

# ZyXEL



## All-in-one VDSL2 VoIP IAD for Triple-play Services

- IP-based VDSL2 High-Speed Internet Access
- Multiple SIP Numbers and Voice Channels Enabling Feature-rich Phone Services over Internet Connection
- New QoS with More Powerful Functionalities to Prioritize Traffics for Better Bandwidth Utilization
- Firewall Protection and IPSec VPN Security
- Easy Installation and TR-069/TR-104 Compliance

### Benefits

#### All-in-one 802.11g Wireless VDSL2 VoIP IAD

The VDSL2 standard is a new technology suitable for triple-play (video, voice and data) applications. ZyXEL's P-2802HW-I Series is a wireless 802.11g VoIP router that offers up to 100 Mbps upstream and downstream bandwidths, providing higher speeds than traditional ADSL2+ IAD. With the ZyXEL P-2802HW-I Series VDSL2 IAD, Telco and ITSP users can generate more revenue from triple-play services.

#### Effective Enhancement to Quality of Service (QoS)

The P-2802HW-I Series enables users to allocate voice, video, and data application resources while guaranteeing Quality of Service (QoS). ZyXEL's new QoS features increase productivity and efficiency through classifying, prioritizing, queuing and scheduling traffics for specific demands such as time-sensitive VoIP and multimedia applications (IPTV service, for example). Furthermore, ZyXEL also provides a mechanism that performs auto-mapping by packet size, DSCP or COS.

#### Phone Bill Savings

The ZyXEL P-2802HW-I Series supports multiple SIP numbers and a mechanism that assigns numbers freely. Even if the ITSP provides only one SIP number, the P-2802HW-I Series still allows users to operate 2 phone ports simultaneously, which not only increases convenience for users, but also creates more revenue for the service provider. In case of an unexpected power failure, users can still make regular phone calls with the Lifeline support. When the VoIP service becomes unavailable, this feature will kick in to place phone calls through the PSTN phone system.

#### Robust Firewall and Secure VPN Connectivity

The ICSA-Compliance ZyNOS operating system ensures state-of-the-art firewall performance and robust security of the P-2802HW-I Series. Based on Stateful Packet Inspection and Denial of Service (DoS) features, it provides the first-line defense against hackers, network intruders and other hazardous threats.

#### Easy Installation and TR-069/TR-104 Compliance

The TR-069/TR-104 functionalities allow service providers to manage and configure the unit remotely in order to reduce CPE deployment complexity and cost for end users. This is particularly beneficial should any network problem occur.



802.11g Wireless VDSL2 VoIP IAD

P-2802HW-I  
SERIES



# VOIP



## Specifications

### System Specifications

#### VDSL2 Standard Compliance

- ITU-T G.993.1 (VDSL)
- ITU-T G.993.2 (VDSL2 Profiles: 8a/8b/8c/8d, 12a/12b, and 17a (30a 100/100M, Optional))
- Band plan 997 and 998
- LR-VDSL2

#### Router Features

- Ethernet WAN (Port 1 configured as WAN port while VDSL2 disabled)
- NAT (includes multi-to-multi NAT)/SUA
- NAT Server (Port Forwarding)
- VPN (IPSec, PPTP, & L2TP) Pass through
- DNS Proxy
- Dynamic DNS
- IP Alias
- DHCP Client/Server/Relay
- RIP I/RIP II Supported
- Support IP Static Route
- IGMP Snooping
- IP Multicasting, IGMP v1 and v2
- IP Policy Routing
- UPnP Support
- NTP

#### Voice

- SIP (RFC 3261) Version 2
- G711 a/μ, G.729a/b; G.726\*, G.723.1\*
- G.168 Echo Cancellation
- T.38 FAX Relay\*
- Transparent Fax Relay over G.711
- Fax/modem Detection and Pass-through
- Voice Activity Detection (VAD)
- Silence Suppression
- Comfort Noise Generation (CNG)
- Dynamic Jitter Butter
- DTMF Detection and Generation
- DTMF relay by In-Band and Out-of-Band (RFC 2833, SIP INFO)

#### Voice Supplementary Service

- Caller ID
- Call-Waiting CID
- Anonymous Call (hide the source calling number)
- Call Waiting
- Call Forwarding (No condition, Busy, No answer)
- Call Transferring (Blind, ConsultOnHold, Attendant)
- Call Accept
- Call Block
- Three Way Conference
- Conference-DSP Local Mixer
- Conference: Ad-Hoc Conference
- Conference: Call Transfer after Conference
- Conference-in Media Mixer Server

- Call Park/Call Pickup
- Call Hold/Call Retrieve
- Second Call
- Early Media
- IVR (Interactive Voice Response)
- Flash Hook Timer
- Music on Hold
- Message Waiting Indicator (RFC 3842)
- Call Fallback
- Abbreviated Dialing (Speed Dial)
- Phone Book
- Internal Call
- Do NOT Disturb\*
- Distinctive Ringing\*
- Call Return\*
- Emergency Call
- Hot Line

