

ZyXEL



Saving Money with Toll-free Calls

- **Multiple SIP numbers and Multiple Voice Channels**
- **Flexibly Forward calls from PSTN to VoIP and Vice Versa**
- **Advanced Security with WPA2 Encryption**
- **Robust SPI Firewall Protection**
- **Media Bandwidth Management (MBM) QoS**

Benefits

Enabling VoIP Phone Services

The two built-in standard phone jacks on the P-2302HWL-P1 allow you to enjoy VoIP conversations while surfing the Internet. Since phone numbers given by service providers can be assigned to each phone port individually or to the two ports at the same time, the P-2302HWL-P1 gives you a two-line phone system without extra charge. This offers unprecedented flexibility and freedom for you to talk nonstop with high-speed broadband connection.

Savings on Phone Bills

By calling through PSTN or VoIP network flexibly, economical calling plans can be planned to minimize phone tolls by leveraging low-cost IP telephony. For example, users can make long-distance calls with P-2302HWL-P1 through Internet VoIP, and switch to traditional PSTN for local access.

A Faster Wireless LAN

The P-2302HWL-P1 complies with the 802.11g wireless standard that enables data to travel as fast as 54Mbps. The advanced 802.11g technology boosts the throughput between ZyXEL P-2302HWL-P1 and the wireless clients to 54Mbps, while maintaining the interoperability with 802.11b at 11Mbps.

Robust Firewall Security

The ICSA-certified ZyNOS operating system ensures state-of-art firewall performance and robust security from the P-2302HWL-P1. Based on Stateful Packet Inspection, DoS (Denial of Service) and DDoS features, it provides the first-line defense against hackers, network intruders, and other malicious threats.

Carrier Grade QoS Solutions

The P-2302HWL-P1 enables network administrators to allocate network resources while guaranteeing Quality of Service (QoS). The QoS Management increases productivity and efficiency by tailoring a system to specific demands such as time-sensitive VoIP and other multimedia applications.

802.11g Wireless
VoIP Station Gateway

P-2302HWL-P1



VOIP



Specifications

Router

- TCP/IP
- PPPoE
- NAT (includes multi-to-multi NAT)/SUA, 2048 NAT sessions
- DNS Proxy
- Dynamic DNS
- IP Alias
- DHCP client/server/relay
- RIP I/RIP II supported
- Support 16 IP Static route
- IP Multicasting, IGMP v1 and v2
- IP Policy Routing
- UPnP support
- Support TOS & Diffserv tagging
- SNTP-Simple Network Time Protocol (RFC 2030)

Firewall Security

- Stateful Packet Inspection
- Content Filtering, Java/ActiveX/Cookie/Keyword blocking
- Prevent DoS Attack
- Access Control of Service
- IP & Generic Packet Filtering
- Real-time Attack Alert and Logs
- Major ALG (SIP/FTP/H.323)

Management

- Secure TFTP and HTTP
- Web-based Configuration Tool
- Telnet Management
- Remote TFTP/HTTP Firmware Upgrade
- Remote Firmware Update
- Web help information
- SNMP v1 & v2 with MIBII

Wireless

- IEEE 802.11g Compliance
- Frequency Range: 2.4 GHz ISM Band
- Data Rates: 54Mbps, 48Mbps, 36Mbps, 24Mbps, 12Mbps, 11Mbps, 6Mbps, 5.5Mbps, 2Mbps, 1Mbps Auto Fallback
- MAC Address filter
- Seamless Roaming
- Support IEEE 802.1x, External Radius server: EAP-MD5, TLS, TTLS, PEAP
- WPA, IEEE 802.11i, WPA2

QoS

- VLAN Tagging Support
- TOS
- MBM (Media Bandwidth Management)

