HEWLETT PACKARD

HP 18263A
"3270" Install and Maintain
BSC 3270, SNA 3270

for the HP 4952A Protocol Analyzer

User's
Guide

HP 4952A Protocol Analyzer

HP 18263A
3270 Installation and Maintenance
BSC 3270, SNA 3270
User's Guide

HEWLETT PACKARD

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Conventions

Critical instructions within the text of this publication are preceded by one or more of the following labels.

WARNING   All operating procedures, practices, etc., that must be performed in the specified manner to preclude the possibility of personal injury or loss of life are preceded by a "Warning" label.

CAUTION   All operating procedures, practices, etc., that must be performed in the specified manner to preclude the possibility of damaging the instrument or destroying programs or software are preceded by a "Caution" label.

NOTE   Explanatory comments or supplementary instructions are preceded by a "Note" label.

Printing History

New editions are complete revisions of the manual. Update packages, which are issued between editions, contain additional and replacement pages to be merged into the manual by the customer. The dates on the title page change only when a new edition or a new update is published. No information is incorporated into a reprinting unless it appears as a prior update; the edition does not change when an update is incorporated.

Many product updates and fixes do not require manual changes and, conversely, manual corrections may be done without accompanying product changes. Therefore, do not expect a one-to-one correlation between product updates and manual updates.

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Introduction

The "3270" Installation and Maintenance Software application for the HP 4952A Protocol Analyzer provides "3270" IBM^{tm} Network users with a high level tool for maintenance, installation, trouble-shooting and configuration of new devices added to the network. In particular, the package provides many user friendly features to ease all of the work and tests associated with the maintenance of a "3270" network.

This package extends the SNA and BSC capability of the HP 4952A Protocol Analyzer beyond monitoring and simulation to let you easily test the function of controllers and devices connected to a "3270" network. The alignment of displays and the function of keyboards and printers can be confirmed before connection to the host. Address confirmation of all active devices connected to a particular controller or active controllers connected remotely to a front end processor can be done by menu choice and a record obtained for later use.

The "3270" Installation and Maintenance Software package consists of application programs which are specific to the protocol and data code specified.

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The first application program is an SNA protocol package designed to work with the EBCDIC data code.

The second application is designed for use with a BSC protocol utilizing the EBCDIC data code.

NOTE

The correct application for the specified data code should be loaded initially as the data code and protocol cannot be changed once the application is loaded.

Equipment Supplied

The "3270" Installation and Maintenance application includes the following:

- Master Disc
- Blank Disc
- User's Guide

The master disc contains the "3270" Installation and Maintenance program. A blank disc is provided to make a working copy for day-to-day use. See Appendix B for instructions on duplicating the master disc. The User's Guide provides reference and tutorial information and contains the master and blank discs.

The "3270" Installation and Maintenance software coupled with a HP 4952A will be referred to as the "3270" tester throughout the rest of this manual.

Applications

The "3270" Installation and Maintenance application can be used in a "327X" network from the output of a Front End Processor to the input of a "327X" cluster controller.

The application can be used anywhere SNA or BSC data flows over a datacomm network utilizing RS-232C/V.24, RS449, and V.35 as the physical interface. The effects of the tests performed by the "3270" Installation and Maintenance system extend across the controller to the peripherals connected to it.

This is done by utilizing the addressing capability of the controllers and devices connected to the "3270" network.

Connection of the HP 4952A can be made to a "3270" network as shown in Figure 1-1 at points A & B. Note that the control exercised by the "3270" tester is directed into the controllers and devices connected to them. The direction of control and test capability is indicated by the arrows at the connection points in Figure 1-1.

End-users can use the "3270" tester to install, maintain and troubleshoot networks between cluster controllers and communications controllers within the "327X" network. Active controllers can be polled as well as the devices connected to them.

Installation of new devices or controllers can be simplified through the use of selective or polled address scans of the controllers or devices connected to the controllers. Individual cabling problems can be identified with the same tests without the need for utilizing host computer time or resources.
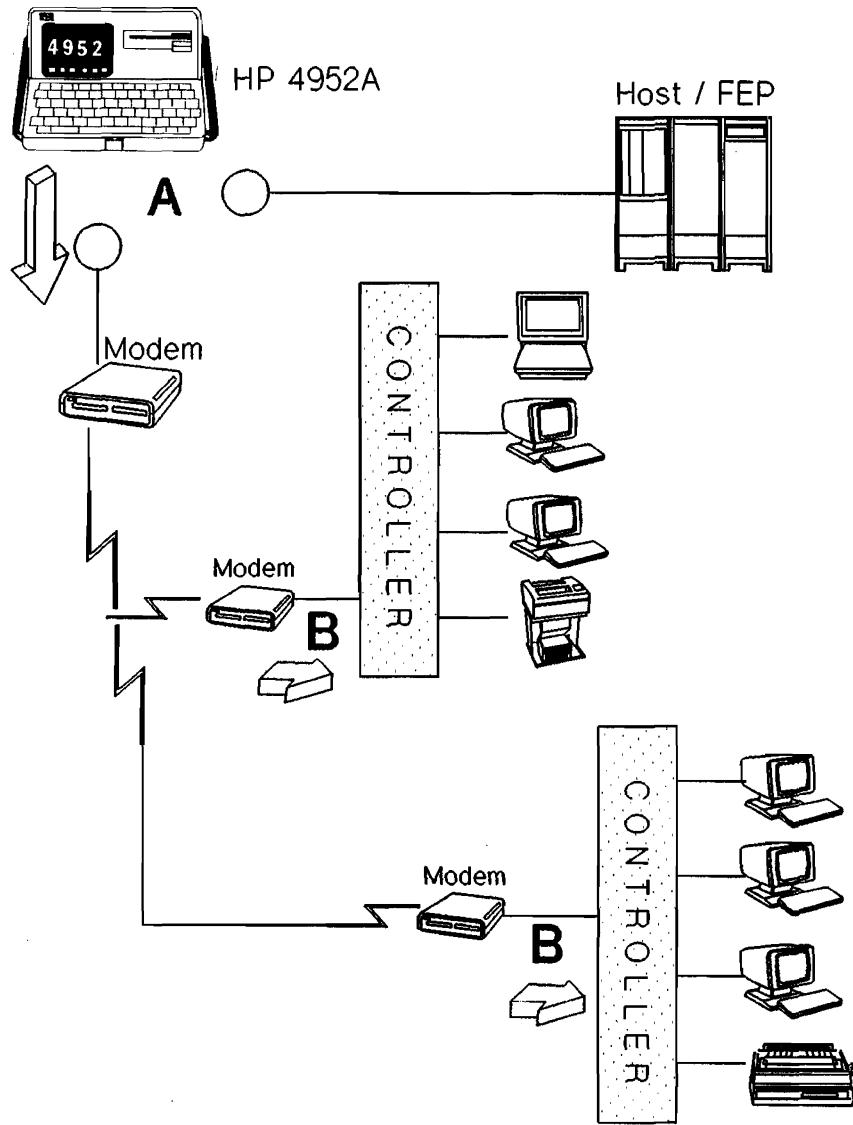
Figure 1-1. Connection Points

Features

- Support for both BSC and SNA (FID2) protocols.

- A simplified softkey interface that eases test selection.

- Test results displayed in a friendly manner as well as available in a hardcopy format from an attached printer.

General Tests

- Scan for and list all the active connected controllers.

- Scan for and list all the active devices connected to a specific controller.

- Read and analyze the controller or device status.

- Loop on Device Scan to allow all the active devices connected to a controller to be identified on their display by address.

Display & Keyboard Tests

- Execute display attributes: protected, alpha, numeric, highlight, non-display.

- Provide an 81 character stairstep pattern for the display to check all display positions.

- Provide an alignment pattern for the video display.

- Check of control key responses.

Printer Tests

- Utilize new-line and end-of-line message control operations.

- Provide an 81 character stairstep pattern for the printer to check all printed positions.

Specifications

Instruments: This application will run on the HP 4952A with 22 kbytes of
                        application memory.

Physical   All of the following supported HP 4952A interfaces :
Interface: RS-232C/V.24, RS-449, V.35

Protocol: SNA as defined in the IBM "Systems Network Architecture
                        Summary", GA27-3136-5, File No. Genl-30 (SNA). BSC.

Transmit
Rates: to 19200 bps.

