TRS-80™ Microcomputer Catalog

CATALOG NO. RSC-2

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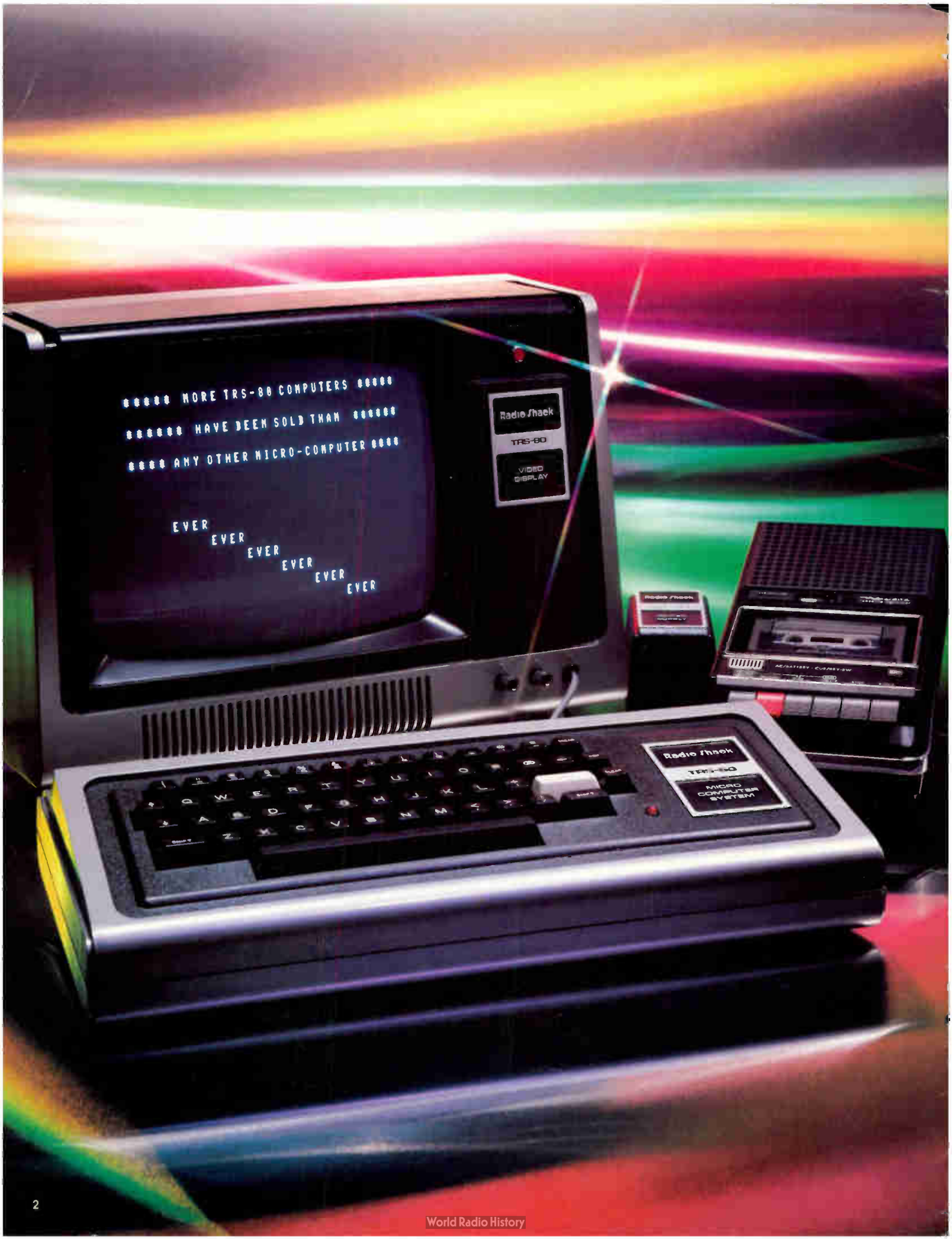

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What is a computer?

Not too many years ago, the pocket calculator we take for granted today could have passed for a powerful computer, and one worth a great deal of money. Today, however, there is much more to the definition of a computer.

The computer is in some respects like a super-power calculator, yet it is very different. Calculators work with numbers. They add, subtract, multiply and divide. Computers work not only with numbers, but with alphanumeric data — names, words, stock numbers. A computer can be programmed to repeat the same function over and over. It can compare a list of stock numbers with one you have asked it to find or alphabetize a list of names. It can logically evaluate information given to it, and act on its findings. It can store large volumes of data for future use or reference. It can converse with its operator, asking questions like "Your totals don't balance, would you like to put the data in again?" or "Would you like the results printed out, or displayed on the video screen?".

Obviously, a computer is much more than just a "number-cruncher." It is literally an extension of the mind. It is to man's mind what the lever is to his arm — a machine capable of increasing his effectiveness. It can free you from repetitive exercises which do not require human judgement. It can provide facts and figures with extreme speed, giving you the time to exercise your judgement thoughtfully.

Not many years ago, a computer with the power of the TRS-80 would have cost over a million dollars. The equipment would have filled large rooms. The advancing technology of integrated circuits led to the microprocessor — literally a "computer on a chip." This, in turn, drastically reduced the size and cost.
The TRS-80, a product of these advances, is manufactured and sold only by Radio Shack.

Perhaps the best way to really explain the computer is to ask the question . . .

What does a computer do?

Large computers are well known in the business world for their ability to do bookkeeping, billing, payroll, inventory control, and analysis and forecasting of business data. Laboratories, engineering firms and universities have used computers to analyze volumes of data and numbers in a wide variety of applications.

As we said, a computer works with alphanumeric information, not just numbers. It can alphabetically sort a mailing list, find subscribers who have not renewed, locate slow-moving inventory items, write purchase orders based on sales trends and current inventory levels, or simply catalog your butterfly collection. And it can become an automated teacher of math, spelling, American history or what have you. For entertainment you can spend hours playing really challenging computer games, from chess to space war.

The TRS-80 Microcomputer System is capable of performing all of these activities. In general, it differs from its larger cousins in speed and the amount of information which can be kept on line at any one time. Keep in mind the TRS-80 isn't a panacea — it's a small computer. Study your needs carefully and buy the TRS-80 system that's right for you — expansion could be the answer. For example, a simple Level-I 4K inventory system could handle 22 items (64 characters per item), while a disk system TRS-80 could store about 1300 items per data diskette. Remember, too, that you'll need to write programs (our manual tells you how) or have them prepared to suit your specific needs. Visit a nearby Radio Shack for help in choosing your system.

Why a personal microcomputer? Because today's complex lifestyles require a method of getting more things done in less time. The TRS-80 has made true computing a reality for the small business, laboratory, classroom and the home. Radio Shack's TRS-80 is *the* personal computer for anyone and everyone!

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Tailor a system to suit your specific needs. This system will meet the demands of many small businesses. It includes Level-II BASIC, Expansion Interface, 32K RAM, two Mini-Disks, video monitor and line printer with tractor feed. Most of our business software packages are based on this very system.

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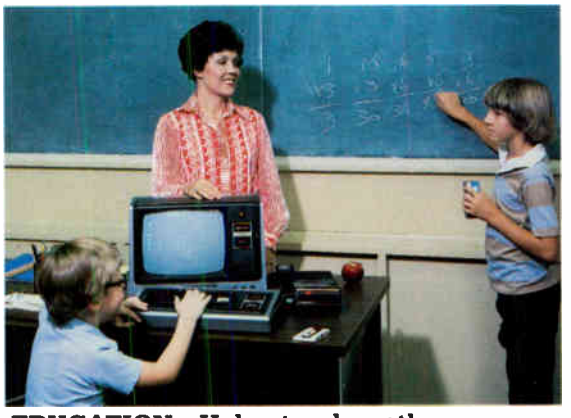
Who can use the TRS-80?

Thousands of people from all walks of life already own the TRS-80 Microcomputer. Why? Because they saw that it could serve to enrich their lives. At work and at home, the TRS-80 is exceptionally versatile. And that's why so many people are using it.

Businessmen find the TRS-80 gives them the edge on the competition. So much of their time is spent on tedious, repetitious paperwork that they often find little time to devote to the more productive areas of their job. But with a TRS-80, tasks like inventory, general ledger posting, payroll and accounts receivable can be processed quickly and effectively. Accountants find it invaluable in tax preparation, cost accounting and in keeping clients' records.

Engineering firms, manufacturers and large businesses use the TRS-80 for specific jobs too small or too costly to run on a large computer.

Programmed to catalog specimens, classify drugs and perform needed statistical and data manipulation, the TRS-80 microcomputer becomes an inexpensive and reliable clinical lab assistant.



EDUCATION—Helps teach math, spelling and other subjects, keeping a progress report on each student.

The TRS-80 is an invaluable — yet affordable — educational tool. Computer-assisted instruction is ideal for students who require repetitive instruction and immediate evaluation of their progress.

And homeowners find more uses for the TRS-80 every day. Already they use it to manage the household budget and to keep purchase dates, serial numbers and repair history of home appliances and valuables.

How do owners like our TRS-80? A school system tells us that the TRS-80 has made computer-assisted instruction available to them for a fraction of their previous cost per student-hour. A Civil Engineer reports laborious structural concrete beam calculations requiring hours are now completed in less than ten minutes. A father writes to tell us "this investment is one of the most significant in value to our family and to the future education of our child that we have ever seen."

The limits of what the TRS-80 can do depend upon the creativity of the user, and his or her needs and imagination. As an educator put it, the TRS-80 "makes possible the tapping of human innovation and creativity on an unprecedented scale."

LAB USE—A very economical alternative to leasing an expensive time-sharing terminal.

HOME—Manages household records, budgets, entertains with challenging games.

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Every TRS-80 we make is "burned in" for at least 24 hours before it leaves our factory for maximum reliability when you receive it.

Why the TRS-80?

Low Cost. Seldom has such a technologically advanced piece of electronic equipment been made affordable to the general public. But Radio Shack broke the price barrier, and made the personal computer a reality.

Value. Most people regard their TRS-80 as an *investment*, and often it yields a return that exceeds their fondest dreams. That's because TRS-80 is what a personal computer should be—a powerful system that's easily expandable.

Availability. The TRS-80 and its accessories are supplied through Radio Shack outlets nationwide and we have over 5800 locations. You can stop in at one near you and actually see and try the TRS-80 before deciding on your purchase.

It's easy to use. Our Level-I TRS-80 system allows the user to learn programming with absolutely no previous knowledge of computers or programming. Our superb user's manual is written in a light and humorous style that makes learning fun. And the TRS-80's BASIC language is stored in permanent Read-Only-Memory (ROM), so it's ready to use the second you turn on the power.

It's expandable. Even the smallest TRS-80 system can be expanded into our largest business system — and you pay no "premium" for not having purchased the biggest system in the beginning. With the Expansion Interface you can add more memory for a system with up to 48K RAM, plus printers, disk drives and much more. And you can convert to one of the most powerful microcomputer languages available, our Level-II BASIC.

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Your nearby Radio Shack is your one-stop store for TRS-80 sales and service.

Start at your own level — modular design lets you expand to a larger, more powerful system anytime.

Businesses of all sizes can afford to computerize their operations the low-cost TRS-80 way.

We build it ourselves. To insure highest quality at an affordable price, Radio Shack designed the TRS-80, and we build it in our own factories. We have taken maximum advantage of state-of-the-art engineering and our manufacturing expertise to produce the best value-to-cost ratio on the market.

Service. If repairs are ever needed, Radio Shack has a nationwide network of over 50 service centers to minimize "down time." You simply return the component in need of service to your nearest Radio Shack store — we do the rest.

Reputation. Radio Shack, with 58 years' experience to our name, is the nation's leading electronics retailer. We're backed by our NYSE-listed parent, Tandy Corporation. You can depend on us in the years to come to stand behind our product and to offer an ever-growing line of both accessories and programs.

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The TRS-80 System

Radio Shack's TRS-80 Microcomputer System is fully wired, tested and U.L. listed for electrical safety — you can put it to work immediately! It's ideal for finances, education, accounting, lab use — even for home entertainment. *And it's the computer with a full line of accessories being delivered now, with more to come in the future.*

Basic TRS-80 systems include a 12″ video monitor, Realistic battery/AC cassette recorder, power supply, 232-page user's manual and a 2-game cassette tape for playing Blackjack and Backgammon.

The TRS-80 comes to you ready to be programmed, either from pre-recorded cassette tape or from the keyboard. A "program" is simply a set of step-by-step instructions telling your TRS-80 what you want it to do. The TRS-80's programs are written in easy-to-learn, plain-English BASIC programming language (BASIC stands for "Beginner's All-purpose Symbolic Instruction Code"). The user's manual includes a beginner's course in BASIC that'll have you "talking" to your computer in no time. The TRS-80 talks back to you via its 12-inch video screen.

Inside the 53-key professional keyboard housing is the actual "brain" of the computer — a powerful Z-80 microprocessor that serves as the central processing unit (CPU). Programs and data are stored in internal "memory chips." Our lowest-priced TRS-80 computer contains 4096 bytes (4K) of user memory, or RAM (a byte being roughly equivalent to one typewritten character and made up of eight electrical signals called "bits"). It can be expanded to 16K within the keyboard unit and to 48K by using the Expansion Interface with additional memory options.

Note — the Z-80 is an 8-bit microprocessor and can address a total of 64K of memory. Both ROM and RAM are addressed in the TRS-80, along with some internal "overhead." In a 48K RAM configuration, the last memory address is 65,535 — the usual ending address for a 64K computer.

The "Read-Only Memory" chips contain the "BASIC interpreter" software. The interpreter accepts plain-English commands and statements from the programmer and translates them into the numeric language of

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the Z-80. You can access the Z-80's numeric "machine language" directly by using our "T-Bug" monitor program, available on cassette tape, or in "assembly language" by using our "Editor/Assembler" tape. (Both of these tapes are suggested only for advanced programmers with a knowledge of machine and assembly language.)

The Realistic cassette recorder lets you record and play your own programs or use one of Radio Shack's prepared programs — simply run the cassette and begin computing. The recorder is included free of extra charge with each basic TRS-80 system. Other recorders may be used — with varying degrees of success — but only if they have automatic recording level capability.

The video monitor looks like a standard television set without the channel selector. It features a wider bandwidth than most TV sets for a sharper display of printing and graphics. The monitor operates on ordinary 120-volt AC, 60 Hz house current. Foreign versions are available in other countries and are sold only overseas by Tandy Electronics outlets. The computer cannot be connected directly to a standard TV set.

For access to other hardware, the TRS-80 utilizes a unique 40-pin bus (connector system) that can attach the TRS-80 to our Expansion Interface, or other external devices.

Housed in the finest ABS material, the TRS-80 is virtually unbreakable. It may be left "on" for extended periods of time with no adverse effects, as long as the cooling vents are not obstructed.

Level-I 4K System. Cat. No. 26-1051.
Level-I 16K System. Cat. No. 26-1053.
Level-II 4K System. Cat. No. 26-1054.
Level-II 16K System. Cat. No. 26-1056.

TRS-80 Microcomputer Specifications

Microprocessor: Advanced Z-80 8-bit processor. Clock speed, 1.78 MHz.

Keyboard: Integrated, full-size, 53-Key professional-type.

Video Display: Memory mapped, all graphics and alphanumerics controlled by BASIC commands. Cursor control. Automatic scrolling.

Text: 16 lines of up to 64 characters with Level-I. With Level-II, you may select an optional mode of 32 characters per line.

Graphics: 128 horizontal by 48 vertical. Graphics and text can be combined in any manner by software.

Memory: Includes 4K Read-Only Memory (ROM), 4K Random Access Memory (RAM). Internally expandable in the computer case to 12K ROM and 16K RAM. Total memory capability of 60K.

Input/Output: Computer-controlled cassette interface. Expansion port built-in.

Power: Power Supply; 120VAC, 60 Hz, 50 watts. Video Monitor; 120VAC, 60 Hz, 50 watts. Both U.L. listed.

Dimensions: Keyboard, 16½x8x3½". Video Display, 16½x13½x12". Power Supply, 2⅝x2⅓x3¼".

The entire computer is housed within the compact keyboard unit.

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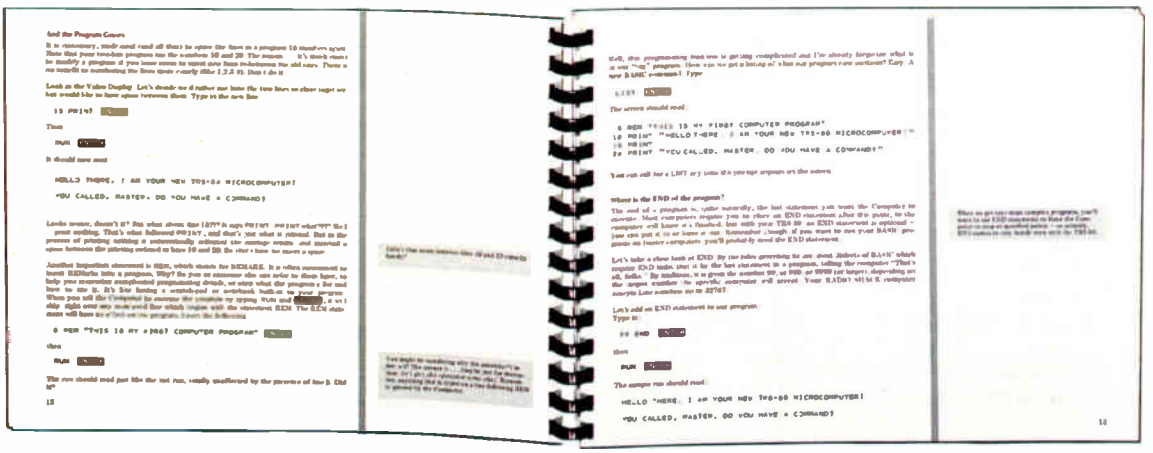
Level-I BASIC Language

Level-I is a simplified version of BASIC programming language. Level-I, together with our outstanding owner's manual, lets you learn how to program quickly and easily — *even if you have no prior knowledge of computers or programming.*

Level-I is stored in 4K of ROM, so it is ready to use the instant you turn on your TRS-80. Level-I includes most standard BASIC commands, video graphics, 250-baud cassette input/output, floating point arithmetic, numeric array, limited string variables and command abbreviations. Following is a summary of Level-I BASIC:

ABS(X) — returns the absolute value of **x**.
CLOAD — loads a program from cassette tape.
CLS — clears video screen.
CONT — continues program execution after BREAK or STOP.
CSAVE — records a program on cassette tape.
DATA — holds data to be read by a READ statement in a program.
END — ends program execution.
FOR-NEXT-STEP — sets up a program loop.
GOSUB — sends the program to a specified subroutine.
GOTO — causes program execution to jump to a specified line number.
IF-THEN — tests for a condition; specifies next action if condition is true.
INPUT — allows keyboard entry of data during program execution.
INPUT # — inputs data from cassette tape.
INT (x) — returns the integer value of **x**.
LET — assigns a value to a variable (optional).
LIST — displays program in memory on the video monitor.
MEM — returns number of free memory bytes.
NEW — clears program from memory.
ON — multi-way program branch, used with GOTO or GOSUB.
POINT — tests to see if a specified graphics point is turned on or off.
PRINT — displays information on video screen.
PRINTAT — allows printing at a specified video screen location.
PRINT # — records data on cassette tape.
READ — reads information from DATA statement in a program.
REM — remarks.
RESET — turns off a specified graphics point on video screen.
RESTORE — causes next READ to start over at beginning of DATA.
RETURN — returns program to its original sequence after subroutine execution.
RND(1) — generates a random number >0 and <1.
RND(X) — generates a random number >1 and $\leq X$.
RUN — starts program execution.
SET — lights up a specified graphics point on the video screen.
STOP — stops program execution.
TAB — begins printing at a specified number of spaces from the left margin of the video screen.
Variable names allowed:
Numeric variables — A through Z.
String variables — A$ and B$ (16 characters each — maximum).
Array variable — A(n) (n limited by available memory).
Accuracy of numeric variables — 6 significant digits.

Our expertly prepared owner's manual will quickly take you from hooking up your system to actually running — and writing—your own programs. You don't have to know a thing about computers because it's written by an educator in an easy-to-read, light-hearted style that makes learning fun.



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Level-II BASIC Language

Level-II is an advanced or "extended" version of BASIC programming language. It offers vastly increased computing power, faster execution time, faster cassette operation (500 baud), and increased numeric accuracy of up to 16 significant digits (intrinsic functions remain at 6-digit accuracy). In addition, you get formatted printing, program editing (with extensive editing commands), error trapping, named files, multi-dimension arrays, comprehensive string variable handling, automatic line numbering, tracing, keyboard rollover and many other features which will delight the advanced programmer. Of course, a detailed 140-page manual is included.

Level-II allows the variable names A-Z, A1-Z9 and AA-ZZ to be used for single, double and integer-precision numeric variables, as well as string variables. The same name may even be used simultaneously for four different types of variables in one program when variable specifiers are employed (AB!, AB#, AB%, and AB$). Multi-character variable names such as "PROFIT" are allowed, but only the first two characters are significant. Program lines, logical lines and string variables may be up to 255 characters long, although video screen lines are limited to 64 characters (long lines overflow to the next screen line). 32-character lines are software selectable (wide letters) with Level-II. Also provided are the necessary commands to access external devices and ports.

