Management Software

AT-S65

User's Guide

AT-LX3800U Multi-Service Transport System

Version 1.0.0

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Allied Telesyn

Contents

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Preface

This guide contains instructions on how to configure and manage an AT-LX3800U Multi-Service Transport System using the AT-S65 management software and contains the following sections:

Where to Find Web-based Guides

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- Allied Telesyn web site: **www.alliedtelesyn.com**
- Allied Telesyn FTP server: **ftp://ftp.alliedtelesyn.com**

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Chapter 1

Getting Started

The AT-S65 management software for the AT-LX3800U Multi-Service Transport System allows you to monitor and manage the chassis and the components installed in it. Some of the functions you can perform with the AT-S65 management software are:

- Review the performance and status of the chassis and line cards
- Set up traps to send messages to remote management stations
- Configure temperature thresholds for the chassis, line cards, and SFPs
- Diagnose problems in the chassis and line cards

The AT-S65 management software is preinstalled on the chassis with default settings for all operating parameters.

There are three ways to access the management software on the chassis. These methods are referred to in this guide as management sessions and are described in this chapter.

This chapter contains the following sections:

Local Management Session

You establish a local management session with the AT-LX3800U chassis when you use the management cable included with the chassis to connect a terminal or PC with a terminal emulation program to the RS-232 port on the chassis. The RS-232 port is located on the front panel of the AT-LX3800U chassis and has a DIN-8 style connector.

This type of management session is referred to as “local” because you must be physically close to the chassis, such as in the wiring closet where the chassis is located.

After the session starts, the menus are displayed from which you can make selections to configure and manage the chassis. You can configure all of the chassis operating parameters from a local management session.

A chassis does not need an Internet Protocol (IP) address for you to manage it locally. You can start a local management session on the chassis at any time and not interfere with the chassis operations.

Starting a Local Management Session

To start a local management session on the chassis, perform the following procedure:

1. Connect the DIN-8 end of the management cable included with the AT-LX3800U chassis to the RS-232 terminal port on the front of the chassis, as shown in Figure 1.

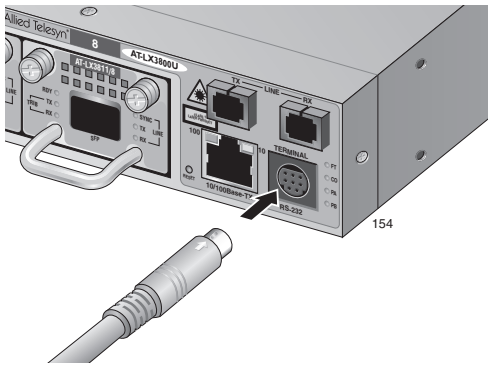

Figure 1. Connecting the Management Cable to the RS-232 Port

2. Connect the other end of the cable to an RS-232 port on a terminal or PC with a terminal emulation program.

3. Configure the terminal or terminal emulation program to the following settings:

   - Baud rate: 9600 (default value)
   - Data bits: 8

- Parity: None
- Stop bits: 1
- Flow control: None

Note
These settings are for a DEC VT100 or ANSI terminal, or an equivalent terminal emulation program.

The software initializes.

4. Press Return.

   The Login prompt is displayed.

5. To configure chassis settings, enter "manager" as the user name. To only view the settings, enter "operator" as the user name.

   The Password prompt is displayed.

6. To configure chassis settings, enter "friend" as the password for a manager login. To only view the settings, enter "operator" as the password for an operator login.

   The Main Menu is displayed, as shown in Figure 2.

```
                Allied Telesyn AT-LX3800U

                        Main Menu

Module Status and Configuration

Administration

System Configuration

Quit
```

Figure 2. AT-S65 Main Menu

Refer to "Using the Menus Interface" on page 19 for information about how to move through the menus and make menu selections.

Quitting a Local Management Session

To end a local management session, return to the Main Menu and select **Quit**.

Note
The AT-S65 management software supports only one management session at a time. Therefore, it is important to always quit a management session when you are finished managing the chassis. Otherwise, you might block future management sessions or software downloads. You can configure a timeout value so that the chassis automatically disconnects a management session after a defined period of inactivity. The default timeout is 5 minutes. To configure a different timeout value, refer to “Specifying a Timeout Value” on page 50.

Remote Management Session

You can use the Telnet application from any workstation on your network to manage an AT-LX3800U system. This type of management session is referred to as remote management because you do not need to be physically close to the chassis to start the session.

A remote management session allows you to access the same menus and options that you can access with a local management session.

To manage a chassis remotely, you must first assign an IP address to it, as described in "Configuring the IP Address, Subnet Mask, and Default Gateway" on page 24 using a local management session.

Starting a Remote Management Session

To start a remote management session, perform the following procedure:

1. Connect a twisted pair cable to the 10/100Base-T port on the front of the chassis, as shown in Figure 3.

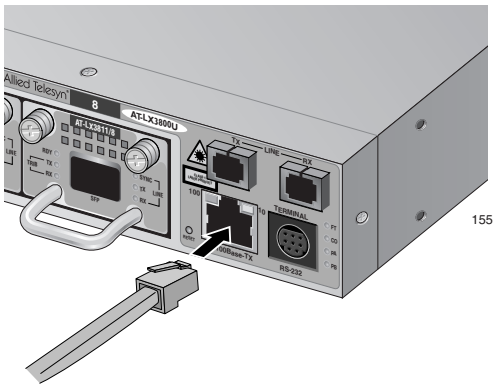

Figure 3. Connecting a Cable to the 10/100Base-T Port

Note
The RJ-45 port runs in MDIX mode. Be sure to use the proper cable. The connector and port pinouts are shown in Appendix A, "Technical Specifications," the *AT-LX3800U Multi-Service Transport System Installation and Maintenance Guide*.

2. In the Telnet application, specify the IP address of the AT-LX3800U chassis that you want to access.

   The software initializes and then the Login prompt is displayed.

3. To configure chassis settings, enter "manager" as the user name. To only view the settings, enter "operator" as the user name.

The Password prompt is displayed.

4. To configure chassis settings, enter “friend” as the password for a manager login. To only view the settings, enter “operator” as the password for the operator login.

   The Main Menu is displayed, as shown in Figure 2 on page 15.

Refer to “Using the Menus Interface” on page 19 for information about how to move through the menus and make menu selections.

Quitting a Remote Management Session

To end a remote management session, return to the Main Menu and select **Quit**.

Note
The AT-S65 management software supports only one management session at a time. Therefore, it is important to always quit a management session when you are finished managing the chassis. Otherwise, you might block future management sessions or software downloads. You can configure a timeout value so that the chassis automatically disconnects a management session after a defined period of inactivity. The default timeout is 5 minutes. To configure a different timeout value, refer to “Specifying a Timeout Value” on page 50.

Using the Menus Interface

Refer to Table 1 for information about how to move through the menus and make menu selections.

Table 1. Using the AT-S65 Menus Interface

When directed to	You must
Select an option	Highlight the option by pressing the up (↑) or down (↓) arrow key; then press Enter. or Type the first character of the desired option and press Enter.
Enter information (for example, the IP address of the chassis)	Type the information and press Enter.
Return to the previous menu	Select the "Return" option at the bottom of the menu. or Press Esc.

Activated options are preceded by a > symbol. In the following example, the Start Log option is activated.

```
Activity Monitor
>  Start Log
   Stop Log
```

When you press Enter to select a field in which you can enter a value, the -> symbol is displayed. For example:

```
Contact:    ->
```

The -> symbol indicates that you can enter a new value for the option or change the existing value. After you enter a value, press Enter again. To delete an existing value without entering a new value, press the space bar and then press Enter.

All changes are immediately activated on the chassis.

SNMP Management Session

Another way to remotely manage an AT-LX3800U chassis is to use an SNMP management application such as HP OpenView or AT-View Plus. To use an SNMP management application, you should be familiar with management information base (MIB) objects. You must download the AT-LX3800U MIB file from the Allied Telesyn web site and compile the file with your SNMP program. For instructions, refer to your SNMP management documentation.

Chapter 2

Basic Parameters

This chapter describes how to configure basic parameters on the chassis and contains the following procedures:

Configuring Basic Chassis Parameters

The AT-S65 management software provides options to configure some basic parameters on the chassis. This section contains the following procedures:

Configuring the Chassis Name, Location, and Contact

To configure the chassis name, location, and contact, perform the following procedure:

1. From the Main Menu, select **System Configuration**.

   The System Configuration Menu is shown in Figure 4.

```
                System Configuration Menu

System Name:              Null (not configured)

System Time Options

Omega Options

IP Parameters

Trap Parameters

Terminal Configuration

Temperature Threshold Configuration

Return to Main Menu...
```

Figure 4. System Configuration Menu

2. From the System Configuration Menu, select **System Name** and press Enter.

   The name can be up to 20 alphanumeric characters, including spaces and special characters. To delete a system name without entering a new name, press the space bar. This name is displayed at the top of every AT-S65 menu.

3. Type a name for the system and press Enter.
4. Select **IP Parameters** and press Enter.

   The IP Parameters Menu is shown in Figure 5.

```
                    IP Parameters Menu


  IP Address:             Null (not configured)
  Subnet Mask:            255.255.0.0
  Gateway Address:        Null (not configured)


  Manager Address1:       Null (not configured)
  Manager Address2:       Null (not configured)
  Manager Address3:       Null (not configured)
  Manager Address4:       Null (not configured)


  Get Community String:   public
  Set Community String:   private
  Trap Community String:  public
  Location:               Null (not configured)
  Contact:                Null (not configured)


> Disable DHCP
  Enable DHCP

  Return to System Configuration Menu ...
```

Figure 5. IP Parameters Menu

5. Adjust the following parameters as necessary:

   Location
   The physical location of the system, for example, Third Floor Network Operations. The location can be up to 20 alphanumeric characters, including spaces and special characters. To delete a location without entering a new name, press the space bar.

   Contact
   The name, phone number, and other information that identifies the person responsible for managing the system.The contact information can be up to 20 alphanumeric characters, including spaces and special characters. To delete the contact information without entering a new name, press the space bar.

Note
The IP Address, Subnet Mask, and Default Gateway parameters are described in “Configuring the IP Address, Subnet Mask, and Default Gateway,” next. The Manager IP addresses are described in “Configuring the Manager IP Addresses” on page 24. The Disable DHCP and Enable DHCP parameters are described in “Enabling or Disabling DHCP” on page 25.

