



ATLAS 890 System Manual

1200321L1	ATLAS 890 Chassis
1200322L1	System Controller Module
1200344L1	AC Power Supply
1200345L1	DC Power Supply

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About this Manual

This manual provides a complete description of the ATLAS 890 system and system software. The purpose of this manual is to provide the technician, system administrator, and manager with general and specific information related to the planning, installation, operation, and maintenance of the ATLAS 890. This manual is arranged so that needed information can be quickly and easily found. The following is an overview of the contents.

Section 1 System Description

Provides managers with an overview of the ATLAS 890 system.

Section 2 Engineering Guidelines

Provides information to assist network designers with incorporating the ATLAS 890 system into their networks.

Section 3 Network Turnup Procedure

Provides step-by-step instructions on how to install the ATLAS 890 unit, determine the parameters for the system, install the network and option modules, and power up the system.

Section 4 User Interface Guide

Explains the VT-100 and Telnet interfaces, the VT-100 user interface conventions, and the ATLAS 890 top-level menu tree.

Section 5 Detail Level Procedures (DLP)

Provides the detail level procedures called out in Section 3, NTP.

Section 6 System Event Logging

Explains the System Event Logging messages for the ATLAS 890 and provides instructions for configuring the Event Log.

Glossary

Revision History

This is the 1st issue of this manual.



Notes provide additional useful information.



Cautions signify information that could prevent service interruption.



Warnings provide information that could prevent damage to the equipment or endangerment to human life.

Safety Instructions

When using your telephone equipment, please follow these basic safety precautions to reduce the risk of fire, electrical shock, or personal injury:

1. Do not use this product near water, such as a bathtub, wash bowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool.
2. Avoid using a telephone (other than a cordless-type) during an electrical storm. There is a remote risk of shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord, power supply, and/or batteries indicated in the manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for special disposal instructions.

Save These Important Safety Instructions

Affidavit Requirements for Connection to Digital Services

- An affidavit is required to be given to the telephone company whenever digital terminal equipment without encoded analog content and billing protection is used to transmit digital signals containing encoded analog content which are intended for eventual conversion into voiceband analog signals and transmitted on the network.
- The affidavit shall affirm that either no encoded analog content or billing information is being transmitted or that the output of the device meets Part 68 encoded analog content or billing protection specifications.
- End user/customer will be responsible for filing an affidavit with the local exchange carrier when connecting unprotected customer premise equipment (CPE) to 1.544 Mbps or subrate digital services.
- Until such time as subrate digital terminal equipment is registered for voice applications, the affidavit requirement for subrate services is waived.

**Affidavit for Connection of Customer Premises Equipment
to 1.544 Mbps and/or Subrate Digital Services**

For the work to be performed in the certified territory of _____ (telco name)

State of _____

County of _____

I, _____ (name), _____ (business address),

_____ (telephone number) being duly sworn, state:

I have responsibility for the operation and maintenance of the terminal equipment to be connected to 1.544 Mbps and/or _____ subrate digital services. The terminal equipment to be connected complies with Part 68 of the FCC rules except for the encoded analog content and billing protection specifications. With respect to encoded analog content and billing protection:

- I attest that all operations associated with the establishment, maintenance, and adjustment of the digital CPE with respect to analog content and encoded billing protection information continuously complies with Part 68 of the FCC Rules and Regulations.
- The digital CPE does not transmit digital signals containing encoded analog content or billing information which is intended to be decoded within the telecommunications network.
- The encoded analog content and billing protection is factory set and is not under the control of the customer.

I attest that the operator(s)/maintainer(s) of the digital CPE responsible for the establishment, maintenance, and adjustment of the encoded analog content and billing information has (have) been trained to perform these functions by successfully having completed one of the following (check appropriate blocks):

- A. A training course provided by the manufacturer/grantee of the equipment used to encode analog signals; or
- B. A training course provided by the customer or authorized representative, using training materials and instructions provided by the manufacturer/grantee of the equipment used to encode analog signals; or
- C. An independent training course (e.g., trade school or technical institution) recognized by the manufacturer/grantee of the equipment used to encode analog signals; or
- D. In lieu of the preceding training requirements, the operator(s)/maintainer(s) is (are) under the control of a supervisor trained in accordance with _____ (circle one) above.

I agree to provide _____ (telco's name) with proper documentation to demonstrate compliance with the information as provided in the preceding paragraph, if so requested.

_____ Signature

_____ Title

_____ Date

Transcribed and sworn to before me

This _____ day of _____, _____

Notary Public

My commission expires:

FCC regulations require that the following information be provided in this manual:

1. This equipment complies with Part 68 of FCC rules. On the back of the equipment housing is a label showing the FCC registration number and ringer equivalence number (REN). If requested, provide this information to the telephone company.
2. If this equipment causes harm to the telephone network, the telephone company may temporarily discontinue service. If possible, advance notification is given; otherwise, notification is given as soon as possible. The telephone company will advise the customer of the right to file a complaint with the FCC.
3. The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the proper operation of this equipment. Advance notification and the opportunity to maintain uninterrupted service are given.
4. If experiencing difficulty with this equipment, please contact ADTRAN for repair and warranty information. The telephone company may require this equipment to be disconnected from the network until the problem is corrected or it is certain the equipment is not malfunctioning.
5. This unit contains no user-serviceable parts.
6. An FCC compliant telephone cord with a modular plug is provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using an FCC compatible modular jack, which is Part 68 compliant.
7. The following information may be required when applying to the local telephone company for a dial-up line for the V.34 modem:

Service Type	REN	FIC	USOC
Loop Start	1.6B/0.8A	02LS2	RJ-11C

8. The REN is useful in determining the quantity of devices you may connect to your telephone line and still have all of those devices ring when your number is called. In most areas, the sum of the RENs of all devices should not exceed five. To be certain of the number of devices you may connect to your line as determined by the REN, call your telephone company to determine the maximum REN for your calling area.
9. This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs. Contact your state public utility commission or corporation commission for information.

Federal Communications Commission Radio Frequency Interference Statement

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



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



Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Canadian Emissions Requirements

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of the Department of Communications.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Class A prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques," NMB-003 édictée par le ministre des Communications.

Canadian Equipment Limitations

Notice: The Canadian Industry and Science Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational, and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above limitations may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

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



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

The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the Load Numbers of all devices does not exceed 100.

Warranty and Customer Service

ADTRAN will replace or repair this product within five years from the date of shipment if it does not meet its published specifications or fails while in service. For detailed warranty, repair, and return information refer to the ADTRAN Equipment Warranty and Repair and Return Policy Procedure.

Return Material Authorization (RMA) is required prior to returning equipment to ADTRAN.

For service, RMA requests, or further information, contact one of the numbers listed at the end of this section.

LIMITED PRODUCT WARRANTY

ADTRAN warrants that for five (5) years from the date of shipment to Customer, all products manufactured by ADTRAN will be free from defects in materials and workmanship. ADTRAN also warrants that products will conform to the applicable specifications and drawings for such products, as contained in the Product Manual or in ADTRAN's internal specifications and drawings for such products (which may or may not be reflected in the Product Manual). This warranty only applies if Customer gives ADTRAN written notice of defects during the warranty period. Upon such notice, ADTRAN will, at its option, either repair or replace the defective item. If ADTRAN is unable, in a reasonable time, to repair or replace any equipment to a condition as warranted, Customer is entitled to a full refund of the purchase price upon return of the equipment to ADTRAN. This warranty applies only to the original purchaser and is not transferable without ADTRAN's express written permission. This warranty becomes null and void if Customer modifies or alters the equipment in any way, other than as specifically authorized by ADTRAN.

EXCEPT FOR THE LIMITED WARRANTY DESCRIBED ABOVE, THE FOREGOING CONSTITUTES THE SOLE AND EXCLUSIVE REMEDY OF THE CUSTOMER AND THE EXCLUSIVE LIABILITY OF ADTRAN AND IS IN LIEU OF ANY AND ALL OTHER WARRANTIES (EXPRESSED OR IMPLIED). ADTRAN SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, INCLUDING (WITHOUT LIMITATION), ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SOME STATES DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES, SO THIS EXCLUSION MAY NOT APPLY TO CUSTOMER.

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Customer Service, Product Support Information, and Training

ADTRAN will replace or repair this product within five years from the date of shipment if the product does not meet its published specification, or if it fails while in service.

A return material authorization (RMA) is required prior to returning equipment to ADTRAN. For service, RMA requests, training, or more information, see the toll-free contact numbers given below.

Presales Inquiries and Applications Support

Please contact your local distributor, ADTRAN Applications Engineering, or ADTRAN Sales:

Applications Engineering	(800) 615-1176
Sales	(800) 827-0807

Post-Sale Support

Please contact your local distributor first. If your local distributor cannot help, please contact ADTRAN Technical Support and have the unit serial number available.

Technical Support	(888) 4ADTRAN
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The Custom Extended Services (ACES) program offers multiple types and levels of service plans which allow you to choose the kind of assistance you need. For questions, call the ACES Help Desk.

ACES Help Desk	(888) 874-2237
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Repair and Return

If ADTRAN Technical Support determines that a repair is needed, Technical Support will coordinate with the Custom and Product Service (CAPS) department to issue an RMA number. For information regarding equipment currently in house or possible fees associated with repair, contact CAPS directly at the following number:

CAPS Department	(256) 963-8722
-----------------	----------------

Identify the RMA number clearly on the package (below address), and return to the following address:

ADTRAN Customer and Product Service
901 Explorer Blvd.
Huntsville, Alabama 35806

RMA # _____

Training

The Enterprise Network (EN) Technical Training offers training on our most popular products. These courses include overviews on product features and functions while covering applications of ADTRAN's product lines. ADTRAN provides a variety of training options, including customized training and courses taught at our facilities or at your site. For more information about training, please contact your Territory Manager or the Enterprise Training Coordinator.

Training - phone	(800) 615-1176, ext. 7500
Training - fax	(256) 963-6700
Training - email	training@adtran.com

SYSTEM DESCRIPTION

This section of ADTRAN's *ATLAS 890 System Manual* is designed for use by network engineers, planners, and designers for overview information about the ATLAS 890.

It contains general information and describes physical and operational concepts, card functions, network relationships, provisioning, testing, alarm status, and system monitoring. This section should be used in conjunction with Section 2, *Engineering Guidelines*, of the system manual.

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1. SYSTEM OVERVIEW

The ATLAS 890 is a modular, highly scalable platform that provides robust solutions for the wide-area communication needs of medium-to-large corporations and network access providers. The ATLAS 890 is an Integrated Access System with extensive support of dedicated bandwidth management and access switching.

The ATLAS 890 is a higher bandwidth version of the ATLAS 800^{PLUS}. It contains a high-performance CPU and powerful communications drivers which supports applications such as frame relay and call switching.

The ATLAS 890 architecture also includes a packet switching and a circuit switching bussing scheme. The result is a system capable of supporting bandwidth requirements of up to 30 T1 or Primary Rate ISDN (PRI) circuits. Designed for standalone or rackmount, the ATLAS 890 Base Unit provides 2 hot-swappable, redundant system controller slots and up to 16 expansion slots that accommodate hot-swappable option modules and up to 4 hot-swappable, redundant power supplies for a variety of applications. A 10/100BaseT Ethernet connection for IP routing and network management is standard with the ATLAS 890 System Controller Module.

With the ATLAS 890, you can consolidate your voice, data, and video applications into a single platform while optimizing wide area bandwidth and reducing equipment costs. The ATLAS 890 architecture and expansion slots allow for a variety of modules, making it one of the most versatile access systems on the market.

2. FEATURES AND BENEFITS

The following is a brief list of ATLAS 890 features and benefits:

Configuration and Management

- VT-100 Emulation
- SNMP, per MIB II (RFC1213), DS1 MIB (RFC1406), and ADTRAN private MIBs
- Telnet
- Dial up remote management via external analog modem
- Six levels of password protection and privileges

Software Upgradeable

- Flash memory
- TFTP download
- XMODEM via control port

Signaling Support

- ISDN D Channel
- Robbed bit, E&M, Ground Start, Loop Start
- Convert between Robbed Bit Signaling and ISDN D Channel
- Direct Inward Dialing

ISDN Switch Types

- 5ESS™, DMS-100™, National ISDN, 4ESS™

Dedicated Connection Maps

- Up to five connection maps
- Time of day/day of week configurable
- Preserves signaling through cross-connect
- No effect on non-configured channels

Switched Connection Maps

- Inbound and outbound call filtering and blocking

Testing

- Local and remote: payload/line, V.54 (depending on installed modules)
- Patterns: 511, QRSS, all ones, all zeros (depending on installed modules)

Performance Monitoring

- Reports: Information stored for last 24 hours in 15 minute increments
- Performance statistics per TR54016, T1.403, RFC1406
- Alarm reporting per TR54016, T1.403

Frame Relay

- Routes Internet Protocol (IP) traffic between a public frame relay network, a private frame relay network, or a point-to-point (PPP) network and the Ethernet port.
- Concentrates IP traffic from a public or private frame relay network to one or more serial ports (V.35). The protocol passed over the serial port is frame relay (RFC 1490 encapsulation).
- Passes Systems Network Architecture (SNA), Bisync, and other legacy protocols between a public or private frame relay network and an external DTE running frame relay to ATLAS.
- Performs voice compression/decompression (G.723.1) and interfaces to either a Private Branch Exchange (PBX) or the Public Switched Telephone Network (PSTN). (This feature requires an additional option module, the VCOM Module—P/N 1200221Lx.)
- Supports LMI, Annex D, or Annex A signaling on frame relay connections.

PPP Switching

- Supports up to 100 simultaneous PPP connections.
- Performs PAP, CHAP, or EAP authentication methods on a per connection basis.
- Includes keepalive functionality for PPP connections.
- Provides capability for numbered or unnumbered PPP interfaces.

3. OPTION MODULES

The ATLAS 890 has a system controller module and 15 option modules:

- ATLAS 890 System Controller Module (P/N 1200322L1)
- Quad T1/PRI Option Module (P/N 1200185L3)
- Quad E1/PRA Option Module (P/N 1200264L1)
- Quad Nx 56/64 Option Module (P/N 1200184L1)
- Quad USSI Option Module (P/N 4200261Lx)
- Octal Basic Rate ISDN Option Module (1200186L2)
- T3 Option Module (P/N 1200223L1)
- T3 Option Module with Drop and Insert Interface (P/N 1200225L1)
- 8,16,24, 32 Channel Voice Compression Resource Modules (P/N 1200221Lx)
- Nx 56/64 IMUX Resource Module (P/N 1200262L1)
- HDLC Resource Module (P/N 1200222L1)
- Modem-16 Resource Module (P/N 1200181L1)
- Async-232 Option Module (P/N 1200182L1)

Each option module is hot-swappable with configuration restored upon replacement.



Replacing an option module with a different module type will result in configuration loss.

Each option module has a variety of performance and alarm status information. Several features of each module are user-configurable, although default values reflect the most common configurations. All option modules contain an extensive self-test as well as tests designed for the technology they incorporate.

ATLAS 890 System Controller Module (P/N 1200322L1)

In addition to controlling the shelf and its contents, the system controller modules serve as the user interface. The operator provisions and monitors all modules in the system, either locally or remotely, via the system controller interface. The system controllers provision the option cards in the shelf via the faceplate RJ-45 Admin connector of the active system controller and a VT-100 terminal (see Figure 4). Additionally, a 10/100 Base-T Ethernet interface is provided for Telnet access.

Quad T1/PRI Option Module (P/N 1200185L3)

The Quad T1/PRI Option Module provides four channelized T1 or PRI interfaces. Each interface can operate independently in DS-1, DSX-1, or PRI mode, and any port can deliver timing for the system.

Quad E1/PRA Option Module (P/N 1200264L1)

The Quad E1/PRA Option Module provides four channelized E1 or PRA interfaces using a supplied 120 ohm DB-15 converter cable. The Quad E1/PRA Option Module may also be purchased to include BNC converter cables (P/N 4200264L1). This interface operates in CCS or CAS signaling mode and can deliver timing for the system.

Quad Nx 56/64 Option Module (P/N 1200184L1)

The Quad Nx 56/64 module provides four synchronous V.35 DTE ports (using supplied DB-78 to V.35 converter cables) that can operate from 56K to 2.048 Mbps in steps of 56 or 64 kbps. Any port can deliver timing for the system.

Quad USSI Option Module (P/N 4200261LX)

The Quad USSI Option Module provides four synchronous DTE ports that can operate from 56K to 2.048 Mbps in steps of 56 or 64 kbps. The DTE ports available (using adapter cables) are: EIA-530, EIA-530A, RS-449, RS-232, and CCITT X.21. Any port can deliver timing for the system.

Octal Basic Rate ISDN Option Module (1200186L2)

The Octal Basic Rate ISDN module provides eight Basic Rate ISDN (BRI) U interfaces, each capable of operating in either NT or LT mode. Any port can deliver timing for the system.

T3 Option Module (P/N 1200223L1)

The T3 Option Module provides a single channelized T3 interface that allows bandwidth management of up to 28 T1s. Functions as a T3 DSU/CSU, M13 multiplexer, and 3/1/0 timeslot interchange DACS. The T3 clock or any of the odd T1s contained in the T3 circuit may deliver timing for the system.

T3 Option Module with Drop and Insert Interface (P/N 1200225L1)

The T3 Option Module with Drop and Insert Interface provides a single channelized T3 interface for primary service and an additional drop and insert interface for passing T3 channels (in T1 pairs) to a secondary channelized T3 device. Functions as a T3 DSU/CSU, M13 multiplexer, and 3/1/0 timeslot interchange DACS. The T3 clock or any of the odd T1s contained in the T3 circuit may deliver timing for the system.

8,16,24, 32 Channel Voice Compression Resource Modules (P/N 1200221Lx)

The Voice Compression Module (VCOM Module) combines with other ATLAS 890 components to implement voice over frame relay (VoFR) capability. The Voice Compression Resources modules support 8, 16, 24, or 32 simultaneous compressed calls using G.723.1 or Netcoder compression algorithms.

Nx 56/64 IMUX Resource Module (P/N 1200262L1)

The Nx 56/64 IMUX Resource Option Module supports multiple, independent BONDING sessions with each session capable of using from 2 to 32 channels of 56K or 64K data. The Nx 56/64 IMUX Resource Module combines with other ATLAS 890 components to provide a flexible disaster recovery system.

HDLC Resource Module (P/N 1200222L1)

Certain ATLAS applications require a large number of High-level Data Link Control (HDLC) controllers beyond the 35 supplied on the system controller module. The HDLC Resource Module contains 128 HDLC controllers and is used when the application requirements call for more HDLC controllers than are provided with the other ATLAS hardware components. The HDLC Resource Module provides no physical interfaces.

Modem-16 Resource Module (P/N 1200181L1)

The Modem-16 Resource Module is a high-capacity card for the ATLAS Integrated Access System, capable of processing 16 modem calls and 16 ISDN calls. Modem or ISDN calls are presented to ATLAS via one or more Primary Rate ISDN (PRI), Basic Rate ISDN (BRI), or T1 circuits. The Modem-16 Resource Module can be used in cooperation with the Safe-T-Net feature of the ATLAS 890 to provide a V.34 disaster recovery solution. The Modem-16 Resource Module combines with the Async-232 Module to enable dial-up access for up to 32 users. The Modem-16 Resource Module provides no physical interfaces.

Async-232 Option Module (P/N 1200182L1)

The Async-232 Module combines with the ATLAS 890 components to provide solutions for a variety of wide area networking (WAN) applications. Providing sixteen asynchronous EIA-232 data terminal equipment (DTE) ports, the Async-232 Module serves as the interface to terminal servers and other DTE equipment. Each port of the Async-232 Module can be configured to operate at any standard asynchronous rate up to 115.2 kbps. The Async-232 Module is only supported in dial-up applications (using the Modem-16 Resource Module) and is not a valid interface for TDM data.

ENGINEERING GUIDELINES

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1. EQUIPMENT DIMENSIONS

The ATLAS 890 base unit is 17.08” W, 11.67” D, and 10.5” H and can be mounted in a 19-inch or 23-inch rack (mounting brackets included in shipment). All other equipment (option modules) fit inside the base unit.

2. POWER REQUIREMENTS

AC System

The ATLAS 890 has a maximum power consumption of 400W and a maximum current draw of 7A regardless of the configuration of option modules installed in the base unit.

DC System

The ATLAS 890 has a maximum power consumption of 325W and a maximum current draw of 8 amps at -48VDC regardless of the configuration of option modules installed in the base unit.

3. REVIEWING THE FRONT PANEL DESIGN

The front panel contains the Alarm Cut-off (ACO) switch, the CRAFT port, and the controller and option module status LEDs. The LEDs provide visual information about the ATLAS 890 Base Unit and any option module that may be installed. Figure 1 identifies the ACO switch, the CRAFT port, and the LEDs.

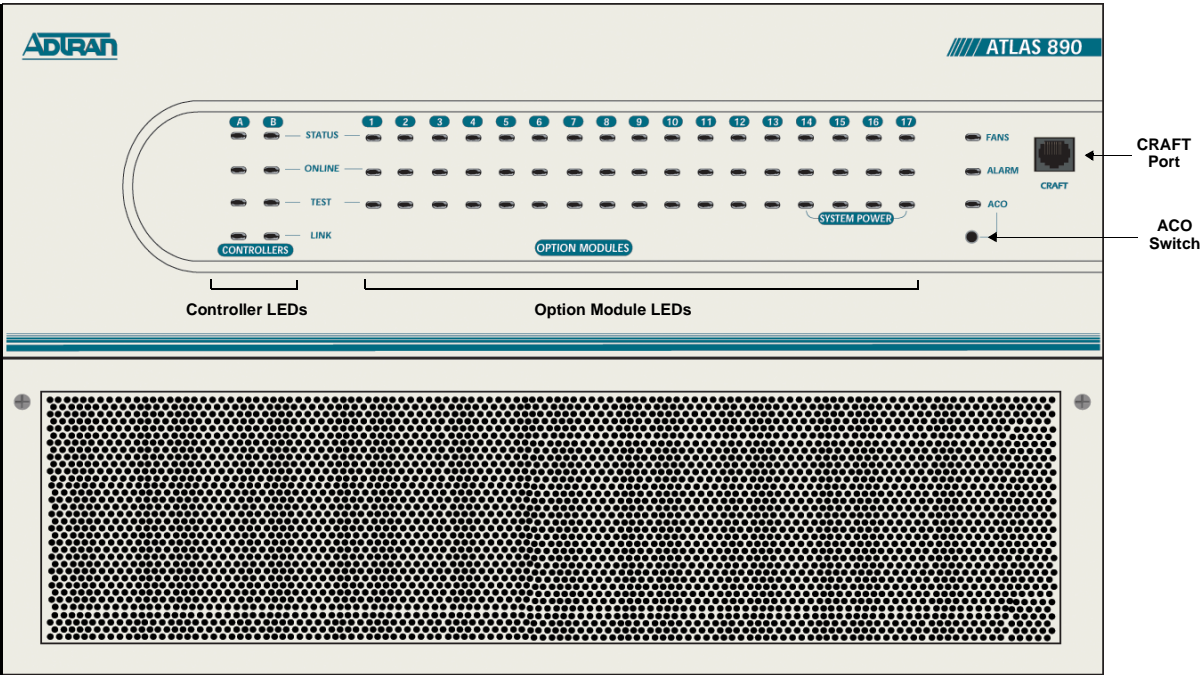


Figure 1. ATLAS 890 Front Panel Layout

ACO Switch

The ACO switch deactivates (clears) the Alarm Relay, located on the rear panel of the ATLAS 890, after an alarm condition has occurred. If an alarm condition is corrected and then reoccurs, the Alarm Relay will activate again.

CRAFT Port

Use the CRAFT port to configure the system via an EIA-232 connection. The connector type is shown below, and Table 1 gives the CRAFT port pinout.

CONNECTOR TYPE RJ-48C
PART NUMBER AMP# 555164-2

Table 1. CRAFT Port Pinout

PIN	NAME	DESCRIPTION
1,2	UNUSED	—
3	RXDATA	Data received by the ATLAS 890
4	UNUSED	—
5	TXDATA	Data transmitted by the ATLAS 890
6,7	UNUSED	—
8	UNUSED	—

Front Panel LEDs

With the ATLAS 890 powered-up, the front panel LEDs provide visual information about the status of the ATLAS 890 and any option modules that may be installed. Table 2 provides a brief description of the front panel features, and Table 3 on page 5 provides detailed information about the LEDs.

Table 2. ATLAS 890 Front Panel Description

Feature	Description
SYSTEM STATUS LEDS	Displays the status of the fans, alarm, and ACO buttons for ATLAS 890. (See Table 3 on page 5.)
Fans	Indicates the fans are operational.
Alarm	Indicates a triggered alarm condition for the alarm relays.
ACO	Indicates the alarm cut-off switch is pressed.

Table 2. ATLAS 890 Front Panel Description (Continued)

Feature	Description
CONTROLLER MODULE LEDS	Displays the status of the network interface. (See Table 3.) All LEDs are off if no network module is installed.
Status	Indicates the operational condition of the controller installed in the controller slot.
Online	Indicates whether the module is available for use or is currently in use.
Test	Indicates that the module is in test.
Link	Indicates there is an active 10/100 Ethernet connection on the installed controller module.
OPTION MODULE LEDS	Displays by row the operational condition of each module installed in the option slots. (See Table 3.) All LEDs will be off if no option module is installed.
Status	Indicates the operational condition of modules installed in the option slots.
Online	Indicates whether the module is available for use or is currently in use. If the module is manually taken offline, this LED is turned off.
Test	Indicates that one or more ports within a module are in test.
ACO SWITCH	Clears the Alarm Relay connection located on the rear panel of the ATLAS 890.
CRAFT PORT	Allows the ATLAS 890 to connect to a computer or modem using the CRAFT port (an EIA-232 port).

Table 3. ATLAS 890 LEDS

FOR THESE LEDS...	THIS COLOR LIGHT...	INDICATES THAT...
FANS	Red (solid)	Fan speed is too low or fan is disconnected.
	Amber (solid)	Fan speed is too high.
	Green (solid)	All fans are functioning properly.
ALARM	Red (solid)	A fan, external input, or power supply error has occurred. LED will remain red until the ACO button is pressed.
ACO	Amber	ACO button is being pressed.

Table 3. ATLAS 890 LEDs (Continued)

FOR THESE LEDS...	THIS COLOR LIGHT...	INDICATES THAT...
STAND-BY CONTROLLER		
Status	Green (slow blink)	Stand-by controller is present.
Online	Green (solid)	Stand-by controller operational for redundancy.
	Red (fast blink)	Controller cannot automatically become the active controller while the current active controller is installed.
Test	N/A	N/A
Link	Green (solid)	Ethernet link detected.
ACTIVE CONTROLLER		
Status	Green (slow blink)	Card is not ready.
	Green (fast blink)	Card is not supported.
	Green (solid)	Active controller present.
Online	Amber (solid)	Controller is in test mode.
	Amber (fast blink)	Card is upgrading firmware.
	Red (fast blink)	Flash parameters are not compatible.
	Green (fast blink)	Card is unresponsive or not supported.
	Red (fast blink)	Card is not ready.
Test	Amber (solid)	Controller is in test mode.
Link	Green (solid)	Ethernet link detected.
MODULE STATUS	Green (solid)	Module is present.
	Green (fast blink)	Module has been manually taken offline by the user.
	Red (solid)	Module failed self-test.
	Red (fast blink)	Module has no response, has been removed, or is not supported.
	Red (slow blink)	Module is not ready.
	None	No module occupies the slot.

Table 3. ATLAS 890 LEDs (Continued)

FOR THESE LEDS...	THIS COLOR LIGHT...	INDICATES THAT...
MODULE ONLINE	Green (solid)	Module has an active connection.
	Green (fast blink)	Module has invalid flash memory or is downloading firmware.
MODULE TEST	Yellow (solid)	Module is in a test mode.

4. REVIEWING THE REAR PANEL DESIGN

The ATLAS 890 rear panel contains 16 slots for housing option modules which provide a variety of additional resources and data ports. All slots are functionally identical. The ATLAS 890 also contains two slots for housing controller modules and a single slot dedicated for power supply use only (see Figure 2). The most common configuration is a fully redundant system with two system controllers and two power supplies. A fully redundant AC-powered ATLAS 890 provides 13 option slots. A fully redundant DC-powered ATLAS 890 provides 15 option slots.

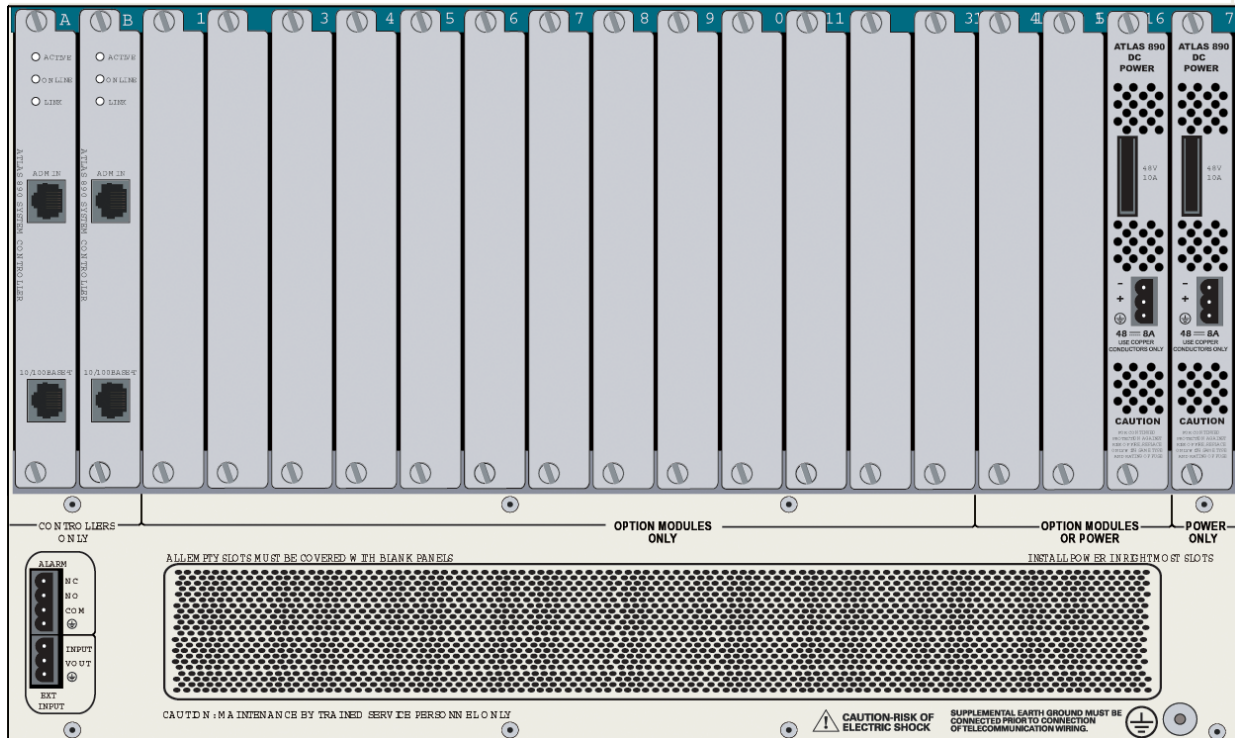


Figure 2. ATLAS 890 Rear Panel

Admin Port

The Admin port (EIA-232) connects to a computer or modem. The control port input provides the following functions:

- Accepts EIA-232 input from a PC or a modem for controlling the ATLAS 890.
- Operates at 2400, 9600, 19200, or 38400 bps.
- Acts as input for either VT 100 or PC control.
- Acts as an interface for flash memory software downloads using XMODEM.

The Admin connection follows, and Table 4 shows the pinout.

CONNECTOR TYPE RJ-48C
PART NUMBER AMP# 555164-2

Table 4. Admin In Pinout

PIN	NAME	DESCRIPTION
1	GND	Ground - connected to unit chassis
2	RTS	Request to send - flow control
3	RXDATA	Data received by the ATLAS 890
4	DTR	Data terminal ready
5	TXDATA	Data transmitted by the ATLAS 890
6	CD	Carrier detect
7	UNUSED	—
8	CTS	Clear to send - flow control

10/100BaseT Connection

The 10/100BaseT port (RJ-48C) provides a 10/100BaseT Ethernet LAN connection, which is used for IP Routing, TFTP, SNMP, and Telnet connections. The network connection follows, and Table 5 shows the pinout.

CONNECTOR TYPE (USOC) RJ-48C
PART NUMBER AMP# 555164-2

Table 5. Ethernet Pinout

PIN	NAME	DESCRIPTION
1	TX1	Transmit Positive
2	TX2	Transmit Negative
3	RX1	Receive Positive

Table 5. Ethernet Pinout (Continued)

PIN	NAME	DESCRIPTION
4, 5	UNUSED	—
6	RX2	Receive Negative
7, 8	UNUSED	—

Alarm Relay Connection

This connection alerts the user when a selected alarm condition exists. The four-pin, removable terminal block connects with external wiring. Refer to DLP-002, *Connecting the Alarm Contacts and the External Input* for detailed instructions. Clear the alarm condition by pressing the ACO switch located on the front panel of the ATLAS 890.

Table 6 shows the pinout for the Alarm Relay connector.

Table 6. Alarm Relay Connector Pinout

Pin	Name	Description
1	Normally Closed (NC)	Opens when a selected alarm condition is present.
2	Normally Open (NO)	Closes when a selected alarm condition is present.
3	Common (COM)	Common connection between external circuitry and NC or NO terminal.
4	Chassis Ground (GND)	

External Input Connection

This connection alerts the user when a selected external alarm condition exists. This connection could be used to monitor a UPS with dry contacts or another ATLAS 890. The three-pin, removable terminal block connects with external wiring. Refer to DLP-002, *Connecting the Alarm Contacts and the External Input* for detailed instructions. Clear the alarm condition by pressing the ACO switch located on the front panel of the ATLAS 890.

Table 7 shows the pinout for the External Input connector.

Table 7. External Relay Monitor Connector Pinout

Pin	Name	Description
1	INPUT	Monitors for the presence or absence of -48 VDC
2	VOUT	-48 VDC @ 1 mA
3	Chassis Ground (GND)	

5. OPTION MODULE INTERFACES

Quad T1/PRI Option Module (P/N 1200185L3)

Each port of the Quad T1/PRI Option Module uses a single, eight-position modular jack to connect to the T1 or PRI circuit. Table 8 gives the pinout for this jack.

CONNECTOR TYPE (USOC) RJ-48C

Table 8. T1/PRI Pinout

PIN	NAME		DESCRIPTION
1	R1	RXDATA-RING	Receive data from the network
2	T1	RXDATA-TIP	Receive data from the network
3	—	UNUSED	—
4	R	TXDATA-RING	Send data towards the network
5	T	TXDATA-TIP	Send data towards the network
6,7,8	—	UNUSED	—

Quad E1/PRA Option Module (P/N 1200264L1)

The DB-62 port of the Quad E1/PRA Option Module supplies a DB-15 connection as defined in Table 9 using provided adapter cables. The DB-62 interface pinout is shown in Table 10.

Table 9. DB-15 Connector Pinout

PIN	NAME	DESCRIPTION
1	RT	Receive Tip
2	GND	Ground
3	TT	Transmit Tip
4	GND	Ground
5	GND	Ground
7	GND	Ground
9	RR	Receive Ring
11	TR	Transmit Ring

Table 10. DB-62 Connector Pinout

PIN	NAME	DESCRIPTION	PIN	NAME	DESCRIPTION
1	P4 TT	Port 4 Transmit Tip	42	GND	Ground
2	P4 TR	Port 4 Transmit Ring	43	P4 RT	Port 4 Receive Tip
3	GND	Ground	44	P4 RR	Port 4 Receive Ring
6	GND	Ground	45	GND	Ground
7	P3 TT	Port 3 Transmit Tip	48	GND	Ground
8	P3 TR	Port 3 Transmit Ring	49	P3 RT	Port 3 Receive Tip
9	GND	Ground	50	P3 RR	Port 3 Receive Ring
12	GND	Ground	51	GND	Ground
13	P2 TT	Port 2 Transmit Tip	54	GND	Ground
14	P2 TR	Port 2 Transmit Ring	55	P2 RT	Port 2 Receive Tip
15	GND	Ground	56	P2 RR	Port 2 Receive Ring
18	GND	Ground	57	GND	Ground
19	P1 TT	Port 1 Transmit Tip	60	GND	Ground
20	P1 TR	Port 1 Transmit Ring	61	P1 RT	Port 1 Receive Tip
21	GND	Ground	62	P1 RR	Port 1 Receive Ring

Note: Pins that are not identified are not used.
 P(1-4) indicates the Port

Quad Nx 56/64 Option Module (P/N 1200184L1)

Each DB-78 port of the Quad Nx 56/64 Option Module supplies a V.35 Winchester-style connection as defined in Table 11 using provided adapter cables. The DB-78 interface pinout is shown in Table 12.

Table 11. V.35 Winchester Pinout

Pin	CCITT	DESCRIPTION
A	101	Protective ground (PG)
B	102	Signal ground (SG)
C	105	Request to send (RTS) from DTE
D	106	Clear to send (CTS) to DTE
E	107	Data set ready (DSR) to DTE
F	109	Received line signal detector (DCD) to DTE
H	—	Data terminal ready (DTR) from DTE
J	—	Ring indicator (RI)

Table 11. V.35 Winchester Pinout (Continued)

Pin	CCITT	DESCRIPTION
R	104	Received data (RD-A) to DTE
T	104	Received data (RD-B) to DTE
V	115	RX clock (RC-A) to DTE
X	115	RX clock (RC-B) to DTE
P	103	Transmitted data (TD-A) from DTE
S	103	Transmitted data (TD-B) from DTE
Y	114	TX clock (TC-A) to DTE
AA	114	TX clock (TC-B) to DTE
U	113	External TX clock (ETC-A) from DTE
W	113	External TX clock (ETC-B) from DTE
NN	—	Test mode (TM) to DTE

Table 12. DB-78 Pinout for the Quad Nx 56/64 Option Module

PIN	SIGNAL DESCRIPTION	PIN	SIGNAL DESCRIPTION
1	RXD-A 2/4	41	RTS-B 2/4
2	RXD-B 2/4	42	GND
3	RXC-A 2/4	43-48	Not used
4	RXC-B 2/4	49	MOD2
5	TXD-A 2/4	50	MOD0
6	TXD-B 2/4	51	EXT-TXC-A 1/3
7	TXC-A 2/4	52	DTR-B 1/3
8	TXC-B 2/4	53	DTR-A 1/3
9	EXT-TXC-A 2/4	54	DCD-B 1/3
10	EXT-TXC-A 2/4	55	DCD-A 1/3
11-17	Not used	56	DSR-B/RI 1/3
18	GND	57	DSR-A 1/3
19	GND	58	CTS-B 1/3
20	CHASIS GND	59	CTS-A 1/3
21	CTS-A 2/4	60	CHASIS GND
22	CST-B 2/4	61	GND

Note: 1/3 or 2/4 indicates the port on the Nx 56/64 Module

Table 12. DB-78 Pinout for the Quad Nx 56/64 Option Module (Continued)

PIN	SIGNAL DESCRIPTION	PIN	SIGNAL DESCRIPTION
23	DSR-A 2/4	62-68	Not used
24	DSSR-B/RI 2/4	69	MOD1
25	DCD-A 2/4	70	EXT-TXC-B 1/3
26	DCD-B 2/4	71	TXC-B 1/3
27	DTR-A 2/4	72	TXC-A 1/3
28	DTR-B 2/4	73	TXD-B 1/3
29-37	Not used	74	TXD-A 1/3
38	RTS-A 1/3	75	RXC-B 1/3
39	RTS-B 1/3	76	RXC-A 1/3
40	RTS-A 2/4	77	RXD-B 1/3
		78	RXD-A 1/3

Note: 1/3 or 2/4 indicates the port on the Nx 56/64 Module

Quad USSI Option Module (P/N 1200261L1)

Table 13 through Table 18 show pinouts for the available interfaces for the Quad USSI Option Module and the cable part numbers required by each interface.

Table 13. DB-78 Pinout for the Quad USSI Option Module

PIN	SIGNAL DESCRIPTION	PIN	SIGNAL DESCRIPTION
1	RXD-A 2/4	41	RTS-B 2/4
2	RXD-B 2/4	42	GND
3	RXC-A 2/4	43-48	Not used
4	RXC-B 2/4	49	MOD2
5	TXD-A 2/4	50	MOD0
6	TXD-B 2/4	51	EXT-TXC-A 1/3
7	TXC-A 2/4	52	DTR-B 1/3
8	TXC-B 2/4	53	DTR-A 1/3
9	EXT-TXC-A 2/4	54	DCD-B 1/3
10	EXT-TXC-A 2/4	55	DCD-A 1/3
11-17	Not used	56	DSR-B/RI 1/3

Note: 1/3 or 2/4 indicates the port on the USSI Module

Table 13. DB-78 Pinout for the Quad USSI Option Module (Continued)

PIN	SIGNAL DESCRIPTION	PIN	SIGNAL DESCRIPTION
18	GND	57	DSR-A 1/3
19	GND	58	CTS-B 1/3
20	CHASIS GND	59	CTS-A 1/3
21	CTS-A 2/4	60	CHASIS GND
22	CST-B 2/4	61	GND
23	DSR-A 2/4	62-68	Not used
24	DSSR-B/RI 2/4	69	MOD1
25	DCD-A 2/4	70	EXT-TXC-B 1/3
26	DCD-B 2/4	71	TXC-B 1/3
27	DTR-A 2/4	72	TXC-A 1/3
28	DTR-B 2/4	73	TXD-B 1/3
29-37	Not used	74	TXD-A 1/3
38	RTS-A 1/3	75	RXC-B 1/3
39	RTS-B 1/3	76	RXC-A 1/3
40	RTS-A 2/4	77	RXD-B 1/3
		78	RXD-A 1/3

Note: 1/3 or 2/4 indicates the port on the USSI Module

CONNECTOR TYPE EIA-530
SYSTEM PART NUMBER 4200261L2

Table 14. EIA-530 Connector Pinout

PIN	SIGNAL DESCRIPTION	PIN	SIGNAL DESCRIPTION
1	Shield (Ground)	13	Clear to Send (B)
2	Transmit Data (A)	14	Transmit Data (B)
3	Received Data (A)	15	Transmit Clock (A)
4	Request to Send (A)	16	Received Data (B)
5	Clear to Send (A)	17	Receive Clock (A)
6	DCE Ready (A)	18	Local Loopback
7	Signal Ground	19	Request to Send (B)
8	Carrier Detect (A)	20	DTE Ready (A)

Table 14. EIA-530 Connector Pinout (Continued)

PIN	SIGNAL DESCRIPTION	PIN	SIGNAL DESCRIPTION
9	Received Clock (B)	21	Remote Loopback
10	Carrier Detect (B)	22	DCE Ready (B)
11	Ext. Transmit Clock (B)	23	DTE Ready (B)
12	Transmit Clock (B)	24	Ext. Transmit Clock (A)
		25	Test Mode

CONNECTOR TYPE EIA-530A
SYSTEM PART NUMBER 4200261L2

Table 15. EIA-530A Connector Pinout

PIN	SIGNAL DESCRIPTION	PIN	SIGNAL DESCRIPTION
1	Shield (Ground)	13	Clear to Send (B)
2	Transmit Data (A)	14	Transmit Data (B)
3	Received Data (A)	15	Transmit Clock (A)
4	Request to Send (A)	16	Received Data (B)
5	Clear to Send (A)	17	Receive Clock (A)
6	DCE Ready (A)	18	Local Loopback
7	Signal Ground	19	Request to Send (B)
8	Carrier Detect (A)	20	DTE Ready (A)
9	Received Clock (B)	21	Remote Loopback
10	Carrier Detect (B)	22	Ring Indicator
11	Ext. Transmit Clock (B)	23	Signal Ground
12	Transmit Clock (B)	24	Ext. Transmit Clock (A)
		25	Test Mode

CONNECTOR TYPE RS-449/V.36
SYSTEM PART NUMBER 4200261L1

Table 16. RS-449/V.36 Connector Pinout

PIN	SIGNAL DESCRIPTION	PIN	SIGNAL DESCRIPTION
1	Shield (Ground)	19	Signal Ground
2	Signaling Rate Indicator	20	Receive Common
3	Not Used	21	Not Used

Table 16. RS-449/V.36 Connector Pinout (Continued)

PIN	SIGNAL DESCRIPTION	PIN	SIGNAL DESCRIPTION
4	Transmit Data (A)	22	Transmit Data (B)
5	Transmit Clock (A)	23	Transmit Clock (B)
6	Received Data (A)	24	Receive Data (B)
7	Request to Send (A)	25	Request to Send (B)
8	Receive Clock (A)	26	Receive Clock (B)
9	Clear to Send (A)	27	Clear to Send (B)
10	Local Loopback	28	Terminal in Service
11	DCE Ready (A)	29	DCE Ready (B)
12	DTE Ready (A)	30	DTE Ready (B)
13	Carrier Detect (A)	31	Carrier Detect (B)
14	Remote Loopback	32	Select Standby
15	Ring Indicator	33	Signal Quality
16	Select Frequency	34	New Signal
17	Ext. Transmit Clock (A)	35	Ext. Transmit Clock (B)
18	Test Mode	36	Standby/Indicator
		37	Send Common

CONNECTOR TYPE RS-232
SYSTEM PART NUMBER 4200261L4

Table 17. RS-232 Connector Pinout

PIN	SIGNAL DESCRIPTION	PIN	SIGNAL DESCRIPTION
1	Shield (Ground)	14	Sec. Transmit Data
2	Transmit Data	15	DCE Transmit Clock
3	Received Data	16	Sec. Received Data
4	Request to Send	17	Receive Signal Element Timing
5	Clear to Send	18	Not used
6	Data Set Ready	19	Sec. Request to Send
7	Signal Ground	20	Data Terminal Ready
8	Received Line Signal Detector	21	Signal Quality Detector
9	+ Voltage	22	Ring Indicator

Table 17. RS-232 Connector Pinout (Continued)

PIN	SIGNAL DESCRIPTION	PIN	SIGNAL DESCRIPTION
10	- Voltage	23	Data Signal Rate Selector
11	Not used	24	DTE Transmit Clock
12	Sec. Received Line Signal Indicator	25	Not used
13	Sec. Clear to Send		

CONNECTOR TYPE CCIT X.21 V.11
SYSTEM PART NUMBER 4200261L3

Table 18. CCIT X.21 V.11 Connector Pinout

PIN	SIGNAL DESCRIPTION	PIN	SIGNAL DESCRIPTION
1	Shield (Ground)	8	Signal Ground
2	Transmit Data (A)	9	Transmit Data (B)
3	Request to Send (A)	10	Request to Send (B)
4	Received Data (A)	11	Received Data (B)
5	Carrier Detect (A)	12	Carrier Detect (B)
6	Transmit/Receive Clock (A)	13	Transmit/Received Clock (B)
7	Ext. Transmit Clock (A)	14	Ext. Transmit Clock (B)
15	Not Used		

Octal BRI Option Module (P/N 1200186L2)

Each port of the Octal BRI Option Module uses a single RJ-45 jack to connect to a standard BRI U interface circuit. Table 19 shows the network pinout connection. The required wiring connection follows:

CONNECTOR TYPE (USOC) RJ-45

Table 19. BRI Pinout

PIN	NAME	DESCRIPTION
1, 2, 3, 6, 7, 8	Unused	—
4	Ring	Ring to and from the Network Interface
5	Tip	Tip to and from the Network Interface

Async-232 Option Module (P/N 1200182L1)

Each Async-232 Interface provides a DB-25 connection as defined in Table 20 using provided adapter cables.

Table 20. DB-25 Connector Pinout

PIN	NAME	DESCRIPTION
1	Shield	Shielded ground connection
2	TXD	Transmit data from DTE
3	RXD	Receive data to DTE
4	RTS	Request to send from DTE
5	CTS	Clear to send to DTE
6	DSR	Data set ready to DTE
7	GND	Ground
8	DCD	Data carrier detect to DTE
9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 23, 24, 25	Unused	n/a
20	DTR	Data terminal ready from DTE
22	RI	Ring indicator to DTE

T3 Option Module (P/N 1200223L1)

Each T3 Option Module provides BNC connectors for transmit and receive connections define in Table 21. Using provided RG 59, 75 ohm cables.

Table 21. T3 Module Connections

NAME	DESCRIPTION
RX IN	Receive data from the network, 75 ohms \pm 5%, unbalanced
TX OUT	Transmit data to the network, 75 ohms \pm 5%, unbalanced

T3 Drop and Insert Option Module (P/N 1200225L1)

Each T3 Drop and Insert Option Module provides BNC connectors for both primary and secondary transmit and receive connections as defined in Table 22 using provided RG 59, 75 ohm cables.

Table 22. T3 Drop and Insert Module Connections

NAME	DESCRIPTION
Primary RX IN	Primary receive data from the network, 75 ohms \pm 5%, unbalanced
Primary TX OUT	Primary transmit data to the network, 75 ohms \pm 5%, unbalanced
Secondary RX IN	Secondary receive data from the network, 75 ohms \pm 5%, unbalanced
Secondary TX OUT	Secondary transmit data to the network, 75 ohms \pm 5%, unbalanced

6. AT-A-GLANCE SPECIFICATIONS

Table 23 lists the specifications for the ATLAS 890 system.

Table 23. Specifications

Application	Feature	Specification
TDM APPLICATIONS		
	TDM bandwidth	49 Mbps Full duplex
	Dedicated map connections	766 dedicated DS0 map connections in each of the 5 maps
SWITCHING APPLICATIONS		
	ISDN signaling types	National ISDN Lucent 5E AT&T 4ESS (PRI Only) Northern DMS-100 (Nortel Custom) ETSI/DSS1
	T1 signaling types	Loop-Start Ground-Start E&M Wink E&M Immediate Feature Group D
	DSP Features	DTMF/MF tones support Progress tone generation 32 available DSP channels
	BRI Connections	128 connections
	PRI Connections	766 DS0 connections
	RBS T1 Connections	766 DS0 connections 27 simultaneous dial tones

Table 23. Specifications (Continued)

Application	Feature	Specification
FRAME RELAY		
	Packet throughput	11,700 pkts/sec (64-1500 size packets)
	Management signaling interfaces	UNI (user and network) NNI
	Management signaling types	ANSI T1.617-D (Annex D) ITU-T Q.933-A (Annex A) LMI (Group of four) Auto
	Encapsulation	RFC 1490
	PVC support	990 PVCs per packet endpoint
	Congestion control	FECN / BECN Discard eligible (DE)
	Quality of service (QOS)	Prioritization on a per-PVC basis
	Testing (ADTRAN proprietary)	PVC loopback Round trip delay measurement
	SNMP support	RFC 1315
PPP		
	Connection support	35 PPP connections to the internal router (not exceeding 11,700 packets per second) 100 PPP connections to the internal router (requires HDLC Module and cannot exceed 11,700 packets per second)
	Authentication support	PAP CHAP EAP
	Keepalive support	On/Off
	Interface support	Numbered interfaces Un-numbered interfaces

Table 23. Specifications (Continued)

Application	Feature	Specification
IP ROUTING		
	Route discovery	RIP V1 RIP V2 ICMP ARP IARP UDP Relay OSPF
	SNMP support	RFCs 1315, 1213, 1406 Adtran Enterprise MIB
VOICE COMPRESSION		
	Algorithm	Voice Compression Module G.723.1 or Netcoder (proprietary)
	Number of channels supported	Up to 64 compression channels
	PCM coding	μ-Law, A-Law (future)
	Fax support	9600 bps
	DTMF generation and detection	TIA 464A

NETWORK TURNUP PROCEDURE

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FIGURES

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1. INTRODUCTION

This section discusses the installation process of the ATLAS 890 installation.

2. TOOLS REQUIRED

The tools required for installation of the ATLAS 890 shelf are:

- #2 Phillips-head screwdriver
- Flat-head screwdriver (for installing modules)

WARNING

To prevent electrical shock, do not install equipment in a wet location or during a lightning storm.



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

3. UNPACK AND INSPECT THE SYSTEM

Each ATLAS 890 is shipped in its own cardboard shipping carton. Open each carton carefully and avoid deep penetration into the carton with sharp objects.

After unpacking the unit, inspect it for possible shipping damage. If the equipment has been damaged in transit, immediately file a claim with the carrier, then contact ADTRAN Customer Service (see *Customer Service, Product Support Information, and Training* in the front of this manual).

Contents of ADTRAN Shipments

Your ADTRAN shipment includes the following items:

- The ATLAS 890 Base Unit
- The ATLAS 890 *System CD*
- AC Power cord - ADTRAN P/N 3127031 (with AC systems)
- 19-23" Convertable Rackmount brackets and screws
- RJ-45—DB-25 adapter (1 for modem connection)
- RJ-45 control port cable (1) - ADTRAN P/N 3127004
- RJ-45—DB-9 adapter (1)



Customers must supply the Ethernet cable.

4. GROUNDING INSTRUCTIONS

To following provides grounding instruction information from the Underwriters' Laboratory UL1950 Standard for Safety of Information Technology Equipment Including Electrical Business Equipment, of July 28, 1995.

An equipment grounding conductor that is not smaller in size than the ungrounded branch-circuit supply conductors is to be installed as part of the circuit that supplies the product or system. Bare, covered, or insulated grounding conductors are acceptable. Individually covered or insulated equipment grounding conductors shall have a continuous outer finish that is either green, or green with one or more yellow stripes. The equipment grounding conductor is to be connected to ground at the service equipment.

The attachment-plug receptacles in the vicinity of the product or system are all to be of a grounding type, and the equipment grounding conductors serving these receptacles are to be connected to earth ground at the service equipment.

A supplementary equipment grounding conductor shall be installed between the product or system and ground that is in addition to the equipment grounding conductor in the power supply cord.

The supplementary equipment grounding conductor shall not be smaller in size than the ungrounded branch-circuit supply conductors. The supplementary equipment grounding conductor shall be connected to the product at the terminal provided, and shall be connected to ground in a manner that will retain the ground connection when the product is unplugged from the receptacle. The connection to ground of the supplementary equipment grounding conductor shall be in compliance with the rules for terminating bonding jumpers at Part K or Article 250 of the National Electrical Code, ANSI/NFPA 70. Termination of the supplementary equipment grounding conductor is permitted to be made to building steel, to a metal electrical raceway system, or to any grounded item that is permanently and reliably connected to the electrical service equipment ground.

The supplemental grounding conductor shall be connected to the equipment using a number 8 ring terminal and should be fastened to the grounding lug provided on the rear panel of the equipment. The ring terminal should be installed using the appropriate crimping tool (AMP P/N 59250 T-EAD Crimping Tool or equivalent.)

5. SUPPLYING POWER TO THE UNIT

AC Powered Systems

The AC powered ATLAS 890 comes equipped with a detachable 6-foot power cord with a 3-prong plug for connecting to a grounded power receptacle. As shipped, the ATLAS 890 is set to factory default conditions. After installing the Base Unit and any option modules, the ATLAS 890 is ready for power-up. To power-up the unit, ensure that the unit is properly connected to an appropriate power source and turn on the unit using the on/off switch on the rear panel.



- *This unit shall be installed in accordance with Article 400 and 364.8 of the NEC NFPA 70 when installed outside of a Restricted Access Location (i.e., central office, behind a locked door, service personnel only area).*
- *Power to the ATLAS 890 AC system must be from a grounded 90-130 VAC, 50/60 Hz source.*
- *The power receptacle uses double-pole, neutral fusing.*
- *Maximum recommended ambient operating temperature is 45 °C.*

DC Powered Systems

The DC powered ATLAS 890 comes equipped with a DC Power supply to furnish the voltages necessary for proper backplane operation. As shipped, the ATLAS 890 is set to factory default conditions. After installing the Base Unit and any option modules, the ATLAS 890 is ready for power-up.



- *This unit shall be installed in accordance with Article 400 and 364.8 of the NEC NFPA 70 when installed outside of a Restricted Access Location (i.e., central office, behind a locked door, service personnel only area).*
- *Power to the ATLAS 890 DC system must be from a reliably grounded -48 VDC source which is electrically isolated from the AC source.*
- *The branch circuit overcurrent protection shall be a fuse or circuit breaker rated minimum 60 VDC, maximum 10A.*
- *Maximum recommended ambient operating temperature is 45 °C.*

6. MOUNTING OPTIONS

The ATLAS 890 Base Unit may be installed for tabletop or 19-inch or 23-inch rackmount. The rackmount brackets included with the Base Unit can be used in 19-inch or 23-inch applications. For a rackmount installation, the ATLAS 890 Base Unit allows flush-face mount, face-forward mount, center mount, and rear mount.



Be careful not to upset the stability of the equipment mounting rack when installing this product.

7. INSTALLING NETWORK AND OPTION MODULES

Figure 1 shows the option slot numbering designation as viewed from the rear of the ATLAS 890. The functionally identical option slots only accept ATLAS 800 Series option modules and the controller slots only accept ATLAS 890 controller modules.

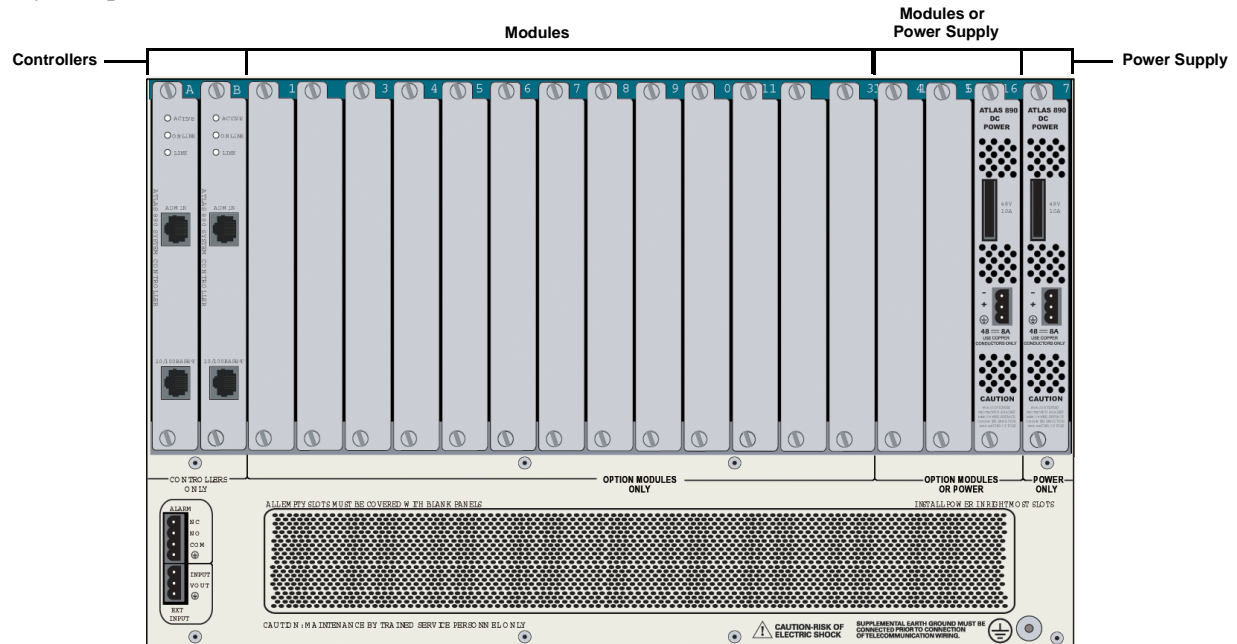


Figure 1. ATLAS 890 Slot Designation (Rear Panel)

WARNING

Option modules are intended to be serviced by qualified service personnel only.

Instructions for Installing the ATLAS 890 Controller and Option Modules

Instructions for Installing the ATLAS 890 Option Modules	
Step	Action
1	Remove the cover plate from the appropriate option slot of the ATLAS 890 rear panel.
2	Slide the Option Module into the option slot until the module is firmly seated against the front of the chassis.
3	Secure the thumbscrews at both edges of the module. Tighten with a screwdriver.
4	Connect the cables to the associated device(s).
5	Complete installation of remaining modules and Base Unit as specified in the appropriate sections of this Network Turnup Procedure.

Quad T1/PRI Option Module (P/N 1200185L3)

Shipping Contents

The ADTRAN shipment of the Quad T1/PRI Option Module includes the following items:

- Quad T1/PRI Option Module
- *Quad T1/PRI Option Module Quick Start Guide*
- Four cables (RJ-48C to RJ-48C), ADTRAN P/N: 3125M008
- Two crossover cable (RJ-48C to RJ-48C), ADTRAN P/N: 3125M010
- Two DB-15 to RJ-48 Adapters, ADTRAN P/N: 3196027

Quad E1/PRA Option Module (P/N 1200264L1)

Shipping Contents

The ADTRAN shipment of the Quad E1/PRA Option Module includes the following items:

- Quad E1/PRA Option Module
- *Quad E1/PRA Option Module Quick Start Guide*
- One DB-62 to Quad DB-15 female cable, ADTRAN P/N: 3125I061



The Quad E1/PRA Option Module may also be purchased with BNC Network Connection Interfaces (P/N 4200264L1).

Quad Nx 56/64 Option Module (P/N 1200311L1)

Shipping Contents

The ADTRAN shipment of the Quad Nx 56/64 Option Module includes the following items:

- Quad Nx 56/64 Option Module
- *Quad Nx 56/64 Option Module Quick Start Guide*
- Two DB-37 to V.35 converter cables, ADTRAN P/N 3125I029

Quad USSI Option Module System (P/N 4200261LX)

Shipping Contents

The ADTRAN shipment of the Quad USSI Option Module System includes the following items:

- Quad USSI Option Module System
- *Quad USSI Option Module System Quick Start Guide*

And one of the following:

- EIA-530/530A to DB-78 Cable (System P/N 4200261L2, Cable P/N 3125I058)
- RS-449/V.36 (System P/N 4200261L1, Cable P/N 3125I057)
- RS-232 (System P/N 4200261L4, Cable P/N 3125I063)
- CCIT X.21 V.11 (System P/N 4200261L3, Cable P/N 3125I056)

Octal Basic Rate ISDN Option Module (P/N 1200186L2)

Shipping Contents

The ADTRAN shipment of the Octal Basic Rate ISDN Option Module includes the following items:

- Octal Basic Rate ISDN Option Module
- *Octal Basic Rate ISDN Option Module Quick Start Guide*
- Eight RJ-45-to-RJ-11 cables, ADTRAN P/N: 3125M007

T3 Option Module (P/N 1200223L1)

Shipping Contents

The ADTRAN shipment of the T3 Option Module includes the following items:

- T3 Option Module
- *T3 Option Module Quick Start Guide*
- Two 6 ft. coaxial BNC cables (ADTRAN P/N 3125I054)

T3 Option Module with Drop and Insert Interface (P/N 1200225L1)

Shipping Contents

The ADTRAN shipment of the T3 Option Module with Drop and Insert Interface includes the following items:

- T3 Option Module with Drop and Insert Interface
- *T3 Option Module with Drop and Insert Interface Quick Start Guide*
- Four 6 ft. coaxial BNC cables (ADTRAN P/N 3125I054)

8,16,24,32 Channel Voice Compression Resource Modules (P/N 1200221LX)

Shipping Contents

The ADTRAN shipment of the 8,16,24,32 Channel Voice Compression Resource Modules includes the following items:

- 8,16,24,32 Channel Voice Compression Resource Modules
- *8,16,24,32 Channel Voice Compression Resource Modules Quick Start Guide*

Nx 56/64 IMUX Resource Module (P/N 1200262L1)

Shipping Contents

The ADTRAN shipment of the Nx 56/64 IMUX Resource Module includes the following items:

- Nx 56/64 IMUX Resource Module
- *Nx 56/64 IMUX Resource Module Quick Start Guide*

HDLC Resource Module (P/N 1200222L1)

Shipping Contents

The ADTRAN shipment of the HDLC Resource Module includes the following items:

- HDLC Resource Module
- *HDLC Resource Module Quick Start Guide*

Modem-16 Resource Module (P/N 1200181L1)

Shipping Contents

The ADTRAN shipment of the Modem-16 Resource Module includes the following items:

- Modem-16 Resource Module
- *Modem-16 Resource Module Quick Start Guide*

Async-232 Option Module (P/N 1200182L1)

Shipping Contents

The ADTRAN shipment of the Async-232 Option Module includes the following items:

- Async-232 Option Module
- *Async-232 Option Module Quick Start Guide*
- Two DB-78 to Octal RS-232 cables (ADTRAN P/N 3125I030)

USER INTERFACE GUIDE

This section of ADTRAN's *ATLAS 890 System Manual* is designed for use by network administrators and others who will configure and provision the system. It contains information about navigating the VT-100 user interface and using the four-character display.

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1. NAVIGATING THE TERMINAL MENU

Terminal Menu Window

The ATLAS 890 uses a multi-level menu structure that contains both menu items and data fields. All menu items and data fields display in the terminal menu window (see Figure 1), through which you have complete control of the ATLAS 890.

