ThinkJet Printer

Application Notes

For Popular Personal Computers

HP Computer Museum
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Table of Contents

This binder contains the following application notes:

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HARDWARE APPLICATION NOTE

CONNECTING THE THINKJET PRINTER
TO AN IBM PC, PC XT
(Serial Interface)

Equipment Required:

COMPUTER-IBM PC or PC XT with an IBM Asynchronous Communications Adaptor.
CABLE-   · HP13242H Serial Printer Cable, HP17255D Serial Printer Cable, or equivalent.

Procedure:

1. Turn OFF the power to all of the equipment.

2. Set the configuration switches on the rear panel of your ThinkJet printer per the following illustration.
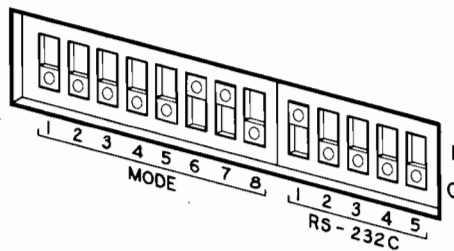
NOTE: Standard switch settings are shown. Individual software packages may require the user to modify these settings.

3. Turn ON the power to the equipment.

4. On the IBM PC: Be sure that a DOS disc is in drive A.

5. Type the following commands after the PC DOS prompt **A>** or **C>**:
   a. **MODE COM1:96,N,8,1,P** then press the **Enter** key. (This command configures the port for operating parameters which match those of the printer.)
   b. **MODE LPT1: = COM1** then press the **Enter** key. (This command causes the system to direct all printer output to Port 1.)

NOTE: If your printer is connected to Port 2, change **COM1** in the above commands to **COM2.**

6. To verify the printer's connection, hold down the **SHIFT** key and press the **PrtSc** key on the computer's keyboard. Any text on the screen will print out. However, line draw and graphics characters will print as "garbage."

HARDWARE APPLICATION NOTE _____

CONNECTING THE THINKJET PRINTER
TO AN IBM PC, PC XT
(Parallel Interface)

Equipment Required:

COMPUTER-IBM PC or PC/XT with IBM Parallel Printer Interface Adaptor.
CABLE-   IBM Parallel Printer Cable (or equivalent).

Procedure:

1. Turn OFF the power to all of the equipment.

2. Set the configuration switches on the rear panel of your ThinkJet printer per the following illustration.
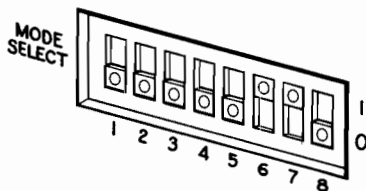
NOTE: Standard switch settings are shown. Individual software packages may require the user to modify these settings.

3. Turn ON the power to the equipment.

4. On the IBM PC: Be sure that a DOS Disk is in drive A.

5. To verify the printer's connection, hold down the **SHIFT** key and press the **PrtSc** key on the computer's keyboard. Any text on the screen will print out. However, line draw and graphics characters will print as "garbage."

HARDWARE APPLICATION NOTE _____

CONNECTING THE THINKJET PRINTER
TO AN IBM PC, JR.
(Parallel Interface)

Equipment Required:

COMPUTER-IBM PC, Jr. with IBM Parallel Printer Attachment.
CABLE-   IBM Parallel Printer Cable (or equivalent).

Procedure:

1. Turn OFF the power to all of the equipment.

2. Set the configuration switches on the rear panel of your ThinkJet printer per the following illustration.
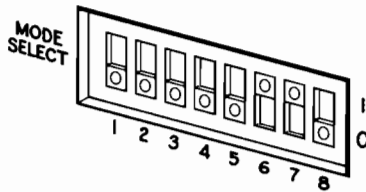
Note: Standard switch settings are shown. Individual software packages may require the user to modify these settings.

3. Turn ON power to the equipment.

4. To verify the printer's connection, hold down the **Fn** (green) key and press the **Prtsc (P)** key on the computer's keyboard. Any text on the screen will print out. However, line draw and graphics characters will print as "garbage".

HARDWARE APPLICATION NOTE _____

CONNECTING THE THINKJET PRINTER
TO AN IBM PCjr
(Serial Interface)

Equipment Required:

COMPUTER-IBM PCjr
CABLE-   HP92219P, or IBM Adapter Cable for Serial Devices and HP 13242H, or IBM
Adapter Cable for Serial Devices and HP 17255D.

Procedure:

1. Turn OFF the power to all of the equipment.

2. Set the configuration switches on the rear panel of your ThinkJet printer per the
following illustration.
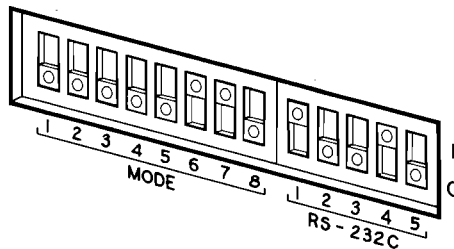
NOTE: Standard switch settings are shown. Individual software packages may require the
user to modify these settings.

3. Turn ON your computer and printer.

4. Be sure that a DOS disc is in drive A of the PC.

5. Each time your PC is turned on do the following.
From the PC DOS prompt A>:
   a. Type **MODE COM1:24,N,8,1,P** then press the **ENTER** key. (This command config-
   ures the port for operating parameters which match those of the printer.)
   b. Type **MODE LPT1: = COM1:** then press the **ENTER** key. (This command causes the
   system to direct all printer output to Serial Port 1.)

6. To verify the printer's connection, hold down the **Fn** (green) key and press the **PrtSc** (P)
key on the computer's keyboard. Any text on the screen will print out. However, line
draw and graphics characters will print as garbage.

HARDWARE APPLICATION NOTE _____

CONNECTING THE THINKJET PRINTER
TO AN APPLE II + OR APPLE IIe
(Parallel Interface)

Equipment Required:

COMPUTER - Apple II + or IIe with the Apple II Parallel Interface Card.
CABLE -   Apple parallel printer interface cable (Apple part no. 590-0042) or equivalent.

Procedure:

1. Turn OFF the power to all of the equipment.

2. Set configuration switches on the rear panel of your ThinkJet printer per the following illustration.
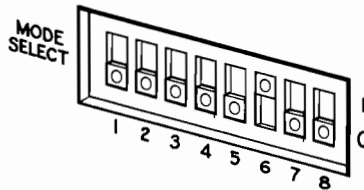
3. Set configuration switches on the Parallel Interface Card according to the illustration below, and install the board into interface slot 1 as instructed in Chapter 1 of the Parallel Interface Card Installation and Operating Manual.
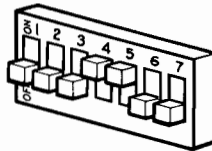
4. Put the system master disk into drive 1.

5. Turn ON the power to the equipment.

6. The following BASIC program will verify proper connection between computer and printer. This program will run properly only if DOS is loaded. Type:

```
10 REM CONNECTION VERIFICATION
20 PRINT CHR$ (4);"PR#1"
30 FOR I = 0 TO 10
40 FOR J = 33 + I TO 111 + I
50 PRINT CHR$ (J);
60 NEXT J
70 PRINT
80 NEXT I
90 PRINT
100 PRINT CHR$ (4);"PR#0"
110 END
```

7. Type **RUN** and press the **RETURN** key.

8. The following will print.

```
]RUN
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmno
"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnop
#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopq
$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqr
%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrs
&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrst
'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrstu
()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrstuv
)*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrstuvw
*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrstuvwx
+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrstuvwxy
```

From CP/M:

Press the **CONTROL** key and **P** simultaneously to copy all characters on the screen to the printer. Use this command and, at the A> prompt, type **DIR** then press the **RETURN** key to list all files and copy them to the printer.

HARDWARE APPLICATION NOTE

CONNECTING THE THINKJET PRINTER
TO AN APPLE IIc
(Serial Interface)

Equipment Required:

COMPUTER-Apple IIc
CABLE-   HP 92219N Serial Printer Cable, or Apple Serial Printer Interface Cable
              (Apple part no. 590-0191-A).

Procedure:

1. Turn OFF the power to all of the equipment.

2. Set the configuration switches on the rear panel of your ThinkJet printer per the
   following illustration.
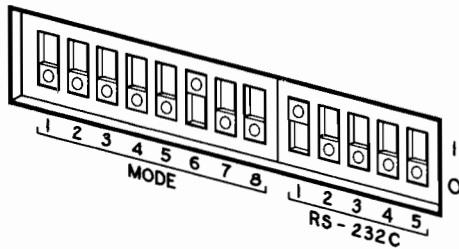
3. Put the system master disc into drive 1.

4. Turn ON the power to the equipment.

5. The following BASIC program will verify proper connection between computer and
   printer. This program will run properly only if DOS is loaded. Type:

```
10 REM CONNECTION VERIFICATION
20 PRINT CHR$ (4);"PR#1"
30 FOR I = 0 TO 10
40 FOR J = 33 + I TO 111 + I
50 PRINT CHR$ (J);
60 NEXT J
70 PRINT
80 NEXT I
90 PRINT
100 PRINT CHR$ (4);"PR#0"
110 END
```

6. Type **RUN** and press the **RETURN** key.

7. The following pattern will print.

```
]RUN
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmno
"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnop
#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopq
$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqr
%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrs
&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrst
'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrstu
()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrstuv
)*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrstuvw
*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrstuvwx
+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrstuvwxy
```

HARDWARE APPLICATION NOTE _____

CONNECTING THE THINKJET PRINTER
TO AN APPLE II + OR APPLE IIe
(Serial Interface)

Equipment Required:

COMPUTER-Apple II + or Apple IIe with Apple Super Serial Card.
**CABLE**-   HP 17355M Serial Printer Cable, or Apple Serial Printer Interface Cable
(Apple part no. 590-0037).

Procedure:

1. Turn OFF the power to all of the equipment.

2. Set the configuration switches on the Super Serial Card to match the following illustra-
tion and install the card in slot 1 as instructed in the Super Serial Card Installation and
Operating Manual.
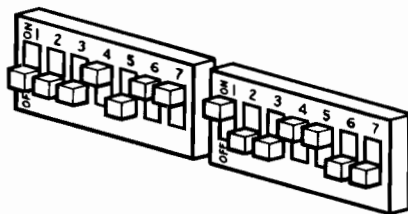
3. Set the configuration switches on the rear panel of your ThinkJet printer according to the
following illustration.

4. Put the system master disc into drive 1.

5. Turn ON the power to the equipment.

6. The following BASIC program will verify proper connection between computer and printer. This program will run properly only if DOS is loaded. Type:

```
10 REM CONNECTION VERIFICATION
20 PRINT CHR$ (4);"PR#1"
30 FOR I = 0 TO 10
40 FOR J = 33 + I TO 111 + I
50 PRINT CHR$ (J);
60 NEXT J
70 PRINT
80 NEXT I
90 PRINT
100 PRINT CHR$ (4);"PR#0"
110 END
```

7. Type **RUN** and press the **RETURN** key.

8. The following pattern will print.

```
]RUN
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmno
"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnop
#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopq
$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqr
%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrs
&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrst
'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrstu
()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrstuv
)*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrstuvw
*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrstuvwx
+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrstuvwxy
```

From CP/M:
Press the **CONTROL** key and **P** simultaneously to copy all characters on the screen to the printer. Use this command and, at the A> prompt, type **DIR** then press the **RETURN** key to list all files and copy them to the printer.

Information Note

THINKJET WORKS ON MACINTOSH™!

"Good things come to those who wait." It's been some time coming, but now there are two ways to connect HP's ThinkJet Printer to Apple's Macintosh Computer. Backing up these connections are software drivers that provide the full functionality found in Apple's own Imagewriter Printer. With either of the configurations described below you can enjoy quiet inkjet printing along with your Mac. Easy installation instructions are provided with each.

Two Configurations–

Configuration 1:
Apple Mac   +   SoftStyle JetStart   +   HP ThinkJet with Serial Interface.

Using the ThinkJet printer with serial interface (model 2225D) and JetStart, a software driver from SoftStyle, Inc., the Apple Imagewriter can be replaced with a ThinkJet printer.

Cable Requirements: Standard Imagewriter cable or equivalent from Hewlett-Packard, HP Part No. 92219M.

JetStart is available from your nearest Hewlett-Packard dealer, HP Computer Supplies Operation (CSO), or a SoftStyle dealer.

Configuration 2:
Apple Mac   +   Microsoft MacEnhancer   +   HP ThinkJet with Serial or
                                                 Parallel Interface.

Using the ThinkJet printer with a serial interface (model 2225D) or parallel interface (model 2225C) and MacEnhancer, a software/hardware product from Microsoft, Inc., the Apple Imagewriter can be replaced by a ThinkJet printer.

Cable Requirements: ThinkJet with serial interface (model 2225D), HP Part No. 13242H or 17255D; ThinkJet with parallel interface (model 2225C), HP Part No. 92219K.

MacEnhancer is available from most Microsoft dealers.

Hewlett-Packard cables are available from Hewlett-Packard Computer Supplies Operation (CSO). Telephone, USA: 1-800-538-8787.

HARDWARE APPLICATION NOTE _____

CONNECTING THE THINKJET PRINTER
TO AN HP 150A/B
(Serial Interface)

Equipment Required:

COMPUTER-Hewlett-Packard 150A and 150B with Serial interface.
CABLE-   HP printer interface cable, HP Part No. 13242G.

Procedure:

1. Turn off the power to your computer and printer.

2. Set the configuration switches on the back of your ThinkJet printer per the following illustration. (Factory default settings shown.)

3. Plug one end of the interface cable into the connector labeled "DATACOM (port2)" located on the back of your HP 150.

MS-DOS Configuration:

4. Turn ON your equipment and enter P.A.M. (included on the same disc as MS-DOS).

5. Touch **DEVICE CONFIG** then **Start Applic.** (illuminated "boxes" on your screen). This will run the MS-DOS Device Configuration Program.

6. Touch **PRN:Interface** field. Touch **Previous Choice** or **Next Choice** until **Port 2** appears in the interface field box.

7. Touch the **PRN:Model** field. Touch **Previous Choice** or **Next Choice** until **ThinkJet** appears in the model field; if ThinkJet is not among the choices offered select **Other.**

8. Touch **Save Config** then **Exit Config.**

Terminal Configuration:

9. Touch **Terminal.**

10. Press the **User System** key.

11. Touch **device control** then touch **"to" devices.**

12. Touch **SERIAL DEVICE.** An asterisk (*) will appear in the SERIAL DEVICE field.

13. Press the **User System** key.

Port 2 Configuration:

14. Touch **config keys** then **port2 config.**

15. Set the fields displayed as shown below. Touch the fields that you want to change and touch **Previous Choice** or **Next Choice** until the correct selection appears.

```
                    FULL DUPLEX HARDWIRED        Port 2

BaudRate  9600     Parity  None    DateBits 8                        Clock   INT
Asterisk  Off                      Stop Bits 1      EnqAck  No
   TR(CD) Hi     Check Parity  No      SR(CH) Lo

RecvPace   None                    SRRXmit  No    RR(CF)Recv  No
XmitPace Xon/Xoff                  SRRInvert No   CS(CB)Xmit  No  DM(CC)Xmit  No
```

16. Touch **Save Config.** This will save and use the new settings, and return you to terminal mode.

17. Hold down the **Shift** key and press the **Stop** key. This will return you to P.A.M.

Configuration Verification:

18. From P.A.M. touch **MSDOS** then touch **Start Applic.**

19. When the A> prompt appears type **dir > prn** then press the **Return** key. This will cause the directory of disc A to be printed on your ThinkJet.

20. Type **EXIT** then press the **Return** key. This will return you to P.A.M.

HARDWARE APPLICATION NOTE _____

CONNECTING THE THINKJET PRINTER
TO AN HP 150 A/B
(HP-IB INTERFACE)

Equipment Required:

COMPUTER-Hewlett-Packard 150A and 150B with HP-IB interface.
CABLE-   HP printer interface cable, HP Part No. 10833A (1 meter).

Procedure:

1. Turn off the power to your computer and printer.

2. Set the configuration switches on the back of your ThinkJet printer per the following illustration. (Factory default settings shown.)
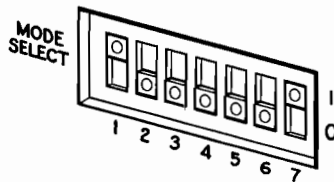
3. Turn ON the power to the equipment.

MS-DOS Configuration:

4. Enter P.A.M. (included on the same disc as MS-DOS).

5. Touch **DEVICE CONFIG** and **Start Applic.** (illuminated "boxes" on your screen). This will run the MS-DOS Device Configuration Program.

6. Touch **PRN:Interface** field. Touch **Previous Choice** or **Next Choice** until **HPIB** appears in the interface field box.

7. Touch **PRN:Address** field then the **Previous Choice** or **Next Choice** until 1 appears in the address field.

8. Touch **PRN:Model** field, then **Previous Choice** or **Next Choice** until **THINKJET** appears in the model field; if ThinkJet is not among the choices offered select **Other.**

9. Touch **Save Config** then **Exit Config.**

Terminal Configuration:

10. Touch **Terminal.**

11. Press the **User System** key.

12. Touch **Device Control** then **"to"** devices.

13. Touch **HP-IB DEVICE.** An asterisk (*) will appear in the HP-IB DEVICE field.

14. Hold down the **Shift** key and press **STOP.** This will return you to P.A.M.

Configuration Verification:

15. From P.A.M. touch **MSDOS COMMANDS** then **Start Applic.**

16. When the A> prompt appears type **dir / w > prn** then press the **Return** key. This will cause the directory of disk A to be printed out on your ThinkJet printer.

17. Type **EXIT** then press the **Return** key. This will return you to P.A.M.

HARDWARE APPLICATION NOTE _____

CONNECTING THE THINKJET PRINTER
TO AN HP 110
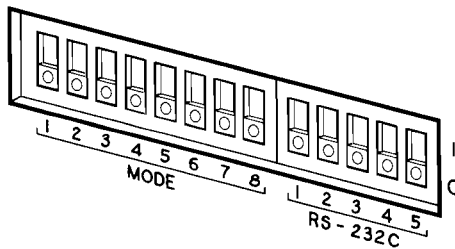### (HP-IL Interface)

Equipment Required:

COMPUTER-Hewlett-Packard 110 with HP-IL interface.
CABLE-   HP printer interface cable, HP Part No. 82167A (1 meter).

Procedure:

1. Turn OFF the power to your computer, printer, and other peripherals on the loop.

2. Connect your system as shown in the illustration below. The order in which the peripherals are connected is critical.
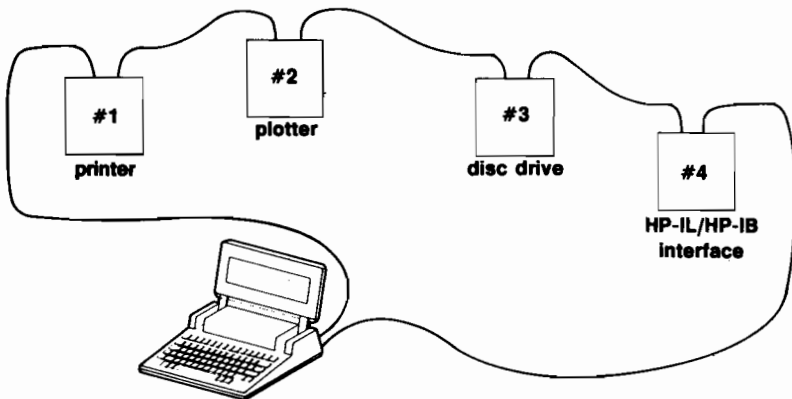
3. Turn ON all peripherals in the loop. They must remain ON or the loop will not operate.

System Configuration:

4. From P.A.M. press **f6** to enter **System Config**.

5. Use the **TAB** or cursor control keys to locate fields on the screen, and the **Next Choice** (f3) or **Previous Choice** (f4) keys to select the setting below.*

Field	Setting
Printer:	HP Graphics/Alpha
Printer Interface:	HP-IL
Print Pitch:	No Config
Print line spacing:	No Config
Print skip perf:	No Config

*System default settings shown.

6. Press **Exit Config** (f8) to save the settings and return to P.A.M.

HARDWARE APPLICATION NOTE _____

CONNECTING THE THINKJET PRINTER
TO AN HP 150A/B
(Parallel Interface)

Equipment Required:

COMPUTER-HP 150A/B with Extended Input/Output Accessory, HP 45643A.
CABLE-   Hewlett-Packard Part No. 13242D.

Introduction:

The HP 150 has two basic modes of operation, Terminal Mode and Personal Computer Mode. The Extended Input/Output Accessory has been designed to provide the capability of using ThinkJet parallel interface printers while in Personal Computer Mode. This application note describes the specific steps necessary to configure your system for use with your ThinkJet as a PC printer.

Procedure:

Hardware Configuration

1. Turn OFF power to all of the equipment.

2. Install the Extended I/O Board in your HP 150. The right-hand slot, as you face the rear of the computer, is the most often selected. See Chapter 1 of the Extended I/O User's Guide for details.

3. Set the configuration switches on the rear panel of your ThinkJet printer per the following illustration.
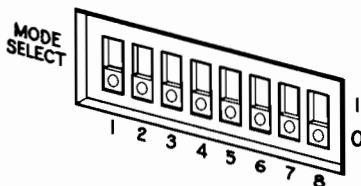
MS-DOS Configuration

4. a. If you are using an HP 150 with dual Floppy Disc Drives, place your working System Master disc in drive A and your Extended I/O disc in drive B.

   b. If you are using an HP 150 with a Hard Disc Drive place your Extended I/O into drive B.

5. Turn ON the power to the equipment.

6. From the P.A.M. Menu, touch **MSDOS COMANDS** then **Start Applic** (f1 key).

7. From the A> system prompt type **VER** then press the **RETURN** key.

8. A message will be displayed showing the version of the Operating System you are currently running.
   a. If the message says, MS-DOS Version 2.01: Follow the instructions in the next section, MS-DOS Configuration for Version 2.01.
   b. If the message says, MS-DOS Version 2.11: Skip the next section and follow the instructions under MS-DOS Configuration for Version 2.11

9. Type **EXIT** then press the **RETURN** key. This will return you to P.A.M.

MS-DOS Configuration for Version 2.01 Operating Systems (Version A):

10. From the P.A.M. Menu, touch **EXTEND IO** then **Start Applic**. (f1 key).

11. Type A then press the **RETURN** key. This identifies the drive containing the working System Master as the target.

12. Touch **Add Parallel** (f3 key). This adds the parallel printer software to your working System Master. The Extended I/O Accessory can provide support for either a parallel printer or an HP-IL printer, but not both at the same time. If the HP-IL software is currently on your working System Master, adding the Parallel software will automatically remove the HP-IL.

13. Touch **EXIT** (f8 key). You are done configuring your system and will be returned to P.A.M.

14. Now perform a hard reset by holding down the **SHIFT** and **CTRL** keys and pressing the **RESET** key. This will reload the system, parallel printer software included. Your parallel ThinkJet is now the PRN printer in your system regardless of what appears in Device Config. For any other printer on the system to function it will need to be configured as the system LST device. To properly configure the LST device, run the Device Config Program on your System Master as explained in your HP 150 PC Owner's Guide.

MS-DOS Configuration for Version 2.11 Operating Systems (Version B):

10. From the P.A.M. Menu touch **DEVICE CONFIG** then **Start Applic**. (f1 key).

11. Touch the **PRN:Interface Field** and set it to Parallel using the **Previous Choice** or **Next Choice** keys.

12. Touch the PRN:Model Field and set ThinkJet using the **Previous Choice** or **Next Choice** keys.

13. Touch **Save Config** then **Exit Config**.

Verification:

1. From the P.A.M. Menu touch **MSDOS COMANDS** then **Start Applic**. (f1 key).

2. Once the A> prompt appears, type **dir > prn** then press the **RETURN** key. This will cause the directory of the disc in drive A to be printed on your ThinkJet.

3. Type **EXIT** then press the **RETURN** key. This will return you to P.A.M.

HARDWARE APPLICATION NOTE _____

CONFIGURING THE THINKJET PRINTER
TO AN HP 150 A/B
(HP-IL Interface)

Equipment Required:

COMPUTER-HP 150A/B with Extended Input/Output Accessory, HP 45643A.
**CABLE-**   Two HP-IL cables (supplied with equipment).

Introduction:

The HP 150 has two basic modes of operation, Terminal Mode and Personal Computer Mode. The Extended Input/Output Accessory has been designed to provide the capability to use ThinkJet printers while in Personal Computer Mode. This application note describes the specific steps necessary to configure your system for use with your ThinkJet as a PC printer.

The HP-IL software that you will be adding to your working System Master needs approximately 10K bytes of memory space. This space will be occupied on disc and, most importantly, in main memory each time you load the system. Due to the reduction in available memory, there are some large applications that may not work after adding this software to your system.

Important: The Extended Input/Output Accessory **does not** provide any Terminal Mode support of printers. This means that use of the **Print** key, or Device Control and Device Mode functions **will not work** with the printer connected to the extended I/O. Because of this, only HP-IB interface ThinkJet printers are recommended for use with HP 150.

Procedure:

Hardware Configuration

1. Turn off power to all equipment in your system.

2. Install the Extended I/O Board into your HP 150. The right-hand slot, as you face the rear of the computer, is the most often selected. See chapter 1 of the Extended I/O Owner's guide for details.

3. Using two HP-IL cables, plug one end of each of the cables into the Extended I/O Board, and the other end into the printer. Two cables are required to complete the loop, one cable is supplied with the ThinkJet, the other with the Extended I/O Board. If you are connecting other equipment to the loop consult the Multiple Device Connection section in Chapter 4 of your Extended I/O Owner's Guide for further information.

MS-DOS Configuration

4. a. If you are using an HP 150 with dual Floppy Disc Drives, place your working System Master disc in drive A and your Extended I/O disc in drive B.

    b. If you are using an HP 150 with a Hard Disc Drive place your Extended I/O disc into drive B.

5. Turn on the power to your equipment.

From the P.A.M. Menu:

6. Touch **EXTEND IO**, then **Start Applic.** (f1 key).

7. Type **A**, then press the **RETURN** key. This identifies the drive containing the working System Master as the target.

8. Touch **Add HP-IL** (f4 key). This adds the HP-IL printer software to your working System Master. The Extended I/O Accessory provides support for either a parallel printer or an HP-IL printer, but not both at the same time. If the parallel software is currently on your working System Master, adding the HP-IL software will automatically remove the parallel.

9. Touch **EXIT** (f8 key). You are done configuring your system and will be returned to P.A.M.

10. Now perform a hard reset by holding down the **SHIFT** and **CONTROL** keys and pressing the **RESET** key. This will reload the system, HP-IL printer software included. Your HP-IL ThinkJet printer is now the PRN printer in your system regardless of what appears in Device Config. For any other printer on the system to function it will need to be configured as the system LST device. To properly configure the LST device, run the Device Config Program on your System Master, as explained in your HP 150 PC Owner's Guide.

Verification

11. Touch **MSDOS COMMANDS**, then **Start Applic.** (f1 key).

12. Once the A> system prompt appears, type **dir>prn**, then press the **RETURN** key. This will cause the directory of the disc in drive A to be printed on your ThinkJet printer.

13. Type **EXIT**, then press the **RETURN** key. This will return you to P.A.M.

pfs®:graph

Software Publishing Corporation ——————— **ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND
pfs:graph (revision B)
ON THE IBM PC, PC XT

Introduction

The procedure outlined in this application will assist you in setting up and using your ThinkJet Printer with pfs:graph (revision B) and the IBM personal computer.

Hardware Configuration

Set the switches on the rear panel of your parallel ThinkJet Printer as follows: Switch 5 UP (1), all others DOWN. This setting enables the "alternate" graphics control mode as required by pfs:graph. See Hardware Application Note for the IBM PC with parallel interface, HP Part No. 5954-2905(54).

Note: Page 7-5 of the pfs:graph Manual refers to "Epson" mode. "Alternate" mode and "Epson" mode are interchangeable terms.

System Configuration

No MS-DOS configuration is required before running pfs:graph.

Application Configuration

Your ThinkJet Printer will give you fast, high quality graphics without special configuration of pfs:graph. Each time the print function is selected from the main menu, a list of printers from which to choose is displayed; ThinkJet is #6 on this list. To avoid having to make this selection each time, use the SETUP program as described in appendix B of your pfs:graph manual. This will allow you the added convenience of automatically selecting ThinkJet as your printer each time you print a graph.

Using Printer Features

pfs:graph does not support any of the formatting or character enhancement features of the ThinkJet Printer.

pfs®:write

Software Publishing Corporation ――――――― **ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND
pfs:write
ON THE IBM PC, PC XT

Introduction

The procedures outlined in this application note will assist you in using your ThinkJet printer with the *pfs*:write package (Rev. B) on the IBM Personal Computer. We suggest that you read Chapter 3, Print, of the *pfs*:write manual, which describes how to print a *pfs*:write document and Print Enhancements, and Sending Special Codes to Your Printer in Chapter 7. Your ThinkJet printer will give you fast, high-quality printing.

Hardware and System Configuration

See Hardware Application Note for the IBM PC with parallel interface, HP Part No. 5954-2905(54); use recommended hardware configuration.

Application Configuration

No printer setup is necessary with *pfs*:write. The default printer is LPT1:, the parallel printer.

Using Printer Features

The PRINT function will create a printed copy of the working copy of your document. Use the following procedure to print a document.

1. Press **ESC** to get to the *pfs*:write MAIN MENU.

2. Type **3** in the SELECTION NUMBER field, then press **F10**. You will now see the PRINT MENU. In many cases, you can print the document without making any changes to the PRINT MENU.

3. Press **F10** twice to print your document.

pfs:write Features

The following *pfs*:write features are supported on the ThinkJet printer.

1. Top, bottom, left, and right margins.

   pfs:write has a narrow default print region. To widen your left and right margins in *pfs*:write follow these steps:
   a. Press the **Esc** key to get to the MAIN MENU.
   b. Type **2**, then press **F10**. This takes you to the DEFINE PAGE MENU.
   c. Type **05** in the LEFT MARGIN field.
   d. Press the **TAB** key once, then type **75** in the RIGHT MARGIN field.
   e. When you are done press **F10** to return to TYPE/EDIT mode and see the new margins.

2. Headings and footers. This is done through the Define Page Menu.

3. Underlining and boldface.

   From the TYPE/EDIT screen:
   a. Position the cursor to the character(s) you desire in bold or to be underlined.
   b. Press the **Shift** key and **F8** for bold, or press the **Shift** key and **F7** to underline the characters.

   Both enhancements can be done to the same character by selecting bold or underlining, then repositioning the cursor over the character and selecting the other enhancement.

   To remove bold or underline, type over the enhanced characters.

4. Number of copies, and single and double spacing, and indentation. All are selected through the Print Menu screen.

   Note: The loss of data on the right-hand side of the page can result from the use of this feature. This is because blanks are inserted in front of each line in the document in order to achieve the desired indentation. This can result in lines extending past the right-hand edge of the paper and therefore some words may not be printed.

5. *New Page*.

   Note: This command, once issued within a document, invalidates the pagination as shown on the display.

6. *PRINTER code1,code2, etc. *

   Typing any of the following printer control sequences in your *pfs:*write text will cause the characters after the printer control sequence to be enhanced with the selected feature when printed to your ThinkJet printer. The printer control sequence will not be printed by the ThinkJet printer.

Printer Control Sequences	Selected ThinkJet Feature
*P 27,38,107,48,83 *	Normal print (12 cpi)
*P 27,38,107,49,83 *	Expanded print (6 cpi)
*P 27,38,107,50,83 *	Compressed print (21.3 cpi)
*P 27,38,107,51,83 *	Expanded-compressed print (10.7 cpi)
*P 27,38,108,54,68 *	6 lines per inch line spacing
*P 27,38,108,56,68 *	8 lines per inch line spacing
*P 14 *	Bold mode ON
*P 15 *	Bold mode OFF

   For additional control sequences, please refer to the Table of HP Mode Print Features in your ThinkJet Printer Manual.