Configuring the IP Address, Subnet Mask, and Default Gateway

To configure parameters for managing the chassis remotely, perform the following procedure:

1. From the Main Menu, select **System Configuration**.

   The System Configuration Menu is shown in Figure 4 on page 22.

2. From the System Configuration Menu, select **IP Parameters** and press Enter.

   The IP Parameters Menu is shown in Figure 5 on page 23.

3. Adjust the following parameters as necessary:

   IP Address
   Specifies the IP address of the chassis. You must specify an IP address, subnet mask, and gateway address if you intend to use Telnet or an SNMP management application to manage the chassis remotely. In addition, if the management station is separated from the chassis by a router, you must also provide a gateway address, which is the IP address of a router through which the chassis can communicate with the remote management station.

   Subnet Mask
   The subnet mask for the chassis. You must assign a subnet mask to manage the chassis remotely.

   Gateway Address
   The IP address of the default router. You must assign a subnet mask to manage the chassis remotely if a router separates the management station from the chassis.

4. After you have adjusted the parameters, return to the Main Menu.

Configuring the Manager IP Addresses

You can specify up to four network management stations that will receive SNMP traps from the system.

To configure the manager IP addresses, perform the following procedure:

1. From the Main Menu, select **System Configuration**.

The System Configuration Menu is shown in Figure 4 on page 22.

2. From the System Configuration Menu, select **IP Parameters** and press Enter.

   The IP Parameters Menu is shown in Figure 5 on page 23.

3. Adjust the following parameters as necessary:

   Manager Address1 through Manager Address 4
   Specifies up to four IP addresses of network management stations that will receive SNMP traps from the chassis. This is optional.

4. After you have adjusted the parameters, return to the Main Menu.

Configuring the SNMP Community Strings

To configure the SNMP community strings, perform the following procedure:

1. From the Main Menu, select **System Configuration**.

   The System Configuration Menu is shown in Figure 4 on page 22.

2. From the System Configuration Menu, select **IP Parameters** and press Enter.

   The IP Parameters Menu is shown in Figure 5 on page 23.

3. Adjust the following parameters as necessary:

   Get Community String
   The default setting for this string is "public."

   Set Community String
   A default setting for this string is "private."

   Trap Community String
   The default setting for this string is "public."

4. After you have adjusted the parameters, return to the Main Menu.

Enabling or Disabling DHCP

The Dynamic Host Control Protocol (DHCP) client software is included with the AT-S65 management software. When you enable DHCP, the system obtains its IP address, subnet mask, and default gateway address from the DHCP server. In order for this feature to work, there must be a DHCP server that resides on your network.

Note
Enabling DHCP overrides any IP configuration settings that you manually assigned.

Note
Boot Protocol (BOOTP), another protocol that performs an identical function, is not available on the AT-LX3800U system.

To enable or disable DHCP, perform the following procedure:

1. From the Main Menu, select **System Configuration**.

   The System Configuration Menu is shown in Figure 4 on page 22.

2. From the System Configuration Menu, select **IP Parameters** and press Enter.

   The IP Parameters Menu is shown in Figure 5 on page 23.

3. Select one of the following parameters:

   Disable DHCP
   Disables DHCP on the chassis.

   Enable DHCP
   Enables DHCP. If you enable DHCP, you must reset the chassis in order for the internal management module to start issuing DHCP requests to obtain its IP configuration.

   The chassis issues up to three requests for its IP configuration from the DHCP server. If the DHCP server does not respond, the chassis uses the assigned IP address, if one was manually assigned.

When you choose Enable DHCP, the IP Parameters Menu is refreshed to show the settings, as shown in Figure 6.

```
                    IP Parameters Menu


  IP Address:              [using 145.39.8.189 from DHCP]
  Subnet Mask:             [using 255.255.255.0 from DHCP]
  Gateway Address:         [using 149.39.8.1 from DHCP]


  Manager Address1:        Null (not configured)
  Manager Address2:        Null (not configured)
  Manager Address3:        Null (not configured)
  Manager Address4:        Null (not configured)


  Get Community String:    public
  Set Community String:    private
  Trap Community String:   public
  Location:                Null (not configured)
  Contact:                 Null (not configured)


  Disable DHCP
> Enable DHCP

 Return to System Configuration Menu ...
```

Figure 6. IP Parameters Menu with DHCP Values

4. After you have adjusted the parameters, return to the Main Menu.

Setting the System Date and Time

Setting the system time is important if you configured the chassis to send traps to your management stations. If the time is not set, traps do not contain the correct date and time. Therefore, it becomes difficult for you to determine when the events represented by the traps occurred.

There are two ways to set the time: manually and using Simple Network Time Protocol (SNTP). When you set the time manually, the chassis loses the values when it is reset or power cycled. When you use this method, you must reset the values whenever you reset the chassis.

When you set up SNTP, the chassis obtains the current date and time from an SNTP or Network Time Protocol (NTP) server located on your network or on the Internet. The AT-S65 management software contains the client version of SNTP. SNTP is a reduced version of NTP. However, the SNTP client software in the AT-S65 management software is interoperable with NTP servers.

To set the system's date and time, perform the following procedure:

1. From the Main Menu, select **System Configuration**.

   The System Configuration Menu is shown in Figure 4 on page 22.

2. From the System Configuration Menu, select **System Time Options** and press Enter.

   The System Time Configuration Menu is shown in Figure 7.

```
              System Time Configuration Menu


System Date (mm/dd/yyyy):     01/01/1980

System Time (hh:mm:ss):       00:00:00

SNTP Status:                  Disabled

SNTP Server:                  Null (not configured)

UTC Offset (-12 to 12):       0

Daylight Savings Time:        Disabled

Poll Interval (Seconds):      0

Last Delta (Seconds):         0

Return to System Configuration Menu ...
```

Figure 7. System Time Configuration Menu

3. Adjust the following parameters as necessary:

   System Date (mm/dd/yyyy)
   Enter a date for the system. Use two numbers for the day and month. Use four numbers to specify the year. Separate the values with slashes. For example, December 5, 2004 is specified as 12/05/2004. Note that if you then enable SNTP, the date you set is superseded by information obtained from the SNTP server.

   System Time (hh:mm:ss)
   Enter a time for the system in the following format: hours, minutes, and seconds, separated by colons. Note that if you then enable SNTP, the system time is superseded by information obtained from the SNTP server.

   SNTP Status
   This option either enables or disables the SNTP client on the chassis. The default is Disabled. After SNTP is enabled, the chassis immediately polls the SNTP or NTP server for the current date and time.

   SNTP Server
   If you set SNTP Status to Enabled, you must specify the IP address of an SNTP server.

   UTC Offset (-12 to 12)
   Coordinated Universal Time (UTC), the international time standard, formerly referred to as Greenwich Mean Time (GMT). The offset is the number of hours from -12 to 12 that the time for the chassis differs from UTC. The default is 0.

   Daylight Savings Time
   Select Enabled to enable daylight savings time, and allow the chassis to adjust its system time to daylight savings time. Or, select Disabled to disable daylight savings time. The default is disabled.

   Poll Interval (seconds)
   Specifies the time interval between queries to the SNTP server. The default is 0.

   Last Delta (seconds)
   This read-only field displays the last adjustment that was applied to the system time due to a drift in the system clock between two successive queries to the SNTP server.

4. After you have adjusted the parameters, return to the Main Menu.

Configuring the Trap Parameters

The trap parameters specify which traps are sent to the SNMP management stations specified in “Configuring the Manager IP Addresses” on page 24.

To set the trap parameters, perform the following procedure:

1. From the Main Menu, select **System Configuration**.

   The System Configuration Menu is shown in Figure 4 on page 22.

2. From the System Configuration Menu, select **Trap Parameters** and press Enter.

   The Trap Parameters Menu is shown in Figure 8.

```
                  Trap Parameters Menu


Chassis Over-Temperature:   0
Module Over-Temperature:    0
SFP Over-Temperature:       0
SFP Rate Change:            0
SFP Loss of Signal:         0
Module Loss of Signal:      0
Module Out of Sync:         0
SFP Insert/Removal:         0
Module Insertion/Removal:   0
RPS Failure:                0
RPS Insertion/Removal:      0
Port Active/Shutdown:       0
Fan Failure:                0
Link Test:                  0
Missing Link:               0
Cold Start:                 0
Authentication:             0

Return to System Configuration Menu ...
```

Figure 8. Trap Parameters Menu

The numbers following each trap relate to the list of IP addresses of management stations as shown in Figure 6 on page 27.

The number “1” following a trap represents “Manager Address1” in the IP Parameters Menu, number “2” represents “Manager Address2,” and so forth. You use this numbering to control which management stations receive which traps. For example, if you want “Manager Address1” and “Manager Address3” to receive the RPS traps, then

you would change the RPS trap items to show the number "1,3." The default is 0 (zero); no management stations receive traps.

3. Enter or change the parameters as desired.

   Changes to the parameters take effect immediately on the chassis.

   The traps are described in Table 2.

Table 2. SNMP Traps

Trap	Description
Chassis Over-Temperature	The chassis temperature has exceeded the set threshold. For information about setting the chassis temperature threshold, refer to "Configuring the Chassis Temperature Threshold" on page 33.
Module Over-Temperature	The temperature of a line card has exceeded the set threshold. For information about setting the line card temperature threshold, refer to "Configuring the Line Card Temperature Threshold" on page 34.
SFP Over-Temperature	The SFP transceiver's temperature has exceeded the set threshold. For information about setting the SFP temperature threshold, refer to "Configuring the SFP Temperature Threshold" on page 35.
SFP Rate Change	A rate has been changed on the client port.
SFP Loss of Signal	The SFP has been disconnected from the client port fiber.
Module Loss of Signal	The line port has been disconnected from the line port fiber.
Module Out of Sync	The line card is out of synch.
SFP Insertion/Removal	An SFP has been inserted into or removed from a line card.
Module Insertion/Removal	A line card has been inserted into or removed from the system.
RPS Failure	A redundant power supply (RPS) has failed.

Table 2. SNMP Traps (Continued)

Trap	Description
RPS Insertion/Removal	An RPS has been inserted into or removed from its slot.
Port Active/Shutdown	The port is active or has been shut down.
Fan Failure	A failure has occurred in one of the fan modules.
Link Test	Not yet available.
Missing Link	The MissingLink setting has changed. To set up the MissingLink feature, refer to Chapter 7, “Setting Up the MissingLink Feature” on page 91.
Cold Start	The chassis has been power cycled.
Authentication	An SNMP management application has attempted to perform a Set function, and the Set community string on an SNMP management application is different from the same community string on the chassis.

