7210 SAS-M

10GBASE MDA

Installation Guide

January 2011
Document Part Number: 93-0333-01-01

Disclaimers

Alcatel-Lucent products are intended for commercial uses. Without the appropriate network design engineering, they must not be sold, licensed or otherwise distributed for use in any hazardous environments requiring fail-safe performance, such as in the operation of nuclear facilities, aircraft navigation or communication systems, air traffic control, direct life-support machines, or weapons systems, in which the failure of products could lead directly to death, personal injury, or severe physical or environmental damage. The customer hereby agrees that the use, sale, licence or other distribution of the products for any such application without the prior written consent of Alcatel-Lucent, shall be at the customer's sole risk. The customer hereby agrees to defend and hold Alcatel-Lucent harmless from any claims for loss, cost, damage, expense or liability that may arise out of or in connection with the use, sale, licence or other distribution of the products in such applications.

This document may contain information regarding the use and installation of non-Alcatel-Lucent products. Please note that this information is provided as a courtesy to assist you. While Alcatel-Lucent tries to ensure that this information accurately reflects information provided by the supplier, please refer to the materials provided with any non-Alcatel-Lucent product and contact the supplier for confirmation. Alcatel-Lucent assumes no responsibility or liability for incorrect or incomplete information provided about non-Alcatel-Lucent products.

Alcatel-Lucent has made reasonable efforts to ensure that the SR-Series Channelized DS3/E3 MDA, complies in all material respects with the supporting product documentation. To obtain this document and other information related to any SR-Series product, please contact your Alcatel-Lucent representative.

This does not constitute a representation or warranty. The warranties provided for Alcatel-Lucent products, if any, are set forth in contractual documentation entered into by Alcatel-Lucent and its customers.

This document was originally written in English. If there is any conflict or inconsistency between the English version and any other version of a document, the English version shall prevail.

Caution:

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous laser radiation exposure.

TABLE OF CONTENTS

List of Figures

List of Tables

Preface

About This Manual

This guide provides site preparation recommendations, step-by-step procedures to install and remove Alcatel's 10-GBase Media Dependent Adapters (MDAs).

The 7210 SAS-M 10-GBase MDA provides 2 ports supporting 10-Gbps XFP interfaces.

After the hardware installation process is completed, refer to the following documents for details on the boot process, software configuration, and Command Line Interface (CLI) information to configure system and network parameters:

- 7210 SAS-M OS Basic System Configuration Guide

  This guide describes basic system configurations and operations.
- 7210 SAS-M OS System Management Guide

  This guide describes system security and access configurations as well as event logging and accounting logs.
- 7210 SAS-M OS Interface Configuration Guide

  This guide describes card, Media Dependent Adapter (MDA), and port provisioning.
- 7210 SAS-M OS Router Configuration Guide

  This guide describes logical IP routing interfaces and associated attributes such as an IP address, port, link aggregation group (LAG) as well as IP and MAC-based filtering, VRRP, and Cflowd.
- 7210 SAS-M OS Routing Protocols Guide

  This guide provides an overview of routing concepts and provides configuration examples for RIP, OSPF, IS-IS, Multicast, BGP, and route policies.
- 7210 SAS-M OS MPLS Guide

  This guide describes how to configure Multi protocol Label Switching (MPLS) and Label Distribution Protocol (LDP).
- 7210 SAS-M OS Services Guide

This guide describes how to configure service parameters such as service distribution points (SDPs), customer information, and user services.

- 7210 SAS-M OS OAM and Diagnostic Guide

  This guide describes how to configure features such as service mirroring and Operations, Administration and Management (OAM) tools.

- 7210 SAS-M Quality of Service Guide

  This guide describes how to configure Quality of Service (QoS) policy management.

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.

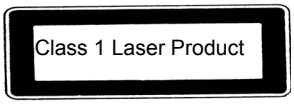
Audience

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, networking environments, and instigate accident prevention procedures.
	Caution	This symbol warns that improper handling and installation could result in equipment damage or loss of data.
	Warning	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 within this document. Only approved Class 1 replaceable laser transceivers should be used with this product.

Technical Support

If you purchased a service agreement for your Alcatel 7210 SAS-M router 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 service agreement, contact your welcome center at:

http://www1.alcatel-lucent.com/comps/pages/carrier_support.jhtml

Installing 10GBase MDA

In This Chapter

This chapter provides information on the following topics:

Provisioning Requirements

To configure MDAs and ports, you must be able to access the router by console or Telnet connection. Refer to the hardware installation guide for information and instructions.

