



*AT-FS211*

*AT-FS212*

*AT-FS212/1*

*AT-FS212/2*

*AT-FS212/3*

*AT-FS212/4*

*AT-FS214*

*AT-FS215*

*AT-FS216*

*AT-FS217*

*Wall-Mountable Fast Ethernet Switches*

## *Installation Guide*

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# Electrical Safety and Emission Compliance Statement

---

**Standards:** This product meets the following standards.

## U.S. Federal Communications Commission

### Declaration Of Conformity

Manufacture Name: Allied Telesyn, Inc.  
Manufacture Address: 960 Stewart Drive, Suite B  
Sunnyvale, CA 94085 USA  
Manufacture Telephone: 408-730-0950  
Declares that the product: Fast Ethernet Switches  
Model Numbers: AT-FS211, AT-FS212, AT-FS212/1,  
AT-FS212/2, AT-FS212/3, AT-FS212/4  
AT-FS214, AT-FS215, AT-FS216, AT-FS217

This product complies with FCC Part 15B, Class B Limits:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device must not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### Radiated Energy

Note: This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with instructions, may cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on. The user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.


Changes and modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commission rules.

## Industry Canada


This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.


**RFI Emission**


EN55022 Class B  **1**




**Warning:** In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.  **2**

**Immunity**

EN55024  **3**


**Warning:** This product requires shielded cables to comply with emission and immunity standards. If it is used with unshielded cables, the user may be required to take measures to correct the interference problem at their own expense.  **4**


**Electrical Safety**


EN60950 (TUV), UL1950 (UL/cUL)  **5**



**Laser**


EN60825  **6**


**Warning** Class 1 Laser product. (AT-FS212/x models)  **7**


**Warning** Do not stare into the Laser beam.  **8**


At time of installation, the Fiber Optic Lasers comply with FDA Radiation Performance Standard 21CFR Subchapter J, applicable at date of manufacture.


This is a "CLASS 1 LED PRODUCT" (AT-FS21x models)  **9**


**Important:** Appendix B contains translated safety statements for installing this equipment. When you see the , go to Appendix B for the translated safety statement in your language.


**Wichtig:** Anhang B enthält übersetzte Sicherheitshinweise für die Installation dieses Geräts. Wenn Sie  sehen, schlagen Sie in Anhang B den übersetzten Sicherheitshinweis in Ihrer Sprache nach.


**Vigtigt:** Tillæg B indeholder oversatte sikkerhedsadvarsler, der vedrører installation af dette udstyr. Når De ser symbolet , skal De slå op i tillæg B og finde de oversatte sikkerhedsadvarsler i Deres eget sprog.


**Belangrijk:** Appendix B bevat vertaalde veiligheidsopmerkingen voor het installeren van deze apparatuur. Wanneer u de  ziet, raadpleeg Appendix B voor vertaalde veiligheidsinstructies in uw taal.


**Important:** L'annexe B contient les instructions de sécurité relatives à l'installation de cet équipement. Lorsque vous voyez le symbole , reportez-vous à l'annexe B pour consulter la traduction de ces instructions dans votre langue.


**Tärkeää:** Liite B sisältää tämän laitteen asentamiseen liittyvät käännetty turvaohjeet. Kun näet -symbolin, katso käännettä turvaohjetta liitteestä B.

**Importante:** l'Appendice B contiene avvisi di sicurezza tradotti per l'installazione di questa apparecchiatura. Il simbolo , indica di consultare l'Appendice B per l'avviso di sicurezza nella propria lingua.

**Viktig:** Tillegg B inneholder oversatt sikkerhetsinformasjon for installering av dette utstyret. Når du ser , åpner du til Tillegg B for å finne den oversatte sikkerhetsinformasjonen på ønsket språk.

**Importante:** O Anexo B contém advertências de segurança traduzidas para instalar este equipamento. Quando vir o símbolo , leia a advertência de segurança traduzida no seu idioma no Anexo B.

**Importante:** El Apéndice B contiene mensajes de seguridad traducidos para la instalación de este equipo. Cuando vea el símbolo , vaya al Apéndice B para ver el mensaje de seguridad traducido a su idioma.

**Obs!** Bilaga B innehåller översatta säkerhetsmeddelanden avseende installationen av denna utrustning. När du ser , skall du gå till Bilaga B för att läsa det översatta säkerhetsmeddelandet på ditt språk.



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# Welcome to Allied Telesyn

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This installation guide contains instructions on how to wall-mount the AT-FS21x and AT-FS212/x Series Fast Ethernet Switches and how to connect the units to your network.

## Where to Find Web-based Guides

The Allied Telesyn web site at [www.alliedtelesyn.com](http://www.alliedtelesyn.com) offers you an easy way to access the most recent documentation, software, and technical information for all of our products. For product guides, select “Support & Services” from our web site.

## Document Conventions

This guide uses the following conventions:

---

**Note**

A note provides additional information.

---

**Caution**

A caution indicates that performing or omitting a specific action may result in equipment damage or loss of data.

---

**Warning**

A warning indicates that performing or omitting a specific action may result in bodily injury.

---

## Contacting Allied Telesyn

You can contact Allied Telesyn technical support online or by telephone or e-mail.

### Online Support

You can request technical support online by accessing the Knowledge Base at **<http://kb.alliedtelesyn.com>**. You can use the Knowledge Base to submit questions to our technical support staff and review answers to previously asked questions.

### Telephone Support

For technical support by phone, contact Allied Telesyn at one of the following locations:

#### **Americas**

United States, Canada, Mexico,  
Central America, South America  
Tel: 1 (800) 428-4835

#### **Germany**

Switzerland, Austria, Eastern Europe  
Tel: (+49) 30-435-900-126

#### **Asia**

Singapore, Taiwan, Thailand, Malaysia,  
Indonesia, Korea, Philippines, China,  
India, Hong Kong  
Tel: (+65) 3815-612

#### **Italy**

Spain, Portugal, Greece, Turkey, Israel  
Tel: (+39) 02-41-30-41

#### **Australia**

Tel: 1 (800) 000-880

#### **Japan**

Tel: (+81) 3-3443-5640

#### **France**

Belgium, Luxembourg,  
The Netherlands, Middle East, Africa  
Tel: (+33) 0-1-60-92-15-25

#### **United Kingdom**

Denmark, Norway, Sweden, Finland  
Tel: (+0044) 1235-442500

### E-mail Support

**Latin America, Mexico, Puerto Rico, Caribbean, and Virgin Islands**  
[latin\\_america@alliedtelesyn.com](mailto:latin_america@alliedtelesyn.com)

#### **Europe**

[support\\_europe@alliedtelesyn.com](mailto:support_europe@alliedtelesyn.com)

## Returning Products

Products for return or repair must first be assigned a Return Materials Authorization (RMA) number. A product sent to Allied Telesyn without a RMA number will be returned to the sender at the sender's expense.

To obtain an RMA number, contact Allied Telesyn's Technical Support at one of the following locations:

### North America

Toll-free: 1-800-762-1664

Fax: 1-425-806-1050

### Europe, Africa, and the Middle East

Tel: +44-1793-501401

Fax: +44-1793-431099

### Latin America, the Caribbean, and Virgin Islands

Tel: international code + 425-481-3852

Fax: international code + 425-481-3895

### Puerto Rico

Tel: 1-800-424-5012, ext 3852 or

1-800-424-4284, ext 3852

### Mexico

Toll-free: 800-424-5012, ext 3852

Fax: international code + 425-481-3895

### Asia and Southeast Asia

Tel: +65-381-5612

Fax: +65-383-3830

### Australia

Toll-free: 1-800-000-880

Fax: +61-2-9438-4966

### New Zealand

Toll-free: 0800-45-5782

## FTP Server

If you need management software for an Allied Telesyn device and you know the file name of the software, you can download the software by connecting directly to our FTP server at **ftp.alliedtelesyn.com**. At login, enter 'anonymous' as the user name and your e-mail address for the password.

