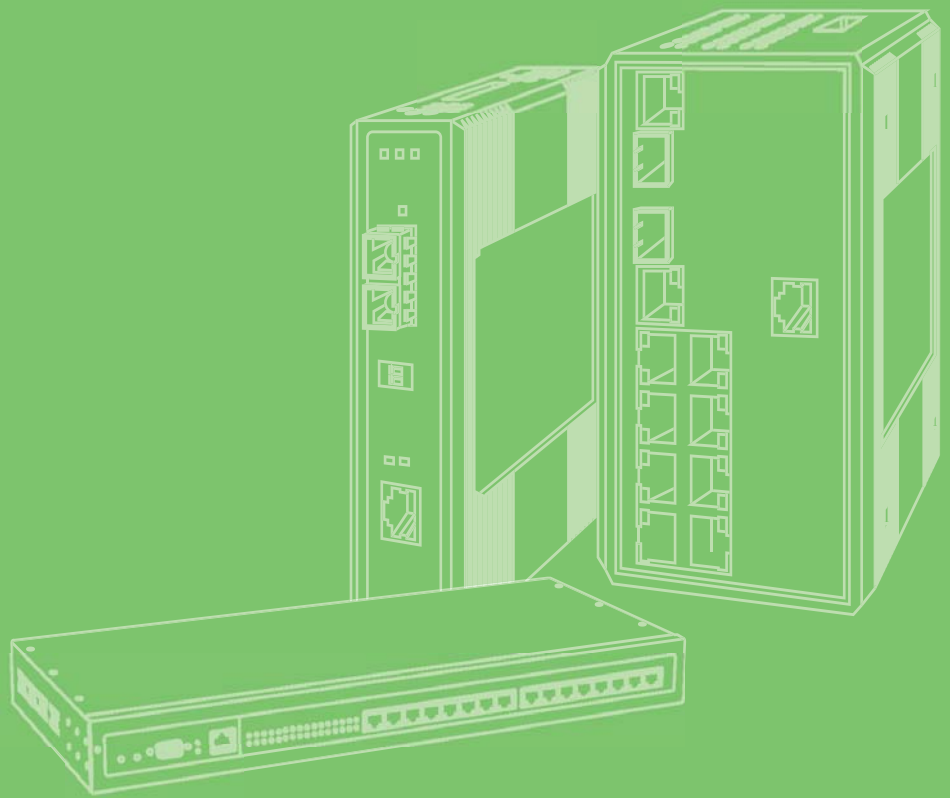# User Manual

# EKI-1526/I/TI
# EKI-1528/I/TI

## 8/16 port RS-232/422/485
## Serial Device Server (Rackmount)

**ADVANTECH**

*Enabling an Intelligent Planet*

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5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

# Declaration of Conformity

### CE

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from Advantech. Please contact your local supplier for ordering information.

This product has passed the CE test for environmental specifications. Test conditions for passing included the equipment being operated within an industrial enclosure. In order to protect the product from being damaged by ESD (Electrostatic Discharge) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

### FCC Class A

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

# Technical Support and Assistance

1. Visit the Advantech web site at www.advantech.com/support where you can find the latest information about the product.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
   – Product name and serial number
   – Description of your peripheral attachments
   – Description of your software (operating system, version, application software, etc.)
   – A complete description of the problem
   – The exact wording of any error messages

# Warnings, Cautions and Notes

**Warning!** *Warnings indicate conditions, which if not observed, can cause personal injury!*

**Caution!** *Cautions are included to help you avoid damaging hardware or losing data. e.g.*

*There is a danger of a new battery exploding if it is incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.*

**Note!** *Notes provide optional additional information.*

# Document Feedback

To assist us in making improvements to this manual, we would welcome comments and constructive criticism. Please send all such - in writing to: ICG.Support@advantech.com.tw

# Packing List

Before setting up the system, check that the items listed below are included and in good condition. If any item does not accord with the table, please contact your dealer immediately.

- One 8 or 16-port serial device server
- EKI-1500 driver utility and documentation CD
- Rack mount kits, including two L-shape metal plates and 12 screws

# Safety Instructions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
15. The power cord or plug is damaged.
16. Liquid has penetrated into the equipment.
17. The equipment has been exposed to moisture.
18. The equipment does not work well, or you cannot get it to work according to the user's manual.
19. The equipment has been dropped and damaged.
20. The equipment has obvious signs of breakage.
21. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.
22. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

# Safety Precaution - Static Electricity

Follow these simple precautions to protect yourself from harm and the products from damage.

- ■ To avoid electrical shock, always disconnect the power from your PC chassis before you work on it. Don't touch any components on the CPU card or other cards while the PC is on.
- ■ Disconnect power before making any configuration changes. The sudden rush of power as you connect a jumper or install a card may damage sensitive electronic components.

# Technical Support and Assistance

1. Visit the Advantech web site at www.advantech.com/support where you can find the latest information about the product.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
   - Product name and serial number
   - Description of your peripheral attachment
   - Description of your software (operating system, version, application software, etc.)
   - A complete description of the problem
   - The exact wording of any error messages

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| Shanghai | 86-21-3632-1616 | Osaka | 81-6-6267-1887 | Hilden / D´dorf | 49-2103-97-885-0 | Milpitas | 1-408-519-3898 |
| Shenzhen | 86-755-8212-4222 | | | | | Irvine | 1-949-420-2500 |
| Chengdu | 86-28-8545-0198 | **Korea** | | **France** | | | |
| Hong Kong | 852-2720-5118 | Toll Free | 080-363-9494 | Paris | 33-1-4119-4666 | **Brazil** | |
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| | | | | Moscow | 7-495-232-1692 | | |
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| | | Pune | 91-20-39482075 | | | | |
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| | | Toll Free | 61-3-9797-0100 | | | | |
| | | Melbourne | 61-2-9476-9300 | | | | |
| | | Sydney | | | | | |

# About This Manual

This user manual is intended to guide professional installers in installing and configuring the Serial Device Server. It includes technical specifications, software utility introduction, as well as procedures for the use of the software utility to self-manage the devices.

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# Chapter 1

## Overview

# 1.1 Introduction

This manual provides the necessary information to use the EKI-1526(TI) | 1528(TI). The Advantech EKI-1500 series of serial device servers consist of fast and cost-effective device servers between serial RS-232/422/485 and Ethernet interfaces.

The two Ethernet ports allow the EKI-1526(TI) | 1528(TI) to establish two separate Ethernet connections to two Ethernet domains or switches in the same domain. Through dual Ethernet connections, the EKI-1526(TI) | 1528(TI) greatly improve the device connectivity reliability, increases system stability, and simplifies redundant configuration.

By encapsulating serial data and transporting it over Ethernet, the EKI-1526(TI) | 1528(TI) allow virtual serial links over Ethernet and IP (TCP/IP, UDP/IP) networks. After Advantech Serial Device Server Configuration Utility (including COM port redirector driver) installation, standard serial operation calls are transparently redirected to the serial device servers, guaranteeing compatibility with legacy serial devices and enabling backward compatibility with existing software. The EKI-1526(TI) | 1528(TI) also support serial tunneling, allowing two native serial devices to communicate over a network without any hosts and programming. As a result, you can extend limited distance, point-to-point, direct serial connections within the plant, throughout the factory, the facility, the office building, or across the global enterprise.

The EKI-1526(TI) | 1528(TI) are industrial-grade network-based serial device servers for connecting up to 8 or 16 serial RS-232/422/485 devices, such as CNCs, PLCs, scales and scanners, directly to a TCP/IP network. The EKI-1526(TI) | 1528(TI) feature two independent Ethernet ports and MAC addresses to provide a redundant network mechanism to guarantee Ethernet network reliability. The EKI-1526(TI) | 1528(TI) provide a simple and cost-effective way to bring the advantages of remote management and data accessibility to thousand of devices that can't connect to an Ethernet network. The EKI-1526(TI) | 1528(TI) offer multiple ways to configure through Windows utility, Web Browser, serial console or Telnet console, these methods make it easy manage many EKI-1526(TI) | 1528(TI) or serial devices on your network.

# 1.2 Device Features

- 8 or 16-port RS-232/422/485 serial communication
- Provides 2 x 10/100/1000 Mbps Ethernet ports for LAN redundancy
- Supports up to 976.5 kbps, and any baud rate setting
- Provides COM port redirection (Virtual COM), TCP and UDP operation modes
- Provides rich configuration methods: Windows utility, Telnet console, Web Browser, and serial console
- Built-in 15 KV ESD protection for all serial signals
- SNMP MIB-II for network management
- Built-in buzzer for easy location
- Standard 1U rackmount size
- Rear wiring
- Automatic RS-485 data flow control

# 1.3 Device Specifications

| Specifications | Description | |
|---|---|---|
| Interface | I/O Ports | ■ 2 x RJ45<br>■ 8 or 16 x RS-232/422/485<br>See the Ethernet Communications and Serial Communications |
| | Power Connector | ■ 2-pin removable screw terminal (power & relay)<br>■ Power socket |
| Physical | Enclosure | SECC chassis |
| | Installation | Rack |
| | Dimensions (W x H x D) | 438 x 43.6 x 259.2 mm (17.24" x 1.71" x 10.2") |
| LED Display | System LED | Power, Status |
| | Port LED | ■ LAN: Speed, Link/Active<br>■ Serial: Tx, Rx |
| Environment | Operating Temperature | -40°C ~ 75°C (-40°F ~ 167°F) |
| | Storage Temperature | -20°C ~ 80°C (-4°F ~ 176°F) |
| | Ambient Relative Humidity | 10 ~ 95% (non-condensing) |
| Ethernet Communications | Compatibility | IEEE 802.3, IEEE 802.3u, IEEE 802.3ab |
| | Speed | 10/100/1000 Mbps, auto MDI/MDIX |
| | Port Connector | 8-pin RJ45 |
| | Ports | 2 x RJ45 |
| | Protection | Built-in 1.5 KV magnetic isolation |
| Serial Communications | Port Type | RS-232/422/485, software selectable |
| | Ports | ■ EKI-1528/EKI-1528I/EKI-1528TI: 8<br>■ EKI-1526/EKI-1526I/EKI-1526TI: 16 |
| | Port Connector | DB9 male |
| | Data Bits | 5, 6, 7, 8 |
| | Stop Bits | 1, 1.5, 2 |
| | Parity | None, Odd, Even, Space, Mark |
| | Flow Control | XON/XOFF, RTS/CTS, DTR/DSR |
| | Baud Rate | 50 bps ~ 976.5 kbps, any baud rate setting<br>16 ports up to 230.4 kbps simultaneously |
| | Protection | Built-in 15 KV ESD for all signals |
| Power | Power Consumption | 5.6W |
| | Power Input | ■ EKI-1528(I)/EKI-1526(I): 100 ~ 240 $V_{AC}$, 50 ~ 60 Hz<br>■ EKI-1528T(I)/EKI-1526T(I): 12 ~ 48 $V_{DC}$, Terminal Block |

| Specifications | Description | |
| --- | --- | --- |
| Software | Driver Support | 32-bit/64-bit Windows 2000/XP/Vista/7/ 8/8.1/10, Windows Server 2003/2008/2012, and Linux |
| | Operation Modes | ■ COM port redirection mode (Virtual COM)<br>■ TCP/UDP server (polling) mode<br>■ TCP/UDP client (event handling) mode<br>■ Pair connection (peer to peer) mode<br>■ RFC2217 mode |
| | Configuration | Windows utility, Telnet console, Web Browser, serial console |
| | Management | SNMP MIB-II |
| Regulatory Approvals | EMC | CE, FCC Part 15 Subpart B (Class A) |

# Chapter 2

# Getting Started

## 2.1 Hardware Overview

### 2.1.1 Front View

The following view shows the EKI-1526/EKI-1526I/EKI-1526T/EKI-1526TI.



**Figure 2.1 Front View**

| No. | Item | Description |
| --- | --- | --- |
| 1 | Reset button | Button allows for system soft reset (3 sec.). |
| 2 | Serial port | DB9 pinout, console port (female). |
| 3 | System LED panel | See "LED Indicators" on page 8 for further details. |

The following view shows the EKI-1528/EKI-1528I/EKI-1528T/EKI-1528TI.



**Figure 2.2 Front View**

| No. | Item | Description |
| --- | --- | --- |
| 1 | Reset button | Button allows for system soft reset (3 sec.). |
| 2 | Serial port | DB9 pinout, console port (female). |
| 3 | System LED panel | See "LED Indicators" on page 8 for further details. |

### 2.1.2 Rear View

The following view shows the EKI-1526/EKI-1526I.
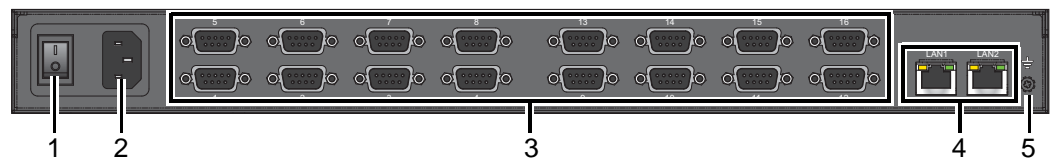


**Figure 2.3 Rear View**

| No. | Item | Description |
| --- | --- | --- |
| 1 | Power button | Turn the device off and on. |
| 2 | AC power in | Supports 100 ~ 240 VAC, 50 ~ 60 Hz. |
| 3 | Serial port | DB9 pinout, supports RS-232/422/485. |
| 4 | ETH port | RJ45 ports x 2. |
| 5 | Ground terminal | Screw terminal used to ground chassis. |

The following view shows the EKI-1526T/EKI-1526TI.
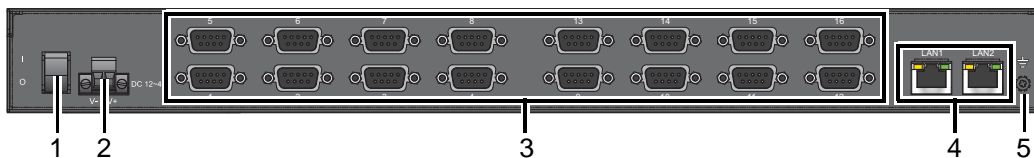


**Figure 2.4 Rear View**

| No. | Item | Description |
| --- | --- | --- |
| 1 | Power button | Turn the device off and on. |
| 2 | Terminal block | Connect cabling for power wiring. |
| 3 | Serial port | DB9 pinout, supports RS-232/422/485. |
| 4 | ETH port | RJ45 ports x 2. |
| 5 | Ground terminal | Screw terminal used to ground chassis. |

The following view shows the EKI-1528/EKI-1528I.
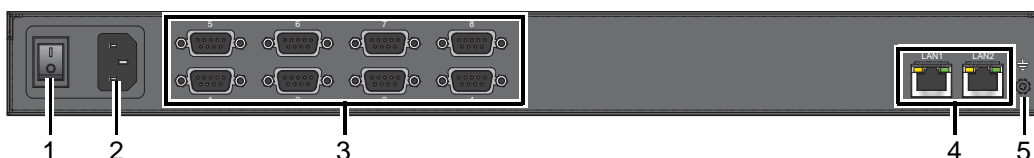


**Figure 2.5 Rear View**

| No. | Item | Description |
| --- | --- | --- |
| 1 | Power button | Turn the device off and on. |
| 2 | AC power in | Supports 100 ~ 240 VAC, 50 ~ 60 Hz. |
| 3 | Serial port | DB9 pinout, supports RS-232/422/485. |
| 4 | ETH port | RJ45 ports x 2. |
| 5 | Ground terminal | Screw terminal used to ground chassis. |

The following view shows the EKI-1528T/EKI-1528TI.
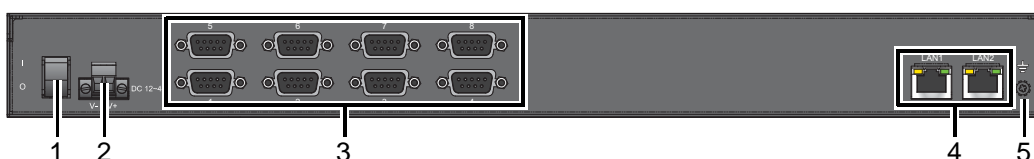


**Figure 2.6 Rear View**

| No. | Item | Description |
| --- | --- | --- |
| 1 | Power button | Turn the device off and on. |
| 2 | Terminal block | Connect cabling for power wiring. |
| 3 | Serial port | DB9 pinout, supports RS-232/422/485. |
| 4 | ETH port | RJ45 ports x 2. |
| 5 | Ground terminal | Screw terminal used to ground chassis. |

## 2.1.3 LED Indicators

The following view shows the EKI-1526/EKI-1526T/EKI-1526I/EKI-1526TI.
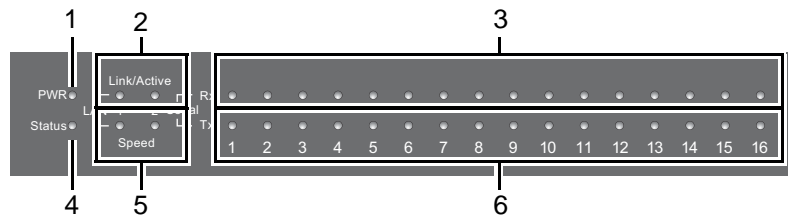


**Figure 2.7 System LED Panel**

| No. | LED Name | LED Color | Status | Description |
|---|---|---|---|---|
| 1 | PWR | GREEN | ON | Power is on |
| | | | OFF | Power is off or power error condition exists |
| 2 | Link/Active | GREEN | ON | Valid network link |
| | | | OFF | Invalid network link |
| 3 | RX | GREEN | ON | Data being received |
| | | | OFF | No data being received |
| 4 | Status | AMBER | ON | The device server has been located by utility's location function |
| | | | BLINKING | System is ready (1cycle/sec.) |
| | | | OFF | System is not working |
| 5 | Speed | AMBER | ON | 1000 Mbps speed |
| | | | OFF | 10/100 Mbps speed |
| 6 | TX | AMBER | ON | Data being transmitted |
| | | | OFF | No data being transmitted |

The following view shows the EKI-1528I/EKI-1528TI.
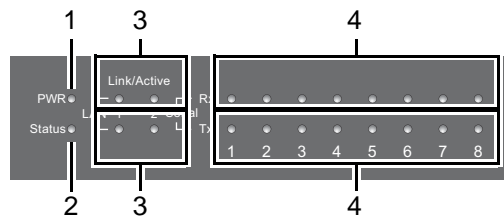


**Figure 2.8 System LED Panel**

| No. | LED Name | LED Color | Status | Description |
|---|---|---|---|---|
| 1 | PWR | GREEN | ON | Power is on |
| | | | OFF | Power is off or power error condition exists |
| 2 | Link/Active | GREEN | ON | Valid network link |
| | | | OFF | Invalid network link |
| 3 | RX | GREEN | ON | Data being received |
| | | | OFF | No data being received |
| 4 | Status | AMBER | ON | The device server has been located by utility's location function |
| | | | BLINKING | System is ready (1cycle/sec.) |
| | | | OFF | System is not working |
| 5 | Speed | AMBER | ON | 1000 Mbps speed |
| | | | OFF | 10/100 Mbps speed |

| No. | LED Name | LED Color | Status | Description |
|-----|----------|-----------|--------|-------------|
| 6 | TX | AMBER | ON | Data being transmitted |
| | | | OFF | No data being transmitted |

## 2.1.4 Dimensions

The following view shows the EKI-1526/EKI-1526I.
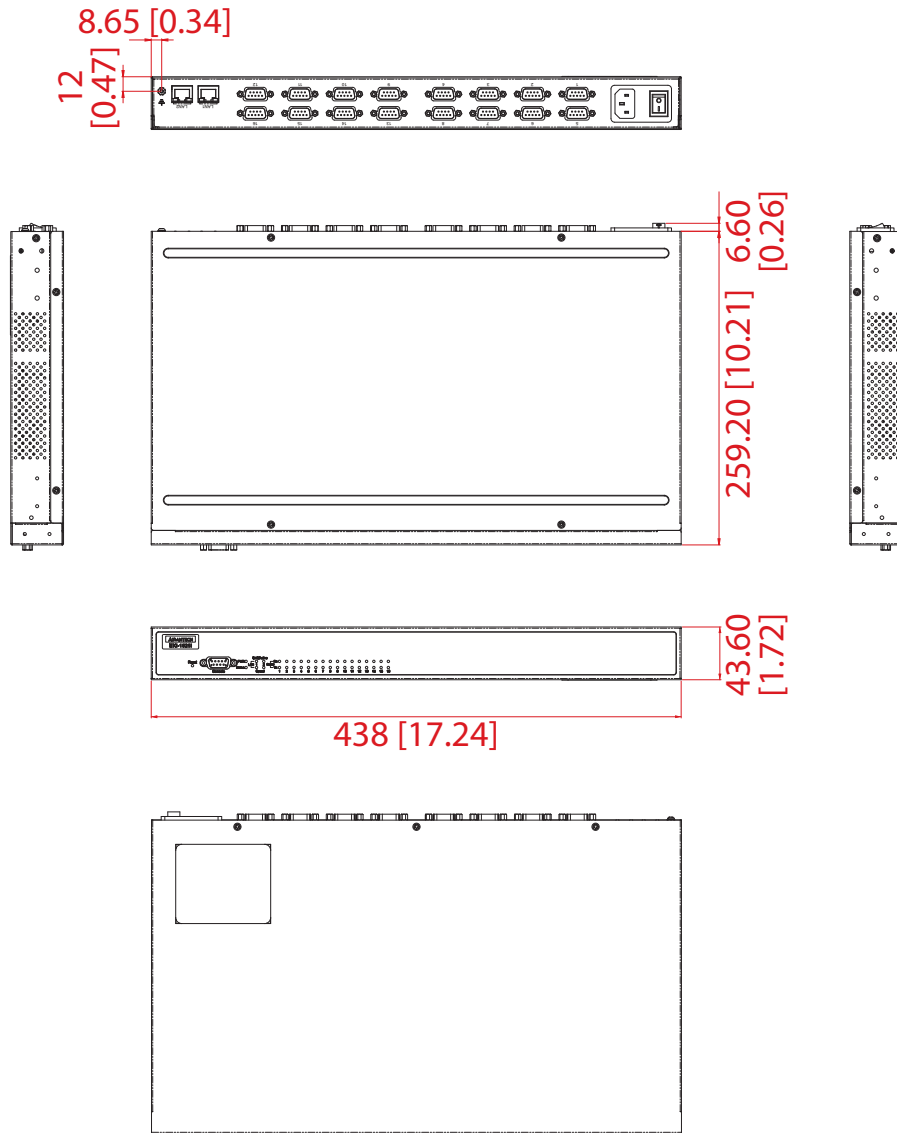


**Figure 2.9 EKI-1526/EKI-1526I Dimensions**

The following view shows the EKI-1528/EKI-1528I.



