

# HEWLETT-PACKARD

## HP-71/HP-75 to HP 150/IBM PC/XT/AT File Transfers

### Summary

This application note provides instructions for transferring ASCII (TEXT) files between an HP-71 or HP-75 Handheld Computer and an HP 150 or IBM PC/XT/AT computer.

Procedures, instructions, and/or programs are provided for each step in the transfer process. These steps include:

- Enter the BASIC data transfer program (XFERPC) into handheld computer (either HP-71 or HP-75)
- Configure the HP 150 or IBM computer
- Connect system components

Listings of programs for the following functions are included:

- Interactive configuration of the HP 82164A HP-IL/RS-232C Interface
- TEXT file upload from an HP-71 or HP-75 to either an HP 150 or IBM PC/XT/AT
- TEXT file download from an HP 150 or IBM PC/XT/AT to an HP-71 or HP-75

This note assumes you have a working knowledge of the products involved.

Appendix A provides instructions and programs to allow conversion of HP-71 or HP-75 DATA files into TEXT files. After conversion, these TEXT files can be uploaded to the HP 150 or IBM using the XFERPC program for the appropriate handheld computer.

HP-71 or HP-75 BASIC programs may be transformed into TEXT files for uploading. Refer to Owner's Manual for instructions.

\*The programs in this document have not been tested with a modem.

Crosstalk® is a registered trademark of Microstuf, Inc.

Indicates an HP 150 or IBM key.

Indicates an HP-71 or HP-75 key.

### Required Equipment

- Either: HP-71 Handheld Computer and HP 82401A HP-IL Interface  
OR  
HP-75 Handheld Computer plus 00075-15001 I/O ROM or Users' Library 00075-13013 I/O Utilities
- HP 82164A HP-IL/RS-232C Interface and HP-IL Cables (2)
- Either: HP 150A, B, or C, RS-232C Cable and HP 45431A Advance/Link or HP 45425A DSN/Link  
OR  
IBM PC, AT, or XT, RS-232C Cable and Crosstalk® XVI (Data Communications System Software)

### Hardware Configuration\*

#### HP-IL/RS-232C Interface

Configure the HP-IL/RS-232C Interface as a DCE terminal. See page 21 of the Interface Owner's Manual for instructions.

#### RS-232C Cable (for HP 150)

Use a male to female RS-232C cable with pins wired end-to-end.

#### RS-232C Cable (for IBM)

Use a cable with pins wired end-to-end, one connector female and the other connector as required by the COM1 port of the IBM.

### HP-71/HP-75 to HP 150 File Transfers

This section provides an explanation of how to enter the XFERPC program into your handheld computer; configure the HP 150, PORT 1 and MS-DOS; and connect system components.

### Procedure

1. Enter the program XFERPC on either the HP-71 or HP-75 (refer to Owner's Manual for instructions). Be sure to use the BASIC program specified for the handheld computer you are using. If you are using the HP-75, the "HPILCMDS" file must be resident in the machine before loading XFERPC. Both the Users' Library I/O Utilities and the HP-75 I/O ROM contain HPILCMDS.
2. Configure the HP 150 as follows:
  - Ensure that the HP 150 is in terminal mode. (Press **f6** from the main menu if in P.A.M.)
  - Press **User System**, **f8** (config keys), then **f1** (global config).
  - Configure the HP 150 as a computer and ensure that Port 1 is the remote device.
  - Press **f1** to save the configuration.
3. Configure Port 1 as follows:
  - Press **f8** (config keys), then **f3** (Port 1 config). The following menu will appear.

| FULL DUPLEX HARDWIRED Port 1 |          |              |      |             |    |             |     |
|------------------------------|----------|--------------|------|-------------|----|-------------|-----|
| BaudRate                     | 9600     | Parity       | None | DataBits    | 8  | Clock       | INT |
| Asterisk                     | Off      |              |      | Stop Bits   | 1  | EnqAck      | No  |
| TR(CD)                       | Hi       | Check Parity | No   | SR(CH)      | Lo |             |     |
| RecvPace                     | Xon/Xoff | SRRXmit      | No   | RR(CF) Recv | No |             |     |
| XmitPace                     | Xon/Xoff | SRRInvert    | No   | CS(CB) Xmit | No | DM(CC) Xmit | No  |

- Press **f1** to save the Port 1 configuration.
- Press **Shift** and **Stop** simultaneously to return to the P.A.M. menu.

