# Korenix JetPort 5201
# Serial Device Server

# User's Manual

Version 1.4

Aug. 2014

**www.korenix.com**

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# Contents

# 1

# Introduction of JetPort

Jetport 5201 is a smart one RS-232 to Ethernet serial device server. It connects the serial port of devices such as card readers, measurement devices, or data acquisition terminals, over Ethernet just like locally attached. JetPort serial device server eliminates the limitation of single host and transmission distance of traditional serial communications by creating access for multiple hosts in Ethernet. The compact size and various mounting options further create installation flexibility.

This chapter describes:

- **Serial to Ethernet Technology Overview**
- **Product features**
- **Product specification**
- **Package checklist**

# Serial to Ethernet Technology Overview

Korenix JetPort serial device servers provide perfect solution to manage serial devices via Ethernet in flexible ways, such as TCP server, TCP client, UDP, or Windows Real/Virtual COM. JetPort creates a transparent gateway for the serial communication to Ethernet. If the control program uses network standard API, you can choose TCP or UDP as the communication protocol. If the control program uses COM port, you can install the Windows driver to add Real/Virtual COM ports.

# Product Features

JetPort 5201 has the following features:

- Smart one-port RS232 to Ethernet Solution
- World's highest serial speed: 460.8kbps
- JetPort Commander, Windows utility for auto discovery, multiple device setting and monitoring.
- Versatile serial operation options: Real/Virtual COM, Serial tunnel, TCP server, TCP client, UDP
- Max. 5 Real/Virtual COM, TCP server, TCP client data links
- Configuration by Windows, Web, telnet
- Event warning by Email, SNMP trap
- Real/Virtual COM driver for Windows NT/2000/XP/2003/7

# Product Specification

| **Network Interface** | |
|---|---|
| **Ethernet** | 10/100BaseTX |
| **Connector** | RJ45 |
| **Protection** | Built-in 1.5 KV magnetic isolation |
| **Protocols** | ICMP, IP, TCP, UDP, DHCP, BootP, ARP / RARP, Telnet, DNS, SNMP MIB II, HTTP |
| **Serial Interface** | |
| **Interface** | RS-232 |
| **Connectors** | male DB9 |
| **Data Rates** | 110 bps to 460.8 Kbps |
| **Data Bits** | 5, 6, 7, 8 |
| **Parity** | odd, even, none |
| **Stop Bits** | 1, 1.5, 2 |
| **RS-232** | TxD, RxD, RTS, CTS, DTR, DSR, GND, DCD |
| **Flow Control** | XON/XOFF, RTS/CTS, DTR/DSR |

| | |
|---|---|
| **Serial Line Protection** | 15KV ESD |
| **Software Utility** | |
| **Utility** | JetPort Commander for Windows NT/2000/XP<br>▶ Device discovery<br>▶ Auto IP report<br>▶ Device setting (run-time change, no rebooting)<br>▶ Access control list<br>▶ Group setting<br>▶ Device monitoring<br>▶ Serial port monitoring<br>▶ Log info<br>▶ Group Firmware update batch |
| **Serial mode** | Real/Virtual COM / TCP Server / TCP Client / UDP / Serial Tunnel |
| | ▶ TCP Alive Check Timeout<br>▶ Inactivity Timeout<br>▶ Delimiter for Data Packing<br>▶ Force TX Timeout for Data Packing |
| **Multiple link** | 5 Hosts simultaneous connection: Real/Virtual COM / TCP server / TCP Client |
| **Real/Virtual COM** | Windows NT/2000/XP/2003/7 |
| **Configuration** | Web console, Telnet console,<br>JetPort Commander for Windows NT/2000/XP/7 |
| **Power Requirements** | |
| **Power Input** | 24VDC (9-30VDC) |
| **Power Line protection** | ▶ 1 KV Burst (EFT), EN61000-4-4<br>▶ 0.5 KV Surge, EN61000-4-5 |
| **Mechanical** | |
| **Dimensions** | 54.4mmx79.5mmx27mm |
| **Regulatory Approvals** | FCC Class A, CE Class A<br>RoHS |
| **Environmental** | |
| **Operating Temperature** | 0 to 55°C (32 to 131°F) |
| **Operating Humidity** | 5% to 95% (Non-condensing) |
| **Storage Temperature** | -20 to 85°C (-4 to 185°F) |

# Package Checklist

JetPort is shipped with the following items:

- Korenix JetPort Serial Device Server
- 100-240V Power adapter
- Mounting kit and 4 screws
- 4 Foot pads
- Documentation and Software CD
- Quick Installation Guide

If any of the above items is missing or damaged, please contact your local sales representative.

# 2
# Quick Start

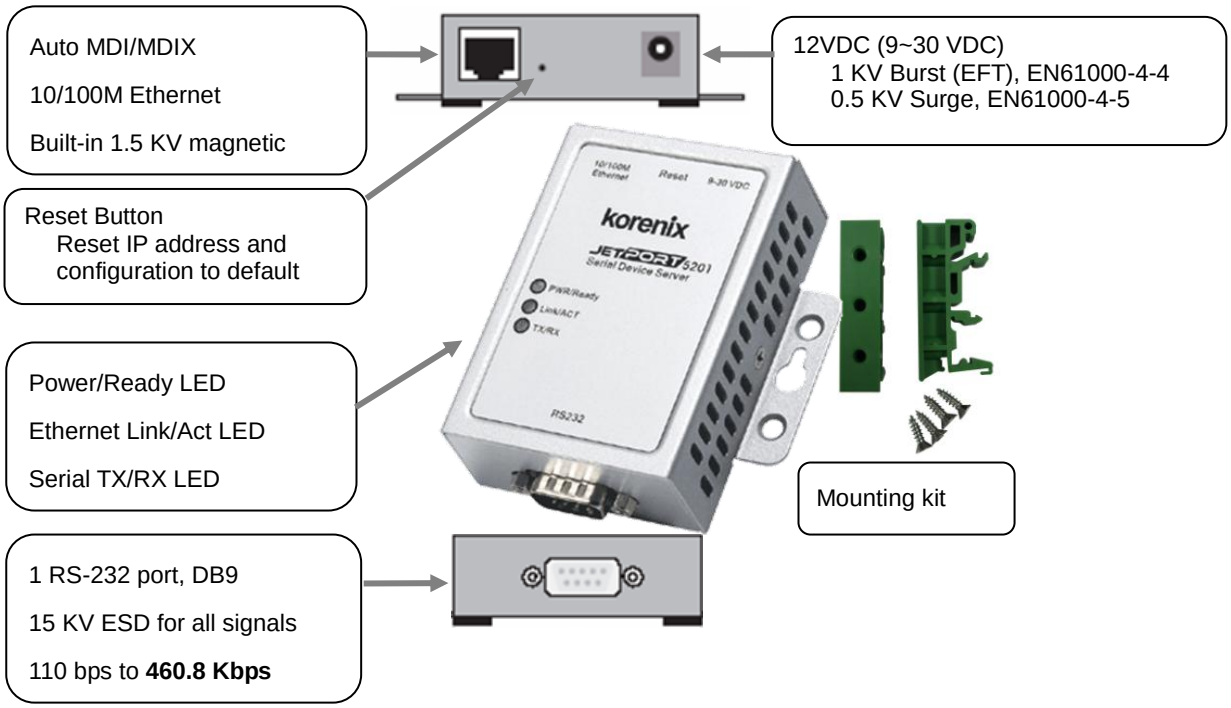
JetPort serial device server can be configured by Windows utility, web browser, or Telnet console. Advanced management features include SNMP support and Email alert. JetPort Commander is a powerful Windows utility that supports device discovery, group setup, group firmware update, and monitoring functions.

