

GVP

IMPACT

Series II

SERIES II

A500 HD



USER'S GUIDE

This manual is the Copyright © 1990 of Great Valley Products, Inc. All Rights Reserved. This document may not, in whole or in part, be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine readable form, without prior consent, in writing, of Great Valley Products, Inc.

GVP, Impact, Impact Series II, DPRC, and FaaastPrep are registered trademarks of Great Valley Products, Inc.

Amiga is a registered trademark of Commodore-Amiga, Inc. Commodore is a registered trademark of Commodore Electronics Limited. Macintosh is a registered trademark of Apple Computers, Inc.

TABLE OF CONTENTS

Introduction	1
Installing RAM in Your A500-HD Series II	2
Installing the Impact A500-HD Series II on the Amiga A500	6
Installing Additional Hard Drives on the GVP Impact Series II SCSI/RAM Controller	8
Partitioning and Formating Using FaaastPrep	10
Programmer's Documentation	14
Technical Specifications	21
Warranty Information	23

NOTE:

Please remember to send in your warranty registration card.



INTRODUCTION

The Great Valley Products (GVP) Impact A500 Series II product line offers a high performance add-on peripheral product for the Commodore Amiga computer system. This manual serves as the User's Guide for the Impact A500-HD Series II hard drive controller.

A key feature of all GVP Series II SCSI/RAM controllers is the new GVP DPRC. The DPRC is a custom Dual-Port RAM Controller chip that was designed exclusively by GVP and is currently only available on GVP Series II SCSI/RAM controller products. The DPRC allows GVP to achieve some of the fastest SCSI transfer rates of any controller in the Amiga market.

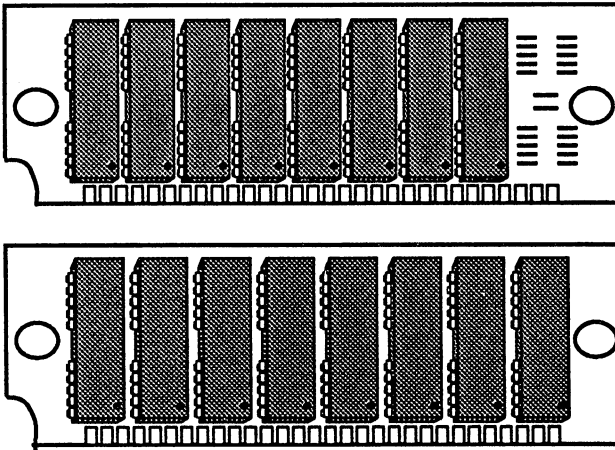
Another important feature of the Impact A500-HD Series II controller is the GVP MiniSlot™. This slot will allow Impact A500-HD Series II owners to expand their A500 like they never thought possible. Look in the near future for more exciting products from GVP using the GVP MiniSlot™.

INSTALLING RAM IN YOUR A500-HD SERIES II

Adding RAM to the Impact A500 is relatively simple and requires only a few steps.

The RAM that should be used is 100ns (nanosecond) or faster, page mode DRAM SIMMs. DRAM stands for Dynamic Random Access Memory while SIMM stands for Single Inline Memory Module. SIMMs are used because of the ease of installation as well as the space they save. The Impact A500 uses 1Mx8 SIMMs for all the memory settings but the eight (8) megabyte setting. The 8M setting uses 4Mx8 SIMMs. When two of these SIMMs are inserted and the proper jumper settings are used, you will have 8M of expansion RAM in your Amiga system.

The more common SIMM is the 1Mx8 version. This SIMM comes in two different styles and to avoid confusion both of the SIMMs shown below can be used:



In order to install additional RAM in your Impact A500-HD Series II it is necessary to disconnect it from the Amiga A500 and follow the following steps:

Step 1:

Once the Impact unit has been disconnected from the Amiga A500 it is very important that you disconnect the external power supply from the Impact A500 before opening up its case.

Warning:

Disconnect the power supply from the Impact A500-HD Series II before removing its cover to install any additional options. Installing any product with the power connected could possibly cause injury to yourself and damage the equipment. Great Valley Products cannot be held responsible for any damages or injuries caused by improper installation of any options installed in the Impact A500-HD Series II. Such improper installation will void all warranties both on the Amiga A500 itself and on the Impact A500-HD Series II.

