

# MX-1200 Series

4G/LTE Multi-Carrier Modular Router



## 4G/LTE Multi-Carrier Modular Router

BEC MX-1200 4G/LTE Multi-Carrier Router is a versatile, feature-packed 4G/LTE Router in rugged design and is compatible with BEC MX-100U cellular modem plug-in for an immediate mobile network expansion support 2 SIMs for carrier failover and failback and embedded GPS with concurrent-multi-GNSS engine for GPS or GLONASS. This platform comes with 4-port Gigabit Ethernet switch, up to two (2) configurable LAN/WAN ports, two (2) multi-purpose USB 2.0 hosts, carrier-grade 802.11ac dual-band WIFI access point and Hotspot with captive portal, enterprise routings, secured VPNs, vehicle ignition sensing, robust firewall security and cloud-based remote device management. MX-1200 is designed to support a wide range of applications and vertical machine-to-machine (M2M) market segments and improve business continuity.

### Mobile and Fixed Broadband Services Ready

MX-1200 platform supports two (2) SIMs for carrier redundancy or seamless failover (with MX-100U) between carrier networks and is equipped up to two (2) versatile Gigabit Ethernet LANs/WANs for wireline connection such as Fiber(FTTH), Cable or DSL with speeds up to 1000Mbps. Using BEC WAN Management in the Web GUI to manage and ensure uninterrupted Internet services by assigning failover to specific WAN interfaces, setting up WAN load balance to smoother traffic to ensure no drops on latency-sensitive application and data.

### Secure Network Privacy Protection

With hardware-based VPN engine, MX-1200 supports simultaneous and multiple VPN remote and/or site-to-site connection access without network performance degradation. All online data transmissions including phone call, database access, etc. are encrypted and protected via the VPN technologies offered by the MX-1200 including PPTP, IPSec, L2TP, GRE, OpenVPN and compatible with most major servers and platforms by establishing private tunnels and enabling office environment for Remote/Branch employees to work without being present in the headquarter office to ensure business continuity

### Maximized Wi-Fi Speed and Coverage

With the next wireless generation, 802.11ac, integrated in the MX-1200, the router delivers fast Wi-Fi speeds of up to 1200Mbps. The MX-1200 supports a link rate up to 300Mbps in 2.4GHz frequency range & 867Mbps 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. MX-1200 also supports the 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

MX-1200 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.

### Key Application:

- Enterprise
- Business Continuity
- Mission Critical
- Transportation & Fleet
- School Bus Wi-Fi
- Public Safety
- FirstNet Applications



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

- (MX-100U Plug-In) Offers 4G/LTE broadband connectivity
- (MX-100U Plug-In) LTE FDD (Cat. 6) Data Rate: DL up to 300Mbps & UL up to 50 Mbps
- (MX-100U Plug-In) Carrier Aggregation
- (MX-100U Plug-In) Multi-WAN interfaces: Mobile 4G/LTE with Dual SIM, EWAN and Wi-Fi WAN for network resilience and reliable connectivity
- (MX-100U Plug-In) Multi-Service APN Selection and Management
- Carrier Grade 802.11ac Wi-Fi, and Hotspot and Captive Portal Functionality
- Embedded GPS option for real-time asset tracking and location data-based applications
- Local and Remote management via SNMP or BECentral® (BEC's Cloud Based Remote Management)

### QoS (Quality of Service)

- Traffic prioritization based-on IP protocol, port number and IP address
- Enhanced IGMP Proxy/Snooping and Fast Leave

### Enterprise Class Routing and Security

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

### Designed for challenging / rugged environments

- Hardened enclosure with Industrial-graded components
- Designed to withstand heat, humidity and protect from shock, vibration, etc.

