

128-Port Asynchronous ISA Adapter Installation Guide

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128-Port Asynchronous ISA Adapter Installation Guide

Note

Before using this information and the product it supports, be sure to read the general information under "Product Warranties and Notices" included with your system unit.

Second Edition (November 1996)

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Safety Information

DANGER

An electrical outlet that is not correctly wired could place hazardous voltage on metal parts of the system or the devices that attach to the system. It is the responsibility of the customer to ensure that the outlet is correctly wired and grounded to prevent an electrical shock.

Before installing or removing signal cables, ensure that the power cables for the system unit and all attached devices are unplugged.

When adding or removing any additional devices to or from the system, ensure that the power cables for those devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.

Use one hand, when possible, to connect or disconnect signal cables to prevent a possible shock from touching two surfaces with different electrical potentials.

During an electrical storm, do not connect cables for display stations, printers, telephones, or station protectors for communication lines.

About This Book

This book, when used with your system unit documentation, helps you install the 128-Port Asynchronous ISA Adapter. This book provides references to other publications for information on installation and cabling the 128-Port Asynchronous ISA Adapter.

Related Publications

This book refers to the following publications:

- The documentation that came with your computer.
- *AIX Version 3.2 and 4.1 Asynchronous Communications Guide*, order number SC23-2488.
- *AIX and Related Products Documentation Overview*, order number SC23-2456.

ISO 9000

ISO 9000 registered quality systems were used in the development and manufacturing of this product.

Trademarks

AIX is a registered trademark of International Business Machines Corporation.

Chapter 1. Overview

The 128-Port Asynchronous ISA Adapter provides support for attaching a maximum of 128 EIA-232D asynchronous serial devices (such as terminals, modems, and printers) to a system unit, when used with one or more optional Remote Asynchronous Nodes 16-Port EIA-232.

The adapter features the following:

- Support for direct or synchronous modems
- Connects to the remote async node using 4 or 8 wire direct cabling
- Attachment of up to eight remote async nodes
- Two 15-pin female high density D-shell connectors
- 512KB memory
- ISA Bus features
 - Single 16-bit ISA slot
 - Four byte addressing
 - Seven bus I/O addresses are available, configured using dip switches
- Controller line terminators (two included, required for operation)
- Async wrap plug (supplied for diagnostics).

128-Port Asynchronous ISA Adapter Components Inventory

You should have received the following:

- 128-Port Asynchronous ISA adapter
- Two terminators
- Asynchronous wrap plug.

Chapter 2. Hardware Configuration and Installation

This section provides instructions for configuring and installing the 128-Port Asynchronous ISA Adapter.

Handling the Adapter

Attention: Static electricity can damage your equipment. Leave the adapter in its static-protective bag until you are ready to install it in your system unit.

Configuring the Adapter

Before you install the adapter into your system, you must assign it a unique bus I/O address. The bus I/O address for the 128-Port Asynchronous ISA Adapter may be any of the values shown in the figure below.

Important: Each ISA adapter in your system must have a unique bus I/O address. This is true whether the adapters are of the same type (for example, all 128-Port Asynchronous ISA Adapters) or a mixture of different types. If two or more ISA adapters in a system are given the same bus I/O address, the system behaves in an unpredictable manner.

Bus I/O Address	Address Switch			
	1	2	3	4
0x108	OFF	OFF	ON	ON
0x118	OFF	ON	OFF	ON
0x128	OFF	ON	ON	ON
0x208	ON	OFF	OFF	ON
0x228	ON	OFF	ON	ON
0x308	ON	ON	OFF	ON
0x328	ON	ON	ON	ON

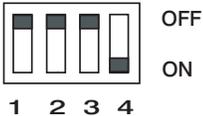


Figure 2-1. Bus I/O Address Switch Settings

There are six jumpers and one set of dip switches on the 128-Port Asynchronous ISA Adapter. Refer to Figure 2-2 on page 2-2 for their positions on the card.

