Fiber Gateway Wi-Fi 7

GPON CPE Solution

Description

Targeted to PON FTTH termination scenarios, this compact multi-play Fiber Gateway Wi-Fi 7 features services such as High-Speed Internet, VoIP, and IPTV from 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 this FGW is based on the ITU G.984.x recommendations, supporting full in-house multi-play services, enabling Data, Voice, and Video services through Ethernet, Wi-Fi, FXS, and USB standard interfaces. Built-in RJ-45 Copper Ethernet interfaces are available for the LAN side, while Wi-Fi 802.11a/b/g/n/ac/ax/be is available for the WLAN side. FXS ports allow the connection of 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-power consumption device also delivers embedded IoT interfacing complying with Thread, Bluetooth, Zigbee and Matter interfaces.

This equipment includes a high-performance Wi-Fi technology that supports tri-band concurrent operation, complying with 802.11a/b/g/n/ac/ax/be 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 the 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, VoIP and IPTV;
- Powerful tri-band concurrent WLAN interface, Wi-Fi 7 compliant;
- Explores the IoT business opportunities by exposing Bluetooth, Thread, Zigbee and Matter standardized interfaces;
- EasyMesh™ Wi-Fi compliance;
- Home Network Security (HNS);
- Mass remote management through OMCI (G.988), TR-069 and Matter standards, thus offering full remote control without user intervention.

