TEAM 700 for Unix®

Operation Manual, Version 4.0.0

General DataComm
Network Access Division

TEAM 700 for Unix®

Operation Manual, Version 4.0.0

Copyright

Trademarks

All brand or product names are trademarks or registered trademarks of their respective companies or organizations.

Documentation

Revision History

Issue Number	Date	Description of Change
1	Dec. 2000	Added GT 1033 MR to TEAM 700 management

Related Publications

A listing of related user manuals is provided below. In addition to the hardware and software manuals, always read the software System Release Notes supplied with your product.

Publication Name	Publication Number*
SpectraComm Manager Card Installation & Operation	048R303-REV
TEAM Core Operation Manual	058R720-VREF
TEAM Core Release Notes	058R957-VREF

* For publications numbers, **REV** is the hardware manual revision (for example, -000, -001, etc.). **VREF** (if listed) is the software revision (for example, -V120 would read: Version 1.2) and corresponds to the most current revision.

Preface

Scope

This manual describes the operation of the TEAM 700 HDSL Network Manager, Version 4.0.0. The information contained in this manual has been carefully checked and is believed to be entirely reliable. However, as General DataComm improves the reliability, function, and design of their products, it is possible that information may not be current. Contact General DataComm for updated information on this or other General DataComm products.

General DataComm, Inc.
Network Access Division
Technical Publications Department
Park Road Extension
Middlebury, Connecticut, USA 06762-1299
Tel: 1 203 758 1811   Toll Free: 1 800 794 8246

Manual Organization

This manual should be read in its entirety and all procedures completely understood before installing or operating the unit. The notes that appear throughout this manual must be read prior to any installation or operating procedure. Examples of notes used in this manual are shown below.

Note   *Indicates a note. It is something you should be particularly aware of; something not readily apparent. A note is typically used as a suggestion.*

Important   *Indicates an emphasized note. It is something you should be particularly aware of; something not readily apparent. Important is typically used to prevent equipment damage.*

This manual is divided into the following chapters:

> *Chapter 1, Introduction*
>
> *Chapter 2, TEAM 700 Configuration*
>
> *Chapter 3, TEAM 700 Reporting*
>
> *Chapter 4, TEAM 700 Maintenance and Diagnostics*

Service Support and Training

VITAL Network Services, a General DataComm company, is committed to providing the service support and training needed to install, manage, and maintain your GDC equipment. VITAL Network Services provides hands-on training courses through **VITAL Network Services Global Technology Training Services**. Courses range from basic data communications, modems and multiplexers, to complex network and ATM systems. Training courses are available at our centers in the US, UK, France, Singapore and Mexico, as well as at a customer's site.

For more information on VITAL Network Services or for technical support assistance, contact VITAL Network Services at:

VITAL Network Services World Headquarters

6 Rubber Avenue	Telephones:	Faxes:
Naugatuck, Connecticut 06770 USA	1 800 243 1030	1 203 723 5012
	1 888 248 4825	1 203 729 7611
http//www.vitalnetsvc.com	1 203 729 2461	

VITAL Network Services Regional Sales and Service Offices:	

North American Region Office
6 Rubber Avenue
Naugatuck, Connecticut 06770 USA
Telephones: 1 800 243 1030
                 1 888 248 4825
                 1 203 729 2461
                 1 800 361 2552 (French Canadian)
Training: 1 203 729 2461
Faxes: 1 203 723 5012
                 1 203 729 7611
	Central America, Latin America
	VITAL Network Services
	Periferico Sur 4225, Desp. 306
	C.P. 14210, Mexico D.F., Mexico
	
	Telephone: 52 5 645 2238
	Training: 52 5 645 2238
	Fax: 52 5 645 5976

Europe, Middle East, Africa VITAL Network Services Molly Millars Close Molly Millars Lane Wokingham, Berkshire RG41 2QF UK Telephone: 44 1189 657200 Training: 44 1189 657240 Fax: 44 1189 657279	**Asia Pacific** VITAL Network Services 501 Orchard Road 05-05 Wheelock Place, Singapore 238880 Telephone: 65 735 2123 Training: 65 735 2123 Fax: 65 735 6889

Table of Contents

Chapter 1: Introduction

Introduction to the TEAM 700

TEAM 700 software consists of integrated applications on the HP OpenView Network Management platform. The applications use the Simple Network Management Protocol (SNMP) to configure and control the operation of SpectraComm and DataComm products. The content of this manual is presented with the assumption that the user is familiar with these systems and products.

The TEAM 700 application communicates with the SpectraComm and DataComm products through a SpectraComm Manager (SCM) card that shares the same shelf. The application can also control remote units connected to the SpectraComm and DataComm products under local control. The workstation that runs the TEAM 700 application must also be running the TEAM CORE application for managing the SCM. The TEAM 700 applications use SNMP to perform the following management functions:

- Configure GDC 700 SpectraComm and DataComm products.

- Monitor the operation of the SpectraComm and DataComm products by means of an Alarm Detail display, a DTE Interface Status LED display, and via a Front Panel display that represents the LED indicators on the front panel of the physical unit.

- Diagnose suspected problems using local tests, remote loopbacks and internally generated test patterns.

Theory of Operation

All of the TEAM Controller application interfaces use the HP OpenView APIs (Application Programmer Interfaces) to integrate with HP OpenView Windows and other network management applications. Menu items are accessed via pulldown menus from the appropriate HP OpenView submap or from the Front Panel drop-down menu. The TEAM Controller GUI screens met HP OpenView premier partner requirements.

SpectraComm Manager Card

TEAM 700 applications operate in conjunction with a SpectraComm Manager (SCM) card to provide comprehensive network management capabilities using the Simple Network Management Protocol (SNMP). The SCM acts as the SNMP proxy agent through which TEAM management applications communicate with SpectraComm and DataComm products and other compatible equipment. The SpectraComm HDSL (High Bit Rate Digital Subscriber Line) is designed as a flexible and versatile connection to the T1/E1 or Fractional T1/E1 telecommunications network.

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 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 of TEAM Applications within the HP OpenView framework.

TEAM 700 Management

Under TEAM 700 management, SpectraComm and DataComm products provide Local loop transmission for full and fractional T1/E1 services, telephone company/carrier or end-user transmission and internal testing. The 700 family is fully network managed by the shelf resident SpectraComm Manager (SCM) and an associated SNMP manager. Up to 15 700-managed master units can be accommodated in a single shelf, and up to 31 of them in a dual shelf. The following table describes briefly the function and structure of SpectraComm and DataComm products (when installed in a shelf) managed by TEAM 700.

Unit Type	Description	SpectraComm	DataComm
Master Units	SpectraComm units installed in the SpectraComm shelf and accommodating up to three DataComm remote products.	SC700-G2￼SC700A-G2￼SC700-G3￼SC701-T2￼SC702-G2￼SC710-D2￼SC711-D2	DC720-G1￼DC720-G2￼DC721-T2￼DC730 D1￼DC730-D2￼DC731-D2￼GT 1020 *￼GT 1030 *￼GT 1033 Multi-Rate *￼GT 2020 *￼GT 2030 *
Remote Units	DataComm units used in point-to-point or multi-point configurations.		
* These are standalone products only.			

Note   *In a multi-point configuration, only like units can be added as remotes, (i.e., two DC721-T2s or three DC731-D2s, etc.).*

The TEAM 700 Applications

All TEAM 700 applications can be accessed from either the HPOV menu bar or from each managed unit's Front Panel display.

Chapter 1 describes in detail the following Performance and Miscellaneous applications:

- Front Panel Application

- Status Application

- Poll Rate Application

- Information Application

- Note Pad Application

The more complex applications are described in subsequent chapters:

- Chapter 2: Configuration Application

- Chapter 3: Reports Application

- Chapter 4: Diagnostics and Maintenance Applications

The HPOV Menu Bar Interface

All TEAM 700 applications can be accessed by means of the HPOV menu bar interface, as depicted in the table below. Note that the HPOV menu bar may include additional selections besides TEAM 700 applications. Select the TEAM 700-managed unit you intend to work with by clicking once on its icon in the shelf slot. Then make the desired menu and TEAM application selections.

Menu Selection	TEAM 700 Applications	Description
Performance	Front Panel...	Displays front panel LEDs of a 700 unit and an application drop-down menu.
	Alarms...	Provides detailed information about alarm state changes.
	Status...	Provides status information on signals at the DTE interface and/or HDSL loops.
	Reports...	Displays statistical reports on errors occuring at the E1, T1 interfaces and at the loops.
Configuration	Configure...	Allows the user to configure a selected 700 unit.
	Circuit Configuration...	Allows the user to configure DS0s or timeslots.
	Maintenance...	Allows the user to reset unit attributes which are not configuration options.
Fault	Diagnose...	Allows the user to run diagnostic tests on a selected 700 unit.
Misc	Front Panel Poll Rate...	Allows the user to set a default polling interval which will take effect each time the Front Panel display is opened.
	Note Pad	Opens a shell tool for text editing on the workstation running the TEAM software for keeping records on the system.
	Information	Displays revision level information on the TEAM 700 software.

