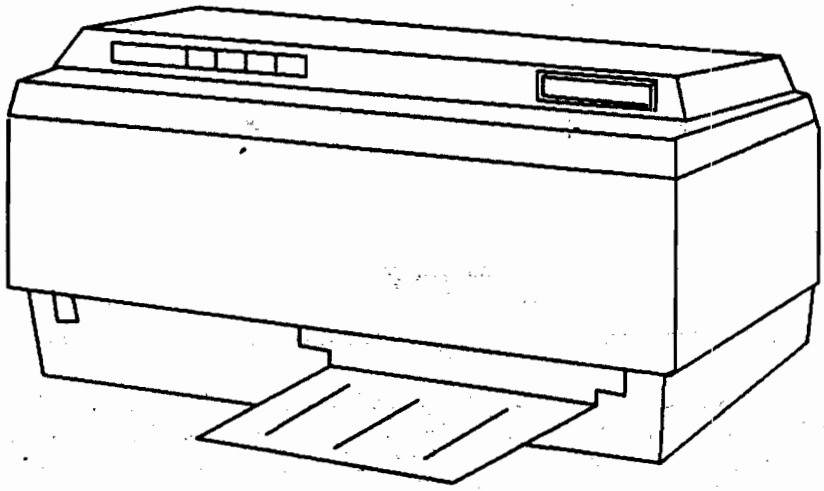
Worldwide Response Center

HP 3000 APPLICATION NOTE #48

PRINTER CONFIGURATION

(Revision #4, November 15, 1988)



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RESPONSE CENTER APPLICATION NOTES

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PRINTER CONFIGURATION

This guide is intended to be a quick reference for printer configuration problems. Each printer, or series of printers, appears in numerical order, with configuration information presented by interface type and MPE level.

GENERAL INFORMATION

This guide lists the TYPE, SUB-TYPE, TERM-TYPE (if applicable), DEVICE NAME (if one is available), and DRIVER for each printer. The following information is also needed in the configuration:

Configurator Dialogue	Suggested Values
LOGICAL DEVICE #?	The ldev number is up to the user. The system printer is usually ldev 6.
DEVICE NAME? (T-MIT and later)	A name used to look up default configuration values in the file DEFDATA.PUB.SYS.
DRT #?	The DRT is the hardware address of the device. It is calculated with the following formulas: Series 64, 68, 70: (IMB# * 128) + (CHAN# * 8) + (HP-IB address) All other HP-IB machines: (CHAN# * 8) + (HP-IB address) NOTE: Each ADCC port has its own DRT number. Ports on an ATP will have the same DRT number with different unit numbers.
UNIT #?	ADCC ports: The unit number is always 0. ATP ports: The unit number depends on the port on that ATP HP-IB: The unit number should be 0.
SOFTWARE CHANNEL#?	Always 0.

TYPE? SUB-TYPE? TERM-TYPE? (MPE IV & V/P) or	Refer to this guide for these values.
ENTER [TERM TYPE#], [DESCRIPTOR FILENAME]? (MPE V/E or later)	
SPEED IN CHARACTERS PER SECOND?	This question is only asked for device type 16 and 32, sub-type 14 and 15.
RECORD WIDTH?	Enter the record width in words; 66 will give 132 column output.
OUTPUT DEVICE?	For the 2635B printing terminal, enter its ldev number. For everything else, enter 0.
ACCEPT JOBS/SESSIONS? ACCEPT DATA? INTERACTIVE? DUPLICATIVE?	For the 2635B printing terminal, enter YES to each of these. For everything else, enter NO.
INITIALLY SPOOLED?	If the printer is to be spooled when the system is started, enter YES.
DRIVER NAME?	Refer to this guide.
DEVICE CLASSES?	Device classes are up to the user. It is suggested that LP be used for system line printers and PP be used for the 2680A Laser Printer. Some applications require specific device classes. Please refer to the individual printer configurations for more information.

256X SERIES

The 256X series of printers are high-speed, dot-matrix line printers. They are replacements for the 2608A, 2608S and 261X printers. These printers are available with HP-IB, MTS, RS-422 and RS-232 interfaces. (Note that not all printer/interface combinations are supported on all systems.) If you are configuring for MTS, please see the HP *26067A System Interface Option 002, Multipoint Interface Manual, section 2.* For additional information on the serial interface, please refer to the *26067A/B System Interface Option 003, Serial Interface Manual.*

The 2563A and 2563B print 300 lines per minute, the 2564B and 2565A print 600 lines per minute, the 2566A and 2566B print 900 lines per minute, and the 2567B prints 1200 lines per minute.

HP-IB Interface Printers:

These printers offer both TRANSPARENT and FEATURE access. Feature access means the printer will recognize and act on special control codes and escape sequences. If you do not know which you want, use FEATURE access. [1]

Configuration for FEATURE access:

Type 32, Sub-type 9, Driver HIOCIPR0
Device name: HP2563, HP2565 or HP2566

Configuration for TRANSPARENT access:

Type 32, Sub-type 13, Driver HIOCIPR0

Connected to an ATP Port:

If the system is on MPE IV or V/P --
Type 32, Sub-type 14, Term-type 22, Driver HIOASLP0

If the system is on MPE V/E or later --
Type 32, Sub-type 14, Term-type TTPCL22.PUB.SYS[2],
Driver HIOASLP0; Device name: HPPCLATP

Connected to an ADCC Port:

If the system is on MPE IV, V/P, or V/R --
Type 32, Sub-type 14, Term-type 19, Driver HIOTERM0

If the system is on MPE V/E or later --
Type 32, Sub-type 14, Term-type TTPCL22.PUB.SYS[2],
Driver HIOASLP2; Device name: HPPCLADCC

---

[1]Some spoolfiles that print correctly on the 2608A may print incorrectly on the 256X printers with FEATURE access. The 256X printers recognize control codes and escape sequences ignored by the 2608A printers. In this case, use TRANSPARENT access.

