PRISM 3101/3102
T1/FT1 CSU/DSU

34-00212
3rd Edition

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Reorder # 34-00212

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1. General

The TxPORT PRISM 3100 Series CSU/DSU terminates a broad range of T1/FT1 networking applications. The single port 3101 and the dual port 3102 models integrate voice and data, LAN-to-LAN networking, or disaster recovery in either managed or unmanaged environments.

The PRISM 3101 or 3102 may be provisioned through either switch settings or the terminal interface. The chapters in this manual are arranged as follows:

1. *General* - Describes product features, specifications, FCC and warranty information, in addition to TxPORT ordering numbers and Customer Service telephone numbers.
2. *Installation* - Describes unit mounting, port connections, and powering.
3. *Configuration* - Describes hardware and software configuration.
4. *Testing* - Describes the LED indicators, test buttons, and procedures for hardware testing from the front panel and software testing procedures from the unit menu screens.

A. *Terminal Interface* - Describes all the parts of the unit menus and their functions.

B. *Pinout Charts* - Describes the pinout assignments of the various ports on the unit.

C. *SNMP* - Describes the SNMP commands and messages.

The PRISM 3101 and 3102 units provide the T1 network connection through an advanced integral ESF CSU. Full performance T1 span monitoring allows early detection and correction of problems before they affect critical applications. The unit provides a wide range of test functions and loopbacks to aid in rapid fault isolation and repair and also responds to inband fractional loop codes to accommodate fractional T1 service testing by the carrier. An internal BERT allows testing of both the network and equipment connections.

The PRISM 3101/3102 is compatible with industry standards ensuring access to any T1 provided service and allowing connection of all equipment quickly and correctly. An innovative design eliminates clocking problems on the high speed data ports. The unit uses Flash memory allowing firmware upgrades in the field eliminating the need for taking units out of service for an extended time or returning units to the factory for updates.

When connecting local area bridging or routing devices to a T1 network, other CSU/DSUs are out of the LAN management loop. With the Ethernet or Token Ring management option, the critical T1 connection point is under control of the existing SNMP management system, providing seamless integration of LAN and WAN, and eliminating the need for a separate CSU/DSU management system.

Features

- Single or dual data ports
- Standard T1 DTE
- Embedded SNMP agent and TELNET software
- Integral ESF/CSU provides full performance monitoring (meets TR62411, TR54016, and T1.403 standards)
- Complete diagnostic capabilities
- Full T1 software management through
  - a VT100 compatible terminal interface
  - an embedded SNMP agent
  - TELNET sessions
- Programmable alarm thresholds
- Flash memory allows field software upgrades
- DIP configuration switches allow easy installation

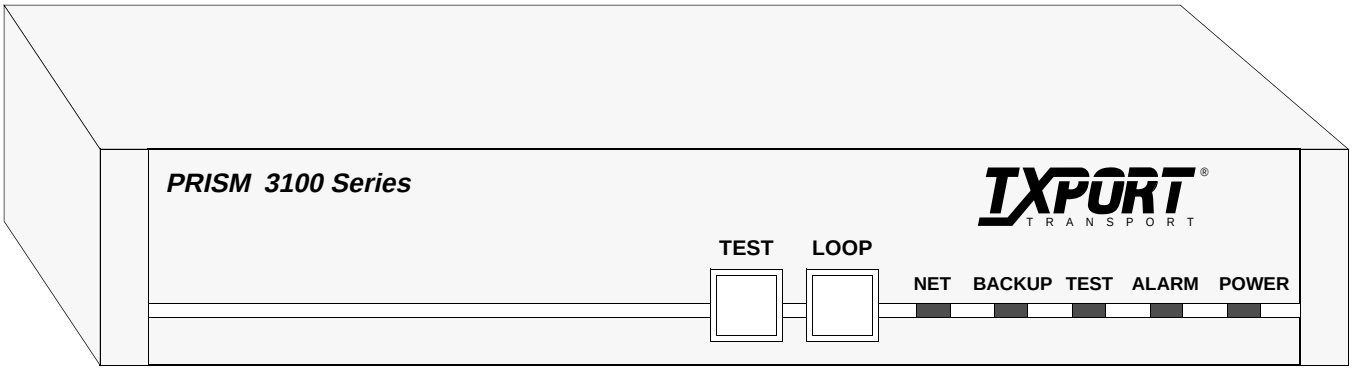


Figure 1-1 PRISM 3101/3102

- D4 or ESF line framing, AMI or B8ZS line coding
- Supports Fractional T1 services with flexible bandwidth allocation
- SLIP RS-232 standard SNMP interface
- Ethernet or Token Ring NIC for integral LAN (optional)

Specifications

Network Interface

Line Rate:	1.544 Mbps (± 50 ppm)
Line Framing:	D4 or ESF
Line Code:	AMI or B8ZS
Input Signal:	0 to -27 dB ALBO
Connection:	RJ-48C jack, 100 Ω (± 5%)
Output Signal:	3.0 V (±10%) base-peak into 100 Ω with protection
Line Build Out:	0, -7.5, -15, -22.5 dB attenuation
Transient Voltage:	1000 V protection, fused input/output
Jitter Control:	per TR62411 and T1.403
Timing Source:	Internal, recovered line clock, external DTE
Ones Density:	B8ZS, Nx56 bit stuffing, alternate fill; complies with TR62411

Equipment Interface

DTE Ports:	3101 single port and 3102 dual port
Compatibility:	EIA530 (RS-422), female DB-25 CCITT V.35, female 34-pin
Data Rate:	Synchronous, Nx56 kbps or Nx64 kbps (where N = 1 to 24); independent selection on each port
Clocking:	Internal, External, Oversample
Data Invert:	Independent selection on each port

Management Interfaces

Supervisory Port

Connection:	8-pin modular (RS-232)
Data Rates:	1.2, 2.4, 9.6, and 19.2 kbps

SLIP Port

Connection:	8-pin modular (RS-232)
Data Rates:	1.2, 2.4, 9.6, and 19.2 kbps

SNMP / TELNET Ethernet (optional)

Connection:	8-pin modular
Network Protocol:	TCP/IP based networks
Data Rate:	10 Mbps
Compatibility:	10BASE-T

SNMP / TELNET Token Ring (optional)

Connection:	8-pin modular
Network Protocol:	TCP/IP based networks
Data Rate:	4 or 16 Mbps
Compatibility:	Type 3 unshielded twisted pair (UTP)

Diagnostics

Performance:	Monitoring per TR54016 and T1.403
Network Loops:	Line loopback, payload loopback, or maintenance loopback in the network direction
Fractional Loop:	Responds to inband V.54 loop code
DTE Port Loops:	Bidirectional loop toward DTE and Net
T1 DTE Loops:	Line loop toward DTE
	Maintenance loop toward DTE
BERT:	Multiple test patterns toward network or DTE ports

Alarms

Activation:	Programmable thresholds
Reporting:	Front panel LEDs, call out on alarm (COA), SNMP TRAPs

Power

AC:	117 VAC, 0.12 A, 12 W maximum, 41 BTU maximum
DC:	24 VDC, 0.50 A, 12 W maximum, 41 BTU maximum
	48 VDC, 0.25 A, 12 W maximum, 41 BTU maximum

Mechanical

Mounting:	Desktop or horizontal rack
Dimensions:	Width 12 inches (30.48 cm)
	Height 1.75 inches (53.34 cm)
	Depth 9 inches (22.86 cm)
Weight:	4 pounds (1.814 kg)

Environmental

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

Standards

TR62411:	December 1990
TR54016:	September 1989
ANSI T1.403:	1989
TR54019A:	April 1988
Ethernet:	ISO/IEC 8802-3
Token Ring:	ISO/IEC 8802-5

Internet:	RFC1157 (SNMP) RFC1213 (MIB-II) RFC1406 (DS1 MIB) RFC1055 (SLIP)
MIB-II:	Device identification and interface performance data. All applicable objects & reporting traps maintained.
DS1 MIB:	DS1 network interface configuration, performance objects, and alarm reporting traps are maintained.

Industry Listings

FCC Compliance:	Part 15 Subpart B, Class A
FCC Part 68 Cert:	Pending at time of printing
UL Listed:	Pending at time of printing
IC/CSO3 Cert:	Pending at time of printing

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 in which case the user is required to correct the interference at his own expense.

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

> ⚠ ***Modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.***

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

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

For users of 1.544 Mbps service, the following instructions are provided to ensure compliance with FCC Rules, Part 68.

1. All direct connections to T1 lines must be made using standard plugs and jacks.
2. The telephone company may require the following information when applying for leased line facilities.

   Port ID: P/N FSG 3XX2/4

   REN/SOC: 6.0 N

   FIC: 04DU9-BN
04DU9-DN
04DU9-IKN
04DU9-ISN

   USOC: RJ-48C

3. If the unit appears to be malfunctioning, it should be disconnected from the telephone lines until you learn whether the source of trouble is your equipment or the telephone line. If your equipment needs repair, it should not be reconnected until it is repaired.
4. The unit has been designed to prevent harm to the T1 network. If the telephone company finds that the equipment is exceeding tolerable parameters, they can temporarily disconnect service. In this case, the telephone company will give you advance notice, if possible.
5. Under FCC rules, no customer is authorized to repair this equipment. This restriction applies regardless of whether the equipment is in or out of warranty.
6. If the telephone company alters their equipment in a manner that will affect the use of this device, they must give you advance warning so that you can have the opportunity for uninterrupted service. You will be advised of your right to file a complaint with the FCC.
7. 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.

> *When installing the DC powered version of this product, use existing 48 VDC battery sources or a CSA certified power supply.*

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables aux appareils numeriques (de la class A) prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

Warranty

TxPORT warrants each unit against defects in material and workmanship for a period of five years from the date the unit was shipped. If the unit malfunctions at any time during

the warranty period, TxPORT will repair, or at TxPORT's option, replace the unit free of charge.

The remedies listed herein are the users sole and exclusive remedies. TxPORT shall not be liable for any indirect, direct, incidental or consequential damages. The owner must return the unit to the factory, shipping prepaid and packaged to the best commercial standard for electronic equipment. TxPORT will pay shipping charges for delivery on return. The customer is responsible for mode and cost of shipment to TxPORT. This warranty does not apply if the unit has been damaged by accident, misuse or as a result of service or modification by other than TxPORT personnel.

Ordering Information

The PRISM 3101 is available with a single V.35 or EIA 530 data port (P/N F-3101-001-1111011 is the default). The PRISM 3102 is available with dual V.35 or EIA 530 data ports (P/N F-3102-001-1111011 is the default). Ordering options are listed in Table 1-A using the following format for a PRISM 3101: *F-3101-001--ABCDEFG*. To order a PRISM 3102, substitute 3102 for 3101 in the formula.

Table 1-A Unit Ordering Numbers

	Description	Option	PMI Part #
A	Company	1 - TxPORT	9-3101D-001-x
B	Special	1 - Standard Unit	-----
		2 - Hardened Protection	9-3101D-00x-x
C	Voltage	1 - 110 V	-----
		4 - 24/48 VDC*	9-3101D-048-x
D	DTE Interface	1 - V.35 Unit	-----
		2 - EIA 530 Unit*	-----
E	LAN NIC	0 - Not Installed	-----
		1 - Ethernet	9-3100-100-1
		2 - Token Ring	9-3100-200-1
F	T1 DTE	1 - T1 DTE	9-3100-300-1
G	DBU	1 - RS-232	-----
		2 - ISDN*	9-510-001-1

*Not released at time of printing.

The optional LAN interface cards may be factory or customer installed into a PRISM 3101/3102 using a chassis mount kit.

Table 1-B Optional Equipment

Part Number	Optional Equipment
	Mounting Kit
9-3100-002-1	Mounting kit for 19" racks
9-3100-002-2	Mounting kit for 23" racks
	Network/T1 DTE Cables
9-1001-004	8-pin mod to 8-pin mod (4 twisted pairs)
9-1001-051-1	T1 cross-over kit, 1 ft.

Table 1-B Optional Equipment

Part Number	Optional Equipment
9-1001-006-1	8-pin mod to 15-pin 'D' type adapter, male
9-1001-006-2	8-pin mod to 15-pin 'D' adapter, female
	Supervisory Cables
9-1001-073-2	DB-09 female to 8-pin (PC to SUPV)
9-1001-073-1	DB-25 female to 8-pin (Modem to SUPV)
9-1544-619-005	8-pin cable, 5 feet
9-1544-619-010	8-pin cable, 10 feet
9-1544-619-020	8-pin cable, 20 feet
9-1001-015-1	DB-25 Pin/8-Pin Modular Adapter
	V.35 Cables
9-1001-001	V.35 male to male null cable
9-1001-311	V.35 male to male cable
9-1001-312	V.35 male to female cable
	EIA 530 Cables
9-1001-511N	EIA 530 male to male null cable
9-1001-511	EIA 530 male to male cable
9-1001-512	EIA 530 male to female cable
9-1564-037-1	EIA 530 male to RS-449 male cable
9-1564-037-2	EIA 530 male to RS-449 female cable

TxPORT Customer Service

TxPORT office hours are Monday through Friday from 8 a.m. to 5 p.m Central Time. For general, sales and marketing information, contact TxPORT at:

888-4TxPORT Toll Free

800-926-0085 Toll Free

(205) 772-3770 Local

Technical Support

Technical support is available 24 hours a day, seven days a week. You may contact a support representative by telephone or e-mail.

Toll Free: 1-888-4TxPORT (and after hours emergencies)

Toll Free: 1-800-285-2755

Local: (205) 772-3770

E-Mail: support@txport.com

Returns/RMA

If for any reason you need to return a TxPORT unit, you must have a Return Material Authorization (RMA) number marked on the shipping package. You may obtain an RMA number from customer service at 888-4TxPORT (or 800-926-0085), ext. 227.

When calling TxPORT for an RMA, please have the following information available.

- Model number and serial number for each unit.
- Reason for return and symptoms of problem.
- Warranty status (if known).
- Purchase order number to cover charges for out-of-warranty items.
- Name and phone number of person we can contact if we have questions about the unit(s).
- Mode of shipment required (second-day air is the normal mode of shipment for all returned material unless otherwise specified).

Units being returned to TxPORT should be sent to the following address:

TxPORT
127 Jetplex Circle
Madison, Alabama 35758

2. Installation

This chapter contains instructions for physically installing the TxPORT PRISM 3101/3102 as either a standalone or rack mount unit as well as information concerning the communication ports and power supply on the rear of the unit.

Unpacking and Inspection

Upon receipt of your shipment, inspect the shipping container and contents. If the contents of the shipment are incomplete or, if there is mechanical damage or defect, notify TxPORT Customer Service. If the shipping container or cushioning material is damaged, notify the carrier and TxPORT 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.

Supplied Materials

Your baseline PRISM 3101/3102 shipment contains three items.

- PRISM 3101/3102 unit with a captive power supply
- T1 network cable (P/N 9-1544-619-009)
- Reference manual with configuration guides

For specific applications, you may require additional cables and adapters. Ordering information is located on page 1-4. Contact TxPORT Customer Service for further assistance.

Rack Mounting

The PRISM 3101/3102 is housed in a plastic case intended for desktop installation. Kits are available which allow the unit to be mounted into standard 19-inch (33.02 cm) or 23-inch (58.42 cm) racks. This assembly occupies two rack spaces at 3.5 inches (8.89 cm).

Supplied Materials

The 3101/3102 rack mount assembly consists of the following items. Refer to the section Ordering Information on page 1-4 for ordering numbers.

- A casing supporting the bottom, sides, and rear of the unit.
- 19-inch or 23-inch plate that bolts to rack.
- Set of four bolts and nuts that attach the casing to the plate.
- Four screws that attach the assembly to the 19-inch or 23-inch rack.

Rack Mount Installation

1. Insert the PRISM 3101/3102 (rear first) into the casing as shown in Figure 2-1.

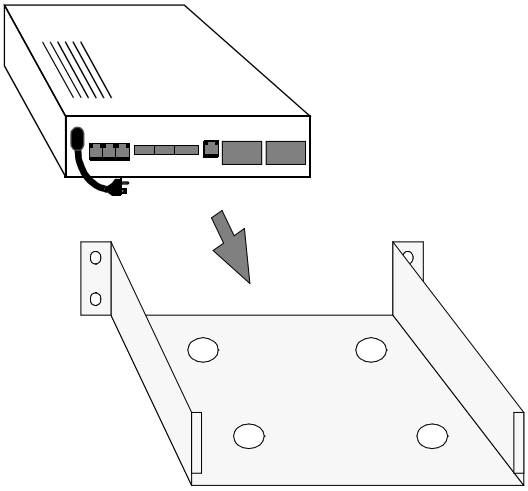


Figure 2-1 Rack Mount Installation

2. Connect this assembly to the 19-inch or 23-inch plate using the four nuts and bolts as shown in Figure 2-2. When the mounting plate is attached to the PRISM 3101/3102 and the casing, the unit is secure and cannot be pulled out of the assembly from the front.