Level-II includes 23 specific error codes which can also be used to generate an error, in order to test error-trapping routines. Level-II users are supplied with a conversion program which converts Level-I program format and baud rate to Level-II (minor program editing may be required). Level-II uses a compressed storage format allowing some programs to be stored in fewer bytes of memory than they were in Level-I, even though Level-II does not allow abbreviation of commands. In addition to the Level-I features listed on the previous page, Level-II offers:

ASC (A$) — returns ASCII code for first character of A$.
ATN (X) — arctangent of X in radians.
AUTO — automatic line numbering.
CDBL (X) — converts to double precision.
CHR$ (X) — returns ASCII character, function, or graphic character represented by the code X.
CINT (X) — converts to integer precision.
CLEAR — clears variables from memory.
CLEAR (X) — reserves string variable space.
CLOAD "FILENAME" — loads named file.
CLOAD? — verifies CSAVEd program.
COS (X) — cosine in radians.
CSAVE "FILENAME" — records named file.
CSNG (X) — converts to single precision.
DEFDBL — defines specified variables as double precision.
DEFINT — defines specified variables as integer precision.
DEFSNG — defines specified variables as single precision.
DEFSTR — defines specified variables as strings.
DELETE — Deletes specified line(s).
DIM — reserves space for arrays.
EDIT — enters edit mode.
ELSE — in conditional branch statement, directs execution if named condition is not met: (IF . . . THEN . . . ELSE . . .).
ERL — returns line # of an error.
ERR — returns code number of an error.
ERROR (X) — generates error # X.
EXP (X) — raises e to the power of X.
FIX (X) — truncates X. (drops decimal points).
FRE (A$) — returns free string space.
FRE (0) — returns free memory space.
INKEY$ — inputs a string value without pausing the program.
INP (X) — inputs one byte from port X.
INPUT - #1 — inputs data from tape recorder #1.
LEN (A$) — returns length of A$.
LEFT$ (A$, 4) — returns left portion of A$ to the fourth character.
LLIST — lists program to line printer.
LOG (A) — natural log of A.
LPOS (0) — returns carriage position of line printer.
LPRINT — prints to line printer.
MID$ (X$, 4, 8) — characters 4-8 of X$.
NEW — erases all of memory.
OUT X,Y — output byte Y to port X.
PEEK (X) — returns contents of memory location X.
POKE X,Y — puts byte Y in memory location X.
POS (0) — returns the cursor position.
PRINT @ — prints at a specified screen location.
PRINT USING "$$##, ###"; A — prints data A using specified format.
RANDOM — randomizes random number generator.
RESUME — returns from an on error-trapping routine.
RIGHT$ (C$, 7) — returns the last 7 characters of C$.
SGN (X) — returns 1 if x>0, 0 if x = 0, and −1 if x<0.
SIN (X) — sine of X in radians.
SQR (X) — square root of x.
STR$ (A) — converts the number A to a numeric string.
STRING$ (20, "*") — prints a line of 20 asterisks.
SYSTEM — places TRS-80 in a mode to accept loading of machine language tape.
TAN (X) — tangent in radians of x.
TRON — initiates trace mode.
TROFF — cancels trace mode.
USR (0) — allows access to machine language subroutine.
VAL (A$) — converts numeric string to a number.
VARPTR (C) — returns the address where variable 'C' is stored in memory.

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Keys to a More Versatile TRS-80

Level-II BASIC (ROM) Kit

When you've mastered our Level-I programming language, you can move up to maximum computing power with our Level-II BASIC. Conversion is easy — we simply exchange the ROM "chips" in your TRS-80 for chips containing the Level-II language. Your local Radio Shack store can arrange for the exchange to be made in our nearest service center. Then just take your keyboard into the store — installation is included in the kit price.

Each Level-II kit includes a 140-page manual, Level-II Blackjack/Backgammon tape, and conversion tapes to convert your existing Level-I program and data tapes to Level-II format. Minor programming editing may be required after conversion. Level-II may be incorporated into either a 4K or 16K RAM TRS-80. Order Cat. No. 26-1120.

16K Memory (RAM) Kit

As your needs increase, you may want more internal memory in which to store programs and working data. The TRS-80 is designed for easy upgrading to a full 16K of RAM memory inside the keyboard unit. Your nearest Radio Shack store can arrange for our local repair center to exchange your 4K RAM "chips" for 16K chips. Then just take your keyboard into the store — we do the rest. Installation is included in the kit price.

Radio Shack's 16K memory option can also be installed in our Expansion Interface. Your interface can contain a maximum of 32K of additional memory, for a system total of 48K of RAM. (The keyboard must be upgraded to 16K before additional memory is added to the Expansion Interface.) Order Cat. No. 26-1101.

Upgrading your TRS-80 is easy! Just bring in your keyboard unit to have your ROM or RAM chips exchanged.

TRS-80 C-20 Certified Computer Cassettes

You'll want to store all of your important programs on our certified digital cassette tape. These tapes are leaderless, and individually tested to insure against loss of any data. Order Cat. No. 26-301.

TRS-80 Computer Carrying Cases

Take your TRS-80 system wherever you go! One case holds the video monitor, the other will hold keyboard unit, power supply, cassette recorder, cables and cassettes. Black leatherette vinyl. Hand carry only — not for shipping. Order Cat. No. 26-500.

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The Key to a More Powerful TRS-80

TRS-80 Expansion Interface

Expansion is a key word in the TRS-80 philosophy. The TRS-80's modular design lets you expand to just the system you want. Of course, you can add 16K RAM and Level-II BASIC to the keyboard unit. Beyond that point, the Expansion Interface becomes the hub of expanded TRS-80 computer systems.

The Expansion Interface measures 4½x16½x8" and is designed to sit directly under the video monitor acting as a base for it. The TRS-80's power supply module, and an identical one for the Interface, are housed inside the interface enclosure. Space is also provided for our optional RS-232-C Serial Interface Board.

A ribbon cable approximately 6" long connects the interface to the TRS-80 bus connector. The Interface provides output connectors for our TRS-80 printers, disk drives, dual cassette recorders, and an RS-232-C serial port, as well as an extension of the TRS-80 bus.

Modular design lets Interface act as a base for the Monitor.

Rear outlets for power supply cords, cassette and disk drive cables.

TRS-80's Power Supply fits inside.

All cable plugs are neatly covered with plastic shrouds

The controllers for (electronic circuits needed to control) up to four TRS-80 Mini Disk drives, a printer and dual cassette recorders are an integral part of the Expansion Interface, as are the provisions for an extra 16K or 32K of optional RAM. A "Real Time Clock" allows your TRS-80 to perform functions or gather data in relation to the time of day (Requires either Disk BASIC or a machine language subroutine available on cassette tape).

The printer output port is a standard Centronics parallel circuit. This parallel port and our RS-232-C serial port allow connection of a variety of peripheral devices. Pin-out information is provided in the owner's manual. Each requires 120VAC, 60 Hz, 50 watts. U.L. listed.

Expansion Interface with Ø RAM. Cat. No. 26-1140.

Expansion Interface with 16K RAM. Cat. No. 26-1141.

Expansion Interface with 32K RAM. Cat. No. 26-1142.

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TRS-80 Mini-Disk System

The TRS-80 Mini-Disk system is a storage medium allowing immediate access to the large amounts of data and programs you will need for accounting, inventory control, mailing lists and other jobs. Up to 4 drives can be attached through the Expansion Interface, furnishing 55,000 to about 310,000 bytes of on-line storage. The first Mini-Disk drive you purchase includes our powerful TRSDOS (Disk Operating System software) and Disk BASIC on diskette. This diskette allows about 55K of user storage space. TRSDOS and Disk BASIC use about 10K of the TRS-80's RAM, so a minimum of 16K is required, along with Level-II and an Expansion Interface.

The magnetically coated 5¼" diameter Mylar diskette is permanently housed in a protective jacket. The diskette is inserted in the drive and rotated at 300 RPM. Data is written and read from the disk by a magnetic head which moves across the diskette's 35 tracks. Each track consists of ten 256-byte sectors. Certain system information and a directory are required on each diskette, leaving 85,760 bytes of space available (each) on the second, third and fourth drive.

The Mini-Disk system can record or read stored information extremely fast. A 13,000-byte program which takes 3½ minutes to load from cassette tape (Level-II) will load in less than 20 seconds from disk.

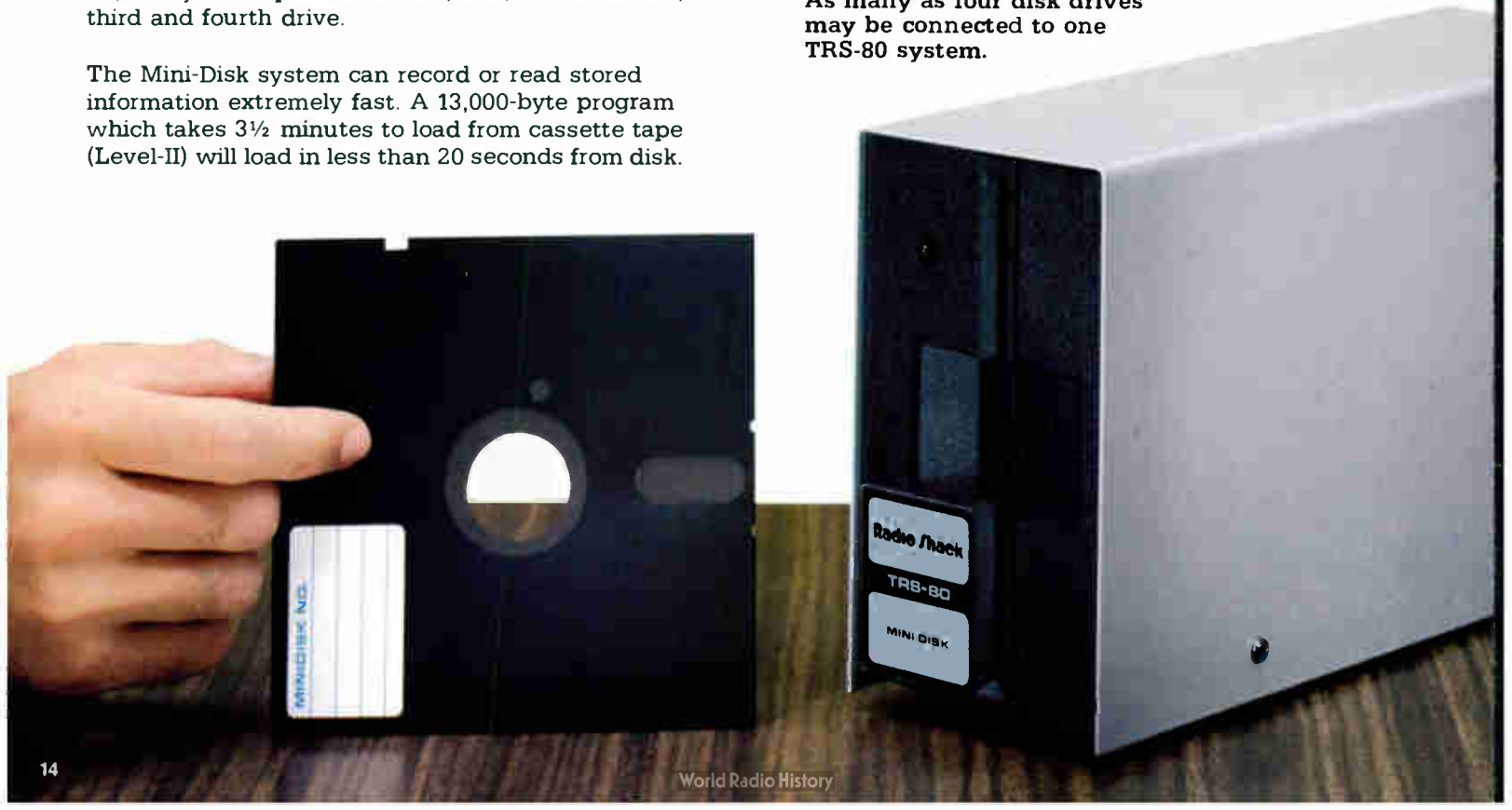
And you may read information one file after the other (sequential), or go directly to any sector without reading the preceding files (random).

The system diskette containing TRSDOS and Disk BASIC must always be in your first drive unit. TRSDOS allows you to copy a diskette (BACKUP) even in a one drive system. For Mini-Disk drive I, order Cat. No. 26-1160. For Mini-Disks II, III or IV, order Cat. No. 26-1161.

Mini-Disk System Specifications

Disk Format: 35 Tracks; 10 Sectors per Track; 256 Bytes per Sector; 89,600 Bytes per Diskette. *Disk Size:* 5¼" floppy disk. *Data Transfer Rate:* 12,500 bytes-per-second. *Disk Speed:* 300 rpm. *Latency:* 100 mS (average). *Track Access Time:* 200 mS average, 600 mS to cross all 35 tracks. *Average Backup Time:* 1:10 minutes (including formatting). *Memory Usage:* TRSDOS, 4.2K RAM; Disk BASIC, 5.8K RAM. *Power:* 120VAC, 60 Hz, 35 watts. U.L. listed. *Size:* 6½x3½x13¼".

As many as four disk drives may be connected to one TRS-80 system.



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TRS-80 TRSDOS and Disk BASIC

TRSDOS. Included in TRSDOS is the software needed to operate the disk system, plus certain programs for file management, called Utilities.

On power-up, TRSDOS is automatically loaded into RAM, occupying 4.2K. An overlay scheme is used so that only the needed portions of TRSDOS use RAM space at any given time. When Disk BASIC is called in, an additional 5.8K RAM is used. Additionally, about 280 bytes are required for each file the user requests, up to 15, hence the minimum RAM requirement for use of a Mini-Disk system of 16K.

Radio Shack intends to continually upgrade TRSDOS, adding new features with each new version, so check with your local Radio Shack store for information on the latest available version. For reference, here are some of the features of version 2.1.

Utilities:

APPEND — Adds one file to the end of another (primarily data files).
ATTRIB — Assigns or changes protective file passwords with 5 levels of protection to prevent unauthorized file access.
AUTO — Automatically executes a command on power-up.
BACKUP — Copies all of a diskette to another diskette. (works even on a one drive system by swapping disks back and forth).
CLOCK — Provides constant time display in the upper right corner of the video screen.
COPY — Copies a file.
DATE — Sets the date which can be accessed by TIME$ in Disk BASIC.
DEBUG — Machine language debugger, allowing you to set break points, execute single-step instructions, dynamically watch registers during execution and display memory in hexidecimal or ASCII.
DIR — Displays a directory of all files on a specified disk drive. If requested, will include logical record length, end of file and space used.
DUMP — Stores a machine language program from memory to disk.
FORMAT — Format and verify a blank diskette. Unusable sectors are marked.
FREE — Displays free space remaining on diskettes in all drives.
KILL — Deletes a file, making space available for reuse.
LIB — Displays all TRSDOS system commands.
LIST — Lists a file to the video display.
LOAD — Loads a machine language program from disk to memory.
PRINT — Lists a file to the line printer.
PROT — Changes protection status of all non-system files on a diskette.
RENAME — Changes the name of a file.
TAPEDISK — Loads system tapes into RAM, then to a specified disk file.
TIME — Sets the time of day for the CLOCK display and TIME$ BASIC command.
TRACE — Prints the program counter on the video display.

TRSDOS Diskette, order Cat. No. 26-310. Blank Diskettes are available individually, Cat. No. 26-305, or in a pack of 3, Cat. No. 26-405.

Radio Shack Disk BASIC. TRSDOS will enter Disk BASIC whenever the command BASIC is entered. Typing CMD "S" under BASIC will return control to TRSDOS (if "BASIC 2" is entered, the TRS-80 will be in Level-II BASIC with full RAM available). Disk BASIC enhances Level-II with the addition of several new commands.

Disk BASIC allows either random or sequential disk files. Programs may be stored in BASIC as ASCII or compressed format files. All files are named. A Filespec name may consist of an 8-character name, a 3-character extension, an 8-character password and a specific disk drive number. (All except the file name are optional.)

Extension Commands:

CMD "D" — Calls up DEBUG (see DOS).
**MID$** — Allows MID$ on the left side of an equation.
INSTR — Tells you the position of one string within another.
DEF FN — Allows user-defined functions.
HEX CONSTANTS — You can type-in hexadecimal and octal constants by preceding them with "&H" or "&".
DEFUSR — Defines an entry point for one of 10 user machine language routines.
USRn — Calls one of 10 possible machine language routines. You can both send and return an argument.
CMD "T" — Turns off 25 msec heartbeat. This *must* be done before cassette I/O is done.
CMD "R" — Restarts the 25 msec heartbeat (should be on for disk operations).
TIME$ — Returns date and time as a text string. Time and date are set by the TIME and DATE commands under TRSDOS.

File Commands:

OPEN — Opens a file for use. This command specifies sequential/random input or output, the file number and file name.
CLOSE — Closes a file which is currently open. The file must be reopened for use.
SAVE — Saves a BASIC program onto disk. (You can CLOAD a tape program, then easily put it on disk.
LOAD — Loads a BASIC program from disk into memory.
MERGE — Combines a BASIC program with another program currently in memory.
DISKDUMP — A program to write a disk file to the line printer (or video) sector by sector in hex code and ASCII, 16 bytes at a time. Shows how data formats are stored on a disk.
KILL — Deletes a file.
LINE INPUT — Reads an entire line of data from disk into a string variable.
EOF — Function to check for end of file.
PRINT#filenum — Write to a sequential file.
INPUT#filenum — Reads from a sequential file.
FIELD — Specifies the format of a random file record.
LOF — Returns highest physical record number used in a file.
LSET/RSET — Places data into a random file buffer in preparation for a write to disk.
PUT — Writes data from a buffer to a specified record number in a random file.
GET — Reads a specified record from a random file into the file's associated buffer.

The following functions are available to convert numbers to text and back again. This way a 5-digit integer may be stored as 2 bytes rather than 5 ASCII characters, saving disk space.

Type	Convert to text	Convert to numeric	Bytes
integer	**MKI$**	**CVI**	2
single precision	**MKS$**	**CVS**	4
double precision	**MKD$**	**CVD**	8

World Radio History

TRS-80 Quick Printer.

For any job that requires a small, single-copy printout, our Quick Printer will fill the bill. It's a fast, compact, low-cost line printer ideal for general use.

The Quick Printer delivers 150 lines per minute on a roll of 4.75-inch wide aluminum-finish paper. No ribbon is needed to produce a black-on-silver copy which makes excellent reproductions on office copiers. The paper is unaffected by light, heat or humidity.

All TRS-80 keyboard characters (except arrows) can be printed. Upper and lower case letters are printed, although they all appear as upper case on the monitor. TRS-80 graphics are not supported.

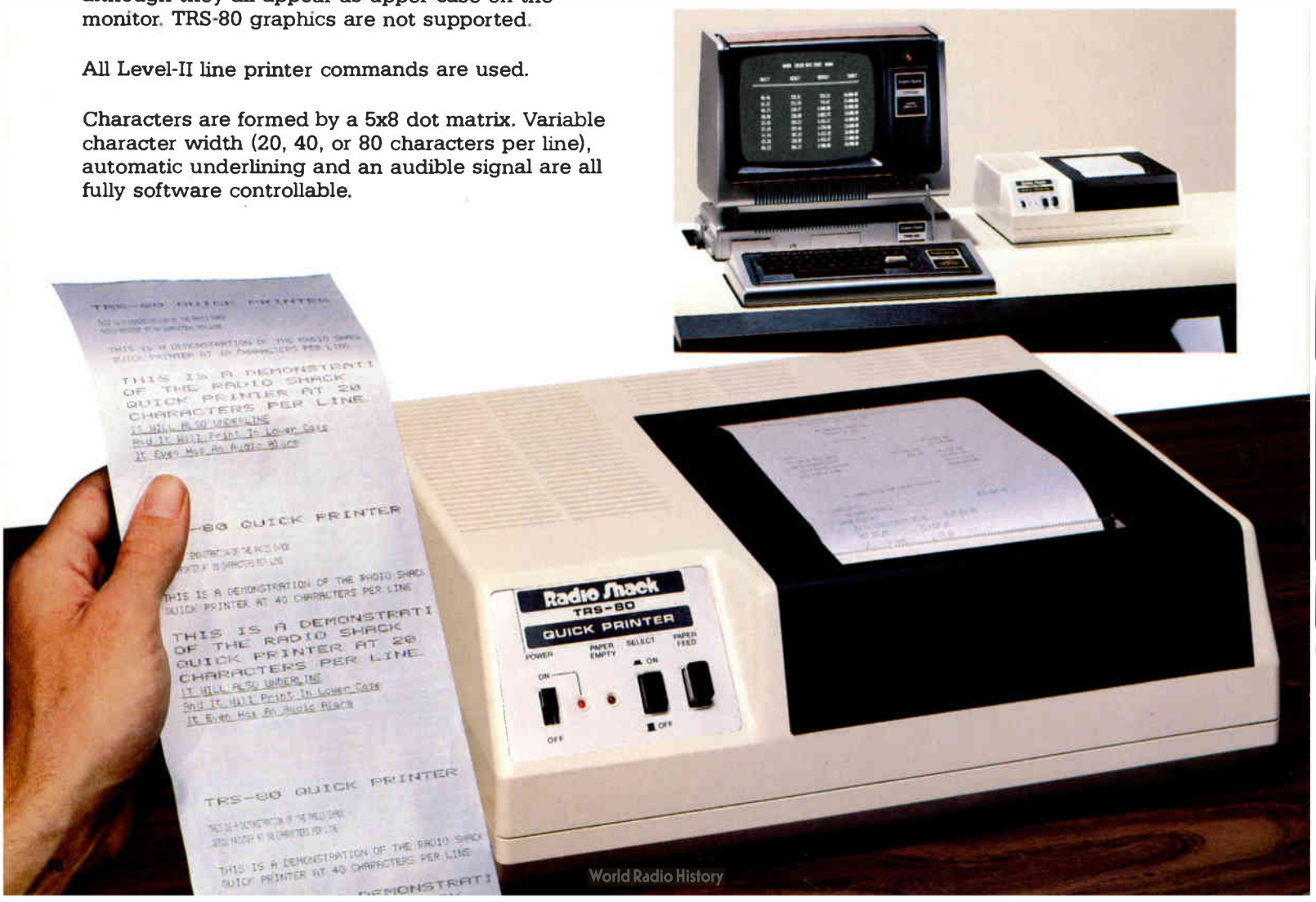
All Level-II line printer commands are used.

