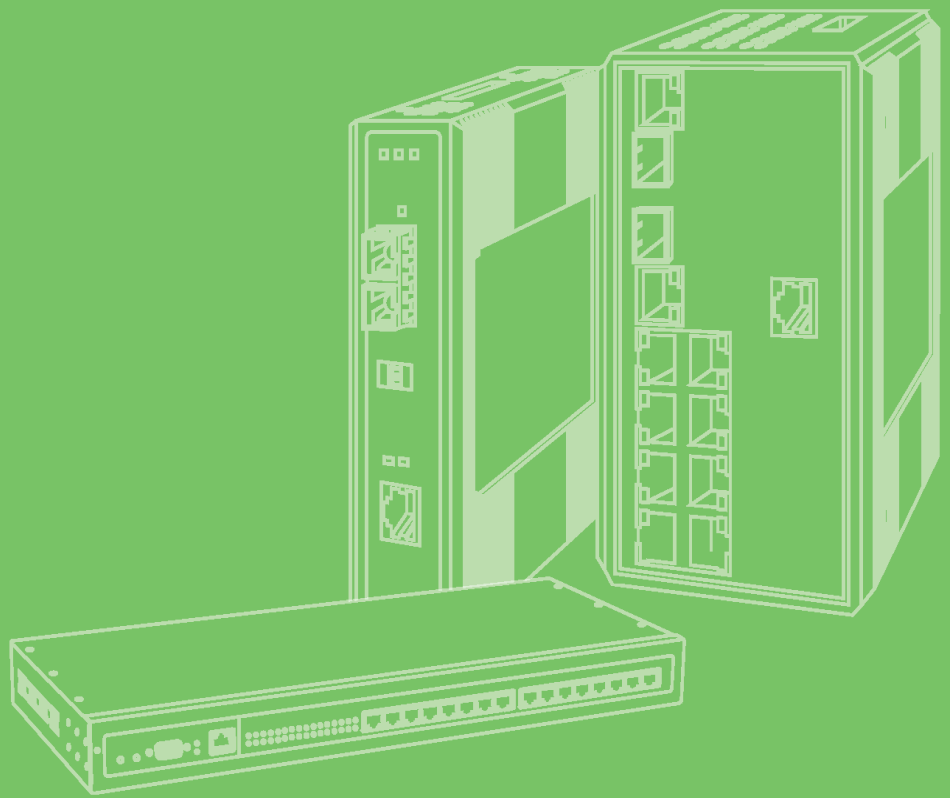# User Manual

EKI-1351/1352/EKI-1521/1522/1524

1/2/4-port RS-232/422/485 Serial Device Servers

ADVANTECH

*e*Automation

Copyright

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Product Warranty (2 years)

Advantech warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Advantech, or which have been subject to misuse, abuse, accident or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time and freight. Please consult your dealer for more details.

If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages you get when the problem occurs.

2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.

3. If your product is diagnosed as defective, obtain an RMA (return merchandize authorization) number from your dealer. This allows us to process your return more quickly.

4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.

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

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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.

CE

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

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from
that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

FCC RF Radiation Exposure Statement: 1. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. 2. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

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

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.
23. The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70 dB (A).

DISCLAIMER: This set of instructions is given according to IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

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.

Contents

Chapter 4   Setting COM Redirector 57

Chapter 1

Overview

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1.1 Introduction

Advantech's EKI series of Industrial Device Servers are robust, feature-rich, and cost effective way to network-enable equipment in an industrial automation environment. The EKI-1521, EKI-1522 and EKI-1524 provide 1/2/4 serial ports, two switched Ethernet ports, a wide power input range, and compact slim design, making it an ideal solution for connecting multiple asynchronous RS232, RS422, or RS485 serial devices to an Ethernet network.

The two Ethernet ports allow the EKI serial device server to establish two separate Ethernet connections to two Ethernet domain or two Ethernet Switches in the same domain. By dual Ethernet connection, the EKI serial device servers greatly improve the device connectivity reliability, increase system stability, and simplify the redundant configuration.

The EKI-1351, and EKI-1352 provide 1/2 serial ports, 802.11b/g Wireless LAN interface to connect any RS-232/422/485 devices to Wireless LAN. These wireless serial device servers provide serial-to-wireless network connectivity as an alternative to wired Ethernet connectivity and enable virtually any serial device or equipment to be remotely accessed, controlled, monitored, or shared on an 802.11b/g wireless network.

By encapsulating serial data and transporting it over Ethernet, the EKI serial device servers allow virtual serial links over Ethernet and IP (TCP/IP, UDP/IP) networks. After Advantech COM redirection software installation, standard serial operation calls are transparently redirected to the EKI serial device servers, guaranteeing compatibility with legacy serial devices and enabling backward compatibility with existing software. EKI serial device servers 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 serial device server provide an impressive list of features and functions enabling multiple industrial devices to be connected, controlled, configured, managed, and updated over a network. With serial ports ,two auto-sensing Ethernet ports or 802.11b/g Wireless , the EKI serial device servers can easily connect multiple serial devices to a network.

The transmission speed of the EKI serial device servers is up to 1.2M bps totally outstripping the competition to meet the demand for high-speed exchange. Functionally transparent and efficient, the EKI serial device server is especially designed for remotely controlling and monitoring devices via the Internet.

Type of supported devices:
- Human Machine Interface (HMI)
- Programmable Controller(PLC)
- Flow meters
- Temperature / pressure monitoring equipment
- Gas leak detection device
- Scales
- Power monitoring equipment
- Data Acquisition Modules

EKI serial device servers provide various TCP/UDP operations: COM port redirection (Virtual COM port), TCP server/ client and UDP mode. Serial devices can be connected by means of multi-operation modes.

1.2 Features

1.2.1 1.2.1 EKI-1521, EKI-1522, and EKI-1524

- Expand up 255 serial ports for one Windows NT/2000/XP/Vista(X86) host
- Provides dual 10/100 Base-T auto-sensing Ethernet ports: establish two separate Ethernet connection.
- Supports high transmission speed up to 1.2M bps totally
- Supports various operation mode: COM port redirection (Virtual COM port), TCP server/client, UDP server/client mode.
- Supports LED indicators: easy to diagnostic
- Supports integrated Configuration utility and port-mapping utility: easy to configure and manage 255 COM ports and self-diagnostic.
- Support great multi-access feature: allow a max 5 of hosts' access one serial port simultaneously.
- Allows a max 16 hosts to access TCP client and command response mode.
- Easy to locate specific EKI serial device server.
- Mounts on DIN rail, or panel easily.

