
Installation and commissioning manual

Tip: Please read the manual carefully before using, lest the device cannot work normally or damage because of incorrect operation

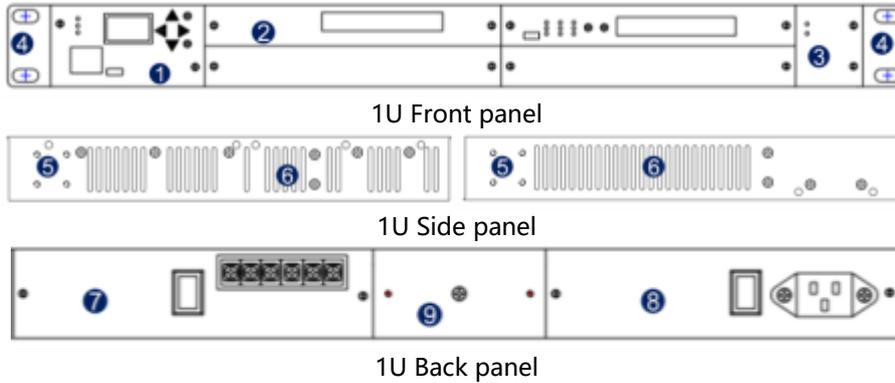
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1. Machine Frame Introduction

1.1 Machine frame appearance description

1.1.1 1U Machine frame



Explain:

- ①Main control card slot
- ②Business card slot,maximum support four business cards, our business cards all can be mixed interpolation and hot swappable
- ③Fan slot,Support for fan hot swap and independent replacement
- ④Scalable lug ⑤Lug instillation position ⑥Side vent
- ⑦Power 1 slot,can plug in AC power supply or DC power supply, support hot swap
- ⑧Power 2 slot,can plug in AC power supply or DC power supply, support hot swap
- ⑨Grounding screw

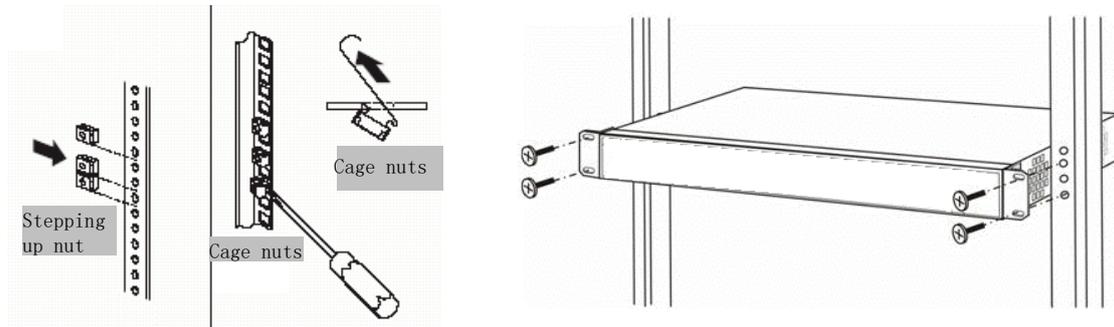
1.1.2 Machine frame component description

Component1	power supply card1
Component2	power supply card2
Component3	Fan card
Component4	Main control card, Support for LCD、 10/100M Ethernet interface

1.2 Machine frame correlation parameters

Parameters		Unit	Specifications
Environmental parameter	Working	°C	-10~ 60°C
	Storage	°C	-20°C~ 75°C
	Relative	°C	5% ~ 95% No condensation
size	1U	mm	482.6Wx300Dx44.5H
Power Supply	DC	V	36~72
	AC	V	100~240,50~60hz
Consumption	1U	W	< 50 (Max)

1.3 Machine frame installation



- (1) Please fix the lugs on the machine frame and make sure the screws have been tightened, lest the device fall to the ground.
- (2) Please make the machine frame mounted inside the cabinet and make sure the screws have been tightened, lest the device fall to the ground.
- (3) Please insert external power source correctly according to the interface type of power card.
- (4) Please check the screws of all boards to make sure the screws have been tightened, lest machine cannot work well because of board loose.
- (5) The cooling air outlets are located on either side, so make sure air circulation of the both sides is normal.
- (6) Please keep the machine room clean, constant temperature.

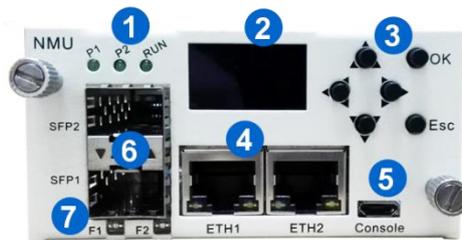
2. Card description

2.1 NMU Master Control card

2.1.1 Board function

The Master control card is used to manage network by supporting management interface of Ethernet communication. By the master control card, can see current state, work performance of all cards and can set relevant functions of all cards.