Step 2:

Turn the Impact A500-HD Series II unit over on its top surface so that the bottom of the unit is facing up. Remove the five(5) screws, on the bottom of the unit, that are marked with arrows. Put these screws in a safe place as they are needed to close the unit up later.

Now, carefully turn the unit over while holding the top and bottom together in order to prevent the bottom from falling out. Once the unit is resting on its bottom, it is safe to lift the cover off, being very careful with the two sets of wires running from the cover to the base. You can either leave these wires connected and have the cover of the unit rest on its side or you can disconnect these wires, making note of where they are connected to. If you decide to disconnect the wires, you should pull the wire off the base by pulling on the plug at the end of the wire, not on the wire itself.

Once the cover is off, you will be able to open up the RAM access compartment. To open this compartment, all you have to do is lift off the metal shield cover. Once the cover is off, you will be able access the RAM expansion sockets and the RAM jumpers.

Step 3:

You should now set the proper jumper settings so that the Impact A500 unit will know how much RAM you will be installing.

Once you have located the proper jumpers it will be necessary to refer to the chart below to determine the jumper settings:

Memory	SIMM Location	J5	J6	J7	J8	J9	J12
0	None	OFF	OFF	ON	ON	OFF	Inboard Side
2	CN9-CN10	OFF	ON	OFF	ON	OFF	Outboard Side
4	CN9-CN12	ON	OFF	OFF	ON	OFF	Outboard Side
8	CN9-CN10	ON	OFF	OFF	OFF	ON	Outboard Side

The jumpers are set by moving the small black plastic blocks that cover their pins to the proper jumpers according to the chart above.

Step 4:

Once the jumpers have been set, it is time to install the RAM. The SIMMs must be inserted in a specific order. They go in from the socket closest to the front, to the socket closest to the rear of the unit. (CN9 thru CN12)

The SIMMs can only be inserted in one direction since they are keyed. This key prevents the SIMMs from being inserted backwards and being damaged. Once the SIMM is in its socket, apply slight pressure to the top of the SIMM to ensure that it is properly seated. When the SIMM is being seated, it will generally snap into place.

Step 5:

Now replace the RAM access cover and make sure that the wires running from the unit's cover are attached properly (if you disconnected them). Next, replace the unit's plastic cover by gently pushing it over the metal base. Be careful not to catch any of the wires from the cover when replacing the unit's plastic cover.

Once the cover has been placed over the metal base, turn the unit over being careful to hold it together until it is resting on a flat surface. Now replace the five screws that hold the cover down and re-install the unit as per chapter 1.

INSTALLING THE IMPACT A500-HD SERIES II ON THE AMIGA A500

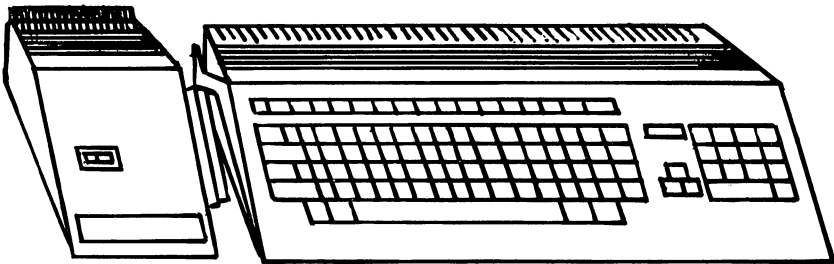
The Impact A500-HD Series II was designed and styled to match your Amiga A500. Once installed, the Impact A500-HD Series II will look like it was originally part of your Amiga system.

Step 1:

First it is necessary to remove the expansion cover on the Amiga A500. This is a small plastic cover on the left side of the Amiga A500. Please refer to your Amiga A500 users guide for more information on removing this cover.

Step 2:

In order to attach the Impact A500 unit to your Amiga A500 all that is necessary to do is slide the Impact unit into the expansion slot on the A500. The diagram below shows how this should be done:



Once the units are together, apply slight pressure to the side of the Impact unit to ensure that it is fully seated.

