

RamFAST/SCSI Owner's Manual

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CV_T C.V. Technologies

"We make hard drives RamFAST!"

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Read This Page Before You Install Your New ROMs . . .

To install the new ROM chips into your RamFAST/SCSI you first need to turn off the power to your computer and any peripherals connected to it. Next, remove the RamFAST/SCSI and lay it on a level work area with the chips facing up. You should replace the ROM chips one at a time so that you are sure to get the replacements into the correct sockets (The new U15 should replace the old U15 and the new U16 should replace the old U16). To remove a ROM chip, gently pry it out of the socket with a small screwdriver or other like utensil. Take the new ROM chip and position it in the socket making sure that the notch is toward the top of the board (same as the old chips, **DO NOT GO BY THE ORIENTATION OF THE LABEL**). Also make sure that all of the pins are in the socket holes and not bent out of the socket or under the chip. Once the new ROM chip is positioned correctly you can press it into the socket. It should snap snugly into place. Repeat this operation with the second new ROM chip.

After this is completed you can reinstall the RamFAST/SCSI into your computer and turn everything back on. It will take it approximately 30 seconds to boot the first time so that the RamFAST/SCSI can search the SCSI bus for devices. You will be presented with the new Configuration/Setup Utility program. At this point you can just (Q)uit and BOOT. Once your system is up and running you should launch RamFAST.System off of the RomDISK (CVTech.ROM). This will put you back in The Utility Program. Make sure that you execute the (I)nstall command so that the new Utility Program and, if necessary, the new GS/OS Driver are copied onto your system disk.

Limited Lifetime Warranty

C.V. Technologies warrants this product against defects in materials and workmanship for as long as you, the original consumer purchaser, own it. This warranty applies only should the product fail to function properly under normal use.

During the warranty period, *C.V. Technologies* will repair (or, at its option, replace), at no charge, components that prove to be defective, provided the product is returned (shipping prepaid and properly packed) to *C.V. Technologies*.

Before returning any item you must first obtain an RMA (Return Merchandise Authorization) number. This number must be prominently marked on the outside of the shipping container and on a letter enclosed inside that lists your name, address, and the reason for returning the item. Also, your purchase receipt or other proof of original purchase and the serial number must be provided when requesting warranty service to be performed. This warranty does not apply if the serial number has been removed, defaced, or altered, or if, in the opinion of *C.V. Technologies*, the product has been damaged by accident, misuse, neglect, improper packing or improper modifications.

This warranty is in lieu of all other express warranties, statements, or representations, and unless stated herein, all such warranties, statements, or representations, made by any other person or firm are void.

In the event that this product shall prove defective in workmanship or materials, your sole remedy shall be the repair or remedy as stated in this warranty, and under no circumstances shall *C.V. Technologies* be liable for any loss or damage, direct, incidental, or consequential, arising out of the use of, or inability to use, this product caused by any defect in the product.

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About the RamFAST/SCSI

Congratulations! You have just purchased the ultimate hard drive controller for the Apple II line of computers. The RamFAST/SCSI is the **ONLY** DMA hard drive controller that supports true 1:1 interleave. No other controller in the Apple II market can make that claim. What this means is that you can expect unparalleled speed and performance (2 to 12 times that of other controllers).

Features

- 1mb/second transfer rate
- 256k of dedicated memory
- GS/OS driver included
- Mouse-driven Configuration/Setup Utility included
- Built-in RomDISK, no floppies to mess with!
- Supports up to 12 partitions at a time
- Allows you to boot any partition
- Access to all of them even under ProDOS 8
- Compatible with the Apple IIe and the Apple IIgs
- Even supports the older SASI drives (Sider D2, D4, and D4T)
- Supports CD-ROM and Tape Drives (with built-in backup software)
- Easy installation — just plug and go
- Limited lifetime warranty

Setting the DIP Switches

You should read this section before attempting to install your RamFAST/SCSI and make a note of any DIP switches you need to change. Note: All DIP Switches (with the possible exception of Switch #1) are shipped in the OFF position.

