AX7501-B0

Dual-Band Wireless AX 10G Fiber IAD with SFP+

The Zyxel AX7501-B0 Dual-Band Wireless AX 10G Fiber IAD with SFP+ provides ultra-high-speed fiber connection for triple-play services. By plugging in different optical transceiver option, AX7501-B0 could provide 10G service in either active fiber or XGS-PON network. The latest dual-band wireless WiFi 6 (11ax) technology optimizes bandwidth utilization to increase network capacity and the number of simultaneous streams, allowing more subscribers to enjoy superior connectivity with extremely low latency.

Benefits

Integrated internet services through fiber

The Zyxel AX7501-B0 supports 10GbE LAN with a reserved SFP+ cage to support 10G active fiber Ethernet functions. The product smoothly migrates from today's Gigabit fiber deployments to the next-generation 10G symmetric fiber solutions.

- Integrated internet services via 10G fiber
- WiFi 6 (11ax) for superior performance and coverage
- SFP+ supports both passive and active fiber
- Zyxel MPro Mesh™ Solutions (compliant with EasyMesh standards)*
- Zyxel Execution Environment (ZyEE) for Linux Containers
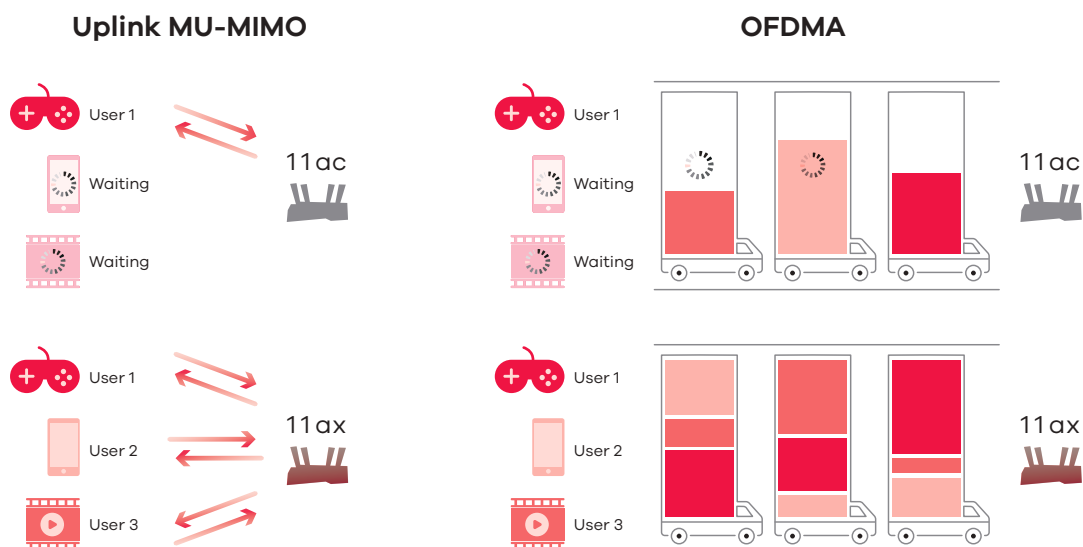- Remote management via TR-069 and OMCI
- Zyxel-developed OPAL ensures BBF.247 compliancy for superior flexibility and faster time-to-market

BBF.247 XGS-PON CERTIFIED

Datasheet AX7501-B0

WiFi 6 (11ax) technology for superior performance and coverage

The Zyxel AX7501-B0 supports the WiFi 6 (11ax) standard to offer lightning-fast throughputs of up to 6 Gbps**. The performance enables operators to provide UHD 4K/8K services to subscribers and hybrid high-throughput applications in homes for a true IoT lifestyle.

TR-069 remote management for lower OPEX

With the TR-069 standard management specifications, the Zyxel AX7501-B0 allows service providers to manage, configure, monitor, and diagnose client devices remotely without interfering with the end-users. This unique feature saves operating time as well as maintenance costs for service providers.

Zyxel OPAL firmware realizes the flexibility and faster time-to-market

Compliant with the same OPAL firmware trunk applied in all Zyxel CPEs, the AX7501-B0 inherits a rich, field-proven feature set including TR-069 and more. Service providers can ensure the same user experience, after migrating to new devices.

Faster software development and less operating system risks

Zyxel ZyEE is a secure and future-proof Linux kernel-based execution environment, also known as a container. ZyEE creates a predictable environment isolated from other applications for software developers and service providers to develop, enable, install, and uninstall third-party applications without risking the core operating system. ZyEE's portability and scalability enhance software development agility by providing broader compatibility with various hardware environments. In addition, the compact and structurally simple ZyEE optimizes system computing resources. With ZyEE, service providers can deliver new features to subscribers with reduced time-to-market while remotely managing services through existing ACS servers.

