Optical Switch

Forward

This manual is applicable to 1X2 optical switch. Mainly expatiate the product's function characteristics, technique parameters, and installation and debugging, and question methods. For insuring the equipment can be successfully installed and safely work, please carefully read the manual before using it, and proceed it strictly according to the prescriptive operation steps of manual for installation and debugging, in order to preventing equipment or operator to do unnecessary damage or harm. If there is question, please contact with our company timely.

Special Notice:

- The optical switch is very professional equipment, and its installation and debugging must be operated by certain technician. User should read this manual before operating to prevent damaging the equipment by fault operation or harming to human's body.
- There is invisible laser bean from Fiber output at back panel when working, which direct shining at eye will cause permanence burn, please take care of avoiding output port facing directly to body or eyes.
- Connect earth first before turning on the power and being sure that the rack mount and the outlet earth well (Earth resistance should be < 4Ω), prevent to damaging the laser by static and harming

body by electricity.

Ⅰ. Product Summary

Optical switch is important equipment in optical fiber transmission system, and mainly used for backup switching 2 way or multi way signal, so as to automatically switch to backup channel when there is something wrong with main channel and guarantee system's regular and continuous operation. The product use imported high performance devices and built in perfect embedded automatic monitoring system to ensure excellent performance of the whole machine.

Ⅱ. Function Characteristics

- Use imported high performance switch devices.
- Adopt advance 32 processor, working in perfect automatic monitoring systemic circuit. It can timely monitor input power accurately and control status of switch and setup to model of automatic switch and manually switch.
- Built-in blue LCD monitor on front panel, accurately show all working status parameters of LCD.
- 19″1U height standard rack mount, equipped standard IEEE802.3 10Base-T Ethernet network port and RS232 network port, can expediently realizes monitor through network.
- Support GB/T 20030-2005HFC Network control management