Note   *The Note Pad application in the Misc menu is not available via the Front Panel Select button menu.*

The Front Panel Application/Interface

The Front Panel application is a display of any TEAM 700-managed unit. It allows monitoring of conditions at the selected SpectraComm and DataComm products by means of colored LED status indicators. The Front Panel is also an additional interface for accessing most of the other TEAM 700 applications via a Select button menu. Table 1-1 describes the LEDs and icons on a typical display. To access TEAM applications via the Front Panel display, use one of the following methods:

- Select any 700-managed shelf icon, then select **Front Panel** on the Performance menu of the HPOV menu bar

- Double-click on a boxed shelf icon to access the Front Panel of an unlinked unit (without any remote)

- Double-click on an unboxed shelf icon to access the connections submap, then double-click on the desired linked unit (remote or master).

- To access other TEAM applications, click on the Select button display an applications menu.

Front Panel (Typ.)	LEDs / Icons	Description	Details
	GDC logo	Displays TEAM 700 version information.	
	ON LED	Power On/Off	Bright Green or Dark Green
	ES	Errored seconds on any given loop or E1/T1 lines.	ES Off and NORM On indicates Normal operation. ES On and NORM On indicates errored seconds on the T1/E1 line. ES On and NORM Off indicates a LOS (Loss Of Signal), OOF (Out Of Frame) or AIS (Alarm Indication Signal) condition is detected in the T1/E1 line.
	NORM	Normal operation on any given loop or E1/T1 lines.	
	TM LED	Test Mode	Bright red Test Mode indicates the unit is performing a diagnostic test. During a test, a double-headed arrow indicates errors detected.
	ALM LED	Indicates a major alarm condition.	Bright red ALM indicates a self-test failure. ALM also blinks with LOS, LOSW (Loss Of Sync Word) or UAS (Unavailable Seconds) detected on any 700 loop;
	LL LED ST LED RL LED	Available only on: GT1020, GT1030, GT 1033 Multi-Rate, GT 2020, and GT 2030	Bright red LL indicates unit is in a line loop test. Bright red ST indicates unit is in a self-test. Bright red RL indicates unit is in a remote local loopback test.
	SD LED or RD LED	Send or Receive Data	A space is detected in transmit or receive data.
	TST	LED Test	Performs a test of the Front Panel LEDs
	GDC logo	Displays version information of the unit.	
	Select Button application menu.	Performance...	Accesses the Alarm, Status, and Reports applications.
		Configuration...	Accesses the Configure, Circuit Configuration and Maintenance applications.
		Fault...	Accesses the main Diagnostics window.
		Misc...	Displays revision level information on the TEAM 700 software.
		Demand Poll	Polls the unit on demand, updating the LED states. At the bottom of the display, the time of the last Autopoll is displayed in white. A yellow display indicates auto polling is disabled.
		Auto Poll	Sets the polling interval: 15, 30, 60 seconds or Disable.
		Exit	Dismisses the Front Panel display.

Window Features in TEAM Applications

The example screens below describe the window features that are common to all TEAM 700 application windows and their subordinate windows. More information on a specific application and its procedures are found later in this and subsequent chapters.
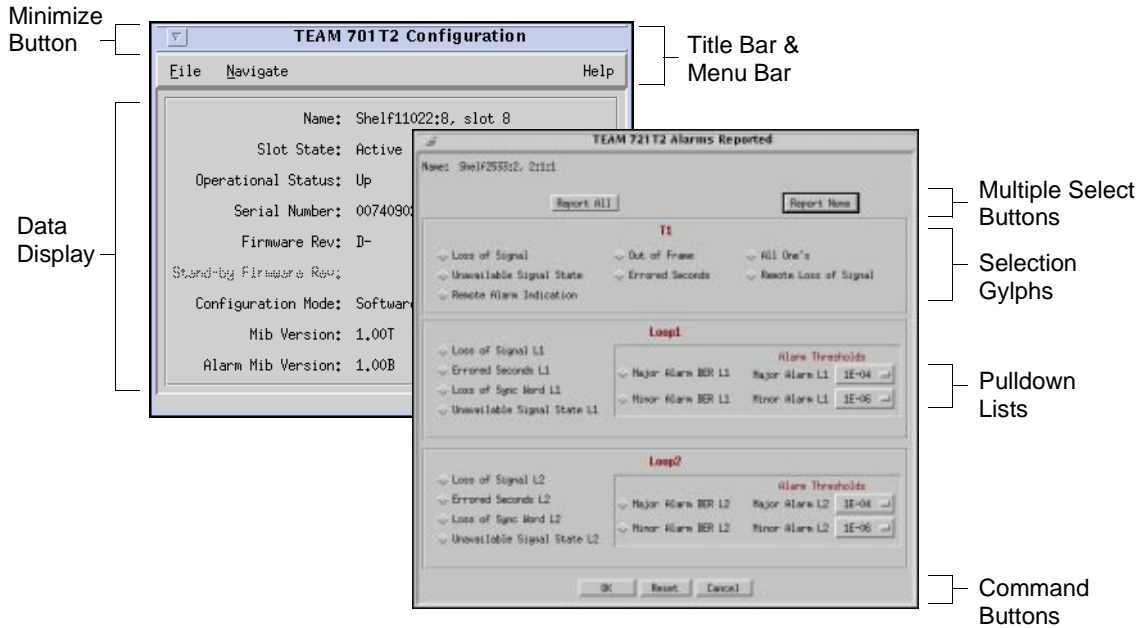
Table 1-2   Typical Application Window Features

Window Feature	Description
Title bar	Identifies the specific TEAM application running in the window, i.e., Circuit Configuration, Diagnostics, etc.
Minimize button	Available only when TEAM software is running on a SUN workstation in an OpenWindows environment. Click to minimize window to an icon. Double-click to restore the window. Located in the Title Bar of each application window.
Menu bar	Provides menus for application-specific utilities along with common utilities, such as File->Exit and Help. Located under the Title Bar.
Name field	Indentifies the shelf and slot location of the card of interest, followed by the card's slot: line: drop notation.
Command buttons	Click command buttons to execute a command instantly, such as Reset, Cancel or OK.
Pulldown lists	Pulldown and scroll to select options for equipment types, function parameters or operation controls for the application.
Glyphs	Click protruding diamond glyphs to select options, click again to deselect.
Entry Fields	Click to activate entry field for user-defined data, such as IP addresses, shelf names, system information.
Multiple Select buttons	Click to globally select and deselect frequently grouped options.
Data Display	A panel displaying read-only information configured by the user or determined by the system.

Note   *Grayed-out buttons, fields, or lists represent options that are disabled or not available with the current configuration. Refer to Chapter 3 for procedures on setting configuration parameters.*

The Alarms Application

The Alarms application is accessed from the HPOV menu bar Performance menu or from the Front Panel Select Performance menu of a TEAM 700-managed SpectraComm and DataComm product. Once the desired alarms are enabled at the Alarms Reported screen, the Alarms application receives the most current alarms by polling the selected unit or from traps sent in response to alarm conditions at the unit. The Alarm Detail window indicates major, minor and warning alarms occuring on the line (T1 and E1), loop and unit. The alarm LEDs are continually updated as new alarms are received. Table 1-3 describes the Alarm Detail window of a typical unit with default alarm severities. Menu selections and LED color definitions follow the table.

Note   *Refer to TEAM Core documentation for information on alarm severity.*

Table 1-3   Alarm Detail Indicators and Selections

Alarm Detail Window	Alarms	Description
	Loss of Signal (Major Alarm: Line/Loop)	Occurs when there are 175 +/- 75 consecutive zeros on the T1/E1 interface. An LOS failure is declared when the LOS defect persists for 2.5 ± 0.5 seconds.
	Unavailable Signal State (Major Alarm: Line/Loop)	Occurs when service is not available for ten or more consecutive SES events. The error is cleared after a 10-second interval with no SES.
	Errored Seconds (Minor Alarm: Line/Loop)	Occurs when one second has at least one CRC error event.
	Loss of Frame Alignment (Major Alarm: E1 Line)	Occurs when 2 frame bit errors out of 4 consecutive frame bits cause a loss of synchronization with the signal. The count for the alarm event increments by one each time framing is lost, regardless of the number of frames affected.
	Out of Frame (Major Alarm: T1 Line)	
	All Ones (Minor Alarm: Line)	Occurs when an unframed, all ones signal is detected.
	Remote Loss of Signal (Major Alarm: Line)	Occurs when a line LOS report is received via the 700 interface.
	Remote Alarm Indication (Minor Alarm: Line)	Occurs in the T1/E1 interface when specific defects have persisted long enough for the remote unit to declare a received signal failure.
	Loss of Sync Word (Major Alarm: Loop)	Occurs when there is a loss of the synchronization word on the corresponding loop.
	Major BER (Major Alarm: Loop)	A bit error rate (BER) event exceeds the selected threshold (10E-03, 10E-04, 10E-05, or 10E-06). Typically, minor BERs thresholds are configured to report at a lower error rate to serve as a warning signal. Major BERs thresholds would be configured at an error rate that would seriously impact operations.
	Minor BER (Minor Alarm: Loop)	
	Unit Failure (Major Alarm: Unit)	Occurs when the unit fails its Power On self-test.
	Checksum Corrupt (Major Alarm: Unit)	Occurs when the non-volatile memory that stores the unit configuration becomes corrupted.
	Power Up (Warning Alarm: Unit)	Occurs each time power is cycled or an each reset at the unit.

Alarm Detail Menus and Definitions

The File menu provides an Exit selection. The Help menu button brings up this manual.

