MVME332XT/S2

68K/88K MVME332XT Driver/Firmware Software Release Guide

MVME332XT/S2
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Software Release Guide

68K/88K MVME332XT Driver/Firmware

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PREFACE

This guide is intended for use with the release media of the MVME332XT Firmware for System V/68 or System V/88.

The following conventions are used in this document:

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

italic
for name of *variables* to which you assign values.

[ ]
optional values appear in square brackets.

Return
the single key you press that performs the return function.

CTRL *character*
to execute control characters; press the CTRL key and the letter simultaneously, e.g., CTRL d.

CONTENTS

PRODUCT OVERVIEW 1-1
- Introduction 1-1
- Release Description 1-1
- Release Characteristics 1-2
- Product Package 1-2

INSTALLATION DEPENDENCIES 2-1
- Software Requirements 2-1
- Hardware Requirements 2-1

INSTALLATION PROCEDURE 3-1
- Preliminary Information 3-1
- Preparation for Installation 3-2
- Installation of the Product Update 3-5
- Upgrading from a Previous Release 3-7
- Removal of the Product 3-7
- Reinstalling the Product 3-9

RELEASE INFORMATION 4-1
- Configuring the Product 4-1
- Using the Product 4-1
- Known Problems 4-2
- Problems Fixed 4-2

CHAPTER 1
PRODUCT OVERVIEW

Introduction

This Software Release Guide (SRG) tells the installer how to load software onto a Motorola computer. Although the installer is the intended audience, the user of this product may benefit from reading this guide. It is the installer's responsibility to inform the users of known problems and work-arounds described in Chapter 4 of this SRG.

NOTE

Read this entire guide before attempting to install this product. This document and any accompanying errata sheets supersede all other installation instructions except where otherwise stated.

Release Description

This product fixes the following in the MVME332XT:

- Hardware flow control
- High frequency noise
- False "Printer Paper Empty" messages
- Unkillable processes
- Read Ring errors

This product adds the following features to the MVME332XT:

- Online software reset
- Serial port internal loopback test
- Ability to enable/disable the DCD noise filter
- Ability to dump firmware information for problem analysis

Release Characteristics

This product updates the driver and firmware for the MVME332XT for 68K and 88K systems. This release includes driver version 15.2, firmware version 15.2, m332xctl version 1.11, and the corresponding man page. New uses for the control function, m332xctl, are described in the *Using the Product* section. Additional release information is available in Chapter 4.

Product Package

This section describes the software media and documentation that constitute the 68K/88K MVME332XT Driver/Firmware Update:

- *(MVME332XT/S2) 68K/88K MVME332XT Driver/Firmware Software Release Guide*
- One tape cartridge for System V/68 or V/88

You can order additional manuals from your sales representative.

- *(MVME332XTFW/D2) MVME332XT Serial Intelligent Peripheral Controller Firmware User's Manual*

CHAPTER 2

INSTALLATION DEPENDENCIES

The following paragraphs list the hardware and software required to run this release of the 68K/88K MVME332XT Driver/Firmware.

Software Requirements

This release requires one of the following system setups:

- SYSTEM V/88 R32V*X* BOS (FH32.*XX*)
- SYSTEM V/68 R3V*X* BOS (FEX3.*XX*)

Hardware Requirements

This release requires the following hardware:

- MVME332XT
- Sufficient disk space as defined in the *Preparation for Installation* section.

You do not need any additional documentation to install the 68K/88K MVME332XT Driver/Firmware Release.

CHAPTER 3

INSTALLATION PROCEDURE

Preliminary Information

As an installer, you should be familiar with all the facets of system administration, including the System Administration Menu Package (**sysadm**).

These conventions apply in the procedures that follow.

- Items that you have to type at the keyboard are in **bold**. For example

  sysadm installpkg

  Enter these items exactly as they appear in the text.

- Optional values appear in square brackets; for example the prompt

  Is this correct? [y, n, ?, q]

  accepts **y, n, ?,** or **q** as valid entries.

- The screen displays are provided as examples only. Some of the information may be different depending on your system configuration.

Preparation for Installation

There are several things you need to do before starting the installation of the MVME332XT Driver/Firmware update. Please review the checklist to be sure that you are ready before you start the procedure.

1) Determine if you have enough disk space.

You need at least 2200 free blocks in the /usr file system to install the 68K/88K MVME332XT Driver/Firmware.

To find out how many free blocks you have, enter the following command and press Return:

df

The system responds with the value for each defined file system.

2) Backup your system.

