

USR-TCP232-410S Manual

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1. Quick Start

USR-TCP232-410S Serial Device Server is used to data bidirectional transparent transmission from serial to Ethernet. User doesn't need to consider details because protocol conversion is made within the server. The serial side is serial data and the Ethernet side is TCP/IP data packet, which works through simple configuration on built-in webpage or setting software.

Any question during testing, please submit it on our technical support center: http://h.usriot.com

1.1. Hardware Testing Environment

Connect 410S (shorten for USR-TCP232-410S) 'COM with PC's via serial cable(or USB to serial cable). Connect network interface between 410S' and PC's via network cable.

Then supply power for 410S with our AC adapter((make sure you can supply at least 200mA current at DC5V)).

The below picture will show you the connection.



Hardware Connection

Notes:

- AC adapter and connection cable are provided by USR IOT.
- RS232 is involved, no connection for RS485.
- PCs in above picture is the same one.

1.2. Data Transmission Testing

Check PC setting after hardware connection.

- 1) Turn off PC Firewall and anti-virus software.
- 2) Disable the network card nothing to do with testing and just leave one local connection.
- 3) As for 410S connect PC directly, should set static IP for PC, which in the same network segment with 410S, like 192.168.0.201.





PC Local Connection Configuration

1.3. Default Parameter Test

Default parameter is as below excel:

User name	admin
Password	admin
IP address	192.168.0.7
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1
Default Work Mode	TCP Server
Default Local Port	23
Baud Rate	115200
Parity bit/Data bit/Stop bit	None/8/1

Data Transmission Test:

- 1) Open test software "USR-TCP232-Test.exe", and do hardware connection according to Chapter 1.1 Hardware Testing Environment.
- 2) The right side is Network Settings: TCP Client, IP address: 192.168.0.7, port #: 23, click "Connect" to build TCP connection.

The left side is Serial Settings: Baud Rate: 115200, Parity/Data bit/Stop bit: None/8/1, Click "Open" to enable the COM.

Then we can test data transmission between COM and network.

Data from serial to network is: PC' COM->410S' COM->410S Ethernet port->PC Network;

Data from network to serial is: PC Network->410S Ethernet port->410S' COM-> PC's COM.



The below picture is for your reference:

COMSettings	COM port data receive	Network data receive	NetSettings
PortNum COM13 PortNum COM13 BaudR 115200 Poity NONE DataB 8 bit StopB 1 bit StopB 1 bit Poit Close Component Close Clos	http://en.usr. on http://en.usr. on	Jinan USR Technology Co., Ltd. Jinan USR Technology Co., Ltd.	(1) Protocol TCP Client (2) Server IP 192,168, 0, 7 (2) Server Pot 23 Disconnect Receive to file Add line return Receive As HEX Receive As HEX Receive Pause Save Clear Send Options Data from file Auto Checksum Auto Clear Input
Send Recycle		LocalHost 192.168. 0 .201 Port 598	Send Recycle
Interval 1000 ms	Jinan USR Technology Co., Ltd. Se	nd http://en.usr.on Send	Interval 1000 ms

Default Parameter Test



2. Overview

2.1. Brief Introduction

USR-TCP232-410S is to transmit transparently between TCP/UDP data packet and RS232/RS485 interface. It carries ARM Processor, low power, fast speed, high stability.

2.2. Features

- 1. Multiple indicator lights for convenient debugging
- 2. Power-line terminal for industrial application
- 3. ARM kernel, Industrial operating temperature range and reliable TCP/IP protocol stack
- 4. Auto-MDI/MDIX,RJ45 port with 10/100Mbps
- 5. TCP Server, TCP Client, UDP, UDP Server and HTTPD Client work mode
- 3. Two ports can work independently at the same time
- 4. Distinguish connected serial ports via port#
- 5. Support virtual serial port and provide corresponding software USR-VCOM
- 6. Serial baud rate from 600bps to 230.4K bps; Check bit of None,Odd,Even,Mark and Space
- 7. Support static IP, DHCP and search devices within network through UDP broadcast.
- 8. Provide serial and network setting protocol, key codes explanation
- 9. Provide PC TCP/IP SOCKET programming example,VB,C++,Delphi,Android,IOS
- 10. Built-in webpage; also can customize webpage for VIP customers
- 11. Reload button, one key to restore default settings
- 12. RJ45 with Link/Data indicator light, built-in isolation transformer and 2 KV electromagnetic isolation
- 13. The global unique MAC address bought from IEEE, also user can define MAC address
- 14. Support upgrade firmware via network
- 15. Support DNS
- 16. Support web port revise (80 by default)
- 17. Support keepalive, detect dead links and reconnect rapidly
- 18. Support account and password, used to page log in and network settings safely
- 19. Support one channel Websocket, realize bidirectional transparent transmission between webpage and serial.
- 20. Support Modbus RTU to Modbus TCP
- 21. Support UDP broadcast function, send and receive data from all IP in the network



2.3 Declaration of Compatibility with USR-TCP232-410

410S' software is fully compatible with 410, as well as power interface, RS485 interface, RS232 interface and network interface, not for outlook and size.

2.4 Basic Parameter

Parameter	Value
Input Voltage	DC5~36V
Working Current	90mA@5V
Operating Temp.	-40~+85°C
Power	<1W
Storage Temp.	-45~105°C, 5~95%RH

3. Hardware

3.1 Dimension





3.2 Indicators



- 1) POWER: indicate power. It is on when power is supplied.
- 2) WORK: indicate working status. It twinkles when 410S works well. If it is on or off for a period, 410S works improperly, you should cut the power and restart.
- 3) 232TX: It twinkles when 410S RS232 sends data.
- 4) 232RX: It twinkles when 410S RS232 receives data.
- 5) 485TX: It twinkles when 410S RS485 sends data.
- 6) 485RX: It twinkles when 410S RS485 receives data.

4. Software Design Reference

4.1 Functions





410S Function Diagram

4.1.1 TCP Client Mode

- 1) Different from UDP mode, its connection can be disconnected and kept.
- Identify disconnects. After connection built, it sends keepalive searching packet every 15 seconds. Once there is an interrupt, it can be detected rapidly then make 410S disconnect from former connection and reconnect.
- 3) It will connect to same source port when 410S try to connect server and local port is not "0".
- 4) It supports USR Synchronous baud rate (Similar RCF2217), which can revise 410S' serial parameter as baud rate accordingly. This function should be combined with USR-VCOM.
- 5) Within same LAN, 410S must be in the same network segment then can communicate. If not, 410S must be set with right one.
- 6) Support USR Cloud.



- 7) Support Modbus TCP function.
- 8) When 410S work under TCP Client to connect to TCP server, Destination IP and port should be cared. The IP can be device with same LAN, also can be different LAN or cross public network. If it connects to server cross public network, the server should have public IP.
- 9) When 410S work under TCP Client, It connect to the port of destination IP actively, not accepting other connection request.
- 10) When 410S work under TCP Client, need to set 410S's local port# to be "0 then it can visit server with randomized, so that it can solve in-successful re-connection in case server judge connection status abnormally and shield 410S' re-connection request.
- 11) TCP Client Test

① USR-TCP232-TEST software:

Need to connect to PC's TCP Server, its IP: 192.168.0.95, Port#: 20108, Click "Listening"



TCP Client Test Screenshot

2

Open USR-TCP232-M4, E45 setup software

Set 410S as TCP Client, Destination IP: 192.168.0.95. Destination port:20108. Click "Save COM1", and search 410S. Then check the parameter when 410S is found.