1.2.2 1.2.2 EKI-1351 and EKI-1352

- Expand up 255 serial ports for one Windows NT/2000/XP/Vista(X86) host
- Provides 802.11b/g standard.
- Supports Wireless LAN Ad-Hoc and Infrastructure modes
- Supports high transmission speed up to 1.2M bps totally
- Supports various operation mode: COM port redirection (Virtual COM port), TCP server/client, UDP server/client mode.
- Supports LED indicators: easy to diagnostic
- Supports integrated Configuration utility and port-mapping utility: easy to configure and manage 255 COM ports and self-diagnostic.
- Support great multi-access feature: allow a max 5 of hosts' access one serial port simultaneously.
- Allows a max 4 hosts to access TCP client and command response mode.
- Easy to locate specific EKI serial device server.
- Mounts on DIN rail, or panel easily.

1.3 Specifications

1.3.1 EKI-1521, EKI-1522 and EKI-1524

- Ethernet communication compatibility: IEEE802.3, IEEE802.3u
- Protocol: TCP/IP
- Interface:
     Network: 2 x 10/100Base-T auto-sensing
     Serial: RS-232/422/485
- Serial ports: 1/2/4 independent RS-232/422/485 ports
     EKI-1521: 1 x RS-232/422/485 port
     EKI-1522: 2 x RS-232/422/485 port
     EKI-1524: 4 x RS-232/422/485 port
- Connector
     Network: RJ-45
     Serial: DB9
- Baud rate: 50~ 921kbps
- Throughput:
Total throughput up to 1.2M bps
- Parity bit: odd, even, none, space, mark
- Data bit: 5, 6, 7, 8
- Stop bit: 1, 1.5, 2
- Data Signals: RS-232: TxD, RxD, CTS, RTS, DTR, DSR, DCD, RI, GND
                 RS-422: TxD+, TxD-, RxD+, RxD-, GND
                 RS-485: Data+, Data-, GND
- Diagnostic LEDs: Power, Status, Ethernet Tx/Rx and Serial Tx/Rx
- Utility Software: Integrated auto-detecting configuration and Port mapping utility
- Driver Supported: Windows NT/2000/XP/Vista(X86)
- Enclosure: Metal with solid DIN rail or panel mounting hardware.
- Power requirements: dual unregulated 12~48V with surge protection.
- Power consumption: EKI-1521:2W, EKI-1522: 4W, EKI-1524: 5W
- Serial protection: 15KV ESD.
- Power protection: 4 KV burst (EFT), EN61000-4-4, 2 KV surge, EN61000-4-5, Overload 2A/125V Replaceable Fuse
- Ethernet protection: Built-in 1.5 KV magnetic isolation.
- Operation Temperature: 0~60
- Storage Tempaerature:-20~80
- Operating Humidity:20~95%(non-condensing)
- Storage Humidity:0~95%(non-condensing).

1.3.2 1.3.2 EKI-1351, EKI-1352

- Ethernet communication compatibility: IEEE802.11b, IEEE802.11g
- Protocol: TCP/IP
- Interface:
    Network: Wireless
    Serial: RS-232/422/485
- Serial ports: 1/2/4 independent RS-232/422/485 ports
    EKI-1351: 1 x RS-232/422/485 port
    EKI-1352: 2 x RS-232/422/485 port
- Connector
    Serial: DB9
- Baud rate: 50~ 921kbps
- Throughput:
    Total throughput up to 1.2M bps
- Parity bit: odd, even, none, space, mark
- Data bit: 5, 6, 7, 8
- Stop bit: 1, 1.5, 2
- Data Signals: RS-232: TxD, RxD, CTS, RTS, DTR, DSR, DCD, RI, GND
                   RS-422: TxD+, TxD-, RxD+, RxD-, GND
                   RS-485: Data+, Data-, GND
- Diagnostic LEDs: Power, Status, Ethernet Tx/Rx and Serial Tx/Rx
- Utility Software: Integrated auto-detecting configuration and Port mapping utility
- Driver Supported: Windows NT/2000/XP/Vista(X86)
- Enclosure: Metal with solid DIN rail or panel mounting hardware.
- Power requirements: dual unregulated 12~48V with surge protection.
- Power consumption: EKI-1351:2W, EKI-1352: 4W
- Serial protection: 15KV ESD.
- Power protection: 4 KV burst (EFT), EN61000-4-4, 2 KV surge, EN61000-4-5, Overload 2A/125V Replaceable Fuse
- Ethernet protection: Built-in 1.5 KV magnetic isolation.
- Operation Temperature: 0~55
- Storage Tempaerature:-20~80
- Operating Humidity:20~95%(non-condensing)
- Storage Humidity:0~95%(non-condensing).

1.4 1.4 Package Check List

- EKI serial device server
- One RS-232 loopback DB9 tester
- Panel mounting bracket
- CD-ROM for utility and manual

Chapter 2

Getting Started

2.1 Understanding Serial Device Servers

The EKI serial device servers are network-based, serial device servers for connecting four RS-232/422/485 devices, such as CNCs, PLCs, scales, and scanners, directly to a TCP/IP network. Once connected through EKI serial device servers, serial device will be able to send and receive data on a network like any other network device. It extends traditional COM ports of a PC with access over a TCP/IP network. Through networking, you can control an monitor remote serial devices either over a LAN or over the WAN. Since the EKI serial device servers are connected through a TCP/IP network, you might need to know some basic facts about networking in order to get the server hooked up correctly.

2.1.1 Product Description

The EKI serial device servers are designed to network-enable any RS-232/422/485 serial devices and provide industry-grade hardware and easy-use software to make connecting serial devices to an Ethernet network a surprisingly simple process. These units immediately upgrade your exiting serial devices for integration into the Internet world. The EKI serial device server feature a lot of powerful functions such as: high speed data transfer, access-control, auto-detection of all EKI series products, remote connection from different network domain, remote firmware download, 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 then be able to communicate with the serial devices via its own application software and with the EKI serial device server. COM port redirector, TCP server mode, TCP client mode, UDP server mode, UDP client mode and Control mode are all different schemes to make a serial connection across using one or more Serial device server.

