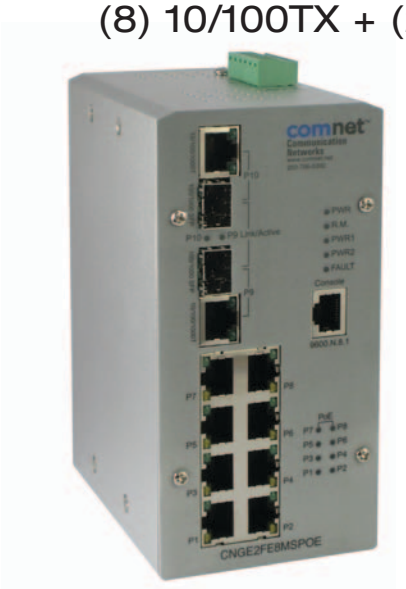
comnet
Communication Networks

CNGE2FE8MSPOE

environmentally hardened managed Ethernet switch with (8) 10/100TX + (2) 10/100/1000TX RJ45 or 100/1000 FX SFP ports



PoE

E
8+2

Description

The ComNet™ CNGE2FE8MSPOE Managed Ethernet Switch provides transmission of (8) 10/100 BASE-TX and (2) 10/100/1000TX or 100/1000FX 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 8 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. All 8 ports support IEEE802.3af Class 1 – 3 based Power over Ethernet (PoE). 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 (100/1000 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 CNGE2FE8MSPOE incorporates LED indicators for monitoring the operating status of the managed switch and network.

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 100/1000 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
- IGMP Snooping V1/V2 for multicast filtering and IGMP Query V1/V2
- Port based VLAN (IEEE 802.1Q)
- IEEE802.3af Class 1 – 3 PoE
- Rapid Spanning Tree protocol (IEEE 802.1W)
- Port Based Security
- Power Supply Sold Separately
- Lifetime Warranty

(SFP) = Small Form-Factor Pluggable Module

specifications

benefits

System Interface/ Performance:
- RJ45 port support Auto MDI/MDI-X function
- Embedded 8-port PoE inject function
- SFP supports 100/1000 Dual Mode
- Store-and-Forward Switching Architecture
- Back-plane (Switching Fabric): 5.6Gbps
- 1Mbits 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, MAC violation port shutdown
- IP Security: IP address security management to prevent unauthorized intruder
- Login Security: IEEE802.1X/RADIUS

IGMP
- Query mode for Multi Media Application
- Support multicast filter

X-Ring
- X-Ring, Dual Homing, Couple Ring and Dual 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 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
- Authentication failure
- X-ring topology change
- Port Link Up/ Link Down
- PoE port events

TFTP Firmware Update and System Configure Restore and Backup

Case
- IP-30 Protection

Supports 6000 VDC 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)
- IEEE802.3af Class 1 – 3 Power over Ethernet
- IEEE802.1ab LLDP

CNGE2FE8MSPOE

environmentally hardened managed Ethernet switch with (8) 10/100TX + (2) 10/100/1000TX RJ45 or 1000 FX SFP ports

specifications

hardware specifications

Switch Architecture	Back-plane (Switching Fabric): 5.6Gbps
	Packet throughput ability (Full Duplex): 8.3 Mpps @64bytes
Transfer Rate	14,880pps for Ethernet port 148,800pps for Fast Ethernet port 1,488,000pps for Gigabit Ethernet port
Packet Buffer	1Mbits
Mac Address	8K MAC address table
Flash ROM	4Mbytes
DRAM	32Mbytes
Connector[1]	10/100TX: 8 × RJ45 10/100/1000T and 100/1000FX Combo: 2 × RJ45 + 2 × SFP sockets RS232 connector: RJ45 type
Network Cable	10Base-T: 2-pair UTP/STP Cat. 3, 4, 5 cable. EIA/TIA-568 100-ohm (100m) 100Base-TX: 2-pair UTP/STP Cat. 5/5E cable. EIA/TIA-568 100-ohm (100m) 1000Base-TX: 2-pair UTP/STP Cat. 5e or 6 cable. EIA/TIA-568 100-ohm (100m)
Optical Fiber[1]	Requires selection of sold-separately SFP Modules. See ComNet data sheet "SFP Small Form-Factor Pluggable Modules" for number and description of SFP modules.
PoE pin assignment	RJ45 port #1 - #8 support IEEE802.3af End-point, Alternative A mode. Per port provides 15.4W ability Positive (VCC+): RJ45 pin 1, 2 Negative (VCC-): RJ45 pin 3, 6
Protocol	CSMA/CD
LED	10/100TX: Link/Activity (Green) Full Duplex/Collision (Yellow) Giga Copper: Link/Activity (Green) Speed: 1000Mbps (Green) SFP: Link/Activity (Green) Power (Green), Power 1 (Green), Power 2 (Green), Fault (Red), Master (Green), FWD (Green)

