# Modular Multi-Service Fiber Optical Multiplexer

## User's Manual

# CONTENTS

## Introduction

Dear users:
Thank you for using our product. In order to make your work smoothly, we give you some advice. Before you connect and operate the product, you should make sure to read this manual carefully and pay more attention to the notices.

## Overview

This device is modular structure point-to-point optical transmission equipment with LCD display, uses the FPGA chips and easy to upgrade. The Main board provide 4*100M channel Ethernet data and 2 AUX port which is for transmitting other data such as RS232/RS485/RS422, two optical interface for optional 1+1 auto protection switch .

The high flexibility, performance, is the best solution for voice/data/video services in existed market.

## Features

- Provides total 16 E1 transparent transmission capacity ;
- With char 16*2 LCD display and SNMP agent inside.
- Provide Console manage interface(RS232)
- Provide one hotline channel for option;
- Provide two SFP fiber interfaces, one as master, the other as slave, insuring uninterrupted service transmission.
- The rate of optical port is 155Mbps, transmission range can reach 25KM, 40KM, 60KM, 80KM or 100KM;
- Provide two fiber interface 1+1 protect function ,and ALS（Automatic Laser Shutdown/Reduction）function
- Provide 4 slots plug-in modules:
  - 4×E1 module（75Ω）/（120Ω）
  - 4×Framed E1 module（75Ω）/（120Ω）,any timesolts can be set
  - 4×FXO/FXS/EM2-4 module
  - 8×FXO/FXS module
  - 2×V.35 (2.048M Fixed speed) module
  - 2×V.35 (N*64K N=1-32) module
  - 4×RS232/422/485 module

- 4*FE to E1 bridge(wire speed 2.048M) module

- Provide 4FE(wire speed 100M)Ethernet channel,support mutual negatiate, Ethernet bandwidth is set on base on multiple of 32K;
- Ethernet port supports full/half duplex, 10M/100M auto-negotiation;
- Ethernet port supports VLAN function and has 4 devision mode for user selection;
- Ethernet package size support 1916 byte and 4 Ethernet port could be set seperately;
- Has complete alarm function and can monitor remote device status;
- Supports E1 loop from remote so as to detect and manage device conveniently;
- The combination AC220V,and DC-48V for redundant

## Parameters

### Fiber

Optical wavelength: 850/1310nm for multi-mode fiber,1310/1490/1550nm for single-mode fiber.
Number of Ports: 2(1+1 )
Transmission distance: 10-120Km
Fiber Optic Interface Type: FC/SC/ST/LC
Data Rate: 155 Mb/s
Line Code: 4B5B
Typical output power：
single mode 1310/1550nm: ≥-7dBm
multi-mode 850nm: ≥-18dBm
multi-mode 1310nm: ≥-25dBm
Receiver Sensitivity: ≤-32dBm
Link budget: ≥25dBm

### E1 Interface

Interface Standard: comply with protocol ITU-T G.703;
Interface Rate: 2048Kbps±50ppm;
Interface Code: HDB3;
E1 Impedance: 75Ω (unbalance), 120Ω (balance);
Jitter tolerance: In accord with protocol G.742 and G.823
Allowed Attenuation: 0~6dBm

### Ethernet interface (10/100M UTP)

Interface rate: 10/100Mbps, half/full duplex auto-negotiation

Interface Standard: Compatible with IEEE 802.3, IEEE 802.1Q (VLAN)
MAC Address Capability: 4096
Connector: RJ45, support Auto-MDIX

- **V.35 Interface**

Interface rate: n*64Kbps
Interface Standard: Compatible with ITU-T V.35 Standard
Connector: DB25/M34
Connect Mode: DCE
Clock Type: G.703 restored clock, Internal clock

- **FXS Phone Interface**

Ring voltage: 75V
Ring frequency: 25HZ
Two-line Impedance: 600 Ohm (pick up)
Return loss: 40 dB

- **FXO PBX Interface**

Ring detect voltage: 35V
Ring detection frequency: 17HZ-60HZ
Two-line Impedance: 600 Ohm (pick up)
Return loss: 40 dB

- **EM2/4 Interface**

AD gain : 0db
DA gain : -3.5DB
line Impedance: 600 Ohm (pick up)
Return loss: 20 dB

- **Power**

Power supply: AC220V；DC －48V；DC +24V
Power consumption: ≤15W

- **Working Environment**

Working temperature: -10° C ~ 60° C
Working Humidity: 5%~95 % (no condensation)
Storage temperature: -40° C ~ 80° C
Storage Humidity: 5%~95 % (no condensation)

