

**GPX147-iODF3101-iReady
V100R005C20
Product Description**

Issue **02**
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About This Document






Related Versions

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

Product Name	Version
GPX147-iODF3101	V100R005C20
iField	V100R005C20
U2000 ODN network management system	V100R005C00

Symbol Conventions

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

Symbol	Description
 DANGER	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
 WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
 CAUTION	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
 NOTICE	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results. NOTICE is used to address practices not related to personal injury.
 NOTE	Calls attention to important information, best practices and tips. NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration.

Change History

Updates between document issues are cumulative. Therefore, the latest document issue contains all updates made in previous issues.

Updates in Issue 02 (2017-10-18) Based on Product Version V100R005C20

This issue is the second official release. Compared with the first release, the description of iFR305G-CH (2200 mm x 600 mm x 300 mm) and the content related to LC/APC adapter are deleted.

Updates in Issue 01 (2015-06-15) Based on Product Version V100R005C20

This issue is the first official release of V100R005C20. Compared with the second release of V100R005C00, the manual of this issue provides the following updates.

Involved Contents	Description
4 Technical specifications	Added the quantity specifications of common optical cables.

Updates in Issue 02 (2014-05-30) Based on Product Version V100R005C00

This issue is the second official release. Compared with the first release, some bugs are fixed.

Updates in Issue 01 (2014-03-15) Based on Product Version V100R005C00

This issue is the first official release. Compared with the version of V100R002C01 (iODNCP), the manual of this issue provides the following updates.

Involved Contents	Description
<ul style="list-style-type: none">Cabinet and RackInternal StructureTypical Configuration and RoutingTechnical Specifications	Added one 300-mm-wide splicing and termination cabinet.

Updates in Issue 01 (2014-02-27) Based on Product Version V100R002C01 (iODNCP)

This issue is the first official release. Compared with the version of V100R003C00, the manual of this issue provides the following updates.

Involved Contents	Description
The whole manual	<ul style="list-style-type: none">Added descriptions of LC/APC adapters to the document.Optimized some chapters, and corrected some incorrect information.

Updates in Issue 01 (2013-05-21) Based on Product Version V100R003C00

This issue is the first official release.

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1 Product Overview

About This Chapter

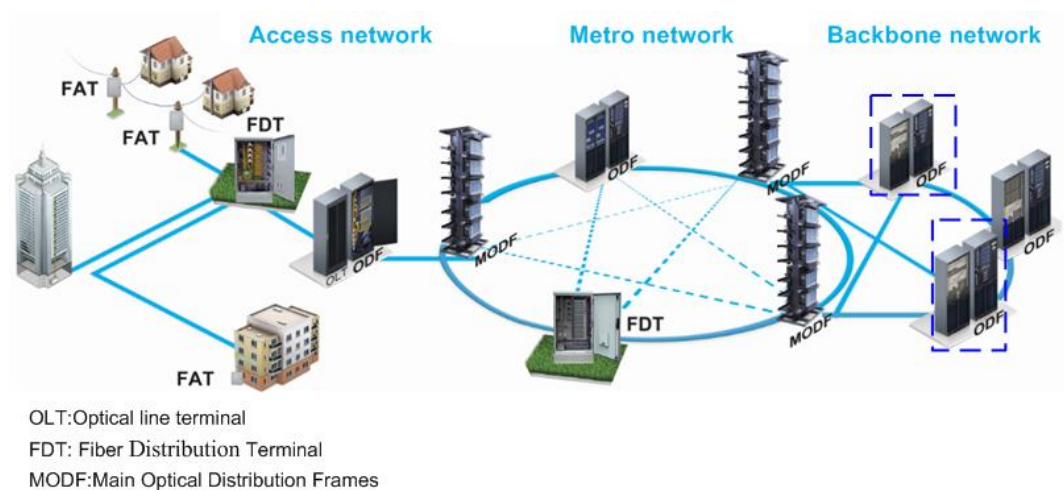
- 1.1 Positioning
- 1.2 Product Features

1.1 Positioning

The GPX147-iODF3101 (iODF for short) is a node device in the iODN solution. It is deployed in the equipment room of a backbone, metro, or optical access network. Multiple intelligent main optical distribution frames (iODFs) can be combined for unified management (including unified termination, connection, scheduling, monitoring, and link testing) of equipment optical cables and external optical cables. In this manner, massive optical fibers in an equipment room can be easily managed and maintained, and more optical fibers can be deployed.

Figure 1-1 shows the location of the iODF on an iODN.

Figure 1-1 Location of the iODF on a iODN



1.2 Product Features

Fine-grained Fiber Management

- Separates fiber routes to avoid fiber crossing.

Rich Application

- Supports the combination of multiple iODFs so that massive fiber patch cords can be deployed and managed together.
- Supports various optical cables, including bundle, air-blown, and flat drop optical cables.

Efficient OAM

- The device supports smooth in-service upgrade to intelligent devices.
- Adapters can be replaced independently.

Environment-Friendly Design

- Complies with restriction of the use of certain hazardous substances (RoHS) specifications.

2 Hardware Structure

About This Chapter

2.1 Cabinet and Rack

The GPX147-iODF3101 supports cabinets and racks in various sizes. The cabinets and racks comply with IEC297 and support functional units that are suitable for 19-inch cabinet- or rack-mounted installation. They can be assembled as a splicing and termination cabinet or an intermediate termination cabinet by using different functional units.

2.2 Internal Structure

Each cabinet or rack model of the GPX147-iODF3101 can house 19-inch units such as intermediate termination service subracks, 4 U splicing and termination service subracks, 8 U splicing and termination service subracks, optical splitter brackets, and parking units. This topic describes the cabinet or rack models respectively.

2.3 4 U Integrated Splicing and Termination Service Processing Subrack

The 4 U integrated splicing and termination service processing subrack consists of a 4 U subrack, and 6 service processing boards.

2.4 8 U Integrated Splicing and Termination Service Processing Subrack

2.5 5 U Intermediate Termination Service Processing Subrack

2.6 Optical Splitter and Parking Unit

The compact optical splitter, optical splitter support, and parking unit are used together to provide an optical splitting function.

2.7 Splicing Service Subrack

The splicing service subrack consists of the splicing service processing board and 4 U subrack.

2.8 Optical Cable Entry Unit

This topic describes the optical cable entry units for the iODF. Optical cables are led in through the entry units and secured by these units.

2.9 Accessories

All accessories are optional, including the fiber storing unit, fiber transit unit, operation desktop, and base.

2.1 Cabinet and Rack

The GPX147-iODF3101 supports cabinets and racks in various sizes. The cabinets and racks comply with IEC297 and support functional units that are suitable for 19-inch cabinet- or rack-mounted installation. They can be assembled as a splicing and termination cabinet or an intermediate termination cabinet by using different functional units.

900-mm-wide Cabinet or Rack

900-mm-wide products include cabinet product series and rack product series, such as the Table 2-1. The iODF cabinet has doors, and side panels and a back panel, which protects optical fibers from being damaged. The iODF rack does not have a door, side panel, or back panel, which facilitates inter-rack fiber patching. Apart from these differences, the iODF cabinet and rack have the same features, application scenarios, and technical specifications.



NOTE

This topic uses the iODF cabinet as an example to show the appearance of the iODF.

Table 2-1 Basic parameters related to a 900-mm-wide cabinet or rack

Cabinet	Rack	Dimensions (mm)	Maximum Internal Installation Height (U)	Maximum Capacity (Unit: Core)
GPX147-iODF 3101-CH2	GPX147-iODF 3101-FH2	2200 x 900 x 300	46	960
GPX147-iODF 3101-CH3	GPX147-iODF 3101-FH3	2000 x 900 x 300	42	768

Figure 2-1 Appearance of a 900-mm-wide cabinet



- Supports side-by-side and back-to-back installation.
- Supports installation on an ESD floor or a concrete floor.
- Supports optical cable routing from the top or bottom of the cabinet for stripping.
- Supports fast removal of cabinet side panels, back panel, and doors.

600-mm-wide Cabinet or Rack

600-mm-wide products include cabinet product series and rack product series, such as the Table 2-2. The iODF cabinet has doors, and side panels and a back panel, which protects optical fibers from being damaged. The iODF rack does not have a door, side panel, or back panel, which facilitates inter-rack fiber patching. Apart from these differences, the iODF cabinet and rack have the same features, application scenarios, and technical specifications.

Table 2-2 Basic parameters related to a 600-mm-wide cabinet or rack

Cabinet	Rack	Dimensions (mm)	Maximum Internal Installation Height (U)	Maximum Capacity (Unit: Core)
GPX147-iODF 3101-CH2A	GPX147-iODF 3101-FH2A	2200 x 600 x 300	46	576

