



Dahua Gigabit Industrial Managed Switch Quick Start Guide

Important Safeguards and Warnings

Please read the following safeguards and warnings carefully before using the product in order to avoid damages and losses.

Attentions

- Do not expose the device to lampblack, steam or dust. Otherwise it may cause fire or electric shock.
- Do not install the device at position exposed to sunlight or in high temperature. Temperature rise in device may cause fire.
- Do not expose the device to humid environment. Otherwise it may cause fire.
- The device must be installed on solid and flat surface in order to guarantee safety under load and earthquake. Otherwise, it may cause device to fall off or turnover.
- Do not place the device on carpet or quilt.
- Do not block air vent of the device or ventilation around the device. Otherwise, temperature in device will rise and may cause fire.
- Do not place any object on the device.
- Do not disassemble the device without professional instruction.

Warning

- Please use battery properly to avoid fire, explosion and other dangers.
- Please replace used battery with battery of the same type.
- Do not use power line other than the one specified. Please use it properly. Otherwise, it may cause fire or electric shock.

Special Announcement

- This manual is for reference only.
- All the designs and software here are subject to change without prior written notice.
- Always follow the instructions listed on the manual. We are not liable for any problems caused by unauthorized modifications or attempted repair.
- All trademarks and registered trademarks are the properties of their respective owners.
- If there is any uncertainty or controversy, please refer to the final explanation of us.
- Please visit our website for more information.

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1 Overview

1.1 Product Introduction

The industrial managed switch is specially developed and designed for on-site transmission and application in harsh environment. The device is equipped with high performance switching engine and large cache, which features low transmission delay and high reliability etc. Solid and sealed all-metal case design, low power consumption, fanless and efficient surface heat dissipation makes it work in the environment from -40°C to $+75^{\circ}\text{C}$; Power input end overcurrent, overvoltage and EMC protection can effectively resist the interference from static electricity, lightning and pulse. The dual power backup guarantees stable operation for the system.

The product owns powerful network management function; network management system supports CLI, Telnet, WEB and network management software based on SNMP.

1.2 Product Features

- EMC high protection design.
- Supports Hi-PoE.
- Large data cache, realtime transmission.
- Wide voltage design.
- IP40 full metal enclosure, fully-sealed and dustproof design.
- $-40^{\circ}\text{C}\sim+75^{\circ}\text{C}$ wide temperature design.
- Network management based on SNMP.
- Low power consumption with full load.

1.3 Typical Application

It is to take the DH-PFS4210-8GT-DP switch as an example to introduce the typical networking scene, which is shown in

Figure 1-1.

