8100A
Site Controller

34-00237.D

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Manual reorder # 34-00237
Revision D, August 2001

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FCC Requirements

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference. The user will be required to correct the interference at his own expense.

Shielded cables must be used with this unit to ensure compliance with the Class A FCC limits.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- Under FCC rules, No customer is authorized to repair this equipment, regardless of warranty status.
- In the event of equipment malfunction, all repairs should be performed by our company or an authorized agent. It is the responsibility of users requiring service to report the need for service to our company or to one of our authorized agents.

Canadian Emissions Requirements

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

For the DC powered units only, end users should use existing battery sources or a CSA certified power supply.

Le présent appareil numérique n’émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques (de la class A) prescrites dans le Règlement sur le brouillage radioélectrique edicté par le ministère des Communications du Canada.

Warranty

Verilink's product warranty is included at the back of this document.

Customer Service

Verilink offers the following services:

- Technical Assistance Center for free 24×7 telephone support for installation, maintenance, and troubleshooting at (800) 285-2755 and support@verilink.com
- Return Materials Authorization (RMA): (800) 926-0085, ext. 2282
- Maintenance contracts and leasing plans: 866-665-1515
- Web site at www.verilink.com

Returning Products

Verilink’s policy for product returns is provided in the warranty statement at the back of this document.

Safety Precautions

When handling this equipment, follow these basic safety precautions to reduce the risk of electric shock and injury:

- Follow all warnings and instructions marked on the product and in the manual.
- Unplug the hardware from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a slightly damp cloth for cleaning.
- Do not place this product on an unstable cart, stand, or table. It may fall, causing serious damage to the product.
- Slots in the unit are provided for ventilation to protect it from overheating. These openings must not be blocked or covered. Never place this product near a radiator or heat register.
- This product should be operated only from the type of power source indicated on the marking label and manual. If you are unsure of the type of power supply you are using, consult your dealer or local power company.
- Do not allow anything to rest on the power cord. Do not locate this product where the cord interferes with the free movement of people.
- Do not overload wall outlets and extension cords, as this can result in fire or electric shock.
- Never push objects of any kind into the unit. They may touch dangerous voltage points or short out parts that could result in fire or electric shock. Never spill liquid of any kind on this equipment.
- Unplug the equipment from the wall outlet and refer servicing to qualified service personnel under the following conditions:
  - When the power supply cord or plug is damaged or frayed.
  - If liquid has been spilled into the product.
  - If the product has been exposed to rain or water.
  - If the product has been dropped or if the housing has been damaged.

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Five-Year Hardware Limited Warranty

ABOUT THIS GUIDE

What is a reference guide

This is a a reference manual. It provides information concerning unit configuration, cabling, and testing/troubleshooting on a function-by-function basis. It is *not* a user's guide containing step-by-step procedures. This manual is designed to be used for specific information about a command, menu field, port, etc. Unless otherwise noted, the information in this manual applies only to the 8100A Site Controller (also referred to as *the unit*).

Where do I go for information

The chapters and appendices in this manual are arranged for quick reference. You do not have to read previous chapters to understand the subsequent chapters.

1 *General* - Describes product features and specifications.

2 *Installation* - Describes unit port connections and powering information.

3 *Configuration* - This chapter describes the menu screens and conventions accessed through the VT100 interface.

A *Management Information Base (MIB) Reference* - This appendix provides the menutrees for TXPORT (_____) and DDS (_____) MIBs.

B *Ordering Numbers and Optional Equipment* - This appendix lists ordering numbers, optional equipment part numbers, and applicable cable diagrams.

Conventions

The following table lists the conventions that are used throughout this guide.

Convention	Description
	A *notice* calls attention to important features or instructions.
	A *caution* alerts you to serious risk of data loss or other results that may cause you or the unit trouble if the warning is not heeded.
	A *warning* alerts you to the risk of serious damage to the unit or injury and possible death to the user.
Enter versus Type	When the word *enter* is used in this guide, it means type something, then press the Return or Enter key. Do not press the Return or Enter key when an instruction simply says *type*.
Syntax vs. Command	When the word *syntax* is used in this guide, it indicates that the general form of a command syntax is provided. You must evaluate the syntax and supply the appropriate port, path, value, address, or string. **Example:** Enable RIPIP by using the following syntax: SETDefault !<port> -RIPIP CONTrol = Listen In this example, you must supply a port number for !<port>. When the word *command* is used in this guide, it indicates that all variables in the command have been supplied and you can enter the command as shown in text. **Example:** Remove the IP address by entering the following command: SETDefault !0 -IP NETaddr = 0.0.0.0 **NOTE:** *For consistency and clarity, the full form syntax (upper- and lowercase letters) is provided. However, you can enter the abbreviated form of a command by typing only the uppercase portion. You can enter the command in either upper- or lowercase letters at the prompt.*
Text represented as `screen display`	`This typeface` is used to represent displays that appear on your terminal screen and command syntax, for example: `NetLogin:`
Text represented as **`commands`**	**`This typeface`** is used to represent commands that you enter, for example: **`SETDefault !0 -IP NETaddr = 0.0.0.0`**
Keys	When specific keys are referred to in the text, they are called out by their labels, such as *the Return key* or *the Escape key*, or they may be shown as *Return* or *Escape*. Unlabeled keys, such as spacebar, are not capitalized. If two or more keys are to be pressed simultaneously, the keys are linked with a plus sign (+), for example: Press Ctrl+C to copy a selected text into a paste buffer.
Italics	Italics are used to denote *new terms* or *emphasis*.
underline	Default settings are underlined.

1 GENERAL

Introduction

The Verilink 8100A Site Controller (Figure 1-1) provides an SNMP agent in a controller capable of managing up to 50 local CSU/DSUs, T1 CSUs, and E1 PMUs.

The 8100A shares the same packaging options as the Verilink 2000 CSU, 2048 PMU, 3001 CSU/DSU, and 4001 DDS CSU/DSU networking products. The unit is available in a standalone case or as a module that plugs into a Verilink 1051 chassis.

The 8100A Site Controller functions as a nodal concentrator for units equipped with the Verilink ComView network management bus. Units are daisychained to and from the Site Controller, which acts as a central management access point for all attached elements. Interface to the 8100A is available through a terminal or the SNMP management port.

The standard 8100A configuration provides two serial ports to connect terminals directly, or indirectly through external modems. Port two can be equipped with an internal modem. The 8100A also monitors group element alarms and performs dial-out or direct alarm reporting to a terminal or printer.

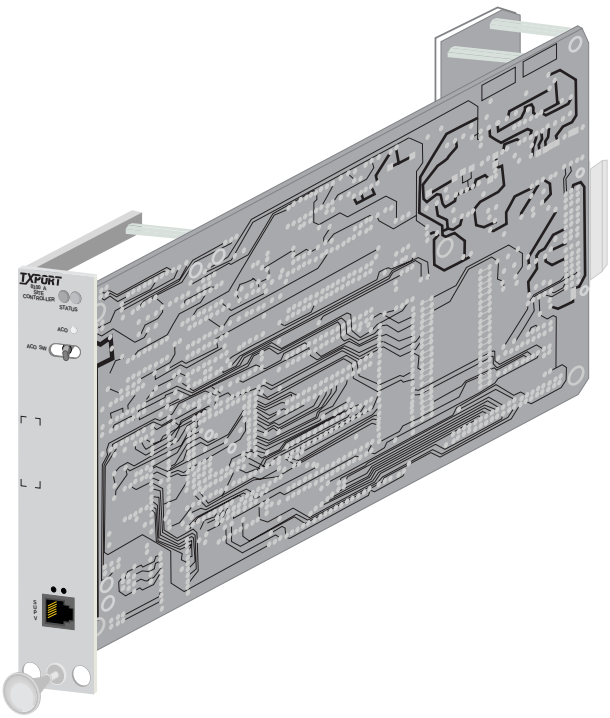


Figure 1-1 8100A Site Controller

The 8100A MECA (Modular Embedded Community Agent) is the management solution for sites with a concentration of CSUs and CSU/DSUs. The 8100A incorporates a tightly integrated MECA providing an SNMP/Telnet agent to units under its control. This capability can be added to existing CSUs and CSU/DSUs. The result is a significant improvement in the management of these products and a reduction in overall equipment cost. Network

administrators can manage multiple network connections through a single Ethernet or Token Ring interface, thus enjoying the performance benefits of an embedded agent with the economy of a shared management connection.

For SNMP-management capability, the 8100A may be optioned with an Ethernet, Token Ring, or SLIP interface. This card provides access to the SNMP agent for any unit attached to the Site Controller's NMS bus. The 8100A also allows establishing a Telnet session to interface with any unit under its control. The Ethernet interface can be optioned with a standard attachment unit interface (AUI) 15-pin connector to use with all Ethernet media types for the appropriate media attachment unit, or with 10BASE-T media without an AUI interface.

8100A Applications

The following subsections depict a few of the various operating modes available for the 8100A Site Controller.

Operation for a Group of Elements

The 8100A is a site controller for a group of elements. The two serial ports allow connection of ASCII terminals or printers.

As shown in Figure 1-2, a local terminal connection can access and control any element in the group. It also can receive group alarm messages from the 8100A. The printer connection allows for the real-time printing of group alarms.

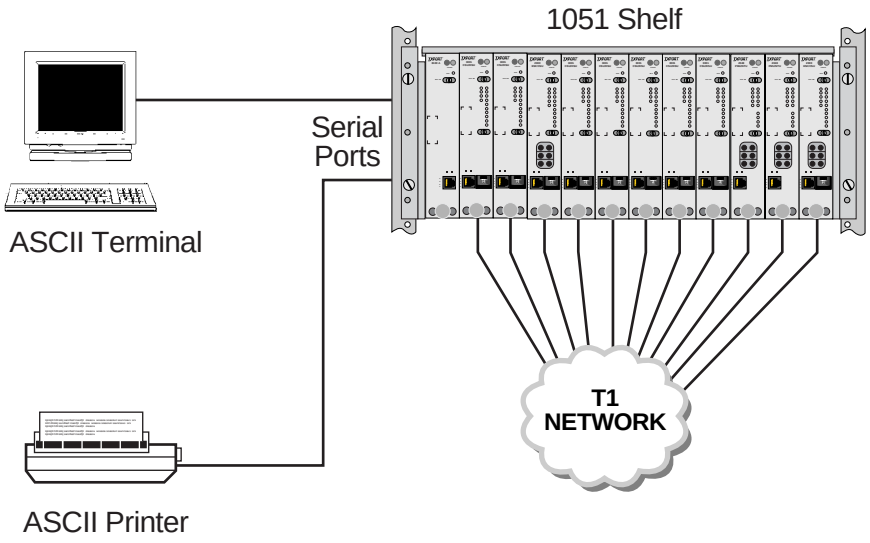


Figure 1-2 Typical Operation

Operation Using Two Modems

The 8100A functions as the access point to a group of elements from a remote ASCII terminal. It also collects and reports alarms from the group to remotely located terminals or printers. Figure 1-3 depicts TERM 2 equipped with an optional internal modem.

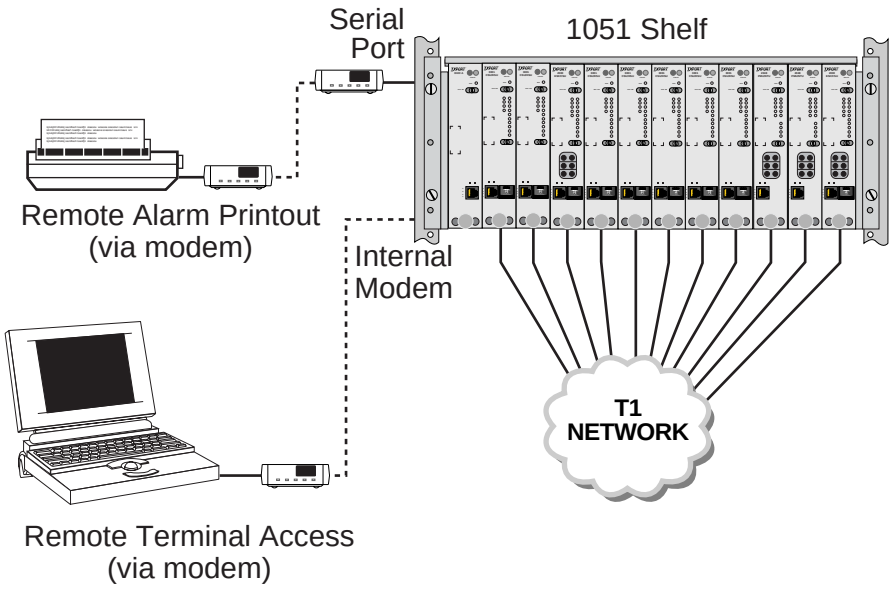


Figure 1-3 Operating with Two

Operating with Ethernet Interface

When configured with an Ethernet interface, the 8100A supports Telnet sessions to the site controller allowing access and control of the group's elements. The 8100A also provides an SNMP agent for each element in the group.

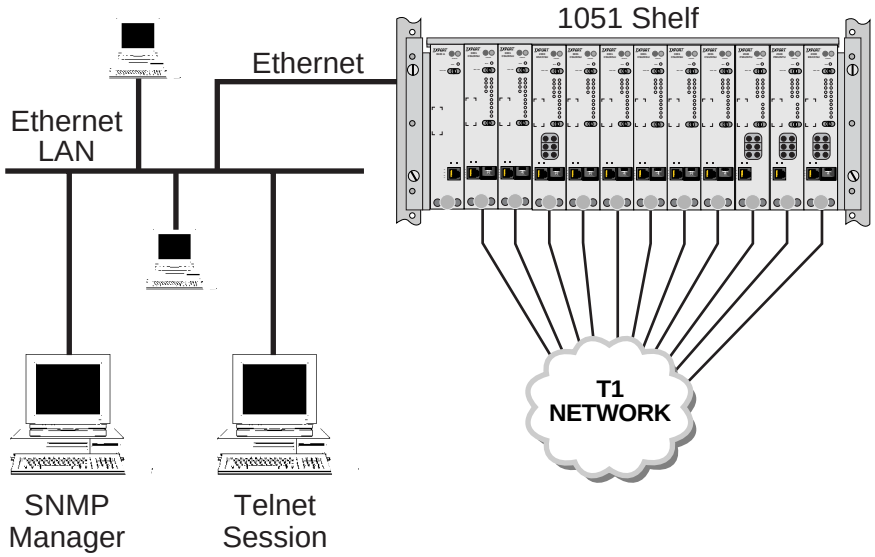


Figure 1-4 Operating with Ethernet Interface

Operating with the SLIP Interface

When configured with a SLIP interface, the 8100A provides an SNMP agent for each element in the group.

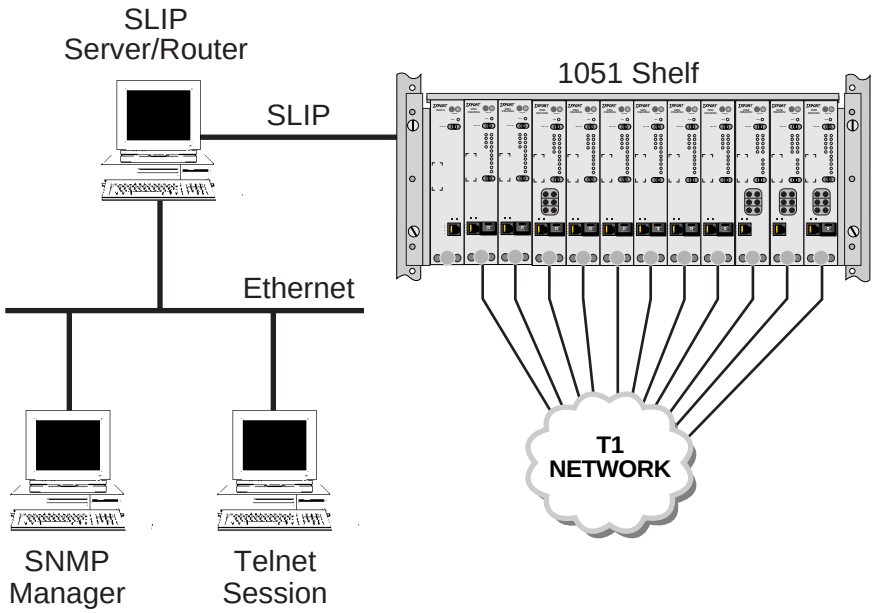


Figure 1-5 Operating with the SLIP Interface

Operating Token Ring Interface

When configured with a Token Ring interface, the 8100A supports Telnet sessions to the site controller allowing access and control of the group's elements. The 8100A also provides an SNMP agent for each element in the group.

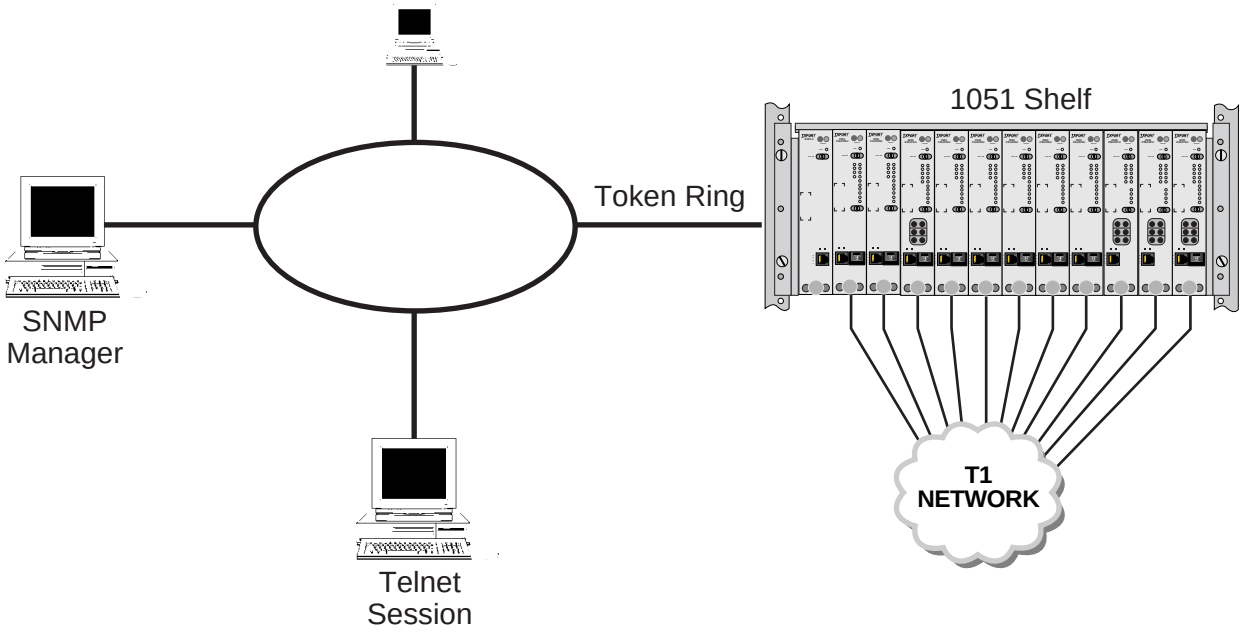


Figure 1-6 Optional Token Ring Interface

Telnet Session from a Remote LAN

Even when equipped with the Ethernet interface, the 8100A supports terminal access locally or remotely. A Telnet session may be established from any remote LAN segment to the site controller. An SNMP management station may also access remote elements via the Site Controller.

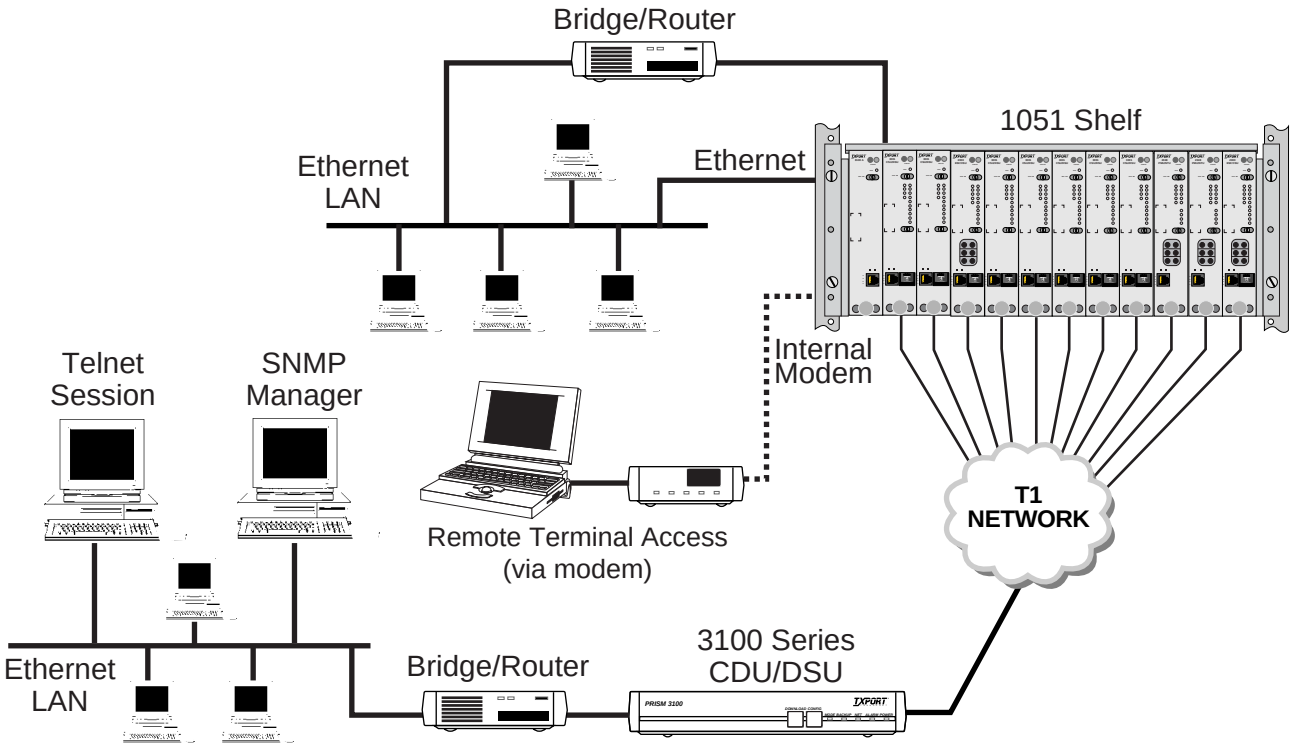


Figure 1-7 Telnet Session from a Remote LAN

Features

- Two serial ports support connections for terminal interfaces, external modems, or alarm reporting.
- Optional internal modem on Port 2.
- Allows SNMP management of all intelligent Verilink network access products.
- A single LAN interface with one IP address serves as an SNMP agent for multiple elements.
- SNMP management of remote elements (under 8100A control) from a LAN interface.
- Integral SLIP interface with optional Ethernet or Token Ring NIC.

Specifications

SLIP Interface	Connection:	RJ-48 (RS-232)
	Data Rate:	2.4, 9.6, 19.2, or 38.4 kbps
	Compression:	SLIP compression
Ethernet LAN Interface	Network Protocol:	TCP/IP-based networks
	Access Method:	Carrier sense multiple access with collision detection (CSMA/CD)
	Data Rate:	10 Mbps
	Encoding:	Manchester
	Connection:	Attachment Unit Interface (AUI) DB-15 female with slide latch or DB-15 female to 10BASE-T
	Compatibility:	AUI connects to media attachment units (MAU) for 10BASE2, 10BASE5, and 10BASE-T (200 mA maximum current)
Token Ring LAN Interface	Network Protocol:	TCP/IP-based networks
	Data Rate:	4 or 16 Mbps
	Connection:	DB-15 adapter to 8-pin RJ-48
	Compatibility:	Type 3 unshielded twisted pair (UTP)
SNMP MIBs	MIB-II (RFC 1213):	Device identification and LAN interface performance data. All applicable objects are maintained.
	DS1/E1 MIB (RFC 1406):	DS1/E1 network interface configuration and performance objects are maintained per RFC 1406.
	TXPORT MIB:	Company information and enterprise traps
	DDS MIB:	DDS equipment configuration and maintenance objects.
Access Ports	Serial Ports:	2.4, 9.6, 19.2, or 38.4 kbps; 8 data bits; 1 stop bit; and no parity
	Modem Port:	(optional) 14.4 kbps, V.42/V.42 bis
Power	DC Power:	−48 VDC (± 10%), 230 mA max, 11 watts, 38 BTU max.
	Connection:	The module unit connects to and receives power from a 1051 chassis backplane. The standalone unit uses a terminal block.
	Alarm Contacts:	30 volt and 1 ampere maximum

Mechanical

Mounting:	desktop; wall; and horizontal or vertical rack
Dimensions:	1.72" W, 6.8" H, 10.5" D
Weight:	2 pounds

These mechanical specifications apply to the single unit only. Refer to the 1051 chassis configuration guide for rackmount specifications.

