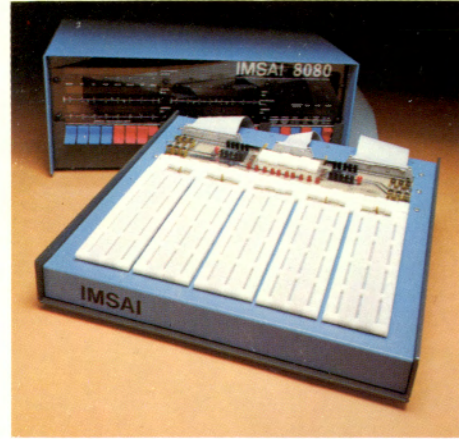## Unique Intelligent Breadboard System

The IMSAI Intelligent Breadboard System is a powerful experimental and educational tool for analyzing the trade-offs between hardware and software implemented circuits. This low-cost physical facility is ideal for implementing and testing digital logic circuits with program interaction and computer control. The Breadboard Console connects directly to an IMSAI 8080 computer. This provides direct access to the computer's bus lines for address, data, control and power, and to 48 lines of programmable TTL I/O. The Breadboard Console includes power regulators, LED level indicators, I/O connectors, and space for up to forty 16-pin IC plug-in packages.

The Economical IMSAI 8080 Intelligent Floppy Disk System

For the money, there's no development system like it: it's easier to use, more powerful, modular and versatile than anything on the market. The intelligent interface/controller has its own processor and firmware, and provides a sophisticated control of the floppy disk system with DMA and automatic retry.
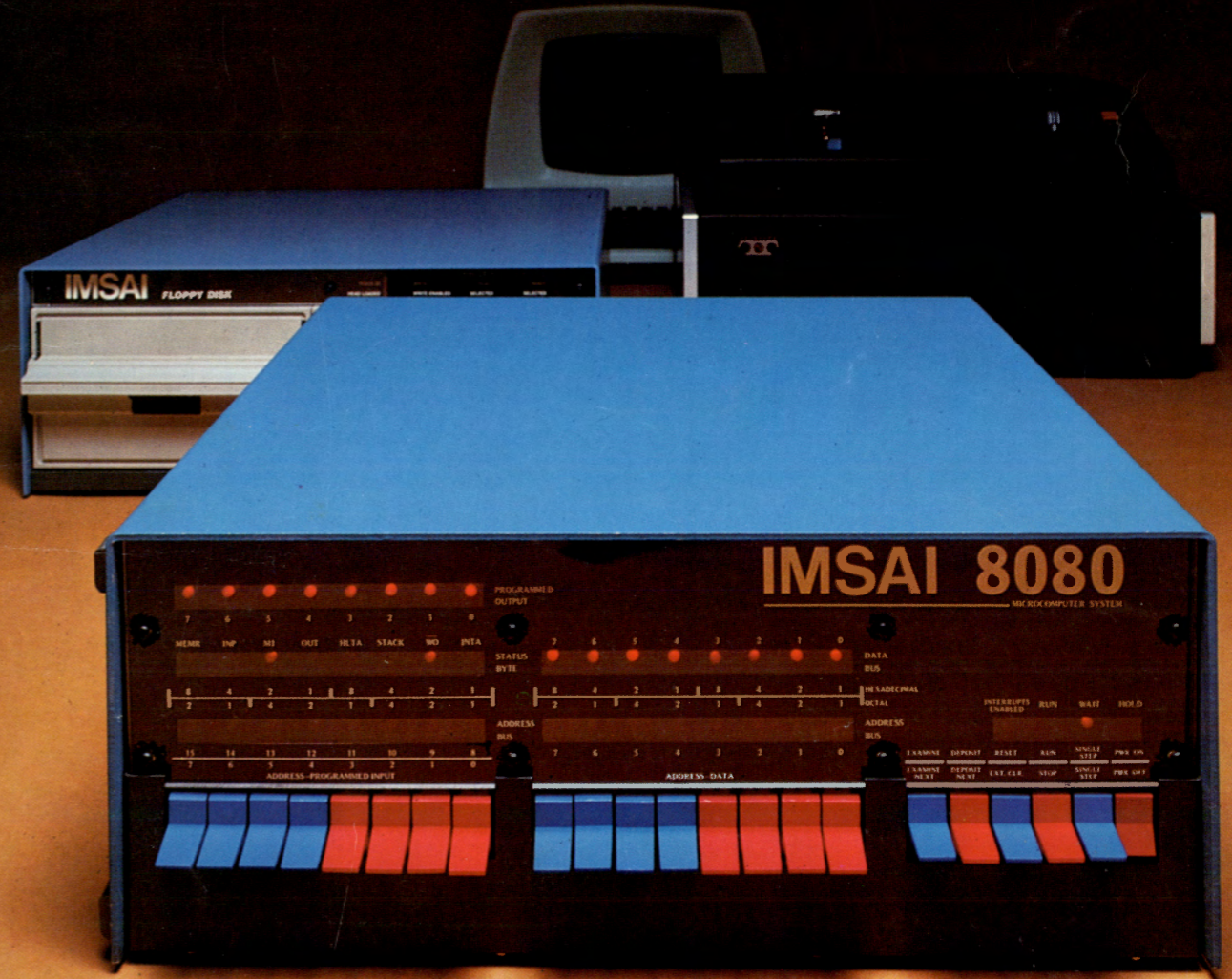
IMSAI 8080 Specifications

Processor Intel 8080A
Memory 65,536 words, directly addressable; MOS
Word Size One byte (8 bits)
Register Instruction Cycle Time 2 μs
Basic Machine Cycle Time 0.5 μs
Number of I/O Ports 256
Machine Instruction Set 78 basic instructions, 174 including variants
Nested Subroutine Calls Number limited only by memory size
Interrupts Eight hardware levels (optional)
Registers Six plus stack pointer, program counter, accumulator, and status register
Board Capacity 22 maximum
Power 120V, 50-60 Hz, single-phase, 28 amperes
Dimensions (cabinet) 19½ in. wide, 17 in. deep, 7 in. high (rack mount optional)
Specifications and prices are subject to change.

