



**HEWLETT
PACKARD**

HP 2635B Printing Terminal

FEATURES

- High throughput
- Printing versatility
- Forms handling flexibility
- User convenience features
 - typewriter style keyboard
 - configuration keys
 - numeric keypad
 - long life print head
 - cartridge ribbon
 - display functions mode
 - self test
 - view key
- RS232 interface
- High reliability
- High static immunity

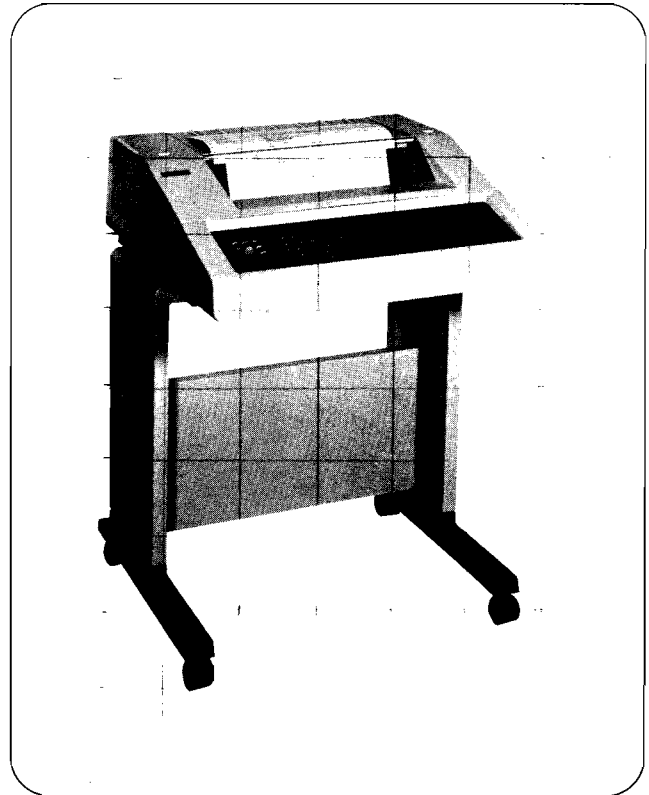
High Throughput

The HP 2635B has a peak print speed of 180 characters per second. Print speed, however, is only one of several factors which affect throughput. The HP 2635B optimizes throughput by printing bi-directionally, suppressing leading and trailing blanks, skipping over embedded blanks and returning the carriage at high speed. The 2635B utilizes an HP-developed CMOS/SOS micro-processor to optimize printing functions, data manipulation, and other control functions.

Printing Versatility

The 2635B utilizes a high resolution four-of-seven wide by nine high dot matrix character cell for crisp, clear character formation. The nine high matrix allows the printing of true descenders on lower case characters and true underlining. The standard 128 USASCII character set allows upper case and lower case, as well as control characters to be printed. In addition, an optional high density character set (printed at 90 CPS) is available for applications requiring higher quality print.

To further enhance printing versatility, the 2635B has eight selectable print pitches from 4.16 characters per inch for titles and headings to 16.67 characters per inch for compressed print which can save paper (132



characters per line on 8½ inch wide paper). Twelve programmable line spacings from 1 to 72 lines per inch provide even further flexibility and allow printing of superscripts and subscripts.

Forms Handling Flexibility

The 2635B employs an impact printing technique allowing the use of single or multi-part forms. The 2635B will typically print on 6 part forms up to .43 mm (.017") thick; however, forms and card stock should be tested for satisfactory feeding, registration and print quality, as paper quality can vary significantly. Forms are reliably advanced by adjustable tractors which accommodate form widths as narrow as 31 mm (1.22") perforation to perforation and as wide as 400 mm (15.75") edge to edge.