Memory   The "3270" Installation and Maintenance Software uses
Requirements: 22 kbytes of application memory.

2

Getting Started

This chapter tells you how to load the "3270" Installation and Maintenance Software application and sample data into your HP 4952A Protocol Analyzer. This manual assumes that you are already familiar with the basic use of the protocol analyzer.

For detailed information concerning operation, voltage and grounding requirements, and power cords refer to the HP 4952A Protocol Analyzer Operating Manual.

Connecting an Interface Pod

Make certain the protocol analyzer is turned off. Connect the interface pod cable from the pod to the connector in the lower center of the HP 4952A back panel.
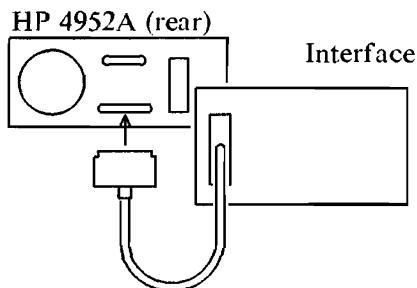
Figure 2-1. Connecting an Interface Pod

Turning on the Analyzer

Turn on the HP 4952A Protocol Analyzer using the line switch on the back panel. The analyzer begins an automatic self test. After the test is completed, the top level menu is displayed. (See Figure 2-2).

If errors have been detected, a list of errors will be displayed. You can go to the top level menu from the error display by pressing [EXIT]. However, if errors have been reported, proper operation in this mode cannot be assumed; contact your Hewlett-Packard Sales and Service office for assistance.

Getting the Top Level Menu

The top level menu gives you access all the features of the HP 4952A.

Whenever you turn on the protocol analyzer the top level menu appears. From lower level displays, you can return to the top level menu by pressing [EXIT] (you may have to press [EXIT] more than once).

```
            Hewlett-Packard

              4952

         Protcol  Analyzer
      Rev.  X.X    © hp 1986

  ┌────┐┌───┐┌───┐┌────┐┌───┐┌────┐ M
  │Auto││Set││Mon-││Sim-││Run ││Exam│ O
  │Conf││Up ││itor││ulate││Menu││Data│ R
  └────┘└───┘└───┘└────┘└───┘└────┘ E
```
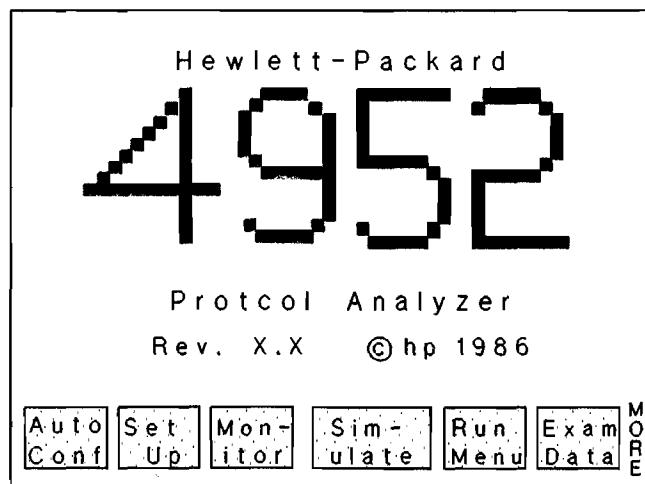
Figure 2-2. Top Level Menu

Making a Working Copy of the Application

The "3270" Installation And Maintenance Software package includes an application disc and a blank disc. The blank disc is provided to make a working copy of the application disc. If you are not familiar with the basic features of the HP 4952A, use the procedure in Appendix B to make a backup copy of the disc.

Hewlett-Packard recommends that you make a working copy of the application disc. Use the copy and retain the master as a backup in case the working copy fails due to wear or accidental erasure. This procedure allows you to make full use of the "3270" tester and not have the application become non-functional at any time. If you should need a copy of your Master Disc, replacement discs can be obtained from Hewlett-Packard.

Looking at the Mass Storage Directory

To see what's on the "3270" Installation And Maintenance Software disc, use the directory feature.

1. Locate your working copy of the disc and insert it in the disc drive.
2. In the top level menu press the <Mass Store> softkey.
3. Press <Directory>. The disc is read and the directory appears.

Loading the Software Application

1. Use the arrow keys or scroll through the directory files to locate the file name you want to use.

2. A choice will have to be made at time for the correct application to be loaded according to the protocol and data code format used on the network - either BSC or SNA.

3.   Enter the file name <SNA> using the keyboard or scroll to the file name
      <SNA> using the cursor or arrow keys.

4.   Press <Load>.

5.   Press <Execute>. The disc is read and the "3270" Installation And Main-
      tenance Software application program is loaded into the protocol analyzer
      memory. This takes a few seconds. After loading, the top level "3270"
      menu appears and then by pressing the MORE key, the top level menu
      shows the "3270" tester application is active (the third line will vary ac-
      cording to the format that is loaded - SNA or BSC).


```
              Hewlett - Packard
           " 3 2 7 0 "  I n s t a l l  &  M a i n t
                      S N A



              C o p y r i g h t        1 9 8 7



                      4 9 5 2
           P r o t o c o l     A n a l y z e r




              R e v .  x . x   ©   h p  1 9 8 7

Re-        Bert       Remote          Mass        3270      Self
Set        Menu       & Print         Store                 Test
```

Figure 2-3. Top Level "3270" Menu

CAUTION

Whenever you turn off the analyzer, or press the <reset> softkey, the application is cleared from memory.

Understanding the Main Menu

Press the <3270> softkey and the main application menu is presented on the protocol analyzer display.

```
                    3 2 7 0   M e n u

S e t u p   O p t i o n s :

    T e s t s  -  s e t   t e s t   p a r a m e t e r s .

    P r i n t  -  s e t   p a r a m e t e r s
                  f o r   s c r e e n   d u m p s .

T e s t   O p t i o n s :

    D i s p  -  s e l e c t   a   d i s p l a y   t e s t .

    P r t   -  s e l e c t   a   p r i n t e r   t e s t .

    G e n   -  s e l e c t   a   g e n e r a l   t e s t .


      S e t   u p                    3 2 7 0   T e s t s
T e s t s    P r i n t           D i s p    P r t      G e n
```

Figure 2-5. Main Application Menu

Any of the five main menu choices may be selected at this time.

The <Setup Tests> and <Setup Print> menu choices set the parameters which control the other menus available. Always check and set up both <Setup Tests> and <Setup Print> menus whenever the application is loaded from disc (the master copy can be changed and stored. Once a master copy has been changed and stored, it cannot be changed and re-stored again).

<Setup Tests>   This menu allows the software and hardware to be con-
                         figured for the data communications parameters of the
                         network.

<Setup Print>   This menu allows the software and hardware to be con-
                         figured for data communication parameters and type of
                         printer for all hardcopy output of the "3270" tester. The
                         output can be either test results or just the menu setups in
                         use.

<3270 Tests Disp>   This menu provides four pre-defined "3270" display tests.
                         These tests let you select or scan for controller or device
                         addresses.

<3270 Tests Prt>   This menu provides two pre-defined printer tests. These tests
                         let you select or scan for controller or device addresses.

<3270 Tests Gen>   This menu provides three pre-defined status tests for con-
                         trollers or devices in the network. These tests let you select
                         or scan for controller or device addresses.

3

"3270" Network Testing

The "3270" Installation and Maintenance package is used in a "327X Network" of IBM equipment for off-line testing and maintenance. This lets you exercise the "3270" components in the network to identify two major areas of concern:

> The first is to identify if each device is configured or connected correctly to their respective controller.

> The second is to allow you to check the functions of the equipment such as the display, keyboard, or printer function.

These tests are not comprehensive but are intended to test the basic functions of the devices to insure they have been connected and configured correctly.

Note the major highlighted arrows in Figure 3-1 (A & B). Each is a point in the network that could be a tie-in point for the "3270" tester.

Application Environment

The environment or network that the "3270" tester is designed to be used in begins at the point to which a Front End Processor(FEP), such as an IBM 3705 or IBM 3725, is normally connected. The environment extends (through modems or physical layers) to cluster controllers, such as IBM 3274's or IBM 3276's and the devices attached to them. Connection can be made at the modem on the interface cable or at the input to the modem connecting the Front End Processor (FEP) for testing a multiple drop arrangement of cluster controllers or at the modem off of a cluster controller for testing a single leg of the network.

