ADTRAN®

Total Access 1240

Installation and Maintenance Practice

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Revision History

Revision	Date	Description
A	December 2004	Initial release
B	September 2005	This revision includes updates to the User Interface and Application Guidelines sections, general updates to the power and ground connection information, and updates to the Ethernet and VLAN interface information.

Conventions

The following typographical conventions are used in this document:

This font indicates a cross-reference link. First-time references to tables and figures are shown in **this font**.

This font indicates screen menus, fields, and parameters.

THIS FONT indicates keyboard keys (ENTER, ESC, ALT). Keys that are to be pressed simultaneously are shown with a plus sign (ALT+X indicates that the ALT key and X key should be pressed at the same time).

This font indicates references to other documentation and is also used for emphasis.

This font indicates on-screen messages and prompts.

This font indicates text to be typed exactly as shown.

This font indicates silk-screen labels or other system label items.

This font is used for strong emphasis.

NOTE

Notes inform the user of additional, but essential, information or features.

CAUTION

Cautions inform the user of potential damage, malfunction, or disruption to equipment, software, or environment.

WARNING

Warnings inform the user of potential bodily pain, injury, or death.

Training

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Section 1
Introduction

GENERAL

This practice is an installation and maintenance guide for the ADTRAN Total Access® 1240 2-wire/4-wire Single-pair High-speed Digital Subscriber Line (SHDSL) Digital Subscriber Line Access Multiplexer (DSLAM). **Figure 1-1** illustrates the Total Access 1240 (P/N 1179605L5) front panel.
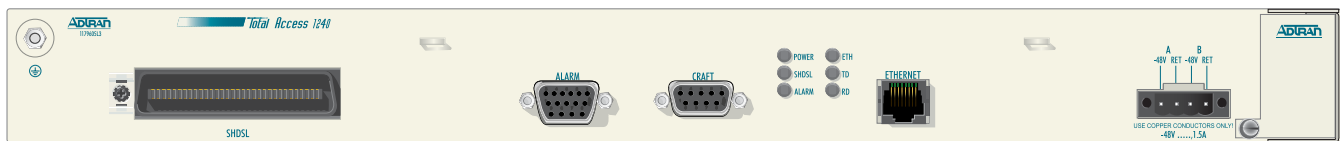
Figure 1-1. Total Access 1240 Front Panel

Description

The Total Access 1240 is a 2-wire/4-wire SHDSL mini-DSLAM, consisting of 24 ports fed by a single 10/100Base-T Ethernet port.

The Total Access 1240 integrates both the SHDSL ports and the Ethernet port onto a single Printed Circuit Board (PCB) assembly and is powered by –48 VDC. SHDSL port connections are made through a 50-pin amphenol connector. Ethernet connections are made through an RJ-45 jack. An alarm port and six LEDs are supported. The unit is fully manageable through the craft port and an SNMP network management workstation.

The Total Access 1240 is rack-mountable and measures 44.45 millimeters (1.75 inches) high by 438.15 millimeters (17.25 inches) wide by 282.575 millimeters deep (11.125 inches). Measurements do not include the mounting brackets. The device can be powered using one or two –48 VDC sources, one for a non-redundant power configuration, two for a redundant power configuration.

Features

The basic and security specific features of the Total Access 1240 are listed below.

Basic Features

The basic features of the Total Access 1240, include the following:

- Front access to all connections
- –48 VDC redundant power inputs
- Removable front access fan module
- Provisioning and alarm monitoring through SNMP (SNMPv2c) and local craft interface (VT-100 Menu System)
- Dedicated Virtual Local Area Network (VLAN) for Inband Management Channel
- 24 subscriber ports (SHDSL)
- Single Ethernet 10/100Base-T uplink
- Four Virtual Circuits (VC) per port
- Strict prioritization ATM Class of Service (COS) is supported on the VCs that are configured on each SHDSL Port.
- Learning bridge configuration
- Supports 2-wire operation supporting payload data rates of 192 kbps to 2,304 kbps in increments of 64 kbps
- Supports 4-wire operation supporting payload data rates of 384 (2×192) kbps to 4,608 ($2 \times 2,304$) kbps in increments of 128 (2×64) kbps
- System Configuration Archive (SCA)
- Supports the following operational environment
  - NEBS GR-63-CORE
  - ETSI EN 300 019-1-3 Class 3.1E
  - ETSI EN 300 386 V1.3.2 (2003-5) for other than telecommunications centres (Class B)
  - Temperature Hardened (–40°C to +70°C)

Security Features

The Total Access 1240 offers a number of filters that affect packets at the subscriber ingress point. The security features are as follows:

- Local Switching: all ingress subscriber packets are forwarded to the network unless local switching is enabled. This is a per port option.
- Ether-type Filtering: allows the ingress/egress filtering of traffic based on an Ether-type of IP, PPPoE, or All. Packets that do not meet the provisioned Ether-type are discarded. This option is on a per VC basis
- Destination MAC Filtering: when enabled, broadcast packets and packets destined to the Broadband Remote Access Aggregation Server (BRAS) are forwarded. All others are discarded.

Front Panel LEDs

There are six LEDs on the front panel of the Total Access 1240 (see **Figure 1-2**).
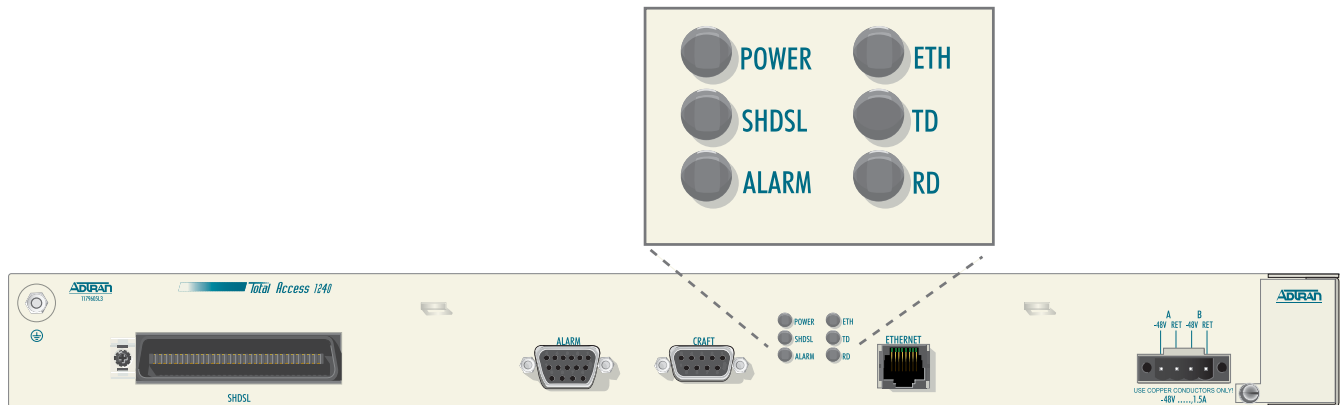
Figure 1-2. Front Panel LEDs

When power is applied the Total Access system performs the power up self-tests. Once the power up self-test is complete, the LEDs reflect the current condition of the hardware. The Total Access 1240 LEDs, status, and descriptions are provided in **Table 1-1**.

Table 1-1. Front Panel LEDs

LEDs	Status	Description
POWER	Green	Unit is In Service
	Yellow	Unit is Out of Service-Maintenance
	Red	Failed self test
	Off	No power present on unit
ALARM	Yellow	Minor alarm is being reported from the unit
	Red	Major alarm is being reported from the unit
	Off	No alarms reported on unit
SHDSL	Green	All SHDSL ports that are provisioned as In Service have completed the training sequence
	Red	At least one SHDSL port that is provisioned as In Service has not completed the training sequence
	Off	No SHDSL ports are provisioned as In Service
ETH	Green	Ethernet connected, 100Base-T
	Yellow	Ethernet connected, 10Base-T
	Red	Ethernet not connected
TD	Green Flashing	Ethernet transmit traffic
	Off	No ethernet transmit traffic
RD	Green Flashing	Ethernet receive traffic
	Off	No ethernet receive traffic

Compliance

The Total Access 1240 complies with the following international standards:

- Safety – UL 60950 Third Edition; EN 60950 with IEC 950 CB Scheme
- ETSI EN 300 386 V1.3.2 (2003-5) for other than telecommunications centres (Class B)
- Environmental
  - Operational environment – NEBS GR-63-CORE; ETSI EN 300 019-1-3 Class 3.1E
  - Storage – NEBS GR-63-CORE; ETSI EN 300 019-1-1 class 1.1
  - Earthquake – NEBS GR-63-CORE, zone 4
  - Transportation – NEBS GR-63-CORE; ETSI EN 300 019-1-2 class 2.3
  - Acoustic Noise – ETS 300 753 and 2/1056-FAU 104 06

Figure 1-3 displays the compliance labels for the Total Access 1240.
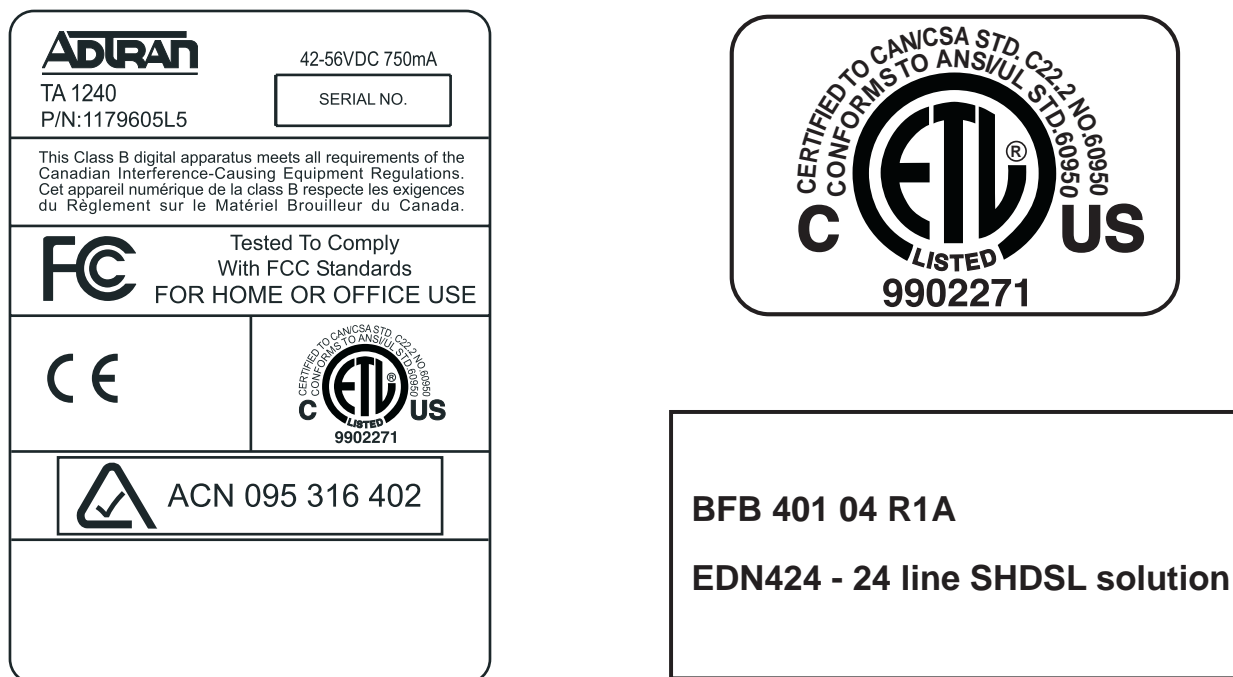
Figure 1-3. Total Access 1240 Compliance Labels

Section 2
Application Guidelines

INTRODUCTION

The Total Access 1240 operates as a transparent bridge to provide Medium Access Control (MAC) level bridging for Ethernet-like networks. The number of attached devices can be up to twenty-four 2-wire SHDSL modems or twelve 4-wire SHDSL modems or some combination thereof. When operating in the 4-wire SHDSL mode, if 2 wires are unavailable then the entire 4-wire circuit becomes Out of Service.

As shown in **Figure 2-1**, service providers are positioned to deploy voice, data, and video over the same connection (triple play type services) using devices such as the Total Access 1240 SHDSL DSLAM.
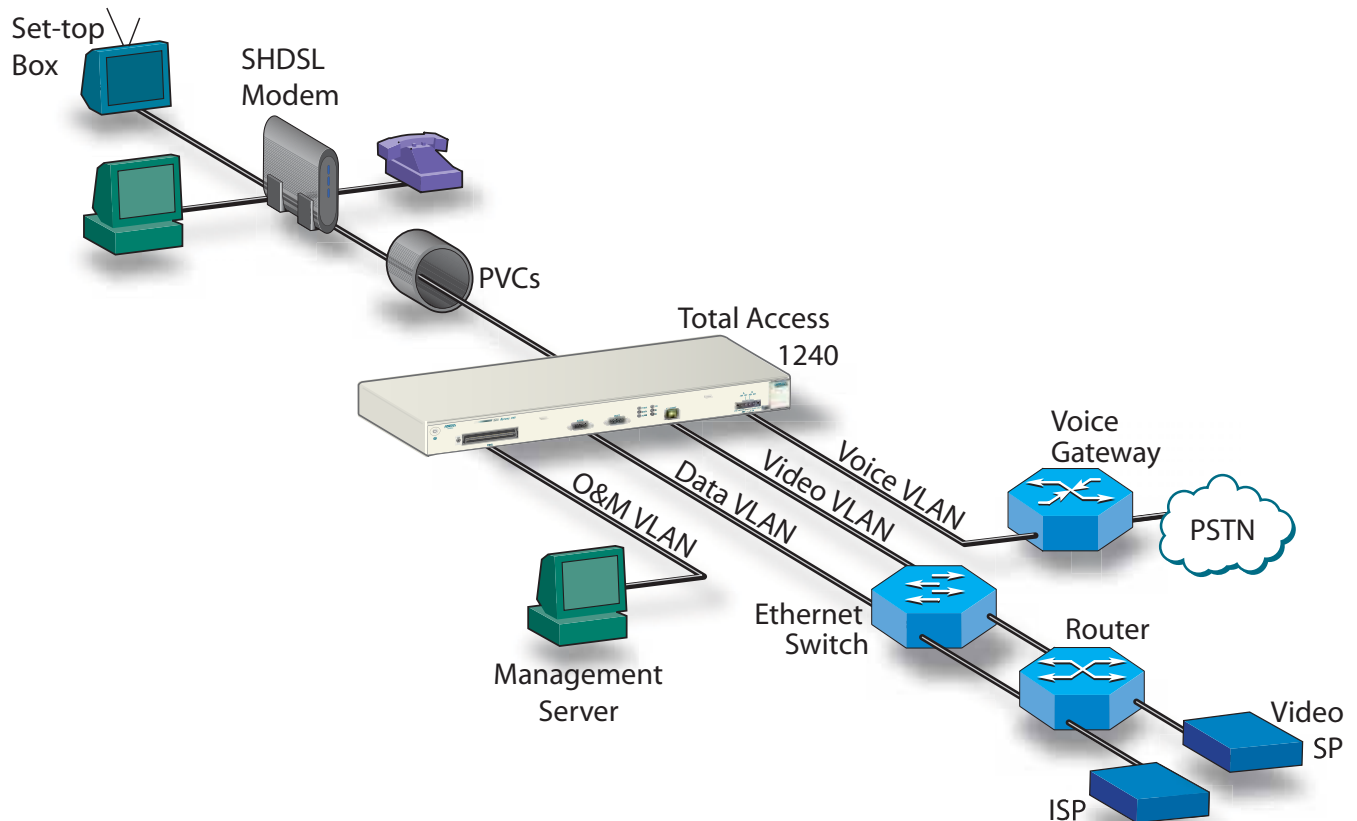
Figure 2-1. Total Access 1240 Application

For security purposes, the unit operates such that Local Switching (Subscriber Port-to-Port Switching) can be disabled/enabled within the unit. Port-to-Port switching can also be accomplished using an external device such as an Ethernet Aggregation Switch. Destination MAC address filtering and Ether-type filtering are also implemented.

The Total Access 1240 supports RFC 2684 (RFC 1483) Bridged Protocol Data Unit (PDU) only. All traffic priorities and queuing are accomplished in the ATM domain (subscriber side) and later mapped into the Ethernet domain (network side).

The Total Access 1240 takes Ethernet packets and performs a Segmentation And Reassembly (SAR) function into an RFC 1483 compliant scheme for transmission over the SHDSL loops to permit broad compatibility with a wide variety of RFC1483 compliant SHDSL modems. The unit uses four simplified Class of Service (COS) queues. Prioritization for the transmission of packets is performed by assigning preference to highest priority packets first and moving to lower priority packets until there is full bandwidth utilization on the subscriber ports.

The unit supports one to four VCs per port (per RFC1483) with one VLAN per VC. To utilize four VLANs, the subscriber must have an RFC1483 capable modem that supports four VCs.

The Total Access 1240 supports the ITU G.991.2 SHDSL standard as well as the ETSI TS 101 542 (2001-08) standard. Data rates supported on the subscriber side are 192 kbps to 2.312 Mbps (1-pair) and 384 kbps to 4.624 Mbps (2-pair). Rate adaptive SHDSL Mode is planned for a future software release.

Lineprobing (also known as rate adaption) is supported on a per port basis. This allows automatic selection of the SHDSL loop rate based on line conditions at the time of the unit training.

The maximum number of filtering entries that can be created in the system is 1,024. Consequently, the capacity of the MAC table is 1,024 MAC addresses. The MAC Address table is global per unit. The MAC addresses are learned on the uplink Ethernet port and the subscriber loops.

VLAN OPERATION

A VLAN is a switched network that is logically segmented by function, project team, or application, without regard to the physical locations of the customers. Providers that offer multiple services can utilize several unique VLANs with different services such as one VLAN to provide Internet access, one VLAN to provide a Public Switched Telephone Network (PSTN), and several other VLANs to provide data and voice services such as Voice over IP, online games, TV broadcasting, etc.

The bridge function of the Total Access 1240 provides support for Virtual LANs in order to create multiple domains in which packets are forwarded. This restricts traffic so that it remains within the VLAN in which it belongs. All the learning and forwarding in the bridge is carried out in the context of a VLAN.

The packets within the VLAN are forwarded pursuant to the following:

- Subscriber Side – Ingress
  - Condition: The packet has a VLAN tag that is associated with the VC from which the packet was received.
    - The packet is forwarded to the Network Egress point.
  - Condition: The packet has a VLAN tag that is inconsistent with the VC from which the packet was received.
    - The packet is discarded.
  - Condition: The packet has no VLAN tag.
    - The DSLAM tags the packet with the configured VLAN ID and VLAN priority for that VC.
    - The packet is forwarded to the Network Egress point.
- Network Side – Ingress
  - Condition: The packet has a VLAN tag that matches one of the VLANs provisioned within the DSLAM. The DSLAM supports up to 96 individual VLANs.
    - The packet is forwarded to the corresponding customer VC egress point.
    - When multiple VCs are on the same VLAN, the Total Access 1240 system matches the packet's MAC address to those in the MAC Learning Table and forward the packet to the VC associated with a matching MAC address.
    - If there is no corresponding MAC address in the MAC Learning Table, the packet is forwarded to all VCs on the same VLAN in an attempt to learn the appropriate VC to which the MAC belongs.
  - Condition: The packet has a VLAN tag that does not match one of the VLANs provisioned within the DSLAM. The DSLAM supports up to 96 individual VLANs.
    - The packet is discarded.
  - Condition: The packet is untagged.
    - If one or more VCs are set to a VLAN of 1 (Native Operation) the Total Access 1240 system matches the packet's MAC address to those in the MAC Learning Table and forward the packet to the VC associated with a matching MAC address.
    - If no VCs are set to Native Operation, the packet is discarded.

- Network – Egress
    - Every packet is forwarded.
- Subscriber - Egress
    - The VLAN tag is removed.
    - The packet is forwarded to the VC corresponding to the original VLAN Tag.

A diagram depicting the Total Access 1240 Ingress/Egress points is provided in **Figure 2-2**.
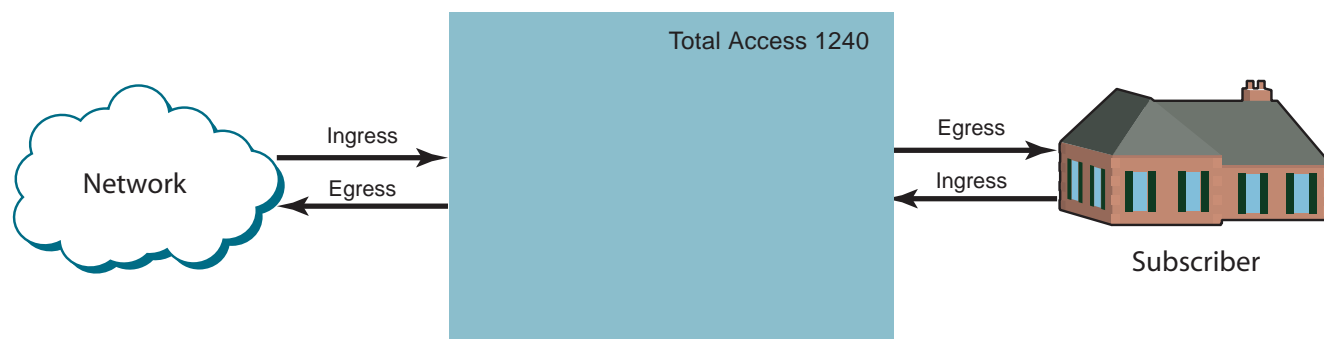
Figure 2-2. Total Access 1240 Ingress and Egress Points

TRAFFIC PRIORITIZATION

The Total Access 1240 supports four traffic priority classifications per VLAN:

- High = CBR
- MidH = VBRrt
- MidL = VBR
- Low = UBR

There are no rate settings for the CBR, VBRrt, and VBR configurations, therefore, these ATM COS priorities have been redefined, in descending order of priority, as follows:

1. High
2. MidH
3. MidL
4. Low

Traffic prioritization applies to the data that is forwarded to the egress of the subscriber ports. Any packets that cannot be serviced due to bandwidth limitations are discarded.

In the upstream path (subscriber to network), the Total Access 1240 can optionally set the VLAN User Priority Bits from 0-7 for untagged traffic causing the data to be tagged with a VLAN ID and Priority Bits.

SYSTEM CONFIGURATION ARCHIVE

The System Configuration Archive (SCA) (see **Figure 2-3**) is controlled by SNMP or screen selections to save provisioning information for the Total Access 1240 to a remote TFTP server for possible system restoration at a later time. In addition to its use for fast recovery of provisioning information, the SCA system can be used to "clone" baseline configurations to new installations so that only a few specific provisions need to be altered, significantly reducing initial setup time.

For further information regarding SCA file format and editing the SCA file, reference "Appendix B, SCA File Format".
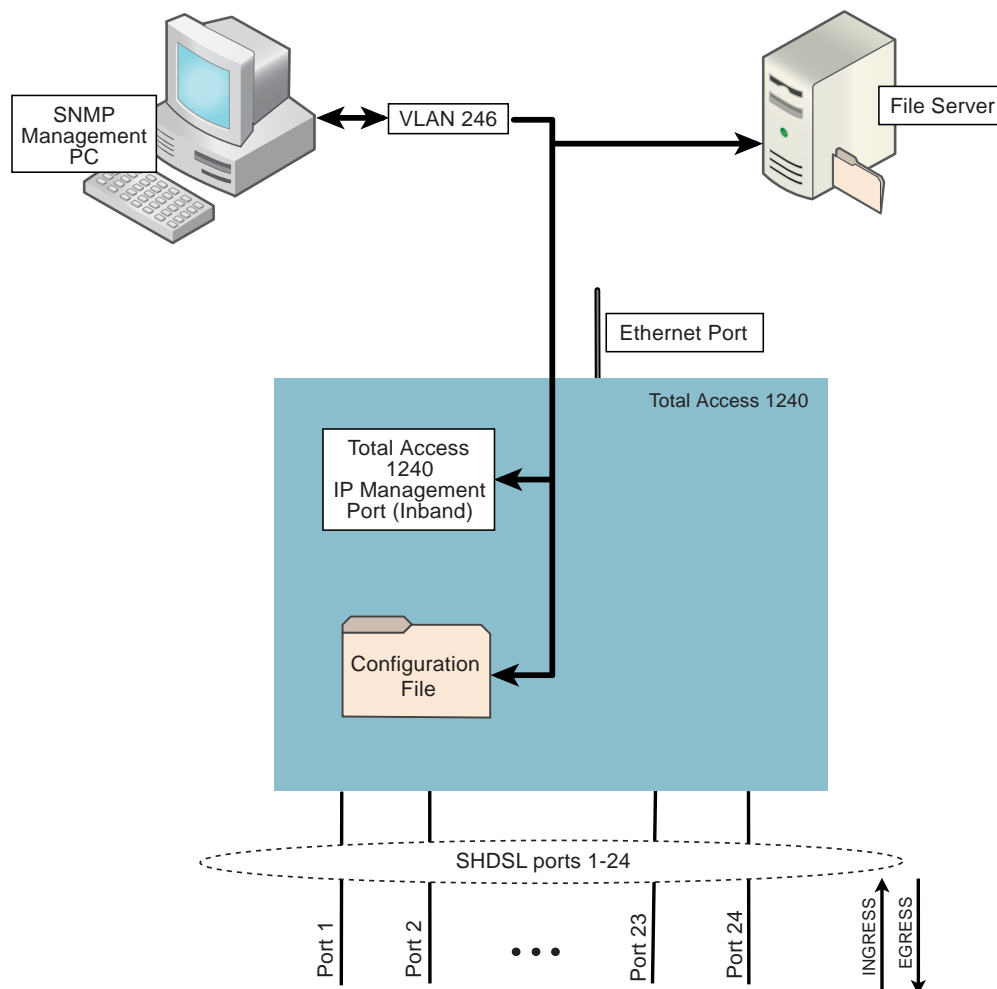
Figure 2-3. System Configuration Archive Concept Diagram

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Section 3
Installation

INTRODUCTION

C A U T I O N !

**SUBJECT TO ELECTROSTATIC DAMAGE
OR DECREASE IN RELIABILITY.**

HANDLING PRECAUTIONS REQUIRED.

CAUTION

Electronic units can be damaged by ESD. When handling a unit, wear an antistatic discharge wrist strap to prevent damage to electronic components. Place units in antistatic packing material when transporting or storing. When working on units, always place them on an approved antistatic mat that is electrically grounded.

After unpacking the Total Access 1240, inspect it for damage. If damage has occurred, file a claim with the carrier then contact ADTRAN Customer Service. Refer to "Appendix C, Warranty" for further information. If possible, keep the original shipping container for returning the Total Access 1240 for repair or for verification of shipping damage.

Shipping Contents

The shipping container for the Total Access 1240 includes the contents as shown in **Table 3-1**

Table 3-1. Total Access 1240 Shipping Contents

Description	Part Number	Quantity
Total Access 1240	1179605L5	1
Total Access 1240 Installation and Maintenance Practice	61179605L5-5	1
Cable Assembly, Ground Wire	3125P037@	1
Terminal Block	32024CON10	1
Mounting Bracket, 19-inch	3265540-1@	2
Mounting Bracket, 23-inch	3265540-2@	2
Screw, 8-32 × 1/4	3276003007	4
Screw, 8-32 × 3/16	327611034	4
Cable Tie	3292032	1

Required Tools

- Wire-wrap tool
- #2 phillips-head screwdriver
- Flat-head screwdriver
- Multimeter (ohmmeter and voltmeter)
- Wire strippers
- Side cutters

MOUNTING THE TOTAL ACCESS 1240

The Total Access 1240 is shipped with two sets of mounting brackets that accommodate either a 19-inch or 21-inch rack.

- The mounting brackets used for a 19-inch rack are part number 3265540-1.

- The mounting brackets used for a 23-inch rack are part number 3265540-2.

The mounting brackets provide for flush or mid-mounting configurations. **Figure 3-1** shows the Total Access 1240 mounting bracket installation options. Four screws (supplied with the unit) are required for mounting the brackets to the system.

Mounting brackets - 19-inch rack

P/N 3265540-1

Mounting brackets - 23-inch rack

P/N 3265540-2
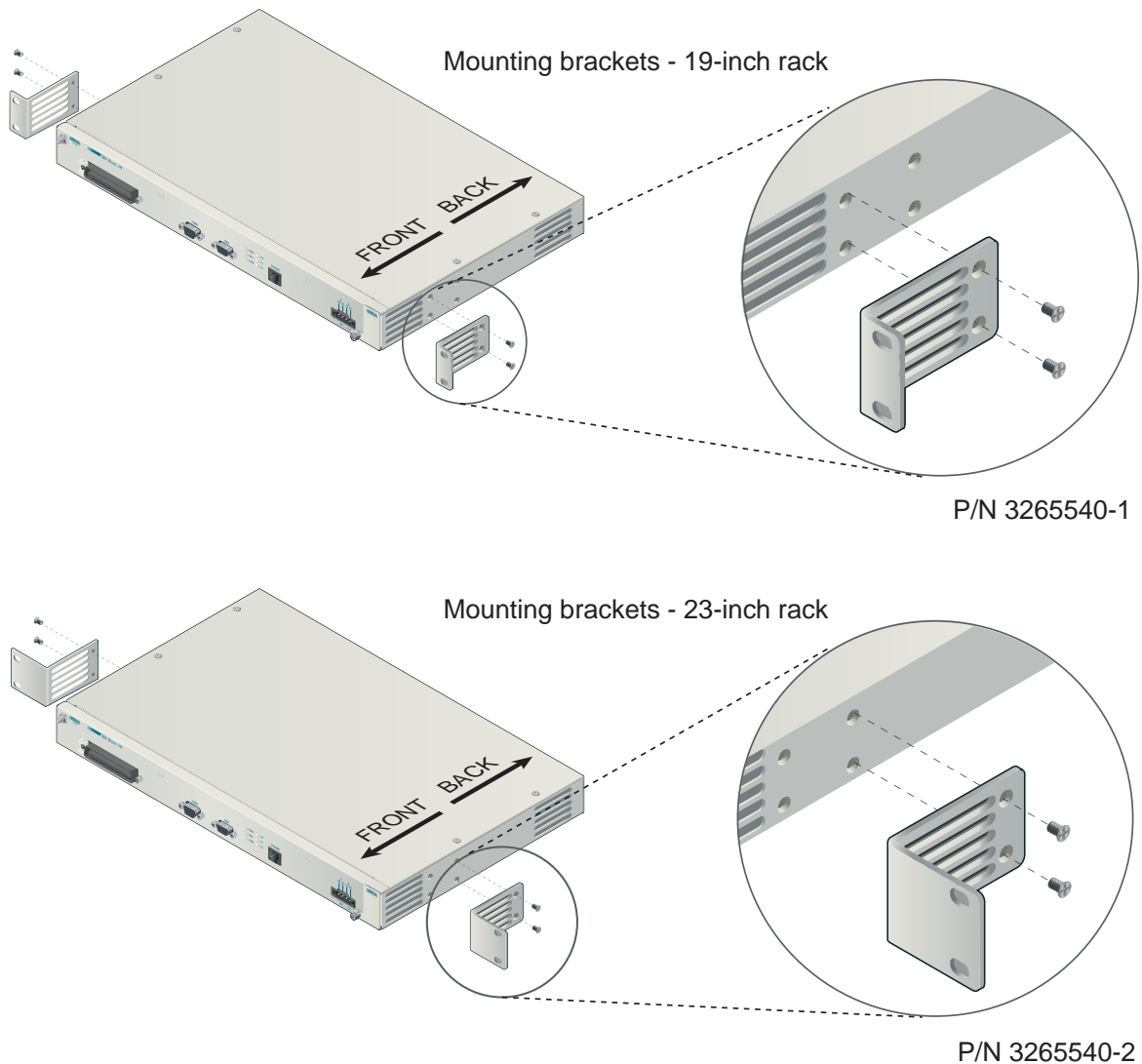
Figure 3-1. Mounting Brackets

Flush-mount

For flush-mount systems, the Total Access 1240 must be mounted from the front of the rack, with mounting brackets in the flush-mounting orientation (see **Figure 3-2**). When flush-mounting a Total Access 1240 in the rack, use a #2 phillips-head screwdriver and attach the mounting brackets to the front set of threaded screw holes with the flanges containing the slotted rack-mounting holes facing the front of the Total Access 1240.

Using four screws appropriate for the mounting rack and the appropriate screwdriver, secure the Total Access 1240 in place on the rack.

Flush-mount Orientation

P/N 3265540-1
19-inch Mounting Brackets

P/N 3265540-2
23-inch Mounting Brackets
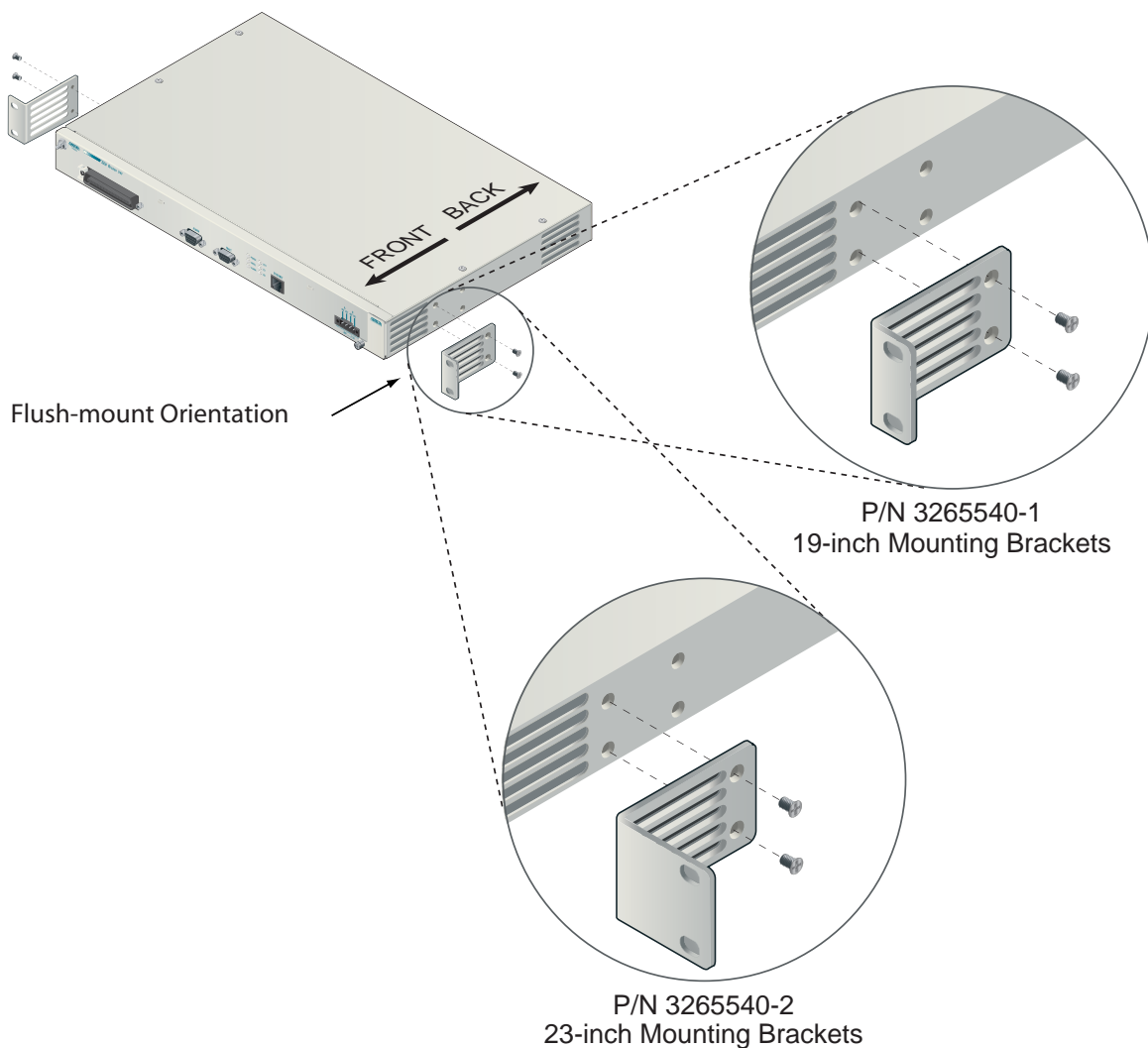
Figure 3-2. Flush-mount Orientation

Mid-mount

For mid-mount systems, the Total Access 1240 must be mounted from the front of the rack, with mounting brackets in the mid-mounting orientation (see **Figure 3-3**). For mid-mounting a Total Access 1240 in the rack, use a #2 phillips-head screwdriver and attach the mounting brackets to the rear set of threaded screw holes with the flanges containing the slotted rack-mounting holes facing the front of the Total Access 1240.

