

Popular Electronics®

WORLD'S LARGEST-SELLING ELECTRONICS MAGAZINE

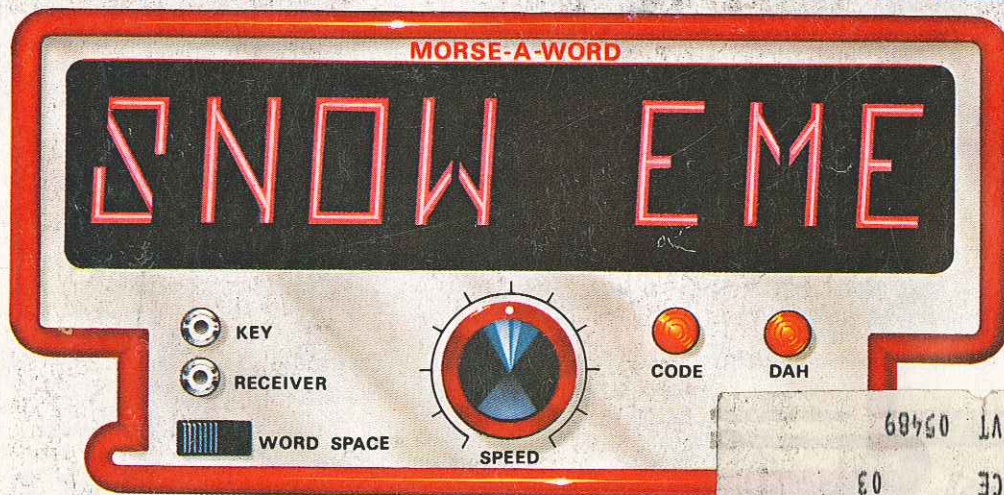
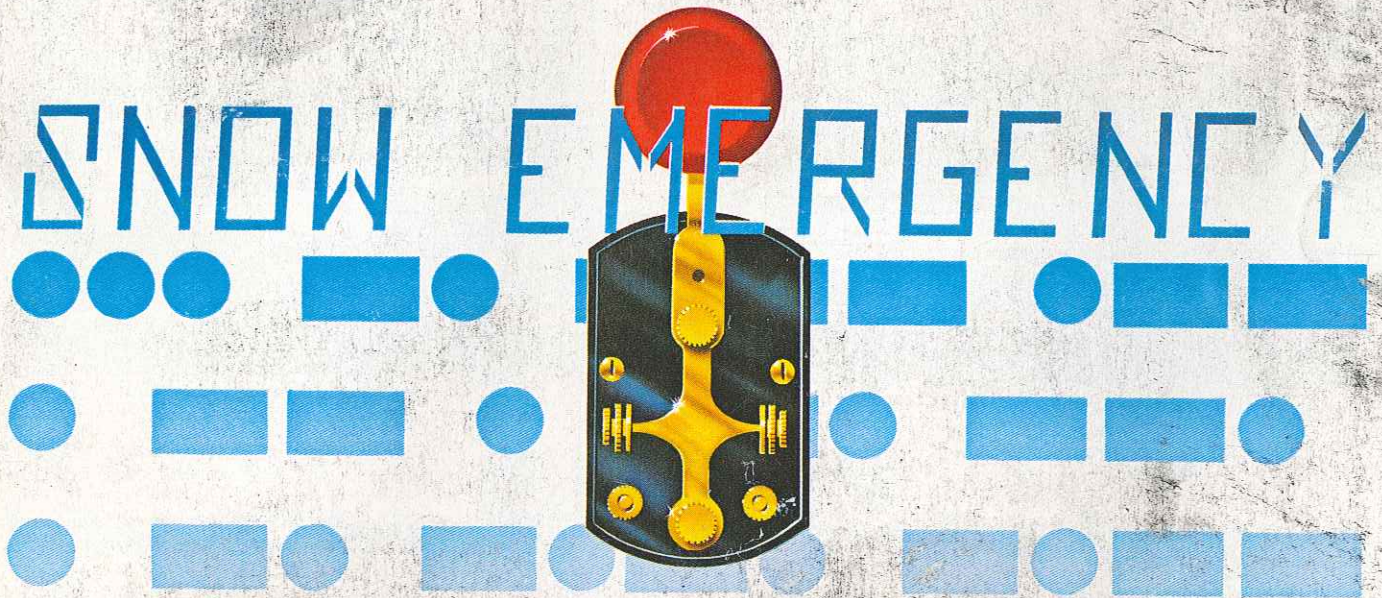
MARCH 1979/\$1.25