Ⅲ. Block Diagram
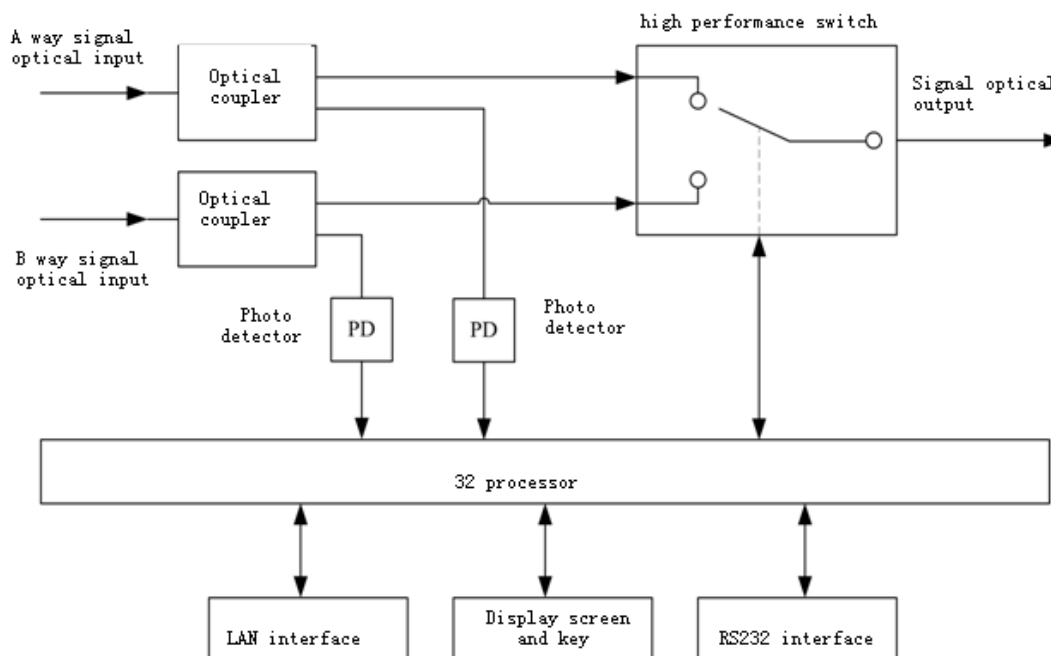
Ⅳ. Technique Parameter

Item	Unit	Technique Parameter	Remark
Wavelength	nm	1200 – 1600	

| Insertion loss	dB	≤1.3	1310nm/1490nm/1550nm
Switching time	ms	≤ 5	
Back wave loss	dB	≥ 55	
Max input optical power	mW	500	
Switching life		≥1000times	
Optical connector type		FC/APC or SC/APC	
Supply voltage	V	AC160V - 250V（50 Hz）/DC-48V	
Consumption	W	≤ 2	
Operating temperature	℃	-5 - +55	
Max relative humidity for working	%	Max 95% No condensation	
Storage Temperature	℃	-30 - +70	
Max relative humidity for storage	%	Max 95% No condensation	
Dimension	mm	483(W)×270(L)×44 (H)	

V. Exterior Function Elucidation

i. Front panel Explanation
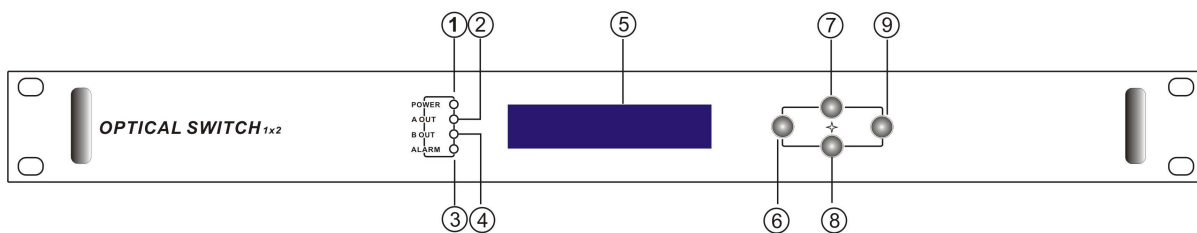
Front panel drawing

1. Power indicator: when the power inside is working, the light is on.

2. Warning indicator: When warn, red light is on, and detail please refer to menu.

3. B way output status indicator: When switch is at B, the light is on.

4. 160X320 lattice LCD: Used for display all parameters.

5. Withdraw or cancel key.

6. Up and increase key.

7. Down and decrease key.

8. Confirmation key

ii.   Back panel explanation
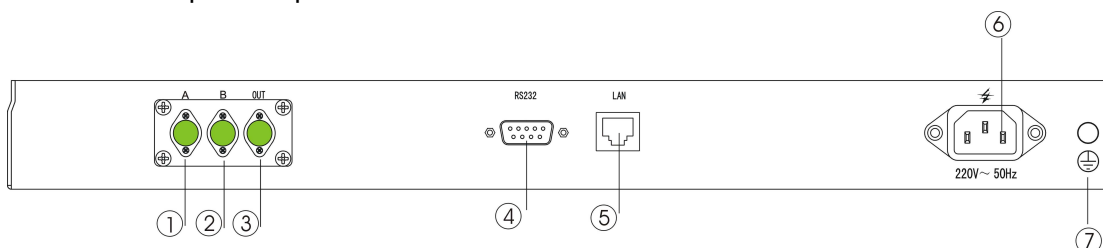
Back panel drawing

1. A way optical signal input.

2. B way optical signal input.

3. Optical signal output: There is an invisible laser beam from the port when working, so should avoid face to body or eye from doing accidental harm.

4. RS232 interface: Used for working in all new network management parameters

5. LAN interface: correspond to standard IEEE802.3 10Base-T Ethernet network port, used for network management.

6. Supply input port.

7. Shell earth double-screw bolt: Used for connecting equipment with earth wire.

iii. Display Parameter Explanation

1) When open
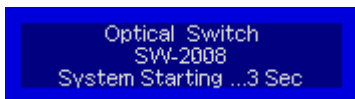
 Shows product's Loge, model and time.

