

**PowerStreams™ X.25 EEA1.30 for AIX**

# **Installation Guide**

**PSX25130A/UG1**

June 2001

## **Notice**

While reasonable efforts have been made to assure the accuracy of this document, Motorola, Inc. assumes no liability resulting from any omissions in this document, or from the use of the information obtained therein. Motorola reserves the right to revise this document and to make changes from time to time in the content hereof without obligation of Motorola to notify any person of such revision or changes.

Electronic versions of this material may be read online, downloaded for personal use, or referenced in another document as a URL to the Motorola Computer Group website. The text itself may not be published commercially in print or electronic form, edited, translated, or otherwise altered without the permission of Motorola, Inc.

It is possible that this publication may contain reference to or information about Motorola products (machines and programs), programming, or services that are not available in your country. Such references or information must not be construed to mean that Motorola intends to announce such Motorola products, programming, or services in your country.

### **Limited and Restricted Rights Legend**

If the documentation contained herein is supplied, directly or indirectly, to the U.S. Government, the following notice shall apply unless otherwise agreed to in writing by Motorola, Inc.

Use, duplication, or disclosure by the Government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data clause at DFARS 252.227-7013 (Nov. 1995) and of the Rights in Noncommercial Computer Software and Documentation clause at DFARS 252.227-7014 (Jun. 1995).

Motorola, Inc.  
Computer Group  
2900 South Diablo Way  
Tempe, Arizona 85282

The software and documentation are copyrighted materials. Making unauthorized copies is prohibited by law. This material may be read online, downloaded for personal use, or included in another document as a URL (from this server). The text itself may not be published commercially in print or electronic form, edited or otherwise altered without the permission of Motorola, Inc.

The software described herein and this documentation are furnished under a license agreement and may be used only in accordance with the terms of the agreement.

## **Trademark Notices**

PowerStreams™ is a trademark of Motorola, Inc.

PowerPC™ is a trademark of IBM, and is used by Motorola with permission.

AIX™ is a trademark of IBM, and is used by Motorola with permission.

IBM® is a registered trademark of International Business Machines Corporation.

Motorola® and the Motorola symbol are registered trademarks of Motorola, Inc. in the U.S.A. and in other countries. All other marks are trademarks or registered trademarks of their respective holders.

© Copyright 2001 Motorola, Inc.

All Rights Reserved.

Printed in the United States of America.

## Motorola Computer Group Documents

The Motorola publications listed below are referenced in this manual. You can obtain paper or electronic copies of Motorola Computer Group publications by:

- ❑ Visiting Motorola Computer Group's World Wide Web literature site, <http://www.motorola.com/literature>
- ❑ Contacting your local Motorola sales office

<b>Document Title</b>	<b>Motorola Publication Number</b>
PowerStreams X.25, X.3/X.28/X.29 PAD, and TCP/IP over X.25 User's Manual	PSX25A/UMx
PowerStreams X.25 Programmer's Guide	PSX25A/PGx

To obtain the most up-to-date product information in PDF or HTML format, visit <http://www.motorola.com/literature>.

## URLs

The following URLs (uniform resource locators) may provide helpful sources of additional information about this product, related services, and development tools. Please note that, while these URLs have been verified, they are subject to change without notice.

- ❑ Motorola Computer Group, <http://www.motorola.com/computer>
- ❑ Motorola Computer Group OEM Services, <http://www.motorola.com/computer/support>
- ❑ IBM Corporation, <http://www.ibm.com>

## Comments and Suggestions

Motorola welcomes and appreciates your comments on its documentation. We want to know what you think about our manuals and how we can make them better. Mail comments to:

Motorola Computer Group  
Reader Comments DW164  
2900 S. Diablo Way  
Tempe, Arizona 85282

You can also submit comments to the following e-mail address:  
reader-comments@mcg.mot.com

In all your correspondence, please list your name, position, and company. Be sure to include the title and part number of the manual and tell how you used it. Then tell us your feelings about its strengths and weaknesses and any recommendations for improvements.

## Conventions Used in This Manual

The following typographical conventions are used in this document:

### **bold**

is used for user input that you type just as it appears; it is also used for commands, options and arguments to commands, and names of programs, directories and files.

### *italic*

is used for names of variables to which you assign values. Italic is also used for comments in screen displays and examples, and to introduce new terms.

### courier

is used for system output (for example, screen displays, reports), examples, and system prompts.

### <Enter>, <Return> or <CR>

represents the carriage return or Enter key.

