

**Model:**

# E-486: Immunity Managed L3 Switch



## Flexible Network Segmentation

Effortlessly create, manage, and secure multiple virtual networks to optimize performance and enhance traffic control across your infrastructure.



6 × 10Gbps SFP+ uplink ports



48 × 10/100/1000Mbps RJ45 ports with PoE+ support



Supports QoS, ACL, VLAN, SSL, STP/RSTP/MSTP, and ERPS



802.1X, ARP/IP/DoS protection, port isolation, IP/MAC binding



WebUI, CLI, SSH, SNMPv1/v2/v3 management



Supports IPv4/IPv6 L3 static routing



High throughput to even the most demanding edge-of-network workgroups.



## PRODUCT OVERVIEW

The **E-486** is a L3 managed switch featuring 48 Gigabit RJ45 ports and 6 × 10G SFP+ uplink slots. Each RJ45 port supports IEEE 802.3af/at (PoE+), delivering a total PoE power budget of 460W, making it ideal for IP surveillance, VoIP, and enterprise network deployments. Its high switching capacity, robust security framework, and advanced L3 management features, ensures seamless connectivity, flexible network segmentation, and enterprise-grade reliability.

### STRONG BUSINESS PROCESS CAPABILITY

- With IEEE 802.1Q VLAN support, the VLANs can be flexibly partitioned according to your needs.
- Supports voice VLAN, configure QoS parameters for voice data streams, enhance the transmission priority of voice data streams, and ensure call quality.
- Supports QoS, three priority modes based on Endpoint, 802.1P and DSCP, and four queue scheduling algorithms: Equ, SP, WRR and SP+WRR.
- Supports ACL, according to configure matching rules, processing actions, and temporal permissions to filter packets, and provide flexible security access control policies.
- Supports IGMP V1/V2 multicast protocol and IGMP Snooping for multi-terminal HD video surveillance and video conference access.
- Supports multicast VLAN and multicast filtering for efficient data transmission, saving network bandwidth and reducing network load.
- Supports port monitoring by copying a copy of the monitored port's packets to the monitoring port to enable network monitoring.

### DIVERSE RELIABILITY PROTECTION

- Supports STP/RSTP/MSTP spanning tree protocols, eliminating layer 2 loops and enabling link backup.
- Supports spanning tree security to prevent all forms of malicious attacks on devices in the spanning tree network.
- Static and dynamic aggregation are supported to effectively increase link bandwidth, achieve load balancing, link backup, and improve link reliability.

### EASY OPERATION AND MAINTENANCE

- It supports a variety of management and maintenance methods such as Web-based management, CLI commands (Console, Telnet), and SNMP (V1/V2/V3).
- Supports HTTPS, SSL V3, TLSV1, SSHV1/V2 encryption for more secure management.
- RMON, system logs, and end-to-end traffic statistics for network optimization and transformation.
- Supports cable detection, Ping detection, and Tracert detection to easily analyze the faulty network nodes.
- LLDP is supported to facilitate the network management system to query and judge the communication status of the link.
- Supports CPU monitoring, memory monitoring, Ping detection, and Tracert detection.

### COMPLETE SECURITY PROTECTION MECHANISM

- Supports quadruple binding of IP address, MAC address, VLAN, and port to filter packets
- It supports ARP protection against ARP spoofing and ARP flooding attacks, such as grid spoofing and intermediary attacks, which are common in local area networks.
- Supports IP source protection to prevent illegal address spoofing including MAC spoofing, IP spoofing, and MAC/IP spoofing
- Supports 802.1X authentication, which provides authentication for local grid computers and controls the authorization status of the controlled endpoints based on the authentication results
- Supports port security and stops learning when the maximum number of MAC addresses is reached to prevent MAC address attacks and control the flow of the port network.

## L3 Switching Features

- Static Routing: IPv4/IPv6
- Address Resolution Protocol (ARP)
  - Dynamic ARP

## L2 Switching Features

- 32KMAC Address Table
- 10K Jumbo Frame
- Flow Control: 802.3x (Full-duplex) &
  - Back-Pressure (Half-duplex)
- Spanning Tree
  - IEEE 802.1D (STP)
  - IEEE 802.1w (RSTP)
  - IEEE 802.1s (MSTP)/16 instances
  - Auto Edge Port
  - BPDU Filtering
  - ERPS
- Link Aggregation
  - IEEE 802.3ad LACP
  - Static Trunk
  - Max 8 Group
  - Max 8 Ports/Group
  - Traffic Load Balancing

## VLAN

- Surveillance VLAN
  - 16 OUI Mode (Auto/Manual)
- Voice VLAN
  - 16 OUI Mode (Auto/Manual)
- QinQ (IEEE 802.1ad): Basic
- GARP VLAN Registration Protocol (GVRP)
- 4096 Static VLAN/Port-based
- 8 groups Protocol-based
- 256 MAC-based
- IEEE 802.1Q Tagged-based

## Multicast

- Common
  - 256 Multicast Groups
  - Immediate Leave
  - Static/Forbidden Router Port
  - Static/Forbidden Forward Port
  - 128 profiles Filtering
  - Throttling
- IGMP Snooping
  - IGMP v1/v2
  - IGMP v3 Basic (BISS)
  - GMP v2/v3 Querier
- MLD Snooping
  - MLD v1/v2
- Multicast VLAN Registration (MVR)
  - IPv4

