Dual serial port and RS485 or RS422 to Ethernet converter device (USR-TCP232-500)

Hard version: V1.1
File version: V1.0

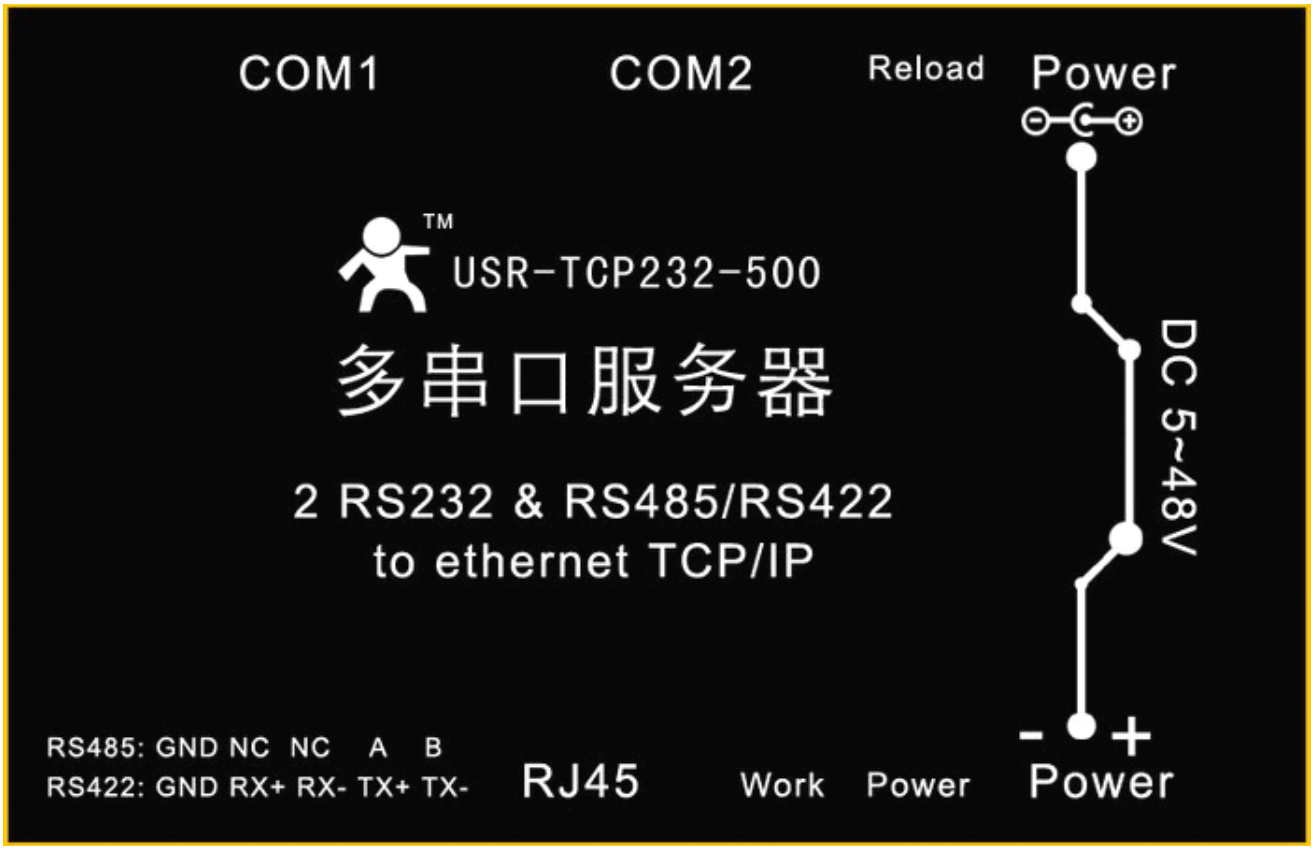
This equipment adopts the latest hardware scheme, rich in resources and upgrade space, function is still rising, can be customized for the network control products, please contact us for details.

Jinan USR IOT Technology Co., Ltd focused on professional serial to ethernet devices, RJ45 network, WIFI, GPRS, and ZIGBEE modules, welcome the new and old customers to purchase.