NOTE

The connection should <u>BREAK</u> the current connection of the network from the host - <u>NOT</u> a "Y" cable 'monitor' type connection.

Scan tests can be done at these points to list all of the active controllers and/or devices connected in the environment. See Figure 3-1 for a simplified view of the environment intended for the "3270" tester.

Printouts of the test results can be sent to an active printer on the network or to an auxiliary printer attached to the RS-232/V.24 printer port on the HP 4952A.

An infinite looping scan test can be done to poll each device connected to the controller while displaying the device's address and controller connection on the display device.

Individual display and keyboard tests can be done for maintenance, troubleshooting, and repair/alignment needs. Printers that are connected to the controller can be tested for basic output function or used as a 'test result' printer.
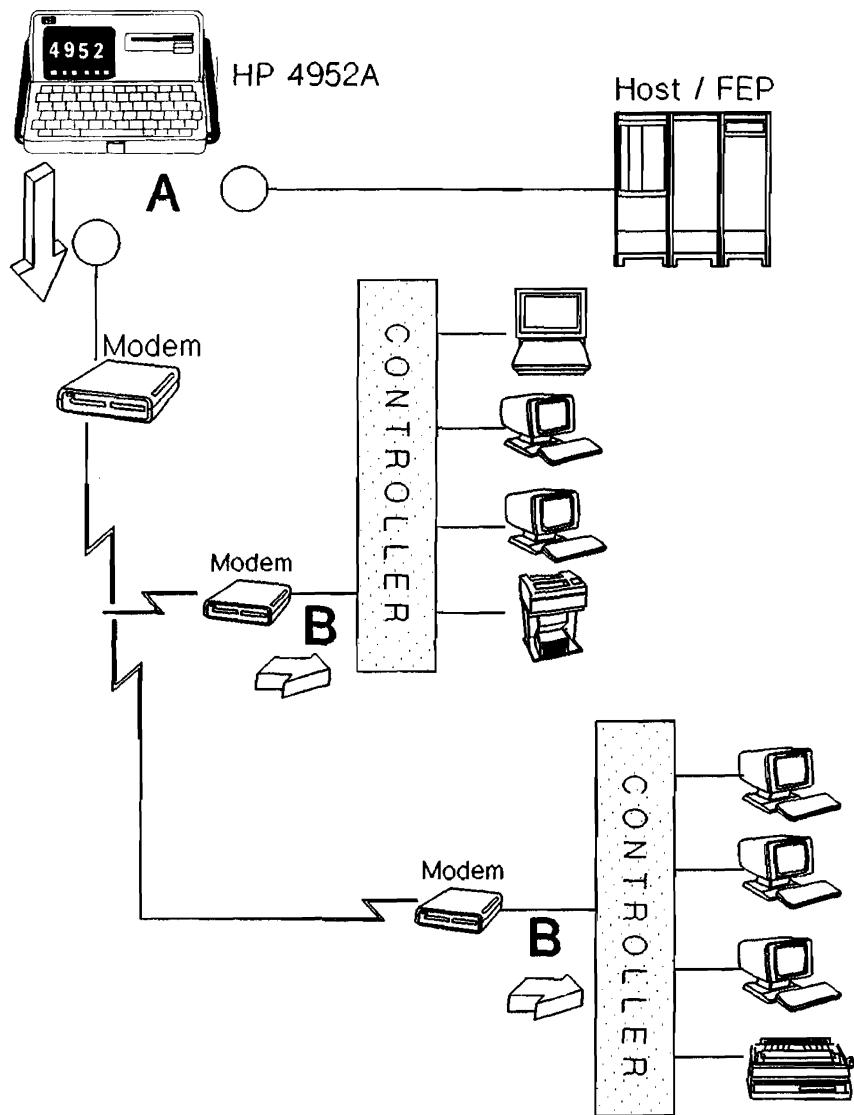
Figure 3-1. Simplified Network

Maintenance - Repair

The "3270" tester can be used as a maintenance tool. The menus allow you to select test patterns for the alignment of displays or testing the display attributes for correct function. An individual device can be selected by address and an alignment pattern sent to allow the maintenance or repair personnel to align the display.
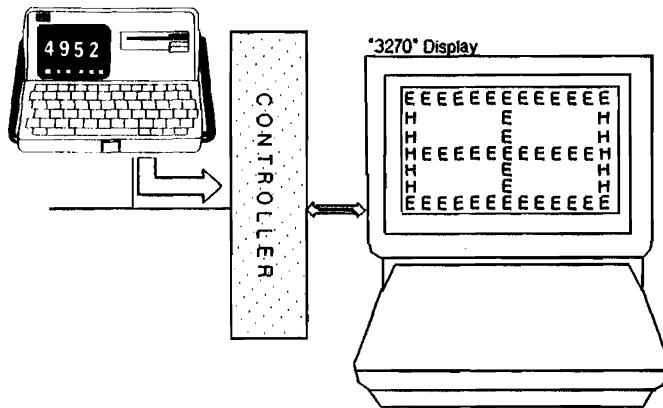
Figure 3-2. Test Pattern

Also available is an 81 character stairstep string test for verification of display position and characters.
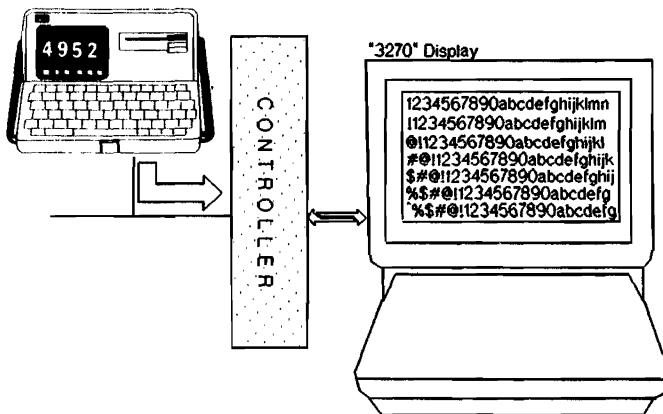
Figure 3-3. 81 Character Stairstep

These capabilities allow the tests to be done "off-line" from the host computer saving valuable host computer time and repeated system generations. These modes can be used by tying into the network as shown in Figure 3-2 & 3-3.

The "3270" tester can be used as a test device for the keyboards connected in the "3270" network. Specific tests are included in the "Display Tests Menu" to allow verification of the control keys PF1-24, PA1-3, CLEAR and ENTER.

The "3270" tester allows the verification of a printer connected to the "3270 network". The printer can then be used to record the other test results done on the network for maintenance or troubleshooting and then produce a 'hardcopy' printout of the installation.
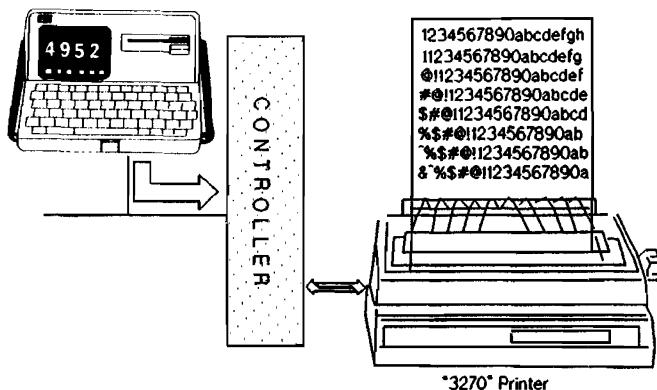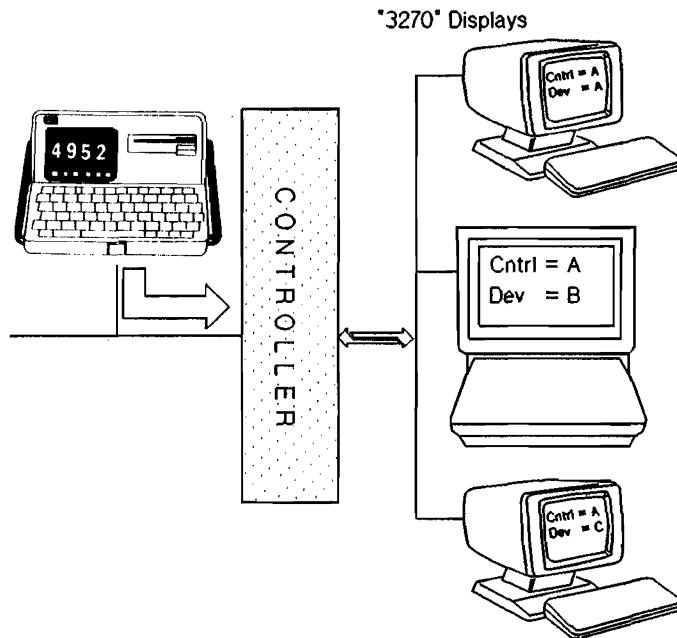
Figure 3-4. Printer Verification

Installation

Installation of new equipment in a "3270" network can be time consuming and frustrating. When a new cluster is set up and connected to a "3270" network, a system generation is performed to add the new terminal addresses to the system terminal address table. System generation requires that the mainframe be taken out of service until the operation is completed. If the wrong addresses are added to the table during

the system generation, the whole operation has to be repeated. The "3270" tester allows you to configure and test IBM "3270" cluster controllers and devices prior to their attachment to the mainframe. This will insure the proper address settings of the terminals so that the system generation is successful the first time.

