EG97000 Series

Hardened Managed 8-port 10/100/1000BASE-T +16-port 100/1000BASE SFP +4-port 1/10G SFP+ Layer 3 Ethernet Switch

Overview

EtherWAN's EG97000 is a gigabit Layer 3 managed switch for high bandwidth uplink or interconnection use. It is specially designed to perform as a router with fast data forwarding done via hardware, capable of IP routing and switching across virtual LANs (VLANs) and subnetworks with no compromise in performance. Compared to traditional full wire-speed Layer 2 managed switches, the EG97000 offers optimal path determination, great QoS security and better traffic management capability to support more than a robust set of Layer 2 managed switch features. As is often said, while Layer 2 switches create networks, Layer 3 switches connect networks. With these rich sets of Layer 3 managed features, the EG97000 supports comprehensive internetwork IP routing that can operate simultaneously with redistribution to other route control tools, including prefix-list and route-map.

In addition, the EG97000 comes with 4 x 10G fiber connection, supporting superior distribution-to-core switching aggregation capability. An added 16 x 1G fiber connection will also help switches to form multiple fiber interconnections without using copper cables and their resulting electromagnetic interference.

With its hardened specifications, EG97000 provides high reliability and nonstop operation in harsh environments, and it designs for operating stably in temperatures from -40 to 75°C (-40 to 167°F), as well as in areas with high electromagnetic interface (EMI). The EG97000 is also equipped with sophisticated network and system failure recovery features including VRRP and dual redundant power supplies. This makes it an ideal choice for both industrial and mission critical applications where sustained connectivity is crucial.

EtherWAN – "When Connectivity is Crucial."

Spotlight

- **Hardened Specifications for Harsh Environments**
  - Wide operating temperature range
  - Robust construction and hardware with ruggedized housing
  - High impact, thermal shock and electrical noise resistance
- **Layer 3 Scalability and Intelligent Security Management**
  - Optimized routing (i.e. RIP and OSPF) with fast lookup routing table at hardware level
  - Reduced network traffic by sending IP instead of MAC address from different VLANs
  - Secured network access into subnets controlled via ACLs
  - Prevents network congestion with QoS priority set to make best use of bandwidth
  - Improved fault isolation and lowered network overhead by using single routing path within VLANs and VRRP
- **Better Network Connectivity and High Bandwidth Uplinks**
  - Provides 4 x 1/10G dual-rate SFP+ for the uplink connection into the core network
  - Provides 16 x 100M/1000M dual-rate SFP for multiple fiber interconnections and network topology flexibility

Software Features

Management

- Interface
  - CLI, Telnet and Web Browser
  - SNMP v1/v2c/v3
- Firmware upgrade or configuration backup via TFTP
- Supports DHCP Server/Client
- RMON (Remote Monitoring)
- Port Mirroring: TX only, RX only, or both
- NTP (Network Time Protocol) time synchronization
- IEEE 802.1ab LLDP (Link Layer Discovery Protocol)
- IPv4/IPv6

Security

- MAC address filtering
- Enable/Disable port
- Storm Control (Both broadcast and multicast types)
- IEEE 802.1x LAN Access Control
- Remote authentication through RADIUS+
- SSH for CLI and Telnet security
- SSL for web security
- ACL (Access Control List, up to 4096 entries)

Quality of Service (QoS)

- Priority Queues: 8 queues per port
- Traffic classification based on IEEE 802.1p CoS (Cost of Service), DSCP (Differentiated Services Code Point), WRR (Weighted Round Robin) and strict mode
- Rate Limiting (Ingress/Egress)

Layer 2 Features

- Auto-negotiation for port speed and duplex mode
- Flow Control
  - IEEE 802.3x full duplex mode
  - Back-Pressure half duplex mode
- Redundant Protocols
  - IEEE 802.1D Spanning Tree Protocol (STP)
  - IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
  - IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
- VLANs
  - IEEE 802.1Q Tag VLANs
  - GVRP (GARP VLAN Registration Protocol)
  - GMRP (GARP Multicast Registration Protocol)
- Link Aggregation
  - Static Trunk
  - IEEE 802.3ad Link Aggregation Control Protocol
- IGMP Snooping
  - IGMP Snooping v1/v2/v3