## For Sales or Corporate Information

You can contact Allied Telesyn for sales or corporate information at the location below:

**Allied Telesyn, Inc.**

19800 North Creek Parkway, Suite 200

Bothell, WA 98011

Tel: 1 (425) 487-8880

Fax: 1 (425) 489-9191

## Tell Us What You Think

If you have any comments or suggestions on how we might improve this or other Allied Telesyn documents, please fill out the General Enquiry Form online. This form can be accessed by selecting “Contact Us” from **[www.alliedtelesyn.com](http://www.alliedtelesyn.com)**.

# Chapter 1

## Overview

---

The AT-FS21x and AT-FS212/x Series Fast Ethernet Switches feature the following models:

- AT-FS211
- AT-FS212
- AT-FS212/1
- AT-FS212/2
- AT-FS212/3
- AT-FS212/4
- AT-FS214
- AT-FS215
- AT-FS216
- AT-FS217

These switches are designed to interconnect LAN devices and subnetworks over large distances. These dual-port switches can also improve the performance of your network by dividing it into smaller, more manageable segments.

The AT-FS21x and AT-FS212/x Series Switches have a 10/100Base-TX twisted pair port and a 100Base-FX fiber optic port. The twisted pair port has an RJ-45 connector and a maximum operating distance of 100 meters (328 feet). This port operates at 10/100 Mbps and features half- and full-duplex operation.

The fiber optic port has a FJ, LC, MT-RJ, SC, ST, or VF-45 connector and a maximum operating distance 2 kilometers (1.2 miles) to 100 kilometers (62 miles), depending on the model. This port operates at 100 Mbps and features full-duplex operation.

These switches are easy to install and do not require software configuration or management. Figure 1 illustrates an AT-FS21x Series Switch.

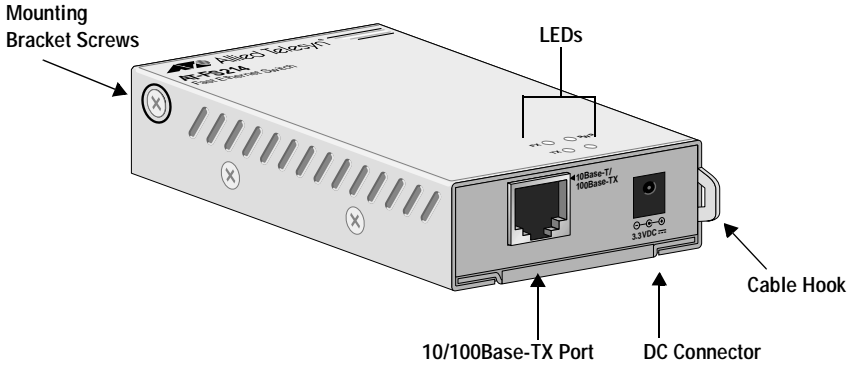


Figure 1 AT-FS21x Series Switch (Model AT-FS214)

Table 1 lists the operating distances for the AT-FS21x and AT-FS212/x Series Switches.

Table 1 Maximum Operating Distance

Model	10/100Base-TX <sup>1</sup>		100Base-FX <sup>2</sup>	
	Connector	Maximum Operating Distance	Connector	Maximum Operating Distance
AT-FS211	RJ-45	100 m (328 ft)	ST	2 km (1.2 mi)
AT-FS212	RJ-45	100 m (328 ft)	SC	2 km (1.2 mi)
AT-FS212/1	RJ-45	100 m (328 ft)	SC	15 km (9.3 mi)
AT-FS212/2	RJ-45	100 m (328 ft)	SC	40 km (24.8 mi)
AT-FS212/3	RJ-45	100 m (328 ft)	SC	70 km (43.3 mi)
AT-FS212/4	RJ-45	100 m (328 ft)	SC	100 km (62 mi)
AT-FS214	RJ-45	100 m (328 ft)	MT-RJ	2 km (1.2 mi)
AT-FS215	RJ-45	100 m (328 ft)	VF-45	2 km (1.2 mi)
AT-FS216	RJ-45	100 m (328 ft)	LC	2 km (1.2 mi)
AT-FS217	RJ-45	100 m (328 ft)	FJ	2 km (1.2 mi)

1. Maximum distance can only be obtained when the UTP/STP cabling is installed and verified to the TIA/EIA 568A Commercial Building Telecommunications Cabling Standard.
2. Maximum distance for 100 Mbps Optical Datalinks are dependent on the following factors: type of optical fiber, duplex mode of both end-nodes, and maximum optical loss budget for each of the optical fiber at the operating optical wavelength.

## Key Features

The switches have the following key features:

- LEDs for unit and port status
- Wall-mountable chassis
- Auto MDI/MDI-X
- External AC/DC power adapters (North America, Continental, or Europe)
- Full- or half-duplex mode operation on the twisted pair port
- Full-duplex operation on the fiber optic port
- FJ, LC, MT-RJ, SC, ST, or VF-45 fiber optic connector
- Data packet forwarding and filtering at full wire speed
- Store and forward switching mode
- Automatic address learning and aging
- IEEE 802.3u compliant auto-negotiation on the twisted pair port

## Switch Performance

The switches perform at:

- 148,800 pps for 100 Mbps and 14,880 pps for 10 Mbps with full wire speed forwarding and filtering
- 200 Mbps maximum throughput in 100 Mbps, full-duplex mode
- 20 Mbps maximum throughput in 10 Mbps, full-duplex mode
- Storage for up to 4,000 MAC addresses
- Unlimited multicast/broadcast addresses
- Low latency 15.6  $\mu$ s (64-byte packet, 100 Mbps full-duplex)

## Status LEDs

Table 2 lists the switch LEDs.

**Table 2** AT-FS21x and AT-FS212/x Series Switch LEDs

LED	Color	Description
PWR	Green	Power is applied.
FX	Green Blinking	A link has been established on the fiber optic port Activity has been detected on the fiber optic port.
TX	Green Blinking	A link has been established on the twisted pair port Activity has been detected on the twisted pair port.
100M	Green OFF	The twisted pair port is operating at 100 Mbps. The twisted pair port is operating at 10 Mbps.

## External Power Adapter

The power adapter supplies 3.3V DC to the switch. Allied Telesyn supplies an approved safety compliant AC power adapter for 3.3 V/1.5 A versions with an unregulated output of 3.3V DC.

## Auto MDI/MDI-X

An RJ-45 twisted pair port on a 10 Mbps or 100 Mbps Ethernet network device can have one of two possible wiring configurations: MDI or MDI-X. The RJ-45 port on a PC, router, or bridge is typically wired as MDI, while the twisted pair port on a switch or hub is usually MDI-X.

To connect two 10 Mbps or 100 Mbps network devices together that have dissimilar port wiring configurations, such as MDI to MDI-X, you use a straight-through twisted pair cable. To connect two network devices that have the same wiring configuration, such as MDI to MDI, you use a crossover cable.

The AT-FS21x and AT-FS212/x Series Switches feature automatic MDI/MDI-X. Each port automatically determines the configuration of the port on the device to which it is connected and then configures itself appropriately. For example, if a port on a switch is connected to a port on a bridge, which is typically wired as MDI, the port on the switch automatically configures itself as MDI-X. This eliminated the need for using a crossover cable with these switches.



## Functional Description

### Frame Processing

The switches support store and forward switching at Fast Ethernet full-wire speed in 10 or 100 Mbps, half- or full-duplex mode. Packets entering each port are stored in buffers. After the full packet is received, it is forwarded or discarded depending on its destination address and error status. This ensures that only error-free data packets destined for another segment will be transferred across the switch, reducing network load. For example, if the packet entering from Port 1 is destined for an end station on Port 2, it will be forwarded if the Frame Check Sequence (FCS) is valid. If the packet from Port 1 is destined for an end station also attached to Port 1, then the packet is discarded.

The switch will discard CRC error, misaligned, runt, and under-sized/over-sized packets. When the packet has dribble bits at the end, the switch will truncate to octet boundary and check for a good FCS before forwarding.

### Address Recognition and Filtering

Up to 4,000 MAC addresses can be stored in the MAC address table. The switch will learn all new addresses in real-time after power-up with its address self-learning mechanism. If the source address of an incoming packet is not found in the address table, the switch waits until the end of the packet to check for good CRC and then updates its MAC address table. Because the switch has Automatic Address Aging, if a source address entry in the table is not updated within five minutes, the entry is deleted from the table. The switch forwards multicast, broadcast, and unicast packets when the MAC address table size is exceeded.

