

# MSI MC-IOT MC EDGE

MISSION CRITICAL IOT, MOTOROLA SOLUTIONS

**STARCONTROLS**





# MSI BACKGROUND

Motorola SCADA/IoT solutions have been implemented worldwide for **over 45 years**, and our product line is **now advancing into the future**.

**MC Edge** has been introduced in 2018 and is the new device in the category



# PRODUCT FEATURES MC-EDGE



Land Mobile Radio



Wireless Sensors Network  
8 Channels LoRaWAN



Cellular (Verizon)



External Communication:  
- Data radio  
- Redundant Cellular



**HW Cryptographic Engine (future)/  
Memory Exp. For Logging**

**Smart Assets:**

(Eth, RS232, RS485,USB)  
- Modbus: Serial/IP Master/Slave  
- User Protocol

**Discrete Inputs/Outputs**

**Base: 3 DI's & 1DO  
Expansions:**

- **Input:** 12 DI, 8 AI
- **Output:** 8 DO, 2 AO
- **Mixed:** 7 DI, 6 DO, 4 AI, 1 AO

# PRODUCT FEATURES MC-EDGE

**Wireless Sensors Network**  
8 Channels LoRaWAN



**LTE**  
Verizon Bands 13, 4



**Ext. Communication Interfaces** (Eth, RS232, RS485,USB)

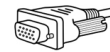
- Smart Assets
- Tetra Radio
- Siren Controllers



**HW Cryptographic Engine/  
Memory Exp. For Logging**

**Smart Assets:**  
(Eth, RS232, RS485,USB)

- Modbus: Serial/IP Master/Slave
- DNP3.0 Serial/IP Master/Slave
- User Protocol



**Discrete Inputs/Outputs**

**Base: 3 DI & 1DO**

**Expansions:**

- **Input:** 12 DI, 8 AI
- **Output:** 8 DO, 2 AO
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# MC-EDGE (REMOTE TERMINAL UNIT)

## REACH AND RESILIENCE CONNECTIVITY



### NETWORK AGNOSTIC & REDUNDANCY

Creating virtual IoT network that support any underlying physical network - IP and NoN-IP. Resulting with the ability to establish one IoT network over several separate networks.



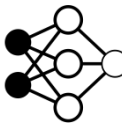
### MULTIPLE BUILT IN RADIOS

Built in radio inside the MC-EDGE: LMR, LTE, LoRaWAN or digital data radio modem



### SCALABLE NETWORKS

Easily expand the number of nodes in existing link or increase the number of links without affecting the operation, performance and reliability of the existing networks.



### EDGE COMPUTING AND PROCESS AUTOMATION

With edge computing capabilities, things like decisions, Filtering, Logging, analytics and more can be taken in the edge thus increasing efficiency, allow real time applications and allow local process implementation



### EXTENDING MONITORING OF REMOTE ASSETS

With LoRaWAN Gateway and LoRaWAN Server the MC-EDGE, which monitor a main asset, can extend monitoring capabilities to remote assets with wireless sensors



### LONG RANGE

LoRaWAN has very wide coverage range about 5 km in urban areas and 15 km in suburban areas



### SUPPORT SENSORS LOW POWER

LoRaWAN design to consume less power from any other technology to enable battery operation up to 10 years



### LOW COST SENSORS

Low cost was identified as one of the critical quality parameters for designing the LoRaWAN infrastructure and edge in order to enable the IoT use cases.



### SIMPLE DEPLOYMENT

LoRaWAN network is easy to deploy due to its simple architecture, simple star topology with standard built in device management and provisioning definitions.

