

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Keysight / Agilent E4208D* at our website: ***Click HERE***



Agilent Technologies

Broadband Series Test System

Troubleshooting Guide

© Copyright 2001 Agilent Technologies, Inc.

The information contained in this document is subject to change without notice.

AGILENT TECHNOLOGIES MAKES NO WARRANTY OF ANY KIND WITH REGARD TO THIS MATERIAL, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Agilent Technologies shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material.

"UNIX" is a registered trademark in the United States and other countries, licensed exclusively through X/Open Company Limited.

New editions of this document are issued to reflect changes made to the software. Revisions may be issued, between editions, to correct errors in the manual. There may not be a new edition issued in conjunction with every application release.
The application release, at the date of printing, is noted in the following table.

Document Name: Broadband Series Test System (BSTS) Troubleshooting Guide
Product Number: E4200B and E4210B

Edition	Printing Date	Comments
Ed 1.00	October 2001	First Edition

Agilent Technologies Company
Advanced Networks Division
Locked Bag 810
Blackburn , Victoria
Australia 3130

We want to hear from you. If you have any comments, queries, or suggestions about this documentation, send them to the postal address shown, or email to: y900_support@agilent.com

1. Introduction **1**
2. Contact Agilent Support **2**
3. Problems at Startup **3**
3.1 BSTS Bootup Problems 3
3.2 Keyboard and Mouse 3
3.3 SCSI Problems 4
3.4 Slow startup 5
3.5 BSTS Display Problems 5
3.6 Passwords 7
3.7 Login Problems 8
4. BSTS Shutdown **11**
5. Networking and Remote Access Issues **13**
5.1 Configuring the BSTS for networking 13
5.2 Reconfiguring BSTS for standalone operation 14
5.3 Using a SUN workstation 15
5.4 Using a PC to access the BSTS 15
5.5 Installing VNC on the BSTS 15
6. Test Session Manager **17**
6.1 Modules greyed out or missing from TSM 17
6.2 Modules RED in TSM 18
6.3 TSM will not launch from the BSTS icon 18
6.4 BSTS has locked up during measurements 19
6.5 Cannot connect to Resource Manager 19
7. Module Problems **21**
7.1 Moving Modules 21
7.2 Logical Addresses 21
7.3 Module Placement Rules 23
7.4 Hardware Checks 24
7.5 Shared Memory Network modules 25
7.6 LIF Problems 26
7.7 Downloading Firmware 27
7.8 Downloading firmware to shared memory networked modules 27
8. Upgrading the BSTS **29**
8.1 Hardware Requirements 29
8.2 Installing HP-UX 10.20 30
8.3 Installing BSTS B.18 Test Software 31
9. License problems **33**
9.1 License files 33
9.2 Hardware Dongle Problems 34
10. Test Suites **35**
11. SmartTests and Capture Analysis Tools **37**
12. Other problems **39**
12.1 Software failure checklist 39
13. Contact Agilent Support **41**
Appendix A **43**
Software Applications available for BSTS 43

Appendix B **45**
BSTS Hardware Modules 45
Appendix C **47**
BSTS Software Versions 47
Appendix D **49**
B.18 Version List 49
Appendix E **51**
Forcing a Firmware Download 51
Appendix F **53**
Optical Connector Maintenance 53
Appendix G **55**
Frequently Asked Questions 55

1. Introduction

This Troubleshooting Guide is designed to assist Broadband Series Test System (BSTS) users in identifying and solving a number of common problems that may occur when using the system. This guide should not be used as an Installation or User's Guide for the BSTS. The BSTS System Installation and Startup Guide can be accessed from the BSTS Customer website or the BSTS Learning Center CD. This guide assumes the BSTS is using software version B.18, the operating system HP-UX 10.20, the V743 controller and E4208D Hard Disk Drive.

Please ensure that you have the current BSTS application and operating system versions.
Application software and Operating System upgrades are freely available, and can be ordered from our BSTS support website:

www.agilent.com/comms/BSTS

To order the upgrade CDs, you will need to register for a free customer login account.
To upgrade your BSTS refer to the section "8. Upgrading the BSTS" on page 29.

To determine the HP-UX version:

Open an hpterm on the BSTS, and type:

```
$ uname -a
```

This will return the HP-UX version which should be B.10.20 as shown:

```
HP-UX bbseries B.10.20 A 9000/743 2008369907 two-user license
```

To determine the BSTS application version:

Open an hpterm on the BSTS, and type:

```
$ what /usr/broadband/bin/bisdn_test
```

This will return the BSTS application version as shown:

```
/usr/broadband/bin/bisdn_test:
HP92453-02A.10.00 HP-UX SYMBOLIC DEBUGGER (END.O) $Revision: 74.03 $
BSTS Test Session Manager Version 5.04.02
```

The base version number 5.04.xx indicates the B.18 version of the test software. Refer to "Appendix C" on page 47 to convert base version numbers to BSTS application version numbers.

BSTS Support Website: www.agilent.com/comms/BSTS

For BSTS User Manuals, Product Release Notes, Frequently Asked Questions, software patches and free software upgrades refer to the BSTS Technical Support website:

www.agilent.com/comms/BSTS

You will need to request a customer login account to access the support information.

2. Contact Agilent Support

Please contact your local BSTS support center if you encounter further problems with your BSTS.

North America

Location: Englewood, CO

Phone: 1-800-698-0061

Email: americas_support@agilent.com

Europe

Location: Netherlands

Phone: +31-20-547-2200

Fax: +31-20-547-2290

Email: ots-europe@agilent.com

Japan

Location: Tokyo

Phone: 0120--421-345

Fax: 0120--421-678

Email: mac_support@agilent.com

Asia-Pacific

Location: Singapore

Phone: 1800 274-4554

Fax: (65) 272-5293

Email: asia_ots@agilent.com

3. Problems at Startup

Problems at startup include:
- Failure of the BSTS to boot
- Slow startup due to incorrect network settings
- Slow startup due to incorrect shutdown procedure
- Incorrect display settings
- Password problems
- Login problems

3.1 BSTS Bootup Problems

Table 1: BSTS Bootup Problems

Symptoms	Reason	Section
No login screen appears	• Keyboard and mouse connection • SCSI address connection	3.2 3.3
Yellow boxes across the bottom of the display and BSTS not booting	• SCSI address or connection	3.3
Hard Disk Fail LEDs flashing	• SCSI address or connection	3.3
Slow Startup	• Incorrect shutdown • Incorrect network settings	3.4

3.2 Keyboard and Mouse

The keyboard and mouse must be properly connected on the front panel of the V743 controller to allow the BSTS to startup correctly. Check that the mouse and keyboard are connected to the correct PS/2 connectors and that they are not faulty.

Keyboard and Mouse connector configuration:

Mouse: PS/2 0
Keyboard: PS/2 1

Keyboard Problems

If the keyboard is not connected or is faulty, the login screen will not appear. Only yellow softkeys will appear on the screen as the boot up proceeds.

In some instances, plugging in the keyboard without shutting down will display the login screen. However, you should shut down the BSTS and reboot to avoid problems later.

After plugging in the keyboard, shutdown the BSTS by typing:

```
$ bisdn_shutdown -halt
```

Wait about three minutes before using the Rst/Abt switch on the V743 controller to re-boot the BSTS with the keyboard connected. This wait is necessary as there will be no shutdown messages to show that shutdown has completed and power can be safely switched off.

Mouse Problems

If the mouse is not connected or is faulty, the BSTS will appear to boot up normally but the login screen will not appear.

The following message may appear on the screen:

X Server cannot be started…

To resolve this problem, plug the mouse into the PS/2 0 connector on the V743 controller, wait for the mouse to be detected and the login screen to appear. If the login screen does not appear, connect a known good keyboard and mouse.

3.3 SCSI Problems

The following symptoms can occur if the SCSI settings or connections are faulty:

- Yellow boxes may appear across the bottom of the screen and the BSTS will not boot up.
- E4208D Hard Disk Drive has the "Sys Fail" and "Fail" LEDs flashing.

These symptoms are usually caused by a problem with the V743 controller module communicating with the bootup hard disk on the E4208D SCSI disk module. Check the following:

SCSI module properly installed

The SCSI module containing the system's bootup hard disk may not be installed correctly in the mainframe. Make sure that the module seats solidly against the backplane. The module handles should snap in place and the front panels of the modules should be flush with the other modules in the BSTS.

SCSI cabling

Make sure that the SCSI cables and terminator meet solidly with the connectors. Jiggle the plugs from side to side to ensure a solid connection. If the SCSI cable on the SCSI module containing the bootup hard disk is loose, the system will not boot up properly.

SCSI module's SCSI IDs

SCSI device IDs range from 0 to 7, with 7 reserved for the controller and 6 used for the boot disk. By default, the SCSI module should have a device ID of 0 for the floppy drive and 6 for the hard drive. If you have an additional SCSI module installed, that device must have a unique ID. For example, the CD-ROM should have a SCSI ID of 2.

SCSI module's logical address

The module's logical address may be conflicting with the logical or servant address of other installed modules. Each module must have a unique logical address. Power down the system and check these addresses before trying again. The logical address should be 8 times the module's VXI slot number. Refer to “7.2 Logical Addresses” on page 21 to correctly check and change the VXI logical addresses.

3.4 Slow startup

The BSTS may take a long time to start up if there are incorrect network settings or if the BSTS was incorrectly shutdown.

If the BSTS was incorrectly shutdown, the BSTS will need to run the HP-UX command 'fsck' to repair the Hard Disk. See "4. BSTS Shutdown" on page 11, to ensure that the BSTS is correctly shutdown.

If the BSTS is taking a long time to boot up, you may need to remove the BSTS from the network. To exit out of the bootup sequence and force a text login, enter <Ctrl-\>. Refer to "5.2 Reconfiguring BSTS for standalone operation" on page 14, to correctly remove the BSTS from the network.

3.5 BSTS Display Problems

When the BSTS is shipped it is configured for the installed Flat Panel Display (FPD) in the Form 7 (7 slot chassis) or for the accompanying external VGA monitor type in the Form 13 (13 slot chassis).

The V743 controller will need to be reconfigured if:
- The monitor in the Form 7 is changed from Internal FPD to an external monitor
- The monitor for the Form 13 is changed
- A controller is moved from a Form 13 to a Form 7.