Figure 2-2 Appearance of a 600-mm-wide cabinet



GPX147-iODF3101-CH2A

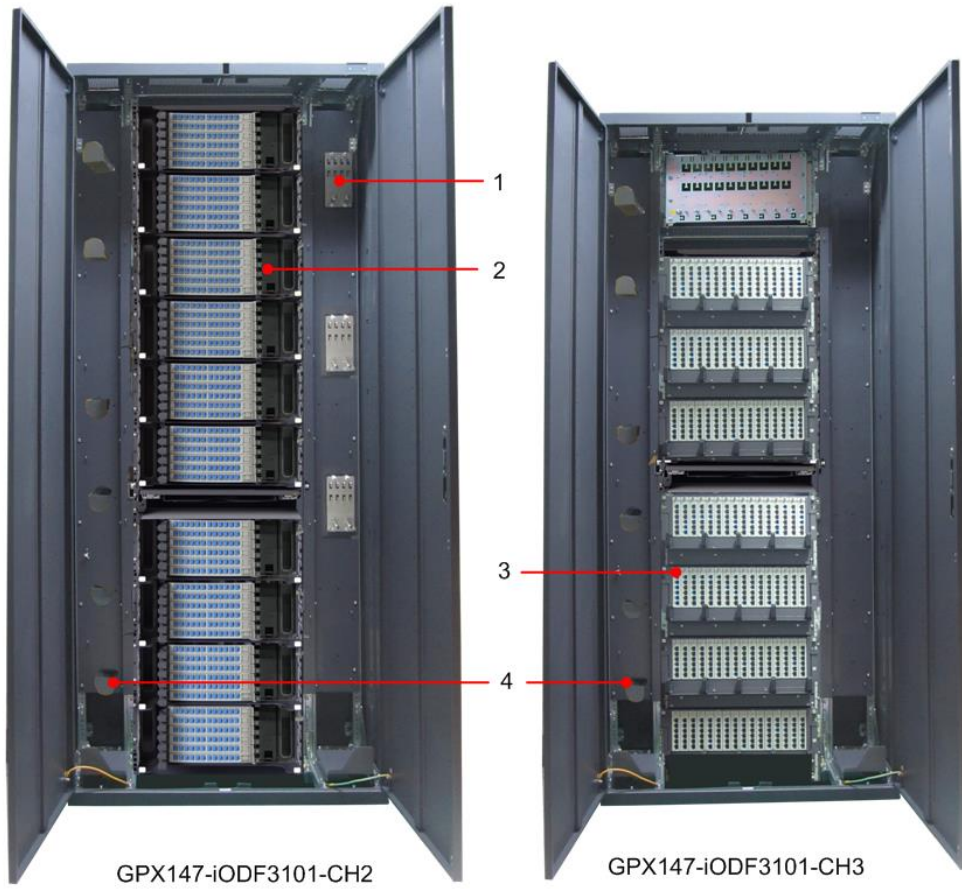
- Supports side-by-side and back-to-back installation.
- Supports installation on an ESD floor or a concrete floor.
- Supports optical cable routing from the top or bottom of the cabinet for stripping.
- Supports fast removal of cabinet side panels, back panel, and doors.

2.2 Internal Structure

Each cabinet or rack model of the GPX147-iODF3101 can house 19-inch units such as intermediate termination service subracks, 4 U splicing and termination service subracks, 8 U splicing and termination service subracks, optical splitter brackets, and parking units. This topic describes the cabinet or rack models respectively.

900-mm-wide Cabinet or Rack

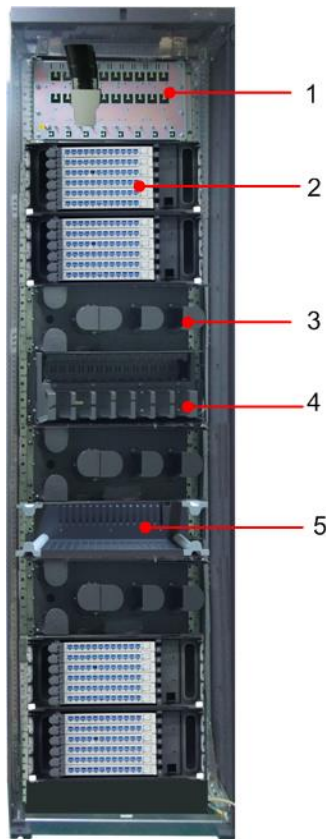
Figure 2-3 Internal structure of a 900-mm-wide cabinet or rack



1. Optical cable entry area	2. 4 U splicing and termination service processing subrack	3. 5 U intermediate termination service processing subrack
4. Cable post		

600-mm-wide Cabinet or Rack

Figure 2-4 Internal structure of GPX147-iODF3101-CH2A



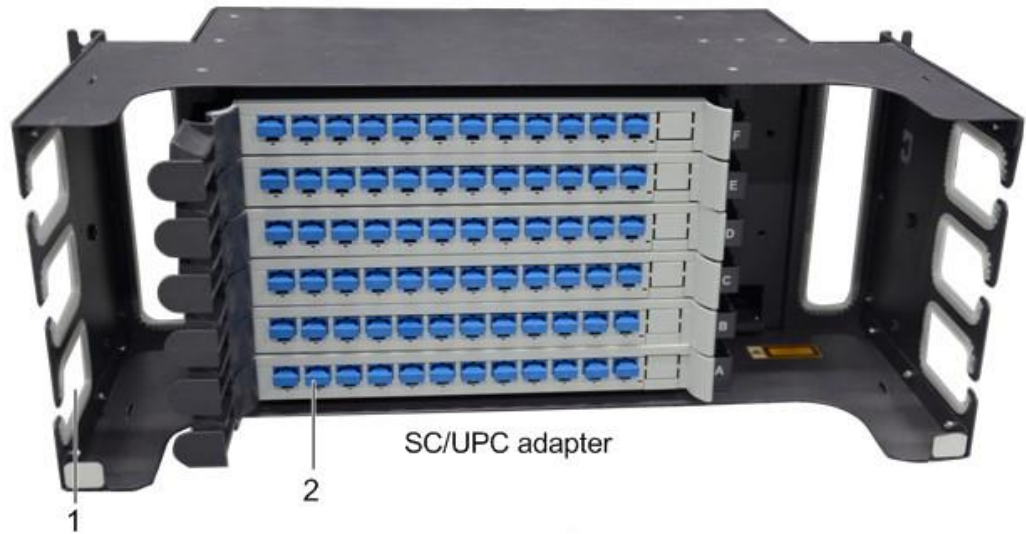
1. Optical cable entry area	2. 4 U splicing and termination service processing subrack	3. Fiber storing unit
4. Optical splitter bracket	5. Parking area	

2.3 4 U Integrated Splicing and Termination Service Processing Subrack

The 4 U integrated splicing and termination service processing subrack consists of a 4 U subrack, and 6 service processing boards.

The service processing board includes integrated splicing and termination service processing board and termination service processing board.

Figure 2-5 Appearance of 4 U integrated splicing and termination service processing subrack



1. 4 U subrack	2. Integrated splicing and termination service processing board
----------------	---

2.3.1 4 U Subrack

The 4 U subrack complies with IEC297. It supports 19-inch rack-mounted installation.

The 4 U subrack houses and manages 6 service processing boards.

Figure 2-6 Appearance of the 4 U subrack



1. Fiber routing ring	2. Slide rails for installing the service processing board	3. Aperture for bare optical fibers or pigtails
4. Paper label of the subrack		

Technical Specifications

Table 2-3 Technical Specifications

Item	Specifications
Model	SR2203-4U
Dimensions (H x W x D; unit: mm)	178 (4 U) x 482.6 x 265
Dimensions with packaging (H x W x D; unit: mm)	280 x 545 x 370
Volume with packaging (unit: m ³)	0.0565
Net weight (unit: kg)	5
Gross weight (unit: kg)	5.6
Capacity	6 service processing boards <ul style="list-style-type: none"> • With SC/UPC, SC/APC adapter: 72 adapter ports

2.3.2 Integrated Splicing and Termination Service Processing Board

This topic describes the integrated splicing and termination service processing board used in the equipment. The integrated splicing and termination service processing board has a tray-style structure and is installed in the equipment to provide splicing and termination functions.

Internal Structure

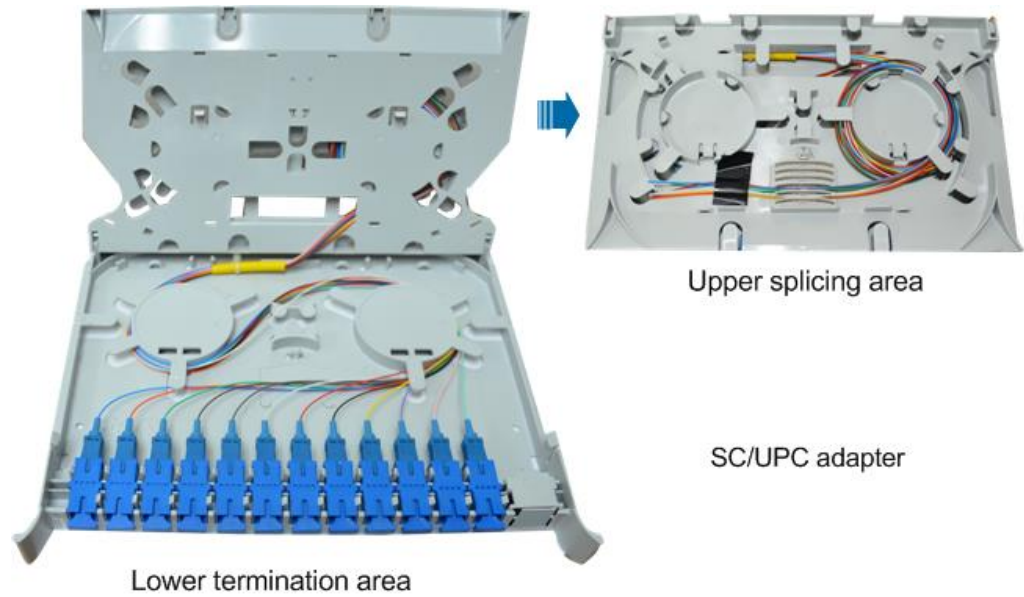
There are two types of integrated splicing and termination service processing boards, supporting the SC/UPC and SC/APC adapters separately.

The integrated splicing and termination service processing board has 2 trays.

- With SC/UPC, SC/APC adapter: The upper tray implements fiber splicing, and the lower tray implements fiber termination.

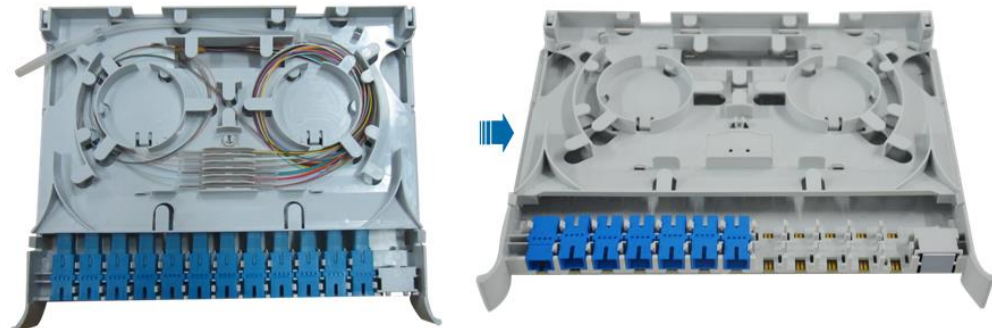
Figure 2-7 shows the internal structure of the integrated splicing and termination service processing board.