EKI-1521, EKI-1522, and EKI-1524 provide dual Ethernet ports that can establish two physical Ethernet connections. Dual connection control enables an alternative backup session that host can connect to device server by the way of second connection while the primary connection should be lost or dropped.
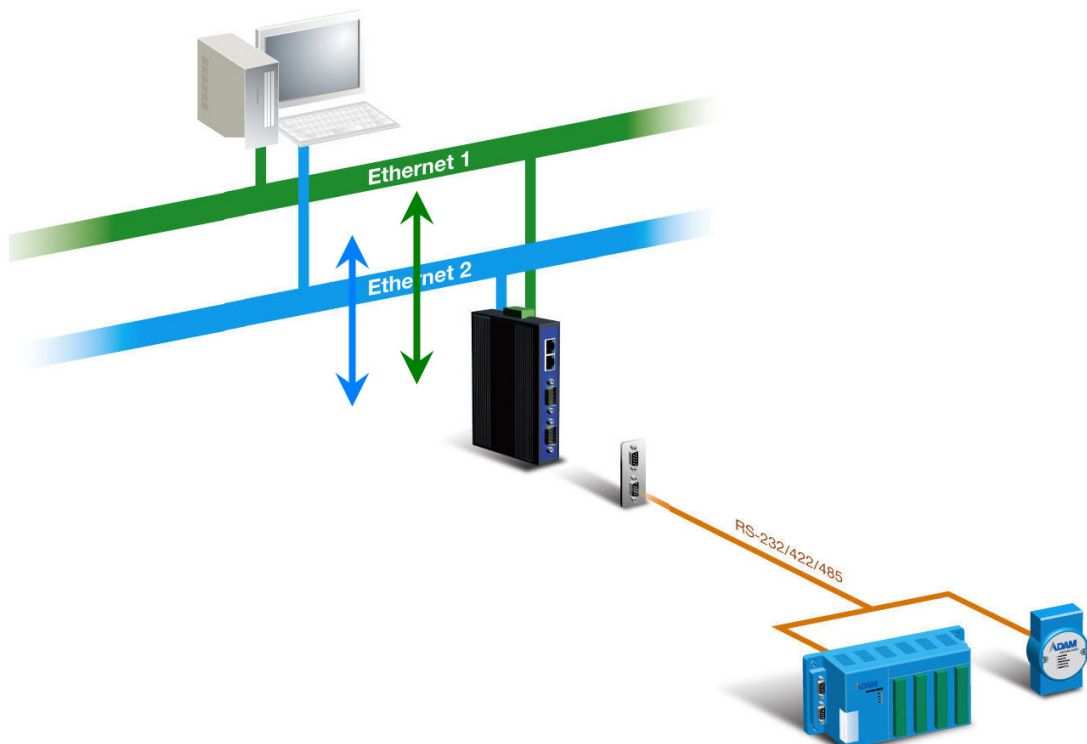
EKI-1351 and EKI-1352 has an 802.11b/g transceiver in addition to its serial and Ethernet ports. Each serial port is connected to the serial communication port of a device. The wireless transceiver connects to another wireless device or to an Access Point (AP).
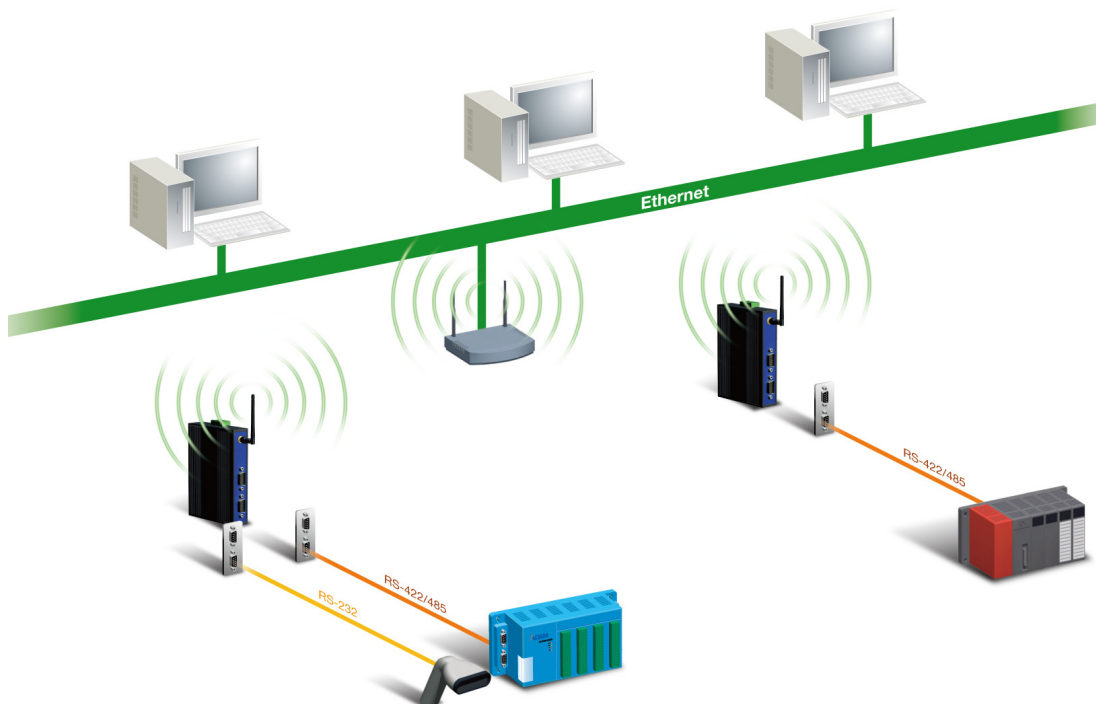
2.1.2 COM port redirector (Virtual COM port)

Advantech COM port mapping utility is a serial COM port redirector that creates virtual COM ports and provides access to serial device connected to Advantech serial device server. Advantech COM port mapping utility is integrated with Advantech serial device server configuration utility. You can configure the device server and enable the Virtual COM port using one integrated utility. Advantech serial device server utility allows you to configure Microsoft applications to communicate with network enabled 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.
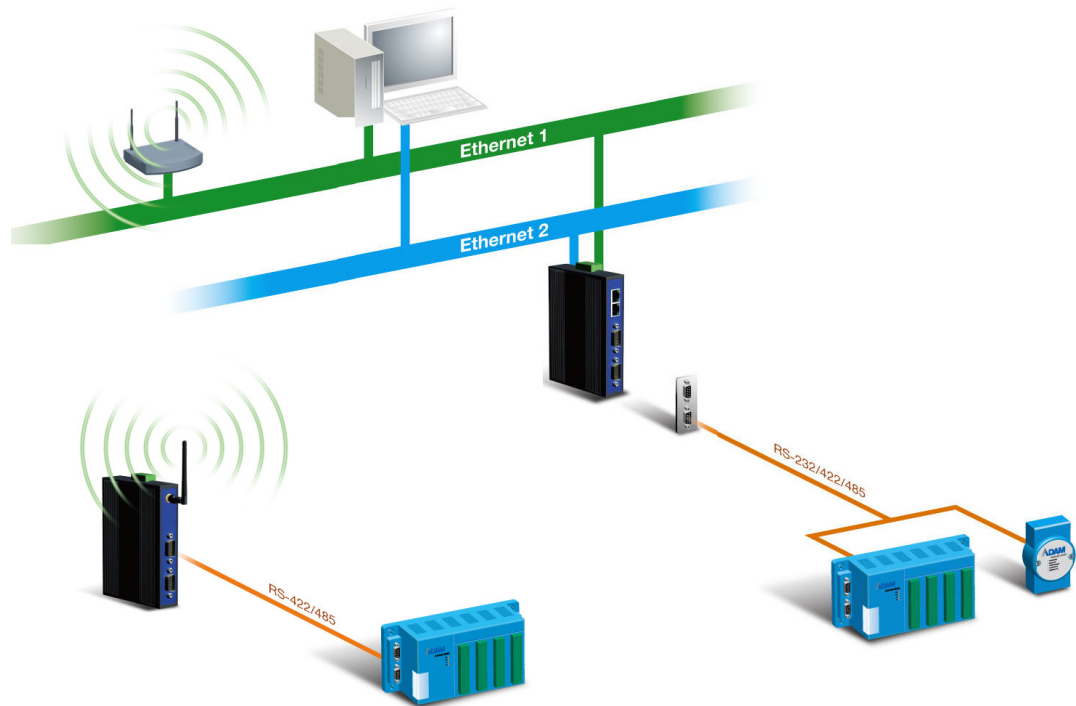
2.1.2.1 Normal Mode

