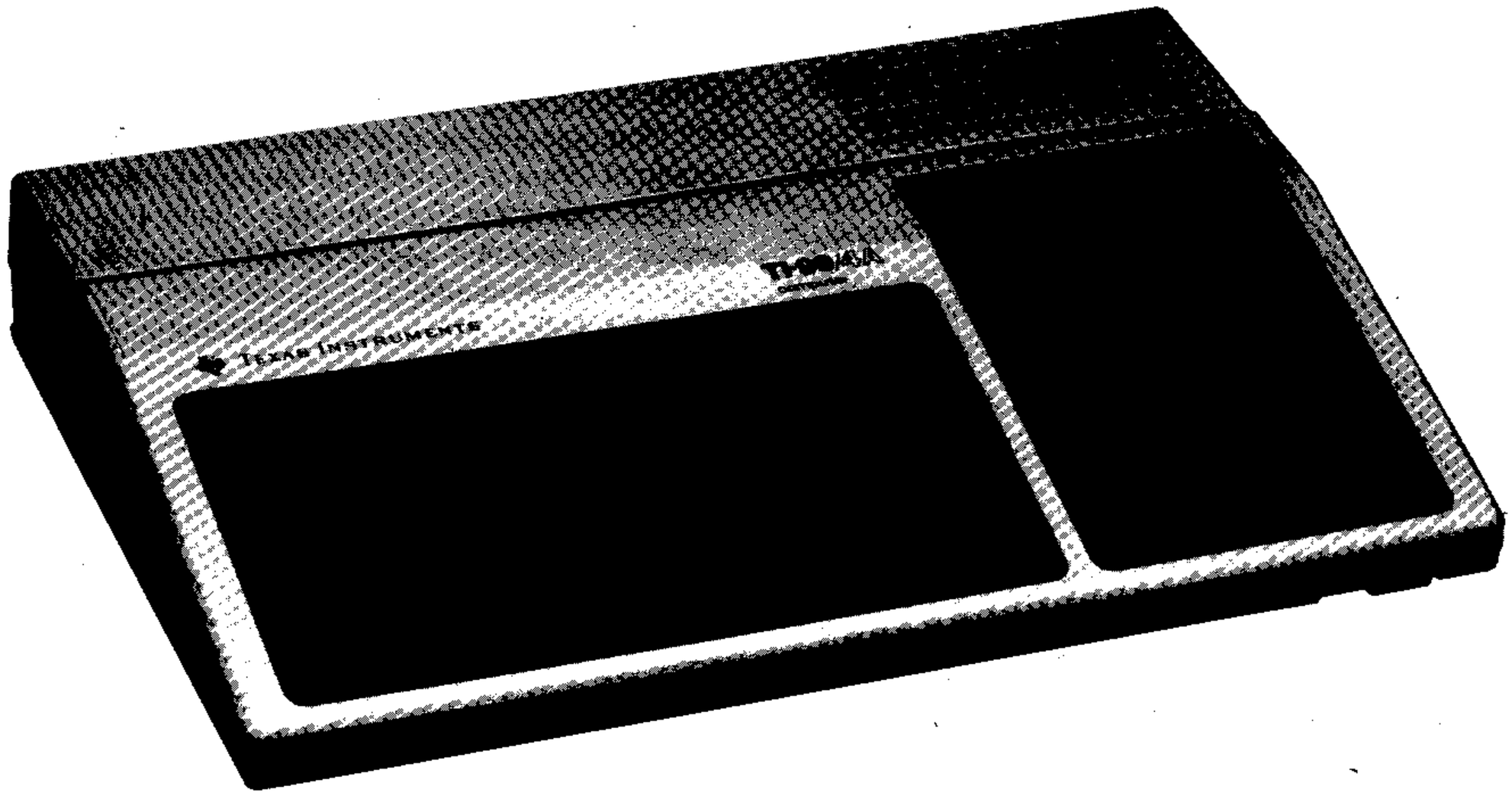
CL709

*Texas Instruments*
*Home Computer*

# *TI-99/4A Home Computer Console*
## *Model PHC 004A*




- **Home enrichment for the whole family, from pre-schooler to senior citizen.**
- **Easy to use. Over 50 plug-in *Solid State Software*™ Command Modules available now — covering *Education* to *Home Financial Management* to *Computer Literacy* to *Entertainment*.**
- **1000-plus cassette and diskette programs available from TI and independent sources.**
- **Superior color, sound, music, graphics — and with the optional *Solid State Speech*™ Synthesizer, *it even talks!***
- **With built-in TI BASIC; available languages include Extended BASIC, Assembler, Pilot, Pascal, and TI LOGO.**
- **Excellent expandability with the space-saving, convenient peripheral expansion system and a wide selection of accessories, including data base access.**

The TI-99/4A Home Computer System developed by Texas Instruments offers all members of the family a unique home enrichment tool.

It is an advanced home computer designed to adapt to the needs of the family that has little or no knowledge of computers or programming. Indeed, a family can obtain full benefit from the system without ever having to learn about computer hardware, software, or programming, though these options are built into the system.

The initial TI-99/4A Home Computer system consists of the *console* and TV *adapter* — which connects the console to your TV set. The programming language "BASIC" is contained within the console, and manuals are provided, so nothing additional needs to be purchased to start using the computer and learning about programming.

In minutes, you have a "feel" for it. It teaches. It entertains. *It makes learning fun.* It's the most fascinating thing to ever happen to leisure time at home. The easy-to-use Texas Instruments Home Computer.

