ADAM-4570/4570L/4570S/
ADAM-4571/4571L/4571S/
EDG-4504

1/2/4 Port Ethernet to
RS-232/422/485 Data Gateway
User's Manual

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The ADAM-4570/ADAM-4570L/ADAM-4570S/ADAM-4571/ADAM-4571L/ADAM-4571S/EDG-4504 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 ADAM-4570/ADAM-4570L/ADAM-4570S/ADAM-4571/ADAM-4571L/ADAM-4571S/EDG-4504 system from being damaged by ESD (Electrostatic Discharge) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

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product returned without dated proof of purchase 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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Chapter 1
Overview

1.1 Introduction

The Advantech Ethernet Data Gateway series (EDG series) is a lightening fast and cost effective data gateway between RS-232/422/485 and Ethernet interfaces. This unit immediately upgrades your existing device for integration into the Internet world. The ADAM-4570/ADAM-4571/EDG-4504 provides multiple RS-232/422/485 serial ports easily individually configured for your needs and ADAM-4570L/4571L provides RS-232 serial ports.

ADAM-4570S/4571S provides security mechanism to protect sensitive data from being altered or accessed by unauthorized users in the RS-422/485 networks.

And the transmission speed of the EDG series is up to 230 Kbps, outstripping the competition to meet the demand for high-speed exchange. In addition, the user only needs the Windows utility to configure the EDG series without the need for any other software. Functionally transparent and efficient, The EDG series is specially designed for remotely controlling and monitoring devices via the Internet.

The EDG series links both your *human-machine interface* (HMI) software and the existing RS-232/422/485 system architecture with an Ethernet network. Because the cabling of industrial automation is expensive, requires heavy maintenance and occupies massive amounts of room space, the EDG series eliminates the amount of cabling. Using EDG series, you can save cabling space, and software development cost. The EDG series also provides a high-performance RISC CPU and Real Time Operating System to reduce CPU load. This element makes the EDG series more stable and reliable during data transmission. Another benefit is the EDG series allows users to remotely download programs to a designated device via Ethernet. This reduces the need for on-site maintenance and di-agnosis.

In addition, The EDG series comes with a Windows-based configuration and port-mapping utility. The configuration tool can auto-detect all EDG series on the local network. It also lets you adjust all settings easily. The port mapping utility helps you to set up 255 ports for one Windows 95/98/NT/2000/ME/XP platform. This helps users manage all ports for their needs.

1.2 Features

- Expand up to 255 serial ports for one Windows 95/98/NT/2000/ME/XP host
- Supports 10/100 Base-T Ethernet standard
- Supports high transmission speeds up to 230 Kbps
- Supports LED indicators: Easy to diagnostic
- Auto-searching Windows configuration utility: Easy setting and security protection
- Port-mapping utility: Easy to manage 255 ports and self-diagnostic
- Easy to locate specific EDG series
- Supports real-time Operating System
- Surge protection for RS-485 line and power supply
- Mounts on DIN rail, panel or piggyback easily

1.3 Specifications

- Protocol: TCP/IP
- Network Port: IEEE 802.3, IEEE 802.3u
- Interface:
  Network: 10/100 BASE-T standard
  Serial: ADAM-4570/ADAM-4571/EDG-4504: RS-232, RS-422 and RS-485; ADAM-4570L/4571L: RS-232; ADAM-4570S/4571S: RS-422 and RS-485
- Port: 1/2/4 independent RS-232/422/485 ports
  ADAM-4570: Two RS-232/422/485 ports
  ADAM-4570L: Two RS-232 ports
  ADAM-4570S: Two RS-422/485 ports
  ADAM-4571: One RS-232/422/485 port
  ADAM-4571L: One RS-232 port
  ADAM-4571S: One RS-422/485 port
  EDG-4504: Four RS-232/422/485 ports
- Connector:
  Network: RJ-45
  Serial: RJ-48 (RJ-48 to DB-9 cable provided) for ADAM-4570/4570L/4570S/4571/4571S/EDG-4504 and DB-9 for ADAM-4571L
- Transmission speed: 300 bps to 230 Kbps
- Parity bit: odd, even, none, space, mark
- Data bit: 5, 6, 7, 8
- Stop bit: 1, 1.5, 2
- Signals: Full Modem control signals (Doesn't support RAS service)

- Diagnostic LEDs:
  Network: TX/RX, Link, Speed (10/100 Mbps), Power
  Serial: TX/RX, Status
- Utility Software:
  Auto-detecting configuration utility
  Easy-to-manage port mapping utility
- Driver Supported:
  Windows 95/98/NT/2000/ME/XP driver
- Power Requirements: unregulated 10 to 30 Vdc with surge protection
- Power Consumption:
  ADAM-4570: 4W
  ADAM-4571: 3.5W
  ADAM-4570L/4571L: 1.5W
  EDG-4504: 4.5W
- Placement:
  DIN-rail, panel mounting, piggyback stack
  (ADAM-4570/4570L/4570S/4571/4571L/4571S)

  DIN-rail, panel mounting (EDG-4504)
- Operating Temperature: 0 ~ 60° C
- Storage Temperature: -20 ~ 80° C
- Operating Humidity: 20 ~ 95% (non-condensing)
- Storage Humidity: 0 ~ 95% (non-condensing)

1.4 Package Checklist

- User's Manual
- CD-ROM for utility and manual
- 1/2/4 RJ-48 to DB-9 serial cables (except ADAM-4571L)
- One RS-232 loopback DB-9 tester
- Five stickers
- NYLON DIN-rail Mounting Adapter
- SECC Panel Mounting Bracket

Chapter 2

Getting Started

In this chapter, you will be given an overview of the EDG series hardware installation procedures. As mentioned in the previous chapter, the EDG series comes ready for all network connections, including Ethernet, and RS-232/422/485 port connections.

We begin this chapter with a brief showing the installation procedure. You can take flow chart for reference.

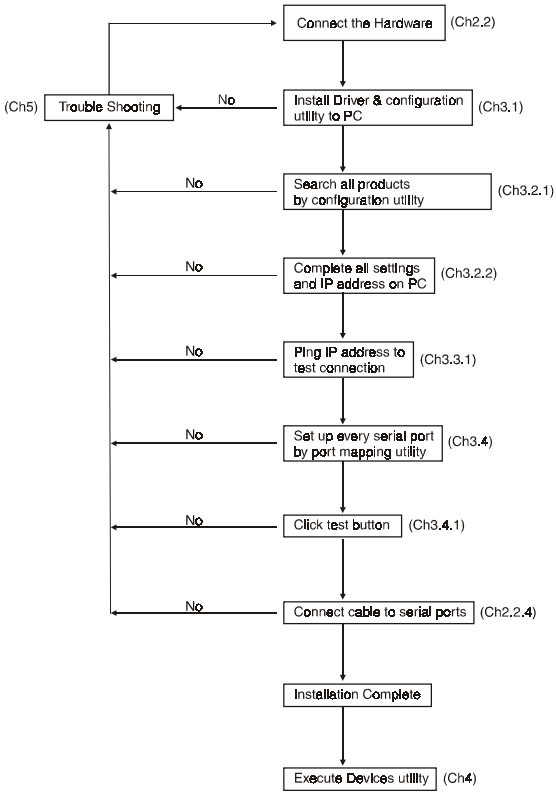


Figure2-1 Installation Flow Chart

2.1 Understanding the Advantech EDG Series

The EDG series is an advanced data gateway unit. It extends traditional COM ports of a PC with access over a TCP/IP network. Through networking, you can control and monitor remote serial devices either over a LAN or over the WAN.

Since the EDG series is connected through a TCP/IP network, you will need to know some basic facts about networking in order to get the server hooked up correctly.

