



# **USR-K1 Super Port**

File version: V1.0.3



USR-K1 is the high performance-cost version of Super Port .It is an embedded serial networking module, whose function is to realize bidirectional transparent transmission between UART TTL and Ethernet .The amazing part of K1 lies in its Ethernet port integration design .You can apply K1 to your products to realize networking communication .User can directly process data interaction through network and device to realize remote data acquisition, remote control and management.

K1 is based on the design concept of "Simple, Reliable, Affordable" .And it has the same kernel solution and parameters as USR-TCP232-T.



### USR-K1 User Manual

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## **1. Product Introduction**

## 1.1 Brief Intro

USR-K1 is the high performance-cost version of Super Port. It is an embedded serial networking module, whose function is to realize bidirectional transparent transmission between TTL and Ethernet. The amazing part of K1 lies in its Ethernet port integration design .You can apply K1 to your products to realize networking communication .User can directly process data interaction through network and device to realize remote data acquisition, remote control and management.

K1 is based on the design concept of "Simple, Reliable, Affordable". And it has the same kernel solution and parameters as USR-TCP232-T.

## 1.2 Function Features

- 10/100M auto detect interface;
- Support AUTO MDI/MDIX, Can use a crossover cable or parallel cable connection;
- Serial com port bound rate can set up from 300 to 961200,and None,Odd,Even,Mark,Space five check bits;
- Work mode TCP Server, TCP Client, UDP, UDP Server;
- Working model related parameters can be set via a serial port or network;
- 3.3 V TTL level compatible;
- Small Size
- Virtual serial port supported;
- Unique heartbeat package mechanism to ensure that the connection is reliable, put an end to connect feign death;
- Under UDP mode, Packet Broadcast is prohibited, with stronger anti-interference ability;
- Across the gateway, across switches, routers;
- Can work in LAN, also can work on the Internet (external network);

## **1.3 Product Characteristics**

- 32 bits ARM CPU inside;
- LAN : 10/100Mbps; protect: Built-2KV isolated electromagnetic;
- Serial port baud rate: from 2400 to 961.2 KBPS can be set up;
- Network protocol: ETHERNET ARP IP UDP TCP ICMP;
- Software tool: configuration software, TCP/UDP test soft, RS232 debug soft;
- Configuration method: serial com port or via Ethernet, free software available;
- Operating temperature: -25~75°C;





- Storage environment: -40~85°C, 5~95%RH.
- Compact type

## 1.4 Order Symbol

name	symbol	Description Remarks
Super Port	USR-K1	

Diagram 0-1 order symbol

## **1.5 Electrical Characteristics**

Model number	Power supply DC	current
USR-K1	3.3V	185mA(165-195)

Diagram 0-2 Electrical Characteristics





## 2. Default Parameter Test

Pls connect the product with your computer or router to test its performance. FAQ: http://www.usriot.com/Search/getList/keyword/t24/

## 2.1 Hardware Connection

1.You can using" USR-TCP232-EVB". It's easier to test. USR-TCP232-EVB is power for DC 5V@200mA.



Diagram 2-1 USR-K1 Connection diagram

3.If you don't have "USR-TCP232-EVB", please refer to 5.4





### 2.2 Set-up Software

Set-up Software with link http://www.usriot.com/Download/237.html as USR-TCP232-Set up can help to view default setting then set the parameter.

1. Search in LAN (Firstly, ensure the computer IP is static. The module IP is 192.168.0.201by default; Disable firewall, antivirus soft and WIFI).

🎪 Detlef Maennl V5.0	0.3.8	
File Search 中文	Help	
Parameters (?) Module work mode	TCP Client	Show Expand functions »
Module IP	192. 168. 0. 7	Operate via COM-(?) CFG connect to GND
Subnet mask	255. 255. 255. 0	Select serial port COM6 💽 (?)
Default Gateway	192. 168. 0. 201	Read via COM
Baud Rate(bps)	115200	Setup via COM
Parity/Data/Stop	NONE V 8 V 1 V	Operate via Net-(?) Leave CFG pin free
Module port	20108	Search in LAN
Destination IP	192. 168. 0. 201	Set selected item via Net
Destination Port	8234	Device list in the Net
I		192.168.0.7 006A0ACD45AB 5.8
Click device can right-click Devic	read the parameters, e list show more	

Diagram 2-2 the default parameters

2.Keep default parameter set up your pc.