Figure 2-7 Internal structure of the integrated splicing and termination service processing board



The SC/UPC adapters and SC/APC adapters of the integrated splicing and termination service processing board are individually replaceable.

Figure 2-8 Individually replaceable adapters



Technical Specifications

Table 2-5 provides technical specifications of the integrated splicing and termination service processing board.

Table 2-4 Technical specifications of the integrated splicing and termination service processing board

Item	Specifications
Model	With SC/UPC, SC/APC adapter: <ul style="list-style-type: none"> iFIM3103, iFIM3104 (for bundle optical cables)

Item	Specifications
Dimensions without packaging (H x W x D; unit: mm)	25 x 232 x 180 (excluding the cabling ear)
Dimensions with packaging (H x W x D; unit: mm)	45 x 295 x 255
Package volume (unit: m ³)	3.39 x 10 ⁻³
Net weight (unit: kg)	<ul style="list-style-type: none"> With SC/UPC, SC/APC adapter: 0.27
Gross weight (unit: kg)	<ul style="list-style-type: none"> With SC/UPC, SC/APC adapter: 0.55
Length of the fiber splice protector (unit: mm)	60
Splicing capacity (unit: core)	<ul style="list-style-type: none"> With SC/UPC, SC/APC adapter: 12
Adapter type	SC/UPC, SC/APC
Pigtail	Bundle pigtail

2.3.3 Integrated Termination Service Processing Board

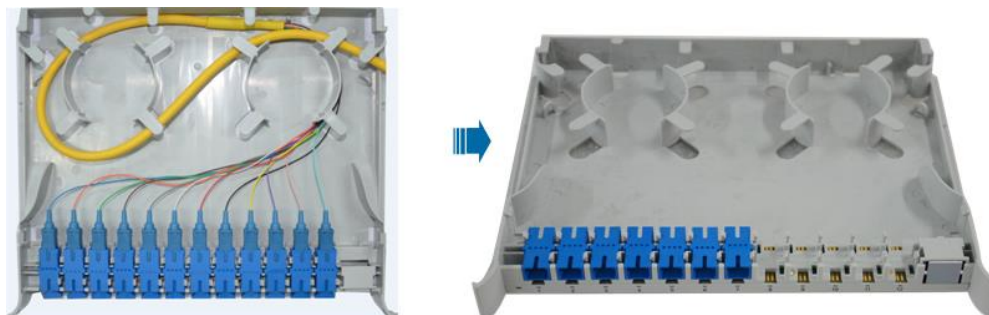
This topic describes the integrated termination service processing board used in the equipment. The integrated termination service processing board uses a tray-style structure and is installed in the equipment to provide the termination function. The integrated termination service processing board is used with the splicing service processing board.

Internal Structure

There are two types of integrated termination service processing boards, supporting the SC/UPC and SC/APC adapters separately.

The integrated termination service processing board has a single tray. The SC/UPC adapters and SC/APC adapters of the integrated termination service processing board are individually replaceable.

Figure 2-9 Individually replaceable adapters



Technical Specifications

Table 2-5 provides technical specifications of the integrated termination service processing board.

Table 2-5 Technical specifications of the integrated termination service processing board

Item	Specifications
Model	<ul style="list-style-type: none"> With SC/UPC, SC/APC adapter: iFTM3102
Dimensions without packaging (H x W x D; unit: mm)	25 x 232 x 180 (excluding the cabling ear)
Dimensions with packaging (H x W x D; unit: mm)	45 x 295 x 255
Package volume (unit: m ³)	3.39 x 10 ⁻³
Net weight (unit: kg)	<ul style="list-style-type: none"> With SC/UPC, SC/APC adapter: 0.27
Gross weight (unit: kg)	<ul style="list-style-type: none"> With SC/UPC, SC/APC adapter: 0.55
Splicing capacity (unit: core)	<ul style="list-style-type: none"> With SC/UPC, SC/APC adapter: 12
Adapter type	SC/UPC, SC/APC
Pigtail	Bundle pigtail

2.4 8 U Integrated Splicing and Termination Service Processing Subrack

The 8 U integrated splicing and termination service processing subrack consists of an 8 U subrack, and 16 integrated splicing and termination service processing boards.

Figure 2-10 Appearance of 8 U integrated splicing and termination service processing subrack



1. 8 U subrack	2. Integrated splicing and termination service processing board
----------------	---

2.4.1 8 U Subrack

The 8 U subrack complies with IEC297. It supports 19-inch rack-mounted installation and is used to house integrated splicing and termination service processing boards.

8 U Subrack

Each 8 U subrack can house 16 vertically-installed service processing boards. Figure 2-11 shows the appearance of the 8 U subrack.

Figure 2-11 Appearance of the 8 U subrack



1. Guide rails for installing service processing boards	2. Fiber transit unit
---	-----------------------

Technical Specifications

Table 2-6 lists the technical specifications of the 8 U subrack.

Table 2-6 Technical specifications of the 8 U subrack

Item	Specifications
Model	GPX147-iSR3201
Dimensions (H x W x D; unit: mm)	356 (8 U) x 482 x 265
Dimensions with packaging (H x W x D; unit: mm)	595 x 495 x 400
Volume with packaging (unit: mm ³)	1.18 x 10 ⁸
Net weight (unit: kg)	6.6
Gross weight (unit: kg)	9
Capacity	16 service processing boards <ul style="list-style-type: none"> • With SC/UPC, SC/APC adapter: 192 adapter ports

2.4.2 Integrated Splicing and Termination Service Processing Board

This topic describes the integrated splicing and termination service processing board used in the equipment. The integrated splicing and termination service processing board has a tray-style structure and is installed in the equipment to provide splicing and termination functions.

Internal Structure

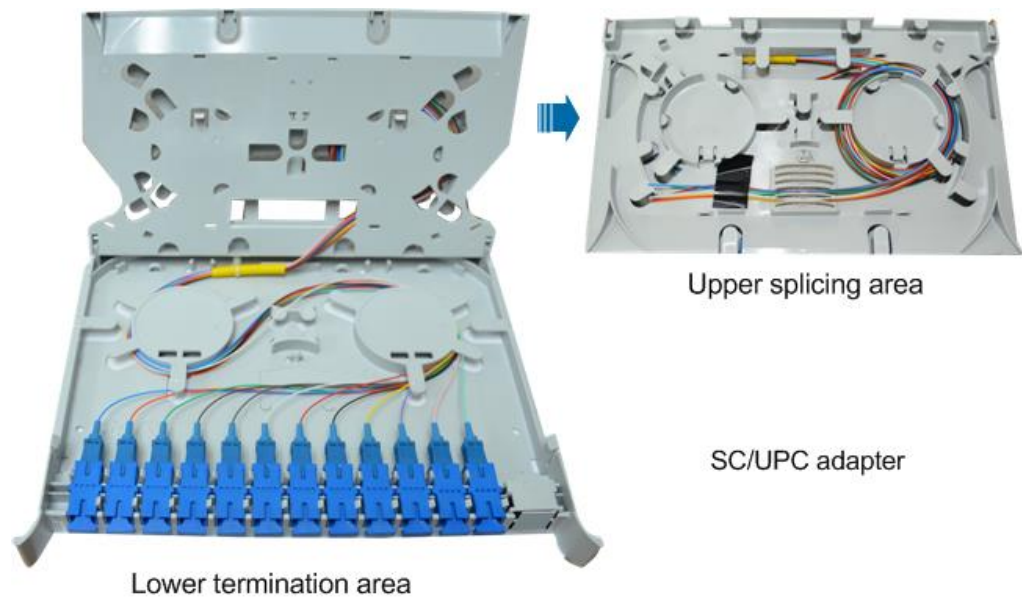
There are two types of integrated splicing and termination service processing boards, supporting the SC/UPC and SC/APC adapters separately.

The integrated splicing and termination service processing board has 2 trays.

- With SC/UPC, SC/APC adapter: The upper tray implements fiber splicing, and the lower tray implements fiber termination.

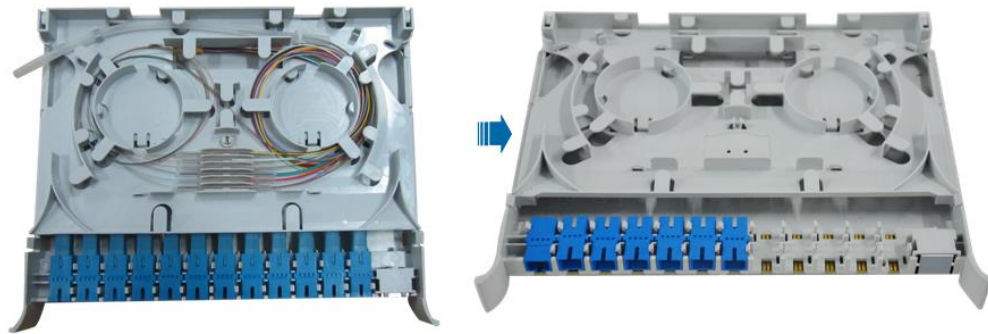
Figure 2-12 shows the internal structure of the integrated splicing and termination service processing board.

Figure 2-12 Internal structure of the integrated splicing and termination service processing board



The SC/UPC adapters and SC/APC adapters of the integrated splicing and termination service processing board are individually replaceable.

Figure 2-13 Individually replaceable adapters



Technical Specifications

Table 2-8 provides technical specifications of the integrated splicing and termination service processing board.

