









Prisma II Hybrid Amplifier Installation Guide

For Your Safety

Explanation of Warning and Caution Icons

Avoid personal injury and product damage! Do not proceed beyond any symbol until you fully understand the indicated conditions.

The following warning and caution icons alert you to important information about the safe operation of this product:

-  You may find this symbol in the document that accompanies this product. This symbol indicates important operating or maintenance instructions.
-  You may find this symbol affixed to the product. This symbol indicates a live terminal where a dangerous voltage may be present; the tip of the flash points to the terminal device.
-  You may find this symbol affixed to the product. This symbol indicates a protective ground terminal.
-  You may find this symbol affixed to the product. This symbol indicates a chassis terminal (normally used for equipotential bonding).
-  You may find this symbol affixed to the product. This symbol warns of a potentially hot surface.
-  You may find this symbol affixed to the product and in this document. This symbol indicates an infrared laser that transmits intensity-modulated light and emits invisible laser radiation or an LED that transmits intensity-modulated light.

Important

Please read this entire guide. If this guide provides installation or operation instructions, give particular attention to all safety statements included in this guide.

Notices

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Important Safety Instructions

Read and Retain Instructions

Carefully read all safety and operating instructions before operating this equipment, and retain them for future reference.

Follow Instructions and Heed Warnings

Follow all operating and use instructions. Pay attention to all warnings and cautions in the operating instructions, as well as those that are affixed to this equipment.

Terminology

The terms defined below are used in this document. The definitions given are based on those found in safety standards.

Service Personnel - The term *service personnel* applies to trained and qualified individuals who are allowed to install, replace, or service electrical equipment. The service personnel are expected to use their experience and technical skills to avoid possible injury to themselves and others due to hazards that exist in service and restricted access areas.

User and Operator - The terms *user* and *operator* apply to persons other than service personnel.

Ground(ing) and Earth(ing) - The terms *ground(ing)* and *earth(ing)* are synonymous. This document uses *ground(ing)* for clarity, but it can be interpreted as having the same meaning as *earth(ing)*.

Electric Shock Hazard

This equipment meets applicable safety standards.



WARNING:

To reduce risk of electric shock, perform only the instructions that are included in the operating instructions. Refer all servicing to qualified service personnel only.

Electric shock can cause personal injury or even death. Avoid direct contact with dangerous voltages at all times. The protective ground connection, where provided, is essential to safe operation and must be verified before connecting the power supply.

Important Safety Instructions

Know the following safety warnings and guidelines:

- **Dangerous Voltages**
 - Only qualified service personnel are allowed to perform equipment installation or replacement.
 - Only qualified service personnel are allowed to remove chassis covers and access any of the components inside the chassis.
- **Grounding**
 - Do not violate the protective grounding by using an extension cable, power cable, or autotransformer without a protective ground conductor.
 - Take care to maintain the protective grounding of this equipment during service or repair and to re-establish the protective grounding before putting this equipment back into operation.

Installation Site

When selecting the installation site, comply with the following:

- **Protective Ground** - The protective ground lead of the building's electrical installation should comply with national and local requirements.
- **Environmental Condition** - The installation site should be dry, clean, and ventilated. Do not use this equipment where it could be at risk of contact with water. Ensure that this equipment is operated in an environment that meets the requirements as stated in this equipment's technical specifications, which may be found on this equipment's data sheet.

Installation Requirements



WARNING:

Allow only qualified service personnel to install this equipment. The installation must conform to all local codes and regulations.

Equipment Placement



WARNING:

Avoid personal injury and damage to this equipment. An unstable mounting surface may cause this equipment to fall.

To protect against equipment damage or injury to personnel, comply with the following:

- Install this equipment in a restricted access location.
- Do not install near any heat sources such as radiators, heat registers, stoves, or

other equipment (including amplifiers) that produce heat.

- Place this equipment close enough to a mains AC outlet to accommodate the length of this equipment's power cord.
- Route all power cords so that people cannot walk on, place objects on, or lean objects against them. This may pinch or damage the power cords. Pay particular attention to power cords at plugs, outlets, and the points where the power cords exit this equipment.
- Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with this equipment.
- Make sure the mounting surface or rack is stable and can support the size and weight of this equipment.
- The mounting surface or rack should be appropriately anchored according to manufacturer's specifications. Ensure this equipment is securely fastened to the mounting surface or rack where necessary to protect against damage due to any disturbance and subsequent fall.

Ventilation

This equipment has openings for ventilation to protect it from overheating. To ensure equipment reliability and safe operation, do not block or cover any of the ventilation openings. Install the equipment in accordance with the manufacturer's instructions.

Rack Mounting Safety Precautions

Mechanical Loading

Make sure that the rack is placed on a stable surface. If the rack has stabilizing devices, install these stabilizing devices before mounting any equipment in the rack.



WARNING:

Avoid personal injury and damage to this equipment. Mounting this equipment in the rack should be such that a hazardous condition is not caused due to uneven mechanical loading.

Reduced Airflow

When mounting this equipment in the rack, do not obstruct the cooling airflow through the rack. Be sure to mount the blanking plates to cover unused rack space. Additional components such as combiners and net strips should be mounted at the back of the rack, so that the free airflow is not restricted.



CAUTION:

Installation of this equipment in a rack should be such that the amount of airflow required for safe operation of this equipment is not compromised.

Important Safety Instructions

Elevated Operating Ambient Temperature

Only install this equipment in a humidity- and temperature-controlled environment that meets the requirements given in this equipment's technical specifications.



CAUTION:

If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, install this equipment in an environment compatible with the manufacturer's maximum rated ambient temperature.

Handling Precautions

When moving a cart that contains this equipment, check for any of the following possible hazards:



WARNING:



Avoid personal injury and damage to this equipment! Move any equipment and cart combination with care. Quick stops, excessive force, and uneven surfaces may cause this equipment and cart to overturn.

- Use caution when moving this equipment/cart combination to avoid injury from tip-over.
- If the cart does not move easily, this condition may indicate obstructions or cables that may need to be disconnected before moving this equipment to another location.
- Avoid quick stops and starts when moving the cart.
- Check for uneven floor surfaces such as cracks or cables and cords.

Grounding

This section provides instructions for verifying that the equipment is properly grounded.

Safety Plugs (USA Only)

This equipment may be equipped with either a 3-terminal (grounding-type) safety plug or a 2-terminal (polarized) safety plug. The wide blade or the third terminal is provided for safety. Do not defeat the safety purpose of the grounding-type or polarized safety plug.

To properly ground this equipment, follow these safety guidelines:

- **Grounding-Type Plug** - For a 3-terminal plug (one terminal on this plug is a protective grounding pin), insert the plug into a grounded mains, 3-terminal outlet.

Note: This plug fits only one way. If this plug cannot be fully inserted into the outlet, contact an electrician to replace the obsolete 3-terminal outlet.

- **Polarized Plug** - For a 2-terminal plug (a polarized plug with one wide blade and one narrow blade), insert the plug into a polarized mains, 2-terminal outlet in which one socket is wider than the other.

Note: If this plug cannot be fully inserted into the outlet, try reversing the plug. If the plug still fails to fit, contact an electrician to replace the obsolete 2-terminal outlet.

Grounding Terminal

If this equipment is equipped with an external grounding terminal, attach one end of an 18-gauge wire (or larger) to the grounding terminal; then, attach the other end of the wire to a ground, such as a grounded equipment rack.

Safety Plugs (European Union)


- **Class I Mains Powered Equipment** – Provided with a 3-terminal AC inlet and requires connection to a 3-terminal mains supply outlet via a 3-terminal power cord for proper connection to the protective ground.

Note: The equipotential bonding terminal provided on some equipment is not designed to function as a protective ground connection.

- **Class II Mains Powered Equipment** – Provided with a 2-terminal AC inlet that may be connected by a 2-terminal power cord to the mains supply outlet. No connection to the protective ground is required as this class of equipment is provided with double or reinforced and/or supplementary insulation in addition to the basic insulation provided in Class I equipment.

Note: Class II equipment, which is subject to EN 50083-1, is provided with a chassis mounted equipotential bonding terminal. See the section titled **Equipotential Bonding** for connection instructions.

Equipotential Bonding

If this equipment is equipped with an external chassis terminal marked with the IEC 60417-5020 chassis icon () , the installer should refer to CENELEC standard EN 50083-1 or IEC standard IEC 60728-11 for correct equipotential bonding connection instructions.

AC Power

Important: If this equipment is a Class I equipment, it must be grounded.

- If this equipment plugs into an outlet, the outlet must be near this equipment, and must be easily accessible.
- Connect this equipment only to the power sources that are identified on the equipment-rating label normally located close to the power inlet connector(s).
- This equipment may have two power sources. Be sure to disconnect all power

Important Safety Instructions

sources before working on this equipment.

- If this equipment **does not** have a main power switch, the power cord connector serves as the disconnect device.
- Always pull on the plug or the connector to disconnect a cable. Never pull on the cable itself.
- Unplug this equipment when unused for long periods of time.

Connection to -48 V DC/-60 V DC Power Sources

If this equipment is DC-powered, refer to the specific installation instructions in this manual or in companion manuals in this series for information on connecting this equipment to nominal -48 V DC/-60 V DC power sources.

Circuit Overload

Know the effects of circuit overloading before connecting this equipment to the power supply.



CAUTION:

Consider the connection of this equipment to the supply circuit and the effect that overloading of circuits might have on overcurrent protection and supply wiring. Refer to the information on the equipment-rating label when addressing this concern.

General Servicing Precautions



WARNING:

Avoid electric shock! Opening or removing this equipment's cover may expose you to dangerous voltages.



CAUTION:

These servicing precautions are for the guidance of qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

Be aware of the following general precautions and guidelines:

- **Servicing** - Servicing is required when this equipment has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into this equipment, this equipment has been exposed to rain or moisture, does not operate normally, or has been dropped.
- **Wristwatch and Jewelry** - For personal safety and to avoid damage of this equipment during service and repair, do not wear electrically conducting objects such as a wristwatch or jewelry.

- **Lightning** - Do not work on this equipment, or connect or disconnect cables, during periods of lightning.
- **Labels** - Do not remove any warning labels. Replace damaged or illegible warning labels with new ones.
- **Covers** - Do not open the cover of this equipment and attempt service unless instructed to do so in the instructions. Refer all servicing to qualified service personnel only.
- **Moisture** - Do not allow moisture to enter this equipment.
- **Cleaning** - Use a damp cloth for cleaning.
- **Safety Checks** - After service, assemble this equipment and perform safety checks to ensure it is safe to use before putting it back into operation.

Electrostatic Discharge

Electrostatic discharge (ESD) results from the static electricity buildup on the human body and other objects. This static discharge can degrade components and cause failures.

Take the following precautions against electrostatic discharge:

- Use an anti-static bench mat and a wrist strap or ankle strap designed to safely ground ESD potentials through a resistive element.
- Keep components in their anti-static packaging until installed.
- Avoid touching electronic components when installing a module.

Fuse Replacement

To replace a fuse, comply with the following:

- Disconnect the power before changing fuses.
- Identify and clear the condition that caused the original fuse failure.
- Always use a fuse of the correct type and rating. The correct type and rating are indicated on this equipment.

Batteries

This product may contain batteries. Special instructions apply regarding the safe use and disposal of batteries:

Safety

- Insert batteries correctly. There may be a risk of explosion if the batteries are incorrectly inserted.

Important Safety Instructions

- Do not attempt to recharge 'disposable' or 'non-reusable' batteries.
- Please follow instructions provided for charging 'rechargeable' batteries.
- Replace batteries with the same or equivalent type recommended by manufacturer.
- Do not expose batteries to temperatures above 100°C (212°F).

Disposal

- The batteries may contain substances that could be harmful to the environment
- Recycle or dispose of batteries in accordance with the battery manufacturer's instructions and local/national disposal and recycling regulations.



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- The batteries may contain perchlorate, a known hazardous substance, so special handling and disposal of this product might be necessary. For more information about perchlorate and best management practices for perchlorate-containing substance, see www.dtsc.ca.gov/hazardouswaste/perchlorate.

Modifications

This equipment has been designed and tested to comply with applicable safety, laser safety, and EMC regulations, codes, and standards to ensure safe operation in its intended environment. Refer to this equipment's data sheet for details about regulatory compliance approvals.

Do not make modifications to this equipment. Any changes or modifications could void the user's authority to operate this equipment.

Modifications have the potential to degrade the level of protection built into this equipment, putting people and property at risk of injury or damage. Those persons making any modifications expose themselves to the penalties arising from proven non-compliance with regulatory requirements and to civil litigation for compensation in respect of consequential damages or injury.

Accessories

Use only attachments or accessories specified by the manufacturer.

Electromagnetic Compatibility Regulatory Requirements

This equipment meets applicable electromagnetic compatibility (EMC) regulatory requirements. Refer to this equipment's data sheet for details about regulatory compliance approvals. EMC performance is dependent upon the use of correctly shielded cables of good quality for all external connections, except the power source, when installing this equipment.

- Ensure compliance with cable/connector specifications and associated installation instructions where given elsewhere in this manual.

Otherwise, comply with the following good practices:

- Multi-conductor cables should be of single-braided, shielded type and have conductive connector bodies and backshells with cable clamps that are conductively bonded to the backshell and capable of making 360° connection to the cable shielding. Exceptions from this general rule will be clearly stated in the connector description for the excepted connector in question.
- Ethernet cables should be of single-shielded or double-shielded type.
- Coaxial cables should be of the double-braided shielded type.

EMC Compliance Statements

Where this equipment is subject to USA FCC and/or Industry Canada rules, the following statements apply:

FCC Statement for Class A Equipment

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 this equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case users will be required to correct the interference at their own expense.

Industry Canada - Industrie Canadienne Statement

This apparatus complies with Canadian ICES-003.
Cet appareil est conforme à la norme NMB-003 du Canada.

CENELEC/CISPR Statement with Respect to Class A Information Technology Equipment

This is a Class A equipment. In a domestic environment this equipment may cause radio interference in which case the user may be required to take adequate measures.

Laser Safety

Introduction

This equipment contains an infrared laser that transmits intensity-modulated light and emits invisible radiation.

Warning: Radiation



WARNING:

- **Avoid personal injury! Use of controls, adjustments, or procedures other than those specified herein may result in hazardous radiation exposure.**
 - **Avoid personal injury! The laser light source on this equipment (if a transmitter) or the fiber cables connected to this equipment emit invisible laser radiation. Avoid direct exposure to the laser light source.**
 - **Avoid personal injury! Viewing the laser output (if a transmitter) or fiber cable with optical instruments (such as eye loupes, magnifiers, or microscopes) may pose an eye hazard.**
- Do not apply power to this equipment if the fiber is unmated or unterminated.
 - Do not stare into an unmated fiber or at any mirror-like surface that could reflect light emitted from an unterminated fiber.
 - Do not view an activated fiber with optical instruments such as eye loupes, magnifiers, or microscopes.
 - Use safety-approved optical fiber cable to maintain compliance with applicable laser safety requirements.

Warning: Fiber Optic Cables



WARNING:

Avoid personal injury! Qualified service personnel may only perform the procedures in this manual. Wear safety glasses and use extreme caution when handling fiber optic cables, particularly during splicing or terminating operations. The thin glass fiber core at the center of the cable is fragile when exposed by the removal of cladding and buffer material. It easily fragments into glass splinters. Using tweezers, place splinters immediately in a sealed waste container and dispose of them safely in accordance with local regulations.

Safe Operation for Software Controlling Optical Transmission Equipment

If this manual discusses software, the software described is used to monitor and/or control ours and other vendors' electrical and optical equipment designed to transmit video, voice, or data signals. Certain safety precautions must be observed when operating equipment of this nature.

For equipment specific safety requirements, refer to the appropriate section of the equipment documentation.

For safe operation of this software, refer to the following warnings.



WARNING:

- **Ensure that all optical connections are complete or terminated before using this equipment to remotely control a laser device. An optical or laser device can pose a hazard to remotely located personnel when operated without their knowledge.**
- **Allow only personnel trained in laser safety to operate this software. Otherwise, injuries to personnel may occur.**
- **Restrict access of this software to authorized personnel only.**
- **Install this software in equipment that is located in a restricted access area.**

Maximum Laser Power

The maximum laser power that can be expected from this amplifier module is defined in the following table.

Output Configuration	Maximum Output	IEC 60825-1 Product Classification	Accessible Radiation Level with Fibers removed "When Open"
4 x 18	18.5 dBm	1M	1M
8 x 18	19.5 dBm	1M	1M
9 x 19	19.5 dBm	1M	1M
4 x 21.5	22.0 dBm	1M	3B
8 x 21.5	22.0 dBm	1M	3B

Warning Labels

The following labels are located on this product.

Laser Warning Labels



Laser Aperture Label



Laser Classification Label



Product and Laser Information Label

The label contains the following information:

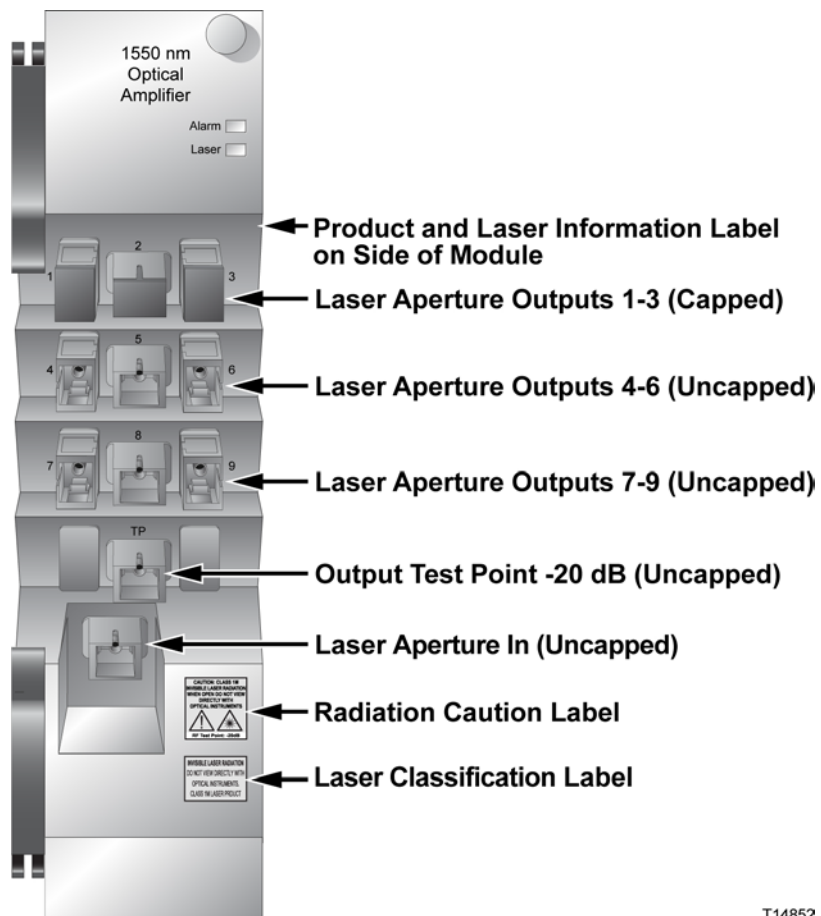
- CISCO** logo and address: 5030 Sugarloaf Parkway, Lawrenceville, GA 30044-2869
- Product ID: 4022007 (with barcode)
- Desc: P2-EDFA-FMOD-9X19-SA
- Manufactured: May, 2008
- Assembled in the USA
- Manufacturing Site: SC
- Compliance: CE, G, UL US, and a 50-hour mark.
- FCC compliance text: "This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation."
- Regulatory text: "This product complies with 21 CFR 1040.10 except for deviations pursuant to Laser Notice No. 50, dated July 26, 2001"
- INVISIBLE LASER RADIATION DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS. CLASS 1M LASER PRODUCT PER IEC 60825-1 EDITION 1.2 2001 126mW MAXIMUM OUTPUT BETWEEN 1530 AND 1560nm**
- Warning symbols: Laser radiation (sunburst) and Attention (hand with lightning bolt).
- ATTENTION** Observe precautions for handling electrostatic sensitive devices

T15138

Note: This sample label shows laser information for 9x19 output configuration. Labels for other output configurations may show different laser information.

Location of Labels on Equipment

The following illustration displays the location of warning labels on this equipment.



T14852

1

Module Introduction

Overview

This chapter describes the Prisma® II Hybrid Amplifier. The hybrid amplifier delivers both analog and digital signals. Microprocessor control allows ease of installation and flexibility of application.

This product comes configured as an uncooled double-wide module, as follows:

- Prisma II Hybrid Amplifier (9 x 19 dBm)
- Prisma II Hybrid Amplifier (4 x 21.5 dBm)
- Prisma II Hybrid Amplifier (8 x 21.5 dBm)
- Prisma II GF Hybrid Amplifier (4 x 18 dBm)
- Prisma II GF Hybrid Amplifier (8 x 18 dBm)

Purpose

This guide provides information about the hybrid amplifier. This chapter describes the front and back panels, and presents a setup summary for the amplifier.

Who Should Use This Document

This document is intended for authorized service personnel who have experience working with similar equipment. The service personnel should have appropriate background and knowledge to complete the procedures described in this document.

Qualified Personnel

Only appropriately qualified and skilled personnel should attempt to install, operate, maintain, and service this product.



WARNING:

Only appropriately qualified and skilled personnel should attempt to install, operate, maintain, and service this product.

Scope

This guide discusses the following topics.

- Description of the hybrid amplifier
- Installation procedures
- CLI Operation
- ICIM Operation
- LCI Operation
- Maintenance and troubleshooting
- CLI command reference
- Descriptions of module parameters

Document Version

This is the third release of this guide (Rev C).

In This Chapter

- Hybrid Amplifier Description 3
- Hybrid Amplifier Front and Back Panel 5
- Module Configuration 7

Hybrid Amplifier Description

The Prisma II optical network is an advanced transmission system designed to optimize network architectures and increase reliability, scalability, and cost effectiveness.

Hybrid Amplifier Features

The Prisma II Hybrid Amplifier has the following features:

- Front panel green light emitting diode (LED) to indicate operating status
- Front panel red LED to indicate alarm status
- Optical input/output connectors
- Hot-swappable and plug-and-play capability
- Front panel optical output test point, -20 dB

Hybrid Amplifier Operation

Operating stand-alone or followed by post-amplifiers, this module provides high-performance transmission of voice, video, and data signals for optical networking.

The module is controlled by an ICIM2, CLI, LCI, or SNMP software.

Hybrid Amplifier Optical Output

The module comes standard with SC/APC Duplex optical connectors. Optical jumpers are sold separately to interconnect hybrid amplifier and post-amplifier modules and to interconnect to other equipment that may have other optical connector types.

Laser Warning

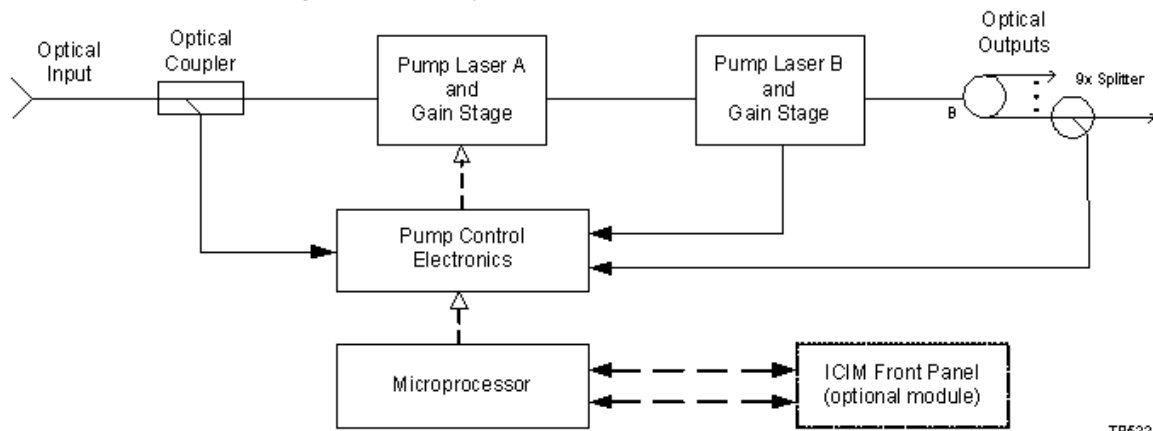


WARNING:

Avoid damage to your eyes! Do not look into any optical connector while the system is active. Even if the unit is off, there may still be hazardous optical levels present.

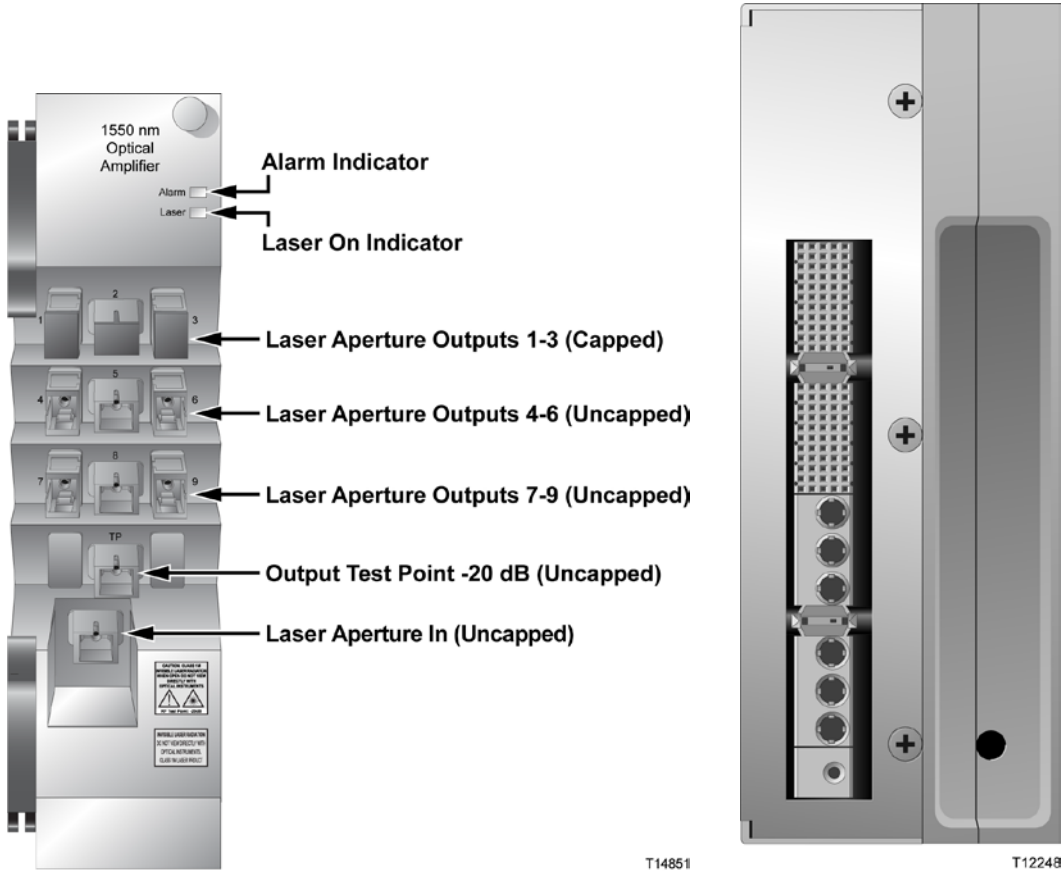
Hybrid Amplifier Module Block Diagram

A block diagram of the hybrid amplifier module is shown below.



Hybrid Amplifier Front and Back Panel

Hybrid Amplifier Illustration (Front and Back)



Hybrid Amplifier Front Panel Features

Part	Function
Alarm Indicator	Red ON - Major Alarm active
	Red Blinking - Minor Alarm active
	Red OFF - No Alarm active
Laser On Indicator	Green ON - Laser enabled and input power OK
	Green Blinking - Module disabled or in Slave mode
	Green Fast Blinking - Module communicating with ICIM or LCI
	Green OFF - Laser disabled or input power critically low

Part	Function
Laser Aperture Out	Connects the output signal to the optical cable. The optical outputs are divided into two banks, A and B.
Laser Aperture In	Connects the optical cable input signal to the module inputs.
-20 dB Laser Aperture Out Test Point	Provides a -20 dB sample of the optical output signal relative to the bank B optical outputs.