When terminals or printers are reallocated in a "3270" network, cables can be inadvertently cross wired or connected to the wrong cluster. By connecting the "3270" tester to a particular cluster the <looping device scan> test or the <Scan Ctrl> menus can identify all active controllers or devices connected to a controller. Messages can be sent to all display devices connected to that controller with the address each responds to when accessed. By using the displayed addresses, the improper connections can be repaired in a concise, orderly manner.

Figure 3-5. Installation of Equipment

"3270" Compatibility Issues

The SNA environment is complex. To insure that all levels of SNA are ready for testing, the "3270" tester will bring the entire 3270 system up and back down during each test sequence. If the 3270 system does not automatically restart each SNA layer, the SNA portion of this package will not work.

For both BSC and SNA environments, vendor variations in protocol implementation may result in the "3270" tester receiving responses that are not recognized, thus causing a test failure.

In both BSC and SNA environments, there is a response timeout parameter. Typically this timeout is defined to be 3000 msec. In real life situations, the vast majority of devices will respond in a much shorter time. To expedite the testing process, the "3270" tester has implemented a 500 msec response timeout. If this timeout value is too short, it can easily be changed in the Setup Test Menu.

NOTE

The "3270" tester is able to exercise the majority of 3270 and compatible products to which it is attached. However, some 3270 compatible products may have difficulty using the full capability of the HP 18263A due to variations in design.

4

Setup Menus

The Setup Menus affect all tests done by the "3270" tester. The data communications parameters, "3270" device response timeout, and the printout of test results are controlled by this menu and should be set before any tests are attempted.

The main menu, labeled '3270 Menu', has two major sets of softkeys. The left softkeys are 'Setup' menus which apply to both the 'Tests' and 'Print' menu. The diagram in Figure 4-1 shows the hierarchy of the menus. Note the Setup menus are shown separately from the main "3270 Menu" yet both Setup Menus affect all other softkey menus and their operation.

```
                                ┌─────────────────┐
                                │   3270 Menu     │
                                └─────────────────┘

   ┌─────────────────────┐        ┌──────────────────────────────────────────┐
   │       Setup         │        │         3270      TESTS                   │
   │  Tests  │  Print    │        │ DISPLAY    │ PRINTER    │ GENERAL         │
   └─────────────────────┘        │ TESTS MENU │ TESTS MENU │ TESTS MENU      │

   ┌────────┐  ┌──────────┐       ┌──────────┐  ┌─────────────┐  ┌──────────────┐
   │ Print  │  │  4952A   │       │ATTRIBUTES│  │ NEW LINE    │  │CNTRLR STATUS │
   │ Screen │  │ Printer  │       └──────────┘  │ END-OF-MSGE │  └──────────────┘
   └────────┘  └──────────┘                     └─────────────┘
               ┌──────────┐       ┌──────────┐  ┌─────────────┐  ┌──────────────┐
               │ "3270"   │       │ STAIRSTEP│  │  STAIRSTEP  │  │ DEVICE STATUS│
               │ Printer  │       └──────────┘  └─────────────┘  └──────────────┘
               └──────────┘
                                  ┌──────────┐                   ┌──────────────┐
                                  │ ALIGNMENT│                   │ LOOPING SCAN │
                                  └──────────┘                   └──────────────┘

                                  ┌──────────┐
                                  │ CNTRL KEY│
                                  └──────────┘
```
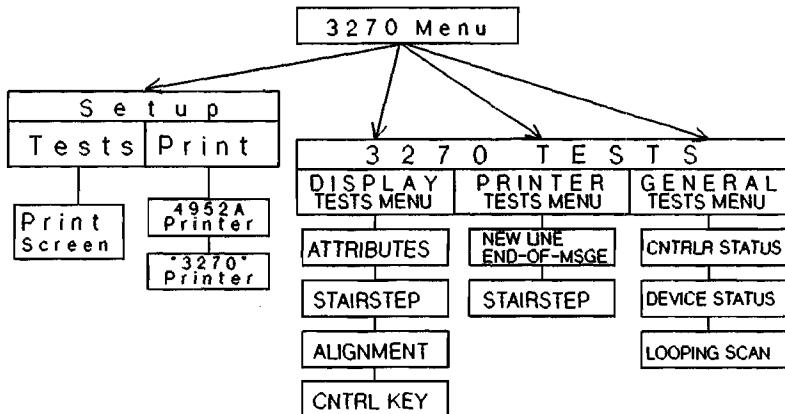
Figure 4-1. "3270" Menu

Using the Test Setup Menu

This menu is accessed from the main "3270 Menu" by the <Setup Tests> softkey. The menu should be displayed as shown below.

```
                  Test   Setup   Menu

        Analyzer attached to:                  Controller


        Clock source:                          Analyzer
        Bits/sec:                              9600
        Data Code:                             EBCDIC
        Parity:                                None
        Mode:                                  NRZ
        Response Timeout:                      500 msec
        Timing\Lead Changes:                   On


        Duplex:                                Full
```

Figure 4-2. Test Setup Menu

Note that the default values for the 'Test Setup Menu' are shown. Each of the inverse video fields are choices to be made by you. As the cursor is scrolled down the display using the cursor control arrows or the return key, the softkeys change to indicate the choices available. Each field is explained as follows:

Analyzer attached to: Controller/Modem

This field designates the equipment the "3270" tester is connected to in the network. If connected to the Controller the HP 4952A is configured as a DCE. If connected to the Modem it is configured as a DTE.

Clock Source: Analyzer/External

This field determines whether the clock source for the interface will be sourced by the HP 4952A or by an external source. If Analyzer is selected, Bits/sec appears which allows the speed of the supplied clock to be selected. If external is selected, the HP 4952A will use the clock supplied on the Transmit/Receive clock lines TC and RC.

Bits/sec 9600/

This field is only available when Analyzer has been selected int eh clock source field. It allows the selection of the data rate of the interface clock which is supplied by the analyzer.

Data Code: EBCDIC

This field is fixed.

Parity: None

Always NONE for EBCDIC

Mode: NRZ

This field allows the choice of either NRZ or NRZI communications protocol.

Response Timeout: 500 msec

Default is 500 milliseconds, but you can set it to any range (in milliseconds) from 0 to 9999. This is important when scanning all devices connected to a point in the network. A lower response time will "speed up" the poll of all inactive devices connected to the network.

Timing\Lead Changes

This field allows you to store timing and lead changes information so you can view it in the Examine Data menu. This information defaults to off at speeds above 38.4 kbps.

The Print Screen Setup Menu

This menu lets you communicate with a printer and the address or location of that printer. The parameters chosen are used in all places of the application where the <Print Scrn> softkey function is used. This function is offered with almost every menu in the application so be sure it is configured correctly.

```
            Print   Screen   Setup   Menu


Printer   attached   to:                    4952


     System   Parameters   Used
```

```
" 3 2 7 0 "          4 9 5 2
```

Figure 4-3. 4952 Print Screen Setup Menu

Note the default values for the 'Print Screen Setup Menu'. Some fields are indicated by inverse video characters.