	ζ(L) Help					
arch List	[Click a device to re	ead parameters in th	ne Search List]	Port1 Port2	Port3 Port4	
)evice IP	Device Name	MAC	Version			
92.168.0.7	USR-TCP232-410S	D8 B0 4C 11 22 33	3009	Designed	115000	(0)
				Daudrate.	€ 115200	(0)
				Parity/Data/Stop:		(?)
				FlowControl:	None 👻	(?)
				Work Mode:	TCP Client 🔹	(?)
				RemoteIP:	192. 168. 0. 95	(?)
į	🔍 Search Device	Cle	ear ARP table	Remote Port:	20108	(?)
			-	Local Port:	0	(?)
📄 Open De	vice 🚫 Device	e Restart 🥥 F	actory Reset	TCP Server style:	Transparent transmi 💌	(?)
se Save			1	ModbusTCP:	None 🔻	(?)
				PackTime:	10 ms (0~255)	(?)
	IP Type: Sta	atic IP 🔻 (?)		PackLen:	200 byte (0~1460)	(?)
	ModuleStaticIP:192	2. 168. 0. 7 (?)		📄 Synchronize ba	udrate (RFC2217	(?)
	SubnetMask: 255	5. 255. 255. 0 (?)		📉 Enable USR Clou	1d b1	(?)
		2, 168, 0, 1 (?)		Device I	D 12345678901234567890	
	Gateway: 192	1. 6			. [12345678	
	Gateway: 192			Communication Cod	2 120 100 10	

TCP Client Software Configuration

③ USR-TCP232-TEST software:

Configure serial parameter. Click to open the port. Test software network part shows connection message:192.168.0.7:49153(port# assigned randomly). Click "send", you can gain data from each side.



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COMSettings	COM port data receive	Network data receive	NetSettings
PortNum COM13 PortNum COM13 PortNum COM13 PortNum COM13 PortNum COM13 PortNum Comment Por	http://en.usr.on A http://en.usr.on	[Receive from 192.168.0.7 : 49153] : Jinan USR Technology Co., Ltd. Jinan USR Technology Co., Ltd.	(1) Protocol TCP Server (2) Local host IP 192.168.0.95 (3) Local host port 20108 Construction Receive to file V Add line return Receive As HEX Receive Pause Save Clear Send Options Data from file Auto Checksum Auto Clear Input
☐ Send As Hex ✓ Send Recycle	~	Peers: 192.168.0.7:49153 💌	
Interval 1000 ms	Jinan USR Technology Co., Ltd. Send	http://en.usr.on Send	Interval 1000 ms

TCP Client Software Configuration

4.1.2 TCP Server Mode

- 1) Different from UDP, its connection can be disconnected and kept.
- 2) 410S listens to local port set firstly, respond and build connection when there is a request. COM send data received to all devices connected with 410S at the same time.
- 3) It supports USR Synchronous baud rate (Similar RCF2217), which can revise 410S' serial parameter as baud rate accordingly. This function should be combined with USR-VCOM.
- 4) It support 8 clients connections at max. (32 clients will be improved in the following.)
- 5) Support Modbus TCP function.
- 6) Under TCP Server mode, 410S listens to local port actively and no monitoring for IP and port connected. When the 9th client is connected, the oldest one will be ticked.
- 7) Test

Set 410S TCP Server Mode, local port 23, same as default.

Open USR-TCP232-TEST Software: set the mode: TCP Client, Destination IP and port. Click"Connect" to test data transmission.



Gile (D. Octions (O) Usl	32 to Ethernet Convert tester				
He(F) Options(O) Help COMSettings PortNum COM1 BaudR 115200 DPaity NONE DPaity NONE DataB 8 bit StopB 1 bit Open Recev Options Receive to file Add line return Receive As HEX Receive As HEX Receive Pause Save Clear Send Options Data from file Auto Checksum Auto Clear Input Send As Hex	COM port data receive		Network data receive		NetSettings (1) Protocol TCP Client (2) Server IP 192.168.0.7 (2) Server Port 23 © Connect Recv Options Receive to file Add line return Receive As HEX Receive As HEX Receive Pause Save Clear Send Options Data from file Auto Checksum Auto Checksum Auto Checksum Auto Checksum Auto Checksum
Interval 1000 ms Load Clear	Jinan USR Technology Co., Ltd.	Send	http://en.usr.cn	Send	Interval 1000 ms Load Clear
💣 COMSettings	Send: 0 Recv: 0	Reset	↓ ↓ 🎯 COMSettings	Send: 0	Recv:0 Reset

TCP Server Test Screenshot

4.1.3 UDP Client Mode

- 1) It belongs to UDP protocol, no connection, just sending data.
- 2) 410S only communicate with destination port of IP. Otherwise, the data cannot be received.
- 3) Destination Address is 255.255.255.255, then it can make UDP broadcast and receive broadcast data. Broadcast within segment as 192.168.0.255, it can be sent but cannot be received currently.
- 4) Under UDP Client and UDP Server mode, host PC allow data length 1460 bytes at max to 410S.
- 5) Test:
 - ① Open USR-TCP232-M4, E45 Setup Software: build a UDP firstly. PC's IP is 192.168.0.95. Port to be listened is 20108.
 - ② Open USR-TCP232-TEST Software: set 410S UDP Client, destination port: 20108.
 - ③ Click "Send" at serial side. Destination IP and port becomes 410S' after receiving the data. Then click "Send" in network part and send data to COM.



Device IP	Device Name	MAC	Version	K5232	RS485 none		
192.168.0.7	USR-TCP232-410S	D8 B0 4C C0 08 DB	3009		Baudrate:	115200 ~	(?)
					Parity/Data/Stop:	NONE \vee 8 \vee 1 \vee	(?)
					FlowControl:	RS485 ~	(?)
				3	Work Mode:	wr ~	(?)
					RemoteIP:	192. 168. 0. 95	(?)
(🔍 Search Device		ar ARP table		Remote Port:	20108	(?)
					Local Port:	0	(?)
Dpen De	wice 🕥 Device	e Restarf 🥥 F	actory Reset		TCP Server style:	Transparent transmi 🗸	(?)
se Save —					ModbusTCP:	None 🗸	(?)
					PackTime:	0 ms (0~255)	(?)
	IP Type: Sta	atic IP 🗸 (?)			PackLen:	0 byte (0~1460)	(?)
	ModuleStaticIP 192	2. 168. 0. 7 (?)			🗸 Synchronize ba	ndrate (RFC2217	(?)
	SubnetMask: 255	5. 255. 255. 0 (?)			🗌 Enable USR Clou	ıd	(?)
	Gateway: 192	2. 168. 0. 1 (?)			Device I Communication Cod	e	
					Communication Cod	B	

UDP Client Software Configuration



UDP Client Testing Screenshot



4.1.4 UDP Server Mode

- 1) It doesn't verify source IP address. Every time 410S receive a UDP data packet, it revise destination IP to where data comes and it replies to the IP and port which communicate latest.
- 2) Test:
- ① Open USR-TCP232-M4, E45 Setup Software: Set 410S UDP Server, local port: 23.
- ② Open USR-TCP232-TEST Software twice. Set work mode to be UDP, Destination IP and port same with 410S'.