Back Panel Connectors

Blind-mate connectors make it easy to install this module. The push-on connector on the back of the module mates with the back plane bus connector inside the chassis. This 110-pin connector provides the following:

- Electrical power input connection
- Alarm communications
- Status-monitoring communications
- Communications and control connections

Module Configuration

The module is shipped from the factory with operational parameters set to factory defaults. However, you will probably choose to configure the operating parameters so that they are best suited for your application.

Configuration and Monitoring Methods

The module may be controlled and monitored using one of the following methods.

- The CLI software

The CLI software running locally on a PC connected to the ICIM can be used to control and monitor the module. For instructions on operating this module using the CLI, refer to **Operation Using CLI** (on page 29) and the *Prisma II Platform Remote User Interface Guide, System Release 2.03*, part number 4025477.

- ICIM Web Interface

The ICIM Web Interface offers a user-friendly alternative to CLI commands for remote module setup and monitoring. Users navigate a series of HTML pages through a standard web browser to view and, where permitted, adjust module parameters. For additional information, see the *Prisma II Platform Remote User Interface Guide, System Release 2.03*, part number 4025477.

- The Prisma II ICIM Front Panel

If an ICIM is installed in the Prisma II chassis, it may be used to monitor the Prisma II application modules within its domain. For security reasons, this non-password protected front panel interface is limited to read-only monitoring except that the amplifier may be placed in service mode. For instructions on operating this module using the ICIM, refer to **Operation Using ICIM** (on page 63).

- LCI software

The LCI software running on a locally connected PC may be used to configure operating parameters of Prisma II modules. For instructions on operating this module using the LCI software, refer to **Operation Using LCI** (on page 103).

- TNCS or ROSA Remote software

TNCS or ROSA software may be used to configure and monitor all functions of the Prisma II modules. For further information, refer to the *TNCS Administrator Release 3.0 Software User's Guide*, part number 4013494 or the appropriate ROSA software documentation.

- SNMP software

The module may be controlled and monitored remotely via an SNMP connection using an appropriate Network Management System. For instructions on operating this module using the ICIM, refer to *Operation Using ICIM* (on page 63) and the *Prisma II Platform System Guide, System Release 2.03*, part number 4025478.

2

Module Installation

Introduction

This chapter contains instructions, site requirements, equipment, and tools needed to install the Prisma II Hybrid Amplifier.

In This Chapter

■ Preparing for Installation.....	10
■ Site Requirements	11
■ Installing the Module in the Chassis.....	14
■ Cleaning Optical Connectors	20
■ Connecting Optical Cables	24
■ External Alarms Connections	25
■ Prisma II Redundancy Interface Panel	27

Preparing for Installation

Before you begin, make sure that the module is in good condition and that you have the tools and equipment listed here.

Unpacking and Inspecting the Module

As you unpack the module, inspect it for shipping damage. Inspect the rear connectors for bent pins.

If you find any damage, contact Cisco Services.

Equipment and Tools Needed

You need the following equipment and tools to install these modules.

You need . . .	To . . .
a Prisma II Chassis with power supply	provide housing, power, and input/output connections to the module.
3/8-in. flat-blade screwdriver	secure the module in the chassis.
optical cables with connectors	carry optical input and output signals.
optical cleaning materials	clean optical connectors.
optical power meter	verify optical input and output levels.

Site Requirements

Before you begin, make certain that your installation site meets the requirements discussed in this section.

Access Requirements

**WARNING:**

Use this product in locations that restrict access to all persons who are not authorized. Otherwise, personal injury or equipment damage may occur.

Ensure that only authorized personnel have access to this equipment. Otherwise, personal injury or equipment damage may occur.

Equipment Rack

To install this module, your site must be equipped with an Electronics Industry Association (EIA) equipment rack that properly houses the chassis with proper spacing for air circulation. For instructions on installing the chassis in the rack, refer to the guide that was shipped with the chassis.

Operating Environment

**CAUTION:**

Avoid damage to this product! Operating this product outside the specified operating temperature limits voids the warranty.

Follow these recommendations to maintain an acceptable operating temperature of the equipment.

- For a chassis with one or more hybrid amplifier modules installed, air inlet temperature must be between -5°C and 55°C (23°F and 131°F).

Note: Refer to the module data sheet and the product guide for product-specific temperature specifications.

- Keep cooling vents clear and free of obstructions.
- Provide ventilation as needed using air-deflecting baffles, forced-air ventilation, or air outlets above enclosures, either alone or in combination.

Power Requirements

All Prisma II application modules receive their electrical power from the chassis. The modules may be installed with the chassis under power.

Space Requirements

The hybrid amplifiers are double-wide modules. They are usually installed in slots 5 through 15. Slots 1 through 4 are usually reserved for the power supplies. Slots 15 and 16 are reserved for the ICIM2, if installed. If an ICIM2 is not installed, any other module could be installed in these slots.

Chassis Style

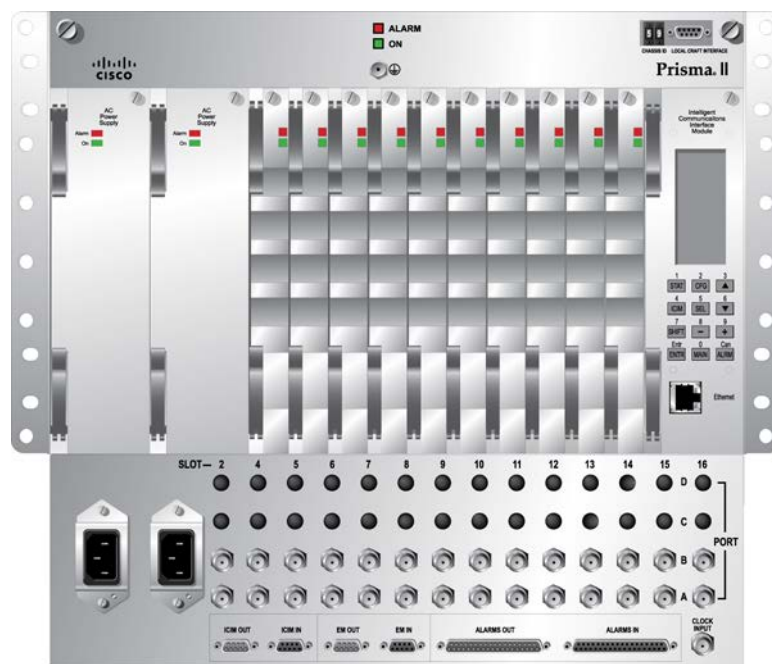
The Prisma II chassis is configured with front connectors. Power, RF input/output, and other connectors are located on the front of the chassis. Connections to the chassis serve the same function and are made in the same manner regardless of the location of the connectors or chassis configuration.

Note: The chassis ships with either a rear exhaust or a front exhaust fan tray. The rear exhaust fan tray has its air exhaust ports on the rear of the fan tray. The front exhaust fan tray has its air exhaust ports on the front of the fan tray and a solid back panel.

Front-Access Chassis - Front Panel Illustration

The following illustration shows the front of the front-access Prisma II standard chassis with two power supplies, 10 full-height modules, and the ICIM installed.

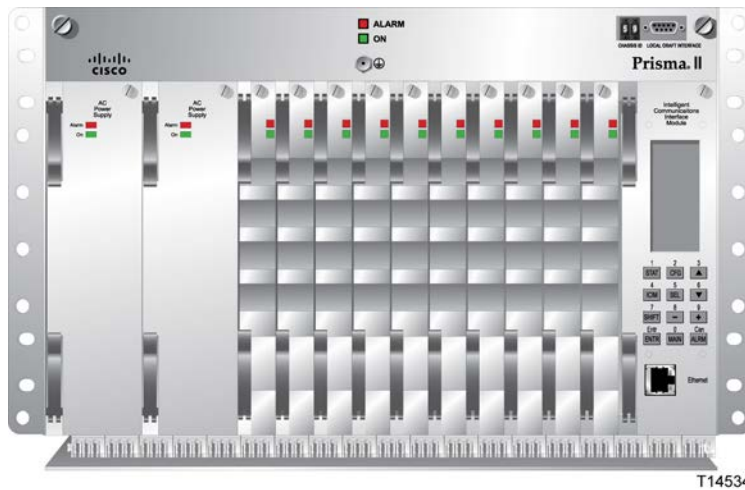
The power inlets, RF input/output, and RF ports are located on the recessed bottom of the connector interface panel on the front-access version of the chassis.



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Rear-Access Chassis - Front Panel Illustration

The following illustration shows the front of the rear-access Prisma II standard chassis with two power supplies, 10 full-height modules, and the ICIM installed.



Installing the Module in the Chassis

To Install the Module

Important: The following procedure assumes that the chassis is mounted in a rack. This procedure applies to both front access and rear access chassis styles. The modules are hot-swappable and have plug-and-play capability.



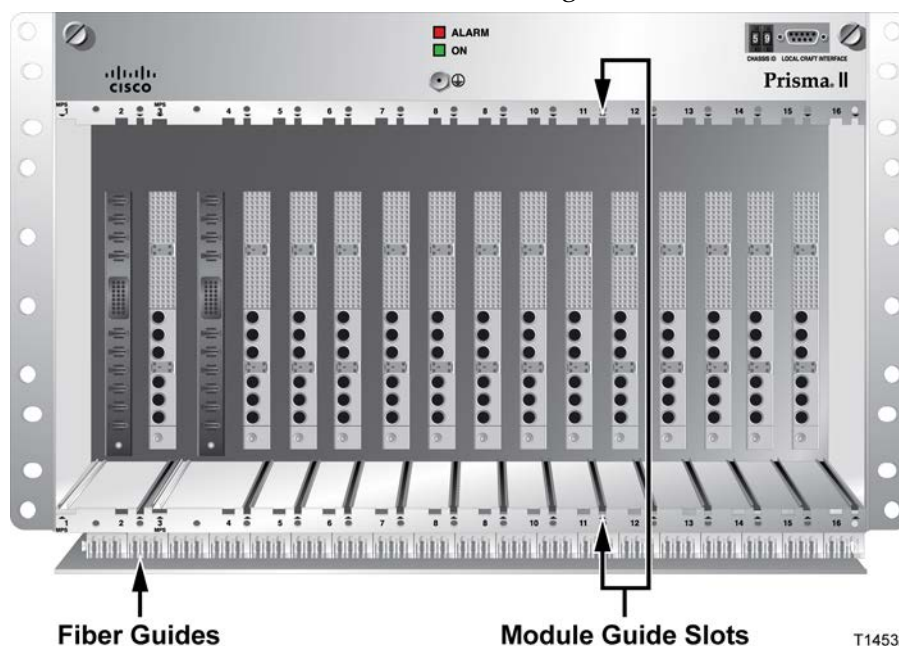
WARNING:

Avoid damage to your eyes! Do not look into any optical connector while the system is active. Even if the unit is off, there may still be hazardous optical levels present.

Important: When a module (power supply or application module) is inserted into the chassis, alarm(s) may be generated momentarily while the module powers up. This will be briefly indicated on the module LED and may also generate an alarm in the Event Log. This is a normal occurrence and does not indicate a module problem.

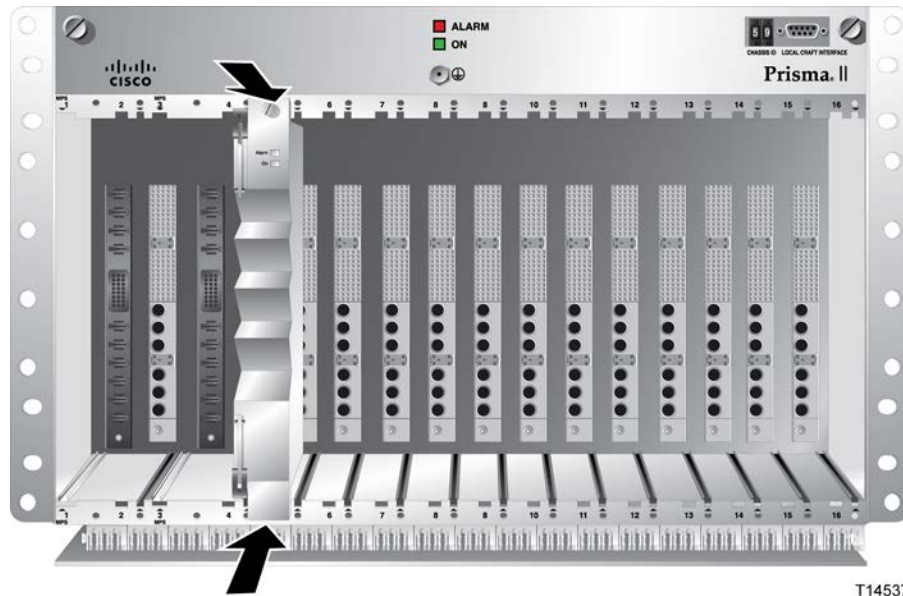
Complete the following steps to install the module in the chassis.

- 1 Locate the fiber guides at the bottom of the chassis and the module guide slots inside the chassis as shown in the following illustration.



- 2 Align the ridges on the top and bottom of the module with the module guide slots located on the chassis.
- 3 Locate the two ejector levers on the left of the module. Swing the ejectors out so they are perpendicular to the module front panel.

- 4 Gently slide the module into the chassis until its power and communications connections join connectors on the Back Plane Bus. *Do not force the module into the chassis.* If properly aligned, it should slide in with minimal force.



- 5 Slowly press the module ejector levers toward the chassis and confirm that the jaws of the ejectors engage with the mounting flange in the chassis. When this occurs, the ejectors act as levers that pull the module toward the mounting flange and cause its power and communications connectors to mate fully with the corresponding connectors at the rear of the chassis. After confirming correct ejector operation, press both ejectors fully so that they are parallel to the module front panel.
- 6 Hand-tighten the screw at the top of the module to secure it in the chassis. Use a 3/8-in. flat-blade screwdriver to secure. *Do not over-tighten.*
- 7 Fill any unused slots with module blanks to guarantee proper cooling air flow.

To Enable Optical Output

As a safety precaution, the optical output of this module is disabled by factory default.

Complete the following steps to enable optical output after the module is installed.

- 1 Obtain the chassis and slot number for the module. When using Telnet for communication with the module, also obtain the chassis IP address.
- 2 Use HyperTerminal, Telnet, or your network management system to establish CLI (command line interface) communication with the module's controlling ICIM. Once communication is established, the CLI> prompt appears onscreen.

Note: Instructions for using HyperTerminal and Telnet are provided below. For instructions on using your network management system, see your network administrator.

Chapter 2 Module Installation

- 3 At the CLI> prompt, type **module chassis <x> slot <y>**, where x and y are the chassis number and slot number respectively, and then press **Enter**. The prompt changes from CLI> to x/y MODULE>, where x/y specifies the module's chassis and slot location.
- 4 At the x/y MODULE> prompt, type **set control enable on**, and then press **Enter**. The optical output of the module should now be enabled.

To Set Up a HyperTerminal Serial Port Session with the ICIM2

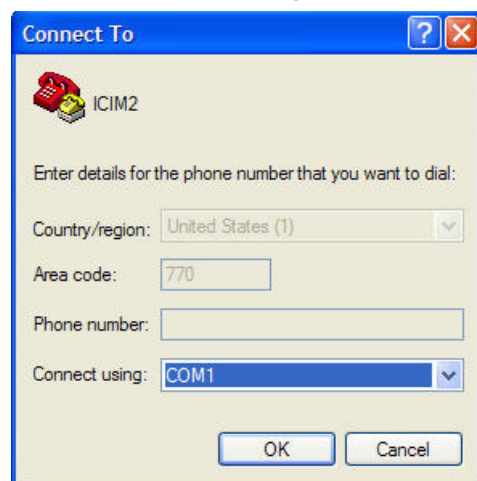
- 1 Connect one end of a DB-9 to DB-9 straight-through serial cable to an available COM port on your personal computer, and the other end to the ICIM front panel serial port.
- 2 Open a HyperTerminal session on your laptop (or desktop) PC that you will use to connect to the ICIM. The HyperTerminal program typically is found at:

Start\All Programs\Accessories\Communication\Hyperterminal

The new Connection Description dialog box appears.



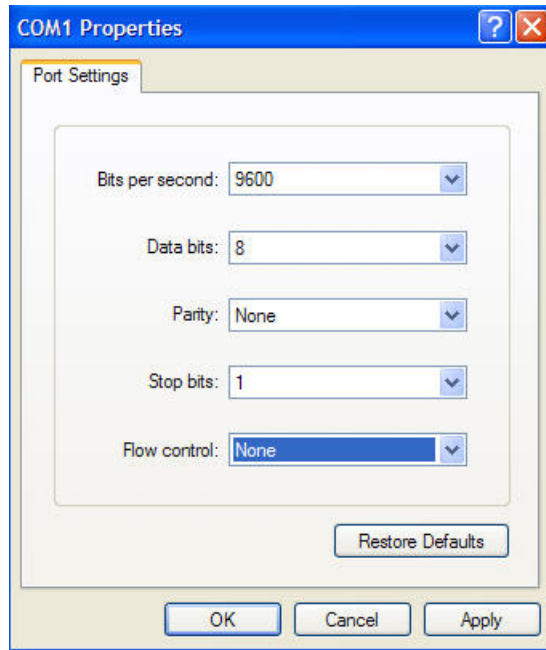
- 3 Type in a name for the connection, select an icon of your choice, and click **OK**. The Connect To dialog box appears.



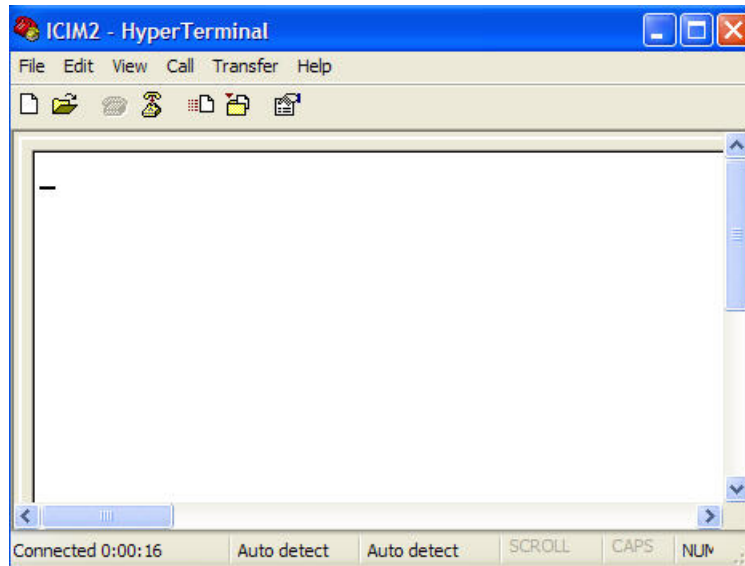
- 4 In the Connect Using field, click the drop-down arrow and select the serial port that you will use for the connection, and then click **OK**. The COM Properties dialog box appears.

Note: For most applications, the serial port is COM1 or COM2.

- 5 Set the following port setting in the COM Properties dialog box.



- 6 Click **OK**. The HyperTerminal main program window appears.



- 7 On the File menu, click **Save** to save the settings.
- 8 Wait for the ICIM boot to finish. Once finished, you should see the following display:

W A R N I N G

Unauthorized or improper use of this system may result in administrative disciplinary action and civil or criminal penalties. By continuing to use this system you indicate your awareness of and consent to these terms and conditions of use. LOG OFF IMMEDIATELY if you do not agree to the conditions stated in this warning.

login:

- 9 Log in using the default username **Administrat0r** and the default password **AdminPassw0rd**. Note the 0 (zero) character in each string.

```
login: Administrat0r
Password: AdminPassw0rd
```

Successful login will return the following prompt:

```
Login of user "Administrat0r" successful
Proceed to CLI at the prompt
Welcome to the ICIM User Interface.
Copyright (c) Cisco Systems, Inc., 2005
Proceed to CLI at the shell prompt
shell>
```

- 10 At the shell> prompt, type **cli**, and then press **Enter**. The CLI> command prompt appears.
- 11 Enter the module configuration commands as indicated above.
- 12 Type **logout** and then press **Enter** to exit the session.
- 13 Remove the serial cable. It is no longer required.

To Set Up a Telnet Session with the ICIM

- 1 Using a Category 5 Ethernet (Cat5) cable, connect the ICIM front panel Ethernet port to your local network.
- 2 Open a command prompt window and verify connectivity by pinging the ICIM's IP address. For example:

```
C:\> ping 172.18.50.100
```

- 3 At the command prompt, type:

```
telnet <IP address>
```

where `IP address` is the IP address of the ICIM. The session starts and the Telnet Login prompt appears.



```
-----  
W A R N I N G  
-----  
Unauthorized or improper use of this system may result in  
administrative disciplinary action and civil or criminal penalties.  
By continuing to use this system you indicate your awareness of and  
consent to these terms and conditions of use. LOG OFF IMMEDIATELY  
if you do not agree to the conditions stated in this warning.  
  
login: Administrat0r  
Password:  
Login of user "Administrat0r" successful  
Proceed to CLI at the prompt  
telnet> cli  
Starting CLI...  
CLI> _
```

- 4 At the Login prompt, type **Administrat0r** (note the zero character in the string), and then press **Enter**.
- 5 At the Password prompt, type **AdminPassw0rd** (note the zero character in the string), and then press **Enter**.
- 6 At the telnet> prompt, type **cli**, and then press **Enter**. The CLI> command prompt appears.
- 7 Enter the module configuration commands as indicated above.
- 8 Type **logout** and then press **Enter** to exit the session.

Cleaning Optical Connectors

Introduction

Cleaning fiber-optic connectors can help prevent interconnect problems and therefore aid system performance. When optical connectors are disconnected and reconnected, the fiber surface can become dirty or scratched. The goal of cleaning the fiber optic connectors is to remove all dust and contaminants without leaving any residue. It is also recommended that all connectors be visually inspected after cleaning to verify the connector is clean and undamaged.

Recommended Equipment

- CLETOP or OPTIPOP ferrule cleaner (for specific connector type)
- Compressed air (also called “canned air”)
- Lint-free wipes moistened with optical-grade (99%) isopropyl alcohol
- Bulkhead swabs (for specific connector type)
- Optical connector scope with appropriate adaptor

Tips for Optimal Fiber Optic Connector Performance

- Do not connect or disconnect optical connectors with optical power present.
- Always use compressed air before cleaning the fiber optic connectors and when cleaning connector end caps.
- Always install or leave end caps on connectors when they are not in use.
- If you have any degraded signal problems, clean the fiber optic connector.
- Advance a clean portion of the ferrule cleaner reel for each cleaning.
- Turn off optical power before making or breaking optical connections to avoid microscopic damage to fiber mating surfaces.

To Clean Optical Connectors



WARNING:

- **Avoid personal injury! Use of controls, adjustments, or performance of procedures other than those specified herein may result in hazardous radiation exposure.**
 - **Avoid personal injury! The laser light source on this equipment emits invisible laser radiation. Avoid direct exposure to the laser light source.**
 - **Avoid personal injury! Viewing the laser output with optical instruments (such as eye loupes, magnifiers, or microscopes) may pose an eye hazard.**
- Connect or disconnect fiber *only* when equipment is OFF or in Service mode.
 - Do not apply power to this equipment if the fiber is unmated or unterminated.
 - Do not look into an unmated fiber or at any mirror-like surface that could reflect light that is emitted from an unterminated fiber.
 - Do not view an activated fiber with optical instruments such as eye loupes, magnifiers, or microscopes.
 - Use safety-approved optical fiber cable to maintain compliance with applicable laser safety requirements.

Fiber Optic Connector Cleaning Instructions

Connector cleanliness is crucially important for optimum results in fiber optic communications links. Even the smallest amount of foreign material can make it impossible to obtain the expected insertion and return losses. This can reduce the range of the equipment, shorten its expected service life, and possibly prevent the link from initializing at all.

New equipment is supplied with clean optical connectors and bulkheads. Clean these connectors and bulkheads in the field *only* if you observe and can verify an optical output problem.

Connectors and Bulkheads

Most fiber optic connectors are of the physical contact (PC) type. PC type connectors are designed to touch their mating connector to prevent air gaps, which cause reflections. For optimum performance, *all* dirt must be removed.

Bulkheads can also become dirty enough to affect performance, either from airborne dust or from contamination introduced by connectors.



WARNING:

Avoid damage to your eyes! Do not look into any optical connector while the system is active. Even if the unit is off, there may still be hazardous optical levels present.

Note: Read the above warning before performing cleaning procedures.

Cleaning Connectors

It is important that all external jumper connectors be cleaned before inserting them into the optical module. Follow these steps to clean fiber optic connectors that will be connected to the optical module:

Important: Before you begin, remove optical power from the module or ensure that optical power has been removed.

- 1 Inspect the connector through an optical connector scope. If the connector is damaged, e.g., scratched, burned, etc., replace the jumper.
- 2 If the connector is dirty but otherwise undamaged, clean the connector as follows:
 - a Make several swipes across the face of the connector with a CLETOP ferrule cleaner. This will remove dust and some films.
 - b Listen for a slight "squeak" typically generated during this process, indicating a clean connector.
 - c Inspect the connector again through the scope to confirm that it is clean.
- 3 If a second inspection indicates that further cleaning is needed:
 - a Use 99% isopropyl alcohol and a lint-free wipe to clean the connector.
 - b Use the CLETOP ferrule cleaner again to remove any film left over from the alcohol.
 - c Inspect the connector again through the scope and confirm that it is clean.
- 4 If necessary, repeat steps 3a-3c until the connector is clean.

Cleaning Bulkheads

Important: Do not detach the bulkhead from the module front panel for cleaning under any circumstances. There is little or no slack in the fiber attached to the bulkhead, and any attempt to remove the bulkhead will risk damage to the fiber.

It is generally more difficult to clean bulkhead connectors and verify their condition due to the inaccessibility of the fiber end face. For this reason, you should *only* attempt to clean a bulkhead connector when a dirty connector is indicated.

Follow these steps to clean the bulkhead:



WARNING:

- **Avoid personal injury! Use of controls, adjustments, or performance of procedures other than those specified herein may result in hazardous radiation exposure.**
- **Avoid personal injury! The laser light source on this equipment emits invisible laser radiation. Avoid direct exposure to the laser light source.**
- **Avoid personal injury! Viewing the laser output with optical instruments (such as eye loupes, magnifiers, or microscopes) may pose an eye hazard.**

- 1 Insert a dry bulkhead swab into the bulkhead and rotate the swab several times.
- 2 Remove the swab and discard. Swabs may be used only once.
- 3 Check the bulkhead optical surface with a fiber connector scope to confirm that it is clean. If further cleaning is needed:
 - a Moisten a new bulkhead swab using a lint-free wipe moistened with optical-grade (99%) isopropyl alcohol.
 - b With the connector removed, fully insert the bulkhead swab into the bulkhead and rotate the swab several times.
 - c Remove the swab and discard. Swabs may be used only once.
 - d Check with a fiber connector scope again to confirm that there is no dirt or alcohol residue on the optical surface.
 - e If any alcohol residue remains, clean it off with a new dry bulkhead swab.
- 4 Mate all connectors to bulkheads and proceed to **Verifying Equipment Operation** below.
- 5 It is also recommended that all connectors be visually inspected after cleaning to verify the connector is clean and undamaged.

Verifying Equipment Operation

Perform circuit turn-up. If the equipment does not come up, i.e., fails verification or indicates a reflection problem, clean the connectors and bulkheads again.

For Further Assistance

If you have any questions or concerns about cleaning fiber optic connectors, contact Cisco Services.

Connecting Optical Cables

To Connect Cable

Important: It is recommended that all connections be made with the optical power off. This will reduce the risk of damage to the fiber.

Note: Observe laser safety precautions. Refer to *Laser Safety* (on page xix) for additional information.

