

**Model:**

# C-244: Immunity L3 Managed Switch



## Engineered for Speed, Built for Security

Delivering ultra-fast connectivity, intelligent management, and enterprise-grade protection for today's high-performance networks.



4 × 10G SFP+, 16 × 1G SFP, and 8 × 1G Combo ports



128 Gbps switching performance and 95.232 Mpps forwarding rate



Routing, VLAN segmentation, and QoS control



ARP/IP/DoS defense, 802.1X authentication, and quadruple binding



ERPS ring protection (<20 ms recovery) and STP/MSTP



WebUI, CLI, SNMP, or Telnet, with SSL/SSH encryption



Enables efficient data transmission, seamless VLAN segmentation and robust protection.



## PRODUCT OVERVIEW

The **C-244** is a L3 managed switch which is engineered to deliver high-speed performance, reliability, and intelligent network control for enterprise-class environments. Equipped with 4 × 10G SFP+ uplinks, 16 × 1G SFP ports, and 8 × 1G Combo ports, this switch provides outstanding flexibility and backbone capacity for high-density network deployments.

### 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

- 8K MAC 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)
- 4094 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/Priority 8 Queue
- 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)

## Access Control List (ACL)

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

## 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

## Discovery

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

## 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

## PRODUCT SPECIFICATIONS

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

### HARDWARE FEATURES

Component	Specification
Ports	4x 10Gbps SFP+, 16x 1Gbps SFP, 8x 1Gbps Combo ports, 1x Console port
Power Supply	AC100–240V 50/60Hz
Standards	IEEE 802.3i, 802.3u, 802.3ab, 802.3x, 802.3az
Indicators	SFP fiber port indicators, power input indicator, system running indicator
Network medium	10Base-T: UTP category 3, 4, 5 cable (Max100m) 100Base-Tx: UTP category 5, 5e cable (Max100m) 1000Base-T: UTP category 5e, 6 cable (Max100m) 1000BASE-SX: 62.5um MMF (min. range: 2m~275m) or 50um MMF (min. range: 2m~550m) 1000BASE-LX: 62.5um/50um MMF (min. range: 2m~550m) or 9um SMF (min. range: 2m~5000m) 10GBASE-SR: OM3/OM4 or above MMF (operating range: 2 m ~ 300 m) 10GBASE-LR: IEC's B1.1 and B1.3 SMF (min. range: 2 m ~ 10,000 m)
Dimensions	430×290×46 mm
Forwarding mechanism	Store-and-Forward
Switching Capacity	128Gbps
Packet Forwarding Rate	95.232Mpps
MAC Address Table	16K
Packet Buffer	12Mbit
Jumbo Frame	12KBytes
Environment	Operating Temperature: 0°C –45°C (0°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