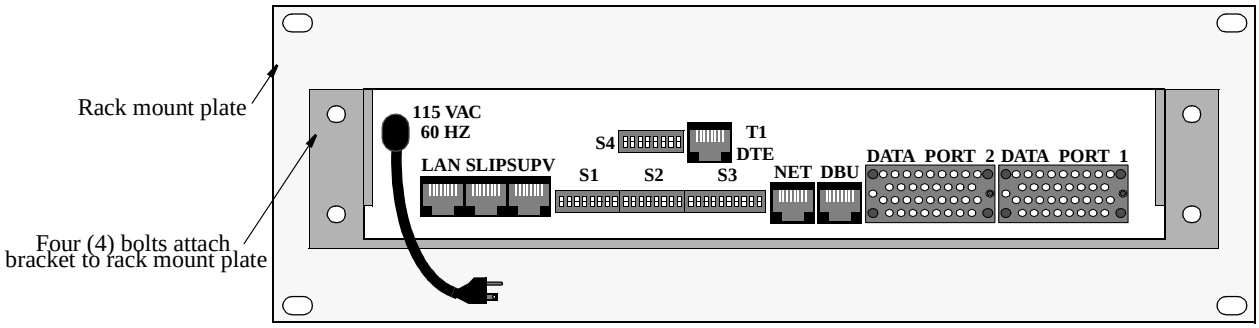


Figure 2-2 Rack Mount Assembly (Rear View)

3. To install the rack mount assembly into a rack, tighten the four sets of nuts and bolts that attach the plate to the rack as shown in Figure 2-3.

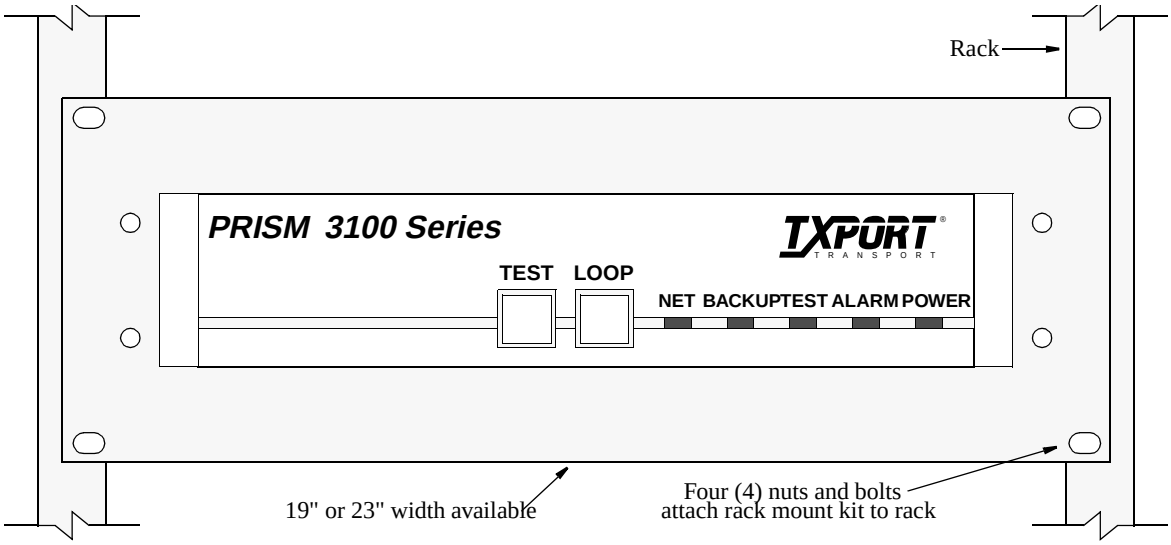


Figure 2-3 Rack Mount Assembly (Front View)

Port Connections

On the rear of the PRISM 3101/3102, there are several port connections as shown in Figure 2-4: LAN, SLIP, SUPV, T1 DTE, NET, DBU, Data Port 1, and Data Port 2.

LAN

The PRISM 3101/3102 can be equipped with either an internal Ethernet or Token Ring network interface card (NIC) for connection to a local area network (LAN). **This port does not function unless the optional NIC is installed.** The Ethernet interface is 10BASE-T. The Token Ring interface is Type 3. The connection is an 8-pin modular jack on the rear of the unit labeled LAN. This allows the NIC to be installed without changing the rear panel.

The Simple Network Management Protocol (SNMP) agent can then be programmed to take advantage of the centralized status monitoring and alarm reporting capability of SNMP managed networks.

Ethernet: The Ethernet interface complies with standard twisted pair, 10BASE-T requirements. Table 2-A displays the pinout assignments for the 8-pin modular LAN connection.

Table 2-A Ethernet Pinout Assignments

Pin	Ethernet Interface
1	Data Out (+)
2	Data Out (-)
3	Data In (+)
6	Data In (-)

Configure the LAN interface before connecting the PRISM 3101/3102 to the LAN network. See the section SNMP Configuration on page 3-15 for specific information.

Token Ring: The Token Ring interface is designed to operate on both 4 and 16 Mbps networks and complies with standard unshielded twisted pair (UTP) requirements. Table

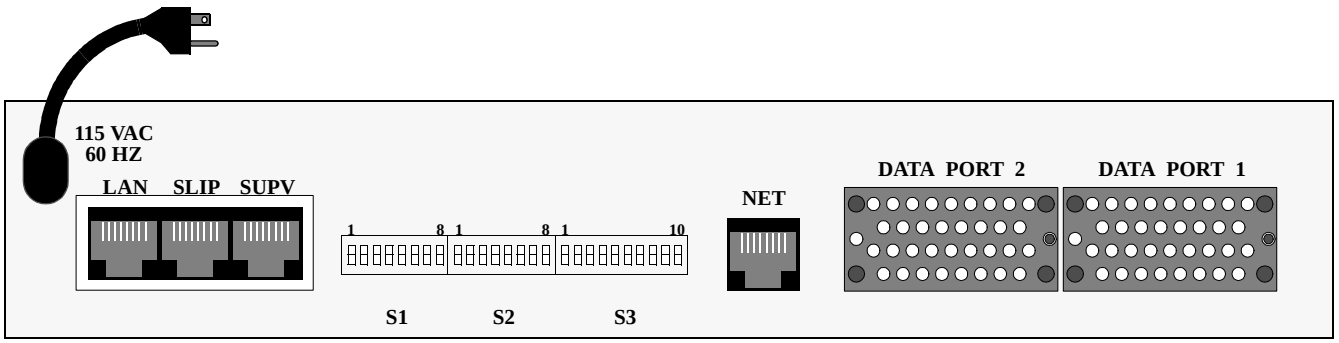


Figure 2-4 PRISM 3101/3102 Rear Panel (dual port 3102 shown)

2-B displays the pinout assignments for the 8-pin modular LAN connection.

Table 2-B Token Ring Pinout Assignments

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

Configure the LAN interface before connecting the PRISM 3101/3102 to the LAN network. See the section SNMP Configuration on page 3-15 for specific information.

SLIP

The SLIP port bit rates are configured through Switch S1 (page 3-1). This port is a DCE port configured for 8 bits, no parity, and 1 stop bit. The physical connections are 8-pin modular jacks (electrically RS-232). Figure 2-5 provides the pinout assignments. Refer to the section Ordering Information on page 1-4 for cable information.

The SLIP port may be used to manage the unit. This port allows access to the embedded SNMP agent used for trap reporting or SNMP management. You may access this port through either a direct connection or a dial-up connection via an AT command set compatible modem. The modem should be optioned to ignore DTR, enable auto answer, inhibit command echo, and return verbose result codes. Serial bit rates can be set from 9.6 kbps to 56 kbps.

If you call the unit and send the BREAK command before receiving the CONNECT message, the modem will hang-up.

SUPV

The SUPV port bit rates are configured through Switch S1 (page 3-1) and programmed through the Management Ports menu on page 3-16. This port is a DCE port configured for 8 bits, no parity, and 1 stop bit. The physical connections are 8-pin modular jacks (electrically RS-232). Figure 2-5 provides the pinout assignments. Refer to the section Ordering Information on page 1-4 for cable information.

The unit firmware may be accessed through this port (see Software Configuration on page 3-3) as well as the Call On Alarm feature (page 3-16). You may access this port through either a direct connection or a dial-up connection via an AT command set compatible modem. The modem should be optioned to ignore DTR, enable auto answer, inhibit command echo, and return verbose result codes. Serial bit rates can be set from 1200 bps to 19200 bps.

If you call the unit and send the BREAK command before receiving the CONNECT message, the modem will hang-up.

T1 DTE

The T1 DTE port bit rates are configured through Switch S4 (page 3-3). The physical connection is an 8-pin modular jack. Table 2-C provides the pinout assignments. Any channel not mapped to a data port is routed to the T1 DTE interface. T1 DTE port linecoding is not dependent on the

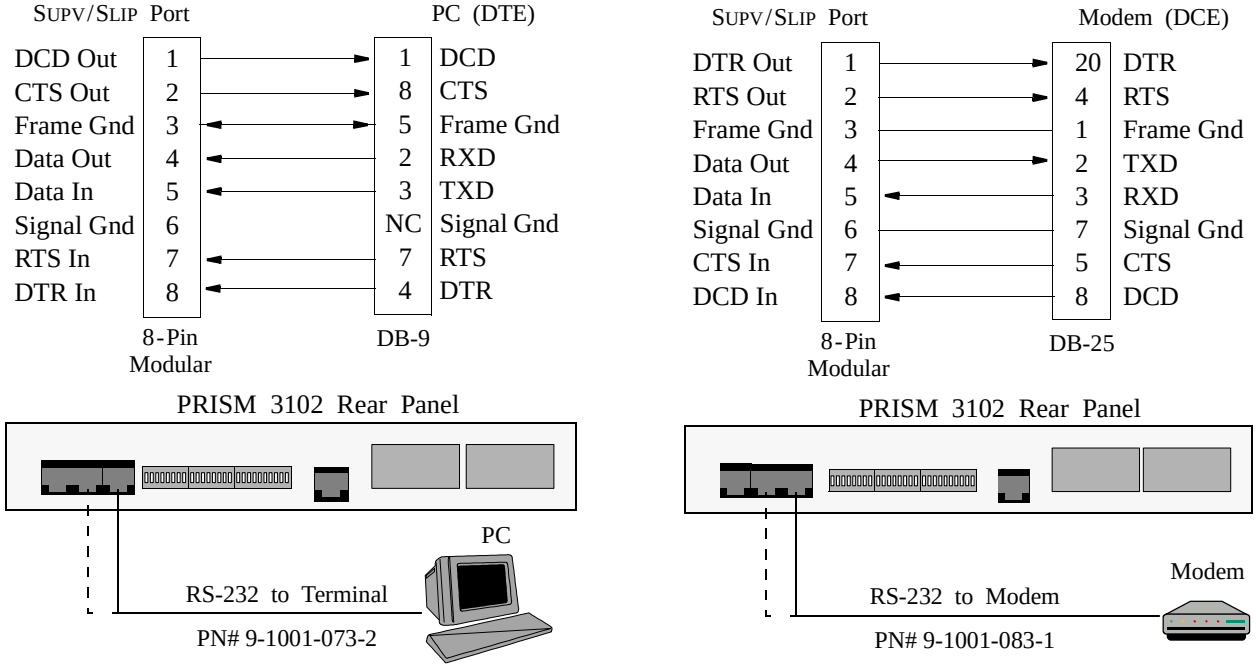


Figure 2-5 SUPV and SLIP Terminal/Modem Connections

linecoding of the network interface. ESF to D4 conversion is supported.

Table 2-C T1 DTE Pinout

Pin	T1 DTE Interface
1	Data Out
2	Data Out
3,6	Not Used
4	Data In
5	Data In
7,8	Chassis Ground

NET

The Network interface connection contains an automatic line build out (ALBO) allowing the unit to be located a substantial distance away from the telco network interface with a receive signal level down to -27 dB.

The network interface LBO level should be set as instructed in the Line Parameters section on page 3-10. Maximum suggested cable lengths for the connection from the unit to the network are listed in Table 2-D. Calculations are based on a cable temperature of 70° F, 0.083 uF/mile capacitance, a 27 dB loss, and a 100 Ω, non-loaded, twisted pair cable.

Table 2-D Maximum Cable Lengths

Cable Type	Loss per 1000'	Max Cable Length
26-gauge PIC	6.8 dB	4,400 ft
24-gauge PIC	5.4 dB	5,500 ft
22-gauge PIC	4.2 dB	7,100 ft
19-gauge PIC	3.0 dB	10,000 ft

PIC - Plastic Insulated Cable

The network physical interface is a standard RJ-48C 8-pin modular jack. Table 2-E displays the pinout assignments.

Table 2-E Network Interface Pinout

Pin	T1 NET Interface
1	Data In
2	Data In
3, 6	Not used
4	Data Out
5	Data Out
7, 8	Chassis Ground

In accordance with FCC Rules, Part 68.218(b), you must notify the telephone company prior to* disconnecting *this product.

DBU

The Dial Back-Up (DBU) port provides an alternate path when the T1 network interface service is disrupted or performance quality is degraded. This port is a 10-pin RS-232 port that can connect, through a connector adapter, to a public switched digital network (PSDN) device such as a TxPORT PS500. Table 2-F displays the pinout assignments. See page 3-13 for information on DBU parameters and settings.

Table 2-F DBU Port Pinout

Pin	Connection
1	Rx Clock In
2	DTR Out
3	RTS Out
4	Frame Ground
5	Data Out
6	Data In
7	Signal Ground
8	CTS In
9	DCD In
10	Tx Clock In

Data Port Connections

The PRISM 3101 is equipped with either a V.35 port (on a standard 34-pin connector) or with an EIA 530 port (on a standard 25-pin DB-25 connector). The PRISM 3102 is available with either two V.35 ports or with two EIA 530 ports.

A standard EIA 530 to RS-449 conversion cable may be used to adapt the DB-25 high speed port connection to 37-pin RS-449 compatible data equipment. Pin functions for both high speed port interfaces are listed in Table 2-G. Default settings route all available DS0s to the T1 DTE port.

FCC rules require that interconnecting cables carrying high speed data be shielded appropriately in order to minimize radio frequency interference.

Table 2-G High Speed DTE Interface

Common Name	EIA 530 DB-25	V.35 34-pin
Frame Ground	1	A
Transmit Data	2, 14	P, S
Receive Data	3, 16	R, T
Request to Send	4, 19	C
Clear to Send	5, 13	D
Data Set Ready	6, 22	E
Signal Ground	7	B
Data Carrier Detect	8, 10	F
Transmit Clock	15, 12	Y, AA
Receive Clock	17, 9	V, X
Local Loopback	18	J
Data Term Ready	20, 23	H
Remote Loopback	21	BB
Terminal Timing	24, 11	U, W

Power Connection

AC powered units are powered by a 110 VAC captive power supply. There is no power switch.

DC powered units have two terminal block connections labeled positive (+) and negative (-) that accept wire sizes from 12-gauge to 20-gauge. Either polarity (positive or negative) may be referenced to ground.

> ***The unit is protected from reverse power connection but will not operate until power is properly connected according to the marked polarities (positive-positive and negative-negative).***

Power Failure

The PRISM 3101/3102 provides non-volatile memory retention of the unit configuration in case of a power failure. This feature allows the unit to automatically restore normal service following a power loss. When power is applied to the unit, the front panel indicators flash for approximately five seconds as the unit starts up.

Network Management

The PRISM 3101/3102 is compatible with the TxPORT 8100A Site Controller as a remote or 'far end' element. The 8100A can be used to manage TxPORT network access products. Network management is performed through the SUPV port, SLIP port, or the LAN port.

3. Configuration

The PRISM 3101/3102 can be configured through manual switch settings and/or through a VT100 terminal connection to the supervisory port.

All default options in this manual are underlined.

Hardware Configuration

Hardware configuration is set using four dual in-line package (DIP) switches located on the rear of the unit. These switches allow you to configure simple applications. Refer to Figure 3-1 for switch locations. A removable configuration guide (45-00103) is included in the back of this manual.

Switch S1

Switch S1 (Figure 3-2) configures the boot mode, SUPV Port Bit Rate, SLIP Port Bit Rate, Channel Assignments, Data Port 1, and Data Port 2. The SUPV and SLIP switches (S1-2 through S1-5) cannot be modified through the terminal interface.

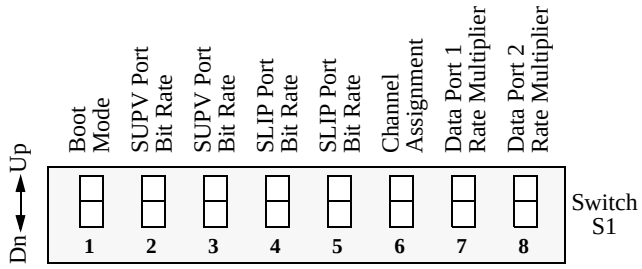


Figure 3-2 Switch S1

Boot Mode: Switch S1-1 determines whether the unit configures itself from the DIP switches or from the battery backed RAM. If set to boot from RAM (Up), the switch settings are ignored. If set to boot from switches (Dn), the unit reads the DIP switches on power-up and configures accordingly. Once running, configuration changes can be made through the terminal interface, overriding the switch settings.

SUPV Port Bit Rate: Switch S1-2 and S1-3 set the supervisory port bit rate. This is a serial RS-232 DCE port configured for 8 bits, no parity, and 1 stop bit. Table 3-A shows the available speeds.

