Full 128 Character Roman Set

High Resolution Display
- **Inverse video, half-bright, underline, blinking**
- **Plug-in character sets**

Forms Mode and Full Editing Capability
- **Character/Block mode**
- **Up to 11 kilobytes of display memory**
- **Field checking**
- **Auto Data Logging**

Choice of Communications Capability
- **RS232C or 20mA DC current loop**
- **Point-to-point, asynchronous**
- **Asynchronous or synchronous polling option with daisy-chained sharing of communications resources**

Modular Architecture, Microprocessor Controlled

Hard Copy Interface

High Reliability, Serviceability
- **Self-Test**

User-Defined Soft Keys

Fully Integrated Mass Storage (Optional)
- **Dual Mini-Cartridges**
- **Up to 110 kilobytes of storage each**

HIGH RESOLUTION DISPLAY

The 2645A displays 1,920 characters in a 24 line by 80 column format on a 5 inch by 10 inch display. A 9 x 15 dot character cell allows large characters to be represented accurately. Wide character and line separation, inverse video, and optional plug-in character sets with underlining, half-bright, and blinking are features designed to increase clarity and ease sessions at the terminal.

FORMS MODE AND FULL EDITING CAPABILITY

The 2645A transmits character-by-character as an interactive terminal or is capable of operating on a block at a time. Local editing allows the terminal user to verify and modify data before transmission to the computer. Standard features include character or line insert and delete, cursor sensing/positioning, numeric/alpha field checking, protected fields, transmit-only fields, tabulation, movable margins, character wraparound, automatic data logging, and positional display lock. Page select and scrolling can be used with up to 11 kilobytes of display memory for off-screen storage. Optional math, line drawing and user-defined character sets enhance display presentation.
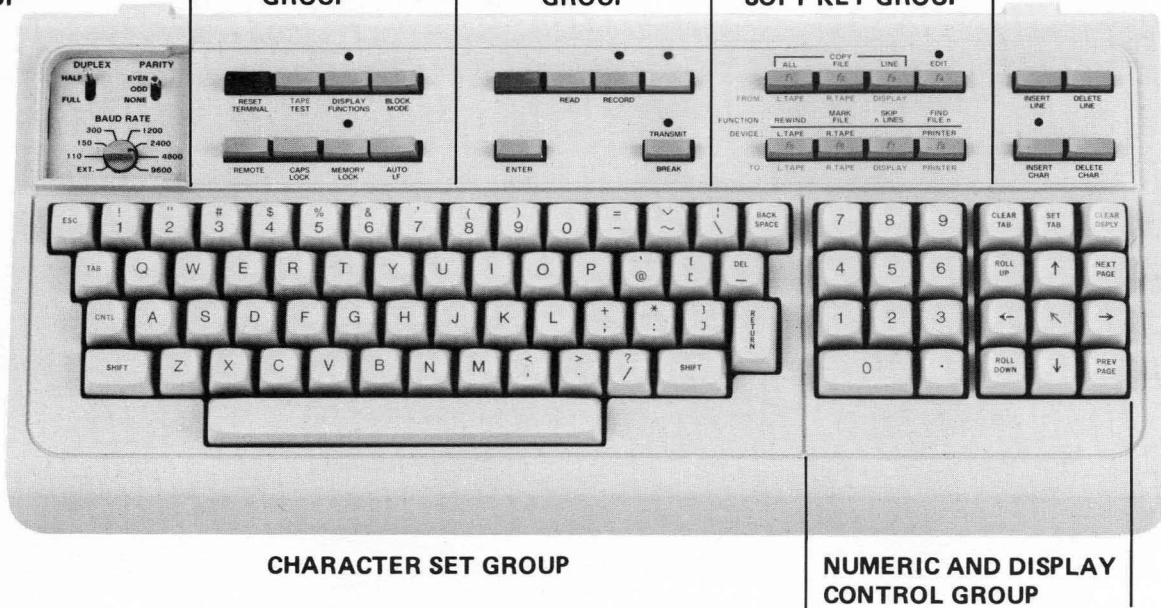
2645A Multi-Task Keyboard

Keyboard group labels: COMMUNICATIONS GROUP · CONTROL GROUP · DATA PATH GROUP · USER-DEFINED SOFT KEY GROUP · EDIT GROUP · CHARACTER SET GROUP · NUMERIC AND DISPLAY CONTROL GROUP

CHOICE OF COMMUNICATIONS CAPABILITY

The standard 2645A operates at up to 9600 baud with handshake and offers asynchronous point-to-point data communications using an RS232C interface. Optional capabilities include: both asynchronous and synchronous polling for multipoint communications which allow multiple terminals to share communications resources or 20mA DC current loop; split input/output speed and custom baud rates.

