

XGSPON STICK USER MANUAL

1. Product Introduction

Product Name: XGSPON STICK ONU , commonly known as "Fiber Stick" or "PON Stick"

MAC IC : Maxlinear PRX126

Product Features:

3.3V Power supply

- Support 20km transmission distance with SMF
- Support data encryption
- Support VLAN function setting
- Support software on line upgrading.
- Support fault alarm
- Support dynamic bandwidth allocation
- Support transparent multicast transmission
- Support SC / APC or SC/UPC connector
- Complies with SFP+ MSA (SFF-8431)
- Complies with RoHS

2. Application Scenarios

The XGSPON STICK optical module, also known as the "SFP (SFP+) packaged PON ONU module" under China Telecom's enterprise standards, is primarily used to replace the SFU optical modem (SFU ONU) and perform gigabit (10-gigabit) single-port 光电转换 (optical-to-electrical conversion) for PON networks.

The XGSPON STICK optical module fully meets the requirements of carrier-grade FTTB, FTTH, and FTTO equipment. It can be hot-plugged into the SFP slot of a Layer 2 Ethernet switch, allowing the entire switch to function as an ONT (Optical Network Terminal). This enables the switch to connect directly to a XGPON optical network. As long as the central OLT (Optical Line Terminal) registers the XGPON STICK optical module in the same way it registers a standard optical modem, the communication device can complete the access switch from the original P2P (point-to-point) network to a PON network.

3. Usage Instructions

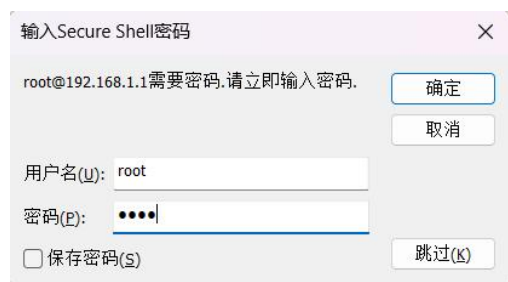
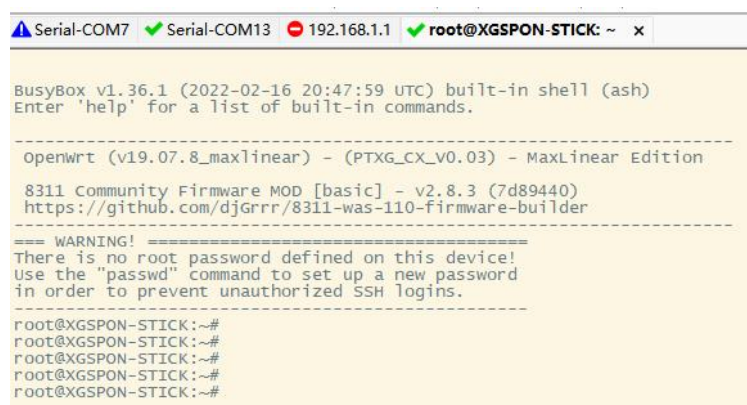
- 1) Insert the STICK module into the SFP/SFP+ optical port of a switch or router, and register it to the OLT port through the ODN network. Ensure that the STICK's received optical power (RX power) is within the range of -7 dBm to -28 dBm.
- 2) For local access to the STICK, the STICK module's IP address is 192.168.11.1. Use SSH to access the module's CLI.

```
C:\Users\Administrator>ping 192.168.11.1 -t

正在 Ping 192.168.11.1 具有 32 字节的数据:
来自 192.168.11.1 的回复: 字节=32 时间<1ms TTL=64
来自 192.168.11.1 的回复: 字节=32 时间=1ms TTL=64
来自 192.168.11.1 的回复: 字节=32 时间=1ms TTL=64
```

Username: root

Password:



》 Check the mac table of the module :

switch_cli GSW_MAC_TABLE_ENTRY_READ

》 Check if there is packet loss at the PON port (PON port data statistics)

: pontop -b -g 'GEM/XGEM Port Counters'

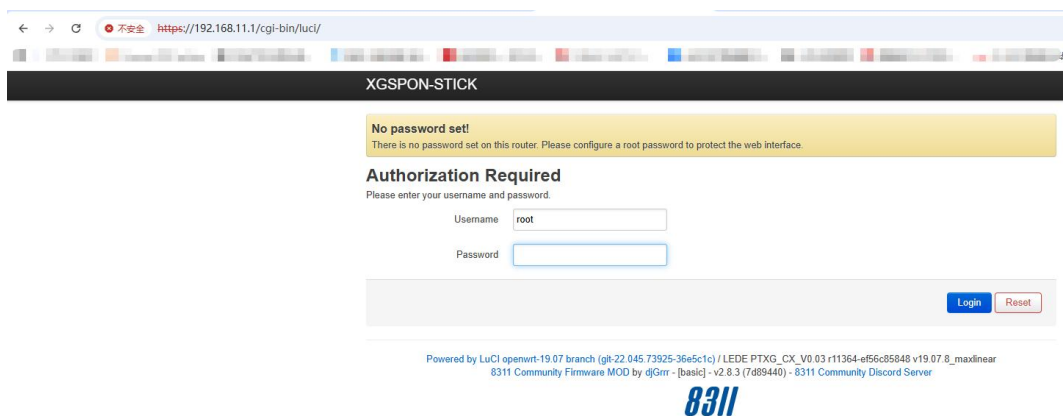
》 Check the status of the link :

ethtool eth0_0

3) Web access

Username: root

Password:



XGSPON-STICK

Status ▾System ▾8311 ▾Logout

REFRESH

No password set!
There is no password set on this router. Please configure a root password to protect the web interface.

