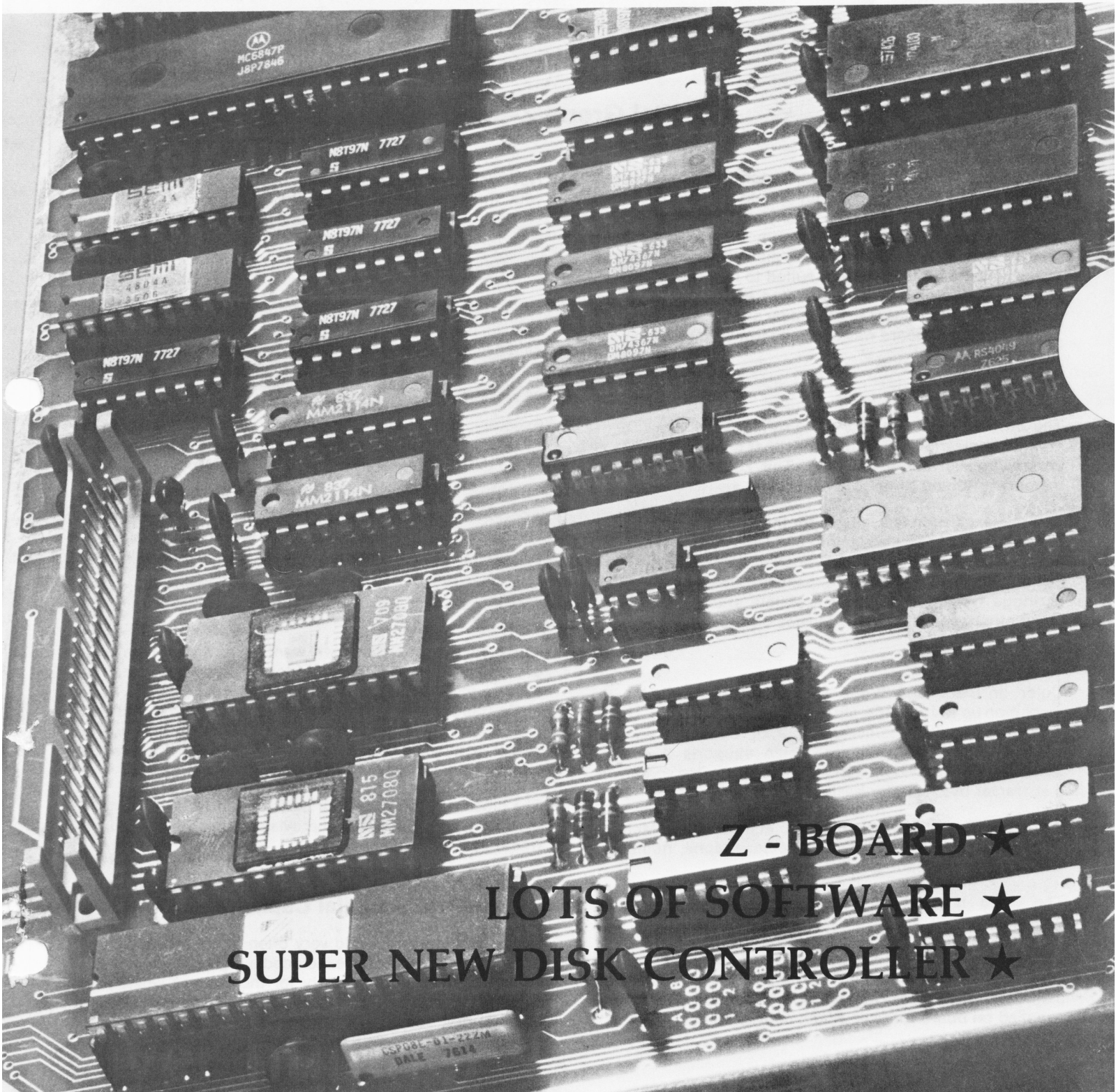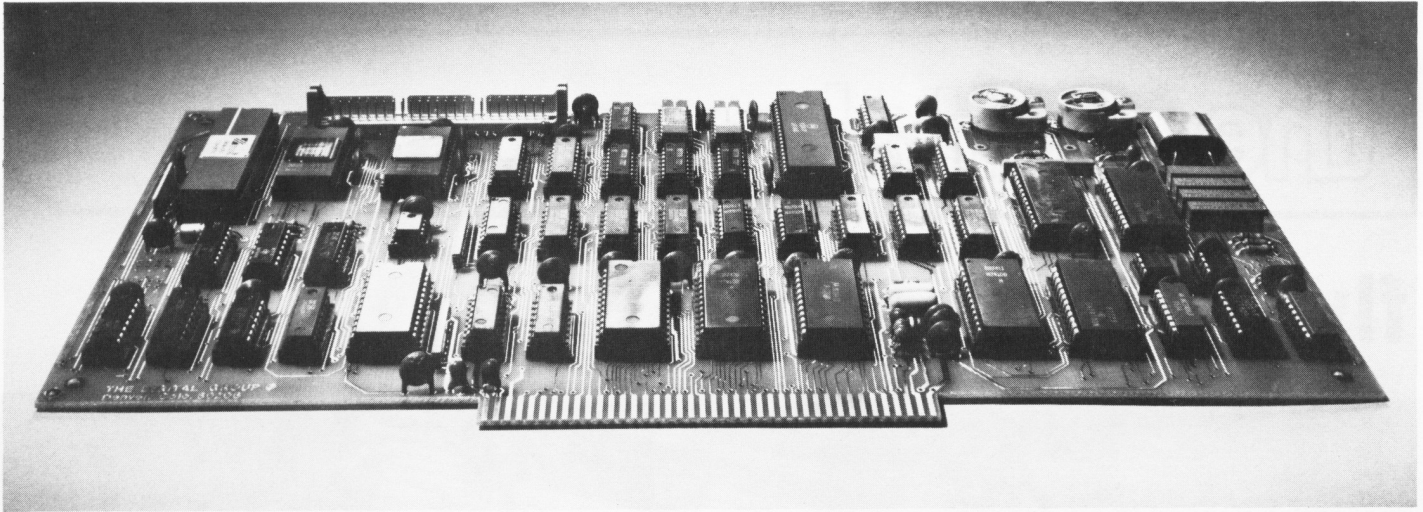# the digital group inc

flyer number 15

Z - BOARD ★
LOTS OF SOFTWARE ★
SUPER NEW DISK CONTROLLER ★

NEW PRODUCTS — HARDWARE

Digital Group Z-Board

The Digital Group is pleased to announce the Z-Board - a full computer on a single board with 6 major functions - more useful functions standard than on any other board currently available! This is not an "appliance computer" such as Radio Shack's and the like - you can really sink your teeth into this one! The Z-Board is especially suited to run direct-entered machine code or externally generated assembler language programs for the utmost in efficiency and performance per dollar. And the Z-Board was designed from top to bottom by Dr. Robert Suding.

The CPU:

The Z-Board has a fast Z80A CPU running at 3.58MHz with all those powerful Z80 instructions that come in handy for controlling just about anything. The Z80A has available memory on-board of up to 2K RAM and 4K ROM.

External expansion is available for the Z-Board. In addition to uncommitted ports, all major Z80A CPU lines are brought out to a single expansion socket for extending its capabilities. This provides an expansion capability for either cartridge type approaches or possible attachment to the many other special purpose devices on the market.

Video Interface:

Color or Black and White Graphics is supported with resolution up to 128 by 64. Up to 8 colors are available. There is a tradeoff between color versus graphic density. The worst case is 128 by 64 graphics which supports 2 colors. Alphanumerics may be mixed with graphics on the screen on a character by character basis.

Alphanumerics are supplied with 16 lines of 32 characters. The character set consists of uppercase alpha, numbers, punctuation, and special symbols.

The video is memory mapped for high-speed motion capabilities.

Direct Video Output is supported for interfacing to b/w or color monitors (an external video amplifier is required - not included). Provisions for an RF modulator circuit are supplied on board for user attachment to standard tv sets.

Now you can implement your own controller application with the Digital Group Z-Board and draw labelled color pictures to help your users quickly understand what your system is doing and saying!

Calculator:

For less than 200 bytes of interfacing software, your Z-Board has all the power of a complete scientific floating point calculator. The calculation speed isn't overwhelming but the functions available and the memory savings are.

RPN notation is standard with a full 8 digits plus 2-digit exponent supported.

Sample Functions:

+	Pi
-	y raised to the x
*	e raised to the x
div.	Trig functions
	Log functions

Time-of-Day Clock:

Many times, your Z-Board will want to know what time it is in order to determine if it should take some time-dependent action such as turning on your sprinklers, etc. With the Time-of-Day clock on the system this becomes routine. There are 6 digits available so that you can time events to the second. There is also an alarm function which can be used to interrupt the processor at a predetermined time.

The clock runs on a 12-hour basis and provides an AM/PM indicator. Backup battery provisions are also available (requires user implementation).

Digital to Analog and Analog to Digital Capabilities:

Sad to say, the real world very often is not inclined to be digital. Therefore, we have included a digital-to-analog and an analog-to-digital capability for those times when your computer needs to talk to devices (such as temperature sensors) that don't understand digital.

The digital-to-analog convertor has 8 bits of resolution (Motorola 1408P8 or equivalent).

The analog-to-digital converter is a DVM chip with plus or minus 1999 counts of resolution.

Input/Output Ports:

With a fully-loaded Z-Board there are still 2 8-bit Input ports and 2 8-bit output ports that are uncommitted. These are particularly handy for communicating with other systems and devices that do converse digitally.

If you are willing to eliminate some of the other capabilities of the computer, more ports can be made available - up to 6 input ports and 5 output ports for those applications that need a large number of ports (and not much else).

Power Requirements:

> 5V at less than 3 Amps
> 12V at less than 1 Amp
> -12V at less than 1 Amp
> -5V at less than 1 Amp

If you've got a 5V power supply than can supply 3 Amps, then our PWR-0 will provide the other 3 required voltages nicely.

Software:

Z-Board base-level software is supplied in a 1K 2708 EPROM. The functions provided are:
> Dump Memory
> Program Memory
> Video Editor
> Keyboard Support

Additional routines are provided for basic support for each of the devices on the computer. The routines are provided in object and source code. We've also included a routine to down-load object programs from Digital Group mainframe-based systems via a port-to-port interface. That means it's really easy to use the Oasis Macro Assembler or any of our other Assemblers to create programs for the Z-Board. *Note:* The Z-Board in its present configuration will not run high-level languages such as Maxi-Basic.

And all this capability comes on a board that is 12" by 6" (plus connector).

Additional equipment needed for operation:

> Power Supply
>   and, depending on the type of installation:
> TV Set (color or b&w) or Monitor (requires external video amplifier.) and
> Inexpensive keyboard (like George Risk 6 or eq.) or Digital Group System (to download from)
> Access to a 2708/2716 EPROM programmer would also be handy.

Z-Board Specification Summary:

> Z80A at 3.58 MHz (Standard Color TV Frequency)
> 2K RAM (Up to 1K used for Video)
> 2K-4K ROM (2 each 2708 or 2716 - 1K supplied)
>
> Video Interface:
>   32 characters by 16 lines
>   Color & B&W Graphics - up to 128 by 64
>   Up to 8 colors
>   Alphanumerics mix with graphics (selectable by characters)
>   Direct Video Output possible
>   Provisions for Color RF Modulator Circuitry on board
>
> Calculator - 8-digit Scientific
>
> Time-of-Day Clock 6 digit with interrupt (alarm)
>
> 2 Uncommitted 8-bit Input Ports
> 2 Uncommitted 8-bit latching Output Ports
>
> A to DVM Converter - /- 1999 counts
>
> D to A Converter - 8 bit
>
> Software:
>   1K Operating System EPROM
>   1K Device Support Routines
>
> Significant Expansion Capabilities Designed In
>
> Power Requirements:
>   5V at 3A, &- 12V and -5V at less than 1A
>
> Size:
>   12" by 6" plus connector

The base card edge connector is a 25 pin dual readout with 50 pins total on .1" centers (supplied).

The expansion connections are via a dual 25 .1" center connector (supplied).

> Availability:
>   100 units on May 15, 1979
>   Additional units subject to normal shipment dates.

Introductory Pricing:

Order Code	Kit	Assembled	Wt
Z-BOARD1	$345.00	$445.00	3

These prices are available for a limited time only.

And this is only the beginning. Coming very quickly for the Z-Board will be a special motherboard, power supply, EPROM programmer, and much more!

Disk Controller - Double Density
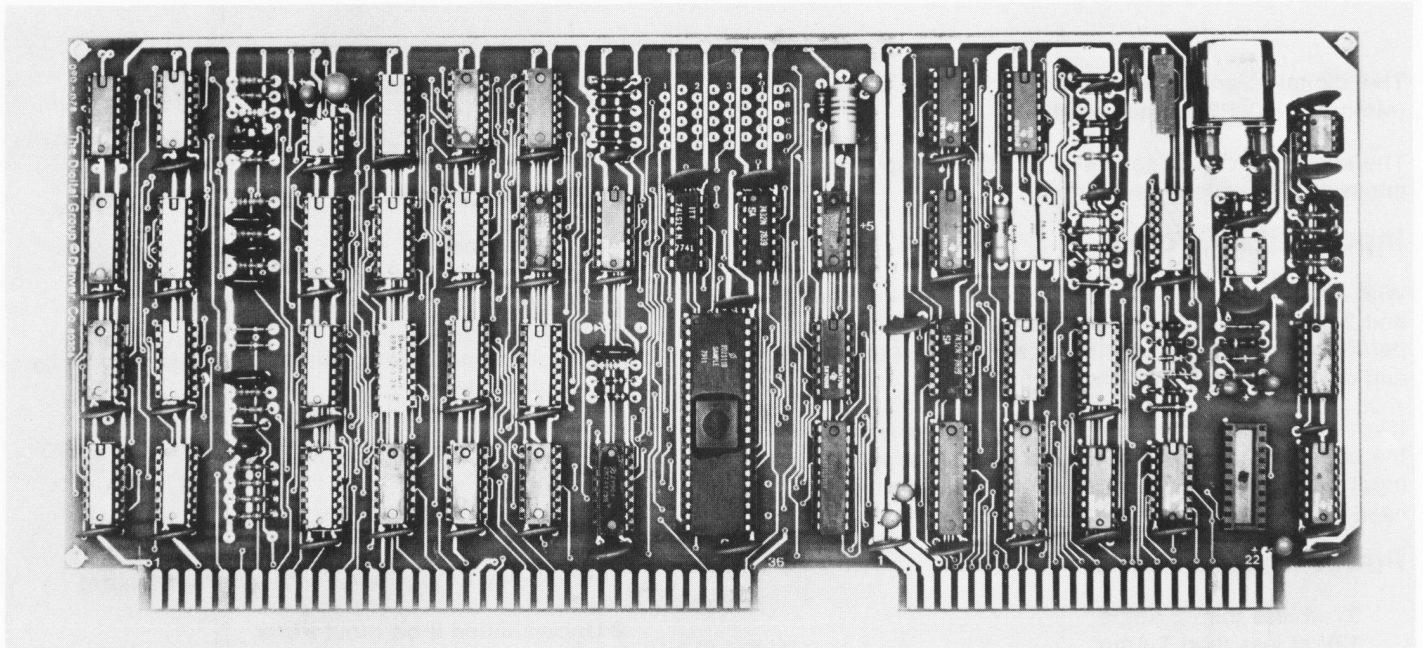
The new Digital Group Double Density Floppy Disk Controller is now available. Now you can double or quadruple capacity merely by changing a single card (but see "compatibility" below).

Rather than just double your available data capacity, we've also added a number of features to significantly improve performance, reliability, testing/exercising, and a new level of disk interface flexibility. This is probably the most complete single hardware product we have ever brought to market.

We are, of course, standardizing on this controller in our systems configurations but, as is our policy, will continue active support for the DSS-INT1 until further notice.

The Controller supports up to 4 drives with any mix of the following characteristics:
    8" Standard Drive
    5" Mini Drive
    Single Density
    Double Density
    Single Sided
    Double Sided

Any combination of sizes, sides, and densities is supported simultaneously. As an example, a configuration could have its operating system software on a double-density mini-floppy and data files could reside on 2 double-density standard drives. (We've cleverly followed our own example - see the new Oasis System configuration.)

Double density effectively doubles the amount of data you can put on a disk. It also doubles the data rate and halves the number of track-to-track seeks (for sequential access) which can result in significant performance improvements.

Another improvement is that there are no hardware modifications required for this board for either dynamic or static based systems.

Features for 8" Standard Drives:

-Automatic Head Load Delay
    Eliminates dependency on software driver timing loops for better reliability.
-Write Protect Circuitry is Standard
    Disks can be protected from being accidentally clobbered.
-Automatic Head Unload Delay
    A performance improvement that eliminates head load/unload delays for quick multiple disk accesses. Also results in a quieter running system as fewer head load/unloads are performed.
-User Selectable Step Rates - 4 Available on-board.
    You can tailor the interface to take advantage of the faster step rate of some drives. Improves performance of system as a whole.
-Disk Formatting Capabilities
    Complete user variable formatting flexibility through Assembler language tables. You are not required to purchase preformatted disks.
-Power-Down Write Protection
    Whenever power is turned off or drops, the board automatically disables the write circuitry thereby protecting your disks from being inadvertantly written on by a power failure.