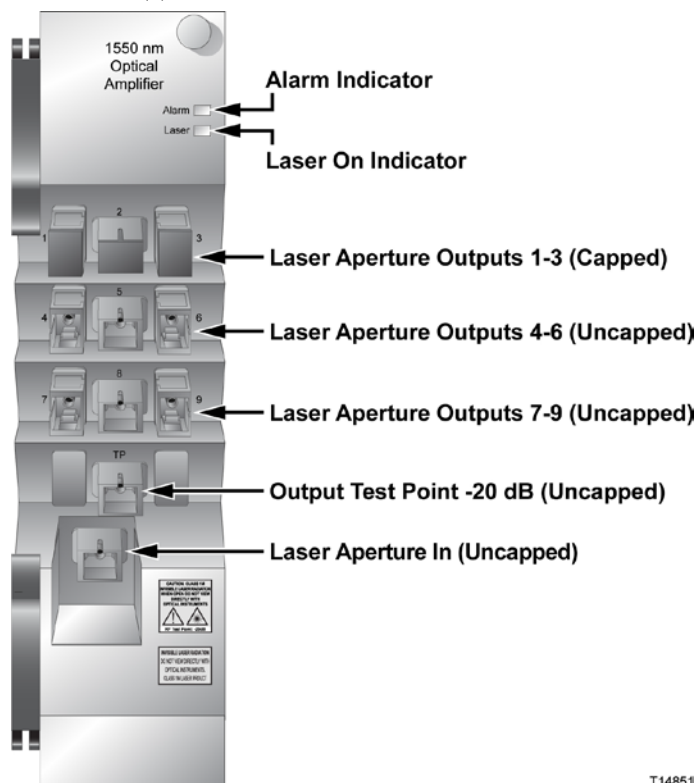
Follow this procedure to make the optical cable connections for each module to be installed.



CAUTION:

High power density exists on fiber when optical power is present. To avoid microscopic damage to fiber mating surfaces, turn off optical power or reduce power below 15 dBm before making or breaking optical connections.

- 1 After cleaning the end of the fiber, connect the optical cable(s) to the top connector(s).



T14851

- 2 After cleaning the end of the fiber, attach the optical cable from the optical source to the input connector (bottom) of the module. This is the optical input connection.
- 3 Route the output cable(s) to the appropriate destination.

External Alarms Connections

Master-Slave Operation

All Prisma II modules ship from the factory configured as a “master.” They can be reconfigured as "slave" or redundant modules through command line interface (CLI) commands. The chassis allows for local hard-wired redundancy by using the ALARM IN and ALARM OUT connectors on the connector interface panel. With these connectors, a master-slave pair of modules can be configured so that if the master fails, the slave takes over.

ALARMS IN and ALARMS OUT Connections

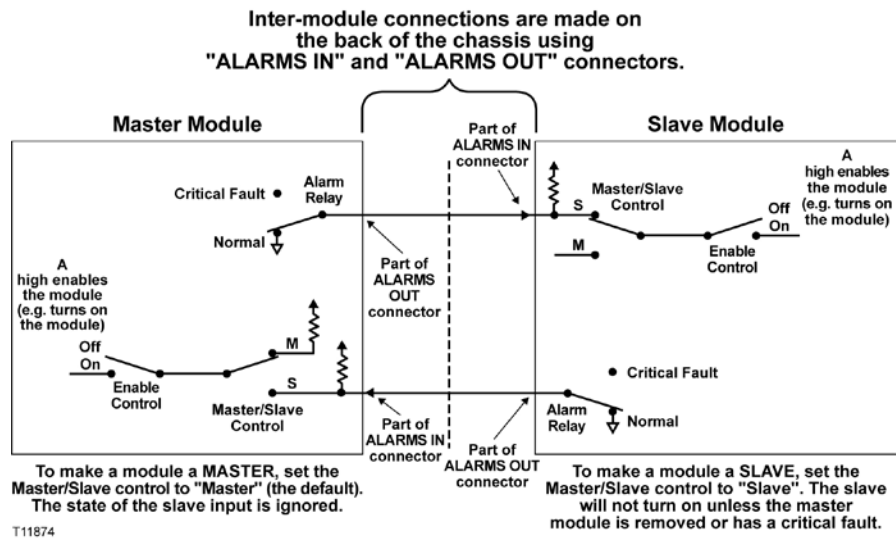
The chassis provides two connections for external alarms to and from each module slot. These alarm connections are located in two 37-pin D-connectors (DB-37) labeled ALARMS IN and ALARMS OUT.

When a critical alarm occurs in a master module, the master turns off and the slave (redundant module) is enabled. To make this happen, the pin representing the master module slot in the ALARM OUT connector must be externally wired to the pin representing the slave module slot in the ALARM IN connector.

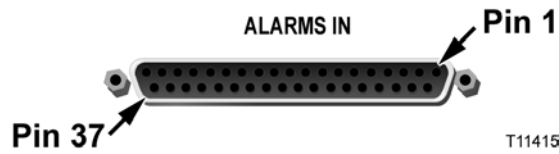
Important:

- This module takes up two slots in the Prisma II chassis. For purposes of redundancy wiring, the module is identified with the higher-numbered slot. For example, if the module occupies slots 6 and 7 (module ejector lever at slot 6), its ALARM IN and ALARM OUT connections are made at slot 7, and the pins for slot 6 are not used.
- Any device configured as a master ignores its own ALARM IN contacts.
- To verify proper wiring and redundant configuration, unplug the master device and confirm that the slave module turns on as a result.
- Once the ALARM IN and ALARM OUT contacts are wired, take care to ensure that the master and slave modules are not moved to other slots. If they are, the ALARM IN and ALARM OUT connectors will need to be rewired to the appropriate pins.

Master-Slave Illustration



ALARMS IN Connector



ALARMS OUT Connector



For more information about ALARMS IN and ALARMS OUT, refer to the *Prisma II Platform System Guide, System Release 2.03*, part number 4025478.

Prisma II Redundancy Interface Panel

The Prisma II Redundancy Interface Panel is an accessory to the Prisma II platform. It is intended to be used with the master-slave feature and the contact closure alarm feature of the Prisma II platform.

The Prisma II Redundancy Interface Panel serves as an extension to the two DB-37 connectors labeled ALARM IN and ALARM OUT on the connector interface panel of the chassis. The terminals on the redundancy interface panel are extensions of pins on the ALARMS OUT and ALARMS IN connectors on the chassis.

Note: This module takes up two slots in the Prisma II chassis. For purposes of redundancy wiring, the module is identified with the higher-numbered slot. For example, if the module occupies slots 6 and 7 (module ejector lever at slot 6), its ALARM IN and ALARM OUT connections are made at slot 7, and the pins for slot 6 are not used.

For more information about the Redundancy Interface Panel, refer to the *Prisma II Chassis Installation and Operation Guide*, part number 713375.

3

Operation Using CLI

Introduction

This chapter describes the procedures for using the CLI to monitor the module. The procedures used in this chapter apply if you are using the Prisma II ICIM2 to monitor the module.

For an overview of module operating features, see *Module Introduction* (on page 1).

Laser Warning



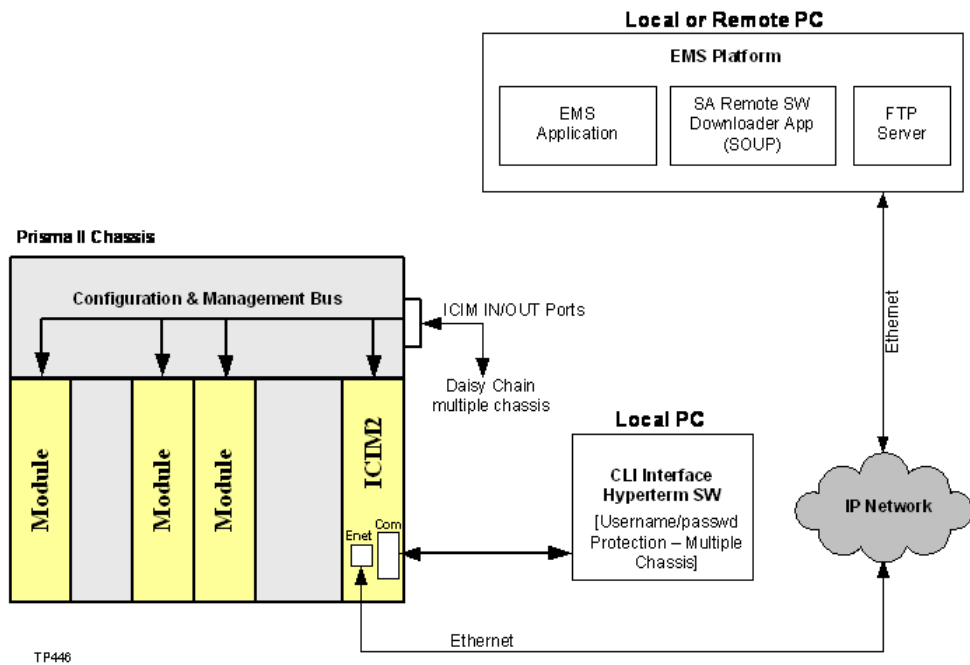
WARNING:

Avoid damage to your eyes! Do not look into any optical connector while the system is active. Even if the unit is off, there may still be hazardous optical levels present.

In This Chapter

■ Prisma II Platform Configuration.....	30
■ Using the CLI.....	31
■ Module Commands.....	38
■ ICIM Commands	48
■ Terminal Commands.....	56

Prisma II Platform Configuration



Using the CLI

CLI Overview

The command-line interface (CLI) to the ICIM supports monitoring and control of the ICIM domain, which includes the ICIM itself, the host chassis, and all other modules installed in the host chassis and other daisy-chained chassis.

The CLI is designed for use by craft operators as well as by remote monitoring systems. To meet both needs, CLI accepts commands in either of two formats:

- A modal format allows craft operators to first select one of four command modes, and then make use of mode-specific monitoring or control commands and help screens.
- A non-modal format allows an operator or network management system to enter all parameters for a particular control or monitoring command, including command mode changes, on a single line.

CLI Command Modes

All CLI interactions occur in one of four command modes. Command modes affect the scope of the commands entered as well as how they are interpreted.

Mode	Description
CLI	The default command mode at login, used for issuing CLI commands to perform general control and monitoring tasks
Module	Used to issue Module mode commands, which are directed to a specific module or range of modules installed in the ICIM domain
ICIM	Used to issue ICIM mode commands, which are directed to the ICIM itself
Terminal	Used to issue Terminal mode commands, which control the way that information is displayed onscreen

The current command mode is indicated by the onscreen prompt, as follows:

Prompt	Meaning
CLI>	CLI command mode now in effect
/ MODULE>	Module command mode now in effect; no chassis or slot specified (see below for details)
ICIM>	ICIM command mode now in effect
TERMINAL>	Terminal command mode now in effect

Selecting Command Modes

CLI mode is the default command mode at login. A different command mode is selected by entering the desired mode name at the CLI command prompt.

The following sample dialog shows how you would change from CLI mode to Module mode:

```
CLI> module <Enter>
*/ * MODULE>
```

You can then use any CLI commands recognized in Module command mode.

To exit Module mode and return to CLI mode, use the **exit** command as follows:

```
*/ * MODULE> exit <Enter>
CLI>
```

If desired, you can then change to **icim** command mode as follows:

```
CLI> icim <Enter>
ICIM>
```

You cannot change command modes directly, e.g., by typing **terminal** at the ICIM> prompt. Instead, you must change the command mode by first returning to CLI mode, and then selecting the new mode, as shown below:

```
ICIM> exit <Enter>
CLI> terminal <Enter>
TERMINAL>
```

Entering Commands - Modal Format

Craft operators typically enter commands modally; that is, by first changing to the appropriate command mode and then entering the desired command.

The following sample dialog illustrates this process.

```
CLI> module <Enter>
*/ * MODULE> chassis 1 slot 6 <Enter>
01/06 MODULE> alarm <Enter>
No active alarms found

Success!
01/06 MODULE>
```

The first line of this example selects the Module command mode. In the next line, the prompt changes to reflect the new command mode. The command on this line selects chassis 1, slot 6 as the object of subsequent commands. On pressing Enter, the prompt changes from */ * MODULE> to 01/06 MODULE> to reflect this selection.

The next line issues the **alarm** command. The response on pressing **Enter** reflects the alarm status for all of the modules installed in or daisy-chained with Chassis 1.

Modal command entry is often helpful for human operators. It can minimize the need for keystrokes in some cases, saving time and eliminating a possible source of error. Modal operation can also help to streamline the work flow by focusing commands and human attention on a particular chassis or module of interest.

Entering Commands - Non-Modal Format

A non-modal command is entered all at once, on a single command line. For example, the **alarm** command entered above could have been entered as follows:

```
CLI> module chassis 1 slot 6 alarm exit <Enter>
No active alarms found

Success!
CLI>
```

Because of its relative efficiency, this is the preferred command entry format for network management systems. Craft operators may also find non-modal command entry to be more efficient when they are already very familiar with the syntax of the command being used.

Command Syntax

The general format of a non-modal CLI command, as it usually should be sent from a network management system, is as follows:

```
modename modeoptions action actionoptions values exit eol
```

where the keywords in the command serve the following functions:

Keyword	Function
modename	The name of a mode switch: cli , module , icim , or terminal
modeoptions	Options that may be associated with the modename
action	A command keyword such as set , show , info , etc.
actionoptions	Options that may be associated with the action
values	Values that may be associated with the action
eol	End of Line, equivalent to Carriage Return or Enter
exit	Used to return to CLI command mode

The general format of a modal CLI command, as a craft operator might send it, is as follows:

```
ModeName modeOptions eol
modeOptions eol
modeOptions Action actionOptions Values eol
Action actionOptions Values eol
Exit eol
```

where the keywords have the same functions as described above for the non-modal format.

Usage Guidelines

- CLI commands, unlike login passwords, are insensitive to case. For example, the keywords **Set**, **set**, and **SET** all have the same meaning in CLI.
- If a particular action requires modeoptions that are not included in the command, an error message will be issued.
- In general, CLI commands issued from a network monitoring system should have the non-modal "single-line" form shown above. Exceptions may be made where they will improve efficiency.
- Mode changes can be used to restrict the scope of most CLI commands. When the command mode changes, the prompt changes to reflect the new mode.

End of Line

The CLI syntax is command-line oriented. Accordingly, the **eol** delimiter (shown as `\n` in the grammar) is functionally equivalent to Carriage Return or Enter; that is, it terminates the command. The **eol** delimiter cannot be used to split a single command across two or more lines.

Shown below, for example, is a legal form of a **set** command within **module** mode as a craft operator might enter it:

```
20/11 Module> set control enable 1 eol
```

However, the following form of the same command is not legal:

```
20/11 Module> set control eol (continue the command on the next line)
20/11 Module> enable 1 eol
```

Wildcards

Some CLI command parameters can include one or more wildcard characters (*) to give added flexibility.

The following sample dialog shows how a craft operator could use a wildcard to check the output power on all modules in chassis 20:

```
CLI> module chassis 20 slot * <Enter>
20/* MODULE> show monitor outpwr <Enter>
```

MODID	NAME	VALUE	UNITS
20/05	OutPwr	-5.33429	dBm
20/07	OutPwr	10.086	dBm
20/13	OutPwr	-6.15736	dBm

```
SUCCESS!
20/* MODULE>
```

The first line in this example changes from CLI mode to Module mode and specifies chassis 20, any (*) slot. On the next line, the prompt has changed to reflect the new mode and chassis specification. The **show** command entered at this prompt, followed by the arguments **monitor** and **outpwr**, specifies that the response should include only those modules for which outpwr is a monitored parameter. The response to this command identifies each applicable module by chassis and slot location and displays the current output power level in dBm.

The next sample dialog shows how a craft operator could use a wildcard to check all monitored parameters whose name contained **pwr**:

```
CLI> module chassis 20 slot * <Enter>
20/* MODULE> show monitor *pwr* <Enter>

  MODID  NAME      VALUE      UNITS
  20/05  OutPwr    8.3        dBm
  20/07  OutPwr    5.91542    dBm
  20/14  OutPwrA   18.9057    dBm
  20/14  OutPwrB   18.8904    dBm

SUCCESS!
20/* MODULE>
```

As can be seen from the response, the pattern matching and keyword matching is caseless, so the OutPwr and InPwr parameters are included even though a lowercase P was used in the command line. Wildcards default to MS Windows filename pattern matching format, where **?**, *****, and **[x-y]** have special meaning. This format can be adjusted using the Terminal command Pattern to use POSIX regex wildcards. See *Terminal Commands* (on page 56) for additional information.

Note: Wildcards are never allowed anywhere in a Set command.

Command Hints and Help

Abbreviations and Shortcuts

In general, the CLI interpreter recognizes the shortest character string that unambiguously identifies a keyword (command or argument). In the CLI command mode, for example, the entry of either **m** (or **mod**, etc.) is recognized as the **module** command.

The table below lists other "shortcuts" available to users in all CLI command modes.

Shortcut	Description
TAB	Automatically completes typing of a keyword
ESC	Displays a list of expected keywords or tokens
BACKSPACE ^H	Erases characters to the left of the text cursor
^A	Displays the current input with all keywords expanded

Shortcut	Description
^D	Performs a logout when typed at the beginning of a line
^L	Displays the current input as received by the command interpreter; used for testing line noise
^P	Moves the text cursor to a previous command line (limited)
^X	Cancel the current input line

Note: While useful for craft operators, avoid using abbreviations and shortcuts in network management system commands, as they are a potential source of error.

Alarm Information

You can use the **alarm** command in any command mode to get a list of currently active alarms in the ICIM domain. You can also change command modes or additional arguments to narrow the scope of the response, as explained later in this chapter.

Getting Online Help

Craft operators can type **help** (or the ? character) and then press **Enter** to view online help screens for each command mode.

The help screens for Module, ICIM, and Terminal modes can be viewed while in CLI mode by using the following commands:

- help module
- help terminal
- help icim

Note: A summary of recognized CLI commands by command mode is also provided in *Prisma II Permitted CLI Commands* (on page 131).

Login and Logout

To use the CLI, you first establish communication with a chassis using Telnet, Hyperterminal, or your network management system. Telnet and Hyperterminal instructions are included in *To Enable Optical Output* (on page 15).

Once communication is established, the control console or PC displays the following message from the ICIM:

```

-----
                W A R N I N G
                -----

Unauthorized or improper use of this system may result in
administrative disciplinary action and civil or criminal penalties.
By continuing to use this system you indicate your awareness of and
consent to these terms and conditions of use.  LOG OFF IMMEDIATELY
if you do not agree to the conditions stated in this warning.

login:

```

Login

Complete the following steps to log into the CLI.

- 1 At the login prompt, type your assigned user name (or if none is assigned, type **Administrat0r**), and then press **Enter**. The user name is case-sensitive.
- 2 At the password prompt, type your assigned password (or if none is assigned, type **AdminPassw0rd**), and then press **Enter**. The password is case-sensitive.

An acknowledgement similar to the following appears:

```

Login of user "Administrat0r" successful
Welcome to the ICIM User Interface
Copyright (C) Cisco Systems, Inc., 2005
Proceed to CLI at the shell prompt

shell>

```

- 3 To enter the CLI, type **cli** at the shell prompt, then press **Enter**. The prompt changes as shown below.

```

CLI>

```

You can now use CLI commands to interact with the ICIM2.

Logout

To log out of the CLI and exit the session, type **logout**, then press **Enter**.

Note: CLI always recognizes the **logout** command, regardless of the current command mode.

Module Commands

Overview

Basic Command Syntax

The general non-modal form of a Module command is as follows:

```
MODULE Modspecs Command args ... Exit
```

Modspecs, or module specifications, are the parameters that identify the chassis and slot to be addressed by the command.

- The keyword **chassis** specifies the affected chassis.
- The keyword **slot** specifies the affected slot or slots.

For example, the command **module chassis 20 slot 11** selects slot 11 of chassis 20 as the object of the command arguments (if any) that follow. Once this command is entered, the Module prompt changes to reflect the current module specification.

The following exchange shows how a craft operator might specify slot 11 of chassis 20 before performing a series of checks on the module installed there:

```
/* MODULE> module chassis 20 slot 11 <Enter>
20/11 MODULE>
```

Entering Modspecs

The **chassis** keyword may be used to specify a single chassis, a range of chassis, or with the wildcard character (*), all chassis in the ICIM domain, as shown in this dialog:

```
/* MODULE> chassis 10
10/* MODULE> chassis [2-87]
[02-87]/* MODULE> chassis *
/* MODULE>
```

Similarly, the **slot** keyword may be used independently to specify a single slot, a range of slots, or all slots in the ICIM domain, as shown in this dialog:

```
10/* MODULE> slot [2-18]
10/[02-18] MODULE> slot 15
10/15 MODULE> slot *
10/* MODULE>
```

The chassis and slot also may be specified together by using the single keyword **modid**, as shown here:

```
[10-34]/01 MODULE> modid [1-5]/[4-13]
[01-05]/[04-13] MODULE> modid 0512
05/12 MODULE> modid *
/* MODULE>
```

The modid method can be somewhat faster to enter, but the resulting dialog may be less readable than when using the chassis and slot keywords.

Module Command Prompt

The Module command prompt always indicates the current module specification, as shown in the following examples.

Prompt	Meaning
<code>*/* MODULE></code>	The modspec is "wild." The command will include all slots and chassis in the ICIM domain.
<code>20/* MODULE></code>	The modspec specifies a chassis but not a slot. The command will address all slots (modules) in chassis 20.
<code>*/11 MODULE></code>	The modspec specifies a slot but not a chassis. The command will address slot 11 of all chassis in the ICIM domain.
<code>20/11 MODULE></code>	The modspec specifies a chassis and a slot. The command will address only slot 11 of chassis 20 in the ICIM domain.
<code>[1-7]/[4-15] MODULE></code>	The modspec indicates a range of slots and chassis. The command will address slots 4-15 of chassis 1-7 in the domain.

Note:

- Modspecs persist when exiting and re-entering Module command mode, but do not affect the scope of operation in other (CLI, ICIM, Terminal) command modes.
- When specifying a range of chassis or slots, the range need not be fully populated. For example, the chassis range [1-7] does not require that there be seven chassis; it only means that chassis numbers within that range will be included.
- For a network management system or other automatic control interface, a specific chassis and slot are required for backward compatibility, and should always be specified.
- For craft operators, ranges may be specified for non-set commands, and module specifications may be concatenated.

Alarm Command

The **alarm** command is used to display all active alarms in the domain of the ICIM.

The following sample dialog illustrates the use of this command:

```
20/* MODULE> alarm <Enter>
    No active alarms found
SUCCESS!
20/* MODULE>
```

This response indicates that no alarms are currently active anywhere in the ICIM domain. The scope of response is not limited to chassis 20, despite the current status of the Module prompt.

Alarm Module

The argument **module** can be added to modify the scope of the command to include only the active alarms in the range indicated by the current Module prompt.

The following sample dialog shows how this argument affects the response.

```
20/* MODULE> alarm module <Enter>
    No active alarms found
SUCCESS!
20/* MODULE>
```

This response indicates that no alarms are currently among the modules installed in chassis 20. Alarms that may exist in other chassis are not reflected.

Show Command

The **show** command (at the Module prompt) is used to display the values of parameters specified by one of four following arguments: **control**, **monitor**, **alarmstate**, or **alarmparam**. These arguments, in turn, are followed by the name of a control (or monitor or alarm) to match against. This name can be the complete name or a pattern that includes one or more wildcard characters (*).

Show Control

The following sample dialogs using the **control** argument show the use of both complete names and wildcards, as well as the kinds of information returned.

```
*//* MODULE> show control enable <Enter>
    MODID  NAME      SETTING  UNITS
    20/05  Enable  On (1)
    20/06  Enable  On (1)
    20/07  Enable  On (1)
    20/09  Enable  On (1)
    20/13  Enable  Off (0)
SUCCESS!
*//* MODULE>
*//* MODULE> show control *serv* <Enter>
    MODID  NAME      SETTING  UNITS
    01/07  Service  Off (0)
    01/08  ServiceA Off (0)
    01/08  ServiceB On (1)
SUCCESS!
*//* MODULE>
```

Show Monitor

The sample dialog below shows the kind of information returned by the **monitor** argument.

```
*//* MODULE> show monitor *pwr <Enter>
```

MODID	NAME	VALUE	UNITS
20/05	OutPwr	8.29224	dBm
20/06	InPwr	5.91542	dBm
20/06	OutPwr	18.9929	dBm
20/13	InPwr	17.2202	dBm
20/13	OutPwr	19.4671	dBm

SUCCESS!
 / MODULE>

Note:

- The information returned by the monitor argument includes units of measurement.
- InPwr values are stated to several decimal places, but only the first 2 or 3 are significant.

Show Alarmstate

The following sample dialog shows the kind of information returned by the **alarmstate** argument.

```
*/* MODULE> show alarmstate *pwr <Enter>
```

MODID	NAME	STATE
20/05	OutPwr	0 (major low)
20/06	InPwr	0 (major low)
20/06	MaxInPwr	0 (ok)
20/07	OutPwr	2 (ok)
20/08	XSPwr	0 (ok)
20/13	OutPwr	0 (major low)
20/13	InPwr	0 (major low)

SUCCESS!
 / MODULE>

Note: The information returned by the **alarmstate** argument provides both the numeric value and its meaning.

Show Alarmparam

Alarms also have parameters, such as thresholds. Accordingly, the **alarmparam** argument is in turn followed by an argument that specifies one of five parameters: **hysteresis**, **majorhigh**, **majorlow**, **minorhigh**, and **minorlow**.

The following sample dialog illustrates the use of these arguments.

```

/** MODULE> show alarmparam *pwr minorhigh <Enter>

  MODID  NAME      MinorHigh
  20/05  OutPwr    1
  20/06  InPwr     5
  20/06  MaxInPwr N/A

SUCCESS!
/** MODULE>

```

Note:

- The returned value of **N/A** shown above indicates that the alarm does not have the requested parameter.
- Some alarm values can also be changed by a craft operator or network management system. See the **set alarmparam** command for details.

Show Module

This command is used to generate a list of information for specified modules that will help with their physical identification.

The following is a sample craft operator dialog using **show module** to display information for the modules in slots 3, 4, and 5 of all chassis in the ICIM domain:

```

/** MODULE> slot [3-5] <Enter>
*/[03-05] MODULE> show module <Enter>

  MODID  MODTYPE  NAME                                     SERIAL
  20/03  Prisma II  Power Supply 3 / Fan Tray             ^ABCDEFGF
  20/05  9x19dBm    Prisma II Hybrid Amp                 ^AAG1AZI

SUCCESS!
*/[03-05] MODULE>

```

Info Command

The **info** command (at the Module prompt) is used to display more detailed information than is returned by using the **show** command. The command can be followed by the argument **control**, **monitor**, **alarm**, or **module**, which, in turn, is followed by one or more arguments further specifying the type of information to be returned.

The details or characteristics that can be requested for each argument include the following:

Argument	Details	Description
Alarm	Hysteresis	threshold hysteresis value
	Index	alarm number, starting at 1, in the list of alarms
	Label	name of the alarm
	Limitadjust	allowed if alarm is adjustable, not allowed if not
	Majorhigh	High Major threshold

Argument	Details	Description
	Majorlow	Low Major threshold
	Minorhigh	High Minor threshold
	Minorlow	Low Minor threshold
	Nominal	alarm nominal value
	Rangehi	upper limit for this threshold
	Rangelo	lower limit for this threshold
	Type	alarm type (1, 2, and 7 are adjustable)
	Value	alarm state
Control	Index	control number, starting at 1, in the list of controls
	Label	name of the control
	Rangehi	upper limit for this control
	Rangelo	lower limit for this control
	Rangestep	smallest increment allowed
	Statenames	list of symbolic control values
	Type	control type: D(igital), F(loat), B(oolean), S(tate)
	Units	control unit
Monitor	Index	monitor number, starting at 1, in the list of monitors
	Label	name of monitor
	Statenames	list of symbolic values
	Type	value type: D(igital), F(loat), B(oolean), S(tate)
	Units	units of measurement
	Value	value
Module	Activerev	active software image revision for the module
	Bootrev	current boot image revision for the module
	CLEI	Common Language Equipment ID code for module
	CLLI	Common Language Locator ID code for module
	Coderev	code revision
	Datecode	manufacturing date (encoded)
	Devtype	numeric type value used for element manager

Argument	Details	Description
	Downldable	module can be downloaded with new firmware
	Inactiverev	inactive software image revision for the module
	Mandata	manufacturing data
	Modtype	manufacturing data (alias for MANDATA)
	Name	name of module
	Nextimage	flash bank where active image resides
	Numanalogcontrols	number of analog controls
	Numcontrols	total number of controls
	Numdigitalcontrols	number of digital controls
	Nummonits	number of monitored values
	Numofalarms	number of alarms
	Scriptrev	script revisions
	Selftest	status of module self test
	Serial	serial number
	Tos	time of service

The following sample dialog illustrates the use of the **info** command to view the **value** and **statenames** characteristics for the **cross** control:

```

/** MODULE> info control cross value statenames <Enter>
  MODID  NAME  VALUE  STATENAMES
  20/08  Cross  False (0)  False (0), True (1)

SUCCESS!
/** MODULE>

```

In the example above, the control's name pattern was explicit (no wildcards). The details to be listed were Value and the available StateNames (not all controls and monitors have StateNames). In this case, the value is 0 (False).

