058R731-V300-01
Issue 1

GDC UAS 600®

Team 600 for UNIX, Version 3.0.0

General DataComm

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If you have comments or suggestions concerning this manual, please contact:

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Telephone: 1 203 758 1811

Trademarks

Revision History

Table-1 Revision History

Issue Number	Date	Description of Change
01	July 1 1998	Applications for user interface

Safety Guidelines

- Always use the following guidelines when unsafe conditions exist or when potentially hazardous voltages are present:
- Always use caution and common sense.
- To reduce the risk of electrical shock, do not operate equipment with the cover removed.
- Repairs must be performed by qualified service personnel only.
- Never install telephone jacks in a wet location unless the jack is designed for that location.
- Never touch uninsulated telephone wires or terminals unless the telephone line is disconnected at the network interface.

- Use caution when installing telephone lines and never install telephone wiring during an electrical storm.

Antistatic Precautions

Electrostatic discharge (ESD) results from the buildup of static electricity and can cause computer components to fail. Electrostatic discharge occurs when a person whose body contains a static buildup touches a computer component.

The equipment may contain static-sensitive devices that are easily damaged and proper handling and grounding is essential. Use ESD precautionary measures when installing parts or cards and keep the parts and cards in antistatic packaging when not in use. If possible, use antistatic floorpads and workbench pads.

When handling components, or when setting switch options, always use an antistatic wrist strap connected to a grounded equipment frame or chassis. *If a wrist strap is not available, periodically touch an unpainted metal surface on the equipment.* Never use a conductive tool, like a screwdriver or a paper clip, to set switches.

FCC Part 68 Compliance

Connection of data communications equipment to the public telephone network is regulated by FCC Rules and Regulations. This equipment complies with Part 68 of these regulations which require all of the following.

For single or multi-line equipment that connects to the telephone network via a plug and jack, the plug and jack must comply with the FCC Part 68 rules. This device is designed to be connected to the telephone or premises wiring, using a compatible modular jack which is Part 68 compliant. See installation chapter for details.

If the unit causes harm to the telephone network, the telephone company may discontinue your service temporarily and if possible, you will be notified in advance. If advance notice is not practical, you will be notified as soon as possible and will be advised of your right to file a complaint with the FCC. The telephone company may change its communication facilities, equipment, operations and procedures where reasonably required for operation. If so, the telephone company will notify you in writing. All repairs or modifications to the equipment must be performed by General DataComm. Any other repair or modification by a user voids the FCC registration and the warranty.

The APEX DDS1 has a DSX-1 interface. To use the public telephone network, it must be connected to a registered CSU.

To connect the APEX DDS1 to the public telephone network the customer is required to provide the following information:

FCC Registration Number: AG6USA-23156-XD-N

Telephone Company jack type: Provided by the registered CSU.

Facility Interface Codes:
T1 Interface - 04DU9-BN, 04DU9-DN, 04DU9-1KN, 04DU9-1ZN

Service Order Code:
T1 Interface - 6.0N

Industry Canada Notification

The Industry Canada label identifies certified equipment. This certification means that the equipment meets telecommunications network protective, operation and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

Notice: The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

Electromagnetic Compatibility

This Class A digital apparatus complies with Canadian ICES-003.

Avis D'industrie Canada

L'étiquette d'Industrie Canada identifie le matériel homologué. Cette étiquette certifie que le matériel est conforme aux normes de protection, d'exploitation et de sécurité des réseaux de télécommunications, comme le prescrivent les documents concernant les exigences techniques relatives au matériel terminal. Le Ministère n'assure toutefois pas que le matériel fonctionnera à la satisfaction de l'utilisateur.

Avant d'installer ce matériel, l'utilisateur doit s'assurer qu'il est permis de le raccorder aux installations de l'entreprise locale de télécommunication. Le matériel doit également être installé en suivant une méthode acceptée de raccordement. L'abonné ne doit pas oublier qu'il est possible que la comformité aux conditions énoncées ci-dessus n'empêche pas la dégradation du service dans certaines situations.

Les réparations de matériel homologué doivent être coordonnées par un représentant désigné par le fournisseur. L'entreprise de télécommunications peut demander à l'utilisateur de débrancher un appareil à la suite de réparations ou de modifications effectuées par l'utilisateur ou à cause de mauvais fonctionnement.

Pour sa propre protection, l'utilisateur doit s'assurer que tous les fils de mise à la terre de la source d'énergie électrique, des lignes téléphoniques et des canalisations d'eau métalliques, s'il y en a, sont raccordés ensemble. Cette précaution est particulièrement importante dans les régions rurales.

Avertissement: L'utilisateur ne doit pas tenter de faire ces raccordements lui-même; il doit avoir recours à un service d'inspection des installations électriques, ou à un électricien, selon le cas.

Avis: L'indice d'équivalence de la sonnerie (IES) assigné à chaque dispositif terminal indique le nombre maximal de terminaux qui peuvent être raccordés à une interface. La terminaison d'une interface téléphonique peut consister en une combinaison de quelques dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas 5.

La Compatibilité d' Eléctro-magnetique

Cet appareil numerique de la classe A est conforme a la norme NMB-003 du Canada.

Deutschland

Installations Anweisungen: Installieren Sie die Telefonleitungen nicht während eines Gewitters. Installieren Sie die Telefonleitungen nicht in einem feuchten Raum, auβer die Dose entspricht den Vorschriften für Feuchträume. Berühren Sie unisolierte Telefonleitungen oder Einrichtungen nicht, auβer diese sind vom Telefonnetz getrennt. Vorsicht bei der Installierung oder Änderung von Telefonleitungen. *Achtung:* Es gibt keine durch den Benutzer zu wartende Teile im Gerät. Wartung darf nur durch qualifiziertes Personal erfolgen.

EC Declaration of Conformity

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The products to which this declaration relates are in conformity with the following relevant harmonized standards, the reference numbers of which have been published in the Official Journal of the European Communities;

Electromagnetic Compatibility

EN55022: 1994

Specification for limits and methods of measurement of radio interference characteristics of information technology equipment.

EN 50082-1: 1992

Generic immunity standard Part 1 Residential, Commercial, and Light Industry.

Safety

EN 60950: 1995 A1 through A3

Low Voltage Directive relating to electrical equipment designed for use within certain voltage limits.

Table of Contents

Preface

Introduction

This manual describes how to operate the Team 600 2B1Q Network Manager. It assumes familiarity with HP OpenView and a working knowledge of 2B1Q DSL functions and operation.

The Team 600 software is an HP OpenView application that employs the Simple Network. Management Protocol (SNMP) to configure and control the operation of GDC 2B1Q LTU/NTU Units. The units support DTE interface functions and provide 2B1Q capability on the Digital Subscriber Loop (DSL).

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, the possibility exists that information may not be current.

If you require updated, or any other General DataComm product information, contact the address or number below or visit our web site at: http://www.gdc.com

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GDC's 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 regarding GDC's VITAL Network Services' service programs, training courses, or for assistance with your support requirements, contact GDC's VITAL Network Services at the address or phone number listed below, or visit our website at: http//www.vitalnetsvc.com

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International Calling Code (+)

When calling from outside the country of origin, use the appropriate International Calling Code where the + symbol is shown.

Safety Information

The DANGERS, WARNINGS and CAUTIONS that appear throughout this manual are not only preventative measures designed to uphold the safety of both the service engineer and operator, but also enhance equipment reliability.

The definitions and symbols for DANGER, WARNING and CAUTION comply with ANSI Z535.2, American National Standard for Environmental and Facility Safety Signs, and ANSI Z535.4, Product Safety Signs and Labels, issued by the American National Standards Institute.

The following examples show the symbols and definitions of DANGER, WARNING, CAUTION, *Note* and *Important* as they are used in this manual.

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.*

CAUTION *Indicates a potentially hazardous situation which, if not avoided, may result in minor to moderate injury. It may also be used to alert against unsafe practices.*

WARNING *Warning indicates an imminently hazardous situation which, if not avoided, could result in death or serious injury.*

DANGER *Danger indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.*

Typographical Conventions

Level 1 Heading paragraph headers introduce major topics.

Level 2 Heading paragraph headers introduce subsections of major topics.

Level 3 Heading paragraph headers introduce subsections of secondary topics.

`Courier font is used to show text that is displayed on the screen.`

Times Bold font is used when referring to screen names.

`Courier bold font is used to show specific input that you type at the keyboard.`

Organization

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

- *Chapter 1 - System Description* describes the product and its features.

- *Chapter 2 - Operation* provides directions for accessing the individual applications that are responsible for the Team 600 functions. It describes how to access the functions from a shelf map window menu bar, and from the Select menu of a data set front panel display. The chapter provides full descriptions of the Team 600 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 operating parameters in a selected data set. The chapter covers how to save configuration changes to the unit 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 data set.
- *Chapter 5 - Diagnostics* provides instructions for accessing the Diagnostics application window and using it to perform test procedures.
- *Chapter 6 - Remote 600 Team Applications* covers the applications of the remote 600s.

The *Index* contains topics on the Team 600 with page numbers.

GDC publication numbers 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
- R denotes a technical publication
- nnn a number assigned by Technical Publications
- 000 identifies a hardware product and does not change
- Vnnn software version associated with a product, which may be updated periodically

The issue number changes when a manual is revised or reprinted with changes 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.

Glossary of Terms

2B1Q Code

2 Binary, 1 Quaternary code

Agent

A device or process running on a device or computer that responds to SNMP requests and sends SNMP Traps

GUI

Graphical User Interface

HP OpenView

HP based user interface for managing network applications and devices

MAP

A named collection of objects and their associated topology

MIB

Management Information Base The collection of object definitions that can be accessed through a network management protocol

SCM

Shelf Controller Module

SNMP

Simple Network Management Protocol

UAS

Universal Access System

DSL

Digital Subscriber Loop

Chapter 1: System Description

Overview

This manual covers the TEAM 600 Unix Application for HP OpenView. You should be familiar with HP OpenView and with the operation of SpectraComm Units (SCU) and DataComm Units (DCU) to use this manual effectively.

The TEAM 600 Application is actually a collection of integrated applications for the HP OpenView Network Management Platform. The applications use the Simple Network Management Protocol (SNMP) to manage GDC 600 SCUs.

TEAM 600 applications enable you to:

- Configure 600 SCUs and DCUs.
- Monitor the operation of the SCUs 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).

Basic Design

Here is a brief description of the basic design of the 2B1Q 600 series design.

UAS 2B1Q System Components

The UAS 2B1Q consists of the following components:

- SpectraComm 616
- SpectraComm 613
- SpectraComm 611
- DataComm 610
- DataComm 612
- DataComm 621
- GT 128
- SpectraComm Manager (SCM)

SpectraComm 616 (SC616)

The SC616 is a six channel Line Termination Unit (LTU). The unit supports three 2B1Q U-interfaces that are compatible with requirements of ANSI T1.0601-1992 and six co-directional 64 kbps interfaces that are compatible with the requirements of ITU-T G.703. Each 2B1Q U-interface is permanently routed to a specific pair of G.703 interfaces. You may control the SC616 by a SCM via the SpectraComm management bus.

SpectraComm 611 (SC611)

The SC611 is a single-channel 2B1Q data transmission device. The unit supports ANSI T1.601-1992 2B1Q U-interface and one ITU-T V.35 or EIA/TIA-232-E DTE interface (optionally, ITU-T X.21 and EIA-530). The SC611 has a sub-rate capability (X.50) provided by the SC621.

SpectraComm 613 (SC613)

The SC613 is a three channel 2B1Q data transmission device. The unit supports three ANSI T1.601-1992 2B1Q U-interfaces and three modified ITU-T X.21 DTE interfaces. Each 2B1Q U-interface is permanently assigned to a specific X.21 interface port operating at either 64 or 128 kbps.

The SpectraComm SC616, SC611 and SC613 pass software configuration and control commands over the EOC (Embedded Operations Channel) from the SCM to a Remote 600 series tail circuit. As LTUs, the The SC616, SC611 and SC613 originate ANSI EOC B1 and B2 loopback commands. This allows the units to inter-operate with other (competitor) devices that comply with the ANSI specification. The SC611 and SC613 are capable of responding to V.54 loopback control from the U-loop as an enable/disable option.

DataComm 621 (DC621)

The DC621 is a low-cost Network Termination Unit (NTU). The unit complies with ANSI T1.601-1992 line coding requirements on the network side, and provides a DTE interface on the business equipment side.

The line coding scheme is a 2B1Q as defined in T1.601. The DTE interface may be used to X.50 compatible rate adaption is performed. The unit works with both synchronous and asynchronous DTEs. The basic DTE channel interface provided is ITU-T V.35 or EIA/TIA-232-E on card. Hardware hooks are provided for optional DTE interface types. Switches are provided for configuration but the unit will also respond to messages from the EOC.

DataComm 610 and 612 (DC610/612)

The DC610 and DC612 are single-channel and dual-channel Network Terminating Units (NTUs). They are compatible with ANSI T1.601-1992 line coding requirements and support an operating range of up to 18 kilo feet over a two-wire 26 gauge line.

V.35 and ITU-T V.24/V.28 interfaces are selectable by jumpers. Optional 530 or X.21 interface cards are available.