Table 3-A SUPV Port Bit Rate

S1-2	S1-3	SUPV Port Rate
Up	Up	1.2 kbps
Dn	Up	2.4 kbps
Dn	Dn	9.6 kbps
Up	Dn	19.2 kbps

SLIP Port Bit Rate: Switch S1-4 and S1-5 set the SLIP port bit rate. This is a serial RS-232 DCE port configured for 8 bits, no parity, and 1 stop bit. Table 3-B shows the available speeds.

Table 3-B SLIP Port Bit Rate

S1-4	S1-5	SLIP Port Rate
Up	Up	1.2 kbps
Dn	Up	2.4 kbps
Dn	Dn	9.6 kbps
Up	Dn	19.26 kbps

Channel Assignment: Switch S1-6 selects the channel assignment mode for network T1 DS0s carrying data to the high speed port. Contiguous channel mode (Dn) assigns the channels as a block beginning at channel one for Data Port 1 and the first available channel for Data Port 2, if installed. For example, if the high speed port data rate is to be 256 kbps (as defined by Switch S3), the unit assigns network channels one through four to the high speed port.

Alternate (Up) channel mode assigns an idle channel following each data channel. For example, data are carried on channels 1, 3, 5, and 7. Channels 2, 4, 6, and 8 are idle (the idle setting is binary code 01111111). The advantage of alternate channel assignment is that T1 ones density requirements are maintained by the idle channels rather than placing any restrictions on the high speed data.

Data Port 1: Switch S1-7 sets the multiplier for the Data Port 1 input timing. The unit can operate at any data rate that is a multiple of 56 or 64 kbps. Selecting Nx64K (Dn) provides port bit rates that are multiples of 64 kbps. The

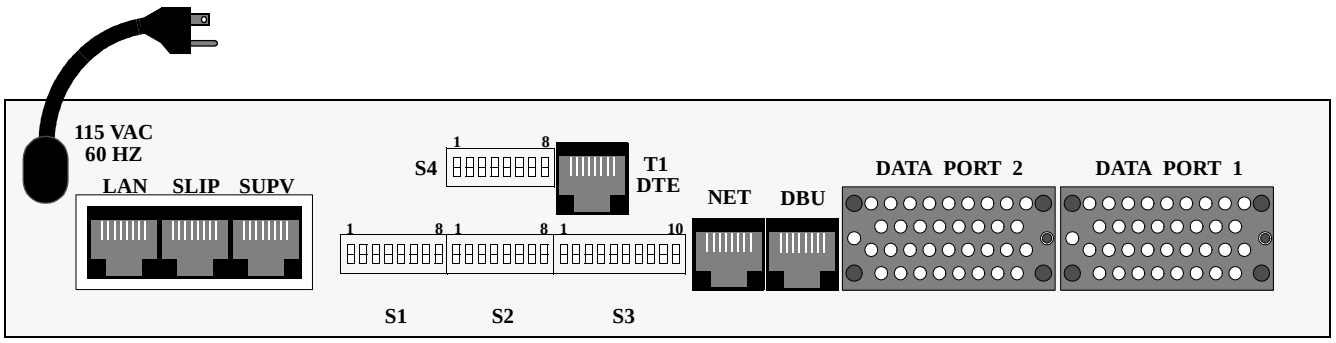


Figure 3-1 PRISM 3101/3102 Rear Panel (dual port 3102 shown)

ones density requirements of the T1 network line must be ensured in this mode. Refer to the section entitled Line Parameters on page 3-10 for more information. Selecting Nx56K (Up) allows port bit rates that are multiples of 56 kbps. The unit maintains ones density for the selected DS0 channel in this mode.

Data Port 2: Switch S1-8 sets the multiplier for Data Port 2 on the 3102 only. The unit can operate at any data rate that is a multiple of 56 or 64 kbps. Selecting Nx64K (Dn) provides port bit rates that are multiples of 64 kbps. The ones density requirements of the T1 network line must be ensured in this mode. Refer to the section entitled Line Parameters on page 3-10 for more information. Selecting Nx56K (Up) allows port bit rates that are multiples of 56 kbps. The unit maintains ones density for the selected DS0 channel in this mode.

Switch S2

Switch S2 (Figure 3-3) configures parameters for Network Framing, Network Coding, Network LBO, Timing Source, Test Button loop Code, and Test Button Mode.

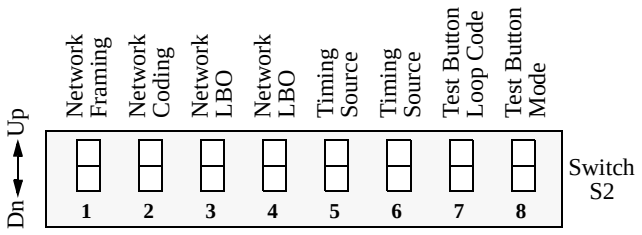


Figure 3-3 Switch S2

Network Framing: Switch S2-1 matches the unit to the network line framing as either ESF (Dn) or D4 (Up).

Network Coding: Switch S2-2 sets the network line coding to either B8ZS (Dn) or AMI (Up).

Network LBO: Switch S2-3 and S2-4 set the line build out signal level of the transmit data (TXD) from the unit to the network. The telephone company can provide the proper setting. If unsure of the exact setting, leave it at the default value. Table 3-C lists the available levels.

Table 3-C Network LBO

S2-3	S2-4	Network LBO
Dn	Dn	0 dB
Up	Dn	-7.5 dB
Dn	Up	-15.0 dB
Up	Up	-22.5 dB

Timing Source: Switch S2-5 and S2-6 determine the unit clocking source. The most common timing source for CSU/DSU applications is the network. The 3101/3102 may also be optioned to time from an internal standard or from the high speed data interface as shown in Table 3-D.

Table 3-D Timing Source

S2-5	S2-6	Timing Source
Dn	Dn	Network
Up	Dn	Internal
Dn	Up	Port 1 EXC
Up	Up	T1 DTE

Test Button Loop Code: Switch S2-7 selects either an inband line loopback code (Dn) or an inband V.54 loop code (Up) for use with the front panel test button. On the 3102 model, this switch applies to Data Port 1 only.

Test Button Mode: Switch S2-8 selects the test button operation mode as either BERT (Dn) or Clear (Up).

Switch S3

Switch S3 (Figure 3-4) sets the Port 1 and Port 2 bit rates as shown in Table 3-E. Positions S3-6 through S3-10 are not applicable on the 3101.

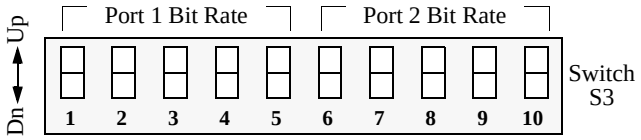


Figure 3-4 Switch S3

Table 3-E Port 1/Port 2 Bit Rates

# of DS0s	S1-7 Up / S1-8 Up	S1-7 Dn / S1-8 Dn	S3-1 / S3-6	S3-2 / S3-7	S3-3 / S3-8	S3-4 / S3-9	S3-5 / S3-10
Disable	Disable		Dn	Dn	Dn	Dn	Dn
1	56 kbps	64 kbps	Up	Dn	Dn	Dn	Dn
2	112	128	Dn	Up	Dn	Dn	Dn
3	168	192	Up	Up	Dn	Dn	Dn
4	224	256	Dn	Dn	Up	Dn	Dn
5	280	320	Up	Dn	Up	Dn	Dn
6	336	384	Dn	Up	Up	Dn	Dn
7	392	448	Up	Up	Up	Dn	Dn
8	448	512	Dn	Dn	Dn	Up	Dn
9	504	576	Up	Dn	Dn	Up	Dn
10	560	640	Dn	Up	Dn	Up	Dn
11	616	704	Up	Up	Dn	Up	Dn
12	672	768	Dn	Dn	Up	Up	Dn
13	728	832	Up	Dn	Up	Up	Dn
14	784	896	Dn	Up	Up	Up	Dn
15	840	960	Up	Up	Up	Up	Dn
16	896	1024	Dn	Dn	Dn	Dn	Up
17	952	1088	Up	Dn	Dn	Dn	Up
18	1008	1152	Dn	Up	Dn	Dn	Up
19	1064	1216	Up	Up	Dn	Dn	Up
20	1120	1280	Dn	Dn	Up	Dn	Up
21	1176	1344	Up	Dn	Up	Dn	Up
22	1232	1408	Dn	Up	Up	Dn	Up
23	1288	1472	Up	Up	Up	Dn	Up
24	1344	1536	Dn	Dn	Dn	Up	Up

Switch S4

Switch S4 (Figure 3-5) configures the T1 DTE port. Any channel not mapped to a data port is mapped to the T1 DTE port. Linecoding on the T1 DTE is independent of T1 linecoding.

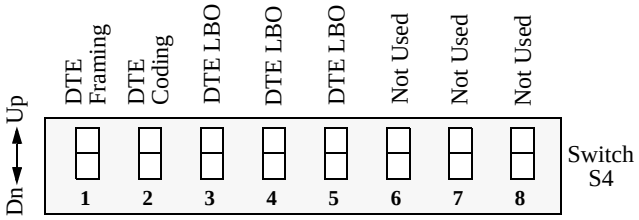


Figure 3-5 Switch S4

DTE Framing: Switch S4-1 selects the framing type for the DTE side of the element as either ESF (Dn) or D4 (Up).

DTE Coding: Switch S4-2 sets the DTE side line coding as either B8ZS (Dn) or AMI (Up).

DTE DSX Level: Switch S4-3, S4-4, and S4-5 set the DTE line build-out signal level as identified in Table 3-F.

Table 3-F DTE DSX

	S4-3	S4-4	S4-5
0-110 ft	Dn	Dn	Dn
111-220 ft	Up	Dn	Dn
221-330 ft	Dn	Up	Dn
331-440 ft	Up	Up	Dn
441-550 ft	Dn	Dn	Up
551-660 ft	Up	Dn	Up
661 ft >	Dn	Up	Up

Software Configuration

The terminal interface is a firmware application program embedded inside the PRISM 3101/3102. You can access this information through the LAN port (page 2-2), SUPV port (page 2-3), or SLIP port (page 2-3) using a TELNET session.

Interface Start-up

Once a compatible terminal is properly connected to the unit, you can start a terminal interface session by sending a BREAK command to the unit (or by pressing <return> four times). The Main Menu screen is displayed if a password has not been specified.

If a password has been previously establish, you must enter the correct password to continue the session. *The password is case-sensitive.* If you have forgotten your password, note the date and time shown on your screen and contact TxPORT Technical Support. You can establish a password through the Utilities screen on page 3-17.

Menu Structure

The terminal interface opens with a main menu allowing five options: Alarms, Performance, Maintenance, Configuration, and Utilities (Figure 3-6). Each menu screen allows you to access the local or far end menu screen.

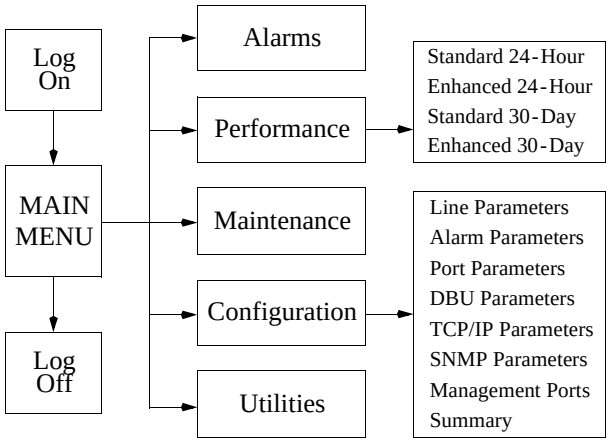


Figure 3-6 Menu Structure

For more information on terminal interface conventions, refer to Appendix A, Terminal Interface.

If you do not enter a keystroke for 10 minutes, the terminal interface automatically logs off.

Alarms Screen

The Alarms screen (Figure 3-7) allows you to view the current alarm status of the network and the DTE lines.

NETAlarms: These status lines display the selected element's current network signal alarm state (Table 3-G). Alarms are determined by the selectable thresholds in Alarm Configuration on page 3-11.

Table 3-G NET Alarm Indicators

Alarm	Description
-------	No status is available
OK	No alarm threshold has been exceeded, although errors may exist which do not exceed thresholds.
ERRS	The Errored Seconds, Severely Errored Seconds, or Bipolar Errored Seconds threshold is exceeded.
LOSS	The Loss Of Signal Seconds threshold is exceeded.
OOFS	The Out Of Frame Seconds threshold is exceeded.
RAIS	The Remote Alarm Seconds threshold is exceeded.
AISS	The Alarm Indication Seconds threshold is exceeded.
UAS	The Unavailable Seconds threshold is exceeded.
DBA	Dial Backup Active
DBF	Dial Backup Failed
PORT 1	DTR Alarm on PORT 1
PORT 2	DTR Alarm on PORT 2

DTEAlarms: These status lines display the selected element's current DTE signal alarm state (Table 3-H). Alarms are determined by the selectable thresholds in Alarm Configuration on page 3-11.

Table 3-H DTE Alarm Indicators

Alarm	Description
OK	No alarm threshold has been exceeded, although errors may exist which do not exceed thresholds.
OOFS	The Out Of Frame Seconds threshold is exceeded.
PORT 1	DTR Alarm on PORT 1
PORT 2	DTR Alarm on PORT 2

Selectable thresholds in the Alarm Parameters screen and the DTR Alarm may be enabled or disabled for the ports in the Port Parameters screen.

(alarm status): The main body of the Alarms screen shows the current count for parameters that may be used to trigger an alarm.

The Current column displays a total of the preceding 15 one-minute intervals. At the end of each one-minute interval, the oldest minute of the 15-minute interval is discarded.

The Threshold column displays the values set in the Alarm Configuration screen (page 3-11). Parameters having a current value equal to or greater than its non-zero threshold generates an alarm. Any parameter with a threshold value of zero is disabled from generating alarms.

The parameters shown on the Alarms screen are updated at approximately five second intervals.

Power Loss Seconds: This field displays the number of seconds that the element has been without power since this value was last cleared.

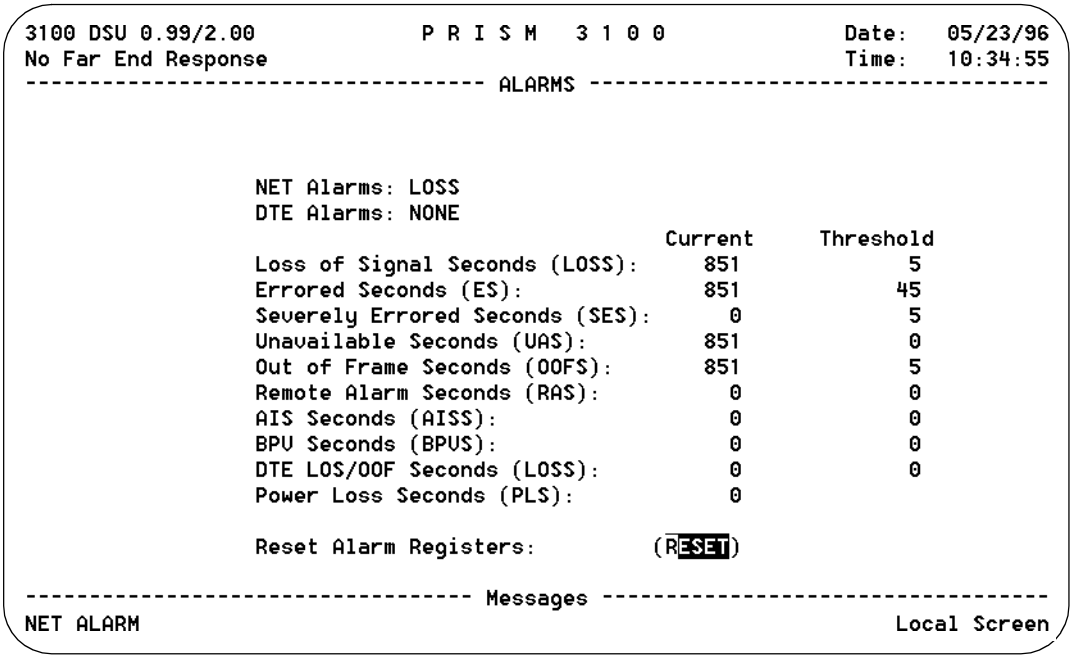


Figure 3-7 Alarms Screen

Reset Alarm Registers: Pressing <return> on (RESET) zeros the value of all Current alarm parameters, but does not affect 24-hour or 30-day performance registers.

Performance Screen

The Performance screen (Figure 3-8) display a detailed history of the error parameters that are continuously monitored. The terminal interface provides a display of near end or far end performance data using the facility data link.

The unit is equipped with a dual set of performance data registers that hold line statistics for both the telco and user. Each register set provides detailed status and performance history for the network interface.

The system has four Performance screens. The STANDARD 24 HOUR and the ENHANCED 24 HOUR screens allow the user to view the 24-hour detailed performance history of the T1 circuit. The only difference in the two screens is in the type of performance data displayed. The STANDARD 24 HOUR screen is shown in Figure 3-8.