# Legacy Architecture with MC-EDGE



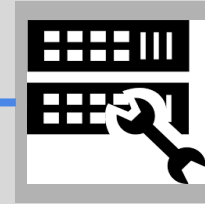
## COMMAND and CONTROL CENTER



HMI



ACE GW/FEP

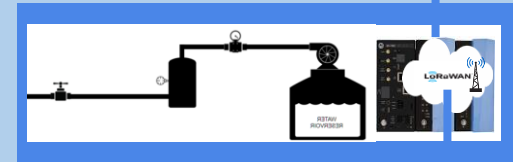
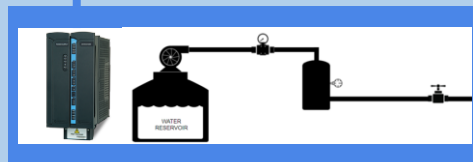
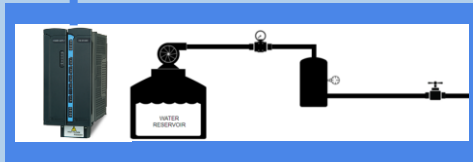


DEVICE MANAGEMENT  
(STS)



RADIO NETWORK  
TETRA/LTE/ANALOG

## REMOTE ASSETS



## DISTRIBUTED ASSETS



# New Architecture with MC-EDGE



## Cloud (HYBRID)

MSI & PARTNERS APPLICATIONS

MC COMMUNICATION

IOT SERVICES

ANALYTICS

DEVICE MANAGEMENT

## COMMAND and CONTROL CENTER

VPN (HYBRID)



HMI (WEB)

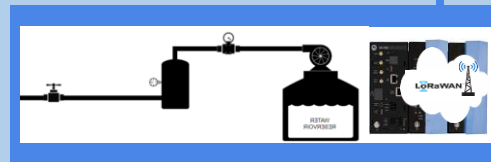
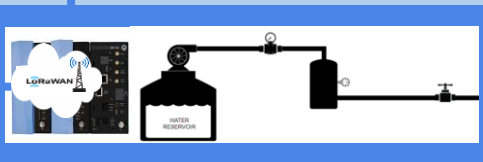
MSI MC-IOT GW



DEVICE MANAGEMENT (WEB)

## REMOTE ASSETS

RADIO NETWORK  
TETRA/LTE/ANALOG



## DISTRIBUTED ASSETS



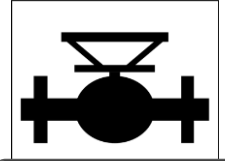
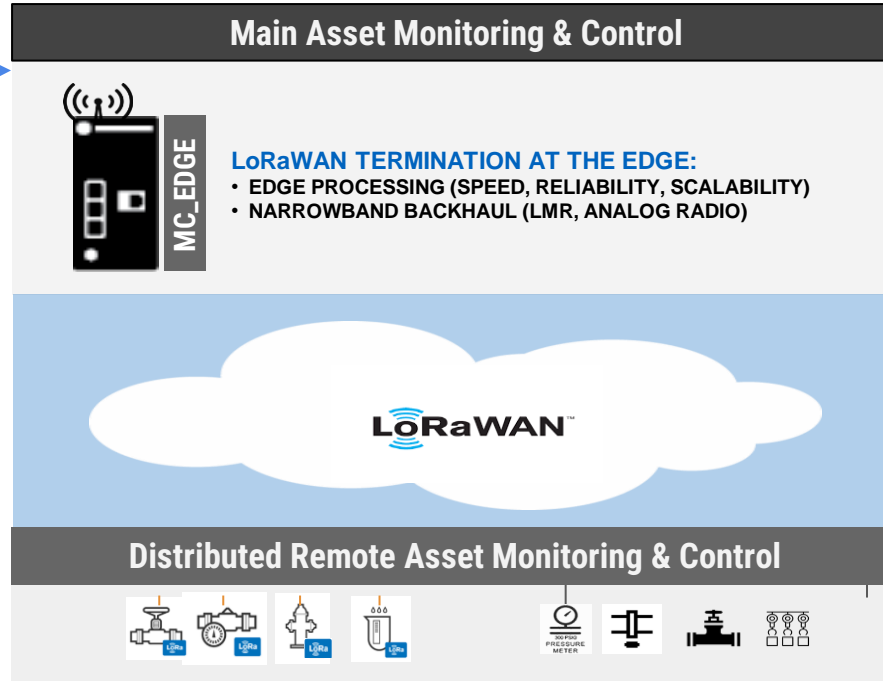
# MC-EDGE LORAWAN



First Deployment Q3 2020: **LoRaWAN termination at the edge**



Second Deployment Q4 2020: **LoRaWAN Gateway**



If tank\_level > X then  
turn on pump