The read-only **Name** field displays the OpenView selection name of the shelf object and the slot number of the master card, followed by the slot: line: drop notation of the selected unit.

Major alarms illuminate Orange when active, Dark Green when inactive.
Minor alarms illuminate Yellow when active, Dark Green when inactive.
Warning Alarms illuminate Bright Green when active, Dark Green when inactive.

The Status Application
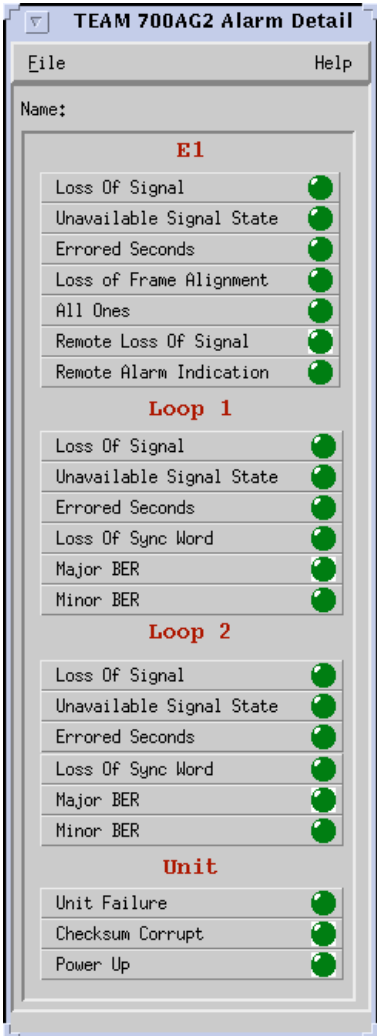
The Status application is accessed from the HPOV menu bar Performance menu or from the Front Panel Select menu of a TEAM 700-managed SpectraComm and DataComm product. Table 1-4 describes the Status window of a typical unit. The Status application receives status on conditions at the DTE and loops by polling the selected unit on demand or at user-set auto-polling intervals. The Status LEDs are continually updated as polls are received. Menu selections and LED color definitions follow the table.

Table 1-4 Status Indicators and Selections

Status	LED/Field	Description
DTE Status (T1/E1 units only)	DCD	Data Carrier Detect declares the status of incoming signal.
	DTR	Data Terminal Ready declares whether the unit is receiving a DTR signal from the DTE.
	RTS	Ready To Send declares whether the unit is ready to send a signal to the DTE.
	DSR	Data Set Ready declares whether the unit is asserting a DSR signal to the DTE.
Loop Status	Tip/Ring Reversal	**Norm** indicates that two conductors of a 700 Loop are correctly connected in a link. **Yes** indicates the unit detected an interchange error and can recover from this condition. No data in the field indicates the two units cannot exhange information or a unit is configured as an LTU.
	Noise Margin	Displays noise margin values (in dB) for each 700 loop, as measured by the signal processing circuitry of the unit.
	Pulse Attenuation	Displays pulse attenuation values (in dB) for each 700 loop, as measured by the signal processing circuitry of the unit.
	Gain (E1 units only)	Displays the optimal receiver gain value (high/low) that should be set, as calculated by the signal processing circuitry of the unit.
	Loop Exchange	**Norm** indicates T1 traffic of a 700 Loop is correctly connected in a link. **Yes** indicates the unit detected an interchange error and and the swapped wires must be corrected. No data in the field indicates the two units cannot exchange information or the unit is configured as an LTU.

Table 1-4 Status Indicators and Selections

Status	LED/Field	Description
Last Updated	Read-only display	Displays the time of the most recent poll, either when the Status window was opened or the time of the last Demand Poll. When Autopoll is active, text is white; when disabled, text is yellow.

Status Menus and Definitions

Status LEDs illuminate Bright Green when active, Dark Green when inactive.

The File menu provides an **Auto Poll** option for temporarily disabling or selecting the automatic poll rate interval (15, 30, or 60 seconds), a **Demand Poll** option for instantaneous update of the Status window, and an **Exit** command which dismisses the Status application window.

Note   *The Auto Poll settings are only active for the selected unit during a session and are not retained when its Front Panel display is closed.*

Note   *When Auto Poll is set to Disable, the Status window displays a static snapshot of the DTE Status LEDs as they appeared at the last poll. The time of the last poll will be displayed as yellow text in the Last Update field.*

TEAM Front Panel Poll Rate Application

The TEAM Front Panel Poll Rate application is accessed only from the HPOV menu bar Misc menu or from the shelf submap Misc menu of a TEAM Core-managed unit. The poll rate selected in this window globally determines the initial polling rate for all Front Panel displays linked to a TEAM Core application, regardless of which individual application is accessing the unit. The initial polling rate is activated each time a Front Panel opened. The Front Panel Poll Rate window is shown and described below.
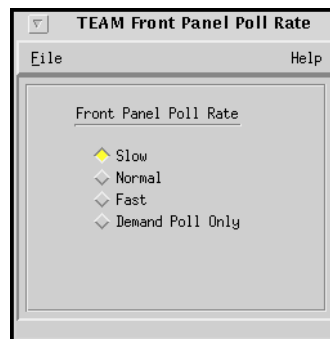
Figure 1-1   TEAM Front Panel Poll Rate

TEAM Front Panel Poll Rate Menus and Procedures

The File menu provides a **Save to File** option for saving polling instructions or data for future use, and an **Exit** command which dismisses the application window.

To set a global poll rate:

1. Click on the desired poll rate: Slow, Normal, Fast or Demand Poll Only. Lower rates provide more precise polling frequency. Higher rates consume more communication and processing resources to maintain the display.

2. From the File menu, select **`Save to File`** to store the setting for use by all TEAM-managed units.

3. From the File menu, select **`Exit`** to dismiss the application window

Chapter 2: TEAM 700 Configuration

Configuration Application Overview

The TEAM 700 Configuration application allows you to configure a selected 700-managed SpectraComm and DataComm product by means of a series of option windows: Configuration Information, Unit Options, T1 Options, E1 Options, Alarms Reported, DTE Options, RDL Options, and Add/Delete Remote Options. The application also provides a method of copying configurations to other units. The user can make configuration changes based on a stored configuration template, or based on the current configuration of the unit. In either case, the unit continues to operate using its unchanged current configuration until the changes are saved to the unit.

Using Configuration Templates

Configuration procedures are described below. Throughout the text descriptions in this chapter, default values will be shown in **`Bold`**. Accompanying screens are representative and may appear differently on your system. Once a configuration has been defined for a desired unit functionality, it can be stored as a template on the workstation that runs the TEAM 700 application. Any number of templates can be stored for retrieval when particular configuration settings are needed.

The three template functions (Save, Load and Compare) are accessed via the File menu or glyph. When you select a template function, a dialog window appears for specifying the template file name. To save configuration templates refer to the basic configuration steps below.

To load configuration settings from an existing template into a unit, 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 unit.

3. If desired, select **`Compare`** from the File menu to compare the screen's configuration data to a specific template.

Configuration Basics

This section provides the basic steps for configuring the unit. The next sections describe the main Configuration and Option window menus and their selectable options.

1. Access the main Configuration window by selecting a TEAM 700-managed unit on the shelf submap and selecting `Configure-->Configuration` from the OpenView menu bar, or from the `Front Panel Select-->Configuration` menu. When the main Configuration window opens, the application reads the current main configuration from the unit.

Note   *The File menu Refresh selection also reads the current configuration from the unit.*
If you select **Refresh** *during the configuration process, any configuration changes made in any*
configuration window will be lost unless they have been saved to a template or to the unit.

2. If you want to make changes to the configuration based on a template, select **Load
   Template** from the File menu and then select a template from the resulting list before
   proceeding.

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

4. Click on an input field to open a list of available values for each option. Hold down the mouse
   button until the scrolling list highlights the desired value, then release the mouse button.

5. You can discard changes made in 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.

6. Close a configuration window without losing changes by clicking the **OK** button.

7. Continue to select other configuration windows to make additional changes. Refer to the
   following sections of this chapter for descriptions of each Configuration Option window menu
   and its selectable parameters.

8. When you have accessed all the configuration windows for changes, use the main
   configuration window File menu to save all changes in either of the following ways:

   • Select **Save to Unit** to send the changes to the unit as the new current configuration.
     This activates the changes instantly in the unit.

   • Select **Save to Template** to save the changes to a template on the workstation. This
     allows the unit to continue operation without changing any of its configuration settings.

     A list of existing templates appears with a field for entering a new template name. Select
     an existing template to overwrite it with the new configuration, or enter a new name to
     create a new template. The stored template can now be loaded to a unit or retrieved for
     modification

Note   *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.

Note   *When you change a value or setting, the application displays the option name and the new value in white text,*
rather than black. The option will remain white until the changes are stored to the unit or a template or
discarded.