Using four screws appropriate for the mounting rack and the appropriate screwdriver, secure the Total Access 1240 in place on the rack.
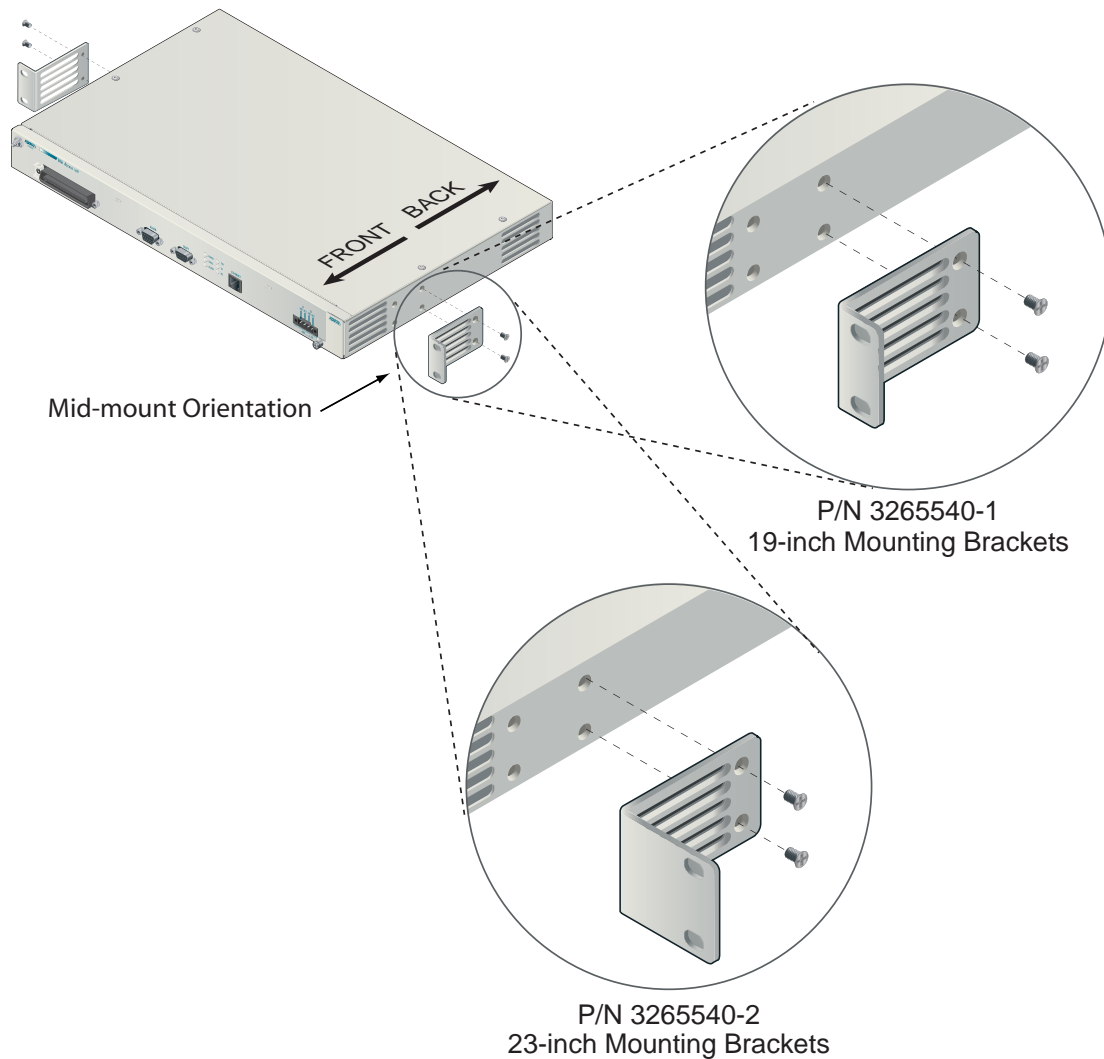
Figure 3-3. Mid-mount Orientation

GROUND AND POWER CONNECTIONS

The Total Access 1240 provides redundant power inputs. Two sources of –48 VDC must be provided to use the redundant power feature. The power wire must be 12 to 18 AWG stranded copper. The ground wire must be 12 to 18 AWG, however, it must be as large or larger than the wire used for power.

Ground Connection

The Total Access 1240 must be grounded to a reliable grounding source. To connect the ground wire, perform the following steps:

1. Connect the ground wire (fitted with a loop terminal end) to the ground lug on the front of the Total Access 1240, as shown in **Figure 3-4**.

2. Clean the surface of the frame ground source and apply an appropriate antioxidant.

3. Connect the other end of the ground wire to the grounded frame.

4. Using an ohmmeter, verify continuity between the ground lug and a known good frame ground. The reading should be less than 1 ohm.
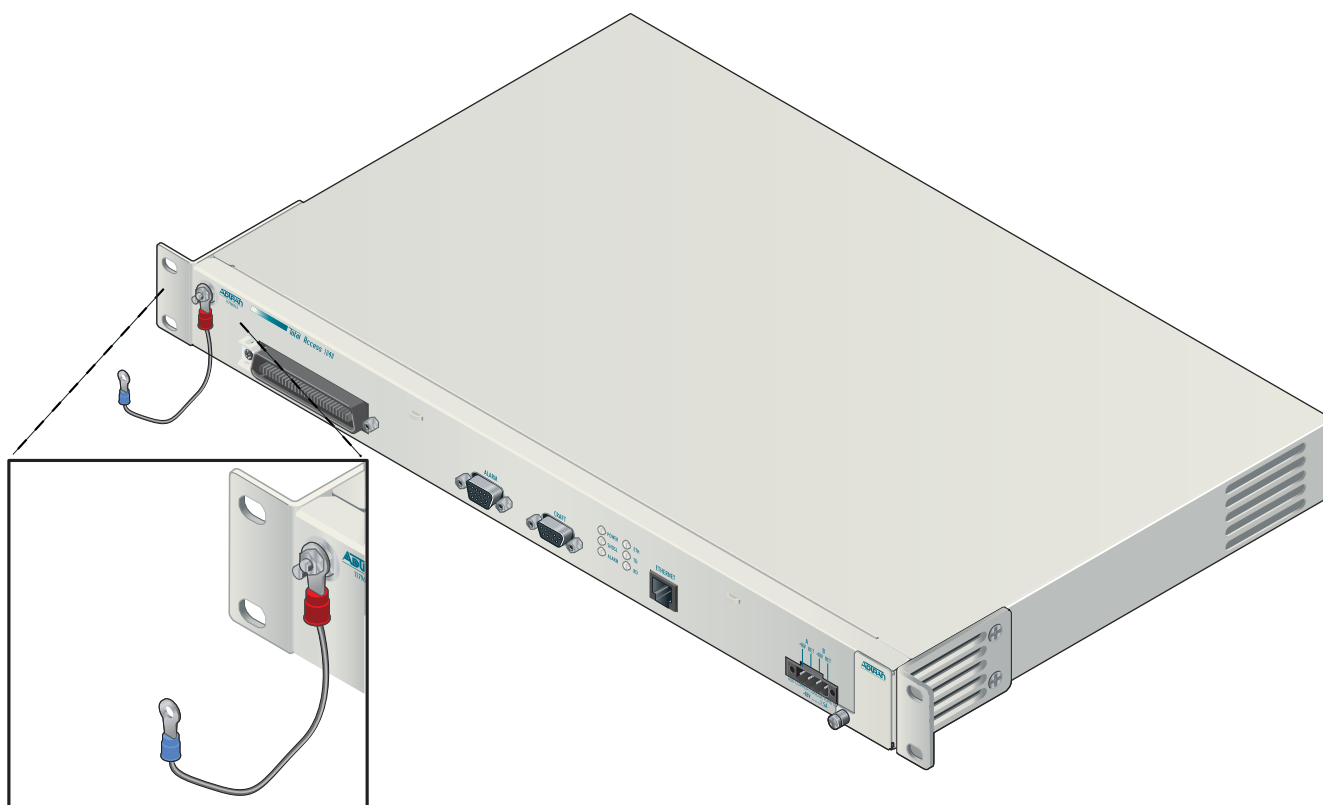
Figure 3-4. Ground Connection

Power Connection

The Total Access 1240 uses a four-point terminal block (see **Figure 3-5**) to accept the
–48 VDC and –48 VDC RET leads.
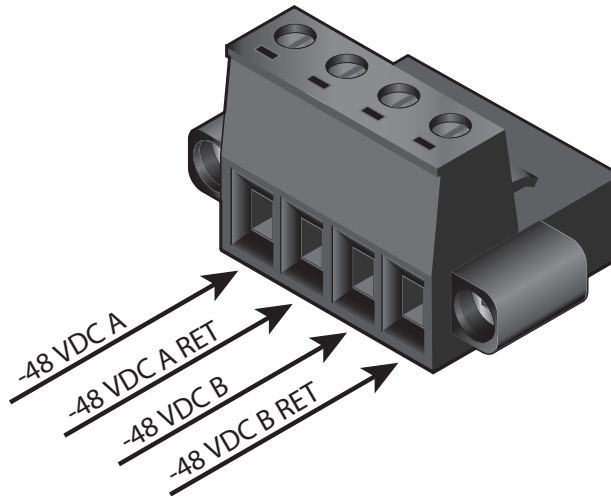
Figure 3-5. Four-point Terminal Block

NOTE

If a non-redundant power configuration is to be implemented, use
the connections marked **–48 VDC A** and **–48 VDC A RET**.

To connect the power source, perform the following steps:

1. With the power disconnected at the source, remove approximately 1/4-inch of insulation
   from the ends of both power wires.

NOTE

ADTRAN recommends an external fuse rated between 1.5 to 2.0
amps.

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2. Using a small flat-head screwdriver, loosen the setscrews on the top of the terminal block.

3. Insert the bare wire into the opening on the front of the terminal block.

4. While holding the wire in place, tighten the setscrew until the wire is secure.

5. Repeat this procedure until all power leads are connected, making sure that the wires are
   connected using correct polarity according to the labeling on the unit above the terminal
   block.

6. Apply power to the Total Access 1240 and test the voltage and polarity on the terminal
   block using the tops of the setscrews as test points.

Fans/Fan Filter

The Total Access 1240 is shipped with a pre-installed fan module (P/N 1179672L1). The fan module is located on the right side of the unit and contains two fans (**Figure 3-6**). The fans move filtered air (if the filter is installed) into the Total Access 1240 chassis and out through the exhaust slots on the left side of the chassis.

The fans are monitored by the Total Access 1240 system and are tested during power-up or when a fan module is installed. If any fan fails, the **POWER** LED turns red, indicating a self-test failure, and a minor alarm is generates indicating the problem. The fan alarm can be suppressed using the fan alarm delay for replacement or maintenance of the fan module.

The fans are thermostatically controlled and operate only when necessary. One fan is activated first and alternates with the other fan to maintain a specified temperature level. If the temperature continues to rise, both fans operate at the same time. In the event the temperature remains high, the SHDSL circuits shut down until a safe operating temperature is reached.

The fan module and fan filter can be replaced in the field.
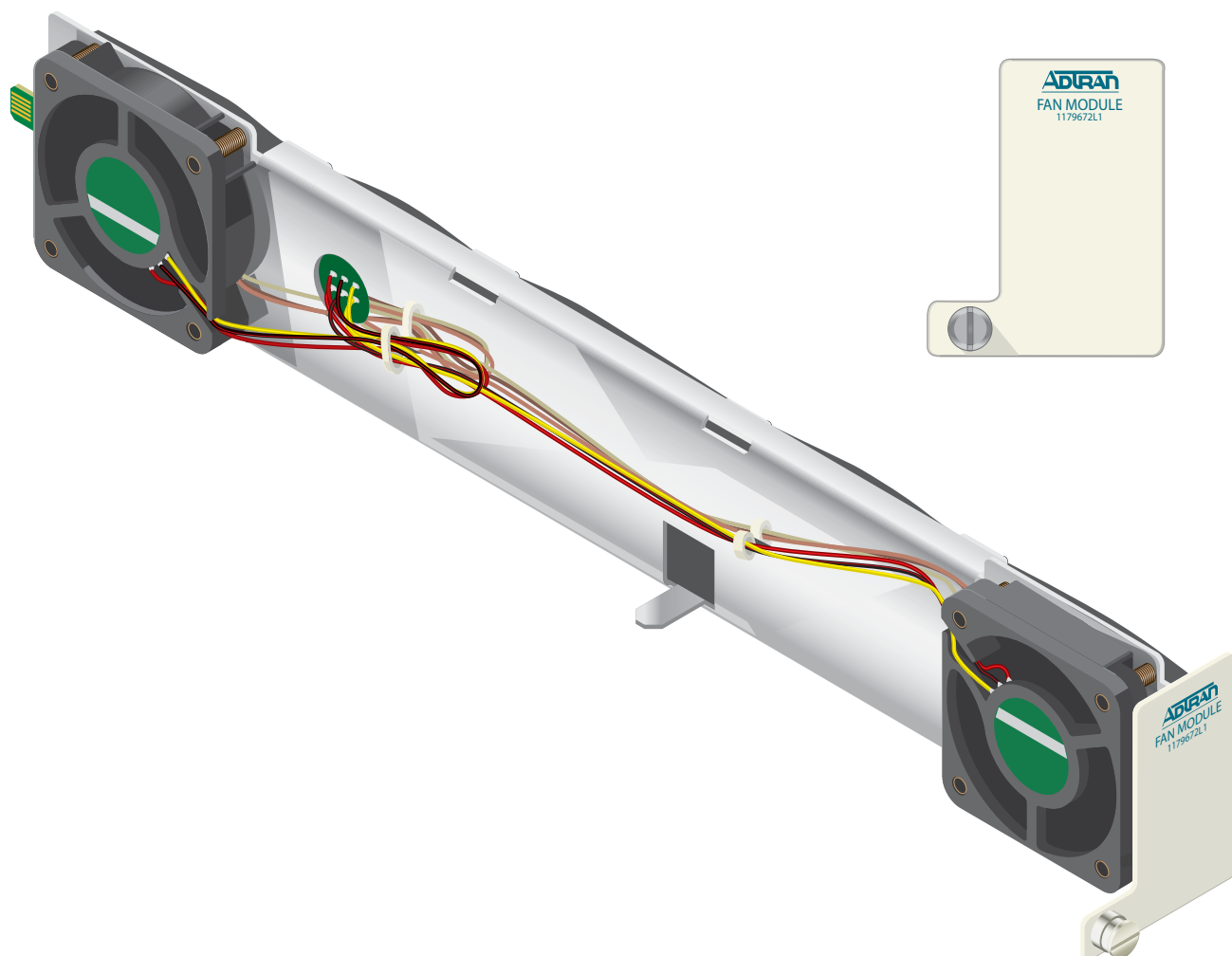
Figure 3-6. Fan Module

Ethernet Connection

The Total Access 1240 interfaces with networks through an Ethernet port. **Figure 3-7** shows the location of the Ethernet port.

Ethernet Connection
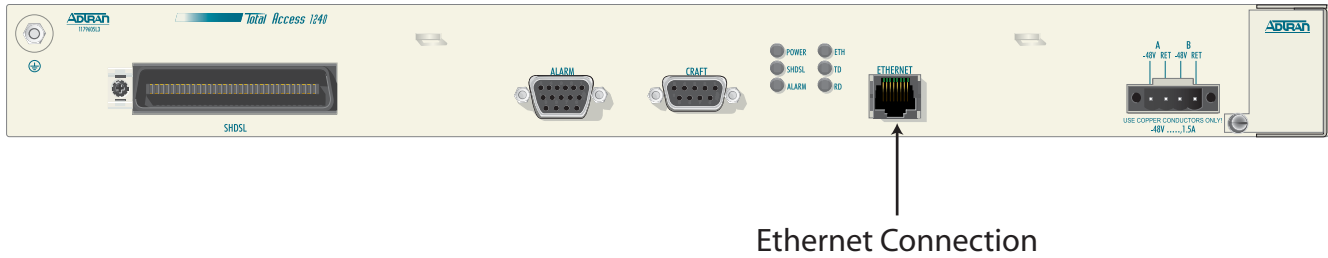
Figure 3-7. Ethernet Port

The following Ethernet protocols are supported:

- IEEE 802.3, 10/100Base-T
- IEEE 802.1Q
- IEEE 802.1P User Defined VLAN Priority (upstream)
- DHCP Client Mode for Management
- SNMP
- Ethernet frame sizes up to 1,522 bytes

Alarm Connections

The Total Access 1240 provides an alarm port (see **Figure 3-8**) with three auxiliary alarm inputs and three alarm outputs. Alarm inputs are activated by shorting A and B contacts which causes an alarm event. Alarm input events can be configured to one of four modes: Load Shedding, Major, Minor, or Critical and can be designated by the user.

Load shedding can be used to reduce loading in the CO if needed. When invoked, load shedding causes the unit to switch off sealing current and drops the SHDSL loops to eliminate power consumption in the product. This can be controlled by one of the external alarm inputs and is automatically activated by the unit if the internal temperature of the unit reaches 115°C. When the units internal temperature decreases to 110°C it returns to normal operation.

The alarm outputs provide both normally open and normally closed pins (through internal relay contacts) for proper operation with a variety of alarm panels. Each alarm event generates an autonomous message that is transmitted through the management VLAN channel to a monitoring device.

A cable with a high density DB-15 female connector on one end and a stub at the other end is available (P/N 1196DB901L1) for wire-wrap connections to an alarm panel.
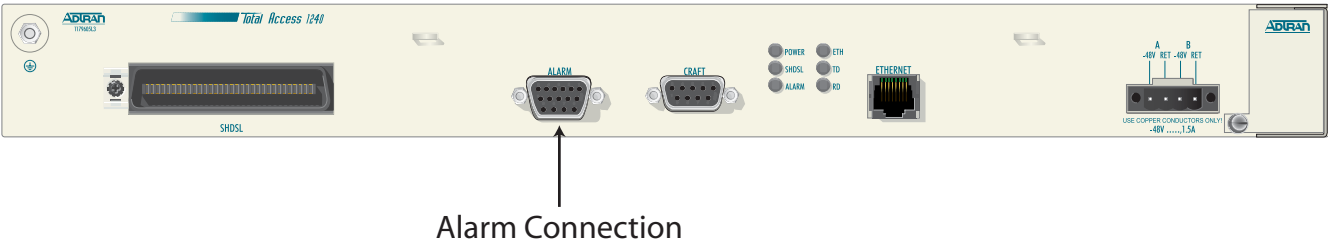
Alarm Connection

Figure 3-8. Alarm Connection

The alarm pinouts are shown in **Table 3-2**.

Table 3-2. Alarm Pinouts

Pin	Contact Description	Pin	Contact Description
1	Alarm 3 Input - A	9	Minor Alarm NC
2	Alarm 1 Input - B	10	Major Alarm NC
3	Critical Alarm COM	11	Alarm 2 Input - B
4	Minor Alarm COM	12	Alarm 1 Input - A
5	Major Alarm COM	13	Critical Alarm NO
6	Alarm 3 Input - B	14	Minor Alarm NO
7	Alarm 2 Input - A	15	Major Alarm NO
8	Critical Alarm NC		

SHDSL Connection

The Total Access 1240 provides 24 SHDSL ports on one 50-pin male amphenol connector (see **Figure 3-9**). The 24 SHDSL links can be physically bonded in pairs. A maximum of twelve 4-wire SHDSL links are supported per module. SHDSL links are bonded in odd and even sequential pairs. For example, SHDSL links 1 and 2, 3 and 4, or 9 and 10 can be linked to form 4-wire SHDSL links.

SHDSL Connection
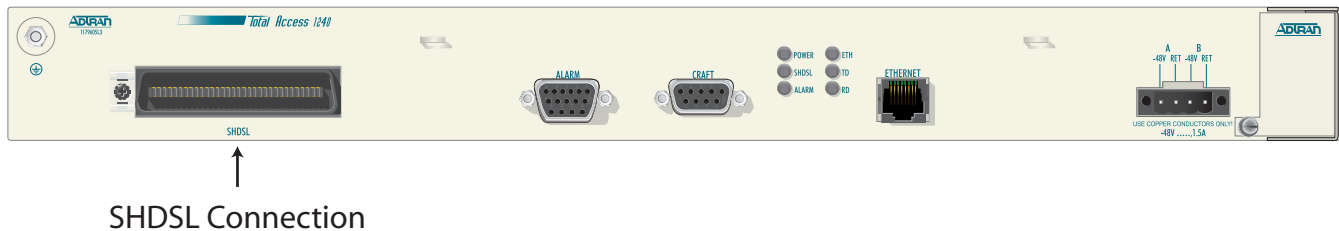
Figure 3-9. SHDSL 50-pin Male Amphenol Connector

To connect the SHDLS ports, perform the following steps:

1. Connect a 25-pair female-ended amphenol connector to the male-ended amphenol connector, labeled **SHDSL**.
2. Tighten the screw (normally provided with the amphenol connector attached to the cable) on the right side of the amphenol connector.
3. Use the cable tie (provided) placed through the tie bracket (provided) to secure the left side of the amphenol connector.

The pin assignments for the SHDSL cable pinouts are shown in **Table 3-3**.

Table 3-3. SHDSL Cable Pinouts

Pair Number	Pins	Pair Number	Pins
1	1, 26	14	14, 39
2	2, 27	15	15, 40
3	3, 28	16	16, 41
4	4, 29	17	17, 42
5	5, 30	18	18, 43
6	6, 31	19	19, 44
7	7, 32	20	20, 45
8	8, 33	21	21, 46
9	9, 34	22	22, 47
10	10, 35	23	23, 48
11	11, 36	24	24, 49
12	12, 36	25	25, 50 Not used

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Section 4
Provisioning Defaults

INTRODUCTION

The Total Access 1240 can be provisioned by a set of menus that are accessible through the DB-9 port, labeled **CRAFT,** or through a management VLAN. The initial configuration of the system must be completed by way of one of these device ports. Once the management VLAN channel has been established, the system can be remotely managed through Telnet (IP), SNMP, or Total Access EMS. The Total Access 1240 default settings are shown in **Table 4-1** through **Table 4-5**.

Table 4-1. Bridge User Port Default Provisioning Options

Provisioning Option	Available Options	Default Setting		
Circuit ID	29 character string			
VPI	0 to 4096	0		
VCI	32 to 65536	35		
Priority (PRI)	High MidHigh (MidH) MidLow (MidL) Low	<u>Bridge</u> 1 2 2 4	<u>PRI</u> High MidH MidL Low	
(Port) Enabled/Disabled	Enabled Disabled	Disabled		
VLAN ID	1 to 4096	<u>Port</u> 1 1 1 1 • • • 24 24 24 24	<u>Bridge</u> 1 2 3 4 • • • 1 2 3 4	<u>VLAN</u> 101 102 103 104 • • • 193 194 195 196

Table 4-1. Bridge User Port Default Provisioning Options (Continued)

Provisioning Option	Available Options	Default Setting
VLAN Priority	0 to 7	0
EtherType (ET)	Any IP PPPoE	Any
Local Switching (LS)	Enabled Disabled	Disabled
Destination Mac Filtering (DMF)	Enabled Disabled	Disabled

Table 4-2. Ethernet Default Provisioning Options

Provisioning Option	Available Options	Default Setting
Duplex Mode	Auto Negotiate Full Duplex Half Duplex	Auto negotiate
Speed	Auto Negotiate 100Base 10Base	Auto negotiate

Table 4-3. SNMP Management Default Provisioning Options

Provisioning Option	Available Options	Default Setting
Password Control		
Set Login Name		Not configured
Access Level	Read Only Technician System Administrator	Not configured
Control Level	Read Only Read-Write	Not configured
Allow SNMP Security Management	Enabled Disabled	Disabled
Set Idle Logout Time	1 to 60 minutes	10 minutes
IP Address		
Mode	Static Dynamic	Static
(Static) IP Address	0–255.0–255.0–255.1–254	192.168.1.1
(Static) Subnet Mask	1–255.0–255.0–255.0	255.255.0.0

Table 4-3. SNMP Management Default Provisioning Options (Continued)

Provisioning Option	Available Options	Default Setting
(Static) Default Gateway	0–255.0–255.0–255.1–254	192.168.1.254
TFTP IP Address	0–255.0–255.0–255.0–255	192.168.1.2
IP VLAN ID	1 (untagged) 2 to 4094 (tagged)	1 (untagged)
Test IP Address		
IP Address	0–255.0–255.0–255.0–255	Not configured
Ping Timeout	1–10 seconds	1 second
Number of Pings	1–8 pings	4 pings
Time/Date		
Time	HH.MM (24 hour format)	N/A
Date	MM.DD.YY	N/A
SNTP Network Time	Enabled Disabled	Disabled
SNTP Server Address	0–255.0–255.0–255.0–255	Not configured
SNTP Poll Interval	5 to 60 minutes, in 5-minute increments	60 minutes
SNTP Time Zone	GMT-12 to GMT+13	GMT
Baud Rate		
Baud Rate	9600 bps 19200 bps 38400 bps	9600 bps

Table 4-4. User Port Default Provisioning Options

Provisioning Option	Available Options	Default Setting
Card Provisioning		
Service State	In Service Out of Service-Unassigned Out of Service-Maintenance	Out of Service-Maintenance
SHDSL Loop Provisioning		
Service State	In Service Out of Service-Unassigned Out of Service-Maintenance	Out of Service-Maintenance
Interface Mode	2-wire 4-wire	2-wire
Rate	N × 64 kbps, where N=3 to 36	2048 kbps (N=32)

Table 4-4. User Port Default Provisioning Options (Continued)

Provisioning Option	Available Options	Default Setting
G.991.2 Annex	A B A/B	B
Lineprobing (PMMS)	Disabled Enabled - Current Condition Enabled - Worst Case Condition	Disabled
PMMS Margin	N/A CC = N from 0 to 20, in dB WC = N from –10 to 20, in dB	N/A
Loopback Timeout	Disabled 1–999 minutes	Disabled
SNR Margin Alarm Threshold	Disabled 1–15 minutes	Disabled
Loop Attenuation Alarm Threshold	Disabled 1–127 dB	Disabled
ES 15 Minute Alarm Threshold	Disabled 1–900 seconds	Disabled
SES 15 Minute Alarm Threshold	Disabled 1–900 seconds	Disabled
UAS 15 Minute Alarm Threshold	Disabled 1–900 seconds	Disabled
LOSWS 15 Minute Alarm Threshold	Disabled 1–900 seconds	Disabled
CVC 15 Minute Alarm Threshold	Disabled 1–65535 errors	Disabled

Table 4-5. SNMP Configuration Default Provisioning Options

Provisioning Option	Available Options	Default Setting
SNMP Contact Information		
Contact	50-character string	Customer specified
Name	50-character string	
Location	50-character string	
SNMP Community Names		
Name	52-character string	Private Public Read/Write
IP Address	0–255.0–255.0–255.0–255	Not configured
Privileges	Read Read/Write	Read
SNMP Trap Hosts		
Trap Port	1 to 65535	162
IP Address	0–255.0–255.0–255.0–255	Not configured
Version	SNMPv1 SNMPv2	SNMPv2
SNMP Traps Enabled		
SNMP Traps Enabled	Yes No	Yes
External Alarms		
Alarm Name	25-character string	Not configured
Alarm Severity	Critical Major Minor Load shedding	Minor
Fan Alarm Delay	Disabled 0–15 minutes	Disabled

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Section 5
User Interface

INTRODUCTION

This section provides detailed information on the following:

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SYSTEM MANAGEMENT

Total Access 1240 system management and provisioning is facilitated by a series of intuitive menus that are accessible on a computer screen. The Total Access 1240 provides two methods for management access:

-
-

Craft Interface

Connection to the Total Access 1240 system menus can be made through the DB-9 connector, labeled **CRAFT** (see **Figure 5-1**), on the front of the Total Access 1240. A DB-9 straight cable is required.
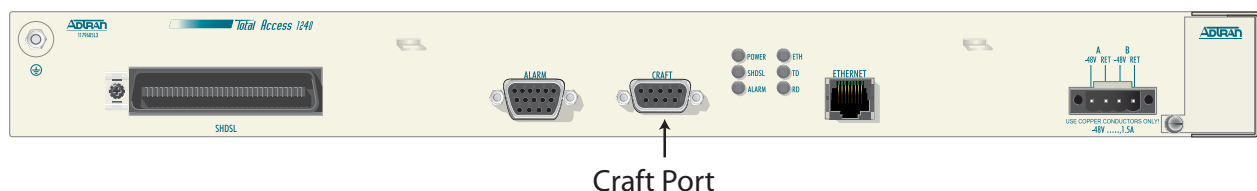
Craft Port

Figure 5-1. Craft Port Location

NOTE

The craft port has priority over Telnet session. If there is an active craft port session, a Telnet session to the Total Access 1240 cannot be initiated. If there is an active Telnet session and a craft port session is initiated, the Telnet session is preempted. The Telnet session is not available until after the user at the craft port logs off or the auto-logoff occurs (after 10 minutes of inactivity).

NOTE

The craft port is capable of operating at baud rates of 19200 bps and 38400 bps.

Connecting a Personal Computer Emulating a VT100 Terminal to Total Access 1240

Most personal computers or laptops can run communications software that emulate a VT terminal. Windows programs such as Terminal or HyperTerminal are two such examples in the Windows format, but there are many other adequate, commercially available software packages, virtually all of which allow the PC or laptop to emulate a VT100 terminal. Certain configuration items must be set on a PC or laptop to act as a VT100 terminal for the Total Access 1240.

1. Set the parameters of the communications software to the following settings:

   - 9600 baud rate

   - 8 data bits

   - No parity

   - 1 stop bit

   - No flow control

2. Set the PC for direct connect on the appropriate communications port (as opposed to dial up connection).

3. Plug the male end of the data cable into the Total Access 1240. Make connection to the PC or laptop as appropriate for the equipment.

Inband Management Interface

To access the Total Access 1240 through the inband management method, use an appropriate Telnet client to access the management interface of the Total Access 1240 at the configured IP address. For more information, refer to "System Management Menu" on page 5-34.

NOTE

A craft port session takes priority over a Telnet session. An active craft port session must be terminated before a Telnet session can be successfully started. When a craft port session is initiated, any active Telnet session is automatically disconnected.

LOGGING ON TO THE TOTAL ACCESS 1240

To login to the Total Access 1240 system, perform the following steps:

1. Establish the physical connection to the Total Access 1240.

2. If a craft port session is being used, proceed to step 3. If using a Telnet session proceed to step 4.

3. Press CTRL+R until the Login prompt appears.

   The Login screen is displayed in **Figure 5-2**. The Total Access 1240 system requires the login name and associated password.

4. Enter the default login name, "ADMIN" (or the configured login name with System Administrator privileges), and press ENTER.

5. Enter the default password, "PASSWORD" (or the configured password), and press ENTER.

```
                         Total Access 1240 - IPoE Fed

                         Login:     ADMIN

                         Password:  ********
```
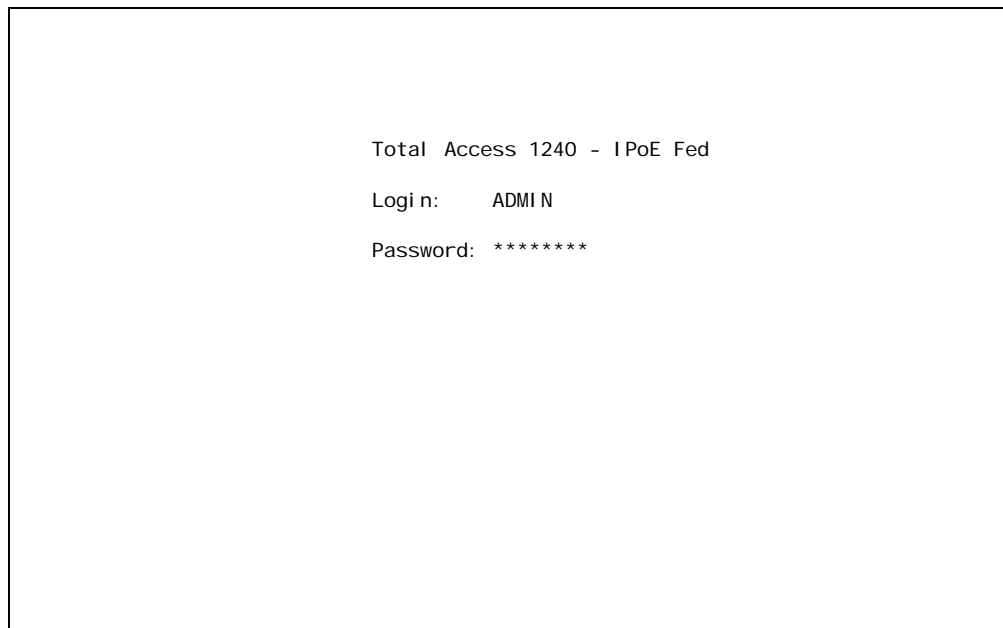
Figure 5-2. Login Screen

NOTE

The Login name and Password fields are case sensitive. The default values are all uppercase. For more information, refer to "Password Control Menu" on page 5-36.

MENU STRUCTURE

The menu structure for the Total Access 1240 is a layered menu tree. Each layer of the menu tree is displayed as a menu or a screen.

