Contents

Preface

Version Description

The Manual Version: V1.5

Copyright Statement

Disclaimer

This manual is written under current knowledge and may be improved or changed in future without further notice. The best work had been done to ensure the manual is accurate and reliable, thus our Company does not responsible for any loss or damage caused by contents missing, inaccuracy or errors.

Abstract

This manual describes installation and use of the Serial device server. Please be sure to read all the information carefully and follow the manual instruction to install the product before you first use our device. It may avoid any damages occurred by mis-operation. Thanks for choosing our products.

Environmental Protection

This product meets the design requirements on environmental protection. Any use, storage and disposal of the product shall be conducted under relevant national laws and regulations.

You are most welcome to put forward advices and suggestions for our work and it well be viewed as the greatest support for our company.

Chapter 1 Introduction

1.1 Overview

Serial device server is the serial networking equipment with high performance based on 32-bit ARM CPU, and realizes the transparent transmission between single serial ports to TCP/IP network. It provides the total solution of how the serial port equipment access TCP/IP network, so you can visit any serial equipment through this module by TCP/IP network. Serial device server greatly improves the control and management ability for serial equipment.

Serial device server module provides the full function UART serial port and network interface based on Ethernet, and offers a full set of instructions and reserved the expansion of the control signal line. This module makes it easy to integration to engineering system.

Serial device server has advanced features such as powerful function, flexible networking, and modular design. According to user's different network demand you can choose different network transmission protocol.

Serial device server is specifically designed to allow DTE devices to be directly accessible from the network. Legacy devices can thus be transformed into Ethernet devices, which can be monitored and controlled from any network location or even the Internet. Different configurations and features are available for specific applications, such as protocol conversion, Virtual COM drivers, and TCP/UDP operation modes to name a few.

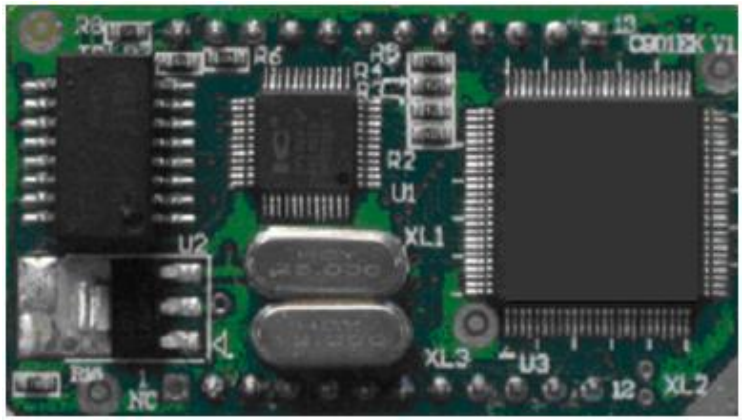
Serial device server can be widely used for integrated access of serial data acquisition in telecommunication, power, water conservancy, financial, traffic, coal, public security, prison, forces and other departments.

Chapter 2 Main features

- Based on 32-bit ARM CPU, High performance and low power consumption；
- Support full function serial signal: TxD/RxD/RTS/CTS/DTR/DSR/DCD/GND
- Data Bits: 5/6/7/8
- Parity：None/Even/Odd/Space/Mark
- Stop Bits：1, 2
- Flow Control: RTS/CTS
- Baud rate: 50bps – 460.8Kbps
- Configuration Options: Built-in WEB server
- Software upgrade function
- Operation mode: including TCP Client，TCP Server and UDP
- User's applications communicate with the device by 1. Socket, 2. Visual serial port
- Input Voltage: 5V

Chapter 3 Pin Description

3.1 Module pin diagram



3.2 Function pins

PIN NAME	PIN No.	Type	Description
Power and Ground			
VCC(+5V)	6	P	DC +5 V power supply input pin
GND	5	P	GND
CGND	18	P	housing ground wire
UART Serial Port			
T_RX	3	I	UART Receive data pin
T_TX	4	O	UART Transmit data pin
T-DTR	13	O/232	UART Data Terminal Ready pin
T-CTS	14	I/232	UART Clear the transmit pin
T-DSR	15	I/232	UART Data Set Ready Pin
T-DCD	16	I/232	UART Data Carrier Detect
T-RTS	17	O/232	UART Request to transmit pin
T_DE	24	O/485	UART 485 transmit Enable
Ethernet Interface （PHY address :9）			
E-78	7	NC	Connect the Ethernet physical