Note   *If you exit the Configuration application before saving edits made in any of the Option windows the following*
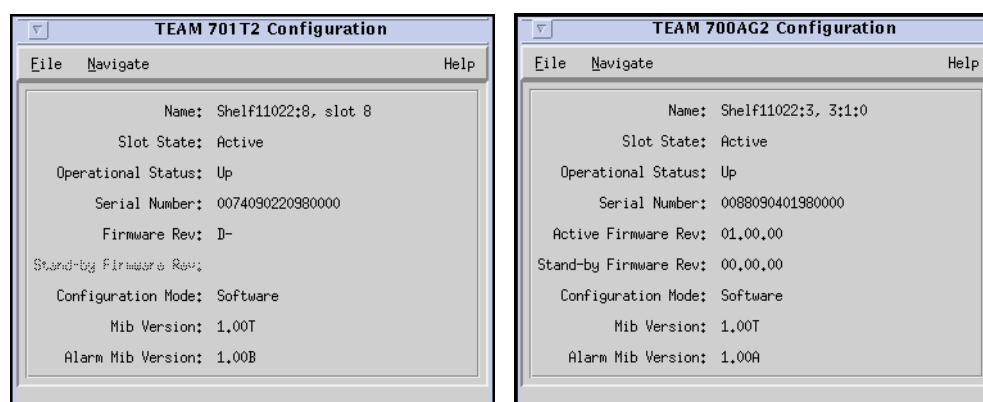*prompt appears:* **Pending edits exist; do you want to save or exit without saving
the changes?**

Configuration Application Windows

The TEAM 700 main Configuration window may be opened from the HPOV Configuration menu or from the Front Panel Select menu. The following figures and tables describe the main Configuration window and all associated windows, using examples from typical SpectraComm and DataComm products. Where units differ in their configurable functions and options, brief notes are provided through out this section. Additional information is found in the documentation provided with the specific unit.

The Main Configuration Window

The main Configuration window displays read-only information on the selected unit and provides access to associated windows by means of its Navigate menu. The table and windows below describe the typical read-only information from two units: SC 701-T2 and SC 700A-G2. Menu selections follow the table.

TEAM 701T2 Configuration	TEAM 700AG2 Configuration
File Navigate Help	File Navigate Help
Name: Shelf11022:8, slot 8	Name: Shelf11022:3, 3:1:0
Slot State: Active	Slot State: Active
Operational Status: Up	Operational Status: Up
Serial Number: 0074090220980000	Serial Number: 0088090401980000
Firmware Rev: D-	Active Firmware Rev: 01.00.00
Stand-by Firmware Rev:	Stand-by Firmware Rev: 00.00.00
Configuration Mode: Software	Configuration Mode: Software
Mib Version: 1.00T	Mib Version: 1.00T
Alarm Mib Version: 1.00B	Alarm Mib Version: 1.00A

Table 2-1   Typical Main Configuration Windows

Field	Description	
Name	Displays the OpenView selection name of the shelf and the slot number of the selected unit followed by the unit's slot: line: drop location.	
Slot State	Identifies the state of the shelf slot: Active or Inactive	
Operational Status	Identifies the state of the current unit: Up or Down	
Serial Number	Displays the serial number of the current unit.	
Firmware Rev.	Displays the firmware revision currently running on the unit.	Revision Format is mm.nn.bb, where: mm=major rev (0-99) nn=minor rev (0-99) bb=bug fix (0-99)
Standby Version Rev.	Displays the standby firmware revision stored on the unit and not currently running.	
Configuration Mode	Identifies whether the unit is configurable by Hardware or Software	
MIB Version	Displays the MIB version of the current unit.	
Alarm MIB Version	Displays the Alarm MIB version of the current unit.	
Messages	Displays application activity and unit interaction in the lower left corner of the window	

Note   *The Standby Firmware revision field is only active for units which support Firmware Downloading, such as the SC 700A-G2. For other units, the field will be grayed-out, as shown in the example above.*

Note   *The read-only Name field appears with the same designation for all Configuration screens associated with the selected unit.*

Main Configuration Window Menu

The main Configuration menus include a File menu for storage and retrieval of previously stored configuration templates. The Navigate menu is used for accessing all of the associated Configuration windows. Table 2-2 describes the selections in both menus. Detailed information for all associated Configuration windows follow the table.

Table 2-2   Configuration Menu Selections

Menu Buttons	Selections	Description
File	Refresh	All options are read from the unit and any unsaved, pending edits are lost.
	Save to Unit	All pending edits are sent to the unit.
	Load Template	Selects an existing TEAM 700 template which is applied as pending edits in the current application. The template settings are implemented the next time the `File-->Save to Unit` command is executed.
	Save to Template	Configuration data is saved as the specific template.
	Compare to Template	An existing TEAM 700 template is selected and compared with the current application.
	Exit	Terminates the Configuration application and discards unsaved, pending edits.
Navigate	Unit Options...	Advances to Unit Options window.
	T1 Options...	Advances to DTE Option window.
	E1 Options...	Advances to E1 Options window.
	Alarms Reported...	Advances to Alarms Reported window.
	DTE Options...	Advances to DTE Options window.
	RDL Options...	Advances to RDL Options window.
	Add Remote...	Advances to Add/Delete Remote window.
	All Screens...	Opens all Configuration application windows.

Note   *If the Configuration application is exited while pending (unsaved) edits exist on any of the configuration screens, the following prompt will appear:* `Pending edits exist, do you want to save or exit without saving the changes?`

Unit Configuration Options

The Unit Options window appears when you select **Navigate -->Unit Configuration** from the main Configuration window menu. The Unit Options window allows the user to define interface characteristics and make DS0 assignments for data carried on the T1/E1 line.

Table 2-3 Unit Options

Typical Unit Options Window	Selections	Description
	Unit Type	Selects the type of unit: Line Terminating (LTU) or Network Terminating (NTU).
	Number of Loops	Selects the number of units in service: One-Loop or Two-Loop.
	Data Type	Assigns the DS0 assignment for data traffic on the unit: Voice or Data.
	OK	Dismisses the Unit Options window. Edits are maintained but not saved.
	Reset	Undoes pending edits since the last "File --> Save to Unit" execution.
	Cancel	Dismisses the Unit Options window without implementing any pending edits.

Note   *When the selected unit is a GT 1033 Multi-Rate, the DS0 assignment is fixed at Data traffic, and the Number of Loops is fixed at One-Loop operation.*

T1 Configuration Options

The T1 Configuration Options window appears when you select **Navigate -->T1 Options** from the main Configuration window. A typical T1 Option window is described below. Units with differing configurable functions and options are identified following the table.

```
                        TEAM 721T2 T1 Options
 Name: Shelf2533:2, 2:1:1

                                   T1

      Line Code:  AMI          Inband Loopback Type:  Line Loop
     Frame Mode:  ESF 54016         Interface Type:  DS - 1
   TX Clock Mode:  Internal         Tx Line Buildout:  0 dB
 TX Pre-Equalization:  0 - 133 ft      AIS Loopdown:  Inhibit

                      OK    Reset   Cancel
```
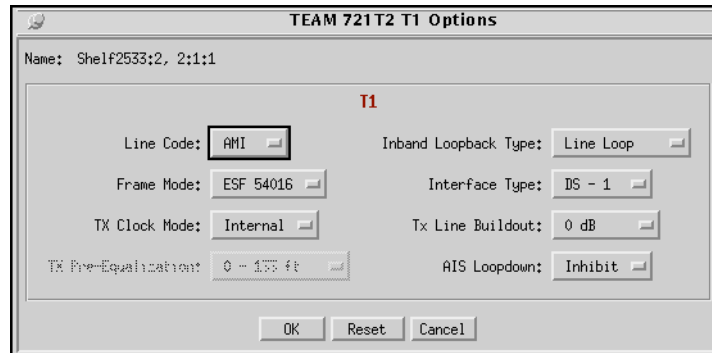
Table 2-4   Typical T1 Options Window

Selections	Description
Line Code	Select: AMI (Alternate Mark Inversion) or **B8ZS** (Bit 8 Zero Suppression)
Frame Mode	Selects the mode for processing the datastream: **ESF ANSI**, ESF 54016, SF or Unframed
TX Clock Mode	Selects the timing of the unit: **Loop**, Internal or External
TX Pre-Equalization	Selects the length of pre-equalization for the T1 cable when operating as a DSX-1 interface: **0-133ft**, 133-266ft, 266-399ft, 399-533ft or 533-655ft.
Inband Loopback Type	Selects the desired loopback type for receiving inband loop-up code: **Line Loopback** or Payload Loopback.
Interface type	Select: DSX-1 or DS-1
TX Line Buildout	Selects the line buildout for the T1 cable when operating as a DS-1 interface: **0**, -7.5dB, -15dB or -22.0dB
AIS Loopdown	Selects the time before an all ones pattern deactivates an inband loopback: 5, 10, 20, 40, 60 secs or **Inhibit**.
OK	Dismisses the T1 Options window. Edits are maintained but not saved.
Reset	Undoes pending edits since the last "File --> Save to Unit" execution.
Cancel	Dismisses the T1 Options window (same as Reset).

Special Unit Considerations

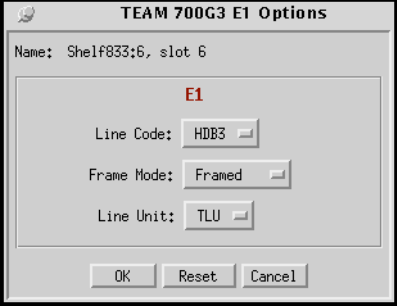Units such as the SC 701-T2 do not have a configurable Interface Type and are fixed at DSX-1. Therefore, when such units are selected, the Interface Type field and the Tx Line Buildout field are grayed-out.

Units such as the DC 721-T1 can be set for either Interface Type. When set for **DSX-1** (default), the Tx Line Buildout field is grayed out. When set for DS-1, the Tx Pre-Equalization field is grayed-out.