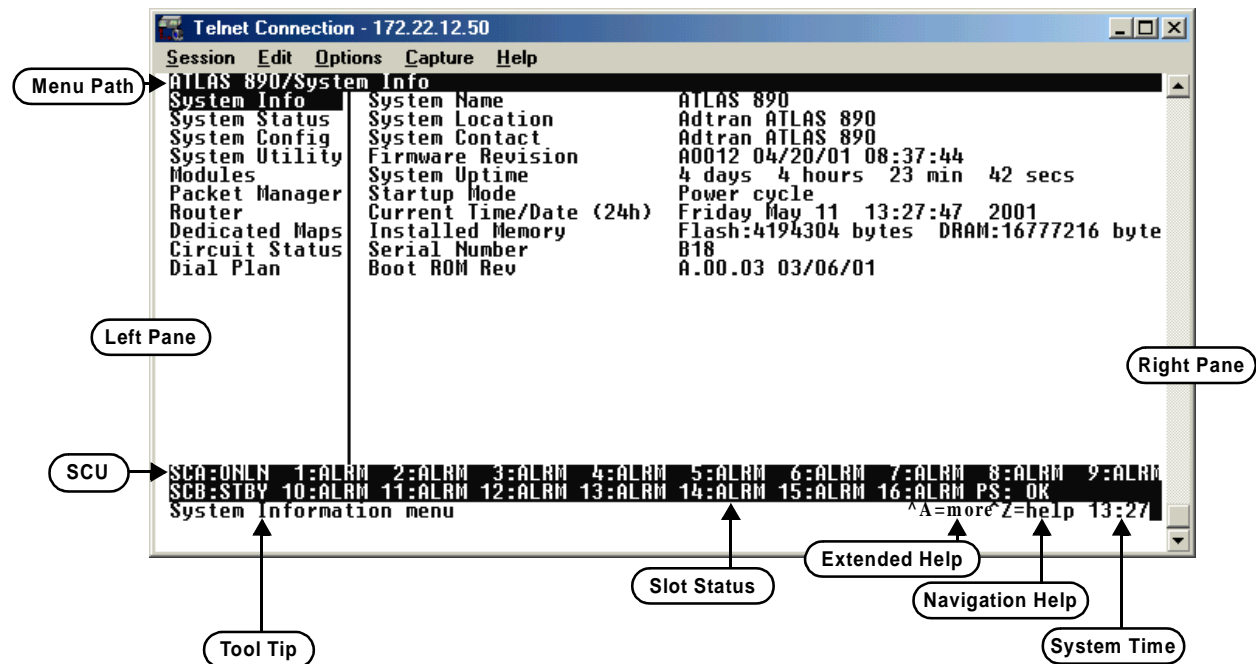


Figure 1. Top-Level Terminal Menu Window

Menu Path

The first line of the terminal menu window (the menu path) shows the session's current position (path) in the menu structure. For example, Figure 1 shows the top-level menu with the cursor on the **SYSTEM INFO** submenu; therefore, the menu path reads **ATLAS 890/System Info**.

Window Panes

When you first start a terminal menu session, the terminal menu window is divided into left and right panes. The left pane shows the list of available submenus, while the right pane shows the contents of the currently selected submenu.

You can view the terminal windows in two ways: with fields and submenus displaying horizontally across the right pane, or with fields and submenus displaying vertically down the right pane. Viewing submenus vertically rather than horizontally allows you to see information at a glance rather than scrolling horizontally across the window. To change the view, move your cursor to an index number and press <Enter>.

Figure 2 shows this alternate view. Fields and submenu names may vary slightly in this view.

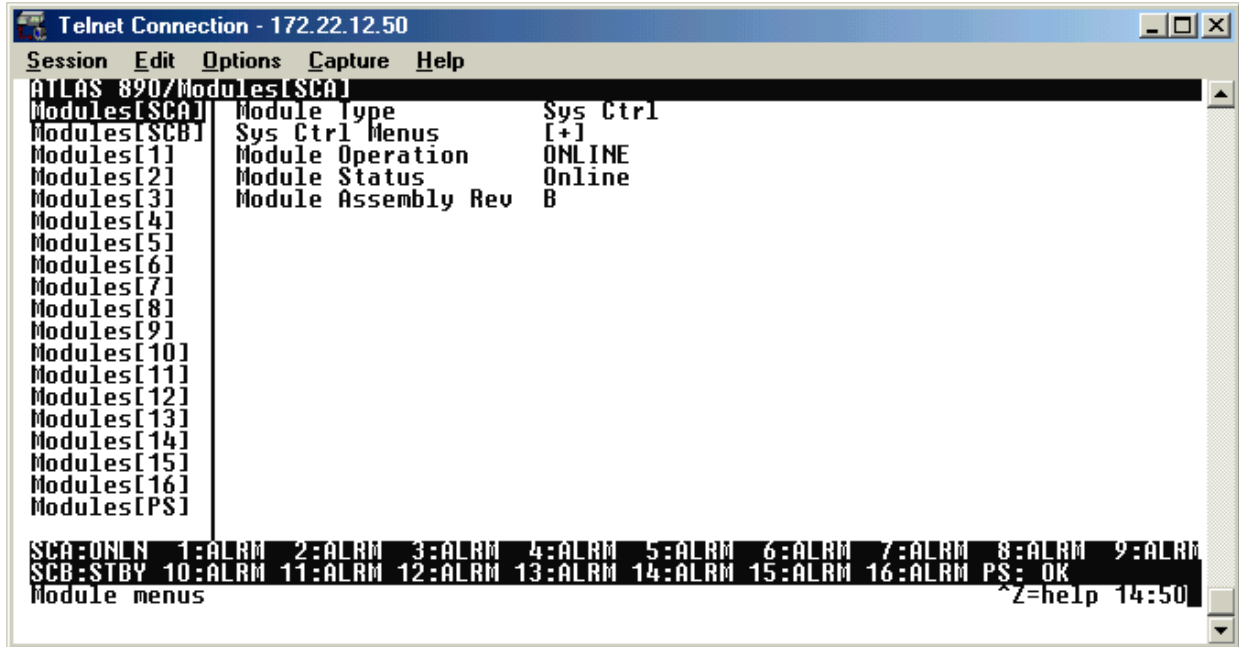


Figure 2. Alternate Menu View

Window Pane Navigation

Use the following chart to assist you in moving between and within the two window panes.

To do this...	Press this key...
Move from left pane to right pane	Tab Enter Right arrow
Move from right pane to left pane	Tab Escape Left arrow Backspace
Move within each pane	Up arrow Down arrow Left arrow Right arrow

Right Window Pane Notation

The right window pane shows the contents of the currently selected menu. These contents can include both submenu items and data fields. Some submenus contain additional submenus and

some data fields contain additional data fields. The following chart explains the notation used to identify these additional items.

This notation...	Means that...
[+]	More items are available when selected
[DATA]	More items are available when selected
<+>	An action is to be taken, such as activating a test
Highlighted menu item	You can enter data in this field
Underlined field	The field contains read-only information

Additional Terminal Menu Window Features

- SCU - displays status information about the system controllers, such as ONLIN (online), STBY (stand-by), and NRDY (not ready).
- Tool Tip - provides a brief description of the currently selected (highlighted) command
- Slot Status - displays status information, such as OK, WARN, or ALRM about slots 1-16
- Extended Help - displays information about selected commands (CTRL+A)
- Navigation Help - lists characters used for navigating the terminal menu and session management (CTRL+Z)
- System Time - displays current time

Navigating Using the Keyboard Keys

You can use various keystrokes to move through the terminal menu, to manage a terminal menu session, and to configure the system. Press <CTRL+Z> to activate a pop-up screen listing the navigation key-strokes.

Moving through the Menus

To do this...	Press this key...
Return to the home screen	H
Jump between two menu items Press <J> while the cursor is located on a menu item, and you jump back to the main screen. Go to another menu item, press <J>, and you jump back to the screen that was displayed the first time you pressed <J>. Press <J> anytime you want to jump between these items.	J

To do this...	Press this key...
Select items	Arrows
Edit a selected menu item	Enter
Cancel an edit	Escape
Close pop-up help screen	Escape
Move between the left and right panes	Tab Arrows
Move to the top of a screen	A
Move to the bottom of a screen	Z
Ascend one menu level	Backspace

Session Management Keystrokes

To do this...	Press this key...
Log out of a session	CTRL+L
Invalidate the password entry and return to the login screen	CTRL+S
Refresh the screen To save time, only the portion of the screen that has changed is refreshed. This option should only be necessary if the display picks up incorrect characters caused by disconnecting and reconnecting the terminal session.	CTRL+R
View Extended Data Display data fields too large for display window.	CTRL+V

Configuration Keystrokes

To do this...	Press this key...
<p>Restore factory default settings.</p> <p>This setting restores the factory defaults based on the location of the cursor. If the cursor is on a module line (in the MODULES menu), then only the selected module is updated to factory defaults.</p>	F
<p>Copy selected items to the clipboard.</p> <p>The amount of information you can copy depends on the cursor location when you press <C>:</p> <p>If the cursor is over an editable field, only that item is copied.</p> <p>If the cursor is over the index number of a list, then all of the items in the row of the list are copied. For example, if the cursor is over the SLOT # field in the MODULES screen, all of the information associated with the slot is copied.</p>	C
<p>Paste the item stored in the clipboard, if the information is compatible.</p> <p>You must confirm all pastes - except those to a single editable field.</p>	P
<p>Increment the value of certain types of fields by one when you paste information into those fields.</p>	>
<p>Decrement the value of certain types of fields by one when you paste information into those fields.</p>	<
<p>Insert a new list item.</p> <p>For example, add a new item to the DEDICATED MAP connection list by pressing <I> while the cursor is over the index number.</p>	I
<p>Delete a list item.</p> <p>For example, delete an item from the DEDICATED MAP connection list by pressing <D> while the index number is active.</p>	D

Getting Help

The bottom line of the terminal menu window contains context-sensitive help information. When the cursor is positioned over a set of configuration items, a help message displays (when available) providing a description of the item. When more detailed help is available for a particular item, ^A displays at the bottom of the window. At this point, if you press <CTRL+A>, a pop-up help screen displays with information about the item.

Press <CTRL+Z> to activate a help screen that displays the available keystrokes you can use to navigate the terminal menu.

2. TERMINAL MENU AND SYSTEM CONTROL

Selecting the Appropriate Menu

The terminal menu is the access point to all other operations. Each terminal menu item has several functions and submenus that identify and provide access to specific operations and parameters. Use the chart below to help select the appropriate terminal menu.

To do this...	Go to this menu...
Review and monitor general system information for the ATLAS 890	SYSTEM INFO
Review and monitor system status for the ATLAS 890	SYSTEM STATUS
Set up the operational configuration for the ATLAS 890	SYSTEM CONFIG
Update settings, transfer files, perform system diagnostics, and reboot the ATLAS 890	SYSTEM UTILITY
Review and configure settings for each installed module, including the ATLAS 890 network modules	MODULES
Define and configure all layer 2 connections including Frame Relay and PPP endpoints	PACKET MANAGER
Define, configure and monitor all ATLAS 890 Router functions	ROUTER
Assign dedicated connections between any two ports in the ATLAS 890	DEDICATED MAPS
Dial Backup functions including monitoring the status of backup links, manually forcing a backup switch, and restoring a primary connection	CIRCUIT STATUS
Set global ATLAS 890 switch parameters or set individual parameters for each port in the ATLAS 890 that handles a switched call	DIAL PLAN

Security Levels

To edit terminal menu items, you must have a password and the appropriate security level. Table 1 describes the six security levels.

Table 1. Password Security Level


Security Level	Description
5	Read-only permission for all menu items - minimum rights
4	Read permission for all menu items and permission to use test commands
3	Access to all commands except passwords, flash download, authentication methods, and interface configurations

Table 1. Password Security Level (Continued)

Security Level	Description
2	Access to all commands except passwords, flash download, and authentication methods
1	Access to all commands except passwords
0	Permission to edit every menu item, including creating and editing passwords - maximum rights

3. MENU DESCRIPTIONS

The remainder of this section describes ATLAS 890 menu and submenu options.

 **NOTE** *To help you follow the terminal menu hierarchy, the following notations are used:*

- > **MENUS**
- » **SUBMENUS**
- »» **SUB-SUBMENUS**

> SYSTEM INFO

The **SYSTEM INFO** menu provides basic information about the unit as well as data fields for editing information. Figure 3 displays the submenus and data fields that are available when you select this menu item.

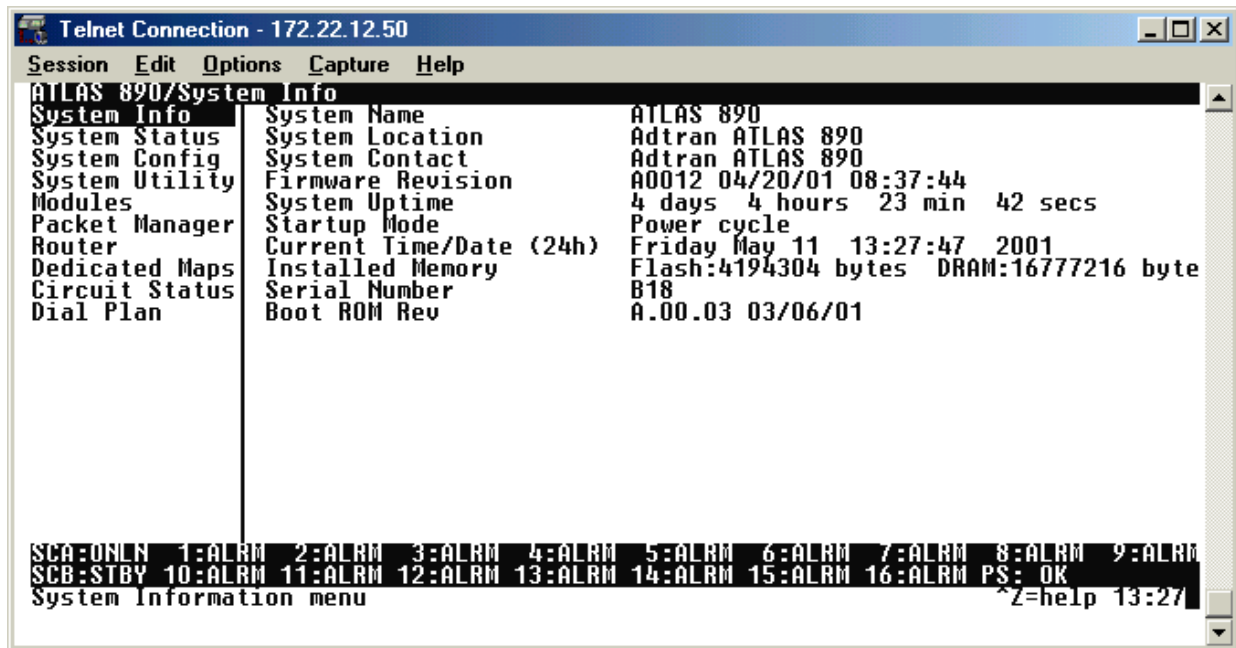


Figure 3. System Information Menu

» **SYSTEM NAME**

Write security: 3; Read security: 5

Provides a user-configurable text string for the name of the ATLAS 890. This name can help you distinguish between different installations. You can enter up to 40 alphanumeric characters in this field, including spaces and special characters (such as an underbar).

» **SYSTEM LOCATION**

Write security: 3; Read security: 5

Provides a user-configurable text string for the location of the ATLAS 890. This field is to help you keep track of the physical location of the unit. You can enter up to 40 alphanumeric characters in this field, including spaces and special characters (such as an underbar).

» **SYSTEM CONTACT**

Write security: 3; Read security: 5

Provides a user-configurable text string for a contact name. You can use this field to enter the name, phone number, or e-mail address of a person responsible for the ATLAS 890 system. You can enter up to 40 alphanumeric characters in this field, including spaces and special characters (such as an underbar).

» **FIRMWARE REVISION**

Read security: 5

Displays the current firmware revision level of the controller.

» **SYSTEM UPTIME**

Read security: 5

Displays the length of time the ATLAS 890 system has been running. Each time you reset the system, this value resets to 0 days, 0 hours, 0 min and 0 secs.

» **STARTUP MODE**

Read security: 5

Displays details about the last system startup. For example, rebooting the ATLAS 890 from the **SYSTEM UTILITY** menu will cause this field to read **WARM REBOOT**.

» **CURRENT TIME/DATE (24HR)**

Write security: 3; Read security: 5

Displays the current date and time, including seconds. To edit this field, place the cursor on the field and press <Enter>. Then, enter the time in a 24-hour format (such as 23:00:00 for 11:00 pm), and the date in mm-dd-yyyy format (for example, 10-30-1998). Press <Enter> when you are finished to exit the menu item.

» **INSTALLED MEMORY**

Read security: 5

Displays the type and amount of memory in use (including Flash memory and DRAM).

» **SERIAL NUMBER**

Read security: 5

Displays the serial number for the unit. The serial number of the ATLAS 890 will automatically display in this field.

» **BOOT ROM REV**

Read security: 5

Displays the boot ROM revision.

> SYSTEM STATUS

The **SYSTEM STATUS** menu provides the user with status information about the ATLAS 890 operational parameters including logged system events and timing. Figure 4 displays the submenus and data fields that are available when you select this menu item.

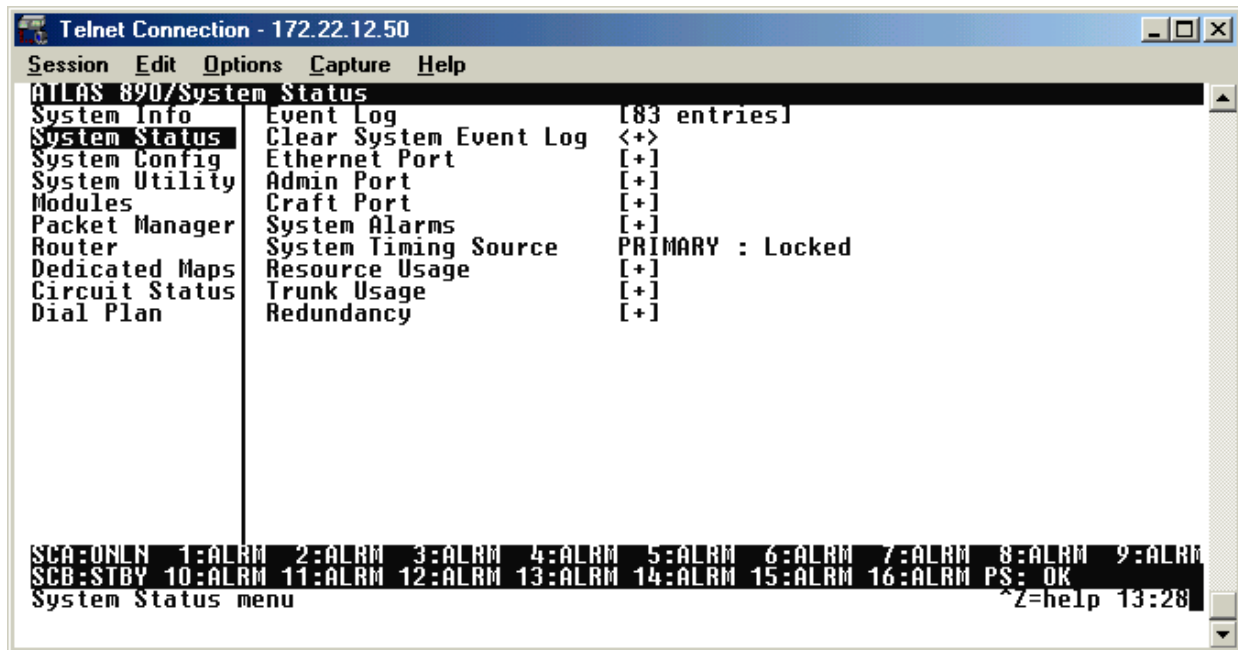


Figure 4. System Status Menu

» **EVENT LOG**

Read security: 5

Displays the last 349 warning or failure messages sent including the day, date, and priority of the message. The most recent messages display at the top of the list. The following read-only fields are available to review:

»» **TIME**

Displays the date (mm/dd) and the time (hh:mm:ss) that the event occurred.

- »» **CAT** Displays the severity of the event. The possible categories are Critical, Major, Minor, Warning, Normal, and Info. You can specify which types of errors you want the system to log with the System Event Logging option. See Section 7, *System Event Logging* for details.
- »» **SRC** Displays the source of the event.
- »» **SLOT** Displays the slot number in which the event occurred. If this field displays SCUA or SCUB (for the active system controller), the event that occurred was an ATLAS 890 system event.
- »» **PORT** Displays the port in which the event occurred.
- »» **EVENT DESCRIPTION** Displays a description of the event.


» **CLEAR SYSTEM EVENT LOG**

Write security: 3; Read security: 3

Clears the event log. When you select this command, the following prompt displays:

— Confirm (y/n) —
This will clear the entire event log.

Select **Y** to clear the log or **N** to exit the command.



CAUTION *If you clear the event log, you cannot retrieve the data.*

» **ETHERNET PORT**

Read security: 5

Displays status information about the Ethernet port. An asterisk (*) indicates activity for the item. The following read-only fields are available to review:

- »» **I/F STATUS** Indicates the current status of the Ethernet port.
- »» **TX FRAMES** Indicates the number of frames transmitted from the Ethernet port since system startup.
- »» **RX FRAMES** Indicates the number of frames received on the Ethernet port since system startup.
- »» **ETHERNET RATE** Indicates whether the Ethernet network is 10 or 100BaseT.

» **ADMIN PORT**

Write security: 2; Read security: 5

Displays the status of the RJ-45 Admin port.

- »» **SIGNAL LEADS** Displays the state of the Admin port signals (**RTS, CTS, DCD, and DTR**).
- »» **TX BYTES** Displays the number of bytes transmitted from the Admin port.
- »» **RX BYTES** Displays the number of bytes received by the Admin port.
- »» **OVERRUN ERRS** Displays the number of overrun errors received by the Admin port.
- »» **FRAMING ERRS** Displays the number of framing errors received by the Admin port.
- »» **CLEAR COUNTERS** **Write security: 5; Read security: 5**
Clears the Admin port statistics. Press **Y** to activate this command.

» **CRAFT PORT**

Write security: 2; Read security: 5

Displays the status of the RJ-45 Craft port.

- »» **TX BYTES** Displays the number of bytes transmitted from the Craft port.
- »» **RX BYTES** Displays the number of bytes received by the Craft port.
- »» **OVERRUN ERRS** Displays the number of overrun errors received by the Craft port.
- »» **FRAMING ERRS** Displays the number of framing errors received by the Craft port.
- »» **CLEAR COUNTERS** **Write security: 5; Read security: 5**
Clears the Craft port statistics. Press **Y** to activate this command.

» **SYSTEM ALARMS**

Read security: 5

Contains alarm information for the ATLAS 890 system including power, temperature, fan and external input alarms. The following status symbols are used:

- [–] Normal condition
- [*] Failure condition
- [!] No Information Available

»» **POWER ALARMS**

Read security: 5

Indicates that one or both of the power supplies are not functional. These power supplies are continuously monitored to determine failures. If one of these supplies fails, a message will be placed in the **EVENT LOG** (see Section 7, *System Event Logging* for more details).

»» **TEMPERATURE ALARMS**

Read security: 5

Indicates that the internal temperature of the power supply has exceeded normal operating limits. When the operating temperature is exceeded by any power supply in slots 14-17, a warning will be placed in the **EVENT LOG** (see Section 7, *System Event Logging* for more details), but no other action will be taken.

»» **FAN ALARMS**

Indicates that installed fans are operating normally.

»» **EXTERNAL INPUT ALARMS**

Indicates that the external input has been activated.

[-] Indicates input is not active

[*] Indicates input is active

» **SYSTEM TIMING SOURCE**

Read security: 5

Indicates which timing source (primary or backup) is currently being used by ATLAS 890 and whether the system is locked onto this source. If the display does not indicate locked, the ATLAS 890 does not have a valid source of timing and cannot reliably transfer data. Review the current setting for system timing source in the **SYSTEM CONFIG** menu. See *Primary Timing Source* and *Backup Timing Source* on page 17 for details.

» **RESOURCE USAGE**

Write security: 5; Read security: 5

Provides resource usage tracking for dynamic resources throughout the system. This includes current, average, and minimum availability for both analog and digital resources.

»» **DATA TABLES**

Read security: 5

Displays resource usage for dynamic resources throughout the system in a table format.

RESOURCE TYPE	Displays types of dynamically allocated resources being tracked throughout the system. Examples are ANALOG (analog modem resource), DIGITAL (digital call resource), and PKT VOICE (packet voice compression resource).
CURRENT	Shows the number of resources available (not in use) and the total number of resources. If a resource is taken offline, it is not included in the total.
AVERAGE	Shows the average number of resources available since the statistics were last reset.
MIN	Shows the fewest number of resources available since the last reset.

0 (ZERO) AVAIL	Provides a count of the number of times the quantity of available resources reached 0.
HR DATA	Displays the AVERAGE , MINIMUM , and 0 AVAILABLE data broken down in hour increments for a 24-hour period.
RESET	Write security: 4; Read security: 5 Activates the reset of all accumulated availability statistics for the selected resource.

»» **CONFIG**

Write security: 3; Read security: 5

Configures the statistics displayed under data tables.

DISPLAY FORMAT	Read security: 5 Sets the display format for all RESOURCE USAGE statistics to either raw data or percentages.
RESET MODE	Write security: 3; Read security: 5 Sets the reset mode for the RESOURCE USAGE statistics to one of the following: DAILY - performs reset daily at 12:00 AM WEEKLY - performs reset on Saturday night, 12:00 AM MANUAL - disables automatic reset of the resource usage statistics

» **TRUNK USAGE**

Write security: 5; Read security: 5

Indicates trunk use: (**NET TERM PRI**, **NET TERM RBS**; **USER TERM PRI**, **USER TERM RBS**).

»» **DATA TABLES**

Read security: 5

Display for collected resource usage data.

TRUNK TYPE	Displays types of trunks in the system.
CURRENT	Shows the number of resources available (not in use) and the total number of resources. If a resource is taken offline, it is not included in the total.
AVERAGE	Shows the average number of resources available since the statistics were last reset.
MIN	Shows the fewest number of resources available since the last reset.
0 (ZERO) AVAIL	Provides a count of the number of times the quantity of available resources reached 0.

SLT/PRT Displays the usage data broken down by slots and ports.

RESET Write security: **4**; Read security: **5**
Activates the reset of all accumulated availability statistics.

»» **CONFIG**

Write security: 5; Read security: 5

Configures the statistics displayed under data tables.

DISPLAY FORMAT Write security: **5**; Read security: **5**
Sets the display format for all **RESOURCE USAGE** statistics to either raw data or percentages.

RESET MODE Write security: **3**; Read security: **5**
Sets the reset mode for the **RESOURCE USAGE** statistics to one of the following:
DAILY - performs reset daily at 12:00 AM
WEEKLY - performs reset on Saturday night, 12:00 AM
MANUAL - disables automatic reset of the resource usage statistics

» **REDUNDANCY**

Write security: 5; Read security: 5

»» **SCU A**

Read security: 5

Displays the current status of the controller module installed in the controller A slot.

»» **SCU B**

Read security: 5

Displays the current status of the controller module installed in the controller B slot.

»» **HARDWARE COMPATIBILITY**

Read security: 5

Displays the current hardware of the controller modules installed in the controller A and controller B slots. Provides status for any compatibility issues that exist.

»» **FIRMWARE COMPATIBILITY**

Read security: 5

Indicates whether the firmware revision of controller A and controller B have any incompatibility problems that would affect controller switchover.

»» **ACTIVE/STANDBY CONFIGURATION**

Read security: 5

Compares the configuration of controller A and controller B and displays any discrepancies in the comparison and indicates when the controllers are synchronized.

»» **STANDBY STARTUP MODE**

Read security: 5

Displays the manner in which the standby controller booted.

»» **INTERCONTROLLER COMMUNICATIONS**

Read security: 5

Displays the status of the Intercontroller Communications Channel (ICC).

> **SYSTEM CONFIG**

The **SYSTEM CONFIG** menu allows you to set up the ATLAS 890 operational configuration. Figure 5 shows the items included in this menu.

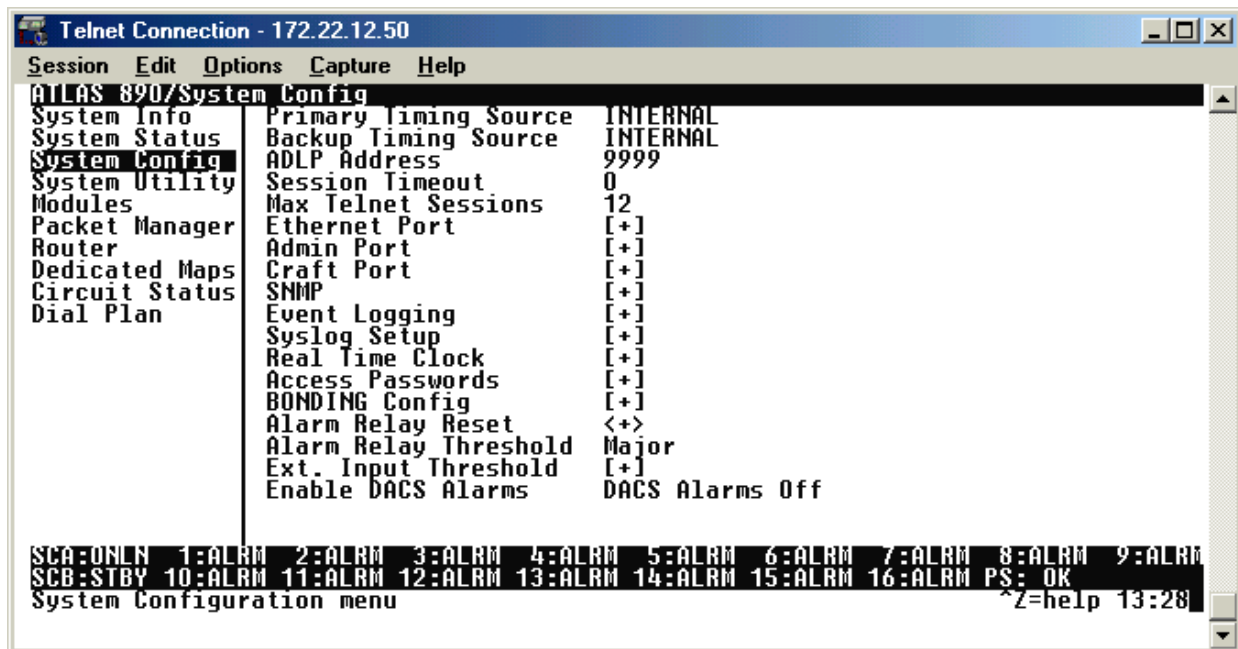


Figure 5. System Configuration Menu

» **PRIMARY TIMING SOURCE**

Write security: 1; Read security: 5

Selects the primary timing source. You can select either **INTERNAL** or any port from one of the installed network or option modules.

» **BACKUP TIMING SOURCE**

Write security: 1; Read security: 5

Selects the secondary timing source. You can select either **INTERNAL** or any port from one of the installed network or option modules. ATLAS 890 uses the backup timing source if the primary timing source goes into alarm. The **BACKUP TIMING SOURCE** should be different from the **PRIMARY TIMING SOURCE** for the most reliable operation.

» **ADLP ADDRESS**

Write security: 2; Read security: 5

Shows the system ADTRAN Data Link Layer Protocol (ADLP) address for connecting remote devices to ADTRAN management software. The allowable range is between 2 and 65520. Enter a value not used by any other ADTRAN units controlled by the management software.

» **SESSION TIMEOUT**

Write security: 3; Read security: 5

Defines the number of seconds the terminal session must remain idle before the session times out. You can enter zero to deactivate this option (the session will never time out).

» **MAX TELNET SESSIONS**

Write security: 3; Read security: 5

Defines the maximum number of Telnet sessions that can be active at the same time. Enter a number between 0 and 12 in this field.



If you enter zero in this field, you will not be able to use Telnet. Only enter zero if you want to completely lock out Telnet access.

» **ETHERNET PORT**

Write security: 2; Read security: 5

Provides a way to configure various settings for the Ethernet port. The following options are available for review and editing:

- »» **PORT NAME** Defines the name of the Ethernet port. You can leave this field blank.
- »» **IP ADDRESS** Lists the address assigned to the base Ethernet port. This address is composed of four decimal numbers, each in the range of 0 to 255, separated by periods. This value is set to 0.0.0.0 by default. The IP address is used for the 10/100BaseT Ethernet interface. Obtain the correct IP address from your LAN administrator.
- »» **DEFAULT GATEWAY** Defines or changes the default gateway. Enter the default gateway address by entering a decimal number into the appropriate field and then pressing <Enter> to move to the next field. You will need a default gateway if the LAN contains multiple segments. This address is composed of four decimal numbers, each in the range of 0 to 255, separated by periods. This value is set to 0.0.0.0 by default. Contact your LAN administrator for the appropriate address.

- »» **SUBNET MASK** Defines which part of a destination IP address contains the network number. This address is composed of four decimal numbers, each in the range of 0 to 255, separated by periods. This value is set to 0.0.0.0 by default. This part of the destination IP address is used along with the ATLAS 890 IP address to determine which nodes must be reached through the default IP gateway.
 - »» **MAC ADDRESS** Displays the system Ethernet Media Access Control (MAC) address. This field is read-only.
 - »» **ETHERNET SPEED** Defines the rate at which the ethernet port operates. Choose from **10 MBPS** or **AUTO 10/100**. When the unit is set for **AUTO 10/100**, the ATLAS 890 auto detects the data rate of the LAN and sets itself to that rate, either 10 or 100 Mbps.
- » **ADMIN PORT**
Write security: 2; Read security: 5
Accepts input for configuring the Admin port.
- »» **PORT NAME** Defines the name of the Admin port. You can leave this field blank.
 - »» **PORT TYPE** Specifies whether you use **DIRECT** or **DIAL** mode. **DIRECT** mode is used when connecting to a VT-100 terminal, and **DIAL** mode is used for modem access.
 - »» **PORT SPEED** Specifies the baud rate of the port. Select either 2400, 9600, 19200, or 38400. If you are using **DIAL** for **PORT TYPE**, ensure that the **PORT SPEED** setting matches the modem baud rate.
 - »» **MODEM INITIALIZATION STRING** Specifies the initialization string for a modem. Refer to your modem documentation for acceptable initialization strings. The default value will set most modems to the appropriate configuration for the ATLAS 890.
 - »» **INITIALIZE MODEM** Write security: **4**; Read security: **5**
Sends the modem initialization string to the modem. When you select this command, the following message displays: **Please verify a modem is connected to the Admin port before continuing. Confirm (y/n)**. Ensure that a modem is connected before selecting **Y**.
 - »» **FLOW CONTROL** This option sets the flow control for the Admin port. You may configure the Admin port flow control for **NONE** or **H/W** (hardware).

» **CRAFT PORT**

Write security: 2; Read security: 5

- »» **PORT NAME** Defines the name of the Craft port. You can leave this field blank.
- »» **PORT SPEED** Specifies the baud rate of the port. Select either 2400, 9600, 19200, or 38400. If you are using **DIAL** for **PORT TYPE**, ensure that the **PORT SPEED** setting matches the modem baud rate.

» **SNMP**

Write security: 3; Read security: 5

Provides a way to configure SNMP access for the ATLAS 890. The following options are available for review and editing:

»» **SNMP ACCESS**

Write security: 3; Read Security: 5

Defines whether SNMP access to the ATLAS 890 is enabled or disabled. Select the appropriate option.

»» **SNMP COMMUNITIES**

Write security: 3; Read Security: 5

Defines SNMP manager(s) characteristics as follows:

- IP ADDRESS** Specifies the IP address of the network manager.
- PRIVILEGES** Defines the **GET** (read-only) and **GET/SET** (read and write) privileges.
- GET NAME** Defines the community name for **GET** access. This value must match the **GET** name defined on the network management station. **PUBLIC** is the default name.
- SET NAME** Defines the community name for **SET** access. This value must match either the **GET** or **SET** name defined on the network management station. **PUBLIC** is the default name.

»» **TRAP TRANSMISSION**

Write security: 3; Read Security: 5

Enables and disables SNMP trap transmission.

»» **AUTHEN TRAP TRANSMISSION**

Write security: 3; Read Security: 5

Enables and disables the authentication failure trap.

»» **TRAPS DESTINATION**

Write security: 3; Read Security: 5

Defines the destination for SNMP traps as follows:

IP ADDRESS	Identifies the IP address for the network manager (NM) to send traps.
COMMUNITY	Defines the community name for trap destinations. This name must match the community name defined on the NM.
TRAP FILTERING	Sets the minimum severity level required for a system event to generate an SNMP trap. If a trap event occurs with a security level equal to or more severe than the trap type's current threshold setting, the event is sent as an SNMP trap. (Refer to the ADTRAN Technical Support web page (www.adtran.com) for a listing of all MIBs containing traps and their security levels.) The following threshold levels for the available selections: DISABLED, CRITICAL, MAJOR, MINOR, WARNING, NORMAL, and INFO.
STATION TYPE	To deliver the SNMP trap packet with the COMMUNITY NAME unchanged, define the STATION TYPE as NORMAL . If you are using T-Watch PRO, define the STATION TYPE as T-WATCH MGMT and append the COMMUNITY NAME with ".ADLP ADDRESS." Within the SNMP trap packet, this field is automatically updated before it is sent to the management station.

»» **DS1 CURRENT PERF THRESHOLDS**

Write security: 3; Read Security: 5

Defines performance threshold values for DS1 Line and Path statistics recorded in a 15-minute interval. If a statistic value exceeds its threshold value, then the corresponding Alert Trap will be sent if the alert event is armed and Alert Traps are enabled. These thresholds apply to all DS1 interfaces in the system.

CURRENT ES THRS	The DS1 performance monitor Threshold Value for the Current 15 minute Errored Seconds (ES) parameter. The default value is 65 for an approximate BER level of 10E-5.
CURRENT SES THRS	The DS1 performance monitor Threshold Value for the Current 15 minute Severely Errored Seconds (SES) parameter. The default value is 10 for an approximate BER level of 10E-5.
CURRENT SEFS THRS	The DS1 performance monitor Threshold Value for the Current 15 minute Severely Errored Framing Seconds (SEFS) parameter. The default value is 2 for an approximate BER level of 10E-5.

CURRENT UAS THRSH	The DS1 performance monitor Threshold Value for the Current 15 minute Unavailable Seconds (UAS) parameter. The default value is 10 for an approximate BER level of 10E-5.
CURRENT CSS THRSH	The DS1 performance monitor Threshold Value for the Current 15 minute Controlled Slip Seconds (CSS) parameter. The default value is 1 for an approximate BER level of 10E-5.
CURRENT PCV THRSH (D4)	The DS1 performance monitor Threshold Value for the Current 15 minute Path Code Violations (PCV) parameter, when the Line Type is Super Frame (AT&T D4 format) DS1. The default value is 72 framing errors for an approximate BER level of 10E-5.
CURRENT PCV THRSH (ESF)	The DS1 performance monitor Threshold Value for the Current 15 minute Path Code Violations (PCV) parameter, when the Line Type is Extended Super Frame DS1. The default value is 13,296 CRC errors for an approximate BER level of 10E-5.
CURRENT LES THRSH	The DS1 performance monitor Threshold Value for the Current 15 minute Line Errored Seconds (LES) parameter. The default value is 65 for an approximate BER level of 10E-5.
CURRENT LCV THRSH	The DS1 performance monitor Threshold Value for the Current 15 minute Line Code Violations (LCV) parameter. The default value is 13,340 for an approximate BER level of 10E-5.

»» **DS1 TOTAL CURRENT PERF THRESHOLDS**

Write security: 3; Read Security: 5

Defines performance threshold values for DS1 Line and Path statistics. If a statistic value exceeds its threshold value, then the corresponding Alert Trap will be sent if the alert event is armed and Alert Traps are enabled. These thresholds apply to all DS1 interfaces in the system.

TOTAL ES THRSH	The DS1 performance monitor Threshold Value for the Total Errored Seconds (ES) parameter. The default value is 648 for an approximate BER level of 10E-5.
TOTAL SES THRSH	The DS1 performance monitor Threshold Value for the Total Severely Errored Seconds (SES) parameter. The default value is 100 for an approximate BER level of 10E-5.
TOTAL SEFS THRSH	The DS1 performance monitor Threshold Value for the Total Severely Errored Framing Seconds (SEFS) parameter. The default value is 17 for an approximate BER level of 10E-5.

TOTAL UAS THRSH	The DS1 performance monitor Threshold Value for the Total Unavailable Seconds (UAS) parameter. The default value is 10 for an approximate BER level of 10E-5.
TOTAL CSS THRSH	The DS1 performance monitor Threshold Value for the Total Controlled Slip Seconds (CSS) parameter. The default value is 4 for an approximate BER level of 10E-5.
TOTAL PCV THRSH (D4)	The DS1 performance monitor Threshold Value for the Total Path Code Violations (PCV) parameter, when the Line Type is Super Frame (AT&T D4 format) DS1. The default value is 691 framing errors for an approximate BER level of 10E-5.
TOTAL PCV THRSH (ESF)	The DS1 performance monitor Threshold Value for the Total Path Code Violations (PCV) parameter, when the Line Type is Extended Super Frame DS1. The default value is 132,960 CRC errors for an approximate BER level of 10E-5.
TOTAL LES THRSH	The DS1 performance monitor Threshold Value for the Total Line Errored Seconds (LES) parameter. The default value is 648 for an approximate BER level of 10E-5.
TOTAL LCV THRSH	The DS1 performance monitor Threshold Value for the Total Line Code Violations (LCV) parameter. The default value is 133,400 for an approximate BER level of 10E-5.

»» **ASP ENDPOINT COMMUNITIES**

Write security: 0; Read security: 0

Configures the ADLP list used when accepting incoming traps from remote ADTRAN TSU 100 Series or ISU 512 units. For a trap to be recognized and sent to the network management station, the remote unit must be listed in the ASP Endpoint Communities list. The following parameters must be configured:

ADLP ADDRESS	Enter the ADLP address (Unit ID) of the remote unit. Only traps containing an ADLP address listed here will be accepted.
ADLP PASSWORD	Enter the ADLP password (Unit Password) of the remote unit. The password will be verified before traps will be accepted from the remote unit.

»» **SNMP/ASP PROXY**

Write security: 0; Read security: 0

Enables or disables Get_Request capabilities for remote units. When enabled, this feature allows SNMP requests to be sent from the Network Management Station through the ATLAS 890 to the selected remote unit. Remote units must be ADTRAN TSU 100 Series or ISU 512 products.

»» **SNMP/ASP POLLING**

Write security: 0; Read security: 0

Enables or disables trap polling through the ATLAS 890 to remote ADTRAN TSU 100 Series or ISU 512 units. When enabled, this feature allows the ATLAS 890 to forward any traps received from remote units to the Network Management Station. The remote unit must be listed in the ASP Endpoint Communities for the traps to be forwarded.

» **EVENT LOGGING**

Write security: 3; Read security: 5

Sets the system event severity level threshold for each of the ATLAS 890 system event types. Whenever a system event occurs, that event is logged if the event's severity level is equal to or more severe than the event type's current threshold setting. See Section 7, *System Event Logging* for detailed information on the system events.

» **SYSLOG SETUP**

Write security: 3; Read security: 3

Configures the ATLAS 890 Syslog client for use with a Syslog server (supplied with ADTRAN Utilities or available on most UNIX platforms).

»» **TRANSMISSION**

Write security: 3; Read security: 3

Enables or disables the transmission of log events to the external Syslog server

»» **HOST IP ADDRESS**

Write security: 3; Read security: 3

Lists the IP address of the external server that is running the Syslog host daemon.

»» **HOST FACILITY**

Write security: 3; Read security: 3

Specifies the facility destination of log events. Facilities are located on the host and are managed by the Syslog host daemon running on either a UNIX machine or a PC.

» **REAL TIME CLOCK**

Write security: 3; Read security: 5

Provides access to the two options listed below. You can review and edit these options.

»» **CURRENT
TIME/DATE**

Displays the current date and time, including seconds. To edit this field, enter the time in 24-hour format (such as 23:00:00 for 11:00 pm), and enter the date in mm-dd-yyyy format (for example, 09-23-1998).

»» **AUTO DAYLIGHT
SAVINGS**

When enabled, automatically updates the time and date when Daylight Savings Time starts and when Standard Time ends.

» **ACCESS PASSWORDS**

Write security: 0; Read security: 0

Provides a way to edit passwords and to add new users and passwords. All menu items are protected by passwords of varying security levels. By assigning different passwords to different security levels, the ATLAS 890 system administrator can control which users can change various menu items. You can assign multiple passwords at the same access level. This way, different users with the same access privileges can have different passwords. Each of the six password security levels are described in Table 1 on page 8.

- »» **LABEL** Defines a username.
- »» **PASSWORD** Allows you to change the password (the default password is **password**). The current password displays as a series of asterisks (*****). The password can contain up to a combination of 12 case-sensitive alphanumeric characters, spaces, or special characters.
- »» **ACCESS RIGHTS** Defines the password level for the corresponding label. You can select from six different password levels (see Table 1 on page 8).
- »» **ACTIVE** Displays the number of users for each label that are currently logged into the system.

» **BONDING CONFIG**

Write security: 3; Read security: 5

Displays the configuration submenus available for the IMUX Module. This configuration is shared among all IMUX Modules.

- »» **TXINIT TIMER** Specifies the length of time the originating endpoint attempts to detect the BONDING negotiation pattern from the answering endpoint before deciding the BONDING call has failed.
- »» **TXFA TIMER** Specifies the length of time both endpoints attempt to detect the BONDING frame pattern when a call is connected before deciding the BONDING call has failed. When interoperating with other manufacturers' BONDING equipment, it may be necessary to change this time so that it matches **TXADD01**.
- »» **TXADD01 TIMER** Specifies the length of time both endpoints wait for additional calls to be connected at the end of negotiation before deciding that the BONDING call has failed. The factory default setting is sufficient for most calls to connect, although when dialing overseas it may be necessary to lengthen this timer to allow for slower call routing.
- »» **TXDEQ TIMER** Specifies the length of time both endpoints attempt to equalize the network delay between the bearer channels before deciding the BONDING call has failed.

- »» **TANULL TIMER** Specifies the length of time the answering endpoint attempts to detect the BONDING negotiation pattern from the originating endpoint before deciding the BONDING call has failed. It may be necessary to shorten this timer if the DTE equipment using the BONDING module also has timer constraints for completing non-BONDING parameter negotiation.

- »» **TCID TIMER** Specifies the length of time both endpoints attempt to negotiate an agreeable value for bearer channels and channel capacities before deciding the BONDING call has failed.

- »» **CALL STAGGER** Specifies the amount of delay between placing calls for outgoing BONDING sessions. The following call stagger values are available
 - NO STAGGER**
There is no delay between the call dialing of a BONDING session.

 - 500 MS**
Wait approximately ½ second between the call dialing of a BONDING session.

 - 1 SEC.**
Wait approximately 1 second between the call dialing of a BONDING session.

 - 2 SEC.**
Wait approximately 2 seconds between the call dialing of a BONDING session.

- » **ALARM RELAY RESET**
Write security: 3; Read security: 5
Clears the Alarm Relay located on the rear panel of the ATLAS 890. Activating the software Alarm Relay Reset functions the same as manually pressing the ACO Switch located on the ATLAS 890 front panel.

- » **ALARM RELAY THRESHOLD**
Write security: 3; Read security: 5
Defines which threshold sets the Alarm Relay. These thresholds include **CRITICAL**, **MAJOR**, **MINOR**, **WARNING**, and **NORMAL**. If an alarm occurs that is greater than or equal to the threshold selected, the Alarm Relay will set. For example, if the threshold is set for **MAJOR**, then ALL Major alarms and ALL critical alarms will set the Alarm Relay. There is one exception -- setting the threshold to **NORMAL** will not set the Alarm Relay for Normal events. No Normal events set the Alarm Relay.

- » **EXTERNAL INPUT THRESHOLD**
Write security: 3; Read security: 5
Defines the alarm level and text for external switch contacts. If the external switch contact is closed, the alarm is thrown and the event text is sent to the event log.

»» **NAME**

Read security: 5

Displays the name External Input to identify the entry for the external input alarm.

»» **DESCRIPTION**

Write security: 3; Read security: 5

Contains the user-defined text that will be sent to the ATLAS 890 event log when the alarm is triggered.

»» **LEVEL**

Write security: 3; Read security: 5

Defines the event log category for the message associated with the alarm. For more details on event log categories, refer to Section 7, *System Event Logging*.

> SYSTEM UTILITY

Use the **SYSTEM UTILITY** menu to view and set the system parameters shown in Figure 6.

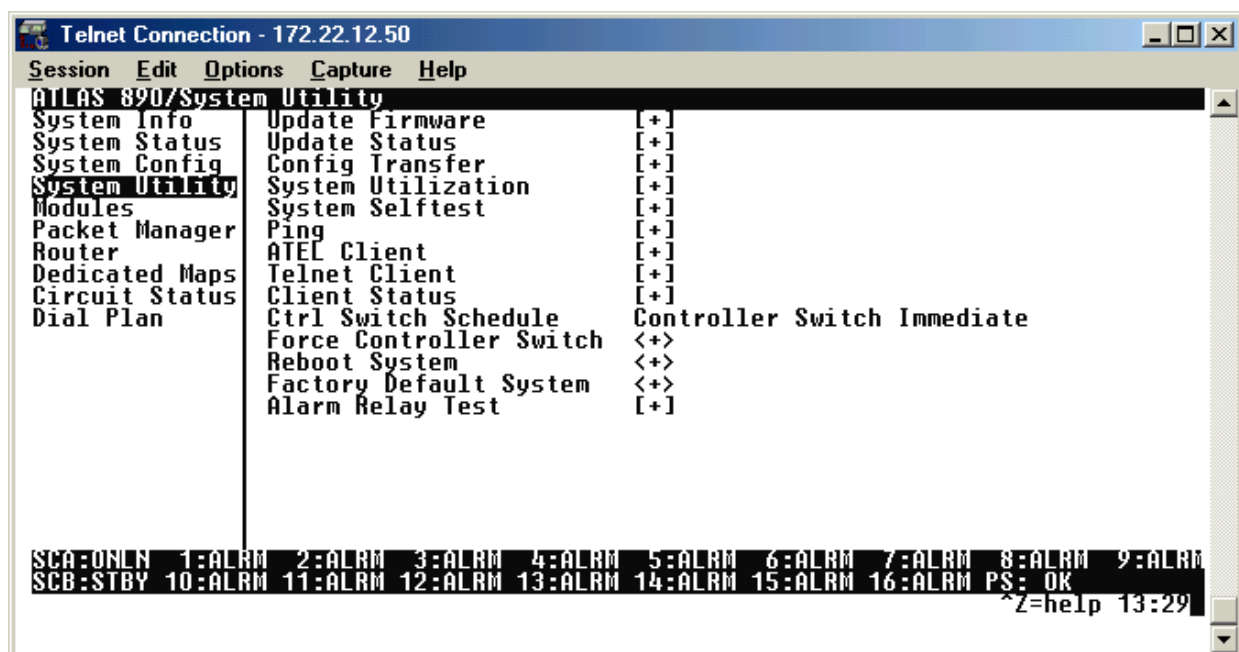


Figure 6. System Utility Menu

» **UPDATE FIRMWARE**

Write security: 1; Read security: 5

Updates firmware when ATLAS 890 enhancements are released. Two transfer methods are available for use in updating any modules that contain Flash memory—including the ATLAS 890 system controller. The first transfer method uses the ATLAS 890 serial Admin port of the system controller and

XMODEM protocol. The second transfer method uses the ATLAS 890 built-in Ethernet port of the system controller and Trivial File Transfer Protocol (TFTP). For more details on updating firmware, please refer to DLP-009 and DLP-010.

»» **MODULE SLOT**

Write security: 1; Read security: 5

Displays the slot you selected for firmware updating. When this option first appears, **NONE SELECTED** displays. When you move the cursor to this field and press <Enter>, a dialog box opens, allowing you to select **SCU A, SCU B, SLOT 1** through **SLOT 16**, or **ALL MODULES OF A TYPE**.

»» **MODULE TYPE**

Write security: 1; Read security: 5

Reflects the module type selected in **MODULE SLOT**. The selections only include upgradable modules.

»» **TRANSFER METHOD**

Write security: 1; Read security: 5

Lists the two transfer methods for updating firmware after selecting a module slot: **XMODEM** and **TFTP**. **XMODEM** transfers files by connecting to a communications program that supports XMODEM uploads to the terminal interface. **TFTP** transfers files by specifying an appropriate server address and filename. The standby controller may only be upgraded using the ICC channel.

TFTP SERVER IP ADDRESS

Write security: 1; Read security: 5

Configures the IP address of the TFTP Server on which the update file resides. ATLAS 890 uses this field to locate the network server on which the update file resides.

TFTP SERVER FILENAME

Write security: 1; Read security: 5

Identifies the name of the update file to retrieve from the TFTP Server. Enter the full path name and filename for the file.

»» **RESTART SCHEDULE**

Write security: 1; Read security: 5

Indicates when to restart the updated module to invoke the new code, after selecting a module slot. The two options include **RESTART IMMEDIATELY AFTER UPDATE** and **RESTART AT SPECIFIED DATE AND TIME**.

RESTART IMMEDIATELY AFTER UPDATE

Write security: 1; Read security: 5

Automatically restarts the module immediately after the update is complete.

RESTART AT SPECIFIED DATE AND TIME

Write security: 1; Read security: 5

Lets you specify a date and time to automatically restart the updated module. When you select this option, a new field called **RESTART DATE AND TIME** displays below the current field.

RESTART DATE AND TIME

Write security: 1; Read security: 5

Defines the date and time to restart the system after updating. Enter the time using a 24-hour format (i.e., 23:25:30 for 11PM, 25 minutes, 30 seconds). Enter the date in mm-dd-yyyy format (i.e., 11-08-2000).

»» CURRENT UPDATE STATUS

Read security: 5

Indicates progress or problems encountered during the current update process. The field displays **IDLE** if no update is in progress or when the update is successfully completed. At the end of a successful update, the contents of this field are copied into **PREVIOUS UPDATE STATUS**.

If you are updating several modules at the same time (if **MODULE SLOT** is set to **ALL MODULES OF A TYPE**), this option displays [+], indicating this field contains submenu items. The following submenus display:

SLT	Indicates the slot number.
TYPE	Defines the type of module for each slot.
CURRENT STATUS	Indicates the status of the current update.
PREVIOUS STATUS	Indicates the status of the previous update.
PREVIOUS TIME	Indicates the time of the previous update.

During the TFTP upload process, various status messages are provided in the **CURRENT UPDATE STATUS** field. For a detailed listing of these messages, please refer to DLP-010.

»» PREVIOUS UPDATE STATUS

Read security: 5

Displays the status of the previous update, after selecting a module slot. If a firmware update has not been attempted for a particular slot, this field reads **HAS NOT BEEN ATTEMPTED**. Following a successful update, the field reads **MODULE UPDATE COMPLETE**. If an update was unsuccessful, the appropriate error message displays.

»» BEGIN FIRMWARE UPDATE

Write security: 1; Read security: 5

Begins updating the firmware for the selected modules. To start this action, enter **Y** to begin or enter **N** to cancel. You can also cancel the operation after the update has begun. For XMODEM updates, cancel the process via the terminal emulation software (consult your documentation for the information on how to do this). For TFTP updates, you can cancel the process by selecting **CANCEL UPDATE** from this field.

» **UPDATE STATUS**

Read security: 5

Displays the status of the current firmware update. These fields are identical to those defined above in **CURRENT UPDATE STATUS**.

» **CONFIG TRANSFER**

Write security: 3; Read security: 5

Used only with TFTP transfers. Sends a file containing the ATLAS 890 configuration to a file on a TFTP server using the TFTP protocol through the 10/100BaseT Ethernet port. **CONFIG TRANSFER** also lets you save the ATLAS 890 configuration as a backup file, so you can use the same configuration with multiple ATLAS 890 units. In addition, **CONFIG TRANSFER** can retrieve a configuration file from a TFTP server.

To support these transfers, ADTRAN delivers a TFTP program with ATLAS 890 called *TFTP Server*. You can configure any PC running Microsoft Windows with this software, and store a configuration file.

Only one configuration transfer session (upload or download) can be active at a time. The TCP/IP parameters are not saved or overwritten as part of an ATLAS 890 unit's transferred configuration; therefore, identical configurations can be sent to multiple units. For complete details on configuration transfers to/from the ATLAS 890, please refer to DLP-010.

»» **TRANSFER METHOD**

Write security: 3; Read security: 5

Displays the method used to transfer the configuration file to or from a server. Currently, TFTP is required.

»» **TFTP SERVER IP ADDRESS**

Write security: 3; Read security: 5

Specifies the IP address of the TFTP server. Get this address information from your System Administrator.

»» **TFTP SERVER FILENAME**

Write security: 3; Read security: 5

Defines the name of the configuration file that you transfer to or retrieve from the TFTP server. The default name is **ATLAS890.cfg**, but it is editable.

»» **CURRENT TRANSFER STATUS**

Read security: 5

Indicates the current status of the update.

»» **PREVIOUS TRANSFER STATUS**

Read security: 5

Indicates the status of the previous update.

»» **LOAD AND USE CONFIG**

Write security: 3; Read security: 5

Retrieves the configuration file specified in the **TFTP SERVER FILENAME** field from the server. To start this command, enter **Y**. To cancel this command, enter **N**.



If you execute this command, the ATLAS 890 retrieves the configuration file, reboots, then restarts using the new configuration.

»» **SAVE CONFIG REMOTELY**

Write security: 3; Read security: 5

Saves the configuration file specified in **TFTP SERVER FILENAME** to the server identified in **TFTP SERVER IP ADDRESS**. To start this command, enter **Y**. To cancel this command, enter **N**.

» **SYSTEM UTILIZATION**

Write security: 0; Read security: 0

Displays statistics related to the ATLAS 890 internal operating system. Please check with ADTRAN Technical Support before attempting to use this menu.

» **SYSTEM SELFTEST**

Write security: 3; Read security: 5

Initiates a system self-test. The self-test consists of memory tests and data integrity tests for each installed module.



Self-tests disrupt data flow.

»» **SELFTEST**

Write security: 3; Read security: 5

Activates the self-test. To confirm self-test activation, press **Y**; to cancel the self-test press **N**.

»» **SELECTED TESTS**

Write security: 3; Read security: 5

Allows the user to select a system-wide test or an individual card test. Choose from **ALL TESTS**, **SLOT:SLT0 SYS CTRL**, or any other installed option/network module.

»» **CURRENT TEST STATUS**

Write security: 3; Read security: 5

Displays which part of self-test is currently being run. See **VIEW SELFTEST LOG** below for details on individual tests.

»» **CURRENT SLOT/PORT**

Write security: 3; Read security: 5

Displays which slot and part is currently being tested.

»» **VIEW SELFTEST LOG**

Read security: 5

Displays time-stamped log of the tests conducted and the Pass/Fail results. Self-tests verify data integrity and processor control to each port. Each port is looped back and a data pattern is sent and tested.

The result of the self-test on each installed port is listed with Pass/Fail results. Figure 7 depicts a typical test log. The fields included in the log are described below the figure.

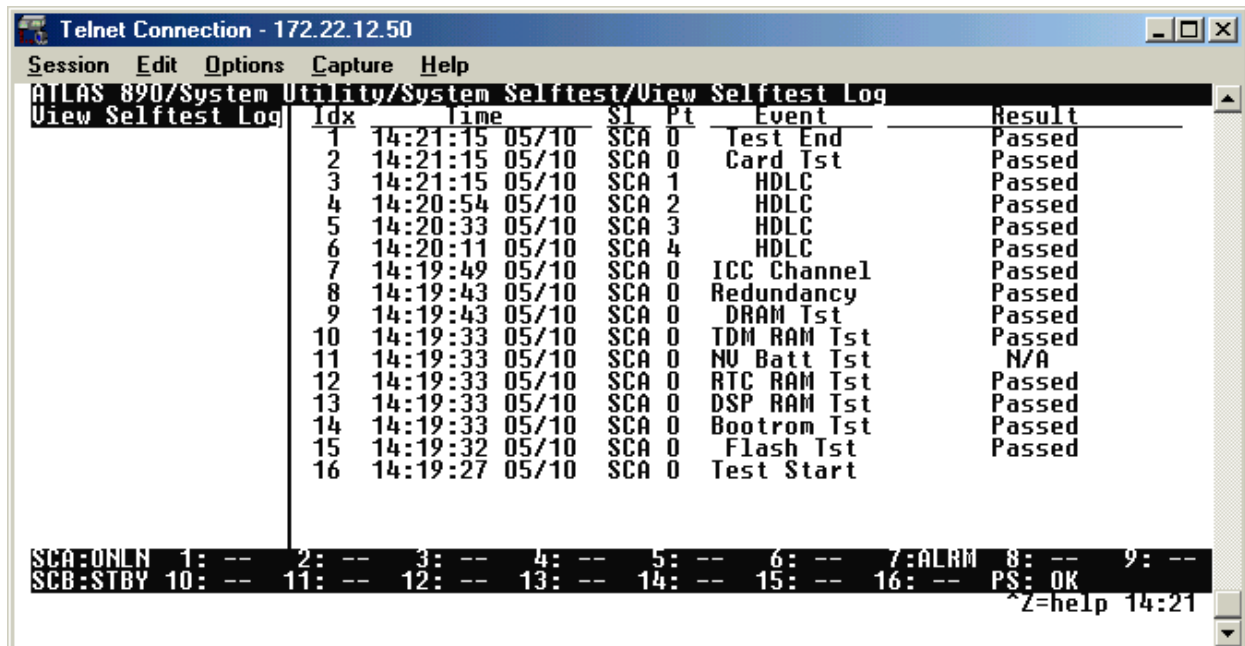


Figure 7. View Selftest Log

The self-test log includes the following fields:

- IDX** Index number of the log.
- TIME** Time and date of the log entry.
- SL** ATLAS 890 slot number.
- PT** ATLAS 890 port number.
- EVENT** Event description.
- RESULT** Show **PASS/FAIL** results.

The tests associated with the system controller are shown in Figure 8 on page 33.

This event...	Logs this result...
Flash	Flash memory checksum verified
BootRom	Boot ROM checksum verified
DSP RAM	Memory associated with the Digital Signal Processor
RTC RAM	Memory associated with the real time clock
NV Batt	Tests the battery for non-volatile memory
TDM RAM	Memory associated with mapping TDM bandwidth
DRAM	Dynamic RAM used for program execution
Redundancy	The gate array that controls redundancy operation
ICC	The InterController Communications Channel
HDLC	The High-Level Data Link Controllers

Figure 8. ATLAS 890 System Controller Self-Test Log

»» **CLEAR SELFTTEST LOG**

Write security: 3; Read security: 5

Clears the self-test log.

» **PING**

Write security: 5; Read security: 5

Allows you to send pings (ICMP echo requests) to devices accessible via the network.



Only one ping session can be active at a time.

»» **IP ADDRESS**

Write security: 5; Read security: 5

Specifies the IP address to ping.

»» **COUNT**

Write security: 5; Read security: 5

Specifies the number of pings to send. The default value is 4, and the maximum value is 99.

»» **SIZE (BYTES)**

Write security: 5; Read security: 5

Specifies the size in bytes of the data portion of the ping request. The default value is 64 bytes,

and the maximum size is 1024 bytes.

- »» **TIMEOUT (MS)**
Write security: 5; Read security: 5
Specifies the time in milliseconds to wait for the ping reply before timing out. The default timeout is 3 seconds, and the maximum timeout value is 10 seconds.
- »» **ROUND TRIP MIN**
Read security: 5
Displays the minimum round trip time of the ping request/reply of the current set of pings.
- »» **ROUND TRIP AVG**
Read security: 5
Displays the average round trip time of the ping request/reply of the current set of pings.
- »» **ROUND TRIP MAX**
Read security: 5
Displays the maximum round trip time of the ping request/reply of the current set of pings.
- »» **TX STATS**
Read security: 5
Displays the number of ping requests transmitted (*n* **TXED**), the number of ping replies received (*n* **RXED**), and the number of ping requests that were lost (*n* **LOST**).
- »» **RESET STATS**
Write security: 5; Read security: 5
Resets all ping statistics to zero. If the ping client is active, this menu will stop it.
- »» **START/STOP**
Write security: 5; Read security: 5
If the ping client is currently idle, this menu sends pings to the specified address. If the ping client is active, the menu either starts or stops sending pings.
- » **ATEL CLIENT**
Write security: 5; Read security: 5
Allows a user to remotely configure ADTRAN TSUs using ADLP over the inband management channel on a V.35 port. This feature only allows for remote sessions through the ATLAS 890 to the TSUs, not vice versa.
 - »» **ATEL ADDRESS**
Write security: 5; Read security: 5
Defines the ADLP address (Unit ID) assigned to the remote unit you are trying to connect to.
 - »» **CONNECT**
Write security: 5; Read security: 5
Activator used to start an ATEL client session to the remote unit configured in the **ATEL ADDRESS** field.

» **TELNET CLIENT**

Write security: 5; Read security: 5

Allows a user to open a Telnet session to any device listed in the ATLAS 890 route table.

»» **ADDRESS**

Write security: 5; Read security: 5

Defines the IP address assigned to the remote unit you are trying to connect to.

»» **ESCAPE CHAR**

Write security: 5; Read security: 5

Defines the Telnet client escape character. Typing the combination characters will close the active telnet session to the remote unit specified in the **ADDRESS** field.

Option	Keystroke
^]	<Ctrl> +]
^ \	<Ctrl> + \
^ [<Ctrl> + [
^ ^	<Ctrl> + <Shift> + 6
^ _	<Ctrl> + <Shift> + -

»» **PORT**

Write security: 5; Read security: 5

Defines the IP port used in the remote login session. Default (for Telnet) is **23**.

»» **CONNECT**

Write security: 5; Read security: 5

Activator used to start a Telnet session to the remote unit configured in the **ADDRESS** field.

» **CLIENT STATUS**

Write security: 5; Read security: 5

Displays status from current Telnet client sessions.

USER NAME	Displays the username (from access passwords list) that has an active Telnet client session.
SESSION ID	Displays the remote units IP address followed by the IP port of an active Telnet client session (in the format IP.IP.IP.IP:Port).

» **CONTROL SWITCH SCHEDULE**

Write security: 5; Read security: 5

Specifies when a controller switch from active to standby will occur.

CONTROLLER SWITCH IMMEDIATE A forced controller switch will occur immediately.

CONTROLLER SWITCH AT TIME Controller switch will occur at the specified date and time. When this option is selected, a new field called **CTRL SWITCH DATE AND TIME** will be displayed below the current field.

» **FORCE CONTROLLER SWITCH**

Write security: 0; Read security: 0

Causes the switch from active to standby to occur immediately.

» **REBOOT SYSTEM**

Write security: 0; Read security: 0

Reboots the ATLAS 890 system. When you select this command, the following message displays:

**** WARNING ** This will reboot the entire system and service will be interrupted!**

Press **Y** to reboot the system or **N** to cancel the command.