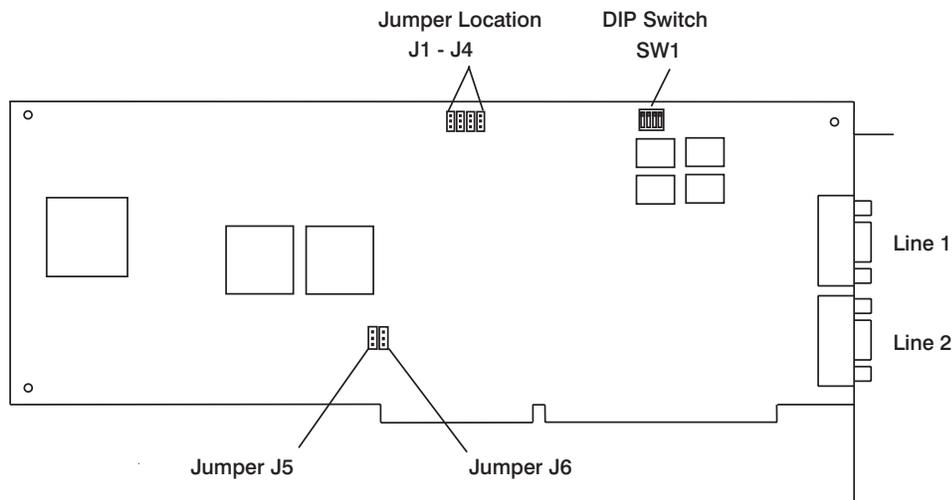


Figure 2-2. Jumper and Dip Switch Locations

Jumpers

There are six jumpers on the adapter. These jumpers are set at the factory, and must not be changed. The correct settings are:



Figure 2-3. Jumper Settings

Choosing the Bus I/O Address

If one or more ISA adapters are already installed in your system, refer to Appendix A, “Using the AIX lsresource Command” on page A-1 for information on how to determine what bus I/O addresses are available for use with your new adapter.

If the 128-Port Asynchronous ISA Adapter is the first ISA adapter installed into your system, you may use the default bus I/O address of 0x328.

Important: Record the bus I/O address you select in Table 2-1. You need this information to configure the software device driver for this adapter as well as to avoid bus I/O address conflicts with other ISA adapters you may install in the future.

ISA Adapter Description	Bus I/O Address
128-Port Async	0x_____
	0x_____
	0x_____
	0x_____
	0x_____

Setting the Bus I/O Address

Configure the bus I/O address you select by setting the dip switches on the adapter as shown in Figure 2-1 on page 2-1. A switch is ON when it points towards the numbers labeled on the switch.

If you are using the default address for the first ISA adapter (0x328), all four switches are set to ON. See Figure 2-1 on page 2-1 for ON/OFF combinations representing the other possible addresses.

You should set the switches to the address you select before you install the adapter into your system.

Installing the Adapter

To install the 128-Port Asynchronous ISA Adapter, follow these steps:

1. Shutdown your system unit, turn off its power, and remove the covers. Refer to your system unit documentation for instructions on shutting down the system, removing the covers, and installing ISA adapters.

2. Locate an available ISA slot in your system unit and remove the slot plate.
3. Plug the 128-Port Asynchronous ISA Adapter into the slot, and screw the endplate to the system unit chassis using the screw you removed from the slot plate. The adapter endplate must be screwed to the system unit chassis for the system to remain in compliance with Part 15 of the FCC rules.
4. Replace your system unit's covers according to your system unit documentation.

Cabling

For more information about cables and cabling needs, refer to the documentation that came with your system and the *AIX Version 3.2 and 4.1 Asynchronous Communications Guide*.

You are now ready to install the software. Go to Chapter 3, "Installing, Configuring, and Verifying Software" on page 3-1.

Chapter 3. Installing, Configuring, and Verifying Software

Once you have completed installing the hardware, you must next install and configure the device software. You may also want to verify that your software installation and configuration were successfully completed. Software installation, configuration, and verification procedures are shown below.