4. Configure MS-DOS as follows:
  - Run DEVICE CONFIG from the P.A.M. menu.
  - Set COM1 to Remote and press **f4** to save the configuration.
  - Press **f8** to exit DEVICE CONFIG.
5. Set up the system as follows:
  - Connect the RS-232C cable to the HP-IL/RS-232C Interface and to Port 1 of the HP 150.
  - Connect the HP-IL cables to the HP-IL/RS-232C Interface and to either the HP-71 or HP-75. NOTE: If using the HP-75, the interface must be the first device on the HP-IL loop.
6. Program the HP 150 as follows:
  - Create a file entitled "DOWNLOAD" on the HP 150 using the commands listed below. This file will be used as a command file by Advance/Link (or DSN/Link), and it is recommended that both reside on the same disc.
  - To create the file, use an HP 150 editor such as EDLIN, a word processing program such as WordStar® (in the NON-DOCUMENT MODE), or the MS-DOS Copy con (copy from console) command. To use the Copy con command, run MS-DOS commands from the P.A.M. menu.
    - Type "Copy con DOWNLOAD" and type each line of text as it appears below. Refer to the Advance/Link (or DSN/Link) Owner's Manual for a description of the commands used in the command file.
    - Where applicable, press **Shift** and **6** to input the control character "**~**" in the program.
    - Precede the file name with a disc drive identifier if the DOWNLOAD file is to be created on a disc other than the default.
    - Press **CTRL** **Z** to terminate the command, and type "PAM" to return to the P.A.M. menu.

| Keystrokes  | Comment                       |
|---|-------------------------------|
| &MSG '^[H~J'  | Home cursor and clear display |
| &ASSIGN &P1   | Assign P1 to text             |
| &MSG  |                               |
| &INPUT 'File to Download?,&P1                       | Input filename for P1         |
| &MSG '^[&dB Downloading<br>data...'                 |                               |
| &SENDFILE &P1                                       | Send file to host             |
| &SEND ^D  | Send EOT character            |
| &MSG  |                               |
| &MSG '^[&dB Transfer Complete'                      |                               |
| &MSG  |                               |
| &MSG '^[&dB Choose another<br>softkey to continue.' |                               |

## Operation

### Transferring files from the HP-71 or HP-75 to the HP 150 (Upload)

This section provides an explanation of the steps required to upload TEXT files from your handheld computer to the HP 150.

1. Configure the HP 150 and run Advance/Link (or DSN/Link).
2. From the main menu, press **f4** (Logging Options), then **f1** (Local file). Enter the name of the local log file (the file to be stored after uploading) and press **Return**. If a file by that name does not already exist, an asterisk will appear in the "Local File" and "Logging" key labels. The HP 150 is now ready to receive data.
3. Run "XFERPC" on the HP-71 or HP-75. When prompted, press **U** to upload data. (It is not necessary to press **ENDLINE** / **RTN**.) Enter the name of the file you wish to upload to the HP 150. "Uploading data . . ." will appear in the display.
4. Each line of uploaded data will appear in the display of the HP 150 as it is received. When the transfer is complete, press **f1** to store the uploaded file on disc.
5. "Transfer another file?" will appear in the display of the HP-71 or HP-75 when the transfer is complete. Press **Y** to transfer another file, or **N** to end the program.

### Transferring files from the HP 150 to the HP-71 or HP-75 (Download)

This section provides an explanation of the steps required to download files from the HP 150 to your handheld computer.

