2.3.5 Serial Connection

EKI serial device servers provide 1port, 2port and 4port DB9 connectors. RS-232/ 422/485 pin assignment as below:



2.4 Configuration Utility installation

Advantech EKI serial device server Utility integrates device server management and virtual COM port configuration. After installation, this utility not only configures the EKI series device servers, but also connects and configures the ADAM series and EDG series device servers. Virtual COM port configuration and management was also integrated in this utility. The best improvement, you don't restart the host while you setup new virtual COM ports. When you map the virtual COM port, the COM port will enable immediately and show in Windows Device Manager.

In order to use a PC and an Ethernet network to control serial devices connected to the EKI serial device server, you must first have a host running Windows NT/2000/ XP. This type of application also requires the host to have an Ethernet card and the TCP/IP protocol installed. The following are the required steps for EKI serial device server

- 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 on the CD-ROM should be:
- 3. Upon executing the setup program, the Welcome Dialog Box will popup. Press the "Next" button to continue.



4. If there is an existed COM port mapping utility on host, you have to remove this to go on installing.



5. Carefully read the Software License Agreement, and press "Yes" to continue.

Advantech EDG Utility
License Agreement Please read the following license agreement carefully.
Press the PAGE DOWN key to see the rest of the agreement.
ADVANTECH AUTOMATION CORPORATION LICENSE AGREEMENT YOU SHOULD CAREFULLY READ THE FOLLOWING TERMS AND CONDITIONS! Opening and using the enclosed software for any purpose indicates your acceptance of the terms and conditions of this License Agreement. If you do not agree with the terms and conditions of this license agreement you should return all software, documentation and copy protection keys for a refund. Restocking fees may apply. Advantech Automation Corporation provides this program and licenses, for its use in the United States, Puerto Rico, or internationally. You assume the responsibility for the selection of the
Do you accept all the terms of the preceding License Agreement? If you select No, the setup will close. To install Advantech EDG Utility, you must accept this agreement.
InstallShield <u>< B</u> ack <u>Y</u> es <u>N</u> o

6. The Setup program will specify a default installation path, C:\Program-Files\Advantech\EDG COMPort Utility.

Advantech EDG Utility	×
Choose Destination Location Select folder where setup will install files.	
Setup will install Advantech EDG Utility in the following folder.	
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.	
Destination Folder C:\\Advantech eAutomation\EDG Utility\ Browse InstallShield	
< <u>B</u> ack <u>Next</u> > Cancel]

7. In this step, you may select a specific program folder or just use the default setting and press "Next".

Advantech EDG Utility	
Start Copying Files Review settings before copying files.	
Setup has enough information to start copying change any settings, click Back. If you are sat copying files.	the program files. If you want to review or isfied with the settings, click Next to begin
Current Settings:	
	>
InstallShield	
	< <u>B</u> ack <u>Next</u> Cancel

8. After setup has copied all program files to your computer, click the <Finish> button to finish the installation.

Advantech EDG Utility	
	InstallShield Wizard Complete Setup has finished installing Advantech EDG Utility on your computer.
	< Back Finish Cancel

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



Configuring Serial Device Server

3.1 Configuration Utility Overview

EKI serial device servers provide an easy-to-use configuration 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 to enhance network security. With this secure function enabled, other PCs will not have permission for configuration. After the installation program on the Advantech INet CD is finished, the serial device servers will be ready for use and configure.

Advantech Serial Device Server utility is excellent device server management tools. You can connect and configure the local and remote Advantech serial device servers easily, moreover, Virtual COM port will be enabled in the same utility. Using this utility, you can

- Configure the network settings (you can set the IP address, Gateway address, and Subnet mask)
- Configure Wi-Fi encryption settings
- 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, set user account, a descriptive name, upgrade firmware)
- Configure COM port redirector(virtual COM port)

There are 4 major areas in this new serial device server utility.

- Device Server List Area: All devices will be searched and listed in this view. You can arrange different favorite group and virtual COM ports
- Device Server Information Area: Click on the server or move cursor to the device, the related information will be shown on this view.
- Configuration Area: Click on the item on the Device Server List Area, the configuration page will display on this view.
- Quick Tool Area: Useful management functions shortcut.



There are five useful management functions shortcut on Quick Tool Area.

