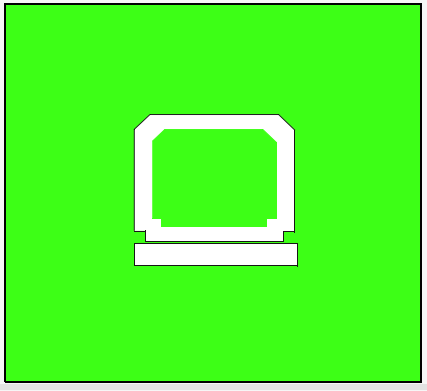
Adtran DSU/CSU



Supports Management Module SM-ADT1000

APRISMA SPECTRUM® POWERED SOLUTIONS

Device Management

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Introduction

This section introduces the SPECTRUM Device Management documentation for the Adtran series of devices.

This introduction contains the following topics:

Purpose and Scope

Use this document as a guide for managing the Adtran devices described on Page 8 with SPECTRUM management module SM-ADT1000. This document describes the icons, menus, and views that enable you to remotely monitor, configure, and troubleshoot Adtran devices through software models in your SPECTRUM database.

Information specific to SM-ADT1000 is what is primarily included in this document. For general information about device management using SPECTRUM and explanations of SPECTRUM functionality and navigation techniques, refer to the topics listed under *Required Reading*.

Required Reading

To use this documentation effectively, you must be familiar with the information covered by the other SPECTRUM online documents listed below.

- ***Getting Started with SPECTRUM for Operators***
- ***Getting Started with SPECTRUM for Administrators***
- ***How to Manage Your Network with SPECTRUM***
- ***SPECTRUM Views***
- ***SPECTRUM Menus***
- ***SPECTRUM Icons***
- ***SPECTRUM Software Release Notice***

Supported Devices

SPECTRUM management module SM-ADT1000 currently allows you to model the Adtran Family of devices which includes Frame Relay Performance Monitoring devices, Multiplexers, and Enterprise Integrated Access devices. The following series of devices are supported:

IQ Series

The IQ Series of performance monitoring devices provide performance statistics of a Frame Relay network.

- **DSU IQ** Supports 56/64k Frame Relay and 100 DLCIs. EIA-232 and V.35 DTE Interfaces.
- **TSU IQ** Supports T1/FT1 Frame Relay access. Single V.35 DTE Interface. 100 DLCIs supported.
- **TSU IQ+** Supports T1/FT1 Frame Relay access and TDM voice. DSX-1 and V.35 DTE Interfaces. 100 DLCIs supported.
- **IQ Probe** Frame aware monitoring device that fits between router and existing DSU/CSU. Frame Relay utilizing EIA-232, V.35, EIA-530, and X.21 Interfaces.

DSU Series/TSU Series

- **DSU IV ESP** All-rate DSU/CSU with embedded SNMP, EIA-232 and V.35 DTE Interfaces.
- **TSU ESP** Single port T1/FT1 DSU/CSU. Single V.35 DTE interface, automatic or manual Dial Backup. LAN to LAN bridging, Frame Relay circuit termination.

T1 Multiplexers

- **TSU 120e** T1/FT1 multiplexer with synchronous V.35 DTE interface and DSX-1 PBX port. Built-in 10BaseT Ethernet interface.
- **TSU 600e** Channel bank replacement device. Six expansion with 12 to 24 ports per chassis. Integrated 10BaseT port. Supports up to 24 DTE interfaces.

Total Access System

- **Total Access 850**

Features for voice and data, VoDSL, IP router, management, and a path to ATM. Capability to access ports on or off using inband management, turn features, functions, and access ports.

DSU/CSU and ISDN Rackmount Solutions

- **Smart 16/16e Shelf**

Rackmount system that holds up to 16 DSU, ISU, and TSU products.

ATLAS Series

Scalable integrated access systems that support voice, data, and video applications.

- **ATLAS 800** A multi-function integrated access device. Eight slot modular platform with two network interfaces configurable for T1, DSX-1 or PRI operation. 10BaseT Ethernet interface. Functions as T1/T3 bandwidth manager, ISDN access switch, remote access concentrator and Digital Access Cross-Connect System (DACS).
- **ATLAS 800PLUS** Has the same functionality as the ATLAS 800 with additional Frame Relay voice, data concentration, switching, and Integral 10BaseT and IP Router. Supports external routers via V.35 or T1.
- **ATLAS 550** Similar functionality to the ATLAS 800 but has six slot modular chassis. Two network interface slots (one T1/PRI module included in chassis). Functions as a multi-T1 IAD, ISDN switch, Frame Relay concentrator/switch.

The SPECTRUM Model

The model type for the Adtran devices is **AdtranDev**. This model represents all of the Adtran devices except for the Atlas Series.

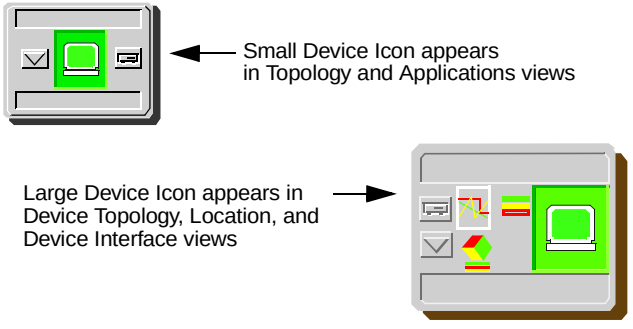
The model type for the Atlas Series is the **AtlasDev**.

Modeling results in the creation of Device icons that represent the devices and Application icons that represent their supported applications.

The Device icons contain double-click zones and provide access to Icon Subviews menus that let you perform device management activities such as those listed in *Tasks* on Page 12.

As Figure 1 shows, the appearance of the Device icons varies slightly depending on the kind of view it appears in.

Figure 1: Device Icons



The device-specific Icon Subviews menu options available from the Device icon are listed in Table 1.

Table 1: Icon Subviews Menu Options

Option	Accesses the...
Fault Management	For further information refer to ***How to Manage Your Network with SPECTRUM***.
Device	*Device View* (Page 14)
DevTop	*Device Topology Views* (Page 20)
Application	*Application Views* (Page 22)
Configuration	*Configuration Views* (Page 120)
Product Information	*Adtran Product View* (Page 122)
Model Information	*Model Information View* (Page 124)
Primary Application	Menu options that let you select either Gen Bridge App or MIB-II as the primary application.

The rest of this document covering the Adtran management module is organized as follows.

The Adtran ATLAS devices also contain a *Chassis Device View* (Page 17) and a *DevTop Chassis View* (Page 21).

Tasks

This section contains an alphabetical list of device management tasks, with each task providing one or more links to views that let you perform the task.

Administrative Information (check)

- *Model Information View* (Page 124)

Alarm Thresholds (set)

- *Interface Icon Subviews Menu* (Page 16)

Configuration Information (check/change)

- *System Configuration Information View* (Page 42)
- *Network Port Configuration View* (Page 44)
- *DTE Port Configuration View* (Page 45)
- *PVC Configuration Table View* (Page 46)
- *DBU Configuration View* (Page 47)
- *Unit Configuration View* (Page 106)
- *Network Configuration View* (Page 107)
- *DBU Configuration View* (Page 108)
- *ISDN DBU Configuration View* (Page 109)
- *Port Configuration View* (Page 110)
- *Dial Configuration View* (Page 111)

DS1 Alarm Traps for Line Status Event Changes (enable/disable)

- *Adtran DS1 Alarm Event Table View* (Page 37)

DS1 Alert Traps for Performance Monitor Threshold Crossing Alerts (enable/disable)

- *Adtran DS1 Threshold Crossing Alert Table View* (Page 38)

DTE Transmit Clock Source (select)

- *Port Configuration View* (Page 110)

Fractional T1 Channels (select number of)

- *Port Configuration View* (Page 110)

IP Address (find/change)

- *Device View* (Page 14)
- *Secondary Address Panel* (Page 17)

Network Alarm State (check)

- *System Configuration Information View* (Page 42)

Network Type (check)

- *Network Type Label* (Page 16)

Performance (check)

- *Device View* (Page 14)
- *Interface Icons* (Page 15)
- *Performance Views* (Page 119)

DS1 Performance Statistics (reset)

- *Unit Configuration View* (Page 106)

SNMP Traps (enable/disable)

- *Unit Configuration View* (Page 106)

Start Channel Number (select)

- *Port Configuration View* (Page 110)

Telnet and Vt100 Terminal Control Password (Set)

- *System Configuration Information View* (Page 42)

Topology (check)

- *Device Topology Views* (Page 20)

TSU ESP Data inversion (enable/disable)

- *Port Configuration View* (Page 110)

TSU ESP forced DTS (enable/disable)

- *Port Configuration View* (Page 110)

TSU ESP inband Mode (select)

- *Port Configuration View* (Page 110)

TSU ESP Performance Reports (enable/disable)

- *Network Configuration View* (Page 107)

TSU ESP Transmission Line Build Out (set)

- *Network Configuration View* (Page 107)

TSU ESP Yellow Alarm (enable/disable)

- *Network Configuration View* (Page 107)

Device View

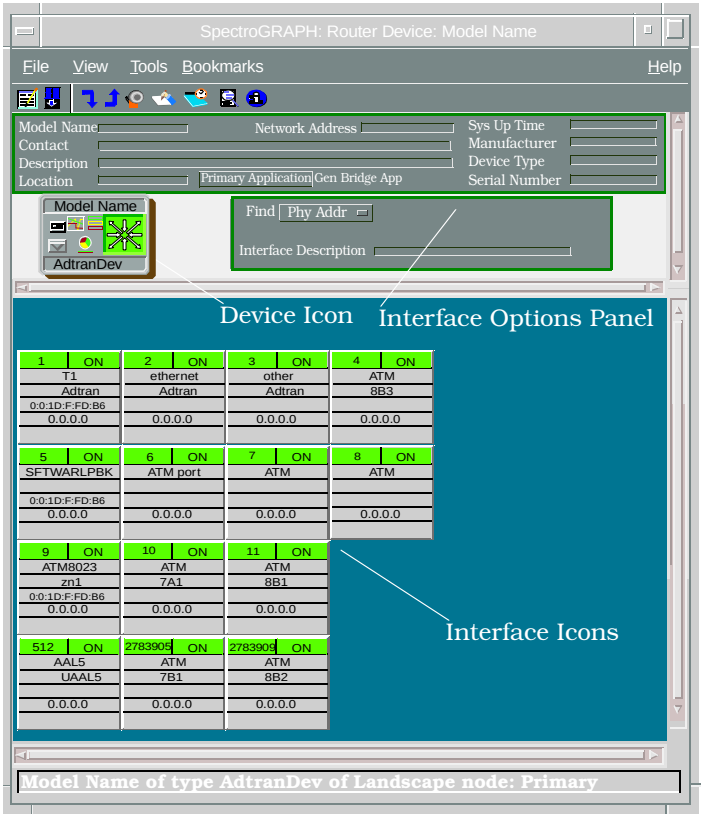
This section describes the Device view and subviews available for models of Adtran devices in SPECTRUM.

Access: *From the* ***Icon Subviews*** *menu for the Device icon, select* ***Device****.*

Interface Device View

This view (Figure 2) uses icons and labels to represent the device and its components, such as modules, ports, and applications. The view provides dynamic configuration and performance information for each of the device's serial and network I/O ports, which are represented by Interface icons in the bottom panel of the view. The middle panel of the view displays a Device icon, which lets you monitor the device operation and access other device-specific views.

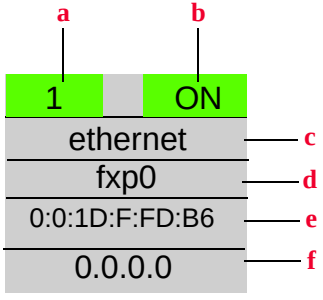
Figure 2: Interface Device View



Interface Icons

Figure 3 shows a close-up of an Interface icon from the Device view. Most of the informational labels on the icon also provide double-click access to other views, as explained in the following label descriptions.

Figure 3: Interface Icon



a *Interface Number Label*

b *IF Status Label*

c *Interface Type Label*

d *Network Type Label*

e *Physical Address Label*

f *IP Address Label*

Interface Number Label

This label displays the interface (port) number.

IF Status Label

This label displays the current status of the interface for the primary application selected, e.g., Gen Rtr App or MIB-II App. Table 2 lists the possible label color representations. Note that the color of the label also depends on the interface's current Administrative Status, which you set in the Interface Configuration view. This view can be accessed by double-clicking the Interface Type label.

Table 2: Interface Status Label Colors

Color	Operational Status	Administrative Status	Label Text
Green	up	up	ON
Blue	down	down	OFF
Yellow	down	up	OFF
Red	testing	testing	TEST

Interface Type Label

This label identifies the interface type (Ethernet, ATM, etc.). Double-click this label to access the Interface Configuration view, see the ***SPECTRUM Views*** documentation.

Network Type Label

This label identifies the type of network to which the interface is connected. Double-click the label to open the Model Information view for the interface.

Physical Address Label

This label displays the physical (MAC) address of the interface. Double-click this label to open the IF Address Translation Table.

IP Address Label

This label displays the IP address for the interface. Double-click this label to open the *Secondary Address Panel* (Page 17), which lets you change the address and mask for the interface.

Interface Icon Subviews Menu

Table 3 lists the device-specific interface Icon Subviews menu options and the views to which they provide access.

Table 3: Interface Icon Subviews Menu

Option	Accesses the...
Detail	Interface Detail view, which displays packet, error, and discard breakdown statistics for the interface.
IF Configuration	Interface Configuration view (see ***SPECTRUM Views***).
Address Translation Table	Address Translation Table (AT) see ***SPECTRUM Views***).
Secondary Address Panel	*Secondary Address Panel* (Page 17).
Thresholds	Interface Threshold view, which lets you set the on/off alarm thresholds for load, packet rate, error rate, and % discarded for the interface.
Model Information	*Model Information View* (Page 124).
Trap Configuration	Interface Trap Configuration view (see ***How to Manage Your Network with SPECTRUM***).

Secondary Address Panel

Access: *From the **Icon Subviews** menu for the Interface icon in the Device view, select **Secondary Address Panel**.*

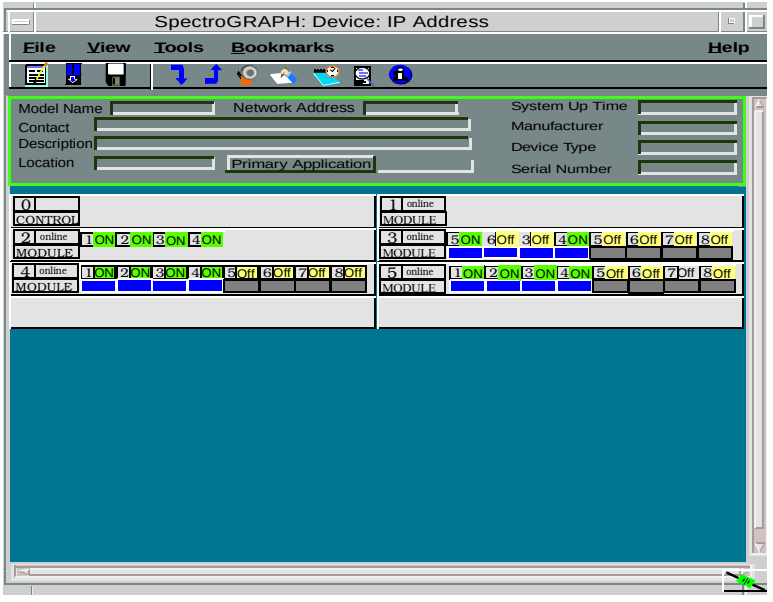
This panel provides a table of IP addresses and masks obtained from the Address Translation table within the device's firmware. You can change the current address displayed in the **IP Address** field by selecting an entry from the table in this panel and clicking the **Update** button.

Chassis Device View

Access: *From the **Icon Subviews** menu for the Atlas Device icon, select **Device > Chassis.***

This view provides information about the status of module and module ports, and allows you to determine the type and status of said modules and module ports installed on the switch.

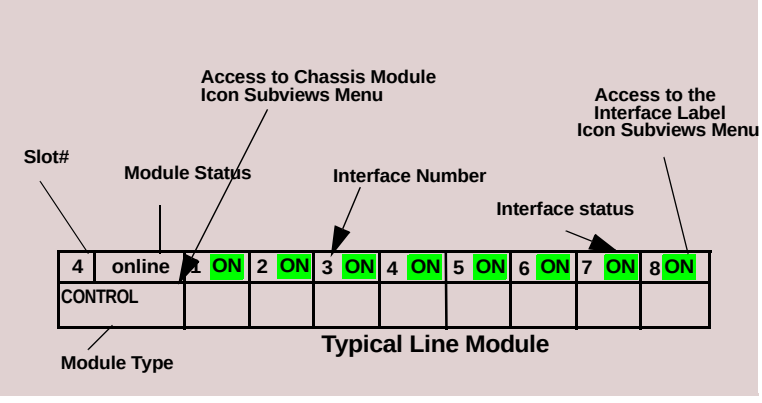
Figure 4: Chassis Device View



Chassis Module Icons

These icons (Figure 5) represent the physical modules as installed in the chassis.

Figure 5: Chassis Module Icon



Module Identification Labels

These labels display the following information:

Slot Number Label - The location of the module within the chassis.

Module Type Label - The type of network interface module in the chassis slot.

Module Status Label - The LED online status of the module. The status is shown as either online (buff), flashing (green) or offline (blue).

Interface Labels

These labels display the following information:

Interface Number Label - The number and type for this interface.

Interface Status Label - The current status of this interface. See Table 2, *Interface Status Label Colors* (Page 15).

Chassis Module Icon Subviews Menu

The Icon Subviews menu selections specific to the Chassis Module for each device within the Adtran Atlas chassis is:

Module Notes - Opens the Module Notes window, which allows you to write and save notes for the selected module within this Chassis view.

Module Detail - Opens the General Option Card Module Detail View.

Module LED Status - Opens the Module LED Front Panel Detail View.

General Option Card Module Detail View

Access: *From the **Icon Subviews** menu for the Module in the Chassis Device view, select **Module Detail.***

Module Index
The index number of the Option Card Module.

Overall Status
Indicates the overall status of the module. Possible values are `OK`, `ONLINE`, `TESTING`, `DOWNLOAD`, `FLASH_DOWNLOAD`, `ERROR`, and `ALARM`.

Module LED Front Panel Detail View

Access: *From the **Icon Subviews** menu for the Module in the Chassis Device view, select **Module LED Status.***

Slot Index
The index number of the slot.

Card Status
The status of the Module.

Online Status
Indicates whether the module is online, flash or offline.

Test Status
Indicates whether the module is in test mode or not.

Device Topology Views

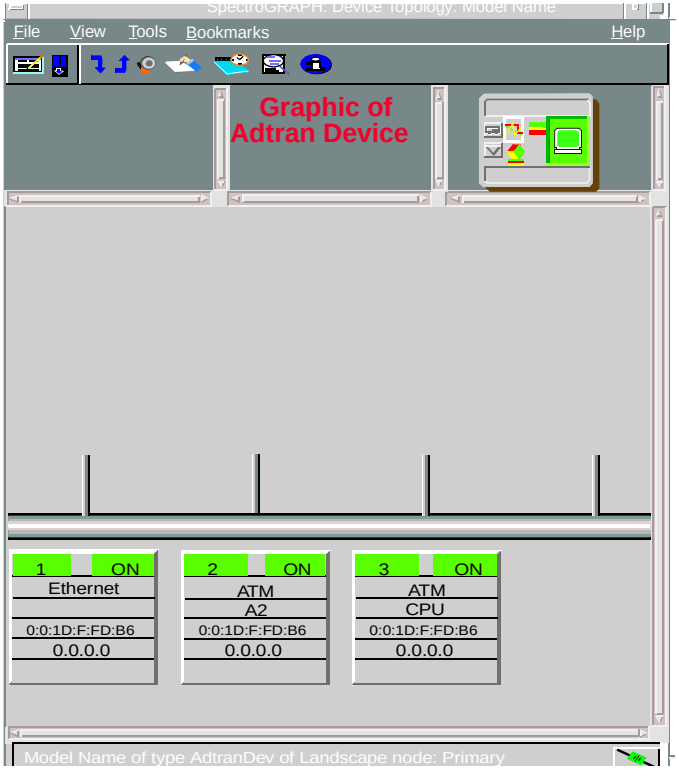
This section describes the Device Topology view available for models of the Adtran devices.

