

EN-4000™ Hardened Edge Router



EN-4000™ Prime Applications

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

EN-4000™ Features

- Active/Active Dual cellular modules
- Dual SIM
- Commercial and Private 4G LTE
- CBRS and Band 8, National Carriers
- 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
- Open VPN (Client, Server w/Certificates)
- Flexible mounting. DIN Rail, Wall, Shell
- Optional PoE

On-Premises Management with enSite™ Enterprise Management System

EN-4000™ HARDENED EDGE ROUTER

The EN-4000™ is a hardened LTE edge router designed for utilities. A modular design can be customized for a wide range of applications and services. It adds speed, capacity, and flexibility to the EN™ series of cellular enabled routers. The EN-4000™ base configuration includes, 5 10/100 Ethernet ports, redundant power supplies (AC and DC) in a metal enclosure, and is DIN rail mountable. The EN-4000™ with 3 modular expansion slots can be customized to include a 4-port Power over Ethernet switch, 2 cellular modules, 4G LTE, Band 8 CBRS, 802.11 Wi-Fi module, additional GigE Ethernet ports, GigE Fiber optic ports, dual RS-232, RS-485, RS-422 serial data ports, and I/O contacts.

The EN-4000™ has, several advanced IP routing protocols and security features including IPsec VPN (AES 256/3DES), stateful firewall, Ethernet switching, and legacy industrial protocol to IP internetworking i.e. MODBUS and DNP3. This allows the EN-4000™ to support legacy SCADA and M2M applications commonly used by Utilities, Power, Oil & Gas and Water companies. With the modular hardware interfaces and support of legacy protocols the EN-4000™ can be used to replace aging copper line connections while simultaneously upgrading to IP connectivity. This provides valuable flexibility and continued ROI as a way to preserve existing CAPEX by avoiding rip and replace of older working legacy hardware and upgrading to more secure and versatile Ethernet/IP connectivity.

The EN-4000™ provides exceptional features at a low-cost with no user fees, a five year hardware warranty, an intuitive web GUI interface, built in layer 4 Firewall, advanced IP routing features, and legacy serial and industrial protocol support.

Manage the EN-4000™ with enSITE™

In addition, EN™ routers can be monitored and managed with Encore's customer premises server based enSite™. Encore's enSite™ offers many 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 to assist in delivering 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 four antennas - LTE cellular, 802.11 Wi-Fi, 4G LTE, CBRS, and GPS services.
 Three slots for optional interface modules
 enSite™ Enterprise Management System
 Disaster Recovery and Traffic Load Sharing over WAN connections
 QoS enforcement to prioritize critical traffic
 Redundant power sources

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
 Open VPN

TRANSPORT PROTOCOLS

WAN
 IP over Ethernet (compatible with MPLS services)
 Frame Relay (RFC-1490, IP over FR)
 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)
 Dead Peer Detection

CELLULAR

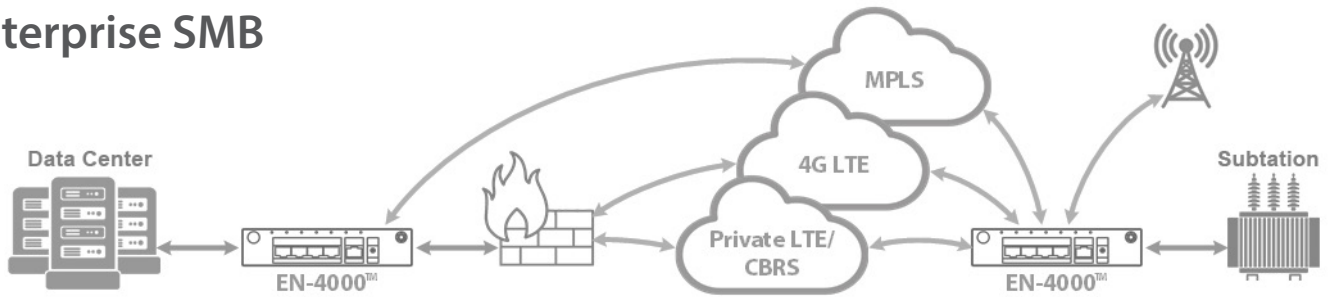
AT&T; LTE 6 300/50 Mb/s – Bands 2, 4, 5, 30 – UMTS 850/1900
 T-Mobile; LTE 4 100/50 Mb/s – Bands 2, 4, 12, 66, 71 – UMTS 850/1900
 Verizon; LTE 6 300/50 Mb/s – Bands 2 (25), 4, 5, 13, 66
 Sprint; LTE 4 150/50 Mb/s – Bands 25, 26 and 41 (1900/800/2500) MHz
 US Cellular; LTE 4 150/50 Mb/s - Bands 5, 12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

