>DCI5800 400G/800G DCI-BOX Stackable DWDM Transmission Platform

Product Description

DWDM Optical Transmission equipment manufacturers,

Big data transmission overall solution provider;

Issue Date: 2025-12
ShenZhen ISEELINK Communication Co., Ltd.

Preface

Overview

This configuration guide primarily introduces the product description of the DCI5800 series, including product specifications, site configuration applications, optical modules, and application cases.

Target Audience

This document is intended for the following engineers:

Network planning engineers

Hardware installation engineers

Commissioning engineers

Data configuration engineers

On-site maintenance engineers

System maintenance engineers

Symbols Conventions

The following symbols may appear in this document, with their meanings as follows:

Symbol	Description
DANGER	Indicates content requiring special attention. Improper operation may cause serious personal injury.
WARNING	Reminds users of precautions. Improper operation may lead to data loss or equipment damage.
NOTICE	Highlights operations or information that require special attention to ensure successful operation or proper equipment functionality.
TIPS	Provides tips or tricks to solve problems or save time.
NOTE	Supplements and explains the main text as necessary.

Catalog

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1.DCI5800 Product Specification

1.1 Product Overview

DCI5800 is an industry-leading innovative DCI OTN transmission platform launched by ISEELINK. DCI5800 has the characteristics of small size, large capacity service access, long distance transmission, Web GUI simple and convenient operation and management, reliable operation and energy saving and emission reduction, which effectively meets the needs of long-distance and large bandwidth user data center interconnection transmission.

The DCI5800 features a modular design that enables both optical-electrical decoupling for cost reduction and integrated management within the same chassis. With SDN capabilities, it creates an intelligent and open network architecture. The system supports the YANG model interface based on the NetConf/YANG protocol, while also offering multiple management methods including Web GUI, CLI, NetConf,and SNMP for streamlined operations.

Product Diagram

DCI5800-1A

DCI5800-2A

DCI5800-4A

Ultra-high integration:

- 1U&2U Chassis,2U supports 4*1.6T service slots, 1U supports 2*1.6T service slots; service card is compatible;
- Client side:

Supports GE/10GE/10G WAN/STM64/OTU2/100GE/OTU4/ 400GE etc(see the details of the card for details);

- Line side:

Supports 100G/200G/400G/800Gbps per wave;

Ultra large capacity:

A single chassis can carry up to 6.4T service capacity, reaching the industry-leading level

Extreme simplicity operations:

- Flexible definition, web GUI intelligent maintenance, improve the operability of remote operation and maintenance;
- Supports remote network port and serial port access, and supports remote cold and hot restart;
- Support remote upgrade of chassis and card, remote configuration import, and remote log download;

White box design:

- Support for Netconf protocols based on Yang model, Web GUI/CLI/SNMP;
- Wait for the open management interface, support Open API, and realize management decoupling;

Suitable for data center and machine room environment:

- Support hot plugging of service/main controller/Ethernet interface/fan/power card;
- The whole machine has forward air/after air design, with strong heat dissipation capacity;
- Master 1:1 backup, support for Gigabit Ethernet management, support for OSPF networking;
- Compatible with AC/HVDC/-48V power supply for data center applications.

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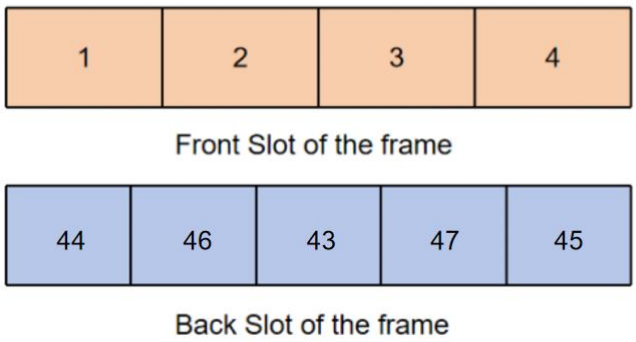
Frame Partition

19-inch 1U chassis

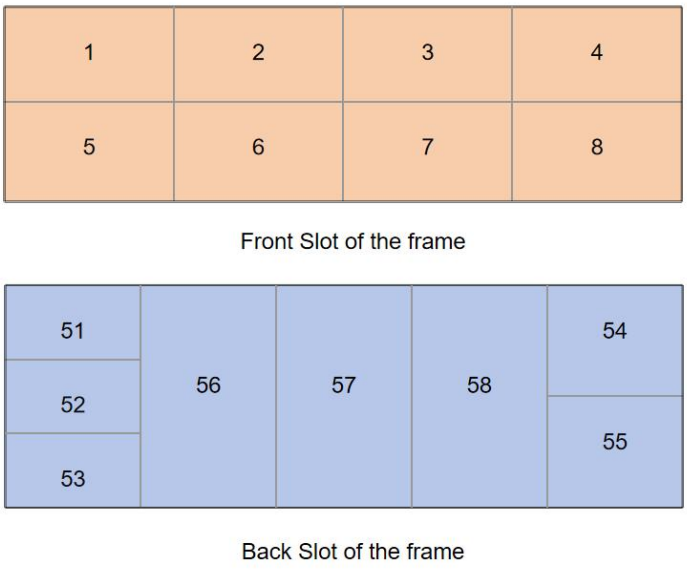


Slot Description

Machine Frame	Composition	Slot
Machine Frame	4 General-purpose service card slots	1~4
	1 Exclusive Slots For Master control card	43
	2 Dedicated Power supply slots	44~45
	2 Dedicated Fan card slots	46~47

Frame Partition

19-inch 2U chassis



Slot Description

Machine Frame	Composition	Slot
Machine Frame	8 General-purpose service card slots	1~8
	2 Exclusive Slots For Master control card	51~52
	1 Ethernet Interface card	53
	2 Dedicated Power supply slots	54~55
	3 Dedicated Fan card slots	56~58

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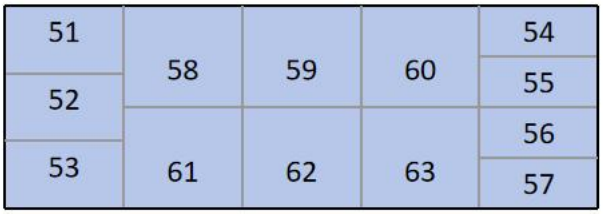
Frame Partition

19-inch 4U chassis

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

Front Slot of the frame



Back Slot of the frame

Slot Description

Machine Frame	Composition	Slot
Machine Frame	16 General-purpose service card slots	1~16
	2 Exclusive Slots For Master control card	51~52
	1 Ethernet Interface card	53
	4 Dedicated Power supply slots	54~57
	6 Dedicated Fan card slots	58~63

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Product Specification

Project Name		Description
Transmission Capacity		96*200Gbps /60*400Gbps
Network Management Unit		● 2U/4U Chassis: dual master 1:1 backup protection ● 1U Chassis: single master ● Management port: 2* RJ45 Gigabit Ethernet electrical port, 2*SFP Gigabit Ethernet optical port 1*Type-C USB Console Port MUX ports: 2*Mux and Demux Device Management Port ● Supports NetConf/yang network management ● Supports CLI/ SNMP/WebGUI network management
Electrical Layer Card		200G TMUX supports dual 2*100G to 1*200G services 200G TMUX supports 20*10G to 1*200G services 200G TMUX supports 10*10G + 1*100G or 2*100G to 1*200G services 400G TMUX supports 4*100G to 1*400G services 400G TMUX supports 4*100G to 2*400G (1+1 protection) services 800G TMUX supports 8*100G to 1*800G services 800G TMUX supports dual 2*400G to 1*800G services
Optical Layer Card		WSS card / TFF card / OP card / OTDR card / OCM card / OA card / OLA card / PTM card / 8-wave MUX /48-wave MUX / 48-wave VMUX /96-wave MUX card
Size	1/2 Service Card	216 mm (W) * 262 mm (D) * 40 mm (H)
	1/4 Service Card	107 mm (W) * 262 mm (D) * 40 mm (H)
	4U Chassis	Supports 16*1/4 slots or 8*1/2 slots 442mm (W) *485mm (D) * 176mm (H)
	2U Chassis	Supports 8*1/4 slots or 4*1/2 slots 442mm (W) *485mm (D) * 88mm (H)
	1U Chassis	Supports 4*1/4 slots and 2*1/2 slots 442mm (W) * 485mm (D) * 44mm (H)
Environment	Working Temperature	-5℃ ~ 45℃
	Storage Temperature	-40℃ ~ 80℃
	Humidity	5% ~ 95% no condensation
Power Source		Dual power 1:1 backup: AC220V/high voltage DC/-48V optional
Power Dissipation		4U<2300W,2U <1300W; 1U <800W (based on full layer power/fan at full speed),

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1.1.1 1U Chassis NMU Card

Product Diagram

Product Specification

Function	Description
Occupied Slots	shown in name 43 slot
Hot-plug	Support hot-swapping of primary and primary controller without affecting services
Alarm and Performance Monitoring	It provides performance monitoring, single card alarm and performance event reporting.

