



WDM Platform 3C-ONTS8600 Series Installation Guide

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1. Safety Precautions

To ensure the safety of the human body and the device, please follow the labels on the device and the safety precautions in this document when installing, operating, and maintaining the device.

The items " Critical " and " Attention " in the manual do not represent all safety precautions to be followed, but are intended to supplement them.

The "Safety Warning" listed in the manual only reflects the requirements, we are not responsible for any damage caused by violation of general safety operation requirements or violation of safety standards for design, production and use of equipment.

Clarification

This document is intended to provide simple and quick operational guidance for the installation of the device hardware.

This document does not describe the installation operations that have been completed before leaving the factory, but only the operations involved in field installation.

Attention

Electrostatic protection

- Before contacting the device, hand holding the plug card, single card, IC chip, etc., in order to prevent human electrostatic damage to sensitive components, you must wear anti-static gloves or anti-static wrist, and the other end of the anti-static wrist is well grounded.

Tying of cables

- Inside the cabinet, the wire buckle/fiber optic ties are spaced no more than 250mm apart. (The user cables are spaced no more than 200mm apart inside the cabinet for wire buckle ties.)
- On the outside of the cabinet, all cables and bellows are tied to the distance between the two beams, and the alignment slots without beams are tied in accordance with the spacing of not more than 250mm.

Pre-installation inspection

- Before equipment installation, it is required to check the machine room, cabinet, power supply, ground, fiber optic cable and supporting facilities. After determining that the construction conditions are available, the construction is carried out in accordance with the engineering design documents.
- During installation and maintenance of the WDM platform, please take protective measures against static electricity, such as wearing anti-static gloves or anti-static wristbands.
- During transportation, handling and installation of the WDM platform, avoid collision of the equipment with doors, walls, shelves and other objects. Do not touch the unpainted metal surfaces of parts or components with sweaty or dirty gloves.
- Do not stack debris on the equipment.



Attention

The WDM platform comes with a fan, the device air inlet is on the right side, the air outlet is on the left side, pay attention to the device air inlet and outlet can't be blocked by fiber, paper and other debris.

2. Installation Environment Requirements

- Do not place the device in an environment of flammable or explosive gases or fumes, and do not perform any operations in such an environment.
- The device needs to be installed in a clean, dry, well-ventilated and temperature-controlled place. Water seepage, dripping and condensation are strictly prohibited in the installation site.
- Installation of dust control measures should be done inside the place. Indoor dust falling on the device will cause electrostatic adsorption, resulting in poor contact with metal connectors or metal contacts, which will not only affect the life of the equipment, but also easily cause equipment failure.
- Ensure air circulation in the installation environment, and do not block the cooling holes of device. It is recommended to leave more than 50mm space around the equipment for cooling.
- The temperature and humidity in the installation site need to be maintained within the temperature (-5°C~50°C (typical) for normal operation of the device (0m~1800m), 1800m~5000m altitude, the maximum temperature specification decreases by 1°C for every 220m increase in altitude) and humidity (5%RH~95%RH, no condensation) ranges.

2.1 Installation Tools

				
Phillips Screwdriver	Straight Screwdriver	Multimeter	Crimping Plier	Bolt Cutter
				
Wire Stripper	Cable Plier	Installation Gloves	Anti-static Gloves	ESD Wrist Strap
				
Ladder	Fiber Binding Tape	Insulation Tape	Network Cable Tester	Optical Power Meter

