

# RidgeWave® BEC 6900R21

4G LTE-A Pro CBRS Outdoor Router (CAT B CPE-CBSD)

**BEC**  
TECHNOLOGIES



## Ideal Use Cases

- Fixed Wireless Broadband
- Last Mile Access
- Mission-Critical & Performance Intensive Networks
- Industrial Connectivity Applications
- Urban and Rural Environments

## 4G LTE-A Pro CBRS Outdoor Router



The RidgeWave® BEC 6900R21 is a High-Power LTE CAT B CPE-CBSD delivering robust connectivity for CBRS B48 commercial deployments. The 6900R21 is an LTE CAT 12 UE supporting carrier aggregation up to 3 CA DL / 2CA uplink, with a high gain 15dBi 4X4 MIMO directional antenna. CBRS deployments with the 6900R21 will experience increased capacity, higher throughput, and extended coverage.

### Innovative MIMO Antenna Technology

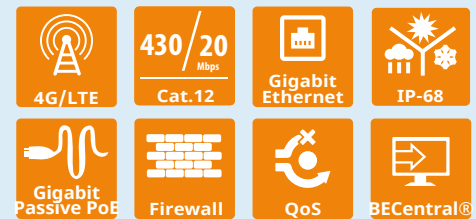
Homes and businesses with a weak or nonexistent wireless signal can benefit from the extended range and reach of the RidgeWave® BEC 6900R21. Multiple MIMO antenna technology options allow service providers to select the optimal solution for their environment or application whether LOS (Line of Sight) or NLOS (Non-Line of Sight). Physical size and weight were key design considerations of the RidgeWave® BEC 6900R21. It can be mounted directly on exterior walls, chimneys, lightweight poles and used for retrofitting applications such as the replacement of older generation wireless technology.

### Rugged Weatherproof Design

The RidgeWave® BEC 6900R21 is an industrial-grade outdoor fixed wireless router with purpose-built to withstand extreme weather conditions and harsh rugged deployments. Unique to BEC devices are GORE® Vents for pressure equalization, humidity, and airflow, this accompanied with lighting/ESD Protection and the IP68/UL 50E enclosure ensure protection against dirt, harmful ingress of water, humidity and extreme temperatures for years of dependable operation. In addition to outdoor, it can be installed in environments such as: manufacturing plants, industrial automation, stadiums, convention halls, stadium facilities, school campuses, or virtually any venue requiring a robust wireless solution.

### 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, 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 RidgeWave® BEC 6900R21.



## FCC Part 96 Authorized

### Designed for Challenging and Rugged Deployments

- IP68 / UL-50E hardened enclosure with industrial-grade components
- Designed for the toughest industrial environments
- Rugged compact design, deploys easily in space-constrained areas
- Electrostatic Discharge (ESD) & Surge protection
- IEEE 802.3at Power over Ethernet (PoE)
- Embedded GPS for self-geolocation and reporting latitude/longitude to SAS