Menu

A menu is a display that provides numbered selections that are used to navigate to related menus, modify provisioning information, or display information screens. A menu can contain the following objects:

- Menu Option: A menu option is indicated by a number, which when selected navigates the display to another menu layer or is used to change the option setting.

- Read-only Field: A read-only field displays information that cannot be changed. The information displayed in a read-only field can be static or can be automatically updated by the Total Access 1240.

- Read-write Field: A read-write field displays information that when selected can be modified.

- Hot Key: A hot key is a key or combination of keys that are assigned to a function (see **Table 5-2**). Hot keys are indicated by the required key(s) and a brief description (i.e., N - Next Port).

Screen

A screen is a display that usually indicates the end of a menu tree path. A screen can contain the following objects:

- Read-only Field: A read-only field displays information that cannot be changed. The information displayed in a read-only field can be static or can be automatically updated by the Total Access 1240.

- Read-write Field: A read-write field displays information that when selected can be modified.

- Hot Key: A hot key is a key or combination of keys that are assigned to a function (see Table 5-2). Hot keys are indicated by the required key(s) and a brief description (i.e., N - Next Port).

MENU NAVIGATION

Basic menu navigation is accomplished by selecting the desired option number and then pressing ENTER. To return to the previous menu or screen, press the ESC (escape) key. To access the System Help screen, press the question mark (?) key, and press ENTER.

Hot Keys

Table 5-1 shows the general keyboard commands and Table 5-2 shows the menu specific hot keys for the Total Access 1240 system.

Table 5-1. General Keyboard Commands

Keyboard Command	Description
BACKSPACE	This keyboard command is used to delete the character to the left of the cursor during keyboard input.
ENTER (or Return)	This keyboard command is used to terminate input.
CTRL+R (Control and r)	This keyboard command is used to renew the display.
CTRL+X (Control and x)	This keyboard command is used to force the terminal menu display to the top level.
ESC	This keyboard command is used to return to the previous menu.
Spacebar	This keyboard command is used to toggle the setting choices for a text field.

Table 5-2. Menu Specific Hot Keys

Hot Key	Description
Ethernet Statistics	
C	This hot key is used to clear the current Ethernet statistics.
J	This hot key is used to jump to the Current or Previous Ethernet statistics screen.
Bridge Statistics	
C	This hot key is used to clear the current Bridge statistics.
J	This hot key is used to jump to the Current or Previous Bridge statistics menu.
M	This hot key is used to display the next bridge.
N	This hot key is used to display the next port.
P	This hot key is used to go to the previous port.
SHDSL Provisioning	
N	This hot key is used to display the next loop.
P	This hot key is used to display the previous loop.
S	This hot key is used to select a specific loop.

Table 5-2. Menu Specific Hot Keys (Continued)

Hot Key	Description
System Alarms	
A	This hot key is used to acknowledge all alarms.
C	This hot key is used to clear all alarms.
F	This hot key is used to display the first alarm.
L	This hot key is used to display the last alarm.
N	This hot key is used to display the next alarm.
P	This hot key is used to display the previous alarm.
R	This hot key is used to reset all alarm logs.
T	This hot key is used to display alarms in time ascending or descending order.

MENU TREES

There are a number of menu screens designed to aid in the maintenance and troubleshooting of the Total Access 1240. The Total Access 1240 menu trees (see **Figure 5-3** and **Figure 5-4**) are visual maps that is used to locate provisioning options.

1. Unit Information
- Unit Name
- Part Number
- Serial Number
- Product Revision
- Software Revision

2. Bridge Circuit Management
- 1. Bridge Port Provisioning — Bridge Port Summary
  - 1. Port
  - 2. Bridge
  - 3. Circuit ID
  - 4. VPI
  - 5. VCI
  - 6. Priority
  - 7. Select Destination Mac Filters
  - 8. VLAN ID
  - 9. VLAN Priority
  - 10. Ether Type
  - 11. Local Switching
  - 12. Enabled/Disabled
  - 13. Save Changes
  - 14. Apply to Other Ports
    - 1. Ports to copy to:
    - 2. Apply Provisioning
    - 3. Exit without changes
- 2. Ethernet Provisioning
  - 1. Duplex Mode
    - 1. Auto Negotiate
    - 2. Full Duplex
    - 3. Half Duplex
  - 2. Speed
    - 1. Auto Negotiate
    - 2. 100 Base
    - 3. 10 Base
- 3. Ethernet Statistics
- 4. Bridge Port Statistics
  - 1. Port
  - 2. Bridge

3. System Management — A

4. SHDSL Ports
- 1. Configuration
  - 1. Card
    - 1. Service State
      - 1. In Service
      - 2. Out of Service - Unassigned
      - 3. Out of Service - Maintenance
    - 2. Restore Factory Defaults
- 2. Provisioning
  - 2. SHDSL
    - 1. Service State
      - 1. In Service
      - 2. Out of Service - Unassigned
      - 3. Out of Service - Maintenance
    - 2. Interface Mode
      - 1. 2-wire
      - 2. 4-wire
    - 3. Rate
    - 4. G.991.2 Annex
      - A
      - B
      - A/B
    - 5. Lineprobing (PMMS)
      - 1. Disabled
      - 2. Enabled - Current Condition
      - 3. Enabled - Worst Case Cond.
    - 6. PMMS Margin
    - 7. Loopback Timeout
    - 8. Alarm Thresholds
      - 1. SNR Margin
      - 2. Loop Attenuation
      - 3. ES 15 Minute
      - 4. SES 15 Minute
      - 5. UAS 15 Minute
      - 6. LOSWS 15 Minute
      - 7. CVC 15 Minute
- 3. Status
  - 1. Reset Statistics
- 4. Alarms
- 5. Test
  - 1. Local Loopback
    - 1. Dual-Sided
    - 2. Customer
    - 3. Network
  - 2. Remote Loopback
- 6. Performance
- 7. Remote Terminal

5. System Alarms

6. Contact Information

7. Logoff

Figure 5-3. Total Access 1240 Main Menu Tree

B

1. Password Control
- 1. Set Passwords
- 2. Allow SNMP Security Management
- 3. Set Idle Logout Time
- 4. Restore Default Passwords

2. IP Address
- IP Feed
- 2. Mode
  - 1. Static
  - 2. Dynamic
- 3. Configure IP
  - (Static IP Settings)
    - 1. IP Address
    - 2. Subnet Mask
    - 3. Default Gateway
    - 4. TFTP IP Address
    - 5. Reset IP Factory Defaults
    - 6. IP VLAN ID
  - (Dynamic IP Settings)
    - 1. TFTP IP Address
    - 2. Renew DHCP Lease
    - 3. Reset IP Factory Defaults
    - 4. IP VLAN ID

3. Test IP Address
- 1. IP Address
- 2. Ping Timeout
- 3. Number of Pings
- 4. Start Ping
- 5. Start Traceroute

4. Time/ Date
- 1. Adjust Time
- 2. Adjust Date
- 3. SNTP: Status
- 4. SNTP: Server Addr.
- 5. SNTP: Poll Interval
- 6. SNTP: Time Zone

5. Baud Rate
- 1. 9600
- 2. 19200
- 3. 38400

6. System Configuration Archive
- TFTP Server
- TFTP Function
- TFTP Filename
- Error Status
- Update Progress

7. SNMP
- 1. Contact Information
  - 1. Contact
  - 2. Name
  - 3. Location
- 2. Community Names
  - 1. Name
  - 2. IP Address
  - 3. Privileges
  - 4. Name
  - 5. IP Address
  - 6. Privileges
  - 7. Name
  - 8. IP Address
  - 9. Privileges
- 3. Trap Hosts
  - 1. IP Address
  - 2. Version
  - 3. IP Address
  - 4. Version
  - 5. IP Address
  - 6. Version
  - 7. Trap Port
- 4. Traps Enabled

8. External Alarms
- 1. Alarm 1
- 2. Alarm 2
- 3. Alarm 3
- 4. Severity
- 5. Severity
- 6. Severity
- 7. Fan Alarm Delay

9. Download New Code
- 1. Y-Modem
  - 1. Download Flash A
  - 2. Download Flash B
  - 3. Exit
- 2. TFTP
  - TFTP Server:
  - TFTP Function:
  - TFTP Filename:
  - Error Status:
  - Update Progress:

10. Restore Factory Defaults
- 1. Restore
- 2. Exit

11. Reset System
- 1. Reset
- 2. Exit

Figure 5-4. Total Access 1240 System Management Menu Tree

MENU DESCRIPTIONS

The Total Access 1240 Main menu (see **Figure 5-5**) is the access point to all other operations. The Main menu options have several functions and submenus that identify and provide access to specific operations and parameters.

```
                        Total Access 1240 - IPoE Fed          09/01/05  03:40
Unacknowledged Alarms:  None




                        Total Access 1240

                        1. Configuration
                        2. Bridge Circuit Management
                        3. System Management
                        4. User Ports
                        5. System Alarms
                        6. Contact Information
                        7. Logoff

                        Selection :








                        '?' - System Help Screen
```

Figure 5-5. Total Access 1240 Main Menu

The Total Access 1240 Main menu options are shown in **Table 5-3**.

Table 5-3. Total Access 1240 Main Menu Options

Option	Description	Function
1	Configuration	This option displays the "Configuration Screen" on page 5-10.
2	Bridge Circuit Management	This option displays the "Bridge Circuit Management Menu" on page 5-11.
3	System Management	This option displays the "System Management Menu" on page 5-34.
4	User Ports	This option displays the "SHDSL Ports Menu" on page 5-65.
5	System Alarms	This option displays the "System Alarm Log Screen" on page 5-89.
6	Contact Information	This option displays the "Contact Information Screen" on page 5-90.
7	Logoff	This option is used to end the Total Access 1240 menu session.

Configuration Screen

The Configuration screen (see **Figure 5-6**) displays information about the system. For instance, the part number can be used to search for related information on the ADTRAN website or to order additional parts. The software revision can be required when calling ADTRAN Technical Support.

```
                         Total Access 1240 - IPoE Fed          09/01/05  03:40
Unacknowledged Alarms: None



                         Configuration

                         Unit Name          Total Access 1240
                         Part Number        1179605L5
                         Serial Number      E49A1314
                         Product Revision
                         Software Revision  A03.30 (Flash B)












                         '?' - System Help Screen
```
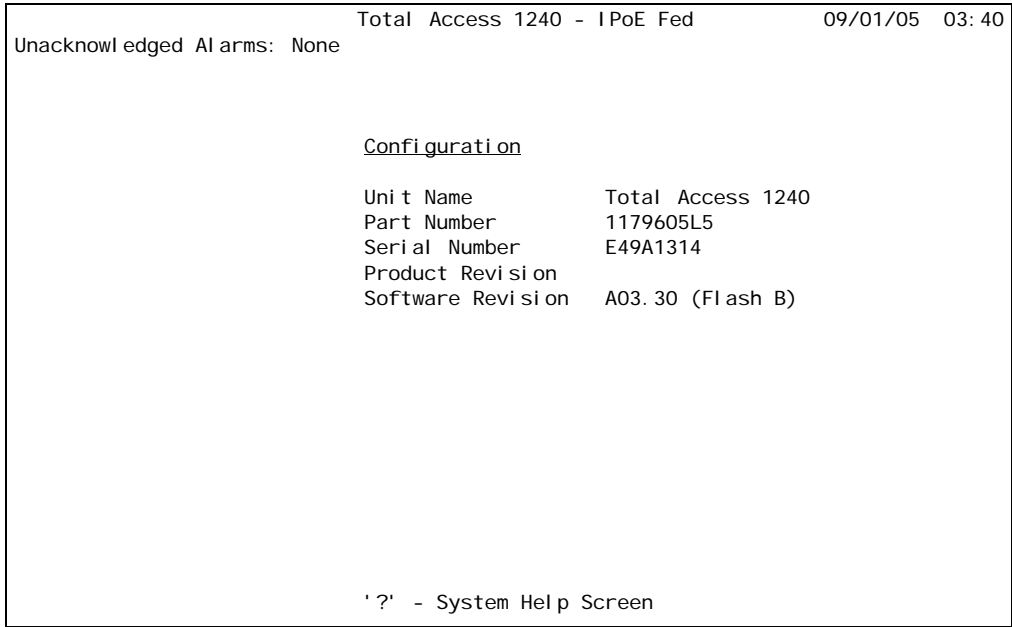
Figure 5-6. Configuration Screen

The Configuration screen fields are shown in **Table 5-4**.

Table 5-4. Configuration Screen Fields

Field	Description
Unit Name	This field displays the unit name of the Total Access 1240.
Part Number	This field displays the part number of the Total Access 1240.
Serial Number	This field displays the serial number of the Total Access 1240.
Production Revision	This field displays the current product revision of the Total Access 1240.
Software Revision	This field displays the software revision of the Total Access 1240. This field updates automatically when a software download is completed.

Bridge Circuit Management Menu

The Bridge Circuit Management menu (see **Figure 5-7**) is used to provision and maintain customer circuits and the Ethernet circuit feeding the system.

```
                      Total Access 1240 - IPoE Fed        09/01/05  03:41
Unacknowledged Alarms:  None




                      Bridge Circuit Management

                      1.  Bridge Port Provisioning
                      2.  Ethernet Provisioning
                      3.  Ethernet Statistics
                      4.  Bridge Port Statistics

                      Selection:









                      '?' - System Help Screen
```
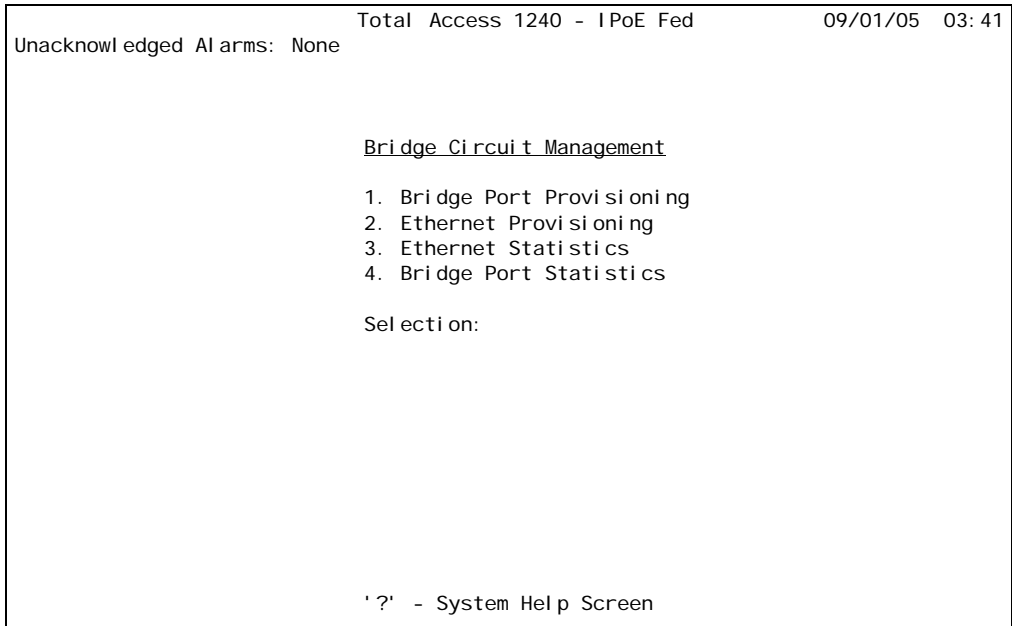
Figure 5-7. Bridge Circuit Management Menu

The Bridge Circuit Management menu options are shown in **Table 5-5**.

Table 5-5. Bridge Circuit Management Menu

Option	Description	Function
1	Bridge Port Provisioning	This option displays the "Bridge Port Summary Screen" on page 5-12.
2	Ethernet Provisioning	This option displays the "Ethernet Provisioning Menu" on page 5-23.
3	Ethernet Statistics	This option displays the "Current Ethernet Statistics Menu" on page 5-26.
4	Bridge Port Statistics	This option displays the "Current Bridge Statistics Menu" on page 5-30.

Bridge Port Summary Screen

The Bridge Port Summary screen (see **Figure 5-8**) displays all ports and their set parameters simultaneously. A highlighted port number on this screen indicates a modem as online and trained. To provision a specific port, navigate to the port with directional arrows, and press the spacebar (Refer to "Bridge User Port Provisioning Menu" on page 5-13).

```
                     Total Access 1240 - IPoE Fed
Unacknowledged Alarms:  None
                           Bridge Port Summary
Port Bridge   VPI   VCI   PRI   VLAN   VPri   ET    LS   DMF   Enabled
  1.   1       0    35    Low   101    0      Any    N    N      Yes
  1.   2       0    36    Low   102    0      Any    N    N      Yes
  1.   3       0    37    Low   103    0      Any    N    N      Yes
  1.   4       0    38    Low   104    0      Any    N    N      Yes
  2.   1       0    35    Low   105    0      Any    N    N      Yes
  2.   2       0    36    Low   106    0      Any    N    N      Yes
  2.   3       0    37    Low   107    0      Any    N    N      Yes
  2.   4       0    38    Low   108    0      Any    N    N      Yes
  3.   1       0    35    Low   109    0      Any    N    N      Yes
  3.   2       0    36    Low   110    0      Any    N    N      Yes
  3.   3       0    37    Low   111    0      Any    N    N      Yes
  3.   4       0    38    Low   112    0      Any    N    N      Yes
  4.   1       0    35    Low   113    0      Any    N    N      Yes
  4.   2       0    36    Low   114    0      Any    N    N      Yes
  4.   3       0    37    Low   115    0      Any    N    N      Yes
  4.   4       0    38    Low   116    0      Any    N    N      Yes



          Up and Down Arrows to select a port and "Space Bar" to modify
             Left & Right Arrows or Tab to page over to other ports
```

Figure 5-8. Bridge Port Summary Screen

The Bridge Port Summary screen fields are described in **Table 5-6**.

Table 5-6. Bridge Port Summary Screen Fields

Field	Description
Port	This field displays the current port number.
Bridge	This field displays the current bridge number.
VPI	This field displays the current port VPI setting.
VCI	This field displays the current port VCI setting.
PRI	This field displays the traffic prioritization.
VLAN	This field displays the current VLAN ID.
VPri	This field displays the current VLAN priority for the port.
ET	This field displays the Ether Type value.
LS	This field displays the Local Switching selection (Y/N).
DMF	This field displays Destination MAC Filtering status as being enabled (Y) or disabled (N).
Enabled	This field displays the enabled/disabled status.

Bridge User Port Provisioning Menu

The Bridge User Port Provisioning menu (see **Figure 5-9**) displays the bridge provisioning for the port selected from the Bridge Port Provisioning Summary screen (see Figure 5-8 on page 5-12) and is used to set up and maintain the 24 ports.

```
                        Total Access 1240 - IPoE Fed
Unacknowledged Alarms:  None
                        Bridge User Port Provisioning
   Bridge   VPI   VCI   PRI   VLAN   VPri   ET    LS   DMF   Enabled
      1      0    35    Low   101     0    Any    N    N      Yes
      2      0    36    Low   102     0    Any    N    N      Yes
      3      0    37    Low   103     0    Any    N    N      Yes
      4      0    38    Low   104     0    Any    N    N      Yes


   1.  Port           1                    8.   VLAN ID        101
   2.  Bridge         1                    9.   VLAN Priority  0
   3.  Circuit ID     No Circuit ID        10.  EtherType      Any
   4.  VPI            0                     11.  Local Switching  N
   5.  VCI            35                    12.  Enabled/Disabled Yes
   6.  Priority       Low                  13.  Save Changes   SAVED
   7.  Select Destination Mac Filters      14.  Apply To Other Ports


                        Selection:


                  Up and Down Arrows to select a bridge
              Left & Right Arrows or Tab to page over to other bridge ports
```

Figure 5-9. Bridge User Port Provisioning Menu

The Bridge User Port Provisioning menu fields are described in **Table 5-7**.

Table 5-7. Bridge User Port Provisioning Menu Fields

Field	Description
Bridge	This field displays the current bridge number.
VPI	This field displays the current port VPI setting.
VCI	This field displays the current port VCI setting.
PRI	This field displays the traffic prioritization.
VLAN	This field displays the current VLAN ID.
VPri	This field displays the current VLAN priority for the port.
ET	This field displays the Ether Type value.
LS	This field displays the Local Switching selection (Y/N).
DMF	This field displays Destination MAC Filtering status as being enabled (Y) or disabled (N).
Enabled	This field displays the enabled/disabled status.

The Bridge User Port Provisioning menu options are shown in **Table 5-8**.

Table 5-8. Bridge User Port Provisioning Menu Options

Option	Description	Function
1	Port	This option is used select a Port (1-24).
2	Bridge	This option is used to assign a bridge number to each circuit. Each circuit must be assigned to one of four bridges.
3	Circuit ID	This option is used to assign a text name to the circuit for use by the provider to identify the circuit.
4	VPI	This option is used to configure each circuit with the Virtual Path Identifier (VPI) to match the modem that the customer is using.
5	VCI	This option is used to configure each circuit with the Virtual Channel Identifier (VCI) to match the modem that the customer is using.
6	Priority	This option is used to assign strict prioritization to each circuit. See "Strict Prioritization" on page 5-15.
7	Select Destination Mac Filters	This option displays the "Router Dest Mac Filtering Menu" on page 5-19.
8	VLAN ID	This option is used to assign a VLAN ID. The VLAN ID is used to uniquely identify a particular VLAN per IEEE 802.1.Q. The parameter for a VLAN ID is a number between 1 and 4094.
9	VLAN Priority	This option displays the "VLAN Priority" on page 5-16.
10	Ether Type	This option is used to assign EtherType Filtering which is selectable as Any, IP, or PPPoE. See "EtherType Filtering" on page 5-17.
11	Local Switching	This option is used to enable or disable Local Switching. Selection of this option toggles between Y(es) and N(o). See "Local Switching" on page 5-18.
12	Enabled/Disabled	This option is used to enable or disable the user port.
13	Save Changes	This option is used to save any changes made to the Bridge User Port menu. This option must be used to implement any provisioning adjustments.
14	Apply To Other Ports	This option displays the "Apply Provisioning to Ports Menu" on page 5-21.

Strict Prioritization

There are four available virtual circuits (VCs) per SHDSL loop that can be prioritized on a strict prioritization basis. This means that any available high priority VC traffic gets queued into the ATM/SHDSL pipe first followed by traffic at the next highest priority class, and so on, to the lowest priority class (see **Figure 5-10**). If a priority class contains no elements, it is bypassed but always considered for the next queueing sequence. Prioritization only applies to egress traffic of the subscriber (SHDSL) ports.

As described above Four VCs can be configured on each SHDSL port. There are four priority settings: High = CBR, MidH = VBRrt, MidL = VBR, and Low = UBR. There are no rate settings for the cbr, vbrrt, and vbr configurations, therefore, these ATM Class of Service (COS) priorities have been redefined as High, MidH, MidL, and Low priorities.
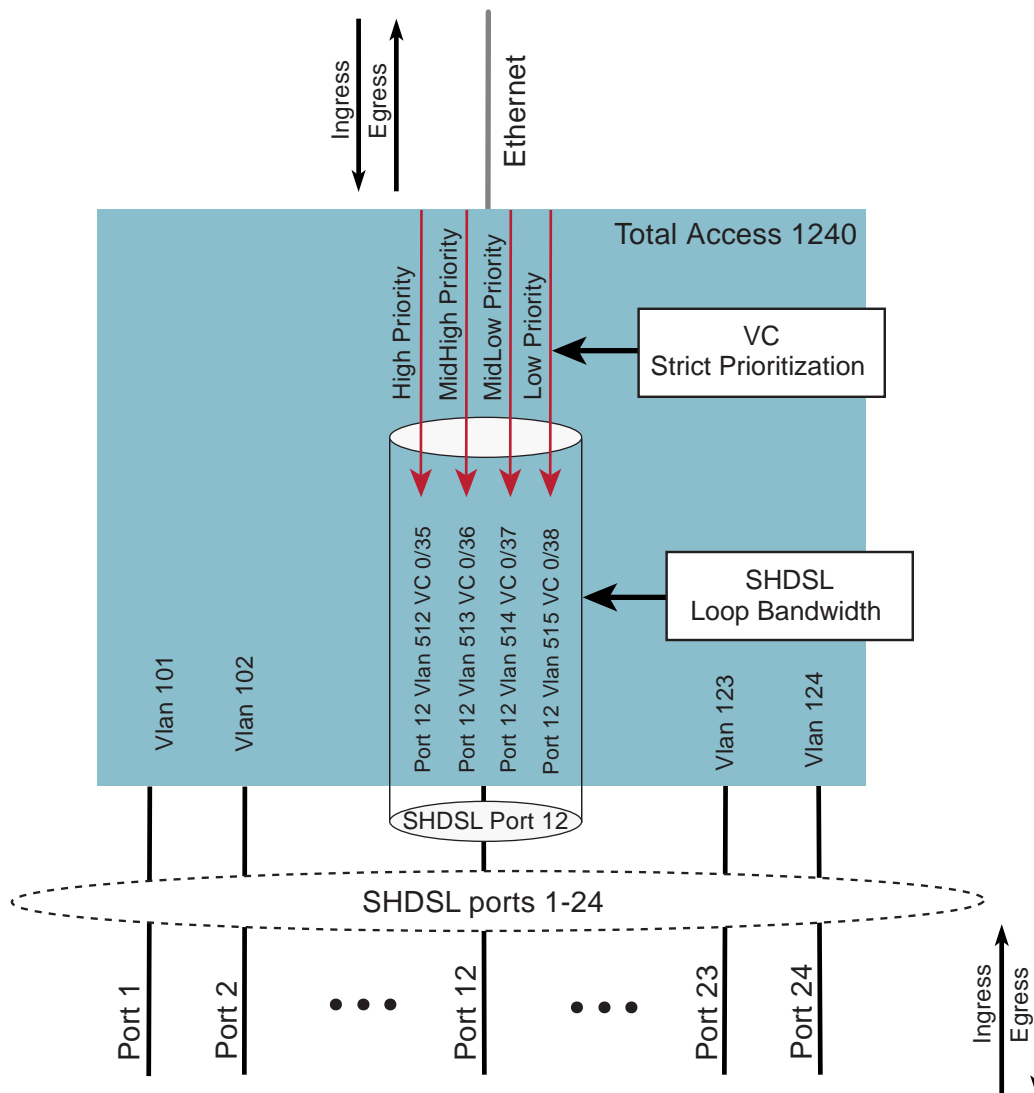
Figure 5-10. Strict Prioritization Concept Diagram

VLAN Priority

The VLAN Priority option is used to prioritize traffic up to eight levels, with 0 as the lowest and 7 as the highest priority. **Table 5-9** lists an example of how traffic types might be organized in a network implementation.

Table 5-9. Traffic Type Examples

VLAN Priority	Traffic Type
0	Best effort
1	Background
2	Best effort
3	Excellent effort
4	Controlled load
5	Video
6	Voice

NOTE

Actual settings depend on the traffic types used in a particular network

EtherType Filtering

The EtherType Filtering option (see **Figure 5-11**) allows filtering of the ingress/egress traffic of the subscriber ports based on the ethertype of IP or PPPoE. This option is applicable on a per VC basis.

- Packets are filtered based on the following EtherTypes:
  - IP
  - PPPoE
  - Any
- Packets that do not meet the provisioned EtherType are discarded.
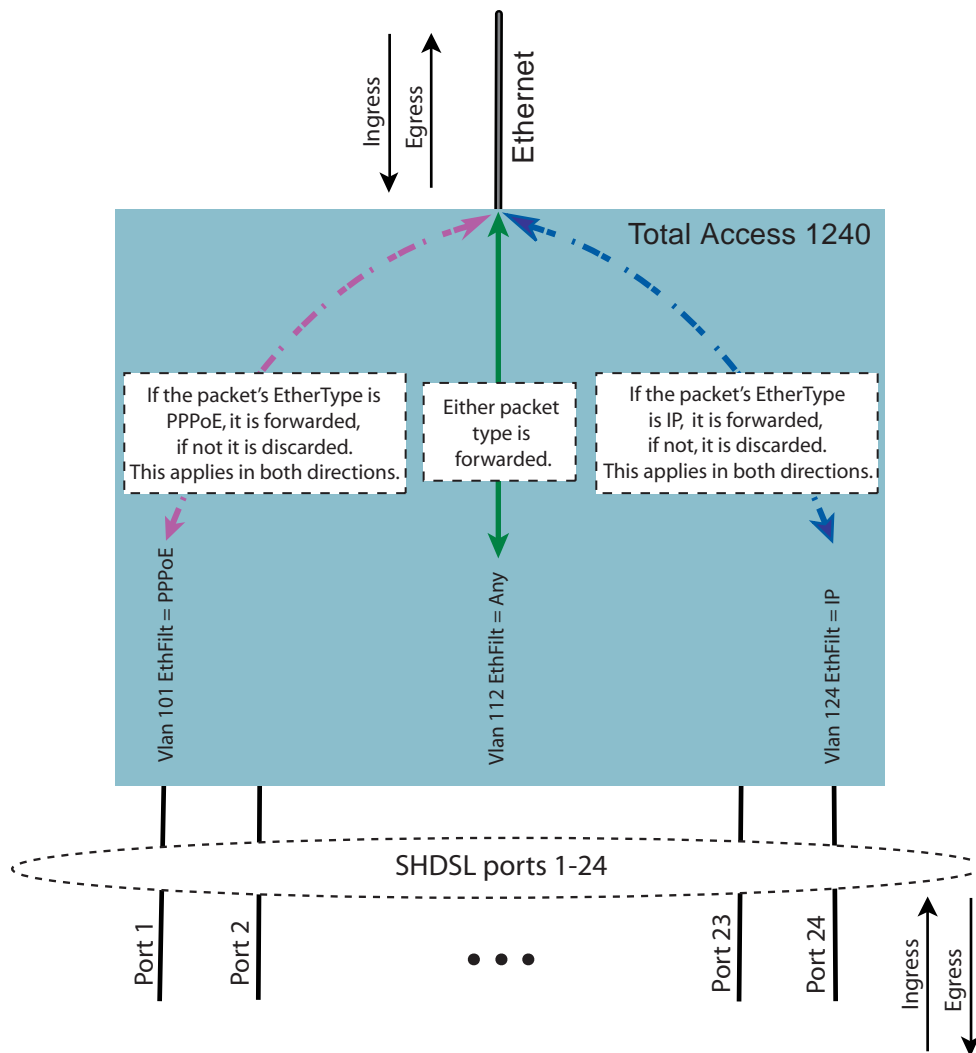
Figure 5-11. EtherType Filtering Concept Diagram

Local Switching

The Local Switching option (see **Figure 5-12**) allows subscriber to subscriber traffic when it is enabled and both subscribers are on the same VLAN. The data is forwarded to the correct port as determined by the MAC Learning Table. This option is applied on a per VC basis.
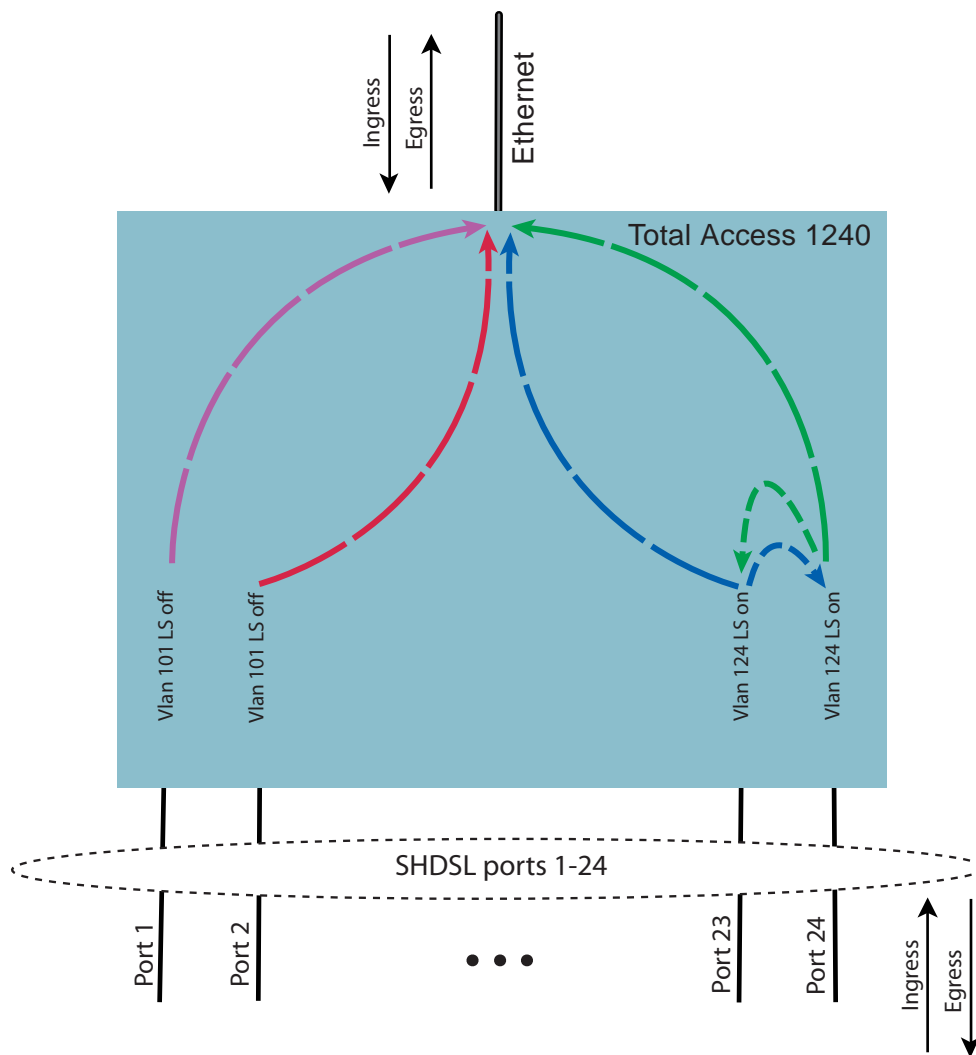
Figure 5-12. Local Switching Concept Diagram

Router Dest Mac Filtering Menu

The Select Destination Mac Filters option from the Bridge User Port Provisioning Menu (refer to "Bridge User Port Provisioning Menu" on page 5-13) allows filtering of ingress traffic of the subscriber ports based on the configured Mac addresses (see **Figure 5-13**). Also known as white listing because traffic other than the configured Mac addresses is discarded and traffic with the configured Mac addresses is forwarded. Broadcast traffic is forwarded in either case. Selecting Disabled allows the filtering to be turned off even if the Mac addresses are configured.
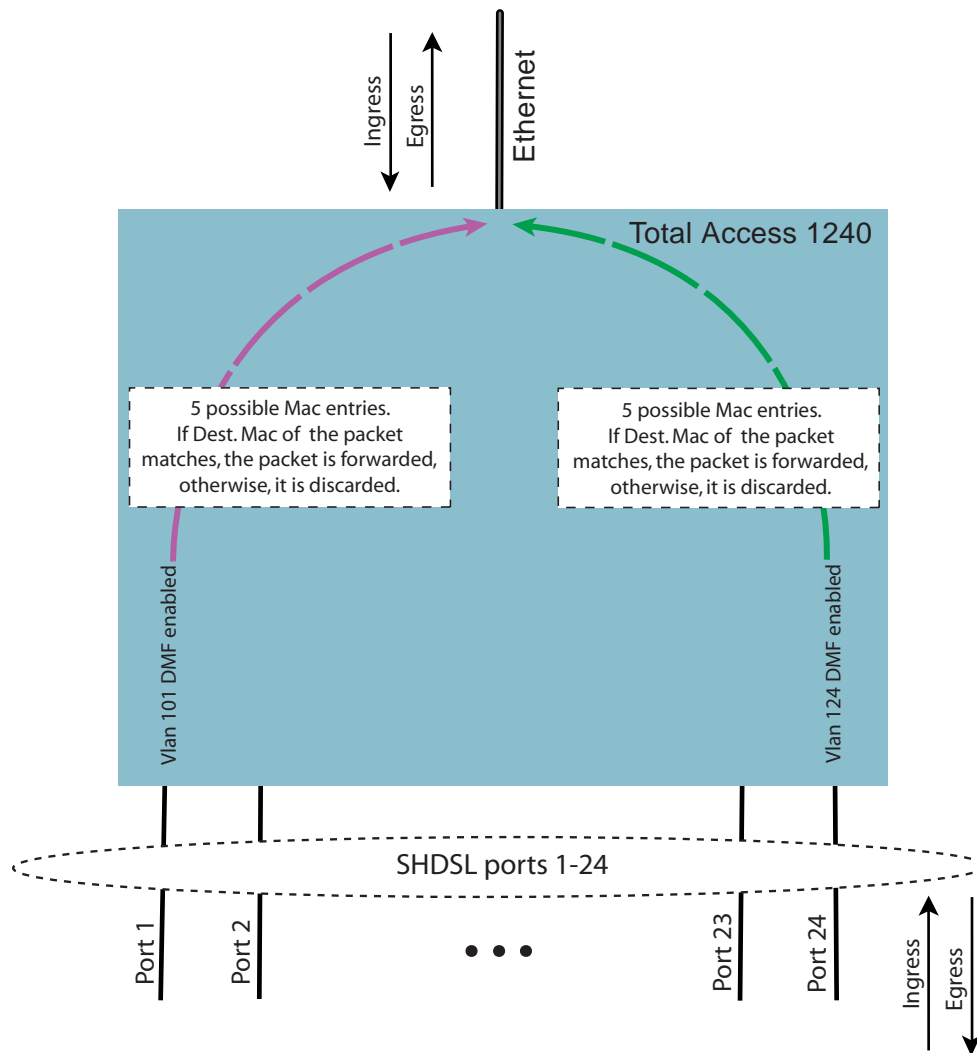
Figure 5-13. Destination Mac Filtering Concept Diagram

The Router Dest Mac Filtering Menu (see **Figure 5-14**) is used to select a Port and Bridge, enable or disable MAC filtering, and set up to 5 MAC Addresses.

```
                        Total Access 1240 - IPoE Fed
Unacknowledged Alarms: None



                        Router Dest Mac Filtering

                        1. Port               9
                        2. Bridge             1
                        3. MAC Filter         Disabled
                        4. Save Changes       SAVED
                        5. Router MAC Addr  1 No MAC Address
                        6. Router MAC Addr  2 No MAC Address
                        7. Router MAC Addr  3 No MAC Address
                        8. Router MAC Addr  4 No MAC Address
                        9. Router MAC Addr  5 No MAC Address

                        Selection :




        'J' - Jump to Provisioning   'N' - Next Port   'P' - Previous Port
                        '?' - System Help Screen
```

Figure 5-14. Router Dest Mac Filtering Menu

The Router Dest Mac Filtering Menu options are described in **Table 5-10**.

