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ISCOM5508 (B)
Hardware Description
(Rel_02)



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Preface

Objectives

This document describes the chassis, hardware components, and cables of the ISCOM5508, including hardware features, components, supported functions and technical specifications of each component, and appearance and technical specifications of cables.

Versions

The following table lists the product versions related to this document.

Product name	Hardware version	Software version
ISCOM5508	B.00 or later	V2.61 or later

Related manuals





The following table lists manuals and their contents related to the ISCOM5508.

Name	Description
<i>ISCOM5508 (B) Hardware Description</i>	This document mainly introduces product overview, components, fiber and cables, pluggable modules, lookup table of LEDs, and lookup table of weight and power consumption.
<i>ISCOM5508 (B) Configuration Guide</i>	This guide mainly introduces basic configuration, data service configuration, multicast service configuration, VoIP service configuration, CATV service configuration, TDM service configuration, MAC address table configuration, VLAN configuration, Spanning Tree configuration, routing configuration, DHCP configuration, QoS configuration, OAM configuration, link security configuration, and system management configuration.

Conventions

Symbol conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
 Warning	Indicate a hazard with a medium or low level of risk which, if not avoided, could result in minor or moderate injury.
 Caution	Indicate a potentially hazardous situation that, if not avoided, could cause equipment damage, data loss, and performance degradation, or unexpected results.
 Note	Provide additional information to emphasize or supplement important points of the main text.
 Tip	Indicate a tip that may help you solve a problem or save time.

General conventions

Convention	Description
Times New Roman	Normal paragraphs are in Times New Roman.
Arial	Paragraphs in Warning, Caution, Notes, and Tip are in Arial.
Boldface	Buttons and navigation path are in Boldface .
<i>Italic</i>	Book titles are in <i>italics</i> .
Lucida Console	Terminal display is in Lucida Console.
Book Antiqua	Heading 1, Heading 2, Heading 3, and Block are in Book Antiqua.

Change history

Updates between document versions are cumulative. Therefore, the latest document version contains all updates made to previous versions.

Issue 02 (2015-12-08)

Second commercial release

- Fixed known bugs.
- Modified configurations of cables.

Issue 01 (2013-10-18)

Initial commercial release

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1 Overview

This chapter describes orientation, appearance, and physical parameters of the ISCOM5508, including the following sections:

- Introduction
- Appearance and slots
- Physical parameters

1.1 Introduction

The ISCOM5508 is a next-generation, small-capacity, 1U, and plug-in Ethernet Passive Optical Network (EPON) Optical Line Terminal (OLT). It is oriented to industrial customers, providing rich features and flexible networking schemes to meet low-density and long-distance requirements for optical fiber access.

- Work with the Optical Network Unit (ONU) as the OLT in EPON to construct the low-cost, high-bandwidth, and long-distance access network, thus addressing problems of small -and medium-scale fiber access.
- Meet Fiber to The Home (FTTH) and Fiber to The Building (FTTB) networking requirements.
- Support automatically collecting information about the power grid, and meet requirements on building the intelligent community.
- Support providing triple play services using the single-fiber.
- Meet networking requirements on bidirectional reconstruction of the Hybrid Fiber Coaxial (HFC) network (EPON+EoC).

The ISCOM5508 can be installed in the following scenarios:

- ETSI 600-mm cabinet
- 19-inch 450-mm cabinet
- 19-inch 600-mm cabinet
- Open rack
- Workbench



When installing the chassis to the 19-inch 600-mm cabinet, you need to purchase brackets applicable to the cabinet.

1.2 Appearance and slots

1.2.1 Appearance of chassis

The ISCOM5508 is a cartridge device, which is flexible to be deployed. Dimensions of the chassis are: 440 mm (Width) × 266 mm (Depth) × 44 mm (Height) (without brackets).

Figure 1-1 shows the appearance of the ISCOM5508 chassis.

Figure 1-1 Appearance of the ISCOM5508 chassis



1.2.2 Distribution of slots

The ISCOM5508 provides the following 6 slots:

- 1 Main Control Card (MCC) slot (slot 1)
- 2 extended subcard slots (slot 2 and slot 3)
- 1 fan module slot (slot 6)
- 2 power module slots (slot 4 and slot 5)

Figure 1-2 shows distribution of slots on the ISCOM5508.

Figure 1-2 Distribution of slots on the ISCOM5508

Slot 4	Slot 5	Slot 6	Extended sub-card (Slot 2)	Extended sub-card (Slot 3)
			MCC (Slot 1)	

1.3 Physical parameters

Table 1-1 lists physical parameters of the ISCOM5508.

Table 1-1 Physical parameters of the ISCOM5508

Parameter		Description
Dimensions		440 mm (Width) × 266 mm (Depth) × 44 mm (Height) (without brackets)
Standard configuration	Weight	5.51 kg
	Power consumption	40 W
Full configuration	Weight	6.24 kg
	Power consumption	63 W
DC power	Rated voltage	-48 VDC
	Voltage range	-38 to -72 VDC
AC power	Rated voltage	110/220 VAC
	Voltage range	100–240 VAC
	Frequency	50/60 Hz



Note

- Standard configuration: chassis, MCC (EPSC), 2 power modules, and 1 fan module.
- Full configuration: chassis, MCC (EPSC), 2 extended subcards, 2 power modules, and 1 fan module.

2 Components

This chapter describes the appearances, dimensions, and technical specifications of components of the ISCOM5508, including the following sections:

- Overview of components
- MCC (EPSC)
- 4 EPON subcard (EP4B)
- 4 GE subcard (GE4B)
- AC power module (RPA1101-SI-220S12)
- DC power module (RPD1101-48S12)
- Fan module (FANS306)

2.1 Overview of components

2.1.1 Classification of components

The ISCOM5508 is composed of the following four types of components:

- MCC
- Extended subcard
- Power module
- Fan module

Table 2-1 lists components of the ISCOM5508.

Table 2-1 Components of the ISCOM5508

Component	Name	Description
MCC	EPSC	Control, management, aggregation, and switching card
Extended subcard	EP4B	4 EPON subcards
	GE4B	4 GE subcards
Power module	RPA1101	110/220 VAC power module

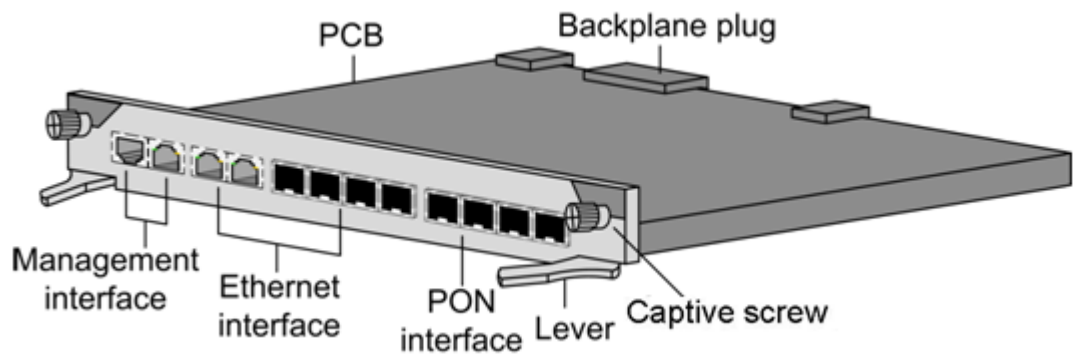
Component	Name	Description
	RPD1101	-48 VDC power module
Fan module	FANS306	Fan module

2.1.2 Appearances of components

Appearance of MCC

Figure 2-1 shows the appearance of the MCC (EPSC).

Figure 2-1 Appearance of the MCC (EPSC)



Appearance of expansion subcard

Figure 2-2 shows the appearance of the EP4B subcard.

Figure 2-2 Appearance of the EP4B subcard

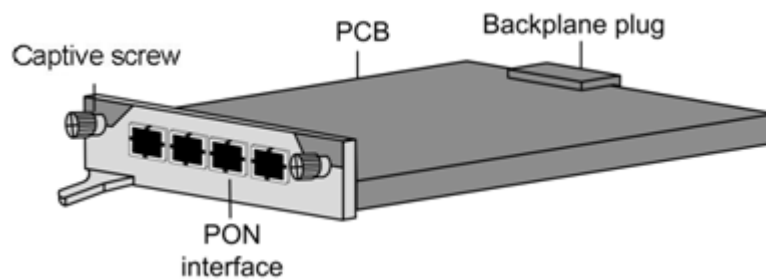
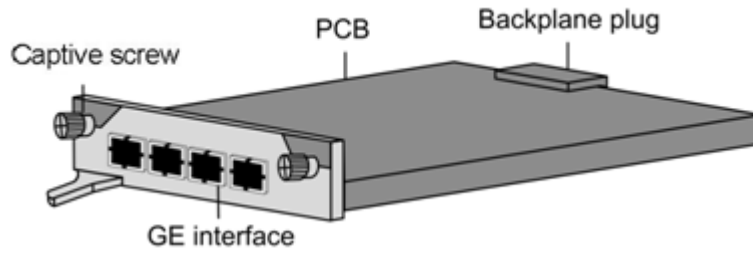


Figure 2-3 shows the appearance of the GE4B subcard.