This chapter introduces how to quick start JetPort

- **Hardware installation**
- **Software setup**

# Hardware Installation

## Panel and Interfaces




## Reset Button

The Reset button provides users with a quick and easy way to restore the default settings of JetPort. Press reset button for 10 seconds. Release after Power LED blinking orange. JetPort will restore to default value including default IP address (192.168.10.2), and no password. When the Power LED turns green, the device is ready to function.

## LED Indicators

There are 3 LEDs, indicating real-time system status.

| LED | Color | Indication |
|---|---|---|
| **PWR/ Ready** | **Red** | **On:** Power is on and booting up.<br>**Blinking:** Indicates an IP conflict, or DHCP or BOOTP server did not respond properly. |
| | **Green** | **On:** Power is on and functioning normally.<br>**Blinking:** Located by Administrator's Location function. |
| | **Off** | Power is off, or power error condition exists. |
| **Link / ACT** | **Green** | **Blinking:** 10 /100Mbps Ethernet connection. |
| | **Off** | Ethernet cable is disconnected, or has a short. |
| **TX / RX** | **Orange** | Serial port is receiving data. |
| | **Green** | Serial port is transmitting data. |

| | | |
|---|---|---|
| | **Off** | No data is being transmitted or received through the serial port. |

## Connecting the Power

Connect the power jack input with the enclosed 12VDC power adapter, or 24VDC power input. The power LED will show red color until the system is ready. If the IP setting is running correctly, the power LED will turn green.

## Connecting to the Network

Connect the Ethernet cable to the JetPort 10/100M Ethernet port. If the 10M Ethernet is working, the Link/Act LED will blinking orange. If the 100M Ethernet is working, the Link/Act LED will blinking green.

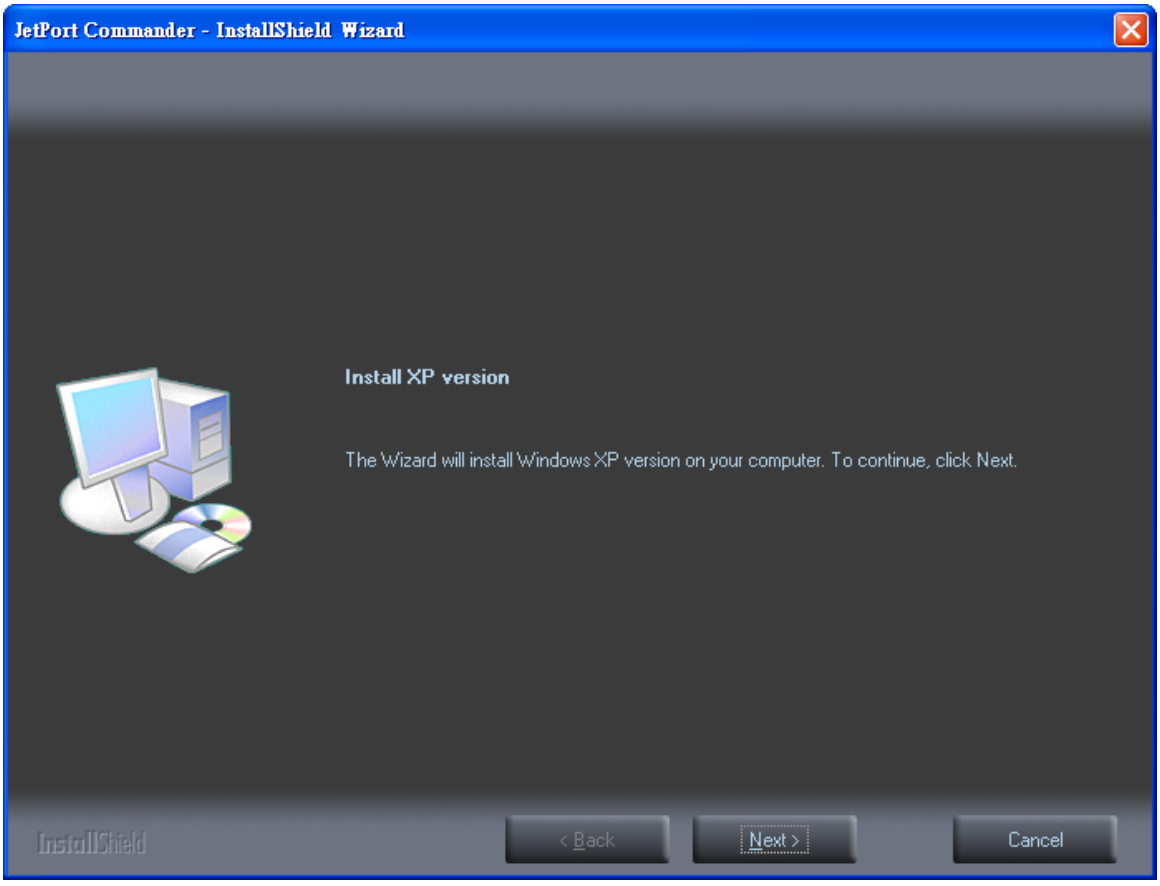
## Connecting to the Serial Device

Connect the serial device to JetPort by RS232 interface cable. JetPort serial port is a standard DB9 male port.