## Network Topologies

Figure 2 illustrates a topology using one AT-FS214 switch to interconnect two small networks of stackable hubs. Network 1 has an AT-FH812u with an AT-FH807u switching module connected to the 100Base-FX port on the AT-FS214. Network 2 has an AT-3624TR hub connected to the 10/100Base-TX port on the AT-FS214.

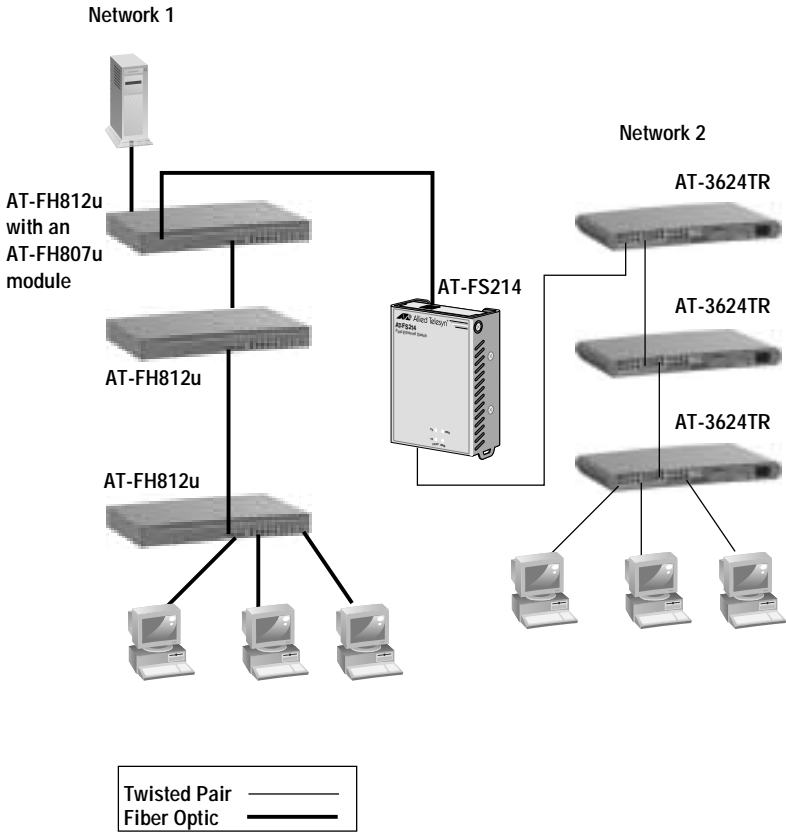


Figure 2 Network Topology

## Chapter 2

# Installing the Switch

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### Verifying the Package Contents

Make sure the following items are included in your package. If any item is missing or damaged, contact your Allied Telesyn sales representative for assistance.

- One AT-FS21x or AT-FS212/x Series Series Fast Ethernet Switch
- External power adapter (North America, Continental Europe, or United Kingdom)
- 2 Phillips-head screws
- 2 plastic anchors
- Cable tie
- This installation guide
- Warranty card

### Planning the Installation

Be sure to observe the following guidelines when planning the installation of your switch.

- The end-node connected to the fiber optic port on the switch must be able to operate at 100 Mbps and full-duplex mode.
- The end-node connected to the twisted pair port can operate at either 10 Mbps or 100 Mbps, half- or full-duplex mode.
- The twisted pair cabling must be kept away from sources of electrical noise, such as radios, transmitters, power lines, broadband amplifiers, electrical motor, and fluorescent fixtures.

- ❑ Refer to the following tables for the cabling specifications for the 10/100Base-TX and 100Base-FX ports.

**Table 3** 10/100Base-TX Twisted Pair Port Cabling Specifications

Operating Mode	Twisted Pair Cable	Maximum Operating Distance
10Base-T	Shielded or unshielded Category 3 or better	100 m (328 ft)
100Base-TX	Shielded or unshielded Category 5 or better	100 m (328 ft)

**Table 4** 100Base-FX Fiber Optic Port Cabling Specifications (Full-duplex)

Model	Fiber Optic Cable	Maximum Operating Distance	Maximum Allowable Loss Budget
AT-FS211	50/125 or 62.5/125 micron multimode	2 km (1.2 mi)	13 dB at 1310 nm
AT-FS212	50/125 or 62.5/125 micron multimode	2 km (1.2 mi)	13 dB at 1310 nm
AT-FS212/1	9/125 micron single-mode	15 km (9.3 mi)	16 dB at 1310 nm
AT-FS212/2	9/125 micron single-mode	40 km (24.8 mi)	30 dB at 1310 nm
AT-FS212/3	9/125 micron single-mode	70 km (43.4 mi)	33 dB at 1310 nm
AT-FS212/4 <sup>1</sup>	9/125 micron single-mode	100 km (62 mi)	34 dB at 1550 nm
AT-FS214	50/125 or 62.5/125 micron multimode	2 km (1.2 mi)	13 dB at 1310 nm
AT-FS215	50/125 or 62.5/125 micron multimode	2 km (1.2 mi)	13 dB at 1310 nm
AT-FS216	50/125 or 62.5/125 micron multimode	2 km (1.2 mi)	13 dB at 1310 nm
AT-FS217	50/125 or 62.5/125 micron multimode	2 km (1.2 mi)	13 dB at 1310 nm

1. The cable must be non-dispersion-shifted, dispersion-shifted, or non-zero dispersion-shifted single-mode fiber optic cable.

---

**Note**

Refer to page 18 for additional fiber optic port specifications.

---

## Selecting a Site

Be sure to observe the following requirements when choosing a site for your switch.

- Select a site that is dust-free and moisture-free.
- Be sure that the site will allow you to easily access the fiber optic and twisted pair cables and the power cord.
- Use dedicated power circuits or power conditioners to supply reliable power to the device.

## Reviewing Safety Guidelines

Please review the following safety guidelines before you begin to install the media converter.

**Laser**

Class 1 laser device. *See* 7

---

**Laser**

Do not stare into the laser beam. *See* 8

---

**Warning**

**Electric Shock Hazard:** To prevent electric shock, do not remove the cover. There are no user-serviceable parts inside. The unit contains hazardous voltages and should only be opened by a trained and qualified technician. *See* 9

---

**Warning**

**Lightning Danger:** Do not work on this equipment or cables during periods of lightning activity. *See* 11

---



**Caution**

**Power cord is used as a disconnection device:** To de-energize equipment, disconnect the power cord. ⚡ 12



**Caution**

**Pluggable Equipment:** The socket outlet should be installed near the equipment and should be easily accessible. ⚡ 13



**Caution**

**Air vents:** The air vents must not be blocked on the unit and must have free access to the room ambient air for cooling. ⚡ 14



**Caution**

**Operating Temperature:** This product is designed for a maximum ambient temperature of 40°C. ⚡ 16



**Caution**

**All Countries:** Install this product in accordance with local and National Electric Codes. ⚡ 17

## Installing the Switch

To install an AT-FS21x or AT-FS212/x Series Switch, perform the following procedure:

1. Remove all equipment from the package and store the packaging in a safe place.
2. Remove the mounting bracket screws, as shown in Figure 3. These screws are marked with black circles.

