

DES-7200 Series

Quick Installation Guide

D-Link[®]

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Revision No.: V1.2

Date: 2008/7/1

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Preface

Thank you for using our switches. This manual will guide you through the quick installation of the high-density multi-service IPv6 10G core routing switches S8606/S8610/S8614 and the super high-density multi-service IPv6 10G core routing switches S9610. Please read this article carefully before using the products so as to avoid damage on people and equipments, especially safety warning suggestions. If you have any question, please feel free to contact customer service personal of Ruijie Network.

Scope

This manual is intended for the users who have some experience in installing and maintaining network hardware and want to learn the above information. This manual assumes that users are familiar with Ethernet terms and concepts.

Safety Warning

Power Supply Safety Warning

 警告 WARNING	Grounding before you power on the device for there may be higher leakage current.
---	---

 警告 WARNING	Be sure that all cables are connected to the sockets grounding correctly.
---	---

 警告 WARNING	Disconnect all cables before you power off the system.
---	--

Static Electricity Protection Warning

 警告 WARNING	Wear the anti-static wrist strap before contacting the equipment for it is equipped with static sensitive apparatus.
---	--

Laser Safety Warning

CLASS 1 LASER PRODUCT	
 警告 WARNING	Directly looking at the optical interfaces or fibers may damage your eyes.

Serial Interface Safety Warning

 警告 WARNING	Hot plugging on the serial interface may damage the terminals. Please power off the terminal before connecting or pulling
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	out the cables to/from the serial interfaces
--	--

Fan Safety Warning

 警告 WARNING	Fan is a dangerous part. Do not move your fingers and body near the fan.
---	--

Transportation Safety Warning

 警告 WARNING	The whole equipment may be greater than 80kg for transportation.
---	--

 警告 WARNING	Do not use the handles on the back to transport the chassis.
---	--

 警告 WARNING	Caution of slide when inserting or pulling out heavier parts.
---	---

Maintenance Warning

 警告 WARNING	Please contact qualified technicians to maintain internal parts.
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Product Overview

D-Link Corporation introduces high-density multi-service IPv6 core router switch DES-7200 by sparing great efforts, after the release of the multi-service 10,000M core router switch DES-7200 being applicable to the backbone Ethernet. DES-7200, as a multi-service IPv6 10,000M core router switch of the new generation, provides powerful defense ability while ensuring high performance and large capacity. It also boasts the ability of service addition and expansion on demand, thus satisfying the design requirements of equal emphasis on service and performance. Currently, two models are available, DES-7206 and DES-7210, which offer ten vertical slots and six horizontal slots respectively.

The DES-7210 series multi-service Ipv6 10,000M core router switch provides users with high-speed non-blocking data switching. With powerful switching and routing functions and secure intelligent technologies, it can be used together with various series of D-Link switches to provide users with complete end-to-end solutions. It is ideal for large-scale network core backbone and heavy traffic node switch. By expanding with high-performance multi-service cards, the DES-7200 series switches support policy routing and IPV6, and satisfies customers' flexible and complex application requirements.

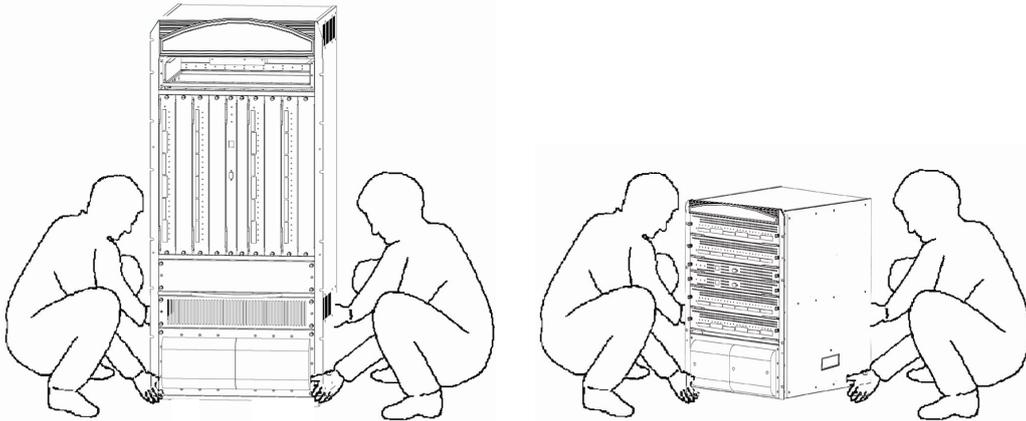
Applications:

- Core layers of such enterprise networks of educational, financial and governmental organizations
- Running environment that needs powerful routing function and carrier-class security & reliability
- High-layer switching of enterprise networks with high bandwidth and 10G needs
- Enterprise environment that needs to provide high QoS assurance for various applications

Safety Precautions for Removing

The DES-7210/7206 is large and heavy. When you handle them, please pay attention to the following requirement:

- Avoid moving the equipment frequently.
- At least two persons are needed to move the equipment. Do not attempt to move the equipment by one person only.
- Keep balanced in moving the equipment, and avoid injuring your leg and feet or spraining your waist.
- Turn off all power supplies and unplug all power cables before you can remove the equipment.
- First remove all the line cards, fan tray, and power module from the chassis before you can move the DES-7210/7206 by using the handles on both sides, to avoid any damage.



