

MC-Edge Intelligent Gateway

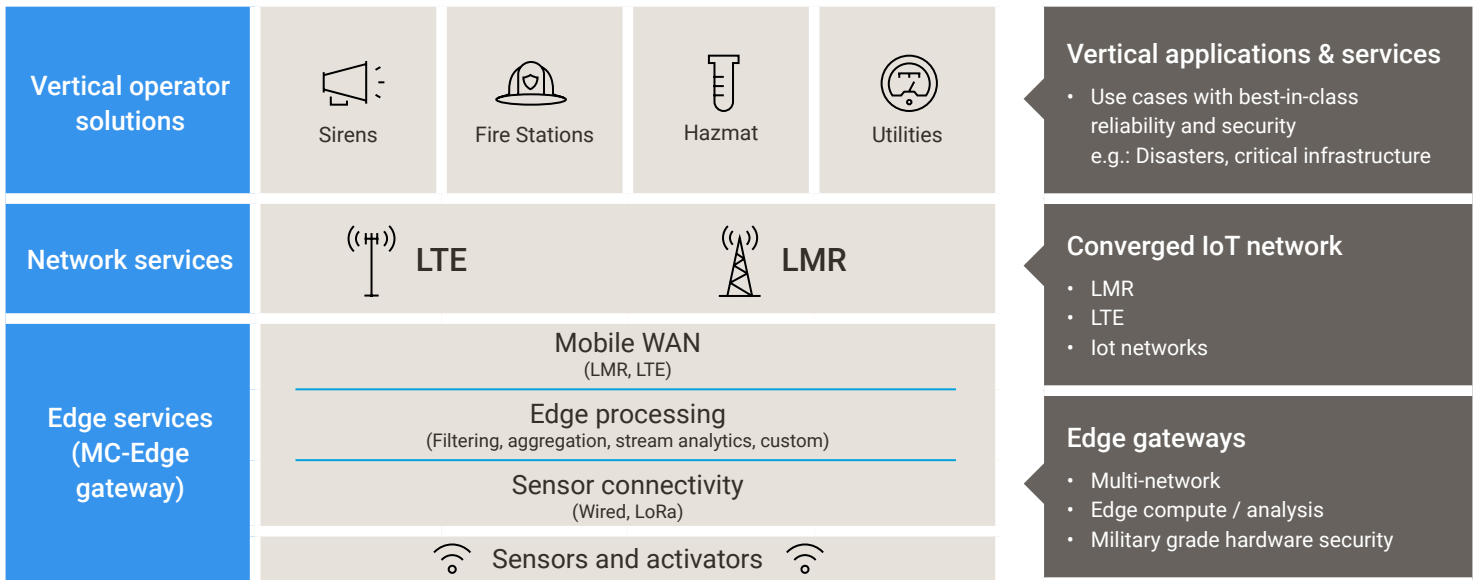
Your gateway to mission-critical IoT

Now more than ever, systems operating in mission-critical environments require a new level of connectivity and security. Whether it's a natural disaster or a man-made emergency, IoT devices are often on the first line of defense. MC-Edge® is an intelligent gateway designed for IoT applications.

MC-Edge's extensive security, ultra-reliable communication capabilities and reliability of transport across two-way radio, LTE, and analog radio modes make it easy for you to implement, support and grow your IoT systems to fully support all your mission-critical operations. Built for versatility, MC-Edge has you covered today, and prepared for tomorrow.

MC-Edge works with ThingPark, Actility's LoRaWAN Network and is fully configurable and manageable from the ThingPark Enterprise console. This addresses the need for the strictest requirements in security and operational continuity.





Utilize MC-Edge to expand and grow your sensor networks

The MC-Edge gateway enables exceptional remote monitoring and control capabilities.

Expand reach with wireless built-in

Expand your operations that currently have no power or communication coverage with MC-Edge, wireless LoRaWAN gateways and servers. MC-Edge is used as a data aggregator for LoRaWAN IoT devices that can span wide areas with minimal power consumption. Utilize MC-Edge to backhaul LoRa data over two-way radio or wireless broadband to your IoT applications.

Ensure mission-critical system security

MC-Edge maintains system integrity by automatically blocking malicious traffic and logging unauthorized attempts. The platform supports IEEE 802.1x for strict identity verification and IPsec to ensure data confidentiality and integrity. For high-security environments, AES-256 encryption protects data at rest and in transit. Enhanced physical protection is available via an optional HSM to isolate cryptographic keys and Data Safeguard technology, which prevents key theft by automatically deleting secrets if physical storage extraction is detected.

Enhance operations with edge computing

With edge computing, activities such as decision-making, filtering, logging and analytics are handled on the edge, thus increasing network capabilities, responsiveness and efficiency.

Embrace network agnostic connectivity and redundancy

MC-Edge utilizes MDLC communication protocol to link distant sites for easy scaling and provide alternative communication links in case of fallback. Use of this standard functionality eliminates the need for costly custom programming or additional communications infrastructure.

