



Electronic components and materials

PHILIPS

Instructor 50™ Desktop Computer... the complete, ready-to-use microprocessor learning package



signetics

Who needs Instructor 50

Research engineers, scientists, design engineers, engineering managers, instrumentation specialists, computer professionals, educators, students and hobbyists, to name a few. In fact, anyone desiring in-depth knowledge of how a microprocessor functions will benefit from Instructor 50.

Instructor 50 effectively supports college and university curricula by illustrating basic computing concepts. Educators who previously taught these fundamentals only through textbooks, lectures, and paper exercises now have a means by which their students can apply classroom instruction. Using the Instructor 50, the student can write, enter and test his own programs, and observe the sequence of events associated with instruction execution.

Whether used in the classroom, office or home – the Instructor 50 reinforces basic concepts, and provides the important practical experience to illustrate microcomputer functions.

No experience required

Plug in the Instructor 50 – and the first message you'll read on the prompting display is "Hello". This friendly, interactive display combines with an exceptional ease of program entry to make the Instructor 50 an ideal system for the novice.

There's absolutely no previous microprocessor experience required to use the Instructor 50. This complete learning package comes with a comprehensive user's guide, containing program examples that you can run and enjoy right from the start.

While the Instructor 50 guides the novice, its broad hardware/software capabilities can also challenge the professional. Accordingly, the Instructor 50 is ready to handle more sophisticated applications when you are.

Fully operational microcomputer in one package

Instructor 50 minimizes the time and expense involved in learning the operation and programming of a microprocessor. A complete, ready-to-run unit with its own integral power supply, it features separate command and hexadecimal keyboards and an LED prompting display. The system includes everything you need to write, run and debug machine-language programs – housed in one compact package.