### Ctrl

represents the Control key. Execute control characters by pressing the **Ctrl** key and the letter simultaneously, for example, **Ctrl-d**.

---

# Introduction to PowerStreams™ X.25 EEA1.30 for AIX

This installation guide contains procedures and information to help you configure and install PowerStreams X.25 EEA1.30 for AIX on your computer system. Use this guide to complement the *PowerStreams X.25 X.3/X.28/X.29 PAD, and TCP/IP over X.25 User's Manual* and *PowerStreams X.25 Programmer's Guide*. This document contains some general, but primarily Motorola system-specific software and hardware configuration details.

## Prerequisites

One of the following hardware configurations is required:

- ❑ XR Series PowerPC™ System
- ❑ FX Series System

The following software is required:

- ❑ AIX 4.3.3 Base Operating System (BOS)

The following additional RAM memory is required:

- ❑ 1MB

The following file system resources must be available:

<b>XR Series PowerPC</b>	
<b>File System</b>	<b>Blocks Free</b>
/	2200
/usr	20000
/var	120
total	22320

### FX Series System

File System	Blocks Free
/	2200
/usr	18000
/var	120
total	20320

## User Interface

To use the X Windows version of SMIT, the AIX X Window package X11 must have been previously installed. Chapter 4 of the AIX 4.1 Installation Guide, *Installing and Removing Optional Software*, provides instructions for installing the optional `Graphics_Startup` bundle.

To access SMIT from a graphical window environment, the display variable for the xterm must be set by typing:

```
export DISPLAY=<your_display>
```

where:

`<your_display>` is the name of the X-compatible display (for example, **neptuneX:0**).

## Compatibility with MVME2600/2700/3600/4600

### XR Series Systems Only

This information applies to AIX 4.3.3 systems using the MVME2600/2700/3600/4600 processors and PowerCom boards. Before the PowerStreams X.25 software can be used with PowerCom boards, you must change some parameters for the vme0 device.

**Note** Prior to running the `rmdev` command, make sure all users are logged off the system.

If there are VME controllers other than PowerCom in your system, their devices must be in the define state. Applications that use these other controllers need to be shut down. If you are unable to put these devices in the define state, you need to remove the controllers from the system before the `rmdev` command is run.

1. Before entering the SMIT fastpath, the `vme0` device must be in an unconfigured state before parameter changes can be made. Do this by entering:

**`rmdev -R -1 vme0`**

2. To change the parameters for the `vme0` device, at the **root** prompt enter the SMIT fastpath:

**`smit vmebus`**

3. Select Change/Show Characteristics of a VMEbus.
4. Select the `vme` bus device shown, usually `vme0`
5. Click on **Do** for the GUI version of SMIT, or press **ENTER** for the ASCII version of SMIT.
6. An interactive form appears that shows characteristics you can change. Change these fields with the values shown:

Configurable VMEbus Slave Map VME address{0x40000000}

Configurable VMEbus Slave Map Size {0x10000}

Configurable VMEbus Slave Map PCI Address Space I/O

7. Click on **Do** for the GUI version of SMIT, or press **ENTER** for the ASCII version of SMIT.

8. To put the new values into effect, you must reconfigure the system. Do this by typing:

```
/usr/sbin/cfgmgr -l vme0
```

## Installation

The following sections provide the procedure for installing the software contained on the PowerStreams X.25 CD-ROM. The installation requires that two separate procedures be performed.

The first procedure installs the base X.25 product that is applicable to all installations. The second procedure allows you to choose which software bundle you need to install based on your system hardware, as well as choosing from optional software packages.

Use the table below to determine all the software bundles you need to install on your system.

<b>If your system...</b>	<b>Then install the following bundle...</b>
is a VME-based system	PSX25-Series XR
is a FX Series system	PSX25-Series FX
requires the PAD application	PSX25-PAD
requires TCP/IP application	PSX25-IFX25

### Important Installation Notes

Prior to installing the PowerStreams X.25 software, specific filesets must reside on your system. Use the table below to identify your required fileset.

<b>System Type</b>	<b>Fileset</b>
FX Series	devices.sac devices.msg.en_US.sac devices.mbus.SYNC1
XR Series with PMCspan boards	devices.pci.PNP0A03.rte

1. Invoke the **smit devinst** command.
2. Insert the AIX CD-ROM into the drive.
3. From the menu that appears, select the CD-ROM devices as the input device.
4. Select the appropriate fileset as the software to install.