» **FACTORY DEFAULT SYSTEM**

Write security: 0; Read security: 0

Resets the entire system to the factory default settings. To reset the system, press **Y**. To cancel this command, press **N**. When you select this command, the following message displays:

**** WARNING ** This will delete all configuration settings. ADTRAN recommends a backup copy of the configuration before defaulting the system.**

» **ALARM RELAY TEST**

Write security: 5; Read security: 5

»» **TOGGLE TEST MODE**

Selects whether the alarm relay test mode is entered. The test mode is only active for a limited amount of time. The “.” key increases the amount of test time and the “;” key decreases the amount of test time while the cursor is on **TOGGLE TEST MODE**. The displayed time is in seconds.

> MODULES

Write security: 3; Read security: 5

The **MODULES** menu provides status information and menu options that allow you to configure and control the installed option modules, as well as the network ports (see Figure 9).

Slot	Type	Menu	Alarm	Test	State	Status	Rev
SCA	Sys Ctrl	[+]			ONLINE	Online	B
SCB	Sys Ctrl	[+]			ONLINE	Standby	B
1	U35Nx	[+]	[n/a]	[n/a]	ONLINE	No Response	-
2	ASYNC232	[+]	[n/a]	[n/a]	ONLINE	No Response	-
3	M56K-16	[+]	n/a	n/a	ONLINE	No Response	-
4	T1/PRI	[+]	[n/a]	[n/a]	ONLINE	No Response	-
5	U-BRI	[+]	[n/a]	[n/a]	ONLINE	No Response	-
6	DS3	[+]	[n/a]	[n/a]	ONLINE	No Response	-
7	DS3 D&I	[+]	[n/a]	[n/a]	ONLINE	No Response	-
8	USSI	[+]	[n/a]	[n/a]	ONLINE	No Response	-
9	E1/PRA	[+]	[n/a]	[n/a]	ONLINE	No Response	-
10	HDLC-128	[+]	n/a	n/a	ONLINE	No Response	-
11	IMUX	[+]	n/a	n/a	ONLINE	No Response	-
12	UCOM	[+]	[n/a]	n/a	ONLINE	No Response	-
13	T1/PRI	[+]	[n/a]	[n/a]	ONLINE	No Response	-
14	U-BRI	[+]	[n/a]	[n/a]	ONLINE	No Response	-
15	T1/PRI	[+]	[n/a]	[n/a]	ONLINE	No Response	-
16	U-BRI	[+]	[n/a]	[n/a]	ONLINE	No Response	-
PS	DC PS				ONLINE	Online	-

Figure 9. Modules Menu



If you install a module in a slot, then want to install a different type of module in the slot, you must set this field to **EMPTY** before selecting another module type.



If a module is installed, the module type automatically shows the name of the installed module, and it cannot be set to any other option.

» SLT

Read security: 5

The ATLAS 890 has four types of slots: system controller slots, option module slots, option module or power supply slots, and power supply only slots. The two controller slots are designated **SCUA** and **SCUB** for system controller units A and B. The 13 option module slots are designated **1** through **13**, and the three hybrid option module or power supply slots are designated **14** through **16**. Slot **17** is used for power supplies only.



Inserting modules into inappropriate slots will result in damage of the ATLAS 890 system.

- *System Controller modules are for use in the controller slots SCUA and SCUB only.*
- *Option Modules are for use in the option module slots 1-16 only.*
- *Power supplies are for use in the power supply slots 14-17 only.*

» **TYPE**

Write security: 3; Read security: 5

Displays the type of module actually installed in the slot or the type of module you plan to install in the slot. The ATLAS 890 controller automatically detects the type of module installed in each slot, and the **TYPE** field automatically defaults to the installed module type. You can also use this field to preconfigure a unit before actually installing modules by specifying the module that you want to install in each slot.

To use this option, navigate to the field you want to edit and press <Enter>. For empty slots, a list of all the available module types displays. Select the one you want and it displays in the **TYPE** field. If this field is already configured with a module, you can only set this field to **EMPTY**. To change from one module type to another, you must set the field to **EMPTY** first.

» **MENU**

Read security: 5

Displays additional status and configuration menus for the ATLAS 890 controller or selected module. To access the submenus for this item, use the arrow keys to scroll to the **MENU** column for the module you want to edit, and press <Enter>. For detailed information on each submenu item for a particular module, refer to the modules menus discussion for the appropriate network, option, or resource module.

» **ALARM**

Read security: 5

Displays whether there is an alarm condition on the ATLAS 890 controller or selected module. Press <Enter> to access the **ALARM** menu. For detailed information on each submenu item for a particular module, refer to the following sections for the appropriate network, option, or resource module alarm menu discussions.

» **TEST**

Read security: 5

Displays whether the ATLAS 890 controller or selected module is executing a test. Press <Enter> to access the **TEST** menu. This option will allow you to setup and initiate tests. You may also access this menu through the **MENU** submenu on this screen. For detailed information on each submenu item for a particular module, refer to the following sections for the appropriate network, option, or resource module test menu discussions.

» **STATE**

Read security: 5

Displays whether the ATLAS 890 controller or selected module is online or offline. Even though a module is physically installed, it must be marked **ONLINE** for it to be considered an available resource. This parameter allows an installed module to be marked **OFFLINE**, which may be useful in system troubleshooting. If you choose **OFFLINE**, the module will not be in alarm condition, but will display **OFFLINE**. While in **OFFLINE**, the **STATUS** LED will flash green. A module will automatically change to the **ONLINE** state when installed.

» **STATUS**

Read security: 5

Displays status information on the installed modules as follows:

ONLINE	The module is enabled and is responding to the system controller's status polls. This is the normal response of the system.
NO RESPONSE	The module is enabled but is not responding to the system controller's status polls. This response indicates a problem in the system or that the module is not properly installed.
EMPTY	The system controller has not detected the presence of a module in the system, nor has a module been manually enabled for this option slot.
OFFLINE	The module is installed but has been taken offline by a user. The module is still responding to controller polls.
OFFLINE/NO RESPONSE	The module is installed but has been taken offline by a user. The module is not responding to controller polls.
NOT SUPPORTED	The module is not supported by the current system configuration.

» **REV**

Read security: 5

Displays the hardware revision of the ATLAS 890 and other installed modules.

> MODULES MENU (QUAD T1/PRI OPTION MODULE)

This section provides detailed information on the **MODULES** menu and submenus for the Quad T1/PRI Option Module. The ATLAS 890 system controller automatically detects the presence of the Quad T1/PRI Option Module when it is installed in the system (listed as **T1/PRI**). To see the menus for the Quad T1/PRI Option Module via the terminal menu, use the arrow keys to scroll to the **MODULES** menu and press <Enter> to access the module choices. Refer to the *Quad T1/PRI Option Module Quick Start Guide* (P/N 61200185L3-13A) for a menu tree containing a complete listing of menus.

» **INFO**

Read security: 5

Displays general information about the Quad T1/PRI Option Module as follows:

»» **PART NUMBER**

Read security: 5

Displays the part number of the Quad T1/PRI Option Module.

»» **SERIAL NUMBER**

Read security: 5

Displays the module's serial number.

»» **BOARD REVISION**

Read security: 5

Displays the board revision of the module.

»» **PLL STATUS**

Read security: 5

Indicates whether the module phase lock loop is locked to its specific source.

» **ALARM STATUS**

Read security: 5

Displays the current T1 alarm status.

»» **PRT**

Read security: 5

Indicates the port number.

»» **ALARMS**

Read security: 5

Displays an alarm condition on the ATLAS 890 unit. Press <Enter> to access this menu item.

LOS

Indicates a loss of signal detected on port interface.

RED

Indicates inability to frame data received on the port. Alternately referred to as Out of Frame (OOF).

YELLOW

Receiving remote alarm (RAI) on port.

BLUE

Receiving unframed all ones from the port Alarm Indicator Signal (AIS).

DS0 ALARM

Displays per-DS0 alarm status; that is, at least one DS0 channel is in alarm if an asterisk (*) appears. These alarms usually indicate the failure to receive the protocol that has been configured for the DS0.

RX LEVEL

(Receive Level) Indicates the strength of the signal (in dB) received on the port.

» **DS0 STATUS**

Read security: 5

The DS0 status indicates usage on a DS0 basis. These options are read-only:

- Unallocated
- * Inactive
- + Signaling mismatch
- A** Active B Channel
- D** Active D Channel
- M** Maintenance
- N** Dedicated (nailed)
- O** Off hook - originate (RBS)
- R** Ringing (RBS); Restart (ISDN)
- W** Waiting dial tone

» **DS0 ALARMS**

Read security: 5

Displays per-DS0 alarm status. These alarms usually indicate the failure to receive the protocol that has been configured for the DS0.

- No Alarm DS0
- D** D Channel Alarm (ISDN)
- F** Frame Alarm (packet)
- T** TBOP Alarm (packet)
- P** PPP Alarm (packet)

» **SIG STATUS**

Read security: 5

Read-only field that indicates signaling of all 24 DS0s. The A/B bits for Rx (receive) and Tx (transmit) DS0s are shown. Dashes display for those DS0s where robbed bit signaling (RBS) is not being transferred by the ATLAS 890.

» **PERFORMANCE CURRENT**

Write security: 3; Read security: 5

The performance fields (either current, 15-minute total, or 24-hour total) provide status on key performance measures as specified in ANSI T1.403 and AT&T TR54016 for the T1/PRI port. Excepting **CLR**, these fields are all read-only. The monitored parameters include the following:

PRT	Displays the port number
CLR	Clears performance information for the selected port
ES	Errored Second (ES) is a second with one or more error events OR one or more Out Of Frame events OR one or more Controlled Slips
BES	Bursty Errored Second (BES) is a second with more than one, but less than 320 error events
SES	Severely Errored Second (SES) is a second with 320 or more error events OR one or more Out Of Frame events
SEFS	Severely Errored Frame Second is a second that contains four consecutive errored framing patterns.
LOFC	Loss of Frame Count is a count of seconds in which a valid framing pattern could not be obtained.
CSS	Controlled Slip Second
UAS	Unavailable Second
Lcv	Line Code Violation
PCV	Path Code Violation
LES	Line Errored Second

» **PERFORMANCE 15MIN**

Write security: 3; Read security: 5

Stores the performance data for the previous 15-minute window. Refer to *Performance Current* above for a detailed description of these fields.

» **PERFORMANCE 24HR**

Write security: 3; Read security: 5

Stores the performance data for the previous 24-hour window. Refer to *Performance Current* for a detailed description.

» **CONFIGURATION**

Write security: 3; Read security: 5

All of the following configurable parameters apply to whether the port is connected to a Primary Rate ISDN circuit or a channelized T1 circuit.

»» **PRT**

Read security: 5

Displays the port number.

»» **PORT NAME**

Write security: 3; Read security: 5

Accepts any alpha-numeric name up to 16 characters long, to uniquely identify each port on the ATLAS 890.

»» **FRAME**

Write security: 2; Read security: 5

This field must be set to match the frame format of the circuit to which it is connected, available from the network supplier. Choose either **D4** or **ESF**.

»» **CODE**

Write security: 2; Read security: 5

Set this field to match the line code of the circuit to which it is connected (this information is available from the network supplier). Choose either **AMI** or **B8ZS**.

»» **TX YEL**

Write security: 3; Read security: 5

Controls the transmitting of yellow alarms. Choose either **ON** or **OFF**.

»» **TX PRM**

Write security: 3; Read security: 5

Controls the sending of performance report messaging (PRM) data on the facility data link (FDL). The PRM data continues to be collected even if **XMIT PRM** is turned off (possible only with ESF format). Choose either **ON** or **OFF**.

»» **LBO**

Write security: 2; Read security: 5

Selects the Line Build Out (LBO) for the network interface. When connecting a ATLAS 890 port to a DSX-1 interface, this parameter is typically set to match the distance (in feet) between the ATLAS 890 and the device with which it is connecting. When you select this item, a list of choices displays. Select the appropriate option.

»» **LB ACCEPT**

Write security: 3; Read security: 5

Sets unit to accept or reject the in-band loop up and loop down codes as defined in ANSI T1.403. This is a line loopback. Choose either **ACCEPT** or **IGNORE**.

»» **PULSE DENSITY**

Write security: 3; Read security: 5

Choose either **ON** or **OFF**. When **ON**, Pulse Density Enforcer causes the ATLAS 890 to monitor for ones (1s) density violations and insert a one (1) when needed to maintain ones at 12.5%. This data insertion will cause data errors.

»» **ADLP**

Write security: ADTRAN Use Only; Read security: 5

The ADTRAN Data Link Protocol (ADLP) provides a communications link between ADTRAN equipment over point-to-point or multidrop connections that can be used for configuration and monitoring remote ADTRAN devices. Choose enable to activate the ADLP over the FDL for the DS1 interface.

» **TEST**

Write security: 3; Read security: 5

These options initiate different types of tests and display test results.

»» **PRT**

Read security: 5

Displays the port number.

»» **Loc LB**

Write security: 4; Read security: 5

Causes loopback on near-end (local) port (see Figure 10). The following options are available:

LINE Metallic loopback

PAYLD Payload loopback - framing and clocking are regenerated

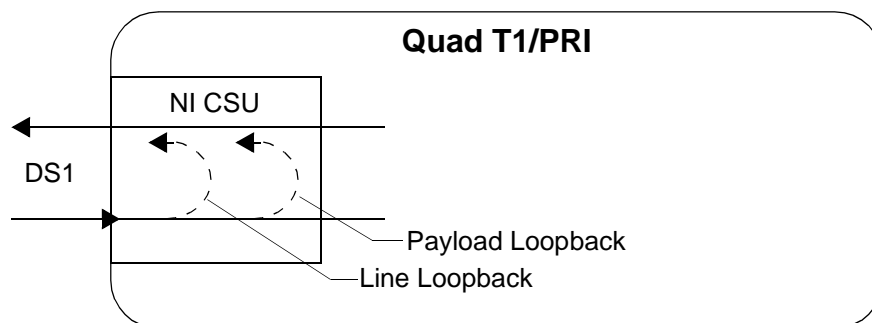


Figure 10. Loopback Test Diagram

»» **REMOTE LB**

Write security: 4; Read security: 5

Sends loopback code to Remote CSU. The following options are available:

AT&T INBAND LINE	Works in ESF and D4 mode
ANSI FDL LINE	Requires ESF mode
ANSI FDL PYLD	Requires ESF mode
INBAND NIU	Works in ESF and D4 mode

»» **PATTERN**

Write security: 4; Read security: 5

Test pattern to be transmitted out the port. The following options are available:

ALL ONES	Framed ones
ALL ZEROS	Framed zeros
QRSS	Pseudo-random pattern with suppression of excess zeros

»» **QRSS/RLB RESULTS**

Write security: 4; Read security: 5

Displays current status of T1 tests including information regarding loopbacks and test patterns. When displaying test pattern status, the display string is composed of pattern sync status and errored seconds.

NONE	No sync.
LOS	Sync has been lost.
SYNC	Pattern is synchronized.
ES	Number of seconds with at least one bit error.

»» **CLR**

Write security: 3; Read security: 5

Clears error counters on test pattern results menu.

»» **INJ**

Write security: 3; Read security: 5

Injects errors into transmitted test pattern.

> **MODULES MENU (QUAD E1/PRA OPTION MODULE)**

This section provides detailed information on the **MODULES** menu and submenus for the Quad E1/PRA Option Module. The ATLAS 890 system controller automatically detects the presence of the Quad E1/PRA Option Module when it is installed in the system (listed as **E1/PRA**). To see the menus for the Quad E1/PRA Option Module via the terminal menu, use the arrow keys to scroll to the **MODULES** menu and press <Enter> to access the module choices.

» **INFO**

Read security: 5

Displays general information about the Quad E1/PRA Option Module as follows:

»» **PART NUMBER**

Read security: 5

Displays the part number of the Quad E1/PRA Option Module.

»» **SERIAL NUMBER**

Read security: 5

Displays the module's serial number.

»» **BOARD REVISION**

Read security: 5

Displays the board revision of the installed module.

»» **E1 FRAMER REV**

Read security: 5

Displays the E1 framer hardware revision.

» **ALARM STATUS**

Read security: 5

Displays any active alarms as follows:

PRT

Displays the port number. The Quad E1/PRA Option Module is a single-port device.

ALARMS

Displays the alarm type. Each alarm type is described below.

LOS	(Loss of Signal) No signal detected on port interface.
LOF	(Loss of Framing) The receiver is unable to synchronize to the FAS framing pattern of the received signal.
LOMF	(Loss of Multi-frame) The receiver is unable to synchronize to the TS15 multi-frame pattern of the received signal.

CRC4	(Loss of CRC-4 Framing) The receiver is unable to synchronize to the CRC-4 frame pattern of the received signal.
AIS	(Alarm Indication Signal) An upstream failure has been detected and all ones are being received.
REM	(Remote Frame Alarm) Loss of frame alarm being received from far end.
REMMF	(Remote Multi-Frame Alarm) Loss of multi-frame alarm being received from far end.

» **TS0 ALARMS**

Read security: 5

Displays per TS0 alarm status. These alarms usually indicate the failure to receive the protocol that has been configured for the TS0.

- No alarm DS0
- D** D channel alarm (ISDN)
- F** Frame alarm (packet)
- T** TBOP alarm (packet)
- P** PPP alarm (packet)

» **TS0 STATUS**

Read security: 5

Indicates usage on a TS0 basis for each port as follows:

- Idle
- Inactive
- A** Active call on this TS0
- D** Active D channel TS0
- F** Framing TS0
- M** Maintenance TS0
- N** Dedicated TS0
- O** Off-hook detected
- R** Ringing detected
- S** Signaling

» **SIG STATUS (PORT 1 THROUGH 4)**

Read security: 5

Displays the state of the A/B/C/D signaling bits for the Quad E1/PRA Option Module. Dashes indicate TS0s where signaling is not being transferred by the ATLAS 890.

» **PERFORMANCE: CURR**

Write security: 5; Read security: 5

The performance fields – either current, 15 minute total, or 24 hour total – provide status on key performance measures as specified in G.821 and RFC 1406 for the E1/PRA port as follows:

PRT	Displays the port number
CLR	Clears performance information for the selected port
ES	Errored Second (ES) is a second with one or more error events OR one or more Out Of Frame events OR one or more Controlled Slips
BES	Bursty Errored Second (BES) is a second with more than one, but less than 320 error events
SES	Severely Errored Second (SES) is a second with 320 or more error events OR one or more Out Of Frame events
UAS	Unavailable Second
CSS	Controlled Slip Second
SEFS	Severely Errored Frame Second is a second that contains four consecutive errored framing patterns
DM	Degraded Minutes is the number of minutes with a bit error rate of 10^{-6} or greater
LCV	Line Code Violation
PCV	Path Code Violation
LES	Line Errored Second
LOFC	Loss of Frame Count is a count of seconds in which a valid framing pattern could not be obtained

» **PERFORMANCE: 15 MIN**

Write security: 5; Read security: 5

In the **PERFORMANCE 15 MIN** menu, the performance data for the previous 15 minute window is stored. Refer to *Performance: Curr* above for a detailed description.

» **PERFORMANCE: 24 HR.**

Write security: 5; Read security: 5

Stores the performance data for the previous 24-hour window. Refer to *Performance: Curr* on page 48 for a detailed description.

» **CONFIGURATION**

Write security: 5; Read security: 5

All of the following configurable parameters apply regardless of whether the port is connected to a Primary Rate Access or channelized E1 circuit.

»» **PRT**

Write security: 3; Read security: 5

Displays the port number.

»» **NAME**

Write security: 3; Read security: 5

Enter any text up to 16 characters to uniquely identify each port on the Quad E1/PRA Option Module.

»» **FAS2**

Write security: 3; Read security: 5

If enabled, the network interface receiver requires the NFAS word (TS0 0 in odd frames) and the FAS word (TS0 0 in even frames) for frame sync. When disabled, only the FAS word is needed for frame sync.

»» **TS16 MF**

Write security: 3; Read security: 5

If enabled, the receiver requires MFAS word in TS16 to achieve sync (CAS signaling). The transmitter outputs MFAS word in TS16 (CCS signaling).

»» **CRC-4**

Write security: 3; Read security: 5

Transmits the CRC-4 checksum bits in the outgoing E1 data stream, when enabled. Also, checks the received signal for errors.

»» **AUTO ALARM**

Write security: 3; Read security: 5

Transmits a remote alarm when framing is lost (when Red Alarm Generation is on), and transmits an AIS alarm when all ones are received (when RCM AIS Generation is on).

»» **CODE**

Write security: 3; Read security: 5

Allows selection of line coding. HDB3 is normally the only coding method used on public networks. AMI may be selected for testing purposes.

»» **TS0 SPARE**

Write security: 3; Read security: 5

TS0 bits Sa4 through Sa8 in frames not containing the Frame Alignment Signal may be used in specific applications, but should be set to 1s when crossing an international border. Enter decimal number whose 5 LSB are to be used for all Sa4.Sa8 bits. Refer to CCITT G.704 for more information.

»» **TS16 SPARE**

Write security: 3; Read security: 5

TS16 in CAS frame 0 contains 3 spare bits: 0000XYXX where 'X' marks a spare bit and 'Y' marks an alarm indications to the remote end. Enter a decimal number whose masked 4 LSB are inserted into TS0 in CAS frame 0. Refer to CCITT G.704 for more information.

»» **INTL BIT**

Write security: 3; Read security: 5

Bit 0 in all non-CRC4 frames are reserved for international use. They may be used nationally if the path does not cross an international border. If not specifically used, the bits should be set to '1' on paths crossing a border. Enter the international bit value of 0 or 1. Refer to CCITT G.704 for more information.

» **TEST**

Write security: 5; Read security: 5

These options initiate different types of tests and display test results. The test menu contains the following menu options.

»» **PRT**

Write security: 4; Read security: 5

Displays the port number.

»» **Loc LB**

Write security: 4; Read security: 5

Initiates a local loopback on the near-end port (see Figure 11). The following options are available:

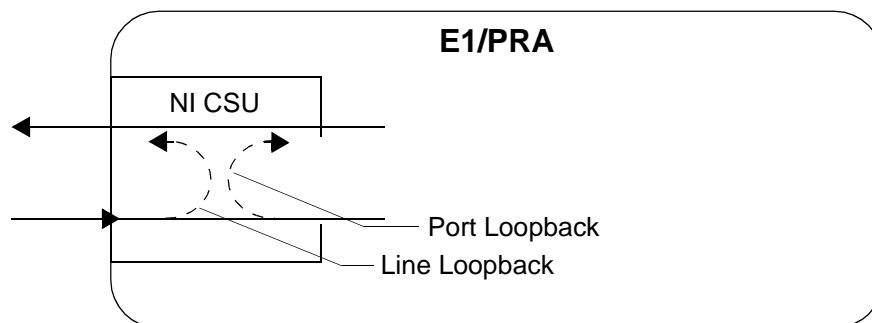


Figure 11. E1/PRA Network Loopback Tests

»» **PATTERN**

Write security: 4; Read security: 5

Test pattern to be transmitted out the port. The following options are available:

ALL ONES Framed Ones

ALL ZEROS Framed Zeros

QRSS Pseudorandom pattern with suppression of excess zeros

»» **QRSS RESULTS**

Write security: 4; Read security: 5

Test pattern results that indicate sync and errors of received data pattern.

»» **CLR**

Write security: 4; Read security: 5

Clears test results contained in the **QRSS RESULTS** field.

»» **INJ**

Write security: 4; Read security: 5

Injects errors into the transmitted test pattern. Return receipt of the errors is displayed in the **QRSS RESULTS** field.

> MODULES MENU (QUAD Nx 56/64 OPTION MODULE)

The ATLAS 890 system controller automatically detects the presence of the Quad Nx 56/64 Option Module when it is installed in the system (listed as **V35NX**). To see the menus for the Quad Nx 56/64 Option Module via the terminal menu, use the arrow keys to scroll to the **MODULES** menu and press <Enter> to access the module choices. Refer to the *Quad Nx 56/64 Option Module Quick Start Guide* for a menu tree containing a complete listing of menus.

» **INFO**

Read security: 5

Provides information about the module part number, serial number and assembly revision.

»» **PART NUMBER**

Read security: 5

Displays the part number of the module.

»» **SERIAL NUMBER**

Read security: 5

Displays the serial number of the module.

»» **BOARD REVISION**

Read security: 5

Displays the board revision of the installed module.

» **ALARM STATUS**

Read security: 5

Displays the current alarm status.

»» **PRT**

Read security: 5

Indicates the port number.

»» **ALARMS**

Read security: 5

Displays an alarm condition on the ATLAS 890 unit.

SLIP

A rate mismatch exists between the DTE clock and the network-side clock (as set by DS0 assignment).

PLL

The Nx port is not able to lock onto the clock provided by the network interface.

ZERO

The DTE is sending an excessive number of consecutive zeroes to the network interface.

NO EXT CLK

The DTE is not providing an external transmit clock. This alarm displays only if the Nx port is configured to get its transmit clock from the DTE.

PKT EP ALM

A packet endpoint has detected missing or incorrect framing.

» **DTE STATUS**

Read security: 5

Shows the status of key DTE interface signals. An asterisk (*) indicates the presence of a signal and a hyphen (-) indicates no signal present.

PRT Operating port number

The following signals are monitored (these options are read-only):

RTS Request to send from DTE

CTS Clear to send to DTE

DTR Data terminal ready from DTE

DSR Data set ready to DTE

DCD	Data carrier detect to DTE
RI	Ring indicate to DTE
TD	Transmit data from the DTE
RD	Receive data toward the DTE
EC	External clock present

» **DATA RATE**

Read security: 5

Displays the data rate at which each Nx port is currently operating. A port's data rate is determined by the number of DS0s assigned to it and the rate per DS0 associated with the active maps.

» **INBAND STATS**

Read security: 5

Provides information on the following inband channel statistics.

PORT	Operating port number
RX FRAMES	The number of frames received on the operating port since system startup
TX FRAMES	The number of frames transmitted from the operating port since system startup
RX BYTES	The number of bytes received from the operating port since system startup
TX BYTES	The number of bytes transmitted to the operating port since system startup
RESET STATS	Clears inband statistic results

» **PLL/FIFO**

Read security: 5

Displays the Phase Lock Loop (PLL) and FIFO status.

PORT
Indicates the operating port.

PLL/FIFO
Displays the state of the PLL and FIFO systems.

LOCK PLL is locked (This is required to transfer data.)

RXE Receive data FIFO empty

RXF	Receive data FIFO full
TXE	Transmit data FIFO empty
TXF	Transmit data FIFO full

» **CONFIGURATION**

Write security: 3; Read security: 5

All of the following configurable parameters apply to the individual V.35 ports.

»» **PRT**

Read security: 5

Displays the port number.

»» **NAME**

Write security: 3; Read security: 5

Accepts any alpha-numeric name up to 16 characters long, to uniquely identify each port on the Quad V.35 Option Module.

»» **CLK +/-**

Write security: 3; Read security: 5

Controls the clock used by the ATLAS 890 to accept the transmit (TX) data from the DTE. This is usually set to **NORMAL**. If the interface cable is long, causing a phase shift in the data, the clock can be set to **INVERTED**. This switches the phase of the clock, which compensates for a long cable.

»» **DATA**

Write security: 3; Read security: 5

Controls the inverting of the DTE data. This inversion can be useful when operating with a high-level data link control (HDLC) protocol (often used as a means to ensure 1s density). Select either **NORMAL** or **INVERTED**. Data inversion configuration must match at both ends of the circuit.

»» **CTS**

Write security: 3; Read security: 5

Determines the behavior of the Clear To Send (CTS) signal. If set to **NORMAL**, CTS will follow the value of Request To Send (RTS). If set to **FORCED ON**, CTS will always be asserted.

»» **DCD**

Write security: 3; Read security: 5

Determines the behavior of the Data Carrier Detect (DCD) signal, also called RLSD on V.35 interfaces. If set to **NORMAL**, DCD will generally be asserted when the interface is capable of passing data (consult the ATLAS 890 User Manual for exact conditions.) If set to **FORCED ON**, DCD will always be asserted. If set to **REMOTE RTS**, the value of DCD will track the value of the remote unit's RTS signal. Note that this feature requires the Inband control channel to be **ENABLED**.

»» **DSR**

Write security: 3; Read security: 5

Determines the behavior of the Data Set Ready (DSR) signal. If set to **NORMAL**, DSR will generally be asserted when the interface is capable of passing data. If set to **FORCED ON**, DSR will always be asserted. If set to **REMOTE DTR**, the value of DSR will track the value of the remote unit's DTR signal. This remote feature requires the Inband control channel to be Enabled.

»» **DTR**

Write security: 3; Read security: 5

Determines whether the ATLAS 890 treats a connection as permanent (**IGNORE**) or connects only when Data Terminal Ready (DTR) is active (**CONNECT ON DTR**). Select either **IGNORE** or **CONNECT ON DTR**.

»» **0 INH**

Write security: 3; Read security: 5

When the port detects an uninterrupted string of 0s being transmitted for more than one second, setting this parameter to **ON** will cause the ATLAS 890 to send 1s toward the network.

»» **INBAND**

Write security: 3; Read security: 5

Creates an inband management channel by robbing 8 kbps bandwidth from the port's allocated bandwidth. This channel can be used for management for ADTRAN products that are not co-located with the ATLAS. Consult the manual for ADTRAN T1 equipment for details on using this feature.

»» **SEND LEADS**

Write security: 3; Read security: 5

Sends the state of the DTE leads to the remote unit whenever any of the leads change state. If any leads on the remote unit are set to track a remote signal, this option must be enabled. The DTE lead states are conveyed using the Inband control channel, which must be enabled.

SIGNAL	RTS	V.54 LOOPBACK	511 TEST ON	SELF TEST ACTIVE	NETWORK TEST ACTIVE	NO DSO MAPPED	NETWORK ALARM
CTS	Follows	Off	Off	Off	Off	Off	Off
DCD	—	—	—	Off	Off	Off	Off
DSR	—	Off	Off	Off	Off	Off	—
— = Do not care							
Force On = On under all conditions							

» **DIAL**

Write security: 3; Read security: 5

Dials an Nx port that is configured to ignore DTR.

»» **PRT**

Read security: 5

Displays the port number.

»» **MODE**

Write security: 3; Read security: 5

Configures the dialing mode. The following options are available:

- | | |
|-------------------|--|
| PERSISTENT | Redial whenever the call is cleared or if the call fails |
| ONE TIME | Attempt the call only once |

»» **DIAL**

Write security: 0; Read security: 0

»» **SRC ID**

Write security: 3; Read security: 5

Indicates the **SOURCE ID** of the number to be dialed. Configure this field in the Nx **INTERFACE CONFIGURATION** section of the **DIAL PLAN**.

»» **NUMBER**

Write security: 3; Read security: 5

Indicates the number to be dialed. Configure this field in the Nx **INTERFACE CONFIGURATION** section of the **DIAL PLAN**.

» **TEST**

Write security: 4; Read security: 5

These options initiate different types of tests and display test results.

»» **LOOPBACK**

Write security: 4; Read security: 5

Test pattern to be transmitted out the port. The following options are available:

- | | |
|------------------------|---|
| NO LOOPBACK | No active loopback |
| LOCAL LOOPBACK | Activates both a local loopback (back toward the DTE) and a port loopback (toward the network) |
| REMOTE LOOPBACK | V.54 loopback code to be sent to the far end, and if the device at the far end supports V.54, the device activates a loopback on detection of the V.54 code |

»» **LOOPBACK STATUS**

Read security: 5

This read-only option indicates a port's current loopback status by displaying any of the following status messages:

- NO LOOPBACK ACTIVE**
- LOOPING UP REMOTE UNIT**

REMOTE UNIT LOOPED BACK

LOOPING DOWN REMOTE UNIT

REMOTE LOOP-UP FAILED

PORT LOOPED FROM REMOTE SOURCE

PORT LOOPBACK ACTIVE

»» **511**

Write security: 4; Read security: 5

Controls the activation of the 511 test pattern generator and detector.

»» **511 RESULT**

Read security: 5

Displays the results of the 511 test. This option is read-only. Clear these results by pressing <Enter> when **CLR** is selected.

NONE	Pattern is not synchronized
LOS	At one point the patter was synchronized, but is currently not synchronized
SYNC	Pattern is synchronized
ES	Number of seconds with at least one bit error

»» **CLR**

Write security: 4; Read security: 4

Clears error counters on test pattern results menu.

»» **INJ**

Write security: 4; Read security: 4

Injects errors into transmitted test pattern.

> **MODULES MENU (QUAD USSI OPTION MODULE)**

The ATLAS 890 system controller automatically detects the presence of the Quad USSI Option Module when it is installed in the system (listed as **USSI**). To see the menus for the Quad USSI Option Module via the terminal menu, use the arrow keys to scroll to the **MODULES** menu and press <Enter> to access the module choices. Refer to the *Quad USSI Option Module Quick Start Guide* for a menu tree containing a complete listing of menus.

» **INFO**

Read security: 5

Provides information about the module part number, serial number and assembly revision.

»» **PART NUMBER**

Read security: 5

Displays the part number of the module.

»» **SERIAL NUMBER**

Read security: 5

Displays the serial number of the module.

»» **BOARD REVISION**

Read security: 5

Displays the board revision of the installed module.

» **ALARM STATUS**

Read security: 5

Displays the current alarm status.

»» **PRT**

Read security: 5

Indicates the port number.

»» **ALARMS**

Read security: 5

Displays an alarm condition on the ATLAS 890 unit.

SLIP

A rate mismatch exists between the DTE clock and the network-side clock (as set by DS0 assignment).

PLL

The USSI port is not able to lock onto the clock provided by the network interface.

ZERO

The DTE is sending an excessive number of consecutive zeroes to the network interface.

NO EXT CLK

The DTE is not providing an external transmit clock. This alarm displays only if the USSI port is configured to get its transmit clock from the DTE.

PKT EP ALM

A packet endpoint has detected missing or incorrect framing.

» **DTE STATUS**

Read security: 5

Shows the status of key DTE interface signals. An asterisk (*) indicates the presence of a signal and a hyphen (-) indicates no signal present.

PRT Operating port number

The following signals are monitored (these options are read-only):

RTS Request to send from DTE

CTS Clear to send to DTE

DTR Data terminal ready from DTE

DSR Data set ready to DTE

DCD Data carrier detect to DTE

RI Ring indicate to DTE

TD Transmit data from the DTE

RD Receive data toward the DTE

EC External clock present

» **DATA RATE**

Read security: 5

Displays the data rate at which each USSI port is currently operating. A port's data rate is determined by the number of DS0s assigned to it and the rate per DS0 associated with the active maps.

» **INBAND STATS**

Read security: 5

Provides information on the following inband channel statistics.

PORT Operating port number

RX FRAMES The number of frames received on the operating port since system startup

TX FRAMES	The number of frames transmitted from the operating port since system startup
RX BYTES	The number of bytes received from the operating port since system startup
TX BYTES	The number of bytes transmitted to the operating port since system startup
RESET STATS	Clears inband statistic results

» **PLL/FIFO**

Read security: 5

Displays the Phase Lock Loop (PLL) and FIFO status.

PORT

Indicates the operating port.

PLL/FIFO

Displays the state of the PLL and FIFO systems.

LOCK	PLL is locked (This is required to transfer data.)
RXE	Receive data FIFO empty
RXF	Receive data FIFO full
TXE	Transmit data FIFO empty
TXF	Transmit data FIFO full

» **CONFIGURATION**

Write security: 3; Read security: 5

All of the following configurable parameters apply to the individual USSI ports.

»» **PRT**

Read security: 5

Displays the port number.

»» **PORT NAME**

Write security: 3; Read security: 5

Accepts any alpha-numeric name up to 16 characters long, to uniquely identify each port on the Quad USSI Option Module.

»» **CLK +/-**

Write security: 3; Read security: 5

Controls the clock used by the ATLAS 890 to accept the transmit (TX) data from the DTE.

This is usually set to **NORMAL**. If the interface cable is long, causing a phase shift in the data,

the clock can be set to **INVERTED**. This switches the phase of the clock, which compensates for a long cable.

»» **DATA**

Write security: 3; Read security: 5

Controls the inverting of the DTE data. This inversion can be useful when operating with a high-level data link control (HDLC) protocol (often used as a means to ensure 1s density). Select either **NORMAL** or **INVERTED**. Data inversion configuration must match on both ends of the circuit.

»» **CTS**

Write security: 3; Read security: 5

Determines the behavior of the Clear To Send (CTS) signal. If set to **NORMAL**, CTS will follow the value of Request To Send (RTS). If set to **FORCED ON**, CTS will always be asserted.

»» **DCD**

Write security: 3; Read security: 5

Determines the behavior of the Data Carrier Detect (DCD) signal, also called RLSD on some interfaces. If set to **NORMAL**, DCD will generally be asserted when the interface is capable of passing data (consult the ATLAS 890 User Manual for exact conditions.) If set to **FORCED ON**, DCD will always be asserted. If set to **REMOTE RTS**, the value of DCD will track the value of the remote unit's RTS signal. Note that this feature requires the Inband control channel to be **ENABLED**.

»» **DSR**

Write security: 3; Read security: 5

Determines the behavior of the Data Set Ready (DSR) signal. If set to **NORMAL**, DSR will generally be asserted when the interface is capable of passing data. If set to **FORCED ON**, DSR will always be asserted. If set to **REMOTE DTR**, the value of DSR will track the value of the remote unit's DTR signal. This remote feature requires the Inband control channel to be Enabled.

»» **DTR**

Write security: 3; Read security: 5

Determines whether the ATLAS 890 treats a connection as permanent (**IGNORE**) or connects only when Data Terminal Ready (DTR) is active (**CONNECT ON DTR**). Select either **IGNORE** or **CONNECT ON DTR**.

»» **0 INH**

Write security: 3; Read security: 5

When the port detects an uninterrupted string of 0s being transmitted for more than one second, setting this parameter to **ON** will cause the ATLAS 890 to send 1s toward the network.

»» **INBAND**

Write security: 3; Read security: 5

Creates an inband management channel by robbing 8 kbps bandwidth from the port's allocated bandwidth. This channel can be used for management for ADTRAN products that are not

co-located with the ATLAS. Consult the manual for ADTRAN T1 equipment for details on using this feature.

»» **SEND LEADS**

Write security: 3; Read security: 5

Sends the state of the DTE leads to the remote unit whenever any of the leads change state. If any leads on the remote unit are set to track a remote signal, this option must be enabled. The DTE lead states are conveyed using the Inband control channel, which must be enabled.

SIGNAL	RTS	V.54 LOOPBACK	511 TEST ON	SELF TEST ACTIVE	NETWORK TEST ACTIVE	NO DS0 MAPPED	NETWORK ALARM
CTS	Follows	Off	Off	Off	Off	Off	Off
DCD	—	—	—	Off	Off	Off	Off
DSR	—	Off	Off	Off	Off	Off	—
— = Do not care							
Force On = On under all conditions							

» **DIAL**

Write security: 3; Read security: 5

Dials an USSI port that is configured to ignore DTR.

»» **PRT**

Read security: 5

Displays the port number.

»» **MODE**

Write security: 3; Read security: 5

Configures the dialing mode. The following options are available:

PERSISTENT Redial whenever the call is cleared or if the call fails

ONE TIME Attempt the call only once

»» **DIAL**

Write security: 0; Read security: 0

»» **SRC ID**

Write security: 3; Read security: 5

Indicates the **SOURCE ID** of the number to be dialed. Configure this field in the **USSI INTERFACE CONFIGURATION** section of the **DIAL PLAN**.

»» **NUMBER**

Write security: 3; Read security: 5

Indicates the number to be dialed. Configure this field in the **USSI INTERFACE CONFIGURATION** section of the **DIAL PLAN**.

» **TEST**

Write security: 4; Read security: 5

These options initiate different types of tests and display test results.

»» **LOOPBACK**

Write security: 4; Read security: 5

Test pattern to be transmitted out the port. The following options are available:

NO LOOPBACK No active loopback

LOCAL LOOPBACK Activates both a local loopback (back toward the DTE) and a port loopback (toward the network)

REMOTE LOOPBACK V.54 loopback code to be sent to the far end, and if the device at the far end supports V.54, the device activates a loopback on detection of the V.54 code

»» **LOOPBACK STATUS**

Read security: 5

This read-only option indicates a port's current loopback status by displaying any of the following status messages:

NO LOOPBACK ACTIVE

LOOPING UP REMOTE UNIT

REMOTE UNIT LOOPED BACK

LOOPING DOWN REMOTE UNIT

REMOTE LOOP-UP FAILED

PORT LOOPED FROM REMOTE SOURCE

PORT LOOPBACK ACTIVE

»» **511**

Write security: 4; Read security: 5

Controls the activation of the 511 test pattern generator and detector.

»» **511 RESULT**

Read security: 5

Displays the results of the 511 test. This option is read-only. Clear these results by pressing <Enter> when **CLR** is selected.

NONE	Pattern is not synchronized
LOS	At one point the pattern was synchronized, but is currently not synchronized
SYNC	Pattern is synchronized
ES	Number of seconds with at least one bit error

»» **CLR**

Write security: 4; Read security: 4

Clears error counters on test pattern results menu.

»» **INJ**

Write security: 4; Read security: 4

Injects errors into transmitted test pattern.

» **DTE INTERFACE MODE**

Write security: 5; Read security: 5

Configures the Quad USSI Module for the appropriate interface type. Select the parameters matching the interface cable being used.

»» **PRT**

Read security: 5

Displays the port number.

»» **DTE INTERFACE**

Write security: 3; Read security: 5

Configures the Quad USSI Module interface type. The following options are available:

AUTO	The ATLAS 890 will automatically detect the interface type. The cable must be connected before the interface can be determined.
EIA-530A	Configures the interface for EIA-530A use.
EIA-530\ RS-449\ V.36	Configures the interface for EIA-530, RS-449, or V.36 use.
X.21/V.11	Configures the interface for X.21 or V.11 use.
RS-232	Configures the interface for RS-232 use.

»» **CURRENT DTE TYPE**

Read security: 5

Displays the current configuration of the Quad USSI Module DTE Interface.

> **MODULES MENU (IMUX 56/64 RESOURCE MODULE)**

The ATLAS 890 system controller automatically detects the presence of the IMUX 56/64 Resource Module when it is installed in the system (listed as **IMUX**). To see the menus for the IMUX 56/64 Resource Module via the terminal menu, use the arrow keys to scroll to the **MODULES** menu and press <Enter> to access the module choices. Refer to the *IMUX 56/64 Resource Module Quick Start Guide* for a menu tree containing a complete listing of menus.

» **INFO**

Read security: 5

Provides information about the module part number, serial number and assembly revision.

»» **PART NUMBER**

Read security: 5

Displays the part number of the module.

»» **SERIAL NUMBER**

Read security: 5

Displays the serial number of the module.

»» **BOARD REVISION**

Read security: 5

Displays the board revision of the installed module.

»» **FIRMWARE REVISION**

Read security: 5

Displays the current firmware revision of the IMUX 56/64 Resource Module.

» **STATUS**

Read security: 5

Indicates the current status of a particular BONDING session.

»» **STATUS**

Read security: 5

Displays the current status of the BONDING session.

IDLE	Indicates the number of Idle BONDING resources for a particular BONDING engine.
RESERVED	BONDING resources reserved for a BONDING session that is in the process of coming up.
NEGOTIATING	A single channel is connected and negotiating the BONDING call for a particular BONDING session.
ADD CHANNELS	The initial BONDING negotiation was successful, and the ATLAS 890 is in the process of adding channels to the BONDING session.

BONDING The remaining channels were brought up successfully, and the BONDING session is now ready to pass data.

TERMINATED The BONDING session has been terminated for some reason and is in the process of freeing BONDING resources.

»» **NUMBCHANNELS**

Read security: 5

Displays the number of bearer channels used in this BONDING session. When the number is displayed in the format X/Y, Y is the number of BONDING resources reserved for this session, and X is the number of calls belonging to this session that are up. If just a number is displayed, then all calls are up, and the number displayed is the number of BONDING resources in use for this session.

»» **DATA RATE**

Read security: 5

Displays the data rate for this BONDING session. The number in the parenthesis is the data rate of the individual bearer channels.

»» **BONDED EP**

Read security: 5

Displays the slot and port of the terminating endpoint that is using this BONDING session.

» **CONFIGURATION**

Write security: 3; Read security: 5

All of the following configurable parameters apply to the IMUX 56/64 Resource Module. In most applications the default values will be correct.

»» **TXINIT TIMER** Specifies the length of time the originating endpoint attempts to detect the BONDING negotiation pattern from the answering endpoint before deciding the BONDING call has failed.

»» **TXFA TIMER** Specifies the length of time both endpoints attempt to detect the BONDING frame pattern when a call is connected before deciding the BONDING call has failed. When interoperating with other manufacturers' BONDING equipment, it may be necessary to change this time so that it matches **TXADD01**.

»» **TXADD01 TIMER** Specifies the length of time both endpoints wait for additional calls to be connected at the end of negotiation before deciding that the BONDING call has failed. The factory default setting is sufficient for most calls to connect, although when dialing overseas it may be necessary to lengthen this timer to allow for slower call routing.

»» **TXDEQ TIMER** Specifies the length of time both endpoints attempt to equalize the network delay between the bearer channels before deciding the BONDING call has failed.

»» **TANULL TIMER** Specifies the length of time the answering endpoint attempts to detect the BONDING negotiation pattern from the originating endpoint before deciding the BONDING call has failed. It may be necessary to shorten this timer if the DTE equipment using the BONDING module also has timer constraints for completing non-BONDING parameter negotiation.

»» **TCID TIMER** Specifies the length of time both endpoints attempt to negotiate an agreeable value for bearer channels and channel capacities before deciding the BONDING call has failed.

»» **CALL STAGGER** Specifies the amount of delay between placing calls for outgoing BONDING sessions. The following call stagger values are available:

No STAGGER

There is no delay between the call dialing of a BONDING session.

500 MS

Wait approximately ½ second between the call dialing of a BONDING session.

1 SEC.

Wait approximately 1 second between the call dialing of a BONDING session.

2 SEC.

Wait approximately 2 seconds between the call dialing of a BONDING session.

> **MODULES MENU (OCTAL BRI OPTION MODULE)**

The ATLAS 890 system controller automatically detects the presence of the Octal BRI Option Module when it is installed in the system (listed as **U-BRI**). To see the menus for the Octal BRI Option Module via the terminal menu, use the arrow keys to scroll to the **MODULES** menu and press <Enter> to access the module choices. Refer to the *Octal BRI Option Module Quick Start Guide* for a menu tree containing a complete listing of menus.

» **INFO**

Read security: 5

Provides information about the module part number, serial number and assembly revision.

»» **PART NUMBER**

Read security: 5

Displays the part number of the module.

»» **SERIAL NUMBER**

Read security: 5

Displays the serial number of the module.

»» **BOARD REVISION**

Read security: 5

Displays the board revision of the installed module.

» **ALARMS**

Read security: 5

Displays the alarm status for the selected Octal BRI Option Module.

»» **PRT**

Read security: 5

Indicates the port number.

»» **ALARMS**

Read security: 5

Displays the current alarm status of each U-BRI interface.

LAYER 1 A layer one alarm is indicated by an asterisk (*) when the U-BRI physical layer is not active. An L1 alarm is present when problems are detected with the endpoint or a cabling problem.

»» **CHANNEL**

Read security: 5

Displays the alarm status of each 2B+D channel. A hyphen (-) indicates no active channel alarm and D indicates an active D channel alarm.

» **CHANNEL USAGE**

Read security: 5

Displays the status of each of the U-BRI interfaces.

»» **PRT**

Read security: 5

Indicates the port number.

»» **CHA**

Read security: 5

(Channel) Displays the status of individual channels. The following symbols may display:

- Unallocated channel
- . Inactive channel
- A Active B channel
- D Active D channel

» **PERFORMANCE CURRENT**

Write security: 3; Read security: 5

The performance field provides status on key performance measures for each of the four U-BRI ports. These fields are all read-only. The monitored parameters include the following:

- PRT** Displays the port number
- RESET** Resets the NEBE and FEBE statistics
- NEBE** Near-end block errors
- FEBE** Far-end block errors

» **CONFIGURATION**

Write security: 3; Read security: 5

All of the following configurable parameters apply to the individual U-BRI interfaces.

»» **PRT**

Read security: 5

Displays the port number.

»» **PORT NAME**

Write security: 3; Read security: 5

Accepts any alpha-numeric name up to 16 characters long, to uniquely identify each port on the Octal BRI Option Module.

» **TEST**

Write security: 5; Read security: 5

These options initiate different types of tests and display test results.

»» **LOCAL LOOPBACK**

Write security: 4; Read security: 5

Activates a local loopback toward the U interface. The following options are available:

NONE	No active loopback
LOOPBACK B1	Loops the first B channel of the interface
LOOPBACK B2	Loops the second B channel of the interface
LOOPBACK B1 + B2	Loops both B channels of the interface
LOOPBACK 2B+D	Loops the entire physical interface

»» **REMOTE LOOPBACK**

Write security: 4; Read security: 5

Activates a loopback towards the controller. The following options are available:

NONE	No active loopback
LOOPBACK B1	Loops the first B channel of the interface
LOOPBACK B2	Loops the second B channel of the interface
LOOPBACK 2B+D	Loops the entire physical interface

> MODULES MENU (VOICE COMPRESSION RESOURCE MODULE)

The ATLAS 890 system controller automatically detects the presence of the Voice Compression (VCOM) Resource Module when it is installed in the system (listed as **VCOM-X** where X is **8** for 1200221L1, **16** for 1200221L2, **24** for 1200221L3, and **32** for 1200221L4). To see the menus for the VCOM Resource Module via the terminal menu, use the arrow keys to scroll to the **MODULES** menu and press <Enter> to access the module choices. Refer to the *VCOM Resource Module Quick Start Guide* for a menu tree containing a complete listing of menus.

» **INFO**

Read security: 5

Provides information about the module part number, serial number and assembly revision.

»» **PART NUMBER**

Read security: 5

Displays the part number of the module.

- »» **SERIAL NUMBER**
Read security: 5
Displays the serial number of the module.
- »» **BOARD REVISION**
Read security: 5
Displays the board revision of the installed module.
- »» **FIRMWARE REVISION**
Read security: 5
Displays the current firmware revision of the selected module.
- » **STATUS**
Read security: 5
Displays the status of each of the voice compression resources.
 - »» **DEVICE**
Read security: 5
Indicates the resource number of the packet voice device listed. On the ATLAS 890, packet voice devices are numbered 1-32.
 - »» **STATUS**
Read security: 5
Indicates the condition of the individual packet voice device. This field may display the following:
 - N/A**
This device is not populated on the selected VCOM Resource Module.
 - AVAILABLE**
This resource is available for voice compression and functioning properly. If a VCOM-8 Option Module is installed, 8 voice compression resources will be **AVAILABLE** and the rest will display **N/A**. The same principle applies to the VCOM-16, 24, and 32 Option Modules.
 - PENDING**
This resource is currently changing state.
 - BUSY**
This resource is currently in use.
 - TESTING**
This resource is currently being tested and is not available for use.
 - FAILED**
This resource has failed testing and is not available for use.

RELOADED

This resource was reinitialized after excessive errors.

»» ALGORITHM

Read security: 5

Denotes the voice compression algorithm being used by the packet voice device. Any packet voice device can use any available compression algorithm. When ATLAS 890 chooses a packet voice device for a particular call, the voice compression algorithm is set to match the dial plan endpoint configuration. Refer to the Frame Relay menu section of the *ATLAS 890 User Manual* for more information.

N/A

This device has not been assigned a voice compression algorithm.

G.723.1

CCITT G.723.1 compression; 6.3 kbps bandwidth.

NETCODER

Proprietary NETCODER compression; 6.4 kbps bandwidth.



Some voice compression standards may be used only under specific licensing arrangements due to existing patents. The ATLAS 890 provides complete management of these licensed resources; therefore, users are not required to take additional steps to ensure conformance with licensing provisions. For example, the ATLAS 890 manages its resources so users never exceed the maximum licensed number of simultaneous connections. Refer to the Frame Relay section of the ATLAS 890 User Manual for details.

»» SILENCE

Read security: 5

Voice endpoints continue to originate frame relay traffic during periods of relative silence. The ATLAS 890 expects to receive such silence frames; therefore, silence compression is **DISABLED** by default. Some voice endpoints can be configured so that no silence frames are transmitted during periods of relative silence. For compatibility with these devices, the ATLAS 890 can be configured to expect that silence suppression is **ENABLED**; thus, no frame relay traffic is generated during periods of silence. Both voice endpoints must agree on the silence suppression setting.

»» CONNECTION

Read security: 5

Helps identify a suspect packet voice device if a particular call reports poor quality. The displayed packet identifier and the dial plan endpoint identify the call using this packet voice device.

»» **FRAME TYPE**

Read security: 5

Displays the kind of frame the ATLAS 890 receives from the frame relay endpoint connected to the VCOM channel, allowing users to monitor the kind of data being carried on the network and processed by the ATLAS 890. (The ATLAS 890 interprets the most-recently received frame from the endpoint.)

During a voice connection, the frame type displays as **VOICE**. For a FAX connection, a variety of frame types display. Initially, **VOICE** displays indicating that although the call has completed, the answering FAX machine has not yet announced its 2100 HZ tone. After completing the 2100 Hz, both FAX endpoints repeat a V.21 cycle for each page of the FAX document.

Each packet the ATLAS 890 receives from its connected frame relay endpoint is classified into one of the following groups:

BLANK

No frame has yet been received from the endpoint, or a FAX connection is between protocol states.

DTMF

Dual-tone, multi-frequency (DTMF) digit received.

VOICE

Receiving voice frames. A connection to a FAX endpoint shows a VOICE status until the FAX protocol is established.

2100 HZ TONE

FAX single-frequency tone detected indicating the beginning of a FAX session.

V.21

FAX single-frequency tone detected indicating the beginning of a FAX page.

V.27TER (2400 BPS)

FAX data reception of 2400 bps using protocol V.27ter.

V.27TER (4800 BPS)

FAX data reception of 4800 bps using protocol V.27ter.

V.29 (7200 BPS)

FAX data reception of 7200 bps using protocol V.29.

V.29 (9600 BPS)

FAX data reception of 9600 bps using protocol V.29.

V.33 (12000 BPS)

FAX data reception of 12000 bps using protocol V.33.

V.33 (14400 BPS)

FAX data reception of 14400 bps using protocol V.33.

» **CONFIG**

Write security: 4; Read security: 5

Provides diagnostic tools for suspected problems; under normal operation, users do not configure the packet voice devices.

»» **CONFIGURE VCOM DEVICES**

Write security: 4; Read security: 5

Contains configuration parameters for individual VCOM Devices.

DEVICE

Read security: 5

Indicates the resource number of the packet voice device listed. On the ATLAS 890, packet voice devices are numbered 1-24.

STATE

Write security: 4; Read security: 5

Controls the configuration state of the individual packet voice device. The ATLAS 890 determines the initial configuration state of each device. ATLAS uses this configuration information to determine which packet voice devices are functional and may be used, which are defective and should not be used, or which are not present on the module and should not be used. Users who suspect an individual packet voice device of improper operation can manually disable that device to prevent ATLAS from attempting to use it. The possible states are defined below.

DEFERRED	Devices which fail built-in testing are automatically marked as DEFERRED , indicating that the ATLAS 890 declines to use the device.
AVAILABLE	The device is properly functioning and can be used when required. The ATLAS 890 automatically marks devices that pass built-in testing as AVAILABLE .
DISABLED	Marking a device as DISABLED prevents the ATLAS 890 from attempting to use it. You can mark a device currently in use as disabled without disturbing the connection, but the device will not be eligible for use in future calls until you remark it as AVAILABLE . This is helpful if you suspect that a particular device is malfunctioning and do not want any calls routed to it.

»» **GAIN SETTINGS**

Write security: 5; Read security: 5

Contains the configuration for output and input gain for the VCOM Resource Module.

OUTPUT GAIN

Write security: 3; Read security: 5

Output gain is applied in the receive direction. Choices range from +12dB (loudest) to -12dB (softest) in 3db increments. This setting takes affect immediately.

INPUT GAIN

Write security: 3; Read security: 5

Input gain is applied in the transmit direction. Choices range from -12dB (softest) to +12dB (loudest) in 3db increments. This setting does not affect currently active calls.

»» **CURRENT FAX STATUS**

Write security: 5; Read security: 5

Enables or disables fax over packet capability using the voice compression module.

» **STATISTICS**

Write security: 4; Read security: 5

These options initiate different types of tests and display test results.

»» **DEVICE**

Read security: 5

Indicates the resource number of the packet voice device listed. On the ATLAS 890, packet voice devices are numbered 1-24.

»» **USAGE TIME**

Write security: 4; Read security: 5

Measures the total elapsed time that a packet voice device has the status **BUSY**. The time is expressed with millisecond precision. Available packet voice devices are assigned new connections using a round-robin technique where all other available packet voice devices must be used before a given device is assigned a new connection. This scheme tends to use all packet voice devices evenly. If a given device shows significantly less elapsed usage time than other packet voice devices on the same ATLAS 890, that device may be faulty.

»» **ATLAS FRMS**

Write security: 4; Read security: 5

(ATLAS Frames) Counts every frame that the ATLAS 890 sends to or receives from the packet voice device. This count indicates activity but does not indicate the actual amount of frame relay data exchanged. The total number of frames handled by the packet voice device is given by the following equation:

$$Frames_{ATLASTotal} = Frames_{ATLAS} + Frames_{ATLASDropped}$$

See the **ATLAS DROP** definition below for a description of the term: $Frames_{ATLASDropped}$

»» **ATLAS DROP**

Write security: 4; Read security: 5

Counter-measures each frame that is dropped or discarded during communication between the the ATLAS 890 and the packet voice device; i.e., ATLAS Frames Dropped. The exchange protocol is designed so that *no* frames should be discarded during this operation. A consistent pattern of dropped frames by a given packet voice device may indicate a faulty packet voice device or an overloaded ATLAS 890 system.



The discarded frame indicated by this value does not reflect network-level performance management, but indicates an anomalous condition within the ATLAS 890 unit. Persistently dropped frames may indicate a problem with the ATLAS 890 unit or the Voice Compression Resource Module.

»» **VCOM FRMS**

Write security: 4; Read security: 5

Counts every frame successfully sent to or received from the ATLAS 890 system controller. This is an indication of activity but does not indicate the actual amount of packet data exchanged. The following equation gives the total number of frames handled for this packet voice device by the ATLAS 890:

$$Frames_{VCOMTotal} = Frames_{VCOM} + Frames_{VCOMDropped}$$

See the **VCOM DROP** definition below for a description of the term: *Frames_{VCOMDropped}*

»» **VCOM DROP**

Write security: 4; Read security: 5

Counter that measures each frame dropped or discarded by ATLAS 890 during communication with the ATLAS 890 system controller about a packet voice device. The exchange protocol is designed so that no frames should be discarded during this operation. A consistent pattern of dropped frames by a given packet voice device may indicate a faulty packet voice device or an overloaded ATLAS 890 system.



The discarded frame indicated by this value does not reflect network-level performance management but indicates an anomalous condition within the ATLAS 890 unit. Persistently dropped frames may indicate a problem with the ATLAS 890 unit or the VCOM module.

»» **CLEAR**

Write security: 4; Read security: 5

Resets the elapsed usage time and frame counters for this packet voice device. Ordinarily, users won't reset these performance measurements. However, this feature can be useful when testing that a suspected problem has been resolved and when zeroing the various counters would make observing future events easier.



Resetting these performance counters has no effect on the performance values accessible via the SNMP network management interface.

»» **RELOADS**

Write security: 4; Read security: 5

Number of times since module reboot that this device has been reloaded due to a failure.

> **MODULES MENU (ASYNC-232 OPTION MODULE)**

The ATLAS 890 system controller automatically detects the presence of the Async-232 Option Module when it is installed in the system (listed as **ASYNC232**). To see the menus for the Async-232 Option Module via the terminal menu, use the arrow keys to scroll to the **MODULES** menu and press <Enter> to access the module choices. Refer to the *Async-232 Option Module Quick Start Guide* for a menu tree containing a complete listing of menus.

» **INFO**

Read security: 5

Provides information about the module part number, serial number and assembly revision.

»» **PART NUMBER**

Read security: 5

Displays the part number of the module.

»» **SERIAL NUMBER**

Read security: 5

Displays the serial number of the module.

»» **BOARD REVISION**

Read security: 5

Displays the board revision of the installed module.

»» **FIRMWARE REVISION**

Read security: 5

Displays the revision of the coprocessor firmware on the installed module.

»» **PROCESSOR ID**

Read security: 5

Displays the processor ID of the installed module.

» **SIGNAL STATS**

Read security: 5

Shows the status of key DTE interface signals. An asterisk (*) indicates the presence of a signal and a hyphen (-) indicates no signal present.

PORT Operating port number

The following signals are monitored (these options are read-only):

DTR Data terminal ready from DTE

DSR Data set ready to DTE

RTS Request to send from DTE

DCD Data carrier detect to DTE

RI Ring indicate to DTE

» **I/O STATUS**

Write security: 5; Read security: 5

Displays the input/output statistics for the Async-232 ports.

»» **PORT**

Read security: 5

Displays the port number.

»» **TX BYTES**

Read security: 5

Displays the number of bytes transmitted by the DTE.

»» **RX BYTES**

Read security: 5

Displays the number of bytes sent to the DTE.

»» **OVERRUNS**

Read security: 5

Displays the received overrun errors from the DTE. A receiver overrun occurs when the DTE performs data transmission too fast for the Async-232 port to keep up, therefore causing data to be lost. An overrun may indicate the need to turn on hardware flow control.

- »» **PRTYERRS**
Read security: 5
Displays the number of bytes received from the DTE that contained parity errors.
- »» **FRMERRS**
Read security: 5
Displays the number of bytes received from the DTE that contained framing errors.
- »» **RST STATS**
Write security: 5; Read security: 5
Clears the current stored I/O statistics for each port.
- » **SESSION STATUS**
Read security: 5
Shows the status of key DTE interface signals. An asterisk (*) indicates the presence of a signal and a hyphen (-) indicates no signal present.
 - »» **PRT**
Read security: 5
Displays the port number.
 - »» **MODE**
Read security: 5
Indicates the session mode for the port. The following modes are available:

UNASSIGNED	Port not assigned to a phone number in the Dial Plan.
IDLE	Port assigned but no call is active.
LOOPBACK	Loopback is turned on in the test menu.
MODEM RING	Incoming analog modem call is ringing on port. Async-232 port will toggle RI.
MODEM ANSWER	The DTE has answered an incoming analog modem call.
MODEM DIAL	The DTE is using the Async-232 port to make an outgoing analog modem call.
MODEM CONNECTED	An analog modem call has been established.
ISDN PPP RING	Incoming ISDN PPP call is ringing on the port. Async-232 port will toggle RI.
ISDN PPP ANSWER	The DTE has answered an incoming ISDN PPP call.

ISDN PPP DIAL The DTE is using the Async-232 port to make an outgoing ISDN PPP call.

**ISDN PPP
CONNECTED** An ISDN PPP call has been established.

»» **CALL DIR**

Read security: 5

Displays the current call direction as **INCOMING** or **OUTGOING**. If there is no active call, **IDLE** will display.

»» **RSC**

Read security: 5

This field indicates the slot and device number allocated for a call to or from this port. If no call is active, it will indicate **NONE**. The allocated resource will be either an analog modem, or an ISDN digital call resource.

»» **LAST DISCONNECT**

Read security: 5

This field indicates the reason for the last call disconnect or dialout failure for this port. If no call has been attempted for the given port, this field will indicate **NONE**. This information is also available in the system log if Async-232 module events are enabled.

»» **HANGUP**

Write security: 3; Read security: 5

Activator used to hangup the current active call on the port.

» **CONFIGURATION**

Write security: 5; Read security: 5

All of the following configurable parameters apply to the individual Async-232 ports.

»» **PRT**

Read security: 5

Displays the port number.

»» **PORT NAME**

Write security: 3; Read security: 5

Accepts any alpha-numeric name up to 16 characters long, to uniquely identify each port on the Async-232 Option Module.

»» **BIT RATE**

Write security: 3; Read security: 5

Configures the fixed DTE port bit rate. Changing this field hangs up an active call and requires confirmation. Options include the following: **300, 1200, 2400, 4800, 9600, 19.2K, 38.4K, 57.6K, and 115.2K.**

»» **FLOW CTR**

Write security: 3; Read security: 5

Configures the flow control for the Async-232 port. Options are:

HARDWARE	Hardware flow control monitors RTS from the DTE and controls CTS to indicate flow control status. Hardware flow control should be used in all cases except when it is not supported by the attached DTE equipment.
SOFTWARE	Software flow control uses XON and XOFF characters in the data stream to control flow.
NONE	No flow control selected for this port.

»» **FMT**

Write security: 5; Read security: 5

Configures the asynchronous character format options for the Async-232 port. The following fields are applicable:

DATA BITS	Number of data bits per character
PARITY	Parity method used for transmit and receive characters
STOP BITS	Number of stop bits per character

»» **CALL DIR**

Write security: 3; Read security: 5

Configures the Async-232 port to answer incoming calls and/or originate outgoing calls. The following options are available: **IN ONLY**, **OUT ONLY**, and **IN & OUT**.

»» **IN CTRL**

Write security: 3; Read security: 5

Selects the method by which incoming calls are indicated to and controlled by the DTE. Options include the following:

AT CMDS	AT commands and responses indicate and control calls. AT commands also support port and allocated modem or ISDN resource configuration.
DTR-DCD	An activated data carrier detect (DCD) signal indicates that an incoming call is answered from the Async-232 Module port. Upon call hang-up, the DCD becomes inactive. The data terminal ready (DTR) signal must be active from the DTE for an incoming call to be answered. If the port is part of a group assigned in the Dial Plan, then the first idle port with DTR active will answer the call. If the DTE drives DTR inactive, the Async-232 Module port hangs up an active call.

»» **DIALOUT**

Write security: 5; Read security: 5

Includes all options that affect dialing outgoing calls. The record field indicates the values of the key dialout subfields.

AT/MDM	Indicates that AT dialing of a modem is selected.
DTR/MDM	Indicates that DTR dialing of a modem is selected.
AT/ISDN	Indicates that AT dialing of an ISDN resource is selected.
DTR/ISDN	Indicates that DTR dialing of an ISDN resource is selected.

DIALOUT METHOD

Write security: 3; Read security: 5

Selects the method by which outgoing calls may be initiated by the DTE.

