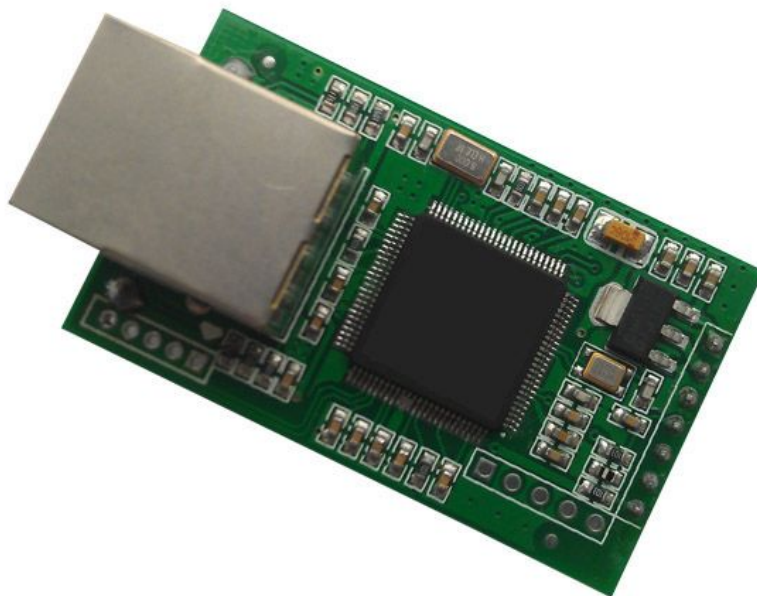


Dual serial to Ethernet module (USR-TCP232-E)

Hardware version: V1.0

File version: V0.8



This equipment adopts the latest hardware solutions, has rich sources and enough upgrade space. Functions are in growing, can also be customized network control products. For more details, please kindly contact us.

Jinan USR IOT Technology Co., Ltd is a professional company focused on serial to networking equipment, RJ45 cable network, WIFI wireless, GPRS, ZIGBEE, ect. Welcome all the new and old customer.

1. Features:

1. New Cortex-M3 kernel, industrial working temperature range, elaborate optimization LWIP
protocol stack, stable and reliable.
2. Two way serial port, can set COM port and working mode independently, work independently, support RTS/CTS hardware flow control.
3. Auto-MDI/MIDX function, discretionarily connect cross-over or direct network cable, automatic switching.
4. Distinguish the connected serial port via port number.
5. Pin compatible with the best selling USR-TCP232-T.
6. Support TCP Server, TCP Client, UDP, UDP Server, HTTPD Client various of work modes.
7. Support virtual serial work way, provide corresponding software.
8. Serial port highest baud rate up to 230400
9. 5 V 3.3 V double power input, just choose one power supply.
10. Needle type capsulation, small volume, facilitate embedded applications.
11. TTL serial level, 3.3 V standards, compatible with 5 V level, 5 V microcontroller IO can directly connected.
12. Support DHCP automatically access IP, can inquire the facility within network through the UDP broadcast protocol.
13. Supply the protocol for VIP customers, can integrate parameter setting function to users' software applications.
14. Provide PC TCP/IP SOCKET programming example, VB C++ Delphi Android IOS.
15. The built-in web page, also parameter setting via web, can customize web pages for users.
16. Can also set via UDP, provide the set up protocol and software source code.
17. Reload button, a key restore default Settings.
18. RJ45 status indicator light, RJ45 interface built-in isolation transformer, 2 KV isolation.
19. The global only MAC address bought from IEEE, the user can define MAC address (please state when you make order).
20. Support upgrade program via network.

Module parameters:

Volume: 55 * 30 * 18 mm

PCB size: 50 * 30 mm

Working temperature: -20-85 degrees

Working humidity: 5% ~ 95%

Working voltage: 5 V or 3.3 V, just choose one

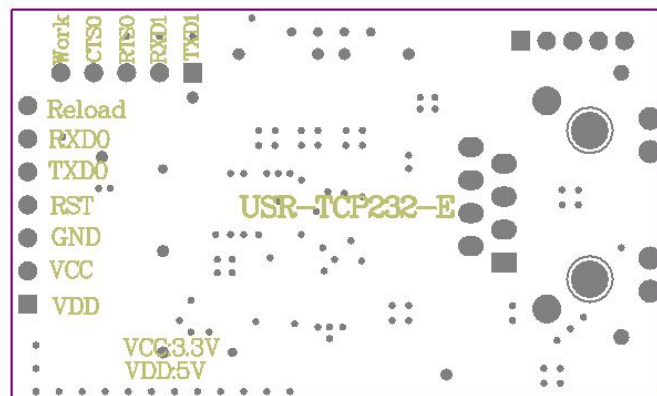
Working current: 150 MA

2. The hardware interface

2.1 pin definition

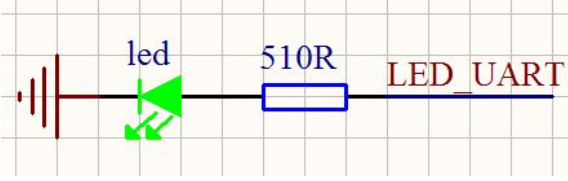
USR-TCP232-E has 13 contact pins in total. Among them, the two needles closed to the RJ45 is only used for fixing but no function definition, the other 11 needles have function definition. 1 ~ 7 pin definition is compatible with USR-TCP232-T, can be directly replaced.