Click "Send" then the COM receive data.

Click "Send" at serial side, only the software communicate latest can receive the data.

🙀 USR-TCP232-Test RS23	2 to Ethernet Convert tester				– 🗆 X
<pre>Generation Class Cl</pre>	2 to Ethernet Convert tester (H) TCOM port data receive http://en.usr.on http://en.usr.on http://en.usr.on http://en.usr.on http://en.usr.on http://en.usr.on http://en.usr.on http://en.usr.on		Network data receive [Receive from 192, 168, 0, 7 : Jinan USR Technology Co., Ltd Jinan USR Technology Co., Ltd	23]: a d. d. d. d. d. d. d. d. d. d.	- C × NetSettings (1) Protocol UDP (2) Local host IP 192,168, 0,95 (3) Local host pot 15000 (3) Local host 15000 (3) Local host pot 15000 (4) Local host 15000 (4) Local ho
│ Auto Ulear Input │ Send As Hex │ ✔ Send Recycle			RemoteIP: 192.168. 0 . 7	Port: 23	Auto Llear Input ☐ Send As Hex ✓ Send Recycle
Interval 1000 ms Load Clear	Jinan USR Technology Co., Ltd.	Send	http://en.usr.on	Send	Interval 1000 ms Load Clear
💣 Ready!	Send : 2700 Recv : 1232	Reset	🛛 👉 Ready!	Send: 1328	Recv : 2461 Reset

UDP Server Test Screenshot



COMSettings	COM port data receive	Network data receive	NetSettings
PortNum COM13 PortNum COM13 BaudR 115200 DPaity NONE DataB 8 bit DataB 8 bit DataB 1 bit Close Consections Receive to file Add line return Receive As HEX Receive Pause Save Clear Cent Options Data S a Side	http://en.usr.on http://en.usr.on http://en.usr.on http://en.usr.on http://en.usr.on http://en.usr.on http://en.usr.on http://en.usr.on http://en.usr.on http://en.usr.on http://en.usr.on http://en.usr.on http://en.usr.on http://en.usr.on	[Receive from 192.168.0.7 : 23] : Jinan USR Technology Co., Ltd. Jinan USR Technology Co., Ltd.	(1) Protocol UDP (2) Local host IP 192.168.0.95 (3) Local host port 15001 Charles port Receive to file Add line return Receive As MEX Receive Pause Save Clear Send Options
☐ Auto Checksum ☐ Auto Clear Input ☐ Send As Hex ☐ Send Percela		RemoteIF: 192.168.0.7 Port: 23	Auto Checksum Auto Clear Input Send As Hex
Interval 1000 ms	Jinan USR Technology Co., Ltd. Send	http://en.usr.on Send	Interval 1000 ms

UDP Server Test Screenshot

4.1.5 TCP and UDP Comparison

	ТСР	UDP
Advantages	Stable, no loss	No connection mechanism, simple and
	Reliable connection mechanism	flexible
	Resend after data sending fails	Suit for small packet and high frequency
		Accurate data sending interval
Disadvantages	Long packet starting	More loss under severe network
	Jam for small packet and high frequency	environment
	Inaccurate interval resulted from check	
	and resend mechanism	

4.1.6 HTTPD Client

It is used to transmit data collected by 410S to HTTP server or gain data from HTTP server.

410S handle complex HTTP protocol so user just do programming for serial, and not need to worry about HTTP.

When 410S send data to HTTP server via serial, packet header needed is sent by 410S.



And 410S totally transmit the data returned, the user need to take part the packets and analysis.

Test:

- Open its webpage
- 1. Set 410S HTTPD Client.
- 2. Set HTTPD packet Header.

firmware revision: v	/3009				<u> 中文</u> loqout
۲ ۲	USR IOT -IOT Experts-			Be Hones	st, Do Best!
Current Status		paramete	ñ		help
Local IP Config	Baud Rate:	115200	bps(600~1024000)		• baud
RS232	Data Size:	8 🔻 bit			232 and 485 can
RS485	Parity:	None T			115200bps
Web to Serial	Stop Bits:	1 ▼ bit			 flowcontrol and pc495
	Flow Control and RS485:	RS485 •			default RS485
Misc Config	Local Port Number:	23			local port 1~65535 when
Reboot	Remote Port Number:	80	Need		TCP Client, set
	HTTPD Client header(<180byte):	GET /1.php?d Host: test.u	ata=\$ HTTP/1.1 sr.cn		use random local port • remote port 1~65535 • packet time/length
	Remote Server Addr:	192.168.0.201			default 0/0,
	Timeout:	0 9	seconds (< 256, 0 for	no timeout)	packet
	UART packet Time:	0 1	ms (< 256)		can modify it as a
	UART packet length:	0	hars (<= 1460, 0 fo	r <mark>no use)</mark>	none-zero value
	Sync Baudrate(RF2217 similar):				
	Enable USR Cloud :				
	Device ID:				
	Communications Code :				×
Copyright © 2009 -	2015 · JiNan Usr IOT Technology Li	mited			website: <u>www.usriot.com</u>

HTTPD Client Webpage Configuration Screenshot

- ① HTTPD Client only support GET to request HTTPD Server. POST will be available in the following.
- ② GET/ is settled packet header.
- ③ 1.php?data= is visit/submit the page
- 4 \$ is data sent by serial.
- 5 HTTP/1.1 is protocol requested.
- 6 Host is IP address/ domain requested.
- \bigcirc Enter twice



- 3. Save the parameters and restart 410S.
- 4. Open serial to send data, then the data can be submitted onto our webpage server.
- 5. For more, please refer to Application Case on USR Website: www.usriot.com.



HTTPD Client Test Screenshot

4.1.7 USR-VCOM Application

It solve the transmission problem of traditional device PC software working as COM. USR-VCOM support receiving data from set COM and send serial data out as network.

How to connect 410S with Visual COM.

- 1. Set 410S TCP Server
 - 1) Open USR-VCOM software, click "Add COM" and select COM 2 (avoid existed COM), Set protocol: TCP Client, Destination IP and port same with410S', Note: fill the device name.
 - 2) "OK" to check whether connection is built. "Connected" shows ready for data transmission.
- 2. More details, please refer to http://www.usriot.com/?s=vcom



USR-VCOM Virtual Serial Port Server V3.7.1.520		
Device(D) Tools(T) Options(O) Chinese Help(-1)	
Add COM Del CDM Connect Reset Count	Monitor Search Monitor Monitor <th< td=""><td></td></th<>	
Remarks COM Name Parameters COM State	Net Protocol Remote IP Remote Port Local Port COM Received Net Received Net State	Reg ID CloudID
	Add Virtual Serial Port X Virtual CDM: COM2 Net Protocol: TCP Client Remote IP/addr: 192168.0.7 Remote Port: 20108 Local Port: 8234 Remarks: Device 1 Volte Advanced +	

USR-VCOM Add a COM



USR-VCOM Build Connection



4.1.8 DHCP

DHCP is obtaining IP address automatically.