Indicator Light Description

Name	Function Description
STAT (card Operating Status Indicator)	A solid green light indicates that the device is powered on and functioning normally.
	If the light is off, it means the device is not powered on or is not working properly.
PROG(Single-card Software Status Indicator)	A solid green light indicates that the device software is loading normally and software initialization is complete.
	A rapidly flashing green light indicates that the device is loading software into the FLASH or FPGA.
	A slow flashing green light indicates that the device's card software is initializing and is in the BIOS boot phase.
	A solid red light indicates that the software loading in the device's FLASH memory has failed or initialization was unsuccessful.
SYNG(Clock Synchronization Status Indicator)	A solid green light indicates that the device is synchronized correctly. The clock is operating in tracking mode (tracking an external source) or free oscillation mode (no external source configured).)
	A solid red light indicates that the device has lost synchronization or is malfunctioning. An external clock source has been configured, but all external sources have been lost, causing the clock to enter hold mode or oscillate freely.
ALM(Single card Fault Indicator)	A solid green light indicates that the device is powered on and functioning normally.
	A solid red light indicates an emergency alarm on the device.
	A solid yellow light indicates a minor alarm in the device.
	If the light is off, it means the device is not powered on or is not working properly.
RUN(Single Disk Operation Indicator light)	The light flashes, indicating normal single-disk operation; the light goes out, indicating a malfunction.
SRV(Business Light)	A solid green light indicates that the device's service configuration is normal and there are no alarms, indicating that it is in good working order.
	A solid red light indicates an urgent alarm in the device's operations (such as signal loss, frame loss, etc.).
	A solid yellow light indicates a minor alarm or a remote alarm in the device's operation.

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Interface Definition

Interface	Name	Type Function
Type-C Interface	SRV	Service card debugging port
	NMU	Main control card debugging port
	OTG	Programming port
SD Slot	SD	Insert SD card
RST Button	RST	Reset button
SFP Optical Port	SFP1	Access to the optical fiber transmission cable enables the aggregation of branch node network management information to the network management center. Dual optical ports enable transmission in two directions and provide 1+1 protection.
	SFP2	
Ethernet Port	ETH1	Connected to the network management computer via a network cable, the network management system manages two network interfaces, enabling cascaded management of multiple network elements and simultaneous transmission of network management information.
	ETH2	
MUX Interface	MUX1	The network management information is transmitted by connecting an external AAWG OMD48/OMD96 device via a network cable.
	MUX2	

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1.1.2 1U Chassis FAN Card

Product Diagram

Product Specification

Function	Description
Occupied Slots	shown in name 46/47 slot
Temperature Monitoring	Temperature of the air outlet can be collected in real time
Automatic Speed Regulation	The fan automatically adjusts its speed based on critical chip temperatures and module temperatures reported by the business card to ensure normal card operation. In case of communication loss, the fan is set to maximum speed.
Manual Speed Adjustment	Support manual speed adjustment for different gear levels using various duty cycles
Status Indication	The fan panel displays a status indicator light. A green light on continuously indicates normal operation, while a red light on continuously indicates a fault.
Electronic Tags	The host reads and loads the electronic tag of the fan module via the I2C bus. The tag records the production date, PN/SN, and runtime (calculated from the moment the card is powered on).
Alarm Detection	Supports alarm reporting for communication loss, fan failure, abnormal speed, and single fan stall
Fan Redundancy	The fan card supports N:1 redundancy, enabling the system to operate continuously for up to 96 hours under normal temperature conditions when one fan card fails.
Hot-plug	support

Indicator Light Description

Name	Functional Description
STAT (card Status Indicator)	The green light stays on, indicating the device is powered on and in normal status.
	Red always on indicates an emergency alarm
	The light is off, indicating the device is not powered on or is not functioning properly.

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1.1.3 2U/4U Chassis NMU Card

Product Diagram

Product Specification

Function	Description
Occupied Slots	shown in name 51/52 slot
1:1 redundancy	Dual master control configuration. The device continues to function normally even if the primary master control fails.
Hot-plug	Support hot-swapping of primary and primary controller without affecting services
Alarm and Performance Monitoring	It provides performance monitoring, single card alarm and performance event reporting.

Indicator Light Description

Name	Function Description
STAT (card Operating Status Indicator)	A solid green light indicates that the device is powered on and functioning normally.
	If the light is off, it means the device is not powered on or is not working properly.
PROG(Single-card Software Status Indicator)	A solid green light indicates that the device software is loading normally and software initialization is complete.
	A rapidly flashing green light indicates that the device is loading software into the FLASH or FPGA.
	A slow flashing green light indicates that the device's card software is initializing and is in the BIOS boot phase.
	A solid red light indicates that the software loading in the device's FLASH memory has failed or initialization was unsuccessful.
SYNG(Clock Synchronization Status Indicator)	A solid green light indicates that the device is synchronized correctly. The clock is operating in tracking mode (tracking an external source) or free oscillation mode (no external source configured).)
	A solid red light indicates that the device has lost synchronization or is malfunctioning. An external clock source has been configured, but all external sources have been lost, causing the clock to enter hold mode or oscillate freely.
ALM(Single card Fault Indicator)	A solid green light indicates that the device is powered on and functioning normally.
	A solid red light indicates an emergency alarm on the device.
	A solid yellow light indicates a minor alarm in the device.
	If the light is off, it means the device is not powered on or is not working properly.
RUN(Single Disk Operation Indicator Light)	The light flashes, indicating normal single-disk operation; the light goes out, indicating a malfunction.
SRV(Business Light)	A solid green light indicates that the device's service configuration is normal and there are no alarms, indicating that it is in good working order.
	A solid red light indicates an urgent alarm in the device's operations (such as signal loss, frame loss, etc.).
	A solid yellow light indicates a minor alarm or a remote alarm in the device's operation.
ACT(Main And Backup Card Working Indicator lights)	When the light is on, the system is operating on the main control card; when the light is off, the system is operating on its backup card.

1.1.4 2U/4U Chassis FAN Card

Product Diagram

Product Specification

Name	Description
Occupied Slots	shown in name 56/57/58 slot
Temperature Monitoring	It can collect the air outlet temperature in real time.
Manual Speed Adjustment	It supports manual speed adjustment according to different duty cycles.
Status Indicator	The fan card has a status indicator light. A solid green light indicates the fan is working properly, while a solid red light indicates a fan malfunction.
Electronic Tags	The host computer reads and loads the electronic tag of the fan module via the I2C bus. The electronic tag records the production date, PN/SN, and running time (calculated from the start of operation after the card is powered on).
Alarm Detection	Supports reporting of alarms for communication loss, fan failure, abnormal fan speed, and single fan stall.
Fan Redundancy	The fan card supports N:1 backup, meaning that even if one fan card fails, the system can continue to operate continuously for no more than 96 hours at normal temperature.
Hot-swap	support

Indicator Light Description

Name	Function Description
STAT (card Operating Status Indicator)	A solid green light indicates that the device is powered on and functioning normally.
	A solid red light indicates an emergency alarm on the device.
	If the light is off, it means the device is not powered on or is not working properly.

1.1.5 2U Chassis Ethernet Interface Card

Product Diagram

Product Specification

Function	Description
Occupied Slots	shown in name 53 slot
Dual Master Control Automatic Switching	Intelligent scheduling (automatic switchover from abnormal master controller to normal master controller)
Manual Switching	The web version supports manual switching.
Internet Access	Two optical and two electrical ports, supporting 100Mbps and 1000Mbps speeds.
MUX Features	Supports dual MUX ports, RJ45 interface (I2C protocol)

Interface definition

Interface	Name	Type Function
SFP Optical Port	SFP1	Access to the optical fiber transmission cable enables the aggregation of branch node network management information to the network management center. Dual optical ports enable
	SFP2	
Ethernet Electrical Port	ETH1	Connected to the network management computer via a network cable, the network management system manages two network interfaces, enabling cascaded management of multiple network elements and simultaneous transmission of network management information.
	ETH2	
MUX Interface	MUX1	The network management information is transmitted by connecting an external mux and demux device via a straight-through network cable.
	MUX2	
DETACH Button	DETACH	Long press: Switch working mode (5 seconds or more); short press: Switch primary/backup NMU card(1 second).

Indicator Light Description

Name	Function Description
STAT (card Operating status Indicator)	A solid green light indicates that the device is powered on and functioning normally.
	A solid red light indicates an emergency alarm on the device.
	A solid yellow light indicates a minor alarm in the device.
	If the light is off, it means the device is not powered on or is not working properly.
SFP1 (Optical Port 1 Indicator Light)	Green light: Data connection is normal; Red light: Data connection is abnormal; Off: No optical module.
SFP2 (Optical Port 2 Indicator Light)	Green light: Data connection is normal; Red light: Data connection is abnormal; Off: No optical module.
AUTO	On: In automatic mode; off: In manual mode.

1.1.6 4U Chassis Ethernet Interface Card

Product Diagram

Product Specification

Function	Description
Occupied Slots	shown in name 53 slot
Dual Master Control Automatic Switching	Intelligent scheduling (automatic switchover from abnormal master controller to normal master controller)
Manual Switching	The web version supports manual switching.
Internet Access	Two optical and two electrical ports, supporting 100Mbps and 1000Mbps speeds.
MUX Features	Supports dual MUX ports, RJ45 interface (I2C protocol)

Interface definition

Interface	Name	Type Function
SFP Optical Port	SFP1	Access to the optical fiber transmission cable enables the aggregation of branch node network management information to the network management center. Dual optical ports enable
	SFP2	
Ethernet Electrical Port	ETH1	Connected to the network management computer via a network cable, the network management system manages two network interfaces, enabling cascaded management of multiple network elements and simultaneous transmission of network management information.
	ETH2	
MUX Interface	MUX1	The network management information is transmitted by connecting an external mux and demux device via a straight-through network cable.
	MUX2	
DETACH Button	DETACH	Long press: Switch working mode (5 seconds or more); short press: Switch primary/backup NMU card(1 second).