AGENCY COMPLIANCE

PART 15 COMPLIANT E322911 N24621

Power Supply*	PoE	48VDC, Redundant power and connective removable terminal block for master and slave power
	Non-PoE	12 – 48 VDC
Power Consumption		136 Watts (Full load) 12 Watts without POE
MTBF		>100,000 hours
Operating Humidity		5% to 95% (Non-condensing)
Operating Temperature		-40˚C to 75˚C
Storage Temperature		-40˚C to 85˚C
Fan		Fanless
Case Dimensions		Metal case. IP-30, 72mm (W) × 105mm (D) × 152mm (H) 2.84" (W) × 4.13" (D) × 5.98" (H)
Installation		DIN Rail and Wall Mount Design
EMI		FCC Class A, CE EN61000-4-2 (ESD), CE EN61000-4-3 (RS), CE EN61000-4-4 (EFT), CE EN61000-4-5 (Surge), CE EN61000-4-6 (CS), CE EN61000-4-8, CE EN61000-4-11, CE EN61000-4-12, CE EN61000-6-2, CE EN61000-6-4
IETF RFC Compliance		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
IETF SNMP MIBS		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
Stability Testing		IEC60068-2-32 (Free fall), IEC60068-2-27 (Shock), IEC60068-2-6 (Vibration)

PART NUMBER	DESCRIPTION
CNGE2FE8MSPOE	Environmentally Hardened Managed Ethernet Switch with (8) 10/100TX + (2) 10/100/1000TX RJ45 or 100/1000 FX SFP Ports[1]
OPTIONAL	ComNet™ PS48VDC-5ADIN Recommended Power Supply (Not Included)

* Power supply not included. Optional power supply available. Consult ComNet for available power supplies.

[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

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.

specifications

software features

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

SNMP MIB RFC 1215 Trap, RFC 1213 MIBII, RFC 1157 SNMP MIB, RFC 1493 Bridge MIB, RFC 2674 VLAN MIB, RFC 1643, RFC 1757, RSTP MIB, Private MIB, LLDP MIB

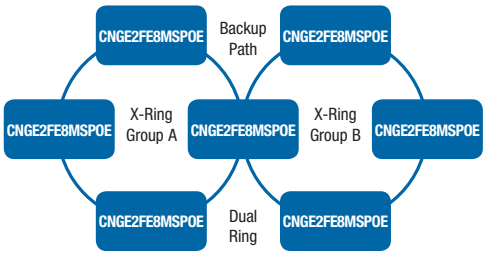
VLAN Port Based VLAN
IEEE802.1Q Tag VLAN (256 entries)/VLAN ID (UP to 4K, can be assigned from 1 to 4096) GVRP (256 Groups)

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

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

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

X-Ring Support X-Ring, Dual Homing, Couple Ring and Dual Ring Topology. Provide redundant backup feature and the recovery time below 20ms. Dual Ring can connect two rings without couple ring and supports the following topology:



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 100 entries of MAC address for static MAC and another 100 for MAC filter; MAC violation port shut down

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

Bandwidth Control Support ingress packet filter and egress packet limit. The egress rate control all of the packet types and the limit rates are 100K-102400Kbps(10/100), 100K-256000Kbps(1000). Ingress filter packet type combination rules are Broadcast/Multicast/ Unknown Unicast packet, Broadcast/Multicast packet, Broadcast packet only and all of packet. The packet filter rate can be set from 100K-102400Kbps(10/100), 100K-256000Kbps(1000).

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

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

SNMP Trap Cold start, Port link up, Port link down, Authentication Failure, PD disconnect trap-PoE port event.

DHCP Provide DHCP Client/ DHCP Server/ Port and IP Binding

DNS Provide DNS client feature and support Primary and Secondary DNS server

SNTP Support SNTP to synchronize system clock in Internet

Firmware Update, configuration backup and restore
Support TFTP firmware update, system configure backup and restore

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

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