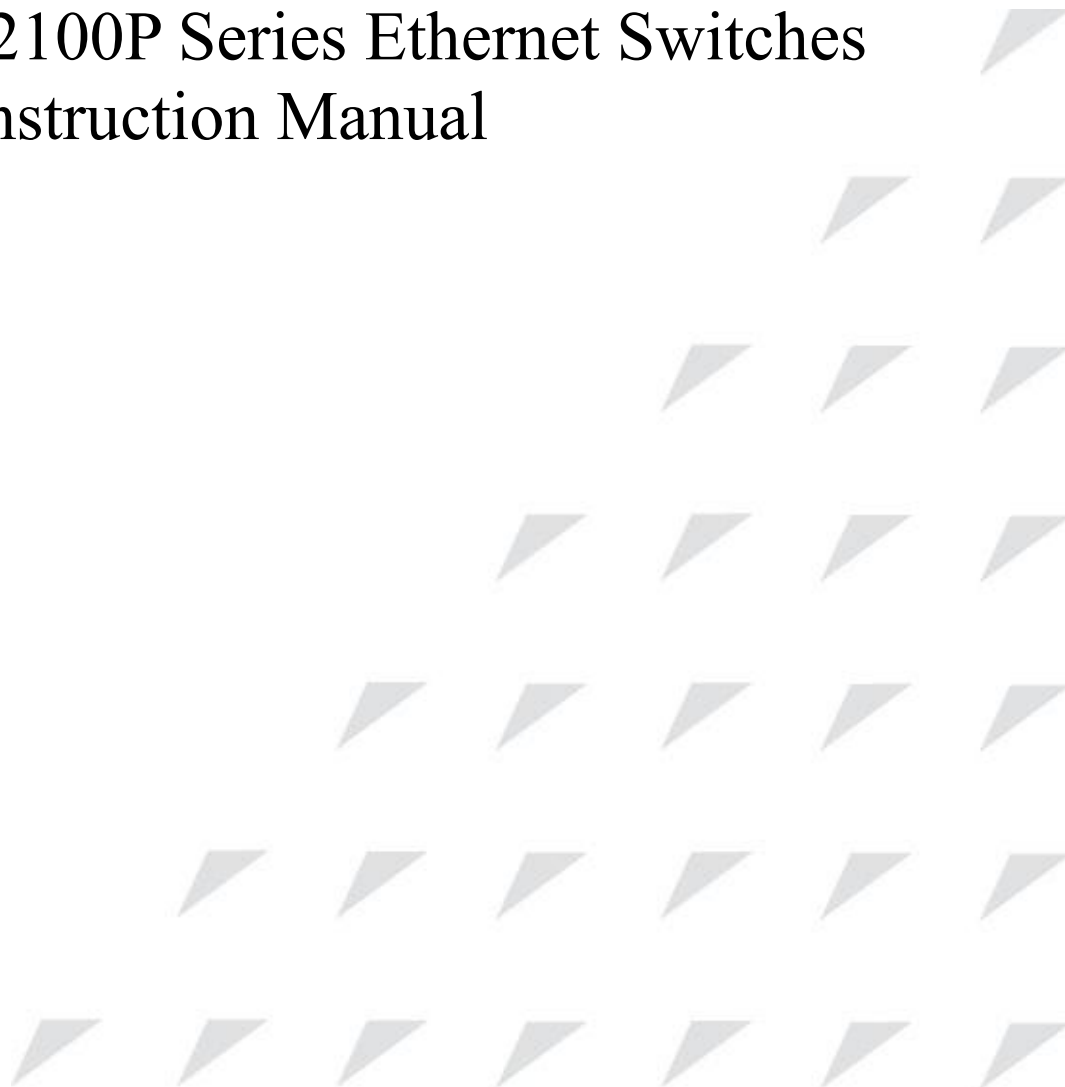# NADDOD S2100P Series Ethernet Switches Installation Instruction Manual

NADDOD Pte. Ltd. provides customers with all-around technical support and services. Where users, who purchase products directly from NADDOD, face any problem during the usage, they may contact the local offices or user service centers of NADDOD, and may also contact the headquarters of the Company directly.

Where readers face any problem about the products of NADDOD , or intend to learn more about other relevant products of the Company, they may contact us by the following ways:

Website of the Company: http://www.naddod.com/

Technical support hotline: 400-0698-860

Technical support e-mail: tech@naddod.com

Technical file e-mail: tech@naddod.com

Customer complaint hotline: 400-0698-860

Address of headquarters of the Company: 302, Building F1, Optics Valley Software Park, Guanshan 1st Road

   East Lake High-tech Zone, Wuhan ,P.R.China

Postcode: 430000

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Declaration

Preface

Introduction

This file introduces NADDOD S2100P series Ethernet switches from such perspectives as product introduction, installation instruction, start after being powered on, fault maintenance.

Product version

The product version corresponding to this file is shown as follows.

Product name	Hardware version
S2100P-8T2S	

Stipulations

Symbol stipulations

The following symbols that may appear herein represent the following meanings.

Symbol	Instruction
Warning	Texts started with this symbol indicate that there exists potential risk, which may cause person injured unless being avoided.
Note	Texts started with this symbol indicate that there exists potential risk, and ignoring such texts may cause device damage, data loss, and worse performance of devices or unforeseeable results.
Instruction	Texts started with this symbol are additional information of the text, emphasizing and complementing the text.

Symbol	Instruction
Tricks	Texts started with this symbol can help you solve certain problem or save your time.