Public

Control Panel > Network and Internet	et   Network Connections				
Organize ▼ Disable this network de ◆ 批选连接 例络 3 Realtek PCLe GBE Family Contr ● Connect us ● Realter ● Connect us ●	Properties	3	Internet Protocol Version 4 (TCP/IPv4 General You can get IP settings assigned autr this capability. Otherwise, you need for the appropriate IP settings. Obtain an IP address automatic Use the following IP address: IP address: Subnet mask: Default gateway: Obtain DNS server address auto Obtain DNS server address auto Preferred DNS server: Alternate DNS server: Alternate DNS server:	Image: Arrow of the second s	Internet Protocol Version 4 (TCP/IPv4) Properties       General       You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.       Obtain an IP address automatically       IP address:       Subnet mask:       Default gateway:       Obtain DNS server address automatically       Imperties       default       Ideault       Validate settings upon exit       Advanced       OK

Diagram 2-3 pc parameter

## 2.3 Communication Test

SR-ICP232-Iest (link http://www.usriot.com/Download/199.html ) can help you test.

Serial to net debugging tester application:

- 1. Ensure the COM port baud rate, check bits, data bits, stop bit correspond to module parameters.
- 2. Ensure network protocol, IP address, port number correspond to module parameters.
- 3. Open COM and the web then connect. They begin transparent transmission after choose the module IP.

🔐 USR-TCP232-Test RS232 to Ethernet Convert tester 📃 🗾				
File(F) Options(O) Help	p(H)			
COMSettings	COM port data receive	Network data receive	NetSettings	
PortNum COM16 -	http://www.usr.cn	http://www.usr.en	(1) Protocol	
n in 115200 -	http://www.usr.cn	http://www.usr.cn	TCP Server 👻	
Baugh 113200	http://www.usr.cn	http://www.usr.en	(2) Local host IP	
DPaity NONE -			192,168, 0 ,201	
DataB 8 bit 💌			(3) Local host port	
StopB 1 bit 💌			8234	
🔅 Close			Disconnect	
Recv Options			Recv Options	
🗌 Receive to file			TReceive to file	
🔽 Add line return			🔽 Add line return	
🗌 Receive As HEX			🗌 Receive As HEX	
Receive Pause			🗌 Receive Pause	
<u>Save</u> <u>Clear</u>			Save Clear	
Send Options			Send Options	
🗌 Data from file			🗌 Data from file	
🗌 Auto Checksum			Auto Checksum	
🗌 Auto Clear Input			🗌 Auto Clear Input	
🗌 Send As Hex		n 100 100 0 7-00100 -	🗌 Send As Hex	
Send Recycle		reers. 132.100.0.7:20108	Send Recycle	
Interval 10 ms	http://www.usr.cn	http://www.usr.cn	Interval 10 ms	
Load Clear	Jeild	Jeid	Load Clear	
🎯 Ready!	Send : 51 Recv : 51 Reset	💣 Ready! Send: 51	Recv : 51 Reset	

Diagram 2-4 USR-TCP232-Test Parameter





## 2.4 Parameter Setting

### 2.4.1 Set via Net

- 1. Hardware Connection, refer to 2.1 Hardware Connection
- 2. Search module,
- 3. Click "Search in LAN"
- 4. Setting your Parameter
- 5. Click "Set selected item via Net"
- 6. Waiting for ten seconds and Click "Search in LAN" check it.

USR-TCP232-Setup	/5.0.3.8	
e Search 中文 H	elp	
Parameters (?) Module work mode	TCP Client 💌	Show Expand functions »
Module IP	192. 168. 0. 7	Operate via COM-(?) CFG connect to GND
Subnet mask	255. 255. 255. 0	Select serial port COM8 (?)
Default Gateway	192. 168. 0. 201	Read via COM
Baud Rate(bps)	115200	Setup via COM
Parity/Data/Stop	NONE - 8 - 1 -	Operate via Net-(?) Leave CFG pin free
Module port	20108	Search in LAN
Destination IP	192. 168. 0. 201	Set selected item via Net
Destination Port	8234	Device list in the Net
r		
Help: 1. You can use COM config the device, choose one 2. When use COM por to GND, while use I connect 3. MouseOver display Any question, Email	port or Ethernet to but you just need "t you must connect CFG "thernet you shoule not " hints . to tec@usr.cn	

