TEXAS INSTRUMENTS

Randy's Ravings

by Randy Holcomb

This month's column is devoted to reviews of some new software and hardware. First we will examine the CorComp DSDD Disk Controller Card, then we will look at some new software from Technologies Support Group.

CorComp 9900
Disk Controller
Double Density Controller for the 99/4A
Sugg. Retail $199.95
CorComp, Inc.
1225 N. Tustin Ave.
Anaheim, CA 92807

After many, many months of waiting by loyal TI users, CorComp began shipping their new Double Density Disk Controller, which had promises of increased performance, double the disk capacity over the current TI controller, and a reasonable price. Well, in my case Veit's New Product Law ("Nothing ever works right until Revision E") held true. The story follows:

In the middle of August, I visited a local dealer who had just got in a DEMO model of the CorComp Disk Controller Card. The Card was "supposedly" capable of running disks in double density mode (360 kbytes per disk) and handling up to 4 drives (versus 3 of the TI disk controller) and offered new disk management software and some new subroutine calls for BASIC and Extended BASIC to perform all sorts of strange (but powerful) functions. The disk management software also included an assembly language loader to load assembly language programs without having to resort to the Editor/Assembler module. Well, being somewhat adventuresome I whipped out the plastic and bought it to see if all these wonderful things they were claiming were true. Well, with this demo card I had, those claims were way off base.

For starters, the disk management software was incomplete and many of the functions relating to disk management weren't implemented. Also, it appeared that the controller's inability to handle disk errors properly was a cause for concern: I would initialize a disk, it would verify OK but then would come up with an error later during a non-destructive test; the worst part of that problem was the fact I was using diskettes that were certified double-sided double-density. After a few frustrating days, I finally packed the board off express mail back to CorComp and requested a current PRODUCTION model. After placing a phone call to Anaheim to find out about the delay in shipping the replacement card arrived. Later on I learned that the original card I bought should have NEVER gotten out because of problems with the design. But I got that card, and so did a lot of other people. Happily, it appears that CorComp has gotten the major bugs out of their card and that they have indeed delivered on their specs.

```
DISK MANAGER V 2.1
Select Option:

   1. File Utilities

   2. Disk Utilities

   3. Disk Tests

   4. Configure Manager

   Written by Steve Mildon
```

Figure 1 - Disk Manager Main Menu

```
File Utilities
Select Option: 2
   1. Copy/Rename/Delete
      Change Protection

   2. Load and Run
      (Assembly file)

Drive No. : 1
Disk Name :
Free                Used

File Name :

Program Name :
```

Figure 2 - Load and Run Option Menu

Does the card work? At this time it appears that CorComp has delivered on their promises. Most of the major points addressed have been tested and function as documented. Of course, there have been some pieces of software that for some reason do not want to work with the new card, but for the most part the most popular software titles function with the CorComp card.

Performance Characteristics. Some pretty interesting claims have been as to the speed differential between the CorComp card versus the TI controller. Most noticeable differences between the speeds can be attributed to the fact that there are now 18 256-byte sectors per track in double-density mode versus 9 sectors in single density. (The difference between single and double density lies in the fact that the data in single density diskettes is stored in every other clock cycle written to the disk, wherein in double density the data is encoded into the clock signal.) Also notable is, on the CorComp controller you can select up to 4 head-step rates (selected by a bank of DIP switches inside the disk controller card) depending on the kind of drive you have. Right now on my system I have two Qume 142s and have no problems at the lowest step rate (3ms), and most drives on the market can easily handle this rate. If you've ever wondered why your TI drives sounded so noisy it's because of a high delay step rate. The shorter step-rate for the head will make a marked difference in the performance of accessing files that are heavily fractured ("broken up" in many small segments). In terms of data transfer rate, tests that I conducted between single and double density showed a modest 80% improvement while doing a Bad-blocks scan using the P-system *FILER*. More exhaustive tests will need to be conducted, but for now it should suffice to say that there is a modest, rather than a tremendous, speed gain with the CorComp card.

Powering-up the System with the CorComp card in place takes on a new format. Instead of the color bar logo the CorComp card literally takes control of your system and displays its own menu, with option 1 being the load of the disk manager, 2 Selecting TI BASIC, and 3 and 4 the options should you have a module plugged in. There is a bug with some cartridges not showing up in this new menu, in which case you hit the space bar TWICE which will turn control back over to the regular ROM monitor in the console to handle those cartridges (Ie, Plato, ROM-only cartridges, etc.)

