OHIO SCIENTIFIC
SMALL COMPUTER SYSTEMS

Systems for personal, hobby and small business computing.

State-of-the-art
in small computers.

Spring 1978

INTRODUCTION TO COMPUTING

A computer is made up of hardware; that is, the physical machinery that performs the computer's tasks, and software, the instructions or programs that direct the hardware to execute a specific task such as playing a game or editing a letter.

Personal Computing

Personal computerists use "turn key" systems and standard software. These machines can simply be turned on and are immediately ready to use. Ohio Scientific offers such easy to use computers complete with ready-to-run software. We also provide the systems software such as BASIC and Assembler that make it easy for the user to program the computer, if so desired. Ohio Scientific's systems are fully expandable to grow with the user's desires. Our wide range of products offers a system for every budget.

Hobbyist Computing

An experimenter with hardware and/or software experience wants a machine that is easy and convenient to use within the price range of personal computers, but, one that is fully expandable and has a broad range of hardware and software available. To meet hobbyist needs, Ohio Scientific offers full systems level software and broad system expansion capabilities on all of our computers. We offer the full range of supplies from bare PC boards to assembled boards to complete systems. Ohio Scientific offers products for hobbyists' advanced experimental interests such as voice I/O and graphics. These features are available in both BASIC-in-ROM and disk systems.

Small Business

Every small business needs the help of a computer for data and word processing. All Ohio Scientific floppy disk-based computer systems are capable of handling the data processing of small companies in the form of inventory control, payroll, ledger, accounts payable, accounts receivable and can also be used for word processing with appropriate applications software.

Ohio Scientific offers fully integrated computer systems, which is important to end users. Our three processor Challenger III configuration assures versatility and protects your computer investment against obsolescence.

The unique three processor system allows the Challenger III to run software written for three different microprocessors, offering the user the best of all worlds!

Ohio Scientific offers full word processor and systems level software for easy programming. Our representatives offer special business applications packages and programming services, tailored to meet the needs of small businesses.

Education

All of Ohio Scientific's computer systems are well suited for use in teaching fundamentals of computing and the programming language "BASIC" because of their low cost and ease of use. Floppy disk systems are particularly useful because they allow program storage and retrieval in a fraction of a second, maximizing the student's actual programming time. The Challenger III system is the undisputed front-runner for studying different microprocessors because of its three processor architecture which allows it to emulate four micros, the 6502, 6800, 8080 and Z-80.

Industrial Development

Ohio Scientific is the world leader in 6502 software. Any of our floppy disk systems are well suited for industrial development of 6502-based products. Optional software for development includes a MOS-technology syntax compatible interactive assembler/editor, an advanced word processing editor, on line debugger, disassembler and relocator.

The Challenger III system has all of these features for the 6502 as well as program development capability for the 6800, Z-80 and 8080.

Ohio Scientific offers a broad range of plug-in accessories for prototyping your products including A/D and D/A, 16 port serial, 96 line parallel and several Eprom boards, including an in-system PROM programmer!
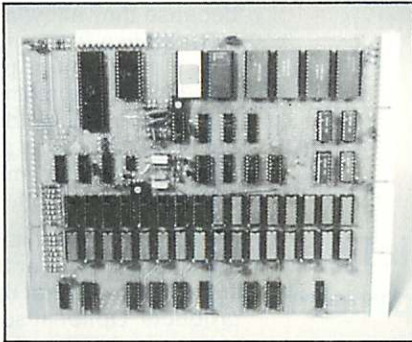
Ohio Scientific system features:

- All systems come fully assembled and tested.
- All systems are upward expandable and use Ohio Scientific standard 48 line system BUS which has been in use since 1975 on tens of thousands of boards. Over 40 different accessory board configurations are available.
- Starter systems offer the user the cost advantages of a personal computer with the expandability of a main frame class computer.
- All systems include our 8K BASIC-in-ROM or on disk which was rated number one in execution speed in the industry by an independent test in the October, 1977 issue of Kilobaud Magazine.
- All systems allow easy access to machine code via an included PROM monitor which allows direct "memory load" and "examine" and machine program execution.
- Optional assembler, editor and on line debuggers (extended monitors) are available for every system.
- Optional full system application program library is available in BASIC for all systems.
- All systems with power supplies have UL recognized supplies.
- All system shipments include the current full line catalog, comprehensive information package and a one year subscription to Ohio Scientific's Small Systems Journal!

