It mainly includes the following contents:

- 1. Introduction
- 2. Equipment description
- 3. Installation
- 4. FAQ

Content

1 Introduction

1.1 Introduction

FS-24FE+24POTS-EPON MDU is EPON broadband access .It base on stable and mature Gigabit EPON technology and Layer 3 Ethernet switch, which has highly reliable and easy to maintain and build network, with guaranteed QoS. This equipment is compliant with technical regulations such as ITU-T, IEEE, YDT.

FS-24FE+24POTS-EPON MDU is multi-dwelling EPON ONUs. Its core chips are mature, stable and high performance chipset in telecom field. Users can easy to build an EPON optical access system together FibRSol with popular EPON OLT. The access system can provide broadband access services for enterprises or multi-dwellings, offer internet access service, VoIP and VOD for families or small companies, etc.。

1.2 Function

FibRSol MDU support following functions:

- Adopt EPON uplink interface, compliant with IEEE802.3ah standard;
- Support IGMP Snooping and IGMP Proxy;
- Support STP/RSTP user Ethernet interface protection;
- Support DHCP Option82 report Ethernet interface physical location information;
- Support PPPoE+ function, used for user precision identification;
- Support configuration of Ethernet interface rate, operation mode, auto-negotiation, Pause flow control;
- Support IP address filter by using ACL rule, suppress unknown single-broadcast, broadcast and multi-broadcast message;
- Support Layer2 line rate forward;
- EPON downlink adopt triple-churning algorithm for data encryption
- Support Ethernet line performance statistic;

- With strong Qos ability, support whole configuration queue priority and message 802.1p flexible mirroring; Support SP, WRR or SP+WRR dispatch mode; Support configure dispatching queue weighing, protect the key service Qos under multi-service condition;
- Voice support H.248、MGCP and SIP protocol, support VBD mode Fax/T.38 Fax/MODEM service, support various coding;
- Support RFC2833 and redundant RFC2833, distinguished ring, MD5 certificate, call forward, call waiting, hotline, clock, short calling and etc.
- Support user local management by commend line.

1.3 Technical specification

FibRSol MDU technical specification is listed in Table1-1:

Technical specification

Type	Name	Description
Service parameter	VLAN	Support VLAN up to 4096; Support IEEE802.1Q， IEEE802.1ad and VLAN transform。
	MAC address	MAC address depth is 16K, single-broadcast and multi-broadcast share.
	Multi-broadcast	Support IGMPV1/V2, support crossing VLAN multi-broadcast.
	QoS	With 8 priority queues, support 802.1P, support Qos classification strategy that based on port, MAC address, VLAN ID, IPv4 and IPv6 distinction and etc. Support priority remark.
	Line speed Layer2/ Layer3 switch	All ports support line speed forward.
	Voice	Support H.248、MGCP、SIP; Support ITU-T G.711、G.723.1、G.729 and etc.
SNI	EPON interface	1pc, compliant with IEEE802.3ah, SC/PC connector, max transmitted distance 20Km.

	Wavelength	Tx 1310nm, Rx1490nm
UNI	Ethernet interface	24*auto-adaptive 10/100Mbps Ethernet ports, RJ45
	Telephone interface	24pcs, share with Ethernet interface
Mechanical parameter	Dimension	480mm×240mm×44.4mm (W*D*H)
	Weight	≤ 4kg
Power Supply	AC	Input：85~264V AC
Power consumption	—	＜25W
Condition	Operating Temp.	-30°C～55°C
	Storing Temp.	-40°C～70°C
	Humidity	10%～90%, non-condensed

2 Appearance description

2.1 Panel graphic

FibRSol MDU front panel shown as Figure 2-1.

Figure 2-1 FibRSol MDU front panel graphic

2.2 Indicator

FibRSol MDU indicators description shown as Table2-1:

Table 2-1 Indicator description

Indicator Name	Color	Status	Description
ACT	Green	Flash	Operate properly
		OFF or normal ON	Operate un-properly
LOS	Red	Normal ON	PON port no laser light
		OFF	PON port with laser light
REG	Green	Normal ON	PON port register properly
		OFF	PON port without register
FE1～FE24	Orange(Left)	Normal ON	Connected to user, no data transmitted.
		Flash	Connected to user, with data transmitted.
	Green(Right)	Normal ON	Full duplex
		OFF	Half duplex or without cable connected
POTS	Green	Normal ON	Phone off-hook
		OFF	Phone hook or without phone connected

2.3 Interface and button

FibRSol MDU interface and button description shown as Table 2-2：

Table 2-2 Interface and button description

Interface or button	Type	Description
220V AC	Power supply	AC 85-264V
ON/OFF	Button	ON/OFF power supply
PON	Optical interface	SC/PC connector, for connecting OLT
FE1~FE24	Ethernet interface	RJ45, connect to PC, router, home gateway and etc. The fourth and fifth is voice signal line, for telephone
Ground	Ground	Ground
ETH	Ethernet port	RJ45, for local download program and debug Ethernet interface
CONSOLE	Serial port	RJ45, for local serial port management

3 Installation

3.1 Prepare

Before installing MDU, please make sure the operation condition reach following requirement:

- Make sure installation location is water-proof, moisture-proof ,anti-thunder, dust-proof;
- Make sure MDU connection condition (For example, can connect to power supply, cabling and etc.)
- Make sure enough air flow for radiating;
- Installation location with good ground condition.

3.2 Placement

FibRSol MDU can be placed on the stable flat desk or fixed in 19inch cabinet. Placement operation is as following:

- Flat desk placement. Stick four adhesive pads to four corners of MDU, then put it on stable flat desk, keep it in venting condition. No pressure on MDU to avoid deforming or damaging.
- Cabinet fixture. Fix MDU to cabinet with suspension loop and screw accessory.