MODULAR ARCHITECTURE, MICROPROCESSOR CONTROLLED

Microprocessor implementation and modular architecture produce a terminal with a wide range of capabilities; and, as needs grow, the potential for flexibility adding such features as integrated tape units, alternate communications protocols, additional display memory, printer interfaces and display enhancements.
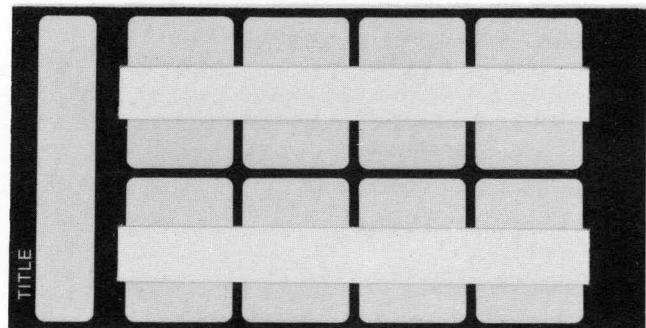
HARD-COPY INTERFACE

A wide variety of hard-copy devices can be accommodated via an optional RS232C serial interface, HP video output interface, or HP printer compatible parallel interface. Commands to print data can be initiated either locally from the terminal keyboard or remotely from a computer.

HIGH RELIABILITY, SERVICEABILITY

Every element of the 2645A terminal has been engineered for high reliability and ease of service. The optional Mini Cartridge represents a significant reliability advance for low cost mass storage. The 2645A's Self-Test features give the user an instant diagnostic test that the terminal, including its data communications area, is operating properly.

USER-DEFINED SOFT KEYS

Each of the 8 special function keys can be easily used to issue a user-defined string of up to 80 characters or several control sequences stored in the 2645A. This feature allows the keyboard to adapt to specialized applications, and can considerably simplify use of the keyboard and result in greater efficiency — each soft key performs the operations of several key sequences. For example, the soft keys could issue frequently used programming sequences, search for files, aid forms construction for data entry, dynamically configure the terminal, or issue instructions to the operator/computer/or both.

USER-LABELED KEY TEMPLATE

FORM #4: Vendor Voucher Summary

Vendor Name	Address	City	State	Zip

Voucher Date	Units	Purchase And Assembly Details	Coding	Cost
				.
				.
				.
				.
				.