Table 5-10. Router Dest Mac Filtering Menu Options

Option	Description	Function
1	Port	This option is used to select a port between 1 and 24.
2	Bridge	This option is used to select a bridge between 1 and 4.
3	MAC Filter	This option is used to either enable or disable Mac filtering.
4	Save Changes	This option is used to save configuration changes made within this menu. This option must be used to implement any provisioning adjustments.
5-9	Router MAC Addr	These options are used to enter non-Multicast MAC Addresses in Hex format in the following format: XX:XX:XX:XX:XX:XX

Apply Provisioning to Ports Menu

The Apply Provisioning to Ports menu (see **Figure 5-15**) is used to apply any provisioning changes to more than one port. Any number of ports can be selected to apply provisioning.

```
                           Total Access 1240 - IPoE Fed
Unacknowledged Alarms: None




                         Apply Provisioning to Ports
                          Warning! This is service affecting!
              This will copy the following options to the ports you enter!

Port Bridge    VPI    VCI    PRI   VLAN   VPri    ET    LS   DMF    Enabled
  1.    1       0     35     Low    101    0      Any    N    N      Yes
  1.    2       0     36     Low    102    0      Any    N    N      Yes
  1.    3       0     37     Low    103    0      Any    N    N      Yes
  1.    4       0     38     Low    104    0      Any    N    N      Yes


                    Enter in the form of '1-12,15,24'


                    1. Ports to copy to:  1-24
                    2. Apply Provisioning
                    3. Exit without changes

                    Selection :

                    '?' - System Help Screen
```

Figure 5-15. Apply Provisioning to Ports Menu

CAUTION

This is service affecting.

The Apply Provisioning to Ports menu options are shown in **Table 5-11**.

Table 5-11. Apply Provisioning to Ports Menu Options

Option	Description	Function
1	Ports to copy to	This option is used to select the specific destination port numbers that provisioning is to be copied.
2	Apply Provisioning	This option is used to apply provisioning to the ports selected from option 1.
3	Exit without changes	This option is used to exits the menu without changes.

The Apply Provisioning to Ports menu fields are described in **Table 5-12**

Table 5-12. Apply Provisioning to Ports Menu Fields

Field	Description
Port	This field displays the port number to be provisioned.
Bridge	This field displays the bridge number to be provisioned.
VPI	This field displays the VPI assigned to port.
VCI	This field displays the VCI assigned to port.
PRI	This field displays the traffic priority setting.
VLAN	This field displays the VLAN assigned to port.
VPri	This field displays the Virtual Path setting.
ET	This field displays the EtherType filtering assigned to this VC.
LS	This field indicates if Local Switching is enabled or disabled.
DMF	This field indicates if Destination Mac Filtering is enabled or disabled.
Enabled	This field displays the enabled or disabled status.

Ethernet Provisioning Menu

The Ethernet Provisioning menu (see **Figure 5-16**) is used to configure the Ethernet port. The Ethernet port is used to connect the Total Access 1240 to a network.

```
                        Total Access 1240 - IPoE Fed          09/01/05  03:44
Unacknowledged Alarms: None




                        Ethernet Provisioning

                        1. Duplex Mode              Full Duplex
                        2. Speed                    100Base

                        Selection :




                        Ethernet Link: Not Active






                        '?' - System Help Screen
```
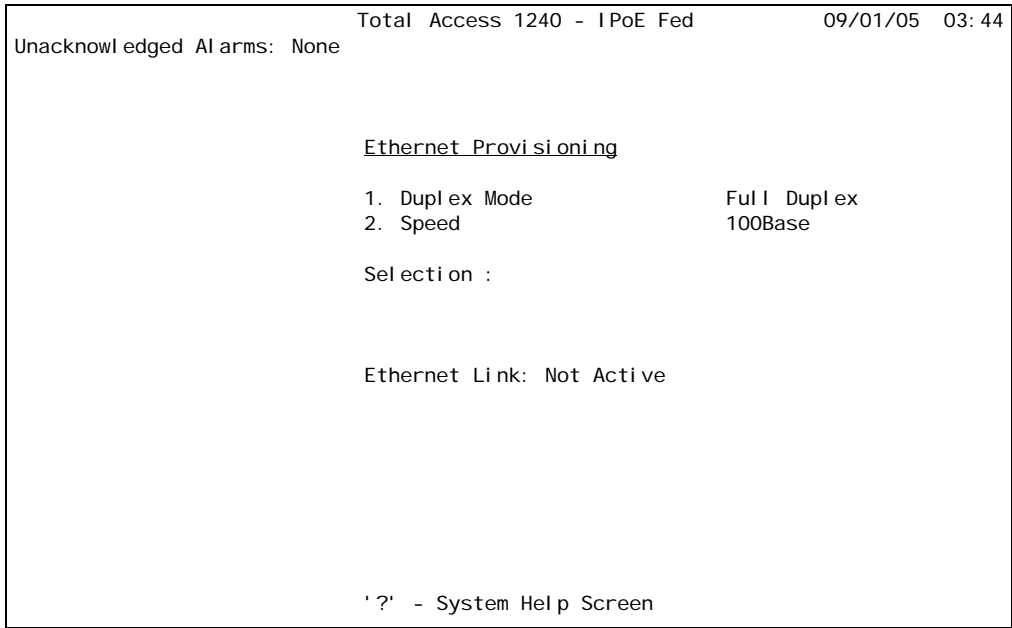
Figure 5-16. Ethernet Provisioning Menu

The Ethernet Provisioning menu options are shown in **Table 5-13**.

Table 5-13. Ethernet Provisioning Menu Options

Option	Description	Function
1	Duplex Mode	This option displays the "Duplex Mode Menu" on page 5-24.
2	Speed	This option displays the "Speed Mode Menu" on page 5-25.

Duplex Mode Menu

The Duplex Mode menu (see **Figure 5-17**) is used to select the duplex mode of the Ethernet interface.

```
                        Total Access 1240 - IPoE Fed          09/01/05  03:44
Unacknowledged Alarms: None




                        Duplex Mode  -  Full Duplex

                        1. Auto Negotiate
                        2. Full Duplex
                        3. Half Duplex

                        Selection :










                        '?' - System Help Screen
```
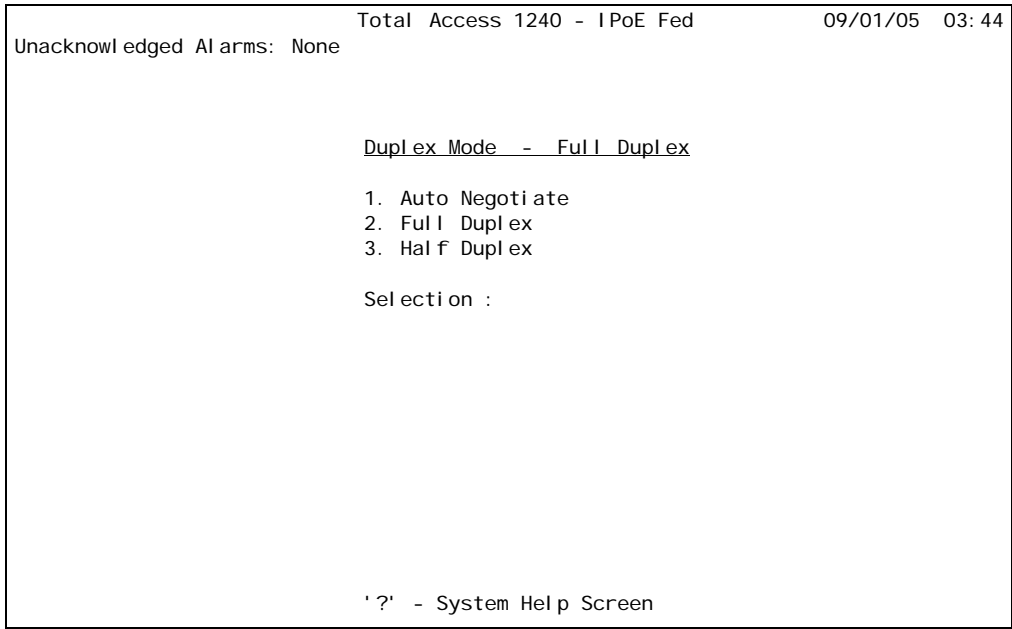
Figure 5-17. Duplex Mode Menu

NOTE

The duplex mode displayed in the title indicates the current duplex mode being viewed or provisioned.

The Duplex Mode menu options are shown in **Table 5-14**.

Table 5-14. Duplex Mode Menu Options

Option	Description	Function
1	Auto Negotiate	This option sets the system to automatically detect the duplex mode of the attached device.
2	Full Duplex	This option sets the Ethernet interface to transmit and receive simultaneously.
3	Half Duplex	This option sets the Ethernet interface to transmit or receive at a given time, but not simultaneously.

Speed Mode Menu

The Speed Mode menu (see **Figure 5-18**) provides options to choose the Ethernet speed.

```
                    Total  Access 1240 - IPoE Fed        09/01/05  03:44
Unacknowledged Alarms: None



                        Speed Mode  -  100Base

                        1. Auto Negotiate
                        2. 100Base
                        3. 10Base

                        Selection :










                        '?' - System Help Screen
```
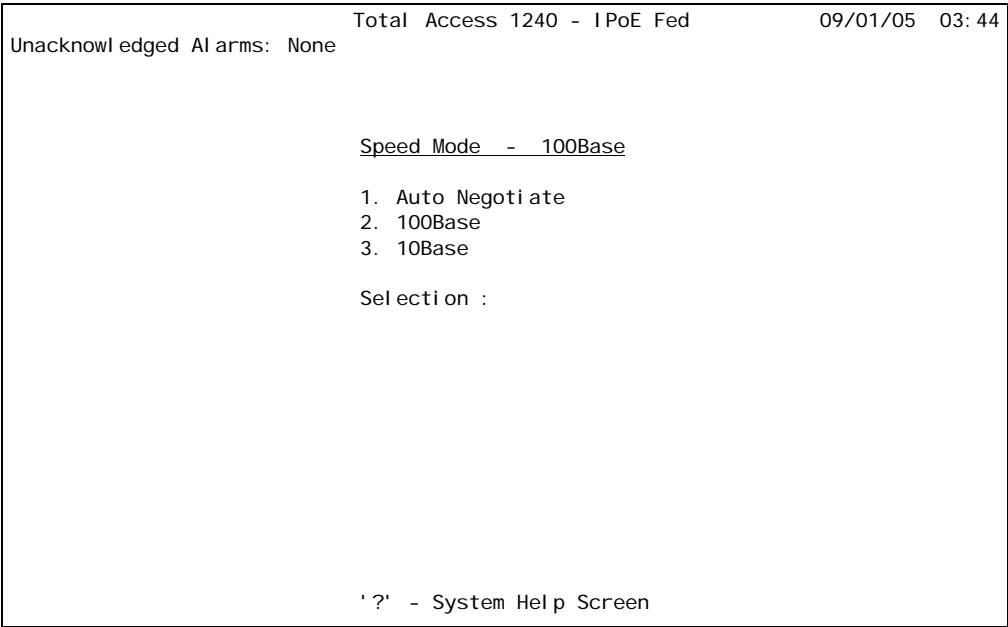
Figure 5-18. Speed Mode Menu

NOTE

The speed mode displayed in the title indicates the current speed mode being viewed or provisioned.

The Speed Mode menu options are shown in **Table 5-15**.

Table 5-15. Speed Mode - 100Base Menu Options

Option	Description	Function
1	Auto Negotiate	This option sets the system to automatically detect the speed of the attached device.
2	100Base	This option sets the Ethernet interface to transmit and receive at 100 mb/s.
3	10Base	This option sets the Ethernet interface to transmit and receive at 10 mb/s.

Current Ethernet Statistics Menu

The Current Ethernet Statistics menu (see **Figure 5-19**) is used to view and reset the current Ethernet statistics.

```
                          Total Access 1240 - IPoE Fed          09/01/05  03:45
Unacknowledged Alarms:

                          Current Ethernet Statistics



        Transmit Statistics

        Successfully Transmitted Packets:        0       LinkType is 10Base mode
        Errored Transmitted Packets:             0       Ethernet Link is Down

        Receive Statistics

        Successfully Received Packets:           0
        Errored Received Packets:                0
        Broadcast Received Packets:              0
        Multicast Received Packets:              0
        Received CRC Errors:                     0

'C' - Clear Current Statistics
'J' - Go to Previous Statistics Screen

                          '?' - System Help Screen
```

Figure 5-19. Current Ethernet Statistics Menu

The Current Ethernet Statistics menu fields are shown in **Table 5-16**.

Table 5-16. Current Ethernet Statistics Menu Fields

Field	Description
Transmit Statistics	
Successfully Transmitted Packets	This field displays the number of packets successfully transmitted from the unit.
Errored Transmitted Packets	This field displays the number of packets transmitted with errors from the unit.
Receive Statistics	
Successfully Received Packets	This field displays the number of packets successfully received to the unit.
Errored Received Packets	This field displays the number of packets received with errors to the unit.
Broadcast Received Packets	This field displays the number of packets received by the layer addressed as broadcast.
Multicast Received Packets	This field displays the number of packets received by the layer addressed as multicast.
Received CRC Errors	This field displays the number of Cyclic Redundancy Check (CRC) errors received to unit.

The Current Ethernet Statistics menu hot keys are shown in **Table 5-17**.

Table 5-17. Current Ethernet Statistics Menu Hot Keys

Hot Key	Description
C	This hot key is used to clear the current Ethernet statistics.
J	This hot key displays the "Previous Ethernet Statistics Menu" on page 5-28.

Previous Ethernet Statistics Menu

The Previous Ethernet Statistics menu (see **Figure 5-20**) is used to view the previous five 15-minute periods of Ethernet statistics.

```
                         Total Access 1240 - IPoE Fed      09/01/05  02:18
Unacknowledged Alarms:                     INFO

                         Previous Ethernet Statistics
15 Minute Periods        Ethernet Port   93 of 96
96 Time Periods

                         <---- Oldest                       Newest ---->
                         03/29/05        03/29/05       03/29/05       03/29/05
                         01:30:00        01:45:00       02:00:00       02:15:00
Successful Tx Packets:          0               0              0              0
Errored Tx Packets   :          0               0              0              0
Successful Rx Packets:          0               0              0              0
Errored Rx Packets   :          0               0              0              0
Broadcast Rx Packets :          0               0              0              0
Multicast Rx Packets :          0               0              0              0
Rx CRC Errors        :          0               0              0              0




'C' - Clear Previous Statistics
'J' - Go to Current Statistics Screen
1 - Oldest   2 - 1/4   3 - Middle   4 - 3/4   5 - Newest   6 - Prev  7 - Next
                      '?' - System Help Screen
```

Figure 5-20. Previous Ethernet Statistics Menu

The Previous Ethernet Statistics menu options located at the bottom of the screen are shown in **Table 5-18**.

Table 5-18. Previous Ethernet Statistics Menu Options

Option	Description	Function
1	Oldest	This option is used to display the oldest 15-minute period of Ethernet statistics.
2	1/4	This option is used to display the second oldest 15-minute period of Ethernet statistics.
3	Middle	This option is used to display the middle, or third, 15-minute period of Ethernet statistics.
4	3/4	This option is used to display the fourth 15-minute period of Ethernet statistics.
5	Newest	This option is used to display the newest 15-minute period of Ethernet statistics.
6	Prev	This option is used to display Ethernet statistics for the previous port.
7	Next	This option is used to display Ethernet statistics for the next port.

The Previous Ethernet Statistics menu fields are described in **Table 5-19**.

Table 5-19. Ethernet Statistics - Previous Fields

Field	Description
Successful Tx Packets	This field displays the number of packets successfully transmitted from the unit.
Errored Tx Packets	This field displays the number of packets transmitted with errors from the unit.
Successful Rx Packets	This field displays the number of packets successfully received to the unit.
Errored Rx Packets	This field displays the number of packets received with errors to the unit.
Broadcast Rx Packets	This field displays the number of packets received by the layer addressed as broadcast.
Multicast Rx Packets	This field displays the number of packets received by the layer addressed as multicast.
Rx CRC Errors	This field displays the number of Cyclic Redundancy Check (CRC) errors received to unit.

The Current Ethernet Statistics menu hot keys are shown in **Table 5-20**.

Table 5-20. Current Ethernet Statistics Menu Hot Keys

Hot Key	Description
C	This hot key is used to clear the previous Ethernet statistics.
J	This hot key displays the "Current Ethernet Statistics Menu" on page 5-26.

Current Bridge Statistics Menu

The Current Bridge Statistics menu (see **Figure 5-21**) is used to select a bridge and view and reset current port statistics.

NOTE

On the Current Bridge Statistics menu, Transmit Statistics refers to data from the Total Access 1240 to the customer modem, and Receive Statistics refers to data from the customer modem to the Total Access 1240.

```
                          Total Access 1240 - IPoE Fed
Unacknowledged Alarms:                     INFO

     Circuit ID: No Circuit ID

                             Current Bridge Statistics
     VC Enabled
     Modem Not Trained       1. Port          1
     Interface Mode: 2-wire  2. Bridge        1

                             Selection :

     Transmit Statistics                Receive Statistics
     Good Packets:        0             Good Packets:         0
     Bad Packets:         0             Bad Packets:          0
     Good Bytes:          0             Good Bytes:           0
     Bad Bytes:           0             Bad Bytes:            0
     ATM Statistics
     Tx Cells:            0             Rx Cells:             0

'C' - Clear Current Statistics         'M' - Next Bridge
'J' - Go to Previous Statistics Screen 'N' - Next Port   'P' - Previous Port

                        '?' - System Help Screen
```

Figure 5-21. Current Bridge Statistics Menu

The Current Bridge Statistics menu options are shown in **Table 5-21**.

Table 5-21. Current Bridge Statistics Menu Options

Option	Description	Function
1	Port	This option is used to select a port.
2	Bridge	This option is used to select a bridge.

The Current Bridge Statistics menu fields are shown in **Table 5-22**.

Table 5-22. Current Bridge Statistics Menu Fields

Field	Description
Transmit Statistics	
Good Packets	This field displays the number of good packets successfully transmitted by the Total Access 1240.
Bad Packets	This field displays the number of bad packets transmitted by the Total Access 1240.
Good Bytes	This field displays the number of good bytes successfully transmitted by the Total Access 1240.
Bad Bytes	This field displays the number of bad bytes transmitted with errors by the Total Access 1240.
Receive Statistics	
Good Packets	This field displays the number of good packets successfully received by the Total Access 1240.
Bad Packets	This field displays the number of bad packets received by the Total Access 1240.
Good Bytes	This field displays the number of good bytes successfully transmitted to the Total Access 1240.
Bad Bytes	This field displays the number of bad bytes transmitted to the Total Access 1240.
ATM Statistics	
Tx Cells	This field displays the number of ATM cells transmitted by the Total Access 1240.
Rx Cells	This option displays the number of ATM cells received by the Total Access 1240.

The Current Bridge Statistics menu hot keys are shown in **Table 5-23**.

Table 5-23. Current Bridge Statistics Menu Hot Keys

Hot Key	Description
C	This hot key is used to clear the current bridge statistics.
J	This hot key displays the "Previous Bridge Statistics Menu" on page 5-32.
M	This hot key is used to display the next bridge.
N	This hot key is used to display the next port.
P	This hot key is used to display the previous port.

Previous Bridge Statistics Menu

The Previous Bridge Statistics menu (see **Figure 5-22**) is used to view previous bridge transmit and receive statistics.

```
                          Total Access 1240 - IPoE Fed       09/01/05  02:32
        Unacknowledged Alarms:                 INFO


                          Previous Bridge Statistics
        15 Minute Periods     Port: 1  Bridge: 1   93 of 96
        96 Time Periods

                          <---- Oldest                      Newest ---->
                          03/29/05       03/29/05      03/29/05      03/29/05
                          01:45:00       02:00:00      02:15:00      02:30:00
        Successful Tx Packets:      0              0             0             0
        Errored Tx Packets   :      0              0             0             0
        Successful Tx Bytes  :      0              0             0             0
        Errored Tx Bytes     :      0              0             0             0
        Successful Rx Packets:      0              0             0             0
        Errored Rx Packets   :      0              0             0             0
        Successful Rx Bytes  :      0              0             0             0
        Errored Rx Bytes     :      0              0             0             0
        ATM Tx Cells         :      0              0             0             0
        ATM Rx Cells         :      0              0             0             0

        'C' - Clear Previous Statistics        'M' - Next Bridge
        'J' - Go to Current Statistics Screen  'N' - Next Port  'P' - Previous Port
        1 - Oldest  2 - 1/4   3 - Middle   4 - 3/4   5 - Newest   6 - Prev  7 - Next
                          '?' - System Help Screen
```

Figure 5-22. Previous Bridge Statistics Previous Menu

The Previous Bridge Statistics menu options located at the bottom of the screen are shown in **Table 5-24**.

Table 5-24. Previous Bridge Statistics Menu Options

Option	Description	Function
1	Oldest	This option is used to display the oldest 15-minute period of bridge statistics.
2	1/4	This option is used to display the second oldest 15-minute period of bridge statistics.
3	Middle	This option is used to display the middle, or third, 15-minute period of bridge statistics.
4	3/4	This option is used to display the fourth 15-minute period of bridge statistics.
5	Newest	This option is used to display the newest 15-minute period of bridge statistics.
6	Prev	This option is used to display bridge statistics for the previous port.
7	Next	This option is used to display bridge statistics for the next port.

The Previous Bridge Statistics menu fields are described in **Table 5-25**.

Table 5-25. Previous Bridge Statistics Menu Fields

Field	Description
Successful Tx Packets	This option displays the number of packets successfully transmitted from the unit.
Errored Tx Packets	This option displays the number of packets transmitted with errors from the unit.
Successful Tx Bytes	This option displays the number of bytes successfully transmitted from the unit.
Errored Tx Bytes	This option displays the number of bytes transmitted with errors from the unit.
Successful Rx Packets	This option displays the number of packets successfully received to the unit.
Errored Rx Packets	This option displays the number of packets received with errors to the unit.
Successful Rx Bytes	This option displays the number of bytes successfully received from the unit.
Errored Rx Bytes	This option displays the number of bytes received with errors from the unit.
ATM Tx Cells	This option displays the number of ATM cells transmitted from the unit.
ATM Rx Cells	This option displays the number of ATM cells received from the unit.

The Previous Bridge Statistics menu hot keys are shown in **Table 5-26**.

Table 5-26. Previous Bridge Statistics Menu Hot Keys

Hot Key	Description
C	This hot key is used to clear the previous bridge statistics.
J	This hot key displays the "Current Bridge Statistics Menu" on page 5-30.
M	This hot key is used to display the next bridge.
N	This hot key is used to display the next port.
P	This hot key is used to display the previous port.

System Management Menu

The System Management menu (see **Figure 5-23**) is used to manage system wide settings. The following subsections describe these settings in detail.

```
                       Total Access 1240 - IPoE Fed        09/01/05  03:48
Unacknowledged Alarms:  None



                            System Management

                    1.  Password Control
                    2.  IP Address
                    3.  Test IP Address
                    4.  Time/Date
                    5.  Baud Rate
                    6.  System Configuration Archive
                    7.  SNMP
                    8.  External Alarms
                    9.  Download New Code
                   10.  Restore Factory Defaults
                   11.  Reset System

                    Selection :



                         '?' - System Help Screen
```
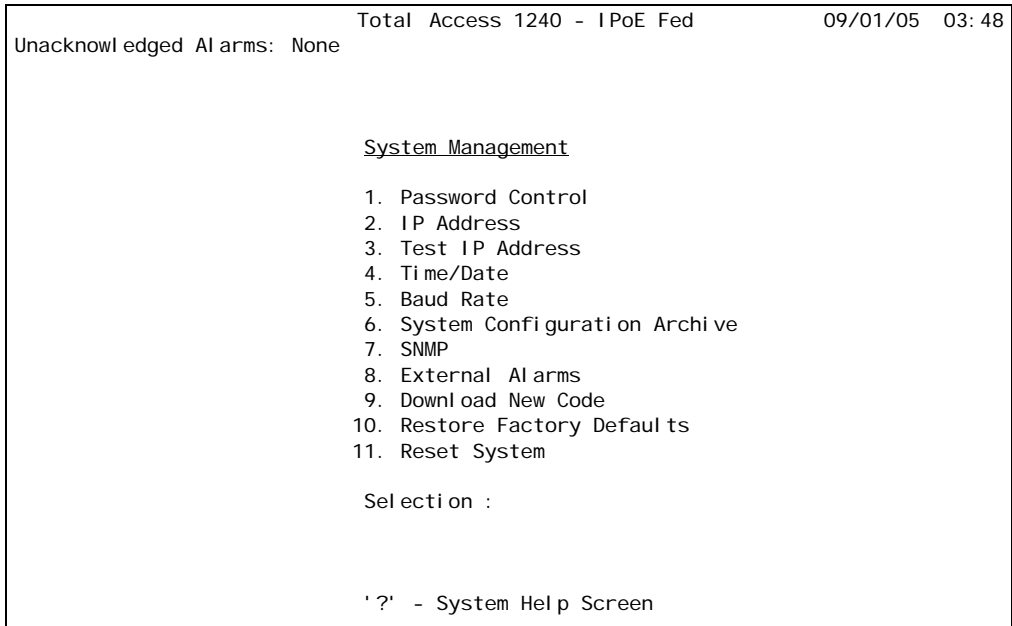
Figure 5-23. System Management Menu

The System Management menu options are shown in **Table 5-27**.

Table 5-27. System Management Menu Options

Option	Description	Function
1	Password Control	This option displays the "Password Control Menu" on page 5-36.
2	IP Address	This option displays the "Mode Selection and Current IP Settings Menu" on page 5-39.
3	Test IP Address	This option displays the "Test IP Address Menu" on page 5-45.
4	Time/Date	This option displays the "Time/Date Adjust Menu" on page 5-46.
5	Baud Rate	This option displays the "Current Baud Rate Menu" on page 5-48.
6	System Configuration Archive	This option displays the "System Configuration Archive Screen" on page 5-49.
7	SNMP	This option displays the "SNMP Configuration Menu" on page 5-51.

Table 5-27. System Management Menu Options (Continued)

Option	Description	Function
8	External Alarms	This option displays the "External Alarms Menu" on page 5-57.
9	Download New Code	This option displays the "Code Download Method Menu" on page 5-59.
10	Restore Factory Defaults	This option displays the "Restore Factory Defaults Menu" on page 5-63.
11	Reset System	This option displays the "Reset System Menu" on page 5-64.

Password Control Menu

The Password Control menu (see **Figure 5-24**) is used to set and modify passwords, logout times, and restore default passwords.

```
                            Total Access 1240 - IPoE Fed
Unacknowledged Alarms: None



                            Password Control

                   1. Set Passwords                    None Configured
                   2. Allow SNMP security management   Disabled
                   3. Set Idle Logout Time             10  minutes
                   4. Restore Default Passwords

                      Selection :









                            '?' - System Help Screen
```
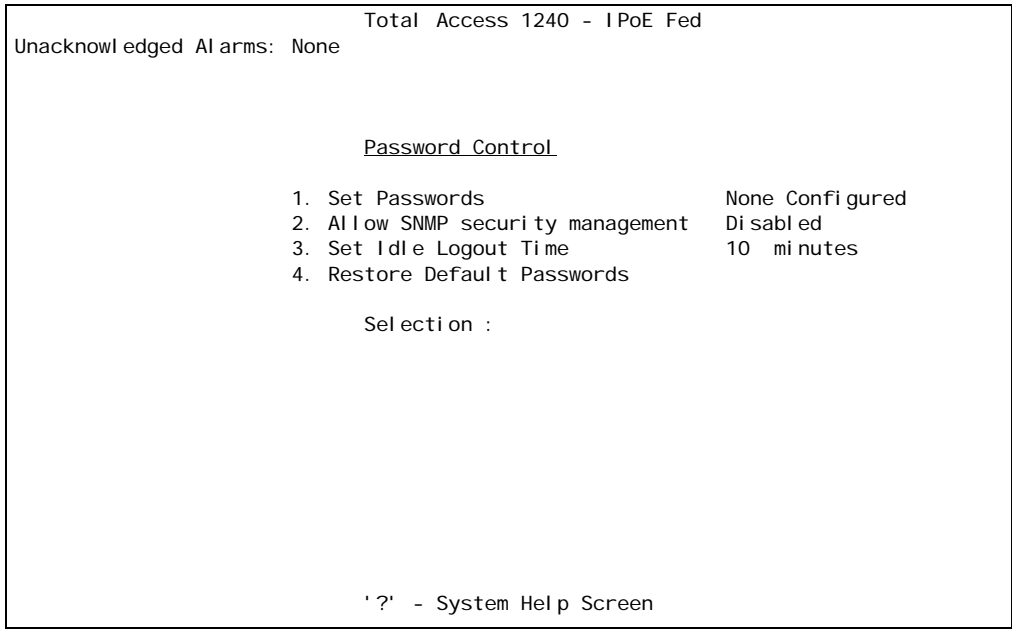
Figure 5-24. Password Control Menu

The Password Control menu options are shown in **Table 5-28**.

Table 5-28. Password Control Menu Options

Option	Description	Function
1	Set Passwords	This option displays the "Password Control Levels Screen" on page 5-37.
2	Allow SNMP security management	This option is used to enable or disable SNMP security management.
3	Set Idle Logout Time	This option is used to set the time allowed before an automatic logout is performed. This option must be set between 1 and 60 minutes.
4	Restore Default Passwords	This option is used to restore all passwords to the default settings.

CAUTION

When the Restore Default Passwords option is selected, the password controls automatically restore to the default setting without additional prompting.

Password Control Levels Screen

The Password Control Levels screen (see **Figure 5-25**) is used to manage User IDs and associated passwords that access the system.

```
                         Total Access 1240 - IPoE Fed
Unacknowledged Alarms: None




                         Password Control Levels
     User               Status           Login
Read Only              Not Configured    ?
Technician             Configured        Technician
System Administrator   Configured        ADMIN










Press space bar to set/change login
```
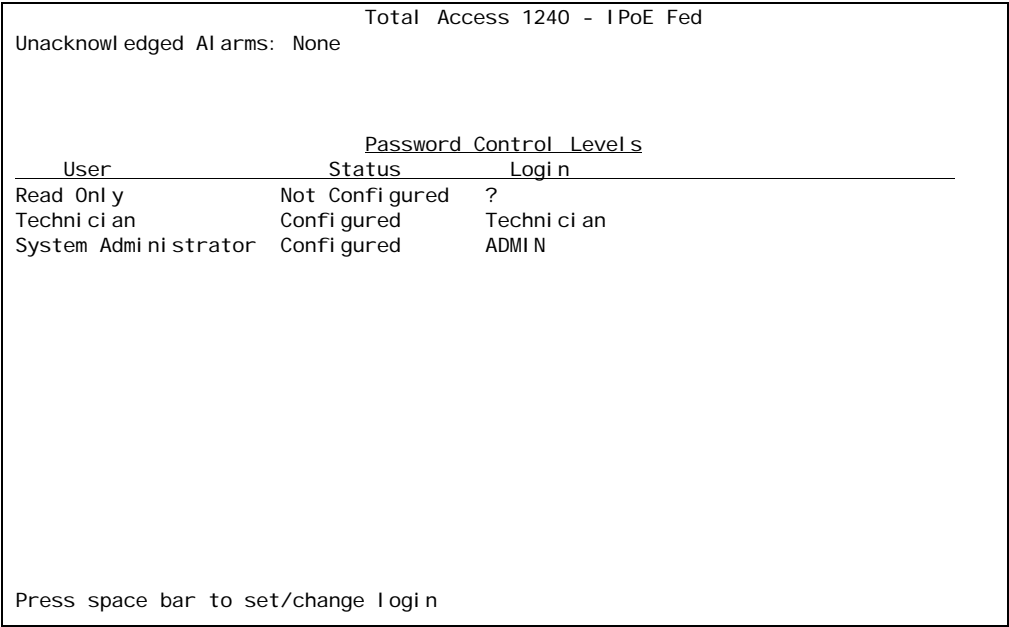
Figure 5-25. Password Control Levels Screen

the password control levels for a default usernames are shown in **Table 5-29**.