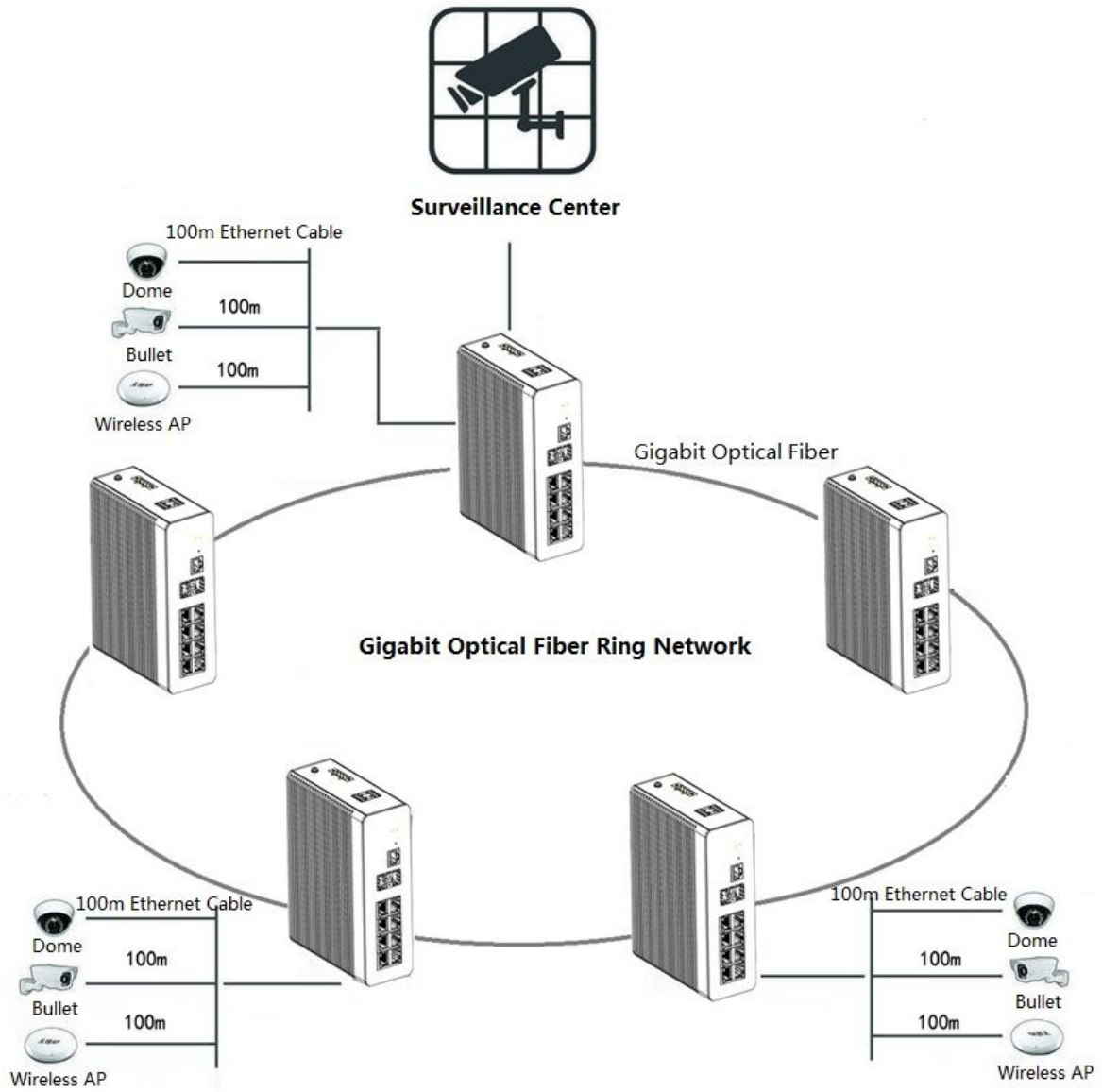


Figure 1-1

2 Device Structure

2.1 Side Panel

The structure of side panel is shown in Figure 2-1.

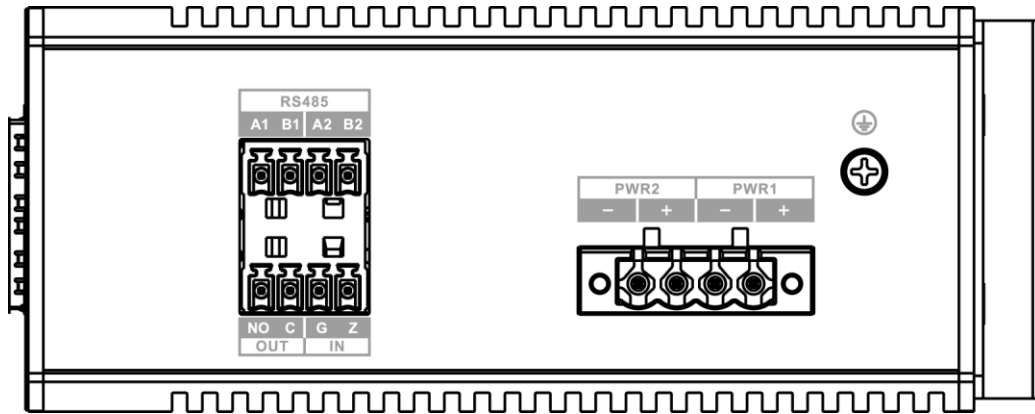


Figure 2-1

Please refer to

Table 2-1 for the description of ports.

Port	Note
PWR2/PWR1	Power port, dual power backup access. Supports DC 48V-DC 57V power input.
RS485	A1B1 and A2B2, two pairs of RS485 ports.
IN	G and Z, a pair of alarm input port.
OUT	NO and C, a pair of alarm output port.
⊕	GND.