Status

System

Hostname	XGSPON-STICK
Model	PRX126-SFP-PON
Architecture	PRX300 rev 1.2
Firmware Version	LEDE PTXG_CX_V0.03 r11364-ef56c85848 / LuCI openwrt-19.07 branch git-22.045.73925-36e5c1c
Kernel Version	4.9.308+
Local Time	2025-09-19 15:14:51
Uptime	0h 3m 1s
Load Average	0.51, 0.40, 0.17

PON Status

PON Mode	XGS-PON
PON PLOAM Status	O1.1, Off-sync state
RX Power / TX Power / TX Bias	-inf dBm / -inf dBm / 0.00 mA
CPU0 / CPU1 / Optic Temperature	48.68 °C (119.6 °F) / 46.04 °C (114.9 °F) / 41.37 °C (106.5 °F)
Module Voltage	3.44 V
Module Info	OEM XGSPONST2000 A-01 (potron)
ETH Speed	10000 Mbps
Active Firmware	B

4. Compatible Devices

- a) **OLT information for upstream registration:**
Mainstream brands such as ZTE, Huawei, Nokia, FiberHome, and FOCUSCOM.
- b) **Switch information for downstream insertion:**
Mainstream Layer 2/Layer 3 switches with SFP/SFP+ interfaces on the market, including Huawei, ZTE, TP-LINK, Cisco, MikroTik, Ubiquiti, Juniper, etc.

Note: If the switch has access restrictions (e.g., a whitelist or vendor lock), firmware adaptation (rewriting the module's EEPROM) is required to make it compatible.

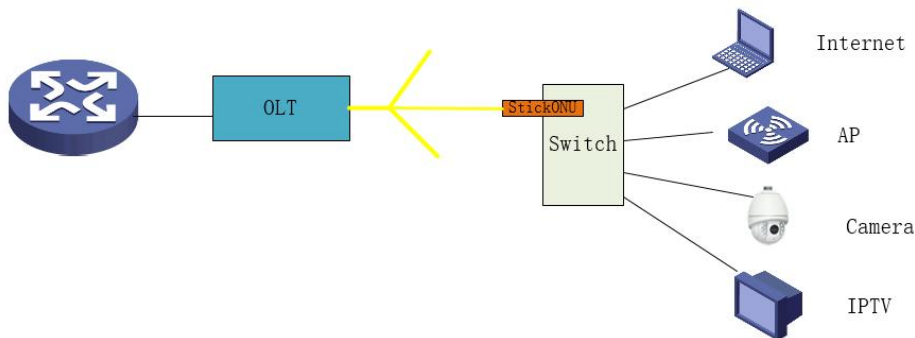
5. Usage Precautions

- a) The Stick module is a bridge-type ONU. No local configuration is required.

- b) All configuration of the Stick module is delivered by the OLT.
- c) The standard DDM RX power range for the Stick module is between -7 dBm and -28 dBm.
- d) Ensure that the device into which the Stick module is inserted has active fan cooling (heat dissipation).

6. Use Case

Community access network renovation: Retain the last-mile copper network to individual homes, while bringing the core fiber optic network into the community network equipment room.



Configuration Example:

- Internet service: assigned VLAN 10
- Camera service: assigned VLAN 20
- IPTV service: assigned VLAN 30

OLT Configuration:

The Stick module operates in transparent mode, forwarding all VLAN traffic.

```
[XGPON] display ont profile 2/1/3
```

```
-----
dba-profile 0 name AUTO_DBA_0
type 4 max XGSPON 1200000
```

```
-----
line-profile 10
model f0-s210
tcont 1 dba-profile 0
gem 1 tcont 1
mapping mode port
mapping 1 port eth 1 gem 1
port vlan 1 eth 1 transparent
```

Switch Configuration::

1) Create service VLANs 10, 20, and 30. Then add the VLANs that need to forward traffic to the port where the Stick module is inserted. Keep the port in the default hybrid mode;

```
interface ethernet 0/1/1
port hybrid tagged vlan 10,20,30
Quit
```

2) Configure the switch ports that connect to end devices in access mode, and assign the corresponding service VLAN to each port;

```
interface ethernet 0/0/1  
port default vlan 10  
port hybrid untagged vlan 10
```

```
interface ethernet 0/0/2  
port default vlan 10  
port hybrid untagged vlan 10
```

```
interface ethernet 0/0/3  
port default vlan 20  
port hybrid untagged vlan 20
```

```
interface ethernet 0/0/4  
port default vlan 30  
port hybrid untagged vlan 30
```

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