- 1 **Terminator power** - If this switch is ON then the RamFAST/SCSI will supply terminator power to the SCSI bus, otherwise the drive is assumed to be supplying it. You should only toggle this switch if the RamFAST/SCSI has problems locating some or all of your drives, or if it is acting erratically. (See "Troubleshooting" for more information.)
- 2 **ROM Select** - This switch should be OFF in an Apple Iigs and ON in an Apple IIe. Period.
- 3 **Reserved**
- 4 **Reserved**
- 5 **Reserved**
- 6 **Reserved**
- 7 **Reserved**
- 8 **Reserved**

Installing or Upgrading Your RamFAST/SCSI

Read the manual. You should be familiar with all of the steps required to install the RamFAST/SCSI before proceeding.

- 0 If you are upgrading from a previous version of the RamFAST/SCSI and you are installing the ROM chips yourself you need to first turn off the power to your computer and all of your peripherals, remove the cover of your computer, and take out the RamFAST/SCSI. When installing the new ROMS you need to make sure that U15 replaces the old U15 and that U16 replaces the old U16. To remove the old ROM you can gently pry it out of its socket with a small screwdriver. Now take the new ROM and place it in the socket making sure that the notch at each ROM is oriented toward the top of the board (the same as the old one) before you press the new ROM into the socket. After the new ROMs are installed you can proceed with the rest of the installation.
- 1 If you are about to connect the RamFAST/SCSI to a drive that contains needed data, we strongly urge you to back it up first. While we do test all cards before they are shipped, things do happen and *C.V. Technologies* can not be held responsible for any loss or damage to the data or the drive, etc.
- 2 Turn off the Apple's power switch. Never insert or remove a card while your computer is turned on. You should, however, leave it plugged in to allow the power supply to absorb any static electricity from your body.
- 3 Remove the cover from the Apple. Consult your owner's manual if you are unsure on how to do this.
- 4 Touch the power supply case in the Apple to discharge any static electricity from your body. Make sure you do this because static can cause a great deal of damage to the computer chips on the card and in your computer.
- 5 Remove the RamFAST/SCSI from its anti-static bag holding it by its edges.
- 6 Set DIP Switch #1 according to the type of your computer.
- 7 Select the slot into which you're going to install the RamFAST/SCSI. Align the card edge of the RamFAST/SCSI with the slot and use the heel of one hand to firmly push the card down into the slot. It should fit snugly.
- 8 Attach the cable from the RamFAST/SCSI to any available opening on the back of your computer. After this, check to make sure that it is still securely connected to the RamFAST/SCSI.
- 9 Connect the drive's cable to the cable at the back of the computer. Replace the cover of the Apple. *Congratulations! The RamFAST/SCSI is now installed.*
- 10 You should probably review the manual sections concerning The Utility Program and Preparing Your Hard Drive For Use again before proceeding.

The Utility Program - Logical Devices Screen

The RamFAST/SCSI Configuration/Setup Utility (referred to from here on as The Utility Program) allows you to format and partition your drives and to assign defaults to many of the factors that control how the RamFAST/SCSI functions. Below is a picture of the "Logical Devices Screen". This is the starting point for using The Utility Program. The "Logical Devices Screen" is basically divided into four (4) separate areas: the copyright, the list of ProDOS Block Devices, the Volume list, and the upper right portion that is used to display messages and prompt for information. The following sections of the manual describe describe what can be done and the available commands.

=== Backup = Edit = Install = Options = Quit = Restore = Save ===== Escape ===

RamFAST/SCSI V2.00e
Configuration/Setup Utility
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"We Make Hard Drives RamFAST!"

==== Logical Devices =====

ProDOS Block Devices		Volume Names	Lockahead	WrProt
Drive 1	Drive 2	Seagate.ST277.1	Auto	N
S7 *Seagate.ST277.1	Seagate.ST277.2	Seagate.ST277.2	Auto	N
S6		Seagate.ST277.3	Auto	Y
S5 Smart Port	Smart Port	CVTech.ID2.A		
S4 Seagate.ST277.3	CVTech.ID2.A	CVTech.ID2.B		
S3 CVTech.ROM		XLNTCD.ROM		
S2		CVTech.ROM		
S1				
S0				

(* = Default Boot Partition)

