



16-Port RS-232/422/485 to Ethernet Server

STE-516C

User's Manual

Version 1.0a

Revision History

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Contents

<u>Chapter 1. Introduction</u>	6
● About the User Guide	6
● To Reader	6
● Manual Contents	7
● Device Servers Related Documents	8
● Technical Support	9
 <u>Chapter 2. Getting Started</u>	 10
● Overview	10
● Product Features	10
● Package Check List	11
● Applications	12
 <u>Chapter 3. Hardware Layout</u>	 15
● Panel Layout	15
● LED / RESET	16
 <u>Chapter 4. Installation</u>	 18
● Before Installation	18
● Booting	18
● Connection	18
 <u>Chapter 5. Setting via Web</u>	 22
● Accessing the Web	22
● Setup Menu	23
● Network Settings	24

● Serial Settings	28
● SNMP Settings	34
● Change Password	36
● Update Firmware	37
● Factory Default	38
● Save & Reboot	39
● System Log	40

Chapter 6. Setting via Telnet **41**

● Connection	41
● Basic Setup Command	42
● Network Command	42
● Serial Command	44
● User Setup	47
● System Command	47

Chapter 7. Setting via LCD **48**

● LCD and Key Control	48
● Main Menu	48
● Network Setup	49
● Port Setup	50
● Status	51
● System	52
● Verification	53

Chapter 8. Application **58**

● Com Port Redirector Method	58
● TCP_Server Method (PC → DeviceServer TCP/IP Connection)	59
● TCP_Client Method (DeviceServer → PC TCP/IP Connection)	60
● Pair Method (Serial Line to Serial Line)	61

Chapter 9. Appendix **63**

- Troubleshooting 63
- Firmware Update via FTP 64

Chapter 1. Introduction

This chapter is an introduction to this serial device server and its related document.

About the User Guide

This user guide is designed for users who are in charge of connecting to and communicating with this device server, setting its configurations, status monitoring, firmware update, and other administration work.

To Reader

This manual is intended for device server users and administrators. It is strongly recommended to read carefully before using or setting this device server. This guide contains information on hardware level application and software level configuration. The understanding of this guide will be a great starting point for any administrators who want to easily monitor and control this device server and its connection devices.

Manual Contents

Ch.1 Introduction is a preface with general information and introductory notices.

Ch. 2 Getting Started describes a brief introduction about this device server, including features and applications.

Ch. 3 Hardware Layout explains about the product layout and pin specifications with block diagram and drawings.

Ch. 4 Installation describes how to connect between WiComm-1 serial and network and how to start the system initially and inspect the system status.

Ch. 5 Setting via Web provides menu-by-menu guide for setting up this device server via web browser.

Ch. 6 Setting via Telnet describes the commands required to set up this device server via telnet.

Ch. 7 Setting via LCD explains the way to monitor device server's operating environment and status.

Ch. 8 Application gives a number of examples of how device server is applied in industry.

Ch. 9 Appendix provides troubleshooting and technical specifications for the product.

Device Servers Related Documents

Device Servers related Technical Documents

Document Name	Description
User Guide	Integration, configuration, and management tasks are explained for the administrator
PortView User Manual	Guide for this device server management application Portview
COM Port Redirector User Manual	Guide for this device server COM Port Redirector
TestView User Manual	Guide for Com port, TCP, UDP testing program

Technical Support

Please find the FAE of product channel for technical support.

Chapter 2. Getting Started

This chapter includes this device server's overview, main and distinctive features, package checklist for each product, and application fields.

Overview

This serial device server provides network connectivity to various serial devices (security devices, communication peripherals, modems, data printing devices, industrial metering devices, etc.). This device server supports RS232, RS422, and RS485 serial communication standards under various communication speeds. Also, it automatically senses 100baseTX Fast Ethernet and connects.

Product Features

This serial device server is including the following features.

- Speed: Max. 921.6Kbps
- RS-232 or Combo(RS-422/RS-485) Serial Port
- 10/100Mbps Ethernet Port
- COM Port Redirector
- Extended Setting and Monitoring through PortView
- Firmware Update via Web, FTP
- Device setting through Web, Telnet, SNMP, PortView

Package Check List

This serial device server package consists of the following. Please make sure that you have all the components.

Serial Device Server x1

Direct LAN Cable x1

Power Adapter x1

CD (Manual and Utility) x1

Notify your sales representative if any of the above items are missing or damaged.

A-Class Device Product

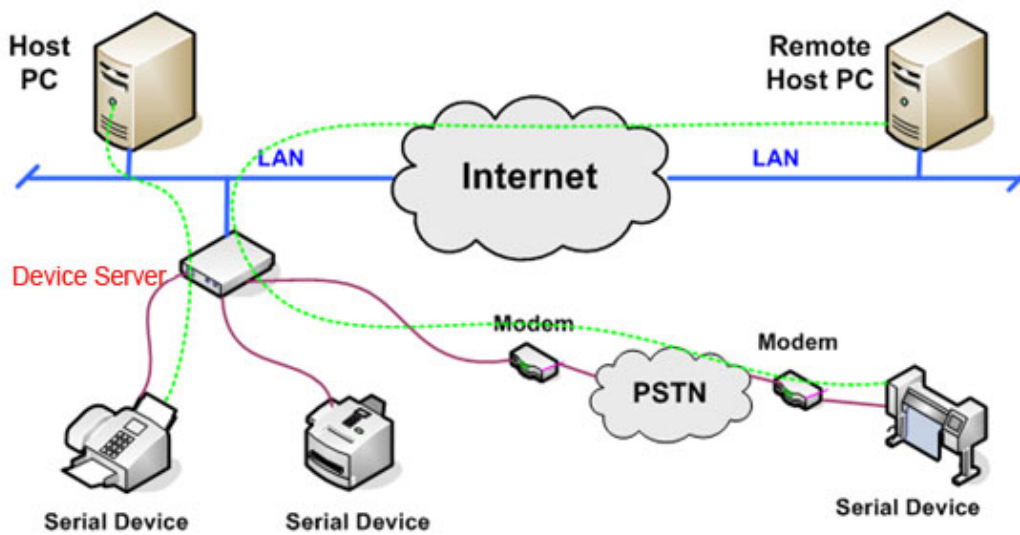
This device is registered only for office use, and both the seller and the user must be aware of this. If not correctly sold or purchased, please exchange with home use device.

Applications

This serial device server can be applied to many practical applications in various fields.

Network Serial Communication

This is the most common application for the serial device server. By connecting a PC and this serial device server to network, you can use serial equipments connected to this serial device server from remote PCs.



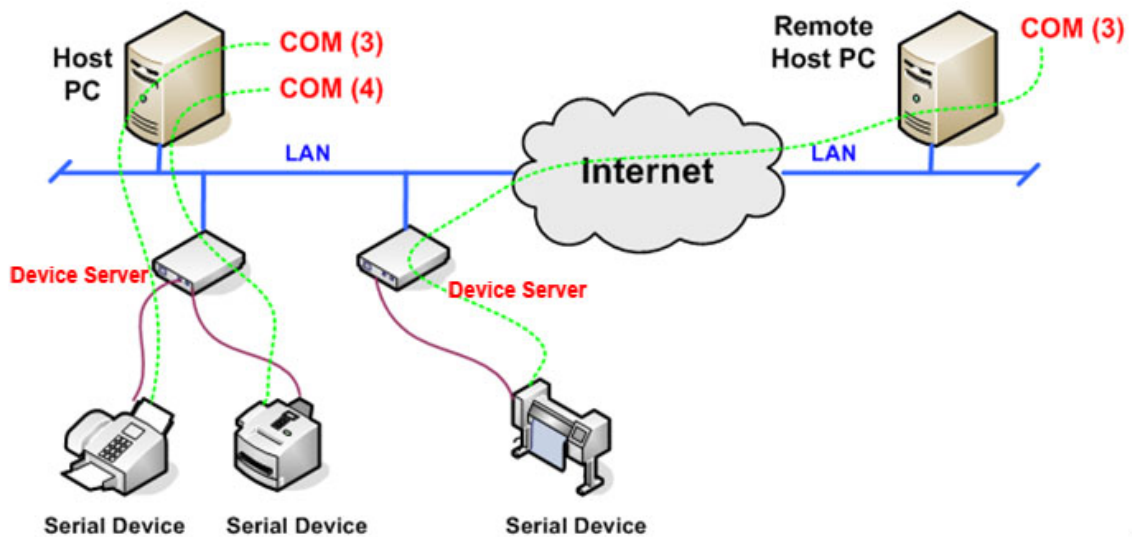
Serial Communication Tunneling

You can extend the serial cable between PC and serial device to network and use it as one with no limitation in distance. For this, refer to Ch. 5. In both TCP Server – TCP Client and UDP Server – UDP Client mode, only data can be sent and received. However, in Pair_Master – Pair_Slave mode, not only data but also control signal can be sent and received.



COM Port Redirection

By exploiting redirection feature, connected the serial ports of this device server to the network can be used in the PC as if they belong to the PC.



Factory / Industrial Automation

PLC, Robot arms, Human–Machine Interface, Warehouse rails

Medical instruments, inspection equipment controllers, alarming units

Home Appliances / Electronic Devices

Power controller, Gaming machines

Scales, Gas detection units, Water & pollution metering devices

Data collection and distribution units

Financial / Building Automation

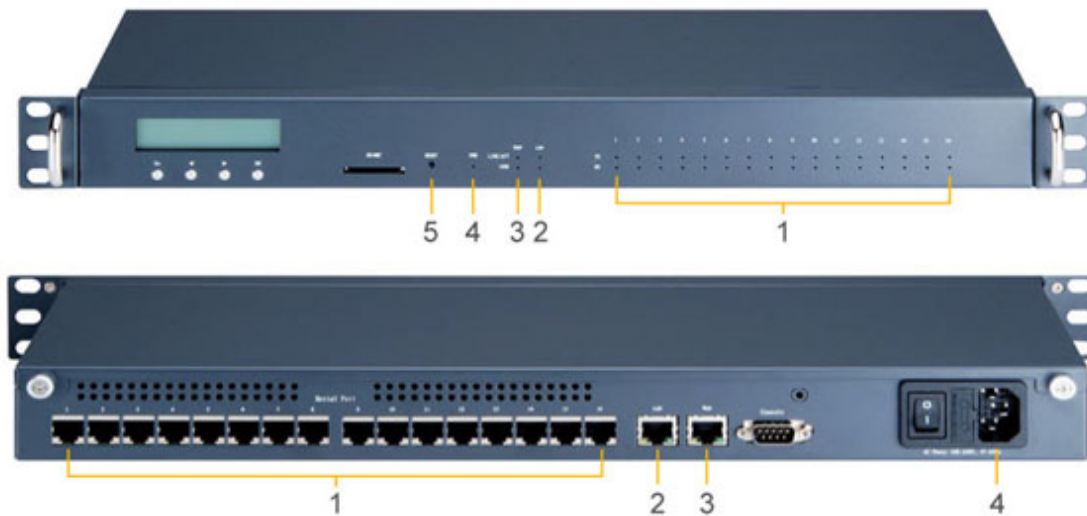
Card readers, Barcode scanners, Kiosks, Point–of–Sale (POS) related devices

Serial printers, Cash registers, Credit card authorization terminals

Biometric detection units, Security devices

Chapter 3. Hardware Layout

This chapter provides the Device Server's hardware block diagram, pin specifications, dimensions and other hardware-related information.