1. Configure the HP 150 and run Advance/Link (or DSN/Link).
2. From the main menu, press **f3** (Command), then **f1** (Command File). The HP 150 will prompt for the name of the command file to be used to download files to the handheld computer. Enter "DOWNLOAD", using a disc label identifier if necessary, and press **Return**.
3. Run "XFERPC" on the HP-71 or HP-75. Press **D** to download data. (It is not necessary to press **ENDLINE** / **RTN**.) Enter the name of the file to be downloaded from the HP 150. This name need not be the same name as the file being downloaded from the HP 150. "Downloading data..." will appear in the display. At this point the HP-71 or HP-75 is ready to receive data.
4. On the HP 150, enter the name of the local file to be downloaded, being sure to include a disc label identifier if applicable. Press **Return** to begin the transfer. Once the data has been downloaded, "Transfer Complete" will appear in the HP 150 display.
5. "Transfer another file?" will appear in the display of the HP-71 or HP-75 when the transfer is completed. Press **Y** to transfer another file, or **N** to end the program.

6. Depending on the format of the HP 150 source file (the file being downloaded), the resulting HP-71 or HP-75 TEXT file may contain unnecessary "blank" lines. If these are unacceptable, they should be deleted.

### HP-71/HP-75 to IBM PC/XT/AT File Transfers

This section provides an explanation of how to set up the system; enter the XFERPC program into your handheld computer; and set up script and command files for the Crosstalk software on the IBM.

#### Procedure

1. Set up the system as follows:
  - Connect the RS-232C cable to the HP-IL/RS-232C Interface and to COM1 of the IBM.
  - Connect the HP-IL cables to the HP-IL/RS-232C Interface and to either the HP-71 or HP-75. NOTE: If using the HP-75, the interface must be the first device on the HP-IL loop.
2. Enter the program XFERPC on either the HP-71 or HP-75. Be sure to use the BASIC program specified for the handheld computer you are using. If you are using the HP-75, the "HPILCMDS" file must be resident in the machine before loading XFERPC. (Both the Users' Library I/O Utilities and the HP-75 I/O ROM contain this file.)
3. If you don't already have one, follow the Crosstalk instructions to create a working copy of the Crosstalk disc. Put this disc in drive B.

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4. With the MS-DOS disc in drive A, use EDLIN to input the XFERPC.XTS Script File (see programs at the end of this note) onto the Crosstalk disc. Where applicable, press **↑** and **⑥** to input the control character “^”.

The IBM will prompt you with: A>

On IBM type in: edlin b:xferpc.xls

Press: **ENTER**

5. Make B the default drive. The IBM will prompt you with: A>

Type in: b:

Press: **ENTER**

Then load the Crosstalk software. The IBM will prompt you with: B>

Type in: xtalk

Press: **ENTER**

6. Choose NEWUSER from the selection displayed on the IBM. Set up the XFERPC.XTK file by responding to the prompts as follows (press **ENTER** after each response unless otherwise noted):

| Prompts  | Responses                     |
|--|-------------------------------|
| <b>Enter phone number:</b>                               | RS232                         |
| <b>Enter system name or comments:</b>                    | XFERPC                        |
| <b>0110,300,600,1200,2400,4800, or 9600</b>              |                               |
| <b>baud?</b>   | 9600                          |
| <b>Do you want to save this setup in a command file?</b> | y (don't press <b>ENTER</b> ) |
| <b>Save settings in what file?</b>                       | XFERPC.XTK                    |
| <b>To begin the ... command prompt.</b>                  |                               |
| <b>Press <b>ENTER</b>:</b>                               | <b>ENTER</b>                  |
| <b>Command?</b> (DO NOT type in GO)                      | LO XFERPC.XTS                 |

7. Follow the instructions in the display on the IBM from this point on. Subsequent use of the routine will load XFERPC.XTS automatically when you load the XFERPC command file.

