# FIBER OPTIC SWITCH – MINI OSW2X1-MINI

## **Technique Parameter**

Туре		Ordinary type Enhanced type		
Item	Unit	Technique	Remark	
Wavelength	nm	1200 - 1600	1200 - 1600	
Insertion loss	dB	≤1.5	≤1.5	Testing at 1310nm, 1490nm, 1550nm
Switching time	ms	$\leq 5$	$\leq 5$	
Return loss	dB	≥ 55	≥ 55	
Max input optical power	mW	500	500	
Input optical power operating range	dBm	-10dBm - +24dBm	-10dBm - +24dBm	
Switching life		$\geq 10$ million times	$\geq 10$ million times	
SNMP module	Suppor browse	t IPV6/HFC netwo r	SNMP module Optional	
Optical connector type		FC/APC or SC/APC	FC/APC or SC/APC	
Supply voltage	V	AC160V - 250V OR -48V (50 Hz)	AC160V - 250V OR -48V (50 Hz)	
Consumption	W	≤ 2	≤2	
Operating temperature	°C	-5 - +55	-5 - +55	
Max relative humidity for working	%	Max 95% No condensation	Max 95% No condensation	
Storage Temperature	°C	-30 - +70	-30 - +70	
Max relative humidity for storage	%	Max 95% No condensation	Max 95% No condensation	
Mini Dimension	mm	235(W)×160(D)×30 (H)	235(W)×160(D)×30 (H)	

### FIBER OPTIC SWITCH – MINI front front panel description



- 1) Power indicator: when the power inside is working, the light is on.
- 2) A way output status indicator: When switch is at A, the light is on.
- 3) B way output status indicator: When switch is at B, the light is on.
- 4) Warning indicator: When warn, red light is on, and detail please refer to menu.
- 5) Exit or cancel key of the display setup menu.
- 6) Up or increment key of the display setup menu.
- 7) Down or decrement key of the display setup menu.
- 8) Enter key of the display setup menu.
- 9) 160×32 dot matrix LCD monitor: Used for displaying all parameters.

10) LAN interface: correspond to IEEE802.3 10Base-T interface, used for network management.

- 11) A way optical signal input.
- 12) B way optical signal input.

13) Optical signal output: There is an invisible laser beam from the port when normal working, so should not face to body or eye to avoid accidental harm.

- 14) Power input.
- 15) RS232 interface: Used for configuring the network management parameters.

## **Displayed Parameter description**

1) When power on:



2) After entering the system



Input optical power and output channel at present.

Shows product's Loge, model and time.

3) Press "Enter" key into the menu index



- 1. Parameter menu; 2. Set parameters; 3. Alarm menu
- 4) Sub-menu of parameter

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

Press "Enter" key into the menu

Content	Meaning
Channel A Power: -99.9 dBm Channel B Power: -99.9 dBm Work Wavelength: 1550nm	Current input optical power of A way
Channel A Power: -99,9 dBm Channel B Power: -99,9 dBm Work Wavelength: 1550nm	Current input optical power of B way
Channel A Power: -99.9 dBm Channel B Power: -99.9 dBm Work Wavelength: 1550nm	Working wavelength at present
Channel B Power: -99,9 dBm Work Wavelength: 1550nm Control Mode: MANUAL	Working mode of switcher at present
Work Wavelength: 1550nm Control Mode: MANUAL Switch Threshold: 8.0 dBm	Switch threshold of automatic switching mode at present
Control Mode: MANUAL Switch Threshold: 8.0 dBm Current Channel: A	Working input channel at present
Current Channel: B Channel A RF: 0.00 V Channel B RF: 0.00 V	*Input RF signal voltage of A way

Current Channel: B Channel A RF: 0.00 V Channel B RF: 0.00 V	*Input RF signal voltage of B way
Switch Threshold: 8.0 dBm Current Channel: A SN: 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 P 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	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 system version

5) Setting menu

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

Press "Enter" key into the menu

Content	Meaning
Set Optical Power Unit Set Work Wavelength Set Buzzer Alarm	Optical power unit in the switch display menu
Set Optical Power Unit Set Work Wavelength Set Buzzer Alarm	Set work wavelength, for correcting input power detection
Set Optical Power Unit Set Work Wavelength Set Buzzer Alarm	Open or close the buzzer alarm
Set Work Wavelength Set Buzzer Alarm Set Control Mode	Set equipment's switching mode. Press "Enter", and then set the switching mode.