The Advantech redirector connects the Advantech serial device server while an application open the COM port and disconnects from the Advantech serial device server when the application closes the COM port. The redirector uses TCP network connections to the Advantech serial device server to gain the access to the connected serial devices.

2.1.2.2 Mutli-Access Mode (Shared COM port mode)

Most of serial devices are connected directly and physically to the PC serial ports via a cable. The operation system, ex. Windows XP, provides the COM ports that user's application can access, and control the serial device through the serial cable. This means that the serial device can be connected to one host and only one application on this host can handle input, output and control operation on this device.

If you want to run more than one applications to use a serial device, you can employ EKI serial device servers that provide a virtual COM pool for a host or multi-hosts on an Ethernet network. EKI serial device server is located between hosts and serial devices. Each serial port on the EKI serial device server can allow max. of 5 host connections through one Ethernet port and two Ethernet ports. There are two major operation modes for Multi-Access Mode. First one is broadcast mode, EKI serial device server handles a command from one application and replies the data from the serial port to all applications that are connecting this serial port. Another one is polling mode. EKI serial device server handles the command from one application and reply to this application only. Query from other applications must be queued and wait for current process completing.
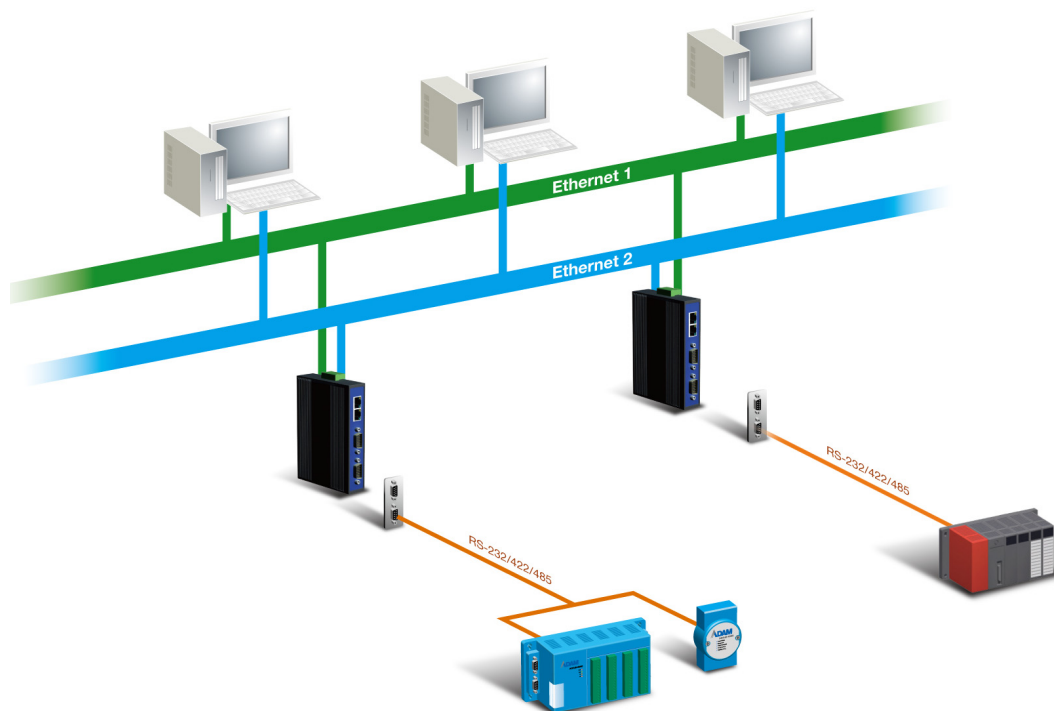
By using a serial derive server to share serial device, you eliminate the separate serial lines and serial devices that can be attached to individual hosts. Collecting the data from these serial devices become more easily and more effectively.