1. System characteristics

1. New Cortex-M3 kernel, industrial temperature range, careful optimization of the LWIP protocol stack, stable and reliable.
2. Three serial port in total, port and work mode can be set independently, work independently.
3. Through the port number to distinguish which serial port is related
4. Two independent RS232, support RTS/CTS hardware flow control.
5. A RS422/RS485 compatible port, can only use one of them at the same time, automatic selection.
6. Support TCP Server, TCP Client, UDP, UDP Server, HTTPD Client, multiple working mode
7. Support Serial port baud rate up to 230400.
8. 5-48V wide input voltage range.
9. Provide DC power outlet, 5.08 terminal power supply port.
10. Unique design: two DB9 socket ninth feet can also be connected to the power supply to power on the sensor or power on the device through serial connections.
11. Support DHCP automatic access IP, search for equipments in network through the UDP broadcast protocol
12. Support DNS, support the dynamic domain destination address.
13. UPNP discovery protocol, Windows can actively find on-line equipment.
14. Built-in webpage, can configurate parameters via web.
15. Also can be set through UDP mode, supply setup protocol and software source code.
16. The Reload button, one-click restore default settings, you are not afraid of setting wrong any more.
17. RJ45 status indicator, full-page working status indicator.
18. Support upgrade through network.

Product interface as below:



2. Hardware interface

2.1 Power interface

This device has 3 power interfaces, 1 power supply hub, 1 5.08 terminal, and 2 serial port ninth foot (connect through the PCB jumper, default not open).

Power socket, ex-diameter 5.5mm, in-diameter 2.1mm standard size, in + ex -, input voltage range 5~48V, current 150mA, we supply high quality 5V/1A power adapter.

Power socket, terminal and serial port ninth foot (connect through the PCB jumper to open),mutual unicom , one for power input, another for power output, better adapt to the working environment.

2.2 Indicator lamp

There are 4 lights in total, from left to right

ID	Name	Description
1	Power	Bright when power on
2	Work	Flicker when work
3	Link(green)	on the RJ45 port, bright when network connection is ok
4	Data(yellow)	on the RJ45 port, flash when data son network

2.3 RS232 interface

Device serial is male (needle), RS232 level (which can be directly connected to the computer serial port), pin orders consistent with computer COM port, and computer connections need cross cable (2-3cross, 7-8 cross, 5-5direct, 7-8 may not connect but must not be connected to the computer directly, or it could lead to work abnormal), in total 6 wires defined, others vacant.

Number	Name	Description
2	RXD	Equipment data receiving pin
3	TXD	Equipment data transmission pin
5	GND	Signal ground
7	RTS	Request to send
8	CTS	Clear to send
9	VCC	Default unused, a pad jumper on PCB, if needed, connect it to the power adapter input positive pole, used for serial sensor power supply or power on the device with an external cable via the serial port.

COM1 and COM2 are defined as above.

2.4 RS485 interface

RS485 two wires, A (DATA+), B (DATA-), when connect with RS485 A (+) to A (+), B (-) to B (-).

2.5 R422 interface

Equipment has RS232 and RS485 interface, but can only use one at the same time, automatic selection. It is RS485 function when wiring is RS485, while RS422 function when wiring is RS422.

2.6 RJ45 interface

Module network is 10M/100M self-adaption, support AUTO MDI/MDIX, can be arbitrary cross cable or parallel cable connected, that is to say you can connect to computer with direct cable or used to test.