# Software Setup

## Install JetPort Commander

1. Insert the CD and auto-run the program. Select “JetPort Commander”, and run JetPort Commander.exe to install Windows utility, JetPort Commander.

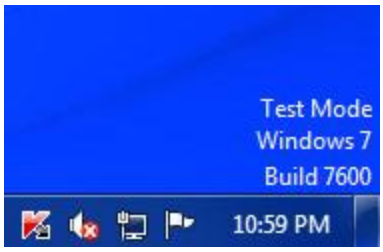


It automatically detects OS of your PC.

It will also turn on the Windows7's test mode.

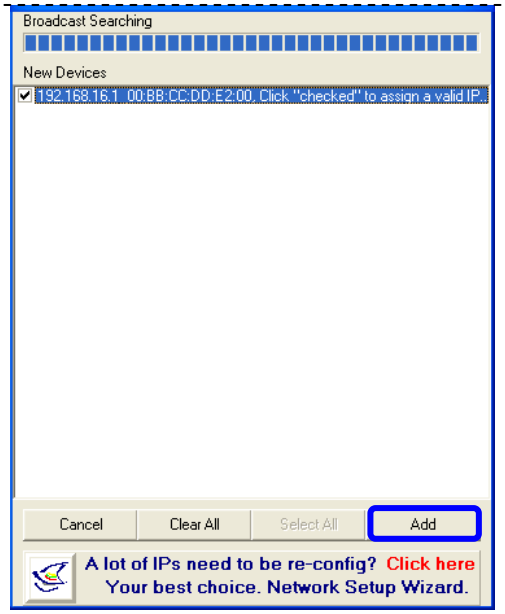
Then you should reboot your PC for the settings to take effect.

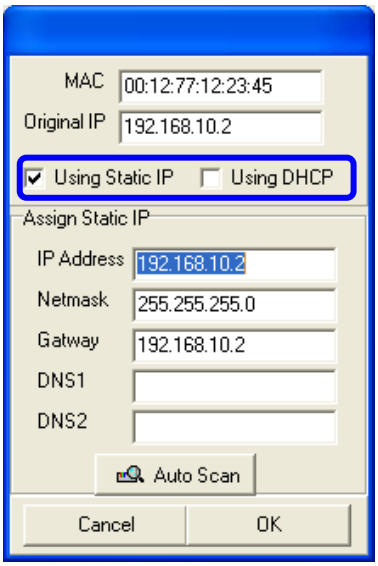
After you reboot your PC, you should see a test mode watermark on the screen.




2. **Broadcast the JetPort unit:** JetPort Commander will broadcast the network and search all available JetPort units in the network. The default IP address of JetPort is "192.168.10.2".

*Product Tip: If you have multiple Network Adapters (i.e. wireless and wired), please activate ONLY ONE Network Adapter that can locate the JetPort devices, and CLOSE the rest Network Adapters. Otherwise, JetPort Commander may broadcast INCORRECTLY.*