8K BASIC-IN-ROM COMPUTERS
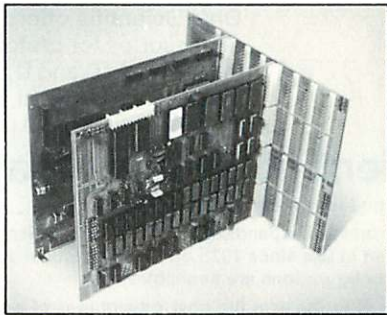
6 Basic Models To Get You Started

All of our BASIC-in-ROM computers are **easy** to use. Simply turn the machine on, press reset, type "C" and you're ready to go in full 8K BASIC by MicroSoft. No need to wait for a cassette or paper tape to load! And, unlike many other BASIC-in-ROM computers, you have easy access to machine code as well as our powerful 8K BASIC. Each of the models is factory assembled and tested.

C2-0 Model 500 Board Fully Populated
$298.00

A complete computer-on-a-board featuring our standard 8K BASIC-in-ROM, 6502 micro-processor, 4K of RAM Memory and a serial port. You add power supply, case, and terminal to be up and running. Later, add a Model 480 back-plane and expand via our full line of accessories!

C-28K 500 Superkit with 440 and 480 Populated
$398.00

The Superkit is the ideal way to get started on a budget. Features a fully assembled Model 500 Board configured for video (instead of serial port), a Video Board (32 x 32 character max. display), and an eight slot mother board. You supply power supply, video monitor (or RF generator and unmodified tv set), and ASCII key-board to have a complete computer and terminal.

C2-1 500-1 Terminal Add-On
$498.00

Includes fully assembled Model 500 and power supply packaged in an attractive case with two EIA connectors for loop through operation. Ideal for use with remote computer terminals. When short or medium length programs need to be run, simply use the 500-1 — instead of expensive time sharing. When long programs must be run, simply switch the 500-1 off and the terminal will automatically talk to its modem!

C2-8S Challenger II
$545.00

Features 8K BASIC-in-ROM, 4K RAM, 6502 Microprocessor and serial port. Complete with cabinet, power supply and eight slot mother board. Seven slots are open for expansion. Simply add a standard computer terminal to be up and running in BASIC!

C2-4P Challenger IIP
$598.00

Complete with 8K BASIC-in-ROM, 4K RAM, a video board interface featuring 32 x 64 characters (lower case and graphic characters option available), an audio cassette interface, high quality keyboard, power supply and cooling fan all in one attractive case. Two of the four slots in the backplane are used, allowing some expansion. You need only to supply a video monitor for operation. For optional program storage, you'll want to add a cassette recorder.

C2-8P Challenger IIP with 8 Slot Cabinet
$825.00

Offers all features of the Challenger IIP plus more room for expansion. The keyboard has a separate case with connector cable. The roomy cabinet and heavy duty power supply are designed to handle up to eight system boards (allowing for 6 slots of expansion). Again, you need only supply video monitor (or RF generator and tv set). The C2-8P can use any of our expansion memory boards whereas the C2-4P can use only special +5 volt only memory boards.

FLOPPY DISK BASED COMPUTERS

Floppy disk based systems are ideal for small business, education and the advanced hobbyist. Full size diskettes offer an economical method for storing data and programs, as well as very fast access to the stored information. Systems based on Disk offer much more versatility than BASIC-in-ROM or RAM only computers.

Each of our disk systems features software including Disk Operating System and 8K BASIC on Disk.

