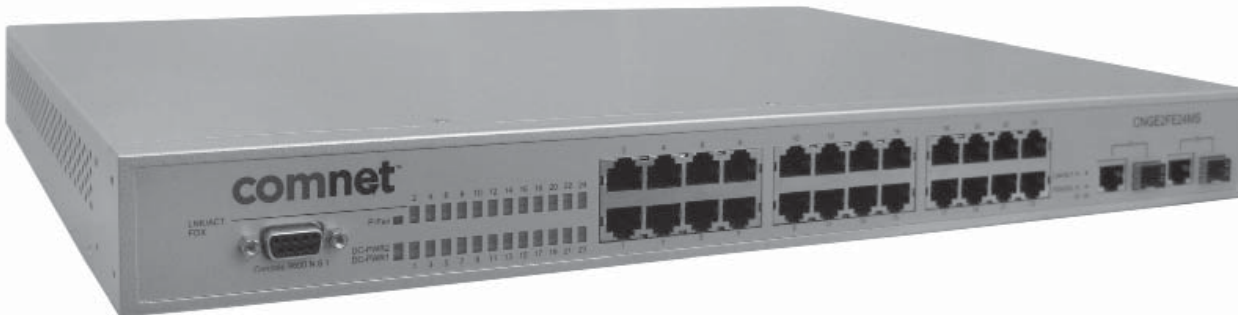


environmentally hardened managed Ethernet switch with  
(24) 10/100TX + (2) 10/100/1000TX RJ45 or 1000 FX SFP ports



## Description

The ComNet™ CNGE2FE24MS Managed Ethernet Switch provides transmission of (24) 10/100 BASE-TX and (2) 10/100/1000TX or 1000FX combo ports. Unlike most Ethernet switches, these environmentally hardened units are designed for deployment in difficult operating environments, and are available for use with either conventional CAT-5e copper or optical transmission media. The 24 electrical ports support the 10/100 Mbps Ethernet IEEE 802.3 protocol, and auto-negotiating and auto-MDI/MDIX features are provided for simplicity and ease of installation. 2 ports are 10/100/1000 configurable for copper or fiber media for use with multimode or single mode optical fiber, selected by optional SFP modules. These network managed layer 2 switches are optically (1000 BASE-FX) and electrically compatible with any IEEE 802.3 compliant Ethernet devices. Plug-and-play design ensures ease of installation, and no electrical or optical adjustments are ever required. The CNGE2FE24MS incorporates LED indicators for monitoring the operating status of the managed switch and network. These units are rack mountable.

## Applications

- ITS Traffic Signalization & Surveillance/ Incident Detection Networks
- Industrial and Factory Automation
- Integrated IP-Video and Data Transmission Networks
- Industrial Security Access Control Systems

## Features

- Environmentally hardened for direct deployment in difficult unconditioned out-of-plant and roadside installations
- 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
- Extended ambient operating temperature range: -40° C to +75° C
- 10/100 BASE-TX and 1000 BASE-FX compatible
- Flexible optics configuration via SFP plug-in modules
- Redundant power supply compatibility reduces possibility of single-point-of-failure for highest possible reliability - Fully configurable through web-based or SNMP network management
- IGMP Snooping V1/V2 for multicast filtering and IGMP Query V1/V2
- Port based VLAN (IEEE 802.1Q)
- Rapid Spanning Tree protocol (IEEE 802.1W)
- Port Based Security
- Lifetime Warranty



**benefits****System Interface/Performance:**

- RJ45 port support Auto MDI/MDI-X function
- Store-and-Forward Switching Architecture
- Back-plane (Switching Fabric): 8.8Gbps
- 4Mbits Packet Buffer
- 8K MAC Address Table
- Redundant Power Supply Design

**VLAN**

- **Port Based VLAN**
- **Support 802.1 Q Tag VLAN**
- **GVRP**

**Port Trunk with LACP****QoS (Quality of Service)**

- Support IEEE 802.1p Class of Service
- Per port provides 4 priority queues
- Port Base, Tag Base and Type of Service Priority

**Port Mirror: Monitor traffic in switched networks**

- TX packet only
- RX packet only
- Both TX and RX packet

**Security**

- Port Security: MAC address entries/filter
- IP Security: IP address security management to prevent unauthorized intruder
- Login Security: IEEE802.1X/RADIUS