Table 2-7 Technical specifications of the integrated splicing and termination service processing board

Item	Specifications
Model	With SC/UPC, SC/APC adapter: <ul style="list-style-type: none"> iFIM3103, iFIM3104 (for bundle optical cables)
Dimensions without packaging (H x W x D; unit: mm)	25 x 232 x 180 (excluding the cabling ear)
Dimensions with packaging (H x W x D; unit: mm)	45 x 295 x 255
Package volume (unit: m ³)	3.39 x 10 ⁻³
Net weight (unit: kg)	<ul style="list-style-type: none"> With SC/UPC, SC/APC adapter: 0.27
Gross weight (unit: kg)	<ul style="list-style-type: none"> With SC/UPC, SC/APC adapter: 0.55
Length of the fiber splice protector (unit: mm)	60
Splicing capacity (unit: core)	<ul style="list-style-type: none"> With SC/UPC, SC/APC adapter: 12
Adapter type	SC/UPC, SC/APC
Pigtail	Bundle pigtail

2.4.3 Integrated Termination Service Processing Board

This topic describes the integrated termination service processing board used in the equipment. The integrated termination service processing board uses a tray-style structure and is installed

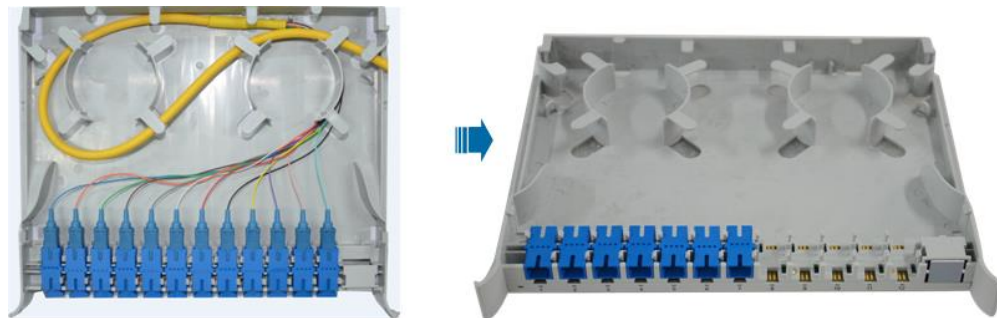
in the equipment to provide the termination function. The integrated termination service processing board is used with the splicing service processing board.

Internal Structure

There are two types of integrated termination service processing boards, supporting the SC/UPC and SC/APC adapters separately.

The integrated termination service processing board has a single tray. The SC/UPC adapters and SC/APC adapters of the integrated termination service processing board are individually replaceable.

Figure 2-14 Individually replaceable adapters



Technical Specifications

Table 2-8 provides technical specifications of the integrated termination service processing board.

Table 2-8 Technical specifications of the integrated termination service processing board

Item	Specifications
Model	<ul style="list-style-type: none"> With SC/UPC, SC/APC adapter: iFTM3102
Dimensions without packaging (H x W x D; unit: mm)	25 x 232 x 180 (excluding the cabling ear)
Dimensions with packaging (H x W x D; unit: mm)	45 x 295 x 255
Package volume (unit: m ³)	3.39 x 10 ⁻³
Net weight (unit: kg)	<ul style="list-style-type: none"> With SC/UPC, SC/APC adapter: 0.27
Gross weight (unit: kg)	<ul style="list-style-type: none"> With SC/UPC, SC/APC adapter: 0.55
Splicing capacity (unit: core)	<ul style="list-style-type: none"> With SC/UPC, SC/APC adapter: 12
Adapter type	SC/UPC, SC/APC
Pigtail	Bundle pigtail

2.5 5 U Intermediate Termination Service Processing Subrack

The 5 U intermediate termination service processing subrack consists of a 5 U intermediate termination subrack, and 16 intermediate termination service processing boards. The termination panel in the 5 U intermediate termination subrack supports 70 °rotation to facilitate the fiber patching on the internal side of intermediate termination service processing boards.

Figure 2-15 Appearance of the 5 U intermediate termination service processing subrack



1. 5 U Intermediate Termination Subrack	2. Intermediate Termination Service Processing Board
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2.5.1 Intermediate Termination Subrack

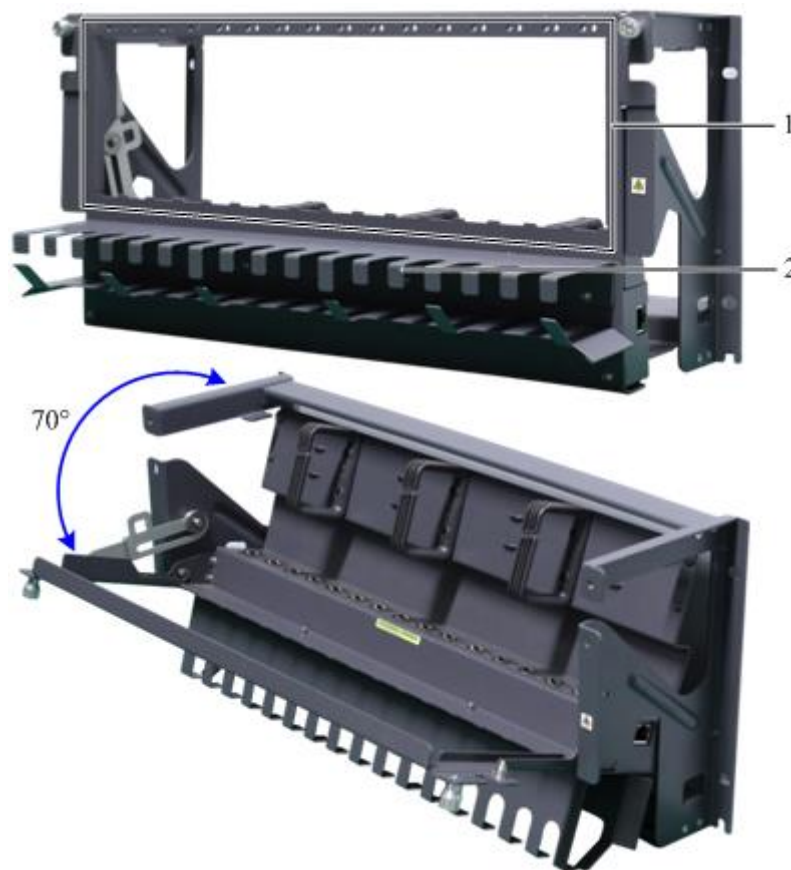
The 5 U intermediate termination subrack complies with IEC297. It supports 19-inch rack-mounted installation and is used to house intermediate termination service processing boards.

5 U Intermediate Termination Subrack

Each 5 U intermediate termination subrack can house 8 vertically-installed intermediate termination service processing boards. Each intermediate termination service processing board occupies 2 slots.

The termination panel in the 5 U intermediate termination subrack supports 70° rotation to facilitate the fiber patching on the internal side of intermediate termination service processing boards. Figure 2-16 shows the appearance of the 5 U intermediate termination subrack.

Figure 2-16 5 U intermediate termination subrack



1. Installation areas for intermediate termination service processing boards	2. Fiber transit unit
--	-----------------------

Technical Specifications

Table 2-9 shows the technical specifications of the 5 U intermediate termination subrack.

Table 2-9 Technical specifications of the 5 U intermediate termination subrack

Item	Specifications
Model	GPX147-iFTU3111
Dimensions (H x W x D; unit: mm)	222.5 (5 U) x 482.6 x 220
Dimensions with packaging (H x W x D; unit: mm)	627 x 397 x 370
Volume with packaging (unit: mm ³)	9.2 x 10 ⁷
Net weight (unit: kg)	3.2
Gross weight (unit: kg)	5
Capacity	8 intermediate termination service processing boards, 192 adapter ports

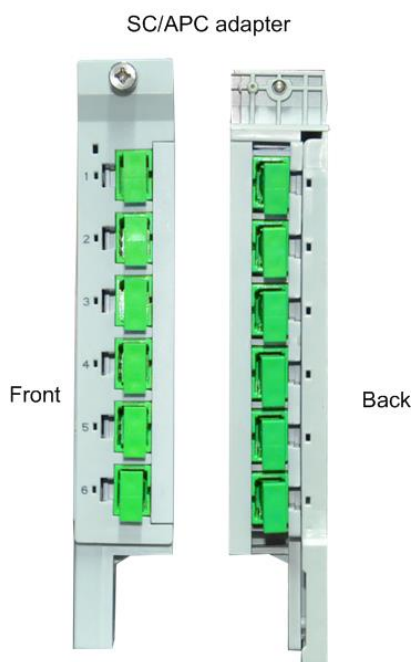
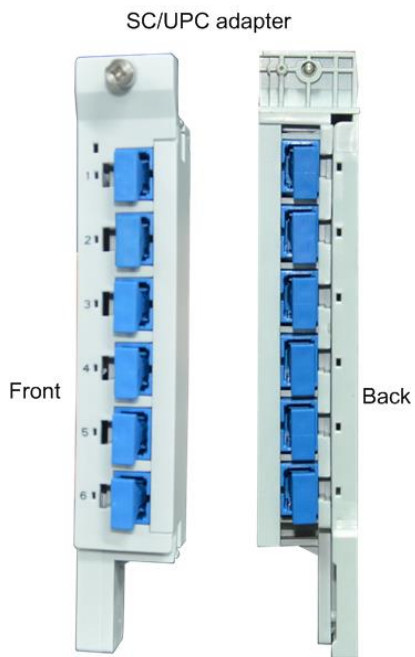
2.5.2 Intermediate Termination Service Processing Board

The intermediate termination service processing board is secured in the subrack using captive screws to implement fiber termination.

Appearance

There are two types of integrated splicing and termination service processing boards, supporting the SC/UPC and SC/APC separately.