Table 2: BSTS Display Problems

Symptom	Problem
Monitor dark or distorted	Compatibility or connection
Dark Screen on Form 7	Hardware Failure
White Screen on Form 7	No data or compatibility problem

Procedure for display re-configuration

1. Shut down the BSTS correctly and turn the system power OFF.
2. Disconnect the SCSI cable from the Controller to the Hard Disk.
3. Hold the Rst/Abt toggle switch on the V743 controller in the ABT(down) position and switch the BSTS ON.
4. When the red lights on the controller go off, release the Rst/Abt switch. This will take about 5 seconds.
5. The boot ROM will slowly cycle though all available graphics modes. This procedure can take up to 4 minutes depending on the current and correct setting.
   The screen may be blank for long periods of time during the search.
   When you see a clear message "Press 1 to select this console and then select Enter" appear on the screen, follow the instructions. This shows that the compatible monitor option has been selected.
6. The next message will ask you to press Esc to confirm the console selection.
   Immediately select and hold <Esc> for about three seconds until the display message changes. You may have to press Esc several times. (If you miss this step, wait until the monitor selection reappears. This may be up to 5 minutes.)
7. You will be presented with a MAIN MENU

8. Select option 2 (Path Configuration) and then select option 3 (Console path) from the next window. If you need to go back to the previous menu by entering a zero, you may find entering zero results in an "*" . You need to press the "M" key for zero as the keyboard is not configured at this stage.
9. From the next screen select 1 (Graphics 1). This will bring up a list of displays with the chosen display having an asterisk beside it. For instance *12 for the Form 7 FPD.
10. Check now that the correct display type has been selected. If you think an incorrect display has been chosen, you can change it by entering the appropriate number and <Enter>.

    For the Form 7 flat panel display, the screen will be white for most of the cycle and change to dark when the correct display has been selected by the controller. Only the correct display type will show any screen activity. Screen inactivity may last for up to 5 minutes before the FPD is selected.

    For the external display, there may be more than one selection that appears to be correct. If, after setting the display there are problems with the CDE screens with screen size, colors, distortion, or flicker, try selecting another compatible display as described in the steps above.

11. Type 55 to save your configuration.
12. Reconnect the SCSI cable from the controller to the Hard Disk.
13. Type 77 to reboot.

External VGA monitor is dark or distorted

If, at startup, or during operation, the external VGA monitor is dark or distorted follow this procedure:

1. Check that the monitor power is OK by checking the LED on the monitor front panel.
2. Check the power lead to the monitor.
3. Check that the controller has booted up.
4. Disconnect the monitor video cable. Most monitors will display a “No Signal” message to verify that the monitor is working correctly.
5. Check the VGA monitor cable. Check that the BSTS adapter cable is OK and properly connected to the "VIDEO" socket on the front of the controller.
6. Check for bent or broken pins on the monitor cable and “VIDEO” socket.
7. Change the monitor cable with a known good cable.
8. Substitute another monitor or try the monitor on another workstation or PC. Some monitors may have a separate SYNC input and so are not compatible with the BSTS which requires its sync source via the green line from the monitor.
9. Check that the controller is configured for the monitor being used. See “Procedure for display configuration” above.

Dark screen on the Form 7 display

As this display is backlit, this scenario may indicate that the display or its associated circuitry is faulty and requires hardware service. Contact Agilent for hardware service, see “13. Contact Agilent Support” on page 41.

White screen on the Form 7 display

If the internal display on the Form 7 is white and shows no video activity, this indicates that the backlight is working but there is no video data getting to the display.

Possible causes are:

- Faulty display, or incorrect display configuration.
  See “5.2 Reconfiguring BSTS for standalone operation” on page 14 to correctly configure the display.

- A hardware failure of the controller or mainframe, or faulty cable connections.
  Contact your local Agilent Service Center for hardware service, refer to “13. Contact Agilent Support” on page 41.

3.6 Passwords

Changing the ‘bisdn’ password

You can change or set the *bisdn* password using the following command at a terminal prompt:

```
$ passwd bisdn
```

You will be asked to enter the old password, and then set and confirm the new password.

If you have forgotten the *bisdn* password, login to the BSTS as *root* and use the following command at a terminal prompt:

```
# passwd bisdn
```

You will be asked to set and confirm the new password.

Changing the ‘root’ password

An unknown *root* password can be changed as follows:

1. If you are logged on to the BSTS, reboot it using either of these methods:

   (i) From the BSTS Test Session Manager's System menu, select Reboot
   (ii) From a terminal prompt type
   $ /usr/broadband/bin/bisdn_shutdown -reboot

2. During boot up, when text first appears, press and hold the <*Esc*> key.
3. On the Main Menu, select "1 - Boot From a Device" to make the system scan for boot devices.
4. On the BOOT FROM DEVICE menu, select "33 - Effective ISL Mode [Automatic]" and press <*Enter*> to change Item 33 from [Automatic] to [Interactive]. Then, select "1 - SCSI.6.0", and at the ISL prompt, type "hpux -is" to cause the system to boot up in single user-mode.
5. When the system boots, at the console prompt use the command "passwd root" to reset the root password.
6. Reboot the BSTS using the following command:
   ```
   # cd /
   # shutdown -r 0
   ```

3.7 Login Problems

Table 3: Login Problems

Sympton	Problem
Cannot login via CDE	File System Full
Cannot initialize or connect to desktop messaging system	Network settings

CDE Login

If the BSTS file system is full, you will not be able to login to the BSTS. A common symptom of this problem is after entering the login and password information, the screen will become blank, and then return to the CDE login screen.

To solve this problem:

1. Log in as 'root'
2. Check the size of the filesystems by typing
   # bdf
   No filesystems should be over 90% full
3. If the /var directory is quite full, remove the following files and directories
   # rm /var/adm/wtmp
   # rmdir /var/adm/crash
4. Find any core files which are created by system dumps and very large. These can be removed.
   # cd /
   # find . -name core
   This will print out the path of any core files, and they can be removed.
5. Remove any temporary Acrobat files from the /var/tmp directory. The temporary Acrobat files contain 'AAA' in their filename.
   # cd /var/tmp
   # ls
   # rm *AAA*
6. Reboot the BSTS, and login again as 'bisdn'
   # shutdown -r now

Desktop Messaging System error

When logging in to the BSTS, you may receive the following error message if your network settings are incorrect.

"Unable to intialize or connect to the Desktop messaging system. Check your $HOME/.dt/errorlog for more information. Press ok and your session will exit."

Contents of the $HOME/.dt/errorlog file:
"dtsession:The ToolTalk session server (ttsession) could not be started.
This indicates that either ToolTalk is not installed or that it is not installed correctly on this machine.
Please see your System Administrator."

Remedies:

1. Check with your system Administrator that your network settings are correct.
   Take your BSTS off the network, and add to the network again.
   Refer to “5. Networking and Remote Access Issues” on page 13.
2. Rename the /etc/resolv.conf file and reboot your BSTS.
   $ su
   # mv /etc/resolv.conf /etc/resolv.conf.bak
   # exit
   $ bisdn_shutdown -reboot

4. BSTS Shutdown

You must NOT turn off the power to the BSTS mainframe or reboot using the Rst/Abt switch without first issuing the “shutdown” command. If this is not done correctly, the file system may become corrupt. Although the file repair process will normally fix any improper shutdown problems during the next boot up, there is always the potential for data corruption, which can lead to system instability.

Shutdown procedure

The shutdown procedure takes approximately 1 to 2 minutes depending on the BSTS configuration.
It can be initiated in two ways.

1. If you have a BSTS session running, quit all applications. From the <System> menu, at the top of the Test Session Manager select <Shutdown> and <Halt>. Shutdown can also be accessed from the BSTS Application Manager.

   The power can only be turned off or the system reset, after the following message appears on the screen: "*System halted OK to turn of the power or reset the system...*"

2. If there is no BSTS application running, or if the CDE is not running, you can shut down or reboot from a terminal.

   To shutdown the BSTS type:
   $ bisdn_shutdown -halt

   To reboot the BSTS type:
   $ bisdn_shutdown -reboot

   The power can only be turned off or the system reset, after the following message appears on the screen: *“System halted, OK to turn off the power or reset the system...*"

NEVER remove the SCSI cable, reset the controller, or switch the power off when there is disk activity evident by the LED flashing on the E4208D disk drive.

Problems with shutdown

1. If for any reason, you are unable to observe the screen during shutdown, wait at least five minutes before switching the power off.
2. If there is no disk activity (the yellow LED on the E4208D front panel is not flashing), disconnect the SCSI cable from the disk drive then reboot or switch off the power. Do this only after 5 minutes have passed after the shutdown command has been initiated and there is no disk activity.
3. If for any reason you are unable to issue the shutdown command from the local console, and the BSTS is networked, try logging in as root or bisdn from a remote terminal and issuing the shutdown command from there. You can then type <ping (IP address)> and when the remote system stops returning packets, it is OK to power down.
4. As a last resort, if you are unable to properly shut down as described above, remove the SCSI cable from the disk drive module at a time when there is no disk activity (the yellow LED is dark) and then reset the controller using the Rst/Abt or switch the power off.

If the system is switched off without shutdown

This may happen when power failures occur or someone inadvertently switches the power off without proper shutdown. If this happens, HP-UX will attempt to repair the file system next time it is booted up. This is done by recovery of backup files and running the *fsck* disk repair utility. This will add time to the boot up process but in most cases will be successful. If you see a message that *fsck* is running when you start up the BSTS, allow it to complete its task before attempting to use the BSTS.

About fsck

In addition to *fsck* running when the file system has been corrupted, it can also be run from the command line to check the integrity of the file system. Although the file repair process will normally fix any file integrity problems, there is always the potential for data corruption, which can lead to system instability.
See HP-UX 10.20 System Administration "How To" book for detailed information about *fsck*.

5. Networking and Remote Access Issues

Many users want to connect their BSTS to their local network in order to remotely control the BSTS and share files with other systems. The V743 BSTS controller can be configured to connect to a network to allow access from other workstations, and from PCs using VNC or remote X clients.

BSTS won't boot from a network

Unlike earlier BSTS versions which ran HP-UX 9.05, the latest version of the BSTS with HP-UX 10.20 cannot be booted from a network shared drive. However, once booted from its hard drive or other device, the BSTS can be remotely controlled via a network.

