



613-000332 Rev. D



## AT-CM2K0S Converteon Line Card Installation Guide

### Overview

The AT-CM2K0S line card is a Gigabit copper-to-fiber media line card. You can install this line card in any Converteon Series chassis. The line card features one small form factor pluggable (SFP) transceiver slot and one copper twisted pair port. The line card is hot-swappable into and out of a Converteon chassis.

### Related Documents

For details on the features and functions of a Converteon chassis, refer to the relevant documents on our web site, [www.alliedtelesis.com](http://www.alliedtelesis.com).

### Verifying Package Contents

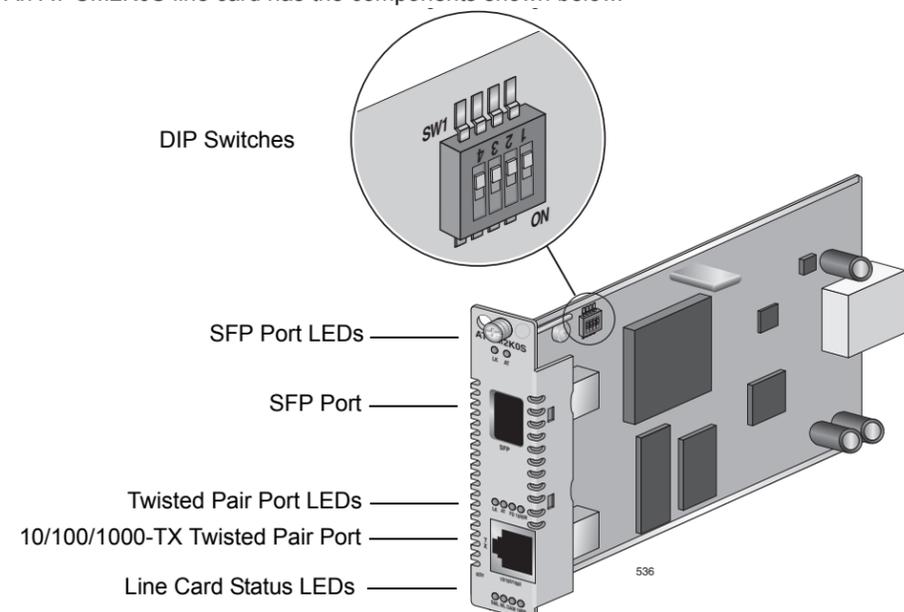
Ensure that the following items are included in your package:

- One AT-CM2K0S line card
- This installation guide

If any item is missing or damaged, contact your Allied Telesis sales representative for assistance.

### AT-CM2K0S Line Card Components

An AT-CM2K0S line card has the components shown below.



### Port Descriptions

#### SFP Port

The SFP slot supports qualified SFP transceivers with a fixed operating speed of 1000 Mbps. Another AT-CM2K0S line card must be installed with an identical SFP module in a remote chassis to de-multiplex the signals. Please refer to the AT-CM2K0S Product Information/Related Products page on the [www.alliedtelesis.com](http://www.alliedtelesis.com) web site for the list of qualified SFP modules.

#### Twisted Pair Port

The 10/100/1000Base-TX compliant twisted pair port has an RJ-45 connector and a maximum operating distance of 100 meters (328 feet). Category 5 (5E), 100 Ohm shielded or unshielded twisted pair cabling is required. The pinouts for this port are shown in "Twisted Pair Port Pinouts."

#### LEDs

An AT-CM2K0S line card has four system LEDs, two LEDs for the SFP port, and five LEDs for the twisted pair port, as described in "LED Descriptions."

#### DIP Switches

One set of DIP switches allows you to set the operating mode, as described in "DIP Switch Settings."

### Installing an AT-CM2K0S Line Card

#### Note

Before you install an AT-CM2K0S line card, refer to the appropriate Converteon chassis installation guide for electrical safety and emissions information.



**Warning:** Remove all metal jewelry, such as rings and watches, before installing or removing a line card from a powered-on chassis.

**Caution:** Be sure to observe all standard electrostatic (ESD) precautions, such as wearing an antistatic wrist strap, to avoid damaging the device. A line card can be damaged by static electricity

#### Note

You can install a Converteon line card in any Converteon chassis line card slot.

To install an AT-CM2K0S line card, perform the following procedure:

1. Remove the AT-CM2K0S line card from its shipping package and store the package in a safe place. You must use the original package if you need to return the unit to Allied Telesis.
2. Configure the line card's DIP switches as required. Refer to "DIP Switches" for more information.
3. Select any line card slot in the chassis where you want to install the AT-CM2K0S line card, and remove the blank slot cover if one is installed.
4. Align the back edge of the line card with the top and bottom alignment guides located inside the slot.
5. Slide the line card into the slot until the front of the card is flush with the front of the chassis.

#### Note

Avoid touching the line card components.

6. Secure the AT-CM2K0S line card to the chassis by using a Phillips screwdriver to tighten the captive screw on the faceplate.