2.1.1 Network Architecture

Traditional serial port communication uses a COM port board that slides into one of the slots at the back of your PC. In this case, only the computer containing the board can access the serial port. With the EDG series, you are now able to access the COM port from a distance through local area network. The EDG series can be integrated within the network architecture of any protocol. Note, all serial devices which are connected to the port must have the same protocol running and the same transmission speed. Connect devices running different protocols to different ports of the EDG series.

The following illustration shows the network architecture as below:

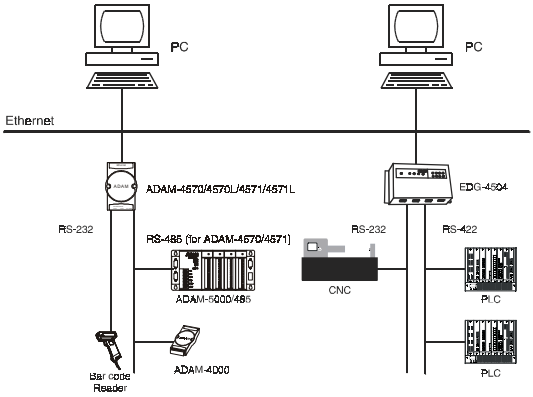


Figure 2-2 Network Architecture(1)

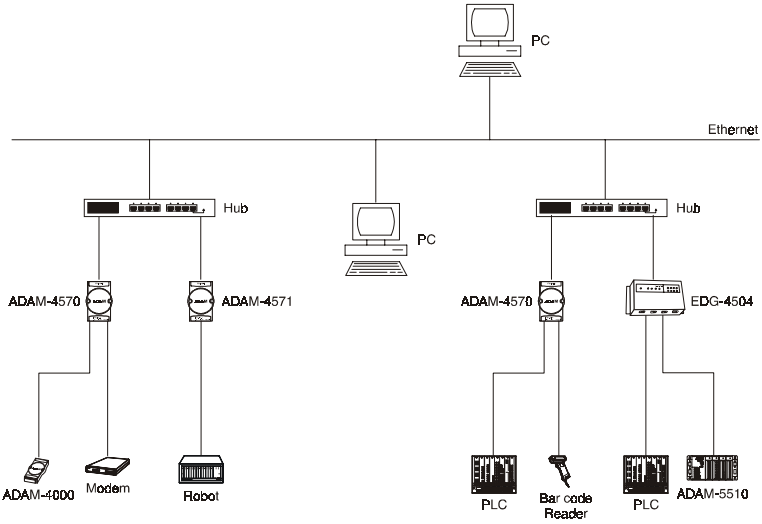


Figure 2-3 Network Architecture(2)

2.1.2 Secure Communication

Advanced multiple security features protect the system and make data more private and secure. The ADAM-4570S/4571S guards your network and data by multiple security protections: T-DES (Triple Data Encryption Standard, which is specified in FIPS PUB 46-2 and American National Standard X9.25) strong encryption, PKCS#5 (Password-based Cryptographic Standard #5), and IP address authorization.

We apply T-DES using three blocks (8 bytes for each block) for plain text 3-time calculation and PKCS#7 for data padding when block of the plain text isn't enough for 8 bytes. We apply PKCS#5 algorithm to turn user-defined password into a unique key by means of a hash algorithm. Users only need to specify a password when configuring ADAM-4570S/4571S in utility. This prevents important data from being accessed by unauthorized users.

2.1.2.1 Data Integrity

All records are protected using the symmetry encryption and checksum algorithms. Symmetry encryption protects the data privacy. With checksum, which is protected by encryption, we could guarantee the integrity of data. Transmissions also include a sequence number, which is protected by encryption, so that missing, altered or extra messages are detectable.

2.1.2.2 Access Control and Local Password Configuration

IP access control can block users from unauthorized hosts; it only allows 32 users to access at one time. In addition, the ADAM-4570S/4571S protects all configuration settings from being changed inadvertently. When this option is enabled, only the corresponding PC can configure the module. The multiple security mechanisms work to prevent unauthorized access to your RS-422/485 networks.

2.1.3 Top / Front / Rear View

2.1.3.1 ADAM-4570/4570L/4570S

There are five network status LEDs located on the top panel of ADAM-4570/4570L/4570S, each with its own specific function.

LED	Color	Status	Description
Status/Power	Red	ON	Heartbeat (1 time/sec)
		OFF	Not working
	Green	ON	Power ON
		OFF	Power OFF
Speed/Link	Red	ON	100 Mbps speed
		OFF	10 Mbps speed
	Green	ON	Valid network link
		OFF	Invalid network link
Tx/Rx (Ethernet)	Red	ON	Ethernet data being transmitted
		OFF	No data being transmitted
	Green	ON	Data being received
		OFF	No Data being received
Tx/Rx (port1)	Red	ON	Serial port data being transmitted
		OFF	No data being received
	Green	ON	Data being received
		OFF	No data being received
Tx/Rx (port2)	Red	ON	Data being transmitted
		OFF	No data being transmitted
	Green	ON	Data being received
		OFF	No data being received

Table 2-1 ADAM-4570/4570L/4570S LED Definition

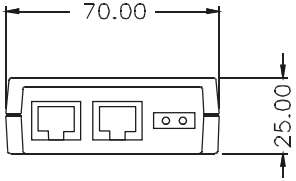


Figure 2-4 ADAM-4570/4570L/4570S—Top Panel

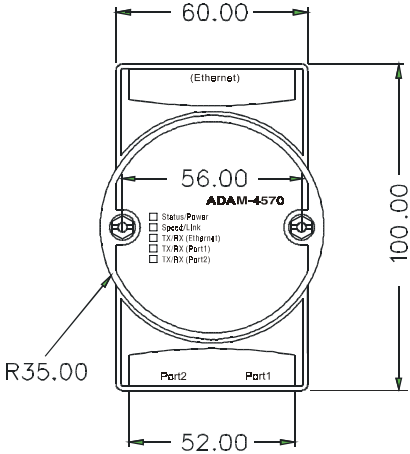


Figure 2-5 ADAM-4570/4570L/4570S—Front Panel

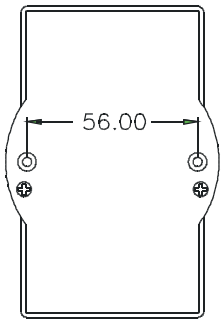


Figure 2-6 ADAM-4570/4570L/4570S—Back Panel

2.1.3.2 ADAM-4571/4571L/4571S

There are four LEDs located on the top panel of ADAM-4571/ 4571L/4571S, each with its own specific function.

LED	Color	Status	Description
Status/Power	Red	ON	Heartbeat (1 time/sec)
		OFF	Not working
	Green	ON	Power ON
		OFF	Power OFF
Speed/Link	Red	ON	100 Mbps speed
		OFF	10 Mbps speed
	Green	ON	Valid network link
		OFF	Invalid network link
Tx/Rx (Ethernet)	Red	ON	Ethernet data being transmitted
		OFF	No data being transmitted
	Green	ON	Data being received
		OFF	No Data being received
Tx/Rx (port1)	Red	ON	Data being transmitted
		OFF	No data being transmitted
	Green	ON	Data being received
		OFF	No data being received

Table 2-2 ADAM-4571/4571L/4571S LED Definition

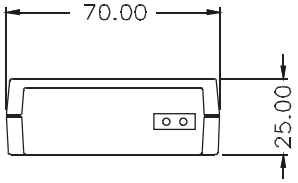


Figure 2-7 ADAM-4571/4571L/4571S—Top Panel

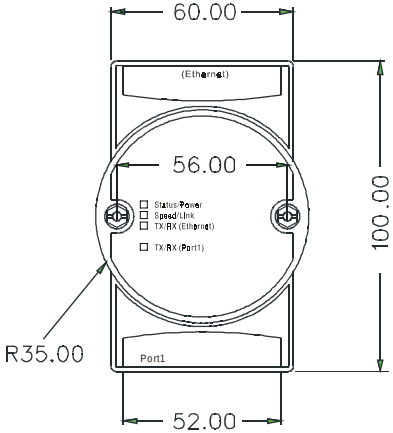


Figure 2-8 ADAM-4571/4571L/4571S—Front Panel

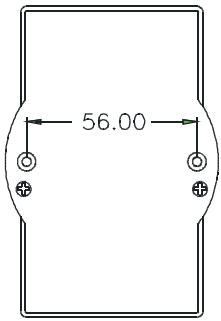


Figure 2-9 ADAM-4571/4571L/4571S—Back Panel

2.1.3.3 EDG-4504

There are 13 LEDs located on the top panel of EDG-4504, each with its own specific function.