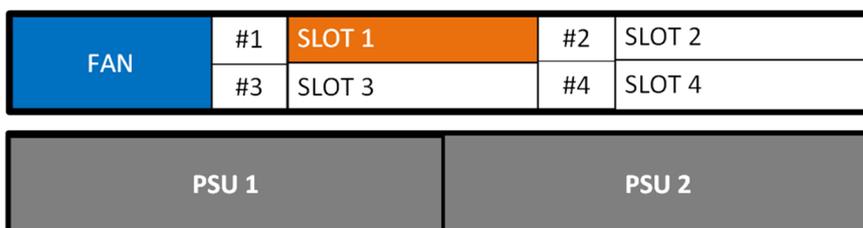
2.2 Installation Cabinet Requirements

- The WDM 1U/2U/5U platform meets industry standards for width and can be installed in IEC 19-inch standard cabinets and ETSI 21-inch standard cabinets.
- The WDM 1U/2U/5U platform can be installed in a cabinet with a depth requirement of not less than 300mm.
- The alignment space in front of the cabinet requires not less than 120mm, otherwise the cable top door problem will occur.
- The cooling airflow of this device is designed for right inlet and left outlet, and the 19-inch cabinet needs to ensure that there is at least 75mm space on both sides to avoid the inlet and outlet being blocked.
- The porosity of the cabinet door is greater than 50% to meet the heat dissipation requirements of the device.
- The cabinet is reserved with grounding terminals for connection to device.
- If the upper alignment method is used, the top of the cabinet should be reserved for the outlet; if the lower alignment method is used, the bottom of the cabinet should be reserved for the outlet.

3. Device Installation

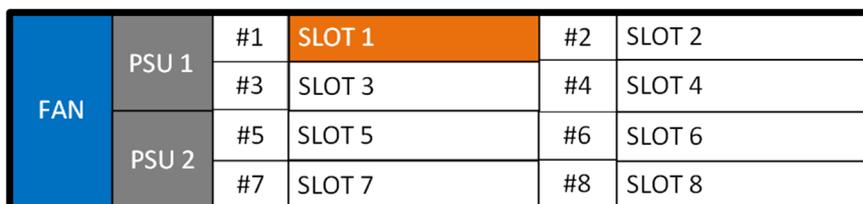
- When installing device, you need to pay attention to the fact that the sum of heat consumption of all equipment in the cabinet can't be greater than the cooling capacity of the cabinet.
- In order to avoid the return air to affect the heat dissipation, the equipment in the cabinet requires an interval of 1U and above space installation, while the center column cabinet can support stacking installation.
- Be careful not to cover the panel cooling holes.
- When the chassis and other equipment common cabinet, can't be installed at the outlet of other equipment.
- To consider the impact of equipment vents on adjacent equipment, to avoid high temperatures in adjacent cabinets equipment.
- When fixing the floating nut, ensure that there is at least 75mm ventilation space on the left and right side of the equipment after installation.

1U WDM platform and slot introduction



Network management card: SLOT 1;
 Electrical/optical layer service card: SLOT 2~4;
 Fan card: FAN;
 Power supply card: PSU1, PSU2.

2U WDM platform and slot introduction



Network management card: SLOT 1;
 Electrical/optical layer service card: SLOT 2~8;
 Fan card: FAN;
 Power supply card: PSU1, PSU2.