DTR DIAL

When DTR is enabled by the DTE and a number has been entered in the **DTR DIAL NUMBER** field, an outgoing call attempt is made. The call is hung up when DTR is dropped. If the call does not connect, the call will continue to be retried as long as DTR remains active.

AT DIAL

When enabled, AT commands may be used to dial outgoing calls. Port an allocated modem or ISDN resource configuration is also supported via AT commands. The DTR signal must be active from the DTE to dial out. The call is hung up when DTR is dropped or when the escape-to-command mode sequent (+++) and ATH are issued. When the call is connected, the Async-232 port enables DCD.

DTR DIAL NUMBER

This field is only active when outgoing calls are enabled and **DIALOUT METHOD** is set to **DTR DIAL**. If a phone number is entered here, it will be dialed when DTR goes active.

CALLOUT PROTOCOL

Write security: 3; Read security: 5

This field determines what type or resource will be allocated and the data protocol that will be used for an outgoing call attempt for the port. The following selections are available:

ANALOG MODEM

An outgoing call attempts to allocate a modem resource and make an analog call. Asynchronous data is passed unmodified between the Async-232 Module port and the allocated modem. The analog modem resource is freed when the call is hungup.

ISDN PPP

An outgoing call attempts to allocate an ISDN resource and make a digital call. Both ends of the call must be using PPP as the protocol to communicate across the link. The Async-232 Module port performs PPP Async-to-Sync conversion between the asynchronous DCE port and the synchronous ISDN link. This conversion is the standard method of transporting PPP frames available in ISDN Terminal Adapters from ADTRAN and other manufacturers. The PPP Async-to-Sync protocol complies with the Internet Engineering Task Force (IETF) RFC 1662. For the ISDN call to be routed outside ATLAS 890, a PRI or BRI interface must be connected to the system and be correctly configured.

OUT ISDN CALL TYPE

Write security: 3; Read security: 5

When **CALLOUT PROTOCOL** has been set to **ISDN PPP**, this field determines what type of ISDN call will be made when a call is attempted. The value must match the network services provisioned for the PRI or BRI interface that the call will be carried on. This field is not present and ignored when the **CALLOUT PROTOCOL** is **ANALOG MODEM**.

DATA 64K

Directs the call control software to request an unrestricted 64 kbps circuit. The default call type for ISDN service is Data 64 kbps.

DATA 56K

Directs the call control software to request a 64 kbps data circuit that is rate-adapted to 56 kbps. It is intended for use in circumstances where interoperability with Switched 56 service is desired.

AUDIO

Directs the call control software to request a 3.1 kHz audio circuit as the bearer capability for outgoing calls. The Audio option is used with an ISDN line configured for voice service. Selecting an Audio call type guarantees a digital end-to-end ISDN connection.

SPEECH

Speech direct the call control software to request a μ -Law speech circuit as the bearer capability for outgoing calls. The Speech option is used with an ISDN line configured for voice service. A Speech call type does not guarantee an end-to-end digital connection with some local and long distance providers.

»» **MODEM**

Write security: 3; Read security: 5

Configures an allocated modem for incoming and outgoing analog modem calls. Selected options are issued to the modem when it is allocated to answer an incoming call or initiate an outgoing call. Some options imply a negotiation with the remote modem. These modem options may also be specified through the AT command interface if enabled.

HIGHEST BIT RATE

Write security: 3; Read security: 5

Selects the highest bit rate the allocated modem will attempt to connect with to the remote modem. Modulation scheme is automatically selected based on the connection speed.

LOWEST BIT RATE

Write security: 3; Read security: 5

Selects the lowest bit rate the allocated modem will attempt to connect with to the remote modem. If the lowest bit rate or higher cannot be negotiated with the remote modem, the call is disconnected. Modulation scheme is automatically selected based on the connection speed.

ERROR CORRECTION

Write security: 3; Read security: 5

Configures the error correction for the allocated modem. The following options are available:

DISABLED

No error correction is requested. If the remote modem refuses to support the option, the call is disconnected. Although no error correction is used, this mode still allows speed matching, data buffering, and flow control.

AUTO-RELIABLE LINK MODE

Modem will attempt to negotiate LAPM, MNO, or no error correction with the remote modem. This is the default setting.

FORCE LAPM MODE

Modem will attempt to negotiate LAPM error correction with the remote modem. If it cannot, the call is disconnected.

FORCE MNP MODE

Modem will attempt to negotiate MNO error correction with the remote modem. If it cannot, the call is disconnected.

AT STORED PROFILE

Write security: 3; Read security: 5

These fields allow an alternate way of changing certain AT command profile settings. Normally, these fields would be changed via their AT command equivalent in an initialization string sent by the DTE (or set by a DTE and then saved to NVRAM using AT&W.) Changing the values here is the equivalent of setting modem DIP switches to assign default values. Any AT commands issued after the menu option is changed (or the unit is rebooted) override the menu default. Issued AT commands are stored between reboots if the profile is saved via AT&W as above. The values in this menu will reflect the stored profile.

ECHO (ATEN)

The **ECHO ATEN** field **ENABLES** (default) or **DISABLES** the echo attenuation.

RESPONSE MSG FORMAT (ATVN)

The **RESPONSE MSG** the formate of the response message.

RESPONSE MSG ENABLE (ATQN)

The **RESPONSE MSG ENABLE** field allows you to turn the response messaging **ON** (default) or **OFF**.

EXTENDED RESULT CODER (ATXN)

The **EXTENDED RESULT CODER** field allows you to configure the Async-232 Option Module to **CONNECT W/ BITRATE** (default) or perform a **SIMPLE CONNECT**.

ATS0 (> 0 TO AUTOANSWER)

The **ATS0 (> 0 TO AUTOANSWER)** field allows you to define the value for the auto answer ATS0 command. The default value is **1**. A value of **1** enables auto answer. A value of **0** disables auto answer.

ATS2 (ESCAPE CODE CHARACTER)

The **ATS2 (ESCAPE CODE CHARACTER)** field allows you to enter the character to be used for an escape sequence. The default value is **43**.

ATS12 (ESCAPE GUARD TIME)

The **ATS12 (ESCAPE GUARD TIME)** field allows you to set the escape time in 0.2 second increments to escape to command mode.. The default value is **50** which equals one second.

DATA COMPRESSION

Write security: 3; Read security: 5

Error correction must be enabled to use data compression; data compression is automatically disabled if error correction is disabled. The following data compression options are available:

DISABLED

Both MNP5 and V.42bis data compression methods are disabled.

MNP5

MNP5 data compression is enabled.

V.42BIS

V.42bis data compression is enabled.

V.42BIS AND MNP5

Both MNP5 and V.42 bis data compression are enabled. This is the default setting.

» **TEST**

Write security: 4; Read security: 5

These options initiate different types of tests and display test results.

»» **PORT**

Read security: 5

Displays the port number.

»» **DTE LOCAL LOOPBACK**

Write security: 4; Read security: 5

Loopback can be **ENABLED** or **DISABLED** for a port with this field. When **ENABLED**, all data received from the DTE by the Async-232 Module port is transmitted back to the DTE. Loopback state is not saved in the module configuration; and, if the card is hot swapped or the ATLAS 890 system is restarted, loopback is disabled on all ports. It is not necessary to have a Dial Plan entry for a port to enable loopback.

> MODULES MENU (MODEM-16 OPTION MODULE)

The ATLAS 890 system controller automatically detects the presence of the Modem-16 Option Module when it is installed in the system (listed as **M56K-16**). To see the menus for the Modem-16 Option Module via the terminal menu, use the arrow keys to scroll to the **MODULES** menu and press <Enter> to access the module choices. Refer to the *Modem-16 Option Module Quick Start Guide* for a menu tree containing a complete listing of menus.

» **INFO**

Read security: 5

Provides information about the module part number, serial number and assembly revision.

»» **PART NUMBER**

Read security: 5

Displays the part number of the module.

»» **SERIAL NUMBER**

Read security: 5

Displays the serial number of the module.

»» **BOARD REVISION**

Read security: 5

Displays the board revision of the installed module.

»» **FIRMWARE REVISION**

Read security: 5

Displays the revision of the coprocessor firmware on the installed module.

»» **PROCESSOR ID**

Read security: 5

Displays the processor ID of the installed module.

» **STATUS**

Read security: 5

Displays the status submenus for both analog and digital resources available on the Modem-16 Option Module.

»» **ANALOG RSRC SESSION STATUS**

Read security: 5

This submenu displays the session status information for the analog resources available on the Modem-16 Option Module.

RSRC

Read security: 5

Indicates the resource number of the analog call resource. On the Modem-16 Option Module, analog resources are numbered 1-16 and digital ISDN resources are numbered 17-32.

STATUS

Read security: 5

Indicates the current status of the particular analog call resource and displays new activity as it occurs. The possible status display values are listed below.

Display Value	Meaning
N/A	Card is not able to determine the status of the analog call resource.
AVAILABLE	Indicates this resource is available for use as an analog call.
IN USE	Indicates this resource is currently being used in an analog call.
TESTING	Indicates this resource is in a test mode and may be unavailable for use.
DISABLED	Indicates this resource has been disabled for use as an analog call resource. This may be done automatically by the system if a given analog resource does not initialize properly.



*System resource usage for analog and digital call resources can be viewed under the **SYSTEM STATUS** menu of the ATLAS. This menu provides detailed resource availability information for each resource type, including hourly average available, minimum available, and number of times there were no available resources of a particular type.*

MODULATION

Read security: 5

Displays the modulation scheme being used by the analog resource for a currently active call. If the analog resource is not in use, this field will display **n/a**.

RX RATE

Read security: 5

Displays the receive bit rate of the analog resource for a currently active call. If the analog resource is not in use, this field will display **n/a**.

TX RATE

Read security: 5

Displays the transmit bit rate of the analog resource for a currently active call. If the analog resource is not in use, this field will display **n/a**.

ERROR CORR

Read security: 5

Displays the error correction mode being used by the analog resource for a currently active call. If the analog resource is not in use, this field will display **n/a**.

DATA COMPR

Read security: 5

Displays the data compression mode being used by the analog resource for a currently active call. If the analog resource is not in use, this field will display **n/a**.

LAST DISC

Read security: 5

Displays the reason for the previous disconnect which occurred on this analog resource. If no disconnect has occurred on this analog resource, this field will display **n/a**.

LINE PARAMS

Read security: 5

Displays technical details about the analog resource for the currently active call. This information may be used when troubleshooting modem connection problems with the Modem-16 Option Module.

RESOURCE STATUS

This field indicates the current status of the analog resource. The following states are valid.

n/a	Module is not able to determine the status of the analog resource
AVAILABLE	This resource is available for use as an analog call resource
IN USE	This resource is currently being used in an analog call
TESTING	This resource is in a test mode and may be unavailable for use
DISABLED	This resource has been disabled for use as an analog call resource

SIGNAL TO NOISE RATIO (dB)

Signal to noise ratio (in decibels) on the modem's receive signal.

RX MEAN SQUARE ERROR

Mean square error of the received signal.

ROUND TRIP DELAY (ms)

Delay between the near and far end modem devices.

RX LEVEL (-dBm)

Displays the level of the signal (in -dBm) of the signal received by the resource.

TX LEVEL (-dBm)

Displays the level of the signal (in -dBm) of the signal transmitted by the resource.

NEAR END ECHO (-dBm)

Displays the echo level of the signal (in -dBm) of the signal received by the resource.

FAR END ECHO (-dBm)

Displays the echo level of the signal (in -dBm) of the signal transmitted by the resource.

RETRAINS REQUESTED BY REMOTE

Number of Retrain Requests sent to the resource.

RETRAINS GRANTED TO REMOTE

Number of Retrain Requests granted by the resource.

RETRAINS GRANTED TO LOCAL

Number of Retrains granted to the resource.

RENEGOTIATIONS REQUESTED BY REMOTE

Number of Renegotiation Requests sent to the resource.

RENEGOTIATIONS GRANTED TO REMOTE

Number of Renegotiation Requests granted by the modem card.

RENEGOTIATIONS GRANTED TO LOCAL

Number of Renegotiation Requests granted to the modem card.

»» **ANALOG RSRC CONNECTIONS STATS**

Write security: 5; Read security: 5

This menu option displays the connection statistics for the analog resources available on the Modem-16 Option Module.

RSRC

Read security: 5

Indicates the resource number of the analog call resource. On the Modem-16 Option Module, analog resources are numbered 1-16 and digital ISDN resources are numbered 17-32.

ATTEMPTS

Read security: 5

Displays the number of connections attempted for this analog resource since the last reset.

COMPLETED

Read security: 5

Displays the number of successful connections for this analog resource.

FAILURES

Read security: 5

Displays the number of unsuccessful connections for this analog resource. It is defined as the number of connection attempts minus the number of successful connections.

RESET STATS

Read security: 5

Resets the connection statistics for the given analog resource. This option resets the connection attempts, connection completions, and the connections failures fields for the analog resource.

RATE STATS

Read security: 5

Displays connection rate statistics for selected data rates for the given analog resource. The number of connections at a rate or range of rates is displayed.

»» **ANALOG RSRC I/O STATS**

Write security: 5; Read security: 5

Displays the input and output statistics for the analog resources available on the module. All statistics are for the current active call and are reset once the call becomes disconnected.

RSRC

Read security: 5

Indicates the resource number of the analog call resource. On the Modem-16 Option Module, analog resources are numbered 1-16 and digital ISDN resources are numbered 17-32.

TX-BYTES

Read security: 5

Displays the number of data bytes transmitted by the analog resource to the remote client modem during the current call. This parameter is reset once the call is disconnected.

RX-BYTES

Read security: 5

Displays the number of data bytes received by the analog resource from the client modem during the current call. This parameter is reset once the call is disconnected.

TX-FRAMES

Read security: 5

Displays the number of data frames transmitted by the analog resource to the remote client modem during the current call. This parameter is reset once the call is disconnected.

RX-FRAMES

Read security: 5

Displays the number of data frames received by the analog resource from the remote client modem during the current call. This parameter is reset once the call is disconnected.

RX-OVRNS

Read security: 5

Displays the number of receiver overruns which occurred on the analog resource during the current call. A receiver overrun occurs when the client modem transmits data too fast for the analog resource to keep up. This causes data to be lost. This parameter is reset once the call is disconnected.

RX-PRTY

Read security: 5

Displays the number of bytes received by the analog resource from the remote client modem during the current call. This parameter is reset once the call is disconnected.

RX-FRME

Read security: 5

Displays the number of framing errors detected by the analog resource during the current call. This parameter is reset once the call is disconnected.

RX-CRC BAD

Read security: 5

Displays the number of received PPP frames by the analog resource from the remote client modem during the current call. This is used only when the analog resource is performing Sync-to-Async PPP conversion. This parameter is reset once the call is disconnected.

RESET STATS

Write security: 5; Read security: 5

Resets the input and output statistics for the given analog resource. This option resets the transmit and receive statistics for the analog resource.

»» DIGITAL RSRC SESSION STATUS

Write security: 5; Read security: 5

Displays the session status information for the digital resources available on the Modem-16 Option Module.

RSRC

Read security: 5

Indicates the resource number of the digital call resource. On the Modem-16 Option Module, analog resources are numbered 1-16 and digital ISDN resources are numbered 17-32.

STATUS

Read security: 5

Indicates the current status of the particular digital call resource. The status display values are listed below.

Display Value	Meaning
N/A	Card is not able to determine the status of the digital call resource.
AVAILABLE	Indicates this resource is available for use as a digital call.
IN USE	Indicates this resource is currently being used in a digital call.
TESTING	Indicates this resource is in a test mode and may be unavailable for use.
DISABLED	Indicates this resource has been disabled for use as a digital call resource.



*System resource usage for analog and digital call resources can be viewed under the **SYSTEM STATUS** menu of the ATLAS. This menu provides detailed resource availability information for each resource type, including hourly average available, minimum available, and number of times there were no available resources of a particular type.*

BIT RATE

Read security: 5

Displays the bit rate of the digital resource for a currently active call. If the digital resource is not in use, this field displays **N/A**.

»» DIGITAL RSRC CONNECTION STATS

Write security: 5; Read security: 5

Displays the connection statistics for the digital resources available on the Modem-16 Option Module.

RSRC

Read security: 5

Indicates the resource number of the digital call resource. On the Modem-16 Option Module, analog resources are numbered 1-16 and digital ISDN resources are numbered 17-32.

ATTEMPTS

Read security: 5

Displays the number of connections attempted for this digital resource since the last reset.

COMPLETED

Read security: 5

Displays the number of successful connections for this digital resource.

FAILURES

Read security: 5

Displays the number of unsuccessful connections for this digital resource. It is defined as the number of connection attempts minus the number of successful connections.

56K CONNECTS

Read security: 5

Displays the number of successful connections at 56 kbps for this digital resource.

64K CONNECTS

Read security: 5

Displays the number of successful connections at 64 kbps for this digital resource.

RESET STATS

Write security: 5; Read security: 5

Resets the connection statistics for the given digital resource. This option resets the connection attempts, connection completions, and the connections failures fields for the analog resource.

»» **DIGITAL RSRC I/O STATS**

Write security: 5; Read security: 5

Displays the input and output statistics for the digital resource available on the Modem-16 Option Module. All statistics are for the current active call and are reset once the call becomes disconnected.

RSRC

Read security: 5

Indicates the resource number of the digital call resource. On the Modem-16 Option Module, analog resources are numbered 1-16 and digital ISDN resources are numbered 17-32.

TX-FRAMES

Read security: 5

Displays the number of data frames transmitted by the digital resource to the remote client modem during the current call. This parameter is reset once the call is disconnected.

RX-FRAMES

Read security: 5

Displays the number of data frames received by the digital resource from the remote client modem during the current call. This parameter is reset once the call is disconnected.

TX-BYTES

Read security: 5

Displays the number of data bytes transmitted by the digital resource to the remote client modem during the current call. This parameter is reset once the call is disconnected.

RX-BYTES

Read security: 5

Displays the number of data bytes received by the digital resource from the client modem during the current call. This parameter is reset once the call is disconnected.

RX-OVRNS

Read security: 5

Displays the number of receiver overruns which occurred on the digital resource during the current call. A receiver overrun occurs when the client modem transmits data too fast for the digital resource to keep up. This causes data to be lost. This parameter is reset once the call is disconnected.

RX-CRC BAD

Read security: 5

Displays the number of frames of data received by the digital resource with an invalid CRC. This parameter is reset once the call is disconnected.

RX-ABORTED

Read security: 5

Displays the number of aborted receive frames detected by the digital resource during the current call. This parameter is reset once the call is disconnected.

RESET STATS

Write security: 5; Read security: 5

Resets the input and output statistics for the given analog resource. This option resets the transmit and receive statistics for the analog resource.

» **CONFIGURATION**

Write security: 5; Read security: 5

Displays the configuration submenus available for both analog and digital resources available on the option module.

»» **ANALOG RSRC**

Write security: 5; Read security: 5

Displays the configuration parameters for the analog resources available on the option module.

RSRC

Read security: 5

Indicates the resource number of the analog call resource. On the Modem-16 Option Module, analog resources are numbered 1-16 and digital ISDN resources are numbered 17-32.

STATUS

Read security: 5

Indicates the current status of the particular analog call resource and displays new activity as it occurs. The possible status display values are listed below.

Display Value	Meaning
N/A	Card is not able to determine the status of the analog call resource.
AVAILABLE	Indicates this resource is available for use as an analog call.
IN USE	Indicates this resource is currently being used in an analog call.
TESTING	Indicates this resource is in a test mode and may be unavailable for use.
DISABLED	Indicates this resource has been disabled for use as an analog call resource. This may be done automatically by the system if a given analog resource does not initialize properly.



*System resource usage for analog and digital call resources can be viewed under the **SYSTEM STATUS** menu of the ATLAS. This menu provides detailed resource availability information for each resource type, including hourly average available, minimum available, and number of times there were no available resources of a particular type.*

OPERATION

Write security: 3; Read security: 5

Selects the mode of operation for the particular analog call resource. The following selections are permissible:

Operation Mode	Meaning
ENABLED	Indicates the selected analog resource is available for use as an analog call resource in the system.
DISABLED	Indicates this resource is not available for use as an analog call resource in the system. If a call is active on this resource when changing the operation to DISABLED , it will be immediately terminated.
AUTO DISABLED	Indicates this resource will not be available for use as an analog call resource once the current call has been completed.

HARDWARE RESET

Write security: 3; Read security: 5

Reset a specific analog resource on the modem module. Any calls currently active will be dropped.

»» DIGITAL RSRC

Write security: 5; Read security: 5

Displays the configuration parameters for the digital resources available on the option module.

RSRC

Read security: 5

Indicates the resource number of the digital call resource. On the Modem-16 Option Module, analog resources are numbered 1-16 and digital ISDN resources are numbered 17-32.

STATUS

Read security: 5

Indicates the current status of the particular digital call resource. The status display

values are listed below.

Display Value	Meaning
N/A	Card is not able to determine the status of the digital call resource.
AVAILABLE	Indicates this resource is available for use as a digital call.
IN USE	Indicates this resource is currently being used in a digital call.
TESTING	Indicates this resource is in a test mode and may be unavailable for use.
DISABLED	Indicates this resource has been disabled for use as a digital call resource.



*System resource usage for analog and digital call resources can be viewed under the **SYSTEM STATUS** menu of the ATLAS. This menu provides detailed resource availability information for each resource type, including hourly average available, minimum available, and number of times there were no available resources of a particular type.*

OPERATION

Write security: 3; Read security: 5

Selects the mode of operation for the particular digital call resource. The following selections are permissible:

Operation Mode	Meaning
ENABLED	Indicates the selected digital resource is available for use as an analog call resource in the system.
DISABLED	Indicates this resource is not available for use as a digital call resource in the system. If a call is active on this resource when changing the operation to DISABLED , it will be immediately terminated.
AUTO DISABLED	Indicates this resource will not be available for use as a digital call resource once the current call has been completed.

> **MODULES MENU (HDLC OPTION MODULE)**

The ATLAS 890 system controller automatically detects the presence of the HDLC Option Module when it is installed in the system (listed as **HDLC-128**). To see the menus for the HDLC Option Module via the terminal menu, use the arrow keys to scroll to the **MODULES** menu and press <Enter> to access the module choices. Refer to the *HDLC Option Module Quick Start Guide* for a menu tree containing a complete listing of menus.

» **INFO**

Read security: 5

Provides information about the module part number, serial number and assembly revision.

»» **PART NUMBER**

Read security: 5

Displays the part number of the module.

»» **SERIAL NUMBER**

Read security: 5

Displays the serial number of the module.

»» **BOARD REVISION**

Read security: 5

Displays the board revision of the installed module.

» **STATUS**

Read security: 5

Displays the submenus for available resources on the HDLC Option Module.

»» **DS0s AVAILABLE**

Read security: 5

Displays the total number of DS0s currently available for allocation on the HDLC Option Module. The maximum value is 128.

»» **CHANNELS**

Write security: 4; Read security: 5

Displays status information about the resources that have been allocated on the HDLC Option Module.

CHANNEL ID

Read security: 5

Indicates the resource number of the allocated resource listed. If a number does not appear in the list, that resource is not currently allocated.

DS0s

Read security: 5

Displays the number of DS0s that are being used by the resource. This value multiplied by the DS0 Rate yields the bandwidth that has been assigned to the resource.

56/64K

Read security: 5

Displays the per DS0 rate that is being used by the resource. This value multiplied by the number of DS0s yields the bandwidth that has been assigned to this resource.

TX FRAMES

Read security: 5

Displays the number of frames that have been transmitted by this resource.

RX FRAMES

Read security: 5

Displays the number of frames that have been received by this resource.

ERRORS

Read security: 5

Displays the total number of errors received by the resource. Press <Enter> on this field to view the number of Total Errors, CRC Errors, Aborted Frames, and Invalid Frames.

CLRCNTR

Write security: 4; Read security: 5

Resets all counters for the resource channel.

> MODULES MENU (T3 OPTION MODULE)

The ATLAS 890 system controller automatically detects the presence of the T3 Option Module when it is installed in the system (listed as **DS3**). To see the menus for the T3 Option Module via the terminal menu, use the arrow keys to scroll to the **MODULES** menu and press <Enter> to access the module choices. Refer to the *T3 Option Module Quick Start Guide* for a menu tree containing a complete listing of menus.

» INFO

Read security: 5

Provides information about the module part number, serial number and assembly revision.

»» PART NUMBER

Read security: 5

Displays the part number of the module.

»» SERIAL NUMBER

Read security: 5

Displays the serial number of the module.

»» BOARD REVISION

Read security: 5

Displays the board revision of the installed module.

- »» **DS1 FRAMER REV**
Read security: 5
Displays the revision of the DS1 framer on the installed module.
- »» **M13 REV**
Read security: 5
Displays the revision of the M13 mux on the installed module.
- » **DS3 ALARM STATUS**
Read security: 5
Indicates the current alarm status of the T3 interface.
 - »» **PRT**
Read security: 5
Indicates the port number.
 - »» **ALARMS**
Read security: 5
Displays the alarm status for the T3 circuit. An asterisk (*) indicates the presence of an alarm and a dash (-) indicates no alarm. The following alarms are monitored:
 - LOS**
Loss of Signal. There is no T3 signal detected on the port interface.
 - RED**
Loss of Frame or Red Alarm. Received T3 cannot be frame-synchronized. A Red Alarm is indicated when the T3 has been out of frame for 2.5 seconds.
 - BLUE**
Alarm Indication Signal or Blue Alarm. Receiving alarm indication signal in the T3 payload from far end equipment indicating a problem upstream.
 - YELLOW**
Remote Alarm Indication or Yellow Alarm. Receiving RAI signal from far-end equipment indicating that the far-end equipment is in red alarm.
- »» **FE ALARMS**
Read security: 5
Displays received alarms from the far-end equipment.
- »» **C-BIT**
Read security: 5
Indicates whether C-Bit framing is being used on the T3 circuit. An asterisk (*) indicates the presence of C-Bit framing and a dash (-) indicates no C-Bit framing present.

» **DS3 PERF CURRENT**

Write security: 3; Read security: 5

The performance fields – either current, 15 minute total, or 24 hour total – provide status on key performance measures as specified in ANSI T1.231-1993 for DS3 interfaces.

PRT	Displays the port number.
CLR	Clears performance information for the selected port.
ES_L	(Errored Seconds - Line) Count of seconds containing excessive zeros, LOS, or BPVs, not due to line code substitutions.
SES_L	(Severely Errored Seconds - Line) Count of seconds containing excessive zeros, LOS, or BPVs, not due to line code substitutions above a predetermined threshold.
LOSS_L	(Loss of Signal Second - Line) Count of seconds of LOS condition.
CV_P	(Code Violation - Path) For the M13 applications, an accumulation of P-bit parity errors. For the C-bit parity application, an accumulation of CP-bit parity errors.
ES_P	(Errored Second - Path) An accumulation of seconds during which any one of the following conditions exist: parity errors, severely errored frame, or AIS signal received.
SAS_P	(SEF/AIS Second) An accumulation of seconds during which severely errored frame or AIS signal is received.
SES_P	(Severely Errored Seconds - Path) An accumulation of seconds during which parity errors, severely errored frames, or AIS signal is received.
UAS_P	(Unavailable Seconds - Path) An accumulation of one-second intervals during which the DS3 path is unavailable; i.e., 10 contiguous SES_Ps.

» **DS3 PERF 15 MIN**

Write security: 3; Read security: 5

In the **DS3 PERF 15 MIN** menu, the performance data for the previous 15 minute window is stored. Refer to *DS3 Perf Current* above for a detailed description.

» **DS3 PERF 24 HR.**

Write security: 3; Read security: 5

Stores the performance data for the previous 24-hour window. Refer to *DS3 Perf Current* above for a detailed description.

» **DS3 CONFIGURATION**

Write security: 3; Read security: 5

Includes all of the configurable parameters pertaining to the T3 interface.

»» **PRT**

Read security: 5

Indicates the port number.

»» **PORT NAME**

Write security: 3; Read security: 5

Enter any text up to 16 characters to uniquely identify the T3 port on the T3 Option Module.

»» **FRAME**

Write security: 3; Read security: 5

Configures the framing format for the T3 circuit. Selections are **M13** or **C-BIT**.

»» **TX CLOCK**

Write security: 3; Read security: 5

Selects the source of the T3 transmit clock. The following options are available:

RECOVERED The ATLAS 890 will derive transmit T3 timing from the receive T3.

INTERNAL The ATLAS 890 will derive transmit T3 timing from the internal ± 20 PPM crystal source.



*Every T3 connection should have one **RECOVERED** and one **INTERNAL** transmit clock. Failure to configure this will result in T3 clock slips.*

»» **LBO**

Write security: 3; Read security: 5

Selects the line build out for the T3 transmitter. The following options are available:

SHORT 0 to 100 feet of cable

LONG 100 to 450 feet of cable

» **DS3 TEST**

Write security: 3; Read security: 5

Executes loops and indicates test status.

»» **PRT**

Read security: 5

Indicates the T3 port under test.

»» **LOOPBACK**

Write security: 3; Read security: 5

This field indicates the present loopback selected. The following options will display:

NONE No loopback in effect
LINE T3 line loopback active

»» **REMOTE LB**

Write security: 3; Read security: 5

This field indicates if loopbacks initiated from remote sources are in effect and may be used to execute remote loopbacks on the far-end T3 equipment. The following options are available:

NONE No remote loopbacks are activated
DS3 LINE T3 line loopback active
DS1 #1 ... Remote individual T1 line loopback is activated
DS1 #28
DS1 ALL Remote T1 line loopbacks for all 28 T1s is activated

»» **REMOTE STATUS**

Write security: 3; Read security: 5

This field indicates the progress of remote loopbacks. The following options will display:

LINE LOOPBACK ACTIVE
Remote line loopback is active.
NO LOOPS ACTIVE
Remote line loopbacks are inactive.

» **DS1 ALARM STATUS**

Write security: 3; Read security: 5

Indicates T1 alarm status.

»» **PRT**

Read security: 5

Indicates the number of the T1 circuit (1-28).

»» **ALARMS**

Read security: 5

Displays the alarm status for each of the 28 T1 circuits. An asterisk (*) indicates the presence

of an alarm and a dash (-) indicates no alarm. The following alarms are monitored:

RED

Loss of Frame or Red Alarm. Received T1 cannot be frame-synchronized. A Red Alarm is indicated when the T1 has been out of frame for 2.5 seconds.

YELLOW

Remote Alarm Indication or Yellow Alarm. Receiving RAI signal from far-end equipment indicating that the far-end equipment is in red alarm.

BLUE

Alarm Indication Signal or Blue Alarm. Receiving alarm indication signal in the T1 payload from far end equipment indicating a problem upstream.

D-CHAN ALR

D Channel alarm is only meaningful if T1 is defined as a PRI. (PRI configuration of a T1 circuit in a T3 bundle requires using one of the HDLC resources provided on the system controller module or an HDLC Option Module.)

» **DS1 DS0 STATUS**

Read security: 5

Indicates usage on a DS0 basis for each T1 in the T3 circuit. These options are read-only:

- Unallocated
- * Inactive
- + Signaling mismatch
- A** Active B Channel
- D** Active D Channel
- M** Maintenance
- N** Dedicated (nailed)
- O** Off hook - originate (RBS)
- R** Ringing (RBS); Restart (ISDN)
- W** Waiting dial tone

» **DS1 DS0 ALARMS**

Read security: 5

Displays per-DS0 alarm status for each T1 in the T3 circuit. These alarms usually indicate the failure to receive the protocol that has been configured for the DS0.

- No Alarm DS0
- D** D Channel Alarm (ISDN)
- F** Frame Alarm (packet)
- T** TBOP Alarm (packet)
- P** PPP Alarm (packet)

» **DS1 SIG STATUS**

Read security: 5

Read-only field that indicates signaling of all 24 DS0s for each T1 in the T3 circuit. The A/B bits for Rx (receive) and Tx (transmit) DS0s are shown when the T1s are configured for D4 framing. When the T1s are configured for ESF framing, ABCD bits are shown for each DS0. Dashes display for those DS0s where robbed bit signaling (RBS) is not being transferred by the ATLAS 890.

» **DS1 PERF CURRENT**

Write security: 3; Read security: 5

The performance fields (either current, 15-minute total, or 24-hour total) provide status on key performance measures as specified in ANSI T1.403 and AT&T TR54016 for each T1 in the T3 circuit. Excepting **CLR**, these fields are all read-only. The monitored parameters include the following:

- PRT** Displays the T1 number (1-28).
- CLR** Clears performance information for the selected T1.
- ES** Errored Second (ES) is a second with one or more error events OR one or more Out Of Frame events OR one or more Controlled Slips.
- BES** Bursty Errored Second (BES) is a second with more than one, but less than 320 error events.
- SES** Severely Errored Second (SES) is a second with 320 or more error events OR one or more Out Of Frame events.
- SEFS** Severely Errored Frame Second is a second that contains four consecutive errored framing patterns.
- LOFC** Loss of Frame Count is a count of seconds in which a valid framing pattern could not be obtained.

CSS Controlled Slip Second

UAS Unavailable Second

Pcv Path Code Violation

» **DS1 PERF 15MIN**

Write security: 3; Read security: 5

Stores the performance data for the previous 15-minute window. Refer to *DS1 Perf Current* on page 105 for a detailed description of these fields.

» **DS1 PERF 24HR**

Write security: 3; Read security: 5

Stores the performance data for the previous 24-hour window. Refer to *DS1 Perf Current* on page 105 for a detailed description.

» **DS1 CONFIGURATION**

Write security: 3; Read security: 5

All of the following configurable parameters apply to whether the port is connected to a Primary Rate ISDN circuit or a channelized T1 circuit.

»» **PRT**

Read security: 5

Displays the T1 number.

»» **PORT NAME**

Write security: 3; Read security: 5

Accepts any alpha-numeric name up to 16 characters long, to uniquely identify each T1 in the T3 circuit.

»» **FRAME**

Write security: 2; Read security: 5

This field must be set to match the frame format of the circuit to which it is connected, available from the network supplier. Choose either **D4** or **ESF**.

»» **CODE**

Write security: 2; Read security: 5

Set this field to match the line code of the circuit to which it is connected (this information is available from the network supplier). Choose either **AMI** or **B8ZS**.

»» **TX YEL**

Write security: 3; Read security: 5

Controls the transmitting of yellow alarms. Choose either **ON** or **OFF**.

»» **TX PRM**

Write security: 3; Read security: 5

Controls the sending of performance report messaging (PRM) data on the facility data link (FDL). The PRM data continues to be collected even if **XMIT PRM** is turned off (possible only with ESF format). Choose either **ON** or **OFF**.

»» **LB ACCEPT**

Write security: 3; Read security: 5

Sets unit to accept or reject the in-band loop up and loop down codes as defined in ANSI T1.403. This is a line loopback. Choose either **ACCEPT** or **IGNORE**.

» **DS1 TEST**

Write security: 3; Read security: 5

These options initiate different types of tests and display test results.

»» **PRT**

Read security: 5

Displays the T1 number.

»» **LOC LB**

Write security: 4; Read security: 5

Causes loopback on near-end (local) port (see Figure 12 on page 108). The following options are available:

LINE Loopback without regenerating framing

PAYLD Payload loopback - framing and clocking are regenerated

»» **REMOTE LB**

Write security: 4; Read security: 5

Sends loopback code to Remote CSU. The following options are available:

AT&T INBAND LINE Works in ESF and D4 mode

ANSI FDL LINE Requires ESF mode

ANSI FDL PYLD Requires ESF mode

INBAND NIU Works in ESF and D4 mode

»» **PATTERN**

Write security: 4; Read security: 5

Test pattern to be transmitted out the port. The following options are available:

ALL ONES Framed ones

ALL ZEROS Framed zeros

QRSS Pseudo-random pattern with suppression of excess zeros

»» **QRSS/RLB RESULTS**

Write security: 4; Read security: 5

Displays current status of T1 tests including information regarding loopbacks and test patterns. When displaying test pattern status, the display string is composed of pattern sync status and errored seconds.

NONE	No sync
LOS	Sync has been lost
SYNC	Pattern is synchronized
ES	Number of seconds with at least one bit error

»» **CLR**

Write security: 3; Read security: 5

Clears error counters on test pattern results menu.

»» **INJ**

Write security: 3; Read security: 5

Injects errors into transmitted test pattern.

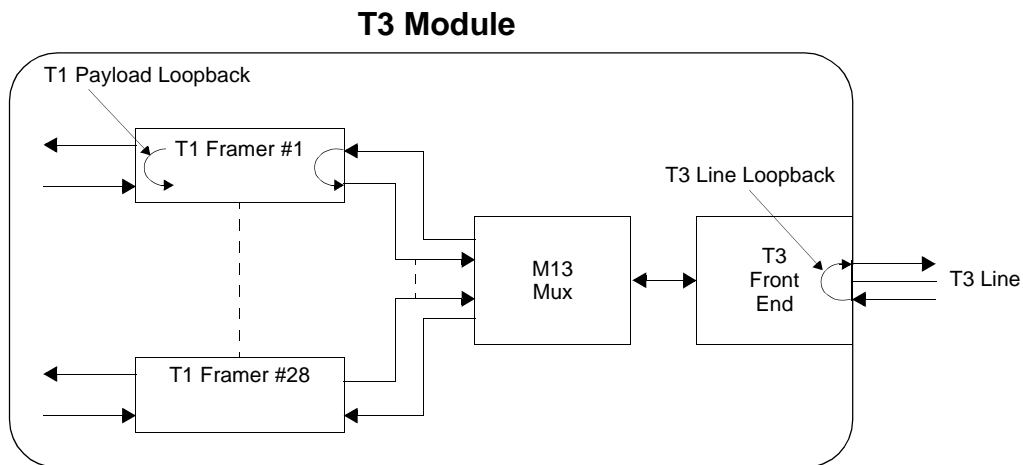


Figure 12. Network Loopback Tests

> **MODULES MENU (T3 WITH DROP AND INSERT OPTION MODULE)**

The ATLAS 890 system controller automatically detects the presence of the T3 with Drop and Insert Option Module when it is installed in the system (listed as **DS3 D&I**). To see the menus for the T3 with Drop and Insert Option Module via the terminal menu, use the arrow keys to scroll to the **MODULES** menu and press <Enter> to access the module choices. Refer to the *T3 with Drop and Insert Option Module Quick Start Guide* for a menu tree containing a complete listing of menus.

» **INFO**

Read security: 5

Provides information about the module part number, serial number and assembly revision.

»» **PART NUMBER**

Read security: 5

Displays the part number of the module.

»» **SERIAL NUMBER**

Read security: 5

Displays the serial number of the module.

»» **BOARD REVISION**

Read security: 5

Displays the board revision of the installed module.

»» **DS1s DROPPED**

Read security: 5

Displays the number of T1 circuits configured for use in the ATLAS 890 system and not passed through to the drop and insert interface.

»» **DS1 FRAMER REV**

Read security: 5

Displays the revision of the DS1 framer on the installed module.

»» **M13 REV**

Read security: 5

Displays the revision of the M13 mux on the installed module.

» **MUX CONFIGURATION**

Write security: 3; Read security: 5

Allows users to define which T1s should be dropped for use in the ATLAS 890 system or passed on to the drop and insert interface. T1s are dropped in pairs.

»» **DS1 DISPOSITION**

Read security: 5

This field has 28 letters, each corresponding (from left to right) to T1s 1-28 delivered on the T3 primary interface. The following letters will display:

- D** Dropped (available for use in the ATLAS 890 system)
- P** Pass through to the drop and insert (secondary) T3 interface

»» **DS1s DROPPED**

Read security: 5

This field shows the number of T1s from the T3 circuit (in the primary interface) that are available for use in the ATLAS 890 system.

»» **DS1s PASSED THRU**

Read security: 5

This field shows the number of T1s from the T3 circuit (in the primary interface) that are being passed out the drop and insert (secondary) interface to other equipment.

»» **T1 PAIR 1-2 THROUGH T1 PAIR 27-28**

Write security: 3; Read security: 5

These fields indicate which pairs of T1s of the T3 circuit connected to the primary interface are selected to be dropped or passed through to the secondary interface.

» **DS3 ALARM STATUS**

Read security: 5

Indicates the current alarm status of the primary and secondary T3 interfaces.

»» **PRT**

Read security: 5

Indicates the port number.

»» **ALARMS**

Read security: 5

Displays the alarm status for the T3 circuit. An asterisk (*) indicates the presence of an alarm and a dash (-) indicates no alarm. The following alarms are monitored:

LOS

Loss of Signal. There is no T3 signal detected on the port interface.

RED

Loss of Frame or Red Alarm. Received T3 cannot be frame-synchronized. A Red Alarm is indicated when the T3 has been out of frame for 2.5 seconds.

BLUE

Alarm Indication Signal or Blue Alarm. Receiving alarm indication signal in the T3 payload from far end equipment indicating a problem upstream.

YELLOW

Remote Alarm Indication or Yellow Alarm. Receiving RAI signal from far-end equipment indicating that the far-end equipment is in red alarm.

»» **FE ALARMS**

Read security: 5

Displays received alarms from the far-end equipment.

»» **C-BIT**

Read security: 5

Indicates whether C-Bit framing is being used on the T3 circuit. An asterisk (*) indicates the presence of C-Bit framing and a dash (-) indicates no C-Bit framing present.

» **DS3 PERF CURRENT**

Write security: 3; Read security: 5

The performance fields – either current, 15 minute total, or 24 hour total – provide status on key performance measures as specified in ANSI T1.231-1993 for DS3 interfaces.

- PRT** Displays the port number.
- CLR** Clears performance information for the selected port.
- ES_L** (Errored Seconds - Line) Count of seconds containing excessive zeros, LOS, or BPVs, not due to line code substitutions.
- SES_L** (Severely Errored Seconds - Line) Count of seconds containing excessive zeros, LOS, or BPVs, not due to line code substitutions above a predetermined threshold.
- LOSS_L** (Loss of Signal Second - Line) Count of seconds of LOS condition.
- CV_P** (Code Violation - Path) For the M13 applications, an accumulation of P-bit parity errors. For the C-bit parity application, an accumulation of CP-bit parity errors.
- ES_P** (Errored Second - Path) An accumulation of seconds during which any one of the following conditions exist: parity errors, severely errored frame, or AIS signal received.
- SAS_P** (SEF/AIS Second) An accumulation of seconds during which severely errored frame or AIS signal is received.
- SES_P** (Severely Errored Seconds - Path) An accumulation of seconds during which parity errors, severely errored frames, or AIS signal is received.
- UAS_P** (Unavailable Seconds - Path) An accumulation of one-second intervals during which the DS3 path is unavailable; i.e., 10 contiguous SES_Ps.

» **DS3 PERF 15 MIN**

Write security: 3; Read security: 5

In the **DS3 PERF 15 MIN** menu, the performance data for the previous 15 minute window is stored. Refer to *DS3 Perf Current* above for a detailed description.

» **DS3 PERF 24 HR.**

Write security: 3; Read security: 5

Stores the performance data for the previous 24-hour window. Refer to *DS3 Perf Current* on page 111 for a detailed description.

» **DS3 CONFIGURATION**

Write security: 3; Read security: 5

Includes all of the configurable parameters pertaining to the primary and secondary T3 interfaces.

»» **PRT**

Read security: 5

Indicates the port number.

»» **PORT NAME**

Write security: 3; Read security: 5

Enter any text up to 16 characters to uniquely identify the T3 port on the T3 Option Module.

»» **FRAME**

Write security: 3; Read security: 5

Configures the framing format for the T3 circuit. Selections are **M13** or **C-BIT**.

»» **TX CLOCK**

Write security: 3; Read security: 5

Selects the source of the T3 transmit clock. The following options are available:

RECOVERED The ATLAS 890 will derive transmit T3 timing from the receive T3.

INTERNAL The ATLAS 890 will derive transmit T3 timing from the internal ± 20 PPM crystal source.



*Every T3 connection should have one **RECOVERED** and one **INTERNAL** transmit clock. Failure to configure this will result in T3 clock slips.*

»» **LBO**

Write security: 3; Read security: 5

Selects the line build out for the T3 transmitter. The following options are available:

SHORT 0 to 100 feet of cable

LONG 100 to 450 feet of cable

» **DS3 TEST**

Write security: 3; Read security: 5

Executes loops and indicates test status.

»» **PRT**

Read security: 5

Indicates the T3 port under test.

»» **LOOPBACK**

Write security: 3; Read security: 5

This field indicates the present loopback selected. The following options will display:

NONE	No loopback in effect
LINE	T3 line loopback active

»» **REMOTE LB**

Write security: 3; Read security: 5

This field indicates if loopbacks initiated from remote sources are in effect and may be used to execute remote loopbacks on the far-end T3 equipment. The following options are available:

NONE	No remote loopbacks are activated
DS3 LINE	T3 line loopback active
DS1 #1 ... DS1 #28	Remote individual T1 line loopback is activated
DS1 ALL	Remote T1 line loopbacks for all 28 T1s is activated

»» **REMOTE STATUS**

Write security: 3; Read security: 5

This field indicates the progress of remote loopbacks. The following options will display:

LINE LOOPBACK ACTIVE
Remote line loopback is active.
NO LOOPS ACTIVE
Remote line loopbacks are inactive.

» **DS1 ALARM STATUS**

Write security: 3; Read security: 5

Indicates T1 alarm status.

»» **PRT**

Read security: 5

Indicates the number of the T1 circuit (1-28).

»» **ALARMS**

Read security: 5

Displays the alarm status for each of the 28 T1 circuits. An asterisk (*) indicates the presence of an alarm and a dash (-) indicates no alarm. The following alarms are monitored:

RED

Loss of Frame or Red Alarm. Received T1 cannot be frame-synchronized. A Red Alarm is indicated when the T1 has been out of frame for 2.5 seconds.

YELLOW

Remote Alarm Indication or Yellow Alarm. Receiving RAI signal from far-end equipment indicating that the far-end equipment is in red alarm.

BLUE

Alarm Indication Signal or Blue Alarm. Receiving alarm indication signal in the T1 payload from far end equipment indicating a problem upstream.

D-CHAN ALR

D Channel alarm is only meaningful if T1 is defined as a PRI. (PRI configuration of a T1 circuit in a T3 bundle requires using one of the HDLC resources provided on the system controller module or an HDLC Option Module.)

» **DS1 DS0 STATUS**

Read security: 5

Indicates usage on a DS0 basis for each T1 in the T3 circuit. These options are read-only:

- Unallocated
- * Inactive
- + Signaling mismatch
- A** Active B Channel
- D** Active D Channel
- M** Maintenance
- N** Dedicated (nailed)
- O** Off hook - originate (RBS)

R Ringing (RBS); Restart (ISDN)

W Waiting dial tone

» **DS1 DS0 ALARMS**

Read security: 5

Displays per-DS0 alarm status for each T1 in the T3 circuit. These alarms usually indicate the failure to receive the protocol that has been configured for the DS0.

- No Alarm DS0

D D Channel Alarm (ISDN)

F Frame Alarm (packet)

T TBOP Alarm (packet)

P PPP Alarm (packet)

» **DS1 SIG STATUS**

Read security: 5

Read-only field that indicates signaling of all 24 DS0s for each T1 in the T3 circuit. The A/B bits for Rx (receive) and Tx (transmit) DS0s are shown when the T1s are configured for D4 framing. When the T1s are configured for ESF framing, ABCD bits are shown for each DS0. Dashes display for those DS0s where robbed bit signaling (RBS) is not being transferred by the ATLAS 890.

» **DS1 PERF CURRENT**

Write security: 3; Read security: 5

The performance fields (either current, 15-minute total, or 24-hour total) provide status on key performance measures as specified in ANSI T1.403 and AT&T TR54016 for each T1 in the T3 circuit.

Excepting **CLR**, these fields are all read-only. The monitored parameters include the following:

PRT Displays the T1 number (1-28).

CLR Clears performance information for the selected T1.

ES Errored Second (ES) is a second with one or more error events OR one or more Out Of Frame events OR one or more Controlled Slips.

BES Bursty Errored Second (BES) is a second with more than one, but less than 320 error events.

SES Severely Errored Second (SES) is a second with 320 or more error events OR one or more Out Of Frame events.

SEFS	Severely Errored Frame Second is a second that contains four consecutive errored framing patterns.
LOFC	Loss of Frame Count is a count of seconds in which a valid framing pattern could not be obtained.
CSS	Controlled Slip Second
UAS	Unavailable Second
Pcv	Path Code Violation

» **DS1 PERF 15MIN**

Write security: 3; Read security: 5

Stores the performance data for the previous 15-minute window. Refer to *DS1 Perf Current* on page 115 for a detailed description of these fields.

» **DS1 PERF 24HR**

Write security: 3; Read security: 5

Stores the performance data for the previous 24-hour window. Refer to *DS1 Perf Current* on page 115 for a detailed description.

» **DS1 CONFIGURATION**

Write security: 3; Read security: 5

All of the following configurable parameters apply to whether the port is connected to a Primary Rate ISDN circuit or a channelized T1 circuit.

»» **PRT**

Read security: 5

Displays the T1 number.

»» **PORT NAME**

Write security: 3; Read security: 5

Accepts any alpha-numeric name up to 16 characters long, to uniquely identify each T1 in the T3 circuit.

»» **FRAME**

Write security: 2; Read security: 5

This field must be set to match the frame format of the circuit to which it is connected, available from the network supplier. Choose either **D4** or **ESF**.

»» **CODE**

Write security: 2; Read security: 5

Set this field to match the line code of the circuit to which it is connected (this information is available from the network supplier). Choose either **AMI** or **B8ZS**.

- »» **TX YEL**
Write security: 3; Read security: 5
Controls the transmitting of yellow alarms. Choose either **ON** or **OFF**.
- »» **Tx PRM**
Write security: 3; Read security: 5
Controls the sending of performance report messaging (PRM) data on the facility data link (FDL). The PRM data continues to be collected even if **XMIT PRM** is turned off (possible only with ESF format). Choose either **ON** or **OFF**.
- »» **LB ACCEPT**
Write security: 3; Read security: 5
Sets unit to accept or reject the in-band loop up and loop down codes as defined in ANSI T1.403. This is a line loopback. Choose either **ACCEPT** or **IGNORE**.
- » **DS1 TEST**
Write security: 3; Read security: 5
These options initiate different types of tests and display test results.
 - »» **PRT**
Read security: 5
Displays the T1 number.
 - »» **Loc LB**
Write security: 4; Read security: 5
Causes loopback on near-end (local) port (see Figure 12 on page 108). The following options are available:
 - LINE** Loopback without regenerating framing
 - PAYLD** Payload loopback - framing and clocking are regenerated
 - »» **REMOTE LB**
Write security: 4; Read security: 5
Sends loopback code to Remote CSU. The following options are available:
 - AT&T INBAND LINE** Works in ESF and D4 mode
 - ANSI FDL LINE** Requires ESF mode
 - ANSI FDL PYLD** Requires ESF mode
 - INBAND NIU** Works in ESF and D4 mode

»» **PATTERN**

Write security: 4; Read security: 5

Test pattern to be transmitted out the port. The following options are available:

ALL ONES Framed ones

ALL ZEROS Framed zeros

QRSS Pseudo-random pattern with suppression of excess zeros

»» **QRSS/RLB RESULTS**

Write security: 4; Read security: 5

Displays current status of T1 tests including information regarding loopbacks and test patterns. When displaying test pattern status, the display string is composed of pattern sync status and errored seconds.

NONE No sync

LOS Sync has been lost

SYNC Pattern is synchronized

ES Number of seconds with at least one bit error

»» **CLR**

Write security: 3; Read security: 5

Clears error counters on test pattern results menu.

»» **INJ**

Write security: 3; Read security: 5

Injects errors into transmitted test pattern.

> PACKET MANAGER

The **PACKET MANAGER** submenus define and configure all layer 2 connections, including frame relay endpoints (see Figure 13). These submenus include **PACKET ENDPNTS**, **PACKET CNCTS**, **CNCTS SORT** and **FRAME RELAY IQ**.

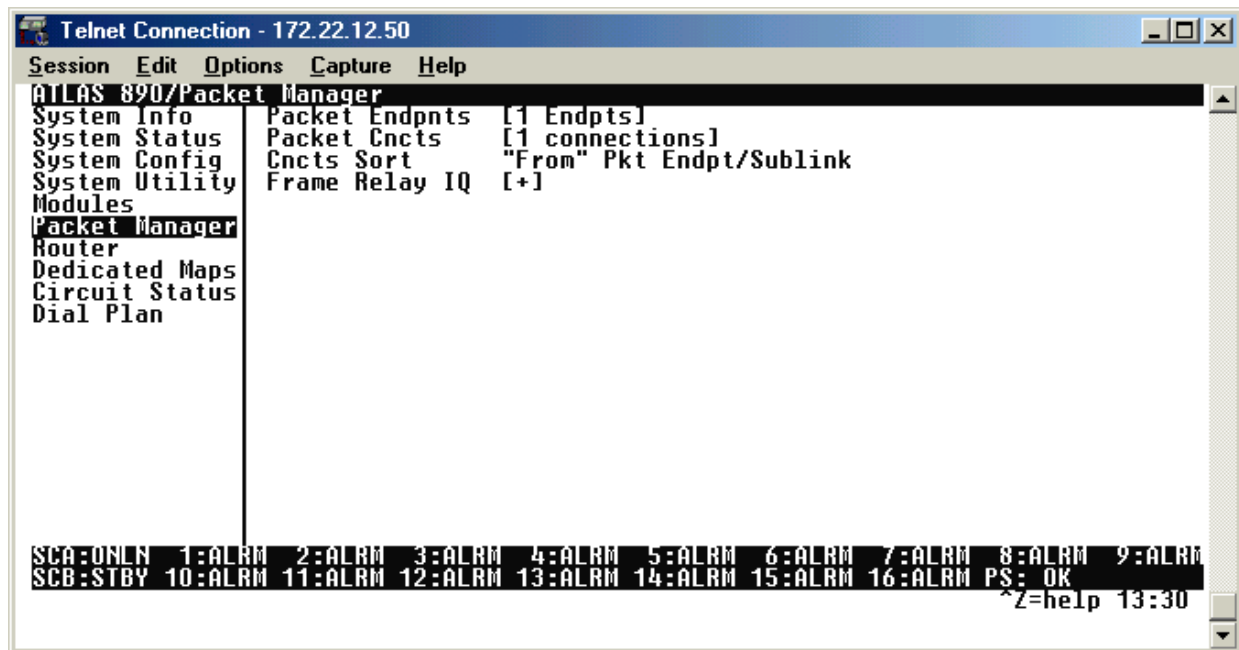


Figure 13. Packet Manager Menu

» PACKET ENDPNTS

Write security: 3; Read security: 5

Defines, monitors, and tests a packet endpoint. Submenus include **STATUS**, **PERFORMANCE**, **CONFIG**, **TEST**, **ENDPNT COUNT**, and **ENDPNTS SORT**.

»» STATUS

Write security: 3; Read security: 5

Displays the status of each packet endpoint including the packet endpoint name, the protocol type, the signaling role, the signaling type, the signaling activity, and the connections. The configuration choices are:

ENDPNT NAME

Write security: 3; Read security: 5

Displays the packet endpoint name as defined in the **PACKET ENDPNTS/CONFIG** menu (see also *Config/ENDPNT NAME* on page 125).

PROTOCOL

Read security: 5

Displays the layer 2 protocol for this packet endpoint. **FR** indicates this packet endpoint is configured for frame relay. **TBOP** indicates this packet endpoint is configured for Transparent Bit Oriented Protocol (TBOP). **PPP** indicates this packet endpoint is configured for the Point-to-Point Protocol.

SIG ROLE

Read security: 5

Displays the frame relay signaling role for this packet endpoint. The following options indicate the signaling role for this packet endpoint. *These settings are not applicable for PPP.*

USER

Indicates the user side of the User to Network Interface (UNI).

NETWORK

Indicates the network side of the UNI.

BOTH

Indicates the packet endpoint is operating in Network to Network Interface (NNI) mode.

SIG TYPE

Read security: 5

Displays the frame relay signaling type used on this packet endpoint. *These settings are not applicable for PPP.*

ANNEX A

Signaling using ITU-T Q.933-A.

ANNEX D

Signaling using ANSI T1.617-D.

LMI

Signaling using Group of Four.

SIG STATE - FRAME RELAY

Read security: 5

Indicates the frame relay signaling state on this packet endpoint. The possible states are defined below.

UP

Indicates that there is active frame relay signaling on this endpoint. The packet endpoint must be defined by the frame relay configuration settings to show active frame relay signaling.

DOWN

The packet endpoint stays in this state only when the physical line is down.

SIG STATE - PPP

Read security: 5

Indicates the status of the PPP negotiation. The possible states are defined below.

INITIAL

This is the first state of LCP negotiation. If the packet endpoint is connected to a physical port in the **DEDICATED MAP**, this state will usually transition to the **STARTING** state to begin the PPP negotiation.

STARTING

The packet endpoint stays in this state only when the physical line is down.

REQ - SENT

The packet endpoint has sent an LCP configuration request to the peer and is waiting for an “acknowledge.”

ACK - RECVD

The packet endpoint has received an “acknowledge” from the peer for the sent configuration request.

ACK - SENT

The packet endpoint has acknowledged the peer’s configuration request, but the peer has not acknowledged us.

OPENED

LCP negotiation on the packet endpoint has finished; authentication, if enabled, occurs now.

CLOSING

The packet endpoint has sent the peer a “terminate” request and is waiting for the peer’s acknowledgement.

CLOSED

The packet endpoint has received the peer’s acknowledgement to the sent terminate request; this is followed by the initial state.

STOPPING

The packet endpoint has received a terminate request from the peer.

STOPPED

The packet endpoint has acknowledged the peer’s terminate request.

NOT CONNECTED

The packet endpoint is not connected to the router in the **PACKET CNCTS** menu.

CURRENT PORT

Read security: 5

Displays the connections for the packet endpoint. The letter **U** in this field indicates that this packet endpoint is used in the **PACKET CNCTS** map. The remainder of the field indicates the physical port this packet endpoint is connected to in the **DEDICATED MAP**. If the port is a channelized interface such as a T1, the DS0 assignment is also provided.

»» PERFORMANCE

Write security: 3; Read security: 5

Displays performance information for each packet endpoint including the endpoint name, the protocol used, link stats, and sublink stats.

ENDPNT NAME

Write security: 3; Read security: 5

Displays the packet endpoint name as defined in the **PACKET ENDPNTS/CONFIG** menu (see also *Config*, *ENDPNT NAME* on page 125).

PROT

Read security: 5

Displays the layer 2 protocol for this packet endpoint. **FR** indicates this packet endpoint is configured for frame relay. **TBOP** indicates this packet endpoint is configured for Transparent Bit Oriented Protocol (TBOP). **PPP** indicates this packet endpoint is configured for the Point-to-Point Protocol.

LINK STATS - FRAME RELAY

Write security: 3; Read security: 5

Displays layer 2 performance statistics. The statistics fields for frame relay reflect the total count since last cleared. The available statistic information is discussed below.

TX PACKETS

Total number of frame relay packets transmitted through this packet endpoint, including both user data (on all PVCs) and signaling.

RX PACKETS

Total number of frame relay packets received through this packet endpoint on all PVCs.

STATE CHANGES

Total number of times that frame relay signaling has gone active or inactive.

SIGNALING ERRORS

Total number of signaling frames received with PVC signaling protocol violations.

SIGNALING TIMEOUTS

Number of times signaling polls were not received in the time specified in **T391** in the **PACKET ENDPTS/CONFIG** menu.

ASYNC STATUS TX

Full status not transmitted during the normal full status cycle. An asynchronous status message is used to quickly activate a link.

ASYNC STATUS RX

Full status not received during the normal full status cycle. An asynchronous status message is used to quickly activate a link.

FULL STATUS TX

Number of full status polls transmitted by this packet endpoint.

FULL STATUS RX

Number of full status polls received by this packet endpoint.

LINK INTEGRITY STATUS TX

Number of link integrity polls transmitted by this packet endpoint.

LINK INTEGRITY STATUS RX

Number of link integrity polls received by this packet endpoint.

CLEAR COUNTERS

Clears all values in this submenu.

LINK STATS - TBOP

Write security: 3; Read security: 5

Displays layer 2 performance statistics. The statistics fields for TBOP reflect the total count since last cleared. The available statistic information is discussed below.

TX PACKETS

Total number of HDLC packets transmitted through this packet endpoint.

RX PACKETS

Total number of HDLC packets received through this packet endpoint.

CLEAR COUNTERS

Clears all values in this submenu.

LINK STATS - PPP

Write security: 3; Read security: 5

Displays layer 2 performance statistics. The statistics fields for PPP reflect the total count since last cleared. The available statistic information is discussed below.

LCP STATE

Displays the current state of the LCP negotiations.

IPCP

Displays the UP if PPP IP control has successfully negotiated.

TX PACKETS

Number of packets transmitted over this link.

RX PACKETS

Number of packets received over this link.

CLEAR COUNTERS

Resets the Tx and Rx packet counts.

SUBLINK STATS - FRAME RELAY

Write security: 3; Read security: 5

Displays frame relay performance statistics for supported packet endpoint sublinks. These statistic fields reflect the total count since cleared. *These settings are not applicable for PPP or TBOP.*

NAME

User-defined name of a sublink (PVC).

DLCI

Local address for each PVC as assigned by the carrier.

STATE

Indicates if this particular sublink (PVC) has been defined as active by a full status poll, and also indicates if the PVC is in backup mode.

ACTIVE

PVC is active.

INACTIVE

PVC is inactive.

ACTIVE/BU

PVC is active, but in backup mode.

INACTIVE/BU

PVC is inactive and in backup mode.

TX PCKTS

Total number of frame relay user data packets transmitted over this PVC.

RX PCKTS

Total number of frame relay user data packets received over this PVC.

STATISTICS

Provides additional information, as follows, on the individual sublink:

RESET COUNTERS

Resets all sublink counters.

FECN COUNT

Total number of FECN bits received on this PVC.

BECN COUNT

Total number of BECN bits received on this PVC.

DE DISCARD COUNT

Total number of Discard Eligible bits that have been received on this PVC.

»» CONFIG

Write security: 3; Read security: 5

Creates and configures packet endpoints.

ENDPNT NAME

Write security: 3; Read security: 5

User-definable name (such as the name of the frame relay provider or the circuit ID).

PROT

Write security: 3; Read security: 5

Defines the protocol operating on this port. **FRAME RELAY** configures this packet endpoint for frame relay signaling. **TBOP** configures this endpoint as transparent bit oriented protocol. **PPP** configures this packet endpoint as point-to-point protocol.

CONFIG - FRAME RELAY

Write security: 3; Read security: 5

Contains the configuration parameters for this packet endpoint.

SIGNALING ROLE

Displays the frame relay signaling role for this packet endpoint. The following options indicate the signaling role of this packet endpoint.

OFF

The remote device does not support frame relay signaling.

AUTO

Detects the role of the device on the other end of the circuit and automatically sets this packet endpoint to the appropriate value.

BOTH

Operates in NNI mode.

NETWORK

Acts as the network side of the UNI interface.

USER

Acts as the user side of the UNI interface.

SIGNALING TYPE

Displays the frame relay signaling type for this packet endpoint. The following options indicate the signaling type for this packet endpoint.

AUTO

Detects the signaling type of the device on the other end of the circuit and automatically sets this packet endpoint to the same signaling type.

ANNEX A

Transmits and responds to ITU-T Q.933-A standards.

ANNEX D

Transmits and responds to ANSI T1.617-D standards.

LMI

Transmits and responds to Group of Four specifications.

USER POLL TIMER (T391)

Sets the polling interval to the network in seconds.

USER POLLS PER STATUS (N391)

Controls how many link integrity polls occur between full status polls.

USER BAD EVENT THRESHOLD (N392)

Sets the number of bad polling events that will cause the link to be declared down in N393 polls.

USER EVENT WINDOW SIZE (N393)

Defines the number of poll events in each monitored window.



*For most applications, the **USER POLL TIMER**, **USER POLLS PER STATUS**, **USER BAD EVENT THRESHOLD**, and **USER EVENT WINDOW SIZE** configuration parameters should be left in the default state. Use caution when changing these parameters.*

NET POLL RESPONSE TIMEOUT (T392)

Determines how long this packet endpoint will wait without receiving a poll

before declaring the poll bad.



Ensure that this timer is greater than the T391 on the user side of the UNI; otherwise, erratic behavior will result.

NET POLLS PER STATUS (N391)

Sets the number of link integrity polls before a full status is transmitted.

NET BAD EVENTS THRESHOLD (N392)

Sets the number of bad polling events that will cause the link to be declared down in N393 polls.

NET EVENT WINDOW SIZE (N393)

Defines the number of poll events in each monitored window.



If the number of bad polls reaches N392 in any N393 period, the link will be declared down. When N393 good polls are received, the link will be declared active again.

CONFIG - PPP

Write security: 3; Read security: 5

Displays the configuration for this packet endpoint.

AUTHENTICATION

Contains the Authentication parameters for this endpoint.

RX METHOD

These are methods the ATLAS 890 uses to authenticate the peer. **NONE** is selected when you do not want to authenticate the peer. **PAP**, **CHAP**, or **EAP** is selected when you will allow the peer to be authenticated with one of the listed authentication protocols. In this case, the most secure method will be used first (**EAP**, then **CHAP**, then **PAP**). **CHAP** or **EAP** is selected when you will authenticate the peer only using one of the encrypted authentication protocols. **EAP** is selected when you will authenticate the peer only using the **EAP** authentication protocol.

RX AUTHENTICATION

This selects the different types of authentication to use to authenticate the peer. **LOCAL** is used when you want to use the local username and password for this port to authenticate the peer.

RX USERNAME

The username the ATLAS 890 will use to authenticate the peer.

RX PASSWORD

The password the ATLAS 890 will use to authenticate the peer.

TX METHOD

This field displays a list of the methods that we will allow the peer to authenticate us with. This is of use when a peer wants to do **PAP** just to get your password. **NONE** is selected when you do not want to be authenticated by the peer. **PAP**, **CHAP**, or **EAP** is selected when you will let the peer use one or all of the authentication protocols. **CHAP** or **EAP** is selected when you will let the peer use only one of the encrypted authentication protocols. **EAP** is selected when you will let the peer use only the EAP authentication protocol.