**IGMP with Query mode for Multi Media Application****X-Ring**

- X-Ring, Dual Homing, Couple Ring and Central Ring Topology
- Provide redundant backup feature and the recovery time below 20ms

**Provides EFT protection 4KV for power line****Spanning Tree**

- Support IEEE802.1d Spanning Tree
- Support IEEE802.1w Rapid Spanning Tree

**Support up to 256 Policy ACL (Access Control List)****Support IEEE802.1ab LLDP****Bandwidth Control**

- Ingress Packet Filter and Egress Rate Limit
- Broadcast/Multicast Packet Filter Control

**System Event Log**

- System Log Server/Client
- SMTP e-mail Alert
- Relay Alarm Output System Events

**SNMP Trap**

- Device cold start
- Power failure
- Authentication failure
- Port Link Up/ Link Down
- Private trap

**TFTP Firmware Update and System Configure Restore and Backup****Case/Installation**

- IP-30 Protection

**Supports 6KV Ethernet ESD protection****STANDARD COMPLIANCE**

- IEEE802.3 10Base-T Ethernet
- IEEE802.3u 100Base-TX/100Base-FX
- IEEE802.3z Gigabit fiber
- IEEE802.3ab 1000Base-T
- IEEE802.3x Flow Control and Back Pressure
- IEEE802.3ad Port trunk with LACP
- IEEE802.1d Spanning Tree/ IEEE802.1w Rapid Spanning Tree
- IEEE802.1p Class of Service
- IEEE802.1q VLAN Tag
- IEEE802.1x User Authentication (Radius)
- IEEE802.1ab LLDP



## specifications

### hardware specifications

<b>Switch Architecture</b>	Back-plane (Switching Fabric): 8.8Gbps Packet throughput ability (Full Duplex): 13.1 Mpps @64bytes	<b>Operating Temperature</b>	-40°C to 75°C
<b>Transfer Rate</b>	14,880pps for Ethernet port 148,800pps for Fast Ethernet port 1,488,000pps for Gigabit Fiber Ethernet port	<b>Storage Temperature</b>	-40°C to 85°C
<b>Packet Buffer</b>	4Mbits	<b>Fan</b>	Fanless
<b>Mac Address</b>	8K MAC address table	<b>Case Dimensions</b>	440mm (W) × 280mm (D) × 44mm (H) 17.32" (W) × 11.0" (D) × 1.73" (H)
<b>Flash ROM</b>	4Mbytes	<b>Installation</b>	19" Rack Mount
<b>DRAM</b>	32Mbytes	<b>EMI</b>	FCC Class A, CE EN61000-4-2 (ESD), CE EN61000-4-3 (RS), CE EN61000- 4-4 (EFT), CE EN61000-4-6 (CS), CE EN61000-4-8, CE EN61000-6-2, CE EN61000-6-4, UL, cUL, CE/EN60950-1
<b>Jumbo Frame</b>	9022bytes (for Gigabit ports)	<b>IETF RFC Compliance</b>	RFC768-UDP, RFC783-TFTP, RFC791-IP RFC792-ICMP, RFC793-TCP, RFC827-ARP, RFC854-Telnet, RFC894-IP over Ethernet, RFC1112-IGMP v1, RFC1519-CIDR, RFC1541-DHCP (client), RFC2030-SNTP, RFC2068-HTTP, RFC2236-IGMP v2, RFC2475-Differentiated Services, RFC2865-Radius, RFC3414-SNMPv3- USM, RFC3415-SNMPv3-VACM
<b>Connector*</b>	(Front) RS232: Female DB-9 (for Console) (Rear) RS232: Male DB-9 (for UPWM) 10/100TX: 24 × RJ45 10/100/1000T and 1000FX Combo: 2 × RJ45 + 2 × SFP sockets	<b>IETF SNMP MIBS</b>	RFC1493-BRIDGE-MIB, RFC1907- SNMPv2-MIB, RFC2012-TCP-MIB, RFC2013-UDP-MIB, RFC2578-SNMPv2- SMI, RFC2579-SNMPv2-TC, RFC2819- RMON-MIB, RFC2863-IF-MIB, draft- ietf-bridge-rstppmib-03-BRIDGE-MIB, draft-ietf-bridge-bridgemib-smiv2-03- RSTP-MIB, IANAifType-MIB
<b>LED</b>	Gigabit Fiber: Link/Activity (Green) Gigabit Copper: Link/Activity (Green) Full Duplex/Collision (Amber) Mini GBIC Link/Activity (Green)	<b>Stability Testing</b>	IEC60068-2-32 (Free fall), IEC60068-2-27 (Shock), IEC60068-2-6 (Vibration)
<b>Power Supply</b>	12V- 48V		
<b>Redundant Power Supply</b>	12V- 48V		
<b>Power Consumption</b>	16.2 Watts		
<b>MTBF</b>	>100,000 hours		
<b>Operating Humidity</b>	5% to 95% (Non-condensing)		