7. *JOIN filename*.

   The *JOIN* command invalidates the pagination shown on the display.

   Any *PRINTER* commands imbedded in the joined file will not be interpreted as control sequences by *pfs:*write; these sequences will be printed as normal ASCII text.

   If you would like to join a file that is more than 80 columns wide, you will need to use *PRINTER* commands to change the number of characters per line on the ThinkJet printer.

   For example, to add a report named Rentals that is 140 columns wide, you would enter the following commands in your document where you want the report to be printed.

*P 27,38,107,50,85 *	(Sets the printer to 142 characters per line.)
JOIN Rentals	(Insert the Rentals report here.)
*P 27,38,107,48,85 *	(Returns the printer to 80 characters per line.)

8. Form letters. See Chapter 4 of the *pfs:*write Manual.

9. *GRAPH filename. * (Not supported in this release.)

   This feature is NOT supported in this release of *pfs:*write. Contact your dealer or Software Publishing Corporation for information about upgrading to the new release that supports ThinkJet.

Helpful Hints

The pagination as shown on the screen can be effectively disabled by setting the PAGE LENGTH to 0 using the DEFINE PAGE function. This makes the document appear to be one continuous page with no page breaks. Under these conditions, page breaks are inserted by placing a *NEW PAGE* command in the document at the appropriate places. In this case, *NEW PAGE* actually generates an ASCII form feed control character which is sent to the printer when the command is encountered in the document. This mode of operation allows the user to insert as many *P* control sequences as desired anywhere in the document without affecting the pagination.

The **PrtSc** key can be used at any time to print the current screen. Make sure you hold down the **SHIFT** key while pressing the **PrtSc** key.

NOTE: ThinkJet does not contain line draw characters. The screen borders will print as characters.

MultiMate™

MultiMate International ——————————— **ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND MULTIMATE ON THE IBM PC, PC XT

Introduction

We suggest you read and follow the instructions in the "Getting Started" section of your MultiMate Manual. This section will help in setting up the MultiMate system for your IBM PC or PC XT, and explain how to get to the MultiMate Main Menu.

Before using MultiMate to print documents to your ThinkJet printer, it will be necessary to have a copy of the correct .PAT file on your system disk. The .PAT file is a file which MultiMate uses to communicate with your printer. The TTYCRLF.PAT file is a generic file already on your system disk that most printers can use, and we recommend that you use this file initially. A copy of the THINKJET.PAT file is available through MultiMate International, but the user should become more knowledgable of the MultiMate Professional Word Processor Program, the EDITPAT program on the utilities disk, and their ThinkJet printer, before attempting to create this file.

Hardware Configuration

See Hardware Application Note for the IBM PC with parallel interface, HP Part No. 5954-2905(54); use recommended hardware configuration.

System Configuration

No change to default MS-DOS setup is necessary before running MultiMate.

Application Configuration

To use the ThinkJet printer with MultiMate, you must configure the Print Document Utility. This is done by entering the Print Document Utility and selecting the I/O port (parallel or serial) that is connected to your ThinkJet printer, and then typing the name of your .PAT file in the Printer Type.

Before you enter the Print Document Utility you will need a sample document to print. An example of creating a file can be found in the "Quick Start" section of your MultiMate Manual. Create an initial sample document and then return to the main function menu. From the Main Function Menu:

1. Type **3**. (Select Print Document Utility.)

2. Press the **RETURN** key.

3. Type **sample document's name**. (Enter the name of your sample document.)

4. Press the **RETURN** key.

5. Press the **TAB** key eleven times. (Move to Port Selection Entry.)

6. Press one of the following:
   P - If your ThinkJet printer is connected to the parallel port.
   S - If your ThinkJet printer is connected to the serial port.

7. Press the **TAB** key five times. (Move to Printer Type.)

8. Type **TTYCRLF**. (Enter name of .PAT file.)

9. Press the **f10** key. (To start printing.)

When you press **f10**, MultiMate will begin formatting and printing your sample document.

Using Printer Features

Printer enhancements are selected by using the special dedicated function keys before and after the phrases you want enhanced in your MultiMate documents. Consult the "Function Reference" chapter in the MultiMate Manual for more information on how to use the special print enhancements. Below is a list of all features supported on ThinkJet.

Features supported by the TTYCRLF.PAT file:
Bold print
Auto-underlining

Features supported by the THINKJET.PAT file:
Bold print
Enhanced print
Auto-underlining
Print pitches (characters per inch)

ThinkJet supports four print pitches, normal (12.0 cpi), expanded (6.0 cpi), compressed (21.3 cpi), and expanded-compressed (10.7 cpi). MultiMate allows you to choose the desired output print pitch by entering a number from 1 to 9 in a print pitch field of Print Document Utility. Listed below is the resulting print pitch on a ThinkJet printer for each pitch indicator number.

Pitch Indicator	Print Pitch
1 selects	Expanded (maximum of 40 cpl)
2 selects	Expanded (maximum of 40 cpl)
3 selects	Expanded-Compressed (maximum of 71 cpl)
4 selects	Expanded-Compressed (maximum of 71 cpl)
5 selects	Expanded-Compressed (maximum of 71 cpl)
6 selects	Normal (maximum of 80 cpl)
7 selects	Normal (maximum of 80 cpl)
8 selects	Compressed (maximum of 142 cpl)
9 selects	Compressed (maximum of 142 cpl)

cpl = characters per line.

Note: Remember to alter your document margins so that you do not have lines containing more characters than the maximum allowable per line at the given print pitch. For example, the default margins in MultiMate allow for 75 characters, but the default pitch will allow a maximum of 71 characters per line. In order to fit all 75 characters on the line, you must increase the margins in your document, or increase the print pitch. Changing the print pitch can be done by putting in a character pitch command at the beginning of your document, or by changing the default print pitch in the Print Document Utility.

Line Spacing

The ThinkJet printer supports 6 and 8 lines per inch spacing. The printer does not support half line or quarter line spacing. If you attempt to do either ¼, ½, 1½, or 2½ line spacing the results will be unpredictable. Also, if superscript or subscript characters are used, they will print either an entire line above or below the base line of print.

Helpful Hints

Consult the "Print Document Utility" section in the "Using Screens and Menus" chapter in the MultiMate manual for more detailed information on printing documents. If you would like the printer menu to come up with the ThinkJet Printer as the default printer for all of your new documents, consult the section on "Editing Printer Defaults."

The information contained in this application note is intended for information purposes only and is subject to change without notice. Questions regarding MultiMate should be directed to MultiMate International. Questions regarding the ThinkJet Printer should be directed to your nearest Hewlett-Packard dealer.

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TK!Solver™

Software Arts, Inc. _____ **ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND TK!SOLVER ON THE IBM PC, PC XT

Introduction

The procedure outlined in this application note will assist you in using your ThinkJet printer with the TK!Solver package on your IBM Personal Computer. For a good, general understanding of printing in TK!Solver, read Chapter 9, Global Settings and Printing, in your TK!Solver Program Instruction Manual. Information about printing plots and tables can be found in Chapter 15, Plots and Tables, of the instruction manual. Additional specifics on printing can be found in the description of the Print command, page 111-136, in your TK!Solver Program Reference Manual.

Hardware Configuration

See Hardware Application Note, HP Part No. 5954-2905(54); use recommended hardware configuration.

System Configuration

No MS-DOS configuration is required for TK!Solver.

Application Configuration

No configuration is required for TK!Solver.

Using Printer Features

When running TK!Solver you can print all or part of any sheet with the Print command. Position the cursor to the first row that you want printed and type /P. Move the cursor to the last row you want printed and press the **ENTER** key.

TK!Solver does not use any of the formatting features of the printer. You can use TK!Solver's printing setup string to change the number of characters per line or the number of lines per page, or to enable bold printing. To enable bold printing once you are running TK!Solver:

1. Type /W1. (Display only one window.)

2. Type =6. (Display the global sheet.)

3. Using the up-arrow and down-arrow keys, position the cursor to the line that begins "Printer Setup String:".

4. Type ^E(s3B. (This is the setup string.)

5. Press the **ENTER** key.

The next time you use the Print command, TK!Solver will send the setup string to the printer before printing the sheet. Your ThinkJet printer will remain in bold print until the printer is turned off, or you send the setup string to turn bold printing off. Other useful setup strings are:

Setup String	Feature
^E(s0B	Bold print OFF
^E&k0S	Normal print pitch. (80 characters per line)
^E&k1S	Expanded print. (40 characters per line)
^E&k2S	Compressed print. (142 characters per line)
^E&k3S	Expanded-compressed print. (71 characters per line)
^E&18D	8 lines per inch (88 lines per page)
^E&16D	6 lines per inch (66 lines per page)

If you use a setup string to change the number of characters per line you should also change the printed page width in the global sheet. For example, to select compressed print (142 characters per line):

1. Type /W1. (Display only one window.)
2. Type +G. (Display the global sheet.)
3. Using the up-arrow and down-arrow keys, position the cursor to the line that begins "Printer Setup String".
4. Type ^E&k2S. (This is the setup string.)
5. Press the **ENTER** key.
6. Using the up-arrow and down-arrow keys, position the cursor to the line that begins "Printed Page Width:".
7. Type **142**. (142 is the number of characters per line.)
8. Press the **ENTER** key.

If you use a setup string to change the number of lines per page you should also change the form length and printed page length in the global sheet. To print 8 lines per inch (88 lines per page):

1. Type /W1. (Display only one window.)
2. Type =6. (Display the global sheet.)
3. Using the up-arrow and down-arrow keys, position the cursor to the line that begins "Printer Setup String:".
4. Type ^E&l8D. (This is the setup string.)
5. Press the **ENTER** key.
6. Using the up-arrow and down-arrow keys, position the cursor to the line that begins "Form Length:".
7. Type **88**.
8. Press the **ENTER** key.
9. Using the up-arrow and down-arrow keys, position the cursor to the line that begins "Printed Page Length:".
10. Type **80**.
11. Press the **ENTER** key.

pfs®:file

Software Publishing Corporation —————————**ThinkJet**

CONFIGURING YOUR THINKJET PARALLEL PRINTER AND
pfs:file
ON THE IBM PC, PC XT

Introduction

The procedures outlined in this application note will assist you in using your ThinkJet Printer with the *pfs*:file package on your IBM Personal Computer. Your ThinkJet printer will give you fast, high-quality printing.

Hardware Configuration

See Hardware Application Note for the IBM PC with parallel interface, HP Part No. 5954-2905(54); use recommended hardware configuration.

System Configuration

No change to the default MS-DOS configuration is required before running *pfs*:file.

Application Configuration

No reconfiguration is required for *pfs*:file. *pfs*:file defaults to **LPT1:** the first parallel printer.

Using Printer Features

The **SHIFT** and **PrtSc** keys when pressed simultaneously can be used at any time with *pfs*:file to copy the current screen to the printer.

The PRINTER program on the *pfs*:file disk is used to send a setup string to the printer. The setup string is then sent to the printer when exiting the PRINTER program. If the printer is turned off for any reason, the setup string must be sent again by running the PRINTER program.

NOTE: When **Esc** appears in the following setup strings, press the **Esc** key on the keyboard.

Selecting Bold Print

1. At the DOS prompt A> type **PRINTER**. Press the **RETURN** key.

2. Press the **F10** key to select **LPT1**. Press the **Esc** key and type **(s3B**. Enter the characters carefully. The following will appear on your screen. (Press the **F6** key to quit the program if you have made a mistake):
   :Escape
   :(
   :s
   :3
   :B
   :

3. Press the **F10** key to exit the PRINTER program and send the string to the printer.

Other Useful Setup Strings

Esc(s0B	Turn off bold print
Esc&k0S	Select 12 characters per inch printing
Esc&k1S	Select 6 characters per inch printing
Esc&k2S	Select 21.3 characters per inch printing
Esc&k3S	Select 10.7 characters per inch printing

*pfs:*file Error Messages

Message	Possible Cause	Corrective Action
PRINTER ISN'T READY	Printer is turned off.	Turn the printer on.
	Printer is stalled.	Make sure carriage is not obstructed, set the paper to the top of form, and press the blue button.
	Printer is out of paper	Add paper.
DRIVE ISN'T READY	Yellow indicator on printer is flashing.	Clear any carriage obstructions and press the blue button on the printer.

1-2-3®

Lotus® Development Corp. _____ **ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND
1-2-3 (Version 1A)
ON THE IBM PC, PC XT

Introduction

The procedures outlined in this application note will assist you in using your ThinkJet Printer and the Lotus 1-2-3 package. The "Getting Started" section of your 1-2-3 manual covers the proper procedure for installing 1-2-3 on your system disk(s). Once installation is complete, the 1-2-3 Electronic Tutorial will help you become familiar with the program.

The Lotus 1-2-3 manual contains two sections that provide complete instructions for printing with your ThinkJet printer: the PRINT Command description located in the Command Skills chapter; and the discussion of the Graph (PrintGraph) Program located in the Appendix.

There are two "environments" in which Lotus 1-2-3 provides commands for printing. Throughout the rest of this application note these environments will be referred to as 1-2-3 (spreadsheet printing) and PrintGraph (graphics printing).

Hardware Configuration

The following steps will determine how to set switch 5 on the back of your ThinkJet Printer. If you are using an IBM PC put your Lotus PrintGraph Disc in Drive A. If you are using an IBM PC XT, PrintGraph should already be installed on Drive C.

From the MS-DOS prompt A> (PC) or C> (XT):

1. Type **LOTUS,** then press the **Enter** key.

2. Type **P.** This runs PrintGraph.

3. Type **CD.** The menu of printers will appear.

4. Look through the list of printers for HP THINKJET. Use the cursor control keys to move through the entire list.
   a. If HP THINKJET *IS* on your list set switch 5 DOWN.
   b. If HP THINKJET *IS NOT* on your list set switch 5 UP.

5. Press the **Enter** key then type **QQY.** This exits PrintGraph.

6. Type **EY** to leave the Lotus Access System.

System Configuration

No change to the default MS-DOS setup is necessary before running 1-2-3.

Application Configuration

As mentioned earlier, Lotus 1-2-3 has two printing "environments", 1-2-3 and PrintGraph.

Printing Spreadsheets:
The only configuration necessary is selecting the output port. To do so, insert your Lotus System Disc, with the write protect tag removed, into drive A. If you have an IBM PC, insert your working disc into drive B. Then from the MS-DOS prompt A> (PC) or C> (XT):

1. Type **123,** then press the **Enter** key. 1-2-3 will begin running.

2. Press any key.

3. Type **/WGDPI1** (/ = Command mode, W = Worksheet, G = Global, D = Default, P = Printer, I = Interface, 1 = first parallel port.)

4. Type **AN.** (Auto-LF, NO.) This ensures the correct linefeeding.

5. Type **QU.** (Quit, Update.) This saves your interface configuration on the disk.

6. Type **Q/QY.** (Quit, Command Mode, Quit, Yes.) Exits 1-2-3.

Printing Graphics:
Before continuing, note two things. First, PrintGraph requires that you choose a driver from its library that will provide the capability of outputing graphics properly to your ThinkJet printer. Choosing the HP THINKJET driver from your library will provide you with the best performance and easiest use of the system. If HP THINKJET is not offered in your library, select the Epson MX-80 Single or Double Density driver. The double density driver provides high quality output but sacrifices speed. The second thing to note is that this document recommends a number of formal settings based on personal preference; therefore, if you would like to position or size your graphs differently, feel free to experiment.

Remove the Lotus System disc and replace the write protect tab. On the IBM PC, remove the write protect tab from the PrintGraph disc and insert it into drive A (this step does not need to be performed on an XT), then from the MS-DOS prompt A> (PC) or C> (XT):

1. Type **GRAPH,** then press the **Enter** key. PrintGraph will begin running.

2. Type **CD.** (Configure, Device.) The driver library will appear.

3. Use the cursor control keys to select HP THINKJET. If it is not offered select the Epson MX-80 Single Density or Double Density Mode drivers.

NOTE: The # symbol, not the cursor, indicates the presently selected output device.

CAUTION: Be certain that switch 5 on the printer's rear panel is set properly:
● Switch 5 DOWN (HP Control Mode) for HP THINKJET.
● Switch 5 UP (Alternate Control Mode) for Epson MX-80.

4. Press the **Space** key to select the desired driver, then press the **Enter** key. The # symbol will appear next to HP THINKJET.

5. Type **I1.** (Interface, first parallel port.)

6. Type **SR.** (Save, Replace.) Saves the new configuration.

7. Type **QQY.** This exits PrintGraph.

When using a ThinkJet in the HP Control Sequence Mode (Switch 5 DOWN) with the HP THINKJET driver selected, the Full and Half-Page Size settings are used to format your output. From the main PrintGraph menu the size settings are accessed by typing **OS,** then choosing F or H for full or half page format. When the Epson MX-80 has been selected (Alternate Control Mode, switch 5 UP) the following Size Settings are suggested. These settings are individually changed by choosing Manual formatting.

Alternate Mode Size Settings

Setting	Half Page	Full Page
Left Margin	.000	.000
Top Margin	.000	1.100
Width	11.000	10.500
Height	6.660	11.926
Rotation	.000	270.000
Page size - Length	15.000	15.000
- Width	12.000	12.000

All of the selections made under the Options and Configuration branches of the PrintGraph menu can be easily saved so that the next time you enter PrintGraph your settings will come up automatically. To save your selections, type **CSRQ** from the main PrintGraph display.

Using Printer Features

Formatting for graphics output to ThinkJet is done through PrintGraph and is described in detail in previous paragraphs.

Text Output

Although there are different ways to format pages, the easiest way is by using Lotus commands. The program itself will take full control of positioning the output on the page according to your commands. 1-2-3 has been designed such that you can define a general or default page format as well as unique formats for any spreadsheet you choose. The default format is always used unless you have specifically defined one for the current spreadsheet.

To Define the Default Format:

1. Type **/WGDP.** Select your left, right, top and bottom margins, and page length.

2. After the selections have been made type **QUQ.** Your format will be saved on disk, and will automatically be used each time you run your program.

To Define a Spreadsheet Format:

1. Type **/PPO.** You can now change/select headers, footers, margins, borders, and page length for this spreadsheet. (Each spreadsheet format is selected individually.)

2. Type **QQ/FS** and your file name to save this format for future use.

Reminder: Before you begin printing be sure that you have positioned the paper at the desired top-of-form, then type **/PPA.** This will let Lotus 1-2-3 know that the paper is aligned with the beginning of a page.

For advanced users, 1-2-3 provides the ability to send control codes and escape sequences directly to the printer. This is done by using what is called a Setup String. The Setup Strings discussed in this application note are for a ThinkJet printer in the HP Control Sequence Mode (switch 5 DOWN). (Refer to the ThinkJet Reference Manual for the proper codes to use if Alternate Mode is being used.) Setup Strings are available for both the default and current page formats. For the default format, type **/WGDPS** and the current type **/PPOS.** 1-2-3 is ready for you to enter a Setup String.

Printer Features	Setup String	Notes
Compressed Print	\ 027&k2S	142 Char./line Set left margin to 0 (ML0) Set right margin to 142 (MR142)
Normal Print*	\ 027&k0S	80 Char./line Set left margin to 0 (ML0) Set right margin to 80 (MR80)
Expanded- Compressed	\ 027&k3S	71 char./line Set left margin to 0 (ML0) Set right margin to 71 (MR71)
Bold Print Mode ON	\ 027(s3B	
Bold Print Mode OFF*	\ 027(s0B	
6 Lines/Inch*	\ 027&l6D	Set page length at 66 (P66) 60 Printable lines per page. 3 lines for header. 3 lines for footer. 0 top and bottom margin.
8 Lines/Inch	\ 027&l8D	Set page length at 88 (P88) 82 printable lines per page. 3 lines for header. 3 lines for footer. 0 top and bottom margin.
Printer Reset	\ 027E	Reset to power up defaults.

* = Power up default settings.

The Setup String will be the first characters sent to the printer when the GO command is executed. For more information on these and other control codes and escape sequences, see the ThinkJet Reference Manual. The Setup Strings used can be saved on the disc the same way page formatting is saved for either default or current spreadsheets.

Helpful Hints:

SHIFT PrtSc can be used while running Lotus 1-2-3 to copy the text from the screen to your printer. The graphs that are displayed must be saved and output by PrintGraph.

Volkswriter Deluxe™
Lifetree Software Inc. _____ThinkJet

CONFIGURING YOUR THINKJET PARALLEL PRINTER AND VOLKSWRITER DELUXE (VERSION 2.1) ON THE IBM PC AND IBM PC XT

Introduction

The procedure outlined in this application note will assist you in using your ThinkJet printer and the Volkswriter Deluxe word processing package.

The Volkswriter Deluxe Tutorials found in the back of your Volkswriter Deluxe manual are quick, complete and easy to use. Tutors 3 and 4 focus on the printing features of Volkswriter. We strongly recommend you run them.

If your copy of Volkswriter was released prior to version 2.1, it will require updating before it will support the Hewlett-Packard ThinkJet Printer. Version 2.1 includes specific modifications that provide support for Hewlett-Packard ThinkJet Printers. Contact Lifetree Software Inc. for updating information.

Hardware Configuration

See the Hardware Application Note for the IBM PC with parallel interface, HP part no. 5954-2905(54); use recommended hardware configuration.

System Configuration

The IBM PC and its operating system (MS-DOS) have been designed to treat the first parallel port as the default output or printer port. Because your ThinkJet Printer is connected through the first parallel port, it is not necessary to change the system configuration. To verify the printer connection press the **SHIFT** and **PrtSc** keys simultaneously. Any text on the screen will print.

Application Configuration

Before using Volkswriter to output to your ThinkJet printer you must run the configuration program provided on the Tutorial Disk. We recommend that you run through the following section and verify your printer's configuration even though you may have done so while installing Volkswriter.

To configure Volkswriter Deluxe on an IBM PC put your Volkswriter Program Disc into Drive A, and the original copy of the Tutorial Disk into drive B. If you are using an IBM PC XT be sure Volkswriter Deluxe is already installed on drive C and insert your Program Disk into drive A. From MS-DOS perform the following:

1. a. If you are using an IBM PC, type **B:CONFIGUR** then press the **Enter** key.
   b. If you are using an IBM PC XT, type **CONFIGUR** then press the **Enter** key.

2. Type **3** then press the **Enter** key. (This defines printer characteristics.)

3. Look through the list of printers for HP2225 ThinkJet:
   a. If HP2225 ThinkJet *IS* on your list type **Y**, then press the **Enter** key.
   b. If HP2225 ThinkJet *IS NOT* on your list you must upgrade your copy of Volkswriter Deluxe to version 2.1.

4. Type **1**, then press the **Enter** key. (To choose a printer from the list.)

5. Type **25**, then press the **Enter** key. (Selects HP ThinkJet.)

6. Type **P**, then press the **Enter** key. (Selects parallel printer.)

7. Press the **Enter** key. (ThinkJet printers have a single printing speed.)

8. Type **X**, then press the **Enter** key. (This exits CONFIGUR.)

9. Type **VX**, then press the **Enter** key. (Run Volkswriter.)

10. Type **P** (select print menu).

11. Type **S** (select printing device).

12. Type **P** (selects parallel port).

13. Press the **F10** key (exit print selection).

14. Type **F** (examine or modify).

15. Type **M** (modify this format).

16. Type **25**, then press the **Enter** key. (The number of the ThinkJet printer table.)

17. Type **S** (store format for later use).
    a. If you have an IBM PC type **A:VW.FMT**, then press the **Enter** key.
    b. If you have an IBM PC XT type **C:VW.FMT**, then press the **Enter** key.

18. Type **U** (then use this format).

19. Type **X** (exit to Volkswriter main display).

You have now completed the configuration necessary to make your ThinkJet printer functional with Volkswriter Deluxe on your IBM.

Using Printer Features

For best printing results utilize the formatting and printing features of Volkswriter Deluxe. You can control your ThinkJet printer directly, but it is much easier to let Volkswriter do the work for you. Volkswriter supports ThinkJet features and uses the ThinkJet Feature Set.

A few things to note when using your ThinkJet printer with Volkswriter Deluxe:

1. ThinkJet has only one font—all four Volkswriter fonts will look the same on a ThinkJet printer.

2. Shadow and bold print look the same on a ThinkJet printer.

Helpful Hints

The **SHIFT** and **PrtSc** keys can be used while running Volkswriter Deluxe to copy the screen to your ThinkJet printer.

Multiplan®
Microsoft ————————————————————**ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND
MULTIPLAN (Version 2.1)
ON THE IBM PC, PC XT

Introduction

The procedures outlined in this application note will assist you in using your ThinkJet Printer with Multiplan. We suggest that you read Chapter 6, "Printing a Worksheet," of the Multiplan Manual, which covers print margins, print options, and printer commands. Consult the Multiplan and ThinkJet Printer manuals for further assistance.

Hardware Configuration

See hardware application note for IBM PC with parallel interface, HP Part No. 5954-2905(54); use recommended hardware configuration.

System Configuration

No change to the default MS-DOS setup is necessary before running Multiplan.

Application Configuration

No change to the default printer setup is necessary with Multiplan.

Using Printer Features

To use the advanced printing features of your ThinkJet, when running Multiplan you must use printer setup strings. To use setup strings run Multiplan then type **PO** to select the PRINT OPTIONS menu. Tab once to the **setup:** field. Type the setup string (see list below) in the setup field and press the **Enter** key. For example, to select compressed print (142 characters per line) type **^[&&k2S** in the setup field. Press the **Enter** key. If you want to adjust the print margins at this point type **M.** Tab twice to move to the print width field. Type **132** (this will leave the default 5 character left and right margins). Press the **Enter** key when done. If you wish to print at this point type **P,** otherwise press the **Esc** key to return to the COMMAND menu.

Other useful Printer Setup Strings:

^[E	Reset all printer modes.
^[(s3B	Turn on bold print.
^[(s0B	Turn off bold print.
^[&&k0S	Select 12 characters per inch pitch.
^[&&k1S	Select 6 characters per inch pitch.
^[&&k3S	Select 10.7 characters per inch pitch.

Setting Printer Margins

Because ThinkJet has 1" margins you may prefer to set the left margin to 0 and the print width to 80. From the main command menu type **PM** to select the PRINT MARGINS menu. Type **0** to set the left margin to 0, press the **TAB** key twice and type **80** to set the print width to 80 characters. Press the **Enter** key when done. If you wish to print at this point type **P,** otherwise press the **Esc** key to return to the COMMAND menu.

Helpful Hints

The **SHIFT** and **PrtSc** keys when pressed simultaneously can be used at any time to print the current screen.

NOTE: ThinkJet does not contain line draw characters. Window borders will not print as a solid border.

The information contained in this application note is intended for information purposes only and is subject to change without notice. Questions regarding Multiplan should be directed to Microsoft Corporation. Questions regarding the ThinkJet Printer should be directed to your nearest Hewlett-Packard dealer.

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SYMPHONY®

Lotus® Development Corp. _____**ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND SYMPHONY (Version 1.0) ON THE IBM PC, PC XT

Introduction

Symphony has two printing "environments." The text or character printing environment is used when you are in Symphony; the graphics printing environment is used when in PrintGraph. The configuration and use of Symphony and PrintGraph are different and independent, and are treated that way in this application note.

For a good general understanding of printing in Symphony, read Chapter 3, How to Print Your Work, in your Symphony How-To Manual. Some additional sections on the specifics of printing in the How To Manual are: Spreadsheets—Chapter 8, How to Print Spreadsheet Reports; word processing—Chapter 9, Printing a Document; graphics—Chapter 12, Printing a Graph; and database management—Chapter 14, Printing Database Reports.

Hardware Configuration

See Hardware Application Note, HP Part No. 5954-2905(54); use recommended hardware configuration.

System Configuration

Symphony provides the user the capability to output to a printer connected to any one of the following ports: first or second parallel, or first or second serial. The IBM PC and MS-DOS have been designed to treat the first parallel port as the default or primary printer port. Your ThinkJet printer is connected to the first parallel port, therefore, it is not necessary to make any changes to the Operating System Configuration.

Application Configuration

Running Install

If you have not done so already, now is the time to follow the procedures in Chapter 3 of your Symphony Introduction Manual which tells how to prepare your disks for running Symphony on your IBM PC ("Two-Diskette System") or IBM PC XT ("Hard Disk System"). The final section of Chapter 3 discusses the Install Program which is what you must use to create a Driver Set. The Driver Set you define "tells" Symphony about the hardware that is plugged into your computer, including your ThinkJet Printer.

Follow the appropriate instructions (PC or PC XT) for Starting the Install Program. When you get to the Main Menu stop. If you are creating a new (first time) Driver Set follow the instructions below for New Driver Set. If you would like to add ThinkJet to an existing Driver Set follow the instructions below for Change Driver Set.

New Driver Set:

1. Type 1 then press the **ENTER** key. (Installation, Create a Driver Set.)

2. Press the **space bar** three times. (Read the preliminaries displayed.)

3. Type the number (#) of the selection that best describes the display system on your computer, then press the **ENTER** key.

4. Type Y then press the **ENTER** key. (Yes, you want to select a text printer.)

5. Type 15 then press the **ENTER** key. (15 selects the HP 2225 Printer Driver, an * should appear next to HP 2225 on the selection list.)

6. Press the **ENTER** key. (This confirms HP 2225 as your Text Printer Selection.)

7. Type **Y** then press the **ENTER** key. (Yes, you want to select a graphics printer.)

8. Press the **space bar**. (View page 2 of selections.)

9. Type **26** then press the **ENTER** key. (26 selects the HP 2225 Printer.)

10. Press the **ENTER** key. (This confirms HP 2225 ThinkJet as your Graphics Printer.)

11. Respond to the modem installation questions.

12. Respond to the asynchronous communications questions.

13. Type **1** or **2** then press the **ENTER** key. (When collating, numbers first or last.)

14. Press the **ENTER** key. (Confirms the collating selection.)

Your printer selections are now complete. Follow the instructions that appear on the display to save these selections on the proper disks. Finally, to exit Install type **5** then press the **ENTER** key and the **space bar.**

Change Driver Set:
This section assumes that you have already run Install at least once and have a Driver Set named Lotus installed that does not include ThinkJet.

1. Type **4** then press the **ENTER** key. (Change selections in a Driver Set.)

2. Press the **space bar** three times. (Work through the current selections.)

3. Type **5** then press the **ENTER** key. (Graph Printer selection.)

4. Press the **space bar**. (View page 2 of selections.)

5. Type **26** then press the **ENTER** key. (26 selects the HP 2225 ThinkJet.)

6. Press the **ENTER** key. (This confirms HP 2225 ThinkJet as your Graphics Printer.)

7. Press the **space bar.** (View remaining selections.)

8. Type **10** then press the **ENTER** key. (Text Printer selection.)

9. Type **15** then press the **ENTER** key. (15 selects the HP 2225 Printer Driver.)

10. Press the **ENTER** key. (This confirms HP 2225 as your Text Printer selection.)

11. Press the **ENTER** key. (Done making changes.)

Your printer selections are now complete. Follow the instructions that appear on the display to save these selections on the proper disks. Finally, to exit Install type **5** then press the **ENTER** key and the **space bar.**

Printer Setup In Symphony
All of the settings provided in this section are the default or standard settings that Symphony uses straight out of the box. It is suggested that you confirm these settings to ensure the desired printer performance. To confirm these settings insert your Symphony Program Disk, with the write protect tag removed, into Drive A. If you have an IBM PC, insert your working disk into drive B. Then from the MS-DOS prompt A> (PC) or C> (XT):

I. Type **ACCESS** then press the **ENTER** key.

2. Type **S.** (This will run Symphony.)

3. Press the **ENTER** key. (The Main Menu is now displayed.)

4. Press the **F9** key. (Services Menu.)

5. Type **CP.** (Configuration, Printer Menu.)

6. Type **T1.** (Printer Type 1; selects first parallel printer port.)

7. Type **AN.** (Sets Auto-Line Feed off.)

8. Type **WN**. (No Wait on page breaks. Continuous feed.)

9. Type **QU**. (Quit then Update setup on Disk.)

10. Press the **Esc** key then type **EY**. (Go to the Services Menu then Exit.)

Printer Setup In PrintGraph:

If you are running an IBM PC remove the Program Disk from drive A and insert your PrintGraph Disk, with the write protect tag removed, into drive A. If your computer is an IBM PC XT leave the Program Disk in drive A. From the Access Menu:

1. Type **P**. (This will run PrintGraph.)

2. Type **SHI1**. (Sets the Interface at First Parallel—Setup, Hardware, Interface, 1st Para.)

3. Type **P**. (Select Graphic Output Device.)

4. Use the UP and DOWN cursor control keys to select HP 2225 ThinkJet.

5. Press the **space bar.** (This marks your selection.)

6. Press the **ENTER** key. (This enters your selection.)

7. Type **QIS**. (Quit, Image, Size.)

8. a. If you want your image to be Full Page type **F**.
   b. If you want your image to be Half Page type **H**.