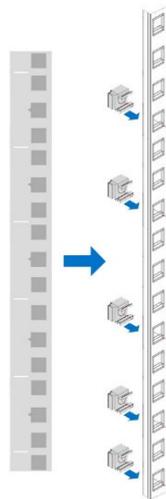
5U WDM platform and slot introduction

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

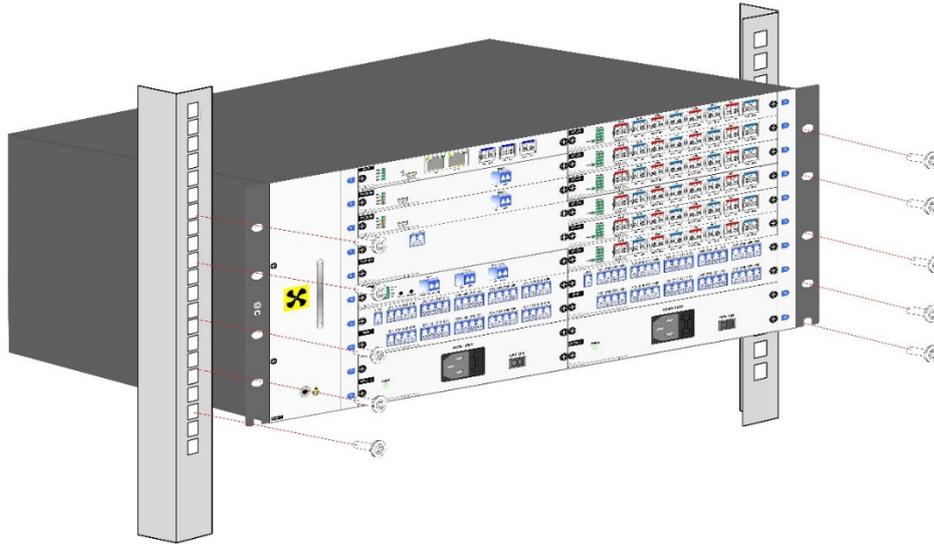
- Network management card: SLOT 1;
- Electrical/optical layer service card: SLOT 2~16;
- Fan card: FAN;
- Power supply card: PSU1, PSU2.

3.1 Chassis Installation

The following is an example of the installation process for a 5U chassis.



Step1: Select the cabinet installation hole position, find a standard 5U position in the front of the cabinet, and install the floating nut on its corresponding hole position.

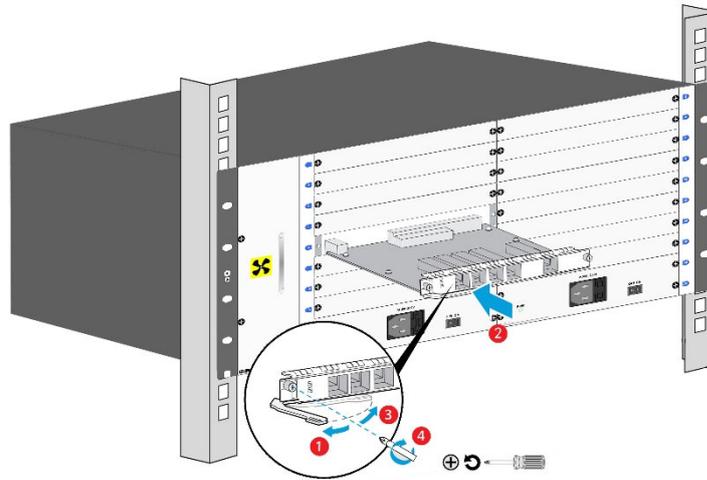


Step2: The front of the chassis is put into the cabinet in parallel, and the front panel screws are installed and tightened after aligning the holes on the shelves to confirm that the equipment is fixed firmly and smoothly.

3.2 Card Installation

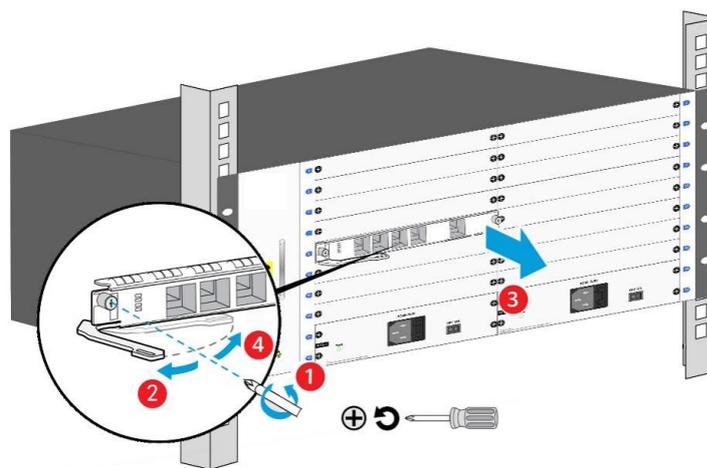
- The slots where the card is not inserted must be sealed with an empty blank card to guarantee good EMC, dustproof and heat dissipation requirements.
- Only before installing the corresponding slot service card, you can remove the slot empty blank card, you cannot remove multiple empty blank cards at once and then assemble multiple service cards at the same time.
- Single card sliding insertion, you need to use your thumb to press the front panel of card and push inward, while controlling the single card puller, and finally control it to snap the chassis so that the card is completely inserted into the slot.
- Anti-static wrist or anti-static gloves must be worn when installing the card.