Special Focus on Hi-Fi Speakers

SPEAKER DESIGN INNOVATIONS • HOW TO UNDERSTAND TEST REPORTS
• THE IMPORTANCE OF POWER-HANDLING CAPACITY

Build the "Morse-A-Word"

AUTOMATICALLY CONVERTS CODE TO WORDS AND NUMBERS



720676 CEN B140CN94 1410 NOV82
WILLIAM CLEMENCE
BOX 140C RD 1
UNDERHILL VT 05489

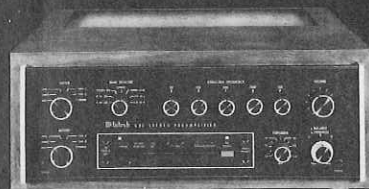


**Tested
In This
Issue**

**Scott 480A Integrated
Philips AF877 Single-Play Turntable
Ohio Scientific Superboard II Computer**

McIntosh

"A Technological Masterpiece..."



McIntosh C 32

"More Than a Preamplifier"

McIntosh has received peerless acclaim from prominent product testing laboratories and outstanding international recognition! You can learn why the "more than a preamplifier" C 32 has been selected for these unique honors.

Send us your name and address and we'll send you the complete product reviews and data on all McIntosh products, copies of the international awards, and a North American FM directory. You will understand why McIntosh product research and development always has the appearance and technological look to the future.

Keep up to date.
Send now - - -

McIntosh Laboratory Inc.
Box 96 East Side Station
Binghamton, NY 13904

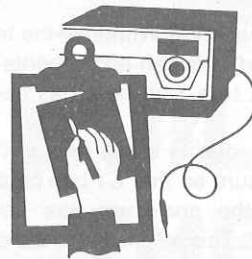
Name _____

Address _____

City _____ State _____ Zip _____

If you are in a hurry for your catalog please send the coupon to McIntosh. For non-rush service send the Reader Service Card to the magazine.

CIRCLE NO. 58 ON FREE INFORMATION CARD



Product Test Reports

Ohio Scientific Superboard II Computer

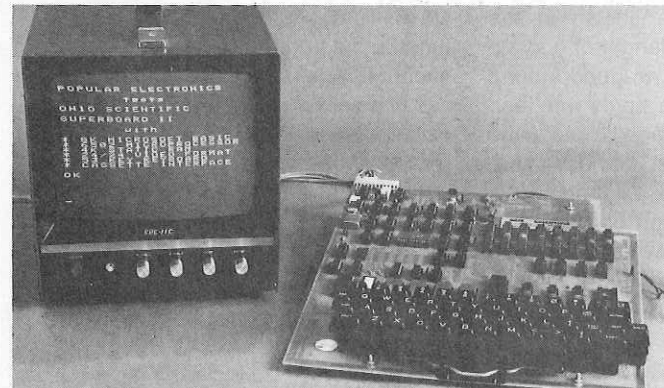


Photo by John Kane

Single-board unit has 4K of RAM, and on-board BASIC in ROM

BACK IN 1975, we built our first microcomputer and had to pay almost \$350 for the microprocessor chip alone. Adding 4K of memory, an I/O port, and some means of entering the BASIC brought the price up to almost \$1000. Things have changed a lot in four years. Microprocessor chips are selling for a fifteenth of the price (often even less) than they did at the outset. Just about everything else having to do with personal computers has also dropped considerably in price. Still, one usually expects to pay more than \$500 for a minimum "appliance" personal computer. It comes as a pleasant surprise, then, that Ohio Scientific's (1333 Chillicothe Rd., Aurora, OH 44202; Tel: 216-562-3101) Superboard II is priced at a very modest figure of \$279.