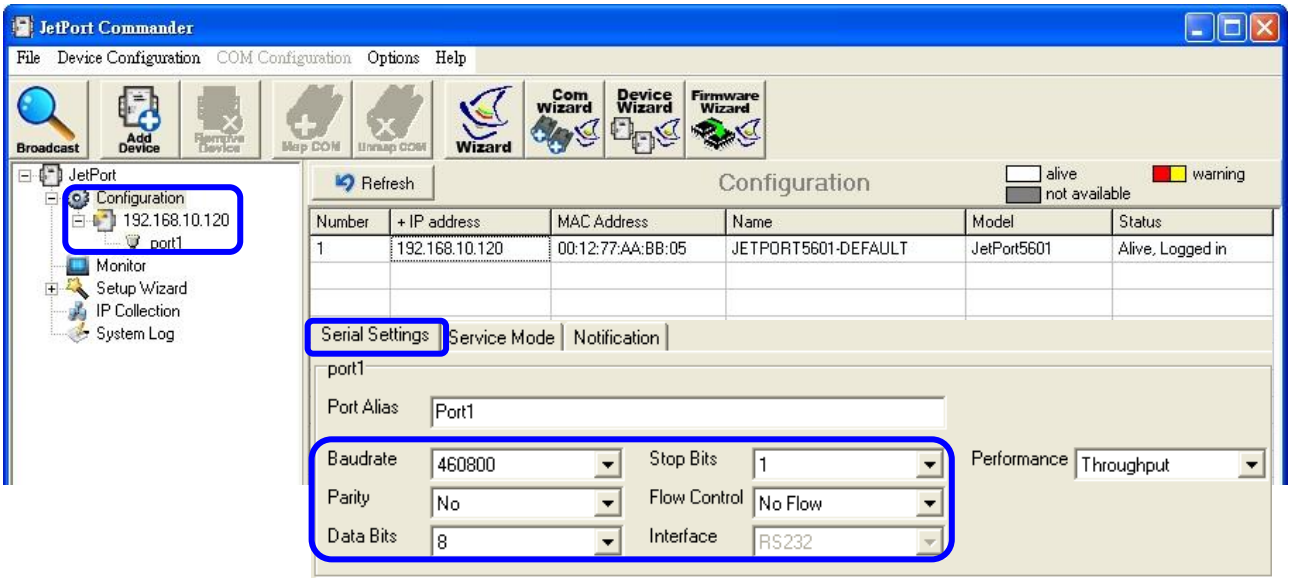

3. **Configuring the JetPort unit:**

3.1 Click on the JetPort unit and select "Add" for further configuring the unit.

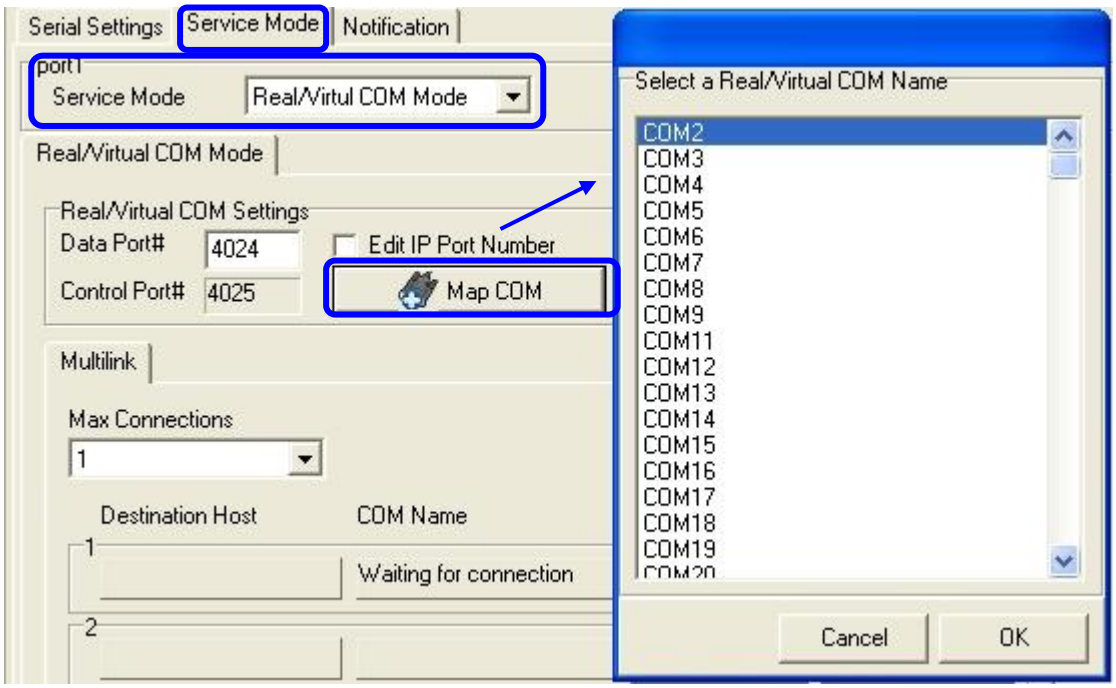
3.2 Select "Static IP" if you want to specify the network parameters, or select "DHCP", or "BootP" if you want dynamic configuration for the JetPort unit.

**4. Configuring the serial port as COM port:**

4.1 Go to “Configuration”, and choose the “device” and the “port”. Select “Serial Settings” to configure the serial parameters




4.2 Select “Service mode” , “Real/Virtual COM Mode” and press “Map COM” to map the port to the COM port.




Congratulations! You have finished JetPort configurations with Real/Virtual COM mode. You can also use web or telnet console by the JetPort IP address.

***Note:*** *This document shows you how to quick setup the software. The full functions and configurations’ description, please refer to the JetPort Commander Manual which you can find in the CD or download from Korenix web site.*

# 4
# Web and Telnet Console

In addition to Windows utility, JetPort can also be managed by Web and Telnet Console.

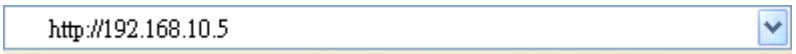
This chapter describes:

- **Web Console**
  - Server Configuration
  - Port Configuration
  - Management
  - Save / Restart
- **Telnet Console**
  - Overview
  - Configuration

# Web Console

When the JetPort has been configured with proper IP address and the web management is enabled, you can use web browser to make further configurations.

Type JetPort's IP address in the Address input box, for example 192.168.10.5.

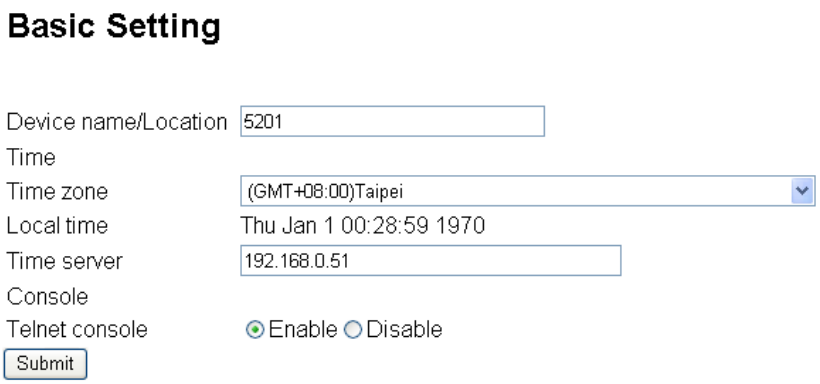



If the JetPort is password protected, use the pre-assigned password to login first.

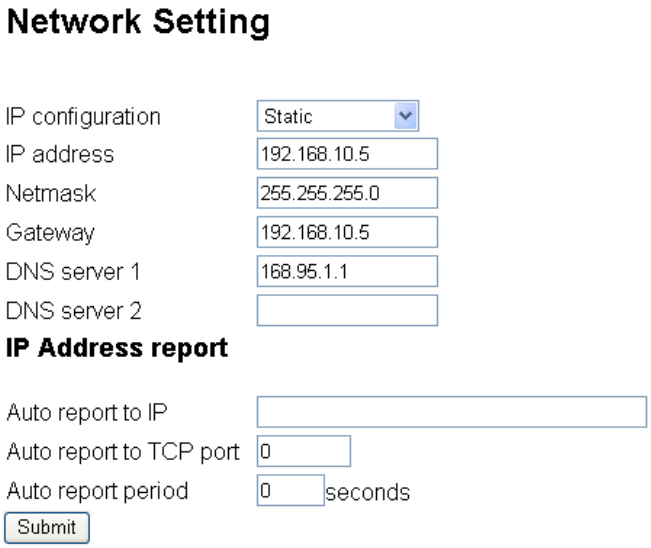

The overview page lists the basic information of this JetPort device.


## Server Configuration

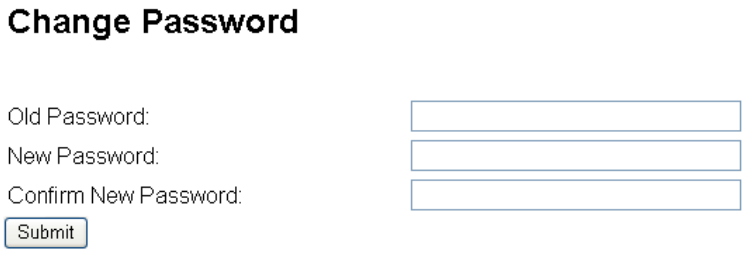
Basic Setting configures Server name, Time Server, and Telnet console enable/disable.




Network Setting configures the IP address, netmask, gateway, and DNS server for the JetPort. Auto IP report is for dynamic IP address reporting in defined intervals.




You can also define Administration password to protect the JetPort from unauthorized modification. Avoid using space in password.