Panel Layout

1. Serial Port : Consists of 8 pin RJ-45 jack, supports RS232,422,485 interface and is possible to set up via web or telnet
2. LAN Port : As a secondary network port, it works through DHCP Server and assigns IP address to a device connected to this device server.
3. WAN Port : As a main network port, it is used to connect this device server to Ethernet card,
hub, router or other wire network devices
4. Power Connector : **Supplies** 100 ~ 240 VAC power
5. Reset Button : Restarts if pushed for less than 5 seconds. Set up by default if pushed for
more than 5 seconds.

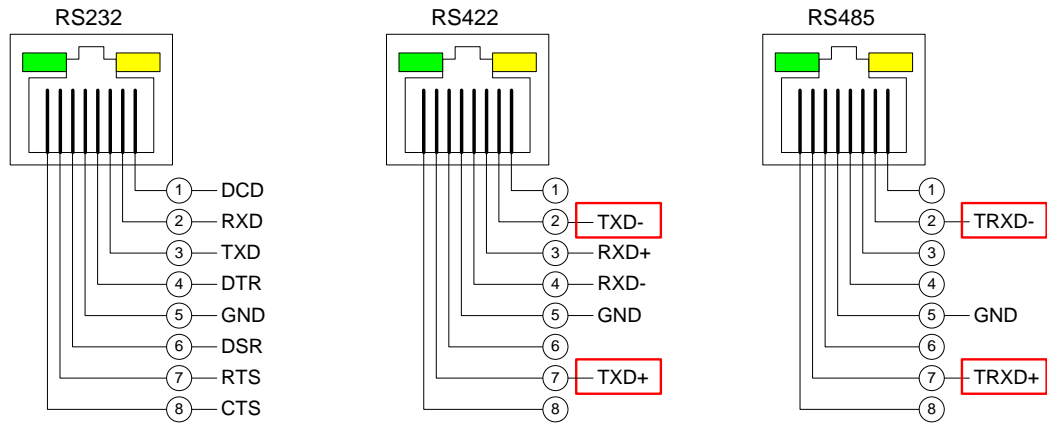
LED / RESET

LED	Status	Description
PWR (White)	On	Power input to device
	Off	No power input to device
WAN (Green)	Off	Inactive network
	On	Active network
LAN (Green)	Off	Sub network inactivated
	On	Sub network activated
Serial Tx/Rx	Green Blink	Serial data transmission
	Orange Blink	Serial data reception
WAN/LAN (Left Green)	On	100BastT network activated
	Off	10BastT network activated
WAN/LAN (Right Orange)	On	Connected to network
	Off	Network connection lost
	Blink	LAN data transmission and reception

<Reset Button>

Input	Result
Push for less than 5 seconds	Restart
Push for more than 5 seconds	Reset to default

Serial Port Pin Specification



PIN definition

Chapter 4. Installation

This chapter provides information related to connection of this serial device server. The following is the method to connect this serial device server to device and network.

Before Installation

In order to connect this device server to network, you need RJ45 Ethernet port. Ethernet supports 10Mbps and 100Mbps connection. (Automatic recognition) Since this device server's WAN/LAN port supports MDIX, you can use any type of cable. (ex. Cross LAN cable, Direct LAN cable) One end of the cable is connected to this device server while another is to Hub switch or other network device.

Booting

First, make sure that an input voltage supplied to the device server is in accordance with module's specification. If power supply is in a normal condition, turn on the device server and check the PWR LED is white then boot it. Even though there is no additional LED to check module's operating status, it is possible to check through LED on RJ45 Ethernet port. For information related to LED condition, refer to chapter 3.

IP address is needed to get an access to set up this device server web and telnet command line. In default, a fixed cable IP address is assigned in this device server. It is possible to assign a different IP address or let this device server automatically get IP address from DHCP server after the first access. However, it is recommended to use a fixed IP address.

Connection

In order to check the device server's status and set up the device, it should connect to

telnet or Web browser. To do so, get IP Address of which the device is operating.

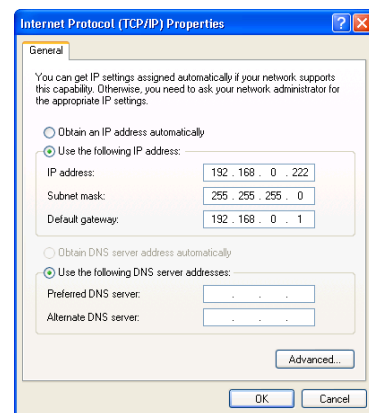
If the device server' s WAN port uses an assigned IP from DHCP server or fixed IP address, the device server provides the following method in case a user does not know IP address.

1. Use default IP address “ 10.10.1.1 ” to LAN port
2. Connect serial console port to PC' s serial port and set it to 115,200 bps for connection.
3. Search the assigned IP using “Detector ” application in Utility & Documents CD.

WAN Default IP Address: 192.168.0.223

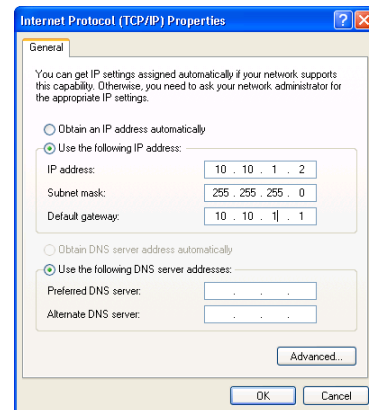
This device server' s default IP address is 192.168.0.223.

In order to connect to this address, network setting should be adjusted referring to the following example.



LAN IP address: 10.10.1.1

LAN port' s default IP address is 10.10.1.1. In order to connect to this address, network setting should be adjusted referring to the following example.



Serial Console Port

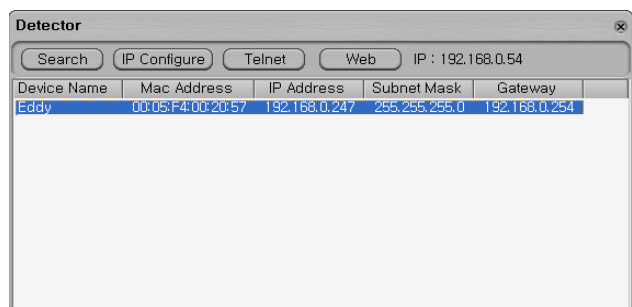
User connects console port and PC' s serial port with serial cable and runs communication program such as hyper terminal. User can connect with the setting of communication speed 115200 bps, None Parity, 8 Data bits and 1 Stop Bit.

Connection through Detector

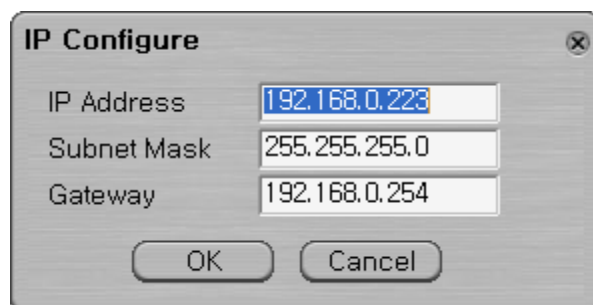
Detector program included in Utility & Documents CD searches all the device server on network and gives an access to it.

(For details of Detector program, please refer to PortView manual.) If user clicks search button on the upper left in Detector program, it lists up this device server on network.

If user wants to connect through web browser or Telnet, choose one of the device server module and click web or Telnet button.



If the device server module that a user wants does not exist on the same network, it can assign a temporary IP address to connect via web or telnet by clicking “IP Configure” button. In this case, a user should connect via web or telnet and restart after setting up IP address .



Now, it is ready to connect to the device server. For setting this device server, take a look at the following method.

1) Setting via Web

A user can easily carry out the environment setting for the device server via Web and can access to Web by using any Web browser. For detailed information, refer to '[Chapter 5. Setting via Web](#)'.

2) Setting by Telnet

A user can carry out the environment setting for the device server by Telnet. For detailed information, refer to '[Chapter 6. Setting by Telnet](#)'.

3) Setting via Portview

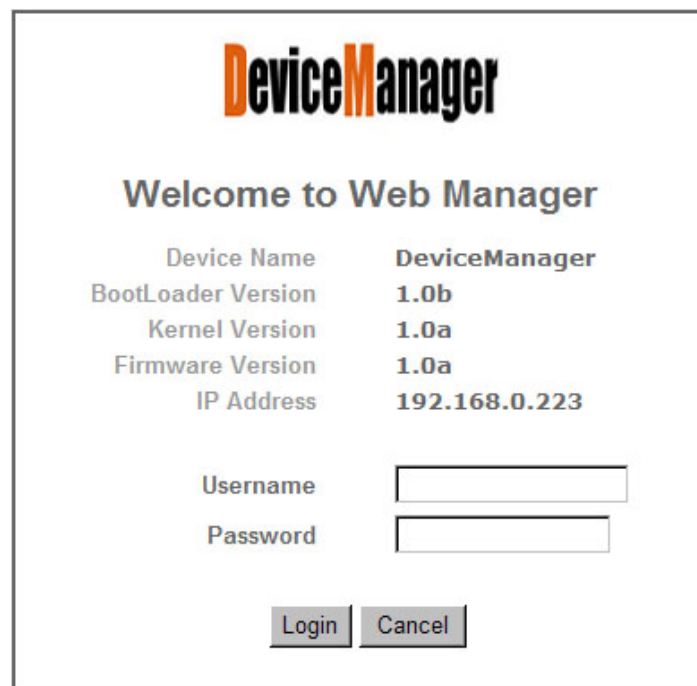
This device server can be monitored via Port view, which is a windows-based utility. For detailed information, refer to Portview User's Manual.

Chapter 5. Setting via Web

Accessing the Web

Open your favorite web browser and enter the IP address of this device manger to access t he web manager. Once you are successfully connected, the following front page will show up. You need to enter appropriate username and password to login. Please note that this username and password is used as authentication method for Telnet as well.