Device Topology View

Access: *From the* ***Icon Subviews*** *menu for the Device icon, select* ***DevTop****.*

The Device Topology view (Figure 6) shows the connections between a modeled device and other network entities. The lower panel of the view uses Interface icons to represent the device's serial, network, and I/O ports. These icons provide the same information and menu options as those in the *Device View* (Page 14). If a device is connected to a particular interface, a Device icon appears on the vertical bar above the Interface icon along with an icon representing the network group that contains the device.

Figure 6: Interface Topology View



Sub-Interfaces Topology View

Access: *From the* ***Icon Subview*** *menu for an Interface icon whose interface contains sub-interfaces, select* ***Sub-Interfaces****.*

When present, the endpoints associated with multiplexed, physical connections are modeled by SPECTRUM as sub-interfaces. This includes, for example, Permanent Virtual Circuits (PVCs) on a physical ATM interface and DCL circuits on a physical Frame Relay interface. In this case, the Sub-Interfaces View displays a DLCI port icon which provides access to port information.

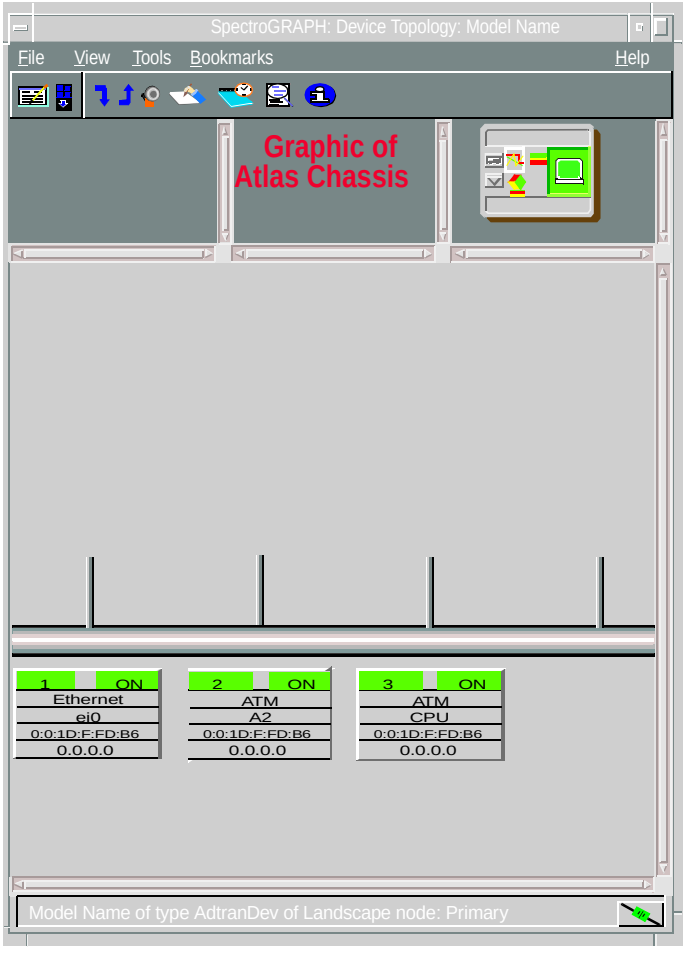
DevTop Chassis View

Access: *From the* ***Icon Subviews*** *menu for the Atlas Device icon, select* ***DevTop > Chassis****.*

The lower panel of the Chassis Device Topology View depicts device and network connections for each port on a selected module. Select a module by clicking on its image within the top middle panel. The interface icons in this view provide the same information and menu options as those described under the *Interface Icons* (Page 15).

Refer to the ***SPECTRUM Views*** documentation for more information on the Device Topology views.

Figure 7: Chassis Topology View



Application Views

This section describes the main Application view and the associated application-specific subviews available for models of Adtran devices in SPECTRUM.

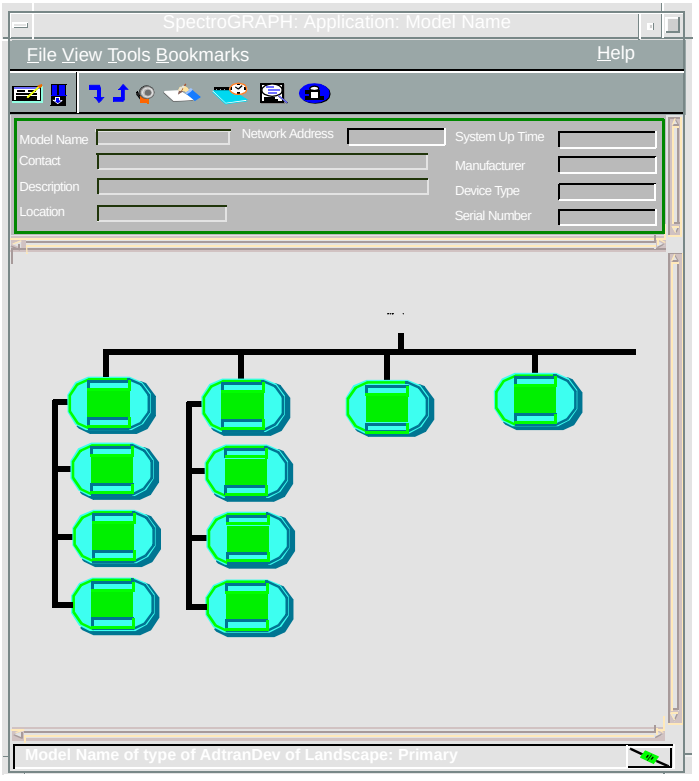
Access: *From the* ***Icon Subviews*** *menu for the Device icon, select* ***Application****.*

Main Application View

When a device model is created, SPECTRUM automatically creates models for each of the major and minor applications supported by the device. The main Application view identifies all of these application models, shows their current condition status, and provides access to application-specific subviews. Figure 8 shows this view in the Icon mode. If you prefer the List mode, which displays applications as text labels, select **View > Mode > List**.

For more information on this view, refer to ***MIBs and the Application View*** documentation.

Figure 8: Main Application View



Supported Applications

SPECTRUM's applications can be grouped within two general categories as follows:

- Applications associated with non proprietary MIBs. See *Common Applications* below.
- Applications associated with device-specific MIBs. See *Device-Specific Applications* (Page 24).

Common Applications

For the most part, these applications represent the non proprietary MIBs supported by your device. Listed below (beneath the title of the SPECTRUM document that describes them) are some of the common applications currently supported by SPECTRUM.

Note: The documents listed below (in bold font) are available for viewing at: www.aprisma.com/manuals/

- ***Routing Applications***
  - Generic Routing
  - Repeater
  - AppleTalk
  - DECnet
  - OSPF
  - OSPF2
  - BGP4
  - VRRP
  - RFC 2932
- ***Bridging Applications***
  - Ethernet Special Database
  - Spanning Tree
  - Static
  - Transparent
  - PPP Bridging
  - Source Routing
  - Translation
  - QBridge
- ***MIB II Applications***
  - SNMP
  - IP
  - ICMP
  - TCP
  - System2
  - UDP
- ***Transmission Applications***
  - FDDI
  - Point to Point
  - DS1
  - DS3

- RS-232
- WAN
- Frame Relay
- Token Ring
- Ethernet
- Fast Ethernet
- RFC 1317App
- RFC 1285App
- RFC 1315App
- 802.11App
- SONET

- ***Technology Applications***
  - APPN
  - ATM Client
  - DHCP
  - DLSw
  - PNNI
  - RFC 1316App
  - RFC 1514
  - RFC 2287
  - RFC 2790
  - RFC 2925

- ***DOCSIS Applications***
  - DOCSISCblDvApp
  - DOCSISQOSApp
  - DOCSISBPI2App
  - DOCSISBPIApp
  - DOCSISIFApp

- ***Digital Subscriber Line (DSL) Applications***
  - ADSL

Device-Specific Applications

SPECTRUM imports the following device-level proprietary MIBs into its database for all Adtran devices:

- ADTRAN-MIB
- ADTRAN-DS1-MIB
- ADTRAN-ATLAS800-MIB
- ADTRAN-ATLAS-GENERAL-OPTIONCARD-MIB
- ADTRAN-ATLAS-INTERFACE-MIB
- ADTRAN-ATLAS-FRONTPANEL-MIB
- ADTRAN-ATLAS-V35NX4-MIB
- ADTRAN-DSUIV-MIB
- ADTRAN-TSUESP-MIB
- ADTRAN-TSU120e-MIB
- ADTRAN-TSU600e-MIB
- ADTRAN-DSUIQ-MIB
- ADTRAN-TSUIQ-MIB
- ADTRAN-IQPROBE-MIB
- ADTRAN-FRPerform-MIB
- ADTRAN-Smart16CTL-MIB

These MIBs can be used in conjunction with SPECTRUM's optional customization products (referred to as the Level I Tool Kits) to create application models and views that display the condition of selected MIB objects.

Note: Aprisma Management Technologies can provide training, technical assistance, and custom engineering support services for creating application models and their associated views.

The views and subviews available for Adtran device-specific applications are described in the rest of this section, grouped by major applications as listed below:

The following applications are available only for Adtran ATLAS devices:

- *Adtran ATLAS Front Panel Group Application (AdATLFrPnlApp)* (Page 114)
- *Adtran ATLAS V35Nx4 Application (AdATLV35Nx4App)* (Page 117)

Adtran Frame Relay Performance Application (AdFRPerformApp)

This application provides the following subviews:

- *History Control Information View*
- *Current PVC Status Table View* (Page 26)
- *Interval PVC Status Table View* (Page 27)
- *Interval Port Status Table View* (Page 29)
- *Interval Port Error Table View* (Page 30)
- *Interval History Time Table View* (Page 31)
- *Daily PVC Status Table View* (Page 32)
- *Daily Port Status Table View* (Page 34)
- *Daily Port Error Table View* (Page 35)
- *Daily History Time Table View* (Page 36)

History Control Information View

Access: *From the **Icon Subviews** menu for the AdFRPerformApp icon, select **History Control.***

This view provides the following information.

History Interval Length
This value selects the sampling interval period for data collected in the interval table. Possible values are `min5`, `min10`, `min15`, `min20`, and `min30`.

Current Interval Time Remaining
Seconds remaining in the current interval.

Completed Intervals
The number of completed intervals in interval tables.

Completed Days
The number of completed days in the day table.

Current PVC Status Table View

Access: *From the **Icon Subviews** menu for the AdFRPerformApp icon, select **PVC Status**.*

This view provides the following information for Permanent Virtual Circuits (PVCs).

If.Status Index
The instance for this entry.

PVC State
The current state for this PVC.

Interval PVC Status Table View

Access: *From the **Icon Subviews** menu for the AdFRPerformApp icon, select **Interval PVC Status**.*

This view provides the following information.

If.PVC.Slot Index
The instance for this entry.

State Change
The number of state changes for this PVC for the interval.

Inactive Time
The time in seconds the PVC has been in the inactive state for the interval.

Frames Rx
The number of frames the PVC has received for the interval.

Frames Tx
The number of frames the PVC has transmitted for the interval.

Bytes Rx
The number of bytes the PVC has received for the interval.

Bytes Tx
The number of bytes the PVC has transmitted for the interval.

Avg Thruput Tx
The average throughput the PVC has transmitted for the interval.

Avg Thruput Rx
The average throughput the PVC has received for the interval.

Max Thruput Tx
The maximum throughput the PVC has transmitted for the interval.

Max Thruput Rx
The maximum throughput the PVC has received for the interval.

Avg Utilization Tx
The average utilization the PVC has transmitted for the interval.

Avg Utilization Rx
The average utilization the PVC has received for the interval.

Max Utilization Tx
The maximum utilization the PVC has transmitted for the interval.

Max Utilization Rx
The maximum utilization the PVC has received for the interval.

Burst Tx
At this time there is no MIB support for this field.

Burst Rx
At this time there is no MIB support for this field.

FECN Rx
The number of Forward Explicit Congestion Notifications (FECNs) the PVC has received for the interval.

FECN Tx
The number of FECNs the PVC has transmitted for the interval.

BECN Rx
The number of Backward Explicit Congestion Notifications (BECNs) the PVC has received for the interval.

BECN Tx
The number of BECNs the PVC has transmitted for the interval.

DE Rx
The number of DEs the PVC has received for the interval.

DE Tx
The number of DEs the PVC has transmitted for the interval.

CR Rx
The number of CRs the PVC has received for the interval.

CR Tx
The number of CRs the PVC has transmitted for the interval.

Min Frame Size Rx
The minimum frame size the PVC has received for the interval.

Min Frame Size Tx
The minimum frame size the PVC has transmitted for the interval.

Max Frame Size Rx
The maximum frame size the PVC received for the interval.

Max Frame Size Tx
The maximum frame size the PVC transmitted for the interval.

Avg Frame Size Rx
The average frame size the PVC received for the interval.

Avg Frame Size Tx
The average frame size the PVC transmitted for the interval.

Lost Frames
The number of Lost Frames on the PVC for the interval. Applies only if Sequence Numbering is enabled for the PVC.

Remote Lost Frames
The number of Remote Lost Frames on the PVC for the interval. Applies only if Sequence Numbering is enabled for the PVC.

Max Delay
The maximum delay in milliseconds on the PVC for the interval. Applies only if Delay Measurement is enabled for the PVC or PVC Diagnostics are being performed.

Min Delay
The minimum delay in milliseconds on the PVC for the interval. Applies only if Delay Measurement is enabled for the PVC or PVC Diagnostics are being performed.

Avg Delay
The average delay in milliseconds on the PVC for the interval. Applies only if Delay Measurement is enabled for the PVC or PVC Diagnostics are being performed.

Interval Port Status Table View

Access: *From the **Icon Subviews** menu for the AdFRPerformApp icon, select **Interval Port Status**.*

This view provides the following information.

If.Slot Index
The instance for this entry.

Frames Rx
The number of frames the port received for the interval.

Frames Tx
The number of frames the port transmitted for the interval.

Bytes Rx
The number of bytes the port received for the interval.

Bytes Tx
The number of bytes the port transmitted for the interval.

Avg Thruput Tx
The average throughput the port transmitted for the interval.

Avg Thruput Rx
The average throughput the port received for the interval.

Max Thruput Tx
The maximum throughput the port transmitted for the interval.

Max Thruput Rx
The maximum throughput the port received for the interval.

Avg Utilization Tx
The average utilization the port transmitted for the interval.

Avg Utilization Rx
The average utilization the port received for the interval.

Max Utilization Tx
The maximum utilization the port transmitted for the interval.

Max Utilization Rx
The maximum utilization the port received for the interval.

Full Status Rx
The number of PVC signalling full status frames received.

Full Status Tx
The number of PVC signalling full status frames transmitted.

Link Integrity Only Rx
The number of PVC signalling link integrity only frames received.

Link Integrity Only Tx
The number of PVC signalling link integrity only frames transmitted.

Asynchronous Status Frames Rx
The number of single PVC status frames received.

Interval Port Error Table View

Access: *From the **Icon Subviews** menu for the AdFRPerformApp icon, select **Interval Port Error**.*

This view provides the following information.

Port.Slot Index
The instance for this entry.

Unavailable Time
The time in seconds the port is unavailable due to a physical or frame relay outage.

CRC Errors
The number of frames received with CRC errors.

Abort Frames
The number of frames received without proper flag termination.

Octet Violations
The number of frames received with a bit count not divisible by eight.

Discarded Frames
The number of frames discarded by the IQ unit.

Length Errors
The number of frames received that is less than 5 bytes or greater than 4500 bytes.

EA Violations
Number of frames received with errors in the EA field of the frame relay header.

Encapsulation Error
The number of frames destined for the IQ IP stack that does not meet the FRF.3 IA.

Inactive DLCI
The number of frames received while the PVC is in the inactive state.

Invalid DLCI
The number of frames received with a DLCI value less than 16 or greater than 1007, not including PVC signaling frames.

Unroutable
The number of frames received on a management DLCI destined for the IQ unit that have the wrong IP address.

Signal Down Time
The time in seconds the signaling state has been down.

Signal Errors
The number of PVC signaling frames received with protocol violations.

Signal Time Out
The number of PVC signal timeouts. Either T391 seconds elapsed without receiving a response to a poll or T392 elapsed seconds with receiving a poll.

Signal State Change
The number of state changes for the PVC signaling protocol. This includes transactions from down state to up state and vice versa.

Interval History Time Table View

Access: *From the **Icon Subviews** menu for the AdFRPerformApp icon, select **Interval History Time**.*

The view provides the following information.

Time Slot Index
The history time slot index number.

Slot Time Total
The total time in seconds this interval slot represents.

Time Stamp
The time the interval started.

Daily PVC Status Table View

Access: *From the **Icon Subviews** menu for the AdFRPerformApp icon, select **Daily PVC Status.***

This view provides the following information.

If.PVC.Slot Index
The instance for this entry.

State Change
The number of state changes on the PVC for the day.

Inactive Time
The time in seconds the PVC has been in the inactive state.

Frames Rx
The number of frames the PVC received for the day.

Frames Tx
The number of frames the PVC transmitted for the day.

Bytes Rx
The number of bytes the PVC received for the day.

Bytes Tx
The number of bytes the PVC transmitted for the day.

Avg Thruput Tx
The average throughput the PVC transmitted for the day.

Avg Thruput Rx
The average throughput the PVC received for the day.

Max Thruput Tx
The maximum throughput the PVC transmitted for the day.

Max Thruput Rx
The maximum throughput the PVC received for the day.

Avg Utilization Tx
The average utilization the PVC transmitted for the day.

Avg Utilization Rx
The average utilization the PVC received for the day.

Max Utilization Tx
The maximum utilization the PVC transmitted for the day.

Burst Tx
At this time there is no MIB support for this field.

Burst Rx
At this time there is no MIB support for this field.

Max Utilization Rx
The maximum utilization the PVC received for the day.

FECN Rx
The number of Forward Explicit Congestion Notifications (FECNs) the PVC received for the day.

FECN Tx
The number of FECNs the PVC transmitted for the day.

BECN Rx
The number of Backward Explicit Congestion Notifications (BECNs) the PVC received for the day.

BECN Tx
The number of BECNs the PVC transmitted for the day.

DE Rx
The number of DEs the PVC received for the day.

DE Tx
The number of DEs the PVC transmitted for the day.

CR Rx
The number of CRs the PVC received for the day.

CR Tx
The number of CRs the PVC transmitted for the day.

Min Frame Size Rx
The minimum frame size the PVC received for the day.

Min Frame Size Tx
The minimum frame size the PVC transmitted for the day.

Max Frame Size Rx
The maximum frame size the PVC received for the day.

Max Frame Size Tx
The maximum frame size the PVC transmitted for the day.

Avg Frame Size Rx
The average frame size the PVC received for the day.

Avg Frame Size Tx
The average frame size the PVC transmitted for the day.

Lost Frames
The number of lost frames on the PVC for the day. Applies only if the sequence numbering is enabled for the PVC.

Remote Lost Frames
The number of remote lost frames on the PVC for the day. Applies only if sequence numbering is enabled for the PVC.

Max Delay
The maximum delay on the PVC for the day. Applies only if delay measurement or PVC diagnostics are enabled for the PVC.