## Quality of Service (QoS)

- Trusted QoS
- Queue Scheduling
  - WRR
  - WFQ
  - Strict Priority
  - Hybrid (WRR+SP or WFQ+SP)
- Class of Service
  - Port-based
  - 802.1p
  - IP TOS Precedence
  - IP DSCP
- Rate Limit
  - Port-based (Ingress/Egress)

## Security

- AAA Authentication
- 8 TACACS+
- 8 RADIUS
- Authentication Manager
  - IEEE 802.1X
  - MAC Auth
  - Web Auth
  - Guest VLAN
  - Port-based
  - Host-based
- Account Manager
  - Local Authentication
  - 8 Multiple User Account
  - Multi-Level Security (Manager/Operator)
  - Password Recovery Procedures
- Management Access
- Management VLAN
  - 256Management ACL
- SSL
  - SSLv2
  - SSLv3
  - TLSv1
- WebUI
  - HTTPS
- CLI
  - SSH v1/v2
- Port Security
  - 256 Dynamic Lock
- Storm Control
  - Broadcast
  - Unknown Multicast
  - Unknown Unicast
- Spanning Tree
  - BPDU Guard
- Protected Port (Port Isolation)
- Black Hole MAC
- CPU Defense Engine
- DoS Prevention
- DHCP Snooping (with Option 82)
- Dynamic ARP Inspection
- 256 IP Source Guard
- IP/MAC/Port Binding (IMPB)
- Dynamic VLAN Assignment

## IPv6

- IPv6 Host
  - Auto Configuration
  - Static IPv6 Address and Prefix Length
  - Static IPv6 Default Gateway
  - IPv6 Neighbor Discovery (ND)
  - IPv6 Duplicate Address Detection
  - ICMPv6
- IPv6 Application
  - HTTP/HTTPS
  - TELNET
  - SSH
  - SNMP
  - TFTP
  - Syslog
  - PING
  - DHCPv6

## Access Control List (ACL)

- ACL Type
  - L2/L3/L4
  - 512 MAC-based
  - 512 IPv4-based
  - 512 IPv6-based
- Access Rules
  - 1024

## MIB

- RFC1213 MIBII (System & Interface groups)
- RFC2819 RMON I (1,2,3, & 9 groups)
- RFC1215 Generic Traps
- RFC1493 Bridge
- RFC2674 Bridge MIB Extensions
- RFC2737 Entity
- RFC3635 Ethernet-Like
- RFC2863 Interface Group
- SNMP-Community-MIB
- SNMPv3-MIB

## Management

- CLI
  - 3 sessions Console
  - 3 sessions Telnet (RFC854)
- WebUI
  - HTTPS
- SNMP(v1,v2c,v3)
- File Management
  - Firmware Upgrade/Backup
  - Dual Images
  - Configuration Download/Backup
  - Multiple Configurations
- Upload/Download
  - TFTP (RFC783)
  - HTTP
  - UART
- Time Management
  - Local
  - NTP
- Port Management
  - Friendly Port Name (Port Description)
  - Error Disabled Recovery
- Line Management
  - Console
  - Telnet (RFC854)
  - SSH v1/v2
- DHCP
  - Client
- DNS
  - Client
- Software Reset Button
- IEEE (802.3az)
- 32 entries / type RMON Management

## Diagnostics

- UDLD
- Mirroring
  - 4 sessions port-based (Many to One)
- Syslog (RFC3164)
  - Local RAM
  - Local Flash
  - 8 Remote Server
- System Diagnostics
  - CPU Utilization
  - Memory Utilization
  - Port Utilization
  - Technical Support Log
- Port Diagnostics
  - Cable Test
  - Fiber Module Status
- Network Diagnostics
  - Ping Test
  - Traceroute

## Discovery

- IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
- ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)

## PRODUCT SPECIFICATIONS

Detailed technical parameters defining the system performance, input/output ports, and mechanical & environmental characteristics of the network switch.

### HARDWARE FEATURES

Component	Specification
<b>Ports</b>	48 x 10/100/1000Mbps ports, 6 x 10000Mbps SFP+ slots, 1x Console port
<b>Power Supply</b>	AC100–240V 50/60Hz
<b>Protocol Standards</b>	IEEE 802.3i, 802.3u, 802.3ab, 802.3x, 802.3az, 802.3af, 802.3at
<b>Indicators</b>	Electrical port indicator, optical port indicator, power input indicator, system running indicator
<b>Network Medium</b>	10Base-T: UTP category 3, 4, 5 cable (maximum 100m) 100Base-Tx: UTP category 5, 5e cable (maximum 100m) 1000Base-T: UTP category 5e, 6 cable (maximum 100m) 1000Base-X: MMF, SMF
<b>Dimensions</b>	440*290*44.5 mm
<b>PoE port</b>	48 802.3at/af standard POE
<b>PoE Pin Definition</b>	1/2(+), 3/6(-)
<b>Forwarding Mechanism</b>	Store-and-Forward
<b>Switching Capacity</b>	216Gbps
<b>Forwarding Rate</b>	160.704Mpps
<b>MAC Address Table</b>	32K
<b>Cache</b>	12Mbit
<b>Jumbo Frame</b>	10KBytes
<b>Environment</b>	Operating Temperature: 0°C –45°C (32°F–113°F) Storage Temperature: -40°C –70°C (-40°F–158°F) Operating Humidity: 10%–90% non-condensing Storage Humidity: 5%–95% non-condensing