Setting the Temperature Thresholds

You can set a maximum temperature threshold for the chassis, line cards, and the SFPs in line cards. Whenever a temperature threshold is exceeded, the chassis sends a trap to the management stations defined in the Trap Parameters Menu, as described in "Configuring the Trap Parameters" on page 30. This section contains the following procedures:

- "Configuring the Chassis Temperature Threshold," next
- "Configuring the Line Card Temperature Threshold" on page 34
- "Configuring the SFP Temperature Threshold" on page 35

Configuring the Chassis Temperature Threshold

To set the chassis temperature threshold, perform the following procedure.

1. From the Main Menu, select **System Configuration**.

   The System Configuration Menu is shown in Figure 4 on page 22.

2. From the System Configuration Menu, select **Temperature Threshold Configuration** and press Enter.

   The Temperature Threshold Configuration Menu is shown in Figure 9.

```
          Temperature Threshold Configuration Menu

Chassis Temperature Threshold Configuration

Line Card Temperature Threshold Configuration

SFP Temperature Threshold Configuration

Return to System Configuration Menu ...
```

Figure 9. Temperature Threshold Configuration Menu

3. From the Temperature Threshold Configuration Menu, select **Chassis Temperature Threshold Configuration** and press Enter.

The Chassis Temperature Threshold Configuration Menu is shown in Figure 10.

```
            Chassis Temperature Threshold Menu


Maximum Temperature Threshold: 0

Return to Temperature Threshold Configuration Menu ...
```

Figure 10. Chassis Temperature Threshold Menu

4. From the Chassis Temperature Threshold Menu, select **Maximum Temperature Threshold**.
5. Enter a number for the Maximum Temperature Threshold and press Enter.

   The highest possible maximum temperature is 75° C.
6. After you have adjusted the parameters, return to the Main Menu.

Configuring the Line Card Temperature Threshold

To set the line card temperature threshold, perform the following procedure.

1. From the Main Menu, select **System Configuration**.

   The System Configuration Menu is shown in Figure 4 on page 22.
2. From the System Configuration Menu, select **Temperature Threshold Configuration**.

   The Temperature Threshold Configuration Menu is shown in Figure 9 on page 33.
3. From the Temperature Threshold Configuration Menu, select **Line Card Temperature Threshold Configuration** and press Enter.

   The Line Card Temperature Threshold Configuration Menu is shown in Figure 11.

```
          Line Card Temperature Configuration Menu


Module Number:

Maximum Temperature Threshold: 0

Return to Temperature Threshold Configuration Menu ...
```

Figure 11. Line Card Temperature Configuration Menu

4. From the Line Card Temperature Configuration Menu, select **Module Number**.
5. Type the number of the line card where the SFP is located and press Enter.
6. Select **Maximum Temperature Threshold**.
7. Enter a number for the Maximum Temperature Threshold and press Enter.

   The highest possible maximum temperature is 120° C. The default is 75°C.

8. After you have adjusted the parameters, return to the Main Menu.

Configuring the SFP Temperature Threshold

To set the temperature threshold for an SFP in a line card, perform the following procedure:

1. From the Main Menu, select **System Configuration**.

   The System Configuration Menu is shown in Figure 4 on page 22.

2. From the System Configuration Menu, select **Temperature Threshold Configuration** and press Enter.

   The Temperature Threshold Configuration Menu is shown in Figure 9 on page 33.

3. From the Temperature Threshold Configuration Menu, select **SFP Temperature Threshold Configuration** and press Enter.

   The SFP Temperature Threshold Configuration Menu is shown in Figure 12.

```
              SFP Temperature Threshold Menu


Module Number:1

Maximum Temperature Threshold: 0

Return to Temperature Threshold Configuration Menu ...
```

Figure 12. SFP Temperature Threshold Configuration Menu

4. From the SFP Temperature Threshold Menu, select **Module Number**.
5. Type the number of the line card where the SFP is installed.
6. Select **Maximum Temperature Threshold**.

7. Enter a number for the Maximum Temperature Threshold and press Enter.

   The highest possible maximum temperature is 100° C. The default is 75°C.

8. After you have adjusted the parameters, return to the Main Menu.

Note
The option to set the temperature threshold for an SFP is only available on SFPs that support this feature.

Pinging a Remote System

You can instruct the chassis to ping a remote device on your network. This procedure is useful in determining whether a valid link exists between the chassis and another device. The chassis sends an Internet Control Message Protocol (ICMP) echo request to the end node. If the node is operating and receives the request, it sends a reply to the chassis.

> **Note**
> You can only ping a remote device when you are connected remotely.

To instruct the chassis to ping a network device, perform the following procedure:

1. From the Main Menu, select **Administration***.*

   The Administration Menu is shown in Figure 13.

```
                    Administration Menu


  Xmodem Software Update to this System
  Image Download Through TFTP

  Ping a Remote System

  Syslog Server Address:      Null (not configured)
  Syslog Facility Code:       1

  Event Log

  Activity Monitor
> Start Log
  Stop Log

  Outstanding Errors
  Diagnostics
  Reset and Restart the System
  Reset Database to Default

 Return to Main Menu ...
```

Figure 13. Administration Menu

Note
The first two options on this menu are described in Chapter 6, ”Downloading AT-S65 Management Software Updates” on page 83. The Reset and Restart the System option is described in “Resetting and Restarting the System” on page 39. The remaining options are described in Chapter 4, ”Monitoring System Performance” on page 51.

2. From the Administration Menu, select **Ping a Remote System** and press Enter.

   The Ping menu is shown in Figure 14.

```
Please enter station IP address to ping:

Note: Ping will repeat until a key is pressed.

->
```

Figure 14. Ping Menu

3. Enter the IP address of the device you want the chassis to ping and press Enter.

   The display, as shown in Figure 15, reports the results of the Ping command.

```
Ping a Remote System
Ping Request: 3, Ping Reply: 3, Ping Lost: 0
```

Figure 15. Ping Results Example

   A Ping command continues until you stop it by pressing any key.

4. Return to the Main Menu.

Resetting and Restarting the System

When you reset a system, the system is also restarted. Resetting and restarting the system is a way to refresh all the statistics displays or overcome system errors. This process does not affect any system settings, return the system to its default values, or affect traffic entering or leaving the line card's physical line. However, it does terminate your management session and you must log in again after the reset is complete.

To reset and restart the system, perform the following procedure:

1. From the Main Menu, select **Administration.**

   The Administration Menu is shown in Figure 13 on page 37.

2. From the Administration Menu, select **Reset and Restart the System** and press Enter.

   The Reset and Restart the System Menu is shown in Figure 16.

```
Do reset system now? (Yes or No):

   Yes
   >No

   Return to Administration Menu ...
```

Figure 16. Reset and Restart the System Menu

3. Select **Yes** to reset the system or **No** to cancel the command.

   The reset process usually takes less than a minute.

4. Log in again to manage the system.

Changing the RS-232 Terminal Baud Rate

The default settings for the RS-232 terminal port are:

- Baud rate: 9600
- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow control: None

To set the RS-232 port to a different baud rate, perform the following procedure:

1. From the Main Menu, select **System Configuration**.

   The System Configuration Menu is shown in Figure 4 on page 22.

2. From the System Configuration Menu, select **Terminal Configuration** and press Enter.

   The Terminal Configuration menu is shown in Figure 17.

```
                Terminal Configuration Menu


Data Rate (Baud Rate)


Return to System Configuration Menu ...
```

Figure 17. Terminal Configuration Menu

3. From the Terminal Configuration Menu, select **Data Rate** and press Enter.

The Terminal Data Rate menu is shown in Figure 18.

```
                  Terminal Data Rate Menu


  115200 bps
  19200 bps
> 9600 bps
  4800 bps
  2400 bps


  Return to Terminal Configuration Menu ...
```

Figure 18. Terminal Data Rate Menu

4. Select the baud rate you want and press Enter.

   The default is 9600. To avoid connection problems, always set the terminal data rate and the baud rate in your terminal emulation program to the same setting.

5. Return to the Main Menu.

   Changes to the baud rate take effect the next time you start a local management session.

Displaying and Naming the Ethernet Port

To display information about the 10/100Base-T Ethernet port and give it a name, perform the following procedure:

1. From the Main Menu, select **Module Status and Configuration**.

   The Module Status and Configuration Menu is shown in Figure 19.

```
                        Module Status and Configuration Menu


 Module         -------------WDM Side-------------------------------Port Side----------

                 Status   Tx       Rx      T_SYN   R_SYN   MaxRate TX       Rx       SFP
1: Not Present  Unknown
2: Not Present  Unknown
3: AT-LX3811/2  MISMATCH
4: Not Present  Unknown
5: Not Present  Unknown
6: Not Present  Unknown
7: AT-LX3811/7  On       Offline  Offline Off     Off     OM       Offline  Offline  Out
8: Not Present  Unknown
9: MGMT BOARD   Off
10: AT-RPSA
11: Not Present Unknown
12: AT-CPU FAN1 On
13: AT-CPU FAN2 On
14: AT-CPU FAN  On

Return to Main Menu ...
```

Figure 19. Module Status and Configuration Menu

   The MGMT BOARD module reflects the status of the 10/100 Ethernet port.

2. Select item 9 and press Enter.

The MGMT BOARD menu is shown in Figure 20.

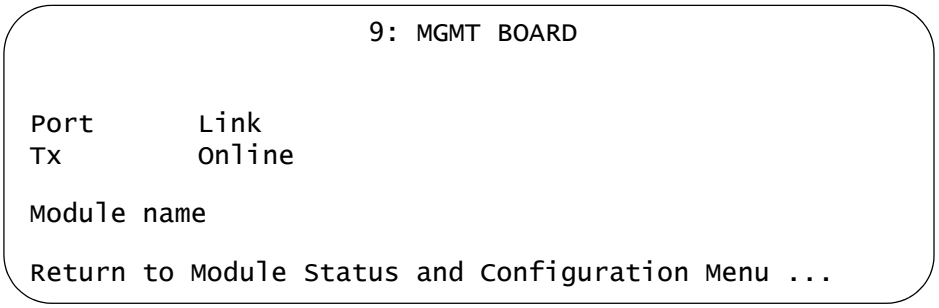

Figure 20. MGMT BOARD (Ethernet Port) Menu

The MGMT BOARD menu shows the current status of the Ethernet port:

Port
This item always displays "Tx."