Set Buzzer Alarm Set Control Mode Set Work Channel	Set working channel (this menu appear only with manual switching mode). Press "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 mode). When input power of A way is less than this value, it will be automatically switched to B way. When input power of A way is more than this value, it will be automatically switched to A way
Set Save RF Ref Set RF Mode Set Channel A Low Alarm	*Keep the current RF Voltage of A and B ways as RF detection reference Voltage.
Set Save RF Ref Set RF Mode Set Channel A Low Alarm	*Set RF operating menu, press enter key, select "ON" or "OFF" to open or close the RF automatic switch function.
Set Control Mode Set Work Channel Set Channel A Low Alarm	Set Channel A input optical power low alarm threshold
Set Work Channel Set Channel A Low Alarm Set Channel B Low Alarm	Set Channel B input optical power low alarm threshold
Set Channel A Low Alarm Set Channel B Low Alarm Set Local IP Address	Set IP 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) Warning menu



Press "ENTER" into the menu to check the alarm

information.Note:1) : The menu with \* is only for enhanced switch;

## 7. Quickly set use instructions of enhanced optical switch RF

### automatic switching

Optical signal and RF signal normally input:



value of A and B ways.

## 8. Network management description

### 8.1 Interface description

1) RS232 communication interface

Adopt DB9 standard connector, the pin definitions as follow:



- 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 bit, 8 data bits, 1 stop bit and the baud rate is 38400.

2) LAN communication interface

Adopt RJ45 standard connector, the pin definitions as follow:



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

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

### 9. The management and application of network interface

#### 9.1 Network management platform browser login-2 methods

#### 9.1-1 Direct connection PC

Set up PC IP same with transponder telemetry. The IP for transponder telemetry is 192.168.0.101, the PC can be set 192.168.0.1.

1. Open the Google Chrome browser and input 192.168.0.101

2. Login it. User name: admin password: 123456 (Another way: User name : super password: super)

新标签页		× +	W.	
$\leftarrow \rightarrow$	c 🙀	192.168.0.101		
1 应用	M a	Embedded WEB Mar	ager - 1	92.168.0.101
	٩	192.168.0.101 - Goo	gle 搜索	
				Google
<b>③</b> 192.16	8.0.101	× +	W.	a second and
$\leftrightarrow$ $\rightarrow$	C ()	192.168.0.101		
1 应用	🜱 Gmail	🖸 YouTube 🛛 🕅 地图	谷录	
			http://1 您与此网	92.168.0.101 财站的连接不是私密连接
			用户名	admin
			密码	
				登录 取消

Device Status:

Z.	SNMP Ag	ent WEB N	Manager		
Device Status	Device Status-				
Device Settings		Device Model	O\$1*2		
Name Otabus		Serial Number	E2020051601		
Alarm Status		Unit Temprature	35	°C	
Alarm Properties		Switch Mode	Automatic		
Network Settings		Current Path	PathA		
Change Password					
Reset Settings	Index	Input Power	Thresho	ld	Description
	1	-0.4 dBm	-5.0 dBr	n	Main:PathA
	2	-0.7 dBm	-5.0 dBr	n	Back:PathB
	Index		Voltage		Name
	1		5.0 V		A +5V DC
	2		0.0 V		B +5V DC

