OmniAccess 740 Hardware Users Guide

Release 2.2

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This equipment has been tested and found to comply within the limits pursuant to the (Centre for Telecom) rules. These limits are designed to provide protection against harmful interference when the equipment is operated in a commercial environment.

The following information is for the Users of the OmniAccess 740: If it is not installed in accordance with the installation instructions, it may not function exactly to the said specifications. Modifying the equipment without Alcatel-Lucent's written authorization may result in the equipment no longer complying with the said dimensions.

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CHAPTER 1

PREFACE

ABOUT THIS GUIDE

This hardware users guide explains the initial hardware installation and the configuration procedures for the OmniAccess 740 (OA-740). It contains procedures for unpacking and installing the OA-740 system hardware, starting up the system, and creating a basic configuration. After completing the installation and basic configuration procedures covered in this guide, use the appropriate companion publications to more completely configure your system.

CHAPTER DESCRIPTION

This chapter explains the objectives, intended audience, organization of the OA-740 Hardware Users Guide, and defines the conventions used to convey instructions and information.

AUDIENCE

This book is intended for networking professionals who are responsible for designing, implementing, and managing enterprise networks. This book aims to provide unique technology and effective practices that deliver value on the networking perspective.

The user is expected to have, at minimum, an introductory understanding of the following:

- Networking applications
- Telecommunication networks
- Hardware configuration

DOCUMENT ORGANIZATION

This hardware users guide is organized into following chapters and appendix:

Chapter 2 OmniAccess 740 Overview describes the functional description of OA-740 and provides functional overview of the system.

Chapter 3 Installing the OmniAccess 740 is a preparatory chapter that describes safety considerations, tools required, an overview of the installation, and hardware installation procedures.

Chapter 4 Starting the OmniAccess 740 provides procedure for starting the OA-740, performing basic configuration tasks, and connecting the system to internal and external networks.

Appendix provides additional information on the regulatory compliances and safety, AC power supply, and Pin Connector details for the OA-740.

DOCUMENT CONVENTIONS

The following conventions are used to attract the attention of the reader:

Note: Means reader take note. Notes contain helpful suggestions/information/references to materials. Take a note of instructions provided here.

Caution: Means reader be careful. Failure to observe the cautionary note could result in equipment damage or loss of data.

Safety Warnings:

Warning: FOLLOW THE IMPORTANT SAFETY INSTRUCTIONS.
Means reader be extremely cautious. Failure to observe the warning note could result in injury to the user, equipment damage, and/or loss of data.

This warning means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.

Obtaining Documentation

Alcatel-Lucent provides several ways to obtain technical assistance and other technical resources. Documents can be downloaded from our support site service.esd.alcatel-lucent.com.

Reference Publications

The following publications are a part of the Alcatel-Lucent documentation suite:

- OmniAccess 700 CLI Command Reference Guide (Release 2.2)
- OmniAccess 700 CLI Configuration Guide (Release 2.2)
- OmniAccess 700 Web GUI Users Guide (Release 2.2)
- OmniAccess 700 Getting Started Guide (Release 2.2)
- OmniAccess 780 Hardware Users Guide (Release 2.2)

Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Alcatel-Lucent service contracts, the Alcatel-Lucent Technical Support Team provides 24-hour-a-day, technical support services online and over the phone.

For Customer issues and help, contact:

Alcatel-Lucent

US Customer Support: (800) 995-2696

International Customer Support: (818) 878-4507

E-mail: support@ind.alcatel.com

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Documentation Feedback

We value your comments and suggestions about our documentation. If you have any comments about this book, please enter them through the feedback link on the Alcatel-Lucent Website. We will use your feedback in our plans to improve the documentation.

CHAPTER 2

OmniAccess 740 OVERVIEW

INTRODUCTION

This chapter provides physical and functional overview of the OmniAccess 740 (OA-740). It contains the functional description of OA-740 hardware, its major components, and related features. Descriptions and examples of software commands are included only when they are necessary for replacing, installing, configuring, or maintaining the OA-740 hardware.

This chapter contains the following sections:

OA-740 Overview

The OA-740 is designed to provide most commonly used network services, such as routing, switching, wide area network (WAN) connectivity, network security with firewall, and related services.

Package Contents

1. The OA-740
   - 4-slot Chassis that includes
     - Services Engine (SE) - 2-port 10/100/1000 Mbps Ethernet
     - 3 Fans (built-in)
     - Power Supply (built-in)
2. Optional Modules
   - 4-port T1E1 Line Card
   - 8-port 10/100/1000 Mbps Gigabit Ethernet (GigE) Line Card
   - 4-port Serial Line Card (V3.5/X.21)
3. Miscellaneous
   - AC Power Cord
   - Console Cable
   - Rack Mount Screws
   - 19-inch Rack Mount Ears
   - 512 MB USB Memory Flash
   - Product Documentation CD ROM

HARDWARE OVERVIEW

The following section provides a detailed overview of the hardware components of OA-740.

THE OA-740

OA-740 has 4 line card slots, numbered 0 to 3 from left to right. The slots 2 and 3 can be combined to support a dual slot line card (such as the SE). All the OA-740 cards support Online Insertion and Removal (OIR) feature.

The OA-740 has the following components:

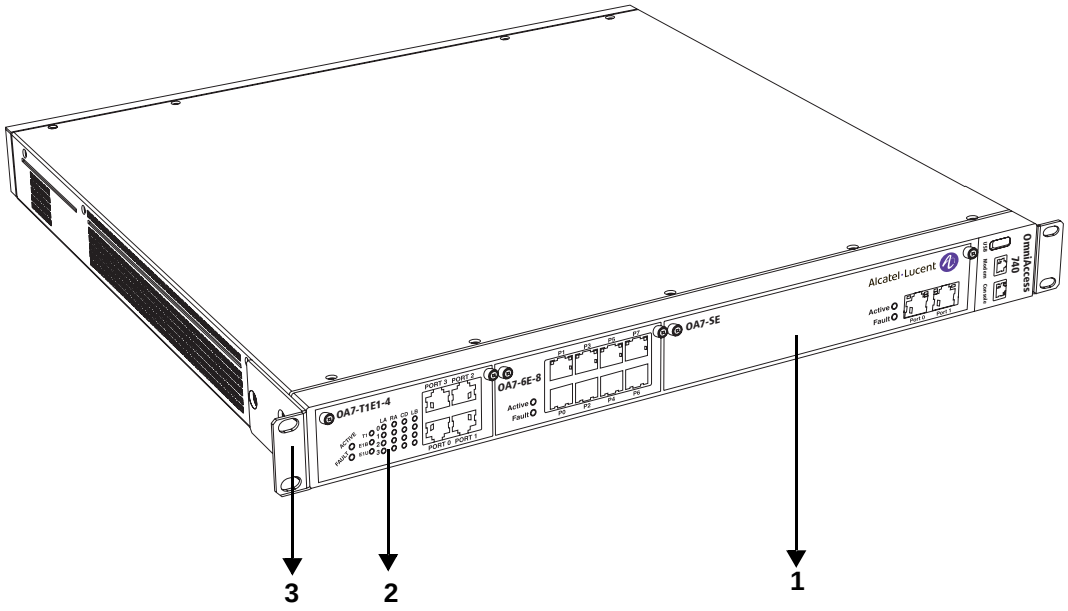
- OA-740 Chassis
- SE

OA-740 Chassis

OA-740 chassis is a rigid sheet metal structure that houses the other hardware components. one rack-unit (1 RU) chassis has a front panel, a rear panel, and perforated side panels for air flow. The chassis also integrates a power supply unit and a cooling unit.

The chassis is of 1.73-inch (4.4 cm) height, 17.5-inch (44.5 cm) width, and 17-inch (43.2 cm) depth. It weighs approximately 26.4 lbs (12.8 kgs).

Figure 1 shows an OA-740 chassis.



1. SE
2. 4-port T1E1 Line Card
3. Rack Mount Flange

Figure 1: The OA-740 Chassis

Table 1 summarizes the physical specifications of the OA-740 chassis.

Table 1: OA-740 Chassis Physical Specifications

Parameter	Value
Chassis height	1.73-inch (4.4 cm)
Chassis width	17.5-inch (44.5 cm) 19-inch (48.3 cm) with rack mount brackets
Chassis depth	17-inch (43.2 cm)
Chassis weight	26.4 lbs (12.8 kgs) maximum configuration

Figure 2 shows the air flow pattern through OA-740 chassis.

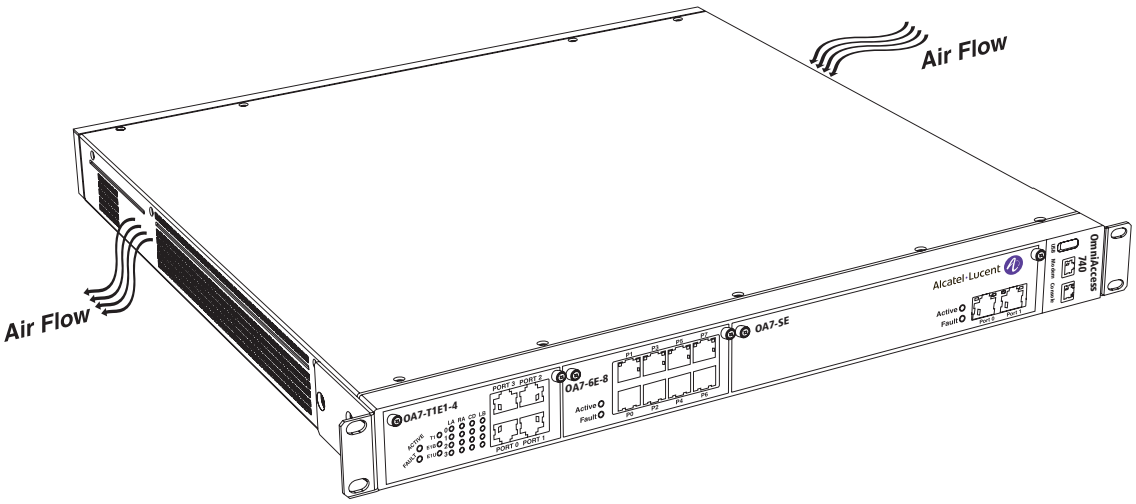


Figure 2: Air Flow Through the OA-740

The chassis has a built-in power supply system which provides power for all the OA-740 components. (Refer to the **"AC Power Specifications"** chapter for power supply specifications.) The chassis also has built-in fans for efficient cooling of the OA-740, which prevents damages due to overheating of the OA-740 components.

The front panel houses SE, line cards, status LEDs, communication ports, and card ejectors. The communication ports on the front panel provide LAN/WAN and console connectivity to the system. All the cards in the front panel dock into respective slots in the back plane. The front panel also houses rack-mount flanges that help the system to be loaded on to a 19-inch rack.

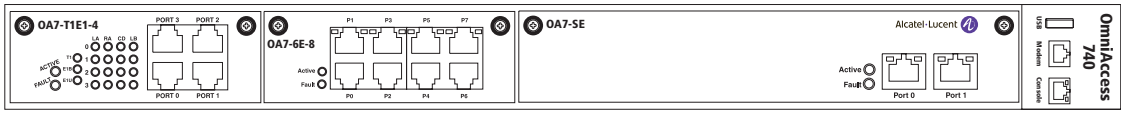


Figure 3: Front Panel

The rear panel provides power supply connectivity to the OA-740.

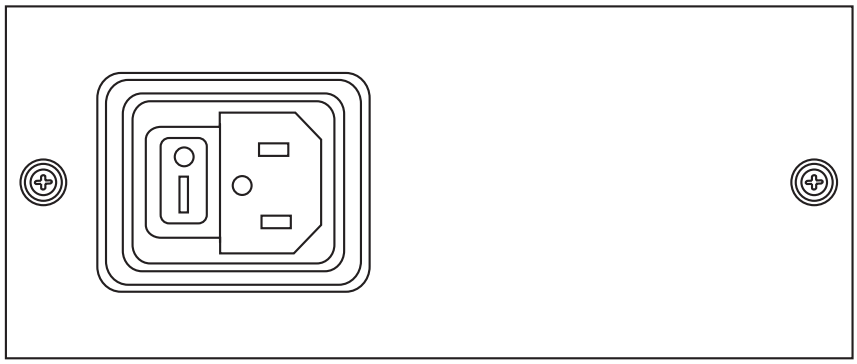


Figure 4: Rear Panel

SLOT NUMBERS

The slots in the front panel are numbered 0 through 3, from left to right.

The table below lists the slot number and the component associated with it.

Table 2: Slot Numbers

Slot Number	Location	Slot Type	Card Associated With the Slot Number
0	Front Panel	Single	Line Card
1	Front Panel	Single	Line Card
2	Front Panel	Dual	SE
3	Front Panel	Dual	SE

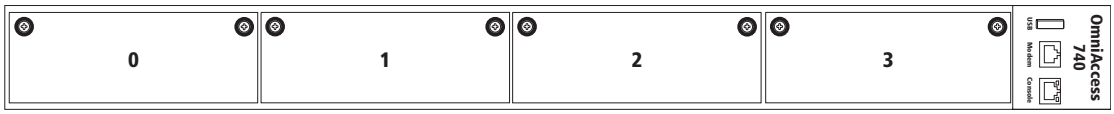


Figure 5: OA-740 (4-Slot Chassis)

LED INFORMATION

The following table shows the state of the main LEDs after startup.

Table 3: LED Status

LED	Status	Description
SE LEDs		
Active	Off	Power up status. This is the default display when the system is first powered on and before the software is loaded.
	Green	SE card is active.
	Yellow	Indicates transient conditions (e.g., booting).

Cable Connection Table

The following table summarizes the cable connections for the OA-740.

Table 4: Cable Connections

Port or Module	Port Type	Connect To
Power Unit	IEC 60320 (320) C-14 Power Inlet	Main power supply.
Ethernet	RJ-45	Ethernet hub or switch.
T1E1	RJ-45	T1E1 network.
Console	RJ-45	PC or VT100
Modem	RJ-11	Telephone Line
Serial	68 pin VHDCI Connector	V.35/X.21 modem

Back Plane

The back panel in the OA-740 provides docking slots for the SE card, the line cards, and performs switching functions.