3.2.1 Insert card



- (1) Remove the empty blank card.
- (2) One hand pinch the puller on the card, one hand pinch the card panel, pull the puller outward, so that the puller and the panel form an angle of about 60 °.
- (3) Smoothly slide along the slot guide to insert the single card while controlling the single card puller, and finally control the single card puller to snap the chassis so that the card is completely inserted into the slot.
- (4) Use a Phillips screwdriver to tighten the screws at both ends of the panel in a clockwise direction.

3.2.2 Remove card



- (1) Use a Phillips screwdriver to loosen the screws at both ends of the panel in a counterclockwise direction.
- (2) Squeeze the puller on the panel with one hand and wrench it outward with force so that the card puller no longer holds

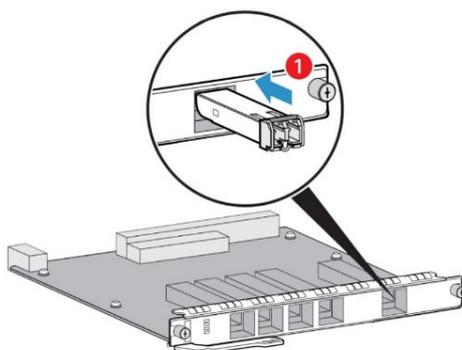
the chassis.

(3) Pull out the card smoothly along the slot guide.

3.3 Optical Module Installation

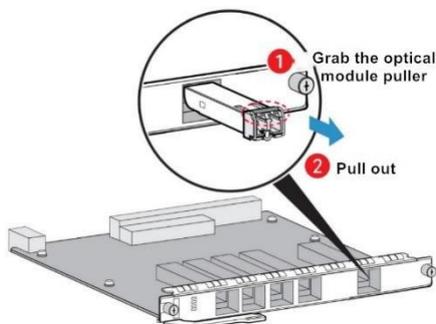
- Anti-static wrist or anti-static gloves must be worn when installing optical modules.
- The optical port without the optical module installed needs to be fitted with a dust cap.
- Optical module can't be inserted backwards, if the optical module can't be inserted in one direction to the end, it is forbidden to push hard inside, turn the optical module up and down 180 degrees and then re-insert it.

3.3.1 Insert optical module



- (1) Remove the dust plug from the optical interface.
- (2) Insert the optical module into the optical interface of the device until it is fastened in the optical interface.
- (3) Insert the fiber in the order of fiber connection.
- (4) When the optical module is inserted into the chassis, the maintenance personnel can verify whether the function of the new optical module is normal by checking the light corresponding to the optical module interface, and the green light indicates that the interface link is normal.

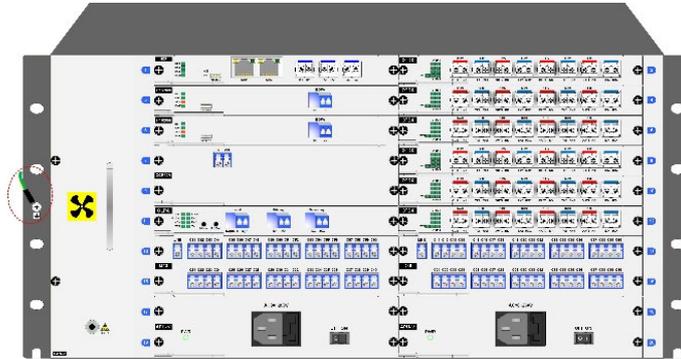
3.3.2 Remove optical module



- (1) Unplug the optical fiber attached to the optical module.
- (2) Hold the optical module puller and pull out the optical module.

