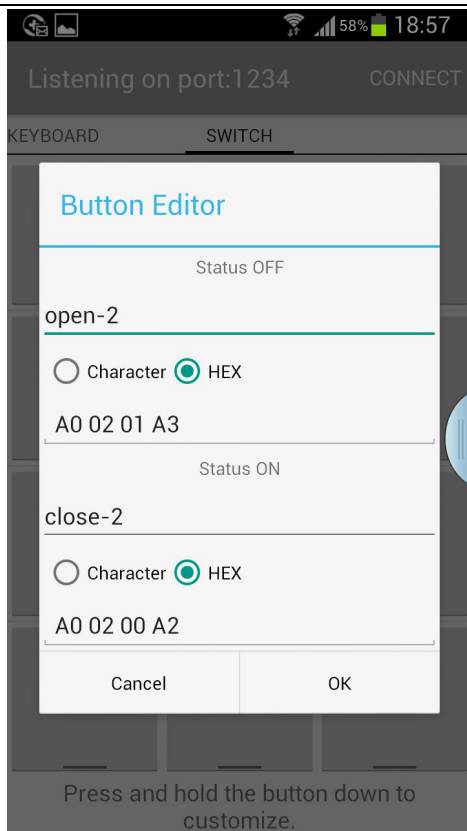
(1)12V/1A adaptor and connect to IN+ and IN-;

(2)Install APP “EspTouch\_Demo” android version to configure wifi account and password for ESP-01 module on the first time



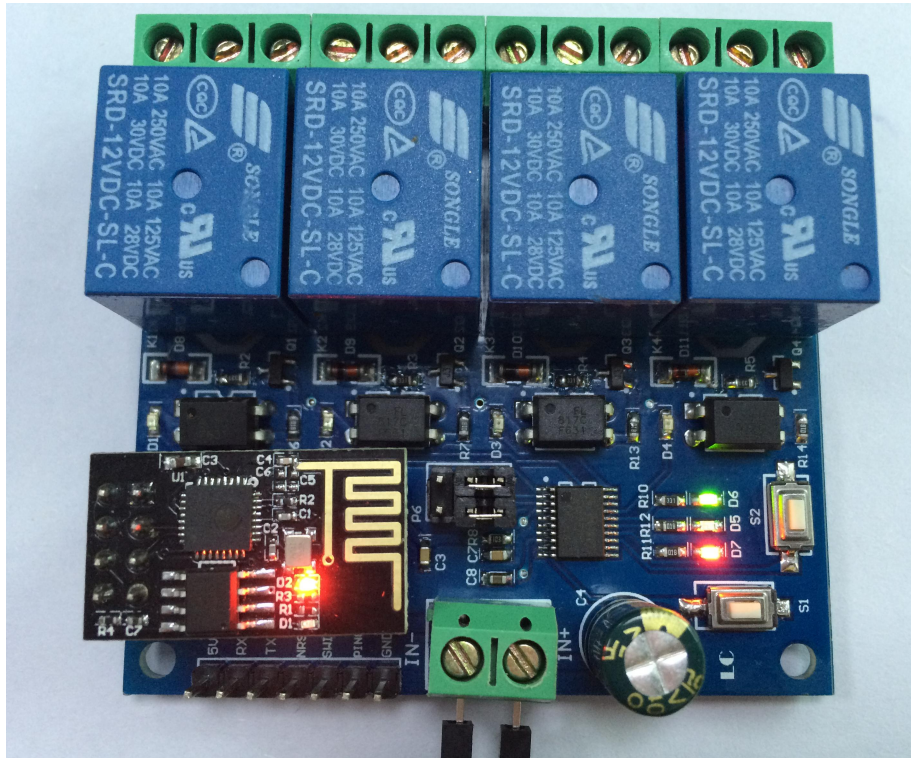
(3) install APP “EasyTCP\_20 “ on android cellphone .It is TCP transmitter tool for sending instruction of relay .Clik “SWITCH” ,and always press gray block to popup Button Editor interface .Then input button name and choose HEX ,and related command .