Specifications

System specifications

Wireless standards
- 802.11 b/g/n/ax 2.4 GHz
- 802.11 a/n/ac/ax 5 GHz

XGS-PON compliance
- ITU-T G.9807.1/G.988 GPON standard-compliant
- Compliant with class N1/N2
- DS/US speeds: 9.95328/9.95328 Gbps
- Wavelength: 1577 nm (DS) & 1270 nm (US)
- Physical distance reach up to 20 km

10G AE compliance
- Compliant with class B+ type PMD
- DS/US speeds: 10.3125/10.3125 Gbps
- Wavelength: 1330 nm (DS) & 1270 nm (US)
- Physical distance reach up to 10 km

Ethernet (LAN) features
- Full duplex IEEE 802.3x
- MAC address learning
- IPv6 address transparent

Networking features
- IEEE 802.1D transparent bridge
- IEEE 802.1D basic spanning tree
- Static route/DNS route/policy route
- Static routing, dynamic routing Routing Information Protocol (RIP)
- DNS entry
- Dynamic DNS
- Internet Group Management Protocol (IGMP)
- OPAL FW
- VLAN group
- Interface grouping

VLAN functional specification
- VLAN IEEE 802.1Q
- CoS IEEE 802.1p
- QinQ VLAN

QoS
- 802.1p priority
- SP/WRR/SP+WRR
- Broadcast storm control

WLAN
- Wireless Protected Setup (WPS)
- WPA/WPA2 (WiFi protected access)
- Supports multiple SSID (up to 4)

Security
- Static Packet Inspection (SPI) firewall
- MAC/IP/URL addresses filtering

VoIP
- Voice functionality:
    - Codec: G.711 a/u, G.722, G.726
    - DTMF tone: detection and generation

Phone features
- Internal call
- T.30/T.38/G.711 fax mode, call waiting, call forwarding (no condition, busy, no answer)
- Call transferring (blind, consult OnHold, attendant)
- Call hold/call retrieve
- Three-way conference
- Second call/adding an outgoing call
- Switch between 2 active calls

Management
- Web/Telnet (CLI)
- OMCI (G.988)/TR-069
- Firmware upgrade via FTP/TFTP/HTTP

USB
- File sharing

Hardware specifications

Wireless
- Four internal antennas (2.4 GHz)
- Four internal antennas (5 GHz)

WAN
- One SFP+ cage for XGS-PON/active fiber/Ethernet transceiver

Ethernet LAN
- 10GbE LAN: one 10000/1000/100 Mbps with R-J45 port
- 1GbE LAN: four 1000/100 Mbps with RJ-45 ports

VoIP
- Two FXS ports RJ-11 (6P2C)

USB
- One USB 3.0 host

Button
- One power on/off
- One WLAN on/off button
- One WPS on/off push button
- One reset button

Status LEDs indicators
- Power/system
- Fiber
- Internet
- 10GbE LAN
- Ethernet
- WLAN 2.4G
- WLAN 5G
- Phone
- USB

Power consumption
- 12 V DC 3.5 A
- Max 42 watt

Physical specifications
- Item dimensions (WxDxH): 250 x 187 x 32 mm (9.84" x 7.36" x 1.26")
- Item weight: 473 g (1.043 lb.)
- Packing dimensions (WxDxH): 273 x 207 x 92 mm (10.75" x 8.15" x 3.62")
- Packing weight: 1084 g (2.390 lb.)

Environmental specifications

Operating environment
- Temperature: 0°C to 40°C (32°F to 104°F)
- Humidity: 10% to 90% RH (non-condensing)

Storage environment
- Temperature: -30°C to 70°C (-4°F to 158°F)
- Humidity: 10% to 95% RH (non-condensing)