Utility Setting: Show the configuration utility window

🗟 Advantech Serial Device Server Confi	guration Utility	
<u>F</u> ile <u>V</u> iew Management Tools <u>H</u> elp		
Utility Settings	X	
Serial I Main Device Manager Favorit Serial F Vir	Main Window Settings Iog Settings Show Log Message Window Save Log to File © Aprogram files/advantech eautomation/verial device server configura	
	OK Cancel Apply	
	Tuesday, December 11, 2007 1	D:17:26 AM

Clear Device List and Search Again: Click on the button, utility will clear all list device servers in the Device Server List Area and re-search again. Don't use this function frequently. The warning message will be pop-up when you double click this button.



- Search Again: This function will search serial device servers on local LAN.
- Add IP address to Favorite: You add the device to Favorite group manually. This function is especially suitable to find and locate the device which is situated other network domain or Internet. While you can ping the device IP and firewall is configured, input the IP and the device will be added in favorite group. If there isn't favorite group in the EDG Devices Favorites, you have to create at least one favorite group firstly.



Search for a range of IP addresses: You also use this function to search a range of IP addresses. The found devices will be inserted to favorite group.



Move the cursor to Device Server list area, right click the model name in EDG Device server tree. You can add all devices in this subtree to favorite group.



Right click on Device name on the mode name subtree, you can export and import serial port setting, locate the device, lock the device, restart the device, and move the device to favorite group.

🗟 Advantech Serial Devic	e Server Co	nfiguration Utility							
<u>F</u> ile <u>V</u> iew Management To	ools <u>H</u> elp								
🙀 🔍 🖻 🔍 ð	8								
■ Serial Device Servers ■ SEDG-4508(R)+ ■ ■	-A6C097)E1	Summary System A Basic Information Type EKI- Name EKI-1524-000	.ccess 1524 0001	ible Monitor Version		1.21			
	EKI-1524-0	100001							
Eth 2 (10 2) Port 1 2) Port 2 2) Port 2 2) Port 3 2) Port 4	Import Seria Export Seria Refresh Dat Locate	al Port Setting al Port Setting a	-	IP Address 172.18.6.70 10.0.0.70	Subne 255.25 255.0.	t Mask 55.255.128 0.0	Default Gateway 172.18.6.126 0.0.0.0	1	_
	Lock Devic	e							
Serial Ports System Serial Port Virtual Com Ports	Restore to F Reset Devic	actory Default Settings e	ode ode	Status Busy Busy		Host IP 172.18.6.60 172.18.6.60);172.18.6.60;);172.18.6.60;172.18	.6.60;	
FKI-1524	Add to Favo	orite	- ode ode	Busy Busy		172.18.6.60 172.18.6.49); 9;172.18.6.49;		
EKI-1524-000001 Ethernet Port 1 MAC: 00:D0:C9:00:00:01 Static IP Address: 172.18.6.70									
Ethernet Port 2 MAC: 00:D0:C9:00:00:02 Static IP Address: 10.0.0.70		Apply	Undo						
		<							
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The device in the favorite group can setup the virtual COM ports and update firmware.

🗟 Advantech Serial Device	e Server Co	nfiguration (Jtility						
<u>F</u> ile <u>V</u> iew Management To	ols <u>H</u> elp								
🖗 🔍 🗷 🛠	6								
Serial Device Servers EDG-4508(R)+ EG-4508(R)+ EG-4508(R)+ EKI-1522 EKI-1522 EKI-1524 EKI	A6C097 E1 01 EKI-1524 Import Se	Summary ; Besic Info Type Name EK Ethemet In Port -000001 rial Port Setting	System Acr rmation EKI-15 I-1524-00C0 nformation - Type	24 , 001 IP Address 172.18.6.42 10.0.0.49	or Version	Subme 255.2 255.0	1.21 t Mask 55.255.128 0.0	Default Gateway 172.18.6.126 0.0.0	
Unitual Com Ports	Export Se Refresh D	rial Port Setting		_					
	Locate			w Mala	Status		Host IP		
	Lock Dev:	ice		le le	Idle Busy		None 172.18.6.70);	
EKI-1524 EKI-1524-000001 Ethumut Part 1	Restore to Reset Dev	Factory Defaul ice	lt Settings	le	Busy		172.18.6.70	J;	
MAC: 00:D0:C9:00:00:01	Remove f	rom Favorite							
Static IP Address: 172.18.6.70 Ethemet Port 2 MAC: 00:D0:C9:00:00:02 Static IP Address: 10.0.0.70	Auto Map Manual M Update Fii	ping lapping mware Apply		ndo					
		<							>
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3.2 Discovering Serial Device Servers

3.2.1 Auto Searching

Advantech Serial Device Server configuration utility will automatically search all the EKI, ADAM and EDG series device servers on the network and show them on the 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 as follows.