## Front&back Panel

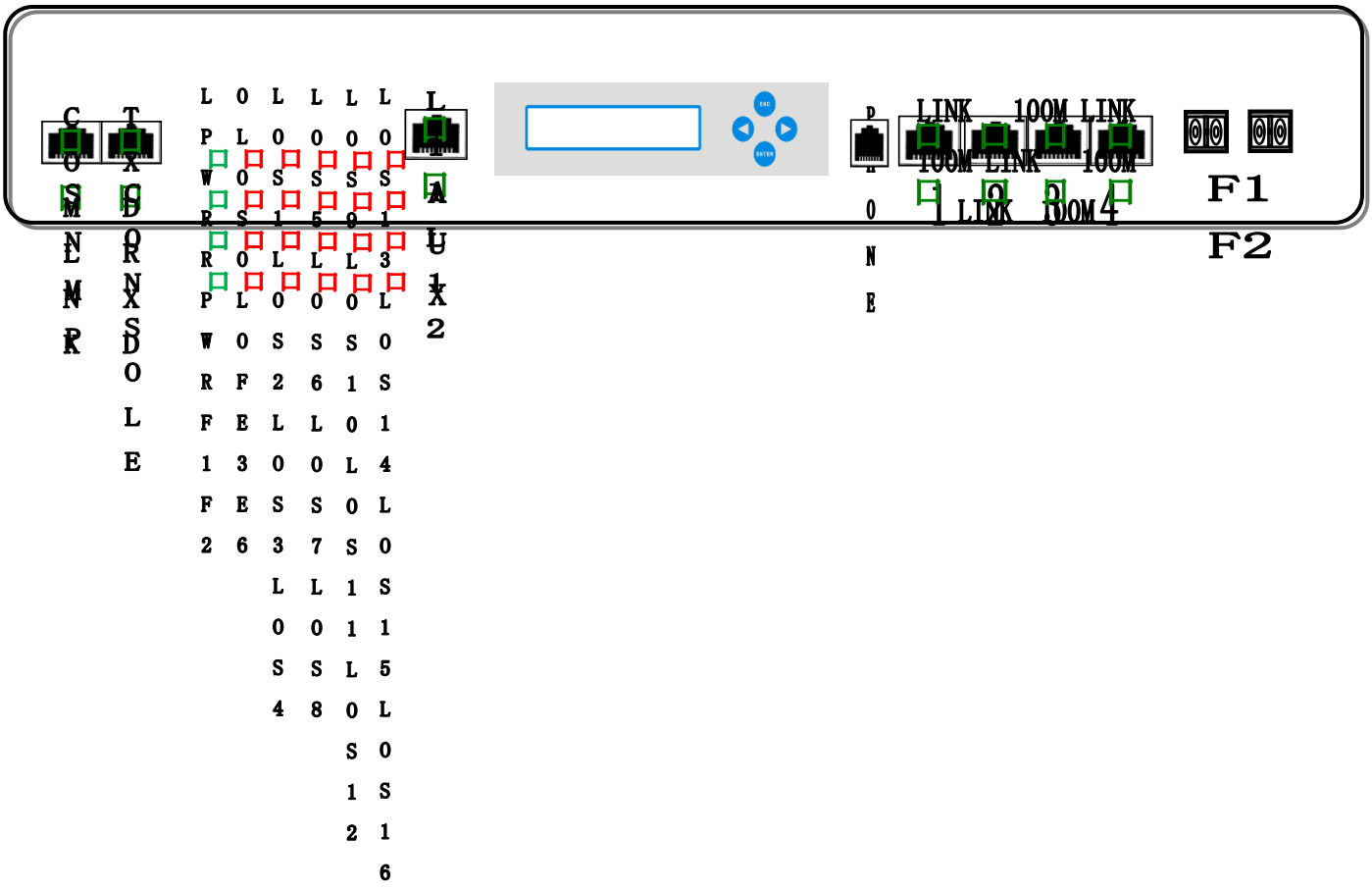



Figure 1: Fornt panel

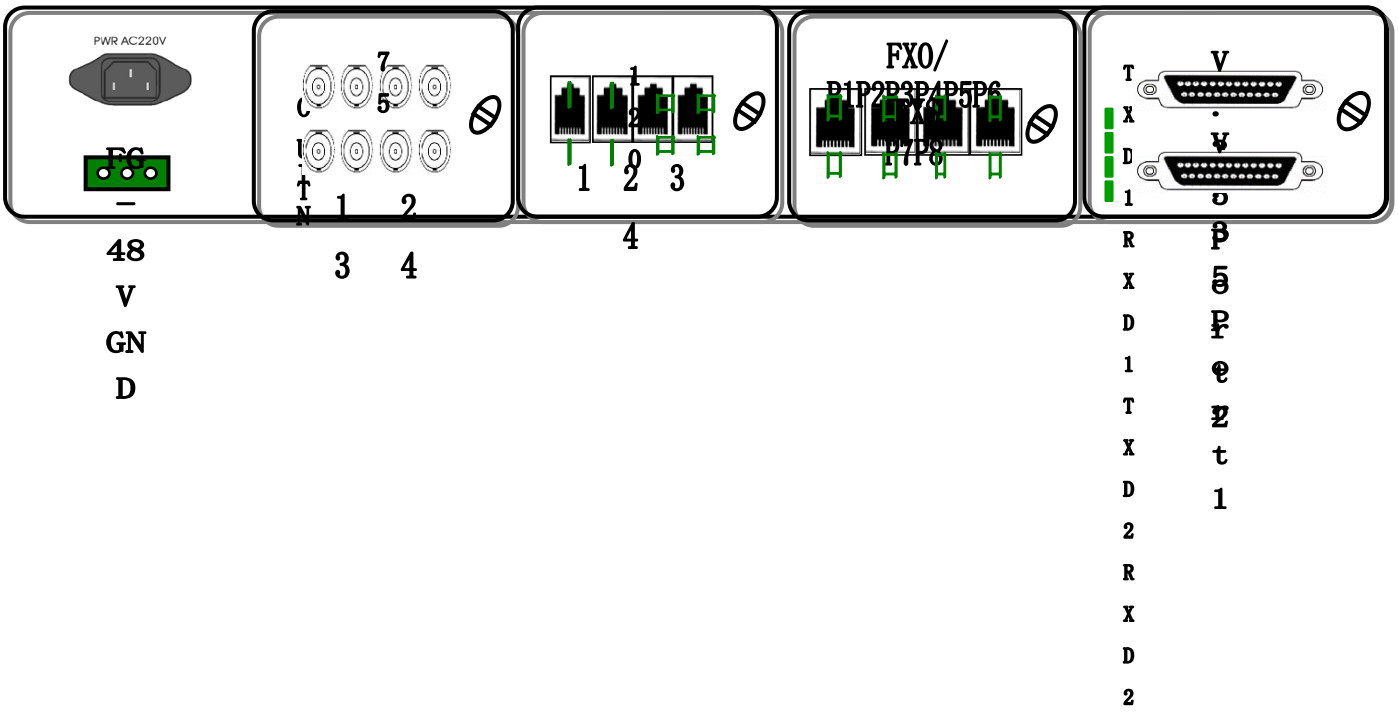


Figure 2: Back panel

## :Indicator LED

| Name | Color | Condition | Description |
|---|---|---|---|
| Indicator Led as follows, | | | |
| **LPWR** | Green | ON | Device power is ON |
| | | OFF | Device power is OFF |
| **RPWR** | Green | ON | The remote device power is ON |
| | | OFF | The remote device power is OFF |
| **F1** | Green | ON | Fiber channel 1 is ok |
| **F2** | Green | ON | Fiber channel 2 is ok |
| **OLOS** | Red | ON | Fiber signal lost, not receive optical signals |
| | | Flash | The corresponding 1-16 Channel E1 AIS alarm |
| | | OFF | Fiber signal receive normally |
| **OLOF** | Red | ON | Fiber signal synchronous lost |
| | | OFF | Fiber synchronous signal receive normally |
| **E3** | Red | ON | Fiber BER≥10-3 |
| **E6** | Red | ON | Fiber BER≥10-6 |
| **LOS1-16** | Red | ON | The corresponding 1-16 Channel E1 signal lost |
| | | Flash | The corresponding 1-16 Channel E1 AIS alarm |
| | | OFF | The corresponding 1-16 Channel E1 signal ok |
| **LINK(RJ45)** | Green | ON/flash | Corresponding Ethernet interface Link/Act |
| **100M(RJ45)** | Green | ON | Corresponding Ethernet interface work in 100M |

**NOTE:**

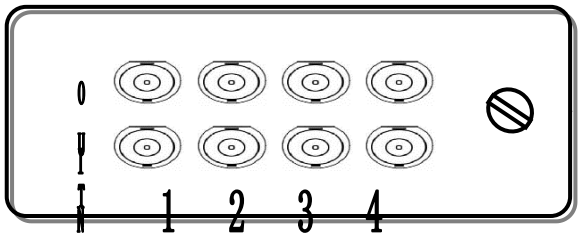
- RPWR Description:
  If signal indicator light OLOS is ON, there are two cases. One case is that the transmission line is broken; the other case is that the remote PDH device is power off. As follows:
  OLOS ON, RPWR OFF: The remote PDH device is power off;

OLOS ON, RPWR ON: Fiber is broken;
OLOS OFF, RPWR ON: Normal Work

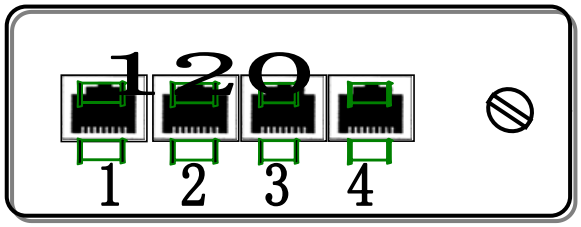
- When command the remote E1 Loop-Back, If no E1 insert in local equipment, the remote equipment E1 LOS LED will flash, indicate E1 AIS alarm, because if no E1 insert in local equipment, ALL '1' will be insert in corresponding E1 data transmit to the fiber direction, then remote equipment E1 will Loop-back the all '1' data, receive it and alarm it;

## Son Card Interface

- 4*E1 module ,total 4 type of E1 module
  1. Unframed E1 75 ohm;
  2. Unframed E1 120 ohm;
  3. Framed E1 75 ohm;
  4. Framed E1 120 ohm;

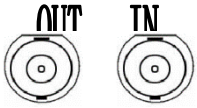



75ohm unframed/framed 4E1 module




120ohm unframed/framed 4E1 module

**75Ω-BNC Socket**




"IN" means 75Ω(BNC) unbalance E1 input

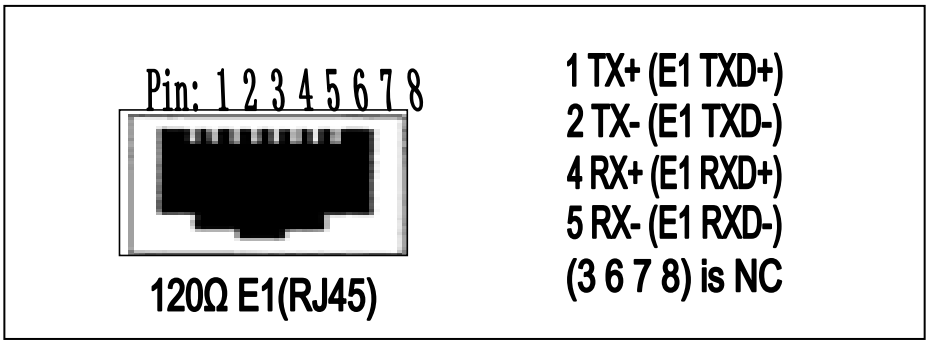
"OUT" means 75Ω(BNC)unbalance E1 output

IN: 1-4 is 1-4Channel E1 interface signals receive input

OUT: 1-4 is 1-4Channel E1 interface signals transmit output

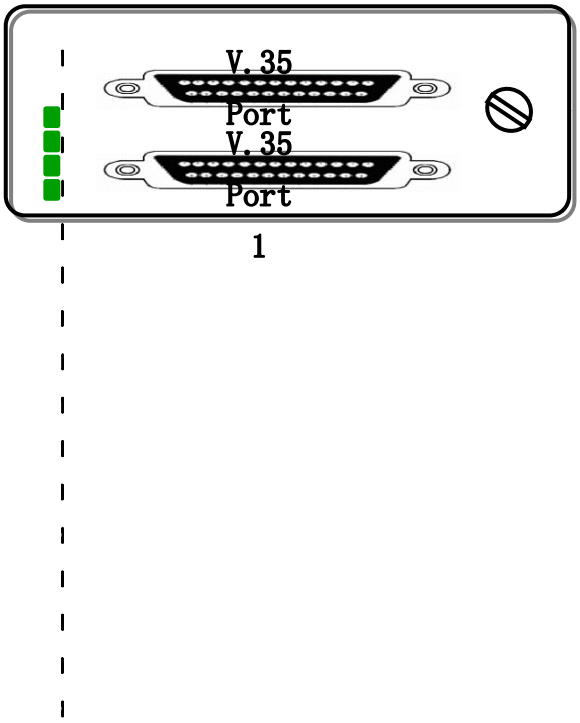
**120Ω-RJ45 Socket**

PIN defined as follows:




- V.35 module,Total 2 type of V.35 module

1. 2048K 2*V.35 module ;
2. N*64K 2*V.35 module ;




2*V.35 module

Indicator Led as follows:

| | | | |
|---|---|---|---|
| TXD1 | Green | Flash | No.1 V．35 data Transmit |
| | | Off | No.1 V．35 no data Transmit |
| RXD1 | Green | Flash | No.1 V．35 data Receive |
| | | Off | No.1 V．35 no data Receive |
| | | Flash | No.1 V．35 data Transmit |

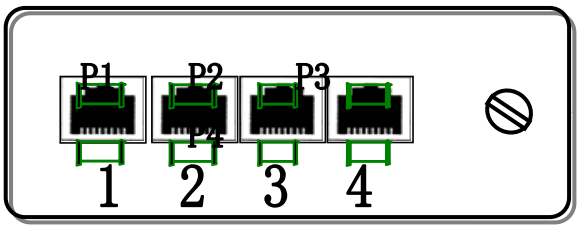
| | | | |
|---|---|---|---|
| TXD2 | Green | Off | No.1 V．35 no data Transmit |
| RXD2 | Green | Flash | No.1 V．35 data Receive |
| | | Off | No.1 V．35 no data Receive |

DB25 receptacle on the rear panel used as V.35 data connector, the pins defined as follows:

| Pins number | Pins name | The pins number of M34 standard receptacle accordingly |
|---|---|---|
| 1 | Frame Ground | A |
| 7 | Signal Ground | B |
| 2 | Send Data A | P |
| 14 | Send Data B | S |
| 3 | Receive Data A | R |
| 16 | Receive Data B | T |
| 4 | Request To Send | C |
| 5 | Clear To Send | D |
| 6 | Data Set Ready | E |
| 20 | Data Terminal Ready | H |
| 8 | Received Line Signal Detect | F |
| 24 | Transmit Clock Ext A | U |
| 11 | Transmit Clock Ext B | W |
| 15 | Transmit Clock A | Y |
| 12 | Transmit Clock B | AA |
| 17 | Receive Clock A | V |
| 9 | Receive Clock B | X |

The attachment has a straight-through cable for transfer DB25M to DB34F, used to directly connect with DTE. Use crossover cable when need to connect with DCE, and contact us.

- 4*FXO/FXS/EM2-4 module

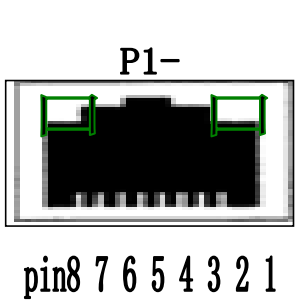



4*FXO/FXS/EM2-4 module

Indicator Led as follows:

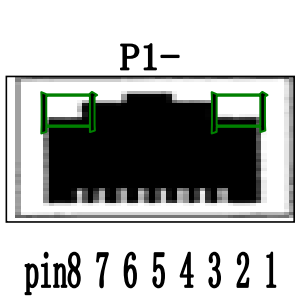
| | | | |
|---|---|---|---|
| P1-P4 | GREEN | ON | 1-4 channel voice is under calling |
| | | WINK | Calling in |
| | | OFF | 1-4 channel voice is not under calling |

FXO/FXS Pin define:



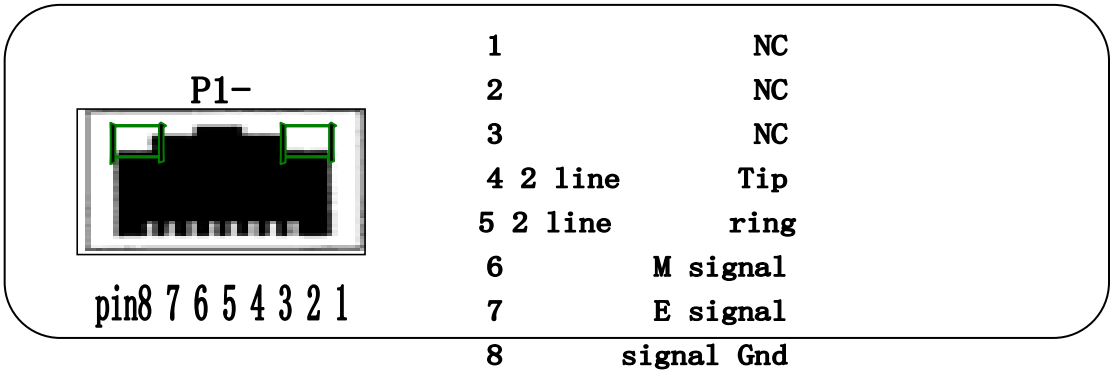

| | |
|---|---|
| 1 | NC |
| 2 | NC |
| 3 | NC |
| 4 | Phone Tip |
| 5 | Phone Ring |
| 6 | NC |
| 7 | NC |
| 8 | NC |