BBF.247 GPON CERTIFIED

BBF.398 GRADE Wi-Fi

RDK REFERENCE DESIGN KIT

Wi Fi 7

Bluetooth Low Energy

zigbee

THREAD

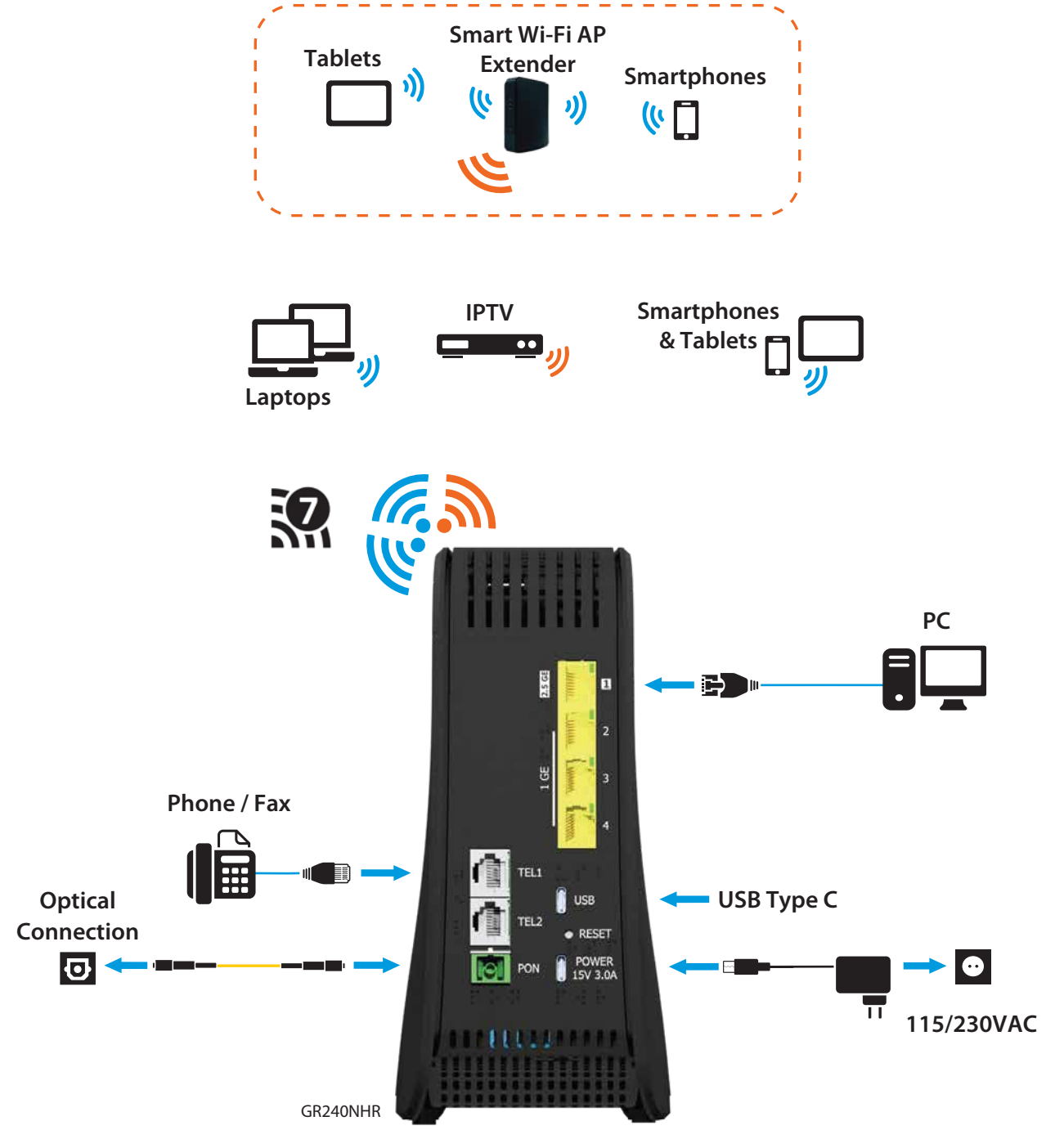
matter

VoIP 2.5GE IPTV

GR240NHR

GR240OH

Scenario



CONNECTIVITY

MODEL	PORTS				WIRELESS							
	FXS	Ethernet		USB	Wi-Fi 7				Thread	Matter	BLE	Zigbee
		1GE	2.5GE		Band	2.4GHz	5GHz	6GHz				
GR240NHR	2	3	1	1 (Type C)	Antennas	3x3	4x4	4x4	√	√	√	√
					EIRP (dBm) (ETSI/FCC)	≤+20/ ≤+24	≤+30/ ≤+34	≤+23 / ≤+30				
GR240OH	2	4	-	1 (Type A)	Antennas	3x3	4x4	-	-	-	-	-
					EIRP (dBm) (ETSI/FCC)	≤+20/ ≤+24	≤+30/ ≤+34	-				

Specifications

WAN Uplink Interfaces	G.984.2 GPON
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); Internet of Thing (IoT); Home Network Security (HNS).
Wi-Fi 7	Functionalities: - 802.11be compliance; - 802.1x authentication; External RADIUS authentication; - WPA/WPA2/WPA3; - AES and TKIP Encryption; - Wi-Fi multimedia support: WMM and WMM-PS; - Multi Link Operation (MLO) **(GR240NHR)**; - Additional 320MHz channels at 6GHz band **(GR240NHR)**; - Additional 4096QAM modulation; - 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/be with 3x3 MIMO — up to +20dBm EIRP(ETSI) or up to +24dBm EIRP (FCC) - 5GHz: Compliant with IEEE 802.11a/n/ac/ax/be and with 4x4 MIMO — up to +30dBm EIRP (ETSI) or up to +34dBm EIRP (FCC) - 6GHz: Compliant with IEEE 802.11ax/be and with 4x4 MIMO — up to +23dBm EIRP (ETSI) or up to +30dBm EIRP (FCC) **(GR240NHR)** - Channel Bandwidth: 20, 40, 80, 80+80, 160, 320 - 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 **(GR240NHR)** 802.11be (2.4 GHz): up to 1375 Mbps 802.11be (5 GHz): up to 5760 Mbps 802.11be (6 GHz): up to 11500 Mbps **(GR240NHR)**

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POTS	RJ-45 FXS port
USB	USB Type C **(GR240NHR)** / USB Type A **(GR240OH)**
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 10/100/1000Base-T; Auto-negotiation support; Auto MDI/MDIX support RJ-45 1/2.5GBase-T; Auto-negotiation support; Auto MDI/MDIX support **(GR240OH)**
IoT	Bluetooth low energy; Matter; Thread; Zigbee **(GR240NHR)**
Energy Efficiency	EU CoC V8, EN 50563, EN 50564, EN 50581
Environment	Temperature Range: +5ºC to +40ºC 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)	[192.8 x 92.6 (base) x 185]mm/ [7.6 x 3.6 (base) x 7.3]"
Net Weight	1081g / 2.4lb
Power Supply (1)	Primary: 230VAC, 50Hz or 115VAC, 60Hz Secondary: 15VDC/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).

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