## Port Configuration- Serial Parameter

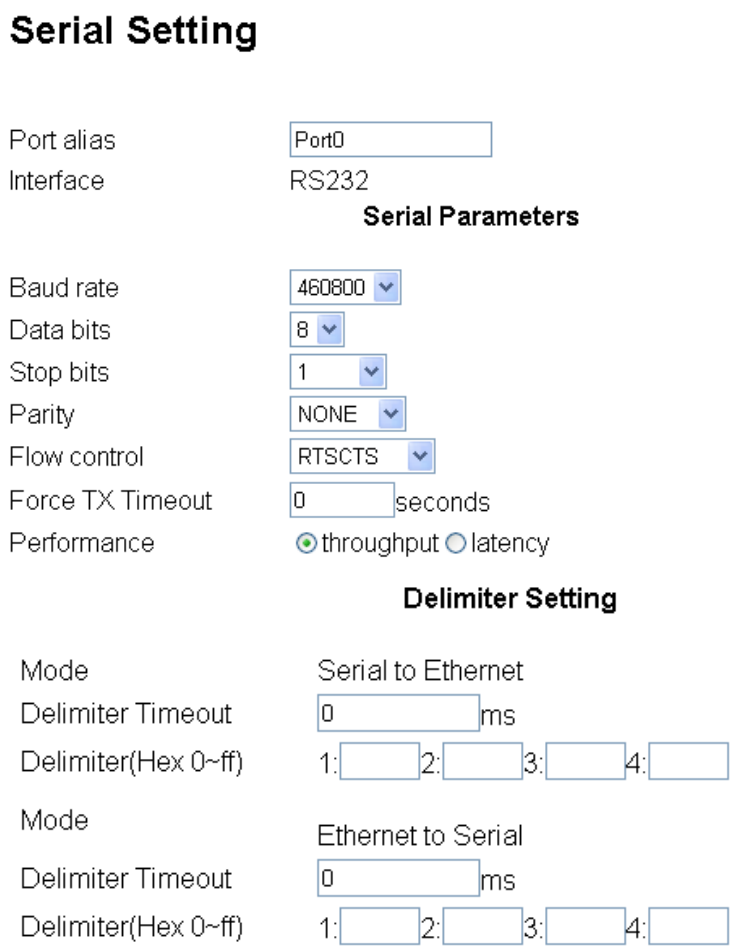
Port Configuration covers Serial Parameter settings, such as baud rate, data bits, stop bits, parity, and flow control.

**Port Alias:** Remark the port to hint the connected device.
**Baud rate:** from 110bps to 460.8kbps
**Parity:** No, Even, Odd, Mark, Space
**Data Bits:** 5, 6, 7, 8
**Stop Bits:** 1, 2 (1.5)
**Flow Control:** No, XON/XOFF, RTS/CTS, DTR/DSR
**Interface:** RS232
**Performance:** Throughput, Latency
Throughput mode guarantees highest transmission speed

Latency mode guarantees shortest response time

For advanced data packing options, you can specify delimiters for Serial to Ethernet and / or Ethernet to Serial communications.

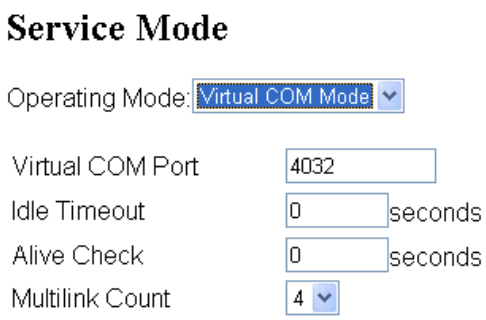
You can define max. 4 delimiters (00~FF, HEX) for each way. The data will be hold until the delimiters are received or the optional “Flush Ethernet to Serial data buffer” times out. Zero means disable(factory default).




Force TX interval time is to specify the timeout when no data has been transmitted. When the timeout is reached or TX buffer is full (4K Bytes), the queued data will be sent. Zero means disable(factory default).

## Service Mode- Real/Virtual COM

In Real/Virtual COM mode, you need to define the available port number, Idle timeout, Alive check, and Max. connections allowed from 1 to 5.

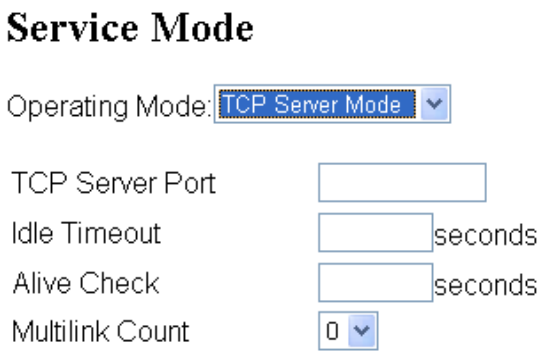



**Idle Timeout:** When serial port stops data transmission for a defined period of time (Idle Timeout), the connection will be closed and the port will be freed and re-try for connection with other hosts. Zero is disable this setting (default). If Multilink is configured, only the first host connection is effective for this setting.

**Alive Check:** The JetPort device will send TCP alive check package in each defined time interval (Alive Check) to remote host to test the TCP connection. If the TCP connection is not alive, the connection will be closed and the port will be freed for other hosts. Zero is disable this setting (default).

## Service Mode- TCP Server

In TCP Server mode, you need to define the available port number, Idle timeout, Alive check, and Max. connections allowed from 1 to 5.

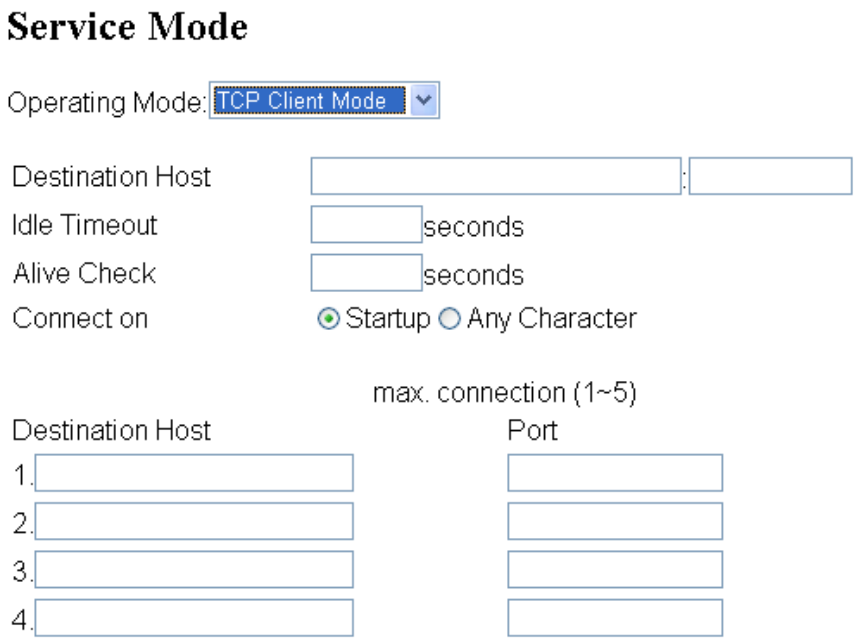



**Idle Timeout:** When serial port stops data transmission for a defined period of time (Idle Timeout), the connection will be closed and the port will be freed and re-try for connection with other hosts. Zero is disable this setting (default). If Multilink is configured, only the first host connection is effective for this setting.

