



# INNBOX V60-U

Universal Home Gateway

**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/LTE, GPON and P2P FTTH modem) in a single device. It enables service providers to offer line-speed connections up to 2.5Gbps. 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 provider's environments using different broadband access technologies: from ADSL2+ in legacy environments and VDSL2 with bandwidth consuming scenarios in FTTC environments to FTTB 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. In cases where there is a need for a backup connection or when wired access infrastructure is not available, mobile 3G and LTE wireless access technology can be utilized by employing an optional USB module. Using same stock keeping unit for all broadband access technologies can really 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.

It provides five full-gigabit Ethernet ports as well as wireless access point of the latest standard 802.11N/AC that brings relief to those troublesome wirings. Using concurrent dual-band (2.4GHz and 5GHz) WiFi technology, the delivery of user experience on all wireless devices is never compromised.

Two ports for telephony services are provided using Voice over IP technology compatible with SIP server environments. In addition, DECT base station is embedded in the Universal Home Gateway (optional).

With embedded firewall and IP sharing technology this Home Gateway delivers secure broadband Internet access shared by all connected clients.

Furthermore two USB2.0 host ports are available to enable value-added features such as file server, FTP server, printer server, hub or external 3G modem connectivity.

The Universal Home Gateway Innbox V60-U also embeds special Quality of Experience (QoE) monitoring client which enables on-line evaluation of data path all the way to HGW, which can reflect in further OPEX optimization.

## Key Features and Benefits >

Powerful Gigabit Home Gateway engine for offering 3Play services on broadband connectivity

Multiple WAN interface options: ADSL2+, VDSL2, Ethernet, 3G/LTE, P2P FTTH, GPON

Multiple LAN interface options: USB2.0, Gigabit Ethernet, FXO/FXS for POTS, DECT, WiFi 802.11N/AC concurrent dual band 2.4GHz/5GHz, UPS

Real 3Play proven Home Gateway easily handling multiple HDTV IP streams

Line rate routing performance, VDSL Vectoring support

Fully featured Router and Firewall, secure wireless transmitting and authentication

Embedded QoE monitoring solution from Ixia®

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

K.21 overvoltage protection on all wired interfaces

## 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/LTE, 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.lite), ANSI T1.413 i2, 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 US0 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 with dual rate (FE and GE) support, GPON SFP module (optional)

#### 3G/LTE Mobile interface (optional, additional external module):

- Networks supported: LTE FDD (Band 1/3/7/8/20), HSPA/UMTS (2100MHz, 900MHz), GSM/GPRS/EDGE (850/900/1800/1900MHz)
- Data services supported: LTE-FDD R9 Cat 3 (100Mbps), 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/MDIX 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 (802.11a or 802.11ac 5GHz second band, concurrent operation; optional) internal antennas
- 2 port FXS (RJ-11) for POTS connection
- 1 port FXO (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)

### 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
- RTP Proxy

### Visual Indicators

- Broadband – indicates WAN connection status
- Internet – indicates IP connectivity status
- Data – indicates LAN connection status
- Wireless – indicates status of WLAN
- USB – indicates USB status
- Phone – indicates VoIP is ready
- DECT – indicates DECT operation
- Battery – indicates backup power operation



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### 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
- IxRave 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
- 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)
- 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)

### USB2.0 applications

- File server (by using USB2.0 disk, flash or HDD), DLNA
- Printer server
- Hub connectivity
- 3G or LTE 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)
- K.21 overvoltage protection on all wired interfaces

### Physical dimensions

- 155mm x 230mm x 38mm (W x D x H), weight 0.5 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 -1, Class 1.2

### Optional accessories

- FTU with RF Fiber-Coax converter, Innbox C30
- SFP optical modules (various models)
- 3G USB modem, Innbox WU520
- LTE USB modem, Coming soon...

### Certification

- CE, CB, RoHS and WEEE compliant

