DC7-80/5V powered ESP8266 WIFI single 30A relay module

1. Overview

Elsay ESP8266 single 30A relay development board is equipped with ESP-12F WiFi module, I/O ports are fully pinned out, support DC7-80V/5V power supply mode. Provide Arduino development environment reference code, suitable for ESP8266 secondary development learning, smart home wireless control and other occasions.

2. Functional features

1, on-board mature and stable ESP-12F WiFi module, large-capacity 4M Byte Flash;

2, WiFi module I / O port and UART program download port all lead out, convenient for secondary development;

3, the power supply supports DC7-80V/5V;

4, on-board WiFi module RST reset button and a programmable key;

5, ESP-12F supports the use of Eclipse/Arduino IDE and other development tools, to provide reference programs under the Arduino development environment;

6, on-board 1-way 5V/30A relay, output switching signals, suitable for controlling the control of loads within the operating voltage of AC 250V/DC30V;

7, on-board power indicator and relay indicator, ESP-12F comes with 1 programmable LED.

3. Hardware introduction and description

1, board size: 78 * 47mm

Weight: 45g



2, Interface Introduction

| Reset key | ESP-12F 10 and Power Pins | normally started terminal public terminal normally closed terminal |
|--|---------------------------------------|---|
| Power | 20 NGTE | 0 |
| indicator Programmab Relay LED Indicator | le Programming 30A Relay Interface | |

Burning port: GND, RX, TX, 5V of ESP8266 are connected to GND, TX, RX, 5V of the external TTL serial module respectively, IO0 needs to be connected to GND when downloading, and then disconnect the connection between IO0 and GND after downloading is completed;

Relay output:

NC: normally closed terminal, shorted to COM before the relay is absorbed, suspended after absorption; COM: common terminal;

NO: Normally open terminal, the relay is suspended before it is absorbed, and is shorted to COM after it is absorbed.

| serial numer | name | Functional Description | serial numer | name | Functional Description |
|-----------------|------|--------------------------|-----------------|------|------------------------|
| 1 | ADC | A/D conversion result. | 10 | IO2 | GPIO2; UART1_TXD |
| | | Input voltage range 0 to | | | |
| | | 1V, value range: 0 to | | | |
| | | 1024 | | | |
| 2 | EN | Enable pin, default | 11 | IO15 | GPIO15; MTDO; |
| | | pull-up | | | HSPI_CS; |
| | | | | | UART0_RTS |
| 3 | IO16 | GPIO16 | 12 | TXD | UART0_TXD; GPIO1 |
| 4 | IO14 | GPIO14; HSPI_CLK | 13 | RXD | UART0_RXD; GPIO3 |
| 5 | IO12 | GPIO12; HSPI_MISO | 14 | GND | POWER GROUND |

3, Introduction to GPIO Pinout Ports

| 6 | IO13 | GPIO13; HSPI_MOSI; UART0_CTS | 15 | 5V | 5V Power Supply |
|---|------|---------------------------------|----|------|---|
| 7 | IO5 | GPIO5 | 16 | 3.3V | 3.3V Power Supply |
| 8 | IO4 | GPIO4 | 17 | RY1 | For relay drive port, shorting cap and IO16 can be used; to use other I/O to drive relay, DuPont wire jumper can be used |
| 9 | IO0 | GPIO0 | | | |

4, Arduino Development Environment Setup

ESP8266 supports Eclipse/Arduino IDE and other development tools, the use of Arduino to be relatively simple, the following is the Arduino development environment to build methods:

1, install Arduino IDE 1.8.9 or the latest version;

2, open the Arduino IDE, click the menu bar File - Preferences, enter the Preferences in the "additional development board manager URL" in the click to add the URL:

http://arduino.esp8266.com/stable/package_esp8266com_index.json,

| Preferenc | es | | × | | |
|---|-----------------------|--|----------|--|--|
| Settings | Network | | | | |
| Sketchbo | ok location: | | | | |
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| Editor 1 | anguage: | English (English) \checkmark (requires restart of Arduin | .0) | | |
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| Interfac | e scale: | Automatic 100 🔹 🕷 (requires restart of Arduino) | | | |
| Theme: | | Default theme \checkmark (requires restart of Arduino) | | | |
| Show ver | bose output during: | compilation upload | | | |
| Compiler | warnings: | None 🗸 | | | |
| 🗌 Displ | lay line numbers | Enable Code Folding | | | |
| ✓ Veri: | fy code after upload | Use external editor | | | |
| Check for updates on startup | | | | | |
| Use accessibility features | | | | | |
| Additional Boards Manager URLs: http://arduino.esp8266.com/stable/package_esp8266com_index.json | | | | | |
| More preferences can be edited directly in the file | | | | | |
| C:\Users\GS202107002\AppData\Local\Arduino15\preferences.txt | | | | | |
| (edit only when Arduino is not running) | | | | | |
| | | 0 | K Cancel | | |