Correctly Moving the DES-7210 and DES-7206



Do not move the equipment by grasping the panel, power supply handle, ventilation holes of the chassis, as they are not designed to bear the weight of the entire equipment. Failing to do so may cause damage or even injure yourself.

Preparation Before Installation

Temperature and Humidity Requirements

To ensure the normal working and a prolonged useful life of the DES-7210/7206, appropriate temperature and humidity must be maintained in the equipment room.

If the equipment room has temperature and humidity that do not meet the requirements for a long time, the equipment may be damaged.

Temperature and Humidity Requirements of the DES-7210/7206

Temperature		Relative Humidity	
Long-term condition	Short-term condition	Long-term condition	Short-term condition
0°C-45°C	0°C-45°C	40%-65%	10%-90%



1. The ambient temperature and humidity are measured at the point that is 1.5m above the floor and 0.4m before the equipment when there is no protective plate in front or back of the equipment rack.
2. The short-term working condition applies where the continuous working period does not exceed 48 hours and the accumulative total period within a year does not exceed 15 days.

Static Discharge Damage Prevention

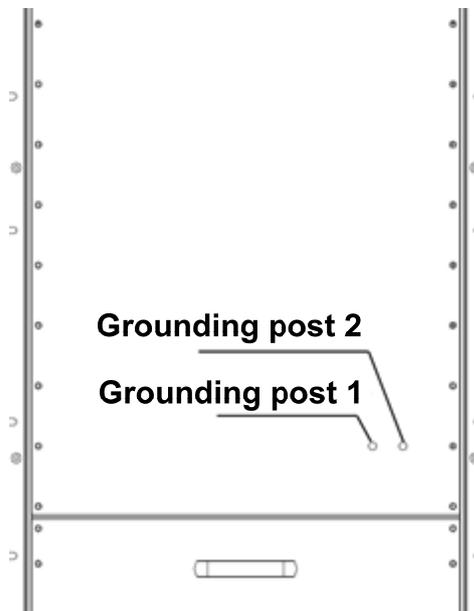
To prevent damage from static electricity, you must pay attention to the following:

1. Proper grounding of the equipment and floor
2. Dust prevention measures are taken in the room.

3. An appropriate humidity is maintained.
4. Always wear an anti-static wrist strap when you touch any circuit board.
5. Try to hold a circuit board by its edges. Do not touch any components or the PCB.
6. Do not let any clothes touch a circuit board. An antistatic wrist strap can only prevent static electricity from human damaging the circuit board, but cannot prevent any static electricity on clothes.

System Grounding Requirements

A good grounding system is the basis for the stable and reliable operation of the DES-7210/7206. It is the chief condition to prevent lightning stroke and resist interference. Please carefully check the grounding conditions on the installation site according to the grounding requirements, and perform grounding properly as needed.



Grounding of the DES-7210/7206

The system cables must ensure the normal working of the equipment. Before you connect the cables, please carefully read the following precautions.

Power Requirements

When the DES-7210/7206 uses the AC power supply:

AC input voltage: 90Vac~264Vac, 47Hz~63Hz

Power: 1200W/2000W

When the DES-7210/7206 uses the DC power supply:

DC input voltage: DC - 36Vdc ~ -75Vdc

Power: 1200W/2000W

Please refer to following table to evaluate the total system requirement:

DES-7200 Series Modules	Maximum Power Consumption (W)
7200-CM1	30
7200-CM2	30
7200-CM3	50
7200-CM4	50
7200-24G	75
7200-24	85
7200-48	100
7200-24GE	75
7200-2XG	75
7200-4XG	100
7200-24P	85+15.4*N (N indicates the PoE port being used, of which the value is less than 24)
7200-48P	100+15.4*N (N indicates the PoE port being used, of which the value is less than 48)
7200-ASE3	100



The DES-7210/7206 provides 1+1 redundancy of power supply. You are recommended to use multiple power supplies for the equipment to ensure its continuous and stable working by avoiding the impact of unexpected power failures on the equipment. However, you must note that the redundancy power supplies must be of the same type; a mix of power supplies is not allowed.

