

MXConnect® BEC MX-320-UT

5G RedCap Industrial Router



Ideal Use Cases

Private 5G & LTE Network Deployments
Distribution Automation (DA) & Smart Grid Control
SCADA & Remote Monitoring
Distributed Energy Resources (DERs) Integration
Capacitor Bank & Voltage Regulator Monitoring
Remote Terminal Units (RTUs) & Field Controllers
Grid Modernization & Industrial IoT Connectivity

Purpose-Built 5G RedCap for Utility Networks

The BEC MXConnect® MX-320-UT 5G Industrial Router delivers purpose-built 5G RedCap connectivity for utility grid modernization and critical infrastructure applications. Designed for distribution automation, SCADA, remote monitoring, and grid-edge communications, it combines efficient 5G Standalone (SA) technology with LTE Cat 4 support, providing a practical migration path from existing LTE networks.

Supporting public cellular networks, CBRS shared spectrum, and private Anterix 900 MHz networks, the MX-320-UT 5G offers flexible deployment options for distributed utility infrastructure. Its Anterix Active validation confirms successful operation on private LTE networks, while the Qualcomm Snapdragon SDX35-3 platform provides a future upgrade path to wider 5 MHz paired-channel operation as Anterix networks evolve.

Optimized Performance and Industrial Connectivity

Engineered for long-life utility field deployments, the MX-320-UT 5G delivers efficient cellular connectivity with optimized power consumption and reduced device complexity. Dual Gigabit Ethernet, dual DB-9 serial interfaces, digital I/O, and dual SIM/eSIM support enable integration with existing RTUs, controllers, and grid-edge equipment while providing flexible connectivity and network redundancy.

Centralized Management and Network Visibility

BECentral® CloudEdge simplifies the deployment and management of geographically distributed devices through centralized provisioning, real-time monitoring, performance analytics, historical reporting, and proactive alerts. Remote diagnostics and management capabilities help utilities maintain network visibility, streamline maintenance, and improve operational efficiency.



5G RedCap Connectivity & Network Resilience

- 5G Standalone (SA) RedCap with LTE Cat 4 support
- Public cellular, CBRS, and Anterix 900 MHz networks
- Anterix Active validated for private LTE operation
- Future upgrade path to paired 5 MHz Anterix channels
- Multi-WAN, automatic failover, and dual SIM/eSIM

Enterprise Routing and Secured VPN

- Dynamic routing with BGP and OSPF
- Secure VPN tunneling for remote connectivity
- Stateful firewall and network security features
- Redundant WAN connectivity with automatic failover

Industrial-Grade Design

- Rugged, hardened industrial metal enclosure
- Compact design for space-constrained installations
- Dual Gigabit Ethernet interfaces
- Dual DB-9 serial interfaces and digital I/O
- Flexible DC power input for utility field deployments

Remote Management

- Web-based interface for local and remote management
- SNMP monitoring and TR-069 remote management
- Remote firmware and configuration management
- BECentral® CloudEdge centralized device management

Features & Specifications

Availability and Resilience

- 5G and Ethernet WAN connectivity
- Automatic failover and fallback
- Load balancing across supported WAN interfaces
- Virtual Routing Redundancy Protocol (VRRP)
- Keep Alive connectivity monitoring

Supported Frequency Bands

5G RedCap 3GPP Release 17

- 5G SA: n1, n2, n3, n5, n7, n8, n12, n13, n14, n18, n20, n25, n26, n28, n30, n38, n40, n41, n48, n66, n70, n71, n77, n78, n79
- Channel Bandwidth: Up to 20 MHz bandwidth
- Modulation: 256QAM DL / 64QAM UL
- Future upgrade to support 5x5 Anterix spectrum

4G / LTE (Cat.4)

- Support Frequency Bands (FDD & TDD): 1, 2, 3, 4(66), 5(18,19,26), 7, 8, 12(17), 13, 14, 20, 25, 26, 28, 29, 30, 32, 34, 38, 39, 40, 41, 42, 43, 46(LAA), 48, 71, 106 (Anterix)
- Channel Bandwidth: Up to 20 MHz bandwidth
- Modulation: 256QAM DL / 64QAM UL

Peak Data Transmission

- 5G SA Peak Data Rates: 223Mbps DL / 123Mbps UL
- 4G/LTE Peak Data Rates: 200Mbps DL / 105Mbps UL (The presented data rates are theoretical only)

Transmitting Power

- 5G SA bands: Class 3 (23 dBm $\pm$ 2 dB)
- LTE bands: Class 3 (23 dBm $\pm$ 2 dB)
- LTE HPUE bands: B41 & B42 Class 2 (26 dBm $\pm$ 2 dB)

Network Protocols and Features

- IPv4, IPv6, IPv4 / IPv6 dual stack
- IPv6 in IPv4 (6RD) / IPv4 in IPv6 (DS-Lite) / IPv6-464XLAT
- Dual APN
- Keep Alive
- 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, MLD proxy and MLD snooping for video service

Firewall

- Built-in NAT Firewall
- Stateful Packet Inspection
- Prevents DoS attacks including Land Attack, Ping of Death, etc.
- Access Control
- IP / MAC / URL / Domain Filtering

Dyanmic Routing

- BGP and OSPF

VPN/Tunneling

- IPSec, OpenVPN, PPTP, L2TP VPN Tunneling
- OpenVPN VPN Tunneling
- PPTP VPN Tunneling
- L2TP VPN Tunneling
- GRE (up to 8 tunnels)
- Embedded PPTP / L2TP / IPSec / OpenVPN Client and Server
- IKE Key Management
- MPPE Encryption for PPTP
- IPSec DES, 3DES and AES encryption

Serial Port (RS-232/RS-422/RS-485)

- DNP3/TCP, Modbus/TCP, Telnet Server, SSH Server, UDP Server/ Client, TCP Server/ Client

Utility Applications

- PTP Ethernet (Precision Time Protocol Ethernet)
- Modbus/TCP
- DNP3/TCP
- IEC 61850-90-5 R-GOOSE
- IEC 61850-3
- IEEE 1613
- IEEE 2030.5

Global Navigation Satellite System (GNSS)

- Embedded GNSS Engine for GPS or GLONASS

Digital IO

- Alarm IO

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® CloudEdge Management
- SNMP v1, v2, v3, MIB-I and MIB-II support
- Syslog monitoring
- SMS Control function for status and reboot

Hardware Specifications

Physical Interface

- 5G: Two (2) SMA Female Connectors
- Ethernet LAN: 2-port Gigabit Interfaces auto-crossover (MDI/ MDI-X) switch
- Serial: DB9 Male x (2)
- Digital Input: 1x2 Terminal Block
- Console: 1x3 Terminal Block
- Dual SIM Card Slot (2FF)
- Reset button
- Power Connector: 1x3 Terminal Block
- LED indicators

Physical Specifications

- Dimensions: 4.8 (W) x 1.5 (H) x 3.8 (D) in. (125 x 97 x 40 mm)
- Weight: 1.36lbs (0.62kg)

Power Requirements

- Input: DC 10V - 56V

Operating Environment

- Operating Temperature: -40° to 70°C (-40° to 158°F)
- Humidity: 20 ~ 95% non-condensing

IP Rating

- IP50

Hardware Interfaces

