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# 1

██████████ **PRODUCT**  
██████████ **INFORMATION**

**A. PERFORMANCE**

Character Formation ..... Dot Matrix (7 x 9)  
 Print Direction ..... Bi-directional (left-to-right and right-to-left)  
 Print Speed ..... Up to 180 characters per second

Line Feed Rate

6 LPI ..... 30 msec/line  
 8 LPI ..... 24 msec/line

Form Feed Rate ..... 176.6 mm/sec (6.95 in/sec)

Line Length ..... Up to 136 characters in 10 cpi mode

Print Modes ..... Normal (10 cpi)  
   Expanded (5 cpi)  
   Compressed (16.7 cpi)

Copies ..... 1-6 (up to 0.43 mm [0.017 inches] pack thickness)

**Print Speed**

PRINT SPEED: LINE LENGTH: PRINT DENSITY:			
	Speed (CPS)	Line Length (Characters)	Density (CPI)
<b>STANDARD CELL</b>	180	227	16.7
	180	170	12.5
	180	136	10.0
	180	113	8.33
<b>EXPANDED CELL</b>	45	113	8.33
	45	85	6.25
	45	68	5.0
	45	56	4.16

**Vertical Format Control**

NUMBER OF CHANNELS:  
 16 Fixed. The position on the paper is computed based upon page length.  
 16 Programmable. Subject to certain limitations. (Refer to the 2630B Family Reference Manual.)

## B. SAFETY COMPLIANCE

The HP 263XB is Listed by Underwriter's Laboratories, Inc. in the following categories with respective guide designations: Electronic Data Processing Equipment (EMRT), Teaching and Instruction Equipment (WYFW), and Office Appliances and Business Equipment (QAOT).

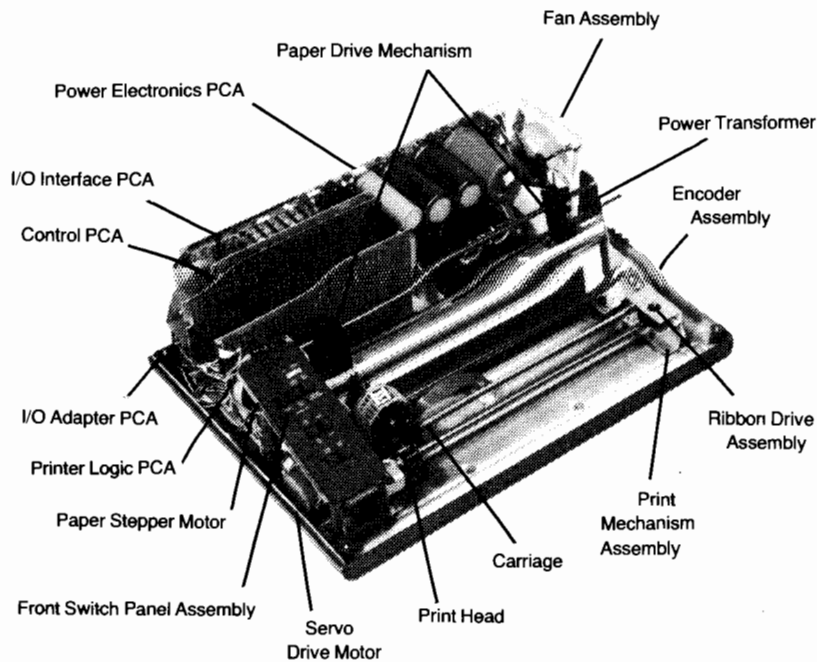
The Canadian Standards Association has certified this printer as Data Processing Equipment.

Finally, this printer was designed to meet most world-wide safety and RFI/EMC standards for Electronic Data Processing Equipment effective prior to 1 December 1979.

## C. PAPER

The HP 2631B will accommodate edge perforated forms varying in width from 400mm (15.75 inches) edge-to-edge to 31mm (1.22 inches) perforation-to-perforation, and will print on 6-part forms of 12-pound paper with 7-pound carbon paper interleaved (up to 0.43mm [0.017 inches] pack thickness). The bottom paper feed slot is recommended for use with multi-part forms to minimize possible forms separation and binding. Multi-part forms and card stock should be tried for satisfactory feeding, registration, and print quality.

## D. 2631B LAYOUT



**E. OPTIONS AVAILABLE**

<b>263XB OPTION</b>	<b>DESCRIPTION</b>
-STD.	RS-232 I/O
-001	Swedish/Finnish
-002	Norwegian/Danish
-003	French
-004	German
-005	U.K.
-006	Spanish
-007	Cyrillic
-008	JASCII/Katakana
-009	Extended Roman
-010	Math
-011	Line Draw
-014	9825A Comp. Char.
-015	220V
-016	100V
-017	240V
-019	Delete USASCII
-020	USASCII High Density
-044	8-bit TTL I/O
-046	HP-IB I/O
-050	Parallel Differential I/O
-051	Serial Edge Connector
-068	Include Ribbons
-210	RTE Subsystem
-214	1000 L-Series Subsystem
-240	264X Subsystem
-242	Replace 02631-60065 Cable with 13242G
-250	HP 250 Tracking Option
-330	HP 300 Tracking Option
-331	Remote Spool
-715	Include Service Documentation
-825	9825 Tracking Option
-835	9835 Tracking Option
-845	9845 Tracking Option
-885	HP 85 Tracking Option
-888	Used and Resold





# 2

## ENVIRONMENTAL/ INSTALLATION/PM

### A. ENVIRONMENTAL

#### Temperature

Operating ..... 10°C to 40°C (50° to 104°F)  
 Non-operating ..... 40° to 75°C (-40° to 167°F)  
 \*\*Relative Humidity ..... 10% to 90% at 40°C

\*\*EXCLUDES PAPER – forms should be tried at high humidity for satisfactory feeding and handling, and at low humidity to determine if static buildup must be eliminated for proper stacking.

### B. PHYSICAL CHARACTERISTICS

Width ..... 640mm (25.2 inches)  
 Depth ..... 470mm (18.5 inches)  
 Height ..... 215mm (8.5 inches)

#### Weight:

Printer, 2631B ..... 23kg (51 pounds)  
 Printer, 2635B ..... 26kg (57 pounds)  
 Pedestal Assembly ..... 24kg (53 pounds)

### Clearance Requirements

Front and Rear ..... Adequate for operator clearance  
 Side ..... 76mm (3 inches)

### C. ELECTRICAL CHARACTERISTICS

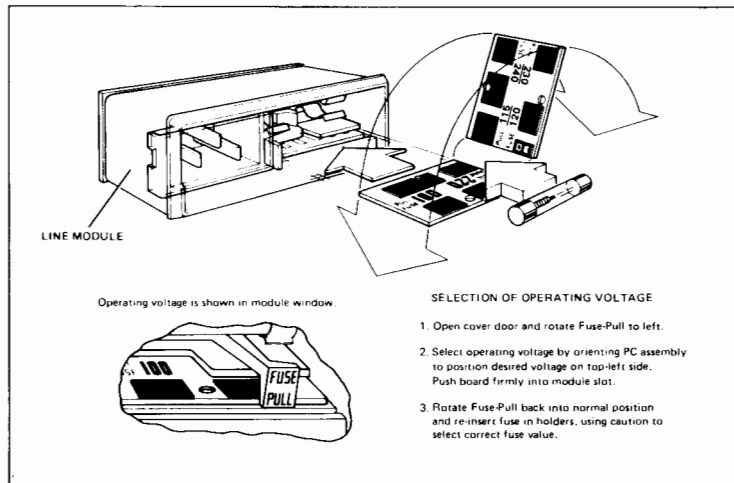
	INPUT (VAC)	RANGE (V)	FREQUENCY TOLERANCE (HZ)
<b>Voltage Source</b> (Selectable)	100	88-110	48-66
	120	105-132	48-66
	220	194-242	48-66
	240	212-264	48-66

Power Cable Length ..... 1.8 meters (6 feet)  
 Power Consumption ..... 265 VA maximum



## D. VOLTAGE SELECTION

### SELECTION OF OPERATING VOLTAGE

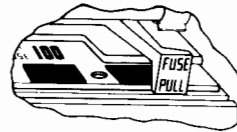


### Power Module

## E. FUSE REPLACEMENT

If it is necessary to change the main line fuse, perform the following steps:

- a. Remove the power cable from the printer.
- b. The power cord receptacle contains the fuse. Uncover the fuse by sliding the cover over the power cable connection.
- c. Pull the fuse release lever and remove the fuse.
- d. Reseat the fuse release lever.
- e. Insert a new fuse:
- f. Slide the fuse cover back over the fuse and reconnect the main power cable.



## F. PREVENTIVE MAINTENANCE

The CE is not required to perform PMs on the 263XB family of printer/terminals. All preventive maintenance should be performed by the operator as outlined in the 263XB Family Operator's Manuals (02631-90917, 02635-90908).

# 3

## CONTROL PANEL CONFIGURATION

### A. CONTROL PANELS (02631-60201 or 02631-60203)

There are two control panels available on the 2631B; parallel (HP-IB, TTL, differential, P/N (02631-60201), and serial (current loop, RS-232, P/N 02631-60203). The print control switch is common to both:

Print Pitch (CPI)				Page Length			
10.0	0	0	0	11.0	3.0	3.5	4.0
5.0	0	1	0	5.0	5.5	6.0	7.0
16.7	1	0	1	8.0	8.5	9.0	10.0
8.3	1	1	1	12.0	14.0	17.0	EXT

0	0	1	1
0	1	0	1

**Lines/Inch**

8	1
6	0

**PERF SKIP**

1	ENABLED
0	DISABLED

ON	▶	= 1
OFF	▶	= 0

The Data Communications switch bank is available only on the serial control panel:

Parity				Baud Rate			
None	0	0	0	2400		200	
Odd	1	0	1		300	150	
Even	1	1	1	110			EXT

0	0	1	1
0	1	0	1

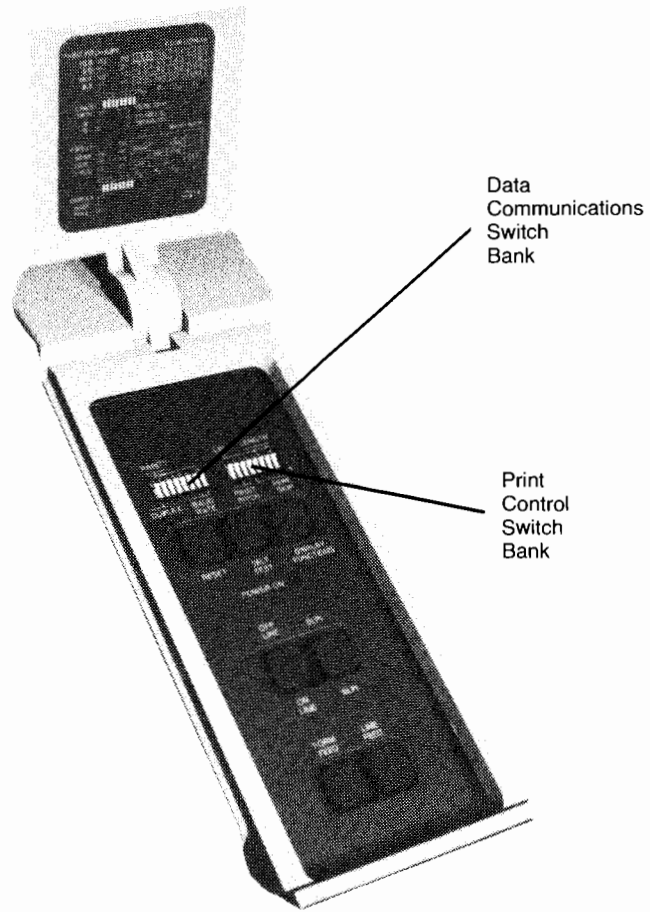
  

**Duplex**

Half	1
Full	0

ON	▶	= 1
OFF	▶	= 0



A serial control panel will work in a parallel unit, but the reverse is not true.

**B. PRINT LOGIC PCA (02631-60225)**

Switch SW1 Configuration, Printer Logic PCA.