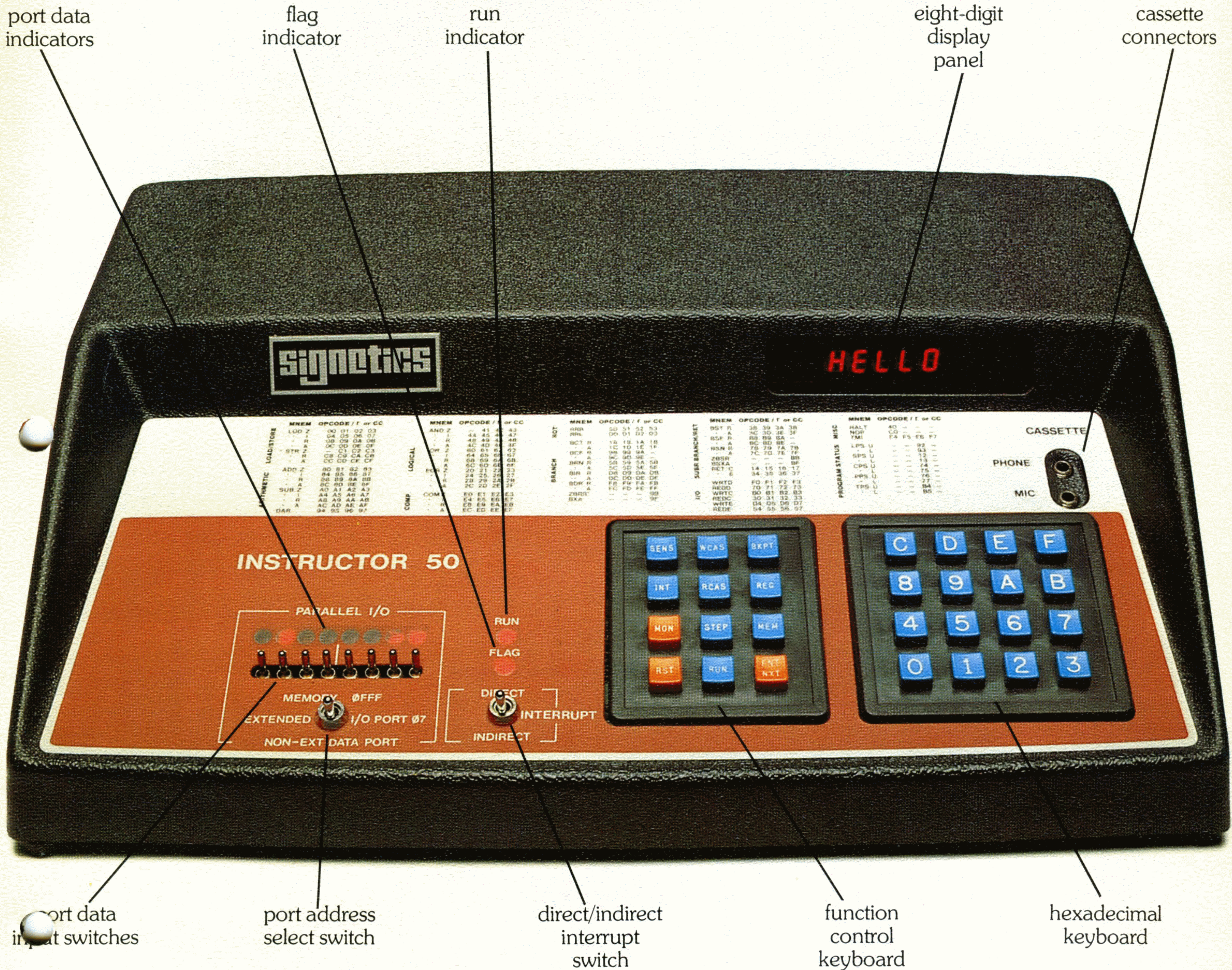
Build a library of program tapes

You can save your programs on any ordinary cassette recorder tape. Simply depress the WCAS (write to cassette) key, and the Instructor 50 will record your program onto a cassette tape. Later, you can rewind the tape, depress the RCAS (read from cassette) key, and reload computer memory. By saving your programs on tape, you can easily create your own library of programs.

The Instructor 50 package comes complete with user's guide and two leads for interfacing with any conventional audio cassette recorder – plus an AC adapter.



The Instructor 50



KEY FEATURES

- Ready-to-run desktop unit with integral power supply.
- 16-key hexadecimal keyboard for entering data values.
- 12-key command function keyboard for issuing commands and selecting operating modes.
- Eight-digit LED display lets you instantly see results of your processing.
- Audio tape cassette interface allows you to create program library.
- S-100 interface bus permits system expansion.
- USE monitor program supervises operation of the system.
- Debugging aids, including breakpoint and single-step modes.
- Parallel and serial I/O.
- 512 bytes of on-board user RAM.
- Crystal-controlled system clock.
- Comprehensive User's Guide and Introductory Manual.
- Port data input switches.
- Port data indicators.
- Direct/indirect interrupt switch.
- Port address select switch.
- FLAG and RUN indicators.
- Use of the powerful 2650 8-bit, N-channel microprocessor, with fixed command set of 75 instructions and eight different addressing modes.

Each Instructor 50 comes with a guarantee card, which offers parts replacement and related labour at no charge for 90 days after purchase.



Monitor firmware makes it easy

The USE (User System Executive) monitor firmware makes the Instructor 50 the best system of its kind. Most systems require start-up procedures before a program can be loaded or executed. The Instructor 50 does not. Its USE monitor program runs automatically as soon as the system is turned on. And an LED display provides helpful prompting and error messages.

While in the monitor mode, you may:

- enter and alter a program.
- read in a previously saved program from audio cassette tape.
- display and alter the contents of the microcomputer's general purpose working registers and/or Program Status Word.
- examine and alter the contents of the Program Counter and memory locations.
- specify and examine a program breakpoint.
- step through a program one instruction at a time.
- save a program on cassette tape.
- begin execution of a program you have written.

