### **DCI-FW1600** Box service conversion system

# Data center interconnection equipment

# **Product Description**

Thank you for choosing our product!

### Product safety precautions

Read the following carefully before installing and using the product. We are not liable for any loss resulting from the breach of safety precautions.



(1) Please connect the hanging ear with the equipment frame and ensure that the screws are tightened to prevent the equipment from falling.

(2) Install the frame with hanging ears in the cabinet and ensure that the screws are tightened to prevent the equipment from falling.

(3) Please correctly access the external power supply according to the power board card interface type.

(4) Check whether the fixing screws of each plate are tightened to avoid abnormal equipment work due to loose plate card.

(5) The heat dissipation outlet of the equipment is located on both sides of the frame. Please ensure normal air circulation on both sides to ensure good heat dissipation of the equipment.

- (6) Keep the machine room clean and dust-free and constant temperature.
- (7) Before putting the equipment on to the power, it must be confirmed that the power switch is closed, and the parts and cables are not damaged, and ensure that the power supply voltage of the equipment is in the normal operation of the equipment



#### **Special attention:**

1. Do not allow any objects into the product, not to allow damage to the product, and avoid use in the following environments.

### FIBER WD M

- 2. When the product is working, do not look directly at the end surface of the optical fiber to avoid eye damage caused by invisible laser to high power.
- 3. Do not allow any objects into the product, not to allow damage to the product, and avoid use in the following environments:
  - Direct sunlight or high-temperature baking environment;
  - Environment where the temperature changes dramatically;
  - Dusty or humid environment;
  - Environment of strong electric or magnetic fields;
  - The environment in which corrosive gases, flammable and explosive gases, or chemical gases diffuse.
  - The machine room has no lightning protection, dustproof, anti-electromagnetic interference and anti-static environment
- 4. Please turn off the power supply immediately and contact us for negotiation and handling in the following circumstances:
  - The product has been soaked by rain or liquid infiltration;
  - Product falling from high places or damaged shell;
  - The product has a burning smell;
  - Products have a spark phenomenon;
  - Product issued abnormal sound;
  - The product cannot work normally;



Please contact us if you have any questions. Do not remove the product without authorization, otherwise it will cause irreparable damage



## Catalogue

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### **DCI-FW1600** Box service conversion system

#### $1_{\text{S}}$ Equipment Description



图 2-1 Box Front

#### 1.NMU Slot

2.Business card slot, 4 business card slots in total (supporting 400G and 200G business cards)

3.2 Box lug

II ∖ Back



图 2-2 Box Back

1.Two hot plug power modules are supported

2. Three hot swappable high-speed fan modules are supported



#### 2、 Function board introduction

I、NMU



图 3-1 NMU Pront

(1)Light: P1、P2、S1、S2、RUN

(2)Ethernet interface: ETH1、ETH2

(3)Optical module interface: S1, S2

Name	Interface	Туре
ETH	Network communication port	RJ-45
S1&S2	OSC inbound and outbound management interface	SFP

Name	Object	Describe
	Light	P1 and P2 indicate the operation of the main and standby power supplies of the equipment, S1 and S2 indicate the interface status of the optical module, RUN indicates the operation status of the equipment, and the RUN light flashes once a second under normal conditions.
NMU	Ethernet interface	Support Ethernet interface, use IP routing protocol and Web side to achieve network management function, and monitor equipment operation status.
	Optical module interface	It supports 1000Mbps SFP optical module, which is used for the monitoring of external OSC network management and other devices.



#### $\rm II$ $\sim$ 400G Function card



图 3-2 400G Function card

(1)Light: PWR、RUN、ALM、L1

(2)Optical module interface: L1

(3)Optical module interface: C1、C2、C3、C4

Name	Object	Describe
4000	Light	PWR indicates the operation of card slot power supply; RUN indicates the running state of the equipment, which normally flashes once a second; ALM indicates signal or service alarm, which is red when it is on; L1 indicates the insertion status of the line side light module.
Function card	Optical module interface	L1 port is the line side optical module interface, supporting CFP2 optical module
	Optical module interface	C1~C4 are the customer side optical module interfaces, supporting QSFP28 optical modules