EM 4 Pin define:

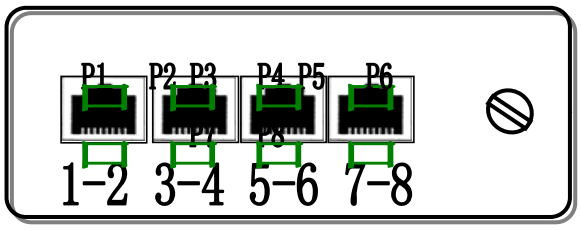



| | |
|---|---|
| 1 | NC |
| 2 | 4 line Rece tip |
| 3 | 4 line Rece ring |
| 4 | 4 line Trans Tip |
| 5 | 4 line Trans ring |
| 6 | M signal |
| 7 | E signal |
| 8 | signal Gnd |

EM 2 Pin define:




◆ 8*FXO/FXS module

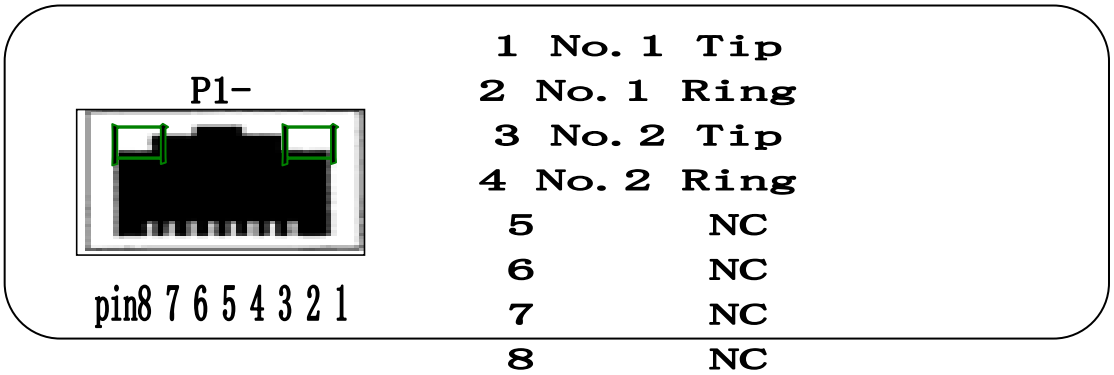



8*FXO/FXSmodule

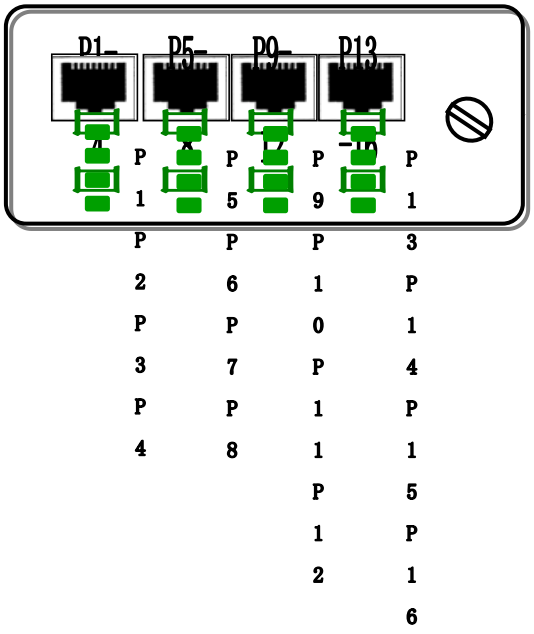
Indicator Led as follows:

| | | | |
|---|---|---|---|
| P1-P8 | GREEN | ON | 1-8 channel voice is under calling |
| | | WINK | Calling in |
| | | OFF | 1-8 channel voice is not under calling |

FXO/FXS Pin define:




16*FXO/FXS module

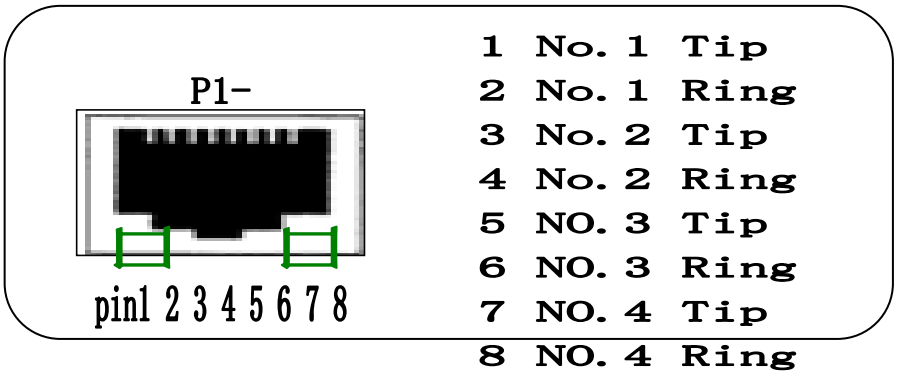



16*FXO/FXSmodule

Indicator Led as follows:

| | | | |
|---|---|---|---|
| P1-P16 | GREEN | ON | 1-16 channel voice is under calling |
| | | WINK | Calling in |
| | | OFF | 1-16 channel voice is not under calling |

FXO/FXS Pin define:



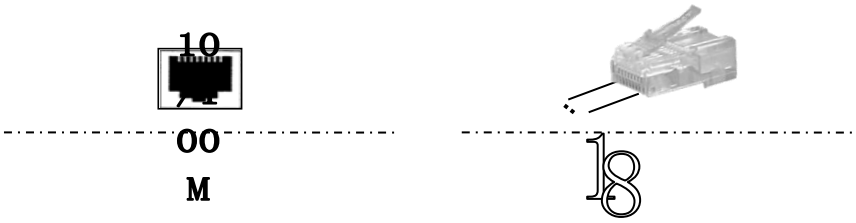

## Ethernet Interface

1Channel Ethernet and 4Channel Ethernet can be optional. Support 10/100M, half/full

duplex auto- negotiation and AUTO-MDIX (crossed line and straightly connected line self-adaptable)

| | | | |
|---|---|---|---|
| LINK | Green | ON | Ethernet is connected |
| | | OFF | Ethernet is not connected |
| 100M | Green | ON | Ethernet rate is 100M |
| | | OFF | Ethernet rate is 10M |

**RJ45 Connector and Crystal head PIN order as follows:**




10/100M Ethernet Interface Crystal head PIN order

✳ **Straightly connected line order**

| A end Crystal head PIN | | B end crystal head PIN | |
|---|---|---|---|
| Twisted Pair Color | PIN order | PIN order | Twisted Pair Color |
| White and Orange | 1 | 1 | White and Orange |
| Orange | 2 | 2 | Orange |
| White and Green | 3 | 3 | White and Green |
| Blue | 4 | 4 | Blue |
| White and Blue | 5 | 5 | White and Blue |
| Green | 6 | 6 | Green |
| White and Brown | 7 | 7 | White and Brown |
| Brown | 8 | 8 | Brown |

✳ **Crossed line order**

| A end Crystal head PIN | | B end crystal head PIN | |
|---|---|---|---|
| Twisted Pair Color | PIN order | PIN order | Twisted Pair Color |
| White and Orange | 1 | 1 | White and Green |
| Orange | 2 | 2 | Green |
| White and Green | 3 | 3 | White and Orange |
| Blue | 4 | 4 | Blue |
| White and Blue | 5 | 5 | White and Blue |
| Green | 6 | 6 | Orange |
| White and Brown | 7 | 7 | White and Brown |
| Brown | 8 | 8 | Brown |

**Description: Crossed line A end "1" connects with "3"; A end "2" connects with "6".When the connected Ethernet line is very long, you should be sure that "1"and "2" "3"and"6"are a pair line of Twisted Pair.**

## Fiber Interface


Two Physical Interface: SFP single-fiber or dual-fiber .

Dual-Fiber: TX-Transmit RX-Receive

Single-Fiber: Transmit and Receive (Note: 1310nm and 1550nm device used in pair)

**Caution：if select 1+1 interface，F1 is main fiber interface，F2 is back-up fiber interface，1+1 function is available**

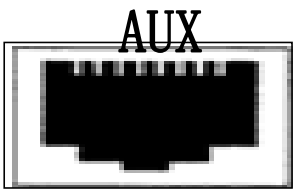
## Hotline Phone

Please plug telephone line with telephone and the phone interface of equipment. For point-to-point application, when off-hook at any side, the other one will ring. Then the user at the other side should also off-hook to answer.

## AUX Interface

Can extend all kinds of data (according to your order)

The RJ45 interface of L1-L4 on the back panel is 1-2Channel RS232 data. PIN1-4 is 1Channel, PIN5-8 is 2Channel. Defined as follows:




PIN:1 2 3 4 5 6 7 8

| | | | |
|---|---|---|---|
| 1 | No.1 | RS485-A; | ;RS422-TX+ |
| 2 | No.1 | RS485-B;RS232 TXD(Out) | ;RS422-TX- |
| 3 | No.1 | ;RS232 RXD(In) | ;RS422-RX+ |
| 4 | No.1 | ;RS232 GND | ;RS422-RX- |
| 5 | No.2 | RS485-A; | ;RS422-TX+ |
| 6 | No.2 | RS485-B;RS232 TXD(Out) | ;RS422-TX- |
| 7 | No.2 | ;RS232 RXD(In) | ;RS422-RX+ |
| 8 | No.2 | ;RS232 GND | ;RS422-RX- |

## Lcd display&Set


Management menu:

Button "ESC" for exit to upper layer of menu or give up set.

Button "ENTER" to enter submenu or confirm set.

Button "<" and ">" to choose the menu at the same level.

Power on the device and after initialization, about four seconds, it will show::

=Fib Opti
Multi=
= System
Menu =

, Press "ENTER" to get the Menu for query and Settings, When there is not any key pressed for more than 1 minute, the screen will return to the top of the

=Fib Opti
Multi=
= System
Menu =

Menu System: .

If no key operate, LCD will display main alarm and minor alarm ,LCD display

Main
Alarm:ALARM
Min
Alarm:ALARM

and

=Fib Opti
Multi=
= System
Menu =

, “ALARM” have alarm,” switching between

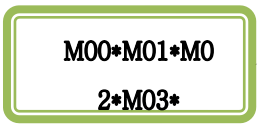
None" is no alarm.