## You don't have to know how to program to use the TI Home Computer.

The heart of the system is a library of Texas Instruments *Solid State Software*™ Command Modules and a growing list of programs developed by independent sources.Command Modules are rugged, permanent, plug-in computer programs which provide a wide array of capabilities and activities for any member of the family. Over 1000 additional programs are available in diskette and cassette formats. (These programs require the use of additional devices — a Disk Drive and Controller for diskette programs and a cassette recorder and cable for cassette programs.)

## If you *do* want to program — or want to learn — TI BASIC is built into the TI Home Computer.

With other systems, it's not. You'll pay extra for it, and have to load it into the machines each time you need it. So, the TI Home Computer saves you time, and money.

TI BASIC is a rich and versatile programming language designed to make programming easy for you. You can apply it to the most demanding problems because it's powerful and accurate, yet it's one of the easiest program languages to learn.

TI LOGO, developed by Texas Instruments and the Massachusetts Institute of Technology, is available for children in kindergarten through grade 6.

For the advanced programmer, Extended BASIC, Assembler, Pilot, and Pascal are available.



## Specifications

CPU: 9900 Family, 16-bit microprocessor, plus 256-byte scratchpad RAM.
Memory: Initial system combined memory: 42K bytes.
Internal ROM memory supplied: 26K bytes. External ROM memory: *(Solid State Software*™ Command Modules) Up to 36K bytes each. RAM memory supplied: 16K bytes.
Keyboard: 48-key staggered Qwerty, full travel.
Sound: 5 octaves, 3 simultaneous tones plus noise generator. From 110 Hz to beyond 40,000 Hz.
Power: 110 V, 60 Hz, 20 W. Wall mounted console transformer, UL listed 8′ power cord.
I/O: Composite video and audio output for monitor. Interface for up to 2 audio cassettes. 44-pin peripheral connector . System memory and address signals available at peripheral connector. Remote control interface.
Built-in Software: 14K byte BASIC interpreter. Internal Graphics Language interpreter, not user accessible.
Internal 4.4K byte monitor, not user accessible.
Size: 25.9 x 28.1 x 7.1 cm (10.2 x 15.0 x 2.5 in.)
Weight: Less than 2.3 kg (5 lbs)

