

GR241AG

Fiber Gateway 4x4

GPON CPE Solution

Description

Targeted to the GPON FTTH deployment scenario, this compact Multiplay Fiber Gateway (FGW) features High Speed Internet, VoIP, 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 clients.

The FGW architecture is based on the Rec. ITU G.984.x 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 RJ-45 copper 10/100/1000 BASE-T ports allow for the connection of devices via cable, in compliment to the ultrafast Wi-Fi access, for Internet application such as video, email, web surfing, files upload/download and online gaming. Furthermore, two RJ-11FXS ports permit the connection of two fax or voice devices featuring the SIP protocol. A useful set of LEDs, built-in in the FGW case, provide fast and pertinent information either to the user or the installer.

This FGW includes an high performance Wi-Fi, dual band concurrent supporting 802.11 a/b/g/n/ac standards, operating simultaneously on the 2.4 and 5 GHz frequency bands. Using DFS (Dynamic Frequency Selection) techniques, allow for an air interface throughput increase and range, by mitigating the multi-user interference.

Altice Labs FGW is multi-vendor OLT interoperable and 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 GPON FTTH Fiber Gateway for residential clients;
- Multiplay services enabled including data High Speed Internet (HIS), voice (VoIP) and TV (IPTV and RF Overlay);
- Evolution of the broadband access paradigm from few Mbps up to fiber 2.5Gbps/1.25Gbps (downstream/upstream) data rates;
- Dual band concurrent Wi-Fi, spanning 802.11 a/b/g/n/ac standards, operating simultaneously on the 2.4 and 5 GHz frequency bands;
- Multi-vendor OLT interoperability;
- Mass remote management through OMCI (G.984.4 and G.988) and TR-069 standards, thus offering a full remote control without user intervention.