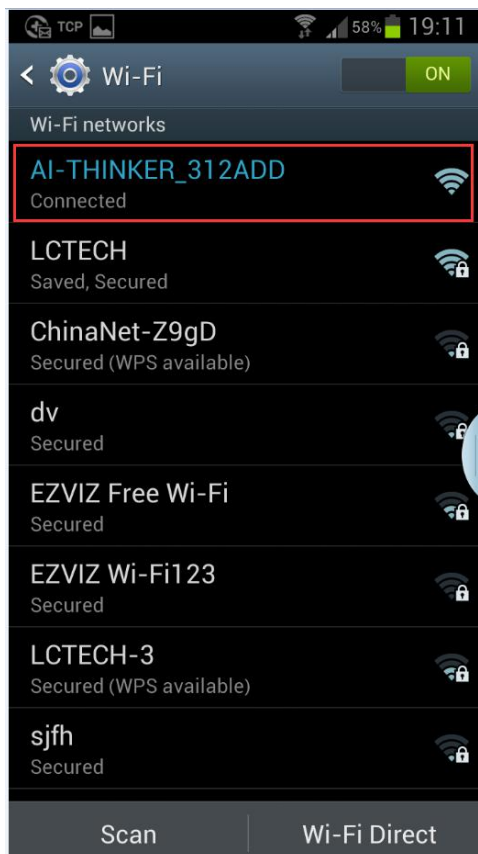


3, setting for mode 1 (cellphone carry on ESP-01 relay module ) :

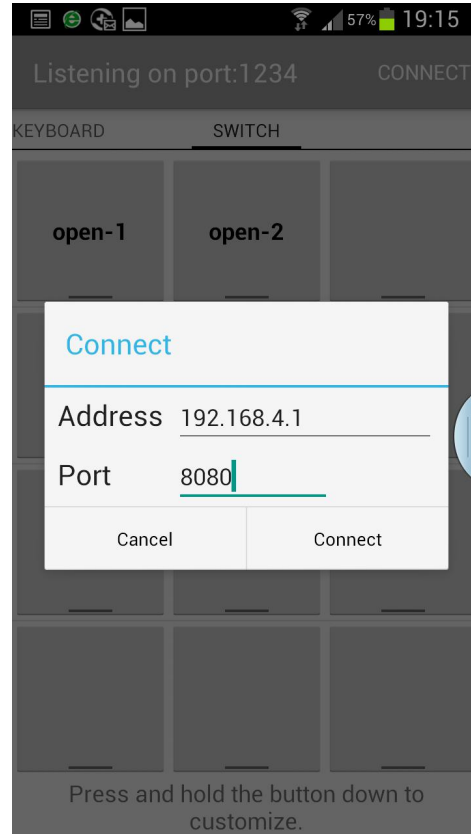
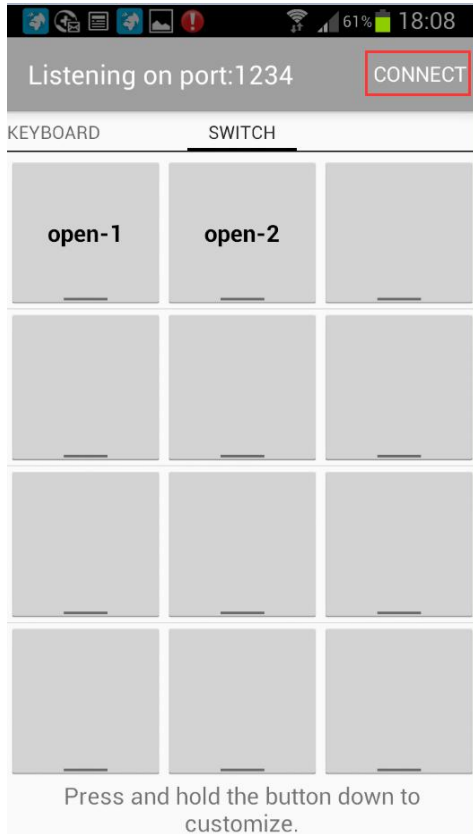
(1) power on ESP-01 module ,green LED is out to 2s slow blinking after 4 s ,that means ,configuration is finished

