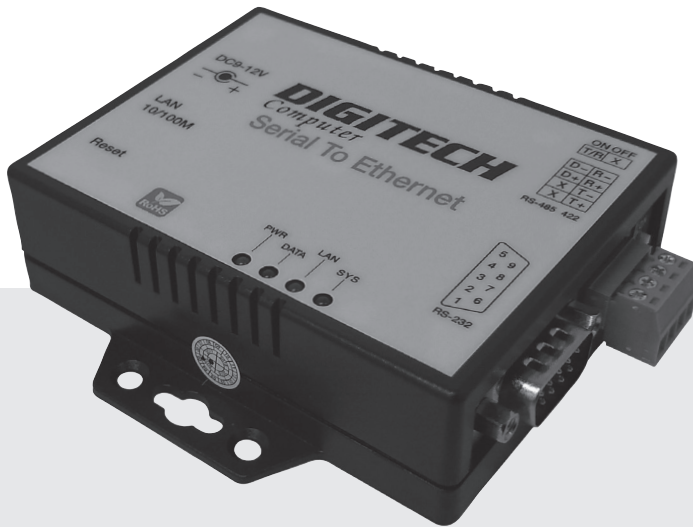


digitech

# Serial to Ethernet Converter



Model:  
XC4134

## Instruction Manual

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## 1. INTRODUCTON

Thank you for using XC4134 in your system work. This device provides the way of connecting serial devices to a Local Area Network (LAN) or Wide Area Network (WAN). It is designed to operate serial ports over 10/100Mbps Ethernet networks. The data is transmitted via TCP/IP protocol therefore data acquisition and controlling is workable via Ethernet to go on Intranet and Internet. XC4134 converter is packaged in a plastic case well suited for industrial environments. There are two serial ports as one is a RS-232 and other one is RS-422/485. Configuration is easy to operate via web page setup.

XC4134 boasts very good performance by carefully selecting qualified components from reliable and certified sources. It makes network connectivity easy with affordable cost to almost all kinds of Serial devices. This operation manual will guide you to set up various functions step by step.

## 1.1 OVERVIEW

XC4134 Converter provides a perfect solution to connect your industrial Serial devices to the Intranet/Internet instantly via Ethernet. XC4134 embedded with ARM-Cortex-M3 CPU makes it become an ideal device for transmitting the data from your RS-232 or RS-422/485 Serial interface devices, such as PLCs, Meters and Sensors to IP-based Ethernet LAN, and making it possible for your software to access Serial interface devices anywhere and anytime.

XC4134 Converter ensure the compatibility of network software that uses a standard network API (Winsock or BSD Sockets) by providing TCP Server Mode, TCP Client Mode, and UDP Mode. XC4134 provides 1 socket connection with remote host. Virtual COM driver and software can be installed on host PC/NB to work with XC4134 as a COM port over a TCP/IP network. This excellent feature preserves your software investment and lets you enjoy the benefits of putting your serial devices on the network.

XC4134 Converters providing TCP Server Mode, TCP Client Mode, and UDP Mode. It supports manual configuration via the web browser console and protocols including TCP, IP, UDP, HTTP, DHCP, ICMP, and ARP. These are the best solution to coordinate your Serial interface devices.

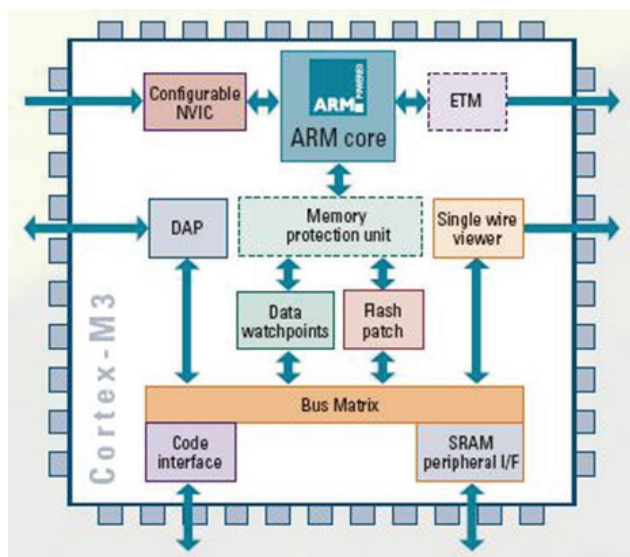
## 1.2 PACKAGE CHECKLIST

XC4134 Serial to Ethernet Converter product attached with the following items:

- 1 unit of TCP/IP converter
- 1 unit of Power Adaptor (9V or 12V DC, 500mA) option
- Documentation & Utility CD

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

## 1.3 BLOCK DIAGRAM



Low-cost devices usually are equipped with low speed processors and limited memories. In reality, they are neither having the capability nor practicality to manage complicated network TCP/IP protocols. The ARM Cortex™-M3 32-bit processor has been specifically developed to provide a high-performance, low-cost platform for a broad range of applications including microcontrollers, automotive body systems, industrial control systems and networking by converting data stream between network TCP/IP and popular serial port signals.

Instead of processing TCP/IP packets directly, devices need only deal with those interface signals, which greatly simplifies the complexity of TCP/IP network in linkage. The Cortex-M3 processor provides outstanding computational performance and exceptional system response to interrupts while meeting low cost requirements through small core footprint, industry leading code density enabling smaller memories, reduced pin count and low power consumption.

The central core of the Cortex-M3 processor, based on a 3-stage pipeline Harvard bus architecture, incorporates advanced features including single cycle multiply and hardware divide to deliver an outstanding efficiency of 1.25 DMIPS/MHz. The Cortex-M3 processor also implements the new Thumb®-2 instruction set architecture, which when combined with features such as unaligned data storage and atomic bit manipulation delivers 32-bit performance at a cost equivalent to modern 8- and 16-bit devices.