LED	Status	Description
Status	ON	Heart beat (1 time/sec)
	OFF	Not working
10M	ON	10 Mbps speed
	OFF	Invalid 10 Mbps Network link
100M	ON	100 Mbps speed
	OFF	Invalid 100 Mbps Network link
TX (Ethernet)	ON	Ethernet data being received
	OFF	No data being transmitted
RX (Ethernet)	ON	Ethernet data being received
	OFF	No data being received
TX (port N) N=1~4	ON	Serial port data being transmitted
	OFF	No data being received
RX (port N) N=1~4	ON	Serial port data being transmitted
	OFF	No data being received

Table 2-3 EDG-4504 LED Definition

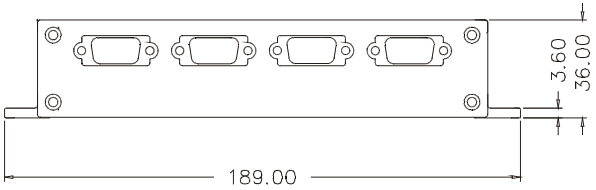


Figure 2-10 EDG-4504—Top Panel

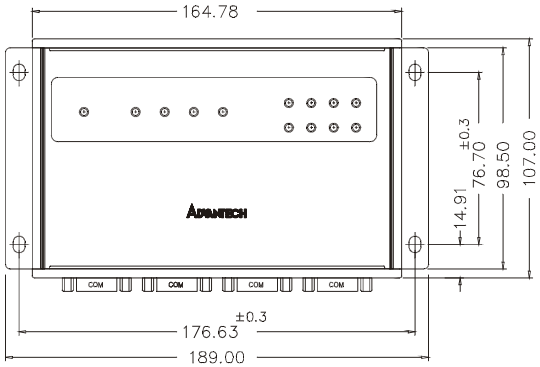


Figure 2-11 EDG-4504—Front Panel

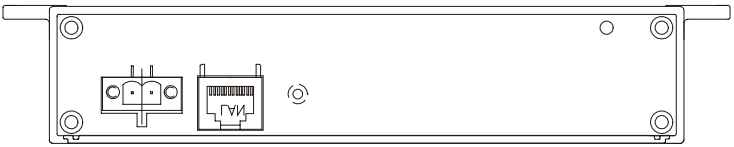


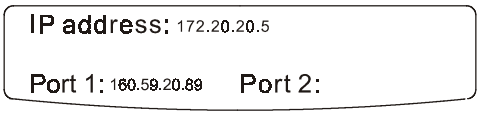
Figure 2-12 EDG-4504—Front Panel

2.1.4 Stickers

If you forgot the IP addresses of specific EDG Series or where the host PC is mapped to the ADAM-4570 port, we have provided five stickers for you to note the IP addresses and place in a secure location. For example,

172.20.20.5: The IP address of specific ADAM-4570

160.59.20.89: The IP address of the specific host PC mapped to this port.



2.2 Connecting the Hardware

Next, we will explain how to find a proper location for your EDG COMPort series, and then explain how to connect to the network, hook up the power cable, and connect to the EDG Series's serial port.

Note: Before you install EDG Series, you can install other communication cards first.

2.2.1 Choosing a Location

2.2.1.1 ADAM-4570/4570L/4570S/4571/4571L/4571S

Due to its versatility and innovative design, the ADAM-4570/4570L/4570S/4571/4571L/4571S can be:

- fixed to a panel mount
- fixed to a DIN Rail.
- Piggyback Stack

Panel Mounting

The ADAM-4570/4570L/4570S/4571/4571L/4571S can be attached to a wall using the included metal brackets. Each bracket comes with four screws; first attach the brackets to the bottom of the ADAM-4570/4570L/4570S/4571/4571L/4571S. Next, screw each bracket to a wall.

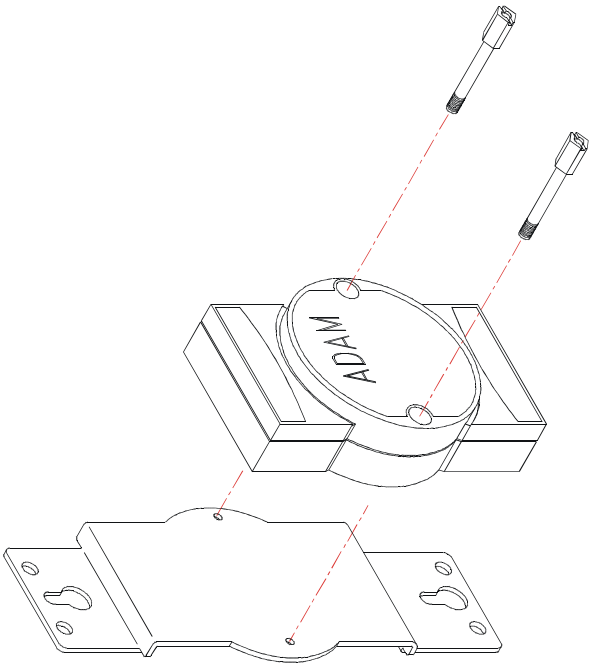


Figure 2-13 Panel Mounting

DIN Rail Mounting

You can mount the ADAM-4570/4570L/4570S/4571/4571L/4571S on a standard DIN Rail. First, using two screws, attach the metal plate to the DIN Rail bracket. Because the screw heads are beveled, the tops of the screws will be flush with the metal plate. Din Rail Mounting Brackets—Orientation of Metal Plates

You can now screw the metal plate with the DIN rail bracket assembly to the bottom of the server is a more convenient way. Next, use the remaining screws to put the metal plate on the bottom of the ADAM-4570/4570L/4570S/4571/4571L/4571S.

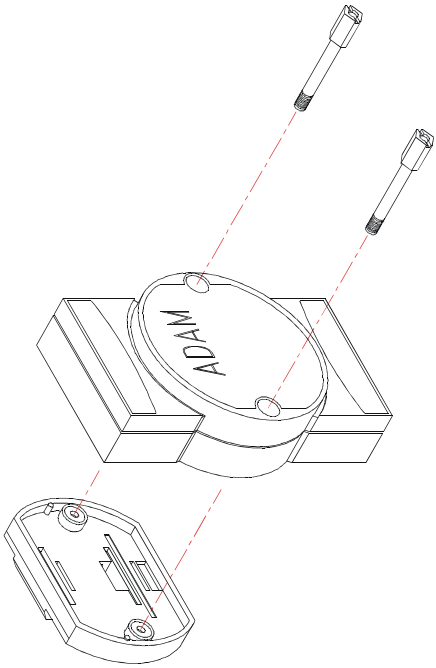


Figure 2-14 Din Rail Mounting

Piggyback Stack

ADAM-4570/4570L/4570S/4571/4571L/4571S can be stacked as seen in the figure below.