Make the choices applicable to the printer that the "3270" tester is connected to.
When the printer is selected for the HP 4952A, the printer setup is defined by the
"Remote & Print" softkey selected from the HP 4952A menu. To configure the
printer, press the high level softkey "Remote & Print" and then press the softkey "Print
Setup". Each field is explained as follows:

NOTE

Printers attached to the HP 4952A remote/printer port for
hardcopy output must be attached with a modem eliminator
cable (HP 13242G).

Printer attached to: "3270" / 4952

This field designates the printer the "3270" tester will output when the <Print
Scrn> softkey is pressed. If the <4952> choice is made a printer should be
connected to the 'remote/printer' port on the rear of the HP 4952A. The
attached printer should be an ASCII printer, such as an HP 2225D or compatible
equipment. If "3270" is the choice for the printer, the following figure will be
displayed.

```
Print   Screen   Setup   Menu


Printer   attached   to:                            " 3 2 7 0 "



   Controller   Address:              $\underline{c}_1$

   Device   Address:                  $\underline{0}_2$




" 3 2 7 0 "            4 9 5 2
```

Figure 4-4. "3270" Print Screen Setup Menu

Each of the inverse video fields are choices for the "3270" tester. As the cursor is
scrolled down the display by the use of the cursor control arrows or the return key on
the keyboard, the softkeys will change to indicate the choices available. Each field
and softkey is explained.

NOTE

This application assumes that a printer on the network has been tested before use. When you make this choice, you should test that printer before performing any other tests.

Printer attached to: "3270"

This field designates the printer the "3270" tester will output to when the <Print Scrn> softkey is pressed.

Controller Address field
Device Address field

These fields must be given a valid address for a controller and printer on the network to which the "3270" tester is connected. Note the two new softkeys that are displayed on the HP 4952A:

<Addr Text>

This softkey affects both the controller and device address and is a 'toggle' function. The address must be set before any of the tests are selected by softkey or the default addresses will be used and the test performed on the default controller and device.

<Scan Ctrl/Dev>

If the address of the device or controller to be tested is not known, the network can be scanned and displayed utilizing the <Scan Addrs> softkey. The 'Controller Address Menu' and the 'Device Menu of Controller' are accessible through the use of the <Scan Addrs> softkey.

<Scan Address Menu> Use

If the address of the device to be tested is not known, the active devices of a particular controller or the active controllers on a network can be scanned and displayed using the "Scan Menu's". 'Controller Address Menu' and 'Device Menu of Controller' are both accessible through the use of the <Scan Address> softkey. The menu accessed is determined by which address field (controller or device) the cursor is placed on when the <Scan Address> softkey is pressed. Both menus are similar in function and format. The device menu applies to the devices connected to specific controller. The Scan Address Menu is shown below as it appears after a partial or full scan has been run. Each softkey and field are explained following the Scan Address Menu.

```
          Device  Menu  of  Controller  X


        Dev   Adr        Dev   Adr        Dev   Adr        Dev   Adr
                          H                  &                  Q
              A           I                  J                  R
              B           c                  K                  !
              C           .                  L                  $
              D           <                  M                  *
              E           (                  N                  )
              F           +                  O                  ;
              G           |                  P                  ^


     Addrs  from  previous  scan




    Addr       Sel        Part           Full              Print
    Hex        Addrs      Scan           Scan              Scrn
```

Figure 4-5. Scan Address Menu

Device Menu — The address displayed as "X" in line 1 is obtained from the Controller Address field in the menu immediately preceding this menu.

Device Address — Lines 3 through 10 contain addresses of the active controllers or devices for which a scan has been made. The cursor should appear on the first address in the list when the menu is first entered.

Scan Message — Two messages can appear on this line. One is "Addrs from previous scan". The other is " Addrs from aborted prev scan". The second message will appear if a scan of addresses was done previously and was aborted.

<Addr Hex> — Addresses can be viewed in Hexadecimal or Text mode by using the <Addr Text> / <Addr Hex> softkey. This softkey is a 'toggle' function.

<Sel Addr> — The controller or device address indicated by the cursor can be selected as the device to be used for testing by pressing this softkey.

<Part Scan> — This softkey is used to start the polling of devices or controllers to determine which are active. 32 addresses are polled based on the EBCDIC polling characters.

<Full Scan> — This softkey is also used to start a poll of devices or controllers to determine the active controllers or devices. 254 addresses are polled starting from 01 to FE (hex).

<Print Scrn> — This softkey prints the current display to the printer defined in the 'Print Screen Setup Menu' under the main '3270 Menu'.

5

Display Tests

The <3270 Tests Disp> menus exercise displays and keyboards connected in a "3270" network. All of the display tests are designed for an eighty column by twenty-four line display.

NOTE

The data communications parameters, "3270" device response timeout, and the printout of test results are controlled by the <Setup Tests/Print> menus and should be set before tests are attempted.

The Display Tests Menu has four available tests:

- Exercise Attributes
- 81 Character Stairstep
- Alignment Pattern
- Control Key Response

Using the Display Tests Menu

This menu is accessed from the main "3270" menu by the <3270 Tests Disp> softkey. the menu displayed is shown on the next page.

```
                Display   Tests   Menu

Test  1.          EXERCISE   ATTRIBUTES
                  ( 1 9 2 0   Char   Display )
Test  2.          81  CHARACTER  STAIRSTEP
                  ( 1 9 2 0   Char   Display )
Test  3.          ALIGNMENT  PATTERN
                  ( 1 9 2 0   Char   Display )
Test  4.          CONTROL   KEY   RESPONSE
                  ( P F 1 - 2 4 , P A 1 - 3 , C l r , E n t r )


Controller  Address                    C 1
Device  Address                        0 2



Test        Test      Test           Test      Addr      Scan
  1           2         3              4        Text      Addr
```

Figure 5-1. Display Tests Menu

Setting the Address

The first step in performing any test of the displays or keyboards is to specify which display or keyboard is to be tested. This is done by selecting the controller and device address at the lower portion of the Display Tests Menu. The choices include any character available on the HP 4952A keyboard including control characters.

The addresses can be viewed in Hexadecimal or in a Text mode by utilizing the <Addr Text> / <Addr Hex> softkey. This softkey affects both the controller and device address and is a 'toggle' function. The address must be set before any tests are selected by softkey or the default address's will be selected and the test performed on the default controller and device.

<Scan Address Menu> Use

If the address of the device to be tested is not known, the active devices of a particular controller or the active controllers on a network can be scanned and displayed using the "Scan Menu's". See Section 4, page 4-8 if you need more information on the use of this test.

Exercise Attributes Test

This test exercises the display attributes and is configured for an 80 column by 24 line display. The test will be performed on the Display that has been selected in the Controller & Device Address field of the 'Display Tests Menu'. Pressing the <Test 1> softkey should produce the display shown below.

```
E X E R C I S E   D I S P L A Y   A T T R I B U T E S


        >    0123456789        <    Protected

        >    ABCDEFGHIJ        <    Alpha

        >    0123456789        <    Numeric

        >    ABCDEFGHIJ        <    Highlight

        >                      <    Non-Display

        >    0123456789        <    Modified
```

Figure 5-2. Exercise Display Attributes

Once the data is displayed, the test is performed by moving the cursor to each of the fields denoted by the '>' and '<' characters and typing in characters other than the designated characters into the fields. Proper operation of the terminal will not allow any other characters to be placed into the fields than the type of characters labeled beside the field.