PART NUMBER	DESCRIPTION
CNGE2FE24MS	Environmentally Hardened Managed Ethernet Switch with (24) 10/100TX + (2) 10/100/1000TX RJ45 or 1000 FX SFP Ports*
Accessories	24VDC Plug in Power Supply, 90-264VAC, 50/60Hz (Included)

\* 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



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.

## software features

**Management**

SNMP v1, v2c, v3/ Web/Telnet/CLI Management

**SNMP MIB**

RFC 2418 SNMP MIB, RFC 1213 MIBII, RFC 2011 SNMP V2 MIB, RFC 1493 Bridge MIB, RFC 2674 VLAN MIB, RFC 1215 Trap MIB, RFC 1643 Ethernet Like, RFC 1757 RMON1, RSTP MIB, UPS MIB, LLDP MIB, Private MIB

**VLAN**

Port based VLAN, up to 24 groups  
IEEE802.1Q Tag VLAN  
Static VLAN groups up to 256, Dynamic VLAN group up to 2048, VLAN ID from 1 to 4094. GVRP up to 256 groups.

**Port Trunk with LACP**

LACP Port Trunk: 13 Trunk groups/ Maximum 4 Trunk members

**LLDP**

Support LLDP to allow switch to advise its identification and capability on the LAN

**X-Ring**

Support X-Ring, Dual Homing, Couple Ring and Central Ring Topology.  
Provide redundant backup feature and the recovery time below 20ms.

**Spanning Tree**

Support IEEE802.1d Spanning Tree and IEEE802.1w Rapid Spanning Tree

**Quality of Service**

The quality of service determined by port, Tag and IPv4 Type of Service, IPv4 Different Service

**Class of Service**

Support IEEE802.1p class of service, per port provides 4 priority queues

**Port Security**

Support 50 entries of MAC address for static MAC and another 50 for MAC filter

**Port Mirror**

Support 3 mirroring types: RX, TX and Both packet

**IGMP**

Support IGMP snooping v1, v2; 256 multicast groups and IGMP query

**IP Security**

Supports 10 IP addresses that have permission to access the switch management and to prevent unauthorized intruder.

**Login Security**

Support IEEE802.1X Authentication/RADIUS

**Access Control List (ACL)**

Support up to 255 Policy

**Bandwidth Control**

Support ingress packet filter and egress packet limit. The egress rate control all of the packet types and the limit rates are 0-100Mbps. Ingress filter packet type combination rules are Broadcast/Multicast packet, Broadcast packet only and all of packet. The packet filter rate can be set from 0 to 100Mbps.

**Flow Control**

Support Flow Control for Full-duplex and Back Pressure from Half-duplex

**System Log**

Support System log record and remote system log server

**SMTP**

Support 1 SMTP Server and 6 e-mail accounts for receiving event alert

**SNMP Trap**

1. Device cold start                      2. Authorization failure  
3. X-Ring topology changed          4. Port link up/ link down  
Trap station up to 3

**Relay Alarm**

Provides one relay output for port breakdown, power fail.  
Alarm Relay current carry ability: 1A @ DC24V

**DHCP**

Provide DHCP Client/ DHCP Server/ IP Relay functions

**DNS**

Provide DNS client feature and support primary and Secondary DNS server

**SNTP**

Support SNTP to synchronize system clock in Internet

**Firmware Update**

Support TFTP & Console firmware update, TFTP & Console backup and restore

**Configuration upload and download**

Support binary format configuration file for system quick installation

**If Alias**

Each port allows importing 128 bit of alphabetic string of words on SNMP and CLI interface