



Alcatel-Lucent 7705

SERVICE AGGREGATION ROUTER | RELEASE 4.0
OC3/STM1 ADAPTER CARD INSTALLATION GUIDE

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About This Guide

This guide provides site preparation recommendations and step-by-step procedures to install, remove, and replace a 4-port OC3/STM1 Clear Channel Adapter card and 2-port OC3/STM1 Channelized Adapter card, and supported small form-factor pluggable (SFP) modules.



Note: The term OC3/STM1 Adapter card is used in this guide to mean both the 2-port OC3/STM1 Channelized Adapter card and the 4-port OC3/STM1 Clear Channel Adapter card.

After the hardware installation process is completed, see [List of Technical Publications](#) for details on the boot process, software configuration, and Command Line Interface (CLI) information to configure system and network parameters.

The 4-port OC3/STM1 Clear Channel Adapter card has four hot-pluggable SFP-based ports that can be independently configured for ATM in access mode or for Packet over SONET/SDH (POS) in network mode. Each port can be independently configured to be SONET (OC3) or SDH (STM1).

The 2-port OC3/STM1 Channelized Adapter card has two hot-pluggable SFP-based ports (optical or electrical) that can be configured for ATM/IMA or TDM in access mode or for MLPPP in network mode. The port type must be configured to be either SONET (OC3) or SDH (STM1).

SFPs are hot-swappable input/output devices that plug into the adapter card ports, linking the ports to fiber-optic or copper networks. See [SFPs](#) for a list of supported SFP modules.

List of Technical Publications

The 7705 SAR OS documentation set is composed of the following guides:

- **7705 SAR OS Basic System Configuration Guide**
This guide describes basic system configurations and operations.
 - **7705 SAR OS System Management Guide**
This guide describes system security and access configurations as well as event logging and accounting logs.
 - **7705 SAR OS Interface Configuration Guide**
This guide describes card and port provisioning.
 - **7705 SAR OS Router Configuration Guide**
This guide describes logical IP routing interfaces, IP-based filtering, and routing policies.
 - **7705 SAR OS MPLS Guide**
This guide describes how to configure Multiprotocol Label Switching (MPLS), Resource Reservation Protocol for Traffic Engineering (RSVP-TE), and Label Distribution Protocol (LDP).
 - **7705 SAR OS Services Guide**
This guide describes how to configure service parameters such as service access points (SAPs), service destination points (SDPs), customer information, and user services.
 - **7705 SAR OS Quality of Service Guide**
This guide describes how to configure Quality of Service (QoS) policy management.
 - **7705 SAR OS Routing Protocols Guide**
This guide provides an overview of dynamic routing concepts and describes how to configure them.
 - **7705 SAR OS OAM and Diagnostics Guide**
This guide provides information on Operations, Administration and Maintenance (OAM) tools.
-

Warnings and Notes

Observe the warnings and notes to avoid injury or router damage during installation and maintenance. Follow the safety procedures and guidelines when working with and near electrical equipment. Warning statements and notes are provided in each chapter.





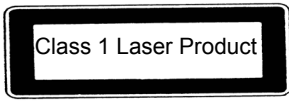
Audience

This guide is intended for network installers and system administrators who are responsible for installing, configuring, or maintaining networks. This guide assumes you are familiar with electronic and networking technologies.

Information Symbols

[Table 1](#) describes symbols contained in this guide.

Table 1: Information Symbols

Symbol	Meaning	Description
	Danger	This symbol warns that improper handling and installation could result in bodily injury. Before you begin work on this equipment, be aware of hazards involving electrical circuitry, be aware of your networking environments, and instigate accident prevention procedures.
	Warning	This symbol warns that improper handling and installation could result in equipment damage or loss of data.
	Caution	This symbol warns that improper handling may reduce your component or system performance.
	Note	This symbol provides additional operational information.
		Class 1 laser products are listed in the Class 1 laser adapter card documents. Only approved Class 1 replaceable laser transceivers should be used with those products.

Multiple PDF File Search

You can use Adobe Reader, Release 6.0 or later, to search multiple PDF files for a term. Adobe Reader displays the results in a display panel. The results are grouped by PDF file. You can expand the entry for each file.



Note: The PDF files in which you search must be in the same folder.

To search multiple PDF files for a term:

Step 1. Open Adobe Reader.