GT 128 (IDSL 128)

The GT 128 (IDSL 128) is a single-channel, Network Terminating Unit (NTU). It is compatible with ANSI T1.601-1992 line coding requirements and supports an operating range of up to 18 kilo feet over a two-wire, 26-gauge line.

V.35 and X.21 interfaces are selectable by jumpers.

SpectraComm Manager (SCM)

SpectraComm Manager (SCM) acts as the SNMP agent through which TEAM management applications communicate with UAS 2B1Q 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 UAS 2B1Q components. The SCM is transparent to the applications, which operate as though they were communicating directly with the hardware units.

Theory of Operation

The TEAM Application Components are your gateway to the TEAM system which carries out each task while being user-friendly. 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. Menus are pulled down from the appropriate OpenView submap or are activated from the front panel button. The TEAM Controller GUI screens meet HP OpenView premier partner requirements.

SpectraComm Manager Card and 600-Managed Units

The SpectraComm 600-managed units work with the GDC SpectraComm Manager (SCM) card to give you comprehensive network management using the Simple Network Management Protocol (SNMP). The SCM acts as the SNMP agent through which TEAM management applications communicate with these 600-managed units and other compatible equipment.

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 by which HP OpenView keeps track of the devices being managed.

Accessing Team 600

The applications that make up the Team 600 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 HPOV Map window when an 600-managed unit is selected in the window
- From the `Select` button on the 600 Front Panel display.

600 front panel displays current status information on the 600-managed unit by displaying the states of the LED indicators on the front panel of the unit. The managed-unit has `Select` button menus where you can access all other functions of the TEAM 600 manager. You can select the front panel from the `Performance` menu in the HPOV Map window menu bar. You can also launch the front panel display from that window by double-clicking on the shelf icon of the unit or device you need to work with.

The following TEAM 600 applications appear on both the Map window and `Select` button menus:

- `Performance`:

  Alarms – furnishes detailed information about alarm state changes

Reports – displays statistical reports

- `Configuration`:

  Configure – enables you to configure a selected 600 unit

  Circuit Configuration - add or delete remotes

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

- `Fault`:

  Diagnose – lets you run diagnostic tests on a selected 600 unit

- `Misc`:

  Information – displays revision level information on the TEAM 600 software

The `Misc` menu in the Map window menu bar offers you two selections that do not appear in the front panel `Select` button menu:

`Front Panel Poll Rate` – lets you set a default polling interval to be in effect each time the front panel display is opened.

`Note Pad` – 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 is useful for keeping system records.

Chapter 2: Operations

Introduction

The Team 600 operates by giving you easy access to its fundamental tools when you run the application. You can see how it constantly gives you feedback on status and alarms, allows you freedom to configure and maintain the application, and advises you of immediate testing results.

Accessing 600 Application

The Team 600 controller application consists of a group of applications, each devoted to a specific aspect of controlling or monitoring 600 units. As mentioned in *Chapter 1*, you can access the Team 600 applications by:

- the map window menu bar, or
- the front panel window `Select` button menus.

This chapter describes both ways.

Performance

There are four performance applications described in this chapter:

- `Alarms` gives you alarm information in a read-only window.
- `Reports` displays information on a variety of error conditions that may be experienced by the unit over a 24-hour period.
- `Front Panel` displays the front panel of an unit.

Configuration

`Configuration` has three parts: `Configure`, `Circuit Configuration`, and `Maintenance`. Each supports read/write windows so that you can review and change unit operating parameters. This chapter describes how to access `Configure`, `Circuit Configuration` and `Maintenance`. Separate chapters are devoted to showing you how these applications work.

Fault

The `Fault` menu lets you access `Diagnose`. With the `Diagnose` application you can command the test functions of the units and see the test results. This chapter describes how to access the `Diagnose` application. A later chapter shows you how to use `Diagnose`.

Misc

Three items appear under the menu `Misc` (miscellaneous): `Information`, `Front Panel Poll Rate`, `Note Pad`, and `Alarm Severity`. Only `Information` appears on the `Select` button menu of the front panel display.

Map Window Menu Bar Access

The table below illustrates how the Team 600 application functions are arranged on the menu bar at the top of the HPOV Map window and shows only the menu selections for the Team 600 applications. The map window menus include selections besides those that apply to Team 600 since the window also lets you access other applications. You must select the unit you intend to work with before you open the intended menu. Select the unit by clicking the mouse once on its icon in the shelf slot.

Note *The menu item Agent Templates, which appears under Misc in the menu listing does not apply to SCM-based applications such as Team 600. The use of that function is therefore not documented in this manual.*

Its functionality is employed by standalone Team application products such as Team 540 and Team 553. The Agent Templates function is documented in the manuals for those products.

Menu Bar	Menu Selections
`Performance`	
	Front Panel...
	Alarms...
	Reports...
`Configuration`	
	Configure...
	Circuit Configuration...
	Maintenance...
`Fault`	
	Diagnose...
`Misc`	
	Information...
	Front Panel Poll Rate...
	Note Pad...
	Alarm Severity...

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 `Front Panel Poll Rate` and `Note Pad` under `Misc`.

Front Panel, 600

The 600 front panel display windows provide a graphical interface to a selected data set. To launch a front panel, choose the unit that you want to work with in the HPOV Map window. Then, either

- Select `Front Panel` from the Performance menu for that window, or
- Double click the mouse on the icon for the selected unit if no remote units have been added.

Note *When viewing the shelf window, a square frame around the master unit status icon indicates that no remotes have been assigned.*

Front Panels, 610, 612, 621, and GT 128 for Remote Applications

The front panel remote status application lets you see the image of the face plate of the card for the front panel of a 610, 612, 621, or GT 128 remote unit.

The application is started by double clicking on the desired card slot icon on the `Graphical Shelf Application` which then displays the `Element Submap` (See Figure 2-1). Displayed in the `Element Submap` is a 2B1Q master unit icon, shown connected to as many as three 2B1Q unit icons. Figure 2-1 is an example of an `Element Submap`.

You have two ways to access a specific remote 600 unit front panel:

- Either (1) single click on one of the icons of the 600 remote units and then choose `Performance->Front Panel`;
- Or (2) double click on one of the 600 remote unit icons in the `Element Submap`.

The front panel images (See Figure 2-2) represents LED images animated to reflect actual card status. Offering you a summary of the real-time events that the unit is undergoing, this application gives you a convenient launching point for all the other major applications related to the 600 series products.

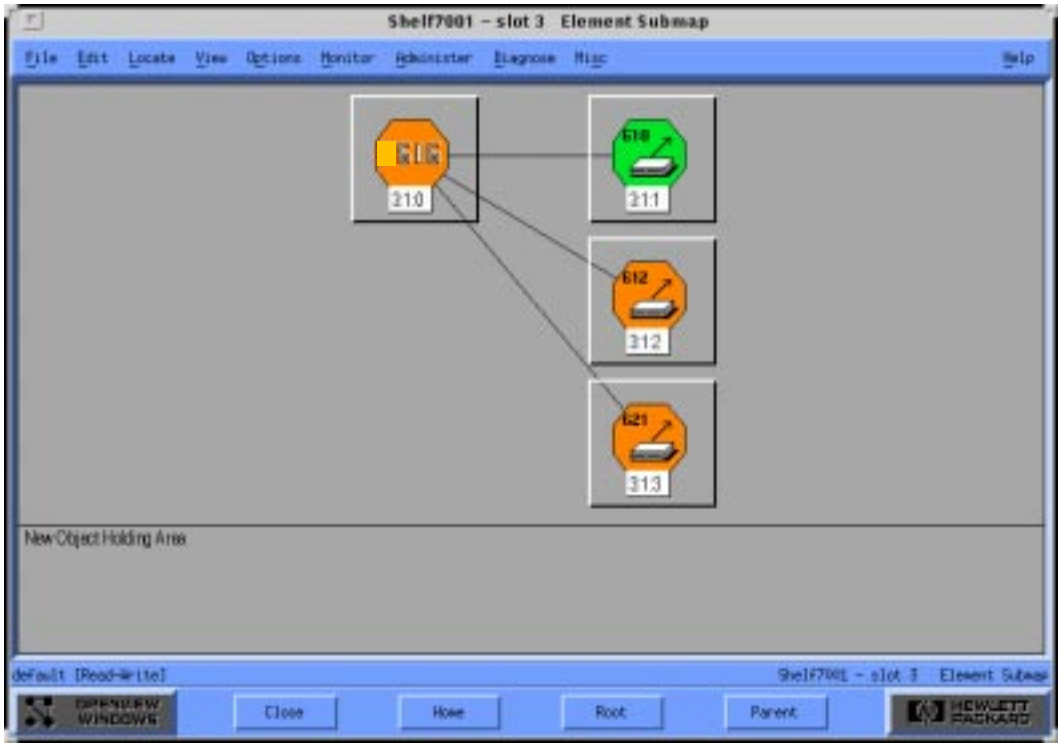


Figure 2-1 Element Submap (616) with the 600 Products as Remote Units

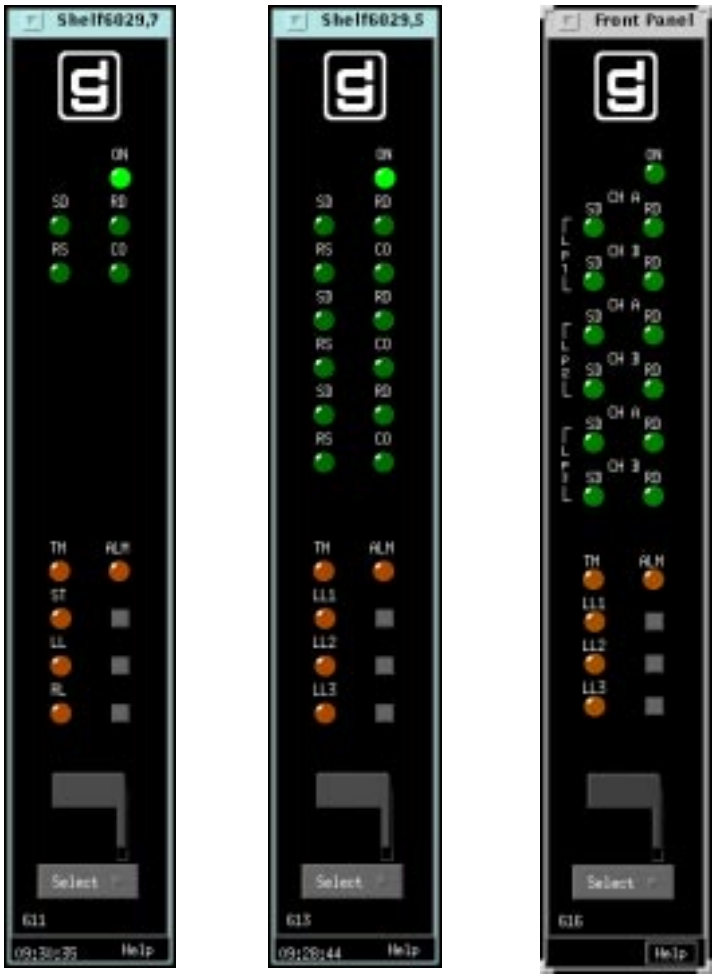


Figure 2-2 Front Panel Series: 611, 613, or 616

LEDs of the Front Panels

The LEDs shown in a front panel display reflect the states of the actual indicators on the physical unit (Table 2-1):

Table 2-1 Front Panel LED Descriptions

LED	LED Indicates:
ON	Power on.
SD	Send Data, data is transmitted on channel.
RD	Receive Data, data is received on channel.
RS	Request-to-Send on channel.
CO	Carrier on channel.
ST	Self-Test pattern is being transmitted.

Table 2-1 Front Panel LED Descriptions (Continued)

RL	Remote Loopback condition.
TM	Test Mode is red if the unit is running a diagnostic test on the channel.
LL1, LL2, LL3	Loopback condition is on the corresponding loop.

The application polls the unit 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. LEDs are displayed as ON (bright green or bright red), or as OFF (dark green or dark red). In the case of errors or a non-response, all LEDs are displayed in the off-state and an error footer message is displayed.

Buttons and Select Menu

The Select button, at the bottom of the front panel displays, lets you access menus for the rest of the Team 600 application functions. The following table, differing somewhat from the arrangement on the shelf map window menu bar, shows the arrangement of the Select button menus (Table 2-2).

Table 2-2 Select Button Descriptions

Select Menu Items	Menu Selections
Performance	
	Alarms...
	Reports...
Configuration	
	Configure...
	Maintenance...
Fault	
	Diagnose...
Misc	
	Information...
Demand Poll	
	Polling status to update front panel

Table 2-2 Select Button Descriptions (Continued)

Select Menu Items	Menu Selections
`Auto Poll (Displays Off or poll inter-val)`	
	15 seconds 30 seconds 60 seconds
	Off
`Exit`	
	Closes front panel application
`Help` (button)	
	Displays help information

Button Images on the Front Panel

Button images on the front panel are for display only (Table 2-3).

Table 2-3 Button Image Indications

Button	Indication
`LL`	Physical front panel Line Loopback test
`ST`	Physical front panel Self Test
`RL`	Physical front panel Remote Loopback test
`GDC` `icon`	Executes an information screen about the application

Polling

Two poll selections in the `Select` button menu determine (for the current session) when the application is to collect new information from the unit to update the front panel window:

- `Demand Poll` which gives you an immediate display
- `Auto Poll` which enables you to select updates at 15, 30, or 60-second intervals or disables automatic polling.