The next example shows how a network management system might construct an **info** command to determine the domain of an ICIM. Note how a Terminal command is first issued to define the vertical bar (|) character as a column separator to be used for any subsequent output. See *Terminal Commands* (on page 56) for details.

```
CLI> terminal colsep "|" paging 0 exit
CLI> module chassis * slot * info module devtype name exit

CHASSIS|SLOT|TYPE|NAME
20|3|5000|Power Supply 3 / Fan Tray
20|5|1001|1310nm Forward Transmit
20|6|2002|Forward Receiver
20|7|1001|1310nm Forward Transmit
20|8|4000|Optical Switch
20|9|3011|FHEDA
20|13|3000|1550nm Optical Amplifier
20|14|2000|Reverse Data Receiver

SUCCESS!
CLI> logout
```

As can be seen from the resulting output, the Terminal command has an immediate effect on the output, with the columns in each line of the response separated by | characters. This makes it easy for the network management system to parse the response.

Reset Command

The reset command is used to set all controls and alarms in a specified application module to its factory defaults.

Because this action is potentially severe, this command can only be executed by an Admin user, and a dialog is presented for confirmation. The reset command is only supported by the new CCB3 modules.

Note: In the factory default state, this module has its outputs disabled. Thus, resetting the module results in loss of output signal.

Set Command

The set command is used to assign a value to one or more parameters specified by a subsequent **control** or **alarmparam** argument.

Set Control

The set control command is followed by two additional arguments. The first identifies the control, while the second specifies the value to be assigned.

Important: To avoid possible system disruption, broadcast **set** commands are not supported. This means that the **set control** command can only be applied to one module (chassis and slot number) at a time. If a specific chassis and slot number are not specified in advance, the CLI interpreter will disallow the command. In addition, the name of the control to be changed must be explicit; no wildcard characters are permitted.

The following example shows how a craft operator might use **set control** to disable the module in slot 5 of chassis 20, and then use **show control** to confirm the change.

```
*/05 MODULE> module chassis 20 <Enter>
20/05 MODULE> set control enable 0 <Enter>

SUCCESS!
20/05 MODULE> show control enable <Enter>

  MODID  NAME      SETTING  UNITS
  20/05  Enable    0

SUCCESS!
20/05 MODULE>
```

This example shows what would happen if the operator had omitted the initial step of specifying the chassis:

```
*/05 MODULE> set control enable 0 <Enter>

Error: This command can only be used at an explicit Chassis and Slot prompt
Set the chassis and slot to specific values before using this command

*/05 MODULE>
```

Set Alarmparam

The CLI can be used to change the parameters of alarms that do not shut down a module. These alarms are the "user" alarms of types 1, 2, and 7. While a full description of the various alarm types is outside the scope of this document, it is important here to note that any attempt to change an alarm's parameter will only be effective if that alarm is of type 1, 2, or 7.

The **set alarmparam** command is typically used in conjunction with the **info** command to first learn about alarm type and status, and then change alarm status where appropriate and allowed.

The following sample dialog shows the **info** command can be used to first learn about all (*) alarms in Module 2006, i.e., the module installed in chassis 20, slot 06:

```
20/06 MODULE> info alarm * type majorlow minorlow majorhigh minorhigh <Enter>

  MODID  NAME      TYPE  MAJORLOW  MINORLOW  MAJORHIGH  MINORHIGH
  20/06  PsOk      6     N/A      N/A      N/A      N/A
  20/06  OutPwr   1     -1      -0.7     1         0.7
  20/06  IntPs    6     N/A      N/A      N/A      N/A
  20/06  Enable   6     N/A      N/A      N/A      N/A
  20/06  LasTemp  3     -20     -15     20        15
  20/06  LasBias  1     -2      -1      -0.001   -0.01
  20/06  InPwr   1     -16     -5       45        25
  20/06  Service  5     N/A      N/A      N/A      N/A

SUCCESS!
20/06 MODULE>
```


This response shows that the OutPwr, LasTemp, LasBias, and InPwr alarms all have majorlow and majorhigh parameters. However, only InPwr, OutPwr, and LasBias can be changed, as LasTemp is of type 3 rather than 1, 2, or 7.

The following sample dialog shows how a craft operator would set the **majorhigh** parameter of **outpwr** to 35°C, and then confirm the change.

```
20/06 MODULE> set alarmparam outpwr majorhigh 35 <Enter>
```

```
SUCCESS!
```

```
20/06 MODULE>
```

```
20/06 MODULE> info alarm * type majorhigh
```

MODID	NAME	TYPE	MAJORHIGH
20/06	PsOk	6	N/A
20/06	OutPwr	1	35
20/06	IntPs	6	N/A
20/06	Enable	6	N/A
20/06	LasTemp	3	15
20/06	LasBias	1	-0.01
20/06	InPwr	1	25
20/06	Service	5	N/A

```
SUCCESS!
```

```
20/06 MODULE>
```

ICIM Commands

ICIM commands provide for monitoring and control of the ICIM itself and for the ICIM domain in general.

Alarm Command

The **alarm** command is used to display all active alarms in the domain of the ICIM.

The following sample dialog illustrates the use of this command:

```
ICIM> alarm <Enter>
    No active alarms found
SUCCESS!
ICIM>
```

This response indicates that no alarms are currently active anywhere in the ICIM domain. To narrow the command scope to specific chassis or modules, use this command in Module mode together with the **module** option, as described in *Module Commands* (on page 38).

Info Command

The **info** command is used to request a listing of one or more parameter values specific to the ICIM module itself.

The general command syntax is as follows:

```
info argument argument ... argument
```

where each **argument** can have one of the values listed in the table below.

Value	Function
ACTIVEREV	Active software image revision for the ICIM
ATTNSTATUS	Value for the Attention line (Low is normal)
BOOTREV	Current boot image revision for the ICIM
CHASSIS	Chassis containing the ICIM
CLEI	Common Language Equipment ID code for the ICIM
CLLI	Common Language Locator ID code for the ICIM
COMMREAD	Sets the SNMP Community Read string
COMMTRAP	Sets the SNMP Community Trap string
COMMWRITE	Sets the SNMP Community Write string
DEVTYPE	Devtype for the ICIM2 or ICIM2-XD
DOWNLDCMD	Download command (used by SOUP)

Value	Function
DOWNLDDIR	Directory path for FTP, excluding filename (used by SOUP)
DOWNLDFILE	Filename only of image to FTP (used by SOUP)
DOWNLDRESULT	Download progress status and result (used by SOUP)
DOWNLDSEM	Application security semaphore (used by SOUP)
DOWNLDSIG	Application security information (used by SOUP)
DOWNLDSTATE	State machine value to indicate FTP/download progress (used by SOUP)
DOWNLDTGT	Module (chassis and slot) to upgrade with release image (used by SOUP)
DOWNLDUSER	Application User ID to ensure only one instance (used by SOUP)
FTPSEVER	IP address of FTP Server (used by SOUP)
FTPUSER	User name for an FTP account
GATEWAY	IP address of TCP/IP gateway, for packet routing
HWREV	Hardware Revision
INACTIVEREV	Inactive software image revision for the ICIM
IP	TCP/IP address of the ICIM
IPSEC	Reserved for future use
MAC	MAC Address, used in low-level Ethernet routing
MANDATA	Manufacturing data
NEXTIMAGE	The image to be active after the next reboot
PREVIOUSIP	Value of the TCP/IP before it was last changed
SELFTEST	Results of the ICIM self test
SERIAL	Serial number of the ICIM
SIZE	Number of modules in the ICIM domain
SLOT	Chassis slot number for the ICIM (15 for ICIM2, 17 for ICIM2-XD)
SMC	The value (Chassis * 100) + Slot for the ICIM
STATUSMSG	Status and Error message information
SUBNET	Subnet mask, such as 255.255.255.0
SWDATE	Software date (obsolete)
SWREV	Software revision (obsolete)
THRESHOLD	Login attempts threshold value
TIMEOUT	User session inactivity timeout value

Value	Function
TOS	Time of Service of the ICIM
TZONE	Time zone string setting
UPDATEID	Always zero (0); this is a write-only value

Any number of these values can be listed, and the output returns the values in the order requested.

The sample dialog below shows how this command might be sent by a network management system.

```
CLI> icim info IP devtype serial swrev attnstatus size exit
IP          DEVTYP  SERIAL  SWREV  ATTNSTATUS  SIZE
172.23.200.154 5011    AADORTI 0.00.15  0           8

SUCCESS!
CLI>
```

Show Command

The **show** command is used to request information about the ICIM settings in the **info** command and about the elements in the ICIM domain, how they are currently provisioned (configured), and what traps are defined in the Traps table. The basic command syntax is:

```
show argument
```

where **argument** specifies whether the request is for those items in the **info** command, or for **domain**, **provisioning**, **traps**, or **clock** information, as further explained below.

Show Domain

This command displays a list of all of the modules in the ICIM domain. The sample dialog below illustrates the use of this command.

```
ICIM> show domain <Enter>

MODID  DEVTYP  SERIAL  ACTIVEREV  CODEREV  NAME
20/03  5010    1234567  1.00.05    CF_CCB3  Power Supply 3 / Fan Tray
20/05  1031    12345678 1.65.00    CF_CCB3  1550nm EM TX FTTP
20/07  3030    AACZOIF  1.00.05    CF_CCB3  1550nm Pre-Amp FTTP
20/08  3031    !AAGJUHB 1.00.05    CF_CCB3  1550nm Post-Amp FTTP
20/05  3019    AAG1AZI  1.01.02    CF_CCB  Prisma II Hybrid Amp

SUCCESS!
ICIM>
```

In the response, each module is identified by its chassis and slot number (MODID) as well as by object type (DEVTYP), serial number (SERIAL), software revision number (ACTIVEREV), and product description (NAME).

Show Provisioning

This command displays a list of the CLI commands needed to restore any replacement modules in the ICIM domain to their current operating states. This list can serve as a command reference to quickly configure a replacement module so that it operates identically to the original.

The output is intended primarily for use by a network management system, which would store the provisioning commands until needed. In the event that a module is replaced, the system would then send the provisioning commands required to configure the replacement module to match the operating state of the original.

The following sample dialog shows how a network management system might send the command, and includes a portion of a typical response.

```
CLI> icim show provisioning exit
. . . . .
Module Chassis 20 Slot 5 Set Control Enable On EXIT
Module Chassis 20 Slot 5 Set Control AGC On EXIT
Module Chassis 20 Slot 5 Set Control RFDrive 0 EXIT
Module Chassis 20 Slot 5 Set Control OMISet 0 EXIT
Module Chassis 20 Slot 5 Set Control Master Master EXIT
Module Chassis 20 Slot 5 Set Control CWMode Off EXIT
Module Chassis 20 Slot 5 Set Control LenMode Off EXIT
. . . . .
```

Using the list requires first locating all command lines that target the chassis and slot location of the replacement module. The commands are then sent to the replacement module one at a time in the order listed. For example, after replacing the module in chassis 20 slot 6 in the above example, the commands on lines 6-9 of the response would be sent to configure the replacement module.

Note: The CLI has no mechanism for accepting multiple commands at a single prompt from either a craft operator or a network management system. It is necessary to send the first command, wait for a new prompt, send the next command, and so on until all commands are sent.

Show Traps

This command is used to display the current status of the Trap table. The basic syntax is as follows:

```
show traps
```

A typical response to this command is shown in the sample craft operator dialog below:

```

CLI> icim <Enter>
ICIM> show traps

IDX   STATE      IP Address
 0   Enabled   172.18.50.41
 1   Enabled   172.18.50.1
 2   Enabled   172.18.50.6
 3   Disabled  0.0.0.0
 4   Disabled  0.0.0.0

SUCCESS!
ICIM>

```

Show Clock

Note that the **show** command supports access to the ICIM real time clock (RTC), as follows:

```

ICIM> show clock exit

MM-DD-YYYY  HH:mm:ss
11-15-2005  12:01:40

SUCCESS!
ICIM>

```

Set Command

The set command allows a single value to be set in the ICIM. The basic syntax is:

```
set argument value
```

Where **argument** is one of the values listed in the following table.

Value	Function
CLLI	Common Language Locator ID code for the ICIM
CLOCK	Date and Time as maintained by the ICIM
COMMREAD	SNMP Read Community string
COMMWRITE	SNMP Write Community string
COMMTRAP	SNMP Trap Community string
GATEWAY	IP address of the TCP/IP gateway, for packet routing
IP	TCP/IP address of the ICIM
STATUSMSG	Error or Status message
SUBNET	Subnet mask, such as 255.255.255.0
UPDATEID	Write-only; value of 1 causes ICIM to re-read ID of all modules

Some of these values (IP and GATEWAY, for example) result in changes to the ICIM NVRAM, but do not take effect until the next reboot.

Set Clock

This command allows the ICIM real time clock (RTC) to be set and confirmed by a single command, as shown in the following example.

```
ICIM> set clock 10/5/2005 12:40:00

MM-DD-YYYY   HH:mm:ss
10-05-2005   12:40:00

SUCCESS!
ICIM>
```

User Command

The **user** command permits control and monitoring of system users and their authorization levels. The basic syntax is as follows:

```
user argument value
```

where **argument** specifies whether the command is to **add**, **change**, **delete**, or **show** user information, as further explained below.

User Add

This command can be used by the Admin user to add a new login and password to the authentication table. A dialog is used to obtain the and validate the password. The new authorization level s given on the command line, and can be one of the following.

Authorization	Description
ADMIN	Equivalent to a Unix superuser (root) and should be allowed for only the most trusted logins. An Admin can change passwords, IP addresses, and other critical values.
READWRITE	Allows typical operations, including the ability to change control values and alarm parameters.
READ	Allows the user to read non-critical values only, and has no write permissions.

User Change

This command can be used by the Admin user to change the password of an existing user. A dialog is used to obtain and validate the new password. The basic syntax is as follows:

```
user change (username)
user add (username) (authorization level)
```

where

- **username** must be 6 to 14 characters in length, must contain both letters and numbers, and cannot contain special characters; for example, abc123.
- **authorization level** is either admin, readwrite, or read.

Note:

- After entering this command, you will be prompted to enter a password for the user. The password must be 6 to 14 characters in length, must contain both letters and numbers, but may contain special characters.
- This command cannot be used to change the authorization level of the user. To change authorization level, the user must be deleted and then added to the system again, but specifying a different new authorization level.

User Delete

This command can be used by the Admin user to delete a login. The command syntax is as follows:

```
user delete (username)
```

Note: Deleting a user that is already logged in does not terminate their current session.

User Show

This command can be used by the Admin user to list all the available logins and authorization levels. It does not display the passwords.

IPRoute Command

The **iproute** command permits control and monitoring of a list of up to four alternate gateways for routing TCP/IP packets. The basic syntax is as follows:

```
iproute argument
```

where **argument** specifies whether the command is to **add**, **delete**, or **show** the route information, as further explained below.

IPRoute Add

This command can be used to add a new entry to the list of alternate gateways for routing TCP/IP packets. If the list already contains four entries, at least one entry must be deleted using the **iproute delete** command before the new entry can be added.

IPRoute Delete

This command can be used to remove an entry from the list of alternate gateways for routing TCP/IP packets.

IPRoute Show

This command can be used to list all current entries in the listing of alternate gateways for routing TCP/IP packets.

Reboot Command

The **reboot** command causes the ICIM to be reset. The basic syntax is as follows:

```
reboot
```

Note: User of this command requires Admin user permissions.

Traps Command

The **traps** command allows the entries in the Trap table to be enabled or disabled, and allows the IP address of the Trap table to be set. The basic syntax is as follows:

```
traps trapenable trapindex [IPAddress]
```

where

trapenable is **enable** or **disable** to specify the command function.

trapindex is the table index (0-4).

[IPAddress] is the optional IP address to put in the table.

Note:

- Admin permissions are required to use this command.
- The Trap table has 5 entries, indexed 0-4. Each entry can be enabled by supplying a valid IP address, or if the table entry already has a valid IP address.
- When disabling an entry in the Traps table, you can specify an empty IP address, i.e., 0.0.0.0.

See the **Show Traps** section of *Show Command* (on page 50) for instructions on viewing selected portions of the Trap table.

Terminal Commands

Overview

Terminal commands are intended for control of the output or pattern matching format.

Note:

- Using the **alarm** command while in this mode shows a list of all active alarms in the ICIM domain.
- Using the **show** command while in this mode lists the current values for all terminal states.

Colsep Command

The **colsep** command controls the separation between columns of output in the display. By default, output is displayed in columns only slightly wider than are needed for the longest value in the column. Adding spaces between columns can make the output more legible to a craft operator, but may make output parsing more difficult for a remote network management system.

On the other hand, if network management software recognizes a specific character (such as |) as a column separator, the colsep command can be used to insert this character between columns in the output.

The basic command syntax is as follows:

```
colsep "string"
```

where **string** is the column separation character or characters, or is empty ("") to specify default column separation.

In the sample dialog below, a network management system sends this command to enforce default column separation just before it sends a command requesting columns of output.

```
CLI> terminal colsep "" exit
CLI> module modid * show control *serv* exit
  MODID  NAME      SETTING  UNITS
  01/07  Service  Off (0)
  01/08  Service  Off (0)
  01/09  ServiceA On (1)
  01/09  ServiceB Off (0)
SUCCESS!
CLI>
```

The next example shows how the output could be modified to make it more easily parsed by another program, such as Microsoft Excel:

```

CLI> terminal colsep "," exit

CLI> module modid * show control *serv* exit

CHASSIS,SLOT,NAME,SETTING,UNITS
1,7,Service,Off(0),
1,8,Service,Off(0),
1,9,ServiceA,On(1),
1,9,ServiceB,Off(0),

SUCCESS!
CLI>

```

If the output data itself might contain columns, another character such as | can be used as a column separator, as shown in the following example:

```

CLI> terminal colsep "|" exit

CLI> module modid * show control *serv* exit

CHASSIS|SLOT|NAME|SETTING|UNITS
1|7|Service|Off(0)
1|8|Service|Off(0)
1|9|ServiceA|On(1)
1|9|ServiceB|Off(0)

SUCCESS!
CLI>

```

Paging Command

The paging command is used to control paging behavior for long CLI output. The basic syntax is as follows:

```

paging value

```

where **value** is zero (0) to disable paging completely, or a number 24 or greater to specify the height of the paging window in lines of text.

Disabling Paging

Normally, when a CLI response is too long to fit in a single 24-line Telnet window, the output is automatically paged using the familiar “more” format, as shown in the following example:

```
CLI> module modid * show control * exit
```

MODID	NAME	SETTING	UNITS
20/05	Enable	1	
20/05	CwMode	0	
20/05	LoRFInh	0	
20/05	Master	Slave (0)	
20/05	RFDrive	0	dB
20/06	Enable	1	
20/06	Master	1	
20/06	WaveLen	1550nm (1)	
20/06	NomPin	0	dBm
20/07	Enable	1	
20/07	CwMode	1	
20/07	LoRFInh	1	
20/07	Master	Master (1)	
20/07	RFDrive	0	dB
20/08	Cross	False (0)	
20/08	Bar	False (0)	
20/08	Mode	Auto (1)	
20/08	WaveLen	1550nm (1)	
20/08	NomPIN3	0	dBm
20/08	NomPIN4	0	dBm
20/08	Delta	6	dB
20/08	HystAmpl	3	dB

```
---line 23 of 51 total lines--Enter 'Q' to quit:
```

Craft operators can simply press **Enter** to display the next page of output. However, network management software may have difficulty working with this output format.

The **paging** command can address this problem by turning off all paging, as follows:

```
CLI> terminal paging 0 exit
CLI> module modid * show control * exit
```

MODID	NAME	SETTING	UNITS
01/05	Enable	On (1)	
01/05	AGC	On (1)	
01/05	RFDrive	0	dB
01/05	OMISet	0	dB
01/05	Master	Master (1)	
01/05	CWMode	Off (0)	
01/05	LenMode	Off (0)	
01/07	Enable	On (1)	
01/07	SetAtten	0	dB
01/07	Master	Master (1)	
01/07	LoInpEna	Off (0)	
01/07	Service	Off (0)	
01/08	Enable	On (1)	
01/08	SetAtten	0	dB
01/08	Master	Master (1)	
01/08	LoInpEna	Off (0)	
01/08	Service	Off (0)	
01/09	Enable	On (1)	
01/09	SetAtten	0	dB
01/09	Master	Master (1)	
01/09	ServiceA	Off (0)	
01/09	ServiceB	Off (0)	
01/12	Enable	On (1)	
01/12	SetAtten	0	dB
01/12	Master	Master (1)	
01/12	ServiceA	Off (0)	
01/12	ServiceB	Off (0)	
10/09	Enable	On (1)	
10/09	SetAtten	0	dB
10/09	Master	Master (1)	
10/09	LoInpEna	Off (0)	
10/09	Service	Off (0)	
76/06	Cross	False (0)	
76/06	Bar	False (0)	
76/06	Mode	Auto (1)	
76/06	WaveLen	1550nm (1)	
76/06	NomPin3	19	dBm
76/06	NomPin4	19	dBm
76/06	Delta	2	dB
76/06	HystAmpl	1	dB
76/06	HystTime	1	sec
76/06	Revert	Auto (1)	
76/06	PrimInp	Port_4 (1)	
76/06	DfltSw	Bar (1)	
76/08	Enable	On (1)	
76/08	SetAtten	0	dB
76/08	Master	Master (1)	
76/08	LoInpEna	Off (0)	
76/08	Service	Off (0)	
76/10	Enable	On (1)	
76/10	SetAtten	0	dB
76/10	Master	Master (1)	
76/10	ServiceA	Off (0)	
76/10	ServiceB	Off (0)	

```
SUCCESS!
CLI>
```

The **paging 0** setting can be useful in allowing a network management system or other interacting program to capture all CLI output at once.

Enabling Paging

When paging is enabled in CLI, a feature called Smart Paging attempts to determine the best Telnet window size automatically. If it cannot do so, Smart Paging uses the number of lines specified in the Paging command as the Telnet window size. Smart Paging has no effect when paging is disabled.

Pattern Command

The **pattern** command is used to select one of two pattern matching styles for the names of monitors, controls, and alarms:

- **wildcard** pattern matching specifies the standard Windows method, which uses *, ?, and [xyz] patterns.
- **regex** pattern matching specifies POSIX regular expressions as used in many Unix or Perl programs.

The default is Windows-style wildcards. When this style is in effect, CLI interprets wildcards as shown in the following sample dialogs:

```
20/03 MODULE> show monitor ps*

MODID  NAME      VALUE      UNITS
20/03  Ps1Inst   0           Inst
20/03  Ps1+24V  0           V
20/03  Ps1+5V   0           V
20/03  Ps1-5V   0           V
20/03  Ps1Temp  0           degC
20/03  Ps3Inst   1           Inst
20/03  Ps3+24V  24.4629    V
20/03  Ps3+5V   5.39218    V
20/03  Ps3-5V   -5.43724   V
20/03  Ps3Temp  30.4215    degC

SUCCESS!
20/03 MODULE>

20/03 MODULE> show monitor ps*5*

MODID  NAME      VALUE      UNITS
20/03  Ps1+5V   0           V
20/03  Ps1-5V   0           V
20/03  Ps3+5V   5.39218    V
20/03  Ps3-5V   -5.43724   V

SUCCESS!
20/03 MODULE>
```

The Regex pattern matching style includes a much more powerful, but also more complex, pattern matching format, a description of which is beyond the scope of this document. For further information, refer to resources available on the public internet for Perl or Boost, such as:

- <http://perldoc.perl.org/>
- <http://www.boost.org/>

Headers Command

The **headers** command is used to enable or disable the display of column headers that may appear in CLI output. The basic command syntax is as follows:

```
headers value
```

where **value** is 0 to disable header display, and 1 (or any number other than 0) to enable header display.

Headers are enabled (1) by default, as shown in the sample craft operator dialog below:

```
20/03 MODULE> show monitor ps*5* <Enter>
  MODID  NAME      VALUE      UNITS
20/03   Ps1+5V    0           V
20/03   Ps1-5V    0           V
20/03   Ps3+5V    5.39218    V
20/03   Ps3-5V   -5.43724    V

SUCCESS!
20/03 MODULE>
```

The following sample dialog shows how a craft operator might disable the column headers and confirm the change:

```
20/03 MODULE> terminal <Enter>
TERMINAL> headers 0 <Enter>
TERMINAL> module modid 2003 <Enter>

20/03 MODULE> show monitor ps*5* <Enter>
  20/03   Ps1+5V    0           V
  20/03   Ps1-5V    0           V
  20/03   Ps3+5V    5.39218    V
  20/03   Ps3-5V   -5.43724    V

SUCCESS!
20/03 MODULE>
```

Show Command

The **show** command is used to display the current values for terminal states. The basic command syntax is as follows:

```
show
```

A typical response to this command is shown in the following sample craft operator dialog:

```
TERMINAL> show <Enter>
Terminal Settings:
  COLSEP  ""
  PAGING  24 LINES PER PAGE
  PATTERN WILDCARD
  HEADERS 1 (Enabled)

SUCCESS!
TERMINAL>
```


4

Operation Using ICIM

Introduction

The procedures in this chapter apply if you are using the Prisma II ICIM2 front-panel interface to configure and operate the module. For information on using CLI commands or the ICIM Web Interface to configure and operate the module, see the *Prisma II Platform Remote User Interface Guide, System Release 2.03*, part number 4025477.

Scope of This Chapter

Included in this chapter are descriptions of the ICIM front panel keypad and liquid crystal display (LCD), and detailed procedures on how to use the front-panel menus to configure the module.

Note: You must use CLI commands or the ICIM Web Interface to configure and operate the module when using the ICIM2-XD. For details, see the *Prisma II Platform Remote User Interface Guide, System Release 2.03*, part number 4025477.

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ICIM Introduction

Laser Warning

**WARNING:**

- **Avoid personal injury! Use of controls, adjustments, or procedures other than those specified herein may result in hazardous radiation exposure.**
 - **Avoid personal injury! The laser light source on this equipment (if a transmitter) or the fiber cables connected to this equipment emit invisible laser radiation. Avoid direct exposure to the laser light source.**
 - **Avoid personal injury! Viewing the laser output (if a transmitter) or fiber cable with optical instruments (such as eye loupes, magnifiers, or microscopes) may pose an eye hazard.**
-
- Do not apply power to this equipment if the fiber is unmated or unterminated.
 - Do not stare into an unmated fiber or at any mirror-like surface that could reflect light emitted from an unterminated fiber.
 - Do not view an activated fiber with optical instruments such as eye loupes, magnifiers, or microscopes.
 - Use safety-approved optical fiber cable to maintain compliance with applicable laser safety requirements.
 - Even if the unit is off, there may still be hazardous optical levels present.