2) When entering system
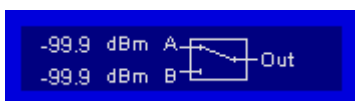
 various way input optical power and output channel at present.

3) Press "Enter" key, and be in menu index

 1.Parameter menu; 2. Set parameter; 3.Alarm menu

4) Sub-menu of parameter

 Push "Enter" key into menu

Content	Function
	Input optical power of current A way
	Input optical power of current B way
	Working wavelength at present
	Working model of switch at present
	SBS value of automatic switching model at present
	Working input channel at present

Switch Threshold: 8.0 dBm Current Channel: A S/N: 1234567890	Serial-number
Current Channel: A S/N: 1234567890 Box Temperature: 31.2 °C	Box temperature at present
S/N: 061103123 Box Temperature: 25.25 °C IP Address: 192.168.0.97	IP address
Box Temperature: 25.25 °C IP Address: 192.168.0.97 Subnet Mask: 255.255.255.0	Subnet Mask
IP Address: 192.168.0.97 Subnet Mask: 255.255.255.0 Net Gateway: 192.168.0.1	Net gateway
Subnet Mask: 255.255.255.0 Net Gateway: 192.168.0.1 Mac: 00-80-95-34-35-55	MAC address
Net Gateway: 192.168.0.1 Mac: 00-b9-88-12-34-56 Software Version: 1.00	Software version

5) Setting menu

1. Disp Parameters
2. Set Parameters
3. Alarm Status

Push ENT key into menu

Content	Function
Set Optical Power Unit Set Work Wavelength Set Buzzer Alarm	Switch optical power unit in menu
Set Optical Power Unit Set Work Wavelength Set Buzzer Alarm	Set work wavelength, for correcting input power test.
Set Optical Power Unit Set Work Wavelength Set Buzzer Alarm	Open or close buzzer alarm
Set Work Wavelength Set Buzzer Alarm Set Control Mode	Set equipment's switching model. Push "Enter" can set switching mode.
Set Buzzer Alarm Set Control Mode Set Work Channel	Set working channel (this menu appear only with manual switching model). Push "ENTER", can switch manually between A and B

Set Buzzer Alarm Set Control Mode Set Switch Threshold	Set switch threshold of automatic switching (this menu appear only with automatic switching model). When input power of A path is less than this value, it will be automatically switched to B path. When input power of A path is more than this value, it will be automatically switched to A path
Set Control Mode Set Work Channel Set Channel A Low Alarm	Set Channel A low alarm
Set Work Channel Set Channel A Low Alarm Set Channel B Low Alarm	Set channel B low alarm
Set Channel A Low Alarm Set Channel B Low Alarm Set Local IP Address	Set local address
Set Channel B Low Alarm Set Local IP Address Set Subnet Mask	Set subset mask
Set Local IP Address Set Subnet Mask Set Gateway	Set gateway
Set Subnet Mask Set Gateway Restore Factory Config	Restore factory config

6) Warn menu

1. Disp Parameters
2. Set Parameters
3. Alarm Status

   Push "ENTER" into menu.

Ⅵ. Network controlling management explanation

i. Interface Explanation
1) RS232 communication connector
   Adopt DB9 standard connector
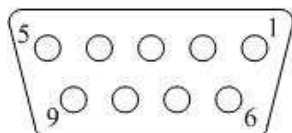
1：No Connect
2：TX
3：RX
4：No Connect

5：GND

6：No Connect

7：No Connect

8：No Connect

9：No Connect

The serial communication uses the standard NRZ form, 1 starts figure, 8 data figure, 1 stop figure and the baud rate is 38400.