Environmental

Operating Temp:	0° to 50°C (32° to 122°F)
Storage Temp:	−20° to 85°C (−4° to 185°F)
Humidity:	95% max (non-condensing)

Industry Listings

FCC Compliance:	Part 15 Subpart B, Class A
FCC Part 68 Cert:	DWEUSA-75322-FA-E Modem: XE1414V
NRTL Cert:	LR 98859
IC/CSO3:	1653 6223 A
Internet Standards:	RFC 1155 (SMI) RFC 1157 (SNMP) RFC 1213 (MIB-II) RFC 1406 (DS1/E1 MIB) RFC 1055 (SLIP)
Ethernet Standards:	ISO/IEC 8802-3

2 INSTALLATION

This chapter contains information and instructions required to prepare the Verilink 8100A Site Controller for use. Included are initial inspection procedures, mounting instructions, connection instructions, and powering information.

Unpacking and Inspection

This unit is carefully packaged to prevent damage in shipment. Upon receipt, inspect the shipping container for damage. If the shipping container or cushioning material is damaged, notify the carrier immediately and make a notation on the delivery receipt that the container was damaged (if possible, obtain the signature and name of the person making delivery). Retain the packaging material until the contents of the shipment have been checked for completeness and the instrument has been checked both mechanically and electrically.

If the contents of the shipment are incomplete or if there is mechanical damage or defect, notify Verilink. If the shipping container is also damaged, or the cushioning material shows signs of stress, notify the carrier of the damage as well as Verilink. Keep the shipping materials for carrier's inspection. Verilink will arrange for repair or replacement without waiting for claim settlement.

Supplied Materials

The 8100A Site Controller is shipped with the following standard equipment.

- The Verilink 8100A Site Controller reference manual.
- Ethernet/Token Ring 15-pin to 8-pin adapter (only units equipped with Ethernet or Token Ring) (part number 9-8100A-024-1).
- Serial cable with 8-pin to 6-pin adapter.

You may also require the following additional materials for the installation and operation of the unit. Refer to page 75 for ordering information.

- −48 VDC power source (see page 75)
- 20-gauge stranded wire (or similar) for DC power and alarm connection
- Serial port adapter for rackmount module (part number 9-8100-018-1 for the 1051-2 and 9-8100-025-1 for the 1051-3)
- IBM Type 3 to IBM Type 1 adapter kit (for Token Ring) (part number 9-1001-072-1)

The interface requirements of any Site Controller application may be met by using the appropriate cable. Cables and other optional Verilink equipment are listed in Appendix B. Contact Verilink for assistance.

Mounting

The Verilink 8100A Site Controller is a modular unit that may be mounted in either a standalone housing or in Slot 1 of a Verilink 1051 chassis. In a standalone housing, these units are designed for desktop or wall mounting in either a vertical or horizontal orientation.

Chassis Installation

When the Verilink 8100A Site Controller is used in a 1051 chassis, it must occupy Slot 1 (Figure 2-1).

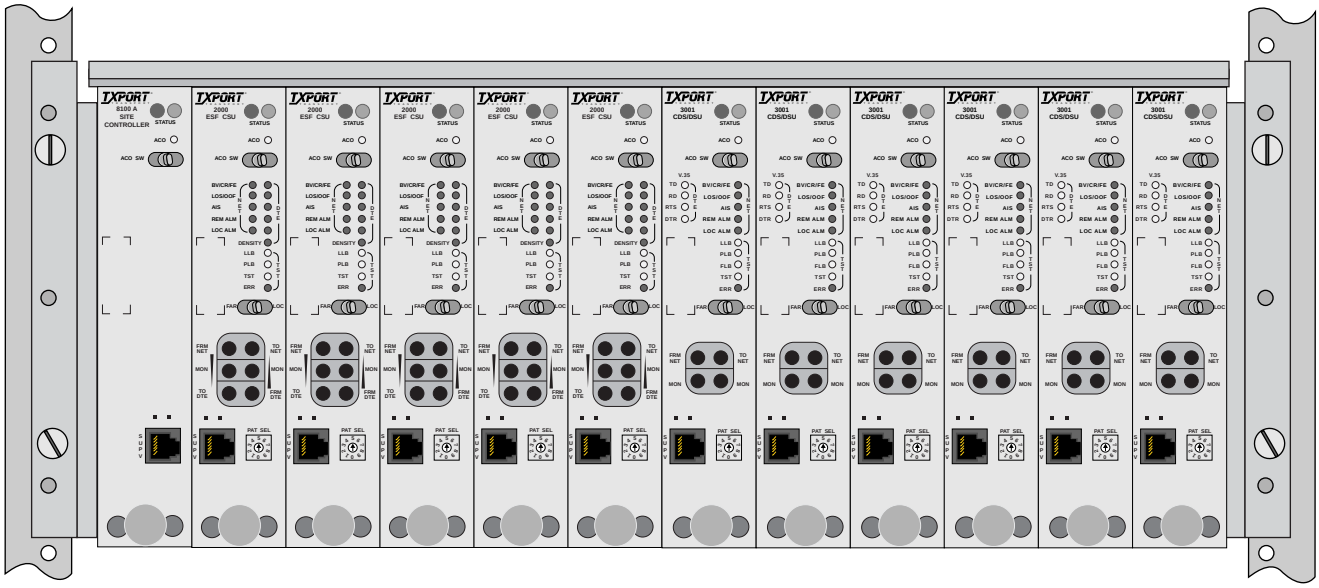


Figure 2-1 Model 1051 Chassis, Front View

Rack mounting brackets are included with every standalone unit for mounting a standalone unit on a rack without including it in a shelf assembly (Figure 2-2).

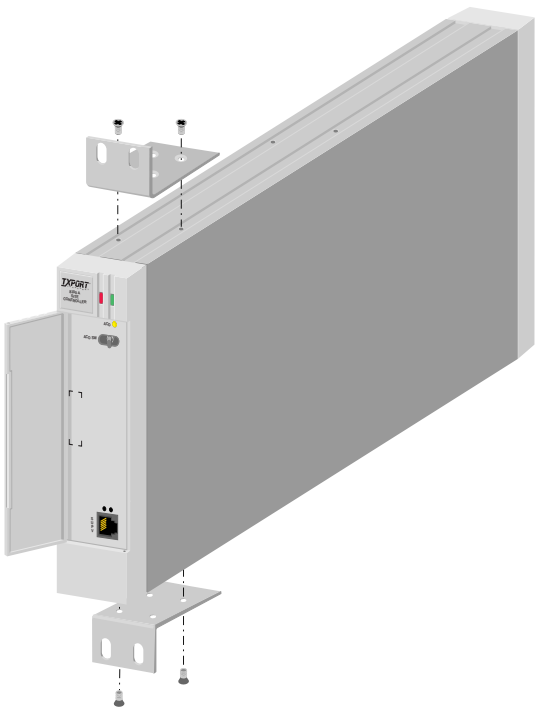


Figure 2-2 Standalone Unit with Mounting Brackets

Interface Connections

Six interface connections are available from the rear of the standalone or chassis units. Figure 2-3 and Figure 2-4 show the rear panel connections for the standalone and a rackmount model (1051- 3) respectively.

When an 8100A is shipped for use in the chassis, special adapters are available that convert the high-speed port (DB-25 or 34-pin) connector in Slot 1 to two 6-pin modular jacks for interface to the 8100A's user serial ports (see page 75). The 8100A does not have a V.35 or EIA-530 interface. It uses the connector on the chassis, along with an adapter, to provide Term 1 and Term 2 connections on the rear of the chassis as well as an external alarm.

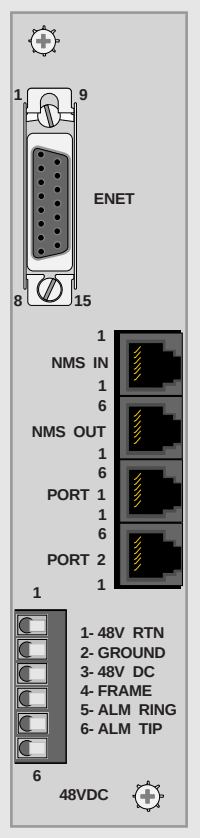


Figure 2-3 8100A Standalone Rear Panel

The 1051-2 chassis option uses a DB-25 connector and requires an appropriate adapter (part number 9-8100-018-1) and kit (part number 9-1001-063-1) to connect to devices that use the standard 25-pin EIA-530 interface. The pin interface comparisons are detailed on page 77.

The 1051-3 chassis uses a V.35 connector and requires an appropriate adapter cable (part number 9-8100-025-1) to connect to devices that use the standard 34-pin V.35 interface. The pin interface comparisons are detailed on page 77.

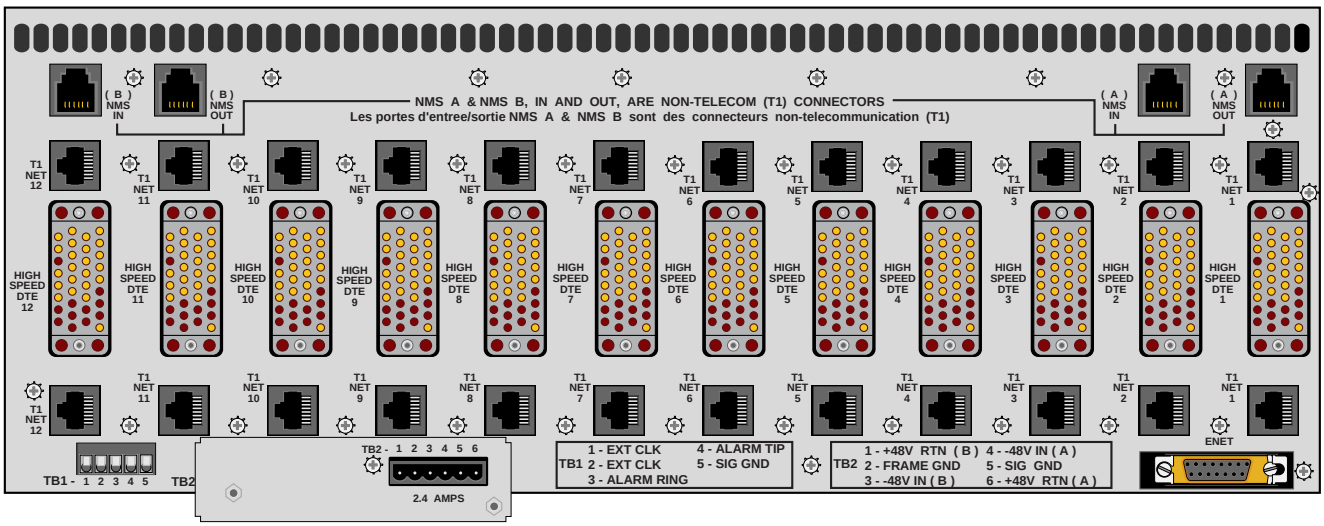


Figure 2-4 Model 1051-3 Chassis, Rear Panel with Term Adapters

SUPV The supervisory port on the front panel is a general purpose serial port. It allows interface access with the 8100A and also alarm reporting functions.

This port is identical to Term 1 on the rear of the unit. You can only use one port (SUPV or Term 1) at a time.

SUPV is a serial RS-232 DCE port configured for 8 bits, no parity, and 1 stop bit. Table 2-1 lists the pinout assignments.

Term 1 Term 1 (labeled Port 1 on the standalone unit) is a general purpose serial port. It allows interface access with the 8100A and also alarm reporting functions.

This port is identical to the supervisory port on the front of the unit. You can only use one port (SUPV or Term 1) at a time.

For the rackmount model, Term 1 is located on the Slot 1 adapter at the rear of the 1051 chassis. You must attach one of the following adapter kits to access Term 1 or Term 2. Refer to page 78 for specific adapter and cable information.

- 1051-2 DB-25 to Dual 6-pin Modular Adapter (part number 9-1001-041-X)
- 1051-3 V.35 Alarm Kit (part number 9-8100-025-1)

Term 1 is a serial RS-232 DCE port configured for 8 bits, no parity, and 1 stop bit. This port can be used to monitor external alarms form other collocated devices. It provides alarm and SNMP trap notification for these external alarms (see External Alarm Monitoring on page 18 for more information). Table 2-1 lists the pinout assignments.

Table 2-1 SUPV and Term 1 Pinout Assignments

Pin	Assignment
1	External Alarm - Lead A
2	Signal Ground
3	Data Out
4	Data In
5	Signal Ground
6	External Alarm - Lead B

Term 2 Term 2 (labeled Port 1 on the standalone unit) is a general purpose serial port. It allows interface access with the 8100A and also alarm reporting functions. It is accessible from the rear panel of a standalone model. For the rackmount model, Term 2 is located on the Slot 1 adapter at the rear of the 1051 chassis. You must attach one of the following adapter kits to allow this port full functionality. Refer to Appendix B for specific adapter and cable information.

- 1051-2 DB-25 to Dual 6-pin Modular Adapter (part number 9-1001-041-X)
- 1051-3 V.35 Alarm Kit (part number 9-8100-025-1)

Term 2 is a serial RS-232 DCE port configured for 8 bits, no parity, and 1 stop bit. Table 2-2 lists the pinout assignments.

Table 2-2 Term 2 Pinout Assignments

Pin	Assignment
1	Not Used
2	Signal Ground
3	Data Out
4	Data In
5	Signal Ground
6	Not Used

Internal Modem

If Term 2 is equipped and configured with an internal modem, the modem pinout assignments in Table 2-3 are valid.

Table 2-3 Internal Modem Pinout Assignments

Pin	Assignment
1	Not Used
2	Not Used
3	Telco Tip
4	Telco Ring
5	Not Used
6	Not Used

The 8100A unit is not connected directly to the telecommunications network and is not subject to the restrictions necessary for network connection. However, if used with a modem, the modem can be connected to the telecommunications network. The modem option provided by Verilink is FCC Part 68 certified. Verilink can supply the cable type which must be used when the unit is set for the internal modem mode. Refer to Appendix B for modem kit ordering information.

SLIP

The SLIP connection connects to Term 2 only. It allows dial or direct access to the SLIP protocol. SLIP is a serial RS-232 DCE port configured for 8 bits, no parity, and 1 stop bit. Table 2-4 lists the pinout assignments.

Table 2-4 SLIP Pinout Assignments

Pin	Assignment
1	Control Out
2	Signal Ground
3	Data Out
4	Data In
5	Signal Ground
6	Control In

NMS The NMS port allows multiple units to be connected in a daisy chain bus arrangement as shown in Figure 2-5. This allows centralized menu access and alarm reporting for any Verilink unit in the chain. The OUT port of one unit is connected to the IN port of the next unit to form a complete chain among the group of units.

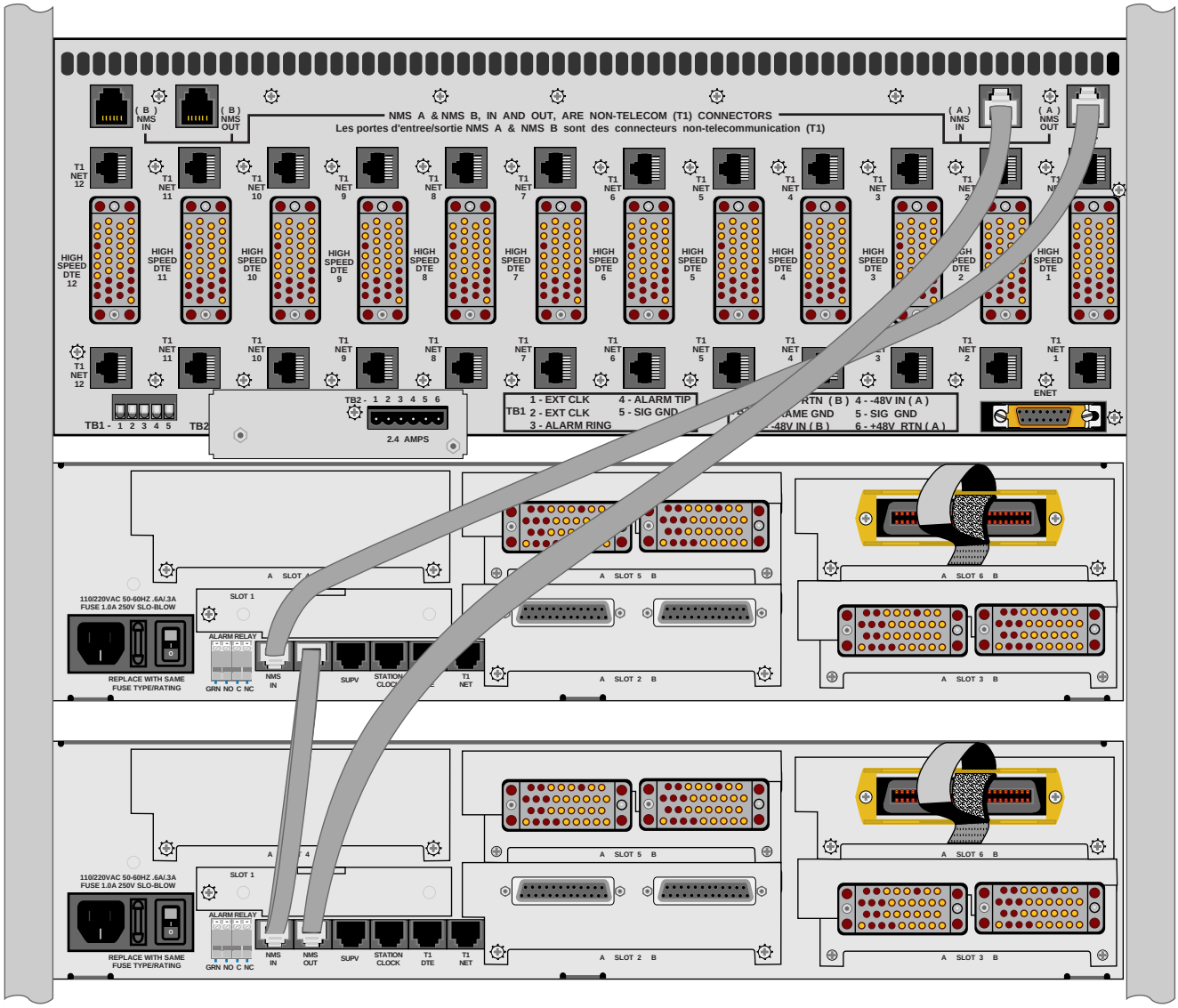


Figure 2-5 NMS Daisy-Chain Arrangement

On the rackmount version, the 8100A is mounted in Slot 1 of the 1051 chassis and is automatically connected into the NMS bus that chains through every element in the chassis. The NMS bus can be extended beyond the chassis through two 6-pin modular jacks on the rear panel of the chassis labeled NMS IN and NMS OUT (Figure 2-4 on page 11). Table 2-5 displays the NMS pinout assignments.

Table 2-5 NMS Pinout Assignments

Pin	NMS IN	NMS OUT
1	Not Used	Not Used
2	Signal Ground	Signal Ground
3	Not Used	Data Out
4	Data In	Not Used
5	Signal Ground	Signal Ground
6	Not Used	Not Used

If no other elements outside the chassis are to be accessed, NMS IN is simply connected to NMS OUT with a short cable provided with each chassis to complete the NMS loop.

All units on the same NMS chain must use the same NMS bit rate.

LAN Connection

The 8100A may be equipped with an optional SLIP, Ethernet, or Token Ring interface for your LAN (Local Area Network). The unit's SNMP (Simple Network Management Protocol) agent can then be programmed to take advantage of the centralized status monitoring and alarm reporting capability of SNMP and Telnet managed networks.

SLIP

The port for the integral SLIP interface is located on Term 2 (labeled Port 2 on the standalone unit). The SLIP port may be used to manage the unit because it allows access ot the embedded SNMP agent for trap reporting or SNMP management. The SLIP port bit rates are set as shown on the silkscreen for TERM 2 of Figure 3-2 on page 22. This port may be accessed through either a direct or dial-up connection using an AT-command-set-compatible modem. Option the modem to ignore DTR, enable auto answer, inhibit command echo, and return verbose result codes. For further information, see Term 2 on page 12.

Ethernet

The Ethernet interface consists of either a female AUI (attachment unit interface) connection or a 10BASE-T with a DB-15 to RJ-48 adapter connection, each operating at 10 Mbps and compliant with ISO/IEC 8802-3 standards (formerly IEEE 802.3). The AUI is a female 15-pin D-shell connector (labeled ENET) with slide latch. It is located on the rear panel of both the standalone unit and the 1051 chassis. Table 2-6 displays the Ethernet pinout assignments.

Table 2-6 Ethernet Pinout Assignments

Contact	Circuit	Ethernet Interface
3	DO-A	Data Out (Ckt. A)
10	DO-B	Data Out (Ckt. B)
11	DO-S	Data Out (Ckt. Shield)
5	DI-A	Data In (Ckt. A)
12	DI-B	Data In (Ckt. B)
4	DI-S	Data In (Ckt. Shield)
2	CI-A	Control In (Ckt. A)
9	CI-B	Control In (Ckt. B)
1	CI-S	Control In (Ckt. Shield)
6	VC	Voltage Common
13	VP	Voltage Plus
14	VS	Voltage Shield
Shell	PG	Protective Gnd (conductive shell)

If necessary, you can attach the appropriate MAU (media attachment unit) for connection to the existing LAN medium. MAUs are available for connection to 10BASE5 (Thick Net), 10BASE2 (Thin Net), and 10BASE-T (twisted pair). Connection to 10BASE-T media requires a 15-pin to 8-pin connector (part number 9-8100A-024-1).

TCP/IP configuration should be performed prior to connecting the 8100A to the LAN interface. Refer to page 34 for TCP/IP configuration information.

Token Ring

The Token Ring interface is designed to operate on both 4 and 16 Mbps networks compliant with ISO/IEC 8802-5 standards (formerly IEEE 802.5). It requires a 15-pin to 8-pin connector (part number 9-8100A-024-1) for connection to IBM® Type 3 media. Connection to an IBM Type 1 (unshielded twisted pair) cable requires the Verilink adapter kit (part number 9-1001-072-1). This kit includes an impedance matching adapter. Table 2-7 shows the pinout assignments for the Token Ring card.

Table 2-7 Token Ring Pinout Assignments with Adapter (p.n. 9-8100-024-1)

Pin	Token Ring Interface
3	Data Out (–)
4	Data In (+)
5	Data In (–)
6	Data Out (+)

Alarm Relay Contacts

The standalone unit and the chassis unit provide rear panel alarm relay contacts. These dry (isolated) alarm contacts allow connection to a remote indicating device. The rating for the contacts is 30 volts and 1 ampere maximum.

Standalone Unit

The alarm connection is made on pins 5 and 6 of the Alarm/Power connector as shown in Table 2-8.

Table 2-8 Alarm/Power Pinout Assignments

Pin	Function
1	48 VDC Return (+)
2	Signal Ground
3	48 VDC (–)
4	Frame Ground
5	Alarm Contact
6	Alarm Common

Chassis Unit

Alarm conditions from all modules in the chassis are bused together in parallel and are presented on a single set of alarm relay contacts [TB1, pins 3 (Alarm Tip) and 4 (Alarm Ring)] allowing connection to a remote indicating device. All modules in a common chassis must operate in the normally open (NO) mode.