The STANDARD 30 DAY and the ENHANCED 30 DAY screens allow the user to view a 30-day history of a particular element's performance. These screens reference intervals by date rather than by time. To reach each of the four screen types, use the <spacebar> to toggle the STANDARD 24 HOUR field. The other fields are described as follows:

Element: Pressing the <spacebar> toggles this field for selection of either the NEAR or FAR unit as the source of performance data or the target of commands. NEAR refers to the unit to which the terminal is connected. FAR refers to the unit at the other end of the network T1 span.

Target: This field selects the display of User or Telco performance registers. Telco registers are for viewing only and may not be changed. The options are:

[USER] [NET] – Display the user performance registers for the network.

[TELCO] [NET] – Display the telco performance registers for the network.

Error Events: This field displays the running total of ESF error events for the circuit selected in the Element field and is applicable only when Target is set to [USER]. This count accumulates until it reaches 65535 or is reset by pressing <return> with the (RESET) field highlighted.

Reset Performance Registers: This field allows the element registers to be reset and may only be used when the Target field is set to [USER]. If <return> is pressed, the following warning appears:

DELETE ALL PERFORMANCE DATA?
(NO!) (YES)

To exit this screen without performing the reset function, press <return> with NO selected. To proceed with the reset function, press <return> on YES. All values for the chosen register set (NET or DTE) are then reset to zero.

[Standard 24 Hour]: Toggling this field with the <spacebar> steps through the four available performance screens.

The remainder of the fields in the Performance screen are for display only. They are defined as follows:

Status: Displays the selected T1 line status derived from the type (or absence) of errors in the received data. This status represents the immediate state of the received T1 signal and is not related to the alarm thresholds. This field shows

```
3100 DSU 0.99/2.00              P R I S M   3 1 0 0              Date:   05/23/96
No Far End Response                                              Time:   10:36:26
------------------------------ 24 HOUR PERFORMANCE ------------------------------
     Element: [NEAR]                                 Status: LOS
     Target: [USER ] [NET]                           Completed Days:          0
     Error Events:      0    (RESET)                 Completed Intervals:     9
     (RESET PERFORMANCE REGS)                        24 Hr. % Error Free:  0.0
                               [STANDARD 24 HOUR]

          143                   0     143       0       0       0       0
          24 Hour               0    8100       0       0       1       0
          30 Day                0       0       0       0       0       0
          ------------------------------------------------------------------
           Time   INTERVAL     ES     UAS     BES     SES    LOFC     CSS
  PAGE-DN ------------------------------------------------------------------
          10:19         1      0     900       0       0       0       0
          10:04         2      0     900       0       0       0       0
          09:49         3      0     900       0       0       0       0
          09:34         4      0     900       0       0       0       0
          09:19         5      0     900       0       0       0       0


---------------------------------- Messages ----------------------------------
NET ALARM                                                        Local Screen
```

Figure 3-8 Performance Screen

one or more of the signal status conditions listed in Line Fault and Loop Status on page 3-7.

Completed Days: Displays the number of days which are included in the 30-day totals.

Completed Intervals: Displays the number of 15-minute intervals in the last 24-hour period since the registers were last cleared (a 24-hour period may contain up to 96 intervals).

24 Hr.% Error Free: Displays the percentage of error free seconds within the last 24 hours or since the event registers were last cleared (based only on the ES and UAS parameters).

(performance data): The main body of display data consists of error events for three different periods: The first display line shows the data accumulated for the current interval (from 0 to 900 seconds). The second line shows the totals for the last 24-hour period (or the last 96 fifteen-minute intervals). The third line shows the 30-day totals.

The remaining lines of this screen show the data for any intervals containing errors. Interval 1 is the most recently stored 15-minute interval and interval 96 is the oldest in the current 24-hour period. On the 30-day screens, interval 30 is the oldest 1-day interval in the current 30-day period. The real time (or date on 30-day screens) of the interval beginning is shown in the first column.

If more than 5 errored intervals have elapsed, [PAGE-Dn] appears to the left of the performance data. Pressing <return> on this field displays the next five errored intervals. [PAGE-UP] appears once [PAGE-Dn] is used. Pressing <return> on [PAGE-UP] displays the previous five errored intervals. Only intervals containing errors are displayed, eliminating rows of zeroes. If an interval is not displayed, no errors were detected during that time period.

The parameters shown on the Performance screens are updated at 5 second intervals.

Per AT&T TR54016, the Standard 24 Hour and Standard 30 Day performance data consists of Errored Seconds (ES), Unavailable Seconds (UAS), Bursty Errored Seconds (BES), Severely Errored Seconds (SES), Loss of Frame Count (LOFC), and Controlled Slip Seconds (CSS).

The Enhanced 24 Hour and Enhanced 30 Day screens show data for CRC Errored Seconds (CRCES), Out of Frame Seconds (OOFS), Loss of Signal Seconds (LOSS), Alarm Indication Signal Seconds (AISS), Remote Alarm Seconds (RAS), and Bipolar Violation Seconds (BPVS).

For generic 54016 far end devices, only the standard telco 24-hour performance data is displayed. 30-day data is not available.

Element Maintenance

The Element Maintenance screen (Figure 3-9) allows you to perform loop test and/or BERT functions on the T1 circuit. You can activate and clear loops and the BERT tester. BERT is performed by using on-board test facilities. No other test equipment is needed. Some of these tests may also be activated by the front panel push buttons as described in Hardware Testing on page 4-1.

Clear Tests: Pressing <return> on this field clears all local tests and any line loops that have been initiated.

Clear Alarms: Pressing <return> on this field causes all near end alarms to be cleared.

T1 Loop: The type of T1 loop is chosen by toggling the <spacebar> and is executed by pressing <return>. This unit

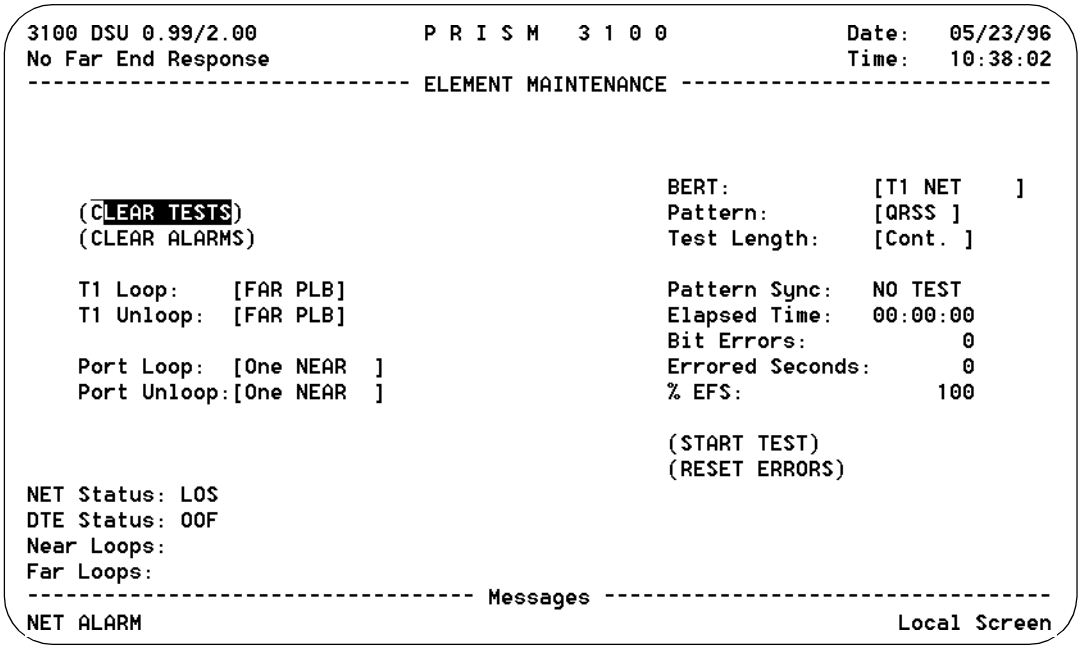


Figure 3-9 Element Maintenance Screen

supports the following types of loops which are graphically represented on pages 3-8 and 3-9.

Loop status changes can be made only when the BERT function is not in the active mode.

NET PLB (Payload Loopback): The received network signal is looped back toward the network with signal regeneration and framing and CRC regeneration. During the NET PLB, data from the DTE is looped back to the DTE. The NET PLB may be activated by receipt of out of band loop code on the network receive signal or by selection in the user interface maintenance screen.

FAR PLB: You can activate a NET PLB on the remote end unit through this selection.

NET LLB (Line Loopback): The received network signal is looped back toward the network with signal regeneration only (framing and CRC intact). During the NET LLB, data from the DTE is looped back to the DTE. The NET LLB may be activated by receipt of inband or out of band loop code on the network receive signal, by the front panel loop switch, or by selection in the interface maintenance screen.

FAR LLB: You can activate a NET LLB on the remote end unit through this selection or through the front panel TEST switch (if configuration Switch S1-7 is set to Inband LLB).

NET MLB (Maintenance Loopback): The NET MLB command loops data at the T1 DTE port back toward the network (passes network data to the DTE and returns data to the network). The MLB affects only network channels assigned to the T1 DTE.

DTE MLB: The T1 DTE MLB command loops all network data back toward the DTE ports at the network interface. Data is passed through to the network. Set the T1-NET Timing to Internal when this loop is enabled.

DTE LLB: The T1 DTE LLB command loops data received at the T1 DTE interface back toward the T1 DTE (al DS0s are returned to the T1 DTE port). The T1 DTE data is also passed to the network.

Port Loop: This field is used to loop high speed data port from the network back to the network and data from the DTE back to the DTE. The Port Loop may be activated by receipt of inband V.54 fractional loop code or by this field.

On the PRISM 3102, each data port loops independently of the other. The user activates a Port Loop on the remote end unit through this field or by the front panel test switch. The test switch can be used to activate a remote Port 1 loop if configuration Switch S1-7 is set to Inband V.54. Either method causes the unit to transmit inband V.54 fractional loop code toward the network in the port's bandwidth.

Port Unloop: Pressing <return> takes down the specified loop from the currently selected port.

BERT: This field selects the interface and direction for the test pattern transmission. The choices are: T1 NET, T1 DTE, One NET, One DTE, Channel 1-24, and IDLE. The 3102 includes the choices Two NET and Two DTE. The internal BERT may also be activated through the front panel test switch as specified under Hardware Testing on page 4-1.

Pattern: Specifies the pattern to be transmitted during a test. Modifying this field will not cause the pattern to be transmitted (refer to Start Test). The choices are [QRSS], [63], [511], [2047], [2^{15}], [2^{20}], [2^{23}], [1:8], [3:24], [ALT], and [CLEAR].

Test Length: Defines the run-time of test pattern generation and error accumulation. The choices are [15 min], [30 min], [60 min], [24 Hour], and [Continuous].

Start Test: Pressing <return> with the cursor on this field starts the selected test pattern. TEST IN PROGRESS appears once the test has started. To end the test, press <return> on STOP TEST.

Reset Errors: Pressing <return> with the cursor on this field causes the test error results to be cleared to zero.

The following fields are for display only. They reflect the selected test parameters and the results of these tests only:

Pattern Sync: This field displays the current state of pattern sync during a test. If no test is in progress, NO TEST is displayed. If a test is active, but the receiver is not in pattern sync, NO SYNC is displayed. If the receiver is in pattern sync, IN SYNC is displayed.

Elapsed Time: Displays the amount of time elapsed since a timed test began or, if completed, the total test time.

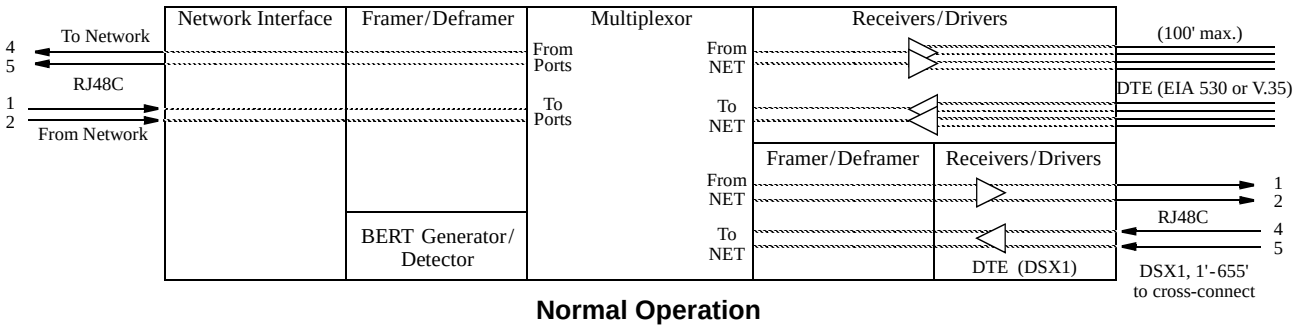
Bit Errors: Displays the total number of bit errors detected since the test began or since error statistics were cleared (Up to a maximum number of 999,999).

Errored Seconds: This field displays the number of asynchronous errored seconds that have been detected since the test began or since error statistics were last cleared. This parameter includes bit error seconds and sync loss seconds.

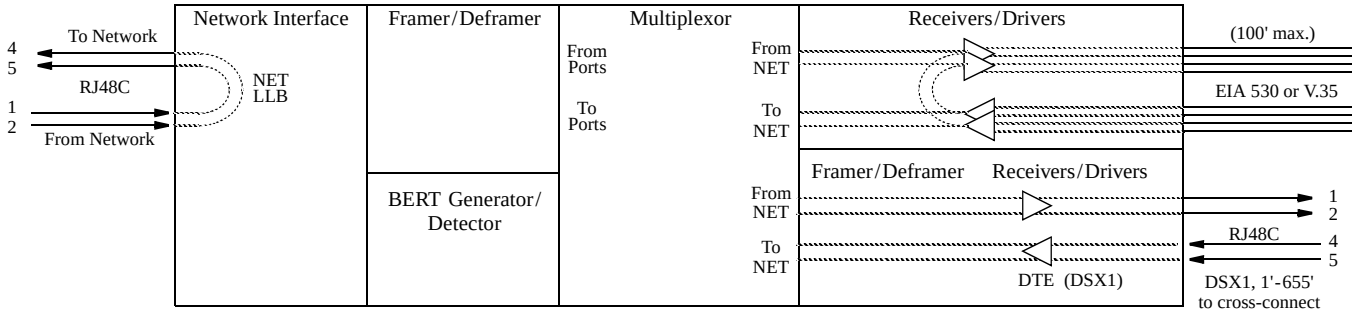
% EFS: This ratio is derived from the number of error free seconds divided by the number of seconds accumulated in Elapsed Time.

LINE FAULT AND LOOP STATUS

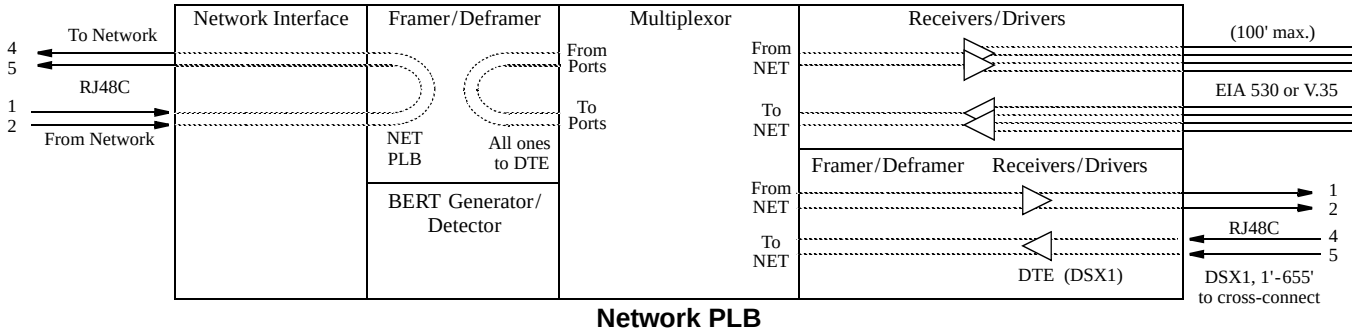
NET/DTE Status: These two fields display the fault status of the network and the far end DTE. They indicate current fault conditions. They do not indicate that alarm thresholds are exceeded. Status indications are described in NET/DTE Status: These two fields display the fault status of the network and the T1 DTE. They indicate current fault conditions. They do not indicate that alarm thresholds are exceeded. Status indications are described in Table 3-I.