Page length, defined as the length of the paper being used, can be program selected for any length up to 255 lines. Text length, defined as the maximum printable area on the page, defaults to one inch less

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2635B

PRINT SAMPLE

16.7
12.5
10.0
8.33

HIGH DENSITY PRINT

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890-=[\|^_!@#%&*()
+~`{|},.<.>?;:

8.33 CHAR/INCH
6.25 CHAR/INCH
5.0 CHAR/INCH
4.16 CHAR/INCH

than page length or can be program selected for any length less than page length. When automatic perforation skip mode is programmably selected, the 2635B will advance one line until it exceeds the text length, then will automatically skip to the next logical top of form.

Forms may also be advanced using the 2635B's 16 channel electronic vertical format unit. The channel definitions are computed and set based upon the selected page and text length. The channels are computed as follows:

		<i>Line Number</i>
• Channel 1	top of next form (TOF)	1 (first line of text)
• Channel 2	bottom of current text	last line of text
• Channel 3	next single space	1,2,3,4... BOT
• Channel 4	next double space	1,3,5,7... BOT
• Channel 5	next triple space	1,4,7,10... BOT
• Channel 6	next half form	1, (BOT/2) -1
• Channel 7	next quarter form	1, (BOT/4) -1 (BOT/2) -1, [3 (BOT/4) -1]
• Channel 8	next tenth space	1,11,21,31... BOT
• Channel 9	bottom of current text (BOT)	last line of text
• Channel 10	bottom of text minus one line	line prior to last line of text
• Channel 11	top of form minus one line	line prior to first line of text
• Channel 12	top of next form (TOF)	1
• Channel 13	next seventh line	1,8,15,22... BOT
• Channel 14	next sixth line	1,7,13,19... BOT
• Channel 15	next fifth line	1,6,11,16... BOT
• Channel 16	next fourth line	1,5,9,13... BOT

Tabs (*horizontal and vertical*) and left and right margins may be set, cleared, and accessed from the keyboard or through escape sequences embedded in the data stream. These functions may be set at the current head position (*or current line*), or they may be set at a specified column or line through absolute addressing.

User Convenience

The HP 2635B terminal incorporates a full ASCII keyboard for high speed alphanumeric input. The keys are located in positions which are compatible with office typewriting equipment. This enables users to become proficient more quickly. The keyboard utilizes highly reliable contact switches. The contacts

are gold inlaid for positive switching action. The keycaps are two color molded for high resolution legends. The keyboard is arranged into separate groupings for control keys, alphanumeric and data entry.

Twelve of the fifteen keys on the top row of the ASCII keyboard serve the dual purpose of alphanumeric entry and configuration parameter entry. When the 2635B is in configuration mode, the user can easily set forms and printing parameters using a few straightforward keystrokes. The following functions can be controlled in configuration mode:

- Set/Clear tabs (*horizontal and vertical*)
- Set/Release/Clear Margins
- Set Page and Text Length
- Auto Perforation Skip On/Off
- Select Print Pitch
- Select Vertical Line Spacing
- Tab Skip Mode On/Off (*in tab skip mode horizontal tabs are transmitted to the CPU as the appropriate number of spaces.*)

The 15 key numeric pad is standard on the HP 2635B. The numeric pad contains keys for entering numerals (0 through 9) arranged in the standard 10 key adding machine locations. Also included are "TAB", "MINUS", "ENTER", "DECIMAL POINT", and "COMMA" keys. The zero (0) key is extra wide, and the enter key is positioned to the right of the numeral keys to facilitate high speed numeric data entry similar to a 10 key adding machine.

Several other features provide convenience for the user. First, the cartridge ribbon is easily replaced without need to touch the ribbon surface. The cartridge contains approximately 60 yards of ribbon and employs a mobius loop, which continually turns the ribbon over to help lengthen the time between cartridge changes. This results in an average ribbon life of 15 million characters (*about 3 months of normal use*).

A switch detects a paper out condition. When paper out is detected, printing is halted and an audible

alarm is sounded. The terminal will not resume printing as long as the paper out condition exists. No characters in the data stream are lost when the paper out condition is detected, and the terminal is being used in an HP recommended configuration.