## 1.4 PRODUCT FEATURES

- **Data Conversion between RS-232 and RS-422/485 and Ethernet**

XC4134 convert Serial interface device (RS-232, RS-422, RS-485) data/signal into the TCP/IP packet and send them out with data stream; or convert the TCP/IP packet into Serial device data/signal.

- **Socket Communication**

XC4134 provides one socket connection.

- **Digital I/O Activating (option)**

XC4134 is with 8 TTL of digital I/O. When sensors are connected to XC4134 Converter, status of sensors are converted into the TCP/IP packet and send them out with the Ethernet DataStream, or use the TCP/IP packet to activate or deactivate the specified digital outputs.

- **Dynamic IP Configuration**

Support DHCP client mode, simplifying network address configuration and management.

- **Dual Speed of LAN**

Support 10/100 Mbps Ethernet, auto-detected.

- **Server / Client Dual Modes**

XC4134 Converter can be configured as network server or client. In the client mode, it can be installed in network which is protected by NAT router or firewall, without the need of a real IP address.

- **Web-based Setup**

Parameters setup is based on HTTP protocol by using standard browsers (IE, Chrome). No special software required, just type IP address on the browser for entering the web page of converter.

(For example: <https://192.168.0.100>)

- **Built-in Security Control**

This device is protected by both setup password and access password to prevent intruders.

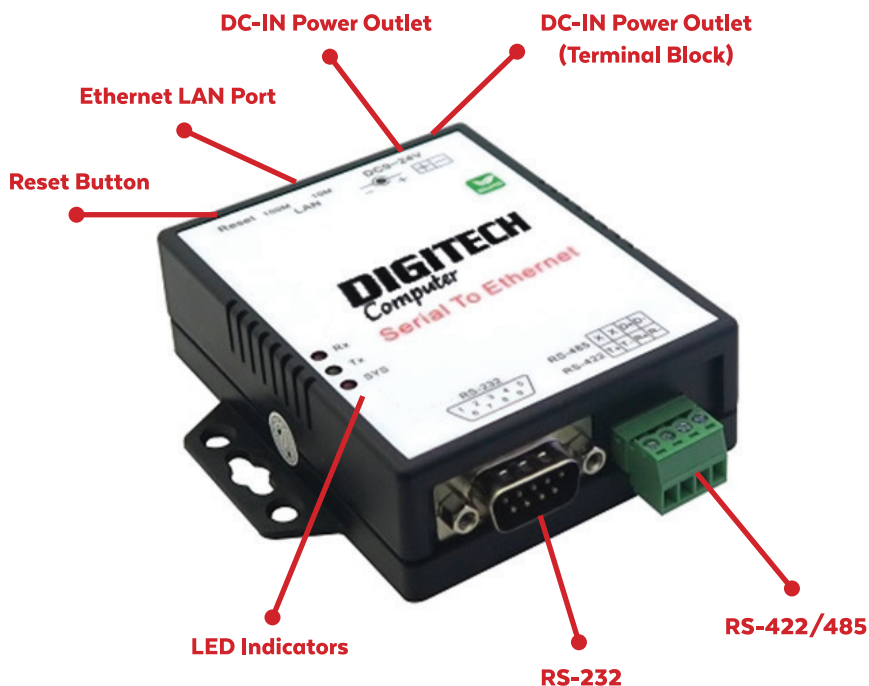
- **Remote Update**

Firmware can be updated directly via network to keep up with latest versions.

## 1.5 PRODUCT SPECIFICATIONS

- » **CPU:** ARM Cortex™-M3 32-bit processor, 72MHz
- » **RAM:** 64K Bytes SRAM
- » **ROM:** 256K Bytes Flash ROM
- » **Ethernet**
  - **Port Type:** RJ-45 Connector
  - **Speed:** 10 /100 M bps (Auto Detecting)
  - **Protocol:** ARP, IP, ICMP, UDP, TCP, HTTP, DHCP
  - **Mode:** TCP Server / TCP Client / UDP / Virtual Com / Pairing
  - **Setup:** HTTP Browser Setup (IE & Chrome)
  - **Security:** Login Password
  - **Protection:** Built-in 1.5KV Magnetic Isolation
- » **Serial Port:**
  - **Port:** RS-232 \* 1 Port (DB9), RS- 422 / 485 \* 1 Port
  - **Speed:** 1200 bps ~ 230.4 Kbps
  - **Parity:** None, Odd, Even, Mark, Space
  - **Data Bit:** 7, 8
  - **Stop Bit:** 1, 2
    - \*\*\*N, 7, 1 not supported.
  - **Port-1:** RS-232 Pins : Rx, Tx, GND
  - **Port-2:**
    - RS-422: Rx+, Rx-, Tx+, Tx- (Surge Protect & Over Current Protect)
    - RS-485: Data+, Data- (Surge Protect & Over Current Protect)
  - Built-in RS-422 / RS-485 pull high / low Resistor
  - 15KV ESD for all signals
- » **Digital I/O Port 8 TTL**
- » **Watch Dog Function**
- » **IP Search Utility:** Support Win-10, Win-8, Win-7, Vista, Win-XP, Win-2003 server, Win-2000
- » **Virtual COM:** Support Windows 2000 / 2003 / XP / Vista / Win-7 / Win-8 / Win-10
- » **Firmware On-line Updated Via Ethernet**
- » **Power:** DC 9 ~ 24 V, 100mA @ 12VDC
- » **LED Lamp:** SYS (PWR), Rx, Tx, LAN on RJ45
- » **Environment**
  - **Operating Temperature:** -10°C ~ +70°C
  - **Storage Temperature:** -20°C~ +85°C
- » **Dimension:** 90 x 65 x 25 mm (W x D x H)
- » **Weight:** 90g
- » **Din-Rail and Panel mounting options**
- » **Regulatory Approval:**
  - CE / FCC
  - RoHS
- » **Warranty:** 1 year

## 2. CONVERTER DESCRIPTION



### 2.1 DC-IN POWER OUTLET

XC4134 Converter is powered by a single 12V DC (Inner positive, outer negative) power supply and 1.0A of current. Connect the power adaptor to the AC power socket and put the DC Jack plug into the outlet of device. The “SYS” red color LED will be ON when power is properly supplied. Terminal Block 2 wires power supply is an option.