Link
The status of the connection, which can be one of the following:

Offline - The port does not have an active connection.

Online - The port has an active connection.

3. To give the port a name, select **Module name** and press Enter.

   The name can contain up to 20 alphanumeric characters, including spaces and special characters.

4. Type a name for the module and press Enter.

5. Return to the Main Menu.

Returning the AT-S65 Management Software to the Factory Default Values

To return the AT-S65 management software to the factory default values, perform the following procedure:

1. From the Main Menu, select **Administration.**

   The Administration Menu is shown in Figure 13 on page 37.

2. From the Administration Menu, select **Reset Database to Default** and press Enter.

   The message in Figure 21 is displayed.

```
  Reset database to default now? (Yes or No):

  Yes
> No


Return to Administration Menu ...
```

Figure 21. Reset Management Software Menu

3. Select **Yes** and press Return.

   The following message is displayed:

   ```
   Database has been set to default, now rebooting the
   system . . .
   ```

   The software is reset to the default values (see Appendix A, “AT-S65 Management Software Default Settings” on page 95), the system is rebooted, and you must log in again.

   Note
   The system time and date are not reset to the default values.

Chapter 3

Menus Interface Security

The AT-S65 management software includes features that allow you to configure the interface to prevent unauthorized individuals from accessing the software and making changes to the AT-LX3800U configuration settings. This chapter contains the following procedures:

Setting Up Manager and Operator Passwords

To prevent unauthorized individuals from accessing the AT-S65 management software, you can specify a password a user is required to enter in order to access the software. Any person who starts the AT-S65 management software, either as a manager or as an operator, is required to enter the password. The password is required whether they access the software locally or remotely.

To specify a new password, perform the following procedure:

1. From the Main Menu, choose **System Configuration**.

   The System Configuration Menu is shown in Figure 22.

```
                System Configuration Menu


System Name:      Null (not configured)

System Time Options

Omega Options

IP Parameters

Trap Parameters

Terminal COnfiguration

Temperature Threshold Configuration

Return to Main Menu...
```

Figure 22. System Configuration Menu

2. From the System Configuration menu, select **Omega Options** and press Enter.

The Omega Options Menu is shown in Figure 23.

```
                    Omega Options Menu

  Manager Password:                    ****************
  Operator Password:                   ****************

  Timeout                              5

> Local Omega Enabled
  Disable Local Omega

> Remote Omega Enabled
  No Remote Omega

  Remote Omega (Telnet) Port Number: 23

  Return to System Configuration Menu...
```

Figure 23. Omega Options Menu

Note
The default value for the Remote Omega (Telnet) Port Number option is 23, the standard for Telnet access. Unless you have some special reason to change this, leave this option set to the default.

3. From the Omega Options menu select **Manager Password** or **Operator Password**.

Note
When you change these passwords, you change the default system passwords for the Manager and Operator logins. The default Manager password is "friend" and the default Operator password is "Operator."

- The password can be up to 20 alphanumeric characters in length. Avoid using special characters such as a spaces, asterisks, and exclamation points. The password is case sensitive.
- When you type the password, it is displayed as a series of asterisks.
- To delete the current password but not assign a new password, enter a space in the password field.

4. Enter a new password and then press Enter.

The new password for the manager or operator login is now activated on the system.

5. Return to the Main Menu.

Enabling or Disabling Access Methods

As explained in Chapter 1, you can access the AT-LX3800U system locally through the RS-232 terminal port or remotely using the Telnet application. You can disable either method to enhance security by preventing unauthorized individuals from making changes to the system's configuration settings.

To enable or disable an access method, perform the following procedure:

1. From the Main Menu, choose **System Configuration**.

   The System Configuration menu is shown in Figure 22 on page 46.

2. From the System Configuration menu, select **Omega Options** and press Enter.

   The Omega Options menu is shown in Figure 23 on page 47.

3. To enable or disable local access, select **Local Omega Enabled** or **Disable Local Omega**.

   These options control local access to the AT-S65 management software on the AT-LX3800U system. The default is enabled.

4. To enable or disable remote access, select **Remote Omega Enabled** or **No Remote Omega**.

   These options control remote access to the AT-S65 management software on the AT-LX3800U system. The default is enabled.

5. Return to the Main Menu.

Specifying a Timeout Value

Specifying a timeout value is a way to prevent unauthorized individuals from using the management software in the event that you forget to exit the software and leave your management station unattended. When you specify a timeout value, the AT-S65 management software ends the session when it detects that there has been no activity in the amount of time you specify as the timeout value. The default timeout value is 5 minutes.

To enter a new timeout value, perform the following procedure:

1. From the Main Menu, choose **System Configuration**.

   The System Configuration Menu is shown in Figure 22 on page 46.

2. From the System Configuration menu, select **Omega Options** and press Enter.

   The Omega Options menu is shown in Figure 23 on page 47.

3. Select **Timeout** and press Enter.

4. Enter a value from 0 (zero) to 65,535 (minutes) and press Enter.

   When you enter a value of 0 (zero), there is no timeout and the session remains active until you end the session. If you enter a value of 0, you must always quit the management software in order not to block future sessions and software downloads to the system. The default is 5 minutes.

   The new timeout value is immediately activated on the system.

5. Return to the Main Menu.

Chapter 4

Monitoring System Performance

This chapter describes the features in the AT-S65 management software for monitoring the performance of the AT-LX3800U Multi-Service Transport System and contains the following sections:

Displaying System Status Information

The AT-S65 management software provides comprehensive status information about the operation of the chassis and its components, including detailed information about the line cards.

To view chassis status information, perform the following procedure:

1. From the Main Menu, select **Module Status and Configuration**.

   The Module Status and Configuration Menu is shown in Figure 24.

```
                        Module Status and Configuration Menu


 Module        -------------WDM Side------------------------------Port Side----------

                Status   Tx       Rx       T_SYN  R_SYN   MaxRate TX      Rx       SFP
1: Not Present  Unknown
2: Not Present  Unknown
3: AT-LX3811/2  MISMATCH
4: Not Present  Unknown
5: Not Present  Unknown
6: Not Present  Unknown
7: AT-LX3811/7  On       Offline  Offline  Off    Off     OM      Offline Offline  Out
8: Not Present  Unknown
9: MGMT BOARD   Off
10: AT-RPSA
11: Not Present Unknown
12: AT-CPU FAN1 On
13: AT-CPU FAN2 On
14: AT-CPU FAN  On

Return to Main Menu ...
```

Figure 24. Module Status and Configuration Menu

The Module Status and Configuration Menu displays basic information about all the components currently installed in the chassis, including:

- Line cards (items 1 through 8)
- Management board (Ethernet port) (Item 9)
- Main and redundant power supplies (items 10 and 11)
- Chassis fans (items 12 through 14)

The “WDM Side” information coordinates with the Line LEDs, and the “Port Side” coordinates with the Trib LEDs on the line cards.

For details about the line card information on this menu and how to display detailed information, refer to Chapter 5, “Working With Line

Cards" on page 67. For information about the Ethernet port, refer to "Displaying and Naming the Ethernet Port" on page 42.

Using the System Activity Monitor

The AT-S65 management software keeps a list of AT-LX3800U system events such as the removal of an SFP or the loss of a data link. This list is called the activity log and you use the activity monitor to display the log. The activity log contains only those events that have occurred since you started the management session. Ending the session purges the log. The activity log can contain up to 256 events. When the maximum number of events is reached, new events are added to the beginning of the file and old ones are deleted.

In contrast, the event log contains all system events since the AT-LX3800U system was last rebooted. For information about the event log, refer to “Using the Event Log” on page 57.

This section contains the following procedures:

Starting and Stopping the Activity Log

To start or stop the activity log, perform the following procedure:

1. From the Main Menu, select **Administration**.

   The Administration menu is shown in Figure 13 on page 37.

2. From the Administration menu, under Activity Monitor, select **Start Log** to start the activity log or **Stop Log** to stop the activity log. The default is Start Log.

Displaying the Activity Log

To view the activity log, perform the following procedure:

1. From the Main Menu, select **Administration**.

   The Administration menu is shown in Figure 13 on page 37.

2. From the Administration menu, select **Activity Monitor** and press Enter.

The Activity Monitor is shown in Figure 25.

```
                        Activity Monitor

              (Press Return to resume the previous menu)

04:26:170:04:42:01:CLEAR:Line Card 3 Wavelength Mismatch
04:26:170:04:42:01:REPORT:Line Card 3 Missing
04:26:170:04:42:01:REPORT:Line Card 3 Wavelength Mismatch
04:26:170:04:42:01:CLEAR:Line Card 3 Missing
04:26:170:04:42:01:REPORT:Line Card 3 SFP Link Down
04:26:170:04:42:01:REPORT:Line Card 3 RX Synchronization Failed
04:26:170:04:42:01:REPORT:Line Card 3 SFP Transceiver is Disabled
```

Figure 25. Activity Monitor

The activity monitor continues to display system activities until you press Enter to return to the previous menu and select **Stop Log**.

The activity log messages are described in Table 3. The messages shown in the activity log are the same as those shown in the event log described in "Using the Event Log" on page 57. Each message is preceded either by "REPORT" or "CLEAR." REPORT indicates that an error is being reported, and CLEAR indicates that the error has been cleared. The "*n*" in the message indicates the number of the line card, fan module, and so forth where the event occurred.

Table 3. Activity and Event Log Events

Event	Description
Chassis Temperature Exceed High Limit	The chassis temperature has exceeded the set maximum limit.
Fan Module *n* Failed	A chassis fan has failed.
Line Card *n* Missing	The line card is missing from the slot.
Line Card *n* RX Synchronization Failed	The line card's receive port synchronization has failed.
Line Card *n* SFP Link Down	The receive port on the SFP has a loss of signal.
Line Card *n* SFP Port Missing Link Enabled	The MissingLink feature has been enabled on the SFP.
Line Card *n* SFP Port Shutdown	The SFP port has been shut down.
Line Card *n* SFP Rate Changed	The line card rate has changed.