Diagram 2-5 Set via net

### 2.4.2 Set via COM.

- 1. Hardware Connection, refer to 2.1 Hardware Connection
- 2. Connect CFG to GND pin
- 3. Click "Read via COM"
- 4. Setting your Parameter



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#### 5. Click "Read via COM" and check it

### 6. Switch off CFG.

🎲 USR-TCP232-Setup V5.0.3.8	
File Search 中文 Help	
Parameters-(?) Module work mode UDP Mode	▼ Show Expand functions ≫
Module IP 192.168.0.7	Operate via COM-(?) CFG connect to GND
Subnet mask 255.255.255.0	Select serial port COM8 🗨 (?)
Default Gateway 192.168.0.201	Read via COM
Baud Rate(bps) 115200	Setup via COM
Parity/Data/Stop NONE 💌 8 💌 1	▼ Operate via Net-(?) Leave CFG pin free
Module port 20108	Search in LAN
Destination IP 192.168.0.201	Set selected item via Net
Destination Port 8234	Device list in the Net
Logs	192.168.0.7 006A0ACD45AB 5.8
Help: 1. You can use COM port or Ethernet to config the device, but you just need choose one 2. When use COM port you must connect O to GND, while use Ethernet you shoule r connect 3. MouseOver display hints Any question, Email to tec@usr.cn	CFG not

Diagram 2-6 Set via COM

### 2.4.3 Set DIY

By setting protocol, load in http://www.usriot.com/Download/206.html





## 3. Module Work Mode

## 3.1 Structure Chart





## 3.2 UDP Mode

e Search 中文 H	elp	
Parameters (?) Module work mode	UDP Mode	Show Expand functions »
Module IP	192. 168. 0. 7	Operate via COM-(?) CFG connect to GND-
Subnet mask	255. 255. 255. 0	Select serial port COM8 💌 (?
Default Gateway	192. 168. 0. 201	Read via COM
Baud Rate(bps)	115200	Setup via COM
Parity/Data/Stop	NONE V 8 V 1 V	Operate via Net-(?) Leave CFG pin free-
Module port	20108	Search in LAN
Destination IP	192. 168. 0. 201	Set selected item via Net
Destination Port	8234	Device list in the Net Module IP MAC Ver
Logs		192.168.0.7 006A0ACD45AB 5.8
Melp: 1. You can use COM config the device, choose one 2. When use COM po to GHD, while use connect 3. MouseOver disple Any question, Emai	port or Ethernet to but you just need rt you must connect CFG Ethernet you shoule not y hints l to tec@usr.cn	
	~	

Diagram 3-2 UDP Mode





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In UDP mode, after the module is powered on listening on port Settings, not take the initiative to establish a connection, when data from by forwarding to the serial port, when a serial port receives the data sent over the network to the IP and port module Settings.

## 3.3 TCP Client

🙀 USR-TCP232-Setup V5	.0.3.8	
File Search 中文 H	elp	
Parameters (?) Module work mode	TCP Client	Show Expand functions »
Module IP	192. 168. 0. 7	Operate via COM-(?) CFG connect to GND
Subnet mask	255. 255. 255. 0	Select serial port COM8 💌 (?)
Default Gateway	192. 168. 0. 201	Read via COM
Baud Rate(bps)	115200	Setup via COM
Parity/Data/Stop	NONE V 8 V 1 V	Operate via Net-(?) Leave CFG pin free
Module port	20108	Search in LAN
Destination IP	192. 168. 0. 201	Set selected item via Net
Destination Port	8234	Device list in the Net
Logs		192.168.0.7 006A0ACD45AB 5.8
Parameters has upd change Param, click Net].	ated to left form. After [Set selected item via	

### **Diagram 3-3 TCP Client**

In TCP client mode, after power on module according to their own Settings active TCP server to connect to the server, and then establish a long connection, data transparent transmission after this mode, the TCP server IP module would need to be visible and the visible means directly by module's IP can PING the server IP, server side can be fixed IP, the Internet can also be internal network IP and module in the same local area network.