Characters are formed by a 5x8 dot matrix. Variable character width (20, 40, or 80 characters per line), automatic underlining and an audible signal are all fully software controllable.

Features paper-empty light, print select (on/off), paper advance and power on/off switch with pilot light. The Quick Printer requires the Expansion Interface, Level-II BASIC and a connecting cable. Order Cat. No. 26-1153. Printer connection cable, Cat. No. 26-1401.

Quick Printer Specifications

Print Density: 20, 10 or 5 characters per inch, software selectable (80, 40 or 20 cpl). *Print Speed:* 150 lines per minute. *Paper:* Aluminum coated roll, 4.75" wide by 131' long. (Available through Radio Shack stores) *Dimensions:* 4¼ x 13 x 10½". 10 lbs. *Power:* 120VAC, 60 Hz. 40 Watts. U.L. listed.



World Radio History

TRS-80 Line Printers

TRS-80 Line Printers are medium-speed, 5x7 dot matrix impact printers suitable for business, education and home use. Both use the standard 64-character upper case ASCII character set, but do not support TRS-80 graphics.

The 26-1150 friction feed printer uses roll or "fanfold" paper, one or two copies. The 26-1152 with tractor feed uses only fanfold paper with feed holes in the margins and will produce up to 5 carbon copies. A continuous-loop cloth ribbon lasts approximately as long as a standard typewriter ribbon. Replacements are available through Radio Shack.

The width of the letters, or "print density," is continuously variable from 10 to 16.5 characters per inch. Print density affects print speed. At maximum density, the printers will produce 132-character lines at a speed of 21 lines per minute.

The 26-1150 friction-feed model (like a typewriter) includes a holder for roll paper up to 9.8" wide. The tractor-feed version is required for multiple copies and exact placement of type on preprinted invoices, payroll checks, and so on. Tractor width is adjustable from 3 to 12.1 inches. Top of forms control is available through software.

Both printers require Level-II (or Disk BASIC), a connecting cable, and the Expansion Interface. All Level-II PRINT commands except PRINT@ can be used (preceeded by an "L"). Operating and service manuals are included. Tractor Feed model, 26-1152. Friction Feed model, 26-1150. Printer-to-Expansion Interface Connecting Cable (one required), 26-1401.

TRS-80 Line Printer Specifications

Print Density: 10-16.5 characters per inch (80-132 characters per line). *Print Width:* Up to 8". *Print Speed:* 60-100 characters per second. *Vertical Line Spacing:* 6 lines per inch. *Dimensions:* 9.5 x 19.8 x 19.5". *Weight:* 45 lbs. *Power:* 120VAC, 50/60 Hz, 3 Amps. 360 Watts. U.L. listed.

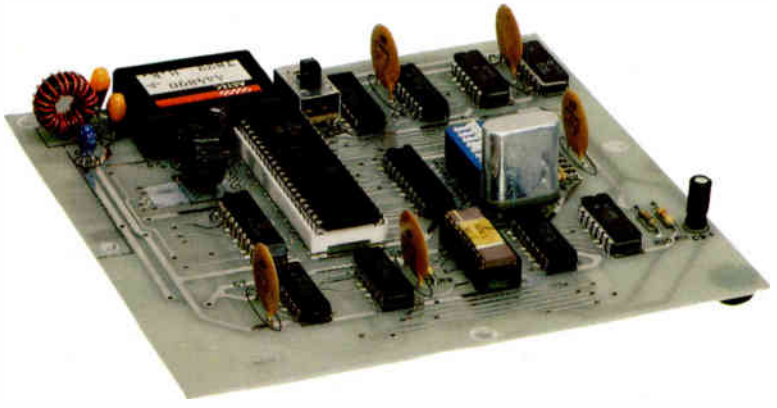
Left, Friction Feed model 26-1150. Below, Tractor Feed model 26-1152.

World Radio History

RS-232-C Serial Interface Board

You can let your TRS-80 communicate with the "outside world" by using our TRS-80 RS-232-C Serial Interface Board. The term RS-232-C refers to a specific EIA (Electronics Industries Association) standard which defines a widely accepted method of interfacing computer hardware. It lets you connect the TRS-80 to a variety of accessories such as modems, card readers, line printers and acoustic couplers.

The RS-232-C board mounts inside our Expansion Interface. A cable is provided for connection to external equipment such as Radio Shack's Telephone Interface or perhaps your own serial line printer. Included is a comprehensive user's manual and a cassette tape program which allows the TRS-80 to act as an interactive terminal for communication with a remote time-sharing computer system. Order Cat. No. 26-1145.



TRS-80 RS-232-C Specifications

Baud Rate: Switch selectable in 8 steps from 110 to 9600 baud. Software controllable in 16 steps from 50 to 19,200 baud. *Stop Bits:* Selectable 1 or 2. *Word Length:* Selectable 5 or 8 bits. *Data In/Data Out Ports:* Switch reversible. *Logic State Sensing:* Clear to send, Data Set Ready, Carrier Detect, Ring Indicator. *Software Controllable Outputs:* Data Terminal Ready, Request to Send. *Software Control:* All functions except Data In/Data Out reversing are fully software controllable.

TRS-80 Telephone Interface I

Radio Shack's Telephone Interface I lets the TRS-80 "talk" with other computer equipment over the phone! After the proper number has been reached, you simply place your telephone handset in the Interface's cradle — without a single electrical connection to your telephone lines.

This Radio Shack coupler converts a serial stream of data from the TRS-80 RS-232-C interface into selective audio tones which are then transmitted over standard telephone lines. It can also reverse the process, decoding selective audio tones and feeding them into the TRS-80 through the RS-232-C interface. (The RS-232-C allows the TRS-80 to communicate with the outside world via a 2-wire connection, but with electrical signals. Since electrical signals cannot be sent over a voice telephone line, the Telephone Interface converts those signals to audio tones so that the connection can be made over long distances via telephone.) The TRS-80 Telephone Interface I operates in the "originate only" mode, meaning that it can send information to other hardware. It is capable of "two-way communication" only with another computer system having "originate *and* answer" capabilities. Order Cat. No. 26-1170.

Specifications

Baud Rate: 300 baud. *Mode:* Originate only, half or full-duplex. *Carrier Detection Level:* -40dbm. *Transmit Level:* -17 dbm at 1070 Hz. *Power Requirement:* 120VAC, 60 Hz, 5 watts. U.L. listed.

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TRS-80 Manuals

Level-I User's Manual. Our Level-I manual has received outstanding reviews as one of the best available "courses" in BASIC. That's because it can teach just about anyone to program — even those who never dreamed of operating a computer. You'll find that its humorous, easy-to-read style makes learning fun.

232 pages containing twenty-six chapters introduce you to the various capabilities of the computer with exercises that give you a chance to try out your knowledge on your own — with answers in the back of the manual. There's even a section of user's programs — some are just for fun, others are for the home and business, education and more.

Learn to program the easy way, with the TRS-80 User's Manual. Included with TRS-80 systems, or available separately as Cat. No. 62-2016.

DOS/Disk BASIC Manual. A complete user's manual for TRS Disk Operating System and Disk BASIC. Included with our Mini-Disk System, or available separately as Cat. No. 26-2104.

Level-II BASIC Reference Manual. This manual is included with Level-II equipment and Level-II conversions, or is available separately. The 140-page Level-II manual is an invaluable reference source for this very extensive and very powerful programming language. It assumes the reader is familiar with Level-I programming. For your copy, order Cat. No. 26-2102.

TRS-80 Technical Manual. By popular demand, we have gathered together the schematics, logic and timing diagrams for Level-I and Level-II, and combined them with sections on circuit theory and circuit description. If you're a hobbyist or a computer engineer wanting technical details on the computer, you'll want the TRS-80 Technical Manual. Order Cat. No. 26-2103.

TRS-80 Software

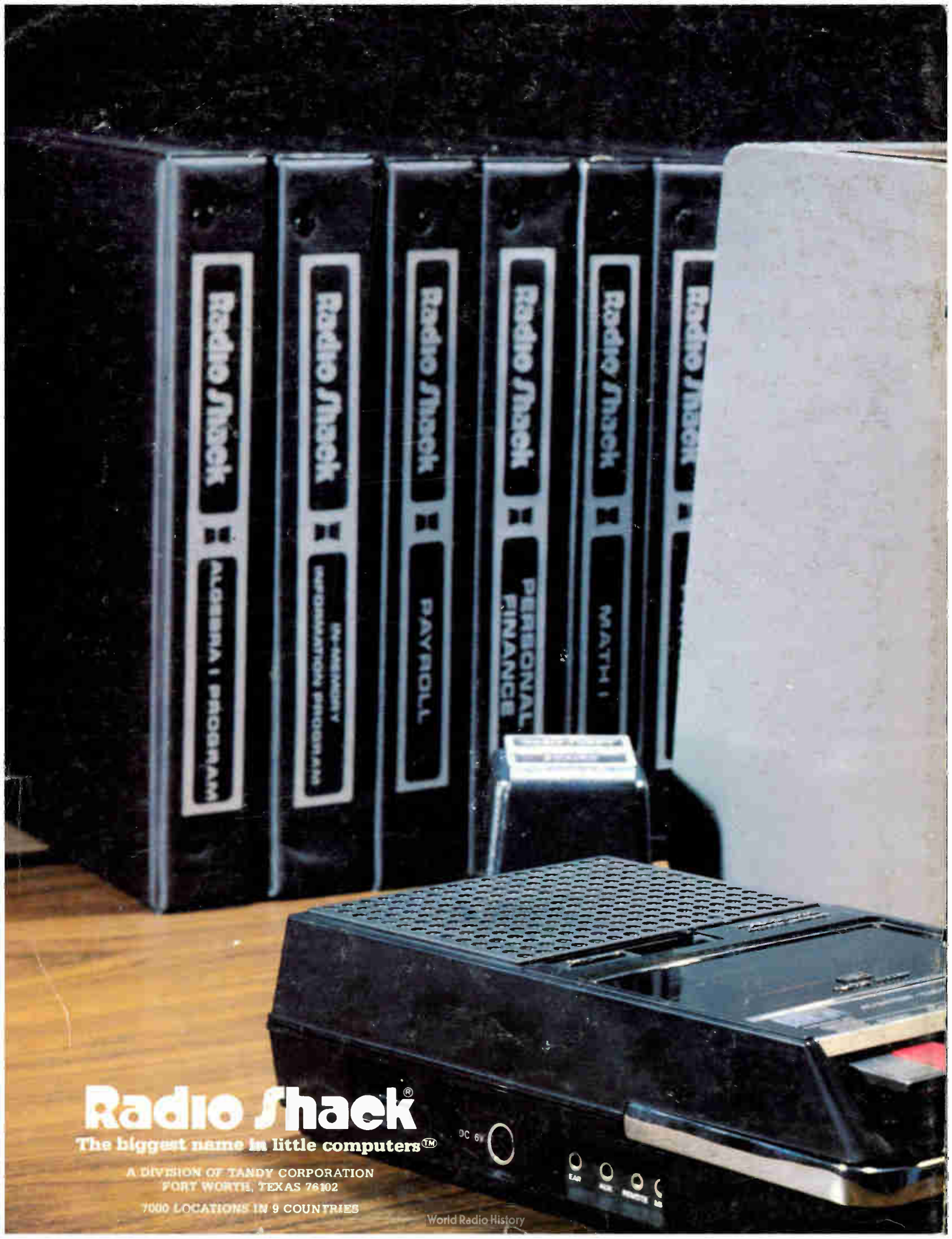
Software (programs) are now available on cassette tape for both Level-I and Level-II TRS-80 systems. New software is being added monthly, including business programs on diskettes. Check with your nearest Radio Shack store for current software information.

World Radio History

TRS-80 System Desk

Serious computer users can integrate expanded TRS-80 installations into our attractive, functional desk unit. The keyboard and Expansion Interface fit into recessed spaces in the desk top, with interconnecting wiring concealed. A bay under the right side of the desk can house from one to four Mini-Disk drive units. And you can place our TRS-80 Quick Printer on the right side of the desk and still have work space left over. 27x48x27". Order Cat. No. 26-1301.

A floor stand for TRS-80 Line Printer is also available. Order Cat. No. 26-1302.



Radio Shack®

The biggest name in little computers™

A DIVISION OF TANDY CORPORATION
FORT WORTH, TEXAS 76102

7000 LOCATIONS IN 9 COUNTRIES

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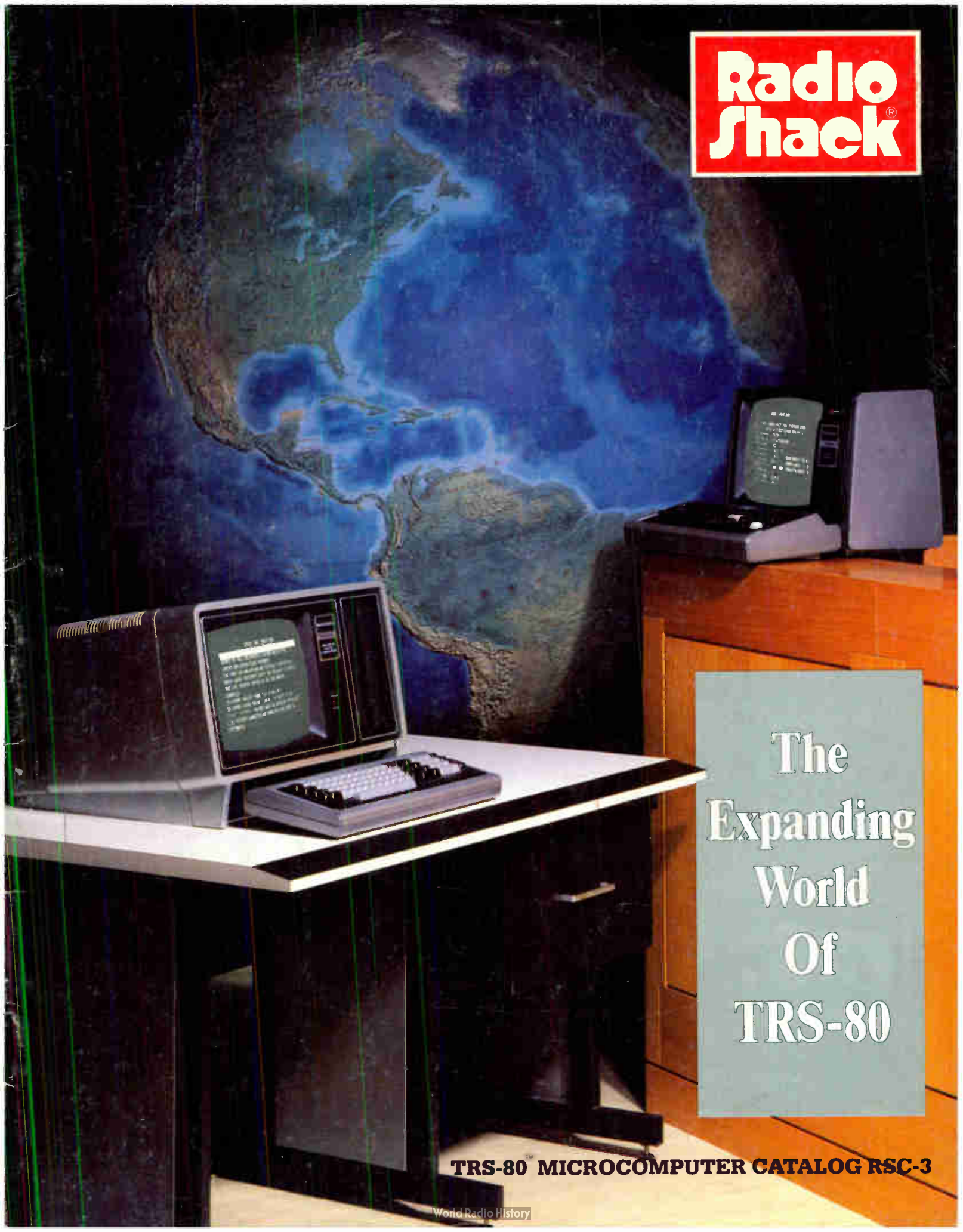

World Radio History

We Take the Mystery Out of Computers . . .

What is a computer?

Not so many years ago, the pocket calculator we now take for granted could have passed for a powerful computer, worth a great deal of money. Today, however, there is much more to the definition of a computer.

Computers work not only with numbers, but with alphanumeric data — names, words, stock numbers. A computer can be programmed to repeat the same function over and over. It can logically evaluate information given to it, and act on its findings. It can store large volumes of data for future use or reference. It can converse with its operator.

Obviously, a computer is much more than just a "number-cruncher." It is literally an extension of the mind. It is to man's mind what the lever is to his arm — a machine capable of increasing his effectiveness. It can free you from repetitive exercises which do not require human judgement. It can provide facts and figures with extreme speed, giving you the time to exercise your judgement thoughtfully.

What Can a Computer Do?

Large computers are well known in the business world for their ability to do bookkeeping, billing, payroll, inventory control, and fast analysis of data.

Because computers work with alphanumeric information, they can sort a mailing list by name, address or other criteria, spot slow-moving inventory items, write purchase orders based on sales trends . . . or simply catalog your butterfly collection. Computers can become teachers, lab assistants — even entertainers that play all kinds of fascinating games, from chess to space war.

TRS-80: The Million-Dollar Breakthrough

TRS-80 systems are capable of performing all of these operations, and quite a few more not mentioned. Although TRS-80 is a small computer, it offers computing power that would have cost more than a million dollars just a few years ago. And now there are two TRS-80 systems! — the Model I and the all-new Model II "strictly business" computer. The chart on page 5 will give you a feeling for the relative capabilities of the two systems. Your nearby Radio Shack store, authorized dealer or Computer Center can help you select the TRS-80 system and accessories you need for your particular application.

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What the Expanding World of TRS-80 is About . . .

It's About Business and the New Model II 2-Megabyte System . . .

Although thousands of TRS-80 Model I systems are used commercially, some applications require more memory and higher speed than Model I offers.

Rather than stretch the expansion limits of Model I to meet these additional requirements, Radio Shack designed and built an entirely new computer . . . TRS-80 Model II.

Model II offers twice the speed of Model I with memory storage up to 2 million bytes. Model II compares favorably with systems like IBM's 5110—*and costs 33% to 66% less!*

It's About Service Before and After You Buy . . .

You can order a TRS-80 at over 7000 locations worldwide. And our 50 new Computer Centers are ready to assist you with after-the-sale training, service and expert advice!

It's Over 100,000 Systems Sold and TRS-80's Growing Acceptance as the "Standard" Small Computer

When we introduced TRS-80 Model I in 1977, we did not anticipate the incredible demand for small computers.

Today, our factories operate around the clock to meet this demand, which is still growing.

Radio Shack revolutionized the industry by *building* affordable computers (instead of just talking about them). And we're in the business to stay!

Model II Systems and Accessories. See Pages 18-23

Model I Systems and Accessories. See Pages 6-17

It's the Benefits of Modular Design . . .

You can buy the Model I or II system that's required for today's jobs—and expand later to meet growing (or changing) needs.

Our promise: We'll sell you what you need, not more, not less, and you *will save money*!

It's About Value . . .

TRS-80 Model I systems start at $499. Last year's price was $599. The reason for the cut is the efficiency of mass production, and we're passing along the savings!

TRS-80's traditional economy continues with Model II, which provides more power-per-dollar than any other small computer!

It's About Continuing Support . . .

In addition to the sensational Model II, we've introduced new hardware items and many new software packages for Model I.

Radio Shack wants to be your small computer company and you can be sure of our support . . . today and tomorrow!

World Radio History

Over 100,000 Owners Know TRS-80's Benefits

Small Businesses Save Time and Cut Costs

Small-business owners have learned TRS-80 gives them an effective, yet affordable "head start" on the competition. Tedious paperwork like payroll and inventory can be handled by TRS-80, and this allows a businessman to spend more time on the really productive areas of his job.