**Alive Check:** The JetPort device will send TCP alive check package in each defined time interval (Alive Check) to remote host to test the TCP connection. If the TCP connection is not alive, the connection will be closed and the port will be freed for other hosts. Zero is disable this setting (default).

## Service Mode- TCP Client

In TCP Client mode, you need to define the destination host IP and port number, Idle timeout, Alive check. To deploy multilink, specify up to 4 more hosts IP and Port number.




**Idle Timeout:** When serial port stops data transmission for a defined period of time (Idle Timeout), the connection will be closed and the port will be freed and re-try for connection with other hosts. Zero is disable this setting (default). If Multilink is configured, only the first host connection is effective for this setting.

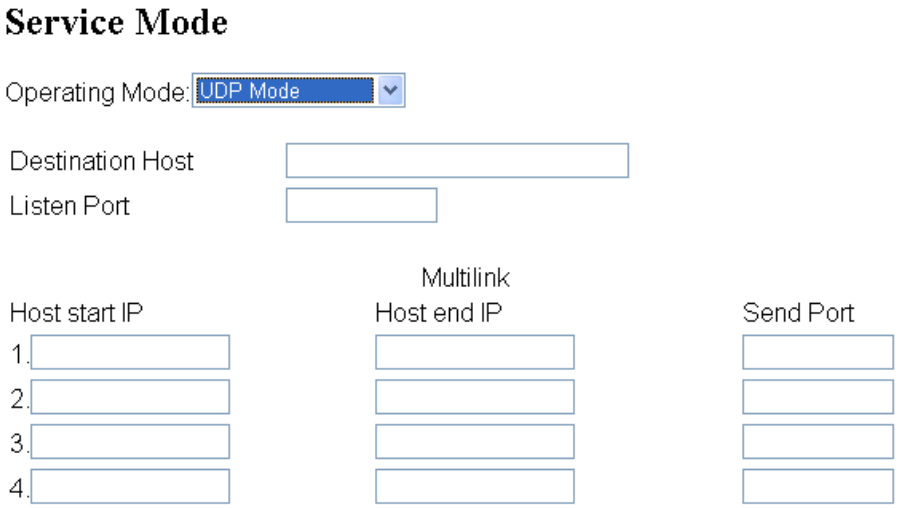
**Alive Check:** The JetPort device will send TCP alive check package in each defined time interval (Alive Check) to remote host to test the TCP connection. If the TCP connection is not alive, the connection will be closed and the port will be freed for other hosts. Zero is disable this setting (default).

**Connect on Startup:** The TCP Client will build TCP connection once the connected serial device is startup.
**Connect on Any Character:** The TCP Client will build TCP connection once the connected serial device starts to send data.

## Service Mode- UDP

In UDP mode, you need to define the destination host IP and Local listen port number.

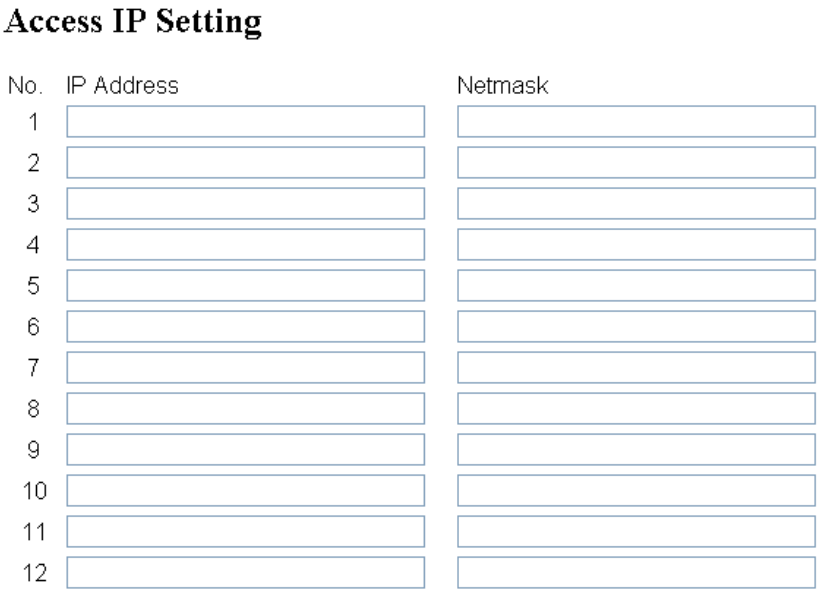
To create more destination hosts, specify the IP range of destination IP and send port number.



## Access IP Table

The Access IP Table specifies the IP address and subnet that can access to the device. The access is based on IP and netmask combination.

If the access is open to all hosts, do NOT enable this function.




## Event Notification

Specify the events that should be notified to the administrator. The events can be alarmed by means of email, SNMP trap, or system log.