8. Sample prompts and responses for downloading a file named TEST from the IBM PC to the HP-71 or HP-75 are shown below.

■ On the IBM:

| Prompts  | Response   |
|--|------------|
| Do you want to UPLOAD, DOWNLOAD or END transfer routine?   | <b>(D)</b> |
| (IBM will display)   |            |
| To DOWNLOAD a file to the HP71 or HP75:  |            |
| ON HP: Run XFERPC, then following instructions in the display, choose D, enter filename.   |            |
| ON IBM: As requested on the command line, press <b>ENTER</b> , then type <b>SEND</b> filename then <b>ENTER</b> again. When <b>COMMAND?</b> returns, transfer is done, type in <b>DO</b> then <b>ENTER</b> . |            |
| <b>Script processing suspended – use DO alone to restart.</b>  |            |
| <b>press <b>ENTER</b>:</b>   |            |

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9. Implement the above instructions by doing the following:

- On the HP-71 or HP-75, key in: run 'XFERPC' (quotation marks are optional with the HP-71)
- Subsequent HP-71 or HP-75 prompts and your responses are:

| Prompts                | Responses                        |
|------------------------|----------------------------------|
| Upload or Download?    | <input type="button" value="D"/> |
| File to Download: ?    | TEST                             |
| Downloading data . . . | (no response needed)             |

- Prompts and responses on the IBM are:

| Prompts                                     | Responses                            |
|---|--------------------------------------|
| <b>Command?</b>                             | <input type="button" value="ENTER"/> |
| <b>Sending b:TEST....press Esc to stop.</b> | send test<br>(no response needed)    |

- Subsequent command lines on the IBM should be similar to the following:

| Prompts                                      | Responses  |
|--|--|
| <b>Command?</b>                              | do   |
| <b>Do you want to transfer another file?</b> |  |
| <b>Y or N</b>                                | <input type="button" value="Y"/> or <input type="button" value="N"/> |

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## Operation

### Transferring files between the IBM and HP-71 or HP-75 (Upload and Download)

This section provides an explanation of the steps required to upload and download files between the IBM and HP-71 or HP-75.

1. The first time you transfer files, follow all the steps described in the Procedure section.
2. After the first time you transfer files, follow steps 1, 2 and 5 in the Procedure section. Then:
  - Choose XFERPC from the selection displayed on the IBM.
  - To upload or download files, type in  or  and follow the instructions in the IBM display.
3. You will have the opportunity to end the transfer routine when you are finished uploading and downloading files. The IBM will display: Do you want to transfer another file? Y or N
  - Press  or  and follow the prompts.
  - The HP-71 or HP-75 will display: Transfer another file?
  - Press  to transfer another file or  to end the program.
4. Depending on the format of the IBM source file (the file being downloaded), the resulting HP-71 or HP-75 TEXT file may contain unnecessary "blank" lines. If these are unacceptable, they should be deleted.