Indicator Light Description

Name	Function Description
STAT (card Operating status Indicator)	A solid green light indicates that the device is powered on and functioning normally.
	A solid red light indicates an emergency alarm on the device.
	A solid yellow light indicates a minor alarm in the device.
	If the light is off, it means the device is not powered on or is not working properly.
SFP1 (Optical Port 1 Indicator Light)	Green light: Data connection is normal; Red light: Data connection is abnormal; Off: No optical module.
SFP2 (Optical Port 2 Indicator Light)	Green light: Data connection is normal; Red light: Data connection is abnormal; Off: No optical module.
AUTO	On: In automatic mode; off: In manual mode.

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1.1.7 POWER Card

The device employs a standard CRPS (Common Redundant Power Supply) configuration, where a single independent power supply unit suffices for normal operation, with load balancing when dual power supplies are used. The power supply unit (PSU) is available in two models:

- PSU-AC/HDC (Supports 220V AC and 240V HDC)
- PSU-LDC (Supports -48V DC)

Product Diagram

Product Specification

Function	Description
Occupied Slots	shown in name 44/45/54/55 slot
Input Voltage	PSU-AC/HVDC: Rated AC 220V, voltage range 198-242V (45Hz ~ 65Hz) and rated HVDC 240V, voltage range 192 ~ 288V PSU-LDC: Rated DC-48V/-60V, voltage range-40 to-72V
1+1 Backup	The device continues to function normally even after a single PSU fails.
Temperature Monitoring	can collect the ambient temperature of the power card in real time
Overheat Protection	When the power module temperature exceeds the set threshold, it enters protection mode, cuts off power supply, and triggers an overheating alarm to prompt cooling measures. Once the temperature drops, the module automatically resumes normal operation.
Status Indication	The power card has a status indicator light. A green light on indicates normal operation, while an orange light on indicates a fault.
Power Plug and Power Cord	AC220V and HVDC240V support optional IEC and China national standard plug power cords, the equipment needs to be equipped with a 10A standard power cord, and DC-48V requires a power cord of no less than 10 square.
Power Status	Supports power supply monitoring in on, normal, and abnormal states
Overvoltage and Undervoltage Protection	The protected state is characterized by output power shutdown and power supply interruption, with automatic power restoration capability.
Real Time Power Query	Supports querying real-time data such as current input and output voltage/current, with power accuracy ≤±4%
Mixed Configuration (optional)	Supports hybrid configurations of PSU-AC/HDC and PSU-LDC

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1.2 Electrical Layer Cards

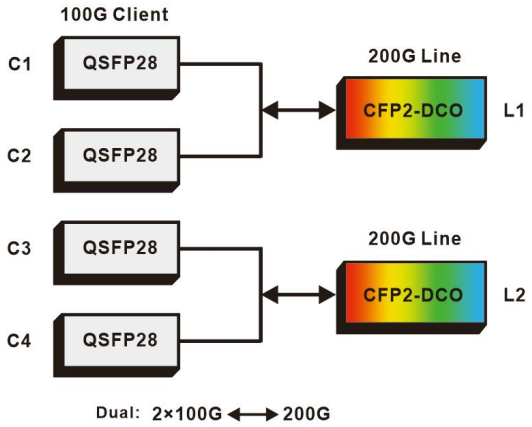
The DCI5800 Electrical Layer Service Cards have the following models, as shown in table.

Card Classification	Card Type	Product Description
Electrical Layer Service Cards	T4D2	200G Transponder Card: Dual 2*100G QSFP28 client to 1*200G CFP2 line mode
	M20D1	200G Muxponder Card: 20*10GE SFP client to 1*200G CFP2line mode
	M2H10D1	200G Muxponder Card: 1*100G QSFP28 + 10*10G SFP client to 1*200G CFP2 line mode 2*40G QSFP + 10*10G SFP client to 1*200G CFP2 line mode 2*100G QSFP28 client to 1*200G CFP2 line mode
	T4Q1	400G Transponder Card: 4*100GE client to 1*400Gbps line mode
	T4Q2	400G Transponder Card: 4*100G QSFP28 client to 2*400G CFP2 line mode Dual 1*400G QSFP-DD client to 1*400G CFP2 line mode 1*400G CFP2 client to 1*400G CFP2 OEO repeater line mode 1*200G CFP2 client to 1*200G CFP2 OEO repeater line mode 1*100G CFP2 client to 1*100G CFP2 OEO repeater line mode
	T8E2	800G Transponder Card: 8*100G QSFP28 client to 1*800G CFP2 line mode Dual 2*400G QSFP112 client to 1*800 CFP2 line mode Dual 4*100G QSFP28 client to 1*400 CFP2 line mode 1*800G CFP2 client to 1*800G CFP2 OEO repeater line mode 1*400G CFP2 client to 1*400G CFP2 OEO repeater line mode 1*200G CFP2 client to 1*200G CFP2 OEO repeater line mode 1*100G CFP2 client to 1*100G CFP2 OEO repeater line mode
	T4Q4 (Under development)	400G Transponder Card: Quad 1*400G QSFP-DD client to 1*400Gbps QSFP-DD line mode
	M8X2 (Under development)	10G Muxponder Card: 10G muxponder board, 8*Anyrate to 2*10G

1.2.1 T4D2

Product Interface

Function Illustration



Product Specification

Technical Specifications	Description
Occupied Slots	1/4 slots,shown in name 1~8 slot
Client-side Interface	Supports 4 pluggable QSFP28 100G modules
Line-side Interface	Supports 2 pluggable 200G CFP2 DCO coherent module
Service Type	100GE /100GE FlexE (Unware Mode) /OTU4
Service Mapping Path	Dual 2*100G client to 1*200G line mode: . 100G<->ODU4<->ODUC2<->OTUC2 . OTU4<->ODU4<->ODUC2<->OTUC2
Line-side Modulation Format	200G: 16QAM / QPSK
WDM Technology	Support DWDM: C-band 50GHz 96 waves tunable
FEC Technology	Support oFEC
Client-side Ethernet RMON Monitoring function	Support
Client-side Automatic Laser Shutdown (ALS)	Support
Local Fault	Supports downstream insertion of Local Fault from the client side in case of Ethernet input loss or WDM side failure. Supports transparent transmission of Local Fault and Remote Fault.
Loop	Support
Time Delay Measurement	Support
Line-side Protection Function	When switching over with the optical protection card, the switchover must be completed within 50ms.

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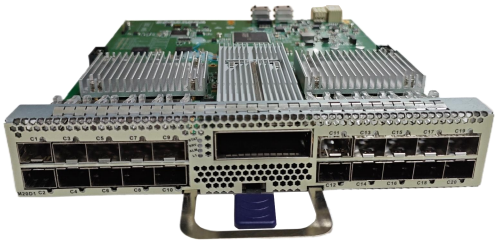
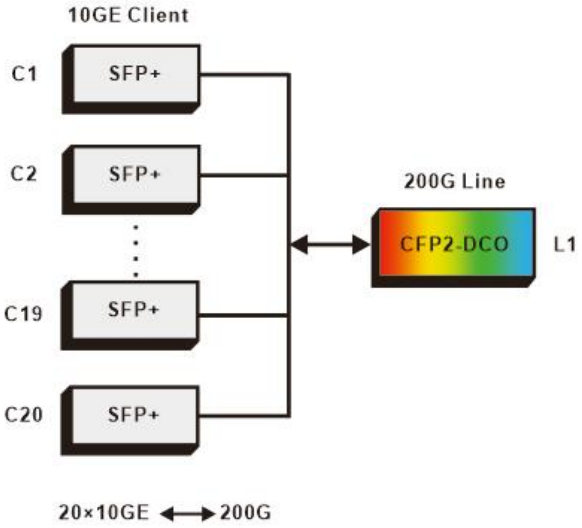
1.2.2 M20D1

Product Interface



Function Illustration



Product Specification

Technical Specifications	Description
Occupied Sots	1/2 slots,shown in name 2/4/6/8 slot
Client-side Interface	Supports 20 pluggable SFP+ 10G or 20 pluggable SFP GE modules
Line-side Interface	Supports 1 pluggable 200G CFP2 DCO coherent module
Service Type	10GE/GE
Service Mapping Path	20*10G client to 1*200G line mode: . 10G<->ODU2<->ODUC2<->OTUC2
Line-side Modulation Format	200G:16QAM / QPSK
WDM Technology	Support DWDM: C-band 50GHz 96 waves tunable
FEC Technology	Support oFEC
Client-side Ethernet RMON Monitoring function	Support
Client-side Automatic Laser Shutdown (ALS)	Support
Local Fault	Supports downstream insertion of Local Fault from the client side in case of Ethernet input loss or WDM side failure. Supports transparent transmission of Local Fault and Remote Fault.
Loop	Support
Time Delay Measurement	Support
Line-side Protection Function	When switching over with the optical protection card, the switchover must be completed within 50ms.
Client-side Ethernet RMON Monitoring function	Support

