Ideal Use Cases

- Fixed Wireless Broadband
- Enterprise/Branch Office
- Business Continuity/Failover
- Home and SOHO Environments
- Retail Networks
- Managed Services

4G/LTE Enterprise Multi-Service Router

The BEC 6500AEL Series of Enterprise Multi-Service LTE Router are high-performance platform featuring Dual-WAN interfaces (4G/LTE and GigaConnect® Ethernet WAN), 4-port Gigabit Ethernet Switch, USB 2.0, high-power 802.11ac dual-band Wi-Fi access point, hotspot/captive portal, dynamic routing, and a robust Firewall security. The 6500AEL Series offers model from LTE CAT 4 up to LTE CAT 12 providing unprecedented LTE speeds, bandwidth, and network performance across licensed LTE bands and CBRS shared spectrum commercial deployments.

Mobile and Fixed Broadband Services Ready

The 6500AEL series provides 4G LTE mobile and gigabit wired Ethernet WAN interfaces and is featuring an auto-failover to ensure maximum Internet accessibility with minimum service interruption. This seamless automatic failover with traffic prioritization in the event of an Internet connectivity failure of the primary WAN interface, traffic is automatically redirected to the secondary WAN interface within seconds. This functionality operates regardless of whether the primary connection is LTE or a wired connection.

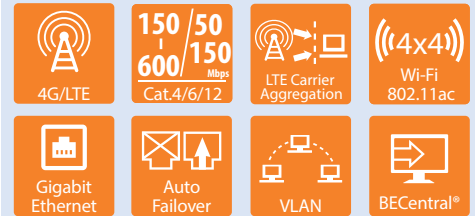## New Experience with Wi-Fi Speed and Coverage

With the next wireless generation, 802.11ac, integrated in the 6500AEL series, the router delivers fast Wi-Fi speeds of up to 1200Mbps. The 6500AEL series supports a link rate up to 300Mbps in 2.4GHz frequency range & 866Mbps 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. The 6500AEL series also supports 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.

Wi-Fi Hotspot with Captive Portal

The 6500AEL series offers Wi-Fi hotspot to share the Internet connection via mobile (4G/LTE) or a wired connection, an existing FTTH, cable, DSL network or modem, with any wireless-enabled devices which is completed separate from the private Wi-Fi network. The captive portal enables highly secure connectivity with multiple authentication options and extensive controls for access and bandwidth management. Customization options allow for operator logos, branding or advertisement placement.

24/7 Cloud Management and Network Visibility

Remote monitoring, management, and control of devices in real-time is essential for IoT networking devices, M2M, and critical applications. BECentral®, BEC's Cloud Based Remote Management, is a comprehensive device management platform designed to minimize deployment, lower support expenses, and maximize the operational efficiency and profitability of the operator. BECentral® provides access to critical information for LTE Network diagnostics and troubleshooting, such as: signal quality measurements (RSSI, RSRP, RSRQ and SINR), network status/APN, location ID and Cell ID. Additional functionality includes OTA firmware upgrades (individual or batch), multi-user account management, local network configuration settings on the BEC 6500AEL series.

4G/LTE	150–600 / 50–150 Mbps Cat.4/6/12	LTE Carrier Aggregation	(4x4) Wi-Fi 802.11ac
Gigabit Ethernet	Auto Failover	VLAN	BECentral®

High Performance and Network Resilience

- 3GPP Category 4, 6, or 12, with Carrier Aggregation, data rates from 150 to 600Mbps (DL) and 50 to 150Mbps (UL)
- Offer 4G/LTE broadband connectivity (3G Fallback is Optional)
- Automatic Failover and dual WAN interfaces for network resilience and reliable connectivity
- 4-Port Gigabit Auto-MDI/MDI-X Switch
- Advanced SX Antenna Technology for increased coverage, signal reception and efficiency
- LTE Multi-Service APN Selection and Management