=====
Logical Devices Screen

Changing the ProDOS8 Slot Assignments

One of the nicest options available with the RamFAST/SCSI is the ability to “map” any or all of your partitions for use under ProDOS8. ProDOS is limited to addressing only two (2) drives in any one slot. To get around this limitation the RamFAST/SCSI lets you select any of your partitions and tell it exactly what Slot/Drive combination you want it assigned to. To select a partition you can either use the arrow keys to move the cursor up and down the list of volumes and hit the space bar to select one or, if a mouse is available, you can just click on its name in the list of volumes. Once this is done you will see a second cursor appear in the ProDOS Block Devices area of the screen. You can now select the Slot/Drive where you want the selected partition to be mapped. If you wish to “unmap” a partition (e.i. remove it from the ProDOS Device Table) you can assign it to “Slot0”. This is just a signal to the RamFAST/SCSI that you no longer want that partition to be mapped into the ProDOS Block Device table.

Setting Lookahead and Write Protect

Also listed on the screen, next to the volume names, are entries for Lookahead and WrProt. You change these by moving the cursor onto the entry you want to change with the arrow keys and hitting the space bar or, if a mouse is available, by clicking on the entry you want changed.

Lookahead cycles through values ranging from 0k up to 28k and also Auto. Lookahead controls the amount of data the RamFAST/SCSI will read beyond the end of any single read request in order to hopefully have the data ready immediately next time. When Lookahead is set to Auto the RamFAST/SCSI attempts to adjust itself automatically to the changing needs of whatever program happens to be running. For most users there should be no need to change this entry to anything other than Auto.

WrProt allows you to tell the RamFAST/SCSI to Write Protect a hard drive partition just like you would write protect a floppy. This can be especially useful when combined with the Password protection discussed under the Options command.

Command Summary

Below is a summary of the commands available from the logical devices screen. You can execute any of these commands in one of two (2) ways: 1) using the keyboard you can hold down the Open-Apple key and the first letter of the command at the same time or 2) using the mouse you can just click on the command at the top of the screen. The summaries are somewhat terse; however, all of the commands in The Utility Program clearly prompt for any information they may need to carry out the command.

Backup and Restore - The RamFAST/SCSI has a built-in ability to backup and restore the data on your hard drives to tape. The backup created by the RamFAST/SCSI is an image backup. The tape will end up with a separate partition for every partition that is chosen for backup. Restore is used to replace the contents of an active partition with the contents of a backed up partition. When you execute either of these commands you will be prompted through the process of selecting a tape drive and selecting the partitions you want backed up or restored.

Edit - To change (format or partition) a particular drive you need to use the Edit command. You will then be prompted to select which drive to edit from a list of those that are online at the time. (Drives are listed in order by SCSI ID number.) After a drive is selected you will be presented with the "Physical Device Screen" (see the next Section for more information).

Install - Once your hard drive has been prepared with an operating system you should use install to copy the RamFAST/SCSI system files onto your hard drive. When you execute this command you are prompted to select the partition you want the system files installed onto. After you chose a partition The Utility Program places a copy of itself on your hard drive in the root directory and, if the computer is an Apple IIgs, copies a GS/OS driver into the Drivers folder inside your System folder. You can only execute this command if The Utility Program was started from a program launcher of some kind (like ProSel or the GS/OS Finder), not if it booted itself.

Options - Executing Options brings up a display of six (6) options that control how the RamFAST/SCSI or The Utility Program work. Any of them may be toggled using the keyboard (arrows to select and space bar to toggle) or the mouse (click on the entry you want toggled). The individual options are discussed below.

Autosave - This option tells The Utility Program to always save the current RamFAST/SCSI configuration data to disk when you quit from The Utility Program. This just makes sure that any changes you make are permanently recorded. If you disable Autosave you will have to execute the Save command to make any changes to your current configuration permanent.

DMA - By default, DMA is disabled in a IIe and enabled in a IIgs. If you have a DMA compatible IIe (see troubleshooting section to be sure) you can enable this option. If you have a nonDMA compatible IIgs (see troubleshooting section to be sure) you should disable this option.

Mouse - By default, the Mouse is disabled in a IIe and enabled in a IIgs. If you own an Apple Mouse for your IIe you should be able to enable this option and use your mouse for selecting items and executing commands.

Password - If your computer is in an environment where you do not want people to change any of your configuration information you can assign a password to The Utility Program. After this is done, any time The Utility Program is run you will be prompted for this password. If an incorrect password is entered then the program just exits with an error message. NOTE: When setting your password keep in mind that it is CASE SENSITIVE.