4. Cable Connection

4.1 Connect Protective Ground Wire



- (1) Wear anti-static wristbands or anti-static gloves. If wearing an antistatic wristband, make sure that one end of the antistatic wristband has been grounded, and the other end is in good contact with the wearer's skin.
- (2) Remove the ground screw on the device grounding point with a Phillips screwdriver.
- (3) Install the removed ground screw and ground cable to the ground point of the 5U platform with a Phillips screwdriver.

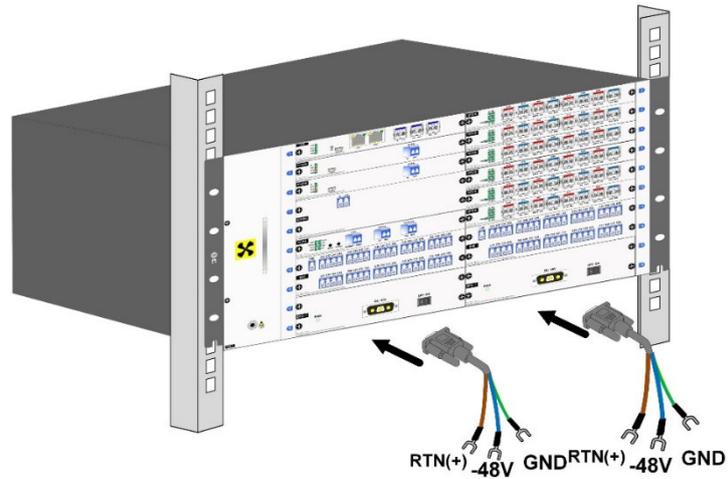
 **Critical:** One end of the ground wire is connected to the device ground point, and the other end is connected to the cabinet ground point.

4.2 Connect Power Supply Cable

The power supply interface of 5U platform is designed on the front of the chassis, the device is shipped with AC power supply cable or DC power supply cable, please refer to the following diagram to install it.

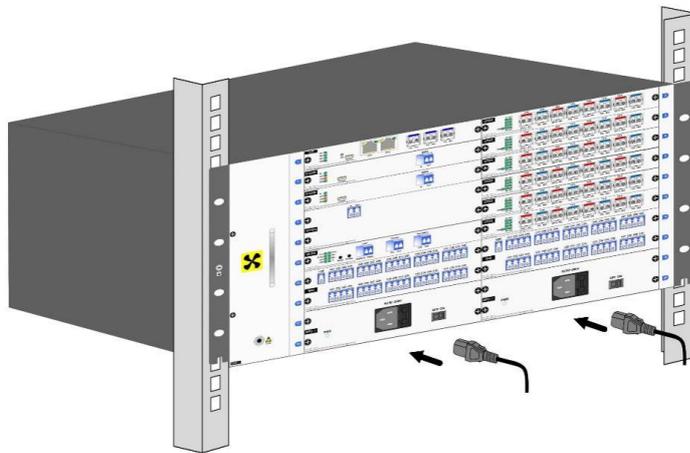
 **Attention:** When making connections or disconnecting the power supply cord, the power needs to be turned off.

4.2.1 DC power supply cable connection



⚠ Attention: DC power supply cable yellow-green to DC protective ground, tan to DC positive, blue to DC negative (i.e. -48V).