9. Regardless of the above selection type **ML0** then press the **ENTER** key. (This sets the left margin to 0.)

Type **QQQS**. (This will save your new settings on disk.)

Using Printer Features

Reports and documents can be easily formatted to meet your output needs. From any of the environments, this is done by pressing the **F9** key then typing **P**. The display that you see now is the Print Settings display. Next, type **S**. This will get you to where you can define your page format, then type **P** to change any of the page settings, or type **M** to change the margins.

For more advanced users this is the menu where you can define Init-Strings. This is a way to send control and escape sequence codes, useful in changing printer functions like character pitch and line spacing, directly to your printer. The init-string that you define will first be sent to the printer when you initiate printing. To input an init-string, from the Print Menu type **SI**, then type the desired string (see below).

Printer Feature	Init-String	Notes
Compressed Print	\027&k2S	142 Characters per line. Set left margin to 0. Set right margin to 142.
Normal Print*	\027&k0S	80 characters per line. Set left margin to 0. Set right margin to 80.
Expanded-Compressed	\027&k3S	71 characters per line. Set left margin to 0. Set right margin to 71.
8 Lines Per Inch	\027&18D	Set page length to 88.
6 Lines Per Inch	\027&16D	Set page length to 66.
Printer Reset	\027E	Reset to Power-on Defaults.

* = Indicates power-on default

All the Print Settings displayed are saved along with the sheet, document, or form. This gives you a great deal of flexibility in tailoring your output for each kind of report or document that you generate.

Symphony provides a unique feature in the ability to imbed init-strings into spreadsheets: as the report is sent out to the printer the init-strings are sent also. Using this you can take advantage of the enhanced printing features of your ThinkJet Printer. In the Spreadsheet Environment follow the example below.

1. Press the **home** key. (Homes the cursor on the spreadsheet.)

2. Type **|** **|** \027(s1B (**|** = the shift key and \ key.) (Init-string that starts bold printing.)

3. Press the **down arrow** key. (This enters the string and advances to the next cell down on the spreadsheet.)

4. Type **BOLD TITLE**.

5. Press the **down arrow**. (This enters the string and advances to the next cell down on the spreadsheet.)

6. Type **|** **|** \027(s0B. (Init-string that ends Bold.)

7. Press the **home** key. (Enters the last label and homes the cursor on the spreadsheet.)

8. Press the **F9** key then type **PSSR**. (F9 enters the Services Menu, then Print, Settings, Source, and Range.)

9. Type **A1..B3** then press the **ENTER** key. (This specifies the range of the example spreadsheet.)

10. Type **QG**. (Quit then Go. Your ThinkJet will print **BOLD TITLE.)**

11. Type **Q**. (Quit gets you back to our spreadsheet.)

The ThinkJet printing enhancements or attributes that Symphony supports in the Word Processing environment are shown below. These attributes are discussed in some depth in Chapter 9 of the How To Manual.

Attribute Code	Attribute
B	Bold
U	Underline
X	Strike through all characters
1	Bold underline

To start and end these functions in your document is a bit tricky. We suggest you read through this paragraph once first before trying it. To start the attribute press the **Alt** and **F1** keys simultaneously (Compose). Then type **BA**. Nothing changes on the display while you are doing this until the **A** has been typed. At this point an UP arrow appears at the current cursor position. Now enter the attribute code (listed above). It will appear on the display but will not be printed. To end any of these attributes press the **Alt** and **F1** keys simultaneously (Compose), then type **EA**.

Using attributes not listed above will result in normal printing.

Helpful Hints
The **SHIFT** and **PrtSc** keys when pressed simultaneously can be used at any time to print the current screen. The graphs displayed must be saved and output by PrintGraph.

pfs®:report
Software Publishing Company _____**ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND
pfs:report
ON THE IBM PC, PC XT

Introduction

The procedures outlined in this application note will assist you in using your ThinkJet Printer with the *pfs*:report package on your IBM Personal Computer. Your ThinkJet Printer will give you fast, high-quality printing.

Hardware Configuration

See Hardware Application Note for the IBM PC with parallel interface, HP Part No. 5954-2905(54); use recommended hardware configuration.

System Configuration

No MS-DOS configuration is required before running *pfs*:report.

Application Configuration

No configuration is required for *pfs*:report. *pfs*:report defaults to **LPT1:** the first parallel printer.

Using Printer Features

The REPORT Program of *pfs*:report does not use any of the formatting features of the printer. If you want to change the print modes, use the *pfs*:report PRINTER program as shown below.

NOTE: When **Esc** is used in the following setup strings press the **Esc** key then type the characters that follow.

To select compressed print (142 characters per line), from the DOS (version 2.10) prompt A> (PC) or C> (XT):

1. Type **PRINTER**. Then press the **RETURN** key.

2. Press the **F10** key to continue, then press the **Esc** key and type &k2S. If you have made a mistake press the **F6** key.

3. Press the **F10** key to send the setup string to the printer. The printer will remain in compressed print until you turn it off, or send another setup string to the printer.

To print a report after you have selected compressed print:

1. Type 1 for SELECTION NUMBER.

2. Enter the FILE NAME, and press the **F10** key.

3. Fill in the desired RETRIEVE SPEC and press the **F10** key. The REPORT OPTIONS page will appear. Fill in the desired information on the top of the form.

4. Press the **TAB** key until you get to the PAGE WIDTH field. Type **142** and press the **F10** key.

5. *pfs*:report will format your report to fit in a 142 column wide page.

Useful Setup Strings:

Esc(s0B   Turn off bold print.
Esc(s3B   Turn on bold print.
Esc&k0S   Select normal print (80 characters per line).
Esc&k1S   Select expanded print (40 characters per line).
Esc&k2S   Select compressed print (142 characters per line).
Esc&k3S   Select expanded-compressed print (71 characters per line).

Whenever you change the print pitch make sure to change the PAGE WIDTH field on the REPORT OPTIONS page to the corresponding number of characters per line.

Framework™

Ashton-Tate _____**ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND
FRAMEWORK (Version 1.0)
ON THE IBM PC, PC XT

Introduction

We recommend that the user go through the Framework Tutorial Manual, specifically Chapter 9, Saving and Printing the Outline; and the Reference Manual, Chapter 6, Printing; and Appendix C, Fred Language Functions by Class. Refer to Appendix E of the Reference Manual for installing Framework Drivers, and hard disk installation.

Framework should be run on an IBM PC, PC XT with at least 384K bytes of memory.

Hardware Configuration

Set the switches on the rear panel of your Parallel ThinkJet Printer as follows: Switches 5,6,7 UP, all others DOWN. See Hardware Application Note, HP Part No. 5954-2905(54).

System Configuration

No MS-DOS configuration is necessary before running Framework.

Application Configuration

The Printer Driver for the ThinkJet Printer must be installed before using Framework to output to the printer. Installation of the driver is described in the following section.

To run the installation program:

1. a. For the IBM PC, put the Framework System Disk #1 in drive A.
   b. For the IBM PC XT, be sure to install Framework on drive C (hard disk. See Appendix E of the Framework Reference Manual for instructions on installing Framework on the hard disk), and insert Framework System Disk #1 in drive A.

2. a. For the IBM PC type **A:INSTALL** then press the **ENTER** key.
   b. For the IBM PC XT type **INSTALL** then press the **ENTER** key.

3. a. For the IBM PC type **A:PRINTER** then press the **ENTER** key.
   b. For the IBM PC XT type **PRINTER** then press the **ENTER** key.

4. a. For the IBM PC put the Framework System Disk #2 in drive A, and press the **ENTER** key to begin the installation program.
   b. For the IBM PC XT, press the **ENTER** key to begin the installation program.

5. a. For the IBM PC place the Framework Utility Disk in drive B, press the **space bar.**
   b. For the IBM PC XT place the Framework Utility Disk in drive A, and press the **space bar.** Press the **ENTER** key. Press the **ENTER** key again after disk activity has stopped. (Follow the above steps, NOT the directions that appear on your screen.)

6. Press the **ENTER** key to select the First Printer.

7. Press the **ENTER** key to select Dot Matrix and Ink Jet Printers.

8. Press the **down arrow** key until HP ThinkJet is selected, then press the **ENTER** key.

9. a. For the IBM PC, type **Y** to proceed with the driver installation.
   b. For the IBM PC XT, type **Y** to proceed with the driver installation, then press the **ENTER** key.

10. Press the **space bar** when the installation has completed.

11. Use the **down arrow** key to select QUIT, then press the **ENTER** key.

12. Press the **space bar** key to return to MS-DOS.

The installation of the ThinkJet printer as the output printing device is now complete. This procedure only needs to be done once; from then on, the Framework program knows that it is sending output to a Thinkjet printer.

To use Framework, do the following:

1. For the IBM PC put the Framework System Disk #1 in drive A and type **FW.** Press the **ENTER** key.

2. a. For the IBM PC put the Framework System Disk #2 in drive A and press the **ENTER** key.
   b. For the IBM PC XT press the **ENTER** key.

3. The Framework screen appears:
   a. For the IBM PC insert the working disk (the disk used to store and retrieve frames created in Framework) into drive B.
   b. For the IBM PC XT insert the working disk (the disk used to store and retrieve frames created in Framework) into drive A.

4. a. For the IBM PC select drive B as the default drive by pressing the **down arrow** or **up arrow** keys until <B:> is selected, then press the **CTRL** and **ENTER** keys simultaneously.
   b. For the IBM PC XT select drive A as the default drive by pressing the **down arrow** or **up arrow** keys until <A:> is selected, then press the **CTRL** and **ENTER** keys simultaneously.

5. Framework is now ready to use.

Using Printer Features

The Print Menu in Framework contains selections to start and control printing. Select BEGIN in the Print Menu and press the **ENTER** key to print the selected frame on ThinkJet. Framework has a variety of formatting features available.

Framework supports the Alternate Mode Feature Set of ThinkJet for the following features: bold, underline, and graphics (high density graphics). These features are accessed through the Framework Words menu and Graphs menu.

The ThinkJet features that are not supported directly through menu selections can be accessed using print function formulas. For example, to set the page length to 66 lines and turn bold mode on:

1. Press the **F2** key. (The Edit Formula key.)

2. Type **@pl(66), @st(" { ESC } E")** then press the **ENTER** key.

These print formulas are now associated with the frame in which they were entered. The printed output of this frame will be bold and will have 66 lines per page.

The results of a printing formula are only apparent on the printed copy. No changes are seen in the text inside the frame on the screen. Printing formulas can be entered for any kind of frame.

As shown, the print function, @st, can be used to send 'setup' strings to the ThinkJet printer to invoke printer features.

Refer to the Tutorial Manual (Chapter 14, Formatting and Printing Techniques) for the rules on entering print formulas; using exact syntax is crucial!)

A few things to be aware of when using a ThinkJet printer with Framework:

1. Italics is not supported on ThinkJet.

2. Framework does not support superscripts and subscripts.

3. Print formulas entered for a given frame affect everything in the frame. For example, turning underline ON through a print formula means that the entire printed document will be underlined.

4. It is not possible to send control codes (for example, **CTRL 0,** to enable compressed printing) to the printer using the @**st** print formula.

Helpful Hints

Framework allows you to resume your work in Framework while the ThinkJet is printing. There are several useful print options in the Print menu of Framework: Pause, Wait for Each Page, Stop, Begin on Page #n, Number of Copies #n.

NOTE: 1. Do not use **PrtSc** while in Framework.
2. Be sure the ThinkJet printer is ON and paper is loaded before printing from Framework.

The information contained in this application note is intended for information purposes only and is subject to change without notice. Questions regarding Framework should be directed to Ashton-Tate. Questions regarding the ThinkJet Printer should be directed to your nearest Hewlett-Packard dealer.

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Microsoft® Word

Microsoft Corporation ———————————**ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND MICROSOFT WORD (Revision 1.1) ON AN IBM PC, PC XT

Introduction

The procedures outlined in this application note will assist you in using your ThinkJet printer with the Microsoft Word package. Your ThinkJet printer will give you fast, high-quality printing. Consult the ThinkJet Reference Manual and the Microsoft Word manual for additional information.

Hardware Configuration

See Hardware Application Note for the IBM PC with parallel interface, HP Part No. 5954-2905(54); use recommended hardware configuration.

System Configuration

No change to the default MS-DOS setup is necessary before running MS Word.

Application Configuration

When using Microsoft Word to print documents, it is necessary to have a copy of the correct PRD file on your Program Disk. A PRD file is a Printer Description File which Word uses to communicate correctly with your printer. You can have as many PRD files on your Program Disk as you would like. Follow the instructions below to copy the TTYBS.PRD file to the Program Disk using DOS. Selecting the correct file for printing with your ThinkJet is discussed later in this section.

Using an IBM PC:

1. Put your Word Program Disk in drive A.

2. Put the Word Utility Disk in drive B.

3. Type **COPY B:TTYBS.PRD A:** then press the **ENTER** key.

Using an IBM PC XT:

1. Put the Word Utility Disk in drive A.

2. Type **COPY A:TTYBS.PRD C:** then press the **ENTER** key.

NOTE: Some releases of Microsoft Word contain the PRD files on the Program Disk instead of the Utility Disk.

Next, you will need to configure Word to properly communicate with your ThinkJet printer. To do so, run Word in the normal manner until you reach the Alpha or Type-In Mode. Then follow the directions outlined below.

Print Option Settings:

1. Press the **ESC** key. (Puts you into the Command Menu.)

2. Type **P**. (Print Menu.)

3. Type **O**. (Print Options menu.)

4. Type **TTYBS** then press the **TAB** key. (Printer Type. Use TTYBS.PRD.)

5. Type **N** then press the **TAB** key. (No-Draft Mode.)

6. Press the **TAB** key four times. (This puts you in the feed field.)

7. Type C, then press the **TAB** key. (This sets continuous paperfeed.)

8. Type **LPT1:** then press the **ENTER** key. (This sets output for the first parallel port, then exits the Print Option Menu.)

9. Press the **ESC** key. (Back to the Command Menu.)

10. Type **Q**. (Quit or exit Word.)

The printer, draft, feed, and setup settings made in the Print Options Menu are saved automatically whenever editing a document.

Using Printer Features

The Character Formats (enhancements) supported by Microsoft Word are listed below. Also, note that some Microsoft Word Character Formats are not supported, and when used will yield a different result. Formatting is done while in the Type-In or Alpha mode of Word. For example, to underline the word "support":)

1. Hold down the **Alt** key, then press **u**. (Start underline.)

2. Type **support**.

3. Hold down the **Alt** key, then press the **SPACE** key. (Start normal.)

Keystrokes	Character Format	Actual ThinkJet Output
*Alt b	Boldface	Bold Print
*Alt i	Italic (not supported)	Text will be underlined
*Alt u	Underline	Underline
*Alt d	Double Underline (not supported)	Single underline
*Alt s	Strikethrough	Legal strikethrough
*Alt k	Small caps (not supported)	Normal caps
*Alt +	Superscript (not supported)	Will appear on same line
*Alt −	Subscript (not supported)	Will appear on same line
*Alt SPACE	Normal Character	Normal–end other format

* = hold down the **Alt** key while typing the next character. Also applies to **SPACE**.

An alternate method of using these Character Formats is through the Edit Menu. The Format Character Menu includes all of the formats in the above list. To get to this menu from the Edit Mode:

1. Press the **ESC** key. (This puts you into Command Menu.)

2. Type **F** then **C**. (Now you are in the Format Character Menu.)

You can move through the menu by pressing the **TAB** key and making selections by typing the first letter of the desired setting. To exit and use the new settings press the **ENTER** key.

Helpful Hints

Word provides options on when and how to print. These are found in the Print Menu. Press the **ESC** key, then type **P** from the Edit Mode. The choices are:

Type **P**. (Prints the current file immediately.)

Type **D**. (Prints whatever is typed on the keyboard. No characters appear on the screen or in the document. Useful in printing short messages or envelopes.)

Type **F**. (Saves your document in a disc file for future printing.)

Type **Q**. (Used to initiate printing of saved print files.)

WordStar®

Micropro International _____**ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND WORDSTAR (Version 3.3) ON AN IBM PC, PC XT

Introduction

The procedures outlined in this application note will assist you in using your ThinkJet Printer with the WordStar package. WordStar will provide you with a good deal of flexibility in formatting your printed output.

Important Notes

If you are using WordStar without making "installation" changes, the margins on your printed output will be different than you might expect. The Application Configuration and Using Printer Features sections of this application note describe ways in which you can change these "default" margins and other formatting features.

In WordStar there are two good ways to format your printed output. One way is through Winstall, and the other is using Print Control and Dot Commands. In Winstall you can change the "default" or initial settings for a large number of WordStar features including printing format. The settings you input while in Winstall will be used every time you begin a new WordStar session: these become your new default. The Print Control and Dot Commands can be used to tailor the print format for a particular document. They are saved along with that document and can be changed interactively while running WordStar. A detailed discussion of how to set the defaults follows in the running Winstall section of this note. Print Control and Dot Commands are covered in Using Printer Features.

Hardware Configuration

See Hardware Application Note for the IBM PC with parallel interface, HP Part No. 5954-2905(54); use recommended hardware configuration.

System Configuration

The IBM PC and its operating system (MS-DOS) have been designed to treat the first parallel port as the default output or printer port. Since your ThinkJet printer is interfaced to that port there is no change necessary to the system configuration. To verify your printer connection press the **SHIFT** and **PrtSc** keys simultaneously. The printer should print whatever appears on the display.

Application Configuration

Winstall

Winstall is a program that is used to customize WordStar. With Winstall you will prepare WordStar to work properly with your ThinkJet printer, and you will have the opportunity to tailor a variety of WordStar features to your needs.

Read Chapter 1, and the IBM PC Addendum, in the WordStar Installation Manual for instructions on running Winstall. Follow these instructions up to the point where the Installation Menu appears. There are five selections in this menu, A through E, which can be used to personally tailor your copy of WordStar. The first section, Menu of Printers, is described below. This must be run in order for your ThinkJet to work properly with WordStar.

The Menu of Printers

1. Type **C**. (Choose the Menu of Printers.)

2. Type **2**. (Choose Page 2 of Printer Types.)

3. Type **G**. (G selects STANDARD PRINTER.)

4. Type **Y**. (This confirms STANDARD PRINTER.)

5. Type **A**. (A selects NO PROTOCOL.)

6. Type **Y**. (This confirms NO PROTOCOL.)

7. Type **A**. (A selects PARALLEL PRINTER DRIVER.)

8. Type **Y**. (This confirms PARALLEL PRINTER DRIVER.)

Changing WordStar Features is optional, but included below is a description of printer settings that are commonly used.

Using Printer Features

Menu of WordStar Features

The procedure outlined below describes how to set the Right Margin to 76, and the Page Offset to 0. This menu allows you to customize other printing features including: Omit-Page-Numbering, Top Margin, Bottom Margin, Left Margin, Number of Lines Per Page, and Form Feeds.

1. Type **E**. (Choose the Menu of WordStar Features.)

To change the right margin from 65 (default) to 76:

2. Type **L**. (L selects Right Margin.)

3. Type **C**. (C to change current setting.)

4. Type **76** then press **ENTER**. (Set new margin at 76.)

5. Type **Y**. (This confirms the new setting of 76.)

To change the Page Offset from 8 (default) to 0:

2. Type **N**. (N selects Page Offset.)

3. Type **C**. (C to change current setting.)

4. Type **0** then press **ENTER**. (Set new offset at 0.)

5. Type **Y**. (This confirms the new setting of 0.)

In either case:

6. Type **X**. (Exit to Installation Menu.)

To exit Winstall, type **X**. While you are exiting Winstall you will have the opportunity to review some of your new settings. If all of the settings are correct, SAVE your changes when you get to the Exit Options Menu by typing **A**.

Using Print Controls and Dot Commands

Print Controls and Dot Commands are used while you are running WordStar to format and enhance a specific document. The document must be opened in order to use these commands. All formatting and enhancement will be maintained right along with the document when it is saved.

Print Controls and Dot Commands are summarized at the end of Chapter 7 in the WordStar Reference Manual. Glancing through the Summary Tables will give you a good idea of the printing features available in WordStar.

Dot Commands are used to format or layout your document. They provide you with the ability to define settings like Page Length, Margins, Page Numbering, Headers, Footers, etc. A Dot Command must begin in the first column with a dot followed by a valid command. An example Dot Command is **.OP** which will Omit Page Numbering from the current page through the remainder of the document.

Print Control Commands are primarily used for doing special effects or enhancements like bold, underlining, overstrike, strikeout, etc. Once a document has been opened a print menu can be displayed by holding down the **Ctrl** key and typing **P**. This menu can be used as an easy reference or even more importantly to invoke a special effect.

Helpful Hints

A good way to verify your installation and learn how to print using WordStar is to print out a document name PRINT.TST. A copy of this is located on your Program disk. Follow the procedure outlined below to print PRINT.TST. (For a complete explanation of the following steps see the Printing Files section of Chapter 9 in your WordStar Reference Manual.)

1. Type **WS**, then press the **ENTER** key. (Run WordStar.)

2. Type **P**. (Print a file.)

3. Type **PRINT.TST**, then press the **ENTER** key. (Name of file to print?)

4. Type **N**. (Disc file output, Y/N?)

5. Press the **ENTER** key. (Start at page number ? - Beginning . . .)

6. Press the **ENTER** key. (Stop after page number ? - End)

7. Type **Y**. (Use form feeds, Y/N?)

8. Type **N**. (Suppress page formatting, Y/N?)

9. Type **N**. (Pause for paper change between pages?)

10. Press the **ENTER** key. (Ready printer, press **RETURN**.)

After a short delay, the document will print out on your ThinkJet printer.

Looking through the PRINT.TST document that you just printed will show you all of the printing capabilities available. Some things to note: when used with WordStar the ThinkJet can only support a single pitch and a single line height. Also, the super and subscripts are printed a full line above or below the main line.

WordStar can be customized to cause super and subscripts to be printed one-half a line above or below the main line of text. To make this change, run Winstall the same way you have in the past, up to the point where the Installation Menu is displayed, then carefully follow the directions below.

1. Type **D**. (Choose Custom Installation of Printers.)

2. Press the **ENTER** key. (Read the displayed message then proceed.)

3. Type **N**. (Return/line feed.)

4. Press the **ENTER** key. (Return and line feed control sequence—leave unchanged.)

5. Press the **ENTER** key. (This confirms Return and line feed control sequence.)

6. Press the **ENTER** key. (Return (no line feed) control sequence—leave unchanged.)

7. Press the **ENTER** key. (This confirms Return control sequence.)

8. Type **C**. (Return and half line feed control sequence–CHANGE–.)

9. Type **0Dh** then press the **ENTER** key. (New value for Return in hexadecimal.)

10. Type **1Bh** then press the **ENTER** key. (New value for Escape in hexadecimal.)

11. Type **3Dh** then press the **ENTER** key. (New value for Equal sign in hex.)

12. Press the **ENTER** key three times. (This enters zeros for the rest of the Return and half line feed function.)

13. Check the function code sequence, it should now be: Dh 1Bh 3Dh 0h 0h 0h.

14. Press the **ENTER** key. (This confirms the new sequence and goes back to the Printer Installation Menu.)

15. Type **X**. (Exit to the Installation Menu.)

16. Type **X**. (Exit from Install.)

17. Type **A**. (**A** saves the changes just made and Exits to the operating system.)

One thing to keep in mind while using super and subscripts is that for them to print properly the line in the document above or below the main line must be blank.

dBASE II™
Ashton-Tate _____ **ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND dBASE II (Version 2.4) ON THE IBM PC, PC XT

Introduction

We recommend that the user perform the tutorial provided in the red section of the dBASE II manual. The following sections of the dBASE II manual contain specific information on printer control and output: Section 2 (grey pages in manual), Section 4 (red pages in manual).

Hardware Configuration

See Hardware Application Note for the IBM PC with parallel interface, HP Part No. 5954-2905(54); use recommended hardware configuration.

System Configuration

No change to the default MS-DOS setup is necessary before running dBASE II.

Application Configuration

To use dBASE II do the following in MS-DOS:

IBM PC—

1. Put the dBASE disk into drive A.

2. Type **dBASE** then press the **ENTER** key.

The dBASE II prompt, a period (.), will appear when the program is ready for use.

IBM PC XT—

To install dBASE II on the hard disk (drive C) do the following:

1. Put the dBASE disk into drive A.

2. Type **COPY A: *.* C: /V** then press the **ENTER** key.

To access the dBASE II program:

1. Be sure the dBASE disk is in drive A, even though the application has been installed on the hard disk.

2. Type **dBASE** then press the **ENTER** key.

The dBASE II prompt, a period (.), will appear when the program is ready for use.

Using Printer Features

To print characters appearing on the screen, from the dBASE II prompt:

1. Type **SET PRINT ON** then press the **ENTER** key. All characters appearing on the screen will print out. To disable this function type **SET PRINT OFF** then press the **ENTER** key.

2. Press the **Ctrl** key and type **P** simultaneously. This is a toggle function that does the same thing as **SET PRINT ON/OFF**.

ThinkJet printing features can be accessed in the following ways.

To send a form feed to the ThinkJet printer:

1. Type **SET PRINT ON** then press the **ENTER** key.

2. Type **EJECT** then press the **ENTER** key.

To put the ThinkJet printer in compressed print mode:

1. Type **SET FORMAT TO PRINT** then press the **ENTER** key.

2. Type **@ 0,0 SAY chr(27) + '&k2S'** then press the **ENTER** key.

To put the ThinkJet printer in normal print mode (12 cpi):

1. Type **SET FORMAT TO PRINT** then press the **ENTER** key.

2. Type **@ 0,0 SAY chr(27) + '&k0S'** then press the **ENTER** key.

To turn bold print on:

1. Type **SET FORMAT TO PRINT** then press the **ENTER** key.

2. Type **@ 0,0 SAY chr(14)** then press the **ENTER** key.

To turn bold print off:

1. Type **SET FORMAT TO PRINT** then press the **ENTER** key.

2. Type **@ 0,0 SAY chr(15)** then press the **ENTER** key.

To turn underline on:

1. Type **SET FORMAT TO PRINT** then press the **ENTER** key.

2. Type **@ 0,0 SAY chr(27) + '&dD'** then press the **ENTER** key.

To turn underline off:

1. Type **SET FORMAT TO PRINT** then press the **ENTER** key.

2. Type **@ 0,0 SAY chr(27) + '&d@'** then press the **ENTER** key.

To change line spacing:
For 6 lines per inch —

1. Type **SET FORMAT TO PRINT** then press the **ENTER** key.

2. Type **@ 0,0 SAY chr(27) + '&l6D'** then press the **ENTER** key.

For 8 lines per inch —

1. Type **SET FORMAT TO PRINT** then press the **ENTER** key.

2. Type **@ 0,0 SAY CHR(27) + '&l8D'** then press the **ENTER** key.

To change the lines per page to 60:

1. Type **SET FORMAT TO PRINT** then press the **ENTER** key.

2. Type **@ 0,0 SAY chr(27) + '&l60P'** then press the **ENTER** key.

The above represents a method for sending print feature commands (also known as set-up strings or escape sequences) to the ThinkJet printer. The form used is **@ row,column SAY string** where **chr(27)** in the string area represents the escape character. (See the ThinkJet reference manual for print feature commands.) The **EJECT** command resets the row,column position to 0,0 where the string is printed. Refer to Section 4 of the dBASE II manual for more information on these commands.

Helpful Hints

The following commands may also be used for printer control.

1. An alternate method for sending print feature commands to the ThinkJet printer is:
   a. Type **SET PRINT ON** then press the **ENTER** key.
   b. Type **? chr(27) + '&k2S'** then press the **ENTER** key. This will enable compressed printing on the ThinkJet printer.

   Any string following a **?** will be sent to the printer.

2. The **REPORT** command allows you to custom format the printout of a database file; for example, heading, margins, page length.
   a. Type **USE filename*** then press the **ENTER** key. This opens an existing database called **filename*** (the name of your file).
   b. Type **REPORT** then press the **ENTER** key. dBASE prompts for formatting information (such as headings, margins, line length and lines per page). The format information is stored in a file that is named by the user during this formatting session. For specific information and examples on the **REPORT** command, please read section 2 of the grey pages of the dBASE II manual.
   c. The open database can be output to the printer using this custom format file by typing **REPORT FORM <format file name> TO PRINT**. Press the **ENTER** key.

* = Enter the name you have given the file.

Miscellaneous Hints

1. Type **SET EJECT OFF** then press the **ENTER** key to supress the initial form feed to the printer when the command **REPORT FORM <format file name> TO PRINT** is used.

2. Care should be taken to order a sequence of **@ row,command SAY string** commands such that the row positioning coordinate is in an increasing sequential order. For example, **@ 5,5 SAY 'line 5'** should be sent to the printer before **@ 10,5 SAY 'line 10'**.

3. Pressing the **ESC** key will terminate dBASE output to the printer. However, the printer will continue printing until its input buffer is empty.

4. Beware: Attempting to send data to the printer when it is not connected or not turned ON may "lock" the computer. Connecting and turning ON the printer should "unlock" the computer. Otherwise, the computer must be restarted.

dBASE III™
Ashton-Tate _____ **ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND
dBASE III (Version 1.0)
ON THE IBM PC, PC XT

Introduction

We recommend the user perform the tutorial provided in the dBASE III manual. The following sections of the dBASE III manual pertain to printer output and control and should also be reviewed before attempting to run dBASE III: Section 4, Commands; Section 5, Functions; Pages 1-94 and 1-109A of the Tutorial Section. The ThinkJet Reference Manual should also be reviewed, especially the Print Features section.

Hardware Configuration

See Hardware Application Note for the IBM PC with parallel interface, HP part No. 5954-2905(54); recommended hardware configuration.

System Configuration

No change to the default MS-DOS setup is necessary before running dBASE III.

Application Configuration

For the IBM PC—

1. Put the dBASE III system disk into drive A.

2. Put your work disk (where database files are stored and retrieved) in drive B.

3. Type **dBASE** then press the **ENTER** key.

4. The dBASE III prompt, a period (.) will appear; type **SET DEFAULT TO B** then press the **ENTER** key to select drive B as the working disk.

For the IBM PC XT—

To install dBASE III on the hard disk (drive C) do the following:

1. Put the dBASE III system disk into drive A.

2. Type **COPY A: *.* C: /V** then press the **ENTER** key.

To access the dBASE III program, do the following:

1. Put the dBASE III system disk into drive A.

2. Type **dbase** and press the **ENTER** key.

3. Remove the dBASE III system disk from drive A.

4. Put your work disk (where database files are stored and retrieved) in drive A.

5. The dBASE III prompt, a period (.) will appear; type **SET DEFAULT TO A** then press the **ENTER** key to select drive A as the working disk.

