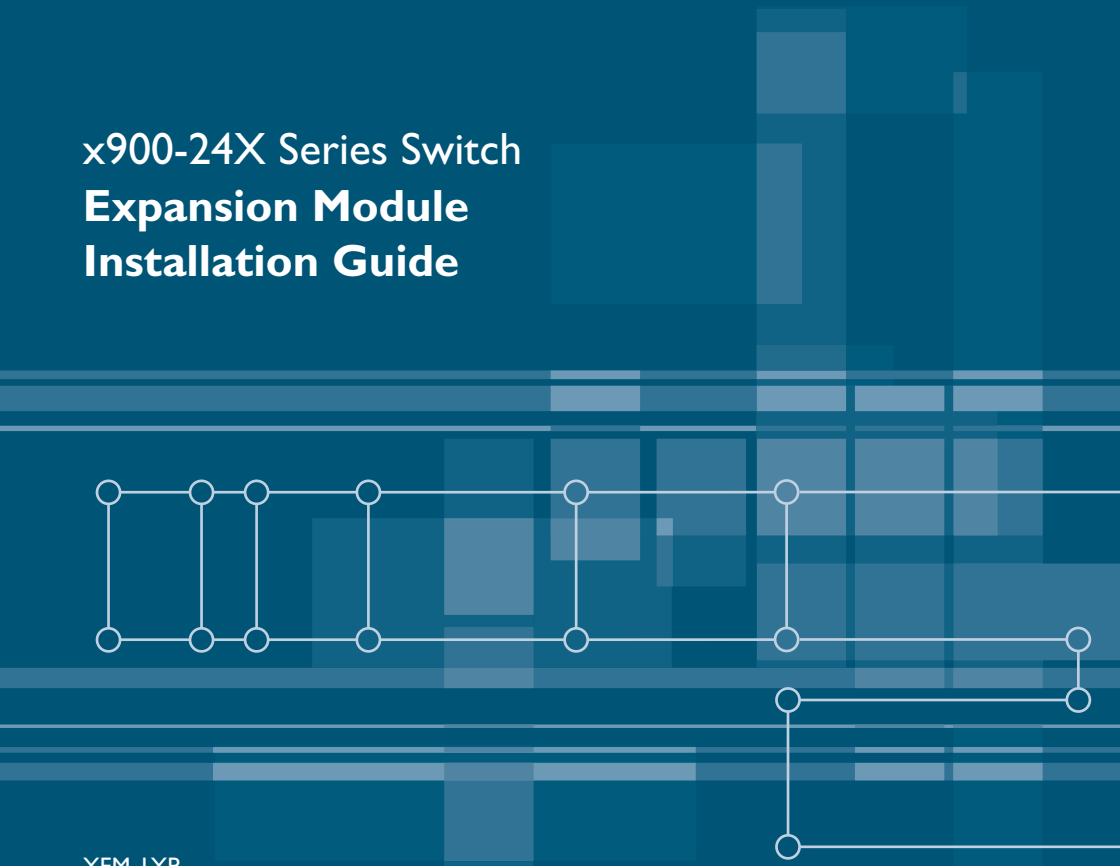
x900-24X Series Switch

Expansion Module Installation Guide



XEM-1XP
XEM-12S
XEM-12T
XEM-12T-N

Allied Telesis

Expansion Module Installation Guide for x900-24X Series Switch
Document Number 613-000032 REV C

Contents

Models Covered by this Guide

- XEM-1XP provides a single XFP port
- XEM-12S provides 12 SFP ports
- XEM-12T and XEM-12T-N provide 12 10/100/1000Mbps RJ-45 ports

Package Contents

One warranty card and this Installation Guide are included with each expansion module. Contact your sales representative if either is damaged or missing.

Overview

Two front bays in the x900-24X Series switch allow quick and easy installation of optional expansion modules (XEMs). These modules enable economical combinations of speed and port density with the x900-24X Series gigabit link aggregation switch.

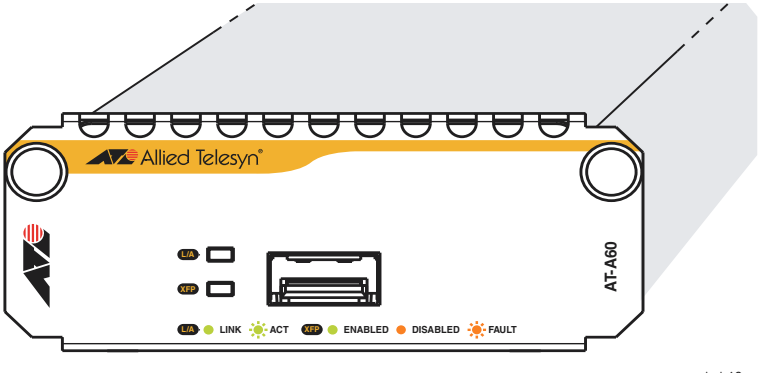
For example, add one 10GbE expansion module to provide a single high-speed, high capacity fiber connection; add a second 10GbE module for redundancy or as bandwidth needs increase. Add one or two 12-port RJ-45 copper expansion modules to provide maximum gigabit Ethernet port density in a compact 1RU chassis. For flexible port options, add one or two 12-port SFP expansion modules to aggregate copper and fiber links from data centres and enterprise networks, while providing long haul fiber links.