Requirements of Installation Tools

List of Installation Tools

Type	Tools	Remarks
Common tools	Claw hammer, pliers	Unpack wooden case and transportation case.
	Cross screwdriver, straight screwdriver, spanner	Disassemble chassis, power supply, fan and modules.
	Power supply cables, network cables, optical fibers and distribution cables	Connect the interfaces.
	Ruler, long tapeline, marker pen	Measure the installation position.
	Bolts, diagonal pliers, straps	Mount the chassis.
Special-purpose tools	Anti-static tool	Prevent static electricity.
	Wire stripper, crimping pliers	Create network cables and grounding cables.
Meter	Multimeter	Test power supply and DC resistance.
	500V megohmmeter	Test the insulation resistance and grounding resistance.

Installation Site Requirements

The DES-7210/7206 must be used indoors. To ensure the normal working and a prolonged useful life of the equipment, the installation site must meet the following requirements.

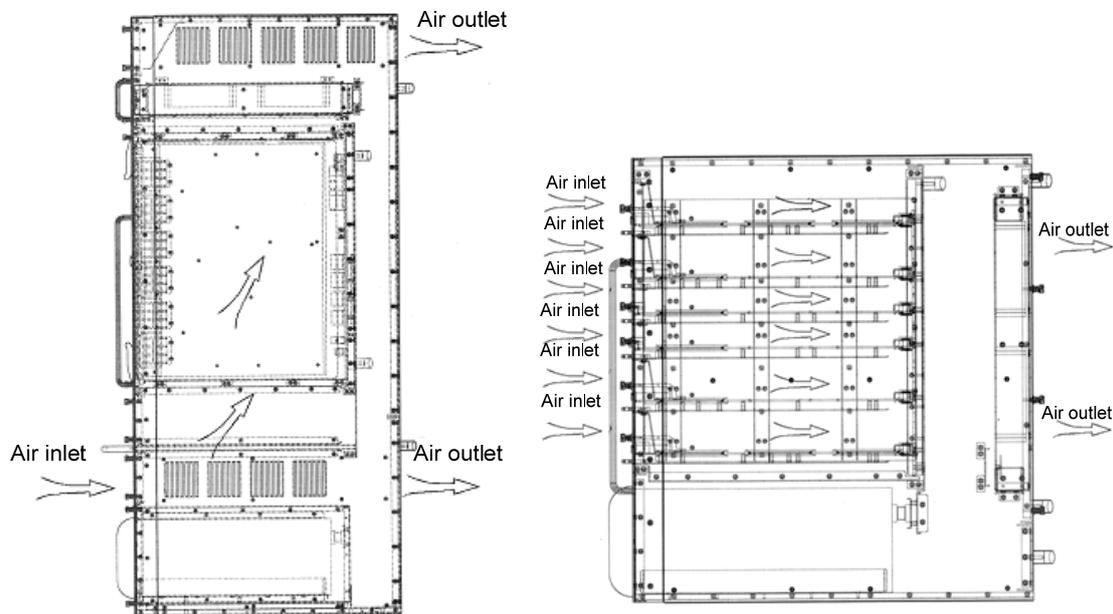
Requirements for Rack Mounting

If you plan to mount the DES-7210/7206 in a frame, you must verify that the frame meets the following conditions:

- Install the switch in an open cabinet as much as possible. If you install the switch inside a closed cabinet, please make sure that the cabinet has a good ventilation and heat dissipation system.
- Make sure that the cabinet is firm enough to bear the weight of the DES-7210/7206 and its installation accessories.
- Make sure that the dimensions of the cabinet spare certain space for the installation of the front, rear, left and right panels of the DES-7210/7206 for the sake of heat dissipation.
- The frame should be properly grounded.

Ventilation Requirements

Following figure shows the ventilation requirements of the DES-7210/7206. You must ensure that sufficient spacing is reserved at the ventilation openings to ensure the normal working of ventilation. After various cables have been connected, they should be arranged into bundles or placed on the cabling rack, to avoid blocking the air inlets.



Ventilation of the DES-7210 and DES-7206

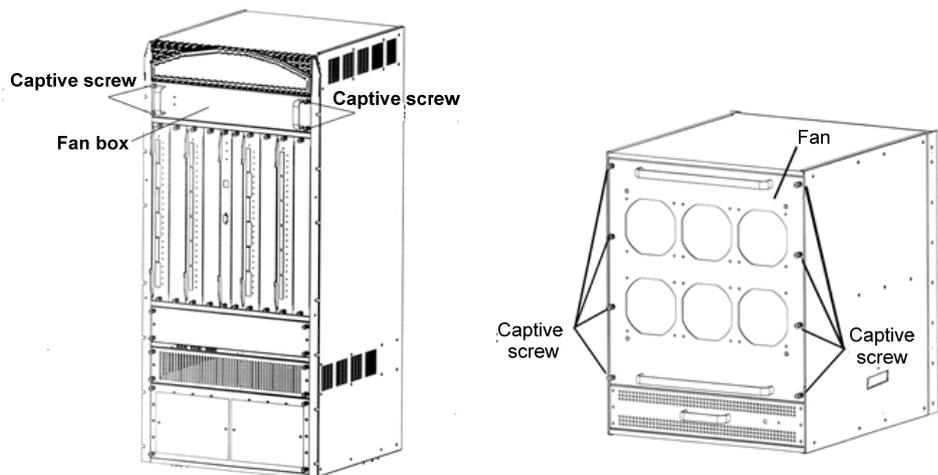
Mounting the DES-7210/7206 into the Cabinet

