By introducing All-in-One Universal Home Gateway with latest design awarded broadband technology, Iskratel brings carrier class high-end networking solution for multi-access service providers offering complex triple play services, including multiple HDTV channel support over local wireless network. Universal Home Gateway Innbox V60-U combines powerful home networking engine and common versatile broadband platform (including ADSL2+, VDSL2, electrical Ethernet, mobile 3G, GPON and P2P FTTH modem) in a single device. It enables service providers to offer line-speed connections up to 1Gbps. Furthermore, Innbox V60-U enables multiple profile arrangement to gain symmetrical or asymmetrical connections from CO, remote access module or base station deployments providing desired bandwidths for even more distant end customers.

Universal Home Gateway fits in service providers’ environments using different broadband access technologies: from ADSL2+ in legacy environments and VDSL2 with bandwidth consuming scenarios in FTTC environments to FTTH scenarios where electrical Ethernet interface is needed. Additionally, Universal Home Gateway Innbox V60-U can be used in modern, full FTTH P2P or GPON scenarios by using additional SFP transceiver, either 100BaseFX, 1000BaseFX or GPON. Wireless 3G access technology can be utilized by additional USB 3G module in case of backup connectivity or wired technology is not available. Using same stock keeping unit can reflect in significant OPEX reduction, especially to mid-size multi-access service providers.

The Universal Home Gateway Innbox V60-U supports delivery of all triple play services: internet data, Voice over IP (VoIP) and IP video including bandwidth consuming HDTV.

Key Features and Benefits:

- Powerfull Full Gigabit Home Gateway engine for offering 3Play services on broadband connectivity
- Multiple WAN interface options: ADSL2+, VDSL2, Ethernet, 3G, P2P FTTH, GPON
- Multiple LAN interface options: USB2.0, Gigabit Ethernet, FXS for POTS, WLAN 802.11N 2.4GHz/5GHz
- Real 3Play proven Home Gateway to provide multiple HDTV IP streams
- Line rate routing performance
- Fully featured Router and Firewall, secure wireless transmitting and authentication
- Vectoring support
- Embedded QoE monitoring solution
- Support for centralized management node of multiple CPE (e.g. controlled mass remote SW upgrade and auto configuration provisioning), TR-069
- Optional Fiber Termination Unit with RF Fiber-Coax converter
INNBOX V60-U

TECHNICAL SPECIFICATIONS

Note: some features are hardware dependant; some feature may not be included in dedicated software release.

WAN Specifications
- Six (6) options of WAN connectivity: ADSL2+, VDSL2, Ethernet, 3G, P2P, FTTH or GPON FTTH
- DSL interface:
  - Copper pair loop, 100 ohm line impedance, RJ-11
  - Comply with ADSL ITU-T G.992.1 (G.dmt), G.992.2 (G.9-lite), ANSI T1.413 2, G.992.3 ADSL2+ (G.dmt.bis), G.992.5 ADSL2+ (G.dmt.bis+)
  - Comply with VDSL2 ITU-T G.993.2 (DMT), ETSI TS 101-270-1 V1.3.1 and ETSI TS 101-270-2 V1.2.1
  - Profiles supported 8a, 8b, 8c, 8d, 12a, 12b, 17a
  - Support for vectoring ITU-T G.993.5
  - Support for 997 and 998 Band plan
  - Support for USO band
  - Support for ISDN and POTS complementary services

Ethernet Interface:
- Comply with Gigabit Ethernet 10/100/1000Base-TX (RJ-45), reconfigurable to electrical Ethernet LAN
- Optical (FTTH) interface (optional, additional external module):
  - SFP cage, support for dual rate 100baseFX and 1000baseFX interface, GPON SFP module (optional)
3G Wireless/Mobile interface (optional, additional external module):
- 3G USB modem (external dongle)
- Networks supported: HSPA/UMTS (2100MHz, 900MHz), GSM/GPRS/EDGE (850/900/1800/1900MHz)
- Data service support HSPA+ (21 Mbps), HSUPA (5.76 Mbps), UMTS (384 Kbps), EDGE (237 Kbps), GPRS (85.6 Kbps)

Local Interface
- 4 port Gigabit Ethernet 10/100/1000base-TX (RJ-45)
- 1 port Gigabit Ethernet 10/100/1000base-TX (RJ-45), reconfigurable to electrical Ethernet WAN
- Automatic MDI/MIDX crossover, Auto-negotiation and speed-auto-sensing, Half/Full duplex support
- 2 port USB 2.0 host connectors
- Internal 802.11bgn WLAN Access Point, 2x2 MIMO, 2.4GHz (2GHz second band, simultaneous operation; optional) internal antennas
- 2 port FXS (RJ-11) for POTS connection
- 1 port FCO (RJ-11) for Line (PSTN) connection (optional)
- DECT base station, internal antenna (optional)

