SPU-E4X01 series EPON ONU

(Includes Wi-Fi series)

Overview

SPU-E4X01 series is fiber to the home multi service access EPON ONU. It's based on the mature, stable, high cost performance EPON technology and has gigabit Ethernet switching, WDM and HFC technology. SPU-E4X01 series has a higher bandwidth, higher reliability, easy management and good quality of service (QoS) guarantee with technical performance of equipment meet the IEEE802.3ah requirements and have good compatibility with third party manufacturers OLT. EPON technology is a kind of emerging technology which takes advantage of PON technology and Ethernet technology also is a kind of point to multi-point network technology. OLT through the passive optical network to connect multiple ONU with single fiber bidirectional technical can rarely used fiber resources to meet the operators of the multi-user access requirements.

It adopts dual fiber WDM technology with downlink wavelength 1490nm, uplink wavelength 1310nm .It only needs one-core fiber to transmit data service. It also have a HFC optical port, received the CATV optical signals and convert into electric CATV signals.

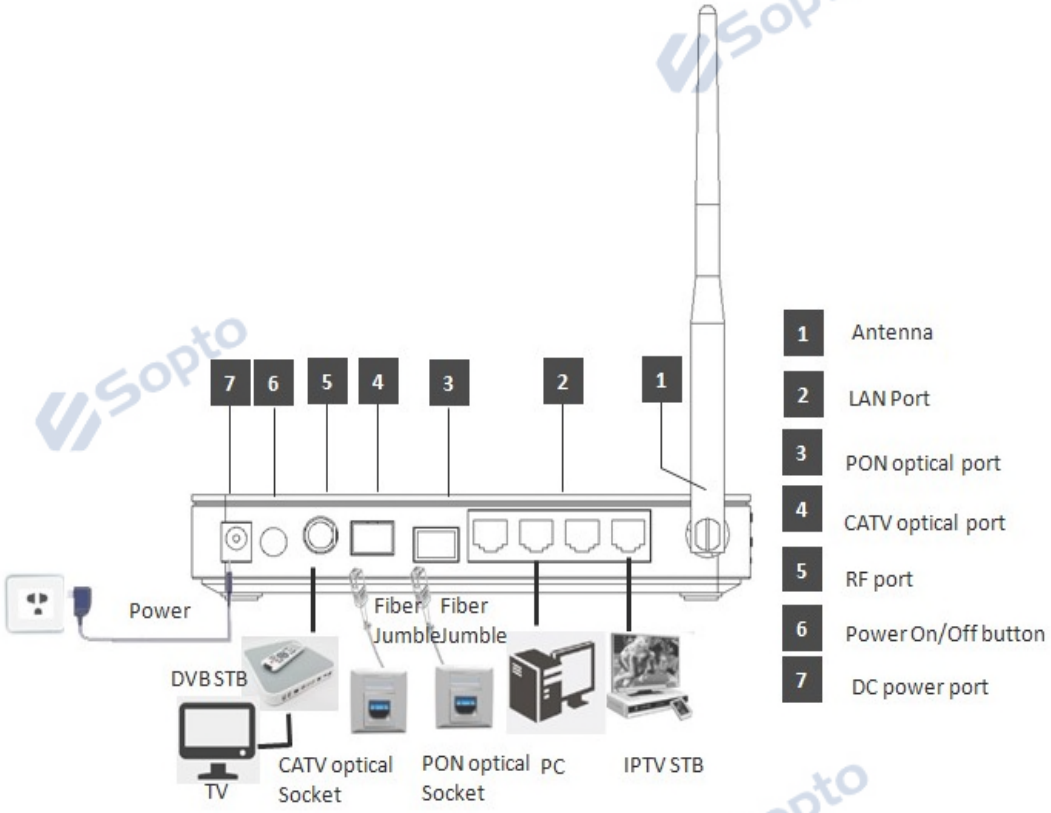
SPU-E4X01 series can integration wireless function with meet 802.11 n/b/g technical standards, It has built-in high gain directional antenna, the wireless transmission rate up to 300Mbps. It has the characteristics of strong penetrating power and wide coverage. It can provide users with more efficient data transmission security.

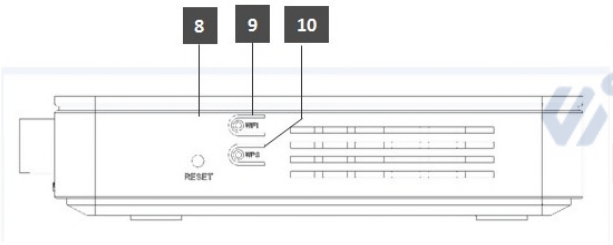
Functional Features

- Support port-based rate limitation and bandwidth control;
- In compliant with IEEE802.3ah Standard