SWITCH SW1-X	FUNCTION	SWITCH SETTING
-1	PAGE LENGTH *11-Inch 12-Inch	Open Closed
-2	SPEED TEST *Disable Enable	Open Closed
-3 & -4	ESCAPE SEQUENCE MODE *All Sequences Accepted  Restrict the following sequences: Reset, On-Line, Off-Line, Self Test Page length, programmable VFC, Identify Request, Primary Status, and Mode Status.  Restrict all escape sequence control.  Reserved	S1-3 S1-4  Open Open Closed Open  Open Closed  Closed Closed

\* Factory switch setting (All switches set to open [0] position)

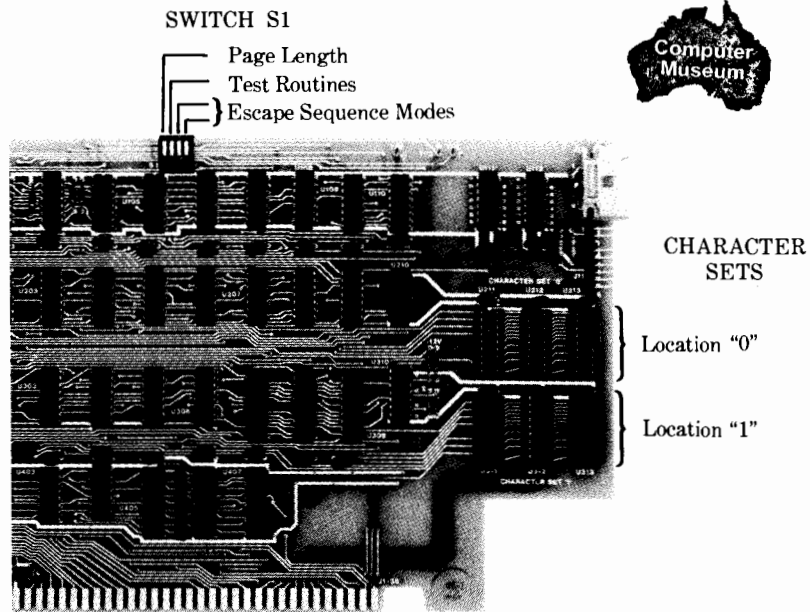


Figure A Print Logic PCA (02631-60225)

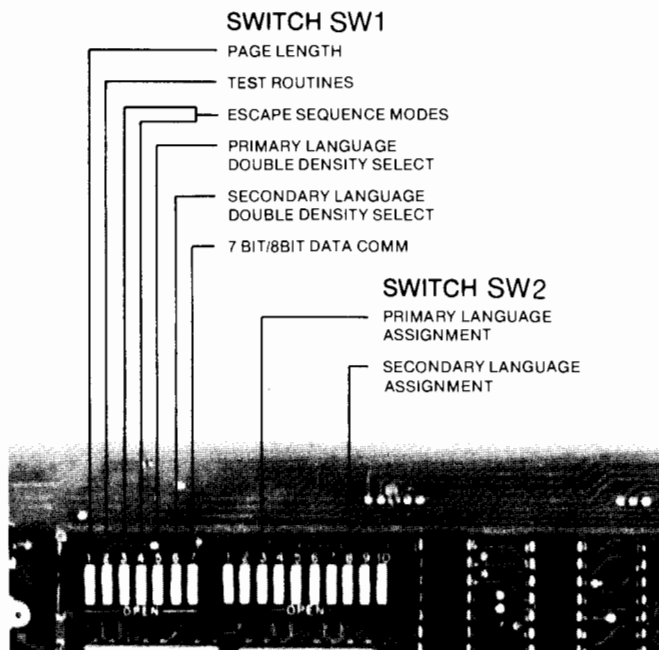
### C. CHARACTER SET INSTALLATION (PRINT LOGIC PCA 02631-60225 ONLY)

The 263XB standard terminals are designed to hold two character sets. Each character set consists of three ROMs, which are installed into one of two character set locations (location "0" or location "1"), on the print logic PCA. Character set location "0" consists of sockets U211, U212, U213. The standard character set configuration, as shipped from the factory, provides a USASCII character set installed in location "0" and no set in location "1". Character set location "0" and "1" are shown in Figure A.

### D. PRINT LOGIC PCA (02631-60601)

#### Switch Configuration (printer Logic PCA, 02631-60601)

Switch SW1, a dip switch array containing 7 rocker switches, controls the printer default for eleven- or twelve-inch paper, high density printing for both primary and secondary character sets, and a selection between default 7 and 8 bit mode. Switch SW2 is a 10-bit switch used to select character sets resident at power-on.



Print Logic PCA (02631-60601)

## Switch SW1 Configuration

SWITCH SW1-X	FUNCTION	SWITCH SETTING
-1	PAGE LENGTH *11-Inch 12-Inch	Open Closed
-2	SPEED TEST *Disable Enable	Open Closed
-3 -4	ESCAPE SEQUENCE MODE *All Sequences Accepted	SW1-3 SW1-4 Open Open
	Restrict the following sequences: Reset, On-Line, Off-Line, Self Test. Page length, programmable VFC, Identify Request, Primary Status, and Mode Status.	Closed Open
	Restrict all escape sequence control.	Open Closed
	(Reserved)	Closed Closed
-5	SELECTS DEFAULT PRINT DENSITY FOR PRIMARY LANGUAGE *Normal High Density	(2631B only)  Closed Open
-6	SELECTS DEFAULT PRINT DENSITY FOR SECONDARY LANGUAGE *Normal High Density	  Closed Open
-7	DATA COMM *7-bit 8-bit	Closed Open

\*Factory switch setting

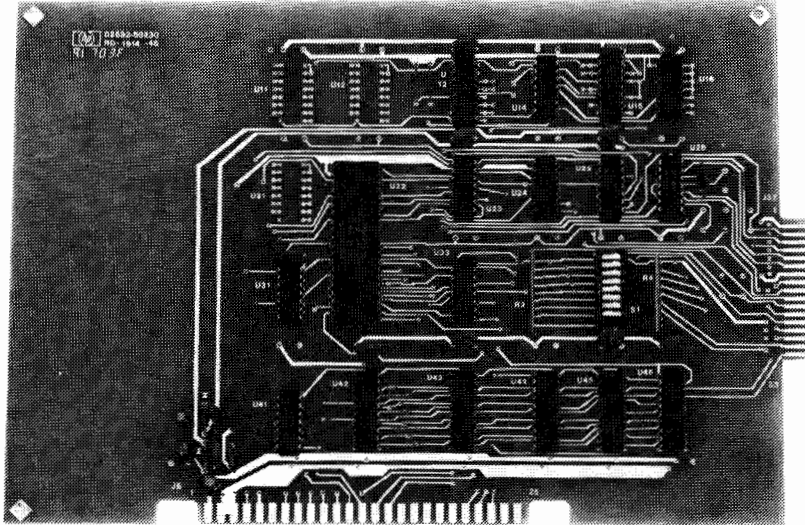
## Switch SW2 Configuration

BINARY CODE Open 0 Closed 1	LANGUAGE
11111	USASCII
11110	Swedish/Finnish
11101	Norwegian/Danish
11100	French: AZERTY non-mute
11011	German
11010	British
11001	Spanish: non-mute
11000	Math Symbols
10111	Cyrillic (2631B only)
10110	Japanese ASCII
10101	Katakana (2631B only)
10100	French: QWERTY non-mute
10011	USASCII (2631B only)
10010	Line Drawing
10001	Roman Extension
10000	User Special
01111	All Blanks
01110	HP 9825 (2631B only)
01101	Russian Roman (2631B only)
00011	Roman Extension: 8-bit mutes (2631B only)
00010	Spanish: mute (2631B only)
00001	French: QWERTY mute (2631B only)
00000	French: AZERTY mute (2631B only)

Invalid codes will generate the USASCII set as the default secondary language.

**E. SERIAL INTERFACE (02631-60230)**

The serial interface for the 263XB is the Full Duplex Serial I/O (P/N 02631-60230) which uses the serial connector adapter (P/N 02631-60234 or 02631-60235). This interface is designed for RS232 full duplex data transfer. The printer contains a 256 character buffer for data transfer and has the capability to strip nulls and deletes from the data stream.





Full Duplex Serial Interface PCA. (02631-60230)

FUNCTION	SWITCH SETTING			
	O = Open C = Closed			
BAUD RATE	S2-1	S2-2	S2-3	S2-4
50	O	C	C	C
75	C	O	O	O
110	O	O	C	C
134.5	C	C	O	C
150	O	C	O	C
200	C	O	C	C
300	C	O	O	C
600	O	O	O	C
900	C	C	C	O
1200	O	C	C	O
1900	C	O	C	O
2400	O	O	C	O
3600	C	C	O	O
4800	O	C	O	O
9600	O	O	O	O
Not Used	C	C	C	C

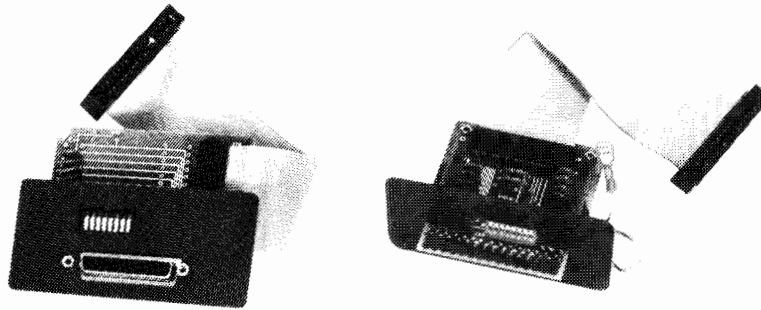
SWITCH S2-X	FUNCTION	SWITCH SETTING
-5	DELETE CHARACTERS Stripped Left in	Open Closed
-6	NOT USED	Closed
-7	RECEIVED 8th BIT Passed Reset	Open Closed
-8	NOT USED	Closed

**F. CONNECTOR ADAPTER ASSY. (02631-60234, 02631-60235)**

Switch S1 is located on the I/O adapter (02631-60234 or 02631-60235, see figures below).

SWITCH S1	FUNCTION	SWITCH SETTING
-1	XON/XOFF OPERATION Enable *Disable	Open Closed
-2	ENQ/ACK OPERATION *Enable Disable	Open Closed
-3 & -4	SCA LINE OPERATION *Normal operation. Busy operation. Inverted Busy operation. On/Off line operation.	S1-3 S1-4 Closed Closed Closed Open Open Closed Open Open
-5 & -6	CD LINE OPERATION *Normal operation. Busy operation. Inverted busy operation. On/Off line if operation.	S1-5 S1-6 Closed Closed Closed Open Open Closed Open Open
-7	EXTERNAL CB SIGNAL *Not required to transmit data. Required to transmit data.	Open Closed
-8	AUTO MODEM DISCONNECT Enable *Disable	Open Closed

\*Factory switch settings.



**RS232 Connector (02631-60234), 264X Compatible Edge Connector (02631-60235)**

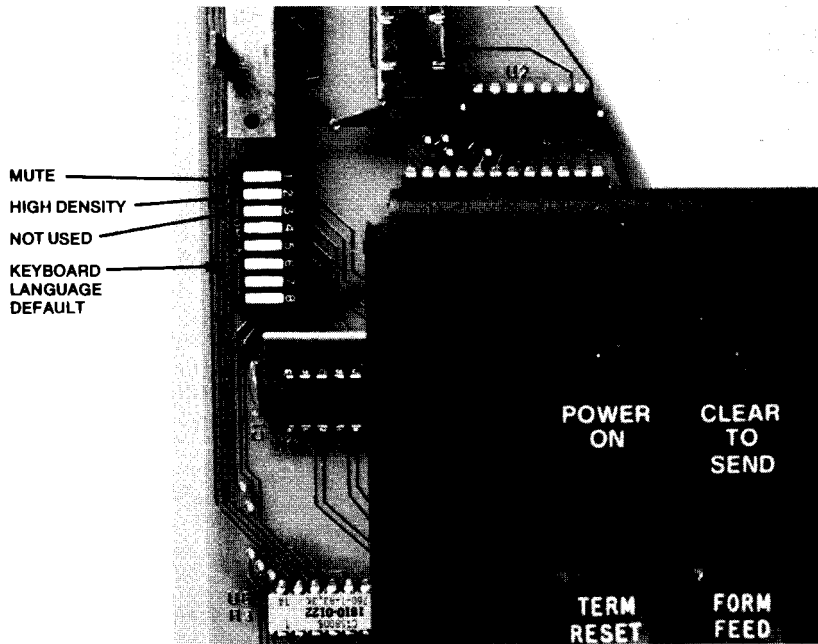
**G. 2635B MULTI-LINGUAL KEYBOARD (02635-60119)**

The table below shows the switch settings for selecting the default keyboard language. The option numbers appearing in the parentheses correspond to the National Keyboard options available for the 2635B terminal.