The First level menu:

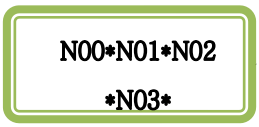
| Main LCD interface | Describe | Press “ENTER” | Press ”< ” | Press ”>” | Pres ”ESC ” |
|---|---|---|---|---|---|
| =Fib Opti Multi= = System Menu = | Display Main LCD interface | Enter first level menu, have four Sub-Menu | no effect | no effect | no effect |
| = Main System = 1:Set Main Board | Main Board parameter setting | Enter second level menu, have 13 Sub-Menu | choose the menu in same level | same level Menu | Return to Main |
| = Main System = 2:Set Son Card | No1-4 Son Card parameter setting | Set and read son card status | choose the menu in same level | same level Menu | Return to Main |
| = Main System = 3:Main report | PDH System fiber and E1 status read | Display the status | choose the menu in same level | same level Menu | Return to Main |
| = Main System = 4:Main&Min Alarm | Main and Minor alarm configure | Select Alarm <Main> <Minor> | choose the menu in same level | same level Menu | Return to Main |
| = Main System = 5:Show Version | Display system version | FPGA: Ver 2.1 Firmware:Ver 2.5 | choose the menu in same level | same level Menu | Return to Main |

main alarm and minor alarm is user configurable, and define in following description

Main and Minor alarm comprise with 80 alarm ,every alarm can on or off




for Main alarm setting,




for Minor alarm setting, in the right of alarm name, if it is '*' ,this alarm is ON, if it is space, this alarm is OFF; Press ">" or "<" to select alarm no ,Press "Enter" to Set ON or OFF;

If sound alarm mute is off, the speaker should play two type of alarm sound, short sound for main alarm and long sound for minor alarm;

Default main and minor alarm configure:

| Main Alarm | Describe | Local | Mark | Remote | Mark |
|---|---|---|---|---|---|
| **OLOS** | Fiber signal los | ★ | M00 | ★ | M40 |
| **OLOF** | Fiber signal synchronous lost | ★ | M01 | ★ | M41 |
| **E3** | Fiber BER≥10-3 | ★ | M02 | | M42 |
| **E6** | Fiber BER≥10-6 | ★ | M03 | | M43 |
| **LAN** | No Any 1-4 Ethernet link | | M04 | | M44 |
| **NC** | Reserved | | M05 | | M45 |
| **FIB1** | Fiber channel 1 is ok | | M06 | | M46 |
| **FIB2** | Fiber channel 2 is ok | | M07 | | M47 |
| **LOS1** | 1 Channel E1 signal lost | ★ | M08 | | M48 |
| **LOS2** | 2 Channel E1 signal lost | ★ | M09 | | M49 |
| **LOS3** | 3 Channel E1 signal lost | ★ | M10 | | M50 |
| **LOS4** | 4 Channel E1 signal lost | ★ | M11 | | M51 |
| **LOS5** | 5 Channel E1 signal lost | ★ | M12 | | M52 |
| **LOS6** | 6 Channel E1 signal lost | ★ | M13 | | M53 |
| **LOS7** | 7 Channel E1 signal lost | ★ | M14 | | M54 |
| **LOS8** | 8 Channel E1 signal lost | ★ | M15 | | M55 |
| **LOS9** | 9 Channel E1 signal lost | ★ | M16 | | M56 |
| **LOS10** | 10 Channel E1 signal lost | ★ | M17 | | M57 |
| **LOS11** | 11 Channel E1 signal lost | ★ | M18 | | M58 |
| **LOS12** | 12 Channel E1 signal lost | ★ | M19 | | M59 |
| **LOS13** | 13 Channel E1 signal lost | ★ | M20 | | M60 |
| **LOS14** | 14 Channel E1 signal lost | ★ | M21 | | M61 |
| **LOS15** | 15 Channel E1 signal lost | ★ | M22 | | M62 |
| **LOS16** | 16 Channel E1 signal lost | ★ | M23 | | M63 |
| **AIS1** | 1 Channel E1 AIS alarm | | M24 | | M64 |
| **AIS2** | 2 Channel E1 AIS alarm | | M25 | | M65 |

| | | | | | |
|---|---|---|---|---|---|
| **AIS3** | 3 Channel E1 AIS alarm | | M26 | | M66 |
| **AIS4** | 4 Channel E1 AIS alarm | | M27 | | M67 |
| **AIS5** | 5 Channel E1 AIS alarm | | M28 | | M68 |
| **AIS6** | 6 Channel E1 AIS alarm | | M29 | | M69 |
| **AIS7** | 7 Channel E1 AIS alarm | | M30 | | M60 |
| **AIS8** | 8 Channel E1 AIS alarm | | M31 | | M71 |
| **AIS9** | 9 Channel E1 AIS alarm | | M32 | | M72 |
| **AIS10** | 10 Channel E1 AIS alarm | | M33 | | M73 |
| **AIS11** | 11 Channel E1 AIS alarm | | M34 | | M74 |
| **AIS12** | 12 Channel E1 AIS alarm | | M35 | | M75 |
| **AIS13** | 13 Channel E1 AIS alarm | | M36 | | M76 |
| **AIS14** | 14 Channel E1 AIS alarm | | M37 | | M77 |
| **AIS15** | 15 Channel E1 AIS alarm | | M38 | | M78 |
| **AIS16** | 16 Channel E1 AIS alarm | | M39 | | M79 |

| Minor Alarm | Describe | Local | Mark | Remote | Mark |
|---|---|---|---|---|---|
| **OLOS** | Fiber signal los | | N00 | | N40 |
| **OLOF** | Fiber signal synchronous lost | | N01 | | N41 |
| **E3** | Fiber BER≥10-3 | | N02 | | N42 |
| **E6** | Fiber BER≥10-6 | | N03 | | N43 |
| **LAN** | No Any 1-4 Ethernet link | ★ | N04 | ★ | N44 |
| **NC** | Reserved | | N05 | | N44 |
| **FIB1** | Fiber channel 1 is ok | ★ | N06 | ★ | N45 |
| **FIB2** | Fiber channel 2 is ok | ★ | N07 | ★ | N47 |
| **LOS1** | 1 Channel E1 signal lost | | N08 | | N48 |
| **LOS2** | 2 Channel E1 signal lost | | N09 | | N49 |
| **LOS3** | 3 Channel E1 signal lost | | N10 | | N50 |
| **LOS4** | 4 Channel E1 signal lost | | N11 | | N51 |
| **LOS5** | 5 Channel E1 signal lost | | N12 | | N52 |
| **LOS6** | 6 Channel E1 signal lost | | N13 | | N53 |
| **LOS7** | 7 Channel E1 signal lost | | N14 | | N54 |
| **LOS8** | 8 Channel E1 signal lost | | N15 | | N55 |
| **LOS9** | 9 Channel E1 signal lost | | N16 | | N56 |
| **LOS10** | 10 Channel E1 signal lost | | N17 | | N57 |
| **LOS11** | 11 Channel E1 signal lost | | N18 | | N58 |
| **LOS12** | 12 Channel E1 signal lost | | N19 | | N59 |
| **LOS13** | 13 Channel E1 signal lost | | N20 | | N60 |
| **LOS14** | 14 Channel E1 signal lost | | N21 | | N61 |
| **LOS15** | 15 Channel E1 signal lost | | N22 | | N62 |
| **LOS16** | 16 Channel E1 signal lost | | N23 | | N63 |
| **AIS1** | 1 Channel E1 AIS alarm | ★ | N24 | | N64 |
| **AIS2** | 2 Channel E1 AIS alarm | ★ | N25 | | N65 |
| **AIS3** | 3 Channel E1 AIS alarm | ★ | N26 | | N66 |
| **AIS4** | 4 Channel E1 AIS alarm | ★ | N27 | | N67 |
| **AIS5** | 5 Channel E1 AIS alarm | ★ | N28 | | N68 |
| **AIS6** | 6 Channel E1 AIS alarm | ★ | N29 | | N69 |
| **AIS7** | 7 Channel E1 AIS alarm | ★ | N30 | | N60 |
| **AIS8** | 8 Channel E1 AIS alarm | ★ | N31 | | N71 |
| **AIS9** | 9 Channel E1 AIS alarm | ★ | N32 | | N72 |
| **AIS10** | 10 Channel E1 AIS alarm | ★ | N33 | | N73 |
| **AIS11** | 11 Channel E1 AIS alarm | ★ | N34 | | N74 |
| **AIS12** | 12 Channel E1 AIS alarm | ★ | N35 | | N75 |
| **AIS13** | 13 Channel E1 AIS alarm | ★ | N36 | | N76 |
| **AIS14** | 14 Channel E1 AIS alarm | ★ | N37 | | N77 |
| **AIS15** | 15 Channel E1 AIS alarm | ★ | N38 | | N78 |
| **AIS16** | 16 Channel E1 AIS alarm | ★ | N39 | | N79 |

= Main System =
1:Parameter Set

this level menu : Press “Enter”: Set Param Select <Local> <Remote> if you select “Local”, setting the local equipment, “Remote” to setting the Remote Equipment

| = Main System = 1:Parameter Set | Describe | Press “ENTER” | Press”<” | Press ”>” | Press ” ESC” |
|---|---|---|---|---|---|
| 1:Loc/Rem E1Loop Parameter Set | Local or rmote E1 loop-back | Loc/Rem E1 Loop <Loc> <Rem> | Select E1 loop type | Select the E1 loop type | To first Menu |
| | If already looped, it will display left time | Left Sec: 58 Loc:All 1-16 E1 | Press any key to continue | Press any key to continue | Press any key to continue |
| 2:E1 Alarm Mask Parameter Set | E1 alarm shield setting | <E1 Alarm Mask > <No E1> | Select the E1 to shield | Select the E1 to shield | To first Menu |
| 3: Alarm Mute Parameter Set | Alarm sound MUTE setting | < MUTE > <ON> <OFF> | Select ON or OFF | Select ON or OFF | To first Menu |
| 4: LED Display Parameter Set | LED display Local or Remote | < LED Display > <Local> <Remote> | Select Local or Remote | Select Local or Remote | To first Menu |

| | | | | | |
|---|---|---|---|---|---|
| **5:Fib Loop-Back Parameter Set** | Local fiber loop-back | **<Fib Loop-Back> <Loop> <No-Loop>** | Select Loop and No-Loop | Select Loop and No-Loop | To first Menu |
| | If already looped, it will display left time | **Left Sec: 58 Local Fiber Loop** | Press any key to continue | Press any key to continue | Press any key to continue |
| **6:4*Ethernet Set Parameter Set** | 4 channel Ethernet Param Setting | **1. 1-4 Port Set 2.Sepra 3.Prior** | Select 1-3 Menu no | Select 1-3 Menu no | To first Menu |
| **7:Fiber No.1 ALS Parameter Set** | No.1 fiber ALS function ON or OFF setting | **<Fiber No.1 ALS> <ON> <OFF>** | Select ALS ON or OFF | Select ALS ON or OFF | To first Menu |
| **8:Fiber No.2 ALS Parameter Set** | No.2 fiber ALS function ON or OFF setting | **<Fiber No.2 ALS> <ON> <OFF>** | Select ALS ON or OFF | Select ALS ON or OFF | To first Menu |
| **9:LCD Back-Light Parameter Set** | LCD back-light AUTO shutdown time setting | **Back-Light Time 60 Second** | shutdown time from 30 to 300 | shutdown time from 30 to 300 | To first Menu |
| **10:LoopBack Time Parameter Set** | LCD back-light AUTO shutdown time setting | **Loop-Back Time 1 Minutes** | 1min/10min/30/min/1hour/5hour/24hour/Foever | 1min/10min/30/min/1hour/5hour/24hour/Foever | To first Menu |

| | | | | | |
|---|---|---|---|---|---|
| 11:Reset the MUX<br>---------- | Reset local and remote equipment | Are you sure?<br>"Enter" to Reset | no effect | no effect | To first Menu |
| 12:ReBoot the MUX<br>---------- | Reboot local equipment | Are you sure?<br>"Enter" to ReBoot | no effect | no effect | To first Menu |
| 13: Restore to factory settings | Restore to factory default setting | Are you sure?<br>"Enter" to Resto | no effect | no effect | To first Menu |