General format stipulations

Format	Instruction
Song typeface	The text adopts song typeface.
Boldface	The title, subtitle, the third level title and Block adopt boldface.
Regular script	Content such as warning and prompt adopts regular script.
Lucida Console	The output information on the screen adopts Lucida Console form. In addition, the information input by users from the terminals among the output information on the screen adopts bold font.

Contents

1 Product introduction

NADDOD S2100P series Ethernet switch is a new generation of high-performance Gigabit Ethernet switch launched by NADDOD , providing 10/100/1000Base-T adaptive Ethernet ports, 10G SFP+ optical ports, built-in power supply, widely used in high performance, high reliability, high-end port density and easy to install network environment, to meet the user enterprise access or connect low-end switch needs.

1.1 Instruction on product models

Form 1-1 S2100P series switches

Product models	Description
S2100P-8T2S	• Desktop switch • 8 10/100/1000Base-T Ethernet ports • 2 1G SFP ports • Build-in power supply • PoE+

1.2 Instruction on front panels

1.2.1 S2100P-8T2S

Figure 1-2   Diagram of front panels of S2100P-8T2S

(1): RJ45 ports

(2): SFP ports

(3): RJ45 Console port (CON)

(4): SYS indicator light

(5): Indicator light of RJ45 ports

(6): PoE indicator light

(7): power supply socket

1.3 Instruction on rear panels

1.3.1 S2100P-8T2S
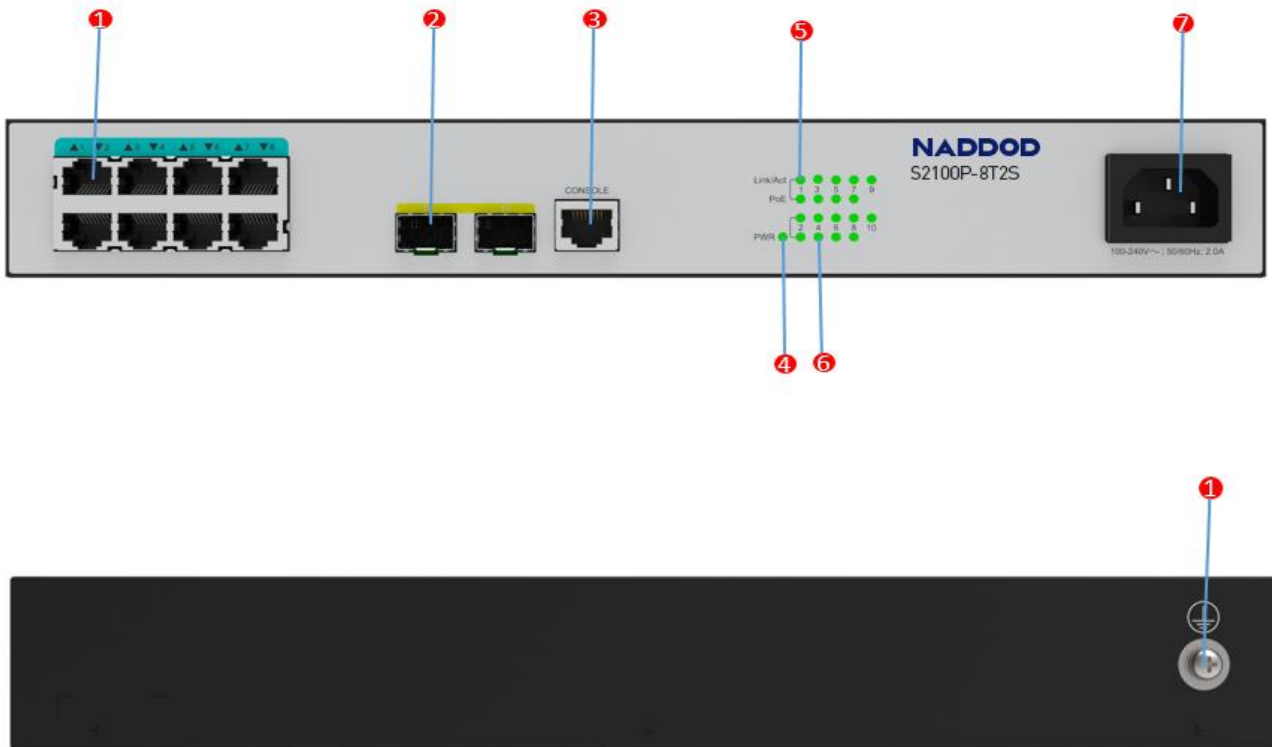
Figure 1-3 Diagram of rear panels of S2100P-8T2S

(1): Ground screws

1.4 Instruction on ports

1.4.1 Business ports

The business ports of S2100P series switches are shown in Form 1-2.

Form 1-2 Business ports of S2100P series switches

Product models	Interface type	Quantity	Description
S2100P-8T2S	SFP	2	Use the category of SFP optical modules
	RJ45	8	PoE, PoE+

1.4.2 Management ports

Console port

The console interface uses a RJ-45 8-pin connector. To connect the console interface of switch to a computer, we need adaptive cables of RJ-45-to-DB-9. It's recommended to use the additionally donated random network cables.
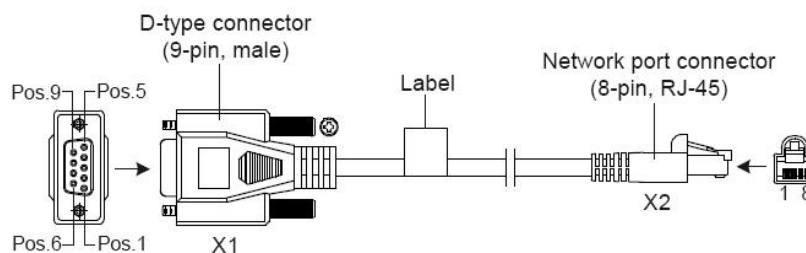
Figure 1-4 DB9 to RJ45 console interface connection cables

