SMC® Networks

INSTALLATION GUIDE

SMCFS26

EZ Switch™ 10/100
24-Port Fast Ethernet Switch with 2 Gigabit uplinks

EZ Switch 10/100 Installation Guide

From SMC's EZ line of low-cost workgroup LAN solutions

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FCC Class A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the 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 the 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.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment

You may use unshielded twisted-pair (UTP) for RJ-45 connections - Category 3 or better for 10 Mbps connections, Category 5 or better for 100 Mbps connections, Category 5, 5e, or 6 for 1000 Mbps connections.

CE Mark Declaration of Conformance for EMI and Safety (EEC)

This information technology equipment complies with the requirements of the Council Directive 89/336/EEC on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility and 73/23/EEC for electrical equipment used within certain voltage limits and the Amendment Directive 93/68/EEC. For the evaluation of the compliance with these Directives, the following standards were applied:

RFI Emission:
- Limit class A according to EN 55022:1998
- Limit class A for harmonic current emission according to EN 61000-3-2/1995
- Limitation of voltage fluctuation and flicker in low-voltage supply system according to EN 61000-3-3/1995

Immunity:
- Product family standard according to EN 55024:1998
- Electrostatic Discharge according to EN 61000-4-2:1995 (Contact Discharge: ±4 kV, Air Discharge: ±8 kV)
- Radio-frequency electromagnetic field according to EN 61000-4-3:1996 (80 - 1000 MHz with 1 kHz AM 80% Modulation: 3 V/m)
- Electrical fast transient/burst according to EN 61000-4-4:1995 (AC/DC power supply: ±1 kV, Data/Signal lines: ±0.5 kV)
- Surge immunity test according to EN 61000-4-5:1995 (AC/DC Line to Line: ±1 kV, AC/DC Line to Earth: ±2 kV)
- Immunity to conducted disturbances, Induced by radio-frequency fields: EN 61000-4-6:1996 (0.15 - 80 MHz with 1 kHz AM 80% Modulation: 3 V/m)
- Power frequency magnetic field immunity test according to EN 61000-4-8:1993 (1 A/m at frequency 50 Hz)
- Voltage dips, short interruptions and voltage variations immunity test according to EN 61000-4-11:1994 (>95% Reduction @10 ms, 30% Reduction @500 ms, >95% Reduction @5000 ms)

LVD:
- EN 60950-1

Warning! Do not plug a phone jack connector in the RJ-45 port. This may damage the device. Les raccordeurs ne sont pas utilisé pour le système téléphonique!

Australia AS/NZS 3548 (1995) - Class A

Safety Compliance

Please read the following safety information carefully before installing the switch:

Power Cord Set	
U.S.A. and Canada	The cord set must be UL-approved and CSA certified.
	The minimum specifications for the flexible cord are: - No. 18 AWG - not longer than 2 meters, or 16 AWG. - Type SV or SJ - 3-conductor
	The cord set must have a rated current capacity of at least 10 A
	The attachment plug must be an earth-grounding type with NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V) configuration.
Denmark	The supply plug must comply with Section 107-2-D1, Standard DK2-1a or DK2-5a.
Switzerland	The supply plug must comply with SEV/ASE 1011.
U.K.	The supply plug must comply with BS1363 (3-pin 13 A) and be fitted with a 5 A fuse which complies with BS1362.
	The mains cord must be <HAR> or <BASEC> marked and be of type HO3VVF3GO.75 (minimum).
Europe	The supply plug must comply with CEE7/7 (“SCHUKO”).
	The mains cord must be <HAR> or <BASEC> marked and be of type HO3VVF3GO.75 (minimum).
	IEC-320 receptacle.

Veuillez lire à fond l'information de la sécurité suivante avant d'installer le Switch:

AVERTISSEMENT: L’installation et la dépose de ce groupe doivent être confiés à un personnel qualifié.