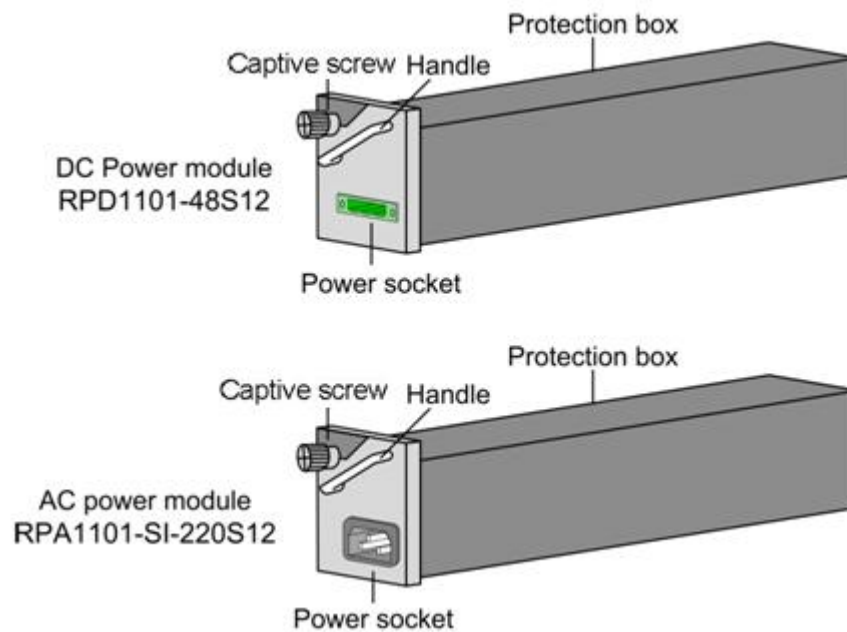
Figure 2-3 Appearance of the GE4B subcard



Appearance of power module

Figure 2-4 shows the appearance of the power module.

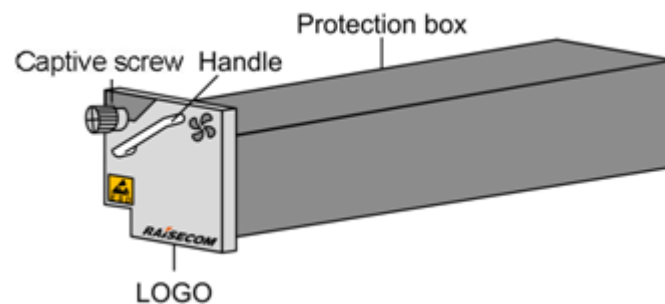
Figure 2-4 Appearance of the power module



Appearance of fan module

Figure 2-5 shows the appearance of the fan module.

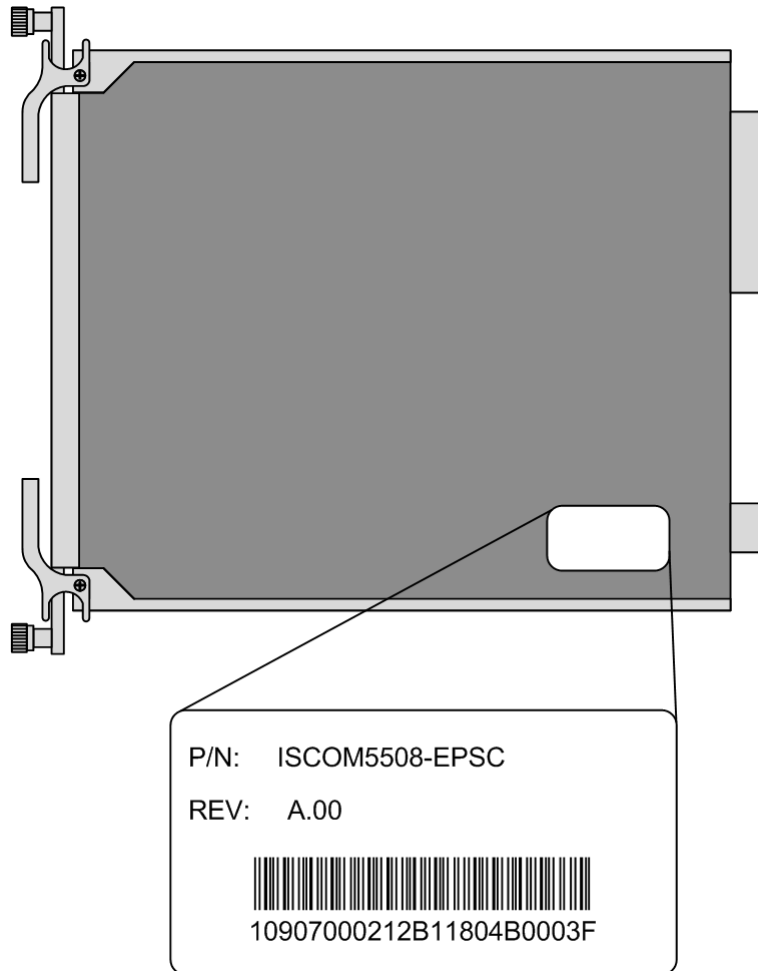
Figure 2-5 Appearance of the fan module



2.1.3 Hardware information label

Hardware information of ISCOM5508 components is described by a label pasted on the Printed Circuit Board (PCB) to facilitate you to view it, as shown in Figure 2-6.

Figure 2-6 Hardware information label on the ISCOM5508



 **Note**

The position of hardware information labels may be different because the layouts of elements are different, so search for it carefully.

Table 2-2 lists items on the hardware information label.

Table 2-2 Items on the hardware information label

Parameter	Description
P/N	Name and type of the component
REV	Hardware version of the component, where "A" means a release version and "00" means a build
Bar code	Bar code of the component

2.2 MCC (EPSC)

2.2.1 Introduction

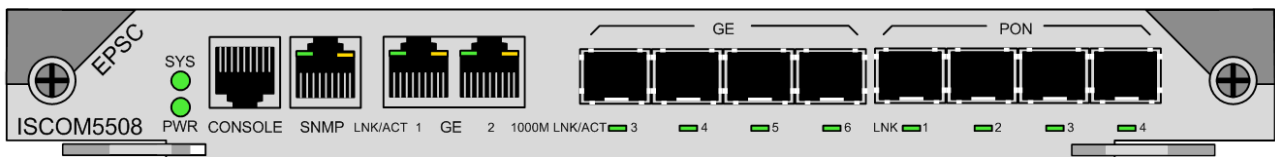
The EPSC card is the main unit for accessing, processing, and switching services. It provides 4 EPON optical interfaces, 2 GE electrical interfaces (RJ45), and 4 GE optical interfaces (SFP). Moreover, it supports managing and maintaining the ISCOM5508 through the SNMP interface and Console interface.

2.2.2 Panel and slots

The EPSC card can be inserted into slot 1 only.

Figure 2-7 shows the panel of the EPSC card.

Figure 2-7 Panel of the EPSC card



2.2.3 Interfaces

There are 12 interfaces on the EPSC card.

Table 2-3 lists interfaces on the EPSC card.

Table 2-3 Interfaces on the EPSC card

Interface	Type	Usage	Description
CONSOLE	RJ45	Local maintenance serial interface	RS-232 serial interface
SNMP	RJ45	Remote network management interface	10/100BASE-T self-adaptive electrical interface
GE 1/2	RJ45	Ethernet service interface	10/100/1000BASE-T self-adaptive electrical interface
GE 3/4/5/6	SFP	Ethernet service interface	Supported optical module type: 1000BASE-X
PON 1/2/3/4	PON SFP	EPON service interface	Supported optical module type: 1000BASE-PX20-D



Note

For details of the optical module, see chapter 4 Pluggable modules.

Table 2-4 lists parameters of the Console interface.

Table 2-4 Parameters of the Console interface

Parameter	Description
Connector	RJ45
Working mode	Duplex UART
Electrical features	RS-232
Baud rate	9600 baud
Data bit	8
Parity check	None
Stop bit	1
Flow control	None
Cable specifications	4-core shielded cable

Table 2-5 lists parameters of the SNMP interface.

Table 2-5 Parameters of the SNMP interface

Parameter	Description
Connector	RJ45
Interface rate	10/100BASE-T auto-negotiation
Wiring	Support adaption to straight-through and crossover cable in host mode
Compliant standard	IEEE 802.3

Table 2-6 lists parameters of the GE interface.

Table 2-6 Parameters of the GE interface based on 10/100/1000BASE-T standard

Parameter	Description
Connector	RJ45
Working mode	<ul style="list-style-type: none"> • 10/100/1000 Mbit/s auto-negotiation • Full duplex and half duplex auto-negotiation
Cable specifications	<ul style="list-style-type: none"> • When the working mode is 10 Mbit/s or 100 Mbit/s, we recommend using the Cat 5 UTP cable. • When the working mode is 1000 Mbit/s, we recommend using Cat 5 or better STP cable.
Compliant standard	IEEE 802.3
Supported network protocol	IP

2.2.4 LEDs

There are 16 LEDs on the EPSC card, where 6 LEDs are integrated with the RJ45 interface.

Table 2-7 lists LEDs on the EPSC card.