The Disk Manager. The most talked-about feature of the CorComp Controller is its disk management software. As opposed to the old Disk Manager Cartridge from TI this manager is disk resident (and takes up 98 sectors in image format no less!) and is loaded from Option 1 of the Disk Controller power-up screen. The Disk manager software provides an easier alternative to the clumsiness of having to switch back and forth between the Disk manager cartridge and any other application cartridges you may be using, and is also easier to use. In addition to the normal disk management functions it contains an assembly-language program loader to load standard tagged object files

Continued on page 150

```
DSK1.TIMP                    Page 1 of 2
  22 Files    Free 666   Used 774

CMD Filename   Size    Type          P
--- --------- ----  ----------      -
 N  ASSM1       33  Program           U
 N  ASSM2       28  Program           U
 N  BSCSUP      15  Dis/Fix   80      U
 N  CHARA1       9  Program           U
 N  CHESS        7  Dis/Var   80      U
 N  DEBUG       32  Dis/Fix   80      U
 N  DISASMBLR   30  Dis/Fix   80      P
 N  DISKFIXER   34  Dis/Fix   80      P
 N  EDIT1       25  Program           U
 N  EDITA1      33  Program           U
 N  EDITA2       6  Program           U
 N  FORMA1      33  Program           U
 N  FORMA2      15  Program           U
 N  MANAGER     98  Program           P
 N  MPBASE      41  Program           U
 N  MPCHAR       9  Program           U
 N  MPCHAR1      9  Program           U
 N  MPDATA      33  Program           U
   Turn Page with CTRL E - CTRL K

DSK1.TIMP                    Page 2 of 2
  22 Files    Free 666   Used 774

CMD Filename   Size    Type          P
--- --------- ----  ----------      -
 N  MPHLP      150  Int/Fix   128     U
 N  MPINTR      33  Program           U
 N  OVERLAY     31  Int/Fix   128     U
 N  TE3         68  Dis/Fix   80      U
   Turn Page with CTRL E - CTRL X
```

Figure 3— Copy/Rename/Delete

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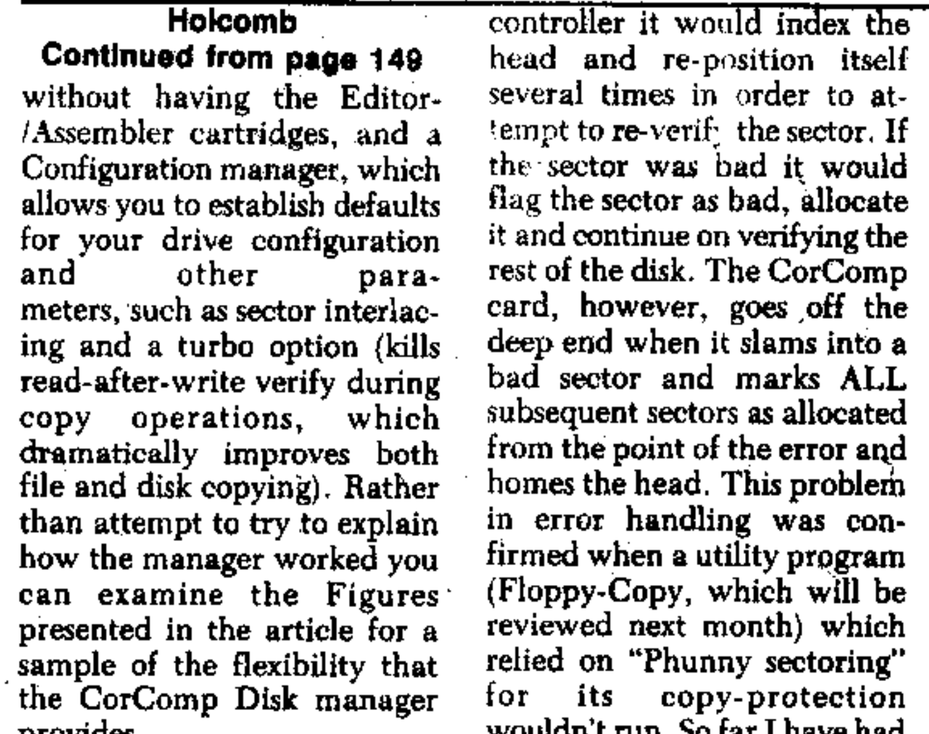
without having the Editor-/Assembler cartridges, and a Configuration manager, which allows you to establish defaults for your drive configuration and other parameters, such as sector interlacing and a turbo option (kills read-after-write verify during copy operations, which dramatically improves both file and disk copying). Rather than attempt to try to explain how the manager worked you can examine the Figures presented in the article for a sample of the flexibility that the CorComp Disk manager provides.