1. Levelly lift the DES-7210/7206 by two people on both sides, and slowly move it to the front of the frame.
2. Levelly lift the DES-7210/7206 to a position slightly higher than the tray or the slide rail of the cabinet, put the equipment onto the tray or the slide rail, and push it into the cabinet.
3. Fasten the DES-7210/7206 onto the cabinet with screws. There are fastening notches on both the left and right of the front panel on the equipment frame. Use screws to fasten them to the fastening bracket of the cabinet. After fastened, the equipment should be stable and still in the cabinet.

Installing the Fan Tray

The DES-7210/7206 provides a ventilation system, 7210-FAN for DES-7210, and 7206-FAN for DES-7206. Install the fan tray by performing the following steps:

1. Remove the blank panel of the fan tray by loosing the captive screws with a straight screwdriver and the cross screws with a cross screwdriver.
2. Push the fan into the cabinet along the guide rail.
3. Tighten the captive screws with a straight screwdriver. Figure 3-2 and Figure 3-3 show the installed fan tray

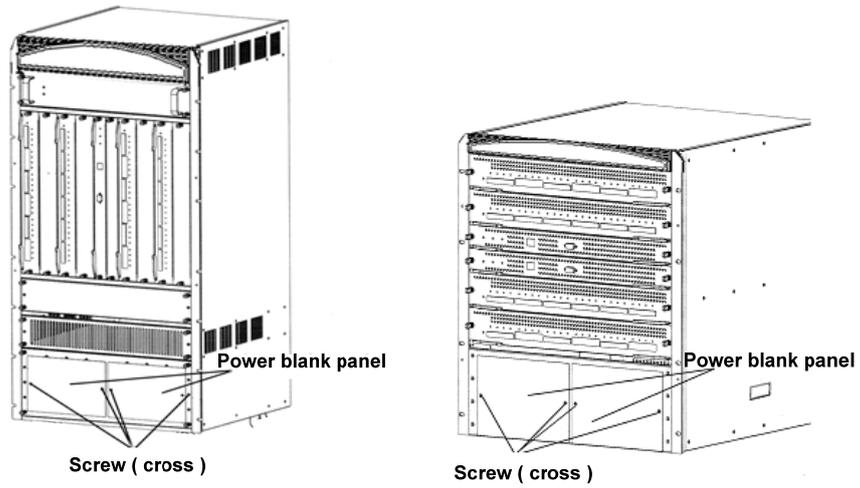


Installing the Fan Tray of the DES-7210 and DES-7206

Installing the Power Supply

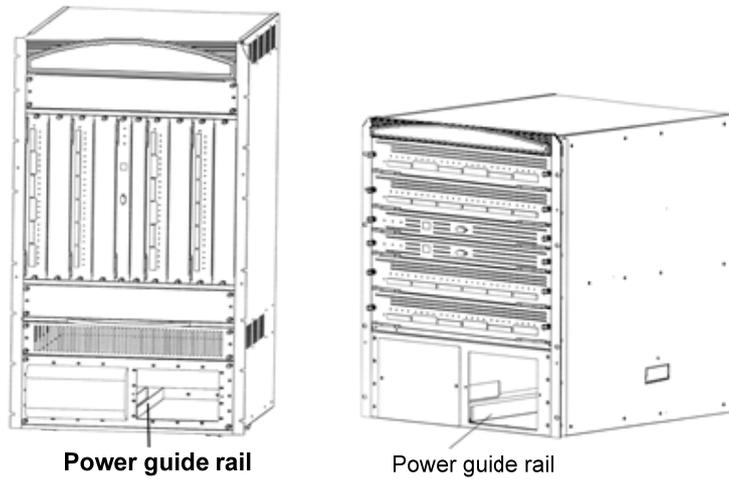
The DES-7210/7206 system provides AC and DC power, which can be installed in the same way by performing the following steps:

1. Remove any blank panel of the power module by loosening the two cross screws with a cross screwdriver, as shown in Figure 3-4 and 3-5.