USER MODULES

This section provides description about the modules/components that can be installed by the user.

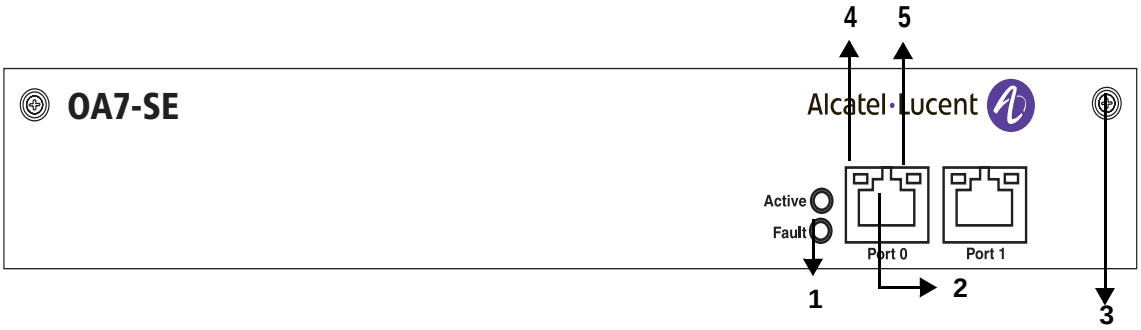
LINE CARDS

All the line cards can be mounted on a single slot except the SE card, which requires two slots. Next generation SE line cards may occupy a single slot only. An overview of the line cards is given below.

SERVICES ENGINE

The SE card is the main data processing center in the chassis. The SE card has two external auto-negotiable copper GigE ports. The GigE interfaces can auto-negotiate, transmit, and receive data packets at the rate of 10/100/1000 Mbps.

The LEDs on the SE card indicate Active or Fault conditions. The LEDs on the Gigabit Ethernet ports of the SE card indicate Link Status, Link Speed, and Activity. The SE card is a dual slot line card, and is installed in slots 2, 3.



1. SE LEDs
2. GigE Ports
3. Thumb Screw
4. Left LED on the Ethernet Port
5. Right LED on the Ethernet Port

Figure 6: Services Engine

SE Card LEDs

SE card has status LEDs for the card and for each of its Ethernet ports.

Table 5: SE Card LEDs

LED	Status	Description
Active	Green	SE card is active.
Fault	Red	Reload in progress.

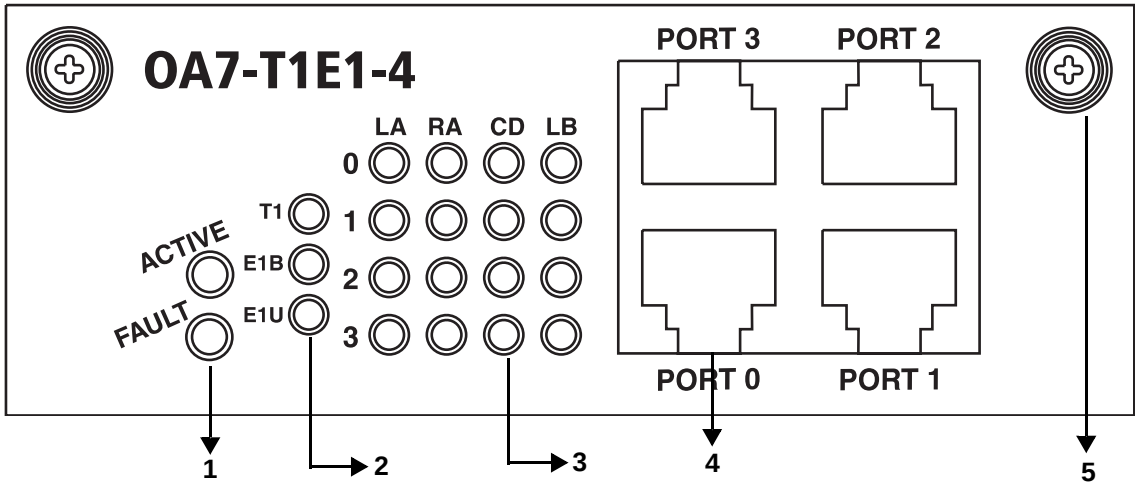
Table 6: LEDs for Ethernet Port on SE Card

LED	Status	Description
Left LED	Green	Link Speed is 1000/10 Mbps.
	Yellow	Link Speed is 100 Mbps.
	Off	Link is not active
Right LED	Amber	Traffic is active.
	Off	Traffic is not active.

4-PORT T1E1 LINE CARD

The 4-port T1E1 line card supports American and European (International) digital transmission standards. The card is a single slot line card, and is installed either in slot 0 or 1. The 4-port T1E1 line card has 4 RJ-45 interfaces. Each interface can support data rates of 1.544 or 2 Mbps depending on the type of connectivity.

The figure below shows the 4-port T1E1 Line Card.



1. T1E1 Card LEDs
2. T1E1 Mode LEDs
3. T1E1 Port LEDs
4. RJ-45 Interfaces
5. Thumb Screw

Figure 7: 4-port T1E1 Line Card

4-port T1E1 Line Card LEDs

The LEDs on the 4-port T1E1 line card indicate Active or Fault condition; T1 mode, E1 Balanced (E1B) mode, and E1 Unbalanced (E1U) mode. The 4x4 LEDs on the front of the card indicate Local Alarm, Remote Alarm, Carrier Detect, and Loopback for the 4 ports.

The following tables describe the status of LEDs on the 4-port T1E1 line card.

Table 7: T1E1 Card LEDs

LED	Status	Description
Active	Green	4-port T1E1 line card is active.
	Yellow	Indicates transient conditions (e.g., booting).
Fault	Red	Reload in progress.

Table 8: T1E1 Port LEDs

LED	Status	Description
Local Alarm (LA)	On	Indicates either Red or Yellow alarm present or Transmitting Blue/AIS alarm.
	Off	Indicates neither Red nor Yellow alarm is present and transmitter also not transmitting AIS/Blue Alarm.
Remote Alarm (RA)	On	Remote System is transmitting Blue/ AIS alarm.
	Off	Remote system is not transmitting any alarm.
Carrier Detect (CD)	On	Carrier detected (cable plugged in).
	Off	Carrier not detected (cable plugged out).
Loopback (LB)	On	Indicates port is in any of the local or network Loopback mode.
	Off	Port is not in Loopback mode.

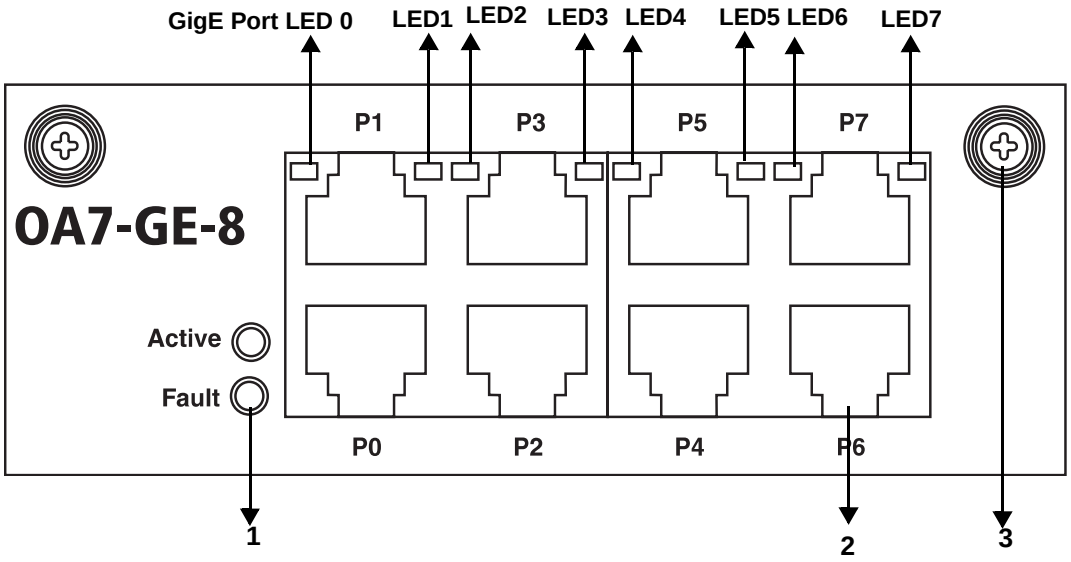
Note: You will see LED activity only when the port is administratively up.

Table 9: T1E1 Mode LEDs

T1	E1B	E1U	Description
On	Off	Off	Line card configured in the T1 mode.
Off	On	Off	Line card Configured in the E1 balanced mode.
Off	Off	On	Line card configured in the E1 unbalanced mode.
Off	Off	Off	No mode configured on the line card.

L2 8-PORT GIGABIT ETHERNET LINE CARD

The 8-port GigE line card provides Layer-2 switching functions. The card is a single slot line card, and is installed either in slot 0 or 1. The GigE card has 8 RJ-45 interfaces. These interfaces can auto-negotiate, transmit, and receive data packets at the rate of 10/100/1000 Mbps.



1. GigE Card LEDs
2. RJ-45 Interfaces
3. Thumb Screw

Figure 8: GigE Line Card

GigE Line Card LEDs

The LEDs on GigE line card indicate Active or Fault conditions. The LEDs on each of the ports indicate Link Status and Activity.

The following tables describe the status of LEDs on the GigE card:

Table 10: GigE Card LEDs

LED	Status	Description
Active	Green	GigE card is active.
	Yellow	Indicates transient conditions (e.g., booting).
Fault	Red	Reload in progress.

Table 11: LEDs for each Port on GigE Card

LED	Status	Description
LED 0	Off	Port 0 link is not active.
	Solid Green	Port 0 link is active.
	Blinking Green	Port 0 link and traffic is active.
LED 1	Off	Port 1 link is not active.
	Solid Green	Port 1 link is active.
	Blinking Green	Port 1 link and traffic is active.
LED 2	Off	Port 2 link is not active.
	Solid Green	Port 2 link is active.
	Blinking Green	Port 2 link and traffic is active.
LED 3	Off	Port 3 link is not active.
	Solid Green	Port 3 link is active.
	Blinking Green	Port 3 link and traffic is active.
LED 4	Off	Port 4 link is not active.
	Solid Green	Port 4 link is active.
	Blinking Green	Port 4 link and traffic is active.

LED	Status	Description
LED 5	Off	Port 5 link is not active.
	Solid Green	Port 5 link is active.
	Blinking Green	Port 5 link and traffic is active.
LED 6	Off	Port 6 link is not active.
	Solid Green	Port 6 link is active.
	Blinking Green	Port 6 link and traffic is active.
LED 7	Off	Port 7 link is not active.
	Solid Green	Port 7 link is active.
	Blinking Green	Port 7 link and traffic is active.

SERIAL LINE CARD (V.35/X.21)

Serial Card (V.35/X.21) provides WAN termination for four ports over serial sync interfaces. The card is a single slot line card, and is installed either in slot 0 or 1. The card allows full duplex operation on a single copper pair and operates in either DTE of DCE mode depending on the cable attached.

V.35 and X.21 are well known communication protocols over synchronous serial lines.

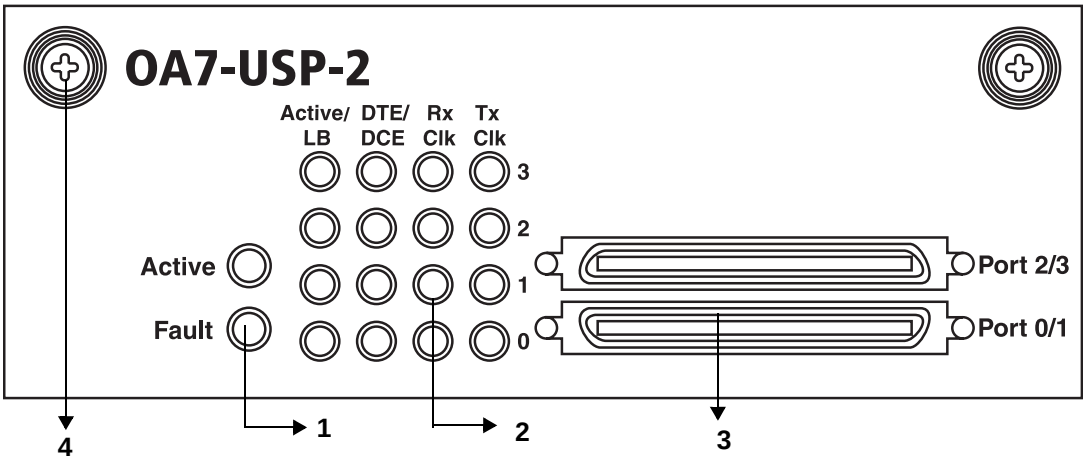
V.35 Interface

The V.35 interface was originally specified by CCITT as an interface for 48kbps line transmissions. It has been adopted for all line speeds above 20kbps.

V.35 is a mixture of balanced and common earth signal interfaces. The control lines including DTR, DSR. DCD, RTS, and CTS are single wire common earth interfaces. The data and clock signals are balanced signals.

X.21 Interface

The physical interface between the DTE and the DCE is defined in ITU-T recommendation as X.21. The DCE provides a full-duplex, bit-serial, synchronous transmission path between the DTE and the local PSE. It can operate at data rates from 600bps.



1. V.35/X.21 Card LEDs
2. V.35/X.21 Port LEDs
3. 68 pin VHDCI Connector
4. Thumb Screw

Figure 9: Serial Line Card (V.35/X.21)

Serial Card (V.35/X.21) LEDs

The LEDs on the Serial line card indicates Active or Fault condition. The 4x4 LEDs on the front of the card indicates the Active Loopback, DTE/DCE, Receive Clock, and Transmit Clock for the 4 ports.

The following tables describe status of LEDs on the Serial card.

Table 12: Serial Card (V.35/X.21) LEDs

LED	Status	Description
Active	Green	Serial card is active.
	Yellow	Indicates transient conditions (e.g., booting).
Fault	Red	Reload in progress.