Larger businesses that own (or have access to) a full-blown mainframe computer have found TRS-80 is ideal for jobs too small to be cost effective on the big computer. TRS-80 saves time because it handles small jobs without interrupting the big computer's schedule, and there's usually no waiting to use the TRS-80 system.

TRS-80 Goes to School

Schools everywhere now rely on TRS-80 as an aid in teaching math, language arts, even computer programming and its very important side effect—the logical approach to problem solving. More TRS-80 systems are used in the classroom than any other type of computer! And Radio Shack supports TRS-80 with teacher guides, course materials and service.

The Most Popular Personal Computer in the World

At home, thousands use TRS-80 systems to manage budgets, catalog valuables, educate and entertain with fascinating games. Most owners (now well over 100,000) regard their TRS-80 as an investment. A father tells us his TRS-80 investment "is one of the most important to our family and to the education of our child that we have ever seen."

What's Behind the Success of TRS-80?

Availability. TRS-80 Model I is in stock in most Radio Shack stores. You can see and try one before you buy. Model II is displayed in Radio Shack Computer Centers, but you can order from *any* Radio Shack outlet.

It's easy to use. Level I's superb manual makes learning to program fast, simple and fun. And Radio Shack's prerecorded software permits an operator with little or no experience to use Model I or Model II for a variety of jobs.

It's expandable. Even the smallest Model I system can be expanded to our largest Model I business system. Model II expands, just as easily, to meet growing or changing needs.

After the sale. Radio Shack provides the answers you need before—and after—you buy. Our Computer Centers offer classes in programming and each has a service facility. And we're constantly adding software and accessories to increase the versatility of both Model I and Model II.

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TRS-80 System Selection Guide

Application	16K Level II	32K Business System	Model II 64K 1-Disk	Model II 64K 3-Disk *
Real Estate	Mortgage and Cash Flow Analysis, Appreciation and Depreciation, Income and Expense, Time Trend Analysis			
Statistics	Multiple Linear Regression, Time Series Analysis, Chi Square Analysis	Multiple Linear Regression, Time Series Analysis, Chi Square Analysis		
Mailing List	80 Names per Data File	7 Key Fields. Approx. 600 Names per Data Diskette. Approx. 200 Names per System Diskette	3000 Names with Expanded Format or 4000 Names with Compressed Format	
Payroll	15 Employees. Reports to Screen or Optional Printer	99 Employees. Any One State. 7 Earnings and 7 Deductions Categories. Prints Checks and W-2 Forms	500 Employees in 3 States, 9 Earnings and 9 Deductions Categories	Approx. Same as 1-Disk but Ties to 3-Disk General Ledger
Time Accounting		750 Clients, 5 Partners, 1250 Charges per Month		2000 Clients, up to 50 Partners. 4500 Charges per Month
General Ledger		100 Accounts, 240 Entries per Session, 1840 Entries per Month	500 Accounts and 100 Categories, 6000 Transactions per Month	600 Accounts with 3 Levels of Summary Accounts. 7500 Transactions per Month
Inventory Control		1000 Items, Tracks Vendors, Back Orders and Order Dates, On-Order and Out-of-Stock Items	3000 Items, 500 Vendors, 2000 Sales Tickets, 3000 Open-Purchase Orders	6000 to 15,000 Items Depending on Number of Vendors
Accounts Receivable		300 Accts. with 1000 Transactions per Month or 100 Accts. with 2000 Transactions per Month	300 Accounts with 8000 Transactions per Month or 1000 Accts. with 5000 Transactions per Month or 2000 Accts. with 1500 Transactions per Month	150 Transactions per Account. 999 Accts. per Cycle. 26 Cycles per Month. Up to 4000 Invoices per Diskette. Interacts with 3-Disk General Ledger
Accounts Payable		75 Vendors with 1000 Transactions per Month or 200 Vendors with 800 Transactions per Month	300 Vendors & 3500 Transactions per Month or 2000 Vendors and 1500 Transactions per Month	150 Transactions per Vendor. 999 Vendors per Cycle. 26 Cycles per Month. Up to 4000 Vouchers per Diskette. Interacts with 3-Disk General Ledger

Figures refer to Radio Shack software. Other software may give different quantities.

* Expected quantities for software to be offered in the near future.

TRS-80 Model I and Model II Specifications

Feature	Model I Without Expansion Interface	Model I With Expansion Interface	Model II
Processor	Z-80 1.78 MHz	Z-80 1.78 MHz	Z-80A 4.0 MHz
Monitor	12-Inch	12-Inch	12-Inch, High-Resolution
Format	16 Lines 64 Char.	16 Lines 64 Char	24 Lines 80 Char
Display	Upper Case Only	Upper Case Only	Upper Lower Case
Keyboard	53-Key	53-Key	76-Key Including Keypad
Keypad	Optional 10-Key	Optional 10-Key	Included
Special Function Keys	None	None	2 Programmable
Random Access Memory	4 or 16K	4 or 16K, Expandable to 48K total	32 or 64K
Program & Data Storage	Cassette Only	Cassette or Optional 5" Disks	Built-In 8" Disk Drive
No. of Disks	—	Up to 4	Up to 4
Capacity per Disk	—	89K, Up to 356K	486K, Up to 2 Meg
I/O Capability: System Bus	Ext. Connector	Ext. Connector	Internal Card Slots
Parallel Port	None	Included	Included
RS-232C Port	None	Optional	2 Included
Expansion	Through Bus Line	Through Bus Line	4 Card Slots
Languages	Level I or II BASIC (ROM Resident)	Level I or II BASIC (ROM Resident) FORTRAN (2-Disk System Only)	Level III BASIC (RAM Based) Others to be Announced

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The TRS-80 Model I Microcomputer System

Radio Shack's TRS-80 Microcomputer System is fully wired, tested and U.L. listed for electrical safety—you can put it to work immediately! It's ideal for finances, education, accounting, lab use—even for home entertainment. And it's the computer with a full line of accessories being delivered now, with more to come in the future!

Basic TRS-80 systems include a 12" video monitor, Realistic battery/AC cassette recorder, power supply, user's manual and a cassette tape for playing Blackjack and Backgammon.

The TRS-80 comes to you ready to be programmed either from prerecorded cassette tape or from the keyboard. A "program" is simply a set of step-by-step instructions telling your TRS-80 what you want it to do. The TRS-80's programs are written in easy-to-learn, plain-English BASIC programming language (BASIC stands for "Beginner's All-purpose Symbolic Instruction Code"). The Level I user's manual includes a beginner's course in BASIC that'll have you "talking" to your computer in no time.

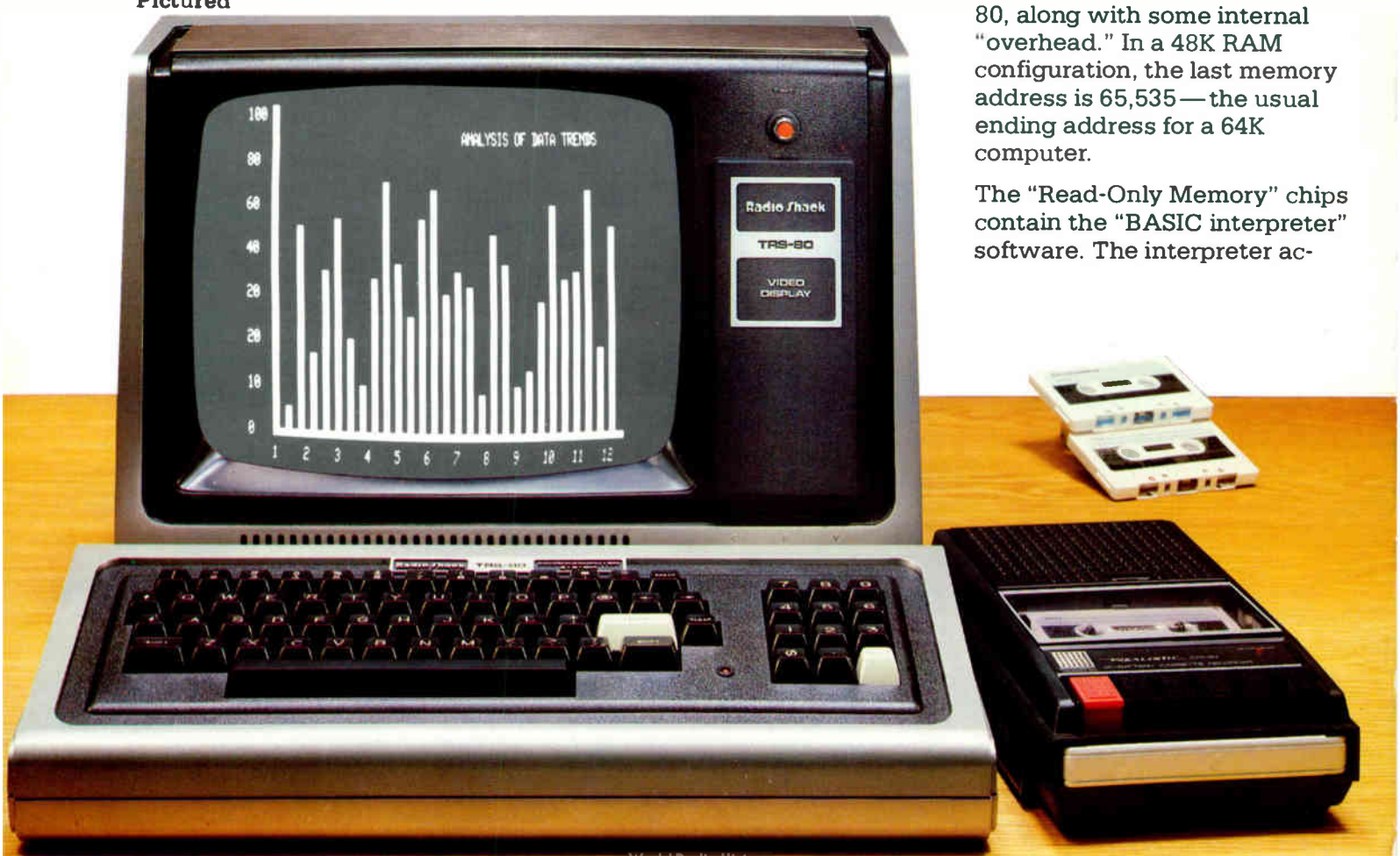
New Lower Prices!

TRS-80 Model I Systems Now Low As

$499

Level I 4K

16K Model Pictured



Inside the keyboard is the computer's "brain."

A powerful Z-80 microprocessor serves as the central processing unit (CPU). Programs and data are stored in internal "memory chips." Our lowest-priced TRS-80 computer contains 4096 bytes (4K) of user memory, or RAM (a byte being roughly equivalent to one typewritten character and made up of eight electrical signals called "bits"). It can be expanded to 16K within the keyboard unit and to 48K by using the Expansion Interface with additional memory options. And now, every new 16K TRS-80 includes a calculator-style numeric keypad (available as an option on 4K computers).

Note: the Z-80 is an 8-bit microprocessor and can address a total of 64K of memory. Both ROM and RAM are addressed in the TRS-80, along with some internal "overhead." In a 48K RAM configuration, the last memory address is 65,535—the usual ending address for a 64K computer.

The "Read-Only Memory" chips contain the "BASIC interpreter" software. The interpreter ac-

World Radio History

for Business, Education or Personal Use

cepts plain-English commands and statements from the programmer and translates them into the numeric language of the Z-80.

You can access the Z-80's numeric "machine language" directly by using our "T-Bug" monitor program, available on cassette tape, or in "assembly language" by using our "Editor/Assembler" tape. (Both of these tapes are suggested only for advanced programmers with a knowledge of machine and assembly language.)

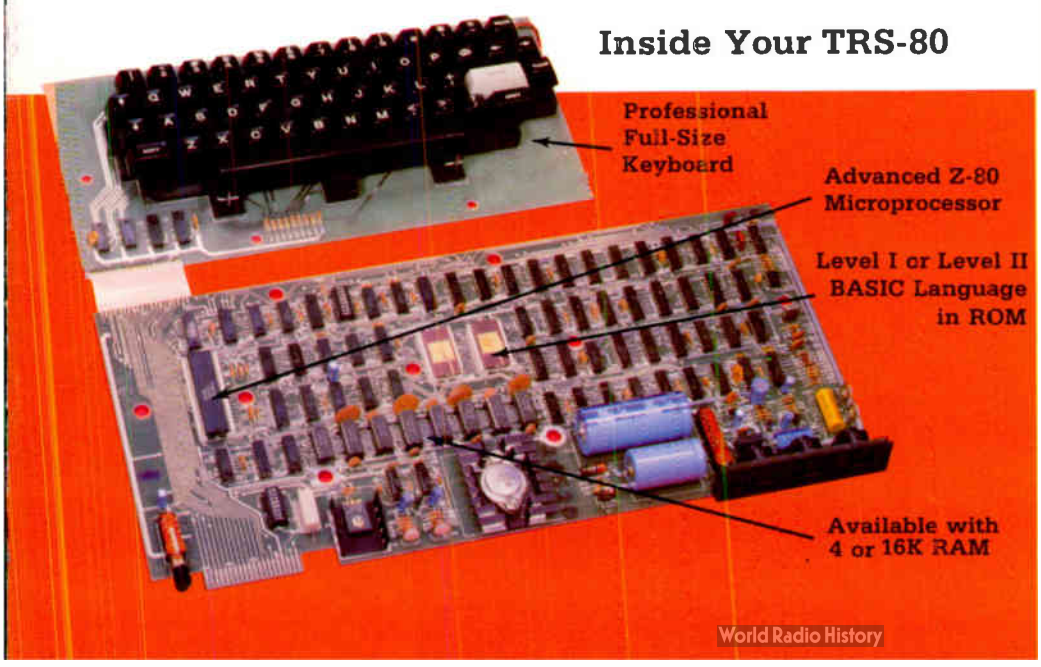
The Realistic cassette recorder lets you record and play your own programs or use one of Radio Shack's prepared programs — simply run the cassette and begin computing. Other recorders may be used — with varying degrees of success — but only if they have automatic recording level capability.

The video monitor looks like a standard television set without the channel selector. It features a wider bandwidth than most TV sets for a sharper display of printing and graphics. The monitor operates on ordinary 120-volt AC, 60 Hz house current. Foreign versions are available in other countries and are sold only overseas by Tandy Electronics outlets. The computer cannot be connected directly to a standard TV set.

For access to other hardware, the TRS-80 utilizes a unique 40-pin bus (connector system) that can attach the TRS-80 to our Expansion Interface, or other external devices.

Housed in the finest ABS® material, the TRS-80 is virtually unbreakable. It may be left "on" for extended periods of time with no adverse effects, as long as the cooling vents are not obstructed.

Inside Your TRS-80



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System Prices

Level I 4K. 26-1051 ..... 499.00
Level I 16K. 26-1053 ..... 729.00
Level II 4K. 26-1054 ..... 619.00
Level II 16K. 26-1056 ..... 849.00

Specifications

Microprocessor: Advanced Z-80 8-bit processor. Clock speed, 1.78 MHz.

Keyboard: Integrated, full-size, 53-Key professional-type.

Video Display: Memory mapped, all graphics and alphanumerics controlled by BASIC commands. Cursor control. Automatic scrolling.

Text: 16 lines of up to 64 characters with Level I. With Level II, you may select an optional mode of 32 characters per line.

Graphics: 128 horizontal by 48 vertical. Graphics and text can be combined in any manner by software.

Memory: Includes 4K or 16K Read-Only Memory (ROM), 4K or 16K Random Access Memory (RAM).

Input/Output: Computer-controlled cassette interface. Expansion port built-in.

Power: Power Supply; 120VAC, 60 Hz, 50 watts. Video Monitor; 120VAC 60 Hz, 50 watts. Both U.L. listed for electrical safety.

Dimensions: Keyboard, 16½x8x3½". Video Display, 16½x13½x12". Power Supply, 2⅝x2⅓x3¼".

ABS® is a trademark of Borg Warner

Choose from Two Versions of BASIC Language

Level I BASIC

Level I is a simplified version of BASIC programming language. Our outstanding owner's manual lets you learn how to program quickly and easily—even if you have no prior knowledge of computers or programming. Level I includes video graphics, 250-baud cassette input/output, floating point arithmetic, numeric array, limited string variables and command abbreviations.

More Powerful Level II

Level II is an advanced version of BASIC. It offers vastly increased computing power and additional features as indicated below. Note that Level II intrinsic functions remain at 6-digit accuracy. A detailed 140-page manual is included. Level II includes 23 specific error codes which can also be used to generate an error in order to test error-trapping routines.

Feature Comparison Chart

FEATURE	LEVEL I	LEVEL II
Array Dimensions	One	No limit
Array names	A(X)	Any numeric variable name
Auto line number	No	Yes
Cassette Speed	250 Baud	500 Baud
Compressed Prog. Storage	No	Yes
Command Abbreviations	Yes	No
Disk Capability	No	Yes
Error Codes	3	23
Error Trapping	No	Yes
Editing	No	Yes
Execution time	(L-II 30% faster than L-I)	
Formatted Print	No	Yes
Keyboard rollover	No	Yes
Logical line lgth.	64 Char.	255 Char.
Multi Statement prog. lines	Yes	Yes
Named files	No	Yes
Numeric accuracy: Single precision	6 Digits	6 Digits
Double precision	—	16 Digits
Numeric Variable Names	A-Z	A-Z,AA-ZZ A1-Z9
Port Access	No	Yes
Printer Commands	No	Yes
Prog. line lgth.	64 Char.	255 Char.
ROM size	4K	12K
Screen Format	16 x 64	16 x 64 or 16 x 32
String length	16 Char.	255 Char.
String names	A$,B$	Any numeric variable name
Tracing	No	Yes
Variables names	1 Char.	Multi-char., (2 Significant)

Language Comparison Chart

COMMAND	LEVEL I	LEVEL II
ABS (X)	X	X
ASC (A$)		X
ATN(X)		X
AUTO		X
CDBL (X)		X
CHR$(X)		X
CINT(X)		X
CLEAR		X
CLEAR(X)		X
CLOAD	X	X
CLOAD?		X
CLOAD (FILE)		X
CLS	X	X
CONT	X	X
COS(X)		X
CSAVE	X	X
CSAVE (FILE)		X
CSNG(X)		X
DATA	X	X
DEFDBL		X
DEFINT		X
DEFSNG		X
DEFSTR		X
DELETE		X
DIM		X
EDIT		X
ELSE		X
END	X	X
ERL		X
ERR		X
ERROR(X)		X
EXP(X)		X
FIX(X)		X
FOR-NEXT-STEP	X	X
FRE(A$)		X
FRE(0)		X
GOSUB	X	X
GOTO	X	X
IF-THEN	X	X
INKEY$		X
INP(X)		X
INPUT	X	X
INPUT#	X	X
INPUT#-X		X
INT(X)	X	X

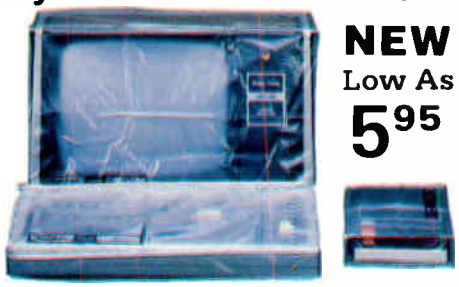
(Cont'd)

LEFT$(A$)		X
LEN(A$)		X
LET	X	X
LIST	X	X
LLIST		X
LOG(A)		X
LPOS(0)		X
LPRINT		X
MEM	X	X
MID$(A$,X,Y)		X
NEW	X	X
NOT		X
ON	X	X
ONERROR GOTO		X
OUT X,Y		X
PEEK (X)		X
POINT (X,Y)	X	X
POKE X,Y		X
POS(X)		X
PRINT	X	X
PRINT AT	X	
PRINT@		X
PRINTUSING		X
PRINT#	X	X
RANDOM		X
READ	X	X
REM	X	X
RESET(X,Y)	X	X
RESTORE	X	X
RESUME		X
RETURN	X	X
RIGHT$(A$,X)		X
RND(1)	X	X
RND(X)	X	X
RUN	X	X
SET(X,Y)	X	X
SGN(X)		X
SIN(X)		X
SQR(X)		X
STOP	X	X
STR$(A)		X
STRING$(X,Y)		X
SYSTEM		X
TAB(X)	X	X
TAN(X)		X
TRON		X
TROFF		X
USR(0)		X
VAL(A$)		X
VARPTR(X)		X

World Radio History

TRS-80 Model I Accessories You Will Want!

System Dust Covers



NEW
Low As
5.95

Keep your system in top condition when it's not in use. Custom vinyl covers fit snugly over systems, disk drives or line printers.