## Sub-menu 6 : Ethernet setting:

6:4*Ethernet Set

Parameter Set

Press “Enter”, display:

1. 1-4 Port Set

2.Sepra

3.Prior

,1 is 1-4channel Ethernet phy and other setting,2 is seprate setting,3 is 802.1P prior setting

No1 Eth--No2 Eth

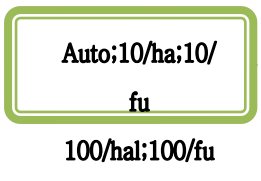
No3 Eth--No4 Eth

◆ Cursor at 1,and press “Enter”,display ,select Ethernet channel ,if you select 1 and press “ENTER”, display

1.Mode

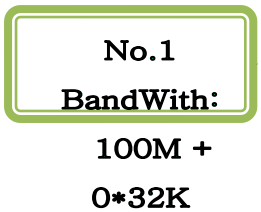
2.FlowCon

3.Rate 4.Prior




1: mode ,display ,auto : phy is auto-nego,10/ha is 10M/half,10/fu is 10M/full,100/haf is 100M/half,100/ful is 100M/full


2:FlowCon display ,you can select ON or OFF




3:Rate display , the maximum Ethernet Bandwidth is 100M,and the minimum 0k, for example you can select 100M + 0*32K ,the bandwidth is 100M,and 10M+0*32K the bandwidth is 10M,1M+16*32K the bandwidth is 1.5M.


4:Prior display you can select priority level 0-7,7 is maximum,0 is the minimum ,the default level is 0;


◆ Cursor at 2,and press “Enter”, display ,there is 4 mode,

M0:Disable Ethernet separate is disable
M1:Special Untag for default Ethernet separate mode, the data has no label
M2:Special Taged the data has label
M3:802.1Q Untag IEEE 802.1Q separate mode


◆ Cursor at 3,and press “Enter”, display ,you can select OFF

or ON for priority enable

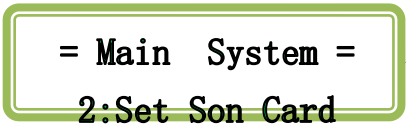
NOTE:

◆ In measuring laser power, be sure to close ALS function

| | | | | | |
|---|---|---|---|---|---|
| = Main System = 3: Main Report this level menu is: | | | | | |
| Press ”ENTER”display 5 screen status, Press ”<” and”>”switching , Press” ESC” Return to main menu | | | | | |
| No | NO.1 screen | NO.2 screen | NO.3 screen | NO.4 screen | NO.5 screen |
| Disp | 1-16E1 Local LOS LLLLLLLL LLLLLL | 1-16E1 Rem LOS LLLLLLLL LLLLLL | Fibe L/R los_lof - - - - | 1-16E1 Local AIS AAAA----- ------- | 1-16E1 Rem AIS AAAA----- ------- |
| | Local 1-16 E1 LOS Status, L is E1 LOS,-is E1 OK | Remote 1-16 E1 LOS Status, L is E1 LOS,-is E1 OK | Locla fiber LOS LOF ,remote fiber LOS LOF Status , L is alarm,- is OK | Local 1-16 E1 AIS Status, A is E1 AIS,-is NO AIS | Remote 1-16 E1 AIS Status, A is E1 AIS,-is NO AIS |
| No | NO.6 screen | NO.7 screen | NO.8 screen | NO.9 screen | |
| Disp | L1:Link 100M Ful L2:Down -- - --- | L3:Link 100M Hal L4:Down -- - --- | R1:Link 100M Ful R2:Down -- - --- | R3:Link 100M Fal R4:Down -- - --- | |
| | Local No.1-2 Ethernet work status | Local No.3-4 Ethernet work status | Remote No.1-2 Ethernet work status | Remote No.3-4 Ethernet work status | |

## 1-4 son card seting

The no.2 of level 2 menu:




1-4 son card module seting， press“ENTER”display:

x: Null Inserted solt no.x no card inserted
x: 4*E1 75 ohm solt no.x unframed 4*E1 75ohm module inserted
x: 4*E1 120 ohm solt no.x unframed 4*E1 75 ohm module inserted
x: 4framed E1 75 solt no.x framed 4*E1 75 ohm module inserted
x: 4framed E1 120 solt no.x framed 4*E1 120 ohm module inserted
x: 4*phone card solt no.x 4*Voice module inserted
x: 2 * 2048K V.35 solt no.x 2*2048K V.35 module inserted
x: 2 * N*64K V.35 solt no.x 2*N*64K V.35 module inserted
x: Not this type solt no.x inserted card type can not be recognised

## 4*E1 unframed module

| 4*E1 unframed module | | |
|---|---|---|
| Press ”ENTER”Display 4 screen status ，<br>Press ”<” and”>”Switching，Press”ESC”Return to main | | |
| Screen | No.1 | No.2 |
| Displa<br>y | LOS:loc *<br>Rem<br>LLLL *L<br>LLL | AIS:loc *<br>Rem<br>LLLL *LL<br>LL |
| | Local and remote 1-4 channel E1 LOS status ，L is E1 LOS,- is E1 ok, Invalid is remote Invalid | Local and remote 1-4 channel E1 AIS status ，A is E1 AIS,- is E1 no AIS, Invalid is remote Invalid |

## 2*V.35 2048K module


Clk have three mode

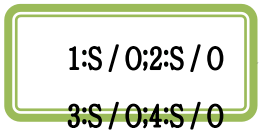
| Clock mode | | mode |
|---|---|---|
| Connect with DTE | E1 master clock， V.35 internal clock | 1 |
| | E1 recovery clock ， V.35 internal clock | 2 |

| | | |
|---|---|---|
| Connect with DCE | E1 external clock, V.35 external clock | 3 |
| Usual clock mode | 1、connect with DTE, used pair, end office is mode 1, user end is mode 2. | |
| | 2、connect one with DCE, the other with DTE,DCE end is mode 3, DTE end is mode 2. | |

Tinv is V.35 transmit clk reverse ,On is reversed ， Off is not reversed
Press "<" and ">" to choose. Press “ENTER”to select your seting value or “ESC” to quit.
2*V.35 N*64K（N=1-32） module，have V.35 speed seting screen


Press "<" and ">" to choose. Press “ENTER”to select your seting 1-32 value or “ESC” to quit.

## 4*FXO/FXS phone module

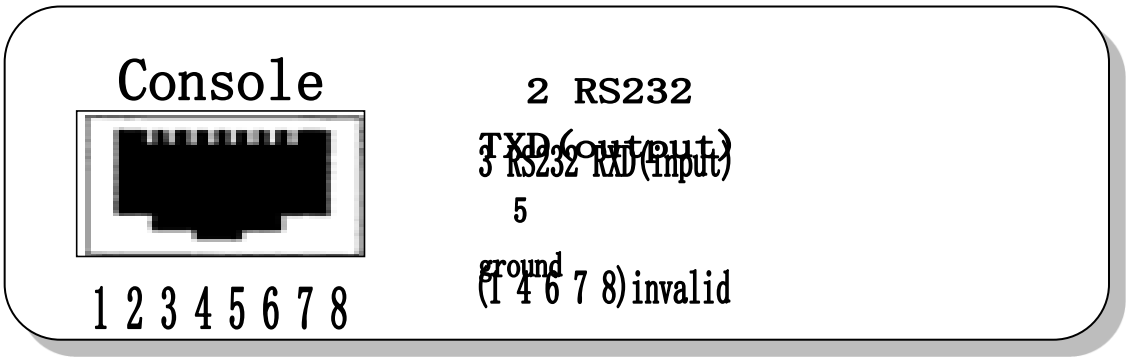
| | | |
|---|---|---|
| 4*FXO/FXS phone module: | | |
|  Press ”ENTER” display phone status, Press ”<” and ”>” switching , Press ”ESC” return to main menu ,1:S / 0 is: No.1 phone is FXS interface , remote is FXO interface | | |
| Display |  | Line 1:local phone status , line 2: Remote phone status |

## 4*FE1 Framed E1 module

| |
|---|
| 4*FE1 Framed E1 module |
|  Press ”ENTER” setting E1 0-31 timesolts, Press ”<” and ”>” Switching select E1, Press ”ESC” Return to |

| main menu<br>U is E1 unframed , f is E1 framed | | |
|---|---|---|
| Display |  |  |
| Describe | The first cursor seting the timeslot 0, if E1 is framed ,then display f,Press”Enter”change to *,indicate E1 is unframed , the under line 00 indicate time solt 0 If e1 is unframed , then KEY ”>” and ”<” invalid | Other 1-31 cursor setting 1-31 Timesolt, Press ”Enter”KEY ‘*’ and ‘-’ switching ,* is this timeslot occupy, - this timeslot not occupy KEY ”>” and ”<” select timesolt |
| Display |  |  |
| Describe | E1 is unframed | E1 is framed ,timeslot 1-2,4-31 occupy |
| Display |  |  |
| Describe | E1 is framed ,timeslot 16-31 occupy | E1 is framed ,timeslot 1-8 occupy |

## Console Interface




This is for PC hyper-terminal control.