5.1 Configuring the BSTS for networking

The following section describes procedures to set up the BSTS for network interworking. Networking a BSTS is best addressed by someone with network administration experience.

These instructions can only be used if your BSTS is using software version B.14 or later.
If your system is not running version B.18, contact Agilent for a Free Software upgrade. See the "Contact Agilent Support" section.

Required information

Before configuring the BSTS for use on a network, you will need to obtain the following information from a Network Administrator:

- Hostname or System Name of the BSTS
- IP address of the BSTS
- Local Timezone and area
- Subnet mask
- Default gateway (if applicable)
- Hostname of DNS gateway
- IP address of DNS gateway (or other routing information)
- Local Domain name
- Domain Name Server (DNS) IP address
- IP address of the local name server
- Hostname of name server
- NIS domain name (if applicable)

Procedure:

1. Reboot the BSTS and log in as "root".
2. Physically connect the BSTS to the network you are to work with.
3. To enter the network data, open a terminal window and type:
   $ /sbin/set_parms initial
4. You can now enter the information collected above.
   Please note: The BSTS does not need to be set as a font server.
5. Reboot the BSTS and test the network connection by typing:
   $ ping <system name> or logging in from another network node.

Wait until the system starts returning packets, then wait an additional minute to ensure all appropriate processes have been executed before logging in.

5.2 Reconfiguring BSTS for standalone operation

If a BSTS has been connected to a network and is subsequently taken off, it should be reconfigured for standalone operation. Otherwise, attempts to login may fail if the network is not available.

BSTS software version B.18 or later

If you have the BSTS software version B.18 or later installed, use the following instructions to remove the BSTS from the network.

PLEASE NOTE: As the BSTS will be rebooted, ensure that there are no active sessions or other users on the BSTS.

Open a terminal window, and at the prompt type:

```
$ su
# cd /usr/broadband/util
# ./no_network
```

When the BSTS is rebooted, the system is configured for standalone operation.

BSTS software version between B.14 and B.18

Please download a copy of the no_network script and request a free software upgrade from the BSTS Support website: **www.agilent.com/comms/BSTS**

If you cannot obtain a copy of the no_network script from our website, use the following method to remove the BSTS from the network.

Procedure:

- Enter the superuser mode by typing at the command line:
  $ su
- Copy the following files to allow stand-alone operation.

Table 4: BSTS Network Files

Copy File From	Copy File To
/etc/rc.config.bak/hosts	/etc/hosts
/etc/rc.config.bak/inetd.sec	/usr/adm/inetd.sec
/etc/rc.config.bak/namesvrs	/etc/rc.config.d/namesvrs
/etc/rc.config.bak/netconf	/etc/rc.config.d/netconf
/etc/rc.config.bak/xfs	/etc/rc.config.d/xfs
/etc/resolv.conf	/etc/resolv.bak

- Remove the file /etc/resolv.conf as follows:
  $ rm /etc/resolv.conf
- Reboot the BSTS using the following command:
  $ bisdn_shutdown -reboot
- When the BSTS is rebooted, the system is configured for standalone operation.

5.3 Using a SUN workstation

When using a non-HP UNIX workstation, most commonly SUN workstations, the colors and fonts of BSTS windows may be affected. The BSTS windows use some fonts that only the HP workstation knows about.

This can be rectified by performing the following commands on the SUN workstation before using the BSTS.

The procedure is given below:

1. On the SUN workstation type the following:
   $ xrdb -query -all > backup.fnt
2. On the SUN workstation type the following:
   $ xrdb -remove -all
   You should not see any fonts listed here now.
3. You may now login into the BSTS and run the BSTS software.

NOTE: If you wish to go back to the old setup, just type the following on the SUN workstation:
$ xrdb -merge backup.fnt

5.4 Using a PC to access the BSTS

If the PC is running “Reflection X” or “Exceed”, error messages about conflicting font versions may be displayed.
This error will occur when using 'True Color' mode, and will be removed when changing to 'PsuedoColor Emulation' mode.
On Reflection X, select the Color function from the Settings menu, and change the font mode to ‘PsuedoColor Emulation’.

5.5 Installing VNC on the BSTS

VNC is a remote display system which allows you to view the BSTS CDE from the Internet and on a PC. The CDE can be used by several viewers at once.

VNC has been included free with the BSTS Application Version B.I7.01 onwards. If you are running a system prior to B.17.01, download VNC from the BSTS website and order a free copy of the B.18 software.
www.agilent.com/comms/BSTS

VNC is available in a tar file at the following location on the BSTS:

/usr/broadband/util/vnc.tar

Install VNC as follows:

1. Enter superuser mode:
   $ su
2. Create a directory to install VNC:
   # cd /usr/broadband/util
   # mkdir vnc
3. Copy the tar file into the new directory:
   # cp vnc.tar vnc
4. Change into the new directory and un-tar the file:
   # cd vnc
   # tar xvf vnc.tar
   This will extract the required files from the archive.
5. Exit out of superuser mode:
   # exit
6. Change into the directory where the files have been extracted to:
   $ cd /usr/broadband/util/vnc/bsts_pkg
7. Start the VNC server application:
   $ vncserver
   You will be prompted for a password to stop unauthorised access via the client application. Enter (and remember) this password.
8. To install the VNC client on your PC either copy the file vncviewer.exe from the directory /usr/broadband/util/vnc/bsts_pkg on the BSTS to your PC (using ftp or a floppy disk), or download the VNC viewer executable from the customer website and install it on your PC. **www.agilent.com/comms/BSTS**

PLEASE NOTE: Each time the BSTS is rebooted, the VNC Server application will need to be restarted.

6. Test Session Manager

The Test Session Manager (TSM) is the software and GUI that is used to operate the BSTS. The Test Session Manager can be started by selecting the icon from the Application Manager, or by running the command 'bisdn_test'. The Test Session Manager is used to select the particular modules and protocols that you wish to use. Each module has a control panel used to configure parameters and run tests.

Table 5: Test Session Manager Problems

Symptom	Problem	Section
Modules Greyed out or Missing	Incorrect VXI Logical Address Settings or no compatible modules	6.1
Module RED in TSM	Hardware or firmware failure	6.2
Cannot start TSM from icon	Corrupt file	6.3
Cannot connect to Resource Manager	Resource Manager not running	6.5

6.1 Modules greyed out or missing from TSM

If modules are greyed out or do not appear in the Test Session Manager, the problem is usually caused by invalid module VXI logical addresses.

Check that the logical addresses are unique and 8 times the slot number.
To do this, open an hpterm, and type the following:

```
$ dr_bsts
```

The output will look like:

```
bisdn@bbseries[10]> dr_bsts
V743 Controller
E4208 found in Slot 1, Logical Address 8
   E4208 SCSI Disk Module installed with Base Software version 5.03.01
E4209A found in Slot 3, Logical Address 24
   E4209A Software version is 4.09.01
   E4209A Firmware version is 5.20
E1695A found in Slot 4, Logical Address 32
   E1695A Software version is 02.27
   E1695A Firmware version is A.03.02
   E1695A has serial number AU33330370
E1697A found in Slot 5, Logical Address 40
   E1697A Software version is A.02.07
   E1697A Firmware version is A.04.00
   E1697A has serial number AU33500377
```

If the logical addresses are incorrect, refer to "7.2 Logical Addresses" on page 21, to set the logical addresses correctly. Servant modules will not have logical addresses that are 8 times the slot number. See "7.2 Logical Addresses" on page 21 to correctly set the servant VXI address.

If all logical addresses are correct, remove the module and inspect its rear connection pins. Bent or damaged connection pins can stop the module from being recognised.
If there are no problems with the pins, there may be a problem with the slot. Install the module in a different slot and change the logical address. When changing the logical address check that the dip switch is not sticky or dirty. Refer to "4. BSTS Shutdown" on page 11, and "7.1 Moving Modules" on page 21 to avoid any problems when moving the module.

If a module is greyed out or missing, the module may not have any compatible modules to work with. For example, the CPP must have either a LIF module directly to the right or an ASP, ABR, NEM or OPT module with a LIF module directly to the right to allow it to be used. If it does not have a compatible module to the right, it will be greyed out in the TSM.

6.2 Modules RED in TSM

If a module displays as a red box in the TSM there may be a module failure.
Try the following to remedy this problem:

- Run a module self-test and reset. From the TSM 'System' menu, select 'Information'. Highlight the module from the module list, and click on 'Self-Test'. The module will either pass or fail the test. Then click on 'Reset', to reset the module.
- Check the VXI Logical Address of the module, as described in the section "Modules greyed out or missing from the TSM" above.
- Check the VXI Servant Address is set correctly, as described in the section "7.2 Logical Addresses" on page 21.
- Re-download the module firmware. To correctly re-download the firmware, refer to "7.7 Downloading Firmware" on page 27.

If these checks do not fix the problem contact your local BSTS Support Center for hardware service. Refer to "13. Contact Agilent Support" on page 41.

6.3 TSM will not launch from the BSTS icon

This will generally be due to a file system corruption, however the following remedies can be tried before recovering the file system.

1. Properly shutdown the BSTS and reboot.
2. If this has no effect, check the file /users/bisdn/.cshrc for:
   /usr/broadband/bin and **/usr/broadband/util**
   in the 'set path' variable and also check the SHLIB_PATH variable for:
   /usr/broadband/lib/bsts and **/usr/broadband/lib/hpt**
   If necessary, copy these from the standard .cshrc file by typing:
   $ cp /usr/broadband/user_env/cshrc /users/bisdn/.cshrc
3. Open a terminal and start the TSM by typing:
   $ /usr/broadband/bin/bisdn_test.
   If necessary, this method of starting the TSM can be used until the icon or startup panel is restored.
4. If the TSM cannot be started from a terminal window, do a file system recovery using the CD-ROM.

6.4 BSTS has locked up during measurements

Cause for this is usually difficult to detect as the application needs to be terminated before any further investigation can be initiated.

If the BSTS user interface is frozen, open a terminal session and kill the 'bisdn_test' application without restarting the system.