- Ne branchez pas votre appareil sur une prise secteur (alimentation électrique) lorsqu'il n'y a pas de connexion de mise à la terre (mise à la masse).
- Vous devez raccorder ce groupe à une sortie mise à la terre (mise à la masse) afin de respecter les normes internationales de sécurité.
- Le coupleur d’appareil (le connecteur du groupe et non pas la prise murale) doit respecter une configuration qui permet un branchement sur une entrée d’appareil EN 60320/IEC 320.
- La prise secteur doit se trouver à proximité de l’appareil et son accès doit être facile. Vous ne pouvez mettre l’appareil hors circuit qu’en débranchant son cordon électrique au niveau de cette prise.

- L’appareil fonctionne à une tension extrêmement basse de sécurité qui est conforme à la norme IEC 60950. Ces conditions ne sont maintenues que si l’équipement auquel il est raccordé fonctionne dans les mêmes conditions.

France et Pérou uniquement:
Ce groupe ne peut pas être alimenté par un dispositif à impédance à la terre. Si vos alimentations sont du type impédance à la terre, ce groupe doit être alimenté par une tension de 230 V (2 P+T) par le biais d’un transformateur d’isolement à rapport 1:1, avec un point secondaire de connexion portant l’appellation Neutre et avec raccordement direct à la terre (masse).

Cordon électrique - Il doit être agréé dans le pays d’utilisation	
Etats-Unis et Canada:	Le cordon doit avoir reçu l’homologation des UL et un certificat de la CSA.
	Les spécifications minimales pour un cable flexible sont AWG No. 18, ou AWG No. 16 pour un cable de longueur inférieure à 2 métres. - type SV ou SJ - 3 conducteurs
	Le cordon doit être en mesure d’acheminer un courant nominal d’au moins 10 A.
	La prise femelle de branchement doit être du type à mise à la terre (mise à la masse) et respecter la configuration NEMA 5-15P (15 A, 125 V) ou NEMA 6-15P (15 A, 250 V).
Danemark:	La prise mâle d’alimentation doit respecter la section 107-2 D1 de la norme DK2 1a ou DK2 5a.
Suisse:	La prise mâle d’alimentation doit respecter la norme SEV/ASE 1011.
Europe	La prise secteur doit être conforme aux normes CEE 7/7 (“SCHUKO”) LE cordon secteur doit porter la mention <HAR> ou <BASEC> et doit être de type HO3VVF3GO.75 (minimum).

Bitte unbedingt vor dem Einbauen des Switches die folgenden Sicherheitsanweisungen durchlesen:

WARNUNG: Die Installation und der Ausbau des Geräts darf nur durch Fachpersonal erfolgen.

- Das Gerät sollte nicht an eine ungeerdete Wechselstromsteckdose angeschlossen werden.
- Das Gerät muß an eine geerdete Steckdose angeschlossen werden, welche die internationalen Sicherheitsnormen erfüllt.
- Der Gerätestecker (der Anschluß an das Gerät, nicht der Wandsteckdosenstecker) muß einen gemäß EN 60320/IEC 320 konfigurierten Geräteeingang haben.

- Die Netzsteckdose muß in der Nähe des Geräts und leicht zugänglich sein. Die Stromversorgung des Geräts kann nur durch Herausziehen des Gerätenetzkabels aus der Netzsteckdose unterbrochen werden.
- Der Betrieb dieses Geräts erfolgt unter den SELV-Bedingungen (Sicherheitskleinstspannung) gemäß IEC 60950. Diese Bedingungen sind nur gegeben, wenn auch die an das Gerät angeschlossenen Geräte unter SELV-Bedingungen betrieben werden.

Stromkabel. Dies muss von dem Land, in dem es benutzt wird geprüft werden:	
Schweiz	Dieser Stromstecker muß die SEV/ASE 1011Bestimmungen einhalten.
Europe	Das Netzkabel muß vom Typ HO3VVF3GO.75 (Mindestanforderung) sein und die Aufschrift <HAR> oder <BASEC> tragen. Der Netzstecker muß die Norm CEE 7/7 erfüllen (”SCHUKO”).

Warnings and Cautionary Messages

Warning: This product does not contain any serviceable user parts.

Warning: Installation and removal of the unit must be carried out by qualified personnel only.

Warning: When connecting this device to a power outlet, connect the field ground lead on the tri-pole power plug to a valid earth ground line to prevent electrical hazards.