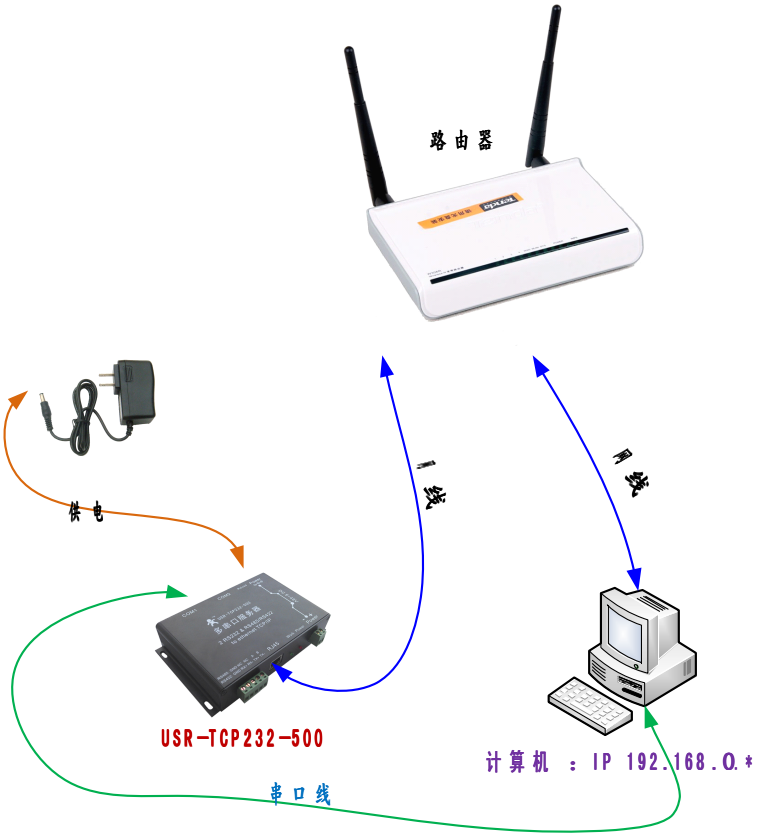
Pin	Name	Description
1	TX+	Transceiver Data+
2	TX-	Transceiver Data-
3	RX+	Receive Data+
4	n/c	Not connected
5	n/c	Not connected
6	RX-	Receive Data-
7	n/c	Not connected
8	n/c	Not connected

2.7 Reload

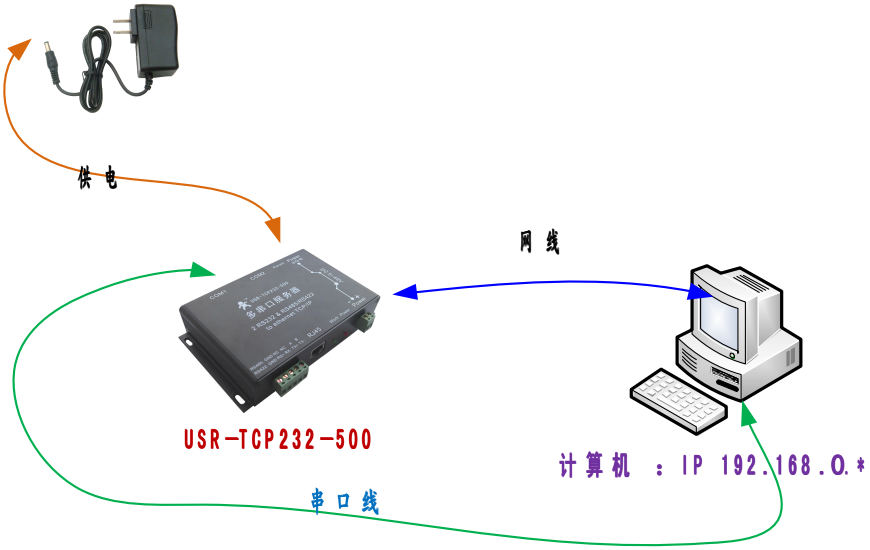
This button is to restore the factory settings button, press the button and power on the device, it will restore to factory default configuration.

3. Equipment used

For the convenience of users, the default device IP is 192.168.0.7, can be directly connected to computer, also can be connect through the router or switch, hardware connection as below

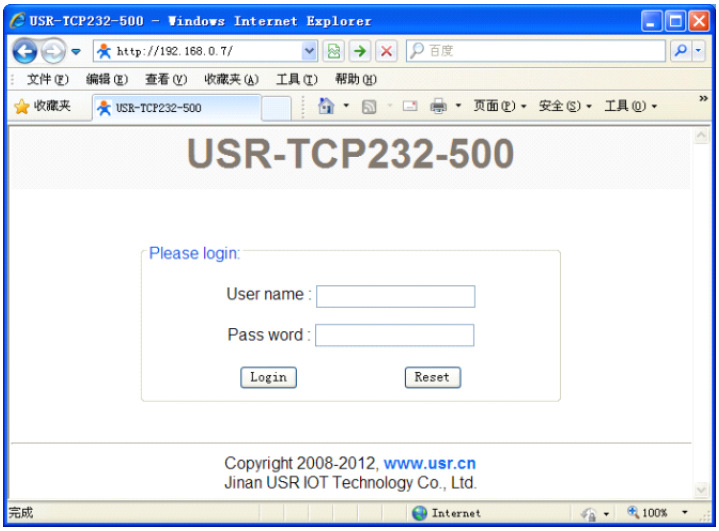


Through the router (picture above) or directly connected with computer (picture below)