number	definition	description
1	VDD	5V power input(just choose one power interface)
2	VCC	3.3V power input(just choose one power interface)
3	GND	Signal Ground
4	RST	Reset pin (200ms low level reset module)
5	TXD0	The first serial transmit data pin
6	RXD0	The first serial receive data pin
7	Reload	restore default settings if this pin is with low level
8	CTS0	The first serial clear to send (no need for common application)
9	RTS0	The first serial require to send (no need for common application)
10	RXD1	The second serial receive data pin
11	TXD1	The second serial transmit data pin



2.2 indicator light

Equipment have 4 indicator lights in total, sequence from left to right.

ID	name	description
1	Work	Reference to pin definition No.8 Just the interface, without LED welded on the module If needed, concatenate this pin to 510 ohm current-limiting resistance via LED, and then link to GND 
2	Link(green)	In RJ45 port, bright after network connection
3	Data(yellow)	In RJ45 port, flash if there are datas on network

2.3 RJ45 interface

Internet access port connection, module network interface is 10 M / 100 M adaptive, support AUTO MDI/MDIX, can discretionarily connect cross-over or direct network cable. That is to say, you can use direct cable to connect with computer or 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

3. Module USES

For the convenience of use, we designed evaluation board for module. With the RS232 to TTL conversion circuit, convenient for user communicate with computer.

The default configuration:

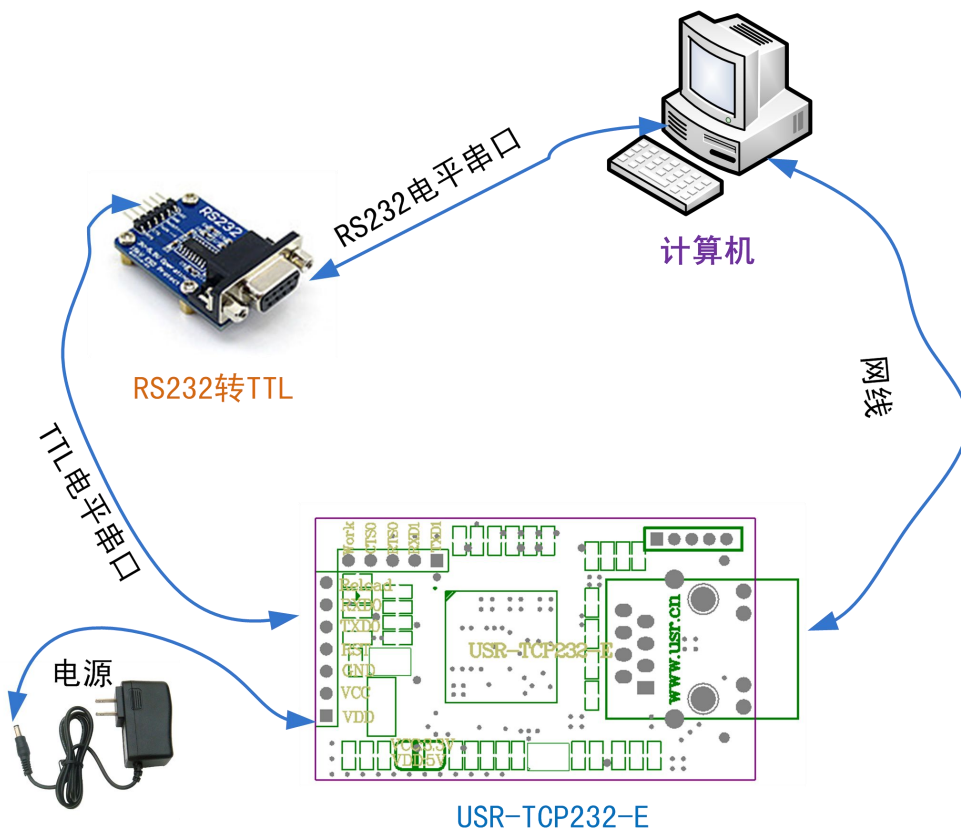
IP address: 192.168.0.7

Subnet mask: 255.255.255.0

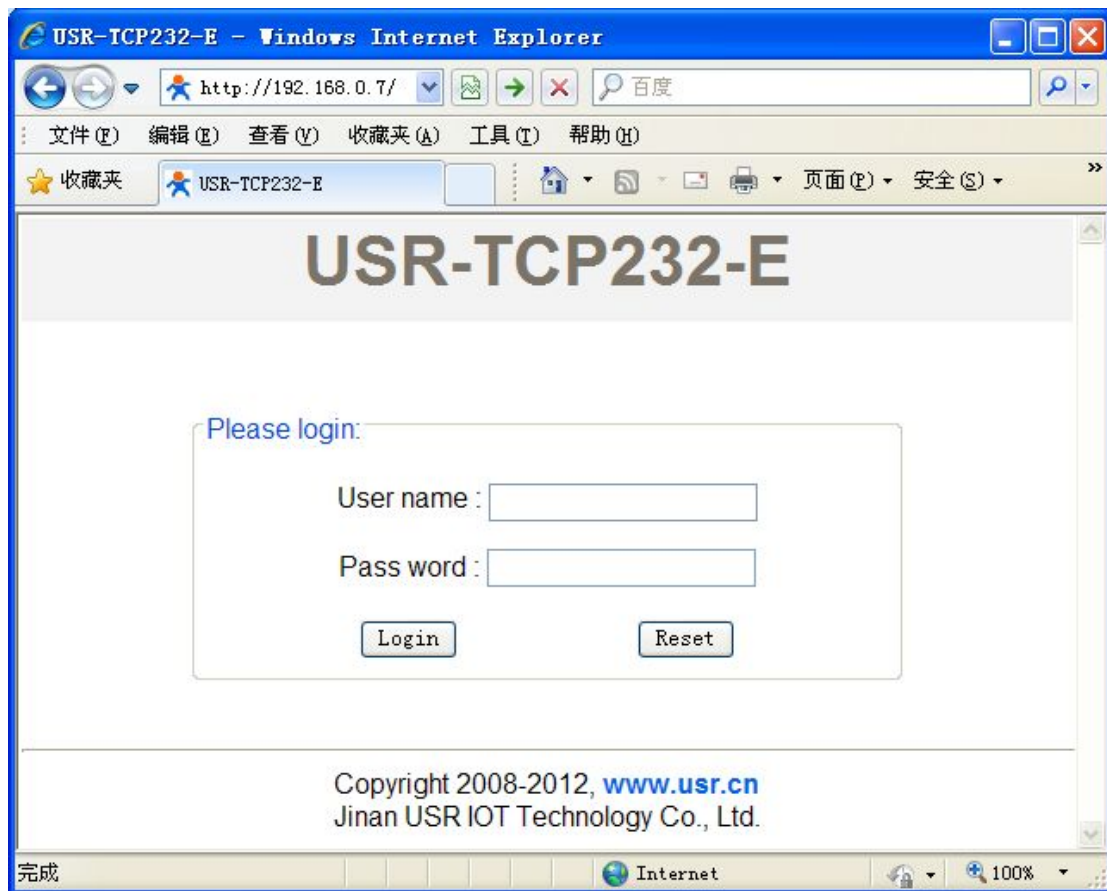
The default gateway: 192.168.0.1

Address Type:	Static IP
Static IP Address:	192 . 168 . 0 . 7
Subnet Mask:	255 . 255 . 255 . 0
Default Gateway:	192 . 168 . 0 . 1
Update Settings	

To test briefly, you can connect the module with computer via network cable, or you can also connect the module and computer to switch or router at the same time. No need to distinguish cross and direct connect cable, the module have automatic switch function. And, change computer IP to 192.168.0. *, such as 192.168.0.201 we test. Connect the module serial to computer through TTL to RS232 turn wiring. if you use TTL to USB turn wiring, please pay attention to the quality of the turn wiring, most low price USB turn TTL module on market is low quality at present. Power up, 5 V connect to VDD or 3.3 V connect to VCC, keep the voltage stable, 150 MA current at least.



Login above IP address **http://192.168.0.7** through the browser, you will enter setup web pages. User name and password are “ admin ”, this can be modified when login into the system.



Webpage as follows, 2 COM port can be set in total, 2. Connection 0 Settings and 3. Connection 1 Settings respectively corresponding to UART1 and UART2 Settings, 4. Miscellaneous Settings is used to set some parameters such as module IP and module name.



To test briefly in default working mode, on the foundation of the hardware connection, use the matched software USR-TCP232-Test in CD to make transmitting and receiving Test. The left side is serial port, use software default Settings, the right side is the network part, set to TCP client and server to be IP 192.168.0.7, port 23.

By default, the two COM port to be set as TCP Server mode, port is 23/26.

This illustration shows the 10 ms two-way simultaneous automatically transmit screenshots, as the allocated memory of the display control is limited. In order to test large amount of data transceiver, here will suspend the receive display, only statistical data. Below is the effect after testing for a few hours, and transmitting millions of bytes. stable and reliable, without a byte loss



Specially instruction

For the robustness of your application system, we suggest you using the time out function (default 0, closed). Such as setting the Telnet Time out, to prevent the complicated internet circumstances influencing communication stability, and solving the off line relink, communication feign death, TCP connection to be occupied problems.

In the TCP Server mode, if still have no new data transceiver when it is Time out setting time, the module will be active to switch off the client links, release resources, wait for new links, transmitting or receiving data will clear the time.

In the TCP Client mode, if still have no new data transceiver when it is Time out setting time, the module will be active to switch off the server links and try to relink.

4. Contact us

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