Certification
- CE
- RoHS (Restriction of Hazardous Substances) Directive certification
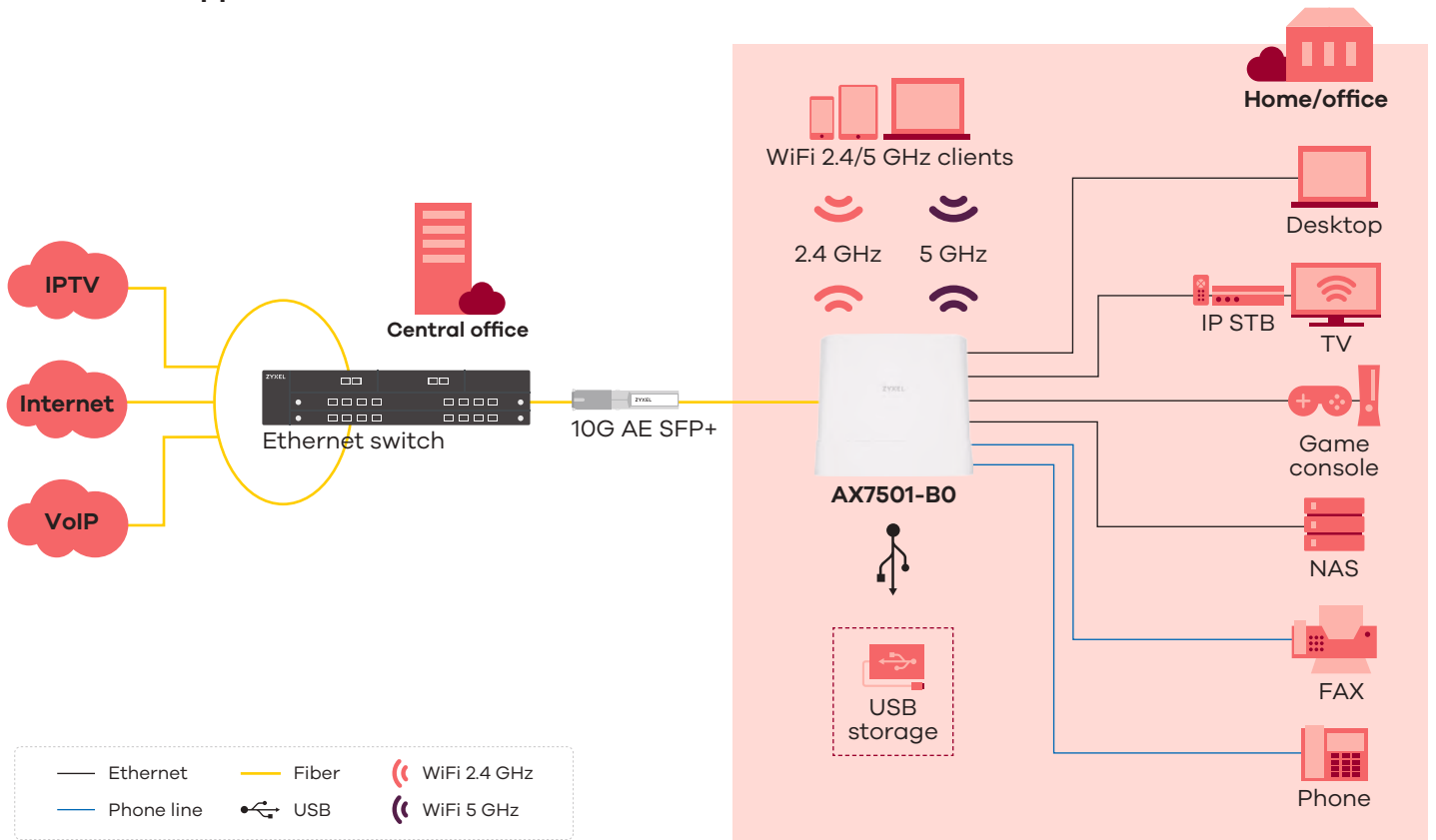- BBF.247

Package contents
- 10G fiber IAD
- Power adapter
- Ethernet cable
- Phone cable
- Quick Start Guide
- Safety warning card
- Wall mount screw

