MISCOM8220G Layer 3 Din-rail Industrial Ethernet Switch

User Manual

(Edition: V1.0)

Wuhan Maiwe Communication Co., Ltd.

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Revision history:

Version	Date	Reason
V1.0	2016.11	Document creation

Safe Use Instruction

This product performance is excellent and reliable in the designed range of use, **but it's necessary to avoid man-made damage or destroy for the equipment**.

- Read the manual carefully and keep this manual for reference if need afterwards.
- Do not put the device close to the water sources or damp places.
- Do not put anything on the power cable, it should be placed out of reach.
- To avoid causing fire, do not knot or wrap the cable.
- Power connector and other device connectors should be firmly connected with each other, frequently inspection is needed.
- Please keep the fiber socket and plug clean. Do not look directly at the fiber section when the equipment is working.
- Please keep the equipment clean and wipe it with a soft cotton cloth if necessary.
- Please do not repair the equipment by yourself, unless there is clear instructions in the manual.

Under the following circumstances, please cut off power immediately and contact us.

- Equipment water damage.
- The equipment is broken or the casing is broken.
- The equipment works abnormally or the performance has completely changed.
- The equipment produces odor, smoke or noise.

Statement: Information requiring explanation in use of the managed software.
Attention: Matters requiring specific attention in the use of the managed software

Catalogue

1. Overview

1.1. Product introduction

MISCOM8220G is a full Gigabit three-layer routing switch designed and developed by Wuhan Maiwe Communication Co. Ltd for industrial communication networks. This switch provides a high-end industrial Ethernet communication solution for complex industrial applications, making industrial communications smoother, more reliable, and faster, meeting customers' needs for continuous innovation in value-added applications.

MISCOM8220G's 10/100/1000Base-Tx Ethernet port can work in half-duplex and full-duplex modes. It also supports auto-negotiation. It can negotiate with other network devices to determine the working mode and rate, simplifying system configuration and management. The switch provides multiple ways to manage the switch, including accessing the switch's command line interface (CLI) through the HyperTerminal, or managing the switch through the telnet management system, or using the SNMP management software system to manage the switch, and supporting multiple network monitoring protocols: LLDP, SNTPv4, DHCP. The Layer 3 routing switch also provides advanced management functions such as MSTP, VRRP, IGMP, IGMP Snooping, internal routing protocols RIPv1/v2 and OSPF v1/v2, static routing protocols, VLANs, GVRP, QoS, port aggregation, Some common advanced management functions such as port rate limiting, broadcast storm suppression, ACL, and port mirroring. In terms of device management, it supports FTP/TFTP upgrade, supports logging and uploading, and supports power-down alarm output. In terms of structural installation, the switch is a din-rail switch with flexible choice of card-mounted or desktop installation.

This din-rail industrial Ethernet switch has 20 Gigabit ports, including 16 Gigabit Tx ports and 4 Gigabit Fx ports. All ports support 802.1Q VLANs, support port speed limit of 64Kbps, support 16K entry MAC address table, 4K VLAN, 512 Layer 2 multicast; support L2/L3 Ipv4 and Ipv6 packets full line rate forwarding .

1.2. System Features

1.2.1. High-performance Gigabit layer 3 industrial Ethernet switch

- 20 Gigabit Ethernet interfaces provide users with flexible networking.
- Gigabit SFP interface, which can support hot-swappable LC fiber interface module and RJ45 electrical port module.
- 16 10/100/1000Base-T adaptive Ethernet interfaces (full-duplex,

half-duplex), support automatic MDI/MDI-X connection, and support 4 Gigabit SFP optical ports.

- The fast fiber ring redundancy technology with less than 50ms enhances the reliability of system communication.
- Supports IEEE802.1Q-based VLANs, number 4094.
- Supports multiple redundancy protocols such as EAPS, MSTP, and VRRP.
- Supports static routing and supports multiple dynamic routing protocols such as RIP v1/v2 and OSPF v1/v2.
- Supports multiple multicast protocols such as IGMP, PIM-SM, and PIM-DM.
- The MAC address table supports 16K.
- Support for sophisticated QoS policies and multiple queue scheduling algorithms.
- Supports various network management protocols such as SNMP, PMON, and Telnet.
- Support for accessing the command line interface (CLI) of the switch through software such as HyperTerminal
- Support hardware ACL function, providing ACL hardware filtering based on L2-L7 layer data.
- Support IGMP Snooping detection.
- Support broadcast storm suppression.
- Support full-duplex and half-duplex mode flow control.
- Reliability: MTBF ≥ 50,000 hours.
- Supports power alarms, port alarms, and ring alarms.
- FTP FTP/TFTP-based online software upgrade, which is convenient for user equipment management and update.
- With graphical network configuration and management and maintenance functions, it can remotely monitor the running status and performance of the network, and provide network fault monitoring, diagnosis, location and alarm capabilities.