410S' IP obtaining have 2 types: DHCP and static IP. It is static IP192.168.0.7 by default.

DHCP is effective after change to DHCP and restart. When 410S connects to router or device assigning IP, it require IP address from host within network, which takes about 5-15 seconds. Then you can search 410S's IP address. It is convenient for setting different IP address in different environment.

Note: Don't set DHCP when 410S connected to PC directly because generally PC don't have the ability of assigning IP. Otherwise, 410S cannot transmit data normally, but wait for IP.

4.1.9 DNS

410S access the domain name or dynamic domain name when work under Client mode. The length of domain name must be less than 30 bytes .410S will analysis the domain name constantly if cannot connect to destination server.

When server's IP address is dynamics, DNS make 410S' parameter no changes if according IP doesn't change no matter how server IP address changes.

4.1.10 Webpage to serial

Webpage to serial function can make interaction between webpage and serial.

- 1. Set port# : 6432 as default.
- 2. Open webpage and click "web to serial". It pops up "connect success" then can send/receive data. Open USR-TCP232-TEST Software, configure serial parameter and click "Open".
- 3. Click "send ASCII data", COM can receive data. Click "Send" in TEST Software, webpage can receive data.



← → 🗙 🗋 192.168.0.7				☆ 🕄	≡
	firmware revision: v3009 USR IOT -10T Experts-	192.168.0.7 says: × connect success!	⊕x loaout		*
	Current Status		help		
	Local IP Config RS232 RS485 Web to Senal Mac Config Reboot	Websocket connection: 0 Receive hex data	 web to serial this page use websocket to transmit data between webpage and uart 		
192.168.0.7/websocket.shtml			•		-

Web to Serial Webpage



X 05K-1CP232-41		
邮箱 🏧 小包 W 税号	🏁 TNT 📥 DHL 🧱 電源 🏠 大附件 🔀 一达通 🔽 小包跟踪 💳 DHL发件 🚺 海关数	姻 G Google 🗋 UKWF M
firmware revision:	v3009	<u> 中文</u> loqout
₹ [®]	USR IOT Be Hone.	st, Do Best!
Current Status	parameter	help 🄶
Local IP Config	Websocket connection: 0	• web to serial
RS232	Receive hex data	this page use websocket to
RS485		transmit data between webpage
Web to Serial		
Misc Config		
Keboot	send ascii data send hex data clear	
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Web to Serial COM Send/Receive Data





Web to serial test

Web to serial needs user's webpage programming ability. Design webpage, request own device's data and process data then reveal the results on webpage. According to chapter4.1.17 Customized Webpage, can download revised webpage into 410S.

1. Build a connection and connect to 410S.

```
function connectx(){
        try{
        socket=new WebSocket('ws://'+window.location.host+':6432');
        socket.binaryType = "arraybuffer";
        }catch(e){
        alert('error');
        return;
        }
        socket.onopen = sOpen;
        socket.onerror=sError;
        socket.onmessage=sMessage;
        socket.onclose=sClose
        }
2. Receive Data Function
        function sMessage(msg)
3. Send data function
```



4.1.11 KeepAlive

When 410S' network is abnormal, it can judge the status in time and disconnect. And connect to server once network recovers.

4.1.12 Modbus RTU to Modbus TCP

Settings:

- 1. Open USR-TCP232-M4,E45 Setup Software, set 410s TCP server/TCP client mode.
- 2. Select "ModbusTCP"
- 3. Click to save the parameter

earch List	[Click a device to r	ead parameters	in the Search List]	Port1 Port2	Port3 Port4	
Device IP	Device Name	MAC	Version	1997 - 19		
192.168.0.7	USR-TCP232-410S	D8 B0 4C 11 2	2 33 3009	Baudrate:	[115200 ▼]	(?)
				Parity/Data/Stop:		(?)
				FlowControl:	None 🔻	(?)
				Work Mode:	TCP Server 🔹	(?)
				RemoteIP:	192. 168. 0. 95	(?)
(💫 Search Device		Clear ARP table Compatible with	Remote Port:	20108	(?)
				Local Port:	23	(?)
Dpen De	vice 🚫 Devic	e Restart	Factory Reset	TCP Server style:	Transparent transmi 🔻	(?)
ase Save				ModbusTCP:	ModbusTCP 👻	(?)
				PackTime:	10 ms (0~255)	(?)
	IP Type: St	atic IP 💌	(?)	PackLen:	200 byte (0~1460)	(?)
	ModuleStaticIP: 192	2. 168. 0. 7	(?)	Synchronize ba	udrate (RFC2217	(?)
	SubnetMask: 255	5. 255. 255. 0	(?)	Enable USR Clou	1d	(?)
	Gateway: 192	2. 168. 0. 1	(?)	Device I	D 12345678901234567890	
	51 A			Communication Cod	e 12345678	
Full	Show +	B :	ase Save		✓ Save COM1	

Modbus TCP Configuration

4.1.13 Device ID

The function have 2 types: send ID once connection and send ID once sending data. It is used to condition that need register packet or need packet header/tail for normal transmission.



4.1.14 Webpage Port

410S has built-in webpage server and the port is 80. Also the port can be revised and visit the web via revised port.

4.1.15 Revise MAC

User can check software's MAC address. 410S's MAC is Globally Unique. Also it support customized MAC.

4.1.16 Firmware Upgrade

410S' firmware upgrade is fulfilled via network. For details, please refer to Chapter 5.1 configure parameter with configuration software.

4.1.17 Customized Webpage

User can make revise as logo/name on the basis of 410S webpage.

- Download UpgradeHtml.exe. The link is http://www.usriot.com/e45-m4-seriesk3-self-defined-webpage/
- 2. Revise webpage code

3. Open "UpgradeHtml.exe", set 410S' IP, Select product M4 and upload revised webpage file. Then upgrade.

unese			
Destination IP	192.168.0.7		
Select Product	☞ M4	⊂ E45	
Select Path	E:\M4\TivaWa	re_C_Series-2.1.0.12	
	Upgrad	le	

Customized Webpage Upgrade



4.1.18 Hardware Flow Control RTS/CTS

410S support serial RTS/CTS Hardware flow control function. It is disabled by default. Don't enable it if device doesn't support Hardware flow control .

4.1.19 Reload

Cut off power firstly.

Press "reload" and supply power. Then keep pressing reload for 5 seconds.



Reload

4.1.20 Flow Calculation

When 410S receive data from network and send to serial, user need to control the flow because of limit of serial speed. Otherwise, serial data will spill.