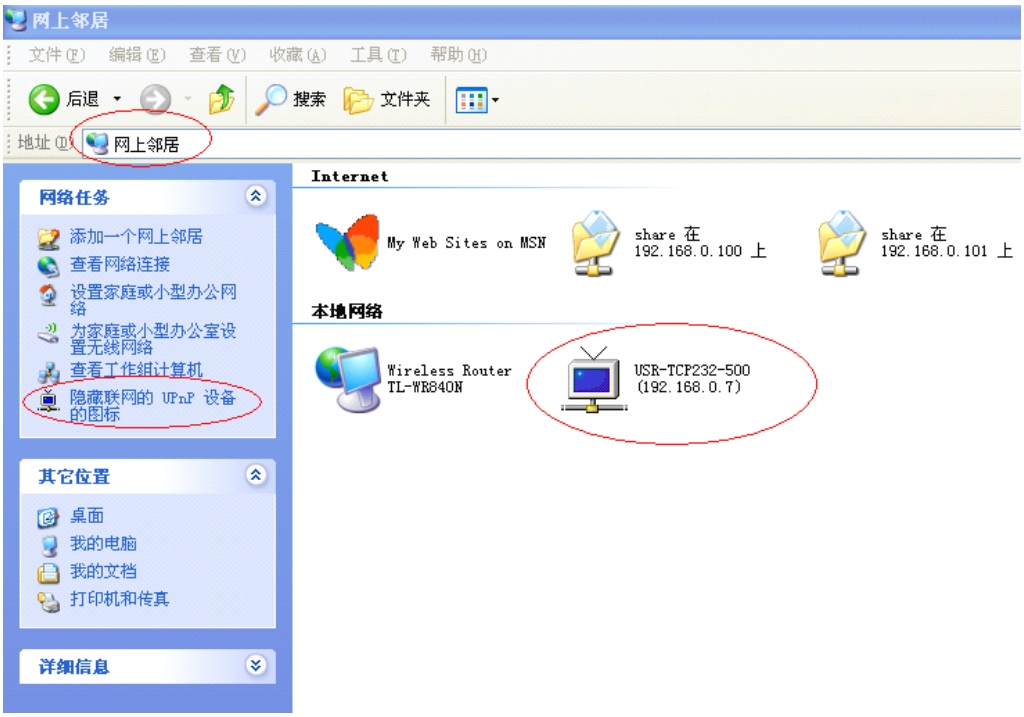
Use browser to log on IP address http://192.168.0.7, will get into the setup webpage.

User name and password are “admin”, after entering the system can modify.