Layer 3 Features IPv4

- Unicast Routing
  - Static Routing (1K)
  - RIP v1/v2 (RIP: Routing Information Protocol)
  - OSPF v2 (OSPF: Open Shortest Path First)
- Multicast Routing
  - PIM-DM (Dense Mode)
  - PIM-SM (Sparse Mode)
- Routing Redundancy
  - VRRP (Virtual Route Redundancy Protocol)

Layer 3 Features IPv6

- IPv6 Unicast Routing
  - RIPng (RIP for next generation)
  - OSPF v3
- IPv6 Multicast Routing*
  - PIM6-DM (PIM-DM for IPv6)
  - PIM6-SM (PIM-SM for IPv6)

  ** Available in Q4 2019*
- IPv6 Routing Redundancy*
  - VRRP v3

  **Available in Q4 2019*

Performance

- 128Gbps switching fabric
- Forwarding rate: 95.23Mpps
- 4GB DDR3 SDRAM and 2GB Flash Memory
- Total VLAN entry size: 4K
- With a maximum Ethernet frame size of 12Kbytes (Jumbo Frames)
- Configurable up to 24,000 unicast routes and up to 1,000 multicast routes at L2 managed level
- Configurable up to 8,000 unicast routes and up to 8,000 multicast routes at L3 (IPv4) managed level
- Configurable up to 2,000 unicast routes at L3 (IPv6) managed level

Hardware Specifications

Technology

Standards
- IEEE 802.3 10BASE-T
- IEEE 802.3u 100BASE-TX/100BASE-FX
- IEEE 802.3ab 1000BASE-T
- IEEE 802.3z 1000BASE-SX/1000BASE-LX
- IEEE 802.3x Full duplex and flow control
- IEEE 802.1p QoS
- IEEE 802.1Q Tag VLANs
- IEEE 802.1w RSTP
- IEEE 802.1x Port-based Network Access Control

Forward and Filtering Rate
- 14,880pps for 10Mbps
- 148,810pps for 100Mbps
- 1,488,100pps for 1000Mbps
- 14,880,952pps for 10Gbps

Packet Buffer Memory
- 32M bits

Processing Type
- Store-and-Forward
- Auto-Negotiation
- Half-duplex back-pressure and IEEE 802.3x full-duplex flow control
- Auto MDI/MDIX

Address Table Size
- 24K

Power

Input
- ±48VDC Redundant (Terminal Block)
- 100-240VAC Redundant (Terminal Block)
- 100-240VAC Redundant (AC Inlet)

Power Consumption
- 75W Max.

Mechanical

Casing
- Metal Case

Dimensions
- Redundant Power:
  442 x 325 x 44mm (W x D x H)
  (17.4" x 12.8" x 1.73")

Weight
- 5.6kg (12.3lbs)

Installation
- Rack mounting

Interface

Ethernet Port
- 10/100/1000BASE-T: 8 ports
- 100/1000BASE-SFP: 16 ports
- 1G/10G SFP+: 4 ports

Console Port
- One RJ45 managed port

Configuration Backup Port
- One USB Port (Type A connector)

Alarm Contact
- One relay output with current 0.6A/30VDC

LED Indicators
- Per Unit: Power 1, Power 2, Alarm
- Per Port: Link/Activity (Green)

Environment

Operating Temperature
- -40 to 75°C (-40 to 167°F)

Storage Temperature
- -45 to 85°C (-49 to 185°F)

Ambient Relative Humidity
- 5% to 95% (non-condensing)