Features for 5" Mini-Drives:

In addition to incorporating all the features for 8" drives, 5" Mini-Drives have the following available:
    -Motor Activity Timer
        Motor shuts off after approximately 9 seconds.
    -Automatic Motor Turn-On Delay
        Motor comes up to speed in approximately 1 second under hardware control. This is transparent to the software.
        Both of these features contribute to the longevity of the drive motors.

Software Driver Features:

- Handles Up to 4 Drives
- A single driver supports any combination of single/double density, single/double sided, standard 8" or mini 5".
  - Makes disk conversion and file copying between unlike media a breeze. (Ex. Mini to standard, single density to double density.)
- Variable Retry Logic
  - You can tailor the number of system retrys for the performance you want.
- Error Codes provided from the driver are understandable and easy to interpret.
- Resides in less than 600 bytes
- A single bootstrap ROM will initially load the system from all varieties of drives.

Software Compatibility:

As the new disk board supports both single and double density, the only conversion required to use double density is to read in your single density disks and write out the disk on another drive which is specified as double density. You can read single density disks with the double density board - in fact, the only software products that must be specified as single or double density are the operating systems. All non-operating system software products will be shipped as single density.

Capacities:

Drive Description	Formatted Bytes
Standard 8" Drive Single-Sided Double-Density	512,512
Standard 8" Drive Double-Sided Double-Density	1,025,024
Mini 5" Drive Single-Sided Double-Density	184,320
Mini 5" Drive Double-Sided Double-Density	322,560

Compatibility:

Your present drives have a better than average probability of performing acceptably with the Digital Group Double-Density Controller in double density mode. However, drive symmetry between 1's and 0's is critical and some drives may require adjustment. This adjustment requires an oscilloscope - a procedure is included in the documentation.

Single-density tested media may or may not be compatible (though most are testing ok) - we recommend a try-it-and-see approach. If you are purchasing new media then by all means make sure it supports dual density.

(Note 1: Due to complete parts incompatibility with the previous disk controller board [DSS-INT1], we are unable to provide a board upgrade kit.)

(Note 2: For kit versions of the interface, there is one trimpot that requires a scope for adjustment. It is recommended that the kit be attempted by the experienced kit builder only.)

Hardware Monitor - HMON:

On top of everything else, the final part of our new floppy disk controller release is a sophisticated hardware monitor (HMON). There are more capabilities in this monitor for system and disk drive testing, exercising, and maintenance than in anything we've seen so far in the microcomputer marketplace. And it's supplied standard as a part of this package.

HMON was designed originally to aid in the development of the Digital Group double-density controller. Its purpose was to aid the designer in testing and debugging every portion of the controller circuitry. During development we realized that this design tool could be put to use by other people in building and debugging various other Digital Group products.

The resulting HMON is a hardware monitor suited to the testing of memory and peripheral equipment for the Digital Group Z80 system.

HMON Command List:

ASCII Dump	Message
ASCII Load	Initialize Storage
External Subroutine Call	Set-Next Loop
Character Input	Nulls after CR/LF
Clear Memory	Octal Output
Continue	Writes ones to disk
Delay	Output Data
Deposit	Ping Diagnostic
Decimal Output	Put Sector
Dump Bottom Buffer	Step Rate
Dump Top Buffer	Reset Disk Log Table
Dump Memory	Return to OPSYS
Echo Character	Random Read
Erase Screen	Select Drive
Examine Memory	Set Loop Counter
Get and Display Buffer (Bottom)	Split/Octal Mode
Get Sector	Disk Status Display
Home Cursor (TVC-64)	Subroutine Call
Help	Seek to Track
Hexidecimal Output	Set Retry Count
Input Data	Verify Diskette
List Macro Instruction	Wait for Data
Load Macro Instruction	Write Zeroes to Disk
Macro Run	

HMON is extensively documented and contains numerous examples.

Note: At this time, HMON will not operate in a system without the double-density disk interface and is not available separately.

Availability:
  100 units May 15, 1979 - Additional units subject to normal shipment dates.

Description	Order Code	Kit	Assembled	Wt
Double Density Disk Int.	DSS-INTD	$395.00	$475.00	2

We've taken our standard disk subsystems and upgraded them to double-density. The following table is for the new configurations.

New Double-Density Disk Subsystem Pricing:

Description	Order Code	Kit	Assembled
Standard drive - single	DSS-COMP1D	$1195.00	$1395.00
Standard drives - dual	DSS-COMP2D	$1775.00	$1995.00
Mini-drive - single	DSM-COMP1D	$995.00	$1195.00
Mini-drives - dual	DSM-COMP2D	$1395.00	$1595.00

PRINTERS

We've added 2 top-quality high-performance printers to our line to meet specific user requests. These printers are sold only on cash-with-order terms. Upon receipt of your printer, we will test it with our software and hardware. After checkout, your printer will be shipped directly to you.

In all cases, a device driver for Oasis on standard disk is included in source and object form as well as Digital Group cabling (specify Paddlecard cable or Bytemaster cable).

End-User Maintenance for these printers is usually available in major metropolitan areas directly from the original manufacturer's service personnel. Please contact the manufacturer directly for their latest service information.
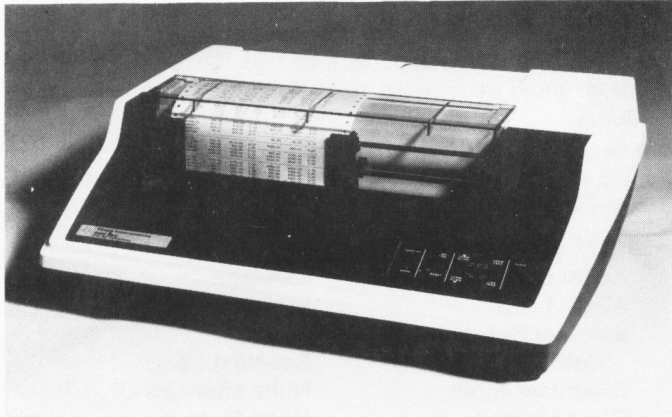
Texas Instruments Model 810 Printer

The 810 is the highest throughput printer we currently offer and probably the best price-performer. Listings really fly on this one!

- 150 characters per second
- Impact Matrix technology
- Bi-directional, Logic Seeking
  - Up to 440 lines per minute (10 character lines)
  - 70 lines per minute with 132 character line
- Tractor-feed (3" to 15" paper width)
- 9x7 character font for better legibility
- Upper/Lower Case
- 128 ASCII character set (see note)
- 6 or 8 lines per inch
- Single or Double line spacing
- Top of Form control
- Up to 5 copies (plus original)
- Parallel interface (see note)
- Operator/Software programmable vertical tabs
- Horizontal Tabs
- Slanted Ribbon for longer life
- 256 character FIFO buffer
- Built-in Self-Test capability
- Rear or Bottom paper feed
- Serial RS-232 Input/Output
- Digital Group Cable included

(*Note:* Optional feature included as standard in Digital Group configuration)
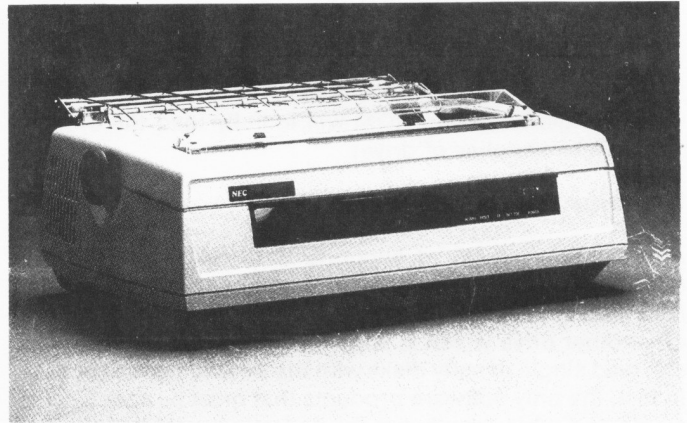
Availability:
    Call for immediate estimate on shipping date. Expected shipping date within 30 days after receipt of order.

Description	Order Code	Assembled	Wt	Terms
TI 810 with:				
Paddlecard cable	PT-TRAC4PC	$2,040.00	70	Cash with order only
Bytemaster cable	PT-TRAC4BT	$2,040.00	70	Cash with order only

Spinwriter

A top-quality drawn-character printer with the strongest mix of features we've seen so far. Primarily for final copy text-oriented output, the Spinwriter provides a good general-purpose capability as well. It's significantly faster than the Centronics 779-2 and almost as fast as a smart bidirectional 60cps matrix printer.

- Print quality similar to Selectric (TM)
- 55 cps
- Bi-Directional Printing
- 128 characters per changeable Print Element
  - (36 more than daisy wheel types)
- Up to 7 copies
- Form Feed control
- Forms Length Control - 0-99 lines
- Tractor Feed and Friction Feed
- Rear or Bottom Paper Feed
- Last Printed Character is visible
- 10 or 12 Pitch
- 6 or 8 Lines Per Inch
- Line-length up to 163 characters
- 16" Wide Forms
- Microprocessor Based
- Switching Power Supply
- Optional APL Print element
- Digital Group Cable included

Availability:
    Call for immediate estimate on shipping date. Expected shipping date within 45 days after receipt of order.

Description	Order Code	Assembled	Wt	Terms
Spinwriter with:				
Paddlecard cable	SPIN-1PC	$2,650.00	70	Cash with order
Bytemaster cable	SPIN-1BT	$2,650.00	70	Cash with order

NEW SYSTEMS

NEW BYTEMASTER OASIS SPECIAL

Many of our new system orders have been for an Oasis based Bytemaster with 2 standard floppies and 64K. Even we can respond when hit between the eyes - here's the "Oasis Special", a new configuration.

Features:
>Bytemaster - no internal disk storage
>64K memory
>2 Double-Density Standard Floppies (DSS-COMP2D)
>OASIS, with O-BASIC, Text Editor, EXEC language, SCRIPT

Description	Order Code	Kit	Assembled	Wt
Oasis Special Bytemaster	MASTER-5	$4,195.00	$4,875.00	89

NEW SYSTEM CONFIGURATIONS AND PRICES

Our standard configurations now include the following additional features as standard:

>New Double Density Disk Interface
>New Motherboard
>New Backplane and Cabling
>New Keyboard with More Function

Please refer to the new price list for more product information.

New Lower Prices for Standalone Memory

Due to IC memory prices dropping, we are now able to significantly reduce our prices on standalone memory boards.

Description	Order Code	Kit	Assembled	Wt.
16K Static	MEM-16	$345.00	na	1
32K Static	MEM-32	$595.00	$645.00	1
16K Dynamic	MEM-16D	na	$295.00	1
32K Dynamic	MEM-32D	na	$495.00	1

Accessories

Double Density Dual Sided Floppy Media

Description	Order Code	Price	Wt.
Mini-Floppies:			
Dual side, double-density	DSM-F1SD	$9.00	1
Box of ten	DSM-F10SD	$80.00	2
Standard Floppies:			
Dual side, double-density	DSS-F1SD	$9.00	1
Box of ten	DSS-F10SD	$80.00	2

Single-sided, single density floppies will continue to be carried.

New Motherboard - Now Standard

We've been supplying an improved motherboard in our Bytemasters and we are now extending it across our line of standard mainframes.

Features:
>Improved Power Planes - lower noise level
>Heavier Bus Lines for better noise control
>2 Additional I/O Slots (6 Total)
>Pre-Wired Phideck Slot
>Pre-Wired Disk Interface Slot (for DSS-INT1 not prewired for DSS-INTD)
>All I/O Connections to/from board can optionally be done on .1" centers

If you feel you must upgrade, the bare board is available. For the time being, you're on your own as far as cables, etc. A complete motherboard and backplane replacement can be an expensive proposition which right now might not represent the best timing given all the technological changes that are happening.

Description	Order Code	Price	Wt.
New Motherboard-PC Board only	MB-6	$75.00	2
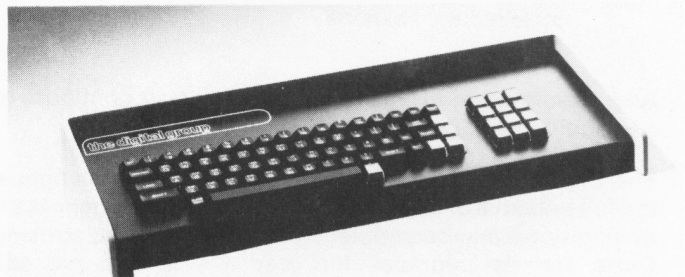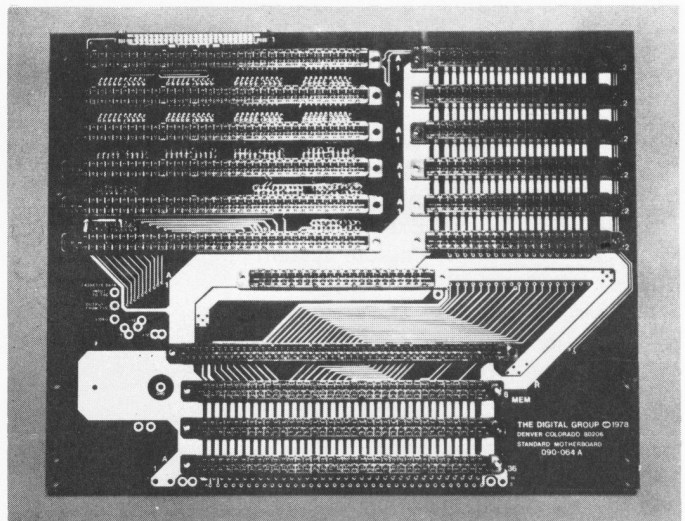
New Standard Keyboard with more Functions

This keyboard feels better to type on than most we've tested. It also has the ability to reassign keys within its matrix for various user functions or additional key placement.

Order Code	Assembled	Wt
KEY3-COMP	$249.50	5

Hardware Discontinuance List

In order to consolidate our line, we have discontinued the following items:

Data Cassettes
Digital Voltmeter
Probes - all types
KEY-2 MON9-COMP (replaced with MON9D-COMP)
VOTRAX1
C-104

We have also returned the Real-World system to its originators as they are in a much better position to provide support. They are in production and have shipped several systems. Please refer to the General Computer Technology pages at the end of this flyer.

SOFTWARE

Oasis System

Many of you who own larger systems with standard disks on them have discovered that the Digital Group has a very high opinion of Oasis. That is for good reason.

We feel that Oasis represents the only true high-end operating system available in the market today.

Only Oasis combines all of these features:

-Fully Integrated
    -You can operate almost any program from any other
    -Everything works in the same fashion
    -Consistant user interface

-Full High-Level Exec Language Support
    -Supports complete system control

-Most Professional System Available
    -Experienced data processing people know how to use Oasis's capabilities almost instantly

-Completely and Thoroughly Documented

-ISAM Files are Supported

-Device Independence
    -Easy to add new devices without any impact on installed applications

And, as with all good software products, Oasis continues to add additional capabilities.

The Digital Group was the first manufacturer to recognize the full potential of Oasis and the first to adopt it and make it available on a microcomputer system. We've now been using Oasis and its upgrades for over a year and are still discovering new capabilities and tasks that we can accomplish with it. We've based all of our internal applications on Oasis and have not been disappointed in the least with the results.

The old saying that "a building is only as good as its foundation" is totally applicable to Oasis. We now have no hesitation in recommending Oasis to anyone who is constructing significant application systems.

More Information on Oasis:

For those of you who would like more information on Oasis, we have about 50 sets of previous release level manuals at $25.00 a set. They contain information on OASIS, O-BASIC, SCRIPT, TEX EDITOR, MACRO ASSEMBLER, EXEC LANGUAGE, and DEBUG.

Description	Order Code	Price	Wt.
OASIS information manual set	O-INFO	$25.00	5

Oasis 5.3 Update

OASIS 5.3 HIGHLIGHTS:

New Device Support:

A double-density Mini-Floppy drive may now serve as a base for an Oasis system. Minis are also supported as standard devices.

The new double-density disk board is supported with both single and double densities.

New keyboard driver with a user-modifiable key-code translation table. Special keyboards and function keys are easily implemented.

Oasis Documentation Revised and Restructured

With Oasis 5.3, a complete set of documentation now includes the following manuals:

System Reference
Text Editor
Exec Language
Macro Assembler
Debug
O-Basic

The restructuring was done to enhance usability. Several of these manuals have extensive revisions and additions - the system reference manual in particular has been enhanced.

New Disk Maintenance Commands:

RECOVER - Find and Restore a file to its directory.
REPAIR   - Detect and correct any disk mis-allocations.
STATE   - Determine the existance of a file.

SHOW COMMAND - New Options:

History - Status of history switch.
ERRNum   - Status of error number switch.
ERRText - Status of error text switch.
SERial   - Display the serial number of the system disk.
WHO   - Display the account name and priviledge level of the account currently logged onto the system.

Display the currently defined console keyboard character for:
ESCape
UP
DOWN
LEFT
RIGHT
RUBout
CANcel

GETCPM Command

This new command gives Oasis the capability to transfer ASCII sequential files (such as programs) from a CP/M* compatible disk onto an Oasis disk. When this process is complete, the file can be manipulated with the Editor or any of the various commands for purpose desired.

*CP/M is a registered trademark of Digital Research.

FILT8080 Command:

Translates Intel 8080 assembly mnemonics to Zilog mnemonics that are compatible with the Oasis Macro Assembler.

New IPL Capabilities:

Oasis now allows the IPL date entry to be bypassed with a Carriage Return. The last date entered is assumed as the current system date. A nice touch is that a successful IPL will respond with a display of the current weekday, month, day, and year.