| HEWLETT-PACKARD | INITIATED BY: | | DATE: |

When Form is Completed PRESS the ENTER Key
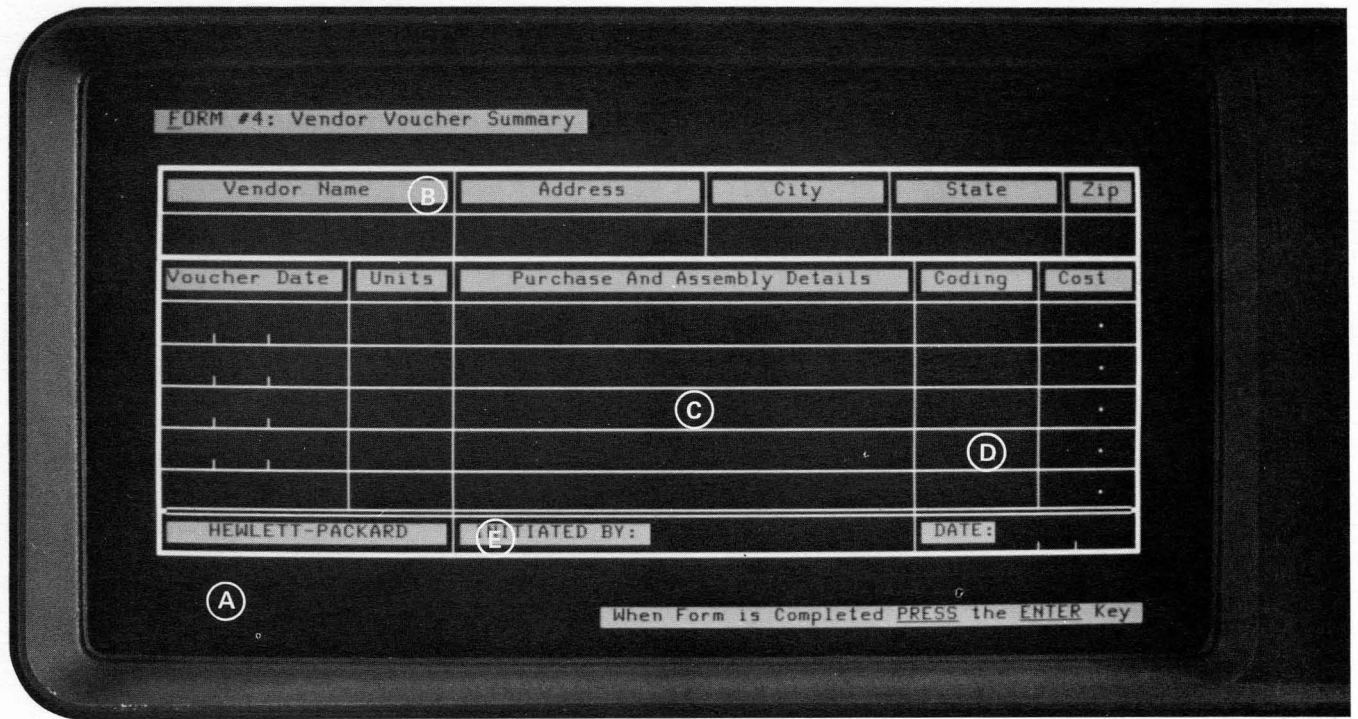
(A) Multi-page display memory: The 2645A high-resolution display can utilize up to 11,000 bytes of display memory for storing lengthy forms, programs or text. Information can be retrieved by scrolling forward or backward a line or a page at a time.

(B) Protected fields: Any combination of character positions can be protected against being modified — the cursor automatically forwards from one unprotected field to the next to help the user enter information in the right places.

(C) Form fitting: The 2645's line drawing set can be used to create display forms that closely match printed forms resulting in fewer chances for operator error.

(D) Field checking: Numeric-only and alpha-only field checks can be dynamically performed to find errors when they are made. Rapid cursor positioning and insert and delete editing speed error correction.

(E) Display enhancements: Specific fields can be brought to the user's attention by using any of the 16 possible combinations of inverse video, optional blinking, underline and half-bright to emphasize areas of the display.

Plug-in character sets: There is the capacity to use up to four 128-character sets concurrently — switchable on a character-by-character basis — the Roman set including displayable control codes for program debugging; the line drawing set for forms drawing and limited graphics capability; the math set with frequently used math symbols and Greek characters; or user-defined character sets.

And more:

- Character wraparound — when inserted text takes up more than 80 columns.

- Adjustable margins — for variable column width/multiple columns/split screen.

- Transmit-only fields — fields that are both protected and transmitted.

- Memory lock — to freeze a number of lines at the top of the display.

- Tab/Back Tab — line independent tabulation from field to field.

- Automatic data logging — stores information as it leaves the display automatically on the optional tape cartridges or optional printer.
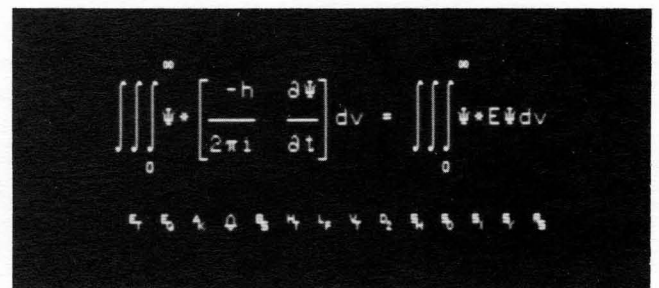
FULLY INTEGRATED MASS STORAGE (Option)