Send $1.00 For A Copy Of The IMSAI 8080 Catalog And Price List/Order Form Today!

The Microcomputer System that's easy to take

IMSAI 8080 Value, Quality, Simplicity.

The broad acceptance of the IMSAI 8080 has made IMS Associates, Inc., one of the world's largest manufacturers of microcomputer systems. The reasons are simple: The IMSAI 8080 is a rugged, high-quality computer system that satisfies a wide range of applications at an extremely high performance/cost ratio.

It's easy to use and easy to afford. Whether you buy it assembled or in kit form, the IMSAI 8080 can be ordered with the capability you need for today. Tomorrow you can change or expand its capabilities easily and economically.

Choose the exact type and capacity of memory you need. Select from a variety of I/O interfaces and peripherals. Make it a stand-alone or dedicated system, or part of a powerful multiprocessor, shared memory system. The only limit to the IMSAI 8080 is your imagination.

Floppy Disk Drives **3330-type Disk Drives** **Line Printers** **Serial Printers**

IEEE-standard I/O

Assembly Language Programming System

Floppy Disk Operating System

IMSAI 8080

Parallel I/O *Serial I/O*

4K BASIC **8K BASIC**

Extended BASIC

A/D and D/A Converters **TV or Video Monitor Interface** **Tape Cassette I/O**

Mini Printer **Keyboard** **CRT Terminals** **TV or Video Monitor**

Inherent value

The expandability and adaptability of the IMSAI 8080 make it a truly value-added system. When you place your order, you specify exactly what you need in the way of memory, I/O boards and peripherals.

The chassis has a capacity of up to 22 boards, and the universal memory and I/O interface boards will plug into any slot. With provision for 10 cable connectors, it's simple to plug numerous peripherals directly into the IMSAI 8080.

For large programs, you can have up to 64K bytes of 500-nanosecond memory with a powerful write-protect feature and LED status indicators. Or you can store your programs permanently in erasable PROM's.

The IMSAI 8080 makes multiprocessing very economical. As many as six processors can share a common memory.

With the variety of I/O interfaces available for the IMSAI 8080— plus its 256 I/O ports—you can configure exactly the system you want. For heavy communications applications, you can specify an eight-level priority interrupt board. And select any number of serial I/O interface boards for synchronous and asynchronous RS232 or current loop operation. Or you can choose a versatile multifunction board with both serial and parallel ports, plus a tape cassette recorder interface.

For various computer control applications you can order parallel I/O boards, A/D and D/A converter boards, and an IEEE-standard board for instrumentation interfacing. For data base management applications, you can operate four floppy disk drives with each intelligent interface/controller you specify. Other I/O boards are available for interfacing high-capacity disk drives, a tape cassette recorder, and high-speed printers. In addition, there are I/O boards that let you use a conventional color TV or a video monitor for character and graphics display.

With the IMSAI 8080 you won't have to worry about where to go to order your peripherals. IMS Associates has just about any peripheral you need, including single or dual floppy disk drives, three different 3330-type disk drives, serial and line printers, CRT terminals, and a keyboard.

If you're an OEM, you can order the IMSAI 8080 without a control panel, or a panel with your own labeling. And the system is available for rack mounting.

And all this value is backed by a 90-day warranty.

Quality throughout

Inside and out the IMSAI 8080 shows you quality. On the outside, there's a heavy gauge aluminum cover and a highly functional control panel with crisp legends protected by a clear acrylic faceplate.

Inside you'll find a sturdy card cage and a straight-through backplane design. There are no wiring harnesses; even the control panel is a plug-in module.

The heavy-duty power supply provides 28 amperes. More than enough to handle all the boards you can put into the IMSAI 8080.

All PC boards are double-sided with plated-through holes and solder masks, and gold-plated contacts.

Simplicity

Everything about the IMSAI 8080 is easy to take. A fully assembled IMSAI 8080 is ready to go the minute you receive it. The economical kit version—which has the same high-quality components as the assembled unit—comes with detailed instructions for easy assembly. And *any* board plugs into *any* slot.

Operating the IMSAI 8080 is easy, too. The front panel is truly an operator's control panel, with wide-angle indicators and large, easy-to-operate paddle switches.

Bit positions are labeled with both hexadecimal and octal notation.

It's easy to program. Software includes a monitor, assembler, text editor, loader and debugger. There is a wide range of high-level systems software available to registered IMSAI 8080 owners at very low cost, including 4K and 8K BASIC, Extended BASIC, and a Floppy Disk Operating System.

And the popularity of the 8080 microprocessor makes a variety of software easy to come by.

To make things even easier you're furnished complete documentation, including a comprehensive user's manual and instructional books on microprocessors.

Best of all the IMSAI 8080 is easy to afford. The basic system—including chassis with power supply, MPU board, control panel and dust cover—costs just $931 fully assembled, and only $599 as a kit.

Send $1.00 for a detailed catalog that will help guide you in ordering exactly what you need: memory capability, I/O interfaces, peripherals. IMS Associates has a large network of dealers located throughout the U.S., in Canada and many other countries to serve you. For the name of the dealer nearest you or for quotations, contact IMS Associates directly.