The MDA slot and type must be provisioned in order to configure ports. A port cannot be configured until the MDA is provisioned.

Provision components in the following order:

Step 1 Configure the BOF parameter `use-expansion-card-type` to `m2-xfp`.

Step 2 Configure the BOF parameters `no-service-ports` to any two ports that you do not intend to use.

Note: The above two steps can be performed from the Timos CLI prompt under the `bof>` CLI context, in which case the node should be rebooted for the BOF parameters to take effect. Additionally, the node can be rebooted and the above BOF parameters can be modified during bootup. In either case, this is one-time configuration required for the first time before the user can use this MDA.

Step 3 Slot number

Step 4 Type

Step 5 MDA slot number

Step 6 MDA type

Step 7 Ports

Component Power Consumption

Table 2: 7210 SAS-M MDA Component Power Consumption

Component	Conservative Estimate (Including Approx. 20% Margin) (Watts)
MDAs:	
M2-10GB-XFP	15

Configuring MDA Parameters

Use the following CLI commands to provision the MDA. A maximum of one MDA can be configured on the chassis.

	Command	Example
Step 1	`card` *`slot-number`*	`card 1`
Step 2	`mda` *`mda-slot`*	`mda 2`
Step 3	`mda-type` *`mda-type`*	`mda-type` **`m2-xfp`**
Step 4	`no shutdown`	`no shutdown`
Step 5	`exit`	`exit`

Example

The following example displays card slot, card type, MDA slot, and MDA type command usage:

```
ALA-1>config# card 1
ALA-1>configcard# mda 2
ALA-1>config>card>mda# mda-type m2-xfp
ALA-1>config>card>mda# no shutdown
ALA-1>config>card>mda# exit
```

Sample Output

```
# show mda

===============================================================================
MDA Summary
===============================================================================
Slot  Mda   Provisioned           Equipped              Admin     Operational
            Mda-type              Mda-type              State     State
-------------------------------------------------------------------------------
1     1     m24-1gb+2-10gb        m24-1gb+2-10gb        up        up
      2     m2-xfp               m2-xfp                 up        up
===============================================================================
*A:ces-A# show mda 1/2

===============================================================================
MDA 1/2
===============================================================================
Slot  Mda   Provisioned           Equipped              Admin     Operational
            Mda-type              Mda-type              State     State
-------------------------------------------------------------------------------
1     2     m2-xfp                m2-xfp                up        up
===============================================================================


*A:mtuETR2594#  show mda 1/2 detail
```

```
===============================================================================
MDA 1/2 detail
===============================================================================
Slot  Mda   Provisioned           Equipped              Admin     Operational
            Mda-type              Mda-type              State     State
-------------------------------------------------------------------------------
1     2     m2-xfp                m2-xfp                up        up


MDA Specific Data
    Maximum port count            : 2
    Number of ports equipped      : 2
    Network ingress queue policy  : default
    Capabilities                  : Ethernet

Hardware Data
    Part number                   :
    CLEI code                     :
    Serial number                 : 000TIM07060
    Manufacture date              :
    Manufacturing string          :
    Manufacturing deviations      :
    Administrative state          : up
    Operational state             : up
    Temperature                   : 32C
    Temperature threshold         : 65C
    Low Temperature threshold     : -20C
    Software version              : N/A
    Time of last boot             : 2010/12/14 17:47:11
    Current alarm state           : alarm cleared
    Base MAC address              : 00:03:fa:1d:b3:9e

-------------------------------------------------------------------------------
QOS Settings
-------------------------------------------------------------------------------
Ing. Named Pool Policy            : None
Egr. Named Pool Policy            : None
===============================================================================
```

```
Hardware Data
    Part number                  : 3HE05050AA
    CLEI code                    : CES CLEI
    Serial number                : SNCES1234
    Manufacture date             : 01012010
    Manufacturing string         : MfgString
    Manufacturing deviations     : MfgDeviation
    Administrative state         : up
    Operational state            : up
    Temperature                  : 42C
    Temperature threshold        : 50C
    Software version             : N/A
    Time of last boot            : 2010/06/07 14:33:56
    Current alarm state          : alarm cleared
    Base MAC address             : f6:12:34:56:78:ab

-------------------------------------------------------------------------------
QOS Settings
-------------------------------------------------------------------------------
Ing. Named Pool Policy           : None
Egr. Named Pool Policy           : None
===============================================================================


*A:ces-A>config# card 1
*A:ces-A>config>card# info
----------------------------------------------
        mda 1
        exit
        mda 2
            mda-type m2-xfp
        exit
----------------------------------------------
*A:ces-A>config>card#
*A:ces-A>config>card#
A:sas-mx>config>card# info detail
----------------------------------------------
  mda 1
       no sync-e
       no shutdown
  exit
  mda 2
       mda-type m2-xfp
       no sync-e
       no shutdown
  exit
  no shutdown
----------------------------------------------
```