The dBASE III program is ready for use.

Using Printer Features

To print characters appearing on the screen, from the dBASE III prompt (.):

1. Type **SET PRINT ON** then press the **ENTER** key. All characters appearing on the screen will print out. To disable this function type **SET PRINT OFF** then press the **ENTER** key.

2. (Alternate method) Press the **Ctrl** and **P** keys simultaneously. This is a toggle function that does the same thing as **SET PRINT ON/OFF**.

To print a database file or database information, use the following commands.

1. a. Type **USE filename*** then press the **ENTER** key. This opens an existing database called **filename*** (the name of your file).
   b. Type **LIST TO PRINT** then press the **ENTER** key. This prints the entire contents of the open database (filename) to the ThinkJet printer. Refer to the dBASE III manual for instructions on printing specific portions of the database file.

2. a. Type **USE filename*** then press the **ENTER** key. This opens an existing database called filename (the name of your file).
   b. Type **DISPLAY TO PRINT** then press the **ENTER** key. This prints the current record of the open database (filename) to the ThinkJet printer. Refer to the dBASE III manual for instructions on printing specific portions of the database file.

3. a. Type **USE filename*** then press the **ENTER** key. This opens an existing database filename (enter the name of your file).
   b. Type **DISPLAY MEMORY TO PRINT** then press the **ENTER** key. The memory variables for the open database will be printed on the ThinkJet printer. Refer to the dBASE III manual for further information on memory variables.

4. a. Type **USE filename*** then press the **ENTER** key. This opens an existing database called filename (enter the name of your file).
   b. Type **DISPLAY STATUS TO PRINT** then press the **ENTER** key. Current processing and status information will be printed on the ThinkJet printer.

5. a. Type **USE filename*** then press the **ENTER** key. This opens an existing database called filename (enter the name of your file).
   b. Type **DISPLAY STRUCTURE TO PRINT** then press the **ENTER** key. Current information on the database structure will be printed on the ThinkJet printer.

* = Enter the name you have given the file.

Helpful Hints

The following commands may also be used for printer control.

Type **SET** then press the **ENTER** key. An options menu will appear on the screen. Press the **SPACE BAR** key until **PRINT** appears as the **DEVICE** selection. Press the **ESC** key to exit from this menu. The following dBASE III commands can be used to select printer features with PRINT SET ON:

Printer Feature Accessed	Type the following then press the **ENTER** key
Form Feed	EJECT
Compressed Print	@ PROW( ) ,PCOL( ) SAY CHR(27) + '&k2S'
Normal Print (12 cpi)	@ PROW( ) ,PCOL( ) SAY CHR(27) + '&k0S'
Bold Print ON	@ PROW( ) ,PCOL( ) SAY CHR(14)
Bold Print OFF	@ PROW( ) ,PCOL( ) SAY CHR(15)
Underline ON	@ PROW( ) ,PCOL( ) SAY CHR(27) + '&dD'
Underline OFF	@ PROW( ) ,PCOL( ) SAY CHR(27) + '&d@'
Line Spacing = 6 LPI	@ PROW( ) ,PCOL( ) SAY CHR(27) + '&l6D'
Line Spacing = 8 LPI	@ PROW( ) ,PCOL( ) SAY CHR(27) + '&l8D'
Page Length = 60 LPP	@ PROW( ) ,PCOL( ) SAY CHR(27) + '&l60P'

The above represents a method for sending print feature commands (also known as set-up strings or escape sequences) to the ThinkJet printers. The form used is **@ row,column SAY string** where **CHR(27)** in the string area represents the escape character. (See the ThinkJet Reference Manual for print feature commands.) The functions, **PROW( )** and **PCOL( )**, indicate that the string sent to the printer should be printed at the current printer position (these functions are explained further below). The **EJECT** command resets the row,column position of the printer to 0,0.

The following commands also result in printer access.

1. An alternate method for sending print feature commands to the ThinkJet printer is:
   a. Type **SET PRINT ON** then press the **ENTER** key.
   b. Type **? CHR(27) + '&k2S'** then press the **ENTER** key. This will enable compressed printing on the ThinkJet printer.

   Any string following a **?** will be sent to the printer.

To determine the printer's current position (row and column) use the following commands:

1. Type **? PROW( )** then press the **ENTER** key. The printer's current row position will appear as a number on the screen.

2. a. Type **SET PRINT ON** then press the **ENTER** key.
   b. Type **@ PROW( ) + 10,1 SAY 'This will print at current printer row + 10'** then press the **ENTER** key. This string prints out at the printer column 1 and the current print row position + 10. This is an example of relative positioning of output.

3. Type **? PCOL( )** then press the **ENTER** key. The printer's current column position will appear as a number on the screen.

4. a. Type **SET PRINT ON** then press the **ENTER** key.
   b. Type **@ 1, PCOL( ) + 5 SAY 'This will print at current printer column + 5'** then press the **ENTER** key. This string prints out at the printer row 1 and the current printer column position + 5. This is an example of relative positioning of output.

The **REPORT** command allows you to custom format the printout of a database file: (for example, headings, margins, page length). For specific information and examples on using the **REPORT** command, refer to the dBASE III manual, pages 1-100, through 1-109A.

1. a. Type **USE filename** then press the **ENTER** key. This opens an existing database called **filename** (enter the name of your file).
   b. Type **CREATE REPORT** then press the **ENTER** key.
   c. Type **filename** (the name you select for the format file about to be created) then press the **ENTER** key.
   d. A report format menu will appear on the screen. Fill in the fields by typing in the desired values for each selection available. For example, for the **# lines/page:** field type **60** and then press the **DOWN ARROW** key to move to the **Double space report (Y/N)?:** field. Press the **UP ARROW** and **DOWN ARROWS** keys to move from field to field. Press the **PgDn** key to access the next screen of format information.
   e. Save the custom format created by pressing the **Ctrl** and **End** keys simultaneously.
   f. To print the currently open database formatted to the specifications of the custom format file you have just created, type **REPORT FORM filename NOEJECT TO PRINT** (enter the name of your format file in place of **filename**) and press the **ENTER** key. The **NOEJECT** is optional and results in suppression of the initial formfeed to the ThinkJet printer.
   g. To modify a custom format file that already exists, type **MODIFY REPORT filename** (enter your format file name in place of **filename**) then press the **ENTER** key. The formatting menu will appear on the screen and desired changes can be made. To save changes, press the **Ctrl** and **End** keys simultaneously.

Miscellaneous Hints

1. Care should be taken to order a sequence of **@ row,column SAY string** commands such that the row positioning coordinate is in an increasing sequential order. For example, @ 5,5 SAY 'line 5' should be sent to the printer before @ 10,5 SAY 'line 10'.

2. Pressing the **ESC** key will terminate dBASE output to the printer. However, the printer will continue printing until its input buffer is empty. To disable this use of the **ESC** key type **SET ESCAPE OFF** then press the **ENTER** key. To re-enable this function, type **SET ESCAPE ON** and then press the **ENTER** key.

3. **CAUTION:** Sending data to the printer when it is not connected or not turned ON may "lock" the computer. Connecting and turning ON the printer should "unlock" the computer. Otherwise, the computer must be restarted.

EasyWriter II™ System

Sorcim/IUS ━━━━━━━━━━━━━━━━━━━ **ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND EASYWRITER II (Version 4.0) ON THE IBM PC, PC XT

Introduction

The user should perform the on-screen tutorial to gain initial familiarity with EasyWriter II (tutorials presented in the manual for more extensive instructions should also be read).

For specific information on printer control and output, we suggest you read the following sections:

Appendix B: Configuring Printer
Appendix F: Printer Configuration Diskette
Chapter 4: Tutorials
Chapter 5: Main Menu, specifically pages 5-13 through 5-22
Chapter 6: System Functions Menu, specifically pages 6-8 through 6-14
Chapter 7: Editing Documents, specifically pages 7-10 through 7-38
Chapter 8: Mail Merge, specifically pages 8-26 through 8-30

Hardware Configuration

See Hardware Application Note for the IBM PC, PC XT with parallel interface, HP Part No. 5954-2905(54); use recommended hardware configuration.

System Configuration

No change to the default MS-DOS setup is necessary before running EasyWriter II.

Application Configuration

Installing EasyWriter II on the IBM PC XT:

For the IBM PC XT, from the MS-DOS prompt C> perform the following to install EasyWriter II on the hard disk:

1. Put the EasyWriter II System Disk in drive A.

2. Type **a:install ew c:** then press the **ENTER** key.

3. After the installation is complete (the MS-DOS prompt will appear) remove the System Disk and put the Housekeeping Disk in drive A.

4. Type **a:install ew c:** then press the **ENTER** key.

5. When installation is complete, remove the Housekeeping Disk.

To access ThinkJet printer features while using EasyWriter II, the following printer set-up steps are required. It is only necessary to complete this procedure once. From the MS-DOS prompt A> (PC) or C> (XT):

1. a. For the IBM PC, put the EasyWriter II System Disk in drive A. Type **EWII** then press the **ENTER** key. The EasyWriter II menu will appear on the screen.
   b. For the IBM PC XT, type **EWII** then press the **ENTER** key. The EasyWriter II menu will appear on the screen.

2. Type **8** to select system functions.

3. For the IBM PC, put the Housekeeping Disk in drive A then press the **ENTER** key.

4. For the IBM PC and XT, type **7** to select Change Printer Selection.

5. For the IBM PC put the EasyWriter II System Disk in drive A then press the **ENTER** key.

6. For the IBM PC and XT:
   a. Type **1** (Standard Printer selection) for the Printer Number then press the **TAB** key to advance to the Port Number field.
   b. Type **2** for the Port Number (parallel port selection) then press the **ENTER** key.

7. For the IBM PC put the Housekeeping Disk in drive A then press the **ENTER** key. Press the **ESC** key to save the printer configuration selected.

8. For the IBM PC XT press the **ESC** key twice to save the printer configuration selected.

9. For the IBM PC and XT press the **ENTER** key to exit EasyWriter II.

To enter the EasyWriter II program do the following:

1. a. For the IBM PC, put the EasyWriter II system disk in drive A. Type **EWII** then press the **ENTER** key.
   b. For the IBM PC XT, type **EWII** then press the **ENTER** key.

The EasyWriter II Main Menu will appear and the program is ready to use.

Using Printer Features

The following steps describe how to access print features in EasyWriter II.

Select the character, word, sentence, line, paragraph, or page mode. (Refer to the Tutorial Section of your manual for selection instructions.)

1. Underlining
   a. Place the cursor on the first character to be affected by the feature.
   b. Press the **ALT** and __ keys simultaneously.
   c. The designated text will be underlined on the screen and on the output to the printer.

2. Bold Print
   a. Place the cursor on the first character to be affected by the feature.
   b. Press the **ALT** and **B** keys simultaneously.
   c. The designated text will be bold when output to the ThinkJet printer.

3. To remove Underlining or Bold
   a. Place the cursor on the first character to be affected by the feature.
   b. Press the **ALT** and **N** keys simultaneously.
   c. The designated text will no longer be underlined or bold.

The selected text can be both underlined and bold by performing the underline procedure of Step 1, then the bold print procedure of Step 2 over the same text area.

There are several ways to output a document to the ThinkJet printer.

To Print a Page—

1. Display the page to be output on the printer.

2. Press the **SHIFT** and **F7** keys simultaneously.

3. Type in the number of spaces you want the printer to indent for the left margin.

4. Press the **ENTER** key and the page will be output to the ThinkJet printer.

5. a. To stop the printer press the **F8** and **SHIFT** keys simultaneously. The printer will stop after its buffer is empty.
   b. To resume printing press the **ENTER** key.
   c. To cancel this print session press the **ESC** key.

To Print a Document—

1. From the main menu type 4 to select Print.

2. Press the **ENTER** key to add an item to the print queue.

3. Type in the number of the document to be printed, then press the **TAB** key.

4. Type in the beginning page number to be printed, then press the **TAB** key.

5. Type in the ending page number to be printed, then press the **TAB** key.

6. Type in the number of copies to be printed, then press the **TAB** key.

7. Type in the number of spaces to indent the left margin in the printed output, then press the **TAB** key. Note that the indentation here is in addition to margins the user has already set in the document.

8. Type **A** in the options field for continuous forms paper.

9. Press the **ENTER** key and the documents in the print queue will be output to the ThinkJet printer. Steps 2 through 8 above can be repeated to enter several documents into the print queue before printing is initiated by pressing the **ENTER** key.

10. a. To stop the printout, press the **SHIFT** and **F8** keys simultaneously. The printer will stop when its buffer is empty.
    b. Press the **F1** key to acknowledge the print stoppage.
    c. To resume printing, press the **ENTER** key.
    d. To cancel this print session, press the **ESC** key. To remove the document from the print queue press the **DEL** key and then the **ENTER** key.

11. You can continue to edit work while printing by pressing the **ESC** key to leave the Print Selection menu. Work can be continued on any document in your file folder except the one currently being printed.

Helpful Hints

1. Superscripts and subscripts on ThinkJet are not supported by EasyWriter II.

2. Other ThinkJet print features (such as compressed print pitch) can be accessed if the EasyWriter II printer is configured as a Custom Printer Type B. There are some complex configuration changes which must be done to accomplish this. Refer to the EasyWriter II manual appendices B (Configuring Printer) and F (Printer Configuration Diskette) and the ThinkJet manual for print feature commands.
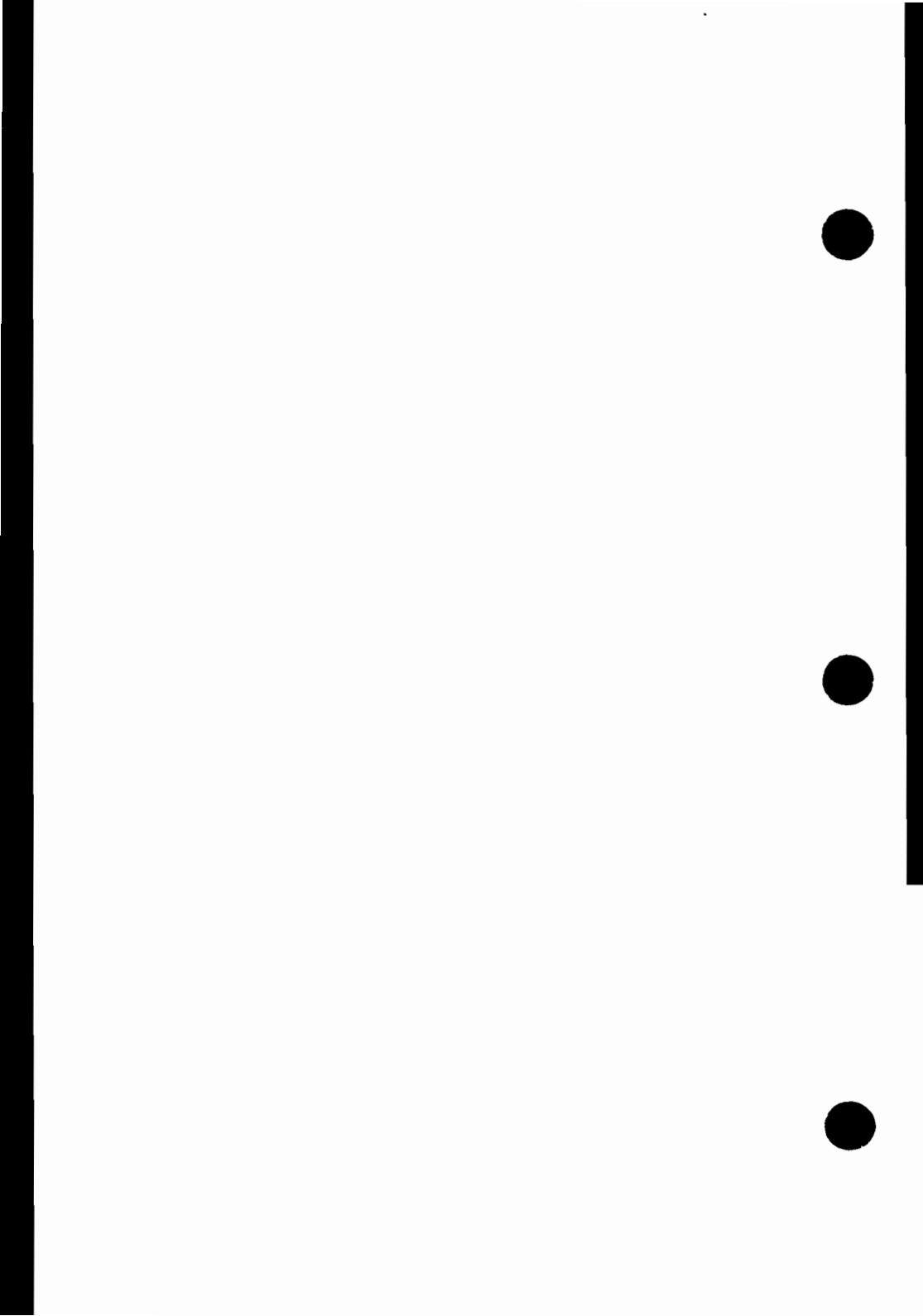
IBM Writing Assistant
IBM ————————————————————————— **ThinkJet**

CONFIGURING YOUR SERIAL THINKJET PRINTER AND
IBM WRITING ASSISTANT
ON THE IBM PCjr

Introduction

The procedures outlined in this application note will assist you in setting up and using your ThinkJet printer with IBM Writing Assistant. We suggest you read Chapter 5 (Printing Documents) of the Writing Assistant manual which covers basic printing operations. Additional information on using print enhancements can be found in Chapter 6 (More Editing).

Hardware Configuration

See Hardware Application Note for the IBM PCjr serial interface configuration, HP Part No. 5954-2912(54); use recommended hardware configuration except set switch 5 (on the left group of switches numbered 1-8) UP(1).

System Configuration

See Application Configuration below for system setup.

Application Configuration

The ThinkJet printer needs to be setup as your output device for the IBM Writing Assistant. The following procedure needs to be done only once to accomplish this. From the DOS prompt A>:

1. Insert the Writing Assistant program disc, making sure the write protect tab is removed. Type **SETUP**, then press the **Enter** key.

2. Press the **Enter** key to continue.

3. Type **1** (Select a Printer) then press the **Enter** key.

4. Type **4** (Epson) then press the **Enter** key.

5. Type **COM1:** (Serial Printer) then press the **Enter** key.

6. Type **2** (Setup Serial Card) then press the **Enter** key.

7. For baud rate selection, type **2400** then press the **Enter** key.

8. For parity, type **none** then press the **Enter** key.

9. For number of data bits, type **8** then press the **Enter** key.

10. For number of stop bits, type **1** then press the **Enter** key.

11. For XON/XOFF protocol, type **N** then press the **Enter** key.

The new device setup is written to the disc when exiting the Setup Menu. Type **5** then press the **Enter** key to exit Setup.

To run Writing Assistant do the following from the DOS prompt:

1. Insert the Writing Assistant program disc into the disc drive.

2. Type **G** then press the **Enter** key.

After disc activity has ceased, the IBM Writing Assistant Main Menu will appear. The program is now ready to use.

Using Printer Features

Printing Documents

The PRINT function in IBM Writing Assistant's Main Menu will create a printed copy of your document.

1. From the Main Menu type **3** (Print), then press the **Enter** key.

2. Default print menu selection will appear on the screen. To make menu changes, press the **Tab** key to move from one field to the next, and type-in the desired value.

3. Press the **Enter** key to initiate printing.

4. Be sure the ThinkJet printer is ON and paper is in position, then press the **Enter** key and the document will begin printing.

5. To temporarily stop printing, press the **spacebar** key. To resume printing press the **Enter** key. To stop printing and return to the Main Menu press the **Esc** key.

IBM Writing Assistant supports both underline and boldface printer enhancements. To use these enhancements enter the Type/Edit screen and:

1. Move the cursor to the first character to be enhanced.

2. Press the **Fn** (green) key and **F5** simultaneously.

3. a. To underline, press the **U** key for each character in the document to be underlined. If a color monitor is being used the underlined characters will appear in a different color. On a black and white monitor the characters will appear underlined.
   b. To boldface, press the **H** key for each character in the document to be in bold. Bold character(s) will appear as a different color on a color monitor and as bold on a black and white monitor.
   c. Characters can be emphasized with both boldface and underline by pressing the **U** key while the cursor is under the character, then moving the cursor back under the character and pressing the **H** key.

4. To remove an enhancement, move the cursor to the first character to be effected. Press the **N** key for each character that you no longer wish enhanced.

5. To exit the enhancement selection menu press the **Fn** (green) and **F10** keys simultaneously.

Printer Command

Other print features can be used by sending control sequences to the ThinkJet printer with the *Printer* Command. Writing Assistant allows you to embed printer-specific control sequences in your document in the following manner. (Refer to the ThinkJet Owner's Manual for specific print feature control sequences, also called escape sequences. Appendix C of the ThinkJet Printer Owner's Manual is especially helpful.)

Enter the print feature command at the location in your document where the print mode should begin. The command should be entered in the following format:

PRINTER code1, code2

Code1 and code2 in the above example equal the ASCII decimal equivalents for the control sequence. Typing any of the following printer control sequences in your IBM Writing Assistant text will cause the characters after the control sequence to be enhanced with the selected feature when printed on your ThinkJet printer:

Selected ThinkJet Feature	Printer Control Sequence
Expanded ON (6 cpi)	*P 14*
Expanded OFF	*P 20*
Compressed ON (21.3 cpi)	*P 15*
Compressed OFF	*P 18*
Expanded-Compressed ON (10.7 cpi)	*P 14,15*
Expanded-Compressed OFF	*P 20,18*
Bold ON	*P 27,69*
Bold OFF	*P 27,70*
Underline ON	*P 27,45,49*
Underline OFF	*P 27,45,48*

Helpful Hints

Because your ThinkJet printer has 1" margins you may want to change the default margins in IBM Writing Assistant's Define Page Menu.

1. From the Main Menu type 2 (Define Page) then press the **Enter** key.

2. The Define Page menu will appear on the screen. Use the **Tab** key to move between format fields, then type-in the desired value. It is recommended that the left margin value be changed to 1 since the ThinkJet printer already has a one-inch margin. Other page parameters may also be changed at the user's discretion.

HEWLETT PACKARD

IBM Filing Assistant
IBM _____ **ThinkJet**

CONFIGURING YOUR SERIAL THINKJET PRINTER AND
IBM FILING ASSISTANT (Revision 1.00)
ON THE IBM PCjr

Introduction

The procedures outlined in this application note will assist you in setting up and using your ThinkJet printer with IBM Filing Assistant. We suggest you read through Chapters 2 (Getting Started) and 6 (Printing Information From a File) of the Filing Assistant manual before proceeding.

Hardware Configuration

See Hardware Application Note for the IBM PCjr serial interface configuration, HP Part No. 5954-2912(54); use recommended hardware configuration, except set switch 5 (on left group of switches numbered 1-8) UP(1).

System Configuration

See Application Configuration below for running the Setup Program.

Application Configuration

IBM Filing Assistant must be configured to work with your ThinkJet printer. This is done by running the Setup Program provided on your IBM Filing Assistant Program Disc. From the DOS prompt A>:

1. Insert the Filing Assistant program disc, type **SETUP** then press the **Enter** key.

2. Press the **Enter** key.

3. Type **3** (Setup Serial Card) then press the **Enter** key.

4. For baud rate selection, type **2400** then press the **Enter** key.

5. For parity, type **none** then press the **Enter** key.

6. For number of data bits, type **8** then press the **Enter** key.

7. For number of stop bits, type **1** then press the **Enter** key.

8. For XON/XOFF protocol, type **N** then press the **Enter** key.

9. Type **1** (Select a Printer) then press the **Enter** key.

10. Type **4** (Epson) then press the **Enter** key.

11. Type **COM1:** (Serial Printer) then press the **Enter** key.

12. Type **6** then press the **Enter** key.

When the Enter key is pressed this final time you will exit the Setup Program, and your application configuration will be saved on the program disc.

To run the Filing Assistant program do the following. From the DOS prompt A>:

1. Insert the Filing Assistant program disc into the disc drive.

2. Type **G** then press the **Enter** key.

When disc activity has ceased, the IBM Filing Assistant Main Menu will appear. The program is now ready to use.

Printing Forms

Printing forms is generally a four-step process. You must select the form you want to print, fill in the print options, enter the print specifications, then give the print command. To print a form:

• Select Form to Print:

1. From the Main Menu type **5** (Print) then press the **Enter** key.

2. Type the name of your file to be printed, then press the **Enter** key.

3. Type **1** (Print Forms) then press the **Enter** key. Your form will appear on the screen.

4. Press the **Fn** (green key) and **F10** keys simultaneously to continue to the Print Options menu.

• Fill in Print Options:

5. Fill in the Print Options menu fields. Use the **Tab** key to move to the next field.
   a. Predefined print spec: Type in the name of a desired print specification created previously, or leave blank. (Creating a predefined print specification is described later.)
   b. Print item names (Y/N): Type **Y** if you wish the item names to be printed with the item information.
   c. Print to: Type **PRINTER** to send the form out to the ThinkJet printer. Type a disc file name to write the form to your disc (a document to be accessed by the IBM Writing Assistant program must be written to a disc file).
   d. Number of copies: Type a number for the number of copies of each form to print.
   e. Lines per page: Type a number to specify the number of lines to allot for printing the form. The default value is 66 lines per page. For example, to fit two forms on a single printer page type **33**.
   f. Pause between pages: Type **N** because your ThinkJet printer uses continuous tractor feed paper.
   g. Press the **Enter** key when menu selections are complete. Your form will appear on the screen ready for Print Spec selections.

• Enter Print Specifications:

6. On the Print Spec form items are selected and arranged for printing (if no options are selected the form will print exactly as it appears on the screen). To select items for printing, type one of the following characters in the desired forms field:

   X = Print this item then advance the printer to the next line.

   $+$ = Print this item, but do not advance the printer to the next line. Move two spaces to the right instead. This is useful for printing two or more fields on a single line.

   To sort printed items type **S** in the field of the items to sort.

• Start Printing:

7. To initiate printing, press the **Fn** (green key) and **F10** keys simultaneously. Your form will be printed in accordance with the Print Options and Print Spec choices you have made.

Print Specification Files

1. From the Filing Assistant Main Menu type **5** (print) then press the **Enter** key.

2. The Print Menu will appear. Type **2** (Define a Print Spec) then press the **Enter** key.

3. Type a name for the Print Spec file then press the **Enter** key.

4. The Print Spec for your specific form appears on the screen. Use the characters described in 6 above to fill in the Print Spec as desired.

5. To save the Print Spec form just created press the **Fn** (green key) and **F10** keys simultaneously. The Print Spec can be accessed using the file name you designated as the entry in the predefined print spec field of the Print Options Menu (see 5a above).

Editing or Removing a Print Spec File

1. From the Main Menu type **5** (Print) then press the **Enter** key.

2. Type **2** (Define a Print Spec) then press the **Enter** key.

3. Type the name of the Print Spec file to be modified or removed, then press the **Enter** key.

4. The Print Spec form will appear on the screen.
   a. Changes can be made by typing over any entries on the form.
   b. To erase the entries and start over, press the **Shift Fn**, and **F8** keys simultaneously.
   c. To remove the Print Spec file entirely, press the **Fn** and **F9** keys simultaneously then press the **Enter** key if you want to proceed with the removal; otherwise, press the **spacebar** key to cancel the removal.

Using Printer Features

ThinkJet print features can be used by sending control sequences to the printer. Filing Assistant allows these print feature control sequences to be sent to the printer in the following way. (Refer to the ThinkJet Owner's Manual for specific print feature control sequences, also known as escape sequences. Appendix C, Table of Alternate Mode Print Features, of the ThinkJet manual is especially helpful.)

1. From the Filing Assistant Main Menu type **7** (Set Print) then press the **Enter** key.

2. To send a sequence directly to the printer do the following:

Print Feature	Set Printer Entry
Expanded ON (6 cpi)	Press **Ctrl** and **N** simultaneously.
Expanded OFF	Press **Ctrl** and **T** simultaneously.
Compressed ON (21.3 cpi)	Press **Ctrl** and **O** simultaneously.
Compressed OFF	Press **Ctrl** and **R** simultaneously.
Expanded-Compressed ON (10.7 cpi)	Press **Ctrl** and **N** simultaneously, then press **Ctrl** and **O** simultaneously.
Expanded-Compressed OFF	Press **Ctrl** and **T** simultaneously, then press **Ctrl** and **R** simultaneously.
Bold Mode ON	Press **Esc** then type E.
Bold Mode OFF	Press **Esc** then type F.
Underline ON	Press **Esc** then type -1.
Underline OFF	Press **Esc** then type -0.

Enter the above sequences to use the desired print features then press the **Fn** and **F10** keys simultaneously to send them to the ThinkJet printer. If you do not wish to send the entered codes press the **Fn** and **F6** keys simultaneously to return to the main menu.

NOTE: To cancel a print feature the appropriate control sequence must be sent as indicated above, or the printer can be turned OFF, then ON again, resetting it to its default state.

To cancel a print session press the **Esc** key. If **Esc** is pressed while Filing Assistant is printing, it will finish the current form then return to the Main Menu.

IBM Reporting Assistant
IBM _____ **ThinkJet**

CONFIGURING YOUR SERIAL THINKJET PRINTER AND
IBM REPORTING ASSISTANT
ON THE IBM PCjr

Introduction

The procedures outlined in this application note will assist you in setting up and using your ThinkJet printer with IBM Reporting Assistant. We suggest you read through chapters 2 (Getting Started), 3 (Creating a Simple Report), and 4 (Creating More Complex Reports) before proceeding.

Hardware Configuration

See Hardware Application Note for the IBM PCjr serial interface configuration, HP Part No. 5954-2912(54); use recommended hardware configuration except set switch 5 (on left group of switches numbered 1-8) UP(1).

System Configuration

See Application Configuration below before running the Setup Program.

Application Configuration

The ThinkJet printer must be setup as your output device for the IBM Reporting Assistant. The following procedure needs to be done only once to accomplish this. From the DOS prompt A>:

1. Insert the Reporting Assistant program disc and type **SETUP**. Press the **Enter** key.

2. Press the **Enter** key again.

3. Type **3** (Setup Serial Card) then press the **Enter** key.

4. For baud rate selection, type **2400** then press the **Enter** key.

5. For parity, type **NONE** then press the **Enter** key.

6. For number of data bits, type **8** then press the **Enter** key.

7. For number of stop bits, type **1** then press the **Enter** key.

8. For XON/XOFF protocol, type **N** then press the **Enter** key.

9. Type **1** (Select a Printer) then press the **Enter** key.

10. Type **4** (Epson) then press the **Enter** key.

11. Type **COM1:** (Serial Printer) then press the **Enter** key.

The new device setup is written to the disc when exiting the Setup Menu. Exit by typing **6** then press the **Enter** key.

To run the Reporting Assistant program, do the following from the DOS prompt:

1. Insert the Reporting Assistant program disc into the disc drive.

2. Type **G** then press the **Enter** key.

When disc activity has ceased the IBM Reporting Assistant Main Menu will appear. The program is now ready to use.

Printing Reports:

1. From the Main Menu type 1 (Print) then press the **Enter** key.

2. Type the name of the file to be printed then press the **Enter** key.

3. Your form will appear on the screen. Fill in any desired Search specifications on this Search Spec form. Press the **Fn** (green key) and **F10** keys simultaneously to continue to the Print Options menu.