Connections to the contacts should use 20-gauge stranded wire (or similar). Contacts are rated at 120 mA (AC or DC).

External Alarm Monitoring

The 8100A can monitor an external device through Term 1 by using the external alarm connections (pins 1 and 6) defined in Table 2-1 on page 12. This feature provides alarm and SNMP trap reporting for the connected external devices. It is activated through the Management Ports screen (page 35) by selecting the Term 1 COA type as either *ext alarm on closed* or *ext alarm on open*.

The selection is determined by the contact's relationship to common under a *no alarms* condition. Set the COA type to *ext alarm on open* for normally closed operation (alarms on open) or to *ext alarm on closed* for normally open operation (alarms on closed). Refer to page 21 for J1 settings on the circuit board. Make connections to the contacts using 20-gauge stranded wire (or similar).

An optional DB-25 (part number 9-1001-063-1) or V.35 (part number 9-8100-025-1) alarm adapter kit may also be installed on the chassis. Refer to Appendix B for diagrams of these kits along with part numbers. The kits include the cable to the alarm contacts and adapter to the chassis Slot 1.

Power Connection

The standalone and chassis units require a −48 VDC power source capable of supplying 135 mA current. Power supplies are available from Verilink and are listed in Appendix B.

Per UL1950 and CSA950 Clause 1.7.2, if the power supply cord is intended to serve as a disconnect device, a socket must be installed near the equipment and be easily accessible.

Ensure that the −48 VDC is properly grounded to earth before applying power to the unit.

Standalone Unit

The power source is connected to pins 1 and 3 of the Power and Alarm terminal as shown in Table 2-8.

Be sure to make the following connections. 18- to 20-gauge wire is recommended for ground connections.

- Chassis ground lead to the Frame Ground terminal (pin 4)
- Other chassis ground lead to an appropriate facility ground
- −48 VDC lead to the −48 VDC terminal
- Return lead to the 48 VDC return terminal

When power is applied to the unit, the front panel Status indicators toggle green and red and the unit beeps five times as it executes a self-test function.

Chassis Unit

The chassis can have a single power source or a redundant power source system. Refer to the 1051 Chassis Configuration Guide for more detailed information.

Redundant Power Source

The power board allows the connection of two independent −48 VDC supplies operated in a redundant mode. This is the default configuration. All slots are powered from the combined input of the A and B power supplies (the A and B buses are in a logical OR arrangement). If one supply fails, the other powers the entire chassis.

Single Power Source

Using a single power source is essentially the same as the redundant configuration with power supply B not operational. If the redundant power board is not used, the A bus and B bus must be connected together with a jumper.

Controls and Indicators

The front panel (Figure 2-6) contains five indicators which convey status, alarm, and activity information; an alarm cut-off switch, and a supervisory (SUPV) terminal connector. These are described in Table 2-9.

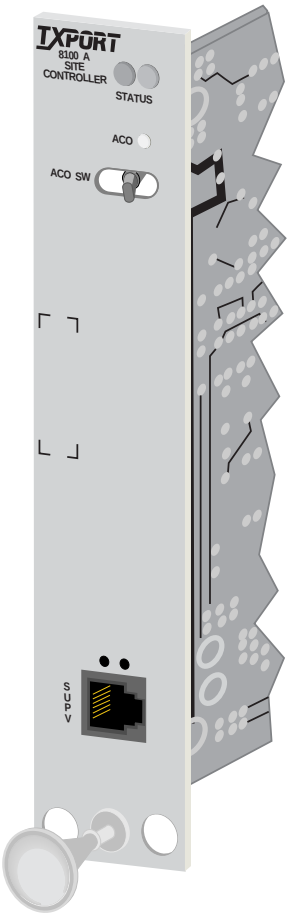


Figure 2-6 8100A Front Panel

Table 2-9 8100A Controls and Indicators

Control/ Indicator	Description
STATUS	The unit has two LED indicators beneath the front panel bezel that are exposed whether the access door is open or closed. These general status LEDs provide a quick check of the unit's operating condition (Go or No Go). If neither LED is lit, the unit is not powered. If the green LED is lit, the unit is powered and functioning normally. If the red LED is lit, there are alarm messages waiting to be reported.
ACO	This yellow LED lights whenever the alarm cut-off switch is placed in the left or On position. It indicates that the alarm relay contacts are disabled. Call on alarms are still active.
ACO SW	The alarm cut-off switch controls the alarm relay circuitry. If the switch is placed in the left or On position, this circuitry is deactivated. The call on alarms are still active.
Activity Indicators	These two small, recessed LEDs are provided to indicate activity on the SUPV port (Tx/Rx).
SUPV	This 6-pin modular jack provides direct terminal access for controlling the unit and gathering performance data. Dial access to the unit is done by connecting an external modem to this port and setting Term 1 to the appropriate bit rate (page 22).

3 CONFIGURATION

This chapter covers the information necessary to configure the 8100A Site Controller for operation. Term 1, Term 2, and NMS bit rates must be set through switch S1. All other configuration parameters are set through the software interface.

Throughout this manual, all default settings are underlined.

J1

Jumper J1 is used to set the alarm contacts. It is located as shown in Figure 3-2 on page 22. J1 can be set to normally open (NO) or normally closed (NC).

NO - Pins 1 and 2

NC - Pins 2 and 3

S1

Switch S1 (Figure 3-1) is used to set the parameters for Term 1 (SUPV), Term 2, NMS bit rate, forced download, and maintenance reset on the 8100A unit. It is located as shown in Figure 3-2.

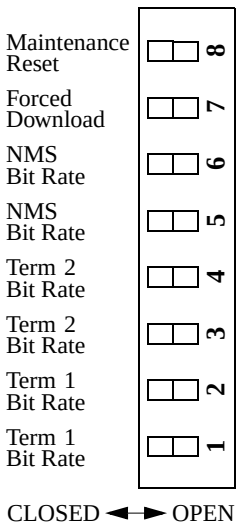


Figure 3-1 Switch S1

Accessing J1 and S1

To access J1 or S1, remove the 8100A from its standalone housing by following this procedure.

1. Open the front panel access door.
2. Gently pull the plastic cover side strips out away from the metal housing until the four stops are clear of the front panel.

3 Pull the cover off the front panel.

4 Remove the two screws on the front panel.

5 Pull the front panel and circuit boards out of the housing.

Observe proper electrostatic discharge handling procedures while holding the circuit boards.

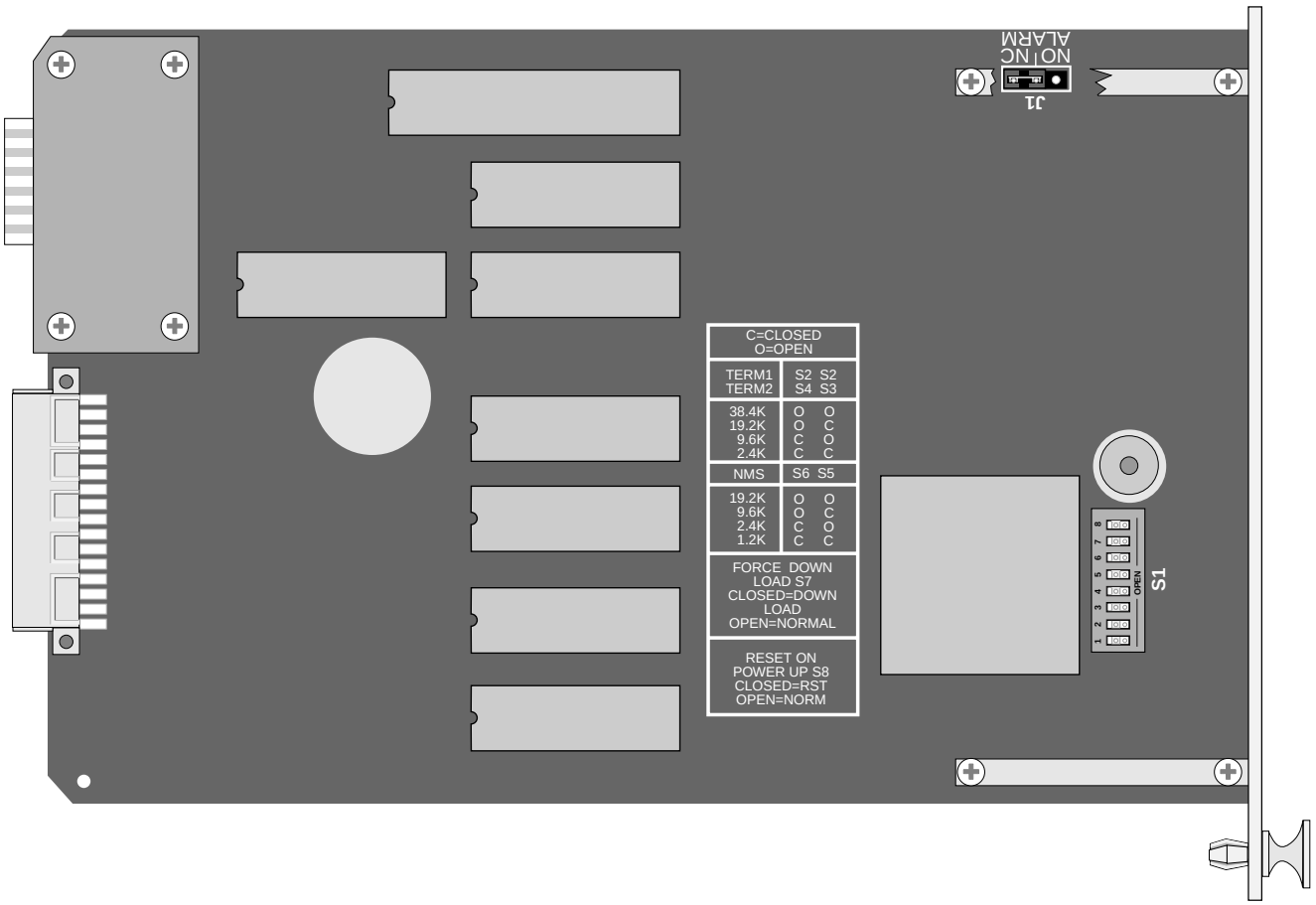


Figure 3-2 8100A Card Showing the Location of J1, S1, and the Silkscreen for S1

Term 1

Term 1 provides an interface to the 8100A and also sends ASCII alarm messages. This interface is a serial RS-232 DCE port configured for 8 bits, no parity, and one stop bit. The bit rate is set through S1-1 and S1-2 as listed in Table 3-1.

Table 3-1 Term 1 Bit Rate

S1-1	S1-2	Term 1 Bit Rate
Open	Open	38400 bps
Closed	Open	19200 bps
Open	Closed	9600 bps
Closed	Closed	2400 bps

Term 2

Term 2 provides an interface to the 8100A and also sends ASCII alarm messages. This interface is a serial RS-232 DCE port configured for 8 bits, no parity, and one stop bit. The bit rate is set through S1-3 and S1-4 as listed in Table 3-2. Term 2 may have an optional factory-installed internal modem and be configured for SLIP.

Table 3-2 Term 2 Bit Rate

S1-3	S1-4	Term 2 Bit Rate
Open	Open	38400 bps
Closed	Open	19200 bps
Open	Closed	9600 bps
Closed	Closed	2400 bps

NMS Bit Rate

The NMS Bus is a serial RS-232 DCE port configured for 8 bits, no parity, and one stop bit. The bit rate is set through S1-5 and S1-6 as listed in Table 3-3.

Table 3-3 NMS Bit Rate

S1-5	S1-6	NMS Bit Rate
Open	Open	19200 bps
Closed	Open	9600 bps
Open	Closed	2400 bps
Closed	Closed	1200 bps

Forced Download

Position S1-7 forces a Flash download for the control board on power-up. Set this switch when using the Verilink Flash PROM Loader (part number 9-201-1000-1) to upgrade the 8100A Flash PROM. Refer to the Verilink Flash PROM Download Procedures (45-00089) for specific information concerning this procedure.

Open: Normal Closed: Forced download

Immediately following a forced download, S1-7 must be placed back to the Open position.

You can save the current 8100A configuration to a file by accessing the Utilities option in the Flash PROM Loader. Once the configuration is saved, you can restore that configuration by selecting the Load Configuration option and supplying the saved file name.

Maintenance Reset

Position S1-8 forces a *maintenance reset* during power-up. This procedure deletes all the defined groups and elements and resets the 8100A database to the default values by reloading the start-up default configuration parameters stored in ROM. Although S1-8 is offered as an additional feature to the unit, the Maintenance Reset option located on the Utilities screen is the preferred reset method.

Open: Normal Closed: Maintenance reset

If the 8100A is to retain the customized configuration parameters on power-up, option switch S1-8 must be set to Open. Once the unit is active, its configuration may be changed through the terminal interface regardless of the switch settings.

Firmware Requirements

The terminal may be connected to either serial port (Term 1 or Term 2) on the 8100A. For Verilink products to communicate with the 8100A, each individual unit's NMS address must be set between 1 and 63. Table 3-4 shows the minimum firmware revision levels required by the units.

Table 3-4 Firmware Requirements for Various Verilink Products

Product	Description	Minimum Revision
1061	Multicast	Revision 1.10 or later
2000	CSU	Revision 2.20 or later
2048	PMU	Revision 2.29 or later
3000	CSU/DSU	Revision 2.00 or later
3001	CSU/DSU	Revision 2.00 or later
3021	E1 CSU/DSU	Revision 1.14 or later
3030	CSU/DSU	Revision 2.45 or later
3060	CSU/DSU	Revision 2.45 or later
3101	CSU/DSU	Revision 2.21 or later
3102	CSU/DSU	Revision 2.21 or later
3111	CSU/DSU	Revision 2.21 or later
3112	CSU/DSU	Revision 2.21 or later
3131	CSU/DSU	Revision 2.21 or later
4001	DDS CSU/DSU	Revision 1.07 or later
4101	DDS CSU/DSU	Revision 1.01 or later
4051	CSU/DSU	Revision 2.21 or later
4151	CSU/DSU	Revision 2.21 or later
41TDM	DDS CSU/DSU	Revision 1.03 or later

Modem Settings

The terminal interface supports any AT-command-set-compatible modem set to the following parameters: ignore DTR, enable auto answer, inhibit command echo, and return verbal result codes.

Serial bit rates of 2400, 9600, 19200, or 38,400 bps may be selected using option Switch S1 (see page 21).

When a port is to be used for a local or direct connection, it should be configured as DIRECT to avoid the modem string output when the terminal is connected (see page 35).

For remote access from a terminal, Term 1 and/or Term 2 may be configured to operate with an AT command set modem. When a port is set to DIAL, it outputs a modem configuration string before placing each call.

Communication Parameters

The terminal interface requires an ANSI compatible VT100 terminal (ASCII) or an VT100 terminal emulation program (such as PROCOMM PLUS®). The terminal interface uses ASCII break and escape commands.

Refer to your terminal emulation program reference manual for specific information concerning the use of break and escape commands and also setting the communication parameters.

The proper communication parameters must also be set on the terminal:

Bit Rate:	Refer to the S1 settings (page 21).
Parity:	None
Data Bits:	8
Stop Bits:	1

Interface Startup

Once a correctly configured terminal is connected to the 8100A, you may access the terminal interface by sending either a Break command or pressing the Enter key four consecutive times to the unit. The 8100A Site Controller Main Menu screen appears.

Make sure the connect string has been sent by the modem before sending a Break. Otherwise, the modem hangs up.

If a password has been established, the Password screen appears before accessing the Main Menu (Figure 3-3). You must enter the correct password to access the 8100A Main Menu. Refer to the Utilities screen (page 37) for information on establishing and maintaining passwords for the 8100A.

The password is case sensitive.

```
                                                          Time: HH:MM:SS
                                                          Date: MM/DD/YY

------------------------------ PASSWORD SCREEN -------------------------------


                Enter Password:          (**********)


                         Start Date: MM/DD/YY
                         Start Time: HH:MM:SS









--------------------------------- Messages -----------------------------------
```

Figure 3-3 Password Screen

Screen Components

Terminal Interface screens have several common components.

Device Type/Revision

The device type (such as 8100A S.C.) and the hardware/software revision control numbers are shown in the upper left corner of the screen (hardware revision is first and software revision is second). Refer to these numbers when contacting the factory with inquiries.

Date/Time

The top right corner of the terminal screen displays the current date and time. The setting of these functions is described in Utilities on page 37.

Menu Title

The menu title (third line, center) denotes the general classification of accessible functions (such as SITE CONTROLLER).

Messages

The bottom line may display various diagnostic or warning messages.

Cursor Controls

The terminal interface uses a highlighted cursor to make selections from menus and select fields within screens to be operated on. The cursor is moved in different ways, depending on the terminal emulation program used. Most programs allow using the Tab and Shift+Tab keys. Others allow using the arrow keys.

Once a field is highlighted, press the spacebar to review the choices and the Enter key to make a selection.

For keyboards that do not have these standard keys or have only some of them, an alternate set of cursor control commands is provided (Table 3-5). Each command is performed by pressing a letter key while holding down the Control key. Alternate and keyboard commands may be freely mixed.

Table 3-5 Cursor Commands

Keyboard Command	Alternate Command
left arrow	Control + S
right arrow	Control + D
up arrow	Control + E
down arrow	Control + X
backspace	Control + H
delete	Control + Z

Active Element List

The Active Element List (Figure 3-4) displays the list of active elements which the Site Controller recognizes on the NMS bus. This screen displays up to ten elements, but as many as 50 elements can be recognized. If more than ten entries are recognized, the NEXT PAGE field appears. Press the Enter key on this field to view the next page. Once NEXT PAGE is activated, previous pages may then be viewed by selecting PREV PAGE.

This manual covers the configuration of the 8100A Site Controller only. When accessing any one of the active elements through the Active Elements List *screen, you are accessing that physical unit. Refer to the reference manual for that particular unit for configuration instructions.*

```
8100A S.C.                                                    Time: HH:MM:SS
Element Rev x.xx/x.xx                                         Date: MM/DD/YY

------------------------------ ACTIVE ELEMENT LIST -----------------------------

NEXT PAGE   PREV PAGE                          Total Active Units -  4

 ID         Circuit ID                         Alarm Status
 ------     -------------------------------    -------------
 1  Far     Circuit 63                         OK
 18         Circuit 42                         Local/Remote
 28 Far     Circuit 16                         Remote
 63         Circuit 23                         Local









---------------------------------- Messages ----------------------------------
```

Figure 3-4 Active Element List Screen

ID This column lists the NMS Bus number (1 to 63) to the left and indicates if a far-end unit is connected on the right. DSU MP Far shows a selectable field in a Slot (2 to 5)-DSU (1A to 6A) format. If a far-end unit is detected, a Far selection appears beside the element ID which represents the far-end unit. If the Enter key is pressed with the highlighted cursor on one of these ID fields, that element's configuration screen appears displaying the menu items for that element.

Circuit ID This column lists the names of all circuits associated with the units which the Site Controller recognizes.

Alarm Status This column displays the current status of an element.

OK

No alarm thresholds have been exceeded.

Local

Element is in an alarm condition.

Remote

Far-end unit is in alarm condition.

Local/Remote

Both units are in alarm condition.

Alarm Group Configuration

The Alarm Group Configuration screen (Figure 3-5) allows configuring the alarm groups.

The 8100A continually polls the elements connected to the NMS bus for changes in alarm status. When a change is detected, the information is stored in an alarm queue to be reported to an external device. This queue has enough storage capacity to allow a significant amount of time to elapse before making connection with the intended recipient of the messages. The queue ensures that alarms occurring during the connection period are not lost.

Up to 16 recipients may be assigned for outgoing alarm messages. For an element to report its alarms, it is assigned to an alarm group which specifies the recipient and the method of getting the messages to that recipient. In addition to handling alarm reporting for elements assigned to it, each alarm group can also be specified to report 8100A Site Controller alarms.

```
8100A S.C.                                                    Time: HH:MM:SS
Element Rev x.xx/x.xx                                         Date: MM/DD/YY

------------------------ SITE CONTROLLER ALARM GROUPS ------------------------

ADD: ( 2)      DEL: ( 0)


# 1 [NORM] NAME: (Alarm Group 4                 )   INCLUDE SITE ALARMS: [YES]
     PRIMARY: [Dial 1  ]   [ASCII]  NUMBER:(9,1-205-772-3770,,,3056        )
   SECONDARY: [Disabled]   [ASCII]

# 2 [SNMP] NAME: (John St. Alarm Group          )   INCLUDE SITE ALARMS: [NO ]
Trap IP (000.000.000.000) (000.000.000.000) (000.000.000.000) (000.000.000.000)
        (000.000.000.000) (000.000.000.000) (000.000.000.000) (000.000.000.000)
```

Figure 3-5 Alarm Group Configuration Screen

ADD An alarm group is added by entering a group identification number (from 1-16) and pressing the Enter key. The added field defaults to Group x, where x is the number selected. If more than four alarm groups have been created, the PREV PAGE and/or NEXT PAGE fields appears.

NORM/SNMP

There are two alarm reporting group types: Normal and SNMP. Press the spacebar with the cursor on this field to choose and then the Enter key.

NORM. The 8100A can report alarms through either Term 1 or Term 2 by using a direct method on both the primary and secondary COA numbers. You cannot use both ports for COA Dial; however, you can use Term 1 for COA Dial and Term 2 for SLIP Dial.

SLIP Dial can only be used on Term 2.

Disabled: Alarm reporting is disabled.

Direct 1: Alarm report is output directly to a connected device on Term 1. This port must have its COA type set to DIRECT in the Management Ports menu (page 35).

Direct 2: Alarm report is output directly to a connected device on Term 2. This port must have its COA type set to DIRECT in the Management Ports menu (page 35).

Dial: In this reporting method, a telephone number is dialed through an external modem connected to one of the serial ports or through the internal modem on Term 2 (if equipped). The alarm group definition need only specify that the alarm report is by the Dial method. The 8100A determines which serial port is set to DIAL in the setup menu and is available.

Once the alarm group has been defined for dial reporting, enter the telephone number of the device that receive the alarm message. Both primary and secondary numbers may be entered. The secondary number is used only if a connection cannot be established with the primary number. If the element's alarms are reported to two locations, the element should also be assigned to two alarm reporting groups.

An element's alarms are then reported as defined by the alarm group, ASCII or NMS, to which it belongs.

ASCII: An ASCII text message is typically sent to a connected device, such as a printer or terminal. The format of an ASCII text message for the Site Controller is:

```
Status Update 03/25/94 14:32:55
Site Name:      Test Center
Group Name:     Group 3
SC8100A Alarms: COM-FAILURE
```

The format of an ASCII text message for an element is:

```
Status Update 03/25/94 14:32:55
Site Name:         Test Center
Group Name:        Group 4
Circuit ID:        Circuit 130 (Far End)
Network Alarms:    ES*
Equipment Alarms:  LOS*
Other Alarms:      COM-FAILURE
```

*Alarms may consist of OK, ES, SES, CSLIP, LOS, OOF, UAS, RAS, AIS, BPV, and CRC.

SNMP. Another type of alarm reporting is SNMP traps. When a network alarm occurs, the 8100A sends a trap message to as many as eight different IP addresses. The trap message is formatted per RFC 1157. The generic trap type is enterpriseSpecific (generic-trap = 7).

When an alarm group is defined to report via SNMP, up to eight TRAP IP addresses can be assigned. The 8100A reports each alarm by transmitting an SNMP Trap to each TRAP IP address.

T1 and DDS network problems often cause more than one alarm type. Multiple trap messages may be generated, each with a different specific trap type. The specific-trap field of each trap message is set to one of the values shown in Appendix A.

Number

This field accepts the telephone number used with the DIAL reporting method. The dial string prefix is entered in the Management Ports screen (page 35).

Name

The name given to the alarm group is typed in this field. The default name is Group x, where x is the number from 1 to 16 entered in the ADD field. This name may be changed but the field cannot be left empty.

