

# CONVERTEON™ Family

One-Slot Chassis

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**AT-CV1000**

## Installation Guide

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# Electrical Safety and Emissions Standards

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This product meets the following standards.

## 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 complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

## European Union Restriction of the Use of Certain Hazardous Substances (RoHS) in Electrical and Electronic Equipment

This Allied Telesis RoHS-compliant product conforms to the European Union Restriction of the Use of Certain Hazardous Substances (RoHS) in Electrical and Electronic Equipment. Allied Telesis ensures RoHS conformance by requiring supplier Declarations of Conformity, monitoring incoming materials, and maintaining manufacturing process controls.

RFI Emissions      FCC Class A, EN55022 Class A, EN61000-3-2, EN61000-3-3, 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    EN60950 (TUV), UL 60950 (CUL<sub>US</sub>)



Laser Safety        EN60825

## Translated Safety Statements

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**Important:** The  indicates that a translation of the safety statement is available in a PDF document titled “Translated Safety Statements” posted on the Allied Telesis website at [www.alliedtelesis.com](http://www.alliedtelesis.com) and on the documentation CD shipped with this product.

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# Preface

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This guide contains instructions on how to install an AT-CV1000 One-Slot Converteon™ chassis. This preface contains the following sections:



- ❑ “Safety Symbols Used in this Document” on page 10
- ❑ “Where to Find Web-based Guides” on page 11
- ❑ “Contacting Allied Telesis” on page 12

## Safety Symbols Used in this Document

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This document uses the safety symbols defined in Table 1.

Table 1. Safety Symbols

Symbol	Meaning	Description
	Caution	Performing or omitting a specific action may result in equipment damage or loss of data.
	Warning	Performing or omitting a specific action may result in electrical shock.

## Where to Find Web-based Guides

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The installation and user guides for all Allied Telesis products are available in portable document format (PDF) on our web site at **[www.alliedtelesis.com](http://www.alliedtelesis.com)**. You can view the documents online or download them onto a local workstation or server.

## Contacting Allied Telesis

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This section provides Allied Telesis contact information for technical support as well as sales and corporate information.

### Online Support

You can request technical support online by accessing the Allied Telesis Knowledge Base: [www.alliedtelesis.com/support/kb.aspx](http://www.alliedtelesis.com/support/kb.aspx). You can use the Knowledge Base to submit questions to our technical support staff and review answers to previously asked questions.

### Email and Telephone Support

For Technical Support via email or telephone, refer to the Support & Services section of the Allied Telesis web site: [www.alliedtelesis.com](http://www.alliedtelesis.com). Select your country from the list displayed on the website. then select the appropriate menu tab.

### Warranty

For hardware warranty information, refer to the Allied Telesis web site: [www.alliedtelesis.com/support/warranty](http://www.alliedtelesis.com/support/warranty).

### Returning Products

Products for return or repair must first be assigned a return materials authorization (RMA) number. A product sent to Allied Telesis without an RMA number will be returned to the sender at the sender's expense.

To obtain an RMA number, contact the Allied Telesis Technical Support group at our web site: [www.alliedtelesis.com/support/rma](http://www.alliedtelesis.com/support/rma). Select your country from the list displayed on the website. Then select the appropriate menu tab.

### Sales or Corporate Information

You can contact Allied Telesis for sales or corporate information through our web site: [www.alliedtelesis.com](http://www.alliedtelesis.com). To find the contact information for your country, select Contact Us -> Worldwide Contacts.

### Management Software Updates

New releases of management software for our managed products are available from either of the following Internet sites:

- Allied Telesis web site: [www.alliedtelesis.com](http://www.alliedtelesis.com)
- Allied Telesis FTP server: <ftp://ftp.alliedtelesis.com>

If you prefer to download new software from the Allied Telesis FTP server from your workstation's command prompt, you will need FTP client software and you must log in to the server. Enter "anonymous" for the user name and your email address for the password.

## Chapter 2

# Overview

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This chapter contains the following sections:

- “Features” on page 14
- “Converteon™ Line Cards” on page 16
- “Blank Slot Cover” on page 17
- “Power Adapter” on page 18
- “Network Topologies” on page 19

## Features

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The AT-CV1000 One-Slot Converteon™ chassis, as shown in Figure 1, is designed to house any single Converteon™ line card.

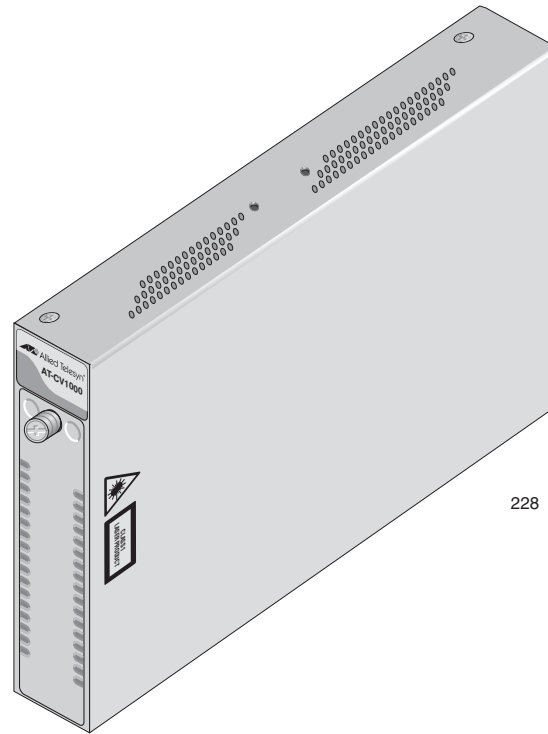


Figure 1. AT-CV1000 One-Slot Converteon™ Chassis

You can install the AT-CV1000 chassis on a desktop as a standalone media converter, mount it on a wall, or install it in an AT-MCR12 chassis.

In addition, you can install the AT-CV1000 chassis in an AT-MCR12 media conversion rack-mount chassis. In order to do this, you must purchase an AT-CVMCR Installation Adapter, available from Allied Telesis.