Updated EXEC Manual:

The EXEC language manual has been enhanced and a more comprehensive example provided.

User Accounting:

As preliminary groundwork for the upcoming multi-user version of Oasis, many User Accounting features have been implemented:

Command	Description
ACCOUNT	Maintain user account names and attributes
OWNERCHG	Transfer ownership of a file to another account
LOGON/ LOGOFF	Keeps an optional history file of user activity
SHARE	Share files between accounts

MACRO Assembler - New Functions:

Local Macro Definitions
Allow Unnamed PABs
Substring substitutions
REPT now allows full 16-bit repeat counts

Oasis 5.3 Update Ordering Information:

Updates include the new 5.3 manuals as appropriate. Updates are supplied on a single standard disk. As with all Oasis products, we **must** have your serial number in order to process your order. *PLEASE NOTE:* Oasis 5.3 Updates are available only until May 30, 1979.

Description	Order Code	Price	Wt
5.3 Update for current Oasis owners: (Available until May 30, 1979):			
Oasis and O-Basic Update (includes Editor, Exec, & Debug)	O-UPD-1	50.00	5
Script Update	O-UPD-2	10.00	1
Macro Assembler	O-UPD-3	20.00	2

Oasis Limited-time offer:

New Oasis 5.3 orders will be available for ordering at the following prices until May 30, 1979:

Description	Order Code	Price	Wt
Oasis, Oasis-Basic, Script, Text Editor and Exec Language:			
--- on mini-disk, double density	OASIS-MDD	$155.00	5
--- on standard disk, single density	OASIS-SD	$155.00	5
--- on standard disk, double density	OASIS-SDD	$155.00	5
Oasis Macro Assembler:			
--- on mini-disk, double density	OASSM-MDD	$50.00	2
--- on standard disk, single density	OASSM-SD	$50.00	2

After May 30, 1979 Oasis will be priced as follows:

Description	Order Code	Price	Wt
Oasis, Oasis-Basic, Script, Text Editor and Exec Language:			
--- on mini-disk, double density	OASIS-MDD	$249.50	5
--- on standard disk, single density	OASIS-SD	$249.50	5
--- on standard disk, double density	OASIS-SDD	$249.50	5
Oasis Macro Assembler:			
--- on mini-disk, double density	OASSM-MDD	$99.50	2
--- on standard disk, single density	OASSM-SD	$99.50	2

Printer Drivers for Non-DG Supplied Printers

We have Oasis device drivers available for non-DG supplied printers. These drivers include commented source files and are for the following types of printers:

Teletype 43
Teletype 40 - older parallel interface
Qume Sprint 3 (13-bit wide parallel interface)

All drivers are delivered without guarantees as to their performance with any specific printer on an as-is basis. No hardware information is included.

Distributed on disk as an Oasis Device with an object code device driver and source for use under the Oasis Macro Assembler.

Description	Order Code	Price	Wt
Teletype Model 40 Driver /older parallel	DEVTTY40	15.00	1
Teletype Model 43 Driver	DEVTTY43	15.00	1
Qume Sprint 3 Driver	DEVQUME3	15.00	1

Oasis Applications

MONITOR AND EXPANDED LISTER

Monitor

Monitor is a set of interlocking routines that provide a base for quick implementation of applications. Monitor eliminates much redundant coding in your applications while at the same time providing a quick, consistantly elegant interface to your user.

Routines are provided for data entry, screen formatting, special editing, dollar and cents rounding, error messages, and end program. Monitor is extensively documented with expanded source listings provided in the hope that others will be able to add further improvements. Monitor is written in O-Basic and has been used extensively as the base for our internal applications as well as other programs.

The 17 routines included are:

Main Routines:
 Input Routines

SIO Support - as console

Included as standard with Oasis.
No additional hardware is required - uses single bits on ports
 2 or 3.
Beehive
Lear-Siglear ADM-3
Hazeltine
Most terminals with RS-232 interfaces
Most printers with RS-232 interfaces

Data Entry with Prompt and Edits

The Data Entry routine provides a general purpose data entry capability. A Prompt is provided and a target of asterisks for the data to be entered into. The cursor is positioned at the 1st character of the target field and cannot move outside of the target. As each character is entered, it replaces an asterisk.

There are 4 optional Edits performed
 Alphanumeric
 Integer only
 Numeric only
 Control key

A carriage-return entry in the first character may be used to blank the field.

In addition the routine will optionally accept a "+" or an "✱" entered as the first character to mean "back up to previous entry."

1. Enter Name ✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱

1. Enter Mail List
2. Enter Payroll
3. Enter Checks
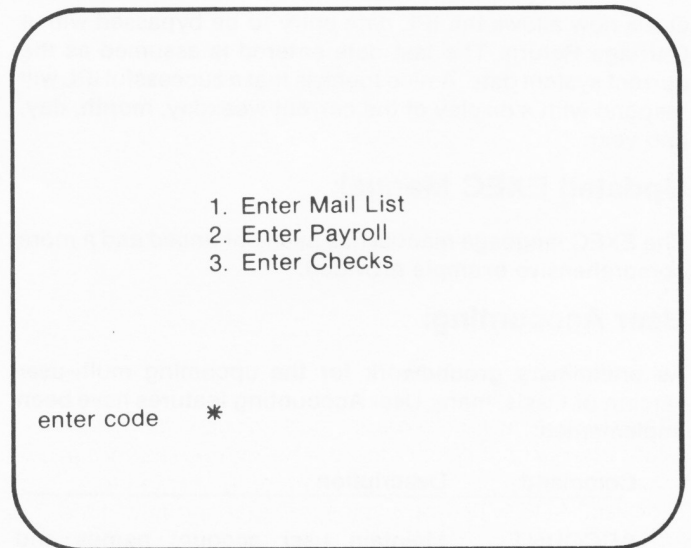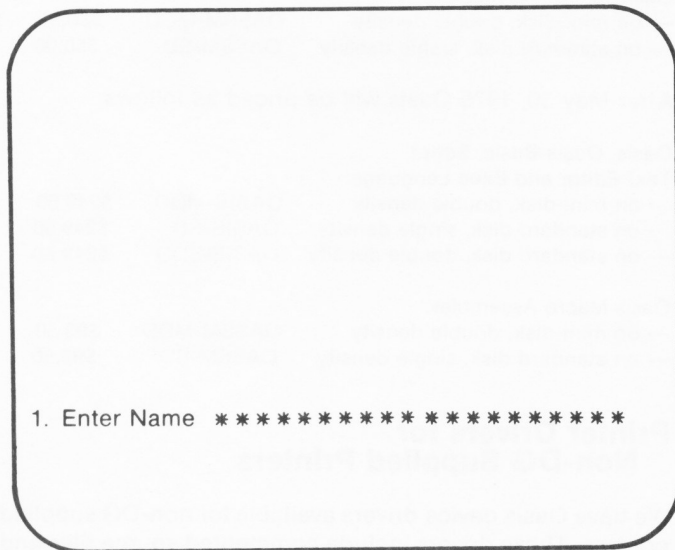
enter code ✱

Menu List and "Enter Code" Prompt

The Menu routine facilitates menu driven applications. The routine supports up to 9 selections for the user. A string is loaded once with all selections and they are displayed with the "enter code" prompts. All the proper data entry edits are automatically performed on the entered code.

Carriage Return is automatic.

```
1. Name        ******************************
2. Address Line 1 **************************
3. Address Line 2 **************************
4. City           ***********************
5. State                                  **
6. Zip Code                            *****




1. Name    *****************************
```

Menu with Targets for Data

The Menu Routine with targets for data provides excellent user feedback as data is entered into a record. When combined with the Data Entry Routine and the Menu Data Update Routine, the job of properly interfacing to the user is greatly simplified.

```
1. Name                        Fred Smith
2. Address Line 1         1234 Anywhere St.
3. Address Line 2 ********************
4. City           **********************,
5. State                                **
6. Zip Code                          *****




3. Address Line 2 ********************
```

Update Menu with Data

The Menu DataUpdate routine updates each target field with data after each field is entered. These three routines allow a common entry point at the bottom of the screen to be used for each field which reduces eye-travel and hunt time. The Update provides the feedback advantages of a fill-in-the-blanks approach without the attendant confusion.

Auxiliary Routines:

Input Routine:
  All ok? Y or N
Output Routines
  Boxed Title
  Single-line page heading
  Cycle number as progress indicator
Edit Routines
  Limit test
  Test for Y or N Response
Other Routines
  Clear Screen Clear
  Screen - Line 3 down
  Clear Screen - Line 7 down
  Clear target data
  Round dollars and cents
  Error message routine
  End program

A detailed demonstration program of each of these capabilities is included with Monitor.

Expanded Lister

Expanded Lister takes a program that has been packed for maximum memory utilization and prints a listing that is much more readable.
  - REMark statements are dramatically highlighted
  - Multiple statements on a line are broken apart onto separate lines
  - Blank lines are inserted after RETurn's and GOTO's for emphasis
  - Program is written in O-Basic for ease of modification

Example:
This:

```
100 REM PROGRAM NAME
200 GOS100\GOS200\PRI"MESSAGE"
     \GOT1000
300 REM PRINT ROUTINE
400 FORI=1TO1000\PRI"MESSAGE-2"
     \NEXI\Z=100
500 IFX=17GOT700
600 Y=16\Z7=15\A=2*SIN(B)\GOT800
```

Becomes:

```
100
     * * * * * * * * * * * * * *
     REM PROGRAM NAME
     * * * * * * * * * * * * * *
200 GOS1000
     \GOS2000
     \PRI"MESSAGE"
     \GOT1000
300
     * * * * * * * * * * * * * *
     REM PRINT ROUTINE
     * * * * * * * * * * * * * *
400 FORI=1TO1000
     \PRI"MESSAGE-2"
     \NEXI
     \Z=100
500 IFX=17GOT700
600 Y=16
     \Z7=15
     \A=2*SIN(B)
     \GOT800
```

which is far more readable.

Many of the O-Basic listings provided by the Digital Group will be in expanded format.

System Requirements:

Oasis
O-BASIC
50K Memory

Description	Order Code	Price	Wt.
Monitor & Expanded Lister:			
on standard disk	MON-SD	24.95	3
mini-disk, double density	MON-MDD	24.95	3

Datamaster

Datamaster is a series of interrelated programs and support aids that dramatically expedite application development. Datamaster is the next higher level of sophisticated support for helping ease application creation.

Datamaster is predicated on an application philosophy that emphasizes ease of implementation while providing a high-level user interface.

The major advantages provided by Datamaster are:

- Applications can be implemented faster
- Dramatically improves the application developer's productivity and effectiveness.
- Eliminates redundant programs and programming stages
- Presents a consistant appearence to the user that is reasonably elegant.

The Digital Group believes that the application which is the simplest for its users will be the most successful.

To help attain that goal we have designed and developed Datamaster. Datamaster's primary goal is to free application development from continually recoding the same basic functions over and over again. This is accomplished by generalizing the file creation, loading, and maintenance functions.

Each data field in a record is described to Datamaster through an interactive series of questions and answers. A field description record is created in a work file for each field. As no assumptions are made about each field, there need be only one file create, file load, and file maintenance program for any number of applications based on Datamaster.

Datamaster's Major Components:

Menus   - All Datamaster routines for both system creation and user functions are accomplished through two master selection menus.

System-Oriented Components:

Monitor:
Monitor provides a base set of routines that are used extensively by Datamaster to provide a uniform visual interface to the user (see Monitor announcement).

Create a File:
In the first series of prompts, Datamaster will ask for:
Name of the File
File ID Extension
Drive where file is to be Created
Organization: Indexed or Direct
Number of Records in the file

In the next series of prompts, Datamaster will ask for each field (up to 20):

1. Description (becomes prompt for user entry)
2. Number of Characters
3. Any optional entry features (defaulted as off)
   a. Auto-duplicate ON or OFF
   b. Default-entry ON or OFF
   c. Default-entry value

After the above information is entered, two files are created. The first is a work file which will contain all the information about the file and its fields that was entered. The second is the data file itself. After this point, the newly created file can be used by the full complement of Datamaster programs.

System Support:

Programs are supplied to:
Document the Application:
Display file information on a CRT
Print File and Record information
Print information about an entire disk

Maintain the Work File:
Change descriptions, entry options, etc.

Aids:
Print an Input Form for File Creation
Copy Files are supplied for your own extensions to Datemaster
Exec to append all Copy Files to a Work Area

User-Oriented Components:
Enter Data into a File
Maintain Data in a File
Print a rudimentary report from a File

User-Oriented Aid:
Print an Input Form for File Loading

System Requirements:
64K memory
Oasis and O-BASIC
Dual-Disk system

The distribution package includes the Monitor code needed to execute - no need to purchase Monitor to operate this package:

Description	Order Code	Price
Datamaster on:		
standard disk	FBLD-SD	$49.95
on mini disk, double density	FBLD-MDD	$49.95

Maillist One

Maillist One is a straightforward maillist processor. It has all the necessary features to create and maintain maillists for organization memberships, smaller publications, sales follow-ups, christmas card lists, and similar applications. Extra space has been reserved in each record for user-supplied codes for later selection if desired (user writes selection program).

Source code is provided for user extensions and enhancements.

Maillist One is based on Datamaster.

Capabilities:
  Enter Mail List
  Maintain Mail List
  Print Edit List
  Delete from Mail List
  Condense Files and Reclaim Space
  Print Labels 1, 2, 3, or 4 up

Note: Maillist One is a complete product. The minimum set of needed Datamaster routines are included (without documentation) with the distribution package. Purchase of Datamaster is not required but may be helpful and is recommended.

Description	Order Code	Price	Wt.
Maillist One on:			
standard disk	MAIL-1-SD	$19.95	1
on mini disk	MAIL-1-MDD	$19.95	1

O-Basic Games

We just can't keep those game builders down - now they're writing games for Oasis Basic. We're offering the best of the lot on a single disk.

STARTREK: A large implementation of an enhanced version of Startrek. Klingon Killers Arise!

New Capabilities:
  Library Computer with:
      Cumulative Galactic Record: displays results of all previous long range sensor scans

      Status Report: shows enemy status

      Photon Torpedo Data: gives direction and distance from the Enterprise to all Klingons in your quadrant

      Starbase Nav Data: gives directions and distance to any Starbase within your quadrant

      Direction/Distance Calculator: enter coordinates for calculations

      Galactic Region/Name Map

BLACKJACK: A reasonably nasty version of an all-time favorite.

OTHELLO: Another favorite with a neat implementation

POKER: 5 card stud with your computer and good luck!

Plus other goodies as a bonus!

Description	Order Code	Price	Wt.
Oasis Games Set 1 on:			
standard disk	OGAME-SD	$25.00	1
on mini disk	OGAME-MDD	$25.00	1

Oasis Support Programs

Cross-references for O-BASIC

Three special commands to be added to Oasis, which is coded in Assembler language for high-speed execution.

Produces the following cross-references:
  Line Number Cross-Reference:
      Each line number in the program is followed by a list of line numbers in which it is referenced.

  Variable Cross-Reference:
      Each variable in the program is followed by a list of line numbers in which the variable is used.

  Statement Cross-Reference:
      Each BASIC statement is followed by a list of line numbers in which it is used.

Description	Order Code	Price	Wt.
Oasis O-Basic Cross Reference on:			
standard disk	O-XREF-SD	$19.94	1
mini-disk	O-XREF-MDD	$19.95	1

Application Note
Poke for O-Basic to send CSI Commands to printer instead of screen.

Examples: "SHOW DISK" and "SHOW DATE"

Routine Example:

```
10 REM METHOD OF PRINTING NON-PRINTING
      SCREENS FROM BASIC
20 REM WRITTEN BY TED HOLDAHL 2/21/79
30 POKE 10AH,LXOR(PEEK(10AH),32)
40 CSI "SHOW DISK"
50 POKE 10AH,LXOR(PEEK(10AH),32)
```

This routine embedded in an O-Basic program will SHOW DISK to the printer. *Note:* This routine operates with Oasis 5.0 and a preliminary version of Oasis 5.3. The routine may not operate with subsequent versions of Oasis.

Graphics Support
IMAGE - Graphics Standalone Editor Routines

IMAGE is an interactive machine language program written for the Digital Group High Resolution Graphics Board to facilitate the creation of graphic images. Formerly, graph paper was used to draw charts and game objects. Hours of work went into first graphing the object on paper and then more hours were spent entering the points into memory. Needless to say this process was tiresome, boring, and any mistake could be disastrous!

Now you can create your image on the graphics screen, then modify it to your exact needs. Compared to graph paper, seeing how it appears on the screen makes a world of difference.

Since complete source code is available, IMAGE can work independently of any existing Digital Group software. It can be reassembled anywhere the user wishes. In the case of Oasis BASIC, it can be used with a high-level language (see following announcement).

IMAGE also has a menu selection facility for the light pen that comes with the Digital Group high resolution graphics board. Up to six functions can be activated simply by pointing the light pen to the desired box and pressing a button.

Software is also provided to allow continuous drawing with the light pen. Imagine being able to draw and selectively erase pictures with your computer!

With IMAGE, not only do you get a language powerful enough to create any picture possible, you also get fast machine language subroutines to use with any graphics programs that you write for your system.

IMAGE uses a crosshair cursor. Full cursor commands are provided, with a software repeat.