The Superboard II is a single-board wired and tested computer that comes with 4K of RAM (expandable on-board to 8K), a 53-key upper- and lower-case keyboard, a Kansas City tape interface, a machine-language monitor in ROM, and 8K Microsoft BASIC in ROM.

The Superboard II is a "basic" computer. It comes without case and power supply. A complete version is the Chal-

lenger IP, which comes wired and tested with a power supply and case for \$349.

General Description. Built around a 6502 microprocessor chip, the Superboard II also contains 1K of dedicated memory for video besides having 4K of user memory. In addition to its upper- and lower-case alphanumeric characters, it can produce user-defined symbols as well as a set of gaming symbols to produce a screen of up to 256 x 256 points. The alphanumeric display is 25 characters per line and 25 lines (convertible to 30 x 30) on an overscanned TV receiver or video monitor. All you need to get the system up and running are a 5-volt power supply capable of delivering 3 amperes of current, a video monitor (or TV receiver plus r-f modulator), and a cassette player.

The single large printed-circuit board on which the computer is assembled is clean and uncluttered. The clock oscillator is crystal-controlled, and all ICs are in sockets. There are also on board three 16-pin IC sockets for future hardware experiments and a 40-pin IC socket that serves as a bus expander.

The alphanumeric keyboard occupies

the forward section of the computer board. Autorepeat is featured in all character keys, including the space bar. One touch of a key puts the selected character on the screen of the monitor. Holding the key down puts a string of the same character on screen for as long as the key is held down. (There is a slight pause between the first and all subsequent characters.)

Available hardware options include an expander board that can support 24K of RAM, a dual mini-floppy interface, a port adapter for a printer or modem, and a 48-line expansion interface. In the software area, an assembler/editor, an extended machine-language monitor, and a complete software library are planned.

When the system is first turned on, it comes up in the monitor mode. If you ask for BASIC, the system responds instantly with the BASIC resident in ROM. The BASIC itself is from Microsoft and is a conventional 8K type. It has the usual complement of commands, statements, expressions, functions, string-handling capabilities, and includes tape SAVE and LOAD commands. The monitor has the usual basic commands and includes tape-cassette commands.

User Report. The video display in our test Superboard II was set for 25 characters on 25 lines. The spacing between the lines was minimal but readable.

We cranked in several BASIC programs that we have used with our 8080 microprocessor based computer. With slight changes in some BASIC commands (we used a different BASIC from that provided), the programs ran properly.

In graphics applications, a particular symbol is "called" to the screen by POKEing the character's code to the address of the video location where it is to be displayed. There are extra character codes to accommodate the additional nonstandard graphic symbols.

The Superboard II uses a 1K single format graphics system and plots can be made at almost any angle. Access to the graphics can be made through either BASIC or machine-language routines. A complete manual that accompanies the computer details operation, BASIC, and graphics.

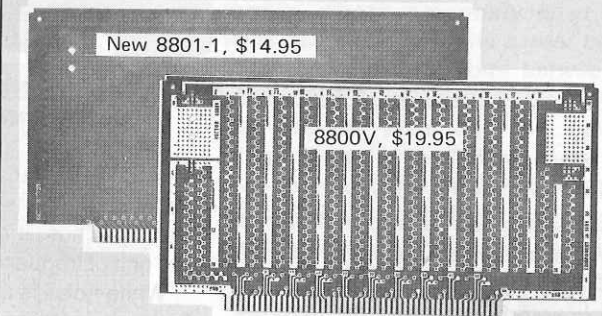
We used the Superboard II for several weeks and quickly became accustomed to its operation. Although we're used to having 64 to 80 characters per line, we became reasonably comfortable with the 25-character/line format of this computer. (Evidently, Ohio Scientific designed the Superboard II with the idea that it would be used primarily with a home TV receiver. Since 32 characters/line would be the practical limit in such a setup, a 25-character by 25-line or 30-character by 30-line format is not unreasonable.) Another minor objection we have is that the system is not readily expandable.