Table 2-1

2.2 Front Panel

2.2.1 DH-PFS4210-8GT-DP

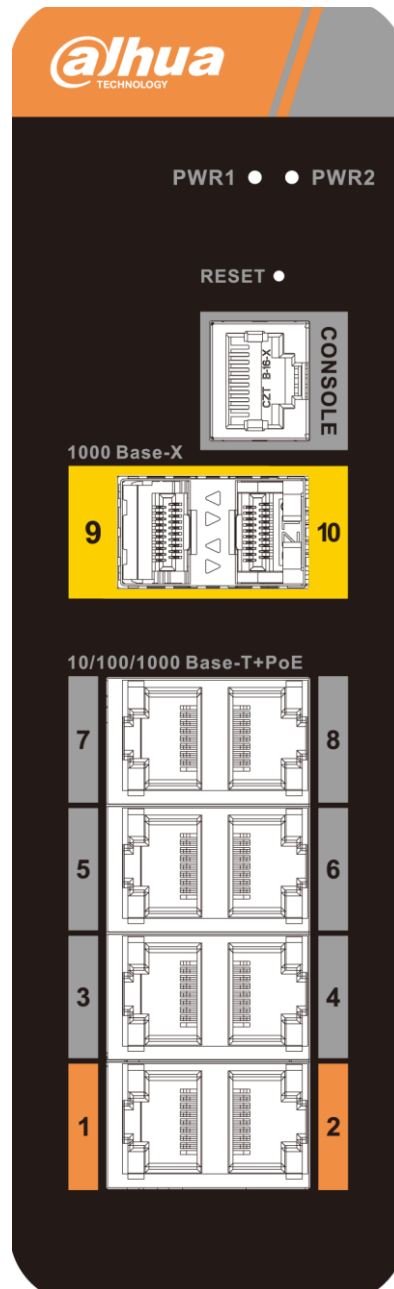


Figure 2-2

Please refer to Table 2-2 and Table 2-3 for the details of indicator light and port respectively.

Indicator light	Note	Color	Device status
PWR1/PWR2	Power status indicator	Green	Power connection is normal.

Table 2-2

Port	Note
CONSOLE	System login setting port.
1/2/3/4/5/6/7/8	8 RJ45 10M/100M/1000M self-adaptive PoE network ports.
9/10	2 1000M optical fiber ports.
RESET	Long press for more than 5s to realize default config function.

Table 2-3

2.2.2 DH-PFS4410-6GT-DP

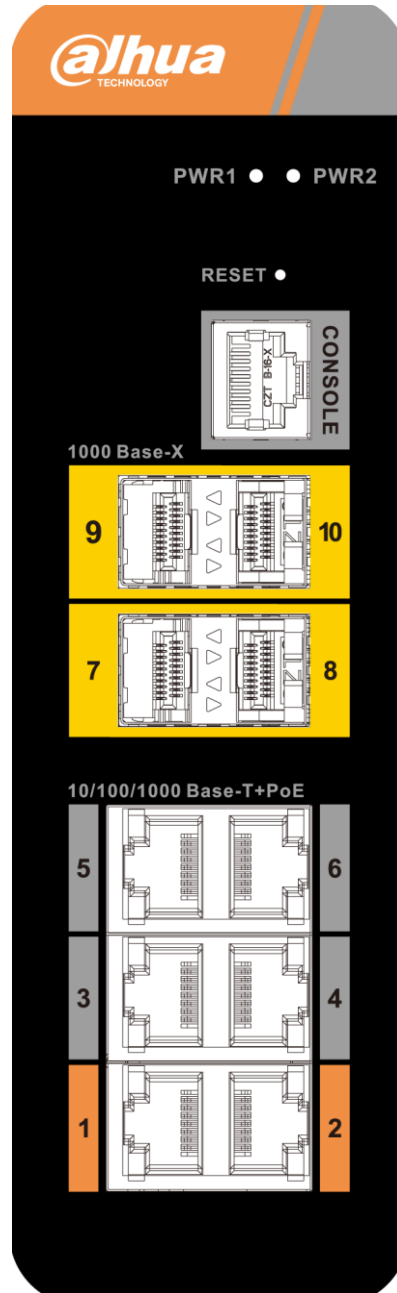


Figure 2-3

Please refer to Table 2-4 and Table 2-5 for the details of indicator light and port respectively.

Indicator light	Note	Color	Device status
PWR1/PWR2	Power status indicator light	Green	Power connection is normal.

Table 2-4



Port	Note
CONSOLE	System login setting port.
1/2/3/4/5/6	6 RJ45 10M/100M/1000M self-adaptive PoE network ports.
7/8/9/10	4 1000M optical fiber ports.
RESET	Long press for more than 5s to realize default config function.