2) LAN communication interface

The LAN communication uses the RJ45 standard port as the connector. The figure as follows:
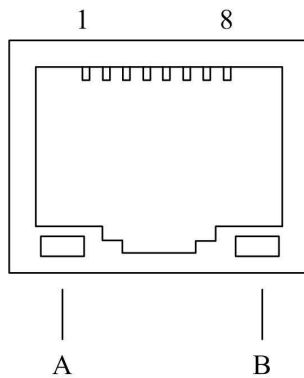
1：TX+

2：TX-

3：RX+

4：No Connect

5：No Connect

6：RX-

7：No Connect   8：No Connect

A: Green light: when it is twinkling, LAN port is sending the data.

B: Yellow light: when the light is on, the network is normal.

ii. Setup Super Terminal

If you do not setup the super terminal in your Windows systm, follow the steps.

1. Click "start menu →program→ accessory→communication→super terminal";Display the image:

（Image 2）

Then you input your connector name, such as SNMP38400"，and choose the serial port to connect with your equipment. As follows;
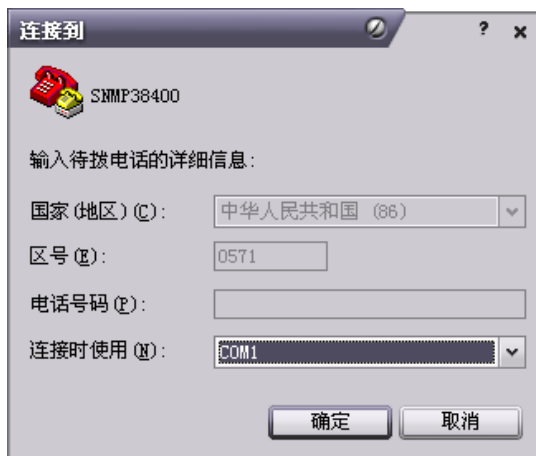
（Image 3）

Press the "OK" button; show the configuration page of serial port. As follows;

（Image 4）

Change the serial port configuration to 38400-baud rate, 8 figure mode, no odd and plural check,1 stop bit, no data control,(image 4), press the "OK" key, you have set up the Windows serial port super terminal. (Image 5):
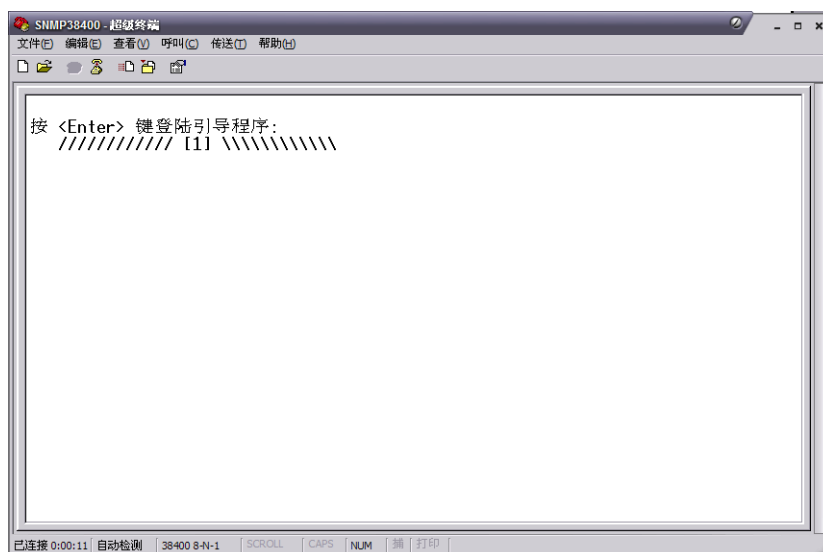