Table 3. Activity and Event Log Events (Continued)

Event	Description
Line Card *n* SFP Temperature Exceed High Limit	The temperature of the SFP has exceeded the set maximum temperature.
Line Card *n* SFP Transceiver is Disabled	The transmit port of an SFP has been disabled.
Line Card *n* SFP Unplugged	The SFP in a line card has been unplugged and/or removed.
Line Card *n* Temperature Exceed High Limit	The temperature of the line card has exceed the set maximum temperature.
Line Card *n* TX Synchronization Failed	The line card's transmit port synchronization has failed.
Line Card *n* Wavelength Mismatch	The line card inserted in the slot does not match the wavelength for that slot.
Line Card *n* WDM Channel Down	The line card's receive port has lost the signal.
Line Card *n* WDM Port Missing Link Disabled	The MissingLink feature on the line card's WDM side has been disabled.
Line Card *n* WDM Port Missing Link Enabled	The MissingLink feature on the line card's WDM side has been enabled.
Line Card *n* WDM Port Shutdown	The line card's transmit port has been shut down.
Line Card *n* WDM Transmitter is Disabled	The line card's transmitter has been disabled.
Power Module *n* Failed	A power supply has failed.
Power Module *n* Inserted	A power supply has been inserted into the chassis.
Power Module *n* Removed	A power supply has been removed from the chassis.
System Cold Reboot	The system has been rebooted by turning the power switch off and then on.

Using the Event Log

The event log provides vital information about chassis activity that helps you identify and solve system problems. The event log permanently stores system event information in a file saved in flash memory on the system. The file can contain up to 511 events. When the maximum number of events is reached, new events are added to the beginning of the file and old ones are deleted.

In contrast, the activity log as described in "Using the System Activity Monitor" on page 54 contains only those events that occurred since you started the latest management session.

Displaying the Event Log

To display the event log, perform the following procedure:

1. From the Main Menu, select **Administration**.

   The Administration menu is shown in Figure 13 on page 37.

2. From the Administration menu, select **Event Log** and press Enter.

   The Event Log menu is shown in Figure 26.

```
                    Event Log Menu


Display Event Log

Clear Event Log

Return to Administration Menu ...
```

Figure 26. Event Log Menu

3. From the Event Log menu, select **Display Event Log** and press Enter.

The event log is displayed, as shown in Figure 27.

```
                                Event Log


Total Events: 511            Displaying: 505 to 511

Date      Time      Message
------------------------------------------------------------------------------
01/11/04  04:26:17  0:04:42:01: CLEAR:Line Card 1 WDM Channel Down
01/11/04  04:26:17  0:04:42:01: REPORT:Line Card 3 Missing
01/11/04  04:26:17  0:04:42:01: REPORT:Line Card 3 Wavelength Mismatch
01/11/04  04:26:17  0:04:42:01: CLEAR:Line Card 3 Missing
01/11/04  04:26:17  0:04:42:01: REPORT:Line Card 3 SFP Link Down
01/11/04  04:26:17  0:04:42:01: REPORT:Line Card 3 RX Synchronization Failed
01/11/04  04:26:17  0:04:42:01: REPORT:Line Card 3 SFP Transceiver is Disabled

N - Next Page, P - Previous Page, F - First Page, L - Last Page, R - Return
```

Figure 27. Event Log

The Event Log menu provides the following information:

Total Events
The total number of events currently stored in the event log.

Displaying
Of the total number of events in the event log, the range of events currently displayed.

Date and Time
The date and time that the event occurred.

Message
This information starts with the number of hours, minutes, and seconds that the chassis has been running since it was last powered on. The messages reported in the event log are identical to those reported in the activity log. For a list of these messages, refer to Table 3, “Activity and Event Log Events” on page 55.

4. Return to the Main Menu.

Clearing the Event Log

To clear the event log, perform the following procedure:

1. From the Main Menu, select **Administration**.

   The Administration menu is shown in Figure 13 on page 37.

2. From the Administration menu, select **Event Log** and press Enter.

   The Event Log menu is shown in Figure 26 on page 57.

3. From the Event Log menu, select **Clear Event Log**.

   The following message is displayed while the event log is being cleared:

   ```
   Please wait while the event log is cleared.
   ```

   Followed by:

   ```
   Done!
   ```

4. Return to the Main Menu.

Displaying Outstanding Errors

Outstanding errors are hardware errors that require immediate attention. The most recent outstanding error is displayed at the bottom of every menu you view, and all the current outstanding errors are shown on the Outstanding Errors menu. Most outstanding errors report line cards that are inserted in the wrong slot (mismatched).

To display the outstanding errors, perform the following procedure:

1. From the Main Menu, select **Administration**.

   The Administration menu is shown in Figure 13 on page 37.

2. From the Administration menu, select **Outstanding Errors** and press Enter.

   An example of the Outstanding Errors menu is shown in Figure 28.

```
                        Outstanding Errors


0:00:06:22: REPORT: Line Card 5 Wavelength Mismatch









Press any key to continue ...

Critical Error: 0:00:13:04 REPORT: Line Card 4 Wavelength Mismatch
Please see Outstanding Error Menu for more Error Messages
```

Figure 28. Outstanding Errors Menu

The most recent error is shown at the bottom of this and all S65 menus. Any older errors are shown above.

The error in the example above shows that wavelength mismatch error indicates that line cards 4 and 5 are inserted in the wrong slots.

Note
A line card inserted in the wrong slot (mismatched) cannot pass data (traffic).

These errors are the same as those shown in the activity and event logs. For more information, refer to Table 3, "Activity and Event Log Events" on page 55.

Specifying a SysLog Server

The syslog protocol allows you to collect messages and events produced by a wide variety of network equipment in a single place. For instance, instead of viewing the event logs of several separate AT-LX3800U systems, you can have those events sent to a single syslog server on your network. The destination for the events is referred to as a facility code.

To transmit the system events to a syslog server, perform the following procedure:

1. From the Main Menu, select **Administration**.

   The Administration menu is shown in Figure 13 on page 37.

2. From the Administration menu, select **Syslog Server Address** and press Enter.

3. Enter the IP address of a syslog server on the network.

4. Select **SysLog Facility Code**.

   Assign a facility code to the chassis log messages. The range is 0 to 23 and the default is 1. The facility code generally used for system events is 23, or you can use whatever facility number you have already set up on your network.

5. Type the facility code and press Enter.

6. Return to the Main Menu.

Using the System Diagnostics

The AT-S65 management software provides an option to run diagnostic self-tests on the chassis and line cards. The following section describes how to run chassis diagnostics. Using this information helps you diagnose performance problems with the chassis. For information about the line card diagnostics, refer to "Displaying the Line Card Diagnostics" on page 78.

To run chassis diagnostics, perform the following procedure:

1. From the Main Menu, select **Administration**.

   The Administration menu is shown in Figure 13 on page 37.

2. From the Administration menu, select **Diagnostics** and press Enter.

   The Diagnostics Menu is shown in Figure 29.

```
                        Diagnostics Menu


Chassis Diagnostics

Line Card Diagnostics

Return to Administration Menu ...
```

Figure 29. Diagnostics Menu

3. From the Diagnostics Menu, select **Chassis Diagnostics** and press Enter.

The AT-S65 management software runs the diagnostics on the chassis and displays the Chassis Diagnostics menu, as shown in Figure 30.

```
                        Chassis Diagnostics


MAC Address:   00:30:84:00:00
WDM Chassis:   AT-LX3800
Serial Number: S05525A022600001 Hardware Revision: A

Running 3 hours, 15 minutes, 24 seconds

Current Time:  07/30/2004 06:42:08

Diagnostic Results:
Flash PROM:        Good       Voltage (+5V): +4.914 V
Serial Interface:  Good       Voltage (+3.3V):+3.213 V
Temperature:       30.5 Celsius
Fan 1 (Chassis):   Good       Fan 1 (Chassis) Speed: 4753 RPM
Fan 2 (Chassis):   Good       Fan 2 (Chassis) Speed: 4753 RPM
Fan 3 (Chassis):   Good       Fan 3 (Chassis) Speed: 4753 RPM
RPS A:             On         Fan1: Good     Fan2: Good
RPS B:             Not PresentFan1: Not PresentFan2: Not Present


Press any key to continue ...
```

Figure 30. Chassis Diagnostics Menu

The top portion of the Chassis Diagnostics menu contains the following items of information:

MAC Address
The MAC address of the chassis.

WDM Chassis
The AT-LX3800U chassis revision number.

Serial Number/Hardware Revision
The serial number and hardware revision level of the system.

Running
The number of hours, minutes, and seconds that the chassis has been running since it was last powered on.

Current Time
The current time set on the chassis.

The lower portion of the Chassis Diagnostics menu contains diagnostic information about the following:

Flash PROM
The status of the Flash PROM and its current voltage.

Serial Interface
The status of the RS-232 terminal port and its current voltage.

Fan 1 through Fan 3
The status of the chassis fans and their current speed.

RPSA and RPSB
The status of the power supplies including whether or not the power supply is turned on and the status of the two fans it contains. The chassis can function with only one power supply, referred to as RPSA or RPSB in this menu.

4. Return to the Main Menu.

Chapter 5

Working With Line Cards

The AT-S65 management software provides several ways that you can view information about the line cards and run diagnostics on a line card. For diagnostic information about the overall system, refer to Chapter 4, “Monitoring System Performance” on page 51.

This chapter contains the following sections:

Displaying Basic Line Card Information

The AT-S65 software provides a menu that displays an overview of the status of all the components in the system.

To view the system status and configuration, perform the following procedure:

1. From the Main Menu, select **Module Status and Configuration**.

   The Module Status and Configuration Menu is shown in Figure 24 on page 52.

   Items 1 through 8 in the Module Status and Configuration Menu display two groups of information about the line cards:

   WDM Side
   The status of the WDM (line) side of the line card, that coordinates with the Line group of LEDs. The columns of information in this section are:

   Status
   The current status of the line card, which can be one of the following:

   Unknown - No line card inserted.

   MISMATCH - The line card in this slot is not the correct line card designated for the slot.

   On - The correct line card is inserted in this slot and the power is on.

   Tx
   The status of the transmit port, which can be one of the following:

   Offline - The transmitter is disabled.

   Online - The transmitter is enabled.

   Rx
   The status of the receive port, which can be one of the following:

   Offline - The receiver input power is less than -38 dBm ± 2 dB.

   Online - The receiver input power is greater than -38 dBm ± 2 dB.

   T_SYN
   The status of the synchronization of the TX path, which can be one of the following:

   Off - The data is not synchronized (locked) on a transmit path.

   On - The data is synchronized (locked) on a transmit path.

R_SYN
The status of the synchronization of the RX path, which can be one of the following:

Off - The data is not synchronized (locked) on a receive path.