			interface RJ45-pin 7,8
E-45	8	NC	Connect the Ethernet physical interface RJ45-pin 4,5
E-2（TX-）	9	O	Ethernet Transmit Data+
E-1（TX+）	10	O	Ethernet Transmit Data-
E-6（RX-）	11	I	Ethernet Receive Data+
E-3 (RX+)	12	I	Ethernet Receive Data-
LED-SPD#	19	O	Ethernet work : 100M,low 10M ,high
LED-LINK#，	20	O	Ethernet is valid for the low level of transition data transceiver, Ethernet is invalid high
Miscellaneous Pins			
Restore	2	I	Restore the factory default settings, power-low reset
Reserved0-2	21-23	I	Retain control pin
NC	1	NC	Null

Remark：

- UART sign、Ethernet indicator light signals : 3.3V TTL signal,

2．I：Input O：Output P：Power

Chapter 4 Technical Specification

4.1 Operating Environment

The device has a wide range of operating temperature and is able to work normally and stably in highly adverse environment.

Working Temperature	0℃ ～ +50℃
Storage Temperature	－40℃ ～ +70℃
Relative Humidity	10 %～95 %

The environment should be free from corrosive and solvent gases, dust, and magnetic interference.

4.2 Power Supply

Input voltage	DC5V
Electric current	＜230mA

4.3 Ethernet Specification

10/100M Auto MDI/MDIX , IEEE 802.3u auto-negotiation

4.4 Serial Parameter

Serial Signal：

TxD/RxD/RTS/CTS/DTR/DSR/DCD/GND

Serial Communication parameter：

Data bit：5/6/7/8

Parity： None/Even/Odd/Space/Mark

Stop Bit：1， 2

Flow Control：Hardware XON/XOFF

Speed rate：50bps – 460.8Kbps

4.5 Default Factory Setting

Serial port：9600,n,8,1 no flow control

IP Address：192.168.0.168 Subnet mask：255.255.0.0

Gateway：192.168.0.1

Working model：udp

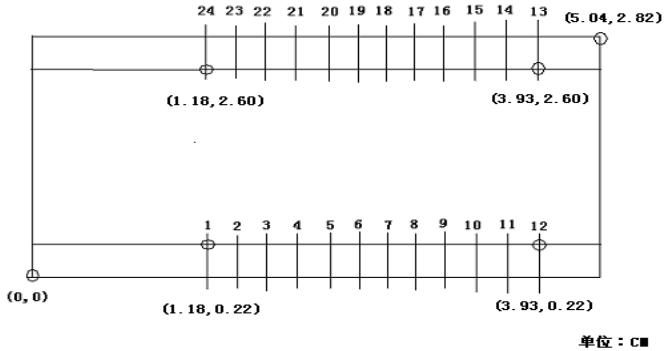
Listening Port：8000

Peer IP：192.168.0.32

Peer Port：8000

Web Security Setting：No password

4.6 Mechanical Specifications



Chapter 5 Software instructions

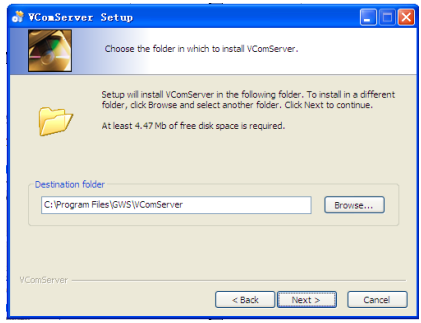
When you use the Serial device server at first time, you need to set the network and serial parameters according to your requirements. We supply the search software and visual serial port management to provide convenience for configure and manage Serial device server.

5.1 Setup visual serial port

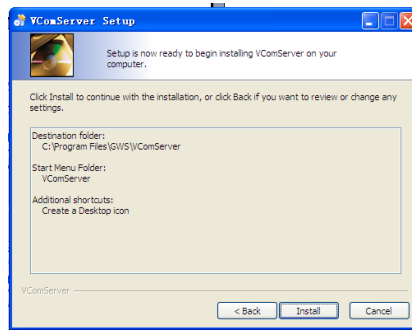
According to the following steps to install the application on the computer with WINDOWS platform.

First, double click the " VcomSetup.exe " file to run it.