⚠ *If a name is deleted from this field and the screen is exited without entering a new name, the alarm group is deleted from the database. If any group is deleted later, all empty groups are also deleted.*

Include Site Alarms

This Yes or No field determines whether site controller alarms are reported in the group. 8100A alarms can include:

Communication Failure	There is a failure on the NMS bus.
External Alarm	There is a failure on an external device.
Device Reset	The 8100A is in a power cycle (reboot).
Power Failure	A power failure has occurred.

DEL An alarm group is deleted from this field by entering the group's identification number and pressing the Enter key. A prompt appears in the message area to confirm the deletion.

Element Configuration

The Element Configuration screen (Figure 3-6) sets the configuration parameters for the network elements.

When an unconfigured element is detected on the network, the 8100A automatically creates a record in the database for that element. Default values are given for the Element Name and the SNMP Read Community. This automatic configuration feature allows the 8100A to become a single point user interface to a group of connected units without any configuration required.

Changes to an existing element's configuration can be made at any time by editing the fields of the selected element. When a screen is exited or another element is selected, the previously displayed fields are saved to the database.

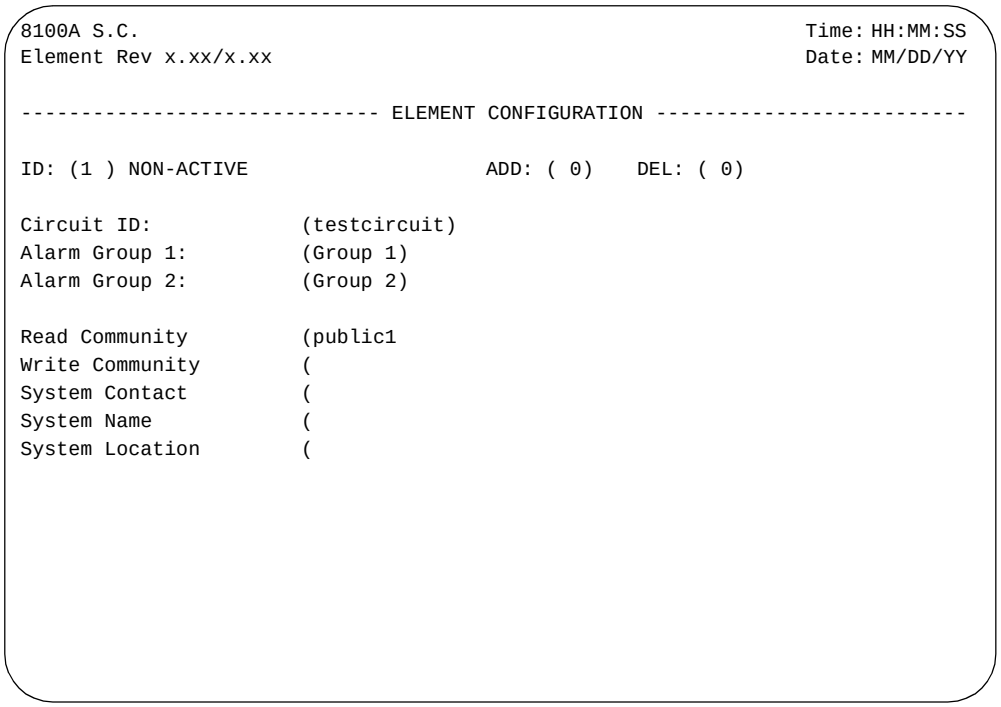


Figure 3-6 Element Configuration Screen

ID This field is used to advance to other elements in the database by entering an element's NMS (ID) identification number and pressing the Enter key or by pressing the spacebar to review the elements in numerical order.

ADD An element may be added to the database by entering its NMS (ID) number (from 1 to 63) and pressing the Enter key.

DEL An element may be deleted from the database by entering its NMS (ID) number and pressing the Enter key.

Circuit ID This field displays the name of the circuit. The default name is Circuit xxx where xxx is the NMS ID number of the near end of the circuit.

Alarm Group These fields display the name of the selected alarm group. Pressing the spacebar reviews the names of the alarm groups specified in the Alarm Group Configuration screen. Two alarm groups can be specified for each element.

SNMP allows for the entry of those parameters required for proper operation with an Ethernet-based LAN manager.

Read Community This field accepts a string (up to 58 characters) identifying the group authorized to perform read operations. The default is publicxxx where xxx is the element ID. The default is displayed unless the user renames it.

Write Community This field accepts a string (up to 58 characters) identifying the group authorized for write operations.

System Contact This field accepts a string (up to 58 characters) identifying the person responsible for a network device.

System Name This field accepts a string (up to 58 characters) identifying the functionality of the network device.

System Location This field accepts a string (up to 58 characters) identifying the physical location of network device.

TCP/IP Configuration

The TCP/IP Configuration screen (Figure 3-7) sets the unit, router, and filter IP addresses for each element along with the subnet mask.

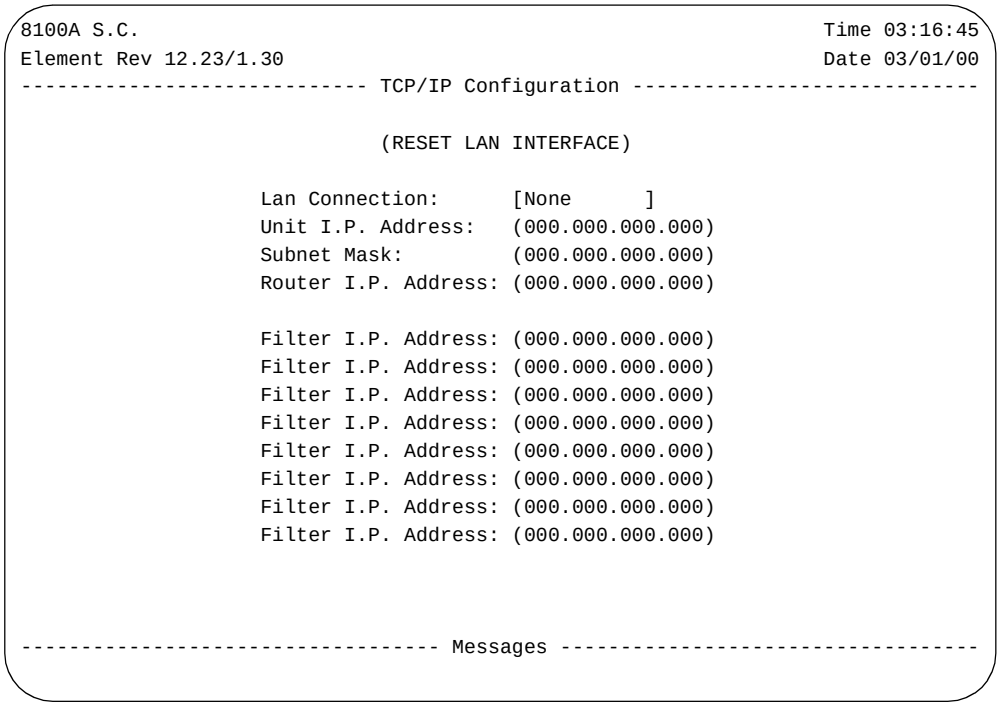


Figure 3-7 TCP/IP Configuration Screen

Reset LAN Interface For changes to take effect, restart the unit. Selecting this field brings up a confirmation prompt asking whether to proceed with the reset or not.

LAN Connection Displays the type of interface installed and, if applicable, the connection rate, SLIP, Ethernet, and Token Ring.

Unit IP Address This field accepts IP addresses. Each device connected to the LAN is required to have a unique IP address identifier. This field requires a numeric entry consisting of four octets with a value of 0 to 255. Each octet is separated by a period.

Subnet Mask This field is provided to manually enter the subnet mask setting. This field requires a numeric entry consisting of four octets with a value of 0 to 255. Each octet is separated by a period.

Router IP Address This field accepts the IP address of the default router. This field requires a numeric entry consisting of four octets with a value of 0 to 255. Each octet is separated by a period.

Filter IP Address These eight fields accept the IP address of the source packet filter. If any of these fields are set, access is allowed only by the specified IP addresses. This field requires a numeric entry consisting of four octets with a value of 0 to 255. Each octet is separated by a period.

SNMP Configuration

The SNMP Configuration screen (Figure 3-8) allows setting the parameters required to operate with an Ethernet/Token Ring-based LAN manager. The SNMP fields consist of alphanumeric entries only (no selectable parameters).

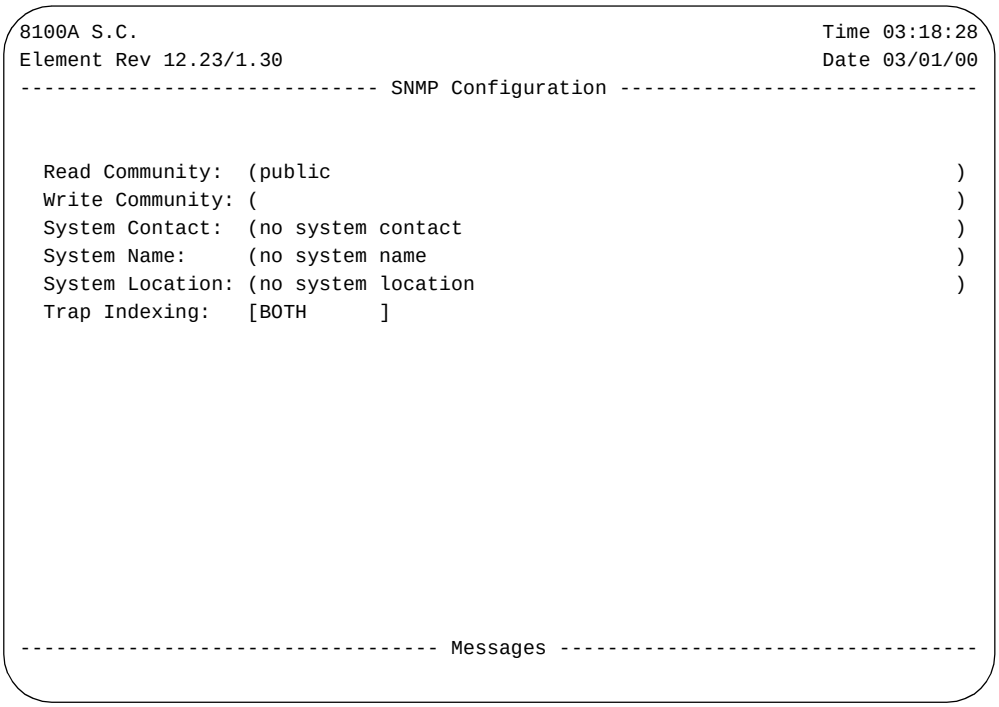


Figure 3-8 SNMP Configuration Screen

The following five menu items require an entry of up to 58 characters identifying the appropriate group, person, device function, or unit location.

Read Community This field accepts a character string identifying the group authorized to perform read operations. The default is public it is renamed.

Write Community This field accepts a string identifying the group authorized for write operations.

System Contact This field accepts a string identifying the person responsible for a network device.

System Name This field accepts a string identifying the functionality of the network device.

System Location This field accepts a string identifying the physical location of network device.

Trap Indexing This field is used to select the method of indexing for SNMP trap reporting.

Management Ports

The Management Ports screen (Figure 3-9) allows establishing the port connection parameters for each element.

```
8100A S.C.                                                    Time 03:20:19
Element Rev 12.23/1.30                                        Date 03/01/00
------------------------------ Management Ports ------------------------------

                       Site Name: (                          )

---------------------------------- Term 1 ----------------------------------

                             Mode: [COA DIRECT        ]
                Dial String Prefix: (ATDT                                 )
              Ext Modem Init String: (ATEMQV1S10=1S0=1&S0                 )

---------------------------------- Term 2 ----------------------------------

                             Mode: [COA DIRECT ]
          Slip Primary Dial String: (                             )
        Slip Secondary Dial String: (                             )
                Dial String Prefix: (ATDT                                 )
              Ext Modem Init String: (ATEMQV1S10=1S0=1&S0                 )
                    Compressed Slip: [AUTO   ]


--------------------------------- Messages ---------------------------------
```

Figure 3-9 Management Ports Screen

Site Name

Up to 27 characters may be typed in this field to signify the name of the site controller.

Mode

This field displays the method used by this port to report alarms (COA). Press the spacebar to make one of the selections shown below.

Disabled

Alarm reporting is disabled for this port.

Dial

Sends reports to a remote modem through an AT command set compatible modem connected to the element's serial port. This is the default setting for Term 2 if the optional internal modem has been selected.

Direct

Sends reports to a device, such as a printer or a terminal, which is connected directly to the element. This is the default setting for Term 1.

Ext Alarm On Open

An alarm condition occurs when the circuit is opened between Control In and Control Out. This option is available only for Term 1 (see Table 2-1 on page 12 for the pinout).

Ext Alarm On Closed

An alarm condition occurs when the circuit is closed between Control In and Control Out. This option is available only for Term 1.

Dial String Prefix Allows entering the dial string prefix (AT dial command, for example).

The telephone number is entered in the Alarm Group Configuration Screen (page 28).

Ext Modem Init String Allows entering the initialization string for an external modem.

Slip Primary Dial String (Term 2 only) This field contains an ASCII string for the primary call on alarm telephone number used in the Dial mode. This string must not include the ATDT command prefix.

The unit makes three attempts to connect using the primary number. If all three attempts fail, the 8100A uses the secondary number (if the field is not blank). When a connection is detected, the 8100A outputs a notification message and then disconnects.

Slip Secondary Dial String (Term 2 only) This field contains an ASCII string for the secondary call on alarm telephone number used in the Dial mode. This string must not include the ATDT-command prefix.

The unit makes three attempts to connect using the primary number. If all three attempts fail, the 8100A uses this secondary number. If the secondary number fails, the 8100A waits five minutes and then attempts to communicate with the primary number again. When a connection is detected, the 8100A outputs a notification message and then disconnects.

Compressed Slip (Term 2 only) Allows the 8100A to enable or disable SLIP compression, depending on the type of connection. Options are auto, enable, and disable.

Internal Modem When the 8100A is equipped with an internal modem, this field appears in the Management Ports screen. The internal modem can be enabled or disabled.

Utilities

The Utilities screen (Figure 3-10) allows setting the time, date, and password for the 8100A. It also displays the current setting for S1.

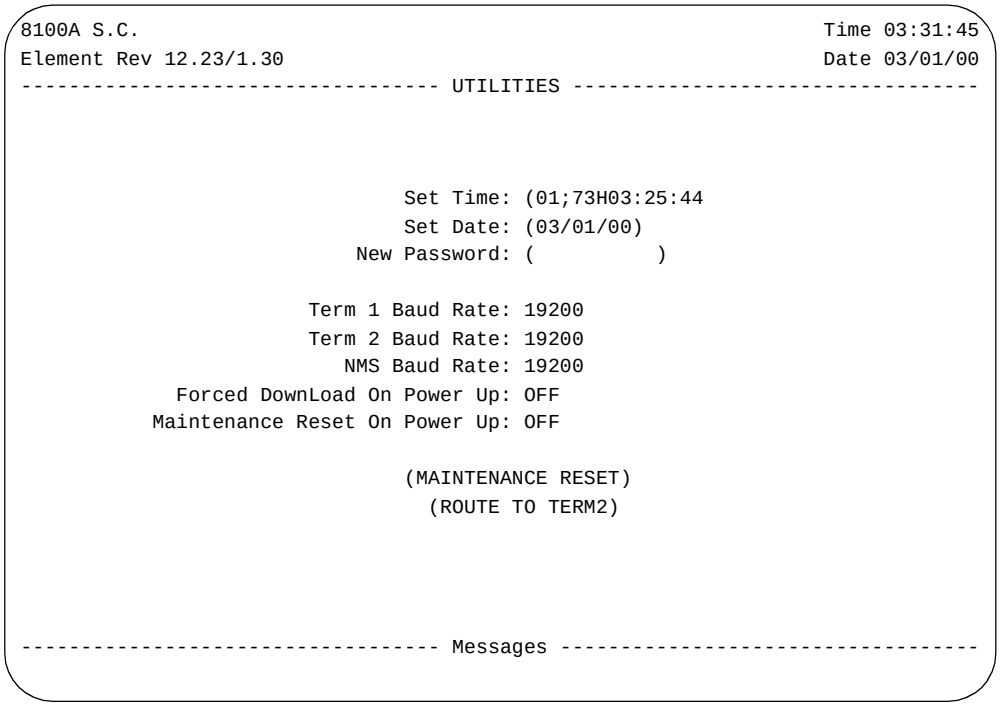


Figure 3-10 Utilities Screen

Set Time The current time may be entered in this field using the HH:MM:SS format. For example, 3:45 AM is entered as 0345 and 3:45 PM is entered as 1545.

Set Date The current date may be entered in this field using the MM:DD:YY format. For example, July 4, 1997 is entered as 070497.

New Password This field allows entry of a password of up to 10 characters. An empty string (carriage return only) may be entered to disable the password feature. After the Enter key is pressed, the new password is activated and is no longer visible. Therefore, type carefully when entering a new password and verify before pressing the Enter key. When the terminal interface is exited and later reactivated, this password must be entered exactly to gain access. If the wrong password is entered, the following message appears:

```
Incorrect Password; Please Enter Again.
```

⚠ *Do not exit the terminal interface program until the password procedure is fully understood. If a password has been specified, it must be typed exactly to reenter the program.*

If a password is programmed and later forgotten, a one-use *backdoor* password can be obtained by calling Verilink Technical Support. Before you call, you must have already submitted, to Verilink, a written release. This release must appear on your company letterhead and can be sent by fax or mail.

Term 1 Baud Rate A read-only field displaying the Term 1 baud rate as configured through switch S1-1 and S1-2 (page 21).

Term 2 Baud Rate A read-only field displaying the Term 2 baud rate as configured through switch S1-3 and S1-4 (page 23).

NMS Baud Rate A read-only field displaying the NMS bit rate as configured through switch S1-5 and S1-6 (page 23).

Forced Download On Power Up A read-only field displaying the Flash Download setting as configured through switch S1-7 (page 23).

Maintenance Reset On Power Up A read-only field displaying the Maintenance Reset setting as configured through switch S1-8 (page 23).

Maintenance Reset This field allows resetting the 8100A database to default values by reloading the start-up default configuration parameters stored in ROM. Pressing the Enter key brings up a warning prompt. To proceed with the reset function, move the cursor to (YES) and press the Enter key. All defined groups are deleted. All elements are deleted and reentered by the auto configuration feature. This redefines the configuration parameters.

Route To Term 2 This field allows checking the connection of Term 2 to a modem. Once it is correctly configured, select this option and enter AT. The screen should respond with the message OK.

A MIB REFERENCE

Introduction

The 8100A Site Controller may be indexed by community name where each unit header is accessed by a unique community string or by interface access where the 8100A is viewed as a singel node concentrator. A detailed description of each method follows.

Community Name

This index method separates the nodes by the string assigned to the Read Community in the Element Configuration screen (page 31). Using this method, a single unit can be accessed through the 8100A IP address and unique community strings. Refer to Index by Community Name in relation to the first column of Indexing by Either Community or Interface (see Table A-1 on page 40) for an example of this type of indexing.

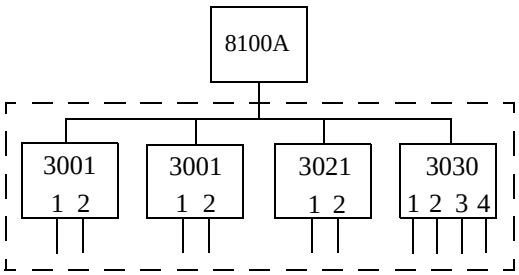


Figure A-1 Index by Community Name

Interface

This index method looks at the 8100A network as a single node concentrator with a single community string allowing access to managed units as a single device with multiple interfaces. Using this method, a single unit can access all managed units collectively through the 8100A IP address and 8100A community strings. The community string, *public*, is the default. Refer to Index by Interface in relation to the second column of Indexing by Either Community or Interface (see Table A-1 on page 40) for an example of this type of indexing.

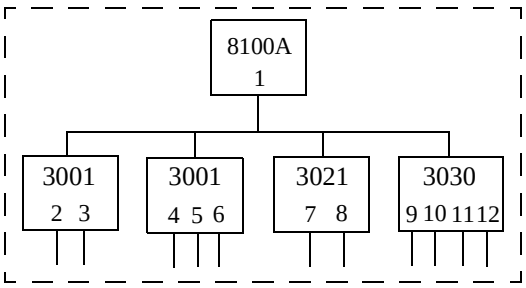


Figure A-2 Index by Interface

Table A-1 Indexing by Either Community or Interface

Indexed by Community	Indexed by Interface	Description	Type	Speed	Admin Status	Oper Status	Specific
	1	TXPORT SC8100A Ethernet	ethernet-csmacd	10000000	up	up	0.0
PRISM 3001							
1	2	T1 Network Interface	ds1	1544000	up	up	mib-2
2	3	Data Port 1	propPointToPointSerial	1536000	up	up	0.0
PRISM 3001							
1	4	T1 Network Interface	ds1	1544000	up	up	mib-2
2	5	T1 DTE Port	ds1	1544000	up	up	0.0
3	6	Data Port 1	propPointToPointSerial	1536000	up	up	0.0
PRISM 3021							
1	7	E1 Network Port	e1	2048000	up	UNK	mib-2
2	8	E1 DTE Port	ds1	2048000	up	up	0.0
PRISM 3030							
1	9	T1 Network Interface	ds1	1544000	up	up	mib-2
2	10	T1 D/I Port	ds1	768000	up	up	0.0
3	11	530 Data Port 3A	propPointToPointSerial	280000	up	up	0.0
4	12	530 Data Port 3B	propPointToPointSerial	0	up	down	0.0

TXPORT and DDS MIBs

Generic MIB Loading Instructions

The MIBs were written using the standard ASN.1 notation. Any standard SNMP manager should be able to compile the MIBs. Although the exact procedure for loading MIBs may vary from one platform to another, the following basic steps are the same.

1. The SNMP manager has a directory for MIBs. Copy the files DDS.MIB and TXPORT.MIB into this directory. The MIBs are sent out on a DOS-formatted diskette, therefore, a DOS2UNIX command may have to be used for UNIX workstations (typical directories are snmp_mibs for OpenView®, bin for SunNet™ Manager, and mibfiles for Castle Rock SNMPc™).

2. Start the SNMP manager if it is not already running. Select one of the menu selections (or selection subheadings) that contains the SNMP MIB operations (this is Options subheading for HP OpenView and Config subheading for SNMPc).

3. Choose the option for LOADING or COMPILING MIBs. You must specify which MIBs to load. If the manager only allows one MIB to be loaded at a time, load the file TXPORT.MIB before loading the DDS.mib.

4. Once the manager has successfully loaded the MIBs, you are ready to manage the TXPORT products. If you have any questions please call TXPORT Product Support.

   The 8100A Site Controller which conforms to RFC 1213 (for MIB-II) and RFC 1406 (for DS1) also supports txport.mib and DDS.mib.

This appendix describes in detail how the 8100A Site Controller embedded SNMP agent conforms to the RFCs and enterpriseSpecific MIBs.