As a precaution, make a full backup of the system before installing any new product. Use the procedure established for your site or the following procedure to backup your system:

1. Log on as **root**.
2. Enter the following command and press Return:

   sysadm backup

The **sysadm** program begins and displays the following:

```
Running subcommand 'backup' from menu 'filemgmt',
FILE MANAGEMENT

Available file systems
/          /user1          /user2          /user3          ALL
Enter file system(s) you want to backup [?, q]:
```

3. Enter **ALL** and press Return. The following appears:

```
Select complete or incremental backup [c, i, ?, q]:
```

4. Enter **c** and press Return. The following appears:

```
Print each file name as it is copied? [y, n, ?, q]:
```

5. Enter **y** or **n** and press Return. The following appears:

```
Select which drive to use:
1 ctape                2 ctape          3 hddiskette1
Enter a number, a name, the initial part of a name, or
? for HELP, q to QUIT:
```

6. Enter **1** and press Return. The following appears:

```
Before inserting the first medium into the ctape drive, mark it:

        Complete Backup of / /user1 /user2 /user3 /usr /user
        Mon. 01/21/91, 07:07:20 PM
                        part 1

Insert the medium in the ctape drive. Press <RETURN> when ready. [q]
```

7. Label the tape as indicated on the screen.

8. Insert a usable tape into the drive and press Return. If you requested **sysadm** to print the file names, the file names scroll across your screen as they are copied. If the backup requires more than one tape, the following messages appear:

```
Reached the end of medium on output.
Remove medium.

Before inserting the next medium into the ctape drive, mark it:

        Complete Backup of / /user1 /user2 /user3 /usr /user
        Mon. 01/21/91, 07:07:20 PM
                        part 2

Insert the medium in the ctape drive.
Press <RETURN> when ready. [q]
```

9. Label each additional tape being careful to copy the correct "part" number.

10. Insert the tape in the drive and press Return. The backup process continues and the above messages reappear each time a tape fills up.

11. Repeat steps 9 and 10 until the following messages indicating successful completion appear:

```
Complete backup of / /user1 /user2 /user3 /usr /user finished.
You may now remove the medium.
```

12. Remove the tape.

Installation of the Product

Use the following procedure to update or install the 68K/88K MVME332XT Driver/Firmware:

1. Log on as **root.**
2. Enter the following command and press Return:

   sysadm installpkg

   The **sysadm** program begins and displays the following:

```
Running subcommand 'installpkg' from menu 'softwaremgmt',
SOFTWARE MANAGEMENT

Select which drive to use:
1 ctape                    2 diskette1      3 hddiskette1
Enter a number, a name, the initial part of a name, or
? for HELP, q to QUIT
```

3. Enter **1** and press Return; the following appears:

```
Insert the removable medium for the package you want to install into the
ctape drive
Press <RETURN> when ready. Type q to quit.
```

4. Insert the product tape into the drive and press Return. In a few moments, the following appears:

```
Installing "MVME332XT Fix-Tape"
Press <RETURN> to continue, type q to quit.
```

5. Press Return. The installation process takes approximately 6 minutes.

```
10 blocks
***> copying files ... This will take about 6 minutes ...
```

6. The system is automatically reconfigured.

```
"MVME332XT Fix-Tape is now installed"
Please shutdown the system then reboot.
```

7. Reboot the system.
   a. Enter the following command and press Return.

      powerdown –y

   b. Turn the key on the system to the reset position and then back to run.
   c. Answer the initialization prompts.

8. Test the Installation Procedure software by logging back on. This will make sure that the new environment variables are properly set.
9. Execute the following command and press Return.

   /etc/m332xctl -r */dev/ttyX9*

   Where ***X*** is the controller number.

   Verify that the versions displayed reflect the following

   MVME332xt Firmware Version 15.2

   MVME332xt Driver Version 15.2

Removal of the Product

Use the following procedure to remove the 68K/88K MVME332XT Driver/Firmware Upgrade:

1. Log on as **root**.
2. Enter the following command and press Return:

   sysadm removepkg

   The **sysadm** program begins and displays the following:

```
Running subcommand 'removepkg' from menu 'softwaremgmt',
SOFTWARE MANAGEMENT

Select which drive to use:
1 ctape                    2 diskette1      3 hddiskette1
Enter a number, a name, the initial part of a name, or
? for HELP, q to QUIT
```

3. Enter **1** and press Return; the following appears:

```
Insert the removable medium for the package you want to remove into the
ctape drive
Press <RETURN> when ready.  Type q to quit.
```

4. Insert the product tape into the drive and press Return. In a few moments, the following appears:

```
Removing "MVME332XT Fix-Tape"
Press <RETURN> to continue, type q to quit.
```

5. Press Return. The removal process takes approximately 6 minutes.

```
10 blocks
***>removing files ... This will take about 6 minutes ...
```

6. The system is automatically reconfigured and restored to its previous release.

```
"MVME332XT Fix-Tape is now removed"
Please shutdown the system then re-boot.
```

7. Reboot the system.
   a. Enter the following command and press Return.

      powerdown -y

   b. Turn the key on the system to the reset position and then back to run.

c. Answer the initialization prompts.

8. Test the Installation Procedure software by logging back on. This will make sure that the new environment variables are properly set.
9. Execute the following command and press Return.

   /etc/m332xctl -r */dev/ttyX9*

   Where ***X*** is the printer device

   Verify that the versions displayed reflect the previous versions.

   MVME332xt Firmware Version *XX.X*

   MVME332xt Driver Version *XX.X*

Reinstalling the Product

Follow the procedure for installation of the product.