Warning

Never ship or move your Amiga A500 with the GVP Impact A500-HD Series II connected. Serious damage can occur if these units are shipped or moved together. Always disconnect the GVP Impact A500-HD Series II unit from the Amiga A500 when shipping or moving either of the units. Great Valley Products cannot be held responsible for damages or injuries caused by improper installation of the Impact A500-HD Series II. Such improper installation or transportation will void all warranties on the Amiga A500 itself and on the GVP Impact A500-HD Series II.

Step 3:

Once the unit is properly seated to the Amiga A500 you should connect the power supply. The power supply included with your GVP Impact A500-HD Series II has a round, five-pin connector on one end. This end is plugged into the back of the Impact A500 unit. Insert the connector as far as it will go and connect the other end of the power supply into a three-prong grounded outlet. GVP recommends that the Amiga A500, it's monitor, and the GVP Impact unit get plugged into a power strip with one master power switch. In this configuration all three units can be powered on at once.

Step 4:

Now turn on all the units with the power strip. At the workbench prompt insert the disk that came with your GVP Impact unit into the floppy drive on the Amiga A500. Please refer to Chapter 3 in order to initialize your drive.

Note: *The switch on the top of the Impact A500 unit is an Autobooting switch. When this switch is to the left (Game Switch position) your hard drive will not autoboot. This position is used for programs that do not like autobooting. When this occurs, reset your machine with this switch to the left and insert your program diskette in the floppy drive of the Amiga.*

Otherwise this switch must be kept to the right, in the Autoboot position. When in this position your hard drive will autoboot without the need for a boot floppy. Also when initializing a new hard drive this switch must be to the right, in the Autoboot position.

4

INSTALLING ADDITIONAL HARD DRIVES ON THE GVP IMPACT SERIES II SCSI/RAM CONTROLLER

Up to seven SCSI peripheral devices can be attached to any GVP Impact Series II controller. These devices may be hard disk drives, tape drives, CD-ROMs, etc. There are a few concepts to understand about the SCSI interface that should be explained before you do the actual installation.

SCSI ID:

Each SCSI peripheral must have its own SCSI ID. SCSI IDs range from zero to seven. However, the Impact Series II controller itself uses SCSI ID number seven. Therefore no other SCSI peripheral may use a SCSI ID = 7.

Terminating the SCSI Bus:

Since SCSI devices are chained one after another in a "daisy chain," the last device needs some special attention. The end of the SCSI bus must be terminated with *terminating resistors*. Terminating resistor packs are small plastic packages, usually with eight pins coming out of them. The figure below shows a typical resistor pack:



Note: Some SCSI peripherals do not have terminating packs, instead they have terminating plugs/connectors which serve the same purpose. Please refer to the appropriate user's guide for more information.

Only the last SCSI device in the chain should contain the resistor packs. It is essential that the terminating resistor packs are removed from all but the last SCSI device. If there are both internal and external SCSI devices, then the last *external* SCSI device is considered to be the last

device, therefore using the terminating resistor packs. This means that all the terminating resistor packs have to be removed from all the other SCSI devices. *Please note that GVP removes all terminating resistor packs on hard drives that are mounted on our controllers, so removing them is not necessary.*

Cabling:

When multiple SCSI devices are used, there are special cabling considerations to be taken into account. When only internal SCSI devices are being used, a "daisy-chain" cable is used. This cable is a flat 50-pin ribbon cable with multiple connections. In other words, this cable can be started at one SCSI device and then connected to a second and then to a third and so on.

If external SCSI devices are being used, they need a different cable. The cable they use is wrapped in a thin metal foil providing a shield as per FCC regulation. This is necessary so that the signals leaving your computer do not interfere with other electronic devices. This cable attaches to the back of the GVP Impact Series II controller through a 25-pin connector. The other end of the cable usually has a 50-pin shielded connector which attaches to the external SCSI device. Both the internal and external SCSI cables are available through your authorized GVP dealer.