Figure 2-17 Appearance of the intermediate termination service processing board



Specifications

Table 2-10 Technical Specifications

Item	Specification
Model	<ul style="list-style-type: none"> • With SC/UPC adapter: GPX147-iFTM3103 • With SC/APC adapter: GPX147-iFTM3102

Item	Specification
Dimensions (H x W x D; unit: mm)	151.5 x 25 x 41.6
Dimensions with packaging (H x W x D; unit: mm)	295 x 45 x 255 NOTE Each package contains eight service boards.
Net weight (unit: kg)	<ul style="list-style-type: none"> With SC/UPC, SC/APC adapter: 0.07
Termination capacity (unit: core)	<ul style="list-style-type: none"> With SC/UPC, SC/APC adapter: 6
Adapter type	SC/UPC, SC/APC

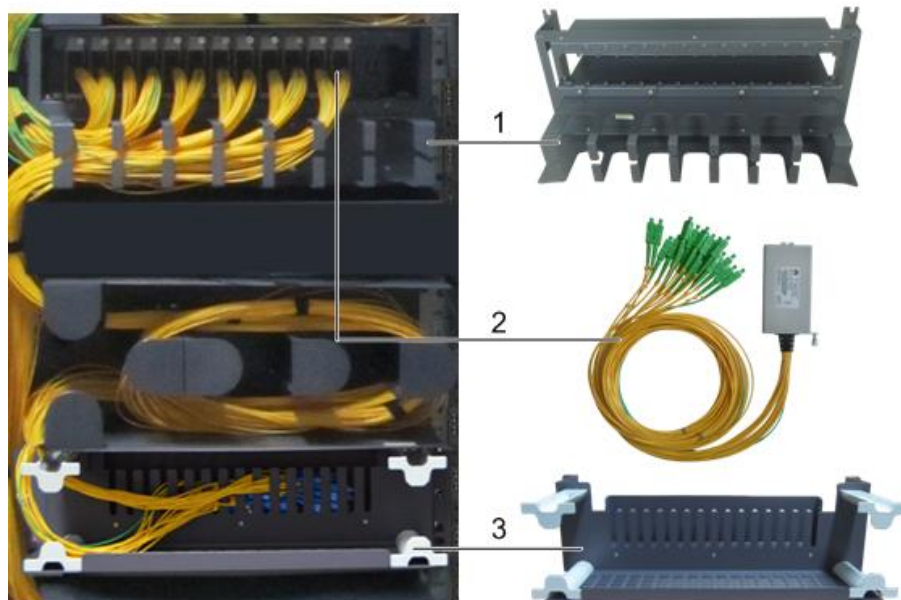
2.6 Optical Splitter and Parking Unit

The compact optical splitter, optical splitter support, and parking unit are used together to provide an optical splitting function.

Appearance

The compact optical splitter is installed in the optical splitter support. Each optical splitter provides 28 installation slots for compact optical splitters, and the compact optical splitter is installed using captive screws. The pigtail connector of the unused optical splitter is protected by the parking unit.

Figure 2-18 Appearance of optical splitter and parking unit



1. Optical splitter support	2. Compact optical splitter	3. Parking unit
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Optical Splitter Support

Table 2-11 Technical Specifications

Item	Specification
Model	GPX147-SR2204-4U
Dimensions without packaging (H x W x D; unit: mm)	4 U x 482 x 198
Dimensions with packaging (H x W x D; unit: mm)	240 x 540 x 270
Package volume (unit: mm ³)	3.50 x 10 ⁷
Net weight (unit: kg)	3.34
Gross weight (unit: kg)	4.0

Compact Optical Splitter

The pigtails of the optical splitters have two colors, green and yellow. Green pigtails indicate the input end, and yellow pigtails indicate the output end. Unused output connectors of the optical splitters can be parked in the parking unit.

The optical splitters support two types of adapters: SC/UPC and SC/APC.

Figure 2-19 Appearance of the compact optical splitter



Up to 28 optical splitters each with a split ratio of 1:2, 1:4, 1:8, or 1:16, or 14 optical splitters each with a split ratio of 1:32 or 1:64, can be installed on the active bracket.

Table 2-12 Technical specifications of compact optical splitters

Item	Specifications	
Model	SPL2605	
Split ratio	<ul style="list-style-type: none"> • 1:2, 1:4, 1:8, 1:16 • 2:2, 2:4, 2:8, 2:16 	<ul style="list-style-type: none"> • 1:32, 1:64 • 2:32, 2:64
Number of occupied slots on the bracket	1	2
Type	Compact optical splitter	
Dimensions without packaging (H x W x D; unit: mm)	60 x 10 x 110	60 x 20 x 110
Dimensions with packaging (H x W x D; unit: mm)	315 x 290 x 75	340 x 290 x 85
Package volume (unit: m ³)	6.85 x 10 ⁻³	8.38 x 10 ⁻³
Connector type	SC/UPC SC/APC	

Item	Specifications	
Pigtail type	G.657A2	
Pigtail length (unit: m)	1.5	
Pigtail diameter (unit: mm)	2	
Net weight (unit: kg)	1:N • 1:2: 0.11 • 1:4: 0.13 • 1:8: 0.16 • 1:16: 0.23 2:N • 2:2: 0.12 • 2:4: 0.13 • 2:8: 0.17 • 2:16: 0.24	1:N • 1:32: 0.42 • 1:64: 0.79 2:N • 2:32: 0.43 • 2:64: 0.79
Gross weight (unit: kg)	1:N • 1:2: 0.27 • 1:4: 0.29 • 1:8: 0.33 • 1:16: 0.42 2:N • 2:2: 0.28 • 2:4: 0.29 • 2:8: 0.34 • 2:16: 0.43	1:N • 1:32: 0.76 • 1:64: 1.24 2:N • 2:32: 0.77 • 2:64: 1.23

Parking Unit

Table 2-13 Specification of the parking unit

Item	Specification
Dimensions without packaging (H x W x D; unit: mm)	133.5 x 482 x 200
Dimensions with packaging (H x W x D; unit: mm)	260 x 552 x 352
Package volume (unit: mm ³)	5.05 x 10 ⁷
Net weight (unit: kg)	2.0
Gross weight (unit: kg)	2.5
Parking Capacity (unit: core)	64

2.7 Splicing Service Subrack

The splicing service subrack consists of the splicing service processing board and 4 U subrack.

The splicing service subrack provides slide rails for horizontally installing six splicing service processing board. Optical fibers can be led into the splicing service subrack through either the left or right inlet. The splicing service processing board can be pulled out for operations and maintenance.

A maximum of 144 cores can be spliced in each splicing service subrack (a 1-meter-long 24-core pigtail can be coiled in each splicing service processing board).

Figure 2-20 Splicing service subrack



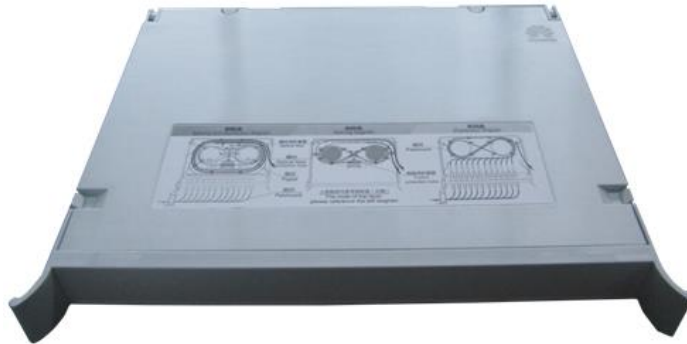
2.7.1 Splicing Service Processing Board

This topic describes the splicing service processing board used in the equipment. The splicing service processing board uses a tray-style structure and is installed in the equipment to provide the splicing function.

Appearance

Figure 2-21 shows the appearance of the splicing service processing board.

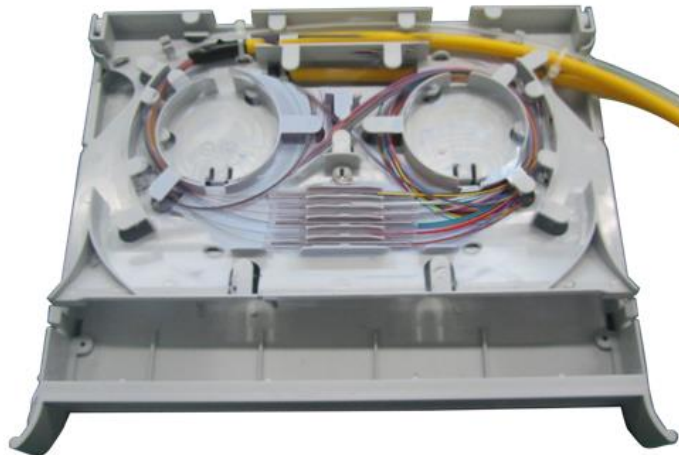
Figure 2-21 Appearance of the splicing service processing board



Internal Structure

The splicing service processing board has 2 trays, and each tray supports splicing for 12 cores. Therefore, the total splicing capacity is 24 cores. Figure 2-22 shows the internal structure of the splicing service processing board.

Figure 2-22 Internal structure of the splicing service processing board



Technical Specifications

Table 2-15 provides technical specifications of the splicing service processing board.

Table 2-14 Technical specifications of the splicing service processing board

Item	Specifications
Model	FSM2103
Dimensions without packaging (H x W x D; unit: mm)	25 x 232 x 180
Dimensions with packaging (H x W x D; unit: mm)	45 x 295 x 255

Item	Specifications
mm)	
Package volume (unit: m ³)	3.39 x 10 ⁻³
Net weight (unit: kg)	0.27
Gross weight (unit: kg)	0.45
Length of the fiber splice protector (unit: mm)	60
Splicing capacity (unit: core)	24

2.8 Optical Cable Entry Unit

This topic describes the optical cable entry units for the iODF. Optical cables are led in through the entry units and secured by these units.

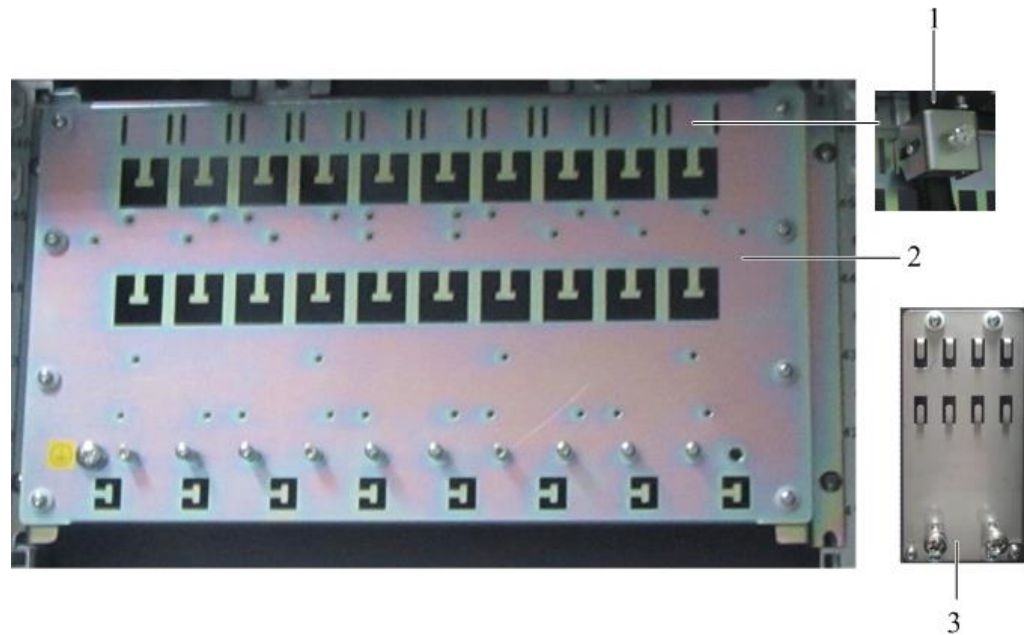
The optical cable entry units for the iODF support the following types of optical cables:

- Bundle optical cable
- Air-blown optical cable
- Flat drop cable

Bundle Optical Cable Entry Unit

The bundle optical cable entry unit is available in 2 types: 19-inch optical cable entry unit and mini bundle optical cable entry unit.

