

# 4-Port Serial to Ethernet+WiFi Converter

## WPC-832-4-I User Manual



<http://www.tcpipweb.com>

\*\*\* this user manual is subject to change without prior notice.

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# Introduction

WPC-832-4 4-Port Serial to Ethernet+WiFi Converter providing new ways of connecting serial devices to a Wireless LAN (Wi-Fi 802.11 b/g/n ). This Converter is designed to operate 4 serial ports through wireless (Wi-Fi 802.11 b/g/n) over 10/100Mbps Ethernet network. As the data is transmitted via TCP/IP protocol, data acquisition and controlling is available to go through Intranet and Internet. 4 Serial ports operate in common RS-232, RS-422 and RS-485 auto selection modes configuration.

WPC-832-4 Serial to Ethernet+WiFi Converter is a high performance design composed with carefully selecting qualified components from reliable and certified sources. This operation manual will guide you to configure functions step by step.

The following topics are covered in this chapter:

- ☐ **Overview**
- ☐ **Package Checklist**
- ☐ **Product Features**
- ☐ **Hardware Specifications**

# Overview

WPC-832-4 Serial to Ethernet+WiFi Converter provides a perfect solution to make your industrial Serial devices connect to Internet instantly via Wireless and Ethernet LAN.

WPC-832-4 embedded with MT7688AN MIPS chipset makes it become the ideal device for transmitting the data from your RS-232 or RS-422/485 Serial interface devices, such as PLCs, various Meters and/or Sensors to an IP-based Wi-Fi LAN, and making it possible for your software to access Serial interface devices anywhere and anytime.

WPC-832-4 providing TCP Server Mode, TCP Client Mode, and UDP Mode for selection. It supports manual configuration via web browser and support various protocols including TCP, IP, UDP, HTTP, DHCP, ICMP, and ARP. These are the best solution to coordinate your Serial interface devices.

## Package Check List

WPC-832-4 4-Port Serial to Ethernet+WiFi Converter product attached with the following items:

- ☐ 1 unit of Serial to WPC-832-4 Converter
- ☐ 1 unit of Power Adaptor (12V DC, 1A) is an option
- ☐ 1 unit of dipole antenna(2.0dBi)
- ☐ Documentation & Utility CD

NOTE: Inform your sales representative if any of the above items missing or damaged.

# Product Specifications

## ● SYSTEM

- ✧ CPU : MT7688AN MIPS CPU, 580 MHz
- ✧ RAM : 128M Bytes DDR2 RAM
- ✧ ROM : 32M Bytes Flash ROM
- ✧ OS : OpenWrt Linux OS

## ● Ethernet

1. Port Type : RJ-45 Connector
2. Speed : 10 /100 M bps ( Auto Detecting )
3. Protocol : ARP , IP , ICMP , UDP , TCP , HTTP , DHCP, NTP , FTP
4. Mode : TCP Server / TCP Client / UDP
5. Setup : HTTP Browser Setup (IE & Netscape) , Console
6. Security : Setup Password
7. Protection : Built-in 1.5KV Magnetic Isolation

## ● WLAN

1. Standard : 802.11b/g/n
2. Data Rate : 11/54/72.2 Mbps @ 20Mhz Band Width
3. Modulation : DSSS, OFDM
4. Frequency : 2.4GHz
5. Tx Power 11b:Max. 22dBm
6. Tx Power 11g/n: Max. 19dBm
7. Rx Sensitivity: -76dBm @ 54Mbps; -89.5dBm @ 11Mbps
8. Tx Rate : Max. 54Mbps with auto fallback
9. Tx Distance: Up to 100m
10. Security : WEP 64-bit / 128-bit data encryption, WPA / WPA2 personal
11. Antenna : 2 dBi ; RP-SMA connector
12. Network Mode Infrastructure; Soft AP (for Setup)
13. Mode : TCP Server / TCP Client / UDP / Virtual Com / Pairing
14. Setup : HTTP Browser Setup (IE, Chrome, Firefox)
15. Security : Login Password

## ● Serial Communication Parameters

1. Port : RS – 232/422/485 \* 4 Port ( RS-232 - RX/TX only )
2. Port : RS - 422 / 485 ( Surge Protect )
3. Speed : 300 bps ~ 921.6K bps
4. Parity : None , Odd , Even
5. Data Bit : 5 , 6 , 7 , 8
6. Stop Bit : 1 , 2
7. RS-232 Pins : Rx , Tx , GND
8. RS-422 : Rx+ , Rx- , Tx+ , Tx- ( Surge Protect )
9. RS-485 : Data+ , Data- ( Surge Protect )
10. 15KV ESD for all signals