4. Fill in the Print Options menu fields. Use the **Tab** key to move to the next field.
    a. Title: Enter a title for your report.
    b. Predefined Report Name: To use a report specification that has been previously created and saved using the Predefine Report function. Enter the Report Spec file name here.
    c. Print totals only (Y/N): If Y then the summary report printed will list only totals and not individual rows in the report.
    d. Print to: Type **PRINTER** to send the form out to the ThinkJet printer. Type a disc filename to write the form to your disc (a document to be accessed by the IBM Writing Assistant program must be written to a disc file.) To review the report on your screen, type **Screen**.
    e. Pause between pages (Y/N): Type **N** because the ThinkJet printer uses continuous form paper.
    f. Lines per page: Type a number to specify the number of lines to allot for printing of the form. The default value is 66 lines per page. To print the report as one continuous page with no page breaks, type **0**.
    g. Page width: Type **80** as the standard number of characters per line. To print reports with greater than 80 characters on a line, type the width desired then use the Set Printer function (described below) to configure your ThinkJet printer for compressed print pitch mode.

5. Press the **Enter** key when menu selections are complete and your form will appear on the screen ready for Report Spec selections.

6. On the Report Spec form assign a number to each field to be printed as a column in the report. The report will be sorted according to the field assigned number 1. Fields not assigned a number will not be printed in the report. Each report can contain up to 20 columns.

7. To initiate printing press the **Fn** and **F10** keys simultaneously. Your form will be printed in accordance with the print options and Report Spec choices you have made. When printing is complete the program will return to the Main Menu.

Using Printer Features

ThinkJet Printer Enhancements can be used by sending control sequences to the ThinkJet printer. Reporting Assistant allows these print feature control sequences to be sent to the printer in the following way. (Refer to the ThinkJet Owner's Manual for specific print feature control sequences, also known as escape sequences. Appendix C, Table of Alternate Mode Print Features, is especially helpful.)

1. From the Reporting Assistant main menu type 4 (Set printer) then press the **Enter** key.

2. To send a sequence directly to the printer do the following:

ThinkJet Print Feature Selected	Set Printer Control Sequence Entry
Expanded ON (6 cpi)	Press **Ctrl** and **N** simultaneously.
Expanded OFF	Press **Ctrl** and **T** simultaneously.
Compressed ON (21.3 cpi)	Press **Ctrl** and **O** simultaneously.
Compressed OFF (12 cpi)	Press **Ctrl** and **R** simultaneously.
Expanded-Compressed ON (10.7 cpi)	Press **Ctrl** and **N** simultaneously, then press **Ctrl** and **O** simultaneously.
Expanded-Compressed OFF	Press **Ctrl** and **T** simultaneously, then press **Ctrl** and **R** simultaneously.
Bold Mode ON	Press **Esc** and type E.
Bold Mode OFF	Press **Esc** and type F.
Underline ON	Press **Esc** and type −1.
Underline OFF	Press **Esc** and type −0.

Enter the sequences above to invoke the desired print features, then press the **Fn** and **F10** keys simultaneously to send them to the printer. If you do not wish to send the entered codes press the **Fn** and **F6** keys simultaneously to return to the main menu.

NOTE: To cancel a print feature the appropriate control sequence must be sent as indicated above, or the printer can be turned OFF then ON again, resetting it to its default state.

To cancel a print session press the **Esc** key. If Reporting Assistant is printing, it will finish the form then return to the main menu.

IBM Graphing Assistant
IBM ————————————————————— **ThinkJet**

CONFIGURING YOUR SERIAL THINKJET PRINTER AND
IBM GRAPHING ASSISTANT
ON THE IBM PCjr

Introduction

The procedures outlined in this application note will enable you to run IBM Graphing Assistant on your ThinkJet printer. We suggest you read Chapters 2 (Getting Started) and 7 (Printing Charts) of your Graphing Assistant manual before proceeding.

Hardware Configuration

See Hardware Application Note for the IBM PCjr serial interface configuration, HP Part No. 5954-2912(54); use recommended hardware configuration except set switch 5 (on left group of switches numbered 1-8) UP(1).

System Configuration

No change to the default MS-DOS configuration is required before running IBM Graphing Assistant.

Application Configuration

IBM Graphing Assistant needs to be configured to work with your ThinkJet printer. This is done by running the Setup program provided on your IBM Graphing Assistant Program Disc. From the DOS prompt A>:

1. Insert the Graphing Assistant program disc, type **SETUP** then press the **Enter** key.

2. Press the **Enter** key.

3. Type **3** (Setup Serial Card) then press the **Enter** key.

4. For baud rate selection, type **2400** then press the **Enter** key.

5. For parity, type **NONE** then press the **Enter** key.

6. For number of data bits, type **8** then press the **Enter** key.

7. For number of stop bits, type **1** then press the **Enter** key.

8. For XON/XOFF protocol, type **N** then press the **Enter** key.

When you press **Enter** this final time your application configuration will be saved on the program disc. To exit the Setup Program, type **6** then press the **Enter** key.

To run the Graphing Assistant program do the following. From the DOS prompt A>:

1. Insert the Graphing Assistant program disc into the disc drive.

2. Type **G** then press the **Enter** key.

When disc activity has ceased the IBM Graphing Assistant Main Menu will appear. The program is now ready to use.

Using Printer Features

To Print a Graph:

1. Retrieve the desired chart from disc then return to the Main Menu.

2. Type 5 (print) then press the **Enter** key.

3. The Printer Menu appears on the screen. Fill in the menu fields using the **Tab** key to move between fields.
   a. Selection number: Type 1.
   b. Expanded size (Y/N): If you would like the chart to be printed lengthwise and expanded to fill an 8½ x 11 inch page, type Y. If not, type N and the graph will be approximately 3 x 4 inches.
   c. Print data points (Y/N): If Y the data points for the chart will also be printed.
   d. Print to: Type **PRINTER** to send the chart out to the ThinkJet printer.

4. Press the **Enter** key when menu selections are complete.

5. Press the **Enter** key to initiate printing of the chart. Press the **Esc** key if you do not want to print at this time. Printing can also be terminated once it has begun by pressing the **Esc** key.

1-2-3
Lotus Development Corp. ———————— **ThinkJet**

CONFIGURING YOUR SERIAL THINKJET PRINTER AND
1-2-3 (Version 1A)
ON THE IBM PCjr

Introduction

The procedures outlined in this application note will assist you in using your ThinkJet printer and the Lotus 1-2-3 package. The "Getting Started" section of your 1-2-3 manual covers the proper procedure for running 1-2-3 on your IBM PCjr. The 1-2-3 Electronic Tutorial will help you become familiar with the program.

The Lotus 1-2-3 manual contains two sections that provide complete instructions for printing with your ThinkJet printer: the PRINT Command description located in the Command Skills chapter; and the discussion of the Graph (Print-Graph) Program located in the Appendix.

There are two "environments" in which Lotus 1-2-3 provides commands for printing. Throughout this application note these environments will be referred to as 1-2-3 (spreadsheet printing) and PrintGraph (graphics printing).

Hardware Configuration

See Hardware Application Note for the IBM PCjr serial interface configuration, HP Part No. 5954-2912(54), except set switch 5 (on left group of switches numbered 1-8) UP (1).

System Configuration

No change to the default MS-DOS setup is necessary before running 1-2-3.

Application Configuration

Configuring 1-2-3
The only configuration necessary is selecting the output port. To do so, insert the HELP and UTILITY disc, with the write protect tag removed, into drive A. Then from the MS-DOS prompt:

1. Type **123**, then press the **Enter** key. 1-2-3 will begin running.

2. Press any key.

3. Type **/WGDPI46** (/ = Command Mode, W = Worksheet, G = Global, D = Default, P = Printer, I = Interface, 4 = second serial interface, 6 = 2400 baud.)

4. Type **AN**. (Auto-LF, NO.) This ensures the correct linefeeding.

5. Type **QU**. (Quit, Update.) This saves your interface configuration on the disc.

6. Type **Q/QY**. (Quit, Command Mode, Quit, Yes.) Exits 1-2-3.

Configuring PrintGraph

Before continuing, note two things. First, PrintGraph requires that you choose a driver from its library that will provide the capability of outputting graphics properly to your ThinkJet printer. Select the IBM Graphics Printer Single or Double Density driver. The double density driver provides higher quality output but sacrifices speed. The second thing to note is that this document recommends a number of formal settings based on personal preference; therefore, if you would like to position or size your graphs differently, feel free to experiment.

Remove the Lotus HELP and UTILITY disc and replace the write protect tag. Remove the write protect tag from the PrintGraph disc and insert it into drive A. From the MS-DOS prompt:

1. Type **GRAPH**, then press the **Enter** key. PrintGraph will begin running.

2. Type **CD**. (Configure, Device.) The driver library will appear.

3. Use the cursor control keys to select the IBM Graphics Printer Single Density or Double Density mode drivers.

NOTE: The # symbol, not the cursor, indicates the selected output device.

4. Press the **Space** key to select the desired driver, then press the **Enter** key. The # symbol will appear next to IBM Graphics Printer.

5. Type **I46** (Interface, second serial port, 2400 baud.)

6. Type **SR**. (Save, Replace.) Saves the new configuration.

7. Type **QQY**. This exits PrintGraph.

The Full and Half-Page Size settings are used to format your output. From the main PrintGraph menu the size settings become available by typing **OS**, then choosing **F** or **H** for full or half-page format. The following Size Settings are suggested. These settings are individually changed by choosing manual formatting.

Alternate Mode Size Settings

Setting	Half Page	Full Page
Size—		
Left Margin	.000	.000
Top Margin	.000	1.100
Width	11.000	10.500
Height	6.660	11.926
Rotation	.000	270.000
Page Size—		
Length	15.000	15.000
Width	12.000	12.000

All of the selections made under the Options and Configuration branches of the PrintGraph menu can be easily saved so that the next time you enter PrintGraph your settings will come up automatically. To save your selections, type **CSRQ** from the main PrintGraph display.

CAUTION: Be sure that switch 5 on the printer's rear panel is set to UP.

Page Formats

Formatting for graphics output to ThinkJet is done through PrintGraph and is described in detail in previous paragraphs.

Text Output

Although there are different ways to format pages, the easiest way is by using Lotus commands. The program itself will take full control of positioning the output on the page according to your commands. 1-2-3 has been designed such that you can define a general default page format as well as unique formats for any spreadsheet you choose. The default format is always used unless you have specifically defined one for the current spreadsheet.

To Redefine the Default Format:

1. Type /WGDP. Select your left, right, top and bottom margins, and page length.

2. After the selections have been made type QUQ. Your format will be saved on disc, and will automatically be used each time you run your program.

To Define a Spreadsheet Format:

1. Type /PPO. You can now change/select headers, footers, margins, borders, and page length for this spreadsheet. (Each spreadsheet format is selected individually.)

2. Type QQ/FS and your file name to save this format for future use.

Reminder: Before you begin printing be sure that you have positioned the paper at the desired top-of-form, then type /PPA. This will let Lotus 1-2-3 know that the paper is aligned with the beginning of a page.

Using Advanced Printer Features

1-2-3 provides the ability to send control codes and escape sequences directly to the printer. This is done by using what is called a Setup String. The Setup Strings discussed in this application note are for a ThinkJet printer in the Alternate Control Sequence Mode (switch 5 UP). (Refer to the ThinkJet Owner's Manual for the proper codes to use if HP Mode is being used.) Setup Strings are available for both the default and current page formats. For the default format, type /WGDPS and the current type /PPOS. 1-2-3 is ready for you to enter a Setup String.

NOTE: Press the **Alt** and / keys simultaneously to display \.

Printer Features	Setup String	Notes
Compressed Print	\015	142 Char/line Set left margin to 0 **(ML0)** Set right margin to 142 **(MR142)**
Compressed Print–OFF*	\018	80 Char/line Set left margin to 0 **(ML0)** Set right margin to 80 **(ML80)**
Bold Print Mode ON	\027\069	
Bold Print Mode OFF*	\027\070	
6 Line/Inch*	\027\050	Set page length at 66 **(P66)**. 60 printable lines per page: 3 lines for header, 3 lines for footer. 0 top and bottom margin.
8 line/Inch	\027\048	Set page length to 88 **(P88)**. 82 printable lines per page: 3 lines for header, 3 lines for footer. 0 top and bottom margin.

The Setup String will be the first characters sent to the printer when the GO command is executed. For more information on these and other control codes and escape sequences, see the ThinkJet Owner's Manual. Be sure to use the numbers in the ASCII Decimal Equivalent Column. The Setup String used can be saved on the disc the same way page formatting is saved for either default or current spreadsheets.

* = Default settings.

Helpful Hints

The graphs that are displayed must be saved and output by PrintGraph.

WordStar®

Micropro International _____ **ThinkJet**

CONFIGURING YOUR SERIAL THINKJET PRINTER AND WORDSTAR (Version 3.3) ON THE IBM PCjr

Introduction

The procedures outlined in this application note will assist you in using your ThinkJet printer with the WordStar package. WordStar will provide you with a good deal of flexibility in formatting your printed output.

Important Notes

If you are using WordStar without making "installation" changes, the margins in your printed output will be different than you might expect. The Application Configuration and Configuring Printer Margins sections of this application note describe ways in which you change these "default" margins and other formatting features.

In WordStar there are two good ways to format your printed output. One way is through Winstall, and the other is using Print Control and Dot Commands. In Winstall you can change the default or initial settings for a large number of WordStar features including printing format. The settings you input while in Winstall will be used every time you begin a new WordStar session: these become your new default. The Print Control and Dot Commands can be used to tailor the print format for a particular document. They are saved along with that document and can be changed interactively while running WordStar. A detailed discussion of how to set the defaults follows in the running Winstall section of this note. Print Control and Dot commands are covered in Using Printer Features.

Hardware Configuration

See Hardware Application Note for the IBM PCjr serial interface configuration, HP Part No. 5954-2912(54); use recommended hardware configuration.

System Configuration

The necessary MS-DOS configuration is described in the hardware application note referenced above.

Application Configuration

Winstall is a program that is used to customize WordStar. With Winstall you will prepare WordStar to work properly with your ThinkJet printer, and you will have the opportunity to tailor a variety of WordStar features to your needs.

Read Chapter 1, and the IBM PC Addendum, in the WordStar Installation Manual for instructions on running Winstall. Follow these instructions up to the point where the Installation Menu appears. There are five selections in this menu, A through E, which can be used to personally tailor your copy of WordStar. Configuring the Printer is described below. This must be run in order for your ThinkJet to work properly with WordStar.

Configuring the Printer:

1. Type **C**. (Choose the Menu of Printers.)

2. Type **2**. (Choose Page 2 of Printer Types.)

3. Type **G**. (G selects Standard Printer.)

4. Type **Y**. (This confirms Standard Printer.)

5. Type **A**. (A selects No Protocol.)

6. Type **Y**. (This confirms No Protocol.)

7. Type **B**. (B selects serial printer driver.)

8. Type **Y**. (This confirms Serial Printer Driver.)

Changing WordStar Features is optional, but included below is a description of printer settings that are commonly used.

Using Printer Features

Configuring Printer Margins

The procedures outlined below describe how to set the Right Margin to 76, and the Page Offset to 0. This menu allows you to customize other printing features including: Omit-Page Numbering, Top Margin, Bottom Margin, Left Margin, Number of Lines Per Page, and Form Feeds.

1. Type **E**. (Choose the Menu of WordStar Features.)

To change the right margin from 65 (default) to 76:

2. Type **L**. (L selects Right Margin.)

3. Type **C**. (C to change current setting.)

4. Type **76** then press **Enter**. (Set new margin at 76.)

5. Type **Y**. (This confirms the new setting of 76.)

To change the Page Offset from 8 (default) to 0:

2. Type **N**. (N selects Page Offset.)

3. Type **C**. (C to change current setting.)

4. Type **0** then press **Enter**. (Set new offset at 0.)

5. Type **Y**. (This confirms the new setting of 0.)

In either case:

6. Type **X**. (Exit Menu of WordStar Features.)

7. Type **X**. (Exit Installation Menu.)

You now have the opportunity to review some of your new settings. If all of the settings are correct, SAVE your changes when you get to the Exit Options Menu by typing **A**.

Using Print Control and Dot Commands

Print Controls and Dot Commands are used while you are running WordStar to format and enhance a specific document. The document must be opened in order to use these commands. All formatting and enhancements will be maintained right along with the document when it is saved.

Print Controls and Dot Commands are summarized at the end of Chapter 7 in the WordStar Reference manual. Glancing through the Summary Tables will give you a good idea of the printing features available in WordStar.

Dot Commands are used to format or layout your document. They provide you with the ability to define settings like Page Length, Margins, Page Numbering, Headers, Footers, etc. A Dot Command must begin in the first column with a dot followed by a valid command. An example Dot Command is **.OP** which will Omit Page Numbering from the current page through the remainder of the document.

Print Control Commands are primarily used for doing special effects or enhancements like bold, underlining, overstrike, strikeout, etc. Once a document has been opened a print menu can be displayed by holding down the **Ctrl** key and typing **P**. This menu can be used as an easy reference or, even more importantly, to use a special effect.

Helpful Hints

A good way to verify your installation and learn how to print using WordStar is to print out a document name PRINT.TST. A copy of this is located on your Program disc. Follow the procedure outlined below to print PRINT.TST. (For a complete explanation of the following steps see the Printing Files section of Chapter 9 in your WordStar Reference Manual.)

1. Insert your WordStar program disc.

2. Type **WS,** then press the **Enter** key. (Run WordStar.)

3. Type **P.** (Print a file.)

4. Type **PRINT.TST,** then press the **Enter** key. (Name of file to print?)

5. Type **N.** (Disc file output, Y/N?)

6. Press the **Enter** key. (Start at page number 7—Beginning...)

7. Press the **Enter** key. (Stop after page number ?—End.)

8. Type **Y.** (Use form feeds, Y/N?)

9. Type **N.** (Suppress page formatting, Y/N?)

10. Type **N.** (Pause for paper change between pages?)

11. Press the **Enter** key. (Ready printer, press **Return**.)

After a short delay the document will print out on your ThinkJet printer.

Looking through the PRINT.TST document that you just printed will show you all of the printing capabilities available. Some things to note: when used with WordStar the ThinkJet printer can only support a single pitch and a single line height. Also, the super and subscripts are printed a full line above or below the main line.

· WordStar can be customized to cause super and subscripts to be printed one-half a line above or below the main line of text. To make this change, run Winstall the same way you have in the past, up to the point where the Installation Menu is displayed, then carefully follow the directions below.

1. Type **D**. (Choose Custom Installation of Printers.)

2. Press the **Enter** key. (Read the displayed message then proceed.)

3. Type **N**. (Return/line feed.)

4. Press the **Enter** key. (Return and line feed control sequence—leave unchanged.)

5. Press the **Enter** key. (This confirms Return and line feed control sequence.)

6. Press the **Enter** key. (Return [no line feed] control sequence—leave unchanged.)

7. Press the **Enter** key. (This confirms Return control sequence.)

8. Type **C**. (Return and half-line feed control sequence—CHANGE.)

9. Type **0Dh** then press the **Enter** key. (New value for Return in hexadecimal.)

10. Type **1Bh** then press the **Enter** key. (New value for Escape in hexadecimal.)

11. Type **3Dh** then press the **Enter** key. (New value for Equal sign in hex.)

12. Press the **Enter** key three times. (This enters zeros for the rest of the Return and half-line feed function.)

13. Check the function code sequence, it should now be: 0Dh 1Bh 3Dh 0h 0h 0h.

14. Press the **Enter** key. (This confirms the new sequence and goes back to the Printer Installation Menu.)

15. Type **X**. (Exit to the Printer Installation Menu.)

16. Type **X**. (Exit the Installation Menu.)

17. Type **A**. (A saves the changes just made and Exits to the operating system.)

One thing to keep in mind while using super and subscripts is that for both to print properly the line in the document above and below the main line must be blank.

Multiplan®
Microsoft ————————————————— ThinkJet

CONFIGURING YOUR SERIAL THINKJET PRINTER AND
MULTIPLAN (Version 2.1)
ON THE IBM PCjr

Introduction

The procedures outlined in this application note will assist you in using your ThinkJet printer with Multiplan. We suggest that you read Chapter 6, Printing a Worksheet, of the Multiplan Manual, which covers print margins, print options, and printer commands. Consult the Multiplan and ThinkJet printer manuals for further assistance.

Hardware Configuration

See Hardware Application Note for the IBM PCjr serial interface configuration, HP Part No. 5954-2912(54); use recommended hardware configuration.

System Configuration

No change to the default MS-DOS setup is necessary before running Multiplan.

NOTE: The BASIC cartridge must be inserted in the PCjr while Multiplan is running.

Application Configuration

No change to the default printer setup is necessary with Multiplan.

Using Printer Features

To use the advanced printing features of your ThinkJet printer, when running Multiplan you must use printer setup strings. To use setup strings run Multiplan, then from the Command Menu:

1. Type **PO** to select the PRINT OPTIONS menu.

2. Tab once to the **setup:** field.

3. Type the setup string (see list below) in the setup field and press the **Enter** key. For example, to select compressed print (142 characters per line) type ^[&&k2S in the setup field.

4. Press the **Enter** key.

5. If you want to adjust the print margins at this point type **M**.

6. Tab twice to move to the print width field.

7. Type **132** (this will leave the default 5-character left and right margins).

8. Press the **Enter** key when done.

9. If you wish to print at this point type **P**, otherwise press the **Esc** key to return to the COMMAND menu.

Other Useful Print Setup Strings:

^[E	Reset all printer modes.
^[(s1B	Turn ON bold print.
^[(s0B	Turn OFF bold print.
^[&&k0S	Select 12 characters per inch pitch.
^[&&k1S	Select 6 characters per inch pitch.
^[&&k3S	Select 10.7 characters per inch pitch.

Setting Printer Margins

Because the ThinkJet printer has 1" margins you may prefer to set the left margin to 0 and the print width to 80. From the main command menu:

1. Type **PM** to select the PRINT MARGINS menu.

2. Type **0** to set the left margin to 0, press the **TAB** key twice and type **80** to set the print width to 80 characters.

3. Press the **Enter** key when done.

4. If you wish to print at this point type **P**, otherwise press the **Esc** key to return to the COMMAND menu.

Helpful Hints

The **Fn** (green key) and **PrtSc** keys, when pressed simultaneously, can be used at any time to print the current screen.

NOTE: The ThinkJet printer does not contain line draw characters. Window borders will not print as a solid border.

Andrew Tobias Managing Your Money ™

MECA _____ ThinkJet

CONFIGURING YOUR SERIAL THINKJET PRINTER AND
MANAGING YOUR MONEY
ON THE IBM PCjr

Introduction

The procedure outlined in this application note will assist you in setting up and using your ThinkJet printer with Managing Your Money. We suggest you review the Managing Your Money manual before proceeding.

Hardware Configuration

See Hardware Application Note for the IBM PCjr serial interface configuration, HP Part No. 5954-2912(54); use recommended hardware configuration.

System Configuration

No change to the default setup is necessary before running Managing Your Money.

Application Configuration

The ThinkJet printer must be setup as the output device for Managing Your Money. The following procedure needs to be done only once to accomplish this.

1. With the Managing Your Money cartridge inserted and from the DOS prompt, insert Diskette 1.

2. Type **SETUP** then press the **Enter** key.

3. Press the **Enter** key to default to disc drive 1.

4. Press the **Enter** key to default to using the clock function.

5. Type **3** for the type of printer, then press the **Enter** key.

6. Type **S** to indicate a serial printer interface, then press the **Enter** key.

7. Type **2** to select 2400 baud rate, then press the **Enter** key.

8. Type **8** to select 8 data bits, then press the **Enter** key.

9. Press the **Enter** key to select 1 stop bit.

10. Type **N** to select no parity, then press the **Enter** key.

11. Press the **Enter** key so that the program will not pause after printing each page.

12. Type **60** for the number of lines per page.

13. Press the **Enter** key for a top margin of 3 lines.

14. Press the **Enter** key for a bottom margin of 3 lines.

15. a. If you would like to do your printing in Normal Print Pitch, type **N** then press the **Enter** key. Skip to step 16.
    b. For other types of printing, type **Y** then press the **Enter** key.

For example, to print in compressed print:
  Type 27, then press the **Enter** key.
  Type 38, then press the **Enter** key.
  Type **107**.
  Type 50, then press the **Enter** key.
  Type 83, then press the **Enter** key.
  Press the **Enter** key.

*For normal print:	Type **27 38 107 48 83**.
*For expanded-compressed print:	Type **27 38 107 51 83**.
*For expanded print:	Type **27 38 107 49 83**.
*For bold print ON:	Type **27 40 115 49 66**.
*For bold print OFF:	Type **27 40 115 48 66**.

* = Press the **Enter** key after each 2 digit number as shown in the compressed print example above.

16. Insert diskette 2, then press the **Enter** key.

    Note: This "setup" string will be sent to your ThinkJet printer the first time printing is initiated through keystrokes indicated by the Managing Your Money program (and *not* from a **PrtSc** printout). Follow the instructions for sending output to your printer.

The ThinkJet printer is now ready to be used as the output device for Managing Your Money.

To use Managing Your Money, do the following from the DOS prompt:

1. With the Managing Your Money cartridge inserted, and from the DOS prompt, insert diskette 1.

2. Type **G** then press the **Enter** key.

3. An introduction screen for Managing Your Money will appear. Press the **Enter** key.

4. Type today's date then press the **Enter** key. The Main Menu will appear.

Managing Your Money is now ready to use.

Bank Street Writer™

Broderbund Software _____ **ThinkJet**

CONFIGURING YOUR SERIAL THINKJET PRINTER AND BANK STREET WRITER ON THE IBM PCjr

Introduction

The procedures outlined in this application note will assist you in using your ThinkJet printer with Bank Street Writer. We recommend that you read through your Bank Street manual before proceeding. Chapter 6, Format Options, will assist you in configuring the PCjr to talk to the ThinkJet printer, and will also instruct you on how to format your printed page; Chapter 4, More Functions (found in the section on "Print"), describes the available options in printing your document; and Chapter 5, Format Options, explains how to incorporate print enhancements within your documents.

Hardware Configuration

See Hardware Application Note for the IBM PCjr serial interface configuration, HP Part No. 5954-2912(54); use recommended hardware configuration.

Application Configuration

Bank Street Writer must be configured to print its documents using the PCjr's serial port. This is done by going into the FORMAT OPTIONS menu and setting the correct PRINTER PORT/TYPE options as described below.

From the DOS prompt A>, insert the Bank Street Writer program disc, type **bsw** then press the **Enter** key.

1. Press the **Esc** key. (A menu of function choices is displayed at the top of the screen.)

2. Press the **Tab** key four times. (This selects the FORMAT menu.) Press the **space bar**, then press the **Enter** key.

3. Press the **Enter** key. (This selects the FORMAT OPTIONS menu.)

4. Press the **Tab** key twice. (This selects the PRINTER PORT/TYPE area.)

5. Use the **right** and **left arrow keys** in combination with the **Enter** key to select the serial port settings that match your ThinkJet printer. The suggested settings are shown below:
   Port: COM1   Baud Rate: 2400
   Parity: NONE   Printer supports formfeed: YES
   Data Bits: 8   Printer supports backspace: YES
   Stop Bits: 1   Printer does auto linefeed: NO

6. Once you have entered your selections, press the **Esc** key. If you have changed any settings, you will now be asked if you want to save them: Type **Y** for yes. You will now be returned to the main function menu. You can either select another function using the **Tab** key, or you can go back to editing a document by pressing the **Esc** key.

Using Printer Features

Bank Street Writer will automatically implement boldface and underlined characters with the **Alt-B** and **Alt-U** commands. You can enable the remaining ThinkJet printer enhancements with the FORMAT (Printer) CHARACTERS command. Chapter 5 (Additional Writing Commands) of your Bank Street Writer Manual explains how to use these commands; Appendix B gives additional information on the FORMAT (Printer) CHARACTERS command.

A list of ThinkJet's HP Mode Print Features is located in Appendix B in the back of your ThinkJet Owner's Manual. You can enable any of these print features by sending the corresponding control codes or escape sequences to the printer.

Below is an example of using the FORMAT (Printer) CHARACTER command to start printing compressed characters in your document. (Where commands are joined by a dash (-) those keys should be pressed simultaneously. Do not include the dash in the command.)

Move to a blank line above the characters to be printed in compressed:

1. Press **Alt-F**. (Press **Alt** and **F** keys simultaneously. Starts Format Feature.)

2. Press **Alt-E**. (Press **Alt** and **E** keys simultaneously. Types the Escape Characters.)

3. Type **&k2S**.

4. Press **Alt-F**.

The characters on the screen will remain the same, but all printouts of your document from this line on will be printed in compressed.

NOTE: Remember to add the escape sequence to switch off compressed print at the end of the characters to be printed, or at the end of your document, so that subsequent documents will not be printed in compressed.

Below are more examples of using this function. There are two different forms of this feature. In form 1, the escape character is printed in the sequence stream by pressing the **Alt** key and **E** simultaneously; in form 2, the escape character is replaced by its ASCII Decimal Equivalent, [027], number in square brackets.

Command	Form 1*	Form 2*
Normal	**Alt-F Alt-E &k0S Alt-F**	**Alt-F [027]&k0S Alt-F**
Expanded-Compressed	**Alt-F Alt-E &k3S Alt-F**	**Alt-F [027]&k3S Alt-F**
Compressed	**Alt-F Alt-E &k2S Alt-F**	**Alt-F [027]&k2S Alt-F**
Expanded	**Alt-F Alt-E &k1S Alt-F**	**Alt-F [027]&k1S Alt-F**
6 LPI	**Alt-F Alt-E &l6S Alt-F**	**Alt-F [027]&l6D Alt-F**
8 LPI	**Alt-F Alt-E &l8S Alt-F**	**Alt-F [027]&l8D Alt-F**
Bold ON	**Alt-F Ctrl-N Alt-F**	**Alt-F [014] Alt-F**
Bold OFF	**Alt-F Ctrl-O Alt-F**	**Alt-F [015] Alt-F**

* = Where commands are joined by a dash, those keys should be pressed simultaneously. Do not include the dash in the command.

NOTE: Spaces have been added in the above commands for clarity only. Do not insert spaces in the command because Bank Street Writer will interpret them as another control character.

Printing Bank Street Writer Documents
The PRINT function in Bank Street Writer's function menu will create a printed copy of your document. Use the following procedure to print a document:

1. Press the **Esc** key. (This will always put you in the Bank Street functions menu.)

2. Press the **Tab** key four times. (Selects the PRINT function command.) Press the **Enter** key.

3. You will be prompted to answer some questions about how you want your document printed. To get the most basic printout of your document simply press the **Enter** key after each of these prompts.

   DO YOU WANT TO PRINT ALL OF YOUR TEXT (Y/N): Y
   IS THIS TO BE A CONTINUATION OF THE LAST TEXT YOU PRINTED (Y/N): N
   DO YOU WANT TO EJECT THE LAST PAGE OF YOUR TEXT (Y/N): Y
   START NUMBERING PAGES AT NUMBER: 1
   TYPE IN PAGE HEADER (PRESS THE **Enter** KEY TO LEAVE UNCHANGED):
   TYPE IN PAGE FOOTER (PRESS THE **Enter** KEY TO LEAVE UNCHANGED):
   DO YOU WANT TO SEE WHERE EACH PAGE WILL END (Y/N): N
   SEND OUTPUT TO PRINTER, SCREEN, OR DISK FILE (P,S,D): P

4. You will finally be prompted with:

   WHEN PRINTER IS READY, PRESS **Enter**.

When you press the **Enter** key this final time your document will begin printing on your ThinkJet printer. More detailed information on each of these questions can be found in your Bank Street Writer manual.

Homeword™

Sierra On-Line, Inc.™ _____ **ThinkJet**

CONFIGURING YOUR SERIAL THINKJET PRINTER AND HOMEWORD ON THE APPLE IIc

Introduction

Procedures outlined in this application note will assist you in using your ThinkJet printer with Homeword. We recommend that you first read through your Homeword manual and review the sections on printing documents.

Hardware Configuration

See Hardware Application Note for the Apple IIc serial interface configuration, HP Part No. 5954-2903(54); use recommended hardware configuration.

System Configuration

The Apple IIc default system configuration for Printer Port 1 is compatible with the ThinkJet Hardware Application Note.