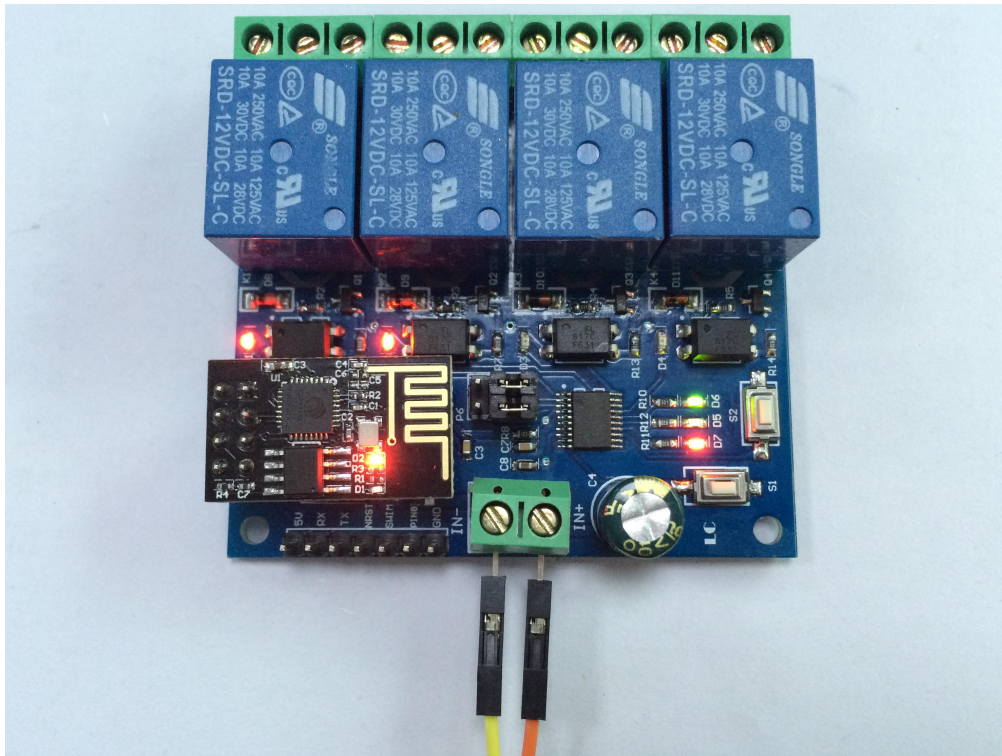
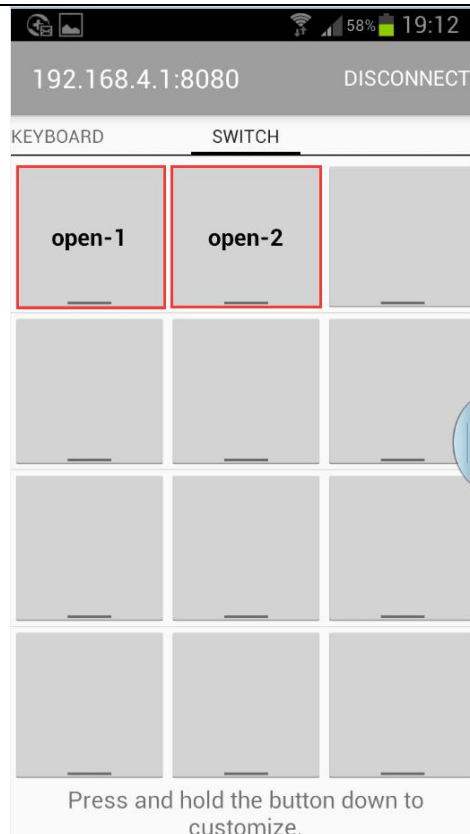
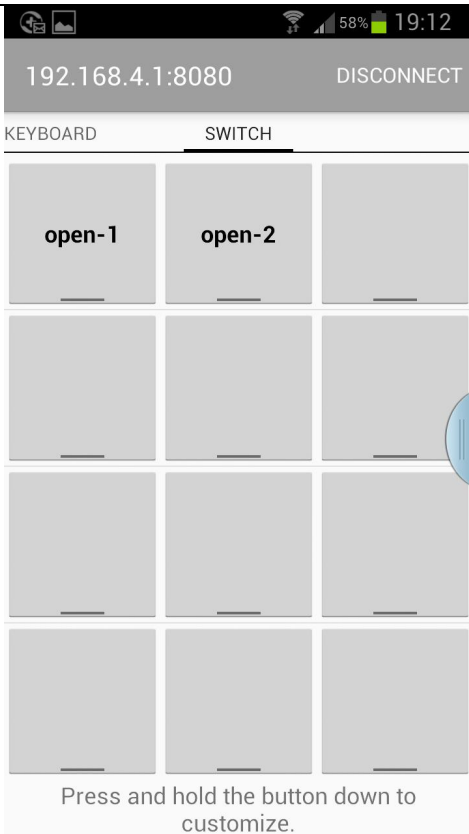


(2)EPS-01 module creates AP and connect with mobile phone



(3)log in app “EasyTCP\_20 “,CLICK “CONNECT”,input IP 192.168.4.1 ,port 8080 ,then connect .The green LED will be 2s slow blinking to always on .Click gray block to control the relay now .