Caution: Do not plug a phone jack connector in the RJ-45 port. This may damage this device. Les raccordeurs ne sont pas utilisé pour le système téléphonique!

Caution: Use only twisted-pair cables with RJ-45 connectors that conform to FCC standards.

Warnings (in German)

Achtung: Dieses Produkt enthält keine Teile, die eine Wartung vom Benutzer benötigen.

Achtung: Installation und Deinstallation des Gerätes müssen von qualifiziertem Servicepersonal durchgeführt werden.

Achtung: Wenn das Gerät an eine Steckdose angeschlossen wird, muß der Masseanschluß am dreipoligen Netzstecker mit Schutzerde verbunden werden, um elektrische Gefahren zu vermeiden.

Environmental Statement

The manufacturer of this product endeavours to sustain an environmentally-friendly policy throughout the entire production process. This is achieved though the following means:

- Adherence to national legislation and regulations on environmental production standards.
- Conservation of operational resources.
- Waste reduction and safe disposal of all harmful un-recyclable by-products.
- Recycling of all reusable waste content.
- Design of products to maximize recyclables at the end of the product's life span.
- Continual monitoring of safety standards.

End of Product Life Span

This product is manufactured in such a way as to allow for the recovery and disposal of all included electrical components once the product has reached the end of its life.

Manufacturing Materials

There are no hazardous nor ozone-depleting materials in this product.

Documentation

All printed documentation for this product uses biodegradable paper that originates from sustained and managed forests. The inks used in the printing process are non-toxic.

Purpose

This guide details the hardware features of the switches, including their physical and performance-related characteristics, and how to install each switch.

Audience

This guide is for system administrators with a working knowledge of network management. You should be familiar with switching and networking concepts.

Zielgruppe Dieser Anleitung ist fuer Systemadministratoren mit Erfahrung im Netzwerkmangement. Sie sollten mit Switch- und Netzwerkkonzepten vertraut sein.

Contents

Introduction **1**
Features and Benefits 1
Front and Rear Panels 1
Rear Panel 1
Front Panel RJ-45 Ports 1
1000BASE-T Ports 2
LED Status Indicators 2

Installing the Switch **3**
Package Contents 3
Selecting a Site 3
Instructions 3
Applications 4
Rack Mounting 5

Product Specifications **7**
Physical Characteristics 7
Switching Criteria 7

Troubleshooting **8**
Diagnosing Switch Indicators 8
Power and Cooling Problems 8
Installation 8

Cables **9**
Twisted-Pair cable and Pin Assignments 9
10BASE-T/100BASE-TX Pin Assignments 9
Straight-Through Wiring 10
Crossover Wiring 10
1000BASE-T Pin Assignments 11

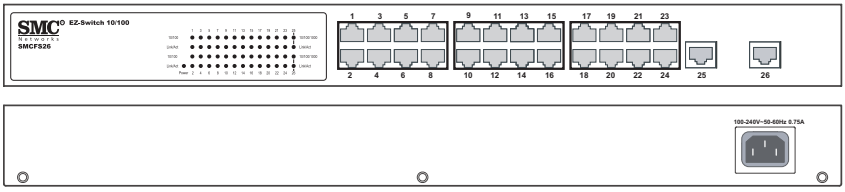
Introduction

The SMC EZ Switch 10/100, SMCFS26, is a high-performance Fast Ethernet switch designed for delivering 100 Mbps connectivity to the desktop. It provides 24 full-duplex 100BASE-TX ports and two 1000BASE-T uplink ports that significantly improve network performance and boost throughput for high-bandwidth applications. With 8.8Gbps of aggregate bandwidth, the switch provides a simple solution to meeting the growing demands on your network's limited resources.

Features and Benefits

- Auto-negotiation supported on all ports
- Automatic MDI/MDI-X operation
- IEEE Std 802.3-2005 compliance ensures compatibility with standards-based hubs, switches and cards from any vendor
- Store-and-forward switching ensures error-free transmission
- Half- and full-duplex flow control prevents packets from being dropped under heavy loading
- Plug-and-play nothing to configure
- “At-a-glance” LEDs for port and system status monitoring
- Desktop or rack installation

Front and Rear Panels



Rear Panel

The AC power socket is located on the rear panel of the switch.

