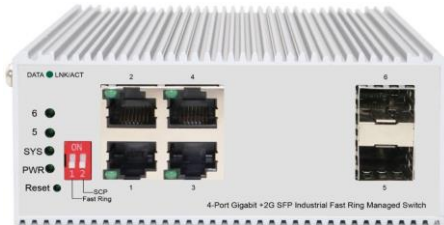## Product Overview

industrial Managed Switch with 4*10/100/1000Mbps RJ45 ports and 2*1000Mbps SFP fiber module expansion slots. Support static routing functions, provide perfect security, QoS, and plenty of VLAN function has ring network function, can form a ring network, switch between by hand in hand form a ring network topology, the redundancy, high reliability characteristics can make in a ring online link disconnected all the way, will not affect the forwarding of data on the network.

The device adopts storage and forwarding, no fan, low power consumption design, has the advantages of easy to use, compact and beautiful, simple installation. The product is designed to meet Ethernet standards, with lightning protection, static protection mechanism, operating temperature range of -40°C to 75°C, stable performance, safety and reliability, can be widely used in intelligent transportation, telecommunications, security, financial securities, customs and other broadband data transmission fields.

Product Features

- Supports IEEE802.3u, IEEE802.3ab, IEEE802.3z, and IEEE802.3x standards;

- RJ45 Supports automatic port flip (Auto MDI/MDIX);

- Supports IEEE802.3x full-duplex flow control and Backpressure half-duplex flow control ;

- Panel indicators monitor working status and assist in fault analysis;

- High energy aluminum alloy roof heat conduction groove design;

- Supports one-click ring network and one-click storm suppression, featuring redundancy and high reliability;

- High reliability design, supporting traditional STP/MSTP/RSTP2-layer link protection technology;

- Support static convergence and dynamic convergence (LACP) 2 convergence modes, effectively increase the link bandwidth, improve the reliability of the link, and at the same time can achieve load balancing, link backup;

- Flexible and convenient management and maintenance Supports various management modes, such as Console, Telnet, and SSH;

- Supports WEB management, which is simple and efficient, and facilitates installation and debugging by engineering and maintenance personnel. Supports file upload and download management through TFTP.

Product Specifications

Hardware Specification

Standard	IEEE802.3,IEEE802.3u,IEEE802.3ab,IEEE802.3z,IEEE802.3x,IEEE802.1X,IEEE802.1q, IEEE802.1p,IEEE802.1d,IEEE802.1w,IEEE802.3ad
Interface	4*10/100/1000Mbps RJ45 Ports 2*1000Mbps SFP Slots
Indicator	PWR,LNK/ACT,SYS
Network media	10BASE-TX: UTP category 3,4,5 cable （≤100m） 100BASE-TX: UTP category 5, 5e cable （≤100m ） 1000BASE-TX: UTP category 5e, 5 cable （ ≤100m） 1000BASE-X: MMF, SMF
MAC Address Table	8K, Auto-learning, Auto-aging
jumbo frame	9216Byte
Packet buffer	4.1M bit
Transfer Mode	Store-and-forward
Packet Forward Speed	8.92Mpps
Switching Capacity	12Gbps
Dimensions(L*W*H)	110*90*46mm
Fan Quantity	Fanless
Green energy saving	IEEE802.3az
Input Power Supply	DC:12-55V
Operating Temperature	-40°C～75 °C
Storage Temperature	-40 °C～80 °C
Operating Humidity	5%～95% non-condensing
Storage Humidity	0%～95% non-condensing
Surge Protection	Differential mode ±2KV,Common mode ±6KV
MTBF	>100000 hour
Electrostatic standard	Contact ±6KV,Air ±8KV