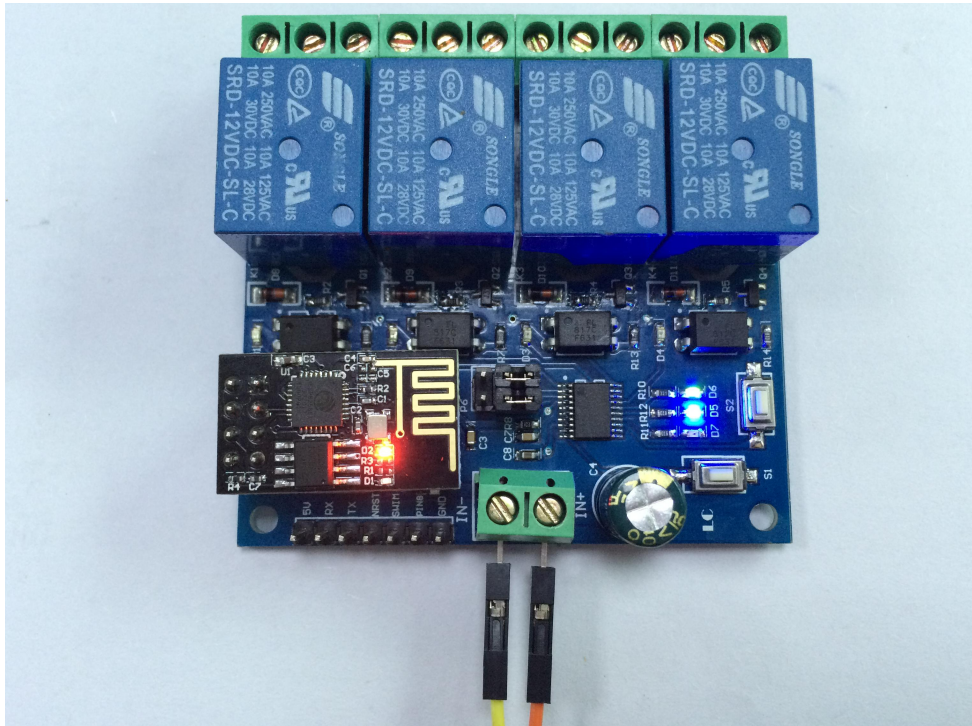




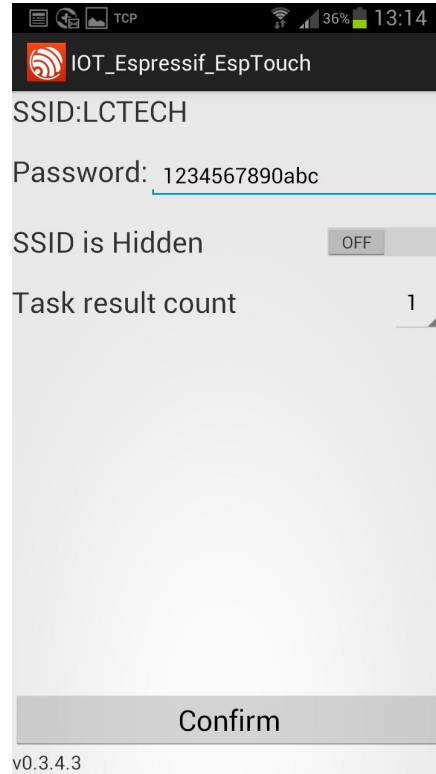
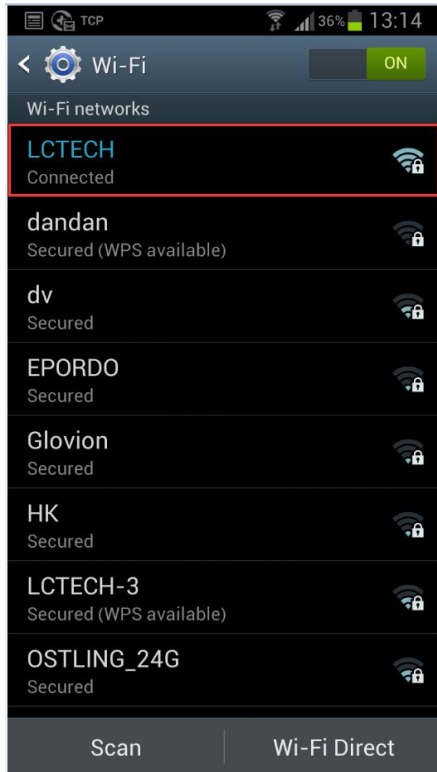