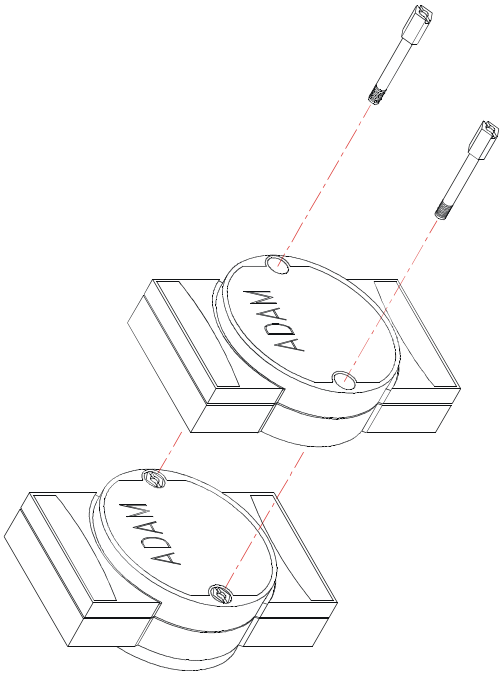


Figure2-15 Piggyback Stack

2.2.1.2 EDG-4504

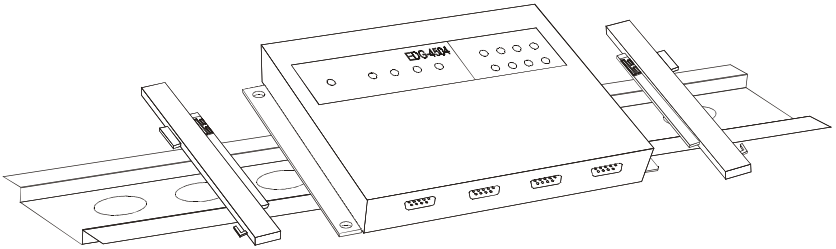


Figure 2-16 Din Rail Mounting

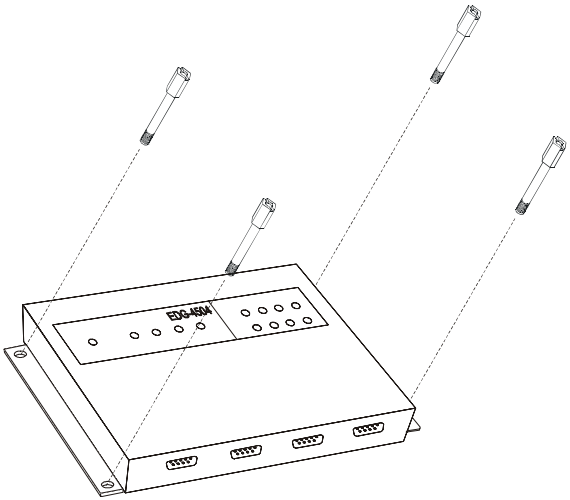


Figure 2-17 Panel Mounting

2.2.2 Network Connection

There are two ways to use the 10/100Base-T Ethernet connector located on the EDG Series:

1. For Local Area Network (LAN) applications using the EDG Series, you will simply plug one end of your Ethernetcable into the 10/100Base-T connector, and the other end into the hub connected to your network.
2. When installing and configuring, you will find it convenient to hook the EDG Series directly to your computer's Ethernet card. To do this you will need to use a "crossed-cable", such as the one supplied with your server.

Cabling requirements for the Ethernet side

Use an RJ-45 connector to connect the Ethernet port of the EDG Series to the network hub. The cable for connection should be Category 3 (for 10Mbps data rate) or Category 5 (for 100 Mbps data rate) UTP/STP cable, which is compliant with EIA/TIA 586 specifications. Maximum length between the hub and any EDG Series is up to 100 meters (ca. 300 ft).

2.2.3 Power Connection

You should take the following steps to connect EDG Series power.

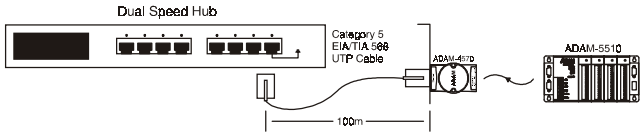


Figure 2-18 Connecting EDG Series series to the hub

1. Connect the power cable to 2-pin connector
2. Connect power cable to power adapter

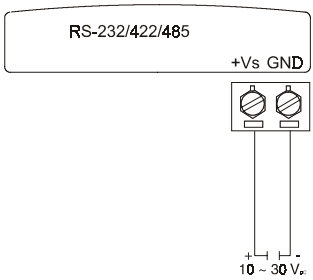


Figure 2-19 Power Connection for ADAM-4570/4570L/4570S/4571/4571L/ 4571S

Figure 2-20 Power Connection for EDG-4504

If the EDG Series is working properly, the green power LED will light up , indicating that the EDG Series is receiving power. Furthermore, the EDG Series provides surge protection to protect it from being damaged by over-voltage, a 34V surge protection is added to the power end and an 18V surge protection is for the RS-422/485 end.

2.2.4 Serial Connection

2.2.4.1 ADAM-4570/4570L/4570S/4571/4571L/4571S

The model of the ADAM-4570/4570L/4570S/4571/4571L/4571S that you purchased has RJ-48 serial ports on the bottom of module. Depending on your serial device and serial interfaces, there are two options:

1. For an RS-232/422/485 (p.s. ADAM-4570S/4571S don't support RS-232) port you may use a RJ-48 to DB-9 cable which we supply to connect your serial device to the ADAM-4570/4570L/4570S/4571/4571L/4571S. Simply plug one end of the cable into the jack, and plug the other end into the serial port jack on your serial device.
2. Refer to the following table for details on serial cable RJ-48 to DB-9 pinouts.

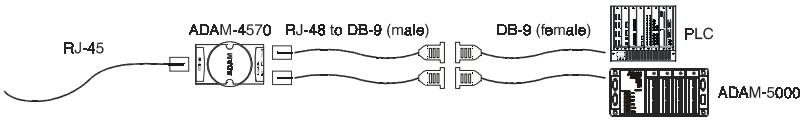
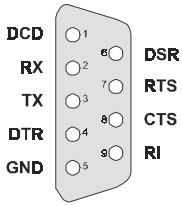


Figure 2-21 Serial Connection for ADAM-4570/4570L/4570S/4571/4571L/4571S.

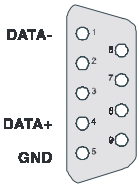
RJ-48

PIN Name	DCD	RX	TX	DTR	GND	DSR	RTS	CTS	RI
RJ-48	1	2	3	4	5	6	7	8	9

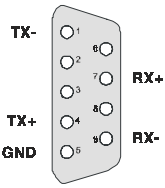
DB-9



RS-232



RS-485



RS-422

2.2.4.2 EDG-4504

The model of the EDG-4504 that you purchased has DB-9 serial ports on the bottom of module. Depending on your serial device and serial interfaces, there are two options:

1. For an RS-232/422/485 port you may use a DB-9 cable to connect your serial device to the EDG-4504. Simply plug one end of the cable into the jack, and plug the other end into the serial port jack on your serial device.
2. The DB-9 pinouts is the same as ADAM-4570/4570L/4571

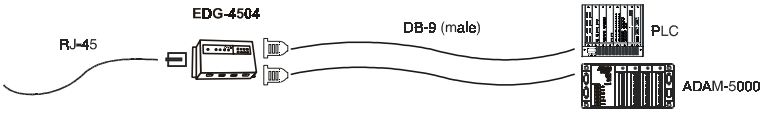


Figure 2-22 Serial Connection for EDG-4504

Chapter 3

Installation and Configuration

3.1 Driver and Utility Installation

In order to use a PC via an Ethernet network to control serial devices connected to the EDG Series, you must first have a host running Windows 95/98/NT/2000/ME/XP. This type of application also requires the host to have an Ethernet card and TCP/IP protocol installed. Following are the installation instructions to set up the EDG Series.