## Device Settings:

and the second s	SNMP Agent WEB Manager	
Device Status	Device Settings	
Device Settings	Switch Mode: Automatic   Set	
Alarm Status	Path Control: PathA V Set	
Alarm Properties	OSW Threshold: _5.0 dBm Set	
Network Settings		
Change Password		
Reset Settings		

Alarm Status:



## SNMP Agent WEB Manager

Device Status	Alarm Status		
Device Settings	Index	Parameter Name	Alarm Status
Alarm Status	1	Box Temp	Nominal
	2	unit both input state	Nominal
Alarm Properties	3	InputA power	Nominal
Network Settings	4	InputB power	Nominal
Change Password	5	InputA state	Nominal
-	6	InputB state	Nominal
Reset Settings	7	InputA RF state	Nominal
	8	InputB RF state	Nominal
	9	A +5V DC	Nominal
	10	B +5V DC	LOLO

## Alarm Properties:

<b>R</b>	SNMP A	Agent WEB Ma	anager					
Device Status	-Alarm Prope	erties						
Device Settings	Index	Parameter Name	HIHI	HI	LO	LOLO	Deadband	Action
Alarm Status	1	Box Temp (`C)	85	70	0	-5	2	Set
Alarm Properties	2	InputA power (dBm)	22.0	<b>18.0</b>	-6.0	-15.0	2.0	Set
Network Settings	3	InputB power (dBm)	22.0	2 18.0	-6.0	-15.0	2.0	Set
Change Password	4	A +5V DC (V)	6.5	6.0	4.0	3.5	0.2	Set
Reset Settings	5	B +5V DC (V)	6.5	6.0	4.0	3.5	0.2	Set
	Index	Para	ameter Name			Cont	rol	Action
	1	unit b	oth input state			EnableMajor	~	Set
	2	InputA state				Set		
	3	In	putB state			EnableMajor	~	Set
	4	InputA RF state			Set			
	5	InputB RF state						

## Network Settings:

-	SNMP Agent WEB	Vanager
Device Status	-Network Settings	
Device Status	Device MAC:	00 : B9 : A0 : 23 : 07 : 0E
Device Settings	Update Identifier:	OSW143SE01
Alarm Status	Agent Version:	V1 0 0
Alarm Properties	Otalia ID Addama	
Network Settings	Static IP Address:	
Observe Deserved	Subnet Mask:	255 . 255 . 255 . 0
Change Password	Default Gateway:	192, 168, 0, 1
Reset Settings	Trap Address 1:	255 . 255 . 255 . 255
	Trap Address 2:	0,0,0,0
	Trap Address 3:	0,0,0
	Trap Address 4:	0.0.0.0
	Trap Address 5:	0.0.0.0
	Trap Address 6:	0.0.0.0
	Trap Address 7:	
	Trap Address 8:	0.0.0.0
	Read Community:	public
	Write Community:	public
	Trap Community:	public

and the second s	SNMP Agent WEB N	Manager	
	Derault Gateway.	192 . 108 . U . 1	
Device Status	Trap Address 1:	255 . 255 . 255 . 255	
Device Settings	Trap Address 2:	0.0.0.0	
Alarm Status	Trap Address 3:	0.0.0.0	
Alarm Properties	Trap Address 4:	0.0.0.0	
Network Settings	Trap Address 5:	0.0.0.0	
Change Password	Trap Address 6:	0.0.0.0	
Reset Settings	Trap Address 7:	0.0.0.0	
	Trap Address 8:	0.0.0.0	
	Read Community:	public	
	Write Community:	public	
	Trap Community:	public	
	SNMP Version:	V1 V V1 V2C	Save

Change Password:

R.	SNMP Agent WEB Manager
Device Status Device Settings Alarm Status Alarm Properties Network Settings Change Password Reset Settings	Change Password Username: Password: New Username: New Password: Confirm Password: Submit Reset

### Reset Settings:

- Ale	SNMP Agent WEB Manager	
Device Status Device Settings Alarm Status Alarm Properties Network Settings Change Password Reset Settings	Restore settings and Reboot device     Reboot device     Input Allowed KEY:	Reboot device Submit KEY
- Hood Colling		Submit

### 9.1-2 IPv6 test:

Connect the optical switch and computer to the same switchboard (or connect the optical switch is connected directly to the computer for testing.