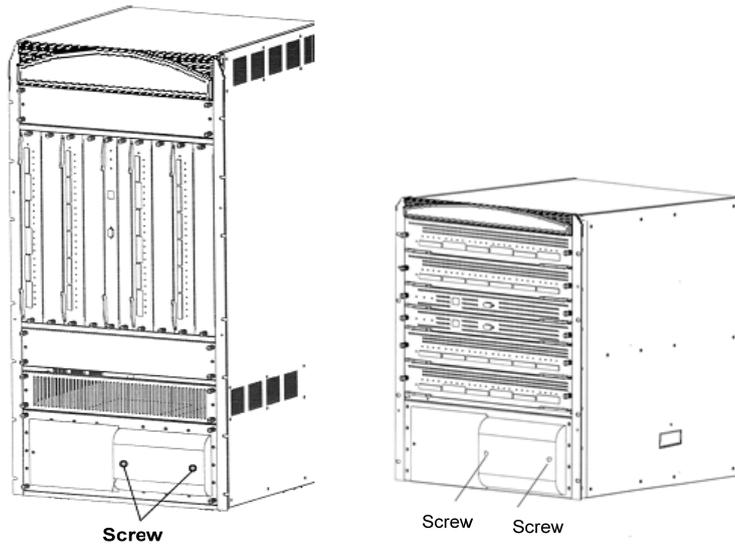
Installing the Power Supply of the DES-7210 and DES-7206

2. Insert the power supply module into the cabinet along the guide rail, as shown in Figure 3-6 and Figure 3-7:



Installing the Power Supply of the DES-7210 and DES-7206

3. Tighten the screws on both sides of the power supply by using a straight screwdriver, as shown in Figure 3-8 and Figure 3-9.

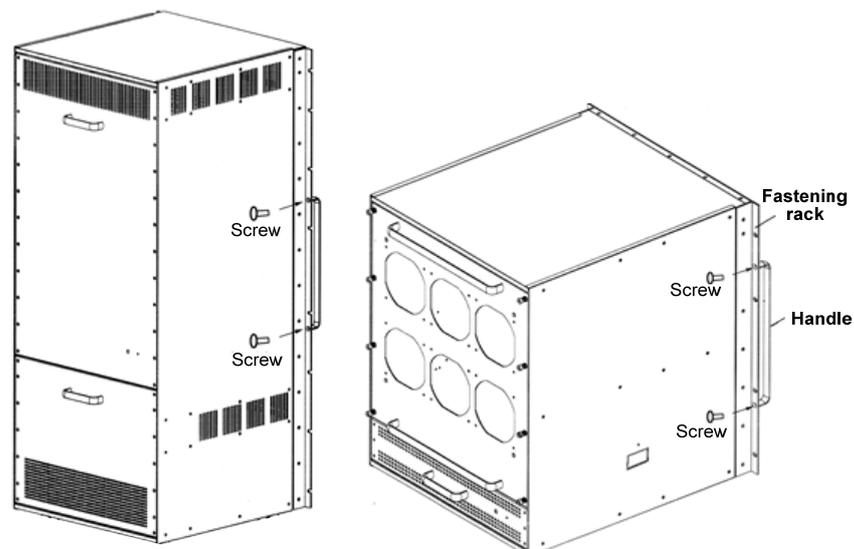


Installing the Power Supply of the DES-7210 and DES-7206

Installing the Handle

For easy handling of the system, the DES-7210/7206 chassis is provided with a handle, which can be installed by performing the following steps:

1. Align the handle with the sunk hole on the fastening bar;
2. Tighten the cross M4 sunk screws provided with the unit, as shown in Figure 3-10 and Figure 3-11.

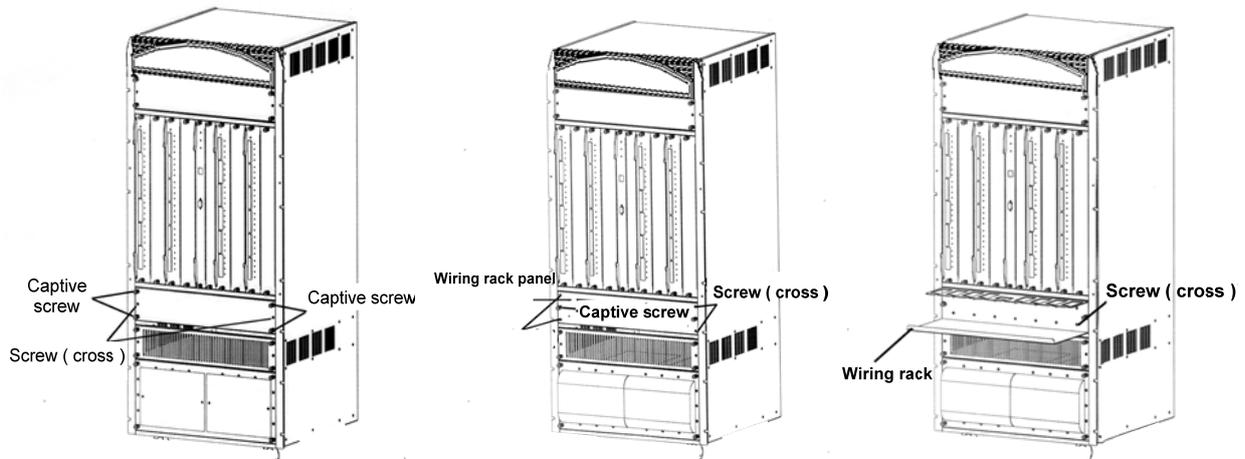


Installing the Handle of the DES-7210 and DES-7206

Installing the Cabling Rack of the DES-7210

The cabling rack of the DES-7210 can be performed by performing the following steps:

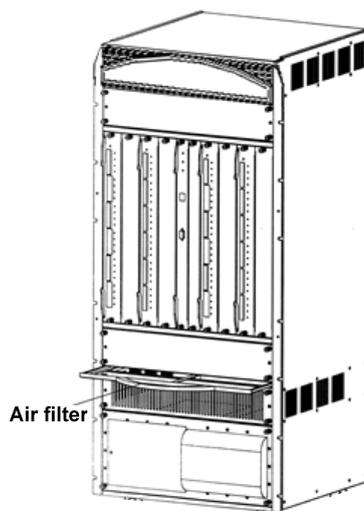
1. Remove the blank panel of the tracing rack by loosening the captive screws with a straight screwdriver and the cross screws with a cross screwdriver.
2. Install the panel of the tracing rack by tightening the two captive screws with a straight screwdriver and the four cross screws with a cross screwdriver.
3. Fasten the cabling rack by using the cross M3 screws provided. (The cabling rack is available in two sizes, and you can select the appropriate one)



Installing the Cabling Rack of the DES-7210

Installing the Air Filter of the DES-7210

Simply push the air filter of the DES-7210 into the cabinet along the guide rail.



Installing the Air Filter of the DES-7210

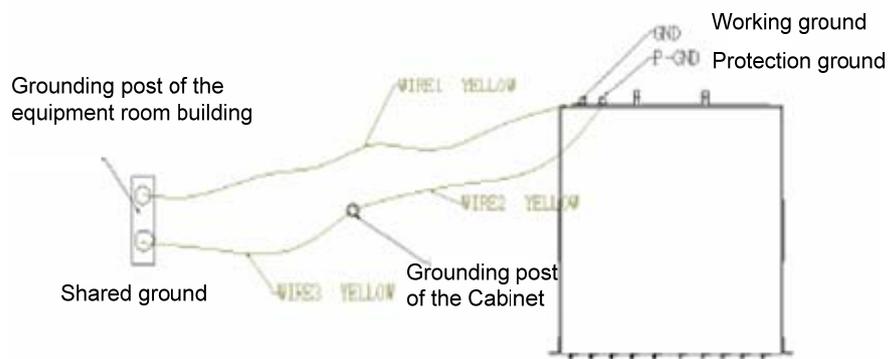


You are recommended to install the air filter as the last step of the chassis installation.

Connecting the System Ground

A working ground GND and a protection ground PGND are installed on the back of DES-7210/7206. GND is directly connected to the ground bar of the equipment room. If a digital grounding bar and an analog grounding bar exist in the equipment room, the GND is connected to the former.

PGND is connected to a grounding terminal on the cabinet and then the grounding terminal is connected to the grounding bar of the equipment room. If a digital grounding bar and an analog grounding bar exist in the equipment room, the PGND is connected to the latter.



Grounding diagram

Connection of grounding posts on the DES-7210/7206 back

Precautions

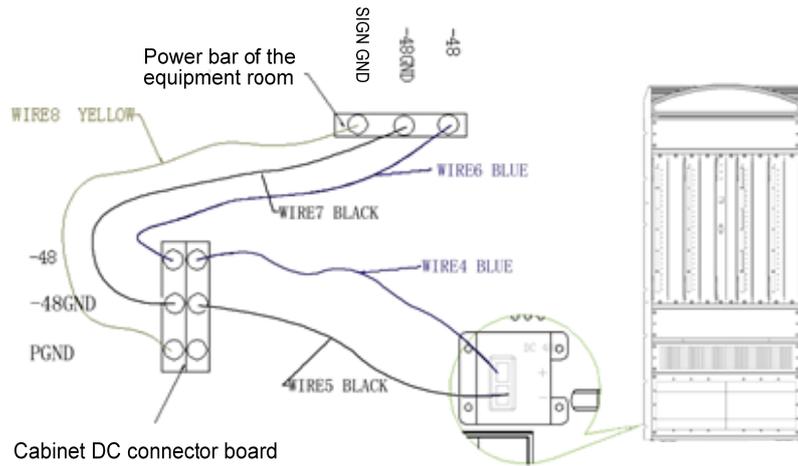
- The sectional area of the grounding cable should be determined according to the possible maximum current. Cables of good conductor should be used.
- Do not use bare wire.
- The grounding resistance for combined grounding should be less than 1Ω .

Simple Grounding Steps

1. Release the nut on the rear grounding post of the equipment.
2. Lock the terminal of the grounding cable to the grounding pole.
3. Tighten the nut.
4. Connect the related terminals according to the above steps and the wiring diagram.