1.2.2. Industrial power supply design

Provide industrial power supply with different input ranges: 24DC (18~36VDC), 48DC (36~72VDC), 220AC/DC (85~264VAC/110~370VDC), single power supply and redundant power supply for customers to choose.

1.2.3. Sturdy design

- The heat dissipation surface design of the aluminum chassis makes it possible to operate the system reliably in the environment of -40 to +70 °C

without the efficient heat dissipation of the fan.

● High-strength enclosed aluminum housing with IP40 protection rating allows the system to work reliably in harsh and dangerous industrial environments.

1.3. Packing list

The packing list of the switch is shown in Table 1-1 below. If any of the listed items is lost or destroyed, please contact the agent or the customer service center of Wuhan Maiwe Communication Co., Ltd. To help you to replace or make up.

Table 1-1 Packaging list

Item	Quantity
Switch	1
CD(Network management software)	1
CONSOLE interface cable	1

1.4. Performance specification

To make sure the switch can complete Ethernet information exchange, users must refer to the following data for reasonable selection and use, in order to make it show good industrial characteristics and excellent network information exchange capability. The technical indicators are as below table:

System indicator	MISCOM8220G
IEEE standard	802.3, 802.3u, 802.3z, 802.3x, 802.1P, 802.3ab, etc.
Exchange mode	store and forward
Backplane bandwidth	40G
Packet forwarding rate	29.76 Mpps
Gigabit port	16 Gigabit Tx ports +4 Gigabit Fx ports
Tx port parameters	Physical interface: RJ45 with shielding, IEEE802.3 standard RJ45 port: 10/100/1000Base-T (Gigabit) supports auto-negotiation Transmission distance: <100 meters
Fiber port parameters	Luminous power: >-12dBm (single mode) >-17dBm (multimode) Light absorption sensitivity: <-38dBm (single mode) <-35dBm (multimode)

	Wavelength: 1310nm (single mode) 1550nm (single mode) 1310 nm (multimode) Transmission distance: <2Km (Gigabit multimode) Connector Type: LC Transmission rate: 1.25Gbps (gigabit)
Power parameter	Input voltage: 24DC (18-36VDC), 48DC (36-72VDC), 220AC/DC (85-264VAC/110-370VDC) Input power consumption: 15W (MAX) Overcurrent protection: built-in
Mechanical parameters	Physical size (height x width x depth): 156mm x 85mm x 137.7mm Installation method: standard DIN rail type Heat dissipation form: aluminum alloy single ribbed chassis surface heat dissipation, no fan Case protection: IP40 Weight: 4.3kg
Working environment	Working temperature: -40 ° C ~ +70 ° C Storage temperature: -40 ° C ~ +85 ° C Humidity: 5%~95% (no condensation)

EMC standard:

EN61000-4-2 anti-static (ESD): ±8kV contact discharge, ±15kV air discharge

EN61000-4-3 electromagnetic field: 10V/m (80-1000MHz)

EN61000-4-6 anti-conduction: 3V (10kHz~150 kHz), 10V (150kHz~80 MHz)

EN55022: EN55022 Class A

2. Hardware installation and networking

2.1. Hardware structure

2.1.1. System structure

The system hardware is mainly composed of the following parts:

●Switched network controller uses high-performance ASIC chip technology to provide Layer 2 wire-speed forwarding of data packets

●Fiber interface adopts optical transceiver module for stable performance

●Power supply uses industrial grade power supply with over current, over voltage and EMC protection

●All data ports are EMC protected

2.1.2. Machine structure

The chassis of this product is a standard DIN rail structure. The whole machine adopts a six-sided fully enclosed structure. The left and right side panels of the chassis are made of single-ribbed aluminum profiles and are part of the overall cooling system. Abandoning the traditional heat sink cooling form, reducing the power consumption of the whole machine and improving the stability of the system.

