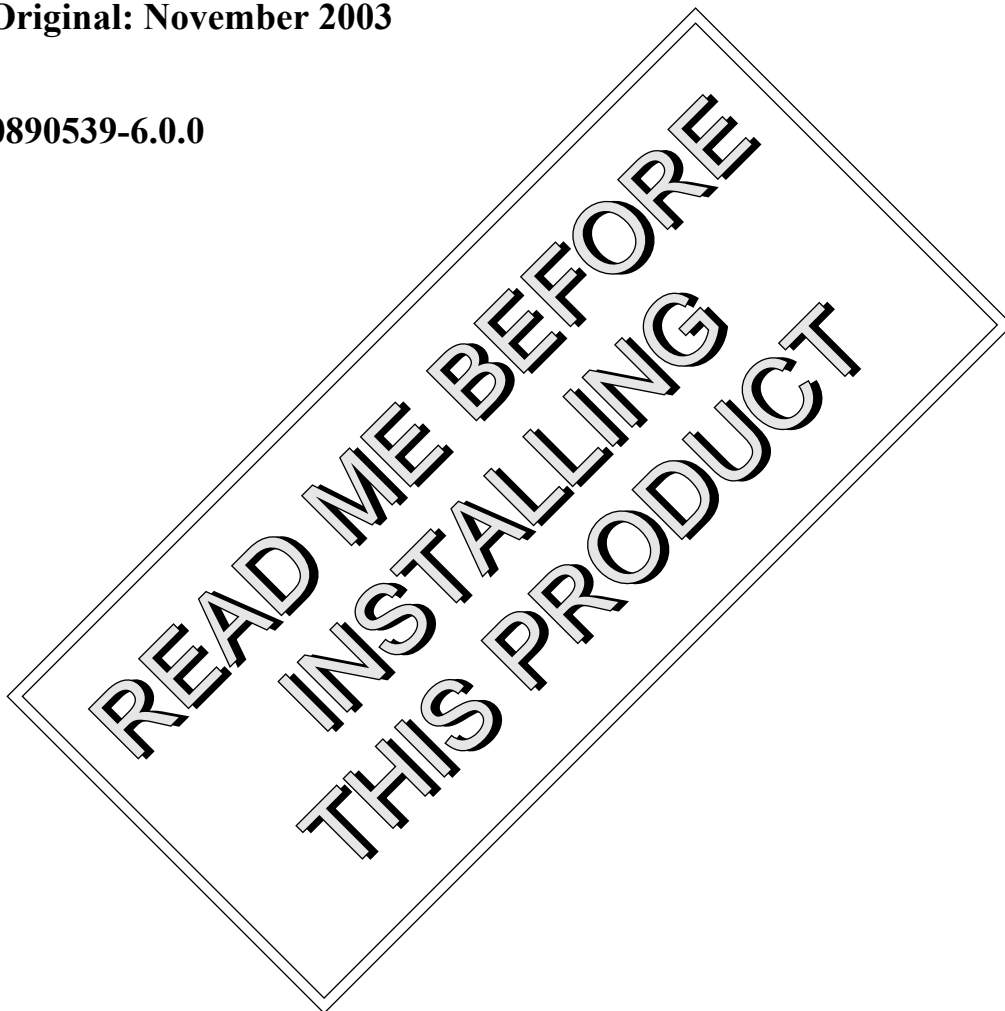


**VMIVME-3122**  
**User Level Driver (ULD)**  
**Version 6.0.0**  
**Release Notes**

**Original: November 2003**

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Concurrent Computer Corporation  
2881 Gateway Drive  
Pompano Beach, FL 33069

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## 1.0. Introduction

This document provides instructions for installing and configuring the VMIVME 3122 User Level Driver on PowerHawk™ Series 900 Computer Systems running PowerMAX OS™ 6.0.

This VMIVME 3122 is a 16 bit A/D Converter Board with program controlled gain, selectable conversion rates and automatic scanning of up to 64 differential or single ended analog inputs.

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## 2.0. Documentation

### 2.1. Concurrent Documentation

The v3122(7) man page is provided by Concurrent Computer Corporation with this product.

### 2.2. Vendor Documentation

Vendor documentation for the VMIVME 3122 may accompany this product. Contact the vendor if you have questions regarding this documentation.

Manual Name/Vendor	Document Number
High Performance 16 Bit Analog to Digital Converter Board Product Manual / VMIC Huntsville, Alabama	500-0031220-000 C

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## 3.0. Prerequisites

The following prerequisites apply to the MVCS Serial Communications device.

### 3.1. Software

- PowerMAX OS 6.0
- User Level Driver (ULD) common library package

### 3.2. Hardware

- Power Hawk™ Series 900 Computer System.
- Empty VME slot.

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## 4.0. Syntax Notation

The following notation is used throughout this manual:

<i>italic</i>	Books, reference cards, and items that the user must specify appear in <i>italic</i> type. Special terms may also appear in <i>italics</i> .
<b>list bold</b>	User input appears in <b>list bold</b> type and must be entered exactly as shown. Names of directories, files, commands, options and system manual page references also appear in <b>list bold</b> type.
list	Operating system and program output such as prompts and messages and listings of files and programs appear in list type.
[ ]	Brackets enclose command options and arguments that are optional. You do not type the brackets if you choose to specify such options or arguments

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## 5.0. Installation Procedures

### 5.1. V3122 Hardware Installation

Suggested V3122 board address information is provided below. Refer to the “Configuration and Installation Section” of the VMIVME 3122 Product manual (500-003122-000) for information about how to set the address modes and the board addresses.