Step 2. Choose Edit – Search from the Adobe Reader main menu. The Search panel appears.

Step 3. Enter the term to search for.

Step 4. Select the All PDF Documents in radio button.

Step 5. Choose the folder in which to search using the drop-down menu.

Step 6. Select the following criteria if required:

- Whole words only
- Case-Sensitive
- Include Bookmarks
- Include Comments

Step 7. Click on the Search button.

Adobe Reader displays the search results. You can expand the entries for each file by clicking on the + symbol.

Step 8. Click on a search result to go directly to that location in the selected file.

Technical Support

If you purchased a service agreement for your 7705 SAR-8 and related products from a distributor or authorized reseller, contact the technical support staff for that distributor or reseller for assistance. If you purchased an Alcatel-Lucent service agreement, check this link for instructions to contact Support personnel:

Web: <http://support.alcatel-lucent.com>

Installing Adapter Cards

In This Chapter

This chapter provides information about installing and removing an OC3/STM1 Adapter card on the 7705 SAR-8 and 7705 SAR-18.

This chapter provides information on the following topics:

- [Power Consumption on page 14](#)
- [Provisioning Requirements on page 15](#)
- [Provisioning an Adapter Card on page 16](#)
 - [Configuration Example on page 17](#)
- [Removing an Adapter Card Configuration on page 19](#)
- [Installation Procedures on page 20](#)
 - [Warnings and Notes on page 20](#)
 - [Installing an Adapter Card on page 21](#)
 - [Removing and Replacing an Adapter Card on page 24](#)

Power Consumption

[Table 2](#) lists the power consumption for the 4-port OC3/STM1 Clear Channel Adapter card and 2-port OC3/STM1 Channelized Adapter card.

Table 2: Power Consumption

Description	Typical Power (W)	Maximum Power (W)
4-port OC3/STM1 Clear Channel Adapter card	25.9 W	30 W
2-port OC3/STM1 Channelized Adapter card	22.1 W	25 W

Refer to “Power Consumption” in the 7705 SAR-8 Installation Guide or 7705 SAR-18 Installation Guide for information on the power consumption of other hardware.

Provisioning Requirements

To configure cards and ports, you must access the 7705 SAR-8 or 7705 SAR-18 by console or Telnet connection. Refer to the 7705 SAR-8 Installation Guide or 7705 SAR-18 Installation Guide for information and instructions on console and Telnet connections.

The CSM does not require provisioning. However, the IOM, which is an integral part of the CSM software module, must be activated before any adapter cards and port parameters can be provisioned and configured. The IOM is activated using the `card` and `card-type` CLI commands to specify its slot number and card type. Adapter cards must be provisioned before their ports can be configured.



Notes:

- IOMs are specified using the `card` and `card-type` commands (items 1 and 2 in the list below).
- Adapter cards are provisioned and configured using the `mda` and `mda-type` commands (items 3 and 4 in the list below).

Provision components in the following order:

1. Card slot number (use the `card` command)
 2. Card type
 3. Adapter card slot number (use the `mda` command)
 4. Adapter card type
 5. Ports
-

Provisioning an Adapter Card

After the IOM has been activated on the CSM (Steps 1 and 2 below), continue in the `config` context with the following CLI commands to provision the adapter card(s). The steps below provision a 4-port OC3/STM1 Clear Channel Adapter card in MDA slot 2 and 2-port OC3/STM1 Channelized Adapter cards in MDA slot 4 and 6.

The 7705 SAR-8 supports up to 6 adapter cards and the 7705 SAR-18 supports up to 12 adapter cards in any combination that does not exceed the maximum; however, for a network application, at least one of the installed cards must be a network-capable adapter card. Within this maximum, up to 6 4-port OC3/STM1 Clear Channel Adapter cards or up to 2 2-port OC3/STM1 Channelized Adapter cards can be configured on a 7705 SAR-8 chassis, and up to 12 4-port OC3/STM1 Clear Channel Adapter cards or 4 2-port OC3/STM1 Channelized Adapter cards can be configured On a 7705 SAR-18 chassis.