Regulatory Approvals

ISO
- Manufactured in an ISO 9001 facility

EN 55032

EN 50121-4

NEMA TS2

UL 62368

EMI

FCC Part 15B Class A

VCCI Class A

EN 61000-6-4

EMS

EN 61000-6-2
- EN 61000-4-2 (ESD Standards)
- EN 61000-4-3 (Radiated RFI Standards)
- EN 61000-4-4 (Burst Standards)
- EN 61000-4-5 (Surge Standards)
- EN 61000-4-6 (Induced RFI Standards)
- EN 61000-4-8 (Magnetic Field Standards)

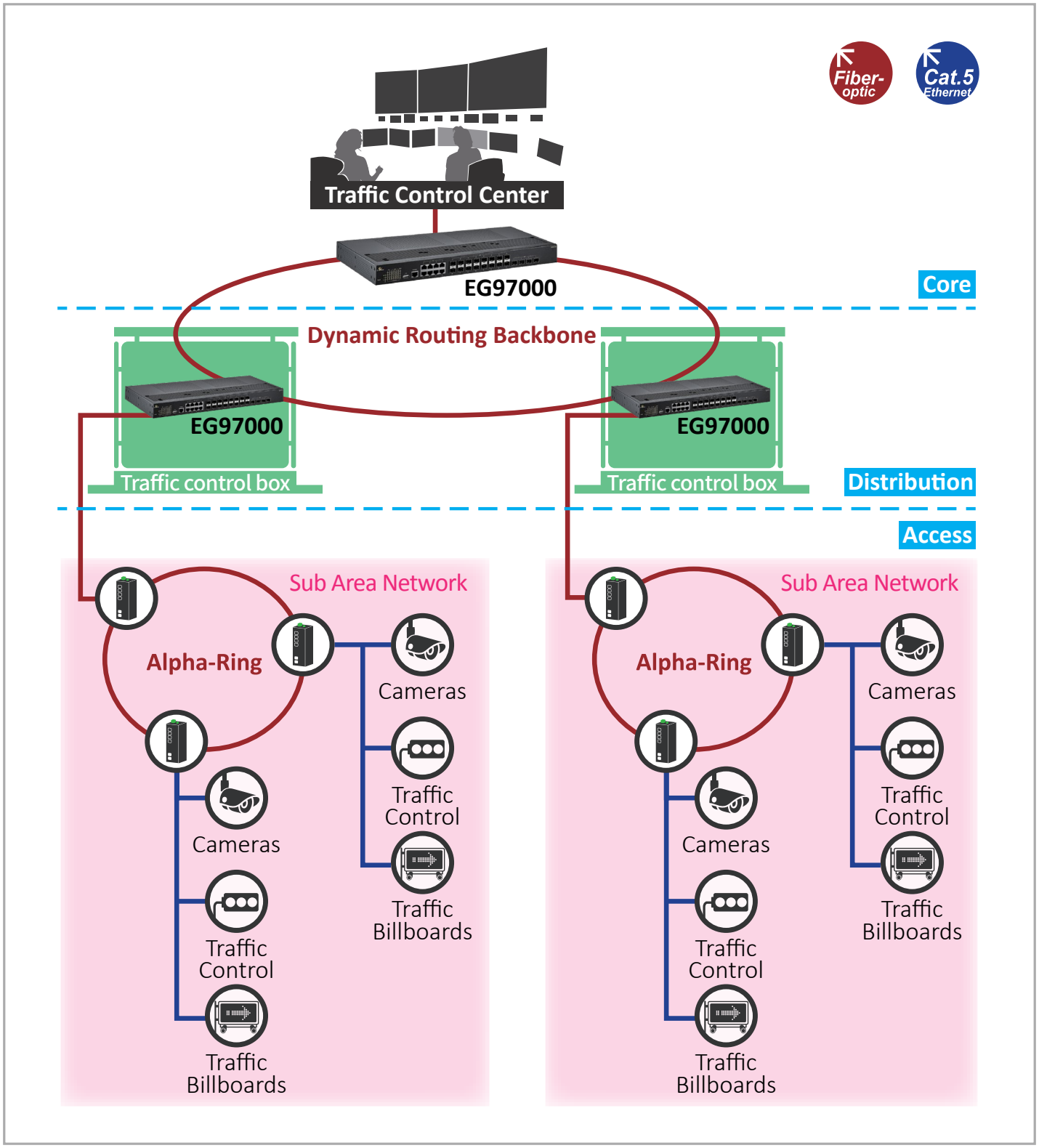
Environmental Test Compliance

IEC 60068-2-6 Fc (Vibration Resistance)