Passwording - This is basically the opposite of the Password option. If you do not want to setup a password, but are afraid someone else might (thus locking YOU out of The Utility Program) you can disable Passwording. This will disable the ability to set a password. NOTE: This is a one-way operation. If you later decide that you want to setup a password you will have to call Tech Support for information on how to re-enable Passwording.

RomDISK - Once installation of your hard drive and the RamFAST/SCSI system files is complete you will usually want to disable the RomDISK in order to keep it from taking up a slot in the ProDOS or GS/OS device list.

Quit - This should be pretty much self-explanatory. Quit is executed when you want to quit out of The Utility Program.

Save - The Save command is usually only used in you have disabled the Autosave option (see Options above). It saves the current configuration information for the RamFAST/SCSI.

The Utility Program - Physical Device Screen

The "Physical Device Screen" is used to format and/or partition a particular drive on the SCSI bus. Below is a picture of the "Physical Device Screen". The "Physical Device Screen" is basically divided into three (3) separate areas: the device name and other information, the volume list, and the size adjust thermometers. The following sections of the manual describe describe what can be done and the available commands.

=== Add = Delete = Format = Partition = Quit ===== Escape ===

Device Name	SyQuest SQ555	Current SCSI ID	2
Serial Number		Current Interleave	1:1
		Cylinders	1275
Device Size	43328k	Sectors/Track	68
Space Available	320k	Heads	2
		Defect List Length	0

==== Physical Device =====

	Volume Names	Volume Sizes	Active
	CVTech.ID2.A	21504k	Y
	CVTech.ID2.B	21504k	Y

<<===== >>
0 Volume Size Adjust (+/- 1mb) 32mb

<< >>
0 Fine Adjust (+/- 32k) 1024k

=====

Physical Devices Screen

Making Partitions Active or Inactive

The far column of the display is labeled Active. This is used to toggle whether or not a partition is to be accessible at all. Unless you have a total of more than twelve (12) partitions total on your hard drives there is little reason to make partitions inactive. If you do have more than twelve you can use this to decide which twelve of your partitions you want to access at any one time.

If you edit a tape drive with a backup tape written by the RamFAST/SCSI inserted you will see the partitions that you backed up. If you need to get one or a small number of files from the backup it is possible to make the backed up partition active. Keep in mind, however, that this will be a very slow process since tapes are not really meant to be accessed in a random fashion.

Changing the Size of Partitions

To change the size of the currently highlighted partition you can use the keyboard or the mouse. With the mouse you can just click on the end of the thermometer that you want to adjust and it will increment or decrement by one. With the keyboard you can hold down the Open-Apple key and the Left or Right arrow key at the same time to adjust the size down or up by 1Mb. You can hold down the Option (or Closed-Apple key) and the Left or Right arrow key at the same time to adjust the size down or up by 32k. You can repeat this for as many partitions as you have until they are the size you want.

Command Summary

Add - This command adds a new partition to the list at the bottom of the screen (if there are any blocks available on the drive).

Delete - This command deletes the currently selected partition from the list at the bottom of the screen.

Format - Format is used to perform a low level format of the drive. If the drive is a SASI drive instead of a SCSI drive you will be prompted to enter the type of SASI drive. When the format is complete your drive will also be partitioned by default with the partitions that appear at the bottom of the screen after the format.

Partition - After adding, deleting, or changing the size of any partition(s) you must execute the Partition command if you want to make the changes permanent. Just be aware that partitioning should never be done unless you have a good backup of any data that is on the drive.

Quit - Quit is just used to exit back to the Logical Devices Screen.

Preparing Your Hard Drive for Use

If you are upgrading to the RamFAST/SCSI from another hard drive controller, be sure to backup any programs or data on your hard drive before installing the RamFAST/SCSI.

What follows is a rough outline of the steps necessary to get the RamFAST/SCSI up and running with your hard drive and computer. Some or all of these steps may not be necessary if you have bought the RamFAST/SCSI and hard drive as a matched set.

Turn on your computer and hard drive. It may take up to 30 seconds for anything to happen while the RamFAST/SCSI scans the SCSI bus for devices. If the RamFAST/SCSI is the boot device, you should see the RamFAST/SCSI Utility Program boot up; otherwise, you should launch it from the ProDOS volume "CVTech.ROM", the program name is "RamFAST.System".