Table 5-29. Password Control Levels for Default Usernames

Username	Access Level	Control Level
ADMIN	System Administrator	Read-write and password control
READWRITE	Technician	Read-write
READONLY	Read only	Read only

Set or Change Username or Password

To set or change a username or password, perform the following steps:

1. Navigate to a Username field with the arrow keys.

   The Username field displays in reverse video.

2. Press the spacebar to open the field, type a username, and press ENTER.

3. Press the TAB key to navigate to the Password field.

   The Password field displays in reverse video.

4. Press the spacebar to open the field, type a password, and press ENTER.

5. Enter the password again when prompted to verify, and press ENTER.

6. Press the TAB key to navigate to the Access Level field.

   The Access Level field displays in reverse video.

7. Press the spacebar to change the access level, and press ENTER.

8. Press the TAB key to navigate to the Status field.

   The Status field displays in reverse video.

9. Press the spacebar to change the status, and press ENTER.

Mode Selection and Current IP Settings Menu

The Mode Selection and Current IP Settings menu (see **Figure 5-26**) is used to configure IP settings in order to remotely manage the Total Access 1240 system.

```
                             Total Access 1240 - IPoE Fed
Unacknowledged Alarms: None



                        Mode Selection and Current IP Settings

                        IP Feed                    IP over Ethernet
                        2.  Mode                   Static
                        3.  Configure IP

                        IP address                 192.168.1.1
                        Subnet mask                255.255.255.0
                        Default Gateway            192.168.1.254
                        TFTP IP address            10.200.200.218
                        IP VLAN ID                 1
                        MAC Address                00-a0-c8-12-4c-7c
                        Receive Packets            0
                        Transmit Packets           7

                        Selection :


                        '?' - System Help Screen
```
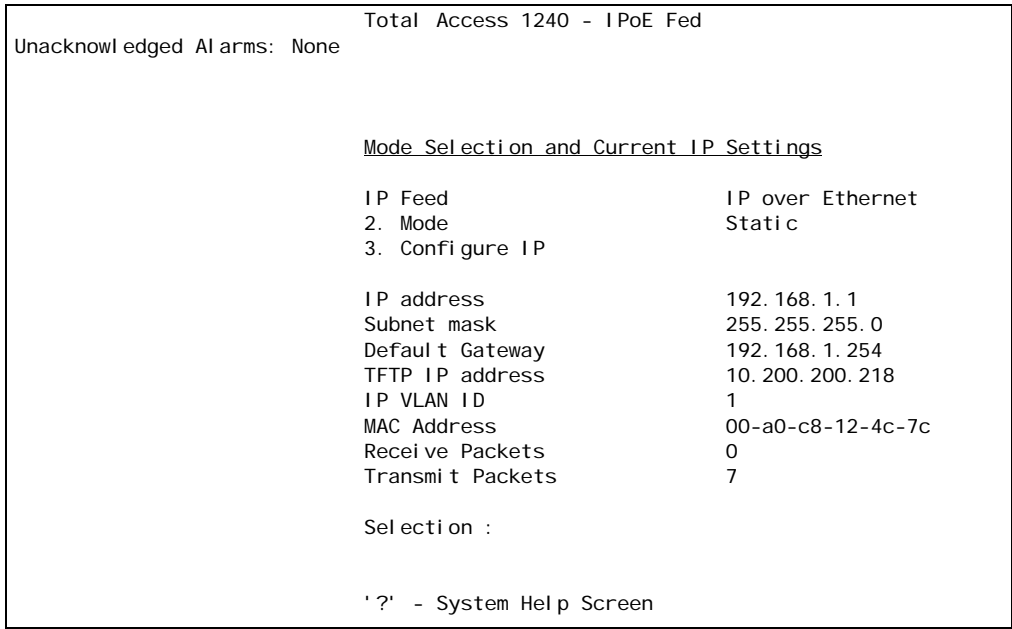
Figure 5-26. Mode Selection and Current IP Settings Menu

The Mode Selection and Current IP Settings menu options are shown in **Table 5-30**.

Table 5-30. Mode Selection and Current IP Settings Menu Options

Option	Description	Function
N/A	IP Feed	This field displays the IP Feed setting. The IP Feed is non-provisionable and is set to IP over Ethernet.
2	Mode	This option is used to select either Static or Dynamic. • In Static Mode, the IP address, Subnet mask, and Default Gateway are set for inband management of the Total Access 1240. • In Dynamic Mode, the Total Access 1240 acts as a Dynamic Host Configuration Protocol (DHCP) client and a DHCP server is required upstream from the Total Access 1240. When a DHCP server is properly configured, the Total Access 1240 system obtains the IP address, Subnet mask, and Default Gateway from the server and applies these settings to the Total Access 1240.

Table 5-30. Mode Selection and Current IP Settings Menu Options (Continued)

Option	Description	Function
3	Configure IP	Depending on the setting of the Mode option, the Configure IP option displays one of the following menus: • "Static IP Settings - for IP over Ethernet Menu" on page 5-40 • "Dynamic IP Settings - for IP over Ethernet Menu" on page 5-43

Static IP Settings - for IP over Ethernet Menu

The Static IP Settings - for IP over Ethernet menu (see **Figure 5-27**) is used to manually provision all of the IP settings.

```
                        Total Access 1240 - IPoE Fed
Unacknowledged Alarms: None



                        Static IP Settings - for IP over Ethernet

                        1. IP address              192.168.1.1
                        2. Subnet mask             255.255.255.0
                        3. Default Gateway         192.168.1.254
                        4. TFTP IP address         10.200.200.218
                        5. Reset IP Factory Defaults
                        6. IP VLAN ID              1
                           (Vlan = 1 is untagged / 2-4094 is tagged)
                           MAC Address             00-a0-c8-12-4c-7c

                        Selection :





                        '?' - System Help Screen
```

Figure 5-27. Static IP Settings - for IP Over Ethernet Menu

NOTE

The Media Access Control (MAC) address, which is set at the factory, is required to configure the DHCP server.

The Static IP Settings - for IP over Ethernet menu options are shown in **Table 5-31**.

Table 5-31. Static IP Settings - for IP over Ethernet Menu Options

Option	Description	Function
1	IP address	This options is used to configure the IP address in decimal dot format (i.e., ###.###.###.###).
2	Subnet mask	This option is used to configure the Subnet Mask in decimal dot format.
3	Default Gateway	This option is used to configure the Default Gateway. The Default Gateway is used to forward traffic to a destination outside of the subnet of the Total Access 1240. The Default Gateway is configured in decimal dot format.
4	TFTP IP address	This option is used to configure the TFTP IP address. The TFTP IP address must be configured to use TFTP for software upgrade. The TFTP address is configured in decimal dot format.
5	Reset IP Factory Defaults	This option displays the "Restore IP Factory Defaults Menu" on page 5-42.
6	IP VLAN ID	This option is used to set the IP VLAN ID. The IP VLAN ID must be set between 1 and 4094. Choosing 1 indicates an untagged VLAN ID. Choosing between 2 and 4094 indicates a tagged VLAN ID.

Restore IP Factory Defaults Menu

The Restore IP Factory Defaults menu (see **Figure 5-28**) is used to reset all of the IP factory defaults.

CAUTION

This is service affecting. If IP factory defaults are enabled remotely, IP connectivity is lost.

```
                         Total Access 1240 - IPoE Fed        09/01/05  03:52
Unacknowledged Alarms:  None



                         Restore IP Factory Defaults

                         1. Yes - Service Affecting

                         Selection :












                         '?' - System Help Screen
```

Figure 5-28. Restore IP Factory Defaults Menu

Dynamic IP Settings - for IP over Ethernet Menu

The Dynamic IP Settings - for IP over Ethernet menu (see **Figure 5-29**) is used to provision some of the IP settings. When the Mode option is set to Dynamic, the Total Access 1240 system automatically retrieves the IP address, Subnet mask, and Default Gateway from the remote DHCP server. The remaining menu items can be provisioned manually.

```
                           Total Access 1240 - IPoE Fed
Unacknowledged Alarms: None



                           Dynamic IP Settings - for IP over Ethernet

                           1.  TFTP IP address           10.200.200.218
                           2.  Renew DHCP Lease
                           3.  Reset IP Factory Defaults
                           4.  IP VLAN ID                 1
                               (Vlan = 1 is untagged / 2-4094 is tagged)

                           Selection :








                           '?' - System Help Screen
```

Figure 5-29. Dynamic IP Settings - for IP over Ethernet Menu

The Dynamic IP Settings - for IP over Ethernet menu options are shown in **Table 5-32**.

Table 5-32. Dynamic IP Settings - for IP over Ethernet Menu Options

Option	Description	Function
1	TFTP IP address	This option is used to configure the TFTP IP address.
		The TFTP IP address must be configured to use TFTP for software upgrade. The TFTP address is configured in decimal dot format.
2	Renew DHCP Lease	This option is used to manually renew information from the DHCP server.
3	Reset IP Factory Defaults	This option displays the "Restore IP Factory Defaults Menu" on page 5-44.
4	IP VLAN ID	This option is used to configure the IP VLAN ID.
		The IP VLAN ID must be set between 1 and 4094. Choosing 1 indicates an untagged VLAN ID. Choosing between 2 and 4094 indicates a tagged VLAN ID.

Restore IP Factory Defaults Menu

The Restore IP Factory Defaults menu (see **Figure 5-30**) is used to reset all of the IP factory defaults.

CAUTION

This is service affecting. If IP factory defaults are enabled remotely, IP connectivity is lost.

```
                        Total Access 1240 - IPoE Fed        04/01/05   08:09
Unacknowledged Alarms:  None



                        Restore IP Factory Defaults

                        1. Yes - Service Affecting

                        Selection :











                        '?' - System Help Screen
```
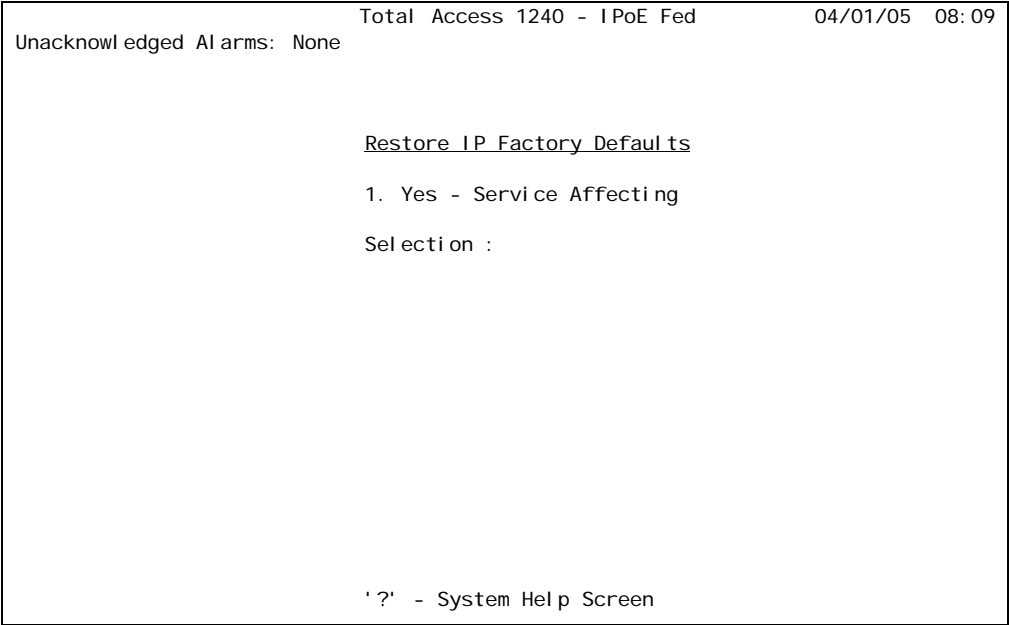
Figure 5-30. Restore IP Factory Defaults Menu

Test IP Address Menu

The Test IP Address menu (see **Figure 5-31**) is used to test IP configurations. Ping and Traceroute utilities are includes in this menu.

```
                        Total Access 1240 - IPoE Fed
Unacknowledged Alarms: None



                        Test IP Address

    1. IP Address       Not configured
    2. Ping Timeout     1 secs                  4. Start Ping
    3. Number of Pings  4 pings                 5. Start Traceroute

                        Selection :









                   '?' - System Help Screen
```
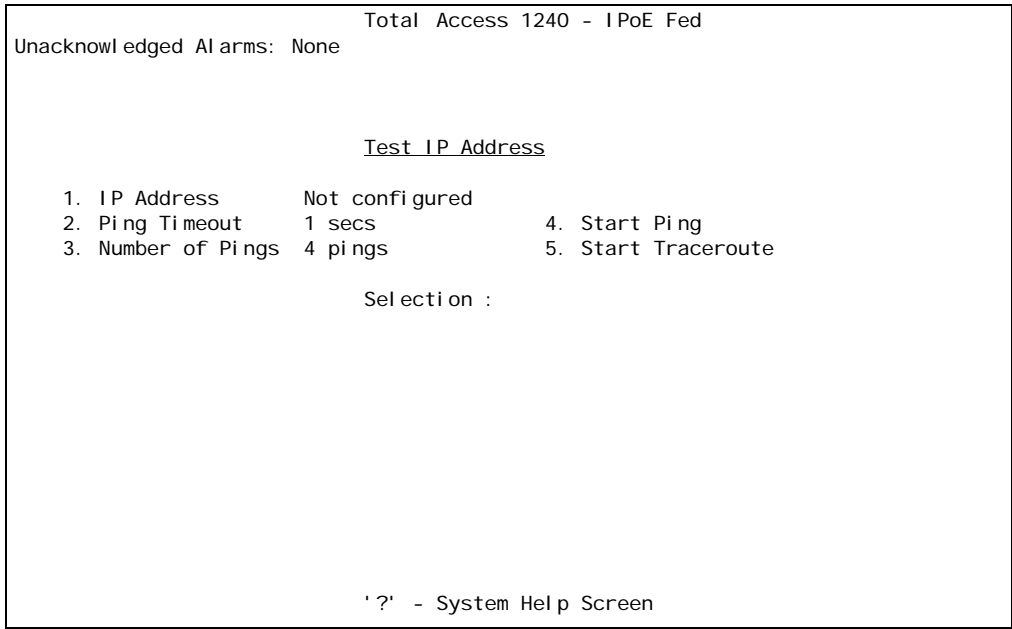
Figure 5-31. Test IP Address Menu

The Test IP Address menu options are shown in **Table 5-33**.

Table 5-33. Test IP Address Menu Options

Option	Description	Function
1	IP Address	This option is used to set the IP address that is to be tested.
2	Ping Timeout	This option is used to set the number of seconds that should pass between pings.
3	Number of Pings	This option is used to set the number of pings that are to be sent during testing of the IP address.
4	Start Ping	This option is used to initiate the ping test.
5	Start Traceroute	This option is used to display the route taken to reach the IP address that is being tested.

Time/Date Adjust Menu

The Time/Date Adjust menu (see **Figure 5-32**) is used to set the system time and date and configure Simple Network Management Protocol (SNTP) client settings. The time and date appears on most screens and is also used for performance monitoring displays.

```
                          Total Access 1240 - IPoE Fed
Unacknowledged Alarms:  None



                          Time/Date Adjust

                          1. Adjust Time        3:54
                          2. Adjust Date        09/01/05
                          3. SNTP: Status       ENABLED
                          4. SNTP: Server Addr. 192.168.1.100
                          5. SNTP: Poll Int.    0
                          6. SNTP: Timezone     0

                          Selection :






                          '?' - System Help Screen
```
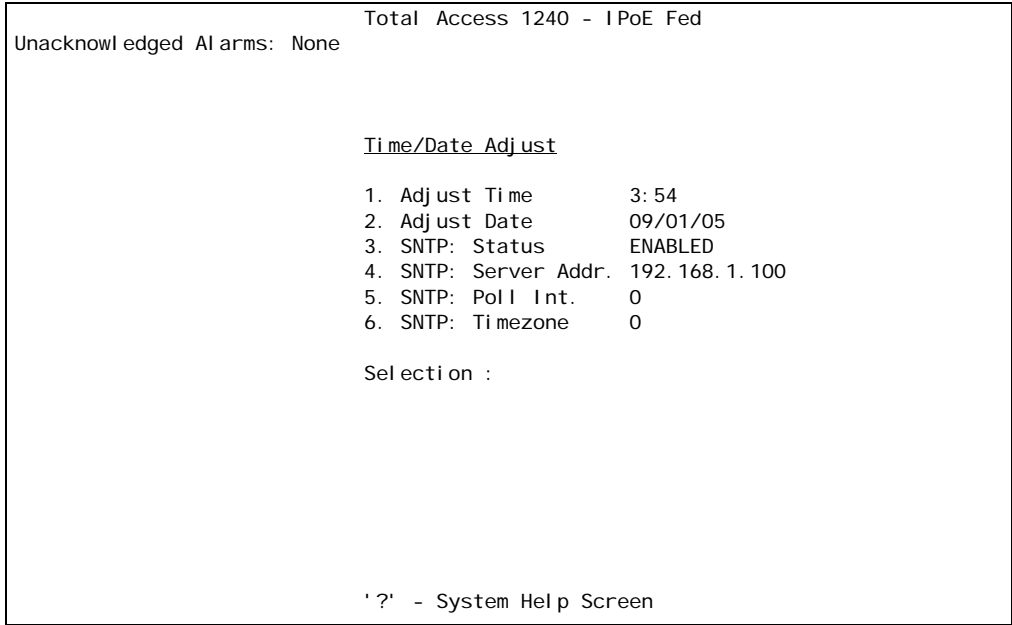
Figure 5-32. Time/Date Adjust Menu

The Time/Date Adjust Menu options are shown in **Table 5-34**.

Table 5-34. Time/Date Adjust Menu Options

Option	Description	Function
1	Adjust Time	This option is used to set the time in a 24-hour format.
2	Adjust Date	This option is used to set the date in MM/DD/YY format.
3	SNTP: Status	This option is used to enable or disable the SNTP capabilities. Simple Network Time Protocol (SNTP) is a connection less User Datagram Protocol (UDP) used to synchronize the time with a high-accuracy network time server.
4	SNTP: Server Addr.	This option is used to set the SNTP server address. The SNTP server address must be entered in decimal form in the box provided separated by periods.
5	SNTP: Poll Int.	This option is used to set the SNTP poll interval. The SNTP poll interval is the number of seconds that the adapter waits between sending SNTP requests and messages to the SNTP server.

Table 5-34. Time/Date Adjust Menu Options (Continued)

Option	Description	Function
6	SNTP: Timezone	This option is used to select a specific time zone for SNTP capabilities. The time zone is based from the GMT and a valid input can be offset from –12 to 13 hours from GMT. Once the IP address of the SNTP server and the desired poll interval is configured, the Total Access 1240 polls the specified server IP address from the time-of-day updates at the specified poll interval.

Current Baud Rate Menu

The Current Baud Rate menu (see **Figure 5-33**) displays the current baud rate. The default management port baud rate is 9600 bps.

```
                         Total Access 1240 - IPoE Fed          09/01/05  03:54
Unacknowledged Alarms: None




                              Current Baud Rate: 9600
        Baud Rate change is instantaneous, remember to adjust your terminal
                              1.  9600
                              2.  19200
                              3.  38400

                              Selection :













                         '?' - System Help Screen
```
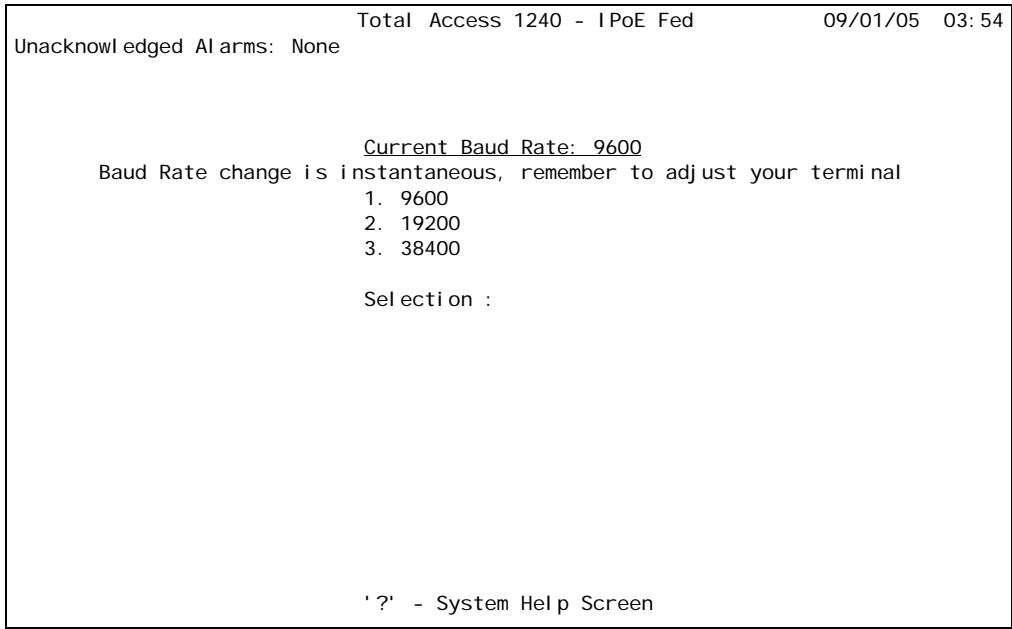
Figure 5-33. Current Baud Rate Menu

The Current Baud Rate menu options are shown in **Table 5-35**.

Table 5-35. Current Baud Rate Menu Options

Option	Description	Function
1	9600	This option configures the baud rate to 9600 bps.
2	19200	This option configures the baud rate to 19200 bps.
3	38400	This option configures the baud rate to 38400 bps.

CAUTION

If the baud rate is changed, the rate changes immediately, and the terminal emulation software must be updated to reflect the change.

System Configuration Archive Screen

The System Configuration Archive (SCA) Screen (see **Figure 5-34**) is used to save/retrieve provisioning information for the Total Access 1240 to/from a remote TFTP server for possible system restoration at a later time.

```
                          Total Access 1240 - IPoE Fed
Unacknowledged Alarms: None



                         System Configuration Archive

             TFTP Server:     10.200.200.218
             TFTP Function:   Retrieve file from Server
             TFTP Filename:
             Error Status:
             Update progress:



             WARNING! SCA RETRIEVE IS SERVICE AFFECTING!
                This process will take several minutes.
             Upon completion, the system will reboot and any
          open telnet or craft port sessions will be terminated.




Press Space bar to enter TFTP address
```

Figure 5-34. System Configuration Archive Screen

The System Configuration Archive screen fields are described in **Table 5-36**.

Table 5-36. System Configuration Archive Screen Fields

Field	Description
TFTP Server	This field is used to enter the IP address of the TFTP Server. The TFTP address is entered in decimal dot format (i.e., ###.###.###.###)
TFTP Function	This field is used to enter the function to perform via TFTP. Available functions are: • Store file to Server • Retrieve file from Server
TFTP Filename	This field is used to enter the filename to be stored to or retrieved from the server via TFTP. The filename must end with a .cfg extension.

Table 5-36. System Configuration Archive Screen Fields (Continued)

Field	Description
Error Status	This field displays the status of the TFTP transfer. The Error Status messages are as follows: • File Not Found: This status indicates that the TFTP network server was unable to locate the specified file name or path in the TFTP Server Filename field. • Access Violation: This status indicates that the TFTP network server denied Total Access 1240 access to the given update filename and path. Verify appropriate permissions are selected for the specified path.
Update Progress	This field displays the progress of the TFTP transfer. Progress messages are as follows: • Contacting Server: This message indicates that an attempt to establish communication with the TFTP network server specified by the server address in the TFTP Server IP Address field is in progress. • Beginning TFTP Transfer: This message indicates that communication with the TFTP network server has been established and the update file is being transferred between TFTP network server and the Total Access 1240. • Completed: This message indicates that the Total Access 1240 successfully stored/retrieved the file.

NOTE

Selection between the TFTP Server, TFTP Function, and TFTP Filename fields is facilitated by using the keyboard up/down arrow keys.

SNMP Configuration Menu

The SNMP Configuration menu (see **Figure 5-35**) is used to provision community names, trap hosts, and the traps enabled options, which provide control to manage SNMP remote access to the system through inband management.

```
                    Total Access 1240 - IPoE Fed        09/01/05  03:54
Unacknowledged Alarms:  None




                    SNMP Configuration

                    1.  Contact Information
                    2.  Community Names
                    3.  Trap Hosts
                    4.  Traps Enabled              Yes

                    Selection :








                    '?' - System Help Screen
```
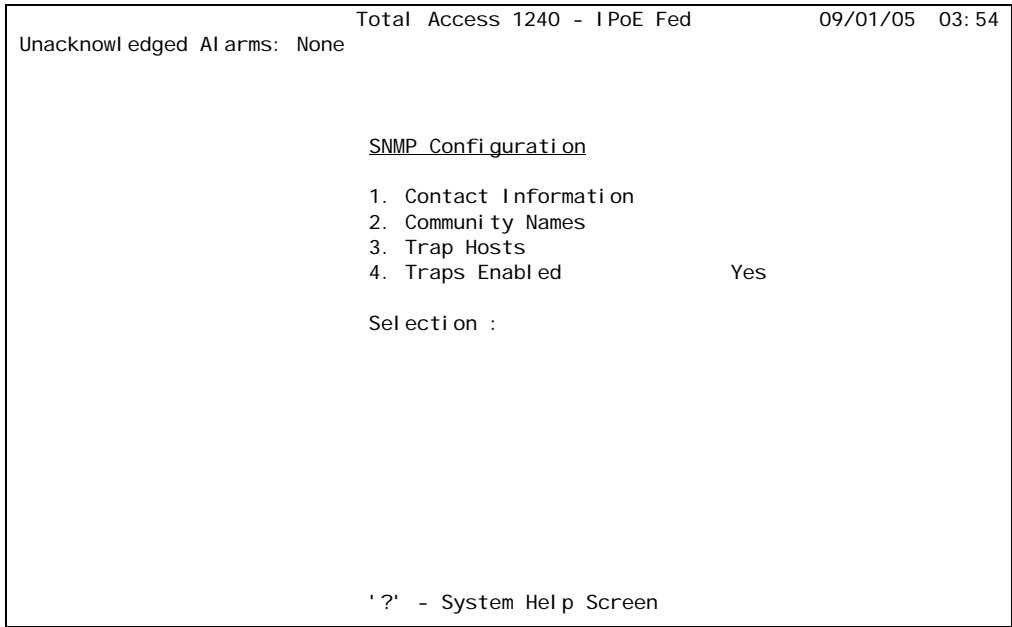
Figure 5-35. SNMP Configuration Menu

The SNMP Configuration menu options are shown in **Table 5-37**.

Table 5-37. SNMP Configuration Menu Options

Option	Description	Function
1	Contact Information	This option displays the "SNMP Contact Information Menu" on page 5-52.
2	Community Names	This option displays the "SNMP Community Names Menu" on page 5-53.
3	Trap Hosts	This option displays the "SNMP Trap Hosts Menu" on page 5-55.
4	Traps Enabled	This option toggles between Yes and No to enable or disable the traps.

SNMP Contact Information Menu

The SNMP Contact Information menu (see **Figure 5-36**) contains contact information and can be customized to reflect any contact, name and location.

```
                          Total Access 1240 - IPoE Fed
Unacknowledged Alarms: None



                          SNMP Contact Information

     1.  Contact          ADTRAN, Inc. (256)963-8000
     2.  Name
     3.  Location


                          Selection :









                          '?' - System Help Screen
```
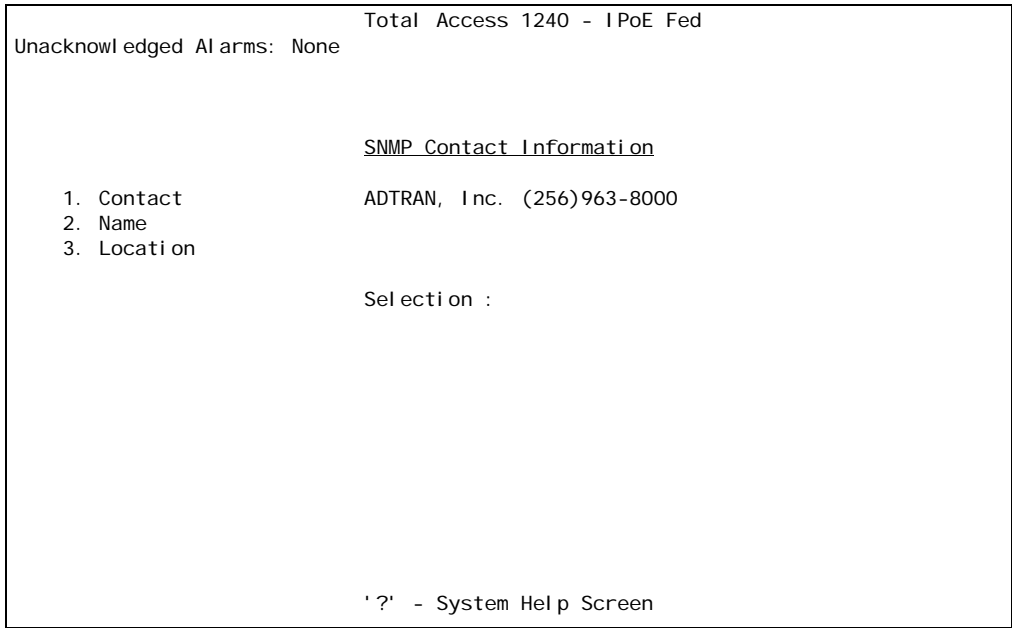
Figure 5-36. SNMP Contact Information Menu

The SNMP Contact Information menu options are shown in **Table 5-38**.

Table 5-38. SNMP Contact Information Menu Options

Option	Description	Function
1	Contact	This option is used to enter a user-specified text string for the name, phone number, or e-mail address of a person responsible for the SNMP. Up to 45 alphanumeric characters can be entered in this field, including spaces and special characters (such as an underscore).
2	Name	This option is used to enter a user-specified text string for the name of the Total Access 1240. This name helps distinguish the Total Access 1240 between different installations. Up to 45 alphanumeric characters can be entered in this field, including spaces and special characters (such as an underscore).
3	Location	This option is used to enter a user-specified text string for the location of the Total Access 1240. This field is used to identify the physical location of the unit. Up to 45 alphanumeric characters can be entered in this field, including spaces and special characters (such as an underscore).

SNMP Community Names Menu

The SNMP Community Names menu (see **Figure 5-37**) is used to establish up to three named accounts which specify unique IP addresses and privileges for network management. To restrict SNMP remote access to a single IP address, assign the IP address to a community. An IP address of 0.0.0.0 provides access from all IP addresses.

```
                      Total Access 1240 - IPoE Fed
Unacknowledged Alarms: None



                      SNMP Community Names
                 Set Name to 0 to delete Community
      1.  Name              private
           2.  IP Address    0.0.0.0
           3.  Privileges    Read
      4.  Name              public
           5.  IP Address    0.0.0.0
           6.  Privileges    Read/Write
      7.  Name              Not Configured
           8.  IP Address    0.0.0.0
           9.  Privileges


                 Selection :




                 '?' - System Help Screen
```
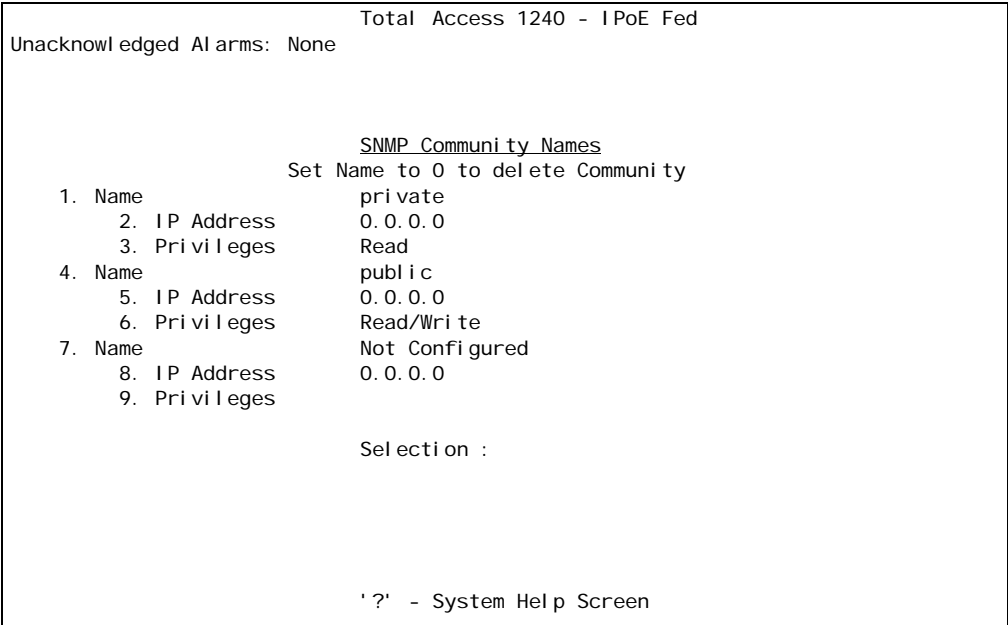
Figure 5-37. SNMP Community Names Menu

The SNMP Community Names menu options are shown in **Table 5-39**.

Table 5-39. SNMP Community Names Menu Options

Option	Description	Function
1	Name	This option is used to configure the first SNMP community. Settings include Private and Public.
2	IP Address	This option is used to configure the first SNMP community IP address in decimal dot format (i.e., ###.###.###.###).
3	Privileges	This option is used to configure the first SNMP community privilege level. Options include Read/Write and Read.
4	Name	This option is used to configure the second SNMP community. Settings include Private and Public.
5	IP Address	This option is used to configure the second SNMP community IP address in decimal dot format (i.e., ###.###.###.###).