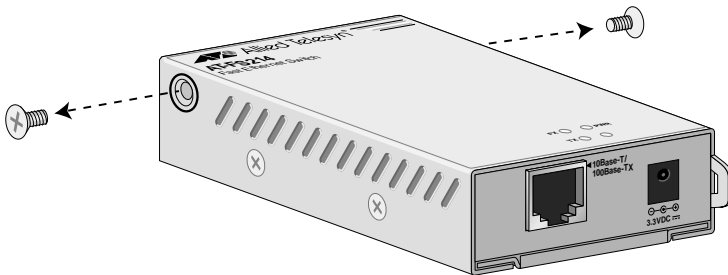


Figure 3 Removing the Mounting Bracket Screws

3. Gently slide the bracket off the switch. See Figure 4.

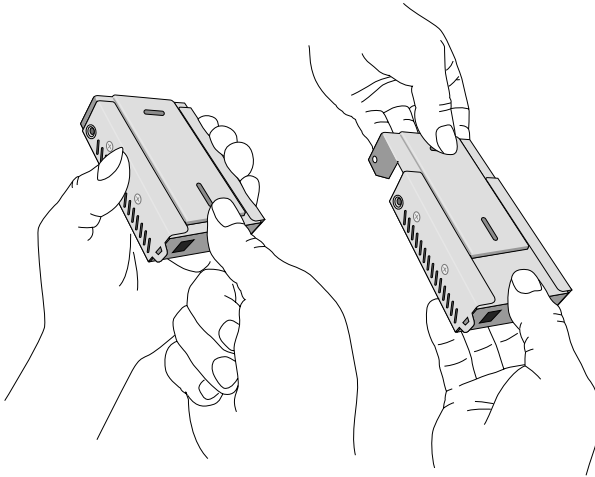


Figure 4 Sliding the Wall-mounting Bracket off the Switch

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**Note**

For drywall installation, drill two 3/16-inch holes, insert the plastic anchors and tap flush.

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4. Position the wall-mounting bracket on the wall and, using two Phillips-head screws (provided), secure the bracket to the wall. See Figure 5.

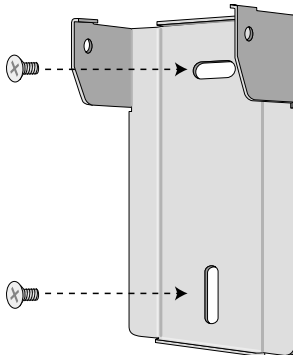


Figure 5 Attaching the Wall-mounting Bracket to the Wall

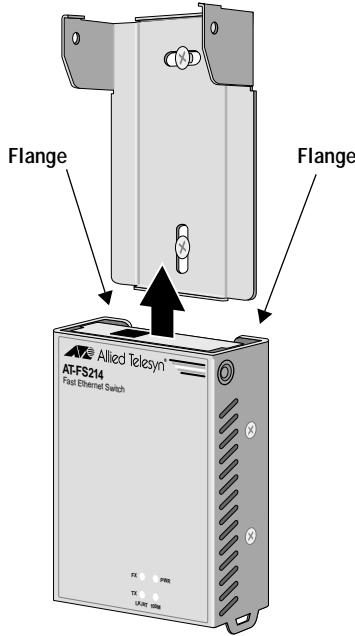
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**Note**

The switch can be mounted either vertically or horizontally.

---

- Using the flanges under the fiber optic port as a guide, slide the switch into the mounting bracket. Refer to Figure 6.



**Figure 6** Sliding the Switch Over the Wall-mounting Bracket

- Secure the switch to the wall-mounting bracket using the screws removed in Step 2.
- If your switch is shipped with Universal Voltage Power Adapter (2-cable), do the following:
  - Connect the AC power cord to the Universal Voltage Power Adapter.
  - Plug the DC cable into the DC receptacle on the switch.
  - Plug the AC power cord on the adapter to a power outlet.
- If your switch is shipped with an Single Voltage Power Adapter (single cable), do the following:
  - Plug the DC cable into the DC receptacle on the switch.



- b. Plug the AC power cord to a power outlet.

---

**Note**

To prevent the DC power cable from being inadvertently pulled out of the switch, use the cable tie supplied with the unit to secure the DC power cable to the cable hook located next to the DC connector.

---

9. Verify that the PWR LED on the switch is green. If the LED is OFF, refer to “Troubleshooting” on page 15.
10. Remove the dust cover from the 100Base-FX fiber optic port and connect the fiber optic cable.
11. Connect the twisted pair cable to the 10/100Base-TX port.
12. Power ON the end-nodes. The TX and FX LEDs should be green. If the LEDs are OFF, refer to “Troubleshooting” on page 15.

The switch is now ready for use.

## Warranty Registration

When you finish installing the product, you should register your product by completing the enclosed warranty card and sending it in.



## Chapter 3

# Troubleshooting

---

Follow the guidelines below to test and troubleshoot the installation in the event a problem occurs.

If the PWR LED is OFF, do the following:

- Make sure that the power adapter is securely connected to a power source and the DC power cord on the adapter is securely connected to the DC power connector on the switch.
- Verify that the power outlet has power by connecting another device to it.
- Try connecting the switch to another power source.
- Try using another power adapter of the same type that came with your switch.

If the TX LED for the twisted pair port is powered OFF, do the following:

- Check that the end-node connected to the port is ON and is operating properly.
- Check that the twisted pair cable is securely connected to the twisted pair port on the switch and on the end-node.
- Make sure that the twisted pair cable does not exceed 100 meters (328 feet).
- If the end-node is operating at 100 Mbps, verify that you are using Category 5 or better twisted pair cabling.

If the FX LED for the fiber optic port is powered OFF, do the following:

- Verify that the end-node connected to the port is ON and is operating properly.
- Check that the fiber optic cable is securely connected to the fiber optic port on the switch and on the end-node.

- ❑ Check to be sure that the end-node connected to the port is operating at 100 Mbps.
- ❑ Make sure that the fiber optic port on the end-node is operating in full-duplex mode.
- ❑ Make sure that the cable connected to the fiber optic receiver port on the switch is connected to the transmitter port on the remote end-node and that the fiber optic transmitter port on the switch is connected to the receiver port on the end-node.
- ❑ Test the attenuation on the fiber cable to ensure that it does not exceed acceptable values.
- ❑ Verify that you are using the appropriate type of fiber optic cable and that you have not exceeded the maximum operating distance. For cable types and operating distances, refer to Table 4 on page 8.
- ❑ Check that the operating specifications of the fiber optic port on the end-node are compatible with the operating specifications of the fiber optic port on the switch. Refer to page 18 for the fiber optic port specifications.

If you are still experiencing problems after testing and troubleshooting the installation, contact Allied Telesyn Technical Support for assistance. Refer to “Contacting Allied Telesyn” on page x or visit our web site at **[www.alliedtelesyn.com](http://www.alliedtelesyn.com)** for support information.

# Appendix A

## Technical Specifications

---

### Physical

Dimensions: 90 mm x 24 mm x 70 mm  
(3.54 in x 0.94 in x 2.76 in)

Weight: 0.23 kg (0.5 lbs)

### Environmental

Operating: 0° to 40° C (32° F to 104° F)

Storage: -20° to 80° C (-4° F to 176° F)

#### Relative Humidity

Operating and Storage: 5% to 80% (non-condensing)

#### Operating and Storage

Altitude: Up to 3,048 meters (10,000 feet)

### Electrical and Mechanical Specifications

Standard: CE Compliant IEEE 802.3, IEEE 802.3u

Immunity: Conforms to EN500082-1 1997 immunity standard

Safety: Conforms to all standards normally supported by Allied Telesyn products including safety standards UL 1950 (UL/cUL), TUV EN60950, EN60825 CE Compliant

EMI/RFI: Meets all applicable requirements for emissions including but not limited to FCC Class A, EN55022 Class A

## Electrical Rating

**Input Supply Voltage**                      3.3 V DC

**Minimum Current Rating**                1.5A

**Maximum Power Consumption**                      6W

## Fiber Optic Port Specifications

The following tables list the specifications for the 100Base-FX fiber optic port.

**Table 5** Fiber Optic Transmitter

Model	Fiber Type <sup>1</sup>	Fiber Optic Diameter	Optical Frequency	Launch Power <sup>2</sup>		
				Maximum	Average	Minimum
AT-FS211 AT-FS212 AT-FS214 AT-FS215 AT-FS216 AT-FS217	MMF	50/125	1310 nm	-14.0	-20.3	-22.5
	MMF	62.5/125	1310 nm	-14.0	-16.8	-19.0
AT-FS212/1	SMF	9/125	1310 nm	-8.0	-11.5	-15.0
AT-FS212/2	SMF	9/125	1310 nm	0.0	-3.0	-5.0
AT-FS212/3	SMF	9/125	1310 nm	0.0	-2.0	-4.0
AT-FS212/4 <sup>3</sup>	SMF	9/125	1550 nm	0.0	-1.5	-3.0

1. MMF = Multimode Fiber / SMF = Single-mode Fiber.

2. The launch power is measured at one meter from the transmitter.

3. The cable must be non-dispersion-shifted, dispersion-shifted, or non zero-dispersion-shifted single-mode fiber optic cable.