Table 2-7 LEDs on the EPSC card

LED	Status	Description
PWR	Green	Power LED <ul style="list-style-type: none"> • Green: the power supply is working properly. • Off: the power supply is working improperly.
SYS	Green	System working LED <ul style="list-style-type: none"> • Fast blinking green (4 Hz): the system is initializing. • Slow blinking green (0.5 Hz): the system is working properly. • Off: the system is working improperly or the card is inserted improperly.
LNK/ACT (SNMP integrated LED)	Green	Line working LED <ul style="list-style-type: none"> • Green: the interface is connected properly. • Blinking green: the interface is transmitting data. • Off: the interface is disconnected or connected improperly.
100M (SNMP integrated LED)	Yellow	Line working rate LED <ul style="list-style-type: none"> • Yellow: the electrical interface is working at 100 Mbit/s. • Off: the electrical interface is working at 10 Mbit/s.
LNK/ACT 1/2/3/4 (SFP optical interface)	Green	Line working LED <ul style="list-style-type: none"> • Green: the interface is connected properly. • Blinking green: the interface is transmitting data. • Off: the interface is disconnected or connected improperly.
LNK/ACT 1/2 (RJ45 electrical interface integrated LED)	Green	Line working LED <ul style="list-style-type: none"> • Green: the interface is connected properly. • Blinking green: the interface is transmitting data. • Off: the interface is disconnected or connected improperly.
1000M (RJ45 electrical interface integrated LED)	Yellow	Line working rate LED <ul style="list-style-type: none"> • Yellow: the electrical interface is working at 1000 Mbit/s. • Off: the electrical interface is working at 100 Mbit/s.
LNK 1/2/3/4	Green	PON interface working LED <ul style="list-style-type: none"> • Green: the PON interface is connected properly and there is a registered ONU working on the interface or there is a laser-always-on ONU. • Off: the PON interface is disconnected or there is no registered ONU working on the interface.

2.2.5 Technical specifications

Table 2-8 lists technical specifications of the EPSC card.

Table 2-8 Technical specifications of the EPSC card

Parameter	Description
Dimensions	259.3 mm (Width) × 243.4 mm (Depth) × 19.8 mm (Height)
Weight	0.89 kg
Power consumption	≤ 32 W

2.3 4 EPON subcard (EP4B)

2.3.1 Introduction

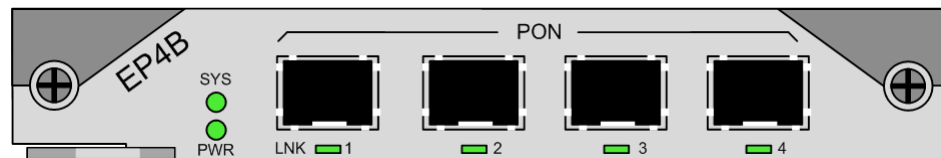
The EP4B subcard is the EPON interface subcard of the ISCOM5508, providing 4 EPON SFP interfaces.

2.3.2 Panel and slots

The EP4B subcard can be inserted into slot 2 or slot 3 of the ISCOM5508.

Figure 2-8 shows the panel of the EP4B subcard.

Figure 2-8 Panel of the EP4B subcard



2.3.3 Interfaces

There are 4 interfaces on the EP4B subcard.

Table 2-9 lists interfaces on the EP4B subcard.

Table 2-9 Interfaces on the EP4B subcard

Interface	Type	Usage	Description
PON 1/2/3/4	PON SFP	EPON service interface	Supported optical module type: 1000BASE-PX20-D



For details of the optical module, see chapter 4 Pluggable modules.

2.3.4 LEDs

There are 6 LEDs on the EP4B subcard.

Table 2-10 lists LEDs on the EP4B subcard.

Table 2-10 LEDs on the EP4B subcard

LED	Status	Description
PWR	Green	Power LED <ul style="list-style-type: none"> • Green: the power supply is working properly. • Off: the power supply is working improperly.
SYS	Green	System working LED <ul style="list-style-type: none"> • Fast blinking green (4 Hz): the system is being initialized. • Slow blinking green (0.5 Hz): the system is working properly. • Off: the system is working improperly or the card is inserted improperly.
LNK 1/2/3/4	Green	PON interface working LED <ul style="list-style-type: none"> • Green: the PON interface is connected properly and there is a registered ONU working on the interface. • Off: the PON interface is disconnected or there is no registered ONU working on the interface.

2.3.5 Technical specifications

Table 2-11 lists technical specifications of the EP4B subcard.

Table 2-11 Technical specifications of the EP4B subcard

Parameter	Description
Dimensions	129.4 mm (Width) × 243.4 mm (Depth) × 19.8 mm (Height)
Weight	0.37 kg
Power consumption	≤ 10 W

2.4 4 GE subcard (GE4B)

2.4.1 Introduction

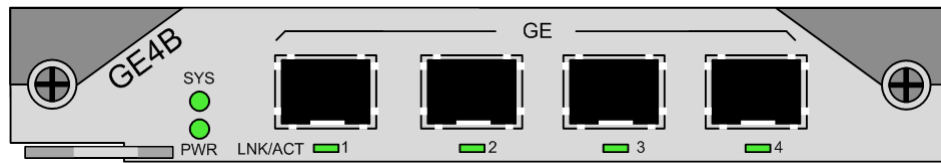
The GE4B subcard is the GE interface subcard of the ISCOM5508, providing 4 SFP-type GE interfaces and being compatible with 1000 Mbit/s Ethernet optical and electrical modules.

2.4.2 Panel and slots

The GE4B subcard can be inserted into slot 2 or slot 3.

Figure 2-9 shows the panel of the GE4B subcard.

Figure 2-9 Panel of the GE4B subcard



2.4.3 Interfaces

There are 4 interfaces on the GE4B subcard.

Table 2-12 lists interfaces on the GE4B subcard.

Table 2-12 Interfaces on the GE4B subcard

Interface	Type	Usage	Description
GE 1/2/3/4	SFP	1000 Mbit/s Ethernet service interface	Supported optical module type: 1000BASE-X Supported electrical module type: 1000BASE-T

Table 2-13 lists parameters of the SFP optical interface.

Table 2-13 Parameters of the 1000BASE-X SFP optical interface

Parameter	Description
Connector	LC/PC
Optical interface properties	Depend on the SFP optical module.
Working mode	Full duplex
Compliant standard	IEEE 802.3
Supported network protocol	IP

Note

- For details of the optical module, see chapter 4 Pluggable modules.
- When the GE4B card uses the 1000BASE-T electrical module, the interface rate should be configured to "forced 1000M" mode. For details, see *ISCOM5508 (B) Configuration Guide*.

2.4.4 LEDs

There are 6 LEDs on the GE4B subcard.

Table 2-14 lists LEDs on the GE4B subcard.

Table 2-14 LEDs on the GE4B subcard

LED	Status	Description
PWR	Green	Power LED <ul style="list-style-type: none"> • Green: the power supply is working properly. • Off: the power supply is working improperly.
SYS	Green	System working LED <ul style="list-style-type: none"> • Fast blinking green (4 Hz): the system is initializing. • Slow blinking green (0.5 Hz): the system is working properly. • Off: the system is working improperly or the card is inserted improperly.
LNK/ACT 1/2/3/4	Green	Ethernet interface working LED <ul style="list-style-type: none"> • Green: the Ethernet interface is connected properly. • Blinking green: the Ethernet interface is transmitting data. • Off: the Ethernet interface is disconnected or connected improperly.

2.4.5 Technical specifications

Table 2-15 lists technical specifications of the GE4B subcard.

Table 2-15 Technical specifications of the GE4B subcard

Parameter	Description
Dimensions	129.4 mm (Width) × 243.4 mm (Depth) × 19.8 mm (Height)
Weight	0.23 kg
Power consumption	≤ 4 W

2.5 AC power module (RPA1101-SI-220S12)

2.5.1 Introduction

The RPA1101-SI-220S12 (hereinafter referred to as RPA1101) module is the AC power module of the ISCOM5508. It supports the following features:

- Wide range of voltage input: 100–240 VAC
- Rated output voltage: 12 V; rated output current: 8.3 A
- Output overvoltage protection and output overcurrent protection
- Input surge current suppression and voltage suppression
- Power status LED
- Operating temperature: -10 to +70 °C

Warning

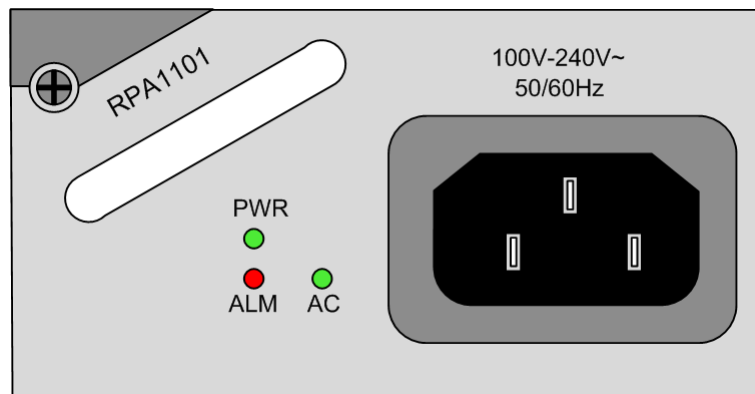
- Turn off the power switch or disconnect the power connection before installing or removing the power cable.
- Ensure that the label on the power cable is correct before connecting the power cable.
- Use the power cable compliant with required specifications.

2.5.2 Panel and slots

The RPA1101 power module can be inserted into slot 4 or slot 5.

Figure 2-10 shows the panel of the RPA1101 power module.

Figure 2-10 Panel of the RPA1101 power module



2.5.3 Interfaces

There is 1 interface on the RPA1101 power module.

Table 2-16 lists the interface on the RPA1101 power module.

Table 2-16 Interface on the RPA1101 power module

Interface	Usage
100V-240V-50/60Hz	AC power interface/receptacle socket

2.5.4 LEDs

There are 3 LEDs on the RPA1101 power module.

Table 2-17 lists LEDs on the RPA1101 power module.

Table 2-17 LEDs on the RPA1101 power module

LED	Status	Description
PWR	Green	Power LED <ul style="list-style-type: none"> • Green: the power supply is working properly. • Off: the power supply is working improperly.
AC	Green	Power input LED <ul style="list-style-type: none"> • Green: the input power is working properly. • Off: the device is powered off or powered on improperly.
ALM	Red	Alarm LED <ul style="list-style-type: none"> • Red: the device is powered on improperly. • Off: the device is powered off or powered on properly.