Figure 2-1 shows the dimensions of the MISCOM8220G: 156mm × 85mm × 137.7mm.
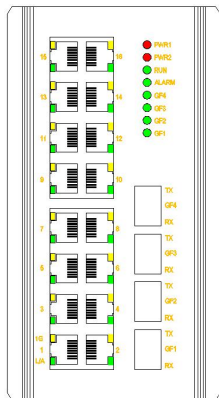

Figure 2-1 Schematic diagram of the MISCOM8220G chassis

The front panel indicators of this series of switches indicate the current working status of the switch. The details are shown in Table 2-1 below.

Table 2-1 Indicators on the front panel

PWR1 PWR2	ALARM		RUN	GF1-GF4	
Red light is always on	Green light is often off	Green light cycle flashes	Green light cycle flashes	Green light is always on	Flashing green light
Normal power	No alarm	Alarm	The system is working properly	Gigabit optical port link	Data transmission

The network port indicators are shown in Table 2-2.

Table 2-2 Description of the indicators on the network port

RJ45					SFP		
Yellow light		Green light			Green light		
On	Off	On	Blink	Off	On	Blink	Off
Current rate connection	No connection or low rate connection	Port connection	Port has network activity	No connection on the port	Port connection	Port has network activity	No connection on the port

Ethernet RJ45 port

Each RJ45 port has an adaptive function that supports automatic MDI/MDI-X connections. You can connect the switch to a terminal device, server, hub, or other switch using a straight-through or crossover cable. Each port supports IEEE802.3x adaptation, so the most appropriate transmission mode (half-duplex or full-duplex) and data rate (10Mbps, 100Mbps or 1000Mbps) can be automatically selected (connected devices must also support this feature). If the devices connected to these ports do not support auto-sensing, the port will force itself to work at the same rate as the other party, avoiding full/half duplex mismatch, the transfer mode will default to half-duplex, and flow control will be automatically disabled. Gigabit electrical ports can support up to 1000Mbps.

SFP Gigabit Fiber port

The Gigabit optical port of this product is a 1000Base-LX full-duplex single-mode/multimode fiber interface. It uses SFP hot-swappable devices and

the fiber interface uses LC interface. The fiber interface needs to be used in pairs (TX and RX are a pair), the TX port is the optical transmitter, and the optical transceiver RX of the optical interface of another remote switch is connected, the RX port is the optical transceiver, and the same optical interface is connected to the same remote switch. The light ends TX. The two redundant 1000Base-LX fiber interfaces can be used to form a fiber redundant ring network. When the system fails, the ring network redundancy switching time is less than 20ms, which can effectively improve the reliability of network operation.

Figure 2-2 shows the optical module of an SFP.

Figure 2-2 Optical module of the SFP

Power input terminal

The standard configuration of this series of switches uses 24V DC power supply, and the power input is connected with 5.08mm pitch terminals, as shown in Figure 2-3. The power consumption of the whole machine is less than 15W.
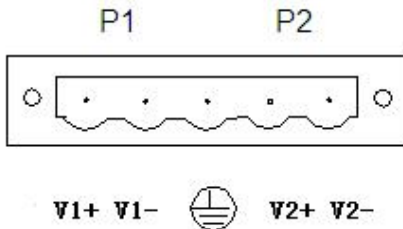

Figure 2-3 Power input terminal

Table 2-3 lists the power requirements.

Table 2-3 Power input terminal pin definitions and descriptions

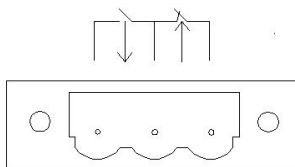| No.	Pin definition	illustrate
1	Power supply 1 input V1+(AC-L)/positive (DC)	
2	Power 1 input V1-(AC-N) / negative (DC)	
3	Protected land (connected to the earth)	
4	Power 2 input V2+ positive (DC)	
5	Power 2 input V2- negative (DC)	

Table 2-4 Switch power requirements table

Voltage	voltage range	Operating temperature	Storage temperature	Humidity
24VDC	18~36VDC	-40°C~+70°C	-40°C~+85°C	5~95%
48VDC	36~72VDC	--40°C~+70°C	-40°C~+85°C	5~95%
220VAC/DC	85~264VAC 47-63Hz or 110~370VDC	--40°C~+70°C	-40°C~+85°C	5~95%

Attention:

The power specifications supported by this device are 24VDC, 48VDC, 220VAC/DC. Before connecting with the power supply, please confirm whether the power supply and the power supply requirements identified by the device match to avoid damaging the device.