ICIM Function

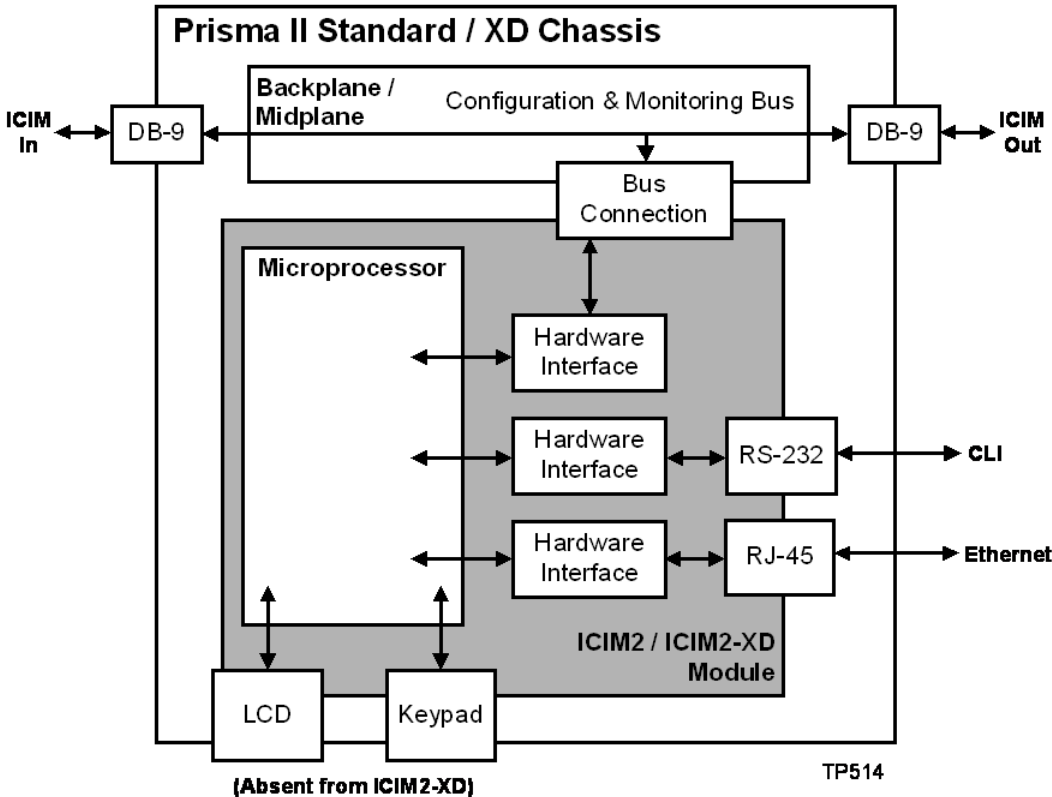
The ICIM serves as the module-to-user interface and as the interface between the Prisma II modules and TNCS or ROSA. The ICIM allows local module configuration and status monitoring for up to 140 modules located in multiple chassis.

Important:

- Do not operate any Prisma II Chassis without a fan tray installed properly. If a fan tray is not installed in the Prisma II Chassis, the ICIM will not communicate with any of the modules in that chassis.
- All chassis connected in a daisy-chain must be powered and have a fan tray installed. A chassis that is connected but is either not powered, or does not have a fan tray installed will cause faulty operation of the ICIM.
- All chassis connected in this daisy-chain must have a unique chassis identification (ID) number.
- The last chassis in the daisy-chain must have a terminator installed in the ICIM OUT connector. Otherwise, faulty communication with the ICIM may occur.

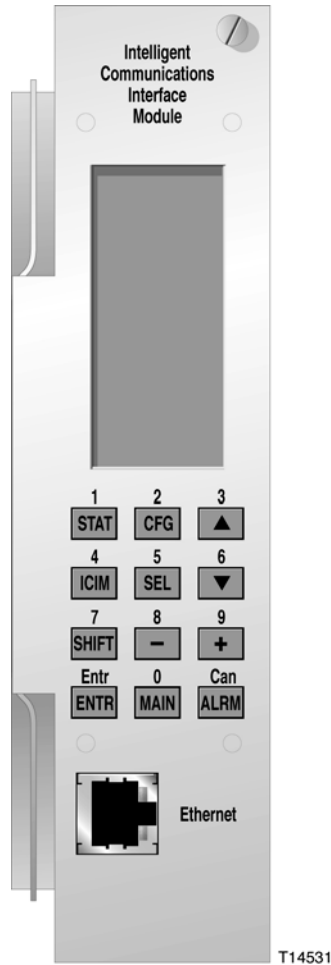
ICIM Block Diagram

A block diagram representing the ICIM2 or ICIM2-XD is shown below.



ICIM Front Panel

ICIM2 Illustration (Front Panel)



ICIM2 Front Panel Features

Part	Function
LCD screen	Displays the ICIM2 menus, alarms, and status information.
12-key numeric keypad	Used to navigate the ICIM2 menus and configure the application modules.
Ethernet connector	Directly connects the ICIM2 to an IP network. The ICIM2 Ethernet port is suitable for connection to intra-building wiring, non-exposed wiring or cabling only.

Chapter 4 Operation Using ICIM

Yellow LED on Ethernet connector	Glows when the Ethernet port is operating in full duplex. Blinks when collisions occur on the Ethernet port.
Green LED on Ethernet connector	Glows when a link is established on the Ethernet port. Blinks during data activity on the Ethernet port.
RS232 connector	Used to connect a PC to the Prisma II system for CLI communication and setup.

ICIM2 LCD

The LCD on the front panel of the ICIM gives you a visual link to the ICIM firmware. When the ICIM is installed and powered up, the MAIN menu appears on the LCD.













The following illustration shows the ICIM MAIN menu.

<u>MAIN</u>
Offline
Modules 15
Alarms 0
Scroll
Module Shelf Slot

TP011

ICIM Keypad

The ICIM keypad has 12 keys for monitoring parameters. The table below lists each key and briefly describes its function.

Button	Function
	Displays status information for the selected module.
	Displays configuration information for the selected module.
	Displays all of the parameters in alarm for a selected module.
	Moves the menu selection area up.
	Moves the menu selection area down.
	Selects the highlighted parameter.
	Displays ICIM module information such as firmware version and serial number.
	Shifts function of a keypad button to the function or number label just above that button.
	Decreases numerical readings of selected configuration parameters.
	Increases numerical readings of selected configuration parameters.
	Enters input data (if valid).
	Exits the current menu and displays the MAIN menu.

ICIM Password

The ICIM2 lets you send configuration commands, change alarm thresholds, and restore factory default settings in Prisma II modules. To prevent unauthorized changes to these parameters, you can use a password protection system.

Password authorization only applies to configurable parameters. Status and alarm information is always available on the ICIM2, regardless of password implementation.

Password Protection System

The ICIM2 menu options available in the password protection system are shown here.



Menu Option	Description
User Psw	A user-settable password. <ul style="list-style-type: none"> ■ Created, entered, and changed by the system operator(s) ■ Must be exactly eight digits, using only the 0-9 number keys
Change Psw	Changes an existing user password
Disable Psw	Disables the user password function
SA Psw	A service password that is used by factory personnel only

Important: If you only want to monitor status and alarm data, simply skip the password function when it appears on the ICIM2 menu. You can access all module status and alarm information without a password.

However, once a user password is entered, you are required to enter it every time you want to set configurable parameters to any module controlled by that ICIM2. Refer to *Expired Password or Inactive Password Messages* (on page 71) and *To Enter the User Password* (on page 71).

To Access the Password Menu

The Password menu allows you to create, enter, change, or disable the user password. It also allows service personnel to use the factory default password.

- 1 Press the  key.
- 2 Use the  key to scroll down until **Password** is highlighted.

- 3 Press the **SEL** key. The Password menu appears. **User Psw** is highlighted.

MAIN	ICIM	ICIM	ICIM
Offline	Shelf 7 Slot 15	Shelf 7 Slot 15	Shelf 7 Slot 15
Modules 0	Mfg Data	Mfg Data	User Psw
Alarms 0	Password IP Setup	Password IP Setup	SA Psw
Scroll	Update Adr	Update Adr	Change Psw
Module Shelf Slot			Disable Psw

TPM2

Expired Password or Inactive Password Messages

After entering a valid password, you are authorized to make changes to system parameters. As a security precaution, this authorization expires automatically 10 minutes after your last keystroke.

After your authorization to change system parameters expires:

- If you try to change any system parameters, the menu displays **Psw Expired**.
- If you try to disable the password, the menu displays **Failed, Password Not Active**.

If either of these messages appears, you must re-enter the password as described in *To Enter the User Password* (on page 71) to renew your authorization to change system parameters.

To Enter the User Password

To use the user password feature, you must create and enter a password of exactly eight digits using only the 0-9 number keys.

The password remains active for 10 minutes after your last keystroke. To change configuration parameters after 10 minutes, you must re-enter your password.

Complete the following steps to enter a user password.

- 1 Access the Password menu as shown in *To Access the Password Menu* (on page 70).
- 2 Press the **SEL** key. The user password menu appears.
- 3 When **User Psw/Shift Off** appears, press the **SHIFT** key to display **Shift On**, and then enter the eight digits of your password, using the 0-9 number keys.

- To change a digit you have just typed, use the **CAN** (Cancel) function by pressing the **ALRM** key. This deletes the last digit typed.
- 4 Press the **ENTER** key to enter the password. The ICIM display updates to show whether your password entry was accepted.
- If the password is accepted, the word **Accepted** appears in the menu, and you are able to return to the MAIN menu.
 - If the password was rejected, the word **Rejected** appears in the menu. Reasons for a password to be rejected include:
 - Entering more than eight digits for the password.
 - Pressing keys other than the 0-9 number keys.
 - Entering an incorrect password if a valid password has been entered.

If the password is rejected, press the **SHIFT** key to return to the password menu and re-enter the password as described in step 3 above.

ICIM	ICIM	ICIM	ICIM
Shelf 0 Slot 15	Shelf 0 Slot 15	Shelf 0 Slot 15	Shelf 0 Slot 15
User Psw	User Psw *****	User Psw 1234****	User Psw 12345678
Shift Off	Shift On	Rejected Shift Off	Accepted Shift Off

TIP 3

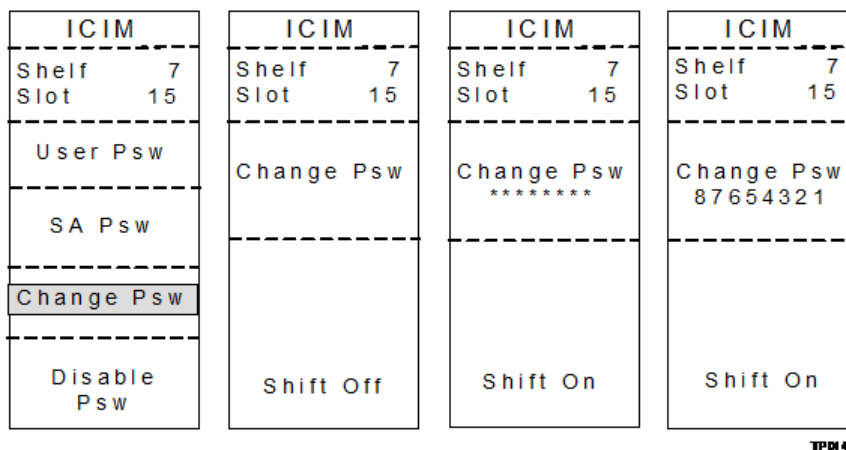
To Change the User Password

After entering a user password, you are authorized to change it as long as the current password is active. If more than 10 minutes elapse since your last keystroke, this authorization expires and you must re-enter the current password before changing to a new one.

Complete the following steps to change the user password.

- 1 Access the Password menu as shown in *To Access the Password Menu* (on page 70).
- 2 Use the **▼** key to scroll down until **Change Psw** is highlighted.
- 3 Press the **SEL** key to select **Change Psw**.
- 4 When **Change Psw/Shift Off** appears, press the **SHIFT** key to display **Shift On**, and then enter the eight digits of your new password, using the 0-9 number keys.

- To change a digit you have just typed, use the **CAN** (Cancel) function by pressing the **ALRM** key. This deletes the last digit typed.
- 5 Press the **ENTER** key to input the new password. The ICIM display updates to show whether your password entry was accepted.
- If the new password entry was accepted, you are able to return to the MAIN menu.
 - If the new password entry was rejected:
 - Press the **SHIFT** key to return to the password entry menu.
 - Clear all digits using the **CAN** (Cancel) function.
 - Re-enter an 8-digit password using only the 0-9 number keys.
 - Press the **ENTER** key to input the password.



To Disable the User Password using ICIM

If a user password has been entered, you may disable it at any time. However, the current password must be active prior to disabling it. If the current password has expired (more than 10 minutes have passed since your last keystroke), you must re-enter the current password before disabling it.

- 1 Press the **ICIM** key.
- 2 Use the **▼** key to scroll down until **Password** is highlighted.
- 3 Press the **SEL** key.
- 4 Use the **▼** key to scroll down until **Disable Psw** is highlighted.
- 5 Press the **SEL** key to select **Disable Psw**.

Chapter 4 Operation Using ICIM

- 6 If the current password is active, the menu displays **Password Is Now Disabled**. You can now make changes to parameters without any password.
- 7 If the current password has expired (more than 10 minutes have passed since your last keystroke), the menu displays **Failed, Password Not Active**. If this occurs, you must re-enter the current password and repeat this procedure.

ICIM	ICIM	ICIM
Shelf 7 Slot 15	Shelf 7 Slot 15	Shelf 7 Slot 15
User Psw	Enter Psw 8765****	Enter Psw 87654321
SA Psw		
Change Psw	Password Is Now Disabled	Failed, Password Not Active
Disable Psw	Shift Off	Shift Off


TPMS



Operating the ICIM

Using the ICIM

Once the module is installed, it runs without the aid of an operator. Unless alarms are generated or your system configuration changes, you should not need to make any adjustments to the module beyond the initial setup.

Accessing the ICIM LCD Contrast

To access the ICIM LCD contrast control from the MAIN menu, press the  key.

Use the  key to increase or the  key to decrease ICIM display contrast.

Note: Do not hold down the ICIM key while adjusting the LCD contrast.

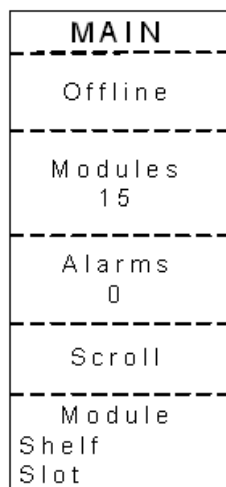
ICIM MAIN Menu

A few seconds after power-up, the MAIN menu appears. Press the  key to select the specific option.

Display	Description
Offline	Indicates TNCS or ROSA communication status with the ICIM.
Modules	Indicates the number of modules in the ICIM domain.
Alarms	Displays the number of currently active alarms. Selecting this option allows scrolling through all modules in alarm condition.
Scroll	Allows scrolling through all modules in the ICIM domain.
Module Shelf Slot	Allows selection of any specific module in the ICIM domain.

ICIM MAIN Menu Illustration

The ICIM MAIN menu is shown below.

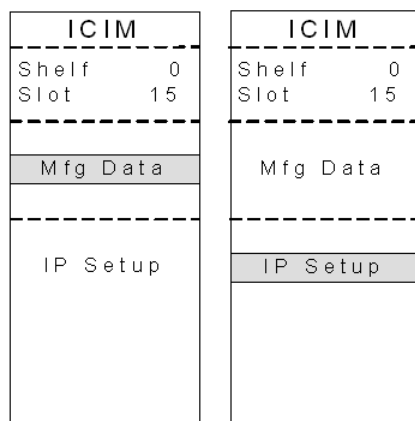


TP011

Prisma II ICIM Menu

To display the ICIM menu, press the **ICIM** key. The ICIM menu appears as shown below. Press the **SEL** key to select the specific option.

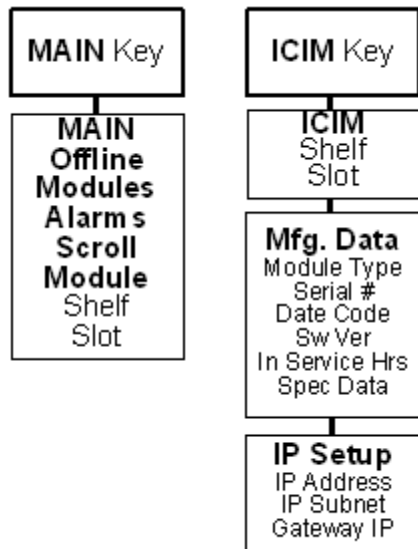
Display	Description
Shelf Slot	Displays the location of the ICIM module. Shelf = Chassis ID number on the front of the chassis. Slot = Slot number within the chassis.
Mfg Data	Displays manufacturing data about the ICIM.
IP Setup	Press the SEL key to view the IP Address, IP Subnet, and Gateway IP of the ICIM. These values are read-only via the ICIM2 front panel. These parameters can be changed via CLI or the Boot Dialog interface.



TP099

Prisma II MAIN Menu and ICIM Menu Structure

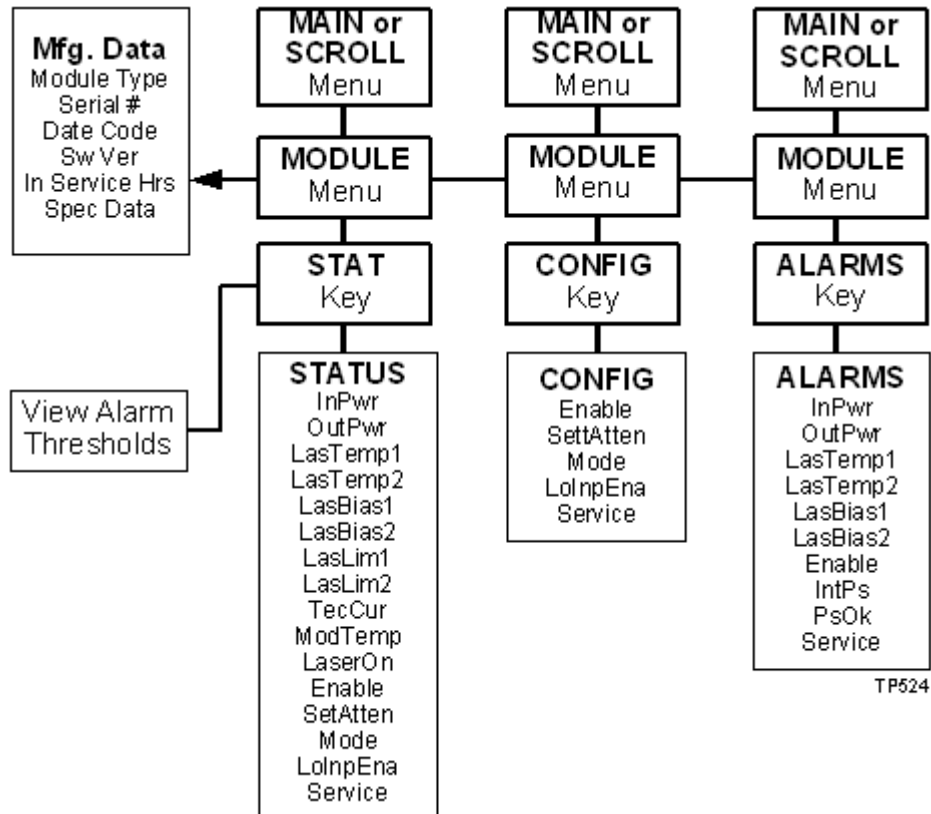
Pressing the **MAIN** key initiates the MAIN software menu. Pressing the **ICIM** key initiates the ICIM2 software menu. The MAIN and ICIM software structures are shown below.



TP523

Hybrid Amplifier Software Menu Structure













From the MAIN menu, you can navigate to the MODULE menu. From the MODULE menu, press the **STAT**, **CFG**, or **ALRM** key to display the desired parameter menu.



Checking the Operating Status using the ICIM

To Check Operating Status using the ICIM

You can use the ICIM to check the status of all operating parameters of this module. All status information is displayed on the ICIM front panel LCD.

- 1 At the MAIN menu, press the  key to highlight the **Shelf** and **Slot** fields.
- 2 Press the  key to address the **Shelf** number. Then press the  key or the  key to scroll to the number of the desired shelf.
- 3 Press the  key.
Result: The **Slot** field is highlighted.
- 4 Press the  key or the  key to scroll to the number of the desired slot.
- 5 Press the  key.
Result: The **MODULE** menu appears on the ICIM LCD.
- 6 Press the  key.
- 7 Press the  key or the  key to scroll through the monitored parameters until you find the parameter of interest.
- 8 Check the status of the desired parameter or select other parameters to monitor.
When finished, press the  key to return to the **MAIN** menu.

STATUS Menus

Press the **STAT** key to select the STATUS menu. Typical STATUS menus are shown below.

STATUS	STATUS	STATUS	STATUS
Shelf 2 Slot 10	Shelf 2 Slot 10	Shelf 2 Slot 10	Shelf 2 Slot 10

Prisma II Hybrid Amp			

InPwr 7.445 dBm	LasTemp1 24.74 degC	LasBias1 0.831 A	LasLim1 0.985 A
OutPwr 18.99 dBm	LasTemp2 31.73 degC	LasBias2 4.075 A	LasLim2 5.495 A
▲ ▼	▲ ▼	▲ ▼	▲ ▼
STATUS	STATUS	STATUS	STATUS
Shelf 2 Slot 10	Shelf 2 Slot 10	Shelf 2 Slot 10	Shelf 2 Slot 10

Prisma II Hybrid Amp			

TecCur 0.419 A	LaserOn 41.00 hrs	SetAtten 0 dB	LoInpEna Off
ModTemp 34.00 degC	Enable On	Mode Master	Service Off
▲ ▼	▲ ▼	▲ ▼	
















TP525

Note: For details on all operating status parameters, see *Module Parameter Descriptions* (on page 143).

Configuring the Module using the ICIM

To Configure Parameters using the ICIM

You can use the ICIM to configure the parameters of this module.

- 1 From the **MAIN** menu, press the  key to highlight the **Shelf** and **Slot** fields.
- 2 Press the  key to address the **Shelf** number. Then press the  key or the  key to scroll to the number of the desired shelf.
- 3 Press the  key. The **Slot** field is highlighted.
- 4 Press the  key or the  keys to scroll to the number of the desired slot.
- 5 Press the  key. The **MODULE** menu appears on the ICIM LCD.
- 6 To configure the module, press the  key.
- 7 Press the  key or the  key to scroll through the configurable controls until you find the parameter of interest.
- 8 Press the  key to select the highlighted control.
- 9 Press the  key or the  key to activate or change the value of the selected control.
- 10 Press the  key to save the changes and return to the **MAIN** menu.

CONFIG Menus

When the **CONFIG** menu is selected, the **Shelf** number field is highlighted. The shelf and slot number fields may only be incremented with the key or the key. The key highlights the **Slot** number field. Once you exit the slot field, the Up and Down arrows will scroll through the parameters that are specific to this module.

Sample **CONFIG** menus are shown below.

CONFIG	
Shelf	2
Slot	10
Prisma II Hybrid Amp	
Enable SetAtten Mode LoInpEna Service	

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Note: For details on all configurable parameters, see *Module Parameter Descriptions* (on page 143).

Hybrid Amplifier Service Mode

Service mode allows the user to reduce the output power of the module to 15 dBm so that the optical cable connections can be made without the risk of damaging the optical components.

The Hybrid Amplifier has multiple optical outputs that are divided into two banks. You can change the Service mode status on all banks of optical outputs using the Service control.

It is critical that optical connections be modified only when the module is in Service mode. The optical output power of the module in the normal operating mode can damage the optical components if cable connections are altered.

To Change Service Mode on the Hybrid Amplifier

Complete the following steps to change the module Service mode.

- 1 From the MAIN menu, press the **CFG** key.
- 2 Press the **▲** key or the **▼** key to scroll to **Service**.
- 3 Press the **SEL** key to select the Service.
- 4 Press the **+** key or the **-** key to change the service to **On** or **Off**.
- 5 Press the **ENTER** key to apply the change. The message "Data Saved" appears to confirm that the change was accepted.
- 6 Press the **MAIN** key to continue.













Checking Alarms using the ICIM

To Check Alarms using the ICIM

Alarms fall into one of the following categories.

- Major low
- Minor low
- Minor high
- Major high







If the red ALARM LED on the front panel is blinking, a minor alarm condition is indicated. If the ALARM LED on the front panel is illuminated, a major alarm condition is indicated.

- 1 From the MAIN menu, press the  key to highlight the **Shelf** and **Slot** fields.
- 2 Press the  key to address the **Shelf** number. Then press the  key or the  keys to scroll to the number of the desired shelf.
- 3 Press the  key.
Result: The **Slot** field is highlighted.
- 4 Press the  key or the  key to scroll to the number of the desired slot.
- 5 Press the  key.
Result: The **MODULE** menu appears on the ICIM LCD.
- 6 Press the  key.
Result: Module alarm conditions display.
- 7 Use the  key or the  key to scroll through alarm conditions until the desired alarm is displayed.
- 8 Monitor the alarm condition(s). Take appropriate action. Verify that all settings and thresholds relating to the alarm indication are set correctly to rule out an unintended alarm.
- 9 When finished, press the  key to return to the MAIN menu.

To View Active User Alarms

User alarms are alarms for which the user can change threshold values.












When a module ALARMS menu is selected, press the  key or the  key to scroll through alarms. Typical user ALARMS menus are shown below.

ALARMS		ALARMS		ALARMS	
Shelf	2	Shelf	2	Shelf	2
Slot	10	Slot	10	Slot	10
Prisma II Hybrid Amp		Prisma II Hybrid Amp		Prisma II Hybrid Amp	
LasBias1 MinorH		InPwr MajorH		OutPwr MinorL	
 		 		 	

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To Set Adjustable Alarm Thresholds using the ICIM

You can use the ICIM to change the adjustable alarm thresholds of this module from their factory default values.

- 1 At the MODULE menu, press the  key. The STATUS menu appears on the ICIM LCD.
 - 2 Press the  key. The alarm thresholds previously set are displayed. If the label **n/a** is displayed, you cannot configure that alarm threshold. Press the  key to highlight the alarm threshold for the next parameter.
 - 3 When the threshold that you wish to set is highlighted, press the  key.
 - 4 Press the  key or the  key to change the increment size.
 - 5 Press the  key or the  key to adjust the alarm threshold.
- Note:** Press the Cancel () key to return to the previous menu.
- 6 Press the  key to save the changes. The message **Data Saved** appears on the ICIM LCD.
 - 7 When finished, press the  key to return to the MAIN menu.

To Check Alarm Thresholds

Complete the following steps to view alarm threshold factory default values.

- 1 At the MODULE menu, press the **STAT** key. The ICIM LCD displays the STATUS menu.
- 2 Press the **SEL** key. The alarm thresholds previously set are displayed.
- 3 When finished, press the **MAIN** key to return to the MAIN menu.

Alarm Threshold Menus

Some typical alarm threshold menus are shown below.

STATUS ----- Shelf 2 Slot 10 ----- Prisma II Hybrid Amp ----- PsOk n/a n/a n/a n/a ▲ ▼	STATUS ----- Shelf 2 Slot 10 ----- Prisma II Hybrid Amp ----- OutPwr MajH 1.000 MinH 0.700 MinL -0.700 MajL -1.000 ▲ ▼	STATUS ----- Shelf 2 Slot 10 ----- Prisma II Hybrid Amp ----- IntPs n/a n/a n/a n/a ▲ ▼	STATUS ----- Shelf 2 Slot 10 ----- Prisma II Hybrid Amp ----- Enable n/a n/a n/a n/a ▲ ▼	STATUS ----- Shelf 2 Slot 10 ----- Prisma II Hybrid Amp ----- LasTemp1 MajH 20.00 MinH 15.00 MinL -15.00 MajL -20.00 ▲ ▼
STATUS ----- Shelf 2 Slot 10 ----- Prisma II Hybrid Amp ----- LasTemp2 MajH 50.00 MinH 45.00 MinL -30.00 MajL -35.00 ▲ ▼	STATUS ----- Shelf 2 Slot 10 ----- Prisma II Hybrid Amp ----- LasBias1 MajH -0.001 MinH -0.010 MinL n/a MajL n/a ▲ ▼	STATUS ----- Shelf 2 Slot 10 ----- Prisma II Hybrid Amp ----- LasBias2 MajH -0.010 MinH -0.100 MinL n/a MajL n/a ▲ ▼	STATUS ----- Shelf 2 Slot 10 ----- Prisma II Hybrid Amp ----- InPwr MajH 45.00 MinH 25.00 MinL -5.000 MajL -16.00 ▲ ▼	STATUS ----- Shelf 2 Slot 10 ----- Prisma II Hybrid Amp ----- Service n/a n/a n/a n/a ▲ ▼

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Note: For details on all alarm thresholds, see *Module Parameter Descriptions* (on page 143).

To View Active Module Alarms

Module alarms are set at the factory and may not be adjusted by the user. Module alarms represent a serious condition that has occurred in the system. If a module alarm occurs, the module will stop operating until the alarm is cleared.

Module Alarm Menus

When a module **ALARMS** menu is selected, press the  key or the  key to scroll through alarms. Some typical **ALARMS** menus are shown below.