Table 2-5

3 Installation Description

3.1 Installation Steps

The device supports DIN-rail mount.

Hang the switch hook on the rail, press the switch to make the buckle stuck into the rail, which is shown in Figure 3-1.

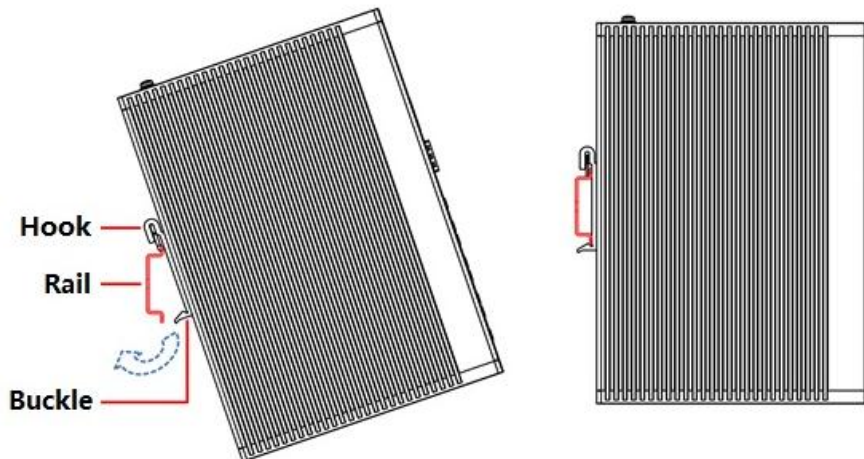


Figure 3-1

3.2 Wiring

3.2.1 Ethernet Port

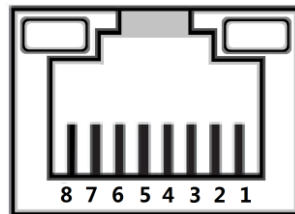


Figure 3-2

10/100/1000 Base-T Ethernet port adopts standard RJ45 port, it is equipped with self-adaptation function, can be automatically configured to full duplex/half-duplex operation mode, supporting MDI/MDI-X self-recognition function of the cable, which means it can use cross-over cable or straight-through cable to connect terminal device to network device.

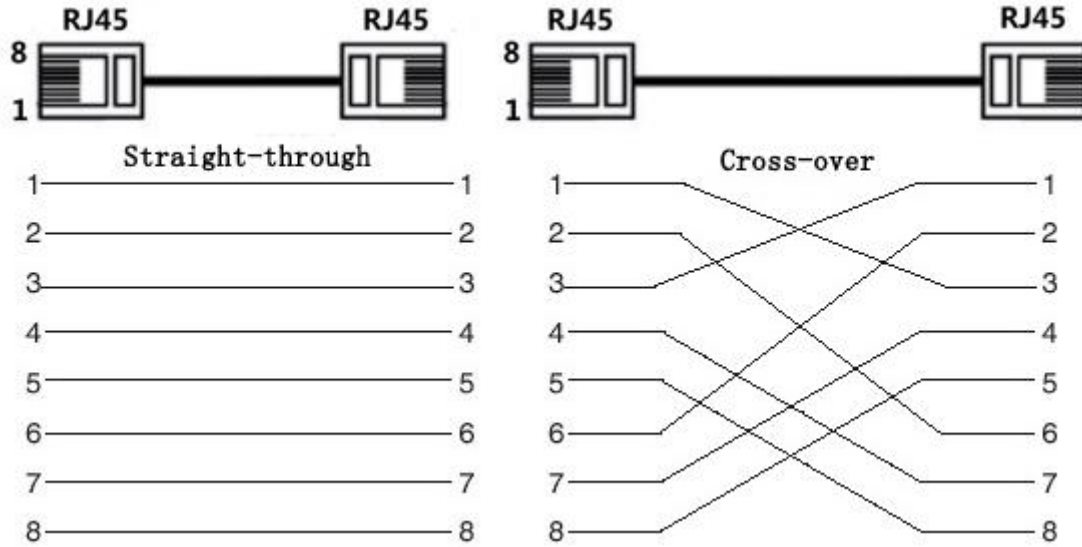


Figure 3-3

The cable connection of RJ45 connector conforms to the standard 568B (1-orange white, 2-orange, 3-green white, 4-blue, 5-blue white, 6-green, 7-brown white, 8-brown).

3.2.2 Console Port

Please refer to Figure 3-4 for the console port.