**Table 6** Fiber Optic Receiver

Model	Fiber Type <sup>1</sup>	Fiber Optic Diameter	Optical Frequency	Receiver Sensitivity		
				Minimum	Typical Sensitivity	Saturation
AT-FS211 AT-FS212	MMF	50/125	1310 nm	-31.8	-34.5	-14.0
AT-FS214 AT-FS215 AT-FS216 AT-FS217		62.5/125	1310 nm	-31.8	-34.5	-14.0
AT-FS212/1	SMF	9/125	1310 nm	-31.0	-31.0	-8.0
AT-FS212/2	SMF	9/125	1310 nm	-35.0	-38.0	0.0
AT-FS212/3	SMF	9/125	1310 nm	-37.0	-37.0	-3.0
AT-FS212/4	SMF	9/125	1550 nm	-37.0	-37.0	-3.0

1. MMF = Multimode Fiber / SMF = Single-mode Fiber.

**Table 7** Fiber Optic Datalink

Model	Fiber Type	Minimum Power/Link Budget	Average Signal Loss	Minimum Operating Distance <sup>1</sup>	Maximum Operating Distance
AT-FS211 AT-FS212	50/125 MMF	13.00	18.70	0	2 km (1.25 mi)
AT-FS214 AT-FS215 AT-FS216 AT-FS217	62.5/125 MMF	16.80	22.50	0	2 km (1.25 mi)
AT-FS212/1	9/125 SMF	16.00	10.30	0	15 km (9.3 mi)
AT-FS212/2	9/125 SMF	30.00	20.80	0	40 km (24.8 mi)
AT-FS212/3	9/125 SMF	33.00	33.40	15 km (9.3 mi)	70 km (43.3 mi)
AT-FS212/4	9/125 SMF	34.00	46.00	40 km (24.8 mi)	100 km (62 mi)

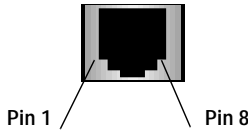
1. The recommended minimum range is stated in all cases where the maximum transmitter output power exceeds the receivers saturation level. This is to prevent blinding or burning out of the optical receiver on the far end-node.

**Table 8** Fiber Optic Loss Specification (Benchmarks)

Fiber Type	Fiber Optic Diameter	Optical Frequency	Typical Loss Factor	Worst Case Loss Factor	Bandwidth
Multimode Fiber	50/125	1310 nm	1.00 db/km	1.50 db/km	400
	62.5/125	1310 nm	1.00 db/km	1.5 db/km	500
Single-mode	9/125 nm	1310 nm	0.40 db/km	1.00 db/km	N/A
	9/125 nm	1550 nm	0.30 db/km	0.75 db/km	N/A

## Pinout Assignments

Figure 7 shows the pin assignments of the RJ-45 connector.



**Figure 7** RJ-45 Pin Assignments

Table 9 lists the 100Base-TX connector pins and their signals when the port is operating in either MDI or MDI-X configuration.

**Table 9** RJ-45 Pin Signals

MDI-X (Default)	Signal	MDI	Signal
1	RX+	1	TX+
2	RX-	2	TX-
3	TX+	3	RX+
4	-	4	-
5	-	5	-
6	TX-	6	RX-
7	-	7	-
8	-	8	-



## *Appendix B*

# *Translated Safety and Emission Information*

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**Important:** This appendix contains multiple-language translations for the safety statements in this guide.

**Wichtig:** Dieser Anhang enthält Übersetzungen der in diesem Handbuch enthaltenen Sicherheitshinweise in mehreren Sprachen.

**Viktigt:** Dette tillæg indeholder oversættelser i flere sprog af sikkerhedsadvarslerne i denne håndbog.

**Belangrijk:** Deze appendix bevat vertalingen in meerdere talen van de veiligheidsopmerkingen in deze gids.

**Important:** Cette annexe contient la traduction en plusieurs langues des instructions de sécurité figurant dans ce guide.

**Tärkeää:** Tämä liite sisältää tässä oppaassa esiintyvät turvaohjeet usealla kielellä.

**Importante:** questa appendice contiene traduzioni in più lingue degli avvisi di sicurezza di questa guida.

**Viktig:** Dette tillegget inneholder oversettelser til flere språk av sikkerhetsinformasjonen i denne veiledningen.

**Importante:** Este anexo contém traduções em vários idiomas das advertências de segurança neste guia.








**Importante:** Este apéndice contiene traducciones en múltiples idiomas de los mensajes de seguridad incluidos en esta guía.

**Obs!** Denna bilaga innehåller flerspråkiga översättningar av säkerhetsmeddelandena i denna handledning.

**Standards:** This product meets the following standards.






U.S. Federal Communications Commission	
<b>Declaration Of Conformity</b>	
Manufacture Name:	Allied Telesyn, Inc.
Manufacture Address:	960 Stewart Drive, Suite B Sunnyvale, CA 94085 USA
Manufacture Telephone:	408-730-0950
Declares that the product:	Fast Ethernet Switches
Model Numbers:	AT-FS211, AT-FS212, AT-FS212/1, AT-FS214, AT-FS215, AT-FS216, AT-FS217
This product complies with FCC Part 15B, Class B Limits:	
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device must not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.	
<b>Radiated Energy</b>	
Note: This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with instructions, may cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on. The user is encouraged to try to correct the interference by one or more of the following measures:	
<ul style="list-style-type: none"> <li>- Reorient or relocate the receiving antenna.</li> <li>- Increase the separation between the equipment and the receiver.</li> <li>- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.</li> <li>- Consult the dealer or an experienced radio/TV technician for help.</li> </ul>	
Changes and modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commission rules.	

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

-  **1 RFI Emission** EN55022 Class B
-  **2 Warning:** In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.
-  **3 Immunity** EN55024
-  **4 Warning:** This product requires shielded cables to comply with emission and immunity standards. If it is used with unshielded cables, the user may be required to take measures to correct the interference problem at their own expense.
-  **5 Electrical Safety** EN60950 (TUV), UL1950 (UL/cUL)
-  **6 Laser Safety** EN60825
-  **7 Warning** Class 1 Laser product. (AT-FS212/x models)





### Sicherheit

- 7 **Warnung** Laserprodukt der Klasse 1.
- 8 **Warnung** Nicht direkt in den Strahl blicken.
- 9  **Achtung: GEFÄHRLICHE SPANNUNG**  
Das Gehäuse nicht öffnen. Das Gerät enthält keine vom Benutzer wartbaren Teile. Das Gerät steht unter Hochspannung und darf nur von qualifiziertem technischem Personal geöffnet werden. Vor Anschluß der LAN-Kabel, Gerät vom Netz trennen.
- 10 Das ist ein "LED Produkt der Klasse 1"
- 11  **Gefahr Durch Blitzschlag**  
**Gefahr:** Keine Arbeiten am Gerät oder an den Kabeln während eines Gewitters ausführen.
- 12  **Vorsicht:** Das netzkabel dient zum trennen der stromversorgung. Zur trennung vom netz, kabel aus der steckdose ziehen.
- 13  **Steckbares Gerät:** Die Anschlußbuchse sollte in der Nähe der Einrichtung angebracht werden und leicht zugänglich sein."
- 14  **Vorsicht**  
Die Entlüftungsöffnungen dürfen nicht versperrt sein und müssen zum Kühlen freien Zugang zur Raumluft haben.
- 15 Der Buchse darf nur aus dem Adapter Strom zugeführt werden.



### Europe - EU










Gebrauchen Sie einen von TÜV zugelassenen Wechselstromadapter für Gleichstrom 3.3V, 1.5A.

- 16  **Betriebstemperatur**  
Dieses Produkt wurde für den Betrieb in einer Umgebungstemperatur von nicht mehr als 40° C entworfen.
- 17  **Alle Länder:** Installation muß örtlichen und nationalen elektrischen Vorschriften entsprechen.