Table 13: Serial (V.35/X.21) Port LEDs

LED	Status	Description
Active/LB	Green - On	Indicates ports are ready and interfaces are enabled.
	Green - Off	Indicates ports are not ready and interfaces are disabled.
	Yellow - On	Ports in Loopback Mode.
	Yellow - Off	Ports are not in Loopback Mode
DTE/DCE	Green - On	DTE cables are plugged-in
	Yellow - On	DCE cables are plugged-in
	Off	Cables not plugged in
RX Clk	Green - Flashing	DTE Receive Clock In DCE Receive Clock Out
	Off	No Receive Clock
TX Clk	Green - Flashing	DTE Transmit Clock In DCE Transmit Clock In
	Off	No Transmit Clock

Serial Card (V.35/X.21) Cable Details

The following table lists the part numbers for the Alcatel-Lucent specific V.35/X.21 cables:

Table 14: Serial Card (V.35/X.21) Cable Part Numbers

Part No.	Description
5100-0010-00	Cable ASSY V.35 DTE Cable with Male Connector (68 Pin SCSI Connector to V.35 DTE Male Connector)
5100-0011-00	Cable ASV.35 DCE Cable with Female Connector (68 Pin SCSI Connector to V.35 DCE Female Connector)
5100-0012-00	Cable ASSY X.21 DTE Cable with Male Connector (68 Pin SCSI Connector to X.21 DB15 Male Connector)
5100-0013-00	Cable AX.21 DCE Cable with Female Connector (68 Pin SCSI Connector to X.21 DB15 Female Connector)

User Interface Ports

The front panel houses the following user interface ports, top through bottom:

- **USB Port** - This port is used to connect a USB device for software upgrades, configuration backup, and restoring data.
- **Modem Port** - A built-in V.90 modem allows the user to remotely access the OA-740 through the RJ-11 port at speeds up to 56 Kbps.
- **Console Port** - The RS232 serial interface allows the user to access the system console at 9600 baud.

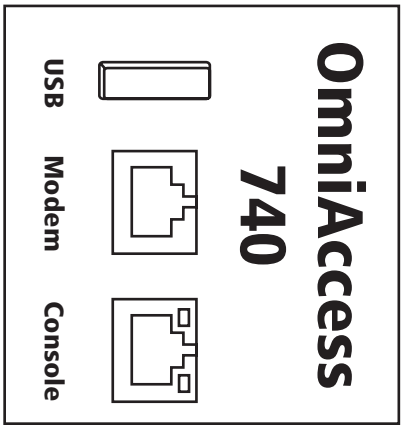


Figure 10: Ports on the Front Panel

Cooling Unit

The cooling unit is integrated in the chassis. The cooling unit houses speed fan for efficient chassis cooling.

SYSTEM SPECIFICATIONS

The tables below provide environmental, power, and physical specifications that are required for the smooth operation of your OA-740.

Table 15: Environmental Specifications

Parameter	Value
Temperature, operating	0 to 45°C
Temperature, non-operating	-25 to 70°C
Humidity, operating	10 - 90% (non-condensing)
Altitude, operating	10,000 ft
Altitude, non-operating	15,000 ft

Table 16: Power Specifications

Parameter	Value
AC-input voltage range	100-240 Volts
AC-input current	3 AMP
Power Consumption	250 Watts

Table 17: Physical Specifications

Parameter	Value
Dimensions (H x W x D)	(1.73 x 17.5 x 17) in. (4.4 x 44.5 x 43.2) cm.
Weight	26.4 lbs (12.8 kgs)
Height in Rack Units (RU)	1 Rack Unit (1 RU)

VALID SYSTEM CONFIGURATION

There should be at least one SE card installed in the OA-740.

CHAPTER 3

INSTALLING THE OmniAccess 740

This chapter guides you through the process of preparing your OmniAccess 740 (OA-740) for installation.

This chapter describes the equipment, tools, power, and site requirements for installing the OA-740. It contains the following sections:

Before installing your OA-740, you should consider the power and cabling requirements that must be in place at your installation site. Other factors to consider would be the environmental conditions; the installation site should maintain normal and safe operation of the system.

PREPARING FOR INSTALLATION

The OA-740 is shipped with all the user modules installed in the chassis. However, optional modules may be shipped in a separate package from the main system.

If you wish to install the components on your own, you need to understand the proper installation procedure and the safety guidelines involved in performing the same.

If you notice any deviations in the contents received as against the order, contact Alcatel-Lucent Technical Support immediately.

REQUIRED TOOLS AND EQUIPMENT

You need the following items to install the OA-740:

- ESD-preventive wrist strap
- Antistatic mat
- No. 2 Phillips screwdriver
- 1/4-in. flat-blade screwdriver
- Tape measure (optional)
- Level (optional)
- A total of 12 M5 x 10-mm Phillips flathead screws to secure the brackets to the chassis
- A total of 16 slotted 10-32 x 3/8 screws for rack installation

INSTALLATION CHECKLIST

To achieve a successful hardware installation, use the following checklist as a guideline before commencing with the installation.

Step 1: Unpack the system.

Open the carton the right way up, and carefully remove contents in the package. Carefully remove the chassis from the carton.

Note: Do not discard the shipping container. You will need the container if you move or ship the OA-740 in future.

Step 2: Verify the contents of the package.

Verify that the contents are included in the shipping container (the accessories box might be separate):

- One OA-740, fully assembled
- One or more accessories boxes (some or all may be shipped separately)

Note: The entire OA-740 documentation set is shipped with each system. These documents can also be downloaded from the Alcatel-Lucent Website.

Step 3: Verify the cards installed.

Verify that the line cards installed in your OA-740 match the card types on the packing list.

Step 4: Have the tools to mount the chassis on the rack.

Keep tools, such as power screw-drivers, screws, cable guides/ties, etc., ready with you for mounting the chassis on the rack.

SAFETY MEASURES

The sections below describe the safety instructions to be followed while using the OA-740.

Note: This equipment has been designed to the highest quality standards of materials, workmanship, and safety. Do not bypass any of the safety features of this equipment or operate this in an improper environment.

PREVENTING INJURY

Warning: Observe the following safety warnings to prevent accidental injury while working with the OA-740.

Follow the guidelines given below to avoid injury while working with the OA-740:

- To avoid injury, be careful when lifting the chassis out of the shipping box.
- Never attempt to rack mount the OA-740 chassis unaided. Ask an assistant to help you for holding the chassis.
- Never operate the OA-740 with exposed power-supply units.
- Never operate the OA-740 if the chassis becomes wet or the area where the chassis installed is wet.

EQUIPMENT GUIDELINES

The following guidelines will help to ensure your safety and protect the equipment. This list does not cover all potentially hazardous situations. However, Alcatel-Lucent advices you to observe caution while working with the system.

Warning: To avoid hazard from electrical shock and/or fire, adhere to safety practices listed in this section and identified within instructions of this document.

Warning: Do not turn ON/OFF the OA-740 without following the stated procedure.

Warning: Potentially hazardous voltage inside. Service should be performed only by qualified personnel.

- The OA-740 is in compliance with national and local electrical codes.
- Review the safety warnings before installing, configuring, or maintaining the OA-740.
- Keep the system area clean and dust-free during and after installation.
- Keep tools and rack shelf components away from walk areas.
- Do not wear loose clothing, jewelry, or other items that could get caught in the rack/shelf. Fasten your tie or scarf and sleeves.
- The equipment grounding should be in accordance with local and national electrical codes.
- Input and earth wiring must be provided at the installation site and protected in accordance with local and national wiring regulations.
- The OA-740 operates safely when it is used in accordance with its marked electrical ratings and product usage instructions.

Lifting Safely

A fully configured OA-740 weighs approximately 26.4 lbs (12.8 kgs). Whenever you lift any heavy object, follow the below guidelines:

Warning: Keep your back straight while lifting the OA-740 to prevent injury.

- Ensure that the system is powered OFF.
- Disconnect all external cables before lifting or moving.
- Do not attempt to lift the equipment by yourself; have someone to assist you.
- Ensure that your footing is solid, and balance the weight of the object between your feet.
- Lift the system slowly; never move suddenly or twist your body as you lift.
- Lift the chassis from the bottom; grasp the underside of the chassis exterior with both hands.

Safety with Electricity

Alcatel-Lucent advices you to follow the guidelines given below as a measure of safety.

Warning: To avoid shock, do not open or attempt to service the unit or its associated power supply cards.

Caution: When connecting the power supply to the system and grounding, ensure that it presents no threat, harm, or non-compliance to operating staff or property. Verify that the unit is grounded properly and protected from voltage surges and static charges.

Caution: Observe all regional and national building and safety regulations.

Follow these basic guidelines when working with any electrical equipment:

- Disconnect all power cables and external cables before installing or removing the OA-740.
- Do not work alone when potentially hazardous conditions exist.
- Never assume that power has been disconnected from a circuit; always check.
- Do not perform any action that creates a potential hazard to people or that makes the equipment unsafe.
- Never install/work with equipment that appears damaged.
- Carefully examine your work area for possible hazards, such as moist floors, ungrounded power extension cables, and missing safety grounds.

Warning: Explosive Device Proximity Warning—Do not operate the OA-740 near unshielded blasting caps or in an explosive environment unless the unit has been modified especially to be qualified for such use.

In addition, use these appropriate guidelines while working with any equipment that is disconnected from a power source, but still connected to the telephone wiring or other network cabling:

- Never install or remove telephone wiring during a lightning storm.
- Never install or remove telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch un-insulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.

PREVENTING ELECTROSTATIC DISCHARGE DAMAGE

Electrostatic Discharge (ESD) damage, which occurs when electronic cards or components are improperly handled can result in complete or intermittent system failures. The line cards consist of printed circuit boards with Integrated Circuits (IC) and should be handled at edges or faceplate only.

Warning: Always tighten the captive tabs and levers on all the devices. These tabs and levers prevent accidental removal, provide proper grounding for the system, and help to ensure that the cards are properly fitted in the shelf.

Follow the guidelines given below for preventing ESD damage:

- Always use an ESD wrist strap or ankle strap and ensure that it makes good skin contact and is properly grounded.
- Do not touch the printed circuit board, and avoid contact between the printed circuit board and your clothing.
- Ensure the line cards are fully inserted in their respective chassis slots and the thumb screws are tightened.

Warning: For safety, periodically check the resistance value of the antistatic strap. The measurement should be in 1 and 10 mega ohms range.

SITE REQUIREMENT GUIDELINES

The guidelines in this section help you to maintain and protect your OA-740 and its components from potential damage from over-voltage, extreme temperature conditions, and other adverse conditions. To assure normal operation and avoid unnecessary maintenance, plan your site configuration and prepare your site before installing the OA-740.

Follow these general precautions when planning your equipment locations and connections:

- Make sure that the site maintains an ambient temperature between 15°C and 25°C, and keep the area around the system to be clean and dust-free.
- Ensure that the cooling vents are not blocked and there is adequate air flow due to ample clearances around the OA-740.
- Alcatel-Lucent recommends keeping the OA-740 off the floor and out of any area that tends to collect dust.
- Follow ESD prevention procedures to avoid damage to equipment. Damage from static discharge can cause immediate or intermittent equipment failure.

The table below lists the operating and non-operating environmental site requirements. The ranges listed are those within which the OA-740 will continue to operate; however, a measurement that is approaching the minimum or maximum of a range indicates a potential problem. You can maintain normal operation by anticipating and correcting environmental anomalies before they approach minimum or maximum operating range.

Table 18: Environmental Site Requirements

Specification	Minimum	Maximum
Temperature, operating	0°C	45°C
Temperature, non-operating	–25°C	70°C
Humidity (non-condensing), operating	10%	90%
Altitude, operating	Sea level	10,000 ft. (3048 m)
Altitude, non-operating	Sea level	15,000 ft. (4572 m)
Clearance, air intake, and exhaust	20 inches (50.8 cm)	—

POWER SUPPLY OVERVIEW

The following sections provide power supply requirements for the OA-740.

POWER SUPPLY SPECIFICATIONS

The OA-740 requires 100/240V and 5A (RMS) @115V, 3A (RMS) @230V AC power. A fully loaded OA-740 consumes less than 250W of power.

For more details on power supply specifications, see **"AC Power Specifications"**.

The following section provides the procedure for connecting input power to your OA-740.

Warning: Read the installation instructions before you connect the system to its power source.

CONNECTING AC INPUT POWER

Warning: When installing the system, the ground connection must always be made first and disconnected last.

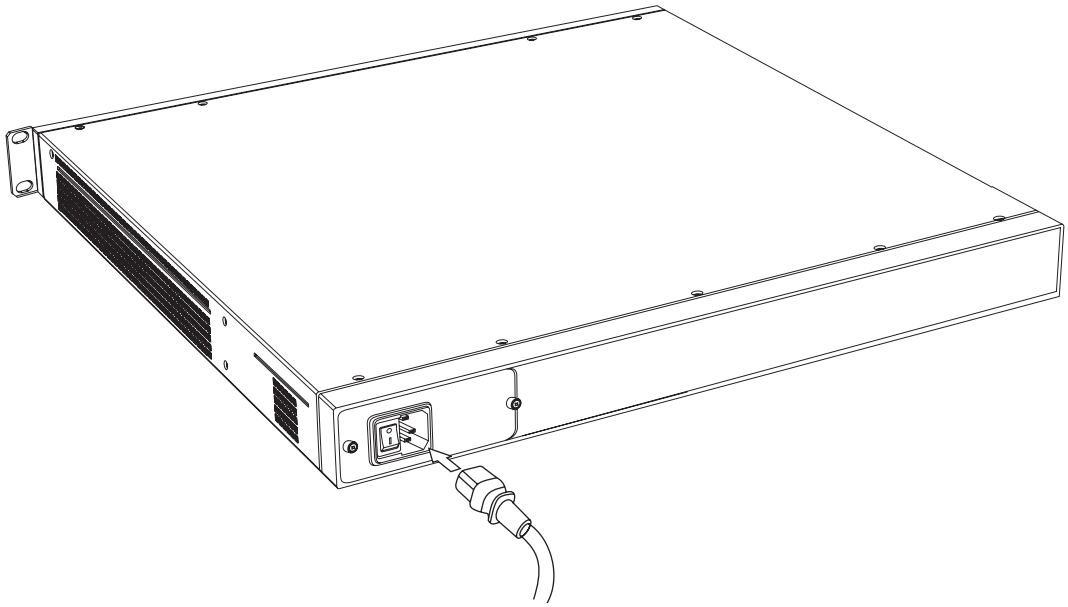


Figure 11: Connecting Power Cord

- Use the specified power cord to power your system.
- Connect the system end of the connector to the OA-740, as shown in above figure.
- Connect the power plug to the utility power socket.
- Be sure that the power cable is not left in a hazardous position that may restrict movement of personnel or that may fray due to movement of other equipment near the system.