PARTITIONING AND FORMATTING USING FAAASTPREP

Included with your GVP Impact Series II hard drive controller is our new FaaastPrep Utility. This utility will allow you unprecedented versatility when working with your hard disk, whether it be a SCSI drive or an AT/IDE drive.

In order to utilize the full power of FaaastPrep, we will first give you a brief overview of this utility. When executing this utility by double clicking on the FaaastPrep icon, you will be presented with a startup screen offering you several options. Your first choice is whether you are going to use this utility on your SCSI drive or your AT drive. In order to switch between these two options, there is a small gadget in the middle of the screen.

The next option concerns automatic versus manual installation. The following is a brief description of both choices:

Automatic: This is the easiest of the two selections when installing a hard drive. This option requires a minimum of input from the user and is the fastest way to set up your hard drive. The Automatic Installation is appropriate for novice users, as well as for those who desire a rapid hard drive installation without the immediate need for special options.

Manual: This option gives the experienced user total control over their hard drive. Parameters such as boot priority, max transfer, and buffer size may be altered for any partition even after the drive has been previously partitioned and already contains data. Other parameters such as low and high cylinders are also alterable. The manual mode is recommended for the experienced user only.

Note: *Hard drives previously prepped using the old GVP drivers can be re-prepped and updated for the new driver using the Automatic mode. Using the Automatic mode to re-prepare your hard drive will retain any data currently on the drive. Entering Automatic mode will present you with a request stating that your drive was already prepped and formatted. Clicking on the "Proceed" gadget will reprep your drive.*

Automatic Mode Instructions:

Once you have chosen SCSI or AT you must then click on the Automatic gadget. You will then be presented with the installation

screen for the automatic mode. FaaastPrep will default to drive ID number zero, if you are installing a drive other than ID number zero, click on the "Skip to Next" gadget to proceed to the next available unit.

Once you have chosen your correct ID number, FaaastPrep will read in some information regarding the drive and display it on the left hand side of the screen. Now, enter the number of partitions into which your drive will be divided by clicking on the appropriate gadget and entering your desired value. Followed by a return. Please note that due to limitations in the Amiga's file system, only one partition is allowed on removable media devices. (Please refer to the chapter titled "Programmer's Documentation" for more information.)

Next, FaaastPrep will automatically divide the total storage capacity into equal sizes. If you do *not* want the partitions to be the same size, all you have to do is to position the cursor in the partition size box and alter the number within the box. Always finish with the RETURN key. Please note that in the lower left hand corner of the screen are two drive size indicators for your reference.

Once you have entered the number of partitions and their respective sizes, you must decide the partition names. FaaastPrep will offer you default partition names which you may change or accept. If you change the names, just position the cursor in the partition name box and re-type the name followed by a return.

Note: *Prep/Format will erase all data currently on the target drive.*

Once everything is to your preference, click on the "Prep/Format" gadget to send this structural data to your drive. Once FaaastPrep is finished, the drive will be prepped and formatted.

Software Installation:

Once your hard drive has been installed and initialized, it will be ready to accept software. Your hard drive partitions act just like large floppy disks, only much faster. This means that copying to and from the hard disk is the same as if you were copying between floppy diskettes.

Some software requires special hard drive installation routines to access them from a hard drive. It is recommended that you consult the software manual that came with the software on how to install it on a hard drive.

You will also want to consult your AmigaDOS manual on additional information regarding copying.

Manual Mode Features:

Low Level Format: This will instruct a hard drive to complete a low level format on itself. Low level format will also present a screen allowing you to enter the interleave for the target drive. An interleave of zero(0) tells the drive to use its own default setting for interleave. Any other number will create an interleave of that number to one (1) (i.e. 1=1:1, 2=2:1, 3=3:1, etc.). Note that certain drives such as Quantum and Maxtor do not allow you to change the interleave value, they always default to 1:1. Also, low level format will completely erase the drive.

Note: *This function is not implemented for AT drives.*

Bad Block Re-Map: This will re-map any defective blocks that a drive may have while keeping the data intact. This re-map will attempt to restore any data found on the bad blocks themselves. Also, you should always back up your hard drive prior to a bad block re-map.