**Default Keyboard Language Select Code**

SWITCH SETTING O = Open C = Closed	LANGUAGE
OOOOO	USASCII
OOOOC	Swedish/Finnish (Option 001)
OOOCO	Norwegian/Danish (Option 002)
OOOCC	French (AZERTY) (Option 003)
OOCOO	German (Option 004)
OOCOC	British (Option 005)
OOCOC	Spanish (Option 006)
OCOCC	French (QWERTY)
Invalid codes set in the switches will generate a USASCII keyboard.	

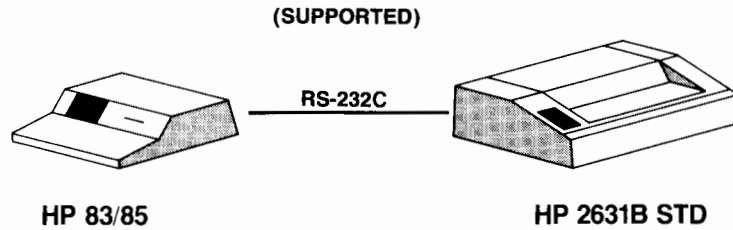
**2635B Keyboard PCA (02631-60119)**





H.

**HP 83/85 to HP 2631B**  
 With serial I/O PCA 02631-60230



**SYSTEM INFORMATION**

I/F: 82939A  
 FROM: Corvallis (CVD)

**NOTES:**

- 1) Factory settings are:
  - a) 300 Baud
  - b) Select code-10
  - c) 7-bit mode
  - d) 1 stop bit
  - e) Odd parity
  - f) No handshake
- 2) To enable ENQ/ACK or Xon/Xoff protocol, see "HP-85 I/O Programming Guide."

**PRINTER INFORMATION**

I/F: 02631-60230  
**ADAPTER:** 02631-60234  
**CONTROL PANEL:** 02631-60203  
**CABLES:** 02631-60065  
**SWITCH SETTINGS:** O = OPEN  
 C = CLOSED  
 X = DON'T CARE

Adapter PCA (02631-60234)  
 1-C 2-C 3-C 4-C 5-C 6-C 7-O 8-C  
 Print Logic PCA (02631-60225)  
 1-O 2-O 3-O 4-O  
 or  
 Print Logic PCA (02631-60601)  
 1-O 2-O 3-O 4-O 5-C 6-C 7-C  
 1-X 2-X 3-X 4-X 5-X 6-X 7-X 8-X  
 9-X 10-X  
 Serial I/O PCA (02631-60230)  
 1-O 2-O 3-O 4-O 5-O 6-C 7-C 8-C

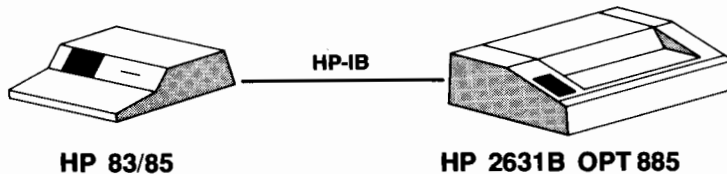
**NOTES:**

- 1) No handshaking. Use 300 Baud rate to prevent data overrun.
- 2) If 83/85 has ENQ/ACK or Xon/Xoff protocol enabled, adapter switches must be changed.
- 3) Relieved 8th bit is reset (0)

I.

**HP 83/85 to HP 2631B**  
 With HP-IB I/O PCA 02631-60226

(SUPPORTED)



**SYSTEM INFORMATION**

**I/F:** 82937A  
**FROM:** Corvallis (CVD)

**PRINTER INFORMATION**

**I/F:** 02631-60226  
**ADAPTER:** 02631-60011  
**CONTROL PANEL:** 02631-60201

**SWITCH SETTINGS**  
 O = OPEN  
 C = CLOSED  
 X = DON'T CARE

Adapter PCA (02631-60011)  
 1-O 2-O 3-O 4-O 5-O 6-C 7-O 8-O

Print Logic PCA (02631-60225)  
 1-O 2-O 3-O 4-O

or

Print Logic PCA (02631-60601)  
 1-O 2-O 3-O 4-O 5-C 6-C 7-C

1-X 2-X 3-X 4-X 5-X 6-X 7-X 8-X 9-X 10-X

**NOTES:**

- 1) Factory settings are:
  - a) Select code-7
- 2) Requires 82936A ROM drawer and 00085-15002 plotter/printer ROM.

**NOTES:**

- 1) Option 885 is a tracking option and includes no switch differences from Option #046 (HP-IB).
- 2) HP-IB address of printer is #01.

J.

**HP 262X to HP 2631B**  
 With serial I/O PCA 02631-60230

(SUPPORTED)



**HP 262X**

**SYSTEM INFORMATION**

**DATACOMM CONFIGURATION #2**  
**FULL DUPLEX HARDWIRED**  
 BAUD RATE: 2400      PARITY: ODD  
 DATABITS: 7      BUFSIZE: 128  
 XMITCLKSOURCE: INT      ASTERISK: OFF  
 STOP BITS: 1      ENQ/ACK: NO  
 RECV CLK SOURCE: INT      TR(CD): HI  
 CHK PARITY: YES      SR(CH): LO  
 STRIPNULDEL: YES      XMITCLKOUT: X16  
 EXTCLKIN: X16      RECVSPACE: NONE  
 SRRXMIT: OFF      RR(CF)RECV: NO  
 XMITPACE: XON/XOFF      SRRinvert: NO  
 CS(CB) Xmit: NO

**NOTES:**

**HP 2631B STD**

**PRINTER INFORMATION**

I/F:      02631-60230  
**ADAPTER:**      02631-60234  
**CONTROL PANEL:**      02631-60203  
**CABLE:**      13242G (13242-60010)  
**SWITCH SETTINGS:**  
 Print Logic PCA (02631-60225)  
 1-O 2-O 3-O 4-O  
 or  
 Print Logic PCA (02631-60601)  
 1-O 2-O 3-O 4-O 5-C 6-C 7-C  
 1-X 2-X 3-X 4-X 5-X 6-X 7-X 8-X  
 9-X 10-X  
 Adapter PCA (02631-60234)  
 1-O 2-C 3-C 4-C 5-C 6-C 7-O 8-C  
 Serial I/O PCA (02631-60236)  
 1-O 2-O 3-O 4-O 5-O 6-C 7-C 8-C

**NOTES:**

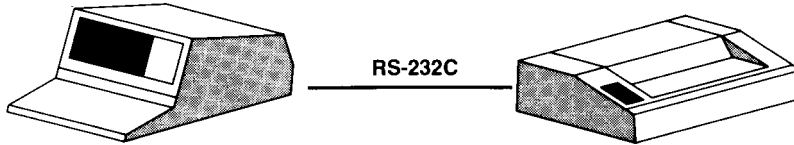
- 1) 02631-60065 Cable supplied with unit will not work.
- 2) Self test code: 0000 541F
- 3) Delete character and 8th Bit ignored

K.

# HP 2645/2648 to HP 2631B

With serial I/O PCA 02631-60230

(SUPPORTED)



## HP 2645/2648 SYSTEM INFORMATION

**I/F:** 13250 A/B/13260 A/B  
P/N 02640-60089, 02640-60143

**CABLE:** 13232G (P/N 02640-60098)  
For use w/o 02631-60065  
13232C (P/N 02640-60059)  
For use w/02631-60065

**FROM:** Data Terminals Division (DTD)

**SWITCH SETTINGS:** O = OPEN  
C = CLOSED  
X = DON'T CARE

A4	A11	A10	A9	1AT	ATN2	THE	RHE	NOSE	2SB
O	C	O	C	O	O	C	O	O	O
FC7	FC6	FC5	FC4	FC3	FC2	FC1	FC0		
O	O	O	O	O	O	C	O		

All other switches "DON'T CARE"

- NOTES:**
- 1) 56 nulls will be transmitted from a 2645 and 0 nulls from a 2648
  - 2) 2400 Baud  
No parity  
1 stop bit
  - 3) Requires device support ROM 13261A.
  - 4) The 264X CRT's utilize a "line by line" method of selecting alternate character sets and automatic underlining mode. The 263X family, however, enters an alternate characters set of underline mode and remains there until directed to a new configuration or reset. Therefore, after the 264X has gone to the next line it no longer is in an alternate mode while the 263X is still receiving and printing as though it was in the alternate set. This causes problems when dumping directly from the CRT screen to the printer.

## HP 2631B STD PRINTER INFORMATION

**I/F:** 02631-60230

**ADAPTER:** 02631-60234

**CONTROL PANEL:** 02631-60203

**CABLE:** 02631-60065

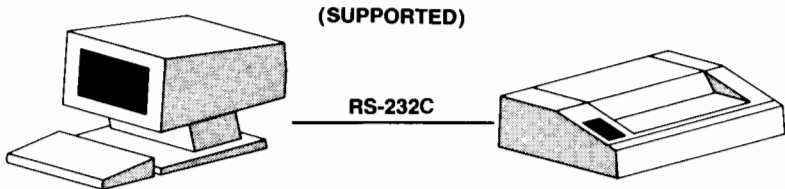
**SWITCH SETTINGS:**  
Print Logic PCA (02631-60225)  
1-O 2-O 3-O 4-O  
or  
Print Logic PCA (02631-60601)  
1-O 2-O 3-O 4-O 5-C 6-C 7-C  
1-X 2-X 3-X 4-X 5-X 6-X 7-X 8-X  
9-X 10-X  
Adapter PCA (02631-60234)  
1-C 2-C 3-O 4-C 5-O 6-C 7-C 8-C  
Serial I/O PCA (02631-60230)  
1-O 2-O 3-O 4-O 5-O 6-C 7-C 8-C

- NOTES:**
- 1) Hardware handshake (inverted busy)
  - 2) Delete characters and 8th bit ignored
  - 3) Self test code: 0000 541F
  - 4) Cable (02631-60065) may only be used with 13232C cable.

L.

# HP 125 to HP 2631B

With serial I/O PCA 02631-60230



### HP 125 SYSTEM INFORMATION

**DATA COMMUNICATIONS/  
SERIAL PRINTER PORT 2**

BAUD RATE: 2400  
 Ptr Nulls: 0  
 Parity: None (0)  
 SRRXmit: OFF  
 Straps: xz  
 SRRInvert: OFF  
 Hndsk: etX  
 Xon/Xoff(X): Xmit

### HP 2631B STD PRINTER INFORMATION

I/F: 02631-60230  
 ADAPTER: 02631-60234  
 CONTROL PANEL: 02631-60203  
 CABLE: 13242G  
 SWITCH SETTINGS: O = OPEN  
 C = CLOSED  
 X = DONT CARE

Print Logic PCA (02631-60225)  
 1-O 2-O 3-O 4-O  
 or  
 Print Logic PCA (02631-60601)  
 1-O 2-O 3-O 4-O 5-C 6-C 7-C  
 1-X 2-X 3-X 4-X 5-X 6-X 7-X 8-X 9-X 10-X

Adapter PCA (02631-60234)  
 1-O 2-C 3-C 4-C 5-C 6-C 7-O 8-C

Serial I/O PCA (02631-60230)  
 1-O 2-O 3-O 4-O 5-O 6-C 7-C 8-C

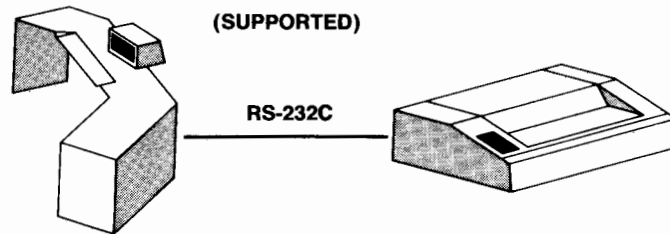
- NOTES:**
- 1) 02631-60065 cable supplied with unit will not work
  - 2) Xon/Xoff Protocol
  - 3) Self test code: 0000 411F
  - 4) Delete character and 8th bit ignored



M.

