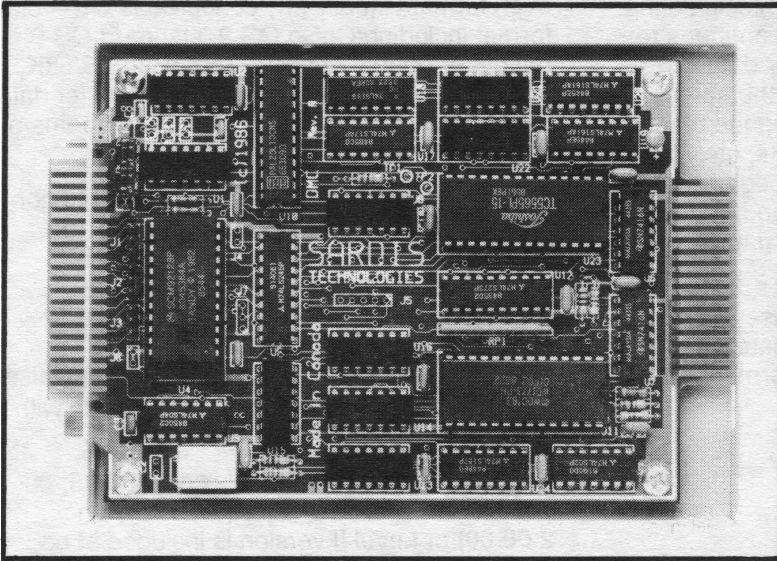


The New DMC Disk Controller

"Advanced Design, Superior Performance"



Did you know ...?

... that every time the CoCo accesses the floppy disk drives for either reading or writing, the 6809E microprocessor not only has its interrupts temporarily masked (disabled), but the processor is also actually halted (stopped)? You don't have to fully understand the technical details to notice the resulting symptoms:

- every time the disks are accessed, the keyboard or mouse briefly "lock up"
- after using the disks a lot, the OS-9 clock has lost time
- when you use the nifty type-ahead feature of OS-9, many of the characters you key are "lost", so you have to retype the whole line
- you're using the CoCo as a real-time data acquisition system in the lab, but every time some accumulated data is written to disk, several new data samples are lost
- you try to make use of the multi-tasking capability of OS-9 by listing a large file to the printer while you're on-line to a BBS, reading messages. But every time the print job

accesses the disk for more data, it "tears a hole" in the incoming messages.

The problems mentioned above are magnified with OS-9 Level II and Multi-View, because they make it easier to run several disk-using programs simultaneously. Interestingly, the waste of processing power caused by constantly halting the processor is up to twice as bad with the CoCo 3 as with the CoCo 2! This is because the CoCo 3 can run at twice the speed, so twice as many instructions could have been executed during the time the 6809E is halted.

The fault lies not with the CoCo itself, nor with OS-9, but with the disk controller, and in this regard all the other units currently on the market (Radio Shack, Disto, J&M, Hard Drive Specialist, etc.) are alike.

Now the good news!

With the new DMC (Dual Mode Controller) Sardis Technologies introduces a new generation of "no halt" controllers.

In order to maintain full compatibility with all your existing software, the DMC retains the current Radio Shack "halt" mode of operation. But it also adds a new "no halt" mode of operation -- it can read from or write to disk all by itself, during which time the 6809E processor continues to run independently, crunching your data, scanning the keyboard, writing to the screen, servicing the serial port(s), updating the real-time clock, responding to interrupts, etc. The processor is only involved at the beginning (to initiate the read/write operation), and at the end (to check the status and move the data to main memory).

As a result, the keyboard and mouse are more responsive, screen updates are faster and smoother, and higher overall performance is achieved.

Other features:

- works with CoCo 1, 2, and 3 (Multi-Pak required)
- runs at either .895 MHz or 1.79 MHz speeds
- all-digital data separation/precompensation – no adjustments needed
- single and double density
- gold plated card-edge connectors for reliability
- black aluminum case
- ROM socket takes 24 pin or 28 pin chips
- dual DOS capability (external switch optional)
- comes with RSDOS 1.1 installed
- 8K bytes cache memory on board (32K optional)
- buffered data bus
- uses the Western Digital WD1773 controller chip

Software Support

The DMC package includes a version of D.P. Johnson's SDISK that has been adapted to make full use of the DMC controller's "no halt" mode under OS-9. Lets you use 35, 40 or 80

track drives (incl. accessing 35 or 40 track disks on an 80 track drive), up to 4 single-sided or 3 double-sided drives, and set different step rates for each drive. It can also read, write, and even format virtually any conceivable OS-9 disk format including CoCo OS-9, standard OS-9 (single or double density), MIZAR OS-9/68K, and Japanese OS-9. This lets you transfer data between the CoCo and other OS-9 systems by diskette.

In addition, SDISK lets you read and write non OS-9 disks that have sector lengths of 128, 256, 512 or 1024 bytes. This allows D.P. Johnson's PC-XFER package (available separately for \$45) to read/write/format IBM-PC/MS-DOS disks, etc. Other software packages to be released in the future may also require this feature, which is not available with the standard Radio Shack drivers.