The chassis has one pre-installed AT-CV5PNLx blank slot cover and an AC power connector.

Figure 2 shows the front and back panels of the AT-CV1000 chassis.

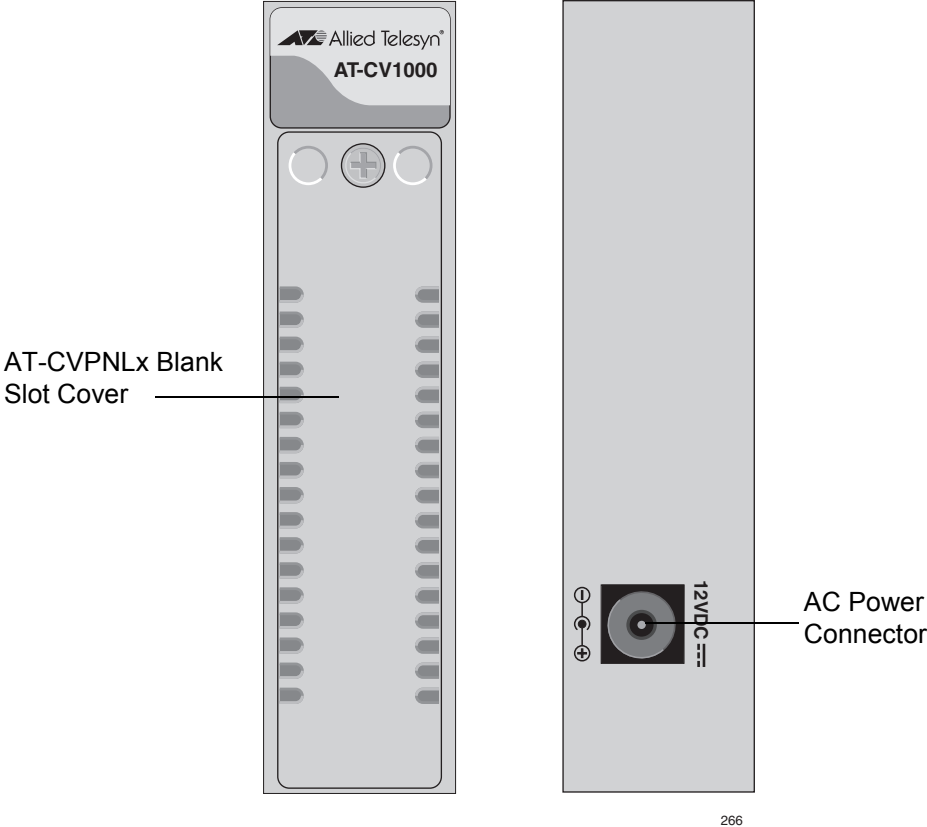


Figure 2. AT-CV1000 Chassis Front and Back Panels

## Converteon™ Line Cards

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The AT-CV1000 chassis can only house one Converteon™ line card. The line card is hot swappable.

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### **Note**

For a current list of Converteon™ line cards, refer to the Allied Telesis web site or consult your authorized sales representative. For detailed descriptions of these line cards, refer to the documentation shipped with the line cards and/or the *Converteon™ Media Converter Line Cards Reference Guide* posted on our web site, **[www.alliedtelesis.com](http://www.alliedtelesis.com)**.

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## Blank Slot Cover

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The AT-CV5PNL1 blank slot cover is designed to maintain optimal, trouble-free environmental conditions for the AT-CV1000 chassis. An unoccupied line card slot on the AT-CV1000 chassis should be covered with a blank slot cover to keep dust from getting into the chassis and maintain proper airflow, cooling, and ventilation throughout the chassis.

Figure 1 illustrates the AT-CV5PNL1 blank slot cover.



Figure 3. AT-CV5PNL1 Blank Slot Cover

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**Note**

Allied Telesis strongly recommends that a blank slot cover be inserted in any slot that does not contain a functioning line card.

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To install a blank slot cover, refer to “Installing a Blank Slot Cover” on page 37.

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**Note**

Only the AT-CV5PNL1 of the AT-CV5PNLx blank cover series is designed for the AT-CV1000 chassis. Be sure to ask for the AT-CV5PNL1 if you need to order a new blank cover for this chassis.

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## Power Adapter

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The AT-CV1000 chassis uses a two-part AC power adapter (supplied), as shown in Figure 4.

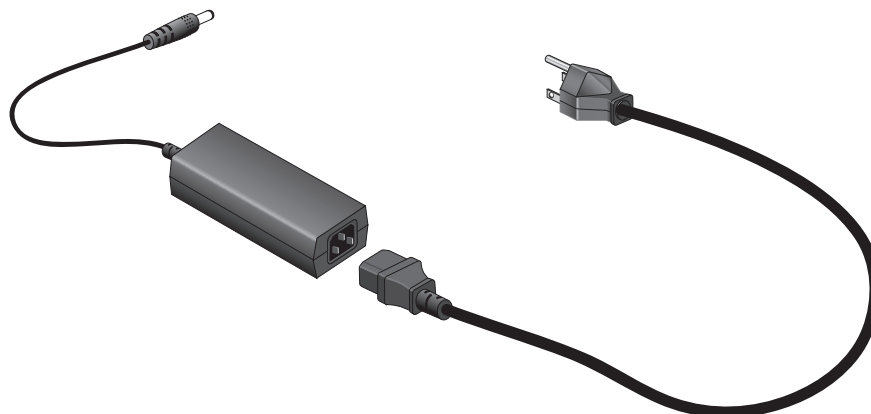


Figure 4. AC Power Adapter

## Network Topologies

This section describes two network topologies you can create with the Converteon™ Fast and Gigabit media converter line cards installed in an AT-CV1000 chassis.

### Standalone Topology

Figure 5 illustrates a standalone topology using one AT-CV1000 chassis with an AT-CM202 line card installed to interconnect two small networks.

