DATA SHEET

I-Series

Policy-based Industrial Ethernet Switch

BENEFITS

BUSINESS ALIGNMENT

- Supports a variety of network-attached devices such as Programmable Logic Controllers (PLCs), shop floor workstations, and security cameras
- DIN-mountable and rack-mountable for flexible installation

OPERATIONAL EFFICIENCY

- Operational tolerance for extreme temperatures (-40° C to 60° C) enables placement in uncontrolled temperature environments
- High-availability design and simple field maintenance minimizes technical support expense
- External alarm support enables problem notification without physical monitoring

SECURITY

- Integral security without performance degradation
- Network security maintained concurrently with user/device mobility
- Network resources securely allocated according to user/device operational roles

SUPPORT AND SERVICE

- Industry-leading customer satisfaction and first call resolution rates
- Personalized response services
- 5-year warranty

- Industrial Ethernet switch with 2 modular slots for configuration flexibility
- Industrial-grade components support explosive gas and other physically demanding environments
- Strong authentication capabilities enable placement in unsecured locations
- Redundant, 24-volt external power supplies

Product Overview

The Extreme Networks I-Series is a 2-slot modular, industrially-hardened Ethernet switch with an IP50 dust-resistant design and Class 1 Division 2 support suitable for explosive gas and other physically demanding environments, such as manufacturing plants, oil refineries, and utilities. Along with its operational tolerance for extreme temperatures ranging from -40° C to 60° C, the I-Series combines multi-layer switching capabilities with wire-rate performance to support the demanding requirements of industrial applications. The I-Series provides 2 modular slots which can support up to 24 10/100Base-T Ethernet ports as well as 2 1 Gbps Small Form Factor Pluggable (SFP) Ethernet uplink ports. In order to provide a reliable, high-availability network, all I-Series models support redundant, 24-volt external power supplies as well as Link Aggregation Groups (LAGs) for scalable, redundant uplinks.

The DIN-mountable I-Series utilizes industrial-grade components and provides a set of event-driven relay connectors to support external alarms.

In conjunction with its non-blocking architecture, the I-Series provides strong support for a variety of network-attached devices such as Programmable Logic Controllers (PLCs), shop floor workstations, and security cameras. The I-Series' highly customizable Layer 2/3/4 packet classification capabilities together with its intelligent queuing mechanisms ensure that mission-critical devices and applications receive prioritized access to network resources.

Making use of Extreme Networks' policy capabilities, a network administrator can define distinct roles or profiles that represent industry-specific operational groups or devices. Each defined role is granted individualized access to specific

network services and applications (e.g., supervisor, operator, PLC, security camera) and these access privileges remain associated with users/devices for both wired and wireless network access. Users and devices are authenticated via IEEE 802.1X, MAC address, or web-based authentication, and then assigned a pre-defined operational role ensuring that each user has access to appropriate information, thus aligning network resource utilization with business goals and priorities.

In order to sustain a secure, feature-rich and cost-effective network well into the future, the I-Series comes with a 5-year warranty.

Industrial-Grade Reliability: Maintenance-free reliability can provide years of uninterrupted service in a wide range of severe temperature and hazardous gas conditions.

Features and Benefits

Advanced Security and Traffic Control Features in a Hardened Switch: No switch vendor matches Extreme Networks for providing a secure infrastructure. This same functionality is now available in a fully-industrialized switch.

Fully Managed Solution: The I-Series is securely SNMP-managed to allow control of the device by authorized users from anywhere on the network, while all events and traffic statistics are reported and tracked by the Extreme Network Management Suite (NMS).

Easy Installation: Optional memory configuration card allows non-technical personnel to field-replace I-Series switches with a simple removal and reinsertion of a memory configuration card. The card carries a copy of the switch configuration and allows settings to be quickly transferred to another I-Series switch.

Standards and Protocols

SWITCHING SERVICES

IEEE 802.1AB – LLDP
ANSI/TIA-1057 – LLDP-MED
IEEE 802.1D – MAC Bridges
IEEE 802.1s – Multiple Spanning Trees
IEEE 802.1t – 802.1D Maintenance
IEEE 802.1w – Rapid Spanning Tree Reconvergence
IEEE 802.3 – Ethernet
IEEE 802.3ab – 1000 Base-T
IEEE 802.3ad – Link Aggregation
IEEE 802.3i – 10Base-T
IEEE 802.3u – 100Base-T, 100Base-FX
Full/half duplex auto-sense support on all ports
IGMP Snooping v1/v2/v3
Jumbo Frame support (9,216 bytes)
Loop Protection
One-to-One and Many-to-One Port Mirroring
Port Description
Protected Ports
Per-port Broadcast/Multicast/Unknown Unicast Suppression
Spanning Tree Backup Root
STP Pass Thru