For example, network send data m bytes every n seconds. m bytes should be transmitted with n seconds. And the transmit time is

$$T = \frac{1}{\text{Baud Rate}} * 10 * \text{m}$$

If n>2T, the data won't spill and 410S can work well. If baud rate is less than 9600, should keep n>T.

4.1.21 Synchronous baud rate (RFC2217)

For encryption during data transmission, devices change data bytes, baud rate, parity and so on. 410S support revise serial parameter accordingly.

Synchronous baud rate is named RFC2217. USR Similar RFC2217 make adjustments on the basis of



RFC2217 protocol to improve accuracy of transmission.

Protocol length is 8 bytes. And values taken for example is in HEX:

Name	Packet Header	Baud Rate	Bytes parameter	Parity
Bytes	3	3	1	1
Explanation	reduce misjudgment	High is in front, smallest is 600(00 02 58)	data bytes, baud rate, parity	Remove 4 bits of header and ignore the high bit
(115200, N,8,1)	55 AA 55	01 C2 00	03	46
(9600, N,8,1)	55 AA 55	00 25 80	03	28

Serial parameter bit:

Bit #	Explanation	Value	Description
		00	5 bits
1.0	Data hit coloction	01	6 bits
1.0	Data Dit Selection	10	7 bits
		11	8bits
2	Stop Dit	00	1 bit
2		01	2bits
2	Darity Enable	00	Disable Parity
3	Failly Ellable	01	Enable Parity
		00	ODD
5:4	Derity Type	01	EVEN
	Panty Type	10	Mark
		11	Clear
8:6	NC	000	0

Using methods:

- 1. USR-TCP232-M4,E45 Setup software, click "Synchronous baud rate (RFC2217)".
- 2. When serial parameter changes is needed, it send RFC 2217 packet. 410S receive the command from network and revise serial parameter accordingly.



4.2 Setting Protocol

It is network setting protocol and serial port setting protocol.

4.2.1 Network Setting Protocol

4.2.1.1 Set Parameter Process

1. Build SOCKET:

Build UDP SOCKET, destination IP: 55.255.255.255, destination port: 1901. Low is in front.

- 2. Setting command process:
 - ① The network send searching command
 - ② 410S return IP address and MAC
 - ③ The network read 410S' parameter

④ Organize setting command according to MAC, known user name/password and parameter to be configured.

- 5 Send setting command
- 6 410S returns "correct setting"
- ⑦ Host PC send "save setting" command
- (8) 410S returns "correct"
- (9) Restart command
- (1) 410S returns "correct setting"

4.2.1.2 Setting Command Content

Command Look-up List:

Function	Header	Length	command	MAC	User name	Parameter	Parity
				(6 bytes)	/password		(sum)
					(12bytes)		
search	FF	01	01	-	-	-	02
reset	FF	xx	02	[MAC]	[usrname]	-	xx
					[password]		
read	FF	xx	03	[MAC]	[usrname]	-	xx
settings					[password]		
Save	FF	xx	04	[MAC]	[usrname]	-	xx
settings					[password]		
Basic	FF	xx	05	[MAC]	[usrname]	Basic	хх
settings					[password]	parameter	
Com 0	FF	xx	06	[MAC]	[usrname]	СОМ	xx
settings					[password]	parameter	



Com 1	FF	xx	07	[MAC]	[usrname]	СОМ	хх
settings					[password]	parameter	
Com 2	FF	хх	08	[MAC]	[usrname]	СОМ	xx
settings					[password]	parameter	
USR			0x10	[MAC]	[usrname]		
Cloud					[password]		

1. Command examples

① Search command example

Search command is set to:

FF 01 01 02

Sum check: 02 = 01 + 01

2 Reset command example

FF 13 02 d8 b0 4c 00 04 c9 61 64 6d 69 6e 00 61 64 6d 69 6e 00 c8

Sum check:

C8 = 13 + 02 + ... + 6E + 00

User name and password both are 5 bytes+00 bits 0 for the lack.

③ Read settings command example

Send (16 bytes): FF 13 03 AC CF 23 66 66 67 61 64 6D 69 6E 00 61 64 6D 69 6E 00 F9

④ Save reading settings command example

Send (16 bytes): FF 13 04 AC CF 23 66 66 67 61 64 6D 69 6E 00 61 64 6D 69 6E 00 FA

- 2. Some commands detailed annotation
 - ① Basic setting parameter command



Basic Parameter:

Name	Byte	Example	Explanation
ucSequenceN	1	хх	Write the read values
um			
ucCRC	1	xx	Write the read values
ucVersion	1	хх	Write the read values
ucFlags	1	80	IP address type:
			0 in 8 th bit: DHCP;1 in 8 th bit: Static IP
usLocationUR LPort	2	20 19	Write the read values
usHTTPServer Port	2	50 00	HTTP server port
ucUserFlag	1		Write the read values
ulStaticIP	4	38 00 A8 C0	Static IP
ulGatewayIP	4	01 00 A8 C0	Gateway
ulSubnetMask	4	00 FF FF FF	Subnet Mask
ucModName	16	55 53 52 2D 54 43 50	410S name
		32 33 32 2D 45 00 00 00 00	
username	6	61 64 6D 69 6E 00	username
password	6	61 64 6D 69 6E 00	password
ucNetSendTim	1		Write the read values
е			
uild	2	01 00	Device ID
ucldType	1	0	Device ID type (0~3)
			0:no use
			1:send id when connect
			2:send id when send data
			3:both
ucUserMAC	6	FF FF FF FF FF FF	MAC
ucReserved	8		Unused

Example:

FF 56 05 AC CF 23 66 66 67 61 64 6D 69 6E 00 61 64 6D 69 6E 00 61 66 03 80 20 19 50 00 02 07 00 A8 C0 01 00 A8 C0 00 FF FF FF 55 53 52 2D 54 43 50 32 33 32 2D 45 34 35 00 00 61 64 6D 69 6E 00 61 64 6D 69 6E 00 02 01 00 00 AC CF 23 66 66 67 00 48 54 54 50 2F 31 2E 1C



2 Port settings parameter command

Port parameter:

Name	bytes	example	Explanation
ulBaudRate	4	00 C2 01 00	Baud Rate
ucDataSize	1	08	COM data bits (0X05/0x06/0x07/0x08)
ucParity	1	01	COM parity
	4	01	1: 110, 2: 000, 3: even, 4: mark, 5: space
	1		
ucFlowControl	1	01	COM flow control (0x01; no, 0x03:HW)
ulTelnetTimeout	4	00 00 00 00	Network reconnection time
usTelnetLocalPort	2	17 00	Local Port
usTelnetRemotePort	2	17 00	Remote Port
uiTelnetURL	30	31 39 32 2E 31 36 38 2E 30 2E 31 00 00 00 00 00 00 00 00 00 00 00 00 00	IP address send in ASCII. Example: 192.168.0.1
ulTelnetIPAddr	4	00 00 00 00	Not adopted
ucFlags	1	02	Enable MODBUSTCP: 0x010(bit2) Enable 2217: 0x08(bit3) Enable USR cloud: 0x010(bit4)
ucWorkMode	1	03	Working mode: 0: UDP, 1: TCP Client, 2: UDP Server, 3: TCP Server, 4: HTTPD Client
uiPackLen	4	C8 00 00 00	COM pack length
ucPackTime	1	0A	COM pack time
ucTimeCount	1	91	Write the read values
TCP server type	1	1	Write the read values
ucReserved	4	Casual value	saved