Caveats. Remember Veit's law that I quoted earlier? Well, there's at least one anomaly with the CorComp card that is different in implementation than the TI controller and it bothers me. The problem is during initialization of disks. When you hit a bad sector during the verify phase of an initialize disk with the TI controller it would index the head and re-position itself several times in order to attempt to re-verify the sector. If the sector was bad it would flag the sector as bad, allocate it and continue on verifying the rest of the disk. The CorComp card, however, goes off the deep end when it slams into a bad sector and marks ALL subsequent sectors as allocated from the point of the error and homes the head. This problem in error handling was confirmed when a utility program (Floppy-Copy, which will be reviewed next month) which relied on "Phunny sectoring" for its copy-protection wouldn't run. So far I have had very few disks that have shown up with errors, but the point is that if a device that is supposed to be compatible with the 99/4A it should be upward-compatible and act accordingly (which it fails in this case; however, for most user applications it is insignificant). Other quirks: You can use your old TI Disk Manager II cartridge but it will not be able to copy CorComp's own Disk manager software. Also, initializing a disk in double-sided double/density mode using the DM II cartridge seems to take FOREVER.

A special prompt comes up during initialization of a disk using the CorComp manager which asks if you want to install the manager on the disk you are initializing.

Should YOU Buy The Card? Yes, if you do not intend to dump your system for a while and/or you are in a disk storage crisis. If you choose to purchase the card; here are some things you may want to do PRIOR to actually getting the card: (1) Find a dealer who has or is willing to PRE-TEST the card. There may still be a number of the pre-production models loose, so do some checking around. (2) If your disk drives are over a year old, have them PROFESSIONALLY cleaned and aligned and checked AT DOUBLE DENSITY. This will insure that if any problems exist that they will be with the controller card or media and NOT your drives. (3) Use media that is CERTIFIED DSDD. Though it may cost a few cents more it's worth having media that is up to spec than losing your data to questionable media. (You're also reading one of the best places for finding the BEST prices on diskettes, too!) Finally, once

Continued on page 151



```
Disk Utilities

Select Option: 4

  1. Catalog

  2. Copy Disk

  3. Rename

  4. Initialize

Drive No. : 1
Disk Name :
Free                Used

Tracks/Side : 40
No. Sides : 2
Density S/D : D
```

Figure 4 - Disk Initialization Menu

New Multi-User Multi-Tasking Family Offers High Performance

SMOKE SIGNAL announces a wide range of 32-bit, UNIX-based computers with disk capacities up to 150M bytes. Dubbed VAR/68K, the desktop systems are for the benefit of value-added resellers, systems integrators, OEM's and end users.

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VAR/68K systems incorporate automatic task-switching hardware that minimizes the time necessary to go between supervisor - and user-operating modes. VAR/68K's dynamic address translation feature incorporates a high speed memory design that eliminates wait states. Each segment of memory can be protected against write and execute operations, or completely protected against any access at all.

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Minimum configuration for a VAR/68K consists of the computer, a single terminal with keyboard, 1M byte of flexible disk, 5M bytes of hard disk, eight RS-232C serial ports, a Centronics-type parallel port and REGULUS operating system.

Fully-configured systems include 1M byte of RAM, 150M bytes of hard disk, 60M bytes of ¼-inch streaming tape backup, 16 serial ports, and four 8-bit parallel ports.

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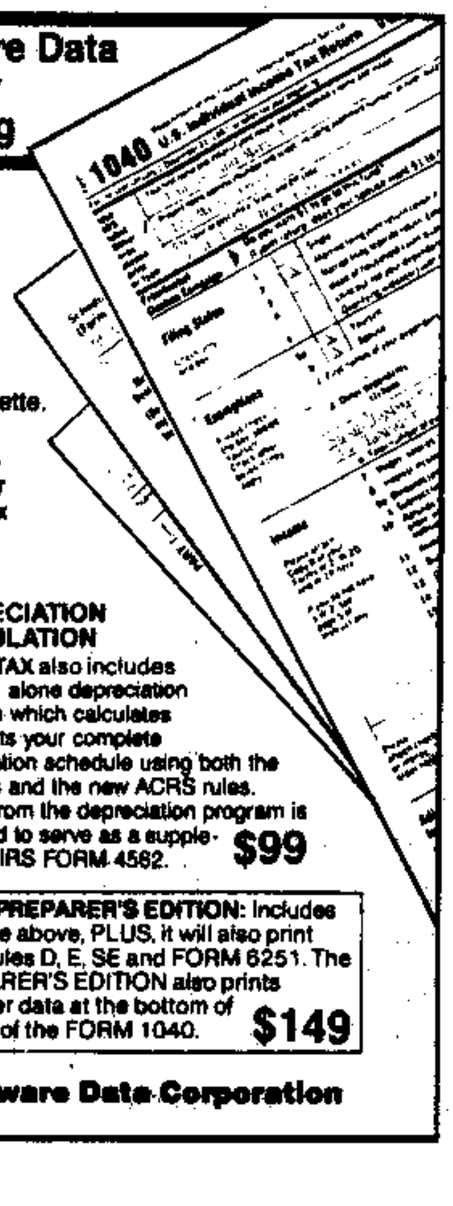

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Continued from page 150

you have the card, burn the card in your system for a while and note any erratic operations. If after several hours of use if all seems well then you probably have a keeper. CorComp's controller warranty is 120 days.

The Documentation, written by W.R. Mosied and Craig Miller, does a nice job explaining the functions of the controller, the disk manager software, the Tool Shed Utilities (VDP Reads and writes, VDP register routines) and includes a nice memory map for the 9918A VDP and the BASIC/Extended BASIC environment. The disk that comes with the controller contains many demo programs that show how to use the tool shed utilities so I won't bother repeating them here. All in all, the CorComp Disk controller card, with all the hoopla and false starts, appears to be all that any TI 99/4A user will need for quite a LONG time. It will be interesting to see how (and when) CorComp can top this one. (Egads, I may have to eat my own words after all.)

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These new releases from TSG are some of the kinds of things you may find useful on some occasion: Multi-Sort, which is a generalized data management program for maintaining things such as mailing lists and other entities in a numeric sequence; Auto-Type, for running off quickie one or two page letters live to your printer if it prints the characters live as opposed to buffering them (like the Smith-Corona TP I); Pro-Mod I, which allows an Extended BASIC programmer to do some pretty wild things to programs in MERGE format, like delete types of commands, global search/replace, delete single/multiple lines, insert lines; and for PROGRAM format files it can extract portions of programs and Downconvert

```
                Confisure Manager

Drive Confisuration

Drive 1                 Drive 2
Tracks/Side : 40        Tracks/Side : 40
No. Sides   : 2         No. Sides   : 2
Density S/D : D         Density S/D : D

Drive 3                 Drive 4
Tracks/Side : 40        Tracks/Side : 40
No. Sides   : 2         No. Sides   : 2
Density S/D : D         Density S/D : D

  From                    To
  Drive No. : 1           Drive No. : 2

Output Configuration
RS232/2.BA=9600_____________________
------------------------------------

Screen Colors 5    Text Color  : 16

PRESS CTRL X FOR NEXT PAGE

                Page 2 of 2

Single Density Interlace : 7
(1-10)

Double Density Interlace : 10
(1-11)

Enable Turbo Option Y/N  : Y

SAVE CONFIGURATION TO DISK Y/N : Y

PRESS CTRL E FOR PREVIOUS PAGE
```

Figure 5—
Disk Configuration Manager Menu

Continued on page 152

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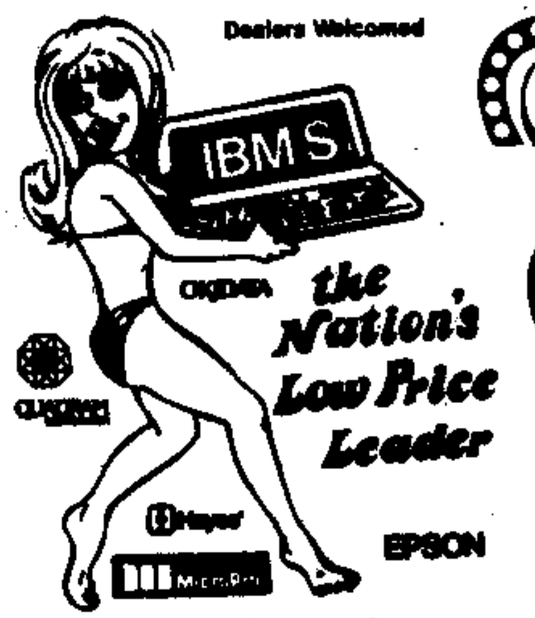

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