The capabilities of IMAGE are shown in the following tables:

Executive Commands:

HOME	Centers the crosshair cursor.
ARROW KEYS:	Move the cursor - control keys can be used if your keyboard does not have arrows
Control S:	Turns on one dot at the center of the crosshairs. Repressing Ctrl-S will turn that dot off.
Control E:	First point of a line.
Control D:	End point of a line.
Control A:	Command to draw a line between the points given by the previous Ctrl-E and D commands.
Control W:	Draw or Undraw command.
Control C:	Clears the graphics buffer.
Control F:	Calibrate light pen routine.
Control G:	Display or Re-display a menu of six blocks.
Control O:	Enables/Disables the menu function.
Control R:	Allows you to draw continuously with the light pen. The light pen must have been calibrated before you enter this routine.
Control X:	Same as Ctrl-R except it erases.
Control Q:	Escapes from the Ctrl-R and X commands and returns you to the command loop.
Control T:	Jumps back to the system monitor - user modified.

System Requirements:

Memory: 4K
Any standard DG system with a Graphics-256 Board (GRAPH-2).

IMAGE is the answer to the dilemma; "Now I have a graphics board, where do I get the software to drive it?". Why not experience the euphoria of creating graphics images in record time, without going crazy doing so? Point and line drivers, interactive editor, and commented source code are all included in one package. What's left for the user? The pleasure that trouble-free graphics will bring with this new Digital Group product.

IMAGE is distributed on audio cassette.

Order Code	Price	Wt.
IMAGE	$27.50	1

O-Basic Graphics Routines

We are also pleased to announce graphics routines for Oasis Basic. With the added functions of Oasis Basic, we can give you a nicer interface than can be provided with the other Basics offered by the Digital Group. With the USR function you can state whole call names instead of calling these routines by number.

Here are a few examples of the commands to the graphics routines:

PTOF,x,y	Turns a dot off
PTON,x,y	Turns a dot on
PTCP,x,y	Compliments a dot
TEST,x,y	Test to see if a dot was on or off.
LOFF,x1,y1,x2,y2	Draw a line with the dots off
LION,x1,y1,x2,y2	Draw a line with the dots on
LCAL	Calibrate the light pen
LPEN	Locate the light pen
CLER	Clears the graphics buffer
INIT,$ff	Sends an eight bit value to the graphics board

Description	Order Code	Price	Wt
Oasis O-Basic Graphics Support on:			
standard disk	OB-GR1-SD	$27.50	1
mini disk	OB-GR1-MDD	$27.50	1

APL with new functions

Shared Variable Support:

Supporting the outside environment through shared variables allows the user or system builder to provide a large number of compatible routines for controlling data structures, processes, devices, etc. These routines are called Auxiliary Processors. Two Auxiliary Processors are provided with the system.

I/O Control Auxiliary processor:
This processor allows the direct control of I/O ports on the Z80 machine using functions defined using APL.

File Auxiliary Processor:
This processor supports the storage and retrieval of data generated by APL on disk. File processor has the following features:
Up to 4 open files at one time
Each File can be up to 250K bytes
Each Record can be any APL data type, shape, or size

Example:
Record No. 1 could be 100 by 200 char matrix
Record No. 2 could be num. vector of 300 nos. etc.

Access is random or sequential by record no.
Reads or Writes next sequential record if record
  number is not specified
Records can be updated in place
Each file can have up to 255 records

DISKMON is required to operate this product.

Availability:
  Call for information concerning product availability,
  improvements, and shipment dates.

Description	Order Code	Price	Wt
APL on:			
standard disk	APL-S	$350.00	2
mini-disk	APL-M	$350.00	2

Watch for a re-announcement of our full APL support at the
APL/79 show in Rochester, NY on May 30.

Assembler 3.0

At last a capable assembler for PHIMON-based systems that
really uses the Phi-Decks!

Highlights:
  Supports Very Large Programs
  Plus a Full-Screen Editor!

By putting source files and object files on Phi-Deck drives,
large programs can be easily assembled. Up to 1 full cassette
of source can be accomodated.

Source and object may reside on different tapes or on the
same tape. The Phi-Decks are fully utilized.

Assembler 3.0 is a 2-pass Assembler which can assemble
programs for any size memory (up to 64K).

  - will use all available memory on system
  - 1K object code buffer
  - Symbol table is variable in size and expands
    automatically as needed
  - Optional Cross-Reference Listing

Assembler Options:
  - List errors only
  - Stop after each page
  - Cross reference
  - Top margin, bottom margin, lines per page
  - Ignore EJECT and SPACE
  - Flag "JP"? if "JR" would do
  - Update default parameters selected
  - Print off and on are supported
  - TITLE statement with date
  - Page numbering

Editor - Full Screen

4K buffer for editing with minimum number of tape accesses
Gets next 4K block automatically
Writes current 4K block automatically when full

Cursor Controls: Up, Down, Right, Left, Linefeed Return,
                   Home

Tabs automatically set for source entry

Commands:
  Set Tab
  Remove Tab
  Delete Character
  Delete Line
  Insert Character
  Insert Line
  For Source Memory (4K block):
    Scroll Forward Screen
    Scroll Backward 1/2 Screen

Distributed on Phideck tape

Order Code	Price	Wt
ASSM-3	$25.00	2

SARGON with book

SARGON is the chess program that was the winner at the 2nd
West Coast Computer Faire in 1978. Since then, Hayden
publishing has made a complete book on SARGON
available. It contains far more documentation than we were
providing in our original SARGON offering so we've
combined both in a single package.

"SARGON" for Digital Group computers with book from
Hayden (not deletable from package).

Distributed on audio cassette

Order Code	Price	Wt
SARGONB	$30.00	2

Software Consolidation

As part of our concentration of software resources towards
Oasis, we are no longer able to provide Digital Group
support for either MCOS or OPUS. We aren't excited about
having to withdraw our support for these products but we
really have no choice. This action should not in any way be
interpreted as a comment on the quality or value of these
products. Both of these products will continue to be
available from their originators. Please contact them directly
for the latest information.

MCOS available from MicroCom:
  MicroCom
  P.O. Box 4069
  Pompano Beach, FL 33063

MCOS has a new completely CP/M* compatible version
available. MCOS continues to be one of the best answers for
Digital Group system owners who want access to CP/M
compatible applications.

OPUS available from ASI:
  Administrative Systems, Inc.
  1642 So. Parker Road   Suite 300
  Denver, CO 80321
  (303) 755-9694

OPUS is still one of the most powerful languages available
on microcomputers - several larger Basic's are evolving
along the lines of OPUS. In addition, ASI has added multi-
user capabilities.

Software No Longer Available

Description	Obsolete Order Codes
Assembler 1.0	ASSM-I
Assembler I Editor	ASSMEDIT
Assembler II Editor	ASSM-ED-A, S, M
Disassembler 1	DISASSMI
MCOS - all packages	MCOS, C-BASIC, MCOS-TOP, MCOS-UTIL, E-BASIC
Mini-Basic and Games	MINI-BASIC, MINB-GS1
OPUS - All packages	OPUS-1 or 2, S or P
SARGON without book	SARGON
Text-Editor 1	TEXT-ED1
Tiny Basic Games	TBX-GS1 through TBX-GS6 as individual game sets (TBX-GSCOMP still available)
Z80 Relocator	Z80-RELO

FLYERNEWS

Changes Since Flyer 14

The Digital Group has undergone many changes since Flyer 14 in September, 1978. We've made a lot of progress in what we believe to be the right direction.

The company has been stabilized as to employment and production. We are doing a reasonably consistant amount of business each month and continue to get better at what we're doing now that things are more predictable.

The Digital Group is currently profitable and has positive cash flow.

There have been improvements in several specific areas (as of April 2, 1979):

The order backlog has become much more manageable - we're even catching up on deliveries of disk cabinets!

The Customer Service backlog is currently less than 1 week.

Currently available software is shipping within 2 weeks, after receipt of order.

Exceptions:
APL due to improvements

The following software products are currently on hold until corrections are received from their authors:
PUP-1
STEPPER 2.0
WOPROC

A lot of attention has been directed to the repair side of the business.

General repairs are being turned around in less than 2 weeks.

Shugart drives continue to be repaired in-house as it has shortened repair lead-times considerably.

The order backlog on PT96 printers is down to 25 units.

Delivery Lead-Times:

The standard shipment time for all merchandise offered for sale by The Digital Group, Inc. in this flyer is within 120 days after receipt of a valid order, unless information in the flyer specifically provides for other shipment times. Of course, The Digital Group will attempt to ship many products on a faster basis.

The availability of complete disk-based systems is now much more reasonable - we even have a few assembled and tested units on the shelf - in fact you might be surprised how fast we or our Factory Authorized Outlets can respond.

Active Dealer List and Qualifications

These are the dealers who have stuck with us through thick and thin and we are convinced that they can do the job for you.

We forsee no significant expansion of our dealer network in the near future - we think we are beginning to adequately support these dealers and we believe that they have the proven capability to support you.

Factory Authorized Outlets (stocking):
Personal Computer Corporation
Frazer Mall
Routes 30 and 352
Frazer, PA 19355
(215) 647-8463

Computer Products
I.O.O.F. Building, Room 207 & 208
2 South McClean
Lincoln. IL 62656
(217) 735-4114

MicroWorks
Mariemont Center Building
3914 Miami Road   Suite 207
Cincinanati, OH 45227
(513) 561-7315

Triangle Product Distributors
5750 Lakeshore Drive
Holland, MI 49423
Sales: (616) 399-6390
Service: (616) 773-5121

Special OEM's: no storefront, special systems and services
Charlie Finn
The Systems Group
2993 Boring Ridge Drive
Decatur, GA 30034
(404) 289-8969

Larry Walker
11 Westwood Drive
Leavenworth, KS 66048
(913) 651-5145

Bridge

Bridge is a totally independent users-group of Digital Group systems owners that currently has about 300 members.

Bridge has provided several issues of a newsletter that contains useful information, and periodically diatribes from someone we have managed to frustrate. Try as we might, we haven't found a single company-line statement in any issue. Naturally, we can't officially recommend such a publication, but unofficially there is a definite need being addressed by Bridge. We'll just keep gritting our teeth from the arrows we get and continue trying to improve.

A subscription to Bridge is: $6.00 per year.

Available from:
BRIDGE
P.O. Box 316
Woodmore, NY 11598

Digital Group Group

The Digital Group Group of Chicago is another independent user's group. They provide a newsletter with much useful information - particularly for Phideck based systems.

The Digital Group Group of Chicago
2035 Prentiss Drive, #103
Downers Grove, IL 60515

Annual subscription is $5.00 per year.

Digital Group User's Ham Nets

There are two Amateur Radio User's Nets that we know of meeting on Saturdays.

The first group meets from 9a.m. to 10a.m. MST on 14281 KHz.

The second group meets at 3p.m. MST on 7190 KHz. *5pm GPST*

Convention Schedule

San Francisco, CA May 11-13, 4th West Coast Computer Faire
Convention Center and Brooks Hall

Rochester, NY May 30 - June 1, APL/79
Downtown Holiday Inn and Americana Rochester

Atlanta, GA June 17 & 18, Atlanta Ham Festival
Marriott Motor Hotel

Milwaukee, WI June 15 & 16, ARRL Central Division Amateur Radio Convention
Red Carpet Inn

PRE-INVENTORY SALE

Have we got a deal for you! Rather than count this slow-moving stuff again, we thought we would try a sale! Limited quantities, first-come, first-served, cash or charge only - no PO's or COD's. Please order sale items on a separate order.

Quantity Available	Order Code	Description	Price	Wt.
25	SVOTRAX1	Votrax speech synthesis kit	$295.00	2
55	SMB-1	Old style mini-motherboard	$10.00	1
75	SMB-2	Old style motherboards -use as short memory and I/O expanders - requires cutting	$20.00	2
30	SKEY-2	George Risk Keyboards #756	$45.00	4
233	STVC32-PC	TVC-32 (16lines x 32 char) PC Boards & documentation	$20.00	1
44	S8080	8080 CPU IC's	$5.00	1
3	SPT40	LRC 40-column printers	$65.00	5
11,000	S7476	7476 TTL IC's (1000 for $50.00)	12 for $1.00	1
149	SEMM32	32K Static PC Board for EMM 4801 with component layout	$10.00	2
800	SPAD-20MA	20ma Paddlecard PC Boards	$2.00	1
500	SPAD-STD	Single-sided version of PAD-STD	$2.00	1
1900	S744132	74132 Schmitt Trigger Nand	10 for $2.80	1
560	S4011	CMO5 4011	10 for $2.80	1
195	S74COO	CMO5 7400 Nand	10 for $2.50	1
380	SAUDCB	6' single audio patch w/minature phone jacks	$1.00	1
3600	STI22	22-pin TI low-profile sockets	8 for $2.00	1
1500	S2218R	18-pin 2.2k dip pack	10 for $10.00	1
178	S5082	HP5082-7430 3 Digit 7-segment display .22 Digit	$1.00	1

ORDERING INFORMATION

COMMON CARRIER RATE CHART

ANY FRACTION OF A POUND OVER THE WEIGHT SHOWN
TAKES THE NEXT HIGHER RATE

WEIGHT NOT TO EXCEED	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8
1 lb.	$.77	$.79	$.82	$.85	$.89	$.94	$.99
2 "	.84	.88	.94	.99	1.08	1.17	1.27
3 "	.91	.97	1.05	1.14	1.27	1.40	1.55
4 "	.98	1.05	1.17	1.28	1.45	1.63	1.84
5 "	1.05	1.14	1.28	1.43	1.64	1.86	2.12
6 "	1.12	1.23	1.40	1.57	1.83	2.09	2.40
7 "	1.19	1.31	1.52	1.72	2.01	2.32	2.69
8 "	1.26	1.40	1.63	1.86	2.20	2.55	2.97
9 "	1.33	1.49	1.75	2.01	2.39	2.78	3.25
10 "	1.40	1.57	1.86	2.15	2.57	3.01	3.53
11 "	1.47	1.66	1.98	2.30	2.76	3.25	3.82
12 "	1.54	1.75	2.10	2.44	2.95	3.48	4.10
13 "	1.61	1.84	2.21	2.59	3.14	3.71	4.38
14 "	1.68	1.92	2.33	2.73	3.32	3.94	4.67
15 "	1.75	2.01	2.44	2.88	3.51	4.17	4.95
16 "	1.82	2.10	2.56	3.02	3.70	4.40	5.23
17 "	1.89	2.18	2.68	3.17	3.88	4.63	5.52
18 "	1.96	2.27	2.79	3.31	4.07	4.86	5.80
19 "	2.03	2.36	2.91	3.46	4.26	5.09	6.08
20 "	2.10	2.44	3.02	3.60	4.44	5.32	6.36
21 "	2.17	2.53	3.14	3.75	4.63	5.56	6.65
22 "	2.24	2.62	3.26	3.89	4.82	5.79	6.93
23 "	2.31	2.71	3.37	4.04	5.01	6.02	7.21
24 "	2.38	2.79	3.49	4.18	5.19	6.25	7.50
25 "	2.45	2.88	3.60	4.33	5.38	6.48	7.78
26 "	2.52	2.97	3.72	4.47	5.57	6.71	8.06
27 "	2.59	3.05	3.84	4.62	5.75	6.94	8.35
28 "	2.66	3.14	3.95	4.76	5.94	7.17	8.63
29 "	2.73	3.23	4.07	4.91	6.13	7.40	8.91
30 "	2.80	3.31	4.18	5.05	6.31	7.63	9.19
31 "	2.87	3.40	4.30	5.20	6.50	7.87	9.48
32 "	2.94	3.49	4.42	5.34	6.69	8.10	9.76
33 "	3.01	3.58	4.53	5.49	6.88	8.33	10.04
34 "	3.08	3.66	4.65	5.63	7.06	8.56	10.33
35 "	3.15	3.75	4.76	5.78	7.25	8.79	10.61
36 "	3.22	3.84	4.88	5.92	7.44	9.02	10.89
37 "	3.29	3.92	5.00	6.07	7.62	9.25	11.18
38 "	3.36	4.01	5.11	6.21	7.81	9.48	11.46
39 "	3.43	4.10	5.23	6.36	8.00	9.71	11.74
40 "	3.50	4.18	5.34	6.50	8.18	9.94	12.02
41 "	3.57	4.27	5.46	6.65	8.37	10.18	12.31
42 "	3.64	4.36	5.58	6.79	8.56	10.41	12.59
43 "	3.71	4.45	5.69	6.94	8.75	10.64	12.87
44 "	3.78	4.53	5.81	7.08	8.93	10.87	13.16
45 "	3.85	4.62	5.92	7.23	9.12	11.10	13.44
46 "	3.92	4.71	6.04	7.37	9.31	11.33	13.72
47 "	3.99	4.79	6.16	7.52	9.49	11.56	14.01
48 "	4.06	4.88	6.27	7.66	9.68	11.79	14.29
49 "	4.13	4.97	6.39	7.81	9.87	12.02	14.57
50 "	4.20	5.05	6.50	7.95	10.05	12.25	14.85

RATES TO

ADDITIONAL CHARGES:
For each COD received for collection — 85 cents.
For each package with a declared value over $100 — 25 cents for each additional $100 or fraction thereof.

WEIGHT AND SIZE LIMITS:
Maximum Weight per package — 50 POUNDS.
Maximum Weight of all packages from one shipper to one consignee in one day — 100 pounds.