## ● Power input :

1. DC 9~32 V, 1000mA@12V
2. support DC Jack & Terminal Input

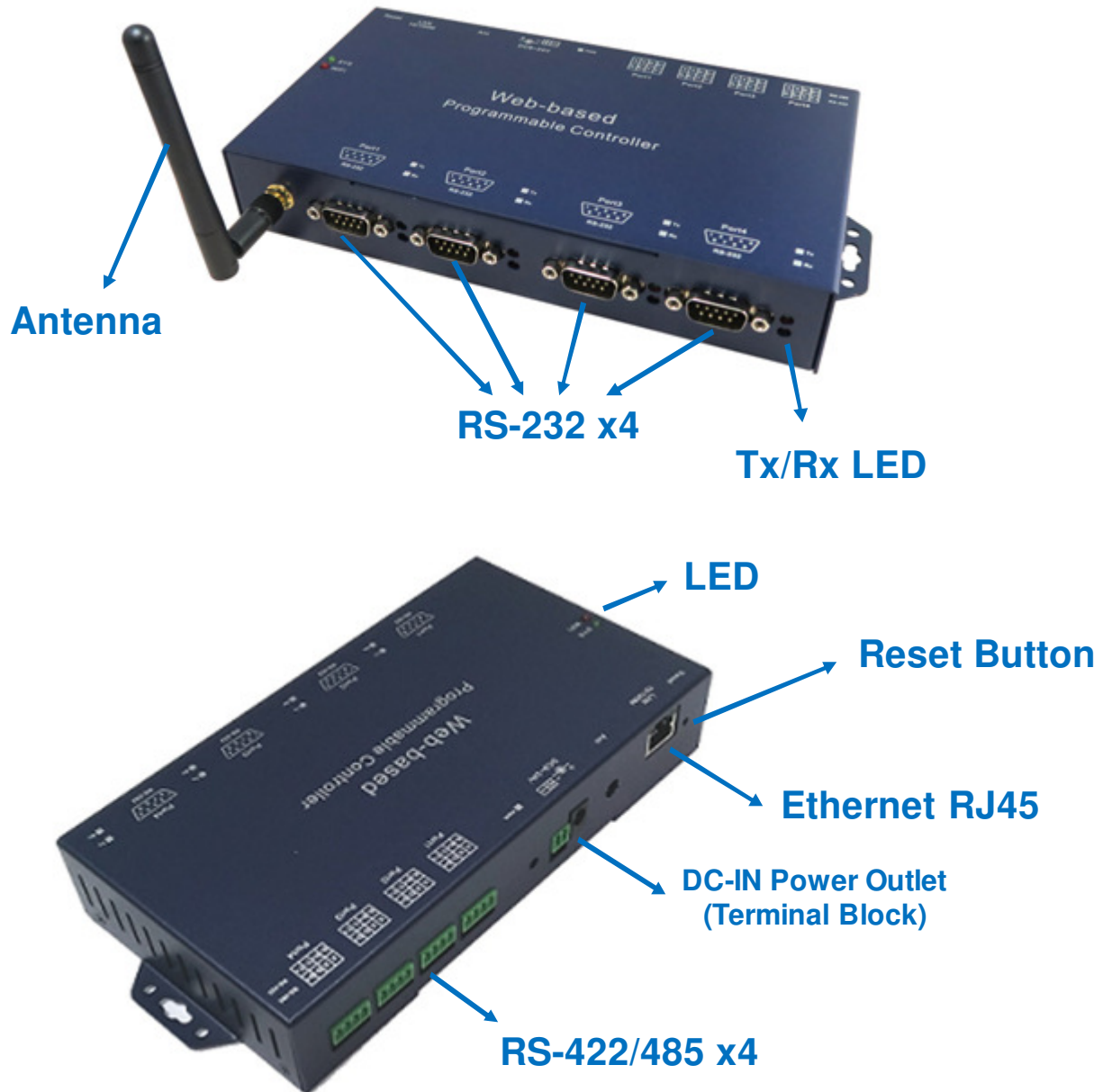
## ● Environmental

1. Operating Temperature : -20 to 70 °C, 10% to 95% RH non-condensing
2. Storage Temperature : -25 to 80 °C, 5% to 95%RH non-condensing

## ● OS Supported

1. Win2000/2003/XP/Vista/Win 7/Win 8/Win 10
2. Configuration : Web Browser Chrome, IE

# Product Panel Views



## Antenna Connector

The connector for antenna is a standard reverse SMA jack. Simply connect it to a 2.0dBi dipole antenna (Standard Rubber Duck) and it is 50 Ohms impedance and can support 2.4GHz frequency.