# HP 250 to HP 2631B

With Serial I/O PCA 02631-60230



### HP 250 SYSTEM INFORMATION

**I/F:** 45 120A  
**FROM:** General Systems Division (GSD)

### HP 2631B STD PRINTER INFORMATION

**I/F:** 02631-60230  
**ADAPTER:** 02631-60234  
**CONTROL PANEL:** 02631-60203

#### SWITCH SETTINGS

O = OPEN  
C = CLOSED

Print Logic PCA (02631-60225)  
1-O 2-O 3-O 4-O

or

Print Logic PCA (02631-60601)  
1-O 2-O 3-O 4-O 5-C 6-C 7-O  
1-C 2-C 3-C 4-C 5-C 6-C 7-O 8-O 9-O 10-C

Adapter PCA (02631-60230)  
1-C 2-O 3-C 4-C 5-C 6-C 7-O 8-C

Serial I/O PCA (02631-60230)  
1-O 2-O 3-O 4-O 5-O 6-C 7-O 8-C

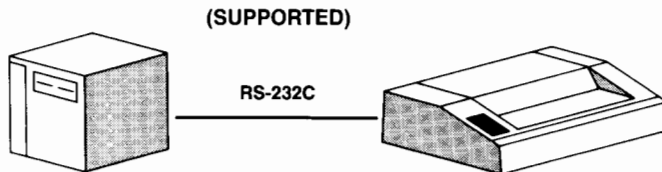
#### NOTES:

- 1) ENQ/ACK protocol
- 2) Delete characters ignored
- 3) 8th bit mode enabled
- 4) Self test code: 0000 425F
- 5) USASCII is primary  
Roman extension is secondary



N.

**HP 1000 to HP 2631B**  
 With serial I/O PCA 02631-60230  
 System DVR00 using the DSD 12531D



**HP 1000**

**SYSTEM INFORMATION**

**I/F:** 12531D  
**CABLES:** 02640-60058 (Hoods both ends)  
 12531-60028 (RS-232C Adapter)  
**FROM:** Data System Division (DSD)  
**DRIVER:** DVR00  
**JUMPERS:** W1 and W7 in B

**HP 2631B OPT 051**

**PRINTER INFORMATION**

**I/F:** 02631-60230  
**ADAPTER:** 02631-60235  
**CONTROL PANEL:** 02631-60203  
**SWITCH SETTINGS:** O = OPEN  
 C = CLOSED  
 X = DON'T CARE  
 Print Logic PCA (02631-60225)  
 1-O 2-O 3-O 4-O  
 or  
 Print Logic PCA (02631-60601)  
 1-O 2-O 3-O 4-O 5-C 6-C 7-C  
 1-X 2-X 3-X 4-X 5-X 6-X 7-X 8-X 9-X 10-X  
 Adapter PCA (02631-60235)  
 1-C 2-C 3-C 4-C 5-C 6-C 7-O 8-C  
 Serial I/O PCA (02631-60230)  
 1-O 2-O 3-O 4-O 5-O 6-C 7-C 8-C

**NOTES:**

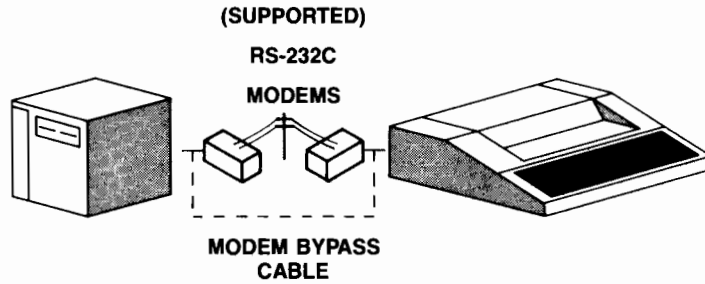
- 1) System I/F uses terminal clock
- 2) 1 stop bit

**NOTES:**

- 1) No handshake or protocol is used; use 1200 Baud or less
- 2) Delete character and 8th bit are ignored
- 3) I/O self test code: 0000 401F
- 4) SI/SO character set selection is enabled

O.

**HP 1000 to HP 2635B**  
 With serial I/O PCA 02631-60230  
 System DVA05 using the DSD 12966A/002



**HP 1000**  
**SYSTEM INFORMATION**

I/F: 12966A/002  
 CABLE: 12966-60006  
 FROM: Data System Division (DSD)  
 DRIVER: DVA05

**HP 2635B OPT 051**  
**PRINTER INFORMATION**

I/F: 02631-60230  
 ADAPTER: 02631-60235  
 CABLE(S): 02631-60065 (Modem)  
 13232U (5061-2403,  
 Modem Bypass)

**SWITCH SETTINGS:** O = OPEN  
 C = CLOSED  
 X = DON'T CARE

Print Logic PCA (02631-60225)  
 1-O 2-O 3-O 4-O  
 or  
 Print Logic PCA (02631-60601)  
 1-O 2-O 3-O 4-O 5-C 6-C 7-C  
 1-X 2-X 3-X 4-X 5-X 6-X 7-X 8-X 9-X 10-X

Adapter PCA (02631-60235)  
 1-C 2-C 3-C 4-C 5-C 6-C 7-C 8-C

Serial I/O PCA (02631-60230)  
 1-O 2-O 3-O 4-O 5-O 6-C 7-C 8-C

**NOTES:**

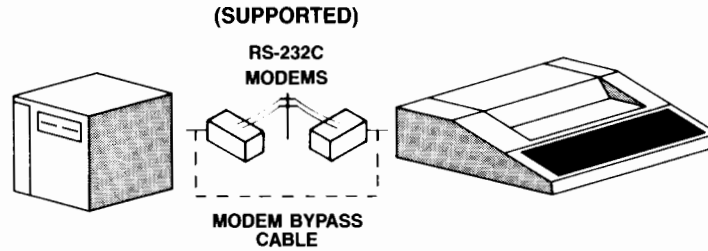
- 1) 12966A/002 includes modem cable (12966-60006).
- 2) DVA05 Supports modem control and hardwire connection.

**NOTES:**

- 1) ENQ/ACK Protocol
- 2) Delete characters and 8th bit ignored
- 3) CB line required to transmit
- 4) Self test code: 0000 021F
- 5) SI/SO character set selection

P.

**HP 1000 to HP 2635B**  
 With serial I/O PCA 02631-60230  
 System DVA05 using the DSD 12966A/002



**HP 1000**

**SYSTEM INFORMATION**

**I/F:** 12966A/002  
**CABLE:** 12966-60006  
**FROM:** Data System Division (DSD)  
**DRIVER:** DVA05

**NOTES:**

- 1) 12966A/002 includes modem cable (12966-60006).
- 2) DVA05 Supports modem control and hardwire connection.

**HP 2635B STD**

**PRINTER INFORMATION**

**I/F:** 02631-60230  
**ADAPTER:** 02631-60235  
**CABLE(S):** 02631-60065 (Modem)  
 13232U (5061-2403, Modem Bypass)

**SWITCH SETTINGS:** O = OPEN  
 C = CLOSED  
 X = DON'T CARE

Print Logic PCA (02631-60225)  
 1-O 2-O 3-O 4-O  
 or  
 Print Logic PCA (02631-60601)  
 1-O 2-O 3-O 4-O 5-C 6-C 7-C  
 1-X 2-X 3-X 4-X 5-X 6-X 7-X 8-X 9-X 10-X  
 Adapter PCA (02631-60235)  
 1-C 2-O 3-C 4-C 5-C 6-C 7-C 8-C  
 Serial I/O PCA (02631-60230)  
 1-O 2-O 3-O 4-O 5-O 6-C 7-C 8-C

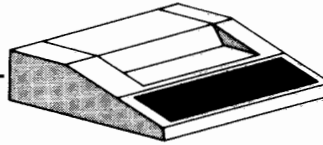
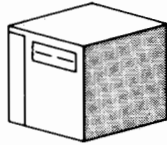
**NOTES:**

- 1) ENQ/ACK Protocol
- 2) Delete characters and 8th bit ignored
- 3) CB line required to transmit
- 4) Self test code: 0000 021F
- 5) SI/SO character set selection

Q.

**HP 1000 to HP 2635B**  
 With serial I/O PCA 02631-60230  
 System DVR05/DVA05 using the DSD 12966A/001

(SUPPORTED)



**HP 1000**

**SYSTEM INFORMATION**

**I/F:** 12966A/001  
**CABLE:** 12966-60008  
**FROM:** Data System Division (DSD)  
**DRIVER:** DVR05/DVA05

**NOTES:**

- 1) DVA05 supports modem control and hardwire connection.  
DVR05 supports only hardwire connection
- 2) 12966A/001 includes hardwire cable (12966-60008).
- 3) System I/F uses terminal clock

**HP 2635B OPT 051**

**PRINTER INFORMATION**

**I/F:** 02631-60230  
**ADAPTER:** 02631-60235  
**SWITCH SETTINGS:** O = OPEN  
C = CLOSED  
X = DON'T CARE

Print Logic PCA (02631-60225)  
 1-O 2-O 3-O 4-O  
 or  
 Print Logic PCA (02631-60601)  
 1-O 2-O 3-O 4-O 5-C 6-C 7-C  
 1-X 2-X 3-X 4-X 5-X 6-X 7-X 8-X 9-X 10-X

Adapter PCA (02631-60235)  
 1-C 2-O 3-C 4-C 5-C 6-C 7-C 8-C

Serial I/O PCA (02631-60230)  
 1-O 2-O 3-O 4-O 5-O 6-C 7-C 8-C

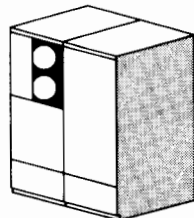
**NOTES:**

- 1) ENQ/ACK Protocol
- 2) Delete characters and 8th bit ignored
- 3) Self test code: 0000 021F
- 4) CB line required to transmit
- 5) SI/SO character set selection

R.

**HP 3000/30,33,44 to HP 2631B**  
 With serial I/O PCA 02631-60230

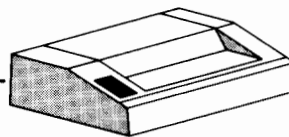
(SUPPORTED)



HP 3000/30,33,44

REMOTE SPOOLED PRINTER

RS-232C



HP 2631B OPT 331

**SYSTEM INFORMATION**

**I/F:** 30018A/19A (A.D.C.C.)  
**FROM:** Computer Systems Division (CSY)  
**DRIVER:** Version B.01.02 of MPE

MPE CONFIGURATION  
 LDEV? (DEPENDENT)  
 DRT? (DEPENDENT)  
 UNIT? (DEPENDENT)  
 SOFTWARE CHANNEL? 0  
 TYPE? 32  
 SUBTYPE? 14 or 15  
 TERMTYPE? 19  
 SPEED? 120  
 REC WIDTH? 66  
 OUTPUT DEVICE? 0  
 ACCEPT JOBS/SESSIONS? NO  
 ACCEPT DATA? NO  
 INTERACTIVE? NO  
 DUPLICATIVE? NO  
 INITIALLY SPOOLED? YES  
 DRIVER NAME? HIOTERM 0  
 DEVICE CLASSES: REMOTE LP

**PRINTER INFORMATION**

**I/F:** 02631-60230  
**ADAPTER:** 02631-60234  
**CONTROL PANEL:** 02631-60203  
**CABLE:** 02631-60065  
**SWITCH SETTINGS:** O = OPEN  
 C = CLOSED  
 X = DON'T CARE  
 Print Logic PCA (02631-60225)  
 1-O 2-O 3-O 4-O  
 or  
 Print Logic PCA (02631-60601)  
 SW1: 1-O 2-O 3-C 4-O 5-C 6-C 7-C  
 SW2: 1-X 2-X 3-X 4-X 5-X 6-X 7-X 8-X 9-X 10-X  
 Adapter PCA (02631-60234)  
 1-O 2-C 3-C 4-C 5-C 6-C 7-O 8-C  
 Serial I/O PCA (02631-60230)  
 1-O 2-O 3-O 4-O 5-O 6-C 7-C 8-C

- NOTES:**
- 1) Xon/Xoff protocol used
  - 2) Delete characters and 8th bit ignored
  - 3) Escape sequences semi-restricted
  - 4) Self test code: 0000 411F
  - 5) SW2 selects language options
  - 6) OPT 331 is a switch setting of a STD unit
  - 7) Set printer for ODD parity

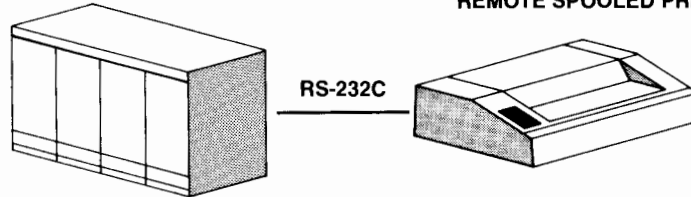
S.