Benefits of Mass Storage: Many operations normally requiring connection to a computer system can now be done off-line with the 2645A. Optional, dual in-board cartridge tape units allow batching of information, and add extensive stand-alone capabilities which can significantly reduce user time; conserve both computer and communications resources; provide a tape backup; and very importantly, allow the terminal to keep on working even when a computer is unavailable.
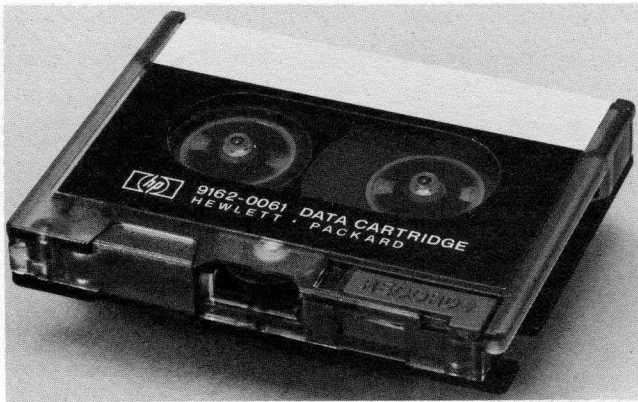
MINI CARTRIDGE

Mini Cartridge: Highly reliable, interchangeable Mini Cartridges each provide the capacity for many hours of typing, up to 110,000 characters of storage formatted in variable length records and files. The tape units feature rapid data transfer and bi-directional high-speed search to access any file in seconds. The Mini Cartridge is ideally suited for storing data, forms, programs or text, and is an excellent substitute for paper tape.

Easy Operation. Single keys for the most frequently performed functions, and color-coded prefix keys to exercise the 2645A's full capabilities, suit the 2645A to a wide variety of users and applications. Gold and green prefix keys provide full access to the 2645A's multiple data paths to allow information to be moved between any of the functional units of the display station — cartridges, display, keyboard, printer, and data communications interface, and the tape units are fully controllable from either keyboard or computer.

STANDALONE/OFFLINE:

1. Input: forms, text

2. User input from keyboard

3. Information output

4. Later: on-line, batch transmission to computer from the terminal

COMPUTER
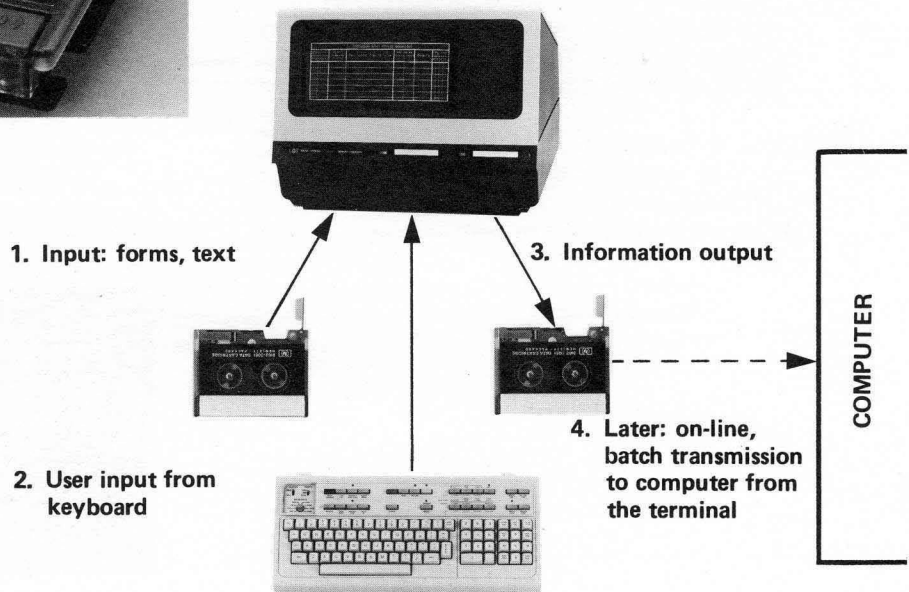
2645A SPECIFICATIONS

GENERAL

Screen Size: 127 mm (5 inches) X 254 mm (10 inches)

Screen Capacity: 24 lines X 80 columns (1,920 character)

Character Generation: 7 X 9 enhanced dot matrix; 9 X 15 dot character cell; non-interlaced raster scan