## Ethernet Port

The connector for network is the usual RJ45. Simply connect it to your network switch or Hub. When the connection is made, the green color LED of Ethernet port will light on. When data traffic (Rx/Tx) occurs on the network, yellow color LED will blink during data transferring.

## Serial Port of RS-232/RS-422/RS-485

Connect the serial data cable between the WPC-832-4 converter and the Serial interface device. Follow the web page parameter setup procedures to configure the converter.

## DC-IN Power Outlet

The Serial to Ethernet+WiFi Converter is powered by a single 12V DC (Inner positive, outer negative) power supply and 1.0mA of current. Connect the power adaptor to the AC power socket and put the DC Jack plug into the outlet of device. The “SYS” green color LED will be ON when power is properly supplied. Terminal Block 2 wires power supply is an option.

### □ DC Power outlet



## Reset Button(WIFI)

If any chance you forgot the login password, or have incorrect settings making converter inoperable. When the power is on and the “SYS” LED light on, use a point tip to press this button and hold it and wait for more than 25 seconds. All the parameters will be reset to the factory default.

## LED Indicators

**PWR(red):** After power on, this LED is always ON.

**SYS(green):** After power on and system work, this LED start blinking.

**WIFI(red):** LED is ON after power on, then off a while. It starts blinking after Wi-Fi module is ON.

**TX / RX (Red / Green) :** Upon data sending or receiving indicator, the LED will blink.



# Wiring Architecture

## 1. RS-232

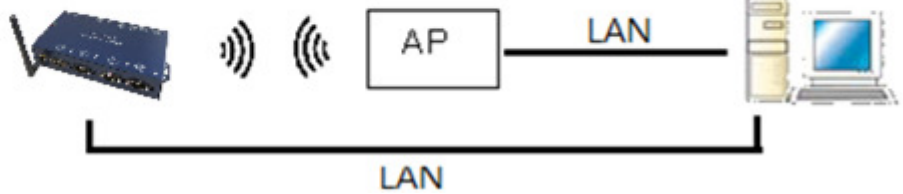
RS-232 Wiring

Serial Device

DB 9

Wifi

DB 9



## 2. RS-422/RS-485

RS-422 Wiring

Serial Device

T -

T +

R -

R +

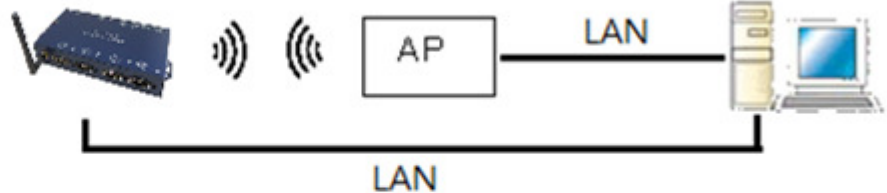
Wifi

R -

R +

T -

T +



RS-485 Wiring

Serial Device

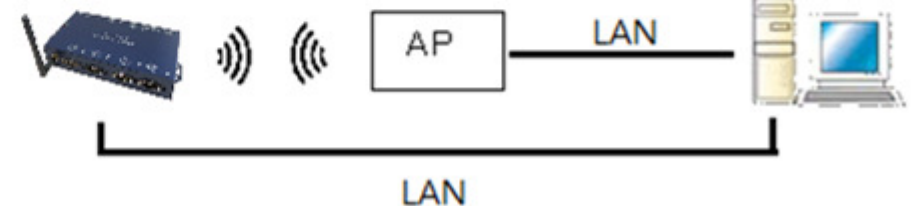
D +

D -

Wifi

D +

D -



When you finish the steps mentioned above and the LED indicators are as shown, the converter is installed correctly. You can check the Software Setup CD to find Utility to setup the IP Address.

To proceed with the parameters setup, please use a web browser (IE or Chrome) to continue the settings.

