4G/LTE Enterprise Multi-Service Router

Broadband Access without Boundaries

BEC 6300VNL Series

| 4G LTE | Auto Failover | 4-port Gigabit Switch | VOIP | TR-069 | UPS |
| MIMO | IPv6 Support | QoS | VLAN | Firewall | Dedicated SIM Slot |

Overview

The BEC 6300VNL 4G/LTE Multi-Service Router features a Dual-WAN interface (4G/LTE) and Ethernet WAN EWAN), 4-port Gigabit Ethernet Switch, Carrier-grade Wi-Fi 802.11n access point, VoIP (Voice over IP), USB, dynamic routing and a robust Firewall. The 6300VNL is a high performance fixed wireless communications platform with advanced software enabling high availability, reliable and secure connectivity for busines critical operations.

High Availability and Network Resilience

Businesses are dependent on constant and reliable internet connectivity, any downtime can be devastating impacting everything from revenues, reputation and ultimately business viability. The BEC 6300VNL provides Multi-WAN connectivity and Auto failover feature to ensure maximum connectivity and minimum service interruption. This feature provides seamless automatic failover with traffic prioritization in the event of a connectivity failure of the primary WAN interface, traffic is automatically redirected to the secondary WAN interface within seconds. The router will also fallback when the primary interface connection is restored. This functionality operates regardless of whether the primary connection is LTE or a wired connection such as fiber, Cable or DSL.

Advanced Quality of Service (QoS) Framework

The 6300VNL supports a QoS framework based on the EPS bearer model. Default bearers are supported for best effort services and multiple dedicated bearers, GBR (guaranteed bit rate) resource types and QoS class of identifiers (QCI) are supported for real-time voice and video applications that require dedicated network resources. BEC's comprehensive QoS capabilities, leverage IP QoS concepts and standards such as DiffServ along with the LTE QoS framework to achieve the best QoE (Quality of Experience) for each subscriber.

Integrated VoIP and Advanced Telephony Features

The BEC 6300VNL is compliant with SIP standard (RFC3261) and supports SIP registrar. This router integrates two FXS ports allowing users to set up two separate VoIP accounts to make or receive calls by connecting with two standard analog telephone sets. 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 SOHO users, delivering free communication between branch offices and client sites. Making VoIP calls is just as easy as dialing an extension number.

Carrier-grade Wireless LAN   (Wi-Fi Certified)

The 6300VNL integrates a 802.11n access point supporting data rates of up to 300Mbps. Security functionality includes: WEP 64/128 bit, WPA, WPA2 (PSK, TKIP and AES, 802.1X, SSID broadcast disable and wireless MAC address filtering and MSSID with Client Isolation to enhance the level of transmission security and access control over the Wireless LAN. The router also supports the Wi-Fi Protected Setup (WPS) standard, allowing users to establish a secure wireless network by simply pushing a button. If the network requires wider coverage, the built-in Wireless Distribution System (WDS) repeater function allows users to expand the wireless network without the need for any external wires or cables.

Pathway to the Future

The BEC 6300VNL fully supports IPv6 (Internet Protocol Version 6), implementation of IPv6 is growing significantly and multiple transition methods are required to support the coexistence and migration from IPv4. With BEC IPv6 enabled devices, service providers easily adapt IPv6 to their network as we support major transition mechanisms such as Dual-Stack, Dual-Stack Lite, and 6RD .

Carrier Certifications

at&t   T··Mobile·   verizon✓

Performance
 • High-Performance/Wire-Speed 32-bit MIPS 34K CPU
 • Offers 4G/LTE broadband connectivity with 3G Fallback
 • Dual- WAN (4G/LTE & EWAN) interface for network resilience and reliable connectivity
 • Advanced SX Antenna Technology for increased coverage, signal reception and efficiency
 • LTE Multi-Service APN Selection and Management
 • 4-port Gigabit Switch
 • Carrier-Grade Wi-Fi, WPA2/AES and MSSID with isolation
 • Redundant Power Connection & Management

Enterprise Class Routing and Secured VPN
• BGP and OSPF Dynamic Routing Protocols
• Secured VPN : IPSec, GRE, L2TP and PPTP

QoS (Quality of Service)
• Traffic prioritization based-on IP protocol, port number, and IP address
• Enhanced IGMP, Proxy/Snooping and Fast Leave

VoIP and Advanced Telephony Functionality
• Compliant with SIP standard: RFC3261
• Two RJ-11 FXS interfaces
• Supports two SIP accounts for connecting to Internet Telephony Service Provider (ITSP)
• 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

Management
• Web-based GUI for remote and local management
• SNMP v1 , v2, v3, MIB-I and MIB-!! support
• TR-069 remote management
• SMS Control function for status and reboot
• Supported by BEC's Cloud-Based device management platform to extend network visibility and control of devices remotely

Application Diagram
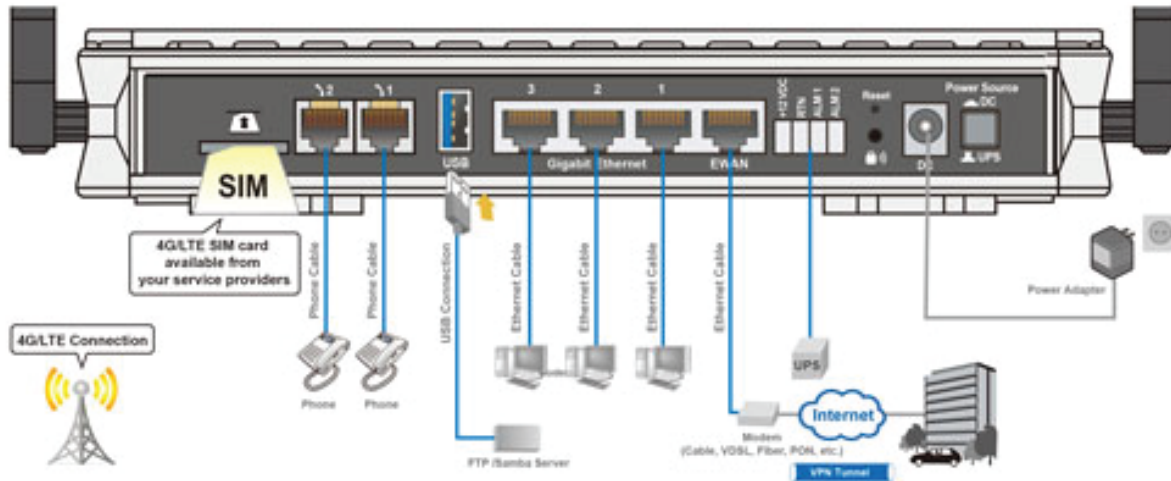
Features & Specifications

Availability and Resilience
- Dual-WAN ports (4G & Ethernet WAN)
- Load balancing - Maximizing bandwidth of outbound traffic
- Auto fail-over between 4G and EWAN

Supported Frequency Bands
- LTE: 700/800/900/2100/2600MHz (Depending on module configuration)
- UMTS/HSPA+: B1, B2, B4, B5, B8
- CDMA 1xRTT/EV-DO Rev A: BC0, BC1, BC10
- GSM/GPRS/EDGE (850/900/1800/1900)
- Peak downlink speeds up to 100Mbps and peak uplink speeds up to 50Mbps
- Receive equalizer with antenna diversity on the 800, 850, 900, 1900, 2100 MHz, and AWS(1700/2100 MHz) bands

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)

Quality of Service Control
- Traffic prioritization based-on IP protocol, port number, and IP address

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
- Password protection for system management
- VPN Passthrough

Wireless
- Compliant with IEEE 802.11n standard
- Backward compatible with IEEE 802.11b and 802.11g standards
- 2.412 ~ 2.484GHz frequency range
- Up to 300Mbps wireless operation rate
- WPS (Wi-Fi Protected Setup) for easy setup
- 64/128 bits WEP supported for encryption
- Wireless security with WPA-PSK/WPA2-PSK
- Supports WDS repeater function
- Multiple SSID with Client Isolation\
- Wireless MAC Filtering
- Wi-Fi Alliance Certified

VoIP
- Compliant with SIP standard (RFC3261)
- Audio Codec: G.711 A-Law, G.711µ-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)*
- Metaswitch Mosiac Partner Certified

VPN/Tunneling (Optional)
- IPSec VPN Tunneling (up to 8 tunnels)
- PPTP VPN Tunneling (up to 4 dial-in/dial-out tunnels)
- L2TP over IPSec VPN Tunneling (up to 4 dial-in/dial-out tunnel)
- GRE (up to 8 tunnels)
- Embedded PPTP / L2TP / IPSec Client and Server
- IKE Key Management
- MPPE Encryption for PPTP
- IPSec DES, 3DES and AES encryption

Dynamic Routing Protocals (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 and over-the-air
- Supports DHCP server/client/relay
- TR-069 supports remote management
- SNMP v1 , v2, v3, MIB-l and MIB-!! support
- Syslog monitoring
- SMS Control function for status and reboot

Hardware Specifications
Physical Interface
- Antenna:
  - 3G/4G LTE: Two (2) detachable antennas
  - Wireless: Two(2) internal antennas
- WAN: 4G/LTE, 3G falback on Ethernet WAN
- Ethernet LAN: 4-port 10/100/1000Mbps auto-crossover (MDI/ MDI-X) switch
- VoIP: Two (2) RJ-11 FXS interface ports
- USB 2.0 : One (1) Interface
- SIM Card Slot (2FF)
- Reset Button
- Wireless On/Off and WPS Push Button
- Power jack
- LED Indicators
- Redundant Power Terminal for Optional Battery Backup (UPS

Physical Specifications
- Dimensions: 7.25"(W) x 1.91"(H) x 5.31"(D) (184.25 mm x 48.5 mm x 135 mm)
- Weight: 1.07kg (2.36lbs)

Power Requirements
- Input: 15V DC, 1.6A

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