# HP 3000/44,64 to HP 2631B

With serial I/O PCA 02631-60230

(SUPPORTED)

REMOTE SPOOLED PRINTER



HP 3000/44,64

HP 2631B OPT 331

## SYSTEM INFORMATION

I/F: 30145A.30155A (A.T.P.)  
**FROM:** Computer Systems Division (CSY)  
**DRIVER:** Version C.FO.H8

MPE CONFIGURATION  
 LDEV? (DEPENDENT)  
 DRT? (DEPENDENT)  
 UNIT? (DEPENDENT)  
 SOFTWARE CHANNEL? 0  
 TYPE? 32  
 SUBTYPE? 14 or 15  
 TERMTYPE? 19  
 SPEED? 120  
 REC WIDTH? 66  
 OUTPUT DEVICE? 0  
 ACCEPT JOBS/SESSIONS? NO  
 ACCEPT DATA? NO  
 INTERACTIVE? NO  
 DUPLICATIVE? NO  
 INITIALLY SPOOLED? YES  
 DRIVER NAME? HIOASLP 0  
 DEVICE CLASSES REMOTE LP

## PRINTER INFORMATION

I/F: 02631-60230  
**ADAPTER:** 02631-60234  
**CONTROL PANEL:** 02631-60203  
**CABLE:** 02631-60065  
**SWITCH SETTINGS:** O = OPEN  
 C = CLOSED  
 X = DON'T  
 CARE

Print Logic PCA (02631-60225)  
 1-O 2-O 3-O 4-O

or

Print Logic PCA (02631-60601)  
 SW1: 1-O 2-O 3-C 4-O 5-C 6-C 7-C  
 SW2: 1-X 2-X 3-X 4-X 5-X 6-X 7-X 8-X 9-X 10-X

Adapter PCA (02631-60234)  
 1-O 2-C 3-C 4-C 5-C 6-C 7-O 8-C

Serial I/O PCA (02631-60230)  
 1-O 2-O 3-O 4-O 5-O 6-C 7-C 8-C

## NOTES:

- 1) Xon/Xoff protocol used
- 2) Delete characters and 8th bit ignored
- 3) Escape sequences semi-restricted
- 4) Self test code 0000 411F
- 5) SW2 selects language options
- 6) OPT 331 is a switch setting of a STD unit
- 7) Set printer for ODD parity

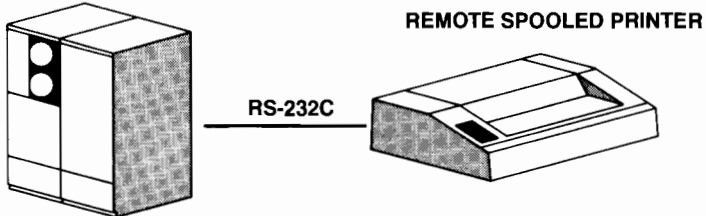


T.

# HP 3000/II,III to HP 2631B

With serial I/O PCA 02631-60230

(SUPPORTED)



HP 3000/II,III

HP 2631B OPT 331

**SYSTEM INFORMATION**

**I/F:** 30032B (A.T.C.)  
**FROM:** Computer Systems Division (CSY)  
**DRIVER:** Version B.01.02 of MPE

MPE CONFIGURATION  
 LDEV? (DEPENDENT)  
 DRT? (DEPENDENT)  
 UNIT? (DEPENDENT)  
 SOFTWARE CHANNEL? 0  
 TYPE? 32  
 SUBTYPE? 14 or 15  
 TERMTYPE? 19  
 SPEED? 120  
 REC WIDTH? 66  
 OUTPUT DEVICE? 0  
 ACCEPT JOBS/SESSIONS? NO  
 ACCEPT DATA? NO  
 INTERACTIVE? NO  
 DUPLICATIVE? NO  
 INITIALLY SPOOLED? YES  
 DRIVER NAME? HIOTERM 0  
 DEVICE CLASSES REMOTE LP

**PRINTER INFORMATION**

**I/F:** 02631-60230  
**ADAPTER:** 02631-60234  
**CONTROL PANEL:** 02631-60203  
**CABLE:** 02631-60065  
**SWITCH SETTINGS:** O = OPEN  
 C = CLOSED  
 X = DON'T CARE

Print Logic PCA (02631-60225)  
 1-O 2-O 3-O 4-O  
 or  
 Print Logic PCA (02631-60601)  
 SW1: 1-O 2-O 3-C 4-O 5-C 6-C 7-C  
 SW2: 1-X 2-X 3-X 4-X 5-X 6-X 7-X 8-X 9-X 10-X  
 Adapter PCA (02631-60234)  
 1-O 2-C 3-C 4-C 5-C 6-C 7-O 8-C  
 Serial I/O PCA (02631-60230)  
 1-O 2-O 3-O 4-O 5-O 6-C 7-C 8-C

- NOTES:**
- 1) Xon/Xoff protocol used
  - 2) Delete characters and 8th bit ignored
  - 3) Escape sequences semi-restricted
  - 4) Self test code 0000 411F
  - 5) SW2 selects language options
  - 6) OPT 331 is a switch setting of a STD unit
  - 7) Set printer for ODD parity





# 4

## TRUBLESHOOTING

### A. TROUBLESHOOTING TABLE

#### Common Symptoms and Possible Causes

PROBLEM	CAUSE
POWER-ON indicator not illuminated	<ol style="list-style-type: none"> <li>1. Power cord not connected.</li> <li>2. Line fuse in power module is bad.</li> <li>3. No current from power outlet.</li> <li>4. Indicator light is bad (fan will operate).</li> <li>5. Front switch panel or keyboard cable is disconnected.</li> </ol>
Machine not going through power-up	<ol style="list-style-type: none"> <li>1. If head drives slowly to right, check left crash stop.</li> <li>2. Bad control board.</li> <li>3. Bad interface PCA.</li> </ol>
Print quality very light or smudged	<ol style="list-style-type: none"> <li>1. Print head out of adjustment.</li> <li>2. Ribbon cartridge needs replacing.</li> <li>3. Print head needs cleaning.</li> <li>4. Print head bracket on carriage assembly is loose.</li> <li>5. Bent or improperly seated lead screw – check for pattern of light and dark.</li> </ol>
Missing dots or ragged characters	<ol style="list-style-type: none"> <li>1. Print head out of adjustment.</li> <li>2. Print head needs cleaning.</li> <li>3. Bad print head.</li> <li>4. Print logic PCA is bad.</li> <li>5. Servo speed too high.</li> <li>6. Encoder bad.</li> <li>7. Bad power supply.</li> <li>8. Bad print head cable.</li> </ol>
Random dots missing in characters	<ol style="list-style-type: none"> <li>1. Encoder bad.</li> <li>2. Servo speed adjustment.</li> <li>3. Dirty head.</li> <li>4. Too much head to platen gap.</li> </ol>
Paper does not advance properly	<ol style="list-style-type: none"> <li>1. Paper not properly loaded, check tractors and paper alignment.</li> <li>2. Paper perforations damaged.</li> <li>3. Paper is catching on box.</li> </ol>

(continued on next page)

## Common Symptoms and Possible Causes (continued)

PROBLEM	CAUSE
Paper does not advance properly (continued)	<ol style="list-style-type: none"> <li>4. Bad paper drive circuitry (printer logic PCA, power electronics PCA, stepper motor).</li> <li>5. Paper guide too tight.</li> <li>6. Bad "O" ring on paper drive clutch.</li> <li>7. Tractors defective (see Service Note 263XB-5)</li> </ol>
Circuit breaker trips	<ol style="list-style-type: none"> <li>1. Defective print structure or lead screw (excessive friction on guide bars, try dry lubricant).</li> <li>2. Print head movement obstructed (paper jammed, ribbon jammed).</li> <li>3. Servo motor bad.</li> </ol>
Paper tearing or separating on multipart forms	<ol style="list-style-type: none"> <li>1. Paper binding or dragging, check paper path.</li> <li>2. Multipart forms not entering unit through the bottom opening.</li> <li>3. Print head needs adjustment.</li> <li>4. Paper guide too tight.</li> </ol>
Print wires snag ribbon	<ol style="list-style-type: none"> <li>1. Dirty print head.</li> <li>2. Print speed too fast.</li> <li>3. Bad print head.</li> <li>4. Bad ribbon.</li> </ol>
Does not complete self-test	<ol style="list-style-type: none"> <li>1. I/O interface PCA bad.</li> <li>2. Control PCA bad.</li> <li>3. Power electronics PCA bad.</li> <li>4. Front panel/keyboard bad.</li> </ol>
Fails servo movement portion of self-test	<ol style="list-style-type: none"> <li>1. Circuit breaker tripped, reset and try again.</li> <li>2. Print logic PCA bad.</li> <li>3. Power electronics PCA bad.</li> <li>4. Control PCA bad.</li> <li>5. Servo motor, lead screw, guide rails, or carriage may be bad.</li> <li>6. Front panel/keyboard bad.</li> </ol>
Printing portion of self-test fails or is bad	<ol style="list-style-type: none"> <li>1. Print head or associated fuses on power electronics PCA are bad.</li> <li>2. Power electronics PCA bad.</li> <li>3. Print logic PCA bad.</li> <li>4. Control PCA bad.</li> <li>5. I/O interface PCA bad.</li> </ol>
+ 5 LED off or noticeably different intensity	<ol style="list-style-type: none"> <li>1. Check fuses on power electronics PCA.</li> <li>2. Check + 5V source.</li> <li>3. Replace power electronics PCA.</li> <li>4. Check crimps on transformer cable.</li> </ol>
+ 12 LED off or noticeably different intensity	<ol style="list-style-type: none"> <li>1. Check fuses on power electronics PCA.</li> <li>2. Check + 12V source.</li> <li>3. Replace power electronics PCA.</li> <li>4. Check crimps on transformer cable.</li> </ol>

(continued on next page)

**Common Symptoms and Possible Causes (continued)**

PROBLEM	CAUSE
-12 LED off or noticeably different	<ol style="list-style-type: none"> <li>1. Check fuses on power electronics PCA.</li> <li>2. Check -12V source.</li> <li>3. Replace power electronics PCA.</li> <li>4. Check crimps on transformer cable.</li> </ol>
Power fuses open repeatedly	<ol style="list-style-type: none"> <li>1. Print head coil is shorted.</li> <li>2. Ribbon cable to head is bad.</li> <li>3. Servo cable is bad.</li> <li>4. Static turns on SCR (and blows fuse).</li> </ol>
Random shifting of left margin in and out	<ol style="list-style-type: none"> <li>1. Encoder bad.</li> <li>2. Check crash stops.</li> <li>3. Structure out of specification.</li> <li>4. Head mounting bracket is loose.</li> </ol>
Occasional stepping of left margin to the right	<ol style="list-style-type: none"> <li>1. Static electricity.</li> <li>2. Intermittent left crash stop.</li> <li>3. Bad print logic PCA.</li> <li>4. Bad control PCA.</li> <li>5. Noisy motors.</li> <li>6. Be sure stand or table is grounded to the unit chassis ground.</li> </ol>
Print density (darkness) varies between left and right side of platen	<ol style="list-style-type: none"> <li>1. Loose head or bracket.</li> <li>2. Defective print structure.</li> </ol>
Character tilted (not vertical)	<ol style="list-style-type: none"> <li>1. Loose head or bracket.</li> <li>2. Defective head.</li> <li>3. Defective bracket.</li> </ol>
Top or bottom dots missing	<ol style="list-style-type: none"> <li>1. Head bracket bent or tipped up or down.</li> <li>2. Bad head.</li> <li>3. Bad power PCA.</li> <li>4. Defective ribbon.</li> </ol>
Lights blinking at power-on	<ol style="list-style-type: none"> <li>1. See self-test error diagnostics for description of flashing lights.</li> </ol>

## B. HINTS

1. If after removing and replacing power PCA, only the lights come on but there is no servo motion, check cables and connectors to power PCA to ensure proper positioning (connectors are not keyed).
2. Jerky right to left head motion indicates bad or unconnected encoder.
3. If after replacing print logic PCA (02631-60225) bell sounds continuously at power-up, ensure that character set ROMs are installed in location "0".
4. Repeated beeping at power-up indicates bad or disconnected crash stop cable or assembly.