- The 'Protected' mode should not allow any characters to be over-typed or otherwise changed.
- The 'Alpha' field should allow only alphanumeric type of characters in this field.
- The 'Numeric' field should allow only numeric type of characters in the numeric field.
- When characters are typed into the 'Highlight' field, each character should retain the highlight characteristic.
- Characters should not be displayed when typed into the 'Non-Display' field.
- The 'Modified' mode is not exercised by this test software.
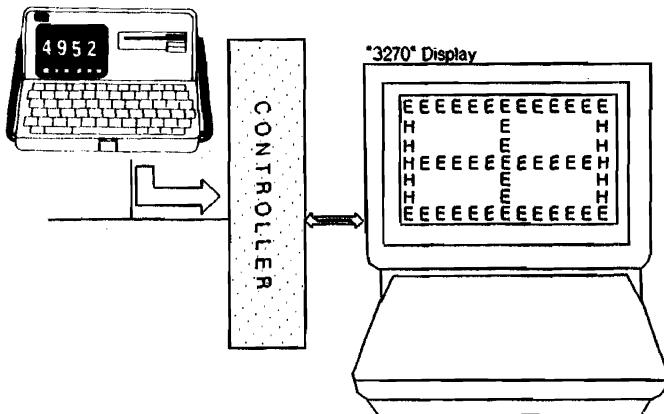
81 Character Stairstep

This test displays a "full display" of known characters. The pattern sent is called a stairstep due to the visual image of the characters 'stepping' to the right in each successive line. This test was designed for an 80 character by 24 line display. The test will be performed on the Display that has been selected in the Controller & Device Address field of the 'Display Tests Menu'. Pressing the <Test 2> softkey should produce a display like the one shown in figure 5-3.

```
ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&*=:()-+<>/?
\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&*=:()-+<>/
?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&*=:()-+<>
/?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&*=:()-+<
>/?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&*=:()-+
<>/?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&*=:()-
+<>/?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&*=:()
-+<>/?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&*=:(
)-+<>/?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&*=:
()-+<>/?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&*=
:()-+<>/?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&*
=:()-+<>/?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&
*=:()-+<>/?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,
&*=:()-+<>/?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%
,&*=:()-+<>/?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$
%,&*=:()-+<>/?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#
$%,&*=:()-+<>/?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a
#$%,&*=:()-+<>/?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!
a#$%,&*=:()-+<>/?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789
!a#$%,&*=:()-+<>/?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz012345678
9!a#$%,&*=:()-+<>/?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz01234567
89!a#$%,&*=:()-+<>/?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456
789!a#$%,&*=:()-+<>/?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz012345
6789!a#$%,&*=:()-+<>/?\ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz01234
```

Figure 5-3. 81 Character Stairstep Display

Actual connection to the network is illustrated in Figure 5-4.

Connection to the network can take place as illustrated in Figure 5-6.

Figure 5-6. Connection for Alignment Pattern

Control Key Response

This test allows you to test the control keys - PA 1 through PA 3, PF 1 through PF 24 and the Clear & Enter keys. This test was designed for an 80 character by 24 line display. The test will be performed on the Display and Keyboard that has been selected in the Controller & Device Address field of the 'Display Tests Menu'. Pressing the <Test 4> softkey produces the display shown below.

Push   desired   control   key.

Use   ENTERKEY   to   stop   test.

                    PF   13   Key   Pressed

This test is performed by first specifying an address of a particular terminal and then have someone at that terminal press each control key desired to verify it's correct operation.

When the test is completed to satisfaction, press the ENTER key on the 'test' terminal and line 10 of the terminal should then change to say:

ENTER Key Pressed, Test Complete.

The cursor is placed on line 15 and any other keys on the keyboard can be pressed, however, none of the keys other than the above listed will respond to the display as part of the test.

Pressing keys too rapidly can cause the test display to lock its keyboard. This lockup situation can be cleared by pressing the RESET key on the keyboard being tested.

Test Results

All of the display tests will complete with a test result display similar to the figure that follows. The test result display remains until the EXIT key is pressed.

```
                D I S P L A Y    T E S T    R E S U L T S


T E S T    1    -    E X E R C I S E    A T T R I B U T E S


    C O N T R O L L E R    A D D R E S S  :              ⁴ₒ
    D E V I C E    A D D R E S S  :                       ⁴ₒ



O P E R A T I O N    S U C C E S S F U L  .




E x a m              E x e c                      P r i n t
D a t a              T e s t                      S c r n
```

Figure 5-7. Display Test Results

If a test fails, an error message will be shown on the display. An explanation of the error messages can be found in Appendix A.

<Examine Data> Softkey

All of the display tests allow the user to utilize the Examine Data function of the HP 4952A to view the actual data for detailed analysis. The data is shown in two formats :

    o   A "Two line" format for the BSC application (see Section 7).
    o   An "SDLC Frame & Format" for the SNA application (see Section 7).

<Exec Test> Softkey

This key allows the test just executed to be re-run.

<Print Scrn> Softkey

This softkey allows the current display on the "3270" tester to be printed on the printer selected in the 'Print Screen Setup Menu'.

6

Printer Tests

The <Printer Tests> menus allow the testing of a "3270" printer.

NOTE

The data communications parameters, "3270" device response timeout, and the printout of test results are controlled by the <Setup Tests/Print> menus and should be set before any printer tests are attempted.

The Printer Tests Menu has two tests available:

- New Line / End-of-Message
- 81 Character Stairstep

Using the Printer Tests Menu

This menu is accessed from the main "3270 Menu" by the <3270 Tests Prt> softkey. The menu displayed is shown on the next page.

```
          P r i n t e r    T e s t s    M e n u


Test  1  .        N E W    L I N E / E N D - O F - M E S S A G E
                  ( E x e r c i s e    P r i n t e r )
Test  2  .        8 1    C H A R A C T E R    S T A I R S T E P
                  ( E x e r c i s e    P r i n t e r )




Controller  Address                        C1
                                            —
Device  Address                            02
                                            —


Test        Test                           Addr        Scan
  1           2                             Text        Addr
```

Figure 6-1. Printer Tests Menu

Printer Tests Menu

The Printer Tests Menu allows two choices of tests :

- New Line End-of-Message
- 81 Character Stairstep

and two 'help' menu choices :

- Address / Text
- Scan Addresses

The first step is to select a controller and device for the test to be performed on. This selection is done in the Controller and Device Address fields at the lower portion of the screen.

Use the cursor arrow keys or the RTN key to go to the appropriate field for a selection of an address. The address is input to the field through the use of the HP 4952A keyboard.

The addresses can be viewed in Hexadecimal or Text mode by utilizing the <Addr Text> / <Addr Hex> softkey. This softkey affects both the controller and device address and is a 'toggle' function. The address must be set before any tests are chosen or the default addresses will be selected and the test is performed on the default controller and device.

Once the controller and device addresses have been chosen, one of the two Printer tests can be selected. Both are intended to test the correct function of a printer connected to a "3270" network. Each can also be used to test a display, but the preferred tests for a display are listed under the "3270 Tests Display Tests" menu.

<Scan Address Menu> Use

If the address of the device to be tested is not known, the active devices of a particular controller or the active controllers on a network can be scanned and displayed using the "Scan Menus". See Section 4, page 4-8 if you need more information on the use of this test.

New Line/End-of-Message
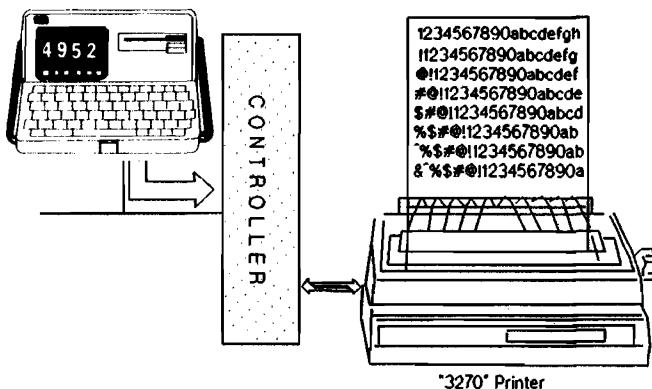
This test checks printing attributes and is configured for an 80 column printer. The test will be performed on a printer selected in the Controller & Device Address field. Pressing the <Test 1> softkey produces the printout shown below.

```
FIRST  NEW_LINE  FUNCTION  CHARACTER  HERE  >

NEW_LINE  CHARACTER  HERE  >
NEW_LINE  HERE  >

END OF MESSAGE CHARACTER HERE  >
```

A possible connection to the network is shown in Figure 6-2.


```
1234567890abcdefgh
11234567890abcdefg
●!1234567890abcdef
#●!1234567890abcde
$#●!1234567890abcd
%$#●!1234567890ab
¨%$#●!1234567890ab
&¨%$#●!1234567890a
```

"3270" Printer

Figure 6-2. Connection to Printer

Once the data is printed, the test has begun. Insure that characters are the only text printed. Another line is sent which is not supposed to print. That line is " (THIS SHOULD NOT PRINT) ". Proper operation of the printer does not allow any other characters to be printed on the printer.