#### III、 200G Function card



图 3-3 200G Function card

- (1) Light: PWR、RUN、ALM、L1
- (2) Optical module interface: L1
- (3) Optical module interface: C1、C2

Name	Object	Describe
200G	Light	PWR indicates the operation of card slot power supply; RUN indicates the running state of the equipment, which normally flashes once a second; ALM indicates signal or service alarm, which is red when it is on; L1 indicates the insertion status of the line side light module.
Function	Optical module interface	L1 port is the line side optical module interface, supporting CFP2 optical module
	Optical module interface	C1~C2 are the customer side optical module interfaces, supporting QSFP28 optical modules



#### $\mathrm{IV}\,{\scriptstyle\smallsetminus}\,$ Power supply unit



图 3-5 Power Unit

Name	Object	Describe
	FAN	When the power supply is turned on, the fan is used for cooling in the chassis.
Power	AC interface	AC power cord can be inserted to supply power to the equipment.
	Switch	When the switch is turned on, it is red and normally on. When the switch is turned off, it is off.



#### 3、Hardware instructions





- (1) The master control card can support the equipment network cable access and the monitoring optical module access.
- (2) The L interface of the rate board can support the CFP2 optical module to make the incoming of the line side and the outgoing of the service.
- (3) The C interface of the rate board can support the incoming and outgoing services of the 100G QSFP28 optical module.
- (4) The power interface supports AC power cord.



#### 4、Software instructions

 $I \mathrel{\scriptstyle\diagdown}$  Software Login

 $\leftarrow$   $\rightarrow$  C  $\oplus$  192.168.1.126

Connect the Ethernet interface on the main control board card with a network cable. Open the browser on the PC side to log in to the Web network management system. The default IP address is 192.168.1.126. The IP address of the network card on the PC side needs to be set to the same network segment. Default user name: admin, password: admin.

					Web Vers	Web Version: 22.08.1
					Language	Language English
• admin						
• admin						
<b>a</b>	<b>`</b> **					
Log	gin					



#### II 、 Basic interface

								1										
													w	eb Version	1: 22 08 16	Logout		
	And in case of the												L	anguage	English	Reboot		
6		(			_			_		_				_		 	2	_
	Monitor		(		Contrasta		Division of	-		C.C.C.C.C.C.C.C.C.C.C.C.C.C.C.C.C.C.C.	-							)
1				•	-#			-	×. ×		The .							
				•	35	- 23	185 =	-	23									
	Slott - CFP2		l r	-	_	_	_	_	_	_	_	_	_					J
	Slot2 - CFP2			-						0	Th		_				-	-
	Slot3 - CFP4			RxPower(dBm)	-50.00	TxPower(dBm)	-50.00	set	Rx alarm threshold	Λ	Module	State Re	dey.					<b>C</b>
	A			Max wavelength(nm)	1310	Work mode	She 🗸	set	Input code	4	Line ra	te (Gis) 4	5.00					١.
				Min wavelength(nm)	1121	Tx mode	Ope 😒	set	Output code	627 V	set (Gis)	al rate 4	1.00					
	Diagnosis			Temperature("C)	45.36	Electrical port FEC	08 🔶 📕	set	Business mode	300. 5	set OSNR(d	8) I						1
								_					_					
	Device upgrade			C1					C2									1
	0			Rx	Power(dBm	Ta	Power(dBm)		Rx	Power(dllm)	Ta	Power(dBn	ND					
	Card upgrade			Ru2	NA.	Tx2	NA		Rx2	-40.00	Tal	-40.00						
				Rul	NA	Ta3	NA		Rid	-40.00	Tx3	-40.00						
				Ra4	NA	Ta4	NA		Rs4	-40.00	Ta4	-40.00						
				Max wavelength(nm)	NA.	Tx mode		set	Max wavelength(rvm)	1117	Tx mode		set					
				Min wavelength(nm)	NA .	Rx alarm threshold	-	set	Min wavelength(nm)	1107	Rx alarm threshold	-40.00	set					1
10	V			Rate(Gis)	NA.	Distance(Km)	NA		Rate(Gis)	43.00	Distance(Km)	10						/
				Temperature(*C)	NA				Temperature(*C)	35.44								
				The burning in									_					
				The basic in	monmat	on												
				Device Mo	del CFF	2-2000	Slot		1		Software versio	1.03.21						
				Productio	n date 201	2-01-01	Serial	number	12.0400109040		Hardware versio	In 1./1.01						