🛅 Advantech eAutomation 🔹 🕨	🛅 EDG COMPort	•	
🛅 Alcohol 120% 🔹 🕨	💼 Serial Device Server Configuration Utility	Þ	🔯 Serial Device Server Configuration Utility
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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 (e.g. EKI-1522), and the utility will expand the tree structure to show the individual device name. Click on the "-" before the model name (e.g. EKI-1522), and the utility will collapse the structure.



For Example, EKI-1522 in this figure is shown " EKI-00C8C8010101 " after expanding the tree structure.

Note When you run the Configuration utility for the first time, the default device name is "MAC ID". In this case, the device name "EKI-00C8C8010101" means the device "MAC ID" is "00 C8 C8 01 01 01". You can change the default device name in System Tag of Device Properties.

Select the device in this sub-tree. The first tab on the "Device Server Information Area" show the device Type, version, name, IP addresses, and serial port information. In the serial port information frame, it displays the operation mode, status and connected host IP.

💐 Advantech Serial Device Serv	er Configurati	on Utility				
<u>File V</u> iew Management Tools <u>F</u>	elp					
🖗 🔍 🖻 🔍 🙈						
□ ■ Senial Device Servera □ ■ EDG-4506(R)+ □ ● EDG-4506(R)+ □ ■ EKI-1522 □ ■ EKI-152 □ ■ EKI-152 □ ■ EKI-1524 ■ ■ EKI-1524 ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■	Summary Sys Basic Inform Type Name EKI-1 Ethemet Info Port T Eth 1 S Eth 2 S	tem Accessib ation EKI-1522 522-0000E1 rmation <u>ype I</u> tatic IP 1 tatic IP 1	le Monitor Versic P Address 72.18.6.57 0.0.0.200	n 1.20 Subnet Mask 255 255 255.128 255.0.0.0	Default Gateway 172.18.6.126 0.0.0	
Favorites	Serial Port In	formation				
EDG-4508(R)+ EDG-4508(R)+ EDG-4508(R)+A6C097 Ethernet Fort MAC: 00.D0.C9.46/C097 Static IP Address: 172.18.6/112	Port Port 1 Port 2	Mode Data Mode Data Mode	Stat Idle Idle	us Host IP Nome Nome		
	Apply	Undo			Tuesday, Decer	nber 11, 2007 10:08:51 AM

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

File Yew Management Tools Help Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Image: Serial Device Servers Ima	🗟 Advantech Serial Device Server Co	nfiguration U	tility				
Image: Constraint of the second se	<u>File Y</u> iew Management Tools <u>H</u> elp						
Strikl Device Servers Basic Information Basic Information Type EK1-1524 Bit 1 (172:18.6.70)	🐞 🔍 🖻 🔍 🙈						
Bit of other Schild Ports Port 1 Data Mode Bury 172.18.6.60;172.18.6.60; Wittwal Com Ports Fort 1 Data Mode Bury 172.18.6.60;172.18.6.60; Port 1/2.18.6.60; Schild Port 3 Data Mode Bury 172.18.6.60;172.18.6.60; Port 1/2.18.6.60; Schild Port 3 Data Mode Bury 172.18.6.60;172.18.6.60; Port 3/2.18.6.60; Schild Port 3 Data Mode Bury 172.18.6.60;172.18.6.40; Port 3/2.18.6.60; Schild Port 3 Data Mode Bury 172.18.6.49;172.18.6.49; Port 4/2.18.6.40; No flow control Apply Undo Port 4/2.18.6.40; Port 4/2.18.6.40;	■ Strial Device Servers ■ EDG-4508(R)+ ● SerD-4508(R)+ ● EDG-4508(R)+ ● EK1-1522 ● EK1-1522 ● EK1-1524 ● Port 1 ● Port 3 ● Port 4 ● EK1-1524-00C001 ● Set1-1524-00C001	Summary S Basic Infon Type Name EKI Ethemet Ini Eth 1 Eth 2 Serial Port I	vstem Accessible mation EKI-1524 EKI-1524 IS24-000001 formation Type IP Static IP 17 Static IP 10 information Mode	Monitor Version Address 2.18.6.70 0.0.70	1.21 Subnet Maak 255 255 255 128 255 0.0 0	Default Gateway 172.18.6.126 0.0.0.0	
	Serial Ports Serial Ports Serial Port 3 115200 bps, N81 No flow control	Fort 1 Port 2 Port 3 Port 4 Apply	Data Mode Data Mode Data Mode Data Mode	Busy Busy Busy Busy Busy	172.18.6.60 172.18.6.60 172.18.6.60 172.18.6.49	172.18.6.60; 172.18.6.60;172.18.6.60 ;172.18.6.49;	;
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Click on each item, you will entry the configuration page to change the setting. The configuration will be introduced on following sections.

