XSR250GK

XGS-PON CPE Solution

Fiber Gateway Wi-Fi 6E

Description

Targeted to PON FTTH deployment scenarios, this compact multi-play Fiber Gateway (FGW) features High-Speed Internet, VoIP, and IPTV services, being the right choice for Operators and Service Providers that want to deliver multiple and advanced services to residential customers and SMEs.

The architecture of this device is based on the ITU G.9807.1 recommendation and supports full in-house multi-play services enabling Data, Voice, and Video services through Ethernet, Wi-Fi, FXS, and USB standard interfaces. Four built-in RJ-45 10/100/1000Base-T ports and one built-in RJ-45 1/2.5/5/10GEBase-T LAN port connect devices via cable, complementing ultra-fast Wi-Fi access for Internet applications such as video, email, web surfing, file upload/download, and online gaming. Two RJ-11 FXS ports connect voice or fax devices featuring the SIP protocol. A valuable set of built-in LEDs provides fast and pertinent information to the user or the installer. This ultimate and low-consumption device provides built-in routing features that avoid needing an external third-party gateway.

This device includes a high-performance Wi-Fi technology that supports tri-band concurrent operation, complying with 802.11a/b/g/n/ac/ax standards, operating simultaneously on the 2.4GHz, 5GHz, and 6GHz frequency bands. Advanced MU-MIMO and Dynamic Frequency Selection (DFS) techniques allow an increase in the air interface throughput and range by mitigating multi-user interference and the utilization of frequency bands allocated to weather radars.

This FGW is fully interoperable with 3rd party OLTs. The device can be remotely managed and configured, allowing operators to optimize OPEX and scale-up deployments by featuring auto-provisioning mechanisms (e.g., TR-069, OMCI, and DHCP).

Business Benefits

- Compact, high-speed, and low-power consumption device for residential customers and SMEs;
- Multi-play services, including Data, High-Speed Internet (HSI), VoIP, and TV (IPTV and RF Overlay);
- Evolution of the broadband access paradigm up to 10Gbps/10Gbps (downstream/upstream) data rates;
- Powerful and enhanced WLAN interface based on MU-MIMO OFDMA 4x4 dual concurrent Wi-Fi antennas complying with 802.11a/b/g/n/ac/ax standards over 2.4GHz, 5GHz and 6GHz wireless frequency bands;
- EasyMesh™ Wi-Fi compliance;
- Mass remote management through OMCI (G.988) and TR-069 standards, thus offering full remote control without user intervention.