## Installing PowerStreams X.25 Base Software

### For AIX 4.3.3

Follow these steps to install the PowerStreams X.25 base software:

1. Insert the PSX25 PowerStreams X.25 CD-ROM into the drive.
2. At the root prompt, type: **smit**
3. Select Software Installation and Maintenance.
4. Select Install and Update Software.
5. Select Install and Update from LATEST Available Software. A fill-in form appears, prompting you for the installation input device.
6. Use `List` to select the installation CD-ROM drive that contains the X.25 software CD-ROM. For example: **/dev/cd0**.
7. Click on **Do** for the GUI version of SMIT, or press **ENTER** for the ASCII version of SMIT. Another fill-in form appears, prompting you for the package you want to install.
8. In the SOFTWARE to install field, type **psx25.base**.

9. Answer the following questions as shown:

```
PREVIEW only?: no
COMMIT software updates?: yes
SAVE replaced files?: no
ALTERNATE save directory:
AUTOMATICALLY install requisite software?: yes
EXTEND file systems if space needed?: yes
OVERWRITE same or newer versions?: no
VERIFY install and check files sizes?: no
Include corresponding LANGUAGE filesets?: yes
DETAILED output?: no
PROCESS multiple volumes?: yes
```

10. Click on **Do** for the GUI version of SMIT, or press ENTER for the ASCII version of SMIT.
11. When asked Are You Sure? respond by clicking on **OK** for the GUI version of SMIT, or by pressing ENTER for the ASCII version of SMIT.

The base product is now installed. Proceed to *Installing Software Bundles* on page 7.

# Installing Software Bundles

## For AIX 4.3.3

Follow these steps to install the applicable PowerStreams X.25 software bundles.

1. Return to the `Install and Update Software` menu.
2. Select `Install Software Bundle (Easy Install)`. A list appears, prompting you for the installation input device.
3. Use `List` to select the installation CD-ROM drive that contains the X.25 software CD-ROM. For example: `/dev/cd0`.
4. Click on **Do** for the GUI version of SMIT, or press `ENTER` for the ASCII version of SMIT. A list appears prompting you to select the bundle you want to install.
5. From the list, select the bundle you want to install. Click on **Do** for the GUI version of SMIT, or press `ENTER` for the ASCII version of SMIT. You are not required to enter anything in the form that appears, the defaults can be retained.
6. When asked `Are You Sure?` respond by clicking on `OK` for the GUI version of SMIT, or by pressing `ENTER` for the ASCII version of SMIT.
7. To install additional bundles, repeat steps 2 through 6 above.
8. After the software has been installed, remove the CD-ROM from the drive.
9. Exit SMIT.
10. You must execute the **cfgmgr** or **modcfgmgr** command before using the software. The format for the command depends on your system platform, as follows:

**cfgmgr -l vme0** (for XR Series systems with PowerCom)  
**cfgmgr -l bus2** (for XR Series systems with PMCspan)  
**modcfgmgr** (for FX Series systems)

11. To re-enter SMIT at the top-level PowerStreams X.25 menu, type: **smit psx25**.

Refer to the *Getting Started* chapter of the *PowerStreams User's Manual* for information on using the product.

## Removal

The PowerStreams X.25 software is removed by executing the **psx25\_remove** program. If the X.25 software is running when this program is executed, an orderly shutdown is performed. All the necessary filesets are then removed.

Follow these steps to remove the PowerStreams X.25 software:

1. Login as **root**.
2. Type:  
**/usr/lpp/psx25/tmp/psx25\_remove**
3. A copy of the **psx25\_remove** program is saved in **/tmp** along with the **fileset.lst** file. The **fileset.lst** file contains a list of all the filesets that are removed.
4. The file **/tmp/remv\_log** contains the output from **installp** which is used to remove the PowerStreams X.25 software.

The removal is now complete.

## Upgrading from EEA1.26 X.25 Release for FX Series Systems

This section provides the procedure for upgrading from X.25 EEA1.26 to EEA1.30. When performing this software upgrade, any user-generated X.25 configuration files are saved.

### Notes

The x25daemon process and any applications that use the PowerStreams X.25 software must be shutdown before the upgrade procedure is run.

This software upgrade is only supported on AIX 4.3.3 RM04 and from PowerStreams X.25 EEA1.26 to EEA1.30. No previous releases of X.25 or AIX are supported.

Before you upgrade your software, shut down the x25daemon process using the following command:

```
etc/rc.psx25 stop
```

Once you have completed this step and shutdown any other applications, the X.25 software can be upgraded.

## Upgrade Procedure for AIX 4.3.3 RM04

Follow these steps to upgrade the PowerStreams X.25 software.