## C. MECHANICAL PROBLEM SOLVING

### Mechanical Problems

1. **Ribbon snagging** can occur in any machine if the head is too close to the platen, and some heads are quite sensitive to this distance. There may be imperfections, such as a small burr on a wire, which can catch the ribbon threads. The designated head-to-platen distance is 0.019 inch, though some heads have been found to operate best at gaps of up to 0.026 inch. On machines that are subject to snagging, try a wider gap before replacing the head. Snagging is also associated with sudden speed changes such as occur when print modes are changed while printing a line. A bent lead screw can also cause ribbon snagging.
2. The **circuit breaker** on the print mechanism assembly may pop for a variety of causes. This thermal breaker is activated when current through the breaker remains above 3 amps for an extended period of time. The lead screw, helix nut, carriage, and rails can all contribute to driving the servo current above this limit and popping the breaker. The white lead screw nut seems to particularly aggravate the problem. If a unit has been popping breakers, the lead screw and rails should be thoroughly cleaned with isopropyl alcohol. Check to see that the carriage and head move freely on the rails and that the lead screw isn't bent. Any binding or friction in this area should be corrected. A temporary fix is to carefully apply a thin film of dry lubricant until a new print mechanism can be obtained. It is believed this will cause future problems, however, so only utilize lubricants as a last resort.
3. **Vertical column offset** appears as a shifting of the leftmost character every other line during bidirectional printing. The symptom is repeatable in bidirectional printing, but disappears in unidirectional printing. The causes include: worn head mounting bracket, binding ribbon, bad encoder, and bad print structure. The specification for margin wander is .015 inch. This can be measured with an optical comparator or with the edge of a feeler gauge, .015 inch is approximately one dot row.

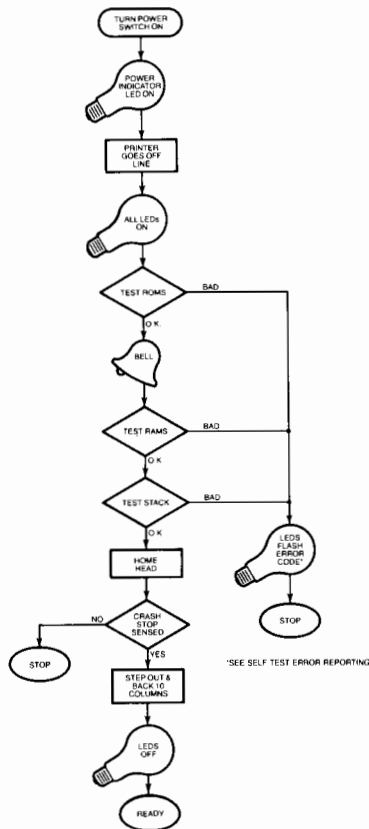
# 5

## DIAGNOSTICS/ SELF-TEST

### A. POWER-ON SELF TEST EVENT SEQUENCE

When the unit is powered-on, the following sequence of events begins:

#### Power-On Sequence Test



## **B. POWER-ON SELF TEST ERROR REPORTING**

In the event that the power-on test fails, all LEDs on the unit will flash at about a 2 Hz rate to tell the operator of the failure. These same LEDs can also be used to display eight bit error codes to indicate which portion failed.

In the 2631B units the ON LINE, 6LPI, 8LPI, and DISPLAY FUNCTIONS LEDs on the operator control panel are used to indicate failures. Once the LEDs start flashing they will flash until the FORM FEED, LINE FEED, or RESET buttons are pressed. If the FORM FEED button is pressed, the first four bits of the eight bit error code are displayed via the LEDs. Pressing the LINE FEED button displays the last four bits of the error code. Table 1 lists the indicators and error codes used on the 2631B/35B. Pressing the RESET button will clear the error indication and return the unit to power-on default conditions. Any printer configuration information will be lost when RESET is pressed.

The 2635B uses the CLEAR TO SEND (CB) and DATA SET READY (CC) LEDs on the keyboard to flash failure indication. They will continue to flash until either the 1, 2, 3, 4, or RESET key is pressed. These are the top numeric keys. If key 1 is pressed, bits 7 and 6 of the eight bit error code are displayed on the CLEAR TO SEND and DATA SET READY LEDs, respectively. Pressing key 2 will display bits 5 and 4, key 3 will display bits 3 and 2, and key 4 will display bits 1 and 0. (Refer to Table 1.) The error codes are listed in Table 2. Pressing RESET will clear the error indication and return the unit to the power-on default conditions. Printer configuration information will be lost when RESET is pressed.

### **Quick Power Supply Inspection**

The power electronics PCA has 3 LEDs which serve as visual indicators of possible problems in the supply voltage circuits. These LEDs are located top center on the board. If any of the LEDs are extinguished, the fuse for that particular supply voltage should be checked. A dim lamp may be an indication of circuitry problems.

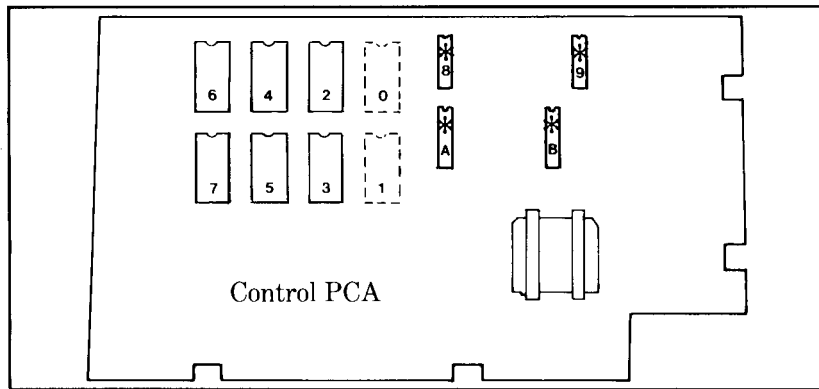


Figure A. ROM and RAM locations on Control PCA. 02631-60621/02631-60224

**EXAMPLE:**

Suppose the 2631B LEDs indicates error 0001 0010:

0001 – ROM or RAM error.

0010 – the decimal equivalent of this code is “2”; see Figure A for the location of ROM/  
RAM “2” – this is a bad ROM or associated socket.

ERROR CODES:		
ERROR TYPE	MOST SIGNIFICANT FOUR BITS 7 6 5 4	LEAST SIGNIFICANT FOUR BITS 3 2 1 0
ROM Error	0001	ROM location code. See Figure A. Value from 8 to F (hex).
RAM Error	0001	RAM location code. See Figure A. Value from 8 to F (hex).
Stack Error	0100	Not used.
Servo Position	0011	0–head going to the left. 1–head going to the right.
HP-IB Error	1100	Not used.



Table 1

TO GET ERROR INDICATORS FOR THE 2635B:							
CB 7	CC 6	CB 5	CC 4	CB 3	CC 2	CB 1	CC 0
key 1		key 2		key 3		key 4	

Table 2

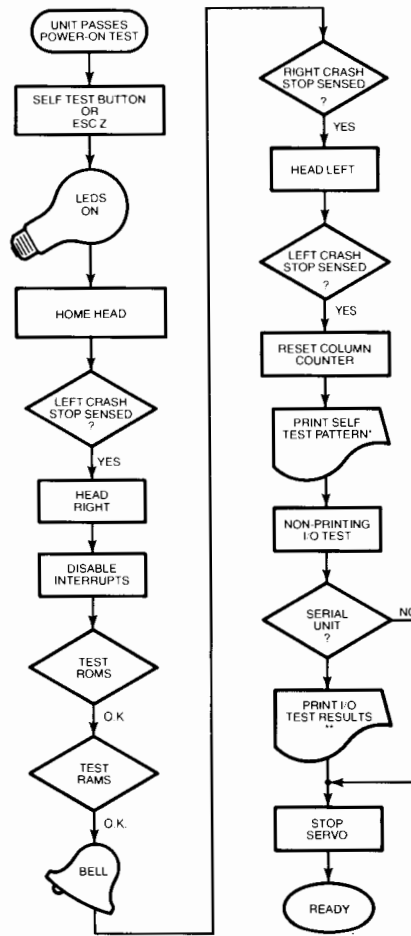
TO GET ERROR INDICATORS FOR THE 2631B:							
O N L I N E 7	6	8	D S P F C T 4	O N L I N E 3	6	8	D S P F C T 0
FORM FEED BUTTON				LINE FEED BUTTON			

### C. STANDARD SELF TEST EVENT SEQUENCE

The self test routines in the 2631B/2635B consist of sub tests which can be invoked separately. A number of these sub tests are grouped together into a standard self test. The standard self test can be started from the front panel or by using an escape sequence. The sub tests can only be accessed from the front panel.

#### Standard Self Test

To perform the standard self test from the front panel, the unit must be off-line with no existing fault conditions. Press and release the SELF TEST switch to activate the standard self test. When the switch is pressed, the following happens.



\*SEE FIGURE B  
 \*\*SEE SERIAL INTERFACE SELF TEST REPORTING





**D. SELF TEST SUB TESTS**

In addition to the standard self test, 13 additional sub tests are available. These are arranged into three groups that can be accessed only from the front panel. On the 2631B the keys on the front panel are used with the SELF TEST key to access the sub tests. The sub tests on the 2635B are accessed by using the numeric keys with the SELF TEST key.

On the 2631B the keys are defined as follows for use in accessing the sub tests:

- ON LINE = 0
- 6/8 LPI = 1
- FORM FEED = 2
- LINE FEED = 3

To access a sub test, hold down the SELF TEST key while entering the correct code on the other keys. In the discussion about the sub tests, the following convention is observed:

- S = Press SELF TEST key down and hold it down during the following key entry.
- s = Release the SELF TEST key.

If you press more than two keys in succession, the 2631B and the 2635B will accept only the last two entries. For example, if you press 0,1,1,2,2, the printer/terminal will do sub test 2,2. If you attempt to access a nonexistent self-test, the printer/terminal responds with an audible tone – three beeps.

**I/O Sub Tests.** The I/O sub tests are defined for printers with a serial interface only. Refer to the 2630B Family Reference Manual for a discussion of the individual tests.

**Printing Sub Tests.** The printing sub tests print various patterns and characters in specified sequences. Refer to the 2630B Family Service Manual for a discussion of the individual tests.

**General Diagnostics Sub Tests.** The general diagnostics sub tests give a limited diagnostic capability. See 2630B Family Service Manual for a discussion of the individual tests.