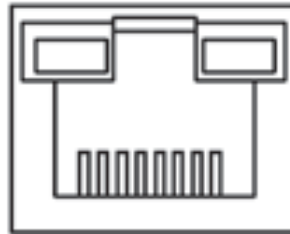


Figure 3-4

Console port is shown in Figure 3-4, use RJ45-DB9 cable to connect device console port and 9-pin serial port which controls the computer. Operating the superterminal software of the Windows system can call the console software of the device, which is to realize the device config, maintenance and management function.

The cable sequence of RJ45-DB9 is shown in Figure 3-5.

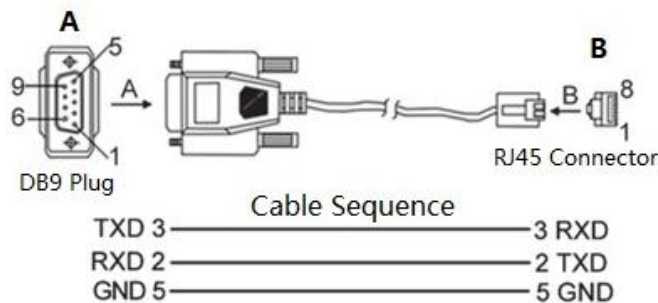


Figure 3-5

One end of RJ45-DB9 cable is RJ45 connector, which needs to be inserted into the Console port of the device; the other end is DB9 plug, which needs to be inserted into the 9-pin serial port which controls the computer.

Please refer to Table 3-1 for the port pin definition.

DB9 pin	RJ45 pin	Signal	Description
2	3	RXD	Receive data
3	2	TXD	Transmit data
5	5	GND	Ground

Table 3-1

3.2.3 SFP Ethernet Port

Warning

The device uses laser to transmit signal via optical fiber cable. The laser conforms to the requirement of level 1 laser products. Therefore, please do not look at the 1000Base-X optical port directly when the device is powered on, which is to avoid injury upon eyes.

Please refer to

Figure 3-6 for SFP module structure.

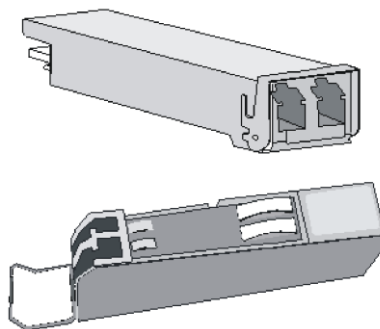


Figure 3-6

Please refer to Figure 3-7 for the SFP module installation.

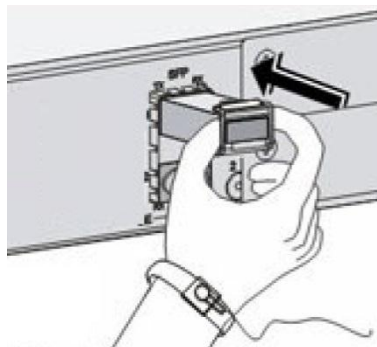


Figure 3-7

Operation Steps

Step 1

It is recommended to wear antistatic gloves before installing SFP module, and then wear antistatic wrist,

and confirm the antistatic wrist is well linked to the surface of the gloves.

Step 2

Lift the handle of SFP module upward vertically and make it get stuck to the top hook, hold the SFP module on both sides and push it gently into the SFP slot till the SFP module is firmly connected to the slot (it can feel that both the top and bottom spring strip of the SFP module are firmly stuck with the SFP slot).

3.2.4 GND

Please refer to

Figure 3-8 for the GND terminal.

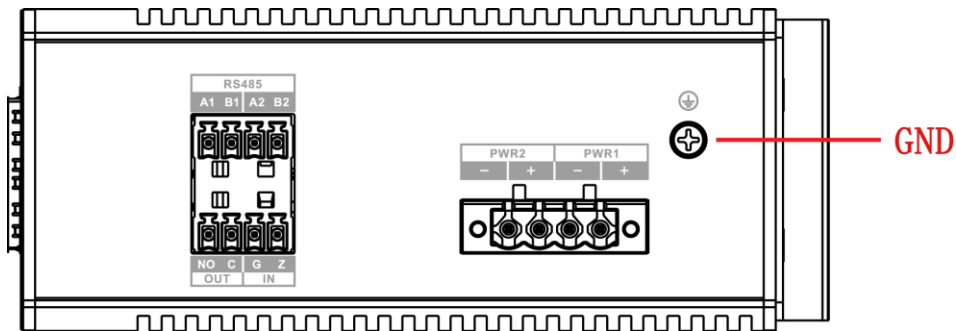


Figure 3-8

Normal ground connection of the device is the important guarantee of device lightning protection and anti-interference, therefore the GND wire has to be normally connected by users, and it has to connect to ground before power on, disconnect ground wire after power off.