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**Standarder:** Dette produkt tilfredsstiller de følgende standarder.

- 1 **Radiofrekvens forstyrrelsesemission** EN55022 Klasse B
- 2  **Advarsel:** I et hjemligt miljø kunne dette produkt forårsage radio forstyrrelse. Bliver det tilfældet, påkræves brugeren muligvis at tage tilstrækkelige foranstaltninger.
- 3 **Immunitet** EN55024
- 4 **Advarsel:** Dette produkt skal bruges med afskærmede kabler for at overholde bestemmelserne vedrørende udstråling og støjimmunitet. Hvis det bruges med uafskærmede kabler, kan det blive påkrævet af brugeren at korrigere interferensproblemer for egen regning.
- 5 **Elektrisk sikkerhed.** EN60950 (TUV), UL1950 (UL/cUL)
- 6  **Laser** EN60825
- Sikkerhed**
- 7 **Advarsel** Laserprodukt av klasse 1.
- 8 **Advarsel** Stirr ikke på strålen.

-  **9 Elektriske Forholdsregler**  
**Advarsel: RISIKO FOR ELEKTRISK STØD**  
 For at forebygge ELEKTRISK stød, undlad at åbne apparatet. Der er ingen indre dele, der kan repareres af brugeren. Denne enhed indeholder LIVSFARLIGE STRØMSPÆNDINGER og bør kun åbnes af en uddannet og kvalificeret tekniker. For at undgå risiko for ELEKTRISK STØD, afbrydes den elektriske strøm til produktet, før LAN-kablerne monteres eller afmonteres.
-  **10** Dette er et "PRODUKT UNDER KLASSE 1 LED"
-  **11 Fare Under Uvejr**  
**Fare:** UNDLAD at arbejde på udstyr eller KABLER i perioder med LYNAKTIVITET.
-  **12 Waarschuwing:** Het toestel wordt uitgeschakeld door de stroomkabel te ontkoppelen. Om het toestel stroomloos te maken: de stroomkabel ontkoppelen.
-  **13** Aan te sluiten apparatuur, de contactdoos wordt in de nabijheid van de apparatuur geïnstalleerd en is gemakkelijk te bereiken."
-  **14 Opgelet:** De ventilatiegaten mogen niet worden gesperd en moeten de omgevingslucht ongehinderd toelaten voor afkoeling
-  **15** Strømforsyningen til apparatet må udelukkende tages fra tilpasningstransformatoren.
- Europe - EU**  
 Brug kun TÜV godkendt vekselstrømstransformator på 3.3V jævnstrøm, 1.5A.
-  **16 Betjeningsstemperatur:** Dette apparat er konstrueret til en omgivende temperatur på maksimum 40 grader C.
-  **17 Alle Lande:** Installation af produktet skal ske i overensstemmelse med lokal og national lovgivning for elektriske installationer.









**Eisen:** Dit product voldoet aan de volgende eisen.






-  **1 RFI Emissie** EN55022 Klasse B
-  **2 Waarschuwing:** Binnenshuis kan dit product radiostoring veroorzaken, in welk geval de gebruiker verplicht kan worden om gepaste maatregelen te nemen.
-  **3 Immunitet** EN55024
-  **4 Waarschuwing:** Om te voldoen aan de emissie- en immunitetsnormen dient dit apparaat te zijn voorzien van afgeschermd kabels. Als het met niet-afgeschermd kabels wordt gebruikt, kan het zijn dat de gebruiker maatregelen moet treffen om interferentieproblemen voor eigen rekening op te lossen.
-  **5 Electricische Veiligheid** EN60950 (TUV), UL1950 (UL/cUL)
-  **6 Laser** EN60825
-  **7 Veiligheid** **Waarschuwing** Klasse-1 laser produkt.
-  **8 Waarschuwing** Neit in de straal staren.

-  **9 Elektriske Forholdsregler**  
**Advarsel:** RISIKO FOR ELEKTRISK STØD For at forebygge ELEKTRISK stød, undlad at åbne apparatet. Der er ingen indre dele, der kan repareres af brugeren. Denne enhed indeholder LIVSFARLIGE STRØMSPÆNDINGER og bør kun åbnes af en uddannet og kvalificeret tekniker. For at undgå risiko for ELEKTRISK STØD, afbrydes den elektriske strøm til produktet, før LAN-kablerne monteres eller afmonteres.
-  **10** Dit is een "KLASSE 1 LED-PRODUKT"
-  **11 Gevaar Voor Bliksemingslag**  
**Gevaar:** NIET aan toestellen of KABELS WERKEN bij BLIKSEM.
-  **12 Attention:** Le cordon d'alimentation sert de mise hors circuit. Pour couper l'alimentation du matériel, débrancher le cordon.
-  **13** Equipement pour branchement électrique, la prise de sortie doit être placée près de l'équipement et facilement accessible".
-  **14 Attention:** Ne pas bloquer les fentes d'aération, ceci empêcherait l'air ambiant de circuler librement pour le refroidissement
-  **15** Stroom mag alleen via de adapter naar het apparaat toegevoerd worden.  
**Europe - EU**  
Gebruik een door TÜV gekeurde wisselstroomadapter van 3.3 Volt gelijkstroom, 1.5 milliampères.
-  **16 Bedrijfstemperatuur:** De omgevingstemperatuur voor dit produkt mag niet meer bedragen dan 40 graden Celsius.
-  **17 Alle Landen:** het toestel installeren overeenkomstig de lokale en nationale elektrische voorschriften.

---



**Normes:** ce produit est conforme aux normes de suivantes.






-  **1 Emission d'interférences radioélectriques** EN55022 Classe B
-  **2 Mise En Garde:** dans un environnement domestique, ce produit peut provoquer des interférences radioélectriques. Auquel cas, l'utilisateur devra prendre les mesures adéquates.
-  **3 Immunité** EN55024
-  **4 Avertissement :** Il faut utiliser des câbles blindés pour ce produit afin de respecter les normes d'émission et d'immunité. Si l'utilisateur choisit d'utiliser des câbles non blindés, il sera peut-être contraint de prendre les mesures nécessaires pour corriger les problèmes d'interférences, ainsi que d'assumer le coût correspondant.
-  **5 Sécurité électrique** EN60950 (TUV), UL1950 (UL/cUL)
-  **6 Laser** EN60825  
**Sécurité**
-  **7 Attention** Produit laser di classe 1.
-  **8 Attention** Ne pas fixer le faisceau des yeux.

- 9  **Information Sur Les Risques Électriques**  
**Avertissement:** DANGER D'ÉLECTROCUTION  
 Pour éviter toute ÉLECTROCUTION, ne pas ôter le revêtement protecteur du matériel. Ce matériel ne contient aucun élément réparable par l'utilisateur. Il comprend des TENSIONS DANGEREUSES et ne doit être ouvert que par un technicien dûment qualifié. Pour éviter tout risque d'ÉLECTROCUTION, débrancher le matériel avant de connecter ou de déconnecter les câbles LAN.
- 10 Ce matériel est un "PRODUIT A DIODE LECTROLUMINESCENTE DE CLASSE 1"
- 11  **Danger De Foudre**  
**Danger:** NE PAS MANIER le matériel ou les CÂBLES lors d'activité orageuse.
- 12  **Attention:** Le cordon d'alimentation sert de mise hors circuit. Pour couper l'alimentation du matériel, débrancher le cordon.
- 13  EQUIPEMENT POUR BRANCHEMENT ELECTRIQUE, la prise de sortie doit être placée près de l'équipement et facilement accessible".
- 14  **Attention:** Ne pas bloquer les fentes d'aération, ceci empêcherait l'air ambiant de circuler librement pour le refroidissement.
- 15 L'alimentation du concentrateur doit être uniquement fournie par l'adaptateur.  
**Europe - EU**  
 Utiliser un adaptateur secteur conforme TÜV de 3.3V, 1.5A en courant continu.
- 16 **Température De Fonctionnement**  
 Ce matériel est capable de tolérer une température ambiante maximum de 40 degrés Celsius.
- 17 **Pour Tous Pays:** Installer le matériel conformément aux normes électriques nationales et locales.