Connecting the DC Power Supply to the Power Module

Connect the related DC power cable according to the ID on the panel of the DC power module and the location requirement. as shown in the following diagram.



Schematic Diagram for the Connection of the DC Power Cable

Precautions

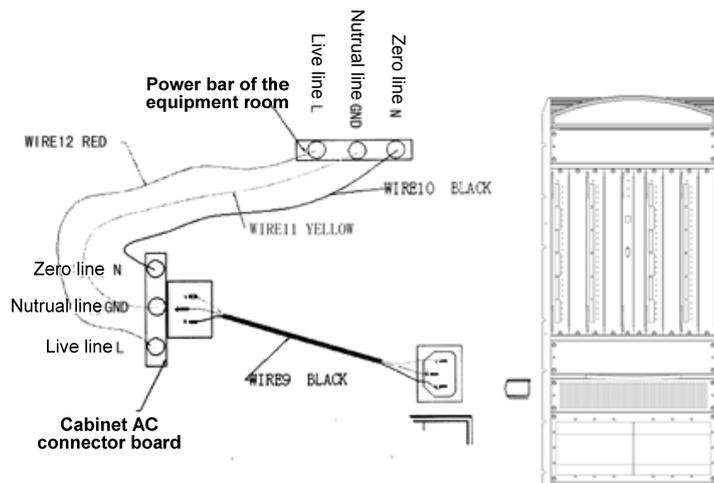
- Before connecting the power supply, you must verify that the external power supply provided matches the power module installed of this equipment.
- Before connecting the power cable, you must make sure that the switch of the power module is at the OFF position.
- The power cables of various colors must be connected to the appropriate wiring posts.
- You must ensure that the power cables connected are in good contact.

Simple Connection Steps

1. Remove the protection cover of the DC wiring terminal.
2. Lock the power cable to the appropriate terminal according to the identification, and tighten the pressing screw.
3. Put on the protection cover and tighten the screw.
4. Connect the other end of the power cable to the corresponding socket or connector.

Connecting the AC Power Supply to the Power Module

Connect the related AC power cable according to the ID on the panel of the AC power module and the location requirement, as shown in the following diagram.



Schematic Diagram for the Connection of the AC Power Cable

Precautions

- Before connecting the power supply, you must verify that the external power supply provided matches the power module installed of this equipment.
- Before connecting the power cable, you must make sure that the switch of the power module is at the OFF position.
- The power cable with a standard 3-pin connector should be used for connection.
- You must ensure that the power cables connected are in good contact.

Simple Connection Steps

1. Insert the plug of the power cable into the power module.
2. Connect the other end of the power cable to the corresponding socket or connector.

Connecting the Cable of the Management Module

1. Connect the end of the Ethernet cable with the RJ45 connector to the Ethernet port of the equipment management module (7210/7200-CM1), and the other end to the NM or control terminal.
2. Connect the end of the standard DB9 serial cable with the RS-232 serial port to the RS-232 serial port of the equipment management module, and the other end to the NM or control terminal.



Note

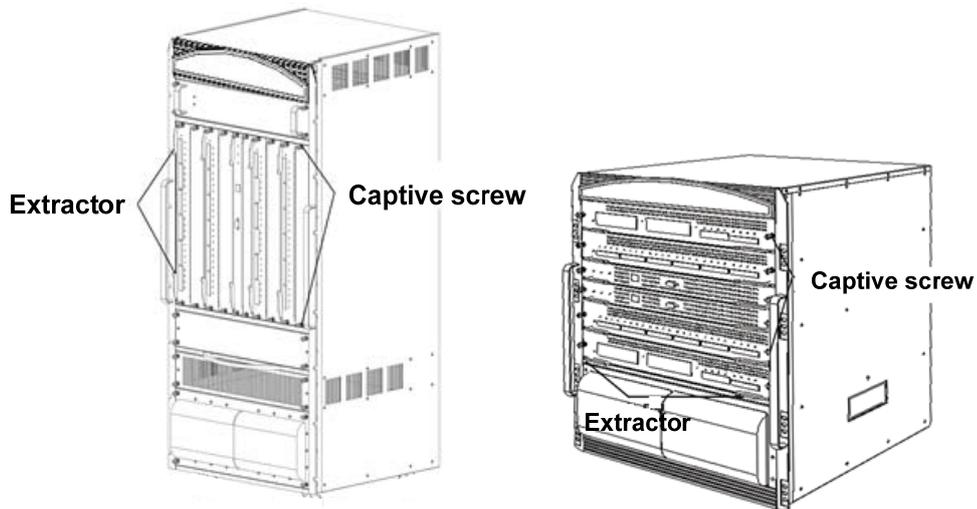
The DES-7210/7206 system must have at least one management module to work normally.