After you are in the Utility Program, execute the Edit command and select your hard drive from the list of "Online SCSI Devices". If the interleave is anything other than 1:1 you should format it; otherwise, proceed to check the partitions displayed in the lower portion of the screen (if any). If they are not as you would like them (or missing altogether) then use the Add and Delete commands and the "Size Ajust" thermometers to set them up the way you want and then execute the Partition command. Now Quit back to the "Logical Devices Screen" and repeat this for as many hard drives as you have connected to the RamFAST/SCSI. Now you should make any changes to the "ProDOS8 Slot Assignments" or the RamFAST/SCSI "Options". Execute the Quit command. If you need to restore programs or data to the hard drive, now is the time to boot a 3.5" or 5.25" and do so; otherwise, boot and install ProDOS8 or GS/OS onto the hard drive from your system disk(s).

Now boot your hard drive, launch "RamFAST.System" (the Utility Program) from the volume "CVTech.ROM" (the RomDISK) and execute the Install command which will copy the system files off of the RomDISK and onto your hard drive. Now just enter the Quit command and that's it!

Multiple Drives - A Special Note

If you have connected more than one drive to the RamFAST/SCSI, you must take care that none of them have duplicate SCSI ID numbers. If you are not sure how to check or change the SCSI ID number of the drive, you should consult the documentation that was supplied with it or contact the seller of the drive and ask. You might want to note at this time that the RamFAST/SCSI searches for drives starting with SCSI ID#7 and works its way down to SCSI ID#0. This isn't backward. It's the way it's supposed to be done. You just might want to keep this in mind as you're setting the ID's of your drives.

With the RamFAST/SCSI you will probably find that life will be much more pleasant and predictable if you make any removable devices have lower SCSI ID numbers than any non-removable devices.

Also, keep in mind that the use of long (6' or longer) cables can cause problems. Especially when daisy-chaining drives together.

Special Features of the RamFAST/SCSI

One thing that has not been mentioned up to now is that the RamFAST/SCSI also allows you to change the way it behaves at power up by holding down certain keys. It is also possible to use these keys when you do an Open-Apple/Control/Reset, but this might seem better suited to an octopus.

If you hold down a number key from "1" through "9" when you turn the power on then the partition in the Logical Devices list corresponding to the number held down is booted. For example: holding down the "2" key will boot the second partition in the list; holding down the "6" key will boot the sixth partition in the list; etc. This can be very handy if you sometimes want to boot GS/OS and other times want to boot ProSel or even ProDOS8.

Also, if you hold down the "0" key at power up The Utility Program will boot. This can be handy if you have lost or misplaced the copy of The Utility Program that the Install command copied onto your hard drive.

Lastly, if you hold down the space bar the RamFAST/SCSI will "basically cease to exist." It will not put partitions in its device list and will just immediately boot through to the next slot. This is handy if you (or maybe your kids) want to boot something on 3.5" or 5.25" disks without having to worry about your hard drive.

Trouble Shooting

The first thing to do if you are experiencing problems is to make sure that all of the cables are plugged in securely, that the power is turned on to all of your drives and your computer, and that the DIP Switches are set correctly for your type of computer. If everything seems to be installed correctly, scan through the list of problems below, read the descriptions, and follow the directions for any of them that apply to your setup. If you are still experiencing problems turn to “**Where to get HELP!**”

Terminating Resistor Plugs - There should only be one (1) set of terminating resistors installed on the SCSI bus. This usually takes the form of an external terminator plug that is installed in the daisy-chain connector of the last drive in the chain. Some drives are supplied with internal terminators. If you know this to be the case with your drive you do not need an external terminator. If you are not sure whether your drive has internal terminators installed you can consult the documentation supplied with it or contact the seller of the drive and ask.

Terminator Power - Continuing the discussion of terminating resistors, at least one device on the SCSI bus must supply power for these terminators. If your drive(s) do not supply terminator power to the SCSI bus you need to turn DIP Switch #1 ON. If you are not sure whether your drive supplies terminator power you can consult the documentation supplied with it or contact the seller of the drive and ask.