If you select `Disable`, the front panel window displays a static snapshot of the LED states as of their last poll: at the time 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 HPOV map window `Misc` menu.

Exit

The menu selection `Exit` dismisses the front panel window when you click on it.

All the front panel button applications are also available through HPOV pull-down menus on the Team 600 Shelf submap.

GDC Logo

The GDC logo on the front panel is actually a push-button which spawns off an informational screen containing Team 600 Controller version information.

Common Window Features

Each Team 600 application you select opens an on-screen window in which to operate. A number of features are common to many of the windows (Table 2-4):

Table 2-4 Common Features of the Team 600

Triangle button (Solaris) Dot button (HPUX)	Found in the title bar, which reduces the window to an icon when you click on it and select `Close`. Double-clicking on icon restores the window. This button appears on the top level window for each application. By clicking the dot button, you dismiss the window.
Title bar	Identifies the specific Team 600 application running in the window. For example: Team 600 Main Configuration or Team 600 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`, where you can dismiss the window. Some window `File` menus contain selections particular for a window. `Help` menu gives you 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 that you access from Main Configuration.
Name field	Identifies the 600 application that is currently connected to by displaying the user-configured shelf name, followed by the SCU slot number, and the user-configured device name.

Descriptions in this manual of the individual Team 600 applications identify window features that are specific to the applications, such as selections in the Menu bar and menus, and buttons.

Performance Functions

The application gives you plenty of constant feedback on how the 600 units are operating.

Alarms

You can launch the Team 600 Alarms application from the Performance menu of the HPOV Map window menu bar or from the front panel display Select button menu. The application displays the read-only `Alarm Detail` windows for the selected unit(s); illustrated are the Team `611`, `613`, and `616` units *(*See Figure 2-3*)*. The Team 600 application gets alarm indications from the unit in two ways:

- Receiving traps sent automatically in response to alarm conditions at the unit. Or,
- initially, polling the unit for alarm conditions.

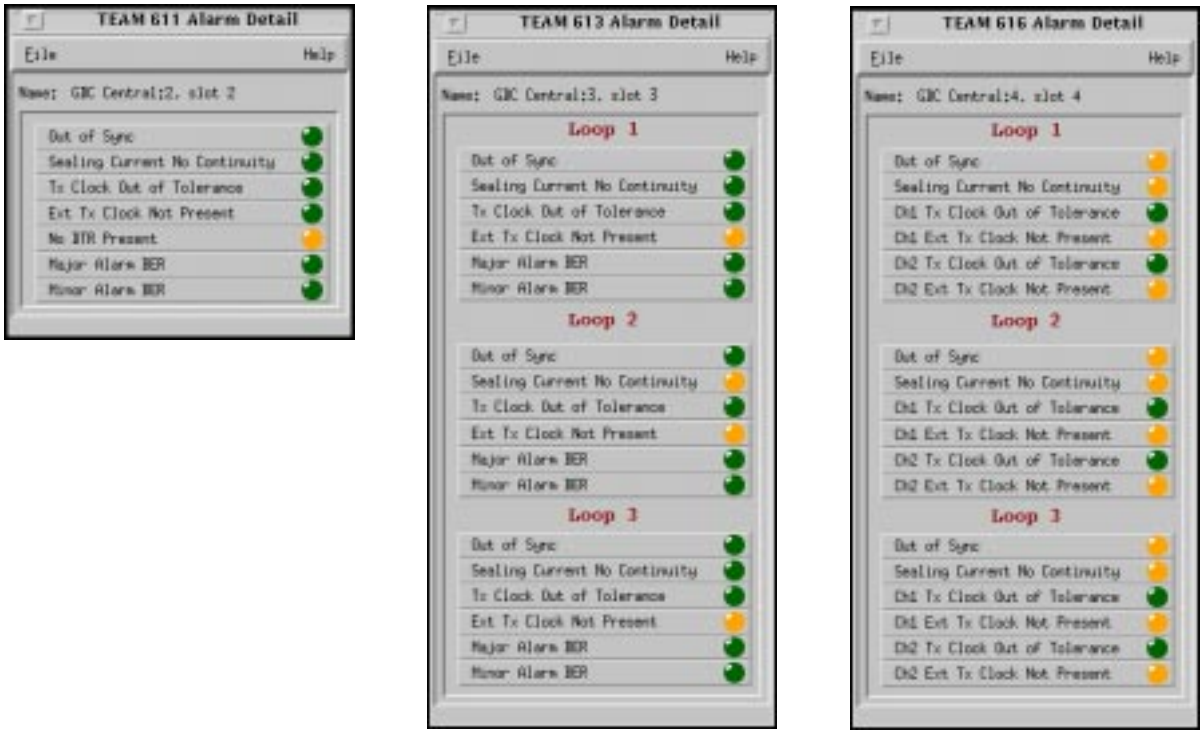


Figure 2-3 Alarm Detail Window (611, 613, and 616)

The following Alarm Detail window displays alarms for the 611, and 613, and 616 products. Team 613 product gives you alarms for three loops and the 616 product displays alarms for the two channels within each loop as shown above (Table 2-5).

Table 2-5 Alarm Detail Features

Alarm	Alarm Definitions
`Out of Sync`	Indicates that framing on the U-loop signals has not been acquired (or has been lost)
`Sealing Current No Continuity`	Indicates that two-wire connection to the U-loop has not been detected (or has been broken).
`Tx Clock Out of Tolerance`	Indicates that the DTE supplied data clock is out of tolerance. This alarm is valid when optioned for external transmit clock timing.

Table 2-5 Alarm Detail Features (Continued)

`Ext Tx Clock Not Present`	Indicates that the DTE supplied transmit data clock has not been detected (or has been lost). This alarm is valid when optioned for external transmit clock timing.
`No DTR Present`	Indicates that the cable connection to the DTE has not been detected or is broken.
`Major BER`	Incoming 600 bit error rate exceeds selected major alarm threshold Major Alarm: on=orange, off=dark green.
`Minor BER`	Incoming 600 bit error rate exceeds selected minor alarm threshold Minor Alarm: on=yellow, off=dark green.

Selectable Alarm Detail Window Items

The Alarm Detail window has selections `File` and `Help` in its menu bar, with the `File` menu containing only one choice, `Exit`, which you click to dismiss the window.

Reports

You can launch the 600 report screens by selecting the HPOV Shelf Map slot icon and then selecting the `Performance->Reports` menu item; or you can click the front panel display `Select` button. The first window called `TEAM 600 Error Reports` you would see is the main window (Figure 2-4).

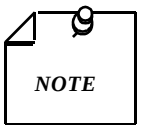
Figure 2-4 Error Reports Window

It introduces you to each error category which has its own graph or statistics report, displayed in a specific screen. Two kinds of reports are included: `TOTALS` and `SUMMARY` and each error category is identified as `ES`, `SES`, and `UAS`. The menu cells on the TEAM 600 Error Reports screen are `File`, `Edit`, `View`, and `Navigate`. `Help` displays help information.

The error reports application is used to display statistics accumulated by the 600 unit. Some features of the reporting function are:

- New background color (bisque) for graphs to emphasize graphical data
- Auto-ranging of Y-Axis
- X-Axis glyph labels lead to pop-up windows by pointing and clicking
- Real-time representation of the intervals

- Interval based graphs have scrolling capability to view all 24 hours worth of data
- Periodic polling for data



No data is collected from the unit until `File-->Refresh` *is selected or the interface is changed.*

File

The menu item `File->Refresh` is an on-demand update of the data. `File->Auto Refresh` has menu items to periodically poll the unit for data and update the screens. `File->Auto Refresh->Off` disables periodic poll; any other option periodically refreshes at the selected value. Poll time is dynamically appended to the menu item `File->Auto Refresh`. `File->Save Error Data to File...` saves the data to a file from the last poll. The data saved in the file is in text format. The `File->Exit` menu item closes all windows and terminates the application.

Edit

The `Edit->Reset` Statistics menu item sends an SNMP set to clear statistics in the unit and to clear data presented on the screen as well.

View

The `View->Legend` displays any legend areas that exist for all the screens. The legend area describes any notations used. For example, the main window has a legend area which contains the expansions for the acronyms ES, SES, and the other error categories.

Navigate

The `Navigate` menu consists of several menu items to open other screens that are part of the errors reports application. The screen pertains to the reports: `24 Hour Error Totals...`, `Errored Seconds...`, `Severely Errored Seconds...`, `Unavailable Seconds...`, `Errors Summary...`, and `All Screens...`.

Thus, the Navigate menu of the error reports window lets you access individual windows which show more detailed statistics on each error condition.

Interface Selector

The interface selection allows you to choose the interface for the report screens you want to display (Loops 1, 2, and 3).

Error Totals

Error reports for the 600 product are given as data collection in intervals of real time. X-axis buttons of the graph represent data from error categories spread over 24 hours in 15-minute intervals; this is the same as using the Navigate menu for each error category.

Auto Ranging

This feature dynamically changes the Y-Axis scale, depending on the maximum value of any of the error categories data on the X-Axis. If the value for an error category (or interval) is 100, then the Y-Axis maximum value is 100. When the X-Axis value for an error category changes to 500 the Y-Axis maximum changes to 500. This way, the graphs are more readable when the values for all error categories (or intervals) fall in the same range.

Loops

The statistics displayed for a TEAM 600 loop interface in the Error Reports window cover 24 hours of operation for a particular loop (Figure 2-5). You select which loop (Loop 1, 2, 3) that you want to view from the interface selection on the top level screen. The vertical axis of the 24-hour period shows the number of errored seconds for the loop categories: ES (Errored Seconds), SES (Severely Errored Seconds), and UAS (Unavailable Seconds). The 24 Hour Totals box on the right side of the screen shows the totals of each category collected so far from the current 24 hours. The `Collection Period` box presents the portion of the current 24 hours collected so far displayed in number of intervals.

Also, the Errors Summary... button in the upper right hand corner is equivalent to the Navigate-->Errors Summary menu item, which gives you a text summary of the valid intervals collected for all categories.

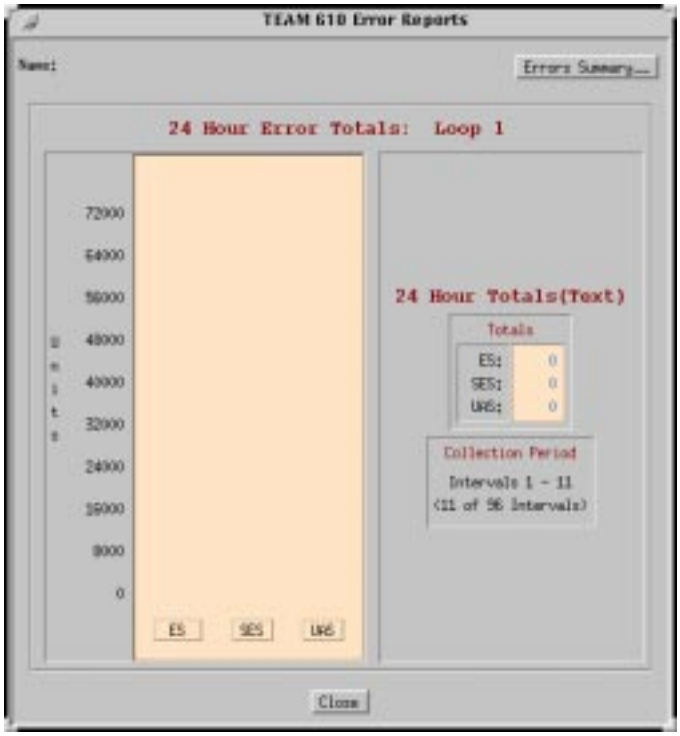


Figure 2-5 Twenty-Four Hours Total Screen

Errored Seconds (ES)

An errored second (ES) is defined as a second with at least one CRC error event.

Figure 2-6 typifies the basic screen for individual statistical error categories, UAS and SES. Like all other graphs, the Y-Axis scale dynamically changes, depending on the maximum value of a certain interval. If data has been collected for less than 24 hours, the intervals on the X-Axis of the graph are not displayed for the unavailable intervals. You have 97 vertical bar graphs of intervals. This screen graphically shows the number of errored seconds that have taken place in the last 24 hours.

The vertical axis of the bar graph displays error seconds for 15-minute time periods. If the unit has not completed 24 hours of operation, then the unavailable intervals are not displayed. When you are finished with this screen, click on the Close button to dismiss the window.

All Other Error Categories

All other error categories for the loop interfaces have similar screens and explanations as the Errored Seconds does.