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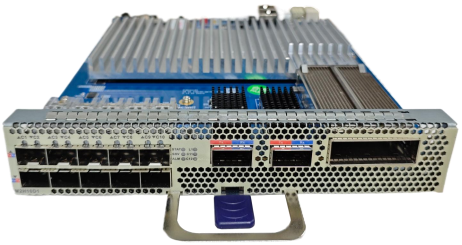
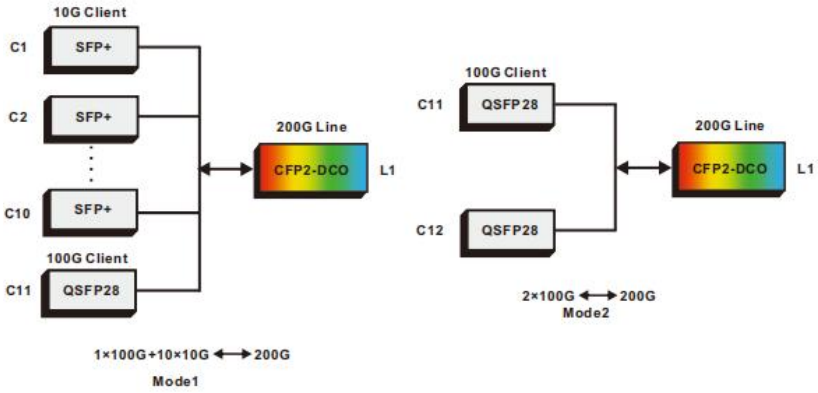
1.2.3 M2H10D1

Product Interface



Function Illustration



Product Specification

Technical Specifications	Description
Occupied Slots	1/2 slots,shown in name 2/4/6/8 slot
Client-side Interface	Supports 2 pluggable QSFP28 100G modules Supports 1 pluggable QSFP+ 40G modules Supports 10 pluggable SFP+ 10G modules
Line-side Interface	Supports 1 pluggable 200G CFP2 DCO coherent module
Service Type	10GE/OTU2/STM-64/10GE WAN/40GE/100GE/100GE FlexE (Unware mode)/OTU4
Service Mapping Path	2*100G client to 1*200G line mode: . 100G<-> ODU4<-> ODUC2<-> OTUC2 . OTU4<-> ODU4<-> ODUC2<-> OTUC 1*100G + 10*10G client to 1*200G line mode: . 100G<-> ODU4<-> ODUC2<-> OTUC2 . OTU4<-> ODU4<-> ODUC2<-> OTUC2 . 10G <->ODU2<->ODU4<-> ODUC2<-> OTUC2 . STM64 <-> ODU2 <-> ODU4<-> ODUC2<-> OTUC2 . OTU2 <-> ODU2<-> ODU4<-> ODUC2<-> OTUC2 1*40G + 10*10G client to 1*200G line mode: . 40G<-> ODU3<-> ODU4<->ODUC2<-> OTUC2 . 10G <->ODU2<->ODU4<-> ODUC2<-> OTUC2 . STM64 <-> ODU2 <-> ODU4<-> ODUC2<-> OTUC2 . OTU2 <-> ODU2<-> ODU4<-> ODUC2<-> OTUC2
Line-side Modulation Format	200G: 16QAM / QPSK
Line-side Protection Function	When switching over with the optical protection card, the switchover must be completed within 50ms.
Local Fault	Supports downstream insertion of Local Fault from the client side in case of Ethernet input loss or WDM side failure. Supports transparent transmission of Local Fault and Remote Fault.

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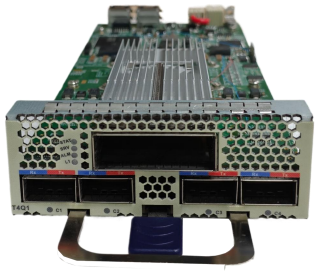
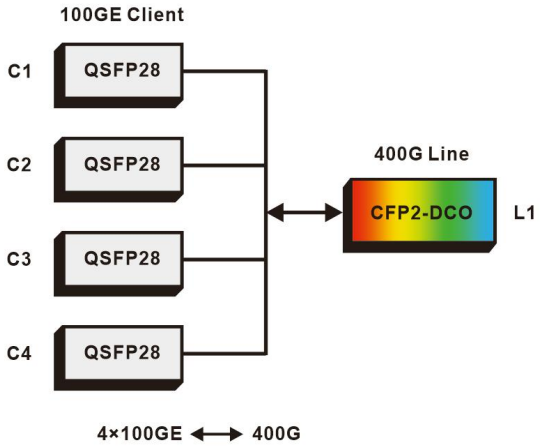
1.2.4 T4Q1

Product Interface



Function Illustration



Product Specification

Technical Specifications	Description
Occupied Slots	1/4 slots,shown in name 1~8 slot
Client-side Interface	Supports 4 pluggable QSFP28 100G modules
Line-side Interface	Supports 1 pluggable 400G CFP2 DCO coherent module
Service Type	100GE
Service Mapping Path	4*100G client to 1*400G line mode: . 100G<->ODU4<->ODUC4<->OTUC4
Line-side Modulation Format	400G: 16QAM/16QAM-PCS/QPSK
WDM Technology	Support DWDM: C-band 50GHz 96 waves tunable
FEC Technology	Support oFEC
Client-side Ethernet RMON Monitoring Function	Support
Client-side Automatic Laser Shutdown (ALS)	Support
Local Fault	Supports downstream insertion of Local Fault from the client side in case of Ethernet input loss or WDM side failure. Supports transparent transmission of Local Fault and Remote Fault.
Loop	Support
Time Delay Measurement	Support
Line-side Protection Function	When switching over with the optical protection card, the switchover must be completed within 50ms.

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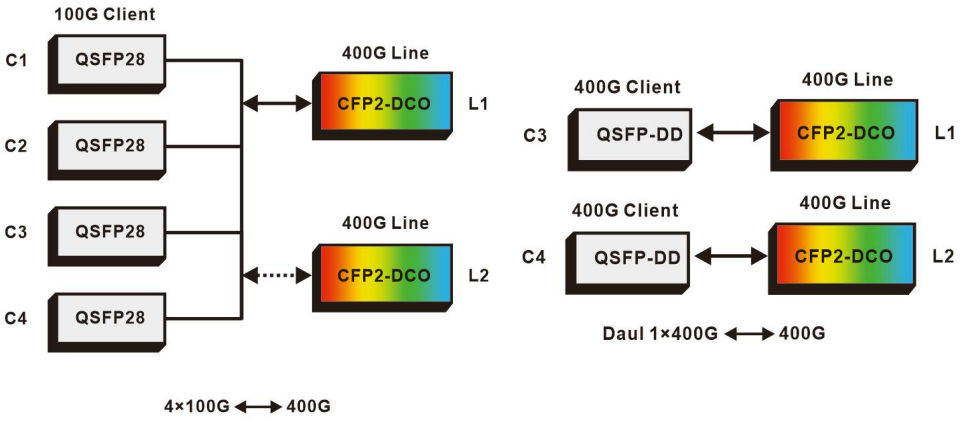
1.2.5 T4Q2

Product Interface

Function Illustration



Product Specification

Technical Specifications	Description
Occupied Slots	1/4 slots,shown in name 1~8 slot
Client-side Interface	Supports 4 pluggable QSFP28 100G modules Supports 2 pluggable QSFP-DD 400G modules
Line-side Interface	Supports 2 pluggable 400G CFP2 DCO coherent modules
Service Type	100GE /100GE FlexE (Unware Mode) / OTU4/400GE
Service Mapping Path	4*100G client to 1*400G line mode: . 100G<->ODU4<->ODUC2<->OTUC2 . OTU4<->ODU4<->ODUC2<->OTUC2 Dual 1*400G client to 1*400G line mode: . 400G<->ODUC4<->OTUC4
Line-side Modulation Format	400G:16QAM/16QAM-PCS/QPSK
WDM Technology	Support DWDM: C-band 50GHz 96 waves tunable
FEC Technology	Support oFEC
Client-side Ethernet RMON Monitoring function	Support
Client-side Automatic Laser Shutdown (ALS)	Support
Local Fault	Supports downstream insertion of Local Fault from the client side in case of Ethernet input loss or WDM side failure. Supports transparent transmission of Local Fault and Remote Fault.
Loop	Support
Time Delay Measurement	Support

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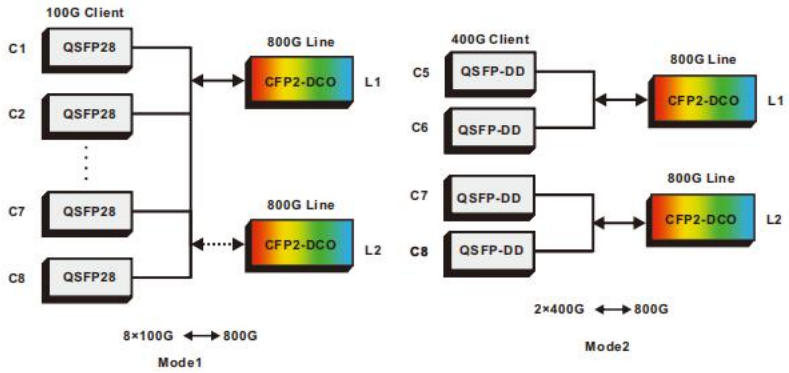
1.2.6 T8E2