Min Delay
The minimum delay on the PVC for the day. Applies only if delay measurement or PVC diagnostics are enabled for the PVC.

Avg Delay
The average delay on the PVC for the day. Applies only if delay measurement or PVC diagnostics are enabled for the PVC.

Daily Port Status Table View

Access: *From the **Icon Subviews** menu for the AdFRPerformApp icon, select **Daily Port Status**.*

This view provides the following information.

If.Slot Index
The instance for this entry.

Frames Rx
The number of frames the port received for the day.

Frames Tx
The number of frames the port transmitted for the day.

Bytes Rx
The number of bytes the port received for the day.

Bytes Tx
The number of bytes the port transmitted for the day.

Avg Thruput Tx
The average throughput the port transmitted for the day.

Avg Thruput Rx
The average throughput the port received for the day.

Max Thruput Tx
The maximum throughput the port transmitted for the day.

Max Thruput Rx
The maximum throughput the port received for the day.

Avg Utilization Tx
The average utilization the port transmitted for the day.

Avg Utilization Rx
The average utilization the port received for the day.

Max Utilization Rx
The maximum utilization the port received for the day.

Max Utilization Tx
The maximum utilization the port transmitted for the day.

Full Status Rx
The number of PVC signalling full status frames received.

Full Status Tx
The number of PVC signalling full status frames transmitted.

Link Integrity Only Rx
The number of PVC signalling link integrity only frames received.

Link Integrity Only Tx
The number of PVC signalling link integrity only frames transmitted.

Asynchronous Status Frames Rx
The number of single PVC status frames received.

Daily Port Error Table View

Access: *From the **Icon Subviews** menu for the AdFRPerformApp icon, select **Daily Port Error**.*

This view provides the following information.

Port.Slot Index
The instance for this entry.

Unavailable Time
The time in seconds the port is unavailable due to a physical or frame relay outage.

CRC Errors
The number of frames received with Cyclic Redundancy Check (CRC) errors.

Abort Frames
The number of frames received without proper flag termination.

Octet Violations
The number of frames received with a bit count not divisible by eight.

Discarded Frames
The number of frames discarded by the IQ unit.

Length Errors
The number of frames received that is less than 5 bytes or greater than 4500 bytes.

EA Violations
Number of frames received with errors in the EA field of the frame relay header.

Encapsulation Error
The number of frames destined for the IQ IP stack that does not meet the FRF.3 IA.

Inactive DLCI
The number of frames received while the Permanent Virtual Circuit (PVC) is in the inactive state.

Invalid DLCI
The number of frames received with a DLCI value less than 16 or greater than 1007, not including PVC signaling frames.

Unroutable
The number of frames received on a management DLCI destined for the IQ unit that have the wrong IP address.

Signal Down Time
The time in seconds the signaling state has been down.

Signal Errors
The number of PVC signaling frames received with protocol violations.

Signal Time Out
The number of PVC signaling frames received with protocol violations.

Signal State Change
The number of state changes for the PVC signaling protocol. This includes transactions from down state to up state and vice versa.

Daily History Time Table View

Access: *From the **Icon Subviews** menu for the AdFRPerformApp icon, select **Daily History Time.***

This view provides the following information.

Time Slot Index
The time slot index number.

Slot Time Total
The time in seconds this day slot represents.

Adtran DS1 Application (AdtranDS1App)

This application provides the following subviews:

- *Adtran DS1 Alarm Event Table View*
- *Adtran DS1 Threshold Crossing Alert Table View* (Page 38)
- *Adtran DS1 Current Threshold Information View* (Page 40)
- *Adtran DS1 Total Threshold Information View* (Page 41)

Adtran DS1 Alarm Event Table View

Access: *From the* ***Icon Subviews*** *menu for the AdtranDS1App icon, select* ***Alarm Table****.*

Double-clicking on an entry in this table displays the Adtran DS1 Alarm Event Detail View. This view provides the following information.

Alarm Index

The index value which uniquely identifies the DS1 interface.

Alarm Enable

Allows you to enable or disable the generation of DS1 Alarm Traps for line status event changes. Can be set to `dslAlarmOFF` or `dslAlarmON`.

Line Event

This bit map variable indicates state changes in the DS1 line status variable (dsx1LineStatus). When a line status bit changes state, the corresponding line event bit is set in this variable. If armed, setting the event will generate an Alarm Trap. After reporting the events in an Alarm Trap or Get response, the device clears the reported events. The various alarm event bit positions are:

Table 4: Alarm Event Bit Positions

NoAlarm	No Alarm Present
FarEndLOF	Far end LOF (Yellow Alarm)
NearEndSendingLOF	Near end sending LOF Indication
FarEndSendingAIS	Far end sending AIS (Blue Alarm)
NearEndSendingAIS	Near end sending AIS
NearEndLOF	Near end LOF (Red Alarm)
NearEndLossOfSignal	Near End Loss of Signal
NearEndIsLooped	Near end is looped

Table 4: Alarm Event Bit Positions

E1_TS16_AIS	E1 TS16 AIS
FarEndSendingTS16LOMF	Far End Sending TS16 LOMF
FarEndSendingTS16LOMF	Near End Sending TS16 LOMF
NearEndDetectsTestCode	Near end detects a test code
NotDefined	any line status not defined here

Line Arm

This bit map variable arms or disarms an individual or group of events identified in Line Event as a source for generation of DS1 Alarm Trap. The variables are the same as those listed in Table 4.

Adtran DS1 Threshold Crossing Alert Table View

Access: *From the **Icon Subviews** of the AdtranDS1App icon, select **Alert Table**.*

Double-clicking on an entry in this table displays the Adtran DS1 Alert Event Detail View. This view displays the following information.

Alert Index

The index value which uniquely identifies the DS1 interface.

Alarm Enable

This allows you to enable or disable the generation of DS1 Alert Traps for Performance Monitor Threshold Crossing Alerts.

Current Alert

This DS1 performance status variable indicates Threshold Crossing Alerts for a Near End Current 15 minute interval. An alert bit is set in this variable when the value of the Current Table object exceeds the Threshold Value. This variable contains the sum of alert values.

Table 5: Threshold Crossing Alert bit position values

ES	Errored Seconds
SES	Severely Errored Seconds
SEFS	Severely Errored Framing Seconds
UAS	Unavailable Seconds
CSS	Controlled Slip Seconds

Table 5: Threshold Crossing Alert bit position values

PCV	Path Coding Violations
LES	Line Errored Seconds
BES	Bursty Errored Seconds
DM	Degraded Minutes
LCV	Line Code Violations

Total Alert
This DS1 performance status variable indicates Threshold Crossing Alerts for a Near End Total performance variables. An alert bit is set in this variable when the value of the Total Table object exceeds the Threshold Value. This variable contains the sum of alert values. See Table 5 for the bit position values.

Far Current Alert
This DS1 performance status variable indicates Threshold Crossing Alerts for a Near End Total performance variables. An alert bit is set in this variable when the value of the Total Table object exceeds the Threshold Value. This variable contains the sum of alert values. See Table 5 for the bit position values.

Far Total Alert
This DS1 performance status variable indicates Threshold Crossing Alerts for a Far End Current 15 minute interval. An alert bit is set in this variable when the value of the Far End Total Table object exceeds the Threshold Value. This variable contains the sum of alert values. See Table 5 for the bit position values.

Total Arm
This DS1 performance status variable indicates Threshold Crossing Alerts for a Near End Total performance variables. An alert bit is set in this variable when the value of the Total Table object exceeds the Threshold Value. This variable contains the sum of alert values. See Table 5 for the bit position values.

Far Current Arm
This DS1 performance status variable indicates Threshold Crossing Alerts for a Near End Total performance variables. An alert bit is set in this variable when the value of the Total Table object exceeds the Threshold Value. This variable contains the sum of alert values. See Table 5 for the bit position values.

Far Total Arm
This DS1 performance status variable indicates Threshold Crossing Alerts for a Near End Total performance variables. An alert bit is set in this

variable when the value of the Total Table object exceeds the Threshold Value. This variable contains the sum of alert values. See Table 5 for the bit position values.

Adtran DS1 Current Threshold Information View

Access: *From the **Icon Subviews** of the AdtranDS1App icon, select **Current Threshold Information**.*

This view provides the following information.

Current 15 Minute Threshold Values

Errored Seconds
The DS1 performance monitor threshold value for the current 15 minute errored seconds parameter. The default value is 65 for an approximate BER level of (10** -5).

Severely Errored Seconds
The DS1 performance monitor threshold value for the current 15 minute severely errored seconds parameter. The default value is 10 for an approximate BER level of (10** -5).

Severely Errored Framing Seconds
The DS1 performance monitor threshold value for the current 15 minute severely errored framing seconds parameter. The default value is 2 for an approximate BER level of (10** -5).

Controled Slip Seconds
The DS1 performance monitor threshold value for the current 15 minute controlled slip seconds parameter. The default value is 1 for an approximate BER level of (10** -5).

Unavailable Seconds
The DS1 performance monitor threshold value for the current 15 minute unavailable seconds parameter. The default value is 10 for an approximate BER level of (10** -5).

Line Errored Seconds
The DS1 performance monitor threshold value for the current 15 minute line errored seconds seconds parameter. The default value is 65 for an approximate BER level of (10** -5).

Current 15 Minute Coding Violations

Path Coding Violations (Super Frames)
The DS1 performance monitor threshold value for the current 15 minute path coding violations parameter, when the line type is Super Frame (AT&T D4 format) DS1. Default value for an approximate BER level of (10** -5) is 72 framing errors.

Path Coding Violations (Extended Super Frames)
The DS1 performance monitor threshold value for the current 15 minute path coding violations parameter, when the line type is Extended Super Frame (ESF) DS1. Default value for an approximate BER level of (10** -5) is 13,296 CRRC errors.

Line Code Violations
The DS1 performance monitor threshold value for the current 15 minute line code violations parameter. The default value is 13,340 for an approximate BER level of (10** -5).

Adtran DS1 Total Threshold Information View

Access: *From the **Icon Subviews** of the AdtranDS1App icon, select **Total Threshold Information**.*

This view displays the following information.

Total Threshold Values

Errored Seconds
The DS1 performance monitor threshold value for the total errored seconds parameter. The default value is 648 for an approximate BER level of (10** -5).

Severely Errored Seconds
The DS1 performance monitor threshold value for the total severely errored seconds parameter. The default value is 100 for an approximate BER level of (10** -5).

Severely Errored Framing Seconds
The DS1 performance monitor threshold value for the total severely errored framing seconds parameter. The default value is 17 for an approximate BER level of (10** -5).

Controled Slip Seconds
The DS1 performance monitor threshold value for the total controlled slip seconds parameter. The default value is 4 for an approximate BER level of (10** -5).

Unavailable Seconds
The DS1 performance monitor threshold value for the total unavailable seconds parameter. The default value is 10 for an approximate BER level of (10** -5).

Line Errored Seconds
The DS1 performance monitor threshold for the total line errored seconds parameter. The default value is 691 for an approximate BER level of (10** -5).

Total Coding Violations

Path Coding Violations (Super Frames)
The DS1 performance monitor threshold value for the total path coding violations parameter, when the line type is Super Frame (AT&T D4 format) DS1. Default value for an approximate BER level of (10** -5) is 132,960 framing errors.

Path Coding Violations (Extended Super Frames)
The DS1 performance monitor threshold value for the total path coding violations parameter, when the line type is Extended Super Frame (ESF). DS1. Default value for an approximate BER level of (10** -5) is 648 CRC errors.

Line Code Violations
The DS1 performance monitor threshold value for the total line code violations parameter. The default value is 133,400 for an approximate BER level of (10** -5).

Adtran DSU IQ Configuration Application (AdDSUIQConApp)

Access: *From the **Icon Subviews** menu for the DSU IQ Device icon, select **Application.***

This application provides the following subviews.

System Configuration Information View

Access: *From the **Icon Subviews** menu for the AdDSUIQConApp icon, select **System Configuration.***

This view provides the following information.

General Configuration

Password
Set the Telnet and Vt100 Terminal Control Password (10 characters max).

Time of Day
Set the time of day with the format hh:mm (hour:minutes).

Date
The date with the format MM-DD-YY.

Network Configuration

IP Address
Sets the unit's IP address.

Subnet Mask
The network's subnet mask.

Gateway IP Address
Sets the network's Gateway IP address.

Control Port Configuration

Port Baud
Sets the Control Port baud rate. Possible rates are `bps9600`, `bps19200`, and `bps38400`.

Port Mode
Selects the Control Port protocol. Possible options are `terminal`, `slip`, and `ppp`.

Configuration Save & Abort

Abort Configuration
A set will cancel the current selections and revert to the last Saved config.

Save Configuration
A Set operation will reset the unit and save current selections.

Trap & Alarm Configuration

Trap Manager Table

This opens the *Trap Manager Table View* (Page 43).

Enable Traps
Allows you to enable or disable traps.

Network Alarms

Network Alarm State
Allows you to monitor the alarm state.

Arm/Disarm Network Alarms
Allows you to arm/disarm network alarm by clicking on appropriate box.

Trap Manager Table View

Access: *Within the System Configuration view of the AdDSUIQConApp, click the Trap Manager Table button.*

Double-clicking on an entry in this table displays the Trap Manager Table Entry View. This view provides the following information.

Route Index
The index for the route.

Route IP Address
Sets the Trap Manager IP Address.

Route DLCI
Sets the Trap Manager DLCI. (Range 16 - 1007).

Route Port
Selects the Trap Manager Port.

Network Port Configuration View

Access: *From the **Icon Subviews** menu for the AdDSUIQConApp icon, select **Network Port Configuration.***

This view provides the following information.

DDS Interface Configuration

Port Loop Rate
The rate for the DDS interface.

Port Clock Source
The timing source for the DDS interface.

Management DLCI Configuration

DLCI 1 Mode
Sets the mode for the management DLCI 1.

DLCI 2 Mode
Sets the mode for the management DLCI 2.

DLCI 1 PVC 1 Address
Sets the DLCI for management PVC 2. (Range 16 - 1007).

DLCI 2 PVC 2 Address
Sets the DLCI for management PVC 2. (Range 16 - 1007).

Frame Relay Management Interface Configuration

Port Signaling
The signaling type for the frame relay management interface. Types include: `none`, `conLMI`, `ansiT1617D`, `ituTQ933A`, and `auto`.

Link Integrity Poll Timer, T391
Sets the polling interval in seconds for the frame relay management.

LMI Status Polling Counter, N391
Sets the interval between full status polls for the frame relay management interface.

Error Threshold, N392
Sets the error count for the frame relay management interface.

Error Window, N393
Sets the error window (number of polling events) for the frame relay interface.

Frame Relay Monitoring Configuration

History Intervals
Sets the number of history intervals for storage.

History Intervals Available
Returns the number of history intervals allowed based on the maximum number.

Sampling Rate
Sets the minute intervals. The minute intervals are 5, 10. 15, 20, and 30.

Maximum PVC supported
Sets the maximum PVCs supported by the IQ unit. (Range 1 - 100).

DTE Port Configuration View

Access: *From the **Icon Subviews** menu for the AdDSUIQConApp icon, select **DTE Port Configuration.***

This view provides the following information.

Physical Layer Configuration

Port Interface
Allows you to select the DTE Port Interface type.

Port Rate
Selects the DTE Port Rate.

CTS Option
Selects the Clear to Send (CTS) Option.

CD Option
Selects the Carrier Detect (CD) option. Options are `forcedOn` and `normal`.

DSR Option
Selects the Data Set Ready (DSR) option.

Flow Control
Determines how the IQ device will respond to congestion during DBU operation. If set to none, the IQ will drop frames during Dial Backup (DBU) operation when severe congestion occurs. If set for hardware, the IQ will vary the DTE TC clock during periods of severe congestion.

Frame Relay Layer Configuration

Port Management DLCI
Sets the DTE Port management DLCI. (Range 16 - 1007)

Management PVC
Controls the presence of the DTE management PVC.

Timeout, T392
Sets the timeout in seconds between polling intervals from 5 to 30 seconds.

Error Events, N392
Sets the number of error events for the frame relay management from 1 to 10.

Error Window, N393
Sets the error window (polling events) for the frame relay management.

Signaling Response
Determines how the IQ device will respond to polls from the DTE device during network failure. If set to always on, the IQ will respond to polls during a network failure.

PVC Configuration Table View

Access: *From the **Icon Subviews** menu for the DSUIQConfigApp icon, select **PVC Configuration.***

This view provides PVC Configuration information. Double-click on an entry to open the PVC Configuration Detail view.

Config Index
The index identifier for this PVC entry.

DLCI Address
The address for this PVC entry, ranging from 16 to 1007.

CIR
The Committed Information Rate (CIR) for this PVC in Kbps.

Sequence Num Option
The sequence number allows the IQ to detect lost frames across the frame relay service. This option should be disabled for PVCs that do not have IQ on both ends.

Delay Pkt Option
Delay Packet Option for this PVC allows the IQ to sample round trip delay across the frame relay service. This option should be disabled for PVCs on both ends.

DBU DLCI
This object is used when this PVC entry is used for dial backup.

Stats Control
Statistics Control option. Possible values are `auto`, `enable`, and `disable`.

DBU Configuration View

Access: *From the **Icon Subviews** menu for the DSUIQConfigApp icon, select **DBU Configuration.***

This view provides the following information.

DBU Option
This specifies whether the unit automatically enters dial backup mode or waits for manual setup.

DBU Mode
This option specifies the dial backup operating mode for the unit as `originate` or `answer`. One must be set to originate and the other end to answer.

Out of Service Option
This enables the unit to enter backup mode if an out-of-service condition is detected from the network. The options are `enable` or `disable`.

Loss of Receive Signal Option
This enables the unit to enter backup mode when a loss of receive signal is detected from the network. The options are `enable` or `disable`.

Loss of Sealing Current Option
This enables the unit to enter backup mode when a loss of sealing current is detected from the network.

Loss of LMI Option
This enables the unit to enter backup mode when the network PVC signaling state goes down.

Pass Check
This allows the unit to send and verify a dial backup passcode for an additional level of security. When enabled, the originate unit sends the passcode and the answer unit checks the passcode before the backup configuration is considered valid.

Pass Code
This sets the dial backup passcode used to provide an additional level of security. A passcode of 1 to 10 digit characters can be set. If enabled, the originate unit sends the passcode and the answer unit checks the passcode to verify the connection.

Answer Always
This enables or disables Answer Always for Dial Backup operation. If enabled, the answer unit answers any incoming calls regardless of failed conditions.

Beeper Option
This option enables or disables the audible alarm when the IQ unit goes into dial backup mode.

Phone Number
This option is used to set a phone number to place a DBU call. This allows for up to 5 different numbers to be set.

Start Lockout
This option selects the hour to begin disabling dial backup operation when daily or weekend lockout mode is inactive.

End Lockout
This option selects the hour to end dial backup lockout when daily or weekend lockout mode is active.

Weekend Lockout
This option enables or disables Weekend Lockout for Dial Backup operation. If enabled, no backup will occur from midnight Friday to midnight Saturday.

Daily Lockout
This enables or disables Daily Lockout for Dial Backup operation. If enabled, no backup will occur between Lockout Start hour and Lockout End hour.

Auto Restore Timer
This option selects the amount of time that the DSUIQ circuit must be active before the unit switches from backup to normal mode of operation. The timer value is in minutes from 0 to 60. A zero value disables the automatic restore.

Redial Count
This allows the selection of the number of times the unit will redial the Far End unit when attempting to go to backup and a busy or reorder condition occurs. Redial count can be set for a maximum of 60.

Fail Timeout
This option allows the selection of the amount of time that the dedicated circuit failure condition is active before attempting to enter dial backup mode. The Fail Timeout value is in increments of 10 seconds up to a maximum of 600 seconds.

