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 e.g. 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/TLS
- 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

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### PHYSICAL FEATURES

#### EN-4000™ Front Panel

- 4 LEDs for module, system status, and power indication
- Two sets of antenna connectors for internal wireless modules
- One set of Wi-Fi antennas
- 2 groups of 4 LEDs for wireless signal strength indication for two cellular modules
- Reset switch

#### EN-4000™ Back Panel

- Two antenna connectors for factory-installed internal radios: Cellular: 4G LTE, CBRS, 802.11ac
- One 10/100 Mbit/s Ethernet RJ-45 (WAN)
- Four 10/100 Mbit/s switched Ethernet RJ-45 (LAN)
- 5 V DC input (from AC line-power adapter)
- Additional power connector for optional factory-installed PSU, settable to other DC voltages

### OPTIONAL MODULES

- Single Optical Ethernet (SFP) interface for fiber, 1 Gig/s
- 10/100/1000 Mbit/s Switched Ethernet over copper
- Dual high-speed serial ports (RS-232, RS-485, RS-422)
- Cellular 4G LTE, 3G, HSPA+, HSPA, 2G
- CBRS
- Wi-Fi Access/Client
- 4-Port PoE Switch

### SERIAL DATA SUPPORT

- Up to 4 serial ports supporting EIA/TIA RS-485, RS-232, RS-422
- Legacy Protocol support for IEC 60870-5-101/103/104 MODBUS, DNP3
- Other Protocols Available

### POWER SUPPLY OPTIONS

- Redundancy between AC input and any DC
- DC: 12, 24, 48; 13 Watts maximum
- AC: 100-240 V AC Auto ranging adapter, 50-60 Hz

### ENVIRONMENTAL

- Operating Temperature: -40 C to +85 C (Industrial Hardened)
- -40 C to +75 C (Extended Temperature Commercial)
- Storage: -40 C to +85 C
- Humidity: 5% to 95%, non-condensing

### MECHANICAL

- Height: 1.6 inches/40 mm
- Width: 5.7 inches/145 mm
- Depth: 4 inches/100 mm
- Weight: 1 lb. (0.45 kg)

### STANDARDS COMPLIANCE

- RoHS Compliant
- Class 1/Div 2
- ABCD
- EMC: FCC Part 15, EN 55011/CISPR II, IEC 61850-3, IEEE 1613
- Product Safety: UL/CSA 60950-1, CAN/CSA-C22.2 No. 60950-1-03, EN 60950-1

Specifications subject to change without notice
Enterprise SMB

Video Surveillance

Industrial SCADA - M2M