Note: *This function is not implemented for AT drives.*

DOS Format: This is the equivalent of the AmigaDOS format.

Read: Reads the rigid disk block and the partition block of the target hard drive.

Write: Writes the data you specified to the rigid disk block and the partition block of the target drive.

Unprep: Erases the first 64 blocks, removing the rigid disk boot block and the partition blocks.

Auto: When enabled, this will automatically adjust cylinders, heads, and sectors according to your specification. (i.e. When entering sectors FaaastPrep will automatically re-calculate high cylinders.) This will also automatically calculate high and low cylinder values according to partition size values.

FileSys: File system type. FFS-Fast File System, OFS-Old File System, AFS-Alternate File System (currently not utilized).

Mem: Type of memory that the buffers are allocated from. E-either fast or chip, C-Chip, F-Fast. Do not use Fast unless there will always be Fast memory available!

Mask: Address Mask to specify memory range that DMA transfers can use.

< >: Use these gadgets to change the target drives ID number.

In this chapter, we will explain some of the more technical details related to GVP's SCSI software which are useful to know if you want to program the SCSI driver or if you want to improve the performance even further. Some sections (and the example programs on the distribution disk) assume some familiarity with the Amiga's I/O system, especially the way the trackdisk.device works. For an introduction, see [3, Chapter 19 and Chapter 42].

Initialization

The GVP device driver must be opened via the exec.library's OpenDevice() call. It requires a standard I/O request, the "flags" parameter must currently be set to zero. Here is an example:

```
struct MsgPort *mp;
struct IOStdReq *io;

if((mp = CreatePort(NULL, 0)) != NULL)
{
  if((io = CreateStdIO(mp)) != NULL)
  {
    if(OpenDevice("gvpscsi.device", UNIT, io, 0) == 0)
    {
      /* SCSI commands go HERE */

      CloseDevice(io);
    }
    DeleteStdIO(io);
  }
  DeletePort(mp);
}
```

GVP's SCSI driver adheres to the standard defined in the include file <devices/scsidisk.h>, so the unit number has the following meaning: The 100s digit is the board number (our driver supports any number of boards), the 10s digit is the logical unit number (LUN), and the 1s digit is the SCSI target ID. The host adapter itself currently uses target ID 7 (HFERR_SelfUnit on OpenDevice()), but this is subject to change. For

further information, see [2, pages D-16 and D-17] and [2, pages E-17 and E-18]. The driver automatically recognizes all GVP SCSI controller boards in the system.

Trackdisk Commands

GVP's SCSI driver supports the following trackdisk.device commands (see [2, pages B-70 to B-76] for the official documentation on the trackdisk.device and [2, pages D-19 and D-20] and [2, pages E-20 and E-21] for the corresponding include file definitions):

CMD_READ
CMD_WRITE
TD_FORMAT
TD_MOTOR
TD_SEEK
CMD_UPDATE
CMD_CLEAR
TD_REMOVE
TD_CHANGENUM
TD_CHANGESTATE
TD_PROTSTATUS
TD_ADDCHANGEINT
TD_REMCHANGEINT

gvpscsi.device will automatically support *any* block size up to 64 kilobytes that is a power of two, so the io_Length and io_Offset parameters for the CMD_READ, CMD_WRITE and TD_FORMAT commands do not necessarily have to be multiples of TD_SECTOR (512) bytes, even though the 1.3 file systems (ROM and FFS) do not support other block sizes. It is possible, however, to use SCSI devices with a block size *smaller* than 512 bytes (e.g. 20-meg Iomega Bernoulli with 256-bytes sectors), since our SCSI driver will handle requests of any size as long as it is a multiple of the current logical block size as understood by the SCSI drive. This is also the reason our new driver does not require the MountList MaxTransfer kludge as most other drivers do (i.e. MaxTransfer is 0x7FFFFFFF). This results in much faster transfer of large data blocks.

In contrast to trackdisk.device V1.3 or earlier, TD_REMCHANGEINT *does work!* Use of TD_REMOVE is not recommended, since this might interfere with the file system. The current versions of the Amiga file

systems do not make use of the TD_ADD/REMCHANGEINT calls, since many drivers do not support them or simply crash. Therefore you should not use more than one partition on any removable medium!