Example:



4.1.1.3 Commands' Return Content

1. Return results of search command

Return command:

Bytes	Name	Example	Explanation
0	TAG_STATUS	FF	
1	Packet_length	24	
2	CMD_DISCOVER_TARG ET	01	
3	Board_type	00	
4	Board_ID	00	
5~8	Client_IP_address	C0 A8 00 07	Device IP(High in front)
9~14	MAC_address	AC CF 23 20 FE 3D	Device MAC(High in front)
15~18	Firemware_version	D0 07 12 34	D0 07: device version# (low in front) 12 34: encrypted version
19~34	Application_title	55 53 52 2D 54 43 50 32 33 32 2D 35 30 30 00 00	Device name
35	checksum	F0	checksum

Example:

Return results of search command(36 bytes)

FF 24 01 00 4B C0 A8 00 4D D8 B0 4C 00 04 C9 DD 07 01 00 55 53 52 2D 54 43 50 32 33 32 2D 34 30 31 00 00 EF

The method of the check is as follow:

0xEF = 00 - FF - 24 - 01 - 00 - 4B - ... - 31 - 00 - 00

2. Return results of reset command

Response(4 bytes): FF 01 02 4B, if user name and password are right, 4B = 'K' FF 01 02 45, if user name and password are wrong, 45 = 'E'

3. Return results of read command

Description:

Return all parameter of 410S network. 193 bytes in total, no parity, no protocol, return parameter directly. Returned content: 193 (basic parameter+serial parameter+serial parameter)



- Return results of save settings command If settings are correct, it returns: FF 01 04 4B
- 5. Return results of basic settings command FF 01 05 4B
- Others return results Sum check fault returns 'E' + right parity Correct execution: FF 01 CMD 'K' User name/password fault returns: FF 01 CMD 'P' Others faults return: FF 01 CMD 'E'

4.2.2 Serial Setting Protocol

Serial AT commands, please wait for updating.

5. Parameter Configuration

It is setup software configuration, webpage configuration and serial configuration.

How to configure:

Revise user name/password \rightarrow set IP access method \rightarrow serial parameter \rightarrow 410S work mode \rightarrow work mode related parameter

5.1 Software Configuration

To make sure setup software normal running, please check the below firstly:

- 1. 410S and setup software PC are within same LAN.
- 2. Close the anti-virus software and firewall on PC.
- 3. Disable network card nothing to do with this testing.

Download [USR-TCP232-M4&E45] Setup software here:

http://www.usriot.com/usr-tcp232-m4e45-setup-v2-3-0-78/

Search device and all 410S within LAN can be found. It includes IP, name, MAC and version#.



arah List	ζ(L) Help [Click a devrige to	, road parameter	r in the Secret List	1	_			
	CIICK a device ()	o reau parameter	s III die Search List	RS232	RS485 n	ione		
)evice IP	Device Name	MAC	Version					
92.168.0.7	USR-TCP232-410	5 D8 B0 4C 11	22 33 3009	I	Baudrate:		15200 -	· (?)
				I	Parity/Data	/Stop: 1	10NE - 8 - 1 -	• (?)
				I	1owControl	.: []	15485 •	• (?)
				Y	York Mode:		CP Server 🔻	• (?)
				I	RemoteIP:	1	92.168.0.201	(?)
)	🔍 Search Device		Clear ARP table	3	Remote Port	2	3	(?)
				I	Local Port:	2	3	(?)
Dpen De	evice 💟 Det	vice Restart	Factory Reset	3	ICP Server	style: ['ransparent transmi 🕶	. (?)
se Save				N	NodbusTCP :	[]	Ione 🔹	. (?)
				I	PackTime:	C	ms (0~255)	(?)
	IP Type:	Static IP 💌	(?)	I	ackLen:	C) byte (0~1460)) (?)
	ModuleStaticIP:	192. 168. 0. 7	(?)		🗸 Synchron	nize baud	rate (RFC2217	(?)
	SubnetMask:	255. 255. 255. 0	(?)		Enable V	SR Cloud		(?)
	Gateway:	192.168.0.1	(?)		De	evice ID		
					Communicati	ion Code		
						[

Software Configuration—Search

 Click searched device and check user name/password. If it is correct, it reveals 410S information. If not, it pops up retype window, click "Confirm". User name and password is admin by default.



Device IP	Device Name	MAC	Version					
192.168.0.7	USR-TCP232-410S	D8 B0 4C C0 08 DB	3009					(-)
				Baud	rate:	115200	~	(?)
				Pari	ty/Data/Stop:	NONE \checkmark	8 ~ 1 ~	(?)
				Flow	Control:	RS485	~	(?)
				Work	Mode:	TCP Server	~	(?)
				Remo	teIP:	192.168.0.3	201	(?)
📄 Open De	vice 🚫 Devi	ce R 🤱 admin	>	****	/le:	23 Transparen	t transmi ~	(?) (?)
-						None		1.1.7
ise Save —	. [0120]					None	s (0~255)	(?)
se Save bsocket Por	rt:6432 (?)	Devi 🥝	OK	Ç Cancel		None m	s (0~255)	(?) (?)
se Save bsocket Por b Port:	rt: <mark>6432</mark> (?) 80 (?)	Devi 🥑	0K	Cancel		None 0 m 0 b	∽ s (0~255) yte (0~1460)	(?) (?) (?)
use Save Absocket Por Ab Port: Avice ID: Avice ID Tur	rt:6432 (?) 80 (?) 1 (?) ne:Disa y (?)	Devi User IP Type: Static ModuleStaticIP 192.16	DK	Cancel	ynohronize ba	None 0 m 0 b audrate(RFC22	vte (0~1460)	(?) (?) (?)
ise Save absocket Por ab Port: avice ID: avice ID Tyj ser Name:	rt: 6432 (?) 80 (?) 1 (?) pe: Disa (?) admin (?)	Devi User IP Type: Statio ModuleStaticIP 192.16 SubnetMask: 255.25	0K 7 IP ~ (?) 88.0.7 (?) 55.255.0 (?)	Cancel	ynchronize be nable USR Clo Device 1	None 0 m 0 b audrate (RFC22 nud	v s (0~255) yte (0~1460) 217	(?) (?) (?) - (?)
ase Save absocket Por ab Port: avice ID: avice ID Typ ser Name: assword:	rt: 6432 (?) 80 (?) 1 (?) pe: Disa' (?) admin (?) admin (?)	Devi User IP Type: Station ModuleStatioIP 192.16 SubnetMask: 255.25 Gateway: 192.16	DK → IP ~ (?) → 8.0.7 (?) → 5.255.0 (?) → 8.0.1 (?)	Cancel	ynchronize be nable USR Clo Device 1 nunication Con	None 0 m 0 b audrate(RFC22 audrate(RFC22	s (0~255) yte (0~1460)	(?) (?) (?) - (?)