- ❑ Network 1 has an AT-FS709FC switch connected to the 100Base-FX port on the AT-CM202 line card in the AT-CV1000 media converter.
- ❑ Network 2 has an AT-8524M switch connected to the 10/100Base-TX port on the AT-CM202 line card in the AT-CV1000 media converter.

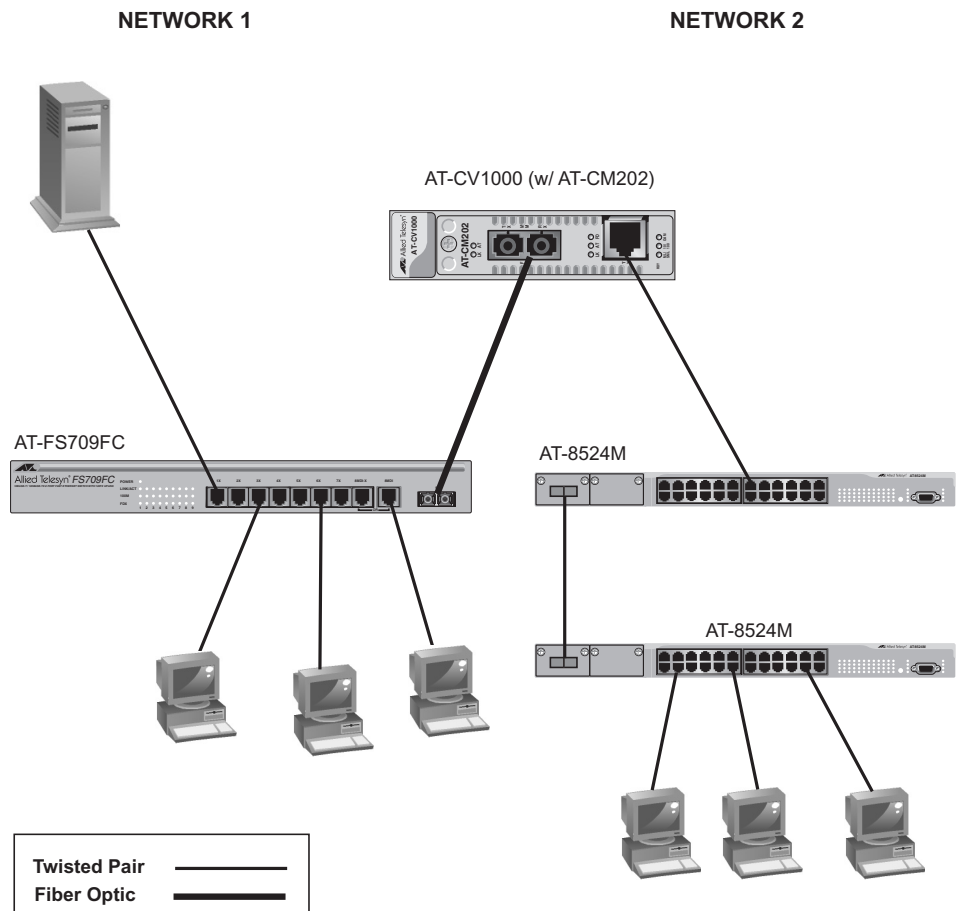


Figure 5. Standalone Network Topology

## Back-to-Back Topology

Figure 6 illustrates a back-to-back topology using two AT-CV1000 chassis, each with an AT-CM202 line card installed to interconnect two small networks.

- ❑ The media converters themselves are connected together through 100Base fiber optic ports on AT-CM202 line cards.
- ❑ Network 1 has an AT-8350GB switch connected to the 10/100Base-TX port on the AT-CM202 line card in the first AT-CV1000 media converter.
- ❑ Network 2 has an AT-8524M switch connected to the 10/100Base-TX port on the AT-CM202 line card in the second AT-CV1000 media converter.

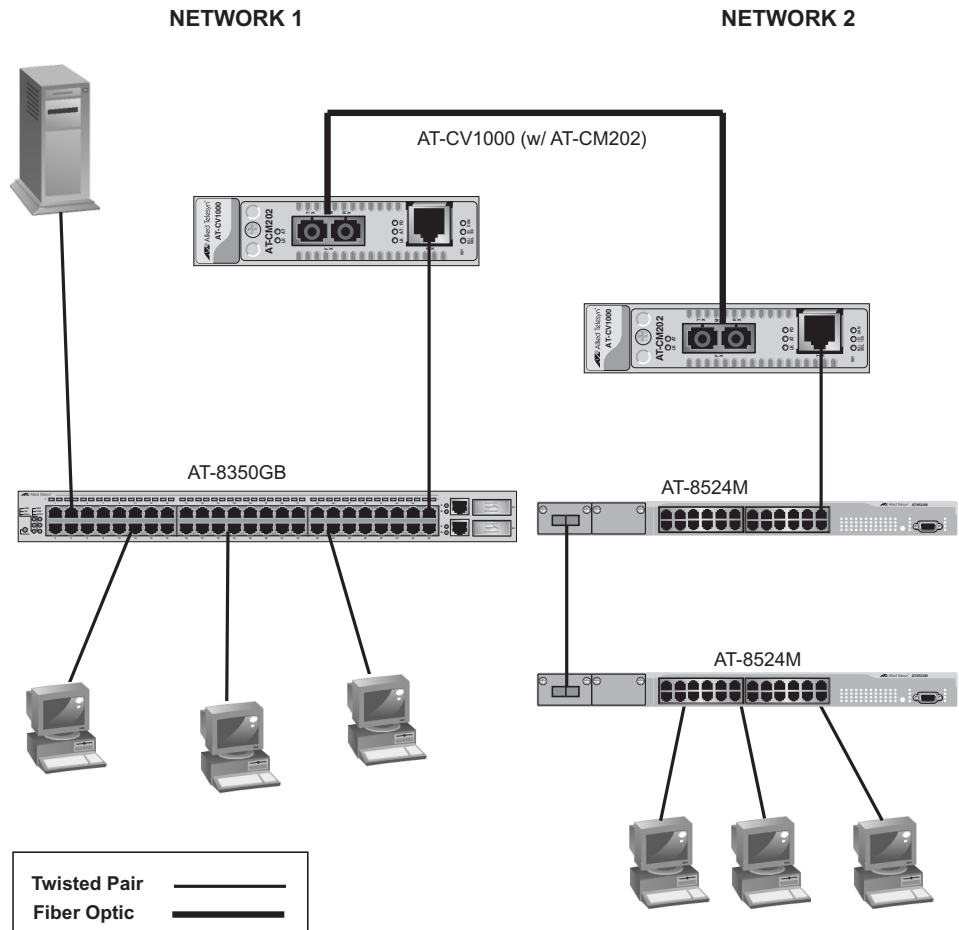


Figure 6. Back-to-Back Network Topology

## Chapter 3

# Installation

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This chapter contains the following installation procedures for the AT-CV1000 chassis:

- “Reviewing Safety Precautions” on page 22
- “Selecting a Site for the Chassis” on page 23
- “Unpacking the Chassis” on page 24
- “Using the AT-CV1000 Chassis on a Desktop” on page 25
- “Mounting the AT-CV1000 Chassis on a Wall” on page 26
- “Installing an AT-CV1000 Chassis in an AT-MCR12 Rack-Mount Chassis” on page 28
- “Installing a Convertion™ Line Card” on page 32
- “Powering On an AT-CV1000 Chassis” on page 35
- “Installing a Blank Slot Cover” on page 37
- “Warranty Registration” on page 39


## Reviewing Safety Precautions

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Please review the following safety precautions before you begin to install the chassis or any of its components.

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### Note

The  indicates that a translation of the safety statement is available in a PDF document titled “Translated Safety Statements” on the Allied Telesis website at [www.alliedtelesis.com](http://www.alliedtelesis.com) and on the documentation CD shipped with this product.

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**Warning:** Do not work on equipment or cables during periods of lightning activity.  E2

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**Warning:** Power cord is used as a disconnection device. To de-energize equipment, disconnect the power cord.  E3

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**Warning:** Class I Equipment. This equipment must be earthed. The power plug must be connected to a properly wired earth ground socket outlet. An improperly wired socket outlet could place hazardous voltages on accessible metal parts.  E4

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Pluggable Equipment. The socket outlet shall be installed near the equipment and shall be easily accessible.  E5

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**Caution:** Air vents must not be blocked and must have free access to the room ambient air for cooling.  E6


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**Warning:** Operating Temperature. This product is designed for a maximum ambient temperature of 40° degrees C.  E7

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
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All Countries: Install product in accordance with local and National Electrical Codes.  E8

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**Caution:** The attached mounting brackets must be used to securely mount the device on the wall.  E15

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**Warning:** Remove all metal jewelry, such as rings and watches, before installing or removing a line card from a powered-on chassis.  E26

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## Selecting a Site for the Chassis

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Observe the following requirements when choosing a site for the chassis:

- ❑ The power outlet for the chassis should be located near the unit and should be easily accessible.
- ❑ The site should provide easy access to the ports on the front and the power supply on the back of the chassis. This arrangement will make it easy for you to connect and disconnect cables as well as to view the LEDs.
- ❑ To allow proper cooling of the chassis, air flow around the unit and through its vents should be unrestricted.
- ❑ Do not place objects on top of the chassis.
- ❑ Do not expose the chassis to moisture or water.
- ❑ Make sure that the site is a dust-free environment.

## Unpacking the Chassis

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To unpack the chassis, perform the following procedure:

1. Remove all components from the shipping package.

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**Note**

Store the packaging material in a safe location. You must use the original shipping material if you need to return the unit to Allied Telesis.

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2. Make sure that the following components are included in the package. If any item is missing or damaged, contact your Allied Telesis sales representative for assistance.
  - One AT-CV1000 chassis with an AT-CV5PNL1 blank slot cover installed
  - Four self-adhesive rubber feet
  - Two wall mounting brackets
  - Two plastic anchors (for wall mounting)
  - Two flat-head self-tapping screws (for wall mounting)
  - One power adapter
  - One power cord
  - Documentation CD
  - Warranty card



## Using the AT-CV1000 Chassis on a Desktop

---

To use the AT-CV1000 chassis on a desktop, perform the following procedure:

1. Remove the chassis from the shipping container.
2. Turn the chassis over and place it on a secure surface.
3. Attach the four self-adhesive rubber feet, included, to the bottom of the chassis, as shown in Figure 7.

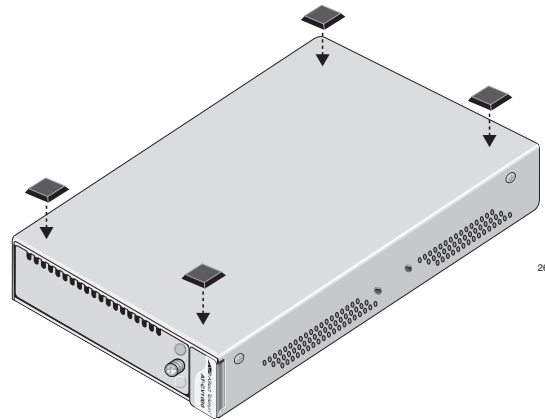


Figure 7. Attaching Rubber Feet

4. Turn the chassis over again.
5. Install the line card according to the instructions in “Installing a Converteon™ Line Card” on page 32.
6. Place the chassis in its intended location.
7. Cable the line card according to the instructions that were shipped with the line card.
8. Power on the chassis according to the instructions in “Powering On an AT-CV1000 Chassis” on page 35.

## Mounting the AT-CV1000 Chassis on a Wall

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The AT-CV1000 chassis is shipped with two wall-mounting brackets. The chassis is designed to be mounted vertically on a wall using the keyholes on the wall-mounted brackets.

