EDG 4000 SERIES SMART GATEWAY MODEMS

PRIVATE BROADBAND FOR CRITICAL INFRASTRUCTURE

Today's Critical Infrastructure enterprises require robust communications to watch over and control their far-flung physical plant and remote equipment.

Whether you run an electric utility that needs to securely monitor its reclosers and instantly respond to downed power lines; a city water department that needs to communicate with its AMI smart meters; or an energy producer keeping track of fluid levels, pressure sensors and emissions — they all require fast, reliable, secure broadband connectivity.

The availability of wireless broadband spectrum in the 900 MHz band resulting from the FCC's recent actions now allows critical infrastructure providers to deploy private LTE networks that enable secure and resilient electric grids.

INTRODUCING THE EDG 4000 SERIES SMART GATEWAY MODEMS

The EDG 4200 and EDG 4600 are secure, customizable, multi-purpose, smart gateway modems for Critical Infrastructure deployments.

The EDG 4000 series can be used in conjunction with Motorola Solutions' fixed LTE 900 MHz infrastructure, other private 900MHz networks, Citizens Broadband Radio Service (CBRS) networks and public carrier networks.

MOTOROLA SOLUTIONS

EDG 4200 AND EDG 4600

The EDG 4200 and EDG 4600 are highly secure Internet of Things (IoT) gateway modems and all-in-one multi-purpose edge devices. They can connect multiple IoT sensors and aggregate data from those endpoints, as well as provide enough processing power to run smart applications and enable time-critical intelligence and decision making directly at the edge.
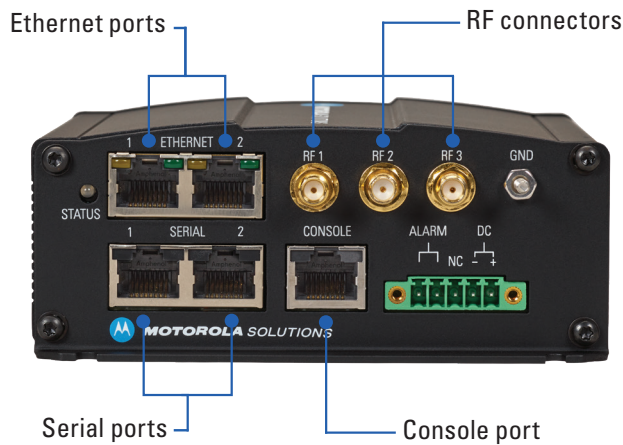
They can broadcast across multiple network technologies too. They can be configured with multiple SIM card slots with the associated radio modules, that provide flexibility to work across different networks.

There are advantages to connecting to different networks. Firstly, it supports failover and failback between Private LTE and Carrier LTE, and failover and failback within Private LTE bands (between CBRS and 900MHz). Secondly, not all the d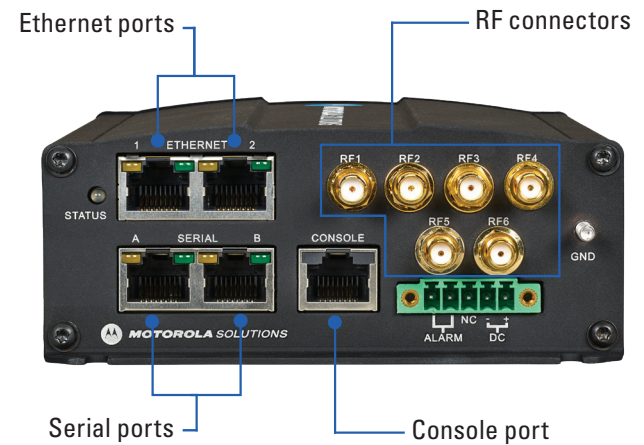ata needs to be treated equally; it needs to travel over the most appropriate network for the type of data it is. The EDG 4200 and EDG 4600 can capture and transmit time-sensitive, mission critical, low speed/throughput data on 900MHz Private LTE (Cat-4/M/NB), as well as high throughput business critical data over CBRS.