### 2.2 ETHERNET LAN PORT

The connector for network is a general RJ45 socket. Simply connect it to your network Switch or Hub. When the connection is made, the LAN LED indicator will light. When data traffic on the network, Tx/Rx LED indicator will blink during data transferring or receiving.



## 2.3 RESET BUTTON

In any case you forgot the password or have incorrect settings must to set Converter back to default, use the Reset button. At first, power on the Converter. Then press Reset button as per below list to reboot or restore to the factory default.

1 Second - no action

2 ~ 4 Seconds - reboot

5 Seconds up - restore factory default (IP: 192.168.1.100)



## 2.4 SERIAL PORT OF RS-232 AND RS-422/485

Connect the Serial data cable between the converter and the serial interface devices. Follow the parameter setup procedures to configure the converter (see the following chapters).

## 2.4 SERIAL PORT OF RS-232 AND RS-422/485



### **SYS (Red):**

Power indicator. When the power is on, the LED will be on.

### **Tx (Green):**

Data sending indicator. When data sending to the network, this LED will blink.

### **Rx (Red):**

Data received indicator. When data receiving from the network, this LED will blink.

## 2.6 WIRING ARCHITECTURE

### RS-232 Wiring Architecture

RS-232 Wiring



RS-232(RTS/CTS) Wiring



RS-232(RTS/CTS , DTR/DSR) Wiring



### RS-422 Wiring Architecture

RS-422 Wiring



RS-485 Wiring



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

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

### 3. IP SEARCH UTILITY

When setting up your converter for the first time, the first thing you should do is to configure the IP address. This chapter introduces the method to configure the Converter's IP address.

On PC/NB we provide a device management utility tool named "IP Search Utility" which is an executable program in Windows environments. IP Search Utility tool is used to detect and setup the installed converters. It uses UDP broadcast packets to query and configure converters on the network.

When you activate the tool, there might be a window pop up requesting for passing through the firewall or you would have to close the firewall enable to run "IP Search Utility". This tool will detect the existence of the connected Converters and depict the converters' status such as IP address, Subnet Mask and MAC Address.

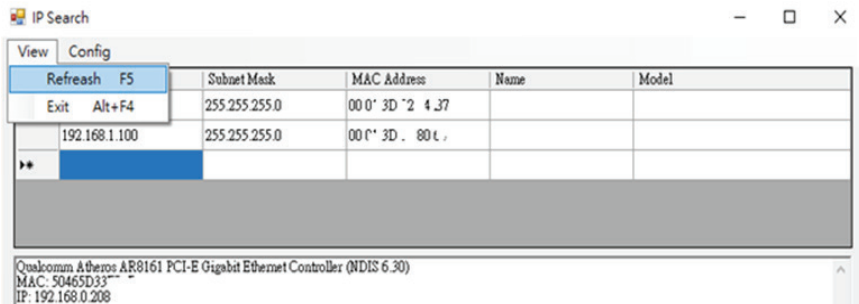
Due to the nature of broadcast UDP packets, IP Search Utility has following characteristics:

- Broadcast packets are not limited by subnet. Even if the IP address of the converters and the host computer not belong to the same subnet, it still can find out the devices.
- Broadcast packets can not pass routers. IP Search Utility can only be used to find out devices under same local area network.

### 3.1 IP SEARCH UTILITY “VIEW”

- **View → Refresh**

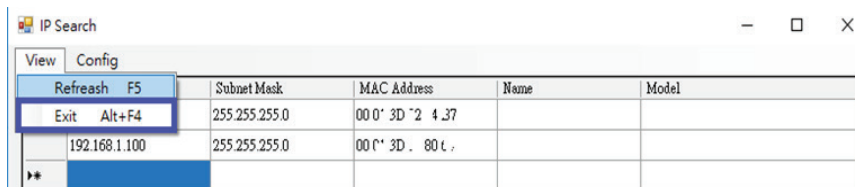
There are two ways for refreshing the status of existing devices. You may select the item “**View**” then “Refresh” the status of existing devices in local LAN. Another one is to press F5 on host computer. IP Search Utility will send another query to update information.