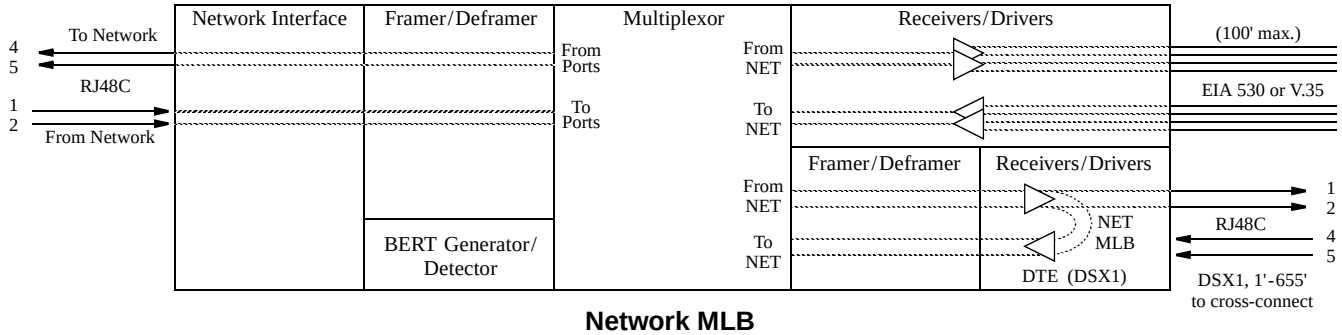
Normal Operation



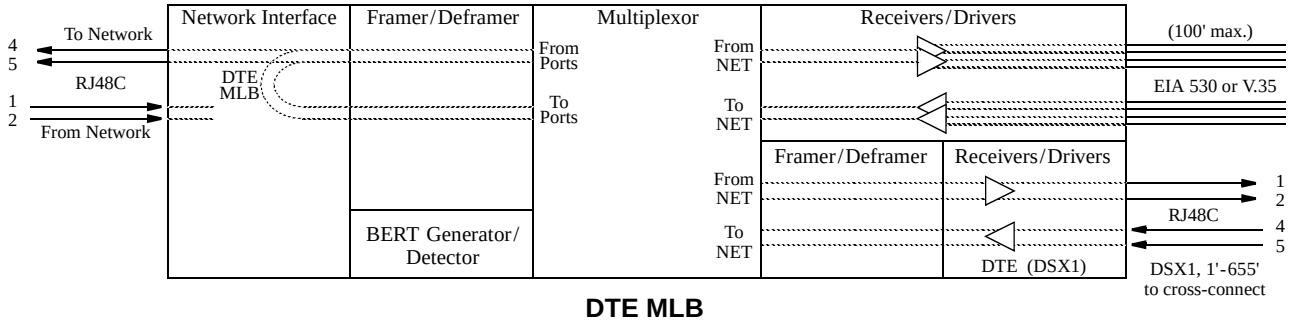
Network LLB



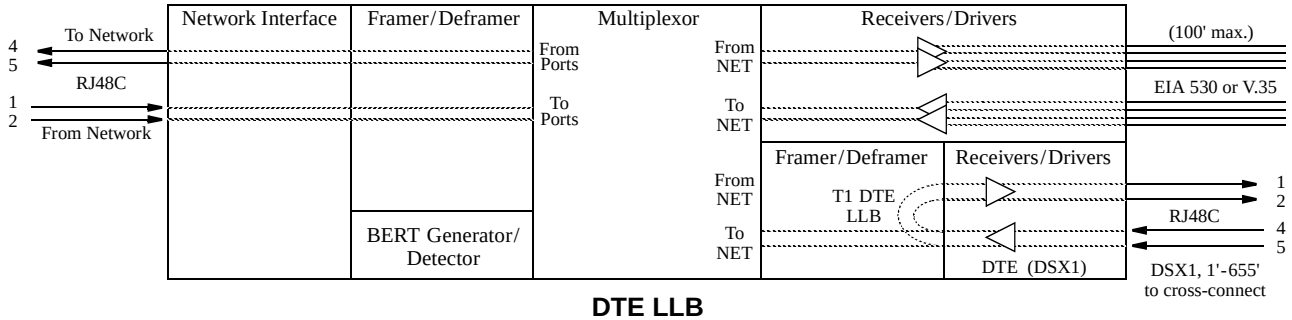
Network PLB



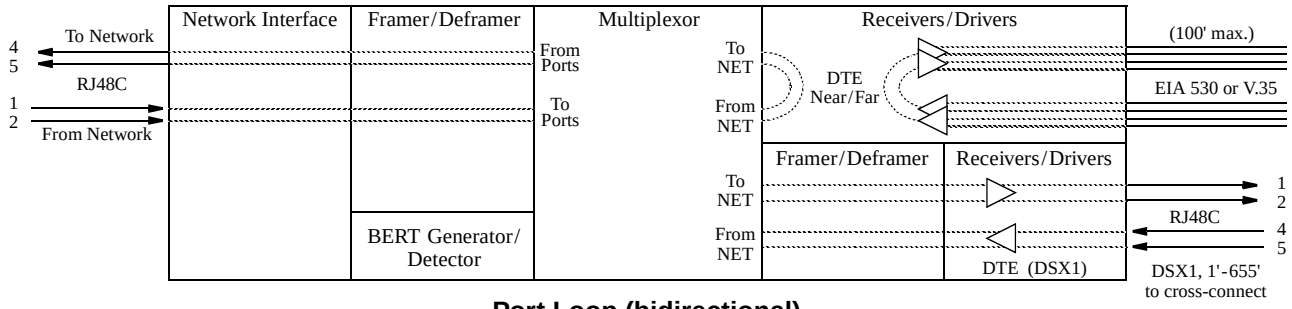
Network MLB



DTE MLB



DTE LLB



Port Loop (bidirectional)

Table 3-I Status Indications

Status	Description
-------	No status is available
OK	No errors are currently detected.
ERR	Frame bit errors, CRC errors, or BPVs are detected.
LOS	A loss of signal condition exists.
OOF	An out of frame condition exists.
RAI	Far end is receiving a remote alarm indication signal.
AIS	The far end is receiving an alarm indication signal.
UAS	An unavailable signal state exists due to consecutive severely errored seconds.

Near Loops: Displays the loop status of the near element.

Far Loops: Displays the loop status of the far element.

Configuration Screens

The Configuration screens allow you to view and set configuration parameters for the network elements.

To send a new configuration to the unit, you must press <return> on one of the fields or exit the screen. The underlined values are the factory default parameters.

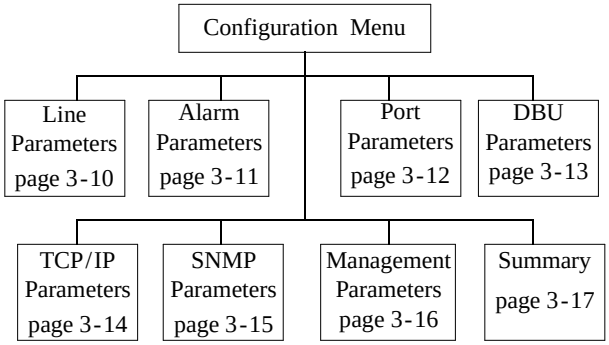


Figure 3-10 Configuration Menu

Line Parameters

The Line Parameters screen (Figure 3-11) allows you to review and set line parameters for the selected element on the T1 circuit. This screen has the following fields, most of which have user selectable options. To send the new line configuration to the unit, either press <return> on one of the fields, change the Element selection, or exit the screen.

T1-NET Framing: Selects the type of framing for the network side of the element as either [ESF] and [D4].

T1-NET Line Code: Sets the network side line coding as either [AMI] and [B8ZS].

T1-NET LBO: Sets the line build out for the network interface as either [0 dB], [-7.5 dB], [-15 dB], or [-22.5 dB].

PRM Enable: This field allows the T1.403 Performance Report Message, which is sent once a second, to be turned on or off. The choices are [ENABLE] and [DISABLE].

Zero Suppression: This field determines whether ones density insertion is activated after 15 zeros. The choices are [ENABLE] and [DISABLE].

T1-NET Timing: Sets the timing source to synchronize the unit's internal timing generators. Slips are controlled to occur on frame boundaries at the network and/or DSX1 ports when timing synchronization is lost.

INTERNAL: The unit's internal frequency standard is used for all timing.

PORT 1*:* Timing is synchronized to the external terminal timing clock supplied from the DTE and connected to the selected port.

> *Verify that the external DTE clock is operating at the data rate selected for Port 1.*

NETWORK: Timing is derived from the network recovered clock (most applications use this selection).

T1-DTE:The unit synchronizes the clock recovered from the DSX-1 T1 DTE port.

Remote Comm Channel: This field selects a communication link to the far end unit. You can either assign a DS0 channel (1 through 24) or use an ESF facility data link (0). If '0' is selected, communication is established over the ESF facility data link (valid only when the network interface is configured for ESF and the FDL has end-to-end integrity). For example, the entire T1 bandwidth must be available to the user with no intervening multiplexors in the signal path blocking the FDL.

As an alternative, the communication link may be assigned to an unused idle channel. This option may be used whether the network is operating in D4 or ESF modes.

When the remote communication is programmed to operate over a spare network channel, test conditions such as a remote network LLB or PLB or a local network LLB will interrupt access to the far end unit.

When the remote communication is programmed to operate over the facility data link (FDL), test conditions such as a remote network LLB or a local LLB on the near end will interrupt access to the far end unit.

> *If far end communication is interrupted for any reason while accessing the remote unit, you should exit and then reenter this screen to ensure that all the parameters have been updated.*

T1-DTE Framing: Selects the type of framing for the T1-DTE side of the element. The unit will support ESF to SF or SF to ESF conversions. The choices are ESF or D4.

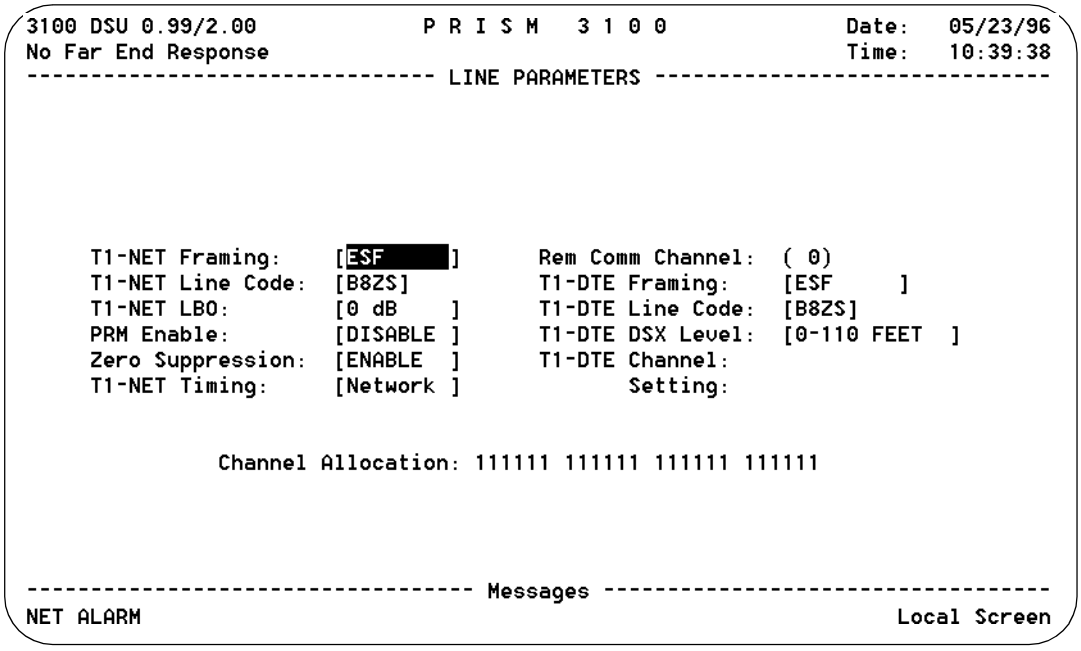


Figure 3-11 Line Parameters Screen

T1-DTE Line Code: Sets the network side line coding as either AMI or B8ZS.

T1-DTE DSX Level: Specifies the DTE line build-out signal level as either 0-110 ft, 111-220 ft, 221-330 ft, 331-440 ft, 441-550 ft, 551-660 ft, or >660 ft.

T1-DTE Channel: Selects channels to be assigned to the T1/DTE from 1 through 24.

Settings: Selects the channel to be either IDLE or THRU.

Channel Allocation: This display-only field indicates the network channel assignments with Channel 1 on the left and Channel 24 on the right. Channels assigned to a port are identified with a port number (1 or 2). Non-assigned idle channels are marked with a dash (-). Remote communication channels are marked with an R. T1-DTE channels are marked with a D.

ALARM CONFIGURATION

The Alarm Configuration screen (Figure 3-12) allows you to review and set alarm related thresholds for the selected element. These thresholds are the minimum acceptable performance levels. To modify the parameters, highlight the desired statistic, type in the new value (any number from 0 to 900) and press <return>. If this value is later surpassed, an alarm indication will appear. A field set to (0) will cause the element not to alarm on that statistic.

Errored Seconds: A one second period in which at least one logic error occurred.

Severely Errored Seconds: A one second period in which at least 320 CRC errors or 1 OOF (out-of-frame) occurred.

Loss of Signal Seconds: A one second period in which the T1 received signal is interrupted.

Unavailable Seconds: A one second period in which consecutive severely errored seconds cause an unavailable state.

Remote Alarm Seconds: Generated by the terminal equipment when an improper signal is received from the facility (or upon receipt of unframed all ones).

AIS Seconds: One second period when all ones are received.

Out of Frame Seconds: A one second period in which a frame sync loss occurred.

BPV Seconds: A one second period in which at least one bipolar violation occurred.

DTE LOS/OOF Seconds: A one second period where the T1-DTE received signal frame synchronization is interrupted or the amplitude drops below a certain level.

Alarm Reset Timer: Determines the number of seconds after alarm conditions clear before indications are removed.

```
3100 DSU 0.99/2.00            P R I S M   3 1 0 0            Date:   05/23/96
No Far End Response                                          Time:   10:40:47
------------------------------ ALARM CONFIGURATION ------------------------------




  Errored Seconds (ES):           (45 )    Remote Alarm Seconds (RAS):  (  0)
  Severely Errored Seconds (SES): (  5)    AIS Seconds (AISS):          (  0)
  Loss of Signal Seconds (LOSS):  (  5)    Out of Frame Seconds (OOFS): (  5)
  Unavailable Seconds (UAS):      (  0)    BPV Seconds (BPVS):          (  0)

  DTE LOS/OOF Seconds (LOSS):     (  0)    Alarm Reset Timer (seconds): ( 30)









---------------------------------- Messages ----------------------------------
NET ALARM                                                        Local Screen
```

Figure 3-12 Alarm Configuration Screen

PORT CONFIGURATION

The Port Configuration screen (Figure 3-13) sets the operating parameters for each high speed port. The unit does not allow conflicting configurations for the DTE ports. Therefore, the selections for each menu item are restricted to those that do not conflict with the configuration of the other high speed port. The default is all channels disabled.

When channel assignment changes are made to the high speed ports or to the remote communication link, the 3101/3102 reestablishes the mapping of all channels. This interruption to traffic will normally result in a brief burst of data errors on other ports.

Channel Allocation: This display-only field indicates the network channel assignments with Channel 1 on the left and Channel 24 on the right. Channels assigned to a port are identified with a port number (1 or 2). Non-assigned idle channels are marked with a dash (-). Remote communication channels are marked with an 'R'. When channels are assigned to a port in the ALTERNATE assignment mode, each data channel is followed by an idle channel that is not assignable for other ports and is marked with an X. T1-DTE channels are shown with a D.

Port #: Selects the port to be configured, such as [ONE] or [TWO].

Rate Multiplier: The unit can operate at any data rate that is a multiple of 56 or 64 kbps. When Nx64K is selected, the ones density requirements of the T1 network line must be ensured. When Nx56K is selected, the unit maintains ones density for the selected DS0 channel.

DS0 Channel Assignment: Selects whether the DTE channel assignment will be made as a CONTIGUOUS group or as ALTERNATE channels. Selecting ALTERNATE will assure ones density but reduce the available bandwidth from 1.536 kbps to 768 kbps.

Start Channel #: The starting channel in the 24-channel DS1 bit stream must be selected in this field. The unit then assigns the following channels automatically according to the bit rate multiplier and the mode selected in DS0 Channel Assignment. The choices are 1 through 24.

Port Rate: Pressing the <spacebar> increases the required port bit rate in increments of 56 or 64 kbps, depending on the Rate Multiplier setting. The N multiplier ranges in value from 0 to 24.

# of Channels: This field displays the number of channels to be passed through to the DTE. The number is determined by the Port Rate value divided by the Rate Multiplier.

Transmit Clock: This field is used to select the clock that the unit will use to sample the data transmitted from the DTE. When set to INTERNAL, the data is automatically edge-aligned and sampled directly with the transmit data clock that is also supplied to the DTE as Transmit Clock. The EXTERNAL option uses the external clock supplied by DTE. The OVERSAMPLE option is used to operate the port as a low speed asynchronous port. In this mode, the port rate should be set to at least 4 times the asynchronous data rate (depending on the degree of allowable distortion for the particular DTE equipment used).

LL (Local Loop) Detect: Allows you to enable or disable pin J (V.35) or pin 18 (EIA 530) to loop-up the near (local) unit.