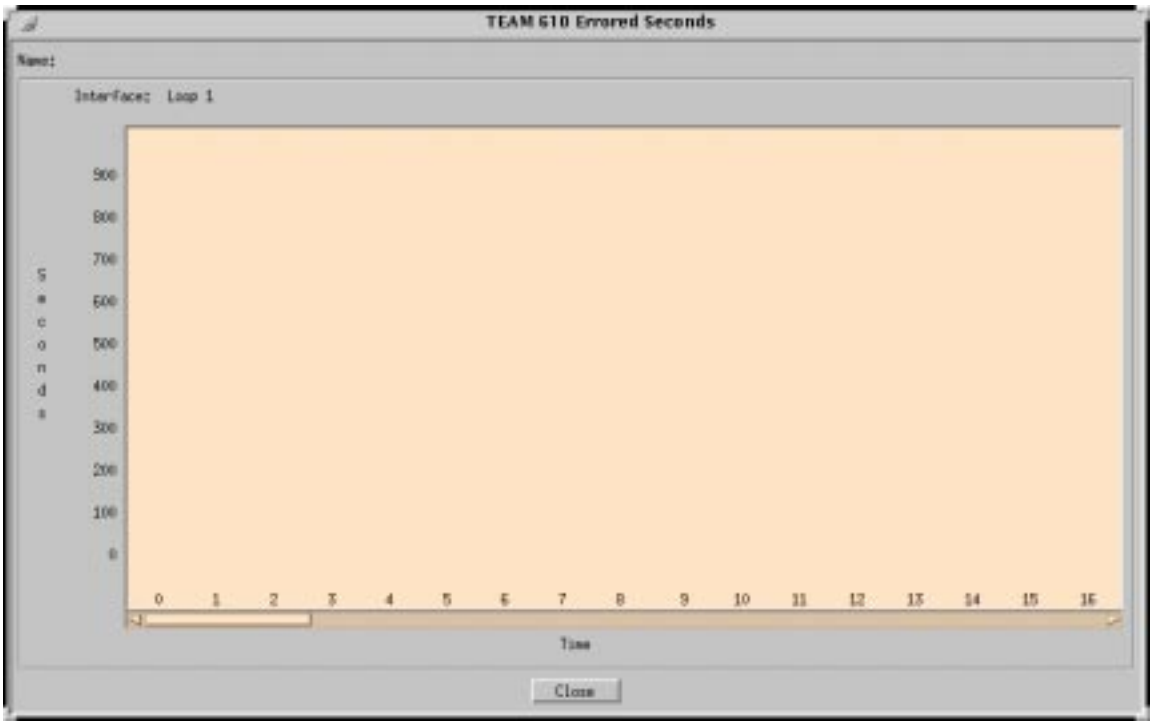


Figure 2-6 Errored Seconds Screen

Severely Errored Seconds (SES)

A Severely Errored Second (SES) is defined as a one-second period having greater than or equal to 30% errored frames or having one or more frames out of sync. A CRC is calculated for each 12 millisecond frame. Thirty percent errored frames per second equals 25 CRC errors.

Unavailable Seconds (UAS)

Unavailable Time is the period of the Unavailable Seconds Signal (UAS) State. UAS state is declared after the detection of 10 consecutive Severely Errored Seconds (SES), and is cleared after a 10-second period with no SES.

Errors Summary

The Errors Summary screen is shown (Figure 2-7). It tabulates data on the error events that have occurred for each error category. The File-->Save Error Data to File option takes the data presented on this screen and saves it to the user's file. The Errors Summary screen displays an array of error events (Y-axis) plotted over time (X-axis).

- Loop Data

  If the count of collected interval loop data is less than 97 (current plus 96 accumulated), then the remaining unfilled intervals are not displayed. Note, however, that after 24 hours of operation, all loop intervals have data. The current box at the bottom of the screen shows a total for each category and for the portion of the 24-hour period accumulated so far.

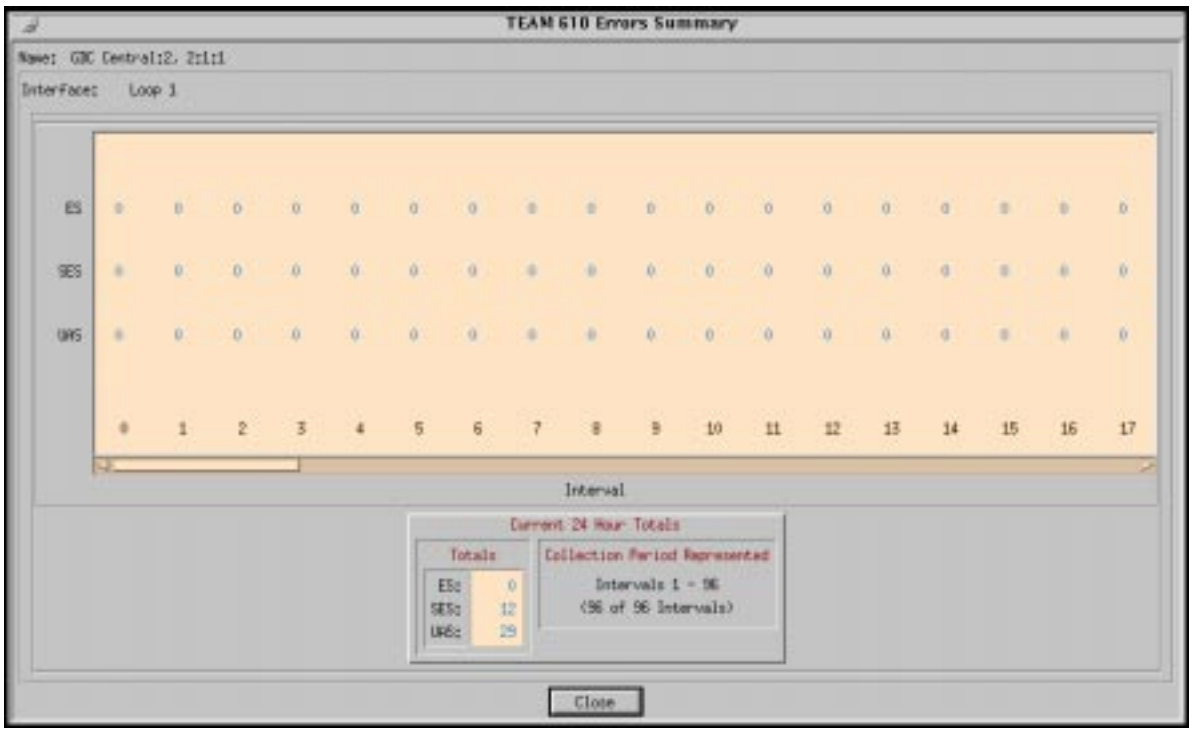


Figure 2-7 Errors Summary Screen

Configuration Functions

Configure

You can launch the Team 600 Configure application from the HPOV Map Configuration Menu or from the front panel menu.

When you launch the application, it initially displays the Team 600 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 unit
- `Load Template`, where you can recall a stored configuration template that you can then save to the unit either with or without modifications
- `Save to Template`, where you can store the current configuration on the workstation for future use as a template
- `Compare to Template`, where you can identify differences between the configuration displayed on-screen and a selected template
- `Exit`, where you can dismiss the window.

The `Navigate` menu enables you to access the read/write windows where you can configure various aspects of unit operation:

- Unit Configuration
- Alarms Reported
- All Screens

The Team 600 Configure application is fully described in *Chapter 3, Configuration*.

Maintenance

You can launch the Team 600 Maintenance application from the HPOV Map Configuration Menu or from the front panel menu.

The application displays one read/write window by which you can control some aspects of operation that fall outside the scope of the `Configure` function. The Team 600 Maintenance application is fully described in *Chapter 4, Maintenance*.

Diagnostics

You can launch the Team 600 Diagnostics application from the Shelf Map Fault Menu or from 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 a selected unit. The Team 600 Diagnostics application is fully described in *Chapter 5, Diagnostics*.

Miscellaneous Functions

Information

You can launch the Team 600 Information window by clicking on the GDC logo in a 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`, where you can dismiss the window.

Front Panel Poll Rate

You can open the `Front Panel Poll Rate` window (See Figure 2-8) from the shelf submap `Misc Menu`. 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 check-box:

`Slow` (60 seconds)

`Normal` (30 seconds)

`Fast` (15 seconds)

`Demand Poll Only` (Disable)

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 check-box and then select `Save to File` from the `File` menu. Saving to file means that you are setting aside polling instructions or data for future us. 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.

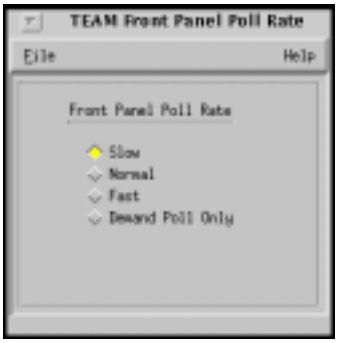


Figure 2-8 Front Panel Poll Rate Window

Note Pad

You can launch the `Note Pad` application from the shelf submap `Misc Menu`. 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.

Alarm Severity

`Alarm Severity` lets you change the default severity of each alarm for the devices in a shelf. For further information, refer to the TEAM CORE manual for a full description of this feature.

Chapter 3: Configuration

Introduction

The Team 600 Configuration application enables you to set all the options in an 600 unit through a convenient group of configuration windows.

You can start the Team 600 Configuration application by either of two methods:

- Select a SCU symbol on the shelf submap in `OpenView`, then select the `Configure` option 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 600 application. A template stores a configuration for the unit options, and you can store as many templates as you need.

To load configuration settings from a template into a unit 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 unit.

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 configuration from the unit 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 unit 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 unit. All changes to any configuration windows that have not previously been saved to the unit or to a template are lost when you select `Refresh`.
2. To edit the current configuration of the unit, proceed directly to the `Navigate` menu as described 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 unit 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 push-pin glyph, 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 unit, or select Save to Template to save it as a template in the workstation.

6. When you select Save to Unit, the changed configuration becomes the current configuration for the unit you are configuring.

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 unit of the same type.

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 (Figure 3-1) has two pull down menus, File and Navigate, that are the means by which you carry out the actual process of configuring the selected unit. 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.

The Main Configuration window title bar displays the application name, Team 600 (changes to type of unit selected) Configuration. The main body of the window has items that point out the selected unit and furnish information about its operations. Below, we have the Team `600 Configuration` main window (Figure 3-1) which is launched from the HPOV Shelf Map Configuration Menu. The application is made up of one main window and a set of transient windows giving you unit optioning, described below.

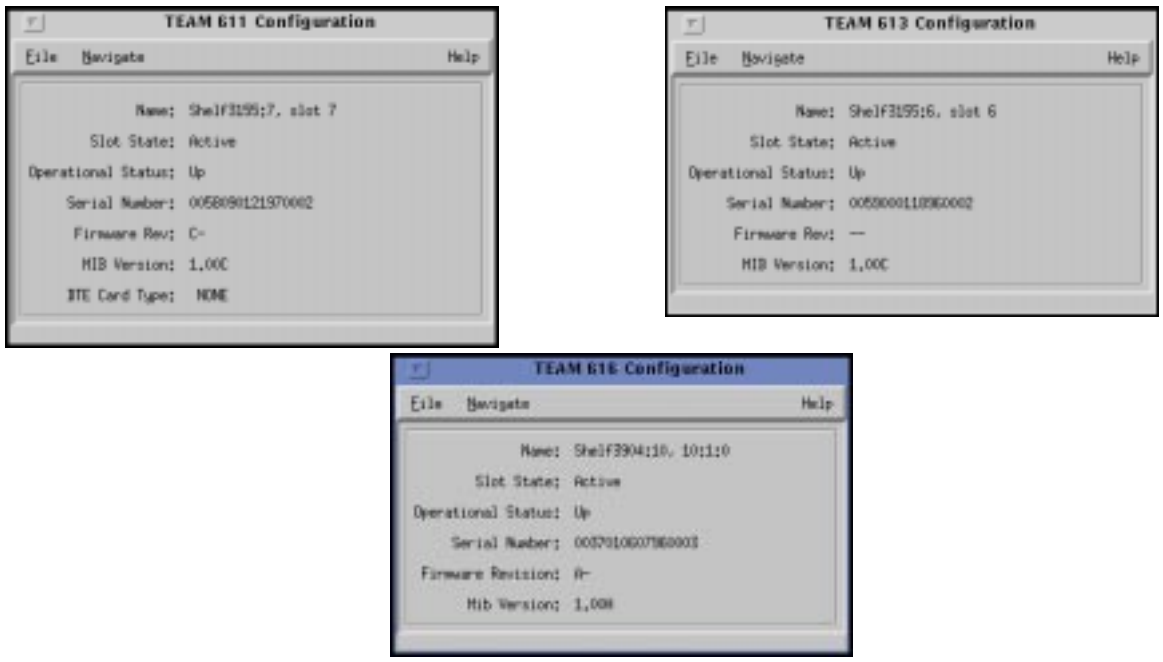


Figure 3-1 Main Configuration Windows for the 611, 613, and 616

Specifically, this main window has four areas:

- Title bar, providing application name
- Menu bar, providing file operations, navigation through subordinate screens, and basic help
- Main body, providing administrative read-only fields
- Status messages, footer area, providing application data on activity and unit interaction

Details of this window (Figure 3-1) follow.

Menu Buttons	Menu Selections	Description	Further Selections
`File`			
	Refresh	All options are read from the unit and outstanding edits are lost.	
	Save to Unit	All outstanding edits are sent to the unit.	

Menu Buttons	Menu Selections	Description	Further Selections
	Load Template	Allows you to select an existing 600 template to be applied as edits to the current application. Your next `File-->Save to Unit` implements the template changes.	dialog window
	Save to Template	Configuration data is saved as a specific template.	dialog window
	Compare to Template	You can select an existing 600 template to be compared with the screen display.	dialog window
	Exit	Terminates application with outstanding edits discarded first.*	

*Note: If the configuration application is exited while pending edits exist on the configuration screens, you are prompted that `Pending edits exist, do you want to save or exit without saving the changes?`

`Navigate`		
	Unit Configuration...	`Unit Configuration Options` window.
	Alarms Reported...	Displays the Team 600 `Alarms Reported/Thresholds` window.
	All Screens...	Displays all subordinate windows of the application
`Help`	Displays `Help` screen.	

