



Wi-Fi 6

XGS-PON Fiber Gateway

10G CPE Solution

Description

Targeted to the PON FTTH deployment scenario, this compact Multiplay XGS-PON Fiber Gateway equipment family features High Speed Internet, VoIP and TV (IPTV and RF Overlay) services, being the right choice for Operators and Service Providers who are willing to deliver multiple and advanced services to residential and SME customers.

This equipment architecture is based on the Rec. ITU G.9807.1 and supports full in-house multi-play services enabling Data, Voice and Video services through Ethernet, Wi-Fi, FXS, USB and RF Overlay standard interfaces. Four built-in RJ45 10/100/1000 BASE-T ports allow for the connection of devices via cable. Ultrafast device is possible via Wi-Fi access or via a LAN GE/10GE BASE-X/T port (model dependent), for Internet application such as video, email, web surfing, files upload/download and online gaming. Furthermore, one RJ11FXS ports permit the connection of two fax or voice devices featuring the SIP protocol. A useful set of built-in LEDs, provide fast and pertinent information either to the user or the installer. This ultimate and low consumption apparatus simplifies the technicians' life during the installation process while in the clients' premises via built-in routing features that avoids the need for an external third party gateway.

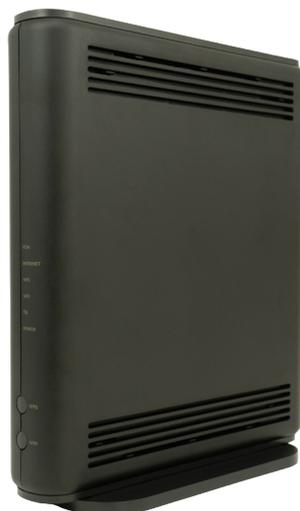
These equipment includes a high performance 4x4 Wi-Fi, dual band concurrent spanning 802.11 a/b/g/n/ac standards, operating simultaneously on the 2.4 and 5 GHz frequency bands, featuring the advanced MU-MIMO and DFS techniques, allowing for

an air interface throughput and range increase by mitigating the multi-user interference and the utilization of frequency bands allocated to weather radars, using dynamic frequency selection.

Altice Labs XGS-PON FGW equipment is straightforward and remotely managed/configured allowing for the optimization of Operators OPEX and the scale up deployment by starring auto provisioning mechanisms (e.g. TR-069, OMCI and DHCP).

Business Benefits

- Compact, high speed and low consumption XGS-PON FTTH Fiber Gateway for residential and SME customers;
- Multiplay services enabled including data High Speed Internet, 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 supporting 802.11a/b/g/n/ac standards over 2.4GHz and 5GHz wireless frequency bands;
- Mass remote management through OMCI (G.988) and TR-069 standards, thus offering a full remote control without user intervention.