Figure 2-23 Appearance of the bundle optical cable entry unit



1. Special fitting for securing the optical cable	2. 19-inch optical cable entry unit	3. Mini bundle optical cable entry unit
---	-------------------------------------	---

19-inch optical cable entry unit

The 19-inch optical cable entry unit is installed at the top of iODF on the external cable side to secure bundle optical cables.

- It can secure altogether 10 bundle optical cables with diameters ranging from 9 mm to 24 mm (also the upper limit of bundle optical cable diameters). The diameters of common bundle optical cables are within the range of 9 mm to 18 mm.
- It does not require hose clamps to secure bundle optical cables.

Table 2-15 Technical specifications of the 19-inch optical cable entry unit

Item	Specifications
Model	GPX147-OEU2304-10
Dimensions (H x W x D; unit: mm)	267 (6 U) x 482 x 62.5
Net weight (unit: kg)	2

Mini bundle optical cable entry unit

The mini bundle optical cable entry unit is installed at the right of the iODF on the external cable side to secure bundle optical cables. With the mini bundle optical cable entry unit, the length of the bundle optical cable to be stripped can be shortened.

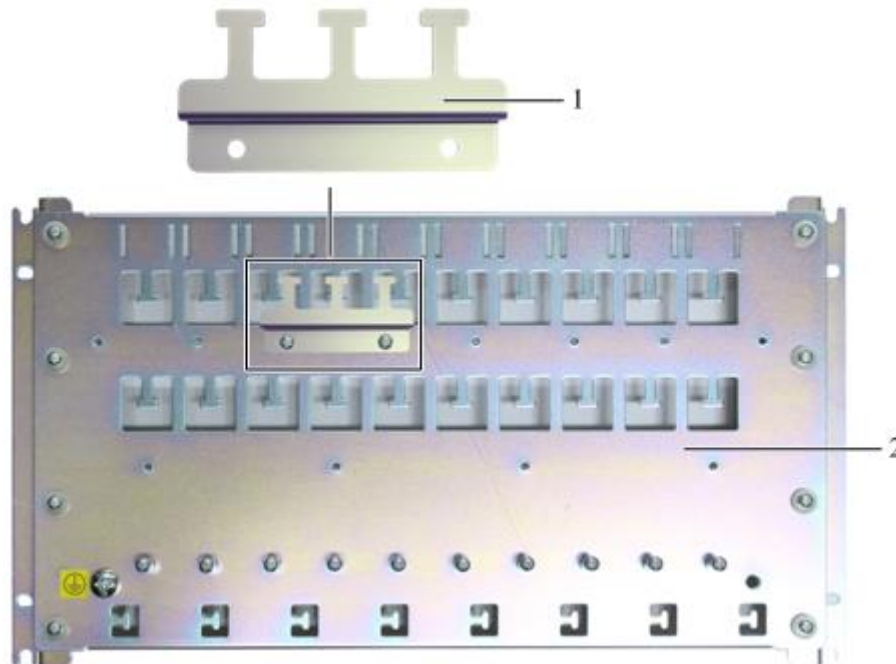
- Each iODF supports altogether 5 mini bundle optical cable entry units.
- Each mini bundle optical cable entry unit can secure altogether 3 bundle optical cables with diameters ranging from 9 mm to 18 mm.

Table 2-16 Technical specifications of the mini bundle optical cable entry unit

Item	Specifications
Model	GPX147-OEU2305-3
Dimensions (H x W x D; unit: mm)	180 x 95 x 30
Net weight (unit: kg)	0.3

Air-blown Optical Cable Entry Module

Figure 2-24 Appearance of the air-blown optical cable entry module



1. Air blown optical cable entry module	2. 19-inch optical cable entry unit
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The air-blown optical cable entry module is used to secure air-blown optical cables.

- The air-blown optical cable entry unit must be configured together with the 19-inch optical cable entry unit. Each 19-inch optical cable entry unit supports altogether 4 air-blown optical cable entry units.

- Each air-blown optical cable entry unit can secure altogether 3 air-blown microducts whose diameter is shorter than 20 mm. (Outer diameter/inner diameter of air-blown microducts: 14/10 mm, 12/10 mm, 10/8 mm, or 12/8 mm).

Table 2-17 Technical specifications of the air-blown optical cable entry module

Item	Specifications
Model	GPX147-OEU2306-3
Dimensions (H x W x D; unit: mm)	80 x 40 x 15
Net weight (unit: kg)	0.04

Flat drop cable entry module

Figure 2-25 Appearance of the flat drop cable entry module



1. Base of the flat drop cable entry module	2. Cover of the flat drop cable entry module
---	--

The flat drop cable entry module is used to secure flat drop cables.

- Each 19-inch optical cable entry unit supports altogether 4 groups of flat drop cable entry modules. Each group of flat drop cable entry modules usually includes 2 bases and 1 cover, and supports a maximum of 4 bases and 1 cover. The number of bases installed on a 19-inch optical cable entry unit should not exceed 8.
- Each base provides a 24-core capacity at most.
- Each flat drop cable (size: 2 mm x 3 mm) contains 1 or 2 cores.

Table 2-18 Technical specifications of the flat drop cable entry module

Item	Specifications
Model	-
Dimensions (H x W x D; unit: mm)	<ul style="list-style-type: none"> • Base: 105 x 83 x 16.1 • Cover: 105 x 83 x 6

Item	Specifications
Net weight (unit: kg)	0.01

2.9 Accessories

All accessories are optional, including the fiber storing unit, fiber transit unit, operation desktop, and base.

Fiber Storing Unit

The fiber storing unit is installed in an iODF for storing optical fibers. It complies with IEC297 and supports 19-inch installation. Optical fibers can be led into the fiber storing unit from either the left or right inlet, presenting a neat fiber routing. The fiber storing unit can be installed at the front or rear of the iODF using mounting ears. Figure 2-26 shows the appearance of the fiber storing unit.

Figure 2-26 Fiber storing unit



Table 2-19 Technical specifications of fiber storing unit

Item	Specifications
Model	GPX147-OSU2201
Dimensions without packaging (H x W x D; unit: mm)	3 U x 482 x 200mm
Dimensions with packaging (H x W x D; unit: mm)	200 x 510 x 295
Package volume (unit: mm ³)	3.0 x 10 ⁷
Net weight (unit: kg)	2.0
Gross weight (unit: kg)	2.5

Fiber Transit Unit

The fiber transit unit is installed at the top or bottom of the iODF cabinet and is used for fiber patching during side-by-side or back-to-back cabinet installation. Figure 2-27 shows the appearance of the fiber transit unit.

Figure 2-27 Fiber transit unit



Table 2-20 Technical specifications of fiber transit unit

Item	Specifications
Model	GPX147-CFU2101-3U
Dimensions without packaging (H x W x D; unit: mm)	3 U x 482 x 200 mm
Dimensions with packaging (H x W x D; unit: mm)	200 x 510 x 295
Package volume (unit: mm ³)	3.0 x 10 ⁷
Net weight (unit: kg)	2.0
Gross weight (unit: kg)	2.5

Operation Desktop

The operation desktop provides a 10 kg bearing capacity and can be configured for placing tools such as the fiber splicer, facilitating operations. Figure 2-28 shows the appearance of the operation desktop.

Figure 2-28 Operation desktop



Table 2-21 Technical specifications of operation desktop

Item	Specifications
Model	GPX147-ITC2101-1U
Dimensions without packaging (H x W x D; unit: mm)	1 U x 442 x 265
Dimensions with packaging (H x W x D; unit: mm)	125 x 530 x 350
Package volume (unit: mm ³)	2.32 x 10 ⁷
Net weight (unit: kg)	3.8
Gross weight (unit: kg)	4.5
Rated load (unit: kg)	10

Base

If the iODF is installed on an ESD floor, a base is required based on the height of the cabinet. The base is available in two models: 600 mm wide and 822 mm wide, which both support the height ranges of 180 to 310 mm and 330 to 610 mm. Figure 2-29 shows the appearance of the base.