Cables - If you have checked all of your cables and they seem to be tightened down correctly it's time to think about the length of the cables. Long cables (6' or more) can cause problems at the speed that the RamFAST/SCSI operates, especially when connecting multiple drives to the RamFAST/SCSI. If you are having problems and you have a long cable it is worth a try if you can to try a shorter one.

Your Power Supply - If you have a number of cards installed in your computer and you still have the “stock” power supply that came with your computer you may experience problems with the RamFAST/SCSI ranging from random crashes to total failure to function. This is especially a problem in an Apple IIgs with an \mathcal{A} E TranswarpGS, an \mathcal{A} E PC-Transporter, and a RamFAST/SCSI. This can also be a problem in an Apple IIe if there are a lot of peripherals installed. If it sounds like this could be the case you should remove some of the cards installed in your computer and see if that cures your problems. If it does, you should definitely consider getting a heavy duty power supply before reinstalling everything in your computer.

Apple IIe With A Number of Cards Installed - In an Apple IIe it is also possible to see the same problems described above for weak power supplies even if you have a heavy duty power supply. This is a problem that is associated with the design of Apple IIe's and there is nothing really that can be done about it. If the RamFAST/SCSI works in your Apple IIe with no (or few) cards installed and doesn't work with all of them installed then, unless one of the peripherals is mentioned below as causing specific problems, it is possible that the RamFAST/SCSI may not be able to function in this computer unless some of the cards are removed permanently.

CMS Hard Drives - There is a set of DIP Switches on the back of most CMS hard drives. One of these switches controls how the drive is "talked to". You must turn on the DIP Switch that makes the drive compatible with the Apple Macintosh. If you are not sure how to do this you can consult the documentation supplied with the drive or contact the seller of the drive and ask.

Multiple Drives with Conflicting SCSI ID Numbers - If you have connected multiple drives to the RamFAST/SCSI you must be sure that the SCSI ID numbers assigned to the drives do not overlap. SCSI ID numbers range from 0 through 7 and no two drives on the same SCSI bus can have the same ID number. Information on how to determine and/or change the SCSI ID number of a drive should be found in the owner's manual that came with the drive.

Apple IIe Accelerators - At the time that this manual was printed, there were no DMA compatible accelerators for the Apple IIe. If you have an accelerator installed in your Apple IIe then you must not enable the DMA option in The Utility Program. If you do enable the DMA option with an accelerator installed you will encounter problems. Other things to be aware of is that the 10MHz RocketChip will not work in the same system as a RamFAST/SCSI. This is a problem with the RocketChip, not the RamFAST/SCSI and there is nothing that we can do about it. Also, some of the 8MHz ZipChips have problems in the same system as a RamFAST/SCSI. If you are having problems with an 8MHz ZipChip try replacing the ZipChip with the original 6502 processor and see if the problems go away. If they do then you need to call Zip Technologies and get it replaced.

Æ TranswarpGS Accelerator - If you experience problems with the RamFAST/SCSI and you have a TranswarpGS installed in your computer check to see if there is a part labeled TWGS-2A installed on your TranswarpGS. At the top right-hand side of the TWGS there are two chips with stickers on them. The top one should be TWGS-1A and the one below it should be TWGS-2B. If this chip is labelled TWGS-2A you will need to contact Æ to obtain a replacement (TWGS-2B). The RamFAST/SCSI will not function in your computer until you get this replacement part. At the time this was printed, the replacement was free of charge. If there is already a TWGS-2B part in your TranswarpGS then you should try replacing the TranswarpGS with the original 65C816 processor and see if the problems go away. If they do you may need to send the TranswarpGS to Æ for further modification.

Æ GS-Ram - If you have an Æ GS-Ram, revision "A", installed in your computer the RamFAST/SCSI will not function. If you have a GS-Ram with a revision "B", "C", or "D" you will have to disable the DMA option in The Utility Program in order to avoid problems. Only revision "E" of the GS-Ram is completely DMA compatible. To determine the Revision of a GS-Ram card you need to remove it from your computer and look at the supporting "leg" of the card (half-way between the card-edge connector and the back end of the card). On the front or back in this area should be a message that says "REV x" where "x" can be "A", "B", "C", "D", or "E"

Æ GS-Ram Plus Rev A, CheckMate Memory Products, or the RamPack 4GS - If you have any of these products installed in your computer you will have to disable the DMA option in The Utility Program in order to avoid problems. To determine the revision of a GS-Ram Plus use the same method described in the Æ GS-Ram problem description above.