**Note:** Always run the “**Refresh**” after any data change.

- **View → Exit (Alt+F4)**

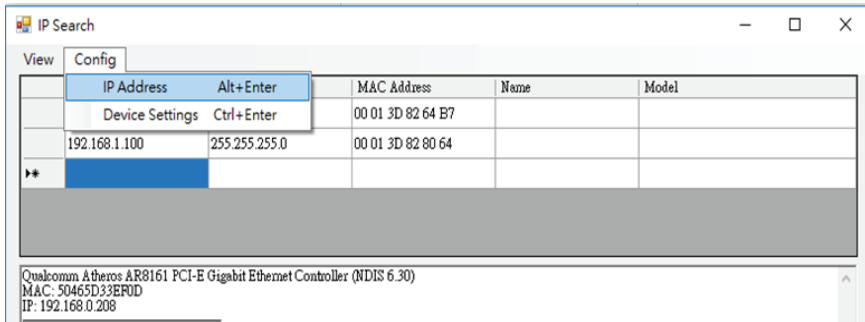
Exit from the program



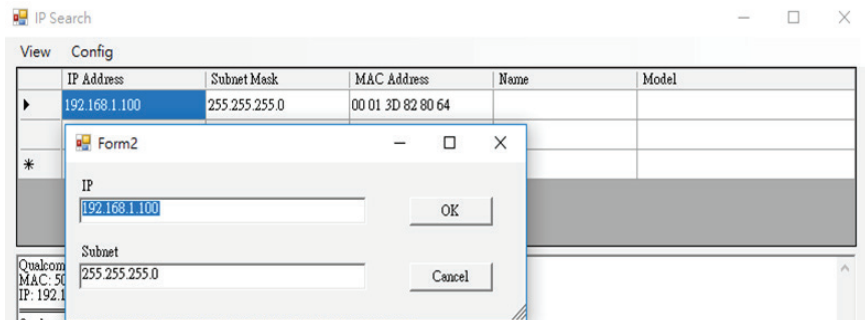
## 3.2 IP SEARCH UTILITY “CONFIG”

- **Config → IP Address (Alt+Enter)**

To click the device on the existing devices list in the table and then press “IP Address”.



A dialog from the table will show up.



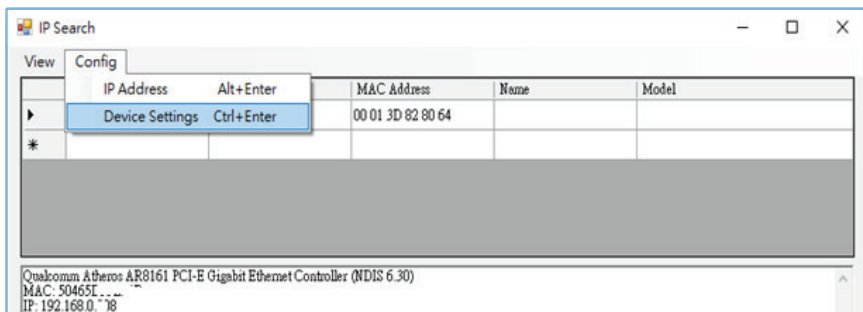
If you want to change device with new IP, input a new IP Address with the same Subnet Mask of your computer. It must avoid any IP conflict with other network devices. Press “OK” to save setup.

Back to run procedure of “View” and “Refresh”. You will see new IP show up on the table.

### 3.2 IP SEARCH UTILITY “CONFIG”

- **Config -> Device Setting (Ctrl+Enter)**

This click will direct to web page of configuration.




## 4. CONFIGURATION

The following topics are covered in this chapter:

- **Serial To Ethernet Converter Setup**
- **Login Setting**
- **Parameters Setting Page**

### 4.1 LOGIN SETTING

- Open your browser.
- Type the IP address of the Converter into the URL field and press ENTER. (The IP address is what you find out from IP Search Utility or set up to.)
- Login page will show up. You can find the login and password printed on a label sticking on bottom of Converter. Input user name with “admin”, leave the password in blank. Click the “Login” button to go into setting page.



user name  
使用者名稱 : admin

password  
密碼 :

login cancel  
登入 取消

**Note:** If you forget the password or cannot login successfully, please read the “Reset” article.

**Factory default:**

**Username:** Admin

**Password:** (leave blank)

## 4.2 PARAMETERS SETTING PAGE

Please ensure to click “Save” button in order to save any change, then a page show up “Back” and “Reboot” button. You may click “back” to configure the page continually or click “reboot” of the device.

### ST EP532

- Status
- Network
- RS232
- RS485/422
- Digital IO
- System

#### Network

|                    |                                 |
|--------------------|---------------------------------|
| Network Link Speed | Auto                            |
| DHCP               | <input type="checkbox"/> Enable |
| IP Address         | 192.168.1.100                   |
| Subnet Mask        | 255.255.255.0                   |
| Gateway            | 192.168.1.1                     |
| DNS Server         | 168.95.192.1                    |

Save

### ST EP532

- Status
- Network
- RS232
- RS485/422
- Digital IO
- System

## Configuration Updated

Back Reboot



## 4.2.1 STATUS PAGE

This is the first page after login or click “Status” to look this page.

### NETWORK INFO

| XC4134  |                       |                   |
|---|-----------------------|-------------------|
| Status<br>Network<br>RS232<br>RS485/422<br>Digital IO<br>System | <b>Network</b>        |                   |
|   | IP Address            | 192.168.1.101     |
|   | Subnet Mask           | 255.255.255.0     |
|   | Gateway               | 192.168.1.1       |
|   | MAC Address           | 24-81-AA-00-4A-23 |
|   | Packets Sent/Received | 433/11814         |
|   | <b>System</b>         |                   |
|   | System Up Time        | 0/01:34:09        |
|   | Firmware Release      | 2017/03/09 1.1221 |
|   | Serial Number         | 29911020803       |

- **IP Address**

To be set up at “Network setting page”

- **Subnet Mask**

To be set up at “Network setting page”

- **Gateway**

To be set up at “Network setting page”

- **MAC Address**

Converter has a unique MAC (Media Access Control) address used by Ethernet in 6 digits.

- **Packets Sent/Received**

A counter for packets transmission.

## 4.2.2 STATUS PAGE

### SYSTEM INFO

| XC4134  |                       |                   |
|---|-----------------------|-------------------|
| Status<br>Network<br>RS232<br>RS485/422<br>Digital IO<br>System | <b>Network</b>        |                   |
|   | IP Address            | 192.168.1.101     |
|   | Subnet Mask           | 255.255.255.0     |
|   | Gateway               | 192.168.1.1       |
|   | MAC Address           | 24-81-AA-00-4A-23 |
|   | Packets Sent/Received | 433/11814         |
|   | <b>System</b>         |                   |
|   | System Up Time        | 0/01:34:09        |
|   | Firmware Release      | 2017/03/09 1.1221 |
|   | Serial Number         | 29911020803       |

- **System up time**

The time appearance since start of Converter in format of [Day / Hour : Minute : Second]. This information can be useful in identifying the reliability of system.