TX USERNAME

The username that the peer will use to authenticate the ATLAS 890.

TX PASSWORD

The password that the peer will use to authenticate the ATLAS 890.

DEBUG LOG

The following events can be viewed in the event log when PPP events have been turned to **INFO**.

LCP DEBUGGING

This turns on LCP negotiation debugging.

IPCP DEBUGGING

This turns on IPCP negotiation debugging.

AUTHENTICATION DEBUGGING

This turns on authentication debugging.

UNKNOWN PROTOCOL DEBUGGING

This turns on debugging for unknown protocols.

MAX CONFIG

This value is the number of unanswered configuration requests that should be transmitted before giving up on negotiation. The default value is 10.

MAX TIMER

This value is the number of seconds to wait between unanswered configuration requests. The default value is 2 seconds.

MAX FAILURE

Due to the nature of PPP, configuration options may not be agreed upon between two PPP peers. This value is the number of configuration-NAKs that should occur

before an option is configuration-rejected. This allows a connection to succeed that might otherwise fail. The default value is 5.

KEEPALIVE

Configures the ATLAS 890 to send keepalive frames on PPP connections that are not currently in use for data.

RESET SESSION

Resets PPP negotiation with the peer.

SUBLINKS - FRAME RELAY

Contains the configuration parameters for individual sublinks, or PVCs. The following parameters are available.

NAME

User-definable name for the DLCI.

DLCI

Local address for each PVC as assigned by the carrier.

QOS

Quality of service. These values can be used to assign a guaranteed amount of bandwidth available for this connection. The sum of all QOS values for the sublink should not exceed the Committed Information Rate (CIR).

BURST

Sets the burst rate used by this virtual circuit for data traffic. A value of zero means that the burst rate is not limited. The value is in kilobits/second. If voice traffic is flowing on ANY sublink on the port carrying THIS sublink, you should enter a value for this setting. Otherwise, leave this field set to default (zero). If the service provider has supplied a 'Be' value, enter that value in this field. The burst rate defines the amount that this virtual circuit is allowed to exceed the CIR. If the service provider has not supplied an excess burst rate, enter the wire speed in this field.

CONFIG

Allows configuration of parameters for each DLCI.

FRAGMENTATION THRESHOLD

Max packet size allowed on this PVC. A zero value disables fragmentation. Fragmentation is used to improve the quality of voice transmission. A good value is $R/300$, where R is the smallest of the ATLAS 890 link rates or the far end link rate in bits per second. For example, if a DLCI comes from an FSU 5622 running on a 56K DDS line and is delivered to the ATLAS 890 on a full T1, the lower rate is 56000 and the value is 186 or 187. Entered values between 1 and 127 are adjusted upward.

DLCI STATE

Controls how the state of this DLCI is reported to any packet connections within ATLAS 890 attempting to send or receive data on this DLCI.

AUTO

Passes the state as reported by the frame relay switch. Set **DLCI STATE** to **AUTO** for normal operation.

FORCE ACTIVE

This DLCI disregards the status as reported from the switch and reports **ACTIVE** to all packet endpoints within ATLAS 890.

FORCE INACTIVE

Reports status as **DOWN** to all packet endpoints within ATLAS 890.

DIAGNOSTIC MODE

Controls operation of PVC testing options. To allow the far end to measure delay, select **ECHO FAR-END LOOPBACKS**. To continuously measure in-band delay, select **IN-BAND DELAY MEASUREMENT**. To turn off continuous diagnostic functions, select **PASS-THROUGH DIAGNOSTIC PACKETS**.

ECHO FAR-END LOOPBACKS

Generates and transmits a response on this DLCI to the remote equipment if an ADTRAN proprietary diagnostic message is received on this DLCI.

IN-BAND DELAY MEASUREMENT

Generates a diagnostic packet to measure delay through the frame relay network. This process requires that the equipment at the remote site be ADTRAN IQ compatible.

PASS-THROUGH DIAGNOSTIC PACKETS

Used when ATLAS 890 is acting as a frame relay switch. Transmits a diagnostic packet out the packet endpoint connected to this DLCI, if a diagnostic packet is received on this packet endpoint.

PRIMARY | BACKUP SELECTION

Allows you to define a sublink as a primary or a backup sublink. **PRIMARY** defines a normal sublink and includes the menus **ENABLE BACKUP SUPPORT**, **BACKUP PACKET ENDPT**, and **BACKUP SUBLINK**. **BACKUP** defines a backup sublink and includes the menus **PRIMARY PACKET ENDPT** and **PRIMARY SUBLINK**.

ENABLE BACKUP SUPPORT

Visible only if the sublink type is **PRIMARY**. **YES** displays the backup menus. **NO** hides the backup menus.

BACKUP PACKET ENDPT

Visible only if **ENABLE BACKUP SUPPORT** is set to **YES**. Selects

BACKUP PACKET ENDPT that contains the **BACKUP SUBLINK** to be tied to this sublink.

BACKUP SUBLINK

Visible only if **ENABLE BACKUP SUPPORT** is set to **YES**. Selects the **BACKUP SUBLINK** to be tied to this sublink.

PRIMARY PACKET ENDPT

Visible only if **BACKUP** is selected. Selects the **PRIMARY PACKET ENDPT** that contains the **PRIMARY SUBLINK** to be tied to this sublink.

PRIMARY SUBLINK

Visible only if **BACKUP** is selected. Selects the **PRIMARY SUBLINK** to be tied to this sublink.



*The fields **BACKUP MODE**, **SWITCH ON SUBLINK DOWN**, **SWITCH ON LMI INACTIVE**, **SWITCH ON BACKUP ACTIVE**, **BACKUP DELAY IN SECONDS**, and **RESTORE DELAY IN SECONDS** display if **PRIMARY** (with **BACKUP SUPPORT**) or **BACKUP** is enabled.*

BACKUP MODE

Provides switching options.

AUTO

Provides normal operation.

FORCED

Forces a switch to backup.

DISABLED

Disables backup switching.

SWITCH ON SUBLINK INACTIVE

Provides switching options if the sublink goes down. Select **YES** to switch to backup if the primary sublink goes down, otherwise select **NO**.

SWITCH ON LMI DOWN

Provides switching options for LMI signaling. Select **YES** to switch to backup if LMI signaling is inactive on the primary link, otherwise select **NO**.

SWITCH ON BACKUP ACTIVE

Provides switching options if the backup sublink goes active. Select **YES** to switch to backup if the backup sublink goes active, otherwise select **NO**.

BACKUP DELAY IN SECONDS

The amount of time within which any of the enabled switch criteria must be met before service is switched to the backup circuit.

RESTORE DELAY IN SECONDS

The amount of time within which the criteria for switching to backup are reached before service is returned to the primary circuit.

USAGE

Read security: 5

This field displays a 7-character summary of the references to this link. Each position is populated with a dash (-) or a character indicating the resource represented. The characters are as follows:

- 1** Packet connection in the first dedicated map
- 2** Packet connection in the second dedicated map
- 3** Packet connection in the third dedicated map
- 4** Packet connection in the fourth dedicated map
- 5** Packet connection in the fifth dedicated map
- Reserved and currently not is use
- s** Used as a Packet Endpoint in the switched dial plan
- u** Used by one or more packet switch connections or packet voice entries

»» TEST

Write security: 3; Read security: 5

Provides menus for controlling options and setting for packet endpoints.

ENDPNT NAME

Write security: 3; Read security: 5

Displays the name of the packet endpoint.

PROTOCOL

Write security: 3; Read security: 5

Displays the protocol running on the packet endpoint.

SUBLINK - FRAME RELAY

Write security: 3; Read security: 5

Displays test menus for the packet endpoint sublinks. The menus vary depending on the protocol. Testing is not supported on TBOP or PPP.

NAME

Displays the user-defined name for the DLCI.

DLCI

Displays the local address for each PVC as assigned by the carrier.

TEST

Displays the test mode for the PVC.

START

The fixed duration that **TEST** is not running and the DLCI is not configured for continuous in-band delay measurement. To change this option, set **DIAGNOSTIC MODE** to **IN-BAND DELAY MEASUREMENT** (also see *In-Band Delay Measurement* on page 130).

CONTDLY

The fixed duration **TEST** is not running and the DLCI is configured for continuous in-band delay measurement. The following **RESULTS** menu accumulates these measurements.

STOP

The fixed duration **TEST** is running. The following **DURATION** field shows the time remaining in the current test.

DURATION

Shows the duration in seconds for the fixed-duration test.

RESULTS [MN/AV/MX DLY]

Displays the minimum, average, and maximum delay for the delay-measurement test. To display the additional test results, place the cursor over this field and press <Enter> on the keyboard. The displayed times are in milliseconds.

ECHO PKT TX

Displays the total number of test packets that have been transmitted.

ECHO PKT RX

Displays the total number of test packets that have been received.

ECHO PKT DROPPED

Displays the total number of packets lost in the receiving direction (traveling from the remote ADTRAN frame relay device to the ATLAS).

RMT PKT DROPPED

Displays the total number of packets lost in the transmit direction (traveling from the ATLAS to the remote ADTRAN frame relay device).

MIN DELAY

Displays the minimum round trip delay for the current test period.

MAX DELAY

Displays the maximum round trip delay for the current test period.

AVG DELAY

Displays the average round trip delay for the current test.

RESET COUNTERS

Resets the counters.

»» **ENDPT COUNT**

Read security: 5

Displays the total number of packet endpoints configured.

»» **ENDPTS SORT**

Write security: 3; Read security: 5

Provides sorting options for the packet endpoints. **SORTING BY NAME** sorts packet endpoints alphabetically by name. If you do not want to sort packet endpoints, set this option to **OFF**.

» **PACKET CNCTS**

Write security: 3; Read security: 5

After packet endpoints are defined, they are connected in the packet connects (**PACKET CNCTS**) map. **PACKET CNCTS** connects upper layer protocols from packet endpoint to packet endpoint. You can think of it as a dedicated map for virtual ports rather than physical ports.

»» **FROM: PEP**

Write Security: 3; Read Security: 5

Selects one packet endpoint for the packet connection. Packet endpoints created in the packet endpoint configuration are visible on a pull-down menu which includes the **ROUTER** option. This router is the internal ATLAS 890 router and can be used multiple times within the **PACKET CNCTS** menu.

»» **SUBLINK**

Write Security: 3; Read Security: 5

If the packet endpoint selected in **FROM: PEP** supports sublinks, they are available in this menu. In frame relay, this is the PVC from which you are selecting to groom data.

»» **TO: PEP**

Write Security: 3; Read Security: 5

Selects the other packet endpoint for the packet connection. Refer to **FROM: PEP** for more detail.

»» **SUBLINK**

Write Security: 3; Read Security: 5

If the **TO: PEP** packet endpoint supports sublinks, the available sublinks are shown within this menu, which includes the **ROUTER** option.

»» **PROTOCOL**

Write Security: 3; Read Security: 5

Selects the protocols for this packet connection. Selecting the protocols on each individual connection allows the mixing of data from multiple sources onto a single PVC. Available protocols include the following: **ALL**, **IP**, **BRIDGE IP**, **PACKET VOICE**, **SNA**, **SNAP**, and **TRANSPARENT PROTOCOLS (TBOP and TASYNC)**.



Keep in mind the following:

1. If **ALL** is selected, additional connections from that PVC are not allowed.
2. If **ROUTER** is selected as one packet endpoint, **IP** is automatically set as the **PROTOCOL**.
3. If a **TBOP** packet endpoint is selected as one packet endpoint, **TRANSPARENT** is automatically set as the **PROTOCOL**.

»» **CONFIG**

Write Security: 3; Read Security: 5

Determines data source and destination. The available options depend on the protocol selected.

CONFLICT

Indicates DLCI mismatch.

FROM

Indicates data source.

To

Indicates data destination.

» **CNCTS SORT**

Write Security: 3; Read Security: 5

Determines the order in which connections are displayed within **PACKET CNCTS**. Options include **FROM PKT ENDPT/SUBLINK**, **TO PKT ENDPT/SUBLINK**, **CONNECTION PROTOCOL**, and **OFF**.

» **FRAME RELAY IQ**

Write Security: 2; Read Security: 5

Gathers and stores statistical information in the submenus **ENABLE IQ STATS**, **PORT ENABLES**, **CONFIG**, and **VIEW IQ STATISTICS**.

»» **ENABLE IQ STATS**

Write Security: 2; Read Security: 5

Globally enables and disables IQ statistics gathering. IQ statistics are only gathered when this option is enabled. This field defaults to the original setting of **[15 MIN, 7 DAYS, 96 INTS]** when re-enabled.

»» **PORT ENABLES**

Write Security: 2; Read Security: 5

Enables and disables IQ statistics gathering for each port. Use the submenus **NAME**, **ENABLE**, **ALL SUBLINKS**, and **SUBLINKS** to configure the individual ports.

NAME

Displays the port number and name.

ENABLE

Enables and disables IQ statistics gathering for the port identified in **NAME**.

ALL SUBLINKS

Provides an easy way to enable or disable IQ statistics gathering on all sublinks. When this activator reads **DISABLE**, pressing <Enter> disables IQ statistics gathering on all sublinks. When it reads **ENABLE**, pressing <Enter> enables IQ statistics gathering on all sublinks.

SUBLINKS

Identifies the PVC to be polled. Indicates the number of sublinks that ATLAS 890 will collect IQ data for within the given link.

NAME

Displays the user-designated name of the sublink (up to 15 characters).

DLCI

Displays the Data Link Connection Identifier (circuit number).

ENABLE

Indicates collection of IQ data for the target DLCI.

»» **CONFIG**

Write Security: 2; Read Security: 5

Sets the parameters for IQ statistics gathering.

CURRENT PIVS

Identifies resources used by IQ statistics storage. A PIV is a port or PVC per interval. ATLAS can track up to 10,000 PIVs. Think of it as a resource meter. The PIV number is derived from the **MAX DAYS** and **MAX INTERVALS** selected by the user. Changing one affects the other.

INTERVAL PERIOD

Sets the period for IQ statistics gathering. Options are 5, 10, 15, 20, and 30 minutes.

MAX DAYS

Defines the number of history day intervals to keep. Maximum entry is dependent on the **MAX INTERVALS** setting.

MAX INTERVALS

Defines the number of history intervals to keep. Maximum entry is dependent on the **MAX DAYS** setting.

»» VIEW IQ STATISTICS

Write Security: 2; Read Security: 5

Displays statistical information gathered for intervals and days on a port and for intervals and days on sublinks (PVCs or DLCIs).

INTERVAL AND DAY

Descriptions of the statistics available in the **INTERVAL** or **DAY** submenus follow:

RX FRAMES

The number of frames the port received for the interval or day.

RX BYTES

The number of bytes the port received for the interval or day.

MAX RX THRU

The maximum throughput the port received for the interval or day.

AVG RX THRU

The average throughput the port received for the interval or day.

MAX RX UTIL%

The maximum utilization the port received for the interval or day.

AVG RX UTIL%

The average utilization the port received for the interval or day.

TX FRAMES

The number of frames the port transmitted for the interval or day.

TX BYTES

The number of bytes the port transmitted for the interval or day.

MAX TX THRU

The maximum throughput the port transmitted for the interval or day.

AVG TX THRU

The average throughput the port transmitted for the interval or day.

MAX TX UTIL%

The maximum utilization the port transmitted for the interval or day.

AVG TX UTIL%

The average utilization the port transmitted for the interval or day.

PORT UA TIME

Time, in seconds, the port is unavailable due to physical or frame relay outage.

SIG DOWN TIME

Time, in seconds, the signaling state has been down.

SIGNAL ERROR

The number of PVC signaling frames received with protocol violations.

SIGNAL T/O

The number of PVC signal time-outs. Either T391 seconds elapsed without receiving a response to a poll or T392 seconds elapsed without receiving a poll.

SIG STATE CHG

The number of state changes for the PVC signaling protocol. This number includes transitions from down state to up state and vice-versa.

RX FULL STAT

The number of PVC-signaling, full-status frames received.

TX FULL STAT

The number of PVC-signaling, full-status frames transmitted.

RX LI ONLY

The number of PVC-signaling, link integrity only frames received.

TX LI ONLY

The number of PVC-signaling, link integrity only frames transmitted.

ASYNC STATUS

The number of single PVC status frames received.

DISCARD FRAME

The number of frames discarded by the IQ unit.

ABORTS

The number of frames received without proper flag termination.

CRC ERROR

The number of frames received with CRC errors.

OCTET ALIGN

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

LENGTH ERROR

The number of frames received that are less than 5 bytes or greater than 4500 bytes.

EA VIOLATION

The number of frames received with errors in the EA field of the frame relay header.

INACTIVE DLCI

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

INVALID DLCI

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

SUBLINK

Provides statistics for a particular DLCI or PVC by interval or day.

INTERVAL AND DAY

Descriptions of the statistics available in the **INTERVAL** or **DAY** submenus follow:

RX FRAMES

The number of frames the PVC received for the interval or day.

RX BYTES

The number of bytes the PVC received for the interval or day.

MAX RX THRU

The maximum throughput the PVC received for the interval or day.

AVG RX THRU

The average throughput the PVC received for the interval or day.

MAX RX UTIL%

The maximum utilization the PVC received for the interval or day.

AVG RX UTIL%

The average utilization the PVC received for the interval or day.

TX FRAMES

The number of frames the PVC transmitted for the interval or day.

TX BYTES

The number of bytes the PVC transmitted for the interval or day.

MAX TX THRU

The maximum throughput the PVC transmitted for the interval or day.

AVG TX THRU

The average throughput the PVC transmitted for the interval or day.

MAX TX UTIL%

The maximum utilization the PVC transmitted for the interval or day.

AVG TX UTIL%

The average utilization the PVC transmitted for the interval or day.

PVC IA TIME

Time, in seconds, the PVC has been in the inactive state for the interval or day.

Rx FECN

The number of FECNs the PVC has received for the interval or day.

Tx FECN

The number of FECNs the PVC has transmitted for the interval or day.

Rx BECN

The number of BECNs the PVC has received for the interval or day.

Tx BECN

The number of BECNs the PVC has transmitted for the interval or day.

Rx DE

The number of DEs the PVC has received for the interval or day.

Tx DE

The number of DEs the PVC has transmitted for the interval or day.

Rx CR

The number of CRs the PVC has received for the interval or day.

Tx CR

The number of CRs the PVC has transmitted for the interval or day.

LOST FRAMES

The number of lost frames on the PVC for the interval or day.

RMT LOST FRMS

The number of remote lost frames on the PVC for the interval. Applies only if **IN-BAND SEQUENCE NUMBER** is **ENABLED** on the PVC.

Rx BURST SEC

The number of bursty seconds the PVC received for the interval or day.

Tx BURST SEC

The number of bursty seconds the PVC transmitted for the interval or day.

MIN RX FRAME

The minimum frame size the PVC received for the interval or day.

MAX RX FRAME

The maximum frame size the PVC received for the interval or day.

AVG RX FRAME

The average frame size the PVC received for the interval or day.

MIN TX FRAME

The minimum frame size the PVC transmitted for the interval or day.

MAX TX FRAME

The maximum frame size the PVC transmitted for the interval or day.

AVG TX FRAME

The average frame size the PVC transmitted for the interval or day.

MIN FRAME DLY

The minimum delay in milliseconds on the PVC **IN-BAND DELAY MEASUREMENT** is **ENABLED** (see *In-Band Delay Measurement* on page 130) for the PVC or if PVC diagnostics are being performed.

MAX FRAME DLY

The maximum delay in milliseconds on the PVC for the interval or day. Applies only if **IN-BAND DELAY MEASUREMENT** is **ENABLED** (see *In-Band Delay Measurement* on page 130) for the PVC or if PVC diagnostics are being performed.

AVG FRAME DLY

The average delay in milliseconds on the PVC for the interval or day. Applies only if **IN-BAND DELAY MEASUREMENT** is **ENABLED** (see *In-Band Delay Measurement* on page 130) for the PVC or if PVC diagnostics are being performed.

PVC STATE CHANGE

The number of state changes for this PVC for the interval or day.

> ROUTER

The ATLAS 890 router uses the integral 10BaseT Ethernet port to transmit local area network (LAN) traffic over the wide area network (WAN) to a remote LAN. By integrating the router into the network access device, you benefit from the cost savings of not requiring an external router. To view the menu options for the Router, see Figure 14. All routing functions within the ATLAS are configured and monitored from the **ROUTER** menu.

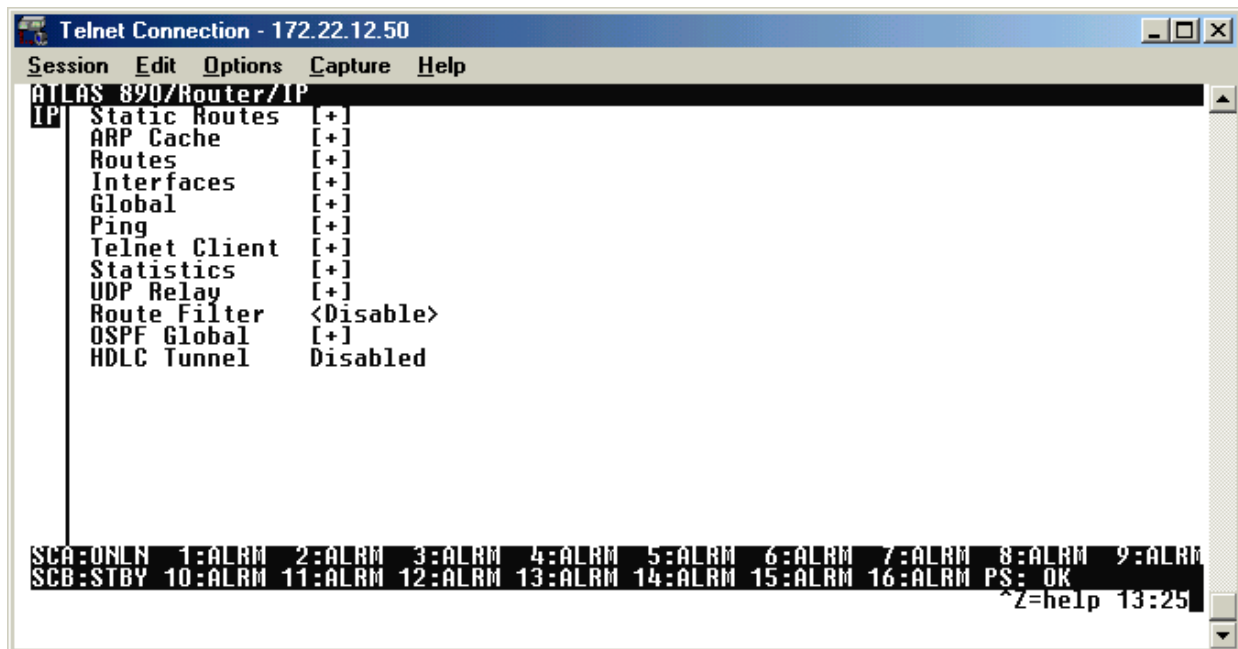


Figure 14. Router Menu (IP Selected)

» STATIC ROUTES

Write Security: 2; Read Security: 2

The **STATIC ROUTES** menu manages static IP routes. You can create, modify, and delete routes using this menu.

»» IP ADDRESS

Write Security: 2; Read Security: 2

Defines the IP address of the host or network device being routed to.

»» NETMASK

Write Security: 2; Read Security: 2

Determines the number of bits used in the above-defined IP address for routing. If a host address is desired for the IP address, this field must be set to 255.255.255.255.

»» GATEWAY

Write Security: 2; Read Security: 2

Defines the IP address of the router to receive the forwarded IP packet.

- »» **INTERFACE**
Write Security: 2; Read Security: 2
Defines the interface to which IP packets with this address will be routed. These are either Ethernet or frame relay DLCIs.
- »» **HOPS**
Write Security: 2; Read Security: 2
Defines the number of router hops required to get to the network or host. Maximum distance is 15 hops.
- »» **COST**
Write Security: 2; Read Security: 2
Defines the total cost of getting to the network. For OSPF routing, this value represents the cost associated with getting to the destination network. Normally, the cost is based on the available bandwidth.
- »» **ENABLED**
Write Security: 2; Read Security: 2
Adds a static route to the router.
- »» **ADVERTISE**
Write Security: 2; Read Security: 2
When set to **YES**, this static route is advertised over all interfaces on which a route advertisement protocol (e.g. RIP) is enabled. When set to **NO**, this is a private route.
- » **ARP CACHE**
Write Security: 2; Read Security: 2
The **ARP CACHE** menu displays the contents of the ATLAS Address Resolution Protocol (ARP) cache. All resolved cache entries time out after 20 minutes. Unresolved entries time out in 3 minutes.
 - »» **IP ADDRESS**
Read Security: 2
Displays the IP address used for resolving MAC address.
 - »» **MAC ADDRESS**
Read Security: 2
Resolves Ethernet address. If set to all zeros, there is no resolution for that address.
 - »» **TIME**
Read Security: 2
Displays the minutes since the entry was last referenced.
 - »» **TYPE**
Read Security: 2
Defines this entry as **DYNAMIC** or **STATIC**.

»» **INTERFACE**

Read Security: 2

Displays the interface upon which this entry was found.

»» **TX PENDING**

Read Security: 2

Displays the number of transmit packets pending a reply.

» **ROUTES**

Write Security: 2; Read Security: 2

The **ROUTES** menu displays the contents of the ATLAS routing table. All static and discovered routes are displayed from this menu.

»» **IP ADDRESS**

Read Security: 2

Displays the IP address of the destination host or network.

»» **NETMASK**

Read Security: 2

Displays the subnet mask applied to the destination address.

»» **GATEWAY**

Read Security: 2

Displays the IP address of the next-hop router or host receiving the forwarded IP packet.

»» **INTERFACE**

Read Security: 2

Displays the next-hop router or host interface through which IP packets are routed, as defined here:

LOCAL

Forwards the packet directly to the ATLAS router.

ENO IP

Forwards the packet through the ATLAS Ethernet port.

ENDPOINT NAME

Forwards the packet using the DLCI number.

»» **USED**

Read Security: 2

Displays the number of times the router has referenced this route.

»» **CLR**

Write Security: 2; Read Security: 2

Clears the **USED** menu and resets the value to zero.

»» **FLAGS**

Read Security: 2

Indicates the properties of this routing table entry, composed of the following letters:

- H** - route is a host route
- G** - route is a gateway route
- DR** - route learned dynamically from RIP
- DO** - intra-area route learned dynamically from OSPF
- DOa** - inter-area route learned dynamically from OSPF
- DOe** - external route learned dynamically from OSPF
- I** - route learned from an ICMP redirect
- A** - route learned from IARP
- P** - route is private and is not advertised with RIP
- T** - route is to a triggered port (updated only when table changes)

»» **HOPS**

Read Security: 2

Displays the number of router hops required to get to the network or host. Ranges from 0 to 16. If set to 16, the route is defined as infinite and cannot be used.

»» **COST**

Read security: 2

For OSPF routing, the cost value represents the current cost associated with getting data to the destination network. Normally, the cost is based on the available bandwidth.

»» **TTL**

Read Security: 2

Displays the number of seconds until the address is removed from table. A value of 999 means the route is static.

» **INTERFACES**

Write Security: 2; Read Security: 2

The **INTERFACES** menu configures and monitors all interfaces connected to the ATLAS router. These include the Ethernet and frame relay DLCIs connected in the **PACKET MANAGER/ PACKET CNCTS**.

»» **NETWORK NAME**

Read Security: 2

Displays the name of the interface connected to the ATLAS router, as follows:

ENO IP	ATLAS Ethernet port
Endpoint Name	DLCI Number

»» **ADDRESS**

Write Security: 2; Read Security: 2

Defines the individual interface IP address. If this field is left as 0.0.0.0, it is treated as an unnumbered interface.

»» **SUBNET MASK**

Write Security: 2; Read Security: 2

Defines the subnet mask applied to the address defined for this link. If the interface IP address is unnumbered, leave as 0.0.0.0.

»» **IARP**

Write Security: 2; Read Security: 2

The Inverse ARP (IARP) menu is only present when this interface is a frame-relay network interface. ATLAS sends Inverse ARP packets to determine the IP address on the other end of the virtual circuit. ATLAS always responds to Inverse ARP requests with its IP address for the requested DLCI.

ENABLE

Causes ATLAS to dynamically send Inverse ARP packets to determine the IP address on the other end of the virtual circuit. When an Inverse ARP packet is not responded to, no route is placed in the IP route table. If the Inverse ARP packet is responded to, a route is placed in the IP route table.

DISABLE

Instructs ATLAS not to generate Inverse ARP request packets. In this case, the **FAR-END ADDRESS** parameter may be used to statically assign a route address (see the following, *Far-End Address*).

»» **FAR-END ADDRESS**

Write Security: 2; Read Security: 2

This menu is only present for frame-relay network interfaces, and it is only selectable when **IARP** is disabled. Use this menu to specify the IP address of the device on the other end of the virtual circuit. If that IP address is non-zero, a static route to the far-end network will be added using the interface *Subnet-Mask*. If 0.0.0.0 has been specified for the *Subnet-Mask*, a default subnet mask is used, based on the class of the Far-End Address.

»» **MTU**

Write Security: 2; Read Security: 2

Defines maximum number of bytes in a datagram transmitted over this interface (Maximum Transmit Unit).

»» **RIP**

Write Security: 2; Read Security: 2

Configures routing information protocol (RIP) on this interface.

MODE

Allows RIP to be enabled or disabled on a per-interface basis.

TX ONLY

RIP advertisements are periodically transmitted, but are not listened to on this virtual circuit.

RX ONLY

RIP advertisements are not transmitted on this virtual circuit, but they are listened to.

TX AND RX

RIP advertisements are periodically transmitted and are listened to on this virtual circuit.



*If **RIP/MODE** is off, **PROTOCOL**, **METHOD**, and **UPDATE** will **not** be visible.*

PROTOCOL

Sets the version of RIP being used on this interface. The options are **RIP V1** and **RIP V2**. If **RIP V2** is used, a new menu, **AUTHENTICATION**, opens.



*If **RIP V2** is used, a user-defined secret may have to be created.*

METHOD

Defines the method used to send RIP route advertisements. The options are listed below:

NONE

All routes in the router table are advertised through this interface with no modification of the routing metric.

SPLIT HORIZON

Only advertises routes not learned through this interface.

POISON REVERSE

All routes are advertised, but the routes learned through this interface are “poisoned” with an infinite route metric.

UPDATES

Defines when RIP advertisements are transmitted.

PERIODIC

RIP advertisements are periodically transmitted.

TRIGGERED

RIP advertisements are transmitted only when new routes are learned, and learned routes do not age.

AUTHENTICATION

Defines the secret used to advertise routes when using RIP V2.

REDISTRIBUTE DEFAULT GATEWAY

Enables or disables the transmission of the Default Gateway to be sent with RIP on a per interface basis.

»» OSPF

Write Security: 2; Read Security: 2

Defines the parameters for this protocol.

MODE

Turns **ON** or **OFF** (default) OSPF.

AREA ID

Uniquely identifies an area with 32-bit integer. Area 0.0.0.0 (default) is used as the OSPF backbone.

AUTHEN METHOD

Enables authentication for this interface at two levels, **SIMPLE** and **MD5**. Both methods use Hello packets to maintain adjacency. A Hello packet is multicast, usually every ten seconds, to neighboring routers. Neighboring routers then return a Hello packet to the sending router. If a router does not receive a Hello packet from an adjacent router, it knows there is a problem.

NONE Does not authenticate.

SIMPLE Transmits a clear text password in the OSPF Hello packets. When set to **SIMPLE**, a new menu, **PASSWORD**, opens.

PASSWORD

Defines the password, a maximum of 8 characters, used in transmitting OSPF Hello packets. The password also authenticates Hello packets from other routers.

MD5 Selects MD5 as the hashing algorithm that exchanges keys (passwords) between OSPF routers. Instead of exchanging the key over the link, the router builds a message digest based on the key, the key ID, and the packet.

KEY LIST

Defines and manages the keys (up to four) used in **MD5**.
Opens only when **AUTHEN METHOD = MD5**.

MODE

Defines how OSPF uses the key entry. **INVALID** means the key is not used for authentication. **VALID** means the key can be used for authenticating other routers but not for transmitting Hello packets. **TRANSMIT** means the key is used for transmitting Hello packets and authenticating other routers.

KEY

Transmits OSPF hello packets when Mode = Transmit.
Authenticates Hello packets from other routers when Mode = Valid or Mode = Transmit. The Key is a maximum 16 character password.

KEY ID

Associates a particular key to an ID which may be necessary to change keys in a multi-router system.



*Only one entry can **TRANSMIT** at a time.*

HELLO TIME

The number of seconds of the intervals between Hello packets that the router sends on the interface. This value, usually 10, must be the same for all routers attached to a common network.

DEAD TIME

The number of seconds that a router's Hello packets have not been seen before its neighbors declare the router down. This value should be some multiple of the **HELLO TIME** interval, and must be the same for all routers attached to a common network.

RETX INTERVAL

The number of seconds between link-state advertisement retransmissions, for adjacencies belonging to this interface. This value is also used when retransmitting database description and link-state request packets.

TRANSMIT DELAY

The estimated number of seconds it takes to transmit a link-state update packet over this interface.

COST

Calculates the cost of using an interface, by dividing $10e8$ by the bandwidth which is then advertised as the cost, or penalty, of using the interface. If set to 0, the cost is automatically calculated using the interface bandwidth.

TYPE

Defines how OSPF should treat the interface. There are four OSPF types possible, but not all of them are available for certain interface types. The OSPF types are as follows:

BROADCAST

Use for Ethernet or Bridged IP media.

NBMA

To use Non-Broadcast Multi-Access media, a neighbor list of each router must be specified.

POINT-TO-POINT

Use when it is known that only one router is on the other end of the link.

POINT-TO-MULTIPOINT

Use for meshed Frame Relay PVCs. A neighbor list of each router must be specified.

PRIORITY

Sets the priority of this interface. Priorities range from 0-255. Used in multi-access networks, this field is used in the designated router election algorithm. The value 0 signifies that the router is not eligible to become the designated router on this particular network. In the event of a tie in this value, routers will use the lowest Router ID as a tie breaker.

NEIGHBORS

Displays a list of up to ten neighbor's IP addresses used to communicate when **TYPE = NBMA** or **TYPE = POINT-TO-MULTIPOINT**.

»» **PROXY ARP**

Enables or disables Proxy ARP on this interface. Allows the network portion of a group of addresses to be shared among several physical network segments. When **ENABLED**, and an ARP (address resolution protocol) request is received on the Ethernet port, the address is looked-up in the IP routing table. If the forwarding port is not on the Ethernet port and the route is not the default route, the router answers the request with its own hardware address. When **DISABLED** (default), the router only responds to ARP request received for its own address.

The ARP protocol itself provides a way for devices to create a mapping between physical (i.e., Ethernet) addresses and logical IP addresses. **PROXY ARP** uses the mapping feature by instructing a router to answer ARP requests as a “proxy” for the IP addresses behind one of its ports. The device which sent the ARP request then correctly assumes that it can reach the requested IP address by sending packets to the physical address that was returned. This technique effectively hides the fact that a network has been (further) subnetted.

» **GLOBAL**

Write security: 2; Read security: 2

Provides a way to configure various settings for the Ethernet port. The following menus are available for review and editing:

»» **DEFAULT GATEWAY**

Write Security: 2; Read Security: 2

Defines or changes the default gateway. Enter the default gateway address by entering a decimal number into the appropriate field and then pressing <Enter> to move to the next field. You will need a default gateway if the LAN contains multiple segments. This address is composed of four decimal numbers, each in the range of 0 to 255, separated by periods. This value is set to 0.0.0.0 by default. Contact your LAN administrator for the appropriate address.

»» **DEFAULT METRIC**

Write Security: 2; Read Security: 2

Defines the default gateway metric. Enter the default gateway metric by pressing <Enter> and entering a decimal number.

»» **DEFAULT GATEWAY COST**

Write Security: 2; Read Security: 2

Defines the default gateway cost. Enter the default gateway metric by pressing <Enter> and entering a decimal number.

» **PING**

Write Security: 2; Read Security: 2

Allows you to send pings (ICMP requests) to devices accessible via the network.



Only one ping session can be active at a time.

»» **IP ADDRESS**

Write Security: 2; Read Security: 2

Specifies the IP address to ping.

»» **COUNT**

Write Security: 2; Read Security: 2

Specifies the number of pings to send. The maximum value is 99.

»» **SIZE**

Write Security: 2; Read Security: 2

Specifies the size in bytes of the data portion of the ping request. The default value is 64 bytes, and the maximum size is 1024 bytes.

»» **TIMEOUT**

Write Security: 2; Read Security: 2

Specifies the time in milliseconds to wait for the ping reply before timing out. The default timeout is three seconds, and the maximum timeout value is ten seconds.

»» **ROUND TRIP MIN**

Write Security: 2; Read Security: 2

Displays the minimum round trip time of the ping request/reply of the current set of pings.

»» **ROUND TRIP AVG**

Write Security: 2; Read Security: 2

Displays the average round trip time of the ping request/reply of the current set of pings.

»» **ROUND TRIP MAX**

Write Security: 2; Read Security: 2

Displays the maximum round trip time of the ping request/reply of the current set of pings.

»» **TX STATS**

Write Security: 2; Read Security: 2

Displays the number of ping requests transmitted (**n txed**), the number of ping replies received (**n rxed**) and the number of ping requests that were lost (**n lost**).

»» **RESET STATS**

Write Security: 2; Read Security: 2

Resets all ping statistics to zero. If the ping client is active, this menu will stop it.

»» **START/STOP**

Write Security: 2; Read Security: 2

If the ping client is currently idle, this menu sends pings to the specified address. If the ping client is active, the menu stops sending pings.

» **TELNET CLIENT**

Write security: 2; Read security: 2

Allows a user to open a Telnet session to any device listed in the ATLAS 890 route table.

»» **ADDRESS**

Write security: 2; Read security: 2

Defines the IP address assigned to the remote unit you are trying to connect to.

»» **ESCAPE CHAR**

Write security: 2; Read security: 2

Defines the Telnet client escape character. Typing the combination characters will close the active telnet session to the remote unit specified in the **ADDRESS** field.

Option	Keystroke
^]	<Ctrl> +]
^ \	<Ctrl> + \
^ [<Ctrl> + [
^ ^	<Ctrl> + <Shift> + 6
^ _	<Ctrl> + <Shift> + -

»» **PORT**

Write security: 2; Read security: 2

Defines the port used in the remote login session. Default (for Telnet) is **23**.

»» **CONNECT**

Write security: 2; Read security: 2

Activator used to start a Telnet session to the remote unit configured in the **ADDRESS** field.

» **STATISTICS**

Write security: 2; Read security: 2

This section describes the following **STATISTICS** submenus:

- **IP** (see Table 2 on page 154)
- **ICMP** (see Table 3 on page 156)
- **TCP** (see Table 4 on page 157)

- **UDP** (see Table 5 on page 158)
- **IP FAST CACHE** (see Table 6 on page 159)

All of these statistics are taken from the MIB-II variables in RFC 1156. To clear the accumulated statistics, press the **Enter** key on **CLEAR**.

Table 2. IP Statistics

Name	Description
FORWARDING	The indication of whether this ATLAS 890 is acting as an IP gateway in respect to the forwarding of datagrams received by, but not addressed to, this ATLAS 890. IP gateways forward datagrams; hosts do not (except those Source-Routed via the host).
DEFAULT TTL	The default value inserted into the Time-To-Live field of the IP header of datagrams originated at this ATLAS 890, whenever a TTL value is not supplied by the transport layer protocol.
INRECEIVES	The total number of input datagrams received from interfaces, including those received in error.
INHDRERRORS	The number of input datagrams discarded due to errors in their IP headers, including bad checksums, version number mismatch, other format errors, time-to-live exceeded, errors discovered in processing their IP options, etc.
INADDRERRORS	The number of input datagrams discarded because the IP address in their IP header's destination field was not a valid address to be received at this ATLAS 890. This count includes invalid addresses (e.g., 0.0.0.0) and addresses of unsupported Classes (e.g., Class E). For entities which are not IP Gateways and therefore do not forward datagrams, this counter includes datagrams discarded because the destination address was not a local address.
FORWDATAGRAMS	The number of input datagrams for which this ATLAS 890 was not their final IP destination, as a result of which an attempt was made to find a route to forward them to that final destination. In entities which do not act as IP Gateways, this counter will include only those packets which were Source-Routed via this ATLAS 890, and the Source-Route option processing was successful.
INUNKNOWNPROTOS	The number of locally-addressed datagrams received successfully but discarded because of an unknown or unsupported protocol.
INDISCARDS	The number of input IP datagrams for which no problems were encountered to prevent their continued processing, but which were discarded (e.g. for lack of buffer space). Note that this counter does not include any datagrams discarded while awaiting re-assembly.

Table 2. IP Statistics (Continued)

Name	Description
INDELIVERS	The total number of input datagrams successfully delivered to IP user-protocols (including ICMP).
OUTREQUESTS	The total number of IP datagrams which local IP user-protocols (including ICMP) supplied to IP in requests for transmission. Note that this counter does not include any datagrams counted in FORWDATAGRAMS .
OUTDISCARDS	The number of output IP datagrams for which no problem was encountered to prevent their transmission to their destination, but which were discarded (e.g., for lack of buffer space). Note that this counter would include datagrams counted in FORWDATAGRAMS if any such packets met this (discretionary) discard criterion.
OUTNOROUTES	The number of IP datagrams discarded because no route could be found to transmit them to their destination. Note that this counter includes any packets counted in FORWDATAGRAMS which meet this “no-route” criterion. Note also that this includes any datagrams which a host cannot route because all of its default gateways are down.
REASMTIMEOUT	The maximum number of seconds which received fragments are held while they are awaiting reassembly at this ATLAS 890.
REASMREQDS	The number of IP fragments received which needed to be reassembled at this ATLAS 890.
REASMOKS	The number of IP datagrams successfully reassembled.
REASMFAILS	The number of failures detected by the IP reassembly algorithm (for whatever reason: timed out, errors, etc.). Note that this is not necessarily a count of discarded IP fragments since some algorithms (notably RFC 815s) can lose track of the number of fragments by combining them as they are received.
FRAGOKS	The number of IP datagrams that have been successfully fragmented at this ATLAS 890.
FRAGFAILS	The number of IP datagrams that have been discarded because they needed to be fragmented at this ATLAS 890 but could not be, e.g., because their “Don’t Fragment” flag was set.
FRAGCREATES	The number of IP datagram fragments that have been generated as a result of fragmentation at this ATLAS 890.
CLEAR	Clears the accumulated statistics.

Table 3. ICMP Statistics

Name	Description
INMSGs	The total number of ICMP messages which the ATLAS 890 received. Note that this counter includes all those counted by INERRORS .
INERRORS	The number of ICMP messages which the ATLAS 890 received but determined as having errors (bad ICMP checksums, bad length, etc.)
INDESTUNREACHS	The number of ICMP Destination Unreachable messages received.
INTIMEEXCDS	The number of ICMP Time Exceeded messages received.
INPARMPROBS	The number of ICMP Parameter Problem messages received.
INSRCQUENCHS	The number of ICMP Source Quench messages received.
INREDIRECTS	The number of ICMP Redirect messages received.
INECHOS	The number of ICMP Echo (request) messages received.
INECHOREPS	The number of ICMP Echo Reply messages received.
INTIMESTAMPS	The number of ICMP Timestamp (request) messages received.
INTIMESTAMPREPS	The number of ICMP Timestamp Reply messages received.
INADDRMASKS	The number of ICMP Address Mask Request messages received.
INADDRMASKREPS	The number of ICMP Address Mask Reply messages received.
OUTMSGs	The total number of ICMP messages which this ATLAS 890 attempted to send. Note that this counter includes all those counted by ICMPOUTERRORS .
OUTERRORS	The number of ICMP messages which this ATLAS 890 did not send due to problems discovered within ICMP such as a lack of buffers. This value should not include errors discovered outside the ICMP layer such as the inability of IP to route the resultant datagram. In some implementations there may be no types of error which contribute to this counter's value.
OUTDESTUNREACHS	The number of ICMP Destination Unreachable messages sent.
OUTTIMEEXCDS	The number of ICMP Time Exceeded messages sent.
OUTPARMPROBS	The number of ICMP Parameter Problem messages sent.
OUTSRCQUENCHS	The number of ICMP Source Quench messages sent.
OUTREDIRECTS	The number of ICMP Redirect messages sent.

Table 3. ICMP Statistics (Continued)

Name	Description
OUTECHOS	The number of ICMP Echo (request) messages sent.
OUTECHOREPS	The number of ICMP Echo Reply messages sent.
OUTTIMESTAMPS	The number of ICMP Timestamp (request) messages sent.
OUTTIMESTAMPREPS	The number of ICMP Timestamp Reply messages sent.
OUTADDRMASKS	The number of ICMP Address Mask Request messages sent.
OUTADDRMASKREPS	The number of ICMP Address Mask Reply messages sent.
CLEAR	Clears the accumulated statistics.

Table 4. TCP Statistics

Name	Description
RTOALGORITHM	The algorithm used to determine the timeout value used for retransmitting unacknowledged octets.
RTOMIN	The minimum value permitted by a TCP implementation for the retransmission timeout, measured in milliseconds. More refined semantics for objects of this type depend upon the algorithm used to determine the retransmission timeout. In particular, when the timeout algorithm is rsre(3), an object of this type has the semantics of the LBOUND quantity described in RFC 793.
RTOMAX	The maximum value permitted by a TCP implementation for the retransmission timeout, measured in milliseconds. More refined semantics for objects of this type depend upon the algorithm used to determine the retransmission timeout. In particular, when the timeout algorithm is rsre(3), an object of this type has the semantics of the UBOUND quantity described in RFC 793.
MAXCONN	The limit on the total number of TCP connections the ATLAS 890 can support. In entities where the maximum number of connections is dynamic, this object should contain the value -1.
ACTIVEOPENS	The number of times TCP connections have made a direct transition to the SYN-SENT state from the CLOSED state.
PASSIVEOPENS	The number of times TCP connections have made a direct transition to the SYN-RCVD state from the LISTEN state.

Table 4. TCP Statistics (Continued)

Name	Description
ATTEMPTFAILS	The number of times TCP connections have made a direct transition to the CLOSED state from either the SYN-SENT state or the SYN-RCVD state, plus the number of times TCP connections have made a direct transition to the LISTEN state from the SYN-RCVD state.
ESTABRESETS	The number of times TCP connections have made a direct transition to the CLOSED state from either the ESTABLISHED state or the CLOSE-WAIT state.
CURRESTAB	The number of TCP connections for which the current state is either ESTABLISHED or CLOSE-WAIT.
INSEGS	The total number of segments received, including those received in error. This count includes segments received on currently established connections.
OUTSEGS	The total number of segments sent, including those on current connections but excluding those containing only retransmitted octets.
RETRANSSEGS	The total number of segments retransmitted - that is, the number of TCP segments transmitted containing one or more previously transmitted octets.
CLEAR	Clears the accumulated statistics.

Table 5. UDP Statistics

Name	Description
INDATAGRAMS	The total number of UDP datagrams delivered to UDP users.
NOPORTS	The total number of received UDP datagrams for which there was no application at the destination port.
INERRORS	The number of received UDP datagrams that could not be delivered for reasons other than the lack of an application at the destination port.
OUTDATAGRAMS	The total number of UDP datagrams sent from this ATLAS 890.
CLEAR	Clears the accumulated statistics.

Table 6. IP Fast Cache Statistics

Name	Description
HITS	Total number of times the ATLAS 890 went into the Fast Cache and successfully retrieved an IP address.
MISSES	Total number of times the ATLAS 890 went into the Fast Cache and failed to retrieve an IP address.
CLEAR	Clears the accumulated statistics.

»» **CLEAR**

Write Security: 2; Read security: 2

Clears current statistics in the IP, ICMP, TCP, UDP, and IP Fast Cache statistics tables.

» **UDP RELAY**

Write Security: 2; Read security: 2

Allows the router to act as a relay agent for UDP (User Datagram Protocol) broadcast packets. Normally, a router will not forward UDP broadcast packets. However, many network applications use UDP broadcasts to configure addresses, host names, and other information. If hosts using these protocols are not on the same network segment as the servers providing the information, the client programs will not receive a response without enabling the UDP relay agent.

»» **ENABLE**

Write Security: 2; Read security: 2

Enables/disables the router to act as a relay agent.

»» **RELAY TABLE**

Write Security: 2; Read security: 2

Lists up to four relay destination servers (**RELAY TABLE 0 - 3**). Each server can be configured using the following menus: **ENABLE**, **IP**, and **UDP**.

ENABLE

Enables/disables this field. Select either **STANDARD** or **SPECIFIED**. (**DISABLE** is not used.)

STANDARD (default)

Relays any of the following standard UDP protocols: DHCP, TFTP, DNS, NTP (Network Time Protocol, port 123), NBNS (NetBIOS Name Server, port 137), NBDG (Net BIOS Datagram, port 138), and BootP.

SPECIFIED

Specifies the UDP port (1 to 65,535) in the UDP Port columns (maximum of three per server).

»» **IP**

Write Security: 2; Read security: 2

Defines the IP address of the server that receives the relay packet.

»» **UDP PORTS 1 - 3**

Write Security: 2; Read security: 2

Specifies the UDP ports to relay. These fields are active only when **ENABLE** is set to **SPECIFIED**.

» **OSPF GLOBAL**

Write Security: 2; Read security: 2

Sets global OSPF parameters.

»» **ROUTER ID**

Write Security: 2; Read security: 2

Uniquely identifies the router in the Autonomous System with a 32-bit integer. (Although this 32-bit integer appears in the form of an IP address, it is *not* an IP address.) By convention and to ensure uniqueness, this value should be one of the router's IP interface addresses. By default, the Ethernet port's IP address is used.

»» **AREA**

Write Security: 2; Read security: 2

OSPF uses areas to divide large networks into different areas to allow a two-level hierarchical routing scheme. This scheme helps reduce the size of the router's routing table and the link-state database table. The link-state database table lists each unique **AREA ID** that was defined in the **INTERFACES OSPF** submenu (see *Area ID* on page 148). The interface **AREA ID** must be defined before it can appear in the table; areas cannot be inserted into this table. If an area entry is deleted here, the interface's area ID is changed to 0.0.0.0, which is the backbone area.

AREA ID

Uniquely identifies the router in the Autonomous System with a 32-bit integer. Although this 32-bit integer appears in the form of an IP address, it is *not* an IP address. For example, an Area ID of 0.0.0.0 identifies the OSPF backbone.

RANGES

Describes those Address Range Summaries that are configured to propagate from an area to reduce the amount of information about it which is known beyond its borders. Up to 10 ranges per area may be defined.

STATUS

Displays subnets subsumed by ranges that either trigger the advertisement of the indicated summary or result in the subnet not being advertised at all—outside the area.

ADVERTISE	Advertises the summary or result.
DON'T ADVERTISE	Does not advertise the summary or result.
DISABLED	Removes the range completely.

NETWORK

Identifies the IP Address of the Net or Subnet indicated by the range.

SUBNET MASK

Identifies the Netmask that pertains to the Net or Subnet.

STUB

Defines stub areas to conserve router memory. Autonomous Systems' external Link State Advertisements (LSAs) are not flooded into a stub area. The only way out of a stub area is through the Area Border Router (ABR). (See *External LSA Overflow* on page 164 for a definition of LSA.)



Backbone areas (areas with ID 0.0.0.0) cannot be defined as a stub.

ACTIVE

Defines the area as a stub, when set to **ON**.

NSSA

A Not-So-Stubby-Area uses link-state type 7 advertisements to convey external route information obtained from any Autonomous System Border Router (ASBR) in the stub. As an Area Border Router (ABR), the router translates type 7 to type 5.

DEFAULT COST

As an ABR for a stub area, the router advertises the default route into the stub area with this cost.

FILTER INTER-AREA SUMMARIES

When set to **ON**, only intra-area routes are learned inside the stub area. If the router is the ABR, it advertises the default route into the stub area for all non-intra-area routes. This is sometimes referred to as Totally Stubby Areas.

VIRTUAL LINK

All non-backbone areas must connect to the backbone area and all routing information must flow through the backbone. Virtual links are used in OSPF to "tunnel" routing information through non backbone areas to allow a simple hub-and-spoke organization.

MODE

When set to **ON**, the router attempts to create a virtual link to the specified router identified by its router ID.

ROUTER ID

Defines the router ID of the router that is to act as the other end of this virtual link.

AUTHEN METHOD

Enables authentication for this virtual link at two levels: **SIMPLE** and **MD5**:

NONE	Performs no authentication.
SIMPLE	Transmits a clear text password in the OSPF hello packets.
MD5	Selects MD5 as the hashing algorithm that exchanges keys (passwords) between OSPF routers. Instead of exchanging the key over the link, the router builds a message digest based on the key, the key ID, and the packet.
PASSWORD/ KEY	This menu is available when AUTHEN METHOD = SIMPLE or AUTHEN METHOD = MD5 . This item doubles as a password (maximum of 8 characters) when simple authentication is used or as a key (maximum of 16 characters) when MD5 is used. The password/key is used to authenticate ourselves and to check the authentication of the router on the other end of the virtual link.
KEY ID	Associates a particular key to an ID. This is necessary when changing key's in a multi-router system.

HELLO TIME

The number of seconds of the intervals between the Hello packets that the router sends over the virtual link. This value must be the same for all routers attached to a common network.

DEAD TIME

The number of seconds that a router's Hello packets have not been seen before the router declares the virtual link down. This value should be some multiple of the Hello interval, and must be the same for the router on the other end of the virtual link.

RETRANSMISSION INTERVAL

The number of seconds between link-state advertisement retransmissions for this virtual link. This value is also used when retransmitting database description and link-state request packets.

TRANSMIT DELAY

The estimated number of seconds it takes to transmit a link-state update packet over this virtual link.

»» **DELAY TIME**

Write Security: 2; Read security: 2

The time between when OSPF receives a topology change and when it starts a shortest path first (SPF) calculation.

»» **HOLD TIME**

Write Security: 2; Read security: 2

The minimum time between two consecutive SPF calculations.

»» **AUTO V-LINK**

Write Security: 2; Read security: 2

All non-backbone areas must be adjacent to the backbone. Areas not adjacent to the backbone must create a virtual link through another area to the backbone. When **ENABLED**, virtual links are automatically created by the router in ABR mode if it detects an area which is not adjacent to the backbone.

»» **REDISTRIBUTION**

Write Security: 2; Read security: 2

Conveys information from one Autonomous System to another (OSPF and RIP) when they are operating simultaneously on the router.

RIP-TO-OSPF

RIP routing updates are translated into OSPF external link-state advertisements (LSA) using the values defined here.

MODE

Redistributes RIP into OSPF, when set to **ON**.

EXTERNAL TYPE

OSPF defines two external types:

- | | |
|---------------|---|
| TYPE 1 | Cost metrics are comparable to the state link metrics. |
| TYPE 2 | Cost metrics are assumed to be larger than the cost of any intra-AS path. |

EXTERNAL COST

Shows the cost assigned to all RIP routes learned when being advertised as an external LSA.

OSPF-TO-RIP

Translates OSPF routing updates into RIP advertisements using the values defined here:

MODE

When set to **ON**, the router redistributes OSPF into RIP.

INTRA-AREA METRIC

OSPF intra-area routes are advertised out RIP using this value as the metric or router hops.

INTER-AREA METRIC

OSPF inter-area routes are advertised out RIP using this value as the metric or router hops.

EXTERNAL TYPE METRIC

OSPF external types 1 and 2 are advertised out RIP using this value as the metric or router hops.

STATIC-TO-OSPF

Static routes defined under the **STATIC ROUTES** menu (see *Static Routes* on page 142) can be advertised out OSPF using the values defined here:

MODE

When set to **ON**, the router advertises the static routes as external LSAs.

EXTERNAL TYPE

Defines two external types:

- | | |
|---------------|---|
| TYPE 1 | Cost metrics are comparable to the state link metrics. |
| TYPE 2 | Cost metrics are assumed to be larger than the cost of any intra-AS path. |

»» INTERNAL

Write Security: 2; Read security: 2

Contains the configuration and status information for database overflow.

EXTERNAL LSA OVERFLOW

When the number of non-default external LSAs reaches this value, the router enters Overflow state. In this state, all locally generated external LSAs are flushed during the overflow interval and all new external LSAs which push the total past this limit are not installed or acknowledged. This limit value **MUST** be set identically in all routers attached to the OSPF backbone and/or any regular OSPF area. (i.e., OSPF stub areas and NSSAs are excluded).

OVERFLOW INTERVAL (SECS)

The number of seconds that the router will remain in the overflow state. During this state, the router will regenerate local non-default external LSAs. When set to 0, the router will not leave overflow state until restarted.

OVERFLOW STATE

Displays the current overflow state. The selections are **ACTIVE** and **NOT ACTIVE**.

TOTAL LSA ENTRIES

The number of LSA entries registered and acknowledged in the LSA database.

DATABASE MEMORY ALLOCATED (BYTES)

The total memory allocated to hold the current LSA database. This is only the memory of the database itself and does not include the memory used for other OSPF information (i.e. neighbor, area, or interface data).

TOTAL ROUTE ENTRIES

The total number of route entries registered and acknowledged in the forwarding table.

»» **DATABASE**

Write Security: 2; Read security: 2

Displays information that the router keeps in a database of all LSAs it has created or has learned from other routers.

AREA ID

Displays the area to which this LSA entry belongs. This field is not visible when the LSA is an external type LSA.

LINK ID

Displays the LSA type-specific field containing either a Router ID or an IP Address. This field identifies the piece of the routing domain that is being described by the advertisement.

ROUTER ID

Displays the router ID of the router who has originated the LSA.

TYPE

Displays the LSA type. The following types are possible:

ROUTER	An advertised router which may be an Area Border Router, Autonomous System Boundary Router, or Virtual Link Router signified as (ABR), (ASBR), or (Virtual) respectively.
NETWORK	Advertised intra-area network.
SUMMARY NET	Summary of multiple inter-area networks
SUMMARY AS	Summary of autonomous system networks.
AS EXTERNAL	Autonomous system external networks.
MULTICAST GROUP	Multicast group LSA. This is not currently supported.
NSSA EXTERNAL	External Not-So-Stubby-Area networks.
AREA/GLOBAL OPAQUE	Type 5/7 external networks.

AGE (SEC.)

The age of this LSA in seconds.

SEQUENCE NO.

The sequence number detects old and duplicate link state advertisements (LSAs). The space of sequence numbers is linearly ordered. The larger the sequence number, the more recent the advertisement.

CHECKSUM

This is the checksum of the complete contents of the advertisement, except the age field. The age field is not included, so that an advertisement's age can be incremented without updating the checksum.

»» **NEIGHBORS**

Write Security: 2; Read security: 2

Contains a list of all the neighbors discovered. The router forms adjacencies with other OSPF routers on a network; these routers are known as neighbors.

ROUTER ID

Displays the router ID of the neighbor.

PRIORITY

Shows the priority of the selected neighbor.

STATE

Displays the state of the neighbor. The possible states are as follows:

DOWN	Indicates no communication has been established.
INIT	Indicates a hello packet has been transmitted to the neighbor.
2WAY	Indicates a hello packet has been received from the neighbor.
EXCHANGE	Exchanges database packet information with this neighbor.
FULL	Indicates that an adjacency with this neighbor has been accomplished and a router designation has been established. Designated router, backup designated router, or non-designated router may appear as /DR, /BDR, or /DROther, respectively. DROther represents routers which are on point-to-point links such as PPP or non-meshed Frame Relay.
UP	Indicates that an adjacency to a neighbor over a virtual link is established.
DOWN	Indicates that an adjacency to a neighbor over a virtual link has not been established.

DEAD TIME

Displays the number of seconds to elapse before the neighbor is considered to be down.

ADDRESS

Shows the IP address associated with the neighbor.

INTERFACE

Shows the interface to which the neighbor is connected.

> DEDICATED MAPS

The **DEDICATED MAPS** menu assigns dedicated connections between any two ports in the ATLAS 890 Base Unit. This section describes the **DEDICATED MAPS** menu items (see Figure 15). These options are module-dependent; that is, the menu items available depend on the module selected.

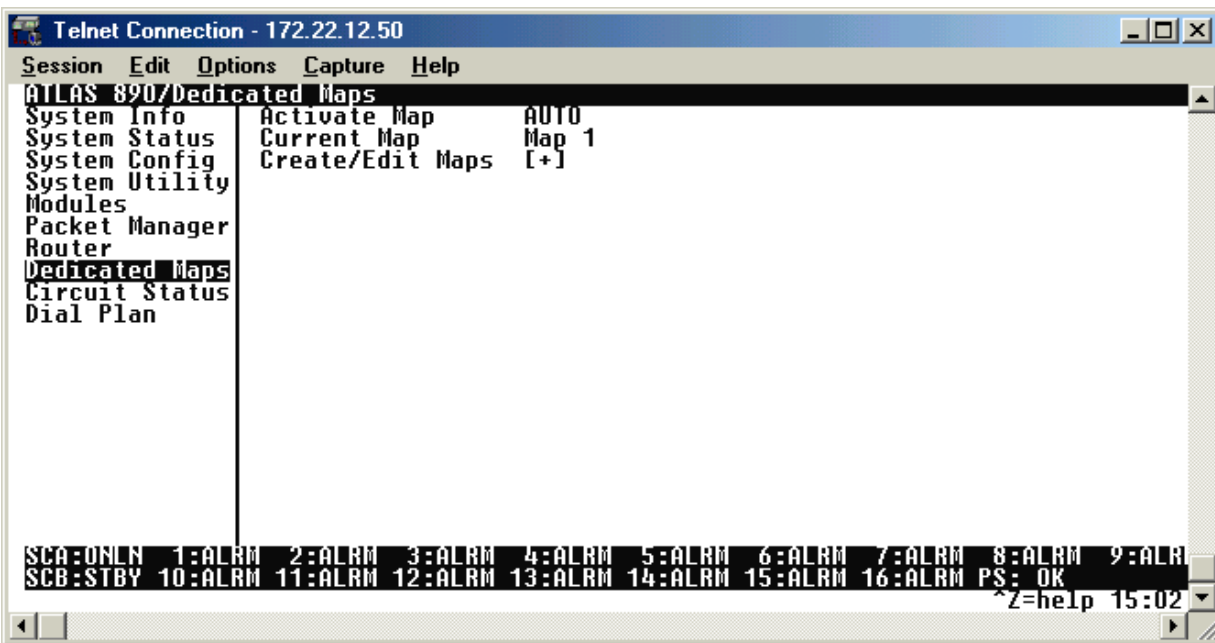


Figure 15. Dedicated Maps Menu

» **ACTIVATE MAP**

Write security: 3; Read security: 5

Activates a dedicated map—automatically or manually. You can have up to five different dedicated

maps, each with an optionally specified name. The configuration choices are:

AUTO Automatically activates a particular dedicated map at the time and day specified in the **ACTIVATE TIME** field.

MAPS 1 THROUGH 5 Allows you to manually activate a specific dedicated map. To manually activate a dedicated map, highlight the **ACTIVATE MAP** field and press <Enter>. Choose the desired dedicated map from the popup menu list.

» **CURRENT MAP**

Read security: 5

Displays the name of the currently active dedicated map (read-only).

» **CREATE/EDIT MAPS**

Write security: 3; Read security: 5

Creates new maps and defines settings, as well as edits existing maps. To add a new map, position the cursor in the index column and press <I>. ATLAS 890 automatically names the maps in the sequence in which they are created. You can change the names with **MAP NAME**.

»» **#**

Displays the index number of the available maps.

»» **MAP NAME**

Write security: 3; Read security: 5

Displays the name of the dedicated map. The name can contain up to 57 alpha-numeric characters, including spaces and special characters. To edit the name, press <Enter> and type in the new name.

»» **SORT TO/FROM**

Write security: 3; Read security: 5

Specifies sort order based on the end points set in **CONNECTS/FROM CONFIG** and **CONNECTS/TO CONFIG**. You can also turn **OFF** this option. The sort feature is helpful when you are attempting to find a particular connection in a large connection list.

»» **CONNECTS**

Enters the dedicated map connections. Press <Enter> to activate the submenus.



*Some of the options available in this submenu change depending on the type of modules selected in the **FROM** or **TO** fields. For more information on these submenus, refer to the individual module discussions in this section.*



*You must return to **DEDICATED MAPS** in the **MAIN MENU** for changes to take effect.*

FROM SLT

Write security: 3; Read security: 5

Specifies the slot to use for the **FROM** connection. When you select this option, a list of all of the slots and the modules installed in the slots displays. Select the appropriate slot and press <Enter>.

PORT

Write security: 3; Read security: 5

Specifies the port to use for the **FROM** connection. When you select this option, a list of ports and module types appears. Select the appropriate port and module type, and press <Enter>.

TO SLOT/SERVICE

Write security: 3; Read security: 5

Specifies the slot to use for the second end of a connection. Select this option, and a list of all of the slots and the modules installed in the slots displays. Pick the appropriate slot and press <Enter>. A **PKTENDPT** or **PKTVOICE** endpoint may also be selected as the service for the connection.

PORT

Write security: 3; Read security: 5

Specifies the port to use for the second end of a connection. When you select this option, a list of ports and module types appears. Select the appropriate port and module type, and press <Enter>. If a **PKTENDPT** or **PKTVOICE** endpoint is selected for the **TO SLOT/SERVICE** field, the available packet endpoints or packet voice endpoints will display in the drop down menu after pressing <Enter>.

FROM CONFIG

Write security: 3; Read security: 5

Specifies the configuration for the **FROM** connection. The selections displayed in this field are based on the type of module selected in the **FROM SLT** option. For detailed information on submenus for a particular module type, please refer to the **DEDICATED MAPS** menu discussion for the appropriate network, option, or resource module.

TO CONFIG

Write security: 3; Read security: 5

Specifies the configuration for the **TO** connection. The selections displayed in this field are based on the type of module selected in the **TO SLT** option. For detailed information on submenus for a particular module type, please refer to the **DEDICATED MAPS** menu discussion for the appropriate network, option, or resource module.

SIG

Write security: 3; Read security: 5

Specifies whether the ATLAS 890 uses active RBS on the connection. Selecting **ON** allows the ATLAS 890 to preserve signaling bits between the two endpoints of the connection. Selecting **OFF** ignores the signaling bits of the connection. This selection is automatically set to **OFF** when RBS does not apply. For example, a T1-to-Nx connection is set to **OFF**.