PLANT WIRING

The following are guidelines for setting up the plant wiring and cabling at your site. When planning the location of the new system, consider the distance limitations for signaling, Electromagnetic Interference (EMI), and connector compatibility, as described in the sections below:

INTERFERENCE CONSIDERATIONS

Interference can occur when wires are run for any significant distance in an electromagnetic field. To prevent damages caused by interference, do the following:

- Ensure that there is no radio interference emanating from the plant wiring.
- Ensure that there is no electrical hazard by conducting power surges through lines and into equipment caused by EMI.
- Use a high-quality twisted-pair cable with one ground conductor for each data signal, when applicable.
- Give special consideration to the effect of a lightning strike near the system location. The electromagnetic pulse caused by lightning or other high-energy phenomena can destroy electronic devices.

DISTANCE LIMITATIONS AND INTERFACE SPECIFICATIONS

The size of your network and the distances between connections depend on the signal type, speed, and transmission media. For example, standard coaxial cable has a greater channel capacity than twisted-pair cable.

When preparing your site for network connections to the OA-740, you should consider the following:

- Type of cabling required (fiber, shielded twisted-pair, or unshielded twisted-pair).
- Distance limitations.
- Cables needed for interface connections.
- Any additional interface equipment required, such as transceivers, hubs, switches, modems, etc.

PRECAUTIONS TO BE TAKEN WHILE FIXING POWER CABLES

Follow these precautions and recommendations when planning power connections to the OA-740:

- Check the power at your site before installation and periodically after installation to ensure that you are receiving uninterrupted power.
- Install a power conditioner if necessary.
- Install proper grounding to avoid damage from lightning and power surges.

GENERAL INSTALLATION

Planning a proper location for the OA-740 and the layout of your equipment rack or wiring cabinet are essential for successful operation of the system. Equipment placed too close together or inadequately ventilated can cause system over-temperature conditions, which may lead to system failure. Follow the precautions given below to avoid problems during installation and ongoing operation.

The OA-740 should be installed as per guidelines provided in the **"Site Requirement Guidelines"** section of this document. Please follow the guidelines in choosing a suitable and safe location.

When installing the system, ensure that the location is clean and safe, and that you have considered the following:

- The OA-740 requires at least 3 inches of clearance on the right and left sides.
- The OA-740 should be installed off the floor. (Excessive dust inside the system can cause over-temperature conditions and component failures.)
- There must be approximately 20 inches (50.8 cm) of clearance at the front and rear of the OA-740 for installing and replacing the system units, or accessing network cables or equipment.
- Line card and power supply filler panels are installed.
- The OA-740 receives adequate ventilation (it should not be installed in an enclosed cabinet where ventilation is inadequate).
- Adequate ground (earth) connection for your OA-740 is provided.

RACK-MOUNTING THE OA-740

The OA-740 is mounted on a standard 19-inch equipment rack. To easily access the electrical cables while the system is installed in a rack, ensure that you have easy access to the front and rear of the system, and that there is about 20-inch clearance at the front and rear of the rack.

You can also mount the OA-740 on an equipment shelf provided that the rack dimensions allow you to secure the system to the shelf. However, Alcatel-Lucent recommends rack-mounting the OA-740.

To rack-mount the OA-740, consider the following guidelines:

- **Maximum recommended operating temperature**
  The maximum recommended operating temperature for the OA-740, indoor is 45°C. Determine a suitable operating environment based on this recommendation.
- **Elevated operating ambient temperature**
  If the unit is installed in a closed or multi-unit rack assembly, the operating temperature of the rack environment may be greater than the ambient temperature of the room. Keep this in mind when installing the OA-740.
- **Reduced Airflow**
  Install the OA-740 shelf in the rack so that the amount of airflow required for safe operation of the equipment in not compromised.
- **Mechanical Loading**
  Mount the OA-740 in the rack so as to avoid a potentially hazardous condition due to uneven mechanical loading.
- **Circuit Overloading**
  When you connect the OA-740 to the supply circuit, consider the effect that overloading of the circuits might have on over current protection and supply wiring.
- **Reliable Grounding**
  Maintain reliable grounding for the OA-740 and all rack-mounted equipment, giving particular attention to supply circuits.

Note: Alcatel-Lucent strongly recommends that you provide a ground connection to the OA-740.

PARTS REQUIRED

The following tools and parts are required to rack-mount the OA-740:

- AC power supply unit
- One 6-gauge ground cable
- Two hex nuts and M4 screws
- Four 10-32 x 3/8-inch slotted screws
- 3/8-inch nut driver
- No. 2 Phillips screwdriver
- 1/4-inch flat-blade screwdriver
- Cable ties, if necessary

INSTALLING THE OA-740 IN THE RACK

Caution: Fully loaded, the OA-740 weighs 26.4 lbs (12.8 kgs). Do not try to mount the OA-740 chassis in the rack unassisted.

Caution: To prevent injury, review the safety precautions in the **"Safety Measures"** section before installing the OA-740 in the rack.

To install the OA-740 chassis in the rack, complete the following steps:

Step 1: Ensure that the rack is stable, and verify that your path to the rack is unobstructed.

Step 2: Ensure that the rack mount brackets are in the same level.

Step 3: Position the OA-740 chassis in front of the rack.

Step 4: Lift the OA-740 by the side of chassis, and slide the chassis into the rack. Push it back until the brackets meet the mounting strips or posts on both sides of the equipment rack. When the chassis is slid back all the way, make one or two people hold the chassis in place.

Step 5: Insert the slotted screws (two screws per bracket) through the brackets and into the mounting strip. Tighten all the screws.

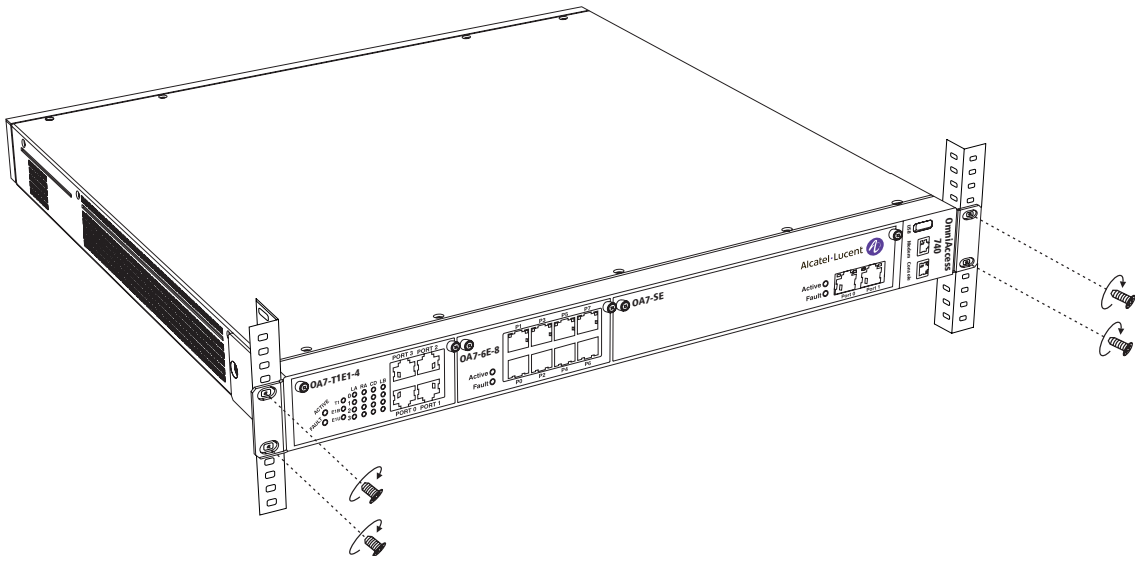


Figure 12: Rack Mounting the OA-740

INSTALLING USER MODULES

The following sections describe the procedure to install the user modules in your OA-740.

INSTALLING LINE CARDS

Follow the procedure detailed below to install the line cards.

Caution: Always handle the line cards by the edges; do not touch the components or connector pins.

Step 1: Insert the line cards in their respective slots (0, 1, 2, 3).

By default, SE card is installed in slots 2, 3. The other line cards can be installed in slots 0, 1.

Step 2: Verify that the line card is rested on the guide and it rides smoothly in the slot.

Step 3: Push the line card firmly and ensure that the card is fully inserted in its respective slot and tighten the thumb screws.

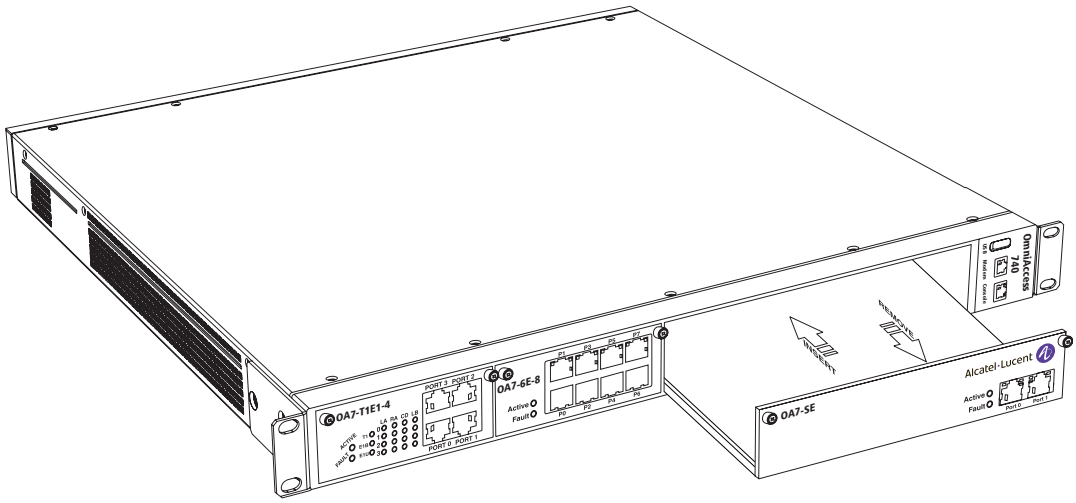


Figure 13: Installing Services Engine

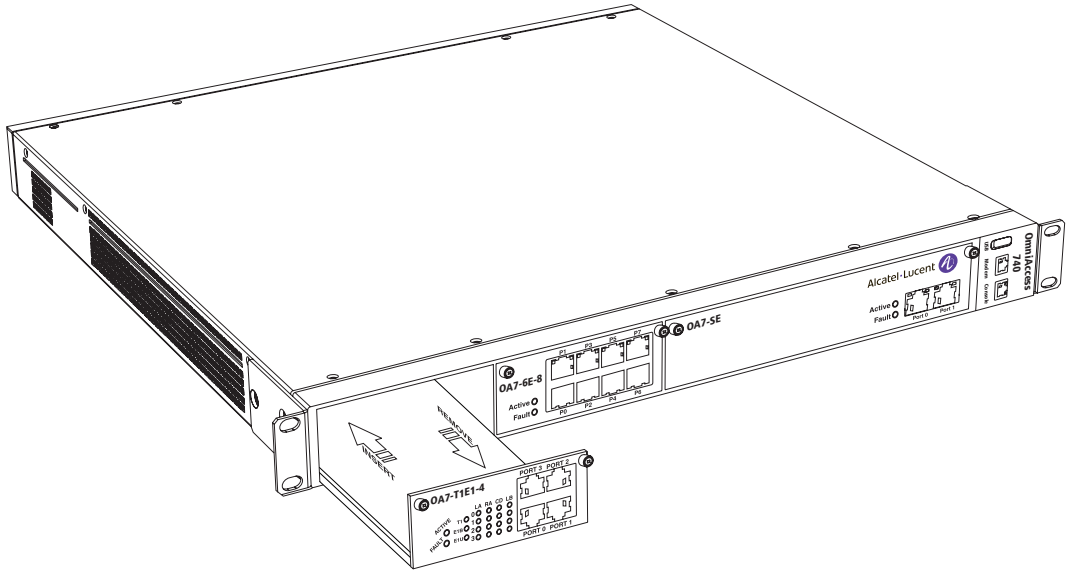


Figure 14: Installing Line Card

REMOVING THE LINE CARDS

To remove the line card, loosen the thumb screws provided on the line card and pull the line card out of the slot.

INSTALLING FILLERS

Fillers are used to cover unused slots. The procedure to install different types of fillers is outlined below.

Step 1: Insert the filler in the empty slot.

Step 2: Verify that the filler is rested on the guide and rides smoothly in the slot.

Step 3: Push the filler firmly and ensure that the filler is fully inserted in its respective slot and tighten the screws.

REMOVING FILLERS

To remove the filler for the line card slots, loosen the thumb screws provided on the line card and pull the filler out of the slot.

CHAPTER 4

STARTING THE OmniAccess 740

INTRODUCTION

This chapter explains the procedure for starting the OmniAccess 740 (OA-740), and connecting to the system console port for Command Line Interface (CLI) access for performing basic configuration tasks.

CHECKING CONDITIONS PRIOR TO SYSTEM STARTUP

Before you power ON the OA-740, check the following:

1. Ensure that the utility power cable is connected to a valid power cord in the rear panel, and power is available from this source.
2. Ensure that the SE is correctly and securely installed.
3. Ensure that a PC or VT100 terminal is connected to the console port, using the appropriate console cable. (If the system is not connected to a console, see the **"Connecting to the System Console Port"** section of this document to connect the system to a console.)