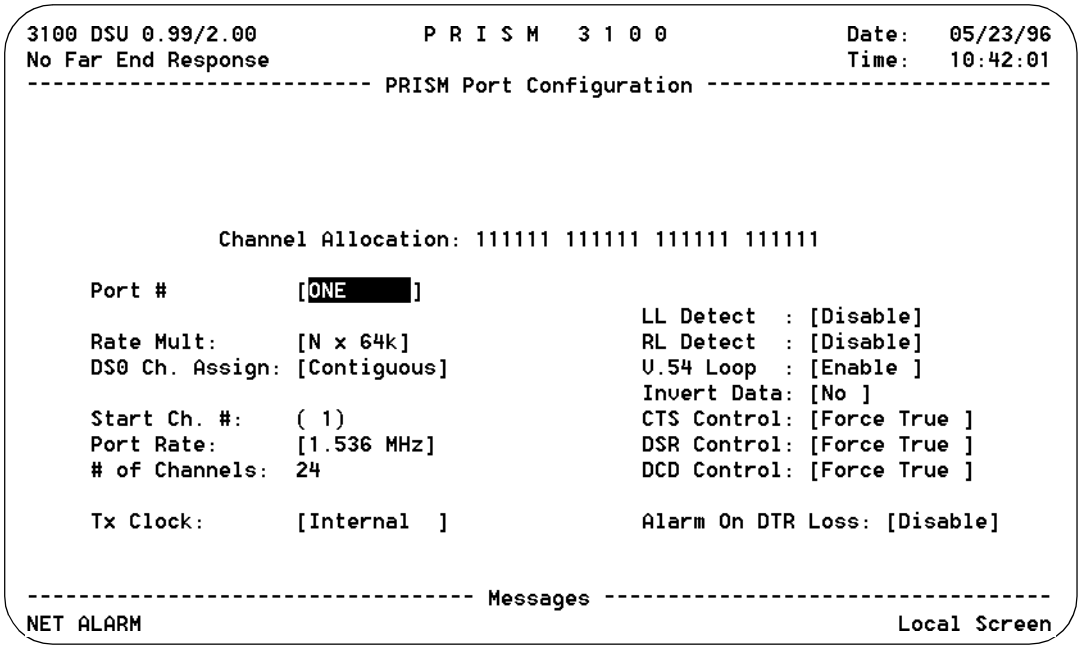


Figure 3-13 Port Configuration Screen

RL (Remote Loop) Detect: Allows you to enable or disable the monitoring of pin BB (V.35) or pin 21 (EIA 530) to loop-up the far unit.

V.54 Loop: Selecting Enable allows the unit to respond to inband V.54 loop commands. If you select Disable, the unit ignores these commands.

Invert Data: In the invert mode (YES), transmit and receive data are inverted at the port interface. This function may be used as a means of guaranteeing ones density when the data is composed of SDLC type protocols. The choices are YEs and NO.

CTS/DSR/DCD Control: Setting any of these three fields to FORCE TRUE or FORCE FALSE allows the forcing of the port control lead output state. INTERNAL allows for normal operation.

Alarm on DTR Loss: Selecting [Enable] allows the unit to go into alarm on loss of DTR. The default setting is [Disable].

DIAL BACKUP PARAMETERS

The Dial Backup Parameters screen (Figure 3-14) allows you to configure the DBU port. You can enable the DBU functionality by selecting two of the eight available alarm indicators or by selecting ANY. These parameters can be any one of nine errors (LOS, ES, SES, UAS, LOF, RAS, AIS, BPV, ANY). These parameters allow you to establish pre-defined thresholds (set in the Alarm Parameters screen) and initiate dial backup when these thresholds are exceeded.

See Alarm Configuration on page 3-11 to set the threshold parameters.

Alarm Reset Timer: This field can be set for zero to 900 seconds. If you set this field to zero, when you enter into dial backup you will stay in that mode even if the T-1 circuit is re-established. If you set this field from 1-900, the circuit will be up that period before it re-establishes.

See Alarm Configuration on page 3-11 to set the thresholds for this field.

Status: Lists the current DBU status as either Disabled, Enabled, Active, Locked, Connecting, Disallowed, Dialing, or Disconnecting.

Command: Disable, Enable, Enable Daily, Activate, or Lock.

Activator 1: Allows you to set the first threshold value for initiating a dial backup. Available values are LOS, ES, SES, UAS, LOF, RAS, AIS, BPV, ANY.

Activator 2: Allows you to set the second threshold value for initiating a dial backup. Available values are LOS, ES, SES, UAS, LOF, RAS, AIS, BPV, ANY.

Mode: One unit must be configured as a master unit and one unit must be configured as a slave. This determines priorities when both units try to establish a DBU connection.

Security: Allows you to enable or disable the security function limiting access to the DBU interface. The security setting must be the same on both ends.

Password: If the security feature is enabled, the password for the security option must be the same on both devices.

Dial String: Character string used to dial the other unit.

Init String: Character string used to configure the modem to dial the other unit.

```
3100 DSU 0.99/2.00            P R I S M   3 1 0 0            Date:   05/23/96
No Far End Response                                          Time:   10:44:51
---------------------------- DIAL BACKUP PARAMETERS ----------------------------


  Status:          DISABLED
  Command:         [DISABLE      ]                        Activation Periods
  Activator 1:     [LOS]                                  ------------------
  Activator 2:     [LOS]                                   Sun: [00] - [00]
  Mode:            [MASTER]                                Mon: [00] - [00]
  Security:        [DISABLED]                              Tue: [00] - [00]
  Password:        (********)                              Wed: [00] - [00]
  Dial String:     (ATDT                          )        Thu: [00] - [00]
  Init String:     (AT&F&C1&M1&D2%A2=0%A4=0       )        Fri: [00] - [00]
  Reset String 1:  (                              )        Sat: [00] - [00]
  Reset String 2:  (                              )
  Reset String 3:  (                              )
  Reset String 4:  (                              )
  Reset String 5:  (                              )

                              (CONFIGURE ISDN TA)

---------------------------------- Messages ----------------------------------
NET ALARM                                                          Local Screen
```

Figure 3-14 Dial Backup Parameters Screen

Reset String: These strings (1-5) are used to reconfigure the ISDN TA when the unit has trouble making a connection.

Configure ISDN TA: Routes you to the user interface of the switched service DBU unit. This feature allows for the configuration of necessary parameters in the switched unit.

Activation Periods: Period of time when the unit is allowed to enter an active DBU state.

> ⚠ ***When configuring activation periods in the Time of Day map, be sure to calculate any time zone differences.***

TCP/IP CONFIGURATION

The TCP/IP Configuration screen (Figure 3-15) is accessible for the SLIP, Ethernet or Token Ring SNMP interface. It allows for the entry of those parameters required for proper operation with an Ethernet or Token Ring-based LAN manager.

LAN Connection: This field allows you to select SLIP, Ethernet, or Token Ring interface for the network connection.

PRISM IP Address: This field accepts IP addresses. Each device connected to the LAN is required to have a unique IP address identifier.

Subnet Mask: This field is provided to manually override the subnet mask setting which is otherwise discovered by the SNMP agent.

Router IP Address: This field accepts the IP address of the default router.

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.

Reset LAN Interface: For changes to take effect, the LAN interface must be reset or the unit must be power cycled. Selecting this field brings up a confirmation screen which prompts you to proceed with the reset.

```
3100 DSU 0.99/2.00            P R I S M   3 1 0 0            Date:   05/23/96
No Far End Response                                          Time:   10:46:13
---------------------------- TCP/IP Configuration ----------------------------



                          (RESET LAN INTERFACE)

                    Lan Connection: [SLIP      ]
                    PRISM  I.P. Address   (198.198.198.002)
                    Subnet Mask           (255.255.255.000)
                    Router I.P. Address   (198.198.198.001)

                    Filter I.P. Address 1 (000.000.000.000)
                    Filter I.P. Address 2 (000.000.000.000)
                    Filter I.P. Address 3 (000.000.000.000)
                    Filter I.P. Address 4 (000.000.000.000)
                    Filter I.P. Address 5 (000.000.000.000)
                    Filter I.P. Address 6 (000.000.000.000)
                    Filter I.P. Address 7 (000.000.000.000)
                    Filter I.P. Address 8 (000.000.000.000)

---------------------------------- Messages ----------------------------------
NET ALARM                                                        Local Screen
```

Figure 3-15 TCP/IP Configuration Screen

SNMP CONFIGURATION

The SNMP Configuration screen (Figure 3-16) is accessible for the SLIP, Ethernet or Token Ring SNMP interface. It allows for the entry of those parameters required for proper operation with an SNMP-based network manager.

The 3101/3102 supports alarm reporting by SNMP TRAPs when running the LAN or SLIP interface. If the unit's IP Connection is LAN or Direct SLIP, it expects an IP connection to always be present and thus outputs its TRAP messages immediately. If the IP Connection is Dial SLIP, the unit dials out from the modem connected to the SLIP port using the number programmed in the SNMP Configuration screen an outputs TRAP messages upon connection.

The PRISM 3101/3102 has an embedded SNMP agent supporting MIB-2 and the DS1/E1 MIB. The SET command is supported and has the functionality described below. The 3101/3102 also supports a single TELNET session.

SNMP Sets: This field enables or disables the set command responses for SNMP. Refer to Appendix C, SNMP Agent for detailed information on these responses.

TRAP IP Address: These six rows require numeric entries. Each row contains four 3-digit numbers which are separated by periods. Each of these numbers can range from 0 to 255.

These fields accept the IP address of a network device to which alarm reporting TRAPs are to be sent. The unit detects and reports alarms and provides several options for reporting them, one of which is SNMP TRAPs. When an alarm occurs, the unit sends a trap message to up to 6 destinations on the user's network. The trap message is formatted per RFC 1157. The generic trap type is enterpriseSpecific (generic-trap = 6).

Up to 6 Trap IP addresses can be assigned to report via SNMP. The unit will report each alarm by transmitting an SNMP Trap to each Trap IP address. T1 network problems often cause more than one alarm type. In these cases, multiple trap messages are 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 the Trap Definition table on the previous page.

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

Read Community: This display accepts a character string identifying the group authorized to perform read operations. The default setting is public.

Write Community: This display accepts a character string identifying the group authorized to perform write operations. The default setting is a null string (‘ ‘).

System Contact: This display accepts a character string identifying the person responsible for a network device. The default setting is no system contact.

System Name: This display accepts a character string identifying the functionality of the network device. The default setting is no system name.

System Location: This display accepts a character string identifying the physical location of network device. The default setting is no system location.

```
3100 DSU 0.99/2.00              P R I S M   3 1 0 0              Date:   05/23/96
No Far End Response                                              Time:   10:47:19
------------------------------ SNMP Configuration ------------------------------




                     SNMP Sets: [ENABLE ]

                     Trap I.P. Address 1 (000.000.000.000)
                     Trap I.P. Address 2 (000.000.000.000)
                     Trap I.P. Address 3 (000.000.000.000)
                     Trap I.P. Address 4 (000.000.000.000)
                     Trap I.P. Address 5 (000.000.000.000)
                     Trap I.P. Address 6 (000.000.000.000)

Read Community      (public                                                    )
Write Community     (                                                          )
System Contact      (no system contact                                         )
System Name         (no system name                                            )
System Location     (no system location                                        )

---------------------------------- Messages ----------------------------------
NET ALARM                                                          Local Screen
```

Figure 3-16 SNMP Configuration Screen

MANAGEMENT PORTS

The Management Ports screen (Figure 3-17) sets the following parameters for the Call On Alarm (COA) connection on both the SUPV and SLIP ports.

Element ID: This field allows the entry of an ASCII string (29 characters in length) which identifies the unit to the device receiving the alarm notification messages.

Call on alarm messages are reported in the following format in the [DIAL] or [DIRECT] modes only:

Element ID HH:MM:SS MM/DD/YY <CR> <LF>

NET Alarms: alarms <CR> <LF>

DTE Alarms: alarms <CR> <LF>

where (alarms) is a string consisting of some or all of the identifiers LOS, OOF, RAS, AIS, UAS, ERRS, or NONE. The following is an example:

Joesunit 17:24:55 08/04/93

NET Alarms: LOS AIS ERRS

DTE Alarms: LOS Port1

The user programmable Element ID string is transmitted first to allow the COA function to send a message with a specific meaning to some host (such as a log on message).

The identifier ERRS represents an alarm that is caused by ES, SES, and/or BPV errors.

COA Connection (SUPV): This field controls the remote alarm reporting. ASCII alarm reporting through the supervisory port is independent of TRAP alarm reporting. The ASCII alarm report type is set by the following choices:

[DISABLED] - Alarm reporting is disabled.

[DIAL] - Sends reports through an attached AT command set compatible modem connected to the SUPV serial port, which must dial out to a remote modem. The message format is described in the Element ID field.

[DIRECT] - Sends reports to a printer or terminal connected directly to the supervisory port.

Primary Dial String, Secondary Dial String: These fields are ASCII strings for the primary and secondary call on alarm phone numbers used in the [DIAL] mode. The strings must NOT include the ATDT command prefix.

The unit attempts 3 times to connect using the primary number. If all 3 attempts fail, it will attempt 3 times to connect using the secondary number (if it is not blank). If the secondary number fails, the unit waits 5 minutes and then attempts to communicate with the primary number again. When a connection is detected, the unit outputs the notification message (as described in the Element ID field) and then disconnects.

Initialization String: The modem initialization string is entered in this field. Refer to the modem's documentation for further information. The default setting is ATEQ0V1.

Disconnect String: This field identifies the character string to be output when the modem session is terminated. The default setting is ATH.

COA Connection (SLIP): This field controls remote alarm reporting. ASCII alarm reporting through the SLIP port is independent of TRAP alarm reporting. The ASCII alarm report type is set by the following choices:

[DISABLED] - Alarm reporting is disabled.

[DIAL] - Sends reports through a modem to the SLIP server.

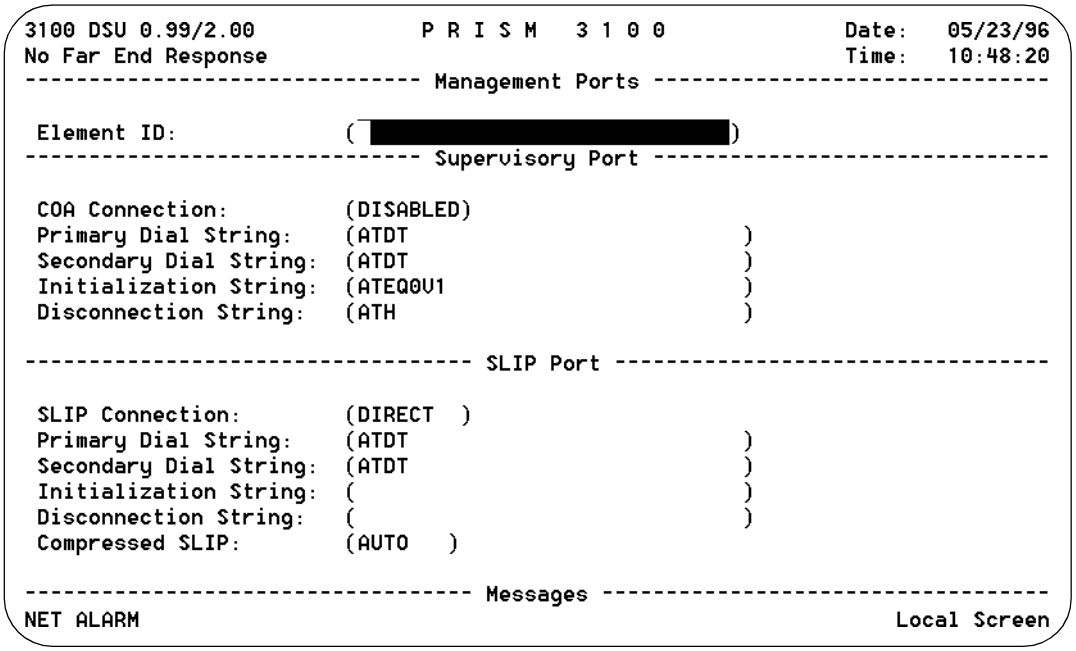


Figure 3-17 Management Ports Screen

[DIRECT] - Sends reports directly to the SLIP server.

Compressed SLIP: The choices are AUTO, ENABLE, and DISABLE. The AUTO setting allows the 3101/3102 to negotiate with the far end to enable or disable SLIP compression, depending on the type of connection.

SUMMARY

The Summary screen (Figure 3-18) is a ***display-only*** screen which summarizes all the configuration switch settings in the left column. Other pertinent information is shown in the right column.

Utilities

The Utilities screen (Figure 4-23) handles the functions described in the following paragraphs.

Set Time: The current time may be entered in this field using the 24-hour HH:MM:SS format. For example, 3:45 AM is entered as 0345 and 3:45 PM is entered as 1545.

```
3100 DSU 0.99/2.00            P R I S M   3 1 0 0            Date:   05/23/96
No Far End Response                                          Time:   10:49:22
----------------------------------- SUMMARY -----------------------------------

 (S1:1)    Boot Mode:        Switches        Serial Num: 000001
 (S1:2-3)  Supv Port Rate:   19200           LAN Conn:   SLIP
 (S1:4-5)  Slip Port Rate:   9600            HW Address: N/A
 (S1:6)    DS0 Ch. Assign:   Contiguous      IP Address: 198.198.198.002
 (S1:7)    Port 1 Mult:      Nx64
 (S1:8)    Port 2 Mult:      Nx64
 (S2:1)    Net Framing:      ESF
 (S2:2)    Net Coding:       B8ZS
 (S2:3-4)  Net LBO:          0 dB            ------ Unit Options -------
 (S2:5-6)  Timing Source:    Network         Port 1: V.35
 (S2:7)    Test Loop:        Inband LLB      Port 2: V.35
 (S2:8)    Test Mode:        BERT            T1-DTE Option Card
 (S3:1-5)  Port 1 Rate:      1.536 MHz
 (S3:6-10) Port 2 Rate:      0 kHz
 (S4:1)    T1-DTE Framing:   ESF
 (S4:2)    T1-DTE LineCode:  B8ZS
 (S4:3-5)  T1-DTE DSX Level: 0-110 FEET

---------------------------------- Messages ----------------------------------
NET ALARM                                                      Local Screen
```

Figure 3-18 Summary Screen

```
3100 DSU 0.99/2.00            P R I S M   3 1 0 0            Date:   05/23/96
No Far End Response                                          Time:   10:50:24
---------------------------------- UTILITIES ----------------------------------




                          Set Time: (10:50:21)
                          Set Date: (05/23/96)


                        New Password: (          )


                           (MAINTENANCE RESET)
                             (FACTORY RESET)




---------------------------------- Messages ----------------------------------
NET ALARM                                                      Local Screen
```

Figure 3-19 Utilities Screen

Set Date: The current date may be entered in this field using the MM:DD:YY format. For example, July 4, 1993 is entered as 070493.