Voice Features

Voice Codec

- G.711a/μ
- G.729 a/b
- G.726 (16/24/32/40kbps)*
- G.723.1 (6.3kbps, 5.3kbps)*

Voice

- SIP v2 (RFC3261)
- DNS SRV*
- SDP (RFC 2327)
- RTP (RFC1889)
- RTCP (RFC1890)
- Echo Cancellation: G.168/G.165
- Frame Loss Concealment
- VAD (Voice Activity Detection)
- Silence Suppression
- CNG (Comfort Noise Generation)
- Dynamic Jitter Buffer (Adaptive)
- DTMF Detection and Generation
- DTMF: In-Band and Out-of-Band (RFC 2833), (SIP INFO)
- Fax, Modem Detection and Pass-through*
- Speed Dial Phonebook (10 entries)
- Flexible Dial Plan (RFC3525 section 7.1.14)
- Multiple SIP Accounts/Phone Numbers- Freely assignable Numbers to Each Phone Port
- Caller ID Generation/Detection (Name & Number) - Bellcore, DTMF, ESTI

Phone Features

- Caller ID
- Message Waiting Indicator (RFC 3842)
- T.38 FAX Relay*
- IVR (Interactive Voice Response)
- Call Waiting
- Call Hold
- Early Media
- Music on Hold
- Flash Hook Timer
- Call Transferring (Blind and Attended Transfer)
- Call Forwarding to PSTN or VoIP
- Do Not Disturb
- Three Way Conference
- Abbreviated Dialing
- Last Number Redial*
- VMWI-Via LED*

FXO

- Relay Emergency Call to PSTN
- Dial a PSTN Call by Pre-fix Number
- PSTN Relay when Power Down/SIP register fail (FXS1 Only)
- Receive Incoming PSTN Phone Call
- Forward Calls to VoIP Network-Selective, Authenticated, All
- Forward Calls to PSTN Network-Selective, Authenticated, All

VoIP to PSTN Authentication and Routing Features

- VoIP to PSTN Call Enable/Disable
- VoIP to PSTN Call Auth time-out timer
- VoIP to PSTN Caller Auth Method: None, PIN
- PIN digit time out timer
- AA Time-out Timer

PSTN to VoIP Authentication and Routing Features

- PSTN to VoIP Call Enable/Disable
- PSTN to VoIP Call Auth time-out timer
- PSTN to VoIP Caller Auth Method: None, PIN
- PIN digit time out timer
- Ring through to FXS
- AA Time-out Timer

NAT Traversal

- STUN (RFC 3489)
- Outbound Proxy
- Manual configured SIP and RTP

Hardware Specifications

- 1 Ethernet WAN Interface, 10/100M Auto MDI/MDIX
- 2 FXS POTS phone ports for conventional phones
- 1 FXO POTS Lifeline Relay
- 3 REN per FXS port
- Embedded wireless 802.11b/g Access point
- External dipole antenna, non-detachable for other high gain antenna choice
- Built-in 4-port Switch auto MDI/MDI-X 10/100M Ethernet RJ45 ports
- Restore Factory Defaults/Reboot button

Physical Specifications

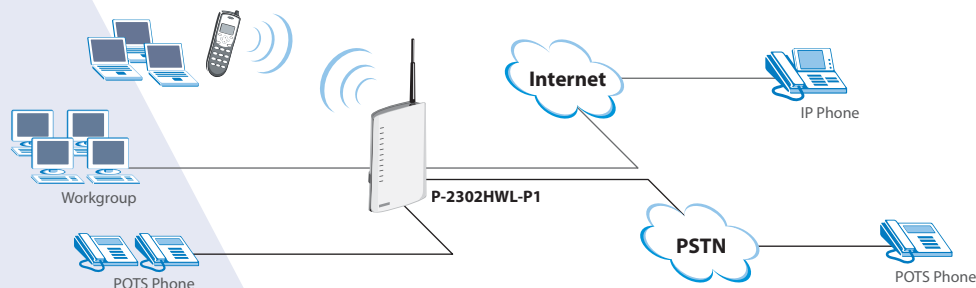
- Dimensions: 56.5 (W) x 147.5 (D) x 215.5 (H) mm
- Weight: 437 g

Environmental Specifications

- Operating Temperature: 0°C ~ 40°C
- Storage Temperature: -30°C ~ 60°C
- Operating Humidity: 20% ~ 95% RH
- Storage Humidity: 20% ~ 95 RH

*Firmware upgradeable for future enhancement

Application Diagram



For more product information, visit us on the web www.ZyXEL.com

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