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## 3.4 UDP Server Mode

USR-TCP232-Setup V5	5.0.3.8	
le Search 中文 H	elp	
Parameters <b>(?)</b> Module work mode	WDP Server 💌	Show Expand functions >>
Module IP	192. 168. 0. 7	Operate via COM-(?) CFG connect to GND
Subnet mask	255. 255. 255. 0	Select serial port COM8 (?)
Default Gateway	192. 168. 0. 201	Read via COM
Baud Rate(bps)	115200	Setup via COM
Parity/Data/Stop	NONE V 8 V 1 V	Operate via Net-(?) Leave CFG pin free
Module port	20108	Search in LAN
Destination IP	192. 168. 0. 201	Set selected item via Net
Destination Port	8234	Device list in the Net
Farameters has upd change Param, click Net].	ated to left form.After 【Set selected item via	

### Diagram 3-4 UDP Server Mode

UDP server refers to the normal UDP are not validated on the basis of the source IP address, destination IP instead of the UDP packets are received data source IP, similar to TCP server functionality.

In this mode, the module by default record a destination IP, when a serial port data, to record the IP to send data, at the same time, the module at the server status, to accept the network packets sent to module, and adjust the target IP IP for the data source, suitable for multiple IP working mode for the module.

Use computer end program and UDP mode is exactly the same, no need to change.

**Note:**UDP mode, UDP server mode with a single maximum length of 1472 bytes should be controlled at or below, if greater than this length, the module will automatically restart, the proposed subcontractor sent.





## 3.5 TCP Server Mode

🔬 USR-TCP232-Setup	V5.0.3.8	
File Search 中文	Help	
Parameters-(?) Module work mode	TCP Server	Show Expand functions >>
Module IP	192. 168. 0. 7	Operate via COM-(?) CFG connect to GND
Subnet mask	255. 255. 255. 0	Select serial port COM8 💽 (?)
Default Gateway	192. 168. 0. 201	Read via COM
Baud Rate(bps)	115200	Setup via COM
Parity/Data/Stop	NONE - 8 - 1 -	Operate via Net-(?) Leave CFG pin free
Module port	20108	Search in LAN
Destination IP	192. 168. 0. 201	Set selected item via Net
Destination Port	8234	Device list in the Net           Module IP         MAC         Ver           192,168,0,7         008404014548         5,8
Logs Parameters has up change Param, clic Net ].	odated to left form.After ck 【Set selected item via	

Diagram 3-5 TCP Server Mode

In TCP Server mode, module and gateway trying to communication first, and then monitor set up local port, there is connection request response and create a connection, can exist at the same time up to 4 links, a serial port after receipt of the data will be sent to all at the same time of establishing links with network module device.

USR-TCP232-SETUP software, set the Index function can be achieved when to establish a multi-channel connection, the module can identify communications equipment, and with the specified device to communicate.

### **3.6 Virtual COM Mode**

Virtual COM means to convent data TCP connected to data of a COM within PC for transparent transmission. Take TCP Client mode for example:



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#### Loading http://www.usriot.com/Download/31.html

- 1. Disable firewall and antivirus program
- 2. Install Virtual COM
- 3. Setting TCP Server



#### **Diagram 3-6 Virtual COM**

#### 4. Connect a com

R-TCP232-T24 series add virtua	Add Virtual Serial Port			
Device IP MAC		Net Protocol Bau	dRate COM Parame ID	Subnet Mask Version
192.168.0.7 00 6A 0A CD 45 AB	Virtual COM: COM6	01 TCP Server 1152	200 NONE/8/1 00 00 84	255.255.255.0 5.8
	Virtual CDM: CDMB	`a free com		
🔍 Seard	ch Device	St Device	😋 Clear 🛛 🛶 Clos	e
	] <b></b> `			
COM Virtual Serial Port Serv	er V3.6.0.975			
Device(D) Tools(T) Options(O)	中文 Help(H)			
Add COM	Reset Count Monitor	art VCOM		
Remarks COM Name Paramete	ers COM State Net Protocol Remote IP	Remote Port Local Port	COM Received Net Received	Net State Reg ID
COM1	Not used TCP Client 192.168.2.7	20108	0 0	Connected 0