SDISK alone would normally cost \$35.95, but your choice of a Level I (requires version 2.00.00) or Level II version is included at no extra cost.

Ordering Information

- DMC controller with RSDOS 1.1 and SDISK (specify Level I or II) \$149.50
- second version of SDISK (specify) \$call
- prices quoted in \$US, shipping costs extra
- payment by check, money order, VISA
- 120 day warranty

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(specifications and prices subject to change without notice).

Questions & Answers

Is a Multi-Pak Interface required?

Well, yes *and* no. The DMC controller *will* work when used *without* the Multi-Pak by plugging the controller directly into the CoCo's cartridge slot. But, since the DMC draws somewhat more power than Radio Shack says may be drawn from the expansion slot, the CoCo's power supply could overheat a bit. Therefore, we recommend that you always use the DMC controller with a Multi-Pak, or other similar device, and *never* with a Y-cable.

What if I'm not using OS-9?

Software that runs under Radio Shack Disk Extended BASIC works just fine on the DMC controller. It does *not*, however, run differently or any better than on most other controllers. But wait — even if you're not running OS-9 now, you probably will in the near future, as much of the new software being released is for OS-9. And when you do start using OS-9, it will be so much more enjoyable if your disk controller is capable of "no halt" processing.

The manual does include sample machine language "no halt" disk read and write routines that you can incorporate into non-OS9 programs you write yourself, but they need to be used in conjunction with interrupt driven I/O routines (for keyboard, serial ports, etc.) to give any real benefit.

I'm in the U.S.A. and you're in Canada. How does that work?

We are currently shipping to all U.S. locations from Blaine in Washington state, and units being returned for warranty work can be sent to us via Blaine as well. We've tried to "erase" the border for you.

How do you provide dual DOS capability with only one ROM socket?

Good question! Obviously you can't just take the two ROM chips and plug them into the one socket. What you do is take the two DOS's you want to install and have someone "burn" them into a single 27128 or 27256 EPROM, one into the lower half of the EPROM, the other into the upper half. Our manual has instructions on how you can then install a switch to select either DOS. If one of the DOS's you are installing is Spectrosystems' ADOS, you would need to have an EPROM burned anyways.

Can I buy the DMC without the RSDOS 1.1 ROM?

Yes, if you already have the ROM, we can ship the DMC without it. Instructions are included in the manual on how to install the ROM yourself. Deduct \$12 off the DMC price.

I already have D.P. Johnson's SDISK. Can I buy the DMC without the SDISK you supply?

Like the song says, "you can't have one without the other," and for a very good reason. Merely installing the hardware portion of the DMC package gains you little (except for reliable 2 MHz operation, dual DOS capability, etc.). Sure, all your software, including OS-9 Level I or II, with or without your copy of SDISK, will run fine. But it will only run in the old-fashioned "halt" mode, same as on any of the other disk controllers. Only when Sardis Technologies' modified version of the SDISK software is installed, is the DMC's new "no halt" mode invoked.

Do you support Disk Caching? *

Yes! The caching function retains the most recently accessed data from disk in RAM. Subsequent accesses to that same data are lightning fast, and with no wear or tear on your disk drives. Since the DMC controller has its own on-board 8K or 32K RAM to use for the cache, valuable main memory is freed. You will get the most benefit from disk caching if you have the 32K option installed.

In what ways is disk caching better than a RAM-Disk? The caching action is automatic, so there is no need for you to copy a file to buffer memory. No new drive name is used, so you don't need to patch programs that have "/D0" hardcoded. All modified data is automatically and immediately written to disk, so you won't lose data because you forgot to copy an updated file back to disk, or a power failure "erased" it. Of course, you can always use a RAM-Disk in addition to disk caching.

If I buy the 8K version, can I later upgrade it to 32K myself?

Yes, all that is involved is to unplug the 8Kx8 static RAM chip and replace it with one 32Kx8 static RAM chip. This chip is available from several mailorder suppliers. No jumpers need to be changed, as the hardware and software automatically detect which size of RAM is installed. Complete instructions are

included in the manual.

How long have you been in business?

Sardis Technologies was formed in early 1983 and began shipping its first product, a 6809 based single board computer, in mid 1984. Since then we've found customers in 14 countries on 5 continents. We're specializing in products that use or enhance the 6809 microprocessor, and have been working with Motorola microprocessors since 1976.

Price List (U.S.A.) effective Sept. 21/87

| | (\$US) |
|--|---------------|
| DMC controller with RSDOS 1.1 and SDISK | \$149.50 |
| DMC controller with SDISK (no ROM) | \$137.50 |
| 32K cache RAM option | add \$16.00 * |
| both Level I and Level II version of SDISK | add \$19.00 * |
| shipping/handling fee | \$5.00 |
| C.O.D. fee | add \$4.00 |

* when ordered at the same time as the controller

Shipping information: unless you request otherwise, we will ship by UPS, so need a street address, not postal box number.

Terms: we accept payment by check, money order, or VISA (sorry, not Mastercard yet)

Warranty: 120 day limited warranty



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