8.65 [0.34]

12 [0.47]

6.60 [0.26]

259.20 [10.21]

43.60 [1.72]

438 [17.24]
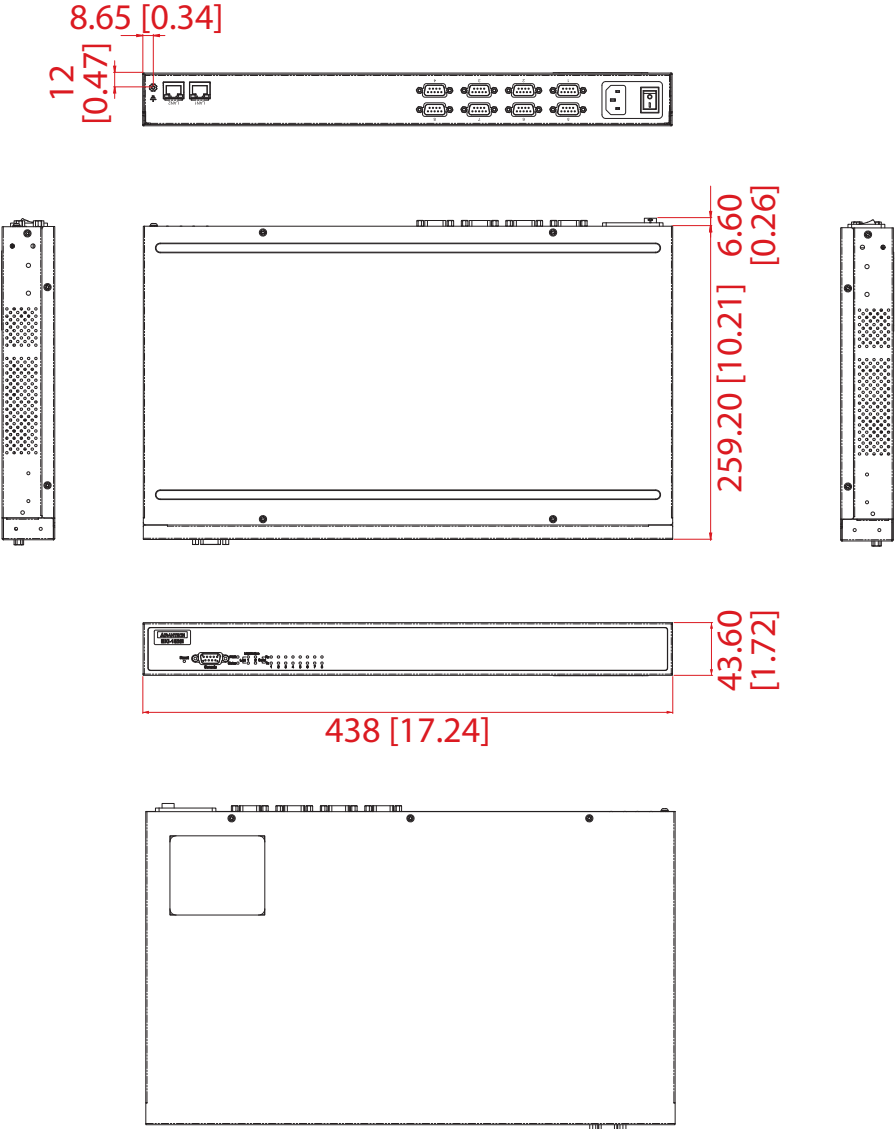
**Figure 2.10 EKI-1528/EKI-1528I Dimensions**

The following view shows the EKI-1526T/EKI-1526TI.

8.65 [0.34]

12 [0.47]

9.60 [0.38]

259.20 [10.21]

43.60 [1.72]

438 [17.24]
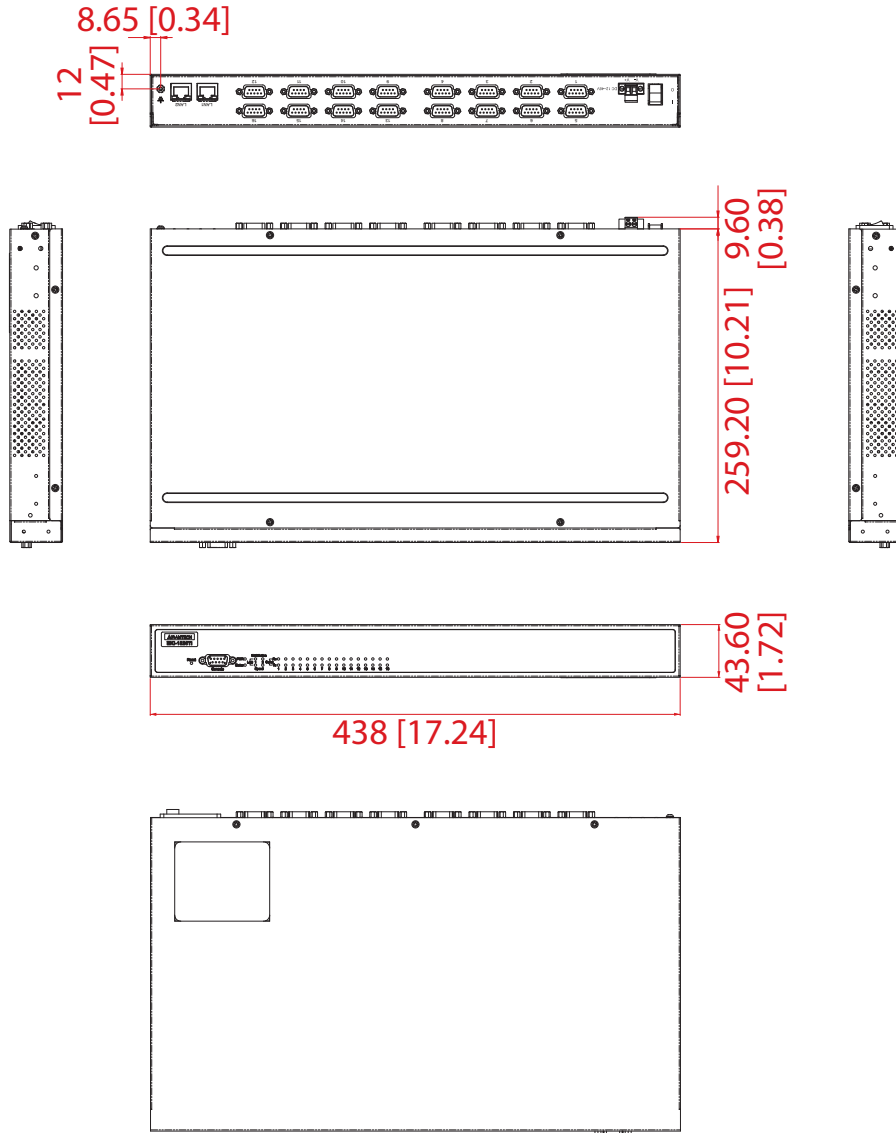
**Figure 2.11 EKI-1526T/EKI-1526TI Dimensions**

The following view shows the EKI-1528T/EKI-1528TI.
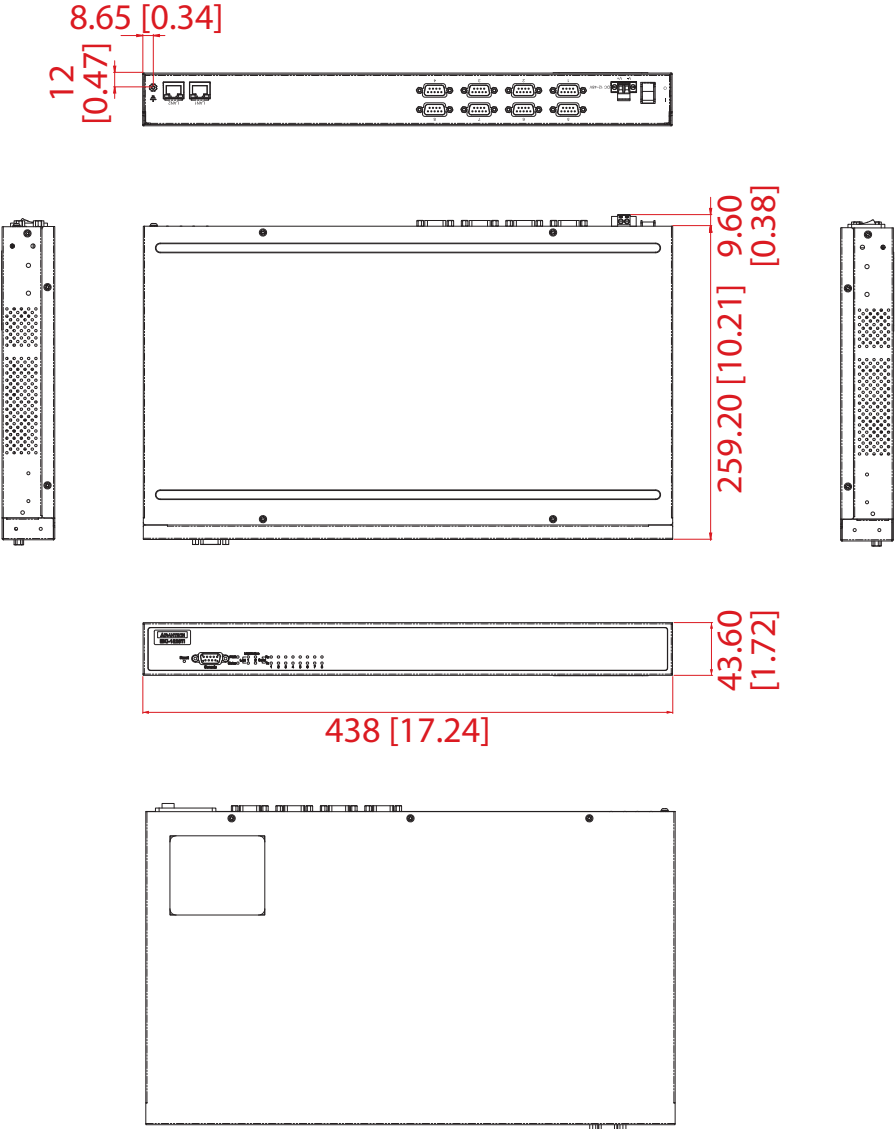


**Figure 2.12 EKI-1528T/EKI-1528TI Dimensions**

## 2.2 Connecting Hardware

### 2.2.1 Rack Mount

1.  Align the rack mount brackets with the holes on the switch.
2.  Secure the rack mount brackets with screws.
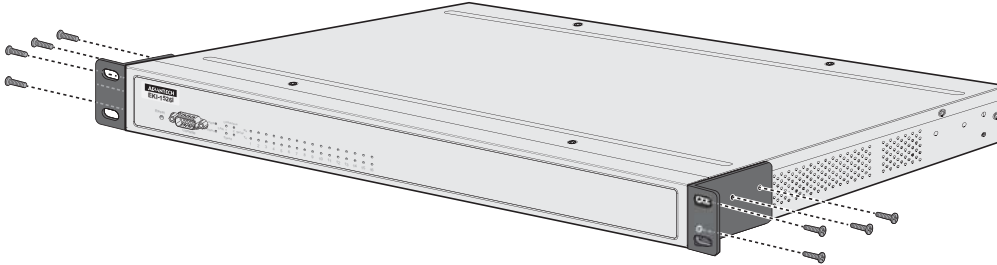
**Figure 2.13 Installing the Rack Mount Brackets**

3.  Align the switch with the posts on the rack cabinet.
4.  Secure the switch with screws.
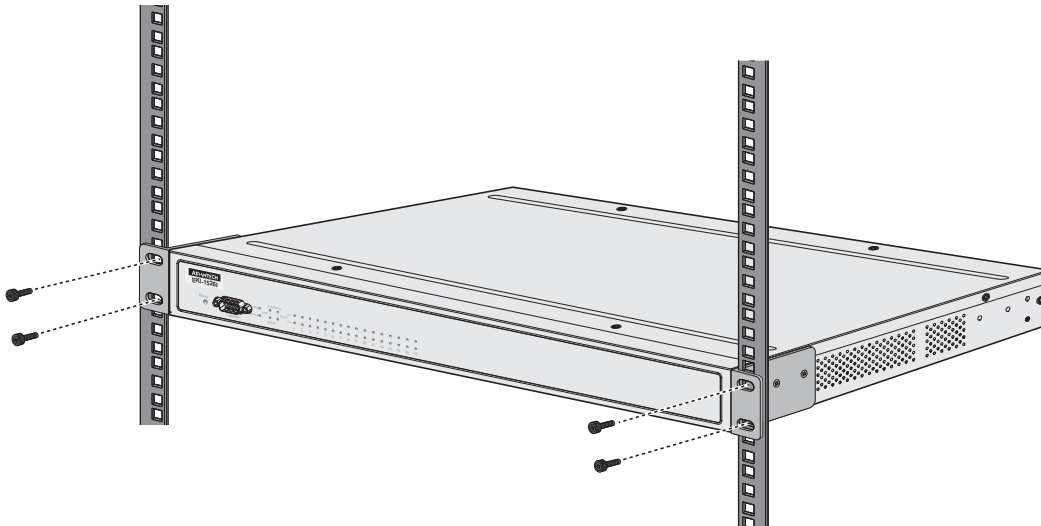
**Figure 2.14 Installing the Switch**

### 2.2.2 Serial Connection

EKI-1526(TI) | 1528(TI) Series provides 8/16 ports DB9 (male) connectors.

RS-232/422/485 pin assignments as below:
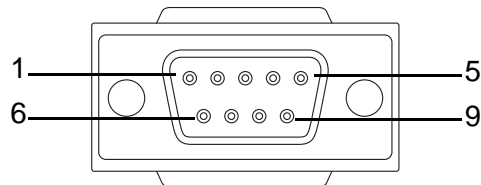
**Figure 2.15 DB9 Pin Assignment**

| Pin | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| RS-232 | DCD | RX | TX | DTR | GND | DSR | RTS | CTS | RI |
| RS-422 | TX- | | | TX+ | GND | | RX+ | | RX- |
| RS-485 | DATA- | | | DATA+ | GND | | | | |

## 2.2.3 Power Connection

*Warning!*   Power down and disconnect the power cord before servicing or wiring the serial device server.

*Caution!*   Do not disconnect modules or cabling unless the power is first switched off.

The device only supports the voltage outlined in the type plate. Do not use any other power components except those specifically designated for the serial device server.

*Caution!*   Disconnect the power cord before installation or cable wiring.

The following is only available for EKI-1528/EKI-1528I/EKI-1526/EKI-1526I.

Connect the EKI-1528/EKI-1528I or EKI-1526/1526I AC power line with its AC connector. If the power is properly supplied, you can turn on the power switch and the PWR LED will light green.
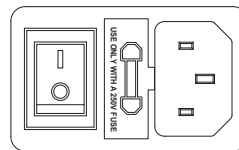


**Figure 2.16 Connecting AC Power**

The following is only available for EKI-1528T/EKI-1528TI/EKI-1526T/EKI-1526TI.

Connect the DC power connector on the rear panel of the switch to the external power source with the included power cord, and check the power LED is on. The following figure illustrates the power socket location on the rear side of a EKI-1528T/ EKI-1528TI or EKI-1526T/EKI-1526TI switch.
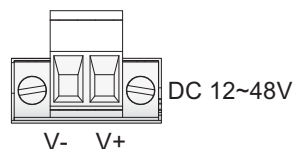


**Figure 2.17 Connecting DC Power**

# Chapter 3

## Utility Configuration

# 3.1 Configuration Utility Overview

Advantech EKI series serial device servers provide an easy-to-use utility to configure your serial device server through an Ethernet connection. For secure administration, it can also restrict the access rights for configuration to only one host PC. With this secure function enabled, other PCs will not have permission for configuration. After the installation program on the Advantech EKI Device Configuration Utility CD-ROM is finished, the serial device servers are ready for use and configuration.

Advantech Serial Device Server Configuration Utility is an excellent device server management tool. You can connect and configure the local and remote Advantech serial device servers easily. The utility provides access to the following functions:

- Configure the network settings (you can set the IP address, Gateway address, and Subnet mask)
- View and set the serial port parameters (configure operating mode, baud rate, serial port settings and operating mode settings)
- Perform diagnostic tests (virtual COM port testing, port status list)
- Perform administrative functions (export and import the serial device server setting, manage access IP, a descriptive name, upgrade firmware)

# 3.2 Installing the Configuration Utility

> **Note!** *Microsoft .NET Framework version 2.0 or greater is required for this application.*

1. Insert the Advantech EKI Device Configuration Utility CD-ROM into the CD-ROM drive (E:\ is usually the drive name of your CD-ROM) on the host PC.
2. Use Windows explorer or the Windows Run command to execute the setup program; the name of the setup program on the CD-ROM is "EKI Device Configuration Utility".
3. If there is an existing COM port mapping utility on the host PC, remove it at this time. A system reboot may be necessary before continuing the installation.

4. Once the InstallShield Wizard screen displays, click **Next** to proceed with the installation.
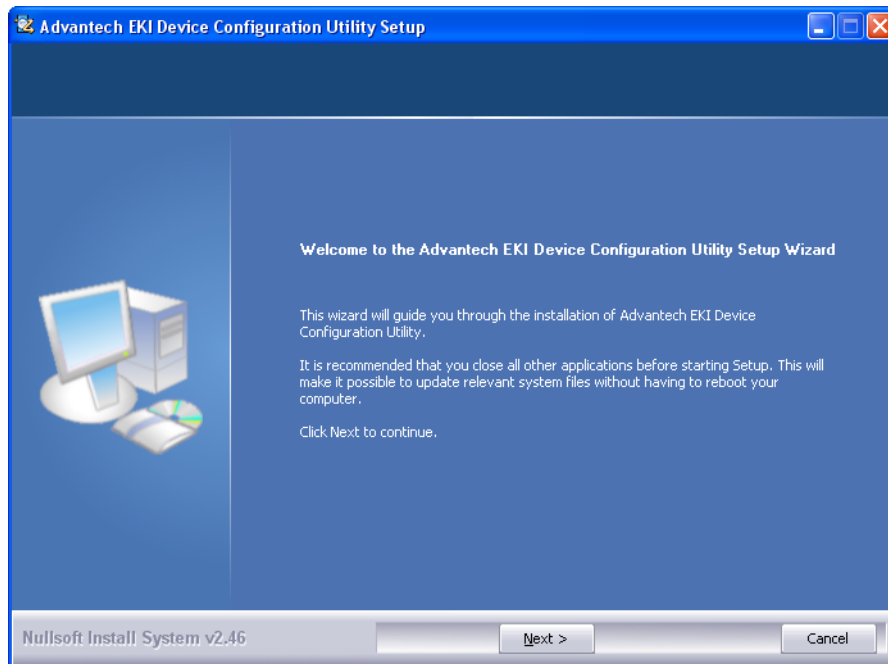


**Figure 3.1 InstallShield Wizard 1 of 4**

5. The Software License Agreement displays, press **I Agree** to continue or **Cancel** to stop the installation.
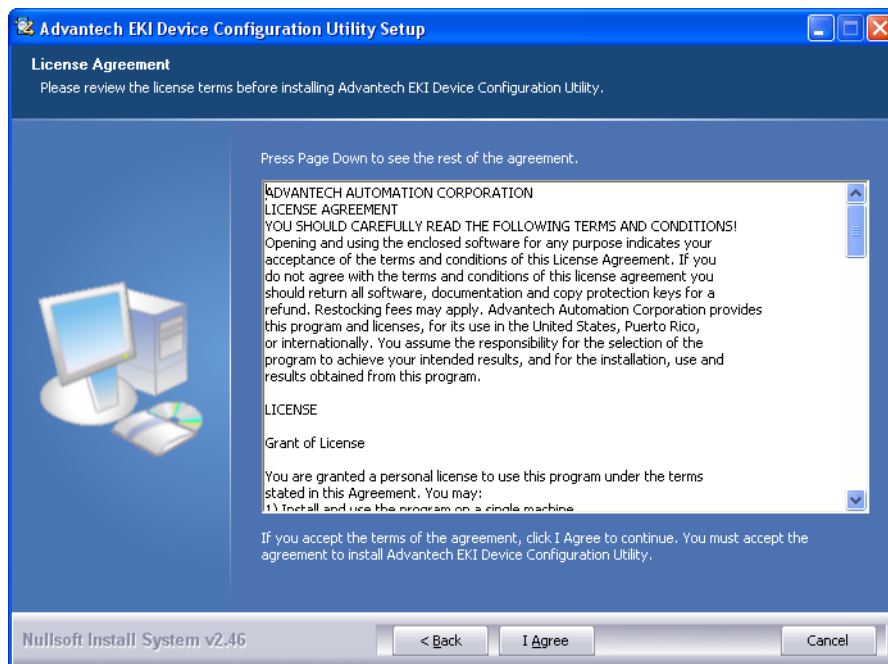


**Figure 3.2 InstallShield Wizard 2 of 4**

The InstallShield continues and a status screen displays. The default installation path is C:\Program Files\EKI Device Configuration Utility.
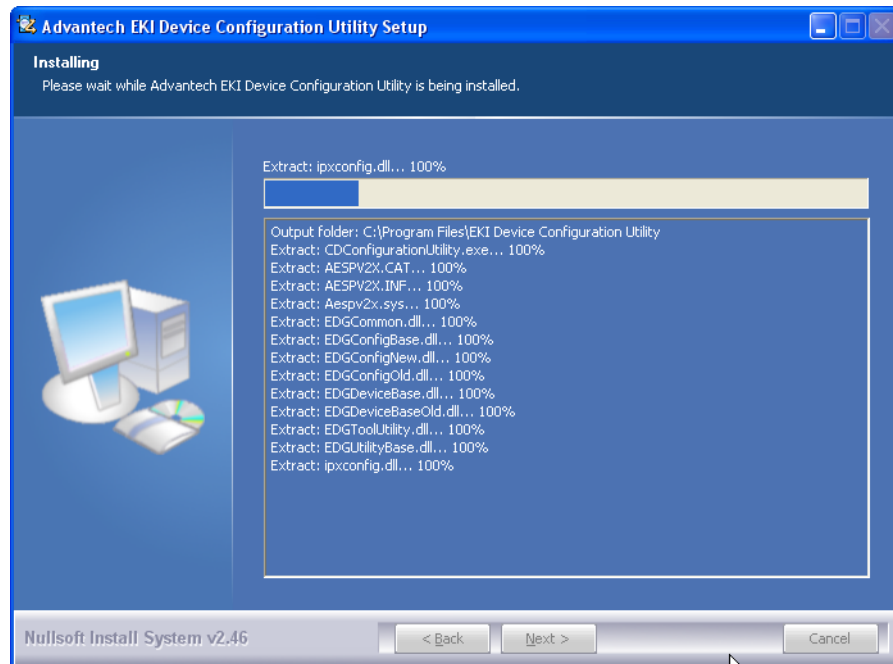


**Figure 3.3 InstallShield Wizard 3 of 4**

6. Once the installation of the package is finished a Configuration Utility Setup screen displays. Click **Finish** to conclude the process and exit the InstallShield Wizard.
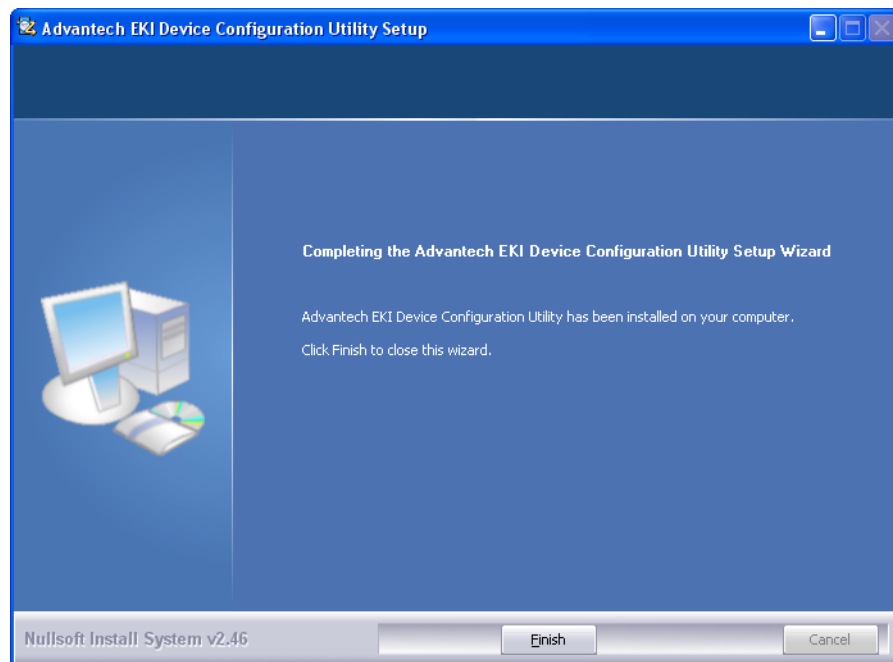


**Figure 3.4 InstallShield Wizard 4 of 4**

## 3.3 Menu Bar

You can open the Advantech EKI Device Configuration Utility from the Windows Start Menu by clicking **Start** > **All Programs** > **EKI Device Configuration Utility** > **Advantech EKI Device Configuration Utility**. The Configuration Utility displays as follows.