PRINTING SUB TESTS				
10% Duty Cycle Exercise Test	S	2	3	s
30% Duty Print Test	S	2	2	s
Multi-Lingual ROM I.D.	S	2		s
Ripple Print and H Pattern Test	S	2	0	s
GENERAL DIAGNOSTICS SUB TESTS				
Stack Test	S	3	1	s
ROM Check Test	S	3	0	s
Fast RAM Test	S	3	2	s
Print Speed Adjustment Routine	S	3		s
High Speed Skip Test	S	2	1	s
I/O SUB TESTS (SERIAL I/O ONLY)				
Data Path Test	Run during all following routines.			
Modem Loopback Routine	S	1	0	s
Internal Loopback Routine	S	1		s
External Loopback Routine	S	1	1	s

**E. SERIAL INTERFACE SELF TEST REPORTING**

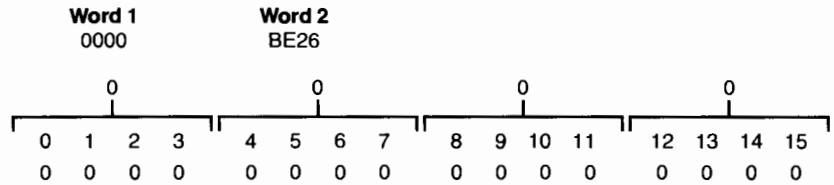
If your unit has a serial interface (02631-60230), the last line of the printout contains two groups of four characters which represent the current interface status.

The test routine results are printed out as follows.

XXXX XXXX

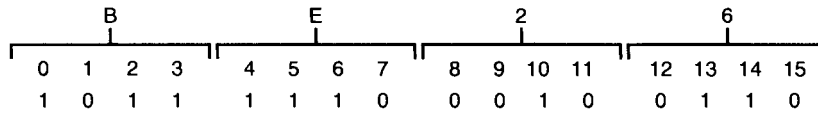
Where X is any hexadecimal number 0,1,2,3,4,5,6,7,8,9,A,B,C,D,E, or F.

These two words of four hexadecimal numbers each, may be expanded into two sixteen bit binary words. Word 1 will contain the error information and word 2 contains switch configuration information. For example, if the following value was printed, it would be decoded as shown in the example below.



**Self Test Results Bit Interpretation – Word 1.**

WORD 1	I/O SELF TEST RESULTS
Bit 0	Time out error on UART if = 1
Bit 1	Not used, will always = 0
Bit 2	Character match error: received did not = transmit if = 1
Bit 3	Parity or framing error if = 1
Bit 4	CA to CB loopback error if = 1(ext/modem loopback only)
Bit 5	Not used, will always = 0
Bit 6	CD to CC loopback error if = 1 (external loopback only)
Bit 7	Line stuck on error if = 1 (external loopback only)
Bit 8	Not used, will always = 0
Bit 9	Not used, will always = 0
Bit 10	SCA to SCF loopback error if = 1 (external loopback only)
Bit 11	I/O interrupt system error if = 1
Bit 12	Transmitter break function error if = 1 (external loopback)
Bit 13	Not used, will always = 0
Bit 14	Not used, will always = 0
Bit 15	Not used, will always = 0



Serial I/O Switch Configuration Self Test Results – Word 2.

WORD 2	SWITCH CONFIGURATION
Bit 0	S1-8, open if = 1
Bit 1	S1-7, open if = 1
Bit 2	S1-6, open if = 1
Bit 3	S1-5, open if = 1
Bit 4	S1-4, open if = 1
Bit 5	S1-3, open if = 1
Bit 6	S1-2, open if = 1
Bit 7	S1-1, open if = 1
Bit 8	S2-8, open if = 1
Bit 9	S2-7, open if = 1
Bit 10	S2-6, open if = 1
Bit 11	S2-5, open if = 1
Bit 12	S2-4, open if = 1
Bit 13	S2-3, open if = 1
Bit 14	S2-2, open if = 1
Bit 15	S2-1, open if = 1



# 6

## ADJUSTMENTS

### A. COMMON ELECTRICAL ADJUSTMENTS

#### Print Speed Adjustment (2631B and 2635B)

The following procedure should be used to adjust the print speed to 180 characters per second when in the standard print mode.

- a. Set the self-test override switch, SW1-2, on the print logic PCA to the closed position.
- b. Turn the printer on.
- c. On the 2631B, push the SELF TEST and LINE FEED keys down at the same time, then release them. On the 2635B, push the SELF TEST key and the 3 key down at the same time, then release them.
- d. Adjust R1 (clockwise) on the printer logic PCA until the 6 LPI LED on the 2631B control panel or the DATA SET READY on the 2635B control panel comes on.
- e. Adjust R1 (counterclockwise) until the 6 LPI LED on the 2631B or the DATA SET READY LED on the 2635B just turns off.
- f. Turn the power off.
- g. Set the self test override switch, SW1-2, to its open position.







# 7

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## PERIPHERALS

DOES NOT APPLY.



# 8

## REPLACEMENT PARTS

FOLLOWING PAGES CONTAIN TABLES.

A. TABLE - ORIGINAL PARTS TO REPLACEMENT PARTS

HP PART NUMBER	DESCRIPTION	2631B					2635B		EXCHANGE PART NUMBER	REPLACEMENT PART NUMBER
		STD	044	046	050	051	STD	051		
02631-60002	Mother Board	X					X		N/A	N/A
02631-60011	HP-IB Adapter Assy.						X		N/A	N/A
02631-60017	8-Bit Differential Adapter Assy.				X				N/A	N/A
02631-60018	8-Bit TTL Adapter Assy.		X						N/A	N/A
02631-60020	Power Transformer	X	X		X		X		N/A	N/A
02631-60027	Print Structure	X	X		X		X		N/A	N/A
02631-60030	Stepping Motor	X	X		X		X		N/A	N/A
02631-60040	Fan	X	X		X		X		N/A	N/A
02631-60055	Power Module	X	X		X		X		N/A	N/A
02631-60056	Line Filter	X	X		X		X		N/A	N/A
02631-60068	Print Head	X	X		X		X		N/A	N/A
02631-60097	Head Guard	X	X		X		X		N/A	N/A
02631-60201	Parallel Control Panel	X	X		X		X		N/A	N/A
02631-60203	Serial Control Panel	X	X		X		X		N/A	N/A
02631-60224	Control PCA	X	X		X		X		02631-69224	02631-60621
02631-60225	Print Logic PCA	X	X		X		X		02631-69225	N/A
02631-60226	HP-IB I/O PCA	X	X		X		X		02631-69226	N/A
02631-60227	8-Bit Differential I/O PCA	X	X		X		X		02631-69227	N/A
02631-60228	8-Bit TTL I/O PCA	X	X		X		X		02631-69228	N/A
02631-60230	RS-232 Serial I/O PCA	X	X		X		X		02631-69228	N/A
02631-60234	RS-232 Adapter Assy.	X	X		X		X		02631-69230	N/A
02631-60235	264X Blade Adapter Assy.	X	X		X		X		N/A	N/A
02631-60238	Print Mechanism Assy.	X	X		X		X		N/A	N/A
02631-60255	Antistatic Tinsel Kit	X	X		X		X		N/A	N/A
02631-60273	Antistatic Tinsel Kit	X	X		X		X		N/A	02631-60255

(continued on next page)



Original Parts to Replacement Parts (continued)

HP PART NUMBER	DESCRIPTION	02631B				2635B		EXCHANGE PART NUMBER	REPLACEMENT PART NUMBER
		STD	044	046	050	051	STD		
02631-69277	Power Electronics PCA	X	X	X	X	X	X	02631-69277	N/A
02631-60363	Leadscrew, Bearing Assy.	X	X	X	X	X	X	N/A	N/A
02631-60378	Field Replaceable Encoder Kit	X	X	X	X	X	X	N/A	N/A
02631-60380	Opto-Interrupter Cable Assy.	X	X	X	X	X	X	N/A	02631-60603
02631-60601	Multi-Lingual Print Logic PCA	X	X	X	X	X	X	02631-69601	N/A
02631-60603	Opto-Interrupter Cable Assy.	X	X	X	X	X	X	N/A	N/A
02631-60621	Control PCA	X	X	X	X	X	X	02631-69621	N/A
02635-60025	Print Mechanism Assy.	X	X	X	X	X	X	N/A	N/A
02635-60033	Keyboard Assy.	X	X	X	X	X	X	02635-69033	N/A
02635-60119	Multi-National Keyboard Assy.	X	X	X	X	X	X	02635-69119	N/A

**B. ROM-PART NUMBERS**

PART NUMBER	DESCRIPTION
02631-60260	Katakana PROM 1-4
02631-60261	Katakana PROM 5-8
02631-60262	Katakana PROM 9
02631-60263	Japanese ASCII PROM 1-4
02631-60264	Japanese ASCII PROM 5-8
02631-60265	Japanese ASCII PROM 9
02631-60266	Extended Roman PROM 1-4
02631-60267	Extended Roman PROM 5-8
02631-60268	Extended Roman PROM 9
02631-60269	9825 Character PROM 1-4
02631-60270	9825 Character PROM 5-8
02631-60271	9825 Character PROM 9
02631-60286	USASCII PROM 1-4 HD
02631-60287	USASCII PROM 5-8 HD
02631-60288	USASCII PROM 9 HD
02631-60289	Swedish/Finnish PROM 1-4 HD
02631-60290	Swedish/Finnish PROM 5-8 HD
02631-60291	Swedish/Finnish PROM 9 HD
02631-60292	Norwegian/Danish PROM 1-4 HD
02631-60293	Norwegian/Danish PROM 5-8 HD
02631-60294	Norwegian/Danish PROM 9 HD
02631-60295	French PROM 1-4 HD
02631-60296	French PROM 5-8 HD
02631-60297	French PROM 9 HD
02631-60298	German PROM 1-4 HD
02631-60299	German PROM 5-8 HD
02631-60300	German PROM 9 HD
02631-60301	UK PROM 1-4 HD
02631-60302	UK PROM 5-8 HD
02631-60303	UK PROM 9 HD
02631-60304	Spanish PROM 1-4 HD
02631-60305	Spanish PROM 5-8 HD
02631-60306	Spanish PROM 9 HD
02631-60307	Japanese PROM 1-4 HD
02631-60308	Japanese PROM 5-8 HD
02631-60309	Japanese PROM 9 HD

**B. ROM-PART NUMBERS (CONTINUED)**

PART NUMBER	DESCRIPTION
02631-60310	Katakana PROM 1-4 HD
02631-60311	Katakana PROM 5-8 HD
02631-60312	Katakana PROM 9 HD
02631-60314	Extended Roman PROM 1-4 HD
02631-60315	Extended Roman PROM 5-8 HD
02631-60316	Extended Roman PROM 9 HD
02631-60329	USASCII PROM 1-4
02631-60330	USASCII PROM 5-8
02631-60331	USASCII PROM 9
02631-60332	Swedish/Finnish PROM 1-4
02631-60333	Swedish/Finnish PROM 5-8
02631-60334	Swedish/Finnish PROM 9
02631-60335	Norwegian/Danish PROM 1-4
02631-60336	Norwegian/Danish PROM 5-8
02631-60337	Norwegian/Danish PROM 9
02631-60338	French PROM 1-4
02631-60339	French PROM 5-8
02631-60340	French PROM 9
02631-60341	German PROM 1-4
02631-60342	German PROM 5-8
02631-60343	German PROM 9
02631-60344	UK PROM 1-4
02631-60345	UK PROM 5-8
02631-60346	UK PROM 9
02631-60347	Spanish PROM 1-4
02631-60348	Spanish PROM 5-8
02631-60349	Spanish PROM 9
02631-60350	Cyrillic PROM 1-4
02631-60351	Cyrillic PROM 5-8
02631-60352	Cyrillic PROM 9
02631-60353	Math Symbols PROM 1-4
02631-60354	Math Symbols PROM 5-8
02631-60355	Math Symbols PROM 9





# 10

## REFERENCE

### A. DOCUMENTATION SUMMARY

TITLE	HP P/N
HP 2631B Operator's Manual	02631-90917
HP 2635B Operator's Manual	02635-90908
HP 2630B Family Technical Reference Manual	02631-90918
HP 2630B Family Service Manual	02631-90919