STARTING THE OA-740

After installing the OA-740 and connecting the cables, follow the procedure given below to start the system:

Step 1: Power ON the OA-740.

Power on the OA-740 by turning on the external power switch located near the power cord on the rear panel. If power supply is available, you can hear the rotation of system fans, and the system begins the bootup sequence.

Step 2: Monitor the system for various bootup messages.

Once the system begins to startup, monitor the SE LEDs for various stages of the booting process.

The following table shows the state of SE LEDs after startup.

Table 19: LED Status

LED	Status	Description
SE LEDs		
Active	Off	Power up status. This is the default display when the system is first powered on and before the software is loaded.
	Green	SE card is active.

Step 3: Configure the system.

Once the system bootup is complete, the system enters the *initial configuration setup* mode, which is an interactive mode for configuring the system. Follow the prompts on the screen to input the required information.

For further customizing and changing the configuration, it would be necessary to use the full-fledged CLI access to the system. To use the CLI and to know more about its usage, refer to the “**OmniAccess 700 CLI Configuration Guide**”.

Step 4: If all the activities have proceeded normally and if the initial configuration is complete, the OA-740 is installed and is now ready for deployment in your network.

CONNECTING TO THE SYSTEM CONSOLE PORT

The OA-740 has a RJ-45 console port connector. A RJ-45 - RJ-45 “roll-over” cable along with RJ-45 to DB-9 (female) adapter is provided with the system to access the console port via a DTE (computer/terminal). Refer to **“Pin Connector Details for OmniAccess 740”** for detailed information on cable pin connection.

To connect the OA-740 to the console, perform the following steps:

Step 1: Connect the RJ-45 end of the console cable to the front-panel console port on the OA-740 and the DB-9 end to the serial-port (COM) on your computer/ terminal.

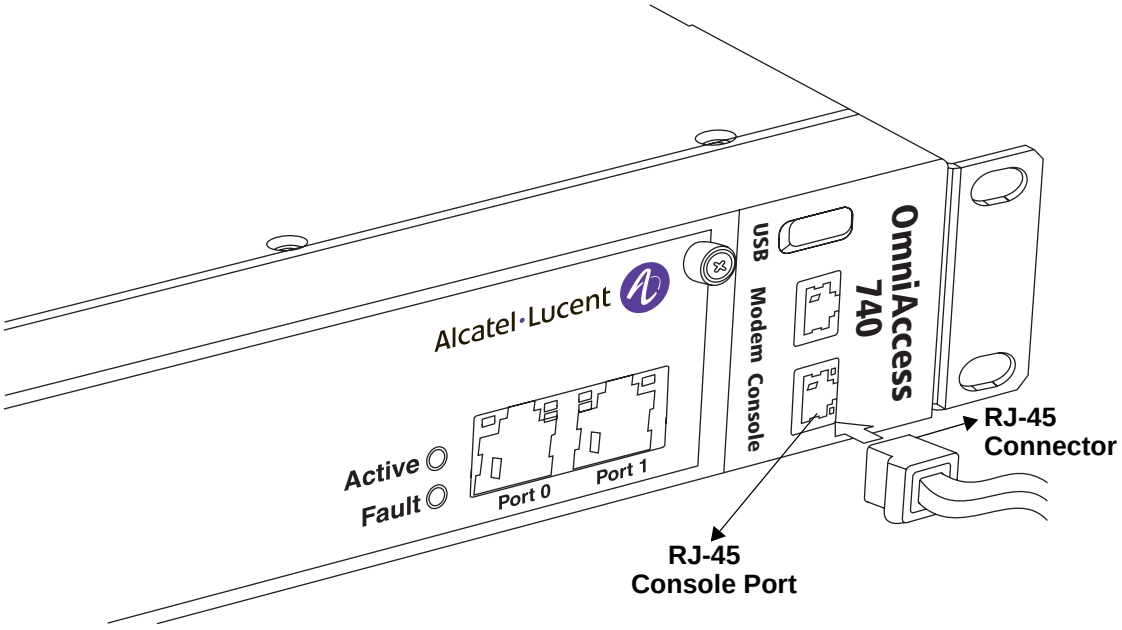


Figure 15: Connecting to the System Console

Step 2: Start your terminal emulation software.

Example: *kermit* or *hyperterm* terminal (if you are using Microsoft Windows operating system) or *minicom* terminal (if you are using Unix/Linux operating system).

Step 3: Set the console session as follows:

Table 20: Console Properties

Parameter	Value
Baud rate	9600
Parity	None
Data Bits	8
Stop Bit	1
Flow control	None

Step 4: Watch for console message output or press the **Enter** key to get the device prompt.

PERFORMING BASIC CONFIGURATION TASKS

Once you boot the OA-740 and connect to the console, you can start configuring your OA-740 either through the CLI or the web-based Graphical User Interface (GUI).

ACCESSING OA-740 THROUGH CLI

The CLI is the primary interface to access the OA-740 through the console. The CLI allows you to configure, monitor, and troubleshoot the system, and enables network connectivity.

To perform initial configuration of your system, follow the procedure given below:

Step 1: Once the system bootup is complete, you are asked to configure the password for a special user - **superadmin**. Superadmin is authorized to execute any command. You need to set the superadmin password when the following prompt is displayed:

```
Enter the new password for superadmin:
```

Once you enter the password for the superadmin, you will be asked to reconfirm the password, with the following prompt:

```
Retype the new password:
```

After confirming the password, you will be asked to login using a username. The below prompt appears.

```
Username:
```

Enter the user name as superadmin. Now, you will be prompted for a password.

```
Password:
```

Enter the newly configured superadmin password.

Note: If you have any pre-existing user account, you can enter at the user name and password prompts, else use the superadmin user account.

Step 2: After entering the correct user name and password, the ALU> prompt is displayed. If the prompt is not seen, press the **Enter** key a few times.

```
ALU>
```

By default, the host name is “**ALU**”. (To configure a different host name, use the configure “hostname <*name*>’ command in the Configuration mode.)

Step 3: At the **ALU** prompt, enter the **enable** command to enter the Super User Mode (SUM).

Example:

```
ALU> enable
ALU#
```

Step 4: From **SUM**, you can enter the Configuration Mode (CM). The CM is used to configure the system globally, to enter specific configuration modes or to configure specific elements, such as interfaces or protocols.

Enter the **configure terminal** command to enter the Configuration mode.

Example:

```
ALU# configure terminal
ALU(config)#
```

The above steps are enough to configure the OA-740 via console.

Step 5: To configure the system remotely (Telnet, SSH, and Modem), you need to configure basic Authentication, Authorization, and Accounting (AAA) configuration. AAA is a system in IP-based networking to control which users have access to the system, what resources users have access to, and to keep track of the activity of users over a network.

To enable AAA services on your system, enter the **aaa services** command in the Configuration mode.

Example:

```
ALU(config)# aaa services
```

Step 6: Set the enable password (system password). To set the system password, enter the following command:

```
enable {secret|password} [5] <password>
```

Example:

```
ALU(config)# enable secret test
Secret for level 15 is set
```

Note: By default, only the console session is available without the enable password configuration.

Step 7: Establish authentication for new users by configuring new user accounts. To configure a new user account, use the following command:

username <*user-name***>** {**password** [**5**] **<***password***>**|**nopassword**|
secret [**5**] **<***password***>**}

Example:

ALU(config)# username user1 **password** pass1

Step 8: Configuring an interface. Enter the following command to enter the Interface Configuration mode.

interface <*name***> <***slot/port***>**

Example:

ALU(config)# interface GigabitEthernet 7/0
ALU(config-interfaceGigabitEthernet7/0)#

(For more information on configuring interfaces, refer to the '**The Command Line Interface**' chapter in the **OmniAccess 700 CLI Configuration Guide**.)

Step 9: Administratively bring up the interface by using the '**no shutdown**' command:

Example:

ALU(config-if GigabitEthernet7/0)# no shutdown

Step 10: Configure an IP address for the interface by entering the following command. Enter the IP address in the valid IP address format A.B.C.D.

ip address {*<ip-address subnet-mask>*|*<ip-address/prefix-length>*}

Example:

ALU(config-if GigabitEthernet7/0)# ip address *192.168.1.1/24*

Note: In the above example, 192.168.1.1 is assumed to be the GigE 7/0 LAN facing interface and IP address. You can configure the IP address based on your topology.

Step 11: Enable SSH and Telnet for in-band Management. The following command enables SSH/Telnet connection to a remote computer:

- **Secure Shell (ssh)** is a program for logging in to a remote machine that provides secure communication between two systems.

  ssh {**enable**|**disable**}

  Example:

  ALU(config)# ssh enable

- **Telnet** is a user command and an underlying TCP/IP protocol for accessing remote computers. Telnet is a program that enables connection to foreign or remote host computers, and provides access to information on them.

  telnet {**enable**|**disable**}

  Example:

  ALU(config)# telnet enable

Step 12: Enable HTTP & HTTPS for web-based management.

- HTTP is the primary protocol used for the transfer of files over the World Wide Web. You can access the OA-700 using HTTP through a web browser after being authenticated.

  http {**enable**|**disable**}

  Example:

  ALU(config)# http enable

- HTTPS, in addition to the normal HTTP uses SSL encryption for secure transmission of files.

  Example:

  ALU(config)# https enable

Step 13: Enable Modem for Out of Band Management.

modem {**enable**|**disable**}

Example:

ALU(config)# modem enable

Step 14: Show Chassis - The '**show chassis**' command provides a physical inventory of the running chassis components for a specific slot or for the entire system.

Example:

```
ALU> show chassis
Physical inventory at Tue Oct 30 12:31:50 2007
        System started approximately Tue Oct 30 12:30:32 2007
        Uptime is 0 days 0 hours 3 minutes 40 seconds
T1E1 - Four port T1E1 (active)
        Slot number: 0
        Part number: 902604-90
        Manufacturer:  ALU
        Description: Four port T1E1
        Serial number:  ND0533001165
        Version: 00
        Revision: 55
        Deviation: 0000
        Loader version: 2.29
        ALU-OS version: 2.2.57
SE - Service engine (active)
        Slot number: 3
        Part number: 902601-90
        Manufacturer:  ALU
        Description: Service engine
        Serial number:  DD0538002041
        Version: 01
        Revision: 02
        Deviation: 0001
        Opteron CPU Version: 10
        Opteron CPU Frequency: 1994 MHz
        LoL firmware version: 2.2.56
        Loader version: 2.29
```

```
        ALU-OS version: 2.2.57
        MDC
                Serial number: WL0534000130
                Deviation: 0002
                Revision: A1
                Version: 01
BP - ALU OA740 chassis (passive)
        Slot number: 29
        Part number: 902610-90
        Manufacturer:  ALU
        Description: ALU OA740 chassis
        Serial number:  WL0537000210
        Version: 00
        Revision: 01
        Deviation: 0001
        Base MAC: 00:11:8b:00:70:00
ALU#
```

Step 15: Save the running configuration to the startup configuration.

Example:

```
ALU(config)# write mem
```

Note: Be sure to save the running configuration. If this is not done, when the system reboots, the configuration is lost.

For further configuration of your OA-740, refer to the **OmniAccess 700 CLI Configuration Guide** provided in the OA-740 Documentation CD along with your system.

CONNECTING THE SYSTEM TO THE NETWORK

This section details the procedure to connect to your OA-740 through the internal or external network.

CONNECTING TO INTERNAL NETWORK

To access the OA-740 through hosts in internal network/LAN, you can use the following:

- Accessing OA-740 Through GUI
- Connecting Through Telnet
- Connecting Through SSH

ACCESSING OA-740 THROUGH GUI

Follow the procedure given below to access and configure the OA-740 through a GUI.

Note: To access the OA-740 through the GUI, an IP interface must be configured in your system.

Step 1: Configure IP address of an interface.

To configure an IP address of a given interface, follow the steps detailed in the "Accessing OA-740 Through CLI" section of this document.

Step 2: Open a Web browser from your PC.

Step 3: In the address bar/field, type the IP address of the interface and press the **Enter** key.

Example:

```
http://<ip address>
http://192.168.1.1/24
```

The login page for the Web GUI is displayed in the browser window.

Step 4: Enter the user name and password, and press the **Enter** key. This will launch a web interface to configure your OA-740.

For further configuration of your OA-740, refer to the **OmniAccess 700 Web GUI User Guide** provided in the OA-740 Documentation CD.

CONNECTING THROUGH TELNET

Telnet is a user command and an underlying TCP/IP protocol for accessing remote computers. Telnet allows you to log on as a regular user with preset privileges to the specific application and data on that remote computer.

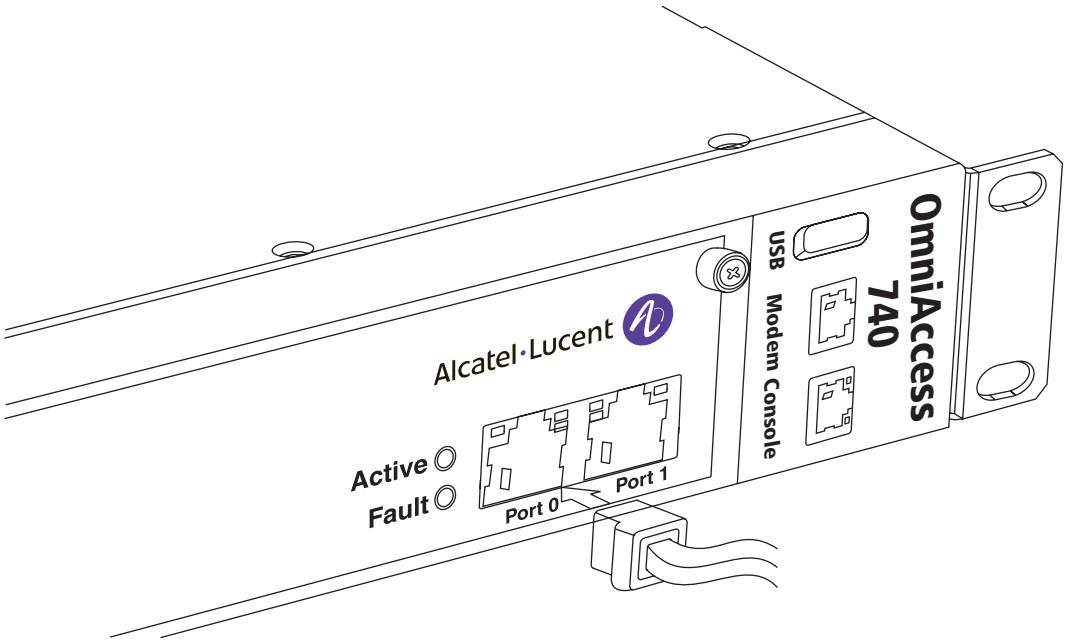


Figure 16: Connecting to Internal Network

To establish a Telnet session with the OA-740, follow the procedure below:

Step 1: Connect the RJ-45 cable from the Ethernet port in the SE card on the front panel of the OA-740 to the internal router, switch, or hub in your LAN.