Refer to the following form for specific pins:

RJ45	Signal	Direction	DB-9
1	CTS (Clear To Send)	→	8
2	DSR (Data Set Ready)	→	6
3	RXD (Receive Data)	→	2
4	GND	---	5
5	GND	---	5

6	TXD (Transmit Data)	←	3
7	DTR (Data Terminal Ready)	←	4
8	RTS (Request To Send)	←	7

Form 1-3 RJ-45-to-DB-9 cable order

The properties of CONSOLE interface are shown in the following form:

Properties	Description
Connector type	RJ45
Standards met	EIA/TIA-232
Rate	115200bit/s
Services supported	• Connect to the character terminal • Connect to the serial port of local terminal (which may be a PC), and run terminal simulation programs on the terminal

1.5　Instruction on indicator lights

1.5.1　Indicator light of system

The working status of the switch can be preliminarily determined by the SYS status indicator light, please see below for details.

Name of indicator light	State	Instruction
SYS	Green blinking @1Hz	The system has been started and works normally
	Green blinking @15Hz	The system is starting
	Dark	The device isn't powered on

1.5.2　Indicator light of RJ45 port

Name of indicator light	State	Instruction
RJ45 port	Green solid	Port links up
	Green blinking	Port links up and has data receipt and sending
	Dark	Port doesn't link up

1.5.3 Indicator light of SFP port

Name of indicator light	State	Instruction
SFP port	Green solid	Port links up
	Green blinking	Port links up and has data receipt and sending
	Dark	Port doesn't link up

2 Installation instruction

2.1 Preparation before installation

2.1.1 Safety warning

To avoid device damage and personal injuries caused by improper usage, please conform to the following precautions:

- The power supply should be unplugged before cleaning switch. Don't use wet duster cloth to wipe the switch, or use liquid to wash the switch.

- Don't place the switch beside water or in a moist place, and prevent water or moisture from entering the enclosure of the switch.

- Don't place the switch on unstable boxes or tables, to avoid major damage to the switch in case of falling down.

- Keep good ventilation indoor and keep the venthole of the switch unblocked.

- The switch can work normally only under correct voltage, please confirm that the working voltage conforms to the voltage indicated by the switch.

- To reduce the risk of electronic shock, don't open the enclosure when the switch is working, and don't open the enclosure of the switch randomly even though it isn't powered on.

- The electro-static dissipative (ESD) gloves must be used when replacing the interface board, to prevent the static electricity from damaging the single board.

2.1.2 Pre-installation check

To ensure normal working environment of switch, S2100P switches have the following requirements for workplaces:

- Confirm that there is space left at the air intake vent and ventilation opening of switch, so as to facilitate the heat dissipation of the crate of switch.

- Confirm that the rack and workbench have good ventilation and heat dissipation system themselves.

- Confirm that the rack and workbench are solid enough, and can bear the weight of switch and its installation accessories.

- Confirm that the rack and workbench are grounded properly.

To ensure long-term stable work of switch, the installation place should also meet the following several requirements:

Requirements for temperature and humidity

To ensure normal operation and service life of switches, it's necessary to keep certain temperature and humidity in the machine room. Where the humidity in the machine room is too high for a long term, it's easy to cause poor insulation performance of insulating materials and even electric leakage, and it's also easy to cause change in mechanical performance of materials, corrosion of metal components and other phenomenon sometimes; where the relative humidity is too low, the fastening screw may be loosened by the air shrinkage of insulating spacer, and meanwhile it's easy to generate static electricity in dry climate environment and damage the circuit of switch; too high temperature is more hazardous, long-term high temperature will accelerate the aging of insulating materials, reduce greatly the reliability of switch, and affect significantly its service life.

Form 2-1 Requirements for temperature and humidity

Items	S2100P series switches
Temperature in working environment	0〜45℃
Relative humidity in working environment (incondensable)	10%〜95%

Cleanliness requirement

Dust is a main hazard for the operation safety of switch. The dust accumulated on the machine indoor may cause electrostatic adsorption, which may cause poor contact of metal connectors or metal contact points. In particular, when the relative humidity indoor is too low, it's easier to cause electrostatic adsorption, which may not only affect the service life of device, but also improve the risk of communication fault.

Form 2-2 Dust content requirements in the machine room

Mechanical active substance	Unit	Content
Dust particles	Particle/m3	≤3×104 (No visible dust on the table within 3 days)
Note: The diameters of dust particles are ≥5um		

In addition to dust, the machine rooms of switches also have strict requirements for the content of salt, acid and sulfide in the air. Such harmful gases will accelerate the corrosion of

metal and aging of certain components. Harmful gases, such as SO2, H2S, NH3 and Cl2 shall be kept away from the machine rooms.

Form 2-3 Limit values of harmful gases in the machine room

Gases	Maximum values (mg/m3)
Sulfur dioxide SO_2	0.2
Sulfuretted hydrogen H_2S	0.006
Ammonia NH_3	0.05
Chlorine Cl_2	0.01

Anti-interference requirements

The switches may be affected by external interference of the system during usage through such conduction methods as capacity coupling, inductive coupling, electromagnetic radiation, common impedance (including grounding system) coupling and wires (power line, signal line, output line, etc.).

For this purpose, it should be noted that:

- The alternating current power supply system is TN system, the alternating current power socket should adopt single-phase three-wire power socket with protective earth wire (PE), to allow the filter circuit on the device to filter the interference of power grid effectively.

- Keep the workplace of switches far away from high power radio launcher, radar launcher, high frequency high current equipment.