For the purposes of this manual, the user interface is separated into six sections.
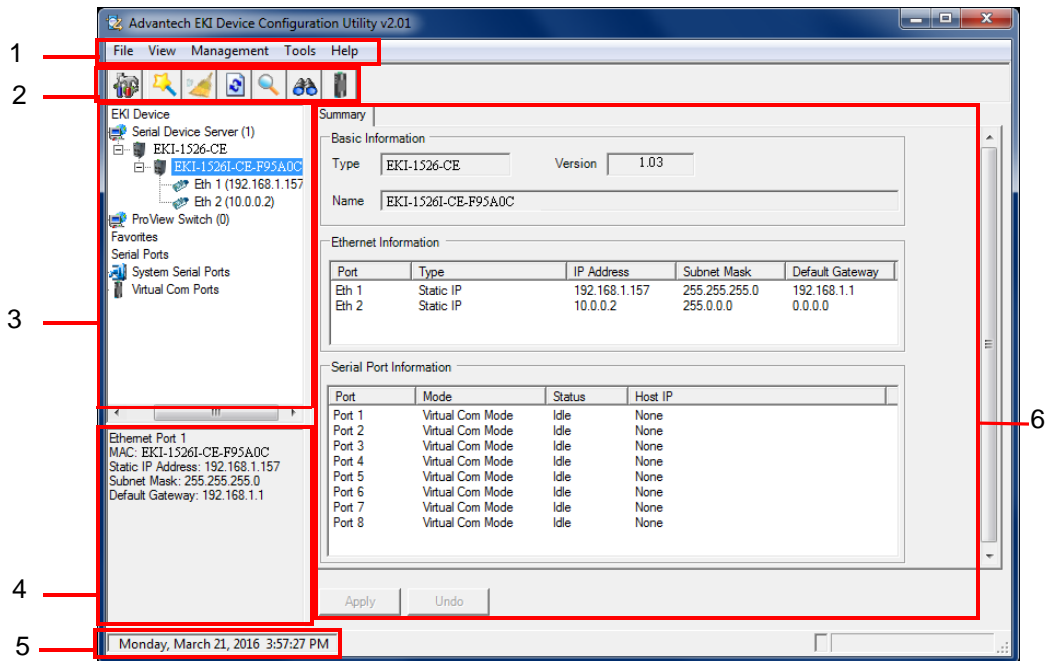


**Figure 3.5 Configuration Utility Overview**

| No | Item | Description |
|---|---|---|
| 1 | Menu Bar | Displays File, View, Management, Tools and Help. |
| 2 | Quick Tool Bar | Useful management functions shortcuts. |
| 3 | Serial Device Server List Area | Available devices are listed in this area. Devices and COM ports can be organized or grouped in this area. |
| 4 | Information Panel | Click on the devices or move cursor to the devices, the related information is shown in this area. |
| 5 | Status Bar | Displays the current time. |
| 6 | Configuration Area | Click on the item on the Device Server List Area, the configuration page displays. |

> **Note!** The configuration utility makes use of TCP/UDP ports 5048 and 5058 to communicate with the Advantech EKI serial device server.
>
> Please reserve TCP/UDP port 5048 and 5058 in your Ethernet network, configuration utility will use these ports to communicate with Advantech EKI-1000, ADAM-4570, and EDG-4500 serial device servers.

## 3.4 Quick Tool Bar

The Advantech EKI Device Configuration Utility makes use of a Quick Tool Bar menu to allow quick access to the management functions. See the following figure for further information.
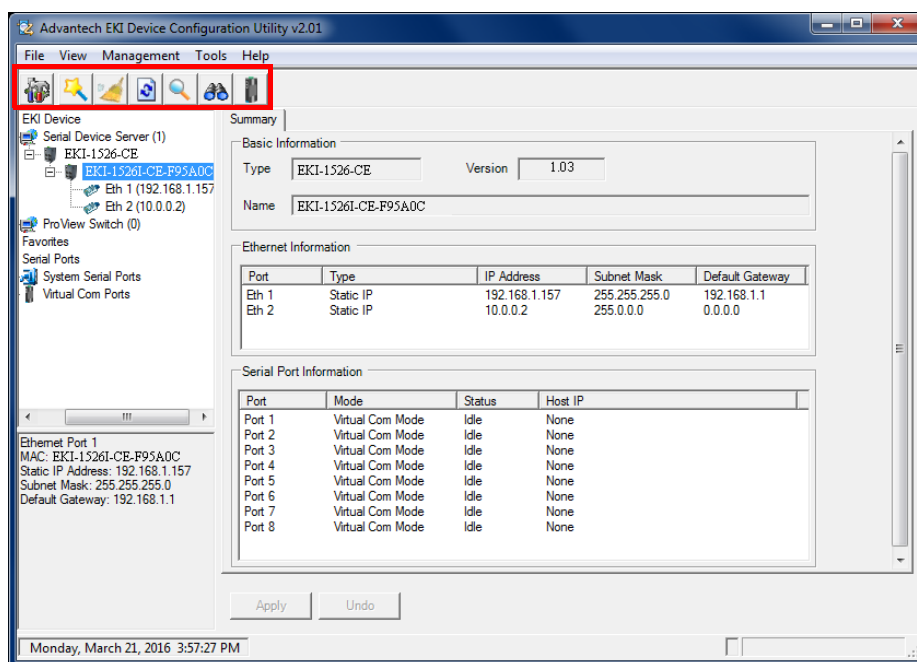


**Figure 3.6 Quick Tool Bar Overview**

| Icon | Item | Description |
|------|------|-------------|
| | Utility Settings | Clear to configure the general settings for the Main Form Setting and Device Manager menus.<br>Refer to "Utility Settings" on page 21. |
| | Configuration Wizard | Start the software wizard (setup assistant) to lead you through the VCOM configuration process for device server product. |
| | Clear Device List and Search Again | Click to clear listed device servers in the Serial Device Server List Area and initiate a new search.<br>*NOTE: A continuous click of the icon results in the following message: Please do not refresh so frequently.* |
| | Search Again | Click to search for serial device servers on the local LAN. |
| | Add IP Address to Favorite | Click to include the selected IP Address into the Favorites list group. |
| | Search for a Range of IP Addresses | Click to begin a range search. Enter the beginning and ending IP addressed to being a search within the string parameters. |
| | Manual Direct Mapping Virtual COM Port | Click to add a target by selecting the Device Type and inputting the IP address without physically connecting the serial device server to the network. |

### 3.4.1 Utility Settings

#### 3.4.1.1 Main Form Setting

Click **View** > **Settings** to configure utility settings.
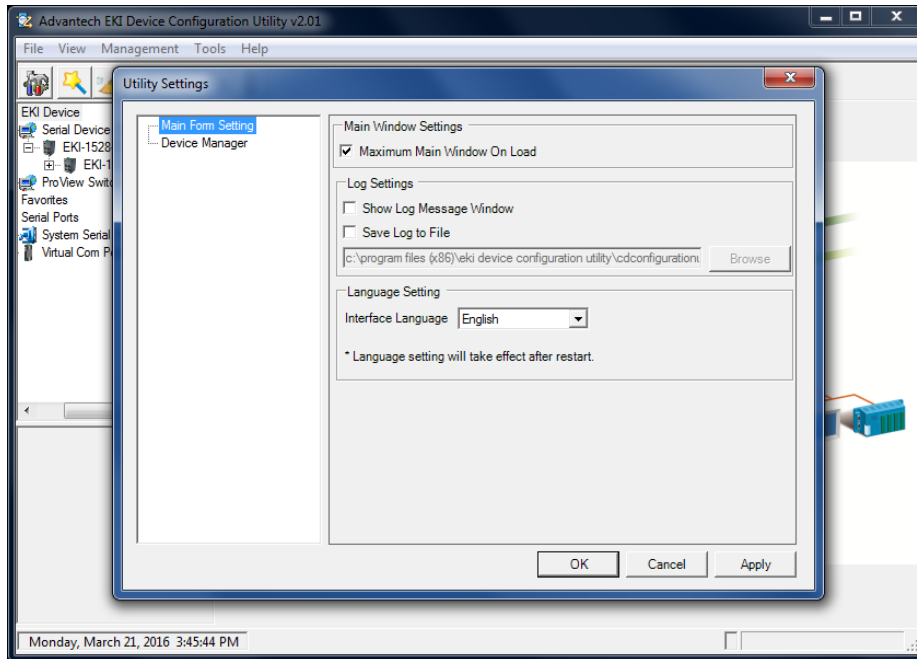
**Figure 3.7 View > Settings > Main Form Setting**

| Item | Description |
|---|---|
| Main Window Settings | |
| Maximum Main Window On Load | Check the box to enable the limiting of main windows on-load to the maximum value. |
| Log Settings | |
| Show Log Message Window | Check the check box to activate the AdvLogMessage form. The Form Log message displays. |
| Save Log to File | Check the check box to save log to file. |
| Browse | If the Save Log to File option is enabled, click **Browse** to select a file to save log data. |
| Language Settings | |
| Interface Language | Click the drop-down menu to select an interface language: Traditional Chinese, Simplified Chinese or English. *NOTE: A restart is required for the settings to take effect.* |
| OK | Click **OK** to save and exit the Utility Settings menu. |
| Cancel | Click **Cancel** to discard the changes. |
| Apply | Click **Apply** to save the main form settings. |

### 3.4.1.2 Device Manager
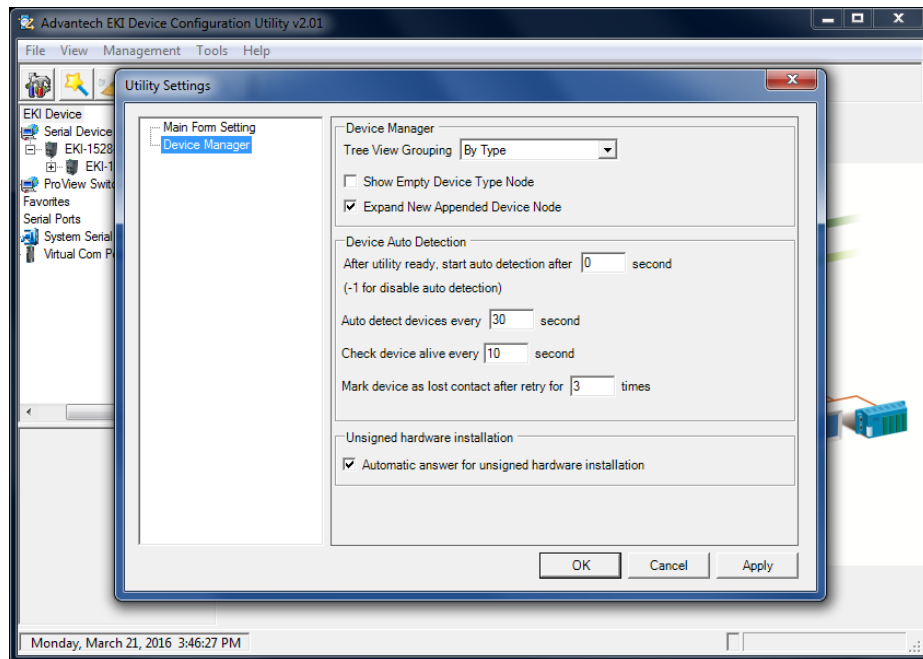


**Figure 3.8 View > Settings > Device Manager**

| Item | Description |
| --- | --- |
| Device Manager | |
| Tree View Grouping | Click the drop-down menu to enable or disable grouping. |
| Show Empty Device Type Node | Check the check box to show empty device type node or not. |
| Expand New Appended Device Node | Check the check box to expand a new appended device node. |
| Device Auto Detection | |
| After utility ready, start auto detection after X second | Enter a value to specify the time to auto detection time (-1 means disable auto detection). |
| Auto detect devices every X second | Enter a value to specify the time to auto detect devices. |
| Check device alive every X second | Enter a value to specify the time to check device alive. |
| Mark device as lost contact after retry for X times | Enter a value to specify the time to mark device as lost contact. |
| Unsigned Hardware Installation | |
| Automatic answer for unsigned hardware installation | Check the check box to enable or disable answer automatically for unsigned hardware installation. |
| OK | Click **OK** to save and exit the utility setting. |
| Cancel | Click **Cancel** to discard the changes. |
| Apply | Click **Apply** to save the utility setting. |

## 3.4.2 Discovering Your Device Server

### 3.4.2.1 Auto Searching

Advantech EKI Serial Device Server Configuration Utility 1.67 or higher will automatically search all the EKI-15xx series serial device servers on the network and show them on the Serial Device Server List Area of the utility. The utility provides an auto-search function to show your device (s) by simply executing the configuration utility program from the Start Menu.

From here all device on the same network domain will be searched and display on Device Server List Area. You can click on the device name to show the features of the specific device. Click on the "+" before the model name, and the utility will expand the tree structure to show the individual device name. Click on the "-" before the model name, and the utility will collapse the tree structure.
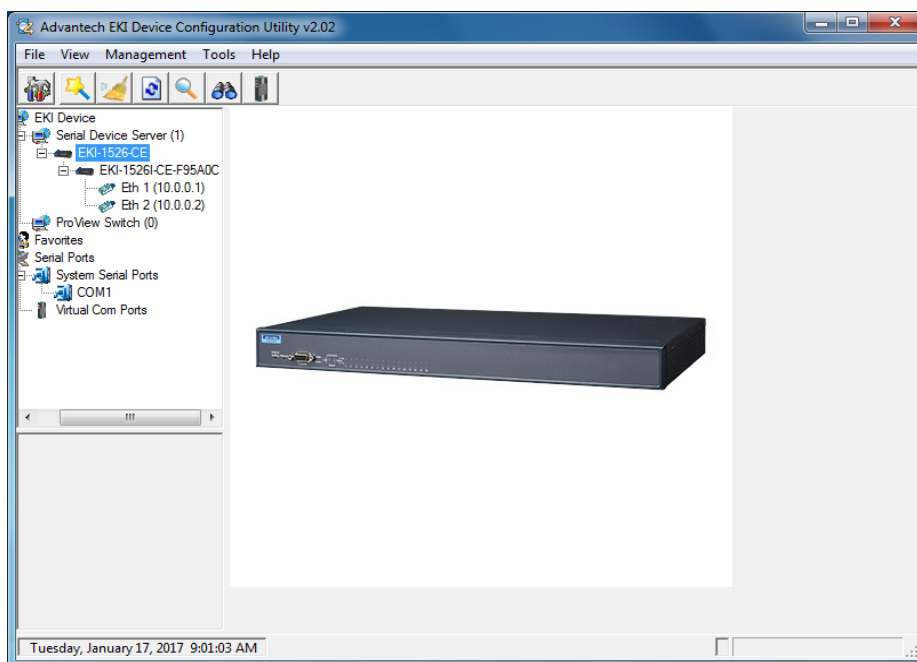


**Figure 3.9 Open View of Serial Device Configuration Utility**

In the previous figure, the EKI-1526I serial device server is listed as EKI-1526I-CE-F95A0C.

**Note!** *When you run the configuration utility for the first time, the default device name is obtained from the serial device's MAC identification number. The name can be altered through the configuration utility.*

Select the device in this sub-tree. The Configuration Area shows a summary of "Basic Information", including device type, version, and name, "Ethernet Information", and "Serial Port Information". The serial port information frame displays the operation mode, status and connected host IP.
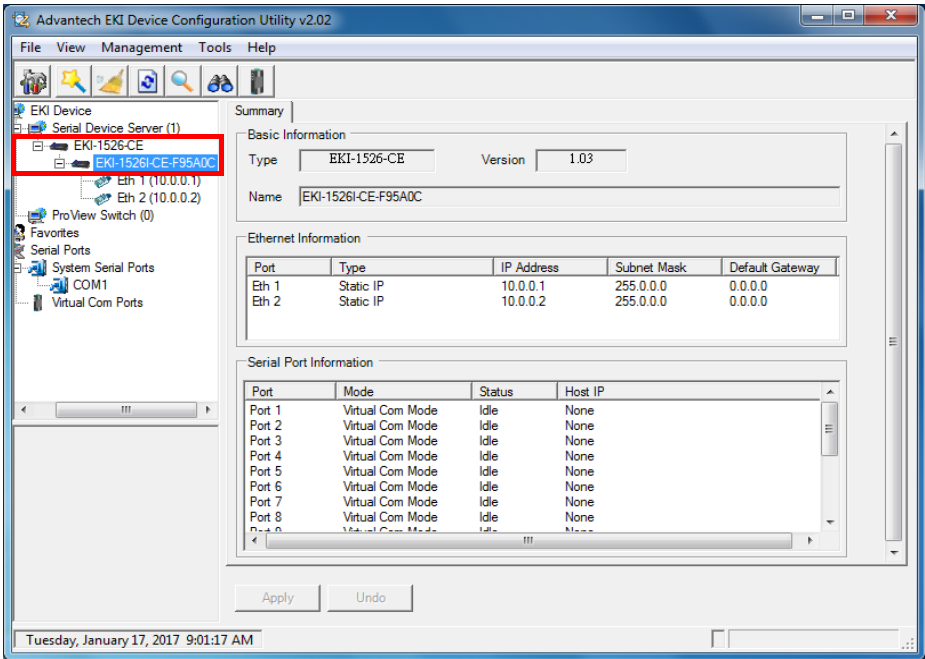


**Figure 3.10 Selecting a Group**

Click on the "+" before the device name, and the utility will expand the interfaces on this device server.
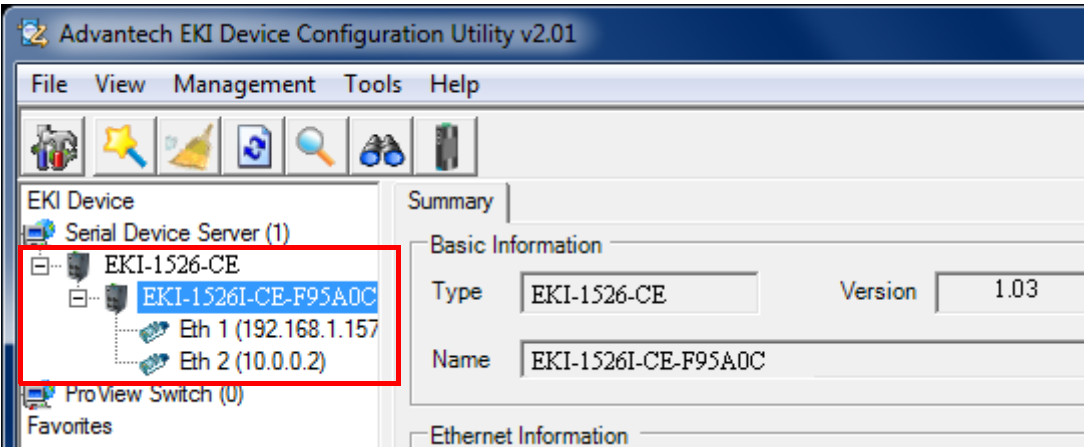


**Figure 3.11 Selecting a Device**

Click on each item to enter the configuration page to change the setting. The configuration will be introduced in the following sections.
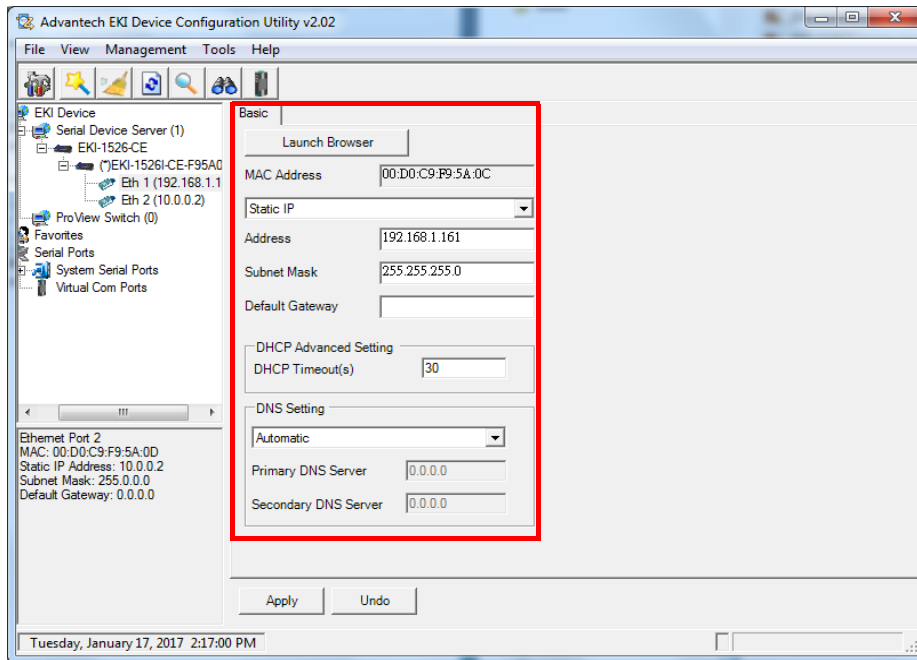


**Figure 3.12 Viewing Basic Settings**

### 3.4.3 Network Settings

Prior to setting up the server's IP address, determine the IP address mode.

There are four mode types available:

- Static IP: mode to assign a specific assigned address
- DHCP / AutoIP: mode to automatically assign IP addresses through a DHCP server
- BOOTP / AutoIP: mode to automatically assign an IP address through the configuration server
- DHCP/BOOTP/AutoIP: mode to automatically assign an IP address using a Bootstrap Protocol or DHCP server.