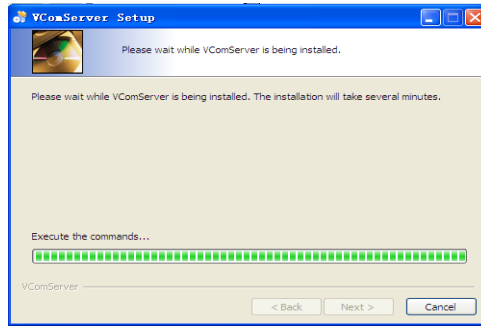
Second, click the " next " on welcome window to continue the install. When appears below interface, you can modify the install folder here.



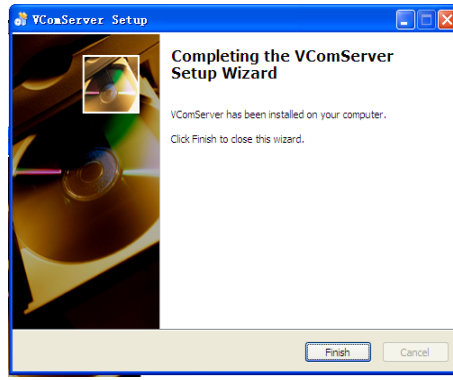
Third, click the " install ", the software will start to install.



At this time, there will be the installation process. Installation requires a certain time, please be patient.



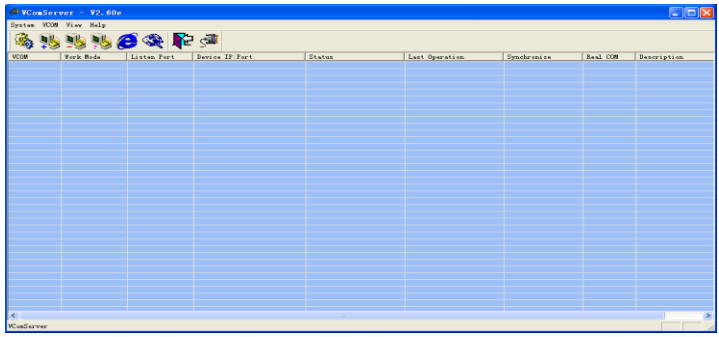
Fourth, click the "finish" to complete installation process.



5.2 Visual serial port instruction

Equipment serial port was virtualized on computer by visual serial port, visual serial port, and management software only have to make communication serial interface point to virtual serial port to realize software communication.

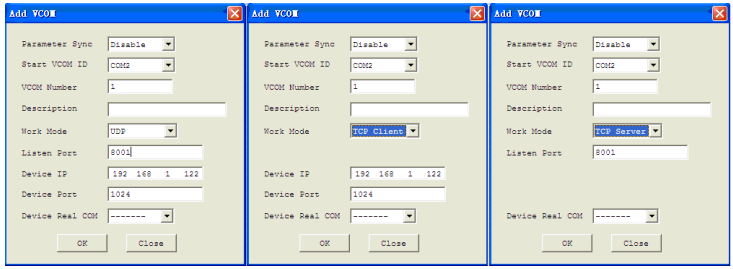
Open the visual serial port in the installation disk, as show in the following picture.



Visual serial port management

Add visual serial port：

Click  to add visual serial port, pop-up adding virtual serial port mapping dialog box. Different mapping mode will appear below three different dialog boxes.



Parameter specification：

Serial parameter Synchronization: No synchronization function.

Start virtual serial port: Choose the name of start virtual

serial port, COM2~COM512.

Virtual serial port number: The number of one-time established virtual serial port, maximum number is 8.

Note: Record the information of virtual serial port

Mapping mode: UDP, TCP client and TCP server

UDP mode：

Local port：Set computer local port

Device address：Set corresponding remote Serial device server IP address

Device port：Set corresponding remote Serial device server port

TCP client mode：

Device address：Set corresponding remote Serial device server IP address

Device port：Set corresponding remote Serial device server port

TCP server mode：

Local port：Set computer local port

Related parameters configuration

Virtual serial port configuration (Assumption IP:IP **A** **Port:** Port **A)**	**Device configuration (Assumption IP:**IP **B** **Port:** Port **B)**
Mapping mode：TCP server Local port ： Port **A**	Operation mode：TCP client Monitor port：-------(nonsense) Server IP：IP**A** Server port：Port **A**
Mapping mode：TCP client Device address：IP **B**	Operation mode：TCP server Monitor port：Port **B**

Device port：Port **B**	Server IP：-------(nonsense) Server port：-------(nonsense)
Mapping mode：UDP Local port：Port **A** Device address：IP **B** Device port：Port **B**	Operation mode：UDP Monitor port：Port **B** Server IP：IP **A** Server port：Port **A**

Delete visual serial port：

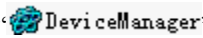
Select the corresponding visual serial port, and click  to delete.

