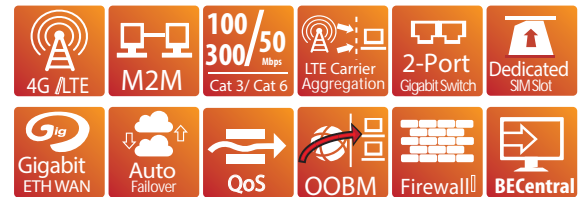


# MXConnect Series

## Advanced Industrial 4G / LTE Router

BEC MX-200Ae



### Overview

The BEC MX-200Ae Advanced Industrial 4G/LTE Router is a high performance fixed wireless platform enabling real-time 4G Cellular data connectivity for your existing serial devices and Ethernet network. It is a Category 6 device supporting LTE Advanced and Carrier Aggregation (2CA) increasing capacity and providing a 50% increase in peak data rates. The MX-200Ae provides a reliable and cost-effective alternative solution for business continuity. The platform can serve as the primary connection or backup connection when wired connections fail, become unavailable or non-existent.

### High Availability and Network Resilience

The MX-200Ae features two Gigabit Ethernet interfaces and a RS-232 Serial interface enabling wireless data connectivity for a broad range of applications and vertical machine-to-machine (M2M) market segments. Intelligent software supports configurable LAN/WAN options, embedded GPS with concurrent multi-GNSS engine for GPS or GLONASS as well as embedded LTE module, and enterprise level functionality such as: advanced security mechanisms, Quality of Service (QoS), SPI firewall, integrated VPN, auto failover for unparalleled uptime and network redundancy, and cloud-based management to extend visibility and control of devices remotely.

### Advanced Quality of Service (QoS) Framework

The MX-200Ae 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 along with the LTE QoS framework to achieve the best QoE (Quality of Experience) for each subscriber.

### Remote Management and Network Visibility

Real-time monitoring, management and control of devices is critical for M2M applications. Administrators can extend network visibility with BECentral®, BEC's Cloud Based Remote Management Platform. BECentral provides administrators with a comprehensive suite of services for real-time device monitoring, provisioning, troubleshooting and maintenance from a single centralized location. The platform will simplify device access, lower support expenses, accelerate deployments / service delivery and maximizes the operational efficiency.

### Designed for Industrial Environments

Purpose-built for continuous operation in harsh environments, the MX-200Ae supports an extended operating temperature range from -4 to 140° F (-20 to 60° C) and a flexible input voltage range of 9-56V DC making it suitable for diverse environments and applications. To enable simple, reliable and efficient integration the ultra-compact, lightweight and low profile design incorporates highly flexible mounting options to ensure that the device and can be easily mounted discretely anywhere.

### High Performance & Reliability and Easy to Manage and Access

- Offers 4G/LTE and/or Ethernet IP broadband connectivity (3G Fallback is optional)
- Automatic failover for network resilience and reliable connectivity
- SX Antenna Technology for increased coverage, signal reception and efficiency
- Embedded GPS option for real-time asset tracking and location data-based application
- Advanced VPN & Tunneling Protocols for secure data
- Local and Remote management via SNMP
- BECentral Remote Management System
- Out-Of-Band Management (OOBM)
- Virtual Routing Redundancy Protocol (VRRP)

### QoS (Quality of Service)

- IEEE 802.1Q VLAN
- Outbound Load Balancing

### Ultra-Compact and Lightweight Design

- Small form factor M2M with affordable price
- Fits in the palm on your hand
- Simplified deployments, easily mounted discretely anywhere

### Designed for Industrial Environments

- Hardened enclosure with Industrial-Graded Components
- Extended Temperature Range
- Flexible Input Voltage selection

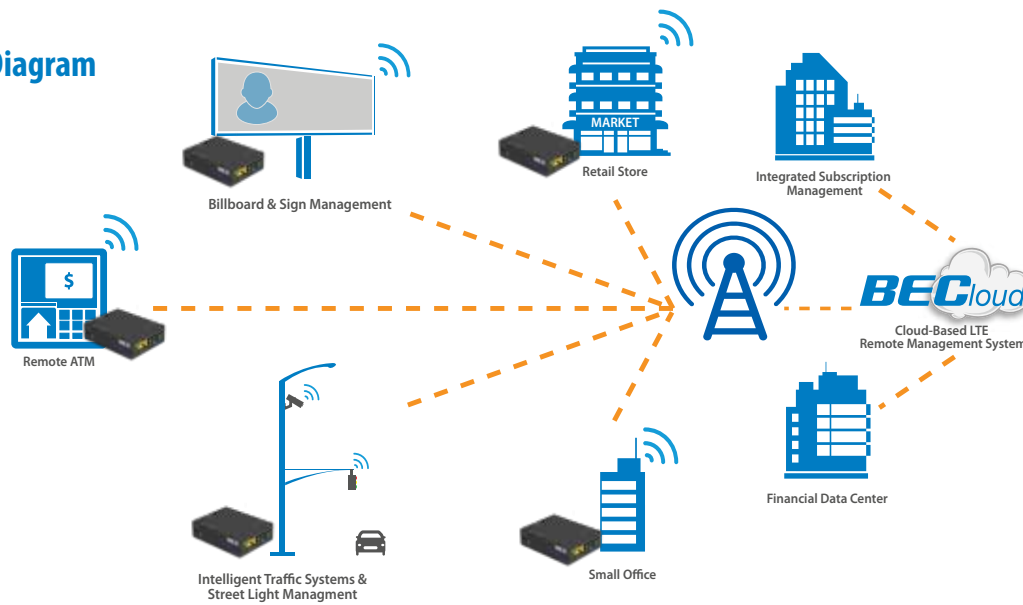
### Ideal Solution for

- Business Continuity, Primary Connectivity, SD-WAN Deployments, Digital signage, Remote surveillance, Vending Machines, Retail PoS, Remote patient care/maintenance services, SCADA, Metering applications and much more.

### Certified on Major Carrier Networks

- AT&T, Sprint, T-Mobile, US Cellular & Verizon

## Application Diagram



## Features & Specifications

### Availability and Resilience

- Dual-WAN ports (4G & Ethernet WAN)
- Load balancing - Maximizing bandwidth of outbound traffic
- Automatic failover and fallback
- Virtual Routing Redundancy Protocol (VRRP)

### Supported Frequency Bands

- LTE Band 1 (1920–1980 MHz UL | 2110–2170 MHz DL)
- LTE Band 2 (1850–1910 MHz UL | 1930–1990 MHz DL)
- LTE Band 3 (1710–1785 MHz UL | 1805–1880 MHz DL)
- LTE Band 4 (1710–1755 MHz UL | 2110–2155 MHz DL)
- LTE Band 5 (824–849 MHz UL | 869–894 MHz DL)
- LTE Band 7 (2500–2570 MHz UL | 2620–2690 MHz DL)
- LTE Band 8 (880–915 MHz UL | 925–960 MHz DL)
- LTE Band 12 (699–716 MHz UL | 729–746 MHz DL)
- LTE Band 13 (777–787 MHz UL | 746–756 MHz DL)
- LTE Band 20 (832–862 MHz UL | 791–821 MHz DL)
- LTE Band 25 (1850–1915 MHz UL | 1930–1995 MHz DL)
- LTE Band 26 (814–849 MHz UL | 859–894 MHz DL)
- LTE Band 29 (717–728 MHz DL Only)
- LTE Band 30 (2305–2315 MHz UL | 2350–2360 MHz DL)
- LTE Band 41 (2492–2690 MHz TDD)
- UMS/HSPA+: B1, B2, B4, B5, B8
- GSM/GPRS/EDGE (850/900/1800/1900)
- LTE FDD (Cat. 6) Data Rate: DL up to 300Mbps & UL up to 50 Mbps
- LTE Bandwidth\*: 1.4, 3, 5, 10, 15, 20 MHz
- Max. Output Power: 23dBm
- Carrier Aggregation
  - DL LTE-FDD
    - 20 MHz intraband non-contiguous
    - 40 MHz interband
  - DL LTE-TDD
    - 40 MHz intraband contiguous and non-contiguous
    - 40 MHz interband

### Carrier Aggregation Combinations

- LTE Band 1: 1 + 8
- LTE Band 2: 2 + 2/5/12/13/29
- LTE Band 3: 3 + 7/20
- LTE Band 4: 4 + 4/5/12/13/19
- LTE Band 5: 5 + 2/4/30
- LTE Band 7: 7 + 3/7/20
- LTE Band 8: 8 + 1
- LTE Band 12: 12 + 2/4/30
- LTE Band 13: 13 + 2/4
- LTE Band 20: 20 + 3/7
- LTE Band 30: 30 + 5/12
- LTE Band 41: 41 + 41

### 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)

### 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

### Quality of Service Control

- IEEE 802.1Q VLAN
- Outbound Load Balancing (Round Robin, Weight or IP Hash)

### 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
- Support SNMP
- Syslog monitoring
- Out-of-Band Management via serial console
- BECentral Cloud-Based Remote Management

### Hardware Specifications

#### Physical Interface

- 3G/4G LTE: Two(2) SMA Female Connectors
- GPS: One (1) SMA Female Connector
- WAN: 3G/4G LTE (and/or ETH WAN Optional)
- RS-232 (DCE, DB-9): one (1) port
- Ethernet LAN: 2-port 10/100/1000Mbps auto-crossover (MDI/ MDI-X) switch
- SIM Card: One (1) slot
- Reset Button
- Power Connector: 4-pin connectors
- LED Indicators
  - Power
  - Internet
  - LTE
  - Ethernet

#### Power Specifications

- Input: DC 9V~56V

#### Physical Requirements

- Dimensions: 4.29"(W) x 1.17"(H) x 3.43"(D) (109mm x 29.7 mm x 87 mm)

#### Operating Environment

- Operating temperature: -4 to 140° F (-20 to 60° C)
- Humidity: 20 ~ 95% non-condensing