Product Interface

Function Illustration



Product Specification

Technical Specifications	Description
Occupied Slots	1/2 slots,shown in name 2/4/6/8 slot
Client-side Interface	Supports 8 pluggable QSFP28 100G modules Supports 4 pluggable QSFP112 400G modules
Line-side Interface	Supports 2 pluggable 400G/800G CFP2 DCO coherent modules
Service Type	100GE, 100GE FlexE (Unware mode), 400GE
Service Mapping Path	8*100G client to 1*800G line mode: . 100G<->ODU4<->ODUC8<->OTUC8 Dual 2*400G client to 1*800G line mode: . 400G<->ODUC4<->ODUC8<->OTUC8 Dual 4*100G client to 1*400G line mode: . 100G<->ODU4<->ODUC4<->OTUC4 1*800G line to 1*800G line OEO repeater mode: . OTUC8<->ODUC8<->OTUC8 1*400G line to 1*400G line OEO repeater mode: . OTUC4<->ODUC4<->OTUC4
Line-side Modulation Format	400G: 16QAM-PCS/QPSK 800G: 16QAM
WDM Technology	Support DWDM: C-band 50GHz 96 waves tunable
FEC Technology	Support oFEC
Line-side Protection Function	When switching over with the optical protection card, the switchover must be completed within 50ms.
Local Fault	Supports downstream insertion of Local Fault from the client side in case of Ethernet input loss or WDM side failure. Supports transparent transmission of Local Fault and Remote Fault.

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1.2 Optical Layer Cards

The DCI5800 Optical Layer Service Cards have the following models, as shown in table.

Card Classification	Card Type	Hardware Description
Optical Layer Service Cards	OBA Card	Booster amplifier card
	OLA Card	Line amplifier card
	OPA Card	Pre amplifier card
	OP1 Card	OLP1+1 Optical line protection card
	OP2 Card	OLP1+1 Dual optical line protection card
	OTDR Card	Optical time-domain reflectometry monitoring card,supports 8 ports
	WSS Card	Nine channels ROADM card
	OCM Card	Optical channel monitor(frequency and optical power monitoring) card,supports 8 ports
	PTM Card	Time synchronization module card
	TFF Card	Fixed 4-wavelength mux/demux OADM card
	ROADM Card	Reconfigurable Optical Add-Drop Multiplexer
	OMD08	8-channel DWDM mux/demux card
	OMD48	48-channel DWDM mux/demux equipment
	OMD96	96-channel DWDM mux/demux equipment
	VMux/VDmux	Variable optical attenuator Multiplexer / Variable optical attenuator Demultiplexer

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1.3.1 EDFA Card

The EDFA Optical Amplifier Module delivers a versatile, low-noise solution for erbium-doped fiber amplifiers (EDFA). This compact module operates with constant gain (Automatic Gain Control, AGC) and constant output power (Automatic Power Control, APC), featuring a highly integrated design. The large-format module supports dual amplifiers with two independent gain units, the card occupies only 1/2 standard slot capacity.

Product Diagram

- Working wavelength range: 1528nm~1565nm
- Support for 1-2 amplification channels: BA/PA/LA, BA+PA or 2LA
- Low noise coefficient: typical value 5dB
- Excellent gain flatness
- The gain supports VOA adjustment ±5dB;
- Three working modes are available:
  - AGC gain adjustable
  - APC output adjustable
  - ACC voltage adjustable
- OSC function is optional to realize remote network management and monitoring
- Support OTDR 1625 interface
- Support MON port optical power monitoring

Performance Parameter		Least Value	Representative value	Crest value	Unit
Operating Wavelength		1528		1565	nm
Output Light Power				20	dBm
Gain		8		33	dB
Interiorinput Power	BA	-10		Maximum Output-gain	dBm
	PA/LA	(Maximum input-29)		Maximum Output-gain	
Noise Factor			5.0		dB
Gain Flatness			1.0		dB
Input Threshold		-34		Adjustable	dBm
Polarization-related Loss				0.3	dB
Polarization-dependent Gain				0.4	dB
Polarization Mode Dispersion				0.5	ps
Pump Leakage				-29	dBm
Return Loss		45			dB
Size		216 (W) * 262 (D) * 40 mm (H)			mm
Environment	Working Temperature	-10℃ ~ 60℃			℃
	Storage Temperature	-40℃ ~ 80℃			℃
	Relative Humidity	5% ~ 95% no condensation			
Power Dissipation		≤30			W

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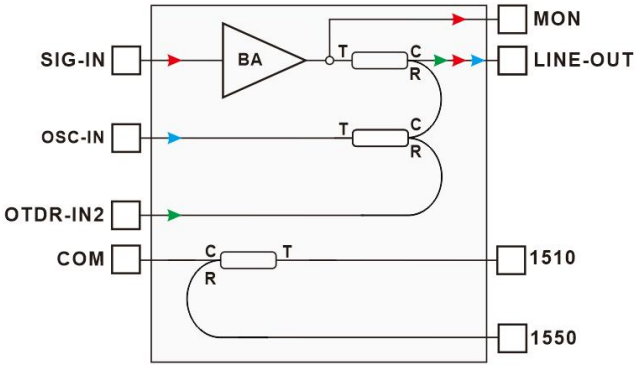
1.3.1.1 OBA

Product Interface

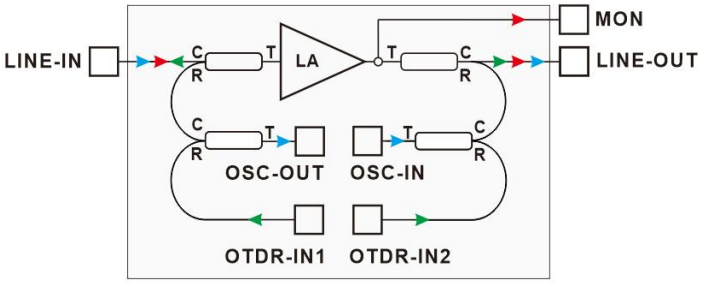
Function Illustration



1.3.1.2 OLA

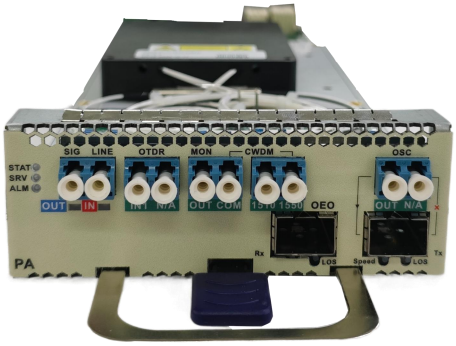
Product Interface

Function Illustration

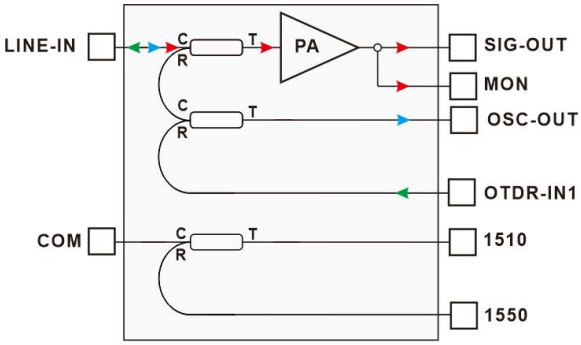


1.3.1.3 OPA

Product Interface



Function Illustration



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Interface Definition

Interface	Name	Function
LINE IN	PA/LA/BA Input Interface	Small signal optical power input port.
SIG OUT	PA/LA/BA Output interface	EDFA amplified output optical port.
OTDR IN1	OTDR Input Interface	OTDR signal input optical port
MON OUT	Monitoring port	EDFA performance monitoring interface, connect to OPM or spectrometer.
WDM COM	COM port	WDM COM optical port
WDM 1510	1510 Signal	1510 Signal Light Port
WDM 1550	1550 Signal	1550 Signal Light Port
OSC OUT	Monitoring channel output port	Link SFP RX to transmit network management information.
RX	Optical module input port	Transmit network management information
TX	Optical module output port	Transmit network management information

Indicator Light Description

Name	Function Description
STAT (Card Operating Status Indicator)	A solid green light indicates that the device is powered on and functioning normally.
	A solid red light indicates an emergency alarm on the device.
	A red flashing light at a frequency of 1Hz indicates a major alarm in the device.
	A solid yellow light indicates a minor alarm in the device.
	A yellow flashing light at a frequency of 1Hz indicates a software malfunction in the device.
	If the light is off, it means the device is not powered on or is not working properly.
ALM (Alarm Indicator Light)	A solid green light indicates that the device is powered on and functioning normally.
	A solid red light indicates an emergency alarm on the device.
	A solid yellow light indicates a minor alarm in the device.
	If the light is off, it means the device is not powered on or is not working properly.
SRV (Indicator Light)	none

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1.3.2 OLP Card

The Optical Line Protection (OLP) system is an innovative optical line protection subsystem developed using advanced dynamic synchronous optical switching technology. When unexpected fiber breakage or significant signal loss in optical transmission lines causes communication quality degradation or equipment failures, the OLP system can rapidly switch to backup lines within seconds. This ensures uninterrupted service delivery while effectively preventing fiber or equipment malfunctions, reducing recovery time from hours to milliseconds. The OLP Card including OP1 card and OP2 card .The card occupies only 1/4 standard slot capacity.