On - The data is synchronized (locked) on a receive path.

Port Side
The status of the port (tributary) side of the line card, that coordinates with the Trib group of LEDs. The columns of information in this section are:

Max Rate
The maximum rate for the SFP installed in the line card. This information is only available when an SFP is installed.

Tx
The status of the transmit port, which can be one of the following:

Offline - The SFP transmitter is disabled.

Online - The SFP transmitter is enabled.

Rx
The status of the receive port, which can be one of the following:

Offline - The SFP input power is less than the threshold value for Rx loss specified by the vendor.

Online - The SFP input power is higher than or equal to the threshold value for Rx loss specified by the vendor.

SFP
The status of the SFP in the line card, which can be one of the following:

In - An SFP is inserted in the SFP slot.

Out - No SFP is inserted in the SFP slot.

Note
The offline and online status of the RX and TX ports depends upon the missing link status that has been set up. For more information, refer to Chapter 7, "Setting Up the MissingLink Feature" on page 91.

Displaying Detailed Line Card Information

The AT-S65 management software provides detailed information about the line cards including items such as temperature, data rate, wavelength, and vendor information for the SFP. The procedures in this section include:

- “Displaying Line Card Status Information,” next
- “Changing the Line Card Name and Location” on page 75
- “Enabling or Disabling a Line Card” on page 75
- “Displaying SFP Vendor Information” on page 73

Displaying Line Card Status Information

To display detailed line card status information, perform the following procedure:

1. From the Main Menu, select **Module Status and Configuration**.

   The Module Status and Configuration Menu is shown in Figure 24 on page 52.

2. Select the line card whose information you want to display and press Enter.

   An example of the Module Status Menu for an AT-LX3811/1 line card is shown in Figure 31.

```
                          1: AT-LX3811/1

Module Name:

Port                  Link
Tx                    Offline
Rx                    Offline

Wavelength            1470
Temperature           41.8 Celsius
Current Data Rate     0.0 Mbps

Module Location:
Module Information
Vendor Information
Module Status         Enabled

Port Status           Enabled
Port Loopback         Pass Through
Port Missing Link     Enabled
Line Missing Link     Disabled
Return to Line Card Status and Configuration Menu ...
```

Figure 31. Sample Line Card Information

The Module Status Menu provides the following information:

Name
The name can be up to 20 alphanumeric characters including spaces and special characters. You may want to choose a name that reflects the organization or group that is connected through this line card.

Port/Link
Indicates whether there is an active connection between the SFP port and the device connected to it, which is one of the following:

Tx - The status of the transmit port, which can be one of the following:

Offline: The SFP transmitter is disabled.

Online: The SFP transmitter is enabled.

Rx - The status of the receive port, which can be one of the following:

Offline: The SFP input power is less than the threshold value for Rx loss specified by the vendor.

Online: The SFP input power is higher than or equal to the threshold value for Rx loss specified by the vendor.

Wavelength
The wavelength of the line transmitter's laser.

Temperature
The current temperature of the line card.

Current Data Rate
The current data rate of the line card ± 10%.

Module Location
For information about setting up this information, refer to "Changing the Line Card Name and Location" on page 75.

Module Information
For information about displaying this detailed information, go to step 3.

Vendor Information
For information about displaying this information, refer to "Displaying SFP Vendor Information" on page 73.

Module Status
The status of the line card. The options are:

Enabled - Enables the lasers on the port and WDM sides. This is the default.

Disabled - Disables the lasers on the port and WDM sides but does not terminate traffic.

Port Status
The status of the SFP port. The options are:

Enabled - Enables the laser on the SFP transceiver. This is the default.

Disabled - Disables the laser on the SFP transceiver but does not terminate traffic.

Port Loopback
The options are:

Pass Through
Traffic is passed through.

SFP Side
Traffic is looped back on the SFP side and forwarded to the WDM side, and traffic from the line side is terminated. The MissingLink feature is automatically disabled.

WDM Side
Traffic is looped back on the line side and forwarded to the SFP side, and traffic from the SFP side is terminated. The MissingLink feature is automatically disabled.

Loopback Both
Traffic is looped back on both sides and the MissingLink feature is automatically disabled.

Port Missing Link
The status of the MissingLink feature on the SFP side. The options are:

Enabled - The MissingLink feature is enabled. This is the default.

Disabled - The MissingLink feature is disabled.

Line Missing Link
The status of the MissingLink feature on the line side. The options are:

Enabled - The MissingLink feature is enabled. This is the default.

Disabled - The MissingLink feature is disabled.

For more information about the MissingLink feature, refer to Chapter 7, “Setting Up the MissingLink Feature” on page 91.

3. To display more detailed information about the SFP transceiver, select **Module Information** and press Enter.

The detailed SFP transceiver information is displayed, as shown in Figure 32. The information varies depending upon the SFP transceiver whose information you are displaying.

```
                        Module Information Menu
                             1: AT-LX3811


Type of Serial Transceiver:         3(Vendor Specific)
SONET Compliance Codes:             22(OC 12, single mode intermediate reach)
Gigabit Ethernet Compliance Codes:  2(1000BASE-LX)
Fiber Channel Link Length:          20(Intermediate)
Fiber Channel Transmitter Type:     1(Long wave laser)
Fiber Channel Media Type:           1(Single mode fiber)
Fiber Channel Speed:                14 (400MB/s)
Encoding:                           05(8B10B)
Normal Baud Rate:                   19(2.5GHz)
9micro, Distance:                   2(Not supported)
50micro, Distance:                  0(Not Supported)
60micro, Distance:                  0(Not Supported)
CU, Distance:                       0(Not Supported)
Transmit Disable:                   1(Supported)
Laser Fault:                        1(Supported)
Signal Detect(Logical 0):           0(Not Supported)
Signal Detect(Logical 1):           1(Supported)
Upper Baud Rate Margin:             60(96%)
Lower Baud Rate Margin:             08(8%)


Return to previous menu ...
```

Figure 32. Detailed SFP Transceiver Information Menu

4. Return to the Main Menu.

Displaying SFP Vendor Information

To display SFP vendor information, perform the following procedure:

1. From the Main Menu, select **Module Status and Configuration**.

   The Module Status and Configuration Menu is shown in Figure 24 on page 52.

2. Select the line card whose information you want to display and press Enter.

   The Module Status Menu for that line card is displayed. An example of that menu is shown in Figure 31 on page 70.

3. Select **Vendor Information** and press Enter.

Details about the SFP inserted in that line card are displayed. An example of that display is shown in Figure 33. The information varies depending upon what the vendor has programmed into the SFP.

```
                    2: AT-LX3811

Vendor name (OUI):       FINISAR CORP.
Vendor IEEE company ID:  009065
Vendor part number:      FTRJ1319P1BTL-AT
Vendor revision number:  A
Vendor serial number:    P651VEW
Vendor date code:        040812
Vendor specific ID:      AT-SPLX10 A02419N0408V001R

Return to previous menu...
```

Figure 33. SFP Vendor Information

4. Return to the Main Menu.

Changing Line Card Settings

You can change the following settings to fit your network needs:

- "Changing the Line Card Name and Location," next
- "Enabling or Disabling a Line Card" on page 75
- "Enabling or Disabling the SFP" on page 76
- "Enabling or Disabling Port Loopback" on page 76

Changing the Line Card Name and Location

To change the name and location of the line card, perform the following procedure:

1. From the Main Menu, select **Module Status and Configuration**.

   The Module Status and Configuration Menu is shown in Figure 24 on page 52.

2. Select the line card whose information you want to change and press Enter.

   The Module Status Menu for that line card is displayed. An example of that menu is shown in Figure 31 on page 70.

3. Select **Name** and press Enter.

   Enter a name for the line card and press Enter. You may want to choose a name that reflects the group connected to that line card, such as Engineering. The name can contain up to 20 alphanumeric characters, spaces, and special characters.

4. Select **Module Location** and press Enter.

   Enter a name for the location and press Enter. For instance, the name of a city to which the line card is sending traffic. The location contain up to 20 alphanumeric characters, spaces, and special characters.

5. Return to the Main Menu.

Enabling or Disabling a Line Card

When you enable a line card, you make it available to send and receive network traffic. If a line card TX or RX LED for the LINE side of the card are flashing green or off, the card may be disabled. The default is enabled.

To verify if a line card is enabled or disabled, or to change that setting, perform the following procedure:

1. From the Main Menu, select **Module Status and Configuration**.

The Module Status and Configuration Menu is shown in Figure 24 on page 52.

2. Select the line card whose information you want to change and press Enter.

   The Module Status Menu for that line card is displayed. An example of that menu is shown in Figure 31 on page 70.

3. Select **Module Status** and press Enter.

   The options are:

   Enabled - Enables the line card. This is the default.

   Disabled - Disables the line card.

4. Press Enter to change the selection.

5. Return to the Main Menu.

Enabling or Disabling the SFP

To enable or disable the SFP (port) in a line card, perform the following procedure:

1. From the Main Menu, select **Module Status and Configuration**.

   The Module Status and Configuration Menu is shown in Figure 24 on page 52.

2. Select the line card whose information you want to change and press Enter.

   The Module Status Menu for that line card is displayed. An example of that menu is shown in Figure 31 on page 70.

3. Select **Port Status** and press Enter.

   The options are:

   Enabled - Enables the laser on the SFP transceiver. This is the default.

   Disabled - Disables the laser on the SFP transceiver but does not terminate traffic.

4. Press Enter to change the selection.

5. Return to the Main Menu.

Enabling or Disabling Port Loopback

To set up loopback on the port (SFP), perform the following procedure:

1. From the Main Menu, select **Module Status and Configuration**.

The Module Status and Configuration Menu is shown in Figure 24 on page 52.

2. Select the line card whose information you want to change and press Enter.

   The Module Status Menu for that line card is displayed. An example of that menu is shown in Figure 31 on page 70.

3. Select **Port Loopback** and press Enter. The options are:

   Pass Through
   Traffic is passed through.

   SFP Side
   Traffic is looped back on the SFP side and forwarded to the WDM side, and traffic from the line side is terminated. The MissingLink feature is automatically disabled.

   WDM Side
   Traffic is looped back on the line side and forwarded to the SFP side, and traffic from the SFP side is terminated. The MissingLink feature is automatically disabled.

   Loopback Both
   Traffic is looped back on both sides and the MissingLink feature is automatically disabled.