Automate C-Code development with MC-Edge AI code assistance

MC-Edge AI code assistance is an optional, dedicated assistant for C developers, deeply customized with proprietary knowledge of MC-Edge system architecture, protocols, and APIs, allowing you to stop writing code from scratch. Beyond code generation, the toolkit acts as a comprehensive assistant, automatically fixing errors, writing application tests, and adhering to system constraints for efficient solutions.

Enable control and P25 radio system remote management

Integrated into Motorola Solutions' P25 dispatch or radio sites, MC-Edge can be used to control physical access, monitor environmental sensors and manage alarms.



System specifications

| GENERAL | |
|---|---|
| Operating temperature | -30°C to 60°C (-22°F to 140°F) |
| Dimensions (CPU) | 2.95 in. x 6.3 in. x 4.4 in (WxHxD) 75 mm x 160 mm x 112 mm (WxHxD) |
| Dimensions (SPE I/O module) | 1.4 in. x 6.5 in. x 4.4 in. (WxHxD) 36 mm x 165 mm x 112 mm (WxHxD) |
| Dimensions (CAN bus I/O module) | 2.95 in. x 6.3 in. x 4.4 in. (WxHxD) 75 mm x 160 mm x 112 mm (WxHxD) |
| Backplane dimensions | 6.2 in. x 1.2 in x 3.1 in. (WxHxD) 158 mm x 31 mm x 79 mm (WxHxD) |
| DIN rail option | Yes |
| Wall mount option | Yes (using DIN rail) |
| Construction | Modular |
| Input voltage | 9-30V DC |
| Real-time clock (RTC) backup battery type | Rechargeable coin-cell battery, capable of maintaining the RTC for at least 30 days at +25°C when the main power is disconnected |
| RTC battery charging temperature | 0°C to 45°C (32°F to 113°F) |
| SDIO card | Yes |
| Internal transceiver options | P25 (North America), LTE, Private LTE, LoRa |
| External connections | Analog MOTOTRBO TETRA P25 Null Modem |
| Network topologies | Point-to-point/multipoint Store and forward Star Tree hierarchy Multi-communication backhaul Supported (dual/redundant link) |

| CPU | |
|-----------------------|---|
| Real-time clock (RTC) | Hardware clock with year, month, day, hour, minute and second supported |
| Communication Ports | RS232/RS485 1 port on the main board non-isolated and additional up to 2 ports on piggy Isolated (<115.2Kbps/<460.8Kbps) |
| | Ethernet Up to 3 ports, 10/100Mbps (auto negotiation) |
| | USB Host port |

| SOFTWARE | | |
|-----------------------------------|---|-----|
| Configuration and maintained tool | PC Tool (STS) | |
| MDLC Networking | Yes | |
| Direct Link | Yes | |
| RTU to RTU communication | Yes | |
| MDLC Store and Forward | Yes | |
| Broadcast | Yes | |
| Diagnostic (local, remote) | Yes | |
| Error Logger (local, remote) | Yes | |
| User programming | C IEC61131-3 MC-Edge AI code assistance | |
| Security | AES-256 end-to-end encryption User and machine authentication Central key management Central authentication server Access control Sensitive data in rest encryption IPsec SCEP PKI Secure hardware key storage (MAXIM) Complies with EU Radio Equipment Directive (RED) Article 3.3 Hardware security module (HSM) IEEE 802.1x | |
| Protocols | DNP 3.0, MDLC, Modbus, MQTT, SSH, SFTP, SNMPv3 | |
| Time synchronization | MDLC, NTP | |
| Set date and time | Yes (with time zone and Daylight Savings Time support) | |
| Services | DNS | Yes |
| | DHCP | Yes |

| LORAWAN SPECIFICATIONS | |
|--------------------------|---|
| LoRaWAN gateway hardware | |
| Radio chipset | SX1301 and SX1257 |
| Radio frequency plan | AS923, AU915-928, EU863-870, US902-928 |
| Frequency ranges | 863-870 MHz, 902-928MHz |
| Receive sensitivity | Up to -140dBm |
| Max TX output | +28dBm |
| LoRaWAN software | |
| LoRaWAN server | Yes |
| LoRaWAN gateway | Basic station for general LoRaWAN network Activity base station for Activity LoRaWAN Network (ThingPark) |



| I/O PORTS | | I/O PERFORMANCES |
|---------------------|---|--|
| Main board | 3 DI + 1 DO ML (isolated) | 2 kHz for all inputs |
| SPE I/O modules | | |
| Mixed I/O module | 16 DI | DI 1-8 counter input frequency: 10 kHz DI 9-16 counter input frequency: 1 kHz |
| | 4 DO EE | 3 DOs form A (two contacts), 1 DO form C (3 contacts) |
| | 4AI (+20mA, 4-20mA) | AI resolution 16 bit, 0.1% @ 25C |
| DI/DO module | 32 DI/DO FET | 1 kHz for all inputs |
| | 16 DI/DO FET | |
| CAN bus I/O modules | | |
| Mixed I/O module | 7 DI / 6 DO 4EE 2ML (isolated) | 2 kHz for all inputs |
| | 4 AI (+20mA, 4-20mA) | 16 bit, 0.1% @ 25C |
| | 1 AO (isolated) (AO: 0 -20mA, 4 -20mA, 0-10V) | 12 bit, 0.25% @ 25C |
| Mixed digital | 8 DO EE 16DI 5-18 V /DRY | - 2 kHz for all inputs |
| | 8 DO EE 16DI 18-60 V | - 2 kHz for all inputs |