To mount the AT-CV1000 chassis on a wall, perform the following procedure:

1. If attached, remove the rubber feet, data cables, and power cord from the chassis.
2. Install the line card according to the instructions in “Installing a Converteon™ Line Card” on page 32.
3. Install the provided wall-mount brackets onto the chassis, as illustrated in Figure 8.

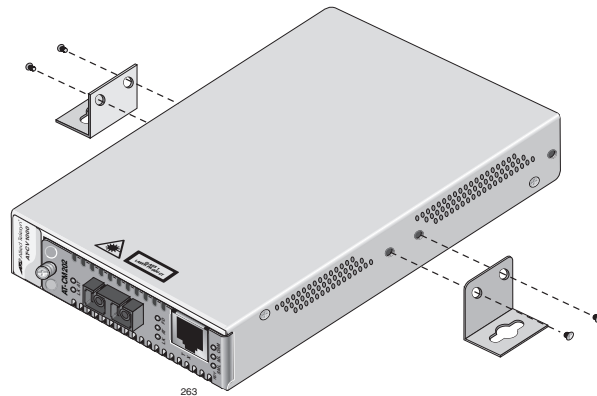


Figure 8. Installing the Wall-Mount Brackets on the Chassis



**Caution:** The attached mounting brackets must be used to securely mount the device on the wall. E15

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4. Select a wall location for the device.
5. Place the chassis against the wall and mark the locations for the wall anchors.

6. Install two plastic anchors and two screws onto the wall, as illustrated in Figure 9.

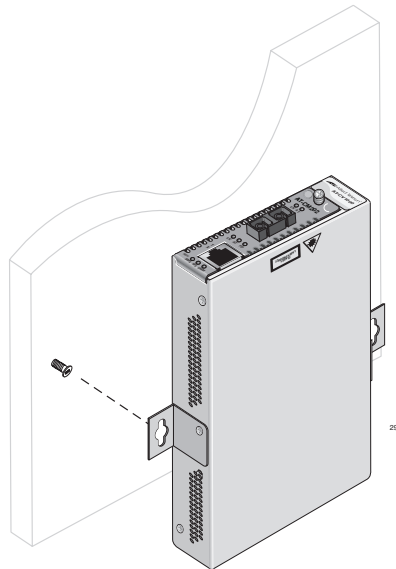


Figure 9. Installing the Plastic Anchors and Screws Onto the Wall

7. Position the chassis vertically onto the wall screws, as illustrated in Figure 10, and slide it down to secure the brackets against the wall.

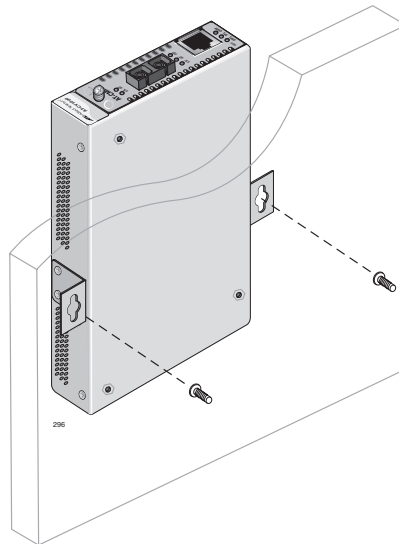


Figure 10. Positioning The AT-CV1000 Chassis Onto the Wall Screws

8. Cable the line card according to the instructions that were shipped with the line card.
9. Power on the chassis according to the instructions in “Powering On an AT-CV1000 Chassis” on page 35..

## Installing an AT-CV1000 Chassis in an AT-MCR12 Rack-Mount Chassis

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In order to install the AT-CV1000 chassis in an AT-MCR12 rack-mount chassis, an AT-CVMCR Installation Adapter, as shown in Figure 11, is required.

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### Note

For detailed descriptions and installation procedures for the AT-MCR12 rack-mount chassis, refer to the *AT-MCR12 Media Conversion Rack-Mount Chassis Installation Guide* available on the Allied Telesis website, [www.alliedtelesis.com](http://www.alliedtelesis.com).

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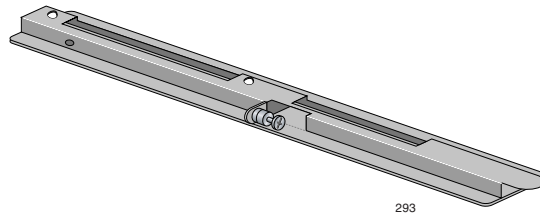


Figure 11. AT-CVMCR Installation Adapter

### Calculating the Power Requirements

Even if your AT-MCR12 rack-mount chassis contains two AT-PWR4 power supply modules (a primary and an auxiliary), the total available power for the modules in the chassis is limited to 80 Watts. This limitation determines how many media converters the AT-MCR12 chassis can support before the primary power supply shuts down.

To avoid power problems, Allied Telesis strongly recommends that you calculate the total power required to supply your chosen media converters before you install them in the AT-MCR12 chassis. Use the following approximate power consumption guidelines for your calculation:

- ❑ Use 6 Watts of power for any MC series media converter and the AT-CV1000 with any of the Converteon line cards except the AT-CM2K0S.
- ❑ Use 9 Watts of power for the AT-CV1000 with an AT-CM2K0S line card installed.

If the total power requirement exceeds the 80 Watt limit, then multiple AT-MCR12 rack-mount chassis are required.

### Installing the AT-CV1000 Chassis

To install an AT-CV1000 chassis in an AT-MCR12 rack-mount chassis using the AT-CVMCR Installation Adapter, perform the following procedure:

1. Choose the slot in the AT-MCR12 chassis where you want to install

the AT-CV1000 chassis and loosen the captive screw to remove the mounting rail from that slot, as shown in Figure 12.

