

TR-S2928F



S2928F Gigabit Ethernet 10G Switch

Product Overview

TR-S2928F L3-lite Series is a next-generation aggregation 10GE switch introduced by Techroutes Network. It is targeted at the IP MAN (metropolitan area network), government and enterprise networks, Internet café and diskless working environment. It is developed on the basis of high performance hardware and TRROS - a software platform with Techroutes Network own independent intellectual property rights. It supports functions such as powerful ACL, flexible QinQ, 1:1 or N:1 VLAN switching, Ethernet OAM, carrier-level QoS and industry-level 10GE Ether-ring, ensuring this switch series meets application requirements in all kinds of complicated sites. It also supports layer-3 routing protocol.

Product Characteristics

Industrial Ethernet Ring with Zero Delay and Zero Packet Loss

Supports industry-level EAPS and their protection shift time is less than 50ms. Their high reliability is represented by the null packet loss, which has been proved by many years of application in the Grid, rail transportation and defense systems.

Telecom-Level Ethernet Switch

Supports the telecom-level Ethernet-ring protection protocol with a protection shift time of less than 50ms, STP/RSTP/MSTP, backup of active and standby uplinks and LACP link aggregation to cater to the requirements of high reliability of carriers.

Provides the perfect Ethernet OAM mechanism to monitor the network running status in real time for rapid trouble locating and detection.

Supports powerful ACL functions to access and control L2-L7 data based on physical port, VLAN, MAC, IP and protocol port ID, and providing carriers flexible and various policy control methods. Supports In-Service

Software Upgrade (ISSU) to ensure the unremitting data forwarding during system upgrade. Supports various L2 multicast functions, including IGMP-Snooping, fast-leave and trans-vlan multicast copy.

Flexible and Convenient Management and Maintenance

Supports management modes such as the console port, Telnet, SSH, etc. Supports the WEB management mode, which is easy and efficient so that it makes installation and debugging convenient. Supports TFTP-patterned file upload/download management. Supports ISSU (In-Service Software Upgrade).

Carrier-Level QoS Policies

Supports priority retagging and complicated flow classification based on VLAN, MAC, source address, destination address, IP or priority to better streamline carrier's services.

Supports provides flexible bandwidth control policies and supports port-/flow-based flow limit, and ensuring the line speed forwarding of each port to make sure the high quality of video, audio and data services. Supports 8 priority queues by each port. Supports multiple queue schedule algorithms such as SP, WRR, or "P plus WRR".

Innovative Virtual Cluster Switching Technique

Innovative TRVSS (Techroutes Virtual Switch System): TR-S2928F L3-lite Series virtualizes multiple physical devices into one. The performance, reliability and management of the virtual system are superior to the physical ones.

Improved Performance: TRVSS makes full use of each link in the physical devices, which avoids STP blocking the link and protects the original link to the maximum extent.

High Reliability: Based on the advanced distribution mechanism and efficient cross-physical link aggregation link function, the logic control plane, service control plane and service data plane are separated. Thus, TR-S2928F L3-lite Series can support continuous layer-3 routing forwarding, avoiding service interruption as a result of a single point of failure.

Easy Management: TRVSS realizes single IP management, greatly improving the networking efficiency and lowering the operating cost.

Versatile IPv6 Solutions

Supports the IPv6 protocol suite, IPv6 neighbor discovery, ICMPv6, path MTU discovery, etc. Supports Ping, Traceroute, Telnet, SSH, ACL and so like on the basis of IPv6, meeting IPv6 networks' equipment management requirements and service control requirements.

Perfect Security Mechanisms

Equipment-level security: The advanced hardware infrastructure design realizes the level-based packet schedule and packet protection, prevents DoS-/TCP-related SYN flood, UDP flood, broadcast storm or large traffic attacks, and supports level-based command line protection, endowing different levels of users with different management permissions.

Supports perfect security authentication mechanisms: IEEE 802.1x, Radius and TRTacacs+.

Supports storm/multicast/unicast limit to ensure the normal running of equipment in harsh network conditions.

Supports a perfect ring detection mechanism to ensure the long-term stable running of network.