#### Note

Always tighten the captive screw to secure the line card to the chassis.

7. Repeat this procedure to install additional AT-CM2K0S line cards.

### LED Descriptions

#### Status LEDs

The line card has four status LEDs as described in the following table. For more information about Smart MissingLink, MissingLink, and OAM, refer to the relevant management software user's guide.

LED	State	Description
RDY	Green	The line card has passed diagnostics.
	Off	The line card has not passed diagnostics.
SML	Green	The Smart MissingLink mode is enabled.
	Off	The Smart MissingLink mode is disabled.
ML	Green	The MissingLink mode is enabled.
	Off	The MissingLink mode is disabled.
OAM	Green	The OAM mode is enabled (visible or bypass). You use the DIP switches to set the OAM mode, as described in "DIP Switch Settings."
	Off	The OAM mode is disabled.

#### SFP Port LEDs

The SFP port has two LEDs, as described in the following table. For more information about Smart MissingLink, refer to the relevant management software user's guide.

LED	State	Description
LK	Green	A link has been established on the port.
	Blinking Green	While in Smart MissingLink mode, a valid connection is established on the port while a link on the other port is lost.
	Off	No link has been established on the port.
AT	Blinking Green	TX/RX activity has been detected on the port.
	Off	There is no TX/RX activity on the port.

#### Twisted Pair Port LEDs

The twisted pair port has five LEDs, as described in the following table. For more information about Smart MissingLink, refer to the relevant management software user's guide.

LED	State	Description
LK	Green	A link has been established on the port.
	Blinking Green	While in Smart MissingLink mode, a valid connection is established on the port while a link on the other port is lost.
	Off	No link has been established on the port.
AT	Blinking Green	TX/RX activity has been detected on the port.
	Off	There is no TX/RX activity on the port.
FD	Green	The port is operating in full-duplex mode.
	Off	The port is operating in half-duplex mode.
1000M	Green	The port is operating at 1000 Mbps.
	Off	The port is not operating at 1000 Mbps.*
100M	Green	The port is operating at 100 Mbps.

LED	State	Description
	Off	The port is not operating at 100 Mbps.*

\*When the 1000M and 100M LEDs are both off, the port is operating at 10 Mbps.

### DIP Switch Settings

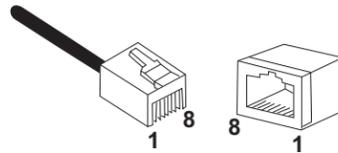
The DIP switches as described in the following table allow you to set the operating mode of the line card. For information about the operating modes as well as Smart MissingLink, MissingLink, and OAM, refer to the relevant management software user's guide.

Operating Mode	DIP 1	DIP 2	DIP 3	DIP 4
Link Test (default)	OFF	OFF	OFF	X
Smart MissingLink (SML)	OFF	ON	ON	X
MissingLink (ML)	OFF	OFF	ON	X
OAM Bypass	ON	OFF	OFF	X
OAM Visible	ON	ON	OFF	X

"X" means that the DIP switch position can be ON or OFF.

### Twisted Pair Port Pinouts

The pinouts for the RJ-45 twisted pair port are shown in the following illustration.



The following table lists the RJ-45 pin signals when a twisted pair port is operating in the MDI or MDI-X mode.

MDI Mode		MDI-X Mode	
Pin	Signal	Pin	Signal
1	TX+	1	RX+
2	TX-	2	RX-
3	RX+	3	TX+
6	RX-	6	TX-

### Warranty Information

The AT-CM2K0S line card has a limited warranty of five years. Go to [www.alliedtelesis.com/warranty](http://www.alliedtelesis.com/warranty) for the specific terms and conditions of the warranty and for warranty registration.

### Specifications

#### Physical, Environmental, and Electrical Ratings

Dimensions (H x W x L)	(2.2 cm x 7.3 cm x 13.0 cm) .78 in. x 2.89 in. x 5.1 in.
Operating Temperature	0° C to 40° C (32° F to 104° F)
Storage Temperature	-25° C to 70° C (-13° F to 158° F)
Operating Relative Humidity	5% to 90% (non-condensing)
Storage Relative Humidity	5% to 95% (non-condensing)
Operating Altitude Range	Up to 3,048 m (10,000 ft.)
Predicted MTBF (Telcordia SR332)	880,000 hours
Power Consumption	6.5 Watts maximum

### Electrical Safety and Emissions Statements

This product meets the following standards when installed in compliant host equipment.

#### U.S. Federal Communications Commission

##### Radiated Energy

Note: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of 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 this instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Note: Modifications or changes not expressly approved of by the manufacturer or the FCC, can void your right to operate this equipment.

#### Industry Canada

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.  
Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

**Emissions** FCC Class A, EN55022 Class A, VCCI Class A, C-TICK, CE

**Warning:** In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

**Immunity** EN55024

**Electrical Safety** UL60950 (cUL-us), EN60950 (TUV), CSA22.2 No. 950

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