Software Configuration-Password

2. Basic parameter configuration

Click "show all" and all basic parameter is revealed.

Set the parameter as needs and click "Base Save" then can set successfully.



USR-TCP232-410S User Manual

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Le(D) +X(L) Help	ead parameters in th				
arch List [Click a device to m		we Search List]	Port1 Port2	Port3	
Device IP Device Name	MAC	Version			
192.168.0.7 USR-TCP232-410S	D8 B0 4C 11 22 33	3009	Baudrate:	115200 -	(?)
			Parity/Data/St	op: NONE 🔻 8 🕶 1 💌	(?)
			FlowControl:	RS485 💌	(?)
			Work Mode:	TCP Server 🔻	(?)
		28	RemoteIP:	192. 168. 0. 201	(?)
🔍 Search Device	Cle	ar ARP table	Remote Port:	23	(?)
			Local Port:	23	(?)
📄 Open Device 🔕 Devic	e Restart 🖓 F	actory Reset	TCP Server sty	le: Transparent transmi 💌	(?)
ase Save			ModbusTCP:	None 🔻	(?)
			PackTime:	0 ms (0~255)	(?)
IP Type: St	atic IP 👻 (?)		PackLen:	0 byte (0~1460)	(?)
	2. 168. 0. 7 (?)		📝 Synchroni ze	baudrate (RFC2217	(?)
ModuleStaticIP:19			Enable USR	Cloud	(?)
ModuleStaticIP:19 SubnetMask: 25	5. 255. 255. 0 (?)			1	
ModuleStaticIP:19 SubnetMask: 25 Gateway: 19	5. 255. 255. 0 (?) (2. 168. 0. 1 (?)		Devid	ze ID	
ModuleStaticIP:19 SubnetMask: 25 Gateway: 19	5. 255. 255. 0 (?) 2. 168. 0. 1 (?)		Devic Communication	code	
ModuleStaticIP:19 SubnetMask: 25 Gateway: 19 Full Show +	5. 255. 255. 0 (?) 12. 168. 0. 1 (?) Base Si	ave	Devic Communication	code	
ModuleStaticIP:19 SubnetMask: 25 Gateway: 19 Full Show +	5. 255. 255. 0 (?) 12. 168. 0. 1 (?) Base S	ave	Devic Communication	code	

Software Configuration --Full Show



1.1			S 12		
earch List [Llick a devic	ce to read parameters in	the Search List]	Port1 Port2	Port3	
Device IP Device Name	MAC	Version			
192.168.0.7 USR-TCP232	-410S D8 B0 4C 11 22 3	3 3009	Baudrate'	115200	(?)
			Parity/Data/Stop:		(?)
			FlowControl:	RS485 🔹	(?)
			Work Mode:	TCP Server 🔹	(?)
			RemoteIP	192.168.0.201	(?)
🔍 Search De	vice	Clear ARP table Compatible with	Remote Port:	23	(?)
			Local Port:	23	(?)
📄 Open Device 😜	Device Restart	Factory Reset	TCP Server style:	Transparent transmi 💌	(?)
ase Save			ModbusTCP:	None 🔻	(?)
ebsocket Port:6432	(?) Device Name: USR	-TCP232-4105 (?)	PackTime:	0 ms (0~255)	(?)
eb Port: 80	(?) User MAC: D8	BO 4C 11 22 (?)	PackLen:	0 byte (0~1460)	(?)
evice ID: 1	(?) IP Type: Sta	tic IP 🔻 (?)	🔽 Synchronize bar	udrate (RFC2217	(?)
evice ID Type: Disa 👻	(?) ModuleStaticIP 192	. 168. 0. 7 (?)	Enable USR Clou	1d	(?)
17	(?) SubnetMask: 255	. 255. 255. 0 (?)	Device I	D	
ser Name: admin	Gotomorr: 192	. 168. 0. 1 (?)	Communication Cod	e	
assword: admin	(?) Gateway. ID2				

Software Configuration-Base Save

- Websocket port: refer to Chapter 4.1.8.3 Webpage to serial
- Webpage port: it is 80 by default when visit webpage.
- Device ID: refer to Chapter 4.1.8.6 Device ID
- Device ID type: sending ID type
- User name: Authentication Code for revising parameter to avoid other users within same LAN revising it.
- Password: same as user name.
- Device Name: 410S's name an be revised.
- MAC address: 410S' MAC
- IP address type: Static and DHCP
- 410S static IP: same segment with router.
- Subnet Mask: 255.255.255.0 by default.
- Gateway: it is router IP generally, can transmit cross network segment and DNS if set correctly.
- 3. Port n configuration(RS232/RS485 Port configuration)

Click the COM to set, revise parameter then click "Save COM1".



arch List [Click a device to rea	d parameters in the Search List;	Porti Pout?	P12	
Device IP Device Name	MAC Version	Tortz	rorts	
192.168.0.7 USR-TCP232-4105	D8 B0 4C 11 22 33 3009	P. Charles	[115000	(0)
		Daudrate.	115200 ♥	0
		Parity/Data/Stop:		(?)
		FlowControl:	RS485 💌	(?)
		Work Mode:	TCP Server 👻	(?)
		RemoteIP:	192.168.0.201	(?)
🔍 Search Device	Clear ARP table	Remote Port:	23	(?)
		Local Port:	23	(?)
📄 Open Device 💽 Device	Restart 🥥 Factory Reset	TCP Server style:	Transparent transmi 💌	(?)
se Save		ModbusTCP:	None 👻	(?)
broghot Port (6432 (2) Dor	rice Name: USR-TCP232-4105 (?)	PackTime:	0 ms (0~255)	(?)
DSOCKECTORC. ONDE	nr MAC: D8 B0 4C 11 22 (?)	PackLen:	0 byte (0~1460)	(?)
eb Port: 80 (?) Use			udrate (RFC2217	(?)
eb Port: 80 (?) Use evice ID: 1 (?) IP	Type: Static IP 🔻 (?)	🔍 📝 Synchronize ba		
wice ID Type: Disa' + (?) Mod	Type: Static IP (?) uleStaticIP 192.168.0.7 (?)	Synchronize ba	1d	(?)
eb Port: 80 (?) Use evice ID: 1 (?) IP evice ID Type: Disa' ↓ (?) Mod ever Name: admin (?) Sub	Type: Static IP (?) buleStaticIP 192.168.0.7 (?) netMask: 255.255.0 (?)	V Synchronize ba Enable USR Clou Device I	ıd D	(?)
absolute for C. Okiz (?) Use wice ID: 1 (?) IP wice ID Type: Disa' ← (?) Mod ter Name: admin (?) Sub ussword: admin (?) Gat	Type: Static IP (?) huleStaticIP 192.168.0.7 (?) netMask: 255.255.0 (?) eway: 192.168.0.1 (?)	♥ Synchronize ba ■ Enable USR Clor Device I Communication Cod	ıd D e	(?)

Software Configuration-COM 1 Configuration

Serial Baud rate: it can be standard or customized.

Parity/Data/Stop: serial parameter.