1. Open the tool: SNMP agent config tool (customer) v2.3.0.0, click search devices, such as As shown in Figure 1:

ist ID	Device MAC	Device IP	Gateway IP	Subnet Mask	Serial NO.	Device Model
	00-B9-A0-23-0	192.168.0.1	192.168.0.1	255.255.255	E2020051601	OS1*2
etwork	Interface: 192.1	.68.1.5				

2.Click list ID to enter Config the agent and copy the contents of device global-ipv6 are shown in Figure 2:

Customer's				
TRAP Host IPv4: T	RAP Host IPv6:	Logical ID (Device Name)		
255.255.255.255 * ::		* HFC-OSW		
0.0.0.0				
0.0.0.0		Device IP		
0.0.0.0		192.168.0.101		
0.0.0.0		Gateway IP		
0.0.0.0		192.168.0.1		
		Subnet Mask		
		255.255.255.0		
		RO Community		
		public		
		RW Community		
		public		
		TRAP Community		
-		👻 public		
Vendor's (Readonly)				
Device Link-IPv6		Device Global-IPv6		
fe80::2b9:a0ff:fe23:70e		2408:8214:1551:a4a0:2b9:a0ff:fe23:70e		
Serial NO. E2020051601				
Device Model: OS1*2				
Vendor's Info: HFC SNMP Agent				
Refresh		Apply Settings		
		Apply seconds		

3. Open Google Chrome browser and Copy content in device global-ipv6 column to search Engine and add http: / [], as shown in Figure 3:

ⅲ 应用 M Gmail 🖸 YouTube	· · · · · · · · · · · · · · · · · · ·	
	http:///2409.92141551-4-0.260-0000-0000-20-1	
	85000000000000000000000000000000000000	
	用户名 admin	
	密码	

4. Enter the user name (admin) and password (123456) to enter the SNMP agent web manager, as shown in Figure 4:

😫 Embedded WEB Manager	× (+	1.10	1.4.10		
← → C ① 不安全   [	2408:8214:1551:a4a Jbe	0:2b9:a0ff:fe23:7(	De]		Ĩ
T.	SNMP Age	ent WEB I	Vlanager		
Device Status Device Settings Alarm Status Alarm Properties Network Settings Channe Password	-Device Status-	Device Model Serial Number Unit Temprature Switch Mode Current Path	OS1*2 E2020051601 30 Automatic PathA	°C	
Reset Settings	Index	Input Power	Threshold	I Description	
	1	-99 <mark>.</mark> 9 dBm	-5.0 dBm	Main:PathA	
	2	- <mark>99.9 dBm</mark>	-5.0 dBm	Back:PathB	
	Index		Voltage	Name	
	1	5.0 V		A +5V DC	
	2		0.0 V	B +5V DC	7

5. SNMP agent web manager can also be accessed through all IPV6 enabled network terminals such as mobile phones, provided that the device must be connected to IPV6 network, and the network supports remote terminal access.

### **10. Service**

- 1. We promise: Guarantee for twelve months (start from the leave factory date showed on the serial number), 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.
- 2. If the equipment fails, immediately contact local distributor or our company

customer service centre.

- **3.** The site maintenance of the fault equipment must be operated by special technician, to avoid worse damage.
- **4. Special notice:** if the user has fixed the equipment, our company will stop the service of free fix. But we will fix it, and collect suitable fix and material cost.

### **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. And 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 optical source. Or the high output power will lead to burn the joint of the output optical fiber, which will reduce the output power.