- **Firmware Release**

Converter firmware is identified by date code. This information will be required when looking for technical support.

- **Serial number**

It is a product serial number code in the converter device and has been provided by factory.

## 4.2.3 NETWORK SETTING PAGE

### NETWORK SETTINGS

| Network            |                                 |
|--------------------|---------------------------------|
| Network Link Speed | Auto                            |
| DHCP               | <input type="checkbox"/> Enable |
| IP Address         | 192.168.1.101                   |
| Subnet Mask        | 255.255.255.0                   |
| Gateway            | 192.168.1.1                     |
| DNS Server         | 168.95.192.1                    |

Save

- **Network Link Speed**

Support 10/100 Mbps, auto-detected.

- **DHCP client**

DHCP client mode could be enabled/disabled statuses. If DHCP is enabled, there should be a DHCP server on the network. If DHCP is disabled, [IP address], [Subnet mask], and Gateway address] should be manually assigned.

- **IP Address**

The IP address of converter device, 4 digits separated by dot. Don't let it conflict with the other devices on the network. If DHCP client mode is enabled and there's a DHCP server on the network, this field will be assigned by DHCP server automatically.

- **Subnet mask**

Subnet mask of the converter device has connected to. "255.255.255.0" is usually used for small network, "255.255.0.0" for larger network, 4 digits separated by dot. If your IP address is provided by an ISP or the internal network administrator, please inquire of them that information and type it correctly. If DHCP client mode is enabled and there's a DHCP server on the network, this field will be assigned by DHCP server automatically.

- **Gateway**

The address of Gateway or Router's IP. 'Gateway' is a device which connects local network to external network. If you need to communicate with other networks or your device owns a real IP address on the internet, please inquire of them that information and type it correctly. If there's no gateway on the network, just leave it as "0.0.0.0". If DHCP client mode is enabled and there's a DHCP server on the network, this field will be assigned by DHCP server automatically.

- **DNS server**

To name Converter with domain name if DNS server is available.

**Remarks:** ensure to click "Save" button in order to save any change.

## 4.2.4 RS-232 SETTING PAGE

| XC4134                              |  |
|-------------------------------------|--|
| RS232                               |  |
| Socket Port                         | 100 TCP Server ▾                                     |
| Baud Rate                           | 115200 ▾ bps   |
| Parity                              | None ▾   |
| Data Bits                           | 8 ▾  |
| Stop Bits                           | 1 ▾  |
| Interface                           | RS232 ▾  |
| RTS/CTS                             | <input type="checkbox"/> Hardware flow control       |
| DSR/DTR                             | <input type="checkbox"/> Socket status & control     |
| Packet Mode for UART Input          | <input checked="" type="checkbox"/> Enable           |
| Inactive Timeout                    | <input checked="" type="checkbox"/> Enable 5 minutes |
| UART Command                        | <input type="checkbox"/> Enable                      |
| <input type="button" value="Save"/> |  |

### • Socket Port

A socket port assigned for the serial port. It's a 16-bit numbers, ranging from 1 to 65535. As the numbers below 1000 are used for specific purposes (e.g. 80 is for HTTP protocol), we suggest you use the numbers larger than 100. Generally the port number 4660 is used for the serial communication. However, you should specify different port number for each serial port.

### • Socket type selections

TCP Server: TCP protocol, passive open, to be connected from the TCP clients.

TCP Client: TCP protocol, active open, connect to the TCP server.

UDP Client: UDP protocol, connectionless

Remote Address / URL

Remote Port

#### » Remote IP address

The server IP address and socket port would be connected in TCP Server, TCP Client and UDP Client mode for a certain serial port.

#### » Remote socket port

The server socket port would be connected in TCP Client and UDP Client mode for a certain serial port.

## 4.2.4 RS-232 SETTING PAGE

- **Baudrate**

Baud Rate: 1200 bps ~ 115.2 Kbps

- **Parity, Data bits, Stop bit**

Parity: None, Even, Odd, Space, Mark.

Data Bits: 7, 8.

Stop Bit: 1, 2.

\*\*\*N, 7, 1 not supported.

- **Interface**

Select "RS-232".

- **RTS/CTS**

"Hardware flow control"

- **Packet Mode for UART input**

Mark to Enable or Unmark to Disable. If packet mode enabled, the data input from UART will be deferred until the input buffer is full or the converter detect 10-character packet gap and no more character will arrived. The block waiting time extended to avoid the splitting of the complete packet.

- **Inactive Timeout**

It is to identify whether the socket active or dead. If there is no any data transferred (send / receive) within the timeout defined period (1 to 99 minutes), then it is probably a dead socket and the socket will be closed automatically, thus a new connection can be accepted again. The timeout period can be set by user to fit different kinds of application.

- **UART command**

Mark to Enable or Unmark to Disable

**Remarks:** ensure to click "Save" button in order to save any change

## 4.2.5 RS-422/485 SETTING PAGE

**XC4134**

StatusNetworkRS232RS485/422Digital IOSystem

**RS485/422**

|                            |   |   |
|----------------------------|---|---|
| Socket Port                | <input type="text" value="101"/>  | <input type="button" value="TCP Server"/> |
| Baud Rate                  | <input type="text" value="115200"/>   | bps                                       |
| Parity                     | <input type="text" value="None"/>   |   |
| Data Bits                  | <input type="text" value="8"/>  |   |
| Stop Bits                  | <input type="text" value="1"/>  |   |
| Interface                  | <input type="text" value="RS485 (Half Duplex)"/>                                  |   |
| Packet Mode for UART Input | <input checked="" type="checkbox"/> Enable  |   |
| Inactive Timeout           | <input checked="" type="checkbox"/> Enable <input type="text" value="5"/> minutes |   |
| UART Command               | <input type="checkbox"/> Enable   |   |

- **Socket Port:** Same as per RS-232 setting.
- **Socket type selections:** Same as per RS-232 setting.
- **Baudrate:** Same as per RS-232 setting.
- **Parity, Data bits, Stop bit:** Same as per RS-232 setting.
- **Interface:** Select “RS-422” or “RS-485”.
- **Packet Mode for UART input:** Same as per RS-232 setting.
- **Inactive Timeout:** Same as per RS-232 setting.
- **UART command:** Same as per RS-232 setting.