TERRITORY SERVED — 48 CONTINENTAL UNITED STATES

TO DETERMINE ZONE, TAKE FIRST THREE DIGITS OF ZIP CODE TO WHICH PARCEL IS ADDRESSED AND REFER TO CHART BELOW

ZIP CODE PREFIX	UPS ZONE	ZIP CODE PREFIX	UPS ZONE	ZIP CODE PREFIX	UPS ZONE	ZIP CODE PREFIX	UPS ZONE
010-043	7	373-379	6	580-583	5	825-827	3
044	8	380-384	5	584-593	4	828	4
045	7	385	6	594-595	5	829-831	3
046-048	8	386-392	6	596-597	5	832-834	4
049-089	7	393-395	6	598-599	5	835-838	5
		396-397	5			840-873	4
100-139	7			600-639	5	874-877	3
140-147	6	400-418	6	640-648	4	878-883	4
148-149	7	420	5	650-658	4	884	3
150-167	6	421-422	6	660-675	4	890-893	4
168-199	7	423-424	5	676-679	3	894-897	5
		425-458	6	680-689	4	898	4
200-214	7	460-466	5	690-693	3		
215	6	467-468	6			900-954	5
216-225	7	469	5	700-704	6	955	6
226	6	470-471	6	705-726	5	956-961	5
227	7	472	5	727	4	970-979	5
228	6	473	6	728-729	5	980-982	6
229-239	7	474-479	5	730-738	4	983-984	5
240-253	6	480-489	6	739	3	985	6
254	7	490-491	6	740-746	4	986	5
255-274	6	492	6	747	5	988-994	5
275-279	7	493-495	5	748	4		
280-282	6	496-497	6	749-761	5		
283-285	7	498-499	5	762-763	4		
286-293	6	764-789	5				
294-295	7	500-503	4	790-799	4		
296-299	6	504	5				
		505	4	800-810	2		
300-319	6	506-507	5	811	3		
320-322	7	508-516	4	812	2		
323-325	6	520-560	5	813-815	3		
326-339	7	561-562	5	816-820	2		
350-369	6	563-567	5	821-823	3		
370-372	5	570-577	4	824	4		

FREIGHT CHARGES

All orders (prepaid, COD, P.O., APO and FPO) will be shipped FOB from Denver to any place in the continental U.S.A.; buyer will pay freight and insurance charges.

Orders weighing over 100 lbs. will be shipped on different days to meet carrier restrictions.

Shipping charges subject to change without notice.

Charge for Shipping

Due to continually increasing costs, we are no longer able to include shipping charges in our prices. Effective immediately all orders must contain shipping charges.

PRICE LIST

New prices effective April 15, 1979. Prices are subject to change without notice. Refer to previous Flyers for more complete product descriptions. All current product shipping dates are as set forth in this flyer.

Description	Order Code	Kit Price	Assembled Price	Wt.

SERIES 5 - Z-BOARD

Description	Order Code	Kit Price	Assembled Price	Wt.
Z-Board Computer	Z-BOARD1	$345.00	$445.00	4

SERIES 4 - BYTEMASTER

All systems in the Series 4 line include Z-80 CPU, 64 character video, built-in data monitor, keyboard & yoke cabinet, plus provisions for attachment of additional storage devices and a printer.

Description	Order Code	Kit Price	Assembled Price	Wt.
18K, set up for standard disks, DISKMON	MASTER-0-A	$1,695.00	$1,995.00	60
34K, set up for standard disks, DISKMON	MASTER-0-B	1,895.00	2,345.00	60
18K, Phideck storage, PHIMON	MASTER-1	1,945.00	2,415.00	65
34K, Phideck storage, PHIMON	MASTER-2	2,245.00	2,665.00	65
18K, double-density Mini-Floppy storage, DISKMON	MASTER-3	2,345.00	2,815.00	65
34K, double-density Mini-Floppy storage, DISKMON	MASTER-4	2,545.00	3,065.00	65
OASIS Special Bytemaster - 64K, 2 double-density standard disks, OASIS	MASTER-5	4,195.00	4,875.00	89
OEM Bytemaster System - MASTER-0-B, 2 double-density standard disks, Centronics 779-2	OEM-1	NA	5,295.00	160

SERIES 3 - SYSTEMS

A system in the Series 3 line can be ordered as a kit or a completely assembled, integrated and tested unit.

Description	Order Code	Kit Price	Assembled Price	Wt.
System 1: MAIN-2, Z80-OPSYS	DG-SYS1A	$1,615.00	$1,915.00	54
System 2: MAIN-2, 2 Phidecks, PHIMON	DG-SYS2A	2,215.00	2,715.00	79
System 3: MAIN-2, 2 double-density Mini-Floppies, DISKMON	DG-SYS3A	2,995.00	3,645.00	95
System 4: Main-3, 2 double-density Mini-Floppies, Printer, DISKMON	DG-SYS4A	3,875.00	4,695.00	112
Development 1: Main-3, 2 Phidecks, 2 double-density Standard Floppies, Printer, DISKMON	DG-SYS5A	4,745.00	5,795.00	131
Computational 1: Main-5, 2 Phidecks, PHIMON	DG-SYS6A	2,745.00	3,375.00	73
Ham System 1: Main-2, 8 additional I/O Ports, & Hamboard. Software (MAXI-BASIC, and ASSM II). (No Monitor.)	DG-SYSHAM	1,615.00	2,115.00	59

SERIES 2 - COMPONENTS

Mainframes:

All Mainframe components in the Series 2 line include the Z-80 CPU, 64 character video, four 8-bit input ports, four 8-bit output ports, new standard motherboard, 2 Amp power supply, dress cabinet, assembled dynamic memory, audio load PROM, and standard wiring.

Description	Order Code	Kit Price	Assembled Price	Wt.
Mainframe 1, 10K Total memory	MAIN-1	1,095.00	1,475.00	2
Mainframe 2, 18K Total memory	MAIN-2	1,215.00	1,595.00	54
Mainframe 3, 34K Total memory	MAIN-3	1,395.00	1,795.00	54
Mainframe 4, 50K Total memory	MAIN-4	1,665.00	2,115.00	54
Mainframe 5, 64K Total memory	MAIN-5	1,845.00	2,295.00	54

Peripherals:

All peripheral components in the Series 2 line include the appropriate interface card for the Digital Group mainframe, the device(s), the interface cables, power supplies and cabinets to make the components functional.

Single density disk subsystems:

Description	Order Code	Kit Price	Assembled Price	Wt.
Mini-Floppy - 1 Drive	DSM-COMP1	795.00	975.00	21
Mini-Floppy - 2 Drive	DSM-COMP2	1,195.00	1,395.00	35
Standard Floppy - 1 Drive	DSS-COMP1	995.00	1,195.00	21
Standard Floppy - 2 Drive	DSS-COMP2	1,575.00	1,795.00	35

Double-density disk subsystems:

Description	Order Code	Kit Price	Assembled Price	Wt.
Mini-Floppy - 1 Drive	DSM-COMP2D	995.00	1,195.00	21
Mini-Floppy - 2 Drive	DSM-COMP2D	1,395.00	1,595.00	35
Standard Floppy - 1 Drive	DSS-COMP1D	1,195.00	1,395.00	21
Standard Floppy - 2 Drive	DSS-COMP2D	1,775.00	1,995.00	35

Standalone Peripherals:

Description	Order Code	Kit Price	Assembled Price	Wt.
Keyboard - Capacitance with numeric pad	KEY1-COMP	NA	245.00	10
Keyboard - Extra function	KEY3-COMP	NA	249.50	10
9" Data Monitor	MON9D-COMP	NA	249.50	23
9" Data Monitor plus SYNC separator	MON9D-CP-S	NA	269.50	23
Phideck - 2 drives	PHI2-COMP	545.00	675.00	19
Phideck - 4 drives	PHI4-COMP	845.00	995.00	25

Description	Order Code	Kit Price	Assembled Price	Wt.
96 column printer	PT96-COMP	675.00	795.00	23
Centronics 779-2 with tractorfeed	PT-TRAC1	NA	1,295.00*	70
Texas Instruments Model 810 with:				
Paddlecard Cable	PT-TRAC4PC	NA	2,040.00*	70
Bytemaster Cable	PT-TRAC4BT	NA	2,040.00*	70
Spinwriter with Paddlecard Cable	SPIN-1PC	NA	2,650.00*	70
Spinwriter with Bytemaster Cable	SPIN-1BT	NA	2,650.00*	70
* = Cash with order only				

SERIES 1 - UNITS

System Packages:

Description	Order Code	Kit Price	Assembled Price	Wt.
Three board system with Z-80 CPU, IO-F, TVC-64, and MB-2 (2K total memory)	Z80-3BDA	495.00	595.00	8
Four board system with Z-80 CPU, IO-F, TVC-64, MEM-8C, and MB-2 (10K total memory)	Z80-4BDA	695.00	895.00	10

Memory Boards:

Note: Connectors are not included

Description	Order Code	Kit Price	Assembled Price	Wt.
1702A 4K EPROM board with 4K 1702A's (unprogrammed)	1702-F	299.00	345.00	2
8K memory board using high speed low power 2102's	MEM-8C	225.00	275.00	2
16K memory board using 4K statics (TMS4044 or equivalent)	MEM-16	345.00	NA	2
32K memory board using 4K statics (TMS4044 or equivalent)	MEM-32	595.00	645.00	2
16K memory board using 4K dynamics	MEM-16D	NA	295.00	2
32K memory board using 4K dynamics	MEM-32D	NA	495.00	2

Memory boards without memory IC's:

Note: Connectors are not included

Description	Order Code	Kit Price	Assembled Price	Wt.
1702A 4K EPROM board without 1702A's	1702-0	75.00	NA	2
8K memory board without 2102's	MEM-0	60.00	NA	2
32K static memory board without 4044's	MEM32-0	60.00	NA	2

Peripheral Boards:

Note: Connectors are not included

Description	Order Code	Kit Price	Assembled Price	Wt.
Audio Cassette interface - standalone	CAS-STD	39.50	65.00	2
Communications interface with 1 I/O channel	COMM-1	95.00	NA	2
Communications interface with 4 I/O channels	COMM-4	145.00	195.00	2
Mini-Floppy interface - supports 4 drives	DSM-INT1	199.50	249.50	2
Standard Floppy interface - supports 4 drives	DSS-INT1	199.50	249.50	2
Double-Density Floppy interface - supports 4 standards or minis	DSS-INTD	395.00	475.00	2
High Resolution Graphics	GRAPH-2	295.00	395.00	2
Ham interface board	HAM-1	195.00	295.00	2
I/O board with four 8-bit input ports and four 8-bit output ports	IO-F	65.00	95.00	2

Description	Order Code	Kit Price	Assembled Price	Wt.
Phideck interface - supports 4 drives	PHI-F	149.50	220.00	2
Video interface - 64 x 16 - includes audio interface	TVC-64	155.00	205.00	2
Video interface - 96 x 24	TVR-96	NA	295.00	2

Peripheral Mechanisms:

Description	Order Code	Kit Price	Assembled Price	Wt.
Mini-Floppy Disk Drive - MPI (double density) or equivalent	DSM-DRMPI1	NA	395.00	12
Mini-Floppy Disk Drive - MPI (dual side, double-density) or equivalent	DSM-DRMPID	NA	545.00	12
Standard Floppy Disk Drive - Shugart or equivalent	DSS-DRSH1	NA	595.00	14
Capacitance Keyboard with numeric pad, cursor control keys, and cable	KEY-1	NA	180.00	6
Phideck digital cassette tape unit	PHI-1	NA	149.50	4

Accessories - Cables/Connectors:

Description	Order Code	Kit Price	Assembled Price	Wt.
General purpose cable kit with crimp tool	CAB-1	55.00	NA	4
General purpose cable kit without tool	CAB-2	37.50	NA	3
Video monitor cable	CBL-VID	NA	6.95	1
Phideck cable pack - up to 4 drives - 6'	CBLPK-PHI	NA	34.95	2
Mini-Floppy cable pack - up to 2 drives	DSM-CBLPK2	NA	49.50	2
Mini-Floppy cable pack - up to 4 drives	DSM-CBLPK4	NA	84.50	3
Standard Floppy cable pack - up to 2 drives	DSS-CBLPK2	NA	49.50	2
Standard Floppy cable pack - up to 4 drives	DSS-CBLPK4	NA	84.50	3
Double density and dual sided Floppy cable - 4 drive	DSS-CBLPK4	NA	84.50	3
CPU Connector Set - five 22-pin dual, 3 PAD-STD, 2 PAD-PROT	22-CONN5	54.50	NA	2
Dual 22-pin w/w connector	22-WW	NA	4.00	1
Dual 36-pin w/w connector	36-WW	NA	5.00	1
Dual 50-pin w/w connector	50-WW	NA	6.00	1

Accessories - Boards:

Description	Order Code	Kit Price	Assembled Price	Wt.
Extender boards - complete 3 board set	EXT-3	55.00	75.00	3
I/O card with connectors	IO-PCC	47.50	NA	1

Motherboards (without connectors):

Description	Order Code	Kit Price	Assembled Price	Wt.
Mini-Motherboard - holds 1 CPU, 1 TVC, 1 Memory, and 1 I/O cards	MB-1	30.00	NA	1
Standard Motherboard - holds 1 CPU, 1 TVC, 3 Memory, and 4 I/O cards	MB-2	45.00	NA	1
Memory Expansion - adds 5 memory slots	MB-3	29.50	NA	1
I/O Expansion - adds 10 I/O slots	MB-4	45.00	NA	1
Heavy-Duty Standard Motherboard - holds 1 CPU, 1 TVC, 3 Memory, and 6 I/O cards	MB-6	75.00	NA	1
I/O prototyping card with connectors	PROT-IOC	47.50	NA	1
Memory prototyping card with connectors	PROT-MEMC	47.50	NA	1

Cabinets:

Description	Order Code	Kit Price	Assembled Price	Wt.
Mainframe - Basic Box	BB-STD	95.00	NA	9
Mainframe - Complete Basic Box	BB-COMP	145.00	NA	12
Phideck - 2 drive	CB-CAS2	65.00	NA	9
Phideck - 4 drive	CB-CAS4	65.00	NA	9
Mainframe - dress cabinet	CB-CPU	249.50	NA	27
Cabinet for KEY-1	CB-KEY1	59.50	NA	7
Cabinet for MON-9	CB-MON9	59.50	NA	6
Cabinet for one mini-floppy	DSM-CB1	95.00	NA	15
Cabinet for two mini-floppies	DSM-CB2	95.00	NA	15
Cabinet for one Standard Floppy	DSS-CB1	145.00	NA	20
Cabinet for two Standard Floppies	DSS-CB2	145.00	NA	20
Peripheral Plate	PP-1	29.95	NA	5

Power Supplies:

Description	Order Code	Kit Price	Assembled Price	Wt.
Mini-Floppy - supports 2 drives	DSM-PWR2	85.00	110.00	5
Standard Floppy - supports 2 drives	DSS-PWR2	85.00	110.00	5
12V at 1 amp, -12V at 1 amp, -5V at 1 amp	PWR-0	45.00	60.00	3
+5V at 12 amps	PWR-12-5V	NA	135.00	9
+5V at 12 amps plus PWR-0	PWR-12	175.00	195.00	9
+5V at 18 amps	PWR-18-5V	NA	185.00	10
+5V at 18 amps plus PWR-0	PWR-18	220.00	245.00	10

Upgrades:

Description	Order Code	Kit Price	Assembled Price	Wt.
Mini-Floppy expansion from 1 to 2 drives	DSM-EXP-12	445.00	445.00	10
Mini-Floppy expansion from 2 to 3 drives	DSM-EXP1	595.00	695.00	20
Mini-Floppy expansion from 2 to 4 drives	DSM-EXP2	995.00	1,145.00	34
Standard Floppy expansion from 1 to 2 drives	DSS-EXP-12	645.00	645.00	20
Standard Floppy expansion from 2 to 3 drives	DSS-EXP1	825.00	925.00	20
Standard Floppy expansion from 2 to 4 drives	DSS-EXP2	1,375.00	1,545.00	34
MEM-16 to MEM-32 using 4K statics	MEM16-32	295.00	NA	2
TVC card from 32 char/line to 64 char/line	TVC-64UPG	69.50	NA	2
8080, 6500, 6800 CPU card to Z-80 CPU	Z80-UPG	145.00	NA	2

Media/Supplies:

Description	Order Code	Kit Price	Assembled Price	Wt.
Standard Floppy Disk - soft sector, Single side, single density:				
Single	DSS-F1S	NA	7.00	1
Package of 10	DSS-F10S	NA	55.00	3
Standard Floppy Disk - soft sector, Double side, double density:				
Single	DSS-F1SD	NA	9.00	1
Package of 10	DSS-F10SD	NA	80.00	3
Mini-Floppy Disk - soft sector, Single side, single density:				
Single	DSM-F1S	NA	7.00	1
Package of 10	DSM-F10S	NA	55.00	2
Mini-Floppy Disk - soft sector, Double side, double density				
Single	DSM-F1SD	NA	9.00	1
Package of 10	DSM-F10SD	NA	80.00	2
Audio Cassette:				
Single	CASSETTE1	NA	2.00	1
Package of 10	CASSETTE10	NA	18.00	3

SOFTWARE:

All software packages include documentation.