- Adopt electromagnetic shielding method if necessary, for example, the interface cables adopt shield cables.

- The interface cables are required to cable indoor, and cabling outdoor is prohibited, so as to prevent overvoltage and overcurrent caused by thunder from damaging the signal port of devices.

Laser usage safety

- This series switches belong to Class 1 laser devices.

📖 Instruction

If the optional fiber interface boards of this series switches are in working state, don't look straight at these fiber interfaces, because the light beams of the optical fiber have energy at a very high level, which may harm the retina.

2.1.3 Installation tools

Before installation, please prepare the following tools:

- Electro-static dissipative (ESD) wrist strap
- Phillips screwdriver or One-word screwdriver
- Left and right guide rails (optional)
- Floating nuts
- Racking screws

Instruction

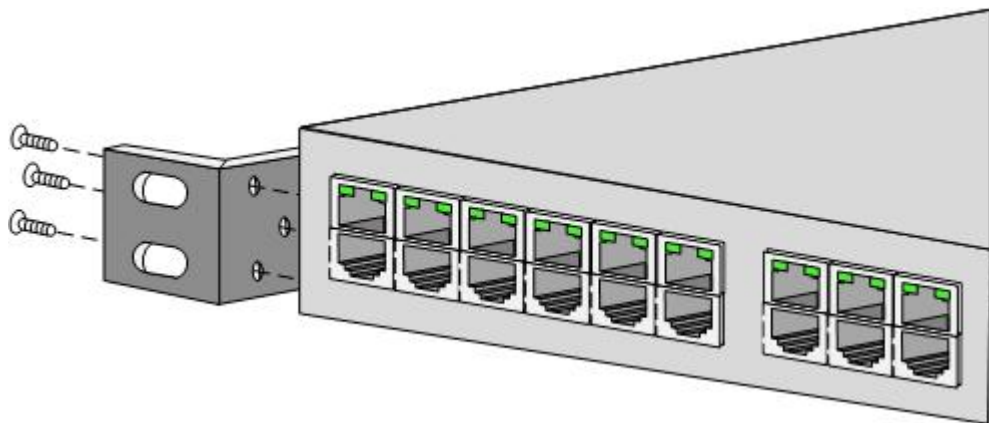No installation tool is attached to the switches, the users should prepare installation tools by themselves.

2.2 Installation

S2100P-8T2S switches adopt two installation methods as follows:

- Installing the switch with front mounting brackets and rack rails
- Installing the switch to the desktop.

2.2.1 Mounting bracket introduction

Figure 2-2 Diagram of front mounting brackets

Instruction:

(1): The screw holes for front mounting brackets to be fixed on the rack

(2): The screw holes for front mounting brackets to be fixed on the switch

Note

Front mounting brackets are only for fixing the switch and can't be used for load-bearing.
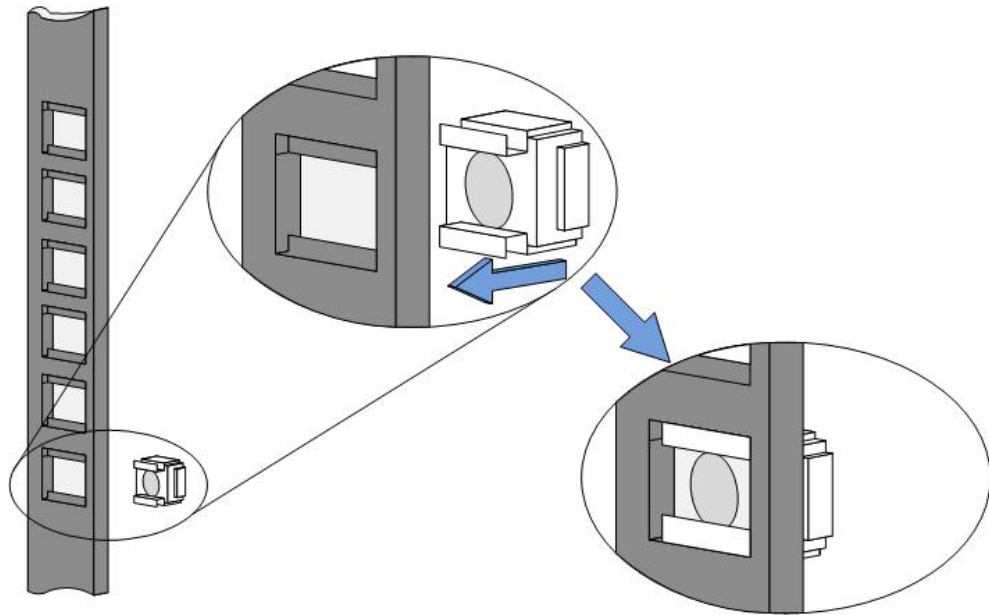
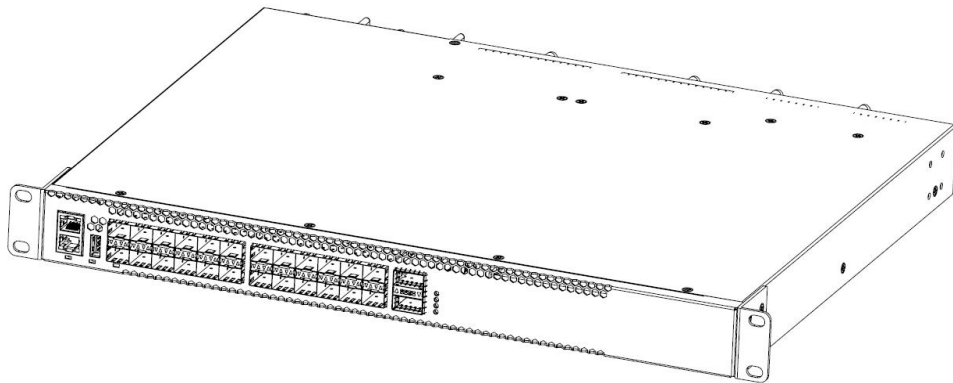## 2.2.2   Install with front mounting brackets and rack rails

Installation procedures

Step 1: Wear an electro-static dissipative (ESD) wrist strap and check the grounding and stability of rack.

