

# New Hardware Solution

REVIEWS BY MORTON KEVELSON

## How to Add a Macintosh Hard Drive to Your A-Max Amiga Disk Manager Mac for the Trumpcard

\*\*\*\*

**Disk Manager Mac overcomes the biggest drawback of the A-Max Macintosh emulator. But it works only with the IVS Trumpcard hard disk controller.**

**A**s pointed out in the *AMIGA Plus* A-Max review (October/November 1989) running a Macintosh without hard disk capability is a frustrating limitation. But now **Disk Manager Mac** lets you put partitions for the A-Max Macintosh emulator onto your Amiga hard disk.

Disk Manager Mac software was

developed by Ontrack Computer Systems and is actually a Macintosh program which manages hard disk formatting and partitioning. Interactive Video Systems (IVS) added A-Max hooks for this software to work with the IVS \$199.95 Trumpcard SCSI hard disk controller (reviewed in the August/September 1989 *AMIGA Plus*).

### Setting Up

As with IVS' user-friendly TCUtils setup software for the Trumpcard, Disk Manager Mac is very easy to install and use. If you are already using a Trumpcard, your hard drive will need to be reformatted — so back up all your files before starting installation. If you have just plugged in your new Trumpcard, Disk Manager Mac should be the first step in setting up. The procedure is started by booting A-Max. When you are prompted for the Macintosh system disk, simply insert the Disk Manager Mac disk, which includes the newest version of Macintosh system and finder software.

Disk Manager Mac starts like any other Macintosh program. The make and model of your hard disk will be automatically determined and you will be presented with the program's working screen. The next step is to perform a low level format and verification of the hard drive. You then have the option of creating one or more Macintosh partitions on your hard disk.

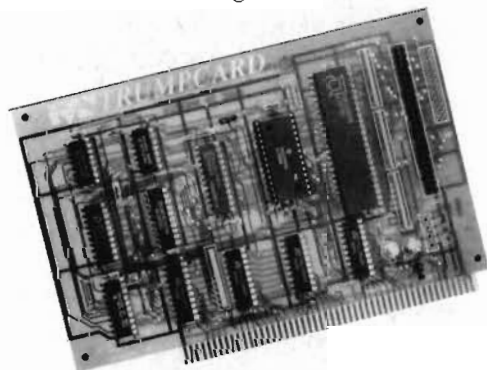
After all the partitions have been

completed and the software drivers are installed, the Macintosh system files are copied from the floppy disk onto the hard drive. Your pseudo-Mac should then be rebooted using the Shut Down option from the Special menu. Remove the Disk Manager Mac disk before restarting. At this point the Macintosh should reboot from the hard disk.

Shut Down the Macintosh once again and reboot the computer from the Trumpcard software disk using the CONTROL-AMIGA-AMIGA key combination. This disk has been modified to automatically recognize the presence of any Macintosh partitions. The Mac partitions will be automatically rearranged to be compatible with AmigaDOS and the Amiga's operating environment. The rest of the hard drive can now be set up with multiple AmigaDOS partitions, using the Trumpcard's installation software. Note that the Disk Manager Mac program should not be used again unless you intend to reformat the entire hard disk. The Mac partition rearrangement, which was performed by the IVS TCUtils software, is not compatible with Disk Manager Mac.

### Performance

To use your hard disk with A-Max you will still have to insert a copy of  
(continued on page 84)



**Revision 3.1 of the Trumpcard hard drive controller card.**

developed by Ontrack Computer Systems and is actually a Macintosh program which manages hard disk for-

# ons From IVS

## How to Add Two Amiga Printer Ports Printerface

+++ 1/2

**Have you ever tried to get a screen dump while working with your video digitizer? You probably couldn't, but here is a workable solution.**

**P**arallel port peripherals are common accessories for the Amiga. Most personal computer printers, video digitizers, sound samplers and scanners are designed to use the parallel port. The Amiga's parallel port is more than a simple printer connection. It is a fully configured, bi-directional, eight-bit, input/output port. This means it is capable of sending as well as receiving data, a byte at a time, at very high speeds. In fact, the parallel port can be configured to simultaneously send and receive digital data.

Therefore, as you add more peripherals to your Amiga system, several peripherals will often compete for the use of the parallel port. Virtually all video digitizers, scanners and sound samplers have software drivers that can send a graphic screen dump or other information to the printer. This is usually impossible while the associated device is in use, because most printers connect to the parallel port as well.

The most obvious solution is to re-

move the peripheral and reconnect the printer cable, a procedure that is neither convenient nor without risk. Switching cables on the parallel port while the computer is turned on creates some risk of damaging the equipment. A parallel port switchbox avoids the need to swap cables, but creates other problems. These multi-contact, electromechanical switches don't eliminate the possibility of damage to the port. Furthermore, the low cost switches which are used in many of these boxes tend to get noisy and unreliable after some time.

The ideal solution would be to install additional parallel ports in the Amiga. Although these devices are available for MS/DOS machines, they have yet to make an appearance for the Amiga. The **Printerface**, from Interactive Video Systems (IVS), is a low-cost alternative to additional parallel ports.

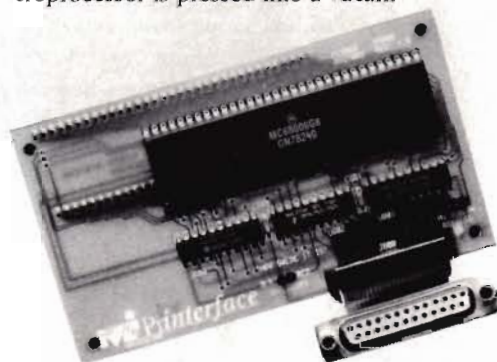
The Printerface is based on a very simple premise. Requirements for driving a printer place the minimum possible demands on the Amiga's parallel port. Printers only expect to receive data from the computer while providing little or nothing in return. In fact, only a single input line is required.