After successful login, enter the main interface of the software, as shown below:

Name	Object	Description
	Essential information	Web page version number display; Language selection, switching between Chinese and English; Log out and restart the device.
	Main Tab	In the main function display area of the device, click to switch to each main function option page. When the device is inserted into the board and read, the corresponding board name will be displayed under "Device Monitoring".
Function	Equipment operation status	The running state of the device is displayed on the Web, which intuitively shows the current running state of the device. It can display the operation of the main control card and its interface, the insertion of each board, the insertion of each optical module under the board, and the status of the device alarm light. Click each area displayed in the picture to directly enter the configuration page of the corresponding board. The card slot being selected for operation will be slightly brighter than other card slots.
	Parameter information and function configuration	The main area for equipment information display and parameter change.

#### **Function Description**

- ${\rm III}_{\,{\ensuremath{\ensuremath{\snuremath{\nnu}\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\ensuremath{\nnu}\ensuremath{\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath{\ensuremath{\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath{\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath\nu}\ensuremath{\nnu}\ensuremath{\nnu}\ensuremath{\nnu}\ensurema$ 
  - (1) Information view

The content in the display area of the Web page is the current running state of the device or the set parameters. The green indicates the normal state, and the red indicates



the abnormal or alarm state. When the network is normal, the device status will change in real time. In case of abnormal display, please refresh the page or change the browser.

							Web Version	1: 22.08.16		Logout	Î
Monitor  Alarm record  Diagnosis  Device upgrade  Card upgrade	LI RxPower(dBm) Max wavelength(nm) Min wavelength(nm)	25.54 1567.55 1528.78	TxPower(dBm) Work mode Tx mode	22.54 ed Bas v ed Of v ed	Re alarm Breshold Input code Output code	-30 -30 -230 V	Language	e State ate (Gis) ical rate	No reday 241.14 224	Reboot	
	Temperature(*C)	33.34	Electrical port FEC	Ope 🗸 🛛 set	Business mode	1001 🗸	set OSNR	(dB)	0		
	Rx Rx1 Rx2 Rx3 Rx4 Max wavelength(nm) Min wavelength(nm) Rate(Gris) Temperature(*C)	Power(dBm) -1.21 -1.04 0.07 -0.67 1312 1308 100 85.53	Tx Tx1 Tx2 Tx3 Tx4 Tx mode Rx alarm threshold Distance(Km)	Power(dBm) -0.14 -0.28 0.25 0.24 -30 € eet 10	Rx Rx1 Rx2 Rx3 Rx4 Max wavelength(nm) Win wavelength(nm) Rate(G/e) Temperature( <sup>C</sup> )	Power(dBm) 2 23 3 63 3 2 3 9 1312 1308 104 29 42	Tx Tx1 Tx3 Tx3 Tx4 Tx mode Rx alarm threshold Distance(Km)	Power(d 0.03 1.33 0.52 0.63 0pa -30 10	Bm) Set		

If the page is not completely displayed, slide down on the right side of the browser to see more information. You can also use ctrl+mouse wheel to change the browser display scale for easy reading.

(2)parameter set

The setting method is as follows (take setting the clock as an example):

In general, the information is gray and cannot be changed. Click "Set" to change the information or value in the box,

Device configuration										
Power 1 On Power	2 On	Fan	open							
Clock	© 2022-10	)-27 17:48:19		set						
Backup interval(Sec)		86400		set						
Record interval(Sec)		3600		set						
Record QTY(Units)		500		set						