System Cover. 26-501 ..... 7.95
2-Pack Disk Drive Covers.
26-502 ..... 5.95
Printer Cover (for 26-1150 or 26-1152).
26-503 ..... 5.95

Dual-Section TRS-80 Power Line Filter

Limits AC power line interference to your TRS-80 Model I system. The same outstanding filter we built into Model II, including built-in dual, isolated filters—one for the computer system and one for the accessory items. Contains 8 outlets all controlled by a single switch. U.L. listed.
26-1451 ..... 39.00

Video/Program Worksheets

Each package contains two pads of 50 two-sided sheets. One side is a proportional Model I screen layout chart for designing graphics or print locations. The other side is a programming worksheet with space for program lines and variable names or comments.
26-2105 ..... 2.95

NEW MODEL

TRS-80 System Carrying Case Set

Take your TRS-80 system with you wherever you go! One case holds the video monitor, the other holds the keyboard unit, power supply, cassette recorder, cables and cassettes. Black molded vinyl. Hand carry only—not designed for shipping purposes.
26-500 ..... 69.00

TRS-80 Manuals

Level I User's Manual

Our Level I manual is intended for the novice. It's a teaching manual whose humorous, easy-to-read style makes learning fun. 232 pages explaining the capabilities of the computer. Included with TRS-80 systems or available separately.
62-2016 ..... 5.95

Level II Reference Manual

This manual is included with Level II equipment and Level II conversions or is available separately. 140 pages of invaluable references. Assumes the reader is familiar with Level I programming.
26-2102 ..... 5.95

DOS/Disk BASIC Manual

A complete reference manual for the TRS-80 Disk Operating System and Disk BASIC. Included with our Mini-Disk system or available separately.
26-2104 ..... 5.95

TRS-80 Technical Manual

We have gathered the schematics, logic and timing diagrams for Level I and Level II plus easy-to-read sections on circuit theory and circuit description.
26-2103 ..... 9.95

Level II BASIC (ROM) Kit

When you've mastered Level I programming language, you can move up to higher computing power with Level II. Conversion is easy—we simply exchange the ROM chips in your TRS-80 for chips containing Level II. Your local Radio Shack store can arrange for the exchange. Incorporate Level II into your 4K or 16K RAM Level I TRS-80.
26-1120 ..... 120.00

Calculator-Style Entries with the Numeric Keypad

79.00

Makes entering data a lot faster when you're used to using a standard calculator. Enter by either the keypad or typewriter keyboard numerals.
26-1103 ..... 79.00

16K Memory (RAM)/Keypad Kit Increases TRS-80's Internal Memory

The TRS-80 is designed for easy upgrading to a full 16K of RAM memory inside the keyboard unit. Your nearest Radio Shack store can arrange for the exchange of your 4K for 16K chips and add the keypad.
26-1101 ..... 230.00

TRS-80 Certified Cassettes

C-20 digital computer cassettes are ideal for storing all of your important programs. These tapes are leaderless and individually tested to insure against loss of any data.
26-301 ..... 3.49

Quantity Savings on Cassettes

Quantity	Price Each
1-11	3.49
12-23	3.09
24-47	2.69
48-up	2.29

World Radio History

The Keys to a More Powerful TRS-80

TRS-80 Expansion Interface

Expansion is a key word in the TRS-80 philosophy. The TRS-80's modular design lets you expand to just the system you want. Of course, you can add 16K RAM and Level II BASIC to the keyboard unit. Beyond that point, the Expansion Interface becomes the hub of expanded TRS-80 computer systems.

The Expansion Interface measures 4½x16½x8" and is designed to sit directly under the video monitor acting as a base for it. The TRS-80's power supply module, and an identical one for the interface, are housed inside the interface enclosure. Space is also provided for our optional RS-232-C Serial Interface Board.

A cable approximately 6" long connects the interface to the TRS-80 bus connector. The interface provides output connectors for our TRS-80 printers, disk drives, dual cassette recorders, and an RS-232-C serial port, as well as an extension of the TRS-80 bus.

The controllers for (electronic circuits needed to control) up to four TRS-80 Mini Disk drives, a printer and dual cassette recorders are an integral part of the Expansion Interface, as are the provisions for an extra 16K or 32K of optional RAM.

The printer output port is a standard Centronics parallel circuit. This parallel port and our RS-232-C serial port allow connection of a variety of peripheral devices. Pin-out information is provided in the owner's manual. Each requires 120VAC, 60Hz, 50 watts. U.L. listed.

Expansion Interface with 0 RAM.
26-1140 ..... 299.00
Expansion Interface with 16K RAM.
26-1141 ..... 448.00
Expansion Interface with 32K RAM.
26-1142 ..... 597.00
16K RAM Memory Expansion Kit.
26-1102 ..... 149.00
Cassette Recorder.
26-1205 ..... 49.95

Voice Synthesizer

Now you can program your TRS-80 to speak. It's not a pre-recorded human voice, but electronically "synthesized" speech projected through a built-in speaker. It plugs into your TRS-80's bus connector on keyboard or Expansion Interface. Programming spoken words is done by typing combinations of some 60 "phonemes" representing spoken sounds. Requires Level I or II—16K RAM preferred.
26-1180 ..... 399.00

TRS-80 VOXBOX™

Experiment with "voice recognition" on your TRS-80. That's right, speak into a microphone attached to the VOXBOX and you can program your TRS-80 to respond to your spoken words.

Computer voice recognition is a new field, and not fully developed, but here's your chance to experiment with this exciting new technology. Level II required.
26-1181 ..... 169.95

Voice Synthesizer
399.00

From
Expansion Interface
299.00

VOXBOX
169.95

World Radio History

Desks and Communications for Your TRS-80

TRS-80 System Desk

Attractive and functional. Keyboard and Expansion Interface fit into desktop, with interconnecting wiring concealed. A bay under the desk can house from one to four Mini Disk drive units. Add a Quick Printer and there's plenty of workspace left. 27x48x27".

26-1301 . . . . . 199.00

Auxiliary fan kit for the bay.

26-1303 . . . . . 29.00

Space-Saver Stand

It's only 37¾x23¾", but holds a TRS-80, cassette recorder, CRT, Expansion Interface, Quick Printer and single or dual disk drives. Space-Saver was designed to hold your TRS-80 system and still leave ample room for work. The low-cost answer for home or educational users.

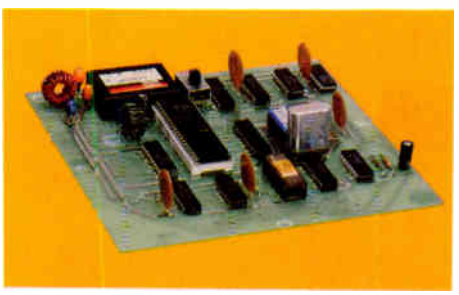
26-1304 . . . . . 49.95

RS-232-C Serial Interface Board 99⁰⁰

You can let your TRS-80 communicate with the "outside world" by using our TRS-80 RS-232-C Serial Interface Board. It lets you connect the TRS-80 to a variety of accessories such as modems, card readers, line printers and acoustic couplers.

The RS-232-C board mounts inside our Expansion Interface. A cable is provided for connection to external equipment such as Radio Shack's Telephone Interface or perhaps your own serial line printer. Included is a comprehensive user's manual and a cassette tape program which allows the TRS-80 to act as an interactive terminal for communication with a remote time-sharing computer system.

26-1145 . . . . . 99.00



TRS-80 RS-232-C Specifications

Baud Rate: Switch selectable in 8 steps from 110 to 9600 baud. Software controllable in 16 steps from 50 to 19,200 baud. *Stop Bits.* Selectable 1 or 2. *Word length:* Selectable 5 to 8 bits. *Data In/Data Out Ports:* Switch reversible. *Logic State Sensing:* Clear to send, Data Set Ready, Carrier Detect, Ring Indicator. *Software Controllable Outputs:* Data Terminal Ready, Request to Send. *Software Control:* All functions except Data In/Data Out reversing are fully software controllable.

Terminal Program Comes with RS-232-C Board

TRS-80 Telephone Interface II

This is the fast way to transfer data from one location to another—by telephone with the Telephone Interface II. It's a full "originate/answer" acoustic coupler which allows two TRS-80's to talk to each other. You can also communicate with another computer which has "originate only" capability (like our Telephone Interface I.) You can pass all types of data or programs between computers, or one of you can operate the other's computer via the telephone lines. No direct connection to the telephone line is required.

It's very simple to operate. Just dial the phone number at the location of the TRS-80 you desire to communicate with; after the connection is made, each telephone handset is placed on its interface. Now you're ready to receive and transmit data. Requires RS-232 Serial Interface Card, Expansion Interface, RS-232 Communications Package and Level II. Adds versatility to your TRS-80.

26-1171 . . . . . 199.00

Specifications

Baud Rate: up to 300. *Mode:* Originate and receive, half or full duplex. *Receive Sensitivity:* −45 dBm. *Power Requirement:* 24 Volts AC, 150 mA, supplied by U.L. listed AC adapter.

Communications Package

29⁹⁵

Software package used with Telephone Interface II allowing the TRS-80 to communicate with another TRS-80 as a host terminal combination. Also lets you transfer programs between TRS-80s. Contains 5 cassettes. 16K Level II required.

26-1146 . . . . . 29.95

World Radio History

TRS-80 Mini-Disk System — Fast, Efficient Mass Storage

Store Large Amounts of Data and Programs for Almost Instant Access

The TRS-80 Mini-Disk system is a storage medium allowing immediate access to the large amounts of data and programs you will need for accounting, inventory control, mailing lists and other jobs. Up to 4 drives can be attached through the Expansion Interface, furnishing 49,900 to about 307,000 bytes of on-line storage. The first Mini-Disk drive you purchase includes our powerful TRSDOS™ (Disk Operating System software) and Disk BASIC on diskette. This diskette allows about 50K of user storage space. TRSDOS and Disk BASIC use about 10K of the TRS-80's RAM, so a minimum of 16K is required, along with Level II and an Expansion Interface.

Each of the diskette's 35 tracks consists of ten 256-byte sectors. Certain system information and a directory are required on each diskette, leaving 85,760 bytes of space available (each) on the second, third and fourth drive.

A 13,000-byte program which takes 3½ minutes to load from cassette tape (Level II) will load in less than 20 seconds from disk. And you may read information one file after the other (sequential), or go directly to any sector without reading the preceding files (random).

The system diskette containing TRSDOS and Disk BASIC must always be in your first drive unit. TRSDOS allows you to copy a diskette (BACKUP) even in a one drive system. For Mini-Disk drive I, order 26-1160, 499.00. For Mini-Disks II, III or IV, order 26-1161, 499.00 each.

Attach Up to 4 Drives for On-Line Storage of 307,000 Bytes

Specifications

Disk Format: 35 Tracks; 10 Sectors per Track; 256 Bytes per Sector; 89,600 Bytes per Diskette. *Disk Size:* 5¼" floppy disk. *Data Transfer Rate:* 12,500 bytes-per-second. *Disk Speed:* 300 RPM. *Latency:* 100 mS (average). *Track Access Time:* 200 mS average, 600 mS to cross all 35 tracks. *Average Backup Time:* 1:10 minutes (including formatting). *Memory Usage:* TRSDOS, 4.2K RAM; Disk BASIC, 5.8K RAM. *Power:* 120VAC, 60 Hz, 35 watts. U.L. listed. *Size:* 6½x3½x13¼".

Uses Inexpensive, 5¼-Inch Magnetic Mini-Diskettes

Radio Shack's mini-diskettes are perfect for use with our mini-disk system. Each diskette is individually certified against defects and designed to meet TRS-80 standards. Extensive testing assures 100% compatibility. Available singly as 26-0305, 5.95, or in a pack of 3 as 26-0405, 16.95.

Quantity Savings on Blank Diskettes — 3-Packs Only

Quantity	Each
1-4	16.95
5-9	15.95
10-19	13.95
20-Up	11.95

Diskette Storage Box

Static-free design protects up to 50 mini-diskettes. Adaptable to hold cassette tapes. Boxes are stackable. Smoke-tint cover, durable molded plastic. 6-5/16x10-1/16x7-11/16".
26-1450 ..... 19.95

Note: All accessories in this catalog may not be stocked at some stores and dealers.

World Radio History

Powerful Disk BASIC and TRSDOS Operating Systems

TRS-80 Mini-Disk System Also Provides Powerful Enhancements to Radio Shack's Level II BASIC

TRSDOS Programs

Included in TRSDOS is the software needed to operate the disk system, plus certain programs for file management, called Utilities.

On power-up, TRSDOS is automatically loaded into RAM, occupying 4.2K. An overlay scheme is used so that only the needed portions of TRSDOS use RAM space at any given time. When Disk BASIC is called in, an additional 5.8K RAM is used. Additionally, about 280 bytes are required for each file the user requests, up to 15, hence the minimum RAM requirement for use of a Mini-Disk system of 16K.

Radio Shack intends to continually upgrade TRSDOS, adding new features with each new version, so check with your local Radio Shack store for information of the latest available version. For reference, here are some of the features of TRSDOS 2.2.

Utilities:

APPEND — Adds one file to the end of another (primarily data files).
ATTRIB — Assigns or changes protective file passwords with 5 levels of protection to prevent unauthorized file access.
AUTO — Automatically executes a command on power-up.
BACKUP — Copies all of a diskette to another diskette (works even on a one drive system by swapping disks back and forth).
CLOCK — Provides constant time display in the upper right corner of the video screen.
COPY — Copies a file.
DATE — Sets the date which can be accessed by TIME$ in Disk BASIC.
DEBUG — Machine language debugger, allowing you to set break points, execute single-step instructions, dynamically watch registers during execution and display memory in hexidecimal or ASCII.
DIR — Displays a directory of all files on a specified disk drive. If requested, will include logical record length, end of file and space used.
DUMP — Stores a machine language program from memory to disk.
FORMAT — Format and verify a blank diskette. Unusable sectors are marked.
FREE — Displays free space remaining on diskettes in all drives.
GETDISK — Copies any disk file or machine language program onto cassette.
GETTAPE — Reads cassette data and writes it into a disk file.
KILL — Deletes a file, making space available for reuse.
LIB — Displays all TRSDOS system commands.
LIST — Lists a file to the video display.
LOAD — Loads a machine language program from disk to memory.
PRINT — Lists a file to the line printer.
PROT — Changes protection status of all non-system files on a diskette.
RENAME — Changes the name of a file.
TAPEDISK — Loads system tapes into RAM, then to a specified disk file.
TEST1 — Program to test the TRS-80's memory, read only and random access.
TEST2 — A BASIC program stress test for the entire disk system.
TIME — Sets the time of day for the CLOCK display and TIME$ BASIC command.
TRACE — Prints the program counter on the video display.

Radio Shack Disk BASIC:

TRSDOS will load and enter Disk BASIC whenever the command BASIC is entered. Typing CMD "S" under BASIC will return control to TRSDOS.

BASIC 2. Type BASIC 2 and the TRS-80 will be in Level II BASIC with full RAM available. Disk BASIC enhances Level II with the addition of several new commands.

BASIC*. Allows reloading and reentry into Disk BASIC from TRSDOS and restores a program that was in resident when you exited BASIC.

BASICR. Enhanced Disk BASIC with line renumber (**NAME**).

BASICR*. Reloads and enters BASICR from TRSDOS and restores a program that was in resident when you exited BASICR.

Disk BASIC and BASICR allows either random or sequential disk files. Programs may be stored in BASIC as ASCII or compressed format files. All files are named. A Filespec name may consist of an 8-character name, a 3-character extension, an 8-character password and a specific disk drive number. (All except the file name are optional.)

Extension Commands:

CMD "D" — Calls up DEBUG (see DOS).
CMD "I" — Exit to TRSDOS and issue a command.
CMD "R" — Restarts the 25 msec heartbeat (should be on for disk operations).
CMD "T" — Turns off 25 msec heartbeat. This *must* be done before cassette I/O is done.
DEF FN — Allows user-defined functions.
DEFUSR — Defines an entry point for one of 10 user machine language routines.
HEX CONSTANTS — You can type-in hexadecimal and octal constants by preceding them with "&H" or "&."
INSTR — Tells you the position of one string within another.
**MID$** — Allows MID$ on the left side of an equation
TIME$ — Returns date and time as a text string. Time and date are set by the TIME and DATE commands under TRSDOS.
USRn — Calls one of 10 possible machine language routines. You can both send and return an argument.

File Commands:

CLOSE — Closes a file which is currently open. The file must be reopened for use.
DISKDUMP — A program to write a disk file to the line printer (or video) sector by sector in hex code and ASCII, 16 bytes at a time. Shows how data formats are stored on a disk.
EOF — Function to check for end of file.
GET — Reads a specified record from a random file into the file's associated buffer.
FIELD — Specifies the format of a random file record.
INPUT#filenumber — Reads from a sequential file.
KILL — Deletes a file.
LINE INPUT — Reads an entire line of data, ignoring delimiters.
LOAD — Loads a BASIC program from disk into memory.
LOF — Returns highest physical record number used in a file.
LSET/RSET — Places data into a random file buffer in preparation for a write to disk.
MERGE — Combines a BASIC program with another program currently in memory.
NAME (BASIC R only) — Renumber the lines in a BASIC program.
OPEN — Opens a file for use. This command specifies sequential/random input or output, the file number and file name.
PRINT#filenumber — Write to a sequential file.
PUT — Writes data from a buffer to a specified record number in a random file.
SAVE — Saves a BASIC program onto disk. (You can CLOAD a tape program, then easily put it on disk.)

The following functions are available to convert numbers to text and back again. This way a 5-digit integer may be stored as 2 bytes rather than 5 ASCII characters, saving disk space.

Type	Convert to text	Convert to numeric	Bytes
integer	**MKI$**	**CVI**	2
single precision	**MKS$**	**CVS**	4
double precision	**MKD$**	**CVD**	8

Manual and Disks May Be Purchased Separately

Most items are available on Special Order for fast delivery. Ask about delivery times.

World Radio History

TRS-80 Library of Ready-to-Run Software

Business-Related Software

Tape Mailing List. 80 names per data file with 16K. 32K cassette system will hold 250 names. **26-1503.** (16K Level II required) . **19.95**

Disk Mailing List. Selective printing from one of seven key fields. Approx. 600 names per data diskette, or 200 names on system diskette. **26-1551.** (16K Disk) **39.95**

Business Mailing List. Fast sort in Zip Code or any other sequence. 32K "Business System"—990 names. 4 disk (48K)—2970 names. **26-1558.** (32K disk) **99.95**

General Ledger I. 240 entries per session and 1830 per month with up to 100 accounts. **26-1552.** (32K Disk) **99.95**

Inventory Control I. Retail inventory record keeping and control—up to 1000 items. Tracks vendors, backorders, order dates, out of stock and on-order items. **26-1553.** (32K Disk) **99.95**

Manufacturing Inventory Control. Raw materials inventory for 1900 items. Up to 20 finished goods per diskette. Prints bill of materials, material requirements and more. **26-1559.** (32K Disk) **199.95**

Accounts Payable. 75 vendors 1000 transactions, or 200 vendors 800 transactions per month. Prints checks, register cash flow analysis and summary of activity for posting General Ledger. **26-1554.** (32K Disk) **149.95**

Accounts Receivable. 300 customers 1000 transactions per month or 100 customers 2000 transactions per month. Prints aged reports, monthly statements, and summary. For posting general ledger. **26-1555.** (32K Disk) **149.95**

Fixed Asset Accounting. Control over fixed asset depreciation. **26-1560.** (32K Disk) **79.95**

Time Accounting Package. Attorneys, CPAs and Job Contractors. 750 clients 1250 charges per month. Up to 26 user-defined charge codes, up to 5 partners with different rates. **26-1561.** (32K Disk) **199.95**

Disk Payroll. 100 employees and 14 user-defined earnings and deductions categories. Prints payroll checks and W-2 forms for any state. **26-1556.** (32K Disk) **199.95**

Level I Cassette Payroll. Calculates paychecks, including tax and other deductions. Stores year-to-date and quarter-to-date info for 11 employees. **26-1501.** (4K, L I) **19.95**

Level II Cassette Payroll. 16K cassette holds 15 employees, 32K holds 75 and 32K Disk holds 40. Prints checks and register. Supports fixed-percentage state and city tax. **26-1504.** (16K L II or 32K Disk) **49.95**

Real Estate Vol. I. Stepped income analysis, compound interest, internal rate of return, resale price. **26-1571.**(16 K, L II) **29.95**

Real Estate Vol. II. Mortgage analysis. **26-1572.**(16 K, L II) **29.95**

Real Estate Vol. III. Detailed property income calculations, appreciation/depreciation estimates. **26-1573.** (16 K, L II) **29.95**

Real Estate Vol. IV. Ellwood analysis, overall capitalization rate, graphic analysis, sensitivity analysis. **26-1574.**(16 K, L II) **29.95**

Real Estate Vol. V. Programs for cash flow and depreciation. **26-1575.** (16K L 11) ..... ★ **29.95**

Real Estate Vol. VI. Building development, Monte Carlo time trend, decision tree analysis. **26-1576.** (16K L II). ..... ★ **29.95**

Statistical Analysis. Random sample, histogram, descriptive statistics. T-test, simple correlation, linear regression. **26-1703.** (4K L I) **29.95**

(Business Software continued)

Advanced Statistical Analysis. Advanced versions of 26-1703 programs plus frequency distribution. Multiple linear regression, time series analysis. **26-1705.** (16K, L II) **39.95**

Concrete Take-Off. Foundation and structural cost estimating for contractors. Calculates material requirements, labor component, productivity and waste. **26-1557.** (32 Disk) **199.95**

Word Processor Disk. Enter and edit text on video screen, save text on disk, output formatted copy to printer. Buffered input for high speed typing without dropouts. Stop tabs, horizontal and vertical centering, formatted headers and footers, automatic page numbering, block manipulation and more. **26-1563.** (32K Disk) **99.95**

