Operation

TEAM 5553

for OpenView/UNIX
Version 1.2.0

General DataComm

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Preface

Scope

This manual describes how to operate Version 1.2.0 of the GDC TEAM 5553 UNIX software application. The TEAM 5553 software employs Simple Network Management Protocol (SNMP) to configure and control the operation of GDC SpectraComm 5553 Data Set Emulators (DSEs). It can be launched under HP OpenView to run on a Sun Solaris workstation or a Hewlett-Packard HPux platform.

An SC 5553 DSE performs the DTE interface functions of a fractional T1 data service unit (DSU). The DSE network interface takes place through the backplane of the SpectraComm shelf in which the DSE is installed and a SpectraComm 5001 Line Terminating Unit (LTU) that is connected to a T1 line. The LTU provides the SC 5553 DSE as many DS0s on the T1 line as are required to support its configured data rate. At the Telco central office, the T1 signal from the LTU is separated into individual DS0s, or bundles of DS0s, for routing to the appropriate destinations. To a remote DSU the SC 5553 DSE appears to be a fractional T1 DSU.

The TEAM 5553 application communicates with the DSE through a SpectraComm Manager (SCM) card that also occupies the SpectraComm shelf. Control by the application can extend also to remote DSUs that are connected to the DSEs under its local control.

Operating instructions for the SCM appear in the *TEAM Core Operation* manual and operating instructions for the LTU appear in the *TEAM 5001 Operation* manual.

This manual assumes you are familiar with HP OpenView and with DSU functions.

Revision History

This is Issue 1 of the manual for TEAM 5553 Version 1.2.0. This version of the application has been upgraded to be compatible with Version 4.1 of the HP OpenView Operating System.

Organization

This manual has five chapters. The information is arranged as follows:

- *Chapter 1 - Introduction* describes the TEAM 5553 application, the GDC SC 5553 DSE that you control with the application, and the TEAM environment in which the application operates, particularly the SCM that enables communication between the application and the DSEs it controls.

- *Chapter 2 - Operation* provides directions for accessing the smaller individual applications that are responsible for the TEAM 5553 functions. It describes how to access the functions from a shelf map window menu bar, and from the Select menu of a DSE front panel display. The chapter provides full descriptions of the TEAM 5553 applications that display read-only windows. It provides access information for the applications that display read/write windows and require greater operator interaction.

- *Chapter 3 - Configuration* provides instructions for accessing the Configuration application and using it to set modem channel operating parameters. The chapter covers

how to save configuration changes to the DSE or as templates at the controller workstation, and defines the parameters you can set.

- *Chapter 4 - Maintenance* provides instructions for accessing the Maintenance application and using it to control functions of the DSE.

- *Chapter 5 - Diagnostics* provides instructions for accessing the Diagnostics application window and using it to perform test procedures.

Document Conventions

Level 1 paragraph headers introduce major topics.

Level 2 paragraph headers introduce subsections of major topics.