Command Syntax	Example
Step 1. <code>card slot-number</code>	<code>card 1</code>
Step 2. <code>card-type card-type</code>	<code>card-type iom-sar</code>
Note: The <i>slot-number</i> is always 1 and the <i>card-type</i> is always <code>iom-sar</code> .	
Step 3. <code>mda mda-number</code>	<code>mda 2</code>
Step 4. <code>mda-type mda-type</code>	<code>mda-type a4-oc3</code>
Step 5. <code>exit</code>	<code>exit</code>
Step 6. <code>mda mda-number</code>	<code>mda 4</code>
Step 7. <code>mda-type mda-type</code>	<code>mda-type a2-choc3</code>
Step 8. <code>exit</code>	<code>exit</code>

You can now install the adapter cards. See [Installing an Adapter Card](#). If you need to install an additional adapter card, continue the configuration process with Step 9 before installing the card.

Step 9. <code>mda mda-number</code>	<code>mda 6</code>
Step 10. <code>mda-type mda-type</code>	<code>mda-type a2-choc3</code>
Step 11. <code>exit</code>	<code>exit</code>

Configuration Example

The following example displays the `card`, `card-type`, `mda` and `mda-type` commands to specify the IOM as an `iom-sar` type, and provision a 4-port OC3/STM1 Clear Channel Adapter card in MDA slot 2 and 2-port OC3/STM1 Channelized Adapter cards in MDA slots 4 and 6.

```
ALU-1>config# card 1
ALU-1>config>card# card-type iom-sar
ALU-1>config>card# mda 2
ALU-1>config>card>mda# mda-type a4-oc3
ALU-1>config>card>mda# exit
ALU-1>config>card# mda 4
ALU-1>config>card>mda# mda-type a2-choc3
ALU-1>config>card>mda# exit
ALU-1>config>card# mda 6
ALU-1>config>card>mda# mda-type a2-choc3
ALU-1>config>card>mda# exit
```

Sample Output

Use the `config>info` command to display card configuration information on a 7705 SAR-8:

```
A:7705>config# info
. . .
#-----
echo "Card Configuration"
#-----
      card 1
        card-type iom-sar
        mda 1
          mda-type a12-sdi
        exit
        mda 2
          mda-type a4-oc3
        exit
        mda 3
          mda-type a16-chds1
        exit
        mda 4
          mda-type a2-choc3
        exit
        mda 5
          mda-type a8-eth
        exit
        mda 6
          mda-type a2-choc3
        exit
      exit
#-----#
```

Use the `config>show card state` command to display administrative and operational states for all cards on a 7705 SAR-8:

```
A:7705>config# show card state
=====
Card State
=====
Slot/   Provisioned   Equipped   Admin Operational   Num   Num Comments
Id      Type          Type       State  State              Ports MDA
-----
1       iom-sar       iom-sar    up     up                  6
1/1     a12-sdi              up     provisioned        12
1/2     a4-oc3              up     provisioned         4
1/3     a16-chds1          up     provisioned        16
1/4     a2-choc3            up     provisioned         2
1/5     a8-eth              up     provisioned         8
1/6     a2-choc3            up     provisioned         2
A       csm-1g          csm-1g     up     up                  Active
B       csm-1g              up     down               Standby
=====
A:7705>config#
```

Use the `config>show mda` command to display provisioned adapter card information on a 7705 SAR-8:

```
A:7705>config# show mda
=====
MDA Summary
=====
Slot  Mda   Provisioned   Equipped   Admin   Operational
      Mda   Mda-type      Mda-type   State   State
-----
1     1     a12-sdi              up     provisioned
      2     a4-oc3              up     provisioned
      3     a16-chds1          up     provisioned
      4     a2-choc             up     provisioned
      5     a8-eth              up     provisioned
      6     a2-choc3            up     provisioned
=====
A:7705>config#
```

Removing an Adapter Card Configuration

If you remove an adapter card and will not be replacing it, or will be replacing it with a card of a different type, you must first remove the associated configuration, such as SAPs, SDPs, and port connections, prior to removing the installed card. If you will be replacing it with a card of the same type, you do not need to remove the associated configuration.

Refer to the 7705 SAR OS Interface Configuration Guide for details on configuring cards and ports.

In the example below, a 4-port OC3/STM1 Clear Channel Adapter card in slot 2 is being removed. In this example, only the port configuration must be removed.

Command Syntax	Example
Step 1. <code>port port-id</code>	<code>port 1/2/1</code>
Step 2. <code>shutdown</code>	<code>shutdown</code>



Note: The `port>shutdown` command must be repeated for all enabled ports on the adapter card.