All systems are readily expandable using our complete line of accessory boards and peripherals. Each system, except as noted, includes cabinets; one for the computer and one for the disk drive(s). All power supplies and interconnecting cables are included. A total of eight slots are available on each system's mother board except on the C3-B.

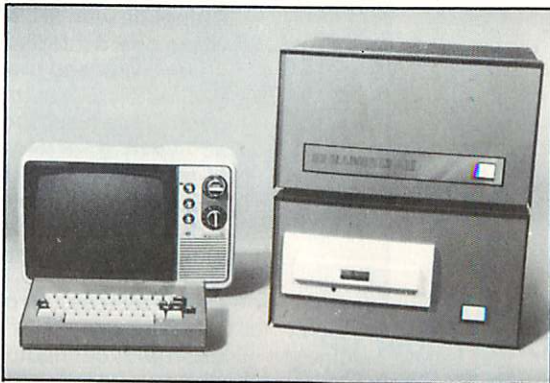## C2-S1S Serial Challenger II with Single Drive Floppy
$1,990.00

Comes complete with 16K RAM Memory, Single Drive Floppy Disk (250,000 characters storage), 6502 processor and serial port. You need to add only Serial ASCII Terminal.

C2-S1V Video Challenger II with Single Drive Floppy
$2,490.00

Comes complete with 16K RAM Memory, Single Drive Floppy Disk, 6502 processor, Challenger IIP type Video Interface and high quality keyboard. You add only a Video Monitor (or RF generator and tv set).

C2-S2S 32K RAM Serial Challenger II with Dual Drive Floppy
$3,090.00

Comes complete with 32K RAM Memory, Dual Drive Floppy Disk (500,000 characters storage), 6502 processor and serial port. You add only a serial ASCII Terminal to be up and running.
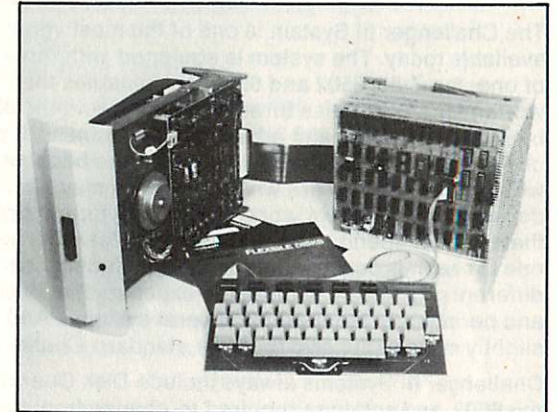
C2-8SK C2-S1S Less Cases & Power Supplies
$1,590.00

Same features as C2-S1S, but **does not include cabinets or power supplies.** Serial ASCII Terminal required. Ideal for OEM type applications.

C2-8VS C2-S1V Less Cases & Power Supplies
$2,090.00

Same features as C2-S1V but **does not include cabinets or power supplies.** Video Monitor (or RF generator and tv set) required. Ideal for OEM applications and hobbyists.

Ohio Scientific's Incomparable Challenger III

The Challenger III System is one of the most versatile small computers available today. The system is equipped with three microprocessors instead of one; the Z-80, 6502 and 6800. This enables the user to use programs written for any of these three processors and the 8080. This is ideal for business, research and education. In business, it protects against obsolescence. As new software packages become available, regardless of what processor they are written for, they may be used. In industrial development, it allows work with three different processors without requiring that the user spend a great deal of time learning several operating systems — one for each processor. In education, students can learn about several different processors without the expense of duplicating memory, accessories and peripherals required for several systems. And, the Challenger III is only slightly more expensive than our standard Challenger II Systems.

Challenger III Systems always include Disk Operating System, 8K BASIC for the 6502, and software required to change from one processor to another, a parallel port, a 1 megabyte memory manager and a scratchpad RAM for user programmable vectors.

C3-S1 Challenger III System with
Dual Drive Floppy
$3,590.00

Complete with 32K RAM Memory, Dual Drive Floppy, Serial Port, cabinets and power supplies. This Challenger III features an eight slot heavy-duty main frame. You add only a serial ASCII Terminal.