Character Size: 2.46 mm (.097 inches) X 3.175 mm (.125 inches)

Character Set: 128 character Roman set

Cursor: Blinking-Underline

Display Modes: White on Black; Black on White (Inverse Video)

Refresh Rate: 60 Hz (50 Hz optional)

Tube Phosphor: P4

Implosion Protection: Bonded implosion panel

Memory: MOS, ROM: 22K bytes (program); RAM; std. 4096 bytes; 12 kilobytes max. (16K including max. data comm. buffer)

Keyboard: Detachable, full ASCII code keyboard, user-defined soft keys, and 18 additional control and editing keys; ten-key numeric pad; cursor pad; multi-speed auto-repeat, N-key roll-over; 1.22m. (4 foot cable).

Cartridge Tape (option): Two mechanisms

Read/Write Speed: 10 ips

Search/Rewind Speed: 60 ips

Recording: 800 bpi

Mini Cartridge: 110 kilobyte capacity (maximum per cartridge)

DATA COMMUNICATIONS

Data Rate: 110, 150, 300, 1200, 2400, 4800, 9600 baud, and external. Switch selectable. (110 selects two stop bits). Operation above 2400 baud may require nulls or handshake protocol to insure data integrity.

Standard Asynchronous Communications Interface: EIA standard RS232C; fully compatible with Bell 103A modems; compatible with Bell 202C/D/S/T modems. Choice of main channel or reverse channel line turn-around for half duplex operation.

Optional Communications Interfaces (see 13260A/B/C/D Communications data sheet for details):
- Current loop, split-speed, custom baud rates
- Asynchronous Multipoint Communications
- Synchronous Multipoint Communications

Transmission Modes: Full or half-duplex, asynchronous

Operating Modes: On-Line; Off-line; Character, Block

Parity: Switch selectable; Even, Odd, None

ENVIRONMENTAL CONDITIONS

Temperature, Free Space Ambient:
Non-Operating: −40 to +75°C (−40 to +167°F)
Operating: 0 to 55°C (+32 to +131°F)

Temperature, Free Space Ambient (Tape):
Non-Operating: −10 to +60°C (−15 to +140°F)
Operating: 5 to +40°C (+41 to +104°F)

Humidity: 5 to 95% (non-condensing)

Humidity (Tape): 20 to 80% (non-condensing)

Altitude:
Non-Operating: Sea level to 7620 metres (25,000 feet)
Operating: Sea level to 4572 metres (15,000 feet)

Vibration and Shock (Type tested to qualify for normal shipping and handling):
Vibration: .37 mm (0.012") pp, 10 to 55 Hz, 3 axis
Shock: 30g, 11ms, 1/2 sine

PHYSICAL SPECIFICATIONS

Display Monitor Weight: 19.6kg (43 pounds)

Keyboard Weight: 3.2kg (7 pounds)

Display Monitor Dimensions: 444 mmW X 457 mmD X 342 mmH (17.5"W X 18"D X 13.5"H) (648 mmD (25.5"D) including keyboard)

Keyboard Dimensions: 444 mmW X 216 mmD X 90 mmH (17.5"W X 8.5"D X 3.5"H)

POWER REQUIREMENTS

Input Voltage: 115 (+10%−23%) at 60 Hz (±0.2%)
230 (+10%−15%) at 50 Hz (±0.2%)

Power Consumption: 85W to 140W max.

PRODUCT SAFETY

Product meets:
UL Requirements for: EDP equipment
office appliances
teaching equipment
CSA Requirements for: EDP equipment

U.L. and CSA labels are applied to equipment shipped to the U.S. and Canada.

PRODUCT SUPPORT

HP SYSTEMS SUPPORT

Refer to appropriate HP system data sheet for use and support of 2645A in systems. If this product is used in a customer-assembled system, the overall operational responsibility of the system rests with the customer.

INSTALLATION

All product preparation can be performed by the owner/user. Refer to reference manual supplied with unit for detailed instructions. HP assistance is provided for installation upon request and at prevailing rates.