# Configuration

When setting up your converter for the first time, the first thing you should do is to configure the IP address.

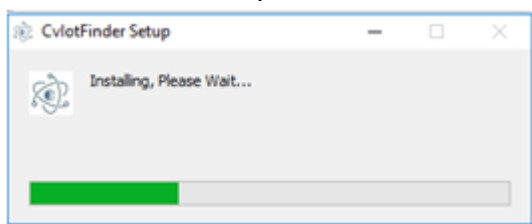
The following topics are covered in this chapter:

- ☐ **IP Search Utility Setup**
- ☐ **Converter Configuration through Web**

# IP Search Utility Setup



1. Copy “CvlotFinder Setup.exe” from CD ROM to your host computer.
2. “CvlotFinder” is a self-extract-install program. Double click it to install this Wi-Fi IP Searching tool into host computer.



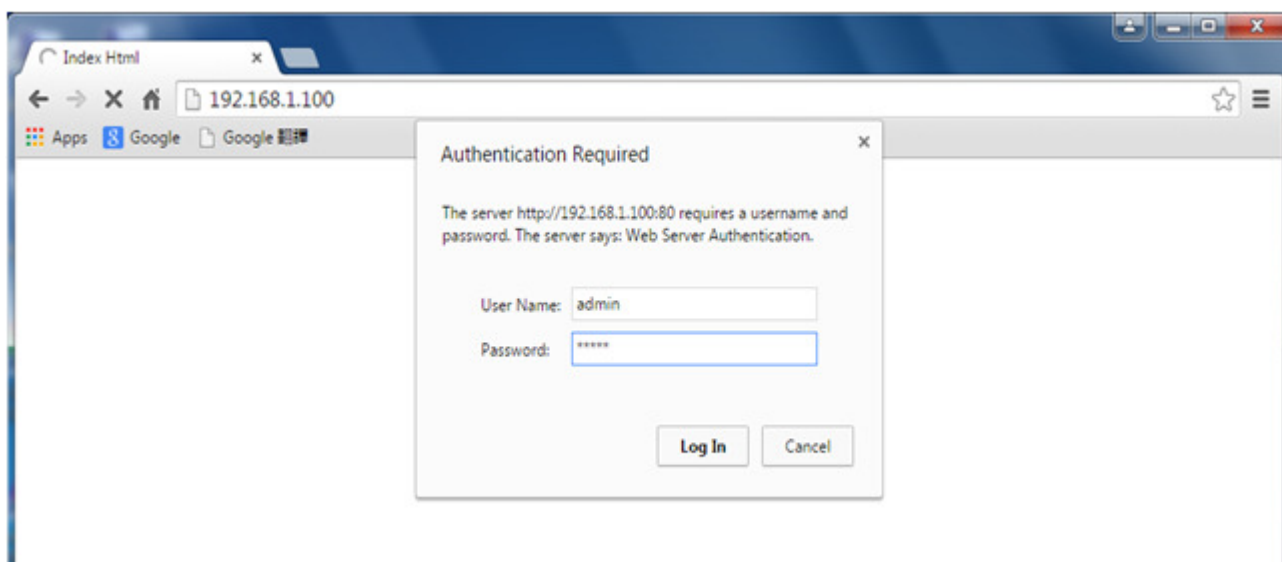
3. CvlotFinder will pop up on the screen after installation or you may double click the icon on desk top of host computer to open this tool.



4. Click on “**Find**” button. It will scan the network and show up the IP of Converter.



5. Click “Goto” button will open a web page of configuration. (default ID: admin; password: admin).



6. Click "Setup" button will pop up a window. You may change Name, Description, IP, Netmask of device. Click "Setup" to save setup. The device's IP must be same subnet with host PC/NB enable to use web browser open configuration page.
7. Follow #5 step, now you have successfully connected to the Converter.

# Serial Over TCP/IP 4 Ports

System

Network

Serial

Over TCP/IP

Log out

ver : 1.1.0

System

Admin. Password:

Confirm Password:

Auto Reset(Minutes):

Device Name:

Description:

System Up Time:

Firmware Release:

Save

Save and Reboot

Restore to factory settings

Reboot

# Configuration

There are 4 setup pages as “System”, “Network”, “Serial” and “Over TCP/IP”.