Codes for Distribution Media:

DM = Mini Disk

DDM= Double Density Mini Disk

DS = Standard Disk

DDS Double Density Standard Disk

Operating Systems:

OASIS 5.3 with Text-Editor, Exec Language, O-Basic, and Script:

Description	Order Code	Dist. Media	Price	Wt.
--- Before May 30, 1979				
on Mini-Disk, double density	OASIS-MD	DDM	155.00*	5
on Standard Disk, single density	OASIS-S	DS	155.00*	5
on Standard Disk, double density	OASIS-SD	DDS	155.00*	5
--- After May 30, 1979				
on Mini-Disk, double density	OASIS-MD	DDM	249.50	5
on Standard Disk, single density	OASIS-S	DS	249.50	5
on Standard Disk, double density	OASIS-SD	DDS	249.50	5
Disk Operating System (DISKMON)				
on Standard Disk, single density	DISKMON-S	DS	45.00	2
on Standard Disk, double density	DISKMON-SD	DDS	45.00	2
Disk Operating System (DISKMON)				
on Mini-Disk, single density	DISKMON-M	DM	45.00	2
on Mini-Disk, double density	DISKMON-MD	DDM	45.00	2
Phideck Operating System (PHIMON)	PHIMON		30.00	1
Z-80 Operating System	Z80-OPSYS		7.50	1

* Until May 30, 1979

Operating System Updates:

OASIS 5.0 to 5.3 (available until May 30, 1979):
Standard Disk, single density only

Upgrade from/to	Order Code	Dist. Media	Price	Wt.
OASIS and O-BASIC	O-UPD-1	DS	50.00	5
SCRIPT	O-UPD-2	DS	10.00	1
MACRO Assembler	O-UPD-3	DS	20.00	2

Note: Oasis serial number **MUST** be included with order.

Upgrade from/to	Order Code	Dist. Media	Price	Wt.
PHIMON 1.0 to PHIMON 2.0	PUP-1	P	10.00	1

Languages:

Upgrade from/to	Order Code	Dist. Media	Price	Wt.
APL on standard disk	APL-S	DS	350.00	2
APL on mini disk	APL-M	DM	350.00	2
Assembler II on audio	ASSMII	A	15.00	1
Business BASIC on audio	BUS-1	A	20.00	1
CONVERS	CONVERS	P	25.00	1
ASSEMBLER II on standard disk	DASSM-2-S	DS	25.00	1
ASSEMBLER II on mini disk	DASSM-2-M	DM	25.00	1
Assembler 3 on Phideck	ASSM-3	P	30.00	2
Business BASIC on standard disk	DBUS-1-S	DS	35.00	1
Business BASIC on mini disk	DBUS-1-M	DM	35.00	1
Maxi-BASIC on standard disk	DMAXI-S	DS	25.00	1
Maxi-BASIC on mini disk	DMINI-S	DM	25.00	1
Maxi-BASIC on audio	MAXI-BASIC	A	15.00	1

OASIS MACRO Assembler:

--- after May 30, 1979:

Upgrade from/to	Order Code	Dist. Media	Price	Wt.
on Mini-Disk, double density	OASSM-MD	DDM	99.50	2
on Standard Disk, single density	OASSM-S	DS	99.50	2

--- until May 30, 1979:

Upgrade from/to	Order Code	Dist. Media	Price	Wt.
on Mini-Disk, double density	OASSM-MD	DDM	50.00	2
on Standard Disk, single density	OASSM-S	DS	50.00	2
Tiny-BASIC Extended	TBX-TVCOS	A	7.50	1

Applications:

Business:

Upgrade from/to	Order Code	Dist. Media	Price	Wt.
Maillist One (Oasis)	MAIL-1-SD	DS	19.95	1
Maillist One (Oasis)	MAIL-1-MDD	DDM	19.95	1
Point-of-Sale data collection (minimal)	BUS-100	DS	15.00	1

Games:

Upgrade from/to	Order Code	Dist. Media	Price	Wt.
Galaxy	GALAXY	A	7.50	1
Kingdom	KING1	A	5.00	1

Maxi-BASIC Games:

Upgrade from/to	Order Code	Dist. Media	Price	Wt.
Set 1 - 7	MB-GS1-7	A	47.50	2
Set 8	MB-GS8	A	7.50	1
Set 9	MB-GS9	A	7.50	1
Complete set 1-9	MB-GSCOMP	A	60.00	4

Upgrade from/to	Order Code	Dist. Media	Price	Wt.
Micro-Chess	MICRO-CH	A	25.00	1

Oasis Games - Set of 5

Upgrade from/to	Order Code	Dist. Media	Price	Wt.
Standard Disk	OGAME-SD1	DS	25.00	1
Mini-Disk, dbl den	OGAME-MDD	DDM	25.00	1
Tiny BASIC Games 1-6	TBX-GSCOMP	A	25.00	3
Super Games on audio	SUP-GAME-A	A	25.00	1
Super Games on standard disk	SUP-GAME-S	DS	30.00	1
Super Games on mini-disk	SUP-GAME-M	DM	35.00	2
SARGON Chess with book	SARGONB	A	30.00	2
Z-80 Lunar Lander	Z80-LUNAR	A	7.50	1

Graphics support for High Resolution Graphics:

Upgrade from/to	Order Code	Dist. Media	Price	Wt.
IMAGE - Graphics Standalone Editor	IMAGE	A	27.50	1
O-BASIC Graphics Routines	OBGR1-SD	DS	27.50	1
O-BASIC Graphics Routines	OBGR1-MDD	DDM	27.50	1

Oasis Support Packages:

Upgrade from/to	Order Code	Dist. Media	Price	Wt.
Cross Reference for O-BASIC	OXREF-SD	DS	19.95	1
	OXREF-MDD	DDM	19.95	1
Filebuilder	FBLD-SD	DS	49.95	4
	FBLD-MDD	DDM	49.95	4
Monitor and Expanded Lister	MON-SD	DS	24.95	2
	MON-MDD	DDM	24.95	2

Printer Drivers for non-DG supplied printers:

Upgrade from/to	Order Code	Dist. Media	Price	Wt.
Teletype Model 40 Driver	DEVTTY40	DS	15.00	1
Teletype Model 43 Driver	DEVTTY43	DS	15.00	1
Qume Sprint 3 Driver	DEVQUME3	DS	15.00	1

Other:

Upgrade from/to	Order Code	Dist. Media	Price	Wt.
Amateur Radio Package	ARP-1	A	5.00	1
Code Practice	CODE-PRAC	A	5.00	1
Speech Synthesizer - Talking BASIC, Talking CW, Latin & Spanish	VOTX	A	27.50	3
Memory Tester, Super Clock & Z80 Op Sys	3PACK-1	A	7.50	1

Programming Aids:

Upgrade from/to	Order Code	Dist. Media	Price	Wt.
Dis-Assembler II	DISASSM2	A	15.00	1
Z-80 Educator	ED-Z80	A	10.00	1
ACS Maxi-BASIC Sort	SORT-MB2	P	27.50	1
STEPPER 2.0	STEPPER	A	10.00	1

Word Processing:

Upgrade from/to	Order Code	Dist. Media	Price	Wt.
Digital Group Word Processing	WOPROC-1	A, P	27.50	1

HELLO! We are General Computer Technology, and we'd like to tell you about our company and our products.

GCT was incorporated in September, 1976 and initially did consulting work for microcomputer manufacturers. As time passed, we saw that there was a need for certain products that was going unfulfilled by the larger manufacturers.

For example, much has been said in magazines about computers controlling lights and applicances, and being used for energy management in the home. However, when you try to find these products that are talked about so much, you find very few that exisit for the personal computer owner. And those that do exisit, are typically specialized or limited in scope. GCT decided that it was time to branch out and fill this need. So the Real World Interface System was designed. This is a general purpose Data Acquisition and Process Control System with a full range of products to fill almost all your needs. Other products include the Real Time Clock/Interrupt Controller, a storage system for floppy diskettes and bus terminators.

In addition to these products, General Computer Technology does consulting and custom design for industrial and commercial applications.

GCT would like to thank The Digital Group for allowing us to include this supplement along with their flyer. We are pleased to offer you these products, which are D.G. compatable, and feel you will recognize them to be innovative as well as practical. Please use our order form, found in the back of the supplement, when ordering GCT products.

We hope you will find something that will be suited to your needs. If not, please pass the supplement on to a friend. In any event, feel free to write us and let us know what you think.

Sincerely,

GENERAL COMPUTER TECHNOLOGY
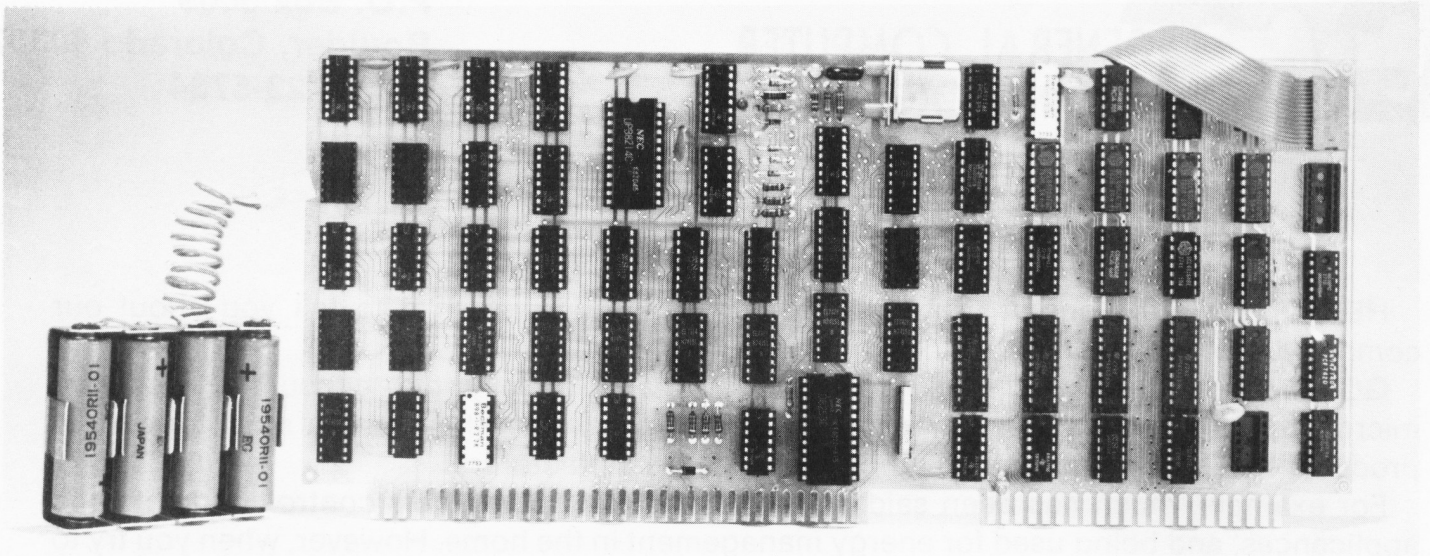
REAL TIME CLOCK/INTERRUPT CONTROLLER BOARD

TIME and MANAGEMENT. If we could manage our time more effectively, we could accomplish more with less effort. That's the purpose of General Computer Technology's new Real Time Clock/Interrupt Controller Board for Digital Group 8080 and Z80 Systems. This board enables your computer to handle several tasks simultaneously as well as making time dependent processing applications available.

The board is comprised of:

— A stable 1MHz timebase
— A CMOS battery operated calendar clock
— Three fully configurable timers with an automatic frequency measurement system
— An eight-level priority vectored interrupt controller

The board allows you to increase your computer's useful processing time by eliminating timing loops and costly wait loops for I/O device servicing and control. It facilitates multi-user and multi-task environments. Date/Time stamping of assemblies, files, and updates, time of day dependent process control and programmable sequencing systems are made possible. Frequency synthesis (direct or indirect through phase-locked loops), frequency, period, interval, and counting measurements, etc., are also possible.

The Calendar/Clock features:

— Operates on a battery with an automatic built-in charger
— Operates for more than 14 days per charge
— Is accurate to within 2.5 seconds per month
— Has 24 bits of directly readable time in units of seconds.

The Interval Timer features:

— Three independent 16-bit counters
— Six programmable counter modes, including programmable rate generator, triggered strobes and event counter

— Fully programmable input to all clocks and gates from eight sources, including external input, cross-coupled counter control, selectable clocking rates and software-controlled gating
— Selectable interrupt and timing rates from 1Hz to 1Mhz
— Binary or BCD counting
— 50MHz two decade prescaler for frequency counter applications

The Priority Interrupt Controller features:

— Has eight levels of prioritized vectored interrupts
— Has Schmidt-triggered inputs
— Supports 8080 and all three Z-80 interrupt modes
— Each level is individually maskable under software control
— Each level can be configured to select a rising or falling edge or active high or active low level interrupt conditions

REQUIREMENTS:

— 5 volts at 1.2 amps
— 12 volts at 40 ma
— 4.8 volts at 0.7 ma (NiCad batteries are supplied with the board)
— Assignment of a block of 16 I/O ports (all I/O ports are decoded on board)
— 1 I/O slot on D.G. motherboard

ORDER CODE	DESCRIPTION	SHPG. WT.	PRICE
NDA-RTC-1G	Real Time Clock Interrupt Controller (assembled)	2 lbs.	379.00
NDA-RTC-0 G	Real Time Clock Interrupt Controller (kit)	2 lbs.	299.00

Please write us concerning the availability of a multi-user operating system with high-level language which can be used with this board.
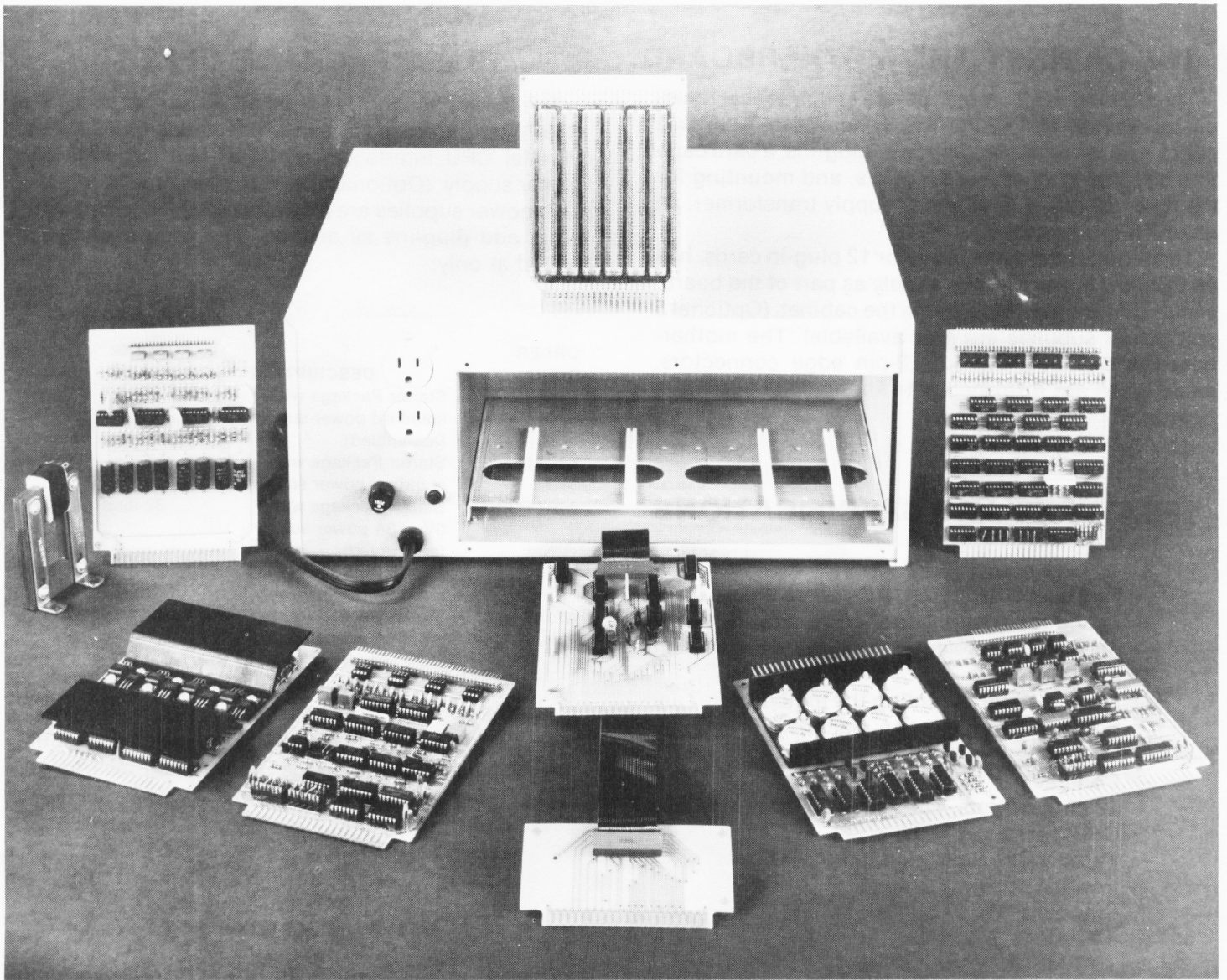
THE REAL WORLD INTERFACE SYSTEM

The Real World Interface System is the first low-cost, general purpose Data Acquisition and Process Control System designed for use with mini and micro-computers. It features many different plug-in modules which give you the flexibility and power to configure your system according to your needs. Almost every board has 8 channels or more of input or output, and can be controlled using BASIC or other high level languages.

Application possibilities are limited only by the imagination. In the home, applications range from simple home control tasks like automatic lawn sprinkler control and turning outlets or lamps on and off; to more complex tasks such as peak demand limiting for electric homes and solar energy system control. There's also intrusion detection and burglar alarms, weather monitoring, greenhouse control and all types of environmental control.

If you're into sophisticated electronics, then you can use the Real World Interface System for joystick interfacing, proportional sensing, and model railroading. Perhaps the most exciting application is robot control. This includes sensor input, motor/solenoid control, and decision making.