**Remarks:** ensure to click “Save” button in order to save any change

## 4.2.6 DIGITAL I/O SETTING PAGE

Please disregard this page if no I/O ports on Converter.

|            |             |          |              |
|------------|-------------|----------|--------------|
| Status     | Socket Port | 102      | TCP Server ▾ |
| Network    | IO1 Mode    | Input ▾  |              |
| RS232      | IO2 Mode    | Input ▾  |              |
| RS485/422  | IO3 Mode    | Input ▾  |              |
| Digital IO | IO4 Mode    | Input ▾  |              |
| System     | IO5 Mode    | Input ▾  |              |
|            | IO6 Mode    | Output ▾ |              |
|            | IO7 Mode    | Output ▾ |              |
|            | IO8 Mode    | Output ▾ |              |
|            |             | Save     |              |

## 4.2.7 SYSTEM SETTING PAGE

|   |                          |  |
|---|--------------------------|--|
| Status<br>Network<br>RS232<br>RS485/422<br>Digital IO<br>System | <b>Administration</b>    |  |
|   | Administrator            | <input type="text" value="admin"/>   |
|   | Password                 | <input type="text"/>   |
|   | Product Name             | <input type="text"/>   |
|   | Product Model            | <input type="text"/>   |
|   | <b>Services</b>          |  |
|   | HTTP Server              | <input checked="" type="checkbox"/> Enable Port: <input type="text" value="80"/> |
|   | Telnet Console           | <input type="checkbox"/> Enable Port: <input type="text" value="23"/>            |
|   | <b>System Tools</b>      |  |
|   | Ethernet MAC Address     | <input type="text" value="24-81-AA-00-3E-94"/> <input type="checkbox"/> Set      |
|   | Firmware Backup          | <input type="button" value="Backup"/>  |
|   | Restore Default Settings | <input type="button" value="Default"/>   |
|   | Reboot System            | <input type="button" value="Reboot"/>  |
| <input type="button" value="Save"/>                             |                          |  |

- **Administration**

Administrator, Password

For security and management purpose, you may set up Administrator and Password for login control.

- **Product Name, Product Model**

The descriptions will show up on the “IP Search Utility”.

- **Services**

HTTP Server

Telnet Console

- **System Tools**

Ethernet MAC address

Firmware Backup

- **Restore Default Settings**

If by chance, you forgot the login and password, or have incorrect settings making the converter unworkable, you may press “Default” button reset the setting back to factory default.



## 4.2.7 SYSTEM SETTING PAGE

- **Reboot System**

Press “Reboot” Button After you finished the detailed parameter setting. It takes about 5 seconds to complete the whole process. You may re-check if all parameters have been correctly saved. If everything is ok, you may close the browser.

Ensure the IP subnet of the converter is same as per the host computer running the browser otherwise the web page won't appear.

## 4.2.8 INTERFACE OF SERIAL INTERFACES

- **RS232:** TxD, RxD for data stream, no flow control
- **RS232 (RTS/CTS):** TxD, RxD for data stream, RTS/CTS for flow control
- **RS232 (RTS/CTS, DTR/DSR):** TxD, RxD for data stream, RTS/CTS for flow control.
- **RS485 (Half duplex):** Half duplex RS-485 interface.
- **RS422 (Full duplex):** Full duplex RS-422 interface

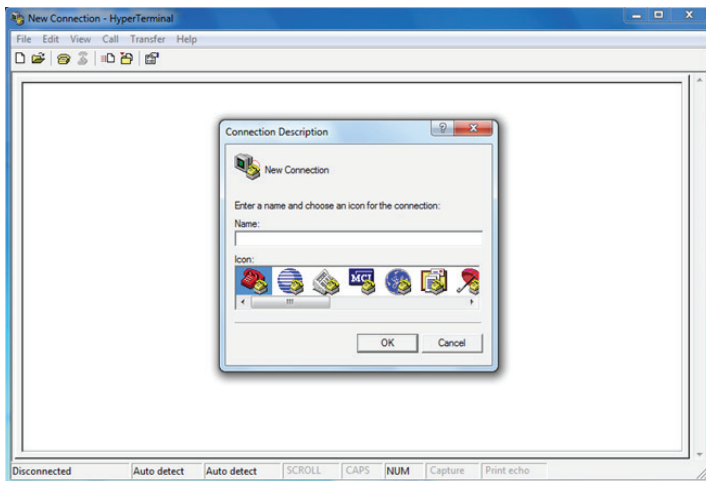
## 5. PARAMETERS SETTING VERIFICATION

After completing the wiring and parameter setting, we should verify if the setting is correct. This chapter will introduce how to use a single computer to test whether the converter work well.

The operating system can be Window 7/8/10. The “Hyper Terminal” utility should be installed on your PC/NB. The PC/NB also plays as Remote Host.