1. Insert the Advantech industrial communication CD-ROM into the drive (e.g. D:\) on the host PC. Change the host computer's default drive from C: to D:
2. Use your Windows Explorer or the Windows Run command to execute the Setup program (the path for the Setup program on the CD-ROM should be D:\ADAM4570\utility&driver\portmaputility1.01\setup.exe, if your default floppy drive is D:).
3. The Setup program will specify a default installation path, *C:\Program Files\Advantech\EDG COMport\1, 2 and 4 ports Mapping utility.* If a new destination path is necessary, just click the *Browse* button to change to another path. After you have specified the installation path, click the *Next* button.
4. Use your Windows Explorer or the Windows Run command to execute the Setup program.the path for the Setup program on the CD-ROM should be D:\ADAM-4570\utility&driver\configutility1.01\setup.exe, if your default floppy drive is D:). Use the same way to execute the Setup program. The default path is *C:\Program Files\Advantech\EDG COMport\1, 2 and 4 Configuration utility*.
5. After setup has copied all program files to your computer, click the *Finish* button to finish the installation.
6. The configuration utility will search for the EDG Series devices on your local network.

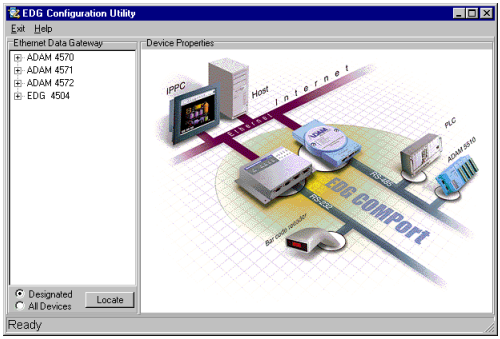
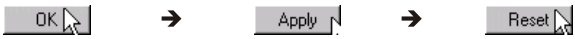


Figure 3-1 Configuration Utility

3.2 Configuring the EDG Series — The Configuration Utility

The EDG Series provides easy Windows configuration through Ethernet connection. This Windows utility searches all the EDG Series and devices on the network automatically and you can configure various parameters for TCP/IP configuration easily. For secure administration, it can also restrict the access rights for configuration to only one host PC to enhance network security. With this secure function enabled, other PCs will not have permission for configuration. The Windows utility consists of four functional categories: System, Network, Port, and Security which are presented on the toolbar of the configuration utility.

Note: When you have finished the configuration of these settings for each category, please follow the steps described below to make thse settings effective on the EDG Series.



3.2.1 Search for Specific EDG Series

If you want to locate specific EDG Series, the configuration utility provides a "Locate" function to assist you. You can select all the EDG Series devices (see Figure 3-2) or select a group of ADAM-4570S/4571S (see Figure 3-3) or just select one ADAM-4570 (see Figure 3-4). When you select a specific device, the LED that stands for "Status" will glow for 8 minutes. When you select another device, the original "Status" LED will turn off. Please follow these steps:

1. Select "All Devices" and click "Locate"
2. The "Status" LED of all devices will turn on

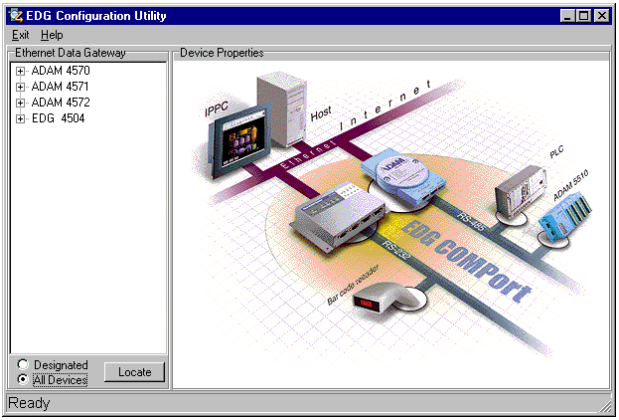


Figure 3-2 Locate all EDG Series

1. Select "Designated" and select "ADAM-4570"
2. Click "Locate"

3. The “Status” LED of all ADAM-4570S/4571S on the LAN will turn on
4. It’s the same way to locate one device.

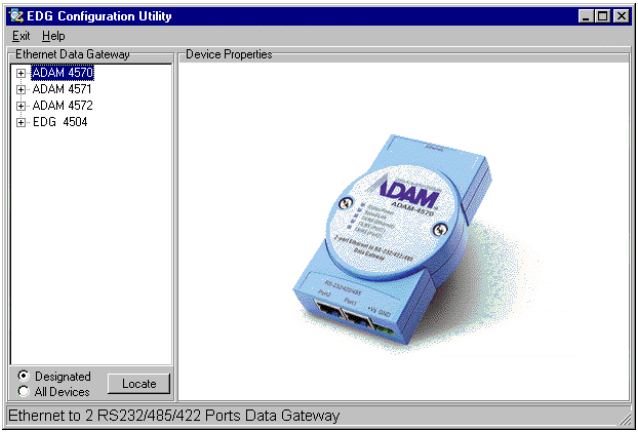


Figure 3-3 Locate the desired group of ADAM-4570S/4571S

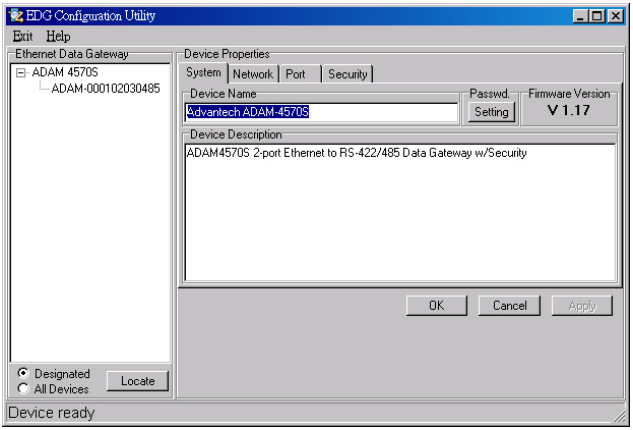


Figure 3-4 Locate specific ADAM-4570S/4571S

3.2.2 System Configuration

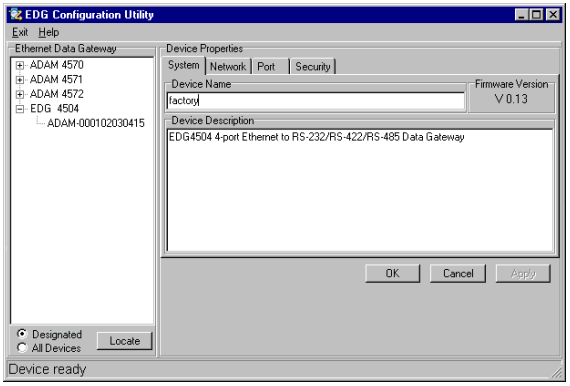


Figure 3-5 System Setting Window

Configuration utility can only search the EDG Series devices on the local network segment and *cannot search beyond a router or gateway.* Make sure that all the EDG Series devices that you want to monitor must reside on the same local network segment with the host PC.

Ethernet Data Gateway

In this column, you will see all the found EDG Series devices are listed when you use the configuration utility to auto-search EDG Series devices. The specific number following each EDG Series device is its MAC Address. The MAC Address is what helps the local system to identify and locate each Ethernet data gateway device. This MAC Address is already set before delivery from factory, hence no need for further configuration.

