



# INNBOX G78

Supreme GPON FTTH Home Gateway



Full gigabit throughput



Top-of-the-line wireless performance



Broad management capabilities



By introducing the latest fibre GPON fibre-access technology, Innbox brings a carrier-class, high-end networking solution for advanced triple-play services. Complying with the latest ITU-T G.984 GPON standard, the **Innbox G78** GPON home gateway is designed for service providers meeting the demand for high-speed connections, and offers data rates up to 2.5 Gbps in downstream and up to 1.25 Gbps in upstream.

The **Innbox G78** is designed for indoor applications, as a cost-optimal alternative to outdoor solutions, and significantly lowers the CAPEX of advanced FTTH deployments.

Innbox G78 GPON home gateway supports the delivery of all triple-play services: internet data, voice over IP, and IP video, including bandwidth-consuming HD TV. It provides four full-gigabit Ethernet ports, as well as wireless access point of the latest **802.11n/ac** standard that relieves the users of those troublesome wirings.

Using a **dual-band Wi-Fi** technology (with concurrent 2.4 GHz and 5 GHz), the delivery of services to all wireless devices and supreme user experience

are never compromised. Supporting the fastest 802.11ac Wave 2 with **multi-user MIMO** (MU-MIMO), Innbox G78 boosts network efficiency and meets the demands for the growing device density on your network.

Adding to local connectivity, Innbox G78 offers one port for telephony services, using a SIP-compatible VoIP technology.

With embedded NAT, firewall and IP sharing, Innbox G78 delivers a **secure**

**internet access** that can be shared by all connected clients.

A USB 2.0 host port is available to enable **value-added features**, such as a file server, an FTP server, a printer server, a hub or an external 3G/LTE modem. In addition, the Innbox G78 embeds a Quality of Experience (QoE) monitoring client which enables on-line evaluation of the data path all the way to the gateway, reflecting in a significantly **lower operator OPEX**.

## KEY FEATURES AND BENEFITS

- ITU G.984 GPON compliant
- Powerful full-gigabit engine for enhanced services
- USB 2.0, Gigabit Ethernet, FXS for POTS, 3G/LTE
- 802.11n/ac MU-MIMO, dual-band 2.4 GHz/5 GHz
- Triple-play home gateway for multiple HDTV IP streams
- Fully-featured router and firewall, with secure wireless transmission and authentication
- Line-rate routing performance
- Embedded QoE-monitoring solution
- K.21 overvoltage protection on all wired interfaces



### WAN specifications

- Full ITU-T G.984 compliance
- SC/APC connector
- Tx (1.25 Gbps upstream data rate)
  - 1310 nm; launch power from 0.5 dBm to +5 dBm
- Rx (2.5 Gbps downstream data rate)
  - 1490 nm; input power overload –8 dBm

### GPON

- Fully ITU-T G.984 compliant framing
- Multiple T-CONTs per device
- Multiple GEM ports per device
- Activation with auto-discovery of SN and password in conformance with ITU-T
- AES-128 decryption with key generation and switching
- Forward error correction
- 802.1p mapper service profile on U/S
- Support for multicast GEM port

### Bandwidth/Distance

- Compliant with ITU-T G.984.5, Class B+
  - APD receiver and DFB transmitter
  - From 0.5 dBm to +5dBm launch power
  - –27 dBm sensitivity; –8 dBm overload

### Local interfaces

- 4 ports Gigabit Ethernet 10/100/1000Base-TX (RJ-45)
  - Automatic MDI/MDIX crossover, Auto-negotiation and speed auto-sensing, half/full duplex support
  - Meets IEEE 802.3 specifications
  - Support for 802.1Q and 802.1p VLAN
- 1 port FXS (RJ-11) for POTS connection
- 1 port USB 2.0 with host connector

### Wireless

- 802.11b/g/n 2x2 MIMO and 802.11ac 3x3 MU-MIMO
- Concurrent WLAN access point with internal antennas
- Wi-Fi protected setup (WPS)
- WEP with 64- or 128-bit key lengths
- WPA/WPA2 in PSK mode or using EAP with RADIUS
- Access control list based on MAC address

### Bridging

- Ethernet bridging/switching per IEEE 802.1D/802.1Q
- Traffic management (priority queuing, traffic shaping)
- QoS with support for IEEE 802.1p and DSCP
- Per-port IEEE 802.1Q VLAN ID processing
- VLAN tagging/untagging
- IGMP v2/v3 snooping
- Automatic MAC learning and aging
- Unlimited MAC addresses for OMCI-configured flows
- Support for 4096 MAC addresses for RG traffic flows
- Broadcast storm control

### IP routing

- IP routing: RIP1, RIP2, static routing
- RFC2684 (RFC1483) routed
- PPPoE client, PPPoE pass-through
- DHCP client, server and relay (RFC2131)
- (D)DNS client and relay
- IP multicast IGMP proxy
- RTP proxy PPPoE
- NAT/NAPT with port forwarding

### USB 2.0 applications

- File server (using USB 2.0 disk, flash or HDD), DLNA
- Printer server
- Hub connectivity
- 3G or LTE modem (optional)

### Security and QoS

- NAT (RFC3022) basic firewall with extensive ALG support
- Firewall with well-known applications setup
- URL filtering
- Time scheduler (parental control)
- DMZ/IP pass-through
- VPN pass-through
- ToS/DSCP-to-CoS mapping
- Bandwidth reservation
- Voice traffic prioritisation

### Configuration and network management

- OMCI
- UPnP/DLNA
- Simple port configuration
- Telnet for local or remote management
- Web for firmware upgrade and configuration
- Web-based management (multi-level GUI)
- Management of remote mesh Wi-Fi satellite APs
- TR-069 data-frame model, TR-098, TR-104, TR-106
- IxRave QoE monitoring client of Ixia® (optional), TR-143
- IPERF and TCP dump (optional)
- Buttons: WLAN, WPS, reset

### Voice support

- G.711 (64 kbps, A-law,  $\mu$ -law), G.729ab (8 kbps) (optional)
- Line echo cancellation G.168 with configurable tail
- Voice-activity detection, Comfort noise generation
- Adaptive jitter buffer and packet-loss compensation
- DTMF dialling, modem/fax tone detection, pass-through
- SIPv2 (RFC 3261), RTP (RFC3550)
- RTP profile for audio and video conferences (RFC 3551)
- RTP payload for DTMF events (RFC2833)
- Caller ID (Type-1 and 2)
- T.38 Fax

### Power

- External 115-230 V AC, 50-60 Hz, 12 V DC 2.5 A
- Power consumption less than 24W

### Physical dimensions

- 190 mm x 255 mm x 27 mm
- 0.57 kg (without power adapter)

### Environment

- Operating: 0..48 °C, RH 5..90% non-condensing, compliant with ETSI 300 019-1-3, Class 3.1
- Storage: –20..+70 °C; RH 10..95% non-condensing, compliant with ETSI 300 019-1-1, Class 1.2

### Certification

- CE, CB, RoHS compliant

Some features are hardware-dependent.

Some features might not be included in dedicated software releases.

Date of issue: 2. 4. 2019 / Version 3.6



# ISKRATEL

IskrateL, d. o. o., Kranj  
Ljubljanska cesta 24a  
SI 4000 Kranj, Slovenia

P +386 4 207 20 00  
F +386 4 207 27 12

info@iskratel.si  
www.innbox.net  
www.iskrateL.com



Telco



Transport



Energy



Public Safety