### The Hardware

Printerface consists of a 3 X 5 inch

printed circuit board, a flat ribbon cable, a 25-pin connector on a mounting plate and some software. It is designed for use with either the Amiga 500 or the 2000. Although installation is not terribly difficult, it may be more than some users are willing to do by themselves. The computer has to be opened, the main circuit board must be exposed and the 68000 microprocessor has to be located and removed. In the Amiga 2000, the drive bay assemblies with associated disk drives and the power supply must be disconnected and removed.

The Printerface circuit board is then plugged into the now empty microprocessor socket and the 68000 microprocessor is pressed into a vacant



**Printerface ready for installation in the Amiga 2000. The address change jumper is at lower right.**

socket on the Printerface. On the Amiga 2000, the installation is completed by routing the flat ribbon cable to the rear of the machine and installing the mounting plate with its associated 25-pin connector in one of  
(continued on page 84)

(Disk Manager Mac from page 82)  
the Disk Manager Mac floppy disk when prompted for the Macintosh system software. The presence of Macintosh hard disk partitions will be automatically detected and the Mac will be shut down and restarted from the hard drive. At this point the floppy disk will no longer be required.

As for the speed of the system, it took me 10 seconds to boot MicroSoft Word from the hard disk as compared to 19 seconds from the Amiga's floppy drive, a two-to-one improvement. Of course raw drive speed is not the only reason for a hard disk on the Macintosh. Many top Mac programs require a prohibitive amount of disk swapping to run, or they might be too big to run at all without a hard disk. Compatibility of the Trumpcard system with the Macintosh is excellent. According to IVS, you can even remove the physical hard disk from your Amiga, install it on a Mac and boot from it. If you have a removable media system on both the Amiga and a Mac, it is possible to transport your cartridges between the two systems.

### Trumpcard Update

While reviewing Disk Manager Mac I also had a look at the new 3.1 version of the IVS Trumpcard. The layout of the circuit board has been completely revised and several minor enhancements have been added. The board now includes a hardware jumper to allow selection between AmigaDOS 1.2 and Amiga DOS 1.3. The AmigaDOS 1.3 option now boots directly from a fast file system partition. For Amiga 2000 installation, a pair of pins have been added to allow for the quick connection of the hard drive LED which is provided on the computer's front panel.

### Conclusions

At this writing, the Trumpcard with Disk Manager Mac is the only hard disk game in town for A-Max users. Fortunately it is a good game indeed. ■

(Printerface from page 83)

the two cutouts which are located right behind the co-processor slot. On the Amiga 500, the ribbon cable is routed out the computer's expansion port on the left side of the machine. The mounting plate is removed and the 25 pin connector is left hanging there — a workable, although somewhat inelegant solution.

Two Printerfaces can be installed in the 2000 by piggybacking the second on top of the first. The microprocessor is then plugged into the second Printerface. There is not enough space inside the Amiga 500 to do this.

### The Software

There are several ways to use the Printerface. The included software disk contains a variety of icon-driven script files which will automatically configure your system to meet your requirements. Note that each of these installation procedures will change one or more files on your boot disk. The installation procedures must also be repeated for all of the applications disks that you boot from and wish to access the Printerface from.

The first software option is to replace the original Amiga Parallel.device driver file with the Printerface.device driver file. This file diverts to the Printerface all output which is normally sent to the parallel port. This arrangement should divert all printer output to the Printerface since the Amiga's Printer.device sends its output via the Parallel.device. Both the Parallel.device and the Printer.device are standard device drivers found in the devs: directory on your Workbench disk. This approach works very well with digitizers, samplers and scanners because their software accesses the parallel port hardware directly in order to achieve their required data transfer speeds.

A second installation option modifies the Amiga's Printer.device driver so that it accesses the Printerface.device driver file instead of the original Parallel.device. This leaves

the original Parallel.device file unchanged on your Workbench disk. This approach should be used with applications that access the Amiga's parallel port via the Parallel.device driver file. It will still divert the Printer.device driver file to the Printerface. Unfortunately, the documentation that accompanies most applications software does not usually tell you how it accesses the Amiga's parallel port.

A third option is to patch your applications software. The supplied Patcher program scans the application's program file and replaces any calls to the Parallel.device with a call to the Printerface device driver. This does not always work because there is no guarantee that the applications software works this way.

The third option is for users who install two Printerfaces in their computer.

Another set of three programs on the Printerface disk lets you divert parallel port output being sent via the Printer.device, to either of the Printerfaces or to the Amiga's parallel port. This is a temporary setting which disappears when the computer is rebooted. Of course it is always possible to modify your startup-sequence so that one of the above three ports will be automatically chosen for printer output whenever the system is rebooted.

### Conclusions

Printerface is a workable solution for a specific problem. It is inexpensive and does the job, although it may not be what everyone needs. If it suits your application and if you can handle the installation, then the Printerface is well worth considering. ■

*Mort Kevelson is an electrical engineer at New York's Con Edison and a well-known Amiga hardware reviewer*

|                                                                                                  |           |
|--------------------------------------------------------------------------------------------------|-----------|
| DISK MANAGER MAC                                                                                 | \$ 119.95 |
| TRUMPCARD 3.1                                                                                    | \$199.95  |
| PRINTERFACE                                                                                      | \$ 99.95  |
| Interactive Video Systems, 11612 Knott Avenue, Suite 13, Garden Grove, CA 92641. (714) 890-7040. |           |