Software Specification

L3 Features	DHCP Server	DHCP Server
		DHCPv6 Server
	Route	Static Route(IPV4/IPV6)
		Route Aggregation
L2 Features	**MAC Address Table**	MAC Aging Time
		MAC Filter
		MAC Notification
	Basic Management	Console/Telnet/SSH
		Http/Https,SSL/TLS
		FTP/TFTP
		Syslog
		SNMP(v1/v2c/v3),SNMP Trap
		SNTP/NTP
		CPU protect
		Software/Hardware watchdog
		Firmware Upgrade/Backup
		Ping/Traceroute
	Port Config	Bandwidth Control
		Flow Control
		EEE
		MTU
		CFM(802.1ag)
		EFM OAM(802.3ah)
		DDM
		Storm Control
		Port Isolation
		Port Security
		Virtual Cable Test
		ULDP/Cisco UDLD
	Discovery	LLDP(802.1ab)
		LLDP-MED
	(Link Aggregation)	Static
		LACP(802.3ad)
		Load Balance(src-mac/dst-mac/src-ip/dst-ip)
		Max groups and ports per group
	VLAN	VLAN(802.1Q 4K)
		Access/Trunk/Hybrid
		Private VLAN
		VLAN Filter
		MAC-based VLAN
		Protocol-based VLAN
		IP Subnet-based VLAN
		Voice VLAN
		GVRP/GMRP
		QinQ/Selective-QinQ/Flexible QinQ
		VLAN Translation/N:1 VLAN Translation
		Guest VLAN
	Network Loop Detection	Loopback Detection
		ERPS
	Spanning Tree	STP/RSTP/MSTP
		MSTP Support 64 instance
		BPDU Guard/Root Guard/BPDU Tunnel
	ARP	Static ARP
		ARP Scanning Prevention
		ARP Spoofing Prevention

		ARP Guard
		Gratuitous ARP
		Dynamic ARP Inspection
		ARP Quantity Control
IPv4 Related Function	**ICMP**	Anti ICMP Attack
		ICMP Rate Limit
		ICMP Unreachable Drop
	Control Multicast	DCSCM
	Multicast VALN	Multicast VALN
	IGMP	IGMP SNOOPING V1/V2/V3
		Fast Leave
		IGMP Proxy
	DHCP	DHCP Client/BOOTP
		DHCP Relay
		DHCP Snooping
		DHCP Option 82/43/60/61/67
IPv6 Related Function	**IPv6 Basic**	IPv6 ND Snooping
	DHCPv6	DHCPv6 Relay
		DHCPv6 Snooping
		IPv6 SAVI
		Security RA
	IPv6 Multicast Routing	MLD v1/V2 Snooping
	IPv6 Features	SNMP over IPv6 Support
		HTTP over IPv6 Support
		SSH over IPv6 Support
		DNS over IPv6 Support
		IPv6 ping/traceroute Support
		IPv6 Telnet Support
		IPv6 Radius+ Support
		IPv6 Tacacs+ Support
		IPv6 SNTP/NTP Support
		IPv6 FTP/TFTP Support
		IPv6 IPSec Support
		IPv6 ACL
QoS(Quality Of Service)	**Basic**	Trust COS/DSCP
		Trust Port
	Scheduling	SP
		WRR
		WDRR
	PolicyMap Stream	Based on VLAN
		Based on COS/DSCP
		Aggregate PolicyMap
		Ingress PolicyMap
	Policing	CAR Stream Shaping(leak algorithm)
		Ingress Policing
	Rewrite	COS/802.1p Priority
		IP Precedence
		IPv4 DSCP/IPv6 DSCP
		drop-precedence
		internal-priority
		Ingress/Egress Rewrite
	Queuing	DSCP to DSCP mapping
		DSCP to DP mapping
		DSCP to Queue mapping
		COS to DP mapping
		COS to Queue mapping
ACL	**IP-ACL**	SIP/DIP

		IP Protocol
		IP Priority(DSCP,TOS, Precedence)
		TCP,UDP src,dst Port
	MAC-ACL	SRC/DST MAC
		VLAN
		COS
		Tag/Untag
	IP-MAC ACL	MAC-ACL and IP-ACL
	User-defined ACL	Base on user defined profile
	ACL Features	Based on time period ACL
		ACL on VLAN
		Based on ACL Stream
Security	**802.1x**	Port Based Authentication
		Support EAPoR
		MAC based Authentication
		Guest VLAN
	MAB	Based on Port Authentication
		Based on MAC Authentication
	MAC Address Count Limit	Based on Port
		Based on VLAN
	IP Address Count Limit	Based on Port
		Based on VLAN
	Access Management	Based on source mac and IP address
	Deny DoS Attack	TCP Flag
		TCP Flagment
		IP Segment
		ICMP
	TACACS+	Standard Support
	Radius	Standard Support
		Client, Support MD5
	SSL	Openssl 1.1.0
Redundancy Related Function	**MRPP**	Compatiable ERRP
	ULPP	Uplink Protection Protocol
		Smart Link/Monitor Link
	ULSM	Uplink State Monitor
Mirror	**Mirror**	Support one to one, multi to one
		Port based mirror, support ingress, egress, and both
		CPU based mirror
		Flow based mirror
		RSPAN