There is a GND screw on the device cover board, which is case ground wire and called “case ground”. Use the ground screw to fix it on the “case ground” after connecting one end of the GND wire to the cold-pressed terminal, the other end of GND wire is reliably connected to the ground.

Note

The sectional area of the GND wire is more than 2.5mm²; the GND resistance is required to be less than 5Ω.

3.2.5 Power Terminal

Please refer to Figure 3-9 for the power terminal.

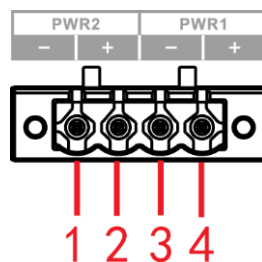


Figure 3-9

Please refer to Table 3-2 for the definition of power terminal.

SN	Signal Name	DC Wiring Definition
1	-	PWR2-
2	+	PWR2+
3	-	PWR1-
4	+	PWR1+

Table 3-2

It provides power for the device by connecting power terminal to power cable. Redundant power input supports two channels power which are PWR0 and PWR1, you can select the other power to continue to provide power when one channel of power breaks down, which greatly improves the reliability of network operation.

Note

The sectional area of power cable shall be more than 0.75mm² (max sectional area 2.5mm²); ground resistance is required to be less than 5Ω.

Operation Steps

The operation steps of connecting power terminal plug and socket are shown as follows.

Warning

Do not touch any revealed wire, terminal and areas with danger voltage of the product, which is to avoid injury over people. Do not dismantle parts or plug connector during power up.

Caution

Please confirm if the power supply is in accordance with the power supply requirement marked on the device before connecting power, in case it may cause damage to the device.

Step 1

Connect the device to ground well according to the Figure 3-10.

Step 2

Take off the power terminal plug from the device.

Step 3

Insert one end of the power cable into the power terminal plug according to the requirement shown in

Figure 3-10 and fix the power cable.

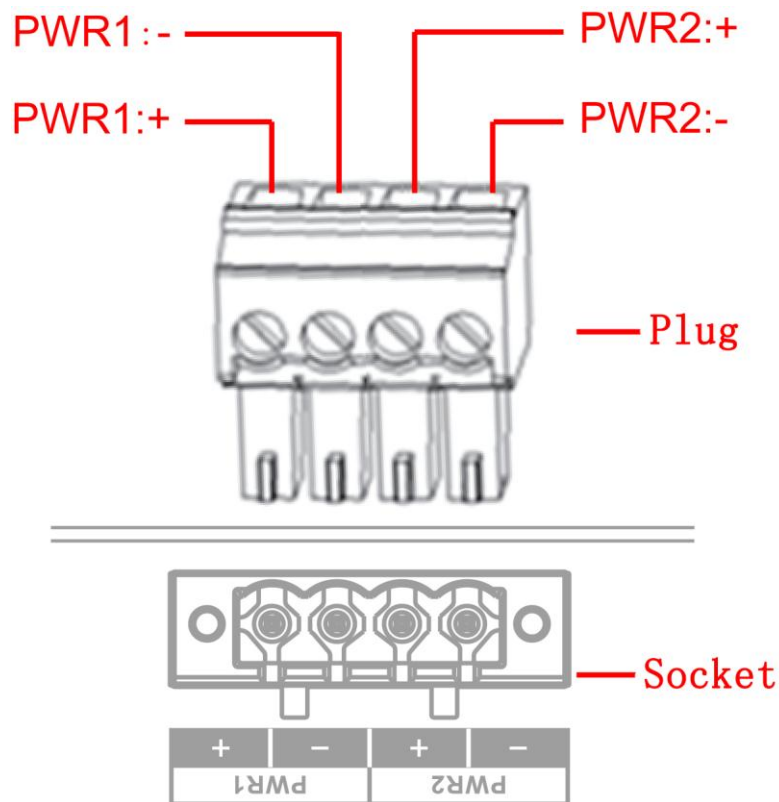


Figure 3-10

Step 4

Insert the plug which is connected to power cable back to the corresponding power terminal socket of the device.