Software Installation

1. Turn the system unit on.
2. Log in as root.
3. Insert the media containing the device driver software into the appropriate media device, for example, CD-ROM drive.
4. Enter:

```
smit isa
```
5. Select **Install ISA Adapter Software** and press Enter.
The Install Additional Device Software screen displays. The "INPUT device/directory for software" option is highlighted. The cursor is positioned on the entry field where you can enter the input device you are using.
6. Press F4 to display a list of input devices you can select.
7. Select the appropriate input device and press Enter. The device or directory you selected displays in the "INPUT device/directory for software" entry field.
The Install Additional Device Software screen displays.
8. Press F4 to display a list of software packages you can select.
The SOFTWARE to install screen displays. Enter a / (slash) to display a Find window.
9. In the Enter Search Pattern field, enter:

```
devices.isa.cxia128
```


The system finds the correct software package to install and highlights it.
10. Press F7 to select the software package and press Enter.
The Install Additional Device Software screen displays.
11. Press Enter. The ARE YOU SURE list displays. Press Enter. The COMMAND STATUS screen displays. The term RUNNING is highlighted to indicate that software installation is in progress. When RUNNING changes into OK, scroll down

to the bottom of the page and locate the Installation Summary. If the installation was successful, SUCCESS appears in the Result column of this summary.

Note: If an error message is displayed on the COMMAND STATUS screen, verify that the adapter card is seated properly. If the card is secure, refer to Appendix A, "Using the AIX Isresource Command" on page A-1 for other troubleshooting procedures.

12. Remove the installation media from the drive.
13. Press F3 twice to return to the ISA Adapter screen.

Proceed with the next section.

Software Configuration

1. On the ISA Adapters screen, select **Add an ISA Adapter** and press Enter. The **Add an ISA Adapter** window displays.
2. Select **128-Port Async, EIA-232 (ISA)** and press Enter. The Parent Device window displays.
3. Select bus1 and press Enter. The Add a 128-Port Async, EIA-232 (ISA) Adapter screen displays.

Two kinds of characteristics are configured using this screen: characteristics of the adapter, and characteristics of the communication network. Adapter characteristics include Device Type, Device Class, Device Subclass, Parent Device, and Bus I/O Address. Of these, only the Bus I/O Address can be modified at this time.

4. Press F4 for a list of available Bus I/O Addresses. Select the address that you set the bus I/O address switches on the adapter and recorded in Table 2-1 on page 2-3.

Important: The Bus I/O Address you select must be the same as the address you set using the bus I/O address switches on the adapter. If you select a different address while configuring the software without changing the bus I/O address switches on the adapter, your system will not function correctly.

5. Configure speed and cable type options according to the characteristics of your network environment. Refer to the *AIX Version 3.2 and 4.1 Asynchronous Communications Guide* and to your local procedures for guidance.

When all required information is filled into this screen, press Enter.

6. The COMMAND STATUS screen displays while the software installation command is being run. When command status changes from running to OK, the software configuration procedure is complete.

If an error message is displayed on the COMMAND STATUS screen, refer to Appendix A, "Using the AIX lsresource Command" on page A-1 for troubleshooting procedures.

7. Press F10 to exit smit.

You may now proceed with verifying your newly installed ISA device. There is no need to shutdown or reboot your system.

Verifying Device Driver Installation

To verify that your newly installed 128-Port Asynchronous ISA Adapter is available for use, follow the steps below:

1. At the prompt, type the following and press Enter.

```
lsdev -Cs isa
```
2. A list of ISA devices displays. Verify that the 128-Port Asynchronous ISA Adapter is in Available mode.

If the 128-Port Asynchronous ISA Adapter registers Available, your installation is ready to use.

Diagnostics

Diagnostics may be supplied with your device driver, or may be found in a separate package. Refer to your system unit documentation for more information about running diagnostics.

Appendix A. Using the AIX Isresource Command

This section aids you in determining what hardware resources are available prior to installing an 128-Port Asynchronous ISA Adapter, or after a configuration failure due to a resource conflict.