Use DB9 cable to connect the PC's COM port with CONSOLE port;

Run the "hyper terminal" program under WINDOWS system,or run other third-party serial port connection software, set the default parameters as following:

Baud rate: 9600;

Data byte: 8;

parity check: none;

Stopbit: 1;

Flow control: none;

Press "ENTER" continuously for several times, enter system's CLI interface and begin management work.

```
========================= Main Menu ======================
== 1.current Ethernet information, Please input '1'       ===
== 2.current PDH & E1 information, Please input '2'       ===
== 3.Enter config menu, Please input '3'                  ===
== 5.Factory Reset!Please input '5'                       ===
==========================================================
W[PDH /]:
```

## Submenu introduction

### 1. Check etherent setting information, input "1"

```
[PDH /]:1
Local/Remote Ethernet Interface Status:
L1:Down ---- --- L2:Down ---- --- L3:Down ---- --- L4:Down ---- ---
R1:Link 100M Ful R2:Down ---- --- R3:Down ---- --- R4:Down ---- ---
==========Local  VLAN========
separate mode:special channel separate
Information of separate set:Mode 1(x=1):Special Separated,and untagged
Port 1-4:(CH1:PORT1,CH2:PORT2,CH3:PORT3,CH4:PORT4)
==========Remote VLAN========
separate mode:special channel separate
Information of separate set:Mode 1(x=1):Special Separated,and untagged
Port 1-4:(CH1:PORT1,CH2:PORT2,CH3:PORT3,CH4:PORT4)
==========Local  BandWidth========
Information of bandwidth:
1:100M+00*32K---2:100M+00*32K---3:100M+00*32K---4:100M+00*32K
==========Remote BandWidth========
Information of bandwidth:
1:100M+00*32K---2:100M+00*32K---3:100M+00*32K---4:100M+00*32K
Press Any Key to Continue........
The device support packet sizes up to 1916!
==========Local  PHY Mode========
PORT1:Auto PORT2:Auto PORT3:Auto PORT4:Auto
==========Remote PHY Mode========
PORT1:Auto PORT2:Auto PORT3:Auto PORT4:Auto
==========Local  Flow Control========
PORT1:OFF PORT2:OFF PORT3:OFF PORT4:OFF
==========Remote Flow Control========
PORT1:OFF PORT2:OFF PORT3:OFF PORT4:OFF
==========Local  Priority========
802.1P Configration:Disable 802.1P!
Pri-value: PORT1:0 PORT2:0 PORT3:0 PORT4:0
==========Remote Priority========
802.1P Configration:Disable 802.1P!
Pri-value: PORT1:0 PORT2:0 PORT3:0 PORT4:0
Press Any Key to Continue.....

========================== Main Menu ======================
== 1.current Ethernet information, Please input '1'       ===
```

```
== 2.current PDH & E1 information, Please input '2'       ===
== 3.Enter config menu, Please input '3'                  ===
== 5.Factory Reset!Please input '5'                       ===
[PDH /]:
```

## 2. Check PDH&E1 information,please input"2"

```
[PDH /]:2
Main and reserve fiber signal lost.
LOCAL/REMOTE Fiber alarm Status:
OLOS OLOF E3   E6
Alar OK   OK   OK
---- ---- ---- ----
LOCAL/REMOTE E1 LOS alarm Status(L:LOS,-:Insert):
1  2  3  4
L  L  L  L
-  -  -  -
LOCAL/REMOTE E1 AIS alarm Status(L:LOS,-:No AIS):
1  2  3  4
-  -  -  -
-  -  -  -
Not Command the remote E1 Loop-Back.
Not Mask E1 Alarm.
LED indication romote device status.
Sound Alarm OFF.
Local fiber loop off.
Hot line telephone on-hook.
Press Any Key to Continue.........


[PDH /]:3
local:1-30 Phone Type(S:FXS,0:FXO):
1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
Remote:1-30 Phone Type(S:FXS,0:FXO):
1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
1-30 Phone Status(C:Calling,H:Hook):
1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
H  H  H  H  H  H  H  H  H  H  H  H  H  H  H  H
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
```

```
H  H  H  H  H  H  H  H  H  H  H  H  H  H  H  H
Local 1-4 AUX Port Type:
No Module insert
No Module insert
RS232 Module
No Module insert
Remote 1-4 AUX Port Type:
No Module insert
No Module insert
No Module insert
No Module insert
Press Any Key to Continue.....
```

3. Enter setting menu, please input "3"

```
[PDH /]:3

======================== Config Menu ==================
== 1.Set 1-4 Port bandwith,Please input '1'         ===
== 2.Set 1-4 Port Ethernet PHY Mode,Please input '2'===
== 3.Set 1-4 Port Flow Control,Please input '3'     ===
== 4.Set 1-4 Port 802.1P priority,Please input '4'  ===
== 5.Config 802.1Q-Switcher,Please input '5'        ===
== 6.Config Channel Separate,Please input '6'       ===
== 7.Maximum Packet Length(1916 or 1936), input '7' ===
== 8.PDH E1&fiber config,Please input '8'           ===
== Exit, Please input '0'                           ===
=======================================================
[PDH /Config]:
```

3.1 Ethernet bandwidth setting, input "1"

```
[PDH /Config]:1

============================ Bandwidth Config ============================
== Set Local bandwidth : setl m xyz ab (m: Port1-4, xyz,ab: Value  ===
== Set Remote bandwidth: setr m xyz ab (m: Port1-4, xyz,ab: Value  ===
== bandwidth =(x*100+y*10+z)M+32*(a*10+b)K  (m<5,xyz<100,ab<32)    ===
== Exit, Please input '0'                                          ===
=========================================================================
[PDH /Bandwidth config]:
```

“setl” for setting local equipment,and “setr” for setting remote side.

x,y,z respectively denote hundred's place, decade and unit for a hundred number; a,b denote decade and unit for a ten number; m means port number,

when m=0 denote optical connector, m=1/2/3/4 denote the 1st/2nd/3rd/4th ethernet port.

If you want to set the 3rd ethernet bandwidth is 55M+32*16K, then input setl 3 055 16

3.2 Ethernet 10/100M setting, input "2"

```
[PDH /Config]:2
==================== Port Status Config ======================
== Set Local command : setl x y                              ===
== Set Remote command: setr x y                              ===
== Note: x:Port numble(x=1-4) y:0 auto negotiation           ===
==                            1 fored half duplex and 10BT ===
==                            2 fored full duplex and 10BT ===
==                            3 fored half duplex and 100BT===
==                            4 fored full duplex and 100BT===
==                                                           ===
== Exit, Please input '0'                                    ===
==============================================================
[PDH /Port Status Config]:
```

“setl” for setting local equipment ,and “setr” for setting remote side.

3.3 flow control setting，input"3"

```
[PDH /Config]:3
==================== Flow Control Config =====================
== Set Local command : setl x y                              ===
== Set Remote command: setr x y                              ===
== Note: x:Port numble(x=1-4) y=0/1;Flowcontrol 0:OFF,1:ON ===
== Exit, Please input '0'                                    ===
==============================================================
[PDH /Port Flow Config]:
```

“setl” for setting local equipment,and “setr” for setting remote side.

Mark: x means 1-4ch etherent port.

3.4 802.1P setting，input"4"

```
[PDH /Config]:4
==================== 802.1P Config ======================
== Enable local  802.1P : enl x,x=0:disable,x=1:enable===
```

```
== Enable Remote 802.1P : enr x,x=0:disable,x=1:enable===
== Local  802.1P user-priority command: setl x y      ===
== Remote 802.1P user-priority command: setr x y      ===
==                                                    ===
== Note:x:port number(x=1-4) y:value(y=0-7)           ===
== (using this value when receive-packets havn't tag) ===
==                                                    ===
== Exit, Please input '0'                             ===
========================================================
[PDH /802.1P Config]:
```

“enl” enable the local 802.1P priority

“enr” enable the local 802.1P priority

“setl” for setting local equipment,and “setr” for setting remote side.

Mark: x means 1-4ch etherent port.

y means priority grade,including:

- The highest grade is 7,applied in critical network traffic, such as routing choose information protocol(RIP) and open shortest path(OSPF) protocol's routing table update;
- Priority 6 and 5 mainly apply in delay-sensitive program, such as interactive video and audio;
- Priority 4 to 1 mainly apply in controlled-load program, such as streaming multimedia and business-critical traffic;
- Priority 0 is default value, and start automatically without setting other priority grade.

**Attention: when ethernet packet is with tag, the device will dedicate priority grade automaticly by tag; otherwise, use setting x y to set priority grade by real situation.**

3.5 802.1Q switch setting, input "5"

```
[PDH /Config]:5
```

```
====================== 802.1Q Config ================================
== Note:You can choice one of 3,4,5,and 3,4 used for back-to-back  ===
==                                                                 ===
== 1.Enable or disable 802.1Q,Please input '1'                     ===
==   Explanation: p:ports number(0<p<=5,5:optic port)              ===
==                xxxx:VID(0=<x<4096); yy:VLAN number(0=<yy<16)    ===
== 2.PVID config: pvid xxxx p p p p p                              ===
==   Disable tag insertion when xxxx = 0000                        ===
== 3.802.1Q membership config command: set/clr yy xxxx p p p p p   ===
==   e.g:vlan1:port1-3,vid=2; vlan2:port4-5,vid=3;                 ===
==       vlan 00 1 2 3; vlan 01 4 5                                ===
== 4.VLAN Tag set: tag z p p p p                                   ===
==   Explanation: z: 1:Egress Tagged; 0:Egress Untagged            ===
==   Note       : port5 can't set                                  ===
== 5.Clear vid and memberships,Please input '5'                    ===
== 9.Loop up current switcher information,Please input '9'         ===
==                                                                 ===
== Exit,Please input '0'                                           ===
=====================================================================
[PDH /802.1Q Config]:
```

## 3.6 channel separating setting, input"6"

```
[PDH /Config]:6
=================== Channel Separate Config =================
== Set Local  Channel Separate : setl x                    ===
== Set Remote Channel Separate : setr x                    ===
== Note: x:Channel Separate mode ( x=0-4 )                 ===
== Explanation of Channel Separate mode :                  ===
== Mode 0( x=0 ) : Disable Channel Separate                ===
== Mode 1( x=1 ) : Special Channel Separated,and untagged  ===
```

```
== Mode 2( x=2 ) : Special Channel Separated,and tagged     ===
== Mode 3( x=3 ) : 802.1Q Channel Separated,and untagged    ===
== Note : 1-4 Ethernet (P1-P2-P3-P4) Separate Each Other    ===
==                                                          ===
== Exit, Please input '0'                                   ===
============================================================
[PDH /Channel separate config]:
```

“setl” for setting local equipment ,and “setr” for setting remote side.

Channel types instruction:

mode 0, when x=0, means cancel channel isolation;

mode 1, when x=1, means corresponding channel isolated, but the data has no label;

mode 2, when x=2, means corresponding channel isolated, but the data has label;

mode 3, when x=3,means the local device's ethernet channels all isolated to each other.

Attention: in ethernet transmission, the data packet is no need to add label. But in some special network, need to add label to enhance network transmission safety.

Channel isolation instruction:

each channel isolates to each other;

3.7 Ethernet packet switch between 1536 and 1916, input "7

```
[PDH /Config]:7
Accept packet sizes form 1916 bytes to 1536 bytes!
```

The device has two types of packet:1916 and 1538, each ethernt port should be setted unified.

