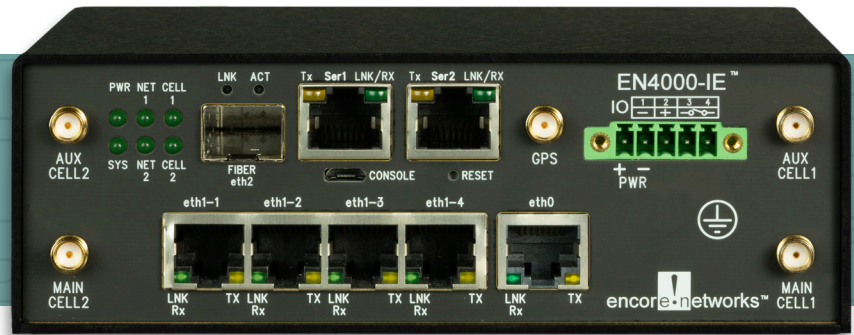


EN4000-IE™ Industrial Edge Router



EN4000-IE™ Prime Applications

- SCADA
- Power Grid Monitoring
- Substation
- PLC
- RTU
- Protocol Conversion
- Line Reclosure
- Capacitor Bank
- Switch Gear
- Video Surveillance
- Legacy Data to IP conversion

EN4000-IE™ Features

- Active/Active Dual cellular modules
- Dual SIM
- Load Sharing
- Commercial and Private 4G LTE
- CBRS and Band 8, National Carriers
- 8 Gb/s memory
- Wi-Fi Access point, Client or Hotspot
- Automatic Traffic Load sharing between wireline and wireless links
- GigE and Fiber
- License free VRRP, and GRE routing protocols
- Assign traffic to different ports
- Redundant power sources AC & DC
- IPsec VPN (Tunnel, NAT-T, Dead Peer Detection)
- VPN IP Security AES 256 and 3DES, SSL/TLS and SSH
- Prioritization, QoS
- Open VPN (Client, Server w/Certificates)
- Flexible mounting. DIN Rail, Wall, Shelf

Secure Utility Hosted On-Premises Management with enSite™ Enterprise Management System

EN4000-IE™ INDUSTRIAL EDGE ROUTER

The EN-4000-IE™ is an industrial edge LTE router designed for utilities. Its ruggedized design and multiple interfaces can be used for a wide range of SCADA applications and utility services. It adds speed, capacity, and flexibility to the EN™ series of LTE enabled routers. The EN4000-IE™ base configuration includes, 5 10/100 Ethernet ports, two configurable serial ports (RS-232, RS-485), one GigE Fiber, programmable I/O contacts in a metal enclosure with 10-60VDC input powering option and flexible mounting options using either DIN Rail, wall or shelf. The EN4000-IE™ utilizes Linux OS with optional 8 GB/s of memory allocated for running of third-party APIs in docker containers and large onboard data storage. Future software enhancements will accommodate data analytics. Multiple configuration options include 2 cellular modules with dual SIMs for active/active 4G LTE, CBRS, and Band 8 support, with an optional 802.11 Wi-Fi module.

The EN4000-IE™ has several advanced IP routing protocols and security features including IPsec VPN (AES 256/3DES), stateful firewall, Ethernet switching, and legacy industrial protocol and IP interworking to support MODBUS, DNP3 and other industrial protocols. This allows the EN4000-IE™ to support legacy SCADA and M2M equipment and applications commonly used by Utilities, Power, Oil & Gas and Water companies while simultaneously upgrading them to IP connectivity. This provides valuable flexibility and continued ROI for existing CAPEX by avoiding rip and replace of older working legacy hardware while upgrading to more secure and versatile Ethernet and IP connectivity.

The EN4000-IE™ provides exceptional features, with an intuitive Graphical User Interface (GUI) all at a low-cost with no user fees, and a five year hardware warranty.

Manage the EN4000-IE™ with enSite™

In addition, EN™ routers can be monitored and managed with Encore's customer premises server based enSite™. Encore's enSite™ offers features that will make managing your entire network of EN™ routers easier, including Cellular data limit enforcement for individual and group plans, firmware updates, Zero and One touch deployment for new hardware, customizable OAM tiers for managed network services, and critical data analytics of the network devices and services.