[2]TTPCL22.PUB.SYS is a term-type file shipped with T-MIT (and later). It takes care of the 132nd column problem mentioned under Known Problems and will let the user select 6 or 8 lines per inch, compressed print, etc., from the printer panel. If TTPCL22.PUB.SYS is not available, use term-type 22.

NOTE

The 256X series is not supported over a modem but should work with SUB-TYPE 15 for a dial-up modem, 14 for a leased line.

For graphics, configure the printer with device class "GLP".

Known Problems:

The 256X printers use column 0 as the first column of a printout. Some serial printer term-type files send an escape sequence to start printing in column 1. This will cause the 132nd character to be lost. This is fixed in the term-type files TTPCL19.PUB.SYS and TTPCL22.PUB.SYS in MPE V/E. Patch ADCC02 is available for MPE V/P. Contact the Response Center for assistance.

Printer Settings:

The settings for the 256X printers are set from the operator's panel on the printer. To change the settings, follow these instructions:

1. Take the printer off line.
2. Hold down the "CONFIG." key and press the "FINE ADJUST." key until the function number you want appears in the window.
3. Release the "CONFIG." key. The current value of that function will appear in the window. Use the "FINE ADJUST." key to change the value.
4. Press the "ENTER" key to save your changes.
5. Put the printer back on line.

Suggested Settings:

HP-IB:

For the HP-IB interface, function number 20 is the HP-IB address of the printer and function number 25 should be set to zero for CIPER protocol.

RS-232/422:

The following tables list configuration settings for a 256X printer.

Table 1. RS-232 256X Printer Settings

Function Number	Value	What It Does
20	31	XON/XOFF Protocol Strip Null and Delete Characters (see note 3)
21	00	DTR always on
22	21 31 41 51 61	1200 Baud, ignore modem signals 2400 Baud, ignore modem signals 4800 Baud, ignore modem signals 9600 Baud, ignore modem signals 19200 Baud, ignore modem signals (select the speed that matches the system I/O configuration)
23	03 00	Odd parity (see note 1) No parity (see note 2)

Note 1 - Use this setting for terminal types 19, 21, and TTPCL19.

Note 2 - Use this setting for terminal types 20, 22, 26, TTPCL22, and TTPCL26.

Note 3 - If it is desirable to not strip nulls and deletes for 8-bit data operation, set this value to 01 instead of 31.

NOTE

Application Note #13, Terminal Types for HP3000 HP-IB Computers, contains a description of the various terminal types.

Table 2. RS-422 256X Printer Settings

Function Number	Value	What It Does
20	31	XON/XOFF Protocol Strip Null and Delete Characters (see note 3)
21	00	Not Used
22	20 30 40 50 60	1200 Baud, ignore modem signals 2400 Baud, ignore modem signals 4800 Baud, ignore modem signals 9600 Baud, ignore modem signals 19200 Baud, ignore modem signals (select the speed that matches the system I/O configuration)
23	03 00	Odd parity (see note 1) No parity (see note 2)

Note 1 - Use this setting for terminal types 19, 21, and TTPCL19.

Note 2 - Use this setting for terminal types 20, 22, 26, TTPCL22, and TTPCL26.

Note 3 - If it is desirable to not strip nulls and deletes for 8-bit data operation, set this value to 01 instead of 31.

NOTE

Application Note #13, Terminal Types for HP3000 HP-IB Computers, contains a description of the various terminal types.

2601A

The 2601A printer is a letter-quality impact printer.

Connected to an ATP Port:

If connected to a 3-pin ATP port --
Type 16, Sub-type 0, Term-type 13, Driver HIOTERM1

WARNING

The above configuration will require a special cable to provide the proper RS-232 signals to the printer. See the note below.

If connected to a 25-pin ATP modem port --
Type 16, Sub-type 1, Term-type 13, Driver HIOTERM1

Connected to an ADCC Port:

If the system is on MPE IV, V/P, or V/R --
Type 16, Sub-type 0, Term-type 13, Driver HIOTERM0

If the system is on MPE V/E or later --
Type 16, Sub-type 1, Term-type 13, Driver HIOTERM2

NOTE

The 2601A can be spooled, but it is not supported as a spooled printer. If you wish to spool the 2601A, configure it as "Everything Else" explained later in this guide.

The 2601A printer requires the DSR (Data Set Ready) signal on pin 6 of the RS-232 connector. Without this signal, the printer will not print. On a three wire ATP port it will be necessary to jumper pin 20 to pin 6 on the printer side of the RS-232 cable. ADCC ports on MPE V/E only put out the DSR signal when the printer is configured as SUB-TYPE 1.

For proper flow control on a 2601A printer, parity enable (DIP switch 2) and even parity (DIP switch 6) must be off.

Table 3. 2601A Recommended DIP Switch Settings

Left DIP Switch Module

Switch	Setting	Meaning
1	user defined	Double Line Feed
2	unused	
3	user defined	Auto Line Feed
4	unused	
5	unused	
6	unused	
7	unused	
8	unused	

Right DIP Switch Module

Switch	Setting	Meaning
1	On	Full Duplex
2	Off	Disable Parity
3	Off	1200 Baud
4	unused	
5	On	1200 Baud
6	Off	Odd Parity
7	unused	
8	user defined	Paper-Out Sensing

2602A

The 2602A printer is a letter-quality impact printer.