1. Start up a terminal session, and at the prompt type:
   $ ps -ef | grep bisdn_
   The output will look like:

```
  root  1035     1  0  Aug 23  ?        0:00 /usr/broadband/bin/bisdn_rmgr.demo
  root  1033     1  0  Aug 23  ?        0:00 /usr/broadband/bin/bisdn_rmgr
bisdn  4819  4762  0 14:49:41 pts/1     0:00 grep bisdn_
bisdn  4811  4795  0 14:48:18 pts/1     0:04 bisdn_155nt -diag_level 3 -display bbseries:0.0 -session 1
bisdn  4795     1  0 14:46:20 pts/1     0:13 bisdn_test
bisdn  4808  4795  0 14:47:57 pts/1     0:19 bisdn_cpp -diag_level 3 -display bbseries:0.0 -session 1
```

2. Note the process IDs of all bisdn processes except "bisdn_rmgr" and "bisdn_rmgr.demo".
   These are located in the second column of output.
   In this case the process IDs are 4819, 4811, 4795 and 4808.
3. To close the Test Session Manager, type.
   $ kill -9 <process id of bisdn_test>
4. To kill the process that has failed, type:
   $ kill -9 <process id>
5. Re-start the TSM by clicking the BSTS icon.

6.5 Cannot connect to Resource Manager

The resource manager process needs to be running to allow the Test Session Manager to open.

If the resource manager is not running the following error message will be displayed in the terminal window: "Cannot connect to Resource Manager process: OS error"

To start the resource manager, open an hpterm and type:

```
$ su
# bisdn_rmgr
# bisdn_rmgr.demo
```

7. Module Problems

The BSTS hardware is modular and needs to be correctly set up for the BSTS to run correctly. Some modules are used in pairs and their relative positions in the mainframe are important for proper operation. Some applications such as the Multiport Test Modules can only be run in a separate session to other BSTS configurations. Problems can be caused by incorrect logical address settings, incorrect firmware, faulty shared memory networking configuration and hardware faults.

7.1 Moving Modules

BSTS modules are **NOT** hot swappable, so the BSTS must be correctly shutdown and powered off before removing or adding new modules to the system.

- To correctly shutdown the BSTS, use the procedure outlined in "4. BSTS Shutdown" on page 11.
- To correctly set the VXI logical address for the modules, use the instructions outlined in the "Logical Addresses" section below .
- When adding modules to your system, refer to "7.3 Module Placement Rules" on page 23 and your BSTS System Installation and Startup Guide .

7.2 Logical Addresses

Checking the VXI address from the BSTS control panel

VXI modules must have unique logical addresses. The logical addresses can be checked by running *dr_bsts* from the *System Diagnostics* on the BSTS Application Manager panel. The current modules in the BSTS mainframe, their logical address and firmware version will be displayed. You can also check the VXI logical address from the Test Session Manager (TSM) by selecting *"System"*, then *"Information"* and then selecting the modules that are active. See the BSTS System Installation and Startup Guide for more information about this.

Modules should be set to the recommended factory default of 8 times their slot number in the mainframe. This means that the module in slot 2 has its VXI logical address set to 2 x 8 = 16. If the VXI logical address is incorrect, the system will not operate correctly or reliably.

Changing the VXI logical address

The logical address is set using dip switches located on the side of the module. The module has to be removed from the mainframe to gain access to the VXI switch. Follow the instructions in the "Moving Modules" section to correctly remove the module.
Make the settings according to the "1 or 0" indications on the sheet-metal case of the module. The switch settings are made in a set binary pattern and this pattern must be unique for each module in the mainframe.

Servant modules and the VXI address settings

The BSTS has a small number of servant modules which are controlled by master modules. When correctly setup, the servant module will be greyed out in the Test Session Manager.
Master modules require their VXI servant address to be set; by convention this value is 7.
The VXI logical address of the servant module must be a value of up to 7 more than the logical address of the master module.

The only cases where the VXI servant address should be set are:
- Line Interface module used with a Timing Reference Module
- 5-slot 622Mb/s solution
- E1697A OC-3 LIF used with an Electrical Interface module

The following tables outline how to set up the VXI logical address and VXI servant address in these cases.

Table 6: Line Inteface and Timing Reference Module setup

	Master: E1697A OC-3 LIF	Servant: E1679A Timing Reference
Slot Number	2	3
Logical Address	16	17
Servant Address	7	N/A

Table 7: 5-slot 622Mb/s system setup

	E1671A	E1693A	E1694A	Master: E1672A	Servant: E1662A
Slot Number	2	3	4	5	6
Logical Address	16	24	32	40	41
Servant Address	0	0	0	7	N/A

The servant address does not need to be set in any other cases. For example, using a LIF module with a CPP or ASP does not require the servant address to be set.

VXI Reset

To help solve hardware problems, reset the hardware across the VXI backplane to clear any failure conditions.

Use the following command to clear the VXI backplane:

```
$ /usr/pil/bin/iclear vxi
```

Ensure that no other BSTS instruments are in use, or BSTS applications are running before resetting the VXI backplane.

7.3 Module Placement Rules

To ensure that the BSTS operates correctly, modules must be inserted in the correct order.
Always consult the module's Installation Guide for further information. If you do not have a hard copy of the module Installation Guide, these documents are available from the BSTS Learning Center CD and the BSTS Customer Support website:
www.agilent.com/comms/BSTS

Instruments:
- The BSTS modules are used in an Instrument. This is started from the Test Session Manager by selecting the required modules and protocols.
- Unless a Frame Processor module is being used, all instruments must contain a Line Interface Module.
- Line Interface Modules can be used by themselves.

E4209A/B Cell Protocol Processor:
- The Cell Protocol Processor must always be the leftmost module in an Instrument.
- There must be no empty slots between the CPP and its associated LIF.
- Available Bit Rate Emulators, Network Impairment Emulators, OAM Protocol Tester modules, LIF modules and an ATM Stream Processor can be selected for use with the CPP and its associated LIF. They must be placed between the CPP and LIF to work correctly.
- There is a limit of 4 slots allowed between a CPP and its associated LIF.
- The E4209A cannot be cascaded. The E4209B module can have up to 4 modules cascaded for extra performance and memory.

E1607A 0-155Mb/s ATM Stream Processor
E1609A 0-622Mb/s ATM Stream Processor:
- The ATM Stream Processor must have a LIF module to its right, and can optionally have a CPP to its left.
- The only modules that can be placed to the right of an ATM Stream Processor are Network Impairment Emulator Modules and Line Interface Modules.
- A E1609A 0-622Mb/s ATM Stream Processor can only communicate with a 622Mb/s Line Interface module when it is directly to the right of the ASP.
  E1609A ASP | E1618A 622Mb/s LIF | Other LIF module
- The E1607A 0-155Mb/s ATM Stream Processor cannot communicate with a 622Mb/s Line Interface module.

E4206A T1/E1 Frame Processor
E4207A V-Frame Processor
E6282A Ethernet Frame Processor
- These modules use the Shared Memory Network and must be placed as close to the SCSI Hard Disk (E4208D) as possible. See the section, "Shared Memory Network Modules", for further information.

E6287A Available Bit Rate Emulator
E6270A OAM Protocol Tester
E4219A Network Impairment Emulator:
- These ABR and OPT modules use the Shared Memory Network and must be placed as close to the SCSI Hard Disk (E4208D) as possible. See the section, "Shared Memory Network Modules", for further information.
- The ABR, OPT and NEM modules should be placed between a CPP and LIF module.
- The Network Impairment Emulator Module cannot be placed between an E1609A 622Mb/s ATM Stream Processor and a 622Mb/s Line Interface module.

- When using the NEM in conjunction with either an ABR or OAM module, the NEM must be placed directly to the left of the LIF module. This is to allow all cells to be impaired.
- You can cascade up to 4 ABR modules, 4 OAM Protocol Testers or 4 Network Impairment Emulator modules in an instrument.

E4204A HSSI Line Interface Module:
- This module must have an E4209A/B Cell Protocol Processor to its left, and either a DXI license or a FR license in order to run. Both of these licenses are distributed freely with BSTS software version B.18.

E1608A 622/155 POS processor:
- The 622Mb/s POS can have either a E1618A 622Mb/s Line Interface or E1697A 155Mb/s Line Interface module immediately on its right.
- The 155 Mb/s POS must have an E1697A 155Mb/s Line Interface module immediately on its right.
- The 622 Mb/s POS can access a 155Mb/s Line Interface with the following configuration E1608A, E1618A, E1697A

6-slot 2.4Gbps POS Bundle:
- Cannot be used in an instrument with any other modules on its left (ie CPP/ASP).
- The Module Order: E1615B, E1676A, E1669A/B

6-slot 2.4Gbps ATM Bundle:
- Module Order: E1615A/B, E1669A (Timing Reference- optional), E1676A, E1669A/B
- E4209B CPP and/or E1607A ASP can be placed next to the E1615A/B, and used in the same session, but it can only add/drop traffic at 155Mb/s.
  See the User Help from the Learning Center CD or BSTS Customer Support website to correctly drop traffic to other modules.
  www.agilent.com/comms/BSTS

5-slot 622 Mbps ATM/SDH solution:
- Module order:
  E1671A, E1693A, E1694A, E1672A, E1662A (servant module)

7.4 Hardware Checks

Module pin connections to the mainframe

Many hardware problems are caused by poor connections between the module and the mainframe. Always ensure modules are firmly inserted into their slots. Some problems can be removed by powering the BSTS down (See “Shutting down the BSTS”) and pulling the module from the mainframe, checking for bent or missing pins on the module rear connector, and reseating the module back into the mainframe. If possible, insert the module into a different slot to eliminate the possibility that the slot is faulty. When moving the module ensure the logical addresses are also changed. See “7.1 Moving Modules” on page 21 to correctly change the logical address.
If you find bent or missing pins contact your local Agilent Service Center for hardware service.
See “13. Contact Agilent Support” on page 41.

7.5 Shared Memory Network modules

Some modules use the BSTS shared memory network, and may encounter unique problems.

Shared memory networked modules are:
- E6270A OAM Protocol Tester
- E6282A Ethernet Frame Processor
- E4207A V Interface Frame Processor
- E6287A Available Bit Rate Emulator
- E4206A T1/E1 Frame Processor

Problems

The error message "Problems were encountered launching the application. The application cannot be made available" can be caused by a shared memory network problem with one of the above modules.