## 1. System Setup

1.1 System: where you can change Password, set up Auto Reset time and modify Device Name, Description of device.

Admin. Password:	*****
Confirm Password:	*****
Auto Reset(Minutes):	0
Device Name:	Device Name
Description:	Device Description
System Up Time:	23 min
Firmware Release:	2017/11/10 10:02

1.2 Appearance of Wireless ad Ethernet setup.

Wireless	
IP Address:	10.0.0.1
Subnet Mask:	255.255.255.0
Gateway:	192.168.1.1
MAC Address:	9c:65:f9:24:55:56
Ethernet	
IP Address:	192.168.1.199
Subnet Mask:	255.255.255.0
Gateway:	192.168.1.1
MAC Address:	9c:65:f9:24:2a:36

### 1.3 NTP: Enable / Disable NTP function; Set up NTP server and Time Zone.

The SERVICES configuration page has a blue header. Below it, there are four rows of configuration options:

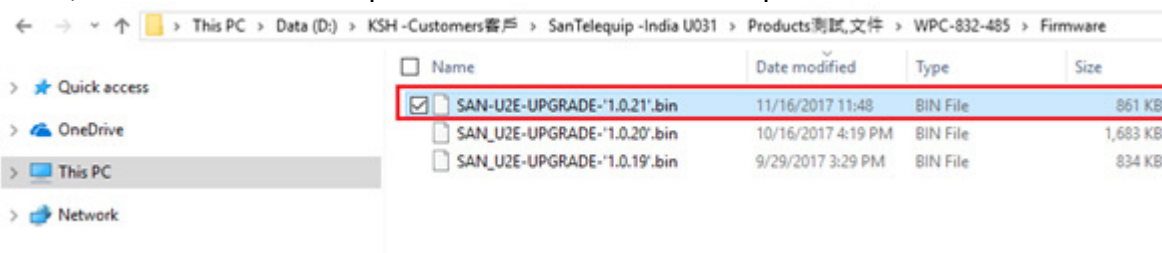
- HTTP Port: 80
- NTP Enabled: Enabled (with a dropdown arrow)
- NTP Server: openwrt.pool.ntp.org
- NTP Offset: UTC (with a dropdown arrow)

### 1.4 Firmware update:

If necessary, click “Browse” to open file manager.

The Firmware update page has a blue header. Below it, there is a text input field for the firmware path, followed by a "Browse..." button (highlighted with a red box). Below the input field is a large red "Update" button.

Then, select the file with specified version and click “open” button.



When the selected file name appears on the input column, click “Update” button.

The Firmware update page is shown again. The text input field now contains the file name "SAN\_UZE-UPGRADE-"1.0.21".bin". The "Browse..." button is still present. Below the input field is a large red "Update" button.

1.5 Up to now, Setup is successfully configured. Please click “Save” and go to other pages for configuration or click “Save and Restart” to run new configuration.

The screenshot shows two buttons side-by-side: "Save" and "Save and Restart".

## 2. Network setup

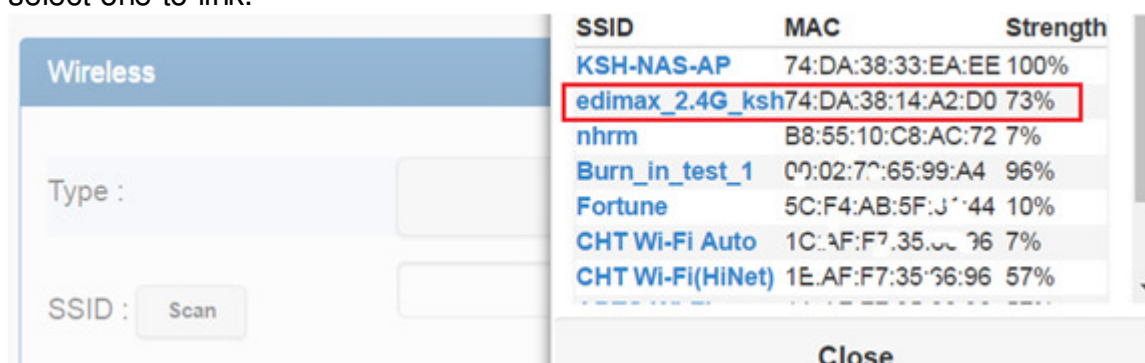


### 2.1 Wireless section:

#### 2.1.1 Type: to select "INFRASTRUCTURE" or "ACCESS POINT"



#### 2.1.2 When selected "INFRASTRUCTURE", go to **SSID**, click "Scan" will get list of available SSID, select one to link.