Device Notification:

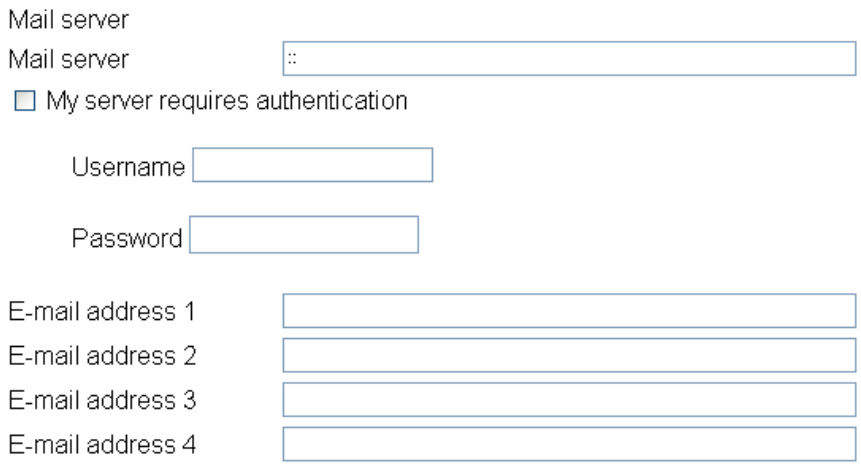
- Hardware Reset (Cold Start): Rebooting the JetPort will trigger the event
- Software Reset (Warm Start): Restarting the computer will trigger the event
- Login Failed: Using wrong password in console will trigger the event
- IP Changed: Changing network setting will trigger the event
- Password Changed: Changing the password will trigger the event
- Access IP Blocked: Report blocked IP addresses

Port Notification:

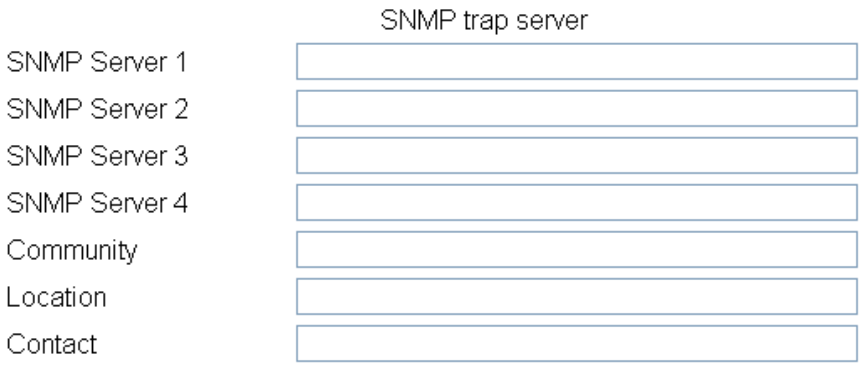
- DCD changed: When DCD (Data Carrier Detect) signal changes, indicating the modem connection status has changed, the event will be triggered.
- RI changed: When RI (Ring Indicator) signal changes, indicating the incoming of a call, the event will be triggered.
- DSR changed: When DSR (Data Set Ready) signal changes, indicating that the data communication equipment is powered off, the event will be triggered.
- CTS changed: When CTS (Clear To Send) signal changes, indicating that the transmission between computer and DCE can proceed.
- Port connected: In TCP Server Mode, when the device accepts an incoming TCP connection, this event will be trigger. In TCP Client Mode, when the device has connected to the remote host, this event will be trigger. In Real/Virtual COM Mode, when Real/Virtual COM is ready to use, this event will be trigger.
- Port disconnected: In TCP Server/Client Mode, when the device lost the TCP link, this event will be trigger. In Real/Virtual COM Mode, When Real/Virtual COM is not available, this event will be trigger.

## Email and SNMP Trap Notification

Email Server configuration includes the mail server's IP address or domain. If the authentication is required, specify the username and password. There are 4 email addresses you can specify to receive the notification.




SNMP Trap configuration includes up to 4 Trap Servers. You need to at least fill in one Trap Server's IP or domain. The Community is also required information. Do not use the ";" in this column. Location and Contact is optional information.

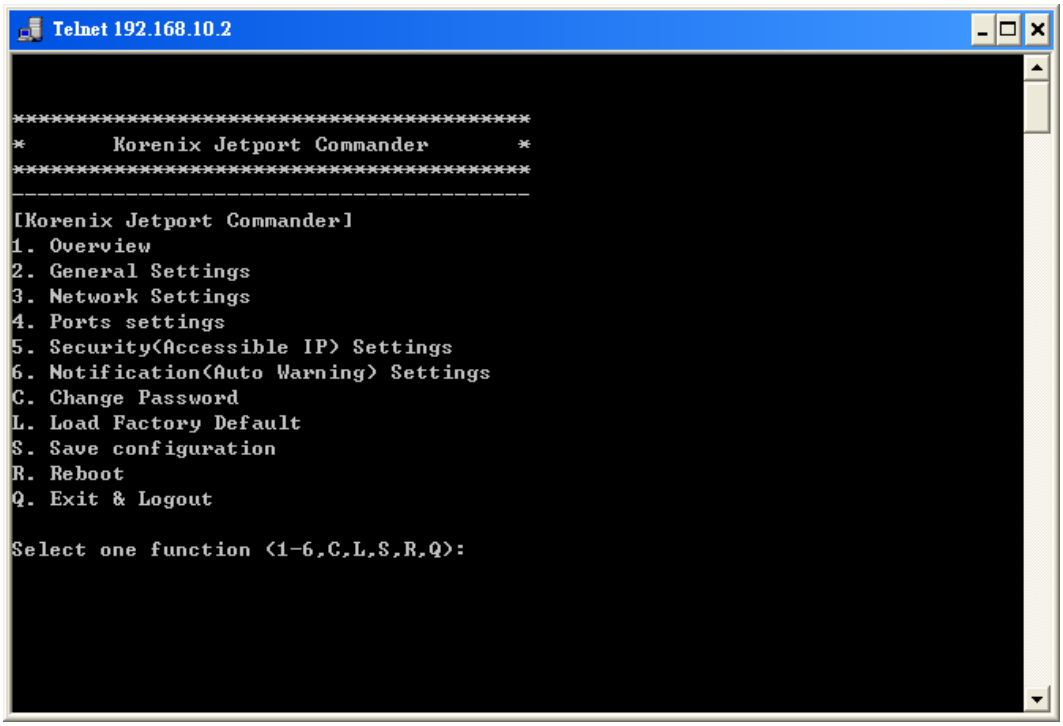



## Save / Restart

Load Factory Default: Load default configuration except Network Settings.
Import Configuration: Retrieve saved configuration file to apply in the device.
Export Configuration: Save the current configuration into a file and save the file in current host.
Upgrade Firmware: Upgrade to new firmware

# Telnet Console

Telnet the IP of JetPort, you will enter the Telnet console menu.




## Configuration

Configure the device and port by pressing function number or the hinted initial.

Press “q” to exit the function.
Always press “a” to apply and save change after making a configuration.

# A

# SNMP MIB II and RS232 Like Support

Jetport 5201 has build-in SNMP agent that supports SNMP trap, RFC 1317 RS232 MIB and RFC1213 MIB-II. The following tables list SNMP variables implemented in Jetport 5201.