Application Configuration

Homeword must be configured so that it does not send linefeeds to the printer. This is done by customizing the Type of Printer Card section. Insert your Homeword disc and turn ON the Apple IIc. Press the **return** key to get to the Main Menu.

From the Main Menu:

1. Press the **right arrow** key twice. (Select the "Customize" icon.)

2. Press the **return** key.

3. Press the **right arrow** key three times. (Select the "Type of Printer Card" icon.)

4. Press the **return** key twice. (Accept the default setting slot - 1.)

5. Press the **return** key again. (Accept the default Printer Card = Other.)

6. Press the **right arrow** key once. (Select "NO." Do not send linefeeds to the printer.) Press the **return** key.

7. Press the **right arrow** key once. (Choose "Save customize choices.") Press the **return** key.

8. Press the **return** key. (Save your choices.)

9. Press the **return** key. (Return to the Customize menu area.)

10. Press the **escape** key. (Return to the Main Menu Area.)

Printing Documents
From the Typing Area:

1. Press the **esc** key. (This will always display the Menu Area.)

2. Press the **left arrow** key twice. (Select the "Print" icon.) Press the **return** key.

3. Press the **left arrow** key once. (Select "Print Document" icon.) Press the **return** key.

4. Press the **return** key. (Your document will now be printed.)

Using Printer Features

A list of ThinkJet's HP Mode Print Features is located in Appendix B of your ThinkJet Printer Owner's Manual. These features can be implemented in your Homeword documents with the **control-X** function command (press the CONTROL key and X simultaneously). (See the Homeword Reference Card.) To print a document in bold mode, for example, look up the bold command in Appendix B of the ThinkJet Printer Owner's Manual. In the ASCII Decimal Equivalent Column you will see the numbers 27,40,115,49,66. Move to the top of your document, then:

1. Press **control-X** (press the CONTROL key and X simultaneously), and type 27. Press the **return** key.

2. Press the **control-X** key, and type 40. Press the **return** key.

3. Press the **control-X** key, and type 115. Press the **return** key.

4. Press the **control-X** key, and type 49. Press the **return** key.

5. Press the **control-X** key, and type 66. Press the **return** key.

Your document will be printed in boldface.

Important Note

The Layout Commands for Boldface text (**open apple-B**) and for underline text are not supported on the ThinkJet printer. Use the **control-X** command to enable these functions.

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*pfs:*write

Software Publishing Corporation _____ **ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER
AND *pfs:*write
ON THE APPLE IIe

Introduction

The procedures outlined in this application note will assist you in using *pfs:*write with your ThinkJet printer. We suggest you review chapters 3 and 6 in your *pfs* manual. Chapter 3 provides instruction on printing documents in *pfs:*write, and Chapter 6, especially sections on Print Enhancements and Sending Special Codes to Your Printer, will assist you in using the special features available on your ThinkJet printer.

Hardware Configuration

See Hardware Application Note for the Apple IIe with parallel interface, HP Part No. 5954-2902(54); use the recommended hardware configuration, except set switch 5 on the rear panel of the printer UP (1), all others DOWN.

System Configuration

Switch settings for the Apple Parallel Interface Card are provided on the Hardware Application Note referenced above.

Using Printer Features

Printing *pfs:*write Documents

The PRINT function will create a printed copy of the working copy of your document. Use the following procedure to print a document. (Where commands are joined by a dash (-) those keys should be pressed simultaneously. Do not include the dash in the command.)

1. Press the **ESC** key. (This will give you the *pfs:*write MAIN MENU.)

2. Type **3**. (Selects the PRINT function.)

3. Press **CONTROL-C**. (You will be prompted to position the paper in your printer.)

4. Press **CONTROL-C**. (Your printer will begin printing your document.)

Formatting Printer Output

You can change the way your documents appear on a page (margins, headings, line spacing, etc.) by changing the settings in the Define Page Menu and the Print Menu. Detailed explanations of each of these options are available in Chapters 2 and 3 of your *pfs* Manual.

NOTE: Since ThinkJet maintains a 1-inch margin, you may want to change the default margins in the Define Page Menu to allow for wider lines of print.

Using Special Printer Features

A list of all ThinkJet Alternate Mode Print Features can be found in Appendix C of your ThinkJet Owner's Manual. You can enable any of these print features by printing the corresponding control codes or escape sequence to the ThinkJet printer. *pfs:*write allows you to print these special characters to your printer with the ***PRINTER*** or ***P*** command. Sending Special Codes to Your Printer, Chapter 6 of the *pfs:*write manual, explains how to use this option. Examples of using the ***P*** feature appear below:

Command	Feature
P 14	Expanded Print ON (6.0 cpi)*
P 20	Expanded Print OFF
P 15	Compressed Print ON (21.3 cpi)*
P 18	Compressed Print OFF
P 14,15	Expanded-Compressed On (10.7 cpi)*
P 20,18	Expanded-Compressed OFF
P 27,50	6 lines per inch line spacing
P 27,48	8 lines per inch line spacing
P 27,69	Bold Mode ON
P 27,70	Bold Mode OFF

*cpi = characters per inch.

NOTE: Be sure to use the Table of Alternate Mode Print Features, Appendix C. Use the numbers in the ASCII Decimal Equivalent column.

Helpful Hints

If at any time you need an explanation of options available within the various *pfs:*write menus, consult Appendix B of the ThinkJet Owner's Manual, which contains a summary of the information you need to use *pfs:*write. You can also press the **open apple-H** keys simultaneously and *pfs:*write will display a help screen.

WordStar®

MicroPro International _____ **ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND WORDSTAR (Revision 3.33) ON THE APPLE IIe

Introduction

The procedures outlined in this application note will assist you in using your ThinkJet Printer with the WordStar package. WordStar will provide you with a good deal of flexibility in formatting your printed output.

Important Notes

If you are using WordStar without making "installation" changes, the margins on your printed output will be different than you might expect. The Running Winstall section of this application note describes how you can change these "default" margins and other formatting features.

In WordStar there are two good ways to format your printed output. One way is through Winstall, and the other is using Print Control and Dot Commands. In Winstall you can change the "default" or initial settings for a large number of WordStar features including printing format. The settings you input while in Winstall will be used every time you begin a new WordStar session: these become your new default. The Print Control and Dot Commands can be used to tailor the print format for a particular document. They are saved along with that document and can be changed interactively while running WordStar. A detailed discussion of how to set the defaults follows in the Running Winstall section of this note. Print Control and Dot Commands are covered thoroughly in Chapter 7 of your WordStar Reference Manual.

Hardware Configuration

See Hardware Application Note for the Apple IIe with parallel interface, HP Part No. 5954-2902(54); use recommended hardware configuration.

System Configuration

Switch settings for the Apple Parallel Interface Card are provided on the Hardware Application Note referenced above.

Application Configuration

Running Winstall:
Run Winstall as described in Chapter 1 of the WordStar Installation Manual.

From the Installation Menu perform the following to set up the configuration for Standard Printer, no protocol, and primary list device.

1. Type **C**. (Selects Menu of Printers.)

2. Type **2**. (Selects the second page of printer types.)

3. Type **G**. (Selects "Standard Printer".)

4. Press the **RETURN** key. (Confirms this choice.)

5. Type **A**. (Selects None required for protocol.)

6. Press the **RETURN** key. (Confirms this choice.)

7. Type **A**. (Selects Primary list device.)

8. Press the **RETURN** key. (Confirms this choice and will exit you to the Installation Menu.)

From the Installation Menu on the Winstall program do the following to set up form feeds, set right margin to 76, and change page offset of zero.

1. Type **E**. (For Menu of WordStar features.)

To change the right margin from 65 (default) to 76:

2. Type **L**. (Selects right margin.)

3. Type **C**. (C to change current setting.)

4. Type **76** then press the **RETURN** key. (Set new right margin to 76.)

5. Type **Y**. (This confirms the setting.)

To change the page offset from 8 (default) to 0:

2. Type **N**. (Selects page offset.)

3. Type **C**. (C to change current setting.)

4. Type **0** then press the **RETURN** key. (Set offset to zero.)

5. Type **Y**. (This confirms the setting.)

To change from NO (default) to Does Form Feeds:

2. Type **O**. (Selects form feeds.)

3. Type **C**. (Toggles to Does Form Feeds.)

4. Type **Y**. (This confirms the setting.)

To exit to Installation Menu:

2. Type **X**. (Return to Installation Menu.)

3. Type **X**. (To exit from Install.)

4. Type **A**. (To save this configuration.)

Using Printer Features

From the Opening Menu on the "WS" program do the following to get an example of output to your ThinkJet.

1. Type **P**. (To print a file.)

2. Type **PRINT.TST** then press the **RETURN** key. (Name of file to print.)

3. Press the **RETURN** key. (Not disc file output.)

4. Press the **RETURN** key. (Start at page number ?, beginning.)

5. Press the **RETURN** key. (Stop after page number ?, end.)

6. Press the **RETURN** key. (Use form feeds, Y/N. Y.)

7. Press the **RETURN** key. (Suppress page formatting, Y/N. N.)

8. Press the **RETURN** key. (Pause for paper change between pages? Y/N. N.)

9. Press the **RETURN** key. (Ready printer, press return.)

pfs®:report
Software Publishing Corporation _____ **ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND
*pfs:*report
ON YOUR APPLE IIe

Introduction

Review the chapter on Print a Report in your *pfs:*report user's manual to help understand how to send data to your printer.

Hardware Configuration

See the Hardware Application Note for Apple II with parallel interface, HP Part No. 5954-2902(54); use recommended hardware configuration.

Software Configuration

Switch settings for the Apple Parallel Interface Card are provided on the Hardware Application Note referenced above.

Using Printer Features

Selecting a ThinkJet printer feature such as compressed, bold, underline, is done by specifying an escape or control code in the *pfs:*report REPORT OPTIONS menu.

The following example uses the *pfs:*report REPORT OPTIONS menu and selects the compressed print.

1. From the *pfs:*report menu, type 1 then press the **TAB** key.

2. Type the name of the file you desire printed, then press **CONTROL-C** (press the CONTROL key and type C simultaneously.)

3. Press **CONTROL-C** again to leave the RETRIEVE SPEC screen.

4. Modify the REPORT OPTIONS Menu as shown. Use the **TAB** key to move between fields in the Print Options menu.

REPORT OPTIONS

TITLE:

PRE-DEFINED REPORT NAME:

LINES PER PAGE: 66   PAGE WIDTH: 142

PRINTER DEVICE (D/P): P

ADD LINEFEED CHARACTERS (Y/N): N

PAUSE BETWEEN PAGES (Y/N): N

PRINTER CONTROL CODES: 27 38 107 50 83

The code shown above next to PRINTER CONTROL CODES sets the ThinkJet printer to compressed print.

5. Press **CONTROL-C** when the PRINT OPTIONS menu fields are correct.

6. Number the fields to be printed and press **CONTROL-C.**

Other Commonly Used ThinkJet Features

Feature	Printer Control Code
Normal print	27 38 107 48 83
Expanded print	27 38 107 49 83
Expanded-Compressed print	27 38 107 51 83
Bold ON	14
Bold OFF	15
Underline ON	27 38 100 68
Underline OFF	27 38 100 64

Bank Street Writer®
Broderbund Software _____**ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND
Bank Street Writer
ON THE APPLE IIe

Introduction

The procedures outlined in the application note will assist you in using your ThinkJet Printer and the Bank Street Writer package. Your ThinkJet Printer will give you fast, high-quality printing. We recommend that you read Chapter 7, "The Utility Program," and "Printer Format Codes" located in the appendix, of the Bank Street Writer manual to help familiarize yourself with the following procedures. Consult the ThinkJet Printer Reference Manual for further printer information.

Hardware Configuration

See the Hardware Application Note for Apple II with parallel interface, HP Part No. 5954-2902(54); use recommended hardware configuration.

System Configuration

Switch settings for the Apple Parallel Interface Card are provided on the Hardware Application Note referenced above.

Application Configuration

The Utility Program must be run to change setup items and to define printer commands. To use the Utility Program:

1. Press the **ESC** key when the Bank Street Writer disk begins to load the program.

2. With the Utility Program menu displayed, type 1 to get the setup items.

3. Type J, then Y. Press the **RETURN** key to activate the form feed character.

4. Press the **ESC** key, then type Y to save the setup item changes and return to the main menu of the Utility Program.

5. Type 4. This will put you in the Define Printer Commands menu.

6. Use the **DELETE** key to backspace over the label, and use the **RETURN** key to terminate the label and the Contents Command string.

Examples:

LABEL	COMMAND
Bold On	Press the **CTRL** key and type **N**.
Bold Off	Press the **CTRL** key and type **O**.
Underline On	(027)&dD
Underline Off	(027)&d @
Half Linefeed	(027) =
6 Lines Per Inch	(027)&l6D
8 Lines Per Inch	(027)&l8D
Normal Print	(027)&k0S
Compressed Print	(027)&k2S
Expanded Print	(027)&k1S
Expanded-Compressed	(027)&k3S

The LABEL field of the Utility Program has room for five characters only, therefore, enter something in the LABEL field that is meaningful to you. For more commands please refer to Appendix A in the ThinkJet Reference Manual.

Press the **ESC** key, then type **Y** to save the printer commands and return to the main menu of the Utility Program.

To insert printer commands into your text press and hold the **Open Apple** key (to the left of the space bar) and type **P**. This will display everything you defined in the utility menu. Next, type the letter that corresponds with the printer feature you want.

Helpful Hints

To verify what is defined as printer commands go to the "Define Printer Commands" menu (as described above). The contents of the printer commands will be displayed.

Apple® Writer II
Apple Computer ――――――――――――― **ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND APPLE WRITER II ON THE APPLE IIe

Introduction

The procedures outlined in this application note will assist you in using Apple Writer II with your ThinkJet Printer. We suggest that you review Making and Using a Glossary, chapter 2; Inserting Control Characters in Text, chapter 2; and Printing, chapter 4 of your Apple Writer II manual.

Hardware Configuration

See the Hardware Application Note for the Apple IIe with parallel interface, HP Part No. 5954-2902(54); use recommended hardware configuration.

System Configuration

Switch settings for the Apple Parallel Interface Card are provided on the Hardware Application Note referenced above.

Application Configuration

Once Apple Writer II is started up on your system you can set up "glossary" files that contain escape sequences for your ThinkJet printer.

Below is an example of defining a glossary file to turn on bold print. Where commands are joined by a dash (-) those keys should be pressed simultaneously. Do not include the dashes in the command.

1. Press the **CONTROL** key and type **G** (shown from this point on as **CONTROL-G**, etc.) then type **?** to access the glossary command definition mode.

2. Type **B**. "B" is now the name of this command definition.

3. Press **CONTROL-V**, **CONTROL-N**, **CONTROL-V**, then press the **RETURN** key. This defines the glossary command named "B" (from step 2) to turn on bold print.

To use this bold print glossary command in your Apple Writer II text:

1. Position the cursor to the beginning of the desired bold text.

2. Press **CONTROL-G**, then type **B**.

Any text entered after this point will be printed in bold print since the glossary command labeled B is set to turn on bold print. Bold print is enabled until a defined glossary command to turn off bold print is selected.

Other possible glossary command definitions are shown below. Where commands are joined by a dash (-) those keys should be pressed simultaneously. Spaces and dashes have been added for clarity and are not to be included in the command. The glossary command definition name is the character after the **?**.

Printer Feature	COMMAND
Bold Off	**CONTROL-G ? b CONTROL-V CONTROL-O CONTROL-V RETURN**
Underline On	**CONTROL-G ? U CONTROL-V ESC CONTROL-V &dD RETURN**
Underline Off	**CONTROL-G ? u CONTROL-V ESC CONTROL-V &d@ RETURN**
6 cpi	**CONTROL-G ? E CONTROL-V ESC CONTROL-V &k1S RETURN**
10 cpi	**CONTROL-G ? F CONTROL-V ESC CONTROL-V &k3S RETURN**
12 cpi	**CONTROL-G ? N CONTROL-V ESC CONTROL-V &k0S RETURN**
21 cpi	**CONTROL-G ? C CONTROL-V ESC CONTROL-V &k2S RETURN**

cpi = characters per inch.

Saving the Setup
To save the new glossary file press **CONTROL-Q F**, then type **Thinkjet**. Press the **RETURN** key.

Loading the Setup
To load the new glossary file press **CONTROL-Q E**, then type **Thinkjet**. Press the **RETURN** key. This step must be performed each time the program is loaded.

To Use Setup
To use the glossary of file definitions press **CONTROL-G** followed by the command definition. The appropriate definition will be inserted in the text.

Helpful Hints

Refer to Appendix A in the Apple Writer II Manual for additional commands.

To Verify Setup of a Glossary File

If the glossary file is already loaded press **CONTROL-G ?**. If the glossary file is not loaded press **CONTROL-Q E** and type **Thinkjet** when you receive the prompt. Press the **RETURN** key to load the file, and press **CONTROL-G ?**. To print what appears on the screen press **CONTROL-P np**, and press the **RETURN** key.

MULTIPLAN®
Microsoft Corporation _____ **ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND
MULTIPLAN (Version 1.07)
ON THE APPLE IIe

Introduction

The procedures outlined in this application note will assist you in using Multiplan with your ThinkJet Printer. We suggest you review the ThinkJet Printer Manual and the Multiplan Manual (especially those sections on Print, Print Margins, Print Options and Print Printer) before proceeding.

Hardware Configuration

See Hardware Application Note for the Apple IIe with parallel interface, HP Part No. 5954-2902(54); use recommended hardware configuration.

System Configuration

Switch settings for the Apple Parallel Interface Card are provided on the Hardware Application Note referenced above.

Using Printer Features

To print your document in compressed mode do the following (remember, when the printer is instructed to print in compressed mode, the entire document will print in compressed. Compressed and normal print cannot be mixed within a document):

From the Multiplan main command menu:

1. Type **P** then **O**. (This puts you in the Print Options command.)

2. Press the **TAB** key. (This puts you in the setup field.)

3. Type ^[&k2S.

4. Press the **RETURN** key.

You may also want to change your print margins:

5. Type **M**. (This puts you in the Print Margins command.)

6. Type **0**.

7. Press the **TAB** key twice. (This will put you in the print width field.)

8. Type **142**. (This will give you 142 columns of printing.)

9. Press the **RETURN** key.

10. Type **P** or press the **RETURN** key for a printout, or press the **ESC** key to return to the Multiplan main command menu. The changes will be saved for this session of Multiplan.

To return to normal print mode, from the Multiplan main command menu:

1. Type **P** then **O**. (This puts you in the Print Options command.)

2. Press the **TAB** key. (This puts you in the setup field.)

3. Type ^[&k0S.

4. Press the **RETURN** key.

To change your print margins back:

5. Type **M**. (This puts you in the Print Margins command.)

6. Type **0**.

7. Press the **TAB** key twice. (This will put you in the print width field.)

8. Type **80**. (This will give you 80 columns of printing.) Press the **RETURN** key.

9. Type **P** or press the **RETURN** key for a printout, or press the **ESC** key to return to the Multiplan main command menu. The changes will be saved for this session of Multiplan.

Helpful Hints

To verify a setup string from the main menu type **P** then **O**. This will put you in the Print Options menu and the setup field will be displayed.

To print what appears on the screen type **P** twice. All characters on the screen will be printed.

pfs®:file

Software Publishing Corporation _____ ThinkJet

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND
pfs:file
ON THE APPLE IIe

Introduction

The procedures outlined in this application note will assist you in using your ThinkJet printer and *pfs*:file. Your ThinkJet Printer will give you fast, high-quality printing. We recommend you review the chapter on printing in your *pfs*:file manual to help you understand how to send data to your printer.

Hardware Configuration

See Hardware Application Note for the Apple IIe with parallel interface, HP Part No. 5954-2902(54); use recommended hardware configuration.

System Configuration

Switch settings for the Apple Parallel Interface Card are provided on the Hardware Application Note referenced above.

Application Configuration

You can use the ThinkJet printer features (such as print pitches, bold, underline) by sending an escape sequence or control code in the *pfs*:file Print Options menu.

The following example accesses the *pfs*:file Print Options menu and selects the ThinkJet expanded-compressed print feature. Where commands are joined by a dash (-) those keys should be pressed simultaneously. Do not include the dash in the command.

1. From the *pfs*:file Function menu, type 5 then press the **TAB** key.

2. Type the name of the file you desire printed, then press **CONTROL-C**.

3. Type 1 then press **CONTROL-C**.

4. Press **CONTROL-C**.

5. Modify the Print Options menu as shown below. Use the **TAB** key to move between fields in the Print Options menu.

PRINT OPTIONS

PRE-DEFINED PRINT SPEC:
PRINT ITEM NAMES (Y/N): Y
ADD LINEFEED CHARACTERS (Y/N): **Y**
LINES PER PAGE: 66
NUMBER OF COPIES: 1
PAUSE BETWEEN PAGES (Y/N): N
PRINTER CONTROL CODES: **27 38 107 51 83**

The 5-digit code in the PRINTER CONTROL CODES sets the ThinkJet printer to Expanded-Compressed print.

6. Press **CONTROL-C** when the PRINT OPTIONS menu fields are correct.

7. Press **CONTROL-C** to begin printing.

Other ThinkJet Features:

Feature	PRINTER CONTROL CODES
Normal print	27 38 107 48 83
Expanded print	27 38 107 49 83
Compressed print	27 38 107 50 83
Bold on	14
Bold off	15
Underline on	27 38 100 68
Underline off	27 38 100 64

Apple® Works
Apple Computer _____ **ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND
APPLE WORKS (Revision 1.1)
ON THE APPLE IIe

Introduction

The procedures outlined below will assist you in using Apple Works and your ThinkJet
Printer. We suggest you review the ThinkJet Reference Manual, and the Apple Works
Reference Manual, especially the chapter on Printers and Printing, before proceeding.

Hardware Configuration

See the Hardware Application Note for the Apple IIe with parallel interface, HP Part No.
5954-2902(54); use recommended hardware configuration.

System Configuration

Switch settings for the Apple Parallel Interface Card are provided on the Hardware Applica-
tion Note referenced above.

Application Configuration

Turn the ThinkJet printer OFF. Set switch 5 on the rear panel of the printer UP, then turn
your printer ON.

From the Main Menu:

1. Type **5** then press the **RETURN** key. (Other activities)

2. Type **7** then press the **RETURN** key. (Specify information about your printer[s])

3. Type **3** then press the **RETURN** key. (Remove a printer)

4. Type **1** then press the **RETURN** key. (Apple DMP–slot 1)

5. Type **3** then press the **RETURN** key. (Remove a printer)

6. Type **1** then press the **RETURN** key. (ImageWriter–slot 1)

7. Type **2** then press the **RETURN** key. (Add a printer–maximum of 3)

8. Type **6** then press the **RETURN** key. (Epson MX/Graphtraxt)

9. Type **ThinkJet** then press the **RETURN** key. (Name of printer)

10. Type **1** then press the **RETURN** key. (Slot 1)

11. Press the **ESC** key. (Escape to Printer Information)

12. Press the **ESC** key. (Escape to Other Activities)

13. Press the **ESC** key. (Escape to Main Menu)

Computer
Museum

Helpful Hints

To verify that your system is set to Epson MX/Graphtraxt do the following:

From the Main Menu:

1. Type **5** then press the **RETURN** key. (Other activities)

2. Type **7** then press the **RETURN** key. (Printer information)

3. Type **4** then press the **RETURN** key. This will give you the Change a Printer menu.

4. Next to "Printer Type" the name of the printer type selected will appear. This should say "Epson MX/Graphtraxt". The slot the interface card is in will also be shown.

To print what you have on the "Review/Add/Change" screen press and hold the key with the open-apple symbol on it, and type **P**.

To turn compressed ON, from the "Review/Add/Change" screen (working screen), press the open-apple key and type **O**. The "Printer Options Window" will appear. Type **CI**, press the **RETURN** key; type **17**, press the **RETURN** key. Press the **ESC** key which will return you to the "Review/Add/Change" screen. To print what is on the screen, press the open-apple key, and type **P**.

To turn underline ON press the **CONTROL** key and type **L** simultaneously. To turn underline OFF repeat this step. To turn on bold press the **CONTROL** key and type **B** simultaneously. Repeat this step to turn off bold.

To print the screen at any time press and hold the open-apple key and type **H**. Bold and underlined features are not implemented during open-apple **H** commands.

pfs®**:graph**
Software Publishing Corporation ——————— **ThinkJet**

CONFIGURING YOUR PARALLEL THINKJET PRINTER AND
pfs:graph
ON THE APPLE IIe

Introduction

The procedures outlined below will assist you in using *pfs*:graph and your ThinkJet Printer. We suggest you review the chapter on Print/Plot in the *pfs*:graph manual to familiarize yourself with procedures for sending data to the ThinkJet printer.

Hardware Configuration

See the Hardware Application Note for the Apple IIe with parallel interface, HP Part No. 5954-2902(54); use recommended hardware configuration.

System Configuration

Switch settings for the Apple Parallel Interface Card are provided on the Hardware Application Note referenced above.

Application Configuration

Turn the ThinkJet printer OFF. Set Switch 5 on the rear panel of the printer UP, then turn your printer ON.

To print a chart, from the *pfs*:graph Menu: (Where commands below are joined by a dash (-) those keys should be pressed simultaneously; do not include the dash in the command.)

1. Type **6** then **CONTROL-C**. (PRINT/PLOT MENU).

2. Type **1** then **CONTROL-C**. (PRINTER MENU).

3. Type **1** in the SELECTION NUMBER field. (Epson format). If you desire expanded size print, or the data printed before the graph, tab to the appropriate field and type **Y**. Otherwise, to leave these fields type **N**.

4. Press **CONTROL-C** to accept the PRINTER MENU.

5. Press **CONTROL-C** to begin sending the chart to your ThinkJet printer.

NOTE: The aspect ratio of your ThinkJet printer is different than the aspect ratio on Epson printers, i.e., a pie chart printed on the ThinkJet printer will be slightly oval.

Dollars and $ense™
Monogram _____ ThinkJet

CONFIGURING YOUR SERIAL THINKJET AND
DOLLARS AND $ENSE
ON THE APPLE IIc

Introduction

The procedures outlined in this application note will assist you in using your ThinkJet printer and Dollars and $ense. We suggest you review the ThinkJet Printer Owner's Manual before proceeding.

Hardware Configuration

See Hardware Application Note for the Apple IIc serial interface configuration, HP Part No. 5954-2903(54); use recommended hardware configuration.

System Configuration

No change to the default setup is necessary before running Dollars and $ense.

Application Configuration

The following procedure must be completed to configure the ThinkJet printer as the output device for Dollars and $ense:

Starting Dollars and $ense:

1. Turn OFF the Apple IIc.

2. Insert the Dollars and $ense disk with the front side (Boot Disk) UP.

3. Turn ON the Apple IIc.

4. The Dollars and $ense introduction screen will appear. When you receive the prompt re-insert the Dollars and $ense disk with the back side (System Disk) UP, then press the **return** key.

Using Account Disc Utilities:

5. Press the **esc** key to select Account Disk Utilities.

6. Press the **esc** key to select the Dollars and $ense Main Menu.

7. Type **K** to select "Modify Configuration Parameters," then press the **return** key.

8. Reinsert the Dollars and $ense Disk with the front side (Boot Disk) UP, then press the **return** key.

9. Type **B** to select "Reselect Printer Type," then press the **return** key.

10. Type **C** then press the **return** key to select Epson.

11. Type **D** to select Print Page Length.

12. Type **60** for a page length of 60 lines, then press the **return** key.

13. Type **E** to select paper width. Press the **return** key until the width shown is 8-1/2 inches. (Each time the RETURN key is pressed, the paper width toggles between 8-1/2 inches and 14 inches.)

14. Type **H** to select Modifications Complete then press the **return** key.

This selection process needs to be done only once. Dollars and $ense will now print using your ThinkJet printer.

To Use the Dollars and $ense Application:

1. Repeat steps 1 through 4 under Starting Dollars and $ense, Application Configuration.

2. A Dollars and $ense menu will appear on the screen. Press the **esc** key twice to display the Main Menu.

Dollars and $ense is ready to use.

Using Printer Features

With your account loaded into Dollars and $ense, budget reports can be printed on the ThinkJet printer by doing the following. From the Dollars and $ense Main Menu:

1. Type **G** to select Prepare Reports, then press the **return** key.

2. Insert the Dollars and $ense disk with back side (System Disk) UP, then press the **return** key.

3. Press the **return** key until Printer appears as the Output Device. (Each time the **return** key is pressed the Output Device selection toggles between Screen and Printer.)

4. Select the account information you would like printed by typing the corresponding letter, then press the **return** key.

5. Make sure the ThinkJet printer is ON and connected to the Apple IIc, then press the **return** key to initiate printing.

Helpful Hints

Dollars and $ense can display graphs, but cannot send graphs to the ThinkJet printer.

Dollars and $ense does not support ThinkJet printer enhancements such as print pitches, bold, underlining, etc.

Bank Street Writer™

Broderbund Software ———————————— **ThinkJet**

CONFIGURING YOUR SERIAL THINKJET PRINTER AND
BANK STREET WRITER
ON THE APPLE IIc

Introduction

The procedures outlined in the application note will assist you in using your ThinkJet printer with Bank Street Writer. We recommend that you read through your Bank Street Writer manual, especially chapters 3 (Print) and 5 (Additional Writing Commands) before proceeding.

Hardware Configuration

See Hardware Application Note for the Apple IIc serial interface configuration, HP Part No. 5954-2903(54); use recommended hardware configuration.

System Configuration

See the hardware application note referenced above for system configuration.

Application Configuration

Before using Bank Street Writer check to see that the Apple IIc's default system configuration is active. This configuration is compatible with the ThinkJet Hardware Application Note referenced above. Press the **esc** key while Bank Street Writer is loading into the computer to run Bank Street Writer's Utility Program.

From the Opening Screen:

1. Type 5. (Select 'CHANGE SERIAL DEFAULTS.')

   The screen should look like this:

```
                CHANGE SERIAL PRINTER

               (NOTE: FOR IIC ONLY)

    BAUD RATE    110    300   1200   2400   4800

                 9600        19200

    PARITY       OFF   EVEN   ODD

    DATA BITS    6      7      8

    STOP BITS    1      2

    DO YOU WANT TO USE THESE VALUES OR THE
    STANDARD IIC DEFAULT SETUP:

    USE THESE VALUES     USE IIC DEFAULTS
```

2. If the values underlined above do not match the values highlighted on the screen use the **left arrow** and **right arrow** keys to select the proper value, then press **return**. Press **esc** when the values on the screen match those above.

3. Type **Y**. (To save your changes.)

4. Type **6**. (To exit the Utility Program.)

Printing Documents
The PRINT function in Bank Street Writer's function menu will create a printed copy of your document. Use the following procedure to print a document:

1. Press the **esc** key. (This will always put you in the Bank Street functions menu.)

2. Press the **tab** key 3 times. (Selects the PRINT function command.)

3. Press the **return** key.

NOTE: The PRINT function does not appear in the menu of the 40 column version of Bank Street Writer. Use the **tab** key to select the TRANSFER MENU function. Press the **return** key. The PRINT function will not appear in the function menu. Select the PRINT function with the **tab** key then press the **return** key.

At this point you will be prompted to answer some questions about how you want your document printed. To get the most basic printout of your document press **return** after each of the following prompts.

DO YOU WANT TO REVIEW FORMAT QUESTIONS (Y/N): N
DO YOU WANT TO PRINT ALL OF YOUR TEXT (Y/N): Y
DO YOU WANT TO SEE WHERE EACH PAGE OF TEXT WILL END (Y/N): N

Finally, you will be prompted with:

WHEN PRINTER IS READY, PRESS RETURN.

When you press the **return** key this final time your document will begin printing.