2.1.3 TCP Server Mode

In TCP server mode, you might initiate the TCP connection from host to EKI serial device server. This operation mode support max. 5 simultaneous connections for each serial port on EKI serial device server from one host or several hosts, however multi-hosts collect the data from one serial port at the same time.
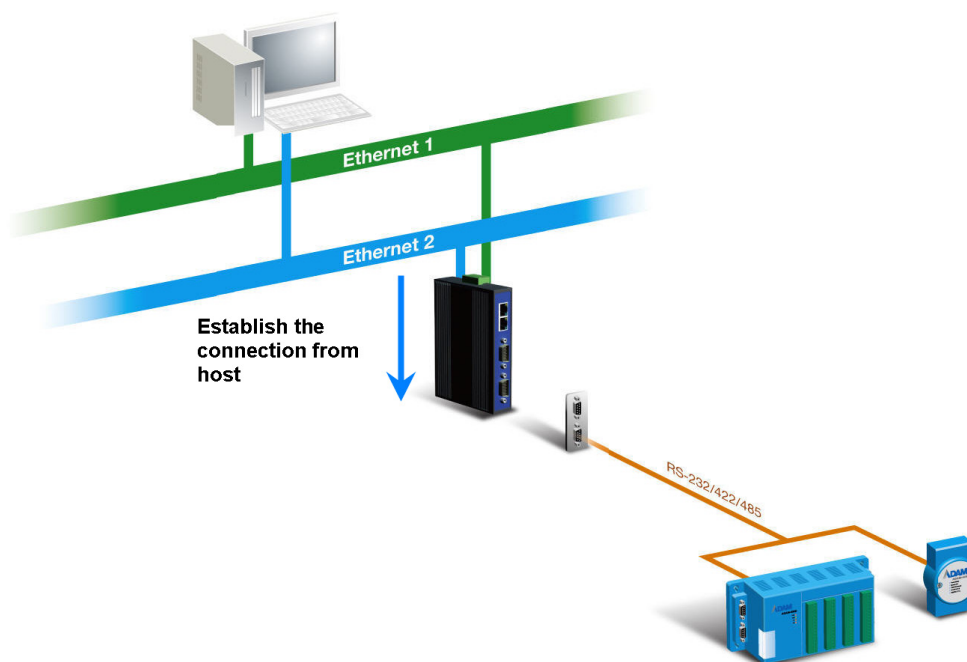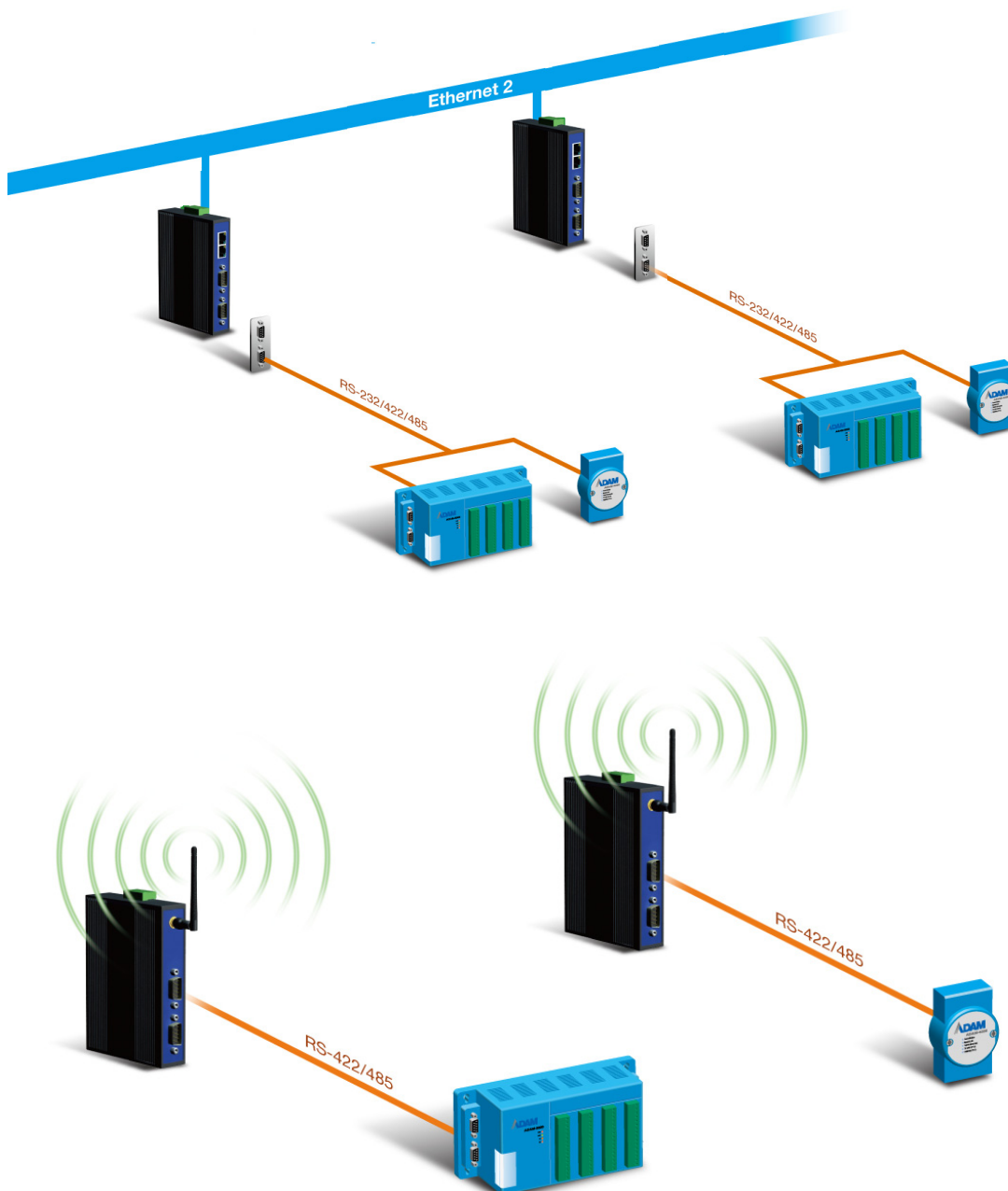
2.1.4 TCP Client Mode

In TCP Client mode, the TCP connection will be established from EKI serial device server. This operation mode supports maximum 16 (EKI-1521, EKI-1522, and EKI-1524) or maximum 4(EKI-1351 and EKI-1352) simultaneous connections for each serial port on EKI serial device sever to one host or several hosts. You should configure the IP address and TCP port number of the network hosts which the EKI serial device connect to using Advantech serial device server utility. After configuration, when EKI serial device server receives the data from serial port, the device server will employ the connection to hosts which are configured.
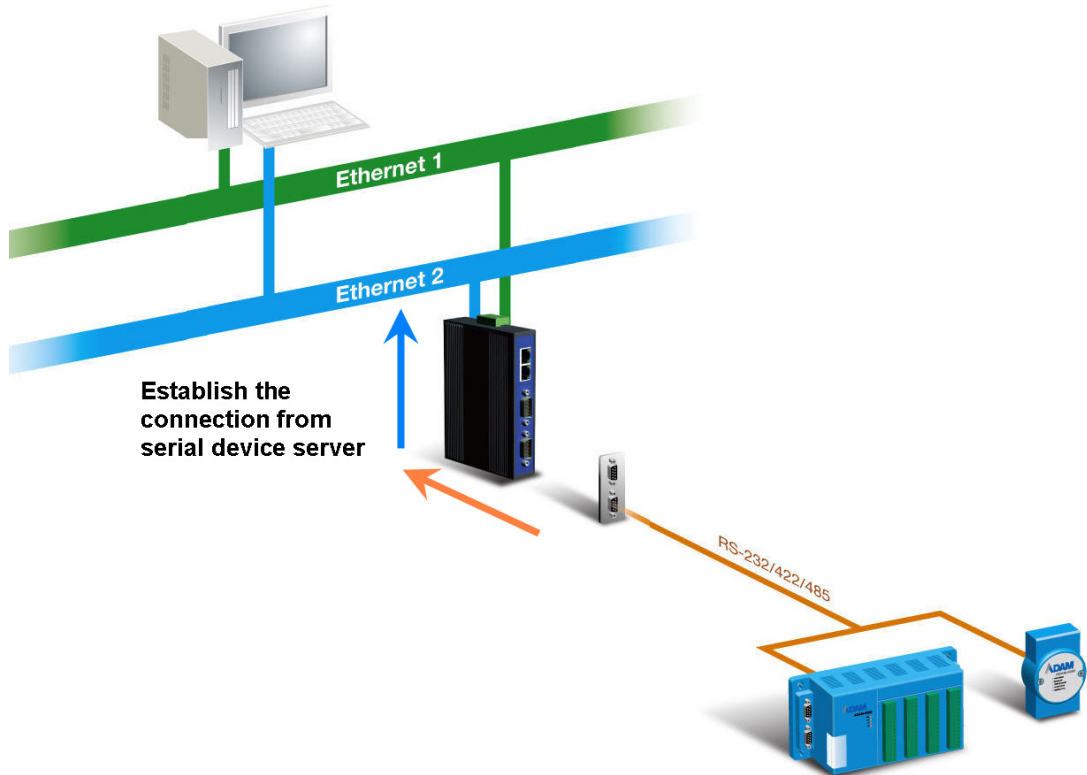
2.1.5 Serial Tunneling mode