XSR150DX

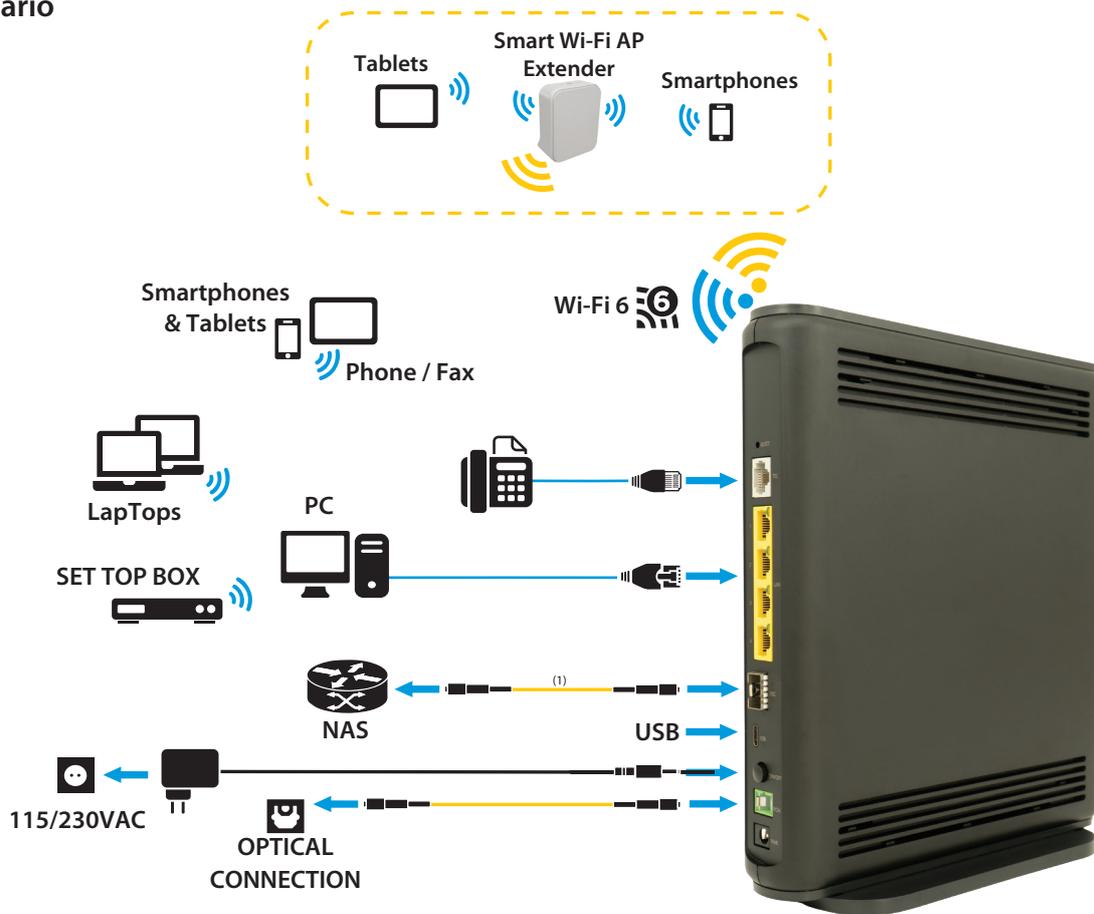


XSR151DK

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Scenario



(1) The physical interface depends on the SFP used

Interfaces			Models	
			XSR150DX	XSR151DK
PON	Type		XGS-PON	
	Class		N1,N2,E1,DD20	
	Tx/Rx Type		Fixed	
	Wavelength (nm)	DS	1575 - 1580	
		UP	1260 - 1280	
	Bitrate (Gbps)	DS	9.95328	
UP		9.95328		
FXS Ports			1x	
LAN Ports	10/100/1000 BASE-T		4x	
	1 / 2.5 / 5 / 10G	BASE-X (SFP/SFP+)	1x	-
		BASE-T (RJ45)	-	1x
RF Overlay (CATV)	47MHz - 870MHz	F Connector; 75 Ω (nominal)	-	1x
Wi-Fi 6	2.4GHz 802.11 b/g/n/ax	MIMO 4x4	√	
		Power* (EIRP)	up to +20dBm (ETSI) or up to +34dBm (FCC)	
	5GHz 802.11 a/n/ac/ax	MIMO 4x4	√	
		Power* (EIRP)	up to +30dBm (ETSI) or up to +34dBm (FCC)	
USB			1x	