Remedies.

1. Make sure that the shared memory modules are installed as closely to the controller as possible, preferably in slot 2 or 3.

2. Check that the module can access the controller.

   Open a terminal window and type:
   $ ping 192.168.1.1

   There should be a return repeating message:
   64 bytes from 192.168.1.1: icmp_seq=<n>. time=0. ms

   If there are no bytes returned then you will need to restart the shared memory network on the BSTS. At the terminal type
   $ smn_start

   Ping the controller again and check for returned bytes.

3. There should be four NFS processes running when these modules are active.

   This can be checked by typing at a terminal prompt:
   $ ps -ef | grep nfs

   Four NFS processes should be running, each of which are called:
   /usr/sbin/nfsd

4. If there are not four NFS processes running, check the file
   /etc/rc.config.d/nfsconf

   Using a text editor such as vi, check for the following lines in the file
   NFS_SERVER=1
   START_MOUNTD=1

If these are set to be 0 or any other number, change it to '1'.
After they have been changed, save the file, shut down and restart the BSTS.

5. Check the file /etc/hosts.

   IP addresses in this file should not be duplicated
   Comment out (using a #) or change as necessary, any duplicated IP addresses.

6. A firmware download to the module may be necessary. This process is different from other modules that do not use the shared memory network.
   Refer to "7.8 Downloading firmware to shared memory networked modules" on page 27.

7.6 LIF Problems

Line interfaces have connections to the environment outside the module. This may result in spurious alarms or errors generated or captured at the receiver.

Unexpected errors or alarms

These may be due to faulty hardware on either the BSTS or the equipment under test, however there are several causes that may not be due to hardware failure.

Check the following:
1. Lasers on the line interface and the system under test are switched on.
2. Change the optical cables to ensure they are not damaged or unclean. Refer to Appendix F "Cleaning Optical Cables" to correctly clean the cables.
3. Is there erronous traffic from the system under test?
4. Check the frame settings on the line interface.
5. Ensure that ATM traffic from the line interface is switched on (Distribution ON).
6. Check for incorrect VPI/VCI settings.

Before obtaining hardware service:
1. Shutdown the BSTS and reboot, use the correct shutdown method as described in "4. BSTS Shutdown" on page 11.
2. Connect the receive and transmit ports of the line interface and carry out the loopback test described below, and in more detail in the "System Installation and Startup Guide".

Loop-back test

BSTS Line interfaces and associated processors, can be checked with a high level of confidence by performing the loop-back test. Always quit and restart the module before starting this test.

1. Disconnect cables from the equipment under test and connect the line interface **Out** and **In** ports with known good cables.
2. Switch on the laser if the system uses an optical line interface and ensure that the signal and laser LEDs are ON.
3. Ensure the ATM cell distribution is ON.
4. Check for alarms and errors as described in the "System Installation and Startup Guide". A copy of this is available from the BSTS Learning Center CD, or the BSTS Customer Support website: **www.agilent.com/comms/BSTS**

5. If you still encounter errors or alarms, clean all optical cables and connectors on the BSTS Line Interface and equipment under test then repeat the test. Refer to Appendix F "Cleaning Optical Cables", to correctly clean the cables and connectors.

7.7 Downloading Firmware

Firmware can be downloaded to the module for a number of reasons:
- The module firmware version is not compatible with the BSTS Application Software version.
- A firmware corruption in the hardware.

The firmware of all BSTS modules is held on the disk drive in the file system of the BSTS. When a software upgrade is performed, the firmware is updated on all modules in the BSTS chassis. If a module is moved to the upgraded BSTS, the firmware may be incompatible, and the new version will need to be downloaded.

Use the following method to download module firmware:
1. Close all applications and the Test Session Manager.
2. Select 'Update Module Firmware' from the System menu on the Application Manager.
   If the Application Manager window is not running, type the following to open the window:
   $ bsts
3. Select the modules you wish to upgrade from the Firmware Download Wizard.
4. Click the Finish button to start the download.

Warning:
DO NOT stop the firmware upgrade process whilst it is running. A firmware upgrade can take up to half an hour for each module. Allow the firmware upgrade to complete before doing anything else with the BSTS. If the firmware upgrade process is interrupted, the hardware will be unusable and will need to be sent to an Agilent Service Center for repair.

See "Downloading Module Firmware" in the System Installation and Startup Guide for further information about downloading firmware.

7.8 Downloading firmware to shared memory networked modules

The download process for these modules is different than the above description. You need to connect to the module, before downloading the firmware.

To do this, you need to use the following commands:

$ telnet 192.168.1.<(slot number* 2) + 1>
> cd "/hst/usr/broadband/device/efp/firmware"
> <init (Note the "less than" symbol)

For example, if the module is in slot number 2 then type:

$ telnet 192.168.1.5
> cd "/hst/usr/broadband/device/efp/firmware"
> <init

This example is for the E6282A Ethernet Frame Processor module (EFP). For other modules use the directory for that module.
For example, for the V Frame Processor download use: /usr/broadband/device/viffp/firmware.

Problems with the firmware download

When you are trying to re-install the BSTS firmware from the hard disk, you may encounter some problems. If the firmware download program does not start, check the following:

1. The PATH variable for the user you are logged in under (normally /users/bisdn) includes the directory /usr/broadband/util. From a terminal check this by typing:
   $ echo $PATH
2. The firmware files are present in the /usr/broadband/device directory.
   For instance for the E1609A 622 ATM Stream Processor the directory named *asp* contains a download script named *asp_download*. Please run the script manually:
   $ /usr/broadband/device/asp/asp_download
3. If system messages indicate that there is a problem communicating with the module, check that the module is properly mounted and configured.
4. If you are reloading a version already installed, you need to force the download of the same version. Not all BSTS modules can be upgraded this way. See Appendix E “Forcing a Firmware Download” to correctly force the firmware download.

8. Upgrading the BSTS

To install the latest BSTS Test Software you require the B.18 BSTS Test Software & Online Help CD-ROM. This software must be installed on the HP-UX 10.20 Operating System. Check the "Hardware Requirements" section if you need to install HP-UX 10.20.

8.1 Hardware Requirements

Before proceeding with an upgrade on your BSTS, you should check that you have compatible hardware for the software.

Hard Disk

You will not be able to install HP-UX 10.20 if you have either of the hard disk modules; E4208A or E4208B. You will need to purchase a new E4208D Hard Disk Drive to install HP-UX 10.20 and B.18.

Controller

To install B.18, you must have a V743 controller with a minimum of 64MB of RAM. It is advisable to have 128MB RAM for the best performance.

Use the following method to check the amount of RAM on the controller:

1. Open an hpterm
2. Enter superuser mode:
   $ su
   Enter a password if required.
3. Run 'dmesg'
   # dmesg
   The amount of RAM (in Kilobytes) on the controller is printed in the last line as "Physical Memory".
4. Exit superuser mode:
   # exit

Contact your local Agilent office if you need to purchase a new hard disk or more RAM. Check the BSTS website, or refer to "13. Contact Agilent Support" on page 41, to find your local Agilent office.
www.agilent.com/comms/BSTS

8.2 Installing HP-UX 10.20

Re-installing HP-UX will format and delete all the data on your Hard Disk, therefore you need to make a copy of any important testing data and make a copy of your BSTS license files. You should copy these licenses to a floppy disk and print a copy if possible.
The license files and directories which often contain user data are given in the table below.

Table 8: Backup Data before HP-UX installation

License Files	User Data
/usr/broadband/config/bsts_license	/users/bisdn/broadband/recordings
/usr/broadband/config/license_db	/users/bisdn/broadband/user_programs
	/users/bisdn/broadband/sessions
	/users/bisdn/broadband/tx_sequences
	/users/bisdn/testmanager

NOTE: Save data for any other users, not only *bisdn*. For example; /users/freddy, /users/sallyf

Use the following method to install HP-UX 10.20:

1. Connect the SCSI CD-ROM drive shipped with your BSTS to the Hard Disk SCSI connector, setting up a SCSI chain terminated at the CD-ROM. Ensure the SCSI ID is a unique number. It is advised that the SCSI ID for the CD-ROM is 2.

   The default SCSI settings are:
   Hard Disk SCSI ID 6
   Controller SCSI ID 7
   Floppy disk SCSI ID 0

2. Turn on your CD-ROM drive and place the HP-UX 10.20 CD-ROM into the drive.

3. Power your BSTS up and press <Esc> for a few seconds once you see the message:

   'Press [Esc] to discontinue boot process'

4. If you have successfully pressed Esc you will see the following message after a few moments:

   Auto boot aborted
   === Main Menu ====

5. Press <1> and then <Return>.

6. Then you should see the message:

   'Scanning for boot devices. Please wait....'

7. After a minute, two options will be displayed. Select the SCSI CD-ROM drive that you attached to your system.

8. Then you will be asked a series of questions. Answer these questions.

9. If you are installing HP-UX 10.20 on a Hard Disk of 8GB or greater you will need to manually increase the number of extents.

   To calculate the number of extents required, you can use this formula:
   Size of Hard Disk (in MB) / Size of Extents (4Mb)
   Hence for a disk size of 8676MB, the number of extents required is 2169.
   For a 9.1GB Hard Disk, you would set the number of extents to be 2275.

10. It will take about 2 hours to install HP-UX 10.20, once the installation is complete the system will reboot.

Once you have upgraded HP-UX, use the "Installing BSTS B.18 Test Software" instructions to install the application software.

8.3 Installing BSTS B.18 Test Software

PLEASE NOTE:
When installing the BSTS software with a DVD-ROM drive, the DVD-ROM may not be recognized. If this occurs you will need to edit the install script as *root* or *superuser* and then run the installation software.

Use this method to edit the install script if the DVD-ROM is not recognized:
1. Open an hpterm.
2. Using the vi editor, edit the script /usr/broadband/util/bsts_install, and change line 75.
   It initially is:

   i=${ioscan -C disk | grep -i **cd** | head -1 | awk '{print substr($1,7,1) }')

   Change the 'cd' to 'rom' so the line reads:
   i=${ioscan -C disk | grep -i **rom** | head -1 | awk '{print substr($1,7,1) }')

3. Save the changes to the file, and start the installation process.

Standard Installation

Use the following instructions to upgrade your BSTS software.
1. Connect any SCSI CD-ROM drive to your BSTS Hard Disk SCSI connector, setting up a SCSI chain terminated at the CD-ROM. Ensure the SCSI ID is a unique number. It is advised that the SCSI ID of the CD-ROM is 2.