2.5.5 Technical specifications

Table 2-18 lists technical specifications of the RPA1101 power module.

Table 2-18 Technical specifications of the RPA1101 power module

Parameter		Description
Dimensions		65.6 mm (Width) × 240.6 mm (Depth) × 41.2 mm (Height)
Weight		0.61 kg
AC power	Rated voltage	110/220 VAC
	Frequency	50/60 Hz
	Voltage range	100–240 VAC
Output power		100 W
Lightning protection level (AC power)		<ul style="list-style-type: none"> • Differential mode: 1 kV • Common mode: 2 kV

2.6 DC power module (RPD1101-48S12)

2.6.1 Introduction

The RPD1101-48S12 (hereinafter referred to as the RPD1101) module is the DC power module of the ISCOM5508. It supports the following features:

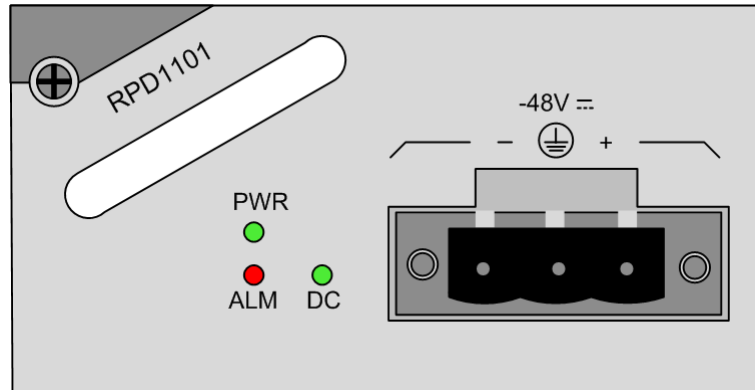
- Wide voltage input: -38 to -72 VDC
- Rated output voltage: 12 V; rated output current: 8.3 A
- Output overvoltage and overcurrent protection and reverse connection protection
- Power status LED
- Operating temperature: -10 to +70 °C

2.6.2 Panel and slots

The RPD1101 power module can be inserted into slot 4 or slot 5.

Figure 2-11 shows the panel of the RPD1101 power module.

Figure 2-11 Panel of the RPD1101 power module



2.6.3 Interfaces

There is 1 interface on the RPD1101 power module.

Table 2-19 lists the interface on the RPD1101 power module.

Table 2-19 Interface on the RPD1101 power module

Interface	Usage
+	BGND power input
-	-48 V power input
⊥	Grounding

2.6.4 LEDs

There are 3 LEDs on the RPD1101 power module.

Table 2-20 lists LEDs on the RPD1101 power module.

Table 2-20 LEDs on the RPD1101 power module

LED	Status	Description
PWR	Green	Power LED <ul style="list-style-type: none"> • Green: the power supply is working properly. • Off: the power supply is working improperly.
DC	Green	Power input LED <ul style="list-style-type: none"> • Green: the input power is working properly. • Off: the device is powered off or powered on improperly.

LED	Status	Description
ALM	Red	Alarm LED <ul style="list-style-type: none"> • Red: the device is powered on improperly. • Off: the device is powered off or powered on properly.

2.6.5 Technical specifications

Table 2-21 lists technical specifications of the RPD1101 power module.

Table 2-21 Technical specifications of the RPD1101 power module

Parameter		Description
Dimensions		65.6 mm (Width) × 240.6 mm (Depth) × 41.2 mm (Height)
Weight		0.49 kg
DC power	Rated voltage	-48 VDC
	Voltage range	-38 to -72 VDC
Output power		100 W

2.7 Fan module (FANS306)

2.7.1 Introduction

The FANS306 module is the fan module of the ISCOM5508. It supports the following features:

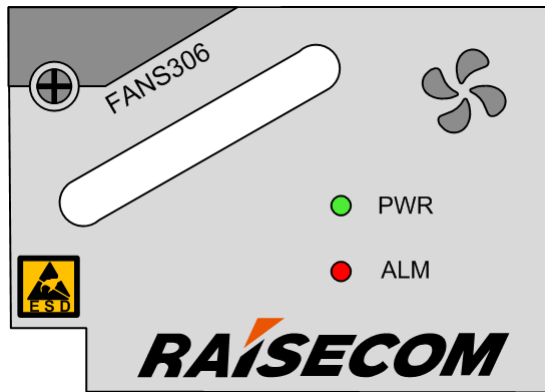
- Support fan monitoring. The system monitors the working status of the fan and an alarm is generated when the fan fails.
- Support adjusting the rotational speed of the fan manually or automatically.
- Support hot swapping.

2.7.2 Panel and slots

The FANS306 module can be inserted into slot 6 of the ISCOM5508.

Figure 2-12 shows the panel of the FANS306 module.

Figure 2-12 Panel of the FANS306 module



2.7.3 LEDs

There are 2 LEDs on the FANS306 module.

Table 2-22 lists LEDs on the FANS306 module.

Table 2-22 LEDs on the FANS306 module

LED	Status	Description
PWR	Green	Power LED <ul style="list-style-type: none"> • Green: the power supply is working properly. • Off: the power supply is working improperly.
ALM	Red	Alarm LED <ul style="list-style-type: none"> • Red: the module is working improperly and an alarm is generated. • Off: the module is working properly.

2.7.4 Technical specifications

Table 2-23 lists technical specifications of the FANS306 module.

Table 2-23 Technical specifications of the FANS306 module

Parameter	Description
Dimensions	41.9 mm (Width) × 230.1 mm (Depth) × 41.1 mm (Height)
Weight	0.3 kg
Power consumption	3 W

3 Fiber and cables

This chapter describes fiber and cables of the ISCOM5508, including the following sections:

- Fiber
- Ethernet cable
- Console cable
- DC power cable
- AC power cable
- Ground cable

3.1 Fiber

3.1.1 Introduction

The ISCOM5508 supports the Single-Mode Fiber (SMF) and Multi-Mode Fiber (MMF). These two kinds of fiber are same in appearance while different in color. The yellow one is a SMF and the orange one is a MMF.

The ISCOM5508 can be connected to the Optical Distribution Frame (ODF) or optical interfaces of other devices through fiber.

Table 3-1 lists the type and usage of the fiber.

Table 3-1 Type and usage of the fiber

Usage	Local connector	Remote connector	Type	Standard
• Connect the ISCOM5508 to the ODF through the Ethernet optical interface.	LC/PC	LC/PC	2 mm SMF	ITU-T G.652
			2 mm MMF	
• Connect the Ethernet optical interface on the ISCOM5508 to optical interfaces on other devices.	LC/PC	FC/PC	2 mm SMF	
			2 mm MMF	
	LC/PC	SC/PC	2 mm SMF	
			2 mm MMF	

Usage	Local connector	Remote connector	Type	Standard
Connect the ISCOM5508 to the ODF through the PON interface.	SC/PC	LC/PC	2 mm SMF	
	SC/PC	FC/PC	2 mm SMF	
	SC/PC	SC/PC	2 mm SMF	

 **Note**

- Choose the connector type and jumper cable length reasonably based on the on-site requirements.
- The supported connector of the optical interface depends on the optical module.
- Choose a connector suitable for the optical interface. Otherwise, it may increase additional loss of fiber links, reduce transmission quality of services, or even damage the connector and optical interface.

3.1.2 Connector

Fiber connectors are different in shape, ferrule end-face, and pigtail sheath color, as shown in Table 3-2.

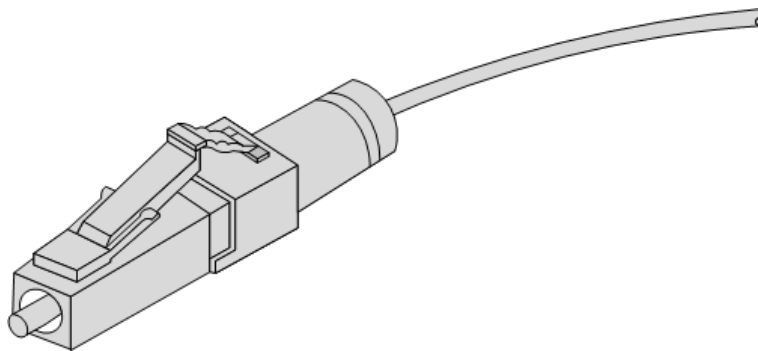
Table 3-2 Fiber connectors

Connector	Description	Pigtail sheath color
LC/PC	Clamping square fiber connector/micro-convex grinding-and-polishing ferrule end-face	Blue
SC/PC	Square fiber connector/ micro-convex grinding-and-polishing ferrule end-face	Blue

LC/PC fiber connector

Figure 3-1 shows the appearance of the LC/PC fiber connector.

Figure 3-1 LC/PC fiber connector



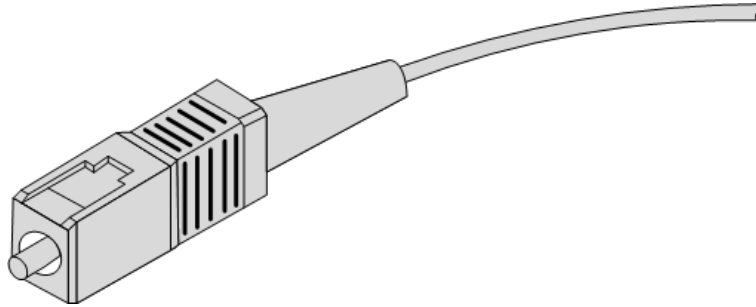
When connecting or removing the LC/PC fiber connector, align the connector with the optical interface, and do not rotate the fiber. Do as below:

- To connect the fiber, align the head of the fiber with the optical interface and insert the fiber into the interface gently.
- To remove the fiber, press down the clamping connector, and push the fiber head inwards, and then pull the fiber out.