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## Programming

### XFERPC Program for the HP-71 Handheld Computer

| Line | # Keystrokes                                     | Comment   |
|------|--|---|
| 100  | CALL XFERPC @ END !REV A 8/01/85                 |   |
| 110  | SUB XFERPC!                                      |   |
| 120  | R\$=PEEK\$(2F946',4)                             | Save delay setting.                                 |
| 130  | DELAY 0,0  |   |
| 140  | DIM L\$[96]                                      |   |
| 150  | RESTORE IO                                       |   |
| 160  | REMOTE :RS232                                    |   |
| 170  | OUTPUT :RS232<br>'SBE;C0;C2;P4,SW0;SS0;SL7;'     | Configure HP 82164A using remote mode instructions. |
| 180  | LOCAL  |   |
| 190  | DISP 'Upload or Download?'                       |   |
| 200  | K\$=KEY\$ @ IF K\$=' ' THEN 200                  |   |
| 210  | IF K\$='U' THEN GOSUB 310                        | Upload to PC.                                       |
| 220  | IF K\$='D' THEN GOSUB 460                        | Download from PC.                                   |
| 230  | IF K\$<>'U' AND K\$<>'D' THEN BEEP<br>@ GOTO 190 |   |
| 240  | DISP 'Transfer another file?'                    |   |
| 250  | K\$=KEY\$ @ IF K\$=' ' THEN 250                  | Transfer another file.                              |
| 260  | IF K\$='Y' THEN 190                              | End program.  |
| 270  | IF K\$='N' THEN 680                              |   |
| 280  | BEEP @ GOTO 240                                  |   |
| 290  | OFF ERROR  | Error handling routine.                             |
| 300  | DISP F\$,' not found' @ BEEP @ WAIT 1            | Nonexistent file name.                              |
| 310  | INPUT 'File to Upload: ','?';F\$                 | Upload routine.                                     |
| 320  | IF F\$='?' THEN 310                              |   |
| 330  | ON ERROR GOTO 290                                |   |
| 340  | CAT F\$  | Insure specified file exists.                       |
| 350  | OFF ERROR  |   |
| 360  | DISP 'Uploading data...'                         |   |
| 370  | ASSIGN #1 TO F\$                                 |   |
| 380  | ON ERROR GOTO 430                                |   |
| 390  | READ #1;L\$                                      | Prepare for end-of-file condition.                  |
| 400  | OFF ERROR  | Read a line of text.                                |
| 410  | OUTPUT :RS232 ;L\$                               |   |

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| Line  | # Keystrokes | Comment                                     |
|---|--------------|---|
| 420 GOTO 380  |              |   |
| 430 OFF ERROR   |              |   |
| 440 IF ERRN<>54 THEN BEEP @ DISP<br>'ERR L';ERRL;':' ;ERRMS @ PAUSE |              | If not end of file, error halts<br>program. |
| 450 GOTO 630  |              |   |
| 460 INPUT 'File to Download: ','?';F\$                              |              | Download routine.                           |
| 470 IF F\$='?' THEN 460   |              |   |
| 480 DISP 'Downloading data...'                                      |              |   |
| 490 CREATE TEXT F\$   |              |   |
| 500 ASSIGN #1 TO F\$  |              |   |
| 510 DIM L1\$[96]  |              |   |
| 520 F=FLAG(-23,1)   |              | Save Flag -23 setting and<br>set Flag -23.  |
| 530 L\$=' '   |              |   |
| 540 OUTPUT :RS232 USING '#,K';CHR\$(17)                             |              | Signal PC to send a line of<br>text.        |
| 550 ENTER :RS232 ;L1\$  |              | Receive data from PC.                       |
| 560 L\$=L\$&L1\$  |              | Add data to current line.                   |
| 570 IF NOT POS(L\$,CHR\$(13)) THEN 550                              |              | Check for end of record.                    |
| 580 IF L\$[1,1]=CHR\$(4) THEN 620                                   |              | Check for end of file.                      |
| 590 PRINT #1;L\$[1,POS(L\$,CHR\$(13))-1]                            |              | Store a line of text.                       |
| 600 L\$=L\$[POS(L\$,CHR\$(13))+1]                                   |              | Update current line.                        |
| 610 IF POS(L\$,CHR\$(13)) THEN 580 ELSE 540                         |              | Check for another end-of-<br>record.        |
| 620 F=FLAG(-23,F)   |              | Restore Flag -23 setting.                   |
| 630 ASSIGN #1 TO *  |              |   |
| 640 DISP 'Transfer complete'  |              |   |
| 650 WAIT 1  |              |   |
| 660 RETURN  |              |   |
| 670 DISP 'Done'   |              |   |
| 680 POKE '2F946',R\$  |              | Restore delay setting.                      |
| 690 END SUB   |              |   |
| 700 SUB VER(V\$)  |              | Version subprogram.                         |
| 710 V\$='A' @ END SUB   |              |   |

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### XFERPC Program for the HP-75 Handheld Computer