- Wi-Fi series meet 802.11 n/b/g technical standards
- Up to 20KM transmission Distance
- Support data encryption, group broadcasting, port Vlan separation ,etc.
- Support Dynamic Bandwidth Allocation (DBA)
- Support ONU auto-discovery/Link detection/remote upgrade of software;
- Support port mode of VLAN configuration
- Support power-off alarm function ,easy for link problem detection
- Support broadcasting storm resistance function
- Support port isolation between different ports
- Support port flow control
- Specialized design for system breakdown prevention to maintain stable system
- Support software online upgrading

Product interface and LED definitions





8 Reset button
9 WIFI on/off button
10 WIFI protected setup

1 Power status
2 CATV status
3 Wi-Fi status
4 LAN status
5 Optical signal status
6 ONU register status

Indicator		Description
PWR	Power status	On: The ONU is power on Off: The ONU is Power off
CATV	CATV status	On：CATV optical normal Off：The CATV signals are not received
WIFI(optional)	WIFI	Blinking：Data is being transmitted On：Wi-Fi function Opens
LAN 1-4	LAN port status	On: Ethernet connection is normal Blinking: Data is being transmitted through the Ethernet port Off: Ethernet connection is not set up
LOS	EPON optical signals	On: Optical power lower than receiver sensitivity ; Off: Optical in normal
PON	ONU Register	On: Success to register to OLT Blinking: In process of registering to OLT Off: Failed to register to OLT;

Specification

Item	Parameter
PON Interface	1 EPON optical interface Meet 1000BASE - PX20+ standard Symmetric 1.25Gbps upstream/downstream SC single - mode fiber Max split ratio: 1:64 Transmission distance 20KM

Uplink CATV Interface:	1 HFC Optical input, SC/APC
User Ethernet Interface	4*10/100M or 4*10/100/1000M auto-negotiation Full/half duplex mode RJ45 connector Auto MDI/MDI-X 100m distance 1 RF output Female F-Type Connector
Power Interface	12V DC Power supply
PON Optical Parameter	Wavelength: Tx 1310nm, Rx1490nm Tx Optical Power: 0～4dBm Rx Sensitivity: -27dBm Saturation Optical Power: -3dBm Connector Type: SC Optical Fiber: 9/125qm single-mode fiber
Data Transmission Parameter	PON Throughput: Downstream 950Mbps; Upstream 930Mbps Ethernet: 100Mbps or 1000Mbps Packet Loss Ratio: <1*10E $^{-12}$ latency: <1.5ms
Business Capability	Layer 2 wire speed switching Support VLAN TAG/UNTAG，VLAN conversion Support Port - based speed limitation Support Priority classification Support storm control of broadcast Support loop detection
Network Management	① OAM for PON Related functions: Support OLT query ONU basic information; ONU link fault report; Dynamic Bandwidth Allocation (DBA); etc ② Local Web management , TR069 Remote Management for ONU local setting： ONU Layer 2 switch configuration such as Vlan; WiFi Setting(optional); etc
Management Function	Status monitor, Configuration management, Alarm management, Log management
Shell	Plastic casing
Power	4FE+CATV: <5.5W, 12V/0.6A power supply adapter 4FE+WIFI+CATV: <6.8W, 12V/1A power supply adapter

	4GE+CATV: <6W, 12V/0.6A power supply adapter 4GE+WIFI+CATV: <7.3W, 12V/1A power supply adapter
Physical Specifications	Item Dimension：170mm(L)*130mm(W)*30mm(H) Item weight：0.3kg
Environmental Specifications	Operating temperature: 0 to 50ºC Storage temperature: -40 to 85ºC Operating humidity: 10% to 90%(Non-condensing) Storage humidity: 10% to 90%(Non-condensing)

CATV

Item	Parameter
Wavelength	1100-1600nm
Optical return loss	>45dB
Input optical power	-18dBm～0dBm
RF frequency	47MHz~1000MHz
RF output lever	78dBuV (@-12~-2dBm@85MHz)
CNR	>41dB (@-10dBm@DS22 Channel)
CSO	>60dBc (@-10dBm@DS22 Channel)
CTB	>60dBc (@-10dBm@DS22 Channel)
RF output return loss	>12dB
RF impedance	75Ohm
AGC function	Support