Redial Timer
This option works in conjunction with the Redial Counter option. The Redial Timer specifies the amount of time between redial attempts. The Redial Timer value is seconds, up to a maximum of 60.

ISDN Switch
This option is used to select the ISDN switch type. Types are `att-5ess` and `nt-dms-100`.

ISDN Channel Rate
This option is used to select the ISDN channel rate.

ISDN SPID
This option is used to set the Service Provider ID (SPID) for the ISDN interface.

ISDN LDN
This option is used to LDN for the ISDN interface.

V.34 Line Type
This option selects the type of analog phone line, either `tone` or `pulse`.

DCE Interface Type
This sets the DCE Interface type, either `rs232` or `v35`.

DCE Bit Rate
This option is used for utilization measurement of the DPU port when an external DCE device is used.

Adtran DSU IQ Status Application (AdDSUIQStatApp)

This application has the following available application-specific subviews:

Current Status View

Access: *From the **Icon Subviews** menu for the AdDSUIQStatApp icon, select **Current Status**.*

This view displays the following information.

DDS State
Current status of the DDS interface. Possible values are `normal56K`, `normal64K`, `openLoop`, `noFrameSync`, `dSUInTest`, `scanning`, `noRXSignal`, and `checkTelcoCable`.

DBU State
Current state of the DBU interface. Possible states are `emptySlot`, `openLoop`, `gettingTEI`,

tEIOK, sPIDOK, idle, inDBU, waitingForCall, noSealingCurrent, outOfService, noRXSignal, ringing, dialing, dialingNumber1, dialingNumber2, dialingNumber3, dialingNumber4, dialingNumber5, answeringCall, noDialTone, noAnswer, busy, waitingToDial, connect, connect33d6, connect31d2, connect115d2R, connect115d2, connect28d8, connect26d4, connect24d0, connect21d6, connect57d6R, connect38d4R, connect19d2R, connect9d6R, connect4d8R, connect2d4R, connect16d8, connect14d4, connect12d0, connect7d2, connect57d6, connect38d4, connect19d2, connect9d6, connect4d8, connect2d4, sendingPasscode, waitingPasscode, invalidPasscode, validPasscode and error.

DBU Port Type
The DBU card type installed. Possible types are empty, v34modem, dce, sw564wire, sw562wire, and isdn.

DTE Signaling State
Current state of the PVC signaling between the DSUIQ and the attached frame relay dte. Either up or down.

DTE Control Leads
This bit map integer reflects the current state of the DTE control leads. Possible selections are CTS, DSR, DCD, RTS, and DTR.

NET Signaling State
Current state of the PVC signaling between the DSUIQ and the frame relay service. Either up or down.

NET PVC Count
Current count of network pvcs.

NET PVC Config Table Size
Current count of rows in the PVC config table.

LAN Port Status
The LAN card type installed. Either empty or ethernet.

LED Status
This bit map integer reflects the DSUIQ front panel LED state. Possible selections are Test, RD, CTS, Alarm, TD, RTS, and DCD.

DDS Interval Status Table View

Access: *From the **Icon Subviews** menu for the AdDSUIQStatApp icon, select **DDS Interval Status Table**.*

This view provides the following information.

Slot Index
The instance for this entry.

Unavailable Seconds
Amount of time in seconds the DDS port is unavailable due to test or in an inactive state.

State Change
Number of changes in the DDS port state. This includes all normal, inactive, and test state transitions.

BPV Frame Error
Number of BPVs received when the DDS is set for 56K mode or the number of DDS framing errors when the DDS is set for 64K mode.

DDS Daily Status Table View

Access: *From the **Icon Subviews** menu for the AdDSUIQStatApp icon, select **DDS Daily Status Table**.*

This view provides the following information.

Slot Index
The instance for this entry.

Unavailable Time
Amount of time in seconds the DDS port is unavailable due to test or in an inactive state.

State Change
Number of changes in the DDS port state. This includes all normal, inactive, and test state transitions.

BPV Frame Error
Number of BPVs received when the DDS is set for 56K mode or the number of DDS framing errors when the DDS is set for 64K mode.

DBU Interval Status Table View

Access: *From the **Icon Subviews** menu for the AdDSUIQStatApp icon, select **DBU Interval Status Table**.*

This view provides the following information.

Slot Index
The instance for this entry.

Frames Rx
The number of frames the port received for the interval.

Frames Tx
The number of frames the port transmitted for the interval.

Bytes Rx
The number of bytes the port received for the interval.

Bytes Tx
The number of bytes the port transmitted for the interval.

Avg Thruput Tx
The average throughput the port transmitted for the interval.

Avg Thruput Rx
The average throughput the port received for the interval.

Max Thruput Tx
The maximum throughput the port transmitted for the interval.

Max Thruput Rx
The maximum throughput the port received for the interval.

Avg Utilization Tx
The average utilization the port transmitted for the interval.

Avg Utilization Rx
The average utilization the port received for the interval.

Max Utilization Tx
The maximum utilization the port transmitted for the interval.

Max Utilization Rx
The maximum utilization the port received for the interval.

DBU Active Time
Time in seconds the DBU port was active.

CRC Errors
Number of frames received with CRC errors.

Abort Frames
Number of frames received without proper flag termination.

Octet Violations
Number of frames received with a bit count not divisible by eight.

Discarded Frames
Number of frames discarded by the IQ unit.

Length Errors
Number of frames received that is less than 5 bytes or greater than 4500 bytes.

Encapsulation Errors
Number of frames destined for the IQ IP stack with that does not meet the FRF.3 IA.

Unroutable Frames
Number of frames received on a management DLCI destined for the IQ unit and have the wrong IP address.

DBU Daily Status Table

Access: *From the **Icon Subviews** menu for the AdDSUIQStatApp icon, select **DBU Daily Status Table**.*

This view provides the following information.

Slot Index
The instance for this entry.

Frames Rx
The number of frames the port received for the day.

Frames Tx
The number of frames the port transmitted for the day.

Bytes Rx
The number of bytes the port received for the day.

Bytes Tx
The number of bytes the port transmitted for the day.

Avg Thruput Tx
The average throughput the port transmitted for the day.

Avg Thruput Rx
The average throughput the port received for the day.

Max Thruput Tx
The maximum throughput the port transmitted for the day.

Max Thruput Rx
The maximum throughput the port received for the day.

Avg Utilization Tx
The average utilization the port transmitted for the day.

Avg Utilization Rx
The average utilization the port received for the day.

Max Utilization Tx
The maximum utilization the port transmitted for the day.

Max Utilization Rx
The maximum utilization the port received for the day.

DBU Active Time
Time in seconds the DBU port was active.

CRC Errors
Number of frames received with CRC errors.

Abort Frames
Number of frames received without proper flag termination.

Octet Violations
Number of frames received with a bit count not divisible by eight.

Discarded Frames
Number of frames discarded by the IQ unit.

Length Errors
Number of frames received that is less than 5 bytes or greater than 4500 bytes.

Encapsulation Errors
Number of frames destined for the IQ IP stack with that does not meet the FRF.3 IA.

Unroutable Frames
Number of frames received on a management DLCI destined for the IQ unit and have the wrong IP address.

Diagnostic Table View

Access: *From the **Icon Subviews** menu for the AdDSUIQStatApp icon, select **Diagnostic Table**.*

This view provides the following information.

Index
The instance for this entry.

DLCI
Sets the DLCI for PVC Loopback.

Control
Starts or Stops PVC Loopback Test.

Duration
Sets the Length of the PVC Loopback in minutes.

Status
PVC Loopback Test Status. Possible values are `diagnosticOff` and `diagnosticOn`.

Seconds Remaining
PVC Loopback Test time remaining in seconds.

Frames Transmitted
Diagnostic Frames transmitted.

Frames Received
Diagnostic Frames received.

Lost Frames
Diagnostic Frames Lost.

Maximum Delay
Diagnostic Maximum Delay measurement.

Minimum Delay
Diagnostic Minimum Delay measurement.

Average Delay
Diagnostic Average Delay measurement.

Adtran IQ Probe Configuration Application (AdIQProbConApp)

This application has the following available application-specific subviews:

- *System Configuration Information View* (Page 55)
- *Trap Manager Table View* (Page 56)
- *DCE Port Configuration View* (Page 56)
- *DTE Port Configuration View* (Page 58)
- *PVC Configuration Table View* (Page 46)
- *DBU Configuration View* (Page 59)

System Configuration Information View

Access: *From the **Icon Subviews** menu for the AdIQProbConApp icon, select **System Configuration.***

This view provides the following information.

General Configuration

Password
Set the Telnet and Vt100 Terminal Control Password (10 characters max).

Time of Day
Set the time of day with the format hh:mm (hour:minutes).

Date
The date with the format MM-DD-YY.

Network Configuration

IP Address
Sets the unit's IP address.

Subnet Mask
The network's subnet mask.

Gateway IP Address
Sets the network's Gateway IP address.

Control Port Configuration

Ethernet Port
Selects whether the Ethernet Port is enabled or disabled.

LEDs Reflect Port
Selects which port signals the LEDs reflect.

Port Baud
Sets the Control Port baud rate.

Port Mode
Selects the Control Port protocol.

Trap & Alarm Configuration

Trap Manager Table

This opens the *Trap Manager Table View*, which is described below.

Enable Traps
Allows you to enable or disable traps.

Network Alarms

Network Alarm State
Allows you to monitor the alarm state.

Ar/Disarm Network Alarms
Allows you to arm/disarm network alarm by clicking on appropriate box.

Trap Manager Table View

Double-clicking on an entry in this table displays the Trap Manager Table Entry View. This view provides the following information.

Route Index
The index for the route.

Route IP Address
Sets the Trap Manager IP Address.

Route DLCI
Sets the Trap Manager DLCI. (Range 16 - 1007).

Route Port
Selects the Trap Manager Port.

DCE Port Configuration View

Access: *From the **Icon Subviews** menu for the AdIQProbConApp icon, select **DCE Port Configuration.***

This view displays the following information.

DCE Interface Configuration

Interface Type
Interface type for the dce interface. Possible types are `x21`, `v35`, `eia530`, and `eia232`.

Port Bit Rate
This variable is uses for utilization measurement of both the DCE and DTE ports. Set this parameter in KBPS equal to the connection rate.

Management DLCI Configuration

DLCI 1 Mode
Sets the mode for the management DLCI 1.

DLCI 2 Mode
Sets the mode for the management DLCI 2.

DLCI 1 PVC 1 Address
Sets the DLCI for management PVC 2. (Range 16 - 1007).

DLCI 2 PVC 2 Address
Sets the DLCI for management PVC 2. (Range 16 - 1007).

Frame Relay Management Interface Configuration

Port Signaling
The signaling type for the frame relay management interface. Types include: `none`, `conLMI`, `ansiT1617D`, `ituTQ933A`, and `auto`.

Link Integrity Poll Timer, T391
Sets the polling interval in seconds for the frame relay management.

LMI Status Polling Counter, N391
Sets the interval between full status polls for the frame relay management interface.

Error Threshold, N392
Sets the error count for the frame relay management interface.

Error Window, N393
Sets the error window (number of polling events) for the frame relay interface.

Frame Relay Monitoring Configuration

History Intervals
Sets the number of history intervals for storage.

History Intervals Available
Returns the number of history intervals allowed based on the maximum number.

Sampling Rate
Sets the minute intervals. Five minute intervals from 5 to 30.

Maximum PVC supported
Sets the maximum PVCs supported by the IQ unit. (Range 1 - 100).

DTE Port Configuration View

Access: *From the **Icon Subviews** menu for the AdIQProbConApp icon, select **DTE Port Configuration.***

This view displays the following information.

Physical Layer Configuration

Interface Type
Interface type for the DTE interface. Possible types are `x21`, `v35`, `eia530`, and `eia232`.

CTS Option
Selects the Clear to Send (CTS) option. Options are `forcedOn` and `followRTS`.

CD Option
The Carrier Detect (CD) option. Options are `normal` and `forcedOn`.

DSR Option
The Data Set Ready (DSR) option. Options are `normal` and `forcedOn`.

Transmit Clock Phase
Sets the phase of the DTE Transmit clock. Either `normal` or `inverted`.

Flow Control
Determines how the IQ device will respond to congestion during DBU operation. If set for `none`, the IQ will drop frames during DBU operation when severe congestion occurs. If set for `hardware`, the IQ will vary the DTE TC clock in order to control the amount of data offered to the IQ when severe congestion occurs. `fECNBECN` mode will set the FECN bit in outbound frames and set BECN bit for inbound frames leaving flow control up to the DTE devices.

Frame Relay Layer Configuration

Port Management DLCI
Selects the DTE Port Management DLCI. (Range 16 - 1007).

Management PVC
Controls the presence of the DTE management PVC in a full status response to the DTE device.

Timeout, T392
Sets the timeout in seconds between polling intervals. (Range 5 - 30).

Error Events, N392
Sets the number of error events for the frame relay management. (Range 1 - 10)

Error Window, N393
Sets the error window (polling events) for the frame relay management.

Signaling Response
Determines how the IQ device will respond to polls from the DTE device during a network failure. If set to `alwaysOn`, the IQ will respond to polls during a network failure. If set to `followsNetwork`, the IQ will not respond thus emulating a failure to the DTE device. If the IQ is responsible for dial backup, this option should be set to `alwaysOn`. The other option is `alwaysOff`.

DBU Configuration View

Access: *From the **Icon Subviews** menu for the AdIQProbConApp icon, select **DBU Configuration.***

This view displays the following information.

DBU Option
This option specifies whether the unit automatically enters dial backup mode or waits for manual setup.

DBU Mode
This option specifies the dial backup operating mode for the unit as originate or answer. One end must be set to originate and the other end to answer.

Carrier Detect Loss
This option enables the unit to enter backup mode when loss of Carrier Detect on the DCE interface occurs.

Loss of LMI Option
This option enables the unit to enter backup mode when network PVC signaling state goes down.

Answer Always
This option enables or disables Answer Always for Dial Backup operation. If enabled, the answer unit answers any incoming call regardless of failed conditions.

Beeper Option
This option enables or disables the audible alarm when the IQ unit goes into dial backup mode.

Pass Check
This option allows the unit to send and verify a dial backup passcode for an additional level of security. When enabled, the originate unit sends the passcode and the answer unit checks the passcode before the backup connection is considered valid.

Pass Code
This option sets the dial backup passcode used to provide an additional level of security. A passcode of one to ten digit characters can be set. If enabled, the originate unit sends the passcode and the answer unit checks the passcode to verify the connection.

Phone Number (1 - 5)
This option is used to set a phone number to place a DBU call.

V.34 Line Type
This option selects the type of analog phone line.

DCE Interface Type
This option enables or disables Answer Always for Dial Backup operation. If enabled, the answer unit answers any incoming call regardless of failed conditions.

DCE Bit Rate
This option is uses for utilization measurement of the DBU port when an external DCE device is used. Set this parameter in KBPS close to the connection rate.

Start Lockout
This option selects the hour to begin disabling dial backup operation when daily or weekend lockout mode is active.

End Lockout
This option selects the hour to end dial backup lockout when daily or weekend lockout mode is active.

Weekend Lockout
This option enables or disables Weekend Lockout for Dial Backup operation. If enabled, no backup will occur from midnight Friday to midnight Sunday.

Daily Lockout
This option enables or disables Daily Lockout for Dial Backup operation. If enabled, no backup will occur between Lockout Start hour and Lockout End hour.

Redial Timer
This option works in conjunction with the Redial Counter option. The Redial Timer specifies the amount of time between redial attempts. The Redial Timer value is seconds, up to a maximum of 60 seconds

Fail Timeout
This option allows the selection of the amount of time that the dedicated circuit failure condition is active before attempting to enter dial backup mode. The Fail Timeout value is in increments of 10 seconds up to a maximum of 600 seconds.

Redial Count
This option allows the selection of the number of times the unit will redial the Far End unit when attempting to go to backup and a busy or reorder condition occurs. Redial count can be set for a maximum of 60.

Auto Restore Timer
This option selects the amount of time that the DSUIQ circuit must be active before the unit switches from backup to normal mode of operation. The timer value is in minutes from 0 to 60. A zero value disables automatic restore, DSUIQ operation must be restored manually.

ISDN Channel Rate
This option is used to select the ISDN channel rate.

ISDN Channel Count
This option is used to select the number ISDN channels to use.

ISDN SPID 1
This option is used to set the SPID for the ISDN interface.

ISDN SPID 2
This option is used to set the SPID for the ISDN interface.

ISDN LDN 1
This option is used to set LDN for the ISDN interface.

ISDN LDN 2
This option is used to set LDN for the ISDN interface.

Adtran IQ Probe Status App (AdIQProbStaApp)

This application has the following available application-specific subviews:

Current Status View

Access: *From the **Icon Subviews** menu for the AdIQProbStaApp, select **Current Status**.*

This view provides the following information.

DBU State
The current state of the DBU interface.

DBU Port Type
The DBU card type installed. Possible types are `empty`, `v34modem`, `dce`, `sw564wire`, `sw562wire`, and `isdn`.

DTE Signaling State
The current state of the PVC signaling between the DSUIQ and the attached frame relay DTE. Either up or down.

DCE Signaling State
The current state of the PVC signaling between the DSUIQ and the frame relay DCE. Either up or down.

NET PVC Count
The current count of network PVCs.

NET PVC Config Table Size
The current count of rows in the PVC config table.

LED Status
This bit map integer reflects the DSUIQ front panel LED state. Possible selections are Test, RD, CTS, Alarm, TD, RTS, and DCD.

DTE Control Leads
The current state of the DTE control leads. Possible selections are CTS, DSR, DCD, RTS, and DTR.

DCE Control Leads
The current state of the DCE control leads.

DBU Interval Status Table View

Access: *From the **Icon Subviews** menu for the AdIQProbStaApp, select **DBU Interval Status Table**.*

This view displays the following information.

Slot Index
The instance for this entry.

Frames Rx
The number of frames the port received for the interval.

Frames Tx
The number of frames the port transmitted for the interval.

Bytes Rx
The number of bytes the port received for the interval.

Bytes Tx
The number of bytes the port transmitted for the interval.

Avg Thruput Tx
The average throughput the port transmitted for the interval.

Avg Thruput Rx
The average throughput the port received for the interval.

Max Thruput Tx
The maximum throughput the port transmitted for the interval.

Max Thruput Rx
The maximum throughput the port received for the interval.

Avg Utilization Tx
The average utilization the port transmitted for the interval.

Avg Utilization Rx
The average utilization the port received for the interval.

Max Utilization Tx
The maximum utilization the port transmitted for the interval.

Max Utilization Rx
The maximum utilization the port received for the interval.

DBU Active Time
Time in seconds the DBU port was active.

CRC Errors
Number of frames received with CRC errors.

Abort Frames
Number of frames received without proper flag termination.

Octet Violations
Number of frames received with a bit count not divisible by eight.

Discarded Frames
Number of frames discarded by the IQ unit.

Length Errors
Number of frames received that is less than 5 bytes or greater than 4500 bytes.

Encapsulation Errors
Number of frames destined for the IQ IP stack with that does not meet the FRF.3 IA.

Unroutable Frames
Number of frames received on a management DLCI destined for the IQ unit and have the wrong IP address.

DBU Daily Status Table View

Access: *From the **Icon Subviews** menu for the AdIQProbStaApp, select **DBU Daily Status Table**.*

This view displays the following information.

Slot Index
The instance for this entry.

Frames Rx
The number of frames the port received for the day.

Frames Tx
The number of frames the port transmitted for the day.

Bytes Rx
The number of bytes the port received for the day.

Bytes Tx
The number of bytes the port transmitted for the day.

Avg Thruput Tx
The average throughput the port transmitted for the day.

Avg Thruput Rx
The average throughput the port received for the day.

Max Thruput Tx
The maximum throughput the port transmitted for the day.