Step 3. <code>exit</code>	<code>exit</code>
Step 4. <code>card slot-number</code>	<code>card 1</code>
Step 5. <code>mda mda-slot</code>	<code>mda 2</code>
Step 6. <code>shutdown</code>	<code>shutdown</code>
Step 7. <code>exit</code>	<code>exit</code>
Step 8. <code>no mda mda-slot</code>	<code>no mda 2</code>

You can now remove the installed card, and replace it if required; see [Removing and Replacing an Adapter Card](#). If you are simply removing the card, insert a filler plate in the empty slot. If you are replacing the card with a different type, provision the new card before installing it. If you are replacing the card with the same type, you do not need to provision it.

Installation Procedures

Warnings and Notes



Dangers:

- Invisible laser radiation can be emitted from an adapter card's port apertures when no cable is connected. Avoid exposure and do not stare into open apertures.
- Always assume that fiber-optic cables are connected to a light source.



Warnings:

- Electrostatic discharge (ESD) damage can occur if adapter cards are mishandled. Always wear an ESD-preventive wrist or ankle strap and always connect an ESD strap to a nearby ground point that is connected to the site grounding point when working with an adapter card. Typical ground points include the ground stud on the 7705 SAR-8 and 7705 SAR-18 mounting bracket, or a properly grounded rack or work bench.
- Always place components on an anti-static surface.
- Do not power up a 7705 SAR-8 or 7705 SAR-18 before verifying that all common equipment (chassis, power, cooling, and grounding) is connected properly.
- The Fan module and all cards in the 7705 SAR-8 chassis must have the same voltage type.
- Filler plates are required in all empty slots to prevent excess dust accumulation and to help control airflow and electromagnetic interference.
- Use only approved small form-factor pluggable (SFP) fiber-optic devices in adapter card ports.
- To comply with the GR-1089-CORE requirement R4-9 [31] standard for electromagnetic compatibility and safety, all intra-building ports are specified for use with shielded and grounded cables at both ends.
- The intra-building port(s) of the equipment or sub-assembly is suitable for connection to intra-building or unexposed wiring or cabling only. The intra-building port(s) of the equipment or sub-assembly must not be metalically connected to interfaces that connect to the Outside Plant (OSP) or its wiring. These interfaces are designed for use as intra-building interfaces only (Type 2 ports as described in GR-1089-CORE) and require isolation from the exposed OSP cabling. The addition of primary protectors is not sufficient protection in order to connect these interfaces metalically to OSP wiring.



Notes:

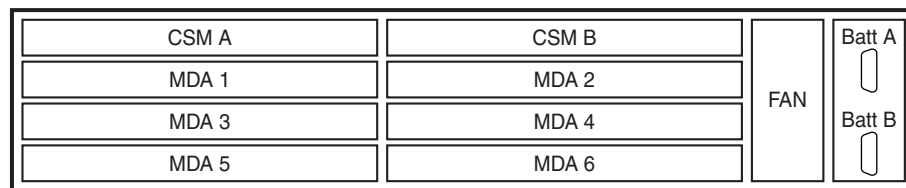
- Ports cannot be configured until the adapter card is provisioned.
- Services cannot be provisioned until the ports are configured.
- Adapter card slot numbers are MDA 1 through MDA 6 on the 7705 SAR-8 and MDA 1 through MDA 12 on the 7705 SAR-18.

Installing an Adapter Card

A maximum of 6 4-port OC3/STM1 Clear Channel Adapter cards or 2 2-port OC3/STM1 Channelized Adapter cards may be installed on the 7705 SAR-8 in MDA slots 1 through 6 and a maximum of 12 4-port OC3/STM1 Clear Channel Adapter cards or 4 2-port OC3/STM1 Channelized Adapter cards can be installed in MDA slots 1 through 12 on the 7705 SAR-18. [Figure 1](#) identifies the location of the CSM and MDA slots on the 7705 SAR-8 and [Figure 2](#) identifies the location of the CSM and MDA slots on the 7705 SAR-18. [Figure 3](#) illustrates the installation of a 4-port OC3/STM1 Clear Channel Adapter card on a 7705 SAR-8. [Table 3](#) describes the installation features. Ejector levers help install and remove the adapter card; captive screws secure the card in place. See [LED Descriptions](#) for information on the connectors and LEDs on the OC3/STM1 Adapter cards.