The display functions feature provides assistance to programmers during software development. With display functions on, embedded control sequences are printed rather than executed. Carriage return, On-line, Off-line and display functions off are exceptions; they are printed and executed. This feature may be turned on and off via a control panel switch or an embedded escape sequence.

Self test capability allows the user to verify proper operation of the 2635B and is accessible through a control panel button or an embedded escape sequence.

Automatic view mode allows the user to see the last character printed by moving the print head to the right after a keyboard entry. This mode can be turned on or off by an escape sequence which is embedded in the data stream or entered from the keyboard. Alternatively, the print head may be moved manually, using the VIEW key on the 2635B keyboard.

RS-232 Interface

The standard interface is full duplex RS232C/CCITT V.24; it incorporates the following features:

- ENQ/ACK protocol
- X-ON/X-OFF (DC1/DC3) protocol
- Printer Busy (buffer full) signal
- 256 character buffer
- 103 and 212 type modem control
- Baud rates selectable from front panel: 110, 150, 300, 1200, 2400, EXT
- In EXT position, 15 baud rates up to 9600 baud are selectable on the interface card.
- Odd, even or no parity
- 25 pin EIA RS232 type connector

An RS232C interface, with terminal clock outputs and 30 position PC edge connector, is also available.

High Reliability

Since the first members of the 2630 Family were introduced over two years ago, extensive customer usage has verified the products' high reliability. The 2635B incorporates all the reliability and simplicity of the existing 2630 Family products, plus electronic and mechanical modifications designed to further enhance reliability.

In addition, the 2635B incorporates extensive internal grounding to provide high immunity to electrostatic discharge. The printer can withstand discharges of 15,000 volts* without losing data.

*This product was tested by discharging a 300 picofarad capacitor, charged to -15,000 volts, through a 500 ohm resistor to the product, with the electrostatic source grounded to the safety ground of the product's power plug. No guarantee is made or implied that such a discharge would not affect the CPU to which the printer is connected.

SPECIFICATIONS

Printing

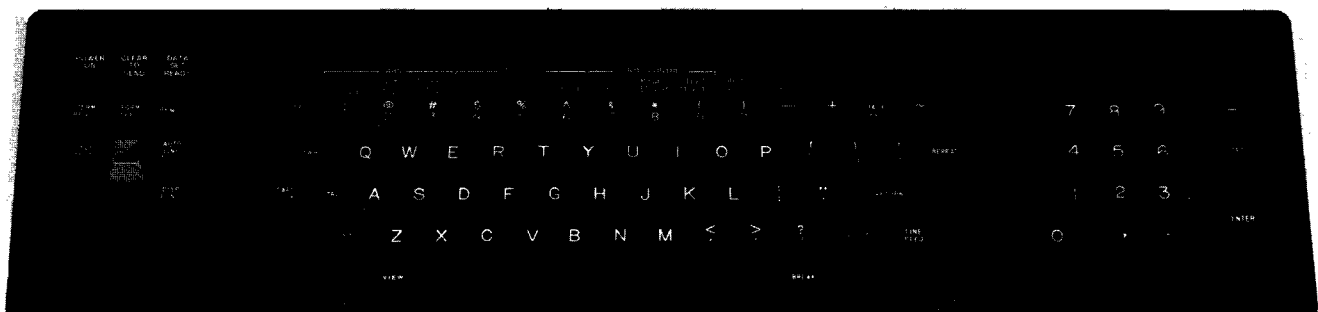
- technique: 7 x 9 dot matrix impact
 - automatic underlining
 - speed: 180 characters per second (*instantaneous*)
 - throughput (*see figure 1*)
- | | |
|------------------------------|--------------------------|
| • print pitch (CPI) | line length (characters) |
| 16.7 standard character cell | 227 |
| 12.5 (printed at 180 CPS) | 170 |
| 10.0 | 136 |
| 8.33 | 113 |
| 8.33 expanded character cell | 113 |
| 6.25 (printed at 45 CPS) | 85 |
| 5.0 | 68 |
| 4.16 | 56 |

Character Set

- 128 USASCII (*standard*)

Forms Handling

- forms tractors
- 16 channel computed VFC
- horizontal and vertical tabbing



- programmable left and right margins
- programmable page and text length
- automatic perforation skip
- variable vertical line spacing: 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, or 72 lines per inch.