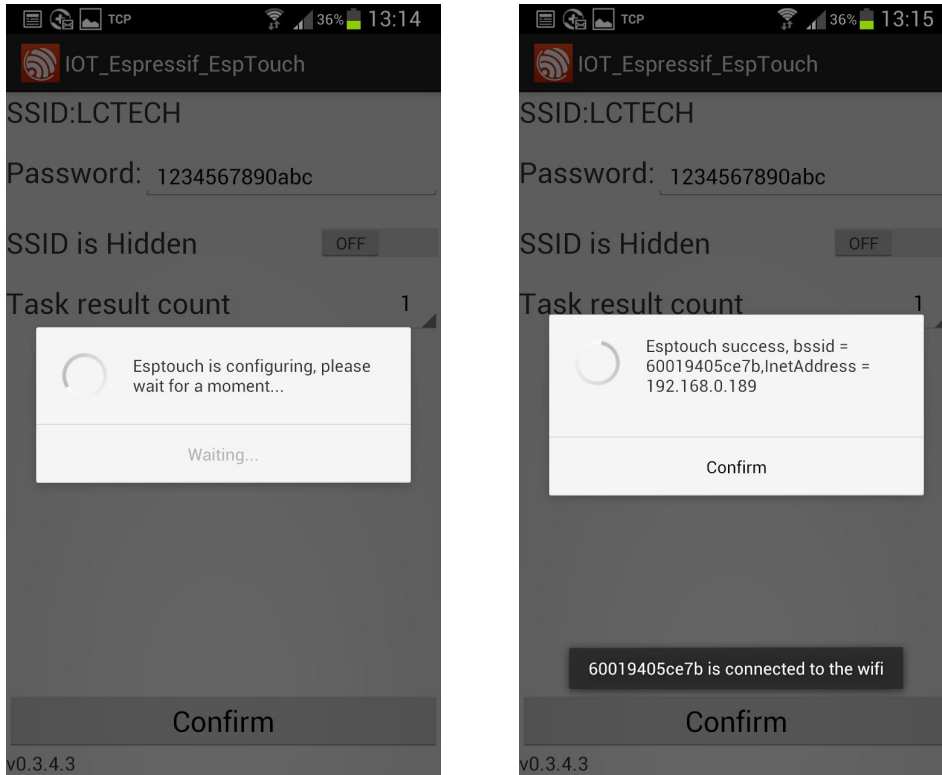
4. Setting for mode 2 (cellphone and ESP-01 module carry on router together )
- (1) Insert ESP-01 module and power on relay module ,press S1 and change to mode 2 when green LED is on slow blinking .Blue LED will be on at this time and green LED is out to 0.5s fast blinking .The module is waiting for “EspTouch\_Demo”APP configuring wifi account and password .



(2) Log in “EspTouch\_Demo”APP,input router password and confirm after cellphone connects router successfully .