Connected to an ATP Port:

If connected to a 3-pin ATP port --
Type 16, Sub-type 0, Term-type 13, Driver HIOTERM1

WARNING

The above configuration will require a special cable to provide the proper RS-232 signals to the printer. See the note below.

If connected to a 25-pin ATP modem port --
Type 16, Sub-type 1, Term-type 13, Driver HIOTERM1

Connected to an ADCC Port:

If the system is on MPE IV, V/P, or V/R --
Type 16, Sub-type 0, Term-type 13, Driver HIOTERM0

If the system is on MPE V/E or later --
Type 16, Sub-type 1, Term-type 13, Driver HIOTERM2

NOTE

The 2602A can be spooled, but it is not supported as a spooled printer. If you wish to spool the 2602A, configure it as "Everything Else" explained later in this guide.

The 2602A printer requires the DSR (Data Set Ready) signal on pin 6 of the RS-232 connector. Without this signal, the printer will not print. On a three wire ATP port it will be necessary to jumper pin 20 to pin 6 on the printer side of the RS-232 cable. ADCC ports on MPE V/E only put out the DSR signal when the printer is configured as SUB-TYPE 1.

Table 4. 2602A Recommended DIP Switch Settings

Switch	Setting	Meaning
8	user defined	Single Strike Ribbon
7	user defined	11"/12" Page Length
6	-->	Self Test Off
5	-->	XON/XOFF Handshake (DC1/DC3)
4	-->	Parity Off
3	<--	Odd Parity
2	-->	1200 Baud
1	-->	1200 Baud

2603A

The 2603A is a letter-quality impact printer which replaces the 2601A and 2602A printers.

Connected to an ATP Port:

Type 16, Sub-type 0, Term-type 13, Driver HIOTERM1

Connected to an ADCC Port:

If the system is on MPE IV, V/P, or V/R --
Type 16, Sub-type 0, Term-type 13, Driver HIOTERM0

If the system is on MPE V/E or later --
Type 16, Sub-type 0, Term-type 13, Driver HIOTERM2

NOTE

The 2603A can be spooled, but it is not supported as a spooled printer. If you wish to spool the 2603A, configure it as "Everything Else" explained later in this guide.

Printer Settings

The 2603A printer contains four banks of DIP switches on the printer's rear panel. To open the rear panel door, slide the door latch toward the bottom and rear of the printer. The switch settings are only read when the printer is initially powered on. The DIP switches should all be down except switches 6 and 7 of the third bank (see figure 1.)

DIP Switch Settings for the 2603A Printer
(with speed set to 9600 Baud)

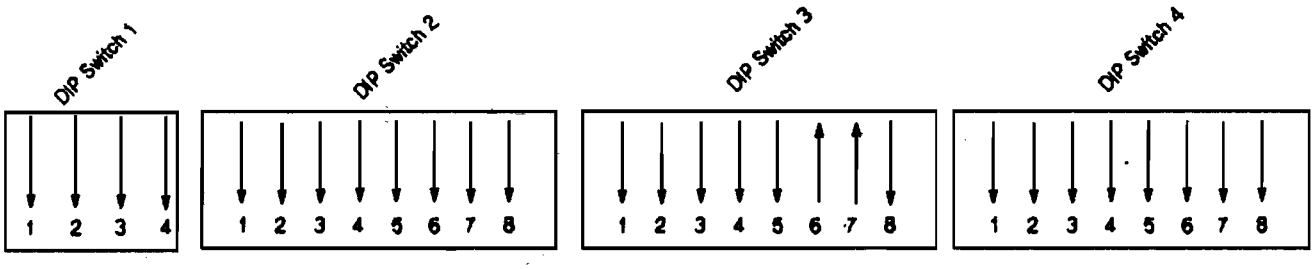

Figure 1.

2608A

The 2608A printer is a 400-line-per-minute dot-matrix printer.

It is configured as follows:
Type 32, Sub-type 4, Driver HIOLPRT0; Device name: HP2608A

2608S

The 2608S is a 400-line-per-minute dot-matrix printer. It can be connected to an HP3000 via HP-IB or MTS.

HP-IB Interface Printers:

This printer offers both TRANSPARENT and FEATURE access. Feature access means the printer will recognize special control codes and escape sequences. If you do not know which you want, use FEATURE access. [1]

Configuration for feature access --
Type 32, Sub-type 9, Driver HIOCIPR0; Device name: HP2608S

Configuration for transparent access --
Type 32, Sub-type 13, Driver HIOCIPR0

MTS Interface Printers:

The DRT number for the 2608S on MTS should back-reference the ldev number of the MTS INP. Enter the "#" character followed by the INP ldev number, e.g., "#200". If you are using an MPCONFIG file, the unit number can be 0. Please see the "2608S Multipoint Serial Interface Manual" for more information.

Type 32, Sub-type 9 (FEATURE access) or 13 (TRANSPARENT), Driver IOMPLP0

NOTE

If you are using this printer for graphics, it must be configured with device class "GLP".

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[1]Some spoolfiles that print correctly on the 2608A may print incorrectly on the 2608S with FEATURE access. The 2608S recognizes control codes and escape sequences ignored by the 2608A printers. In this case, use TRANSPARENT access.

261X Series

The 261X series of printers are high-speed discrete character line printers. They use a parallel differential interface. For HP-IB machines, a translator board is required. These printers also use a punched paper tape for Vertical Forms Control (VFC).