（Image 5）

8
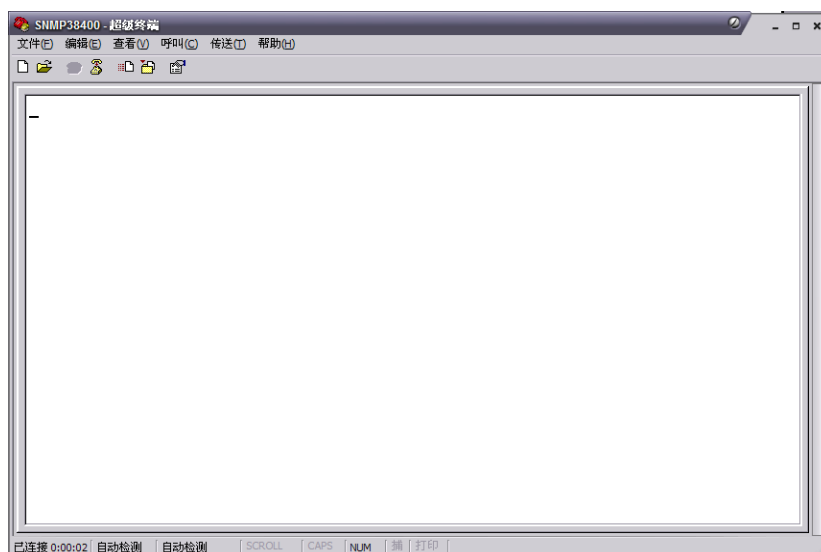
You can click "file→save" menu to save this configuration of super terminal for later using.

6.3 Operating Parameter Configuration

Under the condition of power off, use the serial port lines to connect the RS232 port with the computer port. Open the Windows super terminal, which you have setup. Then turn on the power, you will see the page as follows, at this time, you press the "Enter" key to the boot program. Boot program is like the PC'BIOS setting program. Generally speaking, users do not have to enter the boot program to configure the parameter, so we have to set the password to avoid damaging the properly configuration.

(Image 6)

Skip the boot program and the application program begins as follows:
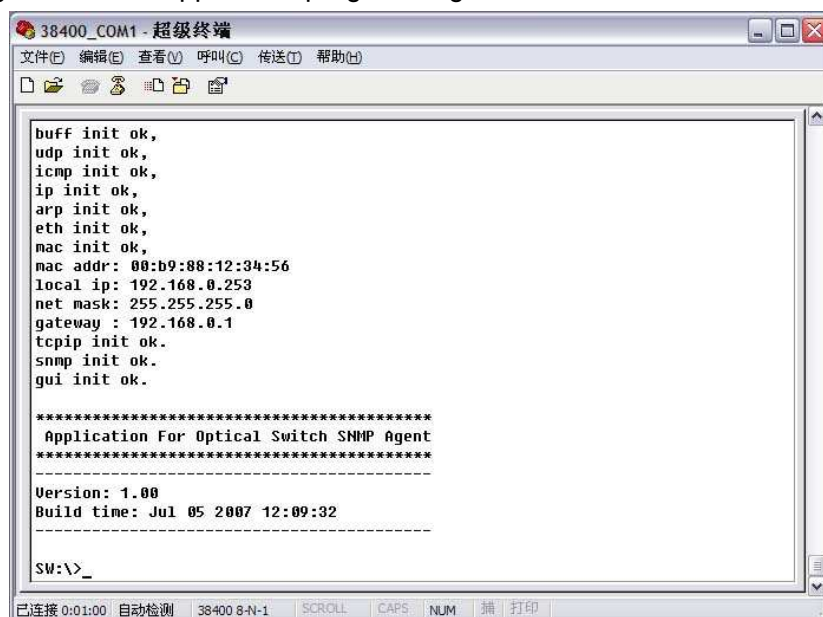
（Image 7）

You can input your order in this page, and then configure the operating parameter of the application program.