The EDG 4600 builds on the capabilities of the EDG 4200, with the ability to transmit at higher power, up to 2W Transmitter Power Output, over 900 MHz Private LTE. This helps reach out to deep rural area assets. This means you need fewer LTE sites, and can benefit from the associated reduction in deployment costs.
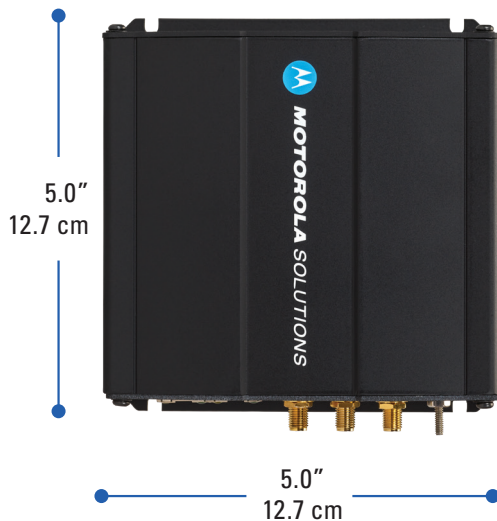
EDG 4200

Ethernet ports — RF connectors

STATUS

Serial ports — Console port

TOP VIEW

5.0"
12.7 cm

5.0"
12.7 cm

EDG 4600

Ethernet ports — RF connectors

STATUS

Serial ports — Console port

TOP VIEW

6.5"
16.5 cm

5.0"
12.7 cm

EDG 4200
FRONT VIEW

EDG 4600
FRONT VIEW

2.0"
5.1 cm
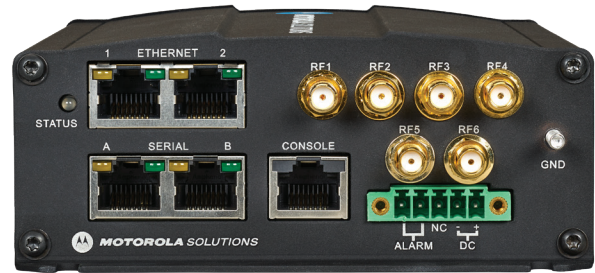
SPECIFICATIONS

NETWORK INTERFACES

	EDG 4200 and EDG 4600
RF Connectors	Up to 6 SMA connectors, 50 Ohm
Communications Modules	Select 1, 2, or 3 modules: • LTE and/or CBRS • Cat-M/NB-IoT • Wi-Fi 802.11 a/b/g/n/ac
Cellular WAN Support	Verizon, AT&T and FirstNET 900 MHz (897.5-900.5 / 936.5-939.5) CBRS Band 48 Cat-M1/NB1 (Carrier and 900MHz)
CBRS	OnGo certified
Wi-Fi	802.11 ac/a/b/g/n 2.4 GHz and 5 GHz
Serial Ports	1 RS-232/RS-422/RS-485 1 RS-232 only
Ethernet Ports	2 RJ-45 ports (10/100/1000 Mbps) with 802.3af PoE PD
Console	1 console port
Digital Interfaces	GPIO, UART, I2C (Optional)

	EDG 4200	EDG 4600
SIM Support	Up to 3 SIM card slots, with network failover	Up to 5 SIM card slots, with network failover
Transmitter Output Power	200mW	Selectable from 200mW to 2W for the 900 MHz LTE frequency, 200mW for all other available frequencies

SECURITY AND ENCRYPTION

	EDG 4200 and EDG 4600
Coprocessor	Onboard cryptographic coprocessor with secure key storage
Encryption	AES encryption (FIPS 197), FIPS 140 Capable, NIST-certified, hardware-based cryptographic, calculation algorithms
VPN	GRE tunnels, IPSec, DMVPN
Authentication	X.509 certificate support, 802.1x (Radius)
Embedded Sensors	External tamper switch with message alerts, GPS with PPS, 9-axis accelerometer with gyroscope

PHYSICAL

	EDG 4200 and EDG 4600
Input Voltage	9-60 VDC or 802.3af PoE PD
Enviornmental Temperature	Operating temperature : -13°F to 158°F (-25°C to + 70°C) Storage temperature: -40°F to +185°F (-40°C to + 85°C)
Humidity	5% to 95% non-condensing