If by chance a display is addressed instead of a printer when this test is run, a passed test message will result and a display similar to the one on the next page will be on the test display.

```
                                    FIRST NEW_LINE   FIR

ACTER HERE > NEW_LINE CHARACTER HERE > END OF MESSAGE CHARACTER

HERE >   (THIS SHOULD NOT PRINT)'
```
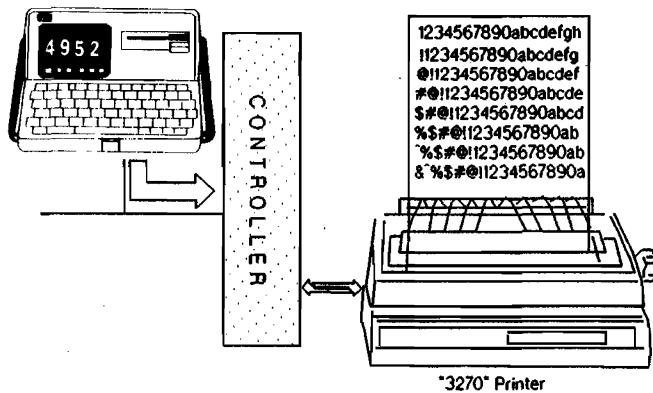
81 Character Stairstep

This test prints a "full page" of known characters. The pattern is called a stairstep due to the visual image of the characters 'stepping' to the right in each successive line. This test was designed for an 80 character line printer. The test will be performed on the printer selected by the Controller & Device Address field of the 'Display Tests Menu'. Depressing the <Test 2> softkey produces a print out similar to the one shown below.

```
 ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&*=:()-+<>/
? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&*=:()-+<>
/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&*=:()-+<
>/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&*=:()-+
<>/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&*=:()-
+<>/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&*=:()
-+<>/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&*=:(
)-+<>/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&*=:
()-+<>/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&*=
:()-+<>/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&*
=:()-+<>/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,&
*=:()-+<>/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%,
&*=:()-+<>/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$%
,&*=:()-+<>/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#$
%,&*=:()-+<>/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a#
$%,&*=:()-+<>/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!a
#$%,&*=:()-+<>/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789!
a#$%,&*=:()-+<>/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789
!a#$%,&*=:()-+<>/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz012345678
9!a#$%,&*=:()-+<>/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz01234567
89!a#$%,&*=:()-+<>/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456
789!a#$%,&*=:()-+<>/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz012345
6789!a#$%,&*=:()-+<>/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz01234
56789!a#$%,&*=:()-+<>/? ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123
```

Figure 6-3. 81 Character Stairstep Printout

Actual connection to the network is illustrated in Figure 6-4.


```
1234567890abcdefgh
!1234567890abcdefg
@!1234567890abcdef
#@!1234567890abcde
$#@!1234567890abcd
%$#@!1234567890ab
`%$#@!1234567890ab
&`%$#@!1234567890a
```

"3270" Printer

Figure 6-4. Connection to Printer

Test Results

All of the printer tests will complete with a test result display as shown below. The test result display remains until the EXIT key is pressed. Lines 1 and 2 will change with each test result display.

```
          P R I N T E R   T E S T   R E S U L T S


T E S T   1  -   N e w   l i n e / E n d   o f   M e s s a g e

   C O N T R O L L E R   A D D R E S S  :              ⁴0
   D E V I C E   A D D R E S S  :                       ⁴0


O P E R A T I O N   S U C C E S S F U L  .




E x a m          E x e c                         P r i n t
D a t a          T e s t                         S c r n
```

Figure 6-5. Printer Test Results

If the test fails, an error message will be shown on the display. An explanation of the error messages can be found in Appendix A.

<Examine Data> Softkey

Both the "status" tests allow the user to utilize the Examine Data function of the HP 4952A to view the actual "data" for detailed analysis. The data is shown in two formats :

 A "Two line" format for the BSC application (see Section 7).

 An "SDLC Frame & Format" for the SNA application (see Section 7).

<Exec Test> Softkey

This key allows the test just executed to be re-run.

<Print Scrn> Softkey

This softkey allows the printout of the current display to be printed on the printer as specified in the 'Print Screen Setup Menu'.

7

General Tests

The <General Tests> menus are designed to poll the status of controllers and devices connected to the "3270" network tester or poll and identify each device connected to a specific controller for installation.

NOTE

The data communications parameters, "3270" device response timeout, and the printout of test results are controlled by the <Setup Tests/Print> menus and should be set before tests are attempted.

The General Tests menu has three available tests:

- Read Controller Status
- Read Device Status
- Looping Device Scan

Using the General Tests Menu

This menu is accessed from the main "3270 Menu" by the <3270 Tests Gen> softkey. The menu is displayed on the next page.

```
           General   Tests   Menu



Test   1 .        READ   CONTROLLER   STATUS
                  ( General   Poll )
Test   2 .        READ   DEVICE   STATUS
                  ( Specific   Poll )
Test   3 .        LOOPING   DEVICE   SCAN
                  ( Message   to   device )




Controller   Address :              c1
Device   Address :                  o2



Test        Test        Test                  Addr        Scan
 1           2           3                    Text        Addr
```

Figure 7-1. General Tests Menu

General Tests Menu

The first step in performing this test is to select a controller and device for the test to
be performed on. This selection is done in the Controller and Device Address fields at
the lower portion of the screen. Use the cursor arrow keys or the RTN key to scroll
to the appropriate field for the selection of an address. The address is input to the
field through the use of the HP 4952A keyboard.

The addresses can be viewed in Hexadecimal or in a Text mode by utilizing the <Addr Text> / <Addr Hex> softkey. This softkey affects both the controller and device address and is a 'toggle' function. The address must be set before any tests are selected by softkey or the default address will be selected and the test performed on the default controller and device.

Once the controller and device address have been chosen, one of the three General tests can be selected. All are intended to aid testing of the correct function of a device connected to a "3270" network. The Looping Scan test is intended for installation aid and troubleshooting.

<Scan Address Menu> Use

If the address of the device to be tested is not known, the active devices of a particular controller or the active controllers on a network can be scanned and displayed using the "Scan Menus". See Section 4 page 4-8 if you need more information on the use of this test.

Read Controller Status

The Read Controller Status test allows you to poll a specific controller for it's status. The Address must be selected. Next, press the <Test 1> key to select this test. Note the menu does not change while the test is running. The only noticeable difference is an inverse blinking video display at the lower portion of the menu with the text 'running' in it. When the test is finished a test result display is placed on the screen with the results of the test. This is shown in the following display.


```
                G e n e r a l   T e s t   R e s u l t s



T E S T   1   -   R E A D   C O N T R O L L E R   S T A T U S


        C O N T R O L L E R   A D D R E S S  :            40
        D E V I C E   A D D R E S S  :                    40


C o n t r o l l e r   A v a i l a b l e




E x a m              E x e c                    P r i n t
D a t a              T e s t                    S c r n
```

Figure 7-2. Read Controller Status Test Results

If the test fails, an error message is shown on the display. An explanation of the error messages can be found in Appendix A.

Read Device Status

This test allows you to poll a specific device for it's status. The Address must be selected. Next, press the <Test 2> key to select this test. Note the menu does not change while the test is running. One difference is an inverse blinking video display at the lower portion of the menu with the text 'running' in it. When the test is finished a test result is displayed.

```
              General  Test  Results


T E S T   1   ·   R E A D   D E V I C E   S T A T U S


    C O N T R O L L E R   A D D R E S S  :           ⁴0̲
    D E V I C E   A D D R E S S  :                    ⁴0̲


              O p e r a t i o n   A b o r t e d




    E x a m          E x e c              P r i n t
    D a t a          T e s t              S c r n
```

Figure 7-3. Read Device Status Test Results

If the test fails, an error message is shown on the display. An explanation of the error messages can be found in Appendix A.

<Exec Test> Softkey

This key allows the test just executed to be re-run.

<Print Scrn> Softkey

This softkey allows the printout of the current display to the printer defined in the 'Print Screen Setup Menu'.

<Examine Data> Softkey

Both the Read Controller and Read Device status tests allow the user to select the Examine Data function of the HP 4952A to view the actual data for detailed analysis. The data is shown in two formats :

A "Two line" format for the BSC application.

A "SDLC Frame & Format" for the SNA application.

Two Line Examine Data Display

The Two Line data display format is in alternating inverse and regular video lines. The top (regular video) line is the DTE data as taken from the line. The second line (inverse video) is the DCE data. Note how the DTE data ends on one line and the DCE data begins on the line immediately below. This shows the half-duplex characteristic of the BSC protocol.