### Diagram 3-7 Virtual COM





# 4. Hardware Description



Diagram 4-1 USR-K1

PCB lib: http://www.usriot.com/Download/232.html

## 4.1 Technical Specifications

Major characteristic	Parameter
Name	USR-K1
CPU	32bit 48MHz (Cortex-M0)
Flash	32KBit
RJ45	
Socket	1
Speed	10/100M MDI/MDIX
Net protocol	IP, TCP, UDP, ARP, ICMP
Buffer	send: 2K bytes, receive: 1K bytes
Network interface	8 pin RJ45
Serial	
Port Number	1
Interface Standard	TTL: pin type 3.3V
Data Bits	5, 6, 7, 8
Stop Bit	1, 1.5, 2
Check Bit	None, Even, Odd, Space, Mark





Public

Baud Rate	TTL:110 bps ~ 921.6 Kbps		
Flow Control	null		
Buffer	receive: 800 bytes		
RS-485 Pull-up and	null, reserved 485 send-receive control pin		
Pull-Down Resistor			
Parameter specification			
Physical Size:	PCB size: 21.6*13.5*32.6MM (L*H*W)		
Tomporaturo and	Operating temperature: -25 to 75 ° C		
	Storage temperature: -40 to 80 ° C		
numbury range	Storage humidity: 5% to 95% RH		

Diagram 4-2 Technical Specifications

## 4.2 Hardware Description



**Diagram 4-3 Technical Specifications** 





No.	Pin	Function	Descriptions	
1	ISP	Update pin	This pin to ground to the module power module can be upgraded. If you do not use, can be suspended.	
2	N/C	N/C	N/C	
3	LINK		Can be used as a network connection status indicator pin	
4	RST	RESET	Pin received 200ms low to reset the whole module. If you do not use, can be suspended. Note: The module is powered automatic reset, it is recommended that connect the MCU IO port, reset the MCU control module in a particular case.	
5	485_EN	485 enable	Can be used as RS485 enable pin	
6	CFG	Serial ports Configuration pins	Low, you can use the serial port module configuration. Normal working hours left floating or tied HIGH. Note: give the power module, and then pulled down the CFG pin to enter the serial configuration state.	
7	LED2	Network data instructions	Connect to 13	
8	RXD	Module data is received	Data receiving end of the module, TTL 3.3V microcontroller	
9	TXD	Module data transmission	Data transmission end of the module, TTL level can be connected to 5V or 3.3V microcontroller	
10	GND	Signal ground	GND	
11	VCC	Power supply	Power supply: 3.3V @ 200mA	
12	LED1	Network connection status indicator	Connect to 16	
13	LED2	Network data instructions	Connect to 7	
14	LED_3. 3	Network led power	Power 3.3V	
15	LED_3. 3	Network led power	Power 3.3V	
16	LED1	Network connection status indicator	Connect to 12	

### Diagram 4-3 I/O introduce

## 4.3 Hardware to RJ45 Light









Diagram 4-4 Hardware to RJ45 light

### 4.4 Size



Recommended PCB Layout Component Side View

Diagram 4-5 size





# **5. Expand Functions**

USR-TCP232-Setup V5	5.0.3.8		
File Search 中文 H	elp		
Parameters (?)		Hido Runord Europhicss //	Rypord functions
Module work mode	ILF Server	hide Expand Functions w	Expand Functions
Module IP	192. 168. 0. 7	Operate via COM-(?) CFG connect to GND	
Subnet mask	255. 255. 255. 0	Select serial port COM8 💌 (?)	ID: 0
Default Gateway	192. 168. 0. 201	Read via COM	🗌 Send device ID when co
Baud Rate(bps)	115200	Setup via COM	✓ Send data with device
Parity/Data/Stop	NONE - 8 - 1 -	Operate via Net-(?) Leave CFG pin free	Specail functions
Module port	20108	Search in LAN	🔽 RS485 🗌 RS422
Destination IP	192. 168. 0. 201	Set selected item via Net	🗖 Reset 🔲 Link
Destination Port	8234	Device list in the Net	🗆 Index 🔽 RFC2217
		Module IP MAC Ver	
Logs Help: 1. You can use COM config the device, choose one 2. When use COM po to GND, while use connect 3. MouseOver displa Any question, Email	port or Ethernet to but you just need rt you must connect CFG Ethernet you shoule not y hints 1 to tec@usr.cn		

**Diagram5-1 Expand functions** 

## 5.1 RS485

"485\_en" for RS485, external enable control pin.