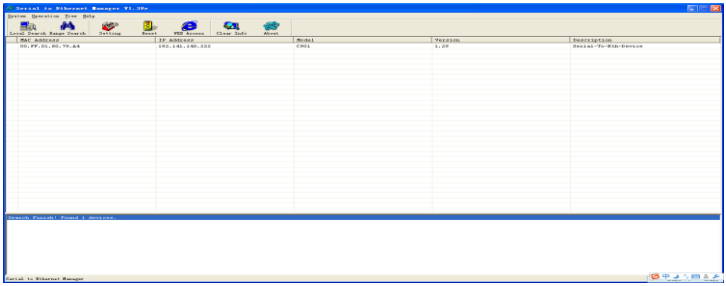
Modify visual serial port：

Select the corresponding visual serial port, and click  to modify.

5.3 Search software instruction

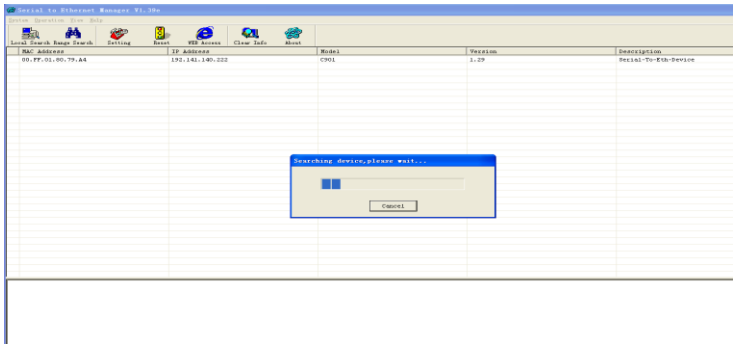
Search software is the WINDOWS GUI, which is easy for you to configure and manage the serial interface server. It can search the all devices in the same network, check and set the network parameter and serial parameter. It also can achieve remote upgrade and reset.

Open the search software "  " at first, select corresponding button or menu to use various practical function.

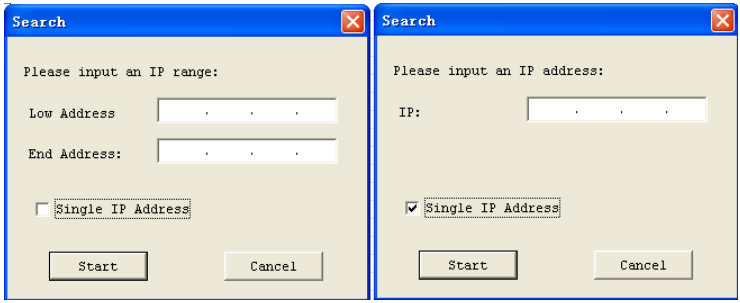


Search for device

Click “local search” to update the converter list in LAN.

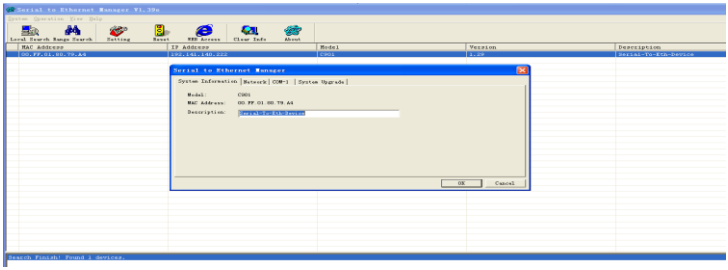


Click “assigned IP search ” to search the assigned IP address device, you can search via IP segment or assigned single IP.