Supports port isolation within the same VLAN, DHCP-Snooping, and IP plus MAC plus Port binding for ensuring user data security;

Technical Specifications

Items		TR-S2928F
Interface		16xGE SFP,8xGE Combo (TX/SFP)& 4x10GE/GE SFP+
Console (RJ45)		1
Backplane (Gbps)		128
Forwarding Rate (Mpps)		96
Chassis	Dimension (WxDxH)mm	440x280x44
	Weight (KG) Empty	4
Package	Dimension (WxDxH)mm	576x448x94
	Weight (KG) Empty	5.2
Power Consumption	No-Load	< 18W
	Full-Load	< 38W
Power Supply AC: 100V-240V,50Hz±10% and DC:48V		45W
Power Redundancy		Yes
Total output BTU (1000BTU/H=293W)		153.58
Fan number		2
Noise@25°C(dBA)		45
MTBF(H)		> 50,000
Forwarding mode		Store-forward
Flash (MB)		32
DRAM (MB)		256
MAC		16K
Buffer size(MB)		1.5
Interface Vlan		64
Routing Table		2040

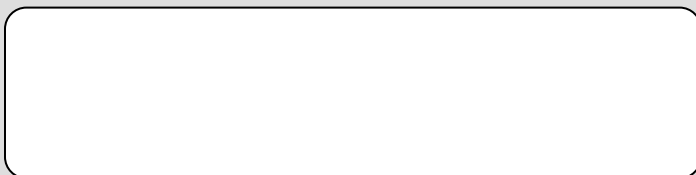
Jumbo frame	9K
VLAN	4K Active VLAN
	GVRP
	QinQ and Selective QinQ
	Private VLAN
	Voice VLAN
Spanning Tree	802.1D (STP), 802.1W (RSTP) and 802.1S (MSTP)
	BPDU guard, root guard and loopback guard
Multicast	IGMP v1/v2/v3
	IGMP snooping
	IGMP Fast Leave
	MVR
	IGMP Filter
IP	Static route, RIP, OSPF
	IPv4/v6 dual stack
IPv6	ICMPv6, DHCPv6, ACLv6 and IPv6 Telnet
	IPv6 neighbor discovery
	Path MTU discovery
	MLD V1/V2
	MLD snooping
	IPv6 Static Routing, RIPng, OSPFv3
	Manual tunnel, ISATAP tunnel, 6 to 4 tunnel
QoS	CAR, HQoS
	MAC/IP/TCP/UDP/VLAN/ COS/ DSCP/ TOS based QoS
	802.1P/DSCP priority re-labeling
	SP, WRR, and "SP+WRR"
	Tail-Drop and WRED
	Flow monitoring and Traffic shaping
Security features	Port isolation
	Port security, and "IP+MAC+port" binding
	MAC sticky DAI & IP source guard, PPPoE+
	IEEE 802.1x, Radius, TRTAcacs+ authentication
	L2/L3/L4 ACL flow identification and filtration Anti-attack from DDoS, TCP's SYN Flood, UDP Flood etc. Broadcast/multicast/unknown unicast storm-control
	MD5, SHA-256, RSA-1024, AES256 etc.
DHCP	DHCP server/relay/client
	DHCP snooping/option82
Reliability	Static/LACP link aggregation

	Interface Backup
	EAPS and ERPS
	ISSU uninterrupted system upgrade
	TRVSS, ups to 16-units per stack
	VRRP
	UDLD
Management	Console, Telnet, SSH, HTTP,HTTPS,RMON
	SNMP v1/v2/v3
	TFTP, FTP, SFTP
	NTP
	ZTP
	SPAN, RSPAN
Environment	Operating temperature/humidity:0°C -50°C ,10%-90% non-condensing
	Storage temperature/humidity:-20°C -70°C , 5%-95% non-condensing
Accessories	Power cord, rack mount kits, console cable
Certification	CE,FCC,RoHS,ISO

Ordering Information

Techroutes S2928F Series	
Item	Description
TR-S2928F	Ethernet switch with 16 GE SFP,8 GE Combo (TX/SFP) and 4 10GE ports (1 Console port, 16 GE SFP ports, 8 GE Combo (TX/SFP), 4 10GE/GE SFP+ ports; 220VAC power supply, cooling fan , 1U, standard 19-inch rack-mounted installation)
TR-S2928F-2AC	Ethernet switch with 16 GE SFP,8 GE Combo (TX/SFP) and 4 10GE ports (1 Console port, 16 GE SFP ports, 8 GE Combo (TX/SFP), 4 10GE/GE SFP+ ports; Dual 220VAC power supply, cooling fan , 1U, standard 19-inch rack-mounted installation)
TR-S2928F-AC-DC	Ethernet switch with 16 GE SFP,8 GE Combo (TX/SFP) and 4 10GE ports (1 Console port, 16 GE SFP ports, 8 GE Combo (TX/SFP), 4 10GE/GE SFP+ ports; 220VAC & 48VDC power supply, cooling fan , 1U, standard 19-inch rack-mounted installation)

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