Level 3 paragraph headers introduce subsections of secondary topics.

```
This typewriter font shows output that is displayed on the screen.
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This bold font shows specific input that you type at the keyboard.

This bold italicized font shows variable input that you type at the keyboard.
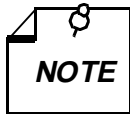
> *Notes present special instructions, helpful hints or general rules.*
>
> **NOTE**

Related Publications

The following documents have additional information that may be helpful when using this product:

- *TEAM Core Operation*   GDC 058R720-V160

- *TEAM 5001 Operation*   GDC 058R726-V200

- *TEAM Software Server Configuration*   GDC 058R723-V100

- *SpectraComm 5553 Data Set Emulator Installation & Operation* GDC 076R108-000

GDC publication numbers (e.g., *GDC 032R101-000*) are used to track and order technical manuals. Publication numbers use the following format:

GDC NNNRnnn-000 or GDC NNNRnnn-Vnnn

- NNN identifies the product family (e.g. TEAM)

- R   denotes a technical publication

- nnn   a number assigned by Technical Publications

- 000   identifies a hardware product and does not change

- Vnnn the software version associated with a product may be updated periodically

The Issue Number on the title page only changes when a hardware manual is revised or when a manual is reprinted for some other reason; it does not automatically change when the software is updated. A new Software Version is always Issue 1. Other specialized publications such as Release Notes or Addenda may be available depending on the product.

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- in the U.S. dial 1-800-243-1030

- outside the U.S. dial 1-203-598-7526

Be ready with the site name and phone number, and a description of the problem. The next available support representative will promptly return your call.

Hands-on training courses are provided by GDC Educational Services. Courses range from basic data communications, modems and multiplexers, to complex network and ATM systems and are taught in Connecticut or at a customer location. To discuss educational services or receive a course schedule, call 1-800-243-1030 and follow the menu instructions.

Safety Instructions

Safety Guidelines

The following symbols are used in this manual to draw your attention to potential hazards. A Caution indicates a hazard to equipment or data. A Warning indicates a hazard to personnel.

Caution statements identify conditions or practices that can result in damage to the equipment or in loss of data.

Warning statements identify conditions or practices that can result in personal injury or loss of life.

Always use caution and common sense. Repairs must be performed by qualified service personnel only.

Glossary of Terms

Backplane Data Highway

High speed bus built into the SpectraComm Shelf backplane to support the exchange of data and timing signals between a line terminating unit and up to 24 data set emulators. The backplane contains four data highways. Two backplanes, and their data highways, can be connected by daisy-chain cables so that a total of 32 shelf slots are supported.

Data Set Emulator (DSE)

Term for the units in the SpectraComm 5000 system that provide DTE interface functions. Each DSE is designed to be compatible with a GDC device that can be installed as a standalone unit at a remote site. An SC 5553 DSE, for example, is compatible with a remote NMS 553 DSU.

Line Terminating Unit

Term for the unit in the SpectraComm 5000 system that provides T1 network interface functions.

1 Introduction

Overview

This manual covers the General DataComm TEAM 5553 Unix Application. The application can be launched under HP OpenView to run on a Sun Solaris workstation or a Hewlett-Packard HPux platform. You should be familiar with HP OpenView and with the operation of digital data service units (DSUs) in order to use this manual effectively.

The TEAM 5553 Unix Application is composed of integrated smaller applications that manage various aspects of GDC SC 5553 Data Set Emulator (DSE) cards. The applications use the Simple Network Management Protocol (SNMP). The SC 5553 DSE is part of the SpectraComm 5000 (SC 5000) system.

TEAM 5553 applications enable you to

*   **Configure** SC 5553 DSEs.

*   **Monito**r the operation of the DSEs through displays of Alarms and DTE Interface States, and through a Front Panel display that shows LED indicators as they appear on the front panel of the physical unit.

*   **Diagnose** suspected problems using local and remote loops (with or without an internally generated test pattern).

It also provides functions for performing the same range of tasks on an NMS 553 Data Service Unit (DSU) installed as the remote unit with which the SC 5553 DSE communicates.

SC 5000 System Components

SC 5000 hardware consists of three types of components:

Data Set Emulator (DSE) – performs DTE interface functions in a manner that emulates the operation of a traditional data set directly connected to a telephone line. For example, the SC 5553 DSE appears to its DTE and to its remote DSU to be a fractional T1 DSU. Rather than being connected directly to a Telco T1 line, however, the SC 5553 DSE transmits and receives data through a data highway incorporated in the backplane of the SpectraComm shelf. The data highway links the DSE to an LTU.

Line Terminating Unit (LTU) – performs network interface and channel grooming functions for a group of DSEs. An SC 5001 LTU connects to a T1 line, over which it transmits the combined data traffic of up to 24 DSEs to a Telco switching site. On the T1 line the data for each DSE occupies one or more DS0s. Telco switching equipment routes the DS0s of the T1 line from the SC 5000 site to their individual remote destinations. In this way a single T1 connection between an SC 5000 site and a Telco switching site can support connections with up to 24 remote sites, depending on how many DS0s each DSE requires. As a fractional T1 device, an SC 5553 DSE can employ from 1 to 24 DS0s. The SC 5001 LTU is managed by the TEAM 5001 application.

SpectraComm Manager (SCM) – acts as the SNMP agent through which TEAM management applications communicate with SC 5000 components. All management

communications are directed to the SCM card Internet Protocol (IP) address. The SCM card relays commands and responses between management applications and hardware components, using a slot addressing scheme to communicate over the SpectraComm shelf backplane with the other SC 5000 components. The SCM is transparent to the applications, which operate as though they were communicating directly with the hardware units. The SCM card is managed by the TEAM Core application, which is also responsible for the Discovery and Mapping functions by which the applications keep track of the devices being managed.

SC 5553 DSE

An SC 5553 DSE performs the functions of a GDC SNMP 553SD-1 DSU.

TEAM 5553 Applications

The applications that make up the TEAM 5553 manager are grouped on menus under the headings Performance, Configuration, Fault, and Misc (Miscellaneous). Menus for the applications are available in two ways:

- From the menu bar of the shelf map window when an SC 5553 DSE is selected in the window

- From the Select button on the SC 5553 Front Panel display.

SC 5553 Front Panel displays current status information on the SC 5553 DSE by displaying the states of the LED indicators on the front panel of the unit; provides Select button menus by which you can invoke all other functions of the TEAM 5553 manager. Front Panel is a selection on the Performance menu in the shelf map window menu bar. You can also launch the Front Panel display from that window by double clicking on the shelf icon of the DSE you need to work with.

The following TEAM 5553 applications appear on both the Map window and Select button menus:

- Performance:

    DTE Status – displays information on the status of signals in the DTE interface

    Alarm Detail – furnishes detailed information about alarm state changes

- Configuration:

    Configure – enables you to configure a selected SC 5553 DSE

    Maintenance – enables you to set device specific attributes that are not set as configuration options

- Fault:

    Diagnose – enables you to run diagnostic tests on a selected SC 5553 DSE

- Misc:

    Information – displays revision level information on the TEAM SC 5553 software

    Front Panel Poll Rate – enables you to adjust the rate at which the application polls the LTU while the Front Panel display is on-screen.

    Note Pad – provides access to a text editor.

2   Operations

Introduction

The TEAM 5553 controller application consists of a group of smaller applications, each devoted to a specific aspect of controlling or monitoring the SC 5553 Data Set Emulator. There are two means of access to the TEAM 5553 applications: the shelf map menu bar, and the Front Panel window Select button menus. This chapter describes both.

There are two applications in the Performance category: Alarms displays alarm information in a read-only window; DTE Status displays the status of signals in the DTE interface. This chapter fully describes both applications.

There are two applications in the Configuration category: Configuration and Maintenance. Each supports read/write windows by which you can review and alter DSE operating parameters. This chapter describes how to access the Configuration and Maintenance applications. Instructions for using the two applications appear in subsequent, individual chapters.

The Diagnostic application supports a read/write window by which you can command the test functions of the DSE and view test results. This chapter describes how to access the Diagnostic application. Instructions for using the application appear in a subsequent chapter.

One item appears on the shelf map menu bar as Misc (miscellaneous): Information displays a read-only window that identifies the revision level of the TEAM 5553 application software. This chapter fully describes this function, which can be accessed from the Front Panel display by clicking the mouse on the GDC logo that appears on the Front Panel.

Map Window Menu Bar Access

The table on the following page illustrates how the TEAM 5553 application functions are arranged on the menu bar at the top of the shelf map window. The table shows only the menu selections for the TEAM 5553 applications. The map window menus include selections in addition to those that apply to TEAM 5553 because the window also provides access to other applications.

You must select the DSE you intend to work with before you open the menu you intend to use. Select the DSE by clicking the mouse once on its icon in the shelf map.

Menu Bar   Menu Selections

Performance

Front Panel
Alarm Detail...
DTE Status...

Configuration

Configure...
Maintain...

Fault

Diagnose...

Misc

Information...

The Performance menu Front Panel selection opens the Front Panel display window. The Select button menus in the Front Panel display window include the selections that appear above, with the exceptions of Front Panel under Performance and the Misc category.

SC 5553 DSE Front Panel

The SC 5553 Front Panel display window (*See Figure 2-1*) provides a graphical interface to a selected SC 5553 DSE. You can launch a Front Panel in either of two ways:

- select the unit you intend to work with in the shelf map window, then select Front Panel from the Performance menu for that window

- double click the mouse on the slot icon for the unit in the shelf map.

The application responds by displaying a window that depicts the front panel of the SC 5553 DSE unit.

Figure 2-1 SC 5553 DSE Front Panel

The LEDs shown in the display reflect the states of the actual indicators on the physical unit:

 INS – In Service

 ON – Power On

 SD – Send Data indicates when lit that the DSE is transmitting data, it displays a two-headed arrow to indicate transitions

 RD – Receive Data indicates when lit that the DSE is receiving data from the remote DSU, it displays a two-headed arrow to indicate transitions

 RS – Request To Send indicates when lit that the DTE has data to transmit, it displays a two-headed arrow to indicate transitions

 CO – Carrier On indicates when lit that the DSE is receiving a signal, it displays a two-headed arrow to indicate transitions

 TMG – Timing is lit when the DSE is designated as the 8 kHz clock source for its shelf

 RSP – NMS Response

 TM – Test Mode, is lit red while the DSE performs a diagnostic test; during a test employing Self Test a two-headed arrow superimposed on the LED indicates that errors have been detected

ALM – Alarm, indicates by its color, which matches that of the SC 5553 Shelf submap icon for the unit, that the DSE has detected an alarm condition.