Menu Buttons	Menu Selections	Description
`Fields` (Read-Only)		
	Name	This is the shelf name, identified by slot number and symbol label.
	Slot State	Gives you the state of the shelf slot, either as `Active` or `Inactive`.
	Operational Status	Shows you the state of the current unit, either as `Up` or `Down`.
	Serial Number	Presents the serial number of the unit.
	Firmware Revision	Shows latest firmware revision on the unit.
	Mib Version	Shows mib version of the unit.
	DTE Card Type	Plug-in DTE Card Type (Unit 611 only)

Unit Configuration Options

The Team 600 `Unit Options` window *(*Figure 3-2) lets you define unit interface characteristics for the unit. This screen is presented when you choose `Navigate-->Unit Configuration Options` on the 600 configuration main window.

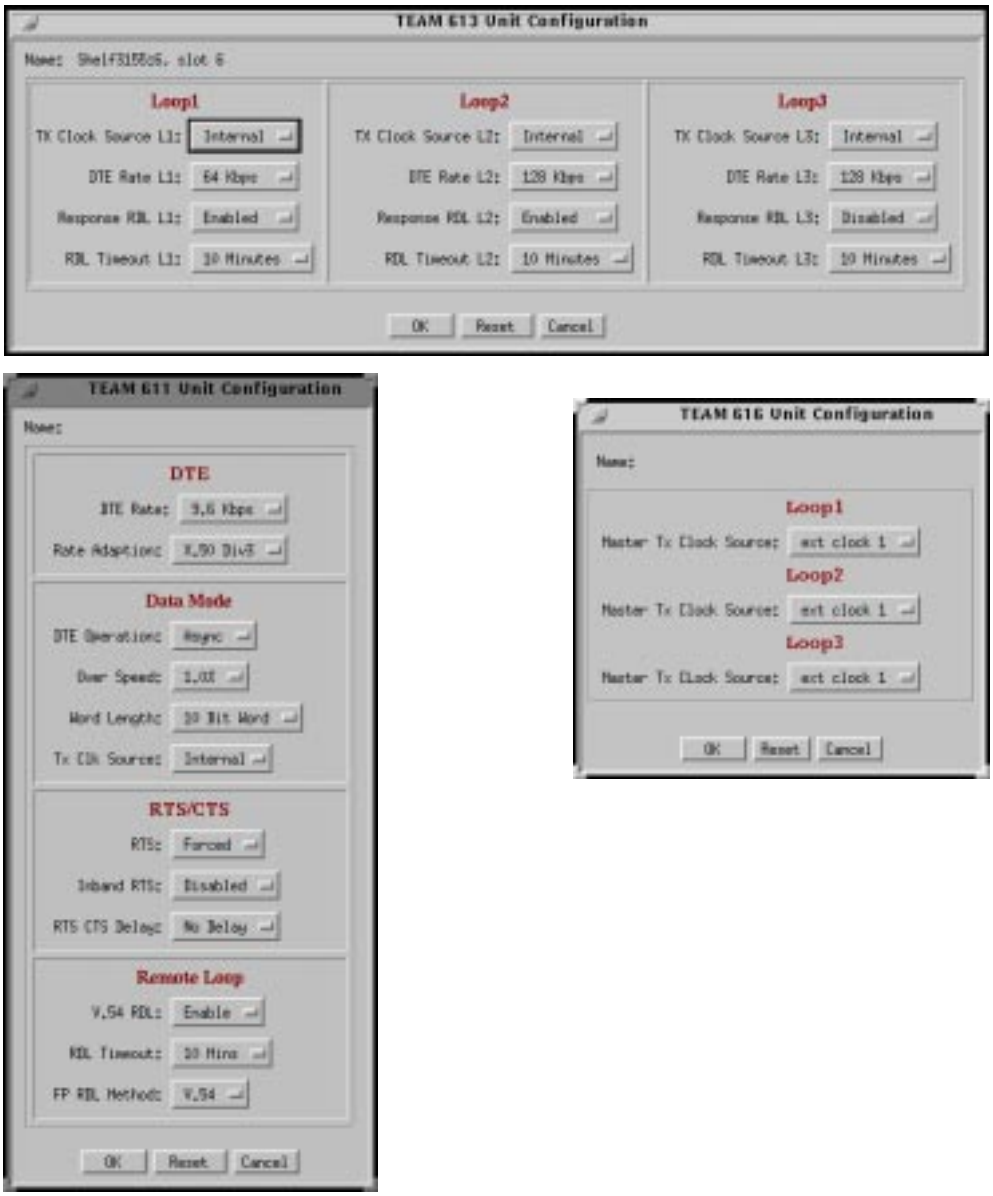


Figure 3-2 Team 600 Unit Options Windows for the 611, 613, and 616 Units

Figure 3-2 shows you the configuration windows for all three 600 products that allows you to configure unit options, such as described below. `Name` is the shelf name, slot, and symbol label of the selected slot symbol from the shelf map and is a read-only field. It appears with the same designation on all other subordinate screens.

611 Unit Options	Description
DTE	
DTE Rate	In Kbps: 2.4, 4.8, 9.6, 19.2, 48, **64**, and 128
Rate Adaption	**X.50 Div3**, X.50 Div2
Data Mode	
DTE Operation	**Sync**, Async
Over Speed	**1.0%**, 2.3%
Word Length	8 Bit Word, 9 Bit Word, **10 Bit Word**, and 11 Bit Word
Tx Clk Source	**Internal**, External
RTS/CTS	
RTS	**Normal**, Forced
Inband RTS	Enable, **Disable**
RTS CTS Delay	**No Delay**, Delay
Remote Loop	
V.54 RDL	**Enable**, Disable
RDL Timeout	**None**, 10 Minutes
FP RDL Method	**V.54**, EOC
613 Unit Options: Loops 1, 2, and 3	
Tx Clk Source	**Internal**, External
DTE Rate	In Kbps: **64** and 128
V.54 RL	**Enabled**, Disabled
V.54 RL Timeout	**No Timeout**, 10 Minutes
616 Unit Options: Loops 1, 2, and 3	
Master TX Clock Source	**External Clock 1**, External Clock 2
Note: If DTE operation is Async, then TX Clk Source is grayed out. If DTE operation is Sync, then Over Speed and Word Length is grayed out. Defaults in bold print.	

Action Buttons	
OK	Dismisses the windows with edits retained. Same function as the mouse click-on, pin-pull.
Reset	Undoes pending edits since last the File-->Save to Unit.
Cancel	Same as Reset, it dismisses the screen.

Alarms Reported

The Team 600 `Alarms Reported` window (Figure 3-3) lets you designate the alarms that are to be masked (not reported) or unmasked (reported). This screen is shown when `Navigate->Alarms Reported` is selected on the 600 Configuration main window. This screen lets you configure alarm reporting. Note that unit default values for all alarm masks are not reported.

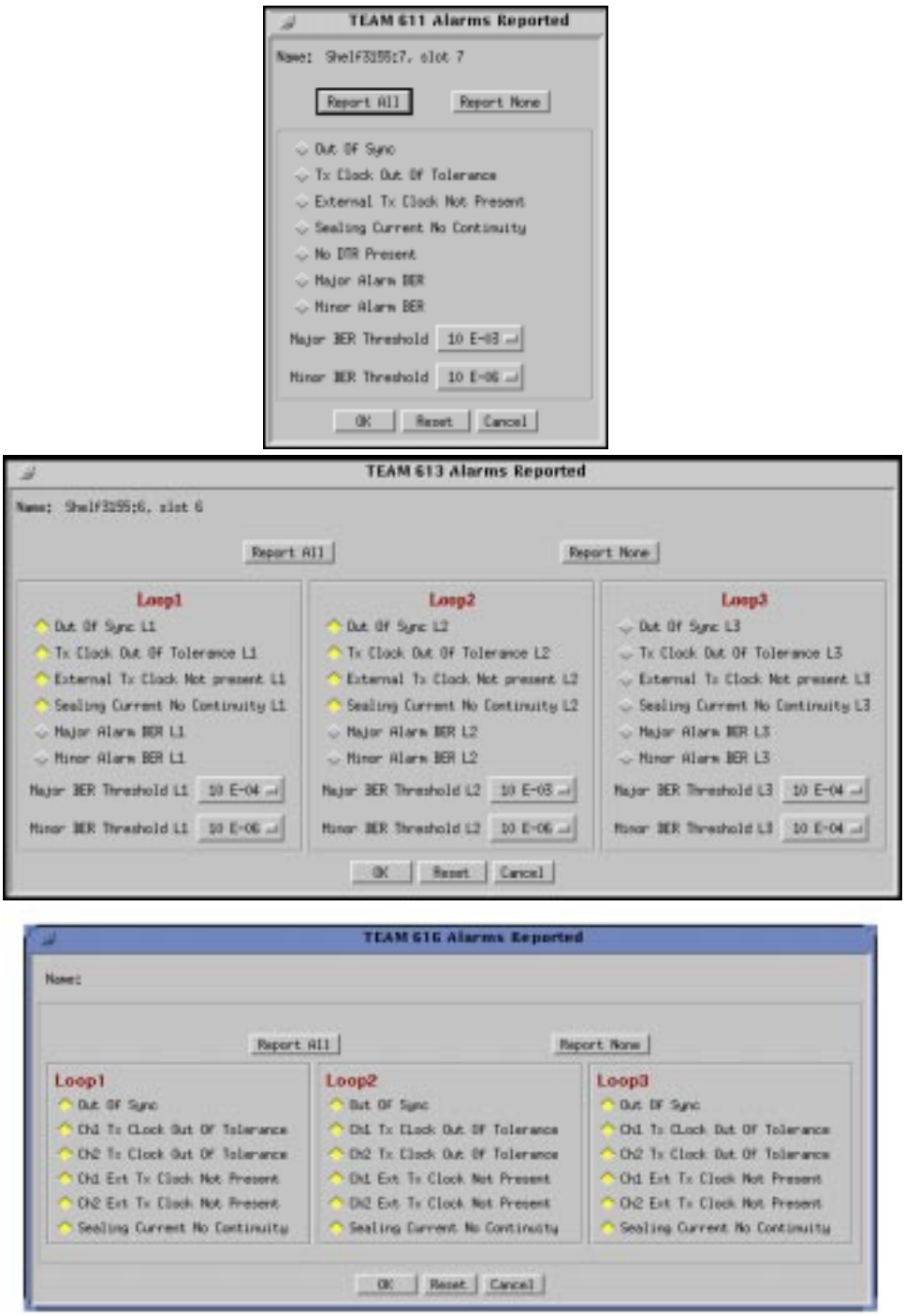


Figure 3-3 Team 600 Alarms Reported Window for the 611, 613, and 616 Units

611 Alarms	Description
Out of Sync	Indicates that framing on the U-loop signals has not been acquired (or has been lost).
Tx Clock Out OF Tolerance	Indicates that the DTE supplied data clock is out of tolerance. This alarm is valid when optioned for external transmit clock timing.
External Tx Clock Not Present	Indicates that the DTE supplied transmit data clock has not been detected (or has been lost). This alarm is valid when optioned for external transmit clock timing.
Sealing Current No Continuity	Indicates that the two-wire connection to the U-loop has not been detected (or has been broken).
No DTR Present	Indicates that the cable connection to the DTE has not been detected or is broken.
Major Alarm BER	Received bit error rate exceeds selected major alarm threshold.
Minor Alarm BER	Received bit error rate exceeds selected minor alarm threshold.
Major BER Threshold	Refer to *Threshold Values for Determining Major/Minor Alarms* below.
Minor BER Threshold	Refer to *Threshold Values for Determining Major/Minor Alarms* below.

613 Alarms, Loops 1, 2, and 3	
Out of Sync	Indicates that framing on the U-loop signals has not been acquired (or has been lost).
Tx Clock Out OF Tolerance	Indicates that the DTE supplied data clock is out of tolerance. This alarm is valid when optioned for external transmit clock timing.
External Tx Clock Not Present	Indicates that the DTE supplied transmit data clock has not been detected (or has been lost). This alarm is valid when optioned for external transmit clock timing.
Sealing Current No Continuity	Indicates that two-wire connection to the U-loop has not been detected (or has been broken).
Major Alarm BER	Received bit error rate exceeds selected major alarm threshold.
Minor Alarm BER	Received bit error rate exceeds selected minor alarm threshold.
Major BER Threshold	Refer to *Threshold Values for Determining Major/Minor Alarms* below.
Minor BER Threshold	Refer to *Threshold Values for Determining Major/Minor Alarms* below.