Using the AIX Isresource Command for Bus I/O Addresses

1. Enter:

```
lsresource -l bus0 -a | grep bus_io
```

This command generates a list of adapters using Bus I/O that looks similar to the following:

TYPE	ADAPTER	ATTRIBUTE	S	G	CURRENT VALUE
0	fda0	bus_io_addr			0x000003f0 - 0x000003f5
0	fda0	bus_io_addr2			0x000003f7
0	sa0	bus_io_addr			0x000003f8 - 0x000003ff
0	sa1	bus_io_addr			0x000002f8 - 0x000002ff
0	sioka0	bus_io_addr	1		0x00000060
0	sioma0	bus_io_addr	1		0x00000060
0	ppa0	bus_io_addr			0x000003bc - 0x000003be
0	ampx0	bus_io_addr			0x000002a0 - 0x000002a6
0	apm0	bus_io_addr			0x000006a0 - 0x000006a6
0	scsi0	bus_io_addr			0x0000f000 - 0x0000f0ff
0	scsi1	bus_io_addr			0x01000000 - 0x010000ff

The 128-Port Asynchronous ISA Adapter requires a unique Bus I/O address for each adapter installed. The valid address locations are: 0x108, 0x118, 0x128, 0x208, 0x228, 0x308, and 0x328. The example shows 0x2a0 bus_io is in use by ampx0 and 0x6a0 is in use by apm0. The next 128-Port Asynchronous ISA Adapter may use 0x328, as no other devices are using that address.

2. Select a bus_io address that is not currently in use and go to Figure 2-1 on page 2-1 to set the switch settings accordingly.

Appendix B. Communications Statements

The following statement applies to this product. The statement for other products intended for use with this product appears in their accompanying documentation.

Federal Communications Commission (FCC) Statement

Note: The &typemod. 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 an authorized dealer or service representative for help.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from authorized dealers. Neither the provider nor the manufacturer are responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Responsible Party:

International Business Machines Corporation
New Orchard Road
Armonk, New York 10504
Telephone: (919) 543-2193



Tested to Comply
With FCC Standards

FOR HOME OR OFFICE USE

European Union (EU) Statement

This product is in conformity with the protection requirements of EU Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. The manufacturer cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of option cards supplied by third parties. Consult with your dealer or sales representative for details on your specific hardware.

This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to CISPR 22 / European Standard EN 55022. The limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communication devices.

International Electrotechnical Commission (IEC) Statement

This product has been designed and built to comply with IEC Standard 950.

United Kingdom Telecommunications Safety Requirements

This equipment is manufactured to the International Safety Standard EN60950 and as such is approved in the UK under the General Approval Number NS/G/1234/J/100003 for indirect connection to the public telecommunication network.

The network adapter interfaces housed within this equipment are approved separately, each one having its own independent approval number. These interface adapters, supplied by the manufacturer, do not use or contain excessive voltages. An excessive voltage is one which exceeds 70.7 V peak ac or 120 V dc. They interface with this equipment using Safe Extra Low Voltages only. In order to

maintain the separate (independent) approval of the manufacturer's adapters, it is essential that other optional cards, not supplied by the manufacturer, do not use main voltages or any other excessive voltages. Seek advice from a competent engineer before installing other adapters not supplied by the manufacturer.

Avis de conformité aux normes du ministère des Communications du Canada

Cet appareil numérique de la classe B est conform à la norme NMB-003 du Canada.

Canadian Department of Communications Compliance Statement

This Class B digital apparatus complies with Canadian ICES-003.

VCCI Statement

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づきクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。

The following is a summary of the VCCI Japanese statement in the box above.

This product is a Class B Information Technology Equipment and conforms to the standards set by the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). This product is aimed to be used in a domestic environment. When used near a radio or TV receiver, it may become the cause of radio interference. Read the instructions for correct handling.

Radio Protection for Germany

Dieses Gerät ist berechtigt in Übereinstimmung mit dem deutschen EMVG vom 9.Nov.92 das EG-Konformitätszeichen zu führen.

Der Aussteller der Konformitätserklärung ist die IBM Germany.

Dieses Gerät erfüllt die Bedingungen der EN 55022 Klasse B.



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