Table 5-39. SNMP Community Names Menu Options (Continued)

Option	Description	Function
6	Privileges	This option is used to configure the second SNMP community privilege level. Options include Read/Write and Read.
7	Name	This option is used to configure the third SNMP community. Settings include Private and Public.
8	IP Address	This option is used to configure the third SNMP community IP address in decimal dot format (i.e., ###.###.###.###).
9	Privileges	This option is used to configure the third SNMP community privilege level. Options include Read/Write and Read.

SNMP Trap Hosts Menu

The SNMP Trap Hosts menu (see **Figure 5-38**) is used to set multiple IP Addresses (trap destinations) and SNMP versions for notification of a trap. A trap is an automatic alert, or notification, sent to an IP Address. The Total Access 1240 system forwards SNMP traps to all configured hosts as the traps occur.

```
                          Total Access 1240 - IPoE Fed
Unacknowledged Alarms: None



                             SNMP Trap Hosts
        Set IP address to enter Trap Host. Set IP address to D to delete Trap Host
             1. IP Address       0.0.0.0
             2. Version          SNMPv1
             3. IP Address       0.0.0.0
             4. Version          SNMPv1
             5. IP Address       10.200.200.218
             6. Version          SNMPv2
             7. Trap Port        162


                             Selection :




                             '?' - System Help Screen
```
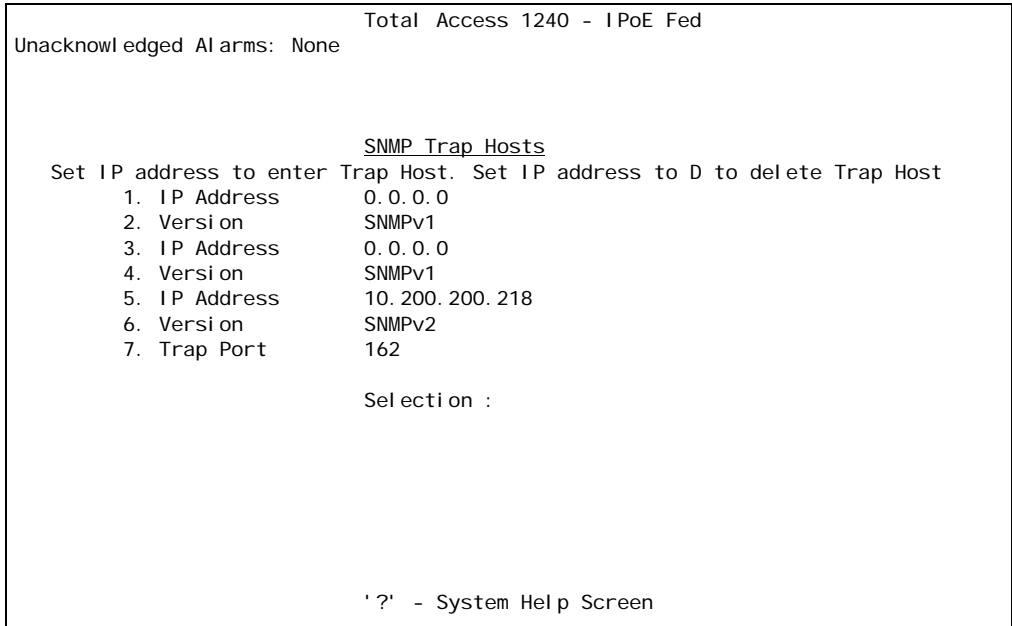
Figure 5-38. SNMP Trap Hosts Menu

The SNMP Trap Hosts menu options are shown in **Table 5-40**.

Table 5-40. SNMP Trap Hosts Menu Options

Option	Description	Function
1	IP Address	This option is used to configure the first SNMP trap host IP address in decimal dot format (i.e., ###.###.###.###).
2	Version	This option is used to configure the SNMP version for the first SNMP trap host. Options include the following: • SNMPv1 • SNMPv2
3	IP Address	This option is used to configure the second SNMP trap host IP address in decimal dot format (i.e., ###.###.###.###).

Table 5-40. SNMP Trap Hosts Menu Options (Continued)

Option	Description	Function
4	Version	This option is used to configure the SNMP version for the second SNMP trap host. Options include the following: • SNMPv1 • SNMPv2
5	IP Address	This option is used to configure the third SNMP trap host IP address in decimal dot format (i.e., ###.###.###.###).
6	Version	This option is used to configure the SNMP version for the third SNMP trap host. Options include the following: • SNMPv1 • SNMPv2
7	Trap Port	This option is used to configure the SNMP trap port. The trap port is defaulted to port 162 and is provisionable for cases in which port 162 is blocked.

NOTE

The SNMP version should match the agent used for SNMP on the network management side.

External Alarms Menu

The External Alarms menu (see **Figure 5-39**) is used to customize the profiles for up to three external alarms. The alarms can be assigned unique names and an associated severity level (refer to "External Alarm Severity Menu" on page 5-58).

```
                        Total Access 1240 - IPoE Fed
Unacknowledged Alarms: None




                              External Alarms

1. Alarm #1 Text - External Alarm Input #1       4. Severity - Minor
2. Alarm #2 Text - External Alarm Input #2       5. Severity - Minor
3. Alarm #3 Text - External Alarm Input #3       6. Severity - Minor
                         7. Fan Alarm Delay  Disabled

                         Selection :







                       '?' - System Help Screen
```
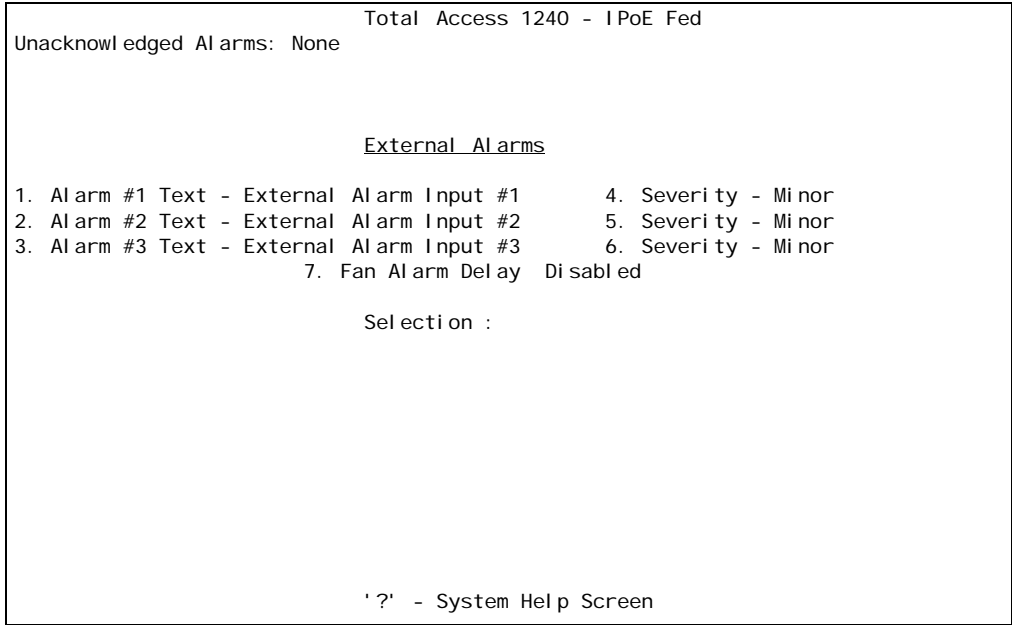
Figure 5-39. External Alarms Menu

The External Alarms menu options are shown in **Table 5-41**.

Table 5-41. External Alarms Menu Options

Option	Description	Function
1	Alarm #1 Text	This option is used to enter a 25-character text string for Alarm #1.
2	Alarm #2 Text	This option is used to enter a 25-character text string for Alarm #2.
3	Alarm #3 Text	This option is used to enter a 25-character text string for Alarm #3.
4 - 6	Severity	Options 4 to 6 are used to assign severity levels to each of the three external alarms. For more information, refer to "External Alarm Severity Menu" on page 5-58.
7	Fan Alarm Delay	This option is used to set the delay for amount of time it takes for an alarm to be generated when the fan module is removed. This alarm can be set between 0–15 minutes.

External Alarm Severity Menu

The External Alarm Severity menu (see **Figure 5-40**) is used to set customized alarm profiles for each of the five external alarms.

```
                      Total Access 1240 - IPoE Fed        09/01/05  03:55
Unacknowledged Alarms: None



                      External Alarm Severity

                      1. Critical
                      2. Major
                      3. Minor
                      4. Load Shedding

                      Selection :








                      '?' - System Help Screen
```
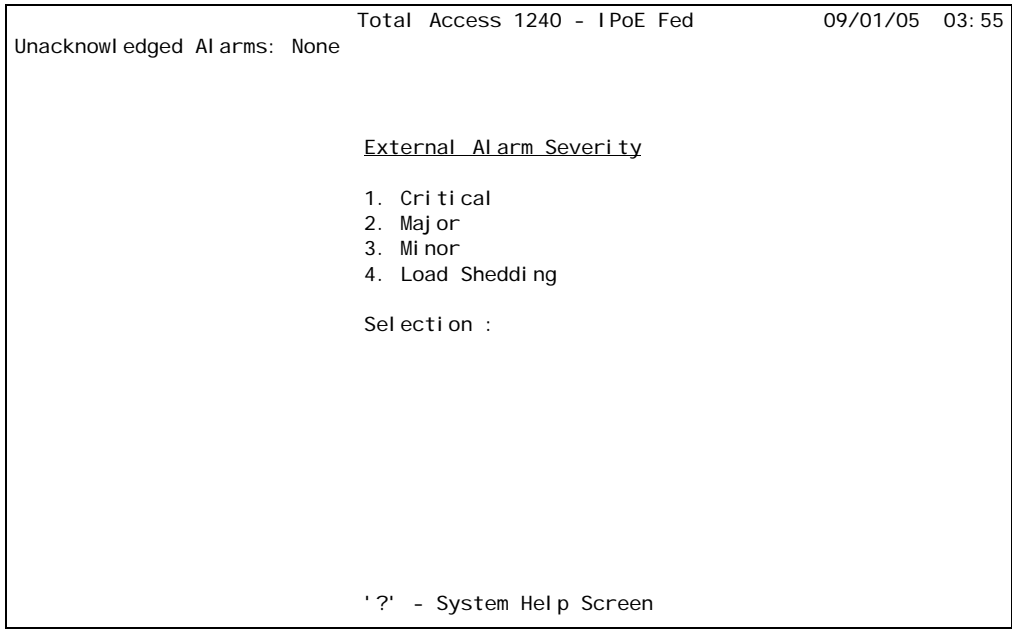
Figure 5-40. External Alarm Severity Menu

The External Alarm Severity menu options are shown in **Table 5-42**.

Table 5-42. External Alarm Severity Menu Options

Option	Description	Function
1	Critical	This option is used to designate a critical alarm.
2	Major	This option is used to designate a major alarm.
3	Minor	This option is used to designate a minor alarm.
4	Load Shedding	This option is used to designate an alarm that shuts down SHDSL services.

NOTE

The alarm severity levels are user-defined based on the impact to customer service.

Code Download Method Menu

The Code Download Method menu (see **Figure 5-41**) displays two methods to download code:

- Y-Modem
- TFTP

CAUTION

Downloading new code is service affecting.

NOTE

The System Management menu TFTP IP address option must be configured to use TFTP.

```
                         Total Access 1240 - IPoE Fed          09/01/05  03:55
Unacknowledged Alarms: None



                         Code Download Method

                         1. Y-Modem (Craft Port)
                         2. TFTP

                         Selection :










                         '?' - System Help Screen
```
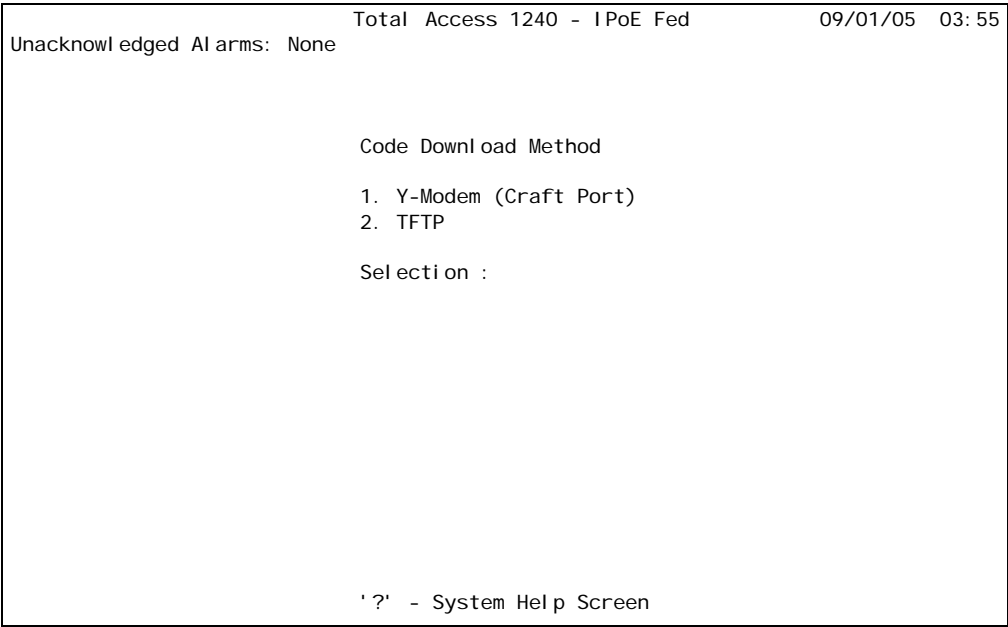
Figure 5-41. Code Download Method Menu

The Code Download Method menu options are shown in **Table 5-43**.

Table 5-43. Code Download Method Menu Options

Option	Description	Function
1	Y-Modem	This option displays the "Y-Modem Download Menu" on page 5-60.
2	TFTP	This option displays the "TFTP Firmware Download Screen" on page 5-61.

Y-Modem Download Menu

The Y-Modem Download menu (see **Figure 5-42**) is used to download code stored from a computer to the Total Access 1240 through the craft port.

```
                       Total Access 1240 - IPoE Fed         09/01/05   03:56
Unacknowledged Alarms: None




                        WARNING! THIS IS SERVICE AFFECTING!

            If either Flash A or B is selected for update,
            service is affected. If Flash B is selected, and code
            download completes, the unit will restart itself
            to implement the new code.
            Y-Modem is the file transfer protocol.
            This function cannot be initiated via a telnet
            connection (use TFTP instead).

                    1. Download 1179605L5_A_*** Flash A
                    2. Download 1179605L5_B_*** Flash B
                    3. Exit

                       Selection :


                       '?' - System Help Screen
```

Figure 5-42. Y-Modem Download Menu

To download code through the Y-Modem Download menu, perform the following steps:

1. Access the system with System Administrator privileges using a terminal application that allows file transfers, such as HyperTerminal.

2. Select Download 1179605L5_A_*** Flash A or Download 1179605L5_B_*** Flash B, and press ENTER.

   Code upgrades can involve either Flash A or Flash B or both. The Y-Modem receive utility begins.

3. If using HyperTerminal, select Transfer from the menu, and select Send.

4. Navigate to the appropriate location and choose the file that contains the code to be downloaded.

CAUTION

The code begins transmitting from the terminal emulation package. When the download is complete, the unit restarts automatically.

NOTE

If downloading both Flash A and Flash B code, repeat steps 3 through 4, choosing the code not previously downloaded.

TFTP Firmware Download Screen

The TFTP Firmware Download screen (see **Figure 5-43**) is used to download code stored from a computer to the Total Access 1240 through a TFTP server.

```
                         Total Access 1240 - IPoE Fed
Unacknowledged Alarms: None



                         TFTP Firmware Download

           TFTP Server:    10.200.200.218
           Get Code for:   1179605L5_A_*** Flash A
           TFTP Filename:
           Error Status:
           Update progress:










Press Space bar to enter TFTP address
```
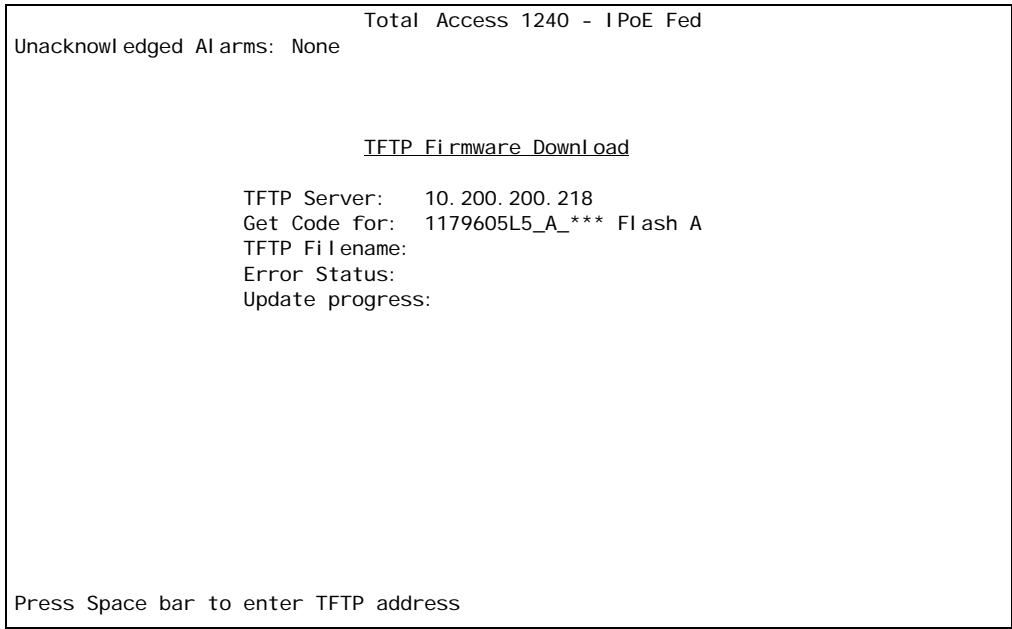
Figure 5-43. TFTP Firmware Download Screen

The TFTP Firmware Download screen fields are shown in **Table 5-44**.

Table 5-44. TFTP Firmware Download Screen Fields

Field	Description
TFTP Server	This field displays the IP address of the TFTP server. The TFTP IP address must be configured prior to attempting a TFTP download.
Get Code For	This field displays the module that will be upgraded.
TFTP Filename	This field displays the TFTP filename that will be used to upgrade the module shown in the Get Code For field. The TFTP filename must be known and must match the part number.

Table 5-44. TFTP Firmware Download Screen Fields (Continued)

Field	Description
Update Progress	This field displays the progress of the TFTP download. Progress messages are as follows: • Contacting Server: This message indicates that an attempt to establish communication with the TFTP network server specified by the server address in the TFTP Server IP Address field is in progress. • Beginning TFTP Transfer: This message indicates that communication with the TFTP network server has been established and the update file is being transferred between TFTP network server and the Total Access 1240. • Completed: This message indicates that the Total Access 1240 successfully received the update file.
Error Status	This field displays the status of the TFTP download. The Error Status messages are as follows: • File Not Found: This status indicates that the TFTP network server was unable to locate the specified file name or path in the TFTP Server Filename field. • Access Violation: This status indicates that the TFTP network server denied Total Access 1240 access to the given update filename and path. Verify appropriate permissions are selected for the specified path.

NOTE

Selection between the TFTP Server, Get Code For, and TFTP Filename fields is facilitated by using the keyboard UP/DOWN ARROW keys.

Restore Factory Defaults Menu

The Restore Factory Defaults menu (see **Figure 5-44**) is used to remotely restore the factory defaults of the system.

CAUTION

This action is service affecting. If the system is accessed remotely through a static IP address, the system resets and access is lost.

```
                        Total Access 1240 - IPoE Fed      09/01/05  01:25
Unacknowledged Alarms:  None




                        Restore Factory Defaults

                   WARNING!  THIS IS SERVICE AFFECTING!

            This defaults all TA1240 options EXCEPT Management IP Settings
            and the unit will be restarted upon completion.
            The restore operation may take several minutes.



                        1. Restore
                        2. Exit

                        Selection :




                        '?' - System Help Screen
```
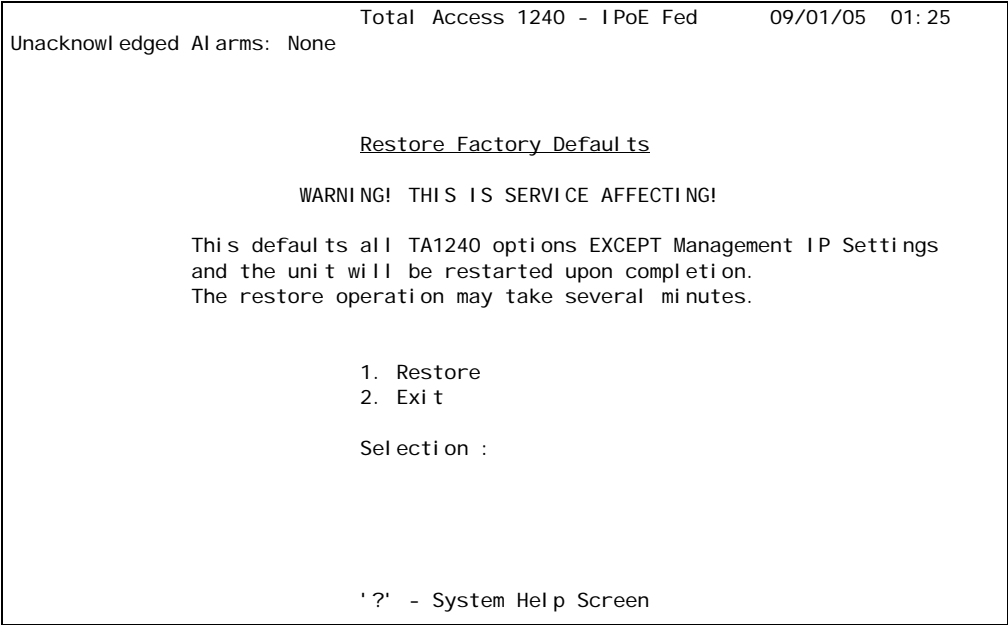
Figure 5-44. Restore Factory Defaults Menu

The Restore Factory Defaults menu options are shown in **Table 5-45**.

Table 5-45. Restore Factory Defaults Menu Options

Option	Description	Function
1	Restore	This option is used to restore all SNMP settings to the factory default settings.
2	Exit	This option is used to return to the "System Management Menu" on page 5-34. The factory defaults are not restored.

Reset System Menu

The Reset System menu (see **Figure 5-45**) is used to remotely reset the system.

CAUTION

This action is service affecting. If the system is accessed remotely through a static IP address, the system resets and access is lost.

CAUTION

When the Reset System option is selected, the system resets without additional prompting.

```
                    Total Access 1240 - IPoE Fed          09/01/05  03:56
Unacknowledged Alarms:  None




                              Reset System

                    WARNING!  THIS IS SERVICE AFFECTING!

                    This option resets the entire system.
                    All system parameters will be retained.
                          Reset occurs immediately.


                            1. Reset
                            2. Exit

                            Selection :




                       '?' - System Help Screen
```
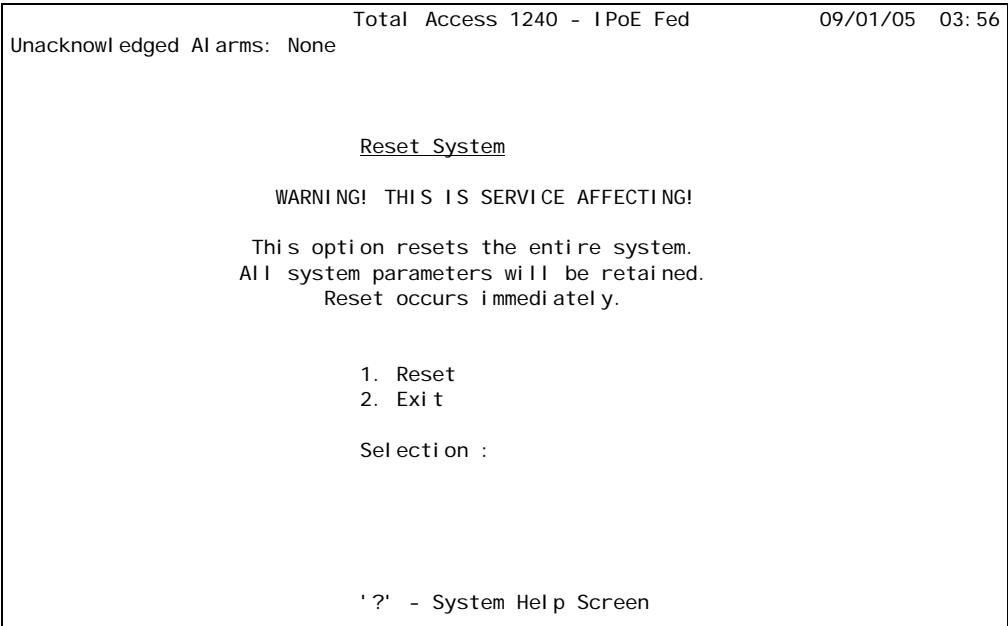
Figure 5-45. Reset System Menu

The Reset System menu options are shown in **Table 5-46**.

Table 5-46. Reset System Menu Options

Option	Description	Function
1	Reset	This option is used to reboot the Total Access 1240. All system options are retained.
2	Exit	This option is used to return to the display to the "System Management Menu" on page 5-34. The system does not reboot.

SHDSL Ports Menu

The SHDSL Ports menu (see **Figure 5-46**) is used to provision all SHDSL ports.

```
                                                            09/01/05  03:56

                              Total Access 1240


                                 SHDSL Ports

                           1.   Configuration
                           2.   Provisioning
                           3.   Status
                           4.   Alarms
                           5.   Test
                           6.   Performance
                           7.   Remote Terminal

                            Selection:









                            '?' - System Help
```
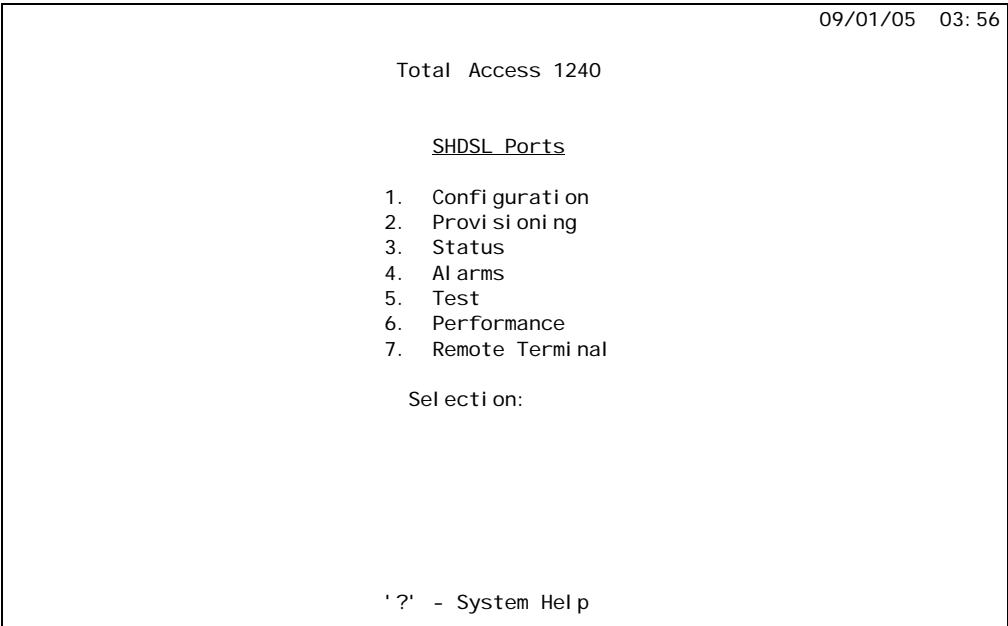
Figure 5-46. SHDSL Ports Menu

The SHDSL Ports menu options are shown in **Table 5-47**.

Table 5-47. SHDSL Ports Menu Options

Option	Description	Function
1	Configuration	This option displays the "SHDSL Loop 1 Configuration Screen" on page 5-66.
2	Provisioning	This option displays the "Provisioning Menu" on page 5-68.
3	Status	This option displays the "SHDSL Loop 1 Status Menu" on page 5-80.
4	Alarms	This option displays the "Alarm Status Screen" on page 5-82.
5	Test	This option displays the "SHDSL Loop 1 Test Menu" on page 5-83.
6	Performance	This option displays the "SHDSL Loop 1 Performance Screen" on page 5-88.
7	Remote Terminal	This option is used to set a remote terminal. SHDSL provides an overhead channel (EOC) over which the Total Access 1240 can configure the NTU (SHDSL modem).

SHDSL Loop 1 Configuration Screen

The SHDSL Loop 1 Configuration screen (see **Figure 5-47**) displays information about the system. For instance, the part number can be used to search for related information on the ADTRAN website or to order additional parts. The software revision can be required when calling ADTRAN Technical Support.

```
                                                        09/01/05  03:57


                              Total Access 1240


                            SHDSL Loop 1 Configuration

                                 LTU                        NTU
            Vendor ID          : ADTN                       N/A
            Part Number        : 1179605L5                  N/A
            Serial Number      : E49A1314                   N/A
            Product Revision   : A                          N/A
            Manufacture Date   :                            N/A
            CLEI Code          :                            N/A
            SHDSL Version      : 01                         N/A
            Vendor List Number : 1                          N/A
            Vendor Issue Number: 1                          N/A
            Boot Revision      : A01.00                     N/A
            Software Revision  : A03.30 (Flash A)           N/A
            Software Checksum  : E215                       N/A



     'N' - Next Loop    'P' - Prev Loop    'S' - Select Loop   '?' - System Help
```

Figure 5-47. SHDSL Loop 1 Configuration Screen

NOTE

The Loop number displayed indicates the current loop number being viewed or provisioned.

There are two descriptors for each SHDSL field:

- LTU – Line Terminating Unit
- NTU – Network Terminating Unit

The SHDLSL Loop 1 Configuration fields are shown in **Table 5-48**.

Table 5-48. SHDSL Loop 1 Configuration Fields

Field	LTU Description	NTU Description
Vendor ID	This field displays the unit vendor ID.	This field displays the modem vendor ID.
Part Number	This field displays the part number of the unit.	This field displays the part number of the modem.
Serial Number	This field displays the serial number of the unit.	This field displays the serial number of the modem.
Product Revision	This field displays the current product revision of the unit.	This field displays the current product revision of the modem.
Manufacture Date	This field displays the unit Manufacture Date.	This field displays the modem Manufacture Date.
CLEI Code	This field displays the Common Language Equipment Identifier (CLEI) of the unit.	This field displays the Common Language Equipment Identifier (CLEI) of the modem.
SHDSL Version	This field displays the unit SHDSL Version.	This field displays the modem SHDSL Version.
Vendor List Number	This field displays the unit Vendor List Number.	This field displays the modem Vendor List Number.
Vendor Issue Number	This field displays the unit Vendor Issue Number.	This field displays the modem Vendor Issue Number.
Boot Revision	This field displays the unit Boot Sector Revision.	This field displays the unit Boot Sector Revision.
Software Revision	This field displays the software revision of the active unit. This field updates automatically when a software download is completed.	This field displays the software revision of the modem. This field updates automatically when a software download is completed.
Software Checksum	This field displays the unit Software Checksum.	This field displays the modem Software Checksum.

Provisioning Menu

The Provisioning menu (see **Figure 5-48**) is used to set the provisioning for the main circuit board card or the SHDSL Circuit IDs.

```
                                                                 09/01/05  03:57

                              Total Access 1240




                              Provisioning

                          1.   Card
                          2.   SHDSL

                       Selection:








                       '?' - System Help
```
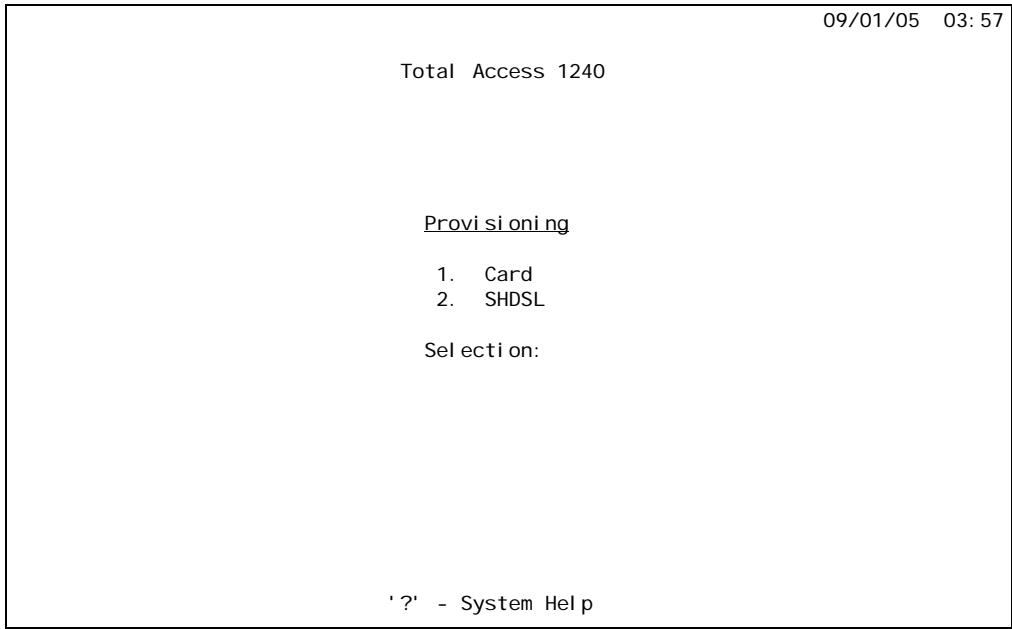
Figure 5-48. Provisioning Menu

The Provisioning menu options are shown in **Table 5-49**.

Table 5-49. Provisioning Menu Options

Option	Description	Function
1	Card	This option displays the "Card Provisioning Menu" on page 5-69.
2	SHDSL	This option displays the "SHDSL Loop 1 Provisioning Menu" on page 5-71.