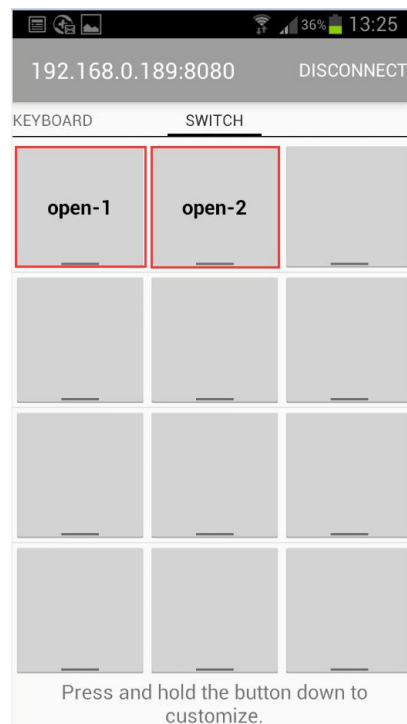
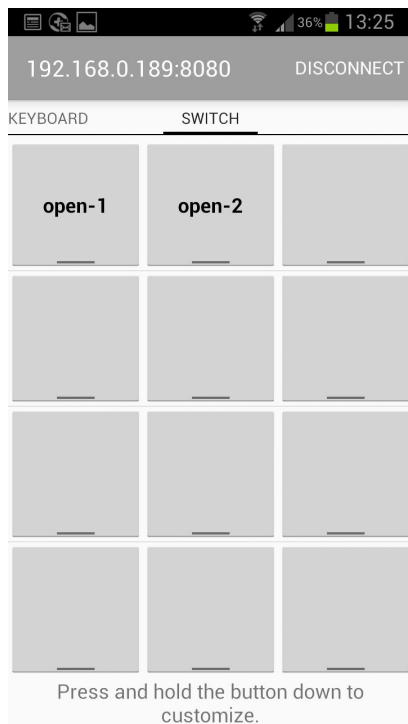
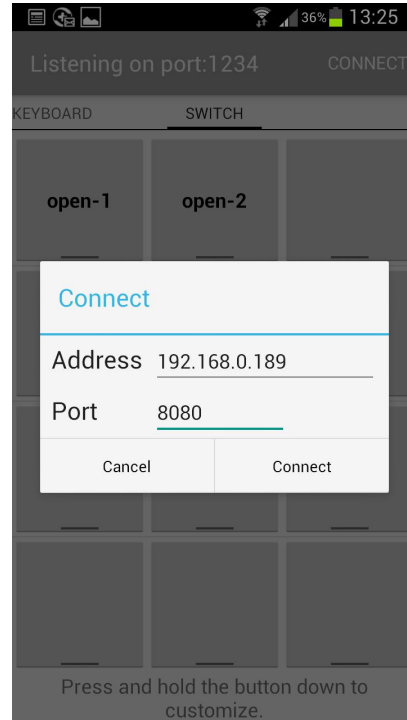
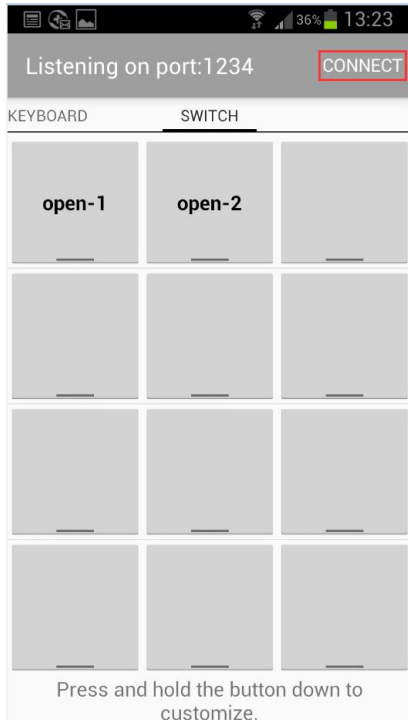


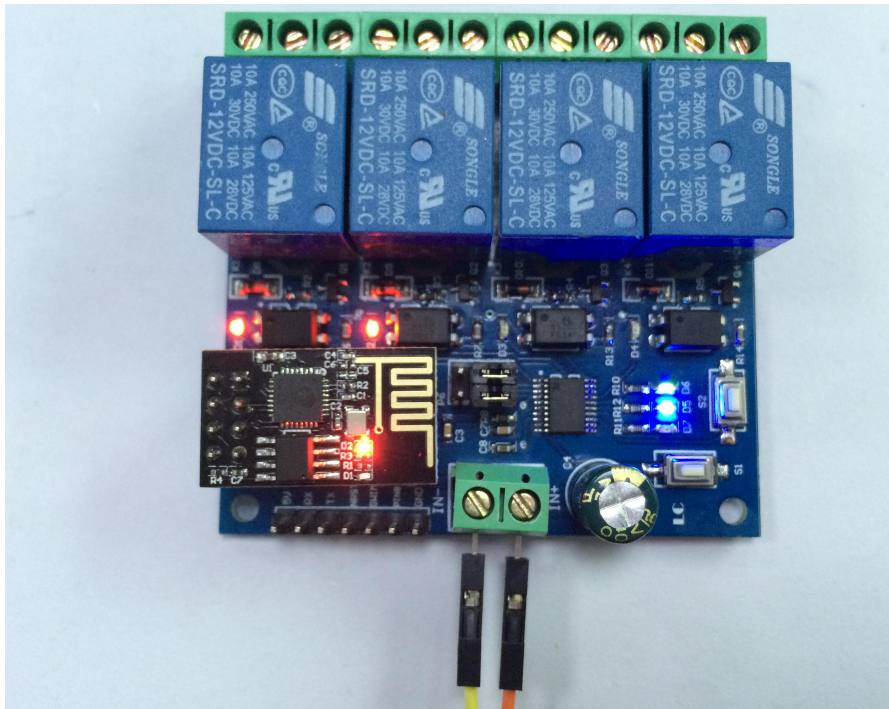
(3)When app creates IP (192.168.0.189 for example ) successfully ,ESP-01 module connects router already .It will remember account and password .And it will connect router automatically next time .