   The default settings are:
   Hard Disk SCSI ID 6
   Controller SCSI ID 7
   Floppy disk SCSI ID 0

2. Turn on your CD-ROM drive and place the B.18 Test Software and Online Help CD-ROM into the drive.
3. From the BSTS Application Manager, click on the Install Software icon.
4. Enter a root password if required.
5. Read the instructions from the BSTS Install Wizard.
6. Highlight all the Software Packages for Installation.
7. From the Actions menu, select "Mark for Install".
8. From the Actions menu, select "Install Analysis".
9. Check the logfile for any errors or warnings after the analysis has completed.
10. Install the packages. This should install with no errors.

    PLEASE NOTE: It can take up to 2 hours to upgrade the software, depending on the number of modules in the BSTS. The firmware for the modules is also upgraded during installation, and can take up to half an hour for each module.

11. Exit the "swinstall" application.
12. Reboot your system.

After HP-UX Installation

Installing HP-UX formats the hard disk and the BSTS installation programs. Hence, the software installation is more hands-on, and requires a different installation method.

Use the following instructions to install your BSTS software directly after an HP-UX installation.

1. Log in as "root" and press <Enter> for the password. This will bring up the X environment.
2. Remove the HP-UX 10.20 CD from the CD-ROM and place the BSTS Test Software & Online Help CD into the CD-ROM drive.
3. Click on the BSTS icon and then select "INSTALL/UPGRADE" item from the menu.
4. Press "OK" to dismiss the "Note" window.
5. Now set the following:
   - Source Depot Type: "Network Directory / CDROM "
   - Source Host Name:
   - Source Depot Path: /cdrom/v743
   - Software Filter..: None
6. Press the "OK" button.
7. Highlight all the Software Packages for Install
8. From the Actions menu, select "Mark for Install".
9. From the Actions menu, select "Install Analysis".
10. Check the logfile for any errors or warnings after the analysis has completed.
11. Install the packages. This should install with no errors.
12. Exit the "swinstall" application.
13. Reboot your system.

Copy your license files back into the directory /usr/broadband/config, and user data to the correct directories to allow you to use your BSTS successfully.

Upgrading the Firmware

When the BSTS Test Software is installed, the module firmware will be upgraded for any modules in the BSTS mainframe. When new modules are inserted into the mainframe, the firmware will need to be manually upgraded using the method described in section “7.7 Downloading Firmware” on page 27.

9. License problems

The BSTS has licenses to allow different software applications and protocols to be used by the modules. To allow these software applications to run, your system must have valid licenses.

The following software licenses are provided free with B.18:
- E4211B SMDS Test Software
- E4213B SMDS DXI Test Software
- E6275A FUNI Test Software
- E6278A Frame Relay SVC viewer software
- E6279A Frame Relay/HSSI software

See Appendix A "Software Licenses", for the complete listing of software licenses available on the BSTS.

There are 3 different licensing schemes supported on the BSTS:
- Hardware based licensing scheme. It relies on a hardware key being attached to the serial port of the controller of the BSTS. The hardware key license can be used for the Conformance Test Suites and the Productivity Tools.
- Software based licensing scheme - old scheme. It relies on the presence of the license file license_db in the /usr/broadband/config/ directory.
- Software based licensing scheme - new scheme. It relies on the presence of the license file bsts_license in the /usr/broadband/config/ directory.

The licenses for your applications will be in one of these three forms.

9.1 License files

The current contents of the license files can be viewed using the licenseEntry utility. To run this utility select the Add Software Licenses icon from the Application Manager, or type the following command:

```
$ licenseEntry
```

The contents of the license files can also be viewed using an editor such as vi, or a command such as 'more' from the command line:

```
$ more /usr/broadband/config/bsts_license
$ more /usr/broadband/config/license_db
```

Problems may be experienced if the license files do not have the correct permissions. To check the file permissions, open an hpterm and type the following command:

```
$ ll /usr/broadband/config/bsts_license
$ ll /usr/broadband/config/license_db
```

The output should look like:

```
-rw-rw-rw-   1 bisdn  bisdn    1684   /usr/broadband/config/bsts_license
-rw-rw-rw-   1 bisdn  bisdn     658   /usr/broadband/config/license_db
```

The permissions should be set to be read/write. If they are not, type the following commands to correctly set the permissions:

```
$ chmod 666 /usr/broadband/config/bsts_license
$ chmod 666 /usr/broadband/config/license_db
```

To add licenses to the BSTS use the 'Add Software Licenses' icon on the BSTS Application Manager. Alternatively, use the licenseEntry function from the command line. This utility will verify that the license entered is correct. An error message will appear if the license code entered is not valid.

Contact your local Agilent support if you continue to encounter problems with your licenses. Refer to section "13. Contact Agilent Support" on page 41.

9.2 Hardware Dongle Problems

Hardware License Dongles can be used for Conformance Test Suites and Productivity Tools.
The Hardware Dongle must be connected to one of the serial ports on the controller module.

The serial port addresses are:
Port A: /dev/tty0p0
Port B: /dev/tty1p0

To check that your Hardware Dongle is working, you can try the following:

1. Check that the keyboard and mouse are connected to the BSTS and are not faulty. If they are not connected problems can arise. Reboot the BSTS after reconnecting the keyboard and mouse. Refer to "4. BSTS Shutdown" on page 11, to correctly reboot the BSTS.
2. Check the permissions on the serial port.
   To do this type the following command from a terminal prompt:
   $ ll /dev/tty0p0
   The output should look like:
   crwxrwxrwx 1 bin bin 1 0x0000000 /dev/tty0p0
3. If the read/write permissions are not set correctly, type the following commands:
   $ su
   # chmod 777 /dev/tty0p0
   # exit
4. Open a kermit session to the serial port, by typing the following commands:
   $ kermit -l /dev/tty0p0/ -b 9600
5. Move the Hardware Key to the other serial port, check the permissions and open a kermit session again.

   If you move the Hardware Key to Port B, type the following command to set Port B as the license driver:
   $ setenv PTCKEYDRIVER "/dev/tty1p0"

If you continue to encounter problems with the Hardware Dongle, contact your local Agilent Support Center. Refer to section "13. Contact Agilent Support" on page 41.

10. Test Suites

A number of Conformance Test Suites can be run on the BSTS. The current version of the test suites is B.18. If you do not have B.18, request a free upgrade CD from the BSTS Customer Support website:

www.agilent.com/comms/BSTS

Refer to Appendix A for a complete listing of the Conformance Test Suites available.

Documentation

User Manuals, Release Notes and the Abstract Test Suites are available from the following location on the Conformace Test Suite CD:
<CD Drive>:\INDEX.htm

The User Manuals describe how to setup the Test Suite, and give sample test case traces.
The Abstract Test Suites are useful to help debug problems, and show the TTCN used for the test cases.

Known Problems

If the test suite is run without a valid software license or without a hardware dongle present, the Test Manager can crash with the error message:

"ETS exited"

If you experience this problem, check the appropriate software license is present, or check that the hardware dongle is attached. If the hardware dongle is attached, refer to the section "9.2 Hardware Dongle Problems" on page 34.

Known Defect

E7844A: ATM Forum UNI 4.0 Core Signalling Conformance Test Suite for Network Side
The UNI 4.0 Conformance Test Suite for the Network side will hang after running about 60 test cases continuously.

The following workarounds allow the test cases to run without the test suite hanging:
- Select 50 test cases at a time when running the test suite.
- Ensure the BSTS Application Software version is B.18. If not, please upgrade the BSTS software. Refer to section "8. Upgrading the BSTS" on page 29.
- Ensure the Conformance Test Software version is B.18. If not, please request a free upgrade from the BSTS Customer Support website: www.agilent.com/comms/BSTS

Please contact BSTS Customer Support if you encounter further problems with this test suite.

11. SmartTests and Capture Analysis Tools

The BSTS has a number of SmartTests and Data Analysis tools to enable greater ease of use and functionality of the BSTS. This software leverages the in-depth functional and performance test capability of the BSTS. To access these tools select either the SmartTest or Analyzer icons from the BSTS Application Manager.
If the BSTS is accessed remotely, type the following command to open the Application Manager:

```
$ bsts
```

SmartTests

SVC Traffic Test Application
Provides rapid Traffic Management performance measurements over multiple Switched Virtual Circuits, with automatic UNI call setup and tear down.
ATM Cell Continuity Smart Test
Rapidly performs the most fundamental test in network provisioning by verifying ATM cell continuity through an ATM switch or network.
Real-Time O.191 Test Application
A 1-2-3 Stepped guide to perform real-time QoS analysis. Ideal for testing ATM Service Level Agreements (Traffic Contracts).
ATM Switch Characterization Test Suite
This Test Suite performs a range of measurement on multiple ports of an ATM switch to categorize its performance.
AAL-2 Real Time Application
Performs AAL-2 performance tests with the E1607A/E1609A ATM Stream Processor.
Guaranteed Frame Rate Test Suite
Produces a range of statistics on GFR enabled devices, including Extended Frame statistics such as Frame Loss Ratio and Frame Latency.
Serial UNISig SmartTest
Can setup SVCs in serial using a set of predefined SETUP messages. Detailed logs are produced to show how the switch responds to each message.

Capture Analysis Tools

A suite of off-line capture analysis tools extends the analysis and diagnostic capability of the ASP and CPP. These applications provide performance metrics in both graphical and tabular formats.

The capture analysis tools provided are:
- TM4.1 Capture Data Traffic Analyzer
- ASP AAL-1 Cell Loss Analyzer
- Capture Data Signalling Performance Analyzer
- Capture Data ABR Analyzer
- BSTS Statistics Logfile Converter
- Log File Graphing Tool

For further information about these tools use the “About” section from the Application Launcher window, or download the Data Sheet from the BSTS Customer website:
www.agilent.com/comms/BSTS

12. Other problems

12.1 Software failure checklist

If you encounter a software failure, collect the following information and contact your local Agilent Support office.