## Technology

CPU Chip (NMOS): TMS9900 16-bit microprocessor. Minicomputer instruction set including hardware multiply and divide. Architecture with 16 general registers. Can address up to 64K bytes of memory. 4 interrupt lines. Video Display Processor Chip (NMOS): Controls display memory and generates composite video signal. 24 lines of 32 characters with 8 x 8 dot resolution. Provides sixteen colors; white, gray, magenta, light yellow, yellow, light red, medium red, dark red, cyan, light blue, blue, light green, medium green, dark green, black, transparent. Provides 32 sets of 8 characters each with different foreground/background colors. Addresses up to 16K bytes of RAM for CPU or display.
Sound Controller Chip ($I^2L$): 3 voices with 5 octave musical resolution. 15 bit programmable noise source. 100 mW audio drive with 30 db control in 2 db steps. *Solid State Software*™ Command Modules. Up to 30K bytes PMOS ROM. Up to 8K bytes NMOS ROM. Simple plug-in module.

# Accessories

## Peripheral Expansion System

Lets you start simple, then gradually build up a sophisticated system by plugging in additional hardware cards. It centralizes most of your hardware in one place, eliminating extra cables and clutter. Accommodates the disk memory system, RS-232 Interface, memory expansion option, and more.

Disk Memory System: Stores additional information that you wish to keep and refer to at a later time. It consists of the TI Disk Drive Controller and from 1 to 3 Disk Memory Drives. Handles variable length records, as well as sequential and relative files. Free disk space is automatically reassigned for file allocation.

Comes with a pre-programmed Command Module that supplies disk utilities and file maintenance commands. Up to 90K bytes of information may be stored on each single-sided diskette — double-sided drives allow 180K bytes per disk.

RS-232 Card: The RS-232 Interface Card, with up to two serial ports, lets you hook up to a wide range of serially formatted accessories. It also has one parallel port to utilize a printer.

Memory Expansion Card: Increases the Home Computer's random access memory (RAM) from 16K bytes to 48K bytes. It allows you to run more complicated programs and solve complex problems faster.

P-Code Card: Allows the computer to access the UCSD p-System* and a variety of programming languages, including UCSD Pascal*, BASIC, and Pilot. High-level languages are compiled to an intermediate language called pseudo-code or p-code. The P-Code Card interprets the p-code instructions, which are then executed by the computer. Solid state implementation of operating system software allows a single drive system to execute Pascal programs and a dual drive system to develop programs.

## Telephone Coupler (Modem)

Allows you to send and receive messages, data, and entire programs through a standard telephone. Lets you communicate with similarly equipped computers at remote locations, and access data bases and software services. Uses the RS-232 Interface and Terminal Emulator II packages.

## *Solid State Speech*™ Synthesizer

Reproduces human speech electronically — and accurately. Plugs directly into the Home Computer's built-in connectors without external cables. Lets it communicate verbally, ideal for children too young to read the screen. Requires Speech Editor, Terminal Emulator II or other customized command modules that use speech (sold separately). The Terminal Emulator II Command Module provides text-to-speech capability whereby you can listen to data base information or have the computer say anything within your own program.

## Wired Remote Controllers

Let you move objects on screen. Each unit includes an eight-position remote control with top-mounted action button. An important accessory every serious game-player should have.

## 10″ Color Monitor

Gives you excellent color resolution (192 x 256 dot density) and a display format for 24 lines of 32 characters. Because our Home Computer connects directly to the video input on the Color Monitor, it eliminates any interference and tuner distortion. You get a picture quality that is far superior to that of normal TV reception.

*Trademark of the Regents of the University of California, San Diego.

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## Limited Warranty

The Texas Instruments TI-99/4A Home Computer Model PHC 004A is covered by a 90-day limited warranty against defects in materials and workmanship. This warranty covers only the hardware portion of the Home Computer. See *User's Reference Guide* for complete warranty text. TI cannot and does not warrant that the TI Home Computer programs and book materials will be free from error or will meet the specific requirements of the user. The user assumes complete responsibility for any decisions made or actions taken based on information obtained using these programs and book materials, which are made available solely on an "as-is" basis (see owner's manual).