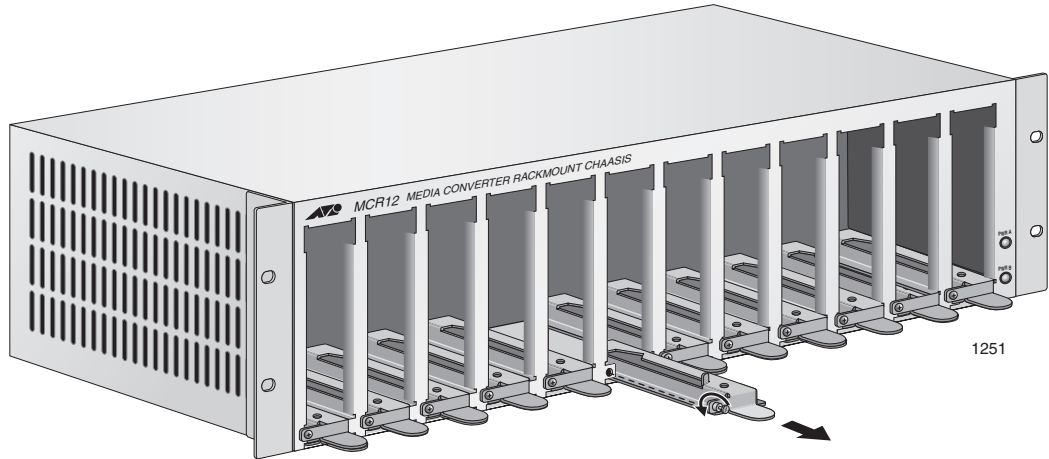


Figure 12. Removing the Mounting Rail from a Slot in the AT-MCR12 Chassis

2. Turn the AT-CV1000 chassis upside down.
3. Turn the AT-CVMCR adapter over, align it with the base of the chassis, and attach it to the chassis with two screws (provided), as shown in Figure 13.