Always make sure the motor is turned off using TD_MOTOR after CMD_READ, CMD_WRITE or TD_FORMAT, since otherwise you might not be able to eject removable media cartridges (e.g. SyQuest).

Direct SCSI Commands

The Commodore SCSI standard provides for a way of sending raw SCSI commands that do not fit into the Amiga's I/O system to the device. This way, a programmer can use any command supported by the SCSI device's firmware. Here's an example on how this feature can be used:

```
struct IOStdReq *io;
struct SCSCmd SC;
UBYTE command[12];

io->io_Command      = HD_SCSCMD;
io->io_Length       = sizeof(struct SCSCmd);
io->io_Data         = (APTR)&SC;

SC.scsi_Data        = (UWORD *)scsidata;
SC.scsi_Length      = scsilength;
SC.scsi_Command     = command;
SC.scsi_CmdLength   = 6;
SC.scsi_Flags       = SCSCIF_READ | SCSCIF_AUTOSENSE;
SC.scsi_SenseData   = sensedata;
SC.scsi_SenseLength = MAXSENSE;
SC.scsi_SenseActual = 0;

command[0] = scsicmp;
command[1] = LUN << 5;
command[2] = 0;
command[3] = 0;
command[4] = scsilength;
command[5] = 0;

DoIO(io);

/* ... */
```

HD_SCSICMD is the name of the Exec command being used, io_Length is always set to sizeof(struct SCSICmd), io_Data points to the SCSICmd structure. The SCSICmd structure in turn points to the memory area for the SCSI data and the Request Sense data. It also contains fields for data length and SCSI status information.

For a complete example on HD_SCSICMD, see the distribution disk. Make sure you also read and understand the section "Memory Requirements". One more restriction: Don't use HD_SCSICMD to perform block I/O on disk devices, use the trackdisk commands (CMD_READ, CMD_WRITE) instead!

The SCSIF_AUTOSENSE feature requires the use of the latest version of <devices/scsidisk.h>, which is, unfortunately, not included with the Version 5.05 of the Lattice C compiler. It can, however, be obtained from Commodore Applications and Technical Support (CATS) as part of the Native Developer Update Kit 1.3.

Memory Requirements

There are certain restrictions on the memory regions that can be used when dealing with SCSI DMA controllers. These restrictions do not necessarily apply to the GVP SCSI controller boards and/or drivers, they should, however, be taken into account when writing software that is supposed to work with other manufacturer's SCSI controllers.

Memory regions used for DMA should be at least word-aligned, some controllers (none of GVP's though) even require longword-alignment. This is easily achieved with the AllocMem() call. The other requirement is related to the type of memory used: Since most SCSI controllers are Zorro-II devices (i.e. designed for the A2000 with its 24-bit address bus), they can only DMA into the lower 16 megabytes of the Amiga's address space. If you happen to have a RAM expansion board that is located outside the address range \$00000000 to \$00FFFFFF or one that does not support DMA, you must restrict all SCSI data transfers to those regions of memory that do support DMA. In the worst case, this is Chip memory only, so you should allocate data buffers with the MEMF_CHIP attribute and set the MountList Mask-parameter to 0x1FFFFF (Chip memory only). Unfortunately, there is no way a programmer can request Zorro-II memory without traversing the free-memory list. None of these restric-

tions apply to the GVP Impact Series I SCSI controllers, and usually it is sufficient to use a Mask value of 0xFFFFFE. Please refer to your RAM expansion manual for further information.

Summary: For CMD_READ, CMD_WRITE and TD_FORMAT, io_Data should be at least word-aligned and point to DMA-able memory. io_Length should be an even number of bytes. For HD_SCSICMD the same restrictions apply to scsi_Data, scsi_SenseData, scsi_Length and scsi_SenseLength. scsi_Length should not exceed the 24-bit limit.