4.2.2 AC power supply cable connection

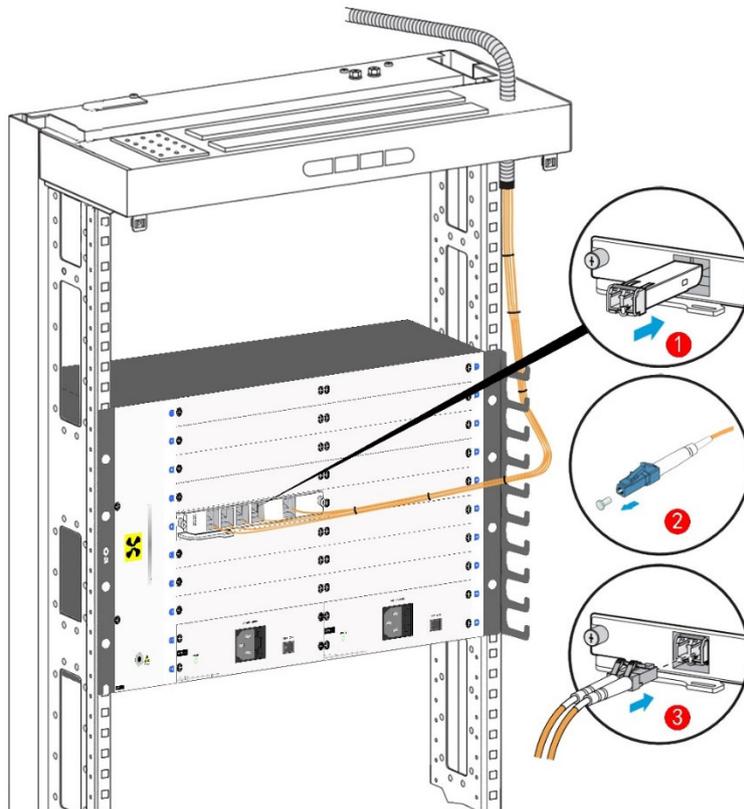


- ⚠ Attention:**
1. High voltage (240V) DC power supply and AC power supply, use the same power supply cable.
 2. Both power connectors should be installed power supply cable.
 3. After the installation of the power supply cable, you need to use a tie to fix it to prevent it from falling off.

5. Fiber Deployment

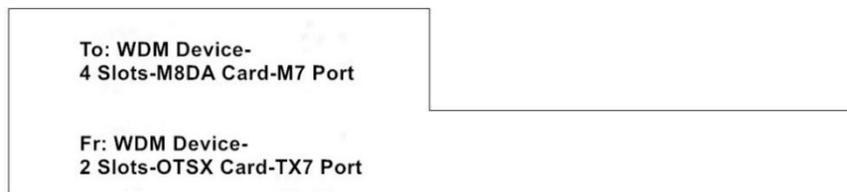
- When performing various operations such as installation and maintenance of optical fibers, it is strictly prohibited to approach or look directly at the fiber outlet with the naked eye.
- Before installing and deploying the internal fiber, you need to install a fixed optical attenuator on the corresponding optical port of the single card in accordance with the fixed optical attenuation installation table. It is recommended to add only one optical attenuator, multiple optical attenuators have top door risk and business interruption risk.
- The bend radius of single-mode G.652 fiber placement should not be less than 50mm.
- The bending radius of multimode fiber cannot be less than 50mm.
- The bending radius of MPO fiber placement should not be less than 60mm.

5.1 Install Card Fiber



- (1) Remove the dust plug on the optical module and the dust cap on the fiber optic connector.
- (2) Connect the optical fiber to the optical module on the corresponding waveform.
- (3) Bundle the fiber, the connected fiber straighten not cross, and every 150mm-300mm length tied with fiber optic ties.
- (4) If you need to disassemble, first push the fiber optic connector inward and then pinch the clasp to pull out the fiber, forbid to pull the fiber optic connector out directly.

5.2 Fiber Optic Label



(1) To: Device name/slot number/single card name/optical port name

Meaning: fiber end is inserted into the device named WDM device, SLOT4 slot, M7 port of M8DA single card.

(2) Fr: Device name/slot number/single card name/optical port name

Meaning: fiber end is inserted into the device named WDM device, SLOT2 slot, TX7 optical port of OTSX single card.

5.3 Fiber Optic Organization

After the fiber is placed, it must be bundled, and the fibers must not be entangled with each other, tied neatly with fiber ties to avoid squeezing the fiber. For not inserting the optical fiber optical port need to insert the optical port plug, for not connecting the optical port pigtail fiber need to set the fiber cap.