4. Press Enter to change the selection.

5. Return to the Main Menu.

Displaying the Line Card Diagnostics

The line card diagnostics provide important information about how the line card is functioning.

To display the line card diagnostics, perform the following procedure:

1. From the Main Menu, select **Administration**.

   The Administration menu is shown in Figure 13 on page 37.

2. From the Administration menu, select **Diagnostics** and press Enter.

   The Diagnostics Menu is shown in Figure 29 on page 63.

3. From the Diagnostics Menu, select **Line Card Diagnostics** and press Enter.

   A sample Line Card Diagnostics Menu is shown in Figure 34.

```
                Line Card Diagnostics Menu


1: Not Present --
2: Not Present --
3: AT-LX3811   Online
4: AT-LX3811   Online
5: Not Present --
6: Not Present --
7: Not Present --
8: Not Present --


Return to Diagnostics Menu ...
```

Figure 34. Line Card Diagnostics Menu

4. Select the line card whose diagnostics you want to display and press Enter.

Note
Diagnostics are not available for a line card with the status of “Not Present.”

The Module Diagnostics Menu is shown in Figure 35.

```
                    Module Diagnostics Menu


Hardware Revision          REV A
Firmware Revision          REV A
Line Card Part Number      AT-LX3811/1
Line Card Serial Number    A02007A040400002

Line Card Voltage          3.306 V
Line Card Temperature      46.0 Celsius
Line Card Bias             11.82416 mA
Line Card Transmit Power   2.95589089 dBm
Line Card Receive Power    -24 dBm
Current Data Rate          623.770 Mbps

SFP Status                 Online

Return to Line Card Diagnostics Menu ...
```

Figure 35. Module Diagnostics Menu

The Module Diagnostics Menu contains the following information about the line card as a whole:

Hardware Revision/Firmware Revision
The revision level of the line card hardware and firmware.

Line Card Part Number
The line card part number.

Line Card Serial Number
The line card serial number.

Line Card Voltage
The current line card voltage ± 1%.

Line Card Temperature
The current temperature of the line card ± 3º C. To set the maximum line card temperature, refer to "Configuring the Line Card Temperature Threshold" on page 34.

Line Card Bias
The bias current of the line card transmitter's laser ± 10%.

Line Card Transmit Power
The line transmitter's output power ± 2 dB.

Line Card Receive Power
The line receiver's input power. (Only values less than -24 dBm are monitored with ± 2 dB accuracy.)

Current Data Rate
The current rate at which the line card is passing data ± 10%.

SFP Status
The status of the SFP in the line card. If no SFP is inserted, the status is “Unplugged” and no other information is displayed.

When an SFP is inserted in the line card, the menu looks similar to Figure 36.

```
                    Module Diagnostics Menu


Hardware Revision          REV A
Firmware Revision          REV A
Line Card Part Number      AT-LX3811/1
Line Card Serial Number    A02007A040400002

Line Card Voltage          3.306 V
Line Card Temperature      46.0 Celsius
Line Card Bias             11.82416 mA
Line Card Transmit Power   2.95589089 dBm
Line Card Receive Power    -24 dBm
Current Data Rate          623.770 Mbps

SFP Voltage                3.260 V
SFP Temperature            42.6 Celsius
SFP Bias                   16.230 mA
SFP Transmit Power         -4.71597562 dBm
SFP Receive Power          -13.00162275 dBm
Max Data Rate              1500 Mbps

Return to Line Card Diagnostics Menu ...
```

Figure 36. Line Card Diagnostics Menu with SFP Information

The following SFP information is displayed:

SFP Voltage
The current voltage of the SFP.

SFP Temperature
The current temperature of the SFP.

SFP Bias
The bias current of the SFP transmitter’s laser.

SFP Transmit Power
The transmitted power of the SFP transmitter.

SFP Receive Power
The received power of the SFP receiver.

Max Data Rate
The maximum data rate of the SFP.

Note
The accuracy of the above information depends upon the SFP vendor's specification. This information is available only for SFPs approved by Allied Telesyn.

5. Return to the Main Menu.

Chapter 6

Downloading AT-S65 Management Software Updates

This chapter describes how to download AT-S65 software updates and contains the following sections:

Note
For instructions on obtaining the latest software updates, refer to “Management Software Updates” on page 11.

Note the following before you begin either procedure:

- ❒ You can download a new AT-S65 image file onto the chassis from either a local or Telnet management session.
- ❒ You can use Xmodem or TFTP to download the image file from a local management session.
- ❒ You must use TFTP to download the image file from a Telnet management session.
- ❒ To use TFTP, there must be a node on your network that contains the TFTP server software, and the new AT-S65 image file must be stored on that node.
- ❒ If you are using TFTP, you should start the TFTP server before you begin the download procedure.
- ❒ Installing a new AT-S65 software image onto the chassis does not change the current configuration, for example its IP address, subnet mask, and name (if already assigned).

Note
The chassis stops forwarding Ethernet traffic after it has downloaded the image file and begun to initialize the software. Some network traffic may be lost.

The following procedures assume that you have already obtained the new software from Allied Telesyn and stored it on the management station from

which you will be performing the procedure, or on the TFTP server.

Using Xmodem to Update the AT-S65 Management Software

To download a new AT-S65 software image onto a chassis from a local management session using Xmodem, perform the following procedure:

1. Establish a local management session on the chassis where you intend to download the new management software.
2. From the Main Menu, select **Administration.**

   The Administration menu is shown in Figure 13 on page 37.
3. From the Administration menu, select **Xmodem Software Update to this System** and press Enter.

   A message is displayed, as shown in Figure 37.

```
Ready to receive software update via Xmodem.

Warning: During software updates, management activity is disabled.
Do Xmodem update now? (Yes or No):
```

Figure 37. Xmodem Software Update Message

4. Enter **Y** to start the download process or **N** to cancel.

   If you enter Y, another message is displayed, as shown in Figure 38.

```
The system is now ready for download. Please start your XMODEM transfer.

Use Hyper Terminal's "Transfer/Send File' option to select Filename &
Protocol.

Note: Please select '1K Xmodem' protocol for faster download . . .
```

Figure 38. Xmodem Message

5. Begin the file transfer.

   The following steps show how to perform the transfer using Hilgraeve HyperTerminal.

6. From the HyperTerminal main window, select **Send File** from the Transfer menu, as shown in Figure 39.

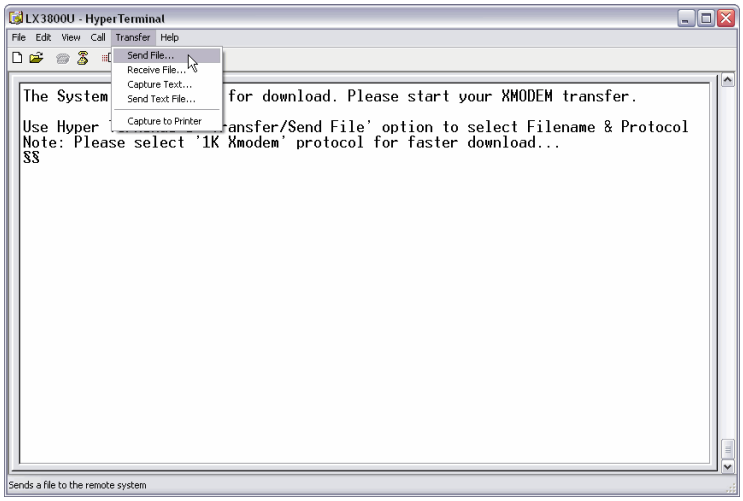

Figure 39. HyperTerminal Window

The Send File window is shown in Figure 40.

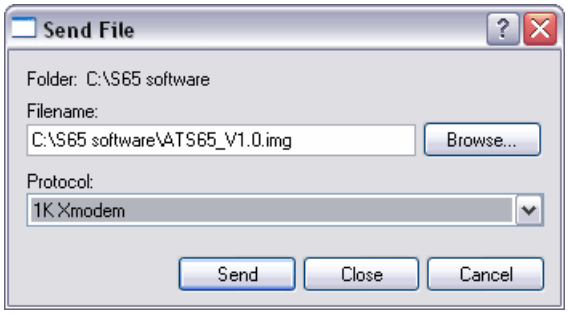

Figure 40. Send File Window

7. Click **Browse** and specify the location and file name of the image file to be downloaded onto the chassis.

8. Click in the Protocol field and select as the transfer protocol either Xmodem or, for a faster download, 1K Xmodem.

9. Click **Send**.

   The software immediately begins downloading onto the chassis. The Xmodem File Send window shown in Figure 41 on page 87 displays

the current status of the software download. The download process takes several minutes to complete.

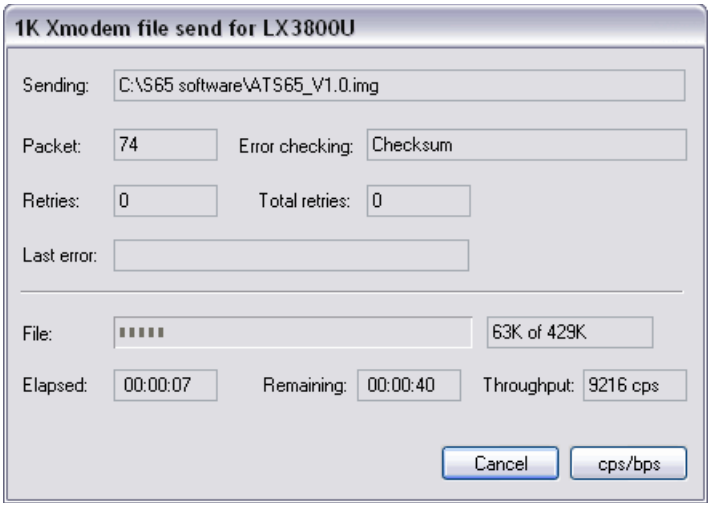

Figure 41. Xmodem File Send Window

After the chassis has downloaded the new image, it begins to initialize the software, a process that takes approximately one minute to complete. The chassis does not forward any network traffic during the initialization process. After the management software is initialized, the chassis automatically resets.

Note
Wait until the software is initialized before you attempt to reestablish your management session.

Using TFTP to Update the AT-S65 Management Software

If your network uses the TCP/IP protocol, you can use any station on the network and TFTP software to download a copy of the current AT-S65 management software onto the chassis. The chassis contains the client portion of the TFTP protocol. The management station you are using must contain the server portion of the TFTP protocol. Start the TFTP server before you begin the download procedure.