Step 2: Open a Telnet session, for example, to **192.168.1.1**.

- From the Windows host, click **Start > Run**, type **telnet 192.168.1.1**, and click **OK**.
- From the Unix/Linux host, from the terminal window, type **telnet 192.168.1.1** and press the **Enter** key.

Step 3: Enter the username and password at the prompt.

You are now ready to access the OA-740, using a Telnet session.

CONNECTING THROUGH SSH

Secure Shell (SSH) is a Unix-based command interface and protocol for securely getting access to a remote computer. SSH uses the RSA public key cryptography for both connection and authentication.

To establish an SSH session with the OA-740, follow the procedure below:

Step 1: Connect the RJ-45 cable from the Ethernet port in SE card on the front panel of the OA-740 to the router, switch, or hub in your internal network/LAN.

Step 2: Open an SSH session, for example, to **192.168.1.1**.

From the Unix/Linux host, from the terminal window, type **ssh <username>@192.168.1.1**, and press the **Enter** key.

Step 3: Enter the username and password at the prompt.

You are now ready to access the OA-740 using an SSH session.

CONNECTING THROUGH EXTERNAL NETWORK

To establish a link between the OA-740 and the external network (WAN/Internet), connect the RJ-11 jack from the external modem to the modem port provided in the front panel of the OA-740.

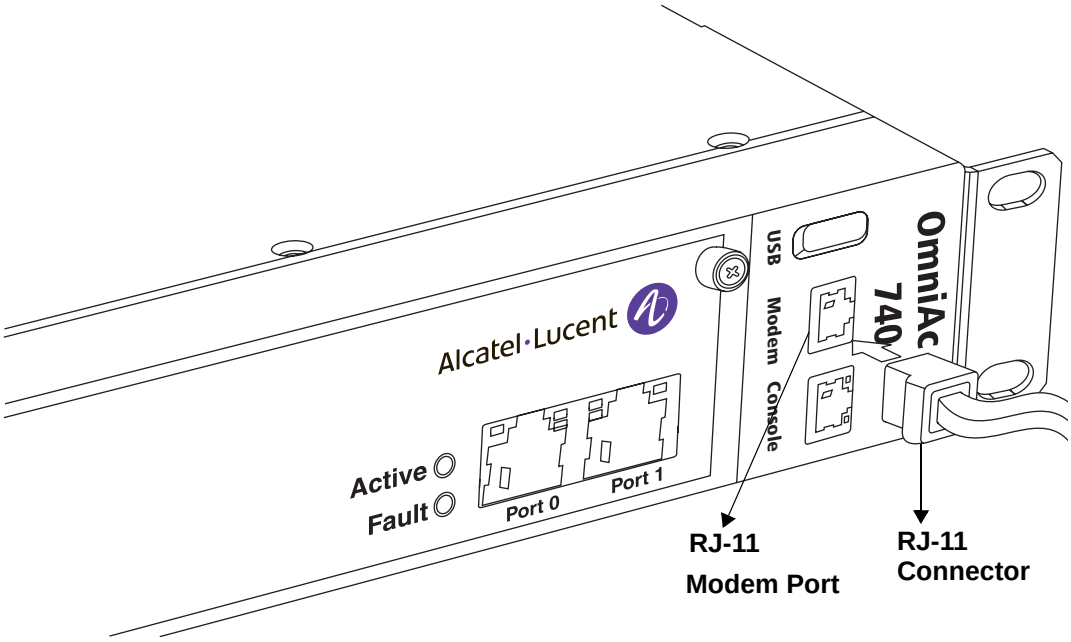


Figure 17: Connecting through External Network

SITE LOG

It is a good practice to maintain a log of the OA-740 to track all activities related to the system. This information also provides valuable history and service record for service personnel. Keep your site log in a common place, near the rack shelf where anyone who performs tasks has access to it.

Site log entries might include the following:

- Installation progress - Make a copy of the System Installation Checklist and insert it into the site log. Make entries in the Installation Checklist as each procedure is completed.
- Upgrades and removal/replacement procedures - Use the site log as a record of system maintenance and expansion history. Each time a procedure is performed on the system, update the site log to reflect the following:
  - Any line card removed and replaced
  - Power supply removals and changes
  - Configuration changes
  - Software upgrades
  - Corrective maintenance procedures performed
- Related comments.

Appendix A

Regulatory Compliance and Safety Information

This appendix provides information on regulatory agency compliance and safety for the OmniAccess 740 (OA-740).

Declaration of Conformity: CE Mark

This equipment is in compliance with the essential requirements and other provisions of Directive 73/23/EEC and 89/336/EEC as amended by Directive 93/68/EEC.

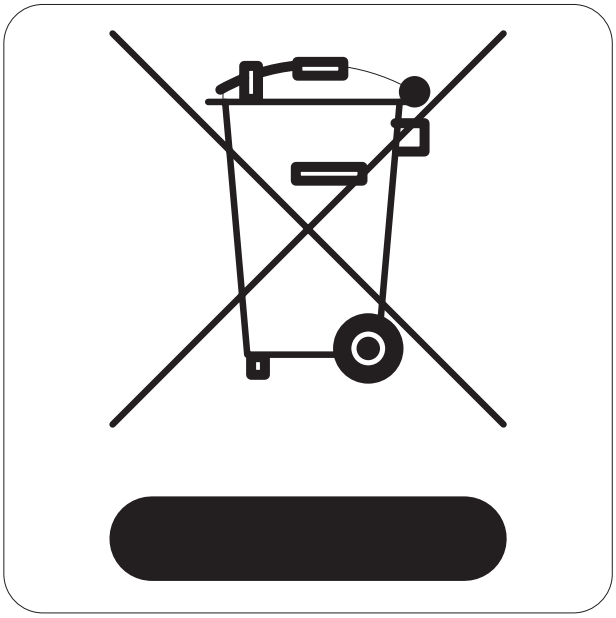
Français: Ce matériel est conformément aux conditions essentielles et à d'autres dispositions de 73/23/EEC et de 89/336/EEC directifs comme modifié par Directive 93/68/EEC.

Deutsch: Konformitätserklärung: CE Kennzeichnung Diese Anlage ist gemäß den wesentlichen Anforderungen und anderen Bestimmungen richtungweisenden 73/23/EEC und des 89/336/EEC, wie von Directive 93/68/EEC geändert.

Español: Este directivo equipo está en conformidad con los requisitos esenciales y otras provisiones 73/23/EEC y 89/336/EEC según la enmienda prevista por Directive 93/68/EEC.

WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE) STATEMENT

The product at end of life is subject to separate collection and treatment in the EU Member States, Norway and Switzerland and therefore marked with the symbol:



Treatment applied at end of life of the product in these countries shall comply with the applicable national laws implementing directive 2002/96EC on waste electrical and electronic equipment (WEEE).

CHINA ROHS: HAZARDOUS SUBSTANCE TABLE

产品说明书附件
SUPPLEMENT TO PRODUCT INSTRUCTIONS

这个文件涉及的是在中华人民共和国境内进口或销售的电子信息产品
Include this document with all Electronic Information Products imported or sold in the People's Republic of China

部件名称 (Parts)	有毒有害物质或元素 (Hazardous Substance)					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr^{6+})	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
电路模块 (Circuit Modules)	×	○	○	○	○	○
电缆及电缆组件 (Cables & Cable Assemblies)	×	○	○	○	○	○
金属部件 (Metal Parts)	×	○	○	○	○	○
塑料和聚合物部件 (Plastic and Polymeric parts)	○	○	○	○	○	○
对于交付时集成了电池的电子信息产品 For electronic information products delivered with integrated functional batteries:						
电池 (Batteries)	○	○	○	○	○	○

○： 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。
Indicates that the concentration of the hazardous substance in all homogeneous materials in the parts is below the relevant threshold of the SJ/T11363-2006 standard.

×： 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006标准规定的限量要求。
Indicates that the concentration of the hazardous substance of at least one of all homogeneous materials in the parts is above the relevant threshold of the SJ/T11363-2006 standard.

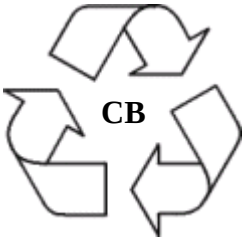
对销售之日的所售产品,本表显示, 阿尔卡特朗讯公司供应链的电子信息产品可能包含这些物质。注意:在所售产品中可能会也可能不会含有所有所列的部件。

This table shows where these substances may be found in the supply chain of Alcatel-Lucent electronic information products, as of the date of sale of the enclosed product. Note that some of the component types listed above may or may not be a part of the enclosed product.

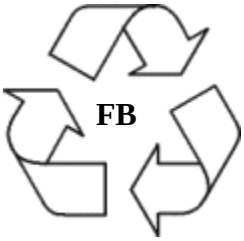
除非另外特别的标注,此标志为针对所涉及产品的环保使用期标志. 某些零部件会有一个不同的环保使用期(例如,电池单元模块)贴在其产品上.
此环保使用期限只适用于产品是在产品手册中所规定的条件下工作.
The Environment- Friendly Use Period (EFUP) for all enclosed products and their parts are per the symbol shown here, unless otherwise marked. Certain parts may have a different EFUP (for example, battery modules) and so are marked to reflect such. The Environment-Friendly Use Period is valid only when the product is operated under the conditions defined in the product manual.

Alcatel-Lucent

Products are packaged using one or more of the following packaging materials:



Corrugated Cardboard



Corrugated Fiberboard

Low-Density Polyethylene

STANDARDS COMPLIANCE

The product bears the CE mark. In addition it is in compliance with the following other safety and EMC standards:

All hardware switching modules used in the OA-740 comply with Class A standards. Modules with copper connectors meet Class A requirements using unshielded (UTP) cables.

SAFETY

- UL60950-1:2003
- CSA 22.2 No. 60950-1:2003
- EN 60950
- IEC 60950-1:2001

EMC

- FCC Part 15, Subpart B
- ICES 003
- EN 55022:1998/A1:2000
- EN 55024
- AS/NZS 3548:1995+A1:1997+A2:1997
- VCCI V-3/2000.04

TELECOM

- 47, CFR Part 68 AND ACTA, Adopted Technical Criteria
- CS 03 Issue 8, Part II
- TBR 12 AND TBR 13
- AS/ACTF S016: 2001
- T1(DS1) JATE - 1.544 Mbit/sec Digital Interface
- E1 JATE - 2.048 Mbit/sec Digital Interface

DECLARATION OF CONFORMITY ADDENDUM

Application of Council Directive(s)	89/336/EEC 73/23/EEC 1999/5/EEC
Manufacturer's Name	Alcatel-Lucent
Manufacturer's Address	26801 West Agoura Road Calabasas, CA 91301 Tel: 818-880-3500 Fax: 818-880-3505 Website: www.alcatel-lucent.com
Conformance to Directive(s)/ Product Standards	EC Directive 89/336/EEC EC Directive 73/23/EEC EC Directive 1999/5/EEC EN 55022:1998+A1:2000+A2:2003 EN 61000-3-2:2000 EN 61000-3-3:1995+A1:2001 EN 55024:1998+A1:2001 EN 61000-4-2:2001 EN 61000-4-3:2002 EN 61000-4-4:1995+A1:2000+A2:2001 EN 61000-4-5:2001 EN 61000-4-6:2001 EN 61000-4-8:2001 EN 61000-4-11:2001 EN 55024:1998+A1:2001 EN60555-2: 1995 EN 60950-1:2001+A11 CB Scheme ETSI EN 300 386 v1.4.1(2000-2003) ETSI TBR 012 ETSI TBR 013

FCC CLASS A, PART 15

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

The user is cautioned that changes and modifications made to the equipment without approval of the manufacturer could void the user's authority to operate this equipment.It is suggested that the user use only shielded and grounded cables to ensure compliance with FCC Rules.

If this equipment does cause interference to radio or television reception, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the equipment with respect to the receiver.
- Move the equipment away from the receiver.
- Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions.

CANADA CLASS A STATEMENT

This equipment does not exceed Class A limits per radio noise emissions for digital apparatus, set out in the Radio Interference Regulation of the Canadian Department of Communications.

AVIS DE CONFORMITÈ AUX NORMES DU MINISTÈRE DES COMMUNICATIONS DU CANADA

Cet èquipement ne dèpasse pas les limites de Classe A d íèmission de bruits radioèlectriques pour les appareils numèriques,telles que prescrites par le RÈglement sur le brouillage radioèlectrique ètabli par le ministère des Communications du Canada.

JATE

This equipment meets the requirements of the Japan Approvals Institute of Telecommunications Equipment (JATE).

CISPR22 CLASS A WARNING

This is a Class A product. In a domestic environment, this product may cause radio interference. Under such circumstances, the user may be requested to take appropriate countermeasures.