Word Processor Cassette. Same as above with text storage on tape. **26-1505.** (16K, L II) **69.95**

FORTRAN and Assembly Language Software

TRS-80 FORTRAN. Compiler, editor, linking loader, library. **26-2201.** (32K Disk) **99.95**

Disk Editor Assembler. Macro-assembler, linking loader, editor, cross reference. **26-2202.** (32K Disk) **99.95**

Editor Assembler. Standard Zilog Mnemonics for assembly language combined with the convenience of a text editor. For advanced programmers. Cassette only. **26-2002.** (16K, L I or II) **29.95**

T-Bug. Machine language monitor. For advanced programmers. **26-2001.** (4K, L I or II) **14.95**

Programming Aids

Renumber. Renumber all or part of BASIC programs. **26-2004.** (4K, L II) **9.95**

Double Precision Subroutines. Obtain 15 digit accuracy with sine, cosine, arctangent, natural logarithm, exponential and square root functions. **26-1704.** (4K, L II) **9.95**

Personal

In-Memory Information. Computerized card filing system. **26-1502.** (4K, L I or II) **19.95**

Personal Finance. Balance checkbook, maintain monthly budget. **26-1602.** (4K, L I) **14.95**

Budget Management. Up to 60 budgeted accounts with 25 cash expenses. 20 savings transactions. 50 checks per month. Prints various reports. **26-1603.** (16K, L II) **19.95**

Cassette Portfolio Analysis. 3 programs: "Buy and Sell" for stocks, funds and bonds. "Summary" computes long and short term capital gains. "Options" tracks up to 10 positions, computes returns and unrealized gains. **26-1506.** (16K, L II) **29.95**

Standard & Poor's Portfolio Management and Security Selection System. A complete stock analysis and portfolio management package. **26-1507.** (32K Disk) ..... ★ **49.95**

Educational

Math I. Teaches fundamentals of arithmetic. **26-1701.** (4K, L I) **19.95**

Algebra I. 6 self-paced lessons on 3 tapes. **26-1702.** (4K, L I) **19.95**

I.Q. Builder. 8 tapes with 38 programs on vocabulary, antonyms, synonyms, analogies, number series. **26-1706.** (4K, L I or II) .. **29.95**

Level I BASIC Course. Self-paced course teaches Level I BASIC for TRS-80. 4 tapes. **26-2003.** (4K, L I) **12.95**

Level II BASIC Course Part I. 4 cassettes introducing TRS-80 Level II BASIC. **26-2005.** (4K, L II) **14.95**

Level II BASIC Course Part II. Interactive self-paced course on advanced Level II BASIC. 4 tapes. **26-2006.** (16K, L II) **19.95**

(Educational Software continued)

Disk BASIC Instruction. A self-paced course in Disk BASIC covering DOS commands, random and sequential files, all disk additions to Level II BASIC. **26-2007.** (16K Disk) **29.95**

Teacher Aide. Classroom management system designed to assist teachers with student personal information, grade processing and averaging. Up to 35 students. **26-1713.** (16K, L II) **29.95**

TRS-80 Hands-On BCL (Basic Computer Literacy) Package. Includes: Student Guide, Teacher Guide, Algebra I, Program World, Level II BASIC Course Part I. **26-1708.** (4K, L II) **100.00**

Games

Blackjack Backgammon. Fast paced fun! **26-1801.** (4K Level I) **4.95**
26-1803. (4K Level II) **4.95**

"Quick Watson" Deduction Game. **26-1802.** (4K L I or II) **4.95**

Games Pack 1. Checkers, Hammurabi, Draw, Star Pilot, Random Tic-Tac-Toe, Space Taxi. **26-1805.** (4K, L I) **19.95**

Casino Games Pack. Craps, Keno, Slot Machine, Roulette, Wheel of Fortune and Baccarat. **26-1806.** (16K, L II) **19.95**

Micro Chess. 3 levels of difficulty. For beginning or advanced players. **26-1901.** (4K, L I or II) **19.95**

Micro Movie. Draw and play back animated "movies" on TRS-80 video monitor. **26-1903.** (16K, L I or II) **9.95**

Micro Marquee. Create 1-inch high letters moving up your TRS-80 screen. 13 characters per line. **26-1904.** (4K, L I or II) **4.95**

Micro Music. Five octave range with sharps and flats, whole, half, quarter and eighth notes. **26-1902.** (4K, L I or II) **9.95**

Flying Saucer. Shoot 'em down in "real time" with your laser cannon. **26-1905.** (4K, L I or II) **9.95**

Invasion Force. Command a space ship via TRS-80 keyboard. Destroy the aliens before they destroy you! **26-1906.** (16K, L I or II) **14.95**

Checkers 80. Competition "forced jump" game with two levels of skill. **26-1907.** (16K, L I or II) **9.95**

"Eliza" Artificial Intelligence. Discuss your problems with "Eliza." **26-1908.** (16K, L I or II) **14.95**

Communications

RS-232C Communications Software. 3 programs: "COMPAC" transmits a program or data. "HOST" allows TRS-80 control from a remote terminal. "TERM" makes TRS-80 a dumb terminal. **26-1146.** (16K, L II) **29.95**

Important Notice

All Radio Shack Computer Programs Are Distributed on an "As Is" Basis Without Warranty

Radio Shack shall have no liability or responsibility to customer or any other person or entity with respect to any liability, loss or damage caused or alleged to be caused directly or indirectly by computer equipment or programs sold by Radio Shack, including but not limited to any interruption of service, loss of business or anticipatory profits or consequential damages resulting from the use or operation of such computer or computer programs.

NOTE: Good data processing procedure dictates that the user test the program, run and test sample sets of data, and run the system in parallel with the system previously in use for a period of time adequate to insure that results of operation of the computer or program are satisfactory.

★ Available December, 1979

World Radio History

Our Most Popular TRS-80 Systems

"Engineer" 16K System
1456.95

- 16K Level II Complete System (26-1056)
- Printer Interface Cable (26-1411)
- Quick Printer (26-1153)
- Space-Saver Desk (26-1304)

For more technical applications, the "Engineer" system combines powerful Level II with 16K of RAM. The new Printer Interface cable allows direct connection of the Quick Printer to TRS-80's bus connection, without using the Expansion Interface. Quick Printer provides 80-column hard copy and program listings. The Space-Saver holds the entire system and provides the user with ample work space.

"Professional" 16K System
2384.00

- 16K Level II Complete System (26-1056)
- Expansion Interface (26-1140)
- Mini-Disk System (26-1160)
- Quick Printer, Cable (26-1153, 26-1401)
- System Desk (26-1301)

Mini-disk for expanded language, fast data handling and approximately 49,900 bytes of user disk storage space. Quick Printer provides 80-column hard copy and program listings. System Desk holds the entire system with plenty of work space left over.

"Business" 32K System
3294.00

- 16K Level II Complete System (26-1056)
- Expansion Interface, 16K RAM (26-1141)
- 2 Mini-Disk Systems (26-1160, 26-1161)
- Line Printer II and Cable (26-1154, 26-1415)

Two mini-disk units give user approximately 135,600 bytes of disk storage. Virtually all TRS-80 disk-based business software requires this as a minimum system. Applications include general ledger, payroll, disk mail list and more. Line Printer II adds real versatility and convenience to this system, without taking up a lot of work space.

"Deluxe Business" 32K System
4191.00

- 16K Level II Complete System (26-1056)
- Expansion Interface, 16K RAM (26-1141)
- 2 Mini-Disk Systems (26-1160, 26-1161)
- Tractor Feed Line Printer, Cable (26-1152, 26-1401)
- System Desk (26-1301)
- Line Printer Stand (26-1302)

Approximately 135,600 bytes of disk storage space from the two mini-disk systems. Tractor feed line printer uses fanfold paper with feed holes in the margins and will produce up to 5 carbon copies. The System Desk has recessed spaces for the Expansion Interface and keyboard with interconnecting wiring concealed. Line printer stand leaves more desk space.

World Radio History

TRS-80 Line Printers for Every Application

TRS-80 Line Printer I

TRS-80 Line Printer I is a medium-speed 5x7 dot matrix impact printer suitable for business, education and home use. It uses the standard 64-character upper case ASCII character set, but does not support TRS-80 graphics.

It uses only fanfold paper with feed holes in the margins and will produce up to 5 carbon copies. A continuous-loop cloth ribbon lasts approximately as long as a standard typewriter ribbon.

The width of the letters, or "print density," is continuously variable from 10 to 16.5 characters per inch. Print density affects print speed. At maximum density, the printers will produce 132-character lines at a speed of 21 lines per minute.

Tractor-feed is required for multiple copies and exact placement of type on preprinted invoices, payroll checks, etc. Tractor width is adjustable from 3 to 11.5 inches. Top of forms control is available through software.

Requires Level II (or Disk BASIC), a connecting cable and Expansion Interface. All Level II PRINT commands except PRINT@ can be used (preceded by an "L"). Includes manual.

26-1152 ..... 1559.00
Mod I Printer Cable. 26-1401 ..... 39.00
Mod II Printer Cable. 26-4401 ..... 39.00
Ribbon. 3 pack. 26-1413 ..... 18.95
Paper. Fanfold 9½x11". 26-1403 ... 37.95
Mail Labels. 26-1404 ..... 19.95

TRS-80 Line Printer Specifications

Print Density: 10-16.5 characters per inch (up to 132 characters per line). *Print Width:* Up to 8". *Print Speed:* 60-100 characters per second. *Vertical Line Spacing:* 6 lines per inch. *Dimensions:* 9.5 x 19.8 x 19.5". *Weight:* 45 lbs. *Power:* 120VAC, 50/60 Hz, 3 Amps. 360 Watts. U.L. listed.

Quick Printer II

A "mini" line printer priced to fit everyone's budget. And best of all, it can connect directly to your TRS-80 — it needs no Expansion Interface. Software selectable for 16 to 32 character lines. Prints upper and lower case and features automatic "wrap-around" when text exceeds line length, so there's no data lost to overflow. A built-in microprocessor controls the printer and communications with other units. With three interface choices, this versatile printer can be used on a variety of computers. Get low-cost, hard copy output on a 2⅜"-wide roll of aluminum-coated paper. Includes cable to connect to CPU.

26-1155 ..... 219.00
Cable for Expansion Interface.
26-1406 ..... 19.95
Paper. (2 rolls) 26-1412 ..... 3.95

Quick Printer II Specifications

Print Density: 18 or 9 characters per inch, software selectable (32 or 16 cpl). *Print Speed:* 120 lines per minute. *Paper:* Aluminum coated, 2⅜" wide (available through Radio Shack stores). *Dimensions:* 3-5/16x6-3/4x9-1/4". *power:* 120VAC, 60 Hz. U.L. listed.

Line Printer II

Prints 50 characters per second on 8-inch lines of 80 characters each. Also prints expanded (wide) letters under software control. Features upper and lower case letters in a 7x7 dot matrix format and will operate in both friction-feed and pin-feed modes. Continuous forms 9½ inches wide (original and up to two copies) are kept in precise alignment by nonadjustable pins built onto the platen. Also prints single sheets. When used as a friction-feed unit, inexpensive roll paper fits in a detachable rear bail.

26-1154 ..... 970.00
Mod I Cable. 26-1415 ..... 29.00
Mod II Cable. 26-4402 ..... 29.00
Roll Paper. 26-1402 ..... 19.95
Ribbons. 3-pack. 26-1413 ..... 18.95
9½x11" Fanfold Paper. 26-1403 ... 37.95

Line Printer II Specifications

Print Density: 8-inch lines of 80 characters each. *Print Speed:* 50 characters per second. *Dimensions:* 15x11x5". 10 lbs. *Power:* 120VAC, 60 Hz. 200 watts.

Attach Quick Printer, Line Printer I or Line Printer II to Your Level II TRS-80 Bus without Expansion Interface

Printer Interface Cable. Lets you add a complete hard copy system without using the Expansion Interface. Connects directly from the TRS-80 bus connector to the Quick Printer or Line Printer I.

26-1411 ..... 59.00

Line Printer II Interface Cable. Interfaces with Line Printer II without using the Expansion Interface. Connects directly to TRS-80 bus connector.

26-1416 ..... 59.00

World Radio History

Quick Printer

Delivers 150 lines per minute on 4.75-inch wide aluminum-finish paper. No ribbon is needed. The paper is unaffected by light, heat or humidity. Prints all keyboard characters (except arrows), and upper and lower case letters. Graphics are not supported. Variable character width (20, 40 or 80 characters per line), automatic underlining and an audible signal are all fully software controllable. All Level-II line printer commands are used. Features paper-empty light, print select (on/off), paper advance and power on/off switch with pilot light. Requires either Expansion Interface, Printer Cable and Level II BASIC or Printer Interface Cable and Level II BASIC.

26-1153 ..... 499.00
Mod I Printer Cable. 26-1401 ..... 39.00
Mod II Printer Cable. 26-4401 ..... 39.00
Paper. (3 rolls) 26-1405 ..... 16.95

Quick Printer Specifications

Print Density: 20, 10 or 5 characters per inch, software selectable (80, 40 or 20 cpl). *Print Speed:* 150 lines per minute. *Paper:* Aluminum coated roll, 4.75" wide by 131' long. (Available through Radio Shack stores) *Dimensions:* 4¼x13x10½". 10 lbs. *Power:* 120VAC, 60 Hz. 40 Watts. U L. listed.

Note: All TRS-80 printers used with a Model I require Level II BASIC or Disk BASIC.

The Level I TRS-80 cannot be used with a printer.

TRS-80 Line Printer III

For applications requiring higher speed and full 13-inch wide, 132-character lines, Radio Shack's new Line Printer III is the answer! This quiet, professional printer includes many outstanding features... even "self-test!"

9x7 dot matrix upper and lower case letters, as well as numbers, are printed at a fast 120 characters per second. For even faster "throughput," the head prints in *both directions* as it moves across the paper. Accurate positioning of pre-printed forms such as invoices or checks is easy, with controls for line-feed in increments as small as 1/8th-line. Expanded (wide) characters may be software selected for headings or emphasis in your printed reports.

The fully adjustable tractor mechanism feeds continuous forms of varying width up to a maximum of 15 inches, while assuring accurate alignment. Drive motors run only during actual printing, so Radio Shack's Line Printer III can always be silently awaiting your print command, on either TRS-80 Model I or Model II.

For the finest in fast, versatile printers, specify Radio Shack's all new, exclusive Line Printer III.

26-1156 ..... 1960.00
Mod I Printer Cable. 26-1401 ..... 39.00
Mod II Printer Cable. 26-4401 ..... 39.00
Ribbon Cartridge. 26-1414 ..... 21.95
14⅞x11" Fanfold Paper. 26-1417 ... 49.95
Mail Labels. 26-1404 ..... 19.95

Line Printer III Specifications

Print Density: 10 or 5 characters per inch, software selectable. *Print Speed:* 120 characters per second. *Dimensions.* 7-2/5x24-2/5x15-9/10". 42 pounds. *Power:* 120VAC, 47 to 63 Hz. 85 W.

Printer Stands

A Line Printer Stand. Line Printer I and a number of others attach directly to the stand's crossmembers through existing holes in their rubber feet. The "modesty panel" turns sideways to accommodate many popular 15"-wide printers. (Not Line Printer III).

26-1302 ..... 99.00

B Line Printer III Stand. Puts the printer right at your fingertips and frees deskspace. Includes basket.

26-4302 ..... 139.00

World Radio History

Model II—An Exciting New Member of the TRS-80 Family!

Radio Shack's revolutionary TRS-80 Model I introduced low-cost computing to the masses. Small business owners, educators and professional people saw the opportunity to reap benefits which were previously the exclusive domain of large corporations.

While Model I will continue to fulfill many needs (in some cases it may even be better suited), some of you need more storage, power and speed than Model I can offer. Rather than stretch the limits of Model I, we decided to meet those additional needs by designing and building a completely new, faster and more powerful computer . . . TRS-80 Model II.

Model II does not replace Model I, rather it's a new family member, picking up where Model I approaches upper limits of expansion.

A New Family Member

TRS-80 Model II is a powerful, expandable, easy to use, yet very affordable desktop computer system. The basic system is contained in one cabinet, with a built-in 8-inch disk drive and a detachable, moveable keyboard. Model II is U.L. listed. One power cord plugs into any standard 125VAC, 60 Hz outlet, and it has a built-in filter to eliminate power line interference.

World Radio History

Easy to Operate
Fast and Expandable
32K or 64K of RAM
Upper and Lower Case
Direct Memory Access
Built-in 8″ Diskette

32K, 1-Disk TRS-80 Model II System

$3450.00

64K, 1-Disk TRS-80 Model II System

$3899.00

Anyone accustomed to a typewriter will feel right at home at the Model II keyboard. We kept it simple, with as few "special" keys as necessary to do the job. A calculator-style keypad is provided for faster, more accurate numeric entry. Model II's easy-to-read 12-inch, high-resolution video screen displays 24 lines of 80 upper and lower case characters per line. (Double-width characters — 40 per line — can also be selected by your program).

Inside Model II

Internal memory (depending on the system you choose) will store 32,000 or 64,000 characters of information. The required "Operating System" software occupies about 27,000 characters, with the balance available for user programs and data. The built-in 8-inch disk drive will store an additional 416,000 characters. (That's equal to about 20 straight hours of typing at 70 words per minute!) The three additional disk drives you can add, each store another 486,000 characters, bringing Model II's total memory capacity to about 2 million characters.

Experienced data processing people will recognize the terms "direct memory access" and "vectored interrupts," which to the average business user translate as faster operation and more versatility. The fast Z-80A microprocessor — the heart of Model II — operates at a speed of 4 MHz — over twice the speed of TRS-80 Model I. Separate keyboard and video processors also add to Model II's speed.

User-Oriented

Each time you turn on Model II, it automatically "self-tests" to assure proper operation. Features in Model II's programming language allow an operator to turn the system on, and be ready to run payroll, posting, billing or other jobs immediately, without any action other than entering the current date. Model II is "forgiving" of operator errors, too. If you try to load a program when there's no disk in the drive, Model II won't hang up like many other computers. And, when you give Model II a command such as to "kill" a file, it always responds with positive feedback . . . telling you exactly what it did (or did not do) in response to your command. When an Operating System error occurs, a message appears on the video screen with a numbered error code. And no flip charts or manual are required if you don't remember the error codes. Just type "Error 32" (or whatever the number) and Model II will respond with a detailed explanation.

Model II is Expandable

Like TRS-80 Model I, Model II systems are expandable to meet changing — or growing — needs. Three expansion connectors (one parallel and two serial) allow you to connect printers, plotters, digitizers, telephone communications and many other external devices. Internal plug-in card slots allow for more expansion and enhancement options in the future . . . several are in the planning stages now.

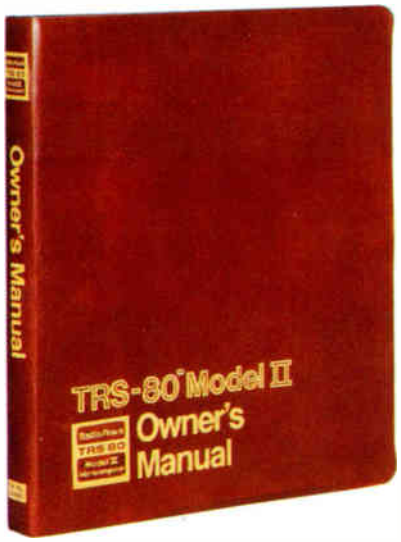
If your application requires more disk storage, you can plug in a Model II Disk Expansion Unit with one, two or three additional drives. If you select an Expansion Unit with one or two drives, you can add the others later. Of course, a 32K system (32,000 characters of memory storage) can be expanded to the full 64K at any time.

Model II comes with a disk containing our expanded Level III BASIC programming language and our all-new, command-compatible "TRSDOS" operating system. This "system software" will be upgraded periodically with new features, and we plan to offer additional programming languages for Model II in the future. Applications software for General Ledger, Inventory Control, Receivables, Payroll and Mailing List is available now, and more will be available soon.

32K, 1-Disk Model II. 26-4001 . . . . . 3450.00
64K, 1-Disk Model II. 26-4002 . . . . . 3899.00
32K Memory Add-on 449.00

World Radio History

Level III BASIC and TRSDOS Disk Operating System



TRS-80 Model II computers contain a very small amount of Read-Only-Memory (ROM), which performs power-on diagnostics, then automatically loads the Operating System from disk. The ROM is electrically replaced by RAM, for a total of 32 or 64K, depending on the Model-II system you have.

Model II's 8-inch diskettes contain 76 accessible tracks of 25 sectors each — a sector contains 256 bytes. A "gran" is 5 sectors. The system diskette (which must always be present in Model II's built-in disk drive) has 65 tracks, or about 416,000 bytes of storage available for your data and programs. On non-system diskettes, 75 tracks — about 486,000 bytes — are available to the user.

Disk rotation speed is approximately 360 RPM and data is transferred from disk at about 62,500 bytes per second, 5 times the speed of TRS-80 Model I's Mini-Disk system.