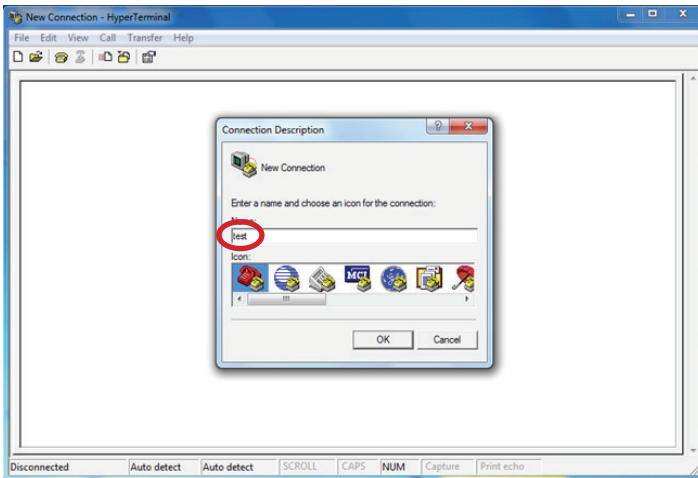
### 5.1 HYPER TERMINAL FOR TCP/IP WINSOCK

1. Open the Hyper Terminal.

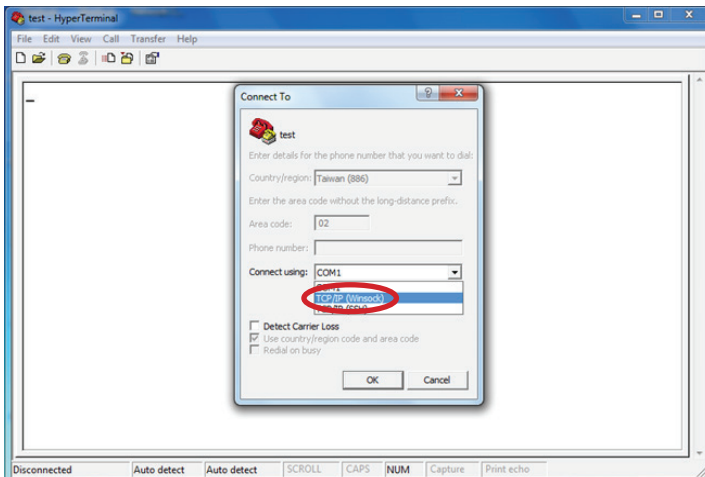


## 5.1 HYPER TERMINAL FOR TCP/IP WINSOCK

2. Key in a file name of connection (e.g. test) and then click “OK”.

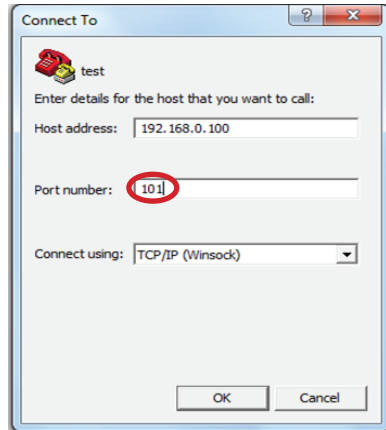
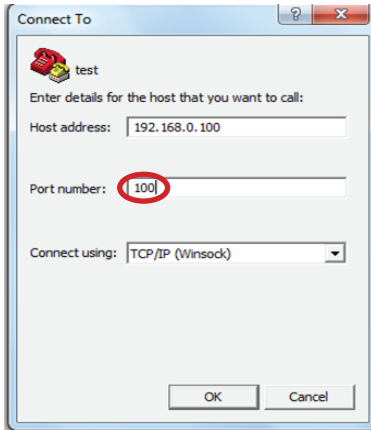


3. Choose TCP/IP, then click “OK”.

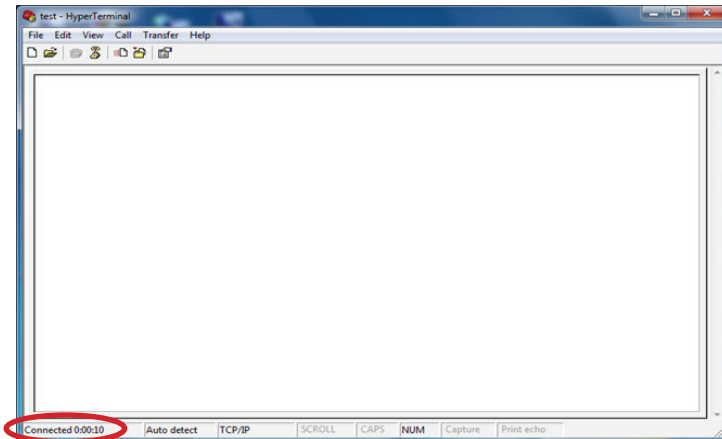


## 5.1 HYPER TERMINAL FOR TCP/IP WINSOCK

- Key in the Converter's IP address and Socket port then click "OK".
  - \*for testing RS-232: default Port Number is 100
  - \*for testing RS-422/485: default Port number is 101



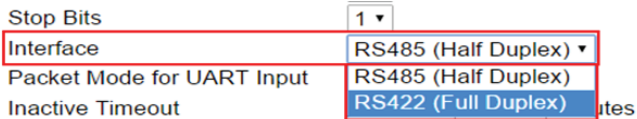
- A Hyper Terminal window will show up. The time counter start at the down left corner if connect is correct.



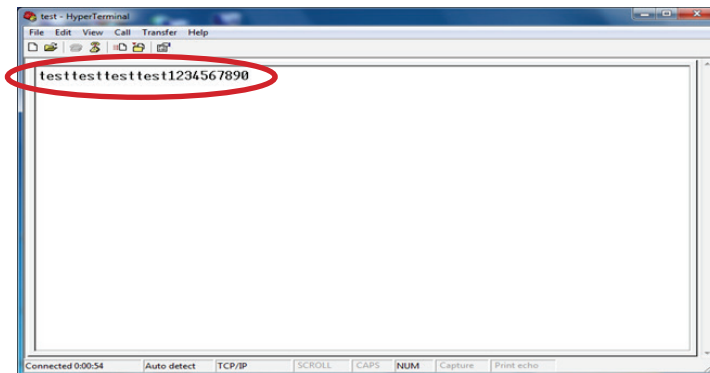
## 5.1 HYPER TERMINAL FOR TCP/IP WINSOCK

### 6. Echo Loop Test

- **For RS-232 testing:** Short DB9 connector #2 pin and #3 pin as circuit.
- **For RS-422 testing:** Short the green Terminal Block T+ to R+ and T- to R- or TX to RX.
- **In RS-422/485 setup page:** choose RS422 firstly.