VLAN SUPPORT

Generic Attribute Registration Protocol (GARP)
Generic VLAN Registration Protocol (GVRP)
IEEE 802.1p – Traffic classification
IEEE 802.1Q – VLAN Tagging
Protocol-based VLANs with Extreme Networks Policy
Private port
Tagged-based VLAN
VLAN Marking of Mirror Traffic

SECURITY

Dynamic ARP Inspection
DHCP Snooping
Dynamic and Static MAC Locking
EAP Pass Thru
IEEE 802.1X Port Authentication
MAC-based Port Authentication
RADIUS Accounting for MAC Authentication
RADIUS Client
RFC 3580 – IEEE 802.1X RADIUS Usage Guidelines
Password Protection (encryption)
Secure Networks Policy
Secure Shell (SSHv2)
Secure Socket Layer (SSL)
Web-based Port Authentication

RFC AND MIB SUPPORT

Extreme Networks Entity MIB
Extreme Networks Policy MIB
Extreme Networks VLAN Authorization MIB
ANSI/TIA-1057 – LLDP-MED MIB
IEEE 802.1AB – LLDP MIB
IEEE 802.1X MIB – Port Access
IEEE 802.3ad MIB – LAG MIB
RFC 826 – ARP and ARP Redirect
RFC 951, RFC 1542 – DHCP/BOOTP Relay
RFC 1213 – MIB/MIB II
RFC 1493 – BRIDGE-MIB
RFC 1643 – Ethernet-like MIB
RFC 2131, RFC 3046 – DHCP Client/Relay
RFC 2233 – IF-MIB
RFC 2271 – SNMP Framework MIB
RFC 2465 – IPv6 MIB
RFC 2466 – ICMPv6 MIB
RFC 2618 – RADIUS Authentication Client MIB
RFC 2620 – RADIUS Accounting Client MIB
RFC 2668 – Managed Object Definitions for 802.3 MAUs
RFC 2674 – P-BRIDGE-MIB
RFC 2674 – QBRIDGE-MIB VLAN Bridge MIB
RFC 2737 – Entity MIB (physical branch only)

RFC 2819 – RMON-MIB
RFC 2863 – ifMib
RFC 2933 – IGMP MIB
RFC 3289 – DiffServ MIB
RFC 3413 – SNMPv3 Applications MIB
RFC 3414 – SNMPv3 User-based Security Module (USM) MIB
RFC 3415 – View-based Access Control Model for SNMP
RFC 3584 – SNMP Community MIB

QUALITY OF SERVICE

8 Priority Queues per Port
802.3x Flow Control
IP DSCP – Differentiated Services Code Point
IP Precedence
IP Protocol
Queuing Control – Strict and Weighted
Round Robin
Source/Destination IP Address
Source/Destination MAC Address

MANAGEMENT

Alias Port Naming
Command Line Interface
Configuration Upload/Download
Editable Configuration File
TFTP client
Multi-configuration File Support
NMS Automated Security Manager
NMS Console
NMS Inventory Manager
NMS Policy Manager
Node/Alias Table
RFC 768 – UDP
RFC 783 – TFTP
RFC 791 – IP
RFC 792 – ICMP
RFC 793 – TCP
RFC 826 – ARP
RFC 854 – Telnet
RFC 951 – BootP
RFC 1157 – SNMP
RFC 1901 – Community-based SNMPv2
RFC 2271 – SNMP Framework MIB
RFC 3164 – The BSD Syslog Protocol
RFC 3413 – SNMPv3 Applications
RFC 3414 – User-based Security Model for SNMPv3
RFC 3415 – View-based Access Control Model for SNMP
RFC 3826 - Advanced Encryption System (AES) for SNMP
RMON (Stats, History, Alarms, Events)
Secure Copy
Secure FTP
Simple Network Management Protocol (SNMP) v1/v2c/v3
Simple Network Time Protocol (SNTP)
Syslog
TACACS+ for Management Authentication, Authorization and Auditing
Text-based Configuration Upload/Download
Web-based Management
Webview via SSL Interface

Specifications

PHYSICAL PORTS

2 slots for 10/100 Mbps I/O modules
2 slots for Gigabit Ethernet SFP uplinks

I/O MODULES

12-port 10/100 Base-T
8-port 100 Base-FX

LED

1 red/green LED showing system status
2 green LEDs showing each power input status
2 green LEDs showing link activity of SFP ports

