MC-EDGE™

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.

For more than 45 years, our SCADA solutions have demonstrated their reliability and security around the globe in helping monitor complex operations. Building upon the benefits provided by SCADA, our MC-Edge extends and maximizes those benefits while enabling and scaling the new capabilities delivered by IoT.

MC-EDGE INTELLIGENT GATEWAY

As the hub for seamless IoT communication via radio networks, MC-Edge is P25, LTE and LoRa ready. LoRaWAN support can provide bi-directional data communication up to 10 miles / 15 km line-of-sight and 1-3 miles / 2 km into buildings (note: the actual distance depends on various parameters and requires proper RF design). In addition, TETRA and PCR technologies are supported as external options. The MC-Edge is compatible with MOSCAD networks and the ACE 3600.

Flexible MC-Edge software configuration makes for easy application development and seamless integration. MC-Edge's IEC61131-3 and 'C' application platform allows users to write custom applications based on their market needs.

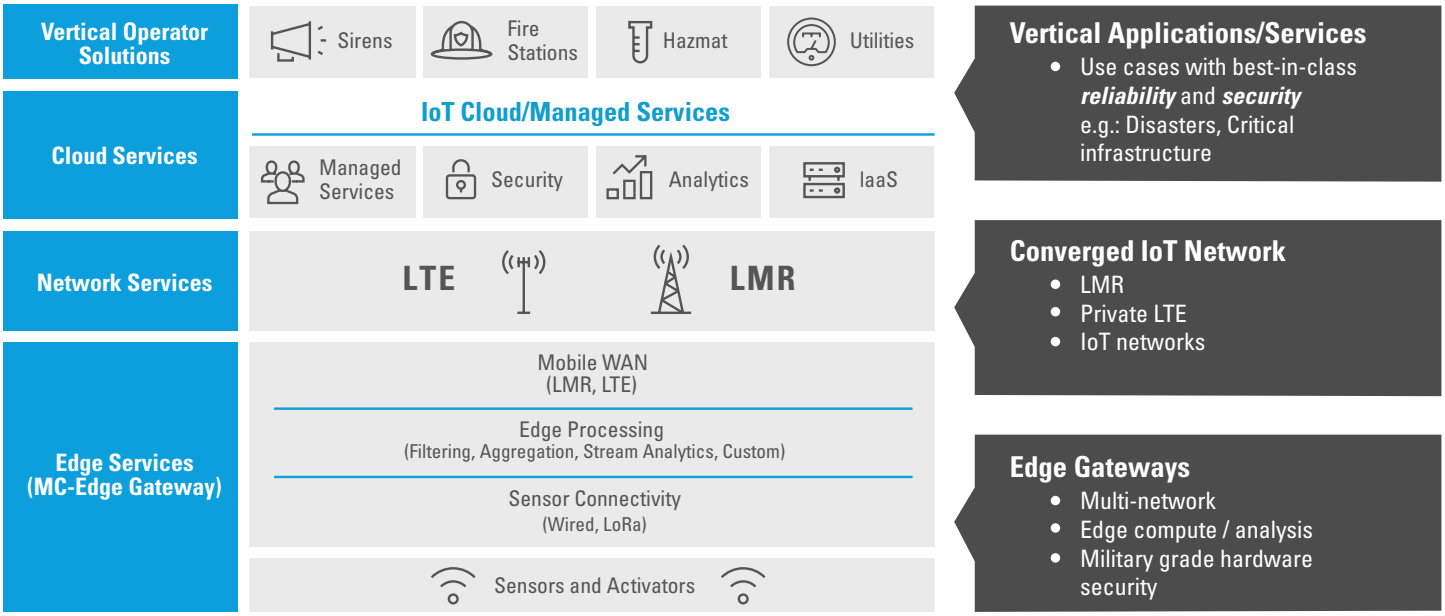
MC-Edge protects your sensitive data from cyber attacks with end-to-end encryption. Full authentication, bulletproof access control and digital signatures keep your information safe.

MC-Edge's extensive security, ultra-reliable communication capabilities and reliability of transport across LMR, 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. MC-Edge has you covered today, and prepared for tomorrow.

MC-Edge Smarter, more secure IoT for an unstable world.