ALARMS	ALARMS	ALARMS
Shelf 2 Slot 10	Shelf 2 Slot 10	Shelf 2 Slot 10
Prisma II Hybrid Amp	Prisma II Hybrid Amp	Prisma II Hybrid Amp
Enable Fault	LasTemp1 MinorL	IntPs Fault
▲ ▼	▲ ▼	▲ ▼

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







Note: For details on all alarm parameters, see *Module Parameter Descriptions* (on page 143).

Checking Manufacturing Data using the ICIM

To Check Manufacturing Data



You can display the manufacturing data for this module on the ICIM LCD.

Complete the following steps to access the manufacturing data.



- 1 From the MAIN menu, press the  key to highlight the **Shelf** and **Slot** fields.
- 2 Press the  key to address the **Shelf** number. Then press the  key or the  key to scroll to the number of the desired shelf.
- 3 Press the  key. The **Slot** field is highlighted.
- 4 Press the  key or the  key to scroll to the number of the desired slot.
- 5 Press the  key. The MODULE menu for this module will be selected, as shown on the left below. Press the  key to enter the start of the MFG. DATA menus, as shown on the right below.

MODULE	MFG.DATA
Shelf 2 Slot 10	Shelf 2 Slot 10
Prisma II Hybrid Amp	Prisma II Hybrid Amp
Alarms 0	Module Type
Mfg. Data	3019
▲ ▼	▲ ▼

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- 6 Use the  and  keys to scroll through the manufacturing data.

MFG. DATA Menus

When the **MFG. DATA** menu is selected, the  key or the  key allows you to scroll through the manufacturing parameters specific to this module. Sample **MFG. DATA** menus are shown below.

MFG. DATA	MFG. DATA	MFG. DATA	MFG. DATA
Shelf 2 Slot 10	Shelf 2 Slot 10	Shelf 2 Slot 10	Shelf 2 Slot 10
Prisma II Hybrid Amp	Prisma II Hybrid Amp	Prisma II Hybrid Amp	Prisma II Hybrid Amp
Serial # AAGIAZI Date Code B08	Sw Ver 1.01.02	In Service Hours 42	Spec Data 9x19dBm
▲ ▼	▲ ▼	▲ ▼	▲ ▼

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Note: For details on all manufacturing data parameters, see *Module Parameter Descriptions* (on page 143).

Saving the Configuration using the ICIM

To Save the Current Configuration

- 1 After you have changed a parameter or entered data, press the **ENTER** key to save the changes and return to the MAIN menu.
- 2 If you do not save your changes for two minutes, or if you press the **SHIFT** **CAN** keys at the same time, changes are aborted and the display returns to the MAIN menu.

Configuration Complete

If no alarms are indicated after using the ICIM to configure this module to your system specifications, no further action is necessary. The module operates without further input. Alarms, changes in operating parameters, electrical power fluctuations, or changes in system design may be cause for additional action.

SNMP Configuration

The IP Setup item in the ICIM menu lets you enter an IP address, IP subnet, and Gateway IP to configure the ICIM for remote status monitoring and control by a Simple Network Management Protocol (SNMP) network management system.

This section does not describe SNMP implementation. Refer to your SNMP manager documentation or management information base (MIB) information for instructions on implementing SNMP, Version 1.

All of this configuration is also available through the Boot Dialog. The Boot Dialog also allows community names and the default port number for traps to be changed.

SNMP Considerations














The following items should be considered when implementing SNMP.

- The SNMP connection is made through the Ethernet port on the front of the ICIM. (Use 10baseT cable with an RJ-45 connector.) To meet the requirements of GR1089-CORE, a shielded cable must be used and both ends must be grounded.
- The network management system (NMS) must be installed behind a firewall to prevent any ill-intentioned persons with an SNMP manager from accessing and tampering with the ICIM.
- When the ICIM has to handle excessive SNMP traffic, it will respond slowly to both SNMP control and front panel input. If this occurs, reduce the update rate of the SNMP manager.

Basic SNMP Setup

Refer to your SNMP manager documentation or MIB information for instructions on implementing SNMP. Before you can use and reconfigure SNMP services, you need to know the community strings in your network and the IP addresses or computer names for SNMP management hosts to which traps are sent.

To Set Up the IP Configuration Parameters for SNMP Support using ICIM

- 1 Press the  key. The ICIM menu appears on the ICIM LCD.
- 2 Select the **Password** menu and enter the User Password. The ICIM allows configuration changes for the next 10 minutes.
Note: Refer to your specific hardware Installation and Operation Guide for more information on using, entering, or changing the ICIM user password.
- 3 Press the  key. The ICIM menu appears.
- 4 Use the  key to scroll down until **IP Setup** is highlighted.
- 5 Press the  key. The **IP Setup** menu appears.
- 6 Use the  or  keys to scroll to and highlight the desired configuration parameter; IP Address, IP Subnet, or Gateway IP.
- 7 Press the  key. The **Adjust** menu for the selected IP parameter appears, and the first segment of the address is highlighted.
- 8 Enter the correct numbers for the first segment of the address.
Note: One of two methods can be used to enter the numbers, as follows:
 - Press the  or  keys to increase/decrease the number to set value.
 - Press the  key to change to the numeric entry mode. Confirm that **Numlock On** appears on the front panel LCD. Then enter the exact number using the number keys on the 12-key numeric keypad.
- 9 Press the  key to accept your entry and move to the next address segment to the right. You can also use the  or  keys to move to the address segment of your choice.
Note: If you are using the numeric entry mode, the cursor moves to the next address segment to the right automatically after you enter the last digit of the current address segment.
- 10 Repeat steps 8 and 9 until all address segments are entered. After you enter the last address segment and press the Enter key, the system returns to the IP Setup menu.
- 11 Repeat steps 6 through 10 for each IP Setup parameter that you need to enter.
- 12 Restart the ICIM.
Important: IP Setup parameters do not take effect until the ICIM is restarted.

To Restart the ICIM by Removing the ICIM

- 1 Unscrew the captive screw near the top right-hand corner of the ICIM.
- 2 Unlock the top and bottom ejector levers near the left-hand side of the ICIM.
- 3 Pull the ejector levers out and away from the front panel to disconnect the ICIM from the chassis backplane connector.
- 4 Pull the ICIM at least 1.5 inches (3.81 cm) out from the front of the chassis to ensure that it is fully separated from the chassis backplane connector.
- 5 Reinsert the ICIM into the chassis until the ejector levers insert into their respective slots in the chassis.
- 6 Push the ejector levers in and flat against the ICIM front panel to reconnect the ICIM to the backplane connector until the ejector levers lock in place.
- 7 Screw in the captive screw to secure the ICIM in the chassis.

Community Strings

Default Community Strings

The community string provides primitive security and context checking for both agents and managers that request and initiate trap operations. An agent does not accept a request from a manager outside the community.

Community strings that the ICIM expects are:

Read Community	public
Write Community	private
Trap Community	SNMP_trap

Setting SNMP Trap Receiver Parameters

You can use the SNMP trap receiver parameters to specify up to five IP addresses to which proprietary traps will be sent. You can also specify the events that will result in a trap being sent to the network management systems at these IP addresses.

The Cold Start trap will always be sent to all network management systems. The Authentication Failure trap will also be sent to all trap receivers if the `snmpEnableAuthenTraps` is set to Enabled.

You can specify which enterprise specific traps are sent to each trap receiver by setting variables in the `P2TrapRecv` table.

To Set Traps for a Specific IP Address using `P2TrapRecvEntry`

Entries to the `P2TrapRecvEntry` file can be made to send the trap information to a trap handler. The SNMP agent automatically sends an alert when the value of an object changes or exceeds a predefined threshold.

- 1 On an SNMP manager, go to the `P2TrapRecvEntry` table.
- 2 Type the IP address to which you want the trap sent.
- 3 Select **Enable** from the drop-down list. The new IP address is enabled and traps are sent to this IP address.

Note: Any changes are immediately stored to the EEPROM, so the changes are not lost if power is lost or the ICIM is reset.

New SNMP Variables

Support for traps requires additional data available through SNMP. This additional data may be useful even if not using traps.

SNMP is the only way this additional data can be accessed. It cannot be accessed through the ICIM front panel or an SMC interface.

Table of Inserted Modules

This table is named p2InsertModuleTable. It contains a list of modules inserted since the last time the ICIM was reset or told to update the chassis ID for all modules. It does not include modules found when the initial search for modules is performed.

The modules are displayed in chronological order, with the most recently inserted module always being in index position 1. If the number of modules inserted exceeds the capacity of the table, the oldest entries are deleted.

This table only contains the chassis and slot ID for a detected module. It is necessary to look at the other tables for more information.

Each row of this table is made up of the following variables:

Variable	Description
p2InsertModuleIndex	The index for this table. The most recently inserted module is always in index position 1.
p2InsertModuleChassisID	The chassis ID number of the new module.
p2InsertModuleSlotID	The slot ID number of the new module.

Table of Removed Modules

This table is named p2RemoveModuleTable. It contains a list of modules removed since the last time the ICIM was reset or told to update the chassis ID for all modules.

The modules are displayed in chronological order, with the most recently removed module always being in index position 1. If the number of modules removed exceeds the capacity of the table, the oldest entries are deleted.

If a module is removed before the "plug-and-play" data is read in, the type, name, and serial number are blank.

Each row of this table is made up of the following variables:

Variable	Description
p2RemoveModuleIndex	The index for this table. The most recently removed module is always in index position 1.
p2RemoveModuleChassisID	The chassis ID number of the removed module.
p2RemoveModuleSlotID	The slot ID number of the removed module.
p2RemoveModuleName	The name of the removed module. This is the name from the plug-and-play data for this module, and matches what the ICIM and SNMP display as the name. TNCS and LCI may use a different name.
p2RemoveModuleType	The TNCS type number of the removed module. This number uniquely identifies every type of module.
p2RemoveModuleSerialNum	The serial number of the removed module. This information is needed to determine if a module has been replaced with one that is the same type.

Previous IP Address

This variable is named p2PreviousIP. When the IP of the ICIM is changed using the front panel, this variable returns the previous ICIM IP address. It returns 0.0.0.0 until the IP address of the ICIM is changed for the first time.

Boot Dialog for ICIM/SNMP Configuration

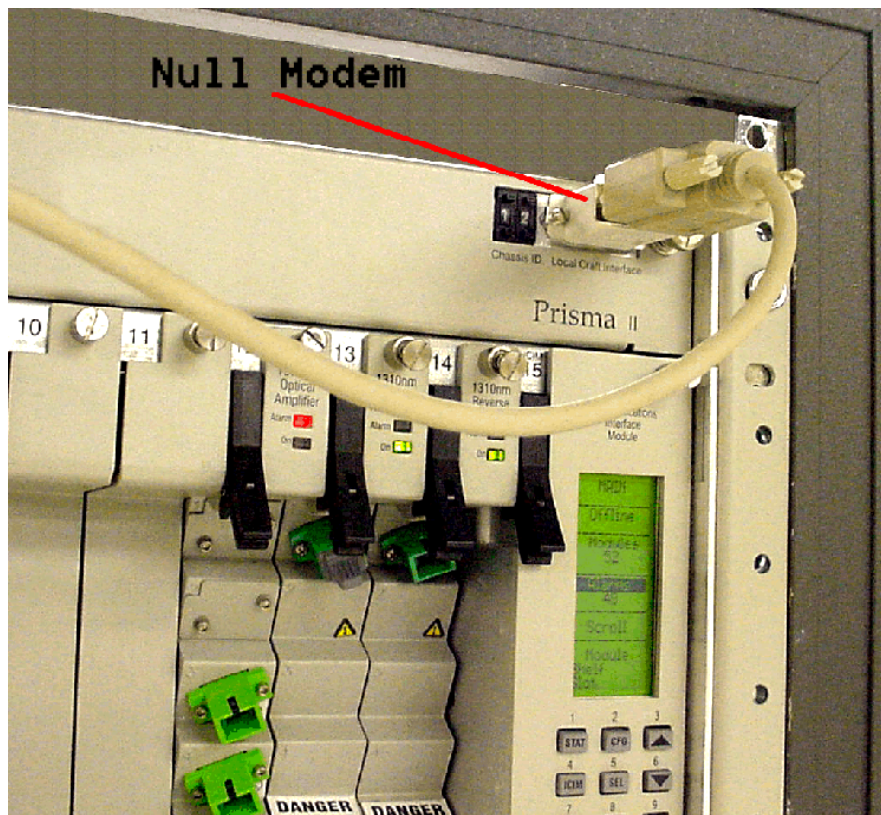
The boot dialog is presented whenever the ICIM is powered up (a cold boot). It is accessible via the LCI communications port on the front of the chassis.

Important: A null modem is required along with a terminal emulator program, such as HyperTerminal on a Windows PC.

The serial port on the PC used by the terminal emulator program should be set up with these parameters:

- 9600 baud
- 8 data bit
- No parity bit
- 1 stop bit

This parameter is often displayed as: 9600 8-N-1.



The primary use of the boot dialog is to flash a new version of the ICIM application via a TFTP server.

Important: Do this only under the direction of Cisco Services.

During a flash operation, the low-level parameters can be changed, including community strings, port number for traps, IP address, etc.

The procedures below initially tell the ICIM that it is to be updated (flashed), whereupon it presents a configuration dialog. After new values are entered and saved, the ICIM is told to **not** update the program and proceed to normal ICIM operations.

To Prepare to Change Parameters

- 1 When the ICIM is powered up, it presents a summary screen along with a prompt to "...press any key within 5 seconds." The following information appears:

```

Start-Up Configuration Dialog
-----
START-UP MODE:
  Run ICIM Application
NETWORK INTERFACE PARAMETERS:
  IP address on LAN is 192.133.194.219
  LAN interface's subnet mask is 0xffffffff00
SNMPv1 COMMUNITY:
  Read Community: public          Write Community: private
  Trap Community: SNMP_trap      Trap Port: 162
HARDWARE PARAMETERS:
  Serial channels will use a baud rate of 9600
  Board's Serial Number is ^AAIIJHC
HARDWARE PARAMETERS:
  ICIM BSP Revision: ICIM Boot Rom, Rev: BT 0204 (02-23-2004)
  MPC860 (Rev 0.2) CPU running at 49 Mhz with 5 Mhz input clock
  ICIM Board with 16 Mbytes DRAM and 4 Mbytes App FLASH and 2 Mbytes Boot
  FLASH
  This board's Ethernet hardware address is 0:2:DE:1:2:3
BOOT ROM PARAMETERS:
  IP address of the TFTP host is 192.133.194.4
  The file to download and start is ram.crc
  After board is reset, start-up code will wait 5 seconds
-----
To change any of this, press any key within 5 seconds.

```

Note: During the first couple of seconds, the ICIM does not respond to a key press.

- 2 Press any key repeatedly until the following prompt appears.

```
(M)odify any of this or (C)ontinue? [M]
```

- 3 Press **Enter** to get the default value for Modify.

```

For each of the following questions, you can press < Return > to
select the value shown in braces, or you can enter a new value.
How should the board boot?
1. pROBE+ (for debugging)
2. TFTP (for code download)
3. Run ICIM Application
Which one do you want? [3] 2

```

- 4 Select **2** for TFTP.

Note: We will **not** be doing a code download, but this gets access to the rest of the parameters dialog.

To Change Parameters

Below is an example dialog where one of the parameters (Trap Community) is changed. Any of the parameters can be changed, although some should be changed only with the advice of a Cisco Services representative.

Note: Hardware parameters (serial channel baud rate, serial number, and board Ethernet address) should **not** be changed.

```

NETWORK INTERFACE PARAMETERS:
Do you want a LAN interface? [Y]
This board's LAN IP address(0.0.0.0 = RARP)? [192.133.194.219]
Subnet mask for LAN (0 for none)? [255.255.255.0]
Should there be a default gateway for packet routing? [Y]
What is its IP address? [192.133.194.254]
SNMP COMMUNITY STRINGS:
Read Community [public]
Write Community [private]
Trap Community [SNMP_trap] ICIM_Trap
Trap Port for P2 traps [162]
HARDWARE PARAMETERS:
Baud rate for serial channels [9600]
Enter the Serial number? [^AAIJHC]
HARDWARE PARAMETERS:
Do you want to change the board's Ethernet address? [N]
BOOT ROM PARAMETERS:
IP address of the TFTP Boot server to boot from? [192.133.194.4]
What is the name of the file to be loaded and started? [ram014.crc]
How long (in seconds) should CPU delay before starting up? [5]

```

Each time a prompt is given, the default value is displayed in square brackets.

- 1 Press **Enter** to retain the current value and move onto the next parameter.

Note: As an example in the above screen, the Trap Community string has been changed to a new value. The prompt for delay time is the last one before the summary screen is presented.

- 2 Press any key repeatedly until the following prompt appears.

```
(M)odify any of this or (C)ontinue? [M]
```

- 3 Press **Enter** to get the default value for Modify.

To Restart the ICIM using ICIM

The boot selection dialog appears again.

For each of the following questions, you can press < Return > to select the value shown in braces, or you can enter a new value.

How should the board boot?

1. pROBE+ (for debugging)
2. TFTP (for code download)
3. Run ICIM Application

Which one do you want? [2] 3

- 1** Select **3** to indicate that the normal ICIM application should be run (instead of TFTP). The summary page appears.
- 2** Do nothing and when the 5 second timeout expires, the ICIM restarts normally.

Adjusting Alarm Thresholds

To Adjust Alarm Thresholds

Relative alarm thresholds are both displayed and stored as relative values. This method for adjusting alarm thresholds lets you choose any valid increment size and adjust the alarm threshold to any valid value.

You can use the ICIM to change the adjustable alarm thresholds of this module from their factory default values.

- 1 At the MODULE menu, press the **STAT** key. The STATUS menu appears on the ICIM LCD.
- 2 Press the **SEL** key. The alarm thresholds previously set are displayed. If the label **n/a** is displayed, you cannot configure that alarm threshold. Press the **▼** key to highlight the alarm threshold for the next parameter.
- 3 When the threshold that you wish to set is highlighted, press the **ENTER** key.
- 4 Press the **▼** key or the **▲** key to change the increment size.
- 5 Press the **+** key or the **-** key to adjust the alarm threshold.
Note: Press the Cancel (**ALRM**) key to return to the previous menu.
- 6 Press the **ENTER** key to save the changes. The message **Data Saved** appears on the ICIM LCD.
- 7 When finished, press the **MAIN** key to return to the MAIN menu.

5

Operation Using LCI

Introduction

This chapter provides LCI installation instructions and detailed descriptions of how to use LCI. This chapter applies to you if you are using the Local Craft Interface (LCI) to operate a module.

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LCI Introduction

Laser Warning



WARNING:

- **Avoid personal injury!** Use of controls, adjustments, or procedures other than those specified herein may result in hazardous radiation exposure.
 - **Avoid personal injury!** The laser light source on this equipment (if a transmitter) or the fiber cables connected to this equipment emit invisible laser radiation. Avoid direct exposure to the laser light source.
 - **Avoid personal injury!** Viewing the laser output (if a transmitter) or fiber cable with optical instruments (such as eye loupes, magnifiers, or microscopes) may pose an eye hazard.
- Do not apply power to this equipment if the fiber is unmated or unterminated.
 - Do not stare into an unmated fiber or at any mirror-like surface that could reflect light emitted from an unterminated fiber.
 - Do not view an activated fiber with optical instruments such as eye loupes, magnifiers, or microscopes.
 - Use safety-approved optical fiber cable to maintain compliance with applicable laser safety requirements.
 - Even if the unit is off, there may still be hazardous optical levels present.

LCI Function

LCI is software that functions as a user interface for the Prisma II platform. LCI is installed on a computer, which is then connected to a Prisma II chassis. You can use LCI to configure and monitor the modules in the chassis to which the computer is connected.

Important: Do not operate any Prisma II chassis without a fan tray installed. If a fan tray is not installed in the Prisma II chassis, the LCI will not communicate with any of the modules in that chassis.

System Requirements

You will need the following computer software and hardware to run LCI.

Computer Requirements

- Pentium II 300 MHz processor or equivalent
- 128 MB RAM
- 10 MB available hard drive space
- CD-ROM Drive
- Windows 95 or later operating system software

Cable Requirements

The required cable is a standard serial extension cable, DB9 Female to DB9 Male. This cable can be purchased locally or ordered from the factory as part number 180143. The connectors are a serial 9-pin D-shell (EIA 574/232).

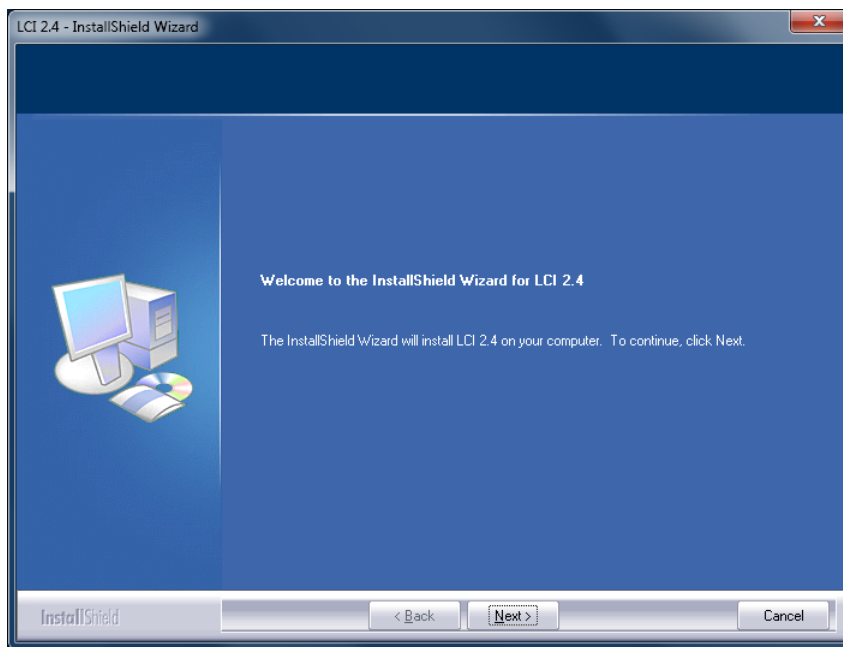
Installing LCI

This section describes how to install your LCI software.

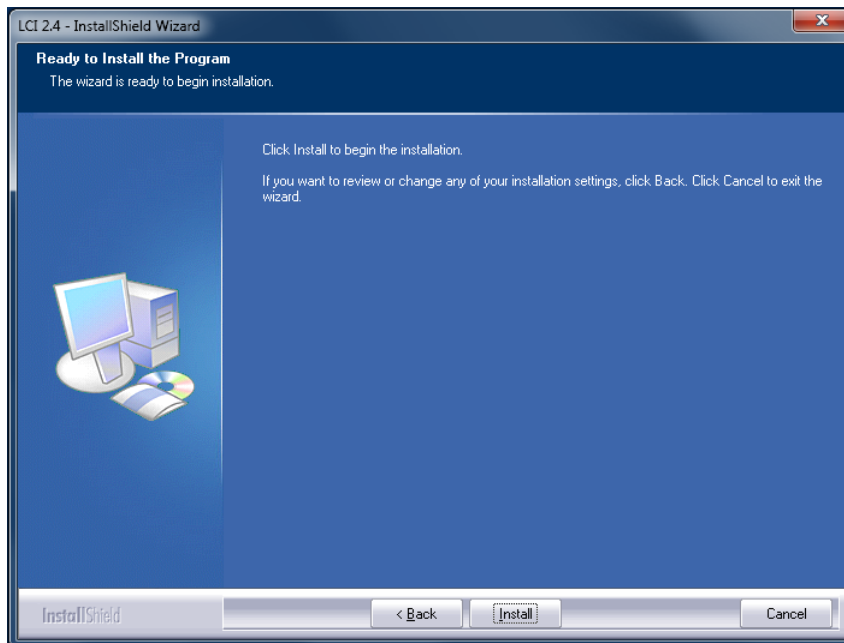
To Install the LCI Software

Complete the following steps to install the LCI software.

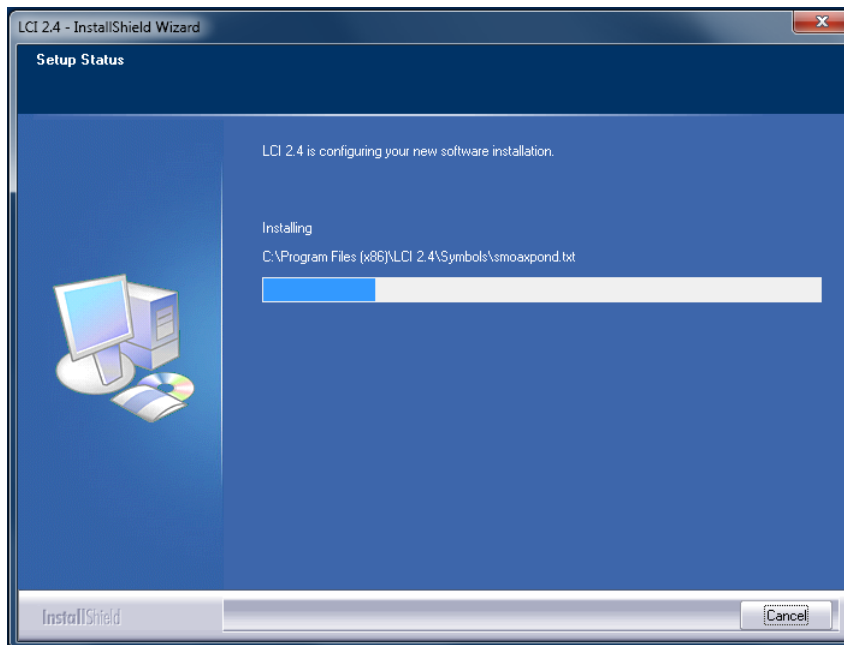
- 1 Obtain the LCI installation program from www.cisco.com/support and copy the program file to your Windows desktop.
- 2 Launch the LCI installation program. The Welcome screen appears as shown in the following illustration.



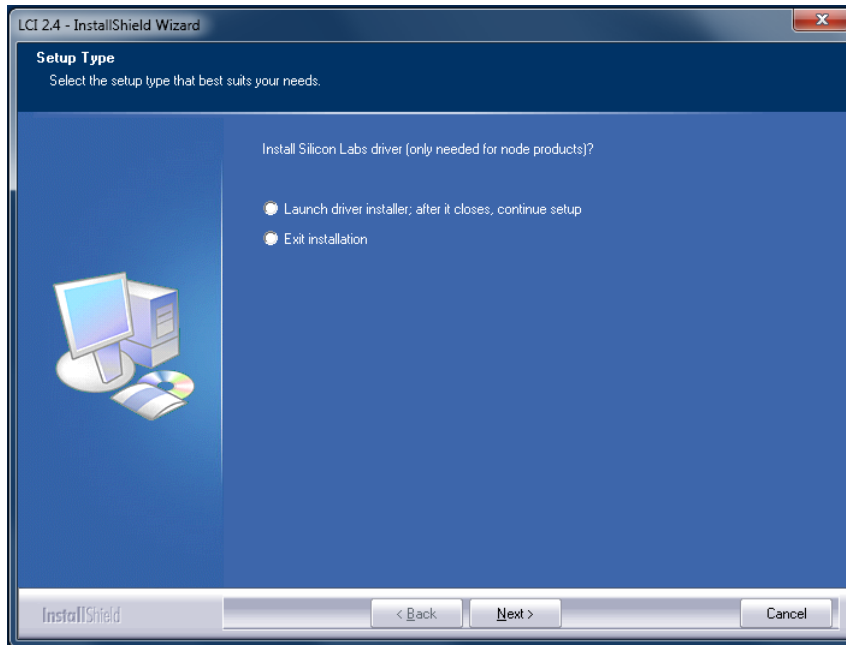
- 3 Click **Next** to continue with the installation process. The Ready to Install the Program screen appears as shown in the following illustration.