- Designed for small business computing.
- Uses the 510 triple processor CPU Board, runs 6502, 6800, 8080 and Z-80 programs.
- Available with up to 1 Megabyte of RAM Memory; high reliability static RAM is standard; low-cost dynamic RAM is optional.
- Single or dual-drive floppy disks store 250,000 characters per surface — 3 to 4 times the storage of mini-floppies.
- Supports our ultra-fast 6-digit BASIC (see "BASIC Timing Comparisons," Kilobaud, Oct. 1977, p. 23, where Ohio Scientific out-benchmarks all of our competitors) and our new super-fast 9-digit business BASIC.
- Powerful operating systems support all standard I/O ports including multiple terminals, line printers, video display and disk.
- Disk supports: sequential, random and index sequential files.
- Applications software, including:
  WP-1, a powerful disk-based Word Processor.
  DMS, a unique data-base management system which supports continuous disk addressing of up to 250,000 characters per file.
  Complete business packages including Accounts Receivable, Accounts Payable, Ledger, Payroll, Inventory and Taxes.
- Two factory-supported terminal options and two factory-supported line-printer options.
- Optional 74-Megatype hard disk for $6000. Reel-to-reel mag tape coming soon.
- Optional 16-user operating system with time share and distributed processing capabilities.
- Optional rack mounting and rack enclosures.
- Leasing programs and maintenance contracts available through many dealers. Optional nationwide field service coming soon.
- Challenger III systems have extremely high performance-to-cost ratios. For example, a system complete with triple processor CPU, 32K bytes of static RAM, a serial I/O port, dual drive floppy disks (500K bytes of on-line storage), fully assembled, plus DOS, BASIC and a demonstration program library costs $3590 fully assembled.
- The same system complete with a deluxe upper-lower case x-y addressable CRT terminal, 65-line-a-minute tractor feed line printer and an applications software library sells for about $6000.
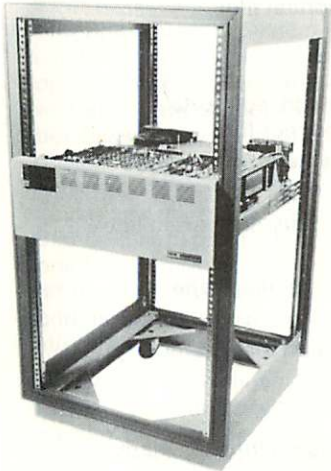
74 Megabytes On-Line Storage: For $6,000

Our 74 Megabyte Hard Disk Drive provides all the mass storage needed by a small business. Because it uses state of the art Winchester technology, high reliability is achieved. With 74 Megabytes of storage, the disk can hold all the records of a medium sized business and all are almost instantaneously accessible. This level of storage/cost ratio was, until now, simply impossible.

C3-B Challenger III System with 74 Megabyte Disks $11,090.00

Features Challenger III with 48K RAM Memory, C-D2 Dual Drive Floppy Disk, C-D74 74 Megabyte Disk, Serial Port and **16 Slot Mother Board.** All in in a 42" Optima Rack. OS-65U is included as standard!

C-D74 74 Megabyte Hard Disk Drive $6,000.00

Includes 74 Megabyte Hard Disk Drive and Interface and 525 Dual Port Memory Board Populated with 4K RAM Memory. OS-65U is included as standard! This is everything you need to add the C-D74 to any existing Ohio Scientific floppy disk system (requires two open slots).