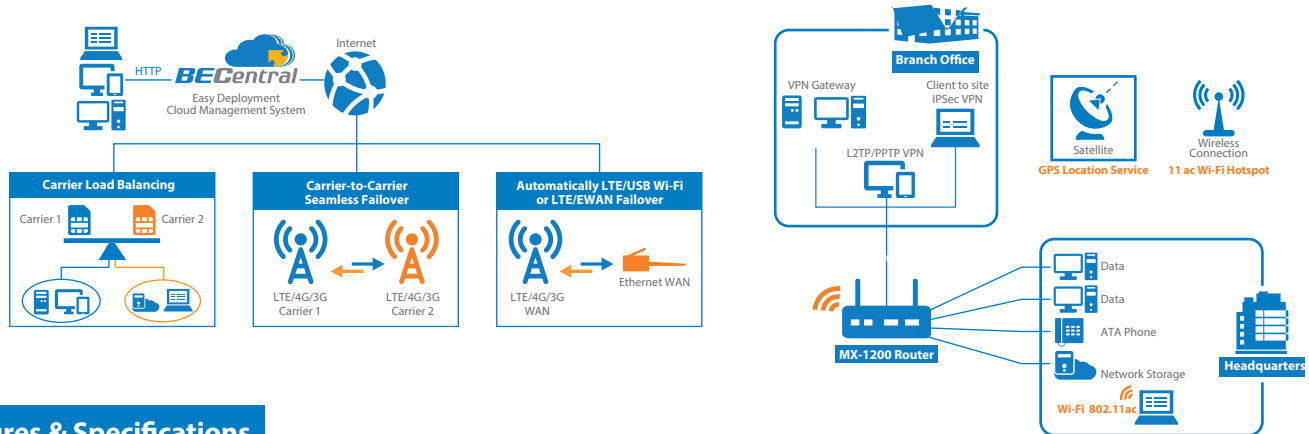
### Carrier Certifications



### 24/7 Cloud Management & Network Visibility

Remote monitoring, management and control of devices in real-time is essential for IoT networking devices, M2M and critical applications. The 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. The 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-1200.

### Application Diagram



### Features & Specifications

#### Availability and Resilience

- Multi-WAN Interfaces
- Carrier to Carrier Failover (With MX-100U)
- Auto failover and failback (With MX-100U)
- Load Balancing (With MX-100U)

#### 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

#### 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 Encryption for PPTP
- IPsec DES, 3DES and AES encryption
- OpenVPN: 1 server up to 4 clients

#### Quality of Service Control

- Traffic prioritization based on IP protocols, port number and IP address

#### USB Application Server

- Storage: FTP server and Samba server

#### Dynamic Routing Protocols

- BGP and OSPF

#### 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) & 867Mbps (5GHz) wireless data rate
- 64/128 bits WEP supported for encryption
- Wireless security with WPA-PSK, WPA2-PSK, Mixed WPA/WAP2-PSK, (TKIP/AES), 802.1x/Radius
- Multiple SSID (4 SSIDs), BSSID
- Wireless Client Isolation
- Wi-Fi Hotspot with captive portal
- Radius or integrated account database
- Wall Garden support

#### Supported Frequency Bands (MX-100U)

- WAN LTE: North America and Global LTE
- LTE FDD(Cat. 6): Bands 1/2/3/4/5/7/8/12/13/20/25/26/29/30
- LTE TDD(Cat. 6): Band 41
- Carrier Aggregation
  - DL LTE-FDD
    - 20 MHz intraband non-contiguous
    - 40 MHz interband
  - DL LTE-TDD
    - 40 MHz intraband contiguous & non-contiguous
    - 40 MHz interband
- UMTS/HSPA+: B1, B2, B4, B5, B8
- GSM/GPRS/EDGE (850/900/1800/1900)
- Peak downlink speeds up to 300Mbps and peak uplink speeds up to 50Mbps
- Channel Bandwidth: 5MHz, 10MHz, 15MHz, 20MHz
- Transmit Power: +23dBm
- Sensitivity: -96dBm

#### Intelligent Ignition Sensing

- For In-vehicle connectivity installations

#### 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
- Support SNMP
- Syslog monitoring

#### Hardware Specifications

##### Physical Interface

- Wi-Fi: four (4) Female RP-SMA Connectors
- 3G/4G LTE (MX-100U Plug-In): two (2) SMA Female Connectors
- (Optional) GPS (MX-100U Plug-In): one (1) SMA Female Connector
- WAN: 3G/4G LTE and/or ETH WAN
- USB 2.0 Host: two (2) ports
- Ethernet LAN: 4-port 10/100/1000Mbps auto-crossover (MDI/ MDI-X) switch
- SIM Card (MX-100U Plug-In): two (2) slots
- Reset Button
- Power Jack
- LED Indicators

##### Power Specifications

- Input: DC 10V – 56V

##### Physical Requirements

- Dimensions: 8.86"(W) x 1.97"(H) x 6.79"(D) (225mm x 50 mm x 172.4 mm)

##### Operating Environment

- Operating temperature: -40 to 140°F (-40 to 60° C)
- Humidity: 20 ~ 95% non-condensing