



Fiber Gateway Wi-Fi 6

GPON CPE Solution

Description

Targeted to PON FTTH deployment scenarios, this compact multi-play Fiber Gateway (FGW) Wi-Fi 6 equipment family features High-Speed Internet, VoIP, IPTV, and RF Overlay services in a single box, 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 these FGWs is based on the ITU G.984.x recommendations 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. Built-in RJ-45 Copper Ethernet interfaces 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. An FXS RJ-11 port connects voice or fax devices featuring the SIP protocol. A valuable set of built-in LEDs provides fast and pertinent information to the user or installer.

This equipment includes a high-performance Wi-Fi technology that supports dual-band concurrent operation, complying with 802.11a/b/g/n/ac/ax standards, operating simultaneously on the 2.4GHz and 5GHz frequency bands. Compliant with Wi-Fi EasyMesh™ from Wi-Fi Alliance®, these FGWs allow the connection of Wi-Fi extenders to ensure that all home areas have complete Wi-Fi coverage.

Advanced MU-MIMO and OFDMA techniques increase air interface range and throughput, mitigating multi-user interference.

This FGW equipment family is fully interoperable with 3rd party OLTs. The devices 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). A user-friendly web terminal is provided.

Business Benefits

- Compact size, high-speed, and low-power consumption devices for residential customers and SMEs;
- Multi-play services from a single CPE, including High-Speed Internet (HSI), VoIP, and TV (IPTV and RF Overlay);
- 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 and 5GHz wireless frequency bands;
- Multi-vendor OLT interoperability;
- User-friendly web terminal;
- OPEX optimization through auto-provisioning mechanisms (e.g., TR-069, OMCI, and DHCP).