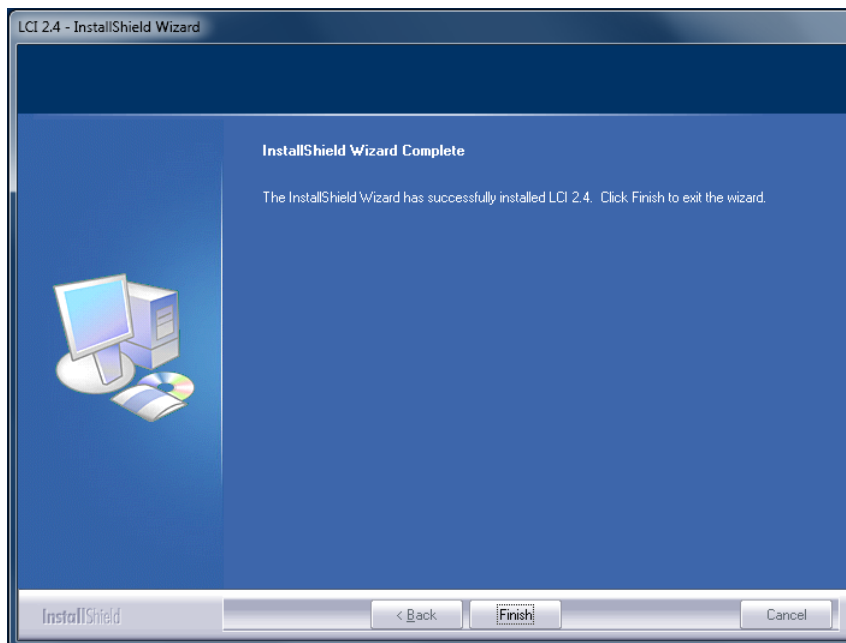
- 4 Click **Install** to begin installation. After a moment, the Setup Status screen appears, displaying a progress indicator as shown in the following illustration.



- 5 When finished, the wizard asks if you want to install the Silicon Labs driver, which is required when using LCI with a node product.
 - If you are using LCI with a node product, choose the **Launch** option, click **Next**, and follow steps of the wizard to install the driver.
 - If you are not using LCI with a node product, choose the **Exit Installation** option and then click **Next**.



- 6 When finished, the InstallShield Wizard Complete screen appears as shown in the following illustration.



- 7 Click **Finish** to exit the Install wizard. An LCI shortcut is placed on your Windows desktop as shown in the following illustration.



The LCI software is now ready to use.

Connecting Your Computer to the Chassis

Before you start LCI, you must first connect your computer to the chassis that contains the module(s) you want to check.

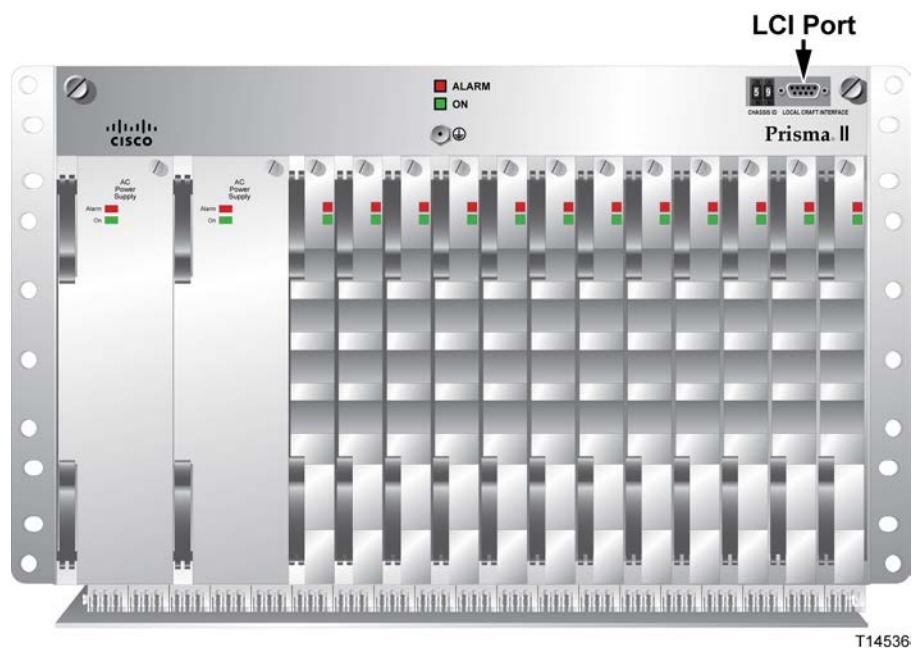
Important:

- LCI only communicates with modules installed in the chassis to which your computer is connected. To check other modules, you must connect your computer to the chassis in which they are installed.
- If LCI does not communicate with a module in the chassis to which your computer is connected, it may be necessary to update the LCI application.

To Connect the Computer to a Prisma II Chassis

Complete the following steps to connect your computer to the chassis.

- 1 Plug one end of a 9-pin RS-232 serial extension cable into your computer.
- 2 Plug the other end of the cable into the LCI port, labeled **Local Craft Interface**.



Starting LCI Software

When you start LCI, it polls the module(s) located in the chassis to which your computer is attached. For each module it finds, LCI does the following:

- Represents the module in the module tree of the main LCI window
- Makes the polling information available so you can check and configure various parameters

Important: Your computer must be connected to the chassis before you start LCI. For instructions, refer to *Connecting Your Computer to the Chassis* (on page 110).

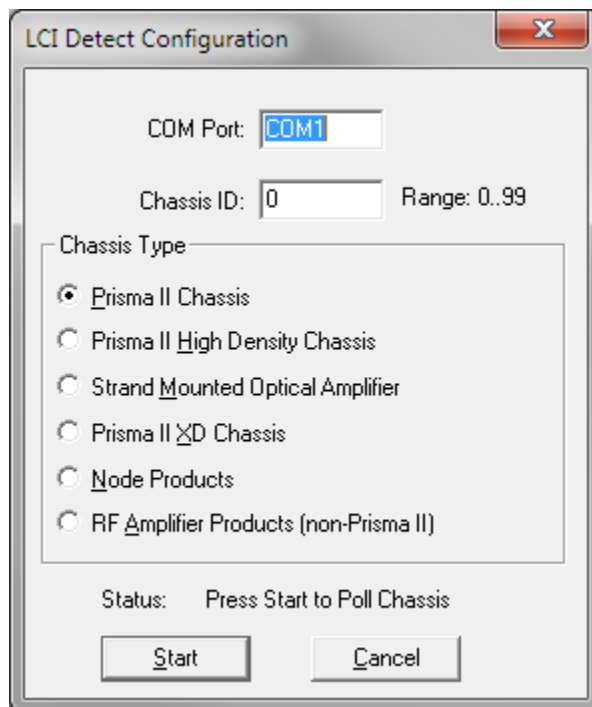
To Start LCI Software

Complete the following steps to start the LCI software.

- 1 Double-click the LCI icon on your Windows desktop.

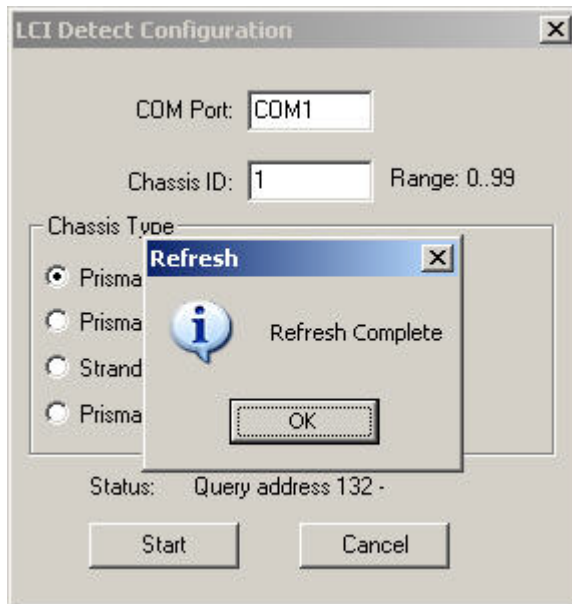


Result: The LCI Detect Configuration window appears as shown below.



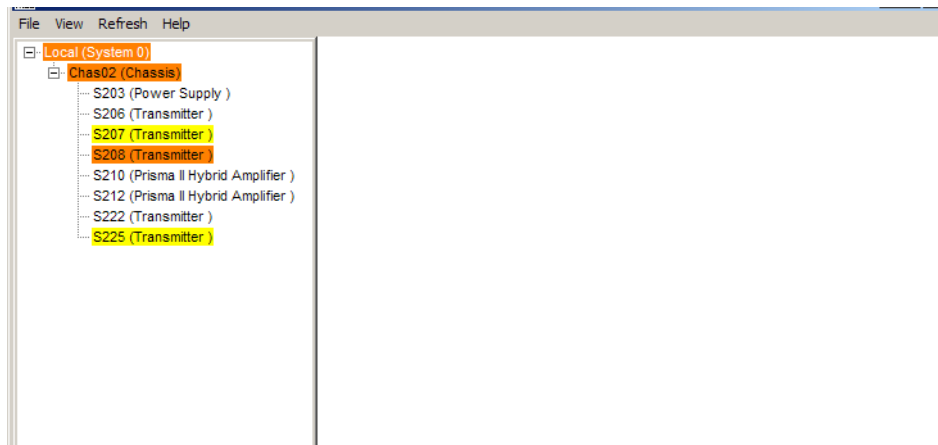
- 2 In the LCI Detect Configuration window, select the appropriate COM port, chassis ID, and chassis type, and then click **Start**.

Result: LCI polls the modules in the chassis, and when finished, displays a Refresh Complete message.



- 3 Click **OK** to continue with LCI startup.

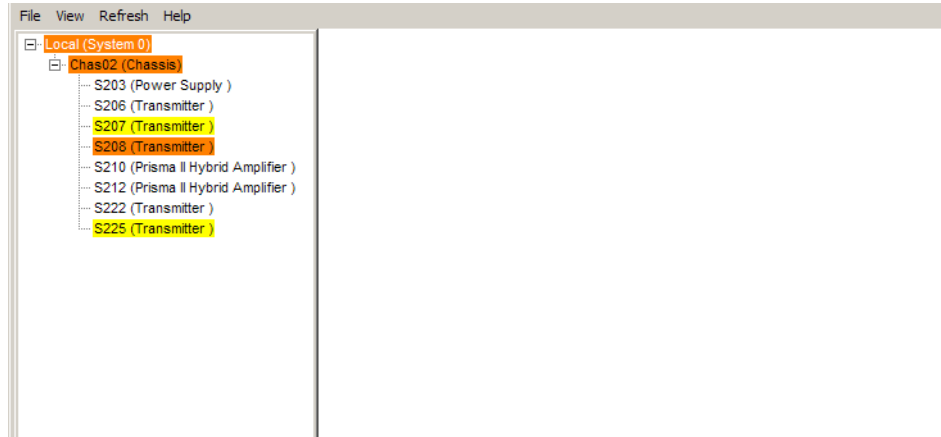
Result: The main LCI window appears as shown in the example below.



LCI Module Tree

Introduction

The main window of LCI contains a tree that represents your system in a hierarchical manner.



Module Tree

The module tree shown in the preceding illustration represents a computer connected to a chassis that contains eight modules. The three tree levels are described in the following table.

Module Tree Level	Description
Local (System 0)	Computer being used.
Chas02 (Chassis)	Chassis to which the computer is connected.
Sxx (Module name)	Module(s) located within the chassis. Each module is of the format <i>chassis slot location (module name)</i> . Example: In the preceding illustration, S210 (Prisma II Hybrid Amplifier) represents an optical amplifier located in slot 10 of the chassis.

Accessing Module Details

The Module Details window displays information about module parameters, alarms, and status. You can access this window from the module tree using one of several methods:

- Double-click the chassis to display a graphic image of the chassis, and then double-click the module in the graphic.
- Right-click the chassis in the module tree to display a context menu, and then choose **Open** from the menu.
- Right-click the module in the module tree to display a context menu, and then select **Details** from the menu.
- Double-click the module in the module tree.

The procedures in this chapter show the module right-click method. In practice, use the method that you find most convenient.

Module Details Window

Optical Hybrid-Amplifier

Parameters							
	Present Value	Present Status	Nominal Value	Minor-Alarm Low-Limit	Minor-Alarm High-Limit	Major-Alarm Low-Limit	Major-Alarm High-Limit
Optical Input Power	7.5	Normal	5.0	5.0	25.0	16.0	45.0
Optical Output Power	19.0	Normal	n/a	0.7	0.7	1.0	1.0
Laser 1 Temperature	25.2	Normal	25.0	-15	15	-20	20
Laser 2 Temperature	32.0	Normal	25.0	-30	45	-35	50
Laser 1 Bias Current	0.83	Normal	0.99	n/a	-0.010	n/a	-0.001
Laser 2 Bias Current	4.07	Normal	5.50	n/a	-0.100	n/a	-0.010

Alarms

Summary Status	Normal
Communication Status	Normal
Power Supply Status	Normal
Internal Power Supply Status	Normal
Laser Enabled Status	Normal
Service Mode Status	Normal

Controls

Enable Laser	On
Optical Power Attenuation	0.0 dB
Operational Mode	Master
Input Alarm Laser Shutdown	Off
Service Mode	Off

Properties

Devtype Revision	1.01
Name	S210
Graphic	
Service Name	
Symbol	
Device Location	
Alias	
Notify Set A	
Notify Set B	
M&C-Scan	On-Scan
Maintenance Mode	Normal
Poll Counter	164
Script	
Comm Alarm Threshold	1
Comm Quality	%
Address	210
Port	COM1
Generic Name	Prisma II Hybrid Amplifier
Description	Optical Hybrid-Amplifier
Software Revision	1.01.02
Script Version	N/A
Serial Number	AAGIAZI
Time Of Service	43 Hrs
Laser On Time	42 Hrs
Day Code	B08
Module Type	3019

Status

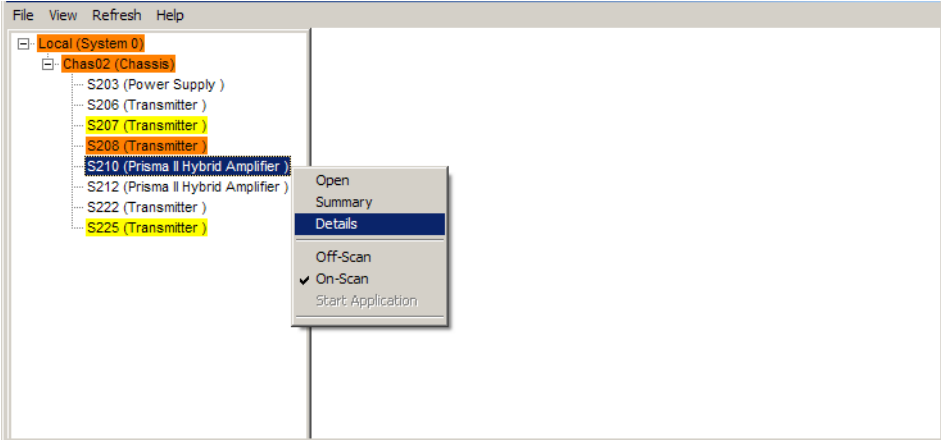
Laser 1 Limit	0.98	A
Laser 2 Limit	5.49	A
Laser TEC Current	0.43	A
Module Temperature	34.3	deg-C

Checking the Operating Status

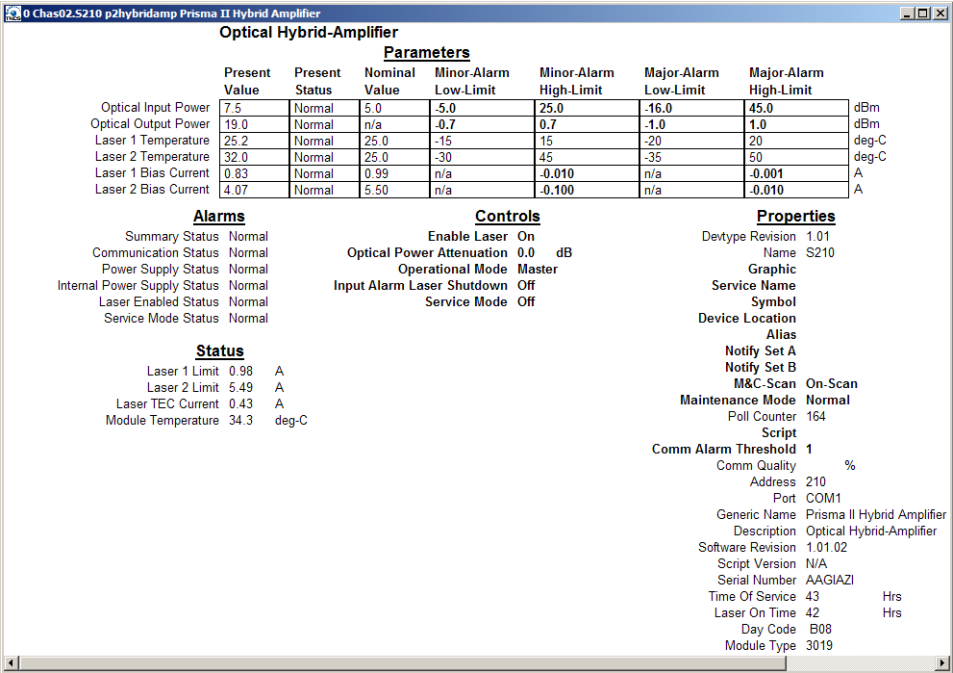
To Check Operating Status using LCI

Using the LCI, you can check the status of all module operating parameters.

- 1 In the module tree, right-click the module, and then click **Details**.



The Module Details window appears as shown in the following example. The monitored parameters are displayed under **Parameters** and **Status**.



2 Check the operating parameters.

Note:

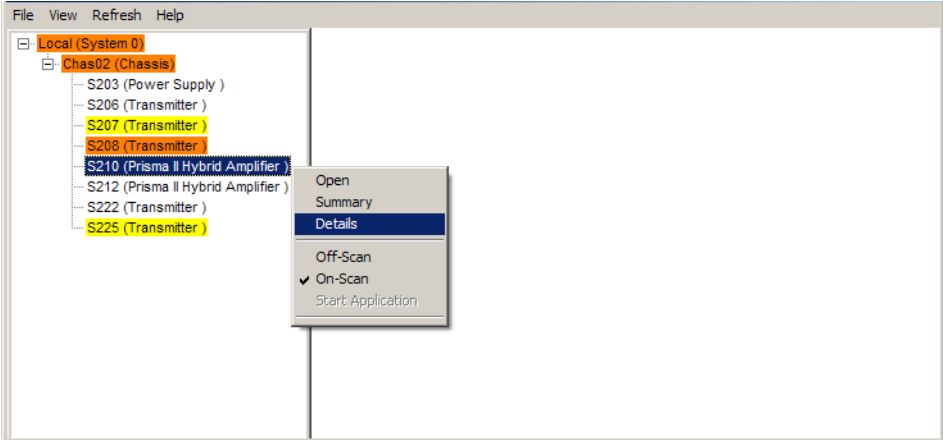
- Optical amplifiers with multiple lasers may have multiple laser temperatures, limits, bias, and other parameters. These multiple parameters are numbered for identification; for example, Laser Bias Current 1, Laser Bias Current 2; Laser Temperature 1, Laser Temperature 2, and so on.
- For details on all operating status parameters, see *Module Parameter Descriptions* (on page 143).

Configuring the Module using LCI

To Configure Parameters using LCI

Using LCI, you can configure any module parameters that allow for such changes.

- 1 In the module tree, right-click the module, and then click **Details**.



The Module Details window appears as shown in the following example.

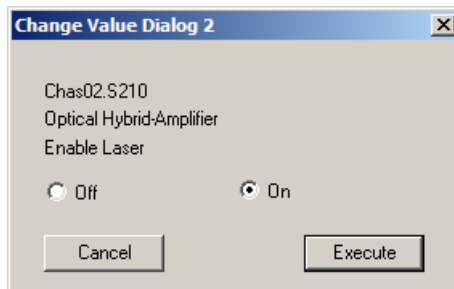
Optical Hybrid-Amplifier

	Present Value	Present Status	Nominal Value	Minor-Alarm Low-Limit	Minor-Alarm High-Limit	Major-Alarm Low-Limit	Major-Alarm High-Limit	
Optical Input Power	7.5	Normal	5.0	-5.0	25.0	-16.0	45.0	dBm
Optical Output Power	19.0	Normal	n/a	-0.7	0.7	-1.0	1.0	dBm
Laser 1 Temperature	25.2	Normal	25.0	-15	15	-20	20	deg-C
Laser 2 Temperature	32.0	Normal	25.0	-30	45	-35	50	deg-C
Laser 1 Bias Current	0.83	Normal	0.99	n/a	-0.010	n/a	-0.001	A
Laser 2 Bias Current	4.07	Normal	5.50	n/a	-0.100	n/a	-0.010	A

<p>Alarms</p> <p>Summary Status Normal</p> <p>Communication Status Normal</p> <p>Power Supply Status Normal</p> <p>Internal Power Supply Status Normal</p> <p>Laser Enabled Status Normal</p> <p>Service Mode Status Normal</p>	<p>Controls</p> <p>Enable Laser On</p> <p>Optical Power Attenuation 0.0 dB</p> <p>Operational Mode Master</p> <p>Input Alarm Laser Shutdown Off</p> <p>Service Mode Off</p>	<p>Properties</p> <p>Devtype Revision 1.01</p> <p>Name S210</p> <p>Graphic</p> <p>Service Name</p> <p>Symbol</p> <p>Device Location</p> <p>Alias</p> <p>Notify Set A</p> <p>Notify Set B</p> <p>M&C-Scan On-Scan</p> <p>Maintenance Mode Normal</p> <p>Poll Counter 164</p> <p>Script</p> <p>Comm Alarm Threshold 1</p> <p>Comm Quality %</p> <p>Address 210</p> <p>Port COM1</p> <p>Generic Name Prisma II Hybrid Amplifier</p> <p>Description Optical Hybrid-Amplifier</p> <p>Software Revision 1.01.02</p> <p>Script Version N/A</p> <p>Serial Number AAGIAZI</p> <p>Time Of Service 43 Hrs</p> <p>Laser On Time 42 Hrs</p> <p>Day Code B08</p> <p>Module Type 3019</p>
--	--	--

<p>Status</p> <p>Laser 1 Limit 0.98 A</p> <p>Laser 2 Limit 5.49 A</p> <p>Laser TEC Current 0.43 A</p> <p>Module Temperature 34.3 deg-C</p>

- 2 Under **Controls**, double-click the parameter you want to configure. The Change Value Dialog box appears. This example shows the dialog box for the Enable parameter.



- 3 Depending on the parameter you chose, select or type a new value.
- 4 Click **Execute**. The new value appears next to the parameter.

Note: For details on all configurable parameters, see *Module Parameter Descriptions* (on page 143).

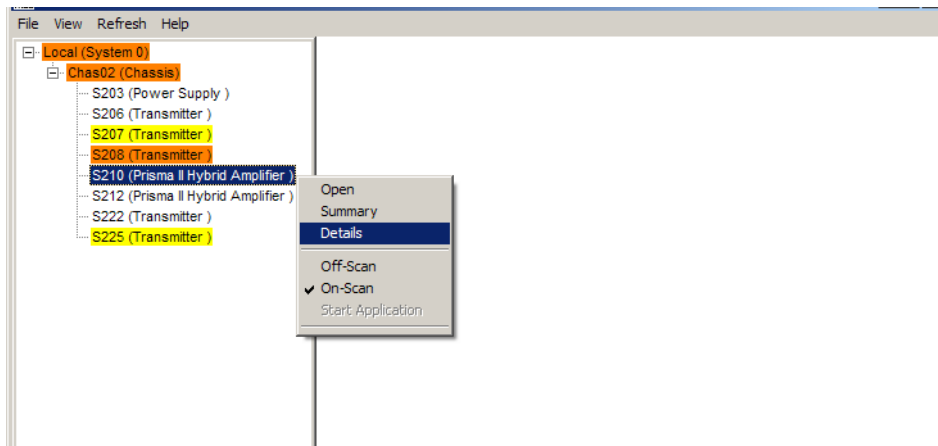
Checking the Module Alarms using LCI

Using LCI, you can check the alarm status of various parameters. Alarms limits fall into one of the following categories.

- Major low
- Minor low
- Minor high
- Major high

To Check Alarms using LCI

Right-click the module, and then click **Details**.



The Module Details window appears as shown in the following example. The alarms are shown under **Parameters** and **Alarms**.

Optical Hybrid-Amplifier							
Parameters							
	Present Value	Present Status	Nominal Value	Minor-Alarm Low-Limit	Minor-Alarm High-Limit	Major-Alarm Low-Limit	Major-Alarm High-Limit
Optical Input Power	7.5	Normal	5.0	-5.0	25.0	-16.0	45.0
Optical Output Power	19.0	Normal	n/a	-0.7	0.7	-1.0	1.0
Laser 1 Temperature	25.2	Normal	25.0	-15	15	-20	20
Laser 2 Temperature	32.0	Normal	25.0	-30	45	-35	50
Laser 1 Bias Current	0.83	Normal	0.99	n/a	-0.010	n/a	-0.001
Laser 2 Bias Current	4.07	Normal	5.50	n/a	-0.100	n/a	-0.010

Alarms		Controls		Properties	
Summary Status	Normal	Enable Laser	On	Devtype Revision	1.01
Communication Status	Normal	Optical Power Attenuation	0.0 dB	Name	S210
Power Supply Status	Normal	Operational Mode	Master	Graphic	
Internal Power Supply Status	Normal	Input Alarm Laser Shutdown	Off	Service Name	
Laser Enabled Status	Normal	Service Mode	Off	Symbol	
Service Mode Status	Normal			Device Location	
				Alias	
				Notify Set A	
				Notify Set B	
				M&C-Scan	On-Scan
				Maintenance Mode	Normal
				Poll Counter	164
				Script	
				Comm Alarm Threshold	1
				Comm Quality	%
				Address	210
				Port	COM1
				Generic Name	Prisma II Hybrid Amplifier
				Description	Optical Hybrid-Amplifier
				Software Revision	1.01.02
				Script Version	N/A
				Serial Number	AAGIAZI
				Time Of Service	43 Hrs
				Laser On Time	42 Hrs
				Day Code	B08
				Module Type	3019

Status	
Laser 1 Limit	0.98 A
Laser 2 Limit	5.49 A
Laser TEC Current	0.43 A
Module Temperature	34.3 deg-C

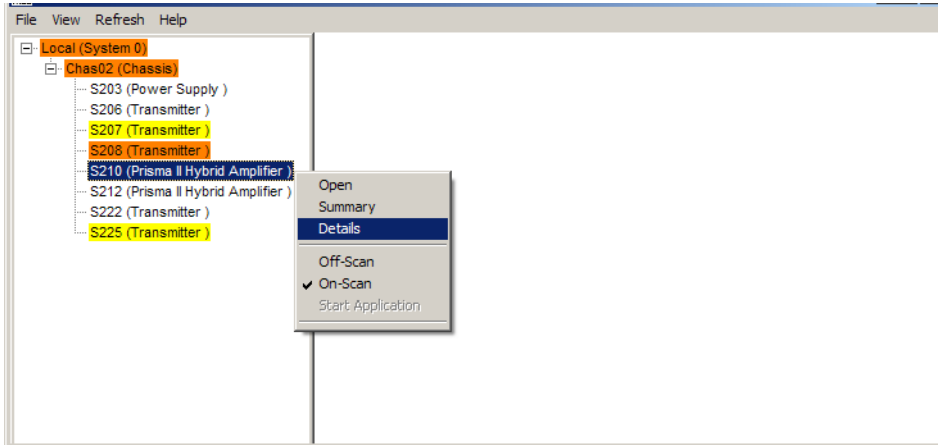
Note: For details on all alarm parameters, see *Module Parameter Descriptions* (on page 143).

Modifying Module Alarm Limits using LCI

To Modify Alarm Limits using LCI

Using LCI, you can modify alarm limits for parameters that allow for such changes.

- 1 In the module tree, right-click the module, and then click **Details**.



The Module Details window appears as shown in the following example. The alarm limits are shown under **Parameters**.