1. Run the system diagnostics script from an hpterm:

   $ /usr/broadband/util/system_diagnostics

2. Current version of software being used.

   Type the following command at an hpterm to determine the software version:

   $ what /usr/broadband/bin/bisdn_test

3. The application and modules being used.
4. The output of dr_bsts

   Type at an hpterm:

   $ dr_bsts

5. Any error messages that are received, if possible the exact error message.
6. The sequence of steps used to reproduce the failure.
7. The bisdn_test error log:

   /users/bisdn/broadband/error_logs/bisdn_test.log

8. The error logs for the modules being used:

   /users/bisdn/broadband/error_logs/<module>.log

13. Contact Agilent Support

Please contact your local BSTS support center if you encounter further problems with your BSTS.

North America

Location: Englewood, CO

Phone: 1-800-698-0061

Email: americas_support@agilent.com

Europe

Location: Netherlands

Phone: +31-20-547-2200

Fax: +31-20-547-2290

Email: ots-europe@agilent.com

Japan

Location: Tokyo

Phone: 0120--421-345

Fax: 0120--421-678

Email: mac_support@agilent.com

Asia-Pacific

Location: Singapore

Phone: 1800 274-4554

Fax: (65) 272-5293

Email: asia_ots@agilent.com

Appendix A

Software Applications available for BSTS

Table 9: BSTS Software Applications

Product	Description
E4212A	AAL Test Software
E4212B	AAL Test Software with AAL-2
E4214B	UNI Signalling Test Software
E4215B	Internet Protocols Test Software
E4216A	Frame Relay Test Software
E4217B	NNI Signalling Test Software
E4223A	Policing and Traffic Characterization Software
E5145A	VB5 Signalling Test Software
E5576A	Test Manager Integration Kit
E6271A	MPEG-2 Test Software
E6273B	ILMI Emulation Test Software
E6280A	PNNI Test Software
E6283A	Packet Performance Application
E7310A	TTCN Productivity Tools
E7313A	HP-ITEX TTCN Editor
E7328A	TM API Run-Time Code for add. Testers
E7826A	MultiService Interworking Application Licenses
E7836A	ATM Traffic Automated Applications Licenses
E7846A	ATM Signalling Automated Applications Licenses

Conformance Test Suites

The following Test Suite bundles are available to be run on the BSTS:

E7826A: Multiservice Interworking Test Suites

- E7293B: ATM Forum LANE 1.0 Service Test Suite
- E7840A: Telcordia Frame Relay/ATM Interworking Test Suite

E7836A: ATM Traffic Test Suites

- E7820A: ATM Forum UNI 3.0 ATM Layer Conformance Test Suite for Intermediate Systems
- E7821A: ATM Forum UNI 3.0 ATM Layer Interoperability Test Suite for Intermediate Systems
- E7822A: ATM Forum UNI 3.0 ATM Layer Conformance Test Suite for End Systems
- E7830A: ATM Forum UNI 3.1 ATM Layer Conformance Test Suite for Intermediate Systems
- E7831A: ATM Forum UNI 3.1 ATM Layer Interoperability Test Suite for Intermediate Systems
- E7832A: ATM Forum UNI 3.1 ATM Layer Conformance Test Suite for End Systems
- E7835A: ATM Forum SSCOP Conformance Test Suite

E7846A: ATM Signalling Test Suites

- E7823A: ATM Forum UNI 3.0 Core Signalling Conformance Test Suite for Network Side
- E7833A: ATM Forum UNI 3.1 Core Signalling Conformance Test Suite for Network Side
- E7833C: ATM Forum UNI 3.1 Complete Signalling Conformance Test Suite for Network Side
- E7834A: ATM Forum UNI 3.1 Core Signalling Conformance Test Suite for User Side
- E7842A: ATM Forum UNI 3.X ATM ILMI Address Registration for User Side
- E7843A: ATM Forum UNI 3.X ATM ILMI Address Registration for Network Side
- E7844A: ATM Forum UNI 4.0 Core Signalling Conformance Test Suite for Network Side
- E7845A: ATM Forum UNI 4.0 Core Signalling Conformance Test Suite for User Side

Appendix B

BSTS Hardware Modules

Table 10: Hardware Modules

Product	Description
E1600A	Multiport test module
E1602A	Single-Mode port adapter
E1607A	155 Mb/s ATM Stream Processor
E1608A	0-622 Mb/s POS Processor
E1609A	622 Mb/s ATM Stream Processor
E1610A	E3 Line Interface
E1612A	155 Mb/s Electrical Line Interface
E1613A	J2 Electrical Line Interface
E1614A	J2 Optical Line Interface
E1616A	DS1/DS3 Line Interface
E1617A	52 Mb/s Optical Line Interface
E1618A	OC-12/STM-4 Optical Line Interface
E1619B	25.6 Mb/s ATM Line Interface
E1697A	OC-3/STM-1 Line Interface
E4201A	E1 Line Interface
E4204A	HSSI Line Interface
E4205A	155 Mb/s UTP-5 Line Interface
E4206A	T1/E1 Frame Processor
E4207A	V-Frame Processor
E4209B	Cell Protocol Processor
E4219A	Network Impairment Emulator
E6270A	OAM Protocol tester Module
E6282A	Ethernet Frame Processor
E6287A	Available Bit Rate module

Table 11: Hard Disk Module

Product	Description
E4208D	SCSI Hard Disk Drive > 4GB
E4208C	SCSI Hard Disk Drive 2GB
E4208B	SCSI Hard Disk Drive 1GB
E4208A	SCSI Hard Disk Drive 512MB

Table 12: Controller Module

Product	Description
E1497	60 MHz Controller
E1498	100 MHz Controller

Appendix C

BSTS Software Versions

Use the following table to determine the current software version running on the BSTS.

Open an hpterm on the BSTS, and type:

$ what /usr/broadband/bin/bisdn_test

This will return the base software version as shown:

/usr/broadband/bin/bisdn_test:
HP92453-02A.10.00 HP-UX SYMBOLIC DEBUGGER (END.O) $Revision: 74.03 $
BSTS Test Session Manager Version **5.04.02**

The base version number is 5.04.xx, indicating the B.18 version of the test software.

Table 13: BSTS Software Versions

BSTS CD Version Number	Base Software Version
B.18	5.04.xx
B.17.01	5.03.xx
B.17	5.02.xx
B.16.01	5.01.xx
B.16	5.00.xx
B.15.03	4.07.xx
B.15.02	4.06.xx
B.15.01	4.05.xx
B.15	4.04.xx
B.14.02	4.03.xx
B.14.01	4.02.xx
B.14	4.01.xx

If your BSTS has the base software prior to version 4.01, your software cannot run on HP-UX 10.20. Contact your local Agilent representative, see “13. Contact Agilent Support” on page 41, or log on to our BSTS Customer Support website, to request a free software upgrade.
www.agilent.com/comms/BSTS

Appendix D

B.18 Version List

The following firmware version listings are available as PDF documents from the BSTS Customer Support website:

www.agilent.com/comms/BSTS

- Software CD Contents
- Learning Center CD Contents
- Conformance Test Suites
- Productivity Tools

Login to the web-based customer support area and select the “Latest Release Information” link to access these documents.

Appendix E

Forcing a Firmware Download

If the firmware has become corrupt, and the current firmware version needs to be downloaded, the firmware download must be manually forced.

A number of firmware download scripts are available on the BSTS Customer Support website to allow the firmware download to be forced. The firmware download scripts available are for the following modules:

- E1609A 0-622Mb/s ATM Stream Processor
- E1615A/B 2.4Gb/s ATM/POS Generator
- E1616A DS1/DS3 Line Interface
- E1697A OC-3/STM-1 Optical Line Interface
- E1695A T3 Line Interface
- E1618A 0C-12/STM-3 Optical Line Interface
- E1608A 0-622 Mb/s POS Processor

Please download the scripts from the BSTS Customer Support website:
www.agilent.com/comms/BSTS

To force a firmware download for other BSTS modules, please contact Agilent for the instructions. Refer to "13. Contact Agilent Support" on page 41.

After the installation script has been run on the BSTS, the firmware download files are present in the /usr/broadband/device directory.
Each module has a directory containing the firmware download script. For example, asp, cpp, lif155o are the directory names for the ATM Stream Processor (ASP), Cell Protocol Processor (CPP) and 155 Mb/s Optical Line Inteface (LIF).
The download scripts are named using the convention <module>_download. For example, asp_download, cpp_download, lif155o_download.

The steps required to force a firmware download are:

1. Open an hpterm window
2. At the prompt type:
   $ cd /usr/broadband/device
   $ cd <module directory>
3. Run the firmware download script:
   $ ./<module>_download -f

CAUTION: When forcing a firmware download, all modules of that type in the BSTS will have the firmware downloaded.

PLEASE NOTE: The E4209B Cell Protocol Processor does not have a force option, and will always force a firmware download.

Appendix F

Optical Connector Maintenance

This appendix contains instructions and information about maintenance of optical connectors and cables. These items are less robust than their equivalent electrical parts, and damage or poor maintenance can result in poor performance of the equipment or unnecessary repair and downtime.

If an optical module shows symptoms of low or no optical output, or is causing generation of spurious errors or alarms, use the recommended process to properly clean all optical connectors on the module and test cables. Then re-check the optical output level. Do NOT use any other cleaning materials or solvents. They may damage the optical surfaces.

Procedure

1. Remove any adapters or attenuators from the ports to be cleaned.

2. Using the process described below, carefully clean the surface of the optical interfaces protruding from the connectors on the module front panel, cables and attenuators.

3. Use a magnifier to check for residual lint or scratches, and re-clean if necessary.

4. Re-attach the adapters and attenuators to the front panel.

5. Check the optical paths by performing the output power and sensitivity tests described in the performance test for that module.

Cleaning of optical components

All optical elements are delicate and should be handled as carefully as possible. The glass and anti-reflective (AR) coated surfaces will be damaged by any contact, especially if abrasive particles have come into contact with the surface. In most cases, it is best to leave minor debris on the surface.

Use of oil-free dry air or nitrogen under moderate pressure is the best tool for removing excessive debris from an optical surface. If the contamination is not dislodged by the flow of gas, use the following protocol for cleaning the part:

1. Clean the part using an absorbent laboratory grade towel such as Kimwipes™, not lens paper. Use enough toweling so that solvents do not dissolve oils from your hands, which can make their way through the toweling onto the coated surface.