XFP Port

The single-port 10Gigabit Ethernet expansion module, model XEM-1XP, features the following:

- support for hot-swappable XFP modules
- two 16MByte DDR-SDRAM for packet buffering
- compatibility with a number of different 10Gb XFP serial transceivers
- status LEDs
- NEBS compliant
- XFP connector, cage, and heatsink are provided for use with any standard XFP module

Front view XEM-1XP



The following LEDs report operations on XEM-1XP expansion modules.

LED	State	Description
L/A (Link Activity)	Green	An XFP transceiver is installed and a 10Gb link has been established.
	Green flashing	An XFP transceiver is installed and link activity is occurring.

LED	State	Description
XFP	Green	An XFP transceiver is installed and enabled. No XFP is installed if this light is off.
	Amber	An XFP transceiver is installed but not operating.
	Amber flashing	The installed XFP transceiver has a transmission fault.

The following XFP modules are approved for the XEM-1XP expansion module.

Product No.	Media Type	Description
AT-XPSR	10GBASE-SR	850nm short-haul transmission, 300m with MMF.
AT-XPLRM	10GBASE-LRM	1310nm short-haul transmission, 300m with MMF.
AT-XPLR	10GBASE-LR	1310nm medium-haul transmission, 10km with SMF.
AT-XPER40	10GBASE-ER	1550nm long-haul transmission, 40km with SMF.

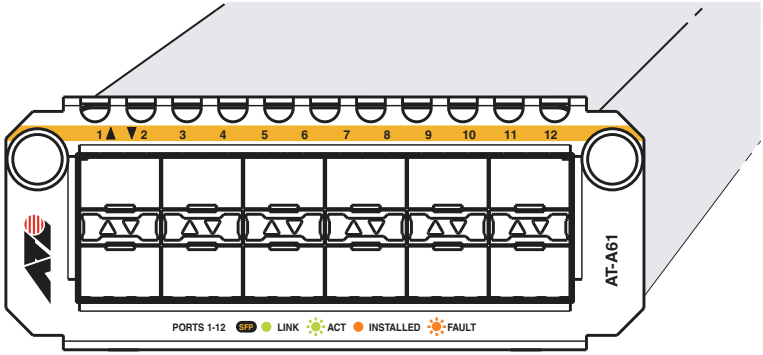
For the latest list of approved transceiver modules, contact an authorised distributor or reseller.

SFP Ports

The 12-port 1000BASE-X expansion module, model XEM-12S, features the following:

- two rows of 6 SFP ports
- support for hot-swappable SFP modules
- status LEDs
- two 16MByte DDR-SDRAM for packet buffering
- NEBS compliant
- cable fault detection and distance-to-fault diagnostics for copper SFP ports (see the *Test Facility* chapter in the Software Reference for the switch)

Front view XEM-12S



The following LEDs report operations on XEM-12S expansion modules.

LED	State	Description
L/A (Link Activity)	Green	An SFP transceiver is installed and a link has been established.
	Green flashing	An SFP transceiver is installed and link activity is occurring.
	Amber	An SFP transceiver is installed but a link has not been established.
	Amber flashing	An SFP is installed but there is a transmission fault.

The following SPF modules are approved for XEM-12S expansion modules.

Product No.	Media Type	Description
AT-SPTX	10/100/1000BASE-T	Copper, 100m at 1000Mbps, RJ-45 connector.
AT-SPSX	1000BASE-SX	850nm, 2 to 550 m with 50/125μm fiber, 2m to 275m with 62.5/125μm fiber, LC connector.
AT-SPLX10	1000BASE-LX	1310nm, 2m to 10km with 9μm SM fiber, 2m to 550m with 50μm MM fiber, 2m to 550m with 62.5μm MM fiber, LC connector.
AT-SPLX40	1000BASE-LX	1310nm SM fiber up to 40km, LC connector
AT-SPLX40/1550	1000BASE-LX	550nm SM fiber up to 40km, LC connector
AT-SPZX80	1000BASE-ZX	1550nm, 80km with 9μm SM fiber, LC connector.
AT-SPZX80/xxxx	1000BASE-ZX CWDM	Wavelengths of 1610nm to 1470nm (20nm intervals) and 1310nm, 80km with 9μm SM fiber, LC connector. Where xxxx can be: 1610 1590 1570 1550 1530 1510 1490 1470 Both ends of an individual fibre must use SFPs of the same wavelength.