Bridging
- Transparent Bridging (IEEE 802.1D)
- RFC2684 (RFC1483) Bridged
- VLAN tagging (IEEE 802.1Q)
- Service based tagging (SBT)
- Supporting QoS (IEEE 802.1p)
- Supporting IP and PPPoE packets filter function
- IGMP transparent snooping
- IGMP forking (optional)
- RTP Proxy

Routing
- IP routing: RIP1, RIP2, and static routing
- RFC2684 (RFC1483) Routed
- PPPoE client
- PPPoE pass-through
- DHCP client, server & relay (RFC2131)
- DDNS client & relay
- IP Multicast IGMP Proxy
- Voice Activity Detection (VAD), Comfort Noise Generation (CNG)
- Line Echo Cancellation G.168 with configurable tail
- DTMF (tone) dialing, modem/fax tone detection and pass-through
- Supports SIPv2 (RFC 3261), RTP (RFC3550)
- Supports RTP Profile for Audio and Video Conferences with minimal control (RFC 3551)
- Supports RTP payload for DTMF events (RFC2833)
- Caller ID (Type-1 and 2)
- Voice compressions G.711 (64kbps, A-law, u-law PCM), G.729ab (8kbps) - optional
- Line Echo Cancellation G.168 with configurable tail
- Voice Activity Detection (VAD), Comfort Noise Generation (CNG)
- Adaptive jitter buffer and Packet Loss Compensation (PLC)
- DTMF (tone) dialing, modem/fax tone detection and pass-through
- Supports SIPv2 (RFC 3261), RTP (RFC3550)

USB2.0 applications
- File server (by using USB2.0 disk, flash or HDD)
- Printer server
- Hub connectivity
- 3G modem (optional)

Wireless
- WiFi Protected Setup (WPS)
- WEP: 64 or 128 bits key length
- WPA/WPA2 (Wi-Fi Protected Access) in PSK mode or using EAP with RADIUS
- Access control list based on MAC address

Power
- External 115-230 VAC, 50 - 60 Hz, 12VDC 2A - 2.5A (depends on variant)
- UPS connector (optional)
- Power consumption, less than 24W (depends on variant and options)

Physical dimensions
- 155mm x 230mm x 38mm (W x D x H), weight 0.4 kg

Environment
- Operating Temperature: 5°C ~ 40°C, Humidity: 5% ~ 85% (non condensing), compliant with ETSI 300 019-1~3, Class 3.1
- Storage Temperature: -25°C ~ +55°C, Humidity: 10% ~ 95% (non condensing), compliant with ETSI 300 019-1 ~ 3, Class 1.2

Security & QoS
- NAT (RFC3022) basic Firewall support 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 prioritization

Configuration & Network Management
- UPnP, DLNA
- Simple port configuration
- DHCP server for IP management
- Telnet for local or remote management
- SNMP v1, v2 (optional)
- WEB for firmware upgrade and configuration
- WEB-based configuration and management (multi-level GUI)
- TR-069 data-frame model support, including TR-098, TR-104 and TR-106
- iRave QoE monitoring client of Ixia® (optional)
- IPERF (optional)
- Buttons: WLAN, WPS, Reset

Voice support
- Voice compressions G.711 (64kbps, A-law, u-law PCM), G.729ab (8kbps) – optional
- Voice Activity Detection (VAD), Comfort Noise Generation (CNG)
- Adaptive jitter buffer and Packet Loss Compensation (PLC)
- DTMF (tone) dialing, modem/fax tone detection and pass-through
- Supports SIPv2 (RFC 3261), RTP (RFC3550)
- Supports RTP Profile for Audio and Video Conferences with minimal control (RFC 3551)
- Supports RTP payload for DTMF events (RFC2833)
- Caller ID (Type-1 and 2)

Optional accessories
- FTU with RF Fiber-Coax converter, Innbox C30
- SFP optical modules (various models)
- 3G USB modem, Innbox WU520

Certification
- CE, CB, RoHS and WEEE compliant

Issued by Iskratel, d.o.o., Kranj.
All rights reserved. Information in this document is subject to change without notice.
The content of this document is the property of Innbox / Iskratel, Kranj, Slovenia, and shall not be copied, multiplied or disclosed to third persons without previous written consent of the owner.

Date of issue: 3.2.2014 / Version 6.0