These printers are configured as follows:

Type 32, Sub-type 2, Driver HIOLPRT2;
Device name: HP2613, HP2617 or HP2619

Known Problems:

Some installations that make their own VFC tapes only punch holes in the first three columns. On HP-IB machines, the printing of $STDLIST requires that there be holes punched in the fourth column also. If these holes are not present, you may get "FORMAT FAULTS" or unwanted page feeds in the printout. This is a firmware requirement of the translator card.

2631B

The 2631B is a dot-matrix printer. It comes with an HP-IB interface or an RS-232 interface.

HP-IB Interface Printers:

Type 32, Sub-type 5, Driver HIOLPRT1[1]

Connected to an ATP Port:

Type 32, Sub-type 14[2], Term-type 19, Driver HIOASLP0;
Device name:HPLPATP

Connected to an ADCC Port:

If the system is on MPE IV, V/P, or V/R

Type 32, Sub-type 14[2], Term-type 19, Driver HIOTERM0

If the system is on MPE V/E or later

Type 32, Sub-type 14[2], Term-type 19, Driver HIOASLP2;
Device name: HPLPADCC

NOTE

The TTPCL files shipped with T-MIT (and later) are not intended to work with the 2631B printer. The VFC defined in the TTPCL files use an escape sequence (ESC 'E' - reset the printer to the panel settings) to which the 2631B responds by going offline.

---

[1] Use of escape sequences with this configuration requires patch C070 for MPE IV and V/P. Please contact the Response Center for assistance.

[2] Use SUB-TYPE 15 for dial-up modems, SUB-TYPE 14 for leased lines or direct connect.

RS-232 Interface

The operator panel on the 2631B printer has two banks of DIP switches. The left bank controls the RS-232 interface. The following will work for a 2631B printer configured at 2400 Baud with term-type 19.

Table 5. 2631B Printer Settings

Switch	Setting	Meaning
1	OFF (0)	Full Duplex
2,3	ON (1), OFF (0)	Odd Parity
4	Don't Care	Not Used
5,6,7,8	OFF (0), ON (1), OFF (0), OFF (0)	2400 Baud

Table 6. 2631B RS-232 Connector Adapter Switch Settings

Switch	Setting	Meaning
1	Open	Enable XON/XOFF
2	Closed	Disable ENQ/ACK
3	Closed	Normal SCA Line Operation
4	Closed	Normal SCA Line Operation
5	Closed	Normal CD Line Operation
6	Closed	Normal CD Line Operation
7	Open	CB Signal Not Required
8	Closed	Disable Auto Modem Disconnect

(Switches are located on the rear of the printer)

2635B

The 2635B is a printing terminal. To use it only as a printer, configure it as a 2631B. For use as a terminal, configure it as follows.

Connected to an ATP Port:

Type 16, Sub-type 0, Term-type 15[1], Driver HIOTERM1

Connected to an ADCC Port:

If the system is on MPE IV, V/P, or V/R --
Type 16, Sub-type 0, Term-type 15[1], Driver HIOTERM0

If the system is on MPE V/E or later --
Type 16, Sub-type 0, Term-type 15[1], Driver HIOTERM2

The switches on the front panel should be set to FULL DUPLEX, NO PARITY, and the configured Baud rate.

NOTE

If the 2635B is configured as a 2631B, XON/XOFF flow control must be enabled as shown in the table below, and the parity switch on the front panel should be set to ODD PARITY.

Table 7. 2635B RS-232 Connector Adapter Switch Settings

Switch	Setting	Meaning
1	Open	Enable XON/XOFF
2	Closed	Disable ENQ/ACK
3	Closed	Normal SCA Line Operation
4	Closed	Normal SCA Line Operation
5	Closed	Normal CD Line Operation
6	Closed	Normal CD Line Operation
7	Open	CB Signal Not Required
8	Closed	Disable Auto Modem Disconnect

(Switches are located on the rear of the printer)

[1] Use TERM-TYPE 16 for 7-bit data with zero parity or TERM-TYPE 15 for 8-bit data without parity. TERM-TYPEs 15 and 16 can prevent loss of data when the 2635B runs out of paper.

2680A

The 2680A is a high-volume laser printer which also has a graphics option.

This printer is configured as follows:

Type 32, Sub-type 8, Driver HIOPPRT0; Device name: HP2680

NOTE

If you are using the 2680 for graphics, it must be configured with device class "PP."

LASERJET-LASERJET II

The following configurations will work for the LaserJet and LaserJet Plus (Product Number 2686X), and the LaserJet Series II (Product Number 33440A).

Connected to an ATP Port:

If the system is on MPE IV or V/P --
Type 32, Sub-type 14, Term-type 22, Driver HIOASLP0

If the system is on MPE V/E or later --
Type 32, Sub-type 14, Term-type TTPCL22.PUB.SYS[1],
Driver HIOASLP0; Device name: HPPCLATP

Connected to an ADCC Port:

If the system is on MPE IV, V/P, or V/R --
Type 32, Sub-type 14, Term-type 18[2], Driver HIOTERM0

If the system is on MPE V/E or later --
Type 32, Sub-type 14, Term-type TTPCL22.PUB.SYS[1],
Driver HIOASLP2; Device name: HPPCLADCC

NOTE

The 2686A is shipped from the factory with the Baud rate set to 9600.

All LaserJets run with 8 data bits, no parity only.

Robust XON must be enabled for the LaserJet Plus and the LaserJet II. You can enable this on the front panel of the LaserJet II. If you have a LaserJet Plus you may need to call your Hewlett-Packard support team for assistance.