ST – Self Test is lit while the internal test pattern generator/checker is active.

LT – Local Test is lit while the DSE is in the Local Loopback test condition.

RL – Remote Loop is lit while the DSE is performing a remote loopback test with the remote DSU.

DL – Digital Loop is lit while the DSE is performing a digital loopback to direct data back to the remote DSU.

The Front Panel screen displays the current operating speed of the DSE.

The application polls the DSE to keep the states of the LEDs in the Front Panel display current. The time of the most recent poll appears at the bottom of the Front Panel display, to the left of the Help button. The time is displayed in white when Auto Poll is enabled, and in yellow when it is disabled.

The Select button, at the bottom of the Front Panel displays provides access to menus for the rest of the TEAM 5553 application functions. The following table shows the arrangement of the Select button menus. It differs somewhat from the arrangement on the Map window menu bar.

Select Menu Items	Second Level Selections
Performance	
	Alarm Detail...
	DTE Status...
Configuration	
	Configure...
	Maintenance...
Fault	
	Diagnose...
Demand Poll	
Auto Poll (*)	
	15 seconds
	30 seconds
	60 seconds
	Disable
Exit	* Displays Off or poll interval

The two Poll selections in the Select button menu determine when the application collects new information from the DSE to update the Front Panel window:

• Selecting Demand Poll causes an immediate update of the display.

• Auto Poll enables you to select updates at 15, 30, or 60 second intervals, or to disable automatic polling. If you select Disable, the Front Panel window displays a static snapshot of the LED states as they were at the last poll, either when the window was launched or a subsequent Demand Poll.

Each time the Front Panel display is opened, its initial polling rate is determined by the Front Panel Poll Rate selection of the map window Misc menu.

The menu selection Exit dismisses the Front Panel window when you click on it.

Common Window Features

Each TEAM 5553 application you select opens an on-screen window in which to operate. A number of features are common to many of the windows:

Triangle button – in the title bar; reduces the window to an icon when you click on it. Double clicking on icon restores the window. This button appears on the top level window for each application.

Title bar – identifies the specific TEAM 5553 application running in the window; for example TEAM 5553 Main Configuration or TEAM 5553 Diagnostics

Menu bar – always contains the selections File, on the far left, and Help, on the far right. File menu always contains the selection Exit, by which you can dismiss the window; some window File menus contain selections special to the window. Help menu provide access to information concerning the window. Some windows have additional Menu bar selections.

The Menu bar appears on the top level window for each application. A Menu bar appears in the Main Configuration window, for example, but not in the windows you access from Main Configuration.

Name field – identifies the SC 5553 the application is currently connected to by displaying the user-configured shelf name, followed by the DSE slot number, and the user-configured device name.

Descriptions in this manual of the individual TEAM 5553 applications identify window features that are specific to the applications, such as selections in the Menu bar and menus, and buttons.

Performance Functions

Alarms

You can launch the TEAM 5553 Alarm application from the shelf map Performance Menu or from the front panel menu. The application displays the read-only Alarm Detail window for the selected DSE *(See Figure 2-2)*.

The TEAM 5553 application gets alarm indications from the DSE in two ways:

• By receiving traps that the SCM sends automatically in response to alarm conditions at the DSE

• By polling the SCM for changes in alarm conditions at the DSE.

Figure 2-2   Alarm Detail Window

The Alarm Detail window displays alarms grouped into three categories:

• Major

• Minor

• Informational

Major Alarms

EEPROM Checksum – indicates that the non-volatile memory that stores the DSE configuration has become corrupted

DCD Loss – indicates loss of incoming signal

Timing Loss – indicates

TxC Loss – indicates loss of transmit timing

Minor Alarms

RxD No Transitions – indicates Receive Data is not alternating one and zero states as it should

TxD No Transitions – indicates Transmit Data is not alternating one and zero states as it should

Informational Alarms

Front Panel Test – indicates the DSE has been commanded into a test by means of its front panel switches

DSR Loss – indicates the DSE is not outputting Data Set Ready to the DTE

DTR Loss – indicates the DSE is not receiving Data Terminal Ready from the DTE

EIA Test – indicates the DSE has been commanded into a test by means of a signal from the DTE at its EIA interface

Alarm Detail Window Menus

The Alarm Detail window has a File menu and a View menu in its menu bar.

The File menu contains only the selection Exit, by which you can dismiss the window.

The View menu consists of three selections: Major, Minor, and Informational, each with a check box beside it. To remove an alarm category from the window display, click on its check box so that it is unchecked. Clicking a box so that it is checked restores the corresponding category to the display.

DTE Status

You can launch the TEAM 5553 DTE Status application from the shelf map Performance Menu or from the front panel menu. The application displays the read-only Status window for the selected DSE *(See Figure 2-3)*. The window displays indicators for the states of the EIA signals at the DTE interface. Dark green indicates Off, light green indicates On, and light green with a superimposed two-headed arrow indicates transitions.

Status Window Menu

The Status window has a File menu in its menu bar with the selections Demand Poll, Auto Poll, and Exit.

Selecting Demand Poll causes an immediate update of the display.

Auto Poll enables you to select updates at 15, 30, or 60 second intervals, or to disable automatic polling. If you select Disable, the Status window displays a static snapshot of the EIA indicators as they were at the last poll, either when the window was launched or a subsequent Demand Poll.

The time of the most recent poll appears in the bottom left corner of the window. The time is displayed in white when Auto Poll is enabled, and in yellow when it is disabled.

Figure 2-3   DTE Status Window

Configuration Functions

Configuration

You can launch the TEAM 5553 Configuration application from the shelf map Configuration Menu or from the front panel menu.

When you launch the application, it initially displays the read-only TEAM 5553 Configuration window, which has a File menu and a Navigate menu in its menu bar.

The File menu contains the selections

- Refresh, which discards all unsaved changes and restores all options in the displayed configuration windows to the values they are assigned by the current operating configuration

- Save to Unit, which puts the new configuration into use by the DSE

- Load Template, by which you can recall a stored configuration template that you can then save to the DSE either with or without modifications

- Save to Template, by which you can store the current configuration on the workstation for future use as a template

- Compare to Template, by which you can identify differences between the configuration displayed on-screen and a selected template

- Exit, by which you can dismiss the window.

The Navigate menu enables you to access the four read/write windows by which you can configure various aspects of DSE operation:

- System Options
- DTE Options
- Alarms Reported
- Add Remote

The TEAM 5553 Configuration application is fully described in *Chapter 3, Configuration.*

Maintenance

You can launch the TEAM 5553 Maintenance application from the shelf map Configuration Menu or from the front panel menu.

The application displays one read/write window by which you can control some aspects of DSE operation that fall outside the scope of Configuration. The TEAM 5553 Maintenance application is fully described in *Chapter 4, Maintenance.*

Diagnostics

You can launch the TEAM 5553 Diagnostics application from the Fault Menu of the shelf map or of the Front Panel display Select button menu.

The application displays one read/write window by which you can control a variety of test functions on the DSE. The TEAM 5553 Diagnostics application is fully described in *Chapter 5, Diagnostics*.

Miscellaneous Functions

Information

You can launch the TEAM 5553 Information window from the shelf map Misc menu or by double clicking on the GDC logo in the Front Panel display.

Information displays one read-only window that contains the name of the application, software revision level information, and copyright information. The File menu in the menu bar contains only the selection Exit, by which you can dismiss the window.

Figure 2-4   TEAM 5553 Information Window

Front Panel Poll Rate

You can open the Front Panel Poll Rate window *(See Figure 2-5)* from the Misc menu of the Map window. The setting you select in this window determines the initial polling rate for Front Panel displays each time they are opened.

The rate selection is a global function. It selects initial polling rate for all front panel displays linked to a TEAM Core application, regardless of which individual application you access it from.

There are four selections, each accompanied by a checkbox:

> Slow
>
> Normal
>
> Fast
>
> Demand Poll Only

The File menu in the menu bar contains two selections: Save to File and Exit.

To set the desired polling rate, first click on the appropriate checkbox and then select Save to File from the File menu. The precise polling frequency that results from a setting of Slow, Normal, or Fast depends on a number of factors. The higher the rate, the more communication and processor capacity is devoted to maintaining the display.

The polling rate for an individual front panel display can be changed for the duration of a session by means of the Auto Poll selection in the Select button menu. Changes you make with that menu selection are not retained when the display is closed.

To dismiss the window, select Exit from the File menu.

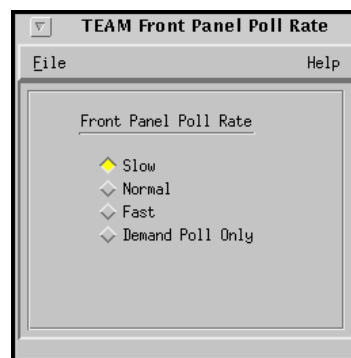**Figure 2-5**   Front Panel Poll Rate Window

Note Pad

You can launch the Note Pad application from the Misc menu of the Map window. The application opens a shell tool on the workstation running the TEAM software. You can use the shell tool to run a text editor, mail tool, or any other software that resides on the workstation. The Note Pad application provides this access for keeping records on the system.

3 Configuration

Introduction

The TEAM 5553 Configuration application enables you to set all the options in the SC 5553 Data Set Emulator through a convenient group of configuration windows.

To Start TEAM 5553 Configuration

You can start the TEAM 5553 Configuration application by either of two methods:

- Select a DSE symbol on the shelf map, then select Configure from the Configuration menu.

- Click on the Select button of the Front Panel display, then click on Configuration and select Configure from the resulting menu.

Templates

You can store configuration settings as templates on the workstation that runs the TEAM 5553 application. A template stores a configuration for the DSE options, and you can store as many templates as you need.

To load configuration settings from a template into the DSE you must perform the following steps:

1. Select Load Template from the File menu and select the template from the resulting dialog window. The application retrieves the configuration settings of the selected template.

2. Select Save to Unit from the File menu. The application makes the template configuration settings the current operating configuration for the DSE.

Configuration Procedure

The following steps describe how to use the configuration application, and illustrate the functions of the Main Configuration window menus.

1. Access the Main Configuration window, either from the submap or from the Front Panel display. The application reads the current Main configuration from the DSE when you open the Main window.

   You can select to base your configuration changes on either the current configuration or a stored configuration template. In either case, the DSE continues to operate using its unchanged current configuration.

   The **Refresh** selection on the Main window **File menu** causes the application to read the current configuration from the DSE. All changes to all configuration windows that have not previously been saved to a profile or a template are lost when you select Refresh.