1. Insert the PSX25 PowerStreams X.25 CD\_ROM into the drive.
2. At the root prompt, type: **smit**
3. Select Software Installation and Maintenance.
4. Select Install and Update Software.
5. Select Update Installed Software to Latest Level (Update All). A fill in form appears and prompts you for the installation device.

6. Use **List** to select the installation CD-ROM drive that contains the X.25 software CD-ROM. For example: **/dev/cd0**.
7. Click on **Do** for the GUI version of SMIT or press **ENTER** for the ASCII version of SMIT. Another fill-in form appears to prompt you for further input.
8. Click on **Do** for the GUI version of SMIT or press **ENTER** for the ASCII version of SMIT.

When this part of the procedure has been completed you will have updated the PowerStreams X.25 software already installed on your system. With the EEA1.30 release of X.25 software a new fileset has been added, however, the previous procedure did not install the new fileset. The following steps will allow you to install this new software.

1. Insert the PSX25 PowerStreams X.25 CD-ROM into the drive.
2. At the root prompt, type: **smit**
3. Select Software Installation and Maintenance.
4. Select Install and Update Software.
5. Select Install and Update from LATEST Available Software. A fill-in form appears, prompting you for the installation input device.
6. Use **List** to select the installation CD-ROM drive that contains the X.25 software CD-ROM. For example: **/dev/cd0**.
7. Click on **Do** for the GUI version of SMIT, or press **ENTER** for the ASCII version of SMIT. Another fill-in form appears, prompting you for the package you want to install.
8. In the SOFTWARE to install field, type **devices.iobus.umfioFX**.

9. Answer the following questions as shown:

```
PREVIEW only?: no
COMMIT software updates?: yes
SAVE replaced files?: no
ALTERNATE save directory:
AUTOMATICALLY install requisite software?: yes
EXTEND file systems if space needed?: yes
OVERWRITE same or newer versions?: no
VERIFY install and check files sizes?: no
Include corresponding LANGUAGE filesets?: yes
DETAILED output?: no
PROCESS multiple volumes?: yes
```

10. Click on **Do** for the GUI version of SMIT, or press ENTER for the ASCII version of SMIT.

When asked *Are You Sure?* respond by clicking on **OK** for the GUI version of SMIT, or by pressing ENTER for the ASCII version of SMIT. Refer to the *Getting Started* chapter of the *PowerStreams X.25 User's Manual* for information on using the product.

11. Execute the **modcfgmgr** command before using the software. This command configures the X.25 devices on the UMFIO module.

## MKSYSB Support

This release of PowerStreams X.25 supports the **mksysb** command. Use **mksysb** to create a backup of the operating system (the root volume group). You can use this backup to reinstall a system to its original state after it has been corrupted. If the backup was created on tape, the tape is bootable and can be used to install the operating system on a new disk. This capability allows system cloning to be performed which negates the requirement of having to manually install PowerStreams X.25 on multiple systems.

One limitation of **mksysb** is restoring device configurations. The PowerStreams X.25 software provides a mechanism to overcome this limitation and is described next.

To create a backup of the operating system that has PowerStreams X.25 installed, you must first shut down the x25daemon process and any user applications that use the PowerStreams X.25 software.

1. Shutdown the x25daemon.

**./etc/rc.psx25 stop**

2. Before the PowerStreams X.25 device configurations can be restored, run the following program prior to running **mksysb**.

**/usr/lpp/psx25/tmp/backup\_psx25**

This program creates several files in the **/usr/lpp/psx25/tmp** directory. These files contain PowerStreams X.25 device information and will be automatically removed by the **restore\_psx25** program. Do not remove these files before running **mksysb**.

3. Now transfer the operating system from the tape to the new disk. To do this, use the instructions described in the Installation and Maintenance menu that is displayed during the tape boot operation.

4. Once the operating system is installed on the new disk and the system is booted, you must run the following program to restore the PowerStreams X.25 device information.

**`/usr/lpp/psx25/tmp/restore_psx25`**

This program restores all PowerStreams X.25 related devices to the same state prior to running the **mksysb** command.

Once this program has completed you can restart the x25daemon process to enable X.25 operation.

**mksysb** Limitations for PowerStreams X.25:

1. The target system to be restored must have identical hardware as the system that was used to create the mksysb tape.
2. Only XR346 (VME 6-port Synchronous Communication Controller) on XR Series platforms are supported.
3. Only PMCspan with 6-port Synchronous Communication Controller on XR Series platforms are supported.

Refer to the **`/usr/lpp/psx25/README`** file for additional information.