Keyboard

- full ASCII keyboard
- typewriter compatible key locations
- caps lock and repeat keys
- enhanced 2-key roll-over
- contact type action, gold inlaid contacts
- 15 key numeric pad
- 12 configuration keys
 - set, clear, and clear all tabs (*horizontal and vertical*)
 - set left and right margins
 - margin release, margin clear
 - select vertical line spacing
 - select page and text length
 - select print pitch
 - automatic perforation skip on/off
 - tab skip mode on/off
- view key

Control and Indicators

Control Pad

- terminal reset
- remote/local
- self test
- auto line feed
- display functions
- form feed
- configure

Serial Interface Controls

- baud rate
- parity
- local copy

Indicators

- power on
- data set ready
- clear to send
- configuration mode on/off
- perforation mode on/off
- tab skip mode on/off

Rear I/O Adaptor Panel

- Handshake protocol selection switches

Paper Advance Knob

Forms Thickness Lever

Forms Specifications

Paper Widths

- maximum width: 400 mm (15.75") edge to edge
- minimum width: 31 mm (1.22") perforation to perforation

Paper Weights

- single part: 20 to 100 pound
- Multi-part**: 12 pound; first and subsequent copies up to six total copies. 7 pound carbon, .43 mm (.017") maximum pack thickness.

Environmental Conditions

Temperature, free space ambient:

–40 to 75C (–40 to 167F) non-operating
10 to 40C (50 to 104F) operation

Humidity:

10% to 90% RH (*non-condensing*)**

**Multi-part forms and card stock should be tested for satisfactory feeding, registration and print quality. If the printer is to be operated under conditions approaching the extremes of the humidity specification, all media should be tested to insure proper handling and stacking.

Power Requirements

Input Voltage:

100, 120, 220, 240 volts AC (+10%, –12%) selectable from rear panel, 48-66 HZ

Power Consumption:

140 VA maximum non-printing
265 VA maximum printing

Physical Specifications

595 mm (23.1") D x 640 mm (25.2") W x 215 mm (8.5") H

23.5 Kg (56 lb) net weight (*without pedestal*)

31 Kg (72 lb) ship weight, (*without pedestal*)

Safety Compliance

The HP 2635B is listed by Underwriter's Laboratories, Inc. in the following categories with respective guide designation: Electronic Data Processing Equipment (EMRT), Teaching and Instruction Equipment (WYFW), and Office Appliances and Business Equipment (QAOT).

The Canadian Standards Association has certified this printing terminal as Data Processing Equipment.

Finally, this product was designed to meet European Safety and RFI/EMC standards for Electronic Data Processing Equipment effective prior to 1 March, 1980. Any questions concerning regulatory agency compliance should be directed to your Hewlett-Packard Sales Office.

Product Support

System Support:

All programmable features are not supported on all HP systems. Refer to appropriate HP system configuration guide for use and support of the 2635B in systems.

If this product is used in a customer-assembled system, the overall operation responsibility for the system rests with the customer.

Warranty:

Contact your local HP Sales Office for terms and conditions.

Hardware supplied:

HP 2635B Printing Terminal, cartridge ribbon, cleaning brush, 2.5 mm hex key

Documentation supplied:

2635B Operator's manual, reference manual, pocket guide

Available Documentation:

2630B Service manual, 2630 Family Parts and Diagrams manual

with EIA connector and 12.5 foot modem cable. 120 volts, 48-66 HZ.

- 015 220V, 48-66 HZ
- 016 100V, 48-66 HZ
- 017 240V, 48-66 HZ
- 020 Adds high-density USASCII character set
- 051 Same as standard except EIA connector is replaced by 30 position PC edge connector. Cable not included.
- 068 Ribbon starter kit (3 ribbons)
- 715 Service documentation

Installation

In many cases product preparation can be performed by the user. Refer to the Operator's manual supplied for detailed instructions. HP assistance for installation is available upon request and at prevailing rates.