Max Thruput Rx
The maximum throughput the port received for the day.

Avg Utilization Tx
The average utilization the port transmitted for the day.

Avg Utilization Rx
The average utilization the port received for the day.

Max Utilization Tx
The maximum utilization the port transmitted for the day.

Max Utilization Rx
The maximum utilization the port received for the day.

DBU Active Time
Time in seconds the DBU port was active.

CRC Errors
Number of frames received with CRC errors.

Abort Frames
Number of frames received without proper flag termination.

Octet Violations
Number of frames received with a bit count not divisible by eight.

Discarded Frames
Number of frames discarded by the IQ unit.

Length Errors
Number of frames received that is less than 5 bytes or greater than 4500 bytes.

Encapsulation Errors
Number of frames destined for the IQ IP stack with that does not meet the FRF.3 IA.

Unroutable Frames
Number of frames received on a management DLCI destined for the IQ unit and have the wrong IP address.

DCE Interval Status Table View

Access: *From the **Icon Subviews** menu for the AdIQProbStaApp, select **DCE Interval Status Table**.*

This view displays the following information.

Slot Index
The instance for this entry.

Unavailable Seconds
Amount of time in seconds the DCE port is unavailable due to test or in an inactive state.

DSR State Change
Number of changes in the DCE port Data Set Ready signal.

DCD State Change
Number of changes in the DCE port Carrier Detect signal.

DCE Daily Status Table View

Access: *From the **Icon Subviews** menu for the AdIQProbStaApp, select **DCE Daily Status Table**.*

This view displays the following information.

Slot Index
The instance for this entry.

Unavailable Seconds
Amount of time in seconds the DCE port is unavailable due to test or in an inactive state.

DCD State Change
Number of changes in the DCE port state. This includes all normal, inactive, and test state transitions.

DSR State Change
Number of changes in the DCE port Data Set Ready signal.

Adtran TSU IQ Configuration Application (AdTSUIQConApp)

This application has the following application-specific subviews:

- *System Configuration Information View* (Page 42)
- *Network Port Configuration View* (Page 66)
- *DTE Port Configuration View* (Page 68)
- *PVC Configuration Table View* (Page 46)
- *DBU Configuration View* (Page 108)

Network Port Configuration View

Access: *From the **Icon Subviews** menu for the AdTSUIQConApp, select **Network Port Configuration**.*

This view provides the following information.

T1 Interface Configuration

Port Frame Type
The Frame type for T1 interface. Possible values are `d4`, `eSF`, and `auto`.

Port Clock Source
Timing source for the transmit side of the T1 interface. Possible sources are `internal` and `fromNetwork`.

Port Line Code
The line code for the T1 interface. Possible codes are `b8ZS` and `aMI`.

Receiver Sensitivity
Selects the gain of receiver for the T1 interface. Either `normal` or `extended`.

Port Line Build Out
Line build out for the transmit side of the T1 interface. Possible values are `auto`, `dB0`, `dB7`, `dB15`, and `dB22`.

Channel Count
Selects the number of active channels for the T1 interface.

Channel Start
Selects the channel that begins the active channel list for the T1 interface.

Channel Bandwidth
Selects the amount of data in each active channel for the T1 interface. Options are `x56Kbp` and `x64Kbps`.

Channel Alignment
Selects the alignment of active channels for the T1 interface. Options are `contiguous` and `alternating`.

Management DLCI Configuration

DLCI 1 Mode
Sets the mode for the management DLCI 1. If set for `shared`, management DLCI 1 is used for customer data and IQ management data. If set for `dedicated`, management DLCI 1 is used only for IQ management data and is not passed to the attached frame relay DTE device.

DLCI 2 Mode
Sets the mode for the management DLCI 2. If set for `shared`, management DLCI 2 is used for customer data and IQ management data. If set for `dedicated`, management DLCI 2 is used only for IQ management data and is not passed to the attached frame relay DTE device.

DLCI 1 PVC 1 Address
Sets the address for management PVC 1 (Range 16 - 1007).

DLCI 2 PVC 2 Address
Sets the address for management PVC 2 (Range 16 - 1007).

Frame Relay Management Monitoring Configuration

Port Signaling
Signaling type for the frame relay management interface. Possible types are `none`, `conLM`, `ansiT1617D`, `ituQ933A`, and `auto`.

Link Integrity Poll Timer, T391
Sets the polling interval in seconds for the frame relay management interface (Range 5 - 30).

LMI Status Polling Counter, N391
Sets the interval between full status polls for the frame relay management interface (Range 1 - 255).

Error Threshold, N392
Sets the error count for the frame relay management interface (Range 1 - 10).

Error Window, N393
Sets the event window for the frame relay management interface (Range 1 - 10).

Frame Relay Monitoring Configuration

History Intervals
Sets the number of history intervals for storage.

History Intervals Available
Returns the number of history intervals allowed based on the maximum number of PVCs selected.

Sampling Rate
Allows you to set the sampling rate for frame relay monitoring. Options are `min5`, `min10`, `min15`, `min20`, and `min30`.

Maximum PVC supported
Sets the maximum PVCs supported by the IQ unit (Range 1 - 100).

DTE Port Configuration View

Access: *From the **Icon Subviews** menu for the AdTSUIQConApp, select **DTE Port Configuration**.*

This view displays the following information.

Physical Layer Configuration

CTS Option
Selects the Clear to Send (CTS) option. Options are `forcedOn and followRTS`

CD Option
Selects the Carrier Detect (CD) option. Either `normal` or `forcedOn`.

DSR Option
Selects the Data Set Ready (DSR) option. Either `normal` or `forcedOn`.

Transmit Clock Phase
Sets the phase of the DTE Transmit clock. Either `normal` or `inverted`.

Flow Control
Determines how the IQ device will respond to congestion during DBU operation. If set for `none`, the IQ will drop frames during DBU operation when severe congestion occurs. If set for `hardware`, the IQ will vary the DTE TC clock in order to control the amount of data offered to the IQ when severe congestion occurs. `FECNBECN` mode will set the FECN bit in outbound frames and set BECN bit for inbound frames leaving flow control up to the DTE devices.

Frame Relay Layer Configuration

Port Management DLCI
Selects the DTE Port Management DLCI (Range 16 - 1007).

Management PVC
Controls the presence of the DTE management PVC in a full status response to the DTE device. Either `enabled` or `disabled`.

Timeout, T392
Sets the timeout in seconds between polling intervals (Range 5 - 30).

Error Events, N392
Sets the number of error events for the frame relay management (Range 1 - 10).

Error Window, N393
Sets the error window (polling events) for the frame relay management (Range 1 - 10).

Signaling Response
Determines how the IQ device will respond to polls from the DTE device during a network failure. If set to `alwaysOn`, the IQ will respond to polls during a network failure. If set to `followNetwork`, the IQ will not respond thus emulating a failure to the DTE device. If the IQ is responsible for dial backup, this option should be set to `alwaysOn`.

DBU Configuration View

Access: *From the **Icon Subviews** menu for the AdTSUIQConApp, select **DBU Configuration**.*

This view displays the following information.

DBU Option
This specifies whether the unit automatically enters dial backup mode or waits for manual setup.

DBU Mode
This option specifies the dial backup operating mode for the unit as `originate` or `answer`. One must be set to originate and the other end to answer.

Network Failure Option
This option enables the unit to enter backup mode when T1 network failure occurs.

Loss of LMI Option
This enables the unit to enter backup mode when the network PVC signaling state goes down.

Answer Always
This enables or disables Answer Always for Dial Backup operation. If enabled, the answer unit answers any incoming calls regardless of failed conditions.

Beeper Option
This option enables or disables the audible alarm when the IQ unit goes into dial backup mode.

Pass Check
This allows the unit to send and verify a dial backup passcode for an additional level of security. When enabled, the originate unit sends the passcode and the answer unit checks the passcode before the backup configuration is considered valid.

Pass Code
This sets the dial backup passcode used to provide an additional level of security. A passcode of 1 to 10 digit characters can be set. If enabled, the originate unit sends the passcode and the

answer unit checks the passcode to verify the connection.

Phone Number (1 - 5)
This option is used to set a phone number to place a DBU call. This allows for up to 5 different numbers to be set.

V.34 Line Type
This option selects the type of analog phone line, either `tone` or `pulse`.

DCE Interface Type
This sets the DCE Interface type, either `rs232` or `v35`.

DCE Bit Rate
This option is used for utilization measurement of the DPU port when an external DCE device is used.

Start Lockout
This option selects the hour to begin disabling dial backup operation when daily or weekend lockout mode is inactive.

End Lockout
This option selects the hour to end dial backup lockout when daily or weekend lockout mode is active.

Weekend Lockout
This option enables or disables Weekend Lockout for Dial Backup operation. If enabled, no backup will occur from midnight Friday to midnight Saturday.

Daily Lockout
This enables or disables Daily Lockout for Dial Backup operation. If enabled, no backup will occur between Lockout Start hour and Lockout End hour.

Redial Timer
This option works in conjunction with the Redial Counter option. The Redial Timer specifies the amount of time between redial attempts. The Redial Timer value is seconds, up to a maximum of 60.

Fail Timeout
This option allows the selection of the amount of time that the dedicated circuit failure condition is active before attempting to enter dial backup mode. The Fail Timeout value is in increments of 10 seconds up to a maximum of 600 seconds.

Redial Count
This allows the selection of the number of times the unit will redial the Far End unit when attempting to go to backup and a busy or reorder

condition occurs. Redial count can be set for a maximum of 60.

Auto Restore Timer
This option selects the amount of time that the DSUIQ circuit must be active before the unit switches from backup to normal mode of operation. The timer value is in minutes from 0 to 60. A zero value disables the automatic restore.

ISDN Switch
This option is used to select the ISDN switch type. Types are `att-5ess` and `nt-dms-100`.

ISDN Channel Rate
This option is used to select the ISDN channel rate.

ISDN SPID 1
This option is used to set the Service Provider ID (SPID) for the ISDN interface.

ISDN SPID 2
This option is used to set the SPID for the ISDN interface.

ISDN LDN 1
This option is used to LDN for the ISDN interface.

ISDN LDN 2
This option is used to set LDN for the ISDN interface.

Adtran TSU IQ Status Application (AdTSUIQStatApp)

This application has the following available application-specific subviews:

- *Current Status View*
- *T1 Interval Status Table View* (Page 72)
- *T1 Daily Status Table* (Page 73)
- *DBU Interval Status Table View* (Page 74)
- *DBU Daily Status Table* (Page 76)
- *Diagnostic Table View* (Page 54)

Current Status View

Access: *From the Icon Subviews menu for the AdTSUIQStatApp, select* ***Current Status****.*

This view displays the following information.

T1 State
Current status of the T1 interface. Possible values are `openLoop`, `testFromTelco`, `blueAlarm`, `redAlarm`, `yellowAlarm`, `eSFNormal`, and `d4Normal`.

DBU State
The current state of the DBU interface. Possible states are `emptySlot`, `openLoop`, `gettingTEI`, `tEIOK`, `sPIDOK`, `idle`, `inDBU`, `waitingForCall`,

noSealingCurrent, outOfService, noRXSignal, ringing, dialing, dialingNumber1, dialingNumber2, dialingNumber3, dialingNumber4, dialingNumber5, answeringCall, noDialTone, noAnswer, busy, waitingToDial, connect, connect33d6, connect31d2, connect115d2R, connect115d2, connect28d8, connect26d4, connect24d0, connect21d6, connect57d6R, connect38d4R, connect19d2R, connect9d6R, connect4d8R, connect2d4R, connect16d8, connect14d4, connect12d0, connect7d2, connect57d6, connect38d4, connect19d2, connect9d6, connect4d8, connect2d4, sendingPasscode, waitingPasscode, invalidPasscode, validPasscode and error.

DBU Port Type
Returns the DBU card type installed. Possible types are empty, v34modem, dce, sw564wire, sw562wire, and isdn.

DTE Signaling State
Current state of the PVC signaling between the TSUIQ and the attached frame relay DTE. Either up or down.

NET Signaling State
Current state of the PVC signaling between the TSUIQ and the frame relay service.

NET PVC Count
Current count of network PVCs.

NET PVC Config Table Size
Current count of rows in the PVC config table.

LAN Port Status
The current status of the LAN port.

LED Status
This reflects TSUIQ front panel LED state.

DTE Control Leads
This reflects the current state of the DTE control leads.

T1 Interval Status Table View

Access: *From the Icon Subviews menu for the AdTSUIQStatApp, select* ***T1 Interval Status Table****.*

This view displays the following information.

Slot Index
The instance for this entry.

Unavail Secs
Amount of time in seconds the T1 port is unavailable due to test or in an inactive state.

State Change
Number of changes in the T1 port state. This includes all normal, inactive, and test state transitions.

Signal Loss Event
An `active` state represents one or more signal loss events.

Loop Back Event
Active state represents one or more loopback events.

AIS Event
Active state represents one or more AIS events. AIS is triggered by unframed all ones condition from the T1 service provider.

Red Alarm Event
Active state represents one or more AIS events. AIS is triggered by unframed all ones condition from the T1 service provider.

Yellow Alarm Event
Active state represents one or more yellow alarm events. Yellow alarm is an indication the service provider has lost frame alignment.

PLL Alarm Event
Active state represents one or more PLL alarm events. PLL alarm is an indication that the transmit and receive side of the T1 interface are not looped timed. This will occur when both ends of the T1 are set to provide timing.

Path Code Violations
Count of path code violations received. Path code violations are a errors in the frame bit positions for D4 and ESF CRC errors when set for ESF.

Line Code Violations
Count of line code violations received. Line code violations are a combination of BPVs that are not part of B8ZS code and excess zeros. Excess zeros are eight or more consecutive zeros when set for B8ZS and fifteen or more consecutive zeros when set for AMI.

T1 Daily Status Table

Access: *From the Icon Subviews menu for the AdTSUIQStatApp, select* ***T1 Daily Status Table****.*

This view displays the following information.

Slot Index
The instance for this entry.

Unavail Secs
Amount of time in seconds the T1 port is unavailable due to test or in an inactive state.

State Change
Number of changes in the T1 port state. This includes all normal, inactive, and test state transitions.

Signal Loss Event
An `active` state represents one or more signal loss events.

Loop Back Event
Active state represents one or more loopback events.

AIS Event
Active state represents one or more AIS events. AIS is triggered by unframed all ones condition from the T1 service provider.

Red Alarm Event
Active state represents one or more AIS events. AIS is triggered by unframed all ones condition from the T1 service provider.

Yellow Alarm Event
Active state represents one or more yellow alarm events. Yellow alarm is an indication the service provider has lost frame alignment.

PLL Alarm Event
Active state represents one or more PLL alarm events. PLL alarm is an indication that the transmit and receive side of the T1 interface are not looped timed. This will occur when both ends of the T1 are set to provide timing.

Path Code Violations
Count of path code violations received. Path code violations are a errors in the frame bit positions for D4 and ESF CRC errors when set for ESF.

Line Code Violations
Count of line code violations received. Line code violations are a combination of BPVs that are not part of B8ZS code and excess zeros. Excess zeros are eight or more consecutive zeros when set for B8ZS and fifteen or more consecutive zeros when set for AMI.

DBU Interval Status Table View

Access: *From the Icon Subviews menu for the AdTSUIQStatApp, select* ***DBU Interval Status Table****.*

This view displays the following information.

Slot Index
The instance for this entry.

Frames Rx
The number of frames the port received for the interval.

Frames Tx
The number of frames the port transmitted for the interval.

Bytes Rx
The number of bytes the port received for the interval.

Bytes Tx
The number of bytes the port transmitted for the interval.

Avg Thruput Tx
The average throughput the port transmitted for the interval.

Avg Thruput Rx
The average throughput the port received for the interval.

Max Thruput Tx
The maximum throughput the port transmitted for the interval.

Max Thruput Rx
The maximum throughput the port received for the interval.

Avg Utilization Tx
The average utilization the port transmitted for the interval.

Avg Utilization Rx
The average utilization the port received for the interval.

Max Utilization Tx
The maximum utilization the port transmitted for the interval.

Max Utilization Rx
The maximum utilization the port received for the interval.

DBU Active Time
Time in seconds the DBU port was active.

CRC Errors
Number of frames received with CRC errors.

Abort Frames
Number of frames received without proper flag termination.

Octet Violations
Number of frames received with a bit count not divisible by eight.

Discarded Frames
Number of frames discarded by the IQ unit.

Length Errors
Number of frames received that is less than 5 bytes or greater than 4500 bytes.

Encapsulation Errors
Number of frames destined for the IQ IP stack with that does not meet the FRF.3 IA.

Unroutable Frames
Number of frames received on a management DLCI destined for the IQ unit and have the wrong IP address.

DBU Daily Status Table

Access: *From the **Icon Subviews** menu for the AdTSUIQStatApp icon, select **DBU Daily Status Table**.*

This view provides the following information.

Slot Index
The instance for this entry.

Frames Rx
The number of frames the port received for the day.

Frames Tx
The number of frames the port transmitted for the day.

Bytes Rx
The number of bytes the port received for the day.

Bytes Tx
The number of bytes the port transmitted for the day.

Avg Thruput Tx
The average throughput the port transmitted for the day.

Avg Thruput Rx
The average throughput the port received for the day.

Max Thruput Tx
The maximum throughput the port transmitted for the day.

Max Thruput Rx
The maximum throughput the port received for the day.

Avg Utilization Tx
The average utilization the port transmitted for the day.

Avg Utilization Rx
The average utilization the port received for the day.

Max Utilization Tx
The maximum utilization the port transmitted for the day.

Max Utilization Rx
The maximum utilization the port received for the day.

DBU Active Time
Time in seconds the DBU port was active.

CRC Errors
Number of frames received with CRC errors.

Abort Frames
Number of frames received without proper flag termination.

Octet Violations
Number of frames received with a bit count not divisible by eight.

Discarded Frames
Number of frames discarded by the IQ unit.

Length Errors
Number of frames received that is less than 5 bytes or greater than 4500 bytes.

Encapsulation Errors
Number of frames destined for the IQ IP stack with that does not meet the FRF.3 IA.

Unroutable Frames
Number of frames received on a management DLCI destined for the IQ unit and have the wrong IP address.

Adtran TSU IQ+ Configuration Application (AdTSUIQPConApp)

This application has the following available application-specific subviews:

- *System Configuration Information View* (Page 42)
- *Network Port Configuration View* (Page 77)
- *DSX Port Configuration View* (Page 79)
- *DTE Port Configuration View* (Page 68)
- *PVC Configuration Table View* (Page 46)
- *DBU Configuration View* (Page 69)

Network Port Configuration View

Access: *From the* ***Icon Subviews*** *menu for the AdTSUIQPConApp, select* ***Network Port Configuration****.*

This view displays the following information.

T1 Interface Configuration

Port Frame Type
The Frame type for T1 interface. Possible values are `d4`, `eSF`, and `auto`.

Port Clock Source
Timing source for the transmit side of the T1 interface. Possible sources are `internal` and `fromNetwork`.

Port Line Code
The line code for the T1 interface. Possible codes are `b8ZS` and `aMI`.

Receiver Sensitivity
Selects the gain of receiver for the T1 interface. Either `normal` or `extended`.

Port Line Build Out
Line build out for the transmit side of the T1 interface. Possible values are `auto`, `dB0`, `dB7`, `dB15`, and `db22`.

Channel Bandwidth
Selects the amount of data in each active channel for the T1 interface. Options are `x56Kbp` and `x64Kbps`.

Transmit PRM
Enables performance report generation across the T1 FDL for the T1 interface. Either `pRMon`, or `pRMoff`.

Frame Relay Management Interface Configuration

Port Signaling
Signaling type for the frame relay management interface. Possible types are `none`, `conLMI`, `ansiT1617D`, `ituQ933A`, and `auto`.

Polling Interval (secs), T391
Sets the polling interval in seconds for the frame relay management interface. (Range 5 - 30).