SC/PC fiber connector

Figure 3-2 shows the appearance of the SC/PC fiber connector.

Figure 3-2 SC/PC fiber connector



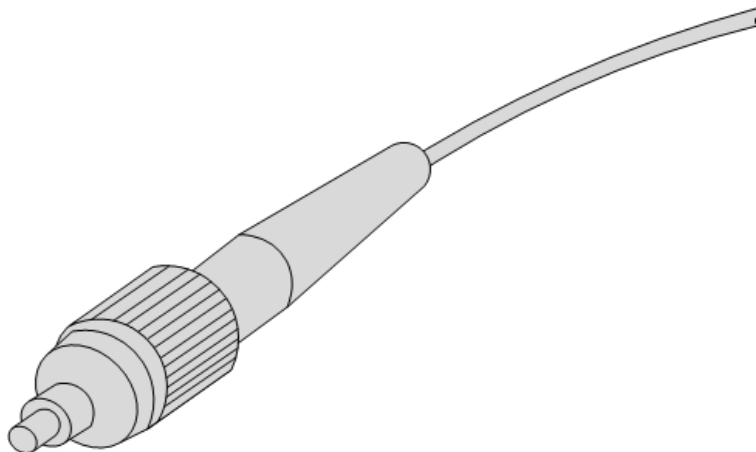
When connecting or removing the SC/PC fiber connector, align the connector with the optical interface, and do not rotate the fiber. Do as below:

- To connect the fiber, align the head of the fiber with the optical interface and insert the fiber into the interface gently.
- To remove the fiber, push the fiber head inwards, and then pull the fiber out.

FC/PC fiber connector

Figure 3-3 shows the appearance of the FC/PC fiber connector.

Figure 3-3 FC/PC fiber connector



When connecting or removing the FC/PC fiber connector, align the connector with the optical interface, and do not rotate the fiber. Do as below:

- To connect the fiber, align the fiber head with the optical interface. Be careful not to damage the ceramic tube inside the optical interface. After inserting the fiber to the bottom, rotate the screw sleeve clockwise to fasten the optical interface.

- To remove the fiber, rotate the screw sleeve counterclockwise. When the screw sleeve is loosened, pull the fiber out.

3.1.3 Wiring

Table 3-3 lists wiring of the fiber.

Table 3-3 Wiring of the fiber

Wiring	Local optical interface	Direction of optical signals	Peer optical interface
Single-fiber connection	Optical interface	<->	Optical interface
Dual-fiber connection	Optical interface Tx	->	Optical interface Rx
	Optical interface Rx	<-	Optical interface Tx

3.2 Ethernet cable

3.2.1 Introduction

The Ethernet cable of the ISCOM5508 can be used to:

- Connect the Ethernet electrical interface of the ISCOM5508 to other devices.
- Connect the SNMP interface of the ISCOM5508 to the NView NMS system.

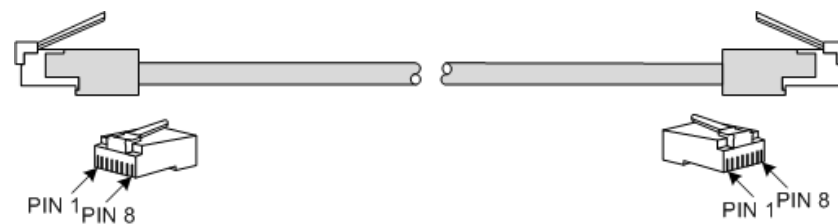
The Ethernet interface on the ISCOM5508 is adaptive to straight-through cable mode and crossover cable mode. So both kinds of Ethernet cables can be used.

The Ethernet cable needs to be made on site.

3.2.2 Appearance

Figure 3-4 shows the appearance of the Ethernet cable.

Figure 3-4 Ethernet cable



3.2.3 Technical specifications

The Ethernet cable can be divided into two types:

- Straight-through cable: both two RJ45 connectors of the straight-through cable follow EIA/TIA568B wiring.
- Crossover cable: one RJ45 connector of the crossover cable follows EIA/TIA 568A wiring; the other RJ45 connector follows EIA/TIA 568B wiring.

Straight-through cable

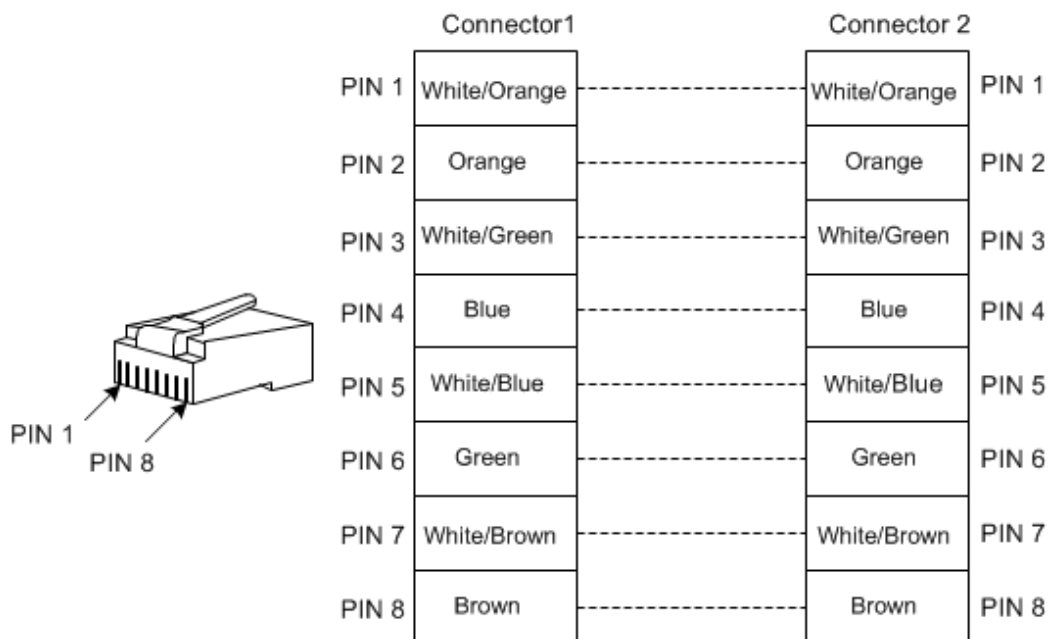
Table 3-4 lists wiring of the straight-through cable.

Table 3-4 Wiring of the straight-through cable

Connector 1 (RJ45)	EIA/TIA568B	Connector 2 (RJ45)	EIA/TIA568B
PIN 1	White/Orange	PIN 1	White/Orange
PIN 2	Orange	PIN 2	Orange
PIN 3	White/Green	PIN 3	White/Green
PIN 4	Blue	PIN 4	Blue
PIN 5	White/Blue	PIN 5	White/Blue
PIN 6	Green	PIN 6	Green
PIN 7	White/Brown	PIN 7	White/Brown
PIN 8	Brown	PIN 8	Brown

Figure 3-5 shows wiring of the straight-through cable.

Figure 3-5 Wiring of the straight-through cable wiring



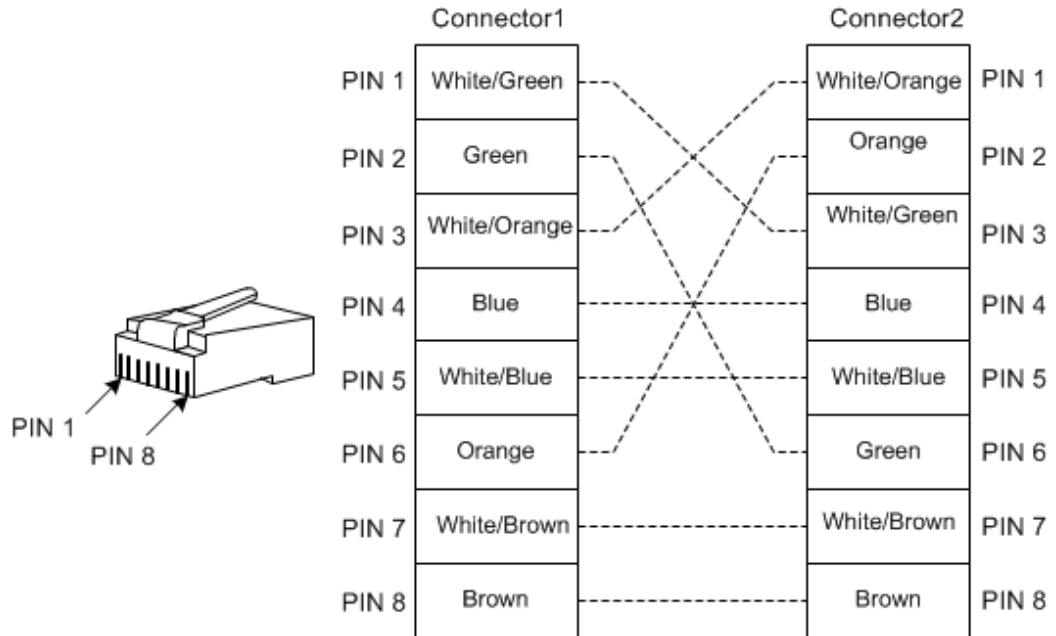
Crossover cable

Wiring of the 100 Mbit/s crossover cable is different from that of the 1000 Mbit/s crossover cable.

One RJ45 connector of the 100 Mbit/s crossover cable follows EIA/TIA568A wiring; the other RJ45 connector follows EIA/TIA568B wiring.