3, click the menu bar of the Tools - Development Board - Development Board Manager, and then search for "ESP8266" to install the Arduino support package for ESP8266 2.5.2 or the latest version!

| Type All Figure ESP8266 Esp8266 Esp8266 Esp8266 Module, Generic ESP8285 Module, Lifely Agrumino Lemon v4, ESPDuino (ESP-13 Module), Adafruit Feather HUZZAH ESP8266 Module, Generic ESP8285 Module, Lifely Agrumino Lemon v4, ESPDuino (ESP-13 Module), Adafruit Feather HUZZAH ESP8266 MiFi Kit 8, Invent One, XinaBox CW01, ESPresso Lite 1.0, ESPresso Lite 2.0, Phoenix 1.0, Phoenix 2.0, NodeMCU 0.9 (ESP-12 Module), NodeMCU 1.0 (ESP-12E Module), Olimex MOD-WIFI-ESP8266(-DEV), SparkFun ESP8266 Thing, SparkFun ESP8266 Thing Dev, SparkFun Blynk Board, SweetPea ESP-210, LOLIN(WEMOS) D1 Raini, LOLIN(WEMOS) D1 mini (clone), LOLIN(WEMOS) D1 mini Pro, LOLIN(WEMOS) D1 mini Lite, LOLIN(WEMOS) D1 R1, ESPino (ESP-12 Module), ThaiEasyElec's ESPino, WifInfo, Arduino, 4D Systems gen4 IoD Range, Digistump Oak, WiFiduino, Amperka WiFi Slot, Seeed Wio Link, ESPectro Core, Schirmilabs Eduino WiFi, ITEAD Sonoff, DOIT ESP-Mx DevKit (ESP8285). Online Help More Info E.5.2 Install Remove | 🥯 Boards Manager | |
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| | 2.5.2 V Install | Remove |

5, program download

1, use jumper caps to connect IO0 and GND pins, prepare a TTL serial module (e.g., FT232) plugged into the computer USB, serial module and development board connection method is as follows:

| TTL Serial Module | ESP8266 Development Board | |
|-------------------|---------------------------|--|
| GND | GND | |
| TX | RX | |
| RX | TX | |
| 5V | 5V | |

2, click the menu bar Tools - Development Board, select the development board for ESPino (ESP-12 module)

3, open the program you want to download, click Tools - Port in the menu bar, select the correct port number.

4, click "Upload" and the program will be automatically compiled and downloaded to the development board, as follows:

| 💿 LED_Relay Arduino 1.8.9 | | |
|---|--|------------------|
| 文件 编辑 项目 工具 帮助 | | |
| | | Ø |
| LED_Relay | | |
| /* 文件名称:LED_Relay.ino 功能:LED闪烁+继电器开启 */ | | Â |
| <pre>#define PIN_LED 16 #define PIN_RELAY 5</pre> | | |
| <pre>void setup() { pinMode(PIN_LED, OUTPUT); pinMode(PIN_RELAY, OUTPUT); digitalWrite(PIN_LED, HIGH); digitalWrite(PIN_RELAY, HIGH); }</pre> | //输出模式 //输出模式 //LED默认关闭 //继电器默认开启 | E |
| <pre>void loop() { digitalWrite(PIN_LED, LOW); delay(1000); //延时1S digitalWrite(PIN_LED, HIGH); delay(1000); //延时1S }</pre> | //打开LED //关闭LED | |
| 上传成功。 | | |
| haon of dava verified. Leaving Hard resetting via RTS pin | | ^ • |
| × [| | F |
| | ESPino (ESP-12 | Module) 12 COM48 |

5, and finally disconnect IO0 and GND, the development board re-power or press the reset button program can run.