Lest we color this report with our own exclusive opinions of this computer, we decided to take it and its accessories to a computer club meeting and see what other computer enthusiasts thought of it. Almost without exception, the Superboard II met with approval, considering its attributes, its low price, and inclusion of video output, tape interface, keyboard, and BASIC in ROM.

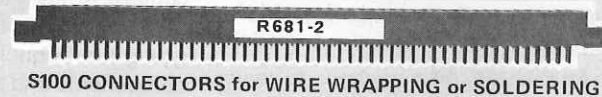
We can heartily recommend the Superboard II computer system for the beginner who wants to get into microcomputers with a minimum of cost. Moreover, this is a "real" computer with full expandability. And it is a ready-to-go system for almost the same price one would have to pay for a stripped-down single-board system to which one must add a keyboard, video output, BASIC, and cassette-tape interface. Also, the Microsoft BASIC is a real plus.

CIRCLE NO. 104 ON FREE INFORMATION CARD

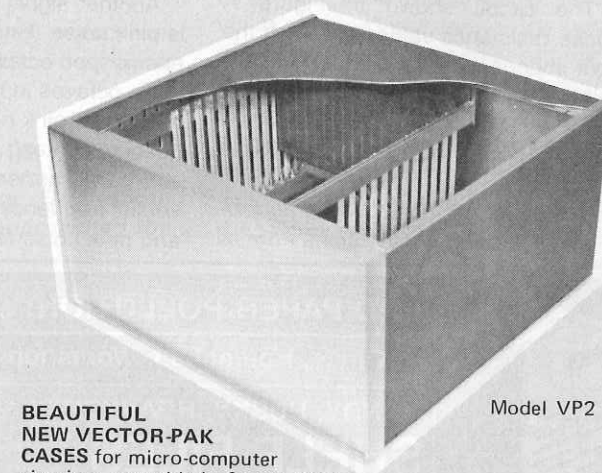
VECTOR PACKAGING MATERIALS SAVE TIME & MONEY



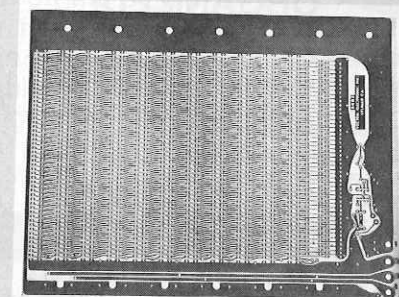
S100 CARDS—100 PLUG CONTACTS—Convenient universal tinned pads and bus lines. For interface, memory expansion, breadboarding. Mount almost anything anywhere on card.



S100 CONNECTORS for WIRE WRAPPING or SOLDERING



BEAUTIFUL NEW VECTOR-PAK CASES for micro-computer circuitry, assembled. Constructed of aluminum, finished in vinyl. Slide out covers for easy access. Includes card guides, heavy chassis plate, perforated bottom cover for cooler operation. Card guides perpendicular to front panel, Model VP1, \$163.00. Card guides parallel to front panel, Model VP2, \$159.00.



Model 8803

S100 MOTHERBOARD, \$29.50. 11 positions ready for connectors. Glass epoxy, etched circuitry for passive or active termination, 12 tantalum capacitors and instructions.

PLUS revolutionary Slit-N-Wrap wiring tools, Micro-Vector-board® printed circuit kits, I.C. sockets, extenders. Prices subject to change without notice. Send for new catalog.

VECTOR ELECTRONIC COMPANY, Inc.
12460 Gladstone Avenue, Sylmar, CA 91342
phone (213) 365-9661, twx 910-496-1539
Our toll-free number which can be used by customers outside of California is 800-423-5659 540777

CIRCLE NO. 55 ON FREE INFORMATION CARD