System Peripherals

AC-1 ASCII Keyboard & Enclosure & Cable
(only for Superkit and older systems)   **$149.00**
AC-2 Audio Cassette Recorder & Cable   **$ 59.00**
AC-3 Video Monitor (9" Diagonal Screen) **$159.00**
AC-4 OKI DATA Model 110 Printer & Interface. Prints 80 columns wide; 110 characters per second or 65 lines per minute (tractor feed).
$1,900.00

AC-5 OKI DATA Model 0-22 Printer and Interface. Features 8 character sizes, upper and lower case, automatic form length, can print up to 132 columns, prints 125 lines per minute (tractor feed).   **$2,900.00**

AC-7 Hazeltine 1500 CRT Terminal. Features upper and lower case, 80 columns by 24 lines, x-y addressing.   **$1,095.00**

AC-8 Lear-Siegler ADM-3A CRT Terminal. **$895.00**

C-D1A Single Drive Floppy Disk with Controller, includes Case, Power Supply, Connecting Cable (250K Bytes) (for system upgrades).   **$990.00**
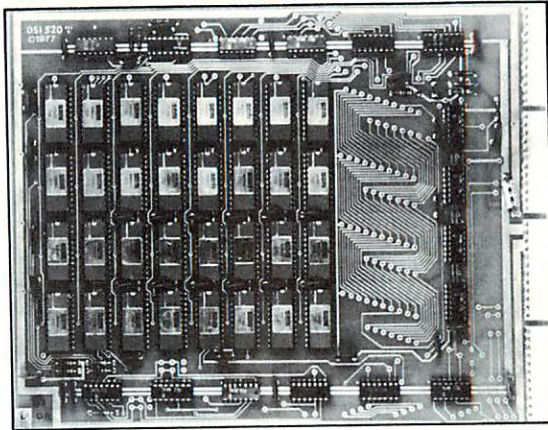
C-D2A Dual Floppy Disk with Controller. Includes Case, Power Supply, Connecting Cable (for system upgrades).   **$1,590.00**

C-D74 74 Megabyte Hard Disk Drive and Interface and 525 Dual port Memory Board Populated with 4K RAM Memory and OS-65U (for system upgrades).   **$6,000.00**

System Accessories

Memory

CM-1 4K Static RAM Memory 1MHz Medium Power	$ 99.00
CM-2 4K Static RAM Memory 2MHz Low Power	$125.00
CM-2P 4K Static Memory for C2-4P (Low Power)	$145.00
CM-3 16 K 1.5MHz Ultra-Low Power Static RAM Memory	$498.00
CM-4 16K 1MHz Dynamic RAM Memory	$398.00
CM-5 32K 1MHz Dynamic RAM Memory	$698.00
CM-6 48K 1MHz Dynamic RAM Memory	$990.00

To the Outside World

CA-6C 430B Audio Cassette Interface (Kansas City Standard — Reads and Records data at 300 Baud)	$ 99.00
CA-6S 430B RS-232C Serial Interface (Set at 300 Baud)	$ 99.00
CA-7C 430B Fully populated including Audio Cassette Interface, 8 Bit Tracking A/D Converter, two 8 Bit D/A Converters	$399.00
CA-7S 430B Fully populated including RS-232C Interface Set at 300 Baud, 8 Bit Tracking A/D Converter, two 8 Bit D/A Converters	$399.00
CA-9 Parallel (Centronics) Line Printer Interface	$249.00
CA-10X Serial Port Board (X=Number of Ports; Must have two minimum) Two Ports Standard	$200.00
Each Additional Port (above standard two)	$ 50.00

CA-11 540 Video Board with Upper Case Only 32 x 64 Characters (Note: Lower Case and Graphics Character Generator plug-in available June, 1978 for $29.)	$249.00
CA-12 96 Line Remote Parallel Interface (Available June, 1978)	$249.00
CA-14 Voice I/O Including Votrax® Voice Module (enables your computer to talk!) Voice output fully assembled. Optional experimental voice input must be user populated.	$525.00

CPU UP-Grade

C3-0A 510 Triple Processor CPU with Software Switch & Memory Management (formerly A-100 option) (for systems upgrade)	$490.00

SOFTWARE

Systems software and applications software are important to any computer user. Systems level software is designed to help make it easy to program the computer. This includes computer languages which make it easy to communicate with the computer and operating systems which make it easy to use all the features of the computer. Applications software is written using the systems level software and is designed to fill a specific need such as business accounting.

Systems Software

S-3 8K BASIC

The microcomputer industry's fastest full feature 8K BASIC is standard on all Ohio Scientific Systems, either in ROM or on diskette.