### 2.1.3 Input password for the AP and assign STATIC IP address

Network Setup

192.168.0.100/hys/network.html

Serial Over TCP/IP 4 Ports

Log out ver : 1.0.13

System Network Serial Over TCP/IP

Wireless

Type : INFRASTRUCTURE

SSID : Scan edimax\_2.4G\_ksh

Password : arp78945612

Encrypt : WPA2

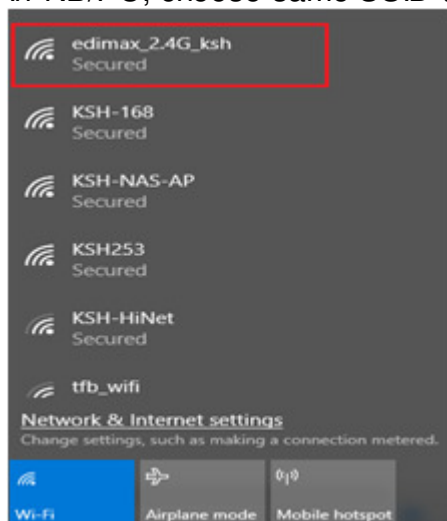
Mode : STATIC

IP Address : 192.168.1.100

Subnet Mask : 255.255.255.0

Save Save and Reboot

### 2.1.4 In NB/PC, choose same SSID to link. NB/PC must close Ethernet in advance.



2.2 When selected “ACCESS POINT”, Converter acts as an Access Point which is allowed to be connected by PC /NB /Smart Phone/ PAD. It supports DHCP server function. Soft AP broadcasts its SSID “CVIoT\_XX\_XX\_XX\_XX\_XX\_XX”. PC /NB /Smart Phone/PAD should connect to this SSID and then open web browser with default IP for Converter setup.

Serial Over TCP/IP 4 Ports

Log out ver : 1.0.21

System Network Serial Over TCP/IP

Wireless

Type : ACCESS POINT

SSID : INFRASTRUCTURE ACCESS POINT

Password : DISABLED

Encrypt : NONE

Mode : STATIC

IP Address : 10.0.0.1

Subnet Mask : 255.255.255.0

Save Save and Reboot



## 2.3 Password: Key in selected AP log in password

SSID : ksh66666666 CVIoT\_9c\_65\_f9\_24\_55\_56

Password :

## 2.4 Encrypt

Encrypt : NONE

Mode :

IP Address :

Subnet Mask : 255.255.255.0

## 2.5 Mode: IP Address

2.5.1 "DHCP": Let AP to assign IP address to itself.

Mode : DHCP

2.5.2 "STATIC": To input assigned IP address, Subnet Mask.

Mode : STATIC

IP Address : 10.0.0.1

Subnet Mask : 255.255.255.0

2.6 Ethernet: select STATIC or DHCP to assign IP address.

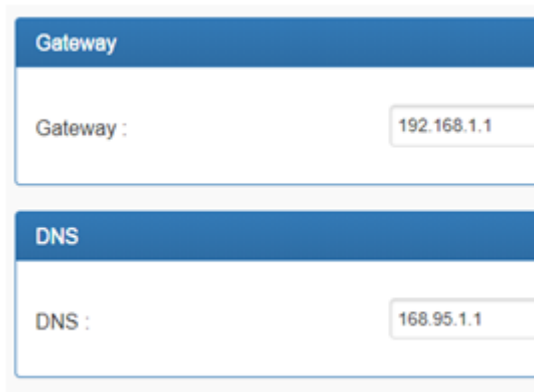
Ethernet

Mode : STATIC

IP Address : 192.168.1.199

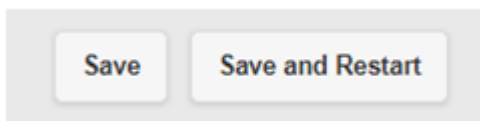
Mask : 255.255.255.0

2.7 Gateway and DNS: To check with MIS for right IP address.



The image shows a configuration interface with two sections. The first section, titled 'Gateway' in a blue header, contains a label 'Gateway :' followed by a text input field containing the IP address '192.168.1.1'. The second section, titled 'DNS' in a blue header, contains a label 'DNS :' followed by a text input field containing the IP address '168.95.1.1'.