Optical Hybrid-Amplifier

Parameters							
	Present Value	Present Status	Nominal Value	Minor-Alarm Low-Limit	Minor-Alarm High-Limit	Major-Alarm Low-Limit	Major-Alarm High-Limit
Optical Input Power	7.5	Normal	5.0	-5.0	25.0	-16.0	45.0
Optical Output Power	19.0	Normal	n/a	-0.7	0.7	-1.0	1.0
Laser 1 Temperature	25.2	Normal	25.0	-15	15	-20	20
Laser 2 Temperature	32.0	Normal	25.0	-30	45	-35	50
Laser 1 Bias Current	0.83	Normal	0.99	n/a	-0.010	n/a	-0.001
Laser 2 Bias Current	4.07	Normal	5.50	n/a	-0.100	n/a	-0.010

Alarms

Summary Status	Normal
Communication Status	Normal
Power Supply Status	Normal
Internal Power Supply Status	Normal
Laser Enabled Status	Normal
Service Mode Status	Normal

Controls

Enable Laser	On
Optical Power Attenuation	0.0 dB
Operational Mode	Master
Input Alarm Laser Shutdown	Off
Service Mode	Off

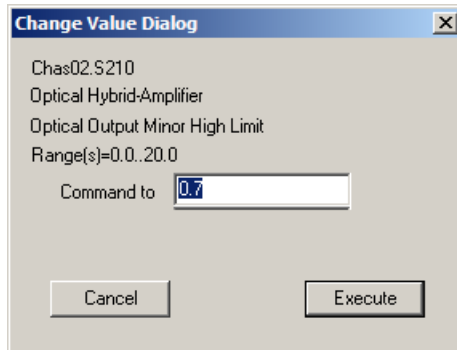
Properties

Devtype Revision	1.01
Name	S210
Graphic	
Service Name	
Symbol	
Device Location	
Alias	
Notify Set A	
Notify Set B	
M&C-Scan	On-Scan
Maintenance Mode	Normal
Poll Counter	164
Script	
Comm Alarm Threshold	1
Comm Quality	%
Address	210
Port	COM1
Generic Name	Prisma II Hybrid Amplifier
Description	Optical Hybrid-Amplifier
Software Revision	1.01.02
Script Version	N/A
Serial Number	AAGIAZI
Time Of Service	43 Hrs
Laser On Time	42 Hrs
Day Code	B08
Module Type	3019

Status

Laser 1 Limit	0.98	A
Laser 2 Limit	5.49	A
Laser TEC Current	0.43	A
Module Temperature	34.3	deg-C

- 2 Double-click the limit you want to change. This example shows a Change Value dialog box for the Minor High limit of the Optical Output Power parameter.



- 3 To change the limit value, type the desired value in the **Command to** box.
- 4 Click **Execute**. The new value appears in the alarm limit column.

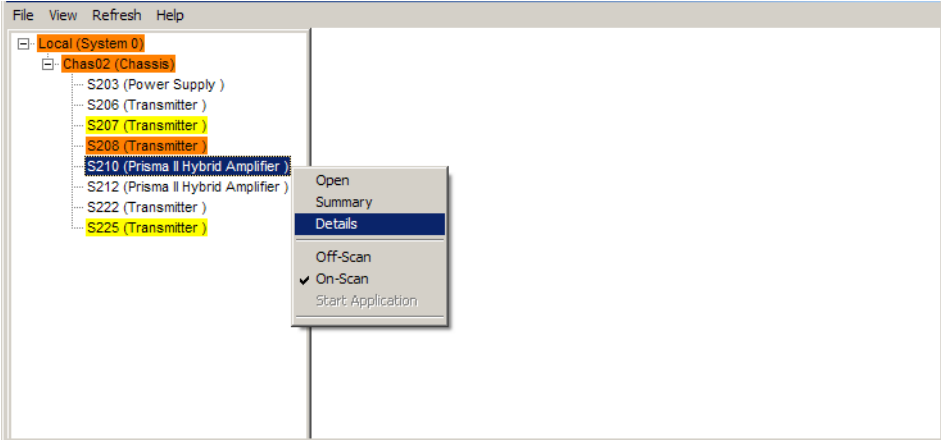
Note: For details on all alarm limits, see *Module Parameter Descriptions* (on page 143).

Checking Manufacturing Data using LCI

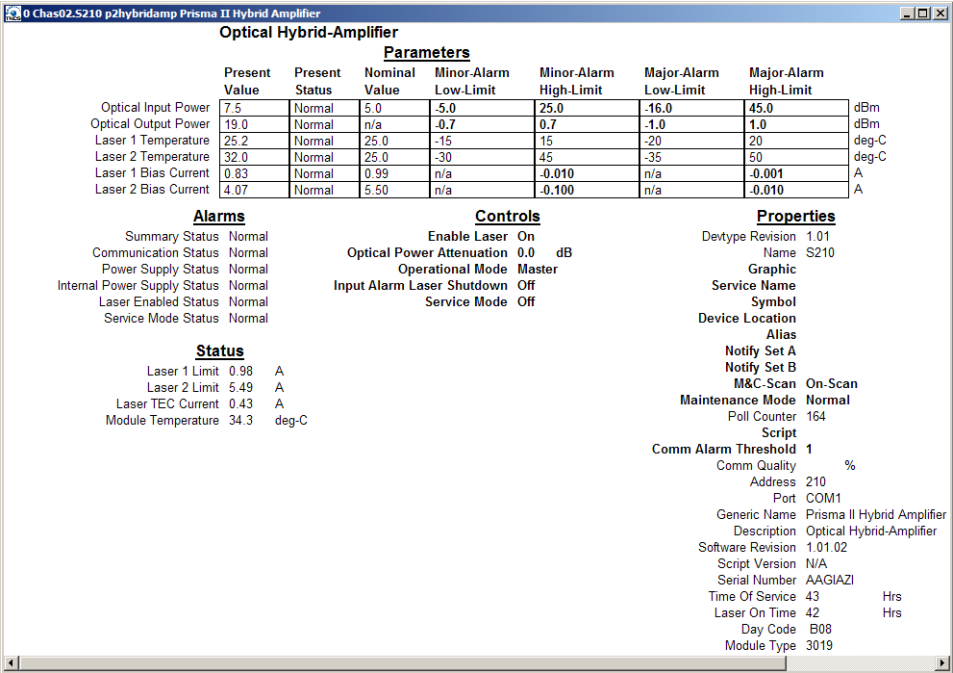
To Check Manufacturing Data using LCI

Using LCI, you can check the manufacturing for a selected module.

- 1 In the module tree, right-click the module, and then click **Details**.



The Module Details window appears as shown in the following example. The manufacturing data is displayed under **Properties**.



- 2 Proceed with viewing the manufacturing data.

Note: For details on all manufacturing data parameters, see *Module Parameter Descriptions* (on page 143).

6

Maintenance and Troubleshooting

Introduction

This chapter describes the maintenance guidelines and troubleshooting procedures for this module.

Qualified Personnel

Only appropriately qualified and skilled personnel should attempt to maintain or troubleshoot module faults.



WARNING:

Allow only qualified and skilled personnel to install, operate, maintain, and service these products. Otherwise, personal injury or equipment damage may occur.

In This Chapter

- Module Maintenance..... 126
- General Troubleshooting Information..... 127
- Troubleshooting Alarm Conditions 128

Module Maintenance

Recommended Maintenance

The following maintenance is recommended to ensure optimal performance.

Frequency	Maintenance Required
Yearly	<ul style="list-style-type: none"> ■ Check all parameters and test points ■ Record data ■ Make adjustments as needed ■ Make sure all cables are mated properly ■ Inspect cables for stress and chafing ■ Make sure all retaining screws are tight ■ Replace chassis air filter (Depending on office environment cleanliness/filtration, the chassis air filter may require more frequent servicing.)
When needed	Carefully clean the module with a soft cloth that is dampened with mild detergent.

Maintenance Record

It may be helpful to establish a maintenance record or log for this module. You may want to record optical input level, optical output level, or current laser levels, as well as the filter change dates.

Large variations in any of the parameters above should be investigated prior to failure.

General Troubleshooting Information

Introduction

This troubleshooting information describes the most common alarms and gives typical symptoms, causes, and items to check before consulting Customer Service.

Equipment Needed

You may need the following equipment to troubleshoot the module.

- Digital voltmeter
- Fiber connector cleaning materials
- Optical power meter
- Spectrum analyzer (for transmitter)

Additional Assistance

If you need additional assistance, contact Cisco Services.

Troubleshooting



WARNING:

Avoid electric shock and damage to this product! Do not open the enclosure of this product. There are no user-serviceable parts inside. Refer servicing to qualified service personnel.

Refer to the following section, *Troubleshooting Alarm Conditions* (on page 128), to identify and correct module faults.

Troubleshooting Alarm Conditions

Amplifier Alarm Conditions

If the red ALARM indicator is illuminated or is blinking, check the ICIM2 display to determine the cause of the alarm.

Alarm	Parameter	Possible Causes	Possible Solutions
LasBias	Laser current	Internal problem	Contact Customer Service for assistance.
InPwr	Optical input	Dirty or loose connector Low input	Check input source.
OutPwr	Optical output	Low input Internal problem	Check input. Contact Customer Service for assistance.
		Module disabled	Enable module.
LasTemp	Laser temperature	Internal problem Fan Tray failure Ambient temperature Chassis air filter requires changing	Contact Customer Service for assistance.
IntPs	Input power supply	Internal problem	Contact Customer Service for assistance.

7

Customer Support

Introduction

If you have technical questions, call Cisco Services for assistance. Follow the menu options to speak with a service engineer.

Access your company's extranet site to view or order additional technical publications. For accessing instructions, contact the representative who handles your account. Check your extranet site often as the information is updated frequently.

A

Prisma II Permitted CLI Commands

Introduction

The following tables summarize the available CLI commands for the Prisma II and Prisma II XD platforms. Each table lists the commands available for one of the four major CLI prompts: CLI, */* MODULE, TERMINAL, and ICIM.

Entries shown in parenthesis () are module-specific and must be typed in full. Hints are given to display available entries for those cases. All other entries may be abbreviated to the shortest unambiguous form, as explained in the CLI online help screens.

Note: Some commands are limited to Admin level users only.

For further information and assistance when working with CLI, type **help** at the appropriate CLI prompt, and then press **Enter** to display the corresponding help screens.

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■ From ICIM	133
■ From */* MODULE	139
■ From TERMINAL	142

From CLI

ALARM	
CLEAR	
DATE	
EXIT	
HELP	ALARM
	CLEAR
	COMMANDS
	DATE
	EDIT
	EXIT
	ICIM
	LOGOUT
	MANUAL
	MODULE
	TERMINAL
	WHO
	WHOAMI
ICIM	
LOGOUT	
MANUAL	
MODULE	
TERMINAL	
WHO	
WHOAMI	
'?'	

From ICIM

ALARM		
EVENTLOGCLEAR		
EVENTLOGFILTER	HARDWARE	ON/OFF
	PROVISIONING	ON/OFF
	SYSTEM	ON/OFF
EXIT		
FILE	IP	(IP_ADDRESS)
	NAME	(FILENAME)
	PASSWORD	(PASSWORD)
	PATH	(PATH)
	USER	(USERNAME)
HELP		
IKE *	ADD	(IP_ADDRESS)
	DELETE	(IP_ADDRESS)
INFO	ACTIVEREV	
	ATTNSTATUS	
	BOOTREV	
	CHASSIS	
	CLEI *	
	CLLI *	
	COMMREAD	
	COMMTRAP	
	COMMWRITE	
	DEVTYPE	
	DOWNLDCMD	
	DOWNLDDIR	
	DOWNLDFILE	
	DOWNLDRESULT	
	DOWNLDSEM	
	DOWNLDSIG	
	DOWNLDSTATE	

Appendix A
Prisma II Permitted CLI Commands

	DOWNLDTGT	
	DOWNLDUSER	
	FTPSERVER	
	FTPUSER	
	GATEWAY	
	HWREV	
	INACTIVEREV	
	IP	
	IPSEC *	
	LOCKOUT	
	MAC	
	MANDATA	
	NEXTIMAGE	
	PREVIOUSIP	
	SELFTEST	
	SERIAL	
	SIZE	
	SLOT	
	SMC	
	STATUSMSG	
	SUBNET	
	SWDATE	
	SWREV	
	THRESHOLD	
	TIMEOUT	
	TOS	
	TZONE	
	UPDATEID	
IPROUTE	ADD	(DESTINATION)
		(GATEWAY)
	DELETE	(DESTINATION)
		(GATEWAY)
IPSEC *	DISABLE	

	ENABLE	
LOGOUT		
MANUAL		
REBOOT		
SET	CLLI *	(CLLI)
	CLOCK	(DATE_TIME)
	COMMREAD	(READ_STRING)
	COMMTRAP	(TRAP_STRING)
	COMMWRITE	(WRITE_STRING)
	GATEWAY	(GATEWAY)
	IP	(IP_ADDRESS)
	LOCKOUT	(INTERVAL)
	STATUSMSG- CLEARKEY	(1)
	SUBNET	(SUBNET_MASK)
	THRESHOLD	(THRESHOLD)
	TIMEOUT	(TIMEOUT)
	TZONE	(TIMEZONE)
	UPDATEID	(1)
SHOW	ACTIVEREV	
	ATTNSTATUS	
	BOOTREV	
	CHASSIS	
	CLEI *	
	CLLI *	
	CLOCK	
	COMMREAD	
	COMMTRAP	
	COMMWRITE	
	DEVTYPE	
	DOMAIN	
	DOWNLDCMD	
	DOWNLDDIR	
	DOWNLDFILE	

Appendix A
Prisma II Permitted CLI Commands

	DOWNLDRESULT	
	DOWNLDSEM	
	DOWNLDSIG	
	DOWNLDSTATE	
	DOWNLDTGT	
	DOWNLDUSER	
	EVENTLOG	
	EVENTLOGALL	
	EVENTLOGFILTER	
	FILE	
	FTPSEVER	
	FTPUSER	
	GATEWAY	
	HWREV	
	IKE *	
	INACTIVEREV	
	IP	
	IPROUTE	
	IPSEC *	
	LOCKOUT	
	LOCKEDUSERS	
	MAC	
	MANDATA	
	NEXTIMAGE	
	PREVIOUSIP	
	PROVISIONING	
	SELFTEST	
	SERIAL	
	SIZE	
	SLOT	
	SMC	
	SNTP *	
	STATUSMSG	

	SUBNET	
	SWDATE	
	SWREV	
	THRESHOLD	
	TIMEOUT	
	TOS	
	TRAPS	
	TZONE	
	UPDATEID	
	USER	
SNTP *	INTERVAL	
	IP	
	MODE	
	STATE	
	TIMEOUT	
TRAPS	DISABLE	(INDEX)
		(IP_ADDRESS)
	ENABLE	(INDEX)
		(IP_ADDRESS)

USER	ADD	(USER_ID)	ADMIN	DISABLE
				ENABLE
			READ	DISABLE
				ENABLE
			READWRITE	DISABLE
				ENABLE
	CHANGE	ACCESS_RIGHTS	(USER_ID)	ADMIN
				READ
				READWRITE
		ACCOUNT_STATUS	(USER_ID)	DISABLE
				ENABLE
		PASSWORD	(USER_ID)	(PASSWORD)
	DELETE	(USER_ID)		
	UNLOCK	(USER_ID)		

Appendix A
Prisma II Permitted CLI Commands

'?'				
-----	--	--	--	--

* Reserved for future use.

From */* MODULE

ALARM	DOMAIN		
	MODULE		
CHASSIS	(digits)		
	*		
	[range]		
EXIT			
HELP			
INFO	ALARM	(ALARMNAME)	HYSTERESIS
		use show alarms *	INDEX
			LABEL
			LIMITADJUST
			MAJORHIGH
			MAJORLOW
			MINORHIGH
			MINORLOW
			NOMINAL
			RANGEHI
			RANGELO
			TYPE
			VALUE
	CONTROL	(CONTROLNAME)	INDEX
		use show control *	LABEL
			RANGEHI
			RANGELO
			RANGESTEP
			STATENAMES
			TYPE
			UNITS
			VALUE
	MODULE	ACTIVEREV	
		BOOTREV	

Appendix A
Prisma II Permitted CLI Commands

		CLEI ¹	
		CLLI ¹	
		CODEREV	
		DATECODE	
		DEVTYPE	
		DOWNLOADABLE	
		INACTIVEREV	
		MANDATA	
		MODTYPE	
		NAME	
		NEXTIMAGE	
		NUMANALOGCONTROLS	
		NUMCONTROLS	
		NUMDIGITALCONTROLS	
		NUMMONITS	
		NUMOFALARMS	
		SCRIPTREV	
		SELFTTEST	
		SERIAL	
		TOS	
	MONITOR	(MONITORNAME)	INDEX
		use show mon *	LABEL
			STATENAMES
			TYPE
			UNITS
			VALUE
LOGOUT			
MANUAL			
MODID	digits		
	*		
	[range]		
RESET			
SET	ALARMPARAM	(ALARMNAME)	HYSTERESIS

			MAJORHIGH
			MAJORLOW
			MINORHIGH
			MINORLOW
	CONTROL	(CONTROLNAME)	(VALUE)
	MODULE	CLLI ¹	(CLLI)
SHOW	ALARMPARAM	(ALARMNAME)	HYSTERESIS
		use show alarms *	MAJORHIGH
			MAJORLOW
			MINORHIGH
			MINORLOW
	ALARMSTATE	(ALARMNAME)	
	CONTROL	(CONTROLNAME)	
	MODULE		
	MONITOR	(MONITORNAME)	
SLOT	digits		
	*		
	[range]		
'?'			

¹ Reserved for future use.

From TERMINAL

ALARM	
COLSEP	(string)
EXIT	
HEADERS	(digits)
HELP	
LOGOUT	
MANUAL	
PAGING	(digits)
PATTERN	REGEX
	WILDCARD
SHOW	
'?'	

B

Module Parameter Descriptions

Introduction

This appendix provides control, alarm, monitor, and manufacturing data parameters for this equipment.

In This Appendix

- Hybrid Amplifier Parameters 144

Hybrid Amplifier Parameters

Hybrid Amplifier Operating Status Parameters

Parameter Name (LCI)	ICIM Abbreviation	Function	Typical Value
Optical Input Power	InPwr	Displays optical input power	5.0 dBm
Optical Output Power	OutPwr	Displays optical output power	19.5 dBm
Laser 1 Temperature	LasTemp1	Laser temperature for pump 1	25°C
Laser 2 Temperature	LasTemp2	Laser temperature for pump 2	25°C
Laser 1 Bias Current	LasBias1	Laser bias current for pump 1	0.625 A
Laser 2 Bias Current	LasBias2	Laser bias current for pump 2	3.25 A
Laser 1 Limit	LasLim1	Laser bias current limit for pump 1	0.825 A
Laser 2 Limit	LasLim2	Laser bias current limit for pump 2	6.25 A
Laser TEC Current	TecCur	Laser TecCooler current for pump 1	0.25 A
Module Temperature	ModTemp	Displays module temperature	26.5°C
Laser On Time	LaserOn	Displays laser ON time	1.0 Hrs
Enable Laser	Enable	Enables or disables the amplifier	On
Optical Power Attenuation	SetAtten	Attenuates optical output by value selected	0 dB
Operational Mode	Mode	Module redundancy control: <ul style="list-style-type: none"> ■ If set to Master, unit only controlled by Enable controls ■ If set to Slave, unit only controlled by external alarm signal 	Master
Input Alarm Laser Shutdown	LoInpEna	Disables low input power alarms and shuts down amplifier when optical input level falls below -10.0 dBm	Off
Service Mode	Service	Sets output level to 15 dBm for servicing	Off

Note: Monitored values may vary from module to module. The values shown above are examples only.

Hybrid Amplifier Configurable Parameters

Parameter Name (LCI)	ICIM Abbreviation	Description	Values	Default
Enable Laser	Enable	Enables or disables amplifier	ON (1) OFF (0)	OFF (0)
Optical Power Attenuation	SetAtten	Attenuates optical output by value selected	0 to 3 dB in 0.5 dB steps	0 dB
Operational Mode	Mode	Module redundancy control: <ul style="list-style-type: none"> ■ If set to Master, unit only controlled by Enable controls ■ If set to Slave, unit only controlled by external alarm signal 	Master (1) Slave (0)	Master (1)
Input Alarm Laser Shutdown	LoInpEna	Disables low input power alarms and shuts amplifier down when optical input level falls below -10.0 dBm	ON (1) OFF (0)	OFF (0)
Service Mode	Service	Sets optical output level to 15.0 dBm for servicing	ON (1) OFF (0)	OFF (0)

Hybrid Amplifier Alarm Data Parameters

Parameter Name (LCI)	ICIM Abbrev.	Nominal Value	Major Low Limit	Minor Low Limit	Minor High Limit	Major High Limit	Hys-teresis	Operating Range
Optical Input Power ¹	InPwr	-	-16 dBm	-5.0 dBm	25 dBm	45 dBm	1.0	-
Optical Output Power ¹	OutPwr	-	-1.0 dBm	-0.7 dBm	-0.7 dBm	1.0 dBm	0.1	-
Laser 1 Temperature ¹	LasTemp1	25.0°C	-20.0°C	-15.0°C	15.0°C	20.0°C	1.0	OK or Alarm
Laser 2 Temperature ¹	LasTemp2	25.0°C	-35.0°C	-30.0°C	45.0°C	50.0°C	1.0	OK or Alarm

Appendix B
Module Parameter Descriptions

Parameter Name (LCI)	ICIM Abbrev.	Nominal Value	Major Low Limit	Minor Low Limit	Minor High Limit	Major High Limit	Hys-teresis	Operating Range
Laser 1 Bias Current ^{1,2}	LasBias1	3.7 to 5.0 A	-8.0 A	-8.0 A	-0.1 A	-0.001 A	0.001	OK or Alarm
Laser 2 Bias Current ^{1,2}	LasBias2	3.7 to 5.0 A	-8.0 A	-8.0 A	-0.1 A	-0.010 A	0.001	OK or Alarm
Laser Enable Status ³	Enable	-	-	-	-	-	-	OK or Alarm
Internal Power Supply Status ⁴	IntPs	-	-	-	-	-	-	OK or Alarm
Power Supply Status ⁵	PsOk	-	-	-	-	-	-	OK or Alarm
Service Mode Status ³	Service	-	-	-	-	-	-	OK or Alarm

¹ Alarm limit values for this parameter are relative to the nominal alarm value.

² Nominal laser bias values are set in manufacturing based on the characteristics of the laser diode, and may vary from module to module. Major Low and Minor Low alarm thresholds are intentionally set low to avoid false alarms that may be generated at high optical input levels (a good condition that corresponds to low bias current). It is recommended that these limits not be changed from their factory defaults.

³ The alarm values OK and Alarm correspond to the control values OFF and ON, respectively.

⁴ This alarm sets the unit to the safe state, in which the optical input is disabled.

⁵ This alarm sets the unit to the safe state, in which the lasers are turned off and optical output is disabled.

Hybrid Amplifier Manufacturing Data Parameter Examples

Parameter Name (LCI)	ICIM Abbreviation	Typical Values
Generic Name	-	Prisma II Hybrid Amplifier
Description	-	Optical Hybrid-Amplifier
Software Version	Sw Ver	1.01.02
Serial Number	Serial #	AAGIAZI
Time of Service	In Service Hours (initial value)	0
Laser On Time	-	42 Hrs
-	Spec Data	9 x 19 dBm
Day Code	Date Code	B08
Module Type	-	3019

Note: These values may vary from module to module. The values shown above are examples only.

Glossary

ac, AC

alternating current. An electric current that reverses its direction at regularly recurring intervals.

AGC

automatic gain control. A process or means by which gain is automatically adjusted in a specified manner as a function of input level or other specified parameters.

CA

conditional access. The system, software, and components necessary to provide or deny subscribers selective access to specific services.

CAN

cancel. The cancel character.

CLI

command line interface. A command reference software that allows the user to interact with the operating system by entering commands and optional arguments.

DAVIC

Digital Audio/Video Council. An international group of approximately 250 companies developing an "end-to-end" standard for interactive digital media, including interfaces and requirements for applications, systems, and networks. The group includes members of the original MPEG Joint Technical Committee (JTC).

dc, DC

direct current. An electric current flowing in one direction only and substantially constant in value.

DFB laser

distributed feedback laser. An injection laser diode that has a Bragg reflection grating in the active region in order to suppress multiple longitudinal modes and enhance a single longitudinal mode.

Glossary

DOCSIS

data over cable service interface specification.

EDFA

erbium doped fiber amplifier. Optical fibers doped with the rare earth element, erbium, which can amplify light in the 1550 nm region when pumped by an external light source.

EIA

Electronic Industries Association. A United States association that provides standards for use between manufacturers and purchasers of electronic products.

EMC

electromagnetic compatibility. A measure of equipment tolerance to external electromagnetic fields.

EMS

Element Management System. A system that controls a single element, or many elements of a single type. Usually works up into a full network management system (NMS).

EMT

externally-modulated transmitter.

ESD

electrostatic discharge. Discharge of stored static electricity that can damage electronic equipment and impair electrical circuitry, resulting in complete or intermittent failures.

FTTP

fiber-to-the-premises. Fiber optic service to the subscriber's premises.

HFC

hybrid fiber/coaxial. A network that uses a combination of fiber optics and coaxial cable to transport signals from one place to another. A broadband network using standard cable television transmission components, such as optical transmitters and receivers, coaxial cable, amplifiers, and power supplies. The broadband output stream is transmitted as an optical signal, over the high-speed, fiber optic transmission lines to local service areas where it is split, converted to electrical RF signals, and distributed to set-tops over coaxial cable.

I/O

input/output.

ICIM

intelligent communications interface module.

IP

Internet protocol. A standard that was originally developed by the United States Department of Defense to support the internetworking of dissimilar computers across a network. IP is perhaps the most important of the protocols on which the Internet is based. It is the standard that describes software that keeps track of the internetwork addresses for different nodes, routes, and outgoing/incoming messages on a network. Some examples of IP applications include email, chat, and Web browsers.

LCD

liquid crystal display. A display medium made of liquid crystal. Liquid crystal's reflectance changes when an electric field is applied. Commonly used in monitors, televisions, cell phones, digital watches, etc.

LCI

local craft interface.

LED

light-emitting diode. An electronic device that lights up when electricity passes through it.

MIB

management information base. SNMP collects management information from devices on the network and records the information in a management information base. The MIB information includes device features, data throughput statistics, traffic overloads, and errors.

nm

nanometer. One billionth of a meter.

NMS

network management system. A software system designed specifically to monitor a network and to facilitate troubleshooting.

OLT

optical line termination. Optical network elements that terminate a line signal.

OMI

optical modulation index, expressed in decimal or percentage notation.

Glossary

ONT

optical network termination. Optical network elements that terminate a network signal; also interchangeably referred to as an optical network unit (ONU).

PID

packet identifier or program identifier.

PLL

phase lock loop. An electronic servo system controlling an oscillator to maintain a constant phase angle relative to a reference signal.

PON

passive optical network. A system that brings optical fiber cabling and signals all or most of the way to the end user. Depending on where the PON terminates, the system can be described as fiber-to-the-curb (FTTC), fiber-to-the-building (FTTB), fiber-to-the-premises (FTTP), or fiber-to-the-home (FTTH).

QAM

quadrature amplitude modulation. An amplitude and phase modulation technique for representing digital information and transmitting that data with minimal bandwidth. Both phase and amplitude of carrier waves are altered to represent the binary code. By manipulating two factors, more discrete digital states are possible and therefore larger binary schemes can be represented.

RF

radio frequency. The frequency in the portion of the electromagnetic spectrum that is above the audio frequencies and below the infrared frequencies, used in radio transmission systems.

RMA

return material authorization. A form used to return products.

RT

remote terminal. Remote equipment of a supervisory system.

RX

receive or receiver.

SA

spectrum analyzer.

SBS

stimulated Brillouin scattering. The easiest fiber nonlinearity to trigger. When a powerful lightwave travels through a fiber, it interacts with acoustical vibration modes in the glass. This causes a scattering mechanism to be formed that reflects some of the light back to the source.

SI

system or service information. Tuning information sent from the DNCS to DHCTs which provides the information that DHCTs need to be able to tune to a particular service.

SMC

status monitoring and control. The process by which the operation, configuration, and performance of individual elements in a network or system are monitored and controlled from a central location.

SNMP

simple network management protocol. A protocol that governs network management and the monitoring of network devices and their functions.

TEC

thermoelectric cooler. A device used to dissipate heat in electronic assemblies.

TNCS

Transmission Network Control System. A Cisco application that allows status monitoring and control of all transmission equipment located in headends and hubs plus optical nodes, power supplies, and amplifiers in the outside plant. TNCS provides access to and information on the entire network in an easy to understand, topology driven, graphical user display.

torque

A force that produces rotation or torsion. Usually expressed in lb-ft (pound-feet) or N-m (Newton-meters). The application of one pound of force on a lever at a point on the lever that is one foot from the pivot point would produce 1 lb-ft of torque.

TX

transmit or transmitter.

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