Æ RamKeeper - If you have a RamKeeper in your computer with two (2) memory cards you will have to disable the DMA option in The Utility Program. If there is only one (1) memory card installed in the BACK pocket of the RamKeeper and the card itself is DMA compatible you should not have any problems.

Æ RamFactor - If you have a RamFactor installed in your computer and are having problems, try removing the RamFactor and see if the problems go away. Some RamFactors cause problems (especially in an Apple IIgs) just being installed in the same computer as the RamFAST/SCSI. If the RamFAST/SCSI works with your RamFactor out of the system and doesn't work if it IS in the system there's not really anything that can be done beyond removing the RamFactor.

Zip GSx Accelerator - If you have a Zip GSx accelerator installed in your computer you need to check the version number on your board. If it is V1.01 then you need to contact Zip Technologies for a free upgrade in order to function with the RamFAST/SCSI.

AST Visionary Plus - The AST Visionary Plus will not function in the same system as a RamFAST/SCSI. It is possible to get them to co-exist, but it requires a hardware modification to the RamFAST/SCSI among other things. You can contact C.V.Technologies for more information.

FingerPrint GSi - If you have a FingerPrint GSi installed in your computer you need to check the version number of the software on the board. If it is V2.x then you should not experience any problems. If the version is V1.x or V3.x then you will have problems with a RamFAST/SCSI also installed in the computer.

Apple IIe 40 Column vs. 80 Column - If you are installing the RamFAST/SCSI into an Apple IIe it is required that you have an 80 Column card. The Utility Program will not function without it.

Apple IIgs Control Panel Settings - In an Apple IIgs you need to make sure that the setting for the slot that the RamFAST/SCSI is installed is set to "Your Card" and that the boot slot is set to "Scan" or to the slot that the RamFAST/SCSI is installed in. You also need to make sure that Slot 3 is set to "Built-in Text Display".

Apple SCSI Drivers - Unless you also have an Apple High Speed DMA SCSI card installed in your Apple IIgs you should disable or remove the Apple supplied SCSI drivers from the Drivers folder located in the System folder of your boot partition. The files that should be disabled or removed are: SCSI.Manager, SCSIHD.Driver, are SCASICD.Driver.

Where to get HELP!

Technical Support

C.V. Technologies
1800 E. Whipp Rd. Suite 200
Kettering, OH 45440

(513) 435-5743

If the "Trouble Shooting" section didn't help, Technical support is usually available from 11am-6pm Eastern Standard Time, Monday through Friday (excluding holidays). Please have the following information ready when calling:

- 1 Serial Number of your RamFAST/SCSI card.
- 2 What devices are attached to the RamFAST/SCSI.
- 3 Which type of Apple (Ile or IIGs) you have.
- 4 A list of any other peripherals which are installed in your computer.

Online

Help and support can also be obtained through a number of online services:

GEnie - Send mail to CV.TECH or read and reply to messages posted in the Apple II roundtable (category 46).

CompuServe - Send mail to 72260,541 or read and reply to messages posted in the APPUSER area (GO APPUSER).

America Online - Send mail to CVTech or goto keyword AHW and select DIRECT CONNECT. You can then read and reply to messages posted in the C.V. Technologies area.

Warranty Registration

So that we may better serve you, please take a moment to fill out the following warranty registration, remove it from the manual, and return it to:

C.V. Technologies
1800 E. Whipp Rd. Suite 200
Kettering, OH 45440

Warranty Registration	
What is the Serial Number of your RamFAST/SCSI?	_____
Your Name	_____
Your Address	_____
Your City, State, and Zip	_____
When did you purchased it?	_____
Where did you purchase it?	_____
Is it being installed in a IIe or a IIgs?	_____
What other cards do you have in your computer?	_____

New Behavior of the ROMDISK

If enabled in the Options menu the ROMDISK will override your second partition and appear as D2 of the slot that the RamFAST/SCSI is installed in. This new behavior of the ROMDISK makes it essential that you disable it as soon as the system files are installed on your hard drive.