*Wi-Fi power upper limit value depends on the country

Specifications

WAN Uplink Interfaces	ITU-T G.9807.1 (XGS-PON) and G.988 compliant.					
10G PON layer	ITU-T G.987.x (XG-PON); ITU-T G.9807.1 (XGS-PON); ITU-T G.988; Configurable AES (Downstream) and FEC (Downstream and Upstream); Bitrates: Downstream - 9.95328 Gbps, / Upstream - 2.48832 Gbit/s(XG-PON) 9.95328 Gbps (XGS-PON); Optics Classes(XG-PON XGS-PON): E1, N2, N2a N1, N2, E1, DD20.					
L2/L3 layer	<p>VLAN-ID to GEM port-ID mapping (per TR-156i3):</p> <ul style="list-style-type: none"> - 1:1, N:1 VLAN; - Transparent VLAN; <p>Classification: DSCP/TOS, 802.1p TCI, VLAN-ID, MAC address;</p> <p>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;</p> <p>802.1q VLAN processing: Q-in-Q, tagging, removing tag, replacing tag or transparent forwarding;</p> <p>IPv4; IPv6;</p> <p>Routing: Network Access Translation (NAT) and Network Access Port Translation (NAPT);</p> <p>Firewall; VPN;</p> <p>DHCP Client and Server;</p> <p>PPPoE Client;</p> <p>Quality of Service (QoS) prioritization using 802.1p.</p>					
IPTV	<p>IGMP v2/v3, and MLD (IPv6) snooping and proxy;</p> <p>IGMP processing per VLAN ID to support group of channels;</p> <p>Interactive services (Video On Demand);</p> <p>IPTV streams forwarding simultaneous :128.</p>					
VoIP	<p>Call control: SIPv1/v2; T.38 Fax relay; Fax/Data bypass;</p> <p>Echo canceller; Echo canceller length; Jitter buffer;</p> <p>Caller ID generation; G.711 PCMU;</p> <p>G.711 PCMA; G.723.1; G.726;</p> <p>G.729; VAD and CNNG; Caller ID and call waiting;</p> <p>RTP/RTCP packet encapsulation; RFC 2833 Support;</p> <p>In-band signaling detection and generation (DTMF, call progress tones);</p> <p>Automatic Tone generation (dial, busy, ring back, stutter, distinctive ring); 3-Way conferencing.</p>					
Services	<p>Content sharing:</p> <ul style="list-style-type: none"> - UPnP Media Server; - DLNA DMS; - Metadata Support; <p>OSGI (Open Service Gateway Interface).</p>					
Wi-Fi 6	<p>Functionalities:</p> <ul style="list-style-type: none"> - 802.11ax compliance; - 802.1x Authentication; External RADIUS Authentication; - WPA/WPA2 Protected access; 64/128 Bits WEP; - 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. <p>Interfaces:</p> <ul style="list-style-type: none"> - Concurrent Mode 2.4GHz + 5GHz via internal antennas <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">- 2.4GHz: Compliant with IEEE 802.11 b/g/n/ax with 4x4 MIMO</td> <td style="width: 30%;">up to +20dBm EIRP* (ETSI) or up to 34dBm EIRP* (FCC)</td> </tr> <tr> <td>- 5GHz: Compliant with IEEE 802.11 a/n/ac/ax and with 4x4 MIMO</td> <td>up to +30dBm EIRP (ETSI) or up to 34dBm EIRP (FCC)</td> </tr> </table> <ul style="list-style-type: none"> - 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 <p>* Wi-Fi Power upper limit value depends on the country</p> <p>Data rates:</p> <ul style="list-style-type: none"> 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 1200 Mbps 802.11ax (5 GHz): up to 4800 Mbps 		- 2.4GHz: Compliant with IEEE 802.11 b/g/n/ax with 4x4 MIMO	up to +20dBm EIRP* (ETSI) or up to 34dBm EIRP* (FCC)	- 5GHz: Compliant with IEEE 802.11 a/n/ac/ax and with 4x4 MIMO	up to +30dBm EIRP (ETSI) or up to 34dBm EIRP (FCC)
- 2.4GHz: Compliant with IEEE 802.11 b/g/n/ax with 4x4 MIMO	up to +20dBm EIRP* (ETSI) or up to 34dBm EIRP* (FCC)					
- 5GHz: Compliant with IEEE 802.11 a/n/ac/ax and with 4x4 MIMO	up to +30dBm EIRP (ETSI) or up to 34dBm EIRP (FCC)					

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RF Overlay	<i>1 port on a F Type Connector; 75 ohms impedance (nominal); Optical wavelength: 1550nm; Optical power: -8dBm < Pin < +2dBm; Analog bandwidth: minimum 47 MHz and maximum 870MHz (maximum can be extended up to 1002MHz on different variant).</i>
POTS	<i>RJ-11/RJ-45 FXS port</i>
USB	<i>USB 3.1</i>
Management	<i>Web-based with GUI; Remote management over the 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.</i>
LAN Ethernet interfaces	<i>RJ-45 GE/2.5GE BASE-T; RJ45 GE/2.5GE/10GE BASE-T or SFP/SFP+ GE/2.5GE/10GE BASE-X/-T (model dependent); Support auto-negotiation; Support auto MDI/MDIX.</i>
Energy Efficiency	<i>CoCV8</i>
Environment	<i>+5°C to +40°C, 5 - 85% Relative Humidity.</i>
EMC	<i>ETSI EN 301489-1 and EN 301489-17</i>
Safety	<i>IEC/EN 60950-1/62368-1</i>
Radio	<i>ETSI EN 300328 and EN 301893</i>
Equipment Size (HxWxD) mm/”	<i>[245.8x44.8(80.6 including base)x210.0]mm/[9.7x1.8(3.2 including base)x8.3]”</i>
Net Weight	<i>< 0.8kg/1.76lb</i>
Packaging	<i>1x Power Adapter AC/DC</i>
Power Supply ⁽¹⁾	<i>Primary: 230VAC, 50Hz or 115VAC, 60Hz; Secondary: 12VDC/4A + 15%</i>

⁽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).



ABOUT ALTICE LABS

Delivering key telecommunications technologies since 1950, shaping the future of technology, enabling Communications Service Providers and Enterprises to offer advanced and differentiated services to their customers and users.

Altice Labs is an innovation and transformation catalyst supported in a strong and dynamic Innovation Ecosystem. Through technology we work every day to improve people's lives and the ways in which companies do business.