Step 2: Fix the rail attached to the rack horizontally to proper positions of the rack.

Step 3: Take out the screws (packed with front mounting bracket), install one end of each front mounting bracket to the switch

Figure 2-3 Installation diagram of front mounting brackets

Step 4: Place the switch horizontally on the rail, push it gently into the rack along the rail, fix the other end of each front mounting bracket to the front mounting rails of rack with screws and supporting floating nuts.
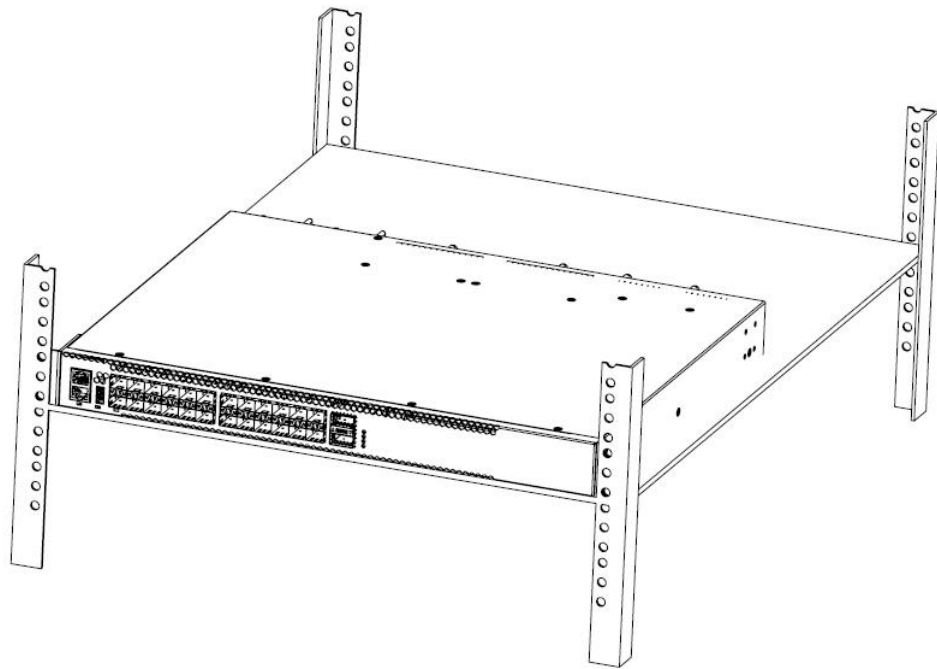
Figure 2-4 Diagram of installing switch to rack

2.2.3 Installing the switch to the desktop

Usually, users don't have 19-inch standard racks, in which case people usually place the switch on the clean workbench simply.

During the operation, pay attention to the following precautions:

● Guarantee the stability and good grounding of workbench.

● Leave 10cm clearance around the switch for heat dissipation.

● Don't place heavy items on the switch.

● 4-foot pads are attached to the device, please paste them to the places near to the corners respectively at the bottom of the switch, as shown in the following diagram:
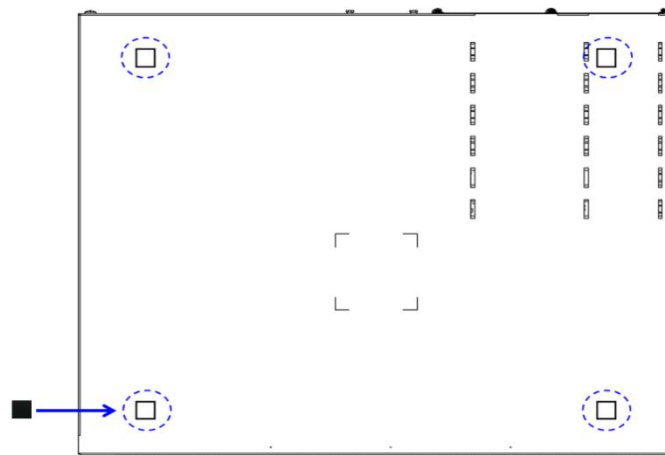
Figure 2-5 Installation diagram of foot pads

2.2.4 Ground wire connection

The power supply input terminals of switch are connected to a noise filter, whose central place is directly connected to the crate, which is referred to as enclosure place (i.e., protected area) and must be grounded properly, so as to make induction electricity and leakage electricity be able to flow to the earth safely, and improve the capacity of anti-electromagnetic interference of switch.

Correct grounding method:

Connect one end of yellow and green protective ground cables of switch to the ground terminal of switch, and the other end to the wiring terminal along the grounding strip in the machine room.

Instruction

The ground wires of Ethernet switches should be connected to the machine room of switch and grounded, and grounding connections through firefighting artery and lightning rod are incorrect.

Figure 2-6 Installation diagram of ground wires of switches

Instruction:

(1): The ground terminal of switches

(2): Protective ground cables

(3): The ground terminal in the machine room

![Note icon] Note

The normal connection of ground wires of switches is an important anti-thunder and anti-interference guarantee of switches. Therefore, users must connect the ground wires correctly. The ground wire connection position and grounding in the machine room shown in the diagram are only for reference, please connect based on the actual situation of devices.