Threshold Values for Determining Major/Minor Alarms	
1E-04 (default for major alarm)	1 x 10^{-4} bit error rate, threshold = 1 x 10^{-4}, i.e., bit error rate exceeds 1 x 10^{-4}--maj/min alarm declared
1E-05	1 x 10^{-5}bit error rate, threshold = 1 x 10^{-5}, i.e., bit error rate exceeds 1 x 10^{-5}--maj/min alarm declared

1E-06 (default for minor alarm)	1 x 10^{-6} bit error rate, threshold = 1 x 10^{-6}, i.e., bit error rate exceeds 1 x 10^{-6}--maj/min alarm declared
1E-07	1 x 10^{-7} bit error rate, threshold = 1 x 10^{-7}, i.e., bit error rate exceeds 1 x 10^{-7}--maj/min alarm declared
1E-08	1 x 10^{-8} bit error rate, threshold = 1 x 10^{-8}, i.e., bit error rate exceeds 1 x 10^{-8}--maj/min alarm declared

616 Alarms, Loops 1, 2, and 3	
Out of Sync	Indicates that framing on the U-loop signals has not been acquired (or has been lost).
Ch1 Tx Clock Out OF Tolerance	Indicates that the DTE supplied data clock for Channel 1 is out of tolerance. This alarm is valid when optioned for external transmit clock timing.
Ch2 Tx Clock Out OF Tolerance	Indicates that the DTE supplied data clock for Channel 2 is out of tolerance. This alarm is valid when optioned for external transmit clock timing.
Ch1 Tx Clock Not Present	Indicates that the DTE supplied transmit data clock for Channel 1 has not been detected (or has been lost). This alarm is valid when optioned for external transmit clock timing.
Ch2 Tx Clock Not Present	Indicates that the DTE supplied transmit data clock for Channel 2 has not been detected (or has been lost). This alarm is valid when optioned for external transmit clock timing.
Sealing Current No Continuity	Indicates that two-wire connection to the U-loop has not been detected (or has been broken).

Action Buttons	
Report All	Selects all alarms for reporting.
Report None	Deselects all alarms, no alarms reported.
OK	Dismisses the windows with edits retained. Same function as the mouse click-on, pin-pull.
Reset	Undoes pending edits since last the File-->Save to Unit.
Cancel	Same as Reset, it dismisses the screen.

Circuit Configuration

This screen is shown when `Configuration->Circuit Configuration` is selected on the Shelf Map menu or from the front panel select button. This screen allows adding or deleting remotes.

Add Remote/Delete Remote

This screen is shown when `Navigate->Add Remote` is selected on the 600 Configuration main window (Figure 3-4). This screen provides a mechanism to add a dedicated remote to the 600 unit. The `Display` (text box) area displays the `Loop Number`, `Unit Type`, and the `Serial Number` of the unit.

Figure 3-4 Team 600 Add Remote or Delete Options Window

Unit Options	Description
`Name`	Shelf name, slot, or `Symbol Label` of the selected slot symbol from the shelf map.
`Serial Number`	This is the serial number of the remote unit to be added. User inputs this field.
`Unit Type`	This is the unit type menu where the user selects type designating remote to be added.
`Loop Number`	Loop number is the main selection option. Unit type and serial number always correspond with the selected loop number.
`File->Refresh`	Causes the screen data to be refreshed from the SCM node table.
`File->Exit`	Exits application and dismisses window.

Action Buttons	
`Add Remote`	Used to add a remote once a location and serial number have been entered.
`Delete Remote`	Used to delete a remote once a remote has been selected from the list.

Chapter 4: Maintenance

Introduction

The Team 600 Maintenance application provides a group of functions for controlling the operation of a 600 device.

Note *The* `TEAM 600 Maintenance` *application is a GUI screen which provides selections for options that are considered transitional and are not included in the configuration screen.*

You can start the Team 600 Maintenance application by either of two methods:

- Select a 600 unit symbol on a submap in `OpenView`, then select the `Maintenance` option from the `Configuration` menu. Or,
- Click on the `Select` button of the Front Panel display, then click on `Configuration` and select `Maintenance` from the resulting menu.

Maintenance Window Buttons

The `Maintenance` window (Figure 4-1) has four action buttons on the figure below.

Figure 4-1 Maintenance Window

Menu Buttons	Menu Selections	Description
`File`		
	`Exit`	Terminates application with outstanding edits discarded.

Menu	
Action Buttons	**Description**
`Reset to Factory Defaults`	Initiates a reset to default configuration parameters.
`Perform Soft Reset`	Initiates a board reset and disrupts data transfer.
`Inhibit/Enable Front Panel`	Inhibits or enables front panel push-buttons.
`Reset Statistics`	Resets all statistics to zero for that unit or loop.
Note: Selecting `Reset to Factory Defaults` for the 600 remotes causes the remote unit to become deleted from the `Configuration-->Add/Delete Remote` screen on Team 7616, 7626, 7624, 616, 613, or 611; thus, communication to the remote unit would be lost.	

`Name` is read-only.

Reset Statistics Loops

Featured in Figure 4-2 is the window for the `TEAM 600 Maintenance Reset Statistics`.

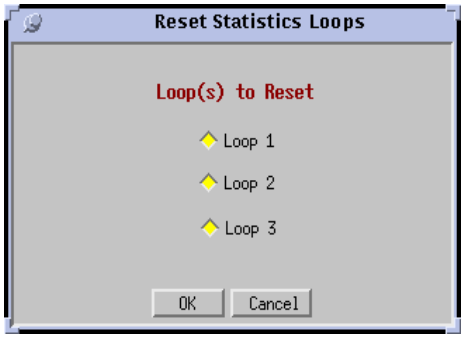


Figure 4-2 Maintenance: Reset Statistics Loops Window for the 613 and 616 Units

Action Buttons	Description
`OK`	Activates selections and dismisses the window.
`Cancel`	Dismisses the screen.

Chapter 5: Diagnostics

Overview

The `Diagnose` menu provides access to the Team 600 Diagnostic screen, which provides the command and results display functions for all tests you can perform on the DSU by means of the TEAM application. The diagnostics window displays the results of the most recent test until you begin another one. `600 Diagnostics` is launched from the Shelf Map `Fault Menu`. The application is made up of one main window and a transient window, giving you testing history, which is called the `Diagnostics History` screen. It is accessible from the main `Diagnostics` window and displays the results of all tests performed during the current session.

The tests you can do from the `Diagnostics` window are divided in two categories: `Master Tests` and `Master-Remote Tests`. When using the diagnostic functions, refer to the appropriate *600 Installation and Operation Manual*.

Diagnostics Window

The `Diagnostics` window (Figure 5-1) is broken down into three different areas: operations, navigation through subordinate screens, and basic help, identified as `File`, `Navigate`, and `Help`. The only selection in the file menu is `Exit` for dismissing the application. The only selection in the Navigate menu is `History`, which causes the application to display the `Diagnostics History` window (Figure 5-1) holding the results of all tests done during the current session.

Diagnostic test fields, test control buttons, graphic displays (test diagrams), test results, and status messages make up the main part of the window. Status reports or messages give the viewer up-to-date data on the application.

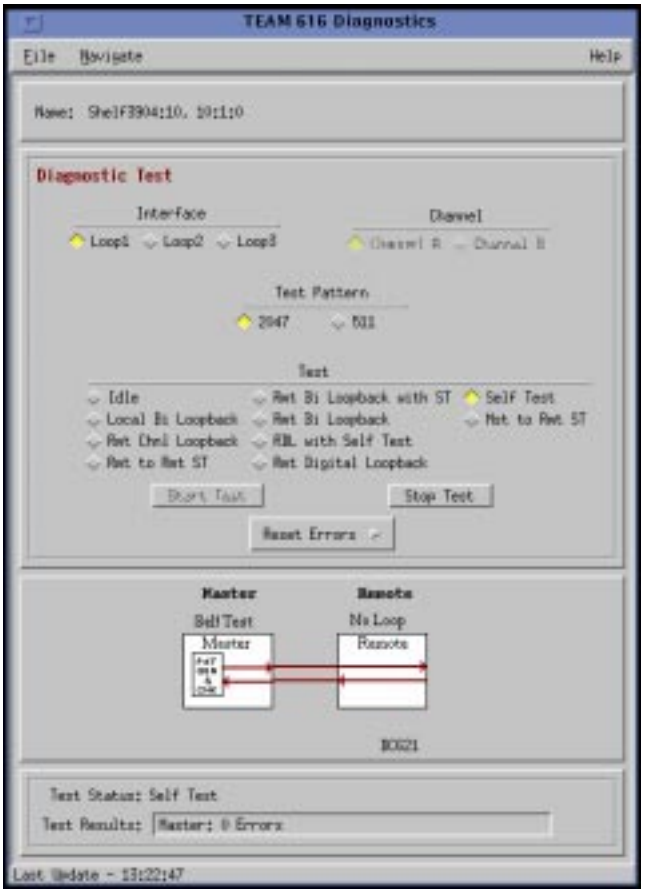


Figure 5-1 Team 600 Diagnostics Window for the Unit 616

Menu Buttons	Menu Selections	Description
`File`		
	Exit	Terminates application.
`Navigate`		
	History...	Displays the `600 Diagnostics History` window
`Help`	Displays `Help` screen.	

Menu Buttons	Menu Selections	Description
Fields		
	Name	This is the shelf name, identified by slot number and symbol label (read-only).
	Diagnostic Test	
	Interface	Loops 1, 2, or 3
	Channel	Channel A or Channel B
	Test Pattern	Pattern 2047 or 511
	Test	
	Self Test	Initiates test pattern generations and checking.
	Local Bi Loopback	Local Bilateral Loopback places the master in digital and channel loopbacks.
	Rmt Chnl Loopback	Remote Channel Loopback places the remote in channel loopback, looping data received from the DTE back out to the DTE.
	Rmt to Rmt ST	Remote to Remote Self Test. Activates the test pattern generator and checker in the selected remote unit, which then transmits its test pattern to the master unit. For this test to provide useful results, it must also be commanded in a second remote unit: the one the first remote communicates with 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.
	Rmt Digital Loopback	Remote Digital Loopback directs the master to place the Remote 1 Digital Loopback, looping data received from the U-Loop back out to the U-Loop.
	Rmt Bi Loopback	Remote Bilateral Loopback places the remote in digital and channel loopbacks.
	Rmt Bi Loopback with Self Test	When the remote line loopback is connected, the data received by the remote module from the local is returned by the 600 system module on the receive path, within the remote's equipment interface. Therefore, during normal operation the local equipment should receive its own signal without errors. The local transmit signal is passed to the remote equipment connected to the 600 system, however, the signal transmitted by the remote is lost. Remote line loopback is generally used to test the proper operation of the 600 link end-to-end, and therefore should be used after normal operation is obtained while the remote 600 loopback is connected.
	RDL with Self Test	Remote Digital Loopback with Self-Test performs remote digital loopback and places the master in test pattern generation and checking.
	Mst to Rmt Self Test	Master to Remote Self-Test places the master and remote in test pattern generation and checking.

Test Buttons	Description
Start Test	Pressing this button starts the test selected in the menus.
Stop Test	Pressing the button sends commands to stop all tests running in the unit.
Reset Errors	This button enables you to reset errors to 0 on the master unit individually.

Graphical Display Area	This area contains a graphical representation of the selected 600 and its interface to the shelf and network. Arrows show the current data paths and are changed to show the loopback paths selected for each test.

Test Status	Displays the status of the diagnostic test. The following are displayed:

Idle **Local Bi Loopback** **Rmt to Rmt ST** **Rmt Digital Loopback**

Rmt Chnl Loopback **Rmt Bi Loopback** **Self Test** **Mst to Rmt Self Test**

RDL with Self Test **Rmt Bi Loopback with Self Test**

Test Results	Displays the test results in bit errors. Only displayed for tests when the Pattern Generator is on.

Note *The Team 600 application polls the unit every 35 seconds while the Diagnostics window is open. In order to reduce unnecessary LAN traffic, the Diagnostics window should be closed when it is not in use.*

Test Instructions

Do the following steps to carry out test:

1. Select the test to be done by clicking on the check box to the left of its name.
2. Click on the Start Test button. The data path display panel exhibits the path for the test you have selected, the Test Status field changes from Idle to the test name.
3. If you are running a Self Test, the Reset Bit Errors button is available while the test runs. The reset button returns the error count to zero. The Stop Test button is available during any test.

While running a test, the application displays the results in the Test Results window area.

Diagnostics History, 600

The diagnostics history application is used to log test information after the test is terminated.You see the diagnostics history when you choose Navigate->History on the 600 Diagnostics main window. Results of diagnostics tests for a current session are shown to you (Figure 5-2).

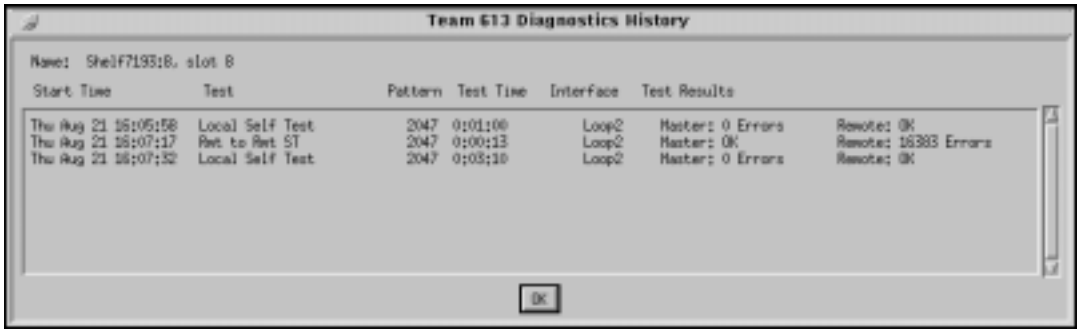


Figure 5-2 Team 600 Diagnostics Window

Fields (Read-Only)	**Description**
`Name`	Shelf name
`Start Time`	Date and time the test started
`Test`	The specific test done
`Pattern`	Test pattern selected (511 or 2047)
`Test Time`	Total time elapsed since the test started: hours:minutes:seconds format
`Test Results`	`OK`: for a test that does not involve Selftest, or for a test with Selftest where no errors occurred `Bit Errors`: followed by a bit error number for a test with Selftest where errors were found.