Enterprise Class Routing and Secured VPN

- BGP and OSPF Dynamic Routing Protocols
- IPSec, GRE, L2TP, PPTP and OpenVPN
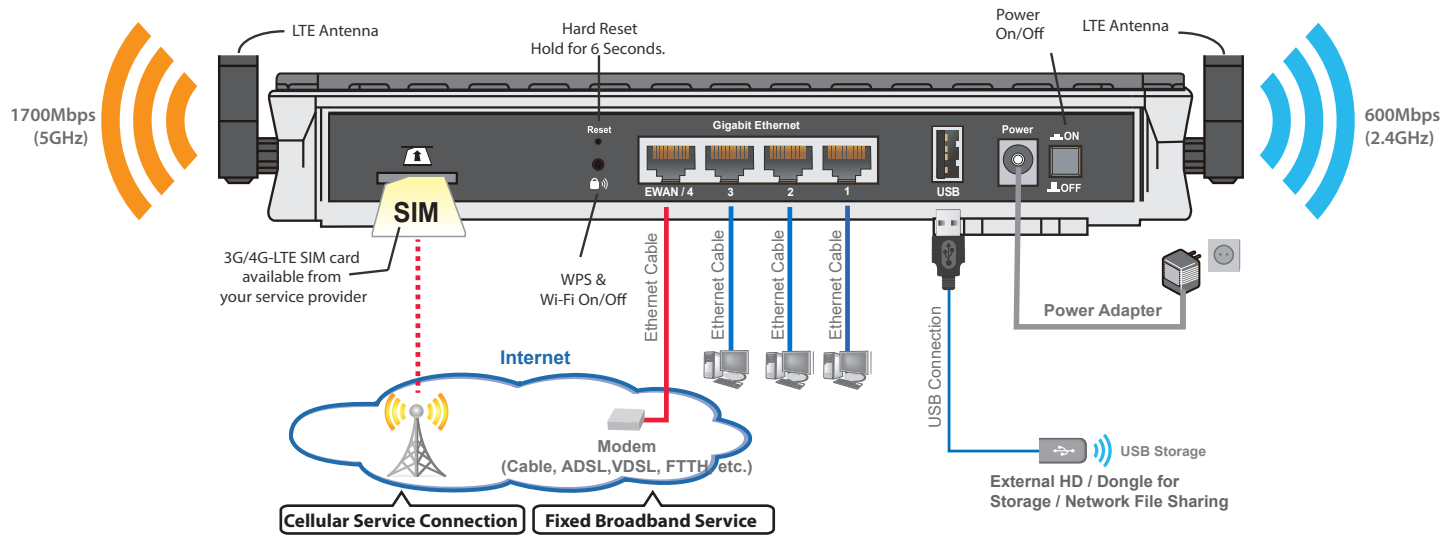- Advanced secure and simultaneous VPN connections

Superior Wireless Technology

- Support 4x4 MIMO 11ac and MU-MIMO
- Simultaneous Dual Band Wi-Fi with high-power design
- Wi-Fi Hotspot with Captive Portal
- Supports Wi-Fi Multimedia (WMM) wireless QoS
- Carrier-Grade Wi-Fi, WPA2/AES and MSSID with isolation
- Multiple Operation Modes: Access Point, Bridge and Repeater

Management

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

Application Diagram

LTE Antenna

Hard Reset
Hold for 6 Seconds.

Power On/Off

LTE Antenna

1700Mbps (5GHz)

600Mbps (2.4GHz)

Reset

Gigabit Ethernet

Power

ON

OFF

SIM

EWAN / 4   3   2   1   USB

3G/4G-LTE SIM card available from your service provider

WPS & Wi-Fi On/Off

Ethernet Cable
Ethernet Cable
Ethernet Cable
Ethernet Cable

USB Connection

Power Adapter

Internet

Modem
(Cable, ADSL,VDSL, FTTH, etc.)

USB Storage

External HD / Dongle for Storage / Network File Sharing

| Cellular Service Connection | Fixed Broadband Service |

Features & Specifications

Availability and Resilience
- Dual-WAN ports (4G/LTE & ETH WAN)
- Load Balancing - Maximizing bandwidth of outbound traffic
- Auto failover between 4G/LTE and ETH WAN

Supported Frequency Bands
- **Supporting North America and Global**
  LTE Bands FDD, TDD & 3G/2G Fallback options (LTE Bands dependent on Model Variant)
- **Model: 6500AEL R15**
  CAT 6 with 2CA DL
  LTE Bands: 1-5, 7, 8,12,13,20,25,26, 29, 30 & 41
- **Model: 6500AEL R17-AF**
  CAT 4
  LTE Bands: 2, 4, 5, 12, 13, 14, 66 & 71
- **Model: 6500AEL R18 (CBRS)**
  CAT 6 with 2CA DL
  LTE Band: 48
- **Model: 6500AEL R20**
  CAT 12 with 3CA DL and 2CA UL
  LTE Bands: 1-5, 7, 8, 9, 12, 13, 18, 19, 20, 26, 28, 29, 30, 32, 41, 42,43, 46, 48, 66
- **Model: 6500AEL R21 (CBRS)**
  CAT 12 with 3CA DL and 2CA UL
  LTE Band: 48
- **Channel Bandwidth**
  1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
- Transmit Power: 23dBm ±2dBm
- Web-based GUI for Configuration and Management Center

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

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) & 866Mbps (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 & 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, and GRE VPN Tunneling
- 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

USB Application Server
- Storage: FTP server and Samba server

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
- BECentral® Cloud Management
- SNMP v1 , v2, v3, MIB-I and MIB-ll support
- Syslog monitoring
- SMS Control function for status and reboot

Hardware Specifications
Physical Interface
- 4G/LTE
  : R15 / R17AF / R20: Two (2) SMA female connectors
  : R18 / R21: Four (4) SMA female connectors
- Wi-Fi
  (2) External female RP-SMA connectors
  (4) Internal antennas
- Power Jack and On/Off button
- USB 2.0 : (1) port
- Ethernet LAN: 4-port 10/100/1000Mbps auto-crossover (MDI/ MDI-X) switch
  - 1 x Versatile Port (LAN#4 / WAN)
- SIM Card Slot (2FF)
- Wireless On/Off and WPS push button
- Reset button and front LED indicators

Physical Specifications
- Dimensions: 9.04"(W) x 6.10"(D) 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℃)
- Storage temperature: - 4° to 158°F (-20° to 70℃)
- Humidity: 20 ~ 95% non-condensing

v2.0