Card Provisioning Menu

The Card Provisioning menu (see **Figure 5-49**) is used to set the service state of the main circuit board card. The default value for the Card Service State is Out of Service-Maintenance. Changes to this service state are reflected on all 24 ports.

```
                                                     09/01/05   03:58

                          Total Access 1240




                          Card Provisioning

        1.   Service State           = OOS-Maintenance
        2.   Restore Factory Defaults


                          Selection:




                          '?' - System Help
```
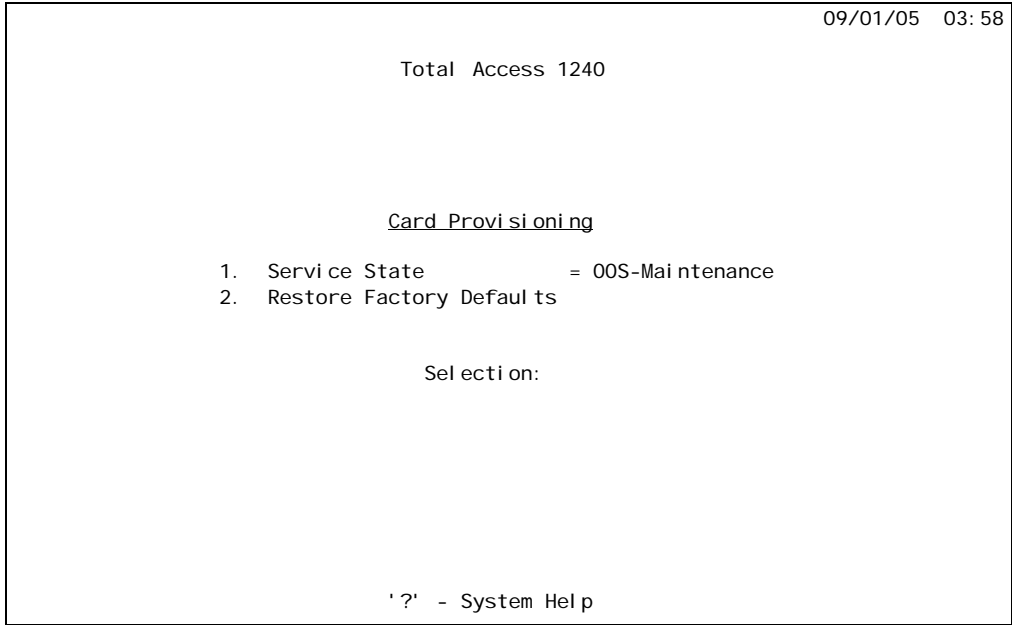
Figure 5-49. Card Provisioning Menu

The Card Provisioning menu options are shown in **Table 5-50**.

Table 5-50. Card Provisioning Menu Options

Option	Description	Function
1	Service State	This option is used to select the card service state. The available service states are as follows: • In Service – The SHDSL services are available, if installed, and Link Down and Threshold alarms are reported. • Out of Service-Unassigned – No SHDSL services are available. No Link Down and Threshold alarms are reported. • Out of Service-Maintenance – SHDSL services are available. No Link Down and Threshold alarms are reported.
2	Restore Factory Defaults	This option displays the "Restore Factory Defaults Screen" on page 5-70.

Restore Factory Defaults Screen

The Restore Factory Defaults screen (see **Figure 5-50**) is used to restore the factory defaults of the main circuit board card.

CAUTION

This action is service affecting. If the system is accessed remotely through a static IP address, the system resets and access is lost.

```
                                                          09/01/05  01:34

                              Total Access 1240




                            Restore Factory Defaults

                 WARNING - This may cause service to be interrupted!

                    This defaults only the SHDSL Ports Provisions.

                        Do you wish to continue (Y/N)?




                            '?' - System Help
```
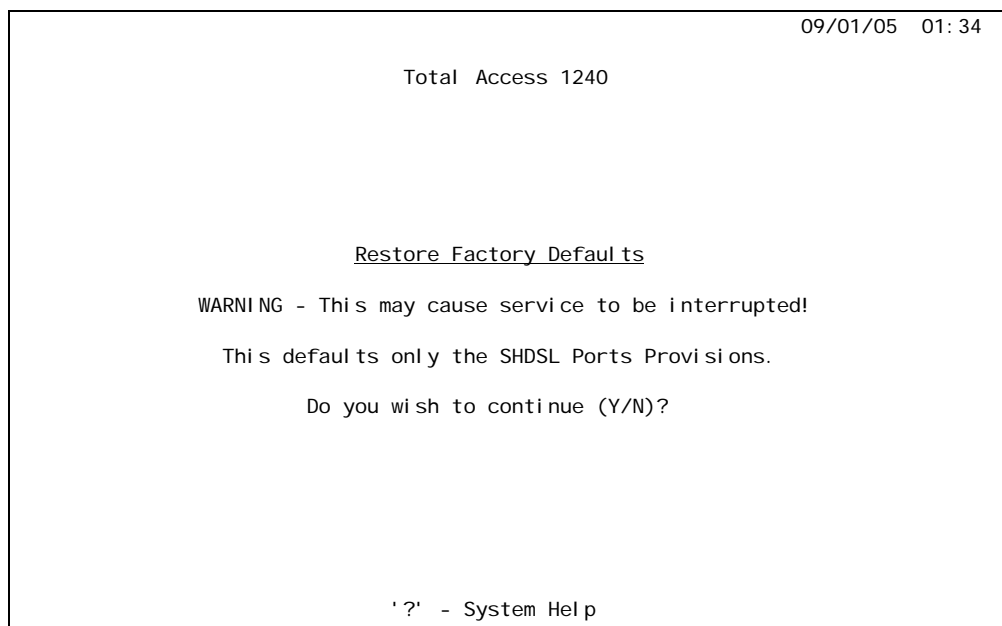
Figure 5-50. Restore factory Defaults Screen

SHDSL Loop 1 Provisioning Menu

The SHDSL Loop 1 Provisioning menu (see **Figure 5-51**) is used to provision all of the SHDSL Circuit IDs. A Circuit ID is initially named using the SHDSL Loop 1 Service State Menu option from the Bridge Port Summary Screen menu.

```
                                                      09/01/05   01:34

                              Total Access 1240


                         SHDSL Loop 1 Provisioning


            1.   Service State        : OOS-Maintenance
            2.   Interface Mode        : 2-wire
            3.   Rate                  : 2304 Kbps (N=36)
            4.   G.991.2 Annex         : B
            5.   Lineprobing (PMMS)    : Disabled
            6.   PMMS Margin           : N/A
            7.   Loopback Timeout      : Disabled
            8.   Alarm Thresholds

                         Selection:




   'N' - Next Loop     'P' - Prev Loop     'S' - Select Loop     '?' - System Help
```

Figure 5-51. SHDSL Loop 1 Provisioning Menu

The SHDSL Loop 1 Provisioning menu options available are shown in **Table 5-51**.

Table 5-51. SHDSL Loop 1 Provisioning Menu Options

Option	Description	Function
1	Service State	This option displays the "SHDSL Loop 1 Service State Menu" on page 5-72.
2	Interface Mode	This option displays the "SHDSL Loop 1 Interface Mode Menu" on page 5-73.
3	Rate	This option displays the "SHDSL Loop 1 Rate Screen" on page 5-74.
4	G.991.2 Annex	This option displays the "SHDSL Loop 1 G.991.2 Annex Menu" on page 5-75.
5	Lineprobing (PMMS)	This option displays the "SHDSL Loop 1 LineProbing Menu" on page 5-76.
6	PMMS Margin	This option displays the "SHDSL Loop 1 PMMS Margin Screen" on page 5-77.
7	Loopback Timeout	This option is used to enable or disable loopbacks. If enabled, the timeout can be set from 1–99 minutes.
8	Alarm Thresholds	This option displays the "SHDSL Loop 1 LineProbing Menu" on page 5-76.

SHDSL Loop 1 Service State Menu

The SHDSL Loop 1 Service State menu (see **Figure 5-52**) is used to set the loop service state. The default value is Out of Service-Maintenance.

```
                                                          09/01/05  03:58

                              Total Access 1240


                       SHDSL Loop 1 Service State

                   1.  In Service
                   2.  Out of Service - Unassigned
                   3.  Out of Service - Maintenance

                         Selection:












                         '?' - System Help
```
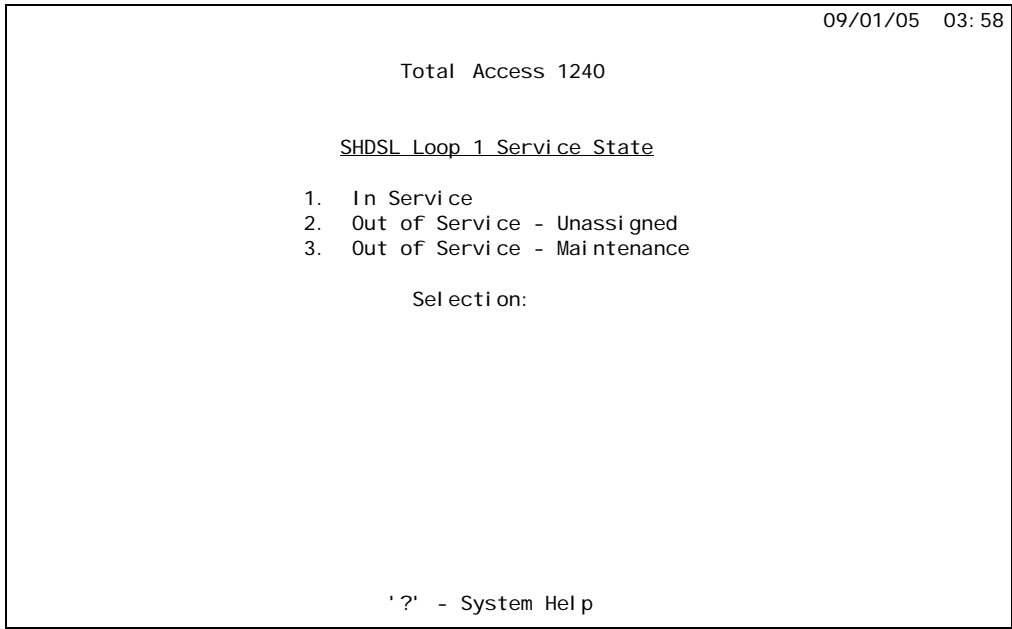
Figure 5-52. SHDSL Loop 1 Service State Menu

The SHDSL Loop 1 Service State menu options are shown in **Table 5-52**.

Table 5-52. SHDSL Loop 1 Service State Options

Option	Description	Function
1	In Service	This option makes SHDSL services available, if installed, and Link Down and Threshold alarms are reported.
2	Out of Service-Unassigned	This option makes SHDSL services unavailable, and no Link Down and Threshold alarms are reported.
3	Out of Service-Maintenance	This option makes SHDSL services available, and no Link Down and Threshold alarms are reported.

SHDSL Loop 1 Interface Mode Menu

The SHDSL Loop 1 Interface Mode menu (see **Figure 5-53**) is used to set the interface mode. The interface mode can be set to either 2-wire or 4-wire. SHDSL transceivers are designed primarily for duplex operation over mixed gauge 2-wire twisted metallic pairs, however, optional 4-wire operation is supported for extended reach applications.

```
                                                          09/01/05  03:59

                            Total Access 1240




                    SHDSL Loop 1 Interface Mode

                        1.   2-wire
                        2.   4-wire

                        Selection:






                            '?' - System Help
```
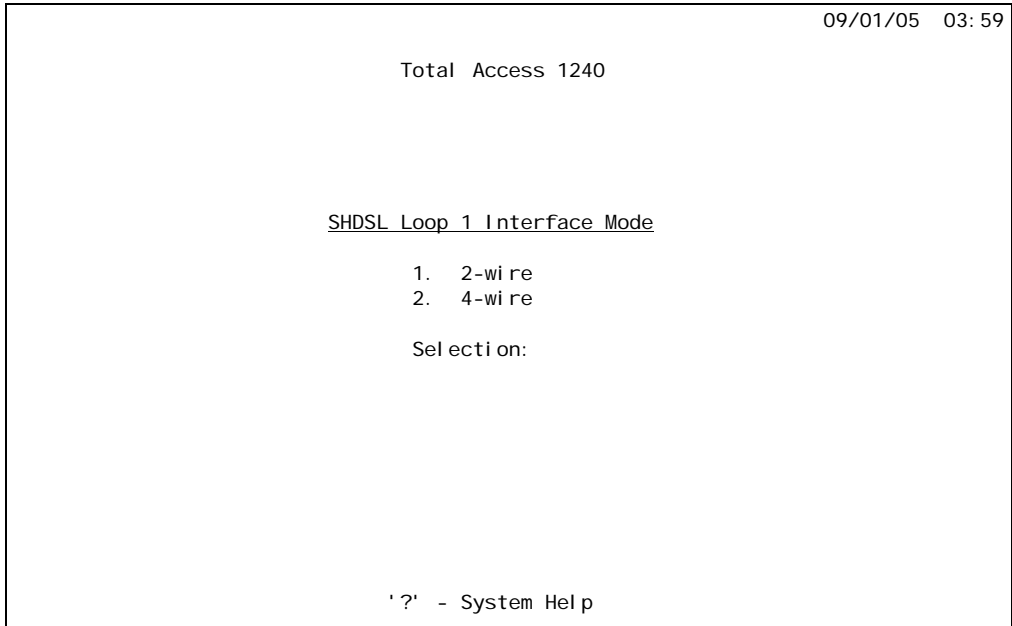
Figure 5-53. SHDSL Loop 1 Interface Mode Menu

The SHDSL Loop 1 Interface Mode menu options are shown in **Table 5-53**.

Table 5-53. SHDSL Loop 1 Interface Mode Menu Options
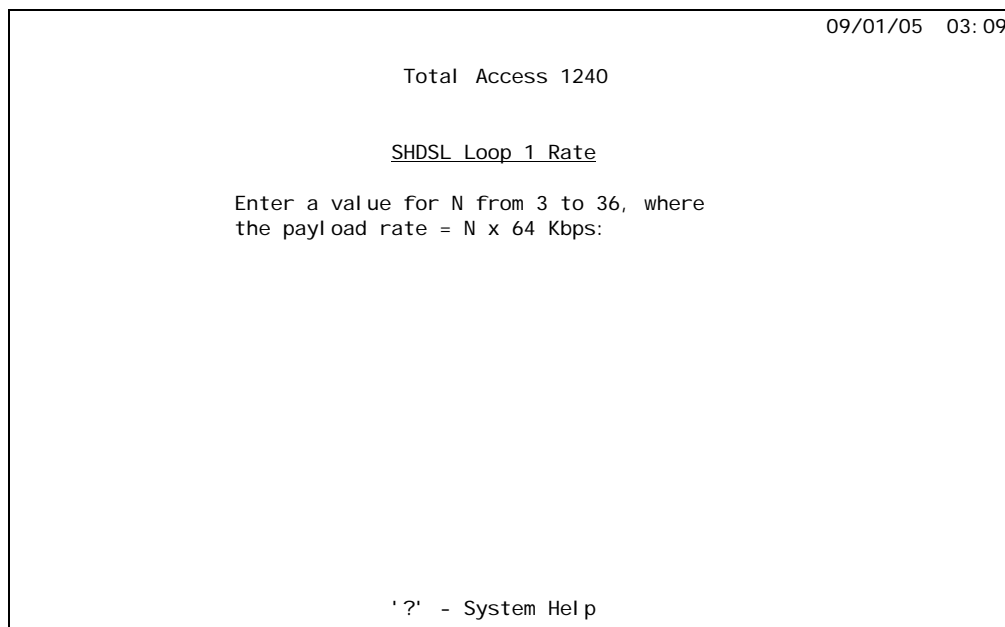
Option	Description	Function
1	2-wire	This option sets the interface mode to single-pair operation. SHDSL offers rates from 192 kbps to 2.3 Mbps in increments of 64 kbps.
2	4-wire	This option sets the interface mode to dual-pair operation. SHDSL offers rates from 384 kbps to 4.6 Mbps in increments of 64 kbps.

NOTE

The line rate on both pairs must be the same.

SHDSL Loop 1 Rate Screen

The SHDSL Loop 1 Rate screen (see **Figure 5-54**) is used to set the rate for the Circuit ID.

```
                                                          09/01/05  03:09

                            Total Access 1240


                           SHDSL Loop 1 Rate

         Enter a value for N from 3 to 36, where
         the payload rate = N x 64 Kbps:
















                         '?' - System Help
```

Figure 5-54. SHDSL Loop 1 Rate Screen

The rates defined in SHDSL standard G.991.2 are $N \times 64$ kbits/s, where N = 3 (192 kb/s) to 36 (2304 kb/s).

SHDSL Loop 1 G.991.2 Annex Menu

The SHDSL Loop 1 G.991.2 Annex menu (see **Figure 5-55**) is used to select the annex for the SHDSL loop.

```
                                                            09/01/05  03:10

                            Total Access 1240


                       SHDSL Loop 1 G.991.2 Annex

                            1.   A
                            2.   B
                            3.   A/B

                       Selection:












                       '?' - System Help
```
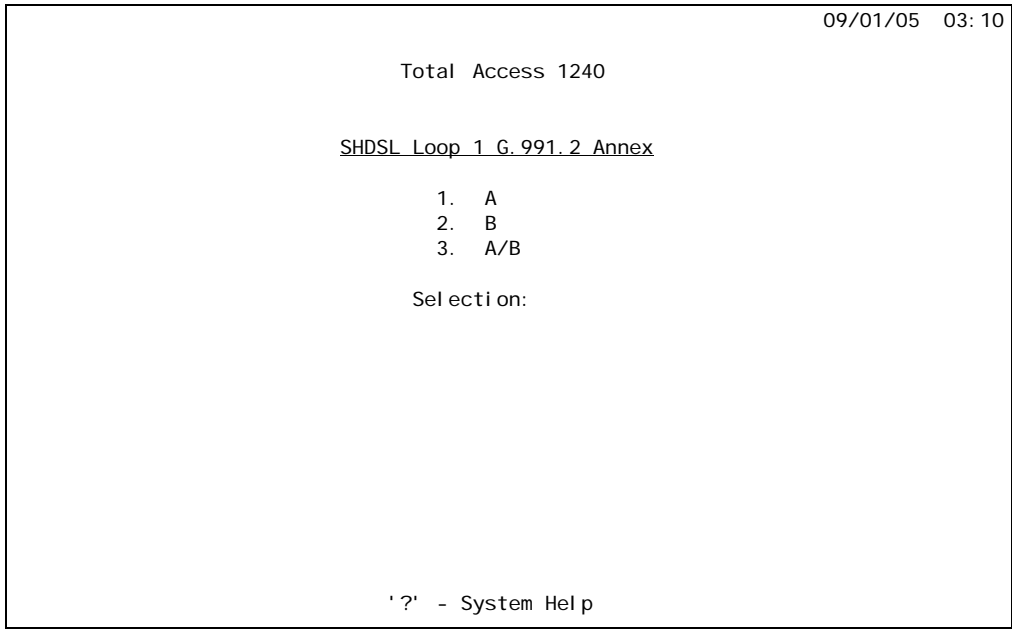
Figure 5-55. SHDSL Loop 1 G.991.2. Annex Menu

The SHDSL Loop 1 G.991.2 Annex menu options are shown in **Table 5-54**.

Table 5-54. SHDSL Loop 1 G.991.2 Annex Menu Options

Option	Description	Function
1	A	This option is used to specify Annex A. Annex A is used for North American applications.
2	B	This option is used to specify Annex B. Annex B is used for European applications.
3	A/B	This option is used to specify that the Total Access 1240 is to auto-detect the setting of the attached device.

SHDSL Loop 1 LineProbing Menu

The SHDSL Loop 1 LineProbing menu (see **Figure 5-56**) is used to configure the Total Access 1240 line probe feature which performs a sequence of power measurements on the twisted pair. From these measurements, the Total Access 1240 determines what the maximum line rate is that it can connect at.

Another name for line probe is Power Measurement Modulation Session (PMMS). This session is performed during the handshake or pre-activation phase of the G.SHDSL training sequence. Once the line probe session is finished, the units will immediately attempt to train.

```
                                                      09/01/05  02:21

                             Total Access 1240


                    SHDSL Loop 1 LineProbing

                    1. Disabled
                    2. Enabled  - Current Condition
                    3. Enabled  - Worst Case Condition

                       Selection:










                       '?' - System Help
```
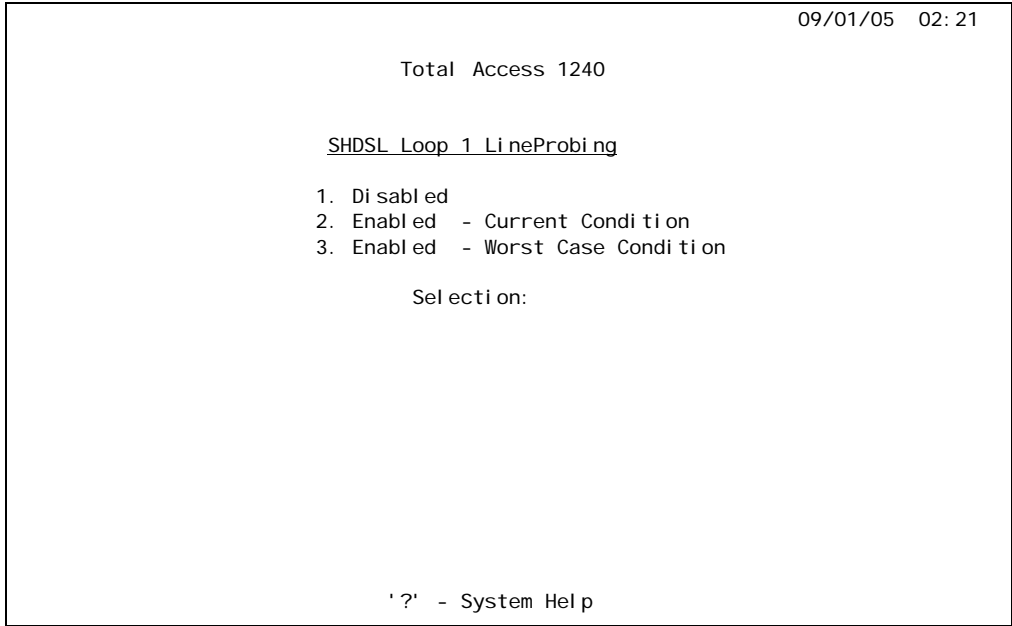
Figure 5-56. SHDSL Loop 1 LineProbing Menu

The SHDSL Loop 1 LineProbing menu options are shown in

Table 5-55. SHDSL Loop 1 LineProbing Menu Options

Option	Description	Function
1	Disabled	Line probing is disabled.
2	Enabled - Current Condition	Current Condition specifies that the line probing sequence should determine the maximum rate it can run given the current conditions on the line at the time of measurement.
3	Enabled - Worst Case Condition	Worst Case Condition specifies that the line probing sequence should assume that worst case conditions exist on the line and then determine the maximum rate at which to run.

SHDSL Loop 1 PMMS Margin Screen

The SHDSL Loop 1 PMMS Margin Screen (see **Figure 5-57** and **Figure 5-58**) is used to specify the PMMS Margin in units of dB. The PMMS Margin selection modifies the line probe algorithm to maximize the rate against the specified margin.

```
                                                         09/01/05   03:07

                              Total Access 1240


                          SHDSL Loop 1 PMMS Margin

         Enter a Current Condition Margin value for N from 0 to 20, in dB

























                              '?' - System Help
```
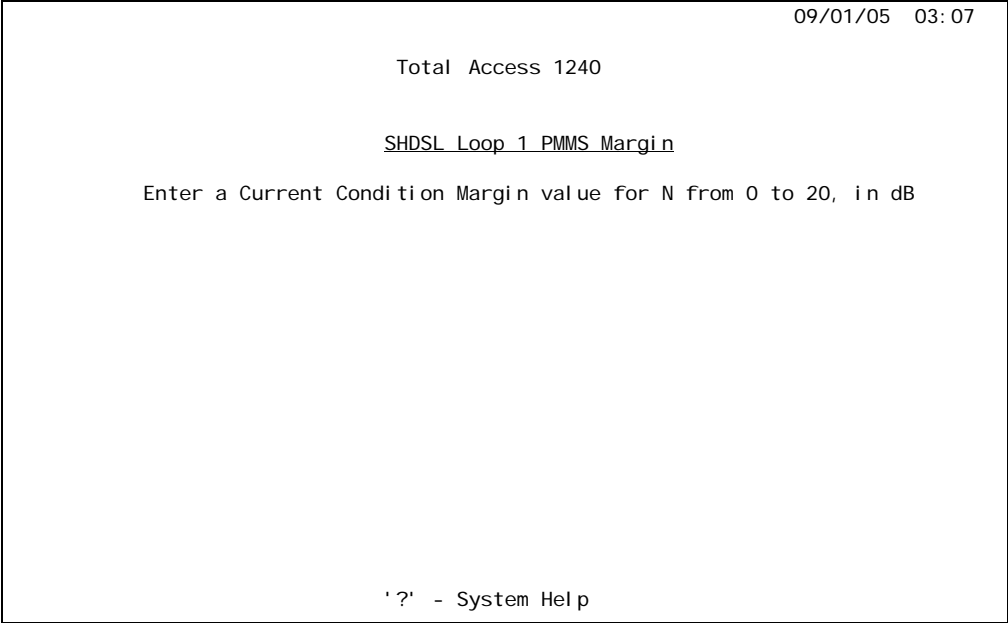
Figure 5-57. SHDSL Loop 1 PMMS Margin Screen

```
                                                         09/01/05   03:14

                              Total Access 1240


                          SHDSL Loop 1 PMMS Margin

       Enter a Worst Case Condition Margin value for N from -10 to 20, in dB

























                              '?' - System Help
```
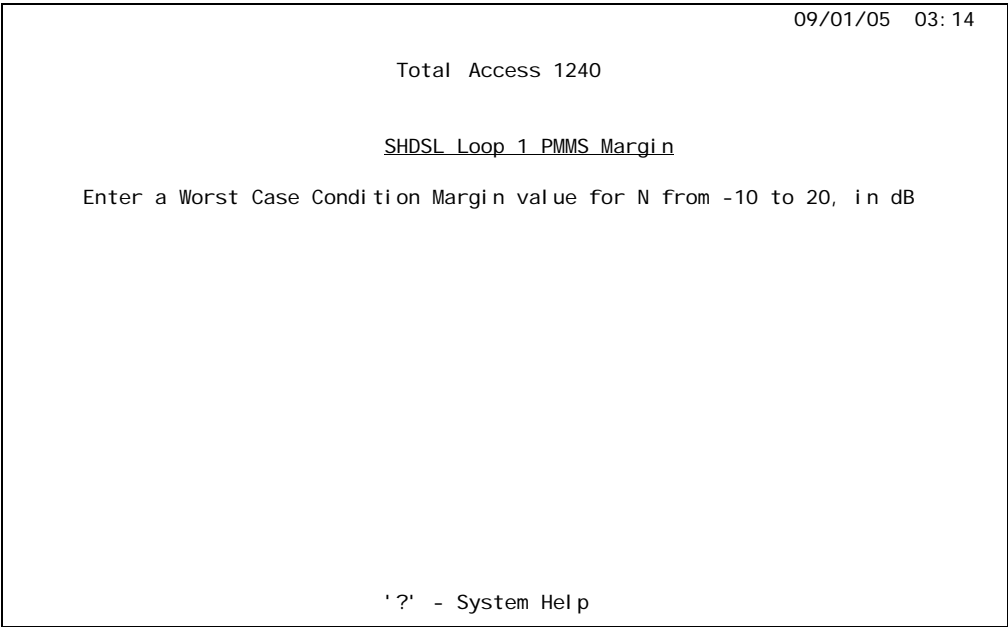
Figure 5-58. SHDSL Loop 1 PMMS Margin Screen Worst Case Option

SHDSL Loop 1 Alarm Thresholds Menu

The SHDSL Loop 1 Alarm Thresholds menu (see **Figure 5-59**) is used to enable, disable, or set the thresholds for each interval. When set, each threshold dictates the level or number of alarm counts at which an SNMP trap is sent.

```
                                                        09/01/05  03:10

                            Total Access 1240



                      SHDSL Loop 1 Alarm Thresholds

                1.   SNR Margin        : Disabled
                2.   Loop Attenuation  : Disabled
                3.   ES 15 Minute      : Disabled
                4.   SES 15 Minute     : Disabled
                5.   UAS 15 Minute     : Disabled
                6.   LOSWS 15 Minute   : Disabled
                7.   CVC 15 Minute     : Disabled


                      Selection:




      'N' - Next Loop    'P' - Prev Loop    'S' - Select Loop    '?' - System Help
```
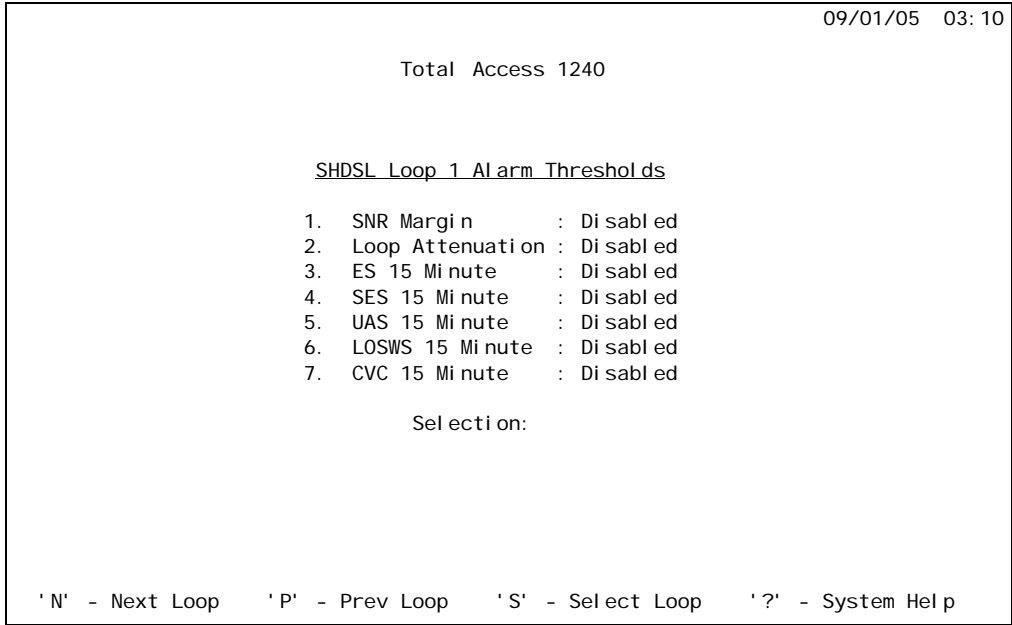
Figure 5-59. SHDSL Loop 1 Alarm Thresholds Menu

The SHDSL Loop 1 Alarm Thresholds menu options are described in **Table 5-56**.

Table 5-56. SHDSL Loop 1 Alarm Threshold Menu Options

Option	Alarm Threshold	Description
1	SNR Margin	This field is used to enable or disable the Signal to Noise Ratio Margin. The SNR Margin sets a threshold from 0 to 15 dB, which is used to determine alarm status. The parameters for SNR Margin are 1 to 15 dB.
2	Loop Attenuation	This option is used to enable or disable the Loop Attenuation setting. Loop Attenuation is used to set a loop loss value from 1 to 27 dB, which determines alarm status. The parameters for Loop Attenuation are 1 to 127 dB.
3	ES 15 Minute	This option is used to enable or disable the Errored Second setting. ES is a count of 1-second intervals during which one or more Cyclical Redundancy Check (CRC) anomalies are declared and/or one or more LOSW defects are declared. The parameters for ES are 1 to 900 seconds.

Table 5-56. SHDSL Loop 1 Alarm Threshold Menu Options (Continued)

Option	Alarm Threshold	Description
4	SES 15 Minute	This option is used to enable or disable the Severely Errored Second setting. SES 15 minute threshold is a count of 1-second intervals during which at least 50 CRC anomalies are declared or one or more LOSW defects are declared. 50 CRC anomalies during a 1-second interval are equivalent to a 30% errored frame rate for a nominal frame length. The parameters for SES are 1 to 900 seconds.
5	UAS 15 Minute	This option is used to enable or disable the Unavailable Second setting. UAS 15 minute threshold is a count of 1-second intervals for which the SHDSL line is unavailable. The SHDSL line becomes unavailable at the onset of 10 contiguous SESs. The 10 SESs are included in the unavailable time. Once unavailable, the SHDSL line becomes available at the onset of 10 contiguous seconds with no SESs. The 10s with no SESs are excluded from unavailable time. The parameters for UAS are 1 to 900 seconds.
6	LOSWS 15 Minute	This option is used to enable or disable the Loss of Synchronization Word Failure setting. LOSWS 15 minute threshold is a count of 1-second intervals during which one or more SHDSL LOSW defects are declared. The parameters for LOSWS are 1 to 900 seconds.
7	CVC 15 Minute	This option is used to enable or disable the Code Violation Count setting. CVC 15 minute threshold is a count of the SHDSL CRC anomalies occurring during the accumulation period. The parameters for CVC are 1 to 65535 errors.

SHDSL Loop 1 Status Menu

The SHDSL Loop 1 Status menu (see **Figure 5-60**) is used to view and reset SHDSL port status information.

```
                                                        09/01/05  03:03

                              Total Access 1240
                             SHDSL Loop 1 Status

         General Status : Down
         Payload Rate   : N/A                      Interface Mode : 2-wire

                                LTU          NTU
                   Loopback Status : Inactive      N/A
                   SNR Margin(dB)  : N/A,N/A,N/A   N/A,N/A,N/A (Cur,Min,Max)
                   Loop Atten(dB)  : N/A,N/A,N/A   N/A,N/A,N/A (Cur,Min,Max)
                   ES              : 0             0
                   SES             : 0             0
                   UAS             : 1647          0
                   LOSWS           : 1647          0
                   CVC             : 0             0

                          1.   Reset Statistics

                          Selection:


         'N' - Next Loop    'P' - Prev Loop    'S' - Select Loop    '?' - System Help
```
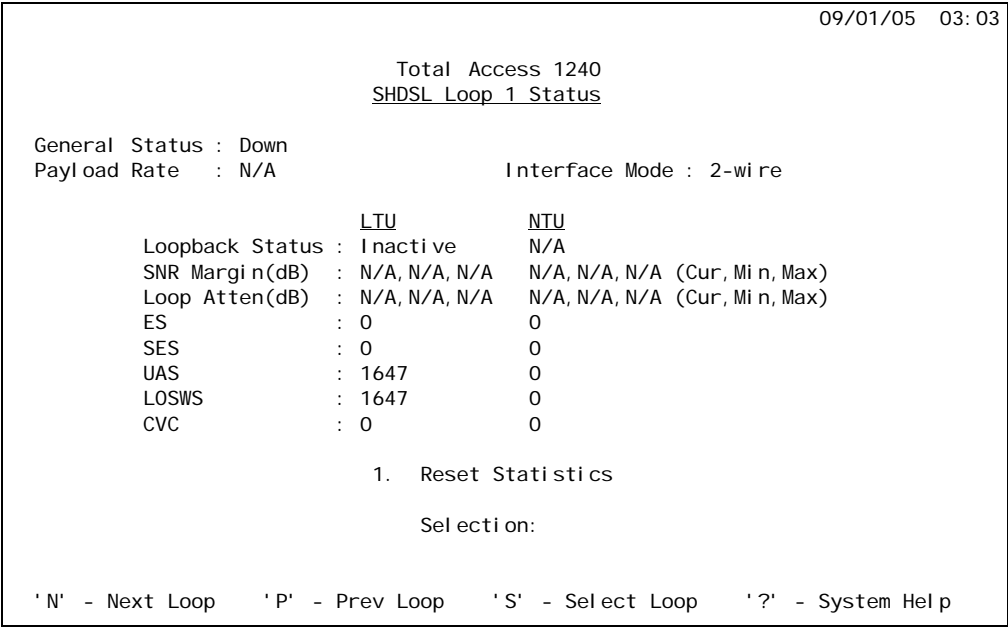
Figure 5-60. SHDSL Loop 1 Status Menu

The SHDSL Loop 1 Status menu fields are described in **Table 5-57**.