The Real World Interface System can be used in industrial applications as well. Automated assembly line testing of electronic components, industrial robot applications, and environmental control are only a few.

The Real World Interface System — a new era in process control.

THE CABINET AND MOTHERBOARD

The Cabinet is a durable, simple and practical housing for the Real World Interface System plug-in cards. It contains a fan to cool high power plug-ins, a card cage to which the motherboard mounts, and mounting for the fuse, AC outlet, and power supply transformer, all of which are provided.

The Motherboard has room for 12 plug-in cards, has its own low current power supply as part of the board, and mounts to the card cage in the cabinet. (Optional 5 volt power supplies are also available). The motherboard is supplied without 22-pin edge connectors, since these are furnished with the individual plug-in boards.

FEATURES AND SPECIFICATIONS

— Fan, fused AC outlet, AC power cord
— Space for an additional power supply, etc.
— Air flow channeled over plug-ins for efficient cooling
— Card cage for mounting the motherboard and holding the plug-ins in place.
— Stackable
— Compact — 17" x 14" x 7"
— 12 plug-in slots, one required for the Parallel CPU Interface Card
— Parallel bus for the plug-ins: 44 lines
— Power Supply:
Standard
+12Vdc ± 5% at 1A
−12Vdc ± 5% at 1A
+ 5Vdc ± 5% at 1A
Optional 5V supplies
(+12 and −12Vdc are the same
as the standard)
+ 5Vdc ± 0.1% at 3A
+ 5Vdc ± 0.1% at 6A

ORDER CODE	DESCRIPTION	SHPG. WT.	PRICE
A700 G	Cabinet and Motherboard with standard power supply (assembled)	25 lbs.	299.00
K700 G	Cabinet and Motherboard with standard power supply (kit)	25 lbs.	249.00
A700-PS3 G	Cabinet and Motherboard with 5V at 3A power supply (assembled)	30 lbs.	339.00
K700-PS3 G	Cabinet and Motherboard with 5V at 3A power supply (kit)	30 lbs.	279.00
A700-PS6 G	Cabinet and Motherboard with 5V at 6A power supply (assembled)	32 lbs.	385.00
K700-PS6 G	Cabinet and Motherboard with 5V at 6A power supply (kit)	32 lbs.	325.00

BASE PACKAGE OFFER

The Base Package is the basic set up for using the Real World Interface System. It includes the Cabinet, Parallel CPU Interface Card, and Motherboard and power supply. (Optional 5 Volt at 3 amp and 5 Volt at 6 amp power supplies are also available). All you need to do is add plug-ins as desired. The base Package is priced at only:

ORDER CODE	DESCRIPTION	SHPG. WT.	PRICE
A707 G	Starter Package with standard power supply (assembled)	27 lbs.	360.00
K707 G	Starter Package with standard power supply (kit)	27 lbs.	299.00
A707-PS3 G	Starter Package with 5V at 3A power supply (assembled)	32 lbs.	399.00
K707-PS3 G	Starter Package with 5V at 3A power supply (kit)	32 lbs.	329.00
A707-PS6 G	Starter Package with 5V at 6A power supply (assembled)	34 lbs.	455.00
K707-PS6 G	Starter Package with 5V at 6A power supply (kit)	34 lbs.	385.00

And, as an added bonus, we'll give you a 5% discount for any Real World Interface System plug-ins ordered with the Base Package. This is our way of helping you get off to a good start.

POWER SUPPLIES

Power supply up-grades are offered for the user who needs more current from his +5V supply. All supplies are fully assembled and tested, and come in either 5V at 3 amp or 5V at 6 amp versions.

ORDER CODE	DESCRIPTION	SHPG. WT.	PRICE
K713 G	+5V at 3 amps	5 lbs.	40.00
K716 G	+5V at 6 amps	7 lbs.	86.00

THE PLUG INS

Below are listed all the plug-in boards available now. Addressing for all boards is jumper selectable and is independent of their location on the motherboard. Each board comes with a dual 22-pin edge connector for mounting to the motherboard and the appropriate external connectors for that board.

PARALLEL CPU INTERFACE CARD
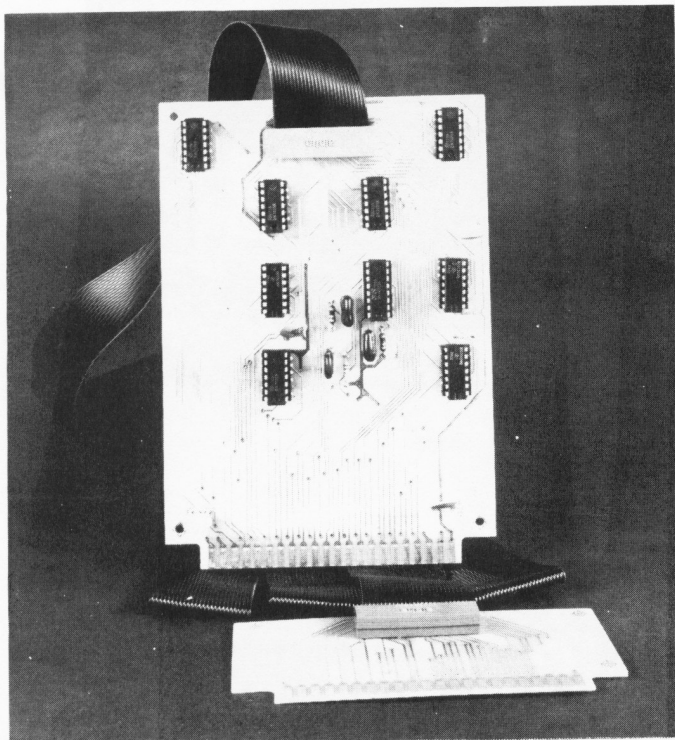
This card is required to interface the System to the ontrolling computer. It buffers data from the CPU and generates strobes and other signals for the other plug-in cards. Two 8-bit latched or one 16-bit latched output port and one 8-bit input port from the CPU are required. The CPU Interface will work with any computer meeting these requirements.

FEATURES AND SPECIFICATIONS

— Power required: +5Vdc at 350 ma
— 8 foot cable supplied along with a paddle card, two 22-pin edge connectors, and CPU cabling for Digital Group Systems
— Requires two 8-bit latched output ports and one 8-bit input port from the controlling computer
— Only interface necessary to the computer

ORDER CODE	DESCRIPTION	SHPG. WT.	PRICE
A720 G	Parallel CPU Interface (assembled)	2 lbs.	95.00
K720 G	Parallel CPU Interface (kit)	2 lbs.	79.50

A/D CONVERTER CARD (ANALOG INPUT)
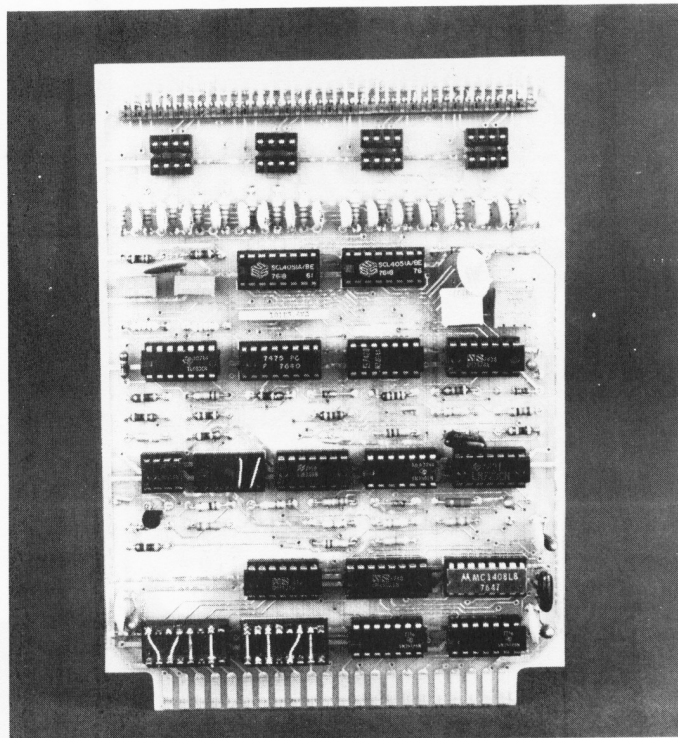
This card contains an instrumentation amplifier, an input multiplexer that can select up to 16 single ended or 8 differential mode signals, a track and hold buffer, and a high speed A/D converter. The maximum conversion time of 40 usec allows digitizing most of the audio spectrum, while the low input drift makes it ideal for use with the temperature probes, current probes, and other precision transducers.

FEATURES AND SPECIFICATIONS

— Power required: +5V at 300 ma ± 12V at 25 ma
— 16 single ended or 8 differential mode channels
— Input range of −5V to +5V or 0V to +5V
— 8 bits of resolution
— Accuracy ± 0.4% of full range
— Conversion time of 40 usec (worst case)
— Registor programmable instrumentation amplifier
— Throughput rate of 25,000 conversions/sec minimum

APPLICATIONS: Temperature probes, current probes, digitizes audio signals

ORDER CODE	DESCRIPTION	SHPG. WT.	PRICE
A750 G	A/D Converter (assembled)	2 lbs.	99.50
K750 G	A/D Converter (kit)	2 lbs.	85.00

D/A CONVERTER
CARD (ANALOG OUTPUT)
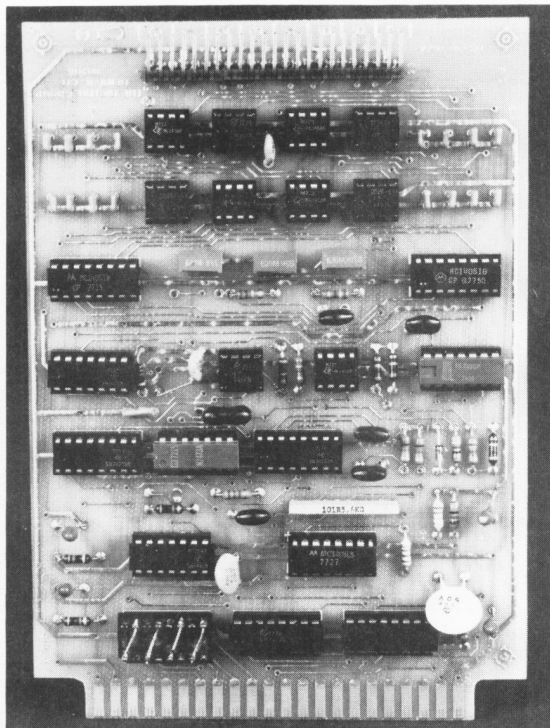
This card permits the generation of analog data for output to many devices such as oscilloscopes, amplifiers, motor drives, X-Y plotters and recorders, music systems, and other voltage controlled devices. Conversion time is 33 usec with a maximum throughput rate of 30,000 conversions/sec. The board has its own memory and refresh circuitry, thus eliminating the need for cumbersome software refresh. 16 channels of analog output are available and the output range and offset are user selectable.

FEATURES AND SPECIFICATIONS

— Power required: +5V at 300 ma, +12 at 25 ma
— 16 channels
— Output range of 0Vdc to 5Vdc or −5Vdc to +5Vdc
— 8 bits of resolution
— Non-addressable reference output voltage available (pot adjustable)
— Accuracy ±0.4% of full range
— Total conversion time including amplifier setting, is 33 usec
— Throughput rate 30,000 conversions/sec

APPLICATIONS: Drives X-Y plotters, oscilloscopes, amplifiers, recorders, synthesizes music, voice.

ORDER CODE	DESCRIPTION	SHPG. WT.	PRICE
A751 G	D/A Converter (assembled)	2 lbs.	107.00
K751 G	D/A Converter (kit)	2 lbs.	89.50

TEMPERATURE MEASUREMENT
CARD
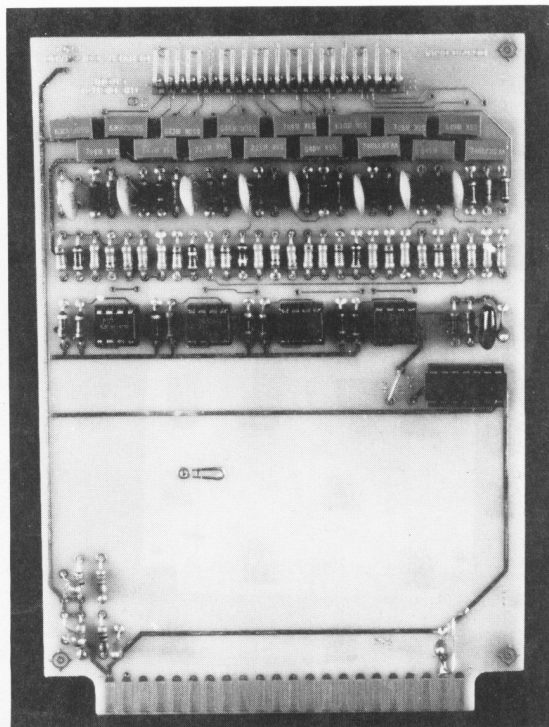
This card can measure the temperature of most environments from −40°C to +100°C. The conditioning circuitry allows the user to set the lower and upper limit to select the range he wants, (for example, lower limit = 70°F and the upper limit = 90°F). The conditioning circuitry enables the transducers to be located at any length from the card. The card comes with 8 channels of temperature probes and requires 1 single ended channel on the A/D card for every temperature probe used.

FEATURES AND SPECIFICATIONS

— Power required: ±12Vdc at 30 ma (max)
— 8 channels
— Sensitivity: 50mV/°C to 200mV/°F
— Zero point reference is stable yet adjustable
— Thermal time constant of probe less than 10 seconds
— Low output impedance can drive analog meters
— Requires 1 channel on A/D board for each channel on Temperature Board
— Weatherproof probes

APPLICATIONS: Process control sensing, home thermostat control, general purpose temperature sensing

ORDER CODE	DESCRIPTION	SHPG. WT.	PRICE
A731 G	Temperature Board (assembled)	2 lbs.	109.00
K731 G	Temperature Board (kit)	2 lbs.	89.50

AC CONTROLLER CARD
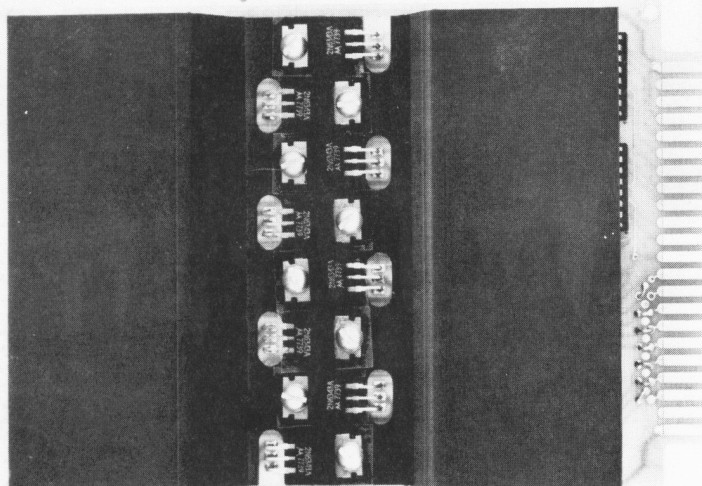
This board incorporates the equivalent of eight solid-state relays. These opto-isolated switches can be used to control relatively heavy loads such as motors, lamps, AC solenoids and heaters. Onboard jumpers determine the address of the controller card, while each bit of the data word corresponds to one of the eight loads to be energized. Individual loads up to 12 amps rms may be switched.
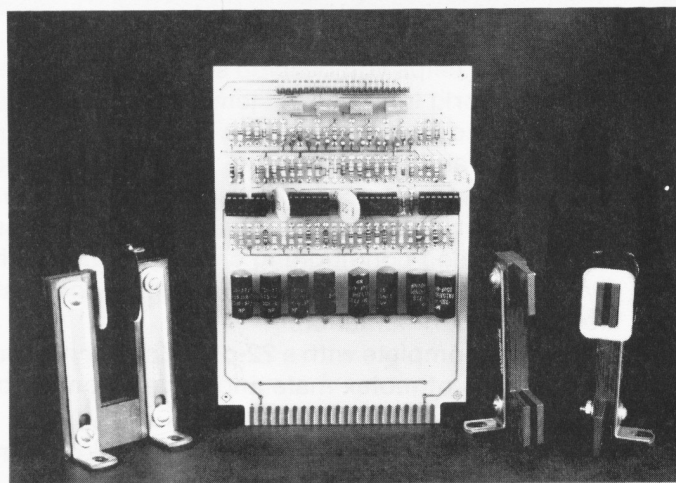
FEATURES AND SPECIFICATIONS

— Power required: +5Vdc at 350 ma
— 8 output channels, 240Vac max, 12A rms max
— Opto-isolators separate logic from AC signals

APPLICATIONS: Motors, lamps, AC solenoids, heaters, small appliances

ORDER CODE	DESCRIPTION	SHPG. WT.	PRICE
A773 G	AC Controller (assembled)	2 lbs.	150.00
K773 G	AC Controller (kit)	2 lbs.	125.00

CURRENT PROBE

This card enables the user to measure AC currents without making electrical contact to the line being measured. It is extremely useful in monitoring power consumed by appliances, motors, air conditioners, and even major branches in home wiring if the sensor is placed at the fuse box. This would find application in such systems for reducing costs when using a peak demand power meter. The card has conditioning circuitry for 4 probes and comes with either 2 or 4 probes. Requires 1 channel on the A/D board per probe. A kit to up-grade from 2 probes to 4 probes is also available.