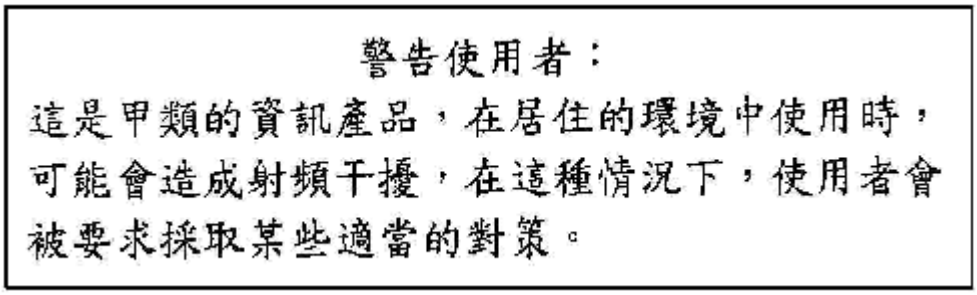
VCCI

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

CLASS A WARNING FOR TAIWAN AND OTHER CHINESE MARKETS

This is a Class A Information Product. When used in a residential environment, it may cause radio frequency interference. Under such circumstances, the user may be requested to take appropriate countermeasure.


警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，
可能會造成射頻干擾，在這種情況下，使用者會
被要求採取某些適當的對策。

TRANSLATED SAFETY WARNINGS

CHASSIS LIFTING WARNING

Two people are required when lifting the chassis. Due to its weight, lifting the chassis unassisted can cause personal injury. Also be sure to bend your knees and keep your back straight when assisting with the lifting of the chassis.

Français: Le châssis doit être soulevé par deux personnes au minimum. Pour éviter tout risque d'accident, maintenez le dos droit et poussez sur vos jambes. Ne soulevez pas l'unité avec votre dos.

Deutsch: Sicherheitshinweise
Hinweise zur Anhebung des Chassis

Zum Anheben des Chassis werden zwei Personen benötigt. Aufgrund des Gewichts kann das Anheben ohne Unterstützung zu Personenschäden führen. Heben Sie das Chassis aus den Knien und halten Sie den Rücken gerade wenn Sie beim Anheben des Chassis assistieren.

Español: Se requieren dos personas para elevar el chasis. Para evitar lesiones, mantenga su espalda en posición recta y levante con sus piernas, no con su espalda.

BLANK PANELS WARNING

Because they regulate airflow and help protect internal chassis components, blank cover plates should remain installed at empty module slots and power supply bays at all times.

Français: Les caches blancs remplissent trois fonctions importantes : ils évitent tout risque de choc électrique à l'intérieur du châssis, ils font barrage aux interférences électromagnétiques susceptibles d'altérer le fonctionnement des autres équipements et ils dirigent le flux d'air de refroidissement dans le châssis. Il est vivement recommandé de vérifier que tous les caches, modules d'alimentation et plaques de protection sont en place avant d'utiliser le système.

Deutsch: Hinweise zu Abdeckungen
Die leeren Modulblenden schützen interne Komponenten und leiten den Luftstrom. Deshalb müssen in allen unbelegten Slots die Modulblenden immer installiert bleiben.

Español: Las tapaderas blancas regulan la circulación de aire y ayudan a proteger componentes internos del chasis y siempre deben estar instaladas en las ranuras vacías del chasis y fuentes de alimentación.

Electrical Storm Warning

To avoid a shock hazard, do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.

Français: Ne pas travailler sur le système ni brancher ou débrancher les câbles pendant un orage.

Deutsch: Hinweise bei Unwetter
Um elektrische Schläge zu vermeiden dürfen während eines Gewitters and diesem Gerät keine Kabel angeschlossen oder gelöst werden, sowie keinerlei Installationen, Wartungen oder Konfigurationen vorgenommen werden.

Español: Para evitar peligro de descargas, no conecte o desconecte ningun cable, ni realice ninguna instalación, maintenimiento o reconfiguración de este producto durante una tormenta eléctrica.

Installation Warning

Only personnel knowledgeable in basic electrical and mechanical procedures should install or maintain this equipment.

Français: Toute installation ou remplacement de l'appareil doit être réalisée par du personnel qualifié et compétent.

Deutsch: Installationshinweise
Dieses Gerät soll nur von Personal installiert oder gewartet werden, welches in elektrischen und mechanischen Grundlagen ausgebildet ist.

Español: Estos equipos deben ser instalados y atendidos exclusivamente por personal adecuadamente formado y capacitado en técnicas eléctricas y mecánicas.

Invisible Laser Radiation Warning

Lasers emit invisible radiation from the aperture opening when no fiber-optic cable is connected. When removing cables do not stare into the open apertures. In addition, install protective aperture covers to fiber ports with no cable connected.

Français: Des radiations invisibles à l'œil nu pouvant traverser l'ouverture du port lorsque aucun câble en fibre optique n'y est connecté, il est recommandé de ne pas regarder fixement l'intérieur de ces ouvertures. Installez les caches connecteurs prévus à cet effet.

Deutsch: Hinweise zur unsichtbaren Laserstrahlung
Die Laser strahlen an der Blendenöffnung unsichtbares Licht ab, wenn keine Glasfaserkabel angeschlossen sind. Blicken Sie nicht in die Öffnungen und installieren Sie unverzüglich die Abdeckungen über den Glasfaseranschlüssen.

Español: Debido a que la apertura del puerto puede emitir radiación invisible cuando no hay un cable de fibra conectado, procurar no mirar directamente a las aperturas para no exponerse a la radiación.

Battery Warning

There is a danger of explosion if the battery in your chassis is incorrectly replaced. Replace the battery only with the same or equivalent type of battery recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions. The manufacturer's instructions are as follows: Return the module with the battery to Alcatel-Lucent. The battery will be replaced at Alcatel-Lucent's factory.

Français: Il y a un danger d'explosion si la batterie dans votre châssis est remplacée avec une autre ne correspondant pas aux préconisations constructeur. Il faut donc renvoyer le module en réparation chez Alcatel-Lucent qui se chargera de remplacer la batterie.

Deutsch: Hinweise Batterie
Bei falschem Einsetzen der batterie in das Gerät besteht die Gefahr der Explosion. Bitte ersetzen Sie die Batterie nur durch den gleichen bzw. gleichwertigen Typ, empfohlen durch den Hersteller. Benutzte Batterien entsorgen sie bitte wie folgt: Bitte senden Sie das Modul zurück zu Alcatel-Lucent. Dort wird die gebrauchte Batterie ersetzt.

Español: Si substituye las pilas de litio en su chasis, siempre utilice el mismo modelo o el tipo equivalente de pila recomendada por el fabricante. Deshágase de las pilas usadas según las instrucciones del fabricante. Devuelva el módulo con la pila de litio a Alcatel-Lucent. La pila de litio será substituida en la fábrica de Alcatel-Lucent.

Dansk: ADVARSEL! batteri--Eksplosionsfare ved fejlagtig handtering. Udskiftning ma kun ske batteri af samme fabrikat og type. Lever det brugte batteri tilbage tilleverandoren.

Operating Voltage Warning

To reduce the risk of electrical shock, keep your hands and fingers out of power supply bays and do not touch the backplane while the switch is operating.

Français: Pour réduire tout risque électrique, gardez vos mains et doigts hors des alimentations et ne touchez pas au fond de panier pendant que le commutateur fonctionne.

Deutsch: Hinweise gegen elektrischen Schlag
Um die Gefahr des elektrischen Schlages zu verringern, greifen sie bitte nicht in die Spannungsversorgung und berühren sie nicht die Rückwandplatine während das Gerät arbeitet.

Español: Para reducir el riesgo de descargas eléctricas, no meta sus manos y dedos dentro del chasis de la fuente de alimentación y no toque componentes internos mientras que el interruptor está conectado.

Power Disconnection Warning

Your switch is equipped with multiple power supplies. To reduce the risk of electrical shock, be sure to disconnect all power connections before servicing or moving the unit.

Français: Il se peut que cette unité soit équipée de plusieurs raccordements d'alimentation. Pour supprimer tout courant électrique de l'unité, tous les cordons d'alimentation doivent être débranchés.

Deutsch: Hinweise zur Spannungsfreischaltung
Ihr Gerät ist mit mehreren Netzteilen ausgerüstet. Um die Gefahr des elektrischen Schlages zu verringern, stellen sie sicher, daß alle Netzverbindungen getrennt sind bevor das Gerät gewartet oder bewegt wird.

Español: Antes de empezar a trabajar con un sistema, asegurese que el interruptor está cerrado y el cable eléctrico desconectado.

Proper Earthing Requirement Warning

To avoid shock hazard:

- The power cord must be connected to a properly wired and earth receptacle.
- Any equipment to which this product will attached must also be connected to properly wired receptacles.

Français:

Pour éviter tout risque de choc électrique:

- Ne jamais rendre inopérant le conducteur de masse ni utiliser l'équipement sans un conducteur de masse adéquatement installé.
- En cas de doute sur la mise à la masse appropriée disponible, s'adresser à l'organisme responsable de la sécurité électrique ou à un électricien.

Deutsch: Hinweise zur geforderten Erdung des Gerätes

Aus Sicherheitsgründen:

- darf das Netzkabel nur an eine Schutzkontaktsteckdose angeschloossen werden.
- dürfen für den Anschluß anderer Geräte, welche mit diesem Gerät verbunden sind, auch nur Schutzkontaktsteckdosen verwendet werden.

Español:

Para evitar peligro de descargas:

- Para evitar peligro de descargas asegurese de que el cable de alimentación está conectado a una toma de alimentación adecuadamente cableada y con toma de tierra.
- Cualquier otro equipo a cual se conecte este producto también debe estar conectado a tomas de alimentación adecuadamente cableadas.

READ IMPORTANT SAFETY INFORMATION WARNING

The *Getting Started Guide* that accompanied this equipment contains important safety information about which you should be aware when working with hardware components in this system. You should read this guide before installing, using, or servicing this equipment.

Français: Avant de brancher le système sur la source d'alimentation, consultez les directives d'installation disponibles dans le “Getting Started Guide”.

Deutsch: Bitte lesen - Sicherheitshinweise
Der Getting Started Guide, welcher diese Anlage beiliegt, enthält wichtige Sicherheitsinformationen, über die sie sich beim Arbeiten mit den Hardwareeinheiten bewußt sein sollten. Sie sollten diese Hinweise lesen, bevor sie installieren, reparieren oder die Anlage verwenden.

Español: La 'Getting Started Guide' que acompañó este equipo contiene información importante de seguridad sobre la cual usted debe estar enterado al trabajar con los componentes de dotación física en este sistema. Usted debe leer esta guía antes de instalar, usar o mantener este equipo.

RESTRICTED ACCESS LOCATION WARNING

This equipment should be installed in a location that restricts access. A restricted access location is one where access is secure and limited to service personnel who have a special key, or other means of security.

Français: Le matériel doit être installé dans un local avec accès limité ou seules les personnes habilitées peuvent entrer.

Deutsch: Hinweis zu Umgebungen mit beschränktem Zutritt
Die Anlage sollte an einem Standort mit beschränktem Zutritt installiert sein. Ein Standort mit beschränktem Zutritt stellt sicher, daß dort nur Servicepersonal mit Hilfe eines Schlüssels oder eines anderen Sicherheitssystems Zugang hat.

Español: Este equipo se debe instalar en un sitio con acceso restrinjido. Un sitio con el acceso restrinjido es uno seguro y con acceso limitado al personal de servicio que tiene una clave especial u otros medios de seguridad.

WRIST STRAP WARNING

Because electrostatic discharge (ESD) can damage switch components, you must ground yourself properly before continuing with the hardware installation. For this purpose, Alcatel-Lucent provides a grounding wrist strap and a grounding lug located near the top-right of the chassis. For the grounding wrist strap to be effective in eliminating ESD, the power supplies must be installed in the chassis and plugged into grounded AC outlets.

Français: L'électricité statique (ESD) peut endommager les composants du commutateur. Pour cette raison Alcatel-Lucent joint à l'envoi du châssis un bracelet antistatique à brancher sur la prise mise à la terre située en bas à droite du commutateur. Vous devrez mettre ce bracelet avant toute intervention hardware.

Deutsch: Hinweise zur ESD (Elektrostatischen Aufladung)
Weil elektrostatische Aufladung (ESD) Teile der Anlage beschädigen könnten, müssen sie sich selbst erden, bevor sie mit der Hardware Installation beginnen. Zu diesem Zweck stellt Alcatel-Lucent ein Erdungsarmband und eine Erdungsöse an der oberen rechten Seite des Chassis zur Verfügung. Um eine sichere Erdungsfunktion des Erdungsarmbandes sicherzustellen, müssen die Netzteile installiert und mit dem Schutzleiter des Versorgungsstromkreises verbunden sein.

Español: La descarga electrostática (ESD) puede dañar componentes eletrónicos. Usted debe asegurarse que está en contacto con tierra antes de hacer la instalación del equipo. Con este fin, Alcatel-Lucent proporciona una pulsera de muñeca para conectar al chasis en la toma de tierra situada en la parte superior derecha del chasis. Para que la correa de muñeca sea eficaz en la eliminación de ESD, las fuentes de alimentación deben estar instaladas en el chasis y conectadas a enchufes CA con tierra adecuada.

INSTRUCCIONES DE SEGURIDAD EN ESPAÑOL

ADVERTENCIA SOBRE EL LEVANTAMIENTO DEL CHASIS

Se requieren dos personas para levantar el chasis. Debido a su peso, la elevación del chasis sin ayuda puede causar daños corporales. También es seguro doblar sus rodillas y guardar su espalda derecho al ayudar a levantar el chasis.

ADVERTENCIA DE LAS TAPADERAS EN BLANCO

Porque regulan la circulación de aire y ayudan a proteger componentes internos del chasis, las tapaderas en blanco deben seguir instaladas en las ranuras vacías del módulo y la fuente de alimentación siempre.

ADVERTENCIA EN CASO DE TORMENTA ELÉCTRICA

Para evitar peligro de descargas, no conecte o desconecte ningun cable, ni realice ninguna instalación, maintenimiento o reconfiguratión de este producto durante una tormenta eléctrica.

ADVERTENCIA DE INSTALACIÓN

Solamente el personal bien informado en procedimientos eléctricos y mecánicos básicos debe instalar o mantener este equipo.