Click the clock display area to enter the date and time selection page,



Device configuration	n						Syst
Power 1 On Power	2 On	F	Fan	oper			CPU
Clock	<sup>©</sup> Choo	se			sen	t	CPU
Backup interval(Sec)	Selec	t date			Select	time	
Record QTY(Units)	« ‹		2022	Oct	ober		> »
	Sun	Mon	Tue	Wed	Thu	Fri	Sat
IPV4	25	26	27	28	29	30	1
IPV4 Address	2	3	4	5	6	7	8
Gateway	9	10	11	12	13	14	15
Subnet mask	16	17	18	19	20	21	22
MAC Address	23	24	25	26	27	28	29
TrapV4	30	31	1	2	3	4	5
Trap IPV4 address						Now	ОК

Select the date and time to be set, or click "Now" to directly synchronize the local PC time to the device, click "OK" after setting, and then click "Send" to send the set information to the device,

#### Warning

	Are you sure you want to modify the clock?
	000
Click	m sending information,click eancel sending,
	<ul> <li>Operation is success</li> </ul>

After confirming the sending and successfully modifying the information, the word "Operation succeeded" will be displayed in the middle of the Web.

The above is the basic process of setting parameters.

#### $\mathrm{IV}\,{\scriptstyle\diagdown}\,$ NMU parameter set

Click NMU in the main tab under the Web page, or click the master control card in the device status diagram to enter the master control card setting page.



Monitor	
Diagnosis Device upgrade Card upgrade	

#### (1)Device configuration

Under the device configuration tab, the operation status of power supply 1 and power supply 2 is displayed, which is green under normal conditions and red under abnormal conditions; Display the status of the fan unit, which is normally green; The clock can set the specific time of equipment operation, mainly used to record the accurate time of alarm occurrence; Backup interval sets the time set by the backup system; Record interval Set the interval of system operation and alarm information; Number of records Set the number of running and alarm messages.

Device configuration	on		
Power 1 On Powe	r 2 On	Fan	open
Clock	© 2022-10	-26 00:01:48	set
Backup interval(Sec)		86400	set
Record interval(Sec)		3600	set
Record QTY(Units)		500	set

#### (2)system resource

Under the System Resources tab, the CPU status displays whether the CPU is running normally; CPU used shows the current percentage of CPU used; The CPU overload threshold can set the percentage of CPU used before the system sends an alarm; Memory status indicates whether the memory is normal; Memory Used Displays the percentage of memory currently used; The memory overload threshold can be used to set the percentage of memory used before the system sends an alarm.



#### **DCI Equipment User Manual**

System resources		
CPU State	Normal	
CPU Used(%)	7	
CPU Overload threshold(%)	80	set
Memory State	Normal	
Memory Used(%)	47	
Memory Overload threshold(%)	80	set

#### (3)IPV4 and IPV6

Under the IPV4 tab, you can modify the IPV4 address, gateway address, and subnet mask of the device to log in to the network management system of the device. If the change is successful, you must log in to the Web network management system with the new IP address immediately, and the MAC address is displayed; Under the IPV6 tab, you can enable/disable the IPV6 function, and modify the IPV6 address and the IPV6 gateway address of the device.

IPV4		IPV6		
IPV4 Address	192 168 1 127 set	IPV6 Address	fe80:0:0:0:1034:56ff:fe78:9126/64	
Gateway	192 168 1 1	Gateway	fe80:0:0:0:0:0:0:1	
Subnet mask	255 255 255 0	IPV6 State	C set	
MAC Address	12-34-56-78-90-ab			

#### (4)TrapV4 and TrapV6

Under the TrapV4 tab, you can set two TrapV4 server addresses and Trap community name; Under the IPV6 tab, you can set the IPV6 server address and community. Set Trap to monitor the alarm information of the device on the server.

TrapV4			TrapV6	
Trap IPV4 address	127 0 0 1	set	Trap IPV6 address	0:0:0:0:0:0:0:1
Trap2 IPV4 address	127 0 0 1		Community(R)	public
Community(R)	public		Community(W)	private set
Community(W)	private			

#### (5)Essential information

Under the Basic Information tab, the model of the board, the card slot number in use, the factory date and serial number, and the software and hardware version number are displayed. The card slot number 0 is the master card slot number, and  $1\sim4$  is the business card slot number.

The basic infor	mation				
Device Model	OAP-M4	Slot	0	Software version	1.03.22
Production date	2019-01-01	Serial number	1234567890AB	Hardware version	1.01.01