OS-65D Disk Operating System

OS-65D is a powerful development oriented disk operating system supplied as standard with all disk based computers.

Optional Software

S-2 Assembler Editor ($35.00)

6502 resident Assembler/Editor is a complete interactive assembler editor for the 6502 using standard MOS-Technology syntax! (available for all systems) Please specify.

S-4 Extended Monitor ($15.00)

A powerful on-line debugger for machine code programs. (Available for all systems) Please specify.

9 Digit Precision BASIC ($49.00)

The extra precision needed for business applications (diskette only)

DMS-1 ($99.00, See Full Line Catalog for complete information)
A powerful data base management system under OS-65D (Disk Only)

OS-65U ($199.00, See Full Line Catalog for complete information)
An advanced operating system fully integrated into 9 digit extended BASIC. Standard with C-D74 based Disk systems. Optional with all other disk systems.

Applications Programs

(See our Full Line catalog or journal for additional information)

Entertainment
BASIC games on cassettes and diskette

Education
BASIC tutor series on cassette or diskette

Hobbyist
Experimental packages on cassette and diskette

Personal/Business
Personal finances cassette/diskette
Introductory business programs cassette/diskette

WP-1 word processor ($79.00, see Full Line Catalog for complete information)
A powerful word processing system with disk based text files suitable for secretarial use (diskette only)

Services offered by some Ohio Scientific Representatives
Custom Programming
Other Application packages including accounts payable, accounts receivable, payroll, ledger and inventory.

OHIO SCIENTIFIC

1333 S. Chillicothe Road
Aurora, Ohio 44202
(216) 562-3101

OHIO SCIENTIFIC BARE BOARD PRICES

For hobbyists, education, industry
No parts are provided except where noted!

Bare Printed Circuit Boards with Manuals

Model 420C 4K RAM Memory Board and Manual	$ 35.00
Model 430B I/O Board and Manual Can have either Serial port or Audio Cassette Interface. Can also have A/D Converter, two D/A Converters	$ 35.00
Model 440B Video Graphics Board and Manual 32 x 32 Display, with additional memory board capable of 128 x 128 dot Matrix Graphics	$ 35.00
Model 450 PROM Board Can be populated with up to 8K of 6834 512 x 8 E-PROM Memory. Documentation Included	$ 35.00
Model 455 PROM Board and Documentation Can be populated with up to 4K x 8 of 1702 Type E-PROM	$ 35.00
Model 480 Backplane Board and Documentation Includes connectors for Backplane and Eight mating boards	$ 39.00
Model 495 Prototyping Board (no documentation)	$ 29.00
Model 498 Card Edge Extender Board Includes necessary connectors (no documentation)	$ 29.00
Model 500 CPU Board and Manual (Can be populated with 4K RAM,8K ROM, 512 Bytes PROM, 6502 CPU, parallel port)	$ 39.00
Model 520 16K RAM Memory Board and Schematics only	$ 35.00
Model 525 Dual Port 16K RAM Memory Board and Schematics only	$ 35.00
Model 550 16 Serial Port Board and Schematics only	$ 35.00
Model 560Z Multiprocessing Board Must be used in conjunction with 500 or 510 CPU Board or Old Style 400 CPU Board. Can accept up to three processors. Includes board, manual, Z-80 and Intersil 6100 microprocessors (PDP-8 emulator)	$125.00

Proms & Roms

65A Serial Monitor PROM	$29.00
65V Video PROM Monitor for 440B Board	$29.00
65V2P Video PROM Monitor for 540B Board	$29.00
65-500F2 Floppy Disk Bootstrap Monitor PROM (for disk add-ons)	$29.00
CG-4 Upper and Lower case and graphics character generator for 540 Video Board (Available June, 1978)	$29.00
65AB 8K BASIC-in-ROM for Serial System & Support E-PROM (You will still require 65A)	$99.00
65VB 8K BASIC in ROM for Video Systems & Support E-PROM (Designed for use with 440B ONLY — still requires 65V)	$99.00
65VB2P 8K BASIC in PROM for 540 Based Video & Support E-PROM (Designed for use only with 540, still requires 65V2P)	$99.00