#### Lifeline Support (For P-2802HW-1x)

- Analog phone connected to FXS can receive incoming PSTN phone Call
- Make a PSTN call by dialing pre-fix number
- Send emergency call through PSTN line
- PSTN relay when device power down (FXS1 Only)
- Forward calls between PSTN and VoIP with PIN authentication\*

#### QoS

- Voice data as highest priority
- Layer 2 to Layer 3 QoS
- Priority Auto-Mapping by Packet Size, DSCP or COS
- TR-098 QoS\*
- 802.1p and 802.1q Auto priority Mapping

#### Management

- SNMP v1 & v2 with MIB II
- Embedded FTP/TFTP Server for f/w upgrade and romfile backup and restore
- Telnet for remote management
- Remote Management Control: Telnet, FTP, Web, SNMP and DNS
- Centralized Logs
- TR-069/TR-104/TR-111\*

#### Firewall Security

- Stateful Packet Inspection
- Prevent DoS Attack
- Access Control of Service
- Content Filtering
- IP & Generic Packet Filtering
- Real-time Attack Alert and Logs

#### Virtual Private Network

- 2 IPSec VPN Tunnels running
- IKE and Manual Key Management
- AH and ESP Protocol
- DES/3DES and AES Encryption (S/W)

- SHA-1 and MD5 Authentication
- Tunnel and Transport Mode Encapsulation
- IPSec NAT Traversal
- NETBIOS pass-through for IPSec

#### Wireless

- IEEE 802.11b/g Compliance
- Reset button for WLAN on/off
- WPA/WPA2 support 802.11i
- OTIST (ZyXEL's One-Touch Intelligent Security Technology)
- 32 MAC Address filter
- Support IEEE 802.1x
- 32 Built-in user profile: EAP-MD5 challenge
- External Radius server: EAP-MD5, TLS, TTLS
- Multiple ESSID\*
- WPS\*

#### Hardware Specifications

- Antenna: 2.9 dBi, non-detachable
- WAN: RJ-11 for over POTS; RJ-45 for over ISDN
- LAN: 4 port Ethernet
- FXS: 2 POTS port
- FXO: 1 POTS port (For P-2802HW-1x)
- Power switch: push button
- Reset button: Restore Factory Defaults

#### Physical Specifications

- Dimensions: 165 (W) x 65 (D) x 242 (H) mm
- Weight: 600 g

#### Environmental Specifications

- Operating temperature: 0°C ~ 40°C
- Operating humidity: 20% ~ 85% RH (non-condensing)
- Storage temperature: -20°C ~ 60°C
- Storage humidity: 20% ~ 90% RH (non-condensing)

#### Certification

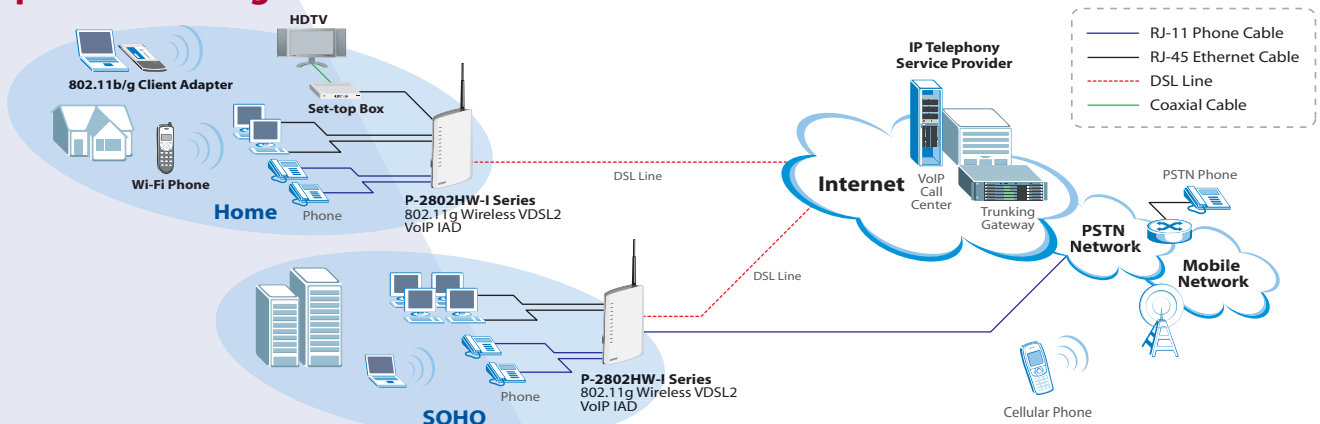
- Safety: CSA international
- EMI: CE, FCC part 15B

\* Firmware upgradeable for future enhancement.

## Product Description

- P-2802HW-11** 802.11g Wireless VDSL2 VoIP IAD over POTS
- P-2802HW-13** 802.11g Wireless VDSL2 VoIP IAD over ISDN
- P-2802HW-11** 802.11g Wireless VDSL2 VoIP IAD over POTS with Lifeline
- P-2802HW-13** 802.11g Wireless VDSL2 VoIP IAD over ISDN with Lifeline

## Application Diagram



For more product information, visit us on the web [www.ZyXEL.com](http://www.ZyXEL.com)