it is important to note:192.168.0.189 this IP address is dynamically allocated by the router to ESP - 01 module.It may change after the next re-connection. User can see the router device list of real-time IP address

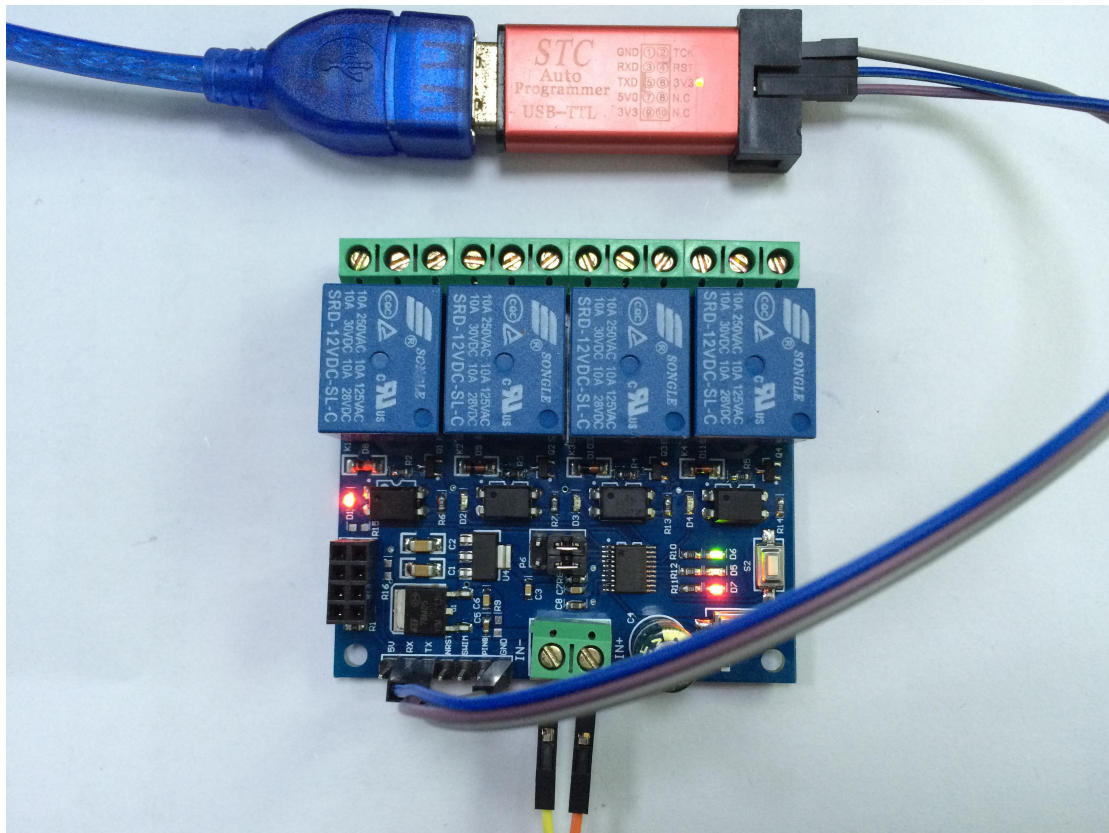
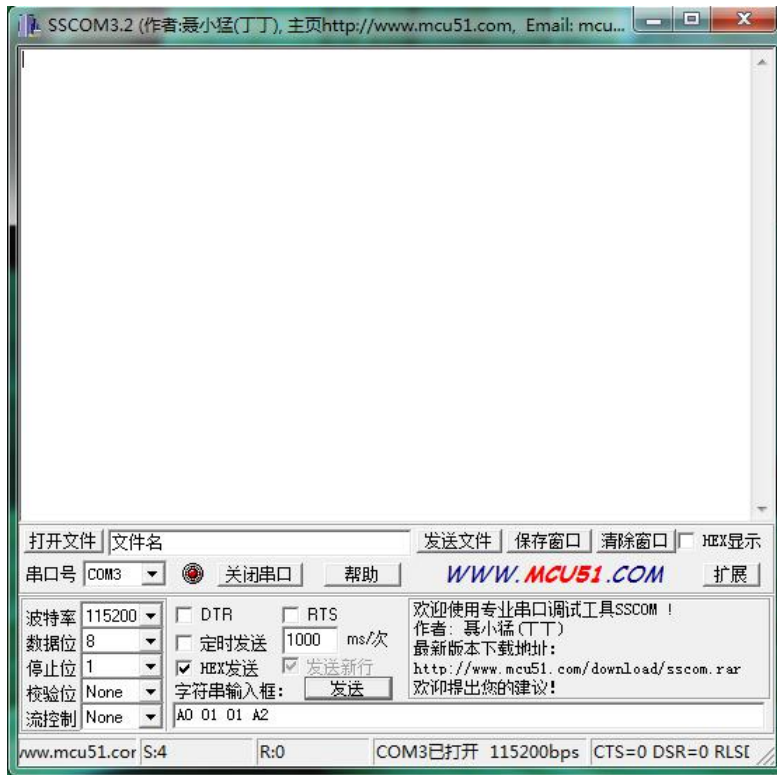
(4)Log in EasyTCP\_20”APP,click “CONNECT”,input IP of ESP-01 module :192.168.0.189 and port 8080 and connect .Green LED is from 2S slow blinking to always on .Then click gray block to control the relay now .