Front Panel RJ-45 Ports

This switch features 24 10/100BASE-TX ports with RJ-45 connectors located on the front panel of the switch. Because all ports support automatic MDI/MDI-X operation, you can use straight-through cables for all network connections to PCs or servers, or to other switches or hubs.

1000BASE-T Ports

The two 1000BASE-T RJ-45 ports operate at 10 Mbps or 100 Mbps, half or full duplex, or at 1000 Mbps, full duplex. Because these ports support automatic MDI/MDI-X operation, you can use straight-through cables for all network connections to PCs or servers, or to other switches or hubs.

LED Status Indicators

The front panel of the switch provides status LEDs for “at-a-glance” system monitoring. The following table details the functions of the various indicators.

Port and System Status LEDs		
LED	Condition	Status
Power	On	The switch is receiving power.
	Off	The switch is not receiving power.
Ports 1-24		
Link/Act	On	The port has established a valid network connection.
	Off	The port has not established a network connection.
	Flashing	Traffic is passing through the port.
10/100/1000	On Green	Indicates the port is operating at 100 Mbps.
	Off	When the corresponding Link/Act LED is on, indicates the port is operating at 10 Mbps.
	Amber	Indicates the port is operating at 1000 Mbps (port 25,26)

Installing the Switch

Before installing the switch, verify that you have all the items listed under “Package Contents.” If any of the items are missing or damaged, contact your local distributor. Also be sure you have all the necessary tools and cabling before installing the switch.

Package Contents

This package includes:

- EZ Switch 10/100, SMCFS26
- Four rubber foot pads
- This Installation Guide
- Two mounting brackets and four screws
- Appropriate AC power cord

Selecting a Site

Be sure to follow the site selection guidelines below when choosing a location:

- Select a suitable location for the switch:
  - It should be accessible for installing, cabling and maintaining the switch.
  - The temperature and humidity should be within the ranges listed in the specifications.
  - The status LEDs should be clearly visible.
  - There should be adequate space (approximately two inches) on all sides for proper air flow.
- Make sure twisted-pair cable is always routed away from power lines, fluorescent lighting fixtures and other sources of electrical interference such as radios, transmitters, etc.
- Make sure that a properly grounded power outlet is within 2 m (6.6 feet) of the switch and is powered from an independent circuit breaker. As with any equipment, using a filter or surge suppressor is recommended.

Instructions

1. **Positioning the Switch:** For desktop or shelf mounting, attach the four adhesive foot pads to the bottom of the switch. For mounting the switch in a rack, see “Rack Mounting” on page 5.

2. **Applying Power:** Plug one end of the power cord into the socket on the switch's rear panel, and the other end into an appropriate electrical outlet. Check the Power LED to be sure power is on.

Note: It is not necessary to power off the switch before connecting or disconnecting any UTP cables, as these actions will not disrupt the operation of other devices attached to the switch.

3. **Connecting PCs:** Connect each PC to an RJ-45 port on the switch using Category 5, 5e, or 6 shielded or unshielded twisted-pair (UTP or STP) cable, maximum length 100 meters (328 ft). The switch will support up to 26 PCs.

Note: If an attached device does not support auto-negotiation, the data rate will be sensed automatically and the communication mode will default to half duplex. All ports on the switch support automatic MDI/MDI-X operation, so you can use straight-through cables for all network connections to PCs or servers, or to other switches or hubs.

4. **Cascading Switches and Other Network Devices:** All the ports on the switch support automatic MDI/MDI-X configuration for cable connections. This allows you to use straight-through cable to connect to other switches or hubs from any port on the switch. No crossover cables or other device settings are needed. See the “Twisted-Pair cable and Pin Assignments” on page 9 of this guide for further information.

Caution: Do not plug a phone jack connector into any RJ-45 port. This may damage the switch. Instead, use only twisted-pair cables with RJ-45 connectors that conform with FCC standards.