Figure 3-6 shows wiring of the 100 Mbit/s crossover cable.

Figure 3-6 Wiring of the 100 Mbit/s crossover cable



The 1000 Mbit/s crossover cable uses all 8 wires of the twisted-pair cable. The crossover is PIN 1 to PIN 3, PIN 2 to PIN 6, PIN 4 to PIN 7, and PIN 5 to PIN 8.

Figure 3-7 shows wiring of the 1000 Mbit/s crossover cable.

Figure 3-7 Wiring of the 1000 Mbit/s crossover cable

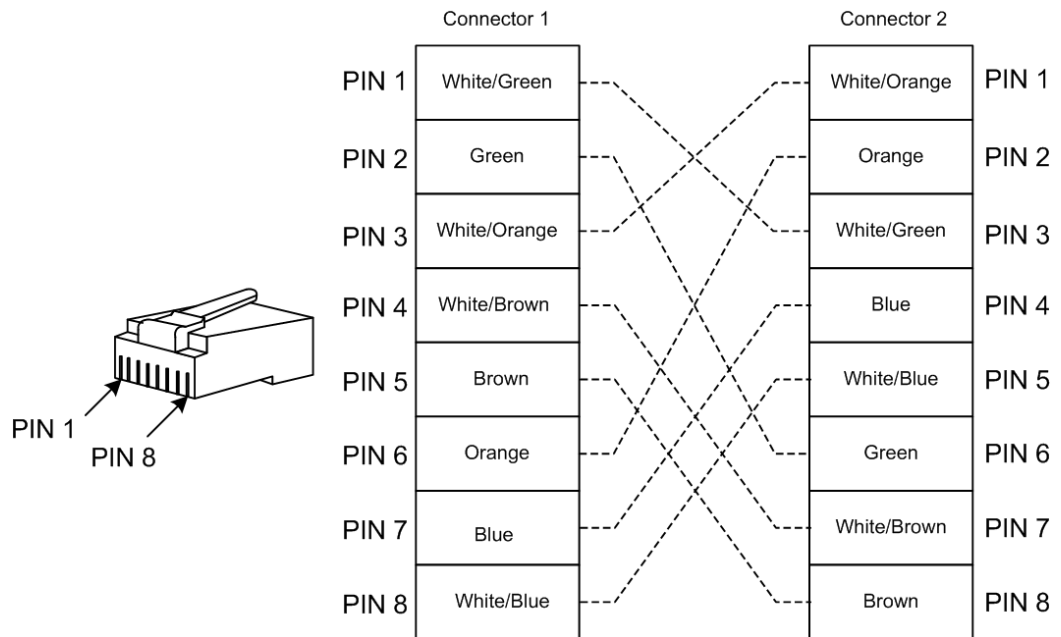


Table 3-5 lists technical specifications of the Ethernet cable.

Table 3-5 Technical specifications of the Ethernet cable

Parameter	Description
Name	CBL-ETH-RJ45/RJ45-D
Color	Dark grey
Cable type	Cat 3 or Cat 5 UTP cable, or STP cable
Connector type	RJ45 connector
Number of cores	8
Length	The letter D indicates the length, which can be customized. For example, if the customer requires 2-meter cables, they are named CBL-ETH-RJ45/RJ45-2m/RoHS.

3.3 Console cable

The configuration cable is used to connect the Console interface of the ISCOM5508 and the RS-232 serial interface of the maintenance console, and transmit configuration data signals. The maintenance console troubleshoots and maintains the ISCOM5508 through the Console interface.

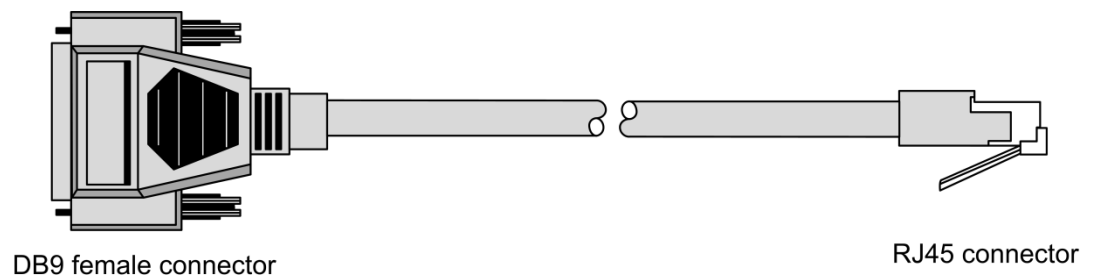
The configuration cable is a 4-core UTP cable. Connectors at the two ends are:

- RJ45 connector: connect the Console interface of the ISCOM5508.
- DB9 female connector: connect the RS-232 serial interface of the maintenance console.

3.3.1 Appearance

Figure 3-8 shows the appearance of the configuration cable.

Figure 3-8 Configuration cable



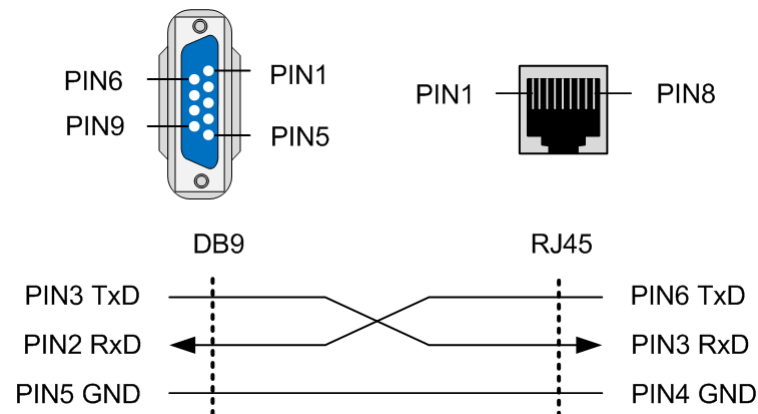
DB9 female connector

RJ45 connector

3.3.2 Wiring

Figure 3-9 shows the PINs and wiring of the RS-232 serial interface and RJ45 Ethernet interface.

Figure 3-9 PINs and wiring



3.3.3 Technical specifications

PIN definition

Table 3-6 lists PIN definitions of the Console interface and RJ45 interface

Table 3-6 PIN definitions of the Console interface and RJ45 interface

PIN No.	PIN function	
	Device (RJ45)	Maintenance console (DB9)
PIN 1	NC	DCD
PIN 2	NC	RxD
PIN 3	RxD	TxD
PIN 4	GND	DTR

PIN No.	PIN function	
	Device (RJ45)	Maintenance console (DB9)
PIN 5	GND	GND
PIN 6	TxD	DSR
PIN 7	NC	RTS
PIN 8	NC	CTS
PIN 9	–	RI

Cable specifications

Table 3-7 lists technical specifications of the Console cable.

Table 3-7 Technical specifications of the Console cable

Parameter	Description
Name	CBL-RS232-DB9F/RJ45-2m/RoHS
Color	White
Cable type	Cat 3 UTP
Connector type	DB9 female connector and RJ45 connector
Number of cores	4
Length	2 m

3.4 DC power cable

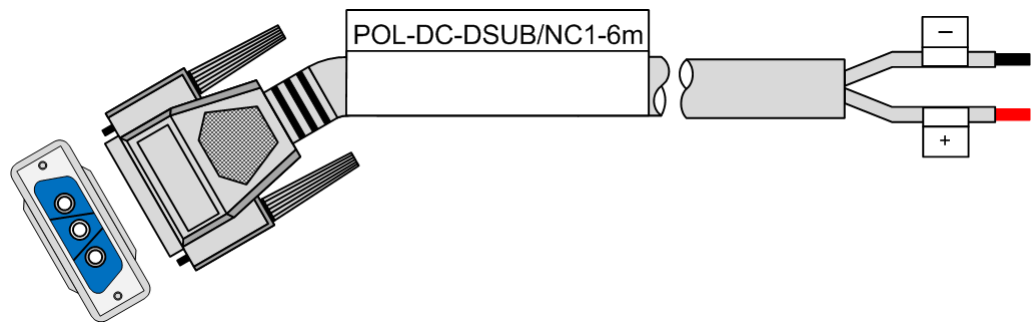
3.4.1 Introduction

The DC power cable supplies -48 VDC power from the power sourcing equipment to the power interface on the RPD1101 module of the ISCOM5508, and then transmits power to the entire device.

3.4.2 Appearance

The DC power cable is composed of the DC power connector and coaxial cable, as shown in Figure 3-10.

Figure 3-10 DC power cable



3.4.3 Technical specifications

Table 3-8 lists technical specifications of the DC power cable.

Table 3-8 Technical specifications of the DC power cable

Parameter	Description
Name	POL-DC-DSUB/NC1-6m
Color	<ul style="list-style-type: none"> • Black (-48 V power cable -) • Red (-48 V ground cable +)
Connector	D connector and bare wire
Cross-sectional area of inner conductor	8.37 mm ²
Wire gauge of inner conductor	8 AWG
DC resistance of inner conductor	2.11 Ω/km
Maximum current	37.7 A
Cable length	6 m
Working temperature	0–40 °C

3.5 AC power cable

3.5.1 Introduction

The AC power cable supplies 110/220 VAC power from the power sourcing equipment to the power interface on the RPA1101 module of the ISCOM5508, and then transmits power to the entire device.

Types of the AC power cable of the ISCOM5508 depend on different regional standards, as shown in Table 3-9.