Two native serial devices can communicate over a Ethernet network without any intermediate host PC and software programming. Serial Tunneling is very simple to use. You can use Advantech serial device server utility to designate one serial port as the tunneling master and another serial device server port as the tunneling slave.

2.1.6 UDP Server/Client Mode

UDP is used primarily for broadcasting messages over a network. In the UDP server mode, EKI serial device server access max of 8 hosts' UDP message. In the UDP client mode, EKI serial device servers transmit UDP message to max of 16 hosts simultaneously.

2.1.7 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 serial device running application program to connect/disconnect to different devices by request, you can use controlling mode.

The controlling mode provides three modem AT-style commands. The serial devices can use these commands to control EKI serial device server connecting or disconnecting to remote networking device. Thus, intelligent serial devices such as stand-alone PLC will send /receive data to/from devices one by one via Ethernet.

2.2 Hardware

In this chapter, we will give you a overview of EKI serial device server hardware and installation.

2.2.1 LED Indicators

2.2.1.1 EKI-1521, EKI-1522 and EKI-1524

There are LEDs display the power status, network status, and serial communication status located on the front panel of EKI-1521, EKI-1522, and EKI-1524, each of them has its own specific meaning as below table.

LED	Color	Status	Description
P1	Green	ON	Power input from first power connector
		Off	Power off
P2	Green	ON	Power input from second power connector
		Off	Power off
Status	Yellow	Blinking	System ON
		Off	System not work
		ON	Locate from Utility
LAN(Left side)	Yellow	ON	Link
		OFF	No Link
		Flash	Active
LAN(Right side)	Green	ON	100M
		OFF	10M
TX	Yellow	ON	Serial port data being transmitted
		OFF	Serial port no data being transmitted
RX	Green	ON	Serial port data being received
		OFF	Serial port no data being received

2.2.1.2 EKI-1351 and EKI-1352

These LEDs display the power status, wireless network status, and serial communication status located on the front panel of EKI-1351, and EKI-1352, each of them has its own specific meaning as below table.

LED	Color	Status	Description
P1	Green	ON	Power input from first power connector
		Off	Power off
P2	Green	ON	Power input from second power connector
		Off	Power off
Status	Yellow	Blinking	System ON
		Off	System not work
		ON	Locate from Utility
	Yellow	Off	0% Wireless signal strength
		One ON	0~ 35% Wireless signal strength
		Two ON	35~70% Wireless signal strength
		Three ON	Up 100% Wireless signal strength
Fail	Yellow	Off	Wireless module OK
		ON	Wireless module failure
Link	Green	Off	Disconnect to wireless AP
		ON	Connect to wireless AP
LAN(Left side)	Yellow	ON	Link
		OFF	No Link
		Flash	Active
LAN(Right side)	Green	ON	100M
		OFF	10M
TX	Yellow	ON	Serial port data being transmitted
		OFF	Serial port no data being transmitted
RX	Green	ON	Serial port data being received
		OFF	Serial port no data being received

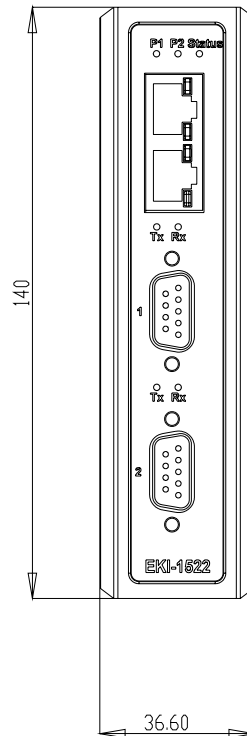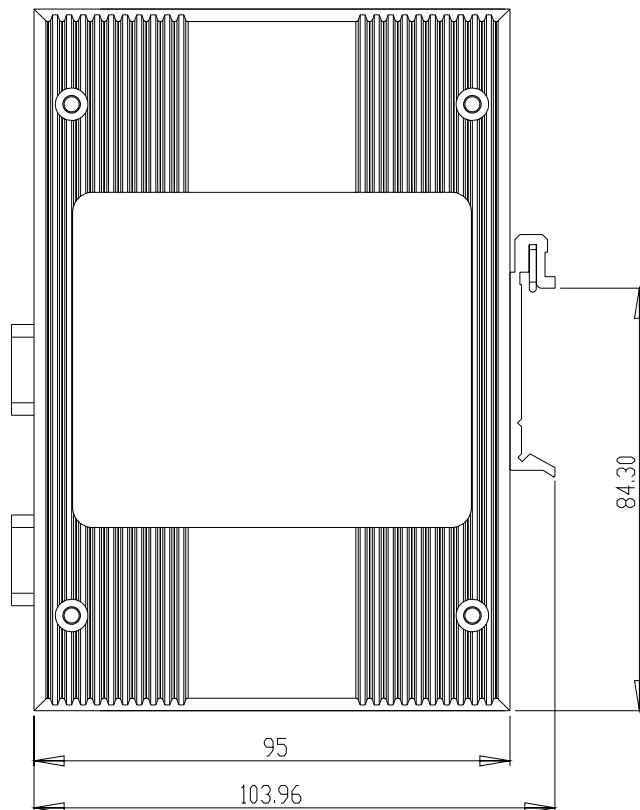## 2.2.2 Dimension (units:mm)