MountList and the Rigid Disk Block

GVP's SCSI software adheres completely to Commodore's Rigid Disk Block standard. This allows automounting/autobooting with alternate file systems (non-ROM file systems). We also support the FileSystem.resource and file system version numbers, so the SCSI driver will automatically use a later ROM file system if one is available. This enables you to use the Kickstart 2.0 ROM file system and all of its new features, even though the drive might have been prepped with the 1.3 FFS. It also requires much less memory.

One other advantage of the RDB standard is that you can move hard drives and cartridges between different manufacturers' controllers and boot from them without having to re-prepare anything.

VUPrep

The RDB standard is defined in [2, pages D-5 and D-6], [2, pages E-6 and E-7], and [3, pages 538-545].

Speeding up the Autoboot Process

During autoboot, the SCSI device driver scans the SCSI bus for all devices currently connected. Unfortunately, this takes a few seconds, so you might want to breakout of this loop if you do not have the maximum of seven SCSI devices connected to your Amiga. This can be done by setting the "Last Disk", "Last LUN" or "Last TID" flags of the RDB, which will result in a slightly faster autoboot process.

Removable Media

gvpscsi.device fully supports removable media (e.g. SyQuest, Iomega Bernoulli, Ricoh) by implementing the trackdisk commands TD_REMOVE, TD_ADDCHANGEINT and TD_REMCHANGEINT. The 1.3.2 Fast File System, however, does not make use of them, so you would really have to use the old ROM file system if you wanted to use removable media. Since this is not an acceptable solution, our SCSI driver uses some special tricks to tell the FFS about media changes. One drawback, however, still applies: Workbench icons might change to "BAD" instead of disappearing after you remove a cartridge.

GvpMount is a small utility that can be used to mount removable media that have not been inserted at boot-time. Simply call it without any command line options. Option "-s" will cause GvpMount to stick around until all SyQuests etc. have been mounted (default if you start it from Workbench). This way it can be "Run" in your "Startup-Sequence".

Disconnect

Version 3 of the GVP SCSI device driver automatically enables all SCSI devices to "disconnect" if more than one is connected. This means that if a SCSI device detects that an operation might take longer than usual (due to seeks etc.), it will release the SCSI bus and give other SCSI devices a chance to operate. Imagine an Amiga with a hard drive and a tape unit: Without the disconnect feature, every time your backup-software would rewind the tape, you could do absolutely nothing with your hard drive until the operation was complete! The same applies for example to low-level formatting of hard drives, which usually takes a few minutes. Under gvpscsi.device, the SCSI will send the driver a message that it is releasing the bus and yet another message when the low-level format is done. Between these two messages, all other SCSI devices can operate normally, they could even disconnect as well. This is similar to the Amiga's multitasking ability where one task releases the processor (i.e. "goes to sleep") until an external event takes place, thereby giving other tasks a chance to run.

The disconnect feature has a slightly higher per-command overhead than the "nasty" mode which "holds" the SCSI bus until the command is completed. With the GVP Impact Series I SCSI controllers, writing very large blocks of data can also be slightly slower in disconnect-mode. If you do not normally operate with several SCSI devices at the same time, you might wish to disable the Disconnect/Reselect feature. If you only have a single SCSI device connected, the driver will use the nasty mode by default.

References:

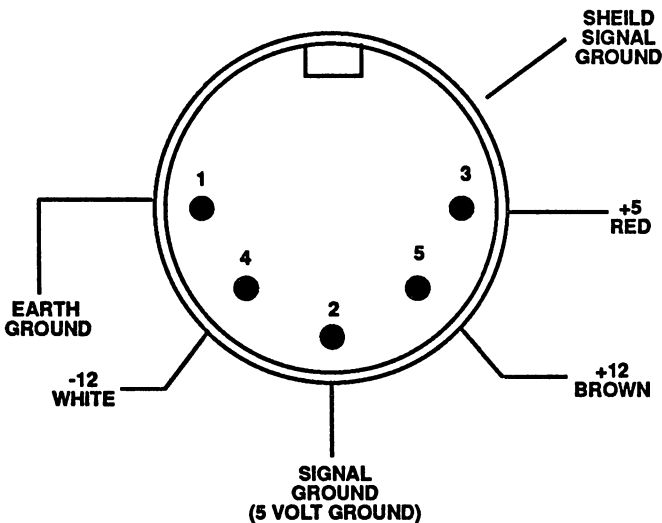
[1] American National Standard for Information Systems - Small Computer System Interface (SCSI), ANSI X3.131-1986, American National Standards Institute, Inc.

