



[Ether-Raptor Series ER-1808 1Gb/10Gb]

Eight-Port 10Gb Distributed Stacking Ethernet Switch

The ER-1808, with its break-through technology, creates the highest density 10Gb Ethernet layer 2/3/4 Switch available today.

Key Features:

- | | |
|---|--------------------------------|
| • Affordable | • 10Gb Layer 2/3/4 Switch |
| • Eight 10Gb Ports | • Small 1.5U package |
| • 10Gb Ethernet XFP connections | • Distributed boxes up to 40km |
| • Links with ER-1010 24 port GbE switches | • Jumbo Frames |
| • 40Gb Trunks | |

Key Applications

- | | |
|------------------------------------|----------------------------------|
| • Stand-alone 10Gb Ethernet Switch | • Redundant 10Gb Backbone Switch |
| • Campus | • Data Center |
| • Metro Networks | |

Product Description

The ER-1808 can be a member of the Ether-Raptor Series scalable architecture or a stand-alone eight-port 10Gb Ethernet Switch. As a stand-alone solution it has eight XFP connectors with options for 300m, 10km, or 40km pluggable transceivers. The ER-1808 is non-blocking, wire speed, layer 2/3/4 switch.

The ER-1808 can also be a member of an Ether-Raptor team of clustered switches. The cluster scales from 2 to 16 interconnected members, creating its own "fabric." This "fabric" provides unparalleled performance and reliability throughout its environment. The distributed "fabric" can connect racks to racks in Datacenters, floors to floors in Enterprises, and buildings to buildings in a Campus/Metro environment. All the capabilities and features of the Ether-Raptor switches are maintained up to a distance of 10km and some of the capabilities stretch to 40km. The box-to-box communication is achieved through a RAST (Raptor Adaptive Switch Technology) connection.

Physically, a RAST port is the high performance interconnect link between boxes. It uses standards based on off-the-shelf components for affordable connections. Conceptually, RAST is the high performance "backplane" of the ER-1010 "fabric". As it connects each new box one contiguous "fabric" is formed. This "fabric" to the outside world is a single switch. All switching and routing functions traverse the RAST "backplane" at wire speed.

Performance

The ER-1808 is a high performance 10Gb Ethernet Switch with a fully loaded box supporting 119 Million packets per second throughput. It is non-blocking and wire-speed on all ports. The ER-1808's QoS (Quality of Service) packet processing combined with its low latency hardware ensures an excellent solution for today's converged networks. QoS is deeply embedded with 8 egress queues on each port to ensure priority to time sensitive packets. Latency for a 64-byte packet going in and out of a single box is a remarkable 1.8 microseconds.

Configurations

A fully loaded ER-1808 has eight 10Gb ports. It is a modular design and each port can be 10Gb Ethernet fiber or copper, or RAST.



[ER-1808]



RaptorWare™ Specifications

Switching:

- IEEE 802.3ac – VLAN Tagging
- IEEE 802.3ad – Link Aggregation
- IEEE 802.1d – Spanning Tree
- IEEE 802.1w – Rapid Spanning Tree
- IEEE 802.1s – Multiple Spanning Tree
GARP \ GMRP \ GVRP
- IEEE 802.1q – Virtual VLANs Port and
Protocol based VLANs
- IEEE 802.1p – Priority
- IEEE 802.1x – Port Authentication
- IEEE 802.3x – Flow Control
- RFC 2865 - RADIUS Client
- RFC 2866 - RADIUS Accounting
- RFC 2868 - RADIUS Tunnel Support
- RFC 2869 - RADIUS Extensions
- rfc2869bis - RADIUS support for EAP
- IGMP Snooping
- Port Mirroring
- Broadcast Storm Recovery
- RFC 768 – UDP
- RFC 783 – TFTP
- RFC 791 – IP
- RFC 792 – ICMP
- RFC 793 – TCP
- RFC 826 – ARP
- RFC 951 – BOOTP
- RFC 2131 – DHCP Client

Routing

- RFC 826 – Ethernet ARP
- RFC 894 – Transmission of IP over Ethernet
- RFC 896 – Congestion Control in IP/TCP Networks
- RFC 1058 – RIP v1
- RFC 1256 – ICMP Router Discovery Messages
- RFC 1321 – Message Digest Algorithm (MD5)

- RFC 1519 – CIDR
- RFC 1583 – OSPF v2
- RFC 1723 – RIP v2
- RFC 1812 – Requirements for IPv4 Routers
- RFC 2328 – OSPF v2 w/ Equal Cost Multi-path support
- RFC 2338 – VRRP – Virtual Router Redundancy Protocol
- RFC 2453 – RIP v2
- RFC 3046 – DHCP/BootP Relay