RFC 1213

RFC 1213 defines the objects in the system and interface tables of the MIB-II specification. The remaining sections of MIB-II are supported but not specified here.

system OID {1.3.6.1.2.1.1}

Table A-2 system OID

Object Name	Object ID	User Access	Object Description	Get	Set
sysDescr	{ system 1 }	read-only	"A textual description of the entity. This value should include the full name and version identification of the system's hardware type, software operating-system, and networking software. It is mandatory that this only contain printable ASCII characters."	Returns the string for the accessed device: TXPORT 2000 T1 CSU TXPORT 2048 E1 PMU TXPORT 3000 T1 CSU/DSU TXPORT 3001 CSU/DSU TXPORT 3002 CSU/DSU TXPORT 3021 E1 CSU/DSU TXPORT 3030 T1 CSU/DSU TXPORT 3060 T1 CSU/DSU TXPORT 1061 E1 MULTICAST TXPORT 4001 DDS CSU/DSU TXPORT 4051 CSU/DSU TXPORT 4101 DDS CSU/DSU TXPORT 4151 CSU/DSU TXPORT 8100A w/SNMP Agent	
sysObjectID	{ system 2 }	read-only	"The vendor's authoritative identification of the network management subsystem contained in the entity. This value is allocated within the SMI enterprises subtree (1.3.6.1.4.1) and provides an easy and unambiguous means for determining 'what kind of box' is being managed. For example, if vendor 'Flintstones, Inc.' was assigned the subtree 1.3.6.1.4.1.4242, it could assign the identifier 1.3.6.1.4.1.4242.1.1 to its 'Fred Router'."	Returns the Object Identifier for the accessed device. 1.3.6.1.4.1.425.2.3 (t1CsuDsu) 1.3.6.1.4.1.425.2.2 (ddsCsuDsu) 1.3.6.1.4.1.425.2.4 (ceptCsuDsu) 1.3.6.1.4.1.425.2.8 (e1Multicast)	
sysUpTime	{ system 3 }	read-only	"The time (in hundredths of a second) since the network management portion of the system was last re-initialized."	Returns the time in hundredths of a second since the network interface was reset.	
sysContact	{ system 4 }	read-write	"The textual identification of the contact person for this managed node, together with information on how to contact this person."	Returns the System Contact string for the accessed unit, defaults to "no system contact."	Sets the System Contact string for the accessed unit
sysName	{ system 5 }	read-write	"An administratively-assigned name for this managed node. By convention, this is the node's fully-qualified domain name."	Returns the System Name string for the accessed unit, defaults to "no system name".	Sets the System Name string for the accessed unit.
sysLocation	{ system 6 }	read-write	"The physical location of this node (e.g., 'telephone closet, 3rd floor')."	Returns the System Location string for the accessed unit, defaults to "no system location."	Sets the System Location string for the accessed unit.

Table A-2 system OID

Object Name	Object ID	User Access	Object Description	Get	Set
sysServices	{ system 7 }	read-only	"A value which indicates the set of services that this entity primarily offers. The value is a sum. This sum initially takes the value zero, Then, for each layer, L, in the range 1 through 7, that this node performs transactions for, 2 raised to (L - 1) is added to the sum. For example, a node which performs primarily routing functions would have a value of 4 (2^{3-1}). In contrast, a node which is a host offering application services would have a value of 72 (2^{4-1} + 2^{7-1}). Note that in the context of the Internet suite of protocols, values should be calculated accordingly: layer functionality 1 physical (e.g., repeaters) 2 datalink/subnetwork (e.g., bridges) 3 internet (e.g., IP gateways) 4 end-to-end (e.g., IP hosts) 7 applications (e.g., mail relays) For systems including OSI protocols, layers 5 and 6 may also be counted."	Returns a value of "72" which represents a host offering application services.	

ifTable OID {1.3.6.1.2.1.2}

Table A-3 ifTable OID

Object Name	Object ID	User Access	Object Description	Get	Set
ifNumber	{ interfaces 1 }	read-only	"The number of network interfaces (regardless of their current state) present on this system."	Returns the number of interfaces present on the accessed unit.	
ifIndex	{ ifEntry 1 }	read-only	"A unique value for each interface. Its value ranges between 1 and the value of ifNumber. The value for each interface must remain constant at least from one re-initialization of the entity's network management system to the next re-initialization."	Returns the indexed values of the unit's interfaces. Refer to Introduction on page 39 for instructions on how interfaces may be accessed.	
ifDescr	{ ifEntry 2 }	read-only	"A textual string containing information about the interface. This string should include the name of the manufacturer, the product name and the version of the hardware interface."	Returns one of the following textual descriptions: **SLIP** - returned for the SLIP interface. **Ethernet** - returned for the E/TR, for Ethernet interface. **Token Ring** - returned for the E/TR, for Token Ring. **T1 Network Interface** - returned for the DS1 interface. **V.35 Data Port** *xy* - returned for slot *x*, port *y* (if a V.35 interface). **530 Data Port** *xy* - returned for slot *x*, port *y* (if an EIA-530 interface). **RS232 Data Port** *xy* - returned for slot *x*, port *y* (if an RS-232 interface). **DSX Data Port** *xy* - returned for slot *x*, port *y* (if a DSX Data Port) **2Wire FXS** *xy* - returned for slot *x*, port *y* (if a 2-Wire FXS interface). **2Wire FX0** *xy* - returned for slot *x*, port *y* (if a 2-Wire FX0 interface). **4Wire E&M** *xy* - returned for slot *x*, port *y* (if a 4-Wire E&M interface). **DSU Data Port *x-yz*** - *x* for slot, *y* for DSU, *z* for port (if a DSU MP interface). **DDS Network Interface** - returned for the DDS Network interface. **DDS DTE RS-232/V.35 Port** - returned for the DDS DTE RS-232/V.35 Port interface. **DDS Dial Back Up Port** - returned for the DDS Dial Back Up Port interface. **E1 Network Port** - returned for the E1 Network Port interface. **E1 DTE Port** - returned for the E1 DTE Port interface. **T1 DTE Port** - returned for the T1 DTE interface on CSUs. **T1 D/I Port** - returned for the T1 DTE interface on DSUs.	

Table A-3 ifTable OID

Object Name	Object ID	User Access	Object Description	Get	Set
ifType	{ ifEntry 3 }	read-only	"The type of interface, distinguished according to the physical/link protocol(s) immediately 'below' the network layer in the protocol stack."	Returns one of the following integer values: **other (1)** - returned for voice and DDS Network interfaces. **ethernet-csmacd(6)** - returned for Ethernet. **iso88025-tokenRing(9)** - returned for Token Ring. **ds1(18)** - returned for the T1 Network and DTE interface. **e1(19)** - returned for the E1 Network and DTE interface. **propPointToPointSerial(22)** - returned for V.25, EIA-530, DBU, and RS-232 data ports.	
ifMtu	{ ifEntry 4 }	read-only	"The size of the largest datagram which can be sent/received on the interface, specified in octets. For interfaces that are used for transmitting network datagrams, this is the size of the largest network datagram that can be sent on the interface."	Returns one of the following integer values: **1500** - returned for the Ethernet interface. **2000** - returned for the Token Ring. **0** - returned for all other interfaces.	
ifSpeed	{ ifEntry 5 }	read-only	"An estimate of the interface's current bandwidth in bits per second. For interfaces which do not vary in bandwidth or for those where no accurate estimation can be made, this object should contain the nominal bandwidth."	Returns the rate at which the interface is running.	
ifPhysAddress	{ ifEntry 6 }	read-only	"The interface's address at the protocol layer immediately 'below' the network layer in the protocol stack. For interfaces which do not have such an address (e.g., a serial line), this should contain an octet string of zero length."	Returns an octet string of sero length for all interfaces except the E/TR Ethernet/TokenRing interface, which returns the physical address of the unit.	

Table A-3 ifTable OID

Object Name	Object ID	User Access	Object Description	Get	Set
ifAdminStatus	{ ifEntry 7 }	read-write	"The desired state of the interface. The testing(3) state indicates that no operational packets can be passed."	Returns user selected value. Defaults to up(1).	**up(1)** - user sets to signify the interface is active, and does not have a testing status. **down(2)** - user sets to signify the interface is not enabled or in an alarm condition. **testing(3)** - user sets to signify the interface has a test loop or BERT active.
ifOperStatus	{ ifEntry 8 }	read-only	"The current operational state of the interface. The testing(3) state indicates that no operational packets can be passed."	**up(1)** - returned if the interface is active, and does not have a testing status. **down(2)** - returned if the interface is not enabled or in an alarm condition. **testing(3)** - returned if the interface has a test loop or BERT active.	
ifLastChange	{ ifEntry 9 }	read-only	"The value of sysUpTime at the time the interface entered its current operational state. If the current state was entered prior to the last re-initialization of the local network management subsystem, then this object contains a zero value."	Returns the time in hundredths of a second when the interface was changed or reset.	
ifSpecific	{ ifEntry 22 }	read-only	"A reference to MIB definitions specific to the particular media being used to realize the interface. For example, if the interface is realized by an ethernet, then the value of this object refers to a document defining objects specific to ethernet. If thisinformation is not present, its value should be set to the OBJECT IDENTIFIER { 0 0 }, which is a syntatically valid object identifier, and any conformant implementation of ASN.1 and BER must be able to generate and recognize this value.	**DDS Network Interface** { 1.3.6.1.4.1.425.2.2.1 } (ddsNetConfigTable) **DDS DTE RS-232/V.35 Port** { 1.3.6.1.4.1.425.2.2.2 } (ddsDteConfigTable) **DDS Dial Back Up Port** { 1.3.6.1.425.2.2.3 } (ddsDbuConfigTable) **T1 Network Interface** { 1.3.6.1.2.1.10.18 } (ds1) **E1 Network Interface** { 1.3.6.1.2.1.10.18 } (ds1) All others { 0.0 }	

RFC 1406 - DS1/E1 MIB

This RFC was published in January 1993 and supersedes RFC 1232. RFC 1406 is used to manage DS1 interfaces, and in this case, a T1 interface. The following lists the objects contained within this RFC and how the unit responds to them.

dsx1ConfigTable OID {1.3.6.1.2.1.10.18.6}

Table A-4 dsx1ConfigTable OID

Object Name	Object ID	User Access	Object Description	Get	Set
dsx1LineIndex	{ dsx1Config Entry 1 }	read-only	"This object is the identifier of a DS1 Interface on a managed device. If there is an ifEntry that is directly associated with this and only this DS1 interface, it should have the same value as ifIndex. Otherwise, the value exceeds ifNumber, and is a unique identifier following this rule: inside interfaces (e.g., equipment side) with even numbers and outside interfaces (e.g., network side) with odd numbers."	Returns the ifIndex of the specified DS1 interface.	
dsx1IfIndex	{ dsx1Config Entry 2 }	read-only	"This value for this object is equal to the value of ifIndex from the Interfaces table of MIB II (RFC 1213)."	Returns the ifIndex of the specified DS1 interface.	

Table A-4 dsx1ConfigTable OID

Object Name	Object ID	User Access	Object Description	Get	Set
dsx1LineType	{ dsx1Config Entry 5 }	read-write	"This variable indicates the variety of DS1 Line implementing this circuit. The type of circuit affects the number of bits per second that the circuit can reasonably carry, as well as the interpretation of the usage and error statistics. The values, in sequence, describe: dsx1ESF Extended SuperFrame DS1 dsx1D4 AT&T D4 format DS1 dsx1E1 CCITT Recommendation G.704 (Table 4a) dsx1E1-CRC CCITT Recommendation G.704 (Table 4b) dsxE1-MF G.704 (Table 4a) with TS16 multiframing enabled dsx1E1-CRC-MF G.704 (Table 4b) with TS16 multiframing enabled"	**dsx1ESF(2)** - the Network Framing is set to ESF. **dsx1D4(3)** - the Network Framing is set to D4. **dsx1E1(4)** - the Network Framing is set to E1. **dsx1E1-CRC(5)** - the Network Framing is set to E1-CRC. **dsxE1-MF(6)** - the Network Framing is set to E1-MF. **dsx1E1-CRC-MF(7)** - the Network Framing is set to E1-CRC-MF.	**dsx1ESF(2)** - the Network Framing is set to ESF. **dsx1D4(3)** - the Network Framing is set to D4. **dsx1E1(4)** - the Network Framing is set to E1. **dsx1E1-CRC(5)** - the Network Framing is set to E1-CRC. **dsxE1-MF(6)** - the Network Framing is set to E1-MF. **dsx1E1-CRC-MF(7)** - the Network Framing is set to E1-CRC-MF.

Table A-4 dsx1ConfigTable OID

Object Name	Object ID	User Access	Object Description	Get	Set
dsx1LineCoding	{ dsx1Config Entry 6 }	read-write	"This variable describes the variety of Zero Code Suppression used on the link, which in turn affects a number of its characteristics. dsx1JBZS refers the Jammed Bit Zero Suppression, in which the AT&T specification of at least one pulse every 8 bit periods is literally implemented by forcing a pulse in bit 8 of each channel. Thus, only seven bits per channel, or 1.344 Mbps, is available for data. dsx1B8ZS refers to the use of a specified pattern of normal bits and bipolar violations which are used to replace a sequence of eight zero bits. ANSI Clear Channels may use dsx1ZBTSI, or Zero Byte Time Slot Interchange. E1 links, with or without CRC, use dsx1HDB3 or dsx1AMI. dsx1AMI refers to a mode wherein no zero code suppression is present and the line encoding does not solve the problem directly. In this application, the higher layer must provide data which meets or exceeds the pulse density requirements, such as inverting HDLC data."	**dsx1B8ZS(2)** - the Network Coding is set to B8ZS. **dsx1AMI(5)** - the Network Coding is set to AMI. **dsx1HDB3(3)** - Network coding is set to HDB3	**dsx1B8ZS(2)** - the Network Coding is set to B8ZS. **dsx1AMI(5)** - the Network Coding is set to AMI. **dsx1HDB3(3)** - Network coding is set to HDB3

Table A-4 dsx1ConfigTable OID

Object Name	Object ID	User Access	Object Description	Get	Set
dsx1SendCode	{ dsx1Config Entry 7 }	read-write	"This variable indicates what type of code is being sent across the DS1 interface by the device. The values mean: dsx1SendNoCode sending looped or normal data dsx1SendLineCode sending a request for a line loopback dsx1SendPayloadCode sending a request for a payload loopback dsx1SendResetCode sending a loopback termination request dsx1SendQRS sending a Quasi-Random Signal (QRS) test pattern dsx1Send511Pattern sending a 511 bit fixed test pattern dsx1Send3in24Pattern sending a fixed test pattern of 3 bits set in 24 dsx1SendOtherTest Pattern sending a test pattern other than those described by this object."	**dsx1SendNoCode(1)** - the unit is not in a BERT Test and not sending a PLB or LLB loopup/loopdown request to the far end. **dsx1SendLineCode (2)** - the unit is transmitting an in-band LLB loopup signal. Since this occurs so quickly, this response probably will not be seen. **dsx1SendPayload Code(3)** - the unit is sending an out-of-band PLB loopup request to the far end, but since this occurs so quickly, this response probably will not be seen. **dsx1SendResetCode(4)** - the unit is sending either an in-band LLB loopdown signal, or an out-of-band PLB loopdown request, but since these occur so quickly, this response probably will not be seen. **dsx1SendQRS(5)** - the unit is in a Network BERT transmitting QRSS pattern. **dsx1Send511Pattern(6)** - the unit is in a Network BERT transmitting 511 pattern. **dsx1Send3in24 Pattern(7)** - the unit is in a Network BERT transmitting 3:24 pattern. **dsx1SendOtherTest Pattern(8)** - the unit is in a Network BERT and is transmitting a pattern other than QRSS, 511, or 3:24.	**dsx1SendNoCode(1)** - disable near-end BERT tests. **dsx1SendLineCode (2)** - the unit will transmit an in-band LLB loopup signal. **dsx1SendPayload Code(3)** - the unit will send an out-of-band PLB loopup request to the far end. **dsx1SendResetCode(4)** - the unit will send either an in-band LLB loopdown signal, or an out-of-band PLB loopdown request. **dsx1SendQRS(5)** - the unit will initiate a Network BERT transmitting QRSS pattern. **dsx1Send511Pattern(6)** - the unit will initiate a Network BERT transmitting 511 pattern. **dsx1Send3in24 Pattern(7)** - the unit will initiate a Network BERT transmitting 3:24 pattern. **dsx1SendOtherTest Pattern(8)** - the unit will initiate a BERT and is transmitting a pattern other than QRSS, 511, or 3:24.
dsx1Circuit Identifier	{ dsx1Config Entry 8 }	read-write	"This variable contains the transmission vendor's circuit identifier, for the purpose of facilitating troubleshooting."	Returns the value of the Circuit Identifier for the unit, this is selectable in the Element. Configuration Screen.	Sets the value of the Circuit Identifier for the unit, this is selectable in the Element. Configuration Screen.

Table A-4 dsx1ConfigTable OID

Object Name	Object ID	User Access	Object Description	Get	Set
dsx1Loopback Config	{ dsx1Config Entry 9 }	read-write	"This variable represents the loopback configuration of the DS1 interface. Agents supporting read/write access should return badValue in response to a requested loopback state that the interface does not support. The values mean: dsx1NoLoop Not in the loopback state. A device that is not capable of performing a loopback on the interface shall always return this as it's value. dsx1PayloadLoop The received signal at this interface is looped through the device. Typically the received signal is looped back for retransmission after it has passed through the device's framing function. dsx1LineLoop The received signal at this interface does not go through the device (minimum penetration) but is looped back out. dsx1OtherLoop Loopbacks that are not defined here."	**dsx1NoLoop(1)** - the unit does not have any loops active. **dsx1PayloadLoop(2)** - the unit has a NET PLB active. **dsx1LineLoop(3)** - the unit has a NET LLB active. **dsx1OtherLoop(4)** - the unit has a Port Loop active.	**dsx1NoLoop(1)** - the unit will take down any active loops. **dsx1PayloadLoop(2)** - the unit will initiate a NET PLB. **dsx1LineLoop(3)** - the unit will initiate a NET LLB. **dsx1OtherLoop(4)** - the unit will initiate a Port Loop on the first port.

Table A-4 dsx1ConfigTable OID

Object Name	Object ID	User Access	Object Description	Get	Set
dx1LineStatus	{ dsx1Config Entry 10 }	read-only	"This variable indicates the Line Status of the interface. It contains loopback, failure, received 'alarm' and transmitted 'alarm' information. The dsx1LineStatus is a bit map represented as a sum, therefore, it can represent multiple failures (alarms) and a LoopbackState simultaneously. dsx1NoAlarm should be set if and only if no other flag is set. If the dsx1LoopbackState bit is set, the loopback in effect can be determined from the dsx1LoopbackConfig object. The various bit positions are: 1 dsx1NoAlarm No Alarm Present 2 dsx1RcvFarEndLOF Far end LOF (a.k.a., Yellow Alarm) 4 dsx1XmtFarEndLOF Near end sending LOF Indication 8 dsx1RcvAIS Far end sending AIS 16 dsx1XmtAIS Near end sending AIS 32 dsx1LossOfFrame Near end LOF (a.k.a., Red Alarm) 64 dsx1LossOfSignal Near end Loss Of Signal 128 dsx1LoopbackState Near end is looped 256 dsx1T16AIS E1 TS16 AIS 512 dsx1RcvFarEndLOMF Far End Sending TS16 LOMF 1024 dsx1XmtFarEndLOMF Near End Sending TS16 LOMF 2048 dsx1RcvTestCode Near End detects a test code 4096 dsx1OtherFailure any line status not defined here"	Returns a sum of the following **dsx1NoAlarm(1)** - the unit has no alarms. **dsx1RcvFarEndLOF(2)** - the unit is receiving a yellow alarm from the far end. **dsx1XmtFarEndLOF(4)** - unit is transmitting a yellow alarm. **dsx1RcvAIS(8)** - the unit is receiving AIS from the far end. **dsx1XmtAIS(16)** - not applicable. **dsx1LossOfFrame(32)** - unit is currently in an OOF condition. **dsx1LossOfSignal(64)** - the unit is currently in a LOS condition. **dsx1LoopbackState(128)** - the unit has a loop active **dsx1T16AIS(256)** - not applicable. **dsx1RcvFarEndLOMF (512)** - not applicable. **dsx1XmtFarEndLOMF (1024)** - not applicable. **dsx1RcvTestCode(2048)** - not applicable. **dsx1OtherFailure(4096)** - not applicable.	

Table A-4 dsx1ConfigTable OID

Object Name	Object ID	User Access	Object Description	Get	Set
dsx1Signal Mode	{ dsx1Config Entry 11 }	read-write	"'none' indicates that no bits are reserved for signaling on this channel. 'robbedBit' indicates that T1 Robbed Bit Signaling is in use. 'bitOriented' indicates that E1 Channel Associated Signaling is in use. 'messageOriented' indicates that Common Channel Signaling is in use either on channel 16 of an E1 link or channel 24 of a T1."	**none(1)** - this signal mode is the only mode supported.	No action, this parameter may not be changed.
dsx1Transmit ClockSource	{ dsx1Config Entry 12 }	read-write	"The source of Tranmit Clock. 'loopTiming' indicates that the recovered receive clock is used as the transmit clock. 'localTiming' indicates that a local clock source is used. 'throughTiming' indicates that recovered receive clock from another interface is used as the transmit clock."	**loopTiming(1)** - the Network Timing is set to Network Clock. **localTiming(2)** - the Network Timing is set to Internal Clock. **throughTiming(3)** - the Network Timing is set to some other source than Network or Interval.	**loopTiming(1)** - the Network Timing is set to Network Clock. **localTiming(2)** - the Network Timing is set to Internal Clock. **throughTiming(3)** - the Network Timing is set to Port 1 Timing.
dsx1Fdl	{ dsx1Config Entry 13 }	read-write	"This bitmap describes the use of the facilities data link, and is the sum of the capabilities: 'other' indicates that a protocol other than one following is used. 'dsx1Ansi-T1-403' refers to the FDL exchange recommended by ANSI. 'dsx1Att-54016' refers to ESF FDL exchanges. 'dsx1Fdl-none' indicates that the device does not use the FDL."	Returns a sum of the following **other(1)** - Rem Comm Channel is active. **dsx1Ansi-T1-403(2)** - the Network Framing is ESF, and PRM Enable is Enabled. **dsx1Att-54016(4)** - the Network Framing is ESF or Rem Comm Channel is active, therefore TR 54016 messaging is active. **dsx1Fdl-none(8)** - the Network Framing is D4, and there is no active Rem Comm Channel.	No action, this parameter may not be changed.

dsx1CurrentTable OID {1.3.6.1.2.1.10.18.7}

Table A-5 dsx1CurrentTable OID

Object Name	Object ID	User Access	Object Description	Get
dsx1CurrentIndex	{ dsx1CurrentEntry 1 }	read-only	"The index value which uniquely identifies the DS1 interface to which this entry is applicable. The interface identified by a particular value of this index is the same interface as identified by the same value as a dsx1LineIndex object instance."	Returns the ifIndex of the specified DS1 interface.
dsx1CurrentESs	{ dsx1CurrentEntry 3 }	read-only	"The number of Severely Errored Seconds encountered by a DS1 interface in the current 15 minute interval."	Returns the number of Errored Seconds (per TR 54016) in the current 15-minute interval.
dsx1CurrentSESs	{ dsx1CurrentEntry 3 }	read-only	"The number of Severely Errored Seconds encountered by a DS1 interface in the currnet 15 minute interval."	Returns the number of Severely Errored Seconds (per TR 54016) in the current 15-minute interval.
dsx1CurrentSEFSs	{ dsx1CurrentEntry 4 }	read-only	"The number of Severely Errored Framing Seconds encountered by a DS1 interface in the current 15 minute interval."	Returns the number of Loss Of Frame Seconds (per TR 54016) in the current 15-minute interval.
dsx1CurrentUASs	{ dsx1CurrentEntry 5 }	read-only	"The number of Unavailable Seconds encountered by a DS1 interface in the current 15 minute interval."	Returns the number of Unavailable Seconds (per TR 54016) in the current 15-minute interval.
dsx1CurrentCSSs	{ dsx1CurrentEntry 6 }	read-only	"The number of Controlled Slip Seconds encountered by a DS1 interface in the current 15 minute interval."	Returns the number of Controlled Slip Seconds (per TR 54016) in the current 15-minute interval.
dsx1CurrentPCVs	{ dsx1CurrentEntry 7 }	read-only	"The number of Path Coding Violations encountered by a DS1 interface in the current 15 minute interval."	Returns 0.
dsx1CurrentLESs	{ dsx1CurrentEntry 8 }	read-only	"The number of Line Errored Seconds encountered by a DS1 interface in the current 15 minute interval."	Returns the number of Bipolar Violation Seconds (per TR 54016) in the current 15-minute interval.
dsx1CurrentBESs	{dsx1CurrentEntry 9 }	read-only	"The number of Bursty Errored Seconds (BESs) encountered by a DS1 interface in the current 15 minute interval."	Returns the number of Bursty Errored Seconds (per TR 54016) in the current 15-minute interval.
dsx1CurrentDMs	{ dsx1CurrentEntry 10 }	read-only	"The number of Degraded Minutes (DMs) encountered by a DS1 interface in the current 15 minute interval."	Returns 0.
dsx1CurrentLCVs	{dsx1CurrentEntry 11 }	read-only	"The number of Line Code Violations (LCVs) encountered by a DS1 interface in the current 15 minute interval."	Returns 0.