- **Key in any characters.** If those characters show on the screen means the loop test is successful.



- 7. If not able to type or not seen any character present in the window, please check every step from beginning of this procedure.

## 5.2 HYPER TERMINAL FOR COM PORT

### 1. For RS-485 testing:

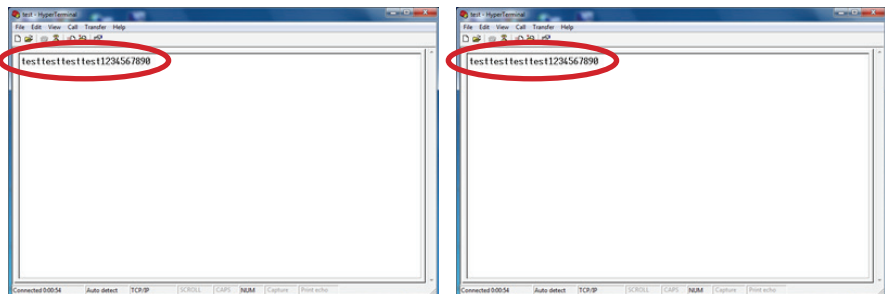
It needs two devices to connect the Terminal Block D+ to D+ and D- to D-.  
In RS-422/485 setup page: choose RS485.

|                            |                       |
|----------------------------|-----------------------|
| Stop Bits                  | 1 ▾                   |
| Interface                  | RS485 (Half Duplex) ▾ |
| Packet Mode for UART Input | RS485 (Half Duplex)   |
| Inactive Timeout           | RS422 (Full Duplex)   |

### 2. Sock ports must be different between two devices.

|   |                                     |                       |
|---|-------------------------------------|-----------------------|
| Status<br>Network<br>RS232<br>RS485/422<br>Digital IO<br>System | <b>RS485/422</b>                    |                       |
|   | Socket Port                         | 101 TCP Server ▾      |
|   | Baud Rate                           | 115200 ▾ bps          |
|   | Parity                              | None ▾                |
|   | Data Bits                           | 8 ▾                   |
|   | Stop Bits                           | 1 ▾                   |
|   | Interface                           | RS485 (Half Duplex) ▾ |
|   | Packet Mode for UART Input          | RS485 (Half Duplex)   |
|   | Inactive Timeout                    | RS422 (Full Duplex) ▾ |
| UART Command  | <input type="checkbox"/> Enable     |                       |
|   | <input type="button" value="Save"/> |                       |

### 3. Run Hyper Terminal as per RS-232 or RS-422 for two socket ports. Key in any characters show on the screen of another socket port means the loop test is successful.



## 5.3 SERVICE MODE

### 1. **TCP Server Mode:**

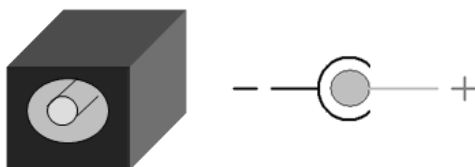
When device is configured as TCP Server, it gives the connected serial device a unique IP : Port address on a TCP/IP network that it can be accessed by other host (client) on the network. Device as TCP Server passively to be contacted by the host computer (client), allowing the host computer to establish a connection with and get data from the serial device.

### 2. **TCP Client Mode**

When Serial to Wi-Fi converter is configured as TCP Client, it allows the connected serial device to initiate actively the TCP connection to remote host software when it needed. When the connection is built, the data is transmitted bi-directionally till the data transmission is finished. The TCP connection will be closed by TCP Client.

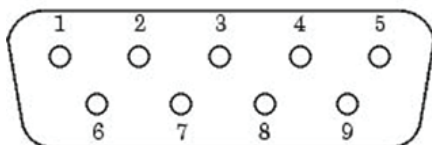
## 6. APPENDIX A

### DC Power outlet :



### RS-232 Pin Assignment

The pin assignment scheme for a 9-pin male connector on a DTE is given below.



**Pin 1:** DCD      **Pin 2:** RXD      **Pin 3:** TXD      **Pin 4:** DTR      **Pin 5:** GND  
**Pin 6:** DSR      **Pin 7:** RTS      **Pin 8:** CTS      **Pin 9:** X

### RS-232 Wiring Diagram

| <b>Serial Device</b> | <b>Converter</b> |
|----------------------|------------------|
| 2. RX                | 3. TX            |
| 3. TX                | 2. RX            |
| 5. GND               | 5. GND           |
| 7. RTS               | 8. CTS           |
| 8. CTS               | 7. CTS           |



## 6. APPENDIX A

### RS-422/485 Pin Assignment

The pin assignment scheme for a 4-pin RS-422 and 2-pin RS-485 as given below.

|    |    |
|----|----|
| D- | R- |
| D+ | R+ |
| X  | T- |
| X  | T+ |

### RS-422 Wiring Diagram

| Serial Device | Converter |
|---------------|-----------|
| R-            | T-        |
| R+            | T+        |
| T-            | R-        |
| T+            | R+        |

### RS-485 Wiring Diagram

| Serial Device | Converter |
|---------------|-----------|
| D+            | D+        |
| D-            | D-        |

**NOTES:**

**NOTES:**

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