Device Name

Configuration utility provides a default name for device to distinguish a specific EDG Series from other EDG Series. You can update the default device name based on your application. Names longer than 128 characters cannot be used. It is best to choose a name you can remember.

Device Description

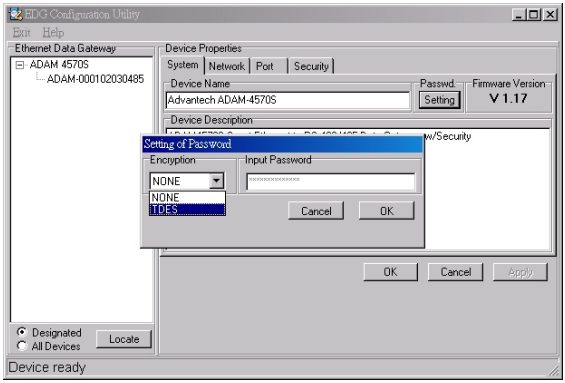
This field is to record the function, application and other information for each EDG Series device in more detail for easy management and maintenance. You are allowed to describe in your own words.

Firmware Version

In this field, the configuration utility represents the firmware version of the EDG Series. You might need to refer to the firmware version to determine functions available on the EDG Series device. In case of problems that might concern the firmware version, please provide the firmware version number to our Customer Service.

Password Setting

When you press down the "setting" button in Password section, a window pops up asking whether to use TDES encryption by entering user-defined password. The window will ask you to re-enter the password for confirmation. If it doesn't match the original one, then you can't proceed other configurations. If you choose to use TDES encryption but leave the password column blank, the utility will apply default password.



If you don't intend to have any encryption to protect your data transmission, just choose "NONE". The "Input Password" column will be disable

Type

EDG Series offers three serial interfaces, RS-232, RS-485 and RS-422. You can use any one of these serial interfaces according to your requirements.

3.2.3 Network Configuration

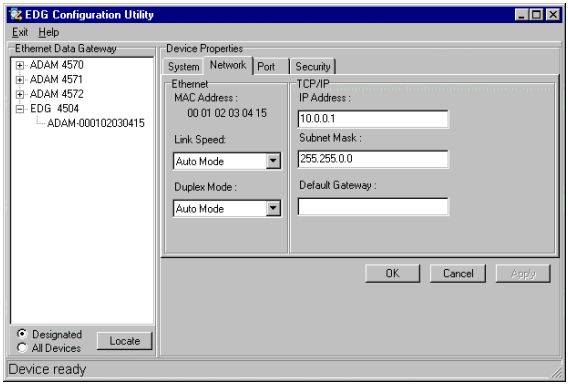


Figure 3-6 Network Configuration Window

MAC Address

This does not need configuration.

Link Speed

This function will show the current linking speed to be either 10Mbps or 100Mbps. However, the utility will auto-detect the current transmission speed on the network segment and set the transmission speed for the device accordingly without your further efforts.

Duplex Mode

The utility will detect the current transmission mode (half-duplex or full-duplex) on the network segment, and set the transmission mode for the device accordingly without your further efforts.

IP address, Subnet Mask, Default Gateway

The IP address identifies your EDG Series device on the global network. Each EDG Series has same default IP address 10.0.0.1. Obtain a specific IP address from your network administrator and then configure each EDG Series with the individual IP address.

Note: The EDG Series does not support auto IP address configured by DHCP server.

3.2.4 Port Configuration

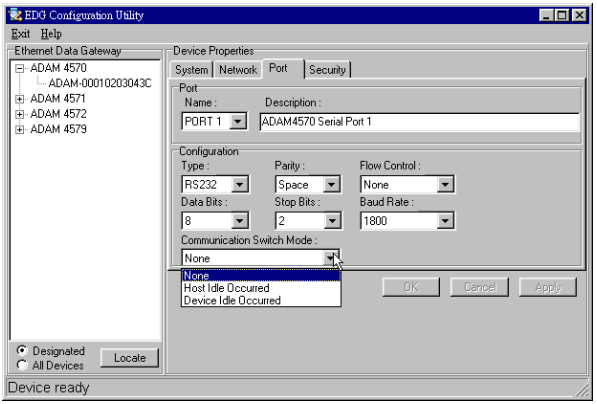


Figure 3-7 Port Configuration Window

Name

To specify which port on the EDG Series is to be connected to the serial device.

Description

You can give more detailed description of the function of the port for easy management and maintenance. Descriptions longer than 128 characters cannot be used.

Type

EDG Series offers three kinds of serial interfaces, RS-232, RS-485 and RS-422. You can use any of the three serial interfaces according to your requirements.

Parity

The EDG Series provides five options: Even, Odd, None, Space, Mark.

Flow Control

The EDG Series provides four options: None, Xon/Xoff, RTS/CTS, DTR/DSR.

Data Bits

The EDG Series provides four options: 5, 6, 7 or 8.

Stop Bits

The EDG Series provides three options: 1, 1.5 or 2.

Baud Rate

The EDG Series supports baud rates from 300 to 230,000 bps.

Communication Switch Mode

In ADAM-4570S/4571S, the utility allows the user to make a choice for communication switch mode. The default is "NONE" and the other two choices are host idle and device idle switch.

The functions are mainly to help users to build up a redundant system with ease. The purpose of the “Host Idle Switch” is to prevent system hung-up due to application program failure. If the program fails, ADAM-4570S/4571S will cut off the connection. Another application program or PC can then start to access. Similarly, when a serial device or connection fails to communicate with ADAM-4570S/4571S, the “Device Idle Switch” function will automatically switch the communication port from one to another, to keep it effectively in communication.

3.2.5 Security Configuration

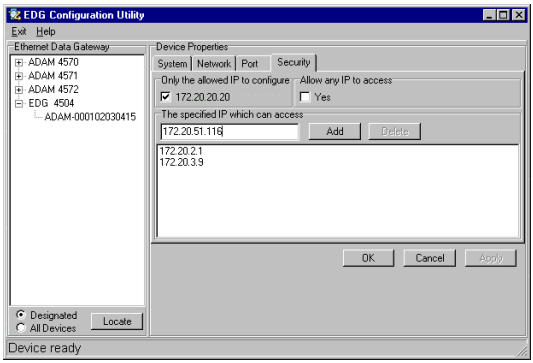


Figure 3-8 Security configuration

Only configure the authorized IP

This option is enabled in order to protect all configuration settings from being changed inadvertently.

Allow any IP to access

If this option is enabled, any PC can access data from this EDG Series.

The specified IP which can access

If you do not want many PCs to have the access right, you can limit at most 32 PCs to access data from this EDG Series.

3.3 Status Messages

The status message shown at the bottom of the utility window reflects the current status of EDG Series.

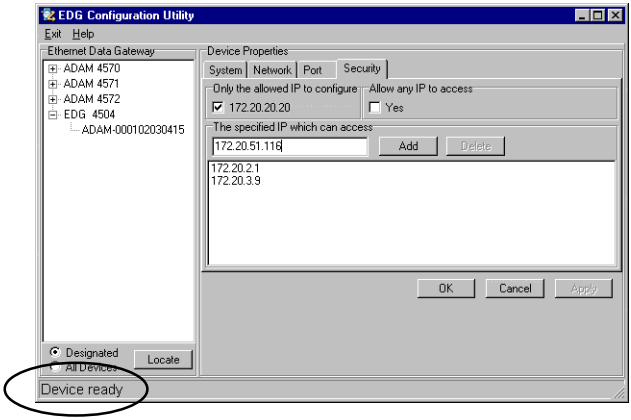


Figure 3-9 Status messages

"Read"

The configuration utility has found the EDG Series and it is ready for use.