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| Line | # Keystrokes   | Comment  |
|------|--|--|
| 100  | ASSIGN IO ':RS'  |  |
| 110  | ! REV A 8/01/85  |  |
| 120  | DELAY 0  |  |
| 130  | DIM L\$[96]  |  |
| 140  | SENDIO<br>':RS','UNL,REN,LAD#','SBE;C0;C2;P4;SW0;<br>SS0;SL7;' | Configure HP 82164A<br>using Remote mode<br>instructions |
| 150  | SENDIO ' ','NRE','   |  |
| 160  | DISP 'Upload or Download?'                                     |  |
| 170  | K\$=UPRC\$(KEY\$) @ IF K\$=' ' THEN 170                        |  |
| 180  | IF K\$='U' THEN GOSUB 280                                      |  |
| 190  | IF K\$='D' THEN GOSUB 430                                      |  |
| 200  | IF K\$<>'U' AND K\$<>'D' THEN BEEP<br>@ GOTO 160               |  |
| 210  | DISP 'Transfer another file?'                                  |  |
| 220  | K\$=UPRC\$(KEY\$) @ IF K\$=' ' THEN 220                        |  |
| 230  | IF K\$='Y' THEN 160  |  |
| 240  | IF K\$='N' THEN 610  |  |
| 250  | BEEP @ GOTO 210  |  |
| 260  | OFF ERROR  | Error handling routine.                                  |
| 270  | DISP F\$; not found' @ BEEP @ WAIT 1                           | Nonexistent file name.                                   |
| 280  | INPUT 'File to Upload: ','?';F\$                               | Upload routine.  |
| 290  | IF F\$='?' THEN 280  |  |
| 300  | ON ERROR GOTO 260  |  |
| 310  | CAT F\$  | Insure specified file exists.                            |
| 320  | OFF ERROR  |  |
| 330  | DISP 'Uploading data...'                                       |  |
| 340  | ASSIGN # 1 TO F\$  |  |
| 350  | ON ERROR GOTO 400  |  |
| 360  | READ # 1 ; L\$   | Prepare for end of file<br>condition.                    |
| 370  | OFF ERROR  | Read a line of text.                                     |
| 380  | SENDIO<br>':RS','UNL,LAD#',L\$&CHR\$(13)&CHR\$(10)             |  |
| 390  | GOTO 350   | Send a line of text to PC.                               |
| 400  | OFF ERROR  |  |
| 410  | IF ERRN<>34 THEN BEEP @ DISP<br>'ERROR line';ERRL @ STOP       | If not end of file, error halts<br>program.              |
| 420  | GOTO 570   |  |
| 430  | INPUT 'File to Download: ','?';F\$                             | Download routine.  |
| 440  | IF F\$='?' THEN 430  |  |
| 450  | DISP 'Downloading data...'                                     |  |
| 460  | ASSIGN # 1 TO F\$,TEXT   |  |
| 470  | DIM L1\$[96]   |  |
| 480  | L\$=' '  |  |
| 490  | SENDIO ':RS','UNL,LAD#',CHR\$(17)                              | Signal PC to send a line of<br>text.                     |
| 500  | L1\$=ENTIO('RS','UNL,TAD#,SDA')                                | Receive data from PC.                                    |
| 510  | L\$=L\$&L1\$   | Add data to current file.                                |
| 520  | IF NOT POS(L\$,CHR\$(13)) THEN 500                             | Check for end of record.                                 |
| 530  | IF L\$[1,1]=CHR\$(4) THEN 570                                  | Check for end of file.                                   |
| 540  | PRINT # 1 ; L\$[1,POS(L\$,CHR\$(13))-1]                        | Store a line of text.                                    |
| 550  | L\$=L\$[POS(L\$,CHR\$(13))+1]                                  | Update current line.                                     |
| 560  | IF POS(L\$,CHR\$(13)) THEN 530 ELSE 490                        | Check for another end of<br>record.                      |
| 570  | ASSIGN # 1 TO *  |  |
| 580  | DISP 'Transfer Complete'                                       |  |
| 590  | WAIT 1   |  |
| 600  | RETURN   |  |
| 610  | DISP 'Done'  |  |
| 620  | END  |  |

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## XFERPC.XTS Script File for Crosstalk Transfer Program.

