ET16222MPp-S

L2+ Managed 16-port 10/100/1000Base-TX(PoE+) + 2-port 10/100/1000Base-TX or 100/1000Base-FX SFP Combo Ethernet Switch

Features

- ► L2+ Managed features provide easier manageability, robust security and QoS
- ► 16 10/100/1000Base-T PoE+ ports + 2 10/100/1000Base-TX or 100/1000Base-FX SFP combo ports
- ► DHCP Server
- ► IPv4/IPv6 L3 static route
- ► IEEE 802.3af 15.4W / IEEE 802.3at 30W High Power PoE
- ► Total 250W PoE power budget
- ► IEEE 802.3az EEE Energy Efficient Ethernet standard for green Ethernet
- ► 9K Jumbo frames
- ► 8K MAC forwarding addresses
- ► CLI/Web/SNMP management interfaces
- ► PoE Port configuration and scheduling
- ► Embedded Surveillance Device Management (Option by request)
- ► 19" 1U Rack-mount

Warranty

- ► 5-Year Warranty

Specifications

Ethernet

Standards	IEEE802.3 10Base-T
	IEEE802.3u 100Base-TX
	IEEE802.3u 100Base-FX
	IEEE802.3ab 1000Base-T
	IEEE802.3z 1000Base-X
Processing Type	Store-and-Forward
Switch Fabric	36 Gbps
Forwarding Capacity	26.784 Mpps
Forward Filter Rate	14,880pps (10Mbps)
	148,800pps (100Mbps)
	1,488,000pps (1000Mbps)
Max Packet Length	9K Bytes
Address Table Size	8K MAC Addresses
Connector	18 x RJ45
Optical Port	2 x SFP 100/1000Base-FX
Console	1 x RJ45

Electrical and Mechanical

Input Power	100~240VAC, 50~60Hz
Total PoE output power budget	250W
Power Consumption	Total around 270W (full loading)
LED Indicators	
Power	Power Status
Ethernet (Per Port)	Link/Active, Speed
PoE status	Indication of PoE Power applying
Dimensions (W x D x H)	442 x 211 x 44 mm
Weight	2.7 Kg
Casing	Metal Case
Mounting Options	Rack Mount

Software Features

Layer 2 Switching

Spanning Tree Protocol	IEEE 802.1D STP, IEEE 802.1w RSTP, IEEE 802.1s MSTP

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Specifications

Trunking	- Link Aggregation Control Protocol (LACP) IEEE802.3ad
	- Up to 13 groups
	- Up to 4 ports per group
VLAN	- Supports up to 4K VLANs simultaneously (out of 4096 VLAN IDs)
	- Port-based VLAN, 802.1Q tag-based VLAN, MAC-base VLAN, Management VLAN, Prvate VLAN Edge(PVE), Q-in-Q (double tag) VLAN
DHCP Relay	- Relay of DHCP traffic to DHCP server in different VLAN.
	- Works with DHCP Option 82
IGMP v1/v2/v3 Snooping	- IGMP limits bandwidth-intensive multicast traffic to only the requesters.
	- Supports 1024 multicast groups
IGMP Querier	IGMP querier is used to support a Layer 2 multicast domain of snooping switches in the absence of a multicast router
IGMP Proxy	IGMP snooping with proxy reporting or report suppression actively filters IGMP packets in order to reduce load on the multicast router
MLD v1/v2 Snooping	Delivers IPv6 multicast packets only to the required receivers
Layer 3 Switching	
IPv4 Static Routing	IPv4 Unicast: Static routing
IPv6 Static Routing	IPv6 Unicast: Static routing
Security	
Secure Shell (SSH)	SSH secures Telnet traffic in or out of the switch, SSH v1 and v2 are supported
Secure Sockets Layer (SSL)	SSL encrypts the http traffic, allowing advanced secure access to the browser-based management GUI in the switch
IEEE 802.1X	- IEEE802.1X: RADIUS authentication, authorization and accounting, MD5 hash, guest VLAN, single/multiple host mode and single/multiple sessions
	- Supports IGMP-RADIUS based 802.1X
	- Dynamic VLAN assignment
Layer 2 Isolation Private VLAN Edge	PVE (also known as protected ports) provides L2 isolation between clients in the same VLAN. Supports multiple uplinks
Port Security	Locks MAC addresses to ports, and limits the number of learned MAC address
IP Source Guard	Prevents illegal IP address from accessing to specific port in the switch
RADIUS/TACACS+	Supports RADIUS and TACACS+ authentication. Switch as a client
Storm Control	Prevents traffic on a LAN from being disrupted by a broadcast, multicast, or unicast storm on a port
DHCP Snooping	A feature acts as a firewall between untrusted hosts and trusted DHCP servers
ACLs	Supports up to 256 entries. Drop or rate limitation based on:
	- Source and destination MAC, VLAN ID or IP address, protocol, port,
	- Differentiated services code point (DSCP) / IP precedence
	- TCP/ UDP source and destination ports
	- 802.1p priority
	- Ethernet type
	- Internet Control Message Protocol (ICMP) packets
	- TCP flag
Quality of Service	
Hardware Queue	Supports 8 hardware queues
Scheduling	Strict priority and weighted round-robin (WRR)
	Queue assignment based on DSCP and class of service
Classification	- Port based
	- 802.1p VLAN priority based
	- IPv4/IPv6 precedence / DSCP based
	- Differentiated Services (DiffServ)
	- Classification and re-marking ACLs
Rate Limiting	- Ingress policer
	- Egress shaping and rate control
	- Per port
Management	
DHCP Server	Support DHCP server to assign IP to DHCP clients
Zero Touch Upgrade	Upgrade single switch automatically when you get notification