BBF.247 XGS-PON CERTIFIED

BBF.398 GRADE Wi-Fi

RDK REFERENCE DESIGN KIT

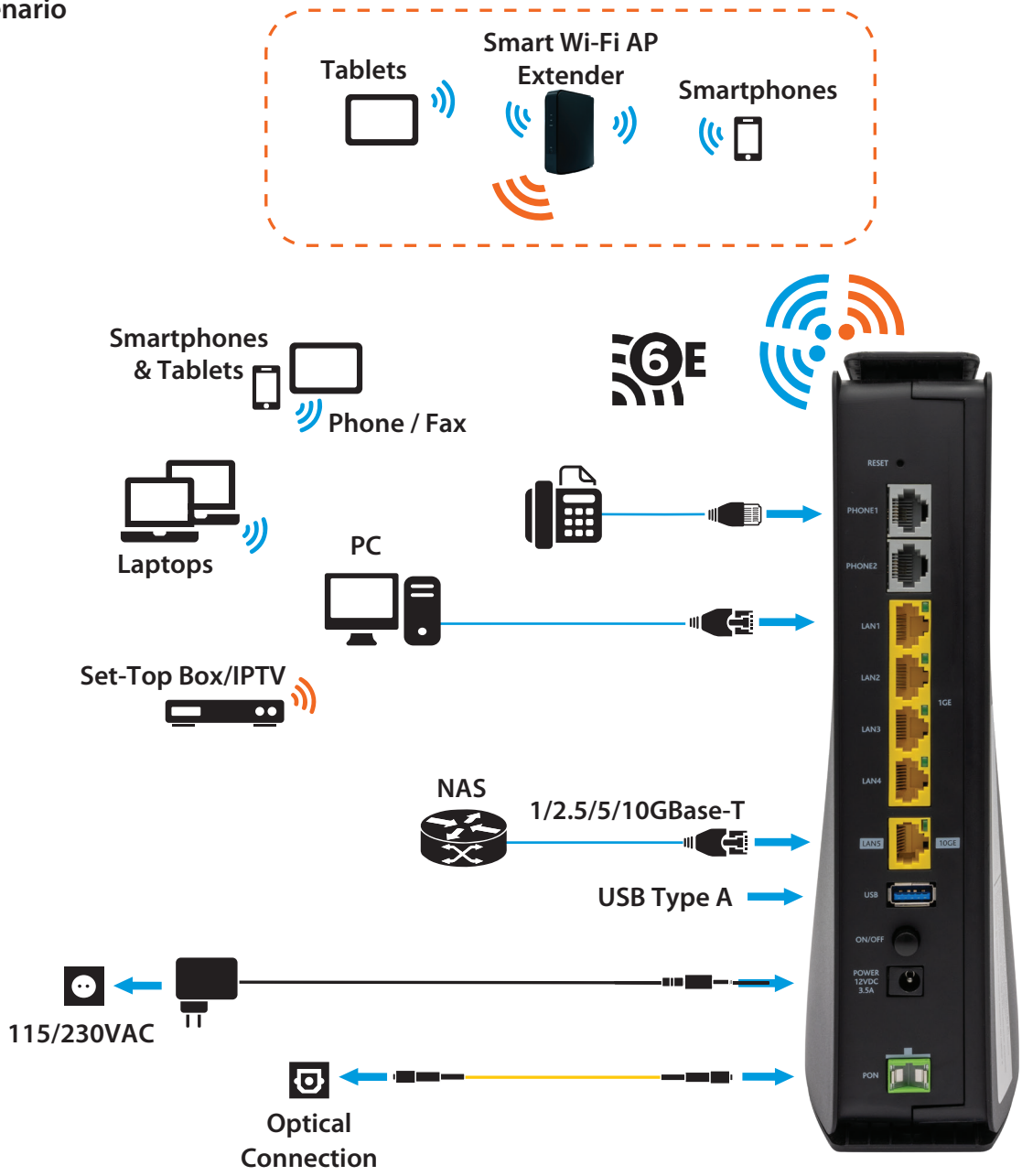
Wi Fi 6E

VoIP

10GE

IPTV

Scenario



Interfaces

Wi-Fi 2.4GHz 802.11b/g/n/ax	2.4GHz @ 3x3
Wi-Fi 5GHz 802.11a/n/ac/ax	5GHz @ 4x4 6GHz @ 4x4
Wi-Fi 6GHz 802.11ax	Band concurrent
USB Type A	1
FXS Ports	2
ETH Ports	4x 1GBase-T 1x 1/2.5/5/10GBase-T