## 3.8 PDH E1 and fiber setting

```
[PDH /Config]:8

================== PDH E1&Fiber Config ==================

== Command: setl x y  or setr x y                       ===

==setl:set local PDH,setr:set remote PDH                ===

==Note:x=1,Let the Local E1 Loop-back,y=0-16,31        ===

==     y=0 :all E1,y=1-16,Corresponding E1,y=31 None    ===

==Note:x=2,Let the Remote E1 Loop-back,y=0-16,31        ===

==     y=0 :all E1,y=1-16,Corresponding E1,y=31 None    ===

==Note:x=3,Mask E1 Alarm ,y=0-15                        ===

==     y=0:Mask all E1,y=1-14 Mask (y+1)-16E1,y=15 None ===

==Note:x=4,Sound Alarm MUTE, y=0:OFF,y=1:ON             ===

==Note:x=5,LED display local/remote,y=0:local,y=1:Remote===

==Note:x=6,Fiber Local Loop-BACK, y=0:OFF,y=1:ON        ===

==Note:x=7,No.1 Fiber ALS  ,   y=0:OFF,y=1:ON           ===

==Note:x=8,No.2 Fiber ALS  ,   y=0:OFF,y=1:ON           ===

==Note:x=9,Set Back-Light Auto-OFF Time,y=30-300 Second ===

==Note:x=10,Set LoopBack Time,  y=1-7                    ===

       y=1:1 minute; y=2:10 minutes;y=3:30 minutes;     ===

       y=4:1 hours;y=5 5 hours;y=6:24 hours;y=7 Forever ===

==Note:x=11,Equipment reset,                            ===

==Note:x=12,Equipment Re-Boot,                          ===

==Note:x=13,Restore to factory settings                 ===

=========================================================

[PDH /PDH Config]:
```

“setl” for setting local equipment,and “setr” for setting remote side.

Mark: x means 1-12 command word,

| Command x | describe | y | |
|---|---|---|---|
| 1 | Let the Local E1 Loop-back | 0-16,31 | y=0 :all E1,y=1-16,Corresponding E1,y=31 None |
| 2 | Let the Remote E1 Loop-back | 0-16,31 | y=0 :all E1,y=1-16,Corresponding E1,y=31 None |
| 3 | Mask E1 Alarm | 0-15 | y=0:Mask all E1,y=1-14 Mask (y+1)-16E1,y=15 None |
| 4 | Sound Alarm MUTE, | 0-1 | y=0:OFF,y=1:ON |
| 5 | LED display local/remote | 0-1 | y=0:local,y=1:Remote |
| 6 | Fiber Local Loop-BACK | 0-1 | y=0:OFF,y=1:ON |
| 7 | No.1 Fiber ALS | 0-1 | y=0:OFF,y=1:ON |
| 8 | No.2 Fiber ALS | 0-1 | y=0:OFF,y=1:ON |
| 9 | Set Back-Light Auto-OFF Time | 0-300 | y=30-300 Second |
| 10 | Set LoopBack Time | 1-7 | y=1:1 minute; y=2:10 minutes;y=3:30 minutes; y=4:1 hours;y=5 5 hours;y=6:24 hours;y=7 Forever |
| 11 | Equipment reset | | |
| 12 | Equipment Re-Boot | | |
| 13 | Restore to factory settings | | |

## Snmp interface

### NMS interface is RJ45 with two LED display:

COM : green LED, when device start, COM led flash indicates SNMP agent communication to the PDH equipment.

LNK/ACT——green light，ON indicates it is connected with PC or HUB or SWITCH(of no effect on cascade card).

**Default parameter**

| | |
|---|---|
| IP address： | 192.168.0.148 |
| Subnet Mask： | 255.255.255.0 |
| Gateway： | 192.168.0.1 |
| WEB type login user's name: | admin |
| WEB type password: | admin |

**NOTE:**

**At the right side of the front panel ,there is an reset key(in the holes),if you press down this key and power on the equipment, will reset to above default parameter**

# Telnet

Users can telnet from long-distance after collocating the IP address of the device. Connect the PC to LAN, run the command "telnet A.B.C.D( default is 192.168.0.148, input "c" or "e" when it come to the interface of Chinese/ English opt. input user name and password to for the system to check( default is admin, admin). Then user will enter into the main interface, showing as follows:


Telnet provide graph interface mode( like the above one) and command line mode( enter from the "command mode" in the "others" menu under the graph interface mode.)

User can set the IP address and other parameters of the device under the graph mode. And the command line mode is the same with the Console controlling mode.

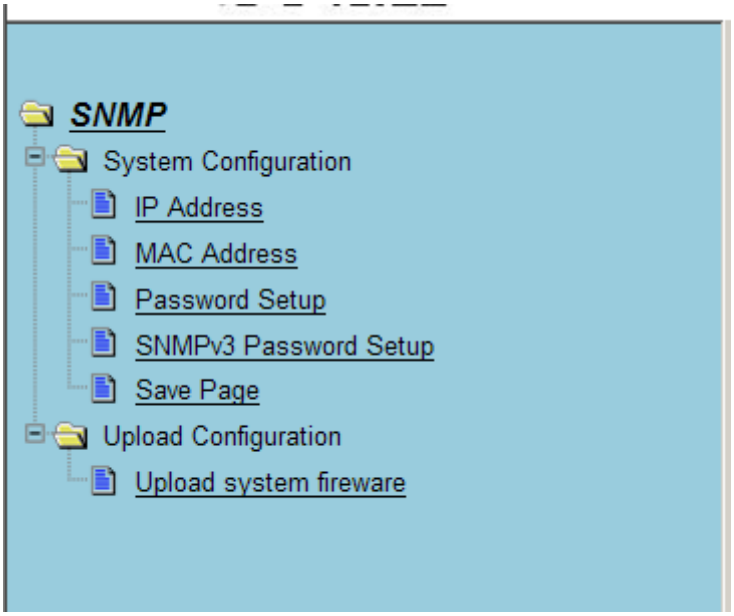
# Http server

This system provides simple IE browse mode. Under this mode, user can realize configuration or update operation.

Input the IP address of the SNMP card at the browser( default is 192.168.0.148) to log on the IE server.

The interface of Logging on is as follows:


Select English at the welcome interface after logging on( default user name is admin, and password: admin). Then it entered into corresponding net page, showing as follows:



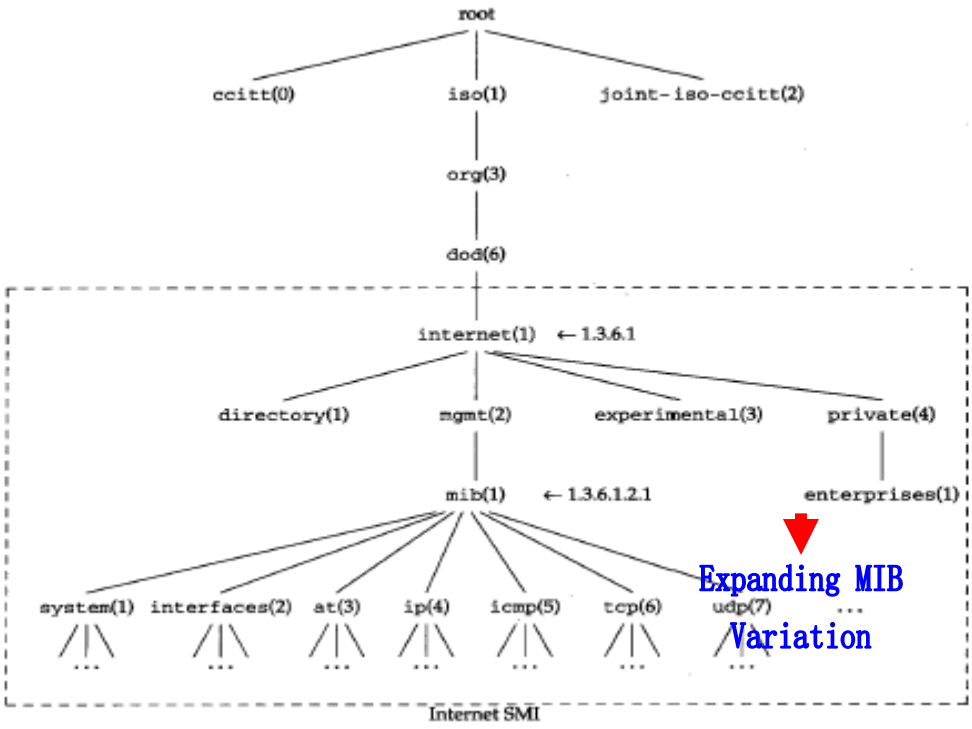
# SNMP software

This system provides a set of SNMP Management Software *Snmp Manage* to operate SNMP card and communication equipment. Please refer to the manual of *SNMP software.*

# MIB Information

This system provides standard MIB variation.

MIB Tree Definition




In MIB tree, MIB variation behind 1.3.6.1.4.1. 36837 is the one of communication equipment which is corresponding to this system.
This system can be read by general SNMP network management software.

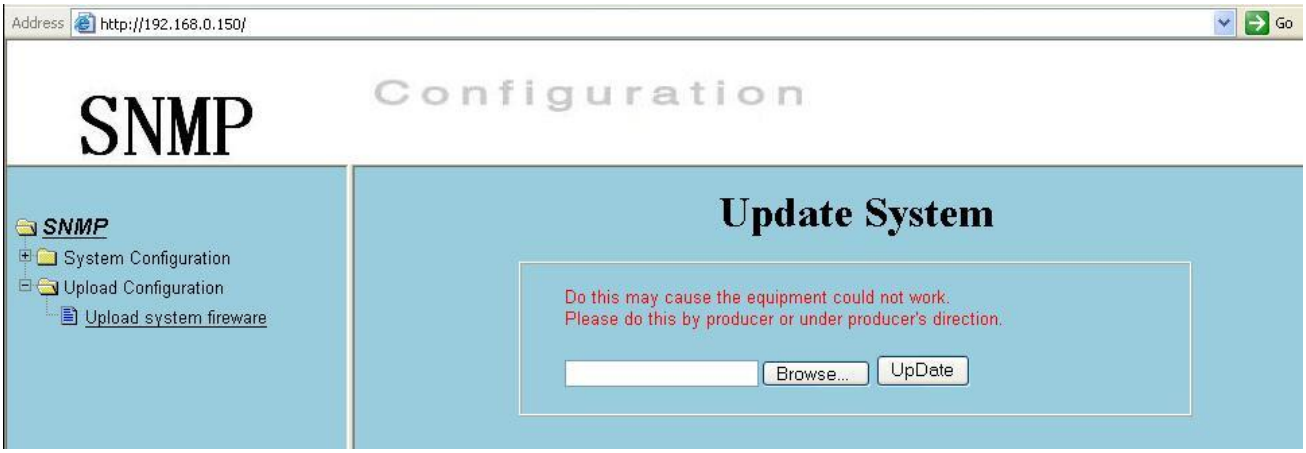
# SNMP card software upgrade

The SNMP card software is stored in the FLASH. Software upgrade means FLASH programming by SNMP card software upgrade function.

It needs software upgrade based on the 2 following situation. One is software upgraded, which means replace the old software in terminal server by new; the other is when the FLASH code destroyed, it could write new with the same version.

The update is realized by IE browser and the operation is easy.