Specifications

Remote Monitoring (RMON)	Embedded RMON agent supports RMON groups 1,2,3,9 (history, statistics, alarms, and events) for enhanced traffic management, monitoring and analysis
Port Mirroring	Traffic on a port can be mirrored to another port for analysis with a network analyzer or RMON probe. Up to N-1 (N is Switch's Ports) ports can be mirrored to single destination port. A single session is supported.
UPnP	The Universal Plug and Play Forum, an industry group of companies working to enable device-to-device interoperability by promoting Universal Plug and Play
s-Flow	The industry standard for monitoring high speed switched networks. It gives complete visibility into the use of networks enabling performance optimization, accounting/billing for usage, and defense against security threats
IEEE 802.1ab (LLDP)	- Used by network devices for advertising their identities, capabilities, and neighbors on an IEEE 802ab local area network - Support LLDP-MED extensions
Web GUI Interface	Built-in switch configuration utility for browser-based device configuration
CLI	For users to configure/manage switches in command line modes
Dual Image	Independent primary and secondary images for backup while upgrading
SNMP	SNMP version1, 2c and 3 with support for traps, and SNMP version 3 user-based security model (USM)
Firmware Upgrade	- Web browser upgrade (HTTP/ HTTPs) and TFTP - Upgrade through console port as well
NTP	Network Time Protocol (NTP) is a networking protocol for clock synchronization between computer systems over packet-switched
Other Management	- HTTP/HTTPs; SSH - DHCP Client/ DHCPv6 Client - Cable Diagnostics - Ping - Syslog - Telnet Client - IPv6 Management

Power over Ethernet (PoE)

Port Configuration	Supports per port PoE configuration function
PoE Scheduling	Supports per port PoE scheduling to turn on/off the PoE devices (PDs).
Auto-checking	Check the link status of PDs. Reboot PDs if there is no responses
Power Delay	The switch provides power to the PDs based on delay time when PoE switch boots up, in order to protect switch from misuse of the PDs

Environmental

Operating Temperature	0°C to 50°C (32°F to 122°F)
Storage Temperature	-20°C to 70°C (-4°F to 158°F)
Relative Humidity	10% to 90% non-condensing
MTBF	> 100,000 hrs

Regulatory Approvals

Certification compliance	CE/FCC Part 15 Class A

Ordering Information

Available Model	Description
ET16222MPp-S	L2+ Managed 16-port 10/100/1000Base-TX(PoE+) + 2-port 10/100/1000Base-TX or 100/1000Base-FX SFP Combo Ethernet Switch
Optional Accessories (to be purchased separately)	
SFP	(S) = SFP Option. Please select your SFP on our SFP Modules page at the back of the catalogue or our website www.ot-systems.com for details.

Ordering Information

Package Checklist

■ Managed Switch	x 1
■ Adhesive Rubber Feet	x 4
■ Mounting Accessory	x 1
■ AC Power Cord	x 1
■ RJ-45 Console Cable	x 1

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Due to continuous improvement, all product specifications are subject to change without further notice.