E1 Configuration Options

The E1 Configuration Options window appears when you select **Navigate -->E1 Options** from the main Configuration window. A typical E1 Option window is described below.

Table 2-5   Typical E1 Options Window

Typical E1 Options Window	Selections	Description
	Line Code	Select: AMI (Alternate Mark Inversion) or **HDB3**
	Frame Mode	Selects the mode for the unit's processing of the datastream: **Framed** causes the unit to receive/process a framed E1 signal. Unframed causes the unit to receive/process the E1 signal bit by bit.
	Unit Type	Selects the type of unit: Terminating Line Unit (**TLU**) or Intermediate Line Unit (ILU)
	OK	Dismisses the E1 Options window. Edits are maintained but not saved.
	Reset	Undoes pending edits since the last "File --> Save to Unit" execution.
	Cancel	Dismisses the E1 Options window (same as Reset).

Alarms Reported Application

The Alarms Reported window appears when you select **Navigate --> Alarms Reported** from the main Configuration window. The default settings for all T1/E1 and Loop alarms is masked (unreported). For the unit to report occurrences of an alarm, it must be unmasked at this screen. Click the **Report All** global button to unmask all alarms for reporting; click the **Report None** button to mask all alarms so that no alarms will be reported; or select/deselect individual alarm diamonds, as desired. A typical Alarm Reported window and alarm threshold basics are provided below. describes each alarm reporting field.

Using Alarm Thresholds

Alarm thresholds control the traps sent to the event log by prioritizing bit error alarms, reporting only those BER (bit error rate) events that exceed values set by the user for each loop. To use alarm thresholding, the Major and Minor BER Alarms are unmasked on the loops. Then, a threshold value is selected from each drop-down list. When the bit error rate on a loop exceeds a threshold, the corresponding major or minor alarm will be declared at the unit's Alarm Detail window. The following guidelines should be considered when setting the Alarm Thresholds:

• A Major Alarm BER threshold should be an error rate that would seriously impact operations.

• A Minor Alarm BER threshold should be a lower error rate to serve as a warning signal.
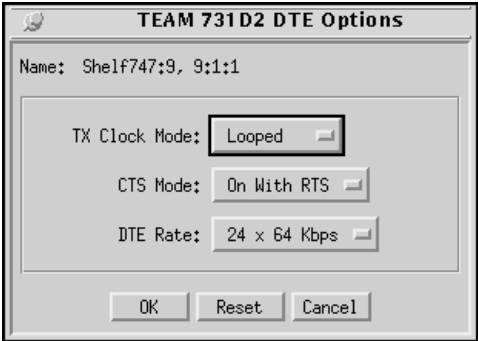
Table 2-6   Alarms Reported Window

Alarms	Default Alarm Priority	Description
Loss of Signal (Line/Loop 1, Loop 2)	Major	Line - Unmask to report when there are 175 +/- 75 consecutive zeros on the T1/E1 interface. Loop - An LOS failure is declared when the LOS defect persists for 2.5 ± 0.5 seconds.
Errored Seconds (Line/Loop1, Loop 2)	Minor	Unmask to report when one second has at least one CRC error event.
Loss of Frame Alignment (E1 Line)	Major	Unmask to report when 2 frame bit errors out of 4 consecutive frame bits cause a loss of synchronization with the signal. The count for the alarm event increments by one each time framing is lost, regardless of the number of frames affected.
Out of Frame (T1 Line)	Major	
All Ones (Line)	Minor	Unmask to report when an unframed, all ones signal is detected.
Remote Loss of Signal (Line)	Major	Unmask to report when a line LOS report is received via the 700 interface.
Remote Alarm Indication (Line	Minor	Unmask to report when, in the T1/E1 interface, specific defects have persisted long enough for the remote unit to declare a received signal failure.
Loss of Sync Word (Loop1, Loop 2)	Major	Unmask to report when there is a loss of the synchronization word on the corresponding loop.
Unavailable Signal State (Line/Loop 1, Loop 2)	Major	Unmask to report when service is not available for ten or more consecutive SES events. The error is cleared after a 10-second with no SES by the sending of a clear alarm SNMP trap.
BER (Bit Error Rate) (Loop 1, Loop 2)	Thresholded for Major and Minor Alarms:	Unmask to report when a bit error rate (BER) event exceeds the user-selected threshold settings: 1E-04: Alarm declared when BER exceeds 1×10^{-4} 1E-05: Alarm declared when BER exceeds 1×10^{-5} 1E-06: Alarm declared when BER exceeds 1×10^{-6} 1E-07: Alarm declared when BER exceeds 1×10^{-7} 1E-08: Alarm declared when BER exceeds 1×10^{-8}
OK	Dismisses the Alarms Reported window. Edits are maintained but not saved.	
Reset	Undoes pending edits since the last "File --> Save to Unit" execution.	
Cancel	Dismisses the Alarms Reported window without implementing any pending edits.	

DTE Configuration Options

The DTE Options window appears when you select **Navigate --> DTE Options** from the main Configuration window. A typical DTE Option window is described below.

Table 2-7   DTE Options

Typical DTE Options Window	Selections	Description
TEAM 731D2 DTE Options Name: Shelf747:9, 9:1:1 TX Clock Mode: Looped CTS Mode: On With RTS DTE Rate: 24 x 64 Kbps OK Reset Cancel	TX Clock Mode	Determines the source of the clock used by the unit to transmit data to the DTE: Internal: derives the transmit clock from the 700 module internal clock oscillator. External: the DCE (Data Communication Equipment) interface uses its external clock provided by the customer's DTE (Data Communications Equipment). **Looped** causes the transmit clock to lock to the receive clock and is developed by the incoming timing of the remote unit.
	CTS Mode	Normal causes the Clear To Send line to be on only in response to the Ready To Send line. **On With RTS** (Request To Send) causes the Clear To Send line to be forced on as long as the 700 module is powered and operating normally.
	DTE Rate	Sets the data rate (time slots x 64K) between the unit and the DTE (N x 64 Kbps): N = 1 - 18 (max.) for one loop N = 1 - 32 (max.) for two loops
	OK	Dismisses the DTE Options window and saves the changes.
	Reset	Restores the settings to the last File-->Save to Unit.
	Cancel	Dismisses the DTE Options window without saving the changes.

Note *DTE configuration applies only to the following units: DC 730-D1, DC 730-D2, DC 731-D2, SC 710-D2, and SC 711-D2.*

Note *The DTE Options window will be grayed-out if, at the Circuit Configuration window, the Loop Provision option is available and has been set to Multipoint.*

Special Unit Considerations - DTE

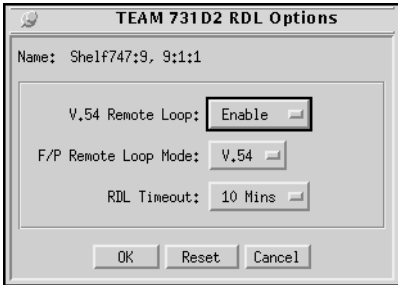- When the selected unit is a SC 731-D2 or SC 711-D2, the selectable timeslots for one loop are 1 - 12; two loops are 1 - 24.

- When the selected unit is a SC 730-D1/D2 or SC 710-D2, the selectable timeslots for one loop are 1- 18; two loops are 1 - 32.

- When the selected unit is a SC 1033 Multi-Rate, the DS0 assignment is fixed at Data traffic on one loop. The selectable timeslots are 2-24.

RDL Configuration Options

The RDL Options window appears when you select **Navigate --> RDL Options** from the main Configuration window. This window allows the user to configure options for a unit's remote device loopback. A typical RDL window is described below.

Table 2-8   RDL Options Window
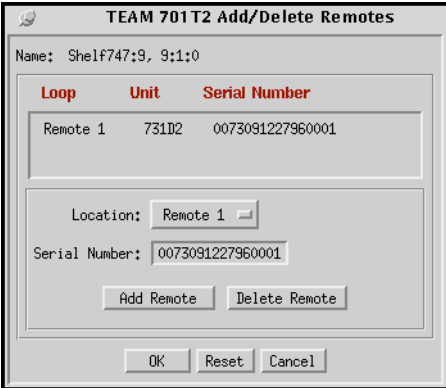
Typical RDL Options Window	Selections	Description
TEAM 731D2 RDL Options Name: Shelf747:9, 9:1:1 V.54 Remote Loop: Enable F/P Remote Loop Mode: V.54 RDL Timeout: 10 Mins OK Reset Cancel	V.54 Remote Loop	Select**:** **Enable** for the unit to detects and responds to inband V.54 protocol. Disable to inhibit the unit from responding to inband V.54 protocol.
	F/P (Front Panel) Remote Loop Mode	Select**:** **V.54** initiates the V.54 protocol inband V.54 loopback commands to the other 700 unit.. EOC to cause the unit to send loopback commands to the other 700 unit using the EOC.
	RDL Timeout	Select**:** **None** to inhibit loopback timeout. 10 minutes to terminate V.54 loopbacks ten minutes after the loop is enabled.
	OK	Dismisses the RDL Options window and saves the changes.
	Reset	Restores the settings to the last File-->Save to Unit.
	Cancel	Dismisses the RDL Options window without saving the changes.