Multicast

- RFC 1112 – Host Ext for IP Multicasting IGMPv1
- RFC 2236 – IGMPv2
- RFC 2362 – PIM-SM
- IP Multicast Traceroute
- RFC 2365 – Administratively Scoped Multicast
- Draft-ietf-pim-v2-dm-03 – PIM-DM
- Draft-ietf-idmr-dvmrp-v3-10 – DVMRP

QoS

- Bandwidth Policing (Min and Max; per port/per VLAN)
- Committed Information Rate (CIR)
- Maximum Burst Rate (MBR)
- Per Port (Interface)
- Per VLAN
- Filtering (L3/L4 Access Lists)
- IP Classification – 6 Tuple Classification
- RFC 2474 – DiffServ Definition
- RFC 2475 – DiffServ Architecture
- RFC 2597 – Assured Forwarding PHB
- RFC 3246 – An Expedited Forwarding PHB
- RFC 3260 – New Terminology and Clarifications for DiffServ

Management

- RFC 854 – Telnet
- RFC 855 – Telnet Option
- RFC 1155 – SMI v1
- RFC 1157 – SNMP v1

- RFC 1212 – Concise MIB Definitions
- RFC 1901 – Community based SNMP v2
- RFC 1905 – Protocol Operations for SNMP v2
- RFC 1906 – Transport Mappings for SNMP v2
- RFC 1907 – MIB for SNMP v2
- RFC 1908 – Coexistence between SNMPv1 & SNMP v2
- RFC 2576 – Coexistence between SNMP v1,v2, & v3
- RFC 1867 – HTML/2.0 Forms w/file upload extensions
- RFC 2068 – HTTP/1.1 protocol as updated by
draft-ietf-http-v11-spec-rev-03
- RFC 2295 – Transparent Content Negotiation
- RFC 2296 – Remote Variant Selection
- RFC 3289 – Differentiated Services MIB
- RSVA/1.0 State Management “cookies”
- HTML 4.0 Specification - December 1997 Java & Script 1.3

Switching Package MIBs

- RFC 1213 – MIB-II
- RFC 1493 – Bridge MIB
- RFC 1643 – Ethernet-like MIB
- RFC 2618 – RADIUS Authentication Client MIB
- RFC 2620 – RADIUS Accounting MIB
- RFC 2674 – VLAN MIB
- RFC 2819 – RMON Groups 1, 2, 3 & 9
- IEEE 802.1x MIB (IEEE8021-PAE-MIB)
- Ether-Raptor Enterprise MIB

Routing Package MIBs

- RFC 1724 – RIP v2 MIB Extension
- RFC 1850 – OSPF MIB
- RFC 2233 – The Interfaces Group MIB Using SMI v2
- RFC 2787 – VRRP MIB

Multicast Package MIBs

- Draft-ietf-idmr-dvmrp-mib-11.txt - DVMRP
- RFC 2933 – IGMP
- RFC 2934 – PIM MIB for IPv4

Product Specifications

Certifications

Pending

Physical Dimensions

- (H) 2.63 in x (W) 17.50 in x (D) 15 in
- (H) 6.67 cm x (W) 44.50 cm x (D) 38.1cm

Reliability

- Minimum 200,000 hrs MTBF, calculated

Environmental

- Storage Temperature: -40° to 70° C
- Operating Humidity: 10% to 95% relative humidity, non-condensing

Ordering Information

Part Number	Description
ER-1808	8 Port Layer (2/3/4) 10-Gbase or RAST switch. Add ER-RAST-F1 for RAST Fiber, ER-RAST-C1 for RAST Copper, or ER-ETH-F1 for Ethernet Fiber.
ER-RAST-C1	1 Port 10-Gigabit RAST Copper Insert
ER-RAST-F1	1 Port 10-Gigabit RAST Support with XFP receptacles
ER-ETH-F1	1 Port 10-Gigabit Ethernet operation with XFP receptacles
ER-ETH-C1	1 Port 10-Gigabit Ethernet Copper
XFP Pluggables	
Copper RAST Cables	
ER-XFP-300	300m XFP 10Gb for MMF
ER-XFP-10K	10km XFP 10Gb for SMF
ER-XFP-40K	40km XFP 10Gb for SMF
ER-RAST-C-3	RAST copper cable 3m
ER-RAST-C-10	RAST copper cable 10m
ER-RAST-C-15	RAST copper cable 15m



U.S. Headquarters

1241 E. Dyer Road Suite150 Santa Ana, CA 92705
Tel: (949) 623-9300 / Fax: (949)623-9400

www.raptor-networks.com / email: info@raptor-networks.com