Set the software interface:

Specail functions	
🔽 RS485	🗌 RS422
🗖 Reset	🗌 Link
🔲 Index	▼ RFC2217

Diagram5-2 RS485

Select it by default





### 5.2 Link

The Link pins for the module to establish a communication connection status indicates pin, establish the communication Link pin will output low level, no connection is established, output high level. "Link" for external Link instructions .

Set the software interface:



Diagram5-3 Link

Don't select it by default

### 5.3 Reset

When the module as a TCP Client-side, the module will take the initiative to connect TCP SERVER. When the Reset function, the module tries to connect to TCP Server-side 30 times, still unable to establish a connection, the module will automatically restart.

Set the software interface:

🗖 RS422
🗌 Link
₩ RFC2217



Don't select it by default

### 5.4 ID

Module as TCP Client-side ID function for TCP Server-side distinguish between data sources, to achieve the establishment of the connection or data communication process device ID will also be sent, the module ID number is set to decimal, range 0 - 65535, requires the receiving end HEX format.

1.Select "Connect" to establish a communication connection, TCP Server-side will receive the corresponding TCP Client-side ID (ID Description: The first four shows for the ID number, the last four digits of the display ID negated to authentication).



Public

The following picture shows the module do TCP CLINENT establish a communication connection ID feature is enabled, the setup interface module ID number 12



#### Diagram5-4 ID

### Don't select it by default

The figure below shows establish a communication connection ID function, the device through the serial communication interface to the TCP Server-side:



Diagram5-5 USR-TCP232-Test ID



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www.usriot.com

2.Select data during each data transfer, TCP Server-side will receive the corresponding TCP Client-side ID (ID Description: ID before data transmitted only display four-digit ID number).

The following picture shows the module do the TCP CLINENT ID feature is enabled, data transmission module ID number 12 setting interface:



Diagram5-6 USR-TCP232-Test ID

The figure below shows the data communication ID function, the device through the serial port to TCP Server communication interface:

## 5.5 Index

Module as TCP SERVER end up at the same time to establish four connections, server-side at the same time send data to four CLIENT and SERVER the receiving Client-side data can not distinguish between sources of data, the Index function can send and receive data source selection.

Index function is enabled, communication data is displayed corresponding Client side device number, specific parameters are described below:

1.When receive data from Ethernet, module will send data to serial port with head 49 N, followed by data. 49 represent incoming data, N represent client index.

2.When user MCU want send data to module serial port, start with head 4F N data... 4F represent send out, N represent which client.

3.When new TCP connection incoming, module will send 43 N M to serial port, indicating that there is current link N accessed, total link number M.

4. When link number have exceed maximum, new link requirement will lead to message 46 46.

5.When disconnect, module will send 44 N M, represent current link N is delete, left link M.





## **Note:** The above values set are HEX format.

### Set the software interface:

Specail functions	
🔽 RS485	🗖 RS422
🗖 Reset	🗖 Link
Index	▼ RFC2217

#### **Diagram5-7 Index**

### Don't select it by default



Diagram5-7 the test of index

### 5.6 RFC2217

RFC2217 is an agreement for setup com port settings via Ethernet by socket, Our product support an agreement like that, but not standard RFC2217, it is more sample and easy than RFC2217.

1. When module receive setup command, if is a valid command(right packet head and right checksum), the module will change self setting and answer nothing, else the data bits would be sent out at com port.

2. TCP Client, TCP Server, UDP Client, UDP Server, UDP broadcast support this function.

3. All changes will work at once, but not save to module, when power off will lose the settings. Set the software interface:





Specail functions				
🔽 RS485	🗖 RS422			
🗌 Reset	🔽 Link			
🔲 Index	▼ RFC2217			

#### Diagram5-8 RFC2217

select it by default

The command length is 8 bits, detail as follow table. The demo bytes are in hex mode:

Name	Packet header	Band rate	UART bits setting	Check sum
Bytes	3	3	1	1
Description	Three bytes	Band rate in hex	Parity/data/stop settings,	Check sum of
Description		mode, High byte first.	see follow table.	last 4 bytes
For example		01 C2 00	02	02
(115200,N,8,1)	55 AA 55	01 02 00	03	03
For example		00.25.90	02	02
(9600,N,8,1)	50 AA 55	00 20 00	00	00

