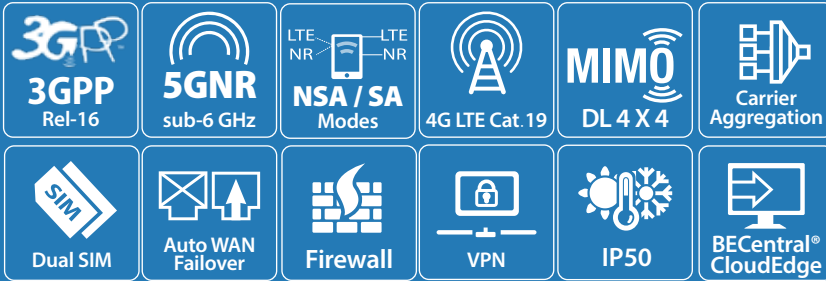


MXConnect® BEC MX-220-UT-5G

Advanced Industrial 5G Router



Ideal Use Cases

- Private 5G & LTE Network Deployments
- Distribution Automation (DA) & Smart Grid Control
- Distributed Energy Resources (DERs) Integration
- Grid Modernization & IoT-Driven Connectivity
- Predictive Maintenance & Asset Management
- Field Workforce Connectivity & Mobile Operations
- Security, Surveillance & Critical Infrastructure Protection

In today's rapidly evolving energy landscape, utilities and electric cooperatives face unprecedented demands. Aging legacy networks struggle to keep pace with the need for real-time data, secure communications, and mission-critical application support. Latency, bandwidth constraints, cybersecurity threats, and coverage gaps are no longer acceptable risks. You need a network solution that is reliable, resilient, and ready to meet the demands of tomorrow. The BEC MX-220-UT-5G Advanced Industrial 5G Router delivers precisely that.

The BEC MX-220-UT-5G redefines utility connectivity with unparalleled spectrum flexibility, seamlessly operating across public Tier 1 carrier spectrum, dedicated CBRS shared spectrum, and private Anterix Band 106, allowing utilities to tailor network deployments for optimal coverage and performance.

5G NR Network Performance and Enhanced Capacity

Embrace the future of connectivity with this 3GPP Release 16 compliant 5G platform. Experience high-performance 5G with lower latency and enhanced bandwidth across SA/NSA modes with 2CA sub-6 GHz carrier aggregation. Backward compatibility with 4G LTE ensures seamless operation when 5G coverage is unavailable or during a 5G rollout. Maximize network performance with advanced 4x4 MIMO DL/2x2 MIMO UL antenna technology and dual SIM support. Dual Gigabit Ethernet (WAN/LAN configurable), dual DB-9 (RS-232/RS-422/RS-485), active GPS, and DI/DO inputs provide versatile connectivity options, making it ideal for a wide range of applications.

Valuable insights and Essential Network Visibility at the Edge

Seamless Integration with BECentral® CloudEdge. The platform simplifies deployments of any scale with zero-touch provisioning and provides visual dashboards with real-time analytics, detailed reporting, historical analysis, performance monitoring, proactive alerts/notifications, and API extensibility for 3rd party integration.



High Performance and Network Resilience

- **5G NR**
 - : 3GPP Release 16 NSA/SA Operation, Sub-6 GHz
 - : SA (Max.) DL 2.4 Gbps (DL) / 550 Mbps (UL)
 - : NSA (Max.) DL 3.4 Gbps (DL) / 900 Mbps (UL)
- **4G/LTE Cat.19** (Max.) 1.6 Gbps (DL) / 200 Mbps (UL)
- Multi-WAN, Automatic Failover, Dual SIM

Enterprise Class Routing and Secured VPN

- BGP and OSPF Dynamic Routing Protocols
- IPSec, GRE, L2TP, PPTP, and OpenVPN
- Advanced secure and simultaneous VPN connections

Industrial-Grade Design

- Rugged and Hardened Metal Housing (IP50)
- Extended Temperature range (-40 to 75°C)
- Flexible input voltage (10V - 56V)
- Class I Division 2 (C1D2) Groups ABCD T4
- Shock and Vibration: MIL-STD 810 Compliant
- Power Consumption: 2-4 watts typical, 11 watts peak

Management

- Web-based GUI for remote and local management
- SNMP v1, v2, v3, MIB-I and MIB-II support
- TR-069 remote management
- Supported by BECentral®, BEC's CloudEdge device management platform, to extend network visibility and control of devices remotely

MXConnect® BEC MX-220-UT-5G

Advanced Industrial 5G Router



Features & Specifications

Availability and Resilience

- Multiple WAN ports (5G or ETH WAN)
- Load Balancing - Maximizing bandwidth of outbound traffic
- Automatic WAN failover

Supported Frequency Bands

• 5G NR sub-6 GHz

- : Comply 3GPP Rel.16 - SA/NSA
- : Support Frequency Range 1 Bands (SA & NSA): n1, n2, n3, n5, n7, n8, n12, n13, n14, n18, n20, n25, n26, n28, n29, n30, n38, n40, n41, n48, n66, n70, n71, n77, n78, n79
- : Carrier Aggregation: sub-6 GHz (FDD&TDD, 2CA)
- : Channel Bandwidth: Up to 120 MHz bandwidth
- : Modulation: 256QAM DL / 256QAM UL

• 4G / LTE (Cat.19)

- : 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)
- : Carrier Aggregation: 5CA DL / 2CA UL
- : Channel Bandwidth: 1.4/3/5/10/15/20 MHz
- : Modulation: 256QAM DL / 64QAM UL

• Data Transmission

- 5G NSA: DL 3.4 Gbps (DL) / 550 Mbps (UL)
- 5G SA: DL 2.4 Gbps (DL) / 900 Mbps (UL)
- 4G/LTE: DL 1.6 Gbps / 200 Mbps (UL)

• 5G FR1 Antenna

- Low Band: 2x2 MIMO
- Mid Band / High Band: 4x4 MIMO (DL Only)

• External Outdoor Antenna (Optional)

- Omni-Directional Wideband
- 4x4 MIMO Gain; 3.0dBi ~10 dBi
- GPS/GNSS
- 1 meter (Low-Loss LMR 200 Cable)
- IP67 compliant | Wind-loaded: 60m/sec
- UV-resistant (UL-746C compliant)

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

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

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

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 Enginer 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: Four (4) 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