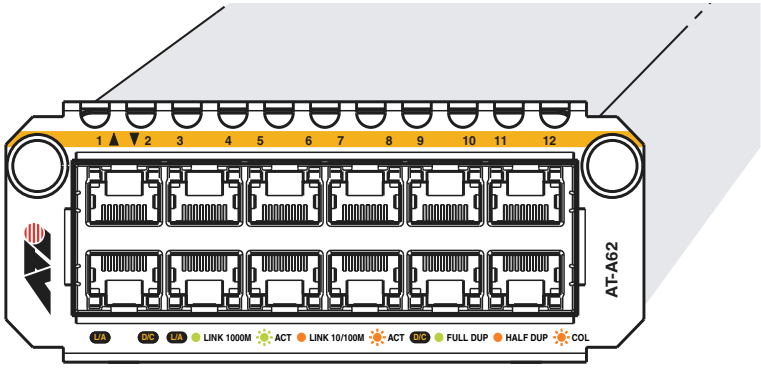
For the latest list of approved transceiver modules, contact an authorised distributor or reseller.

RJ-45 Ports

The 12-port RJ-45 expansion module, model XEM-12T, features the following:

- two rows of 6 RJ-45 ports
- gigabit ports that support speeds of 10/100/1000Mbps
- status LEDs
- two 16MByte DDR-SDRAM for packet buffering
- NEBS model XEM-12T-N available
- cable fault detection and distance-to-fault diagnostics are available for RJ-45 Ethernet ports (see the *Test Facility* chapter in the Software Reference for the switch)

Front view XEM-12T



The following LEDs report operations on XEM-12T expansion modules.

LED	State	Description
L/A (Link Activity)	Green	A 1000Mbps link has been established.
	Green flashing	1000Mbps activity is occurring.
	Amber	A 10/100Mbps link has been established.
	Amber flashing	10/100Mbps activity is occurring.
D/C (Duplex/ Collision)	Green	The port is operating in full duplex mode.
	Amber	The port is operating in half duplex mode.
	Amber flashing	Collisions are occurring.

Installation Procedure

Before you begin:

- Unpack the expansion module.

  In an anti-static environment, remove the expansion module from its packing material. Be sure to observe ESD precautions.

  Caution Failure to observe proper anti-static procedures may damage the unit. If you are unsure about correct procedures, contact your authorised Allied Telesis distributor or reseller.

- Verify the package contents if you have not already done so.

  See "Package Contents" on page 4. If any items are damaged or missing, contact your authorised distributor or reseller.

- Read the safety information for the switch.

  Safety information is available in the Installation and Safety Guide that is on the CD-ROM for the x900-24X Series switch. Or you can download this document from www.alliedtelesis.com/support/software.

- Gather necessary tools.

  You may need a Phillips #2 screwdriver to adjust the retaining screws on a blank faceplate.

Procedure

If you want to swap expansion modules, first save your configuration file as necessary (with **create config** and **set config** commands).

1. If connected, disconnect the switch from its redundant power supply.

2. Disconnect the switch from its AC or DC power supply.

3. Loosen the thumbscrews to the faceplate or existing expansion module, and remove it.

   Keep the faceplate for future use. If you remove the expansion module, cover the bay with the faceplate to prevent dust and debris from entering it and to maintain proper airflow.

4. Carefully slide the module into the empty bay until you feel it engage the rear plug.

5. Secure the module by tightening the thumbscrews on it.

6. Apply power to the switch by re-attaching the power cord.

7. If you disconnected a redundant power supply, reconnect it.

8. Restart the switch and verify installation with the **show log** command to confirm there is no error message about installation in the log file.

   If you are connected to the asyn0 port, any error message is displayed during startup self-tests.

Documentation

The documentation CD-ROM included with each switch contains complete documentation as well as tools to manage it. The CD includes:

- the Hardware Reference, which provides detailed information on the switch and its hardware features.
- the Installation and Safety Guide, which describes how to install the switch and includes important statutory and safety information.
- the Software Reference, which provides detailed information on configuring the switch and its software.
- the *Removable Power Supply and Fan Installation Guide*, which describes how to install power supply units and fan-only modules in the switch.
- this Installation Guide.
- AT-TFTP Server for Windows for downloading software releases.
- Adobe Acrobat Reader for viewing online documentation.

You can also download documentation from www.alliedtelesis.com/support/software.