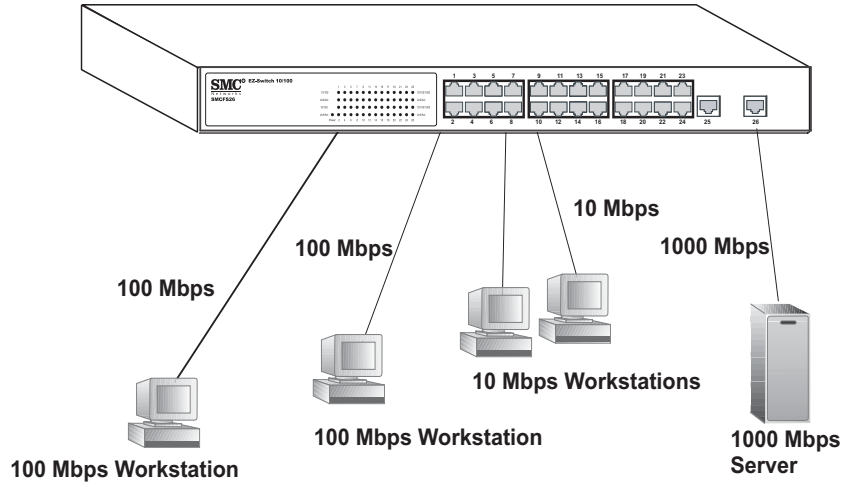
Applications

This switch segments your network, significantly increasing both bandwidth and throughput. Each port on the switch can be attached to any Ethernet or Fast Ethernet device, such as another switch, or a server’s network adapter. All switch ports operate at 10 /100 Mbps full and half duplex providing up to 200 Mbps of bandwidth to the attached device. The two Gigabit uplink ports operate at 1000 Mbps full duplex and provide up to 2 Gbps of bandwidth to each attached device.

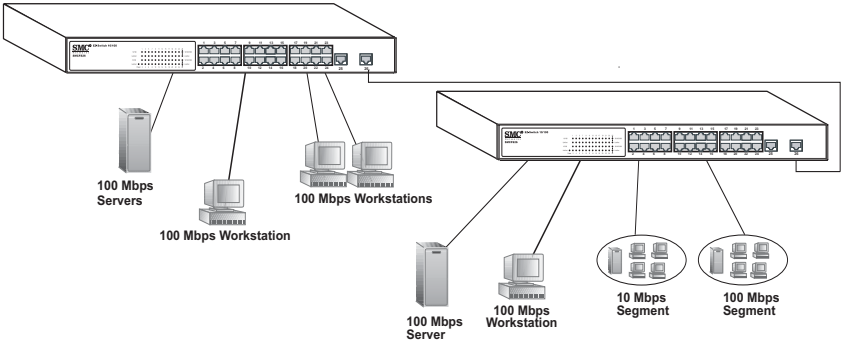
Bridging Functions – This switch provides fully transparent bridging functions. It automatically learns node addresses, that are subsequently used to filter and forward all traffic based on the destination address. When traffic passes between devices attached to the same shared collision domain, those packets are filtered from the switch. But when traffic must be passed between unique segments (i.e., different ports on the switch), the high-speed switching fabric forwards the packets at near zero latency.

Switching Functions – Store-and-forward switching is used to forward traffic to other ports. This scheme ensures data integrity and provides a clean data stream.

Sample Application – This switch is designed to operate as a small workgroup switch. It can provide 10 or 100 Mbps connections to workstations or servers. It can also provide a 1000 Mbps uplink to the network backbone.



Standalone LAN



Cascading Switches

Rack Mounting

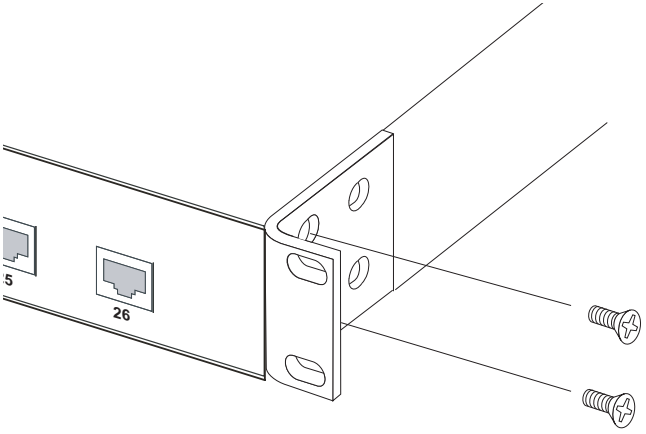
Before rack mounting the switch, pay particular attention to the following factors:

- Temperature: Since the temperature within a rack assembly may be higher than the ambient room temperature, check that the rack-environment temperature is within the specified operating temperature range. (see “Product Specifications” on page 7.)
- Mechanical Loading: Do not place any equipment on top of a rack-mounted unit.
- Circuit Overloading: Be sure that the supply circuit to the rack assembly is not overloaded.

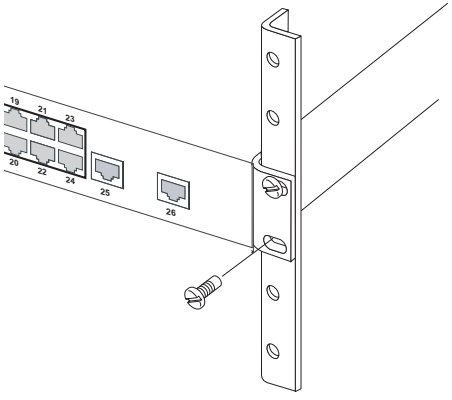
- Grounding: Rack-mounted equipment should be properly grounded. Particular attention should be given to supply connections other than direct connections to the mains.

To rack-mount devices:

1. Attach the brackets to the device using the screws provided in the Bracket Mounting Kit.



2. Mount the device in the rack, using four rack-mounting screws (not provided).



3. If installing multiple switches, mount them in the rack, one below the other, in any order.

Product Specifications

Physical Characteristics

Standards Conformance	IEEE Std 802.3-2005
Communication Rate	Ports 1-24: 10 and 100 Mbps Ports 25-26: 10, 100, and 1000 Mbps
Communication Mode	Full or half duplex
Media Supported	10BASE-T: 100-ohm Category 3 or better twisted-pair 100BASE-TX: 100-ohm Category 5 or better twisted pair 1000BASE-T: 100-ohm Category 5, 5e, or 6 twisted-pair
Number of Ports	24 RJ-45 100BASE-TX ports 2 RJ-45 1000BASE-T ports
Indicator Panel	Power Ports: Link/Act, 10/100/1000 Mbps
Dimensions	44 x 17.2 x 4.3 cm (17.3 x 6.8 x 1.7 in.)
Weight	1.895 kg (4.177 lbs)
Power Requirement	Input Voltage: 100 - 240 VAC @ 50-60 Hz, 0.75 A
Power Consumption	30 Watts maximum
Temperature	Operating: 0 ~ 45 ºC / 32 ~ 113 ºF Storage: -40 ~ 70 ºC / -40 ~ 158 ºF
Humidity	10% to 90% non-condensing
Immunity	EN 61000-4-2/3/4/5/6/8/11
Emissions	FCC Class A, CISPR Class A, EN 61000-3-2/3
Safety	IEC 60950-1

Switching Criteria

Network Bridging Function	Filtering, forwarding and learning
Switching Method	Store-and-forward
MAC Address Table	4K entries
Packet buffer	2.75 Mbit per system

Troubleshooting

Diagnosing Switch Indicators

Troubleshooting Chart

Symptom	Action
Power LED is Off	• Check connections between the switch, the power cord and the wall outlet. • Check the power outlet by using it for another device. • Contact your dealer for assistance.
Link LED is Off	• Verify that the switch and attached device are powered on. • Be sure the cable is plugged into both the switch and corresponding device. • If the switch is installed in a rack, check the connections to the punch-down block and patch panel. • Verify that the proper cable type is used and its length does not exceed specified limits. • Check the adapter on the attached device and cable connections for possible defects. Replace the defective adapter or cable if necessary.