Note   *RDL configuration applies only to the following units: DC 730-D1, DC 730-D2, DC 731-D2, SC 710-D2, SC 711-D2 and GT 1033.*

Add Remote Configuration Window

The Add Remote window appears when you select **Navigate --> Add Remote** from the main Configuration window. Although E1/T1 products have an autodiscovery function, the Add Remote application would be used in the event that a remote is accidentally dropped from the SCM node table. This window is also used to delete remotes associated with the selected unit. A typical Add Remote window is described below.

Table 2-9   Add Remote Window

Typical Add Remote Window	Selections	Description
	Loop/Unit Serial Number Display	Read-only list of remotes currently connected on the loops of the master unit and actively communicating.
	Location	Selects the circuit location: Master or Remote
	Serial Number	Data entry field for the serial number of the dedicated 700 remote unit.
	Add Remote	Adds a remote unit using the circuit location and serial number data entered.
	Delete Remote	Deletes a remote which has been selected from the read-only list.
	OK	Dismisses the Add/Delete Remotes window.
	Reset	Restores the Serial Number field.
	Cancel	Dismisses the Add/Delete Remotes window.

Circuit Configuration Options Window

The Circuit Configuration window appears when you select **Configuration --> Circuit Configuration** from the HPOV shelf map or from the Front Panel --> Configuration Select menu. This window allows the user to configure timeslots or DS0s. A typical Circuit Configuration window is described below.

Table 2-10 Circuit Configuration Options

Typical Add Remote Window	Selections	Description
	Loop/Unit Serial Number Display	Read-only list of remotes currently connected on the loops of the master unit and actively communicating.
	Time Slots, Loop	Shows the DS0 allocation and informs the loop of a DS0 allocation.
	Loop Number	Select the loop number: 1, 2, or 3
	Number of Time Slots	Select the number of timeslots: 1 - 24 for T1 units, two loops 1 - 12 for T1 units, one loop 1 - 31 for E1 units, two loops 1 - 18 for E1 units, one loop
	Starting Time Slot	The number of the starting time slot used for multipoint channel mapping.
	Loop Provision	Select: Point-to-Point or Point-to-Multipoint.

Circuit Configuration Menu Selections

The File menu provides a **Refresh** selection which fetches and displays the latest information from the unit. The **Save to Unit** selection saves the new settings to the master and its remote units. The **Exit** selection dismisses the Circuit Configuration window.

Note   *When the Loop Provision option is set to Multipoint, the DTE Options will be disabled and its window will appear grayed-out*

Note   *When the Loop Provision option is set to Point-to-Point, the Loop Number field and the Timeslots field are disabled and will appear grayed-out. Loop Provision will be fixed at Point-to-Point with 12 timeslots allocated per loop.*

Chapter 3: TEAM 700 Reporting

Overview

The TEAM 700 Reports application is used to display error statistics accumulated by the TEAM 700-managed SpectraComm and DataComm products. You can launch the application by selecting the HPOV Shelf Map slot icon and then selecting the **Performance->Reports** menu item; or you can use the Front Panel display **Select->Performance** menu.

The Reports application collects, formats and displays statistics accumulated by a TEAM 700 managed unit and displays the data in a series of graphed or statistical windows. The following chart shows the categories of TEAM 700 reports and their classification according to the interface on which the selected unit is communicating:

Reports	Interfaces		
	E1	T1	Loops
Error Totals (Current 24 Hours)	✔	✔	✔
Errored Seconds (ES)	✔	✔	✔
Severely Errored Seconds (SES)	✔	✔	✔
Bursty Errored Seconds (BES)		✔	
Unavailable Seconds (UAS)	✔	✔	✔
Loss of Frame Count (LOFC)		✔	
Far End Block Errors (FEBE)			✔
Degraded Minutes (DM)	✔		
Error Summaries	✔	✔	✔

Note   *When the selected unit is a GT 1030 or a GT 1033 Multi-Rate, reports for Bursty Errored Seconds and Degraded Minutes are not provided by the application.*

Report Application Basics

The Error Summary report window collects individual error statistics from the unit and displays the text-based data for viewing or saving to a file. The individual Error Report windows and the Totals window display statistics accumulated from the unit via interval-based graphs which scroll through 24 hours of data. The next section describes the Report windows.
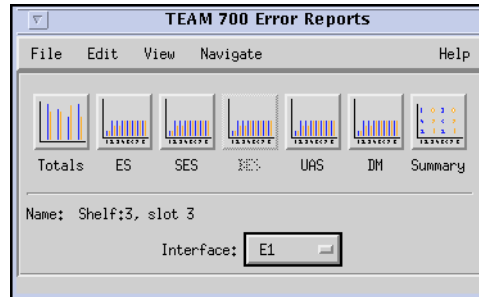
Note   *The SpectraComm or DataComm product accumulates error data which the Report application uses in the individual error windows, Totals and Summaries. The most current data is displayed on each report only after the user selects the Refresh command from the File menu.*

The Main Reports Window

The main Error Reports window is the starting point for all report application functions. The table below describes the main window menu selections which control overall reporting parameters. The main window also provides a glyph bar for launching the application's report windows, which are described following the table.

Table 3-1   The Reports Main Screen Selections

Selections	Options	Description
File Menu	Refresh	An on-demand update of the error data.
	Auto Refresh	The On selection polls the unit for current data, updating the report screens at specified intervals. The Off selection disables the periodic poll for Error Reports only.
	Save Error Data to File	Saves the data from the last poll to a file.
	Exit	Dismisses all report windows and exits the application.
Edit Menu	Reset Statistics	Sends an SNMP set to clear statistics in the unit and clears the data from the report screens.
View Menu	Legend	Displays or inhibits useful notation, such as expanded acronyms, in any screen with a Legend area.
Navigate Menu	Individual network-side error report screens	Each screen displays detailed statistics for each error type listed in the overview for this chapter.
Report Glyphs	Click any report glyph to open the associated report screen.	
Interface	Selects the interface for the report screens to be displayed: E1, T1, Loop 1, Loop 2, Loop 3.	

Note   *A Report glyph will appear grayed-out when the selected unit does not support that report.*

Error Totals Window

Use the Navigate menu or click on the Total glyph to launch the Error Totals window. Error totals are received from the TEAM 700-managed unit in real time intervals collected over 24 hours. The Error Totals window graphs the occurrences in each error category as detected in 15 minute intervals. Features of a typical Error Totals window is described below.

X-Axis Buttons

X-axis contains labels for error categories which also serve as buttons for launching the associated individual report window.

Y-Axis Auto Ranging

Auto ranging dynamically changes the scale of the Y-Axis scale, depending on the maximum value of data in any error category. This ensures values for all error categories or intervals fall within the same range for easy viewing.

Interfaces

Depending on the type of interface selected at the main Report window, the vertical axis of the 24-hour period shows the number of errors for a category of errors on that interface. The example window shows UAS (Unavailable Seconds) errors at the E1 interface.

Collection Period Represented

The read-only data in the Collection Period box displays the portion of the current 24 hours of statistics collected so far, in number of intervals.
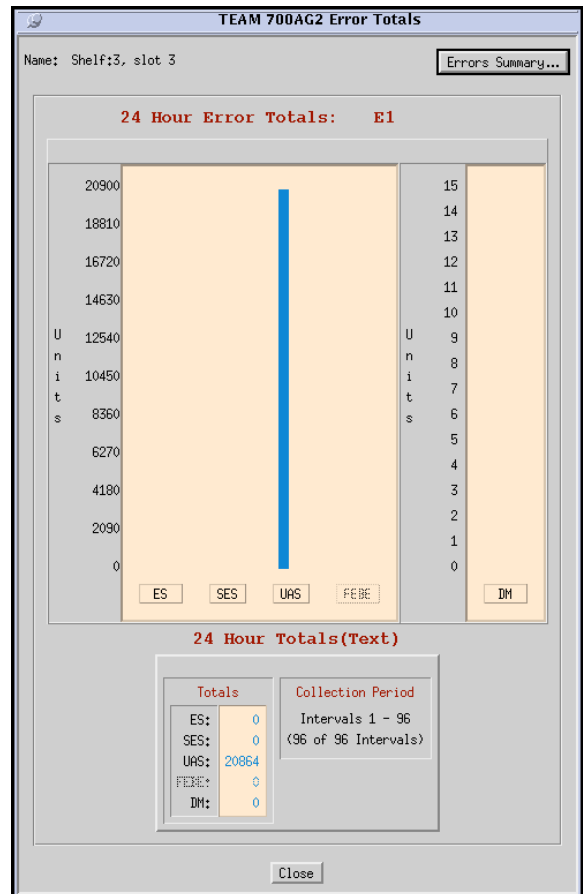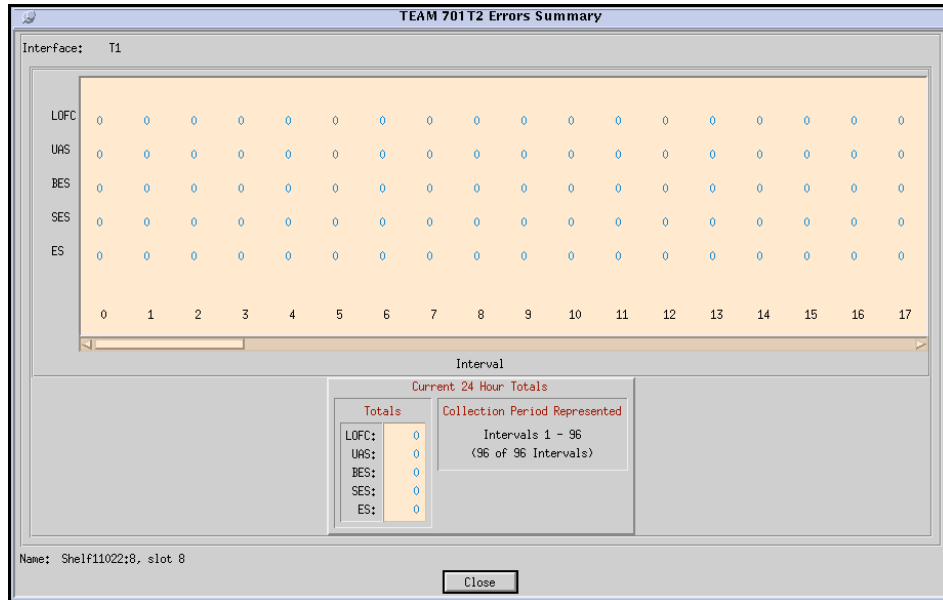