Properly organized fiber optics



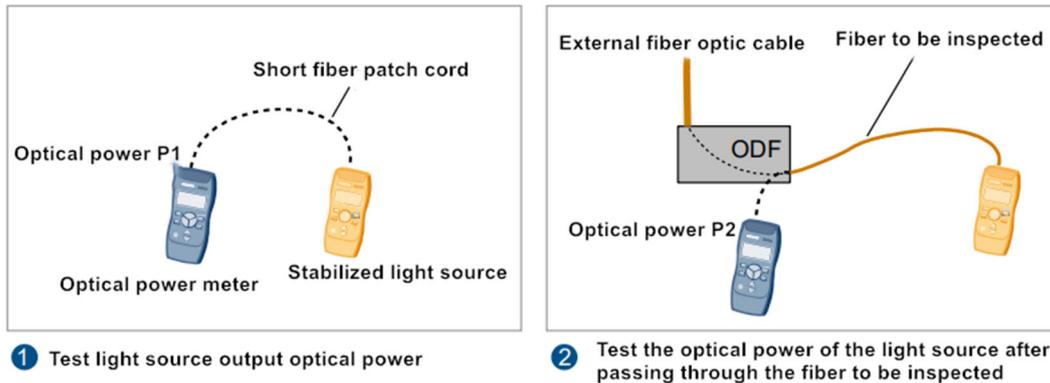
Wrongly organized fiber optics



5.4 Fiber Loss Check



Warning: During the process of checking laser decay, laser light should be avoided to the human eye.



Description:

1. The difference between P2 and P1 is less than 1dB, indicating that the fiber is connected properly. Otherwise, you need to clean the fiber. If the difference between P2 and P1 is still greater than 1dB after cleaning, please replace the fiber.
2. It is recommended that the light source wavelength selection in the vicinity of 1550nm and set the wavelength range of the optical power meter for 1550nm. if the equipment has been powered on, and configured with a light-emitting card, you can use the light-emitting card as the light source.

6. Device Startup

6.1 Pre-power-up checks



Attention:

- Check if the fixed optical attenuator has been added before power up according to the fixed optical attenuator configuration principle.
- Check whether the voltage of the external power supply meets the requirements.
- Check that the external power supply fuse capacity meets the requirements.
- When the supply voltage does not meet the requirements, it is strictly prohibited to power up the equipment.



Danger: All switches on the equipment and external power supply must be placed in OFF before the equipment is powered up.

(1) Check the fuse capacity of the external power supply.

Chassis Power Supply Type	Maximum Power Consumption	Recommended Fuse Capacity
High voltage DC power supply	450W (240V HVDC)	16A
AC power supply	450W (200V AC~240V AC)	16A
	450W (100V AC~120V AC)	
DC power supply	450W (-36V~-72V DC)	16A

(2) Check the voltage of the external power supply

Chassis Power Supply Type	Rated Voltage Range	Maximum Voltage Range
High voltage DC power supply	240V	192V~288V
AC power supply	200V~240V(50/60Hz)	90V~260V (47Hz~63Hz)
	100V~120V(50/60Hz)	
DC power supply	-48V	-36V~-72V

(3) Use a multimeter to check whether there is a short circuit between the phase line (commonly known as the fire line), ground line and zero line of each power outlet.

(4) Use a multimeter to check if the input voltage of the external power supply is within the normal operating voltage range of the equipment.

6.2 After power-up checks

After the device is powered on, check the power indicator status of each functional unit and the fan operation status to determine whether the equipment is running normally on power.

Power indicator meaning.

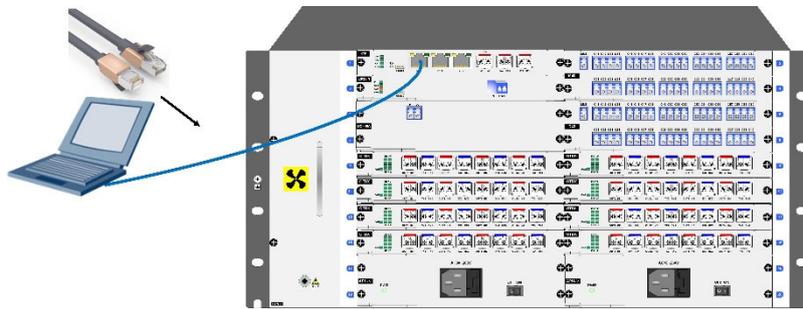
Indicator Light	Green Light	Light Out	On-site Handling of Abnormal Situations
PWR	Power supply is normal	Abnormal power supply	Immediately disconnect the power supply, troubleshoot and reapply power.