MOTOROLA SOLUTIONS

MISSION-CRITICAL IOT ARCHITECTURE



UTILIZE MC-EDGE TO EXPAND AND GROW YOUR SENSOR NETWORKS

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

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.

EXPAND COVERAGE WITH BUILT-IN RADIOS

Select versions of MC-Edge (LMR, LoWaWAN, digital data radio modem) include two-way radios. This combination of communication modes expands system capabilities and geographical coverage while reducing maintenance costs due to a lesser number of products needed.

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 efficiencies.

EXTEND REACH WITH WIRELESS, LOW POWER SENSOR NETWORK

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 with the capability to leverage existing LMR investments or multiple backhaul options for retrieval of LoRa data - and still provide one holistic ecosystem. LoRaWAN can provide wide coverage, consumes minimal power, is affordable and easy to deploy.

ENSURE MISSION-CRITICAL SYSTEM SECURITY

MC-Edge will automatically look for malicious activity or violations of security policies and will only allow legitimate traffic to enter and block other activity. Unauthorized activity is logged and can be reported to a designated control center. This is especially critical for early warning alerting solutions.

SYSTEM SPECIFICATIONS

BANDS SUPPORTED	
LoRa	LoRa Radio Frequency Plan: AU915-928 AS923 US902-928 EU863-870
LTE	For NA: Verizon B4, B13 For EMEA: 4G - B3 (1800 MHz), B7 (2600 MHz) and B20 (800 MHz). 3G - B1(2100) (for fallback) For APAC: 4G - B3 (1800 MHz) and B28 (700 APT). 3G - B5(850) (for fallback)

GENERAL	
Environmental with internal radio	-30 °C to +60 °C (-22 °F to 140 °F)
Environmental without internal radio	-40 °C to +70 °C (-40 °F to 158 °F)
Input power	11-30V DC currently supported. 9-30V DC supported in the future
Wall mount option	Yes (using DIN rail)

INFRASTRUCTURE	
Applies to ASTRO/P25 Networks Only	700/800 VHF UHF R1,R2 900 MHz
LTE	Internal
Wireless Sensor Network - LoRa	LoRa Gateway
MOTOTRBO™ Radio	External
TETRA Radio	External
Analog Radio	External
Housing	NEMA 4/IP65 painted metal Up to 3 I/O slot frames Backup battery and AC (3A or 10A) or DC (48/24 5A, 24/12 8A) Dimesnions: 380 W x 380 H x 210 D mm (15" x 15" x 8.26")

CPU		
RTC	Hardware clock with year, month, date, day, hour, minute, and second supported	Yes
Communication Ports	RS232/RS485	1 port on main board (<115.2Kbps/<460.8Kbps) non-isolated
	Ethernet	Up to 3 ports, 10/100 Mbps (auto negotiation)
	USB	Host
	Micro-USB	OTG

CERTIFICATIONS

Safety	For US: UL 60950-1 (UL listed) For EU & Australia/New Zealand: EN/ANZ 62368
Emission/EMC	For US & Canada: CFR 47 FCC part 15, subpart B (class A) ICES003 For Europe/ANZ: EN301489-52 AS/CA S042.1 Approved per RED

I/Os

Main Board
3DI + 1DO (Isolated)

Input Module
12DI (Isolated)
8AI (Isolated) (AI: 0 -20mA, 4 -20mA, 0-5V)

Output Module
8DO (ML & EE)
2AO (Isolated) (AO: 0 -20mA, 4 -20mA, 0-10V)

Mixed I/O Module
7 DI/6 DO (Isolated)
4AI (0-20mA, 4-20mA)
1AO (Isolated) (AO: 0 -20mA, 4 -20mA, 0-10V)

SOFTWARE

MDLC Networking	Yes
Direct Link	Yes
RTU to RTU communication	Yes
Security	1. AES256 End to End Encryption (FIPS 140-2 Level 2 as a future option) 2. User and Machine Authentication 3. Central Key Management 4. Central Authentication server 5. Access control 6. Sensitive data in rest encryption
Protocols	Modbus RTU Modbus TCP/IP MDLC SSH SFTP
Time Synchronization	MDLC, NTP

For more information visit: motorolasolutions.com/mcedge

MOTOROLA SOLUTIONS

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