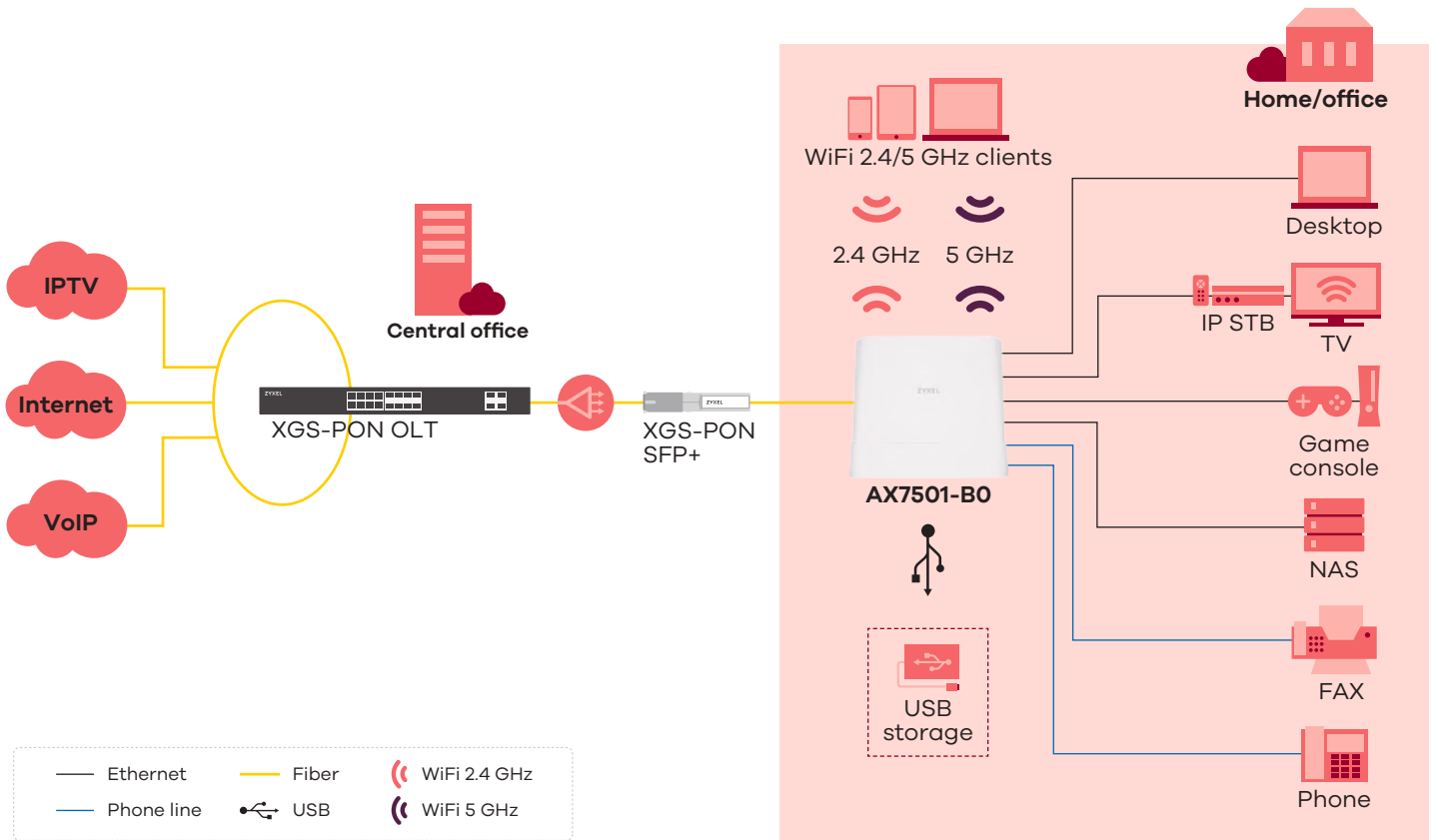* The EasyMesh standards-compliant AX7501-B0 can only work with the WX3401 Wireless Extender.

** The maximum wireless data transfer rate is derived from IEEE Standard 802.11. The actual data transfer rate will vary from network environment including distance, network traffic, building site materials/construction, interference from other wireless devices, and other adverse conditions.
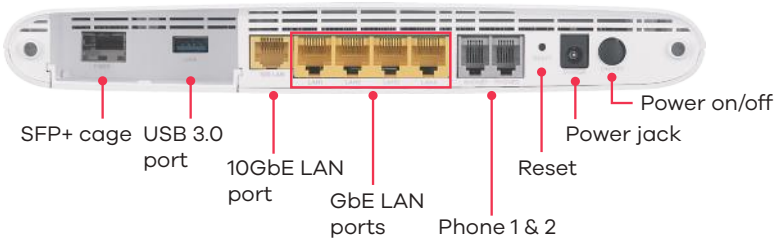
Application diagram

Active fiber application

IPTV
Internet
VoIP

Ethernet switch

Central office

10G AE SFP+

WiFi 2.4/5 GHz clients

2.4 GHz   5 GHz

AX7501-B0

USB storage

Home/office

Desktop

IP STB

TV

Game console

NAS

FAX

Phone

——— Ethernet   ——— Fiber   ((WiFi 2.4 GHz
——— Phone line   •←• USB   ((WiFi 5 GHz

Passive fiber application

IPTV
Internet
VoIP

XGS-PON OLT

Central office

XGS-PON SFP+

WiFi 2.4/5 GHz clients

2.4 GHz   5 GHz

AX7501-B0

USB storage

Home/office

Desktop

IP STB

TV

Game console

NAS

FAX

Phone

——— Ethernet   ——— Fiber   ((WiFi 2.4 GHz
——— Phone line   •←• USB   ((WiFi 5 GHz

Hardware description

WLAN on/off
WPS on/off

SFP+ cage USB 3.0 port
10GbE LAN port
GbE LAN ports
Phone 1 & 2
Reset
Power jack
Power on/off

ZYXEL

COMMUNICATIONS

Datasheet AX7501-B0