TECHNICAL SPECIFICATIONS

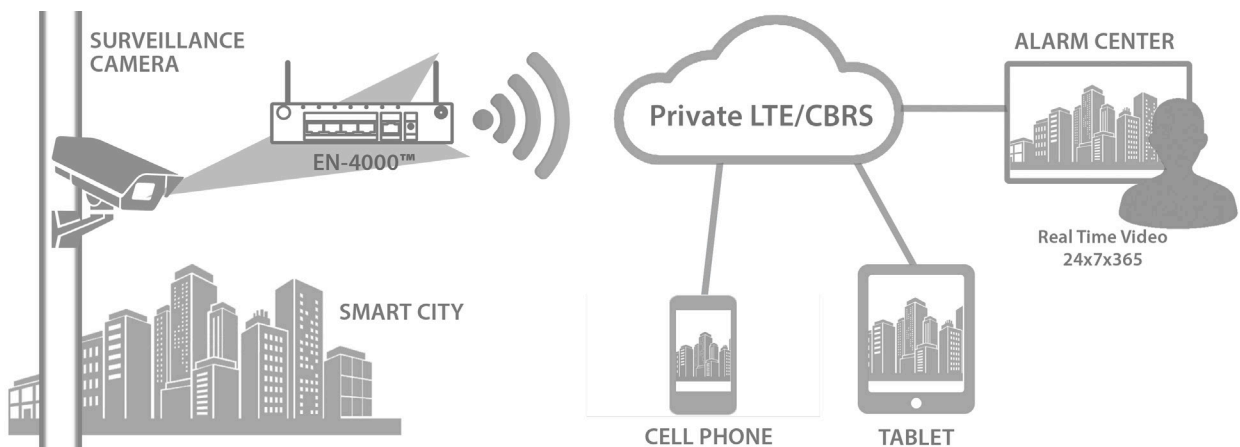
MANAGEMENT	<p>enSite™ Device Management System - Customer Premises Server Based</p> <p>SNMP v3</p> <p>Craft Interface</p> <p>GUI Web Management</p> <p>Telnet</p> <p>SSH (secure shell)</p> <p>DMNR, PNTM</p> <p>Syslog</p>
PHYSICAL FEATURES	<p>EN-4000™ Front Panel</p> <p>4 LEDs for module, system status, and power indication</p> <p>Two sets of antenna connectors for internal wireless modules</p> <p>One set of Wi-Fi antennas</p> <p>2 groups of 4 LEDs for wireless signal strength indication for two cellular modules</p> <p>Reset switch</p> <p>EN-4000™ Back Panel</p> <p>Two antenna connectors for factory-installed internal radios: Cellular: 4G LTE, CBRS, 802.11ac</p> <p>One 10/100 Mbit/s Ethernet RJ-45 (WAN)</p> <p>Four 10/100 Mbit/s switched Ethernet RJ-45 (LAN)</p> <p>5 V DC input (from AC line-power adapter)</p> <p>Additional power connector for optional factory-installed PSU, settable to other DC voltages</p>
OPTIONAL MODULES	<p>Single Optical Ethernet (SFP) interface for fiber, 1 Gig/s</p> <p>10/100/1000 Mbit/s Switched Ethernet over copper</p> <p>Dual high-speed serial ports (RS-232, RS-485, RS-422)</p> <p>Cellular 4G LTE, 3G, HSPA+, HSPA, 2G</p> <p>CBRS</p> <p>Wi-Fi Access/Client</p> <p>4-Port PoE Switch</p>
SERIAL DATA SUPPORT	<p>Up to 4 serial ports supporting EIA/TIA RS-485, RS-232, RS-422</p> <p>Legacy Protocol support for IEC 60870-5-101/103/104 MODBUS, DNP3</p> <p>Other Protocols Available</p>
POWER SUPPLY OPTIONS	<p>Redundancy between AC input and any DC</p> <p>DC: 12, 24, 48; 13 Watts maximum</p> <p>AC: 100-240 V AC Auto ranging adapter, 50-60 Hz</p>
ENVIRONMENTAL	<p>Operating Temperature: -40 C to +85 C (Industrial Hardened)</p> <p>-40 C to +75 C (Extended Temperature Commercial)</p> <p>Storage: -40 C to +85 C</p> <p>Humidity: 5% to 95%, non-condensing</p>
MECHANICAL	<p>Height: 1.6 inches/40 mm</p> <p>Width: 5.7 inches/145 mm</p> <p>Depth: 4 inches/100 mm</p> <p>Weight: 1 lb. (0.45 kg)</p>
STANDARDS COMPLIANCE	<p>RoHS Compliant</p> <p>Class 1/Div 2</p> <p>ABCD</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

Enterprise SMB



Video Surveillance



Industrial SCADA - M2M