[2] Commodore-Amiga, Inc.: Amiga ROM Kernel Reference Manual: Includes & Autodocs, 1989, ISBN 0-201-18177-0, Addison-Wesley Publishing Company, Inc.

[3] Commodore-Amiga, Inc.: Amiga ROM Kernel Reference Manual: Libraries & Devices, 1989, ISBN 0-201-18187-8, Addison-Wesley Publishing Company, Inc.

TECHNICAL SPECIFICATIONS

- Combination four (4) megabyte, zero-waitstate, Fast RAM controller and ANSI X3T9.2 compatible SCSI controller
- Supports up to seven (7) SCSI peripherals
- High performance DMA transfers to and from hard disk.
- SCSI data transfer rates of up to 3.58MB/sec for SCSI peripherals
- Amiga 500 expansion bus host interface
- Auto-configs both Fast RAM and SCSI controller
- Internal 50-pin SCSI connector
- External 25-pin SCSI connector (DB25). Macintosh-compatible pinout
- Power requirements: +5V, +/-5%, +12V, -12V, 2.2 Amps maximum
- Ambient temperature: 0° - 55° C
- Relative Humidity: 20% - 80%



EXTERNAL SCSI CONNECTOR PINOUT (DB-25) FEMALE

Pin	Name	Pin	Name
1	REQ	14	Ground
2	MSG	15	C/D
3	I/O	16	Ground
4	RST	17	ATN
5	ACK	18	Ground
6	BSY	19	SEL
7	Ground	20	DB(P)
8	DB(0)	21	DB(1)
9	Ground	22	DB(2)
10	DB(3)	23	DB(4)
11	DB(5)	24	Ground
12	DB(6)	25	TPWR
13	DB(7)		

INTERNAL SCSI CONNECTOR PINOUT

	Pin	Name
	50	I/O
	48	REQ
	46	C/D
	44	SEL
	42	MSG
	40	RST
	38	ACK
	36	BSY
	34	Ground
	32	ATN
	30	Ground
	28	Ground
	26	Not Used
	24	Ground
	22	Ground
	20	Ground
	18	DB(P)
	16	DB(7)
	14	DB(6)
	12	DB(5)
	10	DB(4)
	8	DB(3)
	6	DB(2)
	4	DB(1)
	2	DB(0)

All odd pins, except pin 25, are ground. Pin 25 is not used.

WARRANTY

For a period of one year from the date of purchase, Great Valley Products warrants to the original purchaser that the hardware shall be free from manufacturing defects.

This warranty is applicable only to the original purchaser who purchased the product directly from Great Valley Products or from an authorized dealer. This warranty shall be void if the unit has been subjected to improper or abnormal use, or if modified or dismantled in any way. If a defect occurs during the warranty period, the unit must be returned, postage paid, in original packaging, to the place of purchase, together with the sales receipt.

The Purchaser's sole and exclusive remedy in the event of defect is limited to the correction of the defect by adjustment, repair, replacement, or refund at Great Valley Products' election. Great Valley Products will in no event be liable for any direct, indirect, or consequential damages to any equipment used with any hardware or software sold by Great Valley Products.

Any software provided is sold or licenced "AS IS". The entire risk as to its quality, performance, or fitness for any particular purpose is assumed by the buyer. Should the software prove to be defective following purchase, the buyer assumes the entire cost of all necessary servicing, repair, or correction of any incidental or consequential damages.

Any statements made by Great Valley Products and its employees, including but not limited to, statement regarding capacity, suitability, or performance of the unit shall not be deemed a warranty or representation of Great Valley Products for any purpose, nor give rise to any liability or obligation of Great Valley Products.

215-337-8770

GVP

213 214 -0000
Creative

60

GVP

GREAT VALLEY PRODUCTS INC.

600 Clark Avenue, King of Prussia, PA 19406

215-337-8770

FAX 215-337-9922