Full Status Polls Interval, N391
Sets the interval between full status polls for the frame relay management interface. (Range 1 - 255).

Error Threshold, N392
Sets the number of error events for the frame relay management (Range 1 - 10).

Error Window, N393
Sets the error window (polling events) for the frame relay management (Range 1 - 10).

Management DLCI Configuration

DLCI 1 Mode
Sets the mode for the managent DLCI 1. If set for `shared`, management DLCI 1 is used for customer data and IQ management data. If set for `dedicated`, management DLCI 1 is used only for

IQ management data and is not passed to the attached frame relay DTE device.

DLCI 2 Mode
Sets the mode for the management DLCI 2. If set for `shared`, management DLCI 2 is used for customer data and IQ management data. If set for `dedicated`, management DLCI 2 is used only for IQ management data and is not passed to the attached frame relay DTE device.

DLCI 1 PVC 1 Address
Sets the address for management PVC 1 (Range 16 - 1007).

DLCI 2 PVC 2 Address
Sets the address for management PVC 2 (Range 16 - 1007).

Frame Relay Monitoring Configuration

History Intervals
Sets the number of history intervals for storage.

History Intervals Available
Returns the number of history intervals allowed based on the maximum number of PVCs selected.

Sampling Rate
Allows you to set the sampling rate for frame relay monitoring. Options are `min5`, `min10`, `min15`, `min20`, and `min30`.

Maximum PVC supported
Sets the maximum PVCs supported by the IQ unit (Range 1 - 100).

DSX Port Configuration View

Access: *From the **Icon Subviews** menu for the AdTSUIQPConApp, select **DSX Port Configuration**.*

This view displays the following information.

Port Frame Type
Frame type for DSX interface. Either `d4` or `eSF`.

Port Line Code
Line code for the DSX interface. Either `b8ZS` or `aMI`.

Yellow Alarm Option
This option controls the origination of Yellow alarm in case of framing loss on the receive side of the DSX interface.

Port Line Build Out
Line build out for the transmit side of the DSX interface. Possible values are `dB0`, `dB7`,`dB15`, and `db22`.

Robbed Bit Signaling
Set for enabled if robbed bit signaling is used on the DSX interface.

Loopback Response
Enables the DSX interface to respond to loopback codes.

Loopback Type
Forces loopback on the DSO channels assigned to the DSX interface. `none` option disables loopback, `line` option forces a loopback toward the network, `port` option forces a loopback toward the attached DSX device.

Adtran TSU IQ+ Status Application (AdTSUIQPStaApp)

This application has the following available application-specific subviews:

Current Status View

Access: *From the **Icon Subviews** menu for the AdTSUIQPStaApp, select **Current Status**.*

This view displays the following information.

T1 State
Current status of the T1 interface. Possible values are `openLoop`, `testFromTelco`, `blueAlarm`, `redAlarm`, `yellowAlarm`, `eSFNormal`, and `d4Normal`.

DBU State
The current state of the DBU interface.

DBU Port Type
Returns the DBU card type installed. Possible types are `empty`, `v34modem`, `dce`, `sw564wire`, `sw562wire`, and `isdn`.

DSX State
The current state of the DSX port.

DTE Signaling State
Current state of the PVC signaling between the TSUIQ and the attached frame relay DTE. Either `up` or `down`.

NET Signaling State
Current state of the PVC signaling between the TSUIQ and the frame relay service.

NET PVC Count
Current count of network PVCs.

LAN Port Status
The current status of the LAN port.

NET PVC Config Table Size
Current count of rows in the PVC config table.

LED Status
The TSUIQ front panel LED state.

DTE Control Leads
The current state of the DTE control leads.

T1 Interval Status Table View

Access: *From the **Icon Subviews** menu for the AdTSUIQPStaApp, select **T1 Interval Status Table**.*

This view displays the following information.

Slot Index
The instance for this entry.

Unavail Secs
Amount of time in seconds the T1 port is unavailable due to test or in an inactive state.

State Change
Number of changes in the T1 port state. This includes all normal, inactive, and test state transitions.

Signal Loss Event
An `active` state represents one or more signal loss events.

Loop Back Event
Active state represents one or more loopback events.

AIS Event
Active state represents one or more AIS events. AIS is triggered by unframed all ones condition from the T1 service provider.

Red Alarm Event
Active state represents one or more AIS events. AIS is triggered by unframed all ones condition from the T1 service provider.

Yellow Alarm Event
Active state represents one or more yellow alarm events. Yellow alarm is an indication the service provider has lost frame alignment.

PLL Alarm Event
Active state represents one or more PLL alarm events. PLL alarm is an indication that the transmit and receive side of the T1 interface are not looped timed. This will occur when both ends of the T1 are set to provide timing.

Path Code Violations
Count of path code violations received. Path code violations are a errors in the frame bit positions for D4 and ESF CRC errors when set for ESF.

Line Code Violations
Count of line code violations received. Line code violations are a combination of BPVs that are not part of B8ZS code and excess zeros. Excess zeros are eight or more consecutive zeros when set for B8ZS and fifteen or more consecutive zeros when set for AMI.

T1 Daily Status Table View

Access: *From the **Icon Subviews** menu for the AdTSUIQPStaApp, select **T1 Daily Status Table**.*

This view displays the following information.

Slot Index
The instance for this entry.

Unavail Secs
Amount of time in seconds the T1 port is unavailable due to test or in an inactive state.

State Change
Number of changes in the T1 port state. This includes all normal, inactive, and test state transitions.

Signal Loss Event
An `active` state represents one or more signal loss events.

Loop Back Event
Active state represents one or more loopback events.

AIS Event
Active state represents one or more AIS events. AIS is triggered by unframed all ones condition from the T1 service provider.

Red Alarm Event
Active state represents one or more AIS events. AIS is triggered by unframed all ones condition from the T1 service provider.

Yellow Alarm Event
Active state represents one or more yellow alarm events. Yellow alarm is an indication the service provider has lost frame alignment.

PLL Alarm Event
Active state represents one or more PLL alarm events. PLL alarm is an indication that the transmit and receive side of the T1 interface are not looped timed. This will occur when both ends of the T1 are set to provide timing.

Path Code Violations
Count of path code violations received. Path code violations are a errors in the frame bit positions for D4 and ESF CRC errors when set for ESF.

Line Code Violations
Count of line code violations received. Line code violations are a combination of BPVs that are not part of B8ZS code and excess zeros. Excess zeros are eight or more consecutive zeros when set for B8ZS and fifteen or more consecutive zeros when set for AMI.

DBU Interval Status Table View

Access: *From the **Icon Subviews** menu for the AdTSUIQPStaApp, select **DBU Interval Status Table**.*

This view displays the following information.

Slot Index
The instance for this entry.

Frames Rx
The number of frames the port received for the interval.

Frames Tx
The number of frames the port transmitted for the interval.

Bytes Rx
The number of bytes the port received for the interval.

Bytes Tx
The number of bytes the port transmitted for the interval.

Avg Thruput Tx
The average throughput the port transmitted for the interval.

Avg Thruput Rx
The average throughput the port received for the interval.

Max Thruput Tx
The maximum throughput the port transmitted for the interval.

Max Thruput Rx
The maximum throughput the port received for the interval.

Avg Utilization Tx
The average utilization the port transmitted for the interval.

Avg Utilization Rx
The average utilization the port received for the interval.

Max Utilization Tx
The maximum utilization the port transmitted for the interval.

Max Utilization Rx
The maximum utilization the port received for the interval.

DBU Active Time
Time in seconds the DBU port was active.

CRC Errors
Number of frames received with CRC errors.

Abort Frames
Number of frames received without proper flag termination.

Octet Violations
Number of frames received with a bit count not divisible by eight.

Discarded Frames
Number of frames discarded by the IQ unit.

Length Errors
Number of frames received that is less than 5 bytes or greater than 4500 bytes.

Encapsulation Errors
Number of frames destined for the IQ IP stack with that does not meet the FRF.3 IA.

Unroutable Frames
Number of frames received on a management DLCI destined for the IQ unit and have the wrong IP address.

DBU Daily Status Table View

Access: *From the **Icon Subviews** menu for the AdTSUIQPStaApp, select **DBU Daily Status Table**.*

This view displays the following information.

Slot Index
The instance for this entry.

Frames Rx
The number of frames the port received for the day.

Frames Tx
The number of frames the port transmitted for the day.

Bytes Rx
The number of bytes the port received for the day.

Bytes Tx
The number of bytes the port transmitted for the day.

Avg Thruput Tx
The average throughput the port transmitted for the day.

Avg Thruput Rx
The average throughput the port received for the day.

Max Thruput Tx
The maximum throughput the port transmitted for the day.

Max Thruput Rx
The maximum throughput the port received for the day.

Avg Utilization Tx
The average utilization the port transmitted for the day.

Avg Utilization Rx
The average utilization the port received for the day.

Max Utilization Tx
The maximum utilization the port transmitted for the day.

Max Utilization Rx
The maximum utilization the port received for the day.

DBU Active Time
Time in seconds the DBU port was active.

CRC Errors
Number of frames received with CRC errors.

Abort Frames
Number of frames received without proper flag termination.

Octet Violations
Number of frames received with a bit count not divisible by eight.

Discarded Frames
Number of frames discarded by the IQ unit.

Length Errors
Number of frames received that is less than 5 bytes or greater than 4500 bytes.

Encapsulation Errors
Number of frames destined for the IQ IP stack with that does not meet the FRF.3 IA.

Unroutable Frames
Number of frames received on a management DLCI destined for the IQ unit and have the wrong IP address.

DSX Interval Status Table View

Access: *From the **Icon Subviews** menu for the AdTSUIQPStaApp, select **DSX Interval Status Table**.*

This view displays the following information.

Slot Index
The instance for this entry.

Unavail Secs
Amount of time in seconds the T1 port is unavailable due to test or in an inactive state.

State Change
Number of changes in the T1 port state. This includes all normal, inactive, and test state transitions.

Signal Loss Event
An `active` state represents one or more signal loss events.

Loop Back Event
Active state represents one or more loopback events.

AIS Event
Active state represents one or more AIS events. AIS is triggered by unframed all ones condition from the T1 service provider.

Red Alarm Event
Active state represents one or more AIS events. AIS is triggered by unframed all ones condition from the T1 service provider.

Yellow Alarm Event
Active state represents one or more yellow alarm events. Yellow alarm is an indication the service provider has lost frame alignment.

PLL Alarm Event
Active state represents one or more PLL alarm events. PLL alarm is an indication that the transmit and receive side of the T1 interface are not looped timed. This will occur when both ends of the T1 are set to provide timing.

Path Code Violations
Count of path code violations received. Path code violations are a errors in the frame bit positions for D4 and ESF CRC errors when set for ESF.

Line Code Violations
Count of line code violations received. Line code violations are a combination of BPVs that are not part of B8ZS code and excess zeros. Excess zeros are eight or more consecutive zeros when set for B8ZS and fifteen or more consecutive zeros when set for AMI.

DSX Daily Status Table View

Access: *From the **Icon Subviews** menu for the AdTSUIQPStaApp, select **DSX Daily Status Table**.*

This view displays the following information.

Slot Index
The instance for this entry.

Unavail Secs
Amount of time in seconds the DSX port is unavailable due to test or in an inactive state.

State Change
Number of changes in the DSX port state. This includes all normal, inactive, and test state transitions.

Signal Loss Event
An `active` state represents one or more signal loss events.

Loop Back Event
Active state represents one or more loopback events.

AIS Event
Active state represents one or more AIS events. AIS is triggered by unframed all ones condition from the DSX service provider.

Red Alarm Event
Active state represents one or more AIS events. AIS is triggered by unframed all ones condition from the T1 service provider.

Yellow Alarm Event
Active state represents one or more yellow alarm events. Yellow alarm is an indication the service provider has lost frame alignment.

PLL Alarm Event
Active state represents one or more PLL alarm events. PLL alarm is an indication that the transmit and receive side of the DSX interface are not looped timed. This will occur when both ends of the DSX are set to provide timing.

Path Code Violations
Count of path code violations received. Path code violations are a errors in the frame bit positions for D4 and ESF CRC errors when set for ESF.

Line Code Violations
Count of line code violations received. Line code violations are a combination of BPVs that are not part of B8ZS code and excess zeros. Excess zeros are eight or more consecutive zeros when set for B8ZS and fifteen or more consecutive zeros when set for AMI.

Adtran DSU IV Application (AdDSUIVApp)

This application has the following available application-specific subviews:

DSU IV Status View

Access: *From the **Icon Subviews** menu for the AdDSUIVApp, select **DSU IV Status**.*

This view displays the following information.

Unit State

This status contains the current DSUIV operational state. Possible states are `normal`, `alarm`, `dialBackup`, and `test`.

Test Status

This status variable contains DSUIV test and remote configuration status information. Possible values are `normal`, `dteOnly`, `localLoopOnly`, `localDTEandLoop`, `remoteConfigMaster`, `remoteConfigSlave`, `remoteLoop`, `remoteLoopTP`, `dteWithTP`, `testPattern`, `dteAndLoopTest`, `loopOnlyTest`, `rdlFromDSUIV`, `dbuTestOrig`, and `dbuTestAnswer`.

Self Test

This status variable contains the DSUIV unit self test result. Possible results are `selfTestPass`, `checksumFail`, `ramTestFail`, `lalTestFail`, and `eepromTestFail`.

Last Command Status

This status variable indicates the result of the last command executed. Options are `success` or `failure`.

Call Disconnect Status

This Call Disconnect Status variable gives the reason the DSUIV unit dropped the last call. Possible reasons are `activeCall`, `noAnswer`, `busy`, `noDialTone`, `farEndDisconnect`, `noPasscode`, `invalidPasscode`, `validCallBack`, `autoRestoreDisconnect`, `manualRestoreDisconnect`, and `powerOnReset`.

ESP DBU Card

The type ESP Dial Backup Card installed in the DSUIV unit. Possible types are `notInstalled`, `espDbuS4W`, `espDbuV34`, and `espDbuISDN`.

ESP LAN Card
The type ESP Lan Card installed in the DSUIV unit. Either `notInstalled` or `espEthernet`.

Front Panel LEDs
This status value contains the on or off state of the DSUIV unit's front panel indicators. The LED bit values are: `RS`, `CS`, `TD`, `RD`, `CD`, `ALM`, and `TST`.

Network Loop Status
This status variable contains network loop status information. The status is a bit mapped sum, multiple bits can be active simultaneously. Possible statuses are `OOS/OOFcode`, `NoReceiveSignal`, `NoSealingCurrent`, `NoFrameSync`, `AttemptRateAdapt`, `RTtest`, `LLtest`, and `DBUInProgress`.

DTE/Dial/DBU Status

This opens another DSU IV Status View that is described in the next column.

DSU IV Status View

Access: *Within the **DSU IV Status** view, click the **DTE/Dial/DBU Status** button.*

This view displays the following information.

DTE Signal Status

DTE Signal Status 1
This status variable indicates DTE signal status information. The status is a bit mapped sum, multiple bits can be active simultaneously.

Table 6: Status Bit Positions

Bit Position	Meaning
TM	Test Mode Indicator
RD	Receive Data
TD	Transmit Data
CD	Carrier Detect
CS	Clear to Send
RS	Request to Send
SR	Data Set Ready
TR	Terminal Ready

DTE Signal Status 2

This status variable indicates DTE signal status information. The status is a bit mapped sum, multiple bits can be active simultaneously. The status bit positions are listed in Table 7.

Table 7: Status Positions

Value	Meaning
RI	Ring Indicator
Reserved	Reserved
Reserved	Reserved
LLB	Local Loopback
RLB	Remote Loopback
Reserved	Reserved
TimerActive	Anti-stream timer active

Dialing Status

This status variable indicates dialing status information. The status is a bit mapped sum, multiple bits can be active simultaneously. The status bit positions are listed in Table 8.

Table 8: Status Bit Positions

Value	Meaning
DialingNumber	DSU IV is dialing a number.
OnlinePassingData	DSU IV is online passing on data.
NoWinkFromSwitch	No wink from switch (cleared after 5 seconds).
NumberBusy	Number is busy.
NoAnswer	No answer (cleared after 5 seconds).
Ringing	Ringing.

DBU Status

This status variable contains the DBU card's status information. The status is a bit mapped sum, multiple bits can be active simultaneously. The status bit positions are listed in Table 9.

Table 9: DBU Status

Value	Meaning
S4WDBU-OOS	Getting TEI
S4WDBU-NoRx	Registering SPID
S4WDBU-NoSx	No Rx Signal
TransmitTestPattern	Connected & Transmitting Test Pattern.
InLoopBack	Connected & In Loopback
Reserved	Reserved
InTestFromTelco	In Test from Telco.
DBUCardPresent	DBU card is present.

Test Operation View

Access: *From the **Icon Subviews** menu for the AdDSUIVApp, select **Test Operation**.*

This view provides the following information.

Test Command
A Set for this option performs one of the DSUIV test operations. Possible operations are `exitTest`, `dteLoopLL`, `loopOnlyRT`, `dteOnly`, `dtePattern`, `testPattern`, `selfTest`, `remoteLoopPattern`, and `remoteLoopDteData`.

Test Pattern
This option selects a test pattern to be used during test commands with patterns. Possible patterns are `pattern2047`, `pattern511`, `stress1`, `stress2`, `stress3`, `stress4`, `dataFromDte`.

DBU Connection Test
This option performs a DBU Connection Test. The Set value selects the phone number to dial the remote unit. A value of 0 selects the Dial Backup string, 1 to 10 selects the stored phone number from the list in the phone number table.

Remote Unit Address
This option selects the address of the remote unit for remote test operations.

Insert Error
A Set operation will insert one error into the transmitted test pattern during pattern tests.

Clear Error
A Set operation will clear the error counters.

Error Count
This value indicates the number of errors accumulated by the test pattern detector.

Dial Operation View

Access: *From the **Icon Subviews** menu for the AdDSUIVApp, select **Dial Operation**.*

This view provides the following information.

Network Dial Command
This Network Dial command makes a call through either the Switched DDS Network or the ESP Dial Backup Card. A Set operation commands the DSUIV to go off hook and dial the number selected by the set value. A value of 0 selects the Manual Dial String, while 1 to 10 selects the stored number in the Dial Directory table (1-10).

Manual Dial String
The Manual Dial String is used to make a call when a Dial Command value 0 is set.

Turn Beeper Off
A Set operation commands the DSUIV to turn the audible beeper off.

Hang Up Call
A Set operation commands the DSUIV to terminate the current call.

Answer Call
A Set operation commands the DSUIV to answer the incoming SW56 or DBU call.

Unit Configuration View

Access: *From the **Icon Subviews** menu for the AdSUIVApp, select **Unit Configuration**.*

This view displays the following information.

Reset Unit
A Set operation with value of 1 causes the DSUIV Unit to perform a reset operation. The reset operation commands the unit to execute a power-up initialization.

Caution: The reset operation commands the unit to execute a power-up initialization.

Operating Config Option
A Set operation to one of the profile values will load the DSUIV operating configuration with the selected factory profile configuration values.

Remote Access
This option allows remote configuration of the unit. Enable or disable.

Keyboard Operation
This option enables or disables front panel keypad operation.

Clock Time
The DSUIV clock time in 24 hours: minutes: seconds.

Clock Date
The DSUIV clock date in month-day-year.

Enable Traps
This option enables the unit to send SNMP Trap messages for alarm conditions. The SNMP Traps are sent to stations specified in the TRAP IP Address table. The options are disable, send Generic standard traps, or enable all traps, including DSUIV enterprise specific.

Trap Host Address Table

Index
The corresponding index that identifies the stored Host Trap Address.

IP Address
The Host Trap IP Address in dotted notation. For example: 192.239.232.59.