Installation Procedures

Warnings and Notes

Warning:

- Electrostatic discharge (ESD) damage can occur if MDAs are mishandled. Always wear an ESD-preventive wrist or ankle strap and always connect an ESD strap to the grounding plug on the front of the chassis.
- Always place components on an anti-static surface.
- Do not power up an 7210 SAS-M router until all components are installed and verified.

Notes:

- Ports cannot be configured until the MDA is configured.
- Services cannot be provisioned until ports are configured.
- MDAs can be installed as follows:
  - → Installed into the expansion slot in the front plate of the chassis. See Installing an MDA into the Expansion Slot on page 19.
- Use only approved 10 Gigabit small form factor pluggable fiber optic devices in MDA ports.

Installing an MDA into the Expansion Slot

MDAs can be installed into the expansion slot on the chassis.

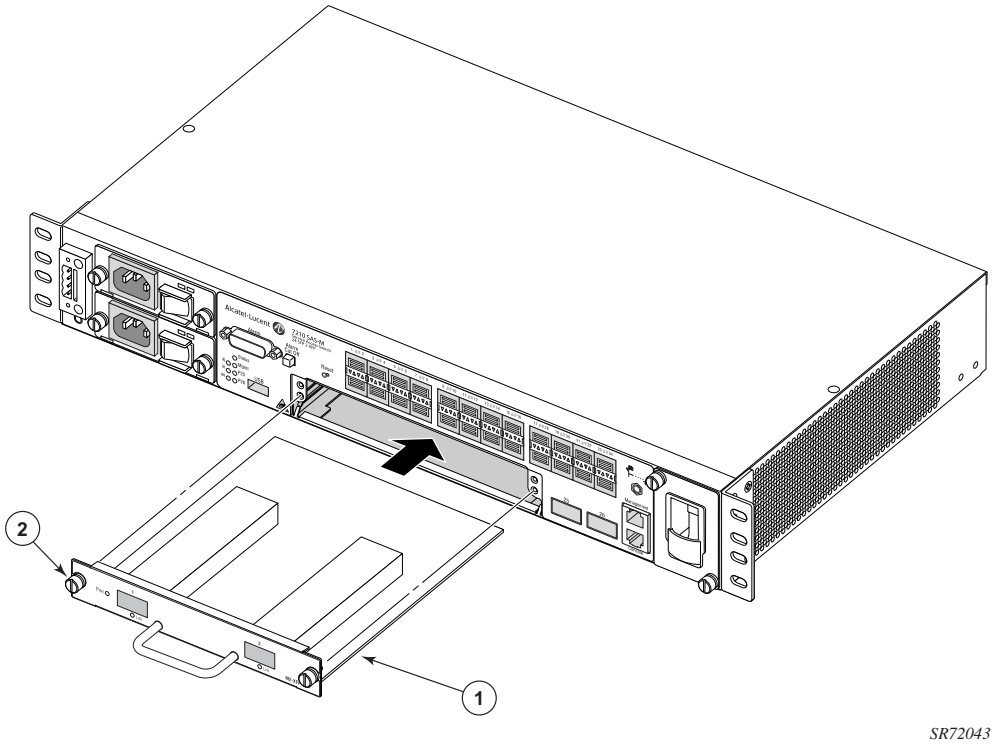


Figure 1: Installing an MDA into the Expansion Slot

To install an MDA in the chassis:

Step 1 Remove the expansion slot cover from the chassis.

Step 2 Remove MDA from the packaging and place on a flat anti-static work surface. Avoid touching board components and connector pins.

Step 3 Insert the MDA into expansion slot on the chassis. Align the MDA with the slot guides and the captive screw with the threaded receptacle.

Step 4 Press the MDA firmly into the slot. Make sure that the connectors are fully seated in the slot receptacle. The faceplate of the MDA should be flush with the chassis faceplate.

Step 5 Tighten the captive screws to secure the MDA. Do not over-tighten. The maximum recommended torque is 4-6 lbf.in.