Alarm relay

This series of switches power-down alarm relay, the terminal block uses a 3-digit 3.81mm pitch terminal. As shown in Figure 2-4. The relay is a normally open and a normally closed relay. The middle one is a common terminal, the left two terminals are normally open relays, and the two right sides are normally closed relays. When the switch is working normally, the normally open relay is energized and closed, and the normally closed relay is disconnected. When the system is powered down, the normally open relay is powered off and the normally closed relay is closed. The relay recommended switch load capacity is 1A (24VDC).

ALARM

Figure 2-4 Schematic diagram of the alarm relay

Table 2-5 Relay output terminal pin definition and description

Number	Pin definition	illustrate
1	Alarm relay output normally open	
2	Alarm relay output common	
3	Alarm relay output normally closed	

Serial network port (CONSOLE)

The network management port is an RJ45 interface, as shown in Figure 2-5. Please use the serial extension cable provided by the company to connect to the serial port of the PC. The interface communication standard is 3-wire RS-232.

The communication parameters of the serial port are as follows: baud rate: 115200, data bit: 8, check digit: none, stop bit: 1, flow control: none
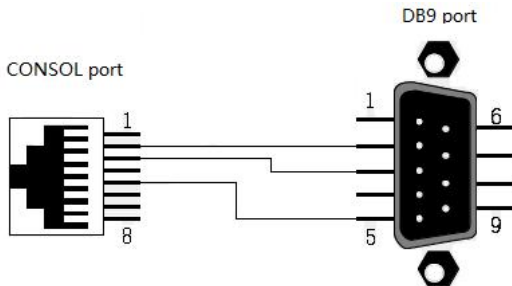

Figure 2-5 Serial port diagram of the RJ45 interface

Ground

The MISCOM8220G industrial Ethernet switch has a grounding screw. The one end of the grounding wire is crimped to the cold-pressing terminal and then fixed to the grounding hole of the chassis with a grounding screw. The other end of the ground wire is reliably connected to the ground. The ground wire cross section is not less than 2.5mm^2.

2.2. Hardware installation

2.2.1. Installation requirements

This industrial Ethernet switch is a single structure. Before installation, you must first confirm that there is a suitable working environment, including power requirements, sufficient space, and whether it is close to other network devices and other devices to be connected. Please confirm the following installation requirements:

●Power requirements: Standard products use 24V power supply. For other power supply methods, please refer to the product label, power supply label on the housing and related instructions.

●Environmental requirements: temperature -40 ° C ~ +70 ° C, relative humidity 5 ~ 95% (no condensation)

●Grounding resistance requirement: <5

●According to the contract configuration requirements, check whether the cable laying is in place and the fiber connector is suitable.

●Avoid direct sunlight, away from heat sources or areas with strong electromagnetic interference

●Standard products are installed on the DIN rail. Check for cables and connectors required for installation

Attention

Be sure to disconnect the power cord before installing or connecting an Ethernet switch. Calculate the maximum possible current in each power line and the common line, and observe all electrical information to know the maximum current allowed by the lines of different widths. If the current exceeds the maximum rated current, the wire will overheat and cause serious damage to the equipment.

At the same time, you must also pay attention to the following:

Separate the path between the power cord and the device line. If the two paths must intersect, make sure that the lines are perpendicular at the intersection. Signal lines or communication lines and power lines cannot be laid in the same pipe. To avoid interference, lines with different signal characteristics should be separated. We can use the type of signal

transmitted in a line to determine which lines should be separated. The rule of thumb is that wires with the same electrical characteristics can be bundled together. Separate the input and output lines. It is highly recommended that all equipment lines in the system be labeled when necessary.

The switch should be connected to the protection ground:

Grounding and wiring can effectively suppress the effects of noise caused by electromagnetic interference. A ground connection should be made before connecting the device, from the ground screw to the grounded surface.