System supports the following orders:

Help   List the system internal order

ethcfg   Configure Ethernet operating parameter

settrap   Configure the aim host IP address of the SNMP Trap

Community   Configure the SNMP group name

entplogo   Configure LOGO information

Specific using as follows：

Help

This order shows current application program version, program name and the list of the system' internal orders as follows:

（Image 8）

You can use the "help" order to show other orders' help information, such as "help ethcfg"，ethcfg's help information appear as follows:
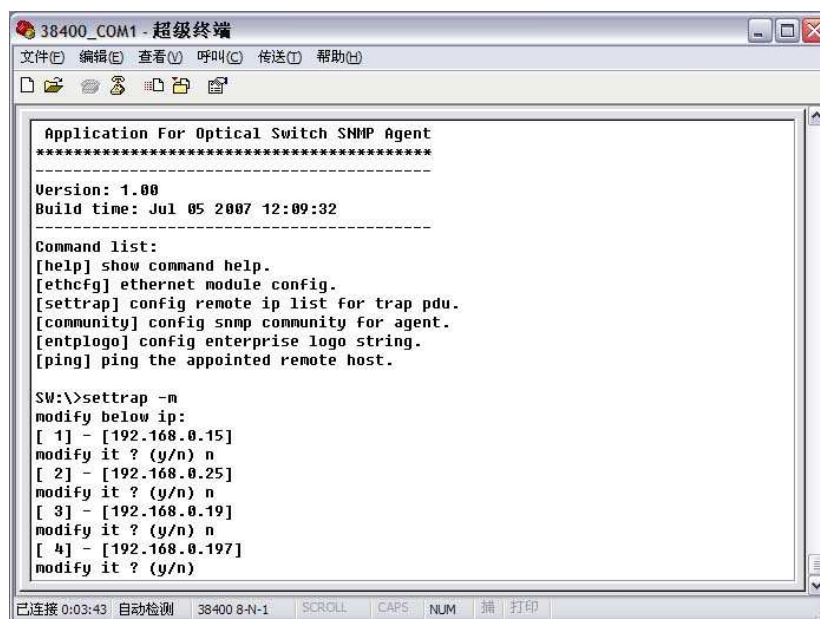
（Image 9）

Ethcfg

This order configures the Ethernet parameter, including IP address, subnet mask and net gateway. You can reference the help information

Settrap

this order shows or modifies the SNMP devil to IP address lists

settrap –l order display, settrap –m order modify; as follows:

（Image 10）

IP address of 0.0.0.0 and 255.255.255.255 don't exist. SNMP devil does not send these two addresses.

Community

This order configures the read-only group name and read-write group name. "Group name" is the concept of SNMP agreement like the password. Use the order "community ro" to configure the read-only, and"community rw" for the read-write. For example, input "community rw public"，"public" is the read-write group name. The group name for read-only and read-write is "Public" as the equipment default setting from factory.

Entplogo

This order modifies the product's LOGO information which is the model number series of factory showed in display. This product permit to configure two LOGO character, the max length is 31byte, which displays in the first line and second line of the crystal liquid screen. Use the order "entplogo -1 xxxx" to configure the first line LOGO, and the second line uses the "entplogo -2 xxxx". Xxxx is the LOGO character sting. The spaces of the xxxx must be used the underline "_", otherwise, the order is failed.

Ⅶ**. Service**

● Our company's promises: Guarantee for twelve months (start from the production date showed on S/N), fix all the life. Equipment at fault is resulted from the users' improperly operation and unavoidable environment reasons, our company will fix, but collect suitable material cost.

- If the equipment at fault, immediately contact local distributor or our company customer service centre.
- The locale amendment for the fault equipment must be operated by special technician, to avoid worse damage.
- Special notice: if the user has fixed the equipment, our company will stop the service of free fix. But we will fix it, and you must pay for the cost of fix and material.

Special notice:

1. In the process of clean the fiber optic active connector, you should avoid direct shining at eye, which will cause permanence burn!!!!
2. Use proper energy to install the fiber optic active connector, or the ceramic tape in the adaptor will lead to break. Once the ceramic tape is broken, the output optical power will decrease rapidly. If you turn the fiber optic active connector slightly, the output optical power changes obviously.
3. **Please operate the optical fiber under the condition of close the power supply. Or the big output power will lead to burn the joint of the output optical fiber, which will reduce the output power.**