Suggested addresses are as follows:

```
v3122 board #0, base address: 0xE0012000
v3122 board #1, base address: 0xE0013000
v3122 board #2, base address: 0xE0014000
v3122 board #3, base address: 0xE0015000
```

### 5.2. V3122 ULD Installation Procedures

This section includes the following:

- Installing the User Level Driver package for PowerMAX OS from 4mm DAT.
- Installing the User Level Driver for PowerMAX OS from CD-ROM.
- Configuring, compiling and testing the ULD
- De-configuring the ULD

#### 5.2.1. Installation from 4mm DAT

To install the V3122 User Level Driver package (**v3122**) from the 4mm DAT tape perform the following steps:

1. Boot the Concurrent Computer System to single-user mode.
2. Sign onto system as root.
3. If a version of the VMIVME 3122 ULD already exists on this system, issue the `pkgrm (1M)` command and confirm to the command that the v3122 package is to be removed. (Note: this step can be followed to remove the driver regardless of whether a new version is to be installed.) Enter the following command:

```
#pkgrm v3122-xxx
      (where xxx is the PMAX OS version).
```

4. If tape device does not exist then create tape device:

```
#putdev -a tape0 volume="dat tape"
#cdevice=/dev/rmt/0hf \
      desc="dat drive 0" type=ctape
```

5. Add User Level Driver Package:

```
#pkgadd -d tape0
```

## 5.2.2. Installation from CD-ROM

### Note:

The system must be configured with the `gr` (generic CD-ROM device driver) and `cdfs` (CD-ROM file system) modules and an entry must exist for the CD-ROM device nodes in `/etc/conf/node.d/gr`.

To install the User Level Driver package (v3122) from the CD-ROM perform the following steps:

1. Sign onto system as root.
2. If a version of the User Level Driver (v3122) already exists on this system, issue the **pkgrm (1M)** command and confirm to the command that the ULD v3122 package is to be removed. (**Note:** this step can be followed to remove the driver regardless of whether a new version is to be installed.) Enter the following command:

```
#pkgrm v3122-xxx  
      (where xxx is the PMAX OS version).
```

3. Insert the PowerWorks Optional Products disc into the CD-ROM drive and mount the file system as shown below.

```
#mkdir /mnt/cdrom  
#mount -F cdfs -r /dev/cd /0 /mnt/cdrom
```

4. Get a list of the packages on the CD-ROM disc and verify that the package you wish to install is on the CD-ROM disc.

```
#pkginfo -d /mnt/cdrom/pkgs.dstream
```

5. Multiple packages may be installed at once by specifying more than one package name, as in:

```
#pkgadd -d /mnt/cdrom/pkgs.dstream \  
        v3122-600 v2510-600
```

6. The package(s) to be installed may be selected from a menu of all the packages available on the CD-ROM disc by not specifying any package name, as in:

```
#pkgadd -d /mnt/cdrom/pkgs.dstream
```

## 5.2.3. Configuring, Compiling and testing the driver

The `pkgadd` command automatically installs the v3122 driver, however, you must still perform additional configuration and compilation to assure proper operation of the driver.

The following steps are taken regardless of whether the software was installed from the 4mm DAT Tape or the CD-ROM:



1. Log in to the system as root.
2. Run `mk_devs` to create the device special files. The `mk_devs` script will create all the necessary device special files for V3122 user level device driver. The device files will be created in the `/dev/ud` directory.

```
#cd /usr/src/udrivers/config/v3122
#./mk_devs
```

3. Rebuild the library software.

```
#cd /usr/src/udrivers/lib/v3122
#touch *.c
#make depends
#make
```

4. Rebuild the configuration software.

```
#cd /usr/src/udrivers/config/v3122
#touch *.c
#make
```

5. The kernel on the system must contain the module for user-level interrupts. If the module is not enabled, the v3122 driver will not initialize.

Using `vi` edit the file `/etc/conf/sdevice.d/ui`.

Ensure that the entry in the “**conf**” column contains a **Y**.

```
#name conf unit
ui Y 0
```

Save the file

```
:wq!
```

If the entry in `/etc/conf/sdevice.d/ui` was changed from **N** to **Y**, continue this step to rebuild the kernel with the `ui` driver present. If the entry was already set to “**Y**”, then skip to the step 6.

Enter:

```
#/etc/conf/bin/idbuild -B
#/sbin/shutdown -i6 -g0 -y
```

6. Configure installed boards as follows:

```
#cd /usr/src/udrivers/config/v3122
```

If testing with only one board installed, with interrupts initialized:

```
#!/v3122config -c -i /dev/ud/v31220 0xE0012000
```

If testing with second board, with interrupts not initialized:

```
#!/v3122config -c /dev/ud/v31220 0xE0012000
```

7. Attach test equipment as needed.
8. Run test software:

```
#cd /usr/src/udrivers/test/v3122
#!/v3122_tst
```

## 6.0. Direct Software Support

Software support is available from a central source. If you need assistance or information about your system, please contact the Concurrent Software Support Center at our toll free number 1-800-245-6453. For calls outside the continental United States, the number is 1-954-283-1822. The Software Support Center operates Monday through Friday from 8 a.m. to 5 p.m., Eastern Standard time. You may submit a request for assistance at any time by using the Concurrent Computer Corporation web site at [http://www.ccur.com/isd\\_support\\_contact](http://www.ccur.com/isd_support_contact).

Calling the Software Support Center gives you immediate access to a broad range of skilled personnel and guarantees you a prompt response from the person most qualified to assist you. If you have a question requiring on-site assistance or consultation, the Software Support Center staff will arrange for a field analyst to return your call and schedule a visit.