Specifications

WAN Uplink Interfaces	ITU.T G.9807.1 (XGS-PON) and G.988 compliant.
XGS-PON layer per G.9807.x	Compliant with standards: ITU-T G.9807.1 (XGS-PON) / ITU-T G.988 (OMCI); Configurable AES (Downstream); In the downstream direction, FEC is statically configurable as ON for all ONUs; in the upstream direction, the use of FEC is under dynamic control by the OLT; Bitrates: 9.95328 Gbps (Downstream) / 9.95328 Gbps (Upstream); Optics Classes: N1; N2; E1; DD20.
L2/L3 layer	VLAN-ID to GEM port-ID mapping (per TR-156i3): - 1:1, N:1 VLAN; - Transparent VLAN; Classification: DSCP/TOS, 802.1p TCI, VLAN-ID, MAC address; Traffic Management: up to 8 queues per T-CONT in priority-controlled mode or up to 16 queues per T-CONT in rate-controlled scheduling mode; 802.1q VLAN processing: Q-in-Q, tagging, removing tag, replacing tag or transparent forwarding; IPv4; IPv6; Routing: Network Access Translation (NAT) and Network Access Port Translation (NAPT); Firewall; VPN; DHCP Client and Server; PPPoE Client; Quality of Service (QoS) prioritization using 802.1p.
IPTV	IGMP v2/v3, and MLD (IPv6) snooping and proxy; IGMP processing per VLAN ID to support group of channels; Interactive services (Video On Demand); IPTV streams forwarding simultaneous :128.
VoIP	Call control: SIPv1/v2; T.38 Fax relay; Fax/Data bypass; Echo canceller; Echo canceller length; Jitter buffer; Caller ID generation; G.711 PCMU; G.711 PCMA; G.723.1; G.726; G.729; VAD and CNG; Caller ID and call waiting; RTP/RTCP packet encapsulation; RFC 2833 Support; In-band signaling detection and generation (DTMF, call progress tones); Automatic Tone generation (dial, busy, ring back, stutter, distinctive ring); 3-Way conferencing.
Services	Content sharing: - UPnP Media Server; - DLNA DMS; - Metadata Support; OSGI (Open Service Gateway Interface).
Wi-Fi 6E	Functionalities: - 802.11ax compliance; - 802.1x authentication; External RADIUS authentication; - WPA/WPA2/WPA3; - AES and TKIP Encryption; - Wi-Fi multimedia support: WMM and WMM-PS; - Multiple SSIDs profiles; - MAC address filtering integrated; - WPS (Pushbutton and PIN entry); - Hotspot 2.0; - Band steering; - Smart Mesh Wi-Fi. Interfaces: - Concurrent Mode 2.4GHz + 5GHz + 6GHz via internal antennas

- 2.4GHz: Compliant with IEEE 802.11b/g/n/ax with 3x3 MIMO	@ 2.4GHz: up to +20dBm (FCC)
- 5GHz: Compliant with IEEE 802.11a/n/ac/ax and with 4x4 MIMO	@ 5GHz: up to +33dBm (FCC)
- 6GHz: Compliant with IEEE 802.11ax and with 4x4 MIMO	@ 6GHz: up to +26dBm (FCC)

- Channel Bandwidth: 20, 40, 80, 80+80, 160
- Support of zero wait Dynamic Frequency Selection (DFS): 4x4 with weather radar detection
- Multi-User MIMO for better performance per user

Data rates:

802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
802.11b: 1, 2, 5.5, 11 Mbps
802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
802.11n: up to 600 Mbps
802.11ac : up to 3400 Mbps
802.11ax (2.4 GHz): up to 900 Mbps
802.11ax (5 GHz): up to 4800 Mbps
802.11ax (6 GHz): up to 4800 Mbps

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EasyMesh™	Compliant with Wi-Fi Alliance® multiple AP specification.
POTS	RJ-11 FXS port
USB	USB Type A
Management	Web-based with GUI; Remote management through OMCI, PLOAM, OAM and Connected Home: TR-069/098/104/111/140/142/143/181; Secure software download upgrade via OMCI or TR-069; Embedded Telnet server for remote management; SNMP V3; Zero-touch configuration; CLI.
LAN Ethernet interfaces	RJ-45 10/100/1000 M Base-T; Auto-negotiation support; Auto MDI/MDIX support; RJ-45 GE/1/2.5/5/10GE Base-T.
Energy Efficiency	CoCV8
Environment	Temperature Range: +5ºC to +40ºC Relative Humidity: 5% to 95%

EMC	ETSI EN 301489-1 and EN 301489-17
Safety	IEC/EN 60950-1/62368-1
Radio	ETSI EN 300328 and EN 301893

Equipment Size (HxWxD)	245 x 80 x 210mm / 9.7 x 3.2 x 8.3"
Net Weight 957g / 2.13lb	
Power Supply (1)	Primary: 230VAC, 50Hz or 115VAC, 60Hz; Secondary: 12VDC/3.5A ± 15%

(1) An LPS power source is used to power the ONT equipment:

- The ONT must be powered by an External CB approved Limited Power Source (LPS).

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