The server is set with the following default IP configuration:

10.0.0.1 (Eth1)

10.0.0.2 (Eth2)

The EKI series includes a software utility option, which you can install on your system, for configuration through computer-based software. The EKI series also includes a web interface option for configuration through a standard web browser.

You can choose from four possible IP Configuration modes --- Static, DHCP, BOOTP, and DHCP/BOOTP.



**Figure 3.13 Network Settings Overview**

| Item | Description |
|---|---|
| Static IP | Static IPUser defined IP address, Subnet Mask, and Default Gateway. |
| DHCP + Auto-IP | DHCP Server assigned IP address, Subnet Mask, Default Gateway, and DNS. |
| BOOTP + Auto-IP | BOOTP Server assigned IP address. |
| DHCP + BOOTP + Auto-IP | DHCP Server assigned IP address, Subnet Mask, Default Gateway, and DNS, or BOOTP Server assigned IP address. (If the DHCP Server does not respond) |
| DNS Setting | In order to use DNS feature, you need to set the IP address of the DNS server to be able to access the host with the domain name. The EKI serial device server provides Primary DNS Server and Secondary DNS Server configuration items to set the IP address of the DNS server. Secondary DNS Server is included for use when Primary DNS server is unavailable. |
| DHCP Advanced Setting | When you enabling DHCP protocol to get IP address, it will be waited DHCP server to give IP within DHCP time out. The default value is 180 seconds. |

*Note!* *When you have finished the configuration of these settings for each category, please press the "Apply" button in order to make these settings effective on the Serial Device Server.*

Click **Reboot** to reboot the serial device server. Any configuration changes you have made since the last time you saved will be lost.

To reset the device:

1.  Right-click a desired device to display the settings menu.
2.  Select **Reset Device**.
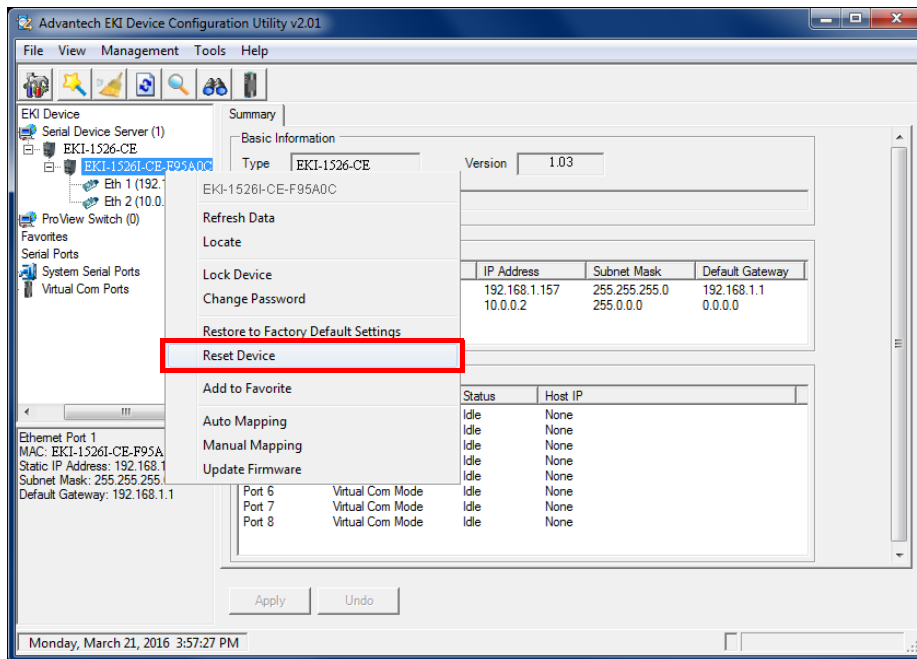


**Figure 3.14 Reset Device**

# 3.5 Administrator Settings

## 3.5.1 Locate the Serial Device Server

When several serial device servers are connected to the network, identification of a specific serial device is possible through the Locate function.

To locate the serial device server:

1. From the device list frame, locate the desired device and right-click on it to display the settings menu.
2. Select **Locate** from the menu.
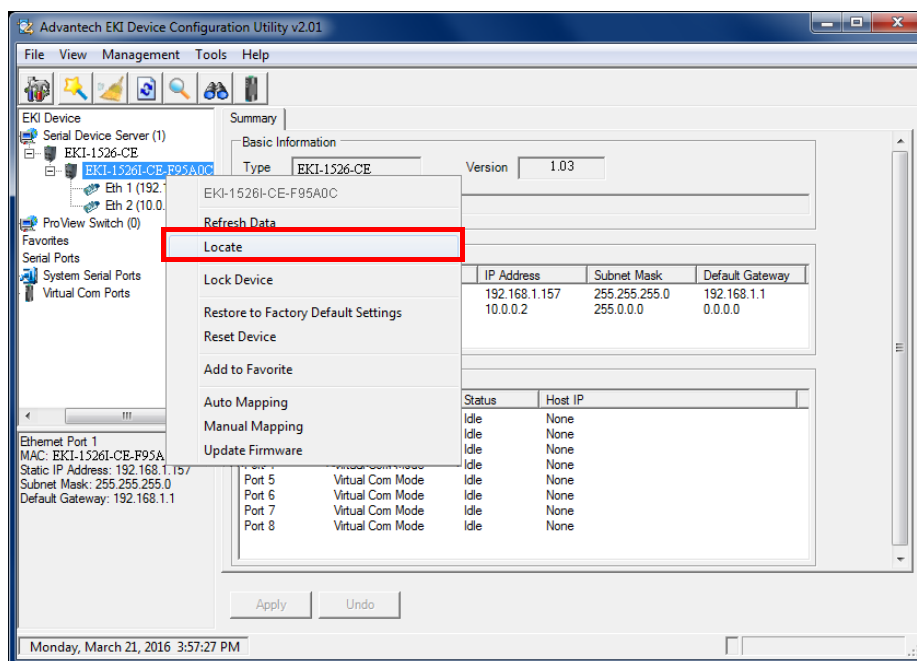


**Figure 3.15 Locate the Serial Device Server**

The unit's Status LED will turn solid amber, and the buzzer will make a beep sound until you click **Stop Locate**.

## 3.5.2 Securing the Serial Device Server

### 3.5.2.1 Lock the Serial Device Server

The configuration utility provides a "Lock Device" function to make it more secure.

To lock the serial device server:

1. Right-click a desired device to display the settings menu.
2. Select **Lock Device**.
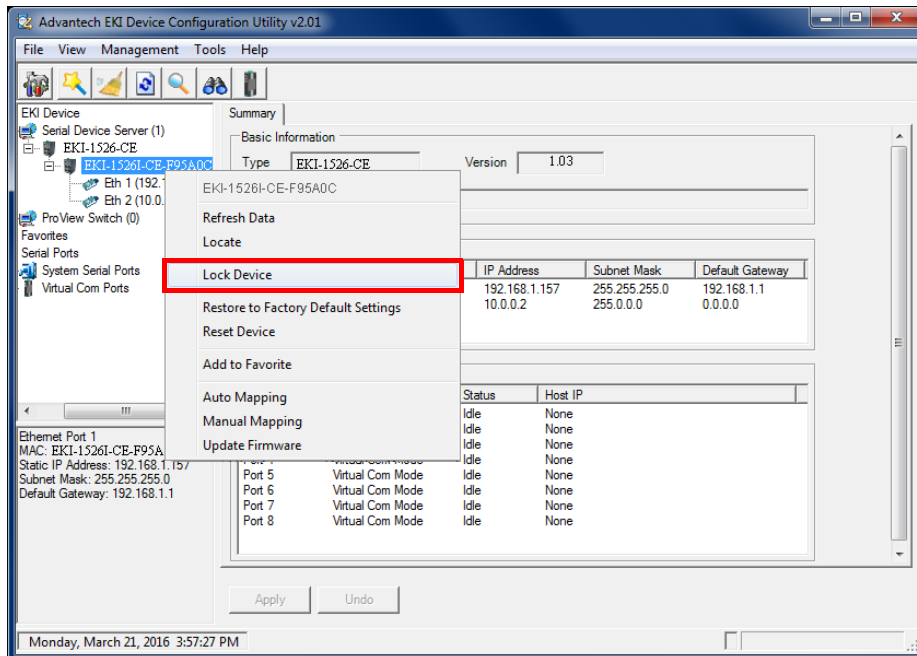


**Figure 3.16 Lock the Serial Device Server**

3. Enter a password. Retype the password entry to confirm the profile password.
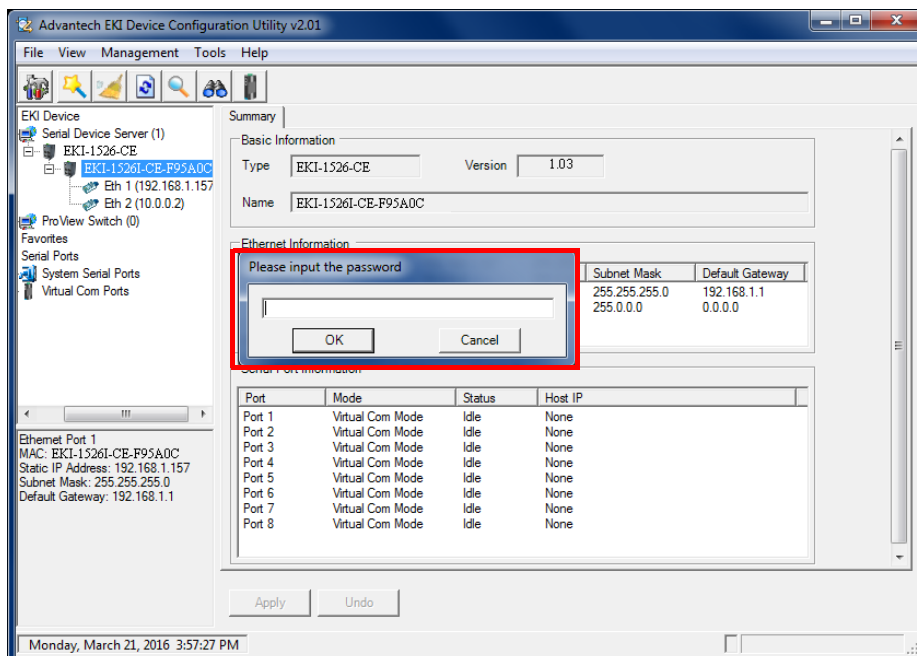


**Figure 3.17 Enter a Password**

4.  Right-click a desired device to display the settings menu. Select **Reset Device** to restart the serial device server and store your setting password into the memory.
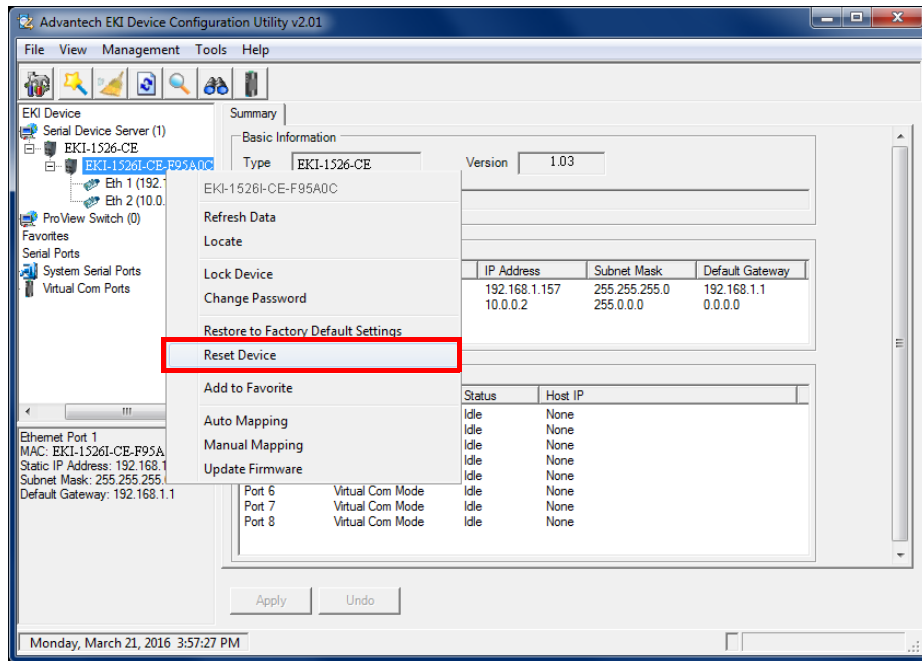


**Figure 3.18 Reset Device**

### 3.5.2.2 Unlock the Serial Device Server

To unlock the serial device server:

1. Right-click a desired device to display the settings menu.
2. Select **Unlock Device**.
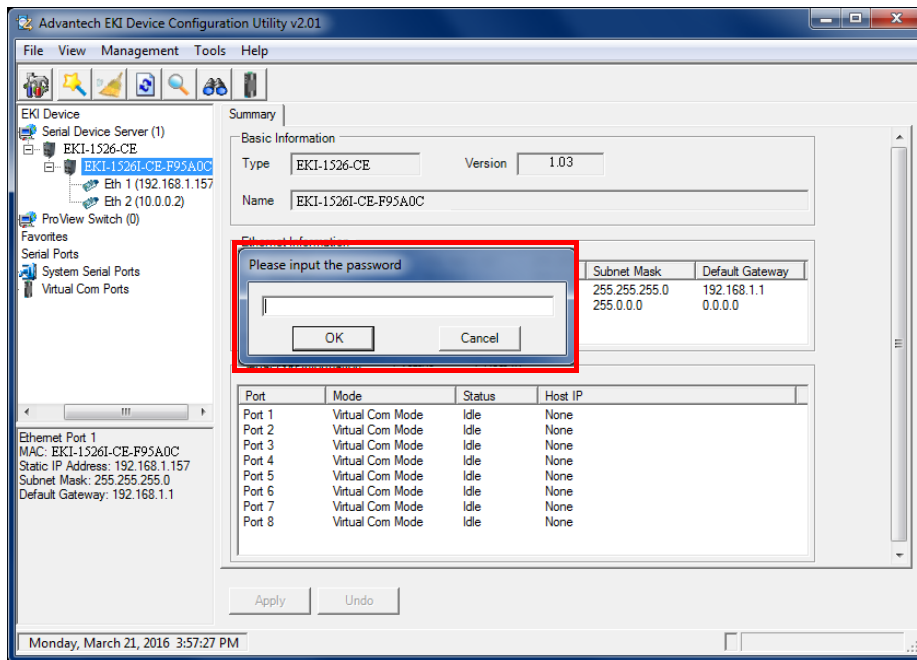


**Figure 3.19 Unlock the Serial Device Server**

3. Enter the password as entered in the Lock Device procedure.

   If you forgot the password, you must restore the setting of the serial device server to the factory defaults, which will be introduced in the next section.

## 3.5.3 Restore to Factory Default Settings

The configuration utility provides the function to restore the serial device server to factory default settings. The confirm message will display after clicking **Restore to Factory Default Settings**. If you really want to restore the serial device server to factory default settings, please click "Yes" button to continue.

Power off the serial device server within ten seconds. After reconnecting the power, all settings will be reset to the factory default. If the power supply remains connected for more than ten seconds, the serial device server will not be changed.

### 3.5.4 Resetting the Device

The Reset Device allows you to reset the serial device server. The function disconnects both the ethernet and serial connections.

The function also allows the serial device server to save new configuration settings to flash memory. Once a new setting is changed, you can use the Save function to accept the changes. You will need to reset the device to save the settings to flash memory.

To access this page, click **Tools** > **Reboot**.

Click **Reboot** to reboot the serial device server. Any configuration changes you have made since the last time you saved will be lost.

To reset the device:

1. Right-click a desired device to display the settings menu.
2. Select **Reset Device**.
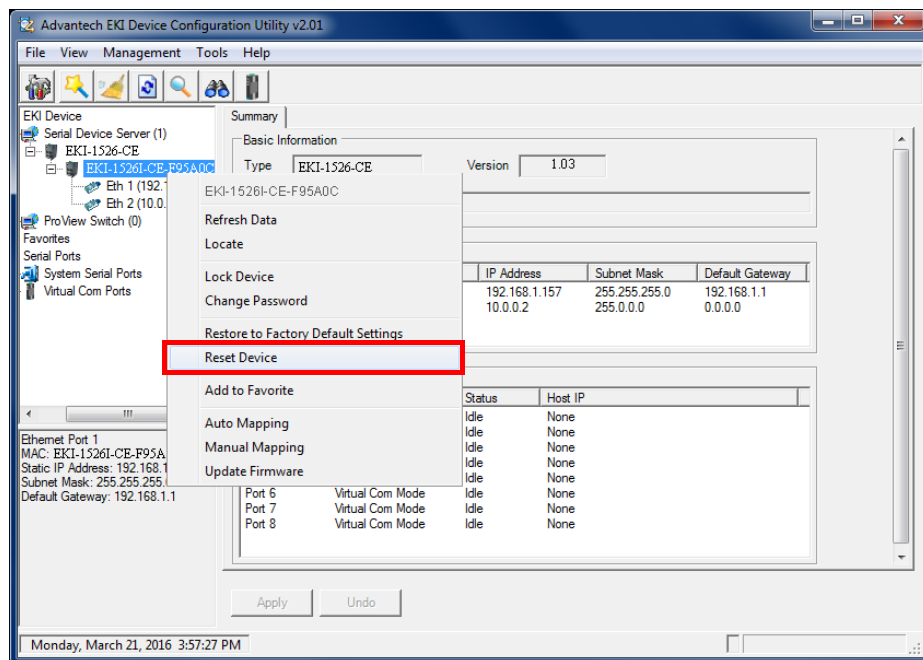


**Figure 3.20 Change Password**

The device resets. Once the process is complete, the serial device server displays under the Serial Device Server listing once again.

### 3.5.5 Add to Favorite

The Add to Favorite function allows to easily map available devices to Favorite's. By bookmarking specific devices, you can create quickly accessible shortcuts for existing critical devices from the vast pool of locally or remotely networked EKI devices.

### 3.5.6 Auto Mapping

See "Auto Mapping" on page 43 for further details.

### 3.5.7 Manual Mapping

See "Manual Mapping" on page 45 for further details.

## 3.5.8 Update Firmware

Advantech continually upgrades its firmware to keep up with the ever-expanding world of computing. You can use the update firmware function in the utility to carry out the upgrade procedure. Please access Advantech's website: http://www.advantech.com to download the latest version of the firmware. Before updating the firmware, make sure that your host's network domain is as same as the serial device server or the host can establish the TCP connection to the serial device server.

To update firmware:

1.  Right-click a desired device to display the settings menu.
2.  Select **Update Firmware**.
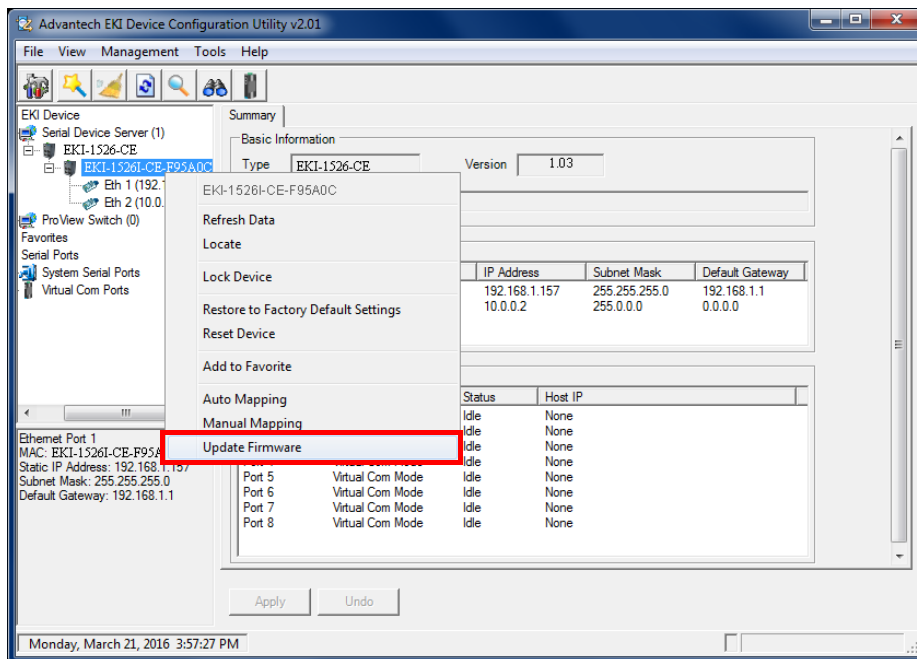


**Figure 3.21 Update Firmware**

3.  Select the firmware file you want to update.

Wait for a few seconds for the firmware to finish updating. After the update has completed, click on the **OK** button.

> **Note!**  *Be sure that the host PC Ethernet network domain is as same as the EKI-1528 Series serial device server or the host PC can establish the TCP connection with the serial device server during the updating firmware process.*

# Chapter 4

## Selecting An Operating Mode

# 4.1 Overview

The EKI-1526(TI) | 1528(TI) are designed to network-enable any RS-232/422/485 serial device, an provides industry-grade hardware and easy-to-use software to make connecting serial devices to an Ethernet network a surprisingly simple process.

These units immediately upgrade your existing serial devices for integration into the Internet world. The EKI-1526(TI) | 1528(TI) feature many powerful functions, such as high speed data transfer, access-control, auto-detection of all EKI series products, and more.

After the simple installation steps to attach your network and serial device to the appropriate connectors on the serial device servers and driver installation, you will be able to communicate with the serial devices via its own application software and wit the EKI serial device server. COM port redirector, USDG TCP server mode, TCP client mode, UDP server mode, UDP client mode, RFC2217 mode are all different methods of making a serial connection across using one or more serial device servers.

# 4.2 COM Port Redirector (Virtual COM Port)

Advantech EKI Device Configuration Utility is a serial COM port redirector that creates virtual COM ports and provides access to serial device connected to Advantech serial device server. You can configure the serial device server and enable the Virtual COM port using one integrated utility. Advantech EKI Device Configuration Utility allows you to configure Microsoft applications to communicate with network enabled serial device servers as easily as if they were physically installed in or directly connected on the PC.