FEATURES AND SPECIFICATIONS

— Power required: ±12Vdc at 20 ma
— Up to 4 channels
— Measuring range: 0.1 to 40 amps
— Frequency range: 30Hz to 400Hz
— Accuracy: ±3% of reading (for sine waves)
— Step response, 30 usec max
— Complete electrical isolation from line
— Requires 1 channel on A/D board for each channel on Current Board

APPLICATIONS: Measure current on: motors, air conditioners, appliances, lamps, power supplies, power lines.

ORDER CODE	DESCRIPTION	SHPG. WT.	PRICE
A732 G	Current Probe-2 channels (assembled	4 lbs.	85.00
K732 G	Current Probe-2 channels (kit)	4 lbs.	69.59
A734 G	Current Probe-4 channels (assembled)	6 lbs.	135.00
K734 G	Current Probe-4 channels (kit)	6 lbs.	115.00
K714 G	Current Probe Up-grade Kit	2 lbs.	55.00

DC CONTROLLER CARD
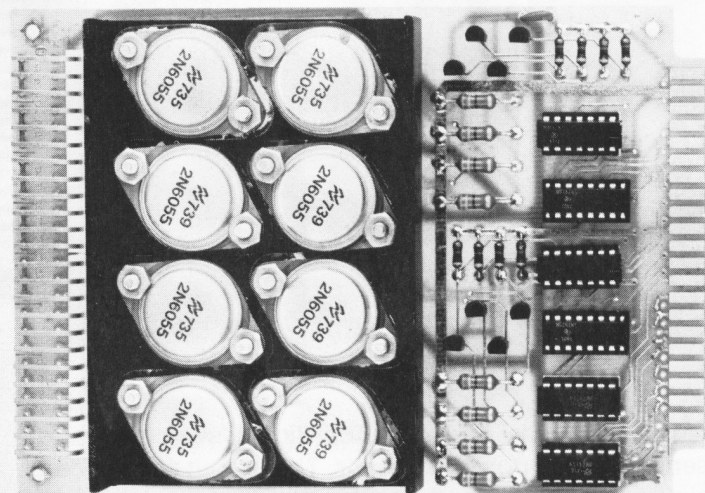
Designed to drive lamps, relays, DC or stepping motors, and other medium-current DC devices from an external DC power source. Each switching transistor is non-isolated but latched and addressing is the same as the AC controller card. Each of the eight output transistors can handle up to 5 amps.

FEATURES AND SPECIFICATIONS

— Power required: +5Vdc at 200 ma, +12Vdc at 300 ma
— 8 output channels, 50Vdc max, 5A max
— May use internal +12Vdc for small loads or external DC up to 50V

APPLICATIONS: DC motors, stepping motors, lamps, relays, solenoids

ORDER CODE	DESCRIPTION	SHPG. WT.	PRICE
A776 G	DC Controller (assembled)	2 lbs.	79.50
K776 G	DC Controller (kit)	2 lbs.	65.00

EXTENDER CARD

The Extender Card allows you easy access to boards for voltage and waveform measurements, for troubleshooting prototypes, and for educational purposes.

ORDER CODE	DESCRIPTION	SHPG. WT.	PRICE
A799 G	22-pin Extender Card (assembled)	2 lbs.	22.50
K799 G	22-pin Extender Card (kit)	2 lbs.	19.50

32 LOW POWER I/O
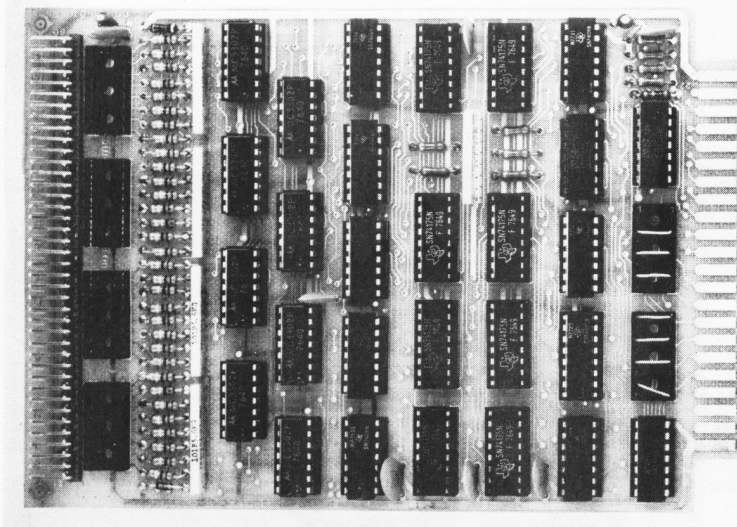
This board is designed for digital switching and sensing of low power DC loads. The output section can sink up to 40 ma and can be tied to voltages up to 30Vdc. Typical applications include driving LED's,

small relays, and small incandescent lamps. The input section can be used in 2 modes. The first mode can detect if the output device being driven has burned out or been manually overridden. The second mode senses a shorted output.

FEATURES AND SPECIFICATIONS

— Power required: +5Vdc at 700 ma
— Switches to ground non-TTL levels up to 30Vdc at 40 ma
— High level input sensing, 30Vdc max
— High input impedence, 100K
— All data latched from the CPU
— Outputs may be paralleled or higher output currents
— 32 channels of flexibility

APPLICATIONS: Low power switching, remote sensing

| ORDER CODE	DESCRIPTION	SHPG. WT.	PRICE
A778 G	32 Low Power I/O (assembled)	2 lbs.	125.00
K778 G	32 Low Power I/O (kit)	2 lbs.	99.50

PROTOTYPING CARD
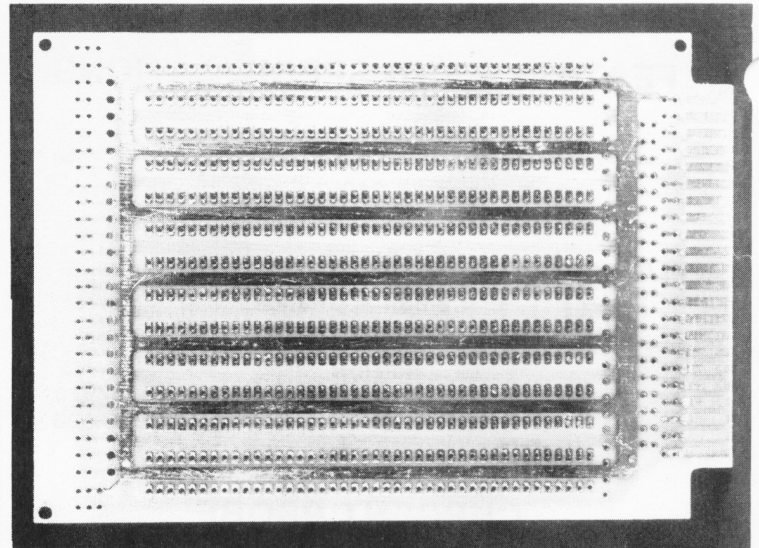
This card helps you develop specialized circuits for the Real World Interface System. The edge connector pin-out is compatible with the Real World Interface System bus and the card has +5Vdc and ground power busses for ease of access. This card is IDEAL for designing your own custom measurement and testing circuits, analog conditioning circuits for use with the D/A and A/D converters, and for educational instruction and experimentation.

It comes complete with a 22-pin edge connector and 24 positions of molex male and female connectors.

ORDER CODE	DESCRIPTION	SHPG. WT.	PRICE
K793 G	Prototype Card	2 lbs.	24.95

THE FLOPPY DISK STORAGE SYSTEM
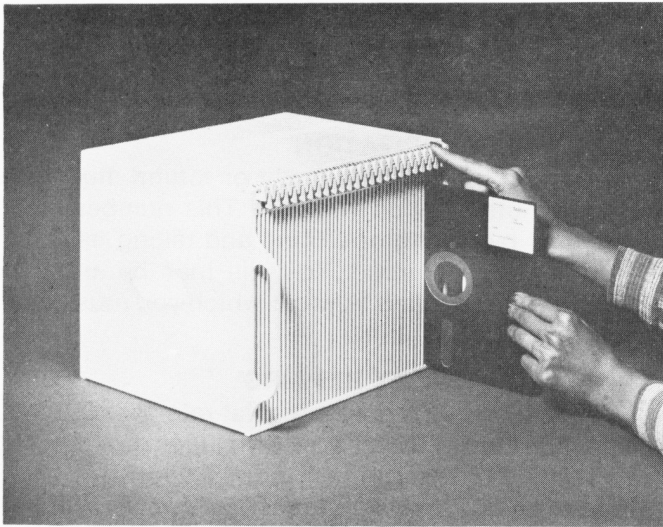
The **FLOPPY DISK STORAGE SYSTEM**™ insures data integrity by providing a safe environment for your diskettes.

Designed for easy operation the system is fully indexed and has push button control for instant retrieval of your most commonly used and valuable disks.

Manufactured from high impact plastic, the system is light weight and portable. It can be easily stacked or fit into a file drawer.

Systems available will accomodate either 15, 30, or 50 diskettes. Available in off-white.

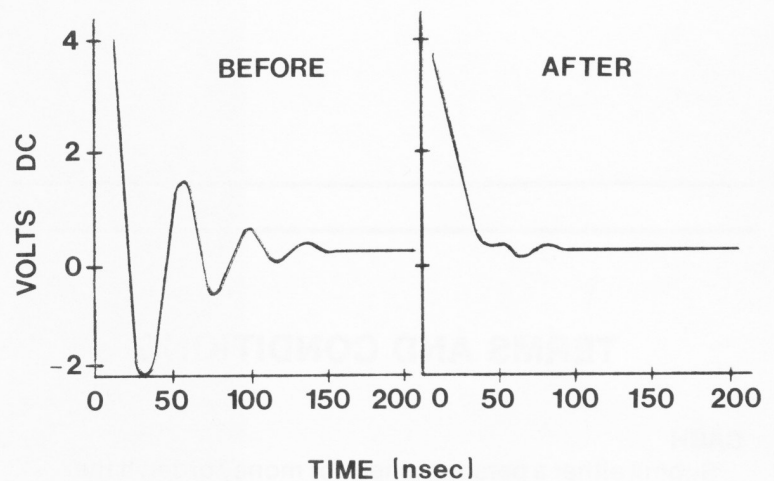| ORDER CODE	DESCRIPTION	SHPG. WGT.	PRICE
FDS-15	15 Slot System: 4½'' wide x 9¾'' high x 10½'' deep	4 lbs.	$69.95
FDS-30	30 Slot System: 8'' wide x 9¾'' high x 10½'' deep	8 lbs.	$119.95
FDS-50	50 Slot System: 13'' wide x 9¾'' high x 10½'' deep	13 lbs.	$179.95

BUS TERMINATORS
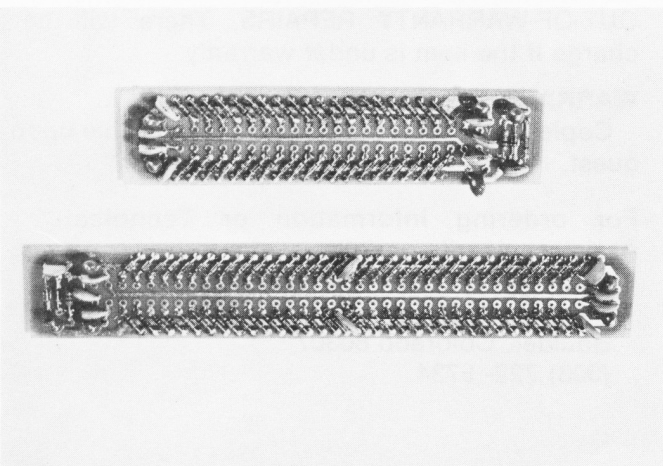
NOISE. It affects us all. The greater the amount of noise present, the less effective we become. Computers are subject to noise, too. How many times has your system failed for what seemed to be no reason? Do you have some boards that won't work with others? It could be noise on the bus lines. Bus terminators reduce noise and enable the bus to work closer to its theoretical limits. Our Bus Terminator Package was designed for use with Digital Groups's memory and I/O busses, and is especially useful if you have a system equipped with expansion motherboards. Each line is terminated at both ends by our exclusive ACTICLAMP circuitry. The ACTICLAMP method of termination eliminates most ringing, reflections and overshoot.

The Bus Terminator Package includes 2 printed circuit boards and all necessary parts for proper installation. The boards are simply pushed onto the pins of one I/O and one memory bus connector on the underside of the motherboard, and soldered into place. The remaining parts are used to beef-up power busses, and reduce video noise on the bus.

Below is a comparison of a typical signal with bus terminators and without bus terminators.

Effective — they reduce noise, and enable the bus to run faster.

Practical — they conveniently mount underneath the motherboard.

ORDER CODE	DESCRIPTION	SHPG. WT.	PRICE
A409	Bus Terminators (assembled)	2 lbs.	43.00
K409	Bus Terminators (kit)	2 lbs.	36.50

PURCHASE ORDERS

Purchase orders will be accepted from companies with approved credit. Our terms are net 30 days.

DELIVERY

Please allow four to eight weeks for delivery.

RETURN AUTHORIZATION

Any item returned for credit or refund must have a Return Authorization Number. This number may be obtained by calling or writing and telling us why the item is being returned. You will then be assigned a Return Authorization Number which you must include with the returned item.

OUT-OF-WARRANTY REPAIRS

Repairs are performed on a flat rate basis. (See rate schedule below). This flat rate includes return postage via U.P.S. If "rush" return is required, you must pay the return postage. A minimum service fee of $15.00 will be assessed on items not found to be defective.

BOARD	FEE
Real World Interface System Cabinet	$40.00
All Real World Interface System Plug-ins (Fee/Board)	25.00
Real Time Clock/Interrupt Controller	50.00

In order to qualify for the flat rate repair schedule, you should:

1. Include your order number or a copy of the dated sales receipt if purchased from a dealer.
2. Include your name, address, phone number.
3. Carefully pack all items for shipment.
4. Include a description of the malfunction.
5. Assemble kits carefully, according to the assembly instructions.
6. Not have made any unauthorized modifications.
7. Not have subjected the item to any unusual electrical or physical stress.

A fee of $20.00 per hour will be charged for repair of items not qualified for the flat rate repair which require special labor.

WARRANTY REPAIRS

Please follow the same procedure as given for OUT-OF-WARRANTY REPAIRS. There will be no charge if the item is under warranty.

WARRANTY

Copies of specific warranties are available upon request.

For ordering information or Technical Assistance, write or call:
General Computer Technology
P.O. Box 3009
Boulder, Colorado 80307
(303) 722- 5734

TERMS AND CONDITIONS

CASH

Submit either a personal check or money order. If the charge for merchandise and transportation is less than the amount you send, we will return the difference.

CHARGE ORDERS

GCT accepts both Mastercharge and Visa either by phone or mail. Charge orders are processed the same as cash orders. *The minimum charge order is $50.00.*

C.O.D. ORDERS

All C.O.D. orders must be accompanied by 20% of the total purchase price before the order can be processed. No C.O.D. orders for less than $50.00 will be accepted. A 5% surcharge will be added to the order (up to $10.00) for the special handling C.O.D.'s require. C.O.D. orders are shipped on a cash or certified fund basis. Personal checks will not be accepted by the delivery service.

GCT GENERAL COMPUTER TECHNOLOGY, INC.

P.O. Box 3009
Boulder, Colorado 80307
(303) 722-5734

ORDER FORM/AGREEMENT

Name _____ Date _____

Address _____

City _____ State _____ Zip _____

Day time phone number (_____) - _____

☐ Please check here if this is a new address.
☐ Please check here if you want to be placed on our preferred mailing list. No order is required.

IMPORTANT ORDERING INFORMATION
1. All prices are net FOB Broomfield, Colorado and apply to the U.S., APO and FPO areas only.
2. Prices and specifications are subject to change without notice.
3. Please allow four to eight weeks for delivery.

METHOD OF PAYMENT (check one)
☐ **Cash** — Check or money order only. If the charge for merchandise and transportation is less than the amount you send, we will refund the difference.

☐ **C.O.D.** — For orders of $50 or more only. 20% deposit (check or money order) must accompany order. Balance will be collected at delivery time (C.O.D. fees will be added to your order and collected on delivery).

☐ **Mastercharge or VISA** — For orders of $50 or more only.

Card number _____

Expiration Date _____

Interbank no. (MC only) _____

Signature: _____

METHOD OF SHIPPING (check one)
☐ **Mailable Items.** We ship UPS for fastest delivery. include Zone from Zone Chart ☐

☐ **Other**

Please Specify _____

C.O.D. Orders Only

C.O.D. Charge 5% of order or $10, whichever is less	
C.O.D. Deposit 20% of order	
Total: please pay this amount	

QUAN.	ORDER CODE	DESCRIPTION	UNIT PRICE	UNIT TOTAL PRICE	SHPG. WT.	SHPG. CHARGES*

What new products would you like us to make? _____

TOTAL			TOTAL SHPG. CHARGES	
Colorado Residents please add 3½% tax				
Shpg. Charges from above				
TOTAL AMOUNT OF ORDER Please pay this amount unless C.O.D.				

← See Rate Chart for shipping charges on mailable items.

cut here

DG-15

Z - Board
New Disk Controller
New Printers
New Bytemaster Configuration

New Oasis Support
New Oasis Release
Monitor
Datamaster
Maillist - One

Graphics Support

Assembler 3.0

Sale Items

and more!

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J E FLANDERS
411 URQUHART DRIVE

BEECH ISLAND   SC 29841

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