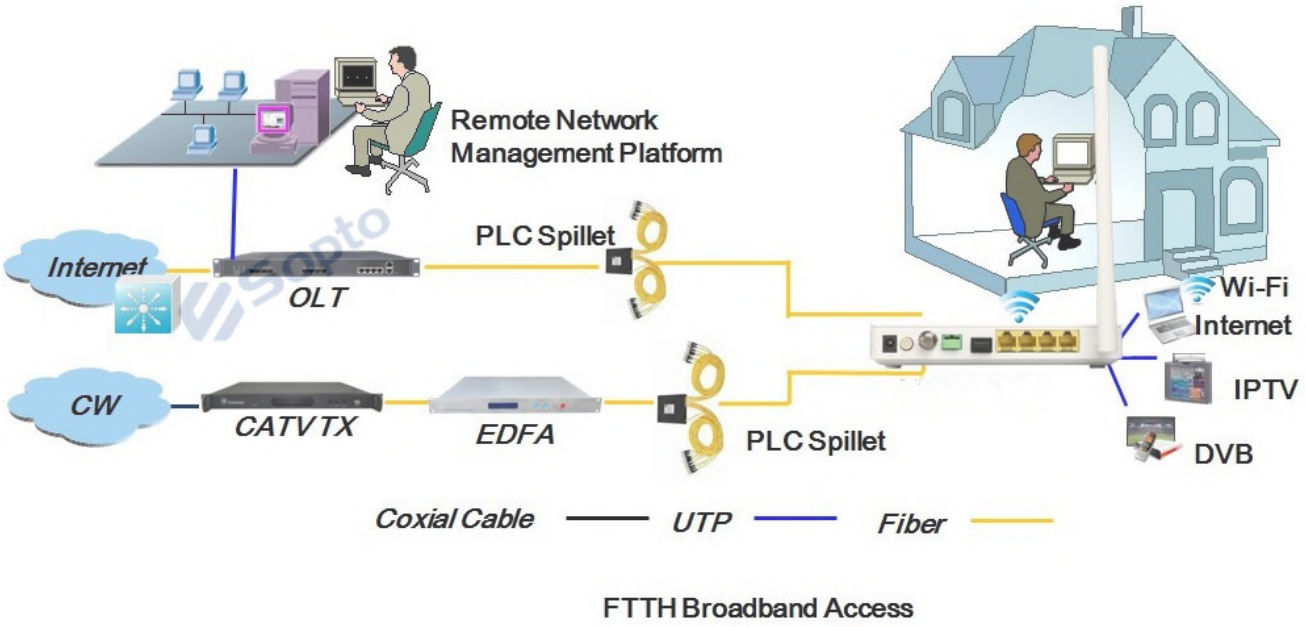
WIFI Specification (Suitable for the WIFI devices)

Item		Parameter
Performance parameters	Operating Mode	Router or bridge
	Throughput	IEEE 802.11b: 11Mbps IEEE 802.11g: 54Mbps IEEE 802.11n: 300Mbps
	Frequency	2.412 ~ 2.472 GHz
	Channel	13*Channel, configurable to meet the standard of USA, Canada, Japan and China
	Modulation	DSSS , CCK and OSP-M
	Coding	BPSK, QPSK, 16QAM and 64QAM
	RF receive sensitivity	802.11b: -82dBm @ 1 Mbps; -80dBm @ 2 Mbps;-78dBm @ 5.5 Mbps; -76dBm @ 11 Mbps 802.11g:

		-82dBm @ 6 Mbps; -81dBm @ 9 Mbps; -79dBm @ 12 Mbps; -77dBm @ 18 Mbps; -74dBm @ 24 Mbps; -70dBm @ 36 Mbps; -66dBm @ 48 Mbps; -65dBm @ 54 Mbps
	RF output lever	802.11b: 16.5 ±1dBm 802.11g: 13 ± 1dBm @ 54 Mbps; 14 ± 1dBm @ 48 Mbps; 15 ± 1dBm @ 6 ~ 36 Mbps 802.11n: 13 ± 1dBm @ 54 Mbps; 14 ± 1dBm @ 48 Mbps; 15 ± 1dBm @ 6 ~ 36 Mbps
	Encryption Mode	802.11i security: WEP-64/128, TKIP (WPA-PSK) and AES (WPA2-PSK)

Network Application

- Typical Solution：FTTH, FTTO
- Typical Business：INTERNET, IPTV, VOD, IP Camera, WIFI



FTTH Broadband Access

Ordering information

Product Name	Product Model	Descriptions

4FE+CATV Dual Fiber HGU Type	SPU-E4101A-HR	4*10/100M Ethernet interface, 1 EPON interface, 1 HFC optical interface, Input optical power -18dBm～0dBm, support AGC function, Plastic casing, external power supply adapter
4FE+CATV+WIFI Dual Fiber HGU Type	SPU-E4101AW-HR	4*10/100/1000M Ethernet interface, 1 EPON interface, 1 HFC optical interface, Input optical power -18dBm ～ 0dBm, support AGC function, Plastic casing, external power supply adapter
4GE+CATV Dual Fiber HGU Type	SPU-E4201A-HR	4*10/100M Ethernet interface, 1 EPON interface, 1 HFC optical interface, Input optical power -18dBm～0dBm, support Wi-Fi function and AGC function, Plastic casing, external power supply adapter
4GE+CATV+WIFI Dual Fiber HGU Type	SPU-E4201AW-HR	4*10/100/1000M Ethernet interface, 1 EPON interface, 1 HFC optical interface, Input optical power -18dBm～0dBm, support Wi-Fi function and AGC function, Plastic casing, external power supply adapter

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