dsx1IntervalTable OID {1.3.6.1.2.1.10.18.8}

Table A-6 dsx1IntervalTable OID

Object Name	Object ID	User Access	Object Description	Get
dsx1IntervalIndex	{ dsx1IntervalEntry 1 }	read-only	"The index value which uniquely identifies the DS1 interface to which this entry is applicable. The interface identified by a particular value of this index is the same interface as identified by the same value as a dsx1LineIndex object instance."	Returns the ifIndex of the specified DS1 interface.
dsx1IntervalNumber	{ dsx1IntervalEntry 2 }	read-only	"A number between 1 and 96, where 1 is the most recently completed 15 minute interval and 96 is the least recently completed 15 minutes interval (assuming that all 96 intervals are valid)."	Returns the interval number for the interval requested, a number from 1 to 96.
dsx1IntervalESs	{ dsx1IntervalEntry 3 }	read-only	"The number of Errored Seconds encountered by a DS1 interface in one of the previous 96, individual 15 minute, intervals."	Returns the number of Errored Seconds (per TR 54016) in the specified 15-minute interval.
dsx1IntervalSESs	{ dsx1IntervalEntry 4 }	read-only	"The number of Severely Errored Seconds encountered by a DS1 interface in one of the previous 96, individual 15 minute, intervals."	Returns the number of Severely Errored Seconds (per TR 54016) in the specified 15-minute interval.
dsx1IntervalSEFSs	{ dsx1IntervalEntry 5 }	read-only	"The number of Severely Errored Framing Seconds encountered by a DS1 interface in one of the previous 96, individual 15 minute, intervals."	Returns the number of Loss Of Frame Seconds (per TR 54016) in the specified 15-minute interval.
dsx1IntervalUASs	{ dsx1IntervalEntry 6 }	read-only	"The number of Unavailable Seconds encountered by a DS1 interface in one of the previous 96, individual 15 minute, intervals."	Returns the number of Unavailable Seconds (per TR 54016) in the specified 15-minute interval.
dsx1IntervalCSSs	{ dsx1IntervalEntry 7 }	read-only	"The number of Controlled Slip Seconds encountered by a DS1 interface in one of the previous 96, individual 15 minute, intervals."	Returns the number of Controlled Slip Seconds (per TR 54016) in the specified 15-minute interval.
dsx1IntervalPCVs	{ dsx1IntervalEntry 8 }	read-only	"The number of Path Coding Violations encountered by a DS1 interface in one of the previous 96, individual 15 minute, intervals."	Returns 0.
dsx1IntervalLESs	{ dsx1IntervalEntry 9 }	read-only	"The number of Line Errored Seconds encountered by a DS1 interface in one of the previous 96, individual 15 minute, intervals."	Returns the number of Bipolar Violation Seconds (per TR 54016) in the specified 15-minute interval.
dsx1IntervalBESs	{ dsx1IntervalEntry 10 }	read-only	"The number of Bursty Errored Seconds (BESs) encountered by a DS1 interface in one of the previous 96, individual 15 minute, intervals."	Returns the number of Bursty Errored Seconds (per TR 54016) in the specified 15-minute interval.
dsx1IntervalDMs	{ dsx1IntervalEntry 11 }	read-only	"The number of Degraded Minutes (DMs) encountered by a DS1 interface in one of the previous 96, individual 15 minute, intervals."	Returns 0.
dsx1IntervalLCVs	{ dsx1IntervalEntry 12 }	read-only	"The number of Line Code Violations (LCVs) encountered by a DS1 interface in the current 15 minute interval."	Returns 0.

dsx1TotalTable OID {1.3.6.1.2.1.10.18.9}

Table A-7 dsx1TotalTable OID

Object ID	Object Name	User Access	Object Description	Get
{ dsx1TotalEntry 1 }	dsx1TotalIndex	read-only	"The index value which uniquely identifies the DS1 interface to which this entry is applicable. The interface identified by a particular value of this index is the same interface as identified by the same value as a dsx1LineIndex object instance."	Returns the ifIndex of the specified DS1 interface.
{ dsx1TotalEntry 2 }	dsx1TotalESs	read-only	"The number of Errored Seconds encountered by a DS1 interface in the previous 24 hour interval"	Returns the number of Errored Seconds (per TR 54016) in the previous 24-hour period.
{ dsx1TotalEntry 3}	dsx1TotalSESs	read-only	"The number of Severely Errored Seconds encountered by a DS1 interface in the previous 24 hour interval."	Returns the number of Severely Errored Seconds (per TR 54016) in the previous 24-hour period.
{ dsx1TotalEntry 4 }	dsx1TotalSEFSs	read-only	"The number of Severely Errored Framing Seconds encountered by a DS1 interface in the previous 24 hour interval."	Returns the number of Loss Of Frame Seconds (per TR 54016) in the previous 24-hour period.
{ dsx1TotalEntry 5 }	dsx1TotalUASs	read-only	"The number of Unavailable Seconds encountered by a DS1 interface in the previous 24 hour interval."	Returns the number of Unavailable Seconds (per TR 54016) in the previous 24-hour period.
{ dsx1TotalEntry 6 }	dsx1TotalCSSs	read-only	"The number of Controlled Slip Seconds encountered by a DS1 interface in the previous 24 hour interval."	Returns the number of Controlled Slip Seconds (per TR 54016) in the previous 24-hour period.
{ dsx1TotalEntry 7 }	dsx1TotalPCVs	read-only	"The number of Path Coding Violations encountered by a DS1 interface in the previous 24 hour interval."	Returns 0.
{ dsx1TotalEntry 8 }	dsx1TotalLESs	read-only	"The number of Line Errored Seconds encountered by a DS1 interface in the previous 24 hour interval."	Returns the number of Bipolar Violation Seconds (per TR 54016) in the previous 24-hour period.
{ dsx1TotalEntry 9 }	dsx1TotalBESs	read-only	"The number of Bursty Errored Seconds (BESs) encountered by a DS1 interface in the previous 24 hour interval."	Returns the number of Bursty Errored Seconds (per TR 54016) in the previous 24-hour period.
{ dsx1TotalEntry 10 }	dsx1TotalDMs	read-only	"The number of Degraded Minutes (DMs) encountered by a DS1 interface in the previous 24 hour interval."	Returns 0.
{ dsx1TotalEntry 11 }	dsx1TotalLCVs	read-only	"The number of Line Code Violations (LCVs) encountered by a DS1 interface in the current 15 minute interval."	Returns 0.

dsx1FarEndCurrent Table OID {1.3.6.1.2.1.10.18.10}

Table A-8 dsx1FarEndCurrent Table OID

Object Name	Object ID	User Access	Object Description	Get
dsx1FarEndCurrentIndex	{ dsx1FarEndCurrentEntry 1 }	read-only	"The index value which uniquely identifies the DS1 interface to which this entry is applicable. The interface identified by a particular value of this index is the same interface as identified by the same value an dsx1LineIndex object instance."	Returns the ifIndex of the specified DS1 interface.
dsx1FarEndTimeElapsed	{ dsx1FarEndCurrentEntry 2 }	read-only	"The number of seconds that have elapsed since the beginning of the far end current error-measurement period."	Returns the number of seconds in the current interval for the far end.
dsx1FarEndValidIntervals	{ dsx1FarEndCurrentEntry 3 }	read-only	"The number of previous far end intervals for which valid data was collected. The value will be 96 unless the interface was brought online within the last 24 hours, in which case the value will be the number of complete 15 minute far end intervals since the interface has been online."	Returns a number from 1 to 96 of completed intervals for the far end.
dsx1FarEndCurrentESs	{ dsx1FarEndCurrentEntry 4 }	read-only	"The number of Far End Errored Seconds encountered by a DS1 interface in the current 15 minute interval."	Returns the number of Errored Seconds (per TR 54016) in the current 15-minute interval for the far end.
dsx1FarEndCurrentSESs	{ dsx1FarEndCurrentEntry 5 }	read-only	"The number of Far End Severely Errored Seconds encountered by a DS1 interface in the current 15 minute interval."	Returns the number of Severely Errored Seconds (per TR 54016) in the current 15-minute interval for the far end.
dsx1FarEndCurrentSEFSs	{ dsx1FarEndCurrentEntry 6 }	read-only	"The number of Far End Severely Errored Framing Seconds encountered by a DS1 interface in the current 15 minute interval."	Returns the number of Loss Of Frame Seconds (per TR 54016) in the current 15-minute interval for the far end.
dsx1FarEndCurrentUASs	{ dsx1FarEndCurrentEntry 7 }	read-only	"The number of Unavailable Seconds encountered by a DS1 interface in the current 15 minute interval."	Returns the number of Unavailable Seconds (per TR 54016) in the current 15-minute interval for the far end.
dsx1FarEndCurrentCSSs	{ dsx1FarEndCurrentEntry 8 }	read-only	"The number of Far End Controlled Slip Seconds encountered by a DS1 interface in the current 15 minute interval."	Returns the number of Controlled Slip Seconds (per TR 54016) in the current 15-minute interval for the far end.

Table A-8 dsx1FarEndCurrent Table OID

Object Name	Object ID	User Access	Object Description	Get
dsx1FarEndCurrentLESs	{ dsx1FarEndCurrentEntry 9 }	read-only	"The number of Far End Line Errored Seconds encountered by a DS1 interface in the current 15 minute interval."	Returns the number of Bipolar Violation Seconds (per TR 54016) in the current 15-minute interval for the far end.
dsx1FarEndCurrentPCVs	{ dsx1FarEndCurrentEntry 10 }	read-only	"The number of Far End Path Coding Violations reported via the far end block error count encountered by a DS1 interface in the current 15 minute interval."	Returns 0.
dsx1FarEndCurrentBESs	{dsx1FarEndCurrentEntry 11 }	read-only	"The number of Bursty Errored Seconds (BESs) encountered by a DS1 interface in the current 15 minute interval."	Returns the number of Bursty Errored Seconds (per TR 54016) in the current 15-minute interval for the far end.
dsx1CurrentDMs	{ dsx1FarEndCurrentEntry 12 }	read-only	"The number of Degraded Minutes (DMs) encountered by a DS1 interface in the current 15 minute interval."	Returns 0.

dsx1FarEndInterval Table OID {1.3.6.1.2.1.10.18.11}

Table A-9 dsx1FarEndInterval Table OID

Object Name	Object ID	User Access	Object Description	Get
dsx1FarEndIntervalIndex	{ dsx1FarEndIntervalEntry 1}	read-only	"The index value which uniquely identifies the DS1 interface to which this entry is applicable. The interface identified by a particular value of this index is the same interface as identified by the same value as a dsx1LineIndex object instance."	Returns the ifIndex of the specified DS1 interface.
dsx1FarEndIntervalNumber	{ dsx1FarEndIntervalEntry 2 }	read-only	"A number between 1 and 96, where 1 is the most recently completed 15 minute interval and 96 is the least recently completed 15 minutes interval (assuming that all 96 intervals are valid)."	Returns the interval number for the interval requested, a number from 1 to 96.
dsx1FarEndIntervalESs	{ dsx1FarEndIntervalEntry 3 }	read-only	"The number of Far End Errored Seconds encountered by a DS1 interface in one of the previous 96, individual 15 minute, intervals."	Returns the number of Errored Seconds (per TR 54016) in the specified 15-minute interval for the far end.
dsx1FarEndIntervalSESs	{ dsx1FarEndIntervalEntry 4 }	read-only	"The number of Far End Severely Errored Seconds encountered by a DS1 interface in one of the previous 96, individual 15 minute, intervals."	Returns the number of Severely Errored Seconds (per TR 54016) in the specified 15-minute interval for the far end.
dsx1FarEndIntervalSEFSs	{ dsx1FarEndIntervalEntry 5 }	read-only	"The number of Far End Severely Errored Framing Seconds encountered by a DS1 interface in one of the previous 96, individual 15 minute, intervals."	Returns the number of Loss Of Frame Seconds (per TR 54016) in the specified 15-minute interval for the far end.
dsx1FarEndIntervalUASs	{ dsx1FarEndIntervalEntry 6 }	read-only	"The number of Unavailable Seconds encountered by a DS1 interface in one of the previous 96, individual 15 minute, intervals."	Returns the number of Unavailable Seconds (per TR 54016) in the specified 15-minute interval for the far end.
dsx1FarEndIntervalCSSs	{ dsx1FarEndIntervalEntry 7 }	read-only	"The number of Far End Controlled Slip Seconds encountered by a DS1 interface in one of the previous 96, individual 15 minute, intervals."	Returns the number of Controlled Slip Seconds (per TR 54016) in the specified 15-minute interval for the far end.
dsx1FarEndIntervalLESs	{ dsx1FarEndIntervalEntry 8 }	read-only	"The number of Far End Line Errored Seconds encountered by a DS1 interface in one of the previous 96, individual 15 minute, intervals."	Returns the number of Bipolar Violation Seconds (per TR 54016) in the specified 15-minute interval for the far end.

Table A-9 dsx1FarEndInterval Table OID

Object Name	Object ID	User Access	Object Description	Get
dsx1FarEndIntervalPCVs	{ dsx1FarEndIntervalEntry 9 }	read-only	"The number of Far End Path Coding Violations reported via the far end block error count encountered by a DS1 interface in one of the previous 96, individual 15 minute, intervals."	Returns 0.
dsx1FarEndIntervalBESs	{ dsx1FarEndIntervalEntry 10 }	read-only	"The number of Bursty Errored Seconds (BESs) encountered by a DS1 interface in one of the previous 96, individual 15 minute, intervals."	Returns the number of Bursty Errored Seconds (per TR 54016) in the specified 15-minute interval for the far end.
dsx1FarEndIntervalDMs	{ dsx1FarEndIntervalEntry 11 }	read-only	"The number of Degraded Minutes (DMs) encountered by a DS1 interface in one of the previous 96, individual 15 minute, intervals."	Returns 0.

dsx1FarEndTotal Table OID {1.3.6.1.2.1.10.18.12}

Table A-10 dsx1FarEndTotal Table OID

Object Name	Object ID	User Access	Object Description	Get
dsx1FarEndTotalIndex	{ dsx1FarEndTotalEntry 1 }	read-only	"The index value which uniquely identifies the DS1 interface to which this entry is applicable. The interface identified by a particular value of this index is the same interface as identified by the same value an dsx1LineIndex object instance."	Returns the ifIndex of the specified DS1 interface.
dsx1FarEndTotalESs	{ dsx1FarEndTotalEntry 2 }	read-only	"The number of Far End Errored Seconds encountered by a DS1 interface in the previous 24 hour interval."	Returns the number of Errored Seconds (per TR 54016) in the previous 24-hour period for the far end.
dsx1FarEndTotalSESs	{ dsx1FarEndTotalEntry 3 }	read-only	"The number of Far End Severely Errored Seconds encountered by a DS1 interface in the previous 24 hour interval."	Returns the number of Severely Errored Seconds (per TR 54016) in the previous 24-hour period for the far end.
dsx1FarEndTotalSEFSs	{ dsx1FarEndTotalEntry 4 }	read-only	"The number of Far End Severely Errored Framing Seconds encountered by a DS1 interface in the previous 24 hour interval."	Returns the number of Loss Of Frame Seconds (per TR 54016) in the previous 24-hour period for the far end.
dsx1FarEndTotalUASs	{ dsx1FarEndTotalEntry 5 }	read-only	"The number of Unavailable Seconds encountered by a DS1 interface in the previous 24 hour interval."	Returns the number of Unavailable Seconds (per TR 54016) in the previous 24-hour period for the far end.
dsx1FarEndTotalCSSs	{ dsx1FarEndTotalEntry 6 }	read-only	"The number of Far End Controlled Slip Seconds encountered by a DS1 interface in the previous 24 hour interval."	Returns the number of Controlled Slip Seconds (per TR 54016) in the previous 24-hour period for the far end.
dsx1FarEndTotalLESs	{ dsx1FarEndTotalEntry 7 }	read-only	"The number of Far End Line Errored Seconds encountered by a DS1 interface in the previous 24 hour interval."	Returns the number of Bipolar Violation Seconds (per TR 54016) in the previous 24-hour period for the far end.
dsx1FarEndTotalPCVs	{ dsx1FarEndTotalEntry 8 }	read-only	"The number of Far End Path Coding Violations reported via the far end block error count encountered by a DS1 interface in the previous 24 hour interval."	Returns 0.
dsx1FarEndTotalBESs	{ dsx1FarEndTotalEntry 9 }	read-only	"The number of Bursty Errored Seconds (BESs) encountered by a DS1 interface in the previous 24 hour interval."	Returns the number of Bursty Errored Seconds (per TR 54016) in the previous 24-hour period for the far end.
dsx1FarEndTotalDMs	{ dsx1FarEndTotalEntry 10 }	read-only	"The number of Degraded Minutes (DMs) encountered by a DS1 interface in the previous 24 hour interval."	Returns 0.

dsx1FracTable OID {1.3.6.1.2.1.10.18.13}

Table A-11 dsx1FracTable OID

Object Name	Object ID	User Access	Object Description	Get	Set
dsx1FracIndex	{ dsx1FracEntry 1 }	read-only	"The index value which uniquely identifies the DS1 interface to which this entry is applicable. The interface identified by a particular value of this index is the same interface as identified by the same value an dsx1LineIndex object instance."	**(2)** - Returns the ifIndex of the DS1 interface.	
dsx1FracNumber	{ dsx1FracEntry 2 }	read-only	"The channel number for this entry."	Returns the channel number (1 to 24).	
dsx1FracIfIndex	{ dsx1FracEntry 3 }	read-write	"An index value that uniquely identifies an interface. The interface identified by a particular value of this index is the same interface as identified by the same value an ifIndex object instance. If no interface is currently using a channel, the value should be zero. If a single interface occupies more than one time slot, that ifIndex value will be found in multiple time slots."	Returns the number of the interface to which the specified channel is assigned.	Can assign the channel to an interface. NOTE: Please be very careful when using this function.

ddsNetConfig OID {1.3.6.1.4.1.425.2.2.1}

Table A-12 ddsNetConfig OID

Object Name	Object ID	User Access	Object Description
ddsNetIndex	{ dds NetConfigEntry 1 }	read-only	This object is the identifier of the DDS network interfaces on the managed device.
ddsNetRate	{ dds NetConfigEntry 2 }	read-write	Allows verifying or setting the network rate on the near-end unit.
ddsNetMode	{ dds NetConfigEntry 3 }	read-write	Allows selecting either standard or proprietary mode of data transfer.
ddsNetSendCode	{ dds NetConfigEntry 4 }	read-write	Allows checking the status of the BERT generator or starting a test.
ddsNetLoopConfig	{ dds NetConfigEntry 5 }	read-write	Allows enabling a loop or checking the status of a loop.
ddsNetStatus	{ dds NetConfigEntry 6 }	read-only	Reports current operational status of the network interface.
ddsNetTimingSource	{ dds NetConfigEntry 7 }	read-write	Allows selecting or verifying the network timing source.
ddsNetRemComm	{ dds NetConfigEntry 8 }	read-only	Reports status of the remote communications link.
ddsNetCircuitAssur	{ dds NetConfigEntry 9 }	read-write	Allows enabling or checking the setting of the circuit assurance option.
ddsNetAntiStrTimer	{ dds NetConfigEntry 10 }	read-write	The object is the identifier of the current unit loop mode.

ddsDteConfig OID {1.3.6.1.4.1.425.2.2.2}

Table A-13 ddsDteConfig OID

Object Name	Object ID	User Access	Object Description
ddsDteIndex	{ ddsDteConfigEntry 1 }	read-only	This object is the identifier for the DTE interfaces on a managed device.
ddsDteRate	{ ddsDteConfigEntry 2 }	read-write	Allows verifying or selecting the DTE data rate.
ddsDteFormat	{ ddsDteConfigEntry 3 }	read-write	This variable describes the current operations format of the DTE interface.
ddsDteParity	{ ddsDteConfigEntry 4 }	read-write	Allows verifying or selecting parity when operating in ASYNC mode.
ddsDteStopBit	{ ddsDteConfigEntry 5 }	read-write	Allows verifying or setting the Stop Bit setting when in async mode.
ddsDteSendCode	{ ddsDteConfigEntry 6 }	read-write	Allows starting a DTE BERT or verifying the setting of the DTE BERT.
ddsDteLoopConfig	{ ddsDteConfigEntry 7 }	read-write	Allows setting a DTE loop or verifying the status of a DTE loop.
ddsDteStatus	{ ddsDteConfigEntry 8 }	read-only	Reports the operations status of the DTE interface.
ddsDteInterfaceType	{ ddsDteConfigEntry 9 }	read-only	Reports the DTE interface type being used.
ddsDteV54Loop	{ ddsDteConfigEntry 10 }	read-write	Allows selecting or verifying the operational state of the V.54 option.
ddsDteRtsCtsDelay	{ ddsDteConfigEntry 11 }	read-write	Allows verifying or selecting setting of the RTS-to- CTS delay option.
ddsDteRtsStatus	{ ddsDteConfigEntry 12 }	read-only	Reports the current status of the RTS control lead.
ddsDteCtsStatus	{ ddsDteConfigEntry 13 }	read-only	Reports the current status of the CTS control lead.
ddsDteDcdStatus	{ ddsDteConfigEntry 14 }	read-only	Reports the current status of the DCD control lead.
ddsDteDtrStatus	{ ddsDteConfigEntry 15 }	read-only	Reports the current status of the DTR control lead.
ddsDteDsrStatus	{ ddsDteConfigEntry 16 }	read-only	Reports the current status of the DSR control lead.
ddsDteDsrControl	{ ddsDteConfigEntry 17 }	read-write	This variable describes the setting for the options on the DTE DSR lead (Circuit 107/CC).
ddsDteDcdControl	{ ddsDteConfigEntry 18 }	read-write	This variable describes the setting for the options on the DTE DCD lead (Circuit 109/CF).
ddsDteRtsControl	{ ddsDteConfigEntry 19 }	read-write	This variable describes the setting for the options on the RTS and CTS leads (Circuit 105/CA and 106/CB).
ddsDteDtrAlarm	{ ddsDteConfigEntry 20 }	read-write	This variable describes the setting for the options on the DTR lead (Circuit 108/CD).
ddsDteRLDetect	{ ddsDteConfigEntry 21 }	read-write	This variable describes the setting for the options on the Remote Loopback lead (Circuit 140/RLB).
ddsDteLLDetect	{ ddsDteConfigEntry 22 }	read-write	This variable describes the setting for the options on the Local Loopback lead (Circuit 141/LLB).
ddsDteDteMode	{ ddsDteConfigEntry 23 }	read-write	This variable describes the mode inwhich data is being sent from the DDS unit back towards the network.

ddsDbuConfig OID {1.3.6.1.4.1.425.2.2.3}

Table A-14 ddsDbuConfig OID

Object Name	Object ID	User Access	Object Description
ddsDbuIndex	{ ddsDbuConfigEntry 1 }	read-only	This object is the identifier of the Dial Backup interface on a managed device.
ddsDbuRate	{ ddsDbuConfigEntry 2 }	read-write	Allows selecting or verifying the Dial Backup rate.
ddsDbuCallMode	{ ddsDbuConfigEntry 3 }	read-write	Allows selecting or verify the call response mode.
ddsDbuDataMode	{ ddsDbuConfigEntry 4 }	read-write	Allows user to select or verify data mode for dial backup (sync or async).