The term-type TTPCL22.PUB.SYS will send a hard reset (ESC 'E') to the printer. This will cause the LaserJet to reset to portrait orientation. To disable all initialization, use term-type 18.

---

[1]TTPCL22.PUB.SYS is a term-type file shipped with T-MIT (and later). If TTPCL22.PUB.SYS is not available, use term-type 22.

[2]Term-type 22 is preferred for data integrity, but may not be available unless patch C045 is installed for MPE IV or V/P. Term-type 22 is not available for MPE V/R.

LASERJET 2000

The following configurations are recommended for the LaserJet 2000 (Product Number 2684A).

Connected to an ATP Port:

If the system is on MPE V/E UB-DELTA-1 or later --
Type 32, Sub-type 14, Term-type TTPCL26.PUB.SYS,[1]
Driver HIOASLP0;

Connected to an ADCC Port:

If the system is on MPE V/E UB-DELTA-3 or later --
Type 32, Sub-type 14, Term-type TTPCL26.PUB.SYS[1],
Driver HIOASLP2;

NOTE

The LaserJet 2000 is supported using TTPCL26 only. If the system is on an older version of MPE and updating the operating system is not an option, configure as shown under "Everything Else" explained later in this guide.

Duplex printing will work but is not supported due to potential job separation conflicts. Adding ESC 'E' (programmable reset) at the end of the job will ensure that the next job starts on a fresh sheet.

Robust XON must be enabled for the LaserJet 2000. You can enable this from the front panel of the LaserJet 2000.

The term-type TTPCL26.PUB.SYS will send a hard reset (ESC 'E') to the printer. This causes the LaserJet to reset to portrait orientation. To disable all initialization, use term-type 18.

[1]TTPCL26.PUB.SYS is a term-type file shipped with UB-DELTA-1 (and later).

2687A

The 2687A is a desk-top laser printer with a serial RS-232 interface. It uses the same print engine as the 2688A, but a less intelligent controller. It does not print graphics.

Connected to an ATP Port:

If the system is on MPE IV, V/P, or V/R --
Type 32, Sub-type 14, Term-type 18, Driver HIOASLP0

If the system is on MPE V/E or later --
Type 32, Sub-type 14, Term-type TTPCL18.PUB.SYS[1],
Driver HIOASLP0

Connected to an ADCC Port:

If the system is on MPE IV or V/P --
Type 32, Sub-type 14, Term-type 18, Driver HIOTERM0

If the system is on MPE V/E or later --
Type 32, Sub-type 14, Term-type TTPCL18.PUB.SYS[1],
Driver HIOASLP2

NOTE

This printer is not supported as a spooled printer because it does not respond to status requests. The system has no way of telling if the printer is out of paper or if it is on line.

HPSLATE requires that this printer be configured with device class "BONSAIA"; TDP requires "LP2687".

[1]TTPCL18.PUB.SYS is a term-type file shipped with T-MIT (and later). If TTPCL18.PUB.SYS is not available, use term-type 18.

2688A

The 2688A is a desk-top laser printer that has many of the same capabilities as the 2680A. It uses single-sheet instead of fan-fold paper.

This printer is configured as follows:

Type 32, Sub-type 8, Driver HIOPPRT0; Device name: HP2688

NOTE

If you are using this printer for HPSLATE, it must be configured with device class "BONSAIB". For graphics, it must be configured with device class "PP88". For HPLISTKEEPER, you must use device class "PP".

293X Series

The 293X series of printers are 200-characters-per-second, dot-matrix printers. They are replacements for the 2631B.

The 2932A is a basic dot-matrix printer. The interfaces available are: RS-232, RS-422, Centronics and HP-IB. On a 3000, this printer would not be connected via a Centronics interface except as a slaved printer off a 2392A terminal. HP-IB is not used on this printer with a 3000.

The 2933A and 2934A have all the features of the 2932A. In addition they can print bar codes, and have options for MTS and DSN/Data Link. The 2934A also has some limited word processing functions.

This guide contains configuration for RS-232 and RS-422 only.

Connected to an ATP Port:

If the system is on MPE IV or V/P --
Type 32, Sub-type 14[1], Term-type 22, Driver HIOASLP0

If the system is on MPE V/E or later --
Type 32, Sub-type 14[1], Term-type TTPCL22.PUB.SYS[2],
Driver HIOASLP0; Device name: HPPCLATP

Connected to an ADCC Port:

If the system is on MPE IV, V/P, or V/R --
Type 32, Sub-type 14[1], Term-type 19, Driver HIOTERM0

If the system is on MPE V/E or later --
Type 32, Sub-type 14[1], Term-type TTPCL22.PUB.SYS[2],
Driver HIOASLP2; Device name: HPPCLADCC

Printer Settings

The settings for the 293X series are set from the operator's panel on the printer. To change the settings, follow these instructions:

1. Press the SELECT key and then the VIEW key. The printer will print a menu of choices.

2. Use the left and right arrow keys to move the print head underneath the desired selection on the menu.

3. Press the SELECT key.

4. Repeat steps 2 and 3 until you have made all your changes.

5. Press VIEW to save your changes.

---

[1]Use SUB-TYPE 15 for a dial-up modem. On a leased line or hardwired, use SUB-TYPE 14.

[2]TTPCL22.PUB.SYS is a term-type file shipped with T-MIT (and later). It will let the user select 6 or 8 lines per inch, compressed print, etc., from the printer panel. If TTPCL22.PUB.SYS is not available, use term-type 22.

