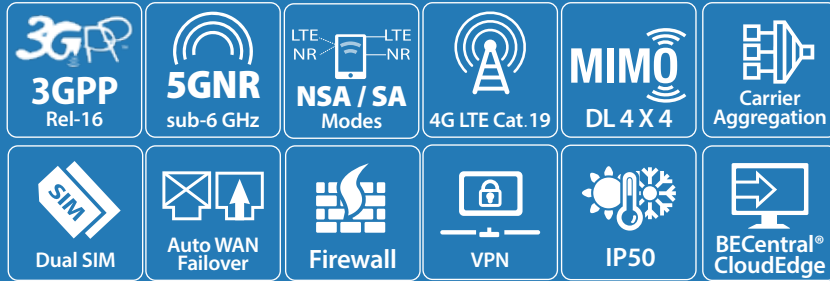


MXConnect® BEC MX-220-UT-5G

Advanced Industrial 5G Router



Ideal Use Cases

Private Networks
Utility Networks/Communications
Industrial Connectivity
IoT/M2M Applications
Oil and Gas
Remote Monitoring & Control
Mission Critical Communications

The BEC MX-220-UT-5G Advanced Industrial 5G Router delivers mission-critical communications for industrial and utility networks. The platform provides reliable and secure connectivity across public and private cellular networks for multiple use cases across utility, industrial, oil and gas, manufacturing, and M2M/IoT applications. The router offers enterprise-grade features such as advanced security, Quality of Service (QoS), SPI firewall, integrated VPN, VRRP, load balancing, and auto-failover for exceptional uptime and network redundancy.

The MX-220-UT-5G is the perfect balance of performance, ruggedness, reliability, price, and secure wireless connectivity for mission-critical operations and acceleration on 5G network deployment

5G NR Network Performance and Enhanced Capacity

Designed for performance, the BEC MX-220-UT-5G, a 3GPP Release 16 compliant platform delivers lower latency and enhanced network connectivity across both SA/NSA modes with 2CA sub-6 GHz carrier aggregation. The MX-220-UT-5G has advanced antenna technology that offers 4x4 MIMO DL and 2x2 MIMO UL capabilities. It has Dual SIM support to ensure network diversity from different carriers. It also features Dual Gigabit Ethernet interfaces configurable for WAN/LAN usage, Dual DB-9 interfaces for RS-232/RS-422/RS-485 connection of serial devices through IP, Active GPS functionality, and DI/DO inputs.

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 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.

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)
- Offer 5G, LTE fixed wireless, and Gigabit broadband connectivity
- Automatic Failover and dual WAN interfaces for network resilience and reliable connectivity
- 2-Port Gigabit Auto-MDI/MDI-X Switch
- Advanced SX Antenna Technology for increased coverage, signal reception and efficiency

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
- SMS Control function for status and reboot
- Supported by BECentral®, BEC's CloudEdge device management platform, to extend network visibility and control of devices remotely

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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
- : Modulation (Uplink): $\pi/2$ -BPSK, QPSK, 16QAM, 64QAM, and 256QAM
- : Modulation (Downlink): QPSK, 16QAM, 64QAM, and 256QAM

• 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

• Carrier Aggregation

- sub-6 GHz: (FDD + FDD, TDD + TDD, FDD + TDD 2CA)
- LTE: 5CA DL / 2CA 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 SX Antenna

- Low Band: 2x2 MIMO
- Mid Band / High Band: 4x4 MIMO (DL Only)
- 4G/5G Management Center in web-based GUI

• 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)

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)
- IEC 61850-90-5 R-GOOSE
- Modbus/TCP
- DNP3/TCP

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

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

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: DB8 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