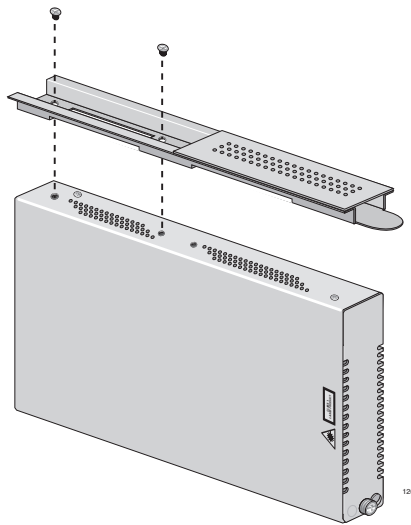


Figure 13. Installing the AT-CVMCR Adapter on the AT-CV1000 Chassis

4. Turn the chassis over, as shown Figure 14.

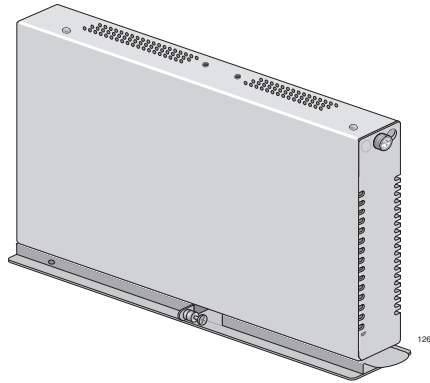


Figure 14. AT-CV1000 Chassis with AT-CVMCR Adapter Installed

5. Use the thumb tab on the adapter to slide the AT-CV1000 chassis into the AT-MCR12 chassis, as shown in Figure 15.

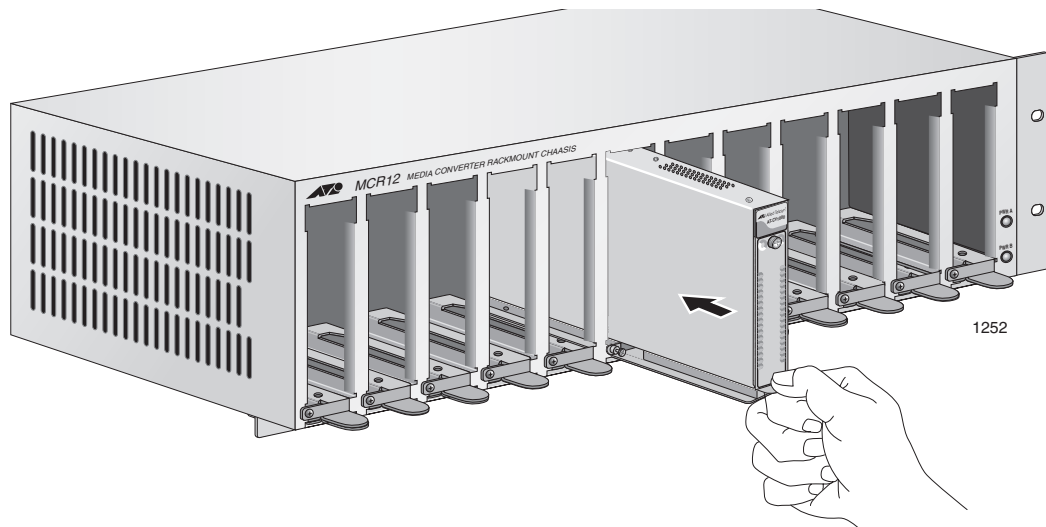


Figure 15. Sliding the AT-CV1000 into the AT-MCR12 Chassis Slot

6. Press gently on the AT-CV1000 chassis to seat the chassis into the backplane.

7. Tighten the captive screw on the AT-CVMCR adapter to secure the AT-CV1000 in the chassis, as shown in Figure 16.

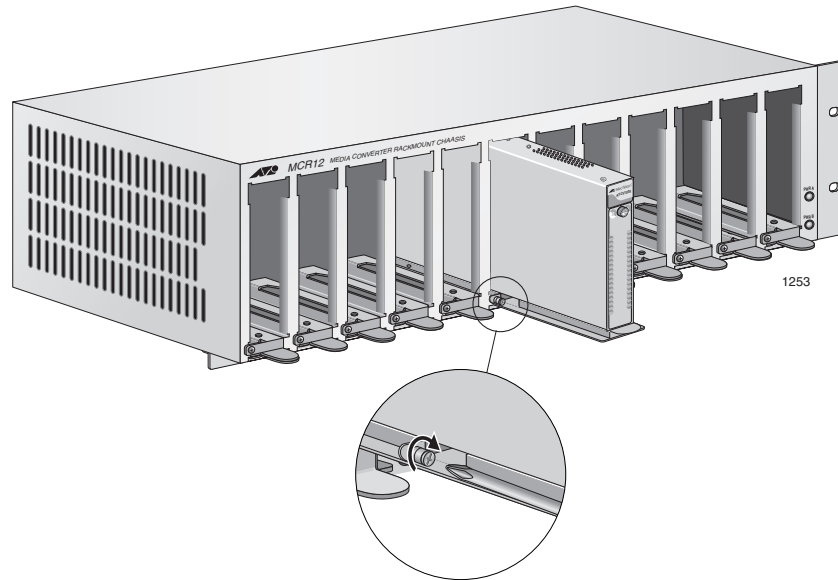


Figure 16. Tightening the Captive Screw on the AT-CVMCR Adapter

8. Install the line card according to the instructions in “Installing a Converteon™ Line Card” on page 32.

## Installing a Converteon™ Line Card

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To install a Converteon™ line card, perform the following procedure:

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

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1. Remove the Converteon™ line card from its shipping package and store the package in a safe place.

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**Note**

You must use the original package if you need to return the unit to Allied Telesis.

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2. Loosen the captive screw to remove the AT-CV5PNL1 blank slot cover from the AT-CV1000.

Keep the blank slot cover in a safe area in case you remove the line card. The blank slot cover is used to keep dust from getting into the chassis and maintains proper airflow, cooling, and ventilation throughout the chassis.

3. Set the line card's DIP switches.

For more information on the DIP switch settings, refer to the *Converteon™ Media Converter Line Cards Reference Guide*.



4. Locate the alignment guides on both sides of the slot, as shown in Figure 17.

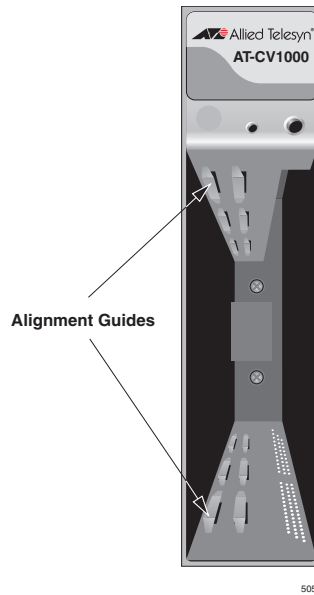


Figure 17. Location of the Alignment Guides

5. Align the back edge of the line card with the left and right alignment guides located inside the slot.
6. Slide the line card into the slot, as shown in Figure 18, until the slot cover is flush with the front of the chassis.

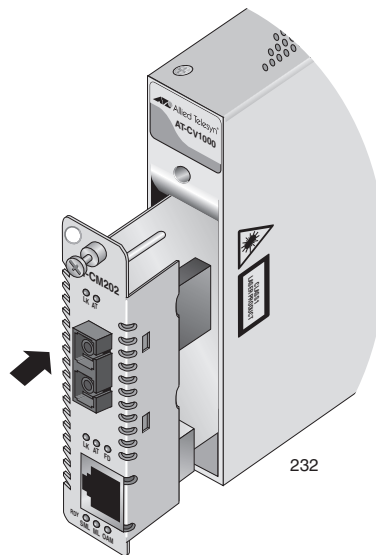


Figure 18. Inserting a Line Card

7. Use a Phillips screwdriver to tighten the captive screw on the line card, as shown in Figure 19.

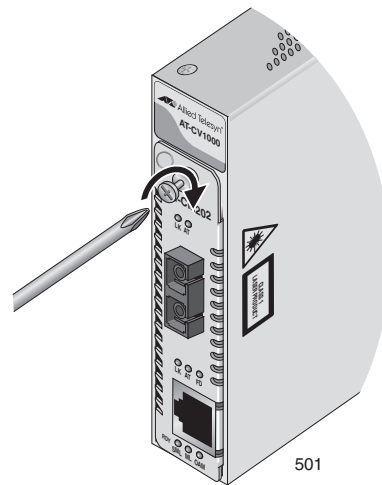


Figure 19. Tightening the Captive Screw

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**Note**

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

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Refer to the documentation shipped with your line card, or to the *Converteon™ Media Converter Line Cards Reference Guide* for cabling information.

## Powering On an AT-CV1000 Chassis

The AC power adapter for the AT-CV1000 chassis consists of two parts: a power cord and a power adapter.

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**Note**

The power adapter for the AT-CV1000 chassis is not used if the chassis is installed in an AT-MCR12 rack-mount chassis.

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**Note**

Use only power sources that are UL Listed (QGGQ or EPBU), TUV Licensed or other Safety Agencies approved, and that are suitable for country of use.

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To power on an AT-CV1000 chassis, perform the following procedure:

1. Plug one end of the power cord into the socket on the power adapter, plug the other end of the power cord into a power outlet, and plug the pigtail cable on the power adapter into the power connector labeled 12VDC on the back of the converter, as shown in Figure 20.