"Searching EDG COMport"

The configuration utility is searching the EDG Series

"Querying DATA from EDG COMport"

The configuration utility is getting data from the EDG Series.

"Device Ready"

The EDG Series is ready to be configured and is now waiting for acknowledgement from the device.

"Lost Connection from the Device"

Due to device shut down or network failure, the configuration utility has lost connection after 5 seconds.

"Fail to apply this setting to the device"

Specific settings are not accepted by EDG Series.

"The device fails to respond"

The connected device does not respond.

"Fail to reset the device"

Fail to reset the EDG Series.

3.3.1 Connection Diagnostic

When you complete the configuration of your EDG Series, you can follow the steps to check if the EDG Series connects to network or not.

1. Execute the Microsoft DOS program.
2. Execute ***"PING"*** command and type your IP address of EDG Series. If EDG Series connects to your network, it will display in the screen. If the EDG Series cannot be pinged, you will need to ask someone at the remote site to check and see if the power is on, and make sure that the connection is okay.

3.4 Port Mapping Utility

The purpose of the port mapping utility is to help you manage all ports which are in one Windows 95/98/NT/2000/ME/XP platform. The utility displays three types of ports: *Used ports, Unused ports* and EDG Series *ports*. Please follow the steps.

1. Click the UNUSED PORTS item and select the port which you want to configure.

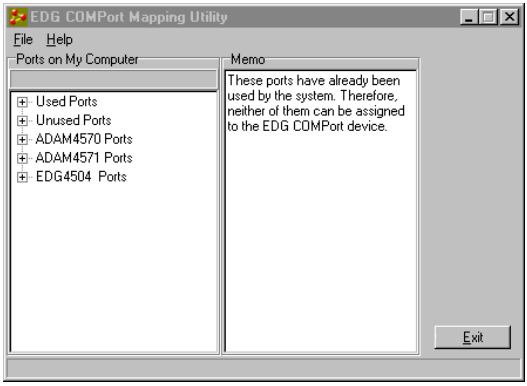


Figure 3-10 Unused ports

2. Click **ADD** button to assign the COMport to the specific EDG Series.
3. Type IP address of the EDG Series and select ports.

Note: If you assigned different COMport to the same ADAM-4570's port. The dialog box will appear to remind you.

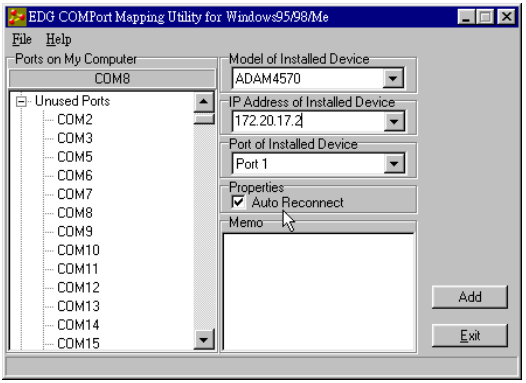


Figure 3-11 Assign COM port to EDG Series

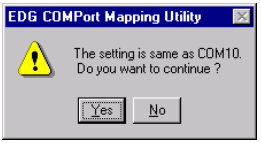
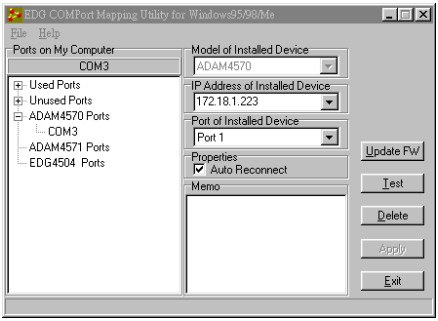


Figure 3-12 Warning window

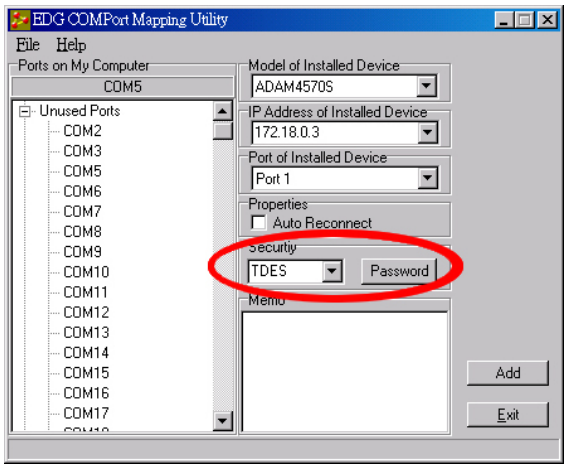
4. The port has been added into EDG Series
5. If you want to remove the COMport, click **DELETE** to remove this.



6. After you complete the configuration, click "Apply".

3.4.1 Security Setting

When you select ADAM-4570S or ADAM-4571S in the column "Model of Installed Device", the view of port mapping utility will change, as the figure shown below.



As you may have observed, it is added with "Security" setting.

The steps of password setting are the same as introduced in the previous section. Remember that user-defined password set in the configuration utility should be consistent with that set in the port mapping utility. That means if you choose TDES encryption without defining a password in the configuration utility, you have to choose TDES encryption here as well and leave "Input Password" blank; else the security communication with ADAM-4570S/4571S will fail.

3.4.2 Self Test Function

The purpose of this test is to make sure the communication from host PC to ADAM -4570 is OK. If there is still an error, you can check the communication from the EDG Series to the serial devices.

If the test is selected, an external test will be done to check that the connection signals for each port are working properly. For the test, you will need to connect each port to a loopback tester (provided in the package). Refer to the following chart for the specifications of this loopback tester. The loopback test only applies to RS-232 mode. The test is divided into two parts: Signal test and Communication Parameters test.

1. Click the Test button in the Port Mapping utility.

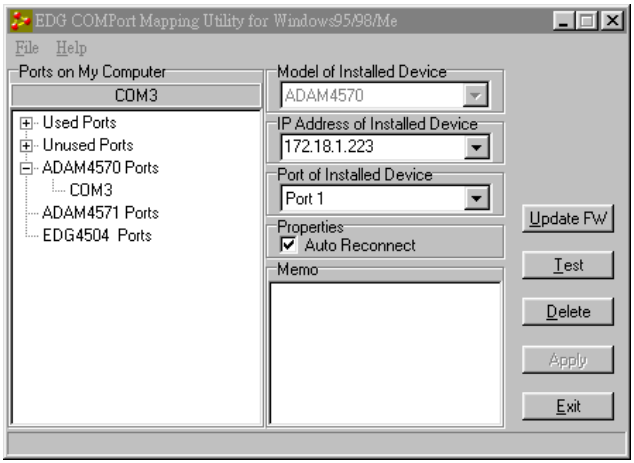


Figure 3-13 Test window

Signal Test

- **RTS → CTS:** Check the RTS and CTS signals between two ports.
- **DTR → RI:** Check the DTR and RI signal between two ports.
- **DTR → DSR:** Check the DTR and DSR signal between two ports.
- **DTR → DCD:** Check the DTR and DCD signal between two ports.