The time and date can be set at the far end, but not displayed.

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 <return> is pressed, the new password is activated and is no longer visible. Therefore, type carefully when entering a new password and verify before pressing <return>. 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 will appear:

```
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 you program a password and later forget it, contact TxPORT Technical support for a one-time backdoor password.

The reset operation sets all parameters to the factory default settings and zeros all performance registers.

Maintenance Reset: This field will clear all user selectable parameters, performance registers, passwords, and alarms but saves the IP Address. All alarm threshold parameters will be reset to default values. The unit reloads start-up configuration settings from the default parameters stored in ROM. Pressing <return> on this field brings up the following warning:

DELETE ALL DATA AND RESTART UNIT?

(NO!) (YES)

Factory Reset: Removes all memory including the IP Address.

To exit this screen without performing the reset function, press <return>with NO selected. To proceed with the reset function, move the cursor to YES and press <return>.

SNMP / TELNET

Any workstation emulating an ANSI VT100 terminal can communicate with the 3101/3102. Note that only a single TELNET session is supported at any one time.

You must be familiar with TELNET operation to begin communication with the unit (refer to the TELNET documentation) The TELNET interface provides security through password layers identical to those described in this chapter for the terminal interface. Once communication is established, all TELNET screens are identical to those described for the terminal interface.

4. Testing

This chapter describes hardware and software testing procedures and responses for the PRISM 3101/3102.

Hardware Testing

The PRISM 3101/3102 front panel (Figure 4-1) has five LED indicators and two control buttons from which you can perform basic unit testing.

Front Panel LEDs

Five front panel LEDs allow a visual identification of the test results and alarms. These LEDs are: NET, BACKUP, TEST, ALARM, and POWER.

NET

This LED is green when the unit is in frame sync. It is amber when the unit is receiving a yellow alarm from far end. It is red when the unit is out of frame sync and/or Loss of Signal.

BACKUP

Amber LED blinks when dialing, connecting, or disconnecting. Solid illumination when active.

TEST

This LED flashes green when the unit is transmitting loop code. It is green continuously when BERT is on with no errors OR the unit is in clear test. It is red when the BERT is on and is receiving errors.

ALARM

Red LED lights continuously when the unit is in an active alarm condition. It flashes when an invalid switch configuration has been made.

POWER

Green LED lights continuously when power is applied to the unit.

Front Panel Buttons

Two front panel buttons allow you to perform loopback tests. The two buttons are: TEST and LOOP.

TEST

When this button is pushed once, the unit transmits five seconds of in-band loop code out to the network either LLB or V.54 depending on the setting of configuration Switch S2-7 (page 3-2). The indicator blinks green during transmission of the loop code.

If configuration Switch S2-8 (page 3-2) is set to Clear Loop, a bidirectional loop is created allowing the central office to initiate a BERT.

If Switch S2-8 is set to BERT, the test pattern last selected in the terminal interface is transmitted toward the network. The received pattern is compared and if the pattern is received error free, the TEST indicator remains green. If pattern errors are detected, the TEST indicator turns red for one second for each errored second. Therefore, if five errored seconds are received, the indicator will remain red for five seconds. The data ports are looped back toward the DTE during the test.

If the TEST button is pushed again, the unit transmits five seconds of in-band loop down code and returns to normal operating mode. The TEST indicator is then turned off.

LOOP

When this momentary push button is pushed once, the unit activates a line loopback, looping the network receive data back to the network, and looping the data from the DTE ports back to the DTE. The TEST indicator is illuminated while the unit is in loop. If pushed again, the unit clears the loop and turns off the LOOP indicator.

> *For additional information concerning test and loop options, refer to the section Software Configuration on page 3-3.*

Software Testing

When indepth testing is necessary, you can perform specific tests from the VT100 interface into the PRISM 3101/3102 menu system.

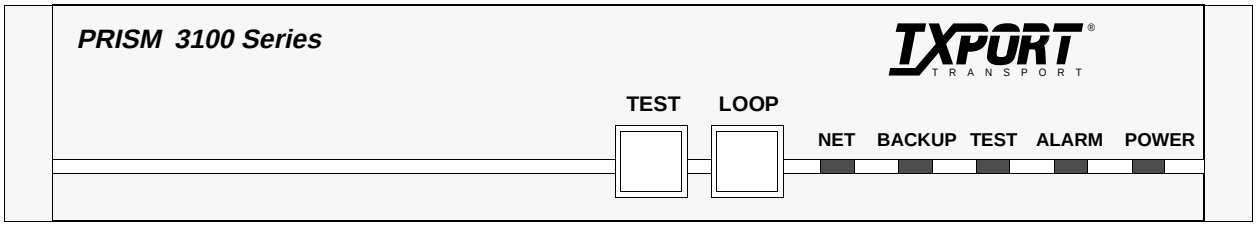


Figure 4-1 Front Panel Controls and Indicators

A. Terminal Interface

This chapter describes the screens structure and menu controls for the TxPORT PRISM 3101/3102 terminal interface. The interface is a firmware application program embedded inside the unit.

It requires an ANSI compatible VT100 terminal (ASCII), or a computer running an ANSI terminal emulation program. The terminal interface uses ASCII BREAK and ESCAPE functions, which are implemented differently with the various terminal emulation programs.

Screen Components

Terminal interface screens have several components common to all screens (Figure A-1).

Device Type and Revision: The device type (such as PRISM 3102) and the revision control numbers are shown in the upper left corner. The first number is the hardware revision and the second number is the software revision. Information is displayed for the near end unit (connected directly to the terminal) on the top line, and for the far end unit (connected to the network T1 interface) on the second line. Refer to this information when contacting the factory with inquiries.

The far end information is available only for TxPORT products that support a proprietary message set. If the far end does not support these messages but does support the standard 54016 protocol, then the far end information is displayed as GENERIC 54016 FAR END. If the far end does not respond to either proprietary or 54016 messages, then NO FAR END RESPONSE will be displayed. If the far end echoes the FDL messages transmitted by the near end unit, then FAR END LINE LOOP is displayed.

Date/Time: The top right corner of the terminal screen displays the current date and time. The setting of these functions is described in the section entitled Utilities on page 3-17.

Element ID: Below the header (PRISM 3100), the Element ID is displayed. Refer to the section entitled Management Ports on page 3-16 for information on the Element ID.

Menu Title: The menu title (third line, center) denotes the general classification of functions currently accessible by the user (such as MAIN or PERFORMANCE).

Messages: Diagnostic messages may be displayed at the bottom of the screen.

Local / Remote Screen Indicator: Identifies the visible screen as displaying the local or remote interface.

Cursor Controls

The terminal interface utilizes 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 use of the <tab> and <shift-tab> keys. Others allow use of the arrow keys. Once a field is highlighted, it is manipulated as described in Section .

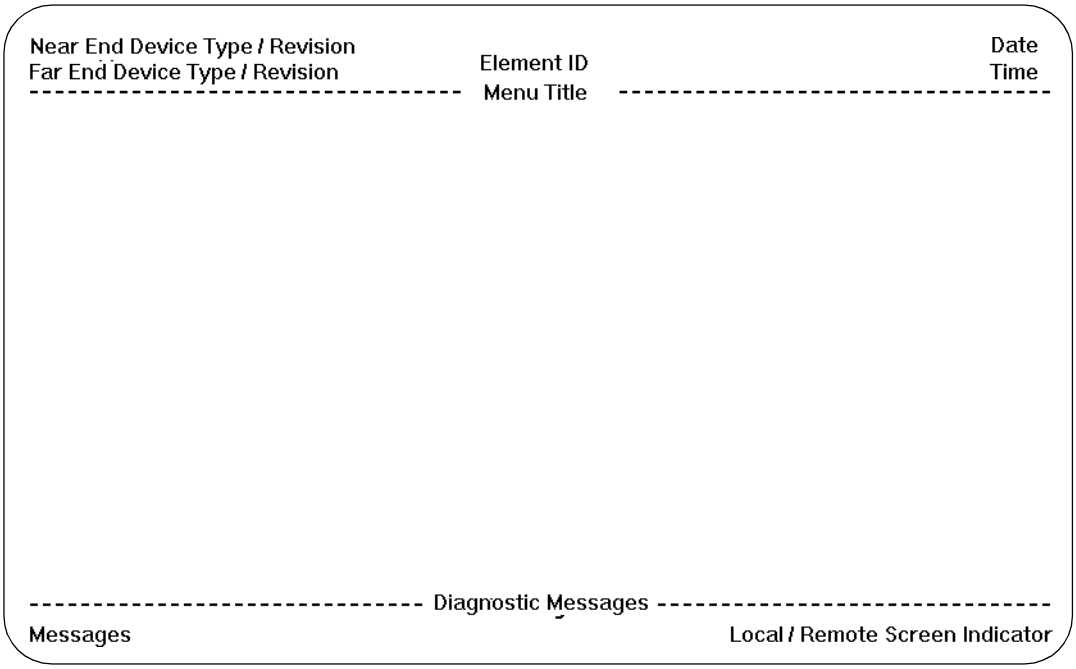


Figure A-1 Terminal Interface Layout

For keyboards which do not have these standard keys or have only some of them, an alternate set of cursor control commands is provided. Each command is performed by pressing a letter key while holding down the <Ctrl> key. Alternate commands may be freely mixed with the keyboard commands at your discretion.

Table A-A Keyboard / Alternate Commands

Keyboard Command	Alternate Command
< left arrow >	< Ctrl - S >
< right arrow >	< Ctrl - D >
< up arrow >	< Ctrl - E >
< down arrow >	< Ctrl - X >
< backspace >	< Ctrl - H >
< delete >	< Ctrl - Z >

Field Types

Each screen is made up of fields. The two basic field types are user-selectable and display-only. If the highlighted cursor can be moved to a field, it is a user selectable field. All other fields are for display only. User selectable fields allow for changes to be made or commands to be executed.

Fields without brackets or parenthesis are display-only. They cannot be changed on the screen. Most user selectable fields are enclosed in brackets or parenthesis and are described in the following paragraphs.

Fields enclosed in brackets [ ] offer the user a list of selections from which to choose. The selections may be toggled by pressing the <spacebar>. Each time it is pressed, a new item appears. When the appropriate choice is displayed, press <return> to select it.

Fields enclosed in parenthesis ( ) are manipulated by one of the following two methods:

1. Pressing <return> on such fields as (Reset) and (Start Test) simply execute the function.
2. The most common type of field in parenthesis accepts typed input in the form of letters and/or numbers. Typing characters when the field is highlighted causes the current entry to be replaced with the new characters. To edit an existing entry rather than replace it, press the <right arrow> key to move the cursor to the point that needs editing. Characters may then be inserted or deleted. Typed data is always inserted rather than typed over. If the field is full, though, at least one character must be deleted to add another.

Many fields of this type may also be toggled by pressing the <spacebar>. Other fields are range checked, where the user is not allowed to exit with an illegal value set.

Any screen may be redisplayed (or refreshed) by pressing <Ctrl - U>. Any changes to fields on a screen, that have not been activated by pressing <return>, will be discarded.

Menu Structure

The Main Menu screen lists the functional user accessible menus. To activate a menu, highlight the desired selection and press <return>. To exit this or any subsequent menu, press <esc>. If the Main Menu is exited, the terminal interface program terminates. This is a valid way to end a session. If any other menu is exited, the previous screen is returned. The menu structure (Figure A-2) shows all the screens accessible from the Main Menu.

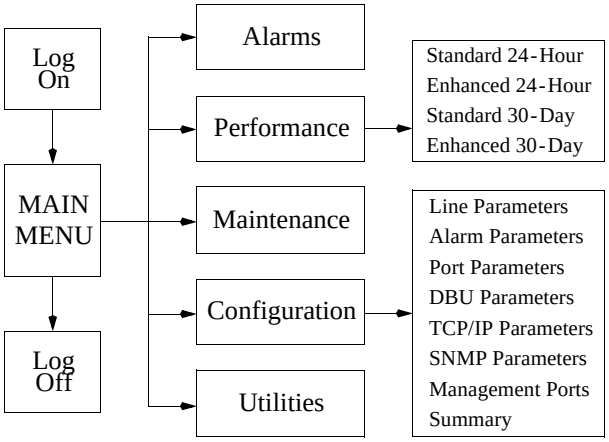


Figure A-2 Terminal Interface Menu Structure

If you do not enter a keystroke for 10 minutes, the terminal interface logs off automatically.

B. Pinout Tables

This appendix displays the pinout assignments for each port and option on the rear of the PRISM 3101/3102

LAN Port - Ethernet

Pin	Signal Name
1	Data Out
2	Data Out
3	Data In
6	Data In

LAN Port - Token Ring

Pin	Signal Name
3	Data Out
4	Data In
5	Data In
6	Data Out

SLIP / SUPV Port - PC

Pin	Signal Name	DTE
1	DCD Out	DCD
2	CTS Out	CTS
3	Frame Gnd	Frame Gnd
4	Data Out	RXD
5	Data In	TXD
6	Signal Gnd	Signal Gnd
7	RTS In	RTS
8	DTR In	DTR

SLIP / SUPV Port - Modem

Pin	Signal Name	DCE
1	DTR Out	DTR
2	RTS Out	RTS
3	Frame Gnd	Frame Gnd
4	Data Out	TXD
5	Data In	RXD
6	Signal Gnd	Signal Gnd
7	CTS In	CRTS
8	DCD In	DCD

T1 DTE Port

Pin	Signal Name
1	Data Out
2	Data Out
3,6	Not Used
4	Data In
5	Data In
7	Chassis Ground
8	Chassis Ground

NET Port

Pin	Signal Name
1	Data In
2	Data In
3,6	Not Used
4	Data Out
5	Data Out
7,8	Chassis Ground

DBU Port

Pin	Signal Name
1	Rx Clock In
2	DTR Clock Out
3	RTS Clock Out
4	Frame Ground
5	Data Out
6	Data In
7	Signal Ground
8	CTS In
9	DCD In
10	Tx Clock In

Data Ports

Signal Name	EIA 530	V.35	Acronym
Frame Ground	1	A	FG
Transmit Data	2, 14	P, S	TD
Receive Data	3, 16	R, T	RD
Request to Send	4, 19	C	RTS
Clear to Send	5, 13	D	CTS
Data Set Ready	6, 22	E	DSR
Signal Ground	7	B	SG
Data Carrier Detect	8, 10	F	DCD
Transmit Clock	15, 12	Y, AA	TXC
Receive Clock	17, 9	V, X	RXC
Local Loopback	18	J	LL
Data Term Ready	20, 23	H	DTR
Remote Loopback	21	BB	RL
Terminal Timing	24, 11	U, W	TT, EXC

C. SNMP Agent

This unit has an embedded SNMP agent which can be accessed either through the built in SLIP interface or the optional Network Interface Card (NIC). The NIC can either be an Ethernet or Token Ring interface. Through these interfaces the user can gain access to the 3100 via Telnet or SNMP. The Telnet session is simply a connection to the user interface of the unit.

SNMP access to the unit is limited to Management Information Bases (MIBs) supported by the embedded SNMP agent. The SNMP agent supports MIB-II (RFC 1213) and the latest DS1 MIB (RFC 1406). This appendix describes in detail how the embedded SNMP agent conforms to the RFCs.

RFC 1213

This RFC defines the MIB-II specification.

systemTable

sysDescr: (read-only)

GET: returns the string 'TxPORT SNMP Agent'

sysObjectID: (read-only)

GET: returns the Object Identifier - 1.3.6.1.4.1.254.1.1

sysUpTime: (read-only)

GET: returns the time in hundredths of a second since the network interface was reset.

sysContact: (read-write)

GET: returns the System Contact string for the unit, defaults to 'no system contact'

SET: sets the System Contact string for the unit

sysName: (read-write)

GET: returns the System Name string for the unit, defaults to 'no system name'

SET: sets the System Name string for the unit

sysLocation: (read-write)

GET: returns the System Location string for the unit, defaults to 'no system location'

SET: sets the System Location string for the unit

sysServices: (read-only)

GET: returns a value of '72' which represents a host offering application services.

ifTable

ifNumber: (read-only)

GET: returns the number of interfaces present on the unit, there are always a minimum of 3 (SLIP, Network - DS1, and Port 1). There are two optional interfaces, a NIC (Ethernet or Token Ring), and a Port 2 card.

ifIndex: (read-only)

GET: returns value of the specified interface, ordered as follows:

1 - SLIP

2 - NIC (if installed)

3 - DS1

4 - D/I (if installed)

5 - Port 1

6 - Port 2 (if installed)

7 - Dial Backup

ifDescr: (read-only)

GET: returns one of the following textual descriptions:

'SLIP Interface' - returned for the SLIP Interface

'Ethernet NIC' - returned for the NIC, for Ethernet interface

'Token Ring NIC' - returned for the NIC, for Token Ring

'T1 Network Interface' - returned for the DS1 interface

'T1 DTE Interface' - returned for the T1 DSX-1 interface (D/I)

'V.35 Data Port 1' - returned for Port 1 (if a V.35 interface)

'V.35 Data Port 2' - returned for Port 2 (if a V.35 interface)

'530 Data Port 1' - returned for Port 1 (if a 530 interface)

'530 Data Port 2' - returned for Port 2 (if a 530 interface)

'DBU Interface' - returned for dial backup

ifType: (read-only)

GET: returns one of the following integer values:

slip(28) - returned for the SLIP Interface

ethernet-csmacd(6) - returned for Ethernet NIC

iso88025-tokenRing(9) - returned for Token Ring NIC

ds1(18) - returned for the DS1 interface

propPointToPointSerial(22) - returned for Port 1 & Port 2

ifMtu: (read-only)

GET: returns one of the following integer values:

296 - returned for the SLIP Interface

1500 - returned for the NIC interface (if Ethernet)

2000 - returned for the NIC interface (if Token Ring)

0 - returned for the DS1 interface, Port 1 and Port 2

ifSpeed: (read-only)

GET: returns the rate at which the interface is running:

9600 - returned for the SLIP Interface at 9600 baud

19200 - returned for the SLIP Interface at 19200 baud

38400 - returned for the SLIP Interface at 38400 baud

56000 - returned for the SLIP Interface at 56000 baud

10000000 - returned for the NIC (if Ethernet)

4000000 - returned for the NIC (if Token Ring @ 4 Mb/s)

16000000 - returned for the NIC (if Token Ring @ 16 Mb/s)

1544000 - returned for the DS1 interface. For Port 1 and Port 2 the rate of the interface is returned, (Number of Channels * Port Rate Multiplier)

DBU - returns 19200 Async rate used for modem initialization and call setup

ifPhysAddress: (read-only)

GET: returns a value of 0 for all interfaces except the NIC interface, which returns the physical address of the unit

ifAdminStatus: (read-write)

GET: **up(1)** - returned for all interfaces

SET: not allowed

ifOperStatus: (read-only)

GET: **up(1)** - returned if the interface is active, and does not have a testing status
down(2) - returned if the interface is not enabled
testing(3) - returned for the DS1 interface, Port 1, or Port 2 if the interface has a test loop or BERT active.

ifLastChange: (read-only)

GET: returns the time in hundredths of a second since the interface was changed, or reset

RFC 1406 - DS1/E1 MIB

This RFC was published in January 1993, and is meant to be a replacement for RFC 1232. RFC 1406 is used to manage DS1 interfaces, and in our case specifically a T1 interface. The following is a list of the objects contained within this RFC, and the manner in which the unit responds to each.

dsx1ConfigTable

dsx1LineIndex: (read-only)

GET: **(2)** - if a NIC is not installed
(3) - if a NIC is installed

dsx1IfIndex: (read-only)

GET: **(2)** - if a NIC is not installed
(3) - if a NIC is installed

dsx1LineType: (read-write)

GET: **dsx1ESF(2)** - the Network Framing is set to ESF
dsx1D4(3) - the Network Framing is set to D4

SET: **dsx1ESF(2)** - sets the Network Framing to ESF
dsx1D4(3) - sets the Network Framing to D4

dsx1LineCoding: (read-write)

GET: **dsx1B8ZS(2)** - the Network Coding is set to B8ZS
dsx1AMI(5) - the Network Coding is set to AMI

SET: **dsx1B8ZS(2)** - sets the Network Coding to B8ZS
dsx1AMI(5) - sets the Network Coding to AMI

dsx1SendCode: (read-write)

GET: **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 inband LLB loopup signal. Since this occurs for less than 6 seconds, this response probably won't be seen.
dsx1SendPayloadCode(3) - the unit is sending an out-of-band PLB loopup request to the Far End, but since this happens in a fraction of a second, this response will probably never be seen
dsx1SendResetCode(4) - the unit is sending either an inband LLB loopdown signal, or an out-of-band PLB loopdown request, but since these happen so quickly, this response will probably never be seen
dsx1SendQRS(5) - the unit is in a Network Bert Test transmitting QRSS pattern
dsx1Send511Pattern(6) - the unit is in a Network Bert Test transmitting 511 pattern
dsx1Send3in24Pattern(7) - the unit is in a Network Bert Test transmitting 3:24 pattern
dsx1SendOtherTestPattern(8) - the unit is in a Network Bert Test and is transmitting a pattern other than QRSS, 511, or 3:24.

SET: **dsx1SendNoCode(1)** - stops any Bert Tests on the unit
dsx1SendLineCode(2) - the unit will transmit an inband LLB loopup signal
dsx1SendPayloadCode(3) - the unit will send an out-of-band PLB loopup request to the Far End
dsx1SendResetCode(4) - the unit will send either an inband LLB loopdown signal, or an out-of-band PLB loopdown request, depending on what the Far End has active
dsx1SendQRS(5) - the unit will start a Network Bert Test transmitting QRSS pattern
dsx1Send511Pattern(6) - the unit will start a Network Bert Test transmitting 511 pattern
dsx1Send3in24Pattern(7) - the unit will start a Network Bert Test transmitting 3:24 pattern
dsx1SendOtherTestPattern(8) - the unit will start a Network Bert Test, running a Clear test

dsx1CircuitIdentifier: (read-write)

GET: Returns the value of the Circuit Identifier for the unit, this defaults to 'TxPORT Prism 3100'

SET:Sets the Circuit Identifier of the unit to the specified string

dsx1LoopbackConfig: (read-write)

GET: **dsx1NoLoop(1)** - the unit does not have any loops active
dsx1PayloadLoop(2) - the unit has a PLB active
dsx1LineLoop(3) - the unit has a LLB active
dsx1OtherLoop(4) - the unit has a Port Loop active

SET: **dsx1NoLoop(1)** - deactivates any loops active on the unit
dsx1PayloadLoop(2) - the unit will activate a PLB if no other loops are active
dsx1LineLoop(3) - the unit will activate a LLB if no other loops are active
dsx1OtherLoop(4) - the unit will activate Port Loops an any active ports, if no other loops are active

dsx1LineStatus: (read-only)

GET: 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 (PLB, LLB, Port 1, or Port 2)
dsx1T16AIS(256) - not applicable
dsx1RcvFarEndLOMF(512) - not applicable
dsx1XmtFarEndLOMF(1024) - not applicable
dsx1RcvTestCode(2048) - not applicable
dsx1OtherFailure(4096) - not applicable

dsx1SignalMode: (read-write)

GET: **none(1)** - this signal mode is the only mode supported
robbedBit(2) - not applicable
bitOriented(3) - not applicable
messageOriented(4) - not applicable

SET: **none(1)** - not applicable
robbedBit(2) - not applicable
bitOriented(3) - not applicable
messageOriented(4) - not applicable

dsx1TransmitClockSource: (read-write)

GET: **loopTiming(1)** - 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 Clock or Port 2 Clock

SET: **loopTiming(1)** - sets network timing to the network clock
localTiming(2) - sets the network timing to the internal clock
throughTiming(3) - sets network timing to the Port 1 clock

dsx1Fdl: (read-write)

GET: 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 54016 messaging is active
dsx1Fdl-none(8) - the Network Framing is D4, and there is no active Rem Comm Channel

SET: **other(1)** - not applicable
dsx1Ansi-T1-403(2) - sets PRM Enable to Enabled
dsx1Att-54016(4) - not applicable
dsx1Fdl-none(8) - sets PRM Enable to Disabled

dsx1CurrentTable

dsx1CurrentIndex: (read-only)

GET: **(2)** - if a NIC is not installed
(3) - if a NIC is installed

dsx1CurrentESs: (read-only)

GET: returns the number of Errored Seconds (per 54016) in the current 15 minute interval

dsx1CurrentSESs: (read-only)

GET: returns the number of Severely Errored Seconds (per TR54016) in the current 15 minute interval

dsx1CurrentSEFSs: (read-only)

GET: returns the number of Loss Of Frame Seconds (per 54016) in the current 15 minute interval

dsx1CurrentUASs: (read-only)

GET: returns the number of Unavailable Seconds (per 54016) in the current 15 minute interval

dsx1CurrentCSSs: (read-only)

GET: returns the number of Controlled Slip Seconds (per 54016) in the current 15 minute interval

dsx1CurrentPCVs: (read-only)

GET: returns 0

dsx1CurrentLESs: (read-only)

GET: returns the number of Bipolar Violation Seconds (per 54016) in the current 15 minute interval

dsx1CurrentBESs: (read-only)

GET: returns the number of Bursty Errored Seconds (per 54016) in the current 15 minute interval

dsx1CurrentDMs: (read-only)

GET: returns 0

dsx1CurrentLCVs: (read-only)

GET: returns 0

dsx1IntervalTable

dsx1IntervalIndex: (read-only)

GET: **(2)** - if a NIC is not installed
(3) - if a NIC is installed

dsx1IntervalNumber: (read-only)

GET: returns the interval number for the interval requested, a number from 1 to 96

dsx1IntervalESs: (read-only)

GET: returns the number of Errored Seconds (per 54016) in the specified 15 minute interval

dsx1IntervalSESs: (read-only)

GET: returns the number of Severely Errored Seconds (per 54016) in the specified 15 minute interval

dsx1IntervalSEFSs: (read-only)

GET: returns the number of Loss Of Frame Seconds (per 54016) in the specified 15 minute interval

dsx1IntervalUASs: (read-only)

GET: returns the number of Unavailable Seconds (per 54016) in the specified 15 minute interval

dsx1IntervalCSSs: (read-only)

GET: returns the number of Controlled Slip Seconds (per 54016) in the specified 15 minute interval

dsx1IntervalPCVs: (read-only)

GET: returns 0

dsx1IntervalLESs: (read-only)

GET: returns the number of Bipolar Violation Seconds (per 54016) in the specified 15 minute interval

dsx1IntervalBESs: (read-only)

GET: returns the number of Bursty Errored Seconds (per 54016) in the specified 15 minute interval

dsx1IntervalDMs: (read-only)

GET: returns 0

dsx1IntervalLCVs: (read-only)

GET: returns 0

dsx1TotalTable

dsx1TotalIndex: (read-only)

GET: **(2)** - if a NIC is not installed
(3) - if a NIC is installed

dsx1TotalESs: (read-only)

GET: returns the number of Errored Seconds (per 54016) in the previous 24 hour period

dsx1TotalSESs: (read-only)

GET: returns the number of Severely Errored Seconds (per 54016) in the previous 24 hour period

dsx1TotalSEFSs: (read-only)

GET: returns the number of Loss Of Frame Seconds (per 54016) in the previous 24 hour period

dsx1TotalUASs: (read-only)

GET: returns the number of Unavailable Seconds (per 54016) in the previous 24 hour period

dsx1TotalCSSs: (read-only)

GET: returns the number of Controlled Slip Seconds (per 54016) in the previous 24 hour period

dsx1TotalPCVs: (read-only)

GET: returns 0

dsx1TotalLESs: (read-only)

GET: returns the number of Bipolar Violation Seconds (per 54016) in the previous 24 hour period

dsx1TotalBESs: (read-only)

GET: returns the number of Bursty Errored Seconds (per 54016) in the previous 24 hour period

dsx1TotalDMs: (read-only)

GET: returns 0

dsx1TotalLCVs: (read-only)

GET: returns 0

dsx1FarEndCurrentTable

dsx1FarEndCurrentIndex: (read-only)

GET: **(2)** - always returns a 2 for the Far End DS1 interface

dsx1FarEndTimeElapsed: (read-only)

GET: returns the number of seconds in the current interval for the Far End

dsx1FarEndValidIntervals: (read-only)

GET: returns the number of completed intervals for the Far End

dsx1FarEndCurrentESs: (read-only)

GET: returns the number of Errored Seconds (per 54016) in the current 15 minute interval for the Far End

dsx1FarEndCurrentSESs: (read-only)

GET: returns the number of Severely Errored Seconds (per 54016) in the current 15 minute interval for the Far End

dsx1FarEndCurrentSEFSs: (read-only)

GET: returns the number of Loss Of Frame Seconds (per 54016) in the current 15 minute interval for the Far End

dsx1FarEndCurrentUASs: (read-only)

GET: returns the number of Unavailable Seconds (per 54016) in the current 15 minute interval for the Far End

dsx1FarEndCurrentCSSs: (read-only)

GET: returns the number of Controlled Slip Seconds (per 54016) in the current 15 minute interval for the Far End

dsx1FarEndCurrentLESs: (read-only)

GET: returns the number of Bipolar Violation Seconds (per 54016) in the current 15 minute interval for the Far End

dsx1FarEndCurrentPCVs: (read-only)

GET: returns 0

dsx1FarEndCurrentBESs: (read-only)

GET: returns the number of Bursty Errored Seconds (per 54016) in the current 15 minute interval for the Far End

dsx1CurrentDMs: (read-only)

GET: returns 0

dsx1FarEndIntervalTable

dsx1FarEndIntervalIndex: (read-only)

GET: **(2)** - always returns a 2 for the Far End DS1 interface

dsx1FarEndIntervalNumber: (read-only)

GET: returns the interval number for the interval requested, a number from 1 to 96

dsx1FarEndIntervalESs: (read-only)

GET: returns the number of Errored Seconds (per 54016) in the specified 15 minute interval for the Far End

dsx1FarEndIntervalSESs: (read-only)

GET: returns the number of Severely Errored Seconds (per 54016) in the specified 15 minute interval for the Far End

dsx1FarEndIntervalSEFSs: (read-only)

GET: returns the number of Loss Of Frame Seconds (per 54016) in the specified 15 minute interval for the Far End

dsx1FarEndIntervalUASs: (read-only)

GET: returns the number of Unavailable Seconds (per 54016) in the specified 15 minute interval for the Far End

dsx1FarEndIntervalCSSs: (read-only)

GET: returns the number of Controlled Slip Seconds (per 54016) in the specified 15 minute interval for the Far End

dsx1FarEndIntervalLESs: (read-only)

GET: returns the number of Bipolar Violation Seconds (per 54016) in the specified 15 minute interval for the Far End

dsx1FarEndIntervalPCVs: (read-only)

GET:returns 0

dsx1FarEndIntervalBESs: (read-only)

GET: returns the number of Bursty Errored Seconds (per 54016) in the specified 15 minute interval for the Far End

dsx1FarEndIntervalDMs: (read-only)

GET: returns 0

dsx1FarEndTotalTable

dsx1FarEndTotalIndex: (read-only)

GET: **(2)** - always returns a 2 for the Far End DS1 interface

dsx1FarEndTotalESs: (read-only)

GET: returns the number of Errored Seconds (per 54016) in the previous 24 hour period for the Far End

dsx1FarEndTotalSESs: (read-only)

GET: returns the number of Severely Errored Seconds (per 54016) in the previous 24 hour period for the Far End

dsx1FarEndTotalSEFSs: (read-only)

GET: returns the number of Loss Of Frame Seconds (per 54016) in the previous 24 hour period for the Far End

dsx1FarEndTotalUASs: (read-only)

GET: returns the number of Unavailable Seconds (per 54016) in the previous 24 hour period for the Far End

dsx1FarEndTotalCSSs: (read-only)

GET: returns the number of Controlled Slip Seconds (per 54016) in the previous 24 hour period for the Far End

dsx1FarEndTotalLESs: (read-only)

GET: returns the number of Bipolar Violation Seconds (per 54016) in the previous 24 hour period for the Far End

dsx1FarEndTotalPCVs: (read-only)

GET: returns 0

dsx1FarEndTotalBESs: (read-only)

GET: returns the number of Bursty Errored Seconds (per 54016) in the previous 24 hour period for the Far End

dsx1FarEndTotalDMs: (read-only)

GET: returns 0

dsx1FracTable

dsx1FracIndex: (read-only)

GET: **(2) -** if a NIC is not installed
(3) - if a NIC is installed

dsx1FracNumber: (read-only)

GET: returns the channel number (1-24)

dsx1FracIfIndex: (read-write)

GET: returns the number of the interface to which the specified channel is assigned

SET: This can either allocate a channel to a port, or de-allocate a channel from a port. In order to be allocated to a port, the port must either have no channels and the desired channel to be allocated is idle, or if the port has channels, then the desired channel must be on the boundary of the current allocation, and be idle. In order to de-allocate from a port, the desired channel must be on the boundary of the current allocation, and the set value is 0.

Addendum

Document: PRISM 3101/3102 Reference Manual & Configuration Guide
Date: June 12, 1998

The power ratings, as listed on page 1-2 of the manual and in the Specifications section of the configuration guide, have been revised as follows.

Power AC: 115 VAC, 160 mA, 15 W maximum, 51 BTU maximum