2.2.2. Host installation

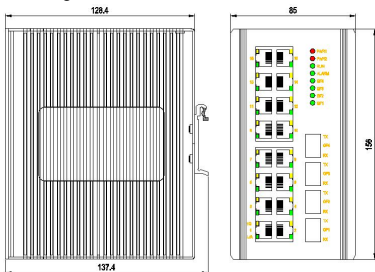The schematic diagram of the whole machine is shown in Figure 2-6.

Figure 2-6 Schematic diagram of the whole machine

For most industrial applications, it is very convenient to install the rails. The installation of the rack should be checked before installation, mainly including the following two contents:

● Is there enough room for installing this product?

● Is there a power supply suitable for the work of this product?

When installing, first determine the installation location of the product, then fix it with the rail.

2.2.3. Cable connection

After the correct installation, the cable can be installed and connected, mainly including the cable connection of the following interfaces.

● Fiber and Ethernet port

The Gigabit Tx port of the terminal equipment is 10/100/1000M. Connect to the terminal device using a straight-through cable and connect to the network device using a crossover cable.

●Connecting network nozzle

The CONSOLE port of this product can be connected to the serial port of the control computer.

●Connect the power supply

When all other cables are connected, you can connect the power supply for the product identification specification.

2.2.4. Fiber optic connection

Attention

> This switch uses a laser to transmit signals over fiber optic cables. The laser meets the requirements of Class 1 laser products, and normal operation is harmless to the eyes. However, when powering up the unit, do not look directly at the optical transmission port and the fiber optic terminator end face.

The steps to connect a pluggable fiber module are as follows:

●Remove and retain the rubber sleeve of the LC, SC or FC port. When not in use, put on a rubber sleeve to protect the fiber terminator.

●Check that the fiber terminator is clean. Wipe the clean paper towel or cotton ball slightly and gently wipe the cable plug. A dirty fiber optic terminator will degrade the quality of the optical transmission and affect port performance.

●Connect one end of the cable to the fiber interface of the switch and the other end to the fiber interface of the other device.

●After the connection is completed, check the optical port LINK/ACT indicator on the front panel of the switch. If the indicator is on, the connection is valid.

The hot plugging procedure for the Gigabit SFP module is as follows. The schematic diagram is shown in Figure 2-8.
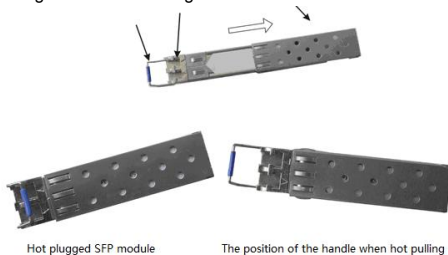

Hot plugged SFP module　　　The position of the handle when hot pulling

Figure 2-8 Hot swapping of an SFP module

Hot plugging steps:

● Observe the end of the PCB gold finger.

● Insert the gold finger end into the metal shield cage of the SFP. When you hear the sound of the cymbal, the device has been inserted into the position, and then the SFP is inserted and removed, and placed in the normal position parallel to the interface.

Hot extraction step:

● The SFP plug handle is first pulled down perpendicular to the interface, and the optical device should be disconnected from the hook of the SFP shield cage.

● Pull out the SFP modules in parallel.

2.2.5. Laying cable

Cables should be laid out in the following conditions:

● Check that the specifications, model and quantity of all cables are consistent with the construction drawing design and contract requirements before laying the cable;

● Before the cable is laid, check whether the cable is damaged, whether there is a certificate such as the factory record and quality assurance to prove its quality;

● The specifications, quantity, routing direction, and placement position of the cables to be laid out shall conform to the construction drawing design requirements, and the wiring length of each cable shall be determined according to the actual position;

● The user cable is placed separately from the power cord;

● There shall be no disconnection in the middle of the cable laid in the raft, or a joint in the middle;

● The cable should be straight and tidy in the aisle, and the turn should be even, smooth and straight;

● The cable should be straight in the channel, and should not be out of the channel, blocking other access holes, and should be tied and fixed at the cable exit channel or cable bend;

● When the cable, power cable, and ground cable are placed in the same slot, the cable, power cable, and ground cable cannot overlap and mix. When the cable is too long, the cable grounding plate must be placed in the middle of the cable tray and cannot be pressed on other cables.