»» ACTIVATE TIME

Write security: 3; Read security: 5

Sets the time when the map becomes active if you have selected **AUTO** in the **ACTIVATE MAP** field. Enter this time in hh:mm:ss 24-hour format.

»» ENBL DAY

Security level: 3; Read security: 5

Specifies which days of the week the map is active.

> DEDICATED MAPS - (QUAD T1/PRI OPTION MODULE)

»» CONNECTS

Write security: 3; Read security: 5

Enters the dedicated map connections. Press <Enter> to activate the submenus.

TO/FROM CONFIG

Write security: 3; Read security: 5

Specifies the configuration for the **TO/FROM** connection. The following selections may apply to the Quad T1/PRI Option Module, depending on the application:

DS0 SELECTION

Defines DS0s for a T1 port. Use this field to define the DS0s for this connection. You can enter the DS0s in several ways. For example, to enter DS0s one through five, enter **1-5**. For DS0s one and five, enter **1,5**.

DS0 AVAILABLE

Indicates which DS0s of the T1 are assigned. DS0 assignment is based on the following items:

DIGIT 0-9

This DS0 is available. The digit that displays in this field represents the last digit of the DS0 number.

*

This DS0 has been requested for this connection, but the DS0 is not yet activated for this port.

!

This DS0 is used by this port in this connection and is currently activated.

S

This DS0 is used in the switched **DIAL PLAN**.

S

This DS0 is used in the switched **DIAL PLAN** and conflicts with this connection.

n

This DS0 is already used in this **DEDICATED MAP**.

N

This DS0 is already used in this **DEDICATED MAP** and conflicts with this connection.

DS0 RATE

Sets the DS0 rate to either 56 or 64 kbps. This field is only valid for T1 ports mapped to a **PKT ENDPNT**.

T1 TRUNK CONDITIONING SERVICE

Sets known values in the signaling bits and the data field for outgoing DS0s which are cross-connected to a T1 port experiencing alarms.

The trunk conditioning process consists of a 2.5 second transmission (indicating call termination), followed by a continuous transmission signaling the final condition as chosen by the user. This selection is only valid for T1 ports having **RBS** set to **ON**.

This option defines to ATLAS 890 the type of signaling being used on the trunk: **E&M**, **LS/GS NETWORK** or **USER**, **SW56**, or **CUSTOM**.

T1 TRUNK CONDITIONING STATE

Defines the final fault signaling state:

IDLE

Used for one-way trunks; that is, for outgoing or incoming calls only – not both.

SEIZED

Used for two-way trunks. Prevents connected equipment from attempting to use a failed trunk for an outgoing call.

T1 FAULT SIGNALING

Displays the final fault signaling state of the AB bits. This field is read-only unless **CUSTOM** is chosen for the **T1 TRUNK CONDITIONING SERVICE** option.

T1 TROUBLE CODE VALUE

Displays the Hex value of the 2.5 second pre-alarm transmission.

> DEDICATED MAPS - (QUAD E1/PRA OPTION MODULE)

»» CONNECTS

Write security: 3; Read security: 5

Enters the dedicated map connections. Press <Enter> to activate the submenus.

TO/FROM CONFIG

Write security: 3; Read security: 5

Specifies the configuration for the **TO/FROM** connection. The following selections may apply to the Quad E1/PRA Option Module, depending on the application:

TS0 SELECTION

Defines TS0s for an E1 port. Use this field to define the TS0s for this connection. You can enter the TS0s in several ways. For example, to enter TS0s one through five, enter **1-5**. For TS0s one and five, enter **1,5**.

TS0 AVAILABLE

Indicates which TS0s of the E1 are assigned. TS0 assignment is based on the following items:

DIGIT 0-9

This TS0 is available. The digit that displays in this field represents the last digit of the TS0 number.

This TS0 has been requested for this connection, but the TS0 is not yet activated for this port.

!

This TS0 is used by this port in this connection and is currently activated.

S

This TS0 is used in the switched **DIAL PLAN**.

S

This TS0 is used in the switched **DIAL PLAN** and conflicts with this connection.

n

This TS0 is already used in this **DEDICATED MAP**.

N

This TS0 is already used in this **DEDICATED MAP** and conflicts with this connection.

TS0 RATE

Sets the TS0 rate to either 56 or 64 kbps. This field is only valid for E1 ports mapped to a **PKT ENDPNT**.

E1 TROUBLE CODE SERVICE

Sets known values in the signaling bits and the data field for outgoing TS0s which are cross-connected to a E1 port experiencing alarms.

The trunk conditioning process consists of a 2.5 second transmission (indicating call termination), followed by a continuous transmission signaling the final condition as chosen by the user. Set the **E1 TROUBLE CODE SERVICE** field to **OFF** or **VOICE**.

T1 TROUBLE CODE VALUE

Displays the Hex value of the 2.5 second pre-alarm transmission.

> DEDICATED MAPS - (QUAD Nx 56/64 OPTION MODULE)

»» CONNECTS

Write security: 3; Read security: 5

Enters the dedicated map connections. Press <Enter> to activate the submenus.

To/FROM CONFIG

Write security: 3; Read security: 5

Specifies the configuration for the **FROM** connection. The following selections may apply to the Quad Nx 56/64 Option Module, depending on the application:

DS0 SELECTION

Defines DS0s for an Nx port. Use this field to define the DS0s for this connection. This field only applies to Nx-to-Nx or Nx-to-Pkt Endpnt connections.

DS0 RATE

Sets the DS0 rate to either 56 or 64 kbps.

> DEDICATED MAPS - (QUAD USSI OPTION MODULE)

»» CONNECTS

Write security: 3; Read security: 5

Enters the dedicated map connections. Press <Enter> to activate the submenus.

To/FROM CONFIG

Write security: 3; Read security: 5

Specifies the configuration for the **FROM** connection. The following selections may

apply to the Quad USSI Option Module, depending on the application:

DS0 SELECTION

Defines DS0s for an USSI port. Use this field to define the DS0s for this connection. This field only applies to USSI-to-USSI, USSI-to-Nx or USSI-to-Pkt Endpt connections.

DS0 RATE

Sets the DS0 rate to either 56 or 64 kbps.

> DEDICATED MAPS - (OCTAL BRI OPTION MODULE)

»» CONNECTS

Write security: 3; Read security: 5

Enters the dedicated map connections. Press <Enter> to activate the submenus.

TO/FROM CONFIG

Write security: 3; Read security: 5

Specifies the configuration for the **TO/FROM** connection. The following selections may apply to the Octal BRI Option Module, depending on the application:

DS0 SELECTION

Defines DS0s for an BRI port. Use this field to define the DS0s for this connection. This field only applies to BRI-to-BRI, BRI-to-USSI, BRI-to-Nx or BRI-to-Pkt Endpt connections.

DS0 RATE

Sets the DS0 rate to either 56 or 64 kbps.

NT/LT

Configures the BRI U interface to be network termination or line termination.

> DEDICATED MAPS - (T3 AND T3 WITH DROP AND INSERT OPTION MODULES)

»» CONNECTS

Write security: 3; Read security: 5

Enters the dedicated map connections. Press <Enter> to activate the submenus.

TO/FROM CONFIG

Write security: 3; Read security: 5

Specifies the configuration for the **TO/FROM** connection. The following selections may apply to the T3 or T3 with Drop and Insert Option Module, depending on the application:

DS0 SELECTION

Defines DS0s for a specific T1 in the T3 circuit. Use this field to define the DS0s for this connection. You can enter the DS0s in several ways. For example, to enter DS0s one through five, enter **1-5**. For DS0s one and five, enter **1,5**.

DS0 AVAILABLE

Indicates which DS0s of the T1 are assigned. DS0 assignment is based on the following items:

DIGIT 0-9

This DS0 is available. The digit that displays in this field represents the last digit of the DS0 number.

*

This DS0 has been requested for this connection, but the DS0 is not yet activated for this port.

!

This DS0 is used by this port in this connection and is currently activated.

S

This DS0 is used in the switched **DIAL PLAN**.

S

This DS0 is used in the switched **DIAL PLAN** and conflicts with this connection.

n

This DS0 is already used in this **DEDICATED MAP**.

N

This DS0 is already used in this **DEDICATED MAP** and conflicts with this connection.

DS0 RATE

Sets the DS0 rate to either 56 or 64 kbps. This field is only valid for T1s mapped to a **PKT ENDPNT**.

T1 TRUNK CONDITIONING SERVICE

Sets known values in the signaling bits and the data field for outgoing DS0s which are cross-connected to a T1 port experiencing alarms.

The trunk conditioning process consists of a 2.5 second transmission (indicating call termination), followed by a continuous transmission signaling the final condition as chosen by the user. This selection is only valid for T1 ports having **RBS** set to **ON**.

This option defines to ATLAS 890 the type of signaling being used on the trunk:

E&M, LS/GS NETWORK or **USER, SW56**, or **CUSTOM**.

T1 TRUNK CONDITIONING STATE

Defines the final fault signaling state.

IDLE

Used for one-way trunks; that is, for outgoing or incoming calls only – not both.

SEIZED

Used for two-way trunks. Prevents connected equipment from attempting to use a failed trunk for an outgoing call.

T1 FAULT SIGNALING

Displays the final fault signaling state of the AB bits. This field is read-only unless **CUSTOM** is chosen for the **T1 TRUNK CONDITIONING SERVICE** option.

T1 TROUBLE CODE VALUE

Displays the Hex value of the 2.5 second pre-alarm transmission.

T1 TROUBLE CODE SERVICE

When RBS signaling is off, the T1 alarm code will be transmitted on an alarm event. The options to select are **OFF**, **VOICE** or **DATA** trouble code, or the **CUSTOM** data code that is configured in **T1 TROUBLE CODE VALUE**.

> DEDICATED MAPS - (PKT ENDPT CONNECTIONS)

»» CONNECTS

Write security: 3; Read security: 5

To assign a packet endpoint to a physical port, select the port in the **FROM SLOT/PORT** field and configure the **TO SLOT/PORT** as follows:

TO SLOT/SERVICE

Write security: 3; Read security: 5

Select **PKT ENDPNT** to activate a list of available packet endpoints in the **TO PORT** field.

TO PORT/PEP

Write security: 3; Read security: 5

Press <Enter> and select the appropriate packet endpoint to assign the endpoint to a physical port.

TO/FROM CONFIG

Write security: 3; Read security: 5

Specifies the configuration for the **TO/FROM** connection. The following selections

apply to the packet endpoint:

TRANSMIT IDLE CODE

Configures the ATLAS 890 to send idle code on the packet endpoint with marks or flags.

RECEIVE IDLE CODE

Defines the idle code (either marks or flags) the ATLAS 890 should expect on the selected packet endpoint.

> DEDICATED MAPS - (PACKET VOICE CONNECTIONS)

»» CONNECTS

Write security: 3; Read security: 5

Enters the dedicated map connections. Press <Enter> to activate the submenus.

To SLOT/SERVICE

Write security: 3; Read security: 5

Select **PKT VOICE** to activate a list of available packet endpoints in the **To PORT** field.

To PORT/PEP

Write security: 3; Read security: 5

Press <Enter> and select the appropriate packet endpoint from the drop-down list.

To/FROM CONFIG

Write security: 3; Read security: 5

Specifies the configuration for the **To/FROM** connection. The following selections apply to the **PKT VOICE** connections:

DLCI

Press <Enter> and select the appropriate DLCI from the drop-down list.

VOICE PORT

Identifies the voice port address of the remote unit. Express units support ports 1 and 2. A remote ATLAS supports ports 1 through 255.

CONFLICT REPORT

Describes existing conflicts. Potential problems include DLCI unavailable or Voice port already in use.

VOICE COMPRESSION

Configures the compression algorithm used on the selected packet voice endpoint. Older FSUs use G.723.1 at 6.3kbps, and newer FSUs use 6.4K Netcoder. The compression algorithm must match at both endpoints.

SILENCE SUPPRESSION

Reduces the total system bandwidth load by preventing ATLAS from sending

frames containing a special silence code during periods of silence. Both endpoints must agree to use silence suppression. By default, silence suppression is **ENABLED** to prohibit silence frames from transmitting and to decrease the total system bandwidth.

SIGNALING

Signaling method on the packet voice endpoint. Both endpoints must agree about the compression algorithm choice.

> CIRCUIT STATUS

The **CIRCUIT STATUS** menu allows the user to view the status of all circuits configured for dedicated circuit backup (see Figure 15).

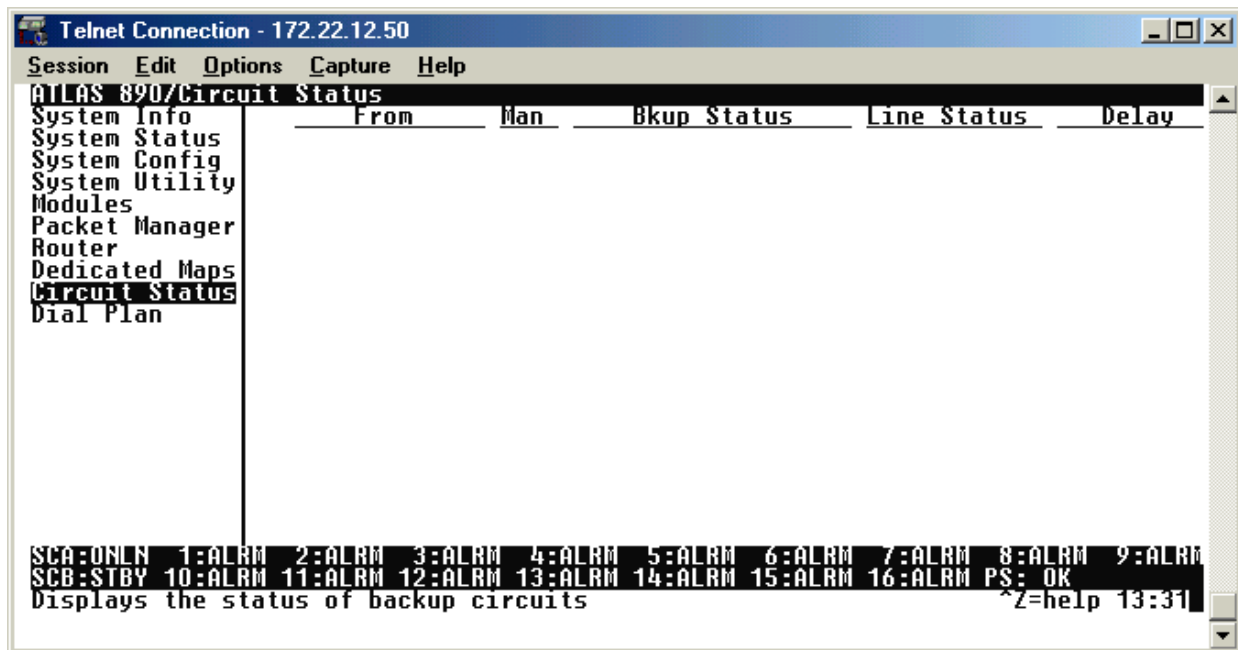


Figure 16. Circuit Status Menu

» FROM

Read security: 5

Indicates the slot, port, and name of the endpoint configured for backup.

» **MAN (MANUAL BACKUP)**

Write security: 3; Read security: 5

This activator forces a link in/out of backup.

FB Force Backup

FR Force Restoral

» **BKUP STATUS (BACKUP STATUS)**

Read security: 5

The displayed string indicates the current status of the dedicated line. The following selections are available for the **BACKUP STATUS** menu item.

FB

Backup was forced through the interface menu.

FR

Restoral was forced through the interface menu.

PRIMARY

The link is active.

DIALING

Attempting to dial the backup link.

BACKUP FAILED

Exceeded **MAX NUM REDIALS**.

RETRY DIAL [NUM]

Will retry backup dialing in [num] seconds.

PRIMARY DOWN

The link is in error and waiting on backup.

ANSWERING

The link is answering a backup endpoint.

BACKUP

The link is in backup.

» **LINE STATUS**

Read security: 5

Displays the overall status of the connection. The following selections are available for the **LINE STATUS** menu item.

UNKNOWN

Endpoints do not support (or are not configured) for monitoring.

ACTIVE

The connection is up and running.

INACTIVE

The connection is down due to configuration (i.e., DTR is down).

DATA ALARM

The **FROM** endpoint is in data alarm.

NETWORK ALARM

The **TO** endpoint is in network alarm.

NET/DATA ALARM

Both the **FROM** endpoint and the **TO** endpoint are in alarm.

DATA UNKNOWN

The status of the **FROM** endpoint is unknown.

» **DELAY**

When present, this indicates that one ATLAS 890 has detected a change in state and is counting down to delay/restoral.

» **TEST**

Write security: 1; Read security: 5

Contains a test activator and test status displays for dedicated dial backup circuits.

»» **LAST RUN TIME**

Read security: 5

Displays the date and time of the last test call made through this dedicated dial backup circuit. (Not seen until circuit is tested.)

»» **NEXT RUN TIME**

Read security: 5

Displays the date and time of the next schedule test call to be made through this dedicated dial backup circuit. (Not seen unless **TEST CALL** is configured for something other than manual in the **INTERFACE CONFIG** for the **CIRCUIT BACKUP ENDPOINT**.)

»» **LAST TEST STATUS**

Read security: 5

Displays the status of the last test call made through this dedicated dial backup circuit. The following status messages may display:

IDLE	No current test call on this dedicated dial backup circuit
PASSED	Passed last manual or scheduled test
FAILED	Failed last manual or scheduled test

»» **PASS : FAIL**

Read security: 5

Displays the number of successful and unsuccessful test calls made through this dedicated dial backup circuit.

»» **TEST NOW**

Write security: 5; Read security: 5

Press to initiate a test call on the dedicated dial backup circuit.

> DIAL PLAN

The **DIAL PLAN** submenus set global ATLAS 890 switch parameters as well as individual parameters for each ATLAS 890 port handling a switched call (see Figure 16). The individual ports are separated into two port types: network and user. Network ports terminate a connection from the network. User ports terminate incoming calls and, in turn may be connected to user equipment.

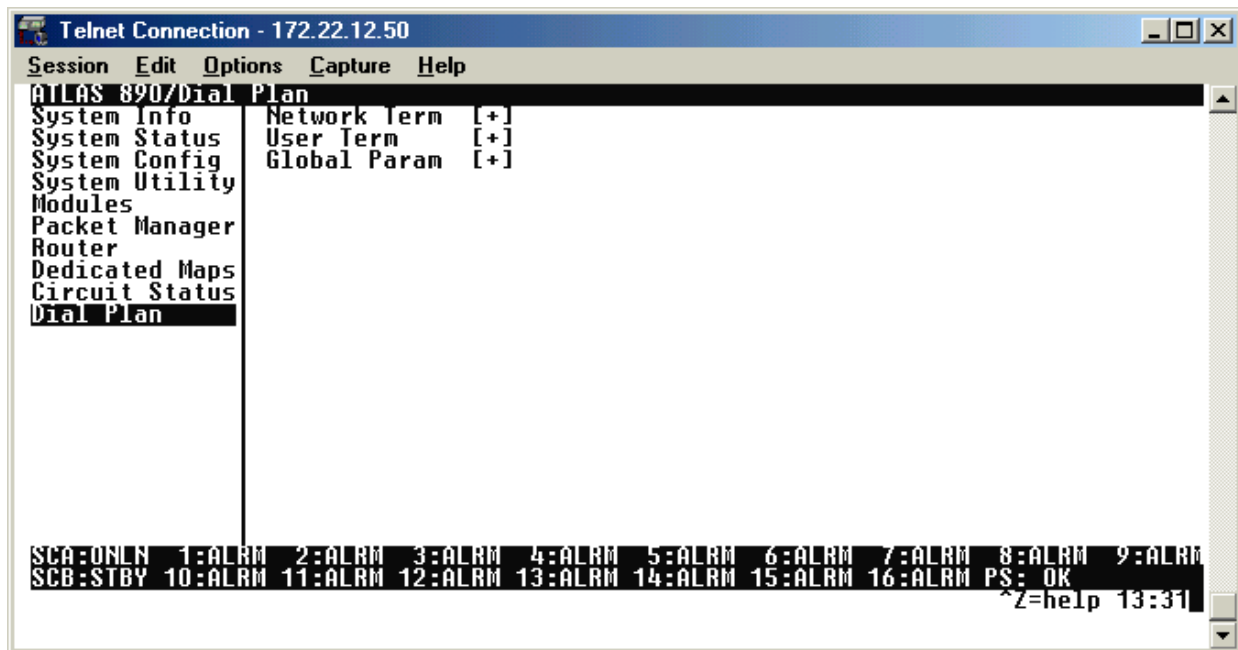


Figure 17. Dial Plan Menu

» **NETWORK TERM**

Write security: 3; Read security: 5

This menu allows the user to define option parameters for ports which terminate a connection from the network.



In applications where two ATLAS 890 units are used in a point-to-point configuration, a port in the ATLAS 890 at one end would act as the network (user termination), while the ATLAS 890 at the opposite end would be terminating a network connection (network termination).

»» **SLOT/SVC**

Write security: 3; Read security: 5

Selects the ATLAS 890 slot or service that terminates a network connection.

»» **PORT/PEP**

Write security: 3; Read security: 5

Selects the ATLAS 890 port or packet endpoint that terminates a network connection.



There may be more than one “endpoint” associated with a particular port. If a T1 is connected to the PSTN, some DS0s may be used for long distance, while others are used for local calls. These would constitute two “endpoints” (trunks) over a single physical port.

»» **SIG**

Write security: 3; Read security: 5

Defines the type of signaling being used for this connection (endpoint). Select **RBS** for a T1 using Robbed Bit Signaling or **PRI** for a Primary Rate ISDN interface. Select **NFAS** for a non-facility associated signalling interface or **NONE** for OSC when bonding DS0s. This selection is only necessary if a T1/PRI is selected as the **SLOT/PORT** type.



One HDLC resource is used by each PRI or each Packet Endpoint.

»» **OUT#ACCEPT**

Write security: 3; Read security: 5

Defines the parameters for the outgoing calls that ATLAS 890 sends to the network.

SRC ID

Identifies the call source ID from which this endpoint accepts calls. This field simplifies the creation of a dial plan in applications where the criterion for switching calls to a certain endpoint is a function of which endpoint originated the call. **SRC ID** may be entered with the usual wild card entries (except \$).

X = Any digit 0 through 9

[1,3,5] = Any of these digits

0 = Default value

The default ID for all source endpoints all accept numbers is 0. This results in all calls being routed based on the dialed number.

ACCEPT NUMBER

Write security: 3; Read security: 5

Designates which numbers this endpoint passes on toward the network. The accept list may consist of multiple entries. The numbers are defined using the following “wild cards”:

X = Any single digit

N = Any single digit 2 through 9

\$ = Any number of digits of any value

9 = This specific number

[1,2,3...] = A single digit in this group

Example:

1-800-\$ only permits toll-free, long distance calls to 1-800. If this were used, then a second accept number would need to be specified (NXX-XXXX) permitting local numbers to be dialed.

NOTE

Any specific entry takes precedence over a wild card. For example, if endpoint A was designated as \$ while endpoint B accepted 963-800X, then an incoming call to 963-800X would only be accepted by endpoint B.

SEARCH

Instructs ATLAS 890 in which order to search for an accept number match. Normally, all searches are set to primary. The secondary search selection forces ATLAS 890 to only accept a call at this endpoint if all primary endpoints are unavailable.

PRIMARY SEARCH

All long distance calls should go out a PRI directly to an IXC (MCI, ATT, etc.), and local calls should go out a T1 to the LEC. It may be desirable to place long distance calls on the local exchange if all of the IXC trunks are unavailable (busy or in alarm). In this case, the primary accept number for the local exchange would be N\$, and the secondary accept would be 1\$.

SECONDARY SEARCH

The same accept rules apply for all secondary number searches as for primary searches.

DATA 64K, DATA 56K, AUDIO, SPEECH

Reflects the bearer capability the network has provisioned for this line. If the ISDN lines were purchased with different services provisioned, then ATLAS 890 would send the call out of the port which supports the type of service the call requires.

For example, the network termination is on a pair of BRIs (with the same phone number) with one provisioned for data and the other for voice. By enabling data in one and not the other, ATLAS 890 ensures that calls bearing data will be sent out the right BRI interface.

TREAT CALL AS

Allows the incoming call to be treated as the selected call type, regardless of the actual incoming call type. The default selection, **AS RECEIVED**, effectively disables the feature by using the actual call type. Other options include **DATA 64K** and **DATA 56K**.

»» OUT#REJ

Write security: 3; Read security: 5

Defines parameters for outgoing calls that ATLAS 890 will not send to the network.

REJECT NUMBER

Identifies which numbers this endpoint will not pass on toward the network. The reject list may consist of multiple entries. The reject list may be used to more easily specify the call filtering desired. The wildcards are identical as in **OUT#ACCEPT** (see *Out#Accept* on page 182).



The reject list takes precedence over the accept list. For example, 1-900-\$ rejects all 1-900 long distance calls, and 1-\$ rejects all long distance calls.

DATA 64K, DATA 56K, AUDIO, SPEECH

Rejects outgoing calls based on call type. For example, setting the reject number to **\$**, Digital 56/64 to **ENABLED**, and Audio and Speech to **DISABLED** will reject all digital calls, but accept analog calls.



This list may remain blank if the accept list meets desired filtering.

»» **IFCE CONFIG**

Write security: 3; Read security: 5

Specifies the configuration parameters for the endpoint. The selections displayed in this field are based on the type of module selected in the **SLOT/SVC** option. For detailed information on submenus for a particular module type, please refer to the dial plan interface configuration menu discussion for the appropriate network, option, or resource module.

 **NOTE**

*Some of the options available in this submenu change depending on the type of modules selected in the **SLT/SVC** or **PRT/PEP** fields. For more information on these submenus, refer to the individual module interface configuration discussions in this section.*

»» **SUBST TEMPL**

The substitution template allows the ATLAS 890 to select calls (based on telephone number) and substitute a user-defined number for the received digits after the call has been processed by the switchboard. Substitution templates are created for each entry in the Dial Plan.

ORIGINAL#

Designates the number(s) to be the search criteria for the substitution template. The pattern can be a specific number, or wildcards can be used as part of the number specification.

X = Any single digit

N = Any single digit 2 through 9

\$ = Any number of digits of any value

9 = This specific number

[1,2,3...] = A single digit in this group

Example:

963-812[012] would be 963-8120 to 963-8122.

SUBSTITUTED#

Designates the number to be substituted for the number(s) defined in the **ORIGINAL#** field. The pattern can be a specific number, or wildcards can be used as a part of the number specification.

X = Any single digit

N = Any single digit 2 through 9

\$ = Any number of digits of any value

9 = This specific number

[1,2,3...] = A single digit in this group

Punctuation characters () - + are ignored and a comma is interpreted as a .5 second pause in the dial string.

Example:

The **ORIGINAL#** field contains \$ and the **SUBSTITUTED#** field contains **,256\$**. All calls routed out this connection will be delayed .5 seconds and contain a 256 prefix.



*Wildcards used in the **SUBSTITUTED#** field are only valid when used in the same position (relative to the end of the digit string) as the **ORIGINAL#** field.*

» **USER TERM**

Write security: 3; Read security: 5

This menu allows you to define option parameters for ports which terminate a connection from user equipment. In this case, ATLAS 890 is acting as the network.



In applications where two ATLAS 890 units are used in a point-to-point configuration, a port in the ATLAS 890 at one end would act as the network (user termination), while the ATLAS 890 at the opposite end would be terminating a network connection (network termination).

»» **SLOT/SVC**

Write security: 3; Read security: 5

Selects the ATLAS 890 slot or service that terminates a user connection.

»» **PORT/PEP**

Write security: 3; Read security: 5

Selects the ATLAS 890 port or packet endpoint that terminates a network connection.



There may be more than one “endpoint” associated with a particular port. If a T1 is connected to the PSTN, some DS0s may be used for long distance, while others are used for local calls. These would constitute two “endpoints” (trunks) over a single physical port.

»» **SIG**

Write security: 3; Read security: 5

Defines the type of signaling being used for this connection (endpoint). Select **RBS** for a T1 using robbed bit signaling or **PRI** for a Primary Rate ISDN interface. Select **NFAS** for a non-facility associated signalling interface or **NONE** for OSC when bonding DS0s. This selection is only necessary if a T1/PRI is selected as the **SLOT/PORT** type.



One HDLC resource is used by each PRI or each Packet Endpoint.

»» **IN#ACCEPT**

Write security: 3; Read security: 5

Defines the parameters for the incoming calls that ATLAS 890 accepts from the network.

SRC ID

Identifies the call source ID from which this endpoint accepts calls. This field simplifies the creation of a dial plan in applications where the criterion for switching calls to a certain endpoint is a function of which endpoint originated the call. **SRC ID** may be entered with the usual wild card entries (except \$).

X = Any digit 0 through 9

[1,3,5] = Any of these digits

0 = Default value

The default ID for all source endpoints all accept numbers is 0. This results in all calls being routed based on the dialed number.

ACCEPT NUMBER

Designates which numbers this endpoint will accept (terminate) from the network. The accept list may consist of multiple entries. The numbers are defined using the fol-

Following wildcards:

X = Any single digit

N = Any single digit 2 through 9

\$ = Any number of digits of any value

9 = This specific number

[1,2,3...] = A single digit in this group

Example:

963-8000 would be a specific incoming number that would be accepted by this endpoint. If this endpoint consisted of a T1 with multiple DS0s, a “hunt” group for 963-8000 would be formed. The entry \$ would accept any call.



Any specific entry will take precedence over a wildcard. For example, if endpoint A was designated as \$ while endpoint B accepted 963-800X, then an incoming call to 963-800X would only be accepted by endpoint B.

SEARCH

Instructs ATLAS 890 in which order to search for an accept number match. Normally, all searches are set to primary. The secondary search selection forces ATLAS 890 to only accept a call at this endpoint if all primary endpoints are unavailable.

PRIMARY SEARCH

All long distance calls should go out a PRI directly to an IXC (MCI, ATT, etc.), and local calls should go out a T1 to the LEC. It may be desirable to place long distance calls on the local exchange if all of the IXC trunks are unavailable (busy or in alarm). In this case, the primary accept number for the local exchange would be N\$, and the secondary accept would be 1\$.

SECONDARY SEARCH

The same accept rules apply for all secondary number searches as for primary searches.

DATA 64K, DATA 56K, AUDIO, SPEECH

Reflects the bearer capability of the attached user equipment (typically a TA). If the attached TA can only handle digital calls, then a voice call sent to this endpoint would be rejected.

TREAT CALL AS

Allows the incoming call to be treated as the selected call type, regardless of the actual

incoming call type. The default selection, **AS RECEIVED**, effectively disables the feature by using the actual call type. Other options include **DATA 64K** and **DATA 56K**.

»» **OUT#REJ**

Write security: 3; Read security: 5

Defines the parameters for the outgoing calls that ATLAS 890 will not send to the network.

REJECT NUMBER

Identifies which numbers this endpoint will not pass on toward the network. Use when the outgoing call filter is different for different users sharing this endpoint. The wild-cards are identical as in **OUT#ACCEPT** (see *Out#Accept* on page 182).



[0,1]-\$ rejects all long distance calls, but only for this User termination. If permitted in the Network termination endpoint, this user could not dial long distance numbers while other users could.

DATA 64K, DATA 56K, AUDIO, SPEECH

Rejects outgoing calls based on call type. For example, setting the reject number to \$, Digital 56/64 to **ENABLED**, and Audio and Speech to **DISABLED**, rejects all digital calls while not rejecting analog calls.



This list may remain blank if the accept list meets desired filtering.

»» **IFCE CONFIG**

Write security: 3; Read security: 5

Specifies the configuration parameters for the endpoint. The selections displayed in this field are based on the type of module selected in the **SLOT/SVC** option. For detailed information on submenus for a particular module type, please refer to the dial plan interface configuration menu discussion for the appropriate network, option, or resource module.



*Some of the options available in this submenu change depending on the type of modules selected in the **SLOT/SVC** or **PORT/PEP** fields. For more information on these submenus, refer to the individual module interface configuration menu discussions in this section.*

»» **SUBST TEMPL**

The substitution template allows the ATLAS 890 to select calls (based on telephone number) and substitute a user-defined number for the received digits after the call has been processed by the switchboard. Substitution templates are created for each entry in the Dial Plan.

ORIGINAL#

Designates the number(s) to be the search criteria for the substitution template. The pattern can be a specific number, or wildcards can be used as part of the number specification.

X = Any single digit

N = Any single digit 2 through 9

\$ = Any number of digits of any value

9 = This specific number

[1,2,3...] = A single digit in this group

Example:

963-812[012] would be 963-8120 to 963-8122.

SUBSTITUTED#

Designates the number to be substituted for the number(s) defined in the **ORIGINAL#** field. The pattern can be a specific number, or wildcards can be used as a part of the number specification.

X = Any single digit

N = Any single digit 2 through 9

\$ = Any number of digits of any value

9 = This specific number

[1,2,3...] = A single digit in this group

Punctuation characters () - + are ignored and a comma is interpreted as a .5 second pause in the dial string.

Example:

The **ORIGINAL#** field contains \$ and the **SUBSTITUTED#** field contains ,256\$. All calls routed out this connection will be delayed .5 seconds and contain a 256 prefix.



Wildcards used in the **SUBSTITUTED#** field are only valid when used in the same position (relative to the end of the digit string) as the **ORIGINAL#** field.

» **GLOBAL PARAM**

Write security: 2; Read security: 5

Sets ATLAS 890 options which apply to all switched operations, both incoming and outgoing calls.

»» **END OF NUMBER TIMEOUT**

Write security: 3; Read security: 5

Sets the length of time ATLAS 890 waits before assuming the outgoing dialed number is complete. The default value is six seconds. This timeout will only be invoked if the dialed number does not match one of the patterns set in the **NUMBER COMPLETE TEMPLATE** menu (see *Nbr Complete Templates* below).

»» **COUNTRY CODE**

Write security: 3; Read security: 5

The country code. Enter your international country code using only digits. For the United States, enter **1**.

»» **AREA OR CITY CODE**

Write security: 3; Read security: 5

The local area code. Use for sending caller ID to the network.

»» **NBR COMPLETE TEMPLATES**

Write security: 3; Read security: 5

Sets completed number patterns for outgoing calls so that ATLAS 890 recognizes when the phone number is complete. Fields include the index number (#) and **PATTERN**. For example, a local number will be 7 digits long while a long distance (1+ area code + number) will be 11 digits long. The ATLAS 890 defaults cover almost any installation, and these templates should not require any additional user input – except for unusual circumstances. The template allows the use of the following wildcard inputs to define numbers:

X = Any single digit

N = Any single digit 2 through 9

911 = This specific number

[1, 2, 3...] = A single digit in this group

»» **NUMBER TYPE TEMPLATES**

Sets call type patterns. ISDN interfaces require that a number type be sent over the D channel when a call is sent or received. A normal RBS trunk does not send a type designator, but uses prefixes instead. For example, “1 +” prefix is a national long distance call type while a “011 +” prefix is an international long distance call type. These templates form a table to permit ATLAS 890 to translate the RBS prefix into a call type for ISDN and vice-versa.



The ATLAS 890 default templates should cover all applications and should not need to be added to by the user except for very rare circumstances.

#

Denotes an entry number. The maximum number of entries is 50. Press <I> to insert a new entry and <D> to delete any entry.

PREFIX

Sets the prefix for the number type. Only digits 0 and 1 are allowed (maximum of six characters).

PATTERN

Modifies an entry when you press <Enter> (maximum of 40 characters). A pattern for a normal long distance call, for example, would be 1+(NXX) NXX - XXXX. Note that the symbols (), +, -, and space are not required and are only used to improve the readability of this example.

NUMBER TYPE

Lists valid selections when you press <Enter>. Selections include **LOCAL**, **NATIONAL**, **INTERNATIONAL**, **PRIVATE**, and **UNKNOWN**.

»» **AUTOMATIC ROUTEBACK REJECTION**

Write security: 1; Read security: 5

When enabled, **AUTOMATIC ROUTEBACK REJECTION** prevents calls entering through network termination interfaces from being forwarded out another network interface. Such an event could happen if an incoming call specifies a number that has no endpoint configured to accept it and another network interface has a call acceptance entry which could accept it (such as \$). Without automatic rejection, such a call would be forwarded back to the network. The network would in turn resend the call to the unit until all incoming resources are consumed.



*Use extreme caution when disabling **AUTOMATIC ROUTEBACK REJECTION**.*

»» **COLLISION RESPONSE**

Write security: 0; Read security: 0

When forced, the **COLLISION RESPONSE** will enable the ATLAS to perform **AUTOMATIC** retransmission of **SETUP** messages when faced with a collision situation. Forcing this

response is not advised.

WARNING

*Use extreme caution when forcing **COLLISION RESPONSE**.*

»» **GLOBAL TONE TYPE**

Write security: 1; Read security: 5

Specifies the dialing digit tone encoding to be used throughout the entire system. **DTMF** (dual-tone-multi frequency) and **MF** (multi frequency) are the available options.

> **DIAL PLAN - (QUAD T1/PRI, T3, AND T3 DROP AND INSERT OPTION MODULES)**

» **NETWORK TERM (PRI)**

This menu allows the user to define option parameters for ports which terminate a PRI connection from the network.

»» **IFCE CONFIG (PRI)**

Write security: 3; Read security: 5

Specifies the configuration parameters for the endpoint.

SWITCH TYPE

Defines the type of PRI switch to which the port is connected. If connected to another ATLAS 890, both need to be set to the same switch type. The following options are available:

- Lucent 5E
- National ISDN
- Northern DMS 100
- AT&T 4ESS

FIRST DS0

Defines the first DS0 for this endpoint. The ATLAS 890 uses DS0s, starting with this selection, to send and receive calls to and from the network. The outgoing calls which are allowed or restricted over these DS0s are set by **OUT#ACCEPT** (see page 182) and **OUT#REJECT** (see page 184).

NUMBER OF DS0S

Specifies the number of DS0s ATLAS 890 uses for this endpoint.

OUTGOING NUMBER CONVERSION

Converts outgoing (towards the network) numbers to the selected numbering plan and type option.

AS DIALED

Sends the digits provided as an unknown number type.

ISDN-NATIONAL PREFERRED

Regardless of what type of number is received, the outgoing number is substituted with ISDN-National as the number plan and type. Ten digits are always sent to the network. Leading ones, if present, are stripped out and the area code (provisioned under **DIAL PLAN/GLOBAL PARAMETERS**) is added, if only seven digits are supplied. This action may be required in areas with ten-digit local dialing.

ISDN-SUBSCRIBER PREFERRED

Examines the incoming number and if seven digits are received or if a ten-digit number is received with an area code that matches the area code provisioned in the global parameters, the number is forwarded to the network as a seven-digit number defined as ISDN-Subscriber number plan and type. If the incoming number is ten digits, but with a different area code, it is forwarded to the network as ISDN-National preferred.

ISDN-NATIONAL DMS RESERVED PREFERRED

Ignores the incoming numbering plan and type and substitutes the ISDN/Telephony numbering plan and National number type. Ten digits are sent to the network. Leading ones, if present, are stripped out and the area code set in global parameters is added if only seven digits are supplied. This action may be required in areas with ten-digit local dialing.

ISDN-NATIONAL AS DIALED

Sends the digits provided as National number type.



When **SWITCH TYPE** is set to **4ESS**, many installations require the National form where possible; this may also be the preferred form in 10-digit calling areas.

STRIP MSD

Strips a selected quantity (choose from **NONE**, **1**, **2**, and **3**) of the most significant digits (MSD) of a dialed number prior to being forwarded out of the port.

Example:

A network port could be set to accept all calls beginning with 9 (9\$), and then with **STRIP MSD** set to **1**, all digits would be sent toward the network except the leading 9.



STRIP MSD does not affect **CALL ACCEPT** criteria. All of the digits (including the MSDs that are subsequently stripped) are used as accept criterion.

NETWORK SPECIFIC FACILITY VOICE AND DATA

Enables the sending of appropriate information to the PSTN. The default for this option is **NORMAL**, and in this case no Network Specific Facility Information Element is sent. Unless one of the services listed below is subscribed to, the selection should remain set to **NORMAL**.

The list below indicates services that may be subscribed to from the PSTN. These services require that specific information (such as a Network Specific Facility Information Element) be sent to the network during call setup.

- AT&T SDN
- AT&T Megacom 800
- AT&T Megacom
- AT&T Accunet
- AT&T Long Distance
- AT&T International-800
- AT&T Dial-It 900/Multiquest
- National ISDN INWATS
- Nortel Private Network
- Nortel InWats
- Nortel OutWats
- Nortel Foreign Exchange
- Nortel Tie Trunk

CALLED DIGITS TRANSFERRED

Some PRI switches may be provisioned to send only a portion of the called number (like DID). This menu item allows the ATLAS 890 to know how many digits to expect (choose from **NONE**, **THREE**, **FOUR**, **SEVEN**, and **ALL**). The default is **ALL** and would almost always be correct. If less than **ALL** digits are sent, then the **PREFIX** is defined as follows:

PREFIX

Displays only if **CALLED DIGITS TRANSFERRED** is not set to **ALL**. Enter the prefix for the digits received.

Example:

If the number of digits is four and the number called is 963-8615, the telco's PRI switch sends only 8615 and the prefix is set to 963. This entire number is then used to determine which ATLAS 890 user port endpoint should receive the call.

OUTGOING CALLER ID

Defines the number to use to provide Caller ID to the network for outgoing calls sent through this endpoint. Choose from **SEND AS PROVIDED**, **SUBSTITUTE IF NOT PRESENT**, or **SUBSTITUTE ALWAYS**.



The Caller ID number must be specific (i.e., no wildcards).

SOURCE ID

Simplifies the creation of a dial plan in applications where the criterion for switching calls to a certain endpoint is a function of which endpoint originated the call.

Default value = 0. Zero is the default ID for all endpoints and all accept numbers. With default values, all calls are routed based only on the dialed number.

Multiple endpoints can have the same **SOURCE ID**.

When creating the **CALL ACCEPT** list, specify a **SOURCE ID(s)** as well as a dialed number or range of dialed numbers to accept.

Example:

An application requires that all calls that originate from Port 1 of the ATLAS 890 in Slot 1 be switched to Port 2 of that same module. Assign a unique Source ID (e.g. 7) to Port 1 of the module, and then configure Port 2 to only accept calls from that unique Source ID (7).

SWAP ANI/DNIS

Swaps the ANI and DNIS numbers received from the network. ANI (Automatic Number Identification) is the billing number of the calling party, and DNIS (Dialed Number Identification Service) is the called party number.



With this swap, the ATLAS 890 switchboard uses ANI to route the call. The accept number in the dial plan must use the ANI number, not the DNIS number.

B CHANNEL SELECTION

Determines how the ATLAS 890 switchboard uses B channels for call routing. The **CIRCULAR** method can be used for call load balancing among the available B channels on this interface.

NORMAL

Always start with the last channel configured (i.e. for a full PRI channel 23 would be used if available).

CIRCULAR

Contiguous channels from last to first.

BUSY OPTION

Defines the response propagated to the CPE upon receipt of a **DISCONNECT USER-BUSY** message from the network.

NORMAL

Send a progress message to the CPE and map busy tones.

PASS-THRU

Send a **DISCONNECT USER-BUSY** message to the User Term CPE device.

» **NETWORK TERM (RBS)**

This menu allows the user to define option parameters for ports which terminate an RBS T1 connection from the network.

»» **IFCE CONFIG (RBS)**

Write security: 3; Read security: 5

Specifies the configuration parameters for the endpoint.

FIRST DS0

Defines to the ATLAS 890 the first DS0 for this endpoint. The ATLAS 890 uses DS0s, starting with this selection, to send and receive calls to and from the network. The outgoing calls which are allowed or restricted over these DS0s are set by **OUT#ACCEPT** (see page 182) and **OUT#REJECT** (see page 184).

NUMBER OF DS0s

Specifies the number of DS0s ATLAS 890 uses for this endpoint.

DS0s AVAILABLE

Indicates which DS0s of the T1 have been defined in this switched endpoint (indicated by “!”), in another switched endpoint (indicated by “s”), or in a **DEDICATED MAP** (indicated by “n”). This field is read-only. The following characters may display in this field:

- 0-9** This DS0 is available. The digit that displays in this field represents the last digit of the DS0 number.
- *** This port is requesting this DS0 for this connection, but the DS0 is not yet activated.
- !** This DS0 is used by this endpoint.
- s** This DS0 is used elsewhere in the switched **DIAL PLAN**.
- S** This DS0 is in the switched dial plan and conflicts with this endpoint.
- n** This DS0 is used in one or more **DEDICATED MAPS**.
- N** This DS0 is in one or more **DEDICATED MAPS**, and conflicts with this endpoint.

SIGNALING METHOD

Defines to the ATLAS 890 the type of signaling to be used across this trunk. The signaling selected needs to match the signaling being provided by the network (PSTN). The following choices are available:

- E&M Immediate
- E&M Wink
- Loop Start
- Ground Start
- Feature Group D



The ATLAS 890 converts signaling types between network and user terminations.

FGD TX SEQUENCE

Displayed only if **SIGNALING METHOD** is configured for **FEATURE GROUP D**. Defines to the ATLAS 890 the format in which to present the outgoing digits. Choices: **NORMAL** if no digits are to be sent; **ANI/DNIS** to send both ANI and DNIS; **DNIS** to send DNIS only; **ANI** to send ANI only.

FGD RX SEQUENCE

Displayed only if **SIGNALING METHOD** is configured for **FEATURE GROUP D**. Defines to the ATLAS 890 the format in which to receive the incoming digits. Choices: **NORMAL** if no digits are to be received; **ANI/DNIS** to receive both ANI and DNIS; **DNIS** to receive DNIS only; **ANI** to receive ANI only.

WINK AFTER ANI/DNIS

Displayed only if **SIGNALING METHOD** is configured for **FEATURE GROUP D**. When enabled, the ATLAS 890 will transmit a wink after ANI/DNIS digits are transmitted.

DIGIT SUPPRESSION

When enabled, no digits will be sent toward the network/PBX after going off-hook on an outgoing call.

DIRECT INWARD DIALING

Defines to the ATLAS 890 whether Direct Inward Dialing (DID) is being used by the network. If **DID** is **ENABLED**, then the following information must be defined.

DID DIGITS TRANSFERRED

Defines the number of digits sent to ATLAS 890 from the network if **DID** is used. This option only displays if **DID** is set to **ENABLED**.

DID PREFIX

Defines to the ATLAS 890 the prefix digits which are not received as a part of the DID number. The ATLAS 890 uses the combination of prefix and DID number to determine the user endpoint that should receive the incoming call. This option only displays if **DID** is set to **ENABLED**. If **DID** is **DISABLED**, then you must define the trunk number.



*If **FEATURE GROUP D** is used, **DID** only refers to **DNIS** digits.*

TRUNK NUMBER

When the network connection does not provide DID digits, the ATLAS 890 must be given a number to use to determine which user endpoint should receive the incoming call. **TRUNK NUMBER** displays only when **DID** is set to **DISABLED**.



The trunk number must be specific (i.e., no wildcards).

Example:

To connect an incoming DS0 (trunk) to an endpoint with the accept number of 963-8615, set the trunk number to 963-8615.

STRIP MSD

Strips a selected quantity (choose from **NONE**, **1**, **2**, and **3**) of the most significant digits (MSD) of a dialed number prior to being forwarded out of the port.

Example:

A network port could be set to accept all calls beginning with 9 (9\$), and then with **STRIP MSD** set to **1**, all digits would be sent toward the network except the leading 9.



***STRIP MSD** does not affect **CALL ACCEPT** criteria. All of the digits (including the MSDs that are subsequently stripped) are used as accept criterion.*

SOURCE ID

Simplifies the creation of a **DIAL PLAN** in applications where the criterion for switching calls to a certain endpoint is a function of which endpoint originated the call.

Default value = 0. Zero is the default ID for all endpoints and all accept numbers. With default values, all calls are routed based only on the dialed number.

Multiple endpoints can have the same **SOURCE ID**.

When creating the **CALL ACCEPT** list, specify a **SOURCE ID(s)** as well as a dialed number or range of dialed numbers to accept.

Example:

An application requires that all calls that originate from Port 1 of the ATLAS 890 in Slot 1 be switched to Port 2 of that same module. Assign a unique Source ID (e.g. 7) to Port 1 of the module, and then configure Port 2 to only accept calls from that unique Source ID (7).

DS0 ALIGNMENT

DS0 Alignment is typically enabled when a user needs the ability to maintain alignment between T1s as if they were in dedicated map mode. This scenario requires **DS0 ALIGNMENT** enabled on both interfaces (usually on User Term and on Net Term). An interface that has **DS0 ALIGNMENT** enabled will only process a call from the switchboard on the same DS0 that the incoming call was received.

Example:

The unit receives an incoming call on DS0 17. The switchboard looks for an interface who has matching accept criteria to the number it received. A match is found on interface "Z" that has **DS0 ALIGNMENT** enabled. This causes interface "Z" to only process the call if it has DS0 17 available. If all matching interfaces have **DS0 ALIGNMENT** enabled and none of those interfaces have DS0 17 available, then a busy or fast busy will be returned to the calling party.

» **NETWORK TERM (NFAS)**

This menu allows the user to define option parameters for ports which terminate a PRI connection from the network.

»» **IFCE CONFIG (NFAS)**

Write security: 3; Read security: 5

Specifies the configuration parameters for the endpoint.

SECONDARY INTERFACES

Write security: 3; Read security: 5

Allows the user to define the slot and port locations of the secondary interfaces in the NFAS group.

#
Displays the entry number.

SLOT
Configures the slot that the interface is physically connected to.

PORT
Configures the port that the interface is physically connected to.

INTERFACE NUMBER
Configures the NFAS Interface ID associated with the interface. The configure ID must match the ID configured by the provider.

BACKUP D CHANNEL
Disables or enables backup D channel on the interface.



Only one backup D channel can be configured per NFAS interface group.

SWITCH TYPE

Defines the type of PRI switch to which the port is connected. If connected to another ATLAS 890, both need to be set to the same switch type. The following options are available:

- Lucent 5E
- National ISDN
- Northern DMS 100
- AT&T 4ESS

FIRST DS0

Defines the first DS0 for this endpoint. The ATLAS 890 uses DS0s, starting with this selection, to send and receive calls to and from the network. The outgoing calls which are allowed or restricted over these DS0s are set by **OUT#ACCEPT** (see page 182) and **OUT#REJECT** (see page 184).

NUMBER OF DS0s

Specifies the number of DS0s ATLAS 890 uses for this endpoint.

OUTGOING NUMBER CONVERSION

Converts outgoing (towards the network) numbers to the selected numbering plan and type option.

AS DIALED

Sends the digits provided as an unknown number type.

ISDN-NATIONAL PREFERRED

Regardless of what type of number is received, the outgoing number is substituted with ISDN-National as the number plan and type. Ten digits are always sent to the network. Leading ones, if present, are stripped out and the area code (provisioned under **DIAL PLAN/GLOBAL PARAMETERS**) is added, if only seven digits are supplied. This action may be required in areas with ten-digit local dialing.

ISDN-SUBSCRIBER PREFERRED

Examines the incoming number and if seven digits are received or if a ten-digit number is received with an area code that matches the area code provisioned in the global parameters, the number is forwarded to the network as a seven-digit number defined as ISDN-Subscriber number plan and type. If the incoming number is ten digits, but with a different area code, it is forwarded to the network as ISDN-National preferred.

ISDN-NATIONAL DMS RESERVED PREFERRED

Ignores the incoming numbering plan and type and substitutes the ISDN/Telephony numbering plan and National number type. Ten digits are sent to the network. Leading ones, if present, are stripped out and the area code set in global parameters is added if only seven digits are supplied. This action may be required in areas with ten-digit local dialing.

ISDN-NATIONAL AS DIALED

Sends the digits provided as National number type.



When **SWITCH TYPE** is set to **4ESS**, many installations require the National form where possible; this may also be the preferred form in 10-digit calling areas.

STRIP MSD

Strips a selected quantity (choose from **NONE**, **1**, **2**, and **3**) of the most significant digits (MSD) of a dialed number prior to being forwarded out of the port.

Example:

A network port could be set to accept all calls beginning with 9 (9\$), and then with **STRIP MSD** set to **1**, all digits would be sent toward the network except the leading 9.



STRIP MSD does not affect **CALL ACCEPT** criteria. All of the digits (including the MSDs that are subsequently stripped) are used as accept criterion.

NETWORK SPECIFIC FACILITY VOICE AND DATA

Enables the sending of appropriate information to the PSTN. The default for this option is **NORMAL**, and in this case no Network Specific Facility Information Element is sent. Unless one of the services listed below is subscribed to, the selection should remain set to **NORMAL**.

The list below indicates services that may be subscribed to from the PSTN. These services require that specific information (such as a Network Specific Facility Information Element) be sent to the network during call setup.

- AT&T SDN
- AT&T Megacom 800
- AT&T Megacom
- AT&T Accunet
- AT&T Long Distance
- AT&T International-800
- AT&T Dial-It 900/Multiquest
- National ISDN INWATS
- Nortel Private Network
- Nortel InWats
- Nortel OutWats
- Nortel Foreign Exchange
- Nortel Tie Trunk

CALLED DIGITS TRANSFERRED

Some PRI switches may be provisioned to send only a portion of the called number (like DID). This menu item allows the ATLAS 890 to know how many digits to expect (choose from **NONE**, **THREE**, **FOUR**, **SEVEN**, and **ALL**). The default is **ALL** and would almost always be correct. If less than **ALL** digits are sent, then the **PREFIX** is defined as follows:

PREFIX

Displays only if **CALLED DIGITS TRANSFERRED** is not set to **ALL**. Enter the prefix for the digits received.

Example:

If the number of digits is four and the number called is 963-8615, the telco's PRI switch sends only 8615 and the prefix is set to 963. This entire number is then used to determine which ATLAS 890 user port endpoint should receive the call.

OUTGOING CALLER ID

Defines the number to use to provide Caller ID to the network for outgoing calls sent through this endpoint. Choose from **SEND AS PROVIDED**, **SUBSTITUTE IF NOT PRESENT**, or **SUBSTITUTE ALWAYS**.



The Caller ID number must be specific (i.e., no wildcards).

SOURCE ID

Simplifies the creation of a dial plan in applications where the criterion for switching calls to a certain endpoint is a function of which endpoint originated the call.

Default value = 0. Zero is the default ID for all endpoints and all accept numbers. With default values, all calls are routed based only on the dialed number.

Multiple endpoints can have the same **SOURCE ID**.

When creating the **CALL ACCEPT** list, specify a **SOURCE ID(s)** as well as a dialed number or range of dialed numbers to accept.

Example:

An application requires that all calls that originate from Port 1 of the ATLAS 890 in Slot 1 be switched to Port 2 of that same module. Assign a unique Source ID (e.g. 7) to Port 1 of the module, and then configure Port 2 to only accept calls from that unique Source ID (7).

SWAP ANI/DNIS

Swaps the ANI and DNIS numbers received from the network. ANI (Automatic Number Identification) is the billing number of the calling party, and DNIS (Dialed Number Identification Service) is the called party number.



With this swap, the ATLAS 890 switchboard uses ANI to route the call. The accept number in the dial plan must use the ANI number, not the DNIS number.

B CHANNEL SELECTION

Determines how the ATLAS 890 switchboard uses B channels for call routing. The **CIRCULAR** method can be used for call load balancing among the available B channels on this interface.

NORMAL

Always start with the last channel configured (i.e. for a full PRI channel 23 would be used if available).

CIRCULAR

Contiguous channels from last to first.

BUSY OPTION

Defines the response propagated to the CPE upon receipt of a **DISCONNECT USER-BUSY** message from the network.

NORMAL

Send a Progress message to the CPE and map busy tones.

PASS-THRU

Send a **DISCONNECT USER-BUSY** message to the User Term CPE device.

» USER TERM (PRI)

This menu allows the user to define option parameters for ports which emulate a PRI connection.

»» IFCE CONFIG (PRI)

Write security: 3; Read security: 5

Specifies the configuration parameters for the endpoint.

SWITCH TYPE

Defines the type of PRI switch that the ATLAS 890 emulates. If connected to another ATLAS 890, both need to be set to the same switch type. The following options are available:

- Lucent 5E
- National ISDN
- Northern DMS 100
- AT&T 4ESS

FIRST DS0

Defines to the ATLAS 890 the first DS0 for this endpoint. The ATLAS 890 uses DS0s, starting with this selection, to send and receive calls to and from the network. The outgoing calls which are allowed or restricted over these DS0s are set by **OUT#ACCEPT** (see page 182) and **OUT#REJECT** (see page 184).

NUMBER OF DS0s

Specifies the number of DS0s ATLAS 890 uses for this endpoint.

STRIP MSD

Strips a selected quantity (choose from **NONE**, **1**, **2**, and **3**) of the most significant digits (MSD) of a dialed number prior to being forwarded out of the port.

Example:

A network port could be set to accept all calls beginning with 9 (9\$), and then with **STRIP MSD** set to **1**, all digits would be sent toward the network except the leading 9.



STRIP MSD does not affect **CALL ACCEPT** criteria. All of the digits (including the MSDs that are subsequently stripped) are used as accept criterion.

NETWORK SPECIFIC FACILITY VOICE AND DATA

Enables the sending of appropriate information to the PSTN. The default for this option is **NORMAL**, and in this case no Network Specific Facility Information Element is sent. Unless one of the services listed below is subscribed to, the selection should remain set to **NORMAL**.

The list below indicates services that may be subscribed to from the PSTN. These services require that specific information (such as a Network Specific Facility Information Element) be sent to the network during call setup.

- AT&T SDN
- AT&T Megacom 800
- AT&T Megacom
- AT&T Accunet
- AT&T Long Distance
- AT&T International-800
- AT&T Dial-It 900/Multiquest
- National ISDN INWATS
- Nortel Private Network
- Nortel InWats
- Nortel OutWats
- Nortel Foreign Exchange
- Nortel Tie Trunk

CALLED DIGITS TRANSFERRED

Defines the number of digits to forward from the called number. When attached to a PBX, the PBX may be provisioned to expect to receive fewer than all of the called digits of the incoming call; however, this option would normally be set to **ALL**. Choose from **NONE, THREE, FOUR, SEVEN, or ALL**.

OUTGOING CALLER ID

Defines the number to use to provide Caller ID to the Network for outgoing calls sent through this endpoint. Choose from **SEND AS PROVIDED, SUBSTITUTE IF NOT PRESENT, or SUBSTITUTE ALWAYS**.



The Caller ID number must be specific (i.e., no wildcards).

SOURCE ID

Simplifies the creation of a dial plan in applications where the criterion for switching calls to a certain endpoint is a function of which endpoint originated the call.

DEFAULT VALUE = 0. Zero is the default ID for all endpoints and all accept numbers. With default values, all calls are routed based only on the dialed number.

Multiple endpoints can have the same **SOURCE ID**.

When creating the **CALL ACCEPT** list, specify a **SOURCE ID(s)** as well as a dialed number or range of dialed numbers to accept.

Example:

An application requires that all calls that originate from Port 1 of the ATLAS 890 in

Slot 1 be switched to Port 2 of that same module. Assign a unique Source ID (e.g. 7) to Port 1 of the module, and then configure Port 2 to only accept calls from that unique Source ID (7).

SWAP ANI/DNIS

Swaps the ANI and DNIS numbers received from the network. ANI (Automatic Number Identification) is the billing number of the calling party, and DNIS (Dialed Number Identification Service) is the called party number.



With this swap, the ATLAS 890 switchboard uses ANI to route the call. The accept number in the dial plan must use the ANI number, not the DNIS number.

B CHANNEL SELECTION

Determines how the ATLAS 890 switchboard uses B channels for call routing. The **CIRCULAR** method can be used for call load balancing among the available B channels on this interface.

NORMAL

Always start with the last channel configured (i.e. for a full PRI channel 23 would be used if available).

CIRCULAR

Contiguous channels from last to first.

BUSY OPTION

Defines the response propagated to the CPE upon receipt of a **DISCONNECT USER-BUSY** message from the network.

NORMAL

Send a Progress message to the CPE and map busy tones.

PASS-THRU

Send a **DISCONNECT USER-BUSY** message to the User Term CPE device.

» **USER TERM (RBS)**

This menu allows the user to define option parameters for ports which emulate an RBS T1 connection from the network.

»» **IFCE CONFIG (RBS)**

Write security: 3; Read security: 5

Specifies the configuration parameters for the endpoint.

FIRST DS0

Defines the first DS0 for this endpoint. The ATLAS 890 uses DS0s, starting with this selection, to send and receive calls to and from the network. The outgoing calls which

are allowed or restricted over these DS0s are set by **OUT#ACCEPT** (see page 182) and **OUT#REJECT** (see page 184).

NUMBER OF DS0S

Specifies the number of DS0s ATLAS 890 uses for this endpoint.

DS0S AVAILABLE

Indicates which DS0s of the T1 have been defined in this switched endpoint (indicated by “!”), in another switched endpoint (indicated by “s”), or in a **DEDICATED MAP** (indicated by “n”). This field is read-only. The following characters may display in this field:

- 0-9** This DS0 is available. The digit that displays in this field represents the last digit of the DS0 number.
- *** This port is requesting this DS0 for this connection, but the DS0 is not yet activated.
- !** This DS0 is used by this endpoint.
- s** This DS0 is used elsewhere in the switched **DIAL PLAN**.
- S** This DS0 is in the switched dial plan and conflicts with this endpoint.
- n** This DS0 is used in one or more **DEDICATED MAPS**.
- N** This DS0 is in one or more **DEDICATED MAPS**, and conflicts with this endpoint.

SIGNALING METHOD

Defines the type of signaling to be used across this trunk. The signaling selected needs to match the signaling being provided by the network. The following choices are available:

- E&M Immediate
- E&M Wink
- Loop Start
- Ground Start
- Feature Group D



The ATLAS 890 converts signaling types between network and user terminations

FGD TX SEQUENCE

Displayed only if **SIGNALING METHOD** is configured for **FEATURE GROUP D**. Defines the format in which to present the outgoing digits. Choices: **NORMAL** if no digits are to be sent; **ANI/DNIS** to send both ANI and DNIS; **DNIS** to send DNIS only; **ANI** to send ANI only.

FGD RX SEQUENCE

Displayed only if **SIGNALING METHOD** is configured for **FEATURE GROUP D**. Defines the format in which to receive the incoming digits. Choices: **NORMAL** if no digits are to be received; **ANI/DNIS** to receive both ANI and DNIS; **DNIS** to receive DNIS only; **ANI** to receive ANI only.

WINK AFTER ANI/DNIS

Displayed only if **SIGNALING METHOD** is configured for **FEATURE GROUP D**. When enabled, the ATLAS 890 will transmit a wink after ANI/DNIS digits are transmitted.

DIRECT INWARD DIALING

Defines whether Direct Inward Dialing (DID) is being used by the network. If **DID** is **ENABLED**, then the following information must be defined.

DID DIGITS TRANSFERRED

Defines the number of digits sent to ATLAS 890 from the network if **DID** is used. This option only displays if **DID** is set to **ENABLED**.

DID PREFIX

Defines the prefix digits which are not received as a part of the DID number. The ATLAS 890 uses the combination of prefix and DID number to determine the user endpoint that should receive the incoming call. This option only displays if **DID** is set to **ENABLED**. If **DID** is **DISABLED**, then you must define the trunk number.



*If **FEATURE GROUP D** is used, **DID** only refers to **DNIS** digits.*

CALLER ID NUMBER

Defines the number the ATLAS 890 uses to provide caller ID to the network for outgoing calls sent through this endpoint. This item is optional.



The Caller ID number must be specific (i.e., no wildcards).

STRIP MSD

Strips a selected quantity (choose from **NONE**, **1**, **2**, and **3**) of the most significant digits (MSD) of a dialed number prior to being forwarded out of the port.

Example:

A network port could be set to accept all calls beginning with 9 (9\$), and then with

STRIP MSD set to **1**, all digits would be sent toward the network except the leading 9.



STRIP MSD does not affect **CALL ACCEPT** criteria. All of the digits (including the MSDs that are subsequently stripped) are used as accept criterion.

SOURCE ID

Simplifies the creation of a **DIAL PLAN** in applications where the criterion for switching calls to a certain endpoint is a function of which endpoint originated the call.

DEFAULT VALUE = 0. Zero is the default ID for all endpoints and all accept numbers. With default values, all calls are routed based only on the dialed number.

Multiple endpoints can have the same **SOURCE ID**.

When creating the **CALL ACCEPT** list, specify a **SOURCE ID(s)** as well as a dialed number or range of dialed numbers to accept.

Example:

An application requires that all calls that originate from Port 1 of the ATLAS 890 in Slot 1 be switched to Port 2 of that same module. Assign a unique Source ID (e.g. 7) to Port 1 of the module, and then configure Port 2 to only accept calls from that unique Source ID (7).

DIAL ON OFFHOOK

Defines a number that is automatically sent to the switchboard when a call on this endpoint is initiated (goes off hook).



The **DIAL ON OFFHOOK** number must be specific (i.e., no wildcards).

DS0 ALIGNMENT

DS0 ALIGNMENT is typically enabled when a user needs the ability to maintain alignment between T1s as if they were in dedicated map mode. This scenario requires **DS0 ALIGNMENT** enabled on both interfaces (usually on User Term and on Net Term). An interface that has **DS0 ALIGNMENT** enabled will only process a call from the switchboard on the same DS0 that the incoming call was received.

Example:

The unit receives an incoming call on DS0 17. The switchboard looks for an interface who has matching accept criteria to the number it received. A match is found on interface "Z" that has **DS0 ALIGNMENT** enabled. This causes interface "Z" to only process

the call if it has DS0 17 available. If all matching interfaces have **DS0 ALIGNMENT** enabled and none of those interfaces have DS0 17 available, then a busy or fast busy will be returned to the calling party.

» **USER TERM (NFAS)**

This menu allows the user to define option parameters for ports which emulate an NFAS connection.

»» **IFCE CONFIG (NFAS)**

Write security: 3; Read security: 5

Specifies the configuration parameters for the endpoint.