Using Printer Features

Bank Street Writer allows you to define up to 16 special printer commands that can be inserted into your text to turn printer features ON or OFF. Review Printer Format Commands (Chapter 5), Define Printer Commands (Chapter 7), and Printer Format Codes (Appendix A) in the Bank Street Writer manual for detailed information on using this function. In Appendix B of your ThinkJet Owner's Manual you will find a list of HP Mode Print Features. The basic steps to defining commands follows.

1. Start the Utility Program. (See System Configuration above.)

2. Type **4**. (Select DEFINE PRINTER COMMANDS.)

3. Press the **left arrow** key. (Erase previous command label.)

4. Type **B ON**. Press the **return** key. (Enter new label.)

5. Type **(27)(40)s1B**. Press the **return** key. (Enter command sequence.)

Repeat steps 3-5 for any additional commands you wish to add. When you are finished:

6. Press the **esc** key. (Return to Utility Program menu.)

7. Type **Y**. (Save your changes.)

8. Type **6**. (Exit Utility Program.)

A sample list of commands that can be defined using Bank Street Writer's Utility Program are:

A.	B ON	(27)(40)s1B	Bold Mode ON
B.	B OFF	(27)(40)s0B	Bold Mode OFF
C.	12 CPI	(27)&k0S	Normal Print
D.	10 CPI	(27)&k1S	Expanded Print
E.	21 CPI	(27)&k2S	Compressed Print
F.	6 CPI	(27)&k3D	Exp-Compressed Print
G.	6 LPI	(27)&l6D	6 Lines Per Inch
H.	8 LPI	(27)&l8D	8 Lines Per Inch

When you want to use one of these features in your document, simply position the cursor at the point you wish the feature to begin. Press **open apple-P** or **closed apple-P** (press the open/closed apple key and letter key simultaneously). A list containing the labels of your defined commands will appear. Type the letter corresponding to the feature you want.

Apple® Works

Apple Computer _____ **ThinkJet**

CONFIGURING YOUR SERIAL THINKJET PRINTER AND APPLE WORKS ON THE APPLE IIc

Introduction

The procedures outlined here will assist you in using Apple Works and your ThinkJet printer. We suggest you review the ThinkJet Manual, and the Apple Works Reference Manual, especially the chapter on "Printing and Printers," before proceeding.

Hardware Configuration

See the Hardware Application Note for the Apple IIc serial interface configuration, HP Part No. 5954-2903(54); use recommended hardware configuration, except set mode switch 5 on the rear of the printer UP (1). Setting switch 5 UP will enable ThinkJet's Alternate Mode Print Enhancements for use with Apple Works.

System Configuration

The Apple IIc's default configuration for Port 1 is compatible with the configuration in the ThinkJet Hardware Application Note.

Application Configuration

To activate ThinkJet's Alternate Mode Printer Enhancements in Apple Works, perform the following steps to remove the current printer, then select the "Epson MX/Graftrax + " driver to be the output to Port 1.

Run the Apple Works program, then from the Main Menu:

1. Type **5** then press the **return** key. (Select the "Other Activities" menu.)

2. Type **7** then press the **return** key. (Specify information about your printer.)

3. Type **3** then press the **return** key. (Choose to remove a printer.)

4. Type the number of the printer you want to remove then press the **return** key. (Select to remove any unnecessary printer.)

5. Type **2** then press the **return** key. (Now choose to add a printer.)

6. Type **6** then press the **return** key. (Choose the Epson MX/Graftrax + printer.)

7. Type **THINKJET** then press the **return** key. (Name the new printer driver.)

8. Type **1** then press the **return** key. (Select Port 1 as your printer connection.)

    The following should appear at the top of your screen:

    Printer name: THINKJET (Port1)

    Printer type: Epson MX/Graftrax +

9. Press the **esc** key three times to return to the main menu.

Using Printer Features

To print what you have on the Review/Add/Change screen (working screen), press and hold **open apple-P** (press the open-apple key and P simultaneously). Answer the questions displayed on the screen using the cursor and return keys.

Printer enhancements are activated from within the Printer Options menus. When you want to use one of the options available press **open apple-O** to get to the options menu. Next, type the letters corresponding to the command you wish to use.

The Apple Works Word Processor supports the following ThinkJet features:

Bold Printing.
Underlining.
Print Pitches.

Character Spacing

The CI command in the Print Options menu selects the following ThinkJet character spacings:

Option	Chars.	Selects
CI	5	Expanded (40 chars/line max.)
CI	8	Expanded Compressed (71 chars/line max.)
CI	10	Normal (80 chars/line max.)
CI	17	Compressed (142 chars/line max.)

Line spacing

The LI command in the Print Options menu selects the following ThinkJet line spacings:

Option	Chars.	Selects
LI	6	6 lines/inch line spacing.
LI	8	8 lines/inch line spacing.

NOTE: Superscript characters, subscript characters, and proportional spacing are not supported by Apple Works on the ThinkJet printer.

Special Spreadsheet and Data Base Codes

Apple Works provides you with an option that lets you define printing features not provided for the Spreadsheet or the Data Base Report. The SC command in the printer options menu will allow you to enable ThinkJet's Alternate Mode Print Features. For example, to print a spreadsheet report in bold, from the Spreadsheet Menu:

1. Press **open apple-O** (press the open apple key and O simultaneously). (Select Printer Options Menu.)

2. Type **SC**. (Selects Special Codes command.)

3. Press the **Return** key.

4. Press **control-E** (press the control key and E simultaneously). (Type ThinkJet command code.)

5. Type **^**. (To end code sequence.)

6. Press the **esc** key. (To return to the spreadsheet.)

This special code is sent to the printer to put it into compressed mode prior to the spreadsheet being sent to it. Consult Appendix C of the ThinkJet Owner's Manual for additional printer options.

Helpful Hints

Open apple-H is a quick and easy way to get a printout of what is currently on the screen. Bold and underline features are not supported by the **open apple-H** command.

Once you have become familiar with Apple Works and your ThinkJet printer you may want to create your own custom printer for ThinkJet. Consult Appendix B of the Apple Works Manual for more information.

Home Accountant™

Arrays, Inc./Continental Software _____ **ThinkJet**

CONFIGURING YOUR SERIAL THINKJET PRINTER AND HOME ACCOUNTANT (Expanded Version) ON THE APPLE IIc

Introduction

The procedures outlined in this application note will assist you in using your ThinkJet printer with Home Accountant. We recommend that you review your Home Accountant manual before proceeding, particularly Chapter 2, Hardware Configuration, and Chapter 6, Printing and Graphing Functions, which describe the functions available.

Hardware Configuration

See Hardware Application Note for the Apple IIc serial interface configuration, HP Part No. 5954-2903(54); use recommended hardware configuration.

System Configuration

No change to the default printer setup is necessary before using Home Accountant.

Application Configuration

Home Accountant must be configured to match the ThinkJet printer. This is done by selecting the Systems Utilities Function from the program's main menu, then selecting the Hardware portion of the utility to be configured. Insert your working copy of the Home Accountant Expanded program disc, side 1 UP, and start the application. Type in the date and press the **return** key.

Using the **up** and **down arrow** keys:

1. Select SYSTEM UTILITIES then press the **return** key.

2. Select HARDWARE then press the **return** key.

You are now in the HARDWARE CONFIGURATION menu. Entries in this area are made by typing the letter corresponding to the entry you want to edit, typing the new entry value, then pressing the **return** key. For example, to select the PARALLEL entry in the S)SERIAL OR P)PARALLEL CARD? data field:

3. Type **B**. (Selects the Data Field.)

4. Type **S** then press the **return** key. (Selects SERIAL.)

ThinkJet's matching data screen:

```
            ** HOME ACCOUNTANT EXPANDED **
               HARDWARE CONFIGURATION

A PRINTER SLOT# 1 '0' = NO PRINTER
B S) SERIAL OR P) PARALLEL? S
C SUPPRESS LINE FEED? (Y/N) N

  ASCII CODE(S) FOR 132-COLUMN FORMAT

  D 27    E 38    F 107    G 50    H 83

  ASCII CODE(S) FOR 80-COLUMN FORMAT

  I 27    J 38    K 107    L 48    M 83
```

NOTE: Other options shown on this screen depend on your computer system. Consult the Apple IIc user's manual for correct entries.

Once you have made the selections type **R** to record these values on your disc. Follow the directions to record these values on side 2 of the Home Accountant Program disc, and return to the SYSTEM UTILITIES menu.

Printing Documents

You will need to create a Home Accountant budget before you can print a report. There are many types of Home Accountant Expanded reports that you can print. Generally, printing reports is a 3-step process: 1. Selecting the report category that you want to print; 2. Answering prompts concerning the printout; and 3. Selecting to print the report.

For example, if you wanted to print a BUDGET/ACTUAL REPORT, from the main menu (follow instructions on the screen for removing and inserting discs):

1. Select PRINTED REPORTS. Press the **return** key.

2. Select BUDGET/ACTUAL. Press the **return** key.

3. Select PRINT BUDGET. Press the **return** key.

4. Type P. (Select to print to a Printer).

5. Press the **return** key. (Except present value of beginning month.)

6. Press the **return** key. (Except present value ending month.)

7. Press the **return** key. (Except present value of current date.)

8. Press any key to start printing.

NOTE: These steps may vary between different types of reports. Refer to your manual for correct entries for other report types.

Word Juggler™
Quark Incorporated _____ **ThinkJet**

CONFIGURING YOUR SERIAL THINKJET PRINTER AND WORD JUGGLER ON THE APPLE IIc

Introduction

The procedures outlined in this application note will assist you in using your ThinkJet printer with Word Juggler. We recommend that you read through your Word Juggler Manual, especially Chapter 1 (Configuring Word Juggler for your Hardware) and Chapter 4, (Printout Enhancements, Printout Control Command, and Typing Modes) before proceeding.

Hardware Configuration

See Hardware Application Note for the Apple IIc serial interface configuration, HP Part No. 5954-2903(54); user recommended hardware configuration.

System Configuration

No change to the default setup is necessary before running Word Juggler.

Application Configuration

Remove the write protect tag and run the Word Juggler program disc. When the main menu appears type **8** then press the **return** key to select the Edit Configuration screen. The suggested configuration for a ThinkJet printer follows:

Printer slot: 1
Printer card: Super Serial (Apple IIc)
Auto linefeed: Yes
Filter: Other (with backspace)
Strike count: 2
Space underline: Yes

Left margin: 0
Width: 80
Pitch: 12

Page length: 66
Top margin: 6
Length: 54
Spacing: Single Space

Press the space bar when the Edit Configuration fields match the above settings.

Printing Documents

Print your documents by pressing **open apple-P**. (Press the **open apple** and **P** keys simultaneously.)

Using Printer Features

To generate bold and underlined text in your documents, place the cursor at the point in your document where you wish the feature to begin then press the **closed apple** key and the letter key simultaneously. Use the delete key to cancel a selected feature command.

Bold ON: Press **closed apple-b**.
Bold OFF: Press **closed apple-B**.

Underline ON: Press **closed apple-u**.
Underline OFF: Press **closed apple-U**.

If desired, both bold and underline features can be implemented at once.

NOTE: Superscript and subscript characters are not supported by Word Juggler on the ThinkJet printer.

Using Printer Control Command

Consult Appendix B, HP Mode Print Features, of the ThinkJet Owner's Manual. You can enable these features with the Printer Control command. To use this command, position the cursor at the point in the text you want the feature to begin.

1. Press the **esc** key. (Starts command mode.)

2. Type **P**. (Selects Printer Control command.)

3. Check the ASCII Hexadecimal Equivalent column of the Printer Feature Table, in the ThinkJet Owner's Manual, for the codes that correspond to the feature you want to use. For example, the codes for Expanded print are: 1B 26 6B 31 53.

4. Type the corresponding ASCII hexadecimal codes preceded by a $. For expanded print type: $1B$26$6B$31$53.

5. Press the **return** key.

To remove a printer control command, position the cursor over the highlighted "Printer Control" and press **open apple-1**, then remove the ASCII Hexadecimal command code using the delete key or **open apple-q**.

Other Print Features	ASCII Hexadecimal Command Code
Normal Print	**$1B$26$6B$30$53**
Expanded Print	**$1B$26$6B$31$53**
Compressed Print	**$1B$26$6B$32$53**
Expanded-Compressed Print	**$1B$26$6B$33$53**
6 LPI Line Spacing	**$1B$26$6C$36$44**
8 LPI Line Spacing	**$1B$26$6C$38$44**

NOTE: The printer feature will be in effect from this line on. Remember to switch off printer features by the end of your document, or other documents will be effected. Do not insert blank spaces between the command code characters.

Typing Modes

The Typing Mode functions in Word Juggler allow you to disconnect the keyboard from the word processor and type directly to the ThinkJet printer. These functions are only accessible from the text entry mode. Special printer features of bold and underline, explained in the Using Special Printer Features section of this application note, can be used.

Typing Mode Left Margin: **Open apple-y**. This function sets the margin for other typing mode functions.

Transmit Line: **Open apple-r**. Prints the text from the cursor to the end of the line.

Press: **Open apple-t**. Allows you to type a line then send it to the printer.

Typewriter: This function is not supported by line printers. Use the Type function instead.

Word Handler II™

Advanced Logic Systems, Inc. _____ **ThinkJet**

CONFIGURING YOUR SERIAL THINKJET PRINTER AND WORD HANDLER II ON THE APPLE IIc

Introduction

The procedures outlined in this application note will assist you in using your ThinkJet printer with Word Handler II. We recommend that you read through your Word Handler II Manual before proceeding.

Hardware Configuration

See Hardware Application Note for the Apple IIc serial interface configuration, HP Part No. 5954-2903(54); use recommended hardware configuration.

System Configuration

No change to the default setup is necessary before running Word Handler II.

Application Configuration

Before you begin configuring Word Handler II for your ThinkJet printer, we suggest you review the Instructions for Word Handler Version 4.3, and Hex Parameters for the Word Handler Word Processor Versions 4.0 Plus, sections in your Word Handler manual. When you are finished looking over these sections, run your program. If this is the first time you have run Word Handler, your Printer Menu screen will automatically come up. If you have previously used Word Handler press the space bar as the program boots to get to the Printer Menu screen.

Once in the Printer Menu you must enter the type of Printer Interface, the Printer Slot number, and the Printer Type. The Printer Interface Type, and the Printer Slot# are the suggested default values for the Apple IIc computer.

1. Type **X**. (Enter Printer Interface type.)

2. Type **1**. (Enter Printer slot #.)

You can select one of two Printer Types to work with your ThinkJet printer. If you choose Printer Type B, Word Handler's default printer features are available. If you choose Printer Type X, you will have to enter the hexadecimal control characters that enable ThinkJet's printer enhancements.

Features supported by Printer Type B:
Bold Print
Underlining

Features supported by Printer Type X:
Bold Print
Auto-Underlining
Pitch Changes (normal print/expanded compressed print)
6 & 8 Lines Per Inch Line Spacing

3. Type **B** or **X**.

You will now be prompted to enter the parameter values for Printer Interface type X.

4. Press the **return** key. (Leave PARM A blank.)

5. Type **09 4B 09 4F 09 32 35 35 4E**. (Sequences for PARM B, explained in the Word Handler manual, page 2.)

6. Press the **return** key.

If you have selected Printer Type X enter the following control numbers and press the **return** key for each corresponding parameter. Press the **return** key to skip over blank parameters.

```
PARM C:  1B 28 73 31 42        (Codes that begin boldface.)
PARM D:  1B 28 73 30 42        (Codes that end boldface.)
PARM E:  1B 26 64 44           (Codes that begin underline.)
PARM F:  1B 26 64 40           (Codes that end underline.)
PARM G:
PARM H:
PARM I-L:
PARM M:  1B 26 6B 33 53        (Codes to begin expanded compressed.)
PARM N:  1B 26 6B 30 53        (Codes to begin normal print.)
PARM O:  60                    (60 Hex = 96. This printer moves in 96ths.)
PARM P:
PARM Q:  10 1B 26 6C 36 44 0A  (Move in 16⁄96ths inch, or ⅙ inch.)
PARM R:  0C 1B 26 6C 38 44 0A  (Move in 12⁄96ths inch, or ⅛ inch.)
PARM S:
PARM T:
PARM U:
PARM V:
PARM W:
PARM X:
PARM Y:  1B 26 6C 36 44.       (Codes to set vertical feed at 6 lines per inch.)
```

NOTE: Superscript characters and half-line spacing are not supported by this PARM list.

Printing Documents

Once you have created a document press **control-E** to go to Word Handler's idle state, then: (Where commands are joined by a dash (-) those keys should not be pressed simultaneously. Do not include the dash in the command)

1. Type **PRINT** then press the **return** key. (Enter command to start print function.)

2. Type the document's name. (Enter document to print.)

3. Press the **return** key.

4. Type the pages you wish to print.

5. Press the **return** key.

6. Type **C** to print the entire document without pausing at each page.

Formatting Documents

If you have decided to install Printer Type X it is important to correctly format your document pages so that the document on the screen matches the document printed on your printer. If the lines on the screen are too long they will not be printed and they may be distorted on the screen. The page format for expanded-compressed print and for normal print is shown below. Before you type your documents we suggest you set the following page formats:

(Enter Editing Mode then press the **open apple-F** key to enter the page Format Menu.)

	Normal	Expanded-Compressed
Paper Width:	6.5	7.1
Paper Length:	11	11
Left Margin:	0	0
Right Margin:	0	0
Top Margin:	0.8	0.8
Bottom Margin:	1.0	1.0
Pitch (10 or 12):	12	10
Lines/Inch (6 or 8)	6	6
First Page Number:	1	1
Header Distance from Top:	0.4	0.4
Footer Distance from Bottom:	0.4	0.4

NOTE: These settings will give you 78 characters/line (normal print) and 71 characters/line (expanded-compressed print), with 1 inch left and right margins.

Using Printer Features

Underlining —
Edit Mode: Position the cursor over the character you wish to underline and press **open apple-Y**.

Insertion Mode: Press **open apple-Y** to start underlining. Press **open apple-N** to end underlining.

Bold Printing —
Insertion Mode (only): Press **open apple-B** to start Bold text inserting. Press **open apple-N** to end bold.

Expanded-Compressed Printing —
Edit Mode: Press **open apple-F** to enter Format Menu screen. Press the **return** key 6 times. Type **10**.

Normal Printing —
Edit Mode: Press **open apple-F** to enter Format Menu screen. Press the **return** key 6 times. Type **12**.

NOTE: When switching between normal printing and expanded compressed printing remember to adjust the page width.

MultiMate ™

MultiMate International _____ **ThinkJet**

CONFIGURING YOUR HP-IB THINKJET PRINTER AND MULTIMATE (Version 3.29) ON THE HP 150 A/B

Introduction

The procedures discussed in this application note will assist you in using your ThinkJet Printer with MultiMate Professional Word Processor on the HP 150. We suggest you read the section entitled "About MultiMate" in the Series 100/MultiMate Reference Manual to acquaint you with this software package.

Hardware Configuration

See Hardware Application Note for HP 150 with HP-IB interface, HP Part No. 5954-2907(54); use recommended hardware configuration.

Application Configuration

Once MultiMate has been installed, run it from P.A.M. by touching **MultiMate** then **Start Applic**. (f1 key). To print a document on your ThinkJet printer using MultiMate, you must first configure the Print Document Utility. Perform the following procedure to configure and print a document using your ThinkJet printer:

From the Main Function Menu:

1. Type 3 then press the **ENTER** or **RETURN** key. (Select Print Document Utility.)

2. Type your document's name then press the **ENTER** or **RETURN** key.

3. Press the **TAB** key seven times. (Position the cursor to Printer Action Table entry.)

4. Type **THINKJET**.

5. Press the **TAB** key 11 times to position the cursor to the driver selection entry. (P (PRN) / L (LST) / C (COM) / A (AUX) / F (FILE).)

6. Type **P** then press the **ENTER** key. (Selects PRN as the printing device and begins printing.)

Using Printer Features

Supported ThinkJet enhancements are listed below. These enhancements are selected by using the special dedicated function keys before and after the phrases you want enhanced in your MultiMate documents. Consult the Function Reference section of the MultiMate Manual for more information on how to use the special print enhancements.

Highlighting Functions:
  Enhanced/bold print
  Shadow print
  Underlining

Print Pitches

ThinkJet supports four print pitches, normal (12 cpi), expanded (6 cpi), compressed (21.3 cpi), and expanded-compressed (10.7 cpi). Multimate allows you to choose the desired output print pitch by entering a number from 1 to 9 in a print pitch field. Listed below is the resulting print pitch on a ThinkJet printer for each pitch indicator number.

Pitch Indicator No.	Print Pitch
1	Expanded (6 cpi* or 40 cpl*)
2	Expanded (6 cpi* or 40 cpl*)
3	Expanded-compressed (10.7 cpi* or 71 cpl*)
4	Expanded-compressed (10.7 cpi* or 71 cpl*)
5	Normal (12 cpi* or 80 cpl*)
6	Normal (12 cpi* or 80 cpl*)
7	Normal (12 cpi* or 80 cpl*)
8	Compressed (21.3 cpi* or 142 cpl*)
9	Compressed (21.3 cpi* or 142 cpl*)

Note: Remember to alter your document margins so that you do not have lines greater than the maximum allowable characters per line at the given print pitch. For example, the default margins in MultiMate are 75 characters wide, but the default pitch will allow a maximum of 71 characters per line. In order to fit all the characters on a line you must decrease the margins in your document, or increase the character pitch. Changing the character pitch can be done by either putting in a character pitch command at the beginning of your document, or by changing the default print pitch in the Print Document Utility.

*cpi = characters per inch.
*cpl = characters per line.

Line Spacing:
The ThinkJet printer supports 6 and 8 lines per inch line spacing. The printer does not support half line or quarter line spacing. If you attempt to do either ¼, ½, 1½, or 2½ line spacing, the results will be unpredictable. Also, if superscript or subscript characters are used, they will print an entire line above or below the base line of print.

Helpful Hints

Consult the Print Document Utility section in the Using Screens and Menus chapter of the MultiMate manual for more detailed information on printing documents. If you would like the printer menu to come up with the ThinkJet printer as the default printer for all of your new documents, consult the section on Editing Printer Defaults.

Microsoft® Word

Microsoft Corporation ————————————— **ThinkJet**

CONFIGURING YOUR THINKJET PRINTER AND MICROSOFT WORD (Revision 1.10) ON THE HP 150 A/B

Introduction

The procedures outlined in this application note will assist you in using your ThinkJet printer with the Microsoft Word package. Your ThinkJet printer will give you fast, high-quality printing. Consult the ThinkJet Reference Manual and the Microsoft Word manual for additional information.

Hardware Configuration

See Hardware Application Note, HP Part No. 5954-2907(54); use recommended hardware configuration.

System Configuration

Before running Microsoft Word it is important that the DEVCONFIG program has been run. This is done to configure the printer ports on the system. It is assumed, for this application note, that the printer will be attached as the PRN: device; however, it will work equally well when setup as the LST: device when running Microsoft Word.

Application Configuration

When using Microsoft Word to print documents, it is necessary to have a copy of the correct .PRD file on your Program Disk. A .PRD file is a printer description file which Word uses to communicate correctly with the printer. You can have as many .PRD files on your Program Disk as you would like. Follow the instructions below to copy the THINKJET.PRD file to the Program Disk using the P.A.M. File Manager. Selecting the correct file for printing a document with your ThinkJet printer is discussed later in this section.

Using the HP 150

1. Put your Word program disk in drive A.

2. Put your Word utility disk in drive B.

3. Touch **File Manager** (f5 key).

4. Touch **Choose Dir.** (f4 key).

5. Type B: then press the **RETURN** key.

6. Touch **Start Display** (f1 key)*

7. Touch **Exit Choose** (f8 key).

8. Touch **Copy File** (f6 key).

9. Touch **THINKJET.PRD.**

10. Type A: then press the **RETURN** key for destination filename.

11. Touch **Start Copy** (f1 key).

12. Touch **Exit Copy** (f8 key) when the copying is complete.

13. Touch **Exit FILE MGR** to return to P.A.M.

* = This step is not done for releases of P.A.M. greater than B.01.00.

Next, you will need to configure Word to properly communicate with your ThinkJet printer. To do so, run Word in the normal manner. When the program displays the document screen, follow the directions outlined below.

1. Press the **ESC** key. (Puts you into the Command Menu.)

2. Type **P**. (Print menu.)

3. Type **O**. (Print Options menu.)

4. Type **THINKJET** then press the **TAB** key. (Printer type. Use **THINKJET.PRD**.)

5. Type **N** then press the **TAB** key. (No, draft mode.)

6. Press the **TAB** key four times. (This puts you in the feed field.)

7. Type **C** for continuous paperfeed, or **M** for manual cut sheet paper. Then press the **TAB** key.

8. Type **PRN:** then press the **RETURN** key. (This sets output to the PRN device, then exits the Print Option menu.)

9. Press the **ESC** key. (Back to the Command menu.)

10. Type **Q**. (Quit and exit Word.)

The printer .PRD file, draft, feed, and setup strings made in the Print Options menu are saved automatically whenever you Quit and exit Word. Therefore, printer settings active at the end of an edit session will become active the next time you start Word again.

Using Printer Features

ThinkJet printer enhancements supported by Microsoft Word are listed below. Character formats not listed below are not supported by the ThinkJet printer, and if used will yield a result different than desired. Formatting is done while in the Type-In or Alpha mode of Word. For example, to underline the word "support" do the following:

1. Hold down the **CTRL** key, then press **u**. (Start underline.)

2. Type **support**.

3. Hold down the **CTRL** key, then press the **SPACE** bar. (Start Normal.)

Keystrokes	Character Format	Actual ThinkJet Output
*CTRL-b	Boldface	Bolt print
*CTRL-u	Underline	Text will be underlined
*CTRL-s	Strikethrough	Legal strikethrough (hyphens)
*CTRL-k	Small caps	Compressed CAPS
*CTRL-SPACE	Normal character	Normal, end other format

* = Where commands are joined by a dash (-) those keys should be pressed simultaneously. Do not include the dash in the command.

Two other methods of selecting character formats are available on the HP 150. The first method is through the softkeys that are displayed when **Choose Typeface** (f6 key) is touched, and the desired enhancement is selected from the list of supported enhancements. The second method is through the Command menu. The format character menu includes all of the formats in the above list. To get this menu from edit mode:

1. Position the cursor under the character you desire enhanced.

2. Press the **ESC** key. (This gives you the Command menu.)

3. Type F then C. (This gives you the Format Character menu.)

You can move through the menu by pressing the **TAB** key and making selections by typing the first letter of the desired setting. To exit and use the new settings, press the **RETURN** key.

Helpful Hints

Word provides options on when and how to print. These are found in the Print Menu. Press the **ESC** key, then type P from the Edit mode. These choices are:

Type **P**. (Prints the current file immediately.)

Type **D**. (Prints whatever is typed on the screen. Printing on a ThinkJet occurs only after the **RETURN** key is pressed. No characters appear on the screen or in the document. This is useful in printing short passages.)

Type **F**. (Prints your document onto a disk file for future printing.)

Type **Q**. (Used to initiate printing of queued print files.)

MemoMaker
Hewlett-Packard Co. _____ **ThinkJet**

CONNECTING YOUR HP-IL THINKJET PRINTER AND MEMOMAKER ON THE HP 110

Introduction

The first-time MemoMaker user should review the lesson plans in Chapter 1 of the MemoMaker User's Manual, located in the HP 110 Owner's Manual. The following chapters in the MemoMaker section of the HP 110 Owner's Manual provide specific information on printer output:

Chapter 2 — MemoMaker Procedures
Chapter 5 — MemoMaker Key and Function Dictionary

Hardware Configuration

See the Hardware Application Note for the HP 110 with HP-IL interface, HP Part No. 5954-2908; use recommended hardware configuration.

System Configuration

Refer to the Hardware Application Note referenced above for proper connection of the ThinkJet printer and the HP 110.

Application Configuration

To select the ThinkJet printer with HP-IL interface as the MemoMaker output device, do the following.

From the HP 110 P.A.M. menu:

1. Press the **System Config** (f6) key.

2. Press the **TAB** key until **Printer Interface** is selected.

3. Press the **Next Choice** (f3) key to select **HP-IL** as the **Printer Interface**.

4. Press the **Exit Config** (f8) key.

This selection process needs to be done only once. MemoMaker documents can now be printed to your ThinkJet printer.

To enter the MemoMaker program:

1. From the HP 110 P.A.M. menu select MemoMaker by pressing the **TAB** key until the selection arrow is pointing at MemoMaker.

2. Press the **Start Applic** (f1) key.

The MemoMaker screen will appear and the program is ready to be used.

Computer Museum

Using Printer Features

MemoMaker supports two enhancements: underline and boldface. They are accessed in the following way.

1. Press the **Block Keys** (f2) key.

2. Press the **Enhance Block** (f5) key.

3. a. To underline, use the **RIGHT ARROW** or **LEFT ARROW** key to place the cursor on the first character to be enhanced and press the **Enhance: Underln** (f1) key. An underline marker, **u**, will be inserted in the text.

   b. Use the **RIGHT ARROW** or **LEFT ARROW** key to move the cursor to the first space after the last character to be underlined and press the **Enhance: Underln** (f1) key. Another underline marker, **u**, will be inserted in the text. These markers delimit the text area to be underlined when the document is printed on ThinkJet.

4. a. To boldface text, use the **RIGHT ARROW** or **LEFT ARROW** key to place the cursor on the first character to enhance, and press the **Enhance: Bold** (f2) key. A boldface marker, **B**, will be inserted in the text.

   b. Use the **RIGHT ARROW** or **LEFT ARROW** key to move the cursor one space beyond the last character to be in boldface and press the **Enhance: Bold** (f2) key. Another boldface marker, **B**, will be inserted in the text. These markers delimit the text area to be in boldface when the document is printed on ThinkJet.

5. To remove the underline or boldface enhancements, remove the enhancement markers, **u** or **B**. Do this by deleting them from the document. Position the cursor under the marker then press the **Extend char** and **-char** keys simultaneously. Be sure to remove both markers that delimit the text area, the start marker, and the end marker.

NOTE: MemoMaker for the HP 110 enables you to apply both enhancements to a text area. Therefore, a text area delimited with both enhancement markers will be printed in boldface and underlined by the ThinkJet printer.

To print your MemoMaker document to the ThinkJet printer do the following from the Main Menu:

1. Press the **Extend char** and **LEFT ARROW** keys simultaneously to send the cursor to the top of the MemoMaker document. By doing so the entire document will be printed since it is output from the current cursor position to the end of the document file. Therefore, portions of the document can be printed, if desired.

2. Press the **Print Keys** (f4) key.

3. If you would like the document printed with double spacing press the **Double Space** (f1) key until the asterisk appears. If single spacing is desired press this key until the asterisk disappears.

4. Press the **Auto Feed** (f2) key until the asterisk appears. This indicates that continuous feed paper is being used.

5. Press the **Print Memo** (f5) key and the document will print on the ThinkJet printer.

To insert page breaks in your document, do the following:

1. Press the **Print Keys** (f4) key.

2. Position the cursor where a page break is desired, then press the **Page Break** (f4) key. A permanent page break appears in the document on the screen. A form feed will be sent to the ThinkJet printer each time a page break marker is encountered.

NOTE: Single spaced printed pages from MemoMaker are 55 lines long unless they are shortened with a page break. Double spaced printed pages from MemoMaker are 28 lines long unless they are shortened with a page break.

Helpful Hints

The format that is setup for a given document can be saved on disc. When working on the document it can be installed in MemoMaker so that all the settings do not have to be re-entered. The current format settings can be saved and retrieved with the following steps.

To save a format file:

1. Press the **File Keys** (f1) key.

2. Press the **Save Format** (f4) key.

3. Type a filename for the format file to be saved then press the **ENTER** key or press **STARTUP.FMT** (f1) key. See note below.