● When laying the fiber on the tail, prevent the cable from knotting and minimize the turning, and the turning radius should not be too small. The lashing should be tight and not too tight. When laying on the cable rack, it

should be placed separately from other cables;

●The two ends of the cable should have corresponding markings. The content of the marking is concise and easy to maintain.

Attention

> When laying the pigtail, it is necessary to prevent the cable from being knotted and the turning point should be minimized, and the turning radius should not be too small. If the turning radius is too small, the link optical signal will be seriously depleted. Affect the quality of communication.

2.3. Simple test

2.3.1. System self-test

When the device is powered on, the corresponding Power light will be on. All service port indicators on the front panel will be on for a period of time, then go out, and the Run light (system running status indicator) will also start flashing, after which the system will start running normally.

2.3.2. Electric port test

As shown in Figure 2-9, power on the device and connect any 2 Tx ports to the network ports of the two test computers through the direct connection network cable and send ping commands to each other. Both parties can ping each other correctly without losing packets. The two electrical ports tested are working properly.
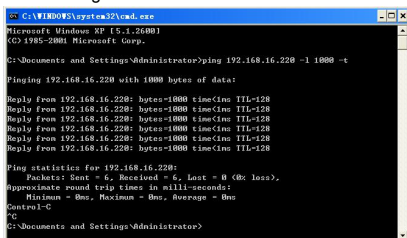

Figure 2-9 Schematic diagram of electrical port test

Example of PING command:

The IP address of the test computer 1 is 192.168.16.220, and the IP address of the test computer 2 is 192.168.16.221. First, the first item "Allow incoming echo request" in the local connection ICMP setting of the two firewalls is checked. The operation method is to open the advanced page in the setting of the windows firewall and set the ICMP protocol.

Then click Test Computer 1 Start → Run, enter cmd or command (Win2000/XP system with cmd, WIN98/95 system with command) command,

pop up the console window, send ping 192.168.16.221 –l 1000 -t, (–l Refers to the number of bytes sent by the packet, -t means to keep sending data.) Run ping 192.168.16.220 –l 1000 –t in test computer 2 in the same way. If test computer 1 shows Reply from 192.168.16.221:bytes=1000 time<10ms TTL=128, test computer 2 displays Reply from192.168.16.220:bytes=1000 time<10ms TTL=128, use CTL+ after running for more than 10 minutes. The C command terminates the current ping. At this time, the console prints out the ping packet statistics. If the statistics packet loss rate is 0, the device works normally. As shown in Figure 2-10.

Figure 2-10 Results returned after inputting the ping test computer in CMD

2.3.3. Fiber port test

Combine the two devices into the fiber optic chain network shown in Figure 2-11. Each Tx port of each device is connected to the test computer through a direct-connected network cable, and sends PING commands to each other. Both parties can correctly ping the other party without losing packets. At the same time, the LINK/ACT light corresponding to the optical port should be on. The two optical ports tested are working properly. Test other optical ports in the same way.

Figure 2-11 Schematic diagram of optical port test

2.4. Network topology

The switch can be flexibly networked. There are 6 basic topologies: star, chain, single loop, single loop coupling, and tangent loop coupling, as shown in Figure 2-12, Figure 2-13, Figure 2-14, Figure 2-15, Figure 2-16.
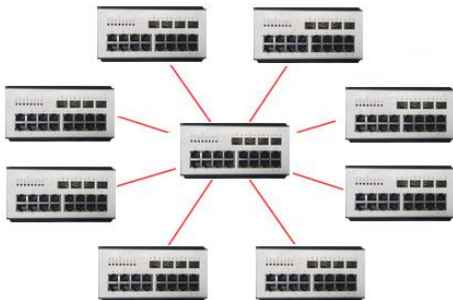
2.4.1. Star network

Figure 2-12 Schematic diagram of the star network

2.4.2. Chain network

Figure 2-13 Schematic diagram of the chain network

2.4.3. Single ring network

Figure 2-14 Schematic diagram of a single ring network

2.4.4. One-way coupling between rings

Figure 2-15 Schematic diagram of single-loop coupling between rings

2.4.5. Tangent ring coupling

Figure 2-16 Schematic diagram of the tangent ring coupling

3. Repair and service

Wuhan Maiwe Communication Co., Ltd. provides a five-year product warranty from the date of shipment. According to its product specifications, during the warranty period, if there is any malfunction or functional failure of the product, we will repair or replace the product for the user without charge. However, the above commitments do not cover damage caused by improper use, accidents, natural disasters, improper operation or improper installation.