TECHNICAL SPECIFICATIONS

GENERAL FEATURES

Protocol management and translation of legacy industry serial protocols
 SNMPv3
 Access for control via SSH, Telnet, and web access interface
 Up to five antennas - LTE cellular, 802.11 Wi-Fi, 4G LTE, CBRS, and GPS services.
 enSite™ Enterprise Management System
 Disaster Recovery and Traffic Load Sharing over WAN connections
 QoS enforcement to prioritize critical traffic
 VDC 10-60 VDC power source

SECURITY APPLIANCE FEATURES

Stateful inspection firewall
 IEEE 802.11i (WPA2, RSN)
 DMZ LAN port
 NAT (Network Address Translation)
 SSL/TLS1
 IP Sec (RFC 2401) with AES 256 and 3DES
 Generic Router Encapsulation GRE (RFC 1701)
 Internet Key Exchange--IKE (RFC-2409)
 RADIUS authentication
 TACACS+
 Open VPN

TRANSPORT PROTOCOLS

WAN
 IP over Ethernet (compatible with MPLS services)
 Asynchronous PPP
 Synchronous PPP
 X.25
 MLPPP
 PPPoE
IP
 IP Versions 4 and 6
 IP Routing (RIP v1/v2), OSPF, BGP, or static routing
 DHCP client/server/BootP/Relay
 IP QoS and traffic prioritization
 IP fragmentation/reassembly
 IP routing over VPN; TCP and UDP
 802.1q VLAN tagging
 Virtual Redundant Routing Protocol (VRRP)
 DMVPN - Encore Enhanced - Proprietary
 IDMVPN Intelligent DMVPN Encore
 Dead Peer Detection

CELLULAR

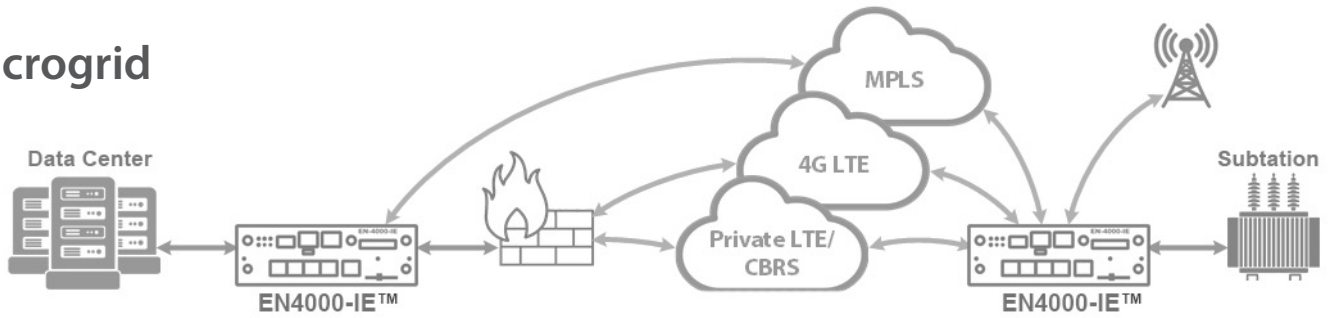
AT&T; LTE 6 300/50 Mb/s – Bands 2, 4, 5, 30 – UMTS 850/1900
 T-Mobile; LTE 4 100/50 Mb/s – Bands 2, 4, 12, 66, 71 – UMTS 850/1900
 Verizon; LTE 6 300/50 Mb/s – Bands 2 (25), 4, 5, 13, 66
 Sprint; LTE 4 150/50 Mb/s – Bands 25, 26 and 41 (1900/800/2500) MHz
 US Cellular; LTE 4 150/50 Mb/s - Bands 5, 12
 Private LTE 900 MHz Band 8
 CBRS 3.5 MHz Band 48