Step 5

Connect the other end of power cable to the corresponding external power supply system according to the power supply requirement marked on the device, and check if the corresponding power indicator light of the device is on, it means power connection is correct if the light is on.

Note

The device supports 48V~57V DC. Please confirm if the power supply conforms to the requirement marked on the device before connecting to power, which is to avoid causing damage to the device.

3.2.6 Alarm Terminal



Figure 3-11

The alarm terminal is located on the side panel of the device, which is used for alarm output. When the device works normally, the alarm relay NO end is closed and NC end is disconnected; when alarm happens, the NO end is disconnected and the NC end is closed.

Note

C pin is the NO switch; NO pin is the NC switch. When the device is operating, C pin is closed and NO pin is disconnected; when alarm happens, C pin is disconnected and NO pin is closed.

The NO and NC of relay can output via connection terminal.

Please refer to

Table 3-3 for the external port electrical parameters of the relay.

Parameter	Value
Max. voltage	AC 125V/DC 60V
Max. current	2A
Max. power	60W
Max. insulation and voltage resistance	2kV

Table 3-3

Operation Steps

The operation steps of wiring installation are shown as follows.

Step 1

Take off the alarm terminal plug from the device.

Step 2

Insert the two wires of the alarm terminal into plugs of alarm terminal according to the description above and fix the wires firmly.

Step 3

Insert the alarm terminal plug which is connected to cable back to the corresponding alarm terminal socket of the device.

4 Quick Operation

It is to introduce VLAN config briefly in this chapter, please refer to corresponding command line manual for other detailed config.

4.1 First Login via Console Port

It is the most basic way to log in the local interface via Console port; it is also the method to configure other ways to log in the device.

Operation Steps

Step 1

Power off the PC.

Step 2

Use default console port cable to connect PC and device. First insert the DB-(hole) plug of console port cable into the 9-pin serial port of PC, and then insert the RJ-45 plug into the console port of the device.

Note

- Please confirm the sign on the port during connection, in case it may plug into the wrong port.
- Please plug out RJ-45 and then DB-9 when dismantling console port cable.



Figure 4-1

Step 3

Power on the PC.

Step 4

Run terminal simulation program on the PC; select the serial port which is to connect the device, set the terminal communication parameters. The parameter value has to be in accordance with the value on the device, the default is shown as follows.

- Baud rate: 115200
- Data bit: 8
- Stop bit: 1
- Parity: none
- Flow control: none

Note

If the PC uses Windows Server 2003 operating system, please add super terminal program in the Windows component and then log in the manage the device according to the way introduced in this manual; If PC uses Windows Server 2008, Windows Vista, Windows 7 or other operating systems, please prepare third-party terminal control software, refer to the software operation guide or online help for operation method.

Step 5

The device is powered on, it displays device self-check info on the terminal, and it will prompt users to press **Enter** button after self-check is over, then it will display username and password input prompt.

Step 6

Input username and press **Enter** button.

Step 7

Input password and press **Enter** button.

Step 8

It will display command line prompt (SWITCH#) after pressing **Enter** button, which is shown as follows. At this moment it means login has been successful.

```
+M25PXX : Init device with JEDEC ID 0xC22018.
Luton10 board detected (VSC7428 Rev. D).

RedBoot(tm) bootstrap and debug environment [ROMRAM]
Non-certified release, version 1_31-4752 - built 17:29:35, Jul 29 2017

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Free Software Foundation, Inc.
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GNU General Public License. You are welcome to change it and/or distribute
copies of it under certain conditions. Under the license terms, RedBoot's
source code and full license terms must have been made available to you.
Redboot comes with ABSOLUTELY NO WARRANTY.

Platform: VCore-III (MIPS32 24KEc) LUTON26
RAM: 0x80000000-0x88000000 [0x80028f20-0x87fdfff0 available]
FLASH: 0x40000000-0x40ffffff, 256 x 0x10000 blocks
== Executing boot script in 3.000 seconds - enter ^C to abort
RedBoot> diag -p
RedBoot> fis load -x linux
MD5 signature validated
Stage1: 0x80100000, length 4641272 bytes
Initrd: 0x80600000, length 188416 bytes
Kernel command line: init=/usr/bin/stage2-loader loglevel=4
RedBoot> exec
Now booting linux kernel:
Base address 0x80080000 Entry 0x80100000
Cmdline : init=/usr/bin/stage2-loader loglevel=4
Active fis: linux
[ 0.374113] vcfw_uio vcfw_uio: UIO driver loading
[ 0.378957] vcfw_uio vcfw_uio: Invalid memory resource
[ 0.384141] iounmap: bad address (null)
00:00:00 Stage 1 booted
```

```

00:00:00 Using device: /dev/mtd7
00:00:01 Mounted /dev/mtd7
00:00:01 Loading stage2 from NAND file 'n6G5Xw'
00:00:05 Overall: 4195 ms, ubifs = 748 ms, rootfs 3422 ms of which xz = 0 ms of which untar = 0 ms
Starting application...wuxuwuxu
Using existing mount point for /switch/
system time:2017-10-14 17:59:53
W icfg 18:00:22 71/icfg_commit_tftp_load_and_trigger#2695: Warning: TFTP get bringup-config:
Operation timed out.

Press ENTER to get started

Username: admin
Password:
SWITCH#