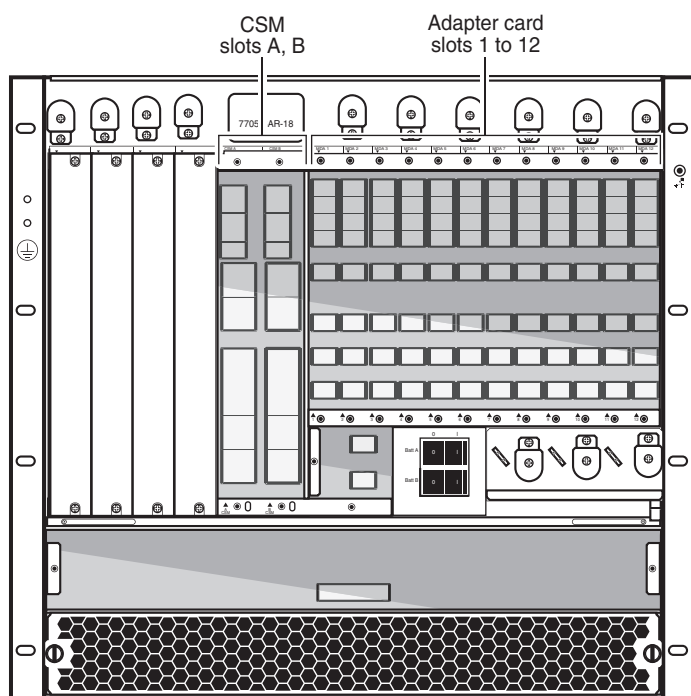
Four SFP ports are supported on the 4-port OC3/STM1 Clear Channel Adapter card and two SFP ports are supported on the 2-port OC3/STM1 Channelized Adapter card for fiber or copper connectivity via SFP modules. See [Table 4](#) for a list of the Alcatel-Lucent approved SFP modules supported by an OC3/STM1 Adapter card. See [SFPs](#) for information on installing an SFP .

Figure 1: 7705 SAR-8 CSM and MDA Slot Identification



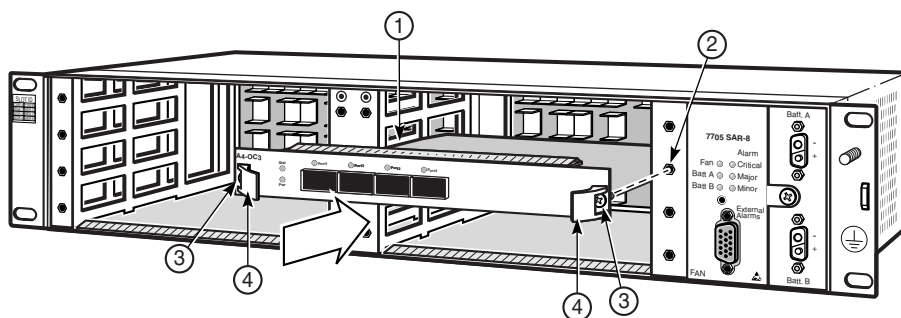
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Figure 2: 7705 SAR-18 CSM and MDA Slot Identification



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Figure 3: Installing an Adapter Card



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Table 3: OC3/STM1 Adapter Card Installation and Removal Features

Key	Description
1	Slot guide
2	Threaded receptacle
3	Captive screw
4	Ejector lever

Tools required:

- torque driver for Phillips screws

To install an adapter card:

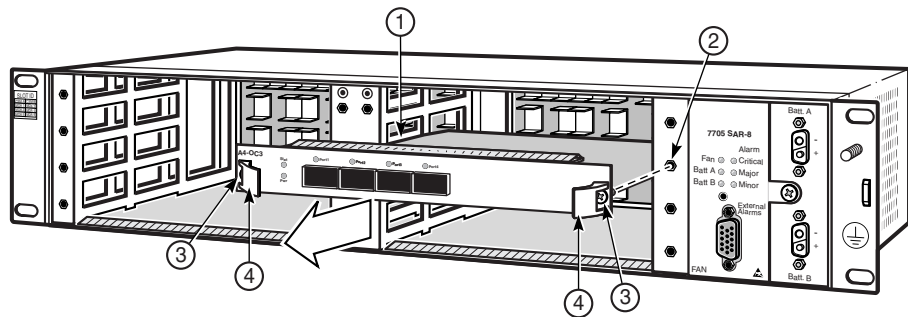
- Step 1.** Remove the adapter card from the packaging and place the card on an anti-static work surface. Avoid touching the card components and connector pins.
- Step 2.** Insert the adapter card into an empty MDA slot.
With the ejector levers pressed inward, hold the adapter card by the levers and align the adapter card with the slot guides and the captive screws with the threaded receptacles (see [Figure 3](#)).
- Step 3.** Press the adapter card firmly into the slot. Make sure that the card connectors are fully seated in the backplane connectors.
- Step 4.** Tighten the captive screws to secure the card. Do not over-tighten. The recommended torque is 3 to 4 lbf-in (0.34 to 0.45 N·m).
- Step 5.** Check the Power LED on the adapter card faceplate. If the adapter card is properly inserted and the 7705 SAR-8 or 7705 SAR-18 has valid power, the Power LED is lit blue. See [LED Descriptions](#) for a description of LED activity.
- Step 6.** Install any SFPs and attach cables. See [SFPs](#) for information on SFPs.

Removing and Replacing an Adapter Card

Before you remove and replace an adapter card, see [Removing an Adapter Card Configuration](#).

Figure 4 illustrates removing a 4-port OC3/STM1 Clear Channel Adapter card from a 7705 SAR-8.

Figure 4: Removing an Adapter Card on a 7705 SAR-8



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Tools required:

- Phillips screwdriver
- torque driver for Phillips screws

To remove and replace an adapter card:

Step 1. Disconnect all cable connections to the adapter card.

Step 2. Use a Phillips screwdriver to loosen the captive screws.



Caution: Do not try to remove the adapter card from the slot before the captive screws are loosened.

Step 3. Simultaneously rotate both ejector levers outward to release the adapter card connectors from the backplane.

Step 4. Hold the adapter card by the ejector levers and pull the card out of the slot.

Step 5. Place the adapter card on an anti-static surface.

Step 6. Install a replacement adapter; see [Installing an Adapter Card](#).

If you are not immediately replacing the adapter card, cover the empty slot with a filler plate.

Step 7. Tighten the captive screws to secure the card or filler plate. Do not over-tighten. The recommended torque is 3 to 4 lbf-in (0.34 to 0.45 N·m).

Step 8. If you replaced the adapter card, check the Power LED on the adapter card faceplate. If the adapter card is properly inserted and the 7705 SAR-8 or 7705 SAR-18 has valid power, the Power LED is lit blue. See [LED Descriptions](#) for a description of LED activity.

Step 9. If you replaced the adapter card, reconnect all cable connections to the card.

In This Chapter

This chapter provides information about installing and removing SFP transceivers on adapter card ports that support these devices.

This chapter provides information on the following topics:

- [Installing and Removing SFPs on page 28](#)
 - [Warnings and Notes on page 28](#)
 - [Fiber Cable Preparation on page 29](#)
 - [Locking Mechanisms on page 29](#)
 - [Supported SFPs on page 30](#)
 - [Installing SFPs on page 31](#)
 - [Removing and Replacing SFPs on page 31](#)

Installing and Removing SFPs

Warnings and Notes



Dangers:

- Invisible laser radiation can be emitted from an adapter card's or SFP's port apertures when no cable is connected. Avoid exposure and do not stare into open apertures.
- Always assume that fiber-optic cables are connected to a light source.



Warnings:

- Before using the optics on this adapter card, verify that the optical path is in compliance with the parameters of the optical components. In particular, pay close attention to any minimum attenuation requirements for the optics. If minimum attenuation requirements are not met, the optical receiver components may be permanently damaged. Contact the appropriate technical support center for assistance and further information about your Alcatel-Lucent products.
- Ensure that the ports on an SFP are protected by an SFP protective plug when you install or remove an optical SFP. Only remove the plug when you are ready to install an SFP cable.
- Electrostatic discharge (ESD) damage can occur if adapter cards are mishandled. Always wear an ESD-preventive wrist or ankle strap and always connect an ESD strap to a nearby ground point that is connected to the site grounding point when working with an adapter card. Typical ground points include the ground stud on the 7705 SAR-8 or 7705 SAR-18 mounting bracket, or a properly grounded rack or work bench.
- Always place components on an anti-static surface.
- Avoid bending a fiber cable beyond its minimum bend radius. Do not exceed the recommended 1.2 inches (30 mm) for fiber-optic cables.