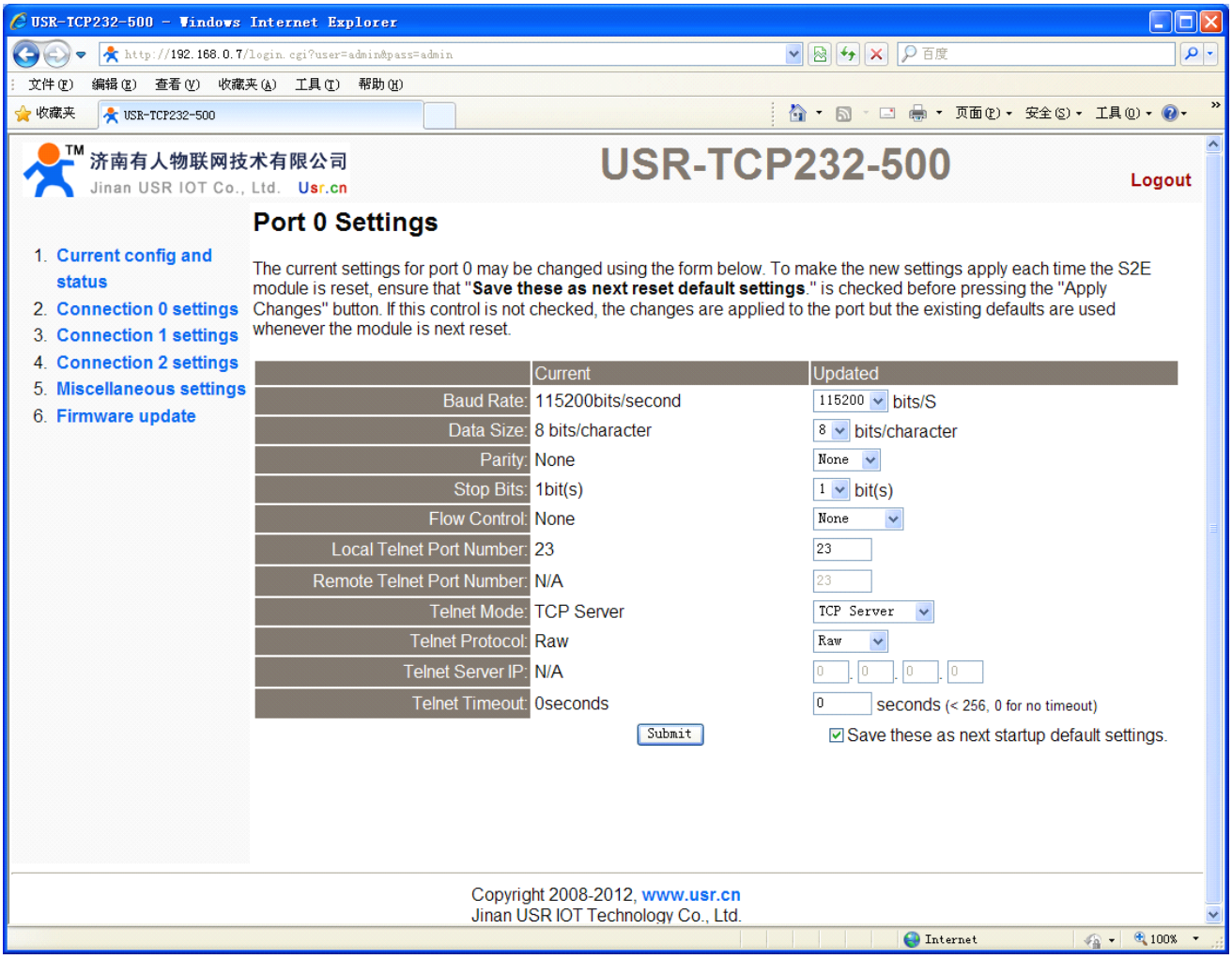


After login webpage interface as below: a total of 3 COM port can be set. 2.Connection 0 settings and 3.Connection 1 settings respectively corresponding to COM1 and COM2 settings, 4.Connection 2 settings corresponding RS422/RS485 compatible port settings.

If the device use DHCP into the network, you can use the UPNP way of to check the device (open My Network Places, display networked UPNP equipment icon), as below the USR-TCP232-500 (192.168.0.7), double-click it will also enter configuration webpage.