Network Configuration View

Access: *From the **Icon Subviews** menu for the AdSUIVApp, select **Network Configuration**.*

This view displays the following information.

Loop Rate
This option selects the network loop operating speed. Possible speeds are `autoRate`, `bps2400`, `bps4800`, `bps9600`, `bps19k`, `bps38k`, `bps56k`, and `bps64k`.

DDS Network Type
This option configures the unit for a specific network type. Possible values are `dedicated`, `attMciSw56`, and `usSprint`.

DDS Network Address
This is the DDS network address used to identify the unit for remote operations in multipoint circuits.

Clock Source
This option selects the internal timing source for the DSUIV. Either `master` or `fromLoopRx`.

DBU Configuration View

Access: *From the **Icon Subviews** menu for the AdSUIVApp, select **DBU Configuration**.*

This view displays the following information.

DBU Option
This specifies whether the unit automatically enters dial backup mode or waits for manual setup.

DBU Mode
This option specifies the dial backup operating mode for the unit as `originate` or `answer`. One must be set to originate and the other end to answer.

Out of Service Option
This option enables the unit to enter backup mode if an out-of-service condition is detected from the network.

Loss of Receive Signal Option
This option enables the unit to enter backup mode when a loss of receive signal is detected from the network.

Loss of Sealing Current Option
This option enables the unit to enter backup mode when a loss of sealing current is detected from the network.

On Pattern Option
This option enables the unit to enter backup mode when a pattern of all ones or zeros is received that exceeds the DBU Fail Timer. If this condition is detected, the DSUIV initiates a handshake operation with the remote unit to determine if the DTE is transmitting a constant data pattern or the network has failed.

Pass Check
This option allows the unit to send and verify a dial backup passcode for an additional level of security. When enabled, the originate unit sends the passcode and the answer unit checks the passcode before the backup connection is considered valid.

Pass Code
This option sets the dial backup passcode used to provide an additional level of security. A passcode of one to ten digit characters can be set. If enabled, the originate unit sends the passcode and the answer unit checks the passcode to verify the connection.

Answer Always
This option enables or disables Answer Always for Dial Backup operation. If enabled, the answer unit answers any incoming call regardless of failed conditions.

Transition Timer (secs)
The Dial Backup Transition Timer specifies the amount of time the dial backup connection will remain active after restoral of the primary DDS circuit. After this time expires the dial backup call will be dropped. The Transition Timer value is in seconds. The default value is 60 seconds.

Maximum Timer (secs)
The Dial Backup Maximum Timer specifies the maximum time the dial backup connection will remain active. After the specified time expires, the unit will disconnect the dial backup connection. The time value is in hours with a maximum of 255. The default value is 0 which disables the timer.

Call Back Option
This option enables or disables the DBU Call Back feature. When this feature is enabled, the Answer unit will place a call to the Originate unit requesting the Originate unit to perform a Call Back for dial backup.

Caller ID Option
This option enables or disables dial backup Caller ID. When this feature is enabled, a DSUIV with an installed ISDN dial backup module can verify the source of an incoming call to provide additional security prior to going to dial backup.

Number to Dial Option
This option offers a selection of stored numbers for the unit to automatically dial. If the primary DSUIV line fails, and the DSUIV is set to originate, the DSUIV dials the numbers in chronological order to setup the dial backup line. `huntFromNumber1` performs a circular hunt operation through the list of phone numbers in the phone number table. `dialNumber2` will only select phone number 2 in the table for dialing.

Start Lockout
This option selects the hour to begin disabling dial backup operation when daily or weekend lockout mode is inactive.

End Lockout
This option selects the hour to end dial backup lockout when daily or weekend lockout mode is active.

Weekend Lockout
This option enables or disables Weekend Lockout for Dial Backup operation. If enabled, no backup will occur from midnight Friday to midnight Saturday.

Daily Lockout
This enables or disables Daily Lockout for Dial Backup operation. If enabled, no backup will

occur between Lockout Start hour and Lockout End hour.

Auto Restore Timer

This option selects the amount of time that the DSUIQ circuit must be active before the unit switches from backup to normal mode of operation. The timer value is in minutes from 0 to 60. A zero value disables the automatic restore.

Redial Count

This allows the selection of the number of times the unit will redial the Far End unit when attempting to go to backup and a busy or reorder condition occurs. Redial count can be set for a maximum of 60.

Fail Timeout

This option allows the selection of the amount of time that the dedicated circuit failure condition is active before attempting to enter dial backup mode. The Fail Timeout value is in increments of 10 seconds up to a maximum of 600 seconds.

Redial Timer

This option works in conjunction with the Redial Counter option. The Redial Timer specifies the amount of time between redial attempts. The Redial Timer value is seconds, up to a maximum of 60.

ISDN Dial Backup Options

ISDN Net

This option is used to select the company to provide the switched Digital Service. When US Sprint is selected, an automatic Echo Canceller Suppressor tone is emitted by the DSUIV unit when dialing. Options are `att-5ess`, `nt-dms-100`, and `national-isdn1`.

Protocol

This option is used to select the protocol used to transmit subrates over the ISDN link. Subrates are all rates below 56kbps. V.120 is the default protocol. Either `v-120`, or `t-link`.

V.32 bis and V.34 Dial Backup Options

MNP Mode

This option selects the type of error control to be negotiated at the start of the V.32 bis or V.34 modem connection. Possible types are `normalMode`, `directMode`, `reliableMNPMode`, `autoReliableMNPMode`, `reliableAPMMode`, `reliableV42`, and `auto`.

Flow Control

This option selects the type of flow control used by the V.32 bis or V.34 modem. Possible types are `disabled`, `xon-xoff`, `ctsOnly`, `rts-cts`, and `uni-xon-xoff`.

Data Compression
This option is used to select the data compression for the V.32 bis or V.34 operation when running asynchronously. When enabled the system will increase the effective data throughput to speeds as high as 57.6kbps, depending on data type. For synchronous applications, the speed is limited to a maximum of 14.4 kbps for V.32 and 28.8 kbps for V.34.

DTE Configuration View

Access: *From the **Icon Subviews** menu for the AdDSUIVApp, select **DTE Configuration**.*

This view displays the following information.

DTE Rate
This option selects the DTE operating speed. Possible speeds are `bps2400`, `bps4800`, `bps9600`, `bps19k`, `bps38k`, `bps56ksync-57kasync`, and `sameAsLoop`.

DTE Connector Type
This option selects the primary DTE connector type for operation as either RS-232(1) or V.35.

DTE Data Scrambler
This option enables or disables DTE data scrambler when network loop rate is operating at 64 kbps.

Command Mode
This option selects the command mode for the primary DTE interface. Possible modes are `disable`, `atcmd`, `v25SDLC`, and `v25Async`.

Command Echo
This option enables or disables command echo when in AT Command Mode.

Result Code
This option enables or disables command response when in AT Command Mode.

Code Format
This option selects short or long AT command response format when in AT Command Mode.

Anti-stream Timeout
This option selects the anti-stream timeout. The anti-stream timeout is the maximum time the DSUIV transmits data into the network from the DTE. This feature is used in multi-drop networks to prevent one DTE from continuously sending to a master DSUIV. The anti-stream timer runs when the request to send (RS) lead is active. Possible values are `disable`, `sec10`, `sec30`, and `sec60`.

CS Option
This option selects mode of operation for DTE clear to send (CS) lead. Possible modes are `forcedOn`, `followRS`, `onWithCD`, `onWithRSCD`,

offWithLOCD. offWithLOCD option is valid for SW56 mode only.

CD Option
This option selects operating mode for the receive line signal detector (CD) lead on DTE connector. Possible modes are forcedOn, normal, and offWithLossCD.

RS to CS Delay
This option selects short or long delay from RS to CS when CS is controlled by RS.

TR Option
This option selects the DSUIV response to changes in data terminal ready (TR) lead from the DTE. noDBUifOff is valid only if a ESP DBU card is installed and the unit is not operating in SW56 mode. Possible values are ignored, idleWhenOff, off-onDial1, off-onDial2, and noDBUifOff.

SR Option
This option selects operation for the data set ready (SR) lead. Possible values are forcedOn, offOOSOnly, offLOCDOnly, offTESTOnly, offTEST-OOS, and offTEST-LOCD.

Transmit Clock Source
This option selects the transmit clock source used by the unit to transfer data from the DTE. Possible values are internal, external, and invert.

Data Format
This option selects either asynchronous or synchronous data format for the DTE interface.

Asynchronous Format
This option selects the asynchronous word length when the data format is asynchronous. Possible values are async9Bits, async10Bits, and async11Bits.

Dial Configuration View

Access: *From the **Icon Subviews** menu for the AdDSUIVApp, select **Dial Configuration**.*

This view displays the following information.

Auto Answer Switch 56 Call
This option enables or disables whether the DSUIV will automatically answer a Switch 56 Call.

Dial Phone Number Table

Double-clicking on an entry in this table displays the Dial Phone Number Table Entry View. This view displays the following information.

Index
The corresponding index that identifies the stored phone number.

Phone Number
The stored phone number, maximum 32 digits.

Test Configuration View

Access: *From the **Icon Subviews** menu for the AdDSUIVApp, select **Test Configuration**.*

This view displays the following information.

Test Timeout (secs)
This option sets the length of time the DSUIV remains in a test or remote configuration mode before automatically returning to data mode. The time is in seconds. A zero value disables the timeout operation.

Accept RDL
This option enables or disables DSUIV acceptance of remote digital loopback command.

DBU Answer Test
This DBU test option enables the unit to answer a dial backup call to perform a DBU Connection test. When enabled, and not in dial backup, the unit will answer an incoming call and loopback the DBU receiver to the DBU transmitter.

Latch LB Timeout (secs)
This option sets the length of time the DSUIV remains in a TELCO activated Latching Loopback test before automatically returning to data mode. The time is in seconds. A zero (0) value disables reception of the Latching Loopback sequence.

EIA Controlled LLB
This option enables EIA controlled local loopback LLB from the DTE.

EIA Controlled RLB
This option enables EIA controlled remote loopback RLB from the DTE.

Adtran TSU 600e Application (AdTSU600eApp)

This application has the following application-specific subviews:

- *TSU 600e Configuration View* (Page 100)
- *LED States View* (Page 101)

TSU 600e Configuration View

Access: *From the **Icon Subviews** menu for the AdTSU600eApp, select **Configuration**.*

This view displays the following information.

Passcode
The password string used for authentication of SNMP messages between proxy agent and the TSU600E.

Reset Performance Monitoring
A set will reset Performance Monitoring DS1 statistic counters in the TSU600E.

Phone Number
The phone number to reach the network manager.

Reboot
A set will reboot the TSU-600E.

Current T1 Map
The currently active T1 Map. Either `MapA` or `MapB`.

Enable Traps
Allows you to `enable/disable` traps.

Current Time
The current TSU600E time value. A sequence of ASCII characters encoded as HHMMSS.

Current Date
The current TSU600E date value. A sequence of ASCII characters encoded as MMDDYY.

Modem Initialization
The modem initialization string used by the TSU600E.

Cancel Test Modes
A set will cancel all tests modes on the TSU-600E.

Unit ID
The unit identification number for the TSU600E.

Send Traps Method
Method by which unit sends traps.

Port Status Table

Index
The index value which uniquely identifies the object instance.

Port Status Value
The status of the port. Possible values are `ok`, `test`, `alarm` and `not-present`.

LED States View

Access: *From the **Icon Subviews** menu for the AdTSU600eApp, select **LED States**.*

This view displays the following information.

System LED
The variable containing the state of the System LED.

Module 1 LEDs (through 6)
Possible selections are OK, ALARM and TEST.

CSU LEDs
Possible selections are OK, ALARM, TEST, and ERROR.

Adtran TSU 120e Application (AdTSU120eApp)

This application has the following application-specific subviews:

TSU 120e Configuration View

Access: *From the **Icon Subviews** menu for the AdTSU120eApp, select **Configuration**.*

This view displays the following information.

Passcode
The password string used for authentication of SNMP messages between proxy agent and the TSU120E.

Reset Performance Monitoring
A set will reset Performance Monitoring DS1 statistic counters in the TSU120E.

Phone Number
The phone number to reach the network manager.

Reboot
A set will reboot the TSU-120E.

Current T1 Map
The currently active T1 Map. Either `MapA` or `MapB`.

Enable Traps
Allows you to `enable/disable` traps.

Current Time
The current time value. A sequence of ASCII characters encoded as HHMMSS.

Current Date
The current date value. A sequence of ASCII characters encoded as MMDDYY.

Modem Initialization
The modem initialization string used by the TSU600E.

Cancel Test Modes
A set will cancel all tests modes on the TSU-120E.

Unit ID
The unit identification number for the TSU120E.

Send Traps Method
Method by which unit sends traps.

LED States View

Access: *From the **Icon Subviews** menu for the AdTSU120eApp, select **LED States**.*

This view displays the following information.

DSU LEDs
The state of the DSU LEDs.

Module 1 LEDs (through 6)
Possible selections are OK, ALARM and TEST.

CSU LEDs
Possible selections are OK, ALARM, TEST, and ERROR.

Adtran Smart 16 Application (AdSmart16App)

This application has the following application-specific subview:

- *Smart 16 Controller Provision View*

Smart 16 Controller Provision View

Access: *From the **Icon Subviews** menu for the AdSmart16App, select **Configuration**.*

This view displays the following information.

SNMP Password
This command is used to change SNMP password.

Clock Time
This command changes time for controller's real time clock in HHMMSS format.

Clock Date
This command changes date for controller's real time clock in YYMMDD format.

Reset
A SET command resets controller to its factory default setting.

Controller IDs
A Bitmap of the Controller IDs proxied by this controller.

Power Supply
Select Smart16 power supply configuration.

Controller LED Status Table

Slot Interface
This index value uniquely identifies the slot interface.

LED Status
Bitmap of the LED status for the controller (instance 1) and each option card (instance 2-17 for slots 1-16, respectively.

Adtran TSU ESP Application (AdTSUESPApp)

Access: *From the **Icon Subviews** menu for the Adtran TSU ESP device icon, select **Application**.*

This application provides the following subviews.

TSU ESP Status View

Access: *From the **Icon Subviews** menu for the AdTSUESPApp icon, select **TSU ESP Status.***

This view provides the following information.

Unit State
This status contains the current TSU ESP operational state.

Self Test
This allows you to start a TSU ESP self-test operation.

Clear History
Allows you to reset the status history alarms, errors, and tests.

Last Command Status
Indicates the result of the last command executed.

DTE Port Status
The TSU ESP DTE port status.

DTE Port Data
The TSU ESP DTE port data.

ESP DBU Card
The type of ESP Dial Backup Card installed in the TSU ESP unit.

ESP LAN Card
The type of ESP LAN Card installed in the TSU ESP unit.

Front Panel LEDs
This status value contains the on or off state of the TSU ESP unit's front panel indicators. Each LED is represented by a bit in the status value. A bit value of one indicates the LED is on. The LED bit values are listed in Table 10.

Table 10: LED Bit Values

Value	LED
1	RS
2	CD
4	TD
8	RD
16	ERR
32	ALM
64	TST

Dial Status
This status variable indicates dialing status information. The status is a bit mapped sum, multiple bits can be active simultaneously.

Current/History Status

This opens the TSU ESP Current & History Status View that is described below.

Current Status

The current status of the TSU ESP. See Table 11.

Table 11: Alarm Indicators

Value	Definition
noAlarm	No alarm present
RcvYellow	Received Yellow Alarm
XmtYellow	Transmit Yellow Alarm
RcvBlue	Receive Blue Alarm
XmtBlue	Transmit Blue Alarm
RcvRed	Receive Red Alarm
RcvLos	Receive Loss of Signal
LocalLB	Local Loopback
RemoteLB	Remote Loopback
XmtPattern	Transmit Pattern Generation

Table 11: Alarm Indicators (Continued)

Value	Definition
CodeViol	Code Violation
RcvBPVS	Receive Bipolar Violations
FrmBitErrs	Frame Bit Errors
PhaseLock	Phase Lock Loop Alarm
DialBackup	Dial Backup

Status History

The TSU ESP status history of alarms, errors, and tests. It is a bit map represented as a sum, multiple bits can be active simultaneously. See Table 11 for values.

Test Operation View

Access: *From the **Icon Subviews** menu for the AdTSUESPApp icon, select **Test Operation.***

This view provides the following information.

DTE Loopback

This allows you to turn the TSU ESP DTE loopback either `on` or `off`.

Test Pattern
Used to select TSU ESP test pattern. Options are `allOnes`, `pattern511`, `noPattern`, `allZeroes` and `patternQRSS`.

Cancel All Tests
This allows you to cancel all tests.

Remote Loopback
Used to select the remote TSU ESP loopback test function. Options are `remNoLoop`, `remPayloadATT`, `remPayloadANSI`, `remLineATT`, `remLineANSI`, and `remPayloadFT1`.

Test Pattern Results
The TSU ESP test pattern results.

Dial Operation View

Access: *From the **Icon Subviews** menu for the AdTSUESPApp icon, select **Dial Operation.***

DBU Dial Command
This Dial Backup command makes a call through the ESP Dial Backup Card. A Set operation commands the TSU ESP Dial Backup Card to go off hook and dial the number selected by the value. Values 0 through 9 select the corresponding stored number in the phone number table.

DBU Dial String
The dial string used to make a forced Dial Backup call. A Set operation performs a forced DBU using the given string.

Hang Up Call
A Set operation commands the TSU ESP to terminate the current call.

Unit Configuration View

Access: *From the **Icon Subviews** menu for the AdTSUESPApp icon, select **Unit Configuration.***

This view provides the following information.

Reset DS1 Performance Stats
Allows you to reset all performance statistics.

Mode
The mode of the TSU ESP.

Modem Initialisation
A Set operations performs TSU ESP modem initialization.

Chain In Port Phone Number
The Chain in Port phone number used to reach the network manager.

Global Trap Setting
Allows you to enable or disable the TSU ESP from sending ADLP traps.

Passcode
The passcode string used for authentication of ADLP messages between T-Watch and TSU ESP.

TSU ESP Time
The current TSU ESP time value. A sequence of ASCII characters encoded as HR- hr, MN-Minute, SC-Second. For example, HRMNSC = 123059.

TSU ESP Date
The current TSU ESP date value. A sequence of ASCII characters encoded as MN-Month, DY-Day, YR-year. For example, MNDYYR = 073193.

Chain In Port Connection
The Chain in Port connection.

Factory Restore
Allows you to reload the factory options.

Enable Traps
This option enables the unit to send SNMP Trap messages for alarm conditions. The SNMP Traps are sent to stations specified in the Trap IP Address table. The options are `disable`, send `mib 2 standard traps`, or `enable all traps`, including TSU ESP enterprise specific.

Trap Host Address Table

Index
The corresponding index that identifies the stored Trap Host Address.

IP Address
The Host Trap IP Address.

Network Configuration View

Access: *From the **Icon Subviews** menu for the AdTSUESPApp icon, select **Network Configuration.***

This view provides the following information.

Yellow Alarm
Enable or disable the TSU ESP to send a Yellow Alarm. Select `yelAlmEnable` or `yelAlmdisable`.

Performance Reports
Allows you to enable or disable the TSU ESP to send performance reports. Select `prmdisable` or `prmenable`.

Line Build Out
Allows you to select the TSU ESP transmission Line Build Out. Options are `lineBOauto`, `lineBO00`, `lineBO75`, `lineBO150`, and `lineBO225`.

Clock Source
This sets the network transmit clock source to `network`, `internal` or `dte`.

Network Framing Format
This sets the network framing format to `D4`, `ESF`, or `auto`.

Network Line Code
This option sets the network line code to `B8ZS` or `ami`.

T1 Bit Stuffing
Allows you to enable or disable TSU ESP T1 bit stuffing.

Receiver Sensitivity
This sets the network receiver sensitivity to `normal` or `extended`.