TECHNICAL SPECIFICATIONS

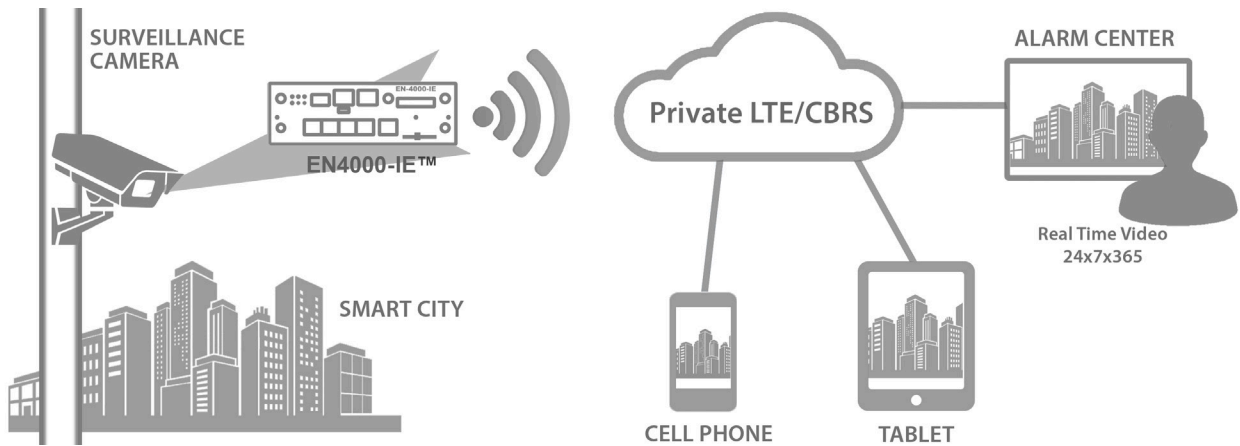
MANAGEMENT	<p>enSite™ Device Management System - Customer Premises Server Based</p> <p>SNMP v3</p> <p>Craft Interface</p> <p>GUI Web Management</p> <p>Telnet</p> <p>SSH (secure shell)</p> <p>DMNR, PNTM</p> <p>Syslog</p>
PHYSICAL FEATURES	<p>Six LEDs for network, system, cell, and power indication</p> <p>Five antenna connectors per internal factory-installed internal radios: Cellular: 4G LTE, CBRS, Band 8, GPS and 802.11ac</p> <p>Dual SIM Slots (2FF)</p> <p>Reset switch</p> <p>Micro USB Console port</p> <p>One 10/100 Mb/s Ethernet RJ-45 (WAN)</p> <p>Four 10/100 Mb/s switched Ethernet RJ-45 (LAN)</p> <p>Dual high-speed serial ports RS-232 and RS-485</p> <p>Single Optical Ethernet (SFP) interface for fiber, 1 Gb/s 10/100/1000 Mbit/s Switched Ethernet over copper</p> <p>10-60 VDC input</p>
OPTIONAL MODULES	<p>One to Two Cellular 4G LTE, CBRS and Band 8</p> <p>GNSS GPS</p> <p>Wi-Fi Access/Client</p>
SERIAL DATA SUPPORT	<p>Legacy Protocol support for IEC 60870-5-101/103/104 MODBUS, DNP3</p> <p>Other Protocols Available</p>
POWER SUPPLY OPTIONS	<p>DC: 10-60; 13 Watts maximum</p>
ENVIRONMENTAL	<p>Operating Temperature: -40 C to +85 C (without cellular modules)</p> <p>-40 C to +75 C (with cellular modules)</p> <p>Storage: -40 C to +85 C</p> <p>Humidity: 5% to 95%, non-condensing</p>
MECHANICAL	<p>Height: 6.015 inches/153 mm</p> <p>Width: 2.019 inches/52 mm</p> <p>Depth: 4.234 inches/108 mm</p> <p>Weight: 2 lb. (0.90 kg)</p>
STANDARDS COMPLIANCE	<p>RoHS Compliant</p> <p>Class 1/Div 2</p> <p>EMC: FCC Part 15, EN 55011/CISPR II, IEC 61850-3, IEEE 1613</p> <p>Product Safety: UL/CSA 60950-1, CAN/CSA-C22.2 No. 60950-1-03, EN 60950-1</p>

Specifications subject to change without notice

Microgrid



Video Surveillance



Industrial SCADA - M2M