💐 Advantech Serial Device Serv	ver Configuration Utility	
<u>F</u> ile <u>V</u> iew Management Tools <u>H</u>	Jelp	
Serial Device Servers EDC 4508(R)+ EDC 450	Ethernet Besic MAC Address IP Address IP Address 255 255 555 128 Default Gateway 172.18 6 126	
	Apply Unic	
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3.2.2 Manual Appending

Using "Add IP address to Favorite" or "Search for a Rang of IP addresses" function, you are able to add one device or group of devices to "EDG Devices Favorites". These devices can locate on local network domain or other network domain.





3.3 Setting network parameters

This section explains how to configure Advantech serial device server network using this utility so that it can communicate over a network with serial devices.

3.3.1 Setting TCP/IP(LAN) parameters

Click on the "+" before the model name (e.g. EKI-1522), and the utility will expand the tree structure to show the individual device name. And click on the "+" before the device name, and the utility will expand the interfaces on this device server. Select the LAN interface.

🗟 EDG Utility	
<u>F</u> ile <u>V</u> iew Management Tools <u>H</u> elp	
🌆 🔍 🔊 🔍 🙈	
🖃 🚅 EDG Devices 🔼	Ethernet Basic
 □-	MAC Address 00:C8:C8:01:01:01
	IP Address 172.18.6.81
EKI-1022	Subnet Mask 255.255.255.128
Eth 1 (172.18.6.81) Fth 2 (172.18.6.83)	Default Gateway 172.18.6.126
EKI-00F0C9000001	
EKI-1546	
- 👻 Serial Ports	
System Serial Ports Ethemat Port 1	
MAC: 00:C8:C8:01:01:01	
Static IP Address: 172.18.6.81	
Default Gateway: 172.18.6.126	
	Apply Undo
	Wednesday, November 14, 2007 2:24

- MAC Address: The MAC address is for the local system to identify and locate each serial device servers. This MAC address is already set before delivery from factory, hence no need for further configuration.
- IP address, Subnet mask, Default gateway: The IP address identifies your Advantech derail device server on the global network. Each EKI-152x serial device severs has the same default IP address 10.0.0.1 and 10.0.0.2. Obtain these specific IP addresses from your network administrator and then configure each Advantech serial device server with individual IP addresses, related Subnet Mask and Gateway Setting.

3.3.2 Setting Wi-Fi(Wireless) parameters

Click on the "+" before the model name (e.g. EKI-1352), and the utility will expand the tree structure to show the individual device name. And click on the "+" before the device name, and the utility will expand the interfaces on this device server. Select the WLAN interface. There are four tabs on this page.

3.3.2.1 3.3.2.1 Ethernet Basic

Ethernet Basic W	ireless Basic Wireless Authentication Wireless Advanced
MAC Address	00:D0:C9:A6:A1:BB
IP Address	10.0.0.1
Subnet Mask	255.0.0.0
Default Gateway	

- MAC Address: The MAC address is for the local system to identify and locate each serial device servers. This MAC address is already set before delivery from factory, hence no need for further configuration.
- IP address, Subnet mask, Default gateway: The IP address identifies your Advantech derail device server on the global network. Each EKI-135x serial device severs has one same default IP address 10.0.0.1. Obtain these specific IP address from your network administrator and then configure each Advantech serial device server with individual IP address, related Subnet Mask and Gateway Setting.