Table 3-2   Error Totals Window

Screen Displays	Description	Details
Name Field	The user-selected ID and the slot number (Read-only)	
24-Hour Totals for detected errors (Graphed or Text)	ES	Errored Seconds
	SES	Severely Errored Seconds
	UAS	Unavailable Seconds
	FEBE	Far End Block Errors
	DM	Degraded minutes
Error Summary Button	Opens the Error Summary screen for a text version of data collected over valid intervals for all error categories.	
Close Button	Dismisses the Error Totals screen	

Error Summary Window

Click the Error Summary button on the Error Totals window to display the Error Summary window, shown below. It can also be accessed from the main Report window glyph bar or `Navigate` menu. This window tabulates data collected on the error events that have occurred for each error category over time. Table 3-3 describes the read-only report data and button functions provided on this window.
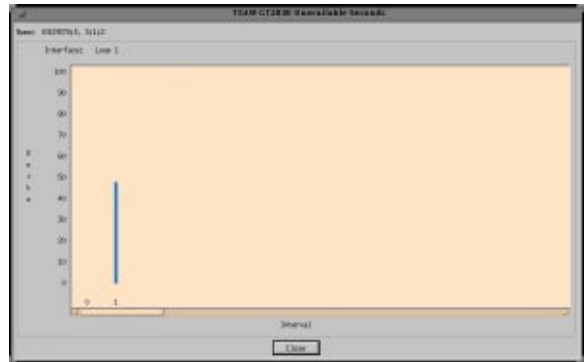

Table 3-3   The Error Summary Screen

Screen Displays	Description	Details
Name Field	The user-selected ID and the slot number (Read-only)	
Collection Period Represented	Displays the portion of the current 24 hours of statistics collected so far, in number of intervals. There are 96 intervals in each 24-hour period, in addition to the curent 15 minute periods numbered 0.	
Error Summaries for detected (Graphed or Text)	LOFC	Loss of Frame Count
	UAS	Unavailable Seconds
	BES	Bursty Errored Seconds
	SES	Severely Errored Seconds
	ES	Errored Seconds
X-Axis Button (not available for some devices)	Selects X-axis label options	Displays time label only
		Displays interval label only
		Displays time and interval label
Close Button	Dismisses the 24-Hour Error Current Totals screen	

The Error Report Windows

All of the Error Report windows have the same appearance and functionality. They are launched individually at the main Report window glyph bar or the Navigate menu.

Each error window displays 97 intervals along the X-axis of the report window. If the unit has not completed 24 hours of operation, then some intervals will not display any graphed data. Valid intervals will display occurrences of the error in vertical bar graphs.

Table 3-4 describes each individual error report window and the typical read-only report data and button functions provided on each window.

A Typical Error Report Window

Table 3-4   The Error Report Windows

Screen Displays	Description	
Name Field	The user-selected ID and the slot number (Read-only)	
Individual Error Report windows	Errored Seconds (ES)	For a one-second interval, at least one CRC error event is detected. Near End or Far End errored seconds occur when the line terminating unit detects at least one LCV or CRC error event in the received signal.
	Severely Errored Seconds (SES)	For a one second interval, the unit has detected seven or more CRC error events, one or more OOF events, or 30% or more errored blocks. A Near end SES occurs when the local LTU detects 300 or more CRC error events in the received signal. A Far end SES occurs when the remote unit detects 300 or more CRC error events.
	Bursty Errored Seconds (BES)	One second contains more than one but less that 320 CRC error events.
	Unavailable Seconds (UAS)	Service is not available for ten or more consecutive SES events. The error event is cleared after a 10-second with no SES.
	Loss of Frame Count (LOFC)	The accumulation of the number of times a Loss of Frame is declared.
	Far End Block Errors (FEBE)	These errors occur when there is an errored block not occurring as part of an SES event in the far end.
	Degraded Minutes	Number of degraded minutes encountered by the T1/E1 interface in one of the previous 96 individual 15-minute intervals.
X-Axis Button	Selects X-axis label options	Displays time label only
		Displays interval label only
		Displays time and interval label
Close Button	Dismisses the associated Error Report screen.	

Note   *If data has not been collected for 24 hours, those remaining intervals will appear blank with no graphed data.*
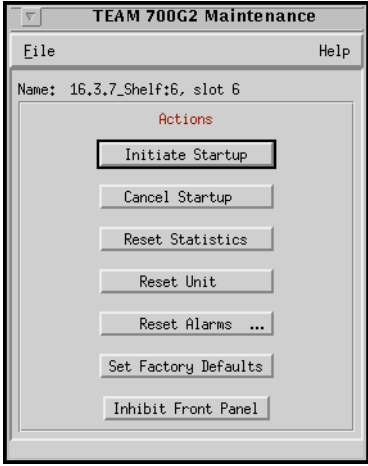
Chapter 4: TEAM 700 Maintenance and Diagnostics

Maintenance Application

The TEAM 700 Maintenance application is used to reset several operation controls at the TEAM 700-managed SpectraComm or DataComm products. You can launch the application by selecting the HPOV Shelf Map slot icon and then selecting the `Configuration->Maintenance` menu item; or you can use the Front Panel display `Select->Configuration` menu. The Maintenance application provides transitional reset actions that apply to parameters set at the Configuration windows. The following figures and tables describe the main Maintenance window and its associated maintenance window for Alarm Reset.

The Main Maintenance Window

The main Maintenance window is described in the table below. Menu selections and maintenance procedures follow the table.

**Table 4-1**   The Main Maintenance Window

Typical Maintenance Window	Selections	Description
	File Menu ->Exit	Discards any unsaved edits and then dismisses the main Maintenance window.
	Initiate Startup	Initiates 700 start-up handshake on the unit. Data is disrupted until handshake is complete.
	Cancel Startup	Terminates the start-up sequence on the unit.
	Reset Statistics	Resets all statistics to zero for that unit.
	Reset Unit	Initiates a board reset and disrupts data transfer.
	Reset Alarms...	Advances to the Reset Alarms window
	Set Factory Defaults	Resets the unit options to the factory defaults.
	Enable/Inhibit Front Panel	Enables or inhibits the use of test buttons or the front panel of the physical device.

Note   *Before the unit resets to the factory defaults, the following warning appears:* `Resetting to factory defaults will disrupt communications to the unit. Do you want to continue?`

Note   *When the following units are selected: SC 701-T2, SC 710-D2 or SC 711-D2, the Enable/Disable Front Panel*
         selection is not supported and will appear grayed-out.

The Reset Alarms Window

The Reset Alarms window is accessed from a button on the main Maintenance window. Major and
minor alarms on any loop available to the unit can be immediately reset to zero in order to clear
alarm events within the threshold interval.
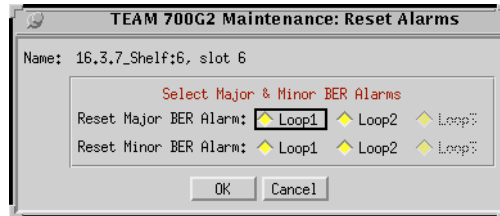
Selection	Description
Reset Major BER Alarm	Before resetting the major alarms, click to select the desired loop(s) from those currently available to the unit.
Reset Minor BER Alarm	Before resetting the major alarms, click to select the desired loop(s) from those currently available to the unit.
OK	Resets immediately the major and minor alarms for the selected loop(s), then dismisses the Alarm Reset window.
Cancel	Discards any pending resets and then dismisses the main Maintenance window.

Special Unit Considerations - Reset Alarms

• When the selected unit is a T1 product the Reset Alarms button is not functional and appears
  grayed-out.

• If only one or two loops are available on the selected unit, the Alarm Reset selections for the
  remaining loop(s) are not functional and will appear grayed-out.

Diagnostics Application

The TEAM 700 Diagnostics application is used to test and display diagnostics results on a TEAM 700-managed SpectraComm or DataComm products and associated remote units. The application is accessed by selecting the HPOV Shelf Map slot icon and then selecting the **Fault->Diagnose** menu item; or you can use the Front Panel display **Select** menu. The following figures and tables describe the main Diagnostics window and its associated History window.