Removing Boards from the DES-7210/7206

1. Unplug all cables/fibers such as optical fibers and RJ45 twisted pairs from the panel.
2. Tighten two captive screws on the panel.
3. Draw out the board by holding the ejector with both hands, as shown in Figure 3-18 and Figure 3-20.



1. Always wear an anti-static wrist strap before plugging/unplugging a board.
 2. Do not hold the edge of the PCB or collide the components on the PCB.
-



Components of DES-7210 and DES-7206

Installing Boards on the DES-7210/7206

1. Remove the appropriate component card or blank panel according to 3.14.
2. Replace it with the appropriate card and insert into the guide rail.
3. Push the card into position by using the ejector, and tighten the two captive screws on the card with a straight screwdriver.



1. Do not hold the edge of the PCB or collide the components on the PCB.
 2. When you plug/unplug a PCB module, use the ejector, instead of forcedly.
-

Installation Check

- Verify if the external power supply matches the distribution panel of the cabinet.
- After the equipment is installed, check if the front/back cabinet doors can be closed.
- Verify that the cabinet has been fastened completely, and does not move or tilt.
- Verify that the equipment has been installed in the cabinet, and all the cables have been fastened to the cabinet.
- Verify that the optical fibers and twisted pairs match the interfaces.
- Verify that the cables have been bound properly.
- Verify that the power cables are in good contact and comply with the safety requirements.
- Verify that the power module has been fastened onto the equipment with the two screws on the panel.
- Turn on the power switch and verify that the power module can work normally.

Unpacking Inspection Requirements

Checking Goods

1. DES-7210/7206 chassis carton

- Whether various panels of the equipment have been installed and adjusted properly
- Wheels
- Screws
- Documentation
- Packing list

2. DES-7210/7206 accessories carton

- Whether the power module of the equipment is the required AC or DC module
- Cabling rack (only for DES-7210)
- Air filter (only for DES-7210)
- Handle of the equipment
- Fan tray
- Power cable (for AC power configuration only)
- Screws
- Documentation
- Packing List

3. Module carton

It contains the modules, packing list and documentation of the DES-7210/7206.



Note

The above lists the items of a normal delivery, which may differ from the actual delivery. All depend on the purchasing contract. Please check your goods carefully against the packing list or purchasing contract. If you have any questions or there are any errors, please contact your distributor.

Management Options

This system may be managed out-of-band through the console port on the Control Module or in-band using Telnet. Each Switch must be assigned its own IP Address, which is used for communication with an SNMP network manager or other TCP/IP application (for example BOOTP, TFTP). The Switch's default IP address is 10.90.90.90. The user can change the default Switch IP address to meet the specification of your networking address scheme.

Connecting the Console Port (RJ-45)

The Switch provides an RJ-45 console port that enables a connection to a computer or terminal for monitoring and configuring the Switch. To use the console port, you need the following equipment:

- A terminal or a computer with both a serial port and the ability to emulate a terminal.
- A null modem or crossover RS-232 cable with a female DB-9 connector for the console port on the Switch.

To connect a terminal to the console port:

1. Connect the supplied RJ-45-to DB-9 adapter cable to the standard 9-pin serial port on the PC. Connect the other end of the cable to the console port on the switch. Set the terminal emulation software as follows:
2. Select the appropriate serial port (COM port 1 or COM port 2).
3. Set the data rate (Default 9600), data format to 8 data bits, 1 stop bit, and no parity, no flow control.
4. Under Properties, select VT100 for Emulation mode.
5. After you have correctly set up the terminal, plug the power cable into the power receptacle on the back of the Switch. The boot sequence appears in the terminal.
6. Press the Enter key at the password prompts. There is no default password for the Switch.
7. Enter the commands to complete your desired tasks. Many commands require administrator-level access privileges. See the CLI Reference Guide on the documentation CD for a list of all commands and additional information using the CLI.

Telnet Management

Users may also access the switch CLI by using PC's Command Prompt. To access it from your computer, users must first ensure that a valid connection is made through the Ethernet port of the Switch and your PC, and then click Start > Programs > Accessories > Command Prompt on your computer. Once the console window opens, enter the command telnet 10.90.90.90 (depending on configured IP address) and press Enter on your keyboard. You should be directed to the opening console screen for the CLI of the switch, press the Enter key at the password prompts. There is no default password for the Switch.

SNMP-Based Management

You can manage the Switch with D-Link D-View or any SNMP-compatible console program. The SNMP function is default Disabled for D-Link managed switches.

Additional Information

If you are encountering problems setting up your network, please refer to the User's Guide that came with the switch. It contains many more rules, charts, explanations and examples to help you get your network up and running.

Additional help is available through our offices listed online. To know more about D-Link products or marketing information, please visit the website <http://www.dlink.com.tw>; for any support issue, please visit the website <http://support.dlink.com.tw>, which will re-direct you to appropriate local D-Link website.