Communication Parameters Test

- Baud rate: From 50 bps to 230 Kbps
- Data bit: 5,6, 7, 8
- Stop bit: 1, 1.5, 2
- Parity: odd, even, none, space, mark

2. Click **OK** button to return to the port mapping window. All the ports in the EDG Series are tested ok.

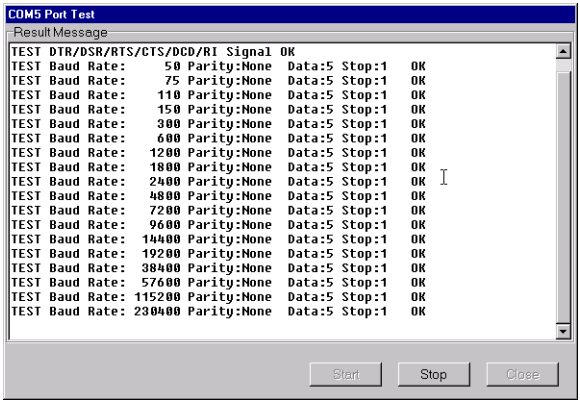


Figure 3-14 Loopback test

3.4.3 Upgrading EDG Series's Firmware Download

Advantech continually upgrades its firmware to keep pace with the ever-expanding world of computing. You can use the Download function located on Port Mapping utility to carry out the upgrade procedure. Please access Advantech's Web site at http://www.advantech.com to download the required computer file and then follow these instructions.

1. Click on the toolbar **Update FW** icon.

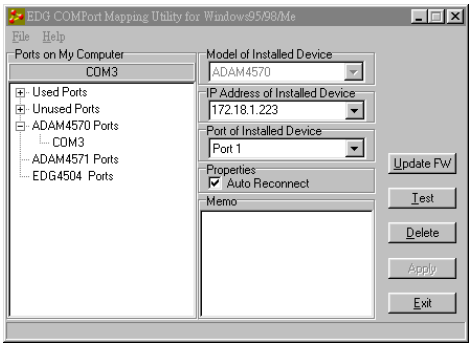


Figure 3-15 Update firmware window

2. Locate and then select the filename of the firmware that you downloaded.

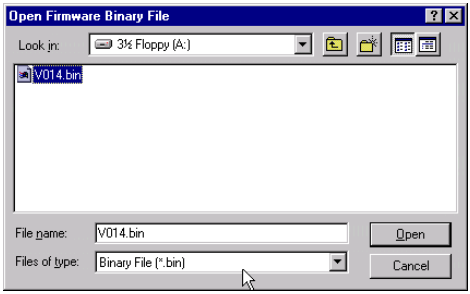


Figure 3-16 Select the file

3. After downloading firmware completely, click on the **Reboot** button. The EDG Series will restart automati cally.

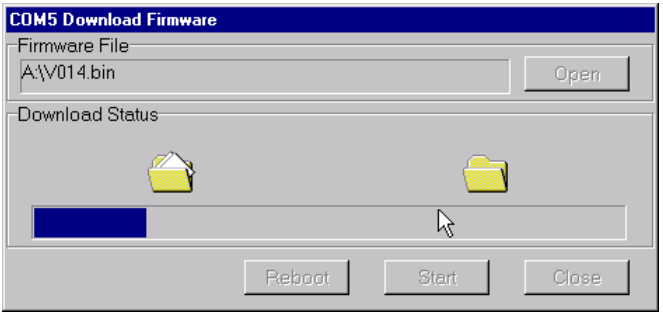


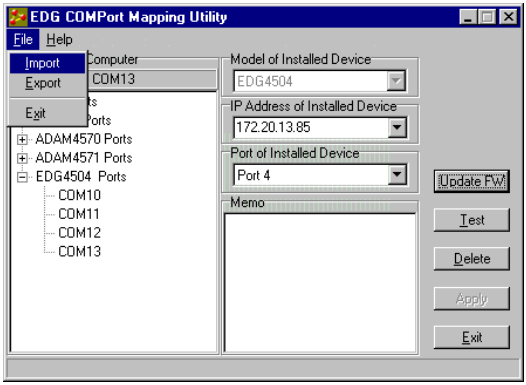
Figure 3-17 Download firmware

Note: After clicking ***Reboot*** button, configuration utility will not reboot EDG Series untill no application program access this EDG Series.

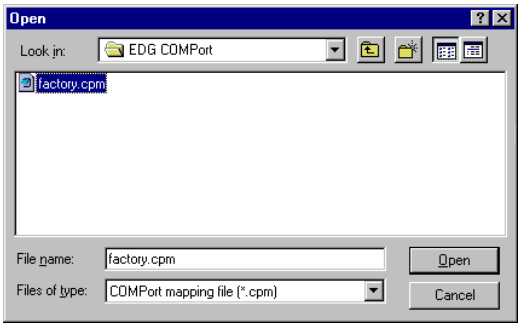
3.4.4 Save The Configuration

If you want to save or recover the configuration, you can select the "Import/Export" items.

1. a. Select "File"
   b. Select "Import" or "Export"



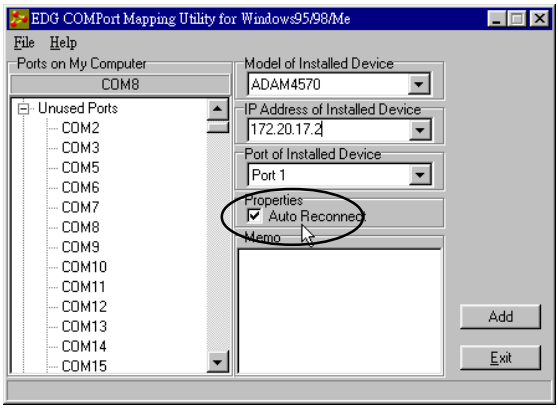
2. Save or open the configurations



3.4.5 Auto-reconnect function

Sometimes, the system crashes because the EDG Series is interrupted or is powered-off by accident. Users want the host PC to re-connect to the EDG Series automatically after such an occurrence. The EDG Series provides an "Auto-reconnect" function to solve this problem. When the EDG Series is powered-off accidentally, the driver will keep trying to reconnect the EDG Series automatically. When the EDG Series recovers or is powered-on, due to this auto-reconnect function, the host PC's commands will be received by the AEDG Series again. This function enhances the reliability of the system.

Warning: If you want to enable the "Auto-reconnect" function, please note that you can NOT enable the "Host idle" function at the same time. The same also applies in reverse, e.g. if you want to enable the "Host idle" function, you also can NOT enable the "Auto-reconnect" function at the same time.



Chapter 4
Troubleshooting

This chapter explains how to solve some of the most common problems you could encounter while using EDG Series. If you are still having problems after reading this chapter, contact your dealer, or e-mail Advantech for help.

"Configuration Utility can not find EDG Series"

1. Check POWER LED. If it is off, you have to check :
   - Make sure the EDG Series power cable is plugged in, and the server is receiving power.
   - Check that the server's network connector is plugged in properly.
   - Make sure your computer is properly connected to the network.
   - The input voltage is between +10 V and +30 V
2. Check LINK LED. If it is off, you have to check:
   - Network Connection is OK
   - Make sure your network is 10/100 Mbps
3. If the above are completed, it means the EDG Series is okay. Next, check to see if the EDG Series and the host are on the same local area network.

"Configuration utility can find EDG Series but cannot access EDG Series"

For security reasons, and to simplify operations, users can give the access right to specific PC. Only these PCs can get data from EDG Series. Thus, if while using the EDG Series, it is advised that you check to see if your PC is on the access right list.

"Cannot change the IP address or other server properties"

The network administrator is the only one allowed to modify the EDG Series's configuration. Keep in mind, even when multiple hosts share the same network, administrative access is still protected. If you need to change any configu ration settings, ask your network administrator for assis tance.

"The host PC can acess the EDG Series at this local site but later moves the EDG Series to a remote site that PC cannot access."

Due differing network interface connections, your IP address might have changed, and as a result, you are no longer on the EDG Series's Access Control list.

To resolve this issue:

1. Confirm your IP address with the EDG Series.
2. As the network administrator to set up the server con- figuration so that you are on the EDG Series's Access Control list.