2.8 Up to now, Setup is successfully configured. Please click “Save” and go to other pages for configuration or click “Save and Restart” to run new configuration.



The image shows two buttons side-by-side on a light gray background. The first button is labeled 'Save' and the second button is labeled 'Save and Restart'. Both buttons have a light gray border and a subtle shadow.

### 3. Serial port setting

Please clearly set each parameters from Serial 1 to Serial 4.

Serial Over TCP/IP 4 Ports

Log out  
ver : 1.1.0

SystemNetworkSerialOver TCP/IP

Serial 1

Baud Rate:

19200

Parity:

None

Data Bits:

8

Stop Bits:

1

Flow Control:

None

RxDelay(ms):

0

TxDelay(ms):

0

3.1 Baud Rate: 300 bps to 921.6K bps

3.2 Parity: None, Even, Odd

3.3 Data Bits: 5, 6, 7, 8

3.4 Stop Bits: 1, 2

3.5 Flow Control: None, XON/XOFF

3.6 RxDelay(ms)

3.7 TxDelay(ms)

3.8 Up to now, Setup is successfully configured. Please click "Save" and go to other pages for configuration or click "Save and Restart" to run new configuration.

Save

Save and Restart

## 4. Serial port over TCP/IP

4.1 There are TCP modes for selection: TCP Server / TCP Client / UDP.

Serial 1 Over TCP

Mode: TCP Server

Port: 100

Inactive Timeout (Minutes): 10

Serial 1 Over TCP

Mode: TCP Server

Port: 100

Inactive Timeout (Minutes): 10

TCP Server

TCP Client

UDP

DISABLED

4.2 TCP Server: Configure TCP server port number and message time out period. At this mode, WPC-832-4 will wait for client connection.

Serial over Wi-Fi

Mode: TCP Server

Port: 100

TCP invalid timeout (Min.s): 10

4.3 TCP Client: Allow to configure 4 remote destination host IP address, port number. At TCP client mode, WPC-832-4 establishes a connection with remote host and sending data to remote host actively.

Serial 1 Over TCP

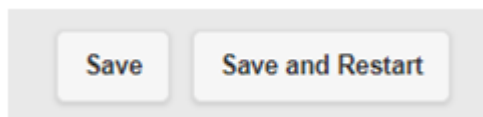
Mode: TCP Client

Inactive Timeout (Minutes): 10

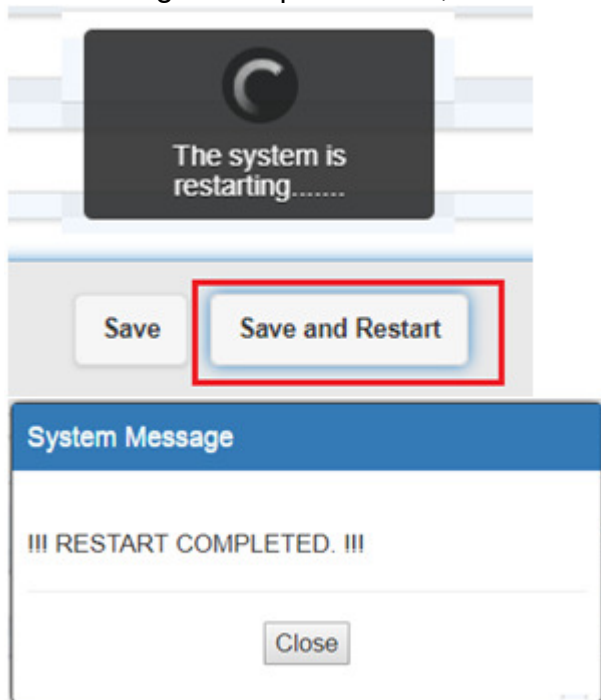
No.	Destination IP	Port
1	192.168.1.10	100
2		
3		
4		

4.4 UDP: Picture as above TCP client mode. Allow to configure 4 remote destination host IP address, port number. At UDP mode, WPC-832-4 establishes a connection with remote host and sending data to remote host actively.

4.5 Up to now, Setup is successfully configured. Please click “Save” and go to other pages for configuration or click “Save and Restart” to run new configuration.



4.6 After configured all parameters, click “Save and Restart” to reboot system.



## 5. Reset button (if needed)

Ensure power is on, press “Reset” button for over 20 seconds then release. WPC-832-4 will set configuration back to default.



Please look our website <http://www.tcpiweb.com/> for more information.