Product Diagram

- Supports automatic switching between primary and secondary routes
- Support manual and automatic mode switching
- Low switching time <15ms
- Low insertion loss: <5.5dB
- Support automatic return to home
- Support manual and automatic mode setting
- Supports switching threshold setting
- Support 1~2 OLP1+1 protection

The optical line protection switch provides two switching modes, manual and automatic. In manual mode, the system switches the optical path only according to the user's command.

In automatic mode, the system switches based on the detected power level and preset threshold. In automatic mode, the system can be set to recovery mode or non-recovery mode.

Product Specification

Performance Parameter		1+1	Unit
Operating Wavelength		1310±50nm, 1550±50nm	nm
Range of Light Power		+ 23 ~ -50	dBm
Accuracy of Light Power		±0.25	dB
Measure Optical Power Resolution		±0.01	dB
Return Loss		≥55	dB
Polarization-related Loss		≤0.05	dB
Wavelength Dependent Loss		≤0.1	dB
Insertion Loss		Tx≤4dB，RX≤1.2dB	dB
Switching Speed		<15	ms
Size		107 (W) *262 (D) * 40 (H)	mm
Environment	Working Temperature	-10℃ ~ +60℃	℃
	Storage Temperature	-40℃ ~ +85℃	℃
	Related Humidity	5%~95% no condensation	
Power Dissipation		≤15	W

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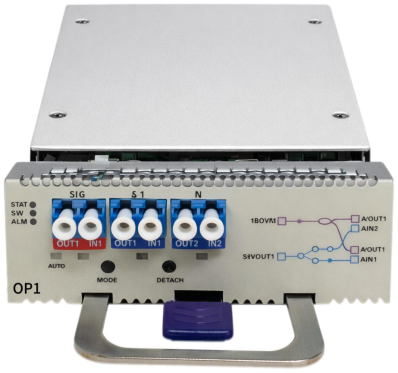
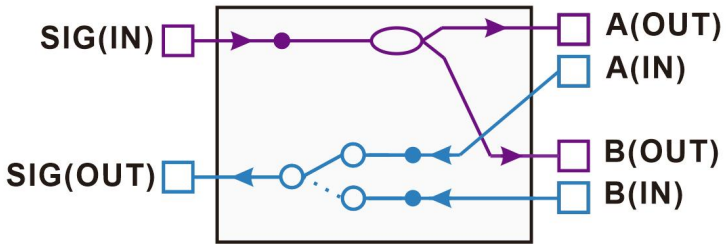
1.3.2.1 OP1

The OP1 optical line protection card is a protective device designed for optical communication lines with significant loss redundancy.

Product Interface



Function Illustration



Product Specification

Function	Description
Occupied Slots	1 slots
Basic Function	The 1+1 protection of two independent optical signals is realized. The system supports the protection switching recovery mode, threshold, waiting time and control command through the network management.
Guard Mode	According to the position of the disk, the wavelength protection, channel protection, multiplexing section protection and optical line protection are realized. The system supports optical input detection for OTDR under optical line protection.

Indicator Light Description

Name	Function Description
STAT (Card Operating Status Indicator)	A solid green light indicates that the device is powered on and functioning normally.
	If the light is off, it means the device is not powered on or is not working properly.
SRV (Service Light)	A solid green light indicates that the device's service configuration is normal and there are no alarms, indicating that it is in good working order.
	A solid red light indicates an urgent alarm in the device's operation (such as signal loss, frame loss, etc.).)
	A solid yellow light indicates a minor alarm or a remote alarm in the device's operation.
ALM (Alarm Indicator Light)	A solid green light indicates that the device is powered on and functioning normally.
	A solid red light indicates an emergency alarm on the device.

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	A solid yellow light indicates a minor alarm in the device.
	If the light is off, it means the device is not powered on or is not working properly.
Auto(Working Mode Indicator Light)	On: In automatic mode; off: In manual mode.
MODE	The working mode switch button can be pressed and held to switch between manual and automatic modes.
DETACH	Optical switch switch, main/backup circuit switch button

Note: When ports A and B flash, it indicates the port is in active use. A red light flashing signals abnormal power, while a green light flashing indicates normal power.

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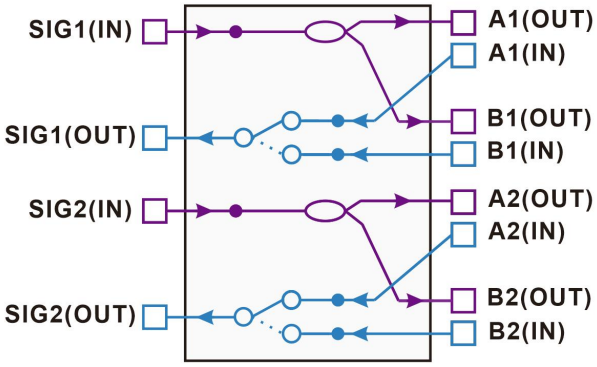
1.3.2.2 OP2

The OP2 Optical Protection Card is a protection device designed for optical communication lines with high loss redundancy.

Product Interface

Function Illustration



Product Specification

Function	Description
Occupied Slots	1 slots
Basic Function	The 1+1 protection of two independent optical signals is realized. The system supports the protection switching recovery mode, threshold, waiting time and control command through the network management.
Guard Mode	According to the position of the disk, the wavelength protection, channel protection, multiplexing section protection and optical line protection are realized. The system supports optical input detection for OTDR under optical line protection.

Indicator Light Description

Name	Function Description
STAT (Card Operating Status Indicator)	A solid green light indicates that the device is powered on and functioning normally.
	If the light is off, it means the device is not powered on or is not working properly.
SRV (Service Light)	A solid green light indicates that the device's service configuration is normal and there are no alarms, indicating that it is in good working order.
	A solid red light indicates an urgent alarm in the device's operations (such as signal loss, frame loss, etc.).
	A solid yellow light indicates a minor alarm or a remote alarm in the device's operation.
ALM (Alarm Indicator Light)	A solid green light indicates that the device is powered on and functioning normally.
	A solid red light indicates an emergency alarm on the device.

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	A solid yellow light indicates a minor alarm in the device.
	If the light is off, it means the device is not powered on or is not working properly.
Auto1(Working Mode Indicator Light)	On: In automatic mode; off: In manual mode.
Auto2(Working Mode Indicator Light)	On: In automatic mode; off: In manual mode.
MODE1	The working mode switch button can be pressed and held to switch between manual and automatic modes.
MODE2	The working mode switch button can be pressed and held to switch between manual and automatic modes.
DETACH1	Optical switch switch, main/backup circuit switch button
DETACH2	Optical switch switch, main/backup circuit switch button

Note: When ports A1/2 or B1/2 flash, it indicates the port is in active use. A red light flashing signals power abnormality, while a green light flashing indicates normal power.

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1.3.3 OTDR Card

The optical cable monitoring system integrates optical cable monitoring, alarm detection, fault analysis, positioning, fault management, line maintenance, and network administration into a unified solution. This system ensures secure and efficient operation of optical fiber networks by providing 24/7 automated monitoring and automatic fiber switching protection. It promptly identifies sudden faults, significantly reduces downtime, and detects potential issues that could cause communication disruptions through early warnings, enabling proactive maintenance and preventing risks before they materialize. The card occupies only 1/4 standard slot capacity.

Product Diagram

- Optical time domain reflection monitoring card, occupies 1/4 slot
- Support working wavelength: 1625nm ±10nm
- Support pulse width: 5ns~20us
- Supports optical fiber polling monitoring in 8 directions
- Support real-time online monitoring

Product Specification

Performance Parameter	Qualification	Unit
Operating Wavelength	1501 or 1625	nm
OTDR Dynamic Range	≥30	dB
OTDR Pulse Width Range	0. 1~20	us
Maximum Detection Distance	≥80	km
OTDR Loss Detection Accuracy	±0.5	dB
OTDR Distance Detection Accuracy	< 20	m
Sampling Precision Pulse Width Range	0.05~8	m
OTDR Event Blind Spots	< 10	m
OTDR Attenuation Blind Zone	< 20	m
Degree of Linearity	±0.05	dB/dB
Maximum Output Optical Power	< 17	nm
Monitoring Port	8	
Size	107(W) * 262(D) *40 (H)	mm
Working Temperature	-10℃ ~ +60℃	
Storage Temperature	-40℃ ~ +85℃	
Related Humidity	5%~95% no condensation	
Power Dissipation	≤15	w

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1.3.4 WSS09 1x9 ROADM Card

The 1x9 ROADM is a compact solution designed for all network types, enabling dynamic traffic design and seamless wavelength routing changes. As a building block for reconfigurable 9D splitters, the 1x9 ROADM features nine independent ports. Port addition utilizes wavelength selection switches (WSS) to dynamically select from 96 DWDM channels on the ITU-T 50 GHz C-band grid for each port's input signal.The card occupies only 1/4 standard slot capacity.