2. To edit the current configuration of the DSE, proceed directly to the Navigate menu as de-

scribed below.

To edit a template, select **Load Template** from the File menu and select a template from the resulting list.

3.   Click on the **Navigate button** to display a menu of the configuration windows, and select the one in which you intend to make changes.

4.   Make changes as needed in the configuration window. When you click on the input field for an option, a window opens to display all the values the field can be set to. Click the mouse on the value you select. When you change the value or setting of an option, the application displays the option name and the new value in white, rather than black, type. They remain white until you either save the changes to the DSE or a template by means of the Main window File menu, or restore the option to its last stored value or setting.

You can discard changes to a configuration window and return all its fields to their stored values in two ways:

•   Click on the **Reset button** to discard changes while keeping the window open

•   Click on the **Cancel button** to discard changes and close the window.

You can close a configuration window without losing changes by clicking on either the **OK button** or the **pushpin icon**, which is located in the upper left corner of the window.

You can keep multiple configuration windows open on-screen and move between them by clicking the mouse on the one in which you intend to operate. The Main Configuration window remains on-screen throughout the configuration process.

5.   When you have accessed all the configuration windows that you need to and made all of your changes, click on the **File menu button** of the Main Configuration window. From that menu you can select **Save to Unit** to save the new configuration in the DSE, or select **Save to Template** to save it as a template in the workstation.

6.   When you select Save to Unit, the changed configuration for the DSE becomes the current configuration.

7.   When you select Save to Template, a window appears containing a list of existing templates and a field for entering a new template name. You can select an existing template to be overwritten with the new configuration, or enter a name to create a new template. A stored template is available to be loaded by the application and then saved, with or without further modification, to any SC 5553 DSE.

Configuration Option Values

When you click the mouse on the entry field for a configuration item, a window opens containing all the values that are permitted for that configuration item. Hold down the mouse button until the highlight is on the value you intend to configure, then release the button. The newly selected value appears in the entry field for the configuration item.

Main Configuration Window

The Main Configuration window has two pull down menus, File and Navigate, that are the means by which you carry out the actual process of configuring the DSE. From the **Navigate menu** you select the individual configuration windows in which you make changes. The **File menu** commands the storage and retrieval of configuration settings. The contents of the two menus appear below.

Menu Buttons   Menu Selections   Further Selections

File

Refresh
Save to Unit

Load Template	dialog window
Save to Template	dialog window
Compare to Template	dialog window

Exit

Navigate

System Options...
DTE Options...
Alarms Reported...
Add Remote...
All Screens...

The Main Configuration window title bar displays the application name, TEAM 5553 Configuration. The main body of the window contains read-only items that identify the DSE and provide information about its operations.

Main Configuration Window Read-Only Display

The Main Configuration window displays the following read-only items:

Name: displays shelf and slot identification for the DSE

Slot State: displays Active or Inactive

Operational Status: displays Up or Down

Serial Number: displays the serial number of the DSE

DTE Interface Type   displays V.35 or EIA-530

Firmware Revision: displays the revision level of the DSE operating code

MIB Version: displays the revision level of the MIB files that enable SNMP control

The TEAM 5553 application relies on the SCM and SC 5553 DSE to indicate when a configuration problem has caused an SNMP set error.
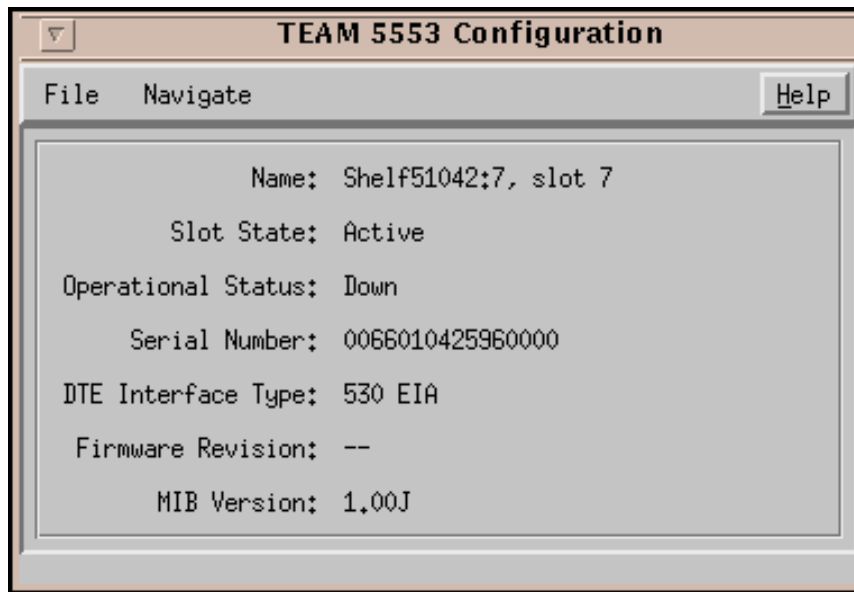
Figure 3-1   Main Configuration Window

System Options

The System Options configuration window contains two groups of options grouped under the headings Miscellaneous Criteria and DS0 Criteria.
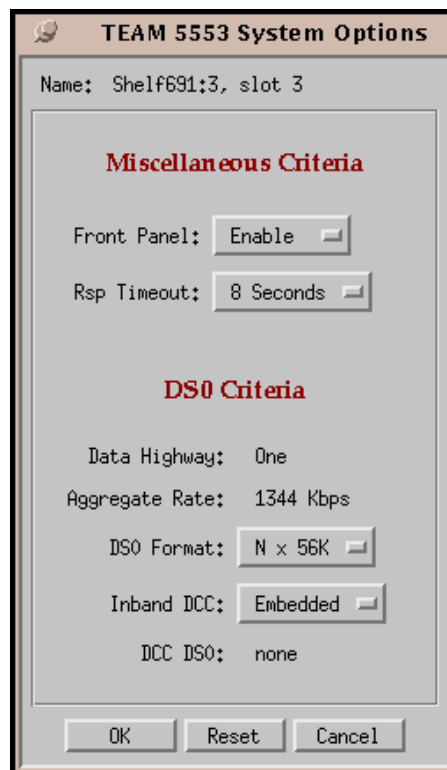

Figure 3-2   System Options Configuration Window

Miscellaneous Criteria

Front Panel – permits you to disable the switches on the front panel of the DSE as protection against any inadvertent interruption of its operation.

Options:

> *Enable* – DSE front panel switches are operational.

> *Inhibit* – DSE front panel switches are disabled.

Rsp Timeout – selects the length of time the SCM waits for a response from the unit before it declares a No Response condition.

Options:

> *2, 4, 6, 8* seconds

DS0 Criteria

Data Highway – read only field that identifies the backplane data highway the DSE is using to exchange data with its LTU. The selection is made by the Shelf Configuration application that is part of the TEAM Core software.

Options:

> *One*
>
> *Two*
>
> *Three*
>
> *Four*

Aggregate Rate – read only field that displays the user data rate currently being supported by the DSE. When all DS0s assigned to the DSE are used for data, the aggregate rate is equal to the number of assigned DS0s times the DS0 format (56 kbps or 64 kbps). When Inband DCC (see below) is configured for DCC DS0, the aggregate rate is equal to one less than the number of assigned DS0s times the DS0 format (56 kbps or 64 kbps).

The assignment of DS0s to the DSE is performed in the Shelf Configuration application that is part of the TEAM Core software.

DS0 Format – selects the data rate of each DS0 assigned to the DSE. When you select N x 64K for this option, the DTE Interface Configuration option Constant DCD is automatically forced to Enabled.

Options:

> *N x 56K*
>
> *N x 64K*

Inband DCC – selects the format of the Diagnostic Communication Channel (DCC) by which the DSE exchanges management communications with its remote DSU.

Options:

> *None*
>
> *Embedded* – inserts the management channel in the overhead bits of the DS0s that carry user data. This type of DCC is available only when the selected DS0 Format is N x 56K.
>
> *DCC DS0* – causes the DSE to dedicate an entire DS0 for use by the management channel.

There must be a least two DS0s allocated to the DSE in order to employ DCC DS0, and the management channel occupies the last allocated DS0.

DCC DS0 – read only field that identifies the DS0 being used for the Diagnostic Communication Channel. This option is displayed only when DCC DS0 is selected for Inband DCC.

Options:

2 – 24

DTE Interface Options

The DTE Interface configuration window contains three groups of options grouped under the headings EIA Control, Control Signal Propagation, and Diagnostic Criteria.
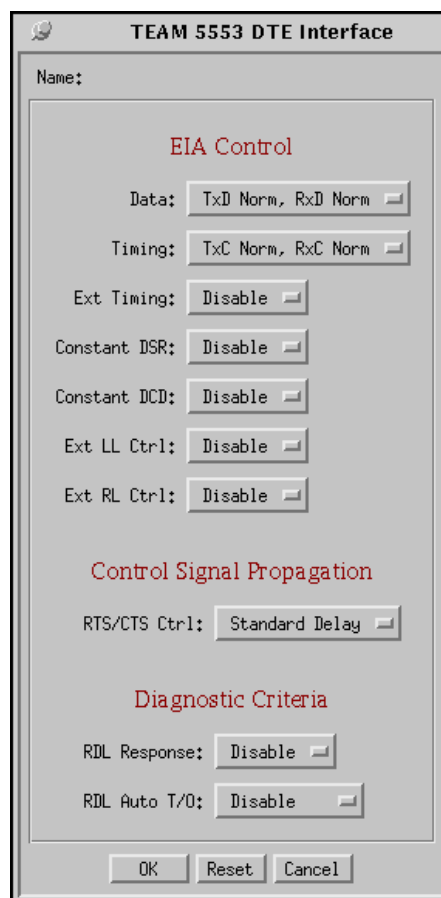

Figure 3-3   DTE Interface Configuration Window

EIA Control

Data – selects the DSE to transmit and receive data as either normal or inverted signal states.

Options:

TxD Norm, RxD Norm – transmit and receive data both use normal signal states

TxD Norm, RxD Inv – transmit data employs normal signal states, receive data is inverted

TxD Inv, RxD Norm – transmit data is inverted, receive data employs normal signal states

TxD Inv, RxD Inv – transmit and receive data are both inverted

Timing – selects signal states of the DSE transmit and receive timing signals.

Options:

TxC Norm, RxC Norm – transmit and receive timing signals both use normal signal states

TxC Norm, RxC Inv – transmit timing signals employ normal signal states, receive timing signals are inverted

TxC Inv, RxC Norm – transmit timing signals are inverted, receive timing signals employ normal signal states

TxC Inv, RxC Inv – transmit and receive timing signals are both inverted

Ext Timing – selects whether or not the DSE accepts external transmit timing from its DTE.

Options:

Disable

Enable

Constant DSR – selects the DSE to output either a constant or a switched Data Set Ready signal to its DTE.

Options:

Disable – switched DSR signal

Enable – constant DSR signal

Constant DCD – selects the DSE to output either a constant or a switched Data Carrier Detect signal to its DTE. This option is forced to Enable when you set DS0 Format to N x 64K in the System Options configuration.

Options:

Disable – switched DCD signal

Enable – constant DCD signal

Ext LL Ctrl – selects whether or not the DSE Local Loop function can be controlled from the DTE.

Options:

Disable – DTE cannot control Local Loop

Enable – DTE can control Local Loop

Ext RL Ctrl – selects whether or not the DSE Remote Loop function can be controlled from the DTE.

Options:

Disable – DTE cannot control Remote Loop

Enable – DTE can control Remote Loop

Control Signal Propagation

RTS/CTS Ctrl – selects the delay (if any) between the DSE receiving Request To Send from the DTE and returning Clear To Send to the DTE. The DSE employs delay time to forward control signals to its remote DSU.

Options:

Standard Delay – equivalent to three bit times

10ms Delay

RTS Forced On – no delay

Diagnostic Criteria

RDL Response – selects whether or not the DSE can send and respond to a PN 127 remote digital loop command.

Options:

PN 127 – DSE can transmit remote digital loop command to its remote DSU, and DSE initiates digital loop in response to command from the DSU

Disable – DSE does not transmit or respond to remote digital loop command

RDL Auto T/O – selects whether or not the DSE ends remote digital loop automatically based on a timeout

Options:

10 Minutes – DSE terminates remote digital loop after ten minutes without need for further operator action. You can end the test manually before the timeout.

Disable – remote digital loop continues until terminated by operator action.

Alarms Reported

The Alarms Reported configuration window (*Figure 3-4*) lets you configure which alarm conditions are to be reported for the DSE and which are not.
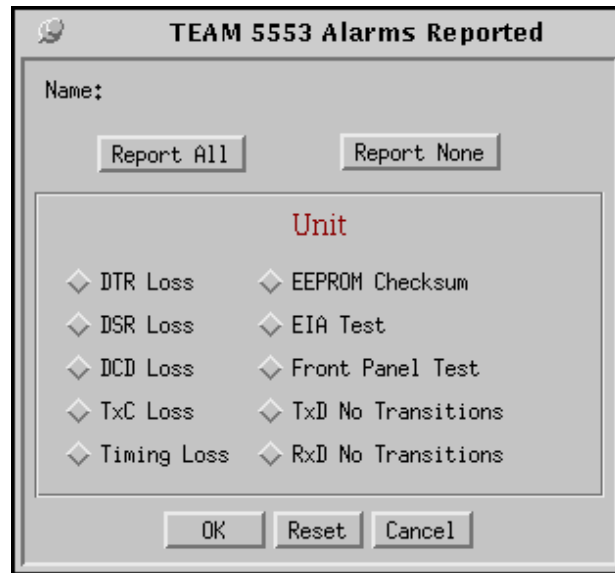
Figure 3-4   Alarms Reported Configuration Window

Buttons and Option Selection

Each of the alarm options in the Alarms Reported configuration window has a small selection field located to its left. You can select or de-select individual alarm options by simply clicking the mouse button on the appropriate selection fields. When an option is selected for its alarm to be reported, its selection field is highlighted. The selection fields next to alarm options that are not to be reported are not highlighted.

The Alarms Reported configuration window has two buttons positioned above the option fields: Report All and Report None:

- Click on Report All to highlight all the alarm option selection fields.

- Click on Report None to remove the highlight from all the alarm option selection fields.

After clicking Report All or Report None you can then change the state of individual fields as needed.

Alarm Options

DTR Loss – Loss of DTR alarm

DSR Loss – Loss of DSR alarm

DCD Loss – Loss of DCD alarm

TxC Loss – Loss of External Transmit Timing alarm

Timing Loss – Loss of Receive Timing alarm

EEPROM Checksum – Configuration Checksum error alarm

EIA Test – alarm indicating the DSE has been commanded into a test mode by the DTE

Front Panel Test – alarm indicating the DSE has been commanded into a test mode by means of its front panel switches

TxD No Transitions – alarm indicating no transmit data from the DTE

RxD No Transitions – alarm indicating no receive data from the remote DSU

Associated Remote

The Add Remote configuration window (*Figure 3-5*) appears when you select Add Remote from the Main Configuration window Navigate menu. There must be an Inband DCC configured for the DSE in order for you to access this window.
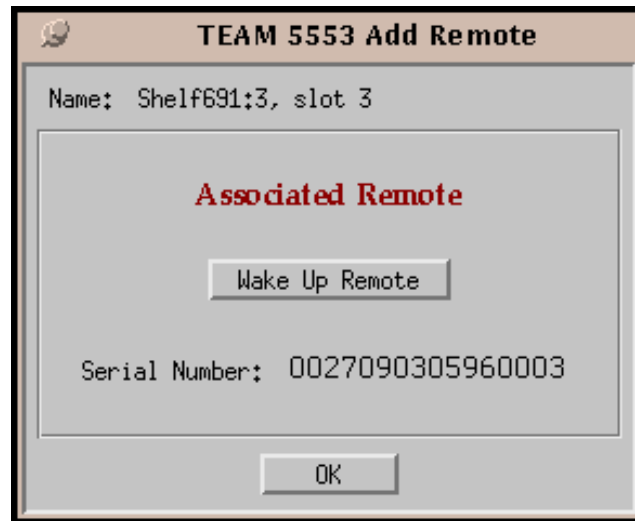

Figure 3-5   Add Remote Window

Procedure

Perform the following procedure to add the remote DSU:

1.   Select Add Remote from Main Configuration window Navigate menu. The Add Remote window appears. The Serial Number field is blank when the window first appears.

2.   Click on the Wake Up Remote button. This commands the TEAM 5553 application to create the software structures that it requires in order to command and monitor the remote DSU in conjunction with the DSE. The application indicates success by displaying the serial number of the associated remote DSU.

3.   Click OK to dismiss the window.

4   Maintenance