---



**Standardit:** Tämä tuote on seuraavien standardien mukainen.

- 1 **Radioaaltojen häirintä** EN55022 Luokka B
- 2  **Varoitus:** Kotiolosuhteissa tämä laite voi aiheuttaa radioaaltojen häiröitä, missä tapauksessa laitteen käyttäjän on mahdollisesti ryhdyttävä tarpeellisiin toimenpiteisiin.
- 3 **Kestävyys** EN55024
- 4 **Varoitus:** Tämä tuote vaatii suojattuja kaapeleita toimiakseen emissio- ja häiriönsietostandardien mukaisesti. Jos tuotetta käytetään ilman suojattuja kaapeleita, käyttäjä voi joutua korjaamaan häirinnän aiheuttaman ongelman omalla kustannuksellaan.
- 5 **Sähköturvallisuus** EN60950 (TUV), UL1950 (UL/cUL)
- 6  **Laser** EN60825  
**Turvallisuus**
- 7 **Varoitus** Luokan 1 Lasertuote.
- 8 **Variotus** Älä katso säteeseen.










- 9  **Sähköön Liittyviä Huomautuksia**  
**Varoitus:** SÄHKÖISKUVAARA Estääksesi SÄHKÖISKUN älä poista kantta. Sisällä ei ole käyttäjän huollettavissa olevia osia. Tämä laite sisältää VAARALLISIA JÄNNITTEITÄ ja sen voi avata vain koulutettu ja pätevät teknikko. Vältäaksesi SÄHKÖISKUN mahdollisuuden katkaista sähkövirta tuotteeseen ennen kuin liität tai irrotat paikallisverkon (LAN) kaapelit.
- 10 Tämä on "ENSIMMÄISEN LUOKAN VALODIODITUOTE"
- 11  **Salamaniskuvaara**  
**Engenvaara:** ÄLÄ TYÖSKENTELE laitteiden tai KAAPELEIDEN KANSSA SALAMOINNIN AIKANA.
- 12  **Huomautus:** VIRTAJOHTOA KÄYTETÄÄN VIRRANKATKAISULAITTEENA. VIRTA KATKAISTAAN irrottamalla virtajohto.
- 13  Pistorasiaan kytkettävä laite; pistorasia on asennettava laitteen lähelle ja siihen on oltava esteetön pääsy."
- 14  **Huomautus:** Ilmavaihtoreikiä ei pidä tukkia ja niillä täytyy olla vapaa yhteys ympäröivään huoneilmaan, jotta ilmanvaihto tapahtuisi.
- 15 Tähtipisteeseen (hub) syötettävän virran pitää tulla ainoastaan sovitimesta.  
**Europe - EU**  
Käytä TÜV-lisensillä valmistettua verkkosovitinta, jonka tasajännitteen nimellisarvot ovat DC 3.3V, 1.5A (milliampeeria).
- 16 **Käyttölämpötila**  
Tämä tuote on suunniteltu ympäröivän ilman maksimilämpötilalle 40° C.
- 17 **Kaikki Maat:** Asenna tuote paikallisten ja kansallisten sähköturvallisuusmääräysten mukaisesti.

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**Standard:** Questo prodotto è conforme ai seguenti standard.













- 1 **Emissione RFI (interferenza di radiofrequenza)** EN55022 Classe B
- 2  **Avvertenza:** in ambiente domestico questo prodotto potrebbe causare radio interferenza. In questo caso potrebbe richiedersi all'utente di prendere gli adeguati provvedimenti.
- 3 **Immunità** EN55024
- 4 **Avvertenza:** questo prodotto, se utilizzato con cavi schermati, è conforme alle norme sulle emissioni e sull'immunità. In caso di uso senza cavi schermati, l'utente può dover adottare a proprie spese misure correttive contro le interferenze.
- 5 **Sicurezza elettrica** EN60950 (TUV), UL1950 (UL/cUL)
- 6  **Laser** EN60825
- Norme Di Sicurezza**
- 7 **Avvertenza** Prodotto laser di Classe 1.
- 8 **Avvertenza** Non fissare il raggio con gli occhi.


















-  **9 Avvertenze Elettriche**  
**Attenzione:** PERICOLO DI SCOSSE ELETTRICHE  
 Per evitare SCOSSE ELETTRICHE non asportare il coperchio. Le componenti interne non sono riparabili dall'utente. Questa unità ha TENSIONI PERICOLOSE e va aperta solamente da un tecnico specializzato e qualificato. Per evitare ogni possibilità di SCOSSE ELETTRICHE, interrompere l'alimentazione del dispositivo prima di collegare o staccare i cavi LAN.
-  **10** Questo è un "PRODOTTO CON LED DI CLASSE 1"
-  **11 Pericolo Di Fulmini**  
**Pericolo:** NON LAVORARE sul dispositivo o sui CAVI durante PRECIPITAZIONI TEMPORALESICHE.
-  **12** **Attenzione:** Il cavo di alimentazione è usato come dispositivo di disattivazione. Per togliere la corrente al dispositivo staccare il cavo di alimentazione.
-  **13** Apparecchiatura collegabile, la presa va installata vicino all'apparecchio per risultare facilmente accessibile".
-  **14** **Attenzione:** le prese d'aria non vanno ostruite e devono consentire il libero ricircolo dell'aria ambiente per il raffreddamento.
-  **15** Questo dispositivo deve essere alimentato solo mediante l'adattatore.  
**Europe - EU**  
 Utilizzare l'adattatore per c.a. da 3.3V c.c. e 1.5A conforme alla normativa TÜV.
-  **16** **Temperatura Di Funzionamento**  
 Questo prodotto è concepito per una temperatura ambientale massima di 40 gradi centigradi.
-  **17** **Tutti I Paesi:** installare il prodotto in conformità delle vigenti normative elettriche nazionali.







**Sikkerhetsnormer:** Dette produktet tilfredsstiller følgende sikkerhetsnormer.

-  **1 RFI stråling** EN55022 Klasse B
-  **2** **Advarsel:** Hvis dette produktet benyttes til privat bruk, kan produktet forårsake radioforstyrrelse. Hvis dette skjer, må brukeren ta de nødvendige forholdsregler.
-  **3 Immunitet** EN55024
-  **4** **Advarsel:** Dette produktet må brukes med vernetede kabler for å tilfredsstille emisjons- og fritakelsesstandarder. Dersom produktet brukes med uvernedede kabler, må brukeren muligens rette forstyrrelsesproblemene for egen regning.
-  **5 Elektrisk sikkerhet** EN60950 (TUV), UL1950 (UL/cUL)
-  **6 Laser** EN60825
-  **Sikkerhet**
-  **7** **Advarsel:** Laserprodukt av klasse 1.
-  **8** **Advarsal:** Stirr ikke på strålen.
-  **9** **Elektrisitet**  
**Advarsel:** FARE FOR ELEKTRISK SJOKK  
 For å unngå ELEKTRISK sjokk, må dekslet ikke tas av. Det finnes ingen deler som brukeren kan reparere på innsiden. Denne enheten inneholder FARLIGE SPENNINGER, og må kun åpnes av en faglig kvalifisert tekniker. For å unngå ELEKTRISK SJOKK må den elektriske strømmen til produktet være avslått før LAN-kablene til- eller frakobles.