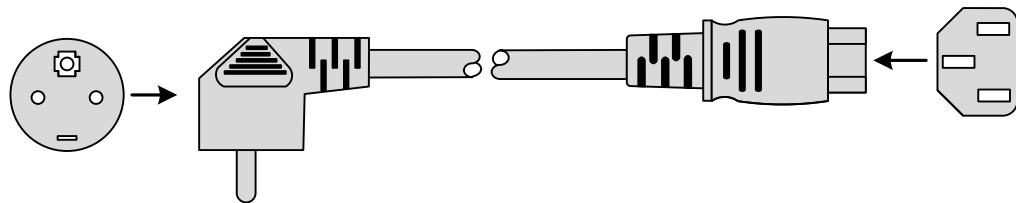
Table 3-9 AC power cable of the ISCOM5508

Regional standard	Name
European standard	POL-AC-European 3-pin/C13 connector-0.75mm ² -D/RoHS
American standard	POL-AC-American 3-pin/C13 connector-18AWG-D/RoHS

3.5.2 Appearance

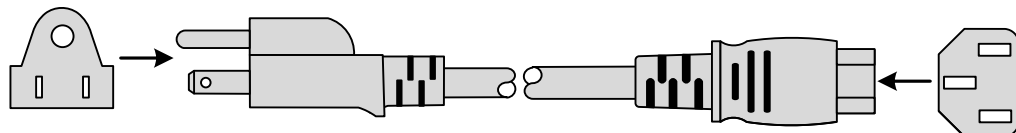
The AC power cable which meets European standard is composed of a European French mode 3-pin plug and a receptacle, as shown in Figure 3-11.

Figure 3-11 European standard AC power cable



The AC power cable which meets American standard is composed of an American 3-pin plug and a receptacle, as shown in Figure 3-12.

Figure 3-12 American standard AC power cable



3.5.3 Technical specifications

Table 3-10 lists technical specifications of the European AC power cable.

Table 3-10 Technical specifications of the European AC power cable

Parameter		Description
Name		POL-AC-European 3-pin/C13 connector-0.75 mm ² -D/RoHS
Connector 1		European 3-pin plug
Connector 2		IEC60320-C13 connector
Cable color	Outer	Black (PVC insulating layer)
	Inner	Blue (N), brown (L), and yellow/green strip (E)
Conductor gauge		3×0.75 mm ²

Parameter	Description
Length	The letter D indicates the length, which can be customized. For example, if the customer requires 1.5-meter cables, they are named POL-AC-European 3-pin/receptacle-0.75 mm ² -1.5 m/RoHS.

Table 3-11 lists technical specifications of the American AC power cable.

Table 3-11 Technical specifications of the American AC power cable

Parameter	Description	
Name	POL-AC-American 3-pin/C13 connector-18AWG-D/RoHS	
Connector 1	NMEA5-15 American 3-pin plug	
Connector 2	IEC60320-C13 connector	
Cable color	Outer	Black (PVC insulating layer)
	Inner	White (N), black (L), and yellow strip (E)
Conductor gauge	18 AWG/3C	
Length	The letter D indicates the length, which can be customized. For example, if the customer requires 1.5-meter cables, they are named POL-AC-American 3-pin/receptacle-18AWG-1.5m/RoHS.	

3.6 Ground cable



Connecting the ground cable properly is an important guarantee to lightning protection, anti-electric shock, and anti-interference. The ISCOM5508 must be connected to the ground cable correctly during installation, which helps avoid personal injury and equipment damage.

3.6.1 Introduction

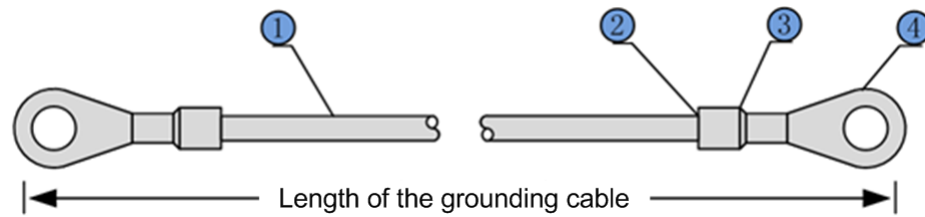
The ground cable is used to ground the ISCOM5508.

3.6.2 Appearance

The ground cable is composed of the ground terminal and conductive wire. In general, ground terminals are OT bare-pressure terminals; and the conductive wire is a yellow/green copper soft flame-retardant conducting wire.

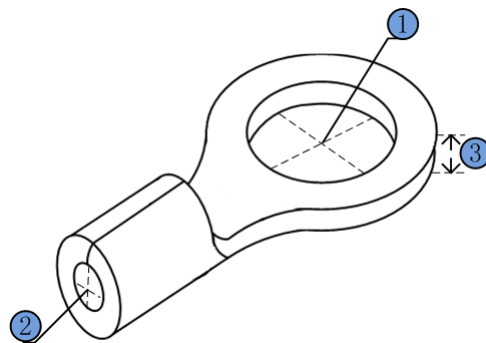
Figure 3-13 and Figure 3-14 show the ground cable and OT terminal respectively.

Figure 3-13 Ground cable



1	Conducting wire	2	Stripped end (connected to the OT terminal)
3	Insulating sheath	4	OT terminal

Figure 3-14 OT terminal



1	Inner diameter of soldering lug	2	Inner diameter of sheath	3	Thickness of soldering lug
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3.6.3 Technical specifications

Table 3-12 lists technical specifications of the ground cable.

Table 3-12 Technical specifications of the ground cable

Parameter	Description
Model	PIL-ground cable-Φ4-D/RoHS
Standard	Comply with the UL standard and meet RoHS requirements.
Conducting wire	Yellow/Green multi-strand copper-core conducting wire 16 AWG (1.25 mm ²) Electronic wire UL1007 or UL1005 is used.
Stripped end	10 mm long and plated with tin
Insulating sheath	3.5/1.75 black heat-shrink tubing, which is a 20 mm plastic tube and shrinks when heated

Parameter	Description
Welding technology	The conducting wire and OT terminals adopt solderless pressed connection.
Error in length of conducting wire	±5 mm

 **Note**

The letter D in the model indicates the length, which can be customized. For example, if the customer requires 2-meter cables, they are named PIL-ground cable-Φ4-2m/RoHS.

Table 3-13 lists technical specifications of the OT terminal.

Table 3-13 Technical specifications of the OT terminal

Parameter	Description
Model	Protective grounding round pressed terminal (M4)
Standard	JB2436-78
Specifications	<ul style="list-style-type: none"> • 4.3 soldering lug • Inner diameter of soldering lug: 4 mm • Outer diameter of soldering lug: ≤ 8 mm • Inner diameter of sheath: 2.1 mm • Thickness of soldering lug: ≥ 0.6 mm
Cross-sectional area of conducting wire	16–15 AWG (1.2–1.5 mm ²)

 **Note**

- The ISCOM5508 is delivered without the ground cable. If required, prepare or make ground cables on site.
- The ground cable cannot be longer than 30 m and should be as short as possible; otherwise, a grounding bar should be used.

4 Pluggable modules

This chapter describes pluggable modules of the ISCOM5508, including the following sections:

- 1000 Mbit/s SFP optical module
- 1000 Mbit/s SFP electrical module
- PON SFP optical module

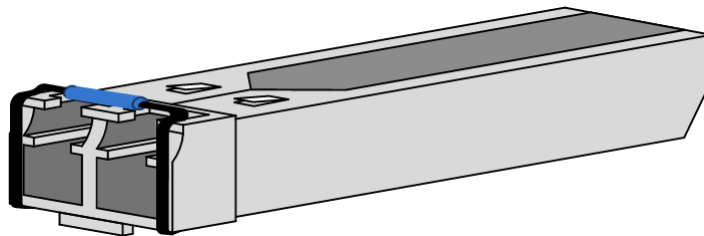
4.1 1000 Mbit/s SFP optical module

4.1.1 Functions and appearance

The 1000 Mbit/s Small Form-factor Pluggables (SFP) optical module is applicable to the 1000 Mbit/s telecommunication network. It is integrated with sending and receiving features.

Figure 4-1 shows the appearance of the 1000 Mbit/s SFP optical module.

Figure 4-1 1000 Mbit/s SFP optical module



4.1.2 Label

There is a label on the bottom of the SFP optical module, which describes the model of the SFP optical module, as shown in Figure 4-2.

Figure 4-2 Label of the 1000 Mbit/s SFP optical module



Table 4-1 describes the model of the 1000 Mbit/s SFP optical module.

Table 4-1 Model of the 1000 Mbit/s SFP optical module

Field	Description
USFP	Internal identifier, indicating it is a universal SFP
Gb	Transmission rate: 1.25 Gbit/s
S1	Transmission distance: • M: 0.55 km • S1: 15 km • S2: 40 km • S3:80 km
D	Support DDM.
01	Internal identifier, different values of which indicate the same function
R	Comply with RoHS.
1310nm	Tx wavelength: 1310 nm
SM	Single-mode fiber
DDM	Support link detection.
21CFR (J)	Comply with U.S. DHHS 21CFR (J).
Class1	Comply with class 1 laser safety.

4.1.3 Technical specifications

Table 4-2 lists technical specifications of the 1000BASE-X SFP optical module.