	EDG 4200	EDG 4600
Weight (maximum)	1 lb (454 g)	2.2 lb (1 kg)
Size (WxDxH)	5" x 5" x 2" (12.7 x 12.7 x 5.1 cm)	5" x 6.5" x 2" (12.7 x 16.5 x 5.1 cm)
Power Consumption	Typical: 2-4 W Sleep mode: 400 mW Peak: 12 W	Typical: 15 W Sleep mode: 400 mW Peak: 30 W

COMPUTING

	EDG 4200 and EDG 4600
Processor	Dual-core Freescale ARM Cortex A9 SoC
Memory	1 GB DDR3 SDRAM
Storage	8 GB eMMC
Firmware	Serial configuration EEPROM
Operating System	Linux, OpenWRT
Application Hosting Environment	Docker containers, LXC containers
Expansion	Mini-PCIe and m.2 expansion card slots
Self-Test Functions	Power-on, CPU and register, interrupt, memory integrity, DMA controller, device interface, transmit and receive, loopback interface, system error/overload, system reset/reboot

ROUTER AND GATEWAY

EDG 4200 and EDG 4600	
Bridging/Switching	VLAN support (802.1q)
Routing Protocols	BGP, MPLS, RIPv2, EIGRP, LDP, IS-IS, OSPF
Network and Transport Layer Protocols	IPv4 (RFC 791, 826, 1918), IPv6 (RFC2460), IPv6-to-IPv4 and IPv4-to-IPv6, UDP (RFC 768), TCP (RFC 793), DHCP IPv6/IPv4 relay/client/server
Service and Application Layer Protocols	MODBUS over TCP/UDP/Serial, DNP3 over TCP/UDP/Serial, IEC 60870-S-101/104 protocol translation
Quality of Service (QoS)	3GPP TS 23.203 and 3GPP TS 23.207 802.1p

REGULATORY COMPLIANCE

EDG 4200 and EDG 4600[1]	
Radio Frequency	FCC 47 CFR Part 15
Environmental	RoHS
Utility	IEEE 1613 C37.90 high-voltage impulse
Safety	UL 62368-1 UL 121201 Class 1, Division 2 - Intrinsic Safety

[1] This device has not been authorized as required by the rules of the Federal Communications Commission. This device is not, and may not be, offered for sale or lease, or sold or leased, until authorization is obtained.

DEVICE MANAGEMENT

EDG 4200 and EDG 4600

A Device Manager provides an open standards-based platform for OT/IT administrators to manage and diagnose the Motorola Solutions EDG 4000 series user equipment in their networks. This comprehensive cybersecurity, device and application management solution is designed to simplify management across device types and helps to reduce costs while ensuring optimal and uncompromising user service levels. The following capabilities are provided:

Device Provisioning and Updates	Device provisioning enables the initial configuration and validation of devices, parameters and policy controls as defined by the agency or region. Ongoing over-the-air (OTA) updates of device firmware and configurations are initiated in batches or for individual devices.
Asset Management	Asset management functions provide the ability for IT administrators to track deployed LTE devices by associating customizable characteristics such as location, name and model.
Security	Communications between the user device and the device manager is encrypted using HTTPS/MQTTS protocols that provide authentication, encryption and integrity protection. Security policy controls on the device as well as device capabilities management is also provided.
Multiple Administrator Settings	Device Manager has the ability to support hierarchical, role-based administration capabilities. This allows Device Manager to be centrally hosted and yet allow autonomous management of devices by agency administrators.
Data Collection and Reports	Configuration, diagnostics, software and administration reports are provided to monitor the behavior and performance of devices and analyze and troubleshoot devices operations.
Elastic Platform	The device management platform is designed from the ground up with scalability and redundancy at its core. When the platform is functioning at maximum capacity, simply add an additional server to manage additional devices or to reduce workload and the application can automatically recognize and realign the resources.

For more information, visit: motorolasolutions.com/PrivateBroadband

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