Removing an MDA

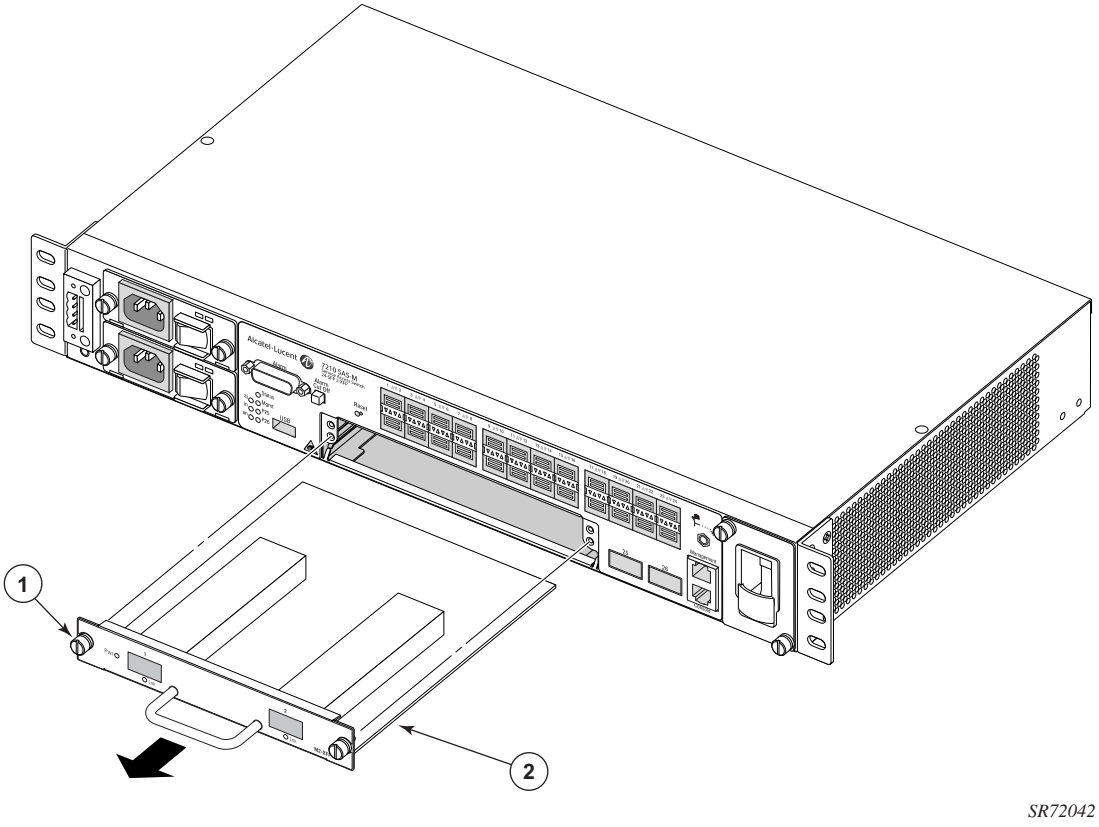


Figure 2: Removing an MDA from the Expansion Slot

To remove an MDA:

Step 1 Disconnect all cables from the MDA ports.

Step 2 Loosen the MDA captive screws.

NOTE: The MDA cannot be removed if the captive screws are tightened.

Step 3 Slide the MDA out of the expansion slot.

Step 4 Place the MDA on an anti-static surface.

Step 5 You must either immediately install another MDA into the slot or replace the MDA slot with blank cover

LED Descriptions

In This Chapter

The following topics are described in this section:

LEDs

M2-XFP MDA

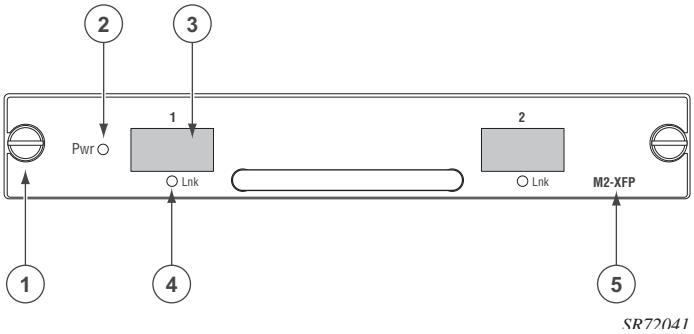


Figure 3: M2-XFP MDA

Table 3: 2-Port 10-GBase MDA Features

Key	Label	Description
1	Captive screws	
2	Power	• Blue: On • Off: No power
3	Ports	• 2 XFP ports
4	Lnk	• Green: Valid communications link is established. • Green (blinking): Indicates Link activity. • Unlit: Disabled, shut down.
5	Label	• M2-XFP