### Diagram5-9 RFC2217 introduce

### Appendix: UART bits setting detail.

	<u> </u>		
Bit	Description	Value	Description
1:0	Data bits	00	5 bits
		01	6 bits
		10	7 bits
		11	8 bits
2	Stop bits	0	1 bits
		1	2 bits
3	Parity enable	0	Not enable Parity
		1	Enable Parity
5:4	Parity type	00	ODD
		01	EVEN
		10	Mark
		11	Clear
8:6	Not used	000	Please fill 0

Diagram5-10 UART bits setting detail

Test bits

55AA5501C2008346 For 115200 N,8,1

55AA550025808328 For 9600 N,8,1

Those two data is not transferred to serial, but the packet not conform will be transferred and revealed.



😔 USR-TCP232-Test 🕯	串口转网络调试助手					
文件 ② 选项 ② 帮助 ④						
串口设置	□ 串口数据接收		网络数据接收		网络设置	
串口号 COM3 💌	55 AA 55 00 25 80 83 27		KReceive from 192.168.0.7	: 20108] :	(1)协议类型	
2+4+	55 AA 55 00 25 80 83 28 89		55 AA 55		TCP Server 💌	
波特率 5000	55 AA 55 00 25 80 83 28 89		55 AA 55		(2) + th 10th til	
校验位 NONE ▼	55 AA 55 00 25 80 83 28					
	89				192,168, 0 ,201	
数据位 100 1	55 AA 55 00 25 80 83 28 89				(3)本地端口号	
停止位 1 bit ▼	55 AA 55 00 25 80 83 28 89				8234	
1	55 AA 55 UU 25 80 83 28					
() 关闭	C9 00 25 00 25 00 03 29 00				● 新开	
	55 AA 55 00 25 80 83 27					
接收区设置	55 AA 55 01 C2 00 83 47				接收区设置	
□ 接收转向文件	55 AA 55 01 C2 00 83 47				□ 接收转向文件	
☑ 自动换行显示	55 AA 55 01 C2 00 83 47				▶ 自动换行显示	
区 十六进制显示	55 AA 55 00 25 80 83 26				区 十六进制显示	
1 首序按收业小					1 首序按收业小	
保存数据					保存数据 清除显示	
发送区设置					发送区设置	
F 自用文件数据源					「 自用文件数据源	
后,自动发送财助位					F 白新发送附加位	
友达元日初宿空					一 及达元日40/佰生	
▶ 按十六进制发送			)左接入 102 100 0 7 20100	_	▼ 按十六进制发送	
□ 数据流循环发送	1		A主按州家: 152.168.0.7:20108	<u> </u>	数据流循环发送	
发送间隔 50 毫秒		1	55 AA 55 00 25 80 83 28		发送间隔 50 毫秒	
<u>计件</u> #1 注除检1		发送		发送	文仕裁 ) 実院給 )	
			1			
<b>(</b> 就绪!	发送:6 接收:111	复位计数	<b>适</b> 就绪!	发送:175	接收:6 <u>复位计数</u>	

### Diagram5-11 RFC2217 for test

Open this function then open RFC2217 via USR-VCOM so serial port baud rate of PC application software serial server device can be matched automatically.





## 6. Common Questions

## 6.1 Work Across Network Segment

If your USR-K1 device's IP is 192.168.0.7, and remote PC's IP is 192.168.1.7, we need to config. Subnet mask of USR-K1 device, PC, and router to 255.255.0.0, if not, USR-K1 module will not communicate normally.

### 6.2 More Network Cards

Control Panel  Network and Internet  Network Connections	Search Network Connections	
Organize  Enable this network device Diagnose this connection Rename this connection Change settings of this connection	 ≣. ▼ [	
本地 注接 网络 3 Realtek PCIe GBE Family Controller		
only one network cards		

## 6.3 Every Period of Time, Module Dropped

- 1. Firewall is no disable and antivirus software isn't off.
- 2. The IP address conflict.
- 3. More network cards is open.
- 4. A power shortage or oversize ripple voltage.





## 6.4 Search Device Failure, Port Occupied

Open more one setup software ,close it.





# 7. Revison history

V1.0.1 New V1.0.2 Adding details about RJ45 light V1.0.3 Correct some errors





## 8. Contact Us

Company: Jinan USR IOT Technology Co., Ltd

Address: 1-724--728, 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