CAPACITY & PERFORMANCE

Address Table Size – 8000 MAC Addresses
1024 VLANs Supported
8 Hardware Queues/Port
VLAN Spanning Tree (802.1S)
- 4 Instances Supported

802.3AD Link Aggregation
- 8 ports per trunk group, 6 groups supported

Main memory: 256 MB
Flash memory: 32 MB

PHYSICAL SPECIFICATIONS

Dimensions (H x W x D):
8.89 cm x 33.86 cm x 18.41 cm
(3.5” x 13.33” x 7.25”)

I/O Module Dimensions:
4.57 cm x 10.7 cm x 11.4 cm (1.8” x 4.21” x 4.5”)

Weight:
I3H252-12TX 4.35 kg (9.57 lbs)
I3H-12TX 0.24 kg (0.53 lbs)
I3H-8FX-MM 0.32 kg (0.70 lbs)
I3H252-24TX 4.59 kg (10.12lbs)I3H252-16FXM 4.75 kg (10.47lbs)I3H252-8FXM-12TX 4.67 kg (10.30 lbs)

MTBF
I3H252-12TX 182,146 hours
I3H-12TX 657,722 hours
I3H-8FX-MM 477,350 hours
I3H-8TX-2FX 600,601 hours

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature:
-40° C to 60° C (-40° F to 140° F)

Storage Temperature:
-40° C to 70° C (-40° F to 158° F)

Operating Humidity:
95% Relative Humidity Non-Condensing

Power Consumption:
The I-Series accepts 24 volt DC power only. The customer must provide DC power to the switch or purchase the optional external DC power unit (I3H-PWR).

Operation Shock:
50 G Trapezoidal Shock

AGENCY AND STANDARDS SPECIFICATIONS

Standard Safety:
UL 60950-1, CSA 22.2 60950-1-03,
EN 60950-1, and IEC 60950-1

Standard EMC:
FCC Part 15 Class A, ICES-003 Class A, BSMI, VCCI V-3, AS/NZS CISPR-22 Class A, EN 55022 Class A, EN 55024 Class A

Industrial EMC:
EN 61000-6-4, EN 61000-6-2, EN 55011

Hazardous Locations:
ANSI/ISA 12.12.01; CAN/CSA C22.2 No. 213-M1987; EN 60079-0:2006; EN 60079-15:2005; for use in Class 1, Division 2, Groups A, B, C, and D

SERVICE AND SUPPORT

Extreme Networks provides comprehensive service offerings that range from Professional Services to design and implement customer networks, customized technical training, to service and support tailored to individual customer needs. Please contact your Extreme Networks account executive for more information about Extreme Networks Service and Support.

WARRANTY

As a customer-centric company, Extreme Networks is committed to providing quality products and solutions. In the event that one of our products fails due to a defect, we have developed a comprehensive warranty that protects you and provides a simple way to get your products repaired or media replaced as soon as possible.

The Extreme Networks I-Series comes with a 5 year warranty against manufacturing defects.

For full warranty terms and conditions please go to:
www.extremenetworks.com/support/warranty.aspx

Ordering Information

PART NUMBER	DESCRIPTION
I3H252-12TX	Factory Configured I-Series base unit with one I3H-12TX
I3H252-24TX	Factory Configured I-Series base unit with two I3H-12TX
I3H252-16FXM	Factory Configured I-Series base unit with two I3H-8FX-MM
I3H252-8FXM-12TX	Factory Configured I-Series base unit with one I3H-8FX-MM and one I3H-12TX
I3H-12TX	12-port 10/100 TX I/O card
I3H-8FX-MM	8-port 100 FX I/O card
I3H-DIN-KIT	DIN Rail Kit for I-Series
I3H-PWR	24VDC Power Unit for I-Series
I3H-RACK-MNT	19" Rack Mount Kit for I-Series
I-MGBIC-GLX	I-Series Only, -40°C to +60°C, 1 Gb, 1000BASE-LX, MM - 550 m, SM - 10 km, 1310 nm Long Wave Length, LC SFP.
I-MGBIC-LC03	I-Series Only, -40°C to +60°C, 1 Gb, 1000BASE-LX, MM, 1310 nm, 2 km with 62.5 MMF, 1 km with 50 MMF, LC SFP.
I-MGBIC-GSX	I-Series Only, -40°C to +60°C, 1 Gb, 1000BASE-SX, IEEE 802.3 MM, 850 nm Short Wave Length, 220/550 m, LC SFP.

Extreme networks

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