3.3 Cable connection

3.3.1 Connect Ethernet line

FibRSol MDU FE ports can be connected to switch, home gateway, or PC by Ethernet cable, which shown as Figure 3-1.

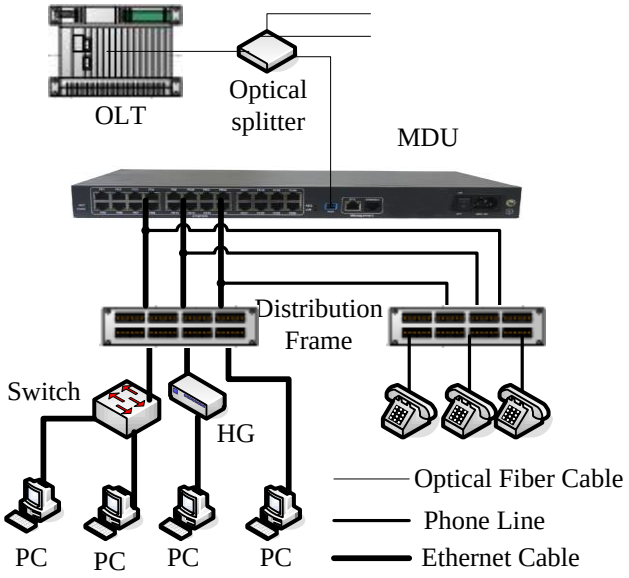


Figure 3-1 Cable connection

Ethernet cable connection:

Connect cable with RJ-45 connector;

Note: No.1, 2, 3, 6 line in the cable are for data service, No.4, 5 line are for voice service, No.7,8 are idle.

3.3.2 Connect voice line

FibRSol MDU voice share interface with Ethernet. No.4, 5 signal line from FE port is connected with voice output. Voice signal is transmitted to user by Ethernet cable.

3.3.3 Connect fiber cable

FibRSol MDU EPON interface can be connected with OLT uplink by optical fiber cable.

1) One connector of fiber cable is plugged into optical splitter or OLT;

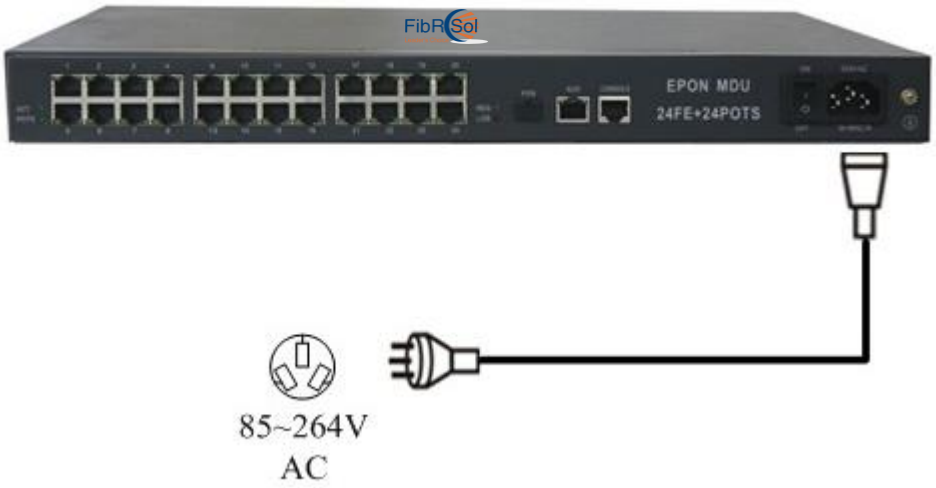
2) Another connector of fiber cable is plugged into optical interface of MDU (PON).

Note: When fiber cable is not in use, please put on the dust-proof cover for MDU optical interface and fiber cable.

Note: Fiber cable can't be bound too tight when fixed.

3.3.4 Connect power supply

FibRSol MDU use 220V AC triple-pin plug. Connection shown as Figure 3-2:



connects

When finish connection, please inspect before supply power turns on:

- Inspect the MDU placement fastness, stability, radiation.
- Inspect power supply.
- Inspect ground connection.
- Inspect MDU connection with other devices.

Turn on power supply：

1) Turn on power supply button to “ON”
2) Inspect LOS and REG indicator status. It connects properly when LOS indicator is OFF and REG indicator is ON. Or else please inspect cable connection.

4 FAQ

Q：All indicators are OFF when power ON?

A： 1) Inspect power supply connection.

2) Inspect the power supply turn on/off button at front panel of equipment.

Q：Stop working after some time operation?

A： 1) Inspect power supply, whether power is higher or lower.

2) Over-heat. Inspect condition temperature, vent hole.

Q：LOS indicator is ON?

A： 1) Fiber cable fault. Inspect fiber cable connection.

2) OLT equipment fault.

Q：REG indicator is flashing?

A： 1) Fiber cable connectors loosen, inspect fiber cable connection.

2) OLT equipment fault, contact ISP.

3) Fiber connector is dusty. Clean connector.

Q：FE port orange indicator flash fast, speed rate lower?

A： 1) Inspect Ethernet connection. Whether it generate loop circuit.

2) Inspect whether there are huge broadcast package transmitted from any ports.

Q：Network connected, but transmission rate become lower, and with packet-loss?

A： 1) Inspect whether Ethernet port operation mode is same as that of user.

2) Set the Ethernet port operation mode same as that of user. It's auto-adaptive mode normally.

Q：Connect console, but it can't print or print random codes at hyper-terminal, no response tapping keys?

A： 1) Inspect console cable whether damage;

2) Inspect hyper-terminal configuration parameter. Baud rate is 9600, word size is 8, without parity, stop bit is 1, no flow control.