Power and Cooling Problems

If the power indicator does not turn on when the power cord is plugged in, you may have a problem with the power outlet, power cord, or internal power supply as explained in the previous section. However, if the unit powers off after running for a while, check for loose power connections, power losses or surges at the power outlet, and verify that the fans on the unit are unobstructed and running prior to shutdown. If you still cannot isolate the problem, then the internal power supply may be defective.

Installation

Verify that all system components have been properly installed. If one or more components appear to be malfunctioning (e.g., the power cord or network cabling), test them in an alternate environment where you are sure that all the other components are functioning properly.

Cables

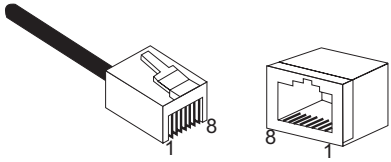
Twisted-Pair cable and Pin Assignments

For 10/100BASE-TX connections, the twisted-pair cable must have two pairs of wires. For 1000BASE-T connections the twisted-pair cable must have four pairs of wires. Each wire pair is identified by two different colors. For example, one wire might be green and the other, green with white stripes. Also, an RJ-45 connector must be attached to both ends of the cable.

Caution: DO NOT plug a phone jack connector into any RJ-45 port. Use only twisted-pair cables with RJ-45 connectors that conform with FCC standards.

Caution: Each wire pair must be attached to the RJ-45 connectors in a specific orientation.

The figure below illustrates how the pins on the RJ-45 connector are numbered. Be sure to hold the connectors in the same orientation when attaching the wires to the pins.



RJ-45 Connector Pin Numbers

10BASE-T/100BASE-TX Pin Assignments

Use unshielded twisted-pair (UTP) or shielded twisted-pair (STP) cable for RJ-45 connections: 100-ohm Category 3 or better cable for 10 Mbps connections, or 100-ohm Category 5 or better cable for 100 Mbps connections. Also be sure that the length of any twisted-pair connection does not exceed 100 meters (328 feet).

Since the RJ-45 ports on the switch base unit support automatic MDI/MDI-X operation, you can use straight-through cables for all network connections to PCs or servers, or to other switches or hubs. In straight-through cable, pins 1, 2, 3, and 6, at one end of the cable, are connected straight through to pins 1, 2, 3, and 6 at the other end of the cable. When using any RJ-45 port on this switch, you can use either straight-through or crossover cable.

10/100BASE-TX MDI and MDI-X Port Pinouts

Pin	MDI Signal Name	MDI-X Signal Name
1	Receive Data plus (RD+)	Transmit Data plus (TD+)
2	Receive Data minus (RD-)	Transmit Data minus (TD-)
3	Transmit Data plus (TD+)	Receive Data plus (RD+)
6	Transmit Data minus (TD-)	Receive Data minus (RD-)
4, 5, 7, 8	Not used	Not used

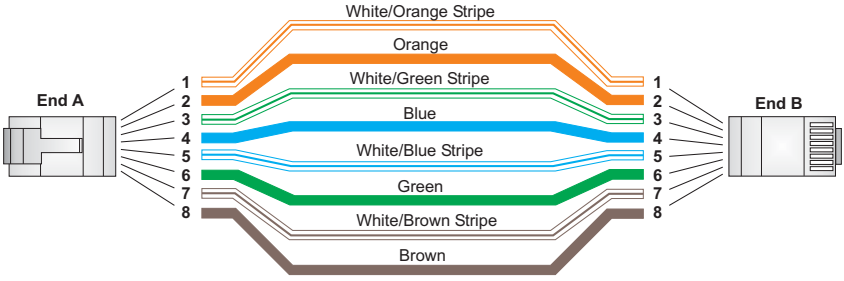
Note: The "+" and "- " signs represent the polarity of the wires that make up each wire pair.

Straight-Through Wiring

If the twisted-pair cable is to join two ports and only one of the ports has an internal crossover (MDI-X), the two pairs of wires must be straight-through. (When auto-negotiation is enabled for any RJ-45 port on this switch, you can use either straight-through or crossover cable to connect to any device type.)

You must connect all four wire pairs as shown in the following diagram to support Gigabit Ethernet.