The Advantech redirector can create up to 255 virtual COM ports. Application on the host can open virtual COM port to access the serial device servers at the same time. The redirector will handle each active virtual COM port as a separate TCP connection to Advantech serial device servers.
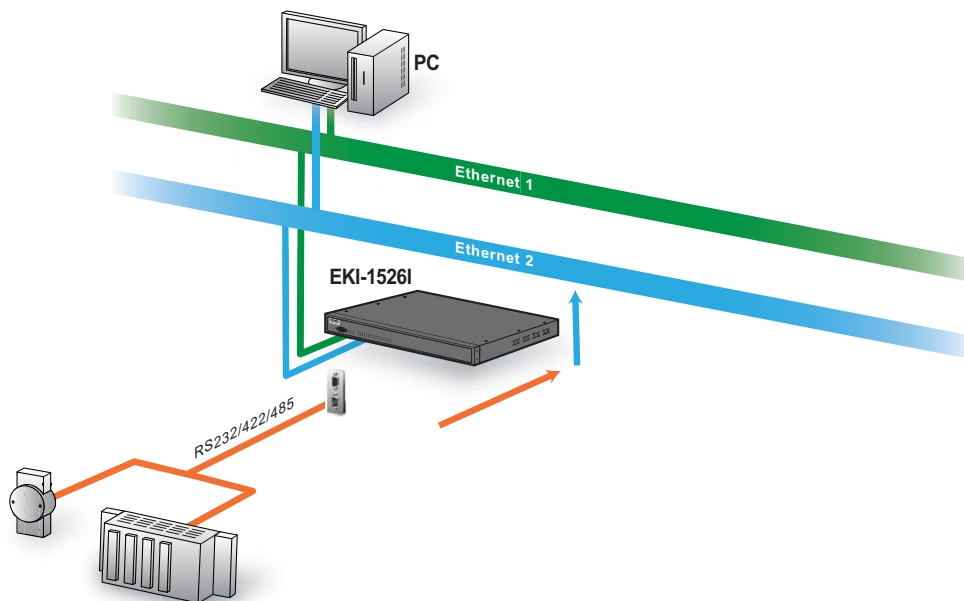


**Figure 4.1 Virtual COM Mode**

The EKI-1526(TI) | 1528(TI) provide Multi-access function through an Ethernet connection path, allowing a maximum of five connections to open one serial port simultaneously. In this mode, all connections use the same serial setting. If one serial setting within this configuration is configured differently, the data communication will not function correctly.



**Figure 4.2 Configuring Virtual COM Mode**

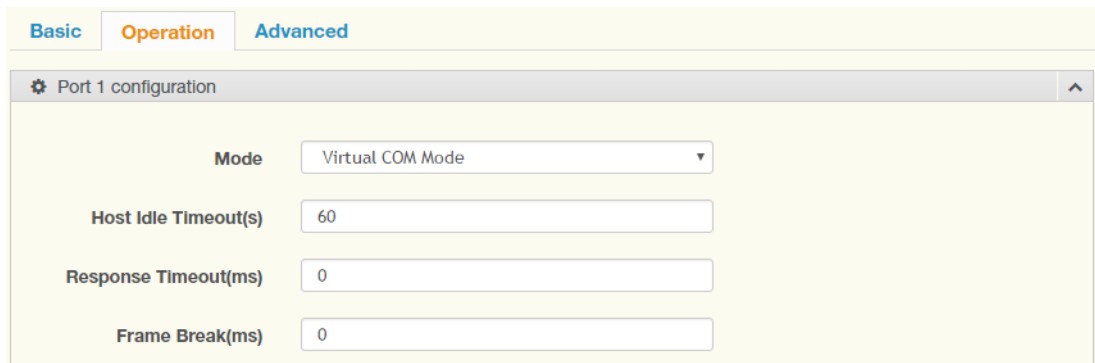The Host Idle Timeout setting monitors the connection between the host and the device. If the Host Idle Timeout setting time is reached, the device server will release the resources allocated to the port mapping. This prevents a stalled host from affecting the connective device.

The Multi-access function has two modes. One is **Normal mode** and the other is **Round-Robin mode**.

## 4.2.1 Normal mode

By disabling the Response Timeout parameter, the EKI-1526(TI) | 1528(TI) Series will operate in normal mode. When multiple hosts simultaneously open the serial port, only the first connected host has management control; the remaining connections only have a data communication function. Each serial port supports up to five simultaneous connections, so multiple hosts can transmit/receive data to/from the same serial port simultaneously. Every host can transmit data to the same serial port, and the EKI-1526(TI) | 1528(TI) Series will also transmit data to every hosts. When the multiple hosts transmit data to the same serial port at the same time, the received data from Ethernet and the outputs of serial port are mixed. When the EKI-1526(TI) | 1528(TI) Series receives data from serial port, the data will also be transmitted to the connected hosts simultaneously.

## 4.2.2 Round-Robin mode

By enabling the *Response Timeout* parameter, the EKI-1526(TI) | 1528(TI) Series operates in "Round-Robin mode". Each serial port supports up to five simultaneous connections allowing hosts to simultaneously transmit/receive data to/from the same serial port. Every host can simultaneously transmit data to the same serial port, EKI-1526(TI) | 1528(TI) Series processes the data in the order arrived. The EKI-1526(TI) | 1528(TI) Series processes the first host's request and replies. The serial device server determines the end of the serial acknowledgement through a response timeout. When EKI-1526(TI) | 1528(TI) serial device server does not receive a response from the serial port after a response timeout query, the device replies with an acknowledgement and then processes the next host request.

With an increased number of hosts, response time may be lengthy, increasing the period of the Response Timeout. **Frame Break** is therefore an important parameter for Round Robin mode. The parameter is a smart method of reducing ineffective waiting periods and streamlining the transmission process.

By disabling the Frame Break function, the series devices will wait for a "Response Timeout" period, whether or not the device has transmitted data. During this period, the host commands are queued and processed in the order received.

If Frame Break is enabled, the serial port idle is longer than the Frame Break period. The EKI-1528 Series assumes the communication is completed and continues with the next query. This is an efficient way to reduce waiting time and improve performance.

# 4.3 USDG Data Mode

The EKI-1526(TI) | 1528(TI) Series can function either as Data server or Data client. Both operations support TCP and UDP protocols. The Series allows you to treat your serial devices as if they were networking devices. You can issue commands or transmit data from serial devices, connected to a EKI-1526(TI) | 1528(TI) Series device, to any devices that are connected to the Internet.

## 4.3.1 USDG TCP Client Mode

In TCP Client mode, the TCP connection is established from the EKI serial device server. This operation mode supports a maximum of 16 simultaneous connections for each serial port on EKI-15xx series to one host or several hosts. You can configure the IP address and TCP port number of the network hosts connected to the EKI serial device server using the Advantech Serial Device Server Configuration Utility. After configuring the devices, when the EKI serial device server receives the data from the serial port, and the device server connects to the hosts which are configured.
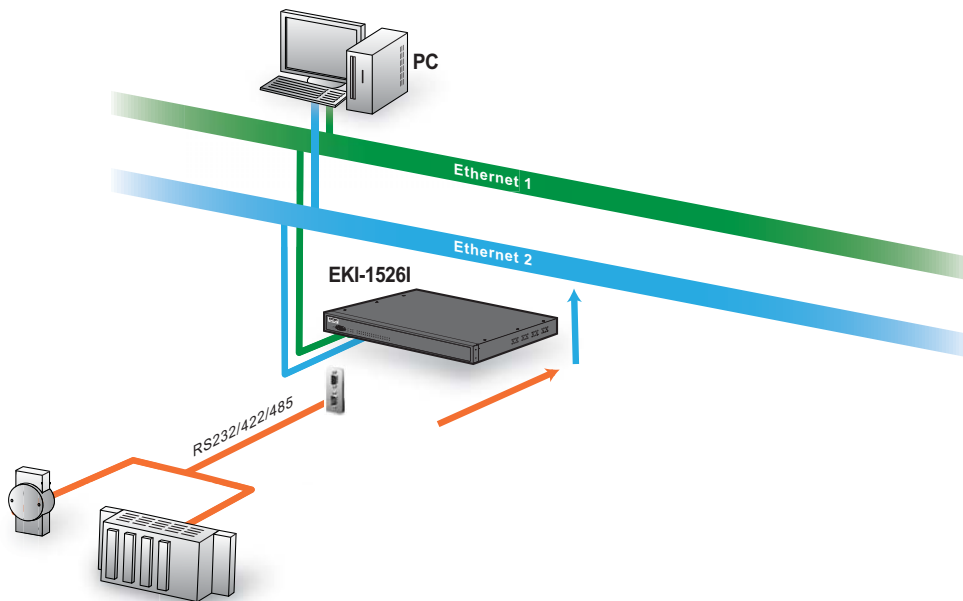


**Figure 4.3 USDG TCP Client Mode**

In USDG Data TCP Client mode, you may need to enable the peer numbers you would like to receive. You can set a maximum sixteen network devices to which you may connect. You need to fill out the IP Address and Port (including local port and peer port) of each network device to which you want to connect.

In the Peer for Receiving Data menu, entering "LocalPort=0" as the value for the Local Port will assign a random TCP Port for an EKI device.



**Figure 4.4 Peer for Receiving Data**

## 4.3.2 USDG Data TCP Server mode

In TCP server mode, the TCP connection is initiated from the host to the EKI serial device server. This operation mode supports a maximum of five simultaneous connections for each serial port on an EKI serial device server from a single or multiple hosts. However a multi-host connection simultaneously transmits the data from a single serial port.
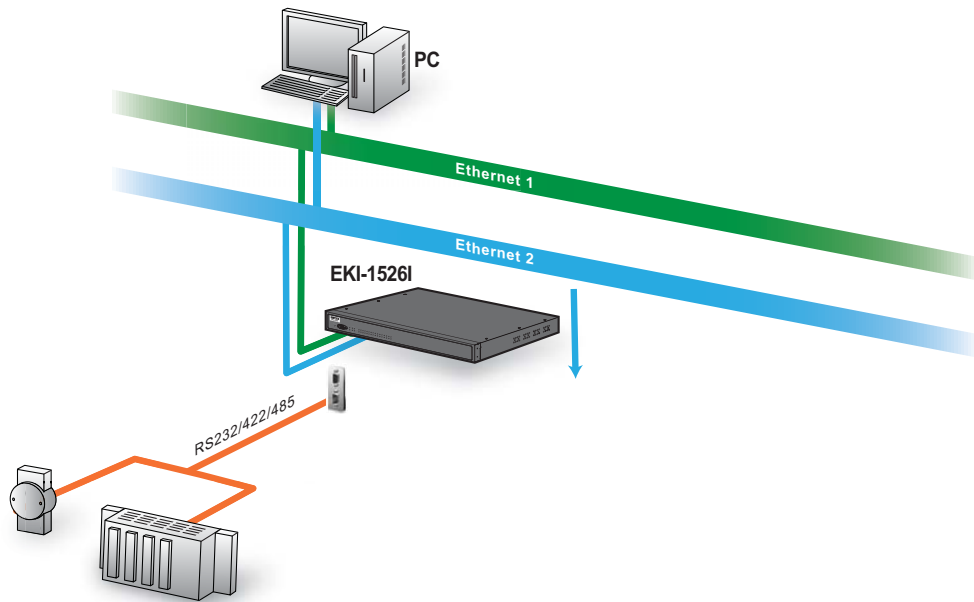


**Figure 4.5 USDG TCP Server Mode**



**Figure 4.6 USDG Data Mode**

### 4.3.3 USDG UDP Server/Client mode

The USDG UDP mode is primarily used for the broadcasting of messages over a network. In UDP server mode, data is transmitted from the Host connected to the EKI-1526(TI) | 1528(TI) USDG UDP Port (Default Port 5300). In the default UDP client mode, EKI serial device servers simultaneously transmits UDP messages to a maximum of 16 peers.

USDG Data mode supports Data Idle Timeout, Data Listen Port, and Command Listen Port parameters.

#### 4.3.3.1 Data Idle Timeout

The default is 60 seconds. If you want to keep connection continually, you can disable the Data Idle Timeout. Data idle Time is the time period for which the device waits for data. If the EKI-1526(TI) | 1528(TI) does not receive data during established idle time, the EKI-1526(TI) | 1528(TI) will disconnect temporarily. When the data comes in, it will reconnect automatically. Users do not need to reconnect.

#### 4.3.3.2 Data Listen Port

The TCP/UDP port number represents the source port number, and the number is used to identify the channel for remote initiating connections. The port range is 1024-65533. If an unknown caller wants to connect to the system and request services, they must define the TCP/UDP port to carry a long-term conversation.

Each node on a TCP/IP network has an IP address, and each IP address can allow connection on one or more TCP port. The well-known TCP ports are those that have been defined; for example, port 23 is used for Telnet connections. There are also custom sockets that users and developers define for their specific needs. The default TCP/UDP port of the EKI-1526(TI) | 1528(TI) Port1 is 5300, Port2 is 5301, etc. Users can adjust them according to preference or application. Each port has its own data listen port to accept the connection requests of other network device. The data listen port cannot be set to the same value. You can transmit/receive data to/from devices via the data listen port.

#### 4.3.3.3 Command Listen Port

Each port has its own command listen port to accept connected request of other network device, so the command listen port cannot be set to the same value. The Command Listen Port is different from the Data Listen port.

## 4.4 USDG Control mode

In controlling mode, the EKI serial device server presents a modem interface to the attached serial device: it accepts AT-style modem commands to connect / disconnect to other networking device.

If you want a serial device running application program to connect/disconnect to different devices on request, this function is available through the USDG Control mode.



**Figure 4.7 USDG Control Mode**

Please refer to the USDG TCP/UDP server operating mode to setup the Data Listen Port, Command Listen Port, and Data Idle Timeout.

## 4.4.1 Hangup Character

The default character is "+". After you have connected to another serial device an via EKI device, you may need to disconnect, using the command "+++". To do this, press "+" three times and wait for the idle timeout <default value is 100ms>; the device will disconnect. You can set "Guard Time" to define the idle time.

## 4.4.2 Guard Time

The default value is 1000 ms.

Example: <Guard Time>+++<Guard Time>

Control Mode is designed for use with legacy operating systems, such as MSDOS, that do not support TCP/IP Ethernet. By connecting one of the EKI's serial ports to the MS-DOS computer's serial port, it is possible to use legacy software originally designed to transmit data via modem, but now transmitting data over the Ethernet.

| Command | Function |
|---|---|
| ATD <IP address><TCP port><CR> | Forms a TCP connection to the specified host.<br>Ex: ATD 192.0.55.22:5201<br>In above example, the EKI serial device server forms a raw TCP connection to the networking device (192.0.55.22). The TCP port is 5201. |
| ATA <CR> | Answering an incoming call |
| +++<CR> | Returns the user to the command prompt when entered from the serial port during a remote host connection. |
| <LF><CR> OK <LF><CR> | Commands are executed correctly |
| <LF><CR> CONNECT <LF><CR> | Connect to other device |
| <LF><CR> RING ddd.ddd.ddd <LF>< CR> | Detect the connection request from other device, which IP address is ddd.ddd.ddd.ddd. |
| <LF><CR> DISCONNECT <LF><CR> | Disconnect from other device |

| Command | Function |
|---|---|
| <LF><CR> ERROR <LF><CR> | Incorrect commands |
| <LF><CR> FAIL <LF><CR> | If you issue an ATDT command and can not connect to the device, it will response "FAIL". |

## 4.5 RFC2217 Mode

RFC2217 mode is similar to virtual COM mode in that a driver is used to establish a transparent connection between a host computer and a serial device by mapping the serial port on EKI-1528 Series devices to a local COM port on a host computer. RFC2217 defines general COM port control options based on the Telnet protocol. Third party drivers supporting RFC2217 are widely available on the Internet and can be used to implement virtual COM mapping to the serial port of your device.

# Chapter 5

## Setting Up Virtual COM Redirector

# 5.1 Setting COM Redirector

Advantech COM port mapping software is a serial COM port redirector that creates virtual COM ports and provides access to serial devices connected to an Advantech serial device servers. Your serial device applications can communicate with serial devices connected to the Advantech serial device servers without software changes.

Since the virtual COM ports work like standard Windows COM ports, your application software sees no difference between a local serial device and one connected to an Advantech serial device server.

The COM redirector utility and the virtual COM port management utility are integrated into one utility with same GUI. The Advantech EKI Device Configuration Utility can create all Virtual COM ports using the Auto Mapping function or by using the manual mapping function.

# 5.2 Virtual COM Port Mapping

## 5.2.1 Auto Mapping

1. On your desktop, navigate to **Start > All Programs** > **EKI Device Configuration Utility** and click **Advantech EKI Device Configuration Utility** to open the utility.
2. Under Serial Device Servers, locate **your server and click the icon to expand the listing.**
3. Select the target device and right-click on it to open up the options menu window.
4. Locate **Auto Mapping** and select it.
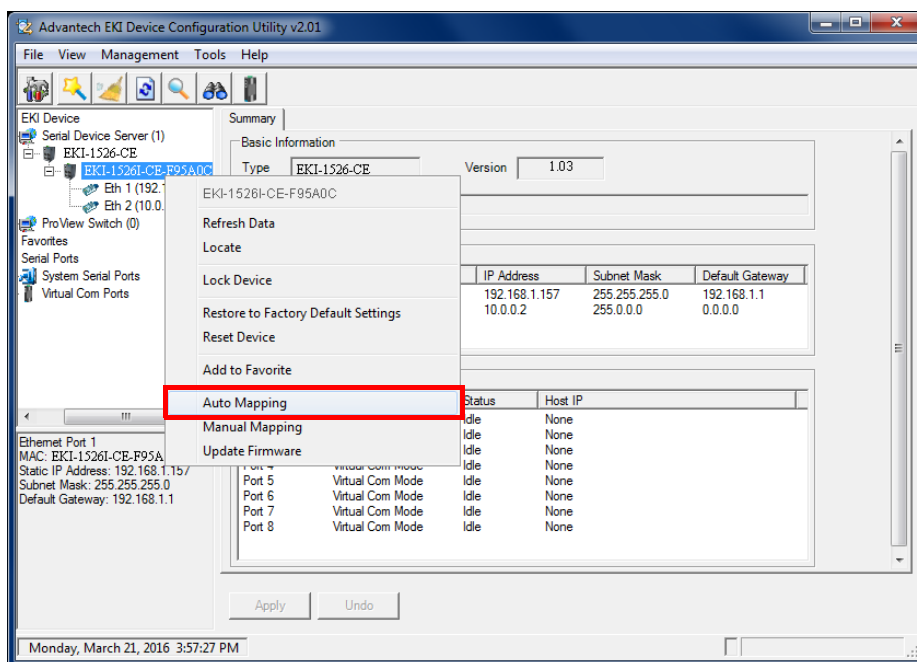


**Figure 5.1 Selecting Auto Mapping**

The **Batch Automatic Mapping Virtual COM Port** window displays.

5. Locate **From System Port** and click the drop-down menu to select the target COM port.
6. From the network address list, select the address options to map.

The selected address displays the Device Port and (EKI serial device server physical serial port) and the system port which will be the VCOM port for the PC.
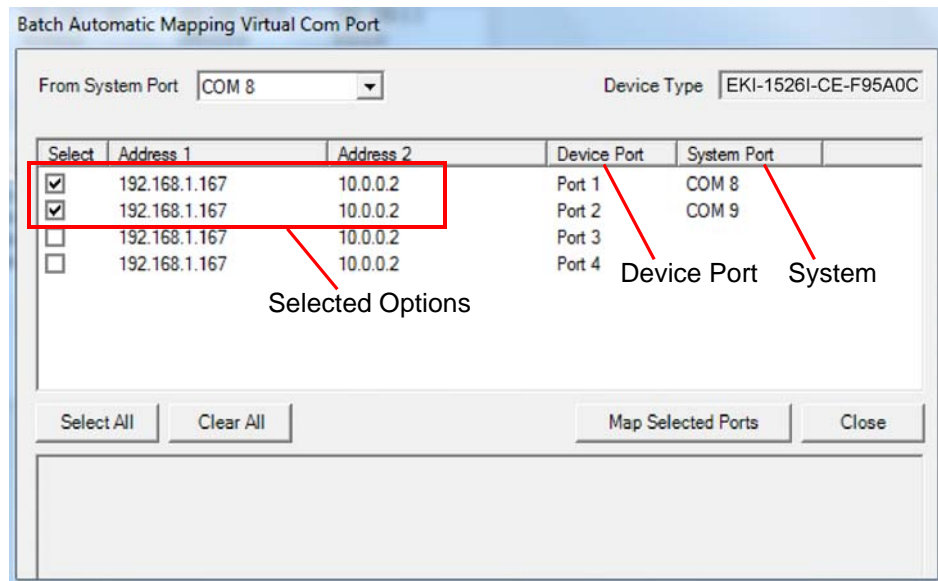


**Figure 5.2 Selecting Auto Mapping**

7. From the network address list, select the address options to map.
8. Click **Map Selected Ports** to set the configuration.
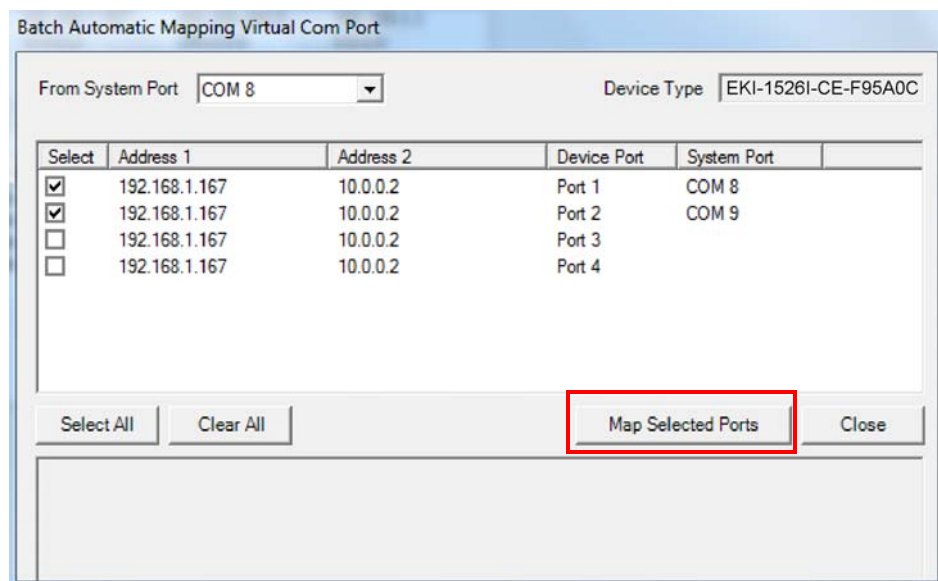


**Figure 5.3 Mapping Selected Ports**

Once the mapping function is initialized, a successful mapping process results in the virtual mapping of the designated physical serial port and VCOM PC port. See the following figure.



**Figure 5.4 Viewing VCOM Mapping Results**

## 5.2.2 Manual Mapping

1. On your desktop, navigate to **Start > All Programs** > **EKI Device Configuration Utility** and click **Advantech EKI Device Configuration Utility** to open the utility.