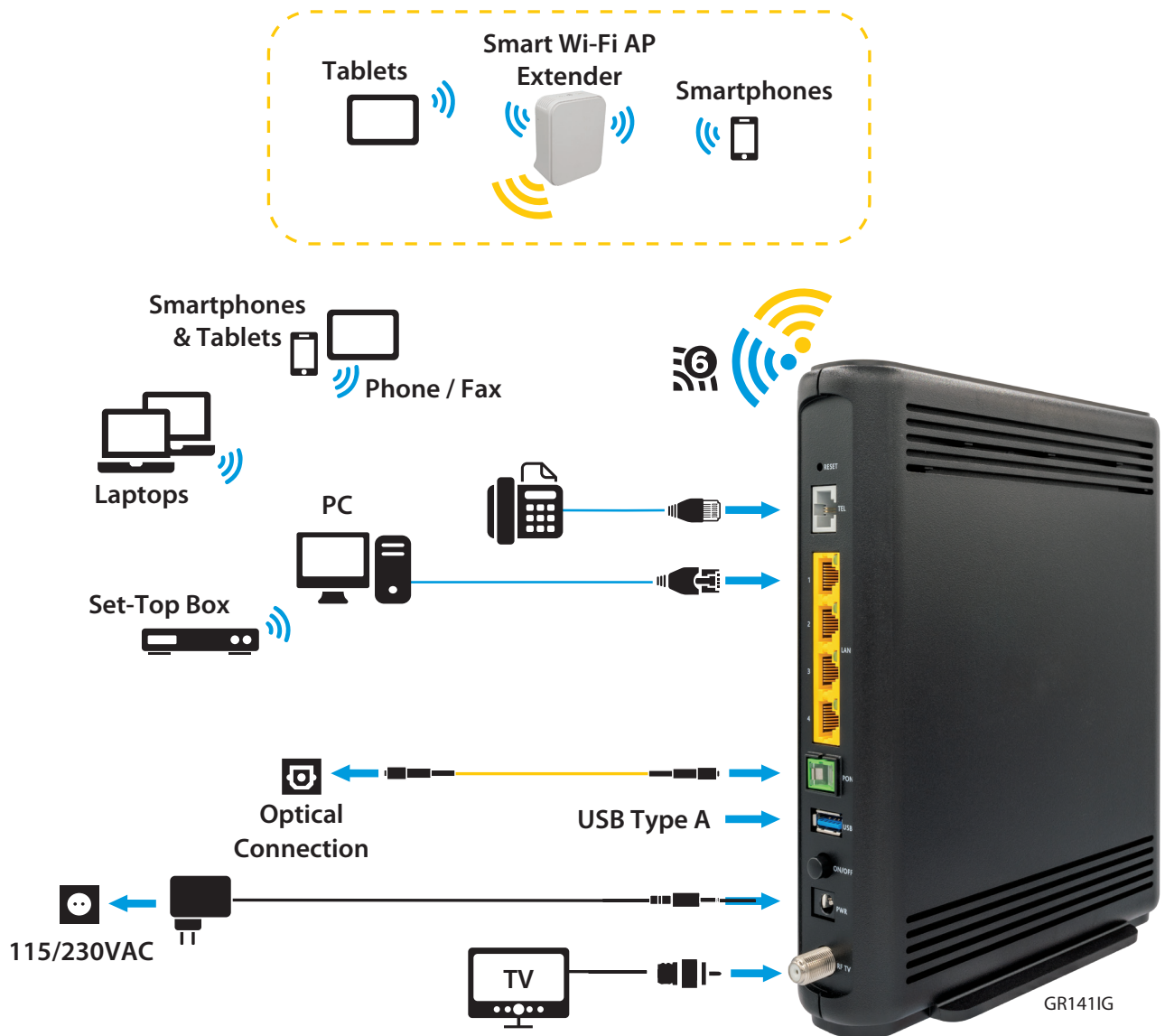
GR141IG



GR140IG

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Scenario



Model	Ports									
	FXS	Ethernet	RF	Wi-Fi 6 Dual Concurrent		USB	PON			
		1GE	Band: (47 ... 870MHz)	Antennas	Power* (dBm EIRP)	Type A	Type	Class	Bit rate (Gbps)	Wavelength (nm)
GR141IG	1x	4x	1x	2.4GHz: 2x2 MIMO 5GHz: 4x4 MIMO	2.4GHz: up to +20 (ETSI) or up to +34 (FCC) 5GHz: up to +30 (ETSI) or up to +34 (FCC)	1x	GPON	B+, C+,D	DS: 2.488 US: 1.244	DS:1480-1500 US:1260-1360
GR140IG	1x	4x	-	2.4GHz: 2x2 MIMO 5GHz: 4x4 MIMO	2.4GHz: up to +20 (ETSI) or up to +34 (FCC) 5GHz: up to +30 (ETSI) or up to +34 (FCC)	1x				

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

Specifications

WAN Uplink Interfaces	G.984.2 GPON and Active Ethernet	
GPON layer per G984.x	Compliant with GPON standards: 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.	
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; Performance: 1 Gbps bidirectional; 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); Simultaneous IPTV streams: 128.	
VoIP specifications	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 6	Functionalities: - 802.11ax compliance; - 802.1x authentication; External RADIUS authentication; - WPA/WPA2; 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. Interfaces: - Concurrent Mode 2.4GHz + 5GHz via internal antennas - 2.4GHz: Compliant with IEEE 802.11a/b/g/n/ac/ax with 2x2 MIMO - 5GHz: Compliant with IEEE 802.11a/n/ac/ax and with 4x4 MIMO - 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 1200 Mbps 802.11ax (5 GHz): up to 4800 Mbps	

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RF Overlay	1 port on an 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 variants).
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.
Energy Efficiency	EU CoC V8, EN 50563, EN 50564, EN 50581
Environment	Temperature Range: +5°C to +40°C Relative Humidity: 5% to 95%
EMC	EN 301 489-1, EN 301 489-17, EN 55032, EN 61000-3-2, EN 61000-3-3, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11
Safety	IEC/EN 60950-1/62368-1
Radio	EN 300 328, EN 301 893 and EN 62311
Equipment Size (HxWxD)	222 x 45 x 190mm / 8.74 x 1.77 x 7.48"
Net Weight	700g / 1.54lb
Power Supply ⁽¹⁾	Primary: 230VAC, 50Hz or 115VAC, 60Hz; Secondary: 12VDC/3A ± 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).