RFC1213 MIB-II supported SNMP variables

| System MIB | | | | |
|---|---|---|---|---|
| sysDescr | sysObjectID | sysUpTime | sysContact | sysName |
| sysLocation | sysORLastChange | sysORID | sysORDescr | sysORUpTime |
| | | | | |

| Interface MIB | | | | |
|---|---|---|---|---|
| ifNumber | ifIndex | ifDescr | ifType | ifMtu |
| ifSpeed | ifPhysAddress | ifAdminStatus | ifOperStatus | ifInOctets |
| ifInUcastPkts | ifInDiscards | ifInErrors | ifOutOctets | ifOutUcastPkts |
| ifOutDiscards | ifOutErrors | ifOutQLen | ifSpecific | |

| Address MIB | | | | |
|---|---|---|---|---|
| atIfIndex | atPhysAddress | atNetAddress | | |

| IP MIB | | | | |
|---|---|---|---|---|
| ipForwarding | ipDefaultTTL | ipInReceives | ipInHdrErrors | ipInAddrErrors |
| ipForwDatagrams | ipInUnknownProtos | ipInDiscards | ipInDelivers | ipOutRequests |
| ipOutDiscards | ipOutNoRoutes | ipReasmTimeout. | ipReasmReqds | ipReasmOKs |
| ipReasmFails | ipFragOKs | ipFragFails | ipFragCreates | ipAdEntAddr |
| ipAdEntIfIndex | ipAdEntNetMask | ipAdEntBcastAddr | ipRouteDest | ipRouteIfIndex |

| | | | | |
|---|---|---|---|---|
| ipRouteMetric1 | ipRouteNextHop | ipRouteType | ipRouteProto | ipRouteMask |
| ipRouteInfo | ipNetToMediaIfIndex | ipNetToMediaPhysAddress | ipNetToMediaNetAddress | ipNetToMediaType |
| ipRoutingDiscards | | | | |

| ICMP MIB | | | | |
|---|---|---|---|---|
| icmpInMsgs | icmpInErrors | icmpInDestUnreachs | icmpInTimeExcds | icmpInParmProbs |
| icmpInSrcQuenchs | icmpInRedirects | icmpInEchos | icmpInEchoReps | icmpInTimestamps |
| icmpInTimestampReps | icmpInAddrMasks | icmpInAddrMaskReps | icmpOutMsgs | icmpOutErrors |
| icmpOutDestUnreachs | icmpOutTimeExcds | icmpOutParmProbs | icmpOutSrcQuenchs | icmpOutRedirects |
| icmpOutEchos | icmpOutEchoReps | icmpOutTimestamps | icmpOutTimestampReps | icmpOutAddrMasks |
| icmpOutAddrMaskReps | | | | |

| TCP MIB | | | | |
|---|---|---|---|---|
| tcpRtoAlgorithm | tcpRtoMin | tcpRtoMax | tcpMaxConn | tcpActiveOpens |
| tcpPassiveOpens | tcpAttemptFails | tcpEstabResets | tcpCurrEstab | tcpInSegs |
| tcpOutSegs | tcpRetransSegs | tcpConnState | tcpConnLocalAddress | tcpConnLocalPort |
| tcpConnRemAddress | tcpConnRemPort | tcpInErrs | tcpOutRsts | |
| | | | | |

| UDP MIB | | | | |
|---|---|---|---|---|
| udpInDatagrams | udpNoPorts | udpInErrors | udpOutDatagrams | udpLocalAddress |
| udpLocalPort | | | | |
| | | | | |

| SNMP MIB | | | | |
|---|---|---|---|---|
| snmpInPkts | snmpOutPkts | snmpInBadVersions | snmpInBadCommunityNames | snmpInBadCommunityUses |
| snmpInASNParseErrs | snmpInTooBigs | snmpInNoSuchNames | snmpInBadValues | snmpInReadOnlys |
| snmpInGenErrs | snmpInTotalReqVars | snmpInTotalSetVars | snmpInGetRequests | snmpInGetNexts |
| snmpInSetRequests | snmpInGetResponses | snmpInTraps | snmpOutTooBigs | snmpOutNoSuchNames |
| snmpOutBadValues | snmpOutGenErrs | snmpOutGetRequests | snmpOutGetNexts | snmpOutSetRequests |
| snmpOutGetResponses | snmpOutTraps | snmpEnableAuthenTraps | snmpSilentDrops | snmpProxyDrops |

RFC1317 RS232 supported SNMP variables

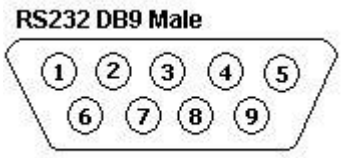
| RS232 MIB | | | | |
|---|---|---|---|---|
| rs232Number | rs232PortIndex | rs232PortType | rs232PortInSigNumber | rs232PortOutSigNumber |

| | | | | |
|---|---|---|---|---|
| rs232PortInSpeed | rs232PortOutSpeed | rs232PortInFlowType | rs232PortOutFlowType | |
| rs232AsyncPortIndex | rs232AsyncPortBits | rs232AsyncPortStopBits | rs232AsyncPortParity | rs232AsyncPortAutobaud |
| rs232AsyncPortParityErrs | rs232AsyncPortFramingErrs | rs232AsyncPortOverrunErrs | | |
| rs232InSigPortIndex | rs232InSigName | rs232InSigState | rs232InSigChanges | |
| rs232OutSigPortIndex | rs232OutSigName | rs232OutSigState | rs232OutSigChanges | |

# B

# RS232 Pin Assignment

| Pin No. | Name | Notes/Description |
|---|---|---|
| 1 | DCD | Data Carrier Detect |
| 2 | RD | Receive Data (RxD, Rx) |
| 3 | TD | Transmit Data (TxD, Tx) |
| 4 | DTR | Data Terminal Ready |
| 5 | SGND | Ground |
| 6 | DSR | Data Set Ready |
| 7 | RTS | Request To Send |
| 8 | CTS | Clear To Send |
| 9 | RI | Ring Indicator |



# C

# Revision History

| Version | Description | Date |
|---|---|---|
| V1.4 | Update Win 7 Setup. | Aug. 2014 |
| V1.3 | Add Real COM | July 2012 |
| V1.2 | Remove Linux TTY driver | July 2009 |
| V1.1 | Correct Serial Port LED color | Oct. 2008 |
| V1.0 | The first version. | Mar. 2006 |