To download a new software image onto the chassis using TFTP, perform the following procedure:

1. Establish a local management session on the chassis where you intend to download the new management software.
2. From the Main Menu, select **Administration**.

   The Administration menu is shown in Figure 13 on page 37.
3. From the Administration menu, select **Image Download Through TFTP** and press Enter.

   The TFTP Image Download menu is displayed, as shown in Figure 42.

```
                    TFTP Image Download

TFTP Server IP:     Null (not configured)

Image File Name:    Null (not configured)

Start TFTP Download

Return to Administration Menu ...
```

Figure 42. TFTP Image Download Menu

4. Select **TFTP Server IP** and press Enter.
5. Enter the IP address of the TFTP server.
6. Select **Image File Name** and press Enter.
7. Enter the file name of the AT-S65 image file stored on the TFTP server.
8. Select **Start TFTP Download**.

A screen similar to Figure 43 is displayed.

```
TFTP Download in progress... Please wait!
Performing CRC check on Boot Loader. Please wait...
Boot Loader CRC check PASSED.

The Downloading Boot Loader version is same as current version v1.1.0
Skipping this download...
Performing CRC check on Application Image. Please wait...
Application Image CRC check Passed.
Writing ATS65 to Flash, please wait...
Written            65536 bytes,27% completed
Written           131072 bytes,54% completed
Written           196608 bytes,81% completed
Written           241669 bytes,100% completed
Download Summary:
Boot Loader Download:    NO
Image Download:          YES

Load completed.
Rebooting...
```

Figure 43. TFTP Download

After the system has downloaded the new image, it reboots the system and begins to initialize the software, a process that takes approximately one minute to complete. The system does not forward any network traffic during the initialization process.

Note
Wait until the software is initialized before you attempt to reestablish your management session.

Chapter 7

Setting Up the MissingLink Feature

The MissingLink™ feature allows the AT-LX3800U system to pass the status of its connections to the remote multiplexer connected to it.

This chapter contains the following sections:

Overview

If the AT-LX3800U system detects a problem with an SFP port, the MissingLink feature passes this information to the remote multiplexer which shuts down the connection and notifies the end node connected to that port that the connection has been lost. The AT-S65 management software provides two types of missing link reporting: port and line.

For example, if there is a loss of connection between a unit such as a switch and the SFP transceiver in the line card in slot 1 on the local AT-LX3800U system, the remote AT-LX3800U system drops the link to the SFP transceiver in the line card in slot 1 and therefore to the unit connected to it. This is shown in Figure 44.

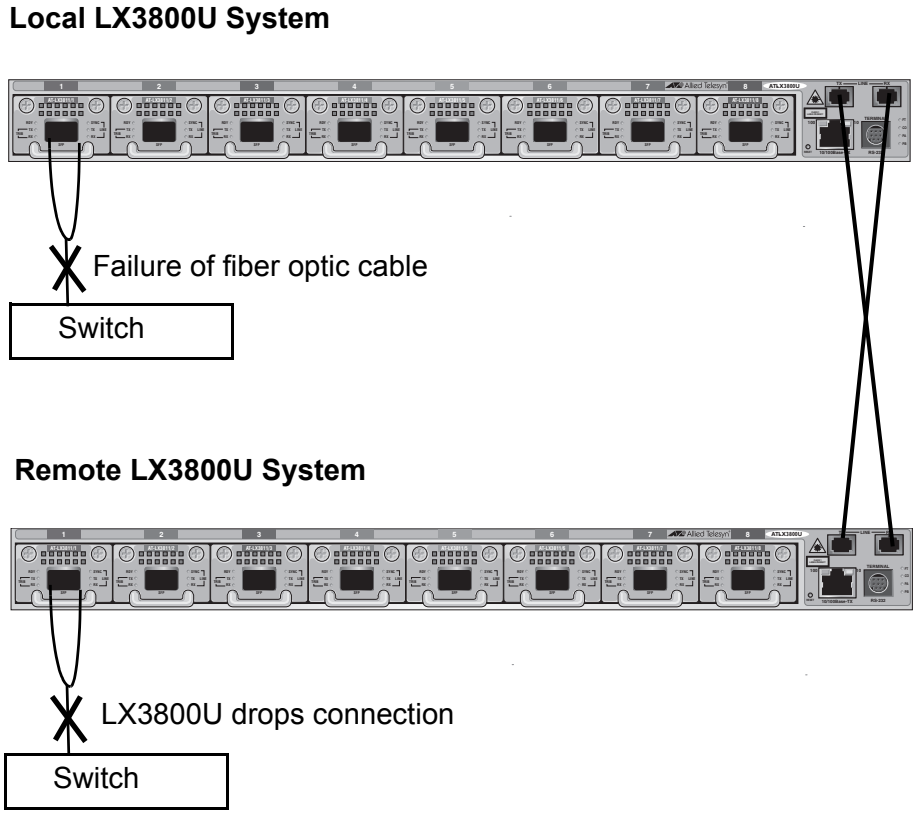

Figure 44. MissingLink Example #1

If a loss of connection occurs between the TX and RX ports on the local AT-LX3800U system and the TX and RX ports on the remote AT-LX3800U system, the links are dropped between all SFPs on the local system and all SFPs on the remote system. This type of MissingLink implementation is shown in Figure 45.

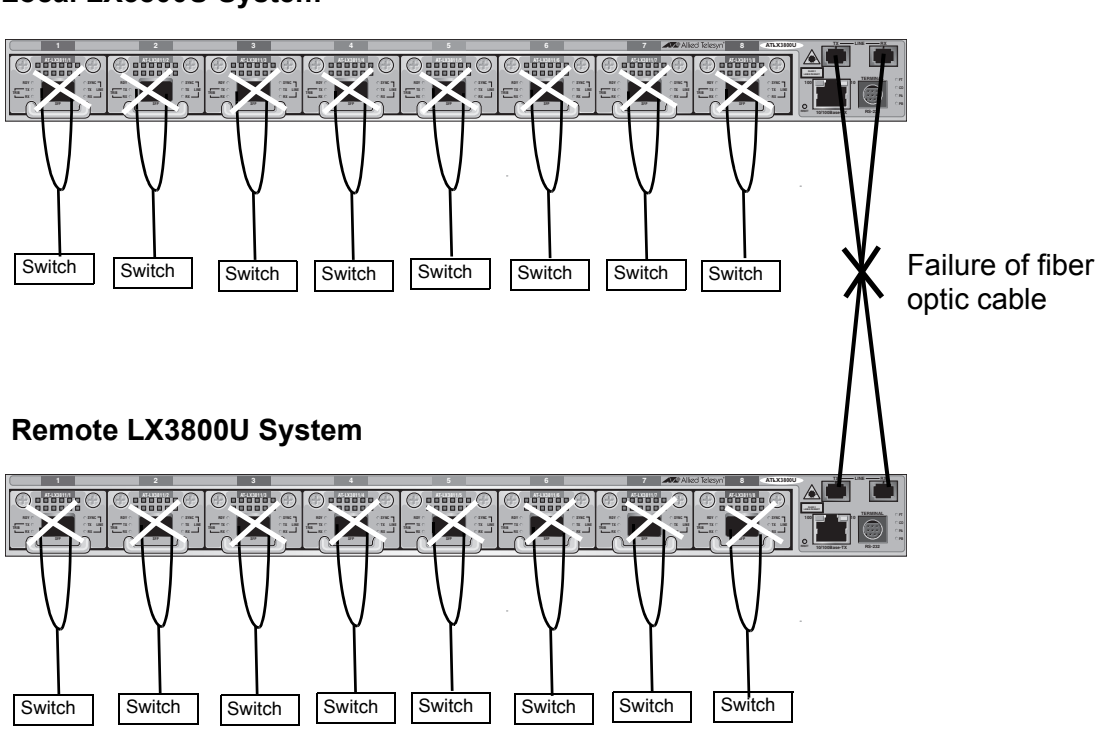

Figure 45. MissingLink Example #2

The value of this type of network monitoring and fault notification is that you can configure some switches to take a specific action when a connection is lost. In some cases, you can configure the unit to seek a redundant path to the disconnected node and send out a trap to a network management station, alerting the network administrator of the problem.

The color and state of the Trib and Line groups of LEDs for each line card in an AT-LX3800U system are affected by the status of the MissingLink settings. For information about the LEDs, refer to "LEDs" in Chapter 1, "Overview" in the *AT-LX3800U Multi-Service Transport System Installation and Maintenance Guide*.

Enabling or Disabling MissingLink

To enable or disable the MissingLink feature on the port or line side, perform the following procedure:

1. From the Main Menu, select **Module Status and Configuration**.

   The Module Status and Configuration Menu is shown in Figure 24 on page 52.

2. Select the line card whose MissingLink status you want to change and press Enter.

   The Module Status Menu for that line card is displayed. An example of that menu is shown in Figure 31 on page 70.

3. Select **Port Missing Link** or **Line Missing Link**.

   The options are:

   Enabled - Enables port MissingLink or line MissingLink. This is the default.

   Disabled - Disables port MissingLink or Line MissingLink.

4. Press Enter to change the selection.

5. Return to the Main Menu.

Appendix A

AT-S65 Management Software Default Settings

This appendix lists the default settings for the AT-S65 management software.

IP Parameters

Setting	Default
IP Address	0.0.0.0
Subnet Mask	255.255.0.0
Gateway Address	0.0.0.0
Manager Address 1 through 4	Null
Get community string	public
Set community string	private
Trap community string	public
Location	Null
Contact	Null
DHCP	Disabled

System Time

Setting	Default
System Date	01/01/1980
System Time	00.00.00
SNTP Status	Disabled
SNTP Server	97.108.82.88
UTC Offset	0
Daylight Savings Time	Disabled

Setting	Default
Poll Interval (seconds)	0
Last Delta (seconds)	0

RS-232 Port

Setting	Default
Terminal mode	VT-100 compatible/ANSI
Data bits	8
Stop bits	1
Parity	None
Duplex mode	Full-duplex
Data rate	9600

Omega Options

Setting	Default
Manager Password	Null
Operator Password	Null
Timeout	5 minutes
Local Omega	Enabled
Remote Omega	Enabled
Remote Omega (Telnet) Port Number	23

Temperature Thresholds

Setting	Default
Chassis Temperature (Maximum)	60
Line Card Temperature (Maximum)	70
SFP Temperature (Maximum)	70

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X