**B. HARD TO FIND OR OBSCURE P/NS**

DESCRIPTION	HP PART NUMBER
Leadscrew Straighten Gauge	02631-60366
Character Counter	02631-60086
"O"-ring (paper advance clutch)	0900-0016
Teflon Spray (for leadscrew)	6040-0057
2635 Baud Rate Knob & Switch	3101-2210
2635 Baud Rate, Duplex, Parity Overlay Plate	02635-00019
2631 Right Hand Ribbon Drive Assembly	02631-60254
2635 Right Hand Ribbon Drive Assembly	02635-60254
Mylar Strip	240871-001-DPC
2631B Parallel Switch Setting Sticker	02631-00064
2631B Serial Switch Setting Sticker	02631-00063
Tinsel Strip Without Harness	1535-3876
Encoder Kit	02631-60378
2631B Nameplate	02631-00084
Encoder Kit With Tools	02631-60245
Sound Cover Clip, RH	02631-40010
Sound Cover Clip, LH	02631-40011
2635B Print Mechanism	02631-60025
2631A Print Mechanism	02631-60023
2631B Print Mechanism	02631-60238
2631G Print Mechanism	02631-60147
Tractor Pair	02631-60627

**C. SINGLE-LEVEL ESCAPE SEQUENCES**

SEQUENCE	EXPLANATION
<i>ESC</i> b	Enables keyboard (2635 only).
<i>ESC</i> c	Disables keyboard (2635 only).
<i>ESC</i> n	Causes machine to go to on-line state.
<i>ESC</i> o	Causes machine to go to off-line state.
<i>ESC</i> z	Initiate self-test routine.
<i>ESC</i> f	Initiate modem disconnect.
<i>ESC</i> Y	Enable Display Functions mode.
<i>ESC</i> Z	Disable Display Functions mode.
<i>ESC</i> I	Move print head to next horizontal tab.
<i>ESCE</i>	Initiate power-on sequence enabling all defaults.
<i>ESC</i> 1	Set tab (horizontal).
<i>ESC</i> 2	Clear tab (horizontal).
<i>ESC</i> 3	Clear all tabs (horizontal).
<i>ESC</i> 4	Set left margin at current print head position.
<i>ESC</i> 5	Set right margin at current print head position.
<i>ESC</i> ^	Request for status. Enables machine to return status word upon receipt of the control character DC1.



**D. MULTI-LEVEL ESCAPE SEQUENCES**

PREFIX	PARAMETER	TERMINATOR	EXPLANATION
<b>1. Select Primary Character Set</b>			
<i>ESC</i> (	NONE NONE	@ A	ROM location 0 is primary. ROM location 1 is primary.
<b>2. Select Secondary Character Set</b>			
<i>ESC</i> )	NONE NONE	@ A	ROM location 0 is secondary. ROM location 1 is secondary.
<b>3. Auto Underline</b>			
<i>ESC</i> &d	NONE NONE	@.A.B.C.H.I.J.K D.E.F.G.L.M.N.O	Turn off Auto Underline. Turn off Auto Underline.
<b>MARGIN</b>			
<i>ESC</i> &a	1-227	l/L	Set left margin at column [1-227].
	1-227	m/M	Set right margin at column [1-227].
<b>HORIZONTAL TAB SET</b>			
<i>ESC</i> &a	1-227	t/T	Set horizontal tab at column [1-227].
	1-227	u/U	Clear horizontal tab at column [1-227].
<b>VIEW MODE</b>			
<i>ESC</i> &k	0	v/V	Enable View mode.
	1		Disable View mode.
<b>AUTO-NEWLINE</b>			
<i>ESC</i> &k	0		Clear auto-newline Sequences.
	1		Perform line feed when carriage return is received.
	2	c/C	Perform carriage return when line feed is received.
<b>SI/SO-8TH-BIT CHARACTER SET SELECTION</b>			
<i>ESC</i> &k	0		Select character sets using Shift In (SI) and Shift Out (SO).
	1	i/I	Select character sets using 8th-bit method.
<b>SI/SO MODE</b>			
<i>ESC</i> &k	0		Select SO character set for single line only.
	1	f/F	Permanent SI and SO character set selections.
<b>UNDERLINE MODE</b>			
<i>ESC</i> &k	0		Disable underline at end of line.
	1	e/E	Disable underline with auto-underline disable sequence.
<b>PRINT PITCH</b>			
<i>ESC</i> &k	0	10.0 characters/inch @	180 characters/sec.
	1	5.0 characters/inch @	45 characters/sec.
	2	16.7 characters/inch @	180 characters/sec.
	3	8.33 characters/inch @	45 characters/sec.
	4	12.5 characters/inch @	180 characters/sec.
	5	6.25 characters/inch @	45 characters/sec.
	6	8.33 characters/inch @	180 characters/sec.
7	4.16 characters/inch @	45 characters/sec.	

**D. MULTI-LEVEL ESCAPE SEQUENCES (CONTINUED)**

PREFIX	PARAMETER	TERMINATOR	EXPLANATION
END-OF-LINE WRAP AROUND			
ESC&s	0		Perform CR-LF when right margin is encountered.
	1	c/C	EOL Wrap Around Disabled.
NO SECOND CHARACTER SET DEFAULT			
ESC&s	1		Print from ROM Location "0" if location "1" is empty.
	0	i/I	Print blanks if location "1" is empty.
PERFORATION SKIP			
ESC&l	0		Enable perforation skip.
	1	I/L	Disable perforation skip.
PAGE LENGTH			
ESC&l	1-255	p/P	Set page length to [1-255] lines.
TEXT LENGTH			
ESC&l	1-255	f/F	Set text length to [1-255] lines.
FIXED VERTICAL FORMS CONTROL			
ESC&l	0		Slew to top of form if not already at top of form (TOF)
	1		Slew to next top of form (TOF)
	2		Slew to bottom of form (BOF)
	3		Slew to next line
	4		Slew to next double space line
	5		Slew to next triple space line
	6		Slew to next half page line
	7		Slew to next quarter page line
	8	v/V	Slew to next tenth space line
	9		Slew to bottom of form (BOF)
	10		Slew to bottom of form minus one line
	11		Slew to TOF minus one line
	12		Slew to top of form (TOF)
	13		Slew to next seventh line
	14		Slew to next sixth line
	15		Slew to next fifth line
	16		Slew to next fourth line
LINE FEED TO VERTICAL TAB			
ESC&l	0		Convert Line Feed to perform vertical tabbing.
	1	n/N	Convert Line Feed to perform single line slew.

**D. MULTI-LEVEL ESCAPE SEQUENCES (CONTINUED)**

PREFIX	PARAMETER	TERMINATOR	EXPLANATION
			VERTICAL LINE SPACING
	0		12 lines/inch.
	1		1 lines/inch.
	2		2 lines/inch.
	3		3 lines/inch.
	4		4 lines/inch.
	6		6 lines/inch.
ESC&I	8	d/D	8 lines/inch.
	9		9 lines/inch.
	12		12 lines/inch.
	18		18 lines/inch.
	24		24 lines/inch.
	36		36 lines/inch.
	72		72 lines/inch.
			SET VERTICAL TABS
	1		Set vertical tab at present line.
	2	m/M	Clear vertical tab at present line.
ESC&I	3	m/M	Clear all vertical tabs.
	1-255	y/Y	Set vertical tab at line [1-255].
	1-255	r/R	Clear vertical tab at line [1-255].
			PROGRAMMABLE VERTICAL FORMS CONTROL
ESC&I	Byte Count	W[VFC Data]	Provides program data information for the VFC.

## E. CONTROL CODES

SYMBOL	KEY*	OCTAL	NAME	DESCRIPTION
ENQ	Ec	05	Enquiry	Terminal receives ENQ and responds with ACK if ready to accept at least 80 characters. If using Serial I/O Configured for ENQ/ACK operation.
ACK	Fc	06	Acknowledge	Causes ACK to be sent if room in buffer.
BEL	Gc	07	Bell	Audio response when received.
BS	Hc	10	Back Space	Move one column left.
HT	lc	11	Horizontal Tab	Move to next Horizontal tab set. If none, perform CR-LF. Note: Tabs are set and cleared with escape sequences.
LF	Jc	12	Line Feed	Move to next print line maintaining current column position.
VT	Kc	13	Vertical Tab	Move to next Vertical tab. If none perform a form feed. Note: Tabs are set and cleared with escape sequences.
FF	Lc	14	Form Feed	Move to first line at top of next page.
CR	Mc	15	Carriage Return	Move to first print position of line.
SO	Nc	16	Shift Out	Select following characters from current secondary character set until receipt of SI.
SI	Oc	17	Shift In	Select following characters from current primary character set until receipt of SO.
DC1	Qc	21	Device Control 1	Triggers transfer of status (refer to escape sequence description for Status Read Back — Appendix A).
ESC	[c	33	Escape	The following characters are a special control sequence.

\*lower case "c" indicates CONTROL key is depressed while typing the letter or symbol.



## F. COMPATIBILITY MATRIX

PARTS 263X 8/83			2635B	2635A	2631G	2631B	2631A
DESCRIPTION	PART NUMBER	OLD PART NO.					
Backplane	02631-60236/3	60002	*	*		*	*
Control Board	02631-69205/4	69101	*			*	
Control Board	02631-69621/8	69224		*			*
Control Board	02631-69626/3	69089			*		
Encoder Board	02631-60037/2	60036	*			*	
Encoder Board	02631-60163/5				*		
Encoder Disc A	02631-60032/7		*			*	
Encoder Disc G	02631-60162/4				*		
Encoder Assy	02631-60378/4			*			*
Encoder Kit	02631-60245/4			*			*
Int 8 Bit Diff	02631-69008/5		*				
Int 8 Bit Diff	02631-69228/1			*			
Int Ext Serial	02631-69377/1	69164	*			*	
Interf HP-IB	02631-69090/5	69006	*			*	
Interf HP-IB	02631-69226/9	69145		*	*		*
Interf RS232	02631-69230/5			*			*
Interf RS232	02631-69376/0	69159	*			*	
Int Curr Loop	02631-69084/7	69021	*			*	
Int 8 Bit TTL	02631-69046/1		*				
Int 8 Bit TTL	02631-69227/0			*			
Keyboard Alfam	02635-69001/2					*	
Keyboard Alfam	02635-69119/3	69033					*
Keybrd Numeric	02635-60002/5					*	
Panel HP-IB	02631-60011/2		*	*	*	*	*
Panel Parallel	02631-60087/2	60003	*				
Panel Parallel	02631-60201/2			*			
Panel Serial	02631-60088/3	60044	*				
Panel Serial	02631-60203/4			*			
Power Supply	02631-69277/0	69001	*	*	*	*	*
Printer Logic	02631-69081/4	69005	*			*	
Printer Logic	02631-69100/4				*		
Printer Logic	02631-69225/8			*			*
Pr Log Multil	02631-69601/4			*			*



# 11

## SERVICE NOTES/ IOSMs

### A. 263XB SERVICE NOTES

#### 2631B

SEQ. NO.	PUB. DATE	TITLE
1	June 1980	Intermittent Failures With Cover On
2	June 1980	Power Supply Compatibility
3	Nov. 1980	8-Bit Character Set Selection
4	Apr. 1981	FCC Violation
5	May 1981	Top-of-Form Misregistration
6		Switch Configurations For Multi-Lingual Units

#### 2635B

SEQ. NO.	PUB. DATE	TITLE
1	June 1980	Intermittent Failures With Cover On
2	June 1980	Power Supply Compatibility
3		Switch Configurations for Multi-Lingual Units
4		Switch Configurations for Multi-National Units

### B. 263XB IOSMs

PUB. DATE	TITLE
Apr. 1980	2631B/35B Printer/Terminal Support Plan
Apr. 1980	The 263XB
Aug. 1980	Speed Adjustment and Encoder Installation for the 2631B and 2635B
Aug. 1980	2631B/35B Printer/Terminal Support Plan
Dec. 1980	Leadscreen Alignment Gauge (P/N 02631-60366)