3   First power-on and start the switch

3.1 Build configuration environment and connect cables
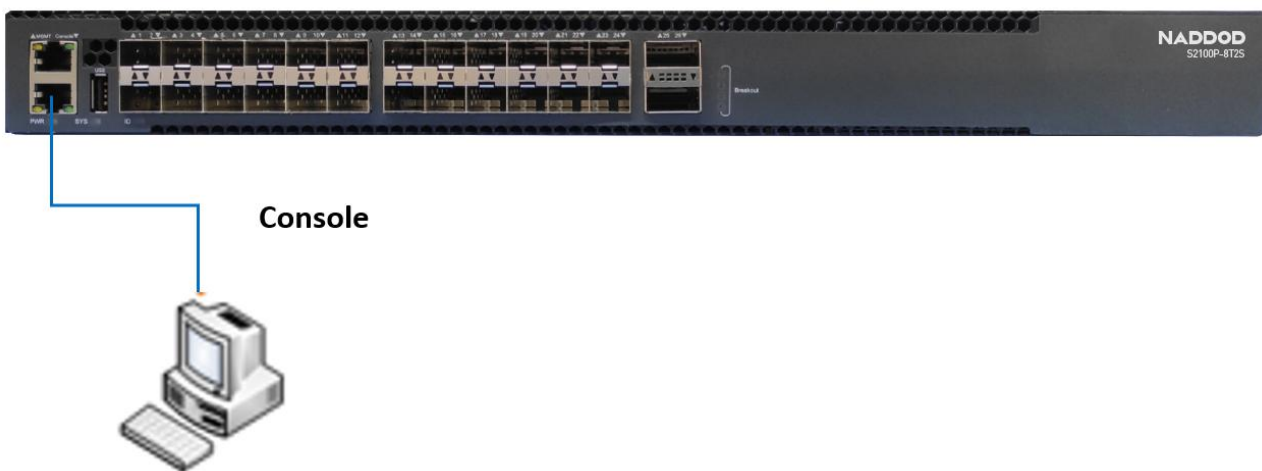
Figure 3-1 Build local configuration environment through Console interface

Step 1: Connect the DB-9 cellular type plug of configuration cables to the serial ports of PC to configure the switch.

Step 2: Connect the RJ-45 end of configuration cables to the configuration interface (Console) of switch.

⚠ Note

Please use DB-9 to RJ-45 cables provided in the box, otherwise it may be incompatible.

3.2 Setting the terminal parameters (Windows hyperterminal)

Step 1.   Open PC, and run terminal simulation program (e.g., hyperterminal attached to Window system) on the PC;

Step 2. Setting the terminal parameters (taking the setting of hyperterminal of Windows XP as an example). The specific methods are as follows:

1. Click the "Start Menu → Programs→ Accessories→ Communications→ Hyperterminal", enter the window of hyperterminal, and create a new connection. The system will pop up the connection instruction interface as shown in the figure.
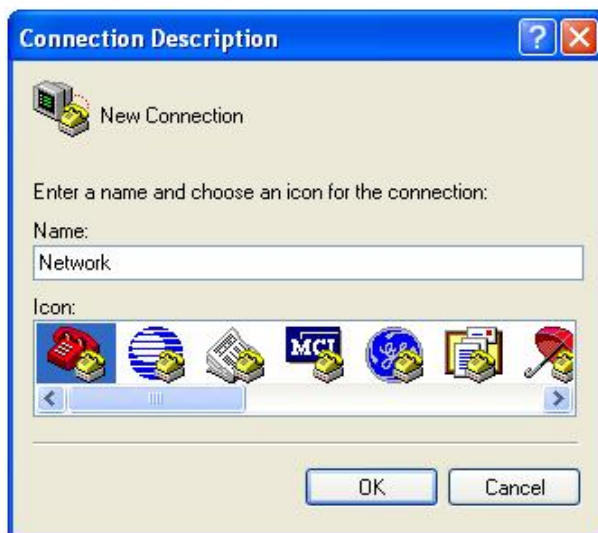
Figure 3-2 Create a new connection

2. Enter the new connection name (e.g., Network) in the connection instruction interface, click the button of "OK", the system will pop up the interface as shown in the following figure, and select the serial port to be used by the connection in the column of [Connect using].


Figure 3-3 Set port connection

3. After selecting the serial port, click the button of <OK>, the system will pop up the parameter setting interface of connection serial port, set the bits per second as 115200, the data bits as 8, the odd-even check as none, the stop bits as 1, and the data flow control as none. (In other Windows

operating systems, the "bits per second" may be described as the "Baud rate"; and the "data flow control" may be described as "traffic control".)

4. After setting the parameters of serial port, click the button of "OK", the system will enter the hyperterminal interface shown in the following figure.
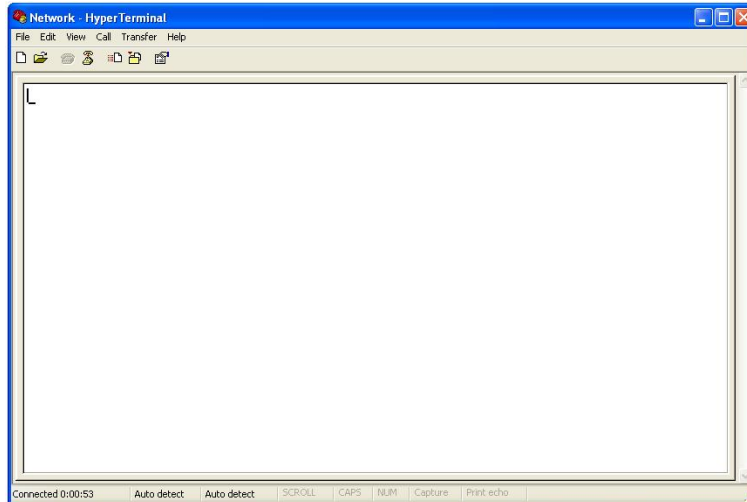
Figure 3-4 Hyperterminal interface