Table 5-57. SHDSL Loop 1 Status Menu Fields

Field	LTU Description	NTU Description
General Status	This field displays the status of the SHDSL loop. Values include the following: • Down • Training • Handshaking • Trained	This field displays the status of the SHDSL loop. Values include the following: • Down • Training • Handshaking • Trained
Payload Rate	This field displays the speed of the data over the SHDSL circuit, which does not include SHDSL framing overhead.	This field displays the speed of the data over the SHDSL circuit, which does not include SHDSL framing overhead.
Interface Mode	This field displays the interface mode. Values include the following: • 2-wire • 4-wire	This field displays the interface mode. Values include the following: • 2-wire • 4-wire

Table 5-57. SHDSL Loop 1 Status Menu Fields (Continued)

Field	LTU Description	NTU Description
Loopback Status	This field displays the loopback status of the unit.	This field displays the loopback status of the modem.
SNR Margin (dB)	This field displays the received signal level compared to noise level from the unit.	This field displays the received signal level compared to noise level from the SHDSL modem.
Loop Atten (dB)	This field displays the received signal level from the unit expressed in DB.	This field displays the received signal level from the SHDSL modem expressed in DB.
ES	This field displays the running count of seconds with any CRC errors from the unit.	This field displays the running count of seconds with any CRC errors from the SHDSL modem.
SES	This field displays the running count of seconds with 832 or more CRC errors from the unit.	This field displays the running count of seconds with 832 or more CRC errors from the SHDSL modem.
UAS	This field displays the running count of seconds where link access is not available from the unit.	This field displays the running count of seconds where link access is not available from the SHDSL modem.
LOSWS	This field displays the running count of seconds where the SHDSL sync word is not detected from the unit.	This field displays the running count of seconds where the SHDSL sync word is not detected from the SHDSL modem.
CVC	This field displays the running count of code violations from the unit.	This field displays the running count of code violations from the SHDSL modem.

Alarm Status Screen

The Alarm Status screen (see **Figure 5-61**) is used to view and clear the alarm log.

```
                                                        09/01/05  03:11

                               Total Access 1240

Page 1 of 1                      Alarm Status             Total Alarms: 6

Date      Time      Level    Port  Description                  Status
04/01/05  02:29:59  Major    EQPT  Rear Fan Failure             Cleared
04/01/05  02:29:54  Major    EQPT  Front Fan Failure            Cleared
04/01/05  02:29:50  Major    EQPT  Fan Module Removed           Cleared
04/01/05  02:29:10  Major    EQPT  Rear Fan Failure             Active
04/01/05  02:29:10  Major    EQPT  Front Fan Failure            Active
04/01/05  02:29:08  Major    EQPT  Fan Module Removed           Active
--------------------------->>> END OF ALARM LOG <<<-----------------------------




                         
                         
                         
                         

 '?' - System Help  'N' - Next  'P' - Prev  'F' - First  'L' - Last 'C' - Clear
```

Figure 5-61. Alarm Status Screen

The Alarm Status screen displays the status of each alarm, the port description, the alarm level, the time of the alarm, and the date the alarm occurred.

SHDSL Loop 1 Test Menu

The SHDSL Loop 1 Test menu (see **Figure 5-62**) is used to set testing for the SHDSL local or remote loopbacks.

```
                                                          09/01/05  03:14

                              Total Access 1240




                              SHDSL Loop 1 Test

                    1.  Local Loopback      : Inactive
                    2.  Remote Loopback     : N/A

                         Selection:






     'N' - Next Loop    'P' - Prev Loop    'S' - Select Loop    '?' - System Help
```
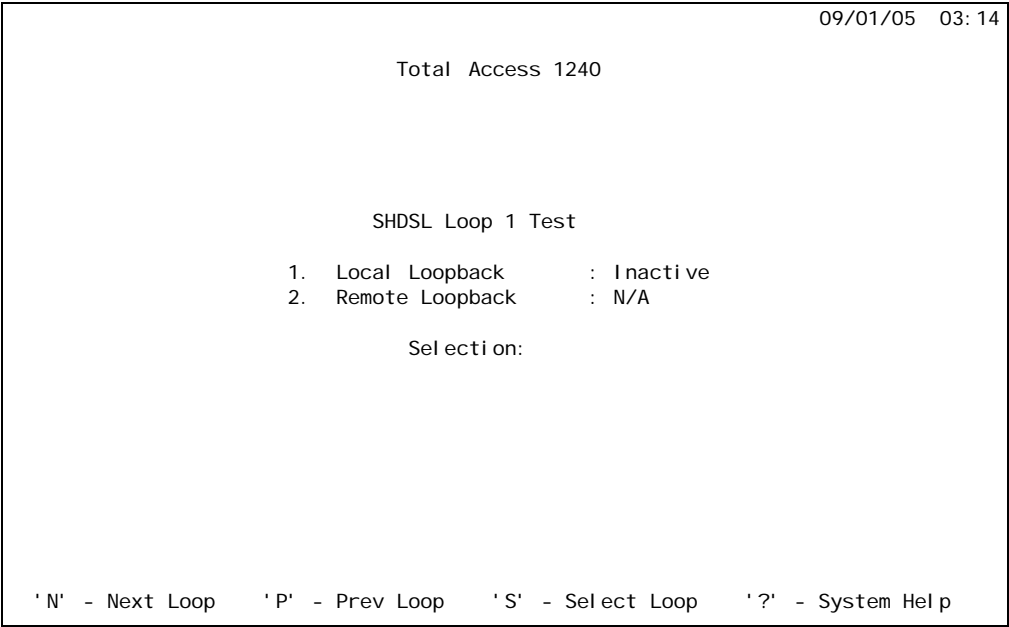
Figure 5-62. SHDSL Loop 1 Test Menu

The SHDSL Loop 1 Test menu options are shown in **Table 5-58**.

Table 5-58. SHDSL Loop 1 Test Menu Options

Option	Description	Function
1	Local Loopback	This option displays the "SHDSL Loop 1 Local Loopback Menu" on page 5-84.
2	Remote Loopback	This option displays the "SHDSL Loop 1 Remote Loopback Menu" on page 5-86.

SHDSL Loop 1 Local Loopback Menu

The SHDSL Loop 1 Local Loopback menu (see **Figure 5-63**), is used to perform and view local loopback tests. For troubleshooting purposes, the Total Access 1240 provides three types of local loopbacks:
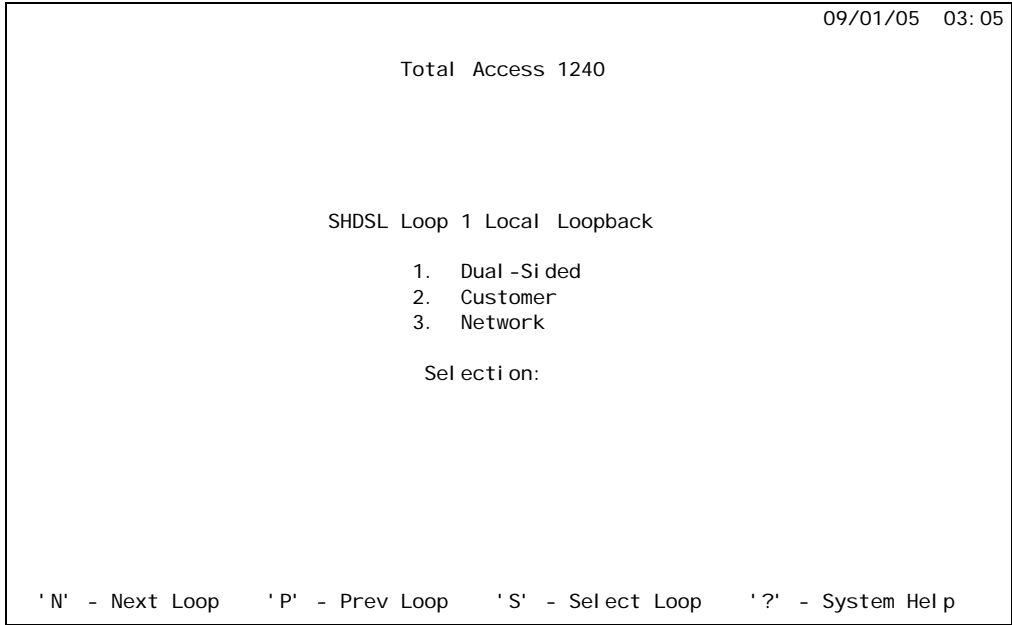
- Dual-Sided
- Customer
- Network

```
                                                    09/01/05   03:05

                              Total Access 1240




                      SHDSL Loop 1 Local Loopback

                            1.   Dual-Sided
                            2.   Customer
                            3.   Network

                         Selection:





 'N' - Next Loop     'P' - Prev Loop    'S' - Select Loop    '?' - System Help
```

Figure 5-63. SHDSL Loop 1 Local Loopback Menu

The SHDSL Loop 1 Local Loopback menu options are shown in **Table 5-59**.

Table 5-59. SHDSL Loop 1 Loopback Menu Options

Option	Description	Function
1	Dual-Sided	This option is used to initiate a dual-sided loopback. For more information, refer to "Local Dual-Sided Loopback" on page 5-85.
2	Customer	This option is used to initiate a customer side loopback. For more information, refer to "Local Customer Loopback" on page 5-85.
3	Network	This option is used to initiate a network side loopback. For more information, refer to "Local Network Loopback" on page 5-85.

Local Dual-Sided Loopback

The local dual-sided loopback provides a bidirectional loopback at the Line Termination Unit (LTU), as shown in **Figure 5-64**.

Figure 5-64. Local Dual-Sided Loopback

Local Customer Loopback

The local customer loopback provides a loopback at the LTU in the customer direction, as shown in **Figure 5-65**. An Alarm Indication Signal (AIS) is injected into the network side.
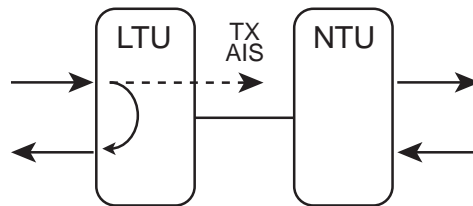
Figure 5-65. Local Customer Loopback

Local Network Loopback

The local network loopback provides a loopback at the LTU in the network direction, as shown in **Figure 5-66**. An AIS signal is injected into the customer side.
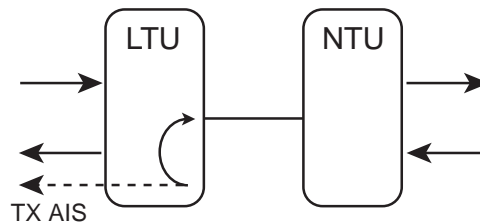
Figure 5-66. Local Network Loopback

SHDSL Loop 1 Remote Loopback Menu

The SHDSL Loop 1 Remote Loopback menu (see **Figure 5-67**), is used to perform and view remote loopback tests. For troubleshooting purposes, the Total Access 1240 provides three types of remote loopbacks:

- Dual-Sided
- Customer
- Network

```
                                                        09/01/05  00:06

                           Total Access 1240




                    SHDSL Loop 1 Remote Loopback

                          1.   Dual-Sided
                          2.   Customer
                          3.   Network

                        Selection:






    'N' - Next Loop    'P' - Prev Loop    'S' - Select Loop    '?' - System Help
```
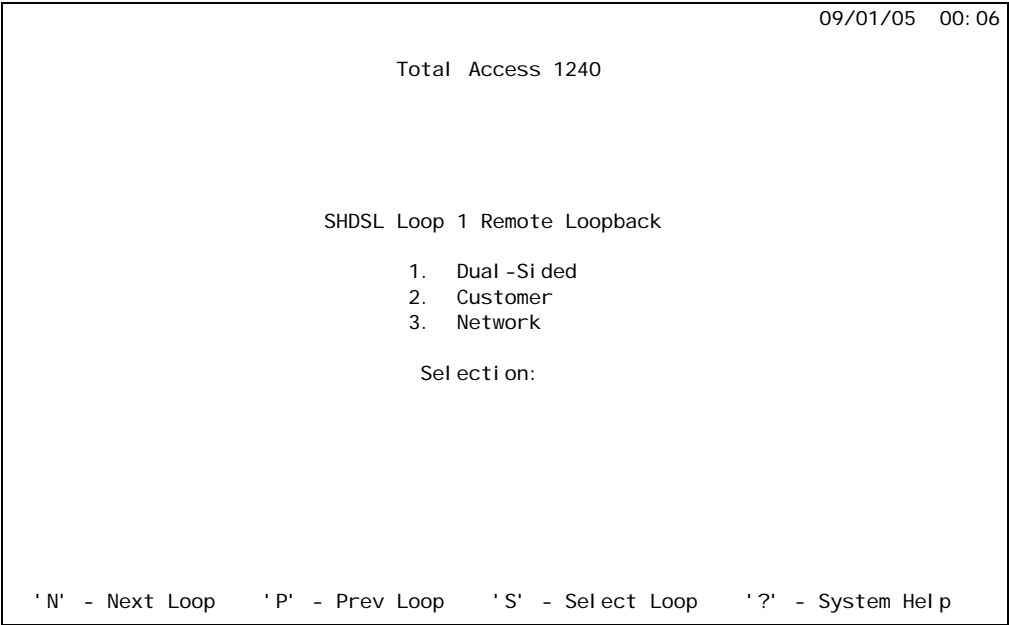
Figure 5-67. SHDSL Loop 1 Remote Loopback Menu

The SHDSL Loop 1 Remote Loopback menu options are shown in **Table 5-60**.

Table 5-60. SHDSL Loop 1 Remote Loopback Menu Options

Option	Description	Function
1	Dual-Sided	This option is used to initiate a remote dual-sided loopback. For more information, refer to "Remote Dual-Sided Loopback" on page 5-87.
2	Customer	This option is used to initiate a remote customer loopback. For more information, refer to "Remote Customer Loopback" on page 5-87.
3	Network	This option is used to initiate a remote network loopback. For more information, refer to "Remote Network Loopback" on page 5-87.

Remote Dual-Sided Loopback

The remote dual-sided loopback provides a bidirectional loopback at the Network Termination Unit (NTU), as shown in **Figure 5-68**.
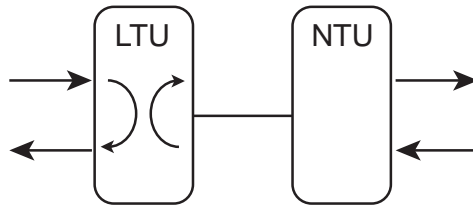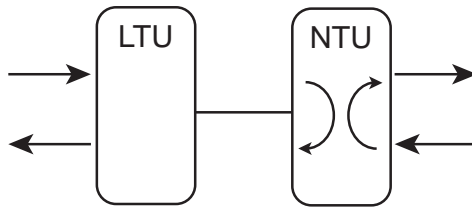

Figure 5-68. Remote Dual-Sided Loopback

Remote Customer Loopback

The remote customer loopback provides a loopback at the NTU in the customer direction, as shown in **Figure 5-69**. An Alarm Indication Signal (AIS) is injected into the network side.
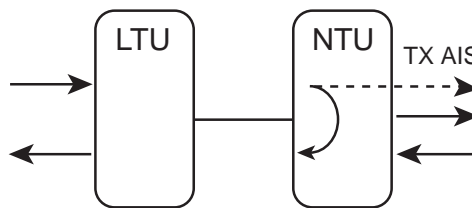
Figure 5-69. Remote Customer Loopback

Remote Network Loopback

The remote network loopback is initiated at the NTU in the network direction, as shown in **Figure 5-70**. AIS signal is injected into the customer side.
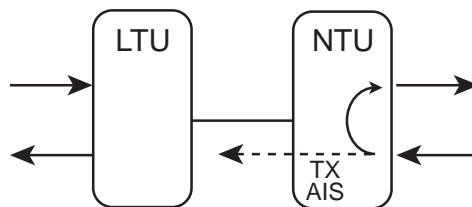
Figure 5-70. Remote Network Loopback

The initiation or removal of any loopback test does not interfere with any interface not being tested. Loopbacks can be set by one source and removed by another source. If the SHDSL line is dropped, or if the NTU is power cycled, all active loopback tests are released.

SHDSL Loop 1 Performance Screen

The SHDSL Loop 1 Performance screen (see **Figure 5-71**) provides information on loop errors in current and previous 15 minute and 24 hour time intervals.

```
                                                           09/01/05   03:15

                              Total Access 1240


                            SHDSL Loop 1 Performance

                           Interface Mode : 2-wire

                  Cur 15 Min      Prev 15 Min     Cur 24 Hour     Prev 24 Hour

                  LTU     NTU     LTU     NTU     LTU     NTU     LTU     NTU
           ES   : 00000   N/A     00000   N/A     00000   N/A     00000   N/A
           SES  : 00000   N/A     00000   N/A     00000   N/A     00000   N/A
           UAS  : 00025   N/A     00893   N/A     02358   N/A     00000   N/A
           LOSWS: 00025   N/A     00893   N/A     02358   N/A     00000   N/A
           CVC  : 00000   N/A     00000   N/A     00000   N/A     00000   N/A




          'N' - Next Loop     'P' - Prev Loop    'S' - Select Loop   '?' - System Help
```

Figure 5-71. SHDSL Loop 1 Performance Screen

The SHDSL Loop 1 Performance screen fields are described in **Table 5-61**.

Table 5-61. SHDSL Loop 1 Performance Screen Fields

Field	LTU Description	NTU Description
Interface Mode	This field displays the interface mode. Values include the following: • 2-wire • 4-wire	This field displays the interface mode. Values include the following: • 2-wire • 4-wire
ES	This field displays the number of CRC errors from the unit.	This field displays the number of CRC errors from the SHDSL modem.
SES	This field displays the number of SES errors from the unit.	This field displays the number of SES errors from the SHDSL modem.
UAS	This field displays the number of UAS errors from the unit.	This field displays the number of UAS errors from the SHDSL modem.
LOSWS	This field displays the number of LOSWS errors from the unit.	This field displays the number of LOSWS errors from the SHDSL modem.
CVC	This field displays the number of CVC errors from the unit.	This field displays the number of CVC errors from the SHDSL modem.

System Alarm Log Screen

The System Alarm Log screen (see **Figure 5-72**) provides non-volatile storage of system events. The event logs can be sorted in ascending or descending order.

```
                        Total Access 1240 - IPoE Fed        09/01/05  03:07
Unacknowledged Alarms: None

System Alarm Log                         Alarms:  1 to 10 of 10      Page:  1 of  1

Date    Time     Level    Description                              Status
04/01/05  2:01:41 Info    1                                        *Active
04/01/05  3:01:34 Info    1                                        *Active
04/01/05  2:54:11 Info    1                                        Active
04/01/05  2:38:40 Info    1                                        Active
04/01/05  2:38:34 Info    0                                        Active
04/01/05  2:38:30 Info    0                                        Active
04/01/05  2:38:14 Info    0                                        Active
04/01/05  2:36:00 Info    Network Feed is IPoE                     Active
04/01/05  2:35:47 Info    Alarm Log Reset                         Active
----------------------------->>> END OF ALARM LOG <<<----------------------------




Inverse = Active       * = Unacknowledged      Chronology =
(N)ext (P)rev (F)irst (L)ast (C)lear (A)cknowldege (R)eset Descending
```

Figure 5-72. System Alarm Log Screen

Contact Information Screen

The Contact Information screen (see **Figure 5-73**) displays ADTRAN technical support, repair, and online support contact information.

```
                    Total Access 1240 - IPoE Fed          09/01/05   03:16
Unacknowledged Alarms:  None



                          Contact Information

            Adtran Technical Support:  (800)726-8663
            Adtran Repair / CAPS:      (256)963-8722
            Online Support:            www.adtran.com












                    '?' - System Help Screen
```

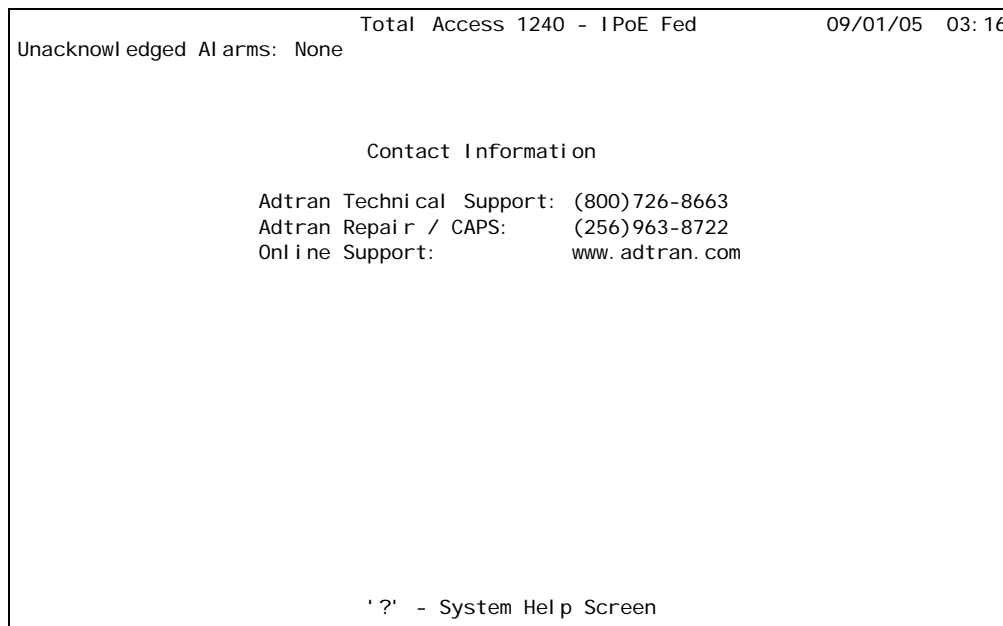**Figure 5-73. Contact Information Screen**

Section 6
Maintenance

INTRODUCTION

The Total Access 1240 does not require routine maintenance for normal operation.

ADTRAN does not recommend that repairs be attempted in the field. Repair services can be obtained by returning the defective unit to ADTRAN. Refer to the "Appendix C, Warranty" section for further information.

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Section 7
Specifications

INTRODUCTION

Specifications for the Total Access 1240 are detailed in **Table 7-1**.

Table 7-1. Total Access 1240 Specifications

Specifications	Descriptions
Environmental	
Operating Temperature:	–40°C to +70°C
Storage Temperature:	–40°C to +85°C
Relative Humidity:	95 percent maximum at 50°C, non-condensing
Maximum Current Draw:	0.625 amps maximum at –48 VDC
Maximum Heat Dissipation:	30 watts
Physical	
Dimensions:	Height: 44.45 millimeters; 1.75 inches (1 mounting unit)
	Width: 438.15 millimeters; 17.25 inches
	Depth: 282.575 millimeters; 11.125 inches
Weight:	< 7.5 pounds
Part Number	
Total Access 1240:	1179605L5

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Appendix A
Declaration of Conformity

AdTran

Corporate Office • 901 Explorer Blvd. • P.O. Box 140000 • Huntsville, AL 35814-4000 • (205) 963-8000

Declaration of Conformity

Adtran
901 Explorer Boulevard
Huntsville Alabama, USA

Declares that the product:

TA1240 24 Port 2W/4W SHDSL DSLAM
1179605L5

is in conformity with the following directives and standards;

Electromagnetic Compatibility Directive, 89/336/EEC, as amended by 92/31/EEC, 93/68/EEC,
EN 300 386 V.1.3.2 (2003-05)

Low Voltage Directive, 73/23/EEC and 93/68/EEC
EN60950: 2000

Authorized Signatory

Jeffrey W. Whitmire
Manager, Regulatory Compliance
Date: March 22, 2005

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Appendix B
SCA File Format

SCA FORMAT

The Total Access 1240 System Configuration Archive (SCA) file can be edited according to the following format and guidelines.

File Format

The top line is a date code used to check compatibility to current software version. Do not modify this entry.

Bridge User Ports: Settings are in decimal format except for MAC Address which is in Hex format.

`:DATECODE 06/14/05`

`:BEGIN //isfs/BRIDGEPORTSSETTINGS` Internal Filename (Do not Change)

`05/10/05` Date Code (Do not Change)

`user1b1,` Port Identifier (Do not Change)

`No Circuit ID,` Circuit ID - Text String

`0,35,1,1,0,0,0,1,` See **Table B-1** for fields a, b, c, d, e, f, g, and h

`No MAC Address,` MAC Address 1 to filter on - xx:xx:xx:xx:xx:xx

`No MAC Address,` MAC Address 2 to filter on - xx:xx:xx:xx:xx:xx

`No MAC Address,` MAC Address 3 to filter on - xx:xx:xx:xx:xx:xx

`No MAC Address,` MAC Address 4 to filter on - xx:xx:xx:xx:xx:xx

`No MAC Address,` MAC Address 5 to filter on - xx:xx:xx:xx:xx:xx

-
-
-

`:END //isfs/BRIDGEPORTSSETTINGS` Internal Filename (Do not Change)

Table B-1. Bridge User Ports

Field	Option	Values
a	VPI - INT	0-4096
b	VCI - INT	32-65535
c	Priority - INT	0-Low 3-MidL 2-MidH 1-High
d	Reserved	Do not Change
e	Ethertype Filtering - INT	0-ANY 1-IP, 2-PPOE
f	Local Switching	0-Disabled 1-Enabled
g	Destination MAC Filtering	0-Disabled 1-Enabled
h	Port	0-Disabled 1-Enabled

VLANPORTSETTINGS: (1 file) (Settings are in decimal)

`:BEGIN //isfs/VLANPORTSETTINGS` Internal Filename (Do not Change)

`06/08/05` Date Code (Do not Change)

`1` Management VLAN - INT (1-4094) 1 for untagged

`0, 1, 1, 0, 0` See **Table B-2** for fields a, b, c, d, and e

`...`

`95, 4, 0, 0, 0` See Table B-2 for fields a, b, c, d, and e

`:END //isfs/VLANPORTSETTINGS` Internal Filename (Do not Change)

Table B-2. VLANPORTSETTINGS

Field	Option	Values
a	Port Number	Do not Change
b	VLAN ID	1-4094
c	Old VID	Do not Change
d	VLAN Priority - INT	0-7
e	Traffic type	Do not Change

SNTPCSETTINGS

`:BEGIN //isfs/SNTPCSETTINGS` Internal Filename (Do not change)

`192.168.1.100;0;0;0;` See **Table B-3** for fields a, b, c, and d

`:END //isfs/SNTPCSETTINGS` Internal Filename (Do not change)

Table B-3. SNTPCSETTINGS

Field	Option	Values
a	SNTP Server IP address	Decimal format: XXX.XXX.XXX.XXX
b	Polling Interval	0 = Disabled 1 to 30 in minutes
c	Offset from GMT	–12 = IDLW –11 = NT –10 = HST –9 = AKST –8 = YDT –7 = PDT –6 = MDT –5 = CDT –4 = EDT –3 = BRA –2 = AT –1 = WAT 0 = GMT 1 = CET 2 = EET 3 = IDT 4 = USZ3 5 = USZ4 6 = USZ5 7 = WAST 8 = CCT 9 = ROK 10 = KDT 11 = EADT 12 = IDLE 13 = NZDT
d	Flags	Do not Change

LocSTUCardProvisioning: (Values are in hex)

`:LocSTUCardProvisioning 1` Internal Variable Name (Do not Change)

`C: 1|  2|  3|  4|  5|  6|  7|  8` Column Header (Do not Change)

`---------------------------------------` Column Separator (Do not Change)

`   7,   0,   0,   0,   0,   0,   0,  a4` See **Table B-4** below by column number

Table B-4. LocSTUCardProvisioning

Column	Option	Values
1	Number of Options	Do not change
2	Card Service State	0 = SERVICE_STATE_IN_SERVICE 1 = SERVICE_STATE_OOS_UNASSIGNED 2 = SERVICE_STATE
3	Powerdown Timeout	0 = Disabled 1 to 999 = timeout in minutes
4	Fan Alarm Delay	0 = Disabled 1 to 15 = delay in minutes
5 - 8	RESERVED for Future Use	

:LocSTULineProvisioning 24 (Values are in Hex)

: LocSTULineProvisioning 24 Internal Variable Name (Do not Change)

```
C: 1|   2|   3|   4|   5|   6|   7|   8|   9|   A|   B|   C|   D|   E|   F|  10|  11|
  12|  13|  14|  15|  16|  17|  18|  19|  1A|  1B|  1C|  1D|  1E|  1F|  20|  21|  22|
  23|  24|  25|  26|  27   Column Header (Do not Change)
```

```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
--------------------------  Column Separator  (Do not Change)
```

```
  26,   0,   0,   0,   0,   0,   1,   0,   0,   0,   2,   0,  20,  20,  20,   0,   0,
   0,   0,   0,   0,   e,  12,   0,   0,   0,   0,   0,   0,   0,   0,   0,   0,   0,
   0,   0,   0,   0,  ad    See Table B-5 below by column number
```

. . .

Table B-5. LocSTULineProvisioning

Column	Option	Values
1	Number of options	Do not change
2	Line Service State	0 = SERVICE _STATE_IN_SERVICE 1 = SERVICE_STATE_OOS_UNASSIGNED 2 = SERVICE_STATE_OOS_MAINTENANCE
3	SHDSL SNR Margin Alarm Threshold	0 = Disabled 1 to 15 = threshold in dB
4	SHDSL Loop Attenuation Alarm Threshold	0 = Disabled 1 to 127 = threshold in dB
5	SHDSL Loopback Timeout	0 = Disabled 1 to 4096 = timeout in minutes
6	Unit Mode	0 = STUC 1 = STUR

Table B-5. LocSTULineProvisioning (Continued)

Column	Option	Values
7	Annex	0 = A 1 = B 2 = A/B
8	LineProbing	0 = Disabled 1 = Enabled Current Condition 2 = Enabled Worst Case
9	Repeater Mode	0 = Terminator 1 = Repeater
A	M-pair Mode	0 = 2-wire 1 = 4-wire 2 = Mpair
B	Number of Pairs (Mpair mode only)	2 pairs ONLY
C	Valid Data Slots (Mpair mode only)	Bit-wise representation of the ports to be physically bonded: bit 0 - pair 1 bit 1 - pair 2 bit 2 - pair 3 (NOT VALID) bit 3 - pair 4 (NOT VALID)
D	Min Line Rate	N = 3 to 36, where rate = N $\times$ 64k + 8k
E	Max Line Rate	N = 3 to 36, where rate = N $\times$ 64k + 8k
F	Current Line Rate	N = 3 to 36, where rate = N $\times$ 64k + 8k
10	Min Sub Rate	N = 0 to 7, where rate = Line Rate + (N $\times$ 8k)
11	Max Sub Rate	N = 0 to 7, where rate = Line Rate + (N $\times$ 8k)
12	PMMS Margin CC	–10dB to 20dB
13	PMMS Margin WC	–10dB to 20dB
14	Clock Mode	0 = Plesio 1 = Plesio w/Reference 2 = Sync 3 = Sync Hybrid
15	Framing Mode	0 = Frame Plesio 1 = Frame Sync 2 = Frame Transparent
16	F-bit notifications	bit 3 = segment defect: 1 = normal, 0 = segd alarm bit 2 = power status: 1 = normal, 0 = rem loss of power bit 1 = segment anomaly: 1 = normal, 0 = sega alarm bit 0 = loss of signal: 1 = normal, 0 = loss of signal

Table B-5. LocSTULineProvisioning (Continued)

Column	Option	Values
17	Performance Primitive Notifications	bit 7 = segment anomaly bit 6 = CRC anomaly bit 5 = segment defect bit 4 = loss of sync word defect bit 3 = SNR margin defect bit 2 = loop attenuation defect bit 1 = loss of sync word failure bit 0 = tip/ring reversal
18	SHDSL ES 15 Minute Alarm Threshold	0 = Disabled 1 to 900 = threshold in seconds
19	SHDSL SES 15 Minute Alarm Threshold	0 = Disabled 1 to 900 = threshold in seconds
1A	SHDSL UAS 15 Minute Alarm Threshold	0 = Disabled 1 to 900 = threshold in seconds
1B	SHDSL CVC 15 Minute Alarm Threshold	0 = Disabled 1 to 65535 = threshold in seconds
1C	SHDSL LOSWS 15 Minute Alarm Threshold	0 = Disabled 1 to 900 = threshold in seconds
1D	Line Rate Control	0 = STU-C 1 = STU-R
1E	SHDSL OS 15 Minute Alarm Threshold	0 = Disabled 1 to 900 = threshold in seconds
1F	Outage Auto-Retrain	0 = Disabled 1 = Enabled
20 - 27	Reserved Options for future use	

SCA FILE EXAMPLE

Figure B-1 provides an example of an SCA file.

```
:DATECODE 07/12/05
:BEGIN //isfs/BRIDGEPORTSSETTINGS
07/06/05
user01b1,
No Circuit ID,
0,35,1,1,0,0,0,0,
No MAC Address,
No MAC Address,
No MAC Address,
No MAC Address,
user01b2,
No Circuit ID,
0,36,2,1,0,0,0,0,
No MAC Address,
No MAC Address,
No MAC Address,
No MAC Address,
...
user24b4,
No Circuit ID,
0,38,0,1,0,0,0,0,
No MAC Address,
No MAC Address,
No MAC Address,
No MAC Address,
:END //isfs/BRIDGEPORTSSETTINGS
:BEGIN //isfs/VLANPORTSETTINGS
06/08/05
1
0,   101,   0,   0,   0
...
95,   196,   0,   0,   0
:END //isfs/VLANPORTSETTINGS
:BEGIN //isfs/SNTPCSETTINGS
192.168.1.100:0:0:0:
:END //isfs/SNTPCSETTINGS
:852 START
:LocSTUCardProvisioning 1
7,   0,   0,   0,   0,   0
:LocSTULineProvisioning 24
:852 STOP
```

Figure B-1. SCA File Example

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Appendix C
Warranty

WARRANTY AND CUSTOMER SERVICE

ADTRAN will replace or repair this product within the warranty period if it does not meet its published specifications or fails while in service. Warranty information can be found at www.adtran.com/warranty.

Refer to the following subsections for sales, support, Customer and Product Service (CAPS) requests, or further information.

ADTRAN Sales

Pricing/Availability:

800-827-0807

ADTRAN Technical Support

Pre-Sales Applications/Post-Sales Technical Assistance:

800-726-8663

Standard hours: Monday - Friday, 7 a.m. - 7 p.m. CST
Emergency hours: 7 days/week, 24 hours/day

ADTRAN Repair/CAPS

Return for Repair/Upgrade:

(256) 963-8722

Repair and Return Address

Contact CAPS prior to returning equipment to ADTRAN.

ADTRAN, Inc.
CAPS Department
901 Explorer Boulevard
Huntsville, Alabama 35806-2807

ADTRAN

Carrier Networks Division
901 Explorer Blvd.
Huntsville, AL 35806