

Active Ethernet Fiber & 802.11ac Gateway with VoIP

FTTH & Wired Broadband Access



BEC 9900VA



The BEC 9900VA is a point-to-point (P2P) Active Ethernet Fiber Gateway – featuring a combo WAN, 3-port Gigabit Ethernet Switch, VoIP, Firewall and Wi-Fi 802.11ac access point. Combo WAN interface enable BEC 9900VA can be used for fiber or copper network. Fiber interface supports fiber-to-the-home (FTTH) applications and offers an optical Small Form Factor Pluggable (SFP) with 100Base and 1000Base auto-sensing function to fit the field request flexibly. Or use traditional RJ-45 interface for up-linking any other kind of broadband connectivity. Furthermore, the BEC 9900VA supports remote management on end-user devices, which is available upon request for Telcos/ISPs projects to tightly manage the FTTH service delivery. The router is also equipped with a built-in 3-port Gigabit Switch which enables amazingly fast LAN transmissions for bandwidth-consuming applications such as video streaming and file sharing. The integrated 802.11ac Wireless Access Point ensures that the BEC 9900VA offers faster wireless speeds (up to 2Gbps) while its 4 external and 2 built-in antennas maximizes wireless signals. It also has two RJ-11 FXS ports for connecting to regular telephones, allowing users to make economical VoIP calls. The BEC 9900VA automatically adopts the optimal connection to deliver smooth and constant signal reception even if obstacles are present. Users can easily enjoy high bandwidth applications such as High Definition IPTV services without changing their home network. The built-in robust firewall provides protection against intrusion attacks while the Quality of Service feature allows traffic prioritization and bandwidth management for downloads and online gaming.

FTTH and Wired Broadband Services Ready

The BEC 9900VA can be used for a point-to-point fiber access network. Since the Fiber WAN interface allows faster rates over even longer distances, it can support Telcom operators or ISPs to provide high quality and reliable Internet broadband services to either business users or home users. The 3-port Gigabit Switch incorporated into the BEC 9900VA enables users to easily connect to multiple computers or wired-Ethernet devices and enjoy blistering LAN transfer rates for multimedia applications such as interactive gaming, IPTV video streaming and real-time audio.

New Experience with Wi-Fi Speed and Coverage

With the next wireless generation, 802.11ac, integrated in the BEC 9900VA, the router delivers fast Wi-Fi speeds of up to 2Gbps. The 9900VA supports a link rate up to 300Mbps in 2.4GHz frequency range & 1700Mbps in 5GHz range and is also backward compatible with existing 802.11 a / b / g / n wireless equipment in the network. The Wireless Protected Access (WPA-PSK/WPA2-PSK) and Wireless Encryption Protocol (WEP) features enhance the level of transmission security and access control over Wireless LAN. BEC 9900VA also supports the Wi-Fi Protected Setup (WPS) standard for easy and secure establishment of a wireless home network. If the user's network requires wider coverage, the built-in Wireless Distribution System (WDS) repeater function expands the wireless network without needing any external wires or cables.

Integrated SIP VoIP and Advanced Telephony Features

BEC 9900VA is compliant with SIP standard (RFC3261) and supports SIP registrar. This device integrates with two FXS ports by connecting with two standard analog telephones to receive or place calls over VoIP accounts. The router offers much more great features, Call Waiting, Conference Call, Return Call, etc. The unique Speed Dial Plan provides custom hotkeys of frequently used phone numbers. This state-of-the-art feature is ideal for users who do not need a landline service, delivering high quality, free communication between offices and customers. Making online call is just as easy as dialing an extension number.

High Performance and Network Resilience

- Offers Combo 100/1000BASE SFP & Ethernet WAN
- SFP auto-sensing for 100/1000Base fiber connectivity
- Automatic Failover/Failback (SFP & EWAN) for network resilience and reliable connectivity
- 3-Port Gigabit Auto-MDI/MDI-X Switch

Superior Wireless Technology

- Simultaneous Dual Band Wi-Fi (2.4GHz & 5GHz) with high-power design
- Wi-Fi Hotspot with Captive Portal
- Supports Wi-Fi Multimedia (WMM) wireless QoS
- Carrier-Grade Wi-Fi, WPA2/AES and MSSSID with isolation
- Multiple Operation Modes: Access Point, Bridge and Repeater

VoIP and Advanced Telephony Functionality

- SIP standard: RFC3261
- Two RJ-11 FXS interfaces
- Supports Phone Services via SIP up to 2 separate accounts
- Supports G.711 A / μ law, and G.729 Audio CODEC standards
- Supports FAX Transmission: T.38 fax relay & G.711 pass-through

Firewall

- Built-in NAT Firewall
- Stateful Packet Inspection (SPI)
- Prevents DoS attacks including Land Attack, Ping of Death, etc.
- VPN pass-through

Enterprise Class Routing and Secured VPN

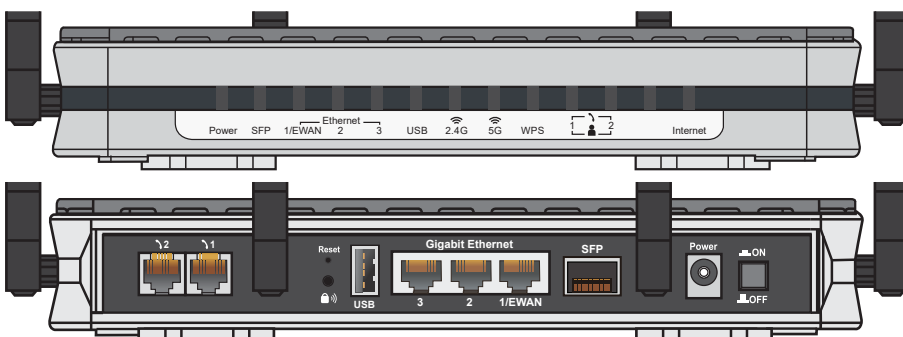
- BGP and OSPF Dynamic Routing Protocols
- Secured VPN : IPsec, GRE, L2TP, PPTP and OpenVPN
- Advanced secure VPN Connections

Management

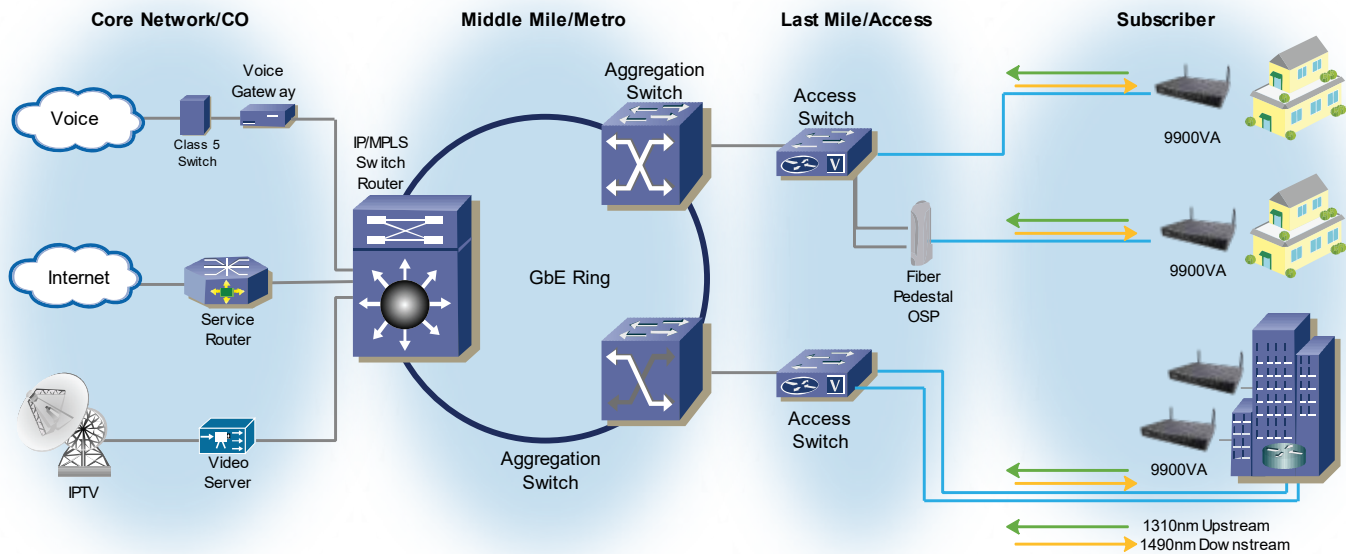
- Web-based GUI for remote and local management
- SNMP v1 , v2, v3, MIB-I and MIB-II support
- TR-069 remote management

Ideal for

- Home, SOHO environments
- Self-Installation Service Offerings



Application Diagram



Features & Specifications

Availability and Resilience

- Dual-WAN ports (SPF & Ethernet WAN)
- Load balancing - Maximizing bandwidth of outbound traffic
- Auto failover between SFP and EWAN

SPF Specifications

- IEEE 802.3 10Base-T
- IEEE 802.3u 100Base-TX
- IEEE 802.3ab 1000Base-T
- IEEE 802.3z 1000Base-SX / LX4G

Network Protocols and Features

- IPv4, IPv6, IPv4 / IPv6 dual stack
- IP Tunnel IPv6 in IPv4 (6RD)
- IP Tunnel IPv4 in IPv6 (DS-Lite)
- 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, IGMP proxy and IGMP snooping for video service
- MLD proxy and MLD snooping for video service
- Supports port-based Virtual LAN (VLAN)

VoIP

- Compliant with SIP standard (RFC3261)
- Audio Codec: G.711 A-Law, G.711 μ-Law, G.729
- DTMF Method: In-band/out-of-band (RFC 2833), SIP Info
- Caller ID Generation: DTMF, FSK
- FAX Transmission: T.38 Fax Relay, G.711 Pass-through
- Silence Suppression, Voice Activity Detection (VAD), Comfort Noise Generation (CNG), G.168 Echo Cancellation, Packet Loss Concealment, Call Waiting, Conference Call
- Speed Dial, Return Call, Redial, Don't Disturb
- Call Detailed Records(CDR)

USB Application Server

- Storage: FTP server and Samba server

Firewall

- Built-in NAT Firewall
- Stateful Packet Inspection (SPI)
- Prevents DoS attacks including Land Attack, Ping of Death, etc.
- Access Control
- IP Filtering, MAC Filtering, URL Filtering

Carrier Grade Wireless LAN

- Compliant with IEEE 802.11 a/b/g/n/ac standards
- 2.4GHz & 5GHz frequency range
- 20/40-MHz channel bandwidth
- Up to 300Mbps (2.4GHz) & 1700Mbps (5GHz) wireless data phy rate
- 64/128 bits WEP supported for encryption
- Wireless security with WPA-PSK, WPA2-PSK, Mixed WPA/WAP2-PSK, (TKIP/AES), 802.1x/Radius
- AP, Client Bridge and WDS Operational Modes
- Multiple SSID (4 SSIDs), BSSID
- Wireless MAC filtering
- Wireless Client Isolation
- Wi-Fi Hotspot with Captive Portal
- Dynamic, Wi-Fi client rate-limiting

Quality of Service Control

- Traffic prioritization based-on IP protocol, port number, and IP address

VPN/Tunneling (Optional)

- IPsec, OpenVPN, PPTP, L2TP VPN Tunneling
- GRE (up to 8 tunnels)
- Embedded PPTP / L2TP / IPsec / OpenVPN Client and Server
- IKE Key Management
- MPPE Encryption for PPTP
- IPsec DES, 3DES and AES encryption

Dynamic Routing Protocols (Optional)

- BGP and OSPF

Management

- Quick Installation Wizard
- Web-based GUI for remote and local management
- Firmware upgrade and configuration data upload and download via web-based GUI
- Supports DHCP server/client/relay
- TR-069 supports remote management
- SNMP v1, v2, v3, MIB-I and MIB-II support
- Syslog monitoring

Hardware Specifications

Physical Interface

- Wi-Fi
 - 5GHz - Four (4) External Female RP-SMA Connectors
 - 2.4GHz - Two (2) Internal Antennas
- Power On/Off Button
- Power Jack
- Optical SPF 100/1000BASE auto-sensing port
- Gigabit Ethernet LAN: 3-port auto-crossover (MDI/ MDI-X) switch
 - 1 x Versatile Port (LAN1 / EWAN)
- USB 2.0 : One (1) Port
- Wireless On/Off and WPS Push Button
- Reset Button
- VoIP: Two (2) RJ-11 FXS interface ports
- LED Indicators

Physical Specifications

- Dimensions: 9.04"(W) x 6.10"(D4) x 1.69"(H) (229.5 mm x 155 mm x 43 mm)

Power Requirements

- Input: 15V DC, 1.6A

Operating Environment

- Operating temperature: 32 to 104° F (0 to 40° C)
- Storage temperature: - 4 to 158° F (- 20 to 70° C)
- Humidity: 20 ~ 95% non-condensing