Open “system firmware update” in the “system update” menu of the IE page, showing as follows:




Click “browse”, select update document, then click “update”. Wait for some minute when update( updating time is according to the size of the document). When presenting “complete”, reboot the device to make it into effect.

Note: 1. If the update failed, the device will be destroyed abidingly. Please do it by the factory or under the guidance of technician.

2. Do not browse through net page during updating. Further more, the system will not work normally during update.

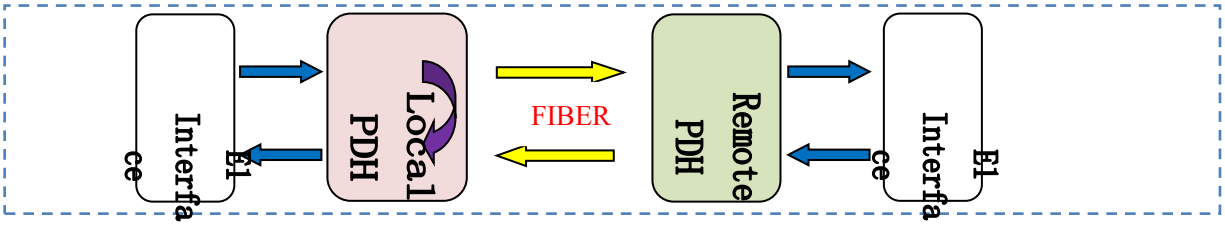
# 0302 PDH SNMP software Operate

See the operation declaration datasheet file in the drive file folder

## Loop Test

Tow Type of Fiber Loop Test:

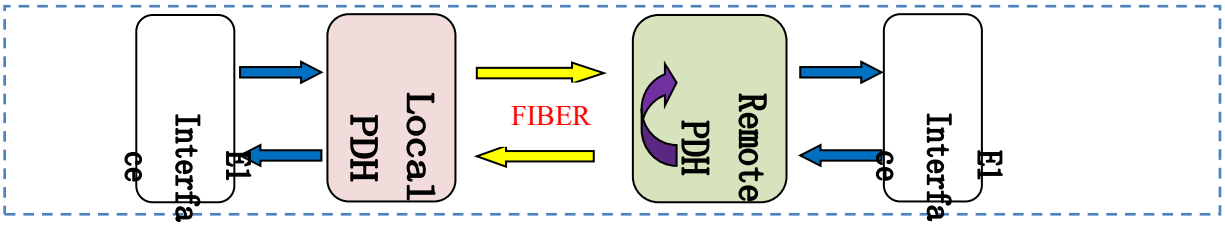
### 1. Fiber local Loop-Back

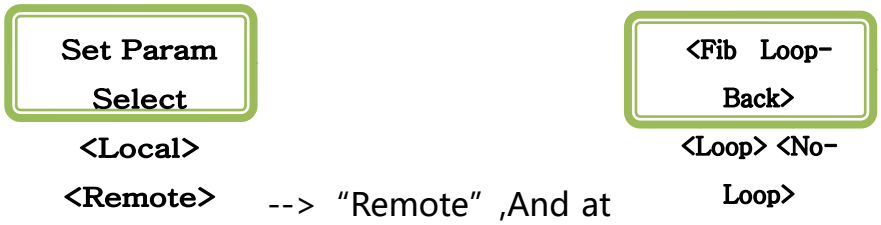




In set menu <Local> <Remote> --> "local" , And at <Loop> <No-Loop> --> "Loop"

### 2. Fiber Remote Loop-Back

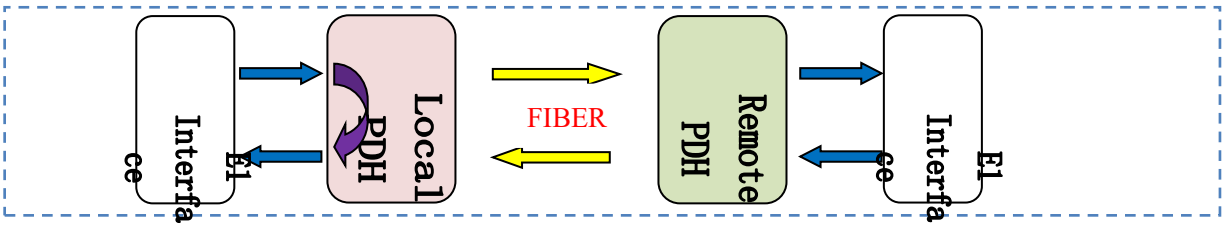


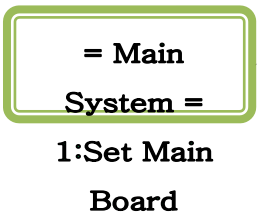




In set menu <Local> <Remote> --> "Remote" ,And at <Loop> <No-Loop> --> "Loop"

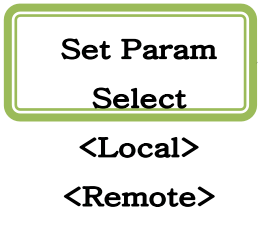
Four Type of E1 Loop Test:

### 1. Local E1 LOOP





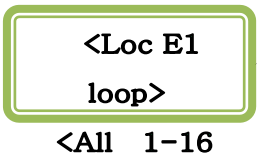

Step1: In the menu ,select " Set Main Board" , Click Enter Key;




Step2: in Select "Local" ,



Step3: in Press "Enter" , Select "Loc"

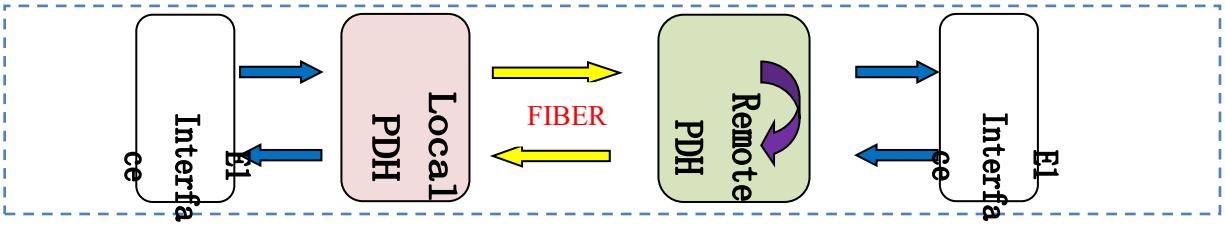


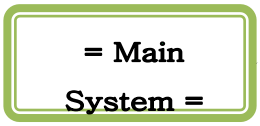

Step4: Under the "Loc E1 loop" ,select "All 1-16E1" or the E1 channel you want or "No E1" .

Note: Select "No E1" ,the local E1 Loop will be cancelled.

After the above steps, the Local E1 Loop-Back is set successfully.

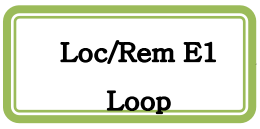
## 2. Remote E1 LOOP




Step1: In the menu ,select " Set Main Board" , Click Enter Key;


Step2: in Select "Local"

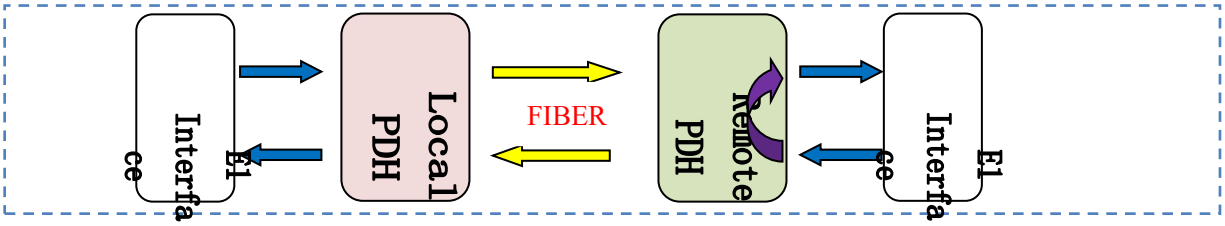

Step3:in Press "Enter", Select "Rem"


Step4: Under the "Rem E1 loop",select "All 1-16E1" or the E1 channel you want or "No E1".

Note: Select "No E1",the local E1 Loop will be cancelled.

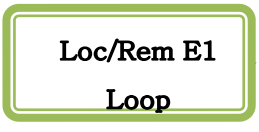
After the above steps, the Remote E1 Loop-Back is set successfully.

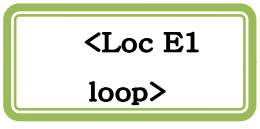
### 3. Remote E1 LOOP-OUT






In Parament set menu --> "Remote", And at

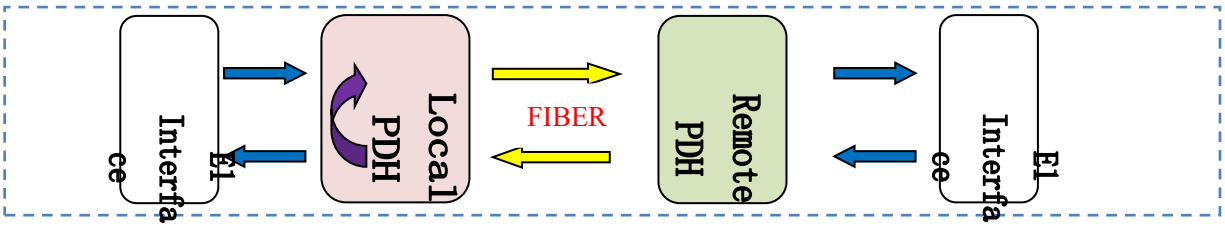



Press "Enter",and --> "Loc",and select "All 1-16E1" or the E1 number you want or "No E1".

Note: Select "No E1",the E1 Loop will be cancelled.

## 4. Remote Command Remote E1 LOOP-IN




In Parament set menu 

=> "Remote", And at 

Press "Enter",and => "Rem",and 

select "All 1-16E1" or the E1 number you want or "No E1".

Note: Select "No E1",the E1 Loop will be cancelled.

## Power

Dual power supply: AC220V and DC-48V:

AC220V socket: input voltage range AC 85V～265V; Please insert power wire as the attachment;

DC-48V socket: input voltage DC-36V ~-72V. If the power of DC-48V is used, the positive and negative terminal can be optional because there is the self-test circuit for the polarity inside the fiber optical multiplexer.

**Normal Connect way "FG"** connect earth;

**"-48V"** connect the power negative;

**"+48V"** connect the power positive;

## After-sales Service

The series of our Modular Multi-Service Fiber Optical Multiplexer products, our company promises three-years warranty. During product warranty time, our company provides free repair service, but if the following cases, we will charge the cost of materials.

**1.** Damage due to not complying with the manual.

**2.** Tear down the device without authorization, which leads to bad situations.

**3.** Lightning, fire and inevitable natural disasters.

**4.** Our products don’ t match with other company products because of bad design to cause damage.

## Company Statement

**1.** As we are adopting new technology, if our product technical parameters are changed, we won’ t notice you.

**2.** The final interpretation right of this manual belongs to our company.