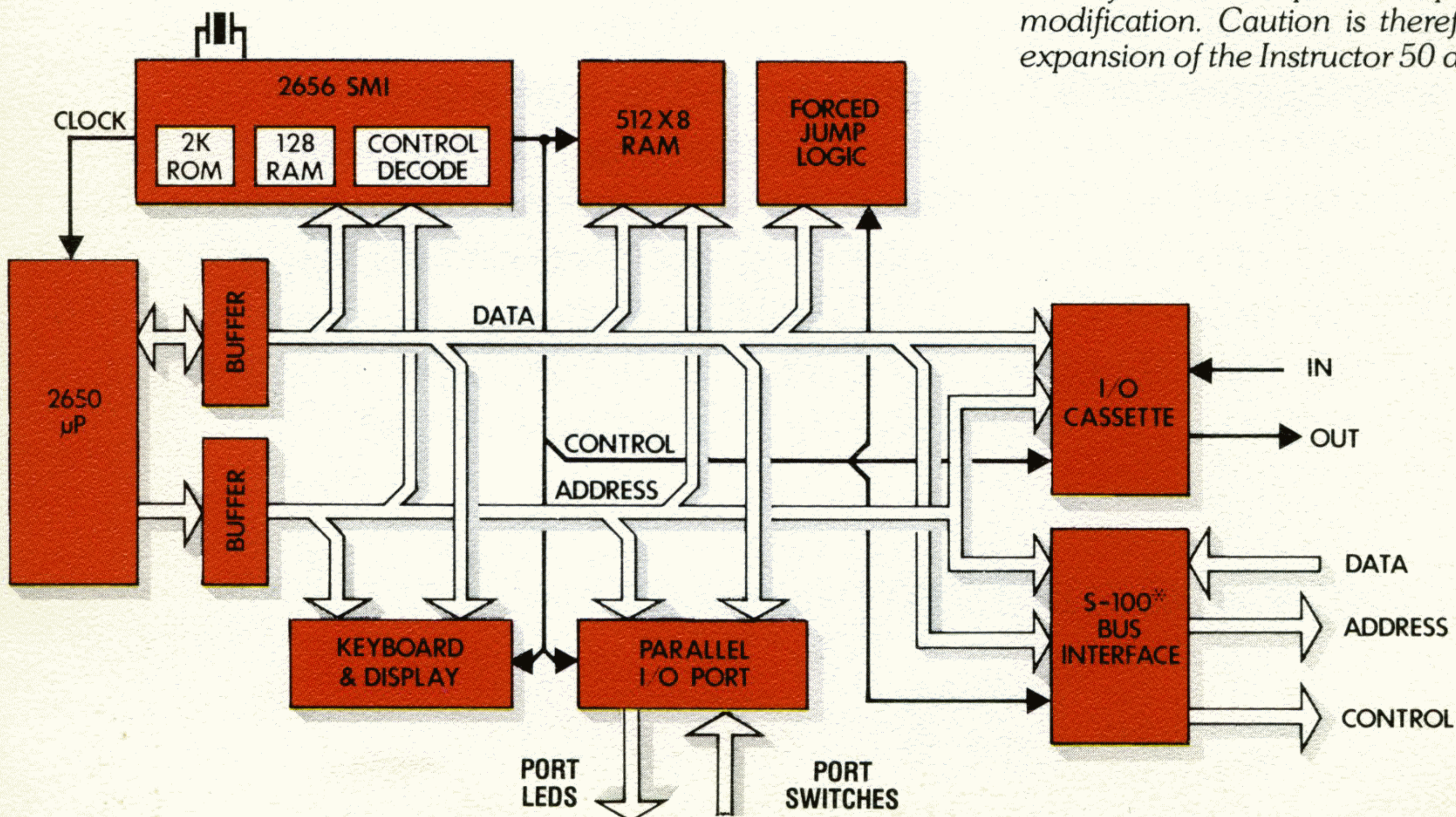
Space for expansion*

Equipped with an S-100 type expansion interface, the Instructor 50 can be converted from a learning device to a small system computer – limited only by the number and type of peripheral boards used. Moreover, the powerful program/data entry and debug facilities of the basic Instructor 50 can be extended to any device connected to the S-100 bus interface.

Heart of the system

The Instructor 50 uses the Signetics 2650 microprocessor as the central processing element. Recognized as the microprocessor "most like a minicomputer", the 2650 reads instructions from program storage and, by executing these instructions, performs all the arithmetic and logical operations required. The 2650 also provides the system program with the physical means to access and control the system's input and output functions.

Instructor 50 block diagram



* Because the S-100 bus standard is only loosely defined, some combinations of "S-100 compatible" equipment may not function properly without modification. Caution is therefore advised in selecting accessories for expansion of the Instructor 50 desktop computer.

Signetics offers one of the broadest choices of microprocessors

... that translates to a broad understanding of microprocessors. This knowledge has gone into the development of the Instructor 50.

Learning about the operational aspects of a microprocessor and how to program one is no easy task. Listening to long-winded lectures and sharing practical experience with ten other people during the last twenty minutes of a session are no way to learn about microprocessors, particularly when it comes to programming one.

That's precisely why we've developed the Instructor 50 – to teach you about microprocessors and microprocessor programming the easy way and “right in your own back yard”. With the Instructor 50 package, you have a complete microcomputer system right at your fingertips.



Instructor 50 is a practical, low-cost microprocessor training tool. Its primary function is to teach you microprocessor operation, programming and applications. Even if you've never used a computer of any kind, you'll find that Instructor 50 can help you learn and apply computer concepts very quickly.

We can help you understand microprocessors.

The Instructor 50

Desktop Computer

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for professional, industrial
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