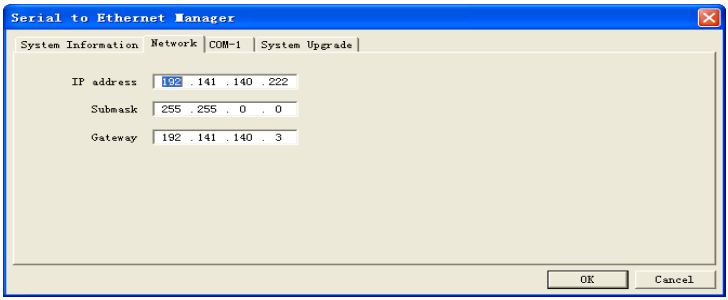


Configuration:

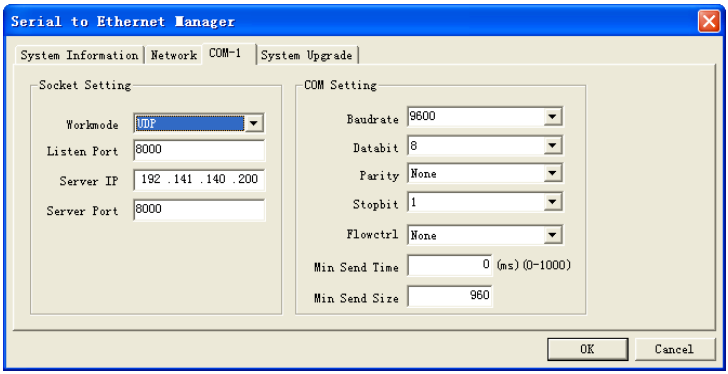
Select the device, and double-click the device list or click “setting” button, the following converter setup dialog box will show up. Click “product information” to view the converter model, MAC address and modify “device Profiles” (most 15 Chinese characters or 31 English letters)



Click “network parameter setting” to designate IP address, net mask and gateway for device.



Click “serial parameter configuration” to set the operation mode, port, baud-rate, data bits, stop bits, parity bits, flow control, transmission time and the length of packet.



Minimum transmission time: the timer will reset after the

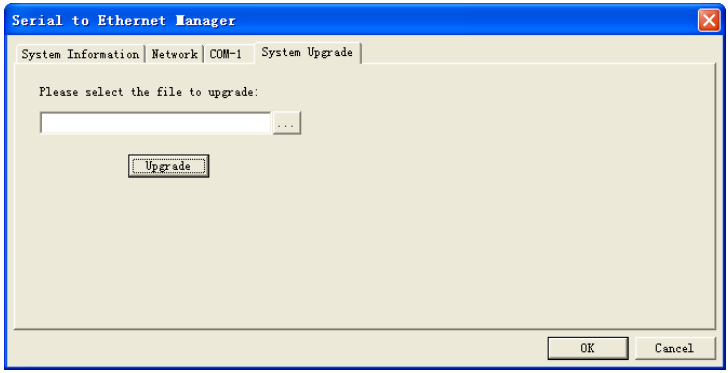
converter receives data from the serial port. If converter hasn't received the next data when minimum transmission time overtime, converter will send the next data to the network. If minimum transmission time is 0, you can configure the transmission time according to baud-rate. A device default value is 0ms.

Minimum transmission bytes: when the converter receives the minimum transmission byte data from the serial port, it will send the data to the network. A device default minimum transmission bytes is 960.

Converter will send data to network with any one of the conditions as Minimum transmission time and Minimum transmission bytes.

If the serial port rate is low, cut down the Minimum transmission bytes.

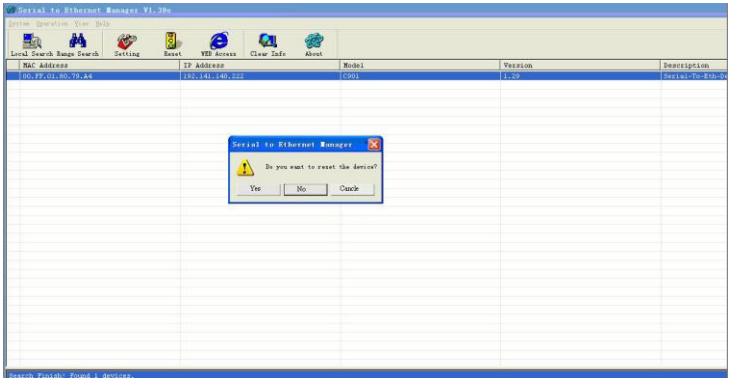
Package Upgrade: select "system upgrade" and open the dialog box to choose firmware, press the" start" to finish upgrade.



