ADSL Modem / Router

Wireless ADSL Router

Powerline
ADSL Router and Adapter

Broadband Router

Security Router

VoIP ADSL Modem/Router

SHDSL Bridge / Router

iBusiness
Security Appliance

**BILLION** ™

## BiPAC 7402VL Series

# VoIP / (802.11g) ADSL2+ Router

Billion's BiPAC 7402VL series is truly one-single-box of compact VoIP router with comprehensive features. The Router lets you make phone calls via ADSL Internet connection to save more cost than traditional calls via PSTN while you still share a high-speed Internet access, even faster with advanced ADSL2+ capability. Rich Firewall security features such as Firewall SPI, DoS, and Parental Control are integrated to provide users unparalleled protection. Quality of Service features enable smooth net connection of inbound and outbound data with least traffic congestion.

▲ **BiPAC 7402VL**

▲ **BiPAC 7402VGL**　　▲ **BiPAC 7402VGP**

- Voice over IP compliant with SIP standard
- Two FXS ports for connecting to regular telephones
- One RJ-11 FXO port for PSTN Lifeline support (BiPAC 7402VGP only)
- 802.11g Wireless AP with WPA Support (option)
- High speed Internet Access with ADSL, ADSL2/2+ firmware upgradeable
- IGMP Snooping for video service
- SOHO Firewall Security with DoS Prevention and SPI
- QoS Control for Traffic Prioritization and Bandwidth Management
- Parental Control with URL Blocking and Packet Filtering
- Dynamic Domain Name System (DDNS)
- Ease of Use with Quick Installation Wizard and Auto-scan ADSL Settings
- Ideal for Home and SOHO Users
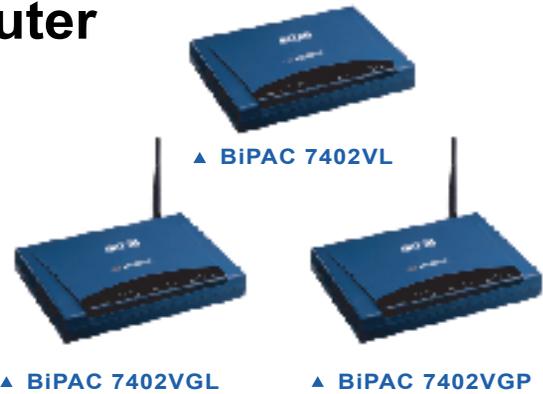
### Benefits

#### Economical Phone Calls
Connecting the router to existing telephone line, the router enables making cost-saving, toll-quality calls via ADSL Internet connection. It complies with the most popular industrial standard, SIP protocol, to ensure the interoperability with SIP devices and major VoIP Gateways. The router supports call waiting, silence suppression, voice activity detection (VAD), comfort noise generation (CNG), line echo cancellation, caller ID (Bell 202,V23) and so on.

#### Express Internet Access
The router complies with ADSL worldwide standards. It supports downstream rate up to 8 Mbps with ADSL, capable of up to 12/24 Mbps with ADSL2/2+, and upstream rate up to 1 Mbps. Users enjoy not only high-speed ADSL services but also broadband multimedia applications such as interactive gaming, video streaming and real-time audio much easier and faster than ever.

#### Smooth and Responsive Data Communication
Quality of Service (QoS) gives you full control over which type of outgoing data traffic should be given priority by the router, ensuring important data like gaming packets, customer information, or management information move through the router at lightning speed, even under heavy load. The QoS features are configurable by source IP address, destination IP address, protocol, and port. You can throttle the speed at different type of outgoing data pass through the router, to ensure users don't saturate upload bandwidth, or office browsing doesn't bring client web serving to a halt.

#### Mobility and Protection
(BiPAC7402VGL and BiPAC 7402VGP)
With integrated 802.11g Wireless Access Point in the router, the device offers a quick and easy access among wired network, wireless network and broadband connection (ADSL) with single device simplicity, and as a result, mobility to the users. In addition to 54 Mbps 802.11g data rate, it also interoperates backward with existing 802.11b equipment. The Wireless Protected Access (WPA) and Wireless Encryption Protocol (WEP) supported features enhance the security level of data protection and access control via Wireless LAN.

#### Extra Back Up - Lifeline Support
(BiPAC 7402VGP only)
Billion's BiPAC 7402VGP integrates another RJ-11 FXO port for inbound and outbound calls transmitted through PSTN. Users can receive phone calls from PSTN while enjoying VoIP call service at the same time. In addition, the device automatically fallbacks to lifeline POTS to enable making normal phone calls when there is power outage, or when the Internet connection is down.

