The ComNet CNGE8MS is an 8-port Managed Ethernet Switch designed to reliably operate in harsh, environmentally challenging applications. It features four (4) 1000BASE-TX and four (4) gigabit combo ports. The four combo ports are 10/100/1000Mbps configurable for either Cat5/6 copper, or multimode or single-mode optical fiber by the use of optional ComNet SFPs* for connector type and distance. Exclusive to ComNet is C-Ring, a feature that protects the network from interruptions or temporary malfunctions with fast recovery technology. Legacy ring allows the switch to be used in an existing ring of ComNet X-Ring enabled switches. Redundant DC inputs are included for uninterrupted operation in the event of a power supply failure. The electrical ports support the 10/100/1000Mbps Ethernet IEEE802.3 protocol, and auto-negotiating and auto-MDi/MDiX features are provided. These network-managed layer 2 switches are optically and electrically compatible with any IEEE802.3 compliant Ethernet device. The CNGE8MS is DIN-rail or wall-mountable.

FEAT URES
› 16 Gbps Switching bandwidth:
   • 4 x Combo Gigabit Ports
   • 4 x 10/100/1000T(X) Ports

› IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic & Port Trunking for ease of bandwidth management

› STP/RSTP/MSTP supported

› Tested and certified by an independent laboratory for full compliance with the environmental requirements (ambient operating temperature, mechanical shock, vibration, humidity with condensation, high-line/low-line voltage conditions and transient voltage protection) of NEMA TS-1/TS-2 and CALTRANS Traffic Signal Control Equipment Specifications.

› Compatible and fully functional when used in a Moxa® Turbo ring topology

› Operating Temperature: -40° C to +75° C. Functional to +85° C.

› Windows utility, eConsole, supports centralized management, and is web-based configurable, or by Telnet and console (CLI) ports

› Supports LLDP (Link Layer Discovery Protocol)

› Event notification through Syslog, E-mail, SNMP trap, and Relay Output

› Port lock to prevent access from unauthorized MAC address

› SNMP v1/v2c/v3 for secure network management

› PTP Client (Precision Time Protocol) for clock synchronization

› C-RSTP supports network applications with complex topology

› Rigid aluminum housing design provides for DIN-Rail or wall mounting

› Lifetime Warranty

APPL ICATIONS
› 10/100/1000 Mbps Ethernet Media Converter

› High Speed Computer Links

SOFTWARE FEATURES
› STP/RSTP/MSTP (IEEE 802.1D/w/s)

› C-Ring Redundant Ring: Recovery time <30ms, with over 250 switches within the ring

› TOS/Diffserv Supported

› Quality of Service (802.1p) for Real-Time Traffic

› VLAN (802.1Q) with VLAN Tagging and GVRP Supported

› IGMP Snooping for Multicast Filtering

› Port Configuration, Status, Statistics, Monitoring & Security

› DHCP Server / Client support

› Port Trunk Support

› MVR (Multicast VLAN Registration) support

* Small Form-Factor Pluggable Module. Sold separately.
SPECIFICATIONS

Connectors

- 10/100/1000BASE-T(X) 4 x RJ-45 Ports with Auto MDI/MDIX
- 10/100/1000BASE-T(X) 4 x RJ-45 Combo Ports
- 100/1000BASE-X 4 x SFP Ports

Power Connector

- Terminal Block

Serial Console

- RS-232 RJ-45 Port @ 9600 bps, with console cable.

Switch Properties

- Switching Latency: 7 µs
- Switching Bandwidth: 16 Gbps
- Max. VLANs Available: 4096
- IGMP Multicast Groups: 1024
- Port Rate Limiting: User Defined
- MAC Table: 8192 MAC addresses available
- Priority Queues: 4
- Processing: Store-and-Forward

Security Features

- Enable/Disable Ports, MAC based port security
- Port-Based Network Access Control: 802.1x
- VLAN (802.1Q): To segregate and secure network traffic
- Supports Q-in-Q VLAN for performance & security to expand the VLAN space
- Radius Centralized Password Management
- SNMPv3 Encrypted Authentication and Access Security
- TACACS

Alarms & Monitoring Systems

- Relay Output: For fault event alarming
- Syslog Server / Client: To record and view events
- SMTP: For event warning notifications via email
- Event Selection Support

Network Redundancy

- C-Ring: Legacy Ring
- Moxa® Turbo Ring: C-RSTP
- STP: RSTP
- MSTP

Fault Alarm Relay

- Relay Contact Rating: 24 VDC @ 1 A

Power

- Operating Voltage Range: Dual DC Inputs: 12 – 48 VDC
- Power Consumption, Typical: 25W
- Current Protection: Overload Current Protected
- Polarity Protection: Reverse Polarity Protected

Electrical & Mechanical

- Indicating LEDs: Power Ring Master ComRing Fault
- RJ-45 Port SFP Port
- Size (L x W x H): 2.93 x 4.3 x 6.05 in (7.43 x 10.92 x 15.36 cm)
- Shipping Weight: <3 lbs./1.1 kg

Environmental

- MTBF: >100,000 hours
- Operating Temperature: -40˚ C to +75˚ C Functional to +85˚ C
- Storage Temp: -40˚ C to +85˚ C
- Relative Humidity: 5% to 95% (non-condensing)

Ethernet Standards Supported

- IEEE 802.3 for 10BASE-T
- IEEE 802.3u for 100BASE-TX and 100BASE-FX
- IEEE 802.3z for 1000BASE-X
- IEEE 802.3ab for 1000BASE-T
- IEEE 802.3x for Flow control
- IEEE 802.3ad for LACP (Link Aggregation Control Protocol)
- IEEE 802.1Q for VLAN Tagging
- IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol)
- IEEE 802.1x for Authentication
- IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)

Regulatory Approvals

- EMI: CC Part 15, CISPR (EN55022) Class A
- EMS: EN61000-4-2
- ESD: EN61000-4-3
- RS: EN61000-4-4
- EFT: EN61000-4-5
- Electrical Surge: EN61000-4-6
- CS: EN61000-4-4, EN61000-4-11
- Mechanical Shock: IEC60068-2-27
- Free Fall: IEC60068-2-32
- Vibration: IEC60068-2-6
- Safety: EN60950-1

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNGE8MS (4) 10/100/1000BASE-T(X) + (4) gigabit combo ports</td>
<td></td>
</tr>
<tr>
<td>Accessories DC Plug-in Power Supply, 90-264 VAC, 50/60 Hz (Included, for benign 0 to 50˚C applications only. Hardened power supply available, consult factory)</td>
<td></td>
</tr>
<tr>
<td>Options [2] Add suffix ‘/C’ for Conformally Coated Circuit Boards to extend to condensation conditions (Extra charge, consult factory)</td>
<td></td>
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</tbody>
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[1] Multimode fiber needs to meet or exceed fiber standard ITU-T G.651. Single mode fiber needs to meet or exceed fiber standard ITU-T G.652. This product requires a fiber installation with a minimum 30 dB connector return loss. The use of Super Polish Connectors is recommended.

Complies with FDA Performance Standard for Laser Products, Title 21, Code of Federal Regulations, Subchapter J.

In a continuing effort to improve and advance technology, product specifications are subject to change without notice.