Introduction

The TEAM 5553 Maintenance application provides a group of functions for controlling the operation of an SC 5553 Data Set Emulator.

To Start TEAM 5553 Maintenance

You can start the TEAM 5553 Maintenance application by either of two methods:

- Select a DSE symbol on the shelf map, then select the Maintenance option from the Configuration menu.

- Click on the Select button of the Front Panel display, then click on Configuration and select Maintenance from the resulting menu.

The window title bar displays the application name, TEAM 5553 Maintenance. The Name field displays the shelf and slot identification for the DSE. See *Figure 4-1*.

Maintenance Window Buttons

The Maintenance window provides the following three buttons.

Front Panel – permits you to enable or disable the hardware switches on the front panel of the SC 5553 DSE. The label on the button appears as either Inhibit Front Panel or Enable Front Panel, and it toggles between the two displays each time you click on the button. The button displays Inhibit Front Panel when the switches are enabled, and it displays Enable Front Panel when they are disabled.

Reset to Factory Defaults – causes all options in the DSE to return to their factory default settings. When you click on this button the application displays a warning "Resetting to factory defaults will terminate communications to the unit. Do you want to continue?" Click on the OK button in the warning window to complete the reset, or click on the Cancel button to cancel the reset.

Soft Reset – causes the DSE to perform a reset and resume operation using its current configuration. When you click on this button the application displays a warning "Performing a soft reset will terminate communications to the unit. Do you want to continue?" Click on the OK button in the warning window to complete the reset, or click on the Cancel button to cancel the reset.

Figure 4-1   Maintenance Window

5 Diagnostics

Introduction

The TEAM 5553 Diagnostics application enables you to perform a variety of tests on the SC 5553 DSE. Tests can involve just the local unit (the DSE), or the local unit, the remote DSU, and the telephone lines that connect them.

You can start the application by either of two methods:

- Select a DSE symbol on the shelf submap, then select Diagnostics from the Fault menu.
- Click on the Select button of the Front Panel display, then click on Fault and select Diagnostics from the resulting menu.

Diagnostics Window

Beneath the menu bar and the Name field the Diagnostics window (*See Figure 5-1*) is divided into three areas:

- Selection panel – contains buttons and check boxes for selecting, starting, and stopping test functions
- Graphic panel – depicts the path followed by test data during the current test
- Time and results panel – contains an input field for specifying the duration of a test that employs the DSE test pattern generator; displays Time Remaining and Test Results

The Diagnostics window menu bar contains File and Navigate. The File menu has only the Exit selection by which you dismiss the window. The Navigate menu also has a single selection: History, by which you can access a display of test results (*see Figure 5-6*) accumulated during the current diagnostic session.

Tests

The Diagnostics window selection panel lists four Tests to choose from, and two Patterns you can select for those tests that employ the DSE test pattern generator. The panel also includes two buttons, Start Test and Stop Test.

The following Tests are available:

Local Loop (can be performed with or without test pattern)

Digital Loop

Remote Loop (can be performed with or without test pattern)

Delay

The two Patterns are:

511 bit

2047 bit

Each Test and Pattern is accompanied by a check box on which you can click to select it. The Pattern check boxes are grayed out when the selected Test cannot be combined with an internal test pattern.

Diagnostic Test Procedure

Perform the following steps to select and carry out a test procedure on the selected DSE.

1.   Click on the check box next to the selected test: Remote Loop, Digital Loop, Local Loop, or Delay.

2.   If you have selected Local Loop or Remote Loop you can perform the test either with an internally generated 511 or 2047 test pattern, or with externally generated and checked data. Under the Pattern heading, click on 511, 2047, or None (for external data). No Pattern selection is required for Digital Loop or Delay.

3.   If you are using an internally generated test pattern select, in the Test Time field, how long the test is to run before ending automatically.

4.   Click on the Start Test button. While the test runs, the graphic panel illustrates the data path employed by the test. If you are using an internally generated test pattern, the Time Remaining field counts down from 100 to 0 percent.

      During a test that employs an internally generated test pattern the Test Results field displays Running: followed by the number of errors detected; it displays In Loop when external data is in use. When you perform the Delay test, the Test Results field displays the round trip time for a signal transmitted to and looped back by the remote DSU.

5.   If you are using an internally generated test pattern, the test ends automatically at the end of the specified Test Time. For any other test, click on the Stop Test button to end the procedure. The Stop Test button can also stop a test with test pattern prior to the Test Time limit that would end it automatically.
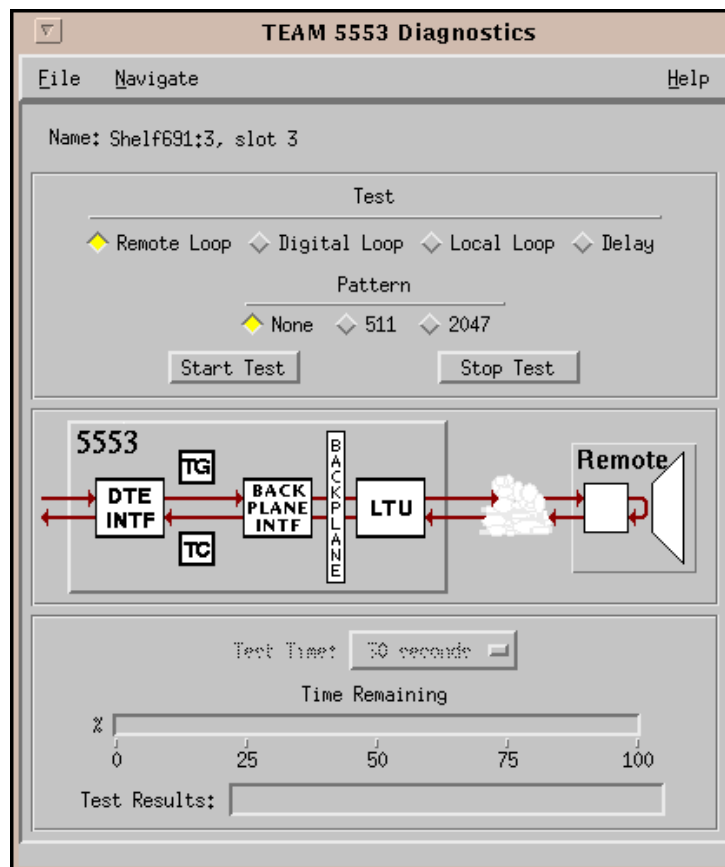
Figure 5-1   Diagnostics Window

Diagnostics Table

The table below briefly describes the available tests. Each test is described more fully and illustrated by a diagram under the headings that follow.

Test	Description
Local Loop (without Pattern)	DSE initiates a local loopback, through which the DTE or external test equipment connected to the DTE interface can direct a test pattern. Must be ended by means of the Stop Test button.
Local Loop (with Pattern)	DSE initiates a local loopback and activates its own test pattern generator/checker.
Remote Loop (without Pattern)	DSE commands the remote DSU to initiate a digital loopback. A test pattern from the local DTE or from external test equipment connected to the local DTE interface can then be directed through the resulting test path. Must be ended by means of the Stop Test button.
Remote Loop (with Pattern)	DSE commands the remote DSU into digital loopback and activates its own test pattern generator/checker.
Digital Loop	DSE loops data it receives from the remote DSU back to the remote DSU. Must be ended by means of the Stop Test button.
Delay	DSE determines delay time on the link by transmitting a signal to the remote DSU, which loops it back so that the DSE can measure the time required for the round trip.

NOTE

In order to function, all Diagnostics procedures for the SC 5553 DSE require the unit to have data highway bandwidth allocated to it on the shelf backplane, and to be receiving shelf timing.

Local Loop

The Local Loop test (*See Figure 5-2*) lets you isolate problems in the operation of the DSE and the DTE interface.
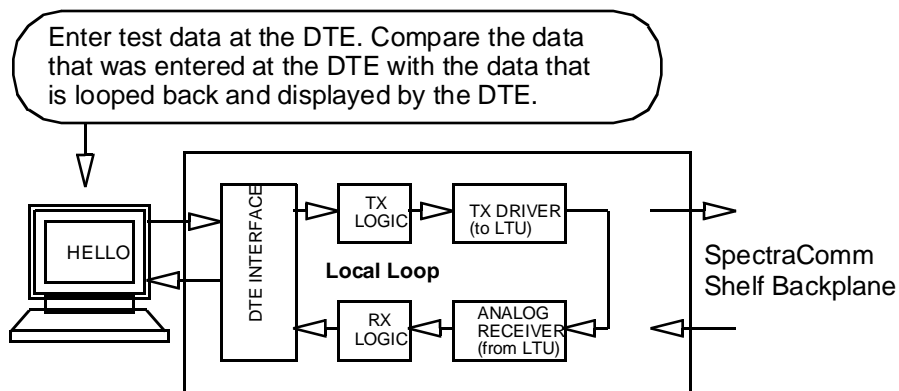

Figure 5-2   Local Loop Test

Local Loop with Test Pattern

Because the pattern generator and checker are internal to the DSE, the DTE interface is not part of the Local Loop test path when you select a test pattern. The use of an internally generated test pattern enables the display of detected errors in the Test Results field.
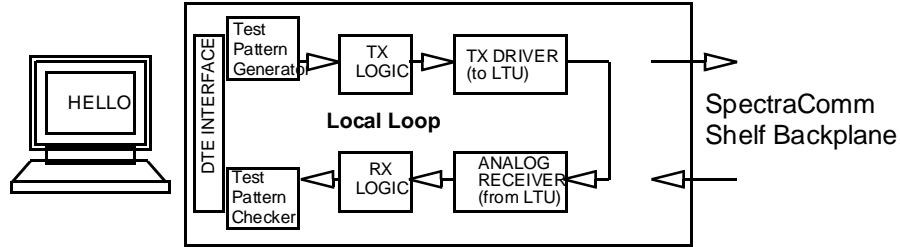

Figure 5-3   Local Loop with Self-Test

Remote Loop

In this test the DSE sends a PN 127 Remote Loop command to the remote DSU. In response the remote DSU couples its receive data to its transmitter input for transmission back to the DSE at the local end (*See Figure 5-4*).
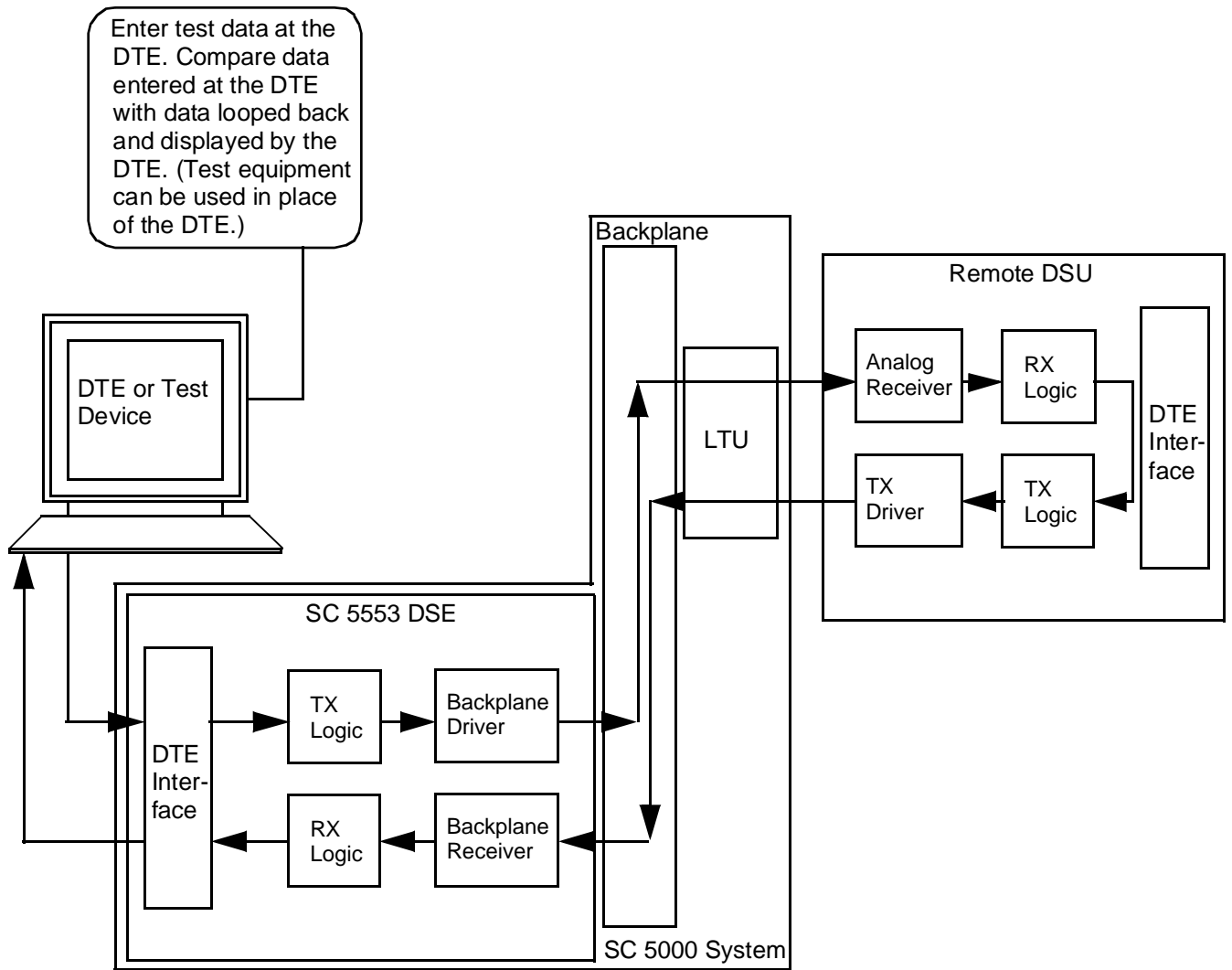
Enter test data at the DTE. Compare data entered at the DTE with data looped back and displayed by the DTE. (Test equipment can be used in place of the DTE.)

DTE or Test Device

Backplane

LTU

Remote DSU

Analog Receiver

RX Logic

DTE Inter-face

TX Driver

TX Logic

SC 5553 DSE

DTE Inter-face

TX Logic

Backplane Driver

RX Logic

Backplane Receiver

SC 5000 System

Figure 5-4   Remote Loop

Remote Loop with Test Pattern

In this test the local DSE sends a Remote Loop command to the remote DSU, then generates a test pattern that it transmits over the network to the remote DSU. The remote DSU loops the received pattern to its transmitter and sends it back to the DSE for analysis (*See Figure 5-5*). This test checks the DSE, the remote DSU, and the link.

The use of an internally generated test pattern enables the display of detected errors in the Test Results field.
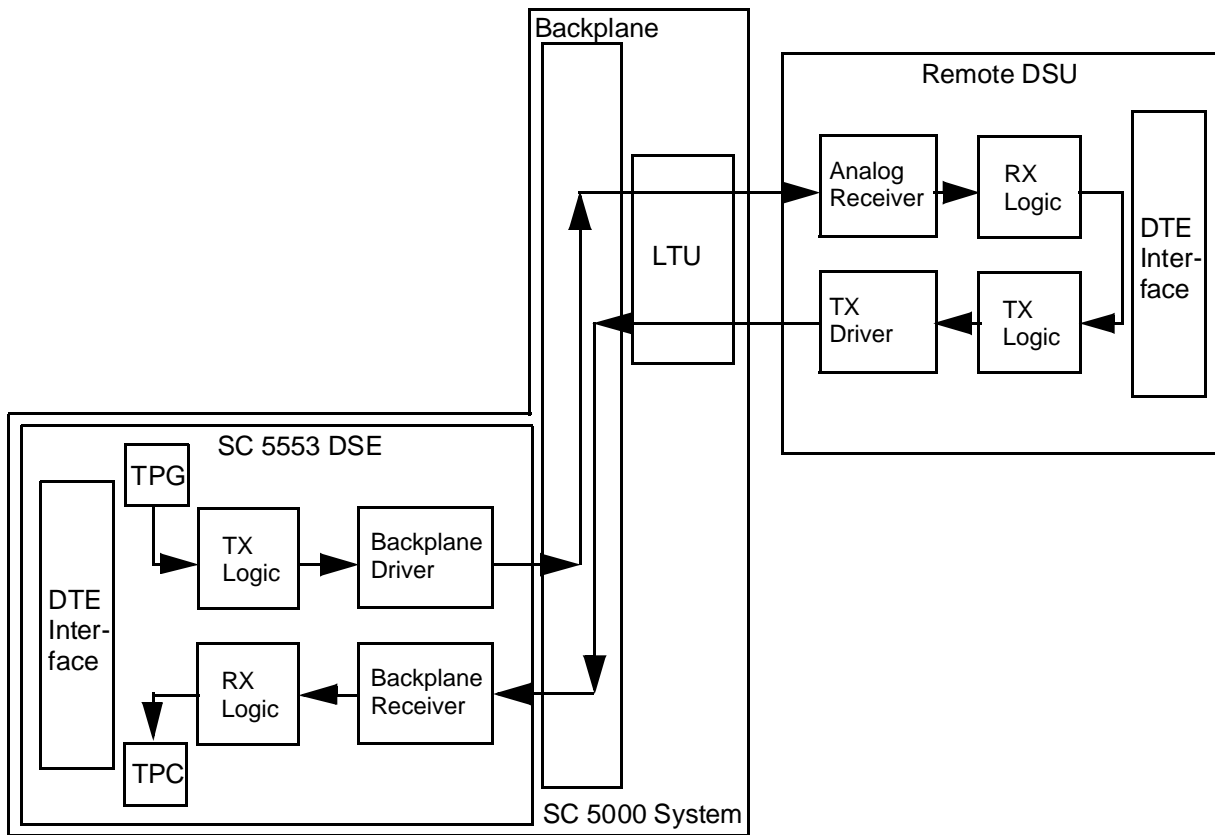
TPG – Test Pattern Generator
TPC – Test Pattern Checker

Figure 5-5   Remote Loop with Test Pattern

Digital Loop

In Digital Loopback (See *Figure 5-5*) local receive data is coupled to the transmitter input so that the remote unit can perform a loopback test without commanding Remote Loopback. The remote DSU site is responsible for test pattern generation and checking in this test.
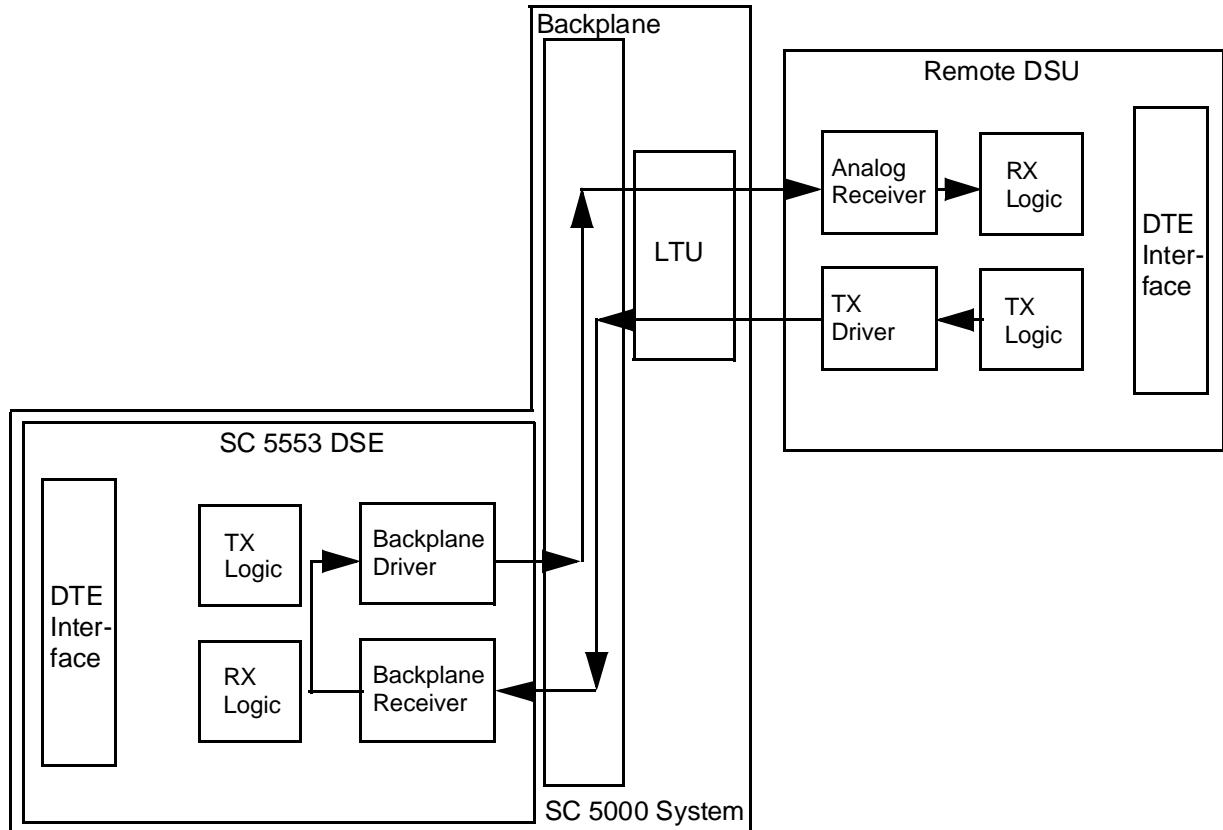
Figure 5-6   Digital Loop

Diagnostics History

You can view a record of tests performed during the current diagnostic session by selecting History from the Navigate menu in the Diagnostics window. The record appears as a listing in the Diagnostics History window (*see Figure 5-7*).
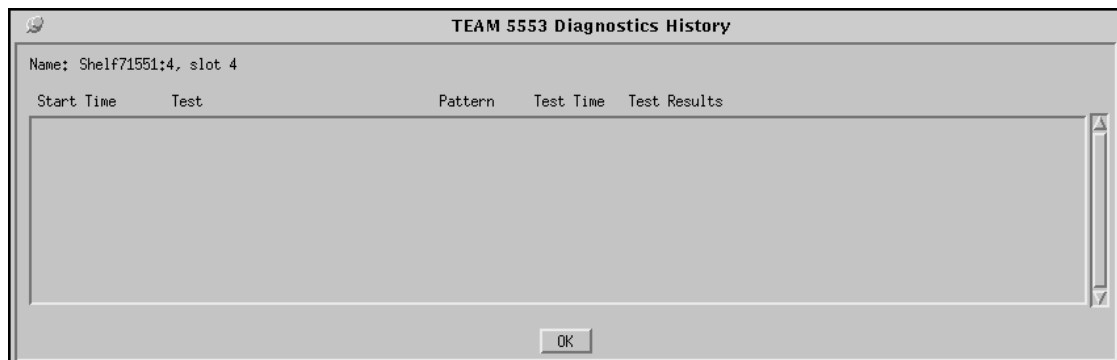
Figure 5-7   Diagnostics History

The Diagnostics History displays information in five columns:

Start Time – date and time test began

Pattern – test pattern used for the test; N/A when internally generated pattern is not used

Test – name of the test

Test Time – duration of the test, applies only to tests with test pattern

Test Results – "Idle: n Errors" for a completed test with test pattern; "Not in loop [STOPPED]" for a completed loop test without test pattern; "n ms" for Delay Test; "TEST STOPPED" for any test with test pattern that was ended by the Stop Test button

To close the Diagnostics History window, click on either the OK button or the pushpin icon in the upper left corner of the window. During an on-going diagnostic session you can close and re-open the Diagnostics History window without loss of display data.

The application clears the Diagnostics History when you exit from the Diagnostics window.

6 NMS 553

Overview

The SC 5553 Data Set Emulator is a central site unit that operates in conjunction with an NMS 553 Data Service Unit (DSU) located at a remote site. The TEAM 5553 software supports a full range of functions for the remote NMS 553 DSU, as it does for the SC 5553 DSE. This chapter describes the NMS 553 functionality of the software and provides instructions for its use.

Access to the NMS 553 Functions

Access to the NMS 553 functions takes place through the icon for the SC 5553 DSE that is linked to the NMS 553 DSU that you intend to work with.

1. Display the shelf map. Any DSE that **does not** have an associated remote is identified by a box around its icon symbol. Each DSE that has an associated remote is identified by an icon symbol without a box.

2. Double click on the icon symbol of the DSE that is linked to the DSU you intend to work with. The application responds by opening a submap that displays icons for the DSE and the DSU with a connecting line to indicate that together they form a link.

3. From this submap you can either click once on the DSU icon to select it and then access the functions through the menu bar of the submap window, or double click on the DSU icon to open the NMS 553 Front Panel display window. From the Front Panel display you can access NMS 553 functions through Select button menus.

Submap Window Menu Bar Access

The table on the following page illustrates how the NMS 553 functions of the TEAM 5553 application are arranged on the menu bar at the top of the link submap window. The table shows only the menu selections for the NMS 553 functions. The submap window menus include other selections as well because the window is accessible to other applications.

You must click on the DSU icon to select it before you open the menu you intend to use.

Menu Bar   Menu Selections

Performance

Front Panel
Alarm Detail...
Local Reports...
Alarm Counts...
Channel Status...

Configuration

Configure...
Maintenance...

Fault

Diagnose...

Misc

Front Panel Poll Rate...
Note Pad

The Performance menu Front Panel selection opens the Front Panel display window, which also provides access to menus through its Select button. All the menu selections shown above appear in the Select button menus except Front Panel and the Misc category.

NMS 553 DSU Front Panel