2.2.2.1 EKI-1521 and EKI-1522

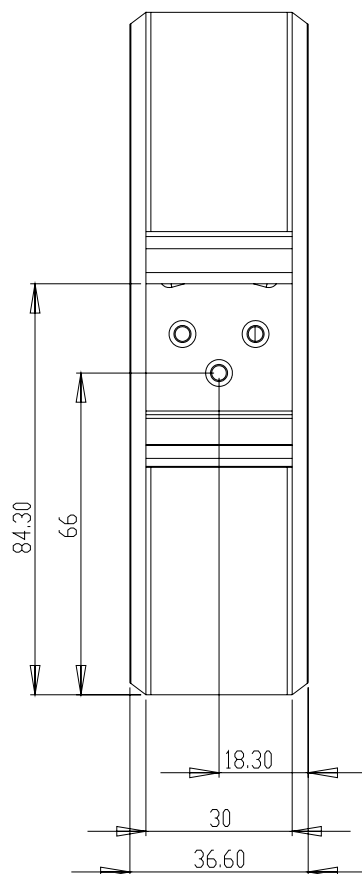**Figure 2.1 Front View**

Figure 2.2 Side View

Figure 2.3 Back View
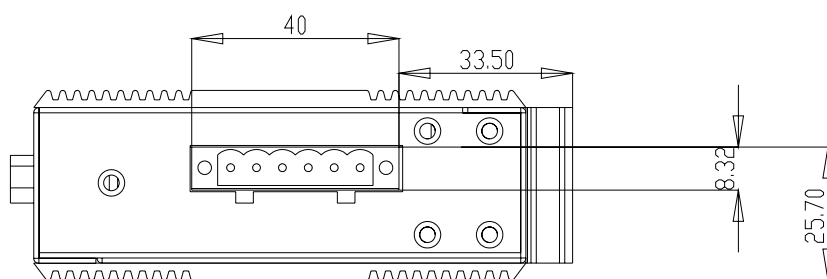

Figure 2.4 Top View

2.2.2.2 EKI-1524
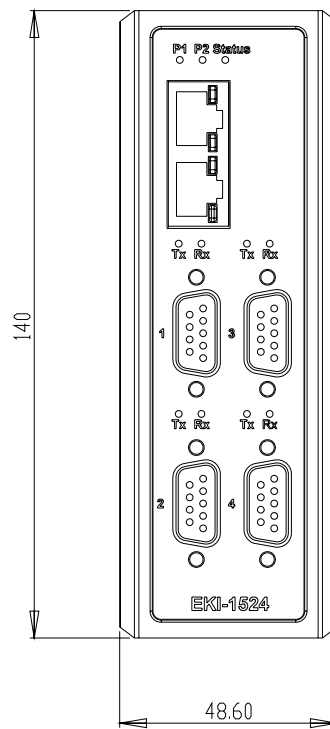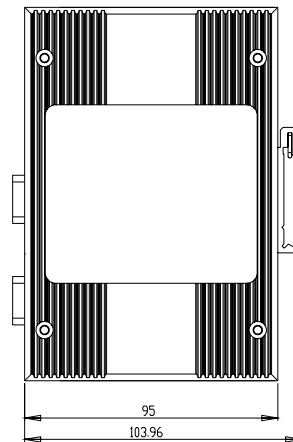

Figure 2.5 Front View

Figure 2.6 Side View
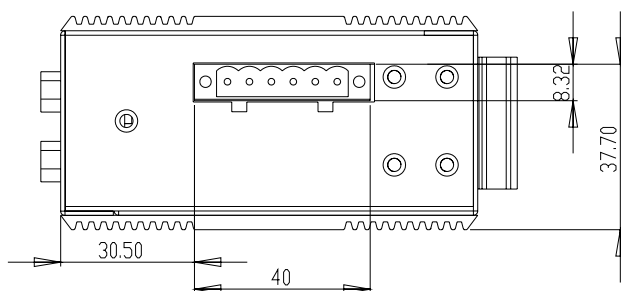
Figure 2.7 Back View

Figure 2.8 Top View

2.2.2.3 EKI-1351 and EKI-1352

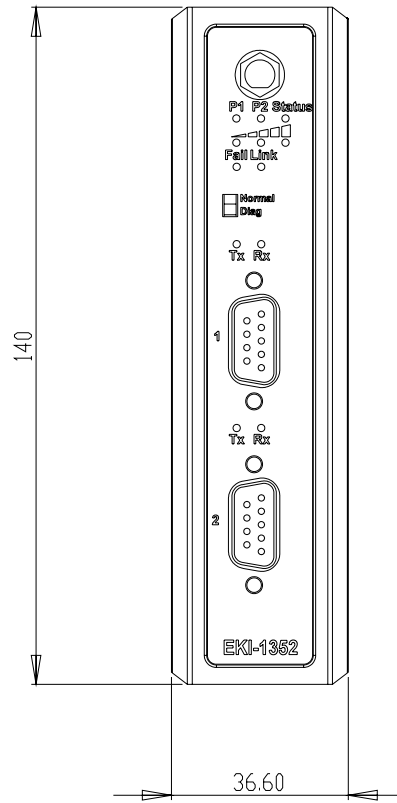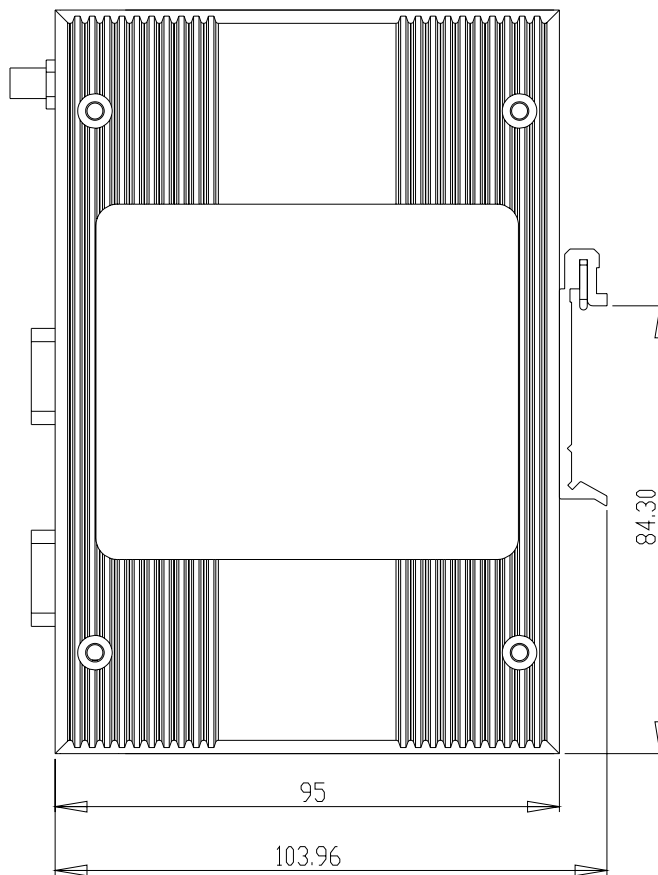**Figure 2.9 Front View**
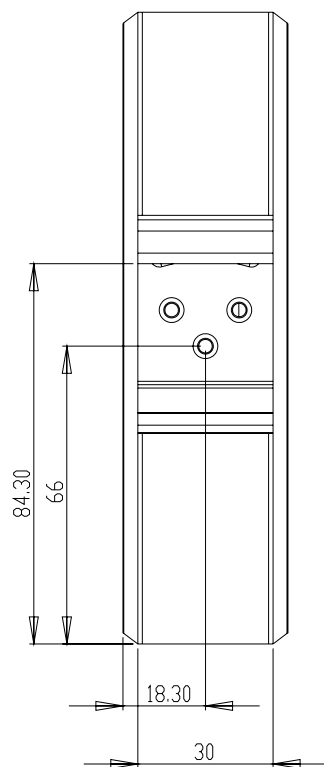