To retrieve a format file:

1. Press the **File Keys** (f1) key.

2. Press the **Get Format** (f3) key.

3. Type the filename of the format file to be retrieved then press the **ENTER** key.

NOTE: For the format file to be automatically loaded upon entering the MemoMaker program, select **STARTUP.FMT** as the format filename. Then it will not be necessary to retrieve the format file: the MemoMaker settings saved in **STARTUP.FMT** will become the current format settings. These settings include left and right margins, tab stops, justification on/off, enhancement setting, printer selection setting, printer feed setting, and printer line spacing.

WordStar®

MicroPro International _____ ThinkJet

CONFIGURING YOUR HP-IB THINKJET PRINTER AND
WORDSTAR (Revision 3.30, 3.3A, 3.3B)
ON THE HP 150 A/B

Introduction

To date, Hewlett-Packard has introduced two versions of WordStar for its Series 100 Personal Computers. The more recent revision, 3.3 runs on the HP 110 Portable and the HP 150, and most important to this application note, it directly supports the HP ThinkJet printer. The support for ThinkJet in revision 3.33 is very complete and therefore the upgrade is strongly recommended. (Contact HP's Supplies Operation at the number listed in the back of your ThinkJet Owner's Manual to order the upgrade kit.) The purpose of this application note is to describe how to best use the early revision of WordStar (3.30) with a ThinkJet printer.

WordStar provides you with a good deal of flexibility in formatting your printed output. For the most complete description of print formatting read Chapter 7 in your WordStar Reference Manual.

It is important to note that if you use WordStar without making any Winstall changes your printed output will have margins different than you might expect. The Running Winstall and Using Printer Features sections of this application note describe different ways in which you can change these "default" margins and other formatting features.

In WordStar there are two good ways to format your printed output. One is through Winstall, and the other is using Print Control and Dot Commands. In Winstall you can change the "default" or initial settings for a large number of WordStar features including printing format. The settings you input while in Winstall will be used every time you begin a new WordStar session: these become your new default. The Print Control and Dot Commands can be used to tailor the print format for a particular document. They are saved along with that document and can be changed interactively while running WordStar. A detailed discussion of how to set the defaults follows in the Running Winstall section of this application note; Print Control and Dot Commands are covered in Using Printer Features.

Hardware Configuration

See Hardware Application Note for the HP 150 with HP-IB interface, HP Part No. 5954-2907(54); use recommended hardware configuration.

Application Configuration

Running Winstall

Winstall is a program that is used to customize WordStar. With it you will prepare WordStar to work with your ThinkJet printer, and you will have the opportunity to tailor a variety of WordStar features to your needs.

The instructions on how to run Winstall can be found in Appendix A of the Wordstar Installation and Training Manual. First, follow the instructions to install WordStar on your "working" disk (floppy or hard) found on page A-8. Once installed, your "working" copy needs to be customized using Winstall. If you are using a 9121 disk drive (floppy), to run Winstall place your WordStar System Master in drive A and your "working" copy of WordStar in drive B. If you are using a 9133 disk drive (hard) place your WordStar System Master in drive B. Your "working" copy of WordStar is already on drive A. Now, follow the steps described below.

1. When in P.A.M. touch **Reread Discs** (f4 key).

2. Touch **Winstall** then touch **Start Applic** (f1 key).

3. Press any key to continue.

4. Press the **RETURN** key.

5. Type **WS** then press the **RETURN** key.

6. Press any key to continue.

7. If you are using a 9121 (floppy) disc drive:
   a. Type **B:** then press the **RETURN** key.
   b. Type **B:WS.COM** then press the **RETURN** key.
   c. Type **B:WS.COM** then press the **RETURN** key.

8. If you are using a 9133 (hard) disc drive:
   a. Type **A:** then press the **RETURN** key.
   b. Type **A:WS.COM** then press the **RETURN** key.
   c. Type **A:WS.COM** then press the **RETURN** key.

9. Press the **RETURN** key twice.

There are three selections in this menu, A, B, and C, which can be used to personally tailor your copy of WordStar. The first section below describes A), the Menu of Printers. This must be run in order for your ThinkJet to work properly with WordStar. Running C), the Menu of WordStar Features, is optional but included below is a description of printer settings that are commonly used.

The Menu of Printers

1. Type **A**. (Choose the Menu of Printers.)

2. Type **3**. (Choose Page 3 of Printer Types.)

3. Type **D**. (D selects backspacing standard.)

4. Press **RETURN** . (This confirms backspacing standard.)

The Menu of WordStar Features

The procedure outlined below describes how to set the right margin to 76, and the page offset to 2. This menu allows you to customize other printing features including: Omit-page-numbering, top margin, bottom margin, left margin, number of lines per page, and form feeds. These printing features are changed as shown below.

1. Type **C**. (Choose the Menu of WordStar Features.)

To change the right margin from 64 (default) to 76:

2. Type **L**. (L selects right margin.)

3. Type **C**. (C to change current setting.)

4. Type **#76** then press the **RETURN** key. (Set new margin at 76.)

5. Press **RETURN**. (This confirms the new setting of 76.)

To change the page offset from 8 (default) to 2:

2. Type **N**. (N selects page offset.)

3. Type **C**. (C to change current setting.)

4. Type **#2** then press **RETURN**. (Set new offset at 2.)

5. Press **RETURN**. (This confirms the new setting of 2.)

In either case:

6. Type **X**. (Exit to Installation Menu.)

To exit Winstall type **X**. On the way out of Winstall you will have the opportunity to review some of your new settings. SAVE your changes when you get to the Exit Options Menu by typing **A**.

Using Print Controls and Dot Commands

Print Controls and Dot Commands are used while you are running WordStar to format and enhance a specific document. The document must be opened in order to use these commands. All formatting and enhancements will be maintained right along with the document when it is saved.

All of the Print Controls and Dot Commands are summarized at the end of Chapter 7 in your WordStar Reference Manual. Glancing through these Summary Tables will give you a good idea of the printing features available in WordStar.

Dot Commands are used to format or layout your document. They provide you the ability to define settings like page length, margins, page numbering, headers, footers, etc. A dot command must begin in the first column with a dot followed by a valid command. An example dot command is **.OP** which will omit page numbering from the current page throughout the document.

Print Control Commands are primarily used for doing special effects or enhancements like bold, underlining, overstrike, strikeout, etc. Once a document has been opened a print menu can be displayed by holding down the **Ctrl** key and pressing **P**. This menu can be used as an easy reference or even more importantly to invoke a special effect. These enhancements can also be invoked from the main menu by pressing **Print Commands** (f2 key) then **Select Enhance** (f4 key) followed by the desired enhancement.

Helpful Hints

A good way to verify your installation and learn how to print using WordStar is to print out a document named PRINT.TST. There is a copy of this document on your System Master. Place the System Master in drive B, then follow the procedure below from P.A.M.

1. Touch **WordStar** then **Start Applic** (f1 key).

2. Touch **Print Options** (f3 key). (Print a file.)

3. Touch **Print a file** (f2 key).

4. Type **B:PRINT.TST** then **RETURN**. (Name of file to print.)

5. Type **N**. (Disc file output y/n.)

6. Press **RETURN**. (Start at page number? – Beginning . . .)

7. Press **RETURN**. (Stop after page number? – End.)

8. Type **Y**. (Use form feeds, Y/N?)

9. Type **N**. (Suppress page formatting, Y/N?)

10. Type **N**. (Pause for paperload between pages?)

11. Press the **RETURN** key. (Ready printer, press **RETURN**.)

After a short delay, the document will print out on your ThinkJet printer.

For a complete explanation of the steps in the above procedure see the Printing Files section of Chapter 9 in your WordStar Reference Manual.

Looking through the PRINT.TST. document that your ThinkJet has just produced will show you all of the printing capabilities available.

Remember that, when used with WordStar 3.30, the ThinkJet printer supports a single pitch and a single line height only. Also, the super and subscripts are printed a full line above or below the main line. However, WordStar can be customized to cause super and subscripts to be printed one-half a line above or below the main line of text. To make this change, run Winstall the same way you have in the past up to the point where the Installation Menu is displayed, then carefully follow the directions below.

1. Type **B**. (Choose Custom Installation of Printers.)
2. Press the **RETURN** key. (Read the displayed message then proceed.)
3. Type **L**. (Return/line feed.)
4. Press the **RETURN** key. (Return and line feed control sequence: leave unchanged.)
5. Press the **RETURN** key. (This confirms Rtn & Lf Ctrl Seq.)
6. Press the **RETURN** key. (Return (no line feed) control sequence: leave unchanged.)
7. Press the **RETURN** key. (This confirms Rtn Ctrl Seq.)
8. Type **C**. (Return and half line feed control seq: change.)
9. Type **0Dh** then press the **RETURN** key. (New value for return in hexadecimal.)
10. Type **1Bh** then press the **RETURN** key. (New value for escape in hexadecimal.)
11. Type **3Dh** then press the **RETURN** key. (New value for equal sign in hexadecimal.)
12. Press the **RETURN** key three times. (This enters zeros for the rest of the return and half-line feed function.)
13. Check the function code sequence, it should now be: **0Dh 1Bh 3Dh 0h 0h 0h**.
14. Press the **RETURN** key. (This confirms the new sequence and goes back to the Printer Install Menu.)
15. Type **X**. (Exit to the Installation Menu.)
16. Type **X**. (Exit from Install.)
17. Type **A**. (A saves the changes just made and exits to the operating system.)

While using super and subscripts, keep in mind that for them to print properly the line in the document above or below the main line must not have characters in it.

1-2-3®

Lotus Development Corporation ――――――― **ThinkJet**

CONFIGURING YOUR HP-IB THINKJET PRINTER AND
1-2-3 (Revision 1A)
ON THE HP 150,
AND THE HP-IL THINKJET PRINTER AND
1-2-3 (Revision 1A)
ON THE HP 110

Introduction

The Lotus 1-2-3 manual contains two sections that provide a complete description of how to use your ThinkJet Printer. One of these sections is the PRINT Command description in Chapter 15, and the other is the discussion of PrintGraph in Chapter 20. Each of these sections describe the "environments" in which Lotus 1-2-3 provides commands for printing. Throughout this note these environments will be referred to as 1-2-3 (Spreadsheet printing) and PrintGraph (Graphics printing).

Hardware Configuration

Hardware configuration is covered fully in the following application notes: HP 150 with HP-IB Interface—HP Part No. 5954-2907(54); and HP 110 with HP-IL Interface—HP Part No. 5954-2908(54).

System Configuration

No change to default MS-DOS setup is necessary before running 1-2-3.

Application Configuration

As mentioned earlier, Lotus 1-2-3 has two printing environments, 1-2-3 and PrintGraph, which are configured separately. 1-2-3 is the simplest to configure and will be described first, followed by the PrintGraph configuration.

1-2-3 Configuration:

If you are using an—
- HP 150 with an HP 9121 (Dual Floppy) Disk Drive, place the 1-2-3 System Disk in drive A.
- HP 150 with an HP 9133 (Hard) Disk Drive, place the 1-2-3 System Disk in drive B.
- HP 110: 1-2-3 is factory installed on drive B and configuration is saved on the E-Disk (drive A), therefore, there is no external disk required for saving 1-2-3 configuration.

1. Select Lotus 1-2-3 using the **TAB** key or cursor control keys, then touch **Start Applic** (f1 key) to run 1-2-3.

2. Once the empty spreadsheet appears, type **/WGDPI1**. This sequence of commands selects the Primary System Printer as the 1-2-3 output device. These are the correct commands if your system is configured as described in the Hardware Application Notes referenced above.

3. Type **AN**. (Auto-LF, No. This ensures the correct linefeeding.)

4. Type **QU**. (Quit, Update. This saves your interface configuration on the disk.)

5. Type **Q/QY**. (Quit, Command Mode, Quit, Yes. Exit 1-2-3, back to P.A.M.)

PrintGraph Configuration:

If you are using an—
- HP 150 with an HP 9121 (Dual Floppy) Disk Drive place the PrintGraph Disk in Drive A.
- HP 150 with an HP 9133 (Hard) Disk Drive, leave the 1-2-3 System Disk in drive B for your convenience.
- HP 110, place the HP 110 Utilities Disk in drive C (External Disk Drive).

From P.A.M. —

1. Touch **Reread Disks** (f4 key).

2. Use the **TAB** or cursor control keys to select PrintGraph, then run it by touching **Start Applic** (f1 key).

In addition to other selections, PrintGraph requires that you choose a driver from its library that will provide the capability of outputing graphics properly to your ThinkJet printer. The process of selecting the best driver is described below.

3. Type **CD**. (Configure, Device. This shows you the driver library.)

4. Use the cursor control keys to highlight HP 2225 ThinkJet Printer. If it is not listed as an option highlight the HP 82906A driver.

5. Press the **SPACE** key to mark the desired driver, then press the **RETURN** key.

6. Type **I1** to select the interface that your ThinkJet is tied to. This matches the configuration described in the Hardware Configuration section of this note.

7. Type **QOS** to specify the picture size settings. For full page pictures type **F**; for half page pictures type **H**.

8. a. If you are using the HP 2225 ThinkJet printer driver, the full and half page size settings work well. Go on to step 9.
   b. If you are using the HP 82906A printer driver the page size settings need to be changed to the values shown below. To do so, type **M**, then **L, T, W,** or **H** to change the Left, Top, Width, and Height settings followed by the corresponding value listed below, then press the **RETURN** key.

	Half Page	Full Page
Left margin	.362	0
Top margin	0	0
Width	7.8	8.0
Height	5.5	11.0

9. Type **QQCSR**. (Save, Replace. Saves new configuration.)

10. Type **Q**. (Quit. Back to main PrintGraph Display.)

All selections made under the Options and Configure branches of the PrintGraph menu can be saved at any time. This means that the next time you run PrintGraph your settings will come up automatically. This is accomplished by typing **CSRQ** from the main PrintGraph display.

Using Printer Features

The formatting for graphics output to ThinkJet is done through the use of PrintGraph, and is described in detail in the previous section. This section will concentrate on text output to your printer: this is all done in 1-2-3.

There are different ways to do page formatting, but the simplest way is to use the commands provided by Lotus. 1-2-3 has been designed such that you can define a general or default page format as well as unique formats for any spreadsheet you choose. The default format will be used unless you have specifically defined one for the current spreadsheet.

To define the default format, from the spreadsheet window type **/WGDP**. From here you can easily set your left, right, top and bottom margins, and your page length. After making your changes type **QUQ**. This will save your format on the disc so it will come back automatically next time.

By typing **/PPO** you can define a page format specific to the current spreadsheet. You now have the option to change headers, footers, margins, borders, and page length for this spreadsheet only. This format will be saved for future use with the spreadsheet by typing **QQ/FS** and the file name.

NOTE: Before you begin printing be sure that you have positioned the paper at the desired top-of-form then type **/PPA**. This will tell 1-2-3 that the paper is aligned with the beginning of a page.

For more advanced users, 1-2-3 provides the ability to send control codes and escape sequences directly to the printer. This is done by using what is called a setup string. Setup strings are available for both the default and current page formats. For the default format, type **/WGDPS**, or for the current format type **/PPOS**. 1-2-3 is now waiting for you to enter a setup string.

Printer Feature	Setup String**	Notes
Compressed Print	\027&k2S	142 characters per line Set right margin to 142 (MR 142)
Compressed-Expanded	\027&k3S	71 characters per line Set right margin to 71 (MR 71)
Normal Print*	\027&k0S	80 characters per line Set right margin to 80 (MR 80)
Bold Print Mode ON Bold Print Mode OFF*	\027(s1B \027(s0B	
6 Lines Per Inch*	\027&l6D	Set page length at 66 60 Printable lines per page 3 lines for header 3 lines for footer 0 top and bottom margin
8 Lines Per Inch	\027&l8D	Set page length at 88 82 printable lines per page 3 lines for header 3 lines for footer 0 top and bottom margin
Printer Reset	\027E	Reset to power-up defaults

–Press **RETURN key after typing string.
 *–Printer power-up default settings.

Your setup string will be the first characters sent to the printer when the **Go** command is executed. For more detailed information on these control codes and escape sequences, and others, see the ThinkJet Reference Manual. The setup strings you use can be saved on the disc the same way the page formatting is saved for either default or current spreadsheets.

Helpful Hints

Shift and **Print** keys can be used while running Lotus 1-2-3 to copy the display to the ThinkJet printer. For best results in graphics, save the graph and then use PrintGraph to output to your ThinkJet.

dBASE II ™
Ashton-Tate ———————————— ThinkJet

CONFIGURING YOUR HP-IB THINKJET PRINTER AND
dBASE II (Revision 2.4)
ON THE HP 150A/B

Introduction

We recommend that the user perform the tutorial provided in the red section of the dBASE II manual. The following sections of the dBASE II manual contain specific information on printer control and output:

Red Section of manual–Section 4
Gray Section of manual–Section 2

Hardware and System Configuration

See the Hardware Application Note for the HP 150 with HP-IB interface, HP Part No. 5954-2907(54); use recommended hardware configuration.

Application Configuration

From the P.A.M. menu do the following to run dBASE II on your HP 150.

(Note: The dBASE II program floppy disk must be in one of the drives to enter the dBASE II program, regardless of whether it is installed on a hard disk or not.)

For the HP 150 with the HP 9121D Disk Drive (dual floppy disks):

1. Select **MSDOS COMANDS** in the P.A.M. menu and touch **Start Applic.** (f1 key).

2. Put the dBASE II program disk into drive A.

3. Type **dbase** then press the **RETURN** key.

The dBASE II prompt, a period, will appear when the program is ready to be used.

For the HP 150 with the HP 9133 Disk Drive (hard disk):

1. Select **MSDOS COMANDS** from the P.A.M. menu then touch **Start Applic.** (f1 key).

2. Put the dBASE II program disk into drive B.

3. Type **COPY B:∗ . ∗ A:/V** then press the **RETURN** key.

To run the dBASE II Program:

1. Be sure the dBASE II program disk is in drive B.

2. Type **dbase** then press the **RETURN** key.

The dBASE II prompt, a period, will appear when the program is ready to be used.

Using Printer Features

To print data on the screen off onto the ThinkJet printer:

1. Type **SET PRINT ON** then press the **RETURN** key. Data displayed on the screen will print out on the ThinkJet printer.

   Type **SET PRINT OFF** then press the **RETURN** key. Data displayed on the screen will not be printed.

2. Press the **Ctrl** key and type **P** simultaneously. This is a toggle function that accomplishes the same thing as **SET PRINT ON / OFF**.

ThinkJet printing features can be accessed in the following ways:

1. To send a form feed to the ThinkJet printer:
   a. Type **SET PRINT ON** then press the **RETURN** key.
   b. Type **EJECT** and press the **RETURN** key.

2. To put the ThinkJet printer in compressed print mode:
   a. Type **SET FORMAT TO PRINT** then press the **RETURN** key.
   b. Type **@ 0,0 SAY chr(27)** + **'&k2S'** then press the **RETURN** key.

3. To put the ThinkJet printer in normal (12 cpi) print mode:
   a. Type **SET FORMAT TO PRINT** then press the **RETURN** key.
   b. Type **@ 0,0 SAY chr(27)** + **'&k0S'** then press the **RETURN** key.

4. To turn bold print ON:
   a. Type **SET FORMAT TO PRINT** then press the **RETURN** key.
   b. Type **@ 0,0 SAY chr(27)** + **'(s3B'** then press the **RETURN** key.

   To turn bold print OFF:
   a. Type **SET FORMAT TO PRINT** then press the **RETURN** key.
   b. Type **@ 0,0 SAY chr(27)** + **'(s0B'** then press the **RETURN** key.

5. To turn underline ON:
   a. Type **SET FORMAT TO PRINT** then press the **RETURN** key.
   b. Type **@ 0,0 SAY chr(27)** + **'&dD'** then press the **RETURN** key.

   To turn underline OFF:
   a. Type **SET FORMAT TO PRINT** then press the **RETURN** key.
   b. Type **@ 0,0 SAY chr(27)** + **'&d@'** then press the **RETURN** key.

6. To change line spacing:
   For 6 lines per inch spacing–
   a. Type **SET FORMAT TO PRINT** then press the **RETURN** key.
   b. Type **@ 0,0 SAY chr(27)** + **'&l6D'** then press the **RETURN** key.

   For 8 lines per inch spacing–
   a. Type **SET FORMAT TO PRINT** then press the **RETURN** key.
   b. Type **@ 0,0 SAY chr(27)** + **'&l8D'** then press the **RETURN** key.

7. To change the page length to 60 lines per page:
   a. Type **SET FORMAT TO PRINT** then press the **RETURN** key.
   b. Type **@ 0,0 SAY chr(27)** + **'&l60P'** then press the **RETURN** key.

This illustrates a method of sending print feature commands (also known as set-up strings or escape sequences) to the ThinkJet printer. The general form of the command is @ **row,column SAY string where chr(27)** in the string area represents the escape character (see the ThinkJet Reference Manual for print feature commands). The **EJECT** command resets the row,column position where the string is printed to 0,0. Refer to section 4 of the dBASE II manual for more information on these commands.

Helpful Hints

The following commands may also be used to send commands to the printer.

1. An alternate method of sending print feature commands to the ThinkJet printer is:
   a. Type **SET PRINT ON** then press the **RETURN** key.
   b. Type **? chr(27)** + **'&k2S'** then press the **RETURN** key. This enables compressed printing on the ThinkJet printer.

   Any string after a ? will be sent to the printer.

2. The **REPORT** command allows you to custom format the printout of a database file (for example, heading, margins, page length).

   a. Type **USE filename** then press the **RETURN** key. This opens an existing database called **filename** (enter the name of your file).

   b. Type **REPORT** then press the **RETURN** key. dBASE prompts the formatting information (such as headings, margins, line length and lines per page). The format information is stored in a file which is named by the user during this formatting session. For specific information and examples on the **REPORT** command, read section 2 of the gray dBASE II manual.

   c. The currently open database can be output to the printer using this custom format file by typing **REPORT FORM ‹format filename› TO PRINT**, then pressing the **RETURN** key.

3. To suppress the initial form feed to the printer when the **REPORT FORM ‹format filename› TO PRINT** command is used, type **SET EJECT OFF** then press the **RETURN** key.

4. Care should be taken to order a sequence of @ **row,column SAY string** commands such that the row positioning coordinate is in an increasing sequential order. For example, @ **5,5 SAY 'line 5'** should be sent to the printer before @ **10,5 SAY 'line 10'**.

5. Pressing the **ESC** key will terminate dBASE output to the printer. However, the printer will continue printing until its input buffer is empty.

6. Beware. Attempting to activate the printer when it is either not connected or not turned ON may "lock" the computer. Connecting and turning ON the printer should "unlock" the computer. Otherwise, the computer must be turned OFF, then ON again.

Diagraph ™

Computer Support Corporation ———————— **ThinkJet**

CONFIGURING YOUR HP-IB THINKJET PRINTER AND
DIAGRAPH (Revision 3.0)
ON THE HP 150 A/B

Introduction

Read the Diagraph Manual for instructions on its use. We highly recommend that the first-time Diagraph user complete the "learning by doing" lesson plans included in the manual.

Hardware Configuration

See the Hardware Application Note for the HP 150 with HP-IB interface, HP Part No. 5954-2907(54); use recommended hardware configuration.

System Configuration

No MS-DOS configuration is necessary before running Diagraph.

Application Configuration

The HP 150 must be configured for an HP-IB printer before Diagraph output can be directed to the ThinkJet printer.

From within the Diagraph program do the following to select the ThinkJet printer:

1. Press the **System** key on the HP 150 keyboard.

2. Touch **device control** (f1 key).

3. Touch **"to" devices** (f3 key).

4. Touch **HP-IB DEVICE** (f5 key) until the asterisk appears.

5. Press the other device choice keys until the asterisk disappears. (Pressing the key toggles the corresponding asterisk on or off.)

6. Press the **SHIFT** and **User** keys simultaneously to restore the Diagraph keys.

Printing from Diagraph

From the Primary Functions screen.

1. Touch **User Aids**.

2. Touch **Print Graphics**.

Your ThinkJet Printer will print what is displayed on the present Diagraph screen.

The information contained in this application note is intended for information purposes only and is subject to change without notice. Questions regarding Diagraph should be directed to Computer Support Corporation. Questions regarding the ThinkJet Printer should be directed to your nearest Hewlett-Packard dealer.

Diagraph is a trademark of Computer Support Corporation.

MemoMaker
Hewlett-Packard Co. _____ **ThinkJet**

CONFIGURING YOUR HP-IB THINKJET PRINTER AND
MemoMaker (Version A)
ON THE HP 150A/B

Introduction

The first-time MemoMaker user should work through the lesson plans provided in the MemoMaker manual to become familiar with the product. The following pages in the MemoMaker manual provide specific information on printer output:

Chapter 4—MemoMaker Keys and Functions, pages 4-16 through 4-18, and pages 4-30 through 4-32.

Hardware Configuration

See Hardware Application Note for the HP 150 with HP-IB interface, HP Part No. 5954-2907(54); use recommended hardware configuration.

System Configuration

No change to the MS-DOS default setup is necessary before running MemoMaker.

Application Configuration

To select PRN as the printing device in MemoMaker, do the following:

1. From the P.A.M. menu select **MemoMaker**.

2. Press the **Start Applic** (f 1) key.

3. The MemoMaker screen will appear.

4. Press the **Print Keys** (f 4) key.

5. Press the **f3** key until PRN: * appears on the screen.

MemoMaker will now output to the PRN device which you previously selected to be the ThinkJet printer. All MemoMaker printouts will now go to the ThinkJet printer.

Using Printer Features

MemoMaker supports two enhancements, underline and boldface. They are accessed in the following ways. From the Main Menu:

1. Press the **Block Keys** (f 2) key.

2. Position the cursor to the first character you desire enhanced.

3. Press the **Enhance Block** (f 5) key.

4. a. To underline, press the **Enhance: underln** (f 1) key until the asterisk (*) appears.
   b. For bold print, press the **Enhance: bold** (f 2) key until the asterisk appears.

5. Use the **RIGHT ARROW** or **LEFT ARROW** keys to highlight the text to be enhanced. (As the cursor moves over the text, the text will appear in inverse video.)

6. Press the **Block OK** (f 5) key to initiate the enhancement change to the selected text area.

7. a. Text areas selected for boldface will appear in bold on the screen.
   b. Text areas selected for underlining will appear italicized on the screen but will be printed as underlined upright characters.
   c. Previous enhancements will be removed from text areas selected for "no enhancements".

8. See your MemoMaker Manual for instructions on removing enhancements.

NOTE: MemoMaker supports only one enhancement on a portion of text at a time. For example, the same text area cannot have both underline and boldface enhancements. The last enhancement selected will be implemented.

To print your MemoMaker document to the ThinkJet printer, from the Main Menu do the following:

1. Press the **HOME UP** key to print the document. Printing will begin at the current cursor position and will continue to the end of the document file. Therefore, portions of a document can be printed, if desired.

2. Press the **Print Keys** (f 4) key.

3. If you would like the document printed with double spacing press the **Double Space** (f 1) key until the asterisk (*) appears. If single spacing is desired press this key until the asterisk disappears.

4. Press the **Auto Feed** (f 2) key until the asterisk (*) appears. This indicates that continuous feed paper is being used.

5. Press the **Print Memo** (f 5) key to print the document on the ThinkJet printer.

To insert page breaks in your document do the following from the Main Menu:

1. Press the **Print Keys** (f 4) key.

2. Position the cursor where you desire a page break and press the **Page Break** (f 4) key. A permanent page break marker appears amid the document on the screen. A form feed will be sent to the printer each time a page break marker is encountered.

NOTE: Single spaced printed pages from MemoMaker are 55 lines long unless they are shortened with a page break. Double spaced printed pages from MemoMaker are 28 lines long unless they are shortened with a page break.

Helpful Hints

The format you have set up for a given document can be saved on disc. It can then be installed in MemoMaker when working on that document so that all the settings do not have to be re-entered. The current format settings can be saved and retrieved with the following steps.

To save a format file, from the Main Menu:

1. Press the **File Keys** (f 1) key.

2. Press the **Save Format** (f 4) key.

3. Type a filename for the format file to be saved then press the **RETURN** key or press the **STARTUP.FMT** (f 1) key (see note below).

To retrieve a file, from the Main Menu:

1. Press the **File Keys** (f 1) key.

2. Press the **Get Format** (f 3) key.

3. Type the filename of the format file to be retrieved, then press the **RETURN** key.

To change your print margins back:

5. Type **M**. (This puts you in the Print Margins command.)

6. Type **O**.

7. Press the **TAB** key twice. (This will put you in the print width field.)

8. Type 80. (This will give you 80 columns of printing.) Press the **RETURN** key.

9. Type **P** or press the **RETURN** key for a printout, or press the **ESC** key to return to the Multiplan main command menu. The changes will be saved for this session of Multiplan.

Helpful Hints

To verify a setup string from the main menu type **P** then **O**. This will put you in the Print Options menu and the setup field will be displayed.

To copy what appears on the screen to the printer type **P** twice. All characters on the screen will be printed.

Other Print Options setup strings include:

Feature	Setup String
Normal	^[&&k0S
Expanded	^[&&k1S
Expanded-Compressed	^[&&k3S
Bold ON	^N
Bold OFF	^O
6 LPI	^[&&l6D
8 LPI	^[&&l8D

Picture Perfect™

Computer Support Corporation _____ **ThinkJet**

CONFIGURING YOUR HP-IB THINKJET PRINTER AND
PICTURE PERFECT (Revision 3.0)
ON THE HP 150 A/B

Introduction

Picture Perfect is an easy to learn and use graphics program that is primarily designed for high-quality output to Hewlett-Packard plotters. This program does, however, provide the capability to send quick output to HP graphics printers including ThinkJet. The purpose of this application note is to describe how to make Picture Perfect and ThinkJet work together to quickly produce "working" hardcopy.

Configuration

See Hardware Application Note for the HP 150 with HP-IB interface, HP Part No. 5954-2907(54); use recommended hardware configuration.

To verify configuration while running Picture Perfect see the Helpful Hints section of this application note.

Using Printer Features

Once each of the Picture Perfect products (horizontal and vertical bar, pie and line) have been installed as explained on pages 6 and 7 of the Picture Perfect Manual, you may run any one of them and plot a graph on the screen. If you are unfamiliar with how to create and plot a graph follow the steps below.

To plot a sample graph on the screen once Picture Perfect is running:

1. Touch **Load Save** (f4 key).
2. Touch **File Manager** (f7 key).
3. Touch **PPerfect Chart** (f2 key).
4. Touch any **Sample** file.
5. Touch **Return Chart** (f1 key).
6. Touch **Back to PPerfect** (f8 key).
7. Touch **Load Chart** (f6 key).
8. Touch **Yes** (f4 key).
9. Touch **Plot** (f3 key).
10. Touch **Plot to Screen** (f3 key).

To print the displayed graph:

1. Touch **User Aids** (f6 key).
2. Touch **Print Utility** (f4 key).
3. Touch **Print Graphics** (f4 key).

After a slight delay ThinkJet will print your graph.

To print the information used in creating the graph:

1. Repeat steps 1-2 above under "To print the displayed graph."

2. Touch **Print Menus** (f5 key). Displays menu of printable types of information.

3. Print your graph by touching any of the valid sections.

Helpful Hints

While running Picture Perfect it is possible to interactively change or verify configuration and access certain printer controls. To do so:

1. Press the **User System** key.

2. Touch **Device Control** (f1 key).

3. Touch **"to"** devices (f3 key).

4. Touch **HP-IB DEVICE** (f5 key). An asterisk must appear in the field indicating the device has been selected. Be sure that the asterisk appears only in the desired field.

5. Touch **Device Control** (f4 key).

6. Touch **ADVANCE PAGE** (f4 key) or **ADVANCE LINE** (f5 key) to position the paper as you desire.

7. To return to the Picture Perfect Menu hold down the **SHIFT** key then press the **User System** key.