5. Select the [Files/Properties] menu item in the dialog box of hyperterminal properties, and enter the window of properties. Click the tab of "Settings" in the window of properties, enter the window of property settings (as shown in the following figure), select the terminal simulation as VT100 there, and click the button of <OK> after finishing the selection.
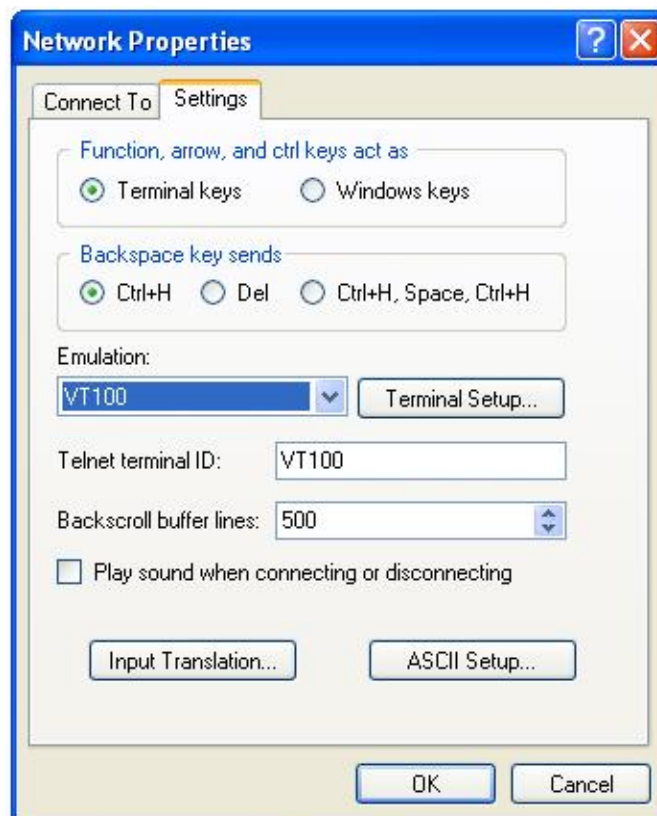
Figure 3-5 Setting of terminal simulation in the window of property settings

⚠ Note

Please use DB-9 to RJ-45 cables provided by us with the box, otherwise it may be incompatible.

3.3 Set port parameters (SecureCRT)

Step 1.   Install the software SecureCRT on the PC;

Step 2.   Set the terminal parameters of SecureCRT:

1.   Click the button of "Quick Connect" to enter the window of quick link.
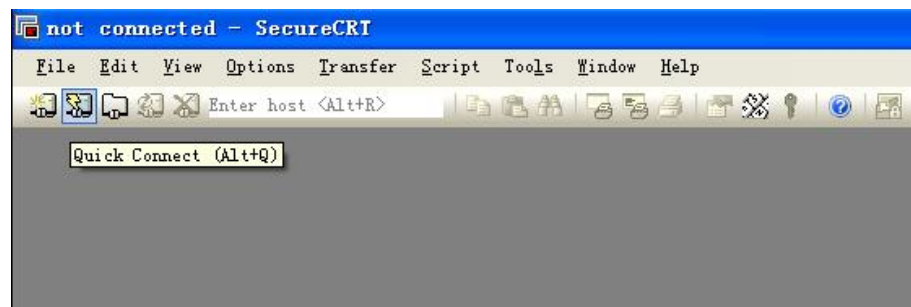
Figure 3-6 Create a quick connection