| 4G (LTE) / 3G SUPPORTING BANDS S | | | | |
|----------------------------------|--|-----------------------------|---|---------------|
| | North America | Europe, Middle East, Africa | Asia Pacific | Latin America |
| 4G bands (LTE) | Verizon B4 & B13 B8 (900MHz US), B48 | B3, B7, B20 | B3, B28 | B4, B7, B28 |
| 3G bands (supporting bands) | B2, B5 | B1 for fallback | B5 for fallback (3G Excluded in ANZ) | |



| INTERNAL P25 RADIO SPECIFICATIONS (NORTH AMERICA) | | |
|---|----------------------------------|--|
| | VHF | 700/800 MHZ |
| Frequency range / bandsplits ² | TX: 136-174MHz RX: 136-174MHz | TX: 763-776, 793-806/806-824, 851-870MHz RX: 763-776/ 851-870MHz |
| Channel spacing | 30/25/12.5kHz | 25/12.5KHz |
| TX output power | 1-5W | 1-3W |
| Receive sensitivity (12dB SINAD) | 0.216µV | 0.250µV |

² Check with your local Motorola Solutions sales representative for frequencies available in your local area.

| INTERNAL SOUND CARD SPECIFICATIONS (EU AND UK) | |
|--|-------------------|
| Audio input | |
| Input type | Single-ended |
| Microphone sensitivity | -40 dBV/Pa ±6 dBV |
| Input voltage | 4.8 V DC |
| Input bandwidth response | 200 - 4000 Hz |
| Audio output - bridge card mode | |
| Output type | Single-ended |
| Supported impedance | > 600 Ω |
| Output voltage | > 1.2 Vrms |
| Bandwidth response | 200 - 4000 Hz |
| Audio output - headphone mode | |
| Output type | Single-ended |
| Supported headset | PMLN7540 |
| Bandwidth response | 200 - 4000 Hz |





POWER MANAGEMENT

| | | |
|---|---|---|
| Voltage management | Preconfigured thresholds based scenarios | |
| Power voltage that can be reduced or disabled | 5 power consumption options available | |
| Power consumption | CPU module all radios off | Max 300 mA / Typical 150 mA @ 12V (w/o SD card and USB) |
| | CPU module all radios on | Max 450 mA / Typical 250 mA @ 12V (w/o SD card and USB) |
| | CPU module all radios on P25 TX | 1.6 A / Typical @ 12V |
| | CPU module all radios on LoRA RX 8 channels | 0.36 A / Typical @ 12V |
| | CPU module all radios on LoRA TX | 0.605 A / Typical @ 12V |
| | CPU module all radios on LTE TX | 0.45 A / Typical @ 12V |
| | Mixed IO module | Max 194.4 mA / Typical 64 mA @12V |
| | Mixed digital IO modules | Max ~357 mA / Typical 21 mA @12V |
| | 32 DIDO module | Max 178 mA / Typical 70 mA @12V |
| | 16 DIDO module | Max 145 mA / Typical 50 mA @12V |
| Mixed IO 16 DI 4AO 4AI module | Max 165 mA / Typical 80 mA @12V | |

REGULATIONS

| | | |
|----------------|-----------------------------|---|
| Safety | US / Canada | IEC62368-1 (cUL Listed) |
| | EU, Australia / New Zealand | EN/ANZ 62368 |
| Emission / EMC | US / Canada | CFR 47 FCC part 15, subpart B (class A) ICES003 |
| | EU, Australia / New Zealand | EN301489-52, AS/CA S042.1, approved per RED |
| Cybersecurity | EU | RED Article 3.3 |
| | Worldwide | IEC 62443-4-1 maturity level 2 |

SERVICE AND SUPPORT

- One year warranty
1. Technical support - remote technical Support from our Solutions Support Center
 2. Software updates - safeguard your system from vulnerabilities and improve network performance
 3. Software upgrades - download the latest integrated system software releases with the latest features, functionalities and enhancements

To learn more, visit:

www.motorolasolutions.com/mcedge



Motorola Solutions, Inc. 500 West Monroe Street, Chicago, IL 60661 U.S.A. motorolasolutions.com

MOTOROLA, MOTO, MOTOROLA SOLUTIONS and the Stylized M Logo are trademarks or registered trademarks of Motorola Trademark Holdings, LLC and are used under license. All other trademarks are the property of their respective owners. ©2026 Motorola Solutions, Inc. All rights reserved. 05-2026 [EV23]