##### 5. additional function instruction (use as USB relay )

Prepare USB to TTL serial module .GND ,TX ,RX of TTL module connects to CND,TX,RX of relay respectively .Remove ESP-01 module ,and choose mode 1.when green light turns into 2 s slow flash ,then open serial port debug software on the computer (e.g., SSCOM32), select baud rate to 115200, send the relay control command in hex format to open or close the corresponding relay,.Take the first relay for example, sending A0 01 01 A2 can open the first relay .





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Kindly note :

1. For the first time, it will take a little longer (about 1 minute) to configure the WIFI password. After the configuration is completed, it will take 20 seconds to automatically connect the next boot.
2. If you want to change the router, you can reset or press the S2 key (the WIFI account and password of the previous memory will be cleared by the S2 key), and the WIFI account and password will be configured for esp-01 in mode 2.
3. When ESP - 01 memory router signal is very weak or not in service area led to the suspension of connection, the green light will go out and try to connect automatically, buttons for invalid state in the process, when the green light is required to 2 s slow flash has returned to the connection.
4. Mode 1 and mode 2 only use the key when the green light is 2 seconds slow flash or normal, and the rest is self-configuring in the chip or waiting for the configuration process, and the key is invalid.
5. The mobile phone and esp-01 will automatically disconnect the TCP connection for more than 6 minutes, and then click "CONNNECT" in the upper right corner of "EasyTCP 20" APP to re-establish the connection.
6. Regarding the UART interface of the board: when debugging 8266, the TX, RX and GND of the USB TTL module are connected with the RX, TX and GND of the relay module respectively; When the relay module is used as a USB relay, the TX, RX and GND of the USB TTL module are connected to TX, RX and GND respectively.
7. For the reserved MCU program download port: when the onboard MCU is STM8S003/STM8S103, NRST and SWIM are programming interfaces; When the onboard MCU is N76E003, NRST, SWIM and PIN8 correspond to the RST, CLK and DAT interfaces of the nu-link programming device.
8. The serial port rate of the onboard MCU is 115200, so please ensure that the baud rate of the esp-01 module is 115200 when the APP is unable to connect with esp-01.



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Shenzhen LC Technology Co., Ltd.

邮编: 518000  
Postcode: 518000

传真: 0755-83834706  
Fax: 86-755-83834706

电话: 0755-82720811  
Tel: 86-755-82720811

手机: 18927473783  
Mobile: 86-18927473783

广东省深圳市龙华新区东环一路中泰电子科技园 1 栋 202 室  
Address: Room 202, Building No.1, Zhongtai Electronic Hi-Tech Park, Donghuan 1st  
Road, Longhua District, Shenzhen, Guangdong, China