Restart device

Select the device that is need to restart, click "system restart" to show the following dialog box. Tip chooses to recovery factory

default setting or no. Click “Yes” to restart and recovery factory default setting, and click “No” to restart device.

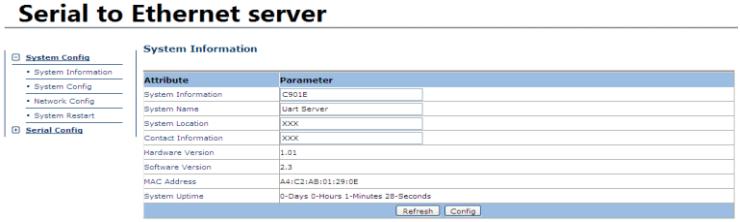


5.4 WEB Management

System Information page, login in default IP address: 192.168.0.168, Default when no password is factory or you restore the factory default settings will not detect the user's access privileges can directly access the pages.

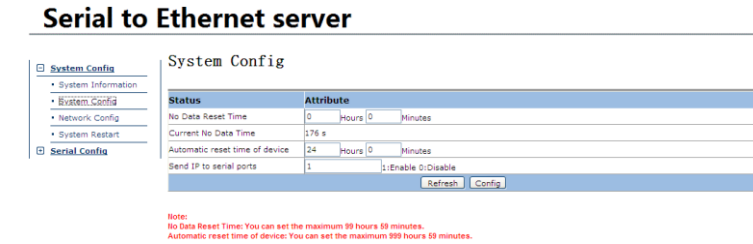
System Information

Set the device description, system name, system location and contact way, at the same time on the current page you can see the version number of the device, MAC address, and system uptime.



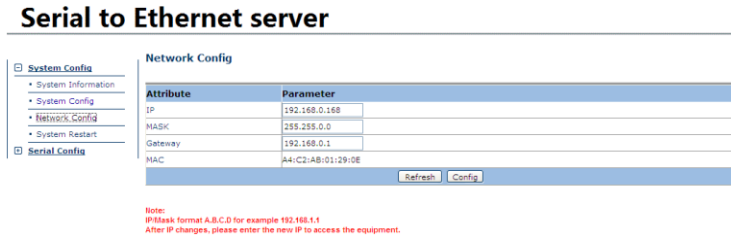
System Config

It can change WEB password here, also to set device automatic reboot time and no data reboot time and normal reboot.



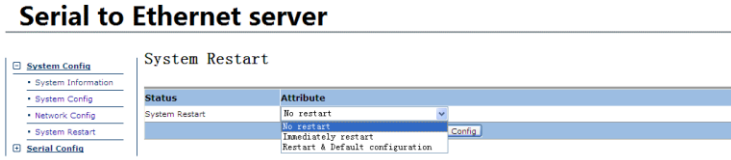
Network Config

Click on the network config, you can view device IP, subnet mask, and can be modified.



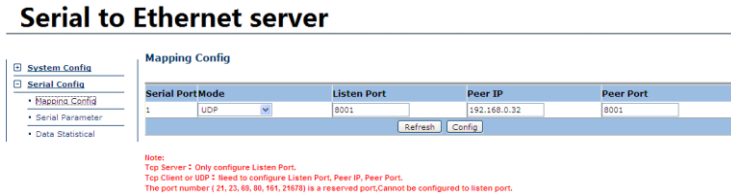
System Restart

Click on the system restart, you can immediately restart the device after the restart to restore the factory configuration.



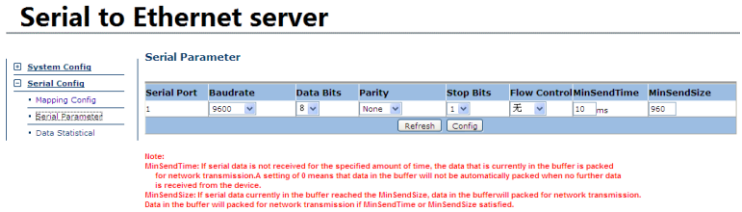
Mapping Config

Config the serial port mapping mode and peer IP on this page.



Serial Parameter

Click hardware parameter to config serial port parameter which including baud rate, data bit, stop bit and Parity bit.



Data Statistical

Check statistical of 8 channels serial port's data transmission.