Parts

2513 Character Generator for 440B, 540	$12.00
8T26 Buffers Used on All Boards	$ 2.00
6850 ACIA	$ 9.00
6821 PIA Replaces 6820, 6520	$ 8.00
S1883 UART for 430B	$11.00
K-1 Connector Kit (four male & four female Molex 12 pin connectors)	$ 3.00
1408L8 8 Bit D/A Converter for 430B	$ 8.00

Information Package

Ohio Scientific's Information Package includes our Full Line Catalog and additional information on **most** of our system boards including schematics and parts lists. Postpaid	$ 5.00

Conditions and Terms of Sale

Ohio Scientific products are delivered in 45 to 75 days, typically. Orders may be cancelled without penalty if delivery is delayed beyond 120 days. Orders cancelled before 120 days are subject to a 10% restocking charge.

Add $4 shipping and handling with each order. Ohio residents add 4% Ohio Sales Tax. We accept VISA and Master Charge. We also accept personal checks, but they must clear before delivery can be made. A 20% deposit is required on all C.O.D. orders. C.O.D.'s must be paid with cash (no personal checks) and are shipped by UPS only. Purchase orders are accepted from well-rated companies and schools only. NO PARTIAL SHIPMENTS WILL BE MADE AGAINST PURCHASE ORDERS, so items ordered separately on individual purchase orders can usually reach you as soon as available (sooner than items ordered together).

Normally, Ohio Scientific ships via UPS, except in cases where the address provided is a United States Post Office box or a Canadian address. In these cases, shipment is made by parcel post, insured mail. Should you wish to have your order shipped by any other means, it will be shipped at your expense, i.e., the carrier will bill you.

Should you for any reason need to return an Ohio Scientific product, you must first obtain a return authorization number from the factory. We cannot be held responsible for any items returned to the factory without authorization.

Warranty-Service

Warranty: All assembled products manufactured by Ohio Scientific carry a limited 60 day warranty. All in-warranty service is carried out at the factory.

Individual dealers and representatives offer their own maintenance services and maintenance contracts. Optional nationwide field service **may** soon be available on Challenger III systems **only.** Challenger III owners will be contacted when this occurs.

Software Warranty

There are no warranties expressed or implied on any Ohio Scientific software.

Leasing

Leasing programs for Challenger III systems are now optionally available through some Ohio Scientific dealers and representatives. The factory does not offer leasing programs!

ORDER FORM

OHIO SCIENTIFIC

1333 S. Chillicothe Road • Aurora, Ohio 44202
(216) 562-3101

Please Print Name, Address, and Phone Number

Name _____

Address _____

City _____ State _____

Zip _____ Phone _____

Ship to Another Address? Give directions here

_____

_____

_____

_____

VISA   master charge THE INTERBANK CARD

Sign Your Name _____ Amt. of Order

Print Name Exactly As It Is On Your Card

Good thru (Enter Date Above) Inter Bank #

Enter Above the Exact Number On Your Card

HOW MANY	MODEL	NAME OF ITEM	PRICE	TOTAL PRICE

TERMS:

- Checks must clear **BEFORE** shipment is made.
- 20% deposits required on all C. O. D. orders.
- All orders shipped via insured UPS unless otherwise requested.
- Purchase orders accepted from large, well rated companies and schools **only.**
- Prices, specs., and terms subject to change without notice.

merchandise total	
Ohio residents add 4% Tax. **TAX**	
shipping charges	
amount enclosed or charged	
balance due COD	

Special Order Form

☐ Comprehensive information package $5.00

☐ 1978 subscription to Small Systems Journal $6.00

☐ 1977 back issues of Small Systems Journal $6.00

☐ 1978 Spring full line catalog $1.00 (available April 15th)

Name _____

Address _____

City _____ State _____

Zip _____ Phone _____