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Line

# Keystrokes

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```
1 LABEL Begin
2 GO LOCAL
3 screen s
4 cls
5 message
6
7 Do you want to UPLOAD, DOWNLOAD or END transfer routine?
8
9 ASK Enter U, D, or E:
10 If-UDE Jump Begin
11 JUMP DO-@
12
13 LABEL DO-U
14 screen s
15 cls
16 message
17
18 To UPLOAD a file from the HP71 or the HP75:
19 ON IBM: As requested on Command line press ENTER, then type CA
20     filename and press ENTER again.
21 ON HP: Run XFERPC choosing U. Follow the instructions in the
22     display.
23 ON IBM: When transfer is done, type in DO and press ENTER.
24
25 wait MA
26 CA -
27 cls
28 ASK Do you want to transfer another file? Y or N
29 If Y rwind
30 JUMP DO-E
31
32 LABEL DO-D
33 LW Char "^Q"
34 screen s
35 cls
36 message
37
38 To DOWNLOAD a file to the HP71 or the HP75:
39 ON HP: Run XFERPC, then following instructions in the display, choose D,
40     enter filename.
41 ON IBM: As requested on the command line, press ENTER, then type SEND
42     filename then ENTER again. When COMMAND? returns, transfer
43     is done, type in DO then ENTER.
44
45 wait MA
46 REPLY "^M"          Press "Crtl M"
47 REPLY "^D^M"         Press "Crtl D Crtl M"
48 cls
49 ASK Do you want to transfer another file? Y or N
50 If Y rwind
51 JUMP DO-E
52
53 LABEL DO-E
54 cls
55 ASK Do you want to leave XTALK? Y or ENTER
56 If Y QUIT
57 DO-
58 LO-
59 ; the end
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## Appendix A

### Converting DATA Files to TEXT Files in Preparation for Transfer

The following program, in separate versions for the HP-71 and HP-75, can be used to convert a DATA file into a TEXT file, thus extending the functionality of the XFERPC program. This program is analogous to a hypothetical BASIC command "TRANSFORM <data file> INTO TEXT", which is not available on the HP-71 or HP-75. (Actually, the transformation of an HP-75 BASIC file containing DATA statements into TEXT is possible, but the resulting TEXT file probably won't be in the format desired for data transfer.)

The program is called DATATEXT (convert DATA file to TEXT) and works independently of the program called XFERPC. To use it in conjunction with XFERPC, run DATATEXT first to convert one or more DATA files to TEXT, then use XFERPC for the actual data transfer.

Because of the differences between DATA and TEXT files, DATATEXT must use an arbitrary method for conversion. The method is defined as follows:

- Each numeric item in a DATA file is converted to a string of the minimum number of numerals consistent with presenting maximum accuracy (this corresponds to the HP-75 display format and the HP-71 format STD). The numeral string is then stored sequentially into the TEXT file.
- Each string item in a DATA file is stored, unchanged, sequentially into the TEXT file. String items longer than 96 characters cause an error, and must be modified before using DATATEXT. (Refer to HP-71 or HP-75 Owner's Manual for details.)

### Procedure

1. Load the correct version of DATATEXT into the HP-71 or HP-75. Note that during the conversion process, DATATEXT requires that there be enough free RAM for both the original DATA file (if in main memory) and the resulting TEXT file.
2. Type: RUN "DATATEXT" **[ENDLINE]** / **[RTN]**. (Quotation marks are optional with the HP-71.)
3. At the prompt, "DATA file:?", key in the name of the DATA file to be converted to TEXT and press **[ENDLINE]** / **[RTN]**. With an HP-75, the DATA file must be in main memory; with an HP-71, a DATA file on mass storage or independent RAM can be indicated by appending a device specifier to the file name.
4. The computer will display "*\*\* Working \*\**" as each DATA file item is converted to text and stored into a dummy TEXT file called "XXX".
  - When completed, the computer will purge the original DATA file, so be sure to keep a copy if needed.
  - Next, the computer will rename or copy the dummy file "XXX" to the original DATA file name, purge "XXX" (if applicable), and then display "Done".