Figure 2-29 Base



Table 2-22 Technical specifications of 822mm wide base

Item	Specifications	
Model	GPX147-ITC2203-B1	GPX147-ITC2203-B2
Dimensions without packaging (H x W x D; unit: mm)	<ul style="list-style-type: none"> • H x 822 x 300 • H: 180 to 320 	<ul style="list-style-type: none"> • H x 822 x 300 • H: 330 to 610
Adjustment step (unit: mm)	10	
Dimensions with packaging (H x W x D; unit: mm)	270 x 904 x 382	400 x 982 x 382
Package volume (unit: mm ³)	0.93 x 10 ⁸	1.38 x 10 ⁸
Net weight (unit: kg)	14.8	19.6
Gross weight (unit: kg)	15.5	21.0
Adjustment range (unit: mm)	180 to 320	330 to 610

Table 2-23 Technical specifications of 600mm wide base

Item	Specifications	
Model	GPX147-ITC2201-B1	GPX147-ITC2201-B2
Dimensions without packaging (H x W x D; unit: mm)	<ul style="list-style-type: none"> • H x 600 x 300 • H: 180 to 320 	<ul style="list-style-type: none"> • H x 600 x 300 • H: 330 to 610
Adjustment step (unit: mm)	10	
Dimensions with packaging (H x W x D; unit: mm)	270 x 682 x 382	400 x 682 x 382
Package volume (unit: mm ³)	9 x 10 ⁷	9.2 x 10 ⁷
Net weight (unit: kg)	13.5	18.5
Gross weight (unit: kg)	15	20
Adjustment range (unit: mm)	180 to 320	330 to 610

3 Typical Configuration and Routing

Table 3-1 Common configurations of the iODF

Item	Optical Cable Entry Mode	Configured Function Module	Optical Cable Output Mode
Configuration 1: Integrated Splicing and Termination	Fiber patch cord/cable patch cord	Integrated splicing and termination service processing board	Optical cable
Configuration 2: Fiber Termination	Fiber patch cord/cable patch cord	Middle termination service processing board	Fiber patch cord/cable patch cord
Configuration 3: Fiber Termination+Integrated Splicing and Termination	Fiber patch cord/cable patch cord	Integrated splicing and termination service processing board and middle termination service processing board	Optical cable
Configuration 4: Separated splicing and termination	Fiber patch cord/cable patch cord	Integrated termination service processing board and splicing tray	Optical cable
Configuration 5: Integrated Splicing and Termination+Optical Splitting	Optical cable	Integrated splicing and termination service processing board and compact optical splitter	Optical cable

Configuration 1: Integrated Splicing and Termination

Fiber patch cords or cable patch cords are used to connect the optical communication equipment and the integrated splicing and termination service processing board. The external optical cable is spliced with the pigtail of the integrated splicing and termination service processing board.

Figure 3-2 Fiber routing principle of the integrated splicing and termination scenario

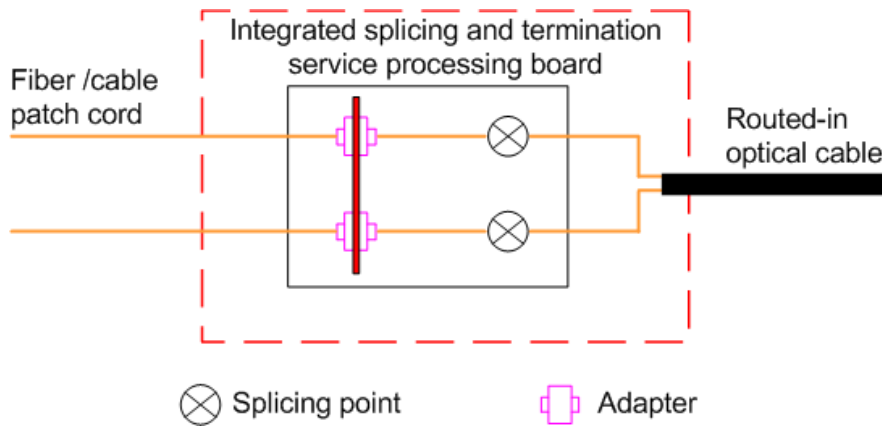
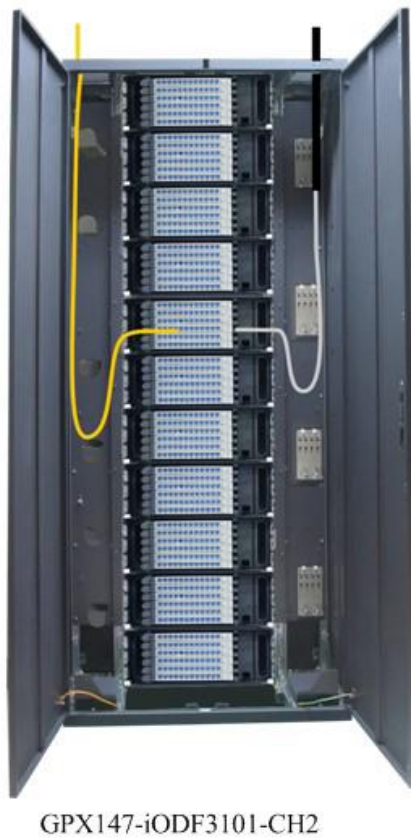


Figure 3-3 Fiber routing of the integrated splicing and termination scenario



Configuration 2: Fiber Termination

Fiber patch cords or cable patch cords are used to connect the main equipment and the middle termination service processing board.

Figure 3-4 Fiber routing principle of the fiber termination scenario

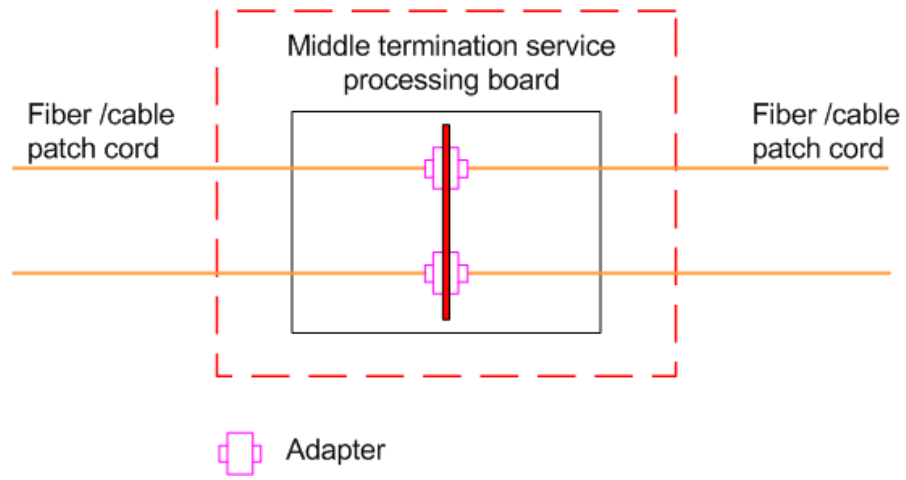
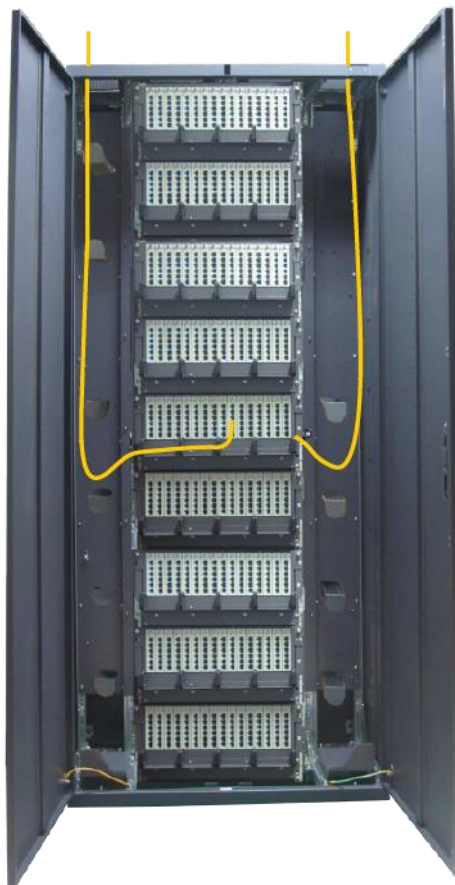


Figure 3-5 Fiber routing of the fiber termination scenario



Configuration 3: Fiber Termination+Integrated Splicing and Termination

Fiber patch cords or cable patch cords are used to connect the optical communication equipment and the middle termination service processing board. The external optical cable is spliced with the pigtail of the integrated splicing and termination service processing board.

Figure 3-6 Fiber routing principle of the fiber termination+integrated splicing and termination scenario

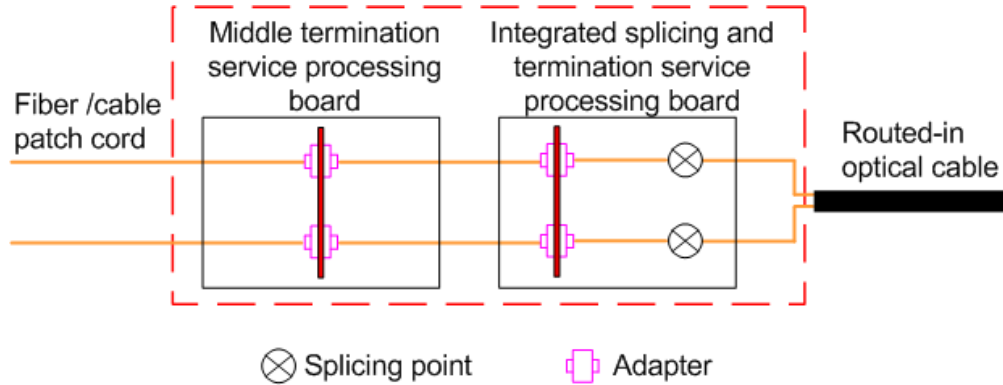


Figure 3-7 Fiber routing of the fiber termination+integrated splicing and termination scenario



Configuration 4: Separated Splicing and Termination

Fiber patch cords or cable patch cords are used to connect the optical communication equipment and the termination service processing board. The external optical cable is spliced with the fan out pigtail in the splicing tray.

Figure 3-8 Fiber routing principle of the separated splicing and termination scenario

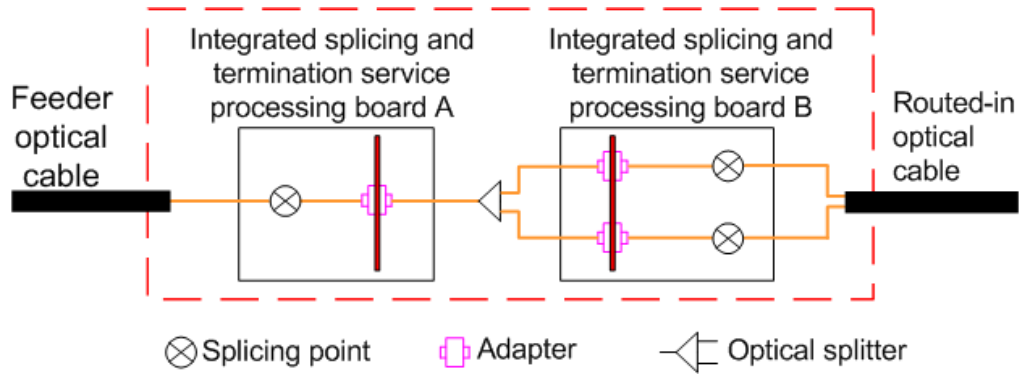


Figure 3-9 Fiber routing principle of the separated splicing and termination scenario



Configuration 5: Integrated Splicing and Termination+Optical Splitting

- The feeder optical cable is spliced with the pigtail of integrated splicing and termination service processing board A.
- The pigtail at the input end of the compact optical splitter connects to integrated splicing and termination service processing board A; the pigtail at the output end of the optical splitter connects to integrated splicing and termination service processing board B.
- The pigtail of integrated splicing and termination service processing board B is spliced with the external optical cable.