ADVERTENCIA DE RADIACIÓN LÁSER INVISIBLE

Los lasers emiten radiación invisible de la apertura abierta cuando no se conecta ningún cable de fibra óptica. Al quitar los cables no mire fijamente en las aberturas abiertas. Además, instale las cubiertas protectoras de la abertura a las salidas de la fibra sin el cable conectado.

ADVERTENCIA DE LA BATERÍA DE LITIO

Hay un peligro de la explosión si la batería del litio en su chasis se substituye incorrectamente. Substituya la batería solamente por el mismo o el equivalente de tipo de batería recomendado por el fabricante. Deseche las baterías usadas según las instrucciones del fabricante. Las instrucciones del fabricante son como sigue: Devuelva el módulo con la batería del litio a Alcatel-Lucent. La batería del litio será substituida en la fábrica de Alcatel-Lucent.

ADVERTENCIA SOBRE LA TENSIÓN DE OPERACIÓN

Para reducir el riesgo del choque eléctrico, matenga sus manos y dedos fuera de la fuente de alimentación y no toque la placa madre mientras que el interruptor está funcionando.

ADVERTENCIA SOBRE LA DESCONEXIÓN DE LA FUENTE

Su interruptor esta equipado por fuentes de alimentación múltiples. Para reducir el riesgo de choque eléctrico, asegúrese desconectar todas las conexiones de alimentación antes de mantener o de mover la unidad.

ADVERTENCIA SOBRE UNA APROPIADA CONEXIÓN A TIERRA

Para evitar peligro de descargas:

- El cable de alimentación debe estar conectado a una toma de alimentación adecuadamente cableada y con toma de tierra.

Cualquier equipo al cual se conecte este producto debe estar también conectado a tomas de alimentación adecuadamente cableadas.

LEER "INFORMACIÓN IMPORTANTE DE SEGURIDAD"

La *Guía de "Comenzando a Usar"* que acompaña este equipo contiene información importante de seguridad sobre la cual usted debe saber al trabajar con los componentes de dotación física en este sistema. Usted debe leer esta guía antes de instalar, de usar, o de mantener este equipo.

ADVERTENCIA DE ACCESO RESTRINGIDO

Este equipo se debe instalar en una ubicación que restrinja el acceso. Una ubicación con acceso restringido es una donde está seguro y limitado el acceso al personal de servicio que tiene un clave especial, u otros medios de la seguridad.

ADVERTENCIA DE PULSERA ANTIESTÁTICA

Debido a que la descarga electrostática (ESD) puede dañar componentes del interruptor, usted debe conectarse a tierra correctamente antes de continuar con la instalación del equipo. Para este propósito,
Alcatel-Lucent proporciona una pulsera antiestática y un terminal que pone a tierra situados cerca de la parte superior derecha del chasis. Para que la pulsera antiestática sea eficaz en la eliminación de ESD, las fuentes de alimentación se deben instalar en el chasis y enchufar en las salidas de CA con descarga a tierra.

CLASE DE SEGURIDAD

Cumple con 21CFR 1040.10 y 1040.11 ó sus equivalentes.

ADVERTENCIA DE FUENTES DE PODER

Las unidades OmniAccess 740 pueden estar equipadas con tres cordones para fuente de poder. Para reducir el riesgo de un choque electrico, desconecte todos los cordones de fuente de poder antes de dar servicio a la unidad.

Appendix B

AC Power Specifications

The OA-740 requires AC-input power supply in the range between 100 and 240V. The AC-input power supply uses a power factor correction that complies to EN61000-3-2.

Table 1 lists the AC-input power supply specifications.

Table 1: AC Power Supply Specifications

Description	Specification
Input	
Input voltage	100 to 240 VAC
Input frequency	50 to 60 Hz
Output	
Power output	250W
Efficiency	65% at minimum measured at nominal AC main voltage and frequency with maximum load on all output
Environmental Characteristics	
Temperature, operating	0 to 40°C
Temperature, non-operating (storage and shipping)	-25 to 70°C
Humidity	10 - 90% (non-condensing)

Description	Specification
Regulatory compliance	
Agency approvals	UL 1950, CSA C22.2 Level 3, TUV EN60950 or VDE EN60950, NEMKO EN60950 (CB Report), CE Complies with FCC part 15 subpart J Class B and CISPR 22 Class B

Appendix C

Pin Connector Details for OmniAccess 740

This section describes pin connection details for the OmniAccess 740 (OA-740).

RJ-11 Modem Connector Pin Assignments

This section details modem connector pin (RJ-11) details for the OA-740.

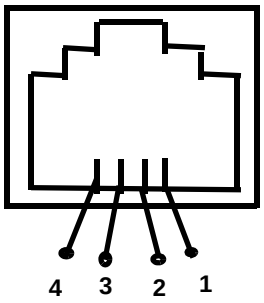


Figure 1: RJ-11 Connector

Table 1: Pin Connector Details for RJ-11 Connector

RJ-11 Connector Pin Number	Signal Name
1	NC
2	Tip or Ring
3	Ring or Tip
4	NC

RJ-45 Console Connector Pin Assignments

This section details the console connector pin (RJ-45) details for the OA-740.

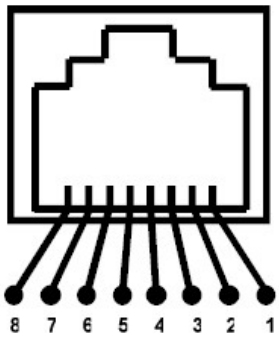


Figure 2: RJ-45 Connector

Table 2: Pin Connector Details for RJ-45 Connector

RJ-45 Connector Pin #	Signal Name
1	Connected to pin 8
2	Connected to pin 7
3	Transmit
4	Signal ground
5	Signal ground
6	Receive
7	Connected to pin 2
8	Connected to pin 1

T1E1 Connector Pin Assignments

The following table details the T1E1 connector pin details for the OA-740:

Table 3: T1E1 Card Port Connector Pin Assignment

Pin #	Signal Name
1	Receive Ring
2	Receive Tip
3	NC (No Connection)
4	Transmit Ring
5	Transmit Tip
6	NC
7	NC
8	NC

SE/L2GE Connector Pin Assignments

The following table details the SE/L2GE connector pin details for OA-740 system.

Table 4: 10/100/1000 Mbps Port Connector Pin Assignment on SE/L2GE Card

Pin #	In 10 Base-T and 100 Base-Tx Mode	In 1000 Base-Tx Mode
1	TX +	TD0 +
2	TX -	TD0 -
3	RX +	TD1 +
4	NC (No Connection)	TD2 +
5	NC	TD2 -
6	RX -	TD1 -
7	NC	TD3 +
8	NC	TD3 -

SERIAL CARD (V.35/X.21) CONNECTOR PIN ASSIGNMENTS

This section details the Serial Card connector pin (V.35/X.21) details for OA-740 system.

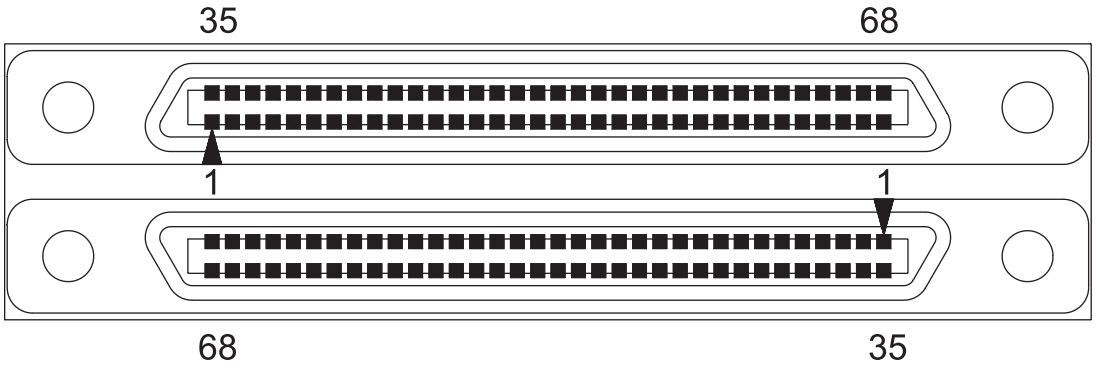


Figure 3: Serial Card (V.35/X.21) Connector

Table 5: Pin Connector Details for Serial Line Card

Pin#	Signal Name	Pin#	Signal Name
A1	CHASSIS_GND	A35	Signal Ground
A2	PORT1_RTS_B	A36	PORT1_RTS_A
A3	PORT1_CTS_B	A37	PORT1_CTS_A
A4	PORT1_DSR_B	A38	PORT1_DSR_A
A5	PORT1_DCD_B	A39	PORT1_DCD_A
A6	PORT1_DTR_B	A40	PORT1_DTR_A
A7	PORT1_RI	A41	PORT1_RL
A8	PORT1_TM	A42	PORT1_LL
A9	PORT1_RxD_B	A43	PORT1_RxD_A
A10	No Connect	A44	No Connect
A11	PORT1_TxD_B	A45	PORT1_TxD_A
A12	No Connect	A46	No Connect
A13	PORT1_RxTiming_B	A47	PORT1_RxTiming_A
A14	No Connect	A48	Signal Ground
A15	PORT1_TxTiming_B	A49	PORT1_TxTiming_A

Pin#	Signal Name	Pin#	Signal Name
A16	Signal Ground	A50	Signal Ground
A17	PORT1_TXC_B	A51	PORT1_TXC_A
A18	CHASSIS_GND	A52	Signal Ground
A19	PORT0_RTS_B	A53	PORT0_RTS_A
A20	PORT0_CTS_B	A54	PORT0_CTS_A
A21	PORT0_DSR_B	A55	PORT0_DSR_A
A22	PORT0_DCD_B	A56	PORT0_DCD_A
A23	PORT0_DTR_B	A57	PORT0_DTR_A
A24	PORT0_RI	A58	PORT0_RL
A25	PORT0_TM	A59	PORT0_LL
A26	PORT0_RxD_B	A60	PORT0_RxD_A
A27	P0P1_CMODE0	A61	P0P1_CMODE1
A28	PORT0_TxD_B	A62	PORT0_TxD_A
A29	P0P1_CMODE2	A63	P0P1_CMODE3
A30	PORT0_RxTiming_B	A64	PORT0_RxTiming_A
A31	P0P1_CMODE4	A65	Signal Ground
A32	PORT0_TxTiming_B	A66	PORT0_TxTiming_A
A33	Signal Ground	A67	Signal Ground
A34	PORT0_TXC_B	A68	PORT0_TXC_A
B1	CHASSIS_GND	B35	Signal Ground
B2	PORT2_RTS_B	B36	PORT2_RTS_A
B3	PORT2_CTS_B	B37	PORT2_CTS_A
B4	PORT2_DSR_B	B38	PORT2_DSR_A
B5	PORT2_DCD_B	B39	PORT2_DCD_A
B6	PORT2_DTR_B	B40	PORT2_DTR_A
B7	PORT2_RI	B41	PORT2_RL
B8	PORT2_TM	B42	PORT2_LL
B9	PORT2_RxD_B	B43	PORT2_RxD_A
B10	P2P3_CMODE0	B44	P2P3_CMODE1

Pin#	Signal Name	Pin#	Signal Name
B11	PORT2_TxD_B	B45	PORT2_TxD_A
B12	P2P3_CMODE2	B46	P2P3_CMODE3
B13	PORT2_RxTiming_B	B47	PORT2_RxTiming_A
B14	P2P3_CMODE4	B48	Signal Ground
B15	PORT2_TxTiming_B	B49	PORT2_TxTiming_A
B16	Signal Ground	B50	Signal Ground
B17	PORT2_TXC_B	B51	PORT2_TXC_A
B18	CHASSIS_GND	B52	Signal Ground
B19	PORT3_RTS_B	B53	PORT3_RTS_A
B20	PORT3_CTS_B	B54	PORT3_CTS_A
B21	PORT3_DSR_B	B55	PORT3_DSR_A
B22	PORT3_DCD_B	B56	PORT3_DCD_A
B23	PORT3_DTR_B	B57	PORT3_DTR_A
B24	PORT3_RI	B58	PORT3_RL
B25	PORT3_TM	B59	PORT3_LL
B26	PORT3_RxD_B	B60	PORT3_RxD_A
B27	No Connect	B61	No Connect
B28	PORT3_TxD_B	B62	PORT3_TxD_A
B29	No Connect	B63	No Connect
B30	PORT3_RxTiming_B	B64	PORT3_RxTiming_A
B31	No Connect	B65	Signal Ground
B32	PORT3_TxTiming_B	B66	PORT3_TxTiming_A
B33	Signal Ground	B67	Signal Ground
B34	PORT3_TXC_B	B68	PORT3_TXC_A

Serial Card V.35 DTE Cable Pin-out Details

The following table lists the V.35 DTE cable pin out at the M-34 Winchester connector:

Table 6: Serial Card V.35 DTE Cable Pin-out

Signal Name	Signal Type	V.35 Circuit Number	M-34 Winchester Male connector Pin #	Direction
TxD(A)	V.35	103	P	DTE -> DCE
TxD(B)	V.35	103	S	DTE -> DCE
TT(A) (DTE supplied timing)	V.35	113	U	DTE -> DCE
TT(B) (DTE supplied timing)	V.35	113	W	DTE -> DCE
RTS	V.28	105	C	DTE -> DCE
DTR	V.28	108	H	DTE -> DCE
RL	V.28	140	N	DTE -> DCE
LL	V.28	141	L	DTE -> DCE
RxD(A)	V.35	104	R	DCE -> DTE
RxD(B)	V.35	104	T	DCE -> DTE
RxC(A)	V.35	115	V	DCE -> DTE
RxC(B)	V.35	115	X	DCE -> DTE
TxC(A)	V.35	114	Y	DCE -> DTE
TxC(B)	V.35	114	AA	DCE -> DTE
CTS	V.28	106	D	DCE -> DTE
DSR	V.28	107	E	DCE -> DTE
DCD	V.28	109	F	DCE -> DTE
RI	V.28	125	J	DCE -> DTE
TM	V.28	142	NN	DCE -> DTE
Signal Ground	-	-	B	-