Accessories:

- 26090A Sound abatement cover
- 26093A Paper basket. Cannot be used with 26097A.
- 26097A Stand for 2635B. Includes casters.
 - 002 Add paper catcher.

ORDERING INFORMATION

2635B:

180 character per second printing terminal, 128 USASCII character set, RS232C/CCITT V.24 interface

Operating Supplies

Print head 92154A
Ribbon cartridge 92155A (package of three)

TYPICAL 2635B THROUGHPUT

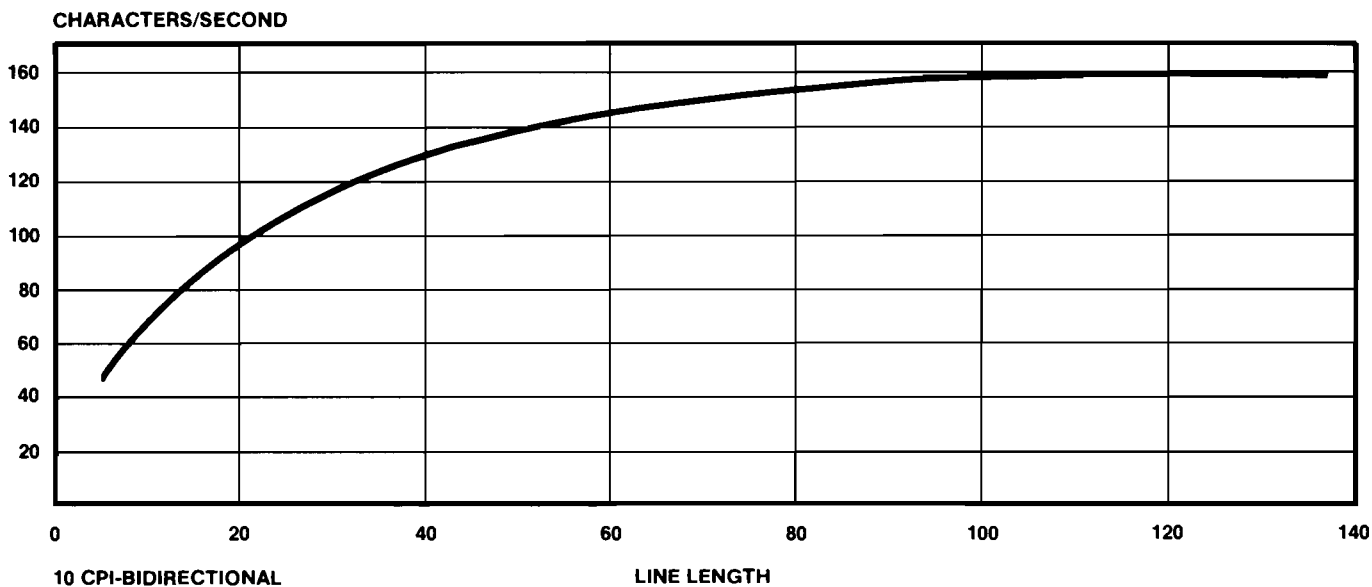


Figure 1





For more information, call your local HP Sales Office or nearest Regional Office: Eastern (301) 258-2000; Midwestern (312) 255-9800; Southern (404) 955-1500; Western (213) 877-1282. Canadian (416) 678-9430. Ask the operator for computer sales. Or write Hewlett-Packard, 1501 Page Mill Road, Palo Alto, CA 94304. In Europe: Hewlett-Packard S.A., 7, rue du Bois-du-Lan, P.O. Box, CH 1217 Meyrin 2, Geneva, Switzerland. In Japan: Yokogawa-Hewlett-Packard Ltd., 29-21, Takaido-Higashi 3-chome, Suginami-ku, Tokyo 168.