Figure 3-10 Fiber routing principle of the integrated splicing and termination+optical splitting scenario

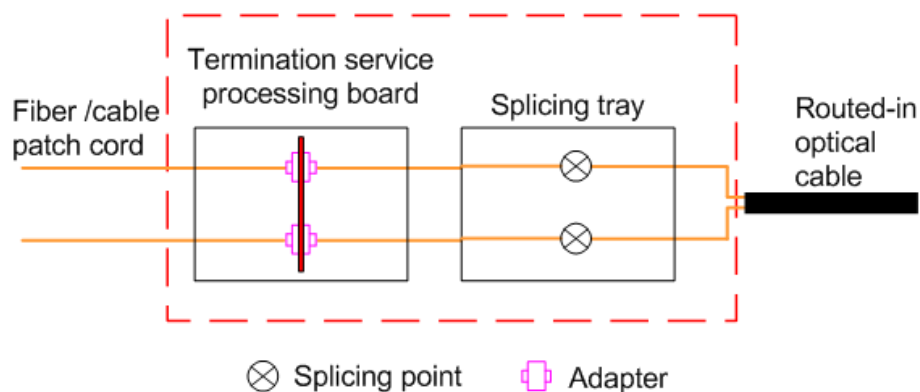


Figure 3-11 Fiber routing of the integrated splicing and termination+optical splitting scenario



4 Technical Specifications and Standards Compliance

Technical Specifications

Table 4-1 lists the technical specifications of the GPX147-iODF3101.

Table 4-1 Technical specifications of the GPX147-iODF3101

Model	Technical Specifications	
GPX147-iODF3101-CH2/ GPX147-iODF3101-FH2	Dimensions without packaging (H x W x D; unit: mm)	2200 x 900 x 300
	Dimensions with packaging (H x W x D; unit: mm)	2320 x 1020 x 540
	Package volume (unit: mm ³)	1.28 x 10 ⁹
	Net weight (unit: kg)	<ul style="list-style-type: none"> GPX147-iODF3101-CH2: about 85 (empty cabinet) GPX147-iODF3101-FH2: about 70 (empty rack)
	Gross weight (unit: kg)	<ul style="list-style-type: none"> GPX147-iODF3101-CH2: about 135 (empty cabinet) GPX147-iODF3101-FH2: about 120 (empty rack)
	Installation space (height) inside the cabinet (unit: U)	46
	Capacity (unit: core)	With SC/UPC, SC/APC adapter: <ul style="list-style-type: none"> Maximum termination capacity: 960 Maximum splicing capacity: 960

Model	Technical Specifications	
GPX147-iODF3101-CH3/ GPX147-iODF3101-FH3	Dimensions without packaging (H x W x D; unit: mm)	2000 x 900 x 300
	Dimensions with packaging (H x W x D; unit: mm)	2120 x 1020 x 540
	Package volume (unit: mm ³)	1.17 x 10 ⁹
	Net weight (unit: kg)	<ul style="list-style-type: none"> • GPX147-iODF3101-CH3: about 80 (empty cabinet) • GPX147-iODF3101-FH3: about 65 (empty rack)
	Gross weight (unit: kg)	<ul style="list-style-type: none"> • GPX147-iODF3101-CH3: about 130 (empty cabinet) • GPX147-iODF3101-FH3: about 115 (empty rack)
	Installation space (height) inside the cabinet (unit: U)	42
	Capacity (unit: core)	With SC/UPC, SC/APC adapter: <ul style="list-style-type: none"> • Maximum termination capacity: 768 • Maximum splicing capacity: 768
GPX147-iODF3101-CH2 A/ GPX147-iODF3101-FH2A	Dimensions without packaging (H x W x D; unit: mm)	2200 x 600 x 300
	Dimensions with packaging (H x W x D; unit: mm)	2320 x 720 x 540
	Package volume (unit: mm ³)	0.9 x 10 ⁹
	Net weight (unit: kg)	<ul style="list-style-type: none"> • GPX147-iODF3101-CH2A: about 60 (empty cabinet) • GPX147-iODF3101-FH2A: about 40 (empty rack)
	Gross weight (unit: kg)	<ul style="list-style-type: none"> • GPX147-iODF3101-CH2A: about 105 (empty cabinet) • GPX147-iODF3101-FH2A: about 85 (empty rack)
	Installation space (height) inside the cabinet (unit: U)	46

Model	Technical Specifications	
	U)	
	Capacity (unit: core)	With SC/UPC, SC/APC adapter: <ul style="list-style-type: none"> • Maximum termination capacity: 576 • Maximum splicing capacity: 576
Size and quantity of common optical cables	<ul style="list-style-type: none"> • 10 bundle optical cables whose diameters are within the range of 9–24 mm; 15 bundle optical cables whose diameters are within the range of 9–18 mm after capacity expansion 	
Common optical cable entry units	<ul style="list-style-type: none"> • 19-inch optical cable entry unit: 1 • Mini bundle optical cable entry unit: 5 	
Size and quantity of flat drop cables	<ul style="list-style-type: none"> • Quantity: 192 • Size (mm): 2 x 3 	
Flat drop cable entry modules	<ul style="list-style-type: none"> • Base: 8 • Cover: 4 	
Size and quantity of air blown optical cables	12 air blown micro tubes, each of which has a diameter equal to or less than 20 mm	
Air blown optical cable entry modules	4	
Optical cable entry mode	Optical cable routed in from the top Optical cable routed in from the bottom (need base)	
Installation	Ground-mounted	
Material	Sheet metal and section steel	
Color	NC purple gray	
Flame-retardant rating	UL94 V0	
Adapter type	SC/UPC, SC/APC	
Adapter insertion loss	≤ 0.2 dB	
Adapter reseating times	> 500	

Environment Parameters

Table 4-2 Environment parameters

Environment Parameter	Value
Working temperature	-40 °C to +70 °C
Storage temperature	-40 °C to +70 °C
Atmospheric pressure	70 kPa to 106 kPa
Relative humidity	≤ 93% (+40°C)

Standards Compliance

Table 4-3 International standards

Name	Description
ITU-T L.64	SERIES L: CONSTRUCTION, INSTALLATION AND PROTECTION OF CABLES AND OTHER ELEMENTS OF OUTSIDE PLANT-ID tag requirements for infrastructure and network elements management
ASTM D 1149	Standard Test Method for Rubber Deterioration-Surface Ozone Cracking
ASTM D 1693	Standard Test Method for Environmental Stress Cracking of Ethylene Plastics
ASTM D 3363	Standard Test Method for Film Hardness by Pencil Test
ASTM D 638	Standard Test Method for Tensile Properties of Plastics
ASTM D 822	Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings
ASTM G 154	Standard practice for operating fluorescent light apparatus for UV exposure of nonmetallic materials
ASTM G 21	Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi
EN 60950	Safety of information technology equipment
ETSI EN 300 019-2	Environmental Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment
IEC 61587-3	structures for electronic equipment-Tests for IEC 60917 and IEC 60297-Part 3:Sectional specification-Climatic,mechanical tests and safety aspects for cases and cabinets
IEC 61587-3	Mechanical structures for electronic equipment-Outdoor enclosures-Part 3:Sectional

Name	Description
	specification-Climatic,mechanical tests and safety aspects for cases and cabinets
AS 60529	Degrees of protection provided by enclosure(IP code)
IEC 60068-2	Basic Environmental Testing Procedures
IEC 60950	Safety of information technology equipment
IEC 61300-3-15-2006	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-15: Examinations and measurements - Dome eccentricity of a convex polished ferrule endface
IEC 61300-3-23-1998	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-23: Examination and measurements; fibre position relative to ferrule endface
IEC 68-2-1	Environmental testing-Part2:Tests-Tests A:Cold
IEC 68-2-2	Basic environmental testing procedures-Part2:Tests-Tests B:Dry heat
IEC 68-2-30	Basic environmental testing procedures-Part2:Tests-Test Db and guidance:Damp heat, cyclic(12+12-hour cycle)
IEC 68-2-52	Environmental testing-Part2:Tests-Test Kb:Salt mist, cyclic(sodium chloride solution)
IEC60529	Degrees of protection provided by enclosures(IP Code)
ISO 2409	Paints and varnishes — Cross-cut test
ISTA 2B	Packaged-Products weighing over 150 lb (68 kg) Basic Requirements: atmospheric conditioning, compression, fixed displacement or random vibration and shock testing
UL 50	Enclosure for Electronic Equipment
UL 60950	Safety of information technology equipment
UL 94	Test for Flammability of Plastic Materials for Parts in Devices and Appliances

5 Acronyms and Abbreviations

A	
AC	Alternating current
C	
CO	Central office
D	
DC	Direct current
E	
eID	Electronic identification
F	
FE	Fast ethernet
FTTx	Fiber to the x
H	
HSI	High-speed internet
I	
iFAT	Intelligent fiber access terminal
iFDT	Intelligent fiber distribution terminal
iField	Intelligent field

iODF	Intelligent optical distribution Frames
iMODF	Intelligent main optical distribution Frames
iODN	Intelligent optical distribution network
L	
LED	Light emitting diode
M	
MPU	Main processing unit
O	
ODF	Optical distribution frames
ODN	Optical distribution network
OLT	Optical line terminal
ONT	Optical network terminal
ONU	Optical network unit
OSS	Operating support system
S	
SNMP	Simple network management Protocol
STB	Set top box
P	
PON	Passive optical network
POTS	Plain old telephone service
U	
USB	Universal serial bus
VPN	Virtual private network
X	

XML	Extensible markup language
xPON	X passive optical network