2. Under **Serial Device Servers**, locate your server and click the icon to expand the listing**.**

3. Select the target device and right-click on it to open up the options menu window.

4. Locate **Manual Mapping** and select it.
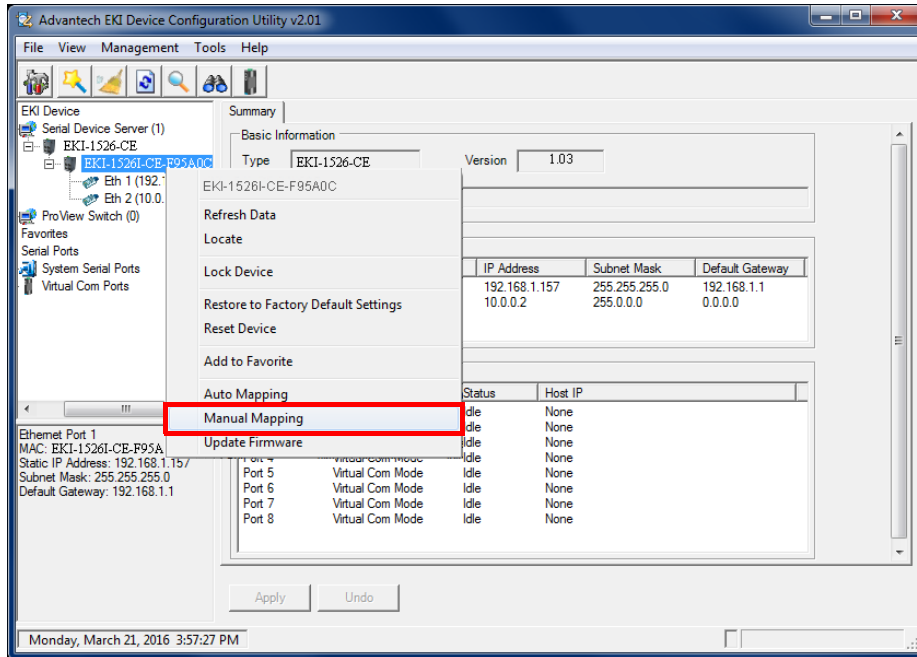


**Figure 5.5 Selecting Manual Mapping**

The **Manual Mapping Virtual COM Port** window displays.

5. In the **Device** > **Serial Port** drop-down menu, select the target port to map. This is the physical serial port on the EKI device.

6. In the **Host** > **COM Port** drop-down menu, select the target COM port to map. This is the virtual port on the target PC.
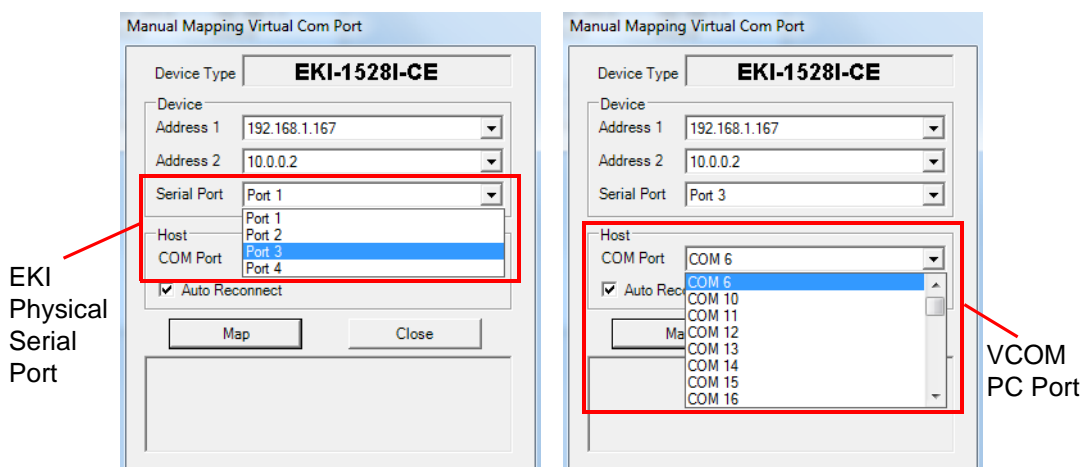


**Figure 5.6 Selecting Manual Mapping**

7. Click **Map it** to continue the process. The mapping process may require a short time. Once this step is completed, the **Manual Mapping Virtual COM Port** window displays again to map the VCOM port on the target PC.

Once the mapping function is initialized, a successful mapping process results in the virtual mapping of the designated physical serial port and VCOM PC port. See the following figure.
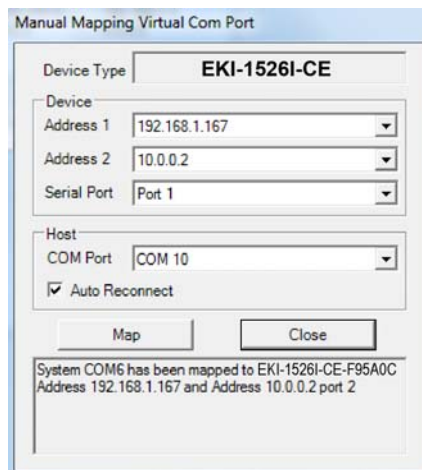


**Figure 5.7 Viewing Manual VCOM Mapping Results**

To allow for an automatic connection after a reboot or a power up, click the Auto Reconnect option to enable this function.

## 5.2.3 Configuration Wizard

1. On your desktop, navigate to **Start > All Programs** > **EKI Device Configuration Utility** and click **Advantech EKI Device Configuration Utility** to open the utility.
2. Under **Serial Device Servers**, locate your server and click the icon to expand the listing**.**
3. From the tool bar, select **Configuration Wizard**.
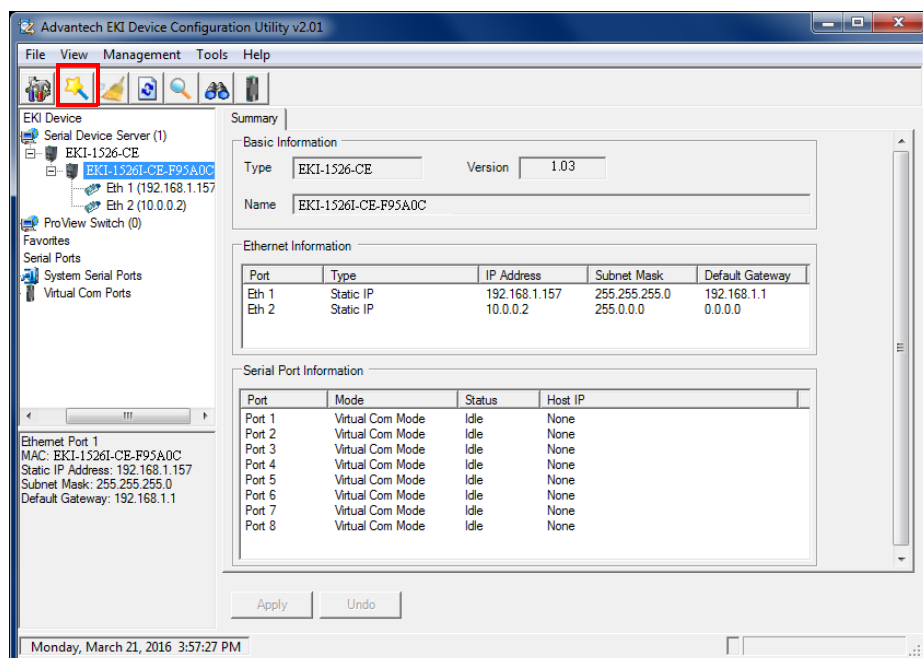


**Figure 5.8 Selecting the Configuration Wizard**

The Wizard screen displays and lists available devices.

4. Select the target device and click **Next** to continue.
   The Wizard Device Settings window displays.
5. Under Serial Port Settings, click the **Type** drop-down menu and select the port type.

Review the settings under the Ethernet fields and verify them.

6.  Click **Next** to continue or **Previous** to return to the previous screen.
    The selected settings are displayed in the following Wizard window.

7.  Locate the radio button correlating to the target port to modify and click on it to select it.
    Verify the Device Port (EKI device physical serial port) and System Port (virtual COM port for PC) settings before continuing.

8.  Click **Finish** to complete the process. A Wizard complete! screen displays indicating the completion of a successful procedure.

## 5.2.4  Confirming Virtual COM Settings

1.  On your desktop, navigate to **Start > All Programs** > **EKI Device Configuration Utility** and click **Advantech EKI Device Configuration Utility** to open the utility.

2.  Locate **Serial Ports** menu in the menu pane and click on the Expand icon next to Virtual COM Ports to view a list of the mapped ports.

3.  Select a VCOM port to view its settings.
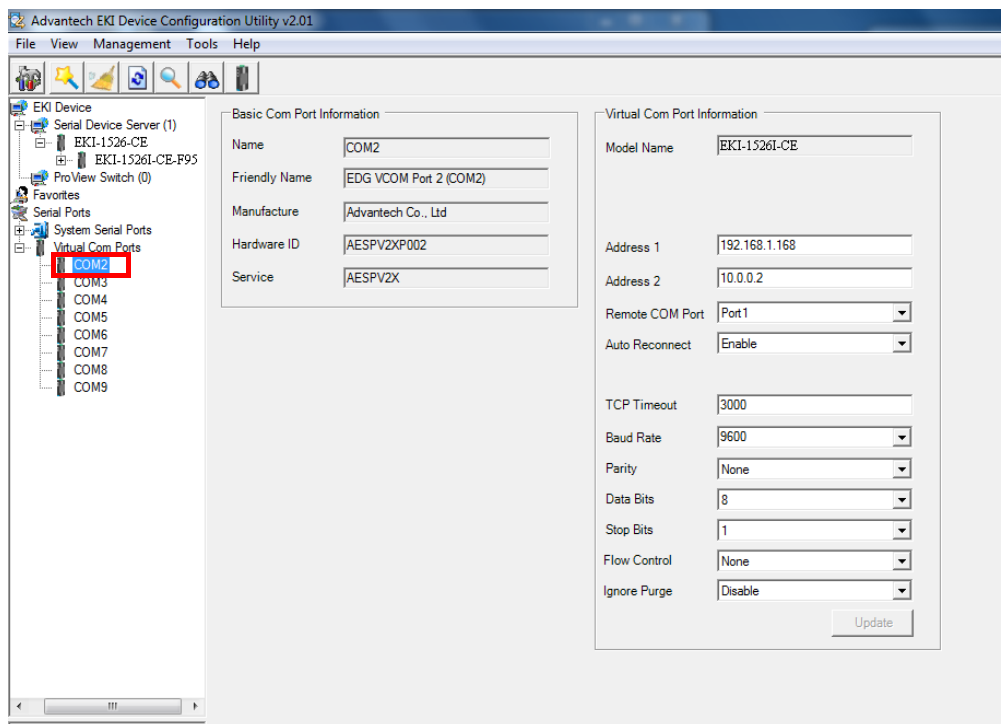


**Figure 5.9 Serial Port Listing on EKI Device**

For the next step, you will need to open the device manager on your system. Using the Device Manager, you can both view and change the COM port settings.

**Note!**    *The following instructions are written for Windows 7; the Windows XP equivalent is displayed in parentheses (). The instructions may vary on other operating systems.*

4.  On your desktop, click on the **Start button** and then on **Control Panel**. A window displays showing all the available control panels.

5.  Click on **Hardware and Sound** (**Hardware**). A list of all available hardware configuration options displays.

6.  Under **Devices and Printers**, click on the **Device Manager** link. A new window displays showing a list of all the available devices on your computer.

7.  Locate **Ports** (COM & LPT) and click on the expand icon. A list of all available serial and parallel port devices display.

    The newly mapped VCOM port should be listed under the same mapped settings used in the previous steps.
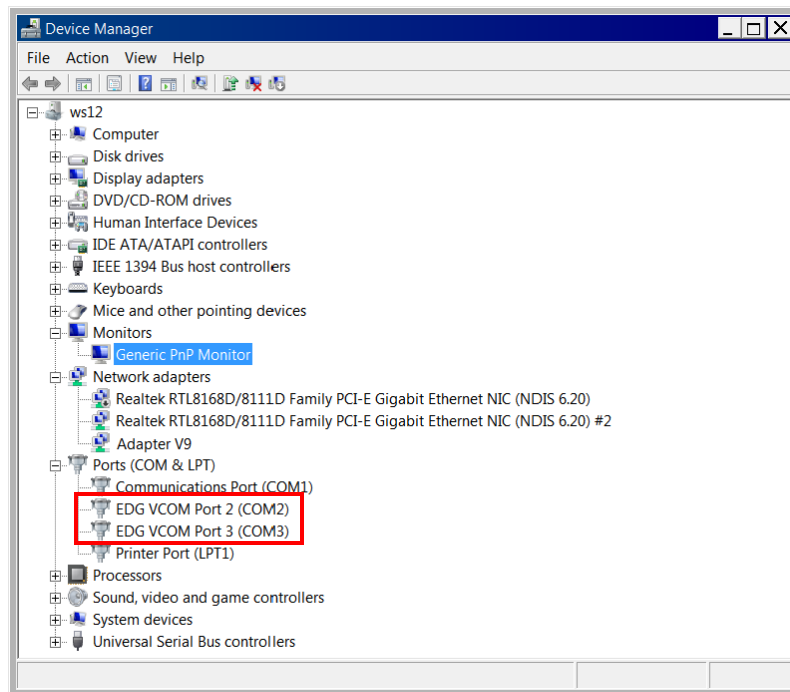


**Figure 5.10 System Port VCOM Mapping Configuration**

The newly mapped VCOM port is listed under the same mapped settings used in the previous steps. The settings correspond to the VCOM port configuration on the EKI device, see the following figure.
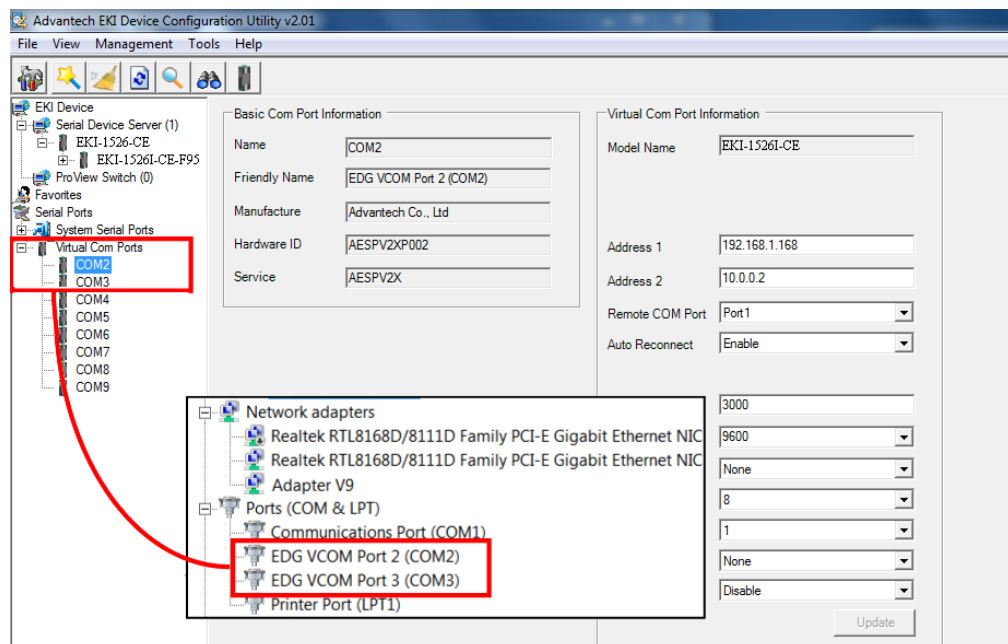


**Figure 5.11 Verifying VCOM Mapping Configuration**

If the settings do not correspond, the VCOM mapping is not correct. See "Virtual COM Port Mapping" on page 43 to re-map the VCOM ports.

## 5.2.5 Removing VCOM Ports

1. On your desktop, navigate to **Start > All Programs** > **EKI Device Configuration Utility** and click **Advantech EKI Device Configuration Utility** to open the utility.

2. Under Serial Ports, click the expand icon on Virtual COM Ports to view the configured port list.

3. Locate the port to remove and right-click on it to open the options menu.

4. Scroll down to **Remove This Port** and click on it to initiate the procedure.
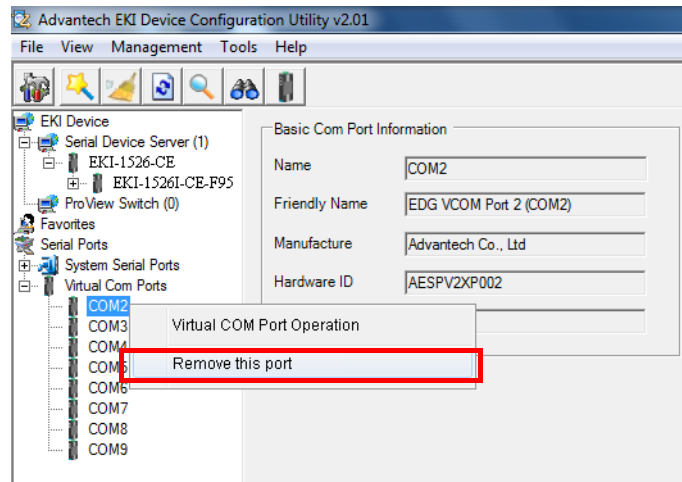


**Figure 5.12 Accessing the Web Page through the EKI Device Configuration Utility**

A Remove Port confirmation window displays.

5. Click **OK** to continue with the removal process or **Cancel** to return to the previous menu.

Once the procedure is completed, a prompt displays the successful removal of the port from the VCOM mapping list.

## 5.2.6 Exporting VCOM Mapping

The VCOM mapping settings can be exported for archiving or further use on remaining EKI serial device server.

Importing settings is supported through the EKI Device Configuration Utility.

To export VCOM mapping:

1. On your desktop, navigate to **Start > All Programs** > **EKI Device Configuration Utility** and click **Advantech EKI Device Configuration Utility** to open the utility.

2. Under **Serial Device Servers**, locate your server and click the icon to expand the listing**.**

3. Select the target device and right-click on it to open up the options menu window.

4. In the menu, select **Export Device Settings**.

A configuration (config) file with the server settings is downloaded to your default download folder.

### 5.2.7 Importing VCOM Mapping

The VCOM mapping settings can be imported from a previously saved configuration file.

Importing settings is supported through the EKI Device Configuration Utility.

To import VCOM mapping:

1.  On your desktop, navigate to **Start > All Programs** > **EKI Device Configuration Utility** and click **Advantech EKI Device Configuration Utility** to open the utility.
2.  Under **Serial Device Servers**, locate your server and click the icon to expand the listing**.**
3.  Select the target device and right-click on it to open up the options menu window.
4.  In the menu, select **Import Device Settings**.
5.  An explorer window displays, locate the configuration (config) file with the server settings and click **Open** to select the file.

Once the file is selected, the new settings are imported into the EKI serial device server.

# 5.3 Running a Diagnostic Test

The loopback test allows you to determine if the EKI serial device server is configured correctly to identify any failed nodes in the network. The test allows you to send a signal from the server and return (looped back) it back to the server.

1.  Connect the loopack connector to a COM port on the EKI serial device server.
2.  On your desktop, navigate to **Start > All Programs** > **EKI Device Configuration Utility** and click **Advantech EKI Device Configuration Utility** to open the utility.
3.  Under Serial Ports, click the expand icon on Virtual COM Ports to view the configured port list.
4.  Open the ICOMToolsPlus utility to open the EKI serial device server settings.
5.  Set the COM port configuration to match the Port Configuration.
6.  Click the **Start** menu.

A successful loopback test incrementally displays the Bytes/sec values on both displayed menus.

# Chapter 6

## Web Configuration

# 6.1 Overview

EKI-1526(TI) | 1528(TI) serial device servers can be configured through a web interface. By using a standard web browser, the same procedure as with the Windows configuration utility can be used. In the browser's address field, enter the IP Address of your EKI-1526(TI) | 1528(TI) serial device server.s The default IP setting is 10.0.0.1, but you should use the IP which you have previously assigned for this device. Once the IP is entered, you will be presented with the following windows.

**Note!** *Before using the web-based configuration, make sure your host PC Ethernet network IP domain is as same as the serial device server, or it can establish the TCP connection with the serial device server.*

**Note!** *It is recommended that you use Microsoft Internet Explorer 7.0 or higher.*

# 6.2 Accessing the Web Page

## 6.2.1 Accessing the Web Page via Configuration Utility

To access the web page via configuration utility:
1.   Select Ethernet under the desired device.
2.   Click **Launch Browser**.
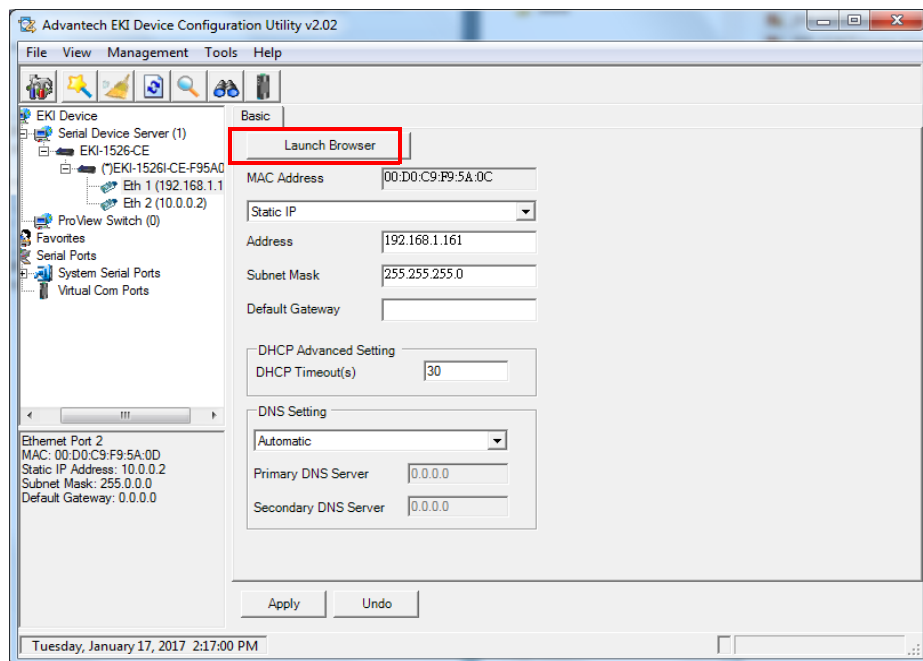


**Figure 6.1 Accessing the Web Page via Configuration Utility**

### 6.2.2 Accessing the Web Page via Web Browser

Once the device is installed and connected, power on the device. The following information guides you through the logging in process.

1. Launch your web browser on the PC.
2. In the browser's address bar, type the device's default IP address (Eth1: 10.0.0.1, Eth2: 10.0.0.2).
3. The main interface displays.

# 6.3 System

You can change the Device Name and Device Description on this page. You can also enable or disable the Telnet and SNMP functions. Moreover, you can set the Timezone related settings.

To access this page, click **System**.
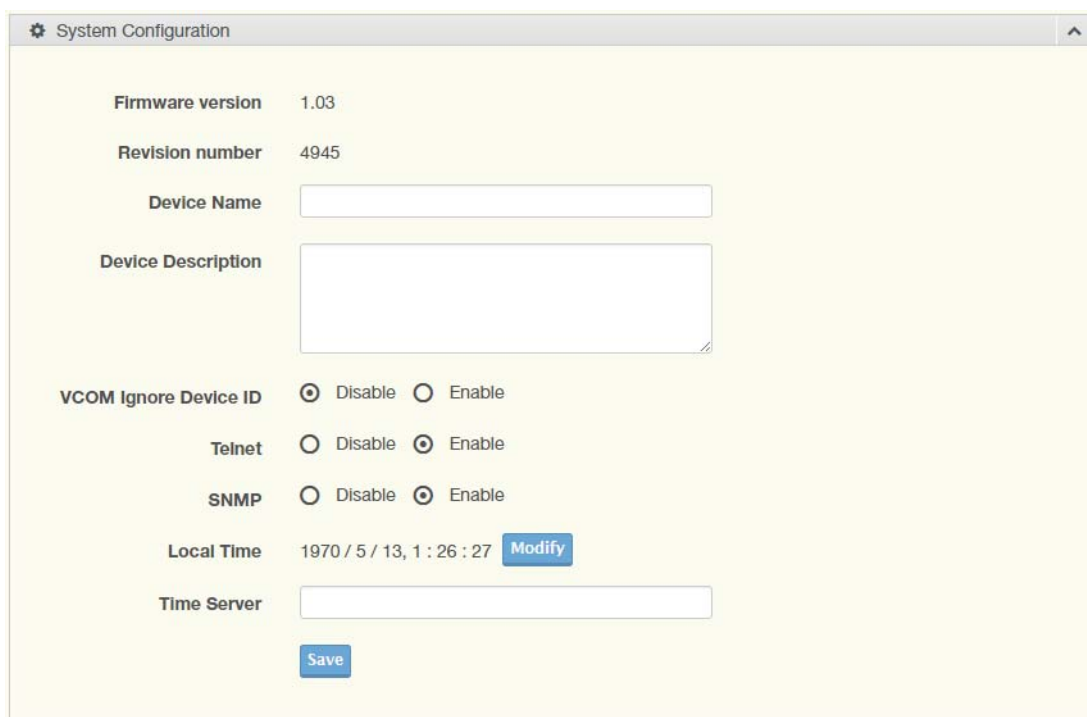


**Figure 6.2 System**

The following table describes the items in the previous figure.

| Item | Description |
| --- | --- |
| Firmware version | Displays the current firmware version of the device. |
| Revision number | Displays the revision number of the device. |
| Device Name | Enter the device name: up to 31 alphanumeric characters. |
| Device Description | Enter the device description. |
| Telnet | Click **Enabled** or **Disabled** to set remote access through the Telnet Service function. |
| VCOM Ignore Device ID | |
| SNMP | Click **Enabled** or **Disabled** to define the SNMP daemon. |
| Local Time | Click **Modify** to set local date and time of the system. |

| Item | Description |
|------|-------------|
| Time Server | Enter the address of the SNTP server. This is a text string of up to 64 characters containing the encoded unicast IP address or hostname of a SNTP server. Unicast SNTP requests will be sent to this address. If this address is a DNS hostname, then that hostname should be resolved into an IP address each time a SNTP request is sent to it. |
| Save | Click **Save** to save the values and update the screen. |

## 6.4 Ethernet Configuration

Choose either **Eth 1** or **Eth 2** in the Ethernet Configuration page.Enter the corresponding values for your network environment. Remember press **Save** after fill in all values.

To access this page, click **Ethernet Configuration**.



**Figure 6.3 Ethernet Configuration**

The following table describes the items in the previous figure.

| Item | Description |
|------|-------------|
| IPv4 Configuration | |
| Mode | Click the drop-down menu to select the IP Address Setting mode: Static IP, DHCP, or BOOTP. |
| MAC Address | Enter the MAC address to which packets are statically forwarded. |
| IP Address | Enter a value to specify the IP address of the interface. The default is 10.0.0.1 (Eth1) & (0.0.0.2 (Eth2). |
| Subnet Mask | Enter a value to specify the IP subnet mask for the interface. The default is 255.0.0.0. |
| Default Gateway | Enter a value to specify the default gateway for the interface. |

| Item | Description |
|------|-------------|
| DNS Configuration | |
| DNS | Click the radio button to select the DNS mode: Automatic or Specific. |
| Current Status | |
| IP 1 | Displays the current IP address 1 of the device. |
| IP 2 | Displays the current IP address 2 of the device. |
| Save | Click **Save** to save the values and update the screen. |

> **Note!** *All new configurations will take effect after rebooting. To reboot the device, click **Tools** > **Reboot**.*

# 6.5 Port Configuration

There are Basic, Operation Mode, and Advanced Setting in the serial port configuration. For more detailed information for setting.

## 6.5.1 Basic

The Basic menu allows for the configuration of the serial interface type, baud rate, parity, data / stop bits, and flow control for port configuration.

To access this page, click **Port Configuration** > **Basic**.



**Figure 6.4 Port Configuration > Basic**

The following table describes the items in the previous figure.

| Item | Description |
|------|-------------|
| Type | Click the drop-down menu to select a serial interface: RS-232, RS-422 or RS-485. |
| Baud Rate | Enter a value to specify the baud rate. The value should conform to the current transmission speeds of connected devices when setting the baud rate. |
| Parity | Click the drop-down menu to select the parity: None, Odd, Even, Mark or Space. |
| Data Bits | Click the drop-down menu to select the data bits: 5, 6, 7, or 8. |

| Item | Description |
|------|-------------|
| Stop Bits | Click the drop-down menu to select the stop bits: 1, 1.5 or 2. |
| Flow Control | Click the drop-down menu to select the flow control mode: None, XOn/XOff, RTS/CTS or DTR/DSR |
| Save | Click **Save** to save the values and update the screen. |

## 6.5.2 Operation

The Operation menu allows for the configuration of the mode type and related attributes for port configuration.

To access this page, click **Port Configuration** > **Operation**.



**Figure 6.5 Port Configuration > Operation**

The following table describes the items in the previous figure.

| Item | Description |
|------|-------------|
| Mode | Click the drop-down menu to select the port configuration mode: Virtual COM Mode, USDG Data Mode, USDG Control Mode or RFC2217 Mode. |
| Virtual COM Mode | |
| Host Idle Timeout (s) | Enter a value to define the host idle timeout period. |
| Response Timeout (ms) | Enter a value to define the response timeout period. |
| Frame Break (ms) | Enter a value to specify the frame break time. |

| Item | Description |
|---|---|
| Pack conditions (Pack sent immediately when reach 1024 Bytes) | |
| By size | Click the option to send pack immediately by size. |
| By interval | Click the option to send pack immediately by interval. |
| By end-character | Click the option to send pack immediately by end-character. |
| Port Data Buffering | |
| Port Data Buffering | Click the drop-down menu to select port data buffering type: None or RAM. |
| When Data Full | Click the drop-down menu to select process mode when data full: Stop. |
| USDG Data Mode | |
| Protocol | Click the drop-down menu to select the protocol: TCP or UDP. |
| Data Idle Timeout (s) | Enter a value to define the data idle timeout period. |
| Data Listen Port | Enter a value to identify the channel for remote initiating connections. |
| Command Listen Port | Enter a value to identify the command listen port for accepting connected request of other network device. |
| Response Timeout (ms) | Enter a value to define the response timeout period. |
| Frame Break (ms) | Enter a value to specify the frame break time. |
| TCP Mode Extra Options | |
| Auto Connect To Peer IP | Click the option to connect to TCP/IP which are set at Peers page automatically after boot up. |
| Port Data Buffering | |
| Media | Click the drop-down menu to select port data buffering type: None or RAM. |
| When Data Full | Click the drop-down menu to select process mode when data full: Stop. |
| Pack conditions (Pack sent immediately when reach 1024 Bytes) | |
| By size | Click the option to sent pack immediately by size. |
| By interval | Click the option to sent pack immediately by interval. |
| By end-character | Click the option to sent pack immediately by end-character. |
| By character-timeout | Click the option to sent pack immediately by character-timeout. |
| Peer for Receiving Data | |
| Peer Number | Click the drop-down menu to select the number of network device which you want to connect. Maximum is 16 network devices. |
| USDG Control Mode | |
| Protocol | Display the current protocol of the USDG control mode. |
| Data Idle Timeout (s) | Enter a value to define the data idle timeout period. |
| Data Listen Port | Enter a value to identify the channel for remote initiating connections. |
| Command Listen Port | Enter a value to identify the command listen port for accepting connected request of other network device. |
| Hang up Character | The default character is "+". After you have connected to another serial device via an EKI device, you may need to disconnect, using the command "+++". To do this, press "+" three times and wait for the idle timeout <default value is 100ms>; the device will disconnect. You can set "Guard Time" to define the idle time. |
| Guard Time (ms) | Enter a value to identify the guard time. |
| RFC2217 Mode | |
| Listen Port | Enter a value to identify the channel for remote initiating connections. |

| Item | Description |
|---|---|
| Host Idle Timeout (s) | Enter a value to define the host idle timeout period. |
| Save | Click **Save** to save the values and update the screen. |

### 6.5.3 Advanced

The Advanced menu allows for the configuration of the time delay, buffer data size and FIFO size for port configuration.

To access this page, click **Port Configuration** > **Advanced**.



**Figure 6.6 Port Configuration > Advanced**

The following table describes the items in the previous figure.

| Item | Description |
|---|---|
| Enable Delay Time | Click the option to enter the value to postpone the receive data. |
| Ignore Purge | Click the option to purge the serial port when the serial port opens first time. |
| Disable Character Timeout Detection | Click the option to disable the serial port character timeout detection. |
| Disable Multiple Connection | Click the option to disable the multi-access function. Then only one TCP connection is allowed on this serial port. |

| Item | Description |
| --- | --- |
| Enable BufferData Size | Click the option to enter the value to queue data to become a packet. |
| Port Timeout | Settings determine the time period that received data from serial port is postponed.<br>Click the option to enter the value to define the timeout period. |
| RTL | Receiver Trigger Level<br>Click the option to determines how often or when the receiver interrupt is be triggered. |
| TTL | Transmitter Trigger Level<br>Click the option to designate to suspend or resume transmission. |
| FCL | Flow Control Lower Trigger Levels<br>Click to set register for automatic flow control. FCL stores the lower trigger level. |
| FCH | Flow Control Higher Trigger Level<br>Click to set register for automatic flow control. FCH stores the upper trigger level. |
| Write to FIFO Size | Click the option to determines the maximum characters will be wrote into one interrupt. |
| USDG Advanced Options (Flow Control will overwrite these options) | |
| RTS Control | Click the drop-down menu to select the status of RTS: ON, OFF, Toggle By Connect or Toggle By Data. |
| DTR Control | Click the drop-down menu to select the status of DTR: ON, OFF, Toggle By Connect or Toggle By Data. |
| Save | Click **Save** to save the values and update the screen. |

# 6.6 Monitor
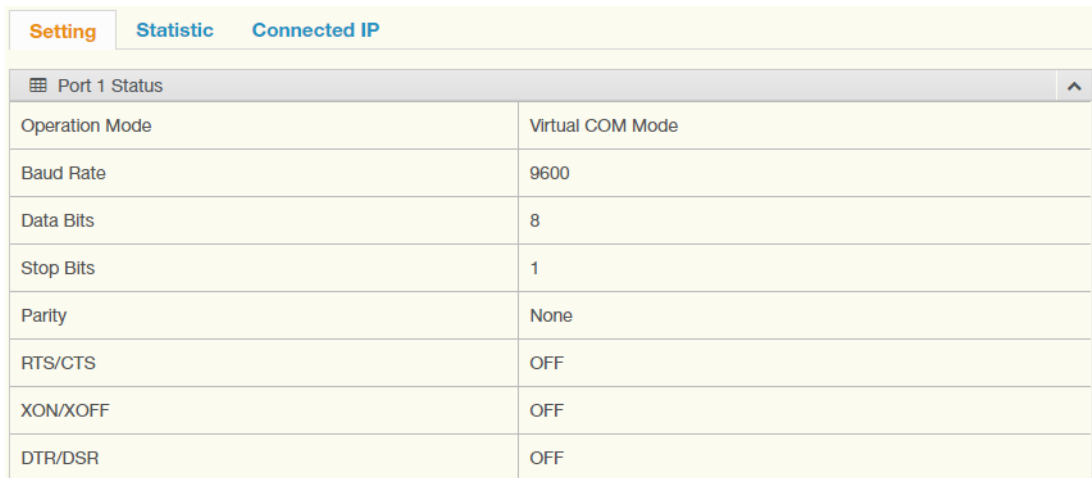
The EKI serial device server provides the function that allows monitoring of the serial ports' status. The serial port's operation mode and status is available for display. The IP address of the host PC which is communicating with serial port is also displayed.

The Monitor function provides a method to monitor the serial device server's status (operation mode, baud rate, data bits, stop bits, parity and RTS/XON/DTR).

Monitoring information is divided into three main message types: Setting/Statistic/Connected IP.

## 6.6.1 Setting

The Monitor Setting page allows for easy viewing of the port's statistics.

To access this page, click **Monitor** > **Setting**.

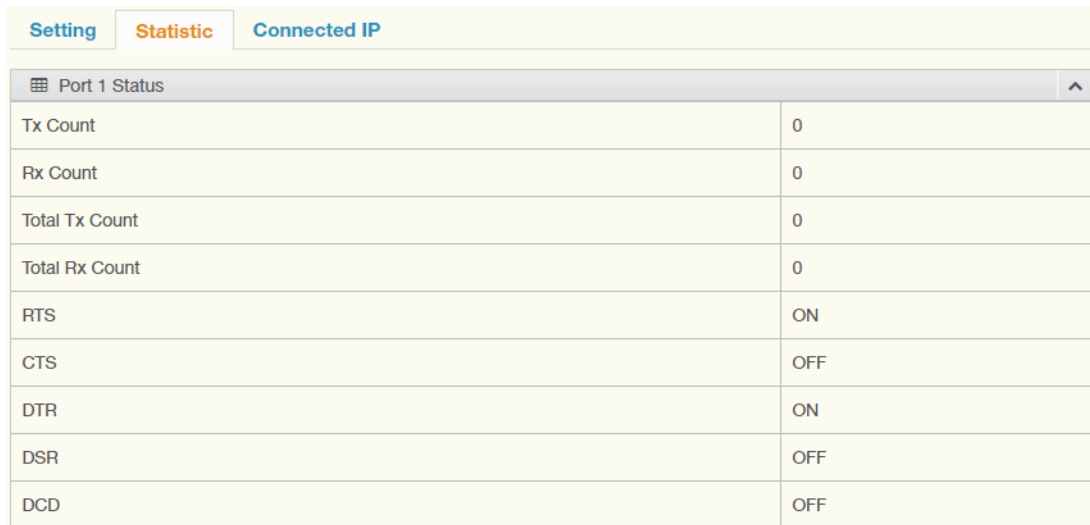| Setting | Statistic | Connected IP | |
|---|---|---|---|
| ⊞ Port 1 Status | | | ⌃ |
| Operation Mode | | Virtual COM Mode | |
| Baud Rate | | 9600 | |
| Data Bits | | 8 | |
| Stop Bits | | 1 | |
| Parity | | None | |
| RTS/CTS | | OFF | |
| XON/XOFF | | OFF | |
| DTR/DSR | | OFF | |

**Figure 6.7 Monitor > Setting**

The following table describes the items in the previous figure.

| Item | Description |
|---|---|
| Operation Mode | Display the current operation mode of the selected port. |
| Baud Rate | Display the current baud rate of the selected port. |
| Data Bits | Display the current data bits of the selected port. |
| Stop Bits | Display the current stop bits of the selected port. |
| Parity | Display the current parity of the selected port. |
| RTS/CTS | Display the current RTS/CTS status of the selected port. |
| XON/XOFF | Display the current XON/OFF status of the selected port. |
| DTR/DSR | Display the current DTR/DSR status of the selected port. |
| Save | Click **Save** to save the values and update the screen. |

## 6.6.2 Statistic

The Monitor Statistic page allows for easy viewing of the port's TX/RX data count.
To access this page, click **Monitor** > **Statistic**.



**Figure 6.8 Monitor > Statistic**

The following table describes the items in the previous figure.

| Item | Description |
|---|---|
| Tx Count | Display the current Tx count of the selected port. |
| Rx Count | Display the current Rx count of the selected port. |
| Total Tx Count | Display the current total Tx count of the selected port. |
| Total Rx Count | Display the current total Rx count of the selected port. |
| RTS | Display the current RTS status of the selected port. |
| CTS | Display the current CTS status of the selected port. |
| DTR | Display the current DTR status of the selected port. |
| DSR | Display the current DSR status of the selected port. |
| DCD | Display the current DCD status of the selected port. |
| Save | Click **Save** to save the values and update the screen. |

### 6.6.3 Connected IP

The Monitor Connected IP page allows for easy viewing of all connected device's IP address.

To access this page, click **Monitor** > **Connected IP**.

| Setting | Statistic | Connected IP |
| --- | --- | --- |

⊞ Port 1 Status ∧

| Connected IP | IP Address |
| --- | --- |
| IP 1 | |
| IP 2 | |
| IP 3 | ervices 78 sysobjectid 1.3.6.1.4.1.10297.201 |
| IP 4 | |
| IP 5 | |
| IP 6 | |
| IP 7 | |
| IP 8 | |
| IP 9 | |
| IP 10 | |
| IP 11 | |
| IP 12 | |
| IP 13 | |
| IP 14 | |
| IP 15 | |
| IP 16 | |

**Figure 6.9 Monitor > Connected IP**

The displayed attributes are not configurable in this menu, and are for information purposes only.

| Item | Description |
| --- | --- |
| Connected IP | Displays the IP designation for the device. |
| IP Address | Displays the current connected IP address of the selected port. |

# 6.7 Alert

On the Alert Settings page, you may configure how administrators are notified by certain system, network, configuration, power, and cellular connection events. Rely on the events, administrators can collect different options for automatic notification. **Mail** refers to send an e-mail to a specified mail address. **Trap** refers to send an SNMP Trap. **Agent** refers to send the SNMP agent setting.

## 6.7.1 Setting

To access this page, click **Alarm** > **Setting**.



**Figure 6.10 Alarm > Setting**

The following table describes the items in the previous figure.

| Item | Description |
|------|-------------|
| Mail Server | |
| Mail Server | This field is for your mail server's domain name or IP address. |
| From Email address | This is the e-mail address from which automatic e-mail warnings will be sent. |
| Email addresses 1-4 | This is the e-mail address or addresses to which the automatic e-mail warnings will be sent. |
| SNMP Trap Server | |

| Item | Description |
| --- | --- |
| Trap Server | Use this field to indicate the IP address to use for receiving SNMP traps. |
| Trap Server Port | Enter the SNMP Trap server port. |
| Trap Version | (default = v1): Use this field to select the SNMP trap version. |
| Trap Community | Use this field to designate the SNMP trap community. |
| SNMP Agent Setting | |
| Read Community | Read community name of your agent. |
| Write Community | Write community name of your agent. |
| Contact | Identify the system contact of your agent. |
| Location | Identify the system location of your agent. |
| Save | Click **Save** to save the values and update the screen. |

### 6.7.2 Event

In this page, you can configure events which will trigger logging or notification. You can select three methods (Mail, SNMP, or log file) to record or send event messages. System event notification is available for cold start, warm start, authentication failure, IP address/Password change, serial DCD/DSR port change and Ethernet link down information.

To access this page, click **Alarm** > **Event**.



**Figure 6.11 Alarm > Event**

The following table describes the items in the previous figure.

| Item | Description |
|---|---|
| System Event | |
| Cold Start | Click the option to select a warning type when the device server's power is cut off and reconnected. |

| Item | Description |
|---|---|
| Warm Start | Click the option to select a warning type when the device server is reboot. |
| Authentication failure | Click the option to select a warning type when an incorrect password is entered. |
| IP address changed | Click the option to select a warning type when the IP address is changed. |
| Password changed | Click the option to select a warning type when the password is changed. |
| Ethernet1 link down | Click the option to select a warning type when the Ethernet 1 port is disconnected. |
| Ethernet2 link down | Click the option to select a warning type when the Ethernet 2 port is disconnected. |
| DCD changed | |
| Port | Click the option to select a warning type of the selected port when a change in the DCD (Data Carrier Detect) signal indicates that the modem connection status has changed. |
| DSR changed | |
| Port | Click the option to select a warning type of the selected port when a change in the DSR (Data Set Ready) signal indicates that the data communication equipment is powered off. |
| Save | Click **Save** to save the values and update the screen. |

# 6.8 Syslogd

The EKI serial device server provides the functionality to allow network devices to send event messages to a logging server, also known as a Syslog server, by way of the Syslogd function. The Syslog protocol is supported by a wide range of devices and can be used to log different types of events.

## 6.8.1 Syslogd Setting

Users can enable the syslogd function to record historical events or messages locally or on a remote syslog server.

To access this page, click **Syslogd** > **Syslogd Setting**.



**Figure 6.12 Syslogd > Syslogd Setting**

The following table describes the items in the previous figure.

| Item | Description |
|---|---|
| Syslogd | Click **Enabled** or **Disabled** to set the logging service status. |
| Save | Click **Save** to save the values and update the screen. |

## 6.8.2 Syslogd Message

After enabling the syslogd function, users can check the history in the syslogd message page.

To access this page, click **Syslogd** > **Syslogd Message**.



**Figure 6.13 Syslogd > Syslogd Message**

## 6.9 Tools

The EKI serial device server provides tools for access to ping and reset functions.

### 6.9.1 Ping

The ping page can help users diagnose ethernet problems. Users can use the ping page to ask the device to ping a specific target to check the Ethernet network status.

The Ping page allows you to configure the test log page.

To access this page, click **Tools** > **Ping**.
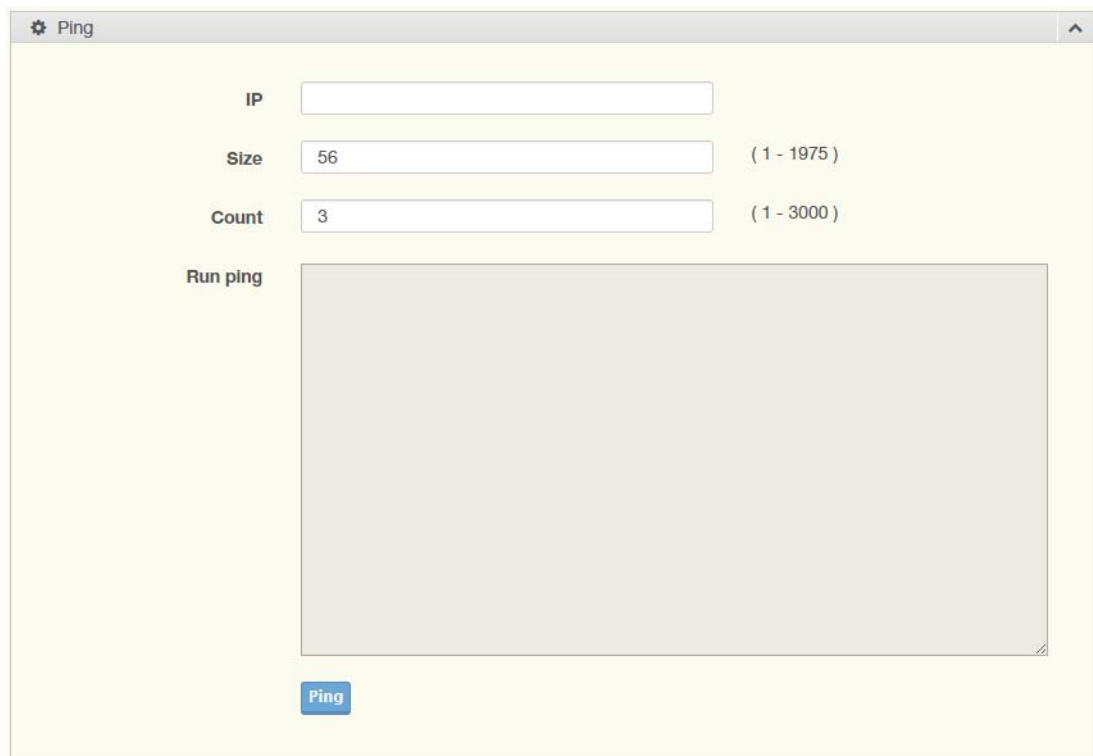


**Figure 6.14 Tools > Ping**

The following table describes the items in the previous figure.

| Item | Description |
|------|-------------|
| IP | Enter the IP address or host name of the station to ping. The initial value is blank. The IP Address or host name you enter is not retained across a power cycle. Host names are composed of series of labels concatenated with periods. Each label must be between 1 and 63 characters long, maximum of 64 characters. |
| Size | Enter the size of ping packet. The default value is 56. The value ranges from 8 to 5120. The size entered is not retained across a power cycle. |
| Count | Enter the number of echo requests to send. The default value is 4. The value ranges from 1 to 5. The count entered is not retained across a power cycle. |
| Run ping | Display the ping reply format. |
| Save | Click **Save** to save the values and update the screen. |

### 6.9.2 Reboot

The configuration will take effect after clicking Save button. But all configurations are saved to flash memory after a system reboot. Press the Reboot button and the system will give a reset response. It will take a few seconds to reconnect with the new values.

To access this page, click **Tools** > **Reboot**.

Click **Reboot** to reboot the serial device server. Any configuration changes you have made since the last time you saved will be lost.

# 6.10 Management

The EKI serial device server allows for easy installation and maintenance and reliable maintenance access from anywhere. With the reliable management tools available, you can streamline staffing and troubleshooting requirements to a centralized system.

### 6.10.1 Log File

If users enable the system event or serial event to log in file, users can download the log file from here.

To access this page, click **Management** > **Log File**.



**Figure 6.15 Management > Log File**

The following table describes the items in the previous figure.

| Item | Description |
|------|-------------|
| System Log File | Click the drop-down menu to select a specific action for the system log file. Available options: Download System Log, Remove System Log, Download and Remove System Log. |
| Save | Click **Save** to save the values and update the screen. |

### 6.10.2 Change Password

The Change Password function allows you to easily update your current password from a single menu.

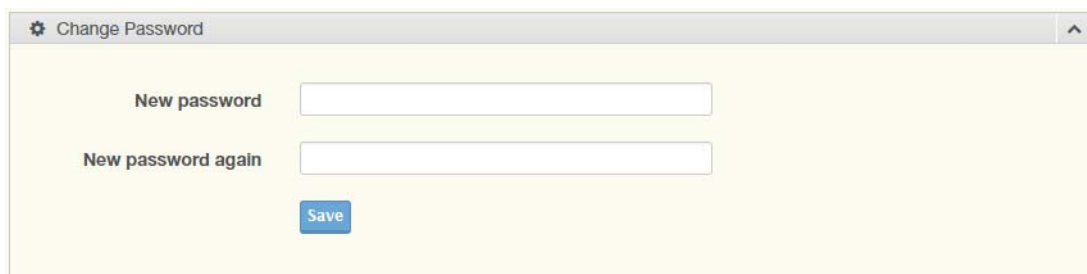To access this page, click **Management** > **Change Password**.



**Figure 6.16 Management > Change Password**

The following table describes the items in the previous figure.

| Item | Description |
| --- | --- |
| Old password | Enter the old password. |
| New password | Enter the character set for the define password type. |
| New password again | Retype the password entry to confirm the profile password. |
| Save | Click **Save** to save the values and update the screen. |

If you have set a password through the configuration utility or Telnet or serial console, when you access the web configuration, you need to key in the password. It is not necessary to enter the user name in the dialog.

If you want to disable the password protection, change the password to default option **None** (leave the new password column blank). Be sure to press the **Save** button and reboot the serial device server to make the change effective.

## 6.10.3 Secure access IP

The Secure Access IP function allows you to assign single or multiple user access to data transmission through a serial device server.

Access is configured as follows: Set Access IP number to 0: unrestricted access

Set Access IP number to greater than 0: restricted to listed Access IP listing.

To access this page, click **Management** > **Secure access IP**.



**Figure 6.17 Management > Secure access IP**

The following table describes the items in the previous figure.

| Item | Description |
| --- | --- |
| Access IP number | Click the drop-down menu to select the number of IP addresses to define (0 to 32). The default setting (0) disables this setting. |
| Save | Click **Save** to save the values and update the screen. |

## 6.10.4 Export Device Settings

Export the server configuration settings to a .conf file.

To access this page, click **Management** > **Export**.

Click **Export** to export the serial device server settings.

## 6.10.5 Import Device Settings

Import the server configuration settings to a .conf file.

To access this page, click **Management** > **Import**.



**Figure 6.18 System**

The following table describes the items in the previous figure.

| Item | Description |
|---|---|
| Choose File | Click **Choose File** to select the configuration file. |
| Submit | Click **Submit** to backup the settings. |

# Chapter 7

## Telnet

# 7.1 Overview

The purpose of the Console Configuration is to help you manage your device in console mode. One of the main functions of the console mode is to change the web configuration login password. You can use terminal software like Hyper Terminal, Telix and other related terminal software.

# 7.2 Telnet Console

## 7.2.1 Create a new connection

You can create a new Telnet connection and assign a connection name for the console configuration.
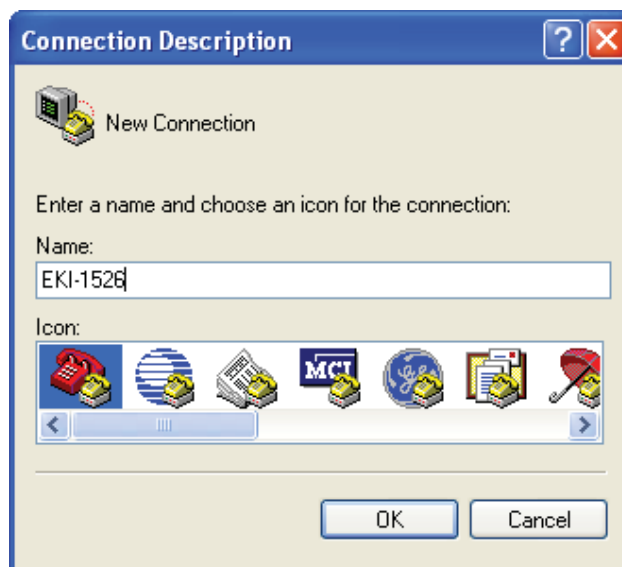


**Figure 7.1 Creating a Telnet Connection**

## 7.2.2 Input the IP address

Confirm that the Telnet console configuration works ok. Be sure that your host PC Ethernet network IP domain is as same as the EKI-1526(TI) | 1528(TI) device server, and the Telnet TCP port number is "23".
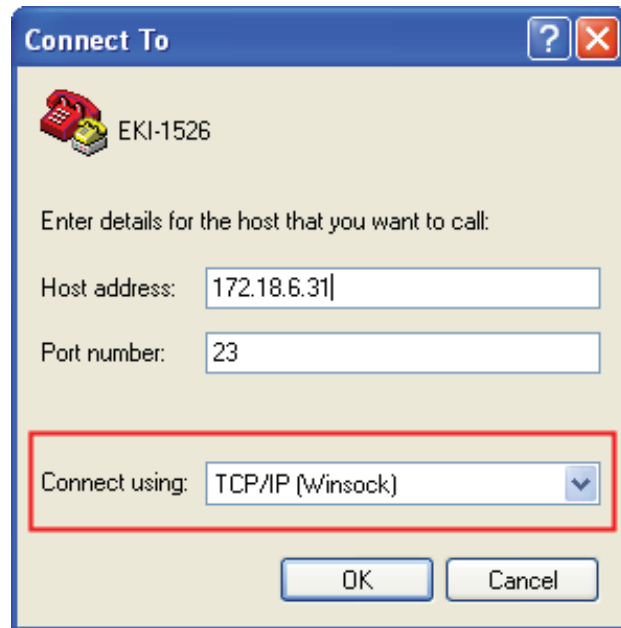


**Figure 7.2 Creating a Telnet Connection**

## 7.2.3 Connection Success

After connecting to the serial device server in HyperTerminal console, a welcome greeting displays.
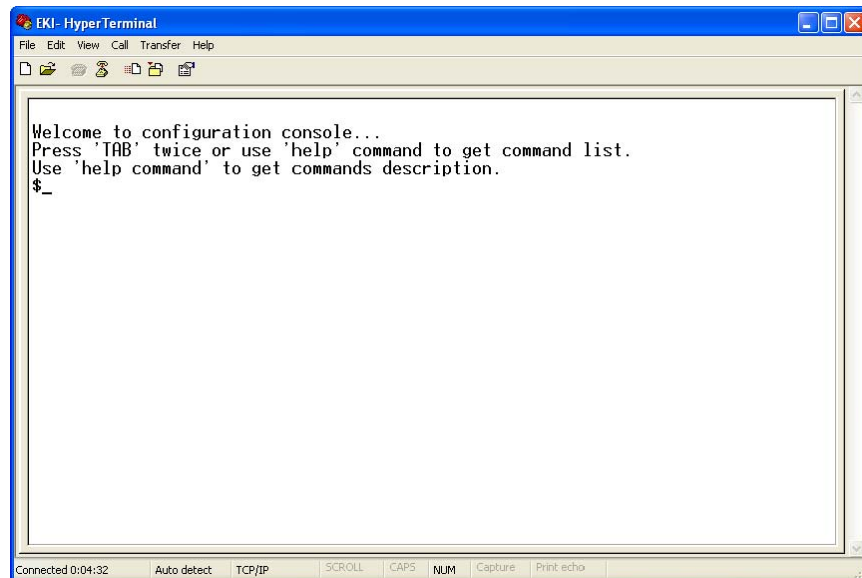


**Figure 7.3 Telnet Connection Console**

At the command prompt, you can type a "help" followed by the Enter button, or <Tab> twice, to display the command list.

You can toggle between the different command menu options.

# 7.3 Serial Console

## 7.3.1 Connecting the cable

You can connect to the EKI-1526(TI) | 1528(TI) serial device server's console port with a RS-232 DB9 M-type communication cable, with the other end connecting to the host's serial port. Make sure the connection is OK and then run the Hyper Terminal Program on your host.



**Figure 7.4 Creating a Serial Connection**

## 7.3.2 Select the COM port

Confirm that the console configuration works ok.



**Figure 7.5 Creating a Serial Connection**

### 7.3.3 COM Port Settings

To connect the EKI-1526(TI) | 1528(TI) device server for console configuration, the port setting should match the EKI-1526(TI) | 1528(TI) device sever default settings.



**Figure 7.6 COM Port Settings**

Console configuration default Settings:

- ■ Baud rate: 38400
- ■ Data bits: 8
- ■ Parity: None
- ■ Stop bits: 1
- ■ Flow control: None

## 7.3.4 Connection Success

After connecting the device in console mode, you can simply press <Enter> to enter the console configuration.
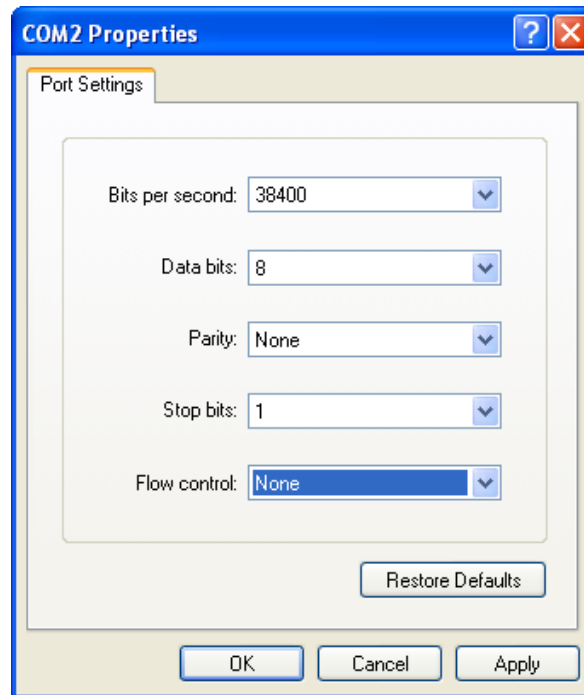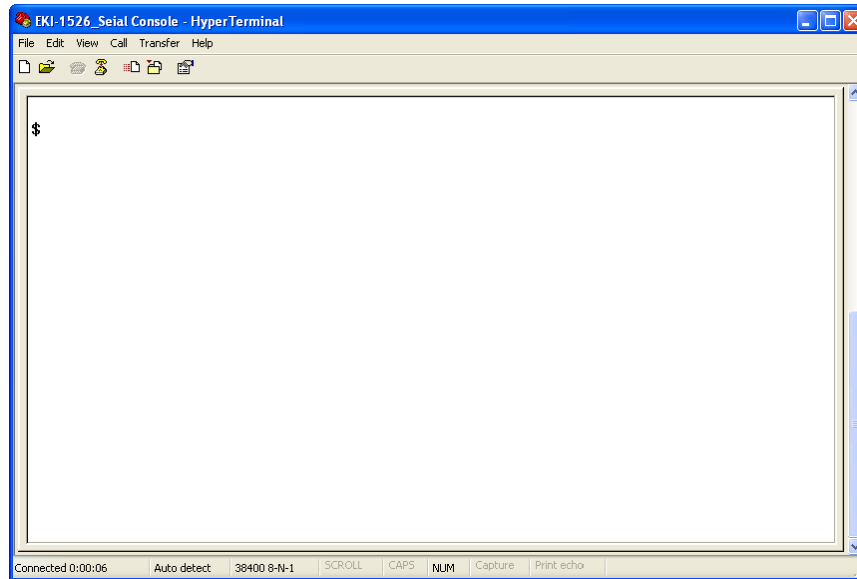


**Figure 7.7 Connection success**

# 7.4 Command List

| Command | Function Description |
|---------|---------------------|
| system | Show or configure the system information |
| port | Show or configure the serial ports information |
| portadv | Show or configure the serial ports advanced settings |
| mvcom | Show or configure the serial ports in Virtual COM mode |
| mctr | Show or configure the serial ports in Control mode (USDG) |
| mdata | Show or configure the serial ports in Data mode (USDG) |
| net | Show or configure the Ethernet ports settings |
| password | Set or change the password |
| alarm | Show or configure the auto warning functions including mail alarm and SNMP alarm |
| monitor | Monitor the serial ports status |
| mrfc2217 | Show all port modes and mode information. |
| apply | Write settings to the flash memory and reboot the system immediately |
| exit | Terminate the shell session |
| help | Display command list help information |
| reboot | Write settings and reboot the system immediately. |

## 7.4.1 system

Usage: system

    Show current device status and informations.

Usage: system name [Maximum length 31 bytes]

    Set current device name.

Usage: system desc [Maximum length 127 bytes]

    Set current device description.

### 7.4.2 port

Usage: port [nn|all]

　Show port status and informations.

Usage: port [nn] desc [Maximum length 127 bytes]

　Set serial port description.

Usage: port [nn|all] type [232|422|485] flow []

　Set serial port type and flow control.

　－ flow 0:None.
　－ flow 1:XOn/XOff.
　－ flow 2:RTS/CTS.
　－ flow 3:DTR/DSR.

Usage: port [nn|all] baud [50-921600] parity [] data [5-8] stop [1|1.5|2]

　Set serial baud rate, parity and numbers of data bits, numbers of stop bits.

　Acceptable baud: 50 75 110 150 300 600 1200 1800 2400 4800 7200 9600 14400 19200 38400 57600 115200 230400 460800 921600

　－ parity n: None Parity.
　－ parity e: Even Parity.
　－ parity o: Odd Parity.
　－ parity m: Mark Parity.
　－ parity s: Space Parity.

Usage: port [nn|all] mode [vcom|ctrl|data]

　Set serial port as virtual COM port or control mode or data mode.

### 7.4.3 portadv

$ help portadv

　Show port advanced setting.

Usage: portadv [nn|all] delayT []

　Set delay time(ms).

Usage: portadv [nn|all] ignorepurge [TRUE|FALSE] dischato [TRUE|FALSE] dismulti-con [TRUE|FALSE]

　Enable or disable the feature of ignore purge.

　Disable character timeout detection, and disable multiple connection.

Usage: portadv [nn|all] databuf []

　Set databuffer threshold.

Usage: portadv [nn|all] timeout [] rtl [] ttl [] fcl [] fch []

　Set port timeout, and set portrtl, portttl, portfcl, portfch.

Usage: portadv [nn|all] fifosize [size|null]

　Set port Writed size of FIFO, null for disable.

Usage: portadv [nn|all] rts []

　Set port RTS status.

　－ value 0 :None Setting.
　－ value 1 :Setting power on.
　－ value 2 :Setting accept on.
　－ value 4 :Setting transmission on.

Usage: portadv [nn|all] dtr []

    Set port DTR status.

- − value 0 :None Setting.
- − value 1 :Setting power on.
- − value 2 :Setting accept on.
- − value 4 :Setting transmission on.

### 7.4.4 mvcom

Usage: mvcom

    Show all port mode and mode informations.

Usage: mvcom [nn|all]

    Set port [nn|all] as virtual COM port mode.

Usage: mvcom [nn|all] idleto []

    Set host idle timeout(s).

Usage: mvcom [nn|all] respto [] framebk []

    Set response timeout(ms) and frame break(ms).

Usage: mvcom [nn|all] bysize []

Usage: mvcom [nn|all] bytime []

Usage: mvcom [nn|all] bychar [NULL|]

    Set datapackage as size(bytes) or time(ms) and character(HEX) .

- − value 0 : None Setting.

### 7.4.5 mctrl

Usage: mctrl

    Show port mode and mode informations.

Usage: mctrl [nn|all]

    Set port [nn|all] as control mode.

Usage: mctrl [nn|all] idleto [] tcpp [] atp [] guardt [] hangchr []

    Set data idle timeout(s) data listen port command listen port   guard time(ms) hangup character.

### 7.4.6 mdata

Usage: mdata

    Show port mode and mode informations.

Usage: mdata [nn|all]

    Set port [nn|all] as data mode.

Usage: mdata [nn|all] protocol [TCP|UDP]

    Set transmit protocol as TCP or UDP.

Usage: mdata [nn|all] idleto [] lsport [] atport []

    Set data idle timeout(s) listen port and AT command port.

Usage: mdata [nn|all] respto [] framebk []

    Set response timeout(ms) and frame break(ms).

Usage: mdata [nn|all] bysize [] bytime [] bychar [NULL|] bychartimeout [ON|OFF]

    Set datapackage as size(bytes) or time(ms) or character(HEX) and character-timeout.

- − value 0 : None Setting.

Usage: mdata [nn|all] autopeerip [ON|OFF]

    Set auto connect to peer ip as on or off.

Usage: mdata [nn|all] peernum [1-16] peer [d.d.d.d:d] ...

    Set peer IP address and port for receive data.

### 7.4.7 net

Usage: net [1|2]

    Show device network status and informations.

Usage: net [1|2] mode [static|dhcp|bootp|all]

    Set network operating mode.

Usage: net [1|2] ip [d.d.d.d] netmask [d.d.d.d] gw [d.d.d.d]

    Set IP address and subnet mask and gateway.

Usage: net [1|2] dns [auto|specific]

    Enable/Disable DNS.

Usage: net [1|2] dns1 [d.d.d.d]

    Set network DNS1.

Usage: net [1|2] dns2 [d.d.d.d]

    Set network DNS2.

Usage: net [1|2] to [d]

    Set network timeout.

### 7.4.8 password

Usage: password

    Display two different Usage.

Usage: password new [1-31 characters]

    Set new password.

Usage: password old [**...] new [1-31 characters]

    Confirm the old password and set new password.

### 7.4.9 alarm

Usage: alarm

    Show current alarm informations.

Usage: alarm mail server [null|address] from [null|address] to1 [null|address] to2 [null|address] to3 [null|address] to4 [null|address]

    Set current mail server configuration.

Usage: alarm trap server [null|address] ver [1|2] community [null|name]

    Set current trap server configuration.

Usage: alarm agent rcommunity [null|name] wcommunity [null|name] contact ull|name] location [null|name]

    Set current snmp agent configuration.

Usage: alarm event mail [cstart] [wstart] [auth] [ip] [passwd] [eth1] [eth2]

    Set current mail event configuration.

Usage: alarm event trap [cstart] [wstart] [auth] [eth1] [eth2]

    Set current trap event configuration.

Usage: alarm port [1|2|..] dcd [none|mail|trap|all] dsr [none|mail|trap|all]

    Set current port alarm configuration.

### 7.4.10 monitor

Usage: monitor port [1|2|..] setting

    Monitor COM port setting

Usage: monitor port [1|2|..] statistic

    Monitor COM port statistic data

Usage: monitor port [1|2|..] ip

    Monitor connected IP

### 7.4.11 time

Usage: time

    Show current time informations.

Usage: time [YYYYMMDDhhmmss]

    Set current time configuration.

Usage: time ntp [timeserver]

    Set current time server configuration.

### 7.4.12 service

Usage: service telnet [enable|disable]

    Enable/Disable telnet function

Usage: service snmp [enable|disable]

    Enable/Disable SNMP function

### 7.4.13 mrfc2217

Usage: mrfc2217

    Show all port mode and mode informations.

Usage: mrfc2217 [nn|all]

    Set port [nn|all] as RFC2217 mode.

Usage: mrfc2217 [nn|all] idleto [] lsport []

    Set host idle timeout(s) and listen port.

### 7.4.14 apply

Usage: apply

    Save the settings to flash and reboot right now.

### 7.4.15 exit

Usage: exit

    Terminate shell session

### 7.4.16 help

Usage: help [cmd]

    Display help information of command cmd

### 7.4.17 reboot

Usage: reboot

    Write settings and reboot the system immediately.

# Chapter 8

## TCP and UDP Port Numbers

# 8.1 List of Known TCP and UDP Port Numbers

| Port | Protocol | Service |
| --- | --- | --- |
| 5048 | (TCP/UDP) | Configuration Utility |
| 5058 | (TCP/UDP) | Configuration Utility |
| 5202 | (TCP) | VCOM/RVCOM |
| 9999 | (TCP) | Firmware Download |
| 22 | (TCP) | SSH |
| 23 | (TCP) | Telnet |
| 25 | (TCP) | SMTP (Mail Client) |
| 53 | (TCP/UDP) | DNS |
| 67 | (UDP) | BOOTP Server/DHCP |
| 68 | (UDP) | BOOTP Client/DHCP |
| 80 | (TCP) | Web Interface/HTTP |
| 123 | (TCP) | NTP |
| 161 | (TCP) | SNMP |
| 162 | (TCP/UDP) | SNMP Trap |
| 443 | (TCP) | HTTPS |
| 502 | (TCP) | Modbus/TCP (Default) |
| 514 | (TCP) | Syslog |
| 546 | (TCP/UDP) | DHCPv6 Client |
| 547 | (TCP/UDP) | DHCPv6 Server |

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