Suggested Settings:

The following settings will work for a 293X printer configured with term-type 22 or TTPCL22.PUB.SYS at 2400 Baud:

```
                    *****  LIST INTERFACE  *****

                        *****  SERIAL  *****

              DATA SETTINGS  CONTROL SETTINGS  SET DEFAULTS


                        *****  DATA SETTINGS  *****

  BAUD RATE   DATA BITS   PARITY   PARITY CHECK   STRIP NULL/DEL   ALL
    2400          8       none       off             off

                    ***** CONTROL SETTINGS  *****

XON/XOFF   ENQ/ACK   BINARY ENQ/ACK   DTR/CD   (S)RTS/SCA   CTS/CB   RS/CH
  on         off          off         High       Low        Ignore   Low

                    *****  END OF SETTINGS  *****
```

Figure 2. 293X Printer Settings

EVERYTHING ELSE

For any other SERIAL RS-232 printer, from HP or another vendor, configure as follows:

Printers Connected to an ATP Port:

Type 32, Sub-type 14, Term-type 18, Driver HIOASLP0

Printers Connected to an ADCC Port:

If the system is on MPE IV, V/P, or V/R --
Type 32, Sub-type 14, Term-type 18, Driver HIOTERM0

If the system is on MPE V/E or later --
Type 32, Sub-type 14, Term-type 18, Driver HIOASLP2

NOTE

A printer configured with TERM-TYPE 18 is not supported as a spooled printer because the system cannot do any status checking. There is no way to tell if the printer is out of paper or if it is on line. If the printer is powered off, out of paper, or off line, the spoolfile will go into the active state and disappear.

HP82905 printers and some foreign printers use a hardware handshake instead of an XON/XOFF protocol. These printers will not work on the HP3000.

TROUBLESHOOTING

If you have trouble with a printer, especially a serial printer, follow these guidelines:

SYMPTOM	POSSIBLE CAUSES
Printer does not print anything and/or SP #ldev/STOPPED, SPOOLEE I/O ERROR	1. Check the configuration. 2. Check that the printer is powered up and on-line. 3. Check the cable. HP-IB cables should be firmly attached at both ends. For RS-232 cables: Direct connect cables must have at least pins 2,3 and 7 (HP cable 13242N is recommended). Modems will require more pins. The cable between the printer and modem should also be a 13242N. The cable between the 3000 and the other modem must have pins 2 and 3 crossed (HP cable 30062B). 4. Is the the paper out indicator lit? Check that the paper is loaded properly. 5. HP 2601A, 2602A and some foreign printers require other RS-232 pins. Three-wire ATP ports cannot provide the signals needed. Note that ADCC ports on MPE V/E don't supply DTR on pin 6 with sub-types 0 or 14. A custom cable can be made to jumper pins 4 and 5 together and pins 6, 8 and 20 together. 6. For term-types 19, 21 or TTPCL19.PUB.SYS the parity should be ODD. For term-types 20,22,26,TTPCL22,TTPCL26, use 8 data bits with no parity. 7. Check that the Baud rate on the printer matches the Baud rate that is configured on the 3000. 8. The printer may be broken. Try the self test.

The printer is printing garbage.	1. Check that the Baud rate on the printer matches the configuration. 2. The parity for term-type 18 and TTPCL18 should be "none". 3. Check the configuration.
The printer stops in the middle of a printout with a SPOOLEE I/O ERROR.	1. If you are using term-type 19, try term-type 21 instead. If you are using TTPCL19.PUB.SYS, use TTPCL22.PUB.SYS and change the printer to 8 data bits, NONE parity.

BACK ISSUE INFORMATION

Following is a list of the Application Notes published to date. If you would like to order single copies of back issues please use the *Reader Comment Sheet* attached and indicate the number(s) of the note(s) you need.

Note #	Published	Topic
1	2/21/85	*Printer Configuration Guide (superseded by note #4)*
2	10/15/85	*Terminal types for HP 3000 HPIB Computers (superseded by note #13)*
3	4/01/86	*Plotter Configuration Guide*
4	4/15/86	*Printer Configuration Guide - Revised*
5	5/01/86	*MPE System Logfile Record Formats*
6	5/15/86	*Stack Operation*
7	6/01/86	*COBOL II/3000 Programs: Tracing Illegal Data*
8	6/15/86	*KSAM Topics: COBOL's Index I/O; File Data Integrity*
9	7/01/86	*Port Failures, Terminal Hangs, TERMDSM*
10	7/15/86	*Serial Printers - Configuration, Cabling, Muxes*
11	8/01/86	*System Configuration or System Table Related Errors*
12	8/15/86	*Pascal/3000 - Using Dynamic Variables*
13	9/01/86	*Terminal Types for HP 3000 HPIB Computers - Revised*
14	9/15/86	*Laser Printers - A Software and Hardware Overview*
15	10/01/86	*FORTRAN Language Considerations - A Guide to Common Problems*
16	10/15/86	*IMAGE: Updating to TurboIMAGE & Improving Data Base Loads*
17	11/01/86	*Optimizing VPLUS Utilization*
18	11/15/86	*The Case of the Suspect Track for 792X Disc Drives*
19	12/01/86	*Stack Overflows: Causes & Cures for COBOL II Programs*
20	1/01/87	*Output Spooling*
21	1/15/87	*COBOLII and MPE Intrinsics*
22	2/15/87	*Asynchronous Modems*
23	3/01/87	*VFC Files*
24	3/15/87	*Private Volumes*
25	4/01/87	*TurboIMAGE: Transaction Logging*
26	4/15/87	*HP 2680A, 2688A Error Trailers*
27	5/01/87	*HPTrend: An Installation and Problem Solving Guide*
28	5/15/87	*The Startup State Configurator*
29	6/01/87	*A Programmer's Guide to VPLUS/3000*
30	6/15/87	*Disc Cache*
31	7/01/87	*Calling the CREATEPROCESS Intrinsic*
32	7/15/87	*Configuring Terminal Buffers*
33	8/15/87	*Printer Configuration Guide*
34	9/01/87	*RIN Management (Using COBOLII Examples) (A)*
34	10/01/87	*Process Handling (Using COBOLII Examples) (B)*
35	10/15/87	*HPDESK IV (Script files, FSC, and Installation Considerations)*
34	11/01/87	*Extra Data Segments (Using COBOLII Examples) (C)*
36	12/01/87	*Tips for the DESK IV Administrators*
37	12/15/87	*AUTOINST: Trouble-free Updates*
38	1/01/88	*Store/Restore Errors*
39	1/15/88	*MRJE Emulates a HASP Workstation*
40	2/01/88	*HP 250 / 260 to HP 3000 Communications Guidelines*
41	4/01/88	*MPE File Label Revealed - Revised 6/15/88*
42	7/15/88	*System Interrupts*
43	7/15/88	*Run Time Aborts*