The NMS 553 Front Panel display window (*See Figures 6-1 and 6-2*) provides a graphical interface to remote NMS 553 DSU. You can launch a Front Panel in either of two ways:

•   select the NMS 553 icon in the submap window, then select Front Panel from the Performance menu for the window

•   display the shelf sub-map that includes the unit you intend to work with, then double click the mouse on the slot icon for the unit.

The application responds by displaying a window that depicts the front panel of the selected NMS 553 DSU unit. There are two NMS 553 DSU Front Panel displays, one for the model with Intelligent Front Panel (IFP) and one for the model without IFP.
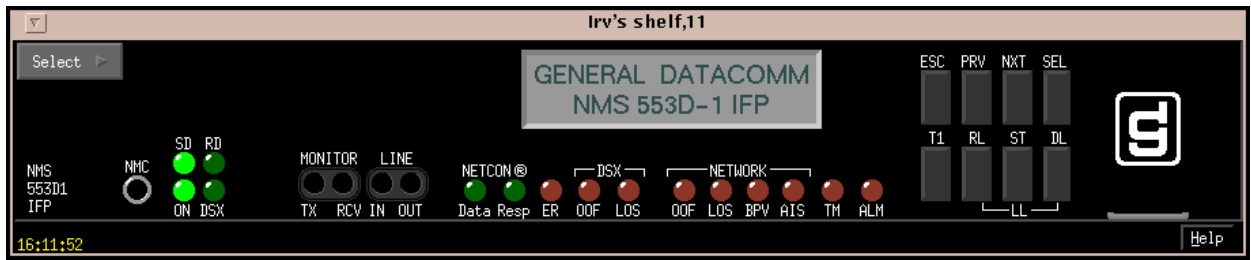
Figure 6-1   NMS 553 IFP DSU Front Panel

Figure 6-2   NMS 553 Non-IFP DSU Front Panel

The LEDs shown in the display reflect the states of the actual indicators on the physical unit:

SD – Send Data indicates when lit that the DSU is transmitting data

RD – Receive Data indicates when lit that the DSU is receiving data

ON – Power On

DSX – Cascade Port Indicator

Data – Management Data indicates when lit that the DSU is receiving data from the TEAM controller

Resp – Management Response indicates when lit that the DSU is transmitting data to the TEAM controller

ER – Error indicates when lit that a CRC error has been detected in receive data, also flashes to indicate detected errors during test modes

DSX OOF – Cascade Port Out of Frame indicator

DSX LOS – Cascade Loss of Signal indicator

NETWORK OOF – Network Out of Frame indicator

NETWORK LOS – Network Loss of Signal indicator

NETWORK BPV – Network Bi-polar Violation indicator

NETWORK AIS – Network Alarm Indication Signal indicator

LBK – Loopback (non-IFP only) indicates when lit the DSU is in a T1 loopback mode

TM – Test Mode

ALM – Alarm, indicates by its color, which matches that of the NMS 553 submap icon for the unit, that the DSU has detected an alarm condition.

The application polls the DSU to keep the states of the LEDs in the Front Panel display current. The time of the most recent poll appears in the bottom left corner of the Front Panel display. The time is displayed in white when Auto Poll is enabled, and in yellow when it is disabled.

The Select button on the Front Panel displays provides access to menus for the rest of the NMS 553 functions of the TEAM 5553 application. The following table shows the arrangement of the Select button menus. It differs somewhat from the arrangement on the submap window menu bar.

Select Menu Items   Second Level
                           Selections

Performance

Alarm Detail...
Local Reports...
Alarm Counts...
Channel Status...

Administer

Configure...
Maintenance...

Fault

Diagnose...

Demand Poll

Auto Poll

15 seconds
30 seconds
60 seconds
Disable

Exit

The two Poll selections in the Select button menu determine when the application collects new information from the DSE to update the Front Panel window:

•   Selecting Demand Poll causes an immediate update of the display.

•   Auto Poll enables you to select updates at 15, 30, or 60 second intervals, or to disable automatic polling. If you select Disable, the Front Panel window displays a static snapshot of the LED states as they were at the last poll, either when the window was launched or a subsequent Demand Poll.

Each time the Front Panel display is opened, its initial polling rate is determined by the Front Panel Poll Rate selection of the map window Misc menu.

The menu selection Exit dismisses the Front Panel window when you click on it.

Performance Functions

Alarms

You can launch the NMS 553 Alarm Detail application from the submap Performance Menu or from the front panel menu. The application displays the read-only Alarms Detail window for the selected DSU *(See Figure 6-3)*.

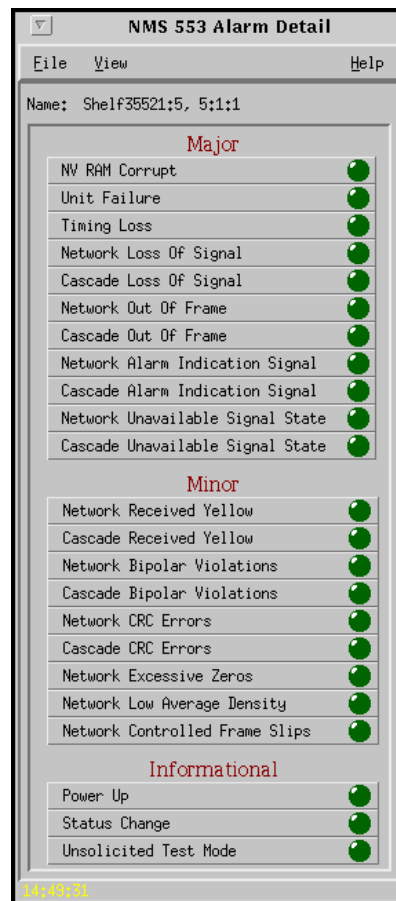The TEAM 5553 application polls the DSU for changes in alarm conditions.

Figure 6-3   Alarm Detail Window

The Alarm Detail window displays alarms grouped into three categories:

*   Major
*   Minor
*   Informational

Major Alarms

NV RAM Corrupt – indicates that the non-volatile memory that stores the DSU configuration has become corrupted

Unit Failure

Timing Loss

Network Loss of Signal

Cascade Loss of Signal

Network Out Of Frame

Cascade Out Of Frame

Network Alarm Indication Signal

Cascade Alarm Indication Signal

Network Unavailable Signal State

Cascade Unavailable Signal State

Minor Alarms

Network Received Yellow

Cascade Received Yellow

Network Bipolar Violations

Cascade Bipolar Violations

Network CRC Errors

Cascade CRC Errors

Network Excessive Zeros

Network Low Average Density

Network Controlled Frame Slips

Informational Alarms

Power Up

Status Change

Unsolicited Test Mode

Alarm Detail Window Menus

The Alarm Detail window has a File menu and a View menu in its menu bar.

The File menu contains the selections Demand Poll, Auto Poll, and Exit. Selecting Demand Poll causes an immediate update of the display.

Auto Poll enables you to select updates at 15, 30, or 60 second intervals, or to disable automatic polling. If you select Disable, the Alarm Detail window displays a static snapshot of conditions as they were at the last poll, either when the window was launched or a subsequent Demand Poll.

The time of the most recent poll appears in the bottom left corner of the window. The time is displayed in white when Auto Poll is enabled, and in yellow when it is disabled.

The View menu consists of three selections: Major, Minor, and Informational, each with a

check box beside it. To remove an alarm category from the window display, click on its check box so that it is unchecked. Clicking a box so that it is checked restores the corresponding category to the display.

Local Reports

The Local Reports function displays AT&T statistics that are accumulated when the DSE and its remote DSU are configured to employ ESF frame formatting. The statistics are stored in the internal registers of the DSU. You can launch the NMS 553 Local Reports function from the submap Misc menu or from the front panel menu.

The Local Reports window menu bar contains File and Edit.

The File menu consists of the selections Refresh and Exit. Refresh causes the application to update the window with any new data that is available from the DSU. Exit dismisses the window.

The Edit menu consists of the selections Clear Results and Resync Timer. Clear Results deletes all entries currently stored for display in the window. Resync Timer enables you to select the time that elapses before the application refreshes the window following a Clear Results.
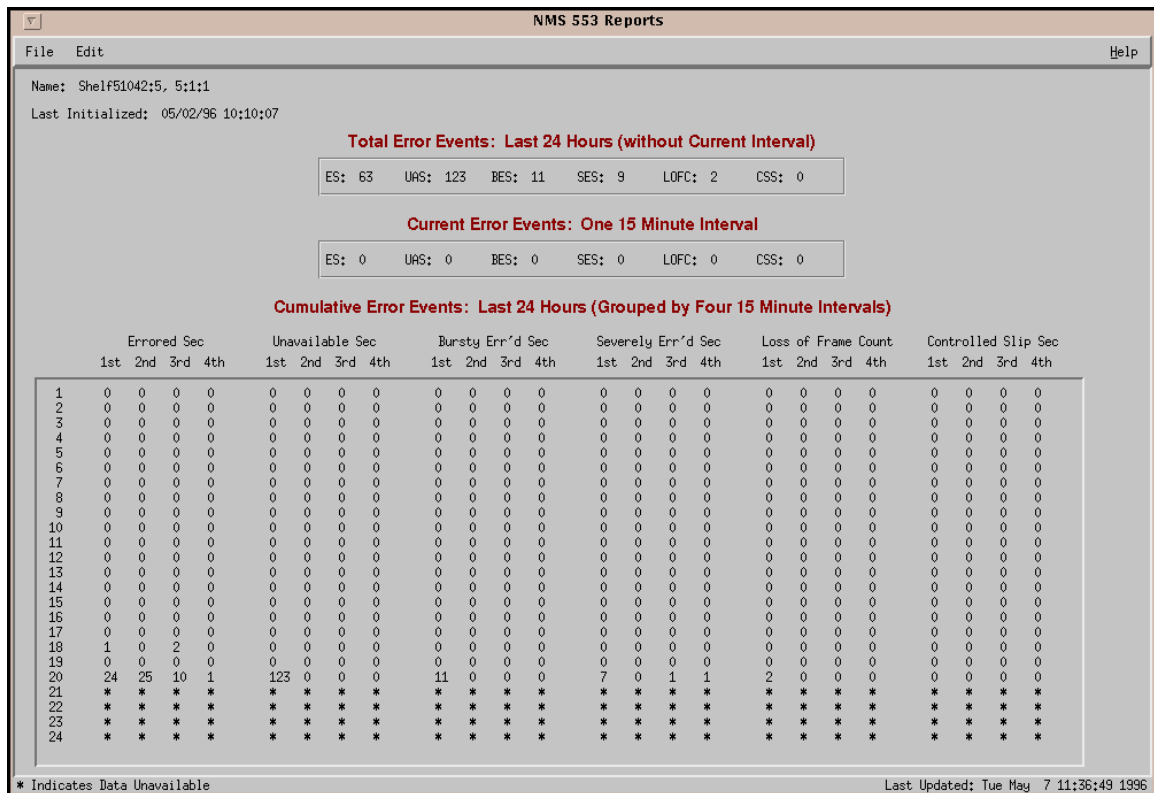

Figure 6-4   Local Reports Window

Alarm Counts

You can launch the NMS 553 Alarm Counts function from the submap Misc Menu or from the front panel menu. The function displays accumulated alarm data divided into the three categories: Major, Minor, and Informational.

The data is arranged in four columns:

Alarm Type

Count – the number of occurrences that have been recorded

First Occurrence

Last Occurrence

The Alarm Counts window menu bar contains File and Edit.

The File menu consists of the selections Refresh and Exit. Refresh causes the application to update the window with any new data that is available from the DSU. Exit dismisses the window.

The Edit menu consists of the selections Clear Results and Resync Timer. Clear Results deletes all entries currently stored for display in the window. Resync Timer enables you to select the time that elapses before the application refreshes the window following a Clear Results.

Figure 6-5   Alarm Counts Window

Channel Status

You can launch the NMS 553 Channel Status window from the submap Performance Menu or from the front panel menu. The application displays the read-only Channel Status window for the DSU *(See Figure 6-6)*. The window displays indicators for the states of the EIA signals at the DTE interface. Dark green indicates Off, light green indicates On, and light green with a superimposed two-headed arrow indicates transitions.

Status Window Menu

The Status window has a File menu in its menu bar with the selections Demand Poll, Auto Poll, and Exit. Selecting Demand Poll causes an immediate update of the display.

Auto Poll enables you to select updates at 15, 30, or 60 second intervals, or to disable automatic polling. If you select Disable, the Status window displays a static snapshot of the EIA indicators as they were at the last poll, either when the window was launched or a subsequent Demand Poll.

The time of the most recent poll appears in the bottom left corner of the window. The time is displayed in white when Auto Poll is enabled, and in yellow when it is disabled.
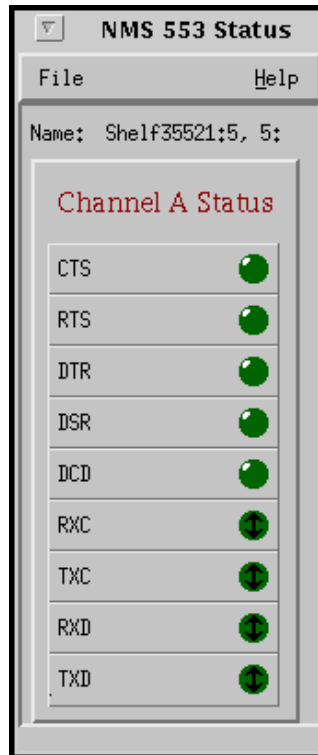

Figure 6-6   Channel Status Window

Configuration

You can launch the NMS 553 Configuration function from the submap Configuration Menu or from the front panel menu. When you launch the window, it initially displays the read-only NMS 553 Configuration window, which has a File menu and a Navigate menu in its menu bar.

The File menu contains the selections

- Refresh, which discards all unsaved changes and restores all options in the displayed configuration windows to the values they are assigned by the current operating configuration

- Save to Unit, which puts the new configuration into use by the DSU

- Load Template, by which you can recall a stored configuration template that you can then save to the DSU either with or without modifications

- Save to Template, by which you can store the current configuration on the workstation for future use as a template

- Compare to Template, by which you can identify differences between the configuration displayed on-screen and a selected template

•   Exit, by which you can dismiss the window.

The Navigate menu enables you to access the four read/write windows by which you can configure various aspects of DSU operation:

•   System Options

•   DTE Options

•   Network Options

•   Alarms Reported

Main Configuration Window

The Main Configuration window has two pull down menus, File and Navigate, that are the means by which you carry out the actual process of configuring the DSE. From the **Navigate menu** you select the individual configuration windows in which you make changes. The **File menu** commands the storage and retrieval of configuration settings. The contents of the two menus appear below.

Menu Buttons	Menu Selections	Further Selections
File		
	Refresh	
	Save to Unit	
	Load Template	dialog window
	Save to Template	dialog window
	Compare to Template	dialog window
	Exit	

Menu Buttons	Menu Selections	Further Selections
Navigate		
	System Options...	
	DTE Options...	
	Network Options...	
	Alarms Reported...	
	All Screens...	

The Main Configuration window title bar displays the function name, NMS 553 Configuration. The main body of the window contains read-only items that identify the DSE and provide information about its operations.

Main Configuration Window Read-Only Display

The Main Configuration window displays the following read-only items:

Name: shelf and slot identification for the master DSE followed by the slot:line:drop address of the DSU

Serial Number: displays the serial number of the DSU

DTE Interface Type   displays V.35 or EIA-530

Firmware Revision: displays the revision level of the DSU operating code

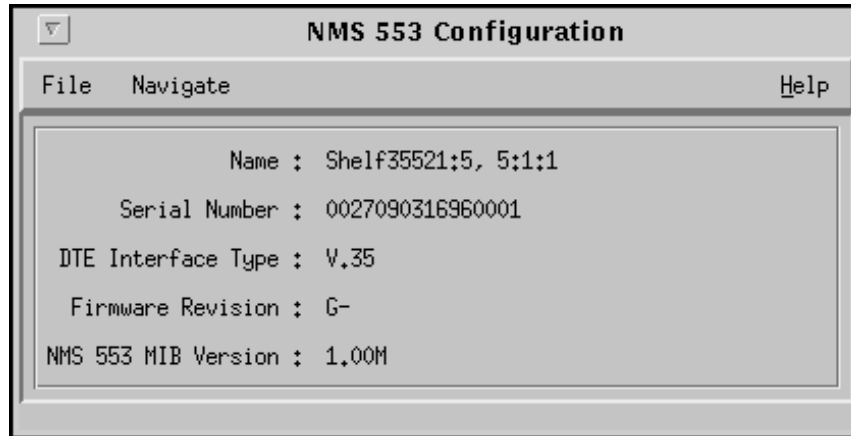NMS 553 MIB Version: displays the revision level of the MIB files that enable SNMP control

Figure 6-7   Main Configuration Window

System Options

The NMS 553 System Options configuration window contains two groups of options grouped under the headings Miscellaneous Criteria and DS0 Criteria.
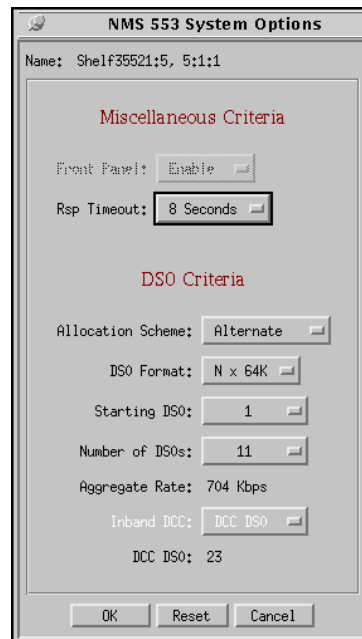

Figure 6-8   NMS 553 System Options Configuration Window

Miscellaneous Criteria

Front Panel – permits you to disable the switches on the front panel of the DSU as protection against any inadvertent interruption of its operation.

Options:

Enable – DSU front panel switches are operational.

Inhibit – DSU front panel switches are disabled.

Rsp Timeout – selects the length of time the SCM waits for a response from the DSU before it declares a No Response condition.

Options:

2, 4, 6, 8 seconds

DS0 Criteria

Allocation Scheme – selects between Alternate and Consecutive assignment of DS0s. Use of alternate DS0s eliminates the need for ones density enforcement. Use of consecutive DS0s permits higher aggregate rates.

Options:

Alternate

Consecutive

DS0 Format – selects the data rate of each DS0 employed by the DSU. When you select N x 64K for this option, the DTE Interface Configuration option Constant DCD is automatically forced to Enabled.

Options:

N x 56K

N x 64K