- ◆ Factory default username: admin
- ◆ Factory default password: 1234



DeviceManager

Welcome to Web Manager

Device Name	DeviceManager
BootLoader Version	1.0b
Kernel Version	1.0a
Firmware Version	1.0a
IP Address	192.168.0.223

Username

Password

Setup Menu

If login process is successful, you will see a web manager' s main page, showing summary of your device. On the left, you will see a setup menu, and you can navigate through these options.

The screenshot shows the Device Manager web interface. At the top left is the 'Device Manager' logo. The main header is orange and contains '[Summary]' and 'Device Name: DeviceManager', 'Logged in as devicemanager', and a 'Logout' link. On the left is a vertical 'Setup Menu' with options: Summary, Network Settings, Serial Settings, SNMP Settings, Change Password, Update Firmware, Factory Default, Save & Reboot, and System Log. Below the menu is a 'Green IT makes Green Earth' logo. The main content area has two sections: 'Overview' and 'Network Configuration', each with a table of device details.

Overview	
Device Name	DeviceManager
Boot_Loader Version	1.0b
Lemonix Kernel Version	1.0a
Firmware Version	1.0a
MAC Address	00:05:f4:00:aa:a1
System Alive	(0 Days) 00:20:43

Network Configuration	
Line Type	Static IP
IP Address	192.168.0.223
Subnet Mask	255.255.255.0
Gateway	192.168.0.254

Main features of Setup Menu are as follows.

Menu	Descriptions
Summary	View a summary of this device server
Network Settings	Configure network connection settings.
Serial Settings	Configure detailed operation environment for serial communication.
SNMP Settings	Configure detailed operation environment for SNMP.
Change Password	Change ID and password for both Web and Telnet interface.
Update Firmware	Update Eddy' s firmware.
Factory Default	Restore all the factory default settings.
Save & Reboot	Save the configurations and reboot this device server
System Log	View of the device server' s system log information

Network Settings

Configure general network environment and network management. After changing values, you need to click 'Submit' button. Then you will see the same page with modified values. Please note that you have to 'Save & Reboot' in order to see these changes in effect. Changes will be discarded if you do not save current settings.

Device Manager

[Network Settings]

Device Name: DeviceManager
 Logged in as devicemanager
[Logout](#)

Setup Menu

- Summary
- Network Settings**
- Serial Settings
- SNMP Settings
- Change Password
- Update Firmware
- Factory Default
- Save & Reboot
- System Log

WAN Configuration

Device Name	<input type="text" value="DeviceManager"/>	Help
Line Type	<input type="text" value="Static IP"/>	Help
IP Address	<input type="text" value="192.168.0.223"/>	Help
Subnet Mask	<input type="text" value="255.255.255.0"/>	Help
Gateway	<input type="text" value="192.168.0.254"/>	Help
DNS	<input type="text" value="168.126.63.1"/>	Help

LAN Configuration

DHCP Server	<input type="text" value="Enable"/>	Help
IP Address	<input type="text" value="10.10.1.1"/>	
Subnet Mask	<input type="text" value="255.255.255.0"/>	
Lease Start Address	<input type="text" value="10.10.1.2"/>	
Lease End Address	<input type="text" value="10.10.1.30"/>	
Lease Time	<input type="text" value="180"/> min	

Network Service Configuration

PortView IP / Port	<input type="text" value="0.0.0.0"/> / <input type="text" value="4000"/>	Help
Telnet Service	<input type="text" value="Enable"/>	Help
FTP Service	<input type="text" value="Enable"/>	Help
WEB Service	<input type="text" value="Enable"/>	Help
SSH Service	<input type="text" value="Disable"/>	Help

Main features for WAN Configuration is as follows.

Menu	Default	Descriptions
Device Name	DeviceManager	Name of the current device
Line Type	Static IP	IP obtaining method for this device server' s network connection.
IP Address	192.168.0.223	Current IP address of this device server is assigned to. (When line type is Static IP, manually enter an appropriate IP address. When line type is DHCP, current IP is displayed, but it is not editable.)
Subnet Mask	255.255.255.0	Current subnet mask of this device server is assigned to. (When line type is Static IP, manually enter an appropriate subnet mask. When line type is DHCP, current subnet mask is displayed, but it is not editable.)
Gateway	192.168.0.254	Current default gateway of this device server is assigned to (When line type is Static IP, manually enter an appropriate default gateway. When line type is DHCP, current default gateway is displayed, but it is not editable.)..
DNS	168.126.63.1	Domain Name Service IP address

Main features for LAN Configuration is as follows.

Menu	Default	Descriptions
DHCP Server	Enable	Enable or disable DHCP server.
IP Address	10.10.1.1	Current IP address for LAN is assigned to.
Subnet Mask	255.255.255.0	Current subnet mask for LAN is assigned to.
Lease Start Address	10.10.1.2	If DHCP server is enabled, start address of the DHCP scope for leasing.

Lease End Address	10.10.1.30	If DHCP server is enabled, end address of the DHCP scope for leasing.
Lease Time	180	DHCP lease time.

Main features for Network Service Configuration are as follows.

Menu	Default	Descriptions
PortView IP / Port	0.0.0.0 / 4000	Set the IP address and the port number of the PC where Portview is installed. For more information on Portview, please refer to the Portview User Manual. If IP is set to 0.0.0.0, this feature is disabled
DDNS (Userna me/ Password)	203.32.117. 1	Register DDNS server' s IP address for DDNS service. DDNS service used in this device server is supported by http://ddns.nu default ID is "admin" and default password is "1234" if you want to use this ,you should register your own in http://ddns.nu
Telnet Service	Enable	Enable or disable Telnet service. If disabled, you cannot connect to this device server via Telnet.
FTP Service	Enable	Enable or disable FTP service. If disabled, you cannot connect to this device server via FTP.
WEB Service	Enable	Enable or disable Web service. If disabled, you cannot connect to this device server via Web.
SSH Service	Disable	Enable or disable Secure Shell service.

Serial Settings

You can set the communication and operation environment for the serial port. After changing values, you need to click 'Submit' button. Then you will see the same page with modified values. Please note that you have to 'Save & Reboot' in order to see these changes in effect. Changes will be discarded if you do not save current settings.

It is possible to change serial settings page for the corresponding serial port selecting serial port number from 1 to 16 on the bottom of the page.

The screenshot shows the 'Serial Settings' page for 'Serial Port 1' in the Device Manager interface. The page is titled '[Serial Settings]' and shows the user is logged in as 'devicemanager'. The left sidebar contains a 'Setup Menu' with options like Summary, Network Settings, Serial Settings, SNMP Settings, Change Password, Update Firmware, Factory Default, Save & Reboot, and System Log. The main content area is a form for 'Serial Port 1' with the following fields:

Operation Mode	COM Redirect	Help
Interface	RS-232	Termination: Disable Help
Local Socket Port	4001	Help
Port Alias	Port-01	Help
Com Specification	Baud: 9600 bps Data: 8 bits Stop: 1 bit Parity: None	Help
Flow Control	None	Help
Device Type	Data Only	Help
Remote IP Address / Port	0.0.0.0 / 4000	Help
KeepAlive Check Time	0 sec	Help
Latency Time	0 msec	Help
Trigger Level / FIFO Size	Tx: Auto Rx: Auto FIFO: 128 bytes	Help
Port Login	Disable User: none Password: none	Help

Serial Port Number : (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16)

Buttons: Submit, Cancel

Menu	Default	Descriptions
Operation Mode	COM	<p>Select the operation protocol, which the serial port would use.</p> <p>Disable Do not use this port.</p> <p>COM Use the serial port of the device server as the COM ports of Windows 2000/XP/2003/Vista operated PC.</p> <p>TCP Server This device server works as a socket server, waiting for the client connection on the network. Socket number for awaiting connections can be set in 'Local socket port' field. All data between the socket and the serial port is transferred untouched after the socket connection is established.</p> <p>TCP Client This device server acts as a socket client in this mode. It tries to connect to the server IP address and the socket number assigned when a certain server waits for connection on the network. All data between the socket and the serial port is transferred untouched after the socket connection is established.</p> <p>TCP Broadcast This device server works as a server, accepting up to 5 simultaneous connections from socket clients. Data transmitted from this device server is broadcast to each socket client.</p> <p>TCP Multiplex This device server works as a server, accepting up to 5</p>

Menu	Default	Descriptions
		<p>simultaneous connections from socket clients. The difference between TCP Broadcast and TCP Multiplex is that Multiplex allows each socket to communicate exclusively. That is, serial data in response are only transferred to the sender socket.</p> <p>UDP Server This device server works as a UDP server, waiting for UDP connection from the client on the network. Socket number for awaiting connections can be set in 'Local socket port' field. Once a UDP packet is received to the socket that waits for the connection, the data is transmitted to the serial port. The data input from the serial port is put into UDP packets, which eventually are sent to the client.</p> <p>UDP Client When the data is input to the serial port, UDP packets are sent using the preset IP address and the socket number of the server.</p> <p>Pair_Master/ Pair_Slave It extends serial cable between DTE and DCE to network and makes it to be used with no restriction on distance. For this mode, two Serial Server devices are needed and each one should be set in Pair_master and Pair_Slave mode. Signal line between DTE and provided. (no DCD, RI)</p>
Interface	RS232	<p>Set the serial port' s interface. You can choose from RS232, RS422, RS485 (No-Echo) and RS485(Echo).</p>
Local Socket	4001	<p>Set the socket number for the port. TCP server and UDP server operation mode makes use of this port for awaiting</p>

Menu	Default	Descriptions
Port		network socket connections.
Port Alias	Port1	Port alias name for convenience. 16 Characters at maximum.
Baud Rate	9600 bps	Set communication speed. (Options: 150, 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400, 460800, 921600 bps)
Data Bits	8	Set the number of bits in each character size. (Options: 5, 6, 7, 8)
Stop Bits	1	Set the number of stop bits. (Options: 1, 2)
Parity	None	Set parity bit check scheme. (Options: None, Odd, Even)
Flow Control	None	Set the flow control scheme. (Options: None, Xon/Xoff, RTS/CTS)
Device Type	DataOnly	Set the signal line checking method for the device to be connected to the given serial port. If the mode is set to Data Only, only Txd, Rxd, and Gnd signal lines are used in inter-device communication. If the mode is set to Modem Signals, all modem signals except RI (Ring Indicator) are asserted, tested, and used in communication. (Options: Data Only, Modem Signals)
Remote IP Address / Port	0.0.0.0 / 4000	When the Operation Mode is TCP Client, UDP Client or pair_mater, pair_slave, set the IP address and the socket number to connect to.
Keepalive Check Time	0	After a certain amount of time passes without any communication after the socket connection between the given serial port and the server is established, automatically disconnect the socket connection. Valid from 0 to 32767 sec. For example, if the operation mode is set to TCP Server and Alive Check Time is configured to 10, TCP Server will listen for the client's connection and eventually

Menu	Default	Descriptions
		<p>establish a connection. Since the check time is 10 seconds, the server will wait for 10 seconds until the client connected to it sends any packet. If there is no data for 10 seconds, server will quit the connection and return to the listening state. This option is helpful in preventing communication obstacles that occur when either the device server or the client quits unexpectedly (i.e. Sudden black out, reboot, LAN cable cut, etc.). In these cases, the other part of communication might not recognize the failure of its partner. Such misunderstanding can cause communication errors.</p> <p>If the value is set to 0, this function is disabled. Once connected socket will be retained until explicitly disconnected.</p> <p>(Only applies to TCP Client, TCP Server, TCP Broadcast, and TCP Multiplex operation modes.)</p>
Latency Time	0	<p>This needs to be set when consecutive data from the given serial port needs to be transmitted to socket at once.</p> <p>For example, if 100 bytes of character string are to be transmitted from the serial device to a server through this device server, bypass is set to 0 for the latency time. Although it provides immediate sending through this device server, the server could be received a lot parts of divided packets. If the latency time is not 0, this device server will wait for the time and check new data. If there is new data, the device server repeatedly wait for the time. Otherwise, this device server will transfer the buffered data, but it could not run in real time.</p>
Trigger Level TX	Auto	<p>When there is empty space for data less than setting value in serial port's output buffer, it sends the data to output buffer.</p> <p>(Option: Auto, 1,2,4,8,16,32,64,96,128)</p>

Menu	Default	Descriptions
		In Auto setting, it adjusts automatically depending on the communication speed. In general, a set value is small for high speed communication while large for low speed communication.
Trigger Level Rx	Auto	<p>When there is empty space for data more than setting value in serial port' s input buffer, it reads the data from input buffer.</p> <p>(Option: Auto, 1,2,4,8,16,32,64,96,128)</p> <p>In Auto setting, it adjusts automatically depending on the communication speed. In general, a set value is large for high speed communication while small for low speed communication.</p>
FIFO Size	128	<p>Linking with Trigger Level Tx, it sets the output size to FIFO.</p> <p>(Option: 1 ~ 128)</p>
Termination	Disable	If serial port' s interface is RS422/485, it is possible to register whether termination resistor is installed or not.
Port Login	Disable	<p>When the Operation Mode is set to TCP Server, ask for the username and password when the client tries to connect</p> <p>(Options: Enable, Disable)</p>
Passive Username	admin	When the Operation Mode is set to TCP Server, set the username to ask for. 16 Characters at maximum.
Passive Password	1234	When the Operation Mode is set as TCP Server, set the password to ask for. 16 Characters at maximum.

SNMP Settings

You can set the communication and operation environment for the SNMP Agent. After changing values, you need to click ‘Submit’ button. Then you will see the same page with modified values. Please note that you have to ‘Save & Reboot’ in order to see these changes in effect. Changes will be discarded if you do not save current settings.

The screenshot shows the Device Manager web interface for the [SNMP Setting] page. The page title is [SNMP Setting] and the user is logged in as devicemanager. The main content area is titled "SNMP Agnet Configuration" and contains the following settings:

SNMP Agnet Configuration	
SNMP v1/v2/v3 Agent	Disable Help
V1/2 Attribution	ReadOnly Help
V3 Attribution	ReadOnly Help
V3 Username / Password	DeviceManager / administrator Help
TRAP IP / Port	0.0.0.0 / 162 Help
System reset notification	Enable Help
Port connect notification	Disable Help
Port disconnect notification	Disable Help

At the bottom of the configuration area, there are two buttons: **Submit** and **Cancel**.

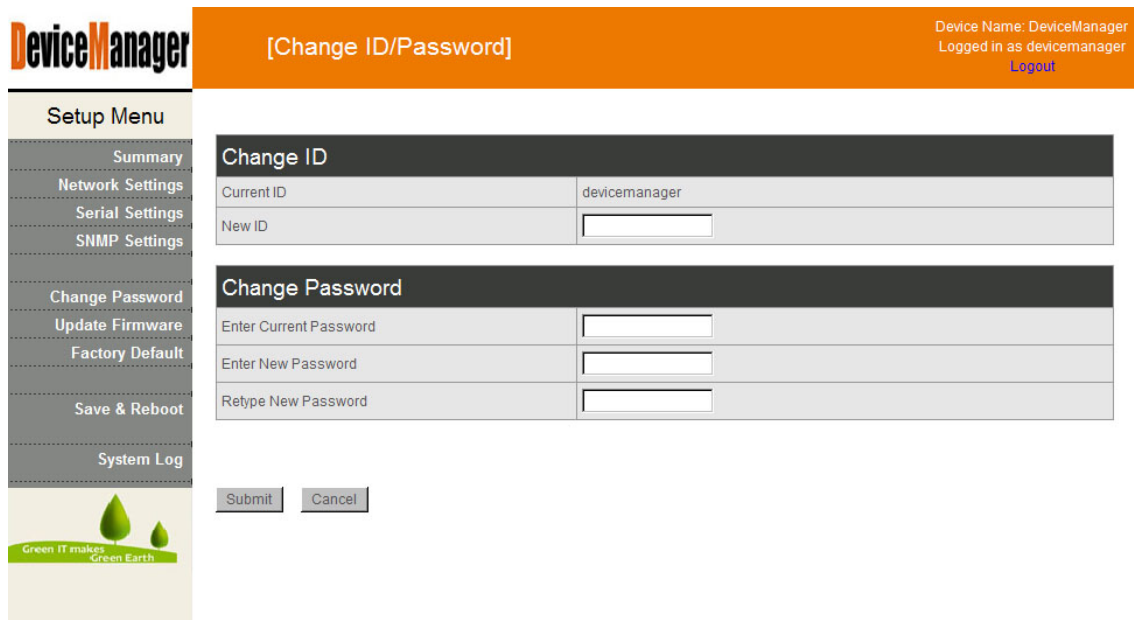
In order to use the SNMP Agent, SNMP v1/v2/v3 Agent become enabled and pushes the [Submit] button.


Feature	Default	Descriptions
SNMP v1/v2/v3 Agent	Disable	Enable or disable Simple Network Management Protocol (SNMP) support. (Options : Disable/Enable)
V1/2 Attribution	ReadOnly	SNMP V1/2 Attributes can read and write by SNMP Agent. In order to read attributes only, change the feature to "ReadOnly". In order to read and write attributes, change the feature to "ReadWrite". (Options : ReadOnly/ReadWrite)
V3 Attribution	ReadOnly	SNMP V3 Attributes can read and write by SNMP Agent. In order to read attributes only, change the feature to "ReadOnly". In order to read and write attributes, change the feature to "ReadWrite". (Options : ReadOnly/ReadWrite)
V3 Username/ Password	DeviceManager/administrator	Configure the Username and the password when use SNMP V3. The Password is at least 8 character string
TRAP IP/ Port	0.0.0.0/162	Configure the server IP address and Port which receive the TRAP information.
System reset notification	Enable	If Enable is selected, inform the " System reset info. " (Option : Enable, Disable)
Port connect notification	Disable	If Enable is selected, inform the " Serial Port opened info. " (Option : Enable, Disable)
Port disconnect notification	Disable	If Enable is selected, inform the " Serial Port Closed info. " (Option : Enable, Disable)

Change Password

Change Web/Telnet access username and password. After changing values, you need to click ‘Submit’ button. Then you will see the same page with modified values. Please note that you have to ‘Save & Reboot’ in order to see these changes in effect. Changes will be discarded if you do not save current settings.

- ◆ Default user id : admin
- ◆ Default password: 1234





[Change ID/Password]

Device Name: DeviceManager
 Logged in as devicemanager
[Logout](#)

Setup Menu


- Summary
- Network Settings
- Serial Settings
- SNMP Settings
- Change Password**
- Update Firmware
- Factory Default
- Save & Reboot
- System Log

Change ID

Current ID	devicemanager
New ID	<input type="text"/>

Change Password

Enter Current Password	<input type="password"/>
Enter New Password	<input type="password"/>
Retype New Password	<input type="password"/>



Update Firmware

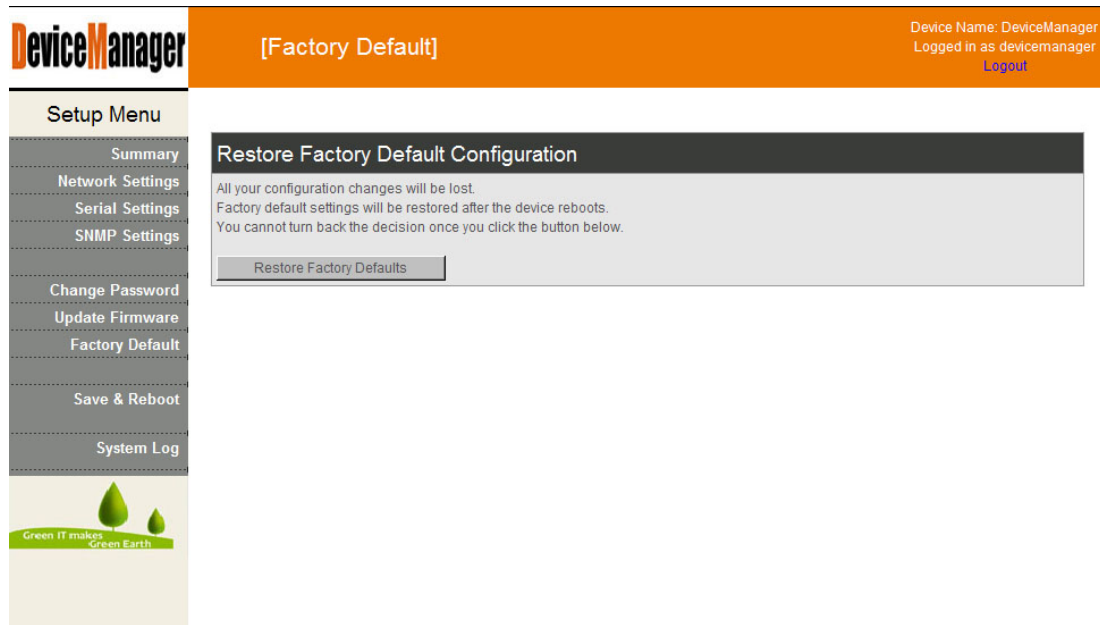
Firmware is an application embedded in Flash memory of this device server. Set the location of the firmware file to update, using the 'Browse...' button. The selected firmware will be transferred to this device manager when you click 'Start Update'. After the transmission is complete, This device manger will be automatically restarted to operate with the new firmware.

Factory Default

Restore all the configuration parameters to the factory default values. Clicking on ‘Restore Factory Defaults’ button will delete all current settings and restore settings to the initial status. This device server will automatically reboot.

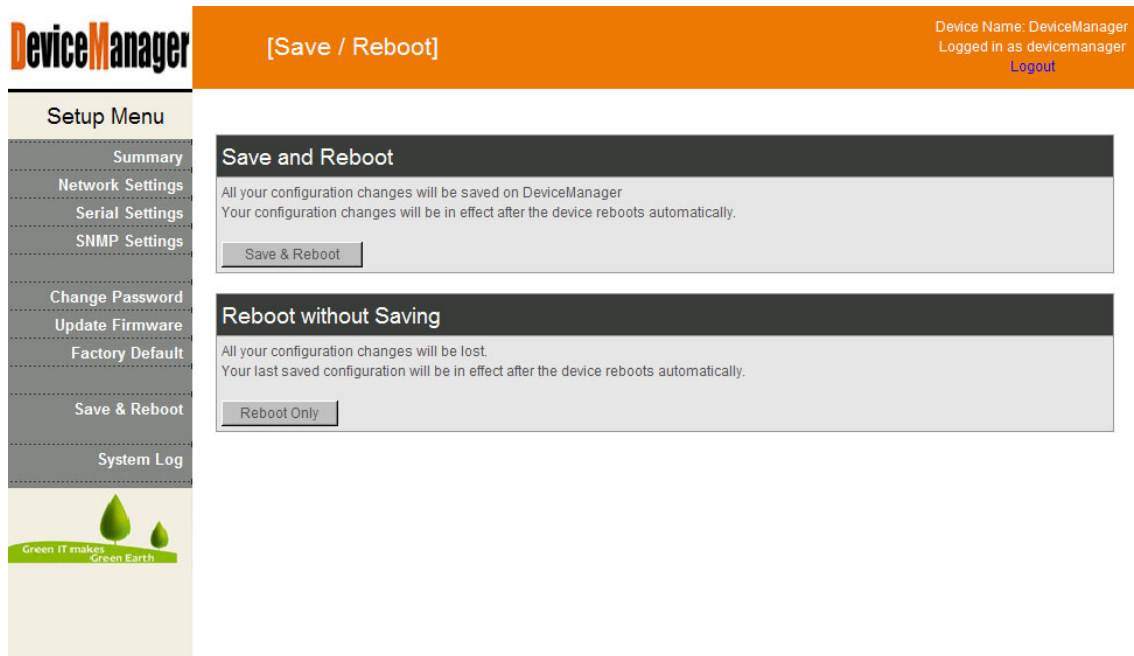
You cannot turn back the decision once you select this option.

◆ The factory default LAN IP Address: 192.168.0.223



Save & Reboot

This option saves changes to the Flash memory and restarts the system to let the changes to take place in the operation.



Main features for Save & Reboot are as follows

Menu	Descriptions
Save & Reboot	'Save & Reboot' reboots this device server after saving changes to Flash memory.
Reboot Only	'Reboot Only' option just reboots this device manager without saving changes. This option can be used to rollback the changes you have mistakenly made.

System Log

You can check this device server' s system log information.

It records and gives you a view of system' s start and ending time, each port' s connection and ending time and other environmental setting time.

It shows an accurate time when power is supplied to RTC in this device server. In case of no power supported, it shows default time “2000-1-1 00:00:00” .

Device Manager

[System Log]

Device Name: DeviceManager
 Logged in as devicemanager
[Logout](#)

[2000-01-01 00:03:22]	Set Save Configuration
[2000-01-01 00:03:21]	Set Port Configuration
[2000-01-01 00:02:11]	(1)COM Redirector Disconnect
[2000-01-01 00:02:11]	(1)COM Redirector Connected
[2000-01-01 00:02:00]	Start up.
[2000-01-01 00:01:00]	Warm Booting
[2000-01-01 00:00:00]	Start up.

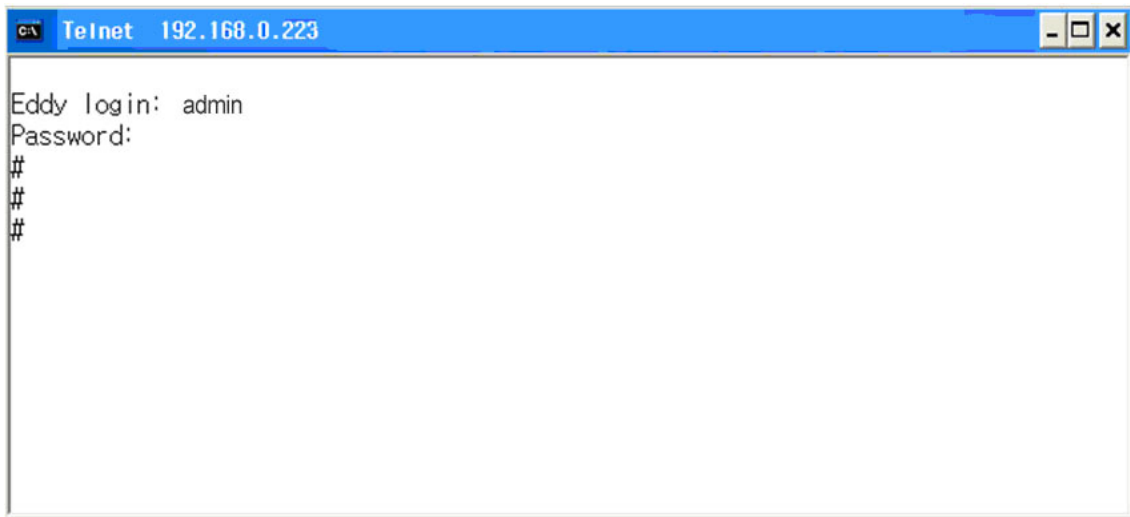
Green IT makes Green Earth

Chapter 6. Setting via Telnet

Connection

If you open telnet client program and enter this device server' s IP address, it asks to enter username and password. Log in with the default username and password given below. If you change username and password on web(or telnet), you should also use the changed one on telnet (or web).

- ◆ Default Username: admin
- ◆ Default Password: 1234



[def] command – Check or change this device server' s setting

[def help] command - confirm the instruction of def command

After a change in setting, it is possible to confirm the change via [def view]

However, only via [def save], you can save the new input, and the new input is applicable after restarting the device server.

Basic Setup Command

def command for environmental setting.

Command	Description
def view	Confirm all the information related to this device server
def view wan	Confirm WAN network setting
def view management	Confirm management setting
def view serial	Confirm serial port information
def help	Command list and help

Network Command

Command for general network environment and management.

Command	Default	Explanation
def mac <Mac Address>	00:05:f4:00:20: 57	Register this device manager' s MAC address.
def line [ip/dhcp]	Static IP	Set up IP acquisition method for network connection
def ip <IP Address>	192.168.0.223	Express current IP address In case of Line Type being Static IP, enter IP address directly. If Line Type is DHCP, current IP shown. (Impossible to change)
def mask <Subnet mask>	255.255.255.0	Show current subnet mask address If Line Type is Static IP, enter subnet mask address directly. If Line Type is DHCP. Current subnet mask address shown. (Impossible to change)
def gateway <Gateway address>	192.168.0.1	Show current Gateway address If Line Type is Static IP, enter gateway address directly. If Line Type is DHCP. Current gateway address shown. (Impossible to change)

def dns <IP Address>	168.126.63.1	Set up IP address of Domain Name Service
def portviewip <IP address>	0.0.0.0	Set up IP address of PC in which PortView installed If IP is 0.0.0.0, PortView becomes inert. (For details, please refer to PortView User manual in the DeviceServer Utility & Documents CD)
def portviewport <Port number>	4000	Set up socket number of PC in which PortView is installed
def ftp [enable/ disable]	Enable	If this device server' s FTP is set disabled, it does not allow connection to ftp.
def telnet [enable/ disable]	Enable	If this device server' s telnet is set disabled, it does not allow connection to telnet.
def web [enable/ disable]	Enable	If this device server' s web is set disabled, it does not allow connection to browser.
def ssh [enable/ disable]	Disable	If this device server' s SSH is set enable, it allows connection to ssh.
def ddns [IP Address]	203.32.117.1	If DDNS service is set to 0.0.0.0, it becomes disabled.
def ddnsuser [username]	devicemanager	Set up username for DDNS server. .
def ddnspass [password]	99999999	Set up password for DDNS server.
def name [device server name]	Product name	Designate the device' s name. (Max 32 bytes)
def snmp [enable/ disable]	Disable	Enable/Disable SNMP (Simple Network Management Protocol) function – MIB-II (RFC 1213): System, Interface, IP, ICMP, TCP, UDP – MIB-I (RFC 1317): Serial Interface
def v1readwrite	Disable	Enable/Disable read and write function for SNMP

[enable, disable]		V1/V2 Attribute data Enable (Read/Write) Disable (Readonly)
def v3readwrite [enable, disable]	Disable	Enable/Disable read and write function for SNMP V3 Attribute data Enable (Read/Write) Disable (Readonly)
def v3username [string]	devicemanager	Set up username for SNMP V3.
def v3password [string]	none	Set up password for SNMP V3.
def trapip [address]	0.0.0.0	Set up IP address of server TRAP data will be sent.
def trapoprt [Socket No.]	162	Set up port number of server that TRAP data will be sent.
def trap_reset [enable, disable]	Enable	Notify reset of system
def trap_connect [enable, disable]	Disable	Notify connection to serial port.
def trap_disconnect [enable, disable]	Disable	Notify disconnection to serial port.

Serial Command

Set the serial port' s communication and operating environment. For more details, please refer to chapter 5.

Command	Default	Explanation
def port x protocol [disable, com_redirect, tcp_server,	com	Select operating protocol to be used in serial port.

Command	Default	Explanation
Tcp_client, tcp_broadcast, Tcp_multiplex, udp_server, udp_client, pair_master, pair_slave]		
def port x interface [rs232, rs422 rs485ne, rs485e]	RS232, RS422	Set up serial interface
def port x socket <port number>	4001	Assign socket number . It is used to wait for network socket connection in Com_redirect, TCP Server, TCP Multiplex, TCP Broadcast, UDP Server, Pair_Slave mode.
def port x name <name>	Port 1	Assign name to port. (Max. 16 bytes)
def port x speed [150/300/600/120 0/2400/4800/9600 /19200/38400/576 00/115200/23040 0/460800/921600]	9600bps	Set up communication speed.
def port x data [5 / 6 / 7 / 8]	8	Set up the number of bit.
def port x stop [1 / 2]	1	Set up the number of stop bit
def port x parity [none/odd/even]	none	Set up parity check method
def port x flow [none/xon/rts]	none	Set up flow control method
def port x signal	data	Set up signal check of device connects to serial port

Command	Default	Explanation
[data/modem]		
def port x remote <IP address>	0.0.0.0	Assign IP address of server that will be connected to in TCP Client, UDP Client, Pair_Master mode.
def port 1 remoteport <socket number>	4000	Assign port number of server that will be connected to in TCP Client, UDP Client, Pair_Master mode.
def port x keepalive <0 ~ 65535>	0	Automatically disable socket connection if there was no communication for assigned period.
def port x latency <msec>	0	Set it when a user wants to transmit data from the serial port at a time.
def port x txtrigger [auto, 1, 2, 4, 8, 16, 32, 64, 96, 128]		Set up txtrigger of each port.
def port x rxtrigger [auto, 1, 2, 4, 8, 16, 32, 64, 96, 128]		Set up rxtrigger of each port.
def port x fifosize <1 ~ 128>		Set up fifosize of each port.
Def port x termination [Enable, Disable]	Disable	Set termination resistor installation method if serial port' s interface is RS422 or RS485
def port x login <Enable/Disable>	Disable	Check username and password when a client connects to server in TCP Server mode.
def port x loginname <username>	None	Set up username when a client connects to server in TCP Server mode. (Max. 8 bytes)
def port x loginpass <password>	None	Set up password when a client connects to server in TCP Server mode. (Max. 8 bytes)

User Setup

Command	Default	Explanation
def username <username>	devicemanage r	Set up username for use in Web, telnet, ftp (Max. 16 byte)
def password <password>	99999999	Set up password for use in Web, telnet, ftp (Max. 16 byte)

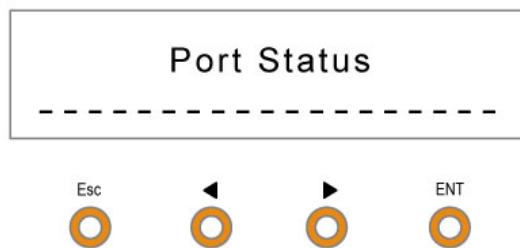
System Command

Command	Explanation
def default	Delete the current setting and get back the default. To save the setting, the system should be rebooted.
def save	Save the current settings. To save the setting, the system should be rebooted.
Reboot	Restart this device server

Chapter 7. Setting via LCD

LCD on the front of the product enables this device server's operating environment setting and interface testing. LCD displays each port's operating status by default. Using key next to LCD, a user can set up device and test interface.

LCD and Key Control



Graphic LCD is 16 Character * 2 Line, and 4 keys enable Device Server's operating environment setting.

The followings are each key's operating function.

Key	Function 1	Function 2
ESC	Go back to upper menu	
Enter	Choose the current value and move to next menu.	
<<	Previous menu / List	If changed value is a number, it changes to the next value. Ex.) 192.168.0.111 → 192.168.1.111
>>	Next menu / List	If changed value is a number, it moves to the next space. Ex.) 192.168.0.111 → 192.168.0.111

Main Menu

The followings are main menu.

- Network Setup : Change device server' s network environment setting.
- Port Setup : Change each serial port' s operating environment setting.
- Status : Check device server' s version information and operating status.
- System : Perform firmware upgrade and reset.
- Verification : Verify each interface' s HW.

Network Setup

Change device server' s network environment setting.

To select Network Setup, a user should press 'ESC' until 'Main Menu' is displayed on LCD. If 'Main Menu' is visible, click '<<' or '>>' until 'Network Setup' is displayed. Then, pressing 'Enter' leads to details setting screen.

Clicking 'ESC' always leads to upper menu, and if there is any change made by user, it asks whether to save in flash memory.

For details of each menu, please refer to Ch. 5 and Ch. 6.

Menu	Option	Default	Description
Network line	Static IP, DCHP Client	Static IP	<<, >> : Select Option Enter : Temporarily save current option and move to next menu.
IP Address		192.168.0.22 3	<< : Increase the number which cursor is at.
Subnet Mask		255.255.255. 0	>> : Move the cursor to next space.
Gateway		192.168.0.25 4	Enter : Temporarily save current option and move to next menu.
FTP Service	Enable, Disable	Enable	<<, >> : Select Option Enter : Temporarily save current option and move to next menu.
Telnet Service	Enable, Disable	Enable	
SSH Service	Enable, Disable	Disable	
WEB Service	Enable, Disable	Enable	

PortView Address		0.0.0.0	<< : Increase the number which cursor is at. >> : Move the cursor to next space. Enter : Temporarily save current option and move to next menu.
---------------------	--	---------	--

Port Setup

Change each serial port' s operating environment setting.

To select port setup, a user should press 'ESC' until 'Main Menu' is displayed on LCD. If 'Main Menu' is visible, click '<<' or '>>' until 'Port Setup' is displayed. Then, pressing 'Enter' leads to details setting screen.

Clicking 'ESC' always leads to upper menu, and if there is any change made by user, it asks whether to save in flash memory.

For details of each menu, please refer to Ch. 5 and Ch. 6.

Menu	Option	Default	Description
Protocol	Disable Com_redirector TCP_Server TCP_Client TCP_Broadcast TCP_Multiplex UDP_Server UDP_Client Pair_Master Pair_Slave	Com_Redirecto r	<<, >> : Select Option Enter : Temporarily save current option and move to next menu.
Socket No.	4001 ~ 4016	4000 +port number	<< : Increase the number which cursor is at. >> : Move the cursor to next space. Enter : Temporarily save current option and move to next menu.

Interface	RS232, RS422 RS485 (NE) RS485 (E)	RS232	<<, >> : Select Option Enter : Temporarily save current option and move to next menu.
Device Type	Data Only, Modem	Data Only	
BaudRate	150 ~ 921600 bps	9600	
Parity	None, Odd, Even	None	
Data Bits	5 ~ 8	8	
Stop Bits	1, 2	1	
Latency_time	0 ~ 65535	0	<< : Increase the number which cursor is at. >> : Move the cursor to next space. Enter : Temporarily save current option and move to next menu.
Keepalive	0 ~ 65535	0	
Remote IP		0.0.0.0	
Remote Port		4000	
Termination	Enable, Disable	Disable	<<, >> : Select Option Enter : Temporarily save current option and move to next menu.

Status

Check device server's version information and operating status.

To select status, a user should press 'ESC' until 'Main Menu' is displayed on LCD. If 'Main Menu' is visible, click '<<' or '>>' until 'status' is displayed. Then, pressing 'Enter' leads to details setting screen.

Menu	Display	Description
Version	B1.0b, O1.0a, F1.0a	B : Boot_loader Version O : OS Version F : Firmware Version
Port Status	- - - - -	If serial port is in communication, port

	- - - -	number is shown on its position. Since it is expressed in one digit, 10~16 port is shown as 0~6 without the first digit.
--	---------	---

System

Device server update, initialization, port reset.

To select system, a user should press 'ESC' until 'Main Menu' is displayed on LCD. If 'Main Menu' is visible, click '<<' or '>>' until 'System' is displayed. Then, pressing 'Enter' leads to details setting screen.

Clicking 'ESC' always leads to upper menu.

Menu	Option	Default	Description
Port Reset	Cancel Yes	Cancel	<<, >> : Select Option Enter: If select cancel, it moves to next menu. If select yes, it executes the selected operation.
Factory Default			
Reboot System			
Firmware Update			

Port Reset

When select 'yes' in port reset, it shows 1~16 port number on LCD and the cursor is at the first one.

P o r t R e s e t															
1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	
6															

Use '<<' , '>>' key to move to the port number which is to be reset and press 'enter' to reset the port.

Factory Default

Use '<<' , '>>' key to select Cancel or Yes. If select 'Yes' and press 'Enter' , device server's setting initializes.

Reboot System

Use '<<' , '>>' key to select Cancel or Yes. If select 'Yes' ' and press 'Enter' , it shows 'Now Rebooting' message and reboots device server.

Firmware update

Upgrade device server' s firmware. (OS, Filesystem)

In order to operate it, a user should have TFTP server and firmware image file in PC. Use '<<' , '>>' key to select Cancel or Yes. If select 'Yes' ' and press 'Enter' , device server' s firmware update process begins . Register firmware name to be updated. Default firmware name is shown as current filesystem firmware name in device server.

```

F i r m w a r e   N a m e
█ s g 1 1 6 1 - f s - 1 0 a . b i n
  
```

Use '>>' key to move the cursor and '<<' key to change line.

If registration of firmware name is done, press 'Enter' and move to input IP address of PC that firmware will be sent to.

```

T F T P   I P   A d d r e s s
█ 1 9 2 . 1 6 8 . 0 0 0 . 0 3
9
  
```

Default IP address is 192.168.0.39. Use '>>' key to move the cursor and '<<' key to change the number. If press 'enter' after changing IP address, device server connects to TFTP in IP address, downloads firmware file and executes update. If update fails, it prints out 'Download Failed' message. In this case, make sure that firmware image name and TFTP server' s IP address are correct. If update is complete normally, reset device server' s power and make new firmware operate.

Verification

Verifies each interface' s HW.

To select verification, a user should press 'ESC' until 'Main Menu' is displayed on

LCD. If 'Main Menu' is visible, click '<<' or '>>' until 'Verification' is displayed. Then, pressing 'Enter' leads to details setting screen. Clicking 'ESC' always leads to upper menu.

Verification execution ends all the programs in device server, so do not forget to restart device server after the test.

Menu	Option	Default	Description
RS232(Loopback)	Cancel Yes	Cancel	<<, >> : Select Option Enter : If select cancel, it moves to next menu. If select yes, it executes the selected operation.
RS232(Signal)			
RS422(Loopback)			
RS485(Loopback)			
Testing WAN Port			
Testing LAN Port			
Testing MMC			
Testing Reset			
Testing Console			
Testing RTC			

RS232 (Loopback)

Change all the serial ports of device server to RS232 and execute Loopback test. For this, RS232 loopback connector should be connected to all the serial ports. If select 'yes' , it starts lookback test and prints out the result on LCD.

```

T e s t I n g ( R S 2 3 2 )
O O O O O O O O O O O O O O O O
```

If there is no problem with the related port, it marks 'O' , otherwise 'X' .

RS232 (Signal)

Change all the serial ports of device server to RS232 and execute signal test. For this, RS232 loopback connector should be connected to all the serial ports. If select 'yes', it starts lookback test and prints out the result on LCD.

```

T e s t I n g ( S I g n a l )
O O O O O O O O O O O O O O O O

```

If there is no problem with the related port, it marks 'O', otherwise 'X'.

RS422 (Loopback)

Change all the serial ports of device server to RS422 and execute Loopback test. For this, RS422 loopback connector should be connected to all the serial ports. If select 'yes', it starts loopback test and prints out the result on LCD.

```

T e s t I n g ( R S 4 2 2 )
O O O O O O O O O O O O O O O O

```

If there is no problem with the related port, it marks 'O', otherwise 'X'.

RS485 (Loopback)

Change all the serial ports of device server to RS485 and execute Loopback test. Since RS485 performs self-loopback, there is no need for additional loopback connector. If select 'yes', it starts lookback test and prints out the result on LCD.

```

T e s t I n g ( R S 4 8 5 )
O O O O O O O O O O O O O O O O

```

If there is no problem with the related port, it marks 'O', otherwise 'X'.

Testing WAN Port

It tests device server's WAN port. For this, WAN port should be connected to network and there should be a PC with IP address of '192.168.0.1' which allows ping test on network. If select 'yes', it attempts Ping to '192.168.0.1' and prints out the result on

LCD.

```
T e s t I n g   W A N   P o r t
                                     OK !
```

If there is no problem, it displays OK, otherwise 'Failed!' .

Testing LAN Port

It tests device server' s LAN port. For this, LAN port should be connected to network and there should be a PC with IP address of '192.168.0.1' which allows ping test on network. If select 'yes' , it attempts Ping to '192.168.0.1' and prints out the result on LCD.

```
T e s t I n g   L A N   P o r t
                                     OK !
```

If there is no problem, it displays OK, otherwise 'Failed!' .

Testing MMC

It tests whether device server' s memory card can read and write. For this, SD card should be inserted into a device server. If select 'yes' , it executes writing and reading data in SD card and prints out the result on LCD.

```
T e s t I n g   M M C
                                     OK !
```

If there is no problem, it displays OK, otherwise 'Failed!' .

Testing Reset

It tests whether device server' s 'Reset' button works or not. If select 'yes' , wait for about 6 seconds to see 'Reset' buttons works. If it works, it prints out the result on LCD.

```
T e s t I n g   R e s e t
                                     OK !
```

If there is no problem, it displays OK, otherwise 'Failed!' .

Testing Console

It tests whether device server' s console port works or not. For this, DB9 loopback connector should be connected to all the console ports. If select 'yes' , it executes loopback test and prints out the result on LCD.

<p>T e s t I n g C o n s o l e</p> <p style="text-align: right;">O K !</p>
--

If there is no problem with the related port, it marks 'O' , otherwise 'X' .

Testing RTC

It tests RTC interface which functions as device server' s clock. If select 'yes' , it sets up the time on RTC, tests reading, and prints out the result on LCD.

<p>T e s t I n g R T C</p> <p style="text-align: right;">O K !</p>
--

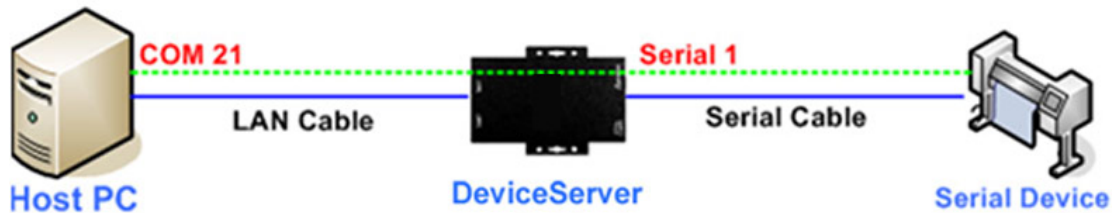
If there is no problem with the related port, it marks 'O' , otherwise 'X' .

Chapter 8. Application

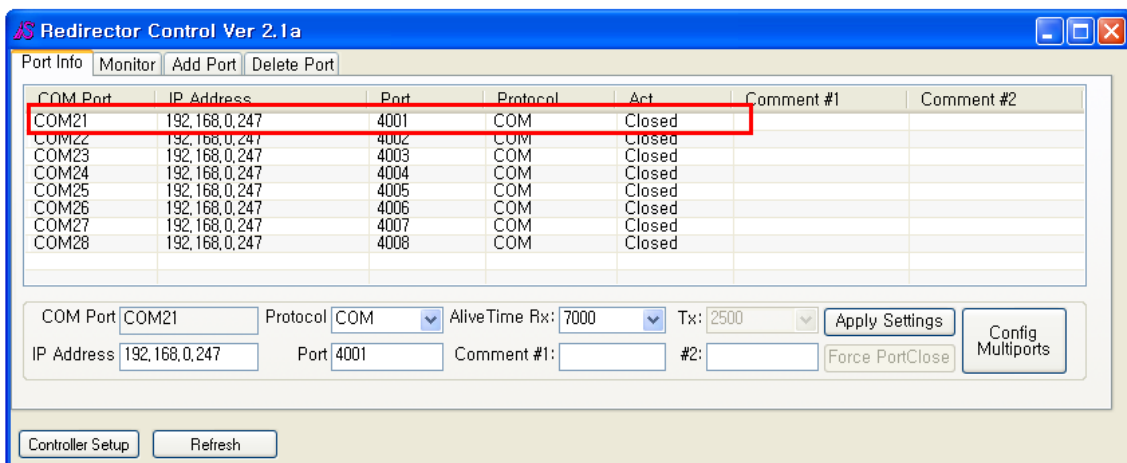
This chapter explains how to set up the frequently used method.

Com Port Redirector Method

Like COM serial port integrated in PC, register this device server's serial port as PC's COM port for use.



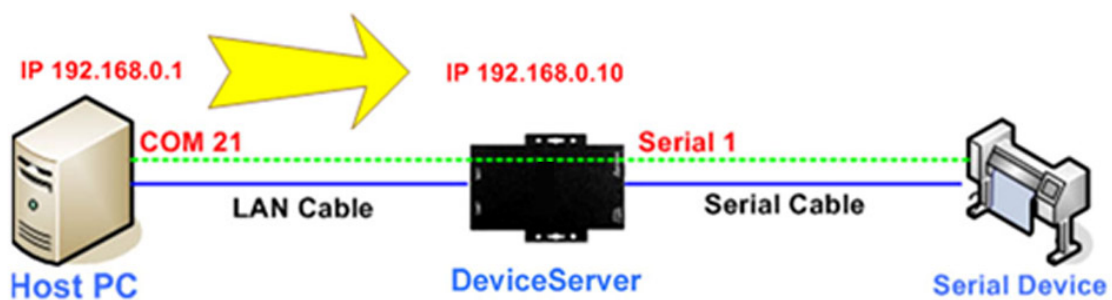
Install Com Port Redirector and do the following. For Redirector installation, please refer to Com Port Redirector manual in CD. The attached image shows 192.168.0.247 as DeviceServer's IP address and it uses the first serial port. As user opens Com21, he can use serial device connected to this DeviceServer.



To cope with PC's Redirector setting, modify setting of the first serial port as described below.

TCP_Server Method (PC → DeviceServer TCP/IP Connection)

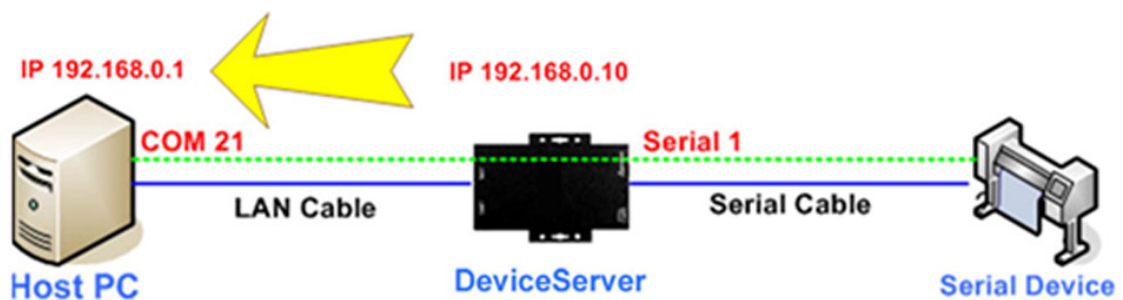
Connect the first serial port of this device server via PC's socket program.



The first port's waiting socket number is 4001 by default, so it should try to connect to the device server's IP address and socket number 4001. As described below, change operation mode to TCP_Server and confirm the waiting socket number. Check communication speed of the connected serial device and set Com specification.

TCP_Client Method (DeviceServer → PC TCP/IP Connection)

Connect from the device server to PC's socket program via TCP/IP



Since it is a connection from Device Server to PC, it requires a change in operation mode to TCP_Client and registration of socket number and IP address. Check communication speed of the connected serial device and set Com specification.


DeviceManager

[Serial Settings]

Device Name: DeviceManager
 Logged in as devicemanager
[Logout](#)

Setup Menu

- Summary
- Network Settings
- Serial Settings
- SNMP Settings
- Change Password
- Update Firmware
- Factory Default
- Save & Reboot
- System Log



Green IT makes Green Earth

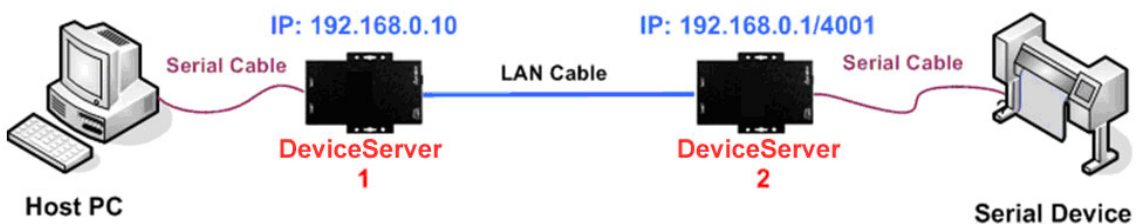
Serial Port 1

Operation Mode	TCP Client Help	
Interface	RS-232	Termination <input type="checkbox"/> Disable Help
Local Socket Port	4001 Help	
Port Alias	Port-01 Help	
Com Specification	Baud 9600 bps	Data 8 bits Stop 1 bit Parity None Help
Flow Control	None Help	
Device Type	Data Only Help	
Remote IP Address / Port	192.168.0.1 / 1234 Help	
KeepAlive Check Time	0 sec Help	
Latency Time	0 msec Help	
Trigger Level / FIFO Size	Tx Auto	Rx Auto FIFO 128 bytes Help
Port Login	Disable User none Password none Help	

Serial Port Number: (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16)

Pair Method (Serial Line to Serial Line)

If the length of cable between PC and serial device is short and it needs an extension, this method of pairing two DeviceServer is suitable.



DeviceServer 1 Setting

In order to carry out master function, set Pari_Master to Operation Mode. Check communication speed of the connected PC and set Com Specification. Then, register Slave to the device server's IP address and port number on Remote IP/Port.

DeviceManager
[Serial Settings]
Device Name: DeviceManager
Logged in as devicemanager
[Logout](#)

Setup Menu

- Summary
- Network Settings
- Serial Settings
- SNMP Settings
- Change Password
- Update Firmware
- Factory Default
- Save & Reboot
- System Log

Green IT makes Green Earth

Serial Port 1

Operation Mode	<input type="text" value="Pair Master"/> Help
Interface	<input type="text" value="RS-232"/> Termination <input type="text" value="Disable"/> Help
Local Socket Port	<input type="text" value="4001"/> Help
Port Alias	<input type="text" value="Port-01"/> Help
Com Specification	Baud <input type="text" value="9600 bps"/> Data <input type="text" value="8 bits"/> Stop <input type="text" value="1 bit"/> Parity <input type="text" value="None"/> Help
Flow Control	<input type="text" value="None"/> Help
Device Type	<input type="text" value="Data Only"/> Help
Remote IP Address / Port	<input type="text" value="192.168.0.1"/> / <input type="text" value="4001"/> Help
KeepAlive Check Time	<input type="text" value="0"/> sec Help
Latency Time	<input type="text" value="0"/> msec Help
Trigger Level / FIFO Size	Tx <input type="text" value="Auto"/> Rx <input type="text" value="Auto"/> FIFO <input type="text" value="128"/> bytes Help
Port Login	<input type="text" value="Disable"/> User <input type="text" value="none"/> Password <input type="text" value="none"/> Help

Serial Port Number : (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16)

DeviceServer 2 Setting

To wait for connection of Master, set Pari_Slave to Operation Mode and register socket number on local Socket Port.

DeviceManager
[Serial Settings]
Device Name: DeviceManager
Logged in as devicemanager
[Logout](#)

Setup Menu

- Summary
- Network Settings
- Serial Settings
- SNMP Settings
- Change Password
- Update Firmware
- Factory Default
- Save & Reboot
- System Log

Green IT makes Green Earth

Serial Port 1

Operation Mode	<input type="text" value="Pair Slave"/> Help
Interface	<input type="text" value="RS-232"/> Termination <input type="text" value="Disable"/> Help
Local Socket Port	<input type="text" value="4001"/> Help
Port Alias	<input type="text" value="Port-01"/> Help
Com Specification	Baud <input type="text" value="9600 bps"/> Data <input type="text" value="8 bits"/> Stop <input type="text" value="1 bit"/> Parity <input type="text" value="None"/> Help
Flow Control	<input type="text" value="None"/> Help
Device Type	<input type="text" value="Data Only"/> Help
Remote IP Address / Port	<input type="text" value="0.0.0.0"/> / <input type="text" value="4000"/> Help
KeepAlive Check Time	<input type="text" value="0"/> sec Help
Latency Time	<input type="text" value="0"/> msec Help
Trigger Level / FIFO Size	Tx <input type="text" value="Auto"/> Rx <input type="text" value="Auto"/> FIFO <input type="text" value="128"/> bytes Help
Port Login	<input type="text" value="Disable"/> User <input type="text" value="none"/> Password <input type="text" value="none"/> Help

Serial Port Number : (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16)

Chapter 9. Appendix

Troubleshooting

This section presents troubleshooting for various problems that may occur while using the system. This section deals with the problems covering the following categories:

Installation Problem

If you cannot access a device connected via this device server, it is better to check the network connection and cables first.

- Check if all cables are correctly connected. (Ethernet or DB-9 serial cables)
- If the LED status is abnormal, it may be caused by a problem from 10baseT or 100baseT cable, or a hub port. The reconnection with another cable or hub port or the connection of another device to the cable may help you analyze the cause of the problem.
- Check if all IP addresses and port numbers are correctly entered.
- If a hub is being used, check if hub ports are normally working by connecting the DeviceServer to another port.

Network setting problem

- If TCP/IP is used, check if the PC and the device server exist on the same network. (Check the connection with the device server by running the ping command on the PC). The IP address of the device server should exist on the same logical network as the host computer. For example, if the IP address of the PC is 192.189.207.3 and the subnet mask is set to 255.255.255.0, the IP address of the device server should be set to 192.189.207.x (x is an integer between 1 to 254). In addition, check if the address of the default gateway is

correctly assigned.

- If the IP address the device server is automatically assigned through a DHCP server, the device server IP address may be changed. A fixed IP address is assigned when the DHCP server assigns a permanent IP address to this device server or the fixed IP address assignment is set in this device server.
- A problem may occur from an incorrect or duplicate IP address. Check if the IP address is assigned to the device server correctly and if the IP address is assigned to another device on the network. In TCP/IP connection, IP address confliction is the most frequent problem. If the IP address is incorrect, it may be the problem of the device connection.
- Check if the PC and the device server are using the same subnet mask. (For example, if the device server uses the subnet mask of 255.255.255.0, the computer should use the same subnet mask). In addition, check if the default gateway is set correctly.
- If an incorrect IP address is assigned, find the DHCP server and check if the DHCP server assigned incorrect IP address to this device server.

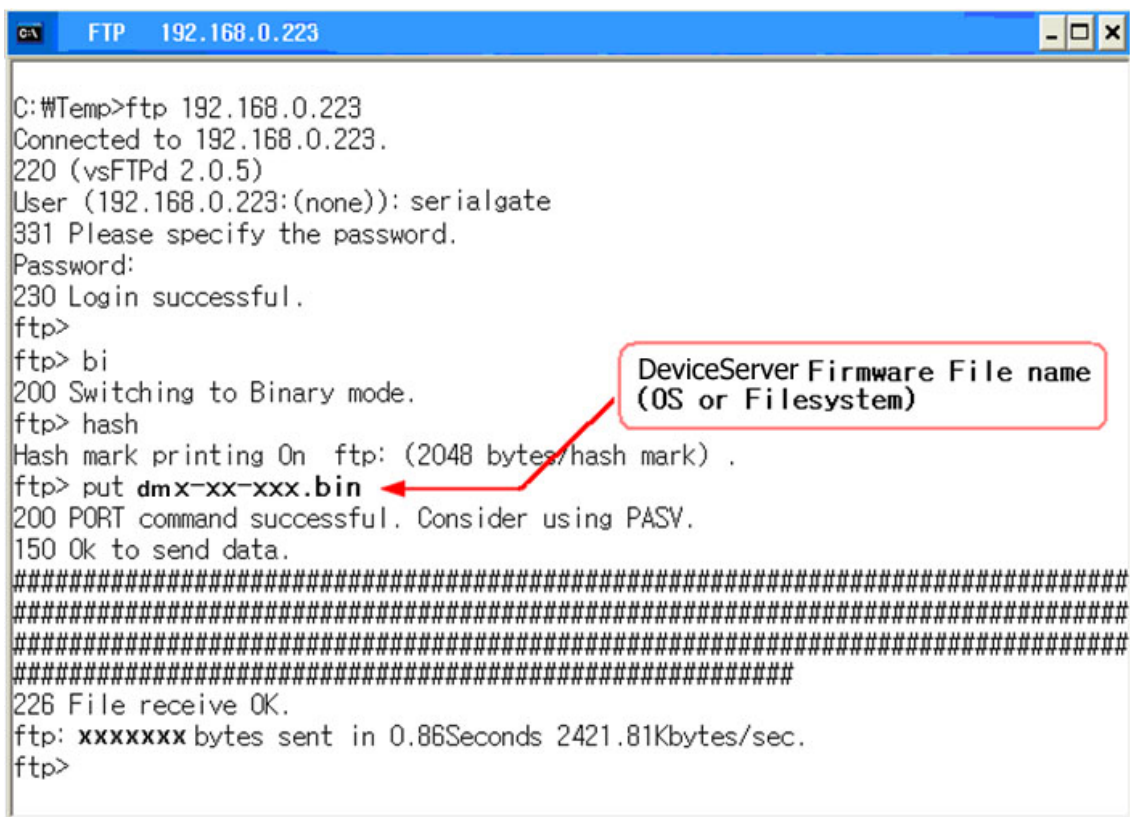
Windows Problem

- If connection to the device is not made properly in Windows, check the connection status by PING x.x.x.x (x.x.x.x refers to this device server's IP address) command in command prompt. If Ping does not work proper, it can not connect to serial device.
- If a problem occurs when COM Port redirector is in use, check the right port is being used when running application.

Firmware Update via FTP

This device server enables firmware upload via web and FTP. This chapter describes how to update via FTP and Telnet. Update via web is explained in Ch. 5. Connect to this device server through ftp program provided in Windows, and input username and password. (Default “devicemanager” , “99999999”) To check transmission mode and status, enter bi and hash.

Send firmware to be upgraded to this device server by put command. If transmission is complete, end ftp program by bye command.



```

C:\Temp>ftp 192.168.0.223
Connected to 192.168.0.223.
220 (vsFTPd 2.0.5)
User (192.168.0.223:(none)): serialgate
331 Please specify the password.
Password:
230 Login successful.
ftp>
ftp> bi
200 Switching to Binary mode.
ftp> hash
Hash mark printing On ftp: (2048 bytes/hash mark) .
ftp> put dmx-xx-xxx.bin
200 PORT command successful. Consider using PASV.
150 Ok to send data.
#####
#####
#####
#####
226 File receive OK.
ftp: xxxxxxxx bytes sent in 0.86Seconds 2421.81Kbytes/sec.
ftp>
  
```

Actual firmware update should be executed through telnet, so connect to this device server through telnet program provided in Windows, and input username and password. (Default “devicemanager” , “99999999”)

(Default “devicemanager” , “99999999”) If log in to this device manager, it locates to default directory where firmware is so a user can update right off.

Register firmware name which is downloaded using upgrade command and save in the device server’s flash memory. (Upgrade program automatically detects if firmware to be upgraded is kernel or filesystem.) Upgrade <firmware name>

A user must check if ‘Flash Write OK’ and ‘Flash Verify OK’ message are displayed fine.

If restart the device server by ‘reboot’ command, the device server operates with new firmware.

Product Specifications

Hardware

Model	Device Server
Processor	ARM926EJ-S (210MHz)
Flash Memory	8 MB
SDRAM	32 MB
LAN Port	10/100Mbps RJ-45 Port * 2
Network Connection	Static IP, DHCP
Serial Port #	16 (RJ-45)
Serial Type	RS232, RS422, RS485
Serial Communication Speed	Max. 921.6Kbps
LED	Front : Power, Ready, WAN, LAN, Serial TX/RX Back : Serial TX/RX, LAN Link
Dimension	240(W) * 150(L) * 50(H)mm
Power	100 ~ 240 VAC (Universal)
Power Consumption	
Weight	
Operating Temperature	0 ~ 50 ° C
Humidity	Max. 95% R.H
Serial Port Protection	± 15KV ESD Protection

Software

O/S	RTOS (Lemonix)
Protocols	TCP, UDP, Telnet, ICMP, DHCP, TFTP, HTTP, SNMP V1/2/3
Connection	Static IP, DHCP
Management Tool	SNMP, PortView, Web

Configuration	Telnet, Web
Windows Application Program	Com Redirect, PortView, TestView