44	8/01/88	*HPPA Pathing Conventions For HP3000 900 Series Processors*
45	8/15/88	*Vplus & Multiplexers*
46	8/15/88	*Setting Up An HPDesk/HPTelex For The First Time*
47	9/15/88	*Customizing Database Data Items & Changing Passwords in JCL Files*
48	11/15/88	*Printer Configuration (Revision #4)*

READER COMMENT SHEET

World Response Center Supports
HP 3000 Application Note #48: Printer Configuration
RC Questions & Answers (November 15, 1988)

We welcome your evaluation of this Application Note and attached RC Questions & Answers Sheet. Your comments and suggestions help us to improve our publications. Please explain your answers under Comments, below.

	AppNote	RC Q&A
Is this publication applicable to your site?	☐ Yes ☐ No	☐ Yes ☐ No
Are the concepts and wording easy to understand?	☐ Yes ☐ No	☐ Yes ☐ No
Would you like to see additional Notes on this subject?	☐ Yes ☐ No	☐ Yes ☐ No

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HEWLETT PACKARD RESPONSE CENTER QUESTIONS & ANSWERS

HP 3000 Questions Commonly Received by the North American Response Centers

Q. When bringing up the LAN network I get an error, Netxport Control Process Loc. 42 clas0002; device open. What does this error indicate?

A. This error is documented in Section 4 of the *NS3000/V Error Message and Recovery Manual.* When bringing up NS for the first time on a system it is important to remember that file NMCONFIG.PUB.SYS is a required file. The error indicates that the file, NMCONFIG. PUB.SYS, is either missing or inaccessible. NMCONFIG is used to hold logging parameters for SUB0005 (Network IPC), SUB006 (Network Services) and SUB008 (Physical Link). The main configuration file for NS, NSCONF.NET.SYS is used to hold logging parameters for SUB0003 (Network Transport) as well as keeping other NS/LAN configuration parameters.

When installing NS you must create the file NMCONFIG.PUB.SYS. Two methods are available: 1. You can fcopy from the file NMSAMP1.PUB.SYS directly to NMCONFIG.PUB.SYS, or 2. If you are on UBDELTA3 (or later) you can create the file by running NMMGR. PUB.SYS. In either case you may want to run NMMGR.PUB.SYS on the file NMCONFIG to customize console and disc logging to your individual needs. This procedure is documented in section 13 of the *NS3000/V Network Manager Reference Manual.*

* * * * *

Q. I am receiving an NS error on my console that I have not seen before. The message is: Netxport Probe : INTERNAL ERROR: Bad Unknown Message Type Loc:27; Class 2 : Parm %000031; PortID .... What is the problem and how do I fix it?

A. With NSII (NS of UB-Delta3, UB-Delta4, V-MIT and all subsequent MITs) a new message was added to the Probe Protocol; the Probe Node Down Message. This message is a courtesy message which indicates the Networking Software for that Node is in the process of being deactivated.

The Probe Protocol will currently log this Class 2 event when an unknown Probe Message Type is received and the packet will be tossed. Similar actions are taken for the HP1000 and HP9000 systems.

If you have a combination of NSI nodes (these are U, UA, UB, UB-Delta1, UB-Delta2 and XL nodes) and NSII nodes on your LAN, the NSI nodes will report a Class 2 event (most likely on the console) when NS is terminated on an NSII node. The event is reported because the NSII node sends out the "Probe Node Down Message" which the NSI nodes do not understand.

If you see this error on an NSI node and an NSII node has just stopped NS, you have nothing to worry about. If you see the message in other circumstances please call the Response Center for resolution.

more...

Q. Is the HP 2335 rugged writer printer supported on the 3000 and how do I configure it?

A. The HP 2335 rugged writer printer is supported on the HP3000 and is fully tested on the 2334 Multimux in a stat mux configuration as well. The HP 3000 host configuration is as follows:

SERIAL INTERFACE:

CABLES:
HP 13242Y, HP 92219G or HP 13242N for the ADCC and 25-pin ATP ports.
HP 13242X for 3-pin ATP ports
HP 30062B for 25-pin ATP/ADCC to 2334, HP 13242N for 2334 to printer

MPE CONFIGURATION:

Logical device #?	(Provided by System Manager)
Device Name?	HPPCLATP ATP/ATP37
	HPPCLADCC ADCC
DRT #?	(Provided by System Manager)
UNIT #?	(Provided by System Manager)
Software Channel #?	0
Type?	32
Subtype?	14 - direct connect or stat mux with no modem signal processing required.
	15 - stat mux or modem.
Termtype?	TTPCL22 - direct connect or modem
	TTPCL26 - 2334PLUS multiplexor
Speed?	1200, 2400 or 9600 baud
Record Width?	66
Output Device?	0
Accept Jobs/Sessions?	N
Accept Data?	N
Interactive?	N
Duplicative?	N
Initially Spooled?	Y or N
Auto Reply?	N
Driver Name?	HIOASLP0 ATP/ATP37
	HIOASLP2 ADCC
Device Class?	(optional)

PRINTER SETTINGS:

all switches down in bank A
all switches down in bank B except for BAUD rate (switches 9,10)
9600 BAUD 9,10 - down
2400 BAUD 9 - up, 10 - down
1200 BAUD 9,10 - up

more...

2334 CONFIGURATION:

See the HP2334A Multiplexor configuration guide for generic printer configuration. pre-defined profiles suggested are 2 for the computer side and 75 for the workstation side. These are defined for 9600 baud operation however. Profiles 6 for the computer side and 76 for the workstation side would be better. These are created from profiles 1 and 75 and are the same except for a change in baud rate to 2400 which better matches printer speed.

In addition, device flow control (X.3 parameter 12) is disabled on the remote mux if using TTPCL22. TTPCL26 requires that we enable flow control on the remote mux.

* * * * *

Q. When I try defining a BRW report after upgrading to UBDelta 3, BRW aborts with an error message "ADD TABLE FAILED, VDB_ADD,...". I receive a similar message, "ADD ITEM OCCURRENCE FAILED, VDB_ADD,..." when running RSETUP.

A. As of UBDelta 3, BRW version A.00.20, the system configuration for the Maximum Extra Data Segment size must be set to the maximum value allowed, 32767. The *BRW manual (P/N 36070-90001)*, gives the system configuration requirements for BRW. However, it shows the Maximum Extra Data Segment requirement to be only 8192, which is sufficient for pre-A.00.20 BRW. The Maximum Extra Data Segment configuration can be changed during a Coldstart or Reload on the way up or, preferably, from a SYSDUMP tape. The question comes up in the SEGMENT LIMIT CHANGE portion of the SYSDUMP dialog.

* * * * *

Q. Some time ago, I increased my HP3000 system tables according to the guidelines in the manual. Now I am running out of room in some of them. What is happening?

A. As MPE and your applications become more sophisticated, more of everything is used including the number of processes, the number of segments, and the number of parameters passed via your stacks.

There are many different guidelines available for setting your tables, including the *System Operation and Resource Management Reference Manual (P/N 32033-90005)*, which had updates published in August 1986 and June 1987. However, the most direct and scientific way to determine the needs for your system, is to look at what space is actually being used.

OPT/3000 will display the table usage. TUNER, an unsupported utility in the TELESUP account, will also display table usage. The tables should be large enough to hold whatever peak activity might occur, plus a margin of safety. Only on very old HP3000's with limited memory would you try to economize on wasted bytes, most systems now have megabytes. You can afford to be generous with table sizes. The alternative is bad news for your users when processing is interrupted.

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Q. One or more of my modem ports keeps hanging. When I put a breakout box or protocol analyzer on the line I notice that the HP port seems to periodically drop DTR. Is there a hardware problem?

A. Most customers will configure ATP/ADCC modem ports as subtype 1. One of the features of subtype 1 is a speedsense timer which starts as soon as DSR (Data Set Ready) and DCD (Data Carrier Detect) signals are provided. This condition occurs when a modem call comes in, and when using some equipment (such as PBXs or data switches) where both signals remain high. After two minutes this timer pops and the port is reset. During the reset of the port DTR (Data Terminal Ready) is dropped for about 5 seconds for the following reason. If two minutes have elapsed and we still have not seen a carriage return on the port, something may have gone wrong. The port is reset to prepare for another try, DTR is dropped and the line is disconnected.

Problems arise with the speed sense timer when third party equipment is attached to the ATP or ADCC port. Modems, Multiplexors, PBX's and Data Switches often have the capability to strap DSR and DCD high all the time. You can guess what might happen at this point. After 2 minutes the port is reset, DTR is dropped and as a result of the dropped connection third party equipment may hang or the ADCC/ATP port may hang if data is sent anyway. Even when no hangs or port failures occur, the CPU is interrupted when the two minute timer pops. This can cause significant system overhead if more than one port is involved which would typically be the case where PBXs or Data Switches are concerned.

Because of the increased use of PBX's, Data Switches and similar equipment, HP has created subtypes 10 and 11, which are similar to subtypes 1 and 5 respectively, with the speed sense timer removed. Subtype 10 uses speed sensing; subtype 11 is speed specified. These subtypes were introduced with UB mit and are only supported on ATP ports but may be used on several previous operating systems running ATP software level G.50.83 or later, (as indicated by running termdsm). These two subtypes are currently recommended by Response Center Engineers as workarounds for some ATP firmware problems related to the presence of the speed sense timer and data communication devices where both DSR and DCD remain high.

NOTE

DSR and DCD are monitored by the HP3000 ATP/ADCC (with Subtype=1), and must be provided by the MODEM, PBX, Data Switch, etc. The HP3000 ATP/ADCC (with Subtype=1) will provide DTR which may be monitored by the MODEM, PBX, Data Switch, etc.

Please see the COMMUNICATOR 3000 Version G.02.B0 of MPE/V UB-MIT (P/N 5958-3145), for a discussion on Subtypes 10 and 11.