SDLC Frame and Format Examine Data Display

After the test is finished, access the Examine Data Menu and the frame information is decoded. Note that at the top of the Examine Data display, up to 57 data characters can be shown.

ADDRESS   Hex address of the secondary channel.

TYPE   Identifies the type of frame from the Control Field.

N(S)   Send Sequence Number of the frame. Normally modulo 8.

P/F   Poll/Final Bit. In the command mode this bit is a P-bit and is
            normally "0". If the primary requires an immediate response from
            the secondary, it sets the P-bit to a "1". The subsequent response is
            identified, since the Final bit is set to a "1".

N(R)   Receive Sequence Number of the frame. Normally modulo 8.

Data   Displays the first nine characters of the information field.

FCS   Indicates the status of the Frame Check Sequence (CRC-CCITT) as
            either good (GG), bad (BB), or indicates an aborted frame (AA).

Looping Device Scan

This test verifies all devices connected to a specific controller in a "3270" network.
The test involves specifying a controller in the general tests menu and then polling all
the devices connected to that controller by writing the controller and specific device
address to the particular device being polled. This allows you to identify which device
is connected to which output of the controller. The poll will be performed on all
devices connected to the controller selected in the Controller Address field of the
'General Tests Menu'. Pressing the <Test 3> softkey produces the printout/display on
each device similar to the one shown below (The poll message is configured for an 80
column by 24 line output device.)

```
CONTROLLER    ADDRESS:    X  'C1'

DEVICE    ADDRESS:    X  'C2'
```

The HP 4952A display should change to a display as shown below.

```
            LOOPING   SCAN   TEST

Press   EXIT   Key   to   stop   test.
            Currently   Polling   Device:

                    Scanning
```

A possible connection to the network is shown in Figure 7-4.
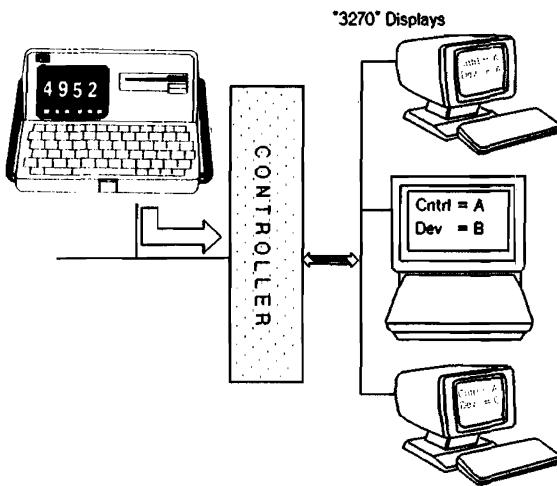
Figure 7-4. Connection to the "3270" Network

Once the display is printed on the polled device, the test has begun. The message shown is the only text that should be printed on each device, and all the devices connected to the controller being tested are displaying the same message with different addresses. One way of checking each display would be a screen print of the 'Scan Address' results for that particular controller done previously and sent to a printer on the network or to the HP 4952A.

This test will continue to run until the EXIT key on the HP 4952A keyboard is pressed. This means once the test is started it continues running until it is manually stopped.

A

Error Messages

Bad Data Transfer (BSC only)

Cause   A message received from the polled device indicating that the last block of data sent by the "3270" tester had a good BCC, but contained unrecognized commands.

Action   Make sure that the test is proper for the device. For example, DISPLAY tests should only be run on displays and PRINTER tests should only be performed on printers.

Corrupt Data Received

Cause   The polled device returned a data block with a bad BCC/FCS.

Action   Re-run the test. If problem persists, most likely a modem problem. Run self tests on both local and remote modems. If this is not the problem, check digital transmission facility with BERT capability.

Device Busy (BSC only)

Cause   A message received from the polled device indicating the device was busy and not available.

Action   Re-run test

Device Not Available

Cause   Device not powered on.

Action   Check power to device.

Cause   Test/Normal switch set to Test mode.

Action   Set Test/Normal switch to normal.

Cause   The device address field in the "3270" tester is selected to a port that doesn't have an attached device.

Action   Run 'LOOPING DEVICE SCAN' to verify which port the device under test is connected, then put this value into the device address field.

NAK Received (BSC only)

Cause   Attempted seven times to transmit a message and the 3270 Negatively AcKnowledged it each time.

Action   Most likely a faulty or misconfigured modem. Run self tests on both local and remote modems. If this is not the problem, check digital transmission with BERT capability.

No DTR/DSR

Cause   Controller or modem is not powered on.

Action   Make sure the power is on.

Cause   Bad physical connections.

Action   Make sure the interface pod cable is firmly attached to both the HP 4951 and the interface pod. Make sure the connector from the controller or modem is securely attached to the "3270" tester.

Cause   Tests 'Setup Menu' not configured properly.

Action   See "Test Setup Menu" in Section 4.

No Pod Attached

Cause   No interface pod was found when the test was executed.

Action   Make sure the interface pod cable is firmly attached to both the HP 4951 and the interface pod, and recycle the power to the instrument. You then have to re-load the application.

No Response

Cause   Controller Address field does not contain the address of an active controller.

Action　　　Use "Scan Addr" to identify and select an active controller to test.

Cause　　　Improper protocol selected.

Action　　　If BSC protocol, use BSC_3270 application.
　　　　　　　If SNA protocol, use SNA_3270 application.

Cause　　　Tests 'Setup Menu' not configured properly.

Action　　　See "Test Setup Menu" in Section 4.

Operation Aborted

Cause　　　User of the "3270" tester has pressed the EXIT key during the execution of a test.

Action　　　User Aborted, re-run test.

Printer Paper or Cover (BSC only)

Cause　　　A message from the polled printer indicating a printer error. The printer is not available.

Action　　　Make sure paper is in the printer and the cover is firmly on.

Receiver Overrun

Cause   Characters are being received too quickly.

Action   The device under test is providing a clock greater than 19.2 kbps. The tester will not operate under these conditions.

Unexpected Results

Cause   The response from the "3270" device/controller was not expected.

Action   Re-run the test. If the test continually fails, there could be a protocol problem.

B
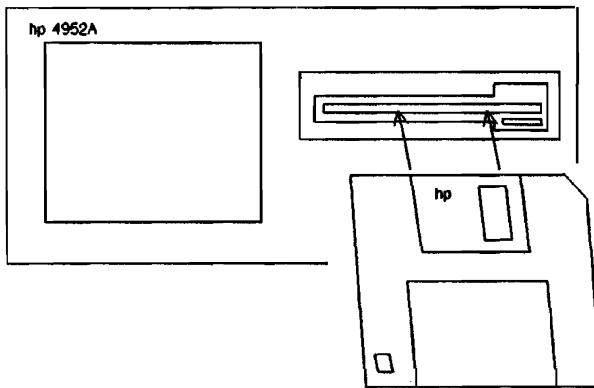
Duplicating the Master Disc

Format a Blank Disc

1. Locate a blank disc and affix a label to it (One blank disc is supplied with the application. A box of ten can be ordered - HP 92192A).

2. Be sure the write-protect tab is pushed in the direction so it will be visible from the front of the disc; otherwise, you will get a write protected error when you attempt to store a file. Insert the disc as shown in Figure B-1.

3. Go to the top level menu, press [MORE] and press <Mass Store>.

4. Press the <Format> softkey.

5. Press <Execute>.

6. When the disc activity is done, remove the formatted disc.

Figure B-1. Loading a Disc

Copy the Master Disc

The master disc contains the "3270" application programs. Each is for a different data code and/or protocol.

It is recommended to copy all of the application programs so the master disc is not used as a training disc or as a normal "working disc" which might allow an application to be inadvertently deleted or copied over.

Copying the "3270" Software Applications

1. Press <Load>.

2. Type in the name of the application you want to copy and press <execute>. When the disc activity stops, press the EXIT key.

3. Remove the master disc and insert the formatted working disc into the disc drive.

4. Press <Store>. Type in a new name if desired (AUTOAPPLIC can be used if you want this application to automatically load every time you insert the disc). Then move the cursor to the comment line and enter SNA_3270, WORKING COPY, or a similar comment which is descriptive of the application you are copying.

5. Press <Execute>. When the disc activity stops, press <EXIT> to return to the top level menu.

6. Repeat steps 1-5 for any other applications that you want to copy (Note only one AUTOAPPLIC file is allowed per disc).

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Softkeys

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