3.3.2.2 Wireless Basic

Ethernet Basic Wireless Basic Wireless Authentication Wireless Advanced							
Wireless Basic Information				Wireless Basic Settings			
Firmware Version		1.1.257		Region		General	
MAC Address	00:D0	:C9:A6:A1:B	в	Mode		802.11b/g Inf	
Assocation Information				Channel		10	
SSID	testAP		-	Data Rate		Au	tomatic
BSSID	00:90	:CC:D3:26:68	3	SSID		< A	NY >
-Site Survey							
SSID		MAC	C	hannel	Mode		WEP
testAP		00:90:CC:D3:26:68	1	10 Infrastru		re	-
Wireless		00:A0:C5:9A:36:C1	6	6 Infrastruct 2 Infrastruct		re	- Frahlad
L4		00.19.CD.0C.P4.04	2		masuuctu	Te	Fugner

Firmware Version: Here is the firmware version of the wireless module embedded in the EKI-1531 and EKI-1352. The wireless module firmware might affect the wireless connection. Write down the version number and provide to our customer service if you have wireless connection problems.

- MAC Address: The MAC address is for the local system to identify and locate each serial device servers. This MAC address is already set before delivery from factory, hence no need for further configuration.
- SSID(Association Information): The SSID (Service Set Identity) identifies a specific wireless LAN. Before associating with a particular wireless LAN, a station must have the same SSID as its access point. This field shows the AP that the EKI-1351 or EKI-1352 is connecting. That means the user must set the specific access point's SSID in infrastructure networks, or set the same SSID in ad hoc networks.
- BSSID: Normally, it should be the MAC Address of Access Point.
- Region: Set the region. Each region has its default channel range. When you choose a specific region, the optional channel range and numbers in the below drop-down menu will be changed automatically.

— Wireless Basic Sett	ings
Region	General
Mode	General Europe France
Channel	Spain
Data Rate	Automatic
SSID	<any></any>

Mode: There are two kinds of basic service set (BSS) in this drop-down menu.

- Wireless Basic Settings				
Region	General			
Mode	802.11b/g Infrastructure			
Channel	802.11b/g Infrastructure 802.11b/g Ad Hoc			
Data Rate	Automatic 🔨 🔽			
SSID	< ANY >			

- 802.11b/g Infrastructure mode : For infrastructure BSS usage, you should set up the SSID of the specific access point (AP). Or just choose .ANY. in SSID drop-down menu to let the wireless module automatically search and connect the appropriate AP.
- 802.11b/g Ad hoc mode: For point-to-point connection, specific or independent BSS usage, you should set the same channel and the same SSID for both points.
- Channel: Each region has its default channel range, which is decided by each region's telecommunications laws.

		×.	
Ethernet Basic Wil	reless Basic Wireless Authentics	ation Wireless Ad	vanced
- Wireless Basic Info	ormation		asic Settings
Firmware Version	1.1.257	Region	General
MAC Address	00:D0:C9:A6:A1:BI	B Mode	802.11b/g Ad H
Assocation Inform	ation	Channel	10
SSID	testAP	— Data Rate	4 5 6
BSSID	00:90:CC:D3:26:68	B SSID	7 8 9
—Site Survey ——] [10 11
SSID	MAC	Channel Mo	ode WEP
testAP	00:90:CC:D3:26:68	10 Inf	rastructure -

Data Rate: The data transmission rate is determined by the device and access point. If there is a restriction for the device or AP, a fixed data rate has to be chosen. Otherwise, we suggest the Automatic. choice.

Ethernet Basic Wire	eless Basic Wireless Authentica	tion 🕅	Vireless Advan	ced	
Wireless Basic Information			Wireless Basic Settings		
Firmware Version	1.1.257	F	Region	General	
MAC Address	00:D0:C9:A6:A1:BE	3	dode	802.11b/g Infr	
Assocation Informa	tion		Channel	10	
SSID	testAP	- I)ata Rate	Automatic	
BSSID	00:90:CC:D3:26:68	- 8	SID	11 M bps 12 M bps 18 M bps 24 M bps	
—Site Survey ———				36 M bps 48 M bps	
SSID	MAC	Cha	nnel Mode	54 M bps Automatic	
testAP	00:90:CC:D3:26:68	10	Infrash	ructure -	

- SSID(Wireless Basic Setting): You can input the AP SSID here. If you doesn't know which access point is the most appropriate one, just set "ANY" for an automatic search.
- Site Survey: Show the Wireless AP's SSID, MAC Address, Channel, Mode, Encryption mode and signal.

3.3.2.3 Wireless Authentication

EKI-1351 and EKI-1352 now support WEP (Wired Equivalent Privacy) encryption operation mode. WEP is a kind of standard to encrypt the data frame. We will enhance other encryption mode in future.