DBU Configuration View

Access: *From the **Icon Subviews** menu for the AdTSUESPApp icon, select **DBU Configuration.***

This view provides the following information.

Dial Backup Configuration

DBU Mode
This specifies the dial backup operating mode for the unit. Possible modes are `disabled`, `originate`, `answer`, and `answerAlways`.

Weekend Lockout
This allows you to select whether the weekend lockout feature is lockout `enabled` or lockout `disabled`.

Enable DBU (by hour)
This selects the hour to resume enabling the entry into dial backup operation when daily or weekend lockout mode is inactive.

Disable DBU (by hour)
This selects the hour to disable dial backup operation when daily or weekend lockout mode is active.

Number to Dial Option
This offers a selection of stored numbers for the unit to automatically dial. if the primary TSU ESP line fails, and the TSU ESP is set to originate, the TSU ESP dials the numbers in chronological order to setup the dial backup line. Option `huntFromNumber1` performs a circular hunt operation through the list of phone numbers in the phone number table. Option `dialNumber1only` will only select phone number 1 in the table for dialing.

Auto Restore Timer
This selects the amount of time that the TSU ESP circuit must be active before the unit switches from backup to normal mode of operation. The

never setting disables the automatic restore, meaning that TSU ESP operation must be restored manually.

Redial Count
This allows the selection of the number of times the unit will redial the Far End unit when attempting to go to back up and a busy or reorder condition occurs. Redial count can be set for a maximum of 99.

Redial Timer
This option works in conjunction with the Redial Counter Option. The Redial Timer specifies the amount of time between redial attempts.

Fail Timeout
This allows the selection of the amount of time that the dedicated circuit failure is active before attempting to enter dial backup mode.

External DCE DBU Options

Pattern Verification
This option is used to select the DBU pattern verification option average.

Physical Interface
This option is used to select the physical interface option available for the External DCE DBU module.

ISDN Options

This opens the *ISDN DBU Configuration View*, which is described below.

ISDN DBU Configuration View

ISDN Net
This option is used to select the company to provide switched Digital Service. When US Sprint is selected, an automatic Echo Canceller Suppressor tone is emitted by the TSU ESP unit when dialing. Options are `att-5ess`, `nt-dms-100`, and `national-isdn1`.

ISDN Rate
This is used to select Nx56 kbps or Nx56 kbps as the backup.

Number of ISDN B Channels
This selects the number of ISDN B channels to be bonded together as a dial backup connection.

ISDN Service Profile ID (SPID) Table

Double-clicking on an entry in this table displays the ISDN Service Profile ID Table Entry View.

Index
The corresponding index that identifies the stored ISDN SPID number.

ISDN SPID Number
The stored ISDN SPID number.

ISDN Local Directory Number (LDN) Table

Double-clicking on an entry in this table displays the ISDN Local Directory Number Table Entry View.

Index
The index that identifies the stored ISDN LDN number.

ISDN LDN Number
The stored ISDN LDN number.

Port Configuration View

Access: *From the **Icon Subviews** menu for the AdTSUESPApp icon, select **Port Configuration.***

This view provides the following information.

DSO Rate
Selects DS0 rate 56 kbps or 64 kbps.

DSO Channels
Selects alternating or consecutive DS0 channels.

DTE Transmit Clock Source
Select internal, external, or internal-invert TSU ESP clock source.

Inband Mode
Allows you to select TSU ESP inband mode.

Data
Allows you to enable or disable TSU ESP data inversion. Options are `normalData` and `invData`.

CTS
Allows you to enable or disable TSU ESP forced DTS. Options are `normalCTS` or `forceCTSon`.

DSR
Allows you to select whether TSU ESP DSR is forced on. Options are `normalDSR` or `forcedDSR`.

DCD
Allows you to select whether TSU ESP DCD is forced on. Options are `normalDCD` or `forcedDCD`.

Fractional T1

Start Channel Number (1-24)
Select start channel number of Fractional T1.

Number of Channels (1-24)
Allows you to select the number of channels in Fractional T1.

Dial Configuration View

Access: *From the **Icon Subviews** menu for the AdTSUESPApp icon, select **Dial Configuration.***

This view provides the Dial Phone Number Table. Double-clicking on an entry in this table displays the Dial Phone Number Table Entry View.

Index
The index that identifies the stored phone number.

Phone Number
The stored phone number.

Test Configuration View

Access: *From the **Icon Subviews** menu for the AdTSUESPApp icon, select **Test Configuration.***

This view provides the following information.

Test Timeout (secs)
This sets the length of time in seconds the TSU ESP remains in a test before automatically exiting. A zero value disables the timeout operation.

Answer Test
This DBU test option enables the unit to answer a dial backup call to perform a DBU Connection test. When enabled, and not in dial backup, the unit will answer an incoming call and loopback the DBU receiver to the DBU transmitter.

Adtran Administrative Application (AdtranAdminApp)

This application has the following device-specific subview:

- Adtran Administration View, which is also displayed as the *Adtran Product View* (Page 122)

Adtran ATLAS Chassis Application (AdATLChasApp)

The application provides the following application-specific subviews:

- *Atlas 800 Interface Table View*

Atlas 800 Interface Table View

Access: *From the* ***Icon Subviews*** *menu for the AdATLChasApp, select* ***Configuration****.*

This view provides the following information.

Number of Interfaces
The number of network interfaces (regardless of their current state) present on this system. The same as ifNumber defined in the MIB-2 interfaces group.

Interface Table

Index
The instance for this entry.

Slot
The physical slot in the Atlas identified by IfIndex.

Port
The physical port in the Atlas identified by IfIndex.

Physical Table

Index
The instance for this entry.

Physical Slot
The physical slot in the Atlas.

Physical Port
The physical port in the Atlas.

Physical Index
The value of this object is equal to the value of ifIndex from the Interfaces table of MIB-II (RFC1212).

Complete Status
A bit-encoded variable that gives the overall status of the Atlas Product. It is encoded as follows in Table 12.

Table 12: Status Values

Value	Definition
OK	0x01
ONLINE	0x02
TESTING	0x04
FLASH DOWNLOAD	0x08
ERROR	0x10
ALARM	0x20

There may be multiple bits set based on the current state of the different option cards and modules.

Adtran ATLAS General Option Card Application (AdATLGenOCApp)

This application provides the following application-specific subviews:

- *ATLAS General Option Card View*

ATLAS General Option Card View

Access: *From the **Icon Subviews** menu for the AdATLGenOCApp, select **Configuration**.*

This view displays the following information.

Index
This variable indicates the interface number of a particular port on an option card within the ATLAS product.

Slot
This variable indicates the slot number of a particular option card within the ATLAS product.

Port
This variable indicates the port number of a particular port on an option card within the ATLAS product.

OID
This variable indicates the OID that points to the specific MIB that references this particular type of Option Card with the ATLAS product.

Port Name
This variable indicates the port name for a particular port located on an option card within the ATLAS product.

Port Test Status
This variable indicates the port test status for a particular port located on an option card within the ATLAS product. Values are `On`, `Off`, and `Nonapp`.

Module State
This variable indicates the state of an option card within the ATLAS product, either online or offline. Valid values are `On` and `Off`.

Module Status
This variable indicates the hardware module status for an option card located within the ATLAS product. Options are `Online`, `Offline`, `NoResponse`, `UnresponsiveOffline`, `NotReady`, and `Restarting`.

Part No
This variable indicates the part number for a particular option card within the ATLAS product.

Serial No
This variable indicates the serial number for a particular option card within the Atlas product.

Hardware Rev
This variable indicates the hardware rev for a particular option card within the ATLAS product.

General Option Card Overall Module Status Table

Access: *From the **Icon Subviews** menu for the AdATLGenOCApp, select **Module Status**.*

Double-clicking on an entry in this table displays the General Option Card Overall Module Status Detail View.

Module Index
An index into the General Option Card Module Index. This number corresponds to the slot number into which the Option Card has been placed.

Overall Status
A bit-encoded variable that gives the overall status of the Option Card. It is encoded as listed in Table 12.

Adtran ATLAS Front Panel Group Application (AdATLFrPnlApp)

This application provides the following application-specific subview:

- *ATLAS Front Panel Information View*

This application contains ASN.1 objects that store the current state of all LEDs and the LCD display on the Atlas products.

ATLAS Front Panel Information View

Access: *From the **Icon Subviews** menu for the AdATLFrPnlApp icon, select **Configuration.***

This view displays the following information.

Atlas LCD Display
The message that is currently displayed on the Atlas LCD.

System LED Status
This variable indicates the status of the System LED. When the system LED changes state, this variable changes accordingly. The system LED states are as follows as listed in Table 13.

Table 13: System LED States

State	Status
OK	Green
Error	Red
Warning	Yellow
Flash Update	Flashing Green
Flash Error	Flashing Red
Off	Off

CSU LED OK Status

The status of the CSU OK LED. Values are listed in Table 14.

Table 14: CSU OK LED Status

State	Status
OK	Green
Flash	Flashing Green
Off	Off

CSU LED Test Status

The status of the CSU Test LED. When the state changes, this variable changes accordingly. Values are listed in Table 15.

Table 15: CSU Test LED Status

State	Status
Test in Progress	Yellow
Flash	Flashing Yellow
Off	Off

CSU LED Error Status

The CSU Error LED status. When the state changes, this variable changes accordingly. Values are listed in Table 16.

Table 16: CSU Error State

State	Status
Error	Red
Flash	Flashing Red
Off	Off

CSU LED Alarm Status

The CSU Alarm LED Status. Values are listed in Table 17.

Table 17: CSU Alarm LED Status

State	Status
Alarm	Red
Flash	Flashing Red
Off	Off

Number of Module Slots

The number of module slots that are located on the Atlas product.

Module LED Table

Slot Index

Indicates which slot is indicated on the Atlas 800 product.

Card Status

The status of the card located in the slot determined by the Index variable.

Online Status

Indicates whether the card located in the slot determined by the Index is online or offline. Values are listed in Table 18.

Table 18: Online LED Status

State	Status
Online	Green
Flashing	Flashing Green
Offline	Off

Test Status

Indicates whether the card located in the slot determined by the Index is in a test mode or not. Values are listed in Table 19.

Table 19: Module Test Status

State	Status
Test in Progress	Green
Flashing	Flashing Red
Off	Off

Adtran ATLAS V35Nx4 Application (AdATLV35Nx4App)

This application provides the following application-specific subview:

- *ATLAS V35Nx4 Option Card View*

ATLAS V35Nx4 Option Card View

Access: *From the* ***Icon Subviews*** *menu for the AdATLV35Nx4App, select* ***Configuration****.*

This view displays the following information.

Number of V35Nx56 Ports

The number of V35Nx56 ports (regardless of their current state) present in the system.

The ATLAS V35Nx4 Option Card Interface Table

This variable indicates the interface number of a particular V35Nx56 port within the ATLAS product. This number will be the same as the ifIndex located in the MIB-II interface table.

Index

The instance for this entry.

Slot No

This variable indicates the slot number of a V35Nx4 Option card within the ATLAS product.

Port No

This variable indicates the port number of a particular port on a V35Nx4 Option card within the ATLAS product.

Alarm Status

This 4 bit-encoded variable indicates the current state of the alarms that can occur on a V35Nx4 Option Card. This variable is encoded as follows in Table 20.

Table 20: Alarm Status

NO EXT CLK ALARM	0x1
ZERO ALARM	0x2
PLL ALARM	0x4
SLIP ALARM	0x8

There may be multiple bits set based on the current state of the option card. If a bit is set, then the alarm is active, else it is not active.

DTE Status

This bit-encoded variable indicates the current state of the DTE leads that are located in an interface on a V35Nx4 Option Card. This variable is encoded as follows in Table 21.

Table 21: DTE Status

RTS	0x001
CTS	0x002
DTR	0x004
DSR	0x008
DCD	0x010
RI	0x020
TD	0x040
RD	0x080
EC	0x100

There may be multiple bits set based on the current state of the option card. If a bit is set, then the lead is active, else it is not active.

Data Rate

This variable indicates the current data rate of an interface on a V35Nx4 Option card.

PLL/Fifo Status

This bit-encoded variable indicates the current state of the PLL/Fifo Status for an interface on a V35Nx4 Option Card. This variable is encoded as follows in Table 22.

Table 22: PLL/FiFo Status

LOCK	0x01
RXE	0x02
RXF	0x04
TXE	0x08
TXF	0x10

There may be multiple bits set based on the current state of the option card. If a bit is set, then the status is active, else it is not active.

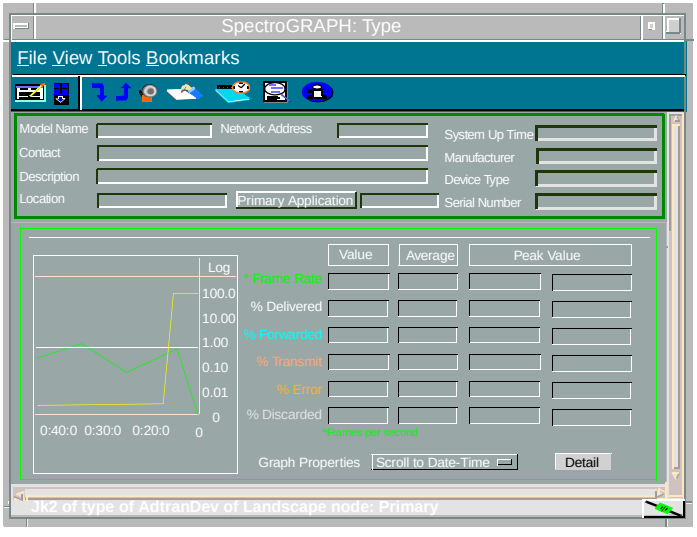
Performance Views

This section introduces the Performance view. For details concerning this view, refer to the ***SPECTRUM Views*** documentation.

Performance views display performance statistics in terms of a set of transmission attributes, e.g., cell rates, frame rates, % error, etc. A typical view is shown in Figure 9. The instantaneous condition of each transmission attribute is recorded in a graph. The statistical information for each attribute is presented in the adjacent table.

Generally, you determine performance at the device level through Performance views accessed from the Device and Application icons. You determine performance at the port/interface level through Performance views accessed from Interface icons.

Figure 9: Performance View



Configuration Views

This section describes the various Configuration views available for models of the Adtran devices in SPECTRUM.

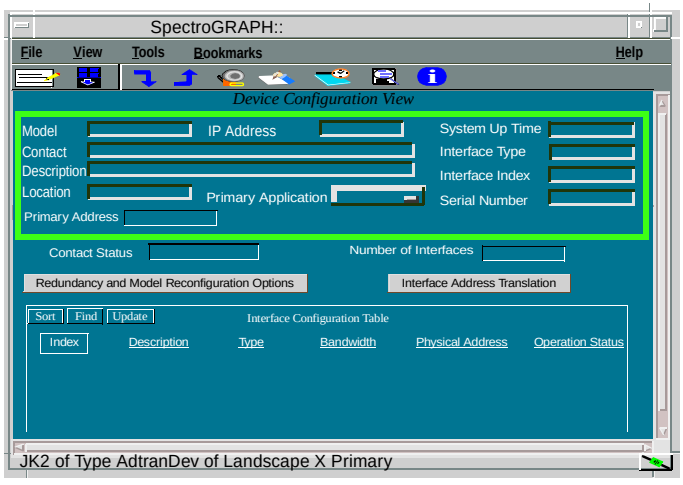
Configuration views let you see and modify current settings for the modeled device and its interfaces, ports, and applications. The following Configuration views are available for models of Adtran devices:

Device Configuration View

Access: *From the* ***Icon Subviews*** *menu for the Device icon, select* ***Configuration****.*

A typical Device Configuration view is shown in *Device Configuration View* (Page 120). Generally, this view includes a few fields that display device information as well as an Interface Configuration Table that lists interface parameters, some of which can be changed (see ***SPECTRUM Views***). Some Device Configuration views include one or more buttons that provide access to device-specific configuration information. These are described below.

Figure 10: Device Configuration View



DLCI_Port Configuration View

Access: *From the **Icon Subviews** menu for a DLCI icon in the DevTop Sub-Interface View, select **Port Configuration.***

This view provides Port Polling/Logging, Performance, Detail and Service Information. Pressing the Help button opens a view that provides a detailed description of this view.

Adtran Product View

This section describes the Adtran Product view available for models of Adtran devices in SPECTRUM.

Access: *From the **Icon Subviews** menu for the Adtran Device icon, select **Product Information**.*

Adtran Product View

This view displays the following information.

Product Identification Information

Product Name
The Adtran product name.

Adtran Product Part Number
The Adtran product part number.

Adtran Product CLEI Code
The Adtran product CLEI code.

Product Revision
The Adtran product revision number.

Product Physical Address
This octet string contains the Adtran physical address assigned to this product. For example, the octet sequence, 16 02 03 01, specifies channel bank number 16, digroup number 2, DSO channel slot number 3, position 1. This object value is commonly reported in SNMP traps to identify the product's location.

Product Serial Number
The Adtran product serial number.

Product Software Version
The Adtran product software version number.

Channel Information

This opens the *Adtran Channel Information View* described below.

Adtran Channel Information View

Access: *Within the Adtran Product View, click on the **Channel Information** button.*

Channel Bank Information Group

This view displays the following information.

Adtran Product View

Language Location Identifier
The Common Language Location Identifier.

Frame Identifier
The Channel Bank Frame Identifier.

Channel Unit Information

Number of Channels
This value contains the number of channels used by the product. For example, a Card Office Channel Unit Data Port (OCUDP) operating with 56 Kbps with Error Correction enabled uses two time slots; an Nx56 Channel Unit uses N slots, etc.

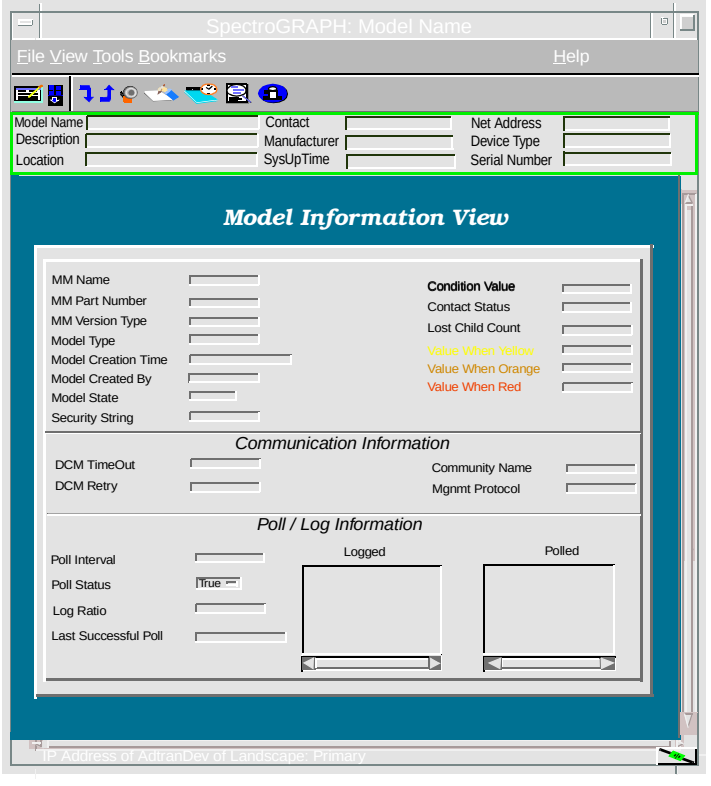
Model Information View

This section provides a brief overview of the Model Information view.

This view displays administrative information about the device and its applications and lets you set thresholds and alarm severity for the device.

Figure 11 shows a sample Model Information view. The layout of this view is the same for all model types in SPECTRUM but some information will vary depending on the model it defines. Refer to ***SPECTRUM Views*** for a complete description of this view.

Figure 11: Model Information View



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