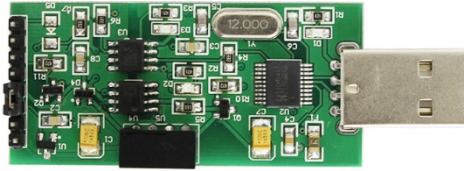


# USB to TTL Serial Module Power isolation Optocoupler



## Overview:

● LC Optical isolation USB to TTL Serial Module Equipped with CH340T USB to serial chip, achieved the power and TTL signal isolation, High-speed and stability, it could avoid the damage of USB and computer blue screen or other issues while use the USB to TTL serial port module, due to improper operation or other external impact on the compute, could improve the safety of debugging.

## The function and characteristics:

- Onboard 500mA self-recovery fuse and 5V isolated power supply module to protect the computer from damage
- Onboard stable CH340T USB to serial chip
- Serial TTL level through the optocoupler isolation, fast (up to 921600bps), high reliability
- Output TX RX end with protection diode function, can improve the impact resistance
- Computer USB end and serial port output end realize complete electrical isolation
- Output TTL level can be set to 3.3V / 5V
- Serial output maximum output current of 150mA

## **The board size**

- 55x26mm

## **The board function description:**

- 3.3V, 5V: Output supply voltage and TTL level switching pin
- VCC, GND: Power supply output pin
- The TX, RX, GND and VCC pins of the serial port module are connected to the RX, TX, GND, and VCC pins of the user equipment. When the isolated serial port module VCC pin with a jumper cap 5V, the output 5V TTL level and power supply voltage; while VCC pin with 3.3V jumper cap, the output level of 3.3V TTL and power supply voltage. The following is an example of using the isolated serial interface module to debug the 3.3V ESP8266 module (With the jumper cap to isolate the serial port module VCC and 3.3V shorted, isolated serial port module TX, RX, GND, VCC respectively ESP8266 RX, TX, GND, VCC), as the picture shows:

## **The background description of using Isolated serial port module**

USB interface was already one of the interfaces that most commonly used by engineers to debug product development. USB interfaces are not only often used in contact with the human body, but also in many cases, it also supplies power to external devices. Strong external power, strong interference may cause damage to the computer USB port or motherboard, then electrical isolation becomes particularly important. LC optically isolated USB to TTL serial port module is suitable for the following occasions:

### **1. Electrical equipment which containing strong electricity:**

USB devices with high power (such as high voltage, inverter, motor drive, etc.) connect to computer USB may burn out the USB interface, be sure to isolate to ensure that the computer USB port, motherboard and personal safety, can effectively avoid USB Mouth damage and personal injury.

### **2. Electrical equipment with Strong interference:**

Such as motor drives, inverters and other great interference itself, into the USB port may lead to computer crashes, blue screen, no response. You can isolate the USB interface through this device to avoid interference with the computer.

### 3. Noise-sensitive equipment:

The computer itself is a noise source, through the isolated USB port, you can avoid high-frequency interference to the computer transmission to sensitive devices, and thus better access to data, such as audio equipment, precision measuring equipment and medical equipment.

### 4. Ordinary electronic equipment:

For ordinary electronic equipment, through the isolation can effectively avoid operational errors caused by short-circuit damage to the computer USB port, blue screen and other issues, greatly improving the security of the operation.

P.S: As there is a certain error of the isolated serial module 5V to 5V above the isolated power supply, so when the VCC through the jumper cap 5V pin and no load when the output power supply voltage will be about 5.4V, but do not worry, when connected to the user equipment, After the device output voltage will automatically drop to 5V or so.