

TR-S2928F-I



S2928F-I Gigabit Ethernet 10G Switch Series

Product Overview

Techroutes TR-S2928F-I Series is a new-generation smart switch developed for carrier IP MAN and enterprise networks. Based on the new high-performance hardware and the TRROS platform, TR-S2928F-I supports ACL, selective QinQ, 1:1 and N:1 VLAN switching, Ethernet OAM, carrier-level QoS, industry-level 10G Ethernet ring, etc.

Product Characteristics

- **Industrial Ethernet Ring with Zero Delay and Zero Packet Loss**
- The TR-S2928F-I supports industrial Ethernet ring network protection protocol. The protection switching time is less than 50ms. The solution has been applied in power industry, rail transportation industry and military projects for decades. It can achieve zero packet loss.
- **Carrier-class Ethernet Switches**
- The TR-S2928F-I supports carrier Ethernet ring network protection protocol. The protection switching time is less than 50ms. It also supports simple and effective redundancy protection mechanism such as STP/RSTP/MSTP protocol and dual uplink standby link protection and LACP link aggregation. These functions meet the requirement of carrier grade high reliability.

- The solution has perfect Ethernet OAM, which can real time monitor the network operating state and rapidly detect and locate the malfunction.
- The solution supports strong ACL function. The solution supports L2~L7 data access and control based on the physical port, VLAN IDs, source MAC/IP addresses and protocol port, which provides flexible ways of policy control.
- The TR-S2928F-I supports ISSU (In-Service Software Upgrade), guaranteeing the user data non-stop forwarding when the system is upgrading.
- The TR-S2928F-I supports various L2 multicast function, including IGMP-Snooping, user fast-leave mechanism and cross VLAN multicast replication function.

➤ **Carrier QoS Policies**

- The TR-S2928F-I supports complex traffic classification based on VLAN, source MAC/IP addresses, destination MAC/IP addresses, IP protocols, or priorities. It also supports priority remark. These functions provide an effective way for users to optimize their businesses.
- The TR-S2928F-I provides flexible bandwidth control policies and support a port base or flow-based Committed Access Rate (CAR) and guarantees Layer 3 line-speed forwarding.
- Every port supports 8 priority queues.
- The TR-S2928F-I also supports multiple queue grooming algorithms such as SP,

➤ **Comprehensive IPv6 Solutions**

- The TR-S2928F-I comprehensively supports IPv6 Neighbor Discovery, ICMPv6, Path MTU Discovery.
- The TR-S2928F-I supports IPv6 based Ping, Traceroute, Telnet, SSH, ACL, meeting the need of IPv6 network equipment management and service control.

➤ **Comprehensive Security Mechanisms**

- The TR-S2928F-I adopts advanced hardware architecture design, realizing the hierarchical scheduling and protection of the packet. It provides multiple security measures to defend against DOS or TCP attacks; and supports command line authority control based on user levels.
- Comprehensive Security Certification: The S2928F-I complies with IEEE 802.1x, Radius, Tacacs+.
- The TR-S2928F-I supports the suppression of broadcast, multicast and unknown unicast packet, ensuring the equipment can operate normally in harsh network conditions.

- The TR-S2928F-I has the perfect loop detection mechanism.
- The TR-S2928F-I supports the port isolation in a same VLAN and DHCP-Snooping,IP+MAC+ port binding.
- **Convenient Management and Maintenance**
- The TR-S2928F-I supports multiple management styles such as Console, Telnet, SSH.
- The S2928F-I supports WEB based management. The management is more simple and effective.
- The S2928F-I supports upload and download of TFTP files.
- The S2928F-I supports ISSU (In-Service Software Upgrade).
- The S2928F-I supports SNMP.

Technical Specifications

Items	TR-S2928F-I
Switching Capacity	144Gbps
Forwarding Rate	108Mpps
Port	24x1000/100M SFP ports, 8xGE TX ports, 4x10G/1G SFP+ ports
Dimensions (WxDxH) mm	440x280x44
Power Consumption	<55W
Power supply	AC: 100V-240V, 50Hz±10%
	DC: -36V~ -72V
Environment	Operating temperature and humidity: -20°C-65°C, 5%-95% non-condensing
	Storage temperature and humidity: -30°C-75°C, 5%-95% non-condensing
MAC Switching	Static configuration and dynamic MAC learning
	MAC browsing and removal
	Configurable aging time of the MAC address
	Limited number of learnable MAC addresses
	MAC filtration
	Black-hole MAC list
VLAN	4K VLAN
	GVRP
	1:1 VLAN mapping and N:1 VLAN mapping
	QinQ and Selective QinQ
	Private VLAN
STP	802.1D (STP), 802.1W (RSTP) and 802.1S (MSTP)
	BPDU protection, root protection, and ring protection
Multicast	IGMP v1/v2/v3
	IGMP Snooping
	IGMP Fast Leave
	Multicast group policy and multicast number limit
	Multicast traffic cross VLAN duplication

IPv4	Default Route
IPv6	ICMPv6, DHCPv6, ACLv6 and IPv6 Telnet
	Path MTU discovery
	MLD Snooping
QoS	Traffic classification of L2-L4 protocol headers
	CAR flow limit
	802.1P/DSCP priority remark
	Multiple queuing algorithms such as SP,WRR, or SP+WRR
	Trail-Drop, WRED
	Traffic Supervision and traffic shaping
Security	Identification and filtering of L2/L3/L4 based ACL
	Defend against DOS or TCP attacks
	Suppression of broadcast, multicast and unknown unicast packet.
	Port isolation
	Port Security, IP+MAC+port binding
	DHCP Snooping, DHCP Option 82
	IEEE 802.1x certification
	Radius, Tacacs+
Command line authority control based on user levels	
Reliability	Static/LACP link aggregation
	EAPS
	ERPS
	ISSU
Management	Console, Telnet, SSH
	WEB based management
	SNMP v1/v2/v3
	TFTP file upload and download
	RMON

Ordering Information**Techroutes TR-S2928F-I**

Item	Description
TR-S2928F-I	Ethernet switch with 24xGE/100M SFP ports, 8xGE TX ports, 4x10G/1G SFP+ ports (1 RJ45 CLI port, 24xGE/100M SFP ports, 8xGE TX ports, 4x10G/G SFP+ ports, standard power supply 220VAC & 48VDC , the cooling fan, 1U, standard 19-inch rack-mounted installation)