Action Buttons	
`OK`	Dismisses the screen.

Chapter 6: Remote 600 Team Applications

Overview for the Remotes: 610, 612, 621, and GT 128

This chapter describes the TEAM 600 applications for the UAS remote devices, specifically: 610, 612, 621, and GT 128, which we refer to as the remote units or Remotes in this chapter. Graphical User Interface (GUI) windows are part of the description. The UAS manager applications are built on the HP OpenView network management platform. HP Open View provides the framework for the user interface application and the SNMP protocol for the communications framework. These units are remote units linked to the UAS 7616, 7626, 7624, or SC 600 series (611, 613, and 616) in the SpectraComm Shelf.

Communications

UAS uses Simple Network Management Protocol (SNMP) to carry out configuration, maintenance, status, and other functions on the SCM and cards of the remotes. The IP (Internet Protocol) addressable SCM is an SNMP agent that proxies requests to the other cards in the SpectraComm Shelf. Alarms from the devices are sent to the HP OpenView Manager via SNMP Traps. The Manager furnishes the protocol stack for the SNMP Communications.

User Interface

The Graphical User Interface for the UAS remotes (600 Management) consists of several applications that are integrated to run under HP OpenView. The applications are summarized here:

- Front Panel
- Configuration
- Alarms
- Reports
- Maintenance
- Information

The following are GUI screens for the UAS remotes which are integrated into HP OpenView. The application windows presented deal specifically with the 600 family products. The Graphical Shelf and SCM applications are handled as core functionality across the SpectraComm products and are not presented in this manual.

Front Panels, Remote Applications

The front panel status application lets you see the image of the face plate of the card for the front panels of the remote units.

You begin this application by double clicking on the 7616, 7626, 7624, (or SC 600 series 611, 613, and 616) card slot icon on the `Graphical Shelf Application` and immediately shown to you is the `Element Submap`. Arrayed in this `Element Submap` is a 7616, 7626, 7624, or SC 600 series (611, 613, and 616) unit icon, shown connected to as many as six 600 remote unit icons. Figure 6-1 is an example of an `Element Submap`.

You have two ways to access a specific 600 front panel: either (1) single click on one of the icons of the 600 remote units and then choose `Performance->Front Panel`; or (2) double click on one of the 600 remote unit icons in the `Element Submap`.

The front panel image (See Figure 6-2) represents LED images animated to reflect actual card status. Offering you a summary of the real-time events that the unit is undergoing, this application gives you a convenient launching point for all the other major applications related to these 600 series products.

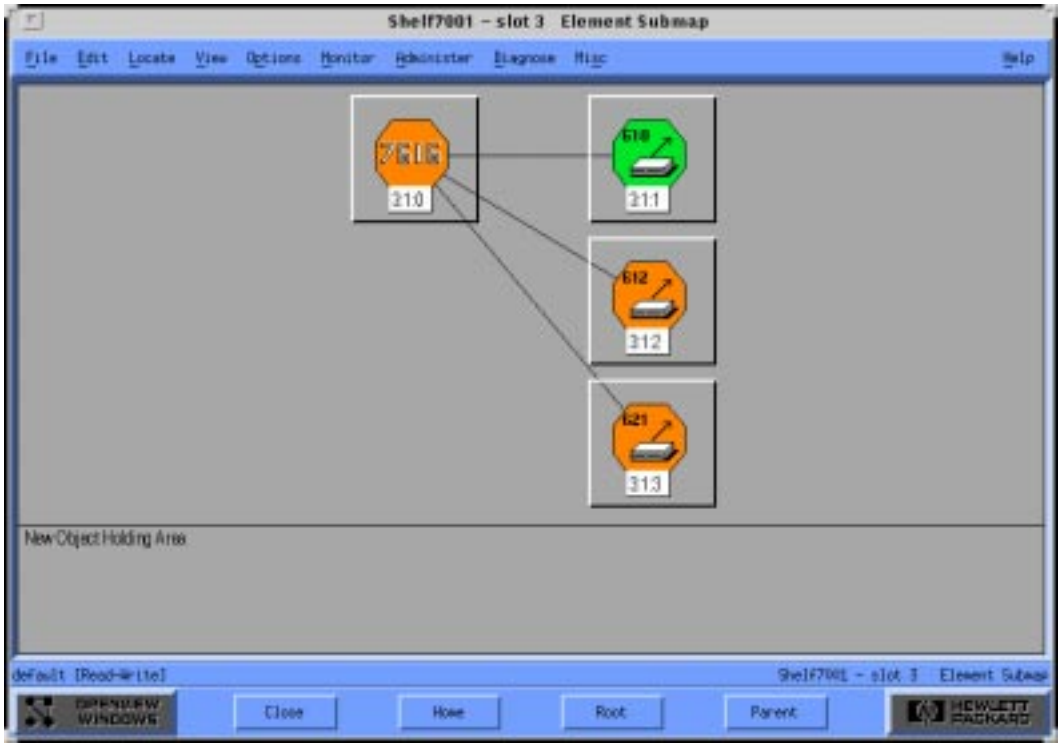


Figure 6-1 Element Submap (7616) with the 600 Products (Remote Units)

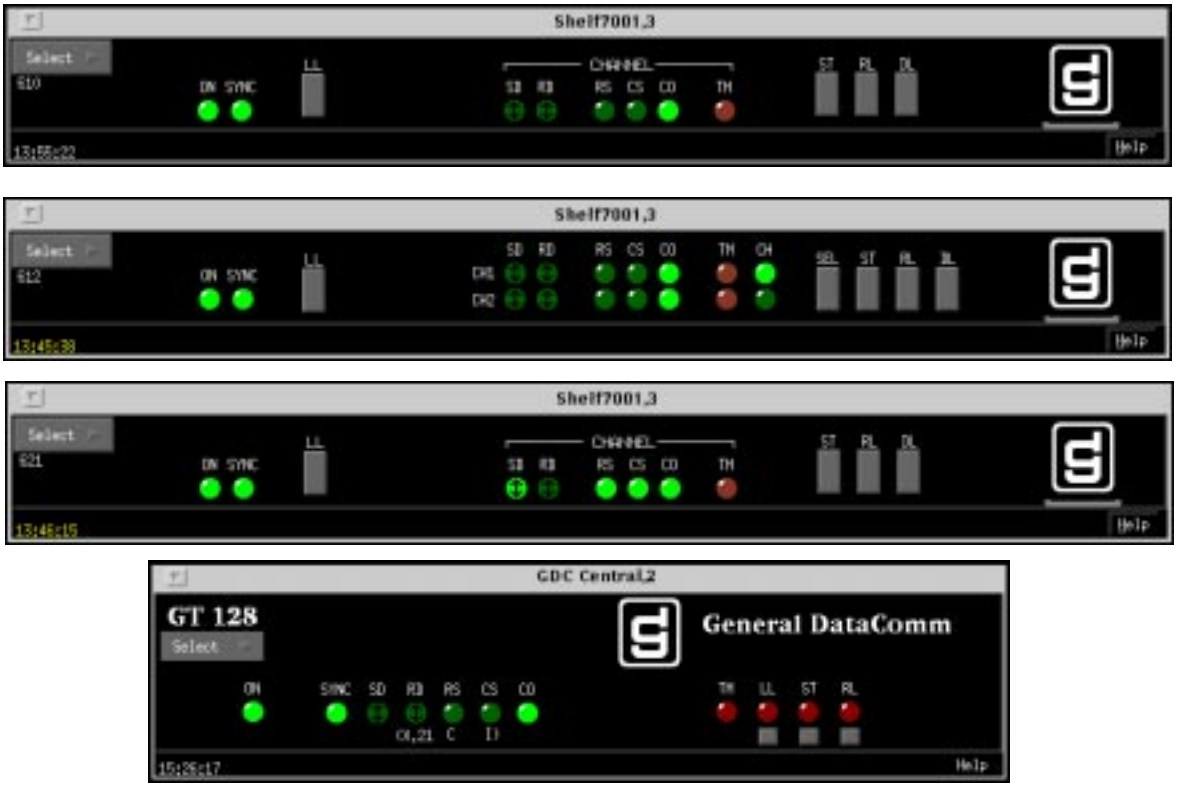


Figure 6-2 Remote Front Panels

The GDC icon executes an information screen about the application. Table 6-1 defines illuminated LEDs for the remote front panels.

Table 6-1 Remote Front Panels LEDs

LED Displayed	LED Function
ON	Power is on, indicated by bright green.
SYNC	Unit is in sync with the 611, 613, 616, 7616, 7624, and 7626.
SD	Send Data means data transmission on channel.
RD	Receive Data indicates receiving data on channel.
RS	Request-to-Send on channel
CS	Clear-to-Send on channel
CO	Carrier on channel
TM	Test Mode indicates unit is running a diagnostic test on the channel.

Table 6-1 Remote Front Panels LEDs (Continued)

CH (612 only)	Shows which channel is active, CH1 or CH2.
LL (GT 128 only)	Local Loop is bright red while the unit is in a local loop, initiated from the front panel push buttons.
ST (GT 128 only)	Self Test is bright red while the unit is in a self test, initiated from the front panel push buttons.
RL (GT 128 only)	Remote Loop is bright red while the unit is in a remote loop, initiated from the front panel push buttons.

Buttons for the remote front panels are identified in Table 6-2.

Table 6-2 Remote Front Panel Buttons

Button	Button Function
Help	Selects front panel descriptions
Select	Contains a menu with selections for:
• Performance	Alarms, Reports
• Configuration	Configuration, Maintenance
• Misc	Information
• Demand Poll	Polling of status to update the front panel
• Auto Poll	Periodic polling of status to update the front panel at 15, 30, or 60-second rates
• Exit	Closing the front panel application

Button images for the remote front panels (display only) are identified in Table 6-3.

Table 6-3 Remote Front Panel Button Images

Button	Button Function for Physical Front Panel
LL	Line Loopback test
ST	Self Test
RL	Remote Loopback test
DL	Data Loopback test
SEL	Toggle between the DTE channels for diagnostic test (612 only).
Note: GDC icon executes an information screen about the application.	

Status Message Area

The status message area displays messages which describe application activity and unit interaction. Examples are: time, not responding, etc.

Configuration of Remotes

The Graphical User Interface for the Configuration Application incorporates features for optioning the remote products. With the Configuration Application, you have access to unit level parameters via the SNMP queries when Windows are displayed or refreshed. Through SNMP set commands, modifications are applied to the unit. The configuration application has templates for copying the same configurations to other units. Configuration templates are stored permanently and are easily accessed. You can initiate the Configuration Application for each 600 unit on the open map.

The configurations of the remotes are launched from the HPOV Element Submap by first selecting a particular 600 remote unit, then choosing `Configuration->Configure` from the Menu bar or from the Front Panel application `Select` button menu. One main window and a set of transient windows, offering unit optioning, make up this application. Included are the 600s configuration (main widow), Unit Configuration Options, Alarms Reported, and All Screens.

Configuration - Main Window

The main window is comprised of four areas. The title bar provides the product name and configuration type. The name field contains the Shelf name, slot number and symbol label. The menu bar provides file operations, navigation through subordinate screens and help. The main body of the window is composed of administrative read-only fields. The status message area at the bottom of the screen provides insight into the state of the application (See Figure 6-3). Note that the four 600s main window configuration screens are all very similar to each other, except that the 612 has two DTE card types, `DTE1` and `DTE2`.