2.1.2 Card appearance



Indicator introduction:

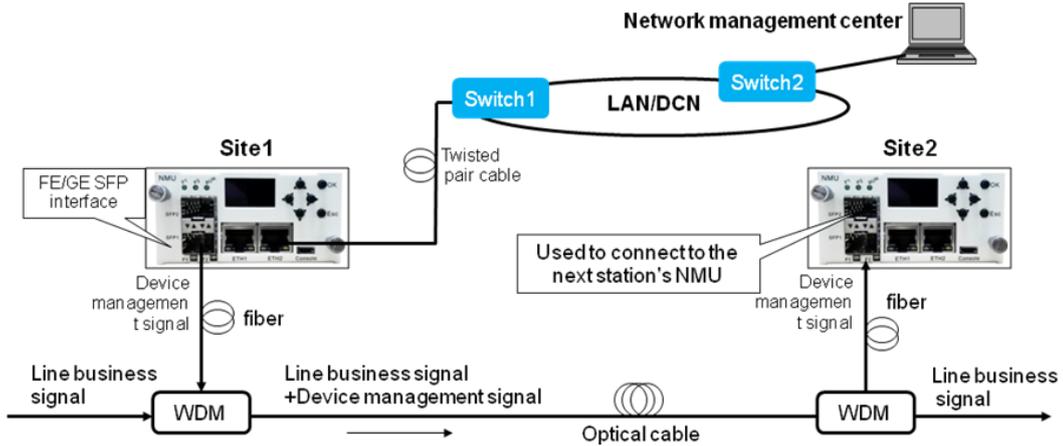
Indicator	Notes	Normal state	Alarm state
P1	Power 1	Green light	Light-off
P2	Power 2	Green light	Light-off
RUN	Board Run	The light flashes every 1	Light-off or flashes irregularly
F1	SFP1	The light flashes	Light-off
F2	SFP2	The light flashes	Light-off

Communication interface:

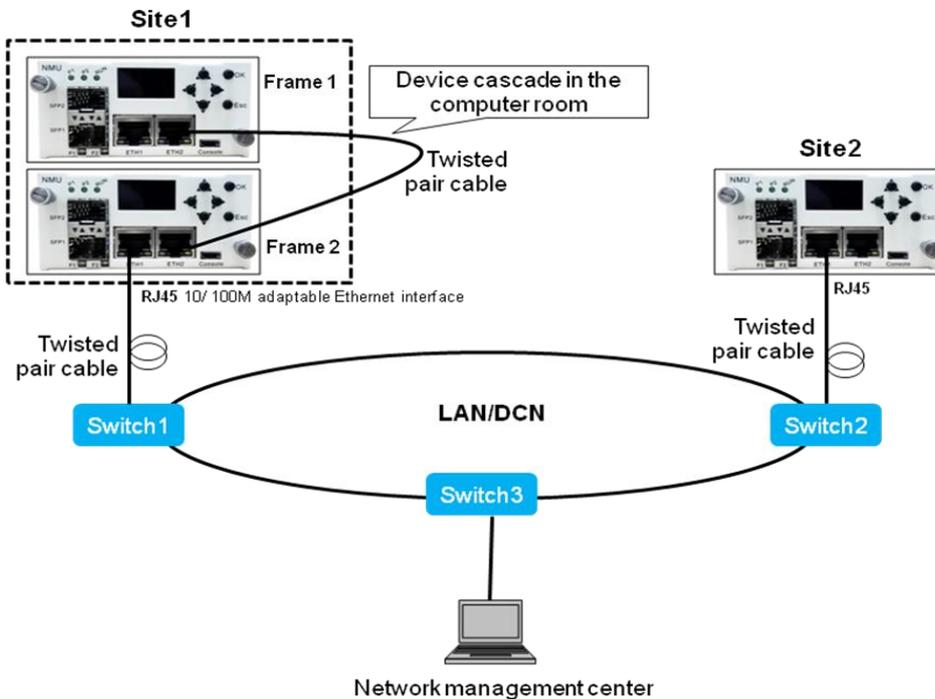
Interface name	Notes	Interface type
ETH	Internet communication	RJ-45
Console	Upgrade interface	Micro USB

2.1.3 NMU instructions

- The equipment management signal and business signal use the same optical fiber transmission



- Equipment management signal and business signal are transmitted independently



2.2 Semiconductor Optical Amplifier

2.2.1 Card function

The board can amplify and compensate optical power for optical signal of 1570~1330nm, which applies to DWDM system.