Cautions:

- This is a Class 1 laser product. Only approved Class 1 replaceable laser transceivers should be used on this product.
- Ensure that the connector on the fiber cable is protected by a dust cover until you are ready to attach the cable to an SFP.
- The SFPs must have protective plugs if they are seated in the adapter card but are not attached to fiber cables.
- Always replace the dust cover on the connector of a fiber cable when the cable is disconnected from an SFP.

**Notes:**

- Discard SFPs according to all local laws and regulations.
- SFPs can be installed and replaced without disabling the interfaces or removing the adapter card from the 7705 SAR-8 or 7705 SAR-18.
- SFPs are keyed to prevent incorrect insertion. If an SFP is not seated properly, remove it and confirm that the orientation is correct before reinserting it.

Fiber Cable Preparation

Clean the connector on the fiber cable before inserting it into the SFP to prevent transferring small particles and contaminating the transceiver.

If you switch SFPs from one port to another, ensure that you clean the fiber connectors before reinserting them.

Apply high standards when inspecting and cleaning fiber connectors. Use a “dry” cleaning method to clean fiber connectors.



Caution: Improper handling, cleaning, and inspection techniques can compromise the fiber connection, resulting in data transmission errors. Refer to Alcatel-Lucent Online Customer Support (OLCS) (<http://www.alcatel-lucent.com/myaccess>), under the 7705 SAR documentation, for the Optical Handling Reference Guide (part number 95-5795-01-00).

Locking Mechanisms

SFPs approved by Alcatel-Lucent might use different lock and release methods. Possible lock and release mechanisms include:

- locking handle—a locking handle or lever on the front of the SFP that you gently raise or lower to insert or remove the SFP from the port
- bail—a bar or latch in the front of the SFP that you pull down and outward to release the module
- tabs—tabs on the sides or bottom of the SFP that you press inward to release the module

Supported SFPs

Table 4 lists the Alcatel-Lucent approved SFPs for the OC3/STM1 Adapter cards.

Table 4: SFPs for the OC3/STM1 Adapter Cards

Part Number	Short Description	Media	Wavelength	Connector Type	Distance ⁽¹⁾	Operating Temperature
3HE00034AA	1-port OC-3/STM-1 SONET/SDH Optics Module, multi-mode	Fiber	1310 nm	LC	Up to 2 km	-40° to 85°C (-40° to 185°F)
3HE00034CA	1-port OC-3/STM-1 SONET/SDH Optics Module, multi-mode ROHS-6/6 DDM	Fiber	1310 nm	LC	Up to 2 km	-40° to 85°C (-40° to 185°F)
3HE00035AA	1-port OC-3/STM-1 SONET/SDH Optics Module, intermediate reach	Fiber	1310 nm	LC	Up to 15 km	-40° to 85°C (-40° to 185°F)
3HE00035CA	1-port OC-3/STM-1 SONET/SDH Optics Module, intermediate reach ROHS-6/6 DDM	Fiber	1310 nm	LC	Up to 15 km	-40° to 85°C (-40° to 185°F)
3HE00036AA	1-port OC-3/STM-1 SONET/SDH Optics Module, long reach	Fiber	1310 nm	LC	Up to 40 km	-40° to 85°C (-40° to 185°F)
3HE00036CA	1-port OC-3/STM-1 SONET/SDH Optics Module, long reach ROHS-6/6 DDM	Fiber	1310 nm	LC	Up to 40 km	-40° to 85°C (-40° to 185°F)
90-9764-04	STM1 Electrical Module	Copper	N/A	DIN	Up to 120 m	-40° to 85°C (-40° to 185°F)
Note: 1. The distance values shown are for guidance only; the actual required distance will be determined by factors such as optical power levels and attenuation.						

Installing SFPs

To install an SFP:

- Step 1.** Remove the SFP from the packaging and place it on an anti-static work surface.
- Step 2.** Hold the SFP by its sides and insert it into the appropriate port until it clicks into place.
- Step 3.** Remove the protective plug from the SFP port when you are ready to attach the fiber cable.