**Powering** communications
with **Security**

# Feature & Specification

## ADSL Compliance

- Compliant with ADSL Standard
  - Full-rate ANSI T1.413 Issue 2
  - G.dmt (ITU G.992.1)
  - G.hs (ITU G.994.1)
  - ADSL over ISDN/U-R2
- Capable of ADSL2 Standard
  - G.dmt.bis (ITU G.992.3)
- Capable of ADSL2+ Standard
  - G.dmt.bisplus (ITU G.992.5)

## Network Protocols and Features

- NAT, static routing and RIP-1/2
- Universal Plug and Play (UPnP) Compliant
- Dynamic Domain Name System (DDNS)
- Virtual Server and DMZ
- SNTP, DNS relay and IGMP proxy
- POP3 (email account checking)
- IGMP Snooping for video service

## Firewall

- Built-in NAT firewall
- Stateful Packet Inspection (SPI)
- Prevent DoS attacks including IP Spoofing, Land Attack, Smurf Attack, Ping of Death, TCP SYN Flooding, etc.
- Packet Filtering - port, source IP address, destination IP address,MAC address
- URL Content Filtering - string or domain name detection in URL string

## VoIP

- Two RJ-11 FXS ports for connecting to regular telephones
- One RJ-11 FXO port for receiving/making calls from/to PSTN for lifeline support (BiPAC 7402VGP only)
- Compliant with SIP standard (RFC3261)
- Supports G.711 A/μ law, and G.729A Audio Codec standards
- Supports Telephony Features: call waiting, silence suppression, voice activity detection (VAD), comfort noise generation (CNG), G.168 line echo cancellation, caller ID (Bell 202,V23)
- Voice over data, QoS control to ensure higher voice quality
- Adaptive jitter buffer support
- Automatic fallback to lifeline POTS when the router power down or VoIP service is not available. (BiPAC 7402VGP only)

## Quality of Service Control

- Support DiffServ approach
- Traffic prioritization and bandwidth management based on IP protocol, port number and address

## Wireless 802.11g (option)

- Compliant with IEEE 802.11g and 802.11b standards
- 2.4 GHz - 2.484G Hz frequency range
- Up to 54 Mbps wireless operation rate
- 64/128 bits WEP supported for encryption
- WPA support

## ATM and PPP Protocols

- ATM Adaptation Layer Type 5 (AAL5)
- Multiple Protocol over AAL5 (RFC 2684, formerly RFC 1483)
- Bridged or routed Ethernet encapsulation
- VC and LLC based multiplexing
- PPP over Ethernet (PPPoE)
- PPP over ATM (RFC 2364)
- Classical IP over ATM (RFC 1577)
- MAC Encapsulated Routing (RFC 1483 MER)
- OAM F4/F5

## Management

- Quick Installation Wizard and Auto-scan ADSL settings
- Web-based GUI for remote and local management
- Firmware upgraded and configuration data upload and download via Web-based GUI
- Firmware upgradeable to ADSL2/ADSL2+ standards
- Embedded Telnet server for remote and local management
- Available Syslog monitoring
- SNMP v3, MIB-I and MIB-II support
- Support DHCP server/client/relay

## Operating Environment

- Operating temperature: 0 ~ 40ºC
- Storage temperature: -20 ~ 70ºC
- Humidity: 20 ~ 95% non-condensing

## Hardware Specification

**Physical Interface**
- WLAN: antenna (option)
- WAN: ADSL port
- Telephone: 2-port FXS
  1-port FXO (BiPAC 7402VGP only)
- LAN: 3-port 10/100M auto-crossover (MDI/MDI-X) Switch
- Console: PS2
- Factory default reset button
- Power jack
- Power switch

**Physical Specification**
- Dimensions: 8.27" x 5.83" x 1.42"
  (210mm x 148mm x 36mm)

**Power Requirement**
- Input: 12V DC, 1.2A

## Models

- BiPAC 7402VL with 2 FXS
- BiPAC 7402VGL with 2 FXS and Wireless-G
- BiPAC 7402VGP with 2 FXS/1FXO and Wireless-G

## Application Diagram

▼ BiPAC 7402VL



▼ BiPAC 7402VGL



▼ BiPAC 7402VGP



All the specifications are subject to changes without prior notice.

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