### High Performance and Support for CBRS Band 48

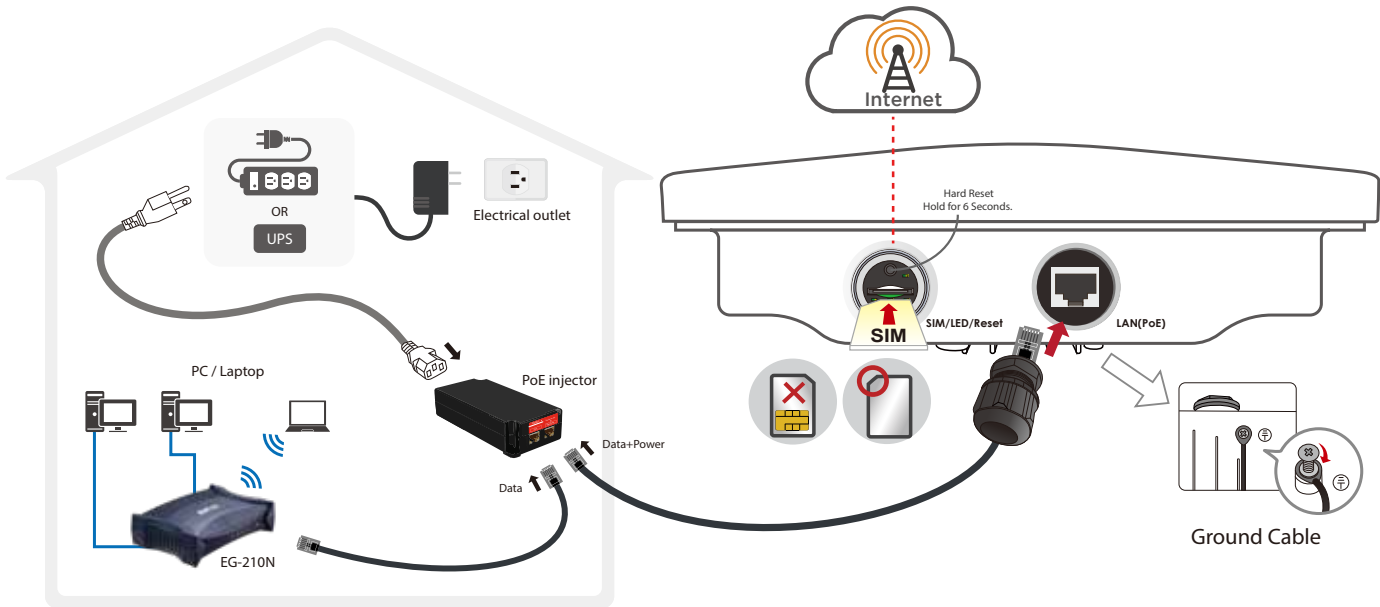
- LTE CAT 12 UE with Carrier Aggregation, data rates of up to 430Mbps (DL) / 20Mbps (UL) (TDD Config. 2, SSF: 7)
- Advanced IP networking functionalities including bridge and routed modes
- Advanced secure VPN sessions (Optional)

### Patented Dual-Polarization Antenna Technology

- Ensure efficient bi-directional transmission for maximum bandwidth and coverage
- H-Plane & V-Plane Polarization
- Simplicity and high isolation for stable and reliable

Package includes Gigabit PoE injector and Mounting Kit

### Application Diagram



### Features & Specifications

#### Supported Frequency Band

- Comply 3GPP Rel.12 with Carrier Aggregation
- 4G/LTE: TDD (Cat.12)
  - : B42 (3400MHz ~ 3600MHz)
  - : B43 (3600MHz ~ 3800MHz)
  - : B48 (3550MHz ~ 3700MHz)
- Data Rates of 430Mbps DL and 20Mbps UL (TDD Config. 2, SSF: 7)
- Carrier Aggregation
  - : 3CA DL
  - : 2CA UL
- LTE Bandwidth: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz & 20MHz
- Modulation: 256QAM DL / 64QAM UL
- Maximum Transmit Power: 38dBm EIRP
- LTE Antenna
  - : MIMO Directional (Dual Polarization)
  - : 4x4 MIMO DL
  - : Gain: 15.5dBi ± 1dBi
  - : CPE-CBSD Category B
  - : OnGo Certified

#### Operational Modes

- Bridge or Routed

#### Firewall

- Built-in NAT Firewall
- Stateful Packet Inspection (SPI)
- Prevents DoS attacks including Land Attack, Ping of Death, etc.
- IP Filtering, MAC Filtering, URL Filtering
- Password protection for system management
- Access Control and VPN pass-through
- SNTP, DNS relay and DDNS
- IGMP snooping and IGMP proxy

#### Network Protocols and Features

- NAT, static routing and RIP-1/2
- NAT supports PAT and multimedia applications
- Virtual server and DMZ
- SNTP, DNS relay and DDNS
- IGMP snooping and IGMP proxy

#### Quality of Service Control

- Supports the DiffServ approach
- Traffic prioritization based-on protocol, port number and IP address

#### Management

- Quick Installation Wizard
- Web-based GUI for remote and local management
- Firmware upgrade and configuration data upload & download via web-based GUI
- DHCP server/client/relay
- TR-069 supports remote management
- BECentral® Cloud Management
- SNMP and Syslog monitoring

#### Hardware Specifications

##### Physical Interface

- Gigabit LAN Interface with IEEE 802.3at complaint PoE P.D
- WAN: 3G/4G LTE
- GPS (6900R21-G Only)
- SIM Card: One (1) slot 2FF Size
- LED Indicators: Power, LAN(PoE), LTE Signal Strength and Internet

##### Power Specifications

- Input: PoE-PD (802.3at PD complaint (25.5W))

##### Operating Environment

- Operating temperature: -40°C to 70°C (-40°F to 158°F)