SECONDARY INTERFACES

Write security: 3; Read security: 5

Allows the user to define the slot and port locations of the secondary interfaces in the NFAS group.

#

Displays the entry number.

SLOT

Configures the slot that the interface is physically connected to.

PORT

Configures the port that the interface is physically connected to.

INTERFACE NUMBER

Configures the NFAS Interface ID associated with the interface. The configure ID must match the ID configured by the provider.

BACKUP D CHANNEL

Backup D channel is not supported on User Term NFAS interfaces.



Only one backup D channel can be configured per NFAS interface group.

SWITCH TYPE

Defines the type of PRI switch to which the port is connected. If connected to another ATLAS 890, both need to be set to the same switch type. The following options are available:

- Lucent 5E
- National ISDN
- Northern DMS 100
- AT&T 4ESS

FIRST DS0

Defines to the ATLAS 890 the first DS0 for this endpoint. The ATLAS 890 uses DS0s, starting with this selection, to send and receive calls to and from the network. The outgoing calls which are allowed or restricted over these DS0s are set by **OUT#ACCEPT** (see page 182) and **OUT#REJECT** (see page 184).

NUMBER OF DS0S

Specifies the number of DS0s ATLAS 890 uses for this endpoint.

STRIP MSD

Strips a selected quantity (choose from **NONE**, **1**, **2**, and **3**) of the most significant digits (MSD) of a dialed number prior to being forwarded out of the port.

Example:

A network port could be set to accept all calls beginning with 9 (9\$), and then with **STRIP MSD** set to **1**, all digits would be sent toward the network except the leading 9.



STRIP MSD does not affect **CALL ACCEPT** criteria. All of the digits (including the MSDs that are subsequently stripped) are used as accept criterion.

NETWORK SPECIFIC FACILITY VOICE AND DATA

Enables the sending of appropriate information to the PSTN. The default for this option is **NORMAL**, and in this case no Network Specific Facility Information Element is sent. Unless one of the services listed below is subscribed to, the selection should remain set to **NORMAL**.

The list below indicates services that may be subscribed to from the PSTN. These services require that specific information (such as a Network Specific Facility Information Element) be sent to the network during call setup.

- AT&T SDN
- AT&T Megacom 800
- AT&T Megacom
- AT&T Accunet
- AT&T Long Distance
- AT&T International-800
- AT&T Dial-It 900/Multiquest
- National ISDN INWATS
- Nortel Private Network
- Nortel InWats
- Nortel OutWats
- Nortel Foreign Exchange
- Nortel Tie Trunk

CALLED DIGITS TRANSFERRED

Some PRI switches may be provisioned to send only a portion of the called number (like DID). This menu item allows the ATLAS 890 to know how many digits to

expect (choose from **NONE**, **THREE**, **FOUR**, **SEVEN**, and **ALL**). The default is **ALL** and would almost always be correct. If less than **ALL** digits are sent, then the **PREFIX** is defined as follows.

OUTGOING CALLER ID

Defines the number for the ATLAS 890 to use to provide Caller ID to the network for outgoing calls sent through this endpoint. Choose from **SEND AS PROVIDED**, **SUBSTITUTE IF NOT PRESENT**, or **SUBSTITUTE ALWAYS**.



The Caller ID number must be specific (i.e., no wildcards).

SOURCE ID

Simplifies the creation of a dial plan in applications where the criterion for switching calls to a certain endpoint is a function of which endpoint originated the call.

DEFAULT VALUE = 0. Zero is the default ID for all endpoints and all accept numbers. With default values, all calls are routed based only on the dialed number.

Multiple endpoints can have the same **SOURCE ID**.

When creating the **CALL ACCEPT** list, specify a **SOURCE ID(s)** as well as a dialed number or range of dialed numbers to accept.

Example:

An application requires that all calls that originate from Port 1 of the ATLAS 890 in Slot 1 be switched to Port 2 of that same module. Assign a unique Source ID (e.g. 7) to Port 1 of the module, and then configure Port 2 to only accept calls from that unique Source ID (7).

SWAP ANI/DNIS

Swaps the ANI and DNIS numbers received from the network. ANI (Automatic Number Identification) is the billing number of the calling party, and DNIS (Dialed Number Identification Service) is the called party number.



With this swap, the ATLAS 890 switchboard uses ANI to route the call. The accept number in the dial plan must use the ANI number, not the DNIS number.

B CHANNEL SELECTION

Determines how the ATLAS 890 switchboard uses B channels for call routing. The **CIRCULAR** method can be used for call load balancing among the available B channels

on this interface.

NORMAL

Always start with the last channel configured (i.e. for a full PRI channel 23 would be used if available).

CIRCULAR

Contiguous channels from last to first.

BUSY OPTION

Defines the response propagated to the CPE upon receipt of a **DISCONNECT USER-BUSY** message from the network.

NORMAL

Send a Progress message to the CPE and map busy tones.

PASS-THRU

Send a **DISCONNECT USER-BUSY** message to the User Term CPE device.

> DIAL PLAN - (QUAD E1/PRA OPTION MODULE)

» NETWORK TERM (PRA)

This menu allows the user to define option parameters for ports which terminate a PRA connection from the network.

»» IFCE CONFIG (PRA)

Write security: 3; Read security: 5

Specifies the configuration parameters for the endpoint.

SWITCH TYPE

Defines the type of PRA switch to which the port is connected. If connected to another ATLAS 890, both need to be set to the same switch type. The following option is available:

- ETSI/DSS1

FIRST DS0

Defines the first DS0 for this endpoint. The ATLAS 890 uses DS0s, starting with this selection, to send and receive calls to and from the network (PSTN). The outgoing calls which are allowed or restricted over these DS0s are set by **OUT#ACCEPT** (see page 182) and **OUT#REJECT** (see page 184).

NUMBER OF DS0s

Specifies the number of DS0s ATLAS 890 uses for this endpoint.

STRIP MSD

Strips a selected quantity (choose from **NONE**, **1**, **2**, and **3**) of the most significant digits (MSD) of a dialed number prior to being forwarded out of the port.

Example:

A network port could be set to accept all calls beginning with 9 (9\$), and then with **STRIP MSD** set to **1**, all digits would be sent toward the network except the leading 9.



STRIP MSD does not affect **CALL ACCEPT** criteria. All of the digits (including the MSDs that are subsequently stripped) are used as accept criterion.

NETWORK SPECIFIC FACILITY VOICE AND DATA

Enables the sending of appropriate information to the PSTN. Currently not supported for E1/PRA use.

CALLED DIGITS TRANSFERRED

Some PRI switches may be provisioned to send only a portion of the called number (like DID). This menu item allows the ATLAS 890 to know how many digits to expect (choose from **NONE**, **THREE**, **FOUR**, **SEVEN**, and **ALL**). The default is **ALL** and would almost always be correct. If less than **ALL** digits are sent, then the **PREFIX** is defined as follows:

PREFIX

Displays only if **CALLED DIGITS TRANSFERRED** is not set to **ALL**. Enter the prefix for the digits received.

Example:

If the number of digits is four and the number called is 963-8615, the telco's PRI switch sends only 8615 and the prefix is set to 963. This entire number is then used to determine which ATLAS 890 user port endpoint should receive the call.

OUTGOING CALLER ID

Defines the number to use to provide Caller ID to the network for outgoing calls sent through this endpoint. Choose from **SEND AS PROVIDED**, **SUBSTITUTE IF NOT PRESENT**, or **SUBSTITUTE ALWAYS**.



The Caller ID number must be specific (i.e., no wildcards).

SOURCE ID

Simplifies the creation of a dial plan in applications where the criterion for switching calls to a certain endpoint is a function of which endpoint originated the call.

DEFAULT VALUE = 0. Zero is the default ID for all endpoints and all accept num-

bers. With default values, all calls are routed based only on the dialed number.

Multiple endpoints can have the same **SOURCE ID**.

When creating the **CALL ACCEPT** list, specify a **SOURCE ID(s)** as well as a dialed number or range of dialed numbers to accept.

Example:

An application requires that all calls that originate from Port 1 of the ATLAS 890 in Slot 1 be switched to Port 2 of that same module. Assign a unique Source ID (e.g. 7) to Port 1 of the module, and then configure Port 2 to only accept calls from that unique Source ID (7).

SWAP ANI/DNIS

Swaps the ANI and DNIS numbers received from the network. ANI (Automatic Number Identification) is the billing number of the calling party, and DNIS (Dialed Number Identification Service) is the called party number.



With this swap, the ATLAS 890 switchboard uses ANI to route the call. The accept number in the dial plan must use the ANI number, not the DNIS number.

B CHANNEL SELECTION

Determines how the ATLAS 890 switchboard uses B channels for call routing. The **CIRCULAR** method can be used for call load balancing among the available B channels on this interface.

NORMAL

Always start with the last channel configured (i.e. for a full PRI channel 23 would be used if available).

CIRCULAR

Contiguous channels from last to first.

» **USER TERM (PRA)**

This menu allows the user to define option parameters for ports which emulate a PRA connection.

»» **IFCE CONFIG (PRA)**

Write security: 3; Read security: 5

Specifies the configuration parameters for the endpoint.

SWITCH TYPE

Defines the type of PRA switch that the ATLAS 890 emulates. If connected to another ATLAS 890, both need to be set to the same switch type.

The following option is available:

- ETSI/DSS1

FIRST DS0

Defines the first DS0 for this endpoint. The ATLAS 890 uses DS0s, starting with this selection, to send and receive calls to and from the network. The outgoing calls which are allowed or restricted over these DS0s are set by **OUT#ACCEPT** (see page 182) and **OUT#REJECT** (see page 184).

NUMBER OF DS0s

Specifies the number of DS0s ATLAS 890 uses for this endpoint.

STRIP MSD

Strips a selected quantity (choose from **NONE**, **1**, **2**, and **3**) of the most significant digits (MSD) of a dialed number prior to being forwarded out of the port.

Example:

A network port could be set to accept all calls beginning with 9 (9\$), and then with **STRIP MSD** set to **1**, all digits would be sent toward the network except the leading 9.



STRIP MSD does not affect **CALL ACCEPT** criteria. All of the digits (including the MSDs that are subsequently stripped) are used as accept criterion.

NETWORK SPECIFIC FACILITY VOICE AND DATA

Enables the sending of appropriate information to the PSTN. Currently not supported for E1/PRA use.

CALLED DIGITS TRANSFERRED

Defines the number of digits to forward from the called number. When attached to a PBX, the PBX may be provisioned to expect to receive fewer than all of the called digits of the incoming call; however, this option would normally be set to **ALL**. Choose from **NONE**, **THREE**, **FOUR**, **SEVEN**, or **ALL**.

OUTGOING CALLER ID

Defines the number to use to provide Caller ID to the network for outgoing calls sent through this endpoint. Choose from **SEND AS PROVIDED**, **SUBSTITUTE IF NOT PRESENT**, or **SUBSTITUTE ALWAYS**.



The Caller ID number must be specific (i.e., no wildcards).

SOURCE ID

Simplifies the creation of a dial plan in applications where the criterion for switching calls to a certain endpoint is a function of which endpoint originated the call.

Default value = 0. Zero is the default ID for all endpoints and all accept numbers. With default values, all calls are routed based only on the dialed number.

Multiple endpoints can have the same **SOURCE ID**.

When creating the **CALL ACCEPT** list, specify a **SOURCE ID(s)** as well as a dialed number or range of dialed numbers to accept.

Example:

An application requires that all calls that originate from Port 1 of the ATLAS 890 in Slot 1 be switched to Port 2 of that same module. Assign a unique Source ID (e.g. 7) to Port 1 of the module, and then configure Port 2 to only accept calls from that unique Source ID (7).

SWAP ANI/DNIS

Swaps the ANI and DNIS numbers received from the network. ANI (Automatic Number Identification) is the billing number of the calling party, and DNIS (Dialed Number Identification Service) is the called party number.



With this swap, the ATLAS 890 switchboard uses ANI to route the call. The accept number in the dial plan must use the ANI number, not the DNIS number.

B CHANNEL SELECTION

Determines how the ATLAS 890 switchboard uses B channels for call routing. The **CIRCULAR** method can be used for call load balancing among the available B channels on this interface.

NORMAL

Always start with the last channel configured (i.e. for a full PRI channel 23 would be used if available).

CIRCULAR

Contiguous channels from last to first.

> DIAL PLAN - (QUAD NX 56/64 OPTION MODULE)

» USER TERM

This menu allows the user to define option parameters for ports configured for V.35 connections.

»» IFCE CONFIG

Write security: 3; Read security: 5

Specifies the configuration parameters for the endpoint.

PORTS AVAILABLE

Indicates which ports of the selected Quad Nx 56/64 Option Module have been defined in this switched endpoint (indicated by “!”), in another switched endpoint (indicated by “s”), or in a **DEDICATED MAP** (indicated by “n”). This field is read-only. The following characters may display in this field:

- 0-4** This port is available.
- *** This port is requesting this port for this connection, but the port is not yet activated.
- !** This port is used by this endpoint.
- s** This port is used elsewhere in the switched **DIAL PLAN**.
- S** This port is in the switched dial plan and conflicts with this endpoint.
- n** This port is used in one or more **DEDICATED MAPS**.
- N** This port is in one or more **DEDICATED MAPS**, and conflicts with this endpoint.

NUMBER OF PORTS

Specifies the number of V.35 ports ATLAS 890 uses for this endpoint.

NUMBER TO DIAL

Specifies the number to dial on an outgoing call.

CALL TYPE

Configures the call type (either **56K** or **64K**) used for outgoing calls from this endpoint.

DIAL CALL AS

Allows the outgoing call to be treated as the selected call type. Options include **DIGITAL** (for 56K or 64K data calls), **VOICE** (for speech calls), and **AUDIO** (for 3.1kHz audio calls).

SOURCE ID

Simplifies the creation of a dial plan in applications where the criterion for switching calls to a certain endpoint is a function of which endpoint originated the call.

Default value = 0. Zero is the default ID for all endpoint and all accept numbers.

With default values, all calls are routed based only on the dialed number.

Multiple endpoints can have the same **SOURCE ID**.

When creating the **CALL ACCEPT** list, specify a **SOURCE ID(s)** as well as a dialed number or range of dialed numbers to accept.

Example:

An application requires that all calls that originate from Port 1 of the ATLAS 890 in Slot 1 be switched to Port 2 of that same module. Assign a unique Source ID (e.g. 7) to Port 1 of the module, and then configure Port 2 to only accept calls from that unique Source ID (7).

MIN DS0's

Set this to 1 for typical single-call connections. Setting this greater than 1 will restrict connections to endpoints supporting aggregation (e.g., BONDING) of the specified number of DS0s.

MAX DS0's

Set this to 1 for typical single-call connections. Setting this greater than 1 will accommodate connections to endpoints supporting aggregation (e.g. BONDING) of up to the specified number of DS0s. This also sets the number of DS0s presented in the negotiation of outgoing aggregate calls.

> DIAL PLAN - (QUAD USSI OPTION MODULE)

» USER TERM

This menu allows the user to define option parameters for ports configured for USSI interface connections.

»» IFCE CONFIG

Write security: 3; Read security: 5

Specifies the configuration parameters for the endpoint.

PORTS AVAILABLE

Indicates which ports of the selected Quad USSI Option Module have been defined in this switched endpoint (indicated by “!”), in another switched endpoint (indicated by “s”), or in a **DEDICATED MAP** (indicated by “n”). This field is read-only. The following characters may display in this field:

- 0-4** This port is available.
- *** This port is requesting this port for this connection, but the port is not yet activated.
- !** This port is used by this endpoint.
- S** This port is used elsewhere in the switched dial plan.

- S** This port is in the switched dial plan and conflicts with this endpoint.
- n** This port is used in one or more dedicated maps.
- N** This port is in one or more dedicated maps, and conflicts with this endpoint.

NUMBER OF PORTS

Specifies the number of USSI interface ports ATLAS 890 uses for this endpoint.

NUMBER TO DIAL

Specifies the number to dial on an outgoing call.

CALL TYPE

Configures the call type (either **56K** or **64K**) used for outgoing calls from this endpoint.

DIAL CALL AS

Allows the outgoing call to be treated as the selected call type. Options include **DIGITAL** (for 56K or 64K data calls), **VOICE** (for speech calls), and **AUDIO** (for 3.1kHz audio calls).

SOURCE ID

Simplifies the creation of a dial plan in applications where the criterion for switching calls to a certain endpoint is a function of which endpoint originated the call.

Default value = 0. Zero is the default ID for all endpoints and all accept numbers. With default values, all calls are routed based only on the dialed number.

Multiple endpoints can have the same **SOURCE ID**.

When creating the **CALL ACCEPT** list, specify a **SOURCE ID(s)** as well as a dialed number or range of dialed numbers to accept.

Example:

An application requires that all calls that originate from Port 1 of the ATLAS 890 in Slot 1 be switched to Port 2 of that same module. Assign a unique Source ID (e.g. 7) to Port 1 of the module, and then configure Port 2 to only accept calls from that unique Source ID (7).

MIN DS0's

Set this to 1 for typical single-call connections. Setting this greater than 1 will restrict connections to endpoints supporting aggregation (e.g., **BONDING**) of the specified number of DS0s.

MAX DS0's

Set this to 1 for typical single-call connections. Setting this greater than 1 will accommodate connections to endpoints supporting aggregation (e.g. **BONDING**) of up to

the specified number of DS0s. This also sets the number of DS0s presented in the negotiation of outgoing aggregate calls.

> DIAL PLAN - (OCTAL BRI/U OPTION MODULE)

» NETWORK TERM

This menu allows the user to define option parameters for ports which terminate a BRI connection from the network.

»» IFCE CONFIG

Write security: 3; Read security: 5

Specifies the configuration parameters for the endpoint.

SWITCH TYPE

Defines the type of BRI switch to which the port is connected. If connected to another ATLAS 890, both need to be set to the same switch type. The following options are available:

- Lucent 5E
- Northern DMS 100
- National ISDN

SPID LIST

To properly operate with a network ISDN switch, the BRI interface must have Service Profile Identifiers (SPIDs) and phone number(s) that match the SPID(s) and phone number(s) programmed into the ISDN switch for this line. Each BRI may have one or more phone numbers and SPIDs. The **SPID LIST** submenu defines these parameters to ATLAS.

PHONE NUMBER

The phone number(s) assigned to this BRI phone line.

SPID NUMBER

This entry must match the SPID number(s) which has been set in the network's ISDN switch (or in the PBX) for this BRI line. A SPID must be entered for each phone number.

CALLS

The number of calls (1 or 2) which can be received or sent on this number/SPID.

D64, D56, AUDIO, SPEECH

These options reflect the network provisions for this SPID. If the BRI was purchased with different services provisioned for the SPIDs, then the call must match the services supported.

STRIP MSD

Strips a selected quantity (choose from **NONE**, **1**, **2**, and **3**) of the most significant digits (MSD) of a dialed number prior to being forwarded out of the port.

Example:

A network port could be set to accept all calls beginning with 9 (9\$), and then with **STRIP MSD** set to **1**, all digits would be sent toward the network except the leading 9.



STRIP MSD does not affect **CALL ACCEPT** criteria. All of the digits (including the MSDs that are subsequently stripped) are used as accept criterion.

SOURCE ID

Simplifies the creation of a dial plan in applications where the criterion for switching calls to a certain endpoint is a function of which endpoint originated the call.

Default value = 0. Zero is the default ID for all endpoints and all accept numbers. With default values, all calls are routed based only on the dialed number.

Multiple endpoints can have the same **SOURCE ID**.

When creating the **CALL ACCEPT** list, specify a **SOURCE ID(s)** as well as a dialed number or range of dialed numbers to accept.

Example:

An application requires that all calls that originate from Port 1 of the ATLAS 890 in Slot 1 be switched to Port 2 of that same module. Assign a unique Source ID (e.g. 7) to Port 1 of the module, and then configure Port 2 to only accept calls from that unique Source ID (7).

SWAP ANI/DNIS

Swaps the ANI and DNIS numbers received from the network. ANI (Automatic Number Identification) is the billing number of the calling party, and DNIS (Dialed Number Identification Service) is the called party number.

» USER TERM

This menu allows the user to define option parameters for ports which emulate a BRI connection.

»» IFCE CONFIG

Write security: 3; Read security: 5

Specifies the configuration parameters for the endpoint.

SWITCH TYPE

Defines the type of BRI switch the ATLAS 890 emulates. If connected to another ATLAS 890, both need to be set to the same switch type. The following options are available:

- Lucent 5E
- National ISDN
- Northern DMS 100

SPID LIST

The port, acting as the network, must use a Service Profile Identifier (SPID) and phone number(s) in order to satisfy the ISDN connection protocol expected by the user's terminal adapter (TA).

PHONE NUMBER

The phone number(s) assigned to this BRI phone line.

SPID NUMBER

Defines the SPID number(s) used for this BRI line. Although the value of the SPID is not significant, a SPID must be entered for each phone number. For convenience, the SPID can be set to be identical to the phone number.



The ATLAS 890 does not support autoSPID detection software which some terminal adapters offer.

CALLS

For user termination, the number of calls which can be received or sent on this number/SPID is fixed at **2**.

D64, D56, AUDIO, SPEECH

These options reflect the network provisions for this SPID. If the BRI was purchased with different services provisioned for the SPIDs, then the call must match the services supported.

STRIP MSD

Strips a selected quantity (choose from **NONE**, **1**, **2**, and **3**) of the most significant digits (MSD) of a dialed number prior to being forwarded out of the port.

Example:

A network port could be set to accept all calls beginning with 9 (9\$), and then with **STRIP MSD** set to **1**, all digits would be sent toward the network except the leading 9.



***STRIP MSD** does not affect **CALL ACCEPT** criteria. All of the digits (including the MSDs that are subsequently stripped) are used as accept criterion.*

SOURCE ID

Simplifies the creation of a dial plan in applications where the criterion for switching calls to a certain endpoint is a function of which endpoint originated the call.

Default value = 0. Zero is the default ID for all endpoints and all accept numbers.

With default values, all calls are routed based only on the dialed number.

Multiple endpoints can have the same **SOURCE ID**.

When creating the **CALL ACCEPT** list, specify a **SOURCE ID(s)** as well as a dialed number or range of dialed numbers to accept.

Example:

An application requires that all calls that originate from Port 1 of the ATLAS 890 in Slot 1 be switched to Port 2 of that same module. Assign a unique Source ID (e.g. 7) to Port 1 of the module, and then configure Port 2 to only accept calls from that unique Source ID (7).

SWAP ANI/DNIS

Swaps the ANI and DNIS numbers received from the network. ANI (Automatic Number Identification) is the billing number of the calling party, and DNIS (Dialed Number Identification Service) is the called party number.

OUTGOING CALLER ID

Defines the number for the ATLAS 890 to use to provide Caller ID to the Network for outgoing calls sent through this endpoint. Choose from **SEND AS PROVIDED**, **SUBSTITUTE IF NOT PRESENT**, or **SUBSTITUTE ALWAYS**.



The Caller ID number must be specific (i.e., no wildcards).

> DIAL PLAN - (ASYNC-232 OPTION MODULE)

» USER TERM

This menu allows the user to define option parameters for ports configured for Async-232 connections.

»» IFCE CONFIG

Write security: 3; Read security: 5

Specifies the configuration parameters for the endpoint.

PORTS AVAILABLE

Indicates which ports of the selected Async-232 Option Module have been defined in this switched endpoint (indicated by “!”) or in another switched endpoint (indicated by “s”). This field is read-only. The following characters may display in this field:

0-9 This port is available. The digit that displays in this field represents the last digit of the port number.

***** This port is requesting this port for this connection, but the port is not yet activated.

- ! This port is used by this endpoint.
- S This port is used elsewhere in the switched dial plan.
- S This port is in the switched dial plan and conflicts with this endpoint.

NUMBER OF PORTS

Specifies the number of Async-232 ports ATLAS 890 uses for this endpoint.

SOURCE ID

Simplifies the creation of a dial plan in applications where the criterion for switching calls to a certain endpoint is a function of which endpoint originated the call.

Default value = 0. Zero is the default ID for all endpoints and all accept numbers. With default values, all calls are routed based only on the dialed number.

Multiple endpoints can have the same **SOURCE ID**.

When creating the **CALL ACCEPT** list, specify a **SOURCE ID(s)** as well as a dialed number or range of dialed numbers to accept.

Example:

An application requires that all calls that originate from Port 1 of the ATLAS 890 in Slot 1 be switched to Port 2 of that same module. Assign a unique Source ID (e.g. 7) to Port 1 of the module, and then configure Port 2 to only accept calls from that unique Source ID (7).

BUSY OUT

Number of milliseconds that passes before this Async-232 endpoint is set to permanently busy and will no longer be available for use.

IDLE TIME

Number of seconds that passes before this Async-232 endpoint is set to idle status.

> DIAL PLAN - (PKT ENDPT CONNECTIONS)

» USER TERM

This menu allows the user to define option parameters for ports configured as packet endpoints.

»» IFCE CONFIG

Write security: 3; Read security: 5

Specifies the configuration parameters for the endpoint.

OUTDIAL NUMBER

Defines the number dialed to originate a call.

OUTGOING CALL TYPE

Selects the terminating resource type, either **DIGITAL 64K** or **DIGITAL 56K**.

REDIAL TIMER

Selects the time delay in seconds between redial attempts.

RANDOMIZE TIMER

Enables/disables random delay added to the redial timer to avoid glare.

RETRY COUNT

Defines the number of redials to attempt.

OUTGOING CALLER ID

Defines the presentation of the calling party number for this endpoint.

SOURCE ID

Simplifies the creation of a **DIAL PLAN** in applications where the criterion for switching calls to a certain endpoint is a function of which endpoint originated the call.

Default value = 0. Zero is the default value for all endpoints and all accept numbers. With default values, all calls are routed based only on the dialed number.

Multiple endpoints can have the same **SOURCE ID**.

When creating the **CALL ACCEPT** list, specify a **SOURCE ID(s)** as well as a dialed number or range of dialed numbers to accept.

Example:

An application requires that all calls that originate from Port 1 of the ATLAS 890 in Slot 1 be switched to Port 2 of that same module. Assign a unique Source ID (e.g. 7) to Port 1 of the module, and then configure Port 2 to only accept calls from that unique Source ID (7).

ROUTE INCOMING CALL

Used to define the method which incoming calls are associated to the packet endpoints. This item has three options:

USING INCOMING NUM

Endpoint selection based on the incoming number.

USING CALLING PARTY NUM

Selection based on the Caller ID as presented by the calling party. If this option is selected, the **CALL PARTY NUMBER** field is made available to the interface configuration. This number allows you to configure the calling part number used to select this packet endpoint.

USING DBU HANDSHAKE

Selection based on a proprietary protocol. This option is only available to packet endpoints with backup sublinks. **DBU HANDSHAKE** is required to interoperate with ADTRAN IQ and Express family products. It enables the association of incoming calls with packet endpoints in cases where there is a single call-in num-

ber (hunt group) and no Caller ID information available.

SUPPORT DBU HANDSHAKE

This option is only available when the packet endpoint selected in the **PORT/PEP** field has backup sublinks. **SUPPORT DBU HANDSHAKE** enables/disables the generation and acceptance of ADTRAN frame relay handshake upon connection. If the endpoint is configured to route incoming calls based on the handshake information, this option is automatically enabled. If another call routing method is in effect, however, this option can be enabled to support the use of handshake information at the far end of the link.

DLCI TRANSLATION

Controls contents of the ADTRAN frame-relay handshake upon connection of a backup PVC. Normally this field should be set to **AUTO**. The **FORCED** mode is present for compatibility with older IQ units.

MIN DS0's

Set this to **1** for typical single-call connections. A value greater than **1** will restrict connections to endpoints supporting aggregation (e.g., **BONDING**) of the specified number of DS0s.

MAX DS0's

Set this to **1** for typical single-call connections. A value greater than **1** will accommodate connections to endpoints supporting aggregation (e.g. **BONDING**) of up to the specified number of DS0s. This also sets the number of DS0s presented in the negotiation of outgoing aggregate calls.

CALL ROUTING TABLE

This table is only visible if **GROUP** is selected in the **PRT/PEP** field. The table format changes, based on the selected routing option. For each case, **CALL PARAMS** contain **OUTDIAL#**, **CALLER ID**, **SOURCE ID**, and **MIN/MAX DS0S**, as described above.

> DIAL PLAN - (CIRCUIT BACKUP CONNECTIONS)

» USER TERM

This menu allows the user to define option parameters for ports configured as backup endpoints.

»» IFCE CONFIG

Write security: 3; Read security: 5

Specifies the configuration parameters for the endpoint.

ORIGINATE/ANSWER

The following selections are available for the **ORIGINATE/ANSWER** menu item:

ORIGINATE	The endpoint will originate the backup call.
ANSWER	The endpoint will answer any incoming calls, but will only go into backup if an error is detected.
ANSWER ANY	The endpoint will answer any incoming calls and go immediately into backup.

OUTGOING CALL TYPE

This only applies to originating endpoints.

SOURCE ID

Simplifies the creation of a dial plan in applications where the criterion for switching calls to a certain endpoint is a function of which endpoint originated the call.

Default value = 0. Zero is the default ID for all endpoints and accept numbers. With default values, all calls are routed based only on the dialed number.

Multiple endpoints can have the same **SOURCE ID**.

When creating the **CALL ACCEPT** list, specify a **SOURCE ID(s)** as well as a dialed number or range of dialed numbers to accept.

OUTDIAL NUMBER

This only applies to originating endpoints. This is the number dialed when the endpoint goes into backup.

FORCE MODE

This forces the backup state of this endpoint. This is a configuration setting, so it will retain its value until it is changed. To temporarily force an endpoint into backup, or to force a restore, try the Manual activator.

BACKUP CRITERIA

Criteria for automatic backup. Note that this setting affects the available options for **RESTORE CRITERIA**.

RESTORE CRITERIA

This only applies to originating endpoints. These are criteria for automatically coming out of backup. Note that **NETWORK SUCCESS** is only available when a backup crite-

tion is not **NET/DATA FAIL**.

NET SUCCESS When network is out of alarm

MANUAL ONLY Only by the Manual activator

STARTUP DELAY

The amount of time to wait after creating or changing the endpoint before allowing backup.

BACKUP DELAY

The amount of time to delay after detecting an alarm before going into backup. This only applies to originating endpoints. If the circuit comes out of alarm before this time has expired, the endpoint will not go into backup.

RESTORE DELAY

The amount of time to delay after clearing an alarm before coming out of backup. This only applies to originating endpoints. If the circuit goes into alarm before this time has expired, the endpoint will remain in backup.

MAX NUM REDIALS

The backup endpoint will attempt this many retries before giving up and declaring a backup failure. This only applies to originating endpoints.

REDIAL TIMER

The amount of time delayed between a failed backup call and the redial. This only applies to originating endpoints.

ENABLE SCHEDULE

Use this menu to schedule the times when backup is enabled. The following selections are available for the **ENABLE SCHEDULE** menu item.

ENABLE TIME This is the time of day to enable dial backup.

DISABLE TIME This is the time of day to disable dial backup. If the disable time is earlier than the enable time, backup monitoring will be active across midnight.

DAYS ENABLED Use this record to enable/disable backup monitoring on particular days of the week.

TEST CALL

This only applies to originating endpoints. Use this menu to schedule regularly occur-

ring test calls. The following selections are available for the **TEST CALL** menu item.

PERIOD	How often test calls are to be made
NEXT TEST TIME	The date of the next scheduled test call

MIN NUM DS0s

This option will specify the number of DS0s to use for this switched call. If this number is **1**, all calls will be directed to the endpoint, and not use a **BONDING** resource. Any number other than **1** will use **BONDING** resources to inverse multiplex the multiple switched channels together.

MAX NUM DS0s

This option will specify the number of DS0s to use for this switched call. If this number is **1**, all calls will be directed to the endpoint, and not use a **BONDING** resource. Any number other than **1** will use **BONDING** resources to inverse multiplex the multiple switched channels together.

> DIAL PLAN - (PACKET VOICE CONNECTIONS)

» NETWORK TERM

This menu allows the user to define option parameters for ports configured as network packet voice endpoints.

»» IFCE CONFIG

Write security: 3; Read security: 5

Specifies the configuration parameters for the endpoint.

DLCI

Selects the appropriate DLCI for this dial plan entry.

VOICE PORT

Identifies the voice port address of the remote unit. FSU 5622s support ports 1 and 2. A remote ATLAS supports ports 1 through 255.

CONFLICT REPORT

Describes existing conflicts. Potential problems include DLCI unavailable or Voice port already in use.

VOICE COMPRESSION

Selects the voice compression algorithm used by this endpoint. ADTRAN FSU 5622 and Express 5200 Series FRADs use CCITT **G.723.1** compression at 6.3 kbps. The Express 5200 Series FRADs also support the proprietary **NETCODER** algorithm at 6.4 kbps. Both endpoints must agree about the compression algorithm choice.

SILENCE SUPPRESSION

Reduces the total system bandwidth load by preventing ATLAS from sending frames

containing a special silence code during periods of silence. Both endpoints must agree to use silence suppression. By default, silence suppression is **DISABLED**. To prohibit silence frames from transmitting and to decrease the total system bandwidth, **ENABLE** this feature.

SIGNALING METHOD

Selects the type of signaling that the remote port is configured to expect. Available options include **E&M IMMEDIATE**, **E&M WINK**, and **LOOP START**.

DIRECT INWARD DIALING

Defines whether Direct Inward Dialing (DID) is used by the remote equipment. If DID is enabled, then the following options must be configured:

CALLER ID

Defines the number ATLAS uses to provide Caller ID to the network for outgoing calls sent through this endpoint. Setting this menu item is optional.

SOURCE ID

Defines the Source ID. Setting this menu item is optional.

DID DIGITS TRANSFERRED

Defines the number of digits sent to ATLAS from the network if **DIRECT INWARD DIALING** is enabled.

DID PREFIX

Defines to ATLAS the prefix digits which are not received as a part of the DID number. ATLAS uses the combination of prefix and DID number to determine the user endpoint that should receive the incoming call.

TRUNK NUMBER

Determines which user endpoint should receive the incoming call when the network connection does not provide DID digits. This field only displays if **DIRECT INWARD DIALING** is set to **DISABLED**.

STRIP MSD

Strips a selected quantity (choose from **NONE**, **1**, **2**, and **3**) of the most significant digits (MSD) of a dialed number prior to being forwarded out of the port.

Example:

A network port could be set to accept all calls beginning with 9 (9\$), and then with **STRIP MSD** set to **1**, all digits would be sent toward the network except the leading 9.



STRIP MSD does not affect **CALL ACCEPT** criteria. All of the digits (including the MSDs that are subsequently stripped) are used as accept criterion.

SOURCE ID

Simplifies the creation of a dial plan in applications where the criterion for switching calls to a certain endpoint is a function of which endpoint originated the call.

Default value = 0. Zero is the default ID for all endpoints and accept numbers. With default values, all calls are routed based only on the dialed number.

Multiple endpoints can have the same **SOURCE ID**.

When creating the **CALL ACCEPT** list, specify a **SOURCE ID(s)** as well as a dialed number or range of dialed numbers to accept.

» **USER TERM**

This menu allows the user to define option parameters for ports configured as user packet voice endpoints.

»» **IFCE CONFIG**

Write security: 3; Read security: 5

Specifies the configuration parameters for the endpoint.

DLCI

Selects the appropriate DLCI for this dial plan entry.

VOICE PORT

Identifies the voice port address of the remote unit. FSU 5622s support ports 1 and 2. A remote ATLAS supports ports 1 through 255.

CONFLICT REPORT

Describes existing conflicts. Potential problems include DLCI unavailable or Voice port already in use.

VOICE COMPRESSION

Selects the voice compression algorithm used by this endpoint. ADTRAN FSU 5622 and Express 5200 Series FRADs use CCITT **G.723.1** compression at 6.3 kbps. The Express 5200 Series FRADs also support the proprietary **NETCODER** algorithm at 6.4 kbps. Both endpoints must agree about the compression algorithm choice.

SILENCE SUPPRESSION

Reduces the total system bandwidth load by preventing ATLAS from sending frames containing a special silence code during periods of silence. Both endpoints must agree to use silence suppression. By default, silence suppression is **DISABLED**. To prohibit silence frames from transmitting and to decrease the total system bandwidth, **ENABLE** this feature.

SIGNALING METHOD

Selects the type of signaling that the remote port is configured to expect. Available options include the following: **E&M IMMEDIATE**, **E&M WINK**, and **LOOP START**.

DIRECT INWARD DIALING

Defines whether or not Direct Inward Dialing (DID) is used by the remote equipment. If DID is enabled, then the following options must be configured:

CALLER ID

Defines the number ATLAS uses to provide Caller ID to the network for outgoing calls sent through this endpoint. Setting this menu item is optional.

SOURCE ID

Defines the Source ID. Setting this menu item is optional.

DID DIGITS TRANSFERRED

Defines the number of digits ATLAS 890 send to the user equipment. This field only displays if **DIRECT INWARD DIALING** is enabled.

CALLER ID NUMBER

Defines the number ATLAS uses to provide Caller ID to the network for outgoing calls sent through this endpoint. This field only displays if **DIRECT INWARD DIALING** is set to **DISABLED**, and **USER TERM** is selected. Setting this menu item is optional.

STRIP MSD

Strips a selected quantity (choose from **NONE**, **1**, **2**, and **3**) of the most significant digits (MSD) of a dialed number prior to being forwarded out of the port.

Example:

A network port could be set to accept all calls beginning with 9 (9\$), and then with **STRIP MSD** set to **1**, all digits would be sent toward the network except the leading 9.



STRIP MSD does not affect **CALL ACCEPT** criteria. All of the digits (including the MSDs that are subsequently stripped) are used as accept criterion.

SOURCE ID

Simplifies the creation of a dial plan in applications where the criterion for switching calls to a certain endpoint is a function of which endpoint originated the call.

Default value = 0. The default ID for all endpoints is 0 and all accept numbers is 0. With default values, all calls are routed based only on the dialed number.

Multiple endpoints can have the same **SOURCE ID**.

When creating the **CALL ACCEPT** list, specify a **SOURCE ID(s)** as well as a dialed number or range of dialed numbers to accept.

DETAIL LEVEL PROCEDURES

Find Your Task in the List Below	Then Go To:
Connecting the ATLAS 890 to an External Modem	DLP-001
Connecting the Alarm Contacts	DLP-002
Setting IP Parameters for the ATLAS 890	DLP-003
Verifying Communications Over an IP LAN	DLP-004
Using the Alarm Connections and ACO Button	DLP-005
Logging in to the System	DLP-006
Connecting the Terminal or PC to the ADMIN or CRAFT Port	DLP-007
Adding/Removing Users and Changing Password Security Levels	DLP-008
Updating the Firmware of an ATLAS 890 using XMODEM	DLP-009
Updating the Firmware of an ATLAS 890 using TFTP	DLP-010
Saving the Current Configuration of an ATLAS 890 using TFTP	DLP-011
Loading the Current Configuration of an ATLAS 890 using TFTP	DLP-012
Using the ADTRAN Utility Syslog with the ATLAS 890	DLP-013

CONNECTING THE ATLAS 890 TO AN EXTERNAL MODEM

Introduction

The ATLAS 890 can be accessed and managed via modem, allowing the same capabilities to the user as if connected to the local **ADMIN** or **CRAFT** access ports. Access is provided either by a female RJ-45 connector, labeled **ADMIN**, located on the back of the unit in the middle of the System Controller module or by the **CRAFT** port, located on the right of the front of the unit.

Prerequisite Procedures

The ATLAS 890 should be mounted in its permanent location before connecting to an external modem.

Tools and Materials Required

- Female RJ-45 to Male DB-25 Connector (shipped with unit)
- Modem
- Modem Cable

WARNING

To prevent electrical shock, do not install equipment in a wet location or during a lightning storm.



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

DLP-001

Perform Steps Below in the Order Listed

1. **Mount the modem in its permanent position.**
2. **Connect power to the modem using manufacturer instructions.**
3. **Configure the modem as follows:**

Speed	9600 bps
Data bits	8
Parity	none
Stop bits	1
Flow control	hardware
Auto answer	on
DTR	ignore
4. **Connect the male RJ-45 connector of the data cable to the female RJ-45 connector, labeled ADMIN, located on the back of the unit in the middle of the System Controller module.**
5. **Route the data cable to the modem.**
6. **Connect the other end of the cable to the RJ-45 end of the connector (RJ-45 to male DB-25). Then, connect the DB-25 end of the connector to the modem, configured as described above.**
7. **Connect the modem to the POTS line as required by the manufacturer.**
8. **Login to the ATLAS 890 system. (Refer to DLP-006 for detailed instructions.)**
9. **From the MAIN MENU, select the SYSTEM CONFIG menu and press the right arrow key to enter the right-pane menus.**
10. **From the SYSTEM CONFIG menu, select the CHAIN PORT menu and press <Enter>. Once in the CHAIN PORT menus, press the right arrow key to enter the right-pane menus.**

11. From the **CHAIN PORT** menus, select the **PORT TYPE** menu and select **DIAL**.

WARNING

*If you are connected to the ATLAS 890 using the **CRAFT** or **ADMIN** interfaces, changing the **PORT TYPE** mode to **DIAL** will terminate your session. You **MUST** have Ethernet access to the ATLAS 890 to change the **PORT TYPE** back to **DIRECT** and restore your terminal session.*



NOTE

To complete the connection to the shelf, the ATLAS 890 must now be called from a PC that is configured to emulate a VT-100 terminal, with communication software set as in step 3 and configured for dial mode.

Follow-up Procedures

Once this procedure is complete, return to the procedure which referred you to this DLP and continue with the tasks indicated there.

CONNECTING THE ALARM CONTACTS AND THE EXTERNAL INPUT

Introduction

This DLP explains how to connect the alarm contacts and the external input on the ATLAS 890.

Prerequisite Procedures

Before making alarm connections, the unit should be mounted in its permanent location.

Tools and Materials Required

- Wire strippers
- Small, straight slot screwdriver
- 22 or 24 AWG 2-conductor twisted pair cross connect wire

WARNING

To prevent electrical shock, do not install equipment in a wet location or during a lightning storm.



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

DLP-002

Connect Alarm Relay Contacts

1. For the alarm relay contacts labeled **ALARM** on the rear of the ATLAS 890 as shown in Figure 1, determine whether the external alarm reporting device uses normally open (NO) or normally closed (NC) relay contacts to sense an alarm condition.
2. Using standard Telco cross connect wire or equivalent, determine and cut the length required to reach from the alarm header to the alarm-reporting device(s).
3. Using wire strippers, strip ¼-inch from both ends of each wire.
4. Remove the alarm relay (4 pin) terminal block.
5. Using the small, straight slot screwdriver, loosen the screws in the terminal block.
6. Insert one strand into the COM connection from the ATLAS 890 and tighten the screw.
7. Insert another strand into either the NC or NO connections and tighten the screw. A chassis ground connection is also provided. Replace the terminal block.

Connect External Input

1. The external input can be used to sense a relay closure or the presence of -48VDC. To sense the relay closure, connect VOUT (-48VDC limited to 1 ma) to the COM of the relay to be monitored and connect INPUT to the normally open (NO) contact of the device to detect when the relay is energized or the normally closed (NC) to detect when the relay is de-energized. To sense the presence of -48VDC, connect INPUT to the source to be sensed.
2. Using standard Telco cross connect wire or equivalent, determine and cut the length required to reach from the external input header to the equipment to be sensed.
3. Using wire strippers, strip ¼-inch from both ends of each wire.
4. Remove the external input (3 pin) terminal block.
5. Using the small, straight slot screwdriver, loosen the screws in the terminal block.
6. Insert the wires in the terminal block as determined in Item 1 and tighten the screws. A chassis ground connection is also provided. Replace the terminal block.

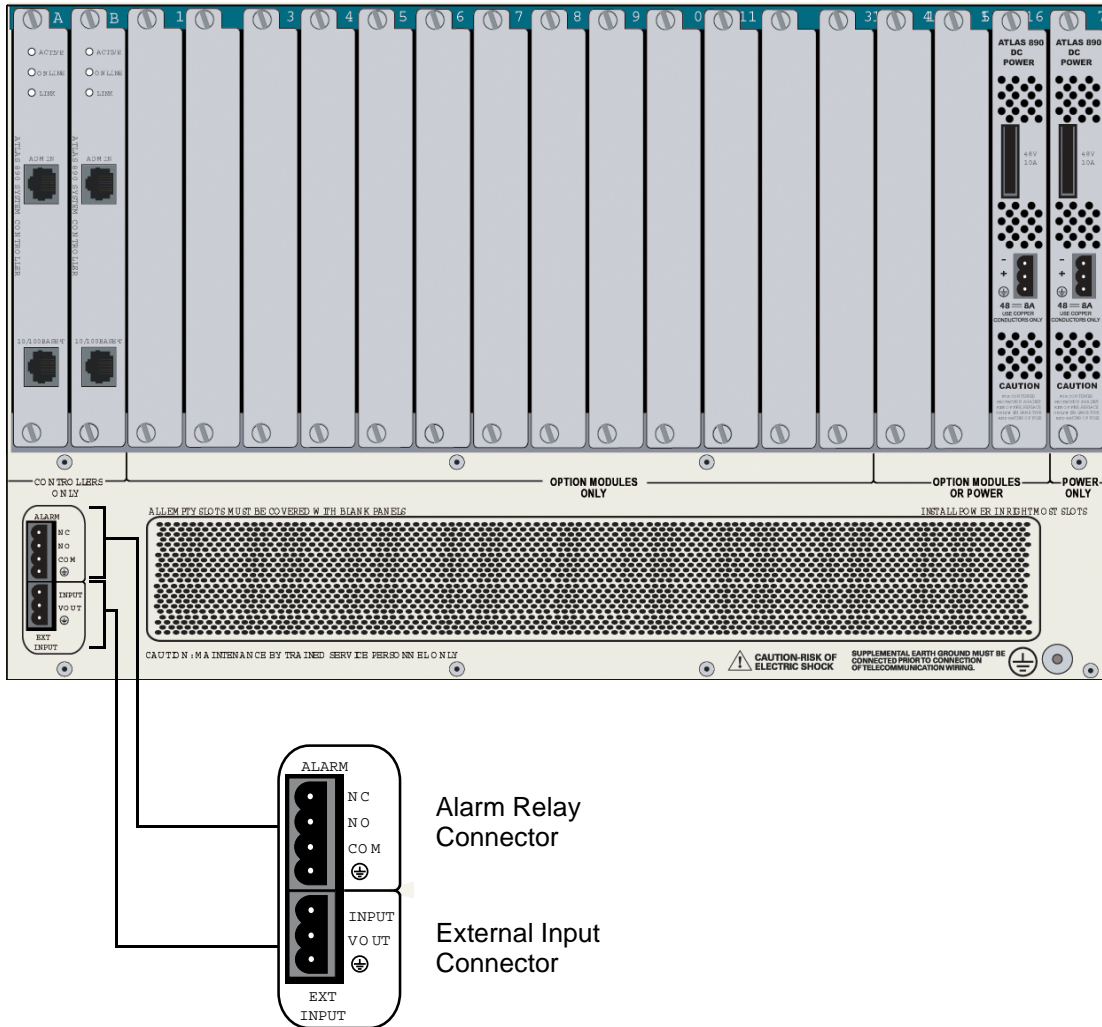


Figure 1. ATLAS 890 Rear View

Alarm Relay Connector Pinout

Pin	Name	Description
1	Normally Closed (NC)	Opens when a selected alarm condition is present.
2	Normally Open (NO)	Closes when a selected alarm condition is present.
3	Common (COM)	Common connection between external circuitry and NC or NO terminal.
4	Chassis Ground (GND)	

External Relay Monitor Connector Pinout

Pin	Name	Description
1	Alarm Out	Outputs EIA-232 level signal for connection to external alarm contacts.
2	Alarm In	Monitors signal coming from external alarm contacts.
3	Chassis Ground	

Follow-up Procedures

Once this procedure is complete, return to the procedure which referred you to this DLP and continue with the tasks indicated there.

SETTING IP PARAMETERS FOR THE ATLAS 890

Introduction

If the ATLAS 890 is connected to an IP network for Telnet, TFTP, or SNMP management, there are several IP parameters that must be set in order for the unit to communicate with the network. These parameters are described in this DLP along with the procedures for setting them.



Please see your Network Administrator for the proper assignment of the following parameters: IP address, Subnet Mask, and Default Gateway.

Prerequisite Procedures

This procedure assumes that the ATLAS 890 unit is connected to an IP network and is powered up.

Tools and Materials Required

- Data cable to connect to either a VT-100 terminal or a PC configured as a VT-100 terminal
- VT-100 terminal or PC configured as a VT-100 terminal



To prevent electrical shock, do not install equipment in a wet location or during a lightning storm.



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

DLP-003

Perform Steps Below in the Order Listed

1. **Connect the ATLAS 890 unit to your VT-100 system (details found in DLP-007).**
2. **Login to the system with maximum rights (details for logging in are in DLP-006).**
3. **From the SYSTEM CONFIG menu, select the ETHERNET PORT option and press <Enter>.**



The next three steps will require confirmation after each change.

4. **From the SYSTEM CONFIG/ETHERNET menu, select the IP ADDRESS option and press <Enter>.**
Enter the appropriate IP address.
5. **From the SYSTEM CONFIG/ETHERNET menu, select the SUBNET MASK option and press <Enter>.**
Enter the appropriate Subnet Mask.
6. **From the SYSTEM CONFIG/ETHERNET menu, select the DEFAULT GATEWAY option and press <Enter>.**
Enter the appropriate Default Gateway.
7. **Left arrow to highlight the ETHERNET submenu to save changes.**
8. **Escape out to the SYSTEM CONFIG menu and logoff by pressing <Ctrl + L>.**

Follow-up Procedures

Once this procedure is complete, return to the procedure which referred you to this DLP and continue with the tasks indicated there.

VERIFYING COMMUNICATIONS OVER AN IP LAN

Introduction

When an Ethernet Port is connected to a local area network (LAN), test steps must be performed on the ATLAS 890 to ensure that the unit is communicating properly over the network. This procedure outlines those steps.

Prerequisite Procedures

Before beginning this procedure, the unit should be physically connected to the LAN and the provisioning tasks detailed in DLP-003 should be complete.

Tools and Materials Required

- Access to a PC or other computer connected to the LAN

WARNING

To prevent electrical shock, do not install equipment in a wet location or during a lightning storm.



CAUTION

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

DLP-004

Perform Steps Below in the Order Listed

1. Ascertain the ATLAS 890 IP address.

If you do not already have the IP Address for the ATLAS 890, either obtain it from the Network Administrator or manually check for the address in the **SYSTEM CONFIG/ETHERNET PORT/IP ADDRESS** menu of the Network Management interface.



You must login with maximum rights to modify the IP parameters on the ATLAS 890.

2. Ping the ATLAS 890 unit from a remote computer on the network.

Using a remote computer system connected to the LAN, perform an ICMP Ping on the IP Address of the ATLAS 890. Verify that the unit responds properly.

If the ATLAS 890 fails to respond, try the following:

- Verify that the proper IP Address, Subnet Mask, and Default Gateway are provisioned in the unit (see DLP-003 for details).
- Verify that the ATLAS 890 is properly cabled into the LAN and that the ethernet cable is properly seated in the RJ-45 jack on the rear of the unit.
- If the ATLAS 890 is connected to a hub or other network device that provides a carrier sense light for each port, verify that the carrier sense light for the port to which the ATLAS 890 is connected is lit. If this light is not lit, check the cabling between the hub and the shelf.
- Verify the IP Address, Subnet Mask, and Default Gateway on the remote computer system.

If none of these steps are successful, contact the LAN Administrator for assistance.



Refer to the documentation of the computer system if you are unsure how to perform a Ping command. Most computers running a networked version of Microsoft Windows™ or UNIX allow a Ping to be performed by simply typing “ping <IP Address>” at a command line prompt. Typically, the Ping program will respond by indicating that the remote IP Address has responded in a certain amount of time or that no response was received.



*Some versions of Ping will continue running until you explicitly tell them to stop. If the program does not terminate on its own, type **<Ctrl+C>** to get the program to stop.*

3. Telnet to the ATLAS 890.

From the same computer used in the previous step, Telnet to the ATLAS 890 and verify that the Telnet session is properly opened (see DLP-006 for logging in to a system and establishing a Telnet session.) Once the Telnet session is established, press **<Ctrl+L>** to logout and close the session.



Refer to the documentation of the computer system if you are unsure how to perform a Telnet. Most computers running a networked version of Microsoft Windows™ or UNIX allow a Telnet to be performed by simply typing “Telnet <IP Address>” at a command line prompt. Telnet is a utility common on many local area networks that allows remote access to another computer or piece of equipment.

Follow-up Procedures

Once this procedure is complete, return to the procedure which referred you to this DLP and continue with the tasks indicated there.

USING THE ALARM CONNECTIONS AND ACO BUTTON

Introduction

The alarm connections alert the user when a selected alarm condition exists. The alarm may be cleared by pressing the Alarm Cut-Off (ACO) switch located on the front panel of the ATLAS 890. This procedure details the steps which must be performed to use the ATLAS 890 alarm connections and ACO switch.

This procedure should be performed at installation on each ATLAS 890 shelf that is wired out to external office alarm equipment.

Prerequisite Procedures

Before beginning this procedure, the ATLAS 890 should be mounted in its permanent location and the alarm contacts should be connected (see DLP-002).

Tools and Materials Required

- VT-100 terminal or PC with VT-100 terminal emulation software

WARNING

To prevent electrical shock, do not install equipment in a wet location or during a lightning storm.



CAUTION

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

DLP-005

Perform Steps Below in the Order Listed

To Begin

1. **Connect to the ATLAS 890 using either the 10/100 BASET, ADMIN, or CRAFT interfaces.**

If you are not already connected to the unit's **ADMIN** or **CRAFT** interfaces (either with a VT-100 compatible terminal or with a PC running VT-100 emulation software), use the procedure in DLP-007 to connect to the **ADMIN** or **CRAFT** interface.

Alternately, if the unit is part of a management cluster connected to the local network, you may use a PC connected to the network to Telnet into the unit. Use the procedures in DLP-003 and DLP-004 to connect to the **10/100 BASET** interface.

2. **Login to the unit.**

Login to the unit using the read-write password (see DLP-006 for details).

Configure the Alarm Relay

3. **Go to the SYSTEM CONFIG menu and press the right arrow key to access the right-pane menus. Select the ALARM RELAY THRESHOLD menu and choose the appropriate threshold level. The ALARM RELAY will set for this threshold and all other alarms of greater importance. Refer to Section 2, *System Event Logging* of this system manual for a listing of all alarms and levels of importance.**



*Setting the threshold to **NORMAL** will not set the **ALARM RELAY** for **NORMAL** events. No **NORMAL** events set the **ALARM RELAY**.*

Configure the Alarm Monitor



Complete the following steps only if you wish to monitor for external alarms.

4. **Go to the SYSTEM CONFIG menu and press the right arrow key to access the right-pane menus. Then, select the EVENT LOGGING menu and press <Enter>. Once in the EVENT LOGGING menu, press the right arrow key to access the right-pane menus.**
5. **From the EVENT LOGGING menu, select the EXTERNAL INPUT menu and set it to the same value as the ALARM RELAY THRESHOLD. Any event on the ALARM MONITOR will now be logged in the EVENT LOG and set the ALARM RELAY.**

Clearing the Alarm Relay Remotely

6. **Go to the SYSTEM CONFIG menu and press the right arrow key to access the right-pane menus. Then, select the ALARM RELAY RESET field and press <Enter>.**



*The **ALARM RELAY** may be cleared locally by pressing the ACO switch.*

Follow-up Procedures

Once this procedure is complete, return to the procedure which referred you to this DLP and continue with the tasks indicated there.

LOGGING IN TO THE SYSTEM

Introduction

Once connected to the ATLAS 890 via either a VT-100 terminal or PC configured as a VT-100 terminal, it is necessary to login to the system to gain access to the management and provisioning functions. This DLP provides specific steps for logging in to the system and accessing the various management and provisioning functions.

Prerequisite Procedures

Complete DLP-007, *Connecting the Terminal or PC to the ADMIN or CRAFT Port*, before logging in to ATLAS 890.

Tools and Materials Required

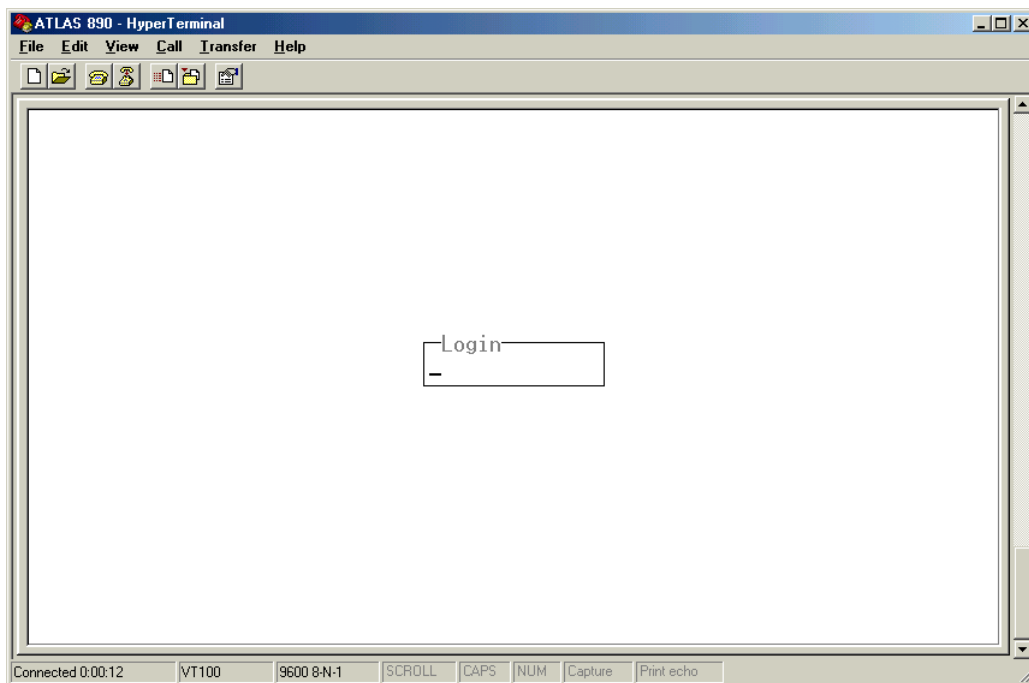
- Data cable to connect to a VT-100 terminal or a PC configured as a VT-100 terminal (shipped with unit)
- VT-100 terminal or PC configured as a VT-100 terminal

DLP-006

Perform Steps Below in the Order Listed

1. **After connecting to the system, a blank screen will appear.**

Pressing any key will display the login screen shown below.



The cursor will blink at the **LOGIN** field, waiting for a password to be entered.

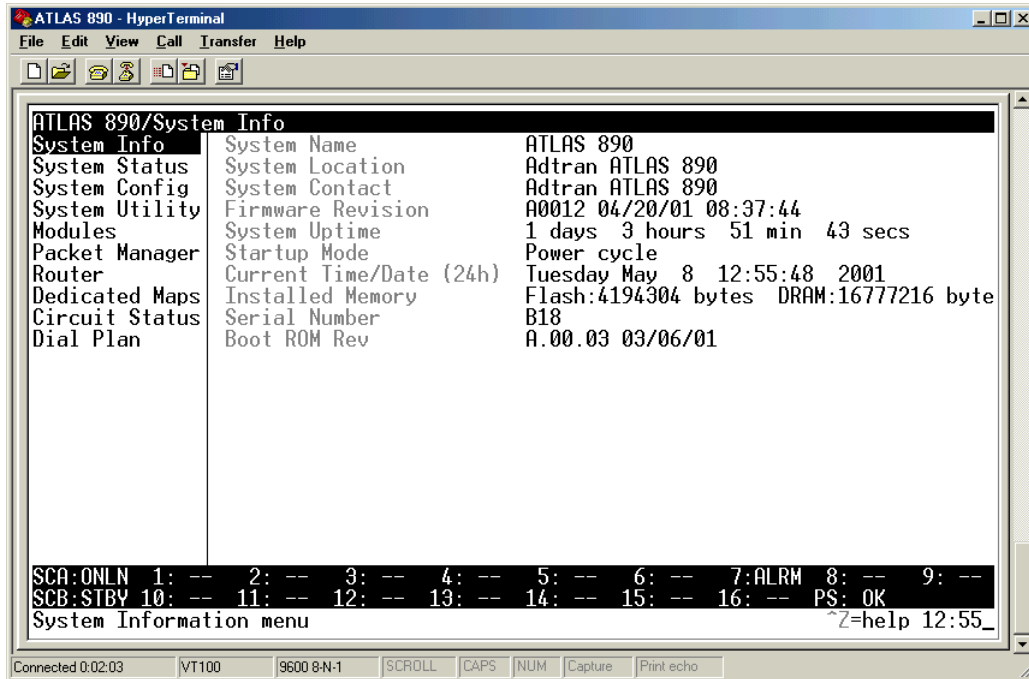
2. **At the LOGIN field, enter the password for the ATLAS 890.**

The manufacturer's default password for the ATLAS 890 system is "**password**" in lowercase letters.

The ATLAS 890 has five levels of access granted to a user. The lowest level of access (Level 5) is read-only, and allows a user to see, but not change, the current configuration of the system. The top level of access (Level 0) is read-write and allows the user to both see and change system configuration parameters.

After initial login, the System Administrator is now able to define levels of access for various users. (See DLP-008, *Adding/Removing Users and Changing Password Security Levels* for more details.)

3. Upon entering the correct password, the ATLAS 890 MAIN MENU is displayed as shown below.



4. You are now logged in to the ATLAS menu system.

Follow-up Procedures

Once this procedure is complete, return to the procedure which referred you to this DLP and continue with the tasks indicated there.

CONNECTING THE TERMINAL OR PC TO THE ADMIN OR CRAFT PORT

Introduction

ATLAS 890 shelf management and provisioning is facilitated by a series of intuitive menus that are accessible on a computer screen. Connecting either a VT-100 terminal or a PC emulating a VT-100 terminal to the **ADMIN** port on the rear of the unit in the middle of the System Controller module or the **CRAFT** interface on the unit faceplate allows access to the menus and management features of ATLAS 890. This section specifies how to connect the VT-100 terminal or PC to the ATLAS 890.

The front **CRAFT** interface for the ATLAS 890 is located on the faceplate of the unit and is an RJ-45 connector. Access can also be made to the ATLAS 890 from the back of the unit through the port labeled **ADMIN**. It is also an RJ-45 connector, and is located on the System Controller module installed in the back of the unit.

Prerequisite Procedures

The ATLAS 890 must be powered for terminal communication to function.

Tools and Materials Required

- VT-100 compatible terminal or computer with terminal emulation software
- Appropriate cable to connect terminal to the ATLAS 890 (shipped with unit)

DLP-007

Perform Steps Below in the Order Listed

1. Connect a VT-100 terminal to ATLAS 890.

- Set the parameters of the VT-100 terminal to:
 - 9600 baud rate
 - 8 data bits
 - No parity
 - 1 stop bit
 - No flow control
- If the terminal has a parallel setting, disable it and use serial port.
- Plug the RJ-45 male end of the data cable into the ATLAS 890. Make the connection to the VT-100 terminal as appropriate for your equipment.

2. Connect a PC emulating a VT-100 terminal to ATLAS 890.

Most personal computers or laptops can run communications software that will emulate a VT-100 terminal. Windows programs such as Terminal[®] or Hyperterminal[®] are two such examples in the Windows format. However, there are many other adequate, commercially available software packages which will allow your PC or laptop to emulate a VT-100 terminal. Certain configuration items must be set on a PC or laptop to act as a VT-100 terminal for the ATLAS 890.

- Set the parameters of the communications software to:
 - 9600 baud rate
 - 8 data bits
 - No parity
 - 1 stop bit
 - No flow control
- Set the PC for direct connect on the appropriate com port (instead of dial-up connection).
- Plug the RJ-45 male end of the data cable into the ATLAS 890. Make connection to the PC or laptop as appropriate for your equipment.

You are now ready to login to ATLAS 890, as described in DLP-006, *Logging in to the System*.

Follow-up Procedures

Once this procedure is complete, return to the procedure which referred you to this DLP and continue with the tasks indicated there.

ADDING/REMOVING USERS AND CHANGING PASSWORD SECURITY LEVELS

Introduction

All menu items in the ATLAS 890 are protected by passwords of varying security levels. By assigning different passwords to different security levels, the ATLAS 890 System Administrator can control which users can view or change various menu items. You can assign multiple passwords at the same access level. This way, different users with the same access privileges can have different passwords. This procedure details the steps which must be performed to add/remove user profiles and assign password security levels in the ATLAS 890.

Tools and Materials Required

- VT-100 terminal or PC with VT-100 terminal emulation software

WARNING

To prevent electrical shock, do not install equipment in a wet location or during a lightning storm.



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

DLP-008

Perform Steps Below in the Order Listed

1. Connect to the ATLAS 890 using either the 10/100 BASET, ADMIN, or CRAFT interfaces.

If you are not already connected to the unit's **ADMIN** or **CRAFT** interfaces (either with a VT-100 compatible terminal or with a PC running VT-100 emulation software), follow the procedure in DLP-007.

Alternately, if the unit is part of a management cluster connected to the local network, you may use a PC connected to the network to Telnet into the unit. Use the procedures in DLP-003 and DLP-004 to connect to the **10/100 BASET** interface.

2. Login to the unit.

Login to the unit using the read-write password (see DLP-006 for details).

3. Go to the SYSTEM CONFIG menu and select the ACCESS PASSWORDS menu and press <Enter>.

4. To add a new user profile and password, select the first column (0) and press I (for insert).

5. Give the new user profile a name by selecting the LABEL field, pressing <Enter>, and typing the user defined name.

6. Determine the password level for the corresponding label.

The ATLAS 890 contains six different password levels. The table below gives a brief description of each level.