Figure 2.10 Side View
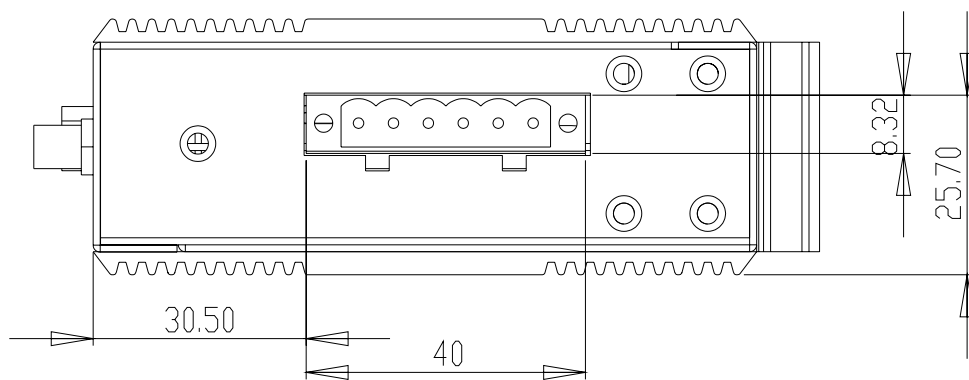
Figure 2.11 Back View

Figure 2.12 Top View

2.3 Connecting Hardward

Next, we will explain how to find a proper location for your EKI serial device server, and then explain how to connect to the network, hook up the power cable, and connect to the EKI device server serial port.

2.3.1 Choosing a Location

Due to its versatility and innovative design, EKI serial device server can be :
- Fixed to a panel mount
- Fixed to a DIN-rail.

2.3.1.1 Panel/Wallmounting

The EKI serial device servers can be attached to a wall using the included metal brackets. Each bracket comes with four screws; and then you can install the device firmly via the components, please see Figure as below.

Figure 2.13 Combining the Metal Mounting Kit

2.3.1.2 DIN-rail Mounting

You can mount the EKI serial device server on a standard DIN rail. The DIN-rail kit is screwed on the industrial switch when out of factory. If the DIN-rail kit is not screwed on the industrial switch, please screw the DIN-rail kit on the switch first.

First, hang the EKI serial device sever to the DIN-rail with angle of inclination. See below figure.
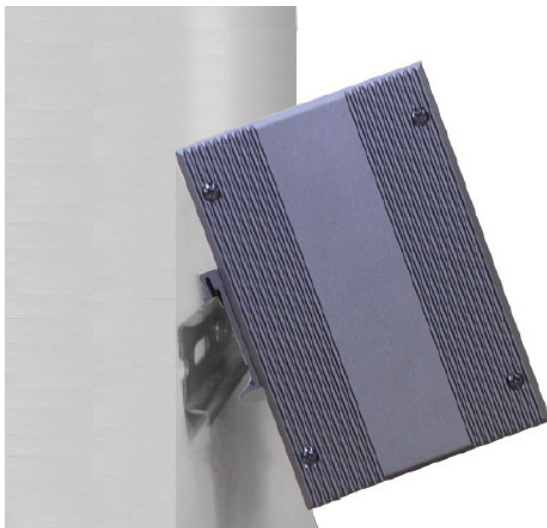

Figure 2.14 DIN-rail Step 1

Then, let the device down straight to slide over the rail smoothly.

Figure 2.15 DIN-rail Step 2

2.3.2 Network Connection

EKI-1521, EKI-1522, and EKI-1524 has 2x RJ-45 that support connection to 10 Mbps Ethernet, or 100 Mbps Fast Ethernet, and half or full duplex operation. EKI-1521, EKI-1522 and EKI-1524 can be connected to other hubs or switches through a twisted-pair straight through the cable or a crossover cable up to 100m long.

2.3.3 Wireless Connection

EKI-1351 and EKI-1352 operate in the 802.11b/g WLAN environment, which is created by an access point working with 802.11b/g protocols. Locate your access point and connect to the Ethernet network first. Then build up the connection between the access point and the EKI-1351 and EKI-1352. While the host PC can not connect to EKI-1351 and EKI-1352, you might switch the EKI-1351 and EKI-1352 as Diag mode.

2.3.3.1 Diag Mode

- Set the switch of EKI-1351 and EKI-1352 to Normal Mode, then power on.
- Wait for 10 to 20 seconds until the signal quality is stable.
- Adjust the switch to Diag Mode, then wait for 5 seconds until the signal link is blinking.
- Return the switch to Normal Mode , then EKI-1351 and EKI-1352 will reboot automatically with Diag Infrastructure Mode. Now EKI-1351 and EKI-1352 will automatically search the field site for access points and create a connection to the one with best signal quality.
- Start the Configuration Utility tool on your host (ensure your host PC and the possible access points that EKI-1351 and EKI-1352 can connect to, are in the same network). Find the EKI-1351 and EKI-1352 on the network.
- Reset the network setting as required. (About Network settings, please refer to section 3.2.3 of the manual)

After the connection is ready, you can follow the steps shown in chapter 3 to configure and set virtual port mapping through network and access point.

You can check the signal access quality with the wireless signal strength LED indicator. Adjust the antenna of the ADAM module to optimize communication quality.

2.3.4 Power Connection

The EKI serial device server supports dual +12 ~ 48 VDC power inputs and power-fail relay output.
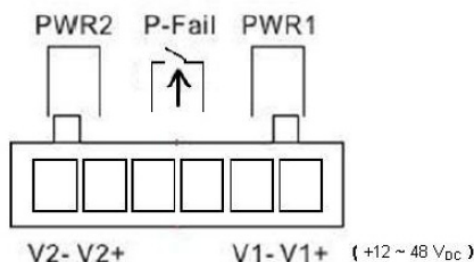
You can connect an alarm indicator, buzzer or other signaling equipment through the relay output. The relay opens if power input 1 or 2 fails ("Open" means if you connect relay output with an LED, the light would be off).