Removing and Replacing SFPs

When you are replacing an SFP, have the following parts ready:

- a replacement SFP
- protective plugs for the SFPs and a dust cover for the fiber cable connector
- an anti-static mat or electrostatic bag

To replace an SFP:

- Step 1.** Disconnect the cable from the SFP connector.
- Step 2.** Place a protective plug in the SFP that is being removed.
- Step 3.** Release the locking mechanism on the SFP with your thumb and forefinger. See [Locking Mechanisms](#) for descriptions of the different SFP lock and release methods. Slide the SFP out of the port.
- Step 4.** Place the SFP on an anti-static mat or in an electrostatic bag.
- Step 5.** Install a replacement SFP into the adapter card port.
- Step 6.** Connect the fiber or copper cable, or if you are not immediately connecting a fiber cable, insert a protective plug into the SFP optical port and place a dust cover on the fiber cable connector.



Note: If you are not immediately replacing the SFP, leave the adapter card port empty. It is not necessary to install protective plugs in the ports on the adapter card.

SFPs

LED Descriptions

In This Chapter

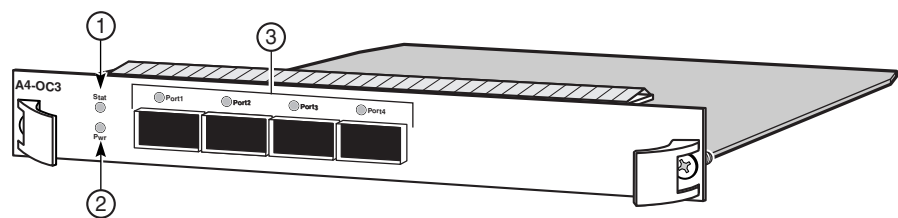
This chapter provides information on the following topic:

- [OC3/STM1 Adapter Card LEDs on page 34](#)

OC3/STM1 Adapter Card LEDs

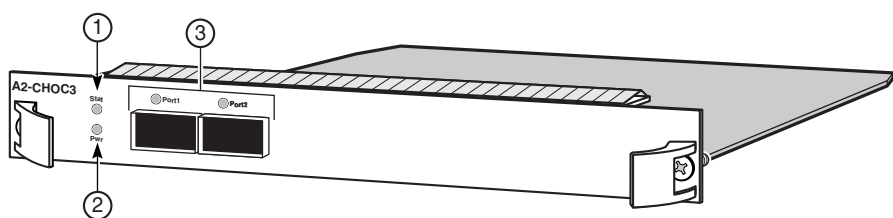
Figure 5 shows the LEDs on the 4-port OC3/STM1 Clear Channel Adapter card. Figure 6 shows the LEDs on the 2-port OC3/STM1 Channelized Adapter card. Table 5 describes the faceplate LEDs for both cards.

Figure 5: 4-port OC3/STM1 Clear Channel Adapter Card LEDs



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Figure 6: 2-port OC3/STM1 Channelized Adapter Card LEDs



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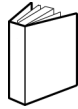
Table 5: OC3/STM1 Adapter Card LEDs

Key	Label	Descriptions
1	Stat(us)	Card status LED: Green: (blinking): Initializing Green: (solid): Operationally up, administratively up Amber: Operationally down, administratively up Unlit: Operationally down, administratively down

Table 5: OC3/STM1 Adapter Card LEDs (Continued)

Key	Label	Descriptions
2	Pwr	Power status LED: Blue: Valid power Unlit: No power or faulty power
3	Port1 Port2 Port3 Port4	Port numbers (ports 1 to 4 on the 4-port OC3/STM1 Clear Channel Adapter card, ports 1 and 2 on the 2-port OC3/STM1 Channelized Adapter card) and corresponding LEDs, as follows: Green: Valid communication link established Unlit: Port is disabled or shut down Amber (blinking): No SFP or port loopback Amber: No link

Customer documentation and product support



Customer documentation

<http://www.alcatel-lucent.com/myaccess>

Product manuals and documentation updates are available at [alcatel-lucent.com](http://www.alcatel-lucent.com). If you are a new user and require access to this service, please contact your Alcatel-Lucent sales representative.



Technical Support

<http://support.alcatel-lucent.com>



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