Starting DS0 – specifies the first DS0 of the group that the DSU employs to transmit and receive its fractional T1 data. The Number of DS0s in the group is selected by the next option. When selecting the Starting DS0, remember that the group of DS0s cannot wrap around at the upper limit. That is, you cannot assign, for example, 22 as the Starting DS0 if the Number of DS0s is to be 5. Remember also to take the Allocation Scheme into account.

Options:

Disabled

1– 24

Number of DS0s – specifies how many DS0s make up the group that the DSU employs to transmit and receive its fractional T1 data. The number you specify here is only the DS0s that actually carry data, regardless of the Allocation Scheme.

Options:

1– 24

Aggregate Rate – read only field that displays the user data rate currently being supported by the DSU. When all DS0s are used for data, the aggregate rate is equal to the number of assigned DS0s times the DS0 format (56 kbps or 64 kbps). When Inband DCC (see below) is configured for DCC DS0, the aggregate rate is equal to one less than the number of assigned DS0s times the DS0 format (56 kbps or 64 kbps).

Inband DCC – selects the format of the Diagnostic Communication Channel (DCC) by which the DSU exchanges management communications with its master DSE.

Options:

Embedded – inserts the management channel in the overhead bits of the DS0s that carry user data. This type of DCC is available only when the selected DS0 Format is N x 56K.

DCC DS0 – causes the DSU to dedicate an entire DS0 for use by the management channel. There must be a least two DS0s allocated to the DSU in order to employ DCC DS0, and the management channel occupies the last allocated DS0.

DCC DS0 – read only field that identifies the DS0 being used for the Diagnostic Communication Channel. This option is displayed only when DCC DS0 is selected for Inband DCC.

Options:

2 – 24

DTE Options

The NMS 553 DTE Options configuration window contains three groups of options grouped under the headings EIA Control, Control Signal Propagation, and Diagnostic Criteria.

Figure 6-9   DTE Options Configuration Window

EIA Control

Data – selects the DSU to transmit and receive data as either normal or inverted signal states.

Options:

TxD Norm, RxD Norm – transmit and receive data both use normal signal states

TxD Norm, RxD Inv – transmit data employs normal signal states, receive data is inverted

TxD Inv, RxD Norm – transmit data is inverted, receive data employs normal signal states

TxD Inv, RxD Inv – transmit and receive data are both inverted

Timing – selects signal states of the DSU transmit and receive timing signals.

Options:

TxC Norm, RxC Norm – transmit and receive timing signals both use normal signal states

TxC Norm, RxC Inv – transmit timing signals employ normal signal states, receive timing signals are inverted

TxC Inv, RxC Norm – transmit timing signals are inverted, receive timing signals employ normal signal states

TxC Inv, RxC Inv – transmit and receive timing signals are both inverted

Split Timing – selects whether or not the DSU operates using split timing. In split timing data is timed at the network interface by the Tx Clock Source selected in the Network Options configuration window, but timed at the DTE interface by external timing from the DTE.

Options:

Disable

Enable

Constant DSR – selects the DSU to output either a constant or a switched Data Set Ready signal to its DTE.

Options:

Disable – switched DSR signal

Enable – constant DSR signal

Constant DCD – selects the DSU to output either a constant or a switched Data Carrier Detect signal to its DTE. This option is forced to Enable when you set DS0 Format to N x 64K in the System Options configuration.

Options:

Disable – switched DCD signal

Enable – constant DCD signal

Test Leads – selects whether or not the DSU Local Loop and Remote Loop functions can be controlled from the DTE.

Options:

Disable – DTE cannot control loop functions

Enable – DTE can control loop functions

Control Signal Propagation

RTS/CTS Ctrl – selects the delay (if any) between the DSU receiving Request To Send from the DTE and returning Clear To Send to the DTE. The DSU employs delay time to forward control signals to the DSE.

Options:

> *Standard Delay* – equivalent to three bit times
>
> *10ms Delay*
>
> *RTS Forced On* – no delay

Diagnostic Criteria

RDL Response – selects whether or not the DSU can send and respond to a PN 127 remote digital loop command.

Options:

> *PN 127* – DSU can transmit remote digital loop command to the DSE, and DSU initiates digital loop in response to command from the DSE
>
> *Disable* – DSU does not transmit or respond to remote digital loop command

RDL Auto T/O – selects whether or not the DSU ends remote digital loop automatically based on a timeout

Options:

> *10 Minutes* – DSU terminates remote digital loop after ten minutes without need for further operator action. You can end the test manually before the timeout.
>
> *Disable* – remote digital loop continues until terminated by operator action.

NMS 553 Network Options

The NMS 553 Network Options configuration window (*Figure 6-10*) appears when you select Network Options from the Main Configuration window Navigate menu. The window can contain two panels labeled Network and Cascade as shown below. When the selected DSU does not have the optional cascade interface installed, the application does not display the Cascade portion of this window.

Figure 6-10   NMS 553 Network Options Configuration Window

Network Interface Options

Line Code – sets the line code the DSU employs on the T1 link.

Options:

> *AMI* – Alternate Mark Inversion, with no bipolar violations
>
> *B8ZS* – Bipolar with eight zero substitution, with bipolar violations

Set Frame Type – sets the network framing format the DSU employs on the T1 link.

Options:

> *Manual ESF* – Extended Superframe Format
>
> *Auto* – DSU adapts itself to ESF or D4 according to which is being received
>
> *Manual D4* – D4 Superframe

Oper Frame Type – is a read-only field that displays the Line Type and Network Framing format detected by the DSU.

ESF Mode – when you select ESF in the Set Line Type field you must set this field to match the type of Facilities Data Link maintenance messages that the service provider supports.

Options:

> *None* – no FDL
>
> *ANSI T1.403* – Scheduled Performance Report Messages (PRMs) and Unscheduled Messages
>
> *TR 54016* – Telemetry Asynchronous Block Serial (TABS) protocol

Interface Type – sets the type of signal that the DSU transmits and receives through its network interface.

Options:

> *DS1* – for connection to a Telco network; Set Line Buildout field is valid when you select DS1
>
> *DSX1* – for short haul connection to another on-site device; Pre-Equal field is valid when you select DSX1

Pre-Equalization – sets pre-equalization when the selected Interface Type is DSX1. Should be set to match line length between the DSU and the device it is connected to, thereby ensuring that a satisfactory signal reaches the device.

Options:

> *None* – provides no pre-equalization
>
> *0 to130 ft*
>
> *130 to 260 ft*
>
> *260 to 390 ft*
>
> *390 to 530 ft*
>
> *530 to 655 ft*

Ones Density – sets the technique the DSU uses to ensure that its transmit signal contains an adequate proportion of digital ones (minimum pulse density) when the Line Code option for the network side is set to AMI.

Options:

> *Inhibit* – no minimum pulse density is maintained
>
> *Max 39 Zeros* – maximum of 39 consecutive zeros can be transmitted to the network before the DSU inserts a 'one'
>
> *Max 15 Zeros* – maximum of 15 consecutive zeros can be transmitted to the network before the DSU inserts a 'one'
>
> *8 (N+1)* – the DSU enforces a minimum of N 'ones' per 8(N+1) bits, where N = 1 to 24; the result is a 12% average ones density
>
> *Min 1 in 8* – the DSU enforces a minimum of 1 'one' per 8 bits. Pulse density violations are enforced but enforcement is not indicated.

Tx Clock Source – selects the timing source for transmissions at the network interface of the DSU.

Options:

> *Receive* – timing derived from the incoming T1 signal
>
> *Internal* – timing from the internal clock of the DSU
>
> *Station* – timing from an RS422 signal at the auxiliary port of the DSU
>
> *Cascade* – timing from optional DSX-1 cascade port
>
> *Channel* – external timing supplied at the channel interface

Fallback Clock Source – selects transmit timing source the DSU is to use if its primary source of timing is lost. The primary transmit timing source for a DSU is configurable. The primary transmit timing source for a CSU is always receive timing.

Options:

> *Internal/Local* – timing from the internal clock of the DSU
>
> *Receive* – timing from the incoming signal at the network interface

Inband Loopback Code – allows or prohibits the DSU from accepting a formatted (framed/ unframed) in-band loopback code from another unit. The code initiates either Payload Loopback (PLB) or Line Loopback (LLB).

Options:

> *None* – prevents DSU from accepting in-band loopback code
>
> *PLB-Unframed* – DSU accepts unframed Payload Loopback code
>
> *PLB-Framed* – DSU accepts framed Payload Loopback code
>
> *LLB-Unframed* – DSU accepts unframed Line Loopback code
>
> *LLB-Framed* – DSU accepts framed Line Loopback code

AIS Loopdown – sets the amount of time (in seconds) that the DSU must receive a continuous Alarm Indication Signal before terminating a remotely-initiated loopback. This option is grayed out when None is selected for Inband Loopback Code.

Options:

5 - 60 seconds

Infinite

Set Line Buildout – sets the Network Line Buildout value when the selected Interface Type is DS1.

Options:

Manual 0dB – provides no attenuation

Manual -7.5dB – provides -7.5dB of attenuation

Manual -15dB – provides -15dB of attenuation

Auto – provides attenuation based on the signal being received from the network

Oper Line Buildout – is a read-only field that displays the Line Buildout value currently in effect.

Cascade Interface Options

Line Code (C) – sets the line code the DSU employs at the DSX-1 cascade interface.

Options:

AMI – Alternate Mark Inversion, with no bipolar violations

B8ZS – Bipolar with eight zero substitution, with bipolar violations

Set Frame Type (C) – sets the network framing format the DSU employs at the DSX-1 cascade interface.

Options:

Manual ESF – Extended Superframe Format

Auto – DSU adapts itself to ESF or D4 according to which is being received

Manual D4 – D4 Superframe

Oper Frame Type (C) – is a read-only field that displays the Line Type and Network Framing format detected by the DSU at the DSX-1 cascade interface.

Pre-Equalization (C)– sets pre-equalization for the DSX-1 cascade interface. Should be set to match line length between the DSU and the device it is connected to, thereby ensuring that a satisfactory signal reaches the device.

Options:

None – provides no pre-equalization

0 to130 ft

130 to 260 ft

260 to 390 ft

390 to 530 ft

530 to 655 ft

Alarms Reported

The NMS 553 Alarms Reported configuration window (*Figure 6-11*) lets you configure which alarm conditions are to be reported for the DSU and which are not. The window can contain three panels labeled Network, Cascade, and Unit as shown below. When the selected DSU does not have the optional cascade interface installed, the application does not display the Cascade portion of this window.

The Cascade alarms duplicate most, but not all, of the Network alarms, so the two categories are treated together in the descriptions of Alarms Reported Fields that appear below. Those alarms that occur only at the Network interface are identified in the descriptions.
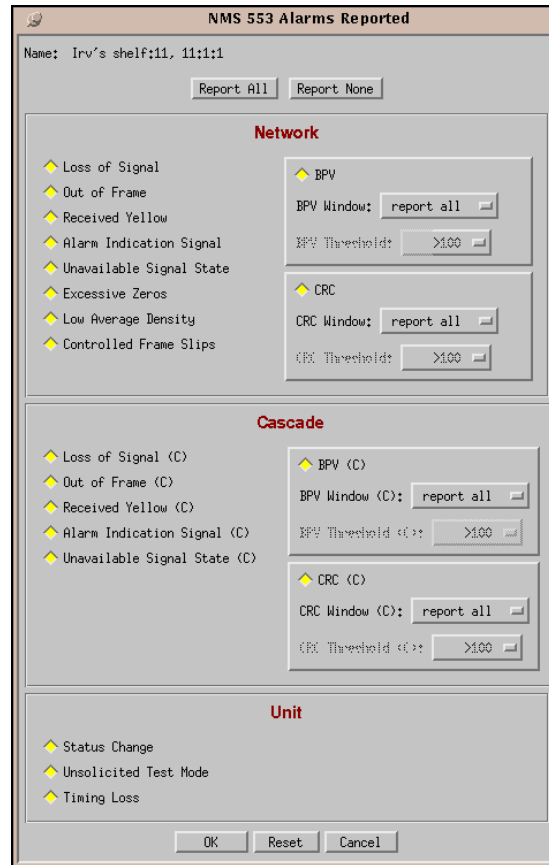

Figure 6-11   Alarms Reported Configuration Window

Buttons and Option Selection

Each of the alarm options in the Alarms Reported configuration window has a small selection field located to its left. You can select or de-select individual alarm options by simply clicking the mouse button on the appropriate selection fields. When an option is selected for its alarm to be reported, its selection field is highlighted. The selection fields next to alarm options that are not to be reported are not highlighted.

The Alarms Reported configuration window has two buttons positioned above the option fields: Report All and Report None:

•   Click on Report All to highlight all the alarm option selection fields.

•   Click on Report None to remove the highlight from all the alarm option selection fields.

After clicking Report All or Report None you can then change the state of individual fields as needed.

Alarms Reported Buttons

Report All – unmasks all alarms.

Report None – masks all alarms.

Reset – replaces the information in the fields with the most recently read information from the DSU. *Note that this button does not initiate a read of information from the DSU.*