Note   *Refer to the Installation and Operation Manuals for the TEAM 700-managed products in order to set up and interpret the most useful diagnostic tests for your system.*

The Main Diagnostics Window

Separate Diagnostics windows can be launched from the HPOV menu bar Fault menu or from the Front Panel Select menu for each TEAM 700-managed unit and its associated remote on the open map. Read-only results from the most recent test is displayed, along with a graphic which depicts the diagnostic data path for a test in progress. Arrows indicate the current data paths and change to show loopback paths associated with each test. The figures and tables below describe each component of the Diagnostics window. Diagnostics menus are described below.
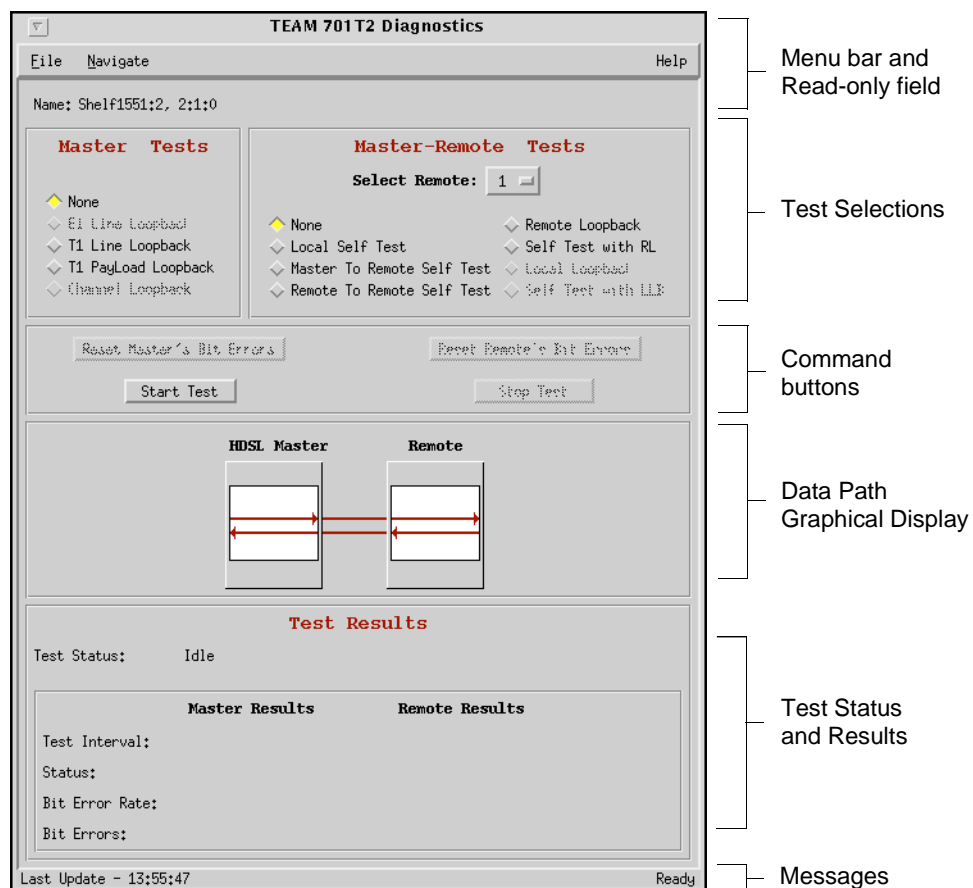

Figure 4-1   A Typical Diagnostics Window

Table 4-2 Diagnostics Selections

Selections	Test Option	Test Description	Products
None		No Master or Master-Remote test selected.	All units
Master Tests	E1 Line Loopback	Used to test connections between local equipment and the 700 system module. The data signal received from the unit's local E1 /T1 interface is returned to the transmit line interface. The framing portion of the T1 interface is regenerated by the unit.	E1 and T1 units only
	T1 Line Loopback		
	T1 Payload Loopback	The data portion (payload) of the T1 interface is returned to the data portion of the T1 transmit. The framing portion of the T1 interface is regenerated by the unit.	T1 units only
	Channel Loopback	Activates a DTE loopback at the master unit's DTE interface	V.35 DTE only
Master-Remote Tests	Select Remote	Selects the remote number to be used for the test.	All units
	Local Self Test	Activates the test pattern generator and checker in the local (master) unit. The test pattern is transmitted onto the 700 link, then checked for errors when it is received back.	
	Master to Remote Self Test	Activates test pattern generators and checkers in both the master unit and the selected remote unit. Each unit receives the test pattern transmitted by the other over the 700 link and checks it for errors.	
	Remote to Remote Self Test	Activates the test pattern generator and checker in the selected remote and transmits the pattern to the master.	
	Remote Loopback	The data received by the remote module from the local is returned by the 700 system module on the receive path within the remote's equipment interface.	
	Self Test with Remote Loopback	Activates the test pattern generator and checker in the master unit and places the selected remote in line loopback.	
Test Results	Test Status	Displays test status: Idle or Running	All units
Master and Remote Results	Test Interval	Displays test intervals (in seconds) for the running test.	
	Status	Displays with BER test: In-sync or Out-of Sync	
	Bit Error rate	Displays the bit error rate for the current self test.	
	Bit Errors	Displays the bit errors detected on the current self test.	
Command Buttons	Start / Stop Test	Click to start or stop the specified tests on the selected unit.	
	Reset Master's Bit Errors	Permits the bit error statistics to be reset individually on either the master or remote unit.	
	Reset Remote's Bit Errors		
Messages (Lower left and right corners)	Last Update	Displays the time of the last update.	
	Status	Displays intermittent messages describing application activity and unit interactions.	

Diagnostics Menus

The File menu provides an **Exit** command which dismisses the Diagnostics application. The Navigate menu provides a **History** option which displays a read-only window of test results from the current session, including stopped tests. A typical Diagnostics History window is shown below.
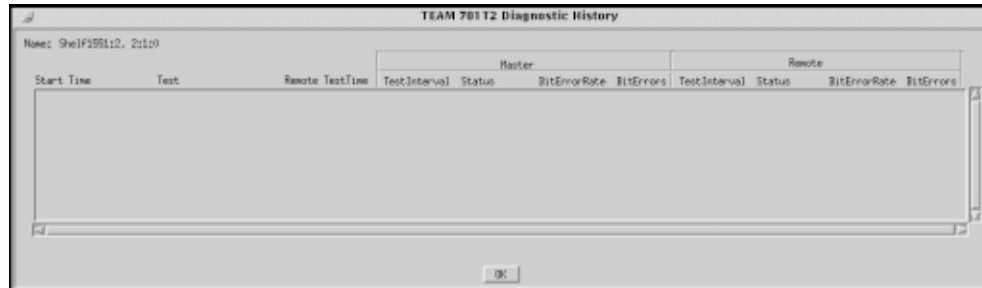
Note   *A running history of tests performed during a single session can be viewed in the scrolling Diagnostics History window. When the Diagnostics application is exited, this historical test data will be lost.*

Special Considerations

- During a Line Loopback test the communication between the master and remote is interrupted and the diagnostic window will not display the remote. At the completion of the test, communication resumes when the SCM sends the next poll (approximately 30 seconds).

- The Self Test pattern internal to the 700 units is always a 2^{15}- 1 pattern.

- The Local Loopback test and the Self Test with Local Loopback are channel loopback tests which apply only to the following products: 730/731, 710, and 711. These diagnostics are not supported by TEAM 700 management and will appear grayed-out.

- During normal operation the local equipment should receive its own signal without errors. The local transmit signal is sent to the remote 700 system, however the signal received from the remote 700 system may be lost. The E1 or T1 Line Loopbacks are generally used to test connections between local equipment and the 700 system module.

- With the Local Self Test, the user is responsible for establishing the physical or electronic loopback that returns the test pattern to its source.

- In order for the Remote to Remote Self Test to provide useful results, it must also be commanded in a second remote unit which communicates with the first unit on the far side of the public network. Once both remotes have been commanded to perform this test, each receives the test pattern transmitted by the other and checks it for errors.

- During normal operation the local equipment should receive its own signal without errors. The local transmit signal passed to the remote equipment connected to the 700 system, the signal transmitted by the remote may be lost. The Remote Loopback is generally used to test the proper operation of the 700 link end-to-end, and therefore should be used after normal operation is obtained while the remote 700 loopback is connected.

- Some remotes can only be tested via the Diagnostics window of their masters (e.g. the 1030)

Note   *The TEAM 700 application polls the* SpectraComm and DataComm products *every 35 seconds while the Diagnostics window is open. To reduce unnecessary traffic, the Diagnostics window should be closed when not in use.*

Test Procedures

1. Before running a test, make any necessary arrangements with the remote site, as needed.

Note   *Line Loopback or Payload loopback tests may require network management control of the remote unit or other coordination with remote site personnel, such as arranging for loopback initiation or test signal generation.*

2. At the main Diagnostics window, click on a check box to select the desired test.

3. For Master-Remote diagnostics, select the remote from the scrolling list.

4. Click on `Start Test`. The data path display panel will exhibit the path for the selected test and the `Test Status` field displays changes from Idle to the name of the test running.

5. During Self Tests, the Reset Bit Errors button will activate, allowing the user to return the error count to zero.

6. During any test, results are displayed in the `Test Results` field.

7. The `Stop Test` button is activated while any test is running.

8. After completing a test, select `Navigate->History` from the main Diagnostics window menu. The Diagnostics History window will display the last test run as well as results for any test run during the current session.

Note   *A running history of tests performed during a single session can be viewed in the scrolling Diagnostics History window. When the Diagnostics application is exited, this historical test data will be lost.*

Index