Fan card: Observe whether the fan starts on the left side of the equipment or sense the air output by hand at the device outlet.

7. Device Connection

7.1 Access to Device via Network Cable

To facilitate the maintenance and configuration of the WDM platform, users can use a network cable to connect the computer to the device and log in to Web Network Manager via HTTP to use the Web interface to intuitively manage and maintain the device.



Description:

1. ETH1/ETH2/ETH3 are remote management Ethernet ports.
2. Console is the local management serial port.
3. TX1/RX1, TX2/RX2, TX3/RX3 are OSC optical monitoring ports.

HTTP service is enabled by default when the device is shipped, and the default Web login information is set. Users can directly use the default login information to log in to the device's Web interface via HTTP service. For the specific operation, please refer to the instruction manual of WEB network management system.

The default web login information includes:

Username : webadmin

Password: admin

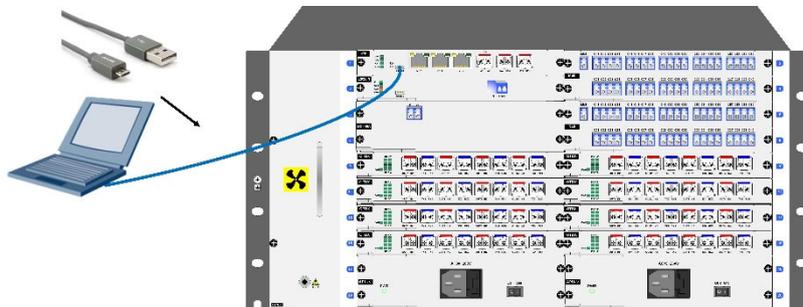
Default IP address of the device: 192.168.1.100

Default HTTP access port: 9091

7.2 Access to Device via CONSOLE Cable

The local PC can also be connected to the device Console port by using a USB to micro USB connection cable. Use HyperTerminal or SecureCRT software on Windows to log into the serial port to query or configure the device IP address, subnet mask, and gateway.

Confirm the serial port connected to the console port of the local computer and the device, correctly select the COM port to be connected, and set the serial port parameters.



The default serial port login information includes.

Protocol (P): Serial
Port (O): COM1 (select the corresponding port)
Baud rate (B): 115200
Data bits (D): 8
Parity check (A): None
Stop bit (S): 1
Data flow control is selected as "empty"

After the serial port is connected, press Enter, "User login" will appear, enter the factory default user name of the device: admin, press Enter after entering the user name, "Password:" will appear, enter the factory default password of the device: KI87*(^o! The default password: KI87*(^o!), press Enter after entering the password, then you can successfully login to the command line interface of the device. Through the command line interface, you can configure the IP address, subnet mask and gateway for the device, and the reference commands are as follows:

The command to query the current IP address of the device: show eth

Command to query the current gateway address of the device: show gw

Configure the device IP address and subnet mask command: set ip 192.168.1.100 255.255.255.0

Configure the device gateway address command: set gw 192.168.1.1

Appendix

- Fan card, power supply card, and network management card support hot-swapping.
- Before replacing the power supply card, you need to unplug the power supply cable from the card before replacing. You also need to ensure that the other power supply card on the device is in the power supply state when replacing it, otherwise unplugging the power supply card will cause the device to lose power, resulting in business interruption.
- Please prepare a spare card in advance before replacing it.
- The time to replace the fan card should not exceed 3 minutes.
- The power supply module needs to wait until the power indicator is always off before it can be powered on again after a power failure, otherwise the power supply cannot be powered on.

.....THE END.....