- 50/100GHz optional channel spacing
- Colorless, odorless
- The user can configure the highly flexible control
- High resolution integrated VOA
- Quick channel change
- Integrated optical channel monitoring
- hot plug
- Supports integrated BA+PA amplifiers

Product Diagram

Performance Parameter		Qualification			Unit
Channel Wavelength		1528.773~1566.73			nm
Channel Spacing		50/100			Ghz
Channel Spectrum Width		N*12.5	4≤N≤12		Ghz
Channel Passband		> 0.3			nm
Insert Loss Flatness		< 0.5			dB
Insertion Loss	(Add 1~9 to BA input)	6.3	7.5	8.1	(dB)
	(PA output to Drop 1~9)	6.3	7.5	8.1	(dB)
Channel Separation	Nearest values	25			dB
	Nonadjacent values	35			dB
Polarization-related Loss		<0.15			dB
VOA Dynamic Range		0~15dB			dB
VOA Sets Resolution		0.1			dB
VOA Setprecision	@0~10dB damping	±1			dB
	@>10dB damping	±1.5			
Directivity		>50			dB
Return loss		>45			dBm
Response Time		< 2dB step	< 1400		ms
		< 15dB step	< 2000		
		Port switching	< 3000		
Size	216 (W) * 262 (D) * 40 (H)				mm
Working Temperature	-10℃ ~ +60℃				
Storage Temperature	-40℃ ~ +85℃				
Relative Humidity	5%~95% Non-condensing				
Power Dissipation	≤80				w

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1.3.5 OCM Card

The Optical Channel Monitoring (OCM) module serves as a critical component in optical transmission systems, providing comprehensive monitoring and measurement of DWDM wavelengths at strategic points within optical communication nodes. This module identifies discrete DWDM wavelengths and delivers detailed optical power data, while supporting 8-core fiber power monitoring capabilities.

Strategically placing modules in different locations within the optical network, combined with the flexibility and quality of information obtained through remote access management, provides a powerful tool for troubleshooting and advanced alert purposes.The card occupies only 1/4 standard slot capacity.

Product Diagram

- Hot plug
- 50GHz channel interval monitoring
- The card provides 8 ports,
- Real-time monitoring channel wavelength occupancy status
- Supports the selection of any port for optical power detection
- Supports 8-way timed polling detection
- Support real-time online monitoring

Product Specification

Performance Parameter	Qualification	Unit
Working Wavelength Range	1528~1567	nm
Channel Spacing	50/100	GHz
Power Detection Accuracy	≤1dB	dB
Relatively Power Accuracy	±0.8	dB
Optical Precision	0.1	dB
OCM Scan Time-all Channels	≤1	s
Channel Power Range	-40~-10	dBm
Wavelength Accuracy	±0.1	nm
Wavelength Accuracy	0.02	nm
Switch Time (maximum)	30	ms
Number of Scans	> 1	Billion
Size	216 (W)*262 (D) * 40 (H)	mm
Working Temperature	-10～+60	℃
Storage Temperature	-40～+85	℃
Relative Humidity	5%~95% Non-condensing	
Power Dissipation	≤80	W

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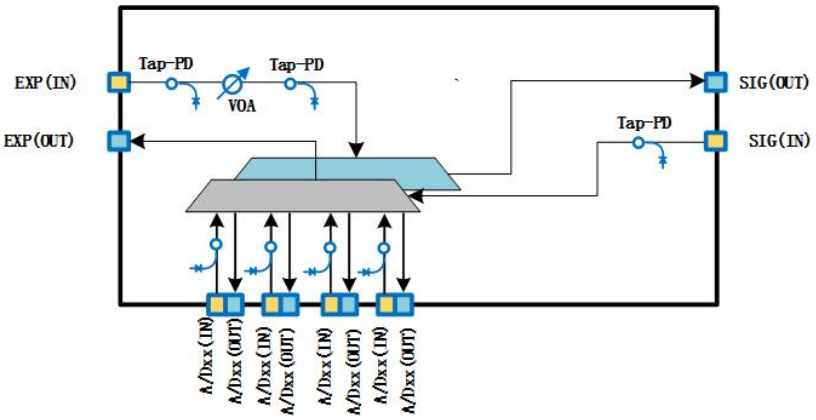
1.3.6 TFF Card

Product Interface

Function Illustration



Product Specification

The optical splitter multiplexer which realizes DWDM fixed wavelength channel up and down service function is presented.

Function	Description
Occupied Slots	1 slot
4 Fixed Wavelengths	Implementing up and down wave services for four 100GHz interval channels at 195.6/195.7/195.8/195.9THz
Port Traversal And Extension Cascade	The EXP IN/OUT port enables cascading of TFF cards supporting 191.4-195.5/196.0-196.1THz wavelength services (excluding those defined by TFF5659), along with wavelength service traversal.

Indicator Light Description

Name	Function Description
STAT (Card Operating Status Indicator)	A solid green light indicates that the device is powered on and functioning normally.
	If the light is off, it means the device is not powered on or is not working properly.
SRV (Service Light)	A solid green light indicates that the device's service configuration is normal and there are no alarms, indicating that it is in good working order.
	A solid red light indicates an urgent alarm in the device's operations (such as signal loss, frame loss, etc.).
	A solid yellow light indicates a minor alarm or a remote alarm in the device's operation.
ALM (Alarm Indicator Light)	A solid green light indicates that the device is powered on and functioning normally.
	A solid red light indicates an emergency alarm on the device.
	A solid yellow light indicates a minor alarm in the device.

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	If the light is off, it means the device is not powered on or is not working properly.

Technical Specifications of TFF Card

Project	Unit	Metric	Remarks
Channel Spacing	GHz	100G	Flat-topped spectrum
Insertion Loss (Exp In to Sig Out)	dB	≤3	
Insertion Loss (Sig In to Exp Out)	dB	≤2	
Add to Sig Out	dB	≤2	
Insertion Loss (Sig In to Drop)	dB	≤2	
3dB Bandwidth	GHz	>75	
Adjacent Channel Isolation Degree	dB	>25	
Co-frequency Isolation	dB	>30	Drop direction

VOA Accuracy Indicators

Project	Unit	Metric	Remarks
Operating Wavelength	nm	1528 ~ 1568	
Type		Bright/ Latching	The power-off state is characterized by inherent insertion loss or minimum insertion loss.
Scope and Accuracy	dB	0~15 @ 0.1dB	The maximum value must be at least 15dB
Inherent Insertion Loss	dB	<1	Typical value: 0.5dB
Wavelength Dependent Loss	dB	< 0.3 @0~8dB < 0.6 @8~15dB	
Return Loss	dB	>40	
Polarization Dependent Loss	dB	<0.5	
Response Time	ms	<200	No business shall be impaired during the adjustment period

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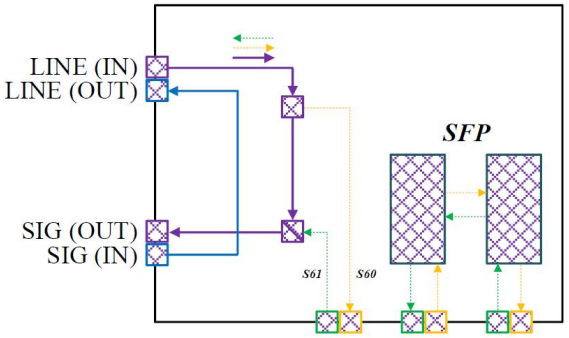
1.3.7 PTM Card

The time synchronization PTM cards, including PTM-W and PTM-E cards, each card occupies only 1/4 standard slot capacity.

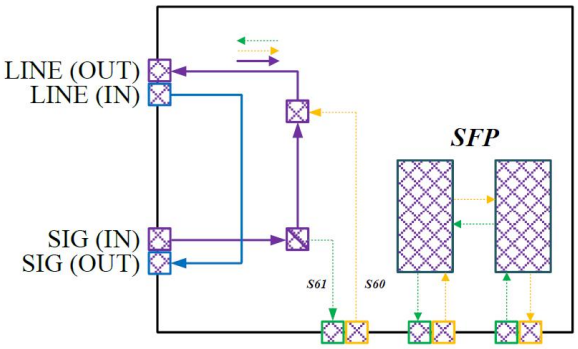
Product Interface

Function Illustration

Working Principle Diagram of PTM-E Card



Working Principle Diagram of PTM-W Card



Technical Specifications of PTM-E/PTM-W Card

Project	Unit	Metric	Remarks
LINE In to C61/60 Out/In	dB	≤1.3	
LINE In to SIG Out	dB	≤1.3	
Insertion Loss (SIG In to LINE Out)	dB	≤0.3	
Line Delay Difference (LINE In to PTPC61Out/In)	ns	≤±1	
Line Delay Difference (LINE Out to PTPC60Out/In)	ns	≤±1	

Indicator Light Description

Name	Function Description
STAT (Card Operating Status Indicator)	A solid green light indicates that the device is powered on and functioning normally.
	If the light is off, it means the device is not powered on or is not working properly.
SRV (Service Light)	A solid green light indicates that the device's service configuration is normal and there are no alarms, indicating that it is in good working order.

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	A solid red light indicates an urgent alarm in the device's operations (such as signal loss, frame loss, etc.).
	A solid yellow light indicates a minor alarm or a remote alarm in the device's operation.
ALM (Alarm Indicator Light)	A solid green light indicates that the device is powered on and functioning normally.
	A solid red light indicates an emergency alarm on the device.
	A solid yellow light indicates a minor alarm in the device.
	If the light is off, it means the device is not powered on or is not working properly.