HARDWARE SUPPLIED

2645A Display Station

DOCUMENTATION SUPPLIED

2645A Display Station User's Manual (02645-90001)
2645A Reference Manual (02645-90005)

ORDERING INFORMATION

PRODUCT NUMBER	DESCRIPTION	PRICE
2645A	DISPLAY STATION Block or character mode, 128 character Roman set, 4096 bytes of RAM display memory, optionally expandable to 12K bytes, inverse video, editing features, 8 user-defined soft keys, 110-9600 baud, RS232C, 7 option slots. *Note: No interface cable included.*	$3,500
–007	Integrated Dual Cartridge Tape — Mini Data Station Adds two built-in cartridge tape transports and electronics to provide Mini Data Station capabilities (requires 2 option slots). Includes device support firmware.	1,600
–013	5 Mini Cartridges	90
–015	50 Hertz, 230V	0
–016	50 Hertz, 115V	0
–030	Delete Standard Asynchronous Communications *Note: One of the 13260 data communications accessories must be ordered when option 030 is ordered.*	–160
ACCESSORIES		
13231A	DISPLAY ENHANCEMENTS Adds blinking, half-bright and underline; 64 character Line Drawing Set, provides for addition of two 128 character sets (requires 1 option slot).	250
–201	64 Character Mathematic Symbol Set Adds display of integral signs, Greek letters, etc.	100
–203	Large Character Set Adds display of character segments for combination into large characters.	150
13234A	TERMINAL MEMORY MODULE (+4K) Adds 4096 bytes of RAM memory (requires 1 option slot).	300
13236B	INTEGRATED DUAL CARTRIDGE TAPE UPGRADE KIT Field upgrade for adding two built-in cartridge tape transports and electronics to provide Mini Data Station capabilities (requires 2 option slots). Includes installation. *Note: 13261A also required.*	1,550
13238A	TERMINAL DUPLEX REGISTER Adds support for HP 9866A or HP 9871A Line Printer (requires 1 option slot). No interface cable included. *Note: 13261A also required on tapeless 2645A's.*	100
13250B	SERIAL PRINTER INTERFACE Adds interface for connecting RS232C serial printing devices (requires 1 option slot). No interface cable included. *Note: 13261A also required on tapeless 2645A's.*	300
13260A	STANDARD ASYNCHRONOUS COMMUNICATIONS Upgrade which provides standard RS232C communications interface for the 2645A. *Note: This is identical to the capability deleted by 2645A-030.*	160
13260B	EXTENDED ASYNCHRONOUS COMMUNICATIONS Provides either an RS232C or 20mA current loop communication interface for the 2645A. Has split speed and custom baud rates. *Note: 2645A-030 must be ordered to delete the Standard Asynchronous interface.*	325
13260C	ASYNCHRONOUS MULTIPOINT COMMUNICATIONS Provides asynchronous multipoint communications interface for the 2645A allowing daisy chained line sharing. *Note: 2645A-030 must be ordered to delete the Standard Asynchronous interface.*	435
–001	Add Monitor Mode Capability.	50
13260D	SYNCHRONOUS MULTIPOINT COMMUNICATIONS Provides synchronous multipoint communications interface for the 2645A allowing daisy chained line sharing *Note: 2645A-030 must be ordered to delete the Standard Asynchronous interface.*	450
–001	Add Monitor Mode Capability	50
13261A	DEVICE SUPPORT FIRMWARE Required by tapeless 2645A's to support printers, tape upgrade or other I/O devices.	170
CABLES		
13232C	RS232C Cable, female, 5 ft.	50
13232F	Current Loop Connector Kit, four wire, 5 ft.	60
13232M	European Modem Cable, male RS232C, 15 ft.	75
13232N	Modem Cable, male RS232C, 15 ft.	75
13232P	Modem/Multipoint Cable, male RS232C, male multipoint connector, 30 ft. total	115
13232Q	Multipoint Cable, male multipoint, female multipoint connector, 30 ft. total	90
13232R	Multipoint Extension Cable, male multipoint/female multipoint connector, 100 ft.	75
13232T	Power Protect Multipoint Cable, male multipoint connector with relays/female multipoint connector, 30 ft. total	185
13232U	Modem Bypass Cable, female RS232C/female RS232C, 5 ft.	50
13246A, 13246B, 13349A	Printer subsystems for the HP 9866A/B/9871A printers are available for the 2645A	3,475 3,675 3,925
9162-0061	MINI CARTRIDGE (purchased from Corporate Parts Center)	

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