2.2.2 Card appearance



Indicator introduction:

Indicator	Notes	Normal state	Alarm state
PWR	Board power	Green light	Light-off
RUN	Board run	The light flashes every 1 second	Light-off or flashes irregularly
In	Input optical	Light off: input power in normal	Red light: input power lower than
Out	Output optical	Light off: output power in normal	Red light: output power lower than
MT	Module	Light off: module temperature in	Red light: module temperature
PT	PUMP	Light off: PUMP temperature in	Red light: PUMP temperature

Communication introduction:

Interface type	Notes	Interface type
Console	Upgrade interface	Micro USB

Fiber interface:

Interface name	Notes	Interface type
In1	Optical signal input interface	LC/PC
Out1	Optical signal output interface	LC/PC
In2	N/A	LC/PC
Out2	N/A	LC/PC

2.2.3 Card indicators

FS-SOA

Parameters	Unit	Symb	Min	Typ	Max
Operating Wavelength	nm	λ_c	1270	1310	1330
Saturate Output Power	dBm	P_o	-----	14	-----
Input Power	dBm	P_i	-15	-----	+6
Gain	dB	G	-----	17	-----
Noise Figure	dB	NF	-----	5.0	6
Power/Gain Stability	dB	ΔP_o	-----	± 0.05	± 0.1
Input Isolation	dB	ISO _i	30	-----	-----
Output Isolation	dB	ISO _o	30	-----	-----

Return loss	dB	RL	-----	-----	-45
PDG	dB	PDG	-----	-----	0.3
PMD	ps	PMD	-----	-----	0.5
Consumption	W	P	-----	-----	10

2.2.4 Card setting

The setting about SOA card need to complete on the master control board, which refer to operating instructions about master control board. We only explain main parameters here.

(1) Working mode

AGC: Constant gain; APC: Constant output power.

Note: No modifying working mode.

(2) PUMP switch

SOA will don't work normally after closing PUMP, please set with caution.

(3) Input power upp

SOA input maximum power;

(4) Input power low

SOA input minimum power;

(5) Output power upp

SOA output maximum power;

(6) Output power low

SOA output minimum power

(7) In_ power state

input power state, SOA will have Low alarm about input power and don't work normally when input power lower than alarm threshold

(8) Ou_ power state

Output power state, SOA will have Low alarm about ouput power and don't work normally when input power lower than alarm threshold

(9) M_Temp state

Module Temp state

(10) P_Temp state

PUMP Temp state

(11) P_Cur state

PUMP current status

(12) Factory Gain

Factory gain is factory gain of SOA card; Factory gain of SOA is fundamentally the same as work gain under normal circumstance

(13)mode temp

Module temperature is temperature of inside SOA module box.

(14)PUMP power

Current PUMP operating current;

(15)PUMP temp

Current PUMP internal temperature

(16)PUMP cur

Current PUMP current value

(17)TEC current

Current Thermo Electric Cooler Current Value

3. Device Operations

(1)Press down key ∇ to choose card which needs to view or set, such as master control board information (include IP information), business board information.

(2)If need to view or set detail information of some card, please stay in the interface of the card, then enter into child interface by press OK key and can view or set card information by press up keys Δ and down keys ∇ .

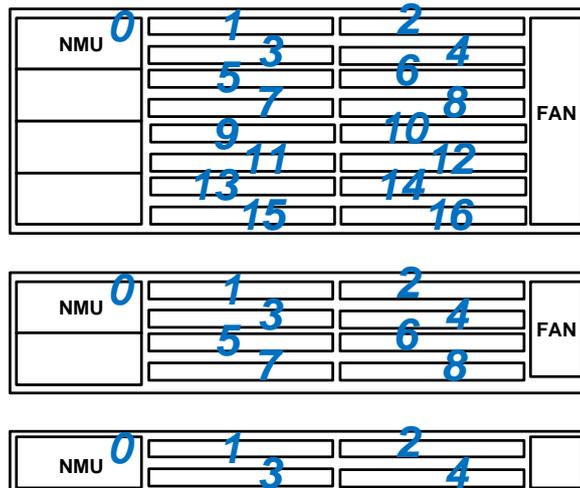
(3)The term with asterisk (*) can be set, if need to set the term, please enter into set the visual design by press OK key. There are two ways to set card information in set the visual design, as follows:

A. N-numeric type: Can choose term which needs to set up by press up keys Δ and down keys ∇ , then press OK keys to complete setting.

B. Numeric type: Can choose digit bit by press left keys \triangleleft and right keys \triangleright , then adjust numbers by press up keys Δ and down keys ∇ , then press OK keys to complete setting.

(4) Can return upper interface or exit some interface by press ESC key.

- Card slot instructions



- How to check the parameters of a card?

For instance:



Fig.1

When you want to see the parameters of this board in the red box on the fig.1 :

First step: Find this card

This card is in the 3 slot, please press the button on the right side of the screen \blacktriangledown , Until the LCD interface to display the fig.2 interface;



Fig.2

The second step: view at this card

Press OK button to enter the fig.3 interface;

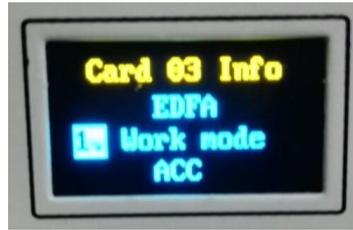


Fig.3

Then the operation of the button ▼, you can see the parameters of the board, if you want to see other card parameters, press ESC to quit, and in accordance with the first step to operate.