```

Enter command, configure device or check device operating status, you can enter ? anytime if you need help.

4.2 Device Factory Default Config

You can log in the device WEB interface via the following IP address.

Username and password can be applied to log in WEB interface via Console port.

Parameter	Note
IP address	192.168.1.110/255.255.255.0
Username	admin
Password	Admin (Hidden)

Table 4-1

4.3 VLAN Config

VLAN (Virtual Local Area Network) is frequently used during actual application; it is divided into multiple network basics internally. VLAN is to organize several devices into one network logically, regardless of the physical location of the devices. Each VLAN is a logical network, which is equipped with all functions and attributes of traditional physical network. Each VLAN is a broadcast domain; broadcast packet can only be forwarded within one VLAN, not across the VLAN.

VLAN Based on Port

VLAN based on port means that one switch can realize the division of logical working groups via controlling interoperability of between two and among several ports. Dividing port VLAN reasonably can greatly improve network security and bandwidth use ratio, besides; it reduces the probability of broadcast storm. The model supports 4094 VLAN; it needs to select a VLAN ID when creating VLAN,

ranging from 2 to 4094. The switch creates VLAN1 under the default circumstance and VLAN1 cannot be deleted.

Application Example

Networking Requirement

There are two users, user 1 and user 2. These two users need to be in different VLAN because the network function and environment they use are different. User 1 belongs to VLAN2, connecting to switch port G1/1 (Gigabit Ethernet 1/1), user 2 belongs to VLAN 3, connecting to switch port G1/2 (Gigabit Ethernet 1/2).

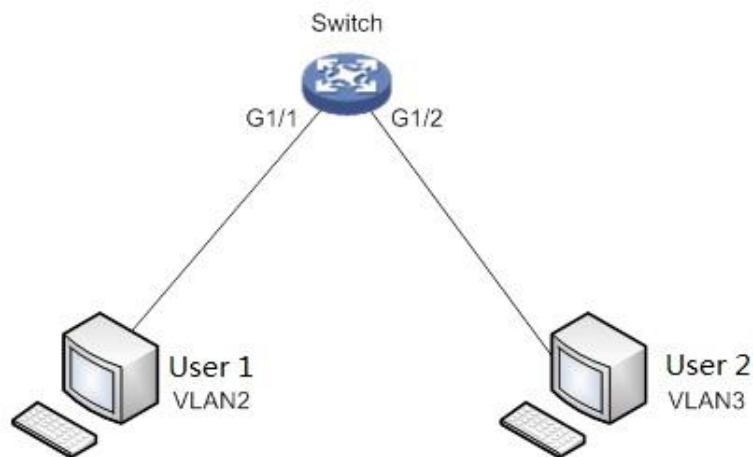


Figure 4-2

Config Steps

The switch config is shown as follows.

Step 1

Create VLAN

```
SWITCH #configure terminal
SWITCH (config)#vlan 2
SWITCH (config-vlan)# exit
SWITCH (config)#vlan 3
SWITCH (config-vlan)# exit
```

Step 2

Distribute ports into the VLAN

```
SWITCH (config)# interface GigabitEthernet 1/1
SWITCH (config-if)# switchport access vlan 2
SWITCH (config-if)# exit
SWITCH (config)# interface GigabitEthernet 1/2
SWITCH (config-if)# switchport access vlan 3
SWITCH (config-if)# exit
```

Note

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