In order to ensure that consumers benefit from the products of Wuhan Maiwe Communication Co., Ltd., help and problem solving can be obtained by the following methods:

- Internet services
- Call the technical support office
- Product repair or replacement

3.1. INTERNET service

Through the technical support section of Wuhan Maiwe Communication

Co., Ltd., you can get more useful information and tips.

3.2. Technical support telephone service

Call the company's technical support office, there will be professional technical engineers to help you solve the problems or problems you encounter in the first time.

3.3. Product repair or replacement

Product repair, replacement or return, please contact our sales staff to negotiate processing, complete the product repair, replacement or return.

4. **Appendix 1**

RJ45 interface line sequence

The MISCOM8220G series switches provide up to 16 RJ45 interfaces. In use, they can be routed to other Ethernet terminal devices via the network cable (direct or cross) of the switch RJ45 interface. Refer to Figure 3-1 below for the RJ45 pin number sequence.
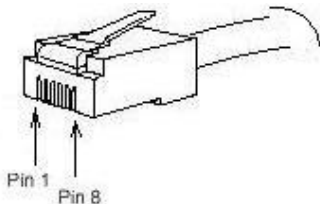

Figure 3-1 RJ45 connector pin sequence diagram

Since the RJ45 ports of the MISCOM8220G series switches support the MDI/MDIX self-identification function of the cable, when the MISCOM8220G switch is interconnected with other Ethernet terminals, five types of direct connection cables can be used, or five types of crossover cables can be used. The choice of cables in our practical use.

When the RJ45 port is 10/100Base-TX, the pin definitions are as shown in Table 1-1 below.

Table 1-1 10/100Base-TX pin definitions are as follows:

Pin number	MDI-X signal name	MDI signal name
1	Receive data +(RD+)	Send data +(TD+)
2	Receive data -(RD-)	Send data -(TD-)
3	Send data +(TD+)	Receive data +(RD+)
6	Send data -(TD-)	Receive data -(RD-)
4,5,7,8	Unused	Unused

When the RJ45 port is 10/100/1000Base-T, the pin definitions are shown in Table 1-2 below.

Table 1-2 10/100/1000Base-TX pin definitions are as follows:

Pin number	MDI-X signal name	MDI signal name
1	Send/receive data (TRD1+)	Send/receive data (TRD0+)

2	Send/receive data (TRD1-)	Send/receive data (TRD0-)
3	Send/receive data (TRD1+)	Send/receive data (TRD1+)
4	Send/receive data (TRD3+)	Send/receive data (TRD2+)
5	Send/receive data (TRD3-)	Send/receive data (TRD2-)
6	Send/receive data (TRD0-)	Send/receive data (TRD1-)
7	Send/receive data (TRD2+)	Send/receive data (TRD3+)
8	Send/receive data (TRD2-)	Send/receive data (TRD3-)

The RJ45 port connection is shown in Figures 3-2 and 3-3. The 100M straight cable crossover cable is compatible with Gigabit.

Figure 3-2 Five-category straight-through network cable wiring method
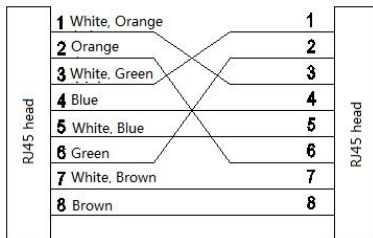

Figure 3-3 Five-way crossover cable connection method

Note: The color definition of the cable in the figure refers to the EIA/TIA568B specification.

Ordering information

Table 2-1 Ordering information

Item	Gigabit Tx port	Gigabit Fx port	Power supply
MISCOM8220G-4 GF-16GT-DC24	16	4	Dual DC24V(18~36V
MISCOM8220G-4 GF-16GT-DC48	16	4	Dual DC48V(36V~72V)
MISCOM8220G-4 GF-16GT-AD220	16	4	Single AC85-264V/DC110~370V

Statement

Our company has the right to change the model number without notifying the user. For the latest information, please consult our company market or technical support staff.

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