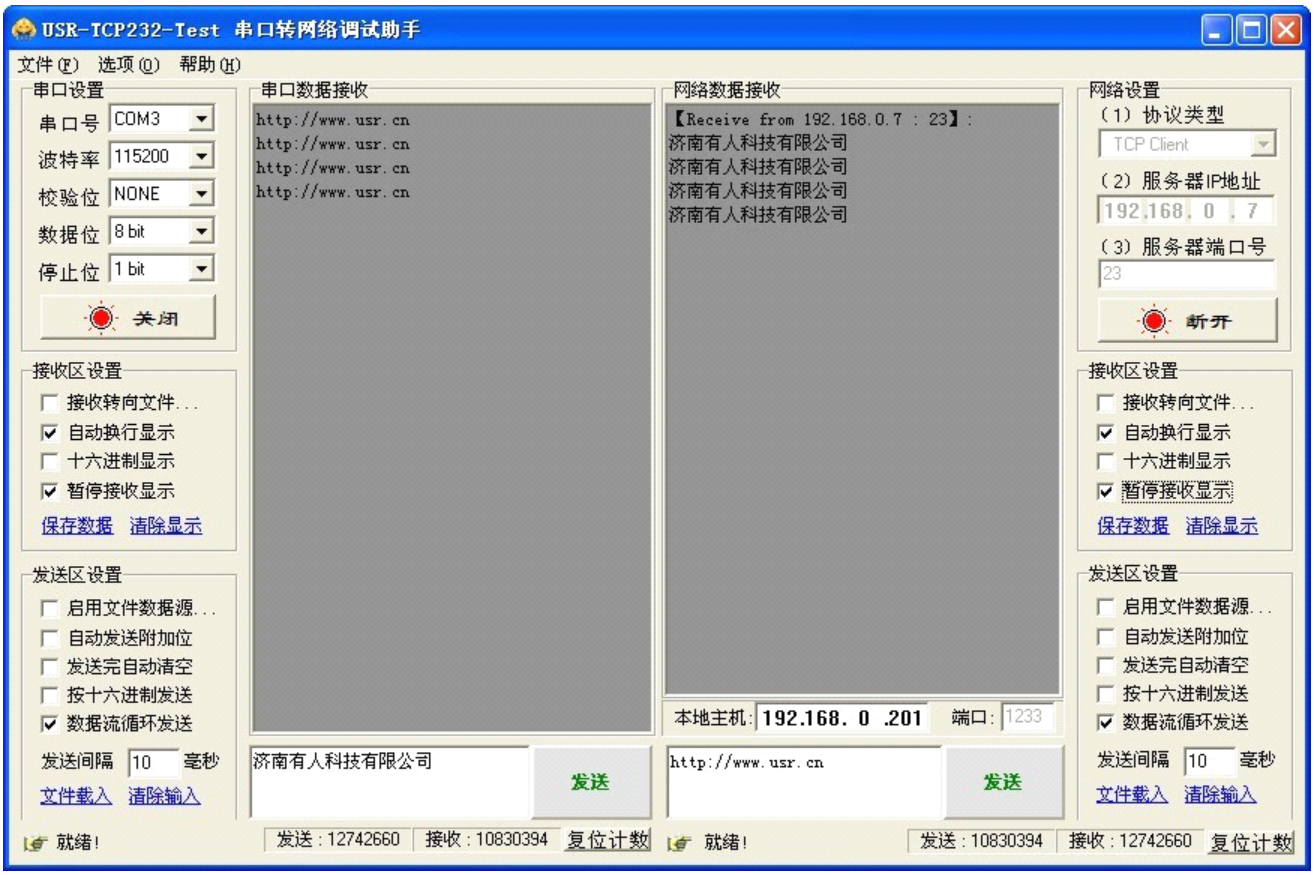
Device configuration webpage as below:



The default working mode simply test, on the basis of hardware connection, then connect USR-TCP232-500 COM1 with the computer, use the software USR-TCP232-Test in CD to test. The left is serial port, using software default settings, the right is network, set to be TCP Client, the server is IP 192.168.0.101that you got just now, port number 23.

By default, the three COM port are all set as TCP Server mode, the port number is 23 / 26 / 29.

Picture below is screenshort that the 10ms simultaneous two-way automatic send. Because the display controls allocating memory is limited, in order to test the large amount of data transmit and receive, here will display pause on receiving, only statistics data. This is the testing effect for several hours and sending millions of bytes, stable and reliable, without losing any byte.



Note: For your application system robustness, we strongly recommend that you enable Timeout function (default 0, not open), such as the Telnet Time out on setup interface, to prevent the complicated Internet environment impact communication stability , solve the problems of communication disconnection reconnecting, suspended communication, TCP link occupied.

In TCP Server mode, if there is still no new data transmit or receive when it is the Timeout time, the module will broke the client link, release resources, wait for a new link, sending and receiving data will clear timing.

In TCP Client mode, if there is still no new data transmit or receive when it is the Timeout time, the module will disconnected the server links and attempted to reconnect immediately .

4. Contact us

Company: Jinan USR IOT Technology Co., Ltd
Address: 1-523, Huizhan Guoji Cheng, Gaoxin Qu, Jinan, Shandong, China
Tel: 86-531-55507297 86-531-88826739-803
Web: http://en.usr.cn Skype: lisausr
Email: sales@usr.cn tec@usr.cn