-  **10** Dette er et "KLASSE 1 LED PRODUKT"
-  **11**  **Fare For Lynnedslag**  
**Fare:** ARBEID IKKE på utstyr eller KABLER i TORDENVÆR.
-  **12**  **Forsiktig:** STRØMLEDNINGEN BRUKES TIL Å FRAKOBLE UTSTYRET. FOR Å DEAKTIVISERE UTSTYRET, må strømforsyningen kobles fra.
-  **13**  Utstyr for stikkontakt. Stikkontakten skal monteres i nærheten av utstyret og skal være lett tilgjengelig."
-  **14**  **Forsiktig:** Lufterventilene må ikke blokkeres, og må ha fri tilgang til luft med romtemperatur for avkjøling.
-  **15** All strømtilførsel må komme fra adapteren.  
**Europe - EU**  
Benytt TÜV-godkjent AC-adapter på 3.3V DC, 1.5A (millismpere)
-  **16** **Driftstemperatur:** Dette produktet er konstruert for bruk i maksimum romtemperatur på 40 grader celsius.
-  **17** **Alle Land:** Produktet må installeres i samsvar med de lokale og nasjonale elektriske koder.
- 





**Padrões:** Este produto atende aos seguintes padrões.

-  **1** **Emissão De Interferência De Radiofrequência** EN55022 Classe B
-  **2**  **Aviso:** Num ambiente doméstico este produto pode causar interferência na radiorecepção e, neste caso, pode ser necessário que o utente tome as medidas adequadas.
-  **3** **Imunidade** EN55024
-  **4** **Advertência:** Este produto requer a utilização de cabos blindados para cumprimento dos standards de limites de emissão e imunidade. Se o produto for utilizado com cabos não blindados, o utilizador poderá necessitar de tomar medidas para correção de problemas de interferência, por sua própria conta.
-  **5** **Segurança Eléctrica** EN60950 (TUV), UL1950 (UL/cUL)
-  **6**  **Laser** EN60825  
**Segurança**
-  **7** **Aviso:** Produto laser de classe 1.
-  **8** **Aviso:** Não olhe fixamente para o raio.
-  **9**  **Avisos Sobre Características Eléctricas**  
**Atenção:** PERIGO DE CHOQUE ELÉTRICO  
Para evitar CHOQUE ELÉTRICO, não retire a tampa. Não contém peças que possam ser consertadas pelo usuário. Este aparelho contém VOLTAGENS PERIGOSAS e só deve ser aberto por um técnico qualificado e treinado. Para evitar a possibilidade de CHOQUE ELÉTRICO, desconecte o aparelho da fonte de energia elétrica antes de conectar e desconectar os cabos da LAN.
-  **10** Este é um "PRODUTO CLASSE 1 LED"
-  **11**  **Perigo De Choque Causado Por Raio**  
**Perigo:** NÃO TRABALHE no equipamento ou nos CABOS durante períodos suscetíveis a QUEDAS DE RAIOS.

-  **12** **Cuidado:** O cabo de alimentação é utilizado como um dispositivo de desconexão. Para deseletrificar o equipamento, desconecte o cabo de alimentação.
-  **13** Equipamento de ligação, a tomada eléctrica deve estar instalada perto do equipamento e ser de fácil acesso."
-  **14** **Cuidado:** As aberturas de ventilação não devem ser bloqueadas e devem ter acesso livre ao ar ambiente para arrefecimento adequado do aparelho.
-  **15** Use somente o adaptador fornecido para alimentação elétrica do hub.
- Europe - EU**  
Use um adaptador de corrente alternada com saída DC de 3.3V e 1.5A em conformidade com as especificações da TÜV.
-  **16** **Temperatura De Funcionamento:** Este produto foi projetado para uma temperatura ambiente máxima de 40 graus centígrados.
-  **17** **Todos Os Países:** Instale o produto de acordo com as normas nacionais e locais para instalações elétricas.
















**Estándares:** Este producto cumple con los siguientes estándares.

-  **1** **Emisión RFI** EN55022 Clase B
-  **2** **Advertencia:** en un entorno doméstico, este producto puede causar radiointerferencias, en cuyo caso, puede requerirse del usuario que tome las medidas que sean convenientes al respecto.
-  **3** **Inmunidad** EN55024
-  **4** **Advertencia:** Este producto exige cables protectores para ajustarse a las normas de emisión e inmunidad. Si se utiliza con cables sin protección, el usuario tendrá que correr con los gastos por las medidas a tomar en caso de problemas de interferencias.
-  **5** **Seguridad eléctrica** EN60950 (TUV), UL1950 (UL/cUL)
-  **6** **Laser** EN60825
- Seguridad**
-  **7** ¡Advertencia! Producto láser Clase 1.
-  **8** ¡Advertencia! No mirat fijamente el haz.
-  **9** **Avisos Electricos**  
**Advertencia: PELIGRO DE ELECTROCHOQUE**  
Para evitar un ELECTROCHOQUE, no quite la tapa. No hay ningún componente en el interior al cual puede prestar servicio el usuario. Esta unidad contiene VOLTAJES PELIGROSOS y sólo deberá abrirla un técnico entrenado y calificado. Para evitar la posibilidad de ELECTROCHOQUE desconecte la corriente eléctrica que llega al producto antes de conectar o desconectar los cables LAN.
-  **10** Este es un "PRODUCTO DE DIODO LUMINISCENTE (LED) CLASE 1"
-  **11** **Peligro De Rayos**  
**Eligro:** NO REALICE NINGUN TIPO DE TRABAJO O CONEXION en los equipos o en LOS CABLES durante TORMENTAS ELECTRICAS.
-  **12** **Atencion:** EL CABLE DE ALIMENTACION SE USA COMO UN DISPOSITIVO DE DESCONEXION. PARA DESACTIVAR EL EQUIPO, desconecte el cable de alimentación.
-  **13** Equipo conectable, el tomacorriente se debe instalar cerca del equipo, en un lugar con acceso fácil".

-  **14** **Atencion:** Las aberturas para ventilación no deberán bloquearse y deberán tener acceso libre al aire ambiental de la sala para su enfriamiento.
-  **15** La energía para el dispositivo central o "hub" debe provenir únicamente del adaptador.
- Europe - EU**  
Utilizar un adaptador de corriente alterna autorizado TÜV de 3.3 voltios de corriente continua y 1.5 miliamperios.
-  **16** **Temperatura Requerida Para La Operación:** Este producto está diseñado para una temperatura ambiental máxima de 40 grados C.
-  **17** **Para Todos Los Países:** Monte el producto de acuerdo con los Códigos Eléctricos locales y nacionales.

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**Standarder:** Denna produkt uppfyller följande standarder.

-  **1** **Radiostörning** EN55022 Klass B
-  **2** **Varning:** Denna produkt kan ge upphov till radiostörningar i hemmet, vilket kan tvinga användaren till att vidtaga erforderliga åtgärder.
-  **3** **Immunitet** EN55024
-  **4** **Varning!** Denna produkt kräver skärmade kablar för att uppfylla standardkraven för emission och immunitet. Om den används med oskärmade kablar kan användaren vara tvungen att vidta åtgärder på egen bekostnad för att åtgärda störningsproblemet.
-  **5** **Elsäkerhet** EN60950 (TUV), UL1950 (UL/cUL)
-  **6** **Laser** EN60825
- Säkerhet**
-  **7** **Varning!** Laserprodukt av klass 1.
-  **8** **Varning!** Laserstrålning när enheten är öppen.
-  **9** **tillkännagivanden beträffande elektricitetsrisk:**  
**RISK FÖR ELEKTRISK STÖT**För att undvika ELEKTRISK stöt, ta ej av locket. Det finns inga delar inuti som behöver underhållas. Denna apparat är under HÖGSPÄNNING och får endast öppnas av en utbildad kvalificerad tekniker. För att undvika ELEKTRISK STÖT, koppla ifrån produktens strömanslutning innan LAN-kablarna ansluts eller kopplas ur.
-  **10** Detta är en "KLASS 1 LYSDIODPRODUKT"
-  **11** **Fara För Blixtnedslag**  
**Fara:** ARBETA EJ på utrustningen eller kablarna vid ÅSKVÄDER.
-  **12** **Varning:** Nätkabeln används som strömbrytare för att koppla från strömmen, dra ur nätkabeln.
-  **13** Utrustning med plugg. Uttaget skall installeras i utrustningens närhet och vara lättåtkomligt".
-  **14** **Varning:** Luftventilerna får ej blockeras och måste ha fri tillgång till omgivande rumsluft för avsvälning.
-  **15** Endast anslutningsenheten får vara kraftkälla till centralen.

**Europe - EU**

Använd en växelströmsanslutningsenhet licensierad av TÜV. Likström 3.3V, 1.5A.

 **16**

**Driftstemperatur:** Denna produkt är konstruerad för rumstemperatur ej överstigande 40 grader Celsius.

 **17**

**Alla Länder:** Installera produkten i enlighet med lokala och statliga bestämmelser för elektrisk utrustning.