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1.3.8 ROADM Card

This document specifies the requirements of a C-band distributed RAMAN amplifier. The amplifier modules can be operated at constant pump power (AWC). Different wavelength pump power can be adjusted to achieve smooth gain spectrum for the DWDM network application. It can amplify the single channel signal, in order to achieve the best OSNR; the module integrated a narrow band filter to suppress the ASE power.

Performance Parameter

Parameter		Min.	Typical	Max.	Unit
Operating Wavelength		1528		1565	nm
Output Power					dBm
Pump Wavelength		1423		1465	nm
Pump power	Boost-RAMAN	700			mw
	Pre-RAMAN	1300			mw
Gain	Boost-RAMAN		10		dB
	Pre-RAMAN		26	28	dB
Input Power	Boost-RAMAN	0		14	dBm
	Pre-RAMAN	-40		-20	
Noise Figure			-2		dB
Gain Flatness			2.2	2.5	dB
Input Threshold	Boost-RAMAN		0	Can be adjusted	dBm
	Pre-RAMAN		-40	Can be adjusted	dBm
Polarization Dependence Loss					dB
Polarization Dependence Gain				0.5	dB
Polarization Mode Dispersion				0.5	ps
Return Loss		45			dB
Size		191 (W) x 253 (D) x 40 (H)			mm
Environment	Operating Temperature	-5℃ ~ 55℃			℃
	Storage Temperature	-40℃ ~ 75℃			℃
	Relative Humidity	5% ~ 95% Non-condensing			
Power Consumption		≤45			W

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1.3.9 MUX/DeMUX Card

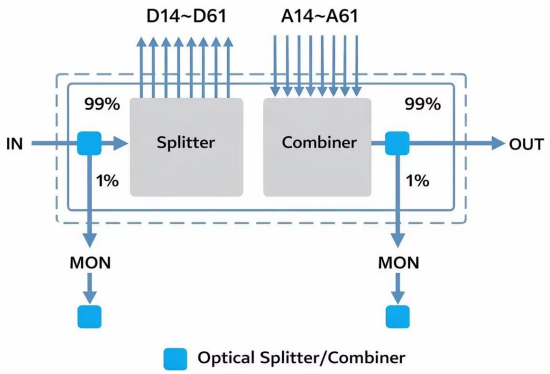
OMD 08/48/96 Card

The passive MUX device for signal splitting operates independently of the sub-frame chassis and can be installed in a standard 19-inch data cabinet, with a height of 1U.

Product Specification

Function	Description
Basic Function	The 8/48/96-channel DWDM100GHz interval signal combining and splitting function is realized. The wavelength range of the 8/48/96th odd-numbered wave is 1528.773nm ~ 1566.314nm in C-band. The odd-numbered wavelength range of 8/48/96 is C-band 1529.163nm ~ 1566.723nm.
Split Wave Function	The combined wave direction: The even-numbered wave 8/48/96-channel single-wavelength optical signal is multiplexed into a single optical fiber, amplified by an amplifier disk, and then transmitted via the line. The splitting direction: 1 multi-wavelength optical signal is divided into 8/48/96 even-numbered wavelengths.
Online Monitoring Feature	The system provides an online monitoring port, which can be connected to a spectrometer to monitor the spectral performance of the optical signals input and output by the line without interrupting the service.

Working Principle and Signal Flow



The IN optical port receives the composite signal transmitted from the upstream station, splits it into 8/48/96 wavelengths, and outputs them through the D14 to D61 optical ports respectively.

The A14 to A61 optical ports are used to combine 48 wavelengths, and the combined signal is output through the OUT optical port.

Project	Unit	Metric	Remarks
MUX			
Channel Count	Ch	8/48/96	
Wavelength Coverage	nm	1528.773~1566.314	
Spectrum Types		flat-topped type	
Channel Spacing	GHz	100	
Insertion Loss	dB	<6	
Return Loss	dB	>40	
Polarization Dependent Loss	dB	<0.5	
Adjacent Channel Isolation Degree	dB	>15	
Non-adjacent Channel Isolation degree	dB	>30	
Maximum Difference in Insertion Loss Per Channel	dB	<1	
Central Frequency Deviation	GHz	±2.5	
1dB Minimum Spectral width	GHz	>50	
3dB Minimum Spectral width	GHz	>75	
20dB Maximum Spectral Width	GHz	<150	
Monochromatic Splitting Ratio	dB	16~23	Spectral ratio 1%
DeMUX			
Channel Count	Ch	8/48/96	
Wavelength Coverage	nm	1528.773~1566.314	
Spectrum Types		flat-topped type	
Channel Spacing	GHz	100	
Insertion Loss	dB	<6	
Return Loss	dB	>40	
Polarization Dependent Loss	dB	<0.5	
Adjacent Channel Isolation Degree	dB	>15	
Non-adjacent Channel Isolation Degree	dB	>30	
Maximum Difference in Insertion Loss Per Channel	dB	<2	
Central Frequency Deviation	GHz	±2.5	
1dB Minimum Spectral Width	GHz	>50	
3dB Minimum Spectral Width	GHz	>75	
20dB Maximum Spectral Width	GHz	<150	
Monochromatic Splitting Ratio	dB	16~23	Spectral ratio 1%

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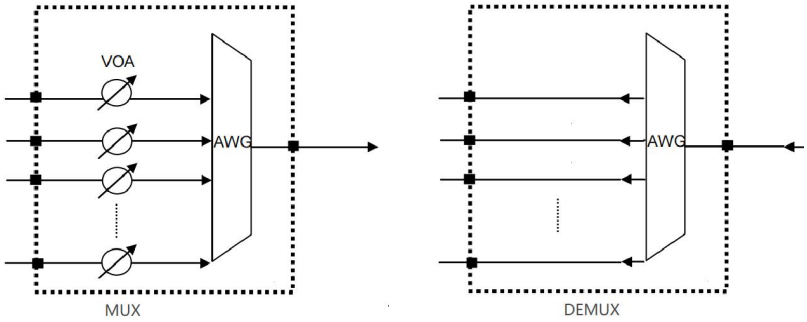
1.3.10 VMux/VDmux



Project	Unit	Metric	Remarks
MUX			
Channel Count	Ch	48	
Wavelength Coverage	nm	1528.773~1566.314	
Spectrum Types		flat-topped type	
Channel Spacing	GHz	100	
Insertion Loss	dB	<7	
Return Loss	dB	>40	
Polarization Dependent Loss	dB	<0.5	
Adjacent Channel Isolation Degree	dB	>15	
Non-adjacent Channel Isolation degree	dB	>30	
Maximum Difference in Insertion Loss Per Channel	dB	<1	
Central Frequency Deviation	GHz	±2.5	
1dB Minimum Spectral width	GHz	>50	
3dB Minimum Spectral width	GHz	>75	
20dB Maximum Spectral Width	GHz	<150	
Monochromatic Splitting Ratio	dB	16~23	Spectral ratio 1%
Attenuation Range	dB	0~15	
Attenuation Resolution	dB	0.1	
Repeatability of attenuation setting	dB	+/-0.1	
Attenuation Accuracy	dB	+/-0.8	
	dB	+/-1.2	
VOA Response Time	ms	10	
Power Off Status	dB	10	
DeMUX			
Channel Count	Ch	48	
Wavelength Coverage	nm	1528.773~1566.314	
Spectrum Types		flat-topped type	
Channel Spacing	GHz	100	
Insertion Loss	dB	<6	
Return Loss	dB	>40	
Polarization Dependent Loss	dB	<0.5	
Adjacent Channel Isolation Degree	dB	>15	
Non-adjacent Channel Isolation Degree	dB	>30	

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Maximum Difference in Insertion Loss Per Channel	dB	<2	
Central Frequency Deviation	GHz	±2.5	
1dB Minimum Spectral Width	GHz	>50	
3dB Minimum Spectral Width	GHz	>75	
20dB Maximum Spectral Width	GHz	<150	
Monochromatic Splitting Ratio	dB	16~23	Spectral ratio 1%

2.Optical Modules

Optical Module Type	Specifications	Applicable Cards
SFP	GE SFP 1310nm 10km	PTM-E, PTM-W, M20D1,M8X2
	GE SFP CH60 80km	PTM-E, PTM-W
	GE SFP CH61 80km	PTM-E, PTM-W
SFP+	10G SFP+ 1310nm 10km	M20D1, M2H10D1
	8G SFP+ 1310nm 10km 8G SFP+ 850nm 100m	M2H10D1
	16G SFP+ 1310nm 10km 16G SFP+ 850nm 100m	M2H10D1
	32G SFP+ 1310nm 10km 32G SFP+ 850nm 100m	M2H10D1
QSFP+	40G QSFP+ LR4 1310nm 10km	M2H10D1
	40G QSFP+ SR4 850nm	
QSFP28	100G QSFP28 LR4 1310nm 10km	T4Q1, T4D2, M2H10D1, T8E2
	100G QSFP28 CWDM4 2km	
	100G QSFP28 SR4 850nm	
QSFP-DD	400G QSFP-DD LR4 1310nm 10km	T4Q2,T4Q4
	400G QSFP-DD coherent DCO	T4Q4
QSFP112	400G QSFP112 LR4 1310nm 10km	T8E2
CFP2	200G CFP2 coherent DCO	T4D2, M20D1,M2H10D1
	400G CFP2 coherent DCO	T4Q1,T4Q2
	800G CFP2 coherent DCO	T8E2

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