EIA/TIA 568B RJ-45 Wiring Standard
10/100BASE-TX Straight-through Cable



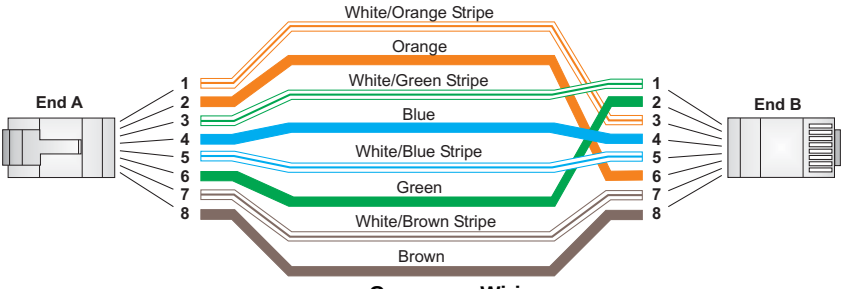
Straight-through Wiring

Crossover Wiring

If the twisted-pair cable is to join two ports and either both ports are labeled with an “X” (MDI-X) or neither port is labeled with an “X” (MDI), a crossover must be implemented in the wiring. (When auto-negotiation is enabled for any RJ-45 port on this switch, you can use either straight-through or crossover cable to connect to any device type.)

You must connect all four wire pairs as shown in the following diagram to support Gigabit Ethernet.

EIA/TIA 568B RJ-45 Wiring Standard
10/100BASE-TX Crossover Cable



Crossover Wiring

1000BASE-T Pin Assignments

All 1000BASE-T ports support automatic MDI/MDI-X operation, so you can use straight-through cables for all network connections to PCs or servers, or to other switches or hubs.

The table below shows the 1000BASE-T MDI and MDI-X port pinouts. These ports require that all four pairs of wires be connected. Note that for 1000BASE-T operation, all four pairs of wires are used for both transmit and receive.

Use 100-ohm Category 5, 5e or 6 unshielded twisted-pair (UTP) or shielded twisted-pair (STP) cable for 1000BASE-T connections. Also be sure that the length of any twisted-pair connection does not exceed 100 meters (328 feet).

1000BASE-T MDI and MDI-X Port Pinouts

Pin	MDI Signal Name	MDI-X Signal Name
1	Bi-directional Data One Plus (BI_D1+)	Bi-directional Data Two Plus (BI_D2+)
2	Bi-directional Data One Minus (BI_D1-)	Bi-directional Data Two Minus (BI_D2-)
3	Bi-directional Data Two Plus (BI_D2+)	Bi-directional Data One Plus (BI_D1+)
4	Bi-directional Data Three Plus (BI_D3+)	Bi-directional Data Four Plus (BI_D4+)
5	Bi-directional Data Three Minus (BI_D3-)	Bi-directional Data Four Minus (BI_D4-)
6	Bi-directional Data Two Minus (BI_D2-)	Bi-directional Data One Minus (BI_D1-)
7	Bi-directional Data Four Plus (BI_D4+)	Bi-directional Data Three Plus (BI_D3+)
8	Bi-directional Data Four Minus (BI_D4-)	Bi-directional Data Three Minus (BI_D3-)

Cable Testing for Existing Category 5 Cable

Installed Category 5 cabling must pass tests for Attenuation, Near-End Crosstalk (NEXT), and Far-End Crosstalk (FEXT). This cable testing information is specified in the ANSI/TIA/EIA-TSB-67 standard. Additionally, cables must also pass test parameters for Return Loss and Equal-Level Far-End Crosstalk (ELFEXT). These tests are specified in the ANSI/TIA/EIA-TSB-95 Bulletin, “The Additional Transmission Performance Guidelines for 100 Ohm 4-Pair Category 5 Cabling.”

Note that when testing your cable installation, be sure to include all patch cables between switches and end devices.

Adjusting Existing Category 5 Cabling to Run 1000BASE-T

If your existing Category 5 installation does not meet one of the test parameters for 1000BASE-T, there are basically three measures that can be applied to try and correct the problem:

1. Replace any Category 5 patch cables with high-performance Category 5e or Category 6 cables.
2. Reduce the number of connectors used in the link.
3. Reconnect some of the connectors in the link.

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