Model II's "Level III BASIC" — an expanded version of Level II — and a new, command-compatible TRSDOS™ Disk Operating System occupy some 70,000 bytes on the system diskette. An overlay scheme allows it to require only about 27K of RAM, leaving 5K free in a 32K Model II or 37K in a 64K system. Command compatibility has been maintained to the greatest possible extent for the convenience of Model I owners who decide to move up to the additional speed and capability of TRS-80 Model II. The system uses numbered error messages which appear on the video screen in a reversed field. For convenience, you can type the number of the message and receive a definition of that message on the screen.

The commands listed to the right are common to both the TRS-80 Model I and Model II languages. Operating System commands are in bolder type.

A few of these commands have a slightly different use in Model II. For example, "SYSTEM" is used to enter DOS and (optionally) execute a DOS command with return to BASIC. A number of the commands also include more options in the Model II language. You will note the absence of PEEK, POKE, INP and OUT, which are no longer needed. Machine language subroutines are entered easily using Model II's improved "DEBUG" utility, and previously "POKED" values such as top of forms are handled by their own unique commands.

While BASIC programmers familiar with Model I will feel right at home, machine language programmers will find a totally new and different architecture "under Model II's hood." We think you'll agree it's quite an improvement in all respects.

In addition to the commands listed, Level III BASIC and Model II TRSDOS have the following additional commands, not part of the Model I system:

AGAIN — Causes the last command executed to repeat.

BUILD — Allows building a file for automatic command entry in place of keyboard entry, executed with the "DO" command.

CREATE — Creates a named file and allocates disk storage space for it. Having preallocated space allows faster file handling in BASIC. (Space can be dynamically located.)

DO — Executes a file created with the "BUILD" command. By using "AUTO DO," a BASIC program may be executed on power-up, without operator entry.

ERASE — Cancels a dimensioned array and frees its memory space.

ERROR — Returns an explanation of a specified error number.

FORMS — Formats the line printer — top of forms, length and width of forms, and can send one character to the printer for testing forms positioning.

HEX$ — Converts a decimal number to a hexadecimal string.

NULL — Sends blanks at the end of a line (communications).

OCT$ — Converts a decimal number to an octal string.

PAUSE — Interrupts a "DO" file to require an operator action, such as inserting a diskette when instructed.

PURGE — Automatic "KILL" mode. Lists all non-system files on a disk and asks if they are to be killed.

RENUM — Renumbers program lines.

RESET — Restores default system settings for all devices.

SETCOM — Initializes communications drivers for the serial ports.

SPACE$ — Prints a specified number of blank spaces.

SPC — Prints spaces on video display.

SWAP — Exchanges the values of two named variables.

WIDTH — Sets line width for video display.

ADDITIONAL OPERATORS: MOD, IMP, EQV, XOR (Integer Division).

Model II's new TRSDOS responds to your commands with positive feedback. If you say "KILL 'file-name' ", TRSDOS will respond with " 'filename' KILLED", or " 'filename' NOT FOUND", so you'll always know what was or was not accomplished by your command. And backup (duplicating) of a diskette requires knowledge of a master password, which gives you additional program and data security.

These examples are taken from version 1.1 of our Model II system software. Of course, Radio Shack will continue to enhance the Level III/TRSDOS Operating System for Model II with new releases. Additional languages will also be made available and will be announced as they are released. Our ability to expand Model II's language capabilities is enhanced because the system is RAM-based, and has no primary language in ROM.

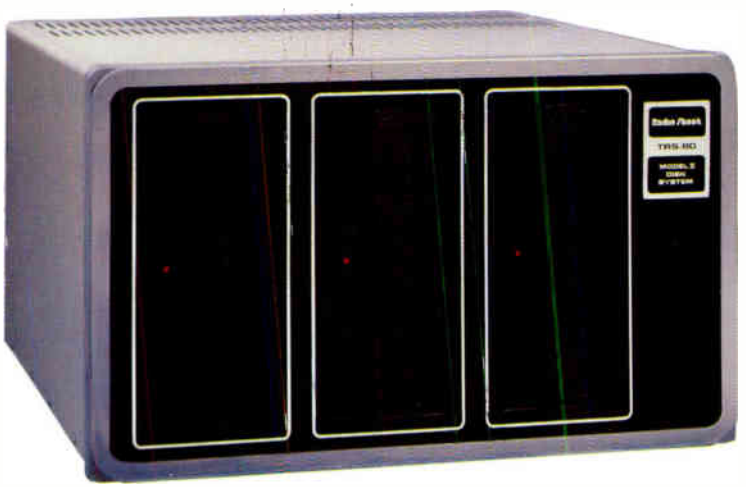
BASIC Commands for Model I and Model II TRS-80s

ABS	**APPEND**	ASC	ATN	**ATTRIB**	**AUTO**	**BACKUP**
BASIC	CDBL	CHR$	CINT	**CLEAR**	CLEAR	**CLOCK**
CLOSE	**CLS**	CLS	**COPY**	COS	CSNG	CVD
CVI	CVS	DATA	**DATE**	DATE$	**DEBUG**	DEFDBL
DEFINT	DEFN(X)	DEFSNG	DEFSTR	DELETE	DIM	**DIR**
DUMP	EDIT	END	EOF	ERL	ERR	ERROR
FIELD	FOR	**FORMAT**	FRE	**FREE**	FRE$	GET
GOSUB	IF-THEN-ELSE	INKEY$	INPUT	INSTR	INT	**KILL**
KILL	LEFT$	LEN	LET	**LIB**	**LIST**	LIST
LLIST	LOAD	LOAD	LOC	LOF	LOG	LPOS
LSET	MERGE	MID$	MKD$	MKI$	MKS$	NEW
NEXT	ON ERROR	ON..GOSUB	ON..GOTO	OPEN	POS	PRINT
PRINT@	**PROT**	PUT	READ	REM	**RENAME**	RESET
RESTORE	RESUME	RETURN	RIGHT$	RND	RSET	RUN
SAVE	SGN	SIN	SQR	STOP	STR$	STRING$
SYSTEM	TAB	**TIME**	TIME$	TROFF	TRON	USR(N)
VAL	**VERIFY**					

Operating System commands in bolder type

World Radio History

Accessories and Software to Enhance Your Model II



From
1150^{00}

Model II's Disk Expansion Unit Gives You Up to 2 Megabytes of Memory Storage

Expanding the disk storage of your TRS-80 Model II system is as easy as plugging in one of the external Disk Expansion Units. It's available with one, two or three drives already mounted — each additional drive adds about one-half million bytes of on-line storage. And, if you buy a one or two-drive system now, you can add the Disk Drive Kit (listed below) at any time to expand to a two or three-drive system.

1-Drive Expansion System.
26-4160 ..... 1150.00
2-Drive Expansion System.
26-4161 ..... 1750.00
3-Drive Expansion System.
26-4162 ..... 2350.00
Disk Drive Kit. (Drive Only).
26-4163 ..... 600.00

Specifications

No. of Drives: 1 to 3. *Disk Format:* Track 0; 26 sectors, 128 bytes per sector (single density). Tracks 1 through 76; 26 sectors, 256 bytes per sector (double density). *Disk Size:* Standard 8" diskette. *Data Transfer Rate:* Single density, 250 kilobits per second. Double density, 500 kilobits per second. *Disk Speed:* 360 RPM. *Latency:* 83 mS (average). *Track Access Time:* 260 mS (average). 10 mS track-to-track. *Power:* 120VAC, 60Hz, 150 watts. U.L. listed. *Size:* 11½x18½x21".

Quality 8-Inch Diskettes

Radio Shack's blank 8" diskettes for the Model II are custom-designed to meet our high quality control standards. Individually tested to insure reliability.

Blank 8" Diskette. 26-4905 ..... 7.50
10-Pack of Above. 26-4906 ..... 69.95
Single DOS Diskette for TRS-80 Model II.
26-4910 ..... 24.95

350^{00}

Versatile Model II System Desk

Our newest System Desk is beautifully matched to TRS-80 Model II. A large drawer with center divider can be used to store diskettes, program binders and more. And totally modular design means you can assemble it the way that best suits your needs. (See drawing below.) The top has a beveled "comfort-edge" front and cut-outs for interconnecting wiring. Heavy-duty metal construction. 28x48x29". A stylish, functional "finishing touch" for your Model II system!
26-4301 ..... 350.00

Model II Owner's Manual

24.95

A comprehensive, illustrated guide in a heavy-duty 3-ring binder for Model II owners and users. No charge with Model II systems, or may be purchased separately. 26-4920 ..... 24.95

Model II Software

General Ledger. Up to 500 accounts and 6000 transactions/month. Ten categories of income and expense accounts. DR/CR or +/− terminology usable throughout. Sessions may be edited up to time of posting. Requires 64K, 1-Disk System.
26-4501 ..... 199.00

Inventory Control System. Comprehensive management system for up to 3000 retail items. Extensive reporting and sales analysis, 12-period sales history, order processing, vendor referencing, automatic updating from sales and order posting. Requires 64K, 1-Disk System.
26-4502 ..... 199.00

Payroll. Up to 500 employees. State tax tables, city tax automatically calculated. Nine earnings, 9 deductions categories. Prints checks and W-2s. Check register, payroll journal, end-of-period reports available. Requires 64K, 1-Disk System.
26-4503 ..... 399.00

Accounts Receivable. Adds and maintains up to 2000 accounts. Sales and payments are easily entered. Printouts of General Ledger journal entries and complete reports are available at any time. Also prints monthly billing statements for mailing. Requires 64K, 1-Disk System.
26-4504 ..... 299.00

Mailing List. 3000 names in expanded format, 4000 names in compressed format. Screening and selection on any criterion. Ideal for subscription services and customer lists. Variable spacing and formatting — prints multiple labels across and oversized labels with return address. Requires 64K, 1-Disk System.
26-4506 ..... 79.00

Important Notice

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Radio Shack shall have no liability or responsibility to customer or any other person or entity with respect to any liability, loss or damage caused or alleged to be caused directly or indirectly by computer equipment or programs sold by Radio Shack, including but not limited to any interruption of service, loss of business or anticipatory profits or consequential damages resulting from the use or operation of such computer or computer programs.

NOTE: Good data processing procedure dictates that the user test the program, run and test sample sets of data, and run the system in parallel with the system previously in use for a period of time adequate to insure that results of operation of the computer or program are satisfactory.

World Radio History

TRS-80 Model II "Starter System"

4898.00

Basic, Powerful TRS-80 Model II System with Line Printer — Expandable as Your Needs Increase

An exceptionally affordable system with 486K bytes of disk storage (including operating system software), 64K internal memory (26-4002), a small pin-feed 9½-inch wide 80-column printer (26-1154) and a Line Printer II cable (26-4402). Ideal for many businesses as it stands, yet instantly ready to be expanded as your business grows.

Approximately 416,000 Free Bytes of Disk Storage

Model II "Step-Up System"

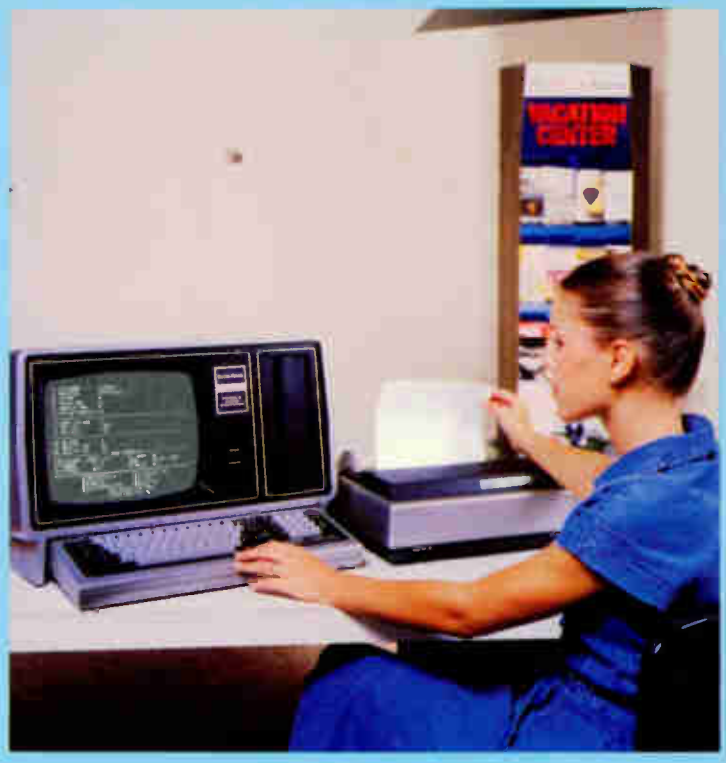
5946.00

64K System with Medium-Speed Line Printer, Line Printer Stand and Our System Desk

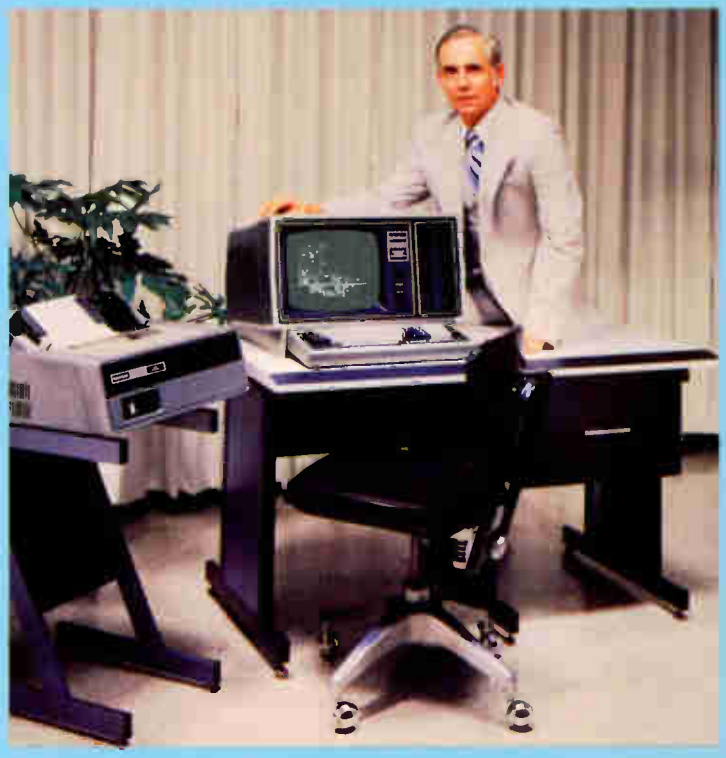
This expanded system is the perfect answer to inventory control or payroll for small businesses. Built around the TRS-80 64K Model II (26-4002), the system includes the Tractor Feed Line Printer (26-1152), capable of producing 132-character lines at a speed of 21 lines per minute. Also features the Printer Cable (26-4401), Printer Stand (26-1302) and our System Desk (26-4301) that holds the entire system and still provides ample work space. Expand the memory capacity of this system by adding an optional external disk system when you need it.

Approximately 416,000 Free Bytes of Disk Storage

Choose the Computer



Start Small . . . E



Up to Two Megabytes

World Radio History

That Fits Your Needs

ł-x-p-a-n-d Later

of Computing Power!

Model II "1.5 Megabyte Business System"

7998.00

A Very Powerful, High-Capacity System with High-Speed, Wide Carriage Line Printer

Compare this versatile and powerful system with 1.5 million bytes of disk storage and 64K internal memory (26-4002), with systems costing twice as much. Includes a 2-drive external disk system (26-4161), our 15-inch 120 CPS Tractor-Feed Line Printer III (26-1156), and Model II System Desk (26-4301). Ideal for larger, integrated accounting systems.

Approximately 1,388,000 Free Bytes of Disk Storage

Model II "Deluxe 2 Megabyte Business System"

8737.00

Our most Powerful, "Full Bore" Model II System. 64K, 3-Disks, High-Speed Printer with Stand

This expanded business system features approximately 2,000,000 bytes of user disk storage! 64K internal memory (26-4002) and a 3-drive external disk system (26-4162) combine to give you maximum TRS-80 storage. Includes desk for Model II (26-4301), Line Printer III (26-1156) and Line Printer III Stand (26-4302).

Approximately 1,874,000 Free Bytes of Disk Storage

World Radio History

Radio Shack has what it takes to be your small-computer company

Availability! TRS-80 Model I is in stock at most Radio Shack stores. You can see and try it *before* you buy. Model II is on display in all 50 Radio Shack Computer Centers and 100 special computer departments in major cities. You can order Model II at *any* of our over 7000 locations.

Easy operation! Our widely acclaimed Level I users manual makes it easy, even fun, for a novice to learn computer programming.

Software! Prerecorded programs are available, now, to put your TRS-80 Model I or Model II to work — immediately. And we are constantly expanding our line of programs.

Expand-ability! Modular design means even the smallest TRS-80 Model I system can be expanded to our largest Model I business system by using our plug-in accessories. The TRS-80 Model II business computer expands just as easily.

After the sale! Your TRS-80 is in good hands with our expert technicians. Over 100 company-operated repair centers nationwide service only our own computers, so we know them "inside out." And all 50 Radio Shack Computer Centers nationwide offer classes for everyone from beginners to advanced programmers. Yes, we're in computers to stay!

Radio Shack®
The biggest name in little computers™

A DIVISION OF TANDY CORPORATION
FORT WORTH, TEXAS 76102

7000 STORES IN 40 COUNTRIES

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NEW FOR 1978

Radio Shack®

TRS-80™ Microcomputer System Products

The Low-Cost Leader Goes Farther Out Front

Order Now at Your Nearest Radio Shack Store or Participating Dealer

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Radio Shack Wants to be YOUR Computer Company!

Lewis Kornfeld

Dear TRS-80 Owner and Inquirer:

In 1977 I said the TRS-80 was "the most important product ever produced by Radio Shack." It was. It is! It is also the most difficult to build in terms of units per day. So, if you waited extra long (or are still waiting) the day is near when our backlog will be eliminated and we will be able to ship from stock. Thanks again for your patience.

A few skeptics imagined that Radio Shack would, with TRS-80, skim off a few thousand hobbyists and then retire from the fray. Shame on them! The following pages of peripheral equipment and software should demonstrate to anyone that Radio Shack means business . . . the computer business.

In short, TRS-80, the Radio Shack product that opened up the Microcomputer Age to thousands of companies, institutions and individuals, now enters Phase Two.

The Radio Shack TRS-80 is now a full microcomputer system, thanks to newly developed peripherals as described in this brochure. A peripheral is a unit that works in conjunction with a computer but is not a part of it. In summary: printers, disk drives, expansion interface/modules, and software.

Again, Radio Shack's prices are right, and our insistence upon quality (plus available local service) make our Company the one you can depend on, a fact that's particularly important in sorting out the workers from the talkers in this fascinating new field of electronics.

Get your orders in early. Despite numerous pressures to break our delivery promises, we will continue to ship computers and peripherals on a first-ordered first-delivered basis.

Sincerely,

President,
Radio Shack Division,
Tandy Corporation

TANDY CENTER
Radio Shack
International
Headquarters

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World Radio History

The TRS-80 . . . Complete, Low-Priced, Ready to Go!

Designed and manufactured in the U.S.A. by Radio Shack, the TRS-80 computer system is 100% wired, tested and U.L. listed for 120VAC so you can put it to work immediately! It's ideal for finances, education, accounting, laboratory — even games at home. And the new products found in this brochure are proof of our intention to keep you well supplied with increasing software and accessories! Below are four complete TRS-80 systems incorporating different combinations of RAM (4K and 16K) and ROM (Level-I and Level-II BASIC). Choose the one that's right for you — turn the page for a look at the TRS-80 matched with a variety of peripherals. Expansion is easy due to TRS-80's modular design. All TRS-80 systems below include a 12" video monitor, Realistic® CTR-41 battery/AC cassette recorder, power supply, 232-page user's manual, and a 2-game cassette.

Level-I BASIC . . . The Beginner's Choice!

Radio Shack's Level-I BASIC really packs a lot into 4K of ROM to produce a thorough but easy to understand computer language. It's the ideal entry level programming language for the computer novice. In fact, BASIC is an acronym for "Beginner's All-purpose Symbolic Instruction Code." Level-I includes most standard BASIC commands, video graphics, cassette input/output, floating point arithmetic, numeric array, and limited string variables. If you can read and write English, you can probably learn to program with Level-I BASIC!

Level-I with 4K RAM

599.00

Our standard TRS-80 system contains sufficient memory to accommodate many uses in home, school, lab, or business.
26-1001, 26-1201, 14-841 .... 599.00

Level-I with 16K RAM

889.00

The additional RAM with this system allows greater data storage and programming capability for more extensive uses.
26-1003, 26-1201, 14-841 .... 889.00

Level-II BASIC . . . More Power to You!

Level-II BASIC is an enhanced, more powerful version of Level-I. It is contained in 12K ROM, instead of the 4K required by Level-I. This additional storage enables Level-II to include additional features that are needed in many applications. Some of these include print formatting, keyboard roll-over (you can type as fast as you wish), string functions, a long list of arithmetic functions, and user control of program errors. In addition, Level-II's versatility allows you to enjoy faster graphics, editing capabilities, and up to 16 digits of accuracy.