OK – saves your changes and closes the window.

Cancel – cancels your changes and closes the window.

Alarms Reported Fields

Network/Cascade

Loss of Signal – occurs when the DSU detects an absence of signal at the interface. Absence of signal for a time equivalent to 175 bits ($\pm$ 75) is considered no signal.

Out of Frame – occurs when the DSU misses two out of four framing bits in the signal at the interface. The count for this alarm increments by one each time framing is lost, regardless of the number of frames affected.

Received Yellow – occurs when a remote failure is detected at the interface.

Alarm Indication Signal – occurs when the DSU receives an AIS at the interface.

Unavailable Signal State – occurs in response to 10 consecutive severely errored seconds at the interface. The state is considered cleared when the DSU has processed 10 consecutive seconds of data without a severely errored second.

Excessive Zeros – (Network only) occurs when Max 15 Zeros or Max 39 Zeros is the configured selection for Ones Density and the DSU has to insert ones in the signal it transmits toward the network. The selected option determines the threshold for ones insertion and occurrence of this alarm. The DSU inserts ones when the transmit signal would otherwise contain fewer ones than the Ones Density option requires.

When this alarm is valid Low Average Density is not. Neither alarm is valid when Inhibit is the option selected for Ones Density.

Low Average Density – (Network only) occurs when 8(N+1) is the configured selection for Ones Density and the DSU has to insert ones in the signal it transmits toward the network. The DSU inserts ones when the transmit signal would otherwise contain fewer ones than the Ones Density option requires.

When this alarm is valid Excessive Zeros is not. Neither alarm is valid when Inhibit is the option selected for Ones Density.

Controlled Frame Slips – (Network only) occurs when the DSU drops frames to compensate for timing discrepancies with the network.

BPV – lets you mask or unmask Bipolar Violation alarms. A Bipolar Violation occurs when the signal the DSU receives at the interface does not alternate between signal levels as required for Alternate Mark Inversion (AMI) or Bipolar with 8 Zero Substitution (B8ZS) data encoding.

If you unmask this alarm field, you must designate a window and a threshold. The window defines a time period within which the threshold must be exceeded in order for the DSU to generate the alarm. For example, a window of one minute and a threshold of >100 specify that more than 100 alarm events must be detected within the one minute window before an alarm is generated.

Options:

BPV Window – report all, one second, one minute, one hour, or when threshold is reached

BPV Threshold – minimum number of alarm events within the specified window required to generate the alarm: >10, >100, >1000, or >10,000

CRC – lets you mask or unmask CRC error alarms. A CRC error occurs when ESF framing is in use and the CRC-6 code calculated for a frame at the receiving unit does not match the CRC-6 code calculated by the unit that transmitted the frame. The DSU performs CRC checking on every ESF frame to detect errors in the signal.

If you unmask this alarm field, you must designate a window and a threshold. The window defines a time period within which the threshold must be exceeded in order for the DSU to generate the alarm. For example, a window of one minute and a threshold of >100 specify that more than 100 alarm events must be detected within the one minute window before an alarm is generated.

Options:

CRC Window – report all, one second, one minute, one hour, or when threshold is reached

CRC Threshold – minimum number of alarm events within the specified window required to generate the alarm: >10, >100, >1000, or >10,000

Unit Alarms

The following group of alarms appears under the heading Unit.

Status Change – occurs when there is a change in the configuration of the DSU.

Unsolicited Test Mode – occurs when the DSU is commanded into a test mode by means of front panel switches.

Timing Loss – occurs when the DSU loses its source of Network Transmitter Timing.

Configuration Functions – Maintenance

You can launch the NMS 553 Maintenance function from the submap Configuration Menu or from the front panel menu. The application displays one read/write window by which you can control some aspects of DSU operation that fall outside the scope of Configuration. See *Figure 6-12*.

The window title bar displays the function name, NMS 553 Maintenance. The Name field displays the shelf name and the slot number of the master DSE followed by the slot:line:drop address of the DSU. The File menu contains only the selection Exit, by which you can dismiss the window.

Maintenance Window Buttons

The Maintenance window provides the following three buttons.

Front Panel – permits you to enable or disable the hardware switches on the front panel of the DSU. The label on the button appears as either Inhibit Front Panel or Enable Front Panel, and it toggles between the two displays each time you click on the button. The button displays Inhibit Front Panel when the switches are enabled, and it displays Enable Front Panel when they are disabled.

Reset to Factory Defaults – causes all options in the DSU to return to their factory default settings. When you click on this button the application displays a warning "Resetting to factory defaults will terminate communications to the unit. Do you want to continue?" Click on the OK button in the warning window to complete the reset, or click on the Cancel button to cancel the reset.

Soft Reset – causes the DSU to perform a reset and resume operation using its current configuration. When you click on this button the application displays a warning "Performing a soft reset will terminate communications to the unit. Do you want to continue?" Click on the OK button in the warning window to complete the reset, or click on the Cancel button to cancel the reset.

Figure 6-12   Configuration Maintenance Options Window

Diagnostics

You can launch the NMS 553 Diagnostics function from the submap Fault menu or from the front panel menu.

The application displays one read/write window by which you can control a variety of test functions on the DSU.

Diagnostics Window

Beneath the menu bar and the Name field the Diagnostics window (*See Figure 6-13*) is divided into three areas:

- Selection panel – contains buttons and check boxes for selecting, starting, and stopping test functions

- Graphic panel – depicts the path followed by test data during the current test

- Time and results panel – contains an input field for specifying the duration of a test that employs the DSU test pattern generator; displays Time Remaining and Test Results

The Diagnostics window menu bar contains File and Navigate. The File menu has only the Exit selection by which you dismiss the window. The Navigate menu also has a single selection: History, by which you can access a display of test results (*see Figure 6-14*) accumulated during the current diagnostic session.

Tests

The Diagnostics window selection panel lists three Tests to choose from, and two Patterns you can select for those tests that employ the DSU test pattern generator. The panel also includes an input field for the User Defined test pattern, and two buttons: Start Test and Stop Test.

The following Tests are available:

Channel Loop (can be performed with or without test pattern)

Unit Test (performed only with test pattern)

Digital Loop (performed only without test pattern)

The Patterns are:

511 bit

2047 bit

Each Test and Pattern is accompanied by a check box on which you can click to select it. The Pattern check boxes are grayed out when the selected Test cannot be combined with an internal test pattern.

Diagnostic Test Procedure

Perform the following steps to select and carry out a test procedure on the DSU.

1. Click on the check box next to the selected test: Channel Loop, Unit Test, or Digital Loop.

2. Under the Pattern heading, click on your selected pattern, or None (for external data) if you have selected a test that supports these options. No Pattern selection is required for Digital Loop or Delay.

3. If you are using an internally generated test pattern select, in the Test Time field, how long the test is to run before ending automatically.

4. Click on the Start Test button. While the test runs, the graphic panel illustrates the data path employed by the test. If you are using an internally generated test pattern, the Time Remaining field counts down from 100 to 0 percent.

During a test that employs an internally generated test pattern the Test Results field displays the number of errors detected; it displays In Loop when external data is in use.

5.   If you are using an internally generated test pattern, the test ends automatically at the end of the specified Test Time. For any other test, click on the Stop Test button to end the procedure. The Stop Test button can also stop a test with test pattern prior to the Test Time limit that would end it automatically.
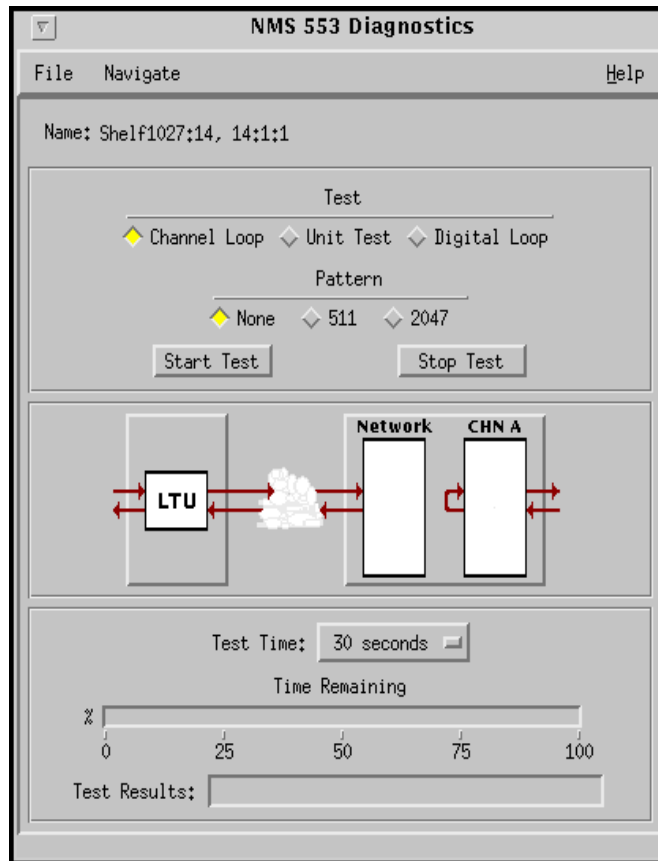

Figure 6-13   NMS 553 Diagnostics Window

Diagnostics Table

The table below briefly describes the available tests.

Test	Description
Channel Loop (without Pattern)	DSU initiates a channel interface loopback, through which the DTE or external test equipment connected to the DTE interface can direct a test pattern
Channel Loop (with Pattern)	DSU initiates a channel interface loopback and activates its own test pattern generator/checker
Unit Test (with Pattern)	DSU initiates a loopback at its network interface and activates its own test pattern generator/checker
Digital Loop	DSU loops data it receives from the DSE back to the DSE

Diagnostics History

You can view a record of tests performed during the current diagnostic session by selecting History from the Navigate menu in the Diagnostics window. The record appears as a listing in the Diagnostics History window (*see Figure 6-14*).
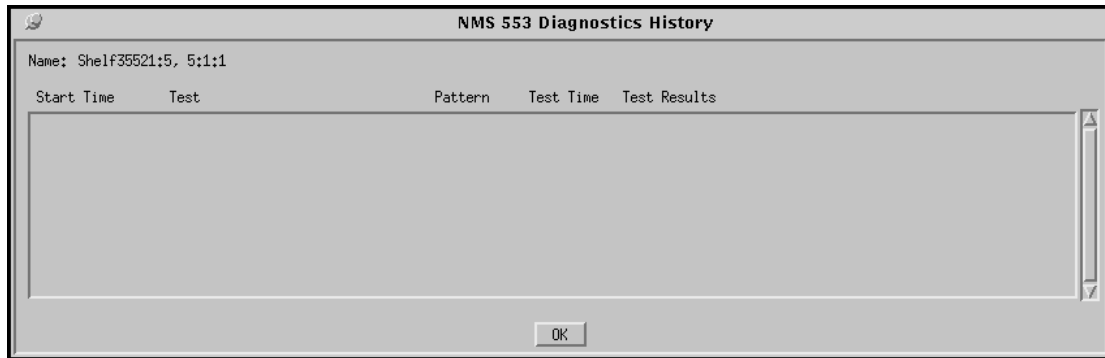

Figure 6-14   Diagnostics History

The Diagnostics History displays information in five columns:

Start Time – date and time test began

Pattern – test pattern used for the test; N/A when internally generated pattern is not used

Test – name of the test

Test Time – duration of the test, applies only to tests with test pattern

Test Results – "Idle: *n* Errors" for a completed test with test pattern; "Not in loop [STOPPED]" for a completed loop test without test pattern; "TEST STOPPED" for any test with test pattern that was ended by the Stop Test button

To close the Diagnostics History window, click on either the OK button or the pushpin icon in the upper left corner of the window. During an on-going diagnostic session you can close and re-open the Diagnostics History window without loss of display data.

The application clears the Diagnostics History when you exit from the Diagnostics window.

Miscellaneous Functions – Front Panel Poll Rate

You can open the Front Panel Poll Rate window *(See Figure 6-15)* from the Misc menu of the submap window. The setting you select in this window determines the initial polling rate for Front Panel displays each time they are opened.

The rate selection is a global function. It selects initial polling rate for all front panel displays linked to a TEAM Core application, regardless of which individual application you access it from.

There are four selections, each accompanied by a checkbox:

Slow

Normal

Fast

Demand Poll Only

The File menu in the menu bar contains two selections: Save to File and Exit.

To set the desired polling rate, first click on the appropriate checkbox and then select Save to File from the File menu. The precise polling frequency that results from a setting of Slow, Normal, or Fast depends on a number of factors. The higher the rate, the more communication and processor capacity is devoted to maintaining the display.

The polling rate for an individual front panel display can be changed for the duration of a session by means of the Auto Poll selection in the Select button menu. Changes you make with that menu selection are not retained when the display is closed.

To dismiss the window, select Exit from the File menu.

Figure 6-15   Front Panel Poll Rate Window

Miscellaneous Functions – Note Pad

You can launch the Note Pad application from the Misc menu of the submap window. The application opens a shell tool on the workstation running the TEAM software. You can use the shell tool to run a text editor, mail tool, or any other software that resides on the workstation. The Note Pad application provides this access for keeping records on the system.

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General DataComm