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## Programming

### DATATEXT Program for the HP-71

| Line | # Keystrokes   | Comment   |
|------|--|---|
| 100  | CALL DATATEXT  |   |
| 110  | END  |   |
| 120  | SUB DATATEXT!  |   |
| 130  | R\$=PEEK\$(‘2F946’,4)  | Save DELAY setting.                                 |
| 140  | DELAY 0  |   |
| 150  | D\$=PEEK\$(‘2F6D9’,5)  | Save display format.                                |
| 160  | STD  |   |
| 170  | DIM S\$[96]  |   |
| 180  | INPUT ‘DATA file: ’,’?’,F\$                                  |   |
| 190  | DISP TAB(6);* Working *                                      |   |
| 200  | CREATE TEXT XXX  | Create dummy TEXT file.                             |
| 210  | ASSIGN #1 TO F\$   |   |
| 220  | ASSIGN #2 TO XXX   |   |
| 230  | ON ERROR GOTO 310  |   |
| 240  | READ #1;N  | Set up “data type” and end of file detection.       |
| 250  | OFF ERROR  | Attempt to read numeric item.                       |
| 260  | S\$=STR\$(N)   |   |
| 270  | GOTO 290   | Convert numeric item to string.                     |
| 280  | READ #1;S\$  | Read string item.                                   |
| 290  | PRINT #2;S\$   | Store string item or string-formatted numeric item. |
| 300  | GOTO 230   | Error handling routine.                             |
| 310  | OFF ERROR  | If error is “data type”, read string item.          |
| 320  | IF ERRN=31 THEN 280  | If not end of file, error halts program.            |
| 330  | IF ERRN<>54 THEN BEEP @ DISP ‘ERR L’;ERRL,’.’;ERRM\$ @ PAUSE |   |
| 340  | ASSIGN #1 TO *   |   |
| 350  | ASSIGN #2 TO *   |   |
| 360  | PURGE F\$  |   |
| 370  | COPY XXX TO F\$  | Copy new file to old file name.                     |
| 380  | PURGE XXX  |   |
| 390  | POKE ‘2F6D9’,D\$   | Restore display format.                             |
| 400  | DISP ‘Done’  |   |
| 410  | POKE ‘2F946’,R\$   | Restore DELAY setting.                              |
| 420  | END SUB  |   |

Program on next page

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**DATATEXT Program for the HP-75**

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| Line | # Keystrokes  | Comment   |
|------|---|---|
| 100  | DELAY 0   |   |
| 110  | DIM S\$[96]   |   |
| 120  | INPUT 'DATA file: ','?';F\$                           |   |
| 130  | DISP TAB(12);/* Working */                            |   |
| 140  | ASSIGN #1 TO F\$                                      |   |
| 150  | ASSIGN #2 TO "XXX",TEXT                               | Create dummy TEXT file.   |
| 160  | ON ERROR GOTO 210                                     | Set up end of file detection.                                       |
| 170  | READ #1 ; S\$   | Read string item or numeric item in string format.                  |
| 180  | OFF ERROR   |   |
| 190  | PRINT #2 ; S\$  | Save string item or string-formatted numeric item.                  |
| 200  | GOTO 160  |   |
| 210  | OFFERROR  |   |
| 220  | IF ERRN<>34 THEN BEEP @ DISP 'ERROR line';ERRL @ STOP | Error handling routine.<br>If not end of file, error halts program. |
| 230  | ASSIGN #1 TO *  |   |
| 240  | ASSIGN #2 TO *  |   |
| 250  | PURGE F\$   |   |
| 260  | RENAME 'XXX' TO F\$                                   | Copy new file to old file name.                                     |
| 270  | DISP 'Done'   |   |
| 280  | END   |   |

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