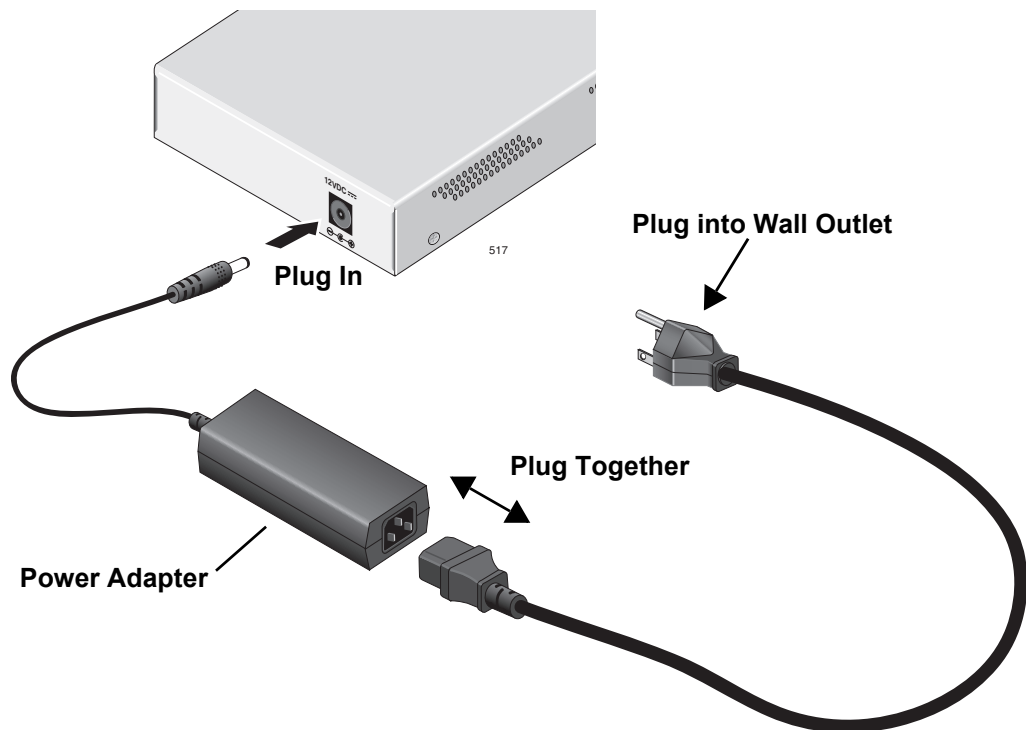


Figure 20. Connecting the Power Adapter and Power Cord

The chassis is now ready for network operations.



**Warning:** Power cord is used as a disconnection device. To de-energize equipment, disconnect the power cord. ⚡ E3

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Pluggable Equipment. The socket outlet shall be installed near the equipment and shall be easily accessible. ⚡ E5

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## Installing a Blank Slot Cover

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The AT-CV1000 chassis is shipped with the line card slot covered with the AT-CV5PNL1 blank slot cover. When the line card slot is unoccupied, you should cover it with a blank slot cover, to keep dust from getting into the chassis and to maintain proper airflow, cooling, and ventilation throughout the chassis.

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**Note**

Allied Telesis strongly recommends that a blank slot cover be inserted in the AT-CV1000 chassis when it does not contain a functioning line card.

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To install an AT-CV5PNL1 blank slot cover, perform the following procedure:

1. Disconnect the cables from all the ports on the line card you are removing from the chassis.
2. Cover the fiber optic port with the dust cap.
3. Remove the line card from the slot.
4. Align the back edge of the AT-CV5PNL1 blank slot cover with the left and right alignment guides.
5. Slide the blank slot cover into the slot, as shown in Figure 21, until the slot cover is flush with the front of the chassis.

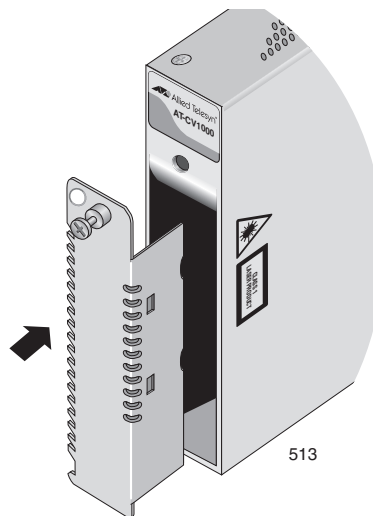


Figure 21. Inserting an AT-CV5PNL1 Blank Slot Cover

6. Use a Phillips screwdriver to tighten the captive screw, as shown in Figure 22.

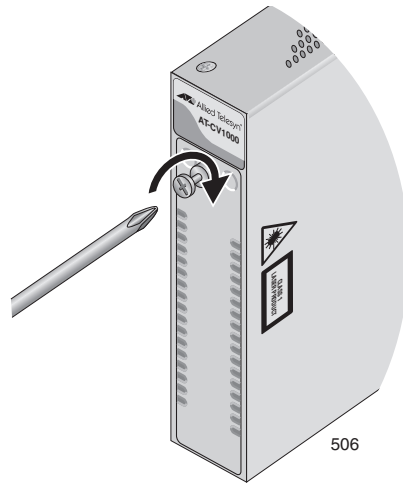


Figure 22. Tightening the Captive Screw on an AT-CV5PNL1 Blank Slot Cover

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**Note**

Always tighten the captive screw to secure the blank slot cover to the chassis.

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## Warranty Registration

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## Warranty Registration

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Allied Telesis hardware products are covered under limited warranties. Some products have a longer warranty coverage than others.

The AT-CV1000 chassis has a limited warranty of Lifetime (24 months Fan & PSU).

All Allied Telesis warranties are subject to the terms and conditions set out on the Allied Telesis website at [www.alliedtelesis.com/warranty](http://www.alliedtelesis.com/warranty).



## Appendix A

# Technical Specifications

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## Physical Specifications

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Dimensions:	W x D x H 10.48 cm x 17.77 cm x 2.54 cm (4.125 in x 7.0 in x 1.0 in)
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## Environmental Specifications

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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 Humidity:	5% to 90% non-condensing
Storage Humidity:	5% to 95% non-condensing
Maximum Operating Altitude:	3,000 m (10,000 ft.)
Maximum Storage Altitude:	4,000 m (13,100 ft.)

## Power Specifications

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Nominal Input:	12VDC
Input Current:	1.06A @ 12VDC

## Safety and Electromagnetic Emissions Certifications

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EMI:	FCC Class A, EN55022 Class A, VCCI Class A, C-TICK, CE
Immunity:	EN55024
Safety:	UL60950-1 (CUL <sub>US</sub> ), EN60950-1 (TUV), CAN/CSA C22.2 No. 60950-1
Laser:	EN60825
Quality and Reliability:	MTBF > 100,000 hrs.