Front view

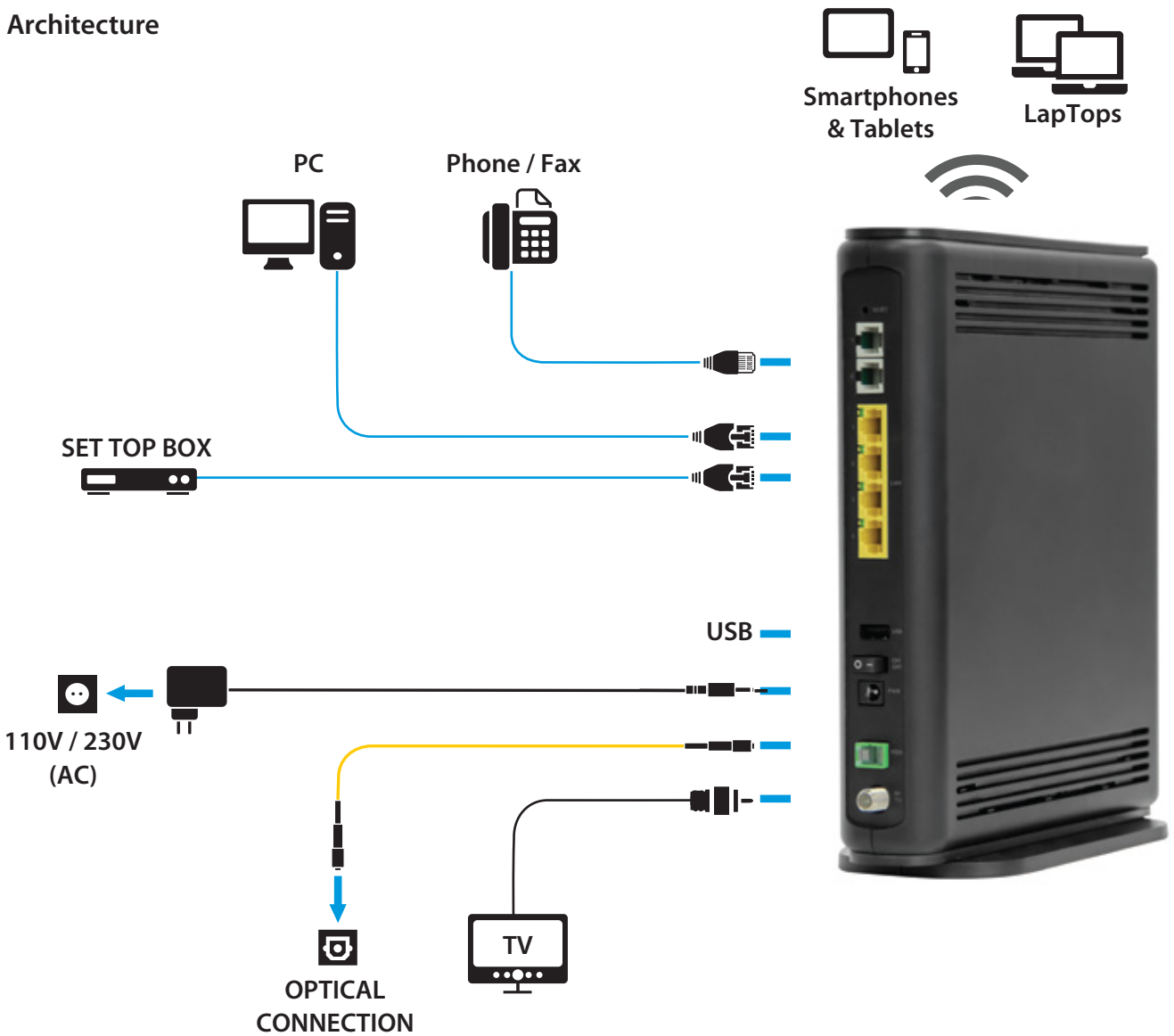


Rear view

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Architecture



ONT Fiber Gateway 4x4 Configurations

RF Overlay	1xCATV
Wi-Fi-2,4GHz 802.11b/g/n	2,4GHz @ 3x3
Wi-Fi-5 GHz 802.11ac	5GHz @ 4x4 Dual-concurrent
USB 2.0	1
FXS Ports	2
ETH Ports	4 x 10/100/1000 BASE-T
NAT/NAPT	✓
Firewall	✓
VPN pass-through	✓
PPPoE termination	✓
OMCI	✓
TR-069	✓
CLI	✓
WebGUI	✓

Specifications

WAN Uplink Interfaces	G.984.2 GPON and Active Ethernet							
GPON layer per G984.x	<p>Comply with GPON standard: ITU-T G.984.1 /G.984.2 /G.984.3 /G.984.4 /G.984.5 /G.988; GPON Encapsulation Method (GEM) supports Ethernet; Configurable AES (Downstream) and FEC (Downstream and Upstream); Bitrates: 2.488Gbps (Downstream) /1.244Gbps (Upstream); Support ODN loss up to 32dB; T-CONTs: 32; GEM Port-IDs: 255.</p>							
L2/L3 layer	<p>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; Performance: 1000Mbps bidirectional; Quality of Service (QoS) prioritization using 802.1p.</p>							
IPTV	<p>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.</p>							
VoIP specifications	<p>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.</p>							
Services	<p>Content sharing: - UPnP Media Server; - DLNA DMS; - Metadata Support; OSGI (Open Service Gateway Interface).</p>							
WiFi	<p>Functionalities:</p> <ul style="list-style-type: none"> - 802.1x Authentication; External RADIUS Authentication; - WPA/WPA2 Protected access; 64/128 Bits WEP; - encryption; 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> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">- Concurrent Mode 2.4GHz + 5GHz via internal antennas</th> <th style="text-align: left;">Power</th> </tr> </thead> <tbody> <tr> <td>- 2.4GHz: Compliant with IEEE 802.11 b/g/n with 3x3 MIMO</td> <td>Up to 20dBm EIRP</td> </tr> <tr> <td>- 5GHz: Compliant with IEEE 802.11 a/n/ac and with 4x4 MIMO</td> <td>Up to 30dBm EIRP</td> </tr> </tbody> </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>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 1734 Mbps 1024QAM (2.4GHz) : up to 1000 Mbps 1024QAM (5GHz) : up to 2166 Mbps 		- Concurrent Mode 2.4GHz + 5GHz via internal antennas	Power	- 2.4GHz: Compliant with IEEE 802.11 b/g/n with 3x3 MIMO	Up to 20dBm EIRP	- 5GHz: Compliant with IEEE 802.11 a/n/ac and with 4x4 MIMO	Up to 30dBm EIRP
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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 FXS port</i>
USB	<i>USB 2.0 Host</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 10/100/1000 BASE-T; Support auto-negotiation; Support auto MDI/MDIX.</i>
Energy Efficiency	<i>CoCV6.</i>
Environment	<i>0°C to +50°C, 5 - 95% Relative Humidity;</i>
EMC	<i>ETSI EN 301489-1 and EN 301489-17</i>
Safety	<i>ETSI EN 60950-1</i>
Radio	<i>ETSI EN 300328 and EN 301893</i>
Equipment Size (HxWxD)	<i>35 x 244 x 202mm / 1.38" x 9.61" x 7.95"</i>
Net Weight	<i>0,8Kg / 1.76lb</i>
Power Supply ⁽¹⁾	<i>Primary: 230VAC, 50Hz or 110VAC, 60Hz; Secondary: 12VDC/3A + 15%</i>

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

- US/Canada: The ONT must be powered by an external Listed Limited Power Source (LPS) or Class 2 Power source. The external power adapter must be LPS certified.
- Rest of the World: 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.