2.   Select the "Serial" protocol.
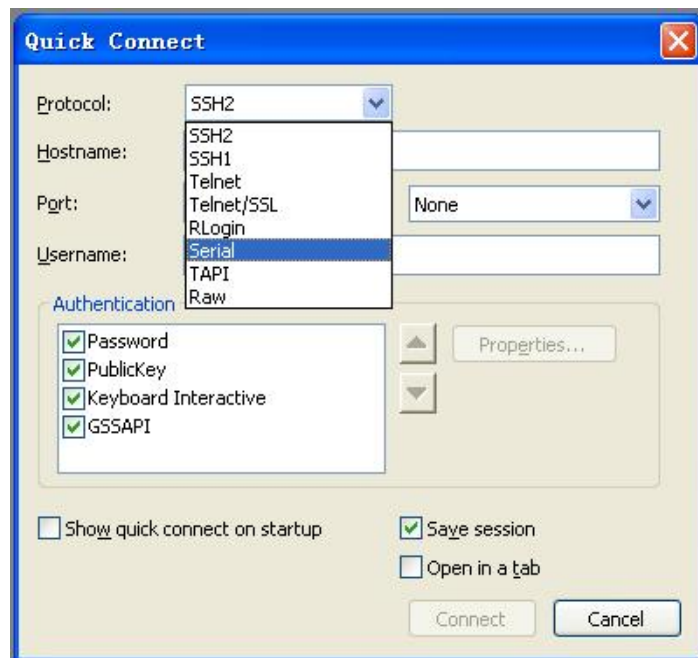
Figure 3-7 Serial port protocol setting

3.   Serial port number used by the PC (taking COM4 as an example).

Figure 3-8 Parameter settings of serial port (selection of serial port number)
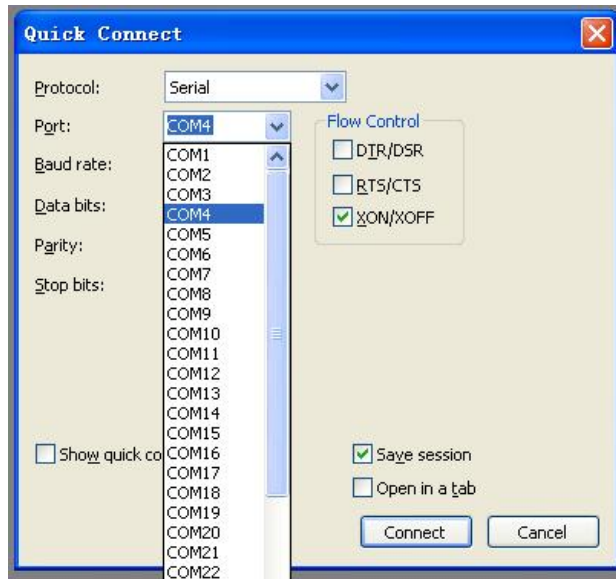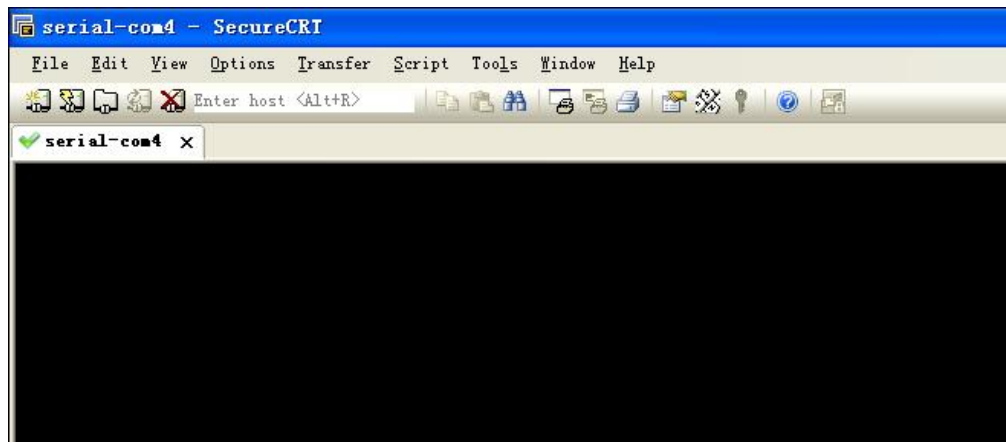
4.   Set the Baud rate as **115200**, the data bits as **8**, the odd-even check as **none**, the stop bits as **1**, the traffic control as **XON/XOFF**, and click the button of **Connect**.

5.   Use the serial port to connect to PC, you can see CLI shown in the following figure when you press the Enter key on the PC.

Figure 3-9 Serial port display window

 Note

Please use the cables attached in the box, otherwise it may be incompatible.

3.4 Powering on the switch

After the switch is powered on and started, the terminal will show the self-inspection information of the device, and after the self-inspection, the system will enter the command line prompt (e.g., switch#), etc.

Enter the command, configure the Ethernet switch or check the operational state of Ethernet switch. May enter "?" at any time for help, and please refer to the command line manual or configuration manual for specific configuration command.

4   **Technical parameters**

This chapter introduces the switch indicator, system indicator, single board indicator, performance indicator and other technical indicators of S2100P series switches, mainly including the following content:

- Switch parameters

4.1   Chassis parameters

The switch parameters of S2100P-8T2S are shown as Form 4-1.

Form 4-1   Parameters of S2100P-8T2S

Items		Parameters
Boundary dimension (mm)		320 (width) × 208 (depth) × 44 (height)
The maximum power consumption of switch		150W
Weight (kg)		1.8
Working temperature (℃)		0～50
Working humidity		10%～90% RH, incondensable
AC input voltage	Nominal voltage (V)	220
	Voltage range (V)	100～240（50Hz/60Hz）
Lightning protection level	AC power supply (kV)	Common-mode: 6 differential-mode: 6
	Ethernet port(kV)	Indoor common-mode: 6

5   License   Installation

The traditional switch software adopts serial port loading method, which, however, is slow and time-consuming, and doesn't have remote loading function, being inconvenient. To solve these problems, the switches introduce TFTP modules, and realize convenient software loading and file downloads through Ethernet port.

Step 1: put the license file under the path of FTP server, same as installing OS.

Step 2: enter the following command under serial port

copy tftp://10.4.50.5/d8860b0009d5.lic flash:/d8860b0009d5.lic

Step 3: after the *copy* command is executed, enter the *reload* command

6 Maintenance and troubleshooting

6.1 Fault handling of configuration system

After the switch is powered on, if the system runs normally, the start information will be shown on the configuration terminal; if the configuration system fails, the configuration terminal may show nothing or messy code.

6.2 The terminal doesn't show fault handling

After being powered on, if the configuration terminal shows no information, check as follows first:

Step 1: whether the power works normally.

Step 2: whether the cables of configuration interface (Console) are connected correctly.

Step 3: If no problem is found in the inspection above, it is probably caused by improper configuration cables or incorrect settings of terminal parameters of terminal (e.g., hyperterminal), please carry out corresponding inspection.

Step 4: Fault handling of the terminal showing messy code

If the configuration terminal shows messy code, it is probably caused by wrong settings of parameters of terminals (e.g., hyperterminal). Please confirm the settings of parameters of terminal (e.g., hyperterminal): the Baud rate set as 115200, the data bits as 8, the odd-even check as none, the stop bits as 1, the traffic control as none, and the terminal simulation selected to be VT100.