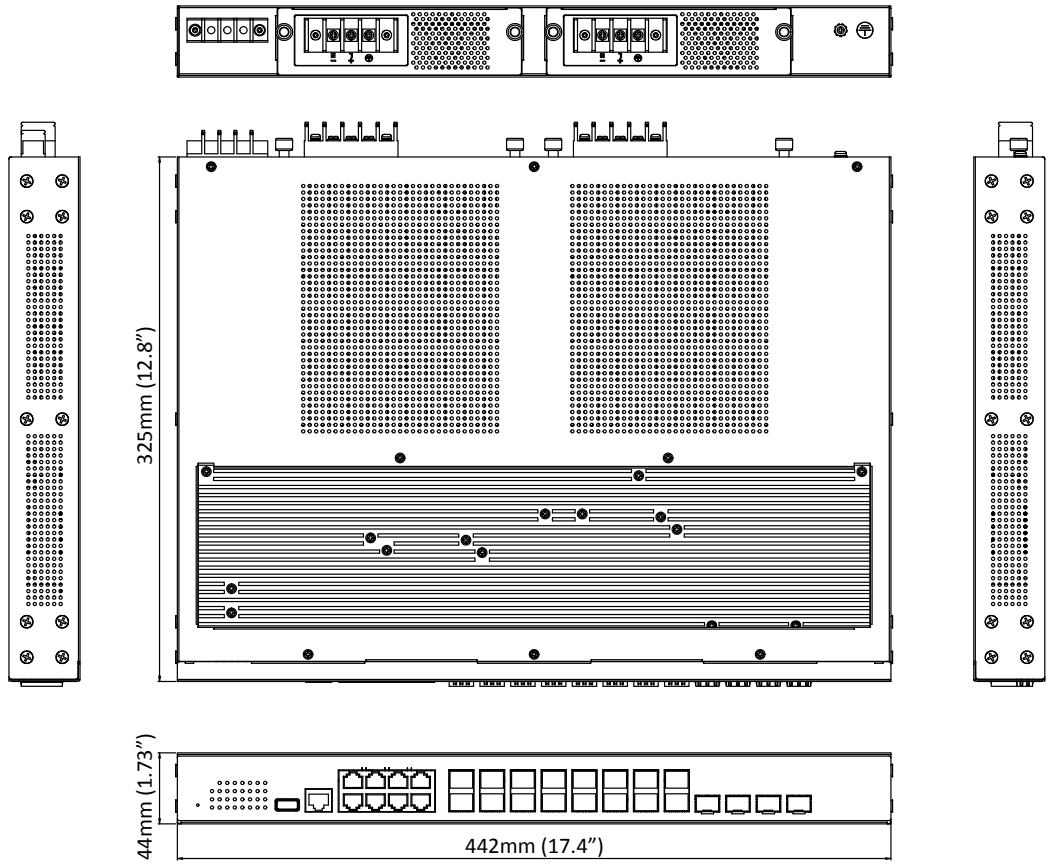
IEC 60068-2-27 Ea (Shock)

FED STD 101C Method 5007.1 (Free fall w/package)

Application Diagram



Dimensions



Ordering Information

Model

EG97244-4VZ	8-port 10/100/1000BASE-T +16-port 100/1000BASE SFP +4-port 1/10G SFP+ Hardened Managed Layer 3 Ethernet Switch

** Rack mounting kit included.*

Power Input Interface (Z)

TR	±48VDC Redundant (Terminal Block)
WR	100-240VAC Redundant (Terminal Block)
CR	100-240VAC Redundant (AC Inlet)