Table A-14 ddsDbuConfig OID

Object Name	Object ID	User Access	Object Description
ddsDbuNumber	{ ddsDbuConfigEntry 4 }	read-write	Displays the string that allows verifying or setting the dial backup number.
ddsDbuStatus	{ ddsDbuConfigEntry 6 }	read-only	Reports the current status of the dial backup unit.
ddsDbuCommand	{ ddsDbuConfigEntry 7 }	read-write	This object is the identifier of the current setting that the Dial Backup Unit is operating in.
ddsDbuActivator	{ ddsDbuConfigEntry 8 }	read-write	This object is the identifier of the current trigger that will activate the Dial Backup Unit.
ddsDbuInitStr	{ ddsDbuConfigEntry 9 }	read-write	This string is the initialization string sent to the dial backup unit before every connection attempt.
ddsDbuHangupStr	{ ddsDbuConfigEntry 10 }	read-write	This string is the hangup command string sent to the dial backup unit after every successful call.
ddsDbuPasswordStr	{ ddsDbuConfigEntry 11 }	read-write	This string is the prompt character and password string for the dial backup unit in Callback DBU.
ddsDbuSunStart	{ ddsDbuConfigEntry 12 }	read-write	This object is the beginning of an allowable window for Dial Backup Activation on Sundays.
ddsDbuMonStart	{ ddsDbuConfigEntry 13 }	read-write	This object is the beginning of an allowable window for Dial Backup Activation on Mondays.
ddsDbuTueStart	{ ddsDbuConfigEntry 14 }	read-write	This object is the beginning of an allowable window for Dial Backup Activation on Tuesdays.
ddsDbuWedStart	{ ddsDbuConfigEntry 15 }	read-write	This object is the beginning of an allowable window for Dial Backup Activation on Wednesdays.
ddsDbuThuStart	{ ddsDbuConfigEntry 16 }	read-write	This object is the beginning of an allowable window for Dial Backup Activation on Thursdays.
ddsDbuFriStart	{ ddsDbuConfigEntry 17 }	read-write	This object is the beginning of an allowable window for Dial Backup Activation on Fridays.
ddsDbuSatStart	{ ddsDbuConfigEntry 18 }	read-write	This object is the beginning of an allowable window for Dial Backup Activation on Saturdays.
ddsDbuSunStop	{ ddsDbuConfigEntry 19 }	read-write	This object is the end of an allowable window for Dial Backup Activation on Sundays.
ddsDbuMonStop	{ ddsDbuConfigEntry 20 }	read-write	This object is the end of an allowable window for Dial Backup Activation on Mondays.
ddsDbuTueStop	{ ddsDbuConfigEntry 21 }	read-write	This object is the end of an allowable window for Dial Backup Activation on Tuesdays.
ddsDbuWedStop	{ ddsDbuConfigEntry 22 }	read-write	This object is the end of an allowable window for Dial Backup Activation on Wednesdays.
ddsDbuThuStop	{ ddsDbuConfigEntry 23 }	read-write	This object is the end of an allowable window for Dial Backup Activation on Thursdays.
ddsDbuFriStop	{ ddsDbuConfigEntry 24 }	read-write	This object is the end of an allowable window for Dial Backup Activation on Fridays.
ddsDbuSatStop	{ ddsDbuConfigEntry 25 }	read-write	This object is the end of an allowable window for Dial Backup Activation on Saturdays.
ddsDbuResetStr1	{ ddsDbuConfigEntry 26 }	read-write	This string is one of the dial backup unit's COLD START reprogramming strings.
ddsDbuResetStr2	{ ddsDbuConfigEntry 27 }	read-write	This string is one of the dial backup unit's COLD START reprogramming strings.
ddsDbuResetStr3	{ ddsDbuConfigEntry 28 }	read-write	This string is one of the dial backup unit's COLD START reprogramming strings.
ddsDbuResetStr4	{ ddsDbuConfigEntry 29 }	read-write	This string is one of the dial backup unit's COLD START reprogramming strings
ddsDbuResetStr5	{ ddsDbuConfigEntry 30 }	read-write	This string is one of the dial backup unit's COLD START reprogramming strings.

companyInfo OID {1.3.6.1.4.1.425.1}

Table A-15 companyInfo OID

Object Name	Object ID	User Access	Object Description	Get
companyName	{ companyinfo 1 }	read-only	Displays the company name.	"TXPORT"
companyStatement	{ companyinfo 2 }	read-only	Displays the company vision statement.	"Universal Access to Core Telecom Services."
companyStreetAddr	{ companyinfo 3 }	read-only	Displays the TXPORT street address.	"127 Jetplex Circle"
companyCityState	{ companyinfo 4 }	read-only	Displays the location of TXPORT.	"Madison, AL"
companyTechService	{ companyinfo 5 }	read-only	Displays the Product Support number.	"1-800-285-2755"
companyInHouseSales	{ companyinfo 6 }	read-only	Displays number which inside sales can be reached.	"1-800-926-0085"
companyEmailAddr	{ companyinfo 7 }	read-only	Displays the information e-mail address.	"info@txport.com"

productInfo OID {1.3.6.1.4.1.425.2.1}

This table applies only to the 8100A Site Controller

Table A-16 productInfo OID

Object Name	Object ID	User Access	Object Description	Get
productModelNumber	{ productInfo 1 }	read-only	Displays the product model number for the device currently being queried.	Model 8100A
productModelDescr	{ productInfo 2 }	read-only	Displays a brief description of the product.	Site Controller
productElementId	{ productInfo 3 }	read-only	Displays the element ID of the unit.	Returns the Site Controller description.
productSoftwareRev	{ productInfo 4 }	read-only	Displays the software revision of the unit.	Returns the Site Controller software revision.
productHardwareRev	{ productInfo 5 }	read-only	Displays the hardware revision of the unit.	Returns the Site Controller hardware revision.
productSerialNum	{ productInfo 6 }	read-only	Displays the unit's serial number.	Returns the Site Controller serial number.
productPhysicalAddress	{ productInfo 7 }	read-only	Displays the unit's physical Ethernet address.	Returns the MAC for Ethernet or Token Ring.
productNmsAddress	{ productInfo 8 }	read-only	Displays the unit's NMS address.	Returns 1.
optionCardDescr	{ productOption CardEntry 2 }	read-only	Displays a brief description of the option card.	Ethernet option NIC, Token Ring option NIC, Internal Modem.
optionCardSoftwareRev	{ productOption CardEntry 3 }	read-only	Displays the software revision of the option card.	Not applicable.
optionCardHardwareRev	{ productOption CardEntry 4 }	read-only	Displays the hardware revision of the option card.	Not applicable.
optionCardPhysicalAddress	{ productOption CardEntry 5 }	read-only	Displays the physical address tied to the option card.	Not applicable.

Definition of Traps

Verilink (formerly TxPORT) products with SNMP support provide for the detection and reporting of network alarms. When an alarm occurs, the SNMP agent sends a trap message (formatted per RFC 1157) to multiple destinations on the user's network. The generic trap type is enterpriseSpecific (generic-trap = 7).

Network problems often cause more than one alarm type. In this case, multiple trap messages are generated, each with a different specific-trap type.

Some alarm types do not apply to certain products.

The Trap-PDU has six mandatory fields as shown in the lower level of Figure A-3.

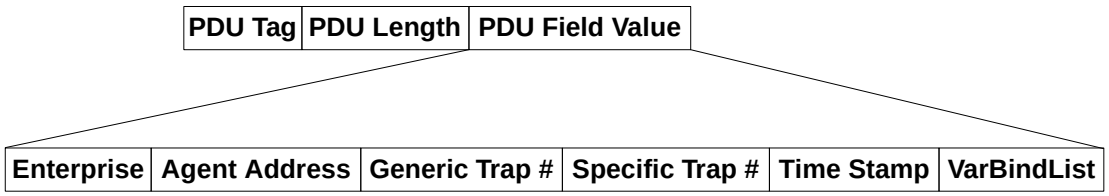


Figure A-3 Trap-PDU Format

The Enterprise field is composed of the Object Identifier of the MIB branch containing the trap definitions. Returns { 1.3.6.1.4.1.425.4 } { txport traps }.

The Agent Address Field is the agent's IP address unit. This further identifies the trap sender to the NMS receiving the trap.

The Generic Trap field contains an integer value that represents one of the standard predefined traps for SNMP.

The Specific Trap field contains trap values defined for a particular enterprise. The values in this field are defined in the txport.mib and the following tables. The list is broken down in specific sections to group trap definitions by use.

The Time Stamp field contains the time the trap was generated in the form of time ticks that have elapsed since the agent was initialized. The value is in units of hundredths of a second. ifIndex istypically providedin the Variable Binding List.

The Variable Bindings List contains supplemental implementation information when included in the Trap-PDU.

Enterprise Specific Traps

Interface Traps

These traps apply to T1 DTE and E1 DTE.

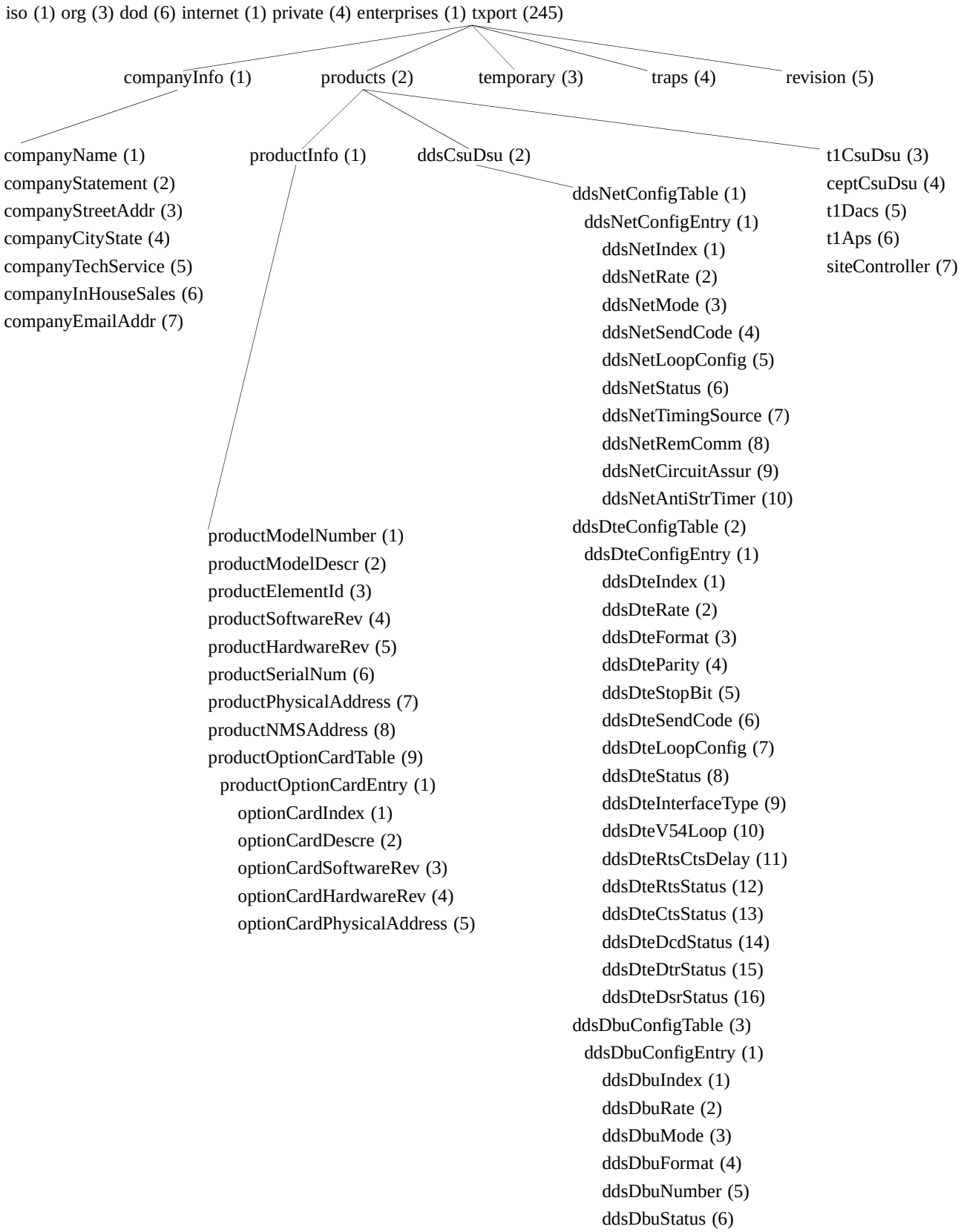
Table A-17

Cleared Near	Cleared Far	Alarm Near	Alarm Far	Description
Equipment Interface Traps (T1 DTE and E1 DTE)				
4	54	104	154	Equipment CRCS threshold exceeded.
5	55	105	155	Equipment BPVS threshold exceeded..
6	56	106	156	Equipment AISS threshold exceeded.
7	57	107	157	Equipment YAS threshold exceeded.
8	58	108	158	Equipment UAS threshold exceeded.
9	59	109	159	Equipment OOFS threshold exceeded.
10	60	110	160	Equipment LOSS threshold exceeded.
11	61	111	161	Equipment CSS threshold exceeded.
12	62	112	162	Equipment SES threshold exceeded.
13	63	113	163	Equipment ES threshold exceeded.
Network Interface Traps (T1, E1, and DDS)				
14	64	114	164	Network CRCS threshold exceeded.
15	65	115	165	Network BPVS threshold exceeded.
16	66	116	166	Network AISS threshold exceeded.
17	67	117	167	Network YAS threshold exceeded.
18	68	118	168	Network UAS threshold exceeded.
19	69	119	169	Network OOFS threshold exceeded.
20	70	120	170	Network LOSS threshold exceeded.
21	71	121	171	Network CSS threshold exceeded.
22	72	122	172	Network SES threshold exceeded.
23	73	123	173	Network ES threshold exceeded.
25	75	125	175	Network OOS threshold exceeded.
28	78	128	178	Port DTR alarm
29	79	129	179	Port ASC alarm
30	80	130	180	Port OOS alarm
31	81	131	181	Port UMC alarm
32	82	132	182	Port TST alarm
33	83	133	183	Port Far-NET alarm
34	84	134	184	Port FAR-DTE alarm
35	85	135	185	Port FAR-Communications alarm
36	86	136	186	Port LOS alarm
37	87	137	187	Port FDL alarm

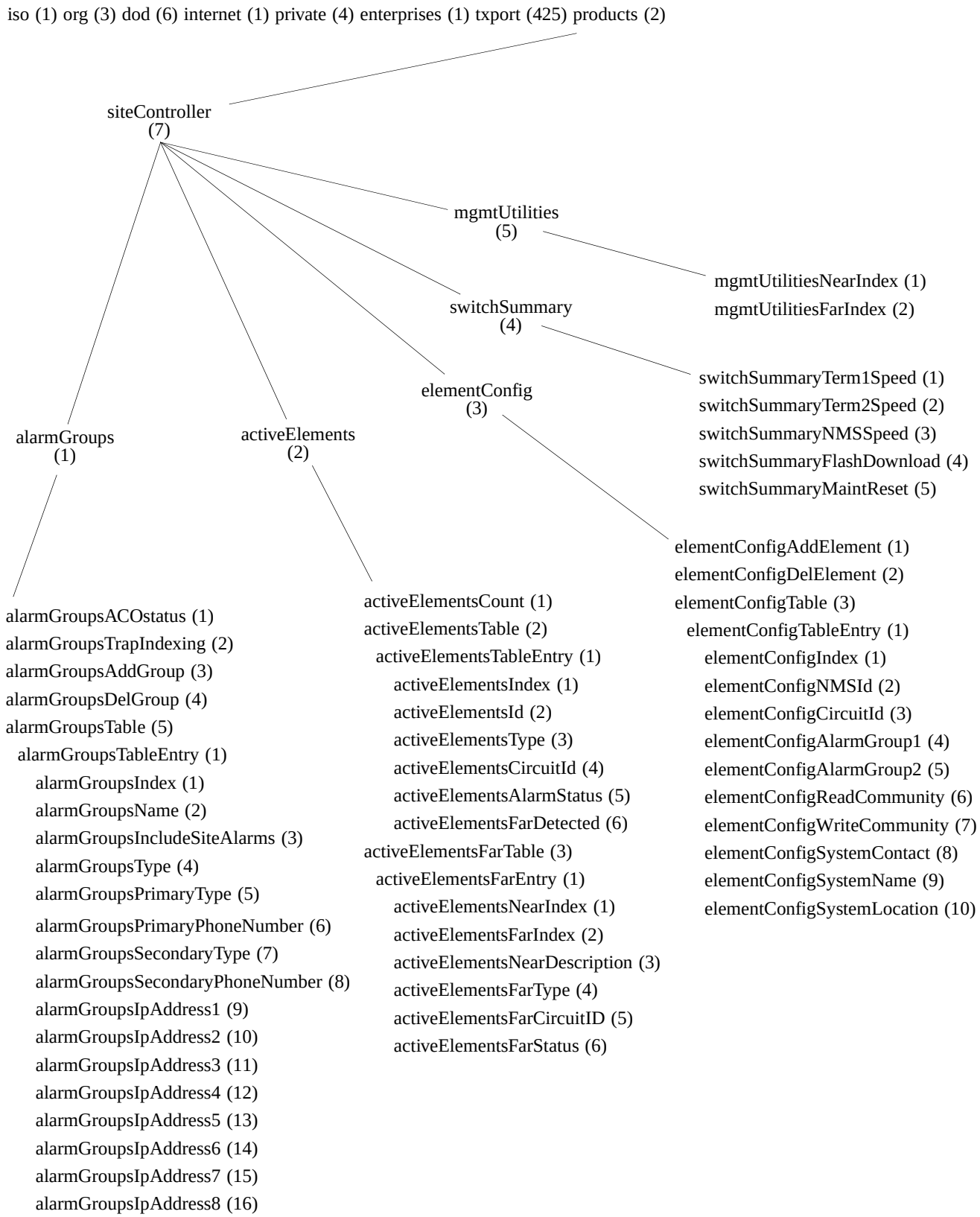
Table A-17

Cleared Near	Cleared Far	Alarm Near	Alarm Far	Description
Data Port Interface Traps				
201	401	601	801	Data Port 2A DTR Alarm (Port 1 on some units)
202	402	602	802	Data Port 2B DTR Alarm (Port 2 on some units)
203	403	603	803	Data Port 3A DTR Alarm (Port 3 on some units)
204	404	604	804	Data Port 3B DTR Alarm (Port 3 on some units)
205	405	605	805	Data Port 4A DTR Alarm
206	406	606	806	Data Port 4B DTR Alarm
207	407	607	807	Data Port 5A DTR Alarm
208	408	608	808	Data Port 5B DTR Alarm
209	409	609	809	Data Port 6A DTR Alarm
210	410	610	810	Data Port 6B DTR Alarm
Other Traps				
n/a	n/a	101	151	Power Failure
2	n/a	n/a	n/a	External Alarm
3	n/a	103	n/a	Communications Error (8100-specific trap)
26	76	126	176	Dial Backup Unit Active
27	77	127	177	Dial Backup Unit Failed

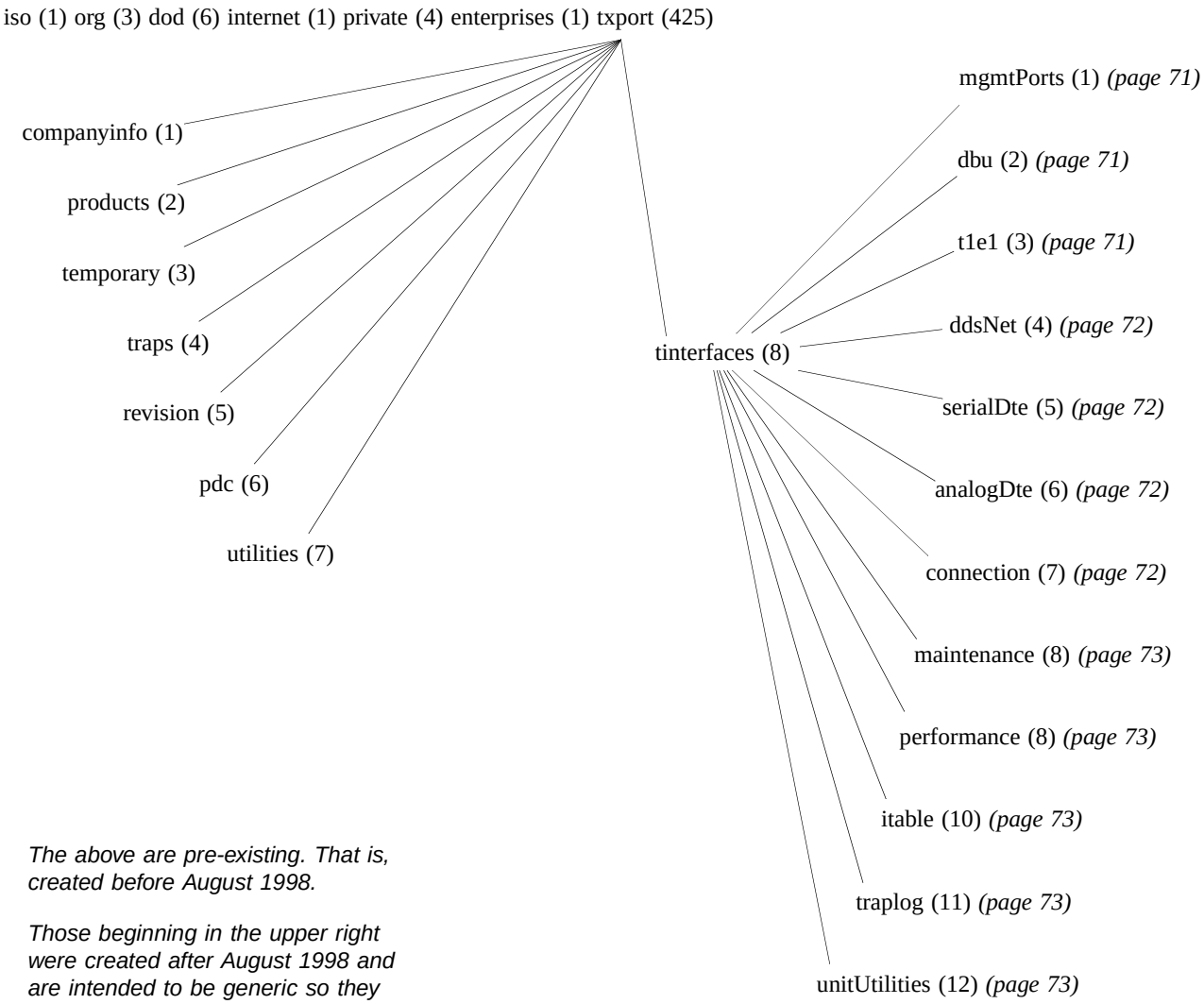
txport.mib and dds.mib Object Identifier Tree



8100a.mib Object Identifier Tree



new.mib Object Identifier Tree



The above are pre-existing. That is, created before August 1998.

Those beginning in the upper right were created after August 1998 and are intended to be generic so they can be used with multiple products to define and manage technologies. Each generic group is optional so a given device need not support all technologies.

