BEC TECHNOLOGIES

MXConnect Series

Advanced Industrial 4G/LTE Router

BEC MX-200

Overview

The BEC MX-200 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. The MX-200 provides a reliable and cost-effective alternative solution for business continuity. The platform can served as the primary connection or backup connection when wired connections fail, become unavailable or non-existent.

High Availability and Network Resilience

The MX-200 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 Quaility of Service (QoS) Framework

The MX-200 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. The BEC LCMS (LTE Central Management System) is a comprehensive device management platform designed to minimize deployment, lower support expenses and maximize the operational efficiency and profitability of the operator. The LCMS 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 functions, including OTA firmware upgrades (individual or batch), LAN, and WAN setting configuration, are also available in the LCMS.

Designed for Industrial Environments

Purpose-built for continuous operation in harsh environments, the MX-200 supports an extended operating temperature range from -4 to 140º F (–20 to 60º C) and a flexible input voltage range of 8-56V 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.

Carrier Certifications

at&t T-Mobile verizon

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) (cloud based)
- Out-Of-Band Management (OOBM)
- Virtual Routing Redundancy Protocol (VRRP)

QoS (Quality of Service)

- IEEE 802.1Q VLAN
- Outbound Load Balancing

Enterprise Class Routing and Security

- Dynamic Routing Protocols (BGP, OSPF)
- Secured VPNs (IPSec, GRE, LT2P, PPTP)

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, Digital signage, Remote surveillance, Vending Machines, Retail PoS, Remote patient care/maintenance services, SCADA, Metering applications and much more.Metering applications and much more.

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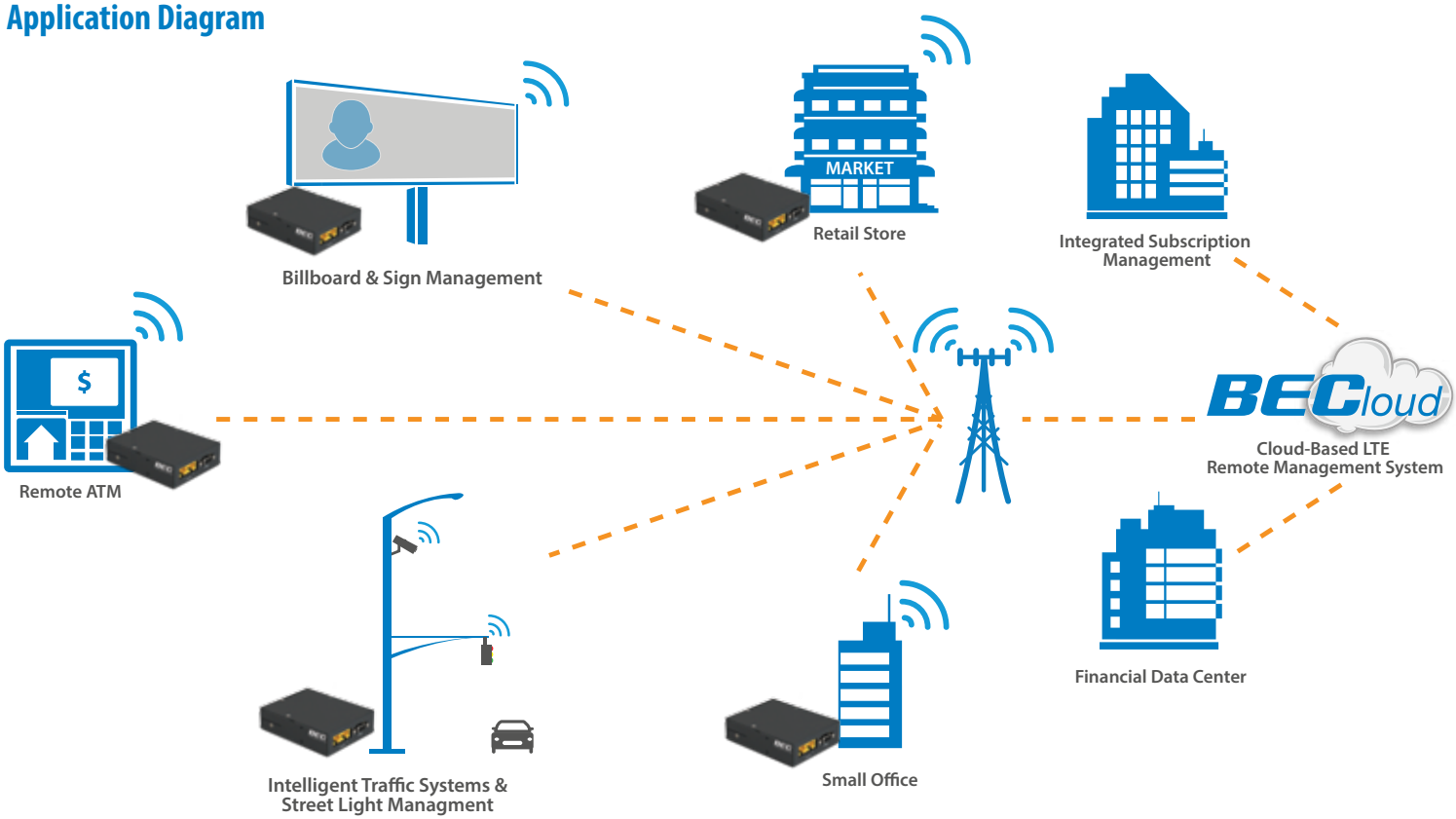
Application Diagram



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: 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
- Web-based GUI for Configuration and Management Center

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

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

Dynamic Routing Protocols
- BGP and OSPF

Secured VPN
- 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 Encyption for PPTP
- IPsec DES, 3DES and AES encyption

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
- Syslog monitoring
- 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