The reason for this is that by default the RamFAST/SCSI does not map any partitions into a slot other than the one it's installed in. In order for the ROMDISK to be available even on a IIe it was necessary to take over this slot in the RamFAST/SCSI's volume table. This shouldn't really cause any problems since you don't need the ROMDISK enabled after you install the system files.

If Problems Occur . . .

If you have any problems installing the new version of the RamFAST/SCSI please make sure that you have read the ENTIRE troubleshooting section of your manual and also all of this addendum. If you are still having problems then you can give us a call.

RamFAST/SCSI V3.0 Addendum

When installing the RamFAST/SCSI ROM Upgrade Kit yourself, make sure that you follow the steps on the enclosed instruction sheet. If you received this upgrade already installed in your RamFAST/SCSI then just ignore this paragraph.

Follow the instructions in the manual for installing the RamFAST/SCSI in your computer. After you have successfully installed the system files on your hard drive make sure that you disable the ROMDISK in the Options menu so that you can access your 2nd partition (see the section **New Behavior of the ROMDISK** for more information on this).

The rest of this addendum covers the differences between the new software and what is printed in your manual.

Enhancements for GS/OS System 6.0

HFS and Partitions Larger Than 32Mb

The RamFAST/SCSI now has built-in support for HFS (Macintosh) partitions and partitions that are larger than 32mb. This allows those of you with very large hard drives to stop dicing them up into 32mb chunks.

If the Utility Program is used to create a partition that is larger than 32mb it will NOT be formatted by the RamFAST/SCSI. When you quit from the Utility Program and boot or return to GS/OS it will tell you that it can't recognize the volume and offer to initialize or eject it. Go ahead and initialize it and select HFS as the file system. You should then be all set.

Compatibility with P8 V2.0.1 Device Mapping

Now that the latest version of ProDOS 8 also has the ability to map extra devices to free slots it's necessary to choose which one of us you want to do the mapping (since if we both do it ProDOS gets very confused). The way you map your devices into the ProDOS 8 Volumes table in the Utility Program determines who's responsible. If you map any volumes into a slot other than the slot that the RamFAST/SCSI is installed in then we will do the mapping of volumes. If you ONLY map volumes into the slot that the RamFAST/SCSI is installed in the we will let ProDOS 8 handle the mapping of volumes (this is the default).

Changes in the Utility Program

The two screens associated with the RamFAST/SCSI Utility program are now referred to as the **Volumes** screen and the **SCSI Utilities** screen. Also, the order of the commands at the top of the screens has changed in some cases in order to group them logically. The commands at the top of the screen also have their command key highlighted now (the key that gets pressed with the Open-Apple key to execute that command). Also note that the "Edit" command has been renamed to "ScsiUtils".

You should also be aware of the fact that the format for our built-in backup/restore has changed in order to streamline the code and make room for the new features. This means that a backup made with a V2.xx RamFAST/SCSI will NOT be able to be restored with a V3.xx RamFAST/SCSI and vice-versa. Therefore, if you are using the built-in backup/restore features of the RamFAST/SCSI you should make a backup before installing the new version in case anything happens, and you should also make a new backup after the installation so that you have a backup compatible with the new ROMs. If you bought the RamFAST/SCSI with V3.xx installed then just ignore this paragraph.

New RamFAST/SCSI Options

There are two new options in the Options menu: HD Backup and Short Timeout.

HD Backup is used to allow backups to hard drives for those people who like to backup to a SyQuest Removable HD or similar HD (this replaces the need to "poke" a value into \$8004 to enable this feature).

Short Timeout is for people that like to leave some of their drives turned off (such as a tape drive). If the RamFAST/SCSI finds configuration data with this option enabled then it will stop looking for devices after 3 seconds instead of the normal 30 seconds.

Device Selection for ScsiUtils, Backup, and Restore

When one of these commands is executed, if there is only one (1) device that is a valid choice then it will be selected automatically without the need for you to pick it from the list of Online SCSI Devices.

When you execute ScsiUtils with only one SCSI drive hooked up to the RamFAST/SCSI it will be selected automatically and you will be moved to the SCSI Utilities screen.

When you execute Backup or Restore your tape drive will be selected automatically as the destination or source (respectively) unless you have enabled the HD Backup option.