Upgrading from a Previous Release

Upgrading from a previous release is no different than a first-time installation. Follow the installation procedure.

CHAPTER 4

RELEASE INFORMATION

This section addresses the following topics:

- Configuring the Product
- Using the Product
- Known Problems
- Problems Fixed

Configuring the Product

This product automatically configures the system during installation.

Using the Product

Four new features were added to the **m332xctl** command.

The **-S***x* option allows the user to reset the board and download the latest firmware.

m332xctl -S*x* */dev/ttyX9*

Where ***x*** is the download script and ***X*** is the controller number.

x=/etc/rc2.d/S10m332xt : (SVR3 download)

x=/etc/rc2.d/S11mvme332xt : (SVR4 download)

The **-T***x* option allows full-duplex internal loop-back testing.

m332xctl -T*x* */dev*

x=0 : output test pattern to the port.

x=1 : do not output test pattern.

The designated ***dev*** should be:

/dev/tty*XY* : (SVR3)

/dev/term/*XY* : (SVR4)

The **-n** option allows the user to enable/disable the DCD noise filter logic for a noisy line. Note that when the noise filter is enabled, the DCD inactive transition will be delayed for 500ms that may cause some timing problems for some loop-back tests that have very tight time-out alarms. Note that once the option is set or clear, it will stay in that mode until the next change. Closing the device will not alter this mode.

m332xctl -n [on|off|info] */dev/ttyXY*

The **-p** option allows the user to dump a port's internal data structures that are vital for problem analysis. When a port gets into an unusual state, execute this command to dump firmware information useful for developers to analyze the problem. It is important that this information be entered into the TAR database. This command works only on SVR3 systems.

m332xctl -p */dev/ttyXY* **>** *filename*

For example, if you execute the following commands:

 # m332xctl -p /dev/tty14 > temp

 # cat temp

The MVME332XT device would dump information from tty14 into a file called temp. The file temp would contain information similar to this form:

```
TTY:devnum:3,state:3,cstate:11,iflag:0,oflag:0,cflag:cbd,lflag:0,c_line:0
c_cc[NCC]:7f 1c 23 40 1 0 0 0,xon:11,xoff:13,event:0,pending_event:0,term:0
tmflag:0,col:0,row:0,vrow:0,lrow:0,dstat:0,esc:0,ext:7c,vtime:-2,fcnt:0
fbol:f7b,fbof:f7b,fput:f7c,local_get:0,devaddr:f82020,wsize:ff,lwm_w:3f
rsize:fff,lwm_r:7ff,wring[put:54,get:54],rring[put:f7b,get:f7b]
oring[put:60,get:60],iring[put:6e3,get:6dc],linesw[open:f204e4,read:f1b4ae
write:f1c054,ioctl:f1e3e0,close:f1a638,ctl:f1a892,gate:f1cf44]
write_wakeup:0,read_wakeup:38a,event_env:3d2,ctl_env:0,gate_env:0
wring:f4b05c,rring:f44824,count(icp_sem:7,ocp_sem:-1,ctl_sem:-1,gate_s:-1
wring_sem:0,oring_sem:0),state2:0,xpollcnt:7,xevent:0,xext:7c,oldchange:0
open:f1f9b2,close:,f1f9b2param:f1fa64,rcmask:ff,tcmask:ff
MK68564:cmdreg:0,modectl:44,intctl:17,rcvctl:c1,xmtctl:c7,stat0:7c
stat1:1,datarg:6d,tcreg:4,brgctl:d,vectrg:6b
```

For more information about the **m332xctl** command, refer to the man page entry by executing the following:

man m332xctl

Known Problems

No known problems.

Problems Fixed

- TAR 1-58433, 1-58356, 1-58592: Qoffice displayed garbage when scrolling. This was caused by a premature return from write when FNDELAY is set in the file mode. Fixed by testing FNONBLOCK flag rather than FNDELAY in the m332write().

- TAR 1-58200: Terminal on/off caused an auto-baud condition as a BREAK sequence was input; also fixed problem when an application was terminated prematurely by INTR key.
- TAR 1-51463: "Getty respawning too rapidly" error messages caused by terminals powered off and on.
- TAR 1-57818: Read-ring size doubled; ioctl (FIONREAD) did not return correct number of receiving characters in the input queues.
- TAR 1-57010: Hardware flow control: CTS (change-of-state) caused a signal to the host.
- TAR 1-54496, 1-56336: Premature return of read request even when the read-ring was empty.
- TAR 1-51605: Null frame created by ioctl caused errors in the read-ring.
- TAR 1-51688, 1-51574, 1-51677: Lock-up problem with solid bright green LED caused by the interrupt condition.
- TAR 1-26021: Lost characters due to input line longer than the buffer length. Lock-up condition on output queue.
- TAR 1-49428: Error sending during break.
- TAR 1-46784: Mode change caused first read to return nothing.
- TAR 1-41992: The first read was blocked after setting VMIN and VTIME equal to zero.
- TAR 1-35717: Read request returns EOF instead of error (EIO) when DCD is going away.