Table 4-2 Technical specifications of the 1000BASE-X SFP optical module

Model	Tx wavelength (nm) Interface type	Mode	Tx optical power (dBm)	Min. overload point (dBm)	Extinction ratio (dB)	Rx sensitivity (dBm)	Transmission distance (km)
USFP-Gb/M-D-R	850 (LC/PC)	Dual-fiber multi-mode	-9.5 to -3	0	9	-17	0.55
USFP-Gb/S1-D-R	1310 (LC/PC)	Dual-fiber single-mode	-10 to -3	-3	9	-21	15

Model	Tx wavelength (nm) Interface type	Mode	Tx optical power (dBm)	Min. overload point (dBm)	Extinction ratio (dB)	Rx sensitivity (dBm)	Transmission distance (km)
USFP-Gb/S2-D-R	1550 (LC/PC)	Dual-fiber single-mode	-3 to 2	-3	9	-21	40
USFP-Gb/S3-D-R	1550 (LC/PC)	Dual-fiber single-mode	-3 to 2	-9	9	-30	80

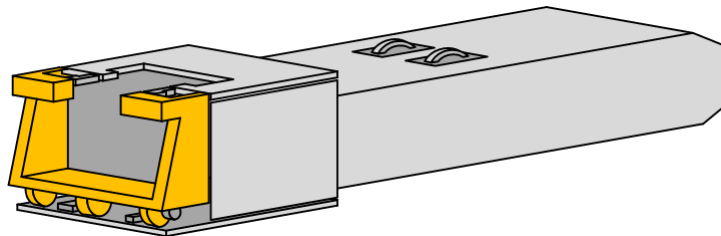
4.2 1000 Mbit/s SFP electrical module

4.2.1 Functions and appearance

The 1000 Mbit/s SFP electrical module is applicable to the 1000 Mbit/s telecommunication network. It is integrated with sending and receiving features.

Figure 4-3 shows the appearance of the 1000 Mbit/s SFP electrical module.

Figure 4-3 1000 Mbit/s SFP electrical module



4.2.2 Technical specifications

Table 4-3 lists technical specifications of the 1000BASE-T SFP electrical module.

Table 4-3 Technical specifications of the 1000BASE-T SFP electrical module

Model	Rate	Transmission distance	Description
USFP-GE-R	1.25 Gbit/s	100 m	<ul style="list-style-type: none"> • 1000BASE-T • Auto-negotiation is disabled. • SerDes interface

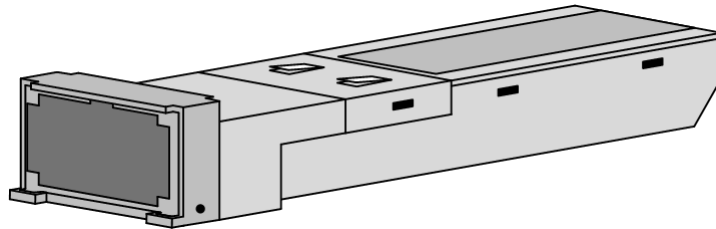
4.3 PON SFP optical module

4.3.1 Functions and appearance

The PON SFP optical module can be applied to the PON system.

Figure 4-4 shows the appearance of the PON SFP optical module.

Figure 4-4 PON SFP optical module



4.3.2 Label

The EPON interface on the ISCOM5508 supports the optical module compliant with the 100BASE-PX20-D standard.

There is a label on the bottom of the SFP optical module, which describes the model of the SFP optical module, as shown in Figure 4-5.

Figure 4-5 Label of the PON SFP optical module



Table 4-4 describes the model of the PON SFP optical module.

Table 4-4 Model of the PON SFP optical module

Field	Description
GSFP	Internal identifier, indicating it is a PON SFP module
PX20	Comply with PX20+ specification.
D	Downstream direction, indicating it is an OLT optical module
M	Support link monitoring.
03	Internal identifier, different values of which indicate the same function
R	Comply with RoHS.
EPON-OLT-PX20+	Comply with PX20+ specification and be applied to OLT optical module
21CFR (J)	Comply with U.S. DHHS 21CFR (J).

Field	Description
Class1	Comply with class 1 laser safety.

4.3.3 Technical specifications

Table 4-5 lists technical specifications of the CLASS B+ optical module.

Table 4-5 Technical specifications of the CLASS B+ optical module

Parameter	Description
Model	GSFP-PX20DM-R
Transmission rate	<ul style="list-style-type: none"> • Tx: 1.25 Gbit/s • Rx: 1.25 Gbit/s
Interface type	SC/PC
Max. transmission distance	20 km
Fiber mode	Single-mode fiber
Central wavelength (Laser type)	<ul style="list-style-type: none"> • Tx: 1490 nm (DFB) • Rx: 1310 nm (APD/TIA)
Tx optical power	2–7 dBm
Extinction ratio	9 dB
Rx sensitivity	-30 dBm
Minimum overload point	-6 dBm
RSSI link monitoring	Supported

5 Lookup table of LEDs

Table 5-1 lists LEDs of the ISCOM5508.

Table 5-1 LEDs of the ISCOM5508

LED	Status	Description
PWR	Green	Power LED <ul style="list-style-type: none"> • Green: the power supply is working properly. • Off: the power supply is working improperly.
SYS	Green	System working LED <ul style="list-style-type: none"> • Blinking green: the system is working properly. • Off: the system is working improperly or the card is inserted improperly.
LNK/ACT 1/2/3/4 (SFP optical interface)	Green	Line working LED <ul style="list-style-type: none"> • Green: the interface is connected properly. • Blinking green: the interface is transmitting data. • Off: the interface is disconnected or connected improperly.
LNK/ACT 1/2 (RJ45 electrical interface integrated LED)	Green	Line working LED <ul style="list-style-type: none"> • Green: the interface is connected properly. • Blinking green: the interface is transmitting data. • Off: the interface is disconnected or connected improperly.
1000M (RJ45 electrical interface integrated LED)	Yellow	Electrical interface working rate LED <ul style="list-style-type: none"> • Yellow: the electrical interface is working at 1000 Mbit/s. • Off: the electrical interface is working at 100 Mbit/s or the interface fails.
LNK 1/2/3/4	Green	PON interface working LED <ul style="list-style-type: none"> • Green: the PON interface is connected properly and there is a registered ONU working on the interface or there is a laser-always-on ONU. • Off: the PON interface is disconnected or there is no registered ONU working on the interface.

LED	Status	Description
ALM	Red	Alarm LED <ul style="list-style-type: none">• Red: the device is working improperly and an alarm is generated.• Off: the device is working properly.
AC	Green	AC power working LED <ul style="list-style-type: none">• Green: the power module is working properly.• Off: the power module is working improperly.
DC	Green	DC power working LED <ul style="list-style-type: none">• Green: the power module is working properly.• Off: the power module is working improperly.

6 Lookup table of weight and power consumption

Table 6-1 lists weight and power consumption of the ISCOM5508.

Table 6-1 Weight and power consumption of the ISCOM5508

Component		Parameter
Standard configuration	Weight	5.51 kg
	Power consumption	40 W
Full configuration	Weight	6.24 kg
	Power consumption	63 W
EPSC	Weight	0.89 kg
	Power consumption	≤ 32 W
EP4B	Weight	0.37 kg
	Power consumption	≤ 10 W
GE4B	Weight	0.23 kg
	Power consumption	≤ 4 W
RPA1101	Weight	0.61 kg
	Output power consumption	100 W
RPD1101	Weight	0.49 kg
	Output power consumption	100 W
FANS306	Weight	0.3 kg
	Power consumption	≤ 3 W



Note

- Standard configuration: chassis, MCC (EPSC), 2 power modules, and 1 fan module.
- Full configuration: chassis, MCC (EPSC), 2 extended subcards, 2 power modules, and 1 fan module.

7 Appendix

This chapter lists terms, acronyms, and abbreviations involved in this document.

- Terms
- Acronyms and abbreviations

7.1 Terms

1U	Unit of dimension, short for unit. It takes 44.45 mm as basic unit, namely, 1 U = 44.45 mm
A	
Auto-negotiation	The Ethernet interface chooses the rate and duplex mode according to the result of negotiation.
B	
Bracket	Small parts at the side of chassis, being used to install the chassis into the cabinet
E	
ETSI 600 cabinet	Cabinet with width of 600 mm, depth of 600 mm, compliant with the ETSI standard
F	
Full duplex	In a communication link, both parties can receive and send data concurrently.
G	

Ground cable	Cable to connect device to ground, usually a yellow/green coaxial cable
I	
IEEE	A professional society serving electrical engineers through its publications, conferences, and standards development activities. The body responsible for the Ethernet 802.3 and wireless LAN 802.11 specifications.
ITU-T	International Telecommunication Union Telecommunication Standardization Sector
L	
Label	Signs for cable, chassis, and warnings
Laser security level	4 security levels for laser products in usual. Level 1 indicates the safest laser, power of which is usually limited at 1mW. It will neither cause fire nor generate harmful radiation under normal conditions.
M	
Multi-mode fiber	In this fiber, multi-mode optical signals are transmitted.
P	
PWE3	Pseudo-Wire Emulation Edge to Edge
R	
RS232	In synchronization transfer mode, no handshaking signals, able to communicate with RS232 or RS422 devices point to point, in transparent transmission, with a maximum rate of 19.2 Kbit/s
S	
Single-mode fiber	In this fiber, single-mode optical signals are transmitted.

7.2 Acronyms and abbreviations

A	
AWG	American Wire Gauge

ACL	Access Control List
B	
BPDU	Bridge Protocol Data Unit
C	
CFM	Connectivity Fault Management
E	
ESD	Electro Static Discharge
ETSI	European Telecommunications Standards Institute
L	
LLDP	Link Layer Discovery Protocol
M	
MPLS	Multi-protocol label switching
O	
ODF	Optical Distribution Frame
OAM	Operation Administration and Maintenance
P	
PTN	Packet Transport Network
PTP	Precision Time Protocol
Q	
QoS	Quality of Service
R	
RH	Relative Humidity
S	

SLA Service-Level Agreement

U

UPS Uninterruptible Power Supply