Serial Flow control: None/RS485/Hardware, None/RS485 for no flow control, Hardware for dishware flow control.

Work Mode: TCP Server /TCP Client/HTTPD Client/UDP Client/UDP Server

Destination IP/Port: IP connected when 410S works as client (TCP Client/HTTPD Client/UDP Client)

Local Port: port 410S to connect. Advice to set it to "0" when 410S works under TCP Client for connection with Random port.

TCP Server Type: No.

Modbus TCP: set this when Modbus TCP to Modbus RTU is needed.

Serial pack time: relate to serial unpacking mechanism.

Serial pack length: relate to serial unpacking mechanism.

Similar RFC2217: Please refer to Chapter 4.1.8.14 Similar RFC2217

4. Firmware Upgrade

If 410S need to upgrade with more advanced firmware, please contact USR sales.

During firmware upgrade, 410S connects to PC directly. PC Upgrade via Wi-Fi is prohibited.



User coning) read parameter:	s in the Search I	ist] Port1	Port2	Port3		
Firmware up	grade		MAC	Version					
Exit	Search	Device	5 D8 B0 4C 11	22 33 3009	Ie	Gaudrate: Parity/Data/Stop: PlowControl: Pork Mode: LemoteIP: Lemote Port:	115200 NONE RS485 TCP Serv 192.168.	▼ 8 ▼ 1 ▼ ▼ ver ▼ 0. 201	(7) (7) (7) (7) (7) (7) (7) (7) (7)
Dpen Devi	ze	💽 Dev	rice Restart	Pactory Res	it J	.ocal Port: "CP Server style: IodbusTCP:	23 Transpar None	rent transmi ▼ ▼	(?) (?) (?)
ebsocket Port:	6432	(?)	Device Name:	USR-TCP232-4105	(?) I	ackTime:	0	ms (0~255)	(?)
eb Port:	80	(?)	User MAC:	D8 B0 4C 11 22	(?) H	ackLen:	0	byte (0~1460)	(?)
evice ID:	1	(?)	IP Type:	Static IP 🔹	(?)	🗸 Synchronize ba	udrate (RF	C2217	(?)
evice ID Type:	Disa 👻	(?)	ModuleStaticIP	192.168.0.7	(?)	Enable USR Clo	ud	NY IOMARKA	(?)
ser Name:	admin	(?)	SubnetMask:	255.255.255.0	(?)	Device I	D		
	admin	(?)	Gateway:	192, 168, 0, 1	(?)	Communication Cod	le		
assword:						P			



Search List [Click a device	: to read paramet	ers in the Search List]	Port1 Port	2 Port3		
Device IP	Device Name	MAC	Version				
192.168.0.7	USR-TCP232-4	105 D8 B0 4C	11 22 33 3009	Baudrate:	115200	•	?)
			Firmware Upgrade	Page 1976	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		?)
			Select Client			•	?)
			Client IB As	192 168 0 7		•	?)
			Client IP AC	Address: D8-80 4C 11 2	2 33	201 (?)
C	🔪 Search Dev:	ice					?)
			Select .bin file			(?)
Dpen Dev	vice 🔕	Device Restart	C:\Users\Adminis	trator\Desktop\G2-Firmwa	ire-1.0	t transmi 🕶 🤇	?)
Base Save			Prog	ram	Fxit	•	?)
'ebsocket Por	t: 6432 (?) Device Name:				ıs (0~255) (?)
Yeb Port:	80 (?) User MAC:		1		yte (0~1460) (?)
)evice ID:	1 (7) IP Type	: Static IP 🔻 (?)	V Synchron	uize baudrate(RFC2	217 (<u>?)</u>
Device ID Typ	e: Disa 🗸 (?) ModuleStatic	IP 192.168.0.7 (?)	🛄 Enable U	SR Cloud		?)
Jser Name:	admin (?) SubnetMask:	255.255.255.0 (?)	D	evice ID		
Password:	admin (?) Gateway:	192.168.0.1 (?)	Communicat	ion Code		
	-		A.D. C.		A 0		

Firmware Upgrade

5.2 Webpage Configuration

Open browser and type in 410s' IP (192.168.0.7 by default) Then user name: admin and password: admin.



http://192.168.0.8	requires a	username and p	assword.
Your connection to	o this site is	not private.	
User Name:	admin		
Password:	****		

Webpage Log In

- 1. Current page reveals basic information:
 - 410S name
 - Firmware version
 - Current IP address
 - MAC address
 - Total running time: from be powered
 - Count of data sending: how many data sent from powered
 - Count of data receiving: how many data received from powered
 - 410S connection status: check whether connection is built.

2. Local IP configuration

Save configuration after revise. Then restart.

- Local IP Configuration
- IP address gaining methods
- Local IP
- Subnet Mask
- Gateway



firmware revision:	v3009	<u> 中文</u> <u>loqout</u>
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	USR IOT -IOT Experts-	Be Honest, Do Best!
Current Status	parameter	help
Local IP Config	IP type: Static IP	• IP type:
RS232		StaticIP or DHCP
RS485	Static IP: 192 · 168 · 0 · 7	Module's static ip
Web to Serial	Submask: 255 , 255 , 255 , 0	Submask     usually
Misc Config		255.255.255.0
Reboot	Gateway: 192 · 168 · 0 · 1	Gateway     Usually router's ip     address
	Save Cancel	
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#### Webpage Configuration-Local IP Configuration

- 3. RS232
  - Baud Rate
  - Data Bit
  - Parity Bit
  - Stop Bit
  - Flow hardware and RS485
  - Local Port
  - Remote Port
  - Work Mode
  - Remote server address
  - Serial pack time
  - Serial pack length
  - Similar RCF2217
- 4. RS485: Same as RS232 above.



5. Web to serial

Click "web to serial " and "connect success" pops up. Confirm then send data.

firmware revision: v3009	192.168.0.8 says:	× <u>中文</u> loqout
	connect success!	Ionest, Do Best!
Current Status		help
Local IP Config	Websocket connection: 0	web to serial
RS232	Receive hex data	this page use websocket to
RS485		transmit data between webpage
Web to Serial		and uart
Misc Config		2
Reboot		
	send ascii data send hex data clear	
	Web to Serial	

- 6. Advanced configuration
  - 410S Name
  - Websocket Port
  - Webpage Port
  - Device ID
  - ID Type
  - MAC Address (can be revised)
  - User Name
  - Password
  - Cache Data or not: whether serial and network data are cached if disconnection.
  - Reset time for no data: how long 410S reset when no data from COM or Network. Set to "0" then no rest.
- 7. Module Management

Save all data then click restart to take effect.



firmware revision:	/3009		<u>由文</u> logout
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	USR IOT -IOT Experts-	Be Honest	t, Do Best!
Current Status	Reboot/Reset		help
Local IP Config	Reboot/Reset Module	Reset Module	Reboot:
RS232			Click to make your config take
RS485			effect
Web to Serial			
Misc Config			
Reboot			
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Webpage configuration- Restart

5.3 Serial Configuration

Serial configuration use AT command, please refer to Chapter 4.2.1 Serial setting Protocol.



6. Contact

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