Select level...	If you want the user to....
5	Have read-only permission for all menu items - minimum rights
4	Have read permission for all menu items and permission to use test commands
3	Have access to all commands except passwords, flash download, authentication methods, and interface configurations
2	Have access to all commands except passwords, flash download, and authentication methods
1	Have access to all commands except passwords
0	Have permission to edit every menu item, including creating and editing passwords -- maximum rights

7. **Assign the password level to the appropriate label by selecting the ACCESS RIGHTS field and choosing the level decided upon in step 6.**
8. **Personalize the password for the appropriate label by selecting the PASSWORD field, pressing <Enter>, then typing the desired password.**

Passwords for the ATLAS 890 system are case sensitive. The default password for a new user profile is “**password**”. The current password displays as a series of asterisks (*****).

Follow-up Procedures

Once this procedure is complete, return to the procedure which referred you to this DLP and continue with the tasks indicated there.

UPDATING THE FIRMWARE OF AN ATLAS 890 USING XMODEM

Introduction

The ATLAS 890 supports firmware updates via the **ETHERNET** port using either TFTP from a network server or the **ADMIN** or **CRAFT** interfaces using XMODEM. This procedure outlines the steps for a successful firmware upgrade using the **ADMIN** or **CRAFT** interfaces and XMODEM software.

Tools and Materials Required

- VT-100 terminal or PC with VT-100 terminal emulation software
- XMODEM software

WARNING

To prevent electrical shock, do not install equipment in a wet location or during a lightning storm.



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

DLP-009

Perform Steps Below in the Order Listed

1. **Connect to the ATLAS 890 using the RJ-45 ADMIN or CRAFT interface.**

If you are not already connected to the shelf's **ADMIN** or **CRAFT** interface (either with a VT-100 compatible terminal or with a PC running VT-100 emulation software), follow the procedure in DLP-007. Connecting to the **ADMIN** or **CRAFT** interface limits the upgrade procedure to XMODEM Only.

2. **Login to the unit.**

Login to the unit using the read-write password (see DLP-006 for details).

3. **Go to the SYSTEM UTILITY menu and select the UPDATE FIRMWARE menu; press <Enter>.**

4. **Select the MODULE SLOT menu and press <Enter>.**

Select the appropriate module slot to update. Select either **SCUA** or **SCUB** to upgrade the installed System Controller module(s).



Selecting **ALL MODULES OF A TYPE** and **SYS CTRL** will force a controller switchover during the update process. Take caution to connect both installed System Controller modules to the Ethernet network to ensure proper Telnet operation following the update.

5. **Go to the TRANSFER METHOD menu and select XMODEM.**
6. **From the RESTART SCHEDULE menu, select the time for the module to perform a restart after completing the update process.**

RESTART IMMEDIATELY AFTER UPDATE restarts the system immediately after the update is complete. **RESTART AT SPECIFIED DATE AND TIME** allows you to select when the updated system will restart. If you select this option, a new field called **RESTART DATE AND TIME** displays below the current field. To use that option, enter the time in 24-hour format (such as 23:00:00 for 11:00 pm). Enter the date in mm-dd-yyyy format (for example, 09-30-2000).

7. **View CURRENT UPDATE STATUS to verify the progress of the current firmware update or any errors encountered during the download process.**
8. **Select BEGIN FIRMWARE UPDATE to start the update process. Enter Y to confirm the transfer and set up the module to receive the XMODEM Upload.**

When the ATLAS 890 is ready to receive the XMODEM upload, the menu screen will clear and display **Awaiting XMODEM Upload...<Ctrl-X> to Cancel**. If this does not appear, please review the steps above for possible configuration errors.

- 9. From the terminal emulation software, begin the XMODEM upload by using the appropriate command sequence. This may take several minutes.**

If necessary, refer to the terminal emulation software documentation for help. Also, when specifying the filename, ensure that the file transferred is the one provided by ADTRAN. Otherwise, the update will not complete successfully.

Because XMODEM data is being transferred in-band through the menu interface, the VT-100 menus of the ATLAS 890 will be inoperable from the **ADMIN** or **CRAFT** interfaces. You can cancel the update at any time within the terminal emulation software. (Please consult the documentation provided by the terminal emulation software to determine how to do this.)

- 10. When the update process has successfully completed, IDLE displays in the CURRENT UPDATE STATUS field and MODULE UPDATE COMPLETE displays in the PREVIOUS UPDATE STATUS field.**

The ATLAS 890 will either restart immediately and resume operation or restart at the specified time and day of the week, depending on your selection.

Alternately, if the unit is part of a management cluster connected to the local network, you may use a PC connected to the network to Telnet into the unit. By utilizing the **ETHERNET** port, the ATLAS 890 may be quickly upgraded using TFTP, provided there is a TFTP server on the local network. The ATLAS 890 ships with ADTRAN Utilities software, which includes a TFTP server. See DLP-010, *Updating the Firmware of an ATLAS 890 using TFTP* for more details.

Follow-up Procedures

Once this procedure is complete, return to the procedure which referred you to this DLP and continue with the tasks indicated there.

UPDATING THE FIRMWARE OF AN ATLAS 890 USING TFTP

Introduction

The ATLAS 890 supports firmware updates via the **10/100 BASET** Ethernet port using either TFTP from a network server or the **ADMIN** or **CRAFT** interfaces using XMODEM. This DLP provides the steps to follow for a successful firmware upgrade using the **10/100 BASET** ethernet port and a TFTP Server.

Tools and Materials Required

- A PC with a Telnet client software
- A TFTP Server accessible on the local network (A TFTP server is provided with the unit as part of the ADTRAN Utilities software.)

WARNING

To prevent electrical shock, do not install equipment in a wet location or during a lightning storm.



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

DLP-010

Perform Steps Below in the Order Listed

1. **Connect to the ATLAS 890 using the 10/100 BASET interface.**

If you are not already connected to the unit's **ETHERNET** port using Telnet client software, use the procedure in DLP-003 to connect to the unit.

2. **Login to the unit.**

Login to the unit using the read-write password (see DLP-006 for details).

3. **Go to the SYSTEM UTILITY menu and select the UPDATE FIRMWARE menu; press <Enter>.**

4. **Select the MODULE SLOT menu and press <Enter>.**

Select the appropriate module slot to update. Select **SCUA** or **SCUB** to update the installed System Controller module(s).



Selecting **ALL MODULES OF A TYPE** and **SYS CTRL** will force a controller switchover during the update process. Take caution to connect both System Controller modules to the Ethernet network to ensure proper Telnet operation after the update.

5. **Go to the TRANSFER METHOD menu and select TFTP.**
6. **Enter the IP address of the network TFTP server into the TFTP SERVER IP ADDRESS field.**
7. **Enter the full path name and filename of the update file into the TFTP SERVER FILENAME field.**
8. **From the RESTART SCHEDULE menu, select the time for the module to perform a restart after completing the update process.**

RESTART IMMEDIATELY AFTER UPDATE restarts the system immediately after the update is complete. **RESTART AT SPECIFIED DATE AND TIME** allows you to select when the updated system will restart. If you select this option, a new field called **RESTART DATE AND TIME** displays below the current field. To use that option, enter the time in 24-hour format (such as 23:00:00 for 11:00 pm). Enter the date in mm-dd-yyyy format (for example, 09-30-2000).

9. **View CURRENT UPDATE STATUS to verify the progress of the current firmware update or any errors encountered during the download process.**

Refer to the table in step 10 for a detailed description of messages found in this field.

10. **Select BEGIN FIRMWARE UPDATE to start the update process. Enter Y to confirm the transfer and to set up the module to receive the TFTP Upload.**

During the TFTP upload process, various status messages display in **CURRENT UPDATE STATUS** to indicate progress. The following table describes these messages.

Message	Meaning
Contacting Server	Indicates communication with the TFTP network server is trying to be established with the specified server address in the TFTP SERVER IP ADDRESS field.
Beginning TFTP Transfer	Indicates communication with the TFTP network server has been established and the update file is being transferred between the ATLAS 890 and the TFTP network server.
Completed	Indicates the ATLAS 890 successfully received the update file.
Error: File Not Found	Indicates the TFTP network server was unable to locate the specified file name or path in the TFTP SERVER FILENAME field.
Error: Access Violation	Indicates the TFTP network server denied the ATLAS 890 access to the given update filename and path. Please verify appropriate user rights are selected for the specified path.

11. **When the update process has successfully completed, IDLE displays in the CURRENT UPDATE STATUS field and MODULE UPDATE COMPLETE displays in the PREVIOUS UPDATE STATUS field.**

The ATLAS 890 will either restart immediately and resume operation, or will restart at the specified time and day of the week—depending on your selection.

Follow-up Procedures

Once this procedure is complete, return to the procedure which referred you to this DLP and continue with the tasks indicated there.

SAVING THE CURRENT CONFIGURATION OF AN ATLAS 890 USING TFTP

Introduction

The ATLAS 890 supports configuration transfers from the unit (via the **10/100 BASET** Ethernet port) to a TFTP server located on the network. This DLP provides the steps to follow for a successful configuration transfer using the **10/100 BASET** Ethernet port and a TFTP Server.

Tools and Materials Required

- A PC with a Telnet client software
- A TFTP Server accessible on the local network (A TFTP server is provided with the unit as part of the ADTRAN Utilities software.)

WARNING

To prevent electrical shock, do not install equipment in a wet location or during a lightning storm.



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

DLP-011

Perform Steps Below in the Order Listed

1. **Connect to the ATLAS 890 using the 10/100 BASET interface.**

If you are not already connected to the unit's **10/100 BASET** port using Telnet client software, use the procedure in DLP-003 to connect to the unit.

2. **Login to the unit.**

Login to the unit using the read-write password (see DLP-006 for details).

3. **Go to the SYSTEM UTILITY menu and select the CONFIGURATION TRANSFER menu; press <Enter>.**

4. **Set the TFTP SERVER IP ADDRESS to the IP address of the machine running the TFTP Server Program.**



*If you are using the ADTRAN TFTP server, the IP address displays in the **STATUS** field.
For other TFTP servers, please refer to the appropriate documentation.*

5. **Change TFTP SERVER FILENAME to a unique filename. This will be the name of the configuration file saved to the remote server.**

Some TFTP servers constrain the format of the filename depending on the operating system of the server. For example, a TFTP server running on a PC under Windows 3.1 may only permit 8.3 format filenames (8 characters, period and three extension characters).

6. **Select the SAVE CONFIG REMOTELY menu field and press <Enter>.**

Enter **Y** to confirm the request.

7. **View CURRENT TRANSFER STATUS to verify the progress of the current transfer.**

8. **When the transfer process has successfully completed, IDLE displays in the CURRENT TRANSFER STATUS field and TFTP DOWNLOAD COMPLETE displays in the PREVIOUS TRANSFER STATUS field.**

WARNING

*TFTP is **not** secure. No passwords are required for client access. Anyone can access files through the IP port on the server machine if they know the target filename.*

Follow-up Procedures

Once this procedure is complete, return to the procedure which referred you to this DLP and continue with the tasks indicated there.

LOADING THE CURRENT CONFIGURATION OF AN ATLAS 890 USING TFTP

Introduction

The ATLAS 890 supports configuration uploads from a unit (via the **10/100 BASET** Ethernet port) to a TFTP server located on the network. This DLP provides the steps to follow for a successful configuration upload using the **10/100 BASET** Ethernet port and a TFTP Server.

Tools and Materials Required

- A PC with a Telnet client software
- A TFTP Server accessible on the local network (A TFTP server is provided with the unit as part of the ADTRAN Utilities software.)

WARNING

To prevent electrical shock, do not install equipment in a wet location or during a lightning storm.



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

DLP-012

Perform Steps Below in the Order Listed

1. **Connect to the ATLAS 890 using the 10/100 BASET interface.**

If you are not already connected to the unit's **10/100 BASET** port using Telnet client software, use the procedure in DLP-003 to connect to the unit.

2. **Login to the unit.**

Login to the unit using at least a level 3 password (see DLP-006 for details).

3. **Go to the SYSTEM UTILITY menu and select the CONFIGURATION TRANSFER menu, then press <Enter>.**

4. **Set the TFTP SERVER IP ADDRESS to the IP address of the machine running the TFTP Server Program.**



*If you are using the ADTRAN TFTP server, the IP address displays in the **STATUS** field. For other TFTP servers, please refer to the appropriate documentation.*

5. **Change TFTP SERVER FILENAME to a unique filename including path. This will be the name of the configuration file retrieved from the remote server.**

Some TFTP servers constrain the format of the filename depending on the operating system of the server. For example, a TFTP server running on a PC under Windows 3.1 may only permit 8.3 format filenames (8 characters, period and three extension characters).



The ATLAS 890 system is rebooted immediately after a configuration is successfully loaded. No additional confirmation is requested, and any online sessions will be terminated.

6. **Select the LOAD AND USE CONFIG menu field and press <Enter>.**

Enter **Y** to confirm the request.

7. **View CURRENT TRANSFER STATUS to verify the progress of the current upload.**

8. **When the upload process has successfully completed, IDLE displays in the CURRENT TRANSFER STATUS field and TFTP DOWNLOAD COMPLETE displays in the PREVIOUS TRANSFER STATUS field.**

WARNING

*TFTP is **not** secure. No passwords are required for client access. Anyone can access files through the IP port on the server machine if they know the target file's name.*

Follow-up Procedures

Once this procedure is complete, return to the procedure which referred you to this DLP and continue with the tasks indicated there.

USING THE ADTRAN UTILITY SYSLOG WITH THE ATLAS 890

Introduction

The ATLAS 890 Event Log is used to log various message types at settable threshold levels. The Event Log is a useful tool for troubleshooting switchboard (or call connection) activities including the viewing of digits received, digits transferred, and ISDN Messages. The Event Log can maintain the most recent 350 lines of data in a first in/first out buffer. To ensure that important data is not lost, saving the Event Log messages to an external Syslog server is advised. The ATLAS 890 ships with an ADTRAN provided Syslog server.

Prerequisite Procedures

This procedure assumes that the ATLAS 890 unit is connected to an IP network and is powered up.

Tools and Materials Required

- Syslog Server (provided on ATLAS 890 System CD in ADTRAN Utilities)

WARNING

To prevent electrical shock, do not install equipment in a wet location or during a lightning storm.



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

DLP-013

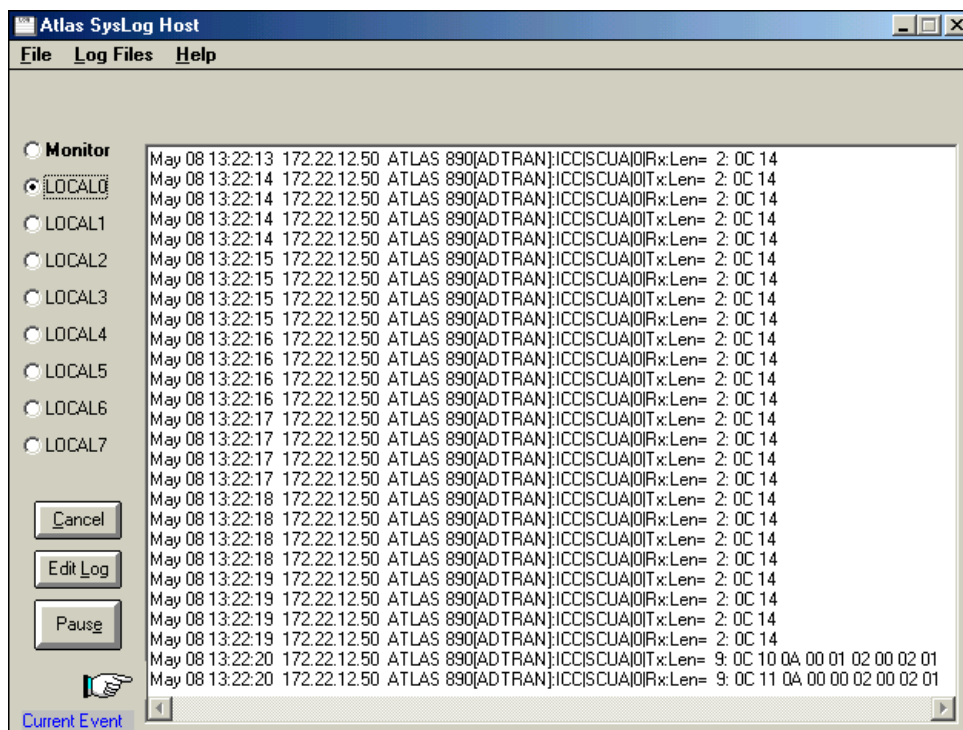
Setting Up the ATLAS 890 to use the Syslog

Login to the system with maximum rights (details for login in are in DLP-006). Once you have logged in to the ATLAS 890, go to **SYSTEM CONFIG/SYSLOG SETUP**. The options should be set as follows:

- **TRANSMISSION:** Enabled
- **HOST IP ADDRESS:** Enter the IP address of the PC where the Syslog host resides
- **HOST FACILITY:** Specifies the facility destination of log events;
Options are LOCAL0 to LOCAL7

Setting Up the Syslog Host

On your PC, go to **START/PROGRAMS/ADTRAN UTILITIES/SYSLOG**. When the Syslog window opens, you will see **LOCAL0** through **LOCAL7** listed on the left. This should correspond with the **HOST FACILITY** specified in the ATLAS 890. The Syslog program must be open on your PC in order for it to record ATLAS 890 information. The Syslog files can be viewed through the Syslog window. They are also available under the ADTRAN Utilities folder, **LOCALX.TXT**, where X can equal 0 through 7. You can also view the **LOCALX.TXT** file by clicking on **EDIT LOG**.



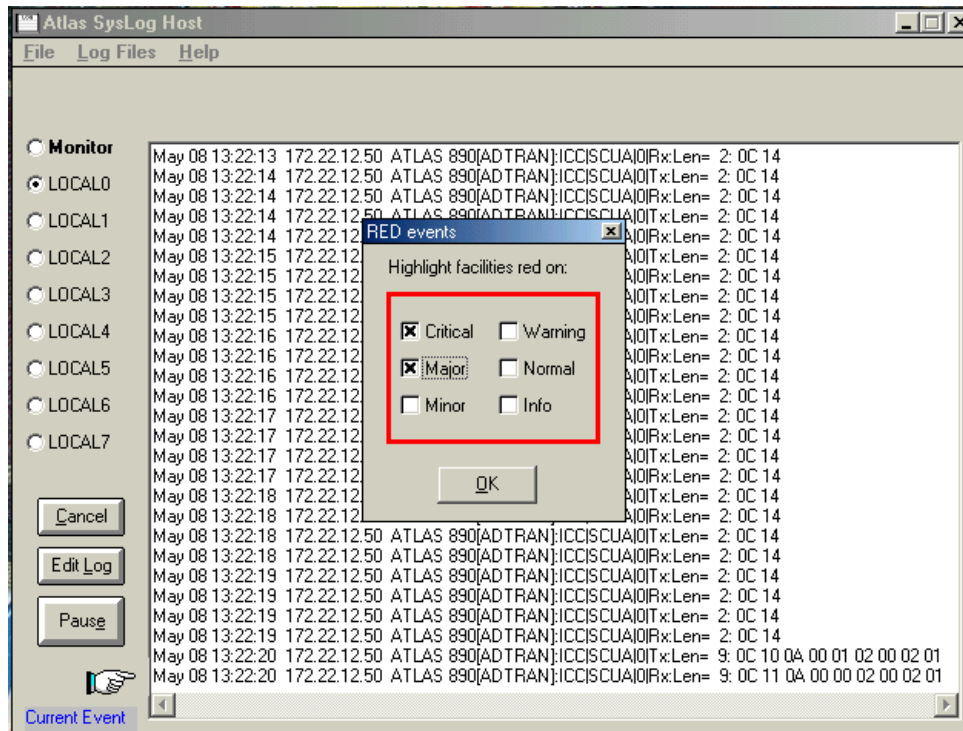
Any event logged in the ATLAS 890 Event Log (**SYSTEM STATUS/EVENT LOG**) should also appear in the Syslog.

Additional Syslog Features

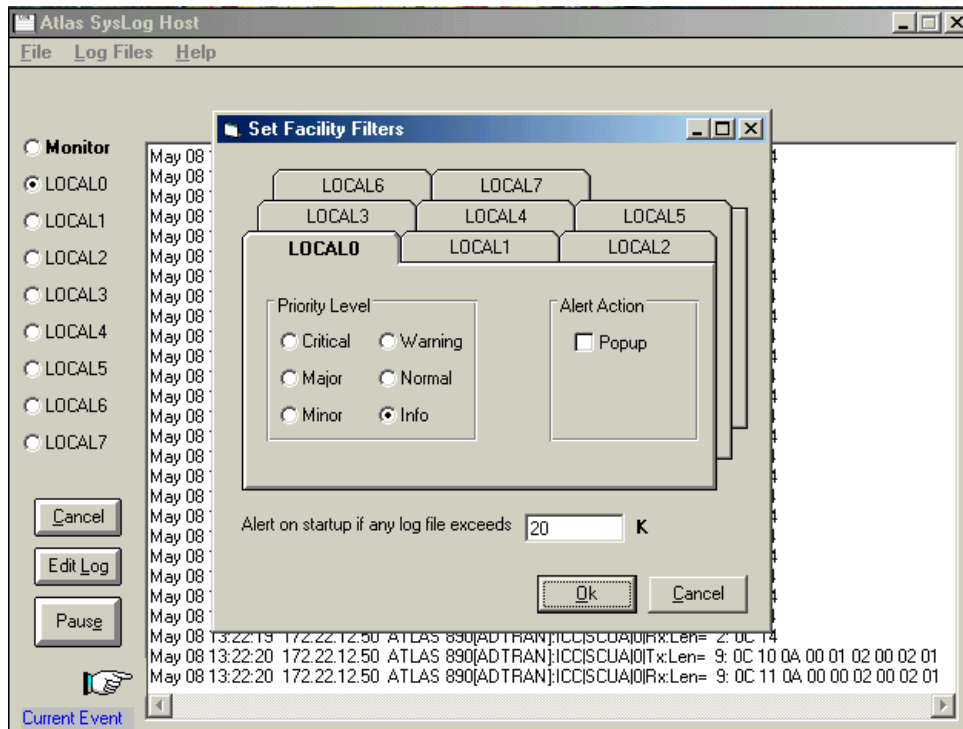
- The **MONITOR** feature allows all Syslog messages to be pre-filtered by **SYSTEM NAME**, **SOURCE**, **SLOT**, and **PORT** before displaying these messages to the user and logging the message to the pre-designated monitor log file. Various filter options may be defined by selecting **SOURCE**. The figure below shows the **SOURCE FILTER** window. When the **MONITOR** button is selected, the file will be logged to **LOCAL8.TXT**. To look at the text file, click on the **EDIT LOG** button on the left side of the Syslog screen.

Only source options selected with an 'X' will be displayed in the Syslog file. In this example, all options will be displayed.

- Under the **LOG FILES** menu option, the user may erase log files, define Red events, set priorities and clear Red events. The **ERASE LOG FILES** option will erase the specified txt log file. **DEFINE RED EVENTS** allows the user to predefine a message priority condition so that if the condition occurs, the file is highlighted in red. In the figure below, any **CRITICAL** or **MAJOR** conditions will cause any **LOCAL0** through **LOCAL7** facility to become highlighted in red if it receives a critical or major alarm.



- The **PROPERTIES** menu allows the user to specify what types of messages will be logged to an ASCII text file. Mark the lowest priority Event Log message you want to log to the Syslog server text file. For example, the figure below shows that all messages will be logged to the text file.



- The **HELP** menu also explains these features. Click on **HELP/CONTENTS/SYSLOG HOST DAEMON** for further explanation of Syslog features.

SYSTEM EVENT LOGGING

The ATLAS 890 Event Log is used to log various message types at settable threshold levels. This section describes the entries that may be logged by the system Event Log. The Event Log **CATEGORY** threshold is particularly important – this is the minimum severity level that must be set in order that the event be logged.



*Use caution when changing **CATEGORY** values from their default levels. If too many sources have their **CATEGORY** values set too low, the number of messages being logged in a given period can be very large. If too many messages are being logged too rapidly, system performance can be adversely affected.*

The Event Log is a useful tool for troubleshooting switchboard (or call connection) activities including the viewing of digits received, digits transferred, and ISDN Messages. Since most of the events discussed in the following tables are used primarily during troubleshooting, they should be turned off in normal operation.

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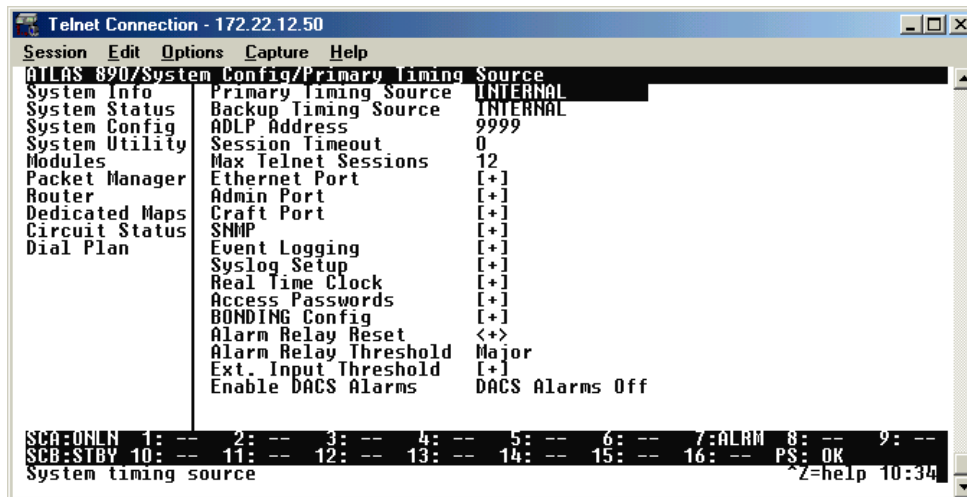
TABLES

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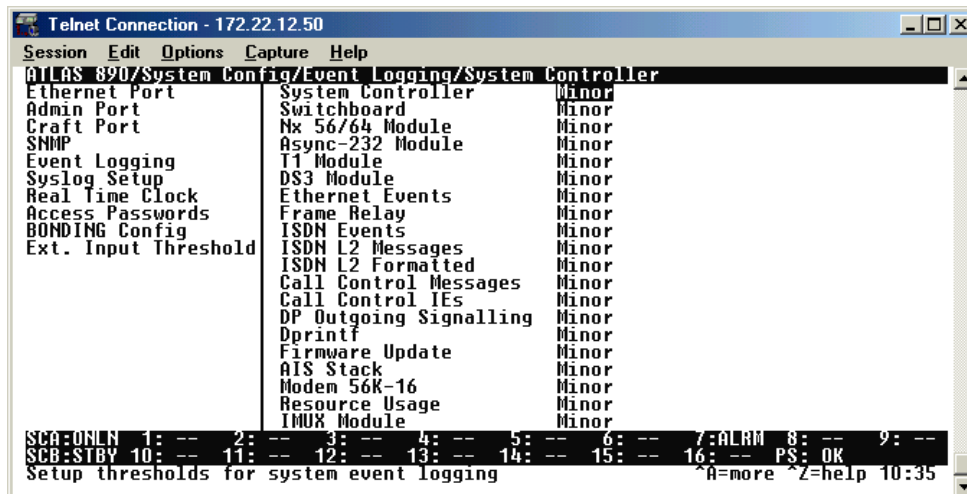
1. SETTING THE EVENT LOG CATEGORY

The following steps outline the procedure for setting up the event **CATEGORY** thresholds for the Event Log.

1. From the **MAIN MENU**, go to the **SYSTEM CONFIG** menu and press the right arrow key to enter the right-pane menus.

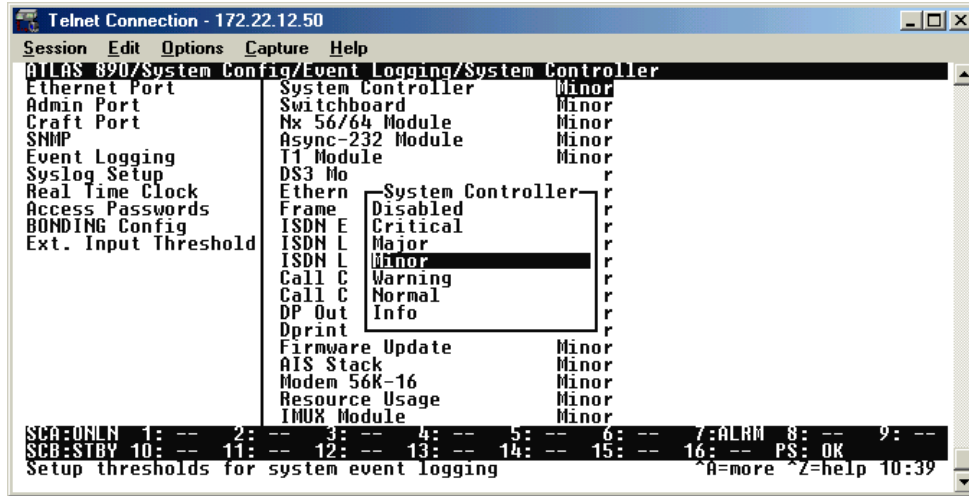



2. Select the **EVENT LOGGING** field and press <Enter>. Once in the **EVENT LOGGING** menus, press the right arrow key to access the right-pane menus.



3. Refer to the tables in this section to determine the desired **CATEGORY** thresholds.

- To change the **CATEGORY**, select the appropriate field and press <Enter>. This will provide a list of available options. Highlight the desired threshold and press <Enter> to select it.

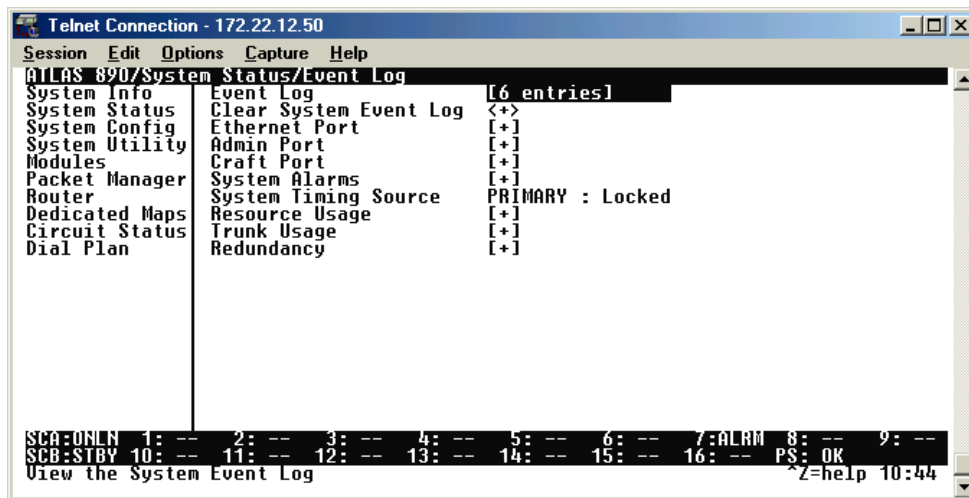


 Use caution when changing **CATEGORY** values from their default levels. If too many sources have their **CATEGORY** values set too low, the number of messages being logged in a given period can be very large. If too many messages are being logged too rapidly, system performance can be adversely affected.

2. VIEWING THE EVENT LOG

The following steps outline the procedure for viewing **EVENT LOG** messages.

- From the **MAIN MENU**, go to the **SYSTEM STATUS** menu and press the right arrow key to enter the right-pane menus.



2. Select the **EVENT LOG** field and press <Enter>. Once in the **EVENT LOG**, press the right arrow key to access the actual messages.

```
Telnet Connection - 172.22.12.50
Session Edit Options Capture Help
ATLAS 890/System Status/Event Log[05/07 11:03:12]
Event Log
Time Cat Src Slot Port
Ethernet Port 05/07 11:03:12 Min Syste S1 7 Module Not Responding
Admin Port 05/07 11:03:01 Min Syste S1 7 Module Found
Craft Port 05/07 09:04:09 Min ICC ICC is up
System Alarms 05/07 09:04:05 Min Exter Clear External Input
Resource Usage 05/07 09:04:05 Min Syste S117 Module Found
Trunk Usage Redundancy 05/07 09:04:05 Min Syste Module Found

SCA:ONLN 1: -- 2: -- 3: -- 4: -- 5: -- 6: -- 7:ALRM 8: -- 9: --
SCB:STBY 10: -- 11: -- 12: -- 13: -- 14: -- 15: -- 16: -- PS: OK
^Z=help 10:48
```



The **EVENT LOG** messages are stored in a first-in/first-out table. Therefore, the most recent log entry is found at the top of the log.



EVENT LOG messages may be sent to an external Syslog server for storage. Refer to DLP-013, “Using the ADTRAN Utility Syslog with the ATLAS 890,” for more details.

3. SYSTEM EVENTS

Table 1 through Table 9 provides a listing of ATLAS system events. This includes tables of events for each category, according to the order they appear in the **EVENT LOG** setup screen.

Table 1. System Controller Events

Console Log String	Category	Event
AC Power Supply has Recovered	CRITICAL	AC power supply is functioning normal again
AC Power Supply has Failed	CRITICAL	AC power supply is not operating properly
AC Power Supply has Exceeded Temperature Limit	CRITICAL	Internal system temperature has exceeded safe operating limit
AC Power Supply is Under Temperature Limit	CRITICAL	Internal temperature has cooled to safe operating limit
DC Power Supply has Recovered	CRITICAL	DC power supply is functioning normally again
DC Power Supply has Failed	CRITICAL	DC power supply is not operating properly
DC Power Supply has Exceeded Temperature Limit	CRITICAL	Internal system temperature has exceeded safe operating limit
DC Power Supply is Under Temperature Limit	CRITICAL	Internal temperature has cooled to safe operating limit
Firmware invalid	CRITICAL	Corrupted firmware
Firmware update failed	CRITICAL	Flash download failed
Fan 1 is Disconnected	CRITICAL	Fan 1 is disconnected
Fan 2 is Disconnected	CRITICAL	Fan 2 is disconnected
Fan 3 is Disconnected	CRITICAL	Fan 3 is disconnected
Fan 1 is Connected	CRITICAL	Fan 1 is connected
Fan 2 is Connected	CRITICAL	Fan 2 is connected
Fan 3 is Connected	CRITICAL	Fan 3 is connected
Fan 1 is Below Speed Threshold	CRITICAL	Fan 1 is rotating too slowly
Fan 2 is Below Speed Threshold	CRITICAL	Fan 2 is rotating too slowly
Fan 3 is Below Speed Threshold	CRITICAL	Fan 3 is rotating too slowly
Fan 1 is Above Speed Threshold	CRITICAL	Fan 1 is rotating too fast
Fan 2 is Above Speed Threshold	CRITICAL	Fan 2 is rotating too fast
Fan 3 is Above Speed Threshold	CRITICAL	Fan 3 is rotating too fast

Table 1. System Controller Events (Continued)

Console Log String	Category	Event
Fan 1 Speed is Normal	CRITICAL	Fan 1 has returned to an acceptable speed
Fan 2 Speed is Normal	CRITICAL	Fan 2 has returned to an acceptable speed
Fan 3 Speed is Normal	CRITICAL	Fan 3 has returned to an acceptable speed
System Configuration Uploaded	CRITICAL	ATLAS configuration file loaded into the system and activated
Module Not Responding	WARNING	Module removed or not responding
ACO Switch pressed	MINOR	ACO switch pressed
External Alarm Detected	MINOR	Alarm detected on External Alarm Monitor
Login Failure	MINOR	Console login failure ^a
External Alarm Cleared	MINOR	External alarm cleared
Timing source changed to Internal	MINOR	Neither the primary nor the backup are valid
Timing source changed to Backup	MINOR	The primary source is not Backup valid
Timing source changed to Primary	MINOR	The timing source changed to primary
Not responding to programming	MINOR	Unable to program module
Cold	NORMAL	System cold start ^b
Firmware update completed	INFO	Flash download successful
Module Found	INFO	Module found
SNMP Authentication Failure	INFO	SNMP authentication failure ^c

- a. Three consecutive logins were attempted and failed.
- b. Generated five seconds after the completion of system initialization.
- c. Generated if the ATLAS receives an SNMP request from an SNMP manager defined in the ATLAS SNMP communities list but with a community name that does not match the community name defined in the SNMP communities list.

Table 2. Switchboard Events

Console Log String	Category	Event
<number> rejected: No such number	WARNING	Call rejected ^a
<number> rejected: Outgoing reject list	NORMAL	Call rejected ^b

Table 2. Switchboard Events (Continued)

Console Log String	Category	Event
<number> rejected: Busy	NORMAL	Call rejected ^c
<number> accepted: <slot> <port>	NORMAL	Call successfully routed

- a. *No such number in dial plan.*
- b. *Number is on outgoing reject list.*
- c. *All endpoints busy.*

Table 3. ICC Events

Console Log String	Category	Event
Unable to Allocate Memory for Flash Download	CRITICAL	Not enough memory available to flash the controller
ICC is up	MINOR	Communication link between redundant controllers is active
ICC is down	MINOR	Communication link between redundant controllers is down
SCUA(B) - incompatible hardware	MINOR	Redundant controllers do not have the same version of hardware
SCUA(B) - incompatible software	MINOR	Redundant controllers do not have the same version of software

Table 4. Nx 56/64 Events

Console Log String	Category	Event
Nx 56/64 511 Test Pattern Active	WARNING	511 Test Pattern Activated
Nx 56/64 511 Test Pattern Cleared	WARNING	511 Test Pattern Deactivated
Nx 56/64 Bilateral Loopback Active	WARNING	Bilateral Loopback Activated
Nx 56/64 Bilateral Loopback Cleared	WARNING	Bilateral Loopback Deactivated
Nx 56/64 Excessive Zeros Alarm	WARNING	Excessive Zeros from DTE
Nx 56/64 Excessive Zeros Alarm Cleared	WARNING	Excessive Zeros condition cleared
Nx 56/64 Clock Slip Alarm Active	MAJOR	Clock Slip Alarm Active
Nx 56/64 Clock Slip Alarm Cleared	MAJOR	Clock Slip Alarm Cleared
Nx 56/64 External Clock Alarm Active	MAJOR	External Clock Alarm

Table 4. Nx 56/64 Events (Continued)

Console Log String	Category	Event
Nx 56/64 External Clock Alarm Cleared	MAJOR	External Clock Alarm Cleared
Nx 56/64 PLL Alarm Active	MAJOR	PLL Alarm Active
Nx 56/64 PLL Alarm Cleared	MAJOR	PLL Alarm Cleared
Nx 56/64 CTS Asserted	INFO	CTS Asserted
Nx 56/64 CTS Dropped	INFO	CTS Dropped
Nx 56/64 DCD Asserted	INFO	DCD Asserted
Nx 56/64 DCD Dropped	INFO	DCD Dropped
Nx 56/64 DTR Asserted	INFO	DTR Asserted
Nx 56/64 DTR Dropped	INFO	DTR Dropped
Nx 56/64 RTS Asserted	INFO	RTS Asserted
Nx 56/64 RTS Dropped	INFO	RTS Dropped

Table 5. T1 Events

Console Log String	Category	Event
T1 Curr CSS Thrs Exceeded	WARNING	Current T1 Controlled Slip Seconds Threshold Exceeded
T1 Curr ES Thrs Exceeded	WARNING	Current T1 Errored Seconds Threshold Exceeded
T1 Curr LCV Thrs Exceeded	WARNING	Current T1 Line Code Violations Threshold Exceeded
T1 Curr LES Thrs Exceeded	WARNING	Current T1 Line Errored Seconds Threshold Exceeded
T1 Curr PCV Thrs Exceeded	WARNING	Current T1 Path Code Violations Threshold Exceeded
T1 Curr SEFS Thrs Exceeded	WARNING	Current T1 Severely Errored Framing Seconds Threshold Exceeded
T1 Curr SES Thrs Exceeded	WARNING	Current T1 Severely Errored Seconds Threshold Exceeded
T1 Curr UAS Thrs Exceeded	WARNING	Current T1 Unavailable Seconds Threshold Exceeded
T1 Line Loopback Active	WARNING	Line Loopback Active

Table 5. T1 Events (Continued)

Console Log String	Category	Event
T1 Loopback Cleared	WARNING	Loopback Cleared
T1 Payload Loopback Active	WARNING	Payload Loopback Active
T1 Total CSS Thrs Exceeded	WARNING	Total T1 Controlled Slip Seconds Threshold Exceeded
T1 Total ES Thrs Exceeded	WARNING	Total T1 Errored Seconds Threshold Exceeded
T1 Total LCV Thrs Exceeded	WARNING	Total T1 Line Code Violations Threshold Exceeded
T1 Total LES Thrs Exceeded	WARNING	Total T1 Line Errored Seconds Threshold Exceeded
T1 Total PCV Thrs Exceeded	WARNING	Total T1 Path Code Violations Threshold Exceeded
T1 Total SEFS Thrs Exceeded	WARNING	Total T1 Severely Errored Framing Seconds Threshold Exceeded
T1 Total SES Thrs Exceeded	WARNING	Total T1 Severely Errored Seconds Threshold Exceeded
T1 Total UAS Thrs Exceeded	WARNING	Total T1 Unavailable Seconds Threshold Exceeded
T1 Blue Alarm Cleared	MAJOR	Blue Alarm Cleared
T1 Blue Alarm Active	MAJOR	Blue Alarm Set
T1 D Channel Alarm Cleared	MAJOR	D Channel Alarm Cleared
T1 D Channel Alarm Active	MAJOR	D Channel Alarm Set
T1 LOS Cleared	MAJOR	LOS Alarm Cleared
T1 LOS Active	MAJOR	LOS Alarm Set
T1 Red Alarm Cleared	MAJOR	Red Alarm Cleared
T1 Red Alarm Active	MAJOR	Red Alarm Set
T1 Tx Blue Alarm Cleared	MAJOR	Tx Blue Alarm Cleared
T1 Tx Blue Alarm Active	MAJOR	Tx Blue Alarm Set
T1 Tx Yellow Alarm Cleared	MAJOR	Tx Yellow Alarm Cleared
T1 Tx Yellow Alarm Active	MAJOR	Tx Yellow Alarm Set
T1 Yellow Alarm Cleared	MAJOR	Yellow Alarm Cleared
T1 Yellow Alarm Active	MAJOR	Yellow Alarm Set

Table 6. Ethernet Events

Console Log String	Category	Event
Out of memory	CRITICAL	Not enough memory for Ethernet driver

Table 7. ISDN Events

Console Log String	Category	Event
BRI configuration failed: No ISDN resources are available	CRITICAL	No BRI resources available
PRI configuration failed: No ISDN resources are available	CRITICAL	No PRI resources available
No SPID matches the call profile: <called number> <call type>	WARNING	No Matching SPID found
No SPID with free B channels matches call type: <call type>	WARNING	No Matching SPID found
LT: Tried to call unregistered SPID <spid>	WARNING	SPID Unregistration attempted
D channel is DOWN	MAJOR	D Channel Down
<message>: Incorrectly formatted cause IE	MAJOR	Incorrectly formatted IE
BRI NT: Spid <spid> was rejected	MAJOR	SPID Failed
BRI NT: SPID Negotiations failed - resetting the link	MAJOR	SPID Negotiation failed
BRI LT: SPID <spid> received - NOT IN LIST	MAJOR	Unknown SPID received
BRI NT: SPID Negotiations failed - Retrying	MINOR	SPID Retry in progress
Configured BRI as LT	NORMAL	BRI LT configuration successful
Configured BRI as NT	NORMAL	BRI NT configuration successful
Rejected an incoming call for an unregistered SPID	NORMAL	Call Rejected
D channel is UP	NORMAL	D Channel Up
Released: No longer an ISDN line	NORMAL	ISDN line released
No outgoing B channel available for call to <number>	NORMAL	No B channels for call
Configured PRI as central office emulator	NORMAL	PRI CO configuration successful

Table 7. ISDN Events (Continued)

Console Log String	Category	Event
Configured PRI as CPE	NORMAL	PRI CPE configuration successful
BRI NT: Spid <spid> registered	NORMAL	SPID registered
BRI LT: All SPIDs registered	NORMAL	SPID Registration complete
BRI NT: All SPIDs registered	NORMAL	SPID Registration complete
BRI LT: Registering SPID <spid>	NORMAL	SPID Registration in progress
BRI NT Registering SPID <spid>	NORMAL	SPID Registration in progress
Call to <called number> declared busy after leaving ATLAS	INFO	Call busy
Call to <called number> refused: Busy	INFO	Call busy
Call to <called number> cleared from ATLAS end	INFO	Call cleared
Call to <called number> connected	INFO	Call connected
Call to <called number> disconnected by far end	INFO	Call disconnected
Call not accepted to <called number>: No channel available	INFO	Call not accepted
Call to ATLAS: <called number> received	INFO	Call received
Call to <called number> ringing	INFO	Call ringing
Dialing <called number>	INFO	Dialing number
Incoming call to <called number> accepted	INFO	Incoming call accepted
Incoming call to <called number> refused	INFO	Incoming call refused

Table 8. Circuit Backup Events

Console Log String	Category	Event
Circuit Backup Attempt Failed	MAJOR	Outgoing backup call was unsuccessful
Circuit Backup Test Call Failed	MAJOR	Outgoing backup test call was unsuccessful
Attempting Circuit Backup	MINOR	Circuit Backup call attempted to restore data circuit
Circuit Backup Active	MINOR	Port is currently in backup

Table 8. Circuit Backup Events (Continued)

Console Log String	Category	Event
Circuit Backup Deactivated, Primary Restored	MINOR	Port was in backup, but primary data function was restored
Circuit Backup Data Alarm Active	MINOR	Inband keep alive messages were disrupted or corrupted
Circuit Backup Data Alarm Cleared	MINOR	Inband keep alive messages are functioning properly
Circuit Backup Test Call Originated	INFO	Circuit Backup test call was attempted by the unit
Circuit Backup Test Call Connected	INFO	Circuit Backup test call was successfully connected to backup site
Circuit Backup Test Call Passed	INFO	Circuit Backup test call was successfully maintained for test period

Table 9. DP Outgoing Signaling Events

Console Log String	Category	Event
TX Set Rx ABCD <> Tx ABCD <> ^a	INFO	ATLAS changed signal bits on port
RX Change Rx ABCD <> Tx ABCD <>	INFO	Equipment connected to port changed signal bits

a. The ATLAS 890 uses only AB signaling bits. The CD signaling bits are a copy of the AB values. These values are shown in hexadecimal notation. For example, if AB signal bits are 01, then the total signal bits would be 01 01. Putting that in hexadecimal notation results in an event of Tx set Rx ABCD 0x 05.

4. ISDN CAUSE CODES

In addition to the above events, certain recognized ISDN cause codes are sent to the Event Log from the ISDN message facility during **ISDN EVENTS**, **L2 MESSAGES**, and **L2 FORMATTED** event categories. Table 10 lists the codes applicable to the ATLAS 890 and the minimum category required for logging the cause code event.

Table 10. ISDN Cause Code Events

Cause Code Event	Category	Code
ACCESS_INFO_DISCARDED	WARNING	43
BAD_INFO_ELEM	MAJOR	99
BEAR_CAP_NOT_AVAIL	MINOR	58
CALL_REJECTED	INFO	21
CAP_NOT_IMPLEMENTED	MINOR	65
CHAN_NOT_IMPLEMENTED	MINOR	66
CHANNEL_UNACCEPTABLE	INFO	6
DEST_OUT_OF_ORDER	INFO	27
FACILITY_NOT_IMPLEMENTED	MAJOR	69
FACILITY_NOT_SUBSCRIBED	MINOR	50
FACILITY_REJECTED	INFO	29
INCOMING_CALL_BARRED	MINOR	54
INCOMPATIBLE_DEST	MAJOR	88
INTERWORKING_UNSPEC	MAJOR	127
INVALID_CALL_REF	MAJOR	81
INVALID_ELEM_CONTENTS	MAJOR	100
INVALID_MSG_UNSPEC	MAJOR	95
INVALID_NUMBER_FORMAT	INFO	28
MANDATORY_IE_LEN_ERR	MAJOR	103
MANDATORY_IE_MISSING	MAJOR	96
NETWORK_CONGESTION	WARNING	42
NETWORK_OUT_OF_ORDER	WARNING	38
NO_CIRCUIT_AVAILABLE	WARNING	34
NO_ROUTE	INFO	2
NO_USER_RESPONDING	INFO	18

Table 10. ISDN Cause Code Events (Continued)

Cause Code Event	Category	Code
NONEXISTENT_MSG	MAJOR	97
NORMAL_CLEARING	INFO	16
NUMBER_CHANGED	INFO	22
OUTGOING_CALL_BARRED	MINOR	52
PRE_EMPTED	WARNING	45
PROTOCOL_ERROR	MAJOR	111
REQ_CHANNEL_NOT_AVAIL	WARNING	44
RESP_TO_STAT_ENQ	INFO	30
SERVICE_NOT_AVAIL	MINOR	63
TEMPORARY_FAILURE	WARNING	41
TIMER_EXPIRY	MAJOR	102
UNASSIGNED_NUMBER	INFO	1
UNSPECIFIED_CAUSE	INFO	31
USER_BUSY	INFO	17
WRONG_MESSAGE	INFO	98
WRONG_MSG_FOR_STATE	MAJOR	101

5. CAUSE CODE LOG ENTRIES

Cause Code IEs that are non-Q.931 (i.e., the Coding Standard field is not 0) are logged with the following format:

<message>: <coding standard> code <cause code>

The coding standard field is one of the following: Reserved, National, or Local. Each Cause Code IE log entry ends with a location designation. Table 11 shows these designations. Table 12 through Table 14 provides a listing of system events.

Table 11. Cause Code Log Entry Location Designations

Code	Location
INOTL	International network
INWK	Network beyond internetworking point

Table 11. Cause Code Log Entry Location Designations (Continued)

LN	Public network serving the local user
LPN	Private network serving the local user
RLN	Public network serving the remote user
RPN	Private network serving the remote user
TN	Transit network
U	User

Table 12. ISDN L2 Messages

Console Log String	Category	Event
<message contents>	INFO	ISDN Layer 2 (LAPD) Message ^a

a. Provides a hex dump of the entire LAPD frame.

Table 13. ISDN Call Control Messages

Console Log String	Category	Event
Host>>CC <tag><call ID> <message>	INFO	ISDN Call Control Messages
CC>>Host <tag><call ID> <message>	INFO	ISDN Call Control Messages

Table 14. Source: ISDN Information Elements

Console Log String	Category	Event
<message contents>	INFO	ISDN Information Element ^a

a. Provides a hex dump of the ISDN IE sent with a call control message.

GLOSSARY

10/100BaseT Ethernet connection

The ATLAS RJ-48C port that provides Ethernet LAN connection for TFTP, SNMP, and Telnet.

A-Law

PCM coding method as defined by the ITU-T. It is a companding standard for converting between analog and digital in a PCM system. A-Law is mainly used in Europe. μ -Law is the North American equivalent.

AMI

Alternate mark inversion. A Layer 1 line code used in a T1 carrier. Zeros are transmitted as zero volts, and ones are transmitted as pulses that alternate polarity. Although B8ZS is an enhancement to AMI, B8ZS and AMI are normally referred to as mutually-exclusive options for a T1. (See also *B8ZS*.)

ANI

Automatic Number Identification. Service provided by a local phone company that provides the transmission of the Billing Number for the originating party. ANI information is sent through the network, from the originating central office, through all intermediate tandem offices, to the terminating central office. Unlike Caller ID, ANI information cannot be blocked by the calling party.

Annex A

Standard for frame relay signaling as defined by the International Telecommunication Union Telecommunication in publication Q.933-A.

Annex D

Standard for frame relay signaling as defined by the American National Standards Institute (ANSI) in publication T1.617-D.

ANSI T1.617-D (Annex D)

See Annex D.

ANSI T1.617-D (Annex D)

See Annex D.

ARP

Address Resolution Protocol. A protocol that maps an IP address to an ethernet MAC address.

B channel

Bearer channel. Bearer channels of an ISDN service carry provide data transmission. Compare with D channel.

B8ZS

Bipolar eight zero substitution. In a T1 carrier system, a specific eight bit pattern containing two deliberate bipolar violations which replaces eight consecutive data zero bits.

bandwidth

The transmission capacity of a communications channel, stated in megabits per second (Mbps).

BECN

Backward Explicit Congestion Notification. Sent to the device generating excessive frame relay traffic as a means to slow down the flow of data to the network. Compare with FECN.

bit

Bit is a contraction of the term binary digit. It is the smallest unit of information a computer can process representing either high or low, yes or no, or 1 or 0. It is the basic unit in data communications. A bit can have a value of zero (a mark) or one (a space).

bps

Bits per second. A measure of the speed of data communications.

BRI

Basic Rate ISDN. An ISDN service that offers two bearer (B) channels operating at 64 kbps for data transfer and a 16 kbps D channel for signaling and control information.

Burst

A sporadic increase in a transmission.

Bursty traffic

Traffic that alternates between steady transmission and short bursts of high transmission.

byte

Eight bits of information composed of zeros or ones, one of which may include a parity bit.

Caller ID

Caller ID is information about the originating party (telephone number, name, date, and time of call) that is transmitted on the subscriber loop using frequency shift keyed (FSK) modem tones. The message is transmitted using the ASCII character code form. Caller ID is not the same as ANI.

CIR

Committed Information Rate. The guaranteed bandwidth available for customer data under normal circumstances.

Compadding

The process of compressing and expanding a signal.

clocking

An oscillator-generated signal that provides a timing reference for a transmission link. A clock provides signals used in a transmission system to control the timing of certain functions. The clock has two functions, (1) to generate periodic signals for synchronization and (2) to provide a time base.

CPE

Customer premise equipment. All telecommunications terminal equipment located on the customer premises, including telephone sets, private branch exchanges (PBXs), data terminals, and customer-owned coin-operated telephones.

CS

See CTS.

CSU

Channel Service Unit. A device that functions similarly to a modem except that the CSU works with digital signals rather than analog signaling.

CTS

Clear to send. A signal on the DTE interface indicating that the DCE is clear to send data.

D channel

Delta channel. Controls the operation of the ISDN connection.

DACS

Digital Access Cross-Connect System. An architecture that allows the cross-connecting of several T1 circuits; that is, any DS0 on any T1 circuit can be groomed to any other DS0 on any of the other T1 circuits in the system.

DCE

Data communications equipment. The part of a computer or data terminal that connects to a communications channel or network.

dedicated bandwidth

Bandwidth which has been set aside (dedicated) for a specific connection and service.

DHCP

Dynamic Host Configuration Protocol. Allows dynamic IP address allocation.

Dial plan

The numbering plan for ATLAS ports (user and network) handling switched connections. Individual dial plans contain phone number and features associated with DTMF dialing, PRI and BRI.

DID

Direct Inward Dial. True DID lines provided as a service are inbound trunks that provide dialed information, but have no outbound dialing capability. In ATLAS, DID refers to digits received or transmitted that allow the attached equipment to further route a call.

Digital Access Cross-Connect System

See *DACS*.

Discard Eligible (DE)

A flag that can be set to indicate to the network that if excess traffic is received, this frame can be discarded if necessary.

DLCI

Data Link Connection Identifier. Identifies each virtual circuit within a shared physical channel. DLCIs have significance only for the physical circuit for which they are assigned (local significance).

DNIS

Dialed Number Identification Service. Service provided by a telephone company that allows the caller to see what number has been dialed.

DS0

Digital signal (or service) having a transmission rate of 64 kbps intended to carry one voice channel (a phone call). Also called a fractional T1 because it bridges the gap between 56-kbps direct dial service (DDS) and a full T1 implementation (24 channels).

DSU

Data Service Unit. A device used with a CSU to support digital communications by converting signals. (See also CSU.)

DTE

Data terminal equipment. The portion of a data terminal that interfaces to the end-user's equipment. The main difference between DCE and DTE is that pins 2 and 3 are reversed on the EIA-232.

DTMF dialing

Dual tone multifrequency dialing. The tones used by customer equipment to signal the network.

E1 circuit

European equivalent to the T-1 with a capacity of 2.048 Mbps. An E1 can handle 32 voice channels with each conversation being digitized at 64 kbps.

ESF

Extended superframe. A method of grouping T1 carrier frames into larger superframes, each containing 24 consecutive T1 frames.

FECN

Forward Explicit Congestion Notification. Sent to the device receiving data from the frame relay network to indicate that there is congestion in the receive direction. The receiving DTE device should take action to slow down traffic from the remote end. Compare with BECN.

flash memory

A kind of non-volatile storage device, similar to EEPROM, where erasing can only be done in blocks or the entire chip.

flash upgrades

Upgrades that can be downloaded into the flash memory.

FRAD

Frame Relay Access Device. Any equipment that provides a connection between a frame relay network and a LAN.

Frame Relay

A subset of the X.25 packet switching protocol that allows for efficient transmission of data by utilizing many virtual circuits on a single physical interface.

FTP

File Transfer Protocol. The TCP/IP protocol used to log in to a network, list files and directories, and transfer files.

Full Status Poll

A poll that occurs each N391 polls and reports the status of each PVC. During this poll the frame relay switch can also notify the user side of the UNI of any creation or deletion of frame relay PVCs.

G.711

ITU-specified voice compression algorithm designed to transmit and receive PCM voice at rates of 48, 56, and 64 kbps.

G.723.1

ITU-specified voice compression algorithm with a low bit rate (5.3 kbps or 6.3 kbps) output quality.

Groom

The assignment and redistribution of any DS0 on any T1 circuit to any other DS0 on any of the T1 circuits in a DACS.

Group of Four

The Frame Relay Consortium, composed of Cisco Systems, DEC, Nortel, and StrataCom, which defined an interface for the UNI.

HDLC

High Level Data Link Control. A generic link-level communications protocol developed by the International Organization for Standardization (ISO). HDLC manages synchronous code-transparent, serial information transfers over a link connection.

hot swappable

A device is hot swappable if it can be installed without powering down the main unit.

IAD

Integrated Access Device. A network access device that provides many services from a single platform. The ATLAS is an IAD.

IARP

Inverse Address Resolution Protocol. Used for resolving the protocol address when the hardware address is known.

ICMP

Internet Control Message Protocol. Specified in RFC-292 to provide diagnostic functions.

Integrated Access System

A chassis-based product that supports a number of end-user applications on the subscriber side and a number of carrier interfaces on the trunk side. The ATLAS is an Integrated Access System designed to provide significant wide-area cost savings through the consolidation of voice, data, fax, and video.

IP

Internet Protocol. A protocol which provides for transmitting blocks of data between hosts identified by fixed-length addresses.

ISDN

Integrated Services Digital Network. A network architecture that enables end-to-end digital connections. The network supports diverse services through integrated access arrangements and defines a limited set of standard, multipurpose interfaces for equipment vendors, network providers, and customers. Interworking with a public switched telephone network is retained.

ITU-T Q.933-A (Annex A)

See Annex A.

IXC

Interexchange Carrier. Phone companies that connect LECs.

kbps

Kilobits per second. 1,000 bits per second.

LAN

Local area network. A group of computers and peripheral devices connected by a communications channel, limited by distance.

leased line

A telecommunication facility or link reserved for the exclusive use of one customer. Also called a dedicated line.

LEC

Local Exchange Carrier. Provides local access to public data and phone networks.

LED

Light emitting diode.

Link Integrity Poll

A poll that occurs each T391 seconds to determine the state of the connection to the frame relay switch.

LLC2

Logical Link Control Type 2. Upper portion of the Data Link layer (layer 2) that handles flow control and error control.

LMI

Standard published by the Frame Relay Consortium in 1990 to create a defined interface on the UNI. The Consortium was composed of Cisco Systems, DEC, Nortel, and StrataCom, and is commonly referred to as the Group of Four. LMI has become a generic term to indicate the type of frame relay signaling used and could be used to mean Annex A or Annex D.

local loop

In telephony the wire pair that connects a subscriber to a phone company end office, typically containing two wires. Four-wire local loops are common, however, especially with leased voice grade circuits.

loopback

A diagnostic procedure where data is sent to the device being tested, and the output of the device is fed directly back to its input, looped around, and the returning data is checked against that which was sent.

MAC Address

Data link address that is unique for every device that gets connected to a LAN. Devices on the LAN use these addresses to update routing tables.

Mbps

Mega bits per second. A measure of the amount of information travelling across a network or communications link.

MIB

Management information base. The MIB is an index to the organized data stored within a network device.

μ-Law

A companding standard for converting between analog and digital in a PCM system. μ-Law is mainly used in North America. A-Law is the European equivalent.

multiplexer

A device (mux) that takes several low-speed channels and merges them into one high-speed channel at one end of a link. Another multiplexer at the other end of the link reverses this process.

N391

Defines how many link integrity polls occur before a full status poll. One out of the number defined in N391 is a full status poll. Default is 6.

N392

Defines how many bad polls can occur within an N393 window before the link is declared down.

N393

Defines the number of polls that make up the window used by N392 to determine if a link is operational.

NNI

A standard interface between two frame relay switches.

nonvolatile memory

Any form of memory that retains its contents when power is removed (for example, ROM, EPROM, etc.)

NT1

Network termination 1. A unit that provides physical and electromagnetic termination of the U-interface, 2-wire transmission line; converts between Layer 1 formats used at the U- and T- reference points; and performs some maintenance functions.

option modules

Any optional, hot-swappable module that can be added to the ATLAS system for a variety of applications.

OSI

Open System Interconnection. It is a standard defined by ISO and the ITU-T to allow interoperability between equipment of different vendors.

overbooking

ATLAS feature that reduces telecommunications expenses by allowing you to over-subscribe switched bandwidth for situations where simultaneous access to the network by every subscriber is not required.

Packet

A transmission that contains both control information and data.

Packet Endpoint

A virtual port within the ATLAS that a specified physical port terminates its data into for further routing by the system.

Packet Switching

A method of routing packets that avoids congestion and minimizes delivery time.

PBX

Private branch exchange. A telephone system usually owned by the customer that serves a particular location. It provides connections from one phone extension to another and connects to the external telephone network.

PCM

Pulse Code Modulation. The most common method for encoding analog voice into a digital bit stream.

PIV

Port/PVC Interval. Think of this as a resource meter. The ATLAS can track up to 10,000 PIVs. The PIV is derived from the Max Number of Days and Max Number of Intervals selected by the user. Changing one affects the other.

PRI

Primary Rate ISDN. An ISDN service that provides 23 B (bearer) channels (64 kbps each) for data transmission and 1 D (data) channel (64 kbps) for signaling and control.

PVC

Permanent Virtual Circuit. Virtual circuit within the frame relay network that has all bandwidth parameters permanently defined upon ordering the circuit.

QOS

Quality of service. A means of guaranteeing available bandwidth under normal operating conditions.

Remote Access

The ability to connect to non-local communications equipment.

RIP

Routing Information Protocol. A protocol used to exchange routing information among a set of computers connected by a LAN. RIP uses hop count as a routing metric.

robbed bit signaling

A type of in-band signaling used with voice transmissions for multiplexing multiple voice circuits onto a T1.

Router

An interface which finds the best path between two networks. Routers forward packets from one network to another, based on network layer information.

Routing Metric

The method by which a routing algorithm determines that one route is better than another. This information is stored in routing tables. Such tables include reliability, delay bandwidth, load, MTUs, communication costs, and hop count.

SNA

Systems Network Architecture. Network architecture developed by IBM in the 1970s.

SNMP

Simple Network Management Protocol. A control and reporting scheme widely used to manage devices from different vendors. SNMP operates on top of the Internet protocol.

SVC

Switched Virtual Circuit. Virtual circuit within the frame relay network that is created only when needed. Bandwidth parameters are defined each time the circuit is created.

synchronous

1. The condition occurring when two events happen in a specific time relationship with each other, both under control of a master clock.
2. A method of data transmission requiring the transmission of timing pulses to keep the sender and receiver synchronized in their communication used to send blocks of information. Synchronous data transmission is used in high speed data circuits because there is less overhead than asynchronous transmission of characters which contain two extra bits per character to affect timing.

T1 circuit

Also T-1. A digital transmission link with a capacity of 1.544 Mbps. T1 uses two pairs of normal twisted wires. T1 normally can handle 24 voice conversations with each conversation being digitized at 64 kbps. With more advanced digital voice encoding techniques, it can handle more voice channels. T1 is a standard for digital transmission in North America.

T391

Defines the time in seconds between frame relay link integrity polls.

T392

Defines the time in seconds the frame relay switch will wait for a poll from the user before declaring the poll bad.

TBOP

Transparent Bit Oriented Protocol. ADTRAN proprietary method for transmitting HDLC traffic across a frame relay network.

TCP

Transmission Control Protocol. Connection oriented protocol that provides error control of IP traffic.

TCP/IP

Transmission Control Protocol/Internet Protocol. A set of communications protocols that encompasses media access, packet transport, session communications, file transfer, electronic mail, and terminal emulation.

TDM

Time Division Multiplexing. A method for sending two or more signals over a common transmission path by assignment the path sequentially to each signal, each assignment being for a discrete time interval.

Telco

Telephone company.

Telnet

A terminal emulation protocol, part of the TCP/IP suite of protocols, that provides remote terminal-connection services. (See also *VT-100*.)

TFTP

Trivial File Transfer Protocol. A simplified version of the TCP/IP file transfer protocol that does not include password protection or user-directory capability.

TIA 464A

Telecommunication Industry Association's standard for DTMF detection and generation.

Transparent (voice compression)

Similar to G.711 with echo cancellation (for voice) disabled. This algorithm is primarily used for video-conferencing.

Transparent BOP

See TBOP

trunk

A direct line between two telephone switching centers.

TSU

T1 Service Unit.

UDP

User Datagram Protocol. Connectionless protocol defined by RFC 768 for transmission of data without acknowledgment or error control.

UNI

User to Network Interface. Defines the interface between the CPE and the frame relay providers switch.

Voice Compression

A means of reducing the bandwidth required for transmission of voice traffic with minimal impact on the quality of the voice.

VT-100

A non-intelligent terminal or terminal emulation mode used for asynchronous communications. Used to configure the ATLAS 890.

WAN

Wide Area Network. A network that connects users across large distances.

XMODEM

An error-correcting file transfer, data transmission protocol used to transmit files between PCs. The XMODEM protocol sends information in 128 byte blocks of data. Some sums (check sums) are done on each block and the result is sent along with the block. If the result does not check out at the other end, the computer at the other end sends a request (a NAK-negative acknowledgment) to retransmit that block again. If the block checks out, the computer send ACK (an acknowledgment). In this way, relatively error-free transmissions can be accomplished.