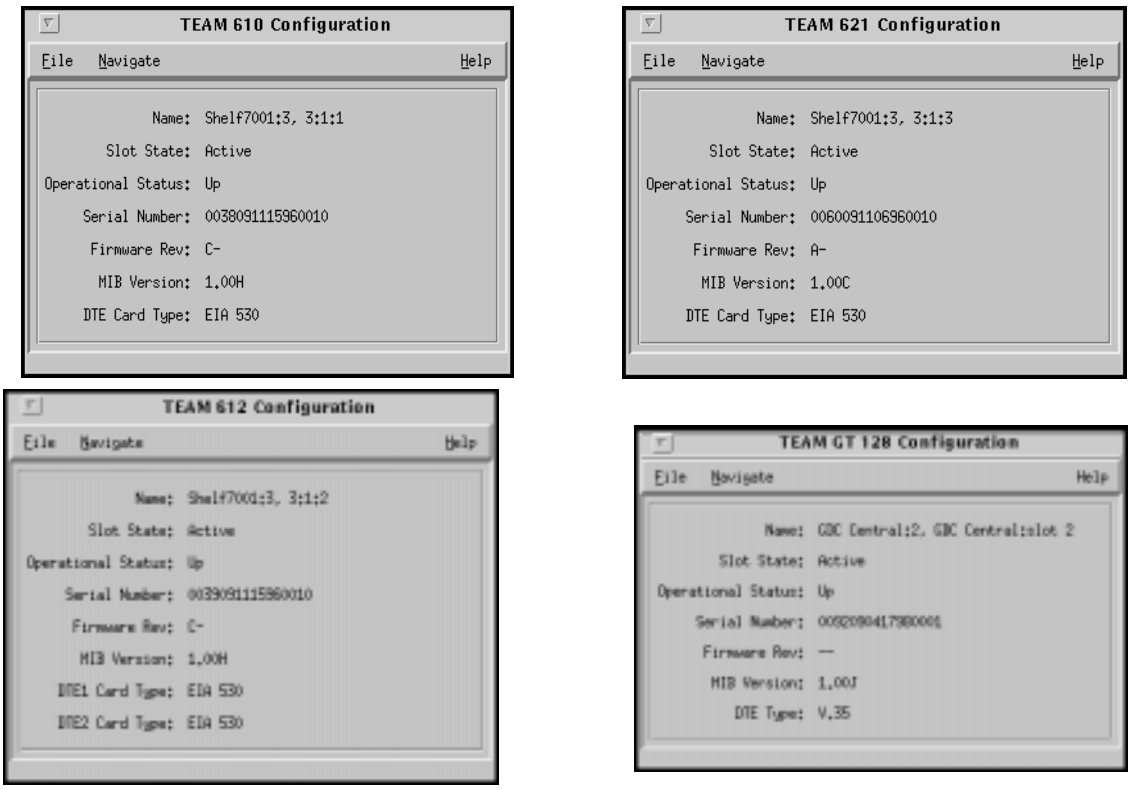


Figure 6-3 Configurations for the Remotes - Main Window Screens

Table 6-4 Remote Units File Menu

File Menu	
`File -> Refresh`	Causes all options to be read from the unit; outstanding edits are lost.
`File -> Save to Unit`	Causes all outstanding edits to be sent to the unit and saved.
`File -> Load Template`	Allows the selection of an existing template of the remote units to be applied as edits to the current application. (A subsequent `File -> Save to Unit` operation implements the template changes.)
`File -> Save to Template`	Causes the configuration data of a unit to be saved as a specific template.
`File -> Compare to Template`	Causes the template file data to be compared to the configuration screen data and differences identified.
`File -> Exit`	Causes outstanding edits to be discarded first and then terminates the application.

Table 6-5 Navigate Menu of the Remotes

Navigate Menu	
`Navigate -> Unit Configuration Options`	Displays the Options window.
`Navigate -> Alarms Reported`	Displays the `Alarms Reported/Thresholds` window.
`Navigate -> All Screens`	Reads and displays all configuration screens.

Table 6-6 Help Option of the Remotes

`Help`	Causes help to be displayed.

Table 6-7 Display Fields of the Remotes

Fields (Note that all fields on this screen are read-only.)	
`Name`	Shelf name, slot, and symbol label of the selected slot symbol from the shelf map
`Slot State`	State of the shelf slot: active or inactive
`Operational Status`	State of the current unit: up or down
`Serial Number`	Unit serial number
`Firmware Version`	Unit firmware version
`MIB Version`	Unit Management Information Base (MIB) version
`DTE Card` (Channel 1 or 2) (For 612 only)	Plug-in DTE type. Read-only types are V.35 or X.21.

`Status Message`. Status message area displays messages, describing application activity and unit interaction. Possible examples are: writing, saving to template, etc.

Unit Configuration Options

Their screens are shown when `Navigate->Unit Configuration Options` is selected on the Configuration main windows of the remotes. This screen allows configuration of the major options of the unit (See Figure 6-4).

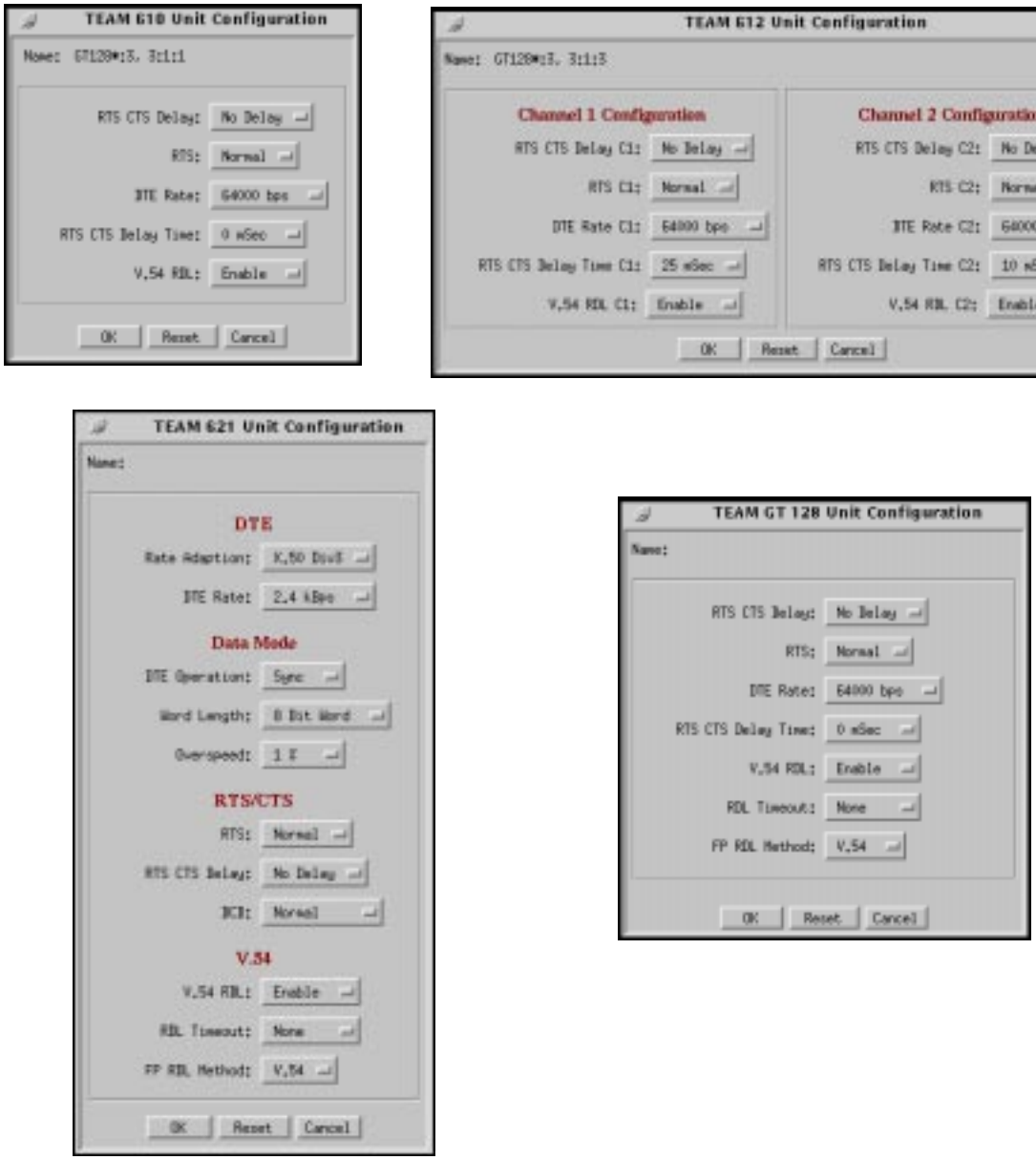


Figure 6-4 Unit Configuration Options Window Screens of the Remotes

`Name` is a read-only field.

Table 6-8 Configuration Options of the Remote Units

Unit Options	
`RTS CTS Delay`	Delay or **no delay**
`RTS`	**Normal** or force

Table 6-8 Configuration Options of the Remote Units

DTE Rate	2400, 4800, 9600, 19200, 38400, 48000, 56000, 57600, **64000**, 128000 bps For the 610, 612, and the GT 128 only 64000 and 128000 bps are available.
RTS CTS Delay Time	**0**, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75 milliseconds
V.54 RDL	Disable or **Enable**
621 and GT 128 Options	
Rate Adaption	X.50 Div2 or **X.50 Div3 (621 only)**
DTE Operation	Async or **Sync (621 only)**
Word Length	8, 9, **10**, or 11-bit word **(621 only)**
Overspeed	**1** or 2.3% **(621 only)**
DCD	**Normal** or inband RTS **(621 only)**
RDL Timeout	**None** or 10 minutes (option for the GT 128 also)
FP RDL Method	PN127 or **V.54** (option for the GT 128 also)
Action Buttons	
OK	Holds edits and dismisses the screen.
Reset	Undoes pending edits since last File->Save to Unit operation.
Cancel	Same as Reset and dismisses the screen.
Note: Defaults are in bold.	

Alarms Reported

These screens are shown when Navigate->Alarms Reported is selected on the 600 series Configuration main windows (See Figure 6-5). Screens permit you to configure Alarm reporting with thresholds. You can report or not report any individual alarm by selecting the alarm. A selected alarm means that the alarm is reported in an SNMP Trap from the SCM to the Controller. The name field is read-only.

Table 6-9 Alarms of the Remote Units

Alarm	Function
Channel 1 DTR	Loss of DTR (DC610, 612, 621, or GT 128)
Channel 2 DTR	Loss of DTR on DC612 Channel 2 (DC612 only)
Major Alarm BER	Major alarm on Bit Error Rate (DC621 only)
Minor Alarm BER	Minor alarm on Bit Error Rate (DC621 only)
Note: Threshold - (621 only) Major Alarm BER and Minor Alarm BER choices are 10^{-3}, 10^{-4}, 10^{-5}, and 10^{-6}.	

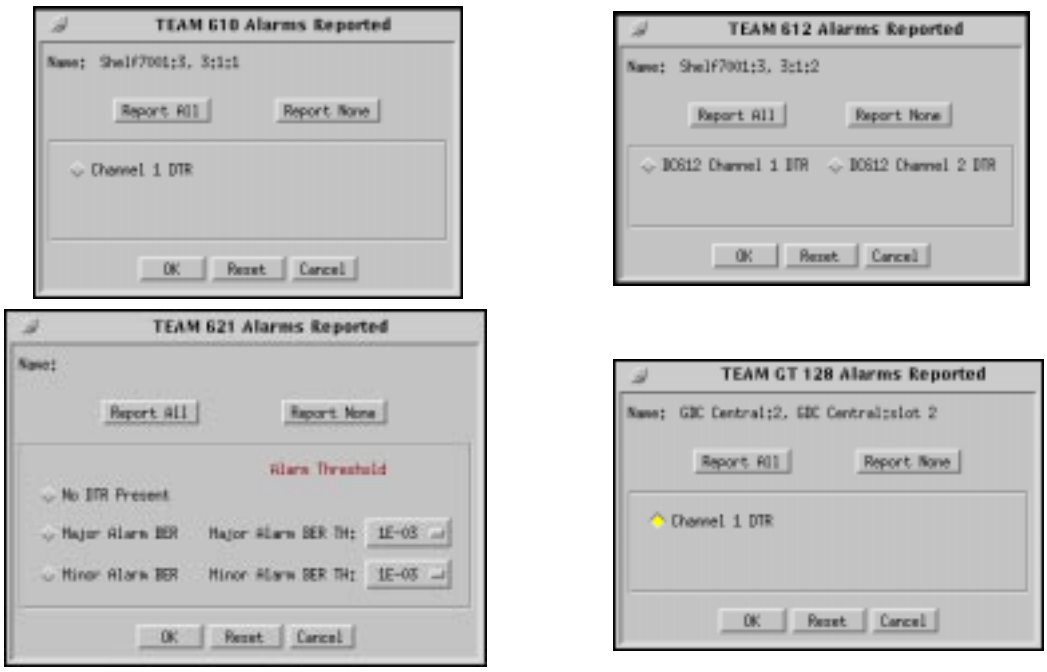


Figure 6-5 Alarms Reported Screens of the Remote Units

Table 6-10 Alarms of the Remote Units

Action Buttons	
`Report All`	Selects all alarms for reporting.
`Report None`	Deselects all alarms, no alarms reported.
`OK`	Holds edits and dismisses the screen.
`Reset`	Undoes pending edits since last `File->Save to Unit` operation.
`Cancel`	Same as Reset and dismisses the screen.

Template Supports for the Remote Units

Device configurations are saved in a file and are known as templates, which can be applied similarly to configure other units. You can `Save`, `Load`, or `Compare` templates by accessing the File menu; and when you invoke one of these three operations, you see a dialog window where you are asked to specify the template file name.

Alarm Detail

The remote unit Alarm Detail is launched from the HPOV Map `Performance->Alarm` or from the Front Panel menu. The alarms for each 600 product are depicted on the screen, as shown in Figure 6-6. `No DTR Present` alarm is only applicable if the GT 128 has a DTE type of V.35.

Figure 6-6 Alarm Detail Screens of the Remote Units

Reports

Description of the reports application is in Chapter 2.

Diagnostics

The diagnostic application is located in the 7616, 7626, 7624, 616, 613. or 611 application. No diagnostic tests emanate from the 600 remote products.

Maintenance

Description of the reports application is in Chapter 4.

Information

Description of the reports application is in Chapter 2.

Index

General DataComm