Level-II with 4K RAM

698.00

Improved graphics, print formatting, and a faster cassette transfer rate are features of Level-II BASIC.
26-1004, 26-1201, 14-841..... 698.00

Level-II with 16K RAM

988.00

A combination of 16K RAM and the powerful Level-II BASIC produces a system capable of handling most demands.
26-1006, 26-1201, 14-841 .... 988.00

"CREATIVE COMPUTING" Comments on the TRS-80 . . .

". . . the designers have made the TRS-80 as idiot-proof as possible . . . operation couldn't have been simpler; by having BASIC in ROM, all you do is plug in the machine, turn it on, and start programming . . . the microprocessor in the TRS-80 is a Z-80, although a great many users won't really care if it's a 4004, as long as the computer performs. And it does, very well.

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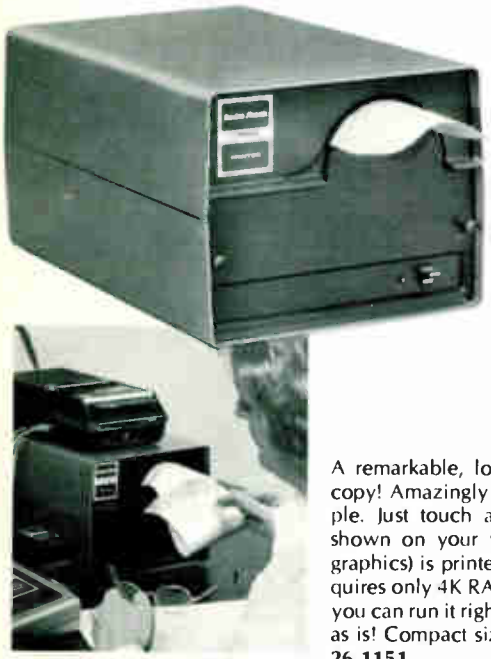
ATTENTION!
If your application requires more complex, higher-priced system design . . . contact Tandy Computers, P.O. Box 2932, Fort Worth, Texas 76101.

World Radio History

Radio Shack Offers the Hardware You Need t

The NEW TRS-80 Screen Printer



599.00

- *Prints 2200 Characters/Sec*
- *Electrostatic 4" Wide Paper*

Prints Program Listings as Quick as a Wink!

A remarkable, low-cost concept in hard copy! Amazingly fast and amazingly simple. Just touch a button — whatever is shown on your video screen (including graphics) is printed on 4"-wide paper. Requires only 4K RAM and Level-I BASIC, so you can run it right off the standard TRS-80 as is! Compact size.

26-1151 ..... 599.00

The NEW TRS-80 Line Printer

1299.00

Sturdy Construction for Business Use

Allows you to achieve true small-business capability! Prints from 60 to 110 characters per second using a 5x7 impact dot matrix. Character density is adjustable from 10 to 16.5 characters per inch. Roll paper up to 9.8" wide may be used. With top-of-form software control, friction feed. Requires 4K RAM, Level-II BASIC, and EXPANSION INTERFACE. **26-1150 ..... 1299.00**

Three Typical E-X-P-A-N-

4K "EDUCATOR" SYSTEM

The "EDUCATOR" System includes our screen printer for a "hard copy" computing system useful in keeping track of household records and point-of-sale receipts. In addition, the "EDUCATOR" is ideally suited for computer-assisted instruction programs.

INCLUDES:

- **TRS-80 with 4K RAM, Level-I BASIC (26-1001)**
- **12" Video Display (26-1201)**
- **Realistic® CTR-41 Cassette Recorder (14-841)**
- **TRS-80 Screen Printer (26-1151)**

Complete TRS-80 Computer System **1198.00**

16K "PRO

Our "
disk s
scienc
analys
system
costs.

INCL

- TRS
- 12"
- CTR
- TRS
- TRS
- TRS

Complete TRS-80 Computer System

World Radio History

o Make the TRS-80 into the System You Want!

The NEW TRS-80 Expansion Interface

299.00

The Key to a More Powerful, Versatile TRS-80 System!

A vital part of Radio Shack's modular design, this single interface enables you to upgrade your system as your needs increase. It contains sockets for additional 16K or 32K RAM and a disk controller for up to four mini-disks. Software-selectable dual cassettes can be used. It attaches to (and continues) the TRS-80 bus, and features a Centronics parallel port, real time clock, and a card slot for an RS-232C interface — or whatever! Usually requires Level-II BASIC.

26-1140 ..... **299.00**

The NEW TRS-80 Mini-Disk System

499.00

- *80K Bytes Per Disk Storage Capability*
- *Includes TRS-80 DOS Software*

Gives you more data storage space and greater operating speed — it literally transforms your TRS-80 into a new system capable of processing business applications! Transfer rate is 125K bits per second, with an average access time of ½ second. Hard error rate is 1 per 100 billion bits read. The mini-disk system enhances Level-II BASIC by adding 15 additional features. Requires 16K RAM, Level-II BASIC, and the EXPANSION INTERFACE.

26-1160 ..... **499.00**

-D-E-D TRS-80 Systems . . .

-ESSIONAL" SYSTEM

ROFESSIONAL" System offers 16K RAM, mini-stem, and a screen printer for applications in and engineering, clinical laboratories, statistical , and software development. A major plus of this is its potential to eliminate expensive "on-line"

IDES:

- 80 with 16K RAM, Level-II BASIC (26-1006)
- /ideo Display (26-1201)
- 41 Recorder (14-841)
- 80 Screen Printer (26-1151)
- 80 Expansion Interface (26-1140)
- 80 Mini-Disk System (26-1160)

2385.00

32K "BUSINESS" SYSTEM

A line printer and two mini-disk units are featured in the "BUSINESS" System. Possible applications include general ledger and payroll, accounts receivable/accounts payable, inventory control, mailing lists, sales and market analysis, and use in medical and dental offices.

INCLUDES:

- TRS-80 with 16K RAM, Level-II BASIC (26-1006)
- 12" Video Display (26-1201)
- CTR-41 Recorder (14-841)
- TRS-80 Line Printer (26-1150)
- TRS-80 Expansion Interface (26-1140)
- Two TRS-80 Mini-Disk Systems (26-1160)
- 16K RAM Memory Option (26-1101)

Complete TRS-80 Computer System **3874.00**

World Radio History

How to Expand Your Existing TRS-80 System

Radio Shack has the cure for your growing pains — our low-cost options for easy system expansion! And we've made expansion a smooth operation by designing the TRS-80 with an eye on your future — so you can beef up your system without hassling with large-scale modifications. Just add on one or more options for increased RAM or ROM. Read on and you'll discover how simple — and inexpensive — system expansion can be at Radio Shack!

Level-II BASIC (ROM)

This option allows you to step up to Level-II BASIC if you own a Level-I BASIC microcomputer. Chances are that as you become proficient in Level-I programming you'll want to go to Level-II BASIC. When you're ready to "graduate," simply place the order at your nearest Radio Shack. When it arrives at the store, you simply bring in your Level-I TRS-80 (keyboard unit only) and the store will send it to the nearest Radio Shack Repair Center for conversion to Level-II—**at no extra installation cost to you!** This usually takes less than a week. Level-II BASIC includes a user's manual and a conversion program that converts your Level-I programs and cassettes to Level-II, which has a faster cassette transfer rate. Plan for your future . . . order one today! **26-1120** **99.00**

Features of Level-II BASIC

In order to show you the versatility of Level-II BASIC, we've listed statements, commands, and functions included in Level-II. Remember — you don't even have to go to 16K RAM to enjoy these features!

Variable Type Declaration Characters	Storage Bytes Used
$ String (0 to 255 characters)	3 + # of characters
% Integer (−32768 to 32767)	2
! Single precision (7.1 digit floating point) . . .	4
# Double precision (16.8 digit floating point)	8

Arithmetic Functions

ABS (exp)
ATN (exp)
CDBL
COBL (exp)
CINT (exp)
COS (exp)
CSNG (exp)
ERL
ERR
EXP (exp)
FIX
MEM
INP (port)
INT (exp)
LOG (exp)
PEEK (add)
POINT
POS (dummy)
RANDOMIZE
RND (parameter)
SGN (exp)
SIN (exp)
SPC (exp)
SQR (exp)
TAB (exp)
TAN (exp)
USRn (exp)
VARPTR (var)
VARPTR (# file number exp)

Full Editing Features Commands

A — Restart EDIT at the start of the line
nC — Change n character(s)
nD — Delete n character(s) at the current position
E — End editing and save changes but don't type the rest of the line
H string — Delete the rest of the line and insert string
I string — Insert string at current position
L — Print the rest of the line and go to the start of the line
Q — Quit and cancel all changes
(backspace) — Delete previous character on the line
(Enter) — End editing and save changes
And many more . . .

Program Statements

CMD
DEFDBL
DEFINT
DEFSNG
DEFSTR
DIM
END
ERROR
FOR
GOSUB
GOTO
IF
LET
NEXT
ON ERROR GOTO
ON . . . GOTO
ON . . . GOSUB
OUT
POKE
REM
RESET
RESTORE
RESUME
RETURN
SET
STOP

Input-Output Statements

INPUT
PRINT
READ
DATA
SET
RESET
CLOAD
CSAVE
INKEY $
PRINT #
INPUT #
PRINT USING

Commands

CLEAR
CONT
DELETE
EDIT
LIST
LLIST
NEW
RUN
TROFF
TRON

String Functions

ASC (string)
CHR$ (exp)
LEFT$ (string length)
LEN (string)
MID$ (string, start [,length])
RIGHT$ (string, length)
STR$ (exp)
VAL (string)

Disk Commands

Input-Output Statements		Input-Output Functions	
CLOSE	LSET	CVD	LOF
DATA	OPEN	CVI	MKD$
FIELD	PRINT	CVS	MKI$
GET	PUT	EOF	MKS$
KILL	RESET	LOC	

These Disk Commands Are Available Only With the TRS-80 Mini-Disk

16K Memory (RAM)

Convert your 4K TRS-80 to 16K of RAM with this option and increase your computer's memory capability! You don't have to stop here, either. Our EXPANSION INTERFACE (26-1140) will accommodate one or two additional 16K options for a total of 32 or 48K RAM. Now that's total versatility! As with Level-II BASIC, this option can be ordered from your nearest Radio Shack for installation at one of our Regional Repair Centers. When the 16K option arrives at your store, you will be notified and asked to bring in your keyboard unit and/or INTERFACE for conversion. **26-1101** **290.00**

World Radio History

Twelve Programs from Our Software Library

PAYROLL PROGRAM

The Payroll Program will handle up to twelve employees. With these programs, you will be able to create an employee file, add new employees to an existing file, and summarize year-to-date wages and taxes. In addition, you can enter hours worked, figure net pay, track quarter and year-to-date earnings and taxes for each employee. An invaluable tool! **26-1501** **19.95**

IN-MEMORY INFORMATION PROGRAM

A collection of three assembly language programs that can virtually replace any small index card system. It will file inventory, name and address lists, phone numbers, investment portfolios, and more. **26-1502** **19.95**

HOME RECIPE PROGRAM

Menus, directory, message center . . . with this program, kitchen chores can be organized, simplified, and "computerized." You will be able to convert measurements, whether you want to serve five or fifty! It won't take long before you'll wonder how you ever worked in the kitchen without your computer! **26-1601** **4.95**

PERSONAL FINANCE PROGRAM

A 7-cassette portfolio with manual. Helps you keep track of household budgets, checkbook balances—even categorizes expenses for income tax records. **26-1602** **14.95**

MATH I PROGRAM

Math I is a basic math facts educational primer designed by a teacher, using a previously proven technique. It begins with the most basic fundamentals of addition and subtraction and proceeds through multiplication and division tables. An evaluation test program is also included for progress measurement. **26-1701** **19.95**

ALGEBRA I PROGRAM

A supplemental course in elementary algebra for those who want to know more about math, and those who have trouble with this phase of mathematics. The course includes nine programs on three cassettes and uses modern, interactive, computer-assisted instruction techniques. **26-1702** **19.95**

STATISTICAL ANALYSIS PROGRAM

A system of programs designed for the routine analysis of data in business, education, medicine, government administration, and other fields. It includes Random Sample, Descriptive Statistics, Histogram, T-Test, Simple Correlation, and Linear Regression. **26-1703** **29.95**

BACKGAMMON/BLACKJACK GAME PROGRAM

Play these two time-honored games with your computer. Great fun for parties, at the office, or at home after an exhausting day at work. Includes instructions. **26-1801** **4.95**

QUICK, WATSON! GAME PROGRAM

New from our games department, it's a fascinating game of logical deduction that even ol' Sherlock himself would have found challenging. **26-1802** **4.95**

T-BUG PROGRAM

This is a monitor program which allows access to the Z-80 CPU. With T-BUG it is possible to program in machine language on a Level-I BASIC TRS-80. **28-2001** **14.95**

EDITOR/ASSEMBLER PROGRAM

Although 16K of RAM is required, this package will run with Level-I BASIC. It is a 2-cassette program which creates both source and object files. Microsoft, an industry leader in systems software, has developed this program . . . so you can expect the ultimate in editing features. Standard Zilog mnemonics are used; macros and conditional assembly are not supported. **26-2002** **29.95**

LEVEL-I BASIC COURSE

Contains 8 lessons with 26 programs. Written by Dr. Ralph James and Dr. Ronald Lodewyck of University of California at Stanislaus. Both are experienced educators and have combined their talents to produce one of the best computer-assisted instruction courses we have seen. It is a totally interactive, self-paced system designed to teach you how to use your TRS-80 to its fullest potential. If you are new to programming, this course is for you. **26-2003** **12.95**

FUTURE SOFTWARE PLANNED

Business

1) General Ledger
2) Accounts Receivable/Payable
3) Advanced Payroll
4) Inventory Control

Home and School

1) Self-improvement Series
2) Computer-assisted Instruction
3) Challenging Logic Games

LEVEL-I USER'S MANUAL

"At last, a book that assumes the user doesn't know 'boo' about programming," writes a customer. The manual contains 232 pages full of programs, charts, and illustrations. An excellent step-by-step guide! Included FREE with each computer ordered!

5.95 **26-2101**

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Order Worksheet for the TRS-80 and Peripherals

GUAN.	CATALOG NUMBER	DESCRIPTION	EACH	TOTAL
		TRS-80 COMPUTERS		
	26-1001	4K LEVEL-I	400.00	
	26-1003	16K LEVEL-I	690.00	
	26-1004	4K LEVEL-II	499.00	
	26-1006	16K LEVEL-II	789.00	
	26-1201	12" VIDEO DISPLAY	199.00	
	14-841	*REALISTIC CTR-41 CASSETTE RECORDER	49.95	
	26-2101	*LEVEL-I USER'S MANUAL	5.95	
		*RECORDER AND MANUAL INCLUDED FREE WHEN COMPUTER IS ORDERED WITH DISPLAY		
		EXPANSION OPTIONS		
	26-1101	16K MEMORY (RAM)	290.00	
	26-1120	LEVEL-II BASIC (ROM)	99.00	
		THESE TWO OPTIONS ARE INSTALLED BY RADIO SHACK AT NO EXTRA INSTALLATION COST		
		PERIPHERALS		
	26-1140	TRS-80 EXPANSION INTERFACE	299.00	
	26-1150	*TRS-80 LINE PRINTER	1299.00	
	26-1151	TRS-80 SCREEN PRINTER	599.00	
	26-1160	*TRS-80 MINI-DISK (REQUIRES 16K)	499.00	
		*REQUIRES LEVEL-II BASIC, AND EXPANSION INTERFACE		
		SOFTWARE		
	26-1501	PAYROLL (UP TO 12 EMPLOYEES)	19.95	
	26-1502	IN-MEMORY INFORMATION	19.95	
	26-1601	HOME RECIPE	4.95	
	26-1602	PERSONAL FINANCE	14.95	
	26-1701	MATH I	19.95	
	26-1702	ALGEBRA I	19.95	
	26-1703	STATISTICAL ANALYSIS	29.95	
	26-1801	BACKGAMMON/BLACKJACK	4.95	
	26-1802	QUICK, WATSON!	4.95	
	26-2001	T-BUG	14.95	
	26-2002	EDITOR/ASSEMBLER	29.95	
	26-2003	LEVEL-I BASIC COURSE	12.95	
		TOTAL		
		10% DEPOSIT		
		BALANCE DUE		

Comments from Our Customers

"I own a TRS-80 with 16K RAM. I would like to purchase the Level-II BASIC. I am well satisfied with the results I have obtained with Level-I BASIC, but I would like to move on to bigger and better things."
A lawyer

"While the old line engineers might not agree, I believe that your company has done a real service for us ole timers trying to learn a new science; yes I am past three score and ten, but believe me it is wonderful to still be able to learn some new science . . . now I am hooked on the computer."
Customer

"We are using our TRS-80 as part of our office equipment. We have an owner in the business who had programming at Georgia Tech, and he has made us a program for our time payment sales. The program includes our finance charge rate and the insurance premium rate so all the displayed figures are correct. And we do not have to use charts or calculate rates. This is a real time-saver . . ."
Customer

"You guys are nuts, but great nuts . . . we are having a ball with these machines in the office. We have four more coming. Keep us informed on new programming and additional equipment."
Customer

"Just great; super; Now that's the way to teach BASIC. The heck with all the esoteric, cybernetic, useless info. Computers are FUN and that's the name of the game. Thanks for the best thought out, implemented, ROM BASIC computer in the marketplace. I love it!!!!"
Customer

"I have had my machine since early December, and I have learned and applied all the functions. It's been fun."
Customer

"Hurrah for Radio Shack, it's about time that someone with financial muscle got into the hobby computer field who can do things properly. Your manual will be great for the average person and will teach a few new tricks to us old timers."
Customer

"My daughter (9 years old) is in chapter 4 and doing very well. My wife is in chapter 3 (she just began). My 7-year-old daughter is not learning programming yet but does practice math skills on some teaching programs I have developed."
Customer

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7000 LOCATIONS IN 9 COUNTRIES

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CATALOG NO.	DESCRIPTION	PRICE	PAGE
	TRS-80 Interface Devices		
26-1145	RS-232-C Board*	99.00	18
26-1170	Telephone Interface I*	149.00	18
	TRS-80 Manuals and Handbooks		
62-2016	Level-I User's Manual	5.95	19
26-2102	Level-II Reference Manual	5.95	19
26-2103	TRS-80 Technical Reference Handbook	9.95	19
26-2104	DOS/Disk BASIC User's Manual	5.95	19
	TRS-80 Furniture		
26-1301	TRS-80 System Desk*	199.00	19
26-1302	Line Printer Stand*	99.00	19
	TRS-80 Accessories		
26-301	C-20 Certified Cassette	3.49	12
26-305	Blank Diskette	5.95	14
26-310	DOS Diskette	14.95	14
26-405	3-Pack Blank Diskettes	16.95	14
26-500	TRS-80 Carrying Cases (1 set)	69.00	12

*Available November, 1978

Radio Shack-prepared software packages are available for use with your TRS-80. New packages will be introduced as they are developed. Check with your nearest Radio Shack for the latest in software.

Radio Shack® **the biggest name in little computers™**

Retail Prices Shown in This List Are Subject to Change and May Vary at Individual Stores and Dealers.

World Radio History

TRS-80™ Microcomputer Price List

The TRS-80 Microcomputer may be ordered through over 5800 Radio Shack outlets nationwide. Visit a store near you for personal assistance in choosing and ordering a TRS-80 system and any of its accessories.

RADIO SHACK # 2416
8397 LEESBURG PIKE
VIENNA, VA. 22[illegible]

CHIP PARROTT 821-0808

EFFECTIVE
OCT. 1, 1978

CATALOG NO.	DESCRIPTION	PRICE	PAGE
	TRS-80 Complete Systems — Include CPU/Keyboard, Power Supply, Video Monitor, Cassette Recorder, Manual and Game Cassette.		
26-1051	4K RAM, Level-I BASIC	599.00	8/9
26-1053	16K RAM, Level-I BASIC	889.00	8/9
26-1054	4K RAM, Level-II BASIC	698.00	8/9
26-1056	16K RAM, Level-II BASIC	988.00	8/9
	TRS-80 System Modules		
26-1001	4K RAM, Level-I CPU/Keyboard	400.00	8/9
26-1003	16K RAM, Level-I CPU/Keyboard	690.00	8/9
26-1004	4K RAM, Level-II CPU/Keyboard	499.00	8/9
26-1006	16K RAM, Level-II CPU/Keyboard	789.00	8/9
26-1201	Video Display	199.00	8/9
26-1205	Cassette Recorder	49.95	8/9
	TRS-80 Expansion Kits		
26-1101	16K RAM Memory (Installation Included)	290.00	12
26-1120	Level-II BASIC (Installation Included)	99.00	12
	TRS-80 Expansion Interface		
26-1140	Expansion Interface with 0 RAM	299.00	13
26-1141	Expansion Interface with 16K RAM	589.00	13
26-1142	Expansion Interface with 32K RAM	879.00	13
	TRS-80 Mini Disk System		
26-1160	First Disk Drive (Includes DOS, Cable)	499.00	14
26-1161	Disk Drives 2, 3 and 4 (Each)	499.00	14
	TRS-80 Printers		
26-1150	Line Printer, Friction Feed	1,299.00	17
26-1152	Line Printer, Tractor Feed	1,599.00	17
26-1153	Quick Printer*	499.00	16
26-1401	Printer Connection Cable	39.00	16/17

*Available November, 1978

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