2. Wet the towel with an anhydrous reagent grade ethanol.

3. Use powder-free gloves to keep fingerprints off the part while cleaning.

4. Drag the trailing edge of the ethanol soaked Kimwipe™ across the surface of the component, moving in a single direction. Use a minimal amount of pressure while wiping. Too much pressure will damage the component.

5. If the surface requires additional cleaning, always switch to a new Kimwipe™ before repeating the process. The purpose of the solvent is only to dissolve any adhesive contamination that is holding the debris on the surface. The towel needs to absorb both the excessive solvent and entrap the debris so that it can be removed from the surface. Surface coatings on interference filters and dichroics are typically less hard than the substrate. It is reasonable to expect that any cleaning will degrade the surface at an atomic level. Consideration should be given as to whether the contamination in question is more significant to the application than the damage that may result from cleaning the surface. In many cases, the AR coatings that are provided to give maximum light transmission amplify the appearance of contamination on the surface.

Appendix G

Frequently Asked Questions

The following Frequently Asked Questions are answered on the BSTS Customer Support website:

www.agilent.com/comms/BSTS

Check the website for any new Frequently Asked Questions as they are regularly updated.

General Usage

- How do I mount the CD drive on the BSTS?
- How can I run regular backups on the BSTS?

Upgrading my BSTS

- When I try to mount my CD-Rom I receive the error "Device busy"?

Remote Access/Using BSTS over a LAN?

- Why am I having problems after connecting my BSTS to the network?

About Disk Drives

- Which of the E4208X disk drives can be used to upgrade the BSTS?
- How do I mount the floppy disk?
- Is there an option to delete the floptical drive on an E4208X?

Using BSTS with an External Monitor

- What are the different monitor types that the E4210B (form13) can support?

Application Manager

- How do I add my own applications to the Application Manager?
- How do I add applications that need command-line parameters to the Application Manager?
- How do I remove applications that I have added to the Application Manager?

Test Suites

Fundamentals

- How is the result of a Test Case derived?

Examples: Analyzing a test case

- Why does E7833C Test Case N0_V0001_1 fail?
- Why does E7833C Test Case N0_V0051_1 fail?
- Why is the result of E7833C Test Case N0_I0252_1 inconclusive?
- Why does E7833C Test Case - N0_N0614_1 fail?

Using Modules

- Can I change the Shared Memory Network IP address?

Packet over SONET/SDH (POS) Module

- Why am I not receiving/capturing any valid data with my POS module?
- Why won't my POS module start up?
- Why is POS matching/filtering/pattern matching not working?
- Why does the E1608A POS module capture garbage when using the E1697A?
- Why can't I match on short frames?
- Why am I capturing one or two errored frames?
- Why is the POS transmit file incorrect?
- Why does the POS analyzer go into an infinite loop on an empty file?
- Why doesn't the PPP connection start?
- Why are the PPP log messages overwritten?
- Why does the PPP connection stop working / time out eventually?
- How do you clear the capture memory on a POS module?
- When I retrieve the captured data using UPE or save the captured data, the data seems corrupt. Why?
- The external trigger output on the front panel cannot be used to count events in certain circumstances. Why?
- The external trigger output on the front panel may remain high for longer than two system clock cycles (50ns). Why?
- Why does my POS module capture excessive 7E values?
- Why is the de-stuffed data option disabled in the POS 2.4G filter/pattern dialog?
- When filtering or pattern matching using de-stuffed data, why is line data saved to capture memory?
- Can I save the SONET Stuff BIT on POS 2.4G?
- Why does the self test on the E1615B occasionally fail?
- On the 2.4G POS Processor, when I set the Path BIP Error Rate to 1E-4, why is the error rate that I measure much lower?
- Why is my POS module capturing line data, not de-stuffed data?
- What are the valid arguments to the pos_fieldgen, POS Field Generator?
- What are the limitations of the pos_compiler, POS compiler?
- Why are transmit and capture memory cleared when a PPP connection is established?
- What causes errors after changing from POS to ATM mode on the E1615B?
- When there is a mismatch in the Address/Protocol/Control Fields in one frame, the POS analyzer does not report an error. Why?
- Why doesn't Release 1.5 work on my E1615A system?

E1600A Multiport Test Module (MTM)

- Why is the E1600A Multiport Test Module (MTM) rejecting inbound calls?
- Why do I get the event "One or more Layer 2 protocol errors have occured" on some ports every time I start a test?
- After running a test for a while, why do calls get rejected with CAUSE value "no user responding"?
- How do I make point-to-multipoint calls?
- Why are all of the calls initiated from the MTM module being rejected with the CAUSE value "no route to destination"?
- How do I check whether a statistic has exceeded a threshold value?
- What might be causing ILMI address registration to fail for certain address values?
- Can I use the MTM with a Q.2931 switch?
- How do I run a performance test with a specific number of open connections already in place?

- What does the CAUSE "user cell rate not available" mean?
- What does the event "RxFifoOverflow: Receiver's ATM cell buffer has overflowed" mean? After a certain number of active calls has been reached, why do subsequent calls get rejected with the CAUSE value "no VPI/VCI available"?
- How do I specify a UBR call type?
- Why is the E1600A Multiport Test Module rejecting setups with coding standard "11" in the End-to-End Transit Delay IE?

E4209B CPP Emulation Module

- What effect does using the GUI to create and destroy an emulation have on the capture memory and on the live capture viewer?
- What effect does using the UPE to create and destroy an emulation have on the capture memory and on the live capture viewer?

E6282A Ethernet Frame Processor

- How can I run ARP emulation from the Ethernet Frame Processor?
- How can I calculate Lost Frames statistics?

A

ABR. See Available Bit Rate Emulator
alarms
unexpected 26
Available Bit Rate Emulator 25
Troubleshooting 25

B

bootup problems 3
login screen 3
slow startup 3
yellow boxes 4

C

Capture Analysis Tools 37
CDE
startup problems 4
CDE Login
Login Problems 8
connectors
damaged or unclean 26
controller
upgrading requirements 29

D

Desktop Messaging System
Login Problems 8
login problems 8
disk activity 11
do not shut down if present 11
display
cable connections faulty 7
configuration
correct selections 6
procedure 5
saving 6
time taken 5
dark 6
external VGA
problems 6
problems
dark screen 6
form 7 6
Form 7 white screen 6
VGA monitor 6

E

E4206A. See T1/E1 Frame Processor
E4207A. See V Interface Frame Processor
E6270A. See OAM Processor
E6282A. See Ethernet Frame Processor
E6287A. See Available Bit Rate Emulator
EFP. See Ethernet Frame Processor
equipment under test
problems 26
errors

unexpected 26
Ethernet Frame Processor 25
troubleshooting 25
F
failure conditions, clearing by VXI reset 22
file system 18
checking and repairing 12
corruption 18
firmware
downloading
Available Bit Rate Emulator 26
Ethernet Frame Processor 26
interruption of 27
OAM Protocol Tester 26
problems 28
shared memory modules 26
shared memory networked modules 29
T1/E1 Processor 26
V Frame Processor 26
Form 7
display 6
fsck 12
running 12
from the command line 12
H
hard disk
upgrading requirements 29
hardware dongles
problems 34
HP-UX
installing software 30
version
finding out about 1
K
keyboard
problems 3
reconnecting 3
L
laser
not on 26
licenses
hardware dongles 34
licensing schemes 33
viewing license file 33
Line Interface
ATM traffic not switched on 26
incorrect frame settings 26
loopback test 26
lockup
during measurements 19
recovery without shutdown 19
logical address

SCSI modules 4
loopback test
for testing 26
procedure 26
M
module
pin connections
checking for bent pins 24
poor 24
modules
E1607A/E1609A ATM Stream Processor (ASP) 23
E4209A/B Cell Protocol Processor (CPP) 23
moving 21
setting logical addresses 21
placement rules 23
problems 21
setting up an instrument 23
mouse
connection 3
problems 4
mysterious problems
remedies 24
N
networking the BSTS
configuring 13
for standalone operation 14
information required 13
installing VNC 15
removing from a network 14
B.18 version 14
versions prior to B.18 14
using a PC to access the BSTS 15
using a SUN workstation 15
O
OAM Processor 25
OAM Protocol Tester
troubleshooting 25
OPT. See OAM Protocol Tester
P
passwords
changing password 7
root editing removing 7
root password 7
power failure
what happens 12
problems mysterious, causes 24
R
reboot
See "shutdown"
remote access 13
reset
remove SCSI cable first 11

root password 7
switch controller 4
system
procedures 11
system only after shutdown message 11
VXI 22
See also "shutdown
resource manager
cannot connect to process 19
Rst/Abt switch 4, 11
using for display configuration 5
See also "shutdown"

S

SCSI cable
connections 4
removing to shutdown 11
SCSI ID
boot device 7
device settings 4
servant modules
VXI address switch setting 21
shared memory network modules
downloading firmware 27
troubleshooting 25
shutdown
emergency last resort 11
from a remote terminal 11
fsck 12
reboot 11
if screen is dark 11
improper, what happens 12
no screen activity 11
problems 11
procedure 11
rebooting 11
removing the SCSI cable 11
time taken 11
using "ping" to check status 11
using Rst/Abt switch 11
using the Rst/Abt switch to reboot 11
waiting time 11
ways initiated 11
what happens if system is switched off without 12
with SCSI cable disconnected 11
software
installing test software 31
startup
slow startup 5
support
contact Agilent 41
contact BSTS support
contact hardware service 2

T

T1/E1 Frame Processor 25
troubleshooting 25
test session
kill 19
stopping without shutdown 19
Test Session Manager
problems 17
modules greyed out or missing from TSM 17
modules RED in TSM 18
TSM will not launch 18
Test Suites
problems
licenses 35

U

upgrading
firmware upgrade after system upgrade 32
hardware requirements 29
problems
DVD-ROM not recognised 31
User Manuals 1

V

V Interface Frame Processor 25
Troubleshooting 25
VXI address
settings 21
binary pattern 21
checking
from control panel 21
factory default 21
must be unique 21
servant 21
VXI reset 22
clearing failure conditions 22

X

X-server cannot be started 4

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP