



4G/LTE Industrial M2M Router

The BEC MX-230 M1 Industrial M2M Router is a low-power wide area network (LPWAN) enabled device supporting Cat.M1 (LTE-M) technologies optimizing range and service coverage for low-cost, low-bandwidth and low-power IoT/M2M communication.

The MX-230 M1 is feature-packed NB-IoT/LTE-M router in compact and rugged designed to be deployed in any harsh environment and hard-to-reach areas. MX-230 M1 features two Gigabit Ethernet interfaces with one versatile port for LAN or ETH WAN connectivity, an RS-232 Serial interface enabling serial device connectivity over IP, optional A-GPS, advanced software and management tools enabling high availability, reliability, high degree of network security operation, centralized control and visibility in distributed environments.

Versatile WAN Options

The MX-230 M1 is an LTE-M/NB-IoT enabled router with dual WAN links, mobile carrier network and the wireline, for internet redundancy. One of the LAN ports is an interchangeable Gigabit Ethernet LAN/WAN added for much of bandwidth when needed.

Designed for Industrial Environments

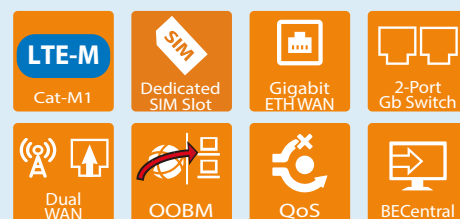
Purpose-built for continuous operation in harsh environments, the MX-230 M1 supports an extended operating temperature range from -4 to 140° F (-20 to 60° C) and a flexible input voltage range of 9-56V DC making it suitable for diverse environments and applications. To enable simple, reliable and efficient integration the ultra-compact, lightweight and low profile design incorporates highly flexible mounting options to ensure that the device can be easily mounted discretely anywhere.

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 MX-230 M1.

Key Application:

- CDMA-based IoT Migration
- Out-of-band Management
- Retail PoS / SCADA
- Metering Applications
- Industrial Control & Automation
- ATMs and much more



Advantages

- Offer LTE-M or Ethernet IP Broadband Connectivity
- Ideal Upgrade Path 2G Based IoT Solutions
- Low Bandwidth > Lower Data Cost
- Lower Latency & Enhanced Coverage

High Performance & Easy Access

- SX Antenna Technology for Increased coverage, signal reception and efficiency
- Local and Remote Management via SNMP
- BECentral® Remote Management System
- Virtual Routing Redundancy Protocol (VRRP)

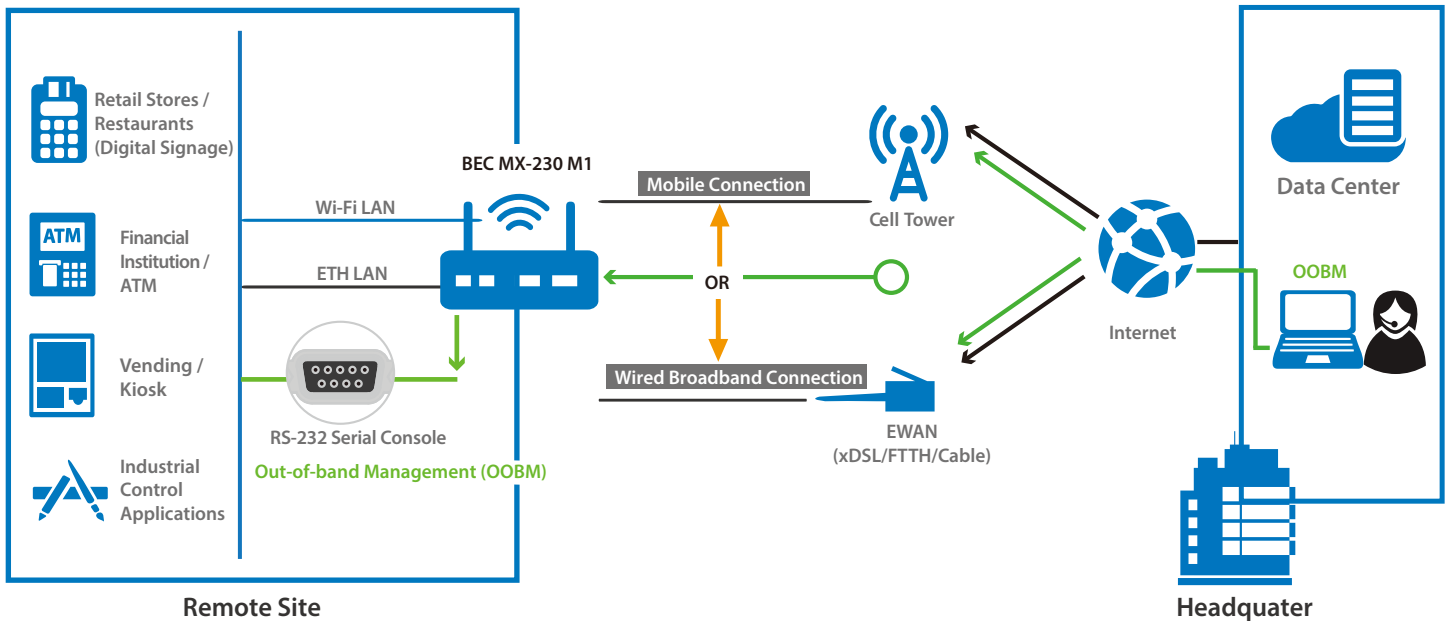
QoS (Quality of Service)

- IEEE 802.1Q VLAN
- Outbound Load Balancing
- Bandwidth Management and Control

Ultra-Compact and Lightweight Design

- Small Form Factor NB-IoT/LTE-M Router
- Fits in the palm on your hand
- Simplified deployments, easily mounted discretely anywhere

Application Diagram



Features & Specifications

Availability and Resilience

- Dual-WAN ports (4G & Ethernet WAN)
- Load balancing - Maximizing bandwidth of outbound traffic

Supported Frequency Bands

- 4G/LTE FDD (Cat. M1)
 - : B13 (777–787 MHz UL | 746–756 MHz DL)
- Peak Downlink (DL) and Uplink (UL) of
 - Cat. M1 : 375Kbps (DL) / 375Kbps (UL)
- GSM (850 / 900 / 1800 / 1900MHz)
- LTE Maximum Output Power: 23dBm

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

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
- BECentral® Cloud Management
- Support SNMP
- Syslog monitoring

Hardware Specifications

Physical Interface

- 3G/4G LTE: One (1) SMA Female Connector
- GPS: One (1) SMA Female Connector
- WAN: 4G/LTE and/or ETH WAN
- RS-232 (DCE, DB-9): One (1) Port
- Ethernet LAN: 2-port 10/100/1000Mbps auto-crossover (MDI/ MDI-X) switch
 - 1 x Versatile Port
 - : LAN1 / EWAN
- SIM Card: One (1) slot
- Reset Button
- 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 – 140° F (-20 – 60° C)
- Humidity: 20 ~ 95% non-condensing