- dbuConfigTable (1)
  - dbuConfigTableEntry (1)
    - dbuNearIndex (1)
    - dbuFarIndex (2)
    - dbuConfigTableIndex (3)
    - dbuDescription (4)
    - dbuRate (5)
    - dbuMode (6)
    - dbuFormat (7)
    - dbuNumber (8)
    - dbuStatus (9)
    - dbuCommand (10)
    - dbuActivator1 (11)
    - dbuActivator2 (12)
    - dbuDialStr (13)
    - dbuInitStr (14)
    - dbuHangupStr (15)
    - dbuPasswordStr (16)
    - dbuSecurity (17)
    - dbuDtrDial (18)
    - dbuISDNSwitchType (19)
    - dbuISDNSwitchVersion (20)
    - dbuISDNTEI (21)
    - dbuISDNSPID (22)
    - dbuISDNDDNUM (23)
- dbuResetStringsTable (2)
  - dbuResetStringsEntry (1)
    - dbuResetNearIndex (1)
    - dbuResetFarIndex (2)
    - dbuResetConfigEntryIndex (3)
    - dbuResetStringsIndex (4)
    - dbuResetString (5)
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    - dbuStartStopNearIndex (1)
    - dbuStartStopFarIndex (2)
    - dbuStartStopConfigEntryIndex (3)
    - dbuStartStopDayOfWeek (4)
    - dbuStart (5)
    - dbuStop (6)
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    - t1e1ConfigFarIndex (2)
    - t1e1ConfigIndex (3)
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    - t1e1Mode (5)
    - t1e1FrameType (6)
    - t1e1LineCode (7)
    - t1e1LineBuildOut (8)
    - t1e1Timing (9)
    - t1e1StationInTiming (10)
    - t1e1StationTiming (11)
    - t1e1PRM (12)
    - t1e1ZeroSuppress (13)
    - t1e1NationalBit (14)
    - t1e1KeepAlive (15)
    - t1e1CRC4Mode (16)
    - t1e1DSXLevel (17)
    - t1e1CRC (18)
    - t1e1FDLPassThrough (19)
    - t1e1AudibleAlarm (20)
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    - t1e1AlarmFarIndex (2)
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    - t1e1SESStatus (10)
    - t1e1SESCount (11)
    - t1e1SESThreshold (12)
    - t1e1SESAlarm (13)
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    - t1e1LOSSCount (15)
    - t1e1LOSSThreshold (16)
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    - t1e1UASCount (19)
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    - t1e1OOFSThreshold (32)
    - t1e1OOFSAlarm (33)
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    - t1e1AlarmReset (43)

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    - mgmtPortsSecondaryDialString (7)
    - mgmtPortsExtInitString (8)
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    - ddsNetRemComm (8)
    - ddsNetCircuitAssur (9)
    - ddsNetAntiStrTimer (10)
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  - bertTableEntry (1)
    - bertNearIndex (1)
    - bertFarIndex (2)
    - bertIndex (3)
    - bertPattern (4)
    - bertLength (5)
    - bertPatternSync (6)
    - bertElapsedTime (7)
    - bertBitErrors (8)
    - bertErroredSeconds (9)
    - bertPercentEFS (10)
    - bertCommand (11)
- bertInterfaceTable (2)
  - bertInterfaceTableEntry (1)
    - bertInterfaceNearIndex (1)
    - bertInterfaceFarIndex (2)
    - bertChipIndex (3)
    - bertInterfaceIndex (4)
    - bertInterfaceSetting (5)
- testTable (3)
  - testTableEntry (1)
    - testNearIndex (1)
    - testFarIndex (2)
    - testTableIndex (3)
    - testType (4)
    - testLoopDirection (5)
    - testFarLLBFraming (6)

- performance24Table (1)
  - performance24TableEntry (1)
    - performance24NearIndex (1)
    - performance24FarIndex (2)
    - performance24InterfaceIndex (3)
    - performance24Index (4)
    - performance24ES (5)
    - performance24BES (6)
    - performance24SES (7)
    - performance24UAS (8)
    - performance24LOFC (9)
    - performance24CSS (10)
    - performance24CRCES (11)
    - performance24OOFS (12)
    - performance24LOSS (13)
    - performance24AISS (14)
    - performance24RAS (15)
    - performance24BPVS (16)
- performance30Table (2)
  - performance30TableEntry (1)
    - performance30NearIndex (1)
    - performance30FarIndex (2)
    - performance30InterfaceIndex (3)
    - performance30Index (4)
    - performance30ES (5)
    - performance30BES (6)
    - performance30SES (7)
    - performance30UAS (8)
    - performance30LOFC (9)
    - performance30CSS (10)
    - performance30CRCES (11)
    - performance30OOFS (12)
    - performance30LOSS (13)
    - performance30AISS (14)
    - performance30RAS (15)
    - performance30BPVS (16)

- iTable (1)
  - iTableEntry (1)
    - iTableNearIndex (1)
    - iTableFarIndex (2)
    - iTableIndex (3)
    - iDescription (4)
    - iType (5)
    - iSlot (6)
    - iPort (7)
    - iStatus (8)

- traplogTable (1)
  - traplogEntry (1)
    - traplogIndex (1)
    - traplogNearIndex (2)
    - traplogFarIndex (3)
    - traplogInterfaceIndex (4)
    - traplogTrapNum (5)
    - traplogTimeStamp (6)
    - traplogDeviceType (7)
- traplogDeleteEntry (2)
- traplogSortOption (3)
- traplogLastTimeStamp (4)

- unitUtilitiesTable (1)
  - unitUtilitiesTableEntry (1)
    - unitUtilitiesNearIndex (1)
    - unitUtilitiesFarIndex (2)
    - unitUtilitiesLocalPassword (3)
    - unitUtilitiesTime (4)
    - unitUtilitiesDate (5)
    - unitUtilitiesMaintenanceReset (6)
    - unitUtilitiesAlarmResetTimer (7)
    - unitUtilitiesAlarmClear (8)

B ORDERING NUMBERS AND OPTIONAL EQUIPMENT

Ordering Numbers

The 8100A Site Controller is available as a standalone or rackmount model.

Ordering options are listed in Table B-1 using the following format: F-8100-100-11AB0 with F-8100-100-11010 being the default.

Table B-1 8100A Part Numbers

	Description	Option
A	Modem	0 - Without modem 1 - With modem
B	LAN	1 - NMS standard 2 - 10BASE-T Ethernet 3 - Token Ring 4 - AUI Ethernet

Optional Equipment

You may also require optional equipment for the installation and operation of the unit. Table B-2 lists the available option for the 8100A.

Table B-2 Optional Equipment for the 8100A

Mounting Equipment	
F-1051-000--112	1051 12-slot chassis (RJ-48C)
9-2000-001-1	19" single unit rack mount bracket (standalone)
9-2000-001-2	19" dual rack mount bracket (standalone)
9-2000-002-1	23" single unit rack mount bracket (standalone)
9-2000-002-2	23" dual rack mount bracket (standalone)
Power Supplies	
30-00087	200 mA standalone wall mount -48 V power supply
F-1040-000--111	1040 single 2 A, -48 VDC power supply
F-1040-000--112	1040 redundant 2 A, -48 VDC power supply
F-1041-000--110	1041 redundant power shelf (w/o supplies)
9-1000-48V-1	Spare -48 VDC power supply (the 1041 holds 2)
MIBs	
9-1000-1000-1	TXPORT MIB
9-1000-4000-1	DDS MIB
Cables	
9-1001-023-010	8-pin mod to 6-pin mod, straight through, 10'
9-1001-040-1	6-pin to 6-pin rolled over cable (NMS to NMS), 6"
9-1001-062-1	Alarm cable (6-pin mod to alarm contacts)

Table B-2 Optional Equipment for the 8100A

Adapters	
9-1001-015-X	DCE DB-25 to DCE 8-pin modular adapter
9-1001-016-X	DTE DB-25 to DCE 8-pin modular adapter
9-1001-025-2	DB-9 female to 8-pin modular adapter
9-1001-041-X	DB-25 to dual 6-pin modular adapter
9-8100-018-1	DB-25 male to dual 6-pin mod adapter (chassis Slot 1)
9-8100A-024-1	Ethernet/Token 15-to-8 pin adapter w/slide lock post
Kits	
9-1001-027-X	DCE DB-25 adapter and cable kit (modem to modem)
9-1001-028-X	DTE DB-25 adapter and cable kit (terminal to terminal)
9-1001-029-2	DTE DB-9 adapter and cable kit (terminal to TERM)
9-1001-042-X	DCE Y-adapter & cable kit (modem to NMS)
9-1001-048-X	DTE Y-adapter & cable kit (terminal to NMS)
9-1001-063-1	DB-25 alarm kit, adapter and cables (not for the standalone version)
9-1001-072-1	IBM Type 3 to IBM Type 1 adapter kit (for Token Ring)
9-8100-019-1	DB-25 Terminal adapter and cable kit (terminal to NMS)
9-8100-025-1	V.35 alarm kit, adapter and cable (1051 chassis slot 1)

X is a variable where the value 1 is a male and 2 is a female.

Interface Comparison

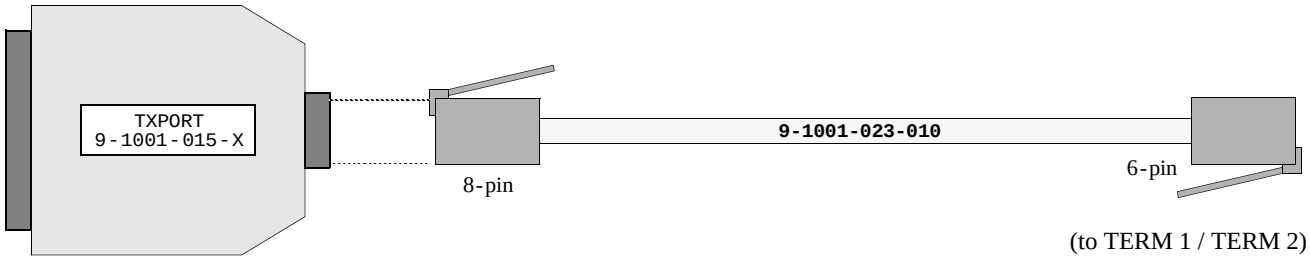
Table B-3 Interface Comparison Chart

Common Name	CCITT Circuit	RS-232 (25-pin)	V.35 (34-Pin)	RS-449 (37-pin)	EIA-530 Circuit	EIA-530 (25-Pin)
Frame Ground	101	1	A	1	Shield	1
Signal Ground	102	7	B	19	AB	7
Transmit Data (A)	103 (A)		P	4	BA (A)	2
Transmit Data (B)	103 (B)	2	S	22	BA (B)	14
Receive Data (A)	104 (A)		R	6	BB (A)	3
Receive Data (B)	104 (B)	3	T	24	BB (B)	16
Request to Send (A)	105			7	CA (A)	4
Request to Send (B)	105	4	C	25	CA (B)	19
Clear to Send (A)	106			9	CB (A)	5
Clear to Send (B)	106	5	D	27	CB (B)	13
Data Set Ready (A)	107			11	CC (A)	6
Data Set Ready (B)	107	6	E	29	CC (B)	22
Data Term Ready (A)	108			12	CD (A)	20
Data Term Ready (B)	108	20	H	30	CD (B)	23
Data Carrier Detect (A)	109			13	CF (A)	8
Data Carrier Detect (B)	109	8	F	31	CF (B)	10
Transmit Clock (A)	114 (A)		Y	5	DB (A)	15
Transmit Clock (B)	114 (B)	15	AA	23	DB (B)	12
Receive Clock (A)	115 (A)		V	8	DD (A)	17
Receive Clock (B)	115 (B)	17	X	26	DD (B)	9
Terminal Timing (A)	113 (A)		U	17	DA (A)	24
Terminal Timing (B)	113 (B)	24	W	35	DA (B)	11

Cable Diagrams

9-1001-027-X DCE adapter and cable kit
DB-25 male to 6-pin modular (X = 1)
DB-25 female to 6-pin modular (X = 2)

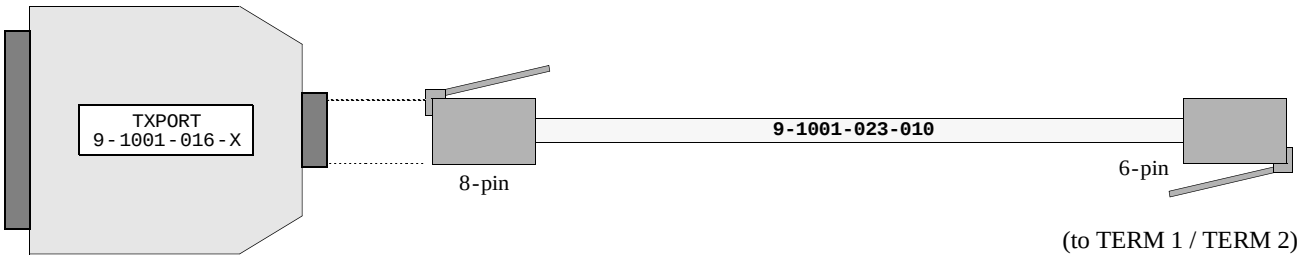
Pin	TERM 1 / TERM 2
1	Control Out
2	Signal Ground
3	Data Out
4	Data In
5	Signal Ground
6	Control In



DB-25 (to Modem)

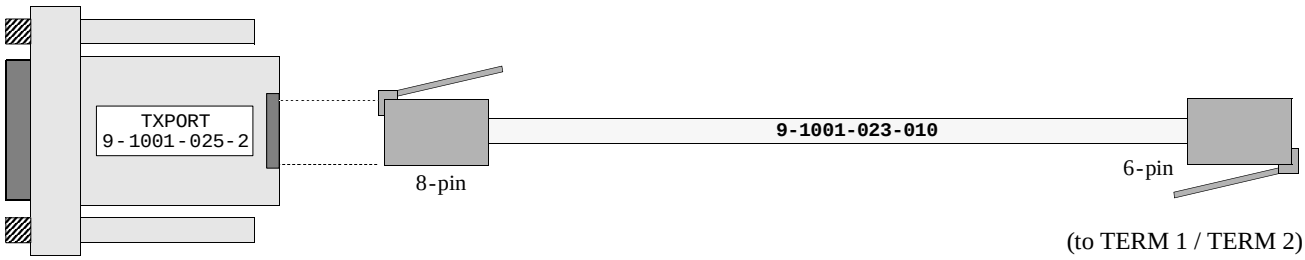
9-1001-028-X DTE adapter and cable kit
DB-25 male to 6-pin modular (X = 1)
DB-25 female to 6-pin modular (X = 2)

Pin	TERM 1 / TERM 2
1	Control Out
2	Signal Ground
3	Data Out
4	Data In
5	Signal Ground
6	Control In



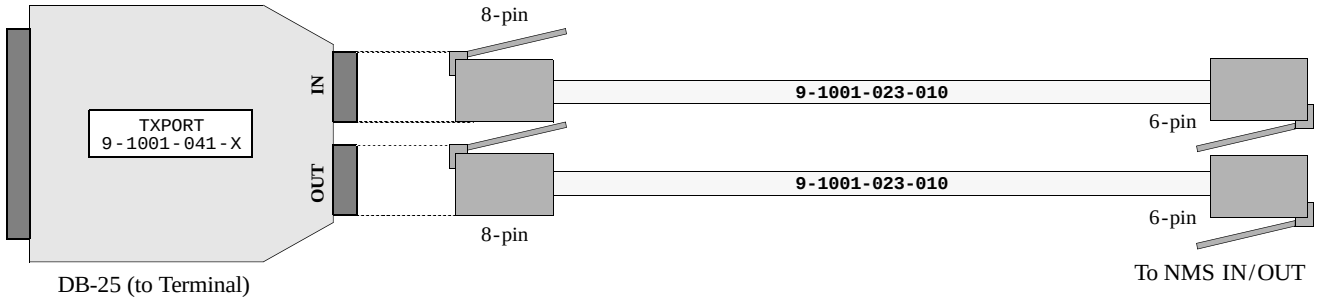
DB-25 (to Terminal)

9-1001-029-2 DTE adapter and cable kit
DB-9 female to 6-pin modular



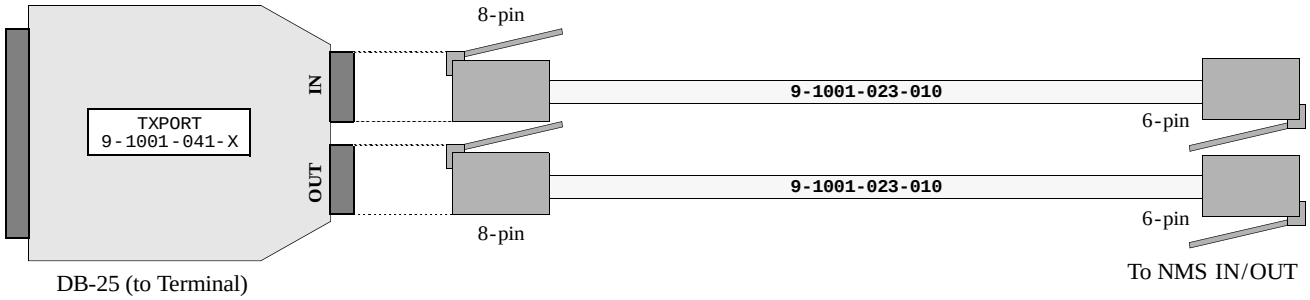
9-1001-042-X DCE Y-adapter and cable kit
DB-25 male to dual 6-pin modular (X = 1)
DB-25 female to dual 6-pin modular (X = 2)

Pin	NMS IN	NMS OUT
1	Not Used	Not Used
2	Signal Ground	Signal Ground
3	Not Used	Data Out
4	Data In	Not Used
5	Signal Ground	Signal Ground
6	Not Used	Not Used



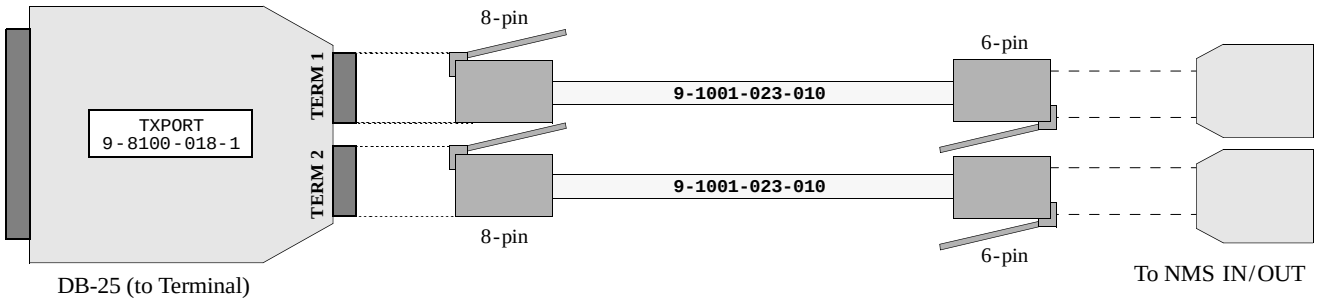
9-1001-048-X DTE Y-adapter and cable kit
DB-25 male to dual 6-pin modular (X = 1)
DB-25 female to dual 6-pin modular (X = 2)

Pin	N	Pin	TERM 1 / TERM 2
1	N	1	Control Out
2	Si	2	Signal Ground
3	N	3	Data Out
4	D	4	Data In
5	Si	5	Signal Ground
6	N	6	Control In

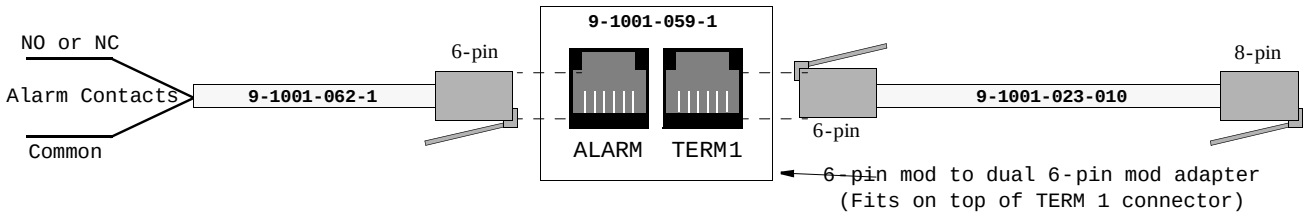


9-8100-019-1 Terminal adapter and cable kit
DB-25 male to dual 6-pin modular

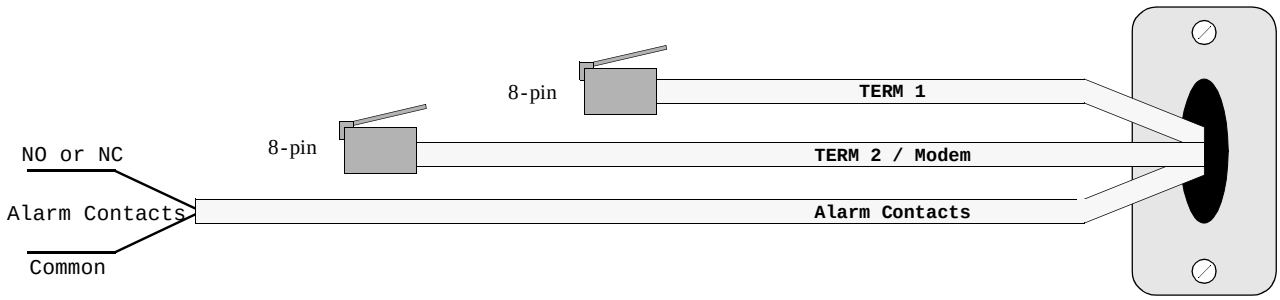
Pin	NMS IN	NMS OUT
1	Not Used	Not Used
2	Signal Ground	Signal Ground
3	Not Used	Data Out
4	Data In	Not Used
5	Signal Ground	Signal Ground
6	Not Used	Not Used



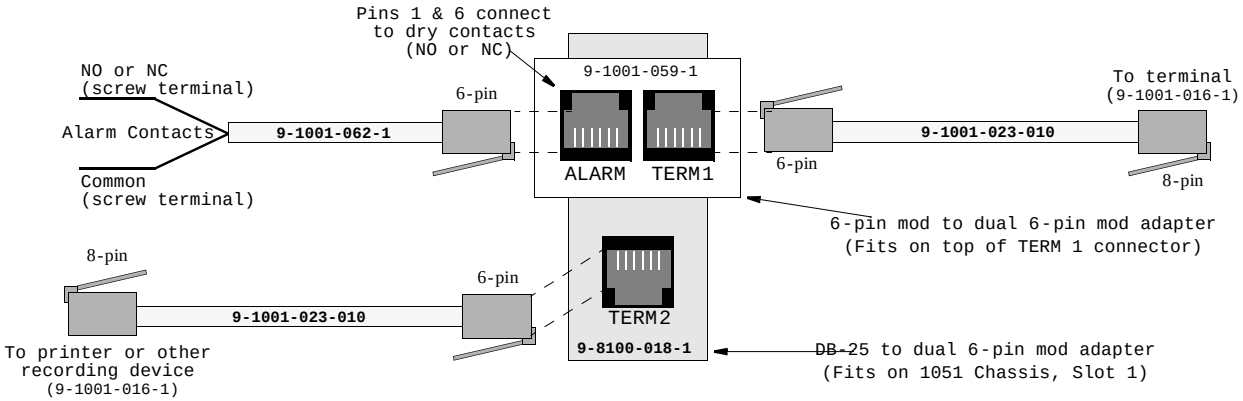
9-1001-063-1 DB-25 Alarm Kit (chassis or standalone installation)
6-pin modular to dual 6-pin modular adapter (fits over TERM 1 connector).



9-8100-025-1 V.35 Alarm Kit (V.35 chassis installation), V.35 male to dual 6-pin modular adapter and cable (fits over Slot 1 in the 1051-3 chassis)



Sample Alarm Configuration The DB-25 to dual 6-pin modular adapter (9-8100-018-1) fits over Slot 1 in the standard 1051-2 chassis. The Alarm kit (9-1001-063-1) then fits over the TERM 1 connector, which is converted to both the ALARM and TERM 1 connectors.



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- Model number and serial number for each unit
- Reason for return and symptoms of problem
- Purchase order number to cover charges for out-of-warranty items
- Name and phone number of person to contact if Verilink has questions about the unit(s).

A return address will be provided at the time the RMA number is issued. The standard delivery method for return shipments is Standard Ground for domestic returns and International Economy for international returns (unless